

June 11, 2010

City of West Linn
Attention: Tom Soppe
22500 Salamo Road
West Linn, OR 97068

Re: **Willamette 205 Corporate Center Phase II**
Extension Request
Project Number 2060016.10

Dear Tom:

The purpose of this letter is to request an extension of the land use approval granted on March 23, 2010 for the Willamette 205 Corporate Center Phase II (AP 07-01). The City's Design Review decision approved an office park consisting of three buildings and a parking structure on an 11.3-acre site located at the northeast corner of the intersection of Tannler Drive and Blankenship Road. The approval included 289,000 SF of office space and 756 parking spaces within a parking structure with an additional 79 surface spaces. The Willamette 205 Corporate Center Phase II was approved in phases with the first phase consisting of one office building and surface parking, and the second phase including two office buildings and an additional parking structure. A pre-application conference meeting was held on May 6, 2010 to review application requirements for the requested two-year approval extension (notes included with this letter). While the project site is only within the Willamette Neighborhood Association, two neighborhood meetings were held to discuss this proposal with the Willamette and Savanna Oaks Neighborhood Associations. Requirements of 99.038.5 have been included with this application. This letter and its attachments address the applicable approval criteria for an extension as provided in CDC 99.325.

I. 55.000 DESIGN REVIEW

55.040 Expiration or Extension of Approval

If substantial construction has not occurred within three years from the date of approval of the development plan, the approved proposal will be void, unless an extension is granted under Section 99.325. (ORD. 1408; ORD. 1589 § 1 (Exh. A), 2010)

Response: The design review file DR-06-24 was originally applied for on June 30, 2006. After its approval by the Planning Commission, the file was appealed to the City Council as file AP-07-01. This file was approved by the City Council on February 15, 2007. After the decision was signed on March 1, 2007, it was noticed the next day and became effective March 23, 2007 (attached to this letter). As of the date of this application, substantial construction has not yet been completed on the subject site due to poor economic conditions that have delayed many projects in Oregon and the United States. As such, this application requests a two-year extension as allowed under Section 99.325, addressed below. This standard is met.

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II. 99.325 EXTENSIONS OF APPROVAL

- A. *The Planning Director may grant an extension from the effective date of approval of two (2) years pertaining to applications listed in Section 99.060.A upon finding that:*
1. *the applicant has demonstrated, and staff and the Planning Commission concur, that the application is in conformance with applicable CDC provisions and relevant approval criteria enacted since the application was initially approved; and*

Response: City staff confirmed the proposed Willamette 205 Corporate Center is in conformance with applicable CDC provisions and relevant approval criteria enacted since the application was initially approved on March 23, 2007. A copy of the approved application has been included with this letter for information purposes only. The only changes to applicable CDC and related provisions are limited to minor amendments to refuse and recycling standards within CDC 55.100, which have subsequently been incorporated into the project as described below and as shown on the revised site plan attached to this letter. Responses to these specific amended code standards are addressed as follows.

CDC 55.100(O) Refuse and Recycling Standards

1. *All commercial, industrial and multifamily developments over five units requiring Class II Design Review shall comply with the standards set forth in these provisions. Modifications to these provisions may be permitted if the Planning Commission determines that the changes are consistent with the purpose of these provisions and the City receives written evidence from the local franchised solid waste and recycling firm that they are in agreement with the proposed modifications.*

Response: The proposed project was approved as a Class II Design Review application. This extension complies with the standards set forth in CDC 55.100 This standard is met.

2. *Compactors, containers, and drop boxes shall be located on a level Portland Cement concrete pad, a minimum of four (4) inches thick, at ground elevation or other location compatible with the local franchise collection firm's equipment at the time of construction. The pad shall be designed to discharge surface water runoff to avoid ponding.*

Response: The approved refuse and recycling enclosure will be surfaced with a concrete pad and drained in accordance with this new standard.

3. *Recycling and solid waste service areas:*
 - a. *Recycling receptacles shall be designed and located to serve the collection requirements for the specific type of material.*
 - b. *The recycling area shall be located in close proximity to the garbage container areas and be accessible to the local franchised collection firm's equipment.*
 - c. *Recycling receptacles or shelters located outside a structure shall have lids and be covered by a roof constructed of water and insect resistive material. The maintenance of enclosures, receptacles and shelters is the responsibility of the property owner.*

- d. *The location of the recycling area and method of storage shall be approved by the local fire marshal.*
- e. *Recycling and solid waste service areas shall be at ground level and/or otherwise accessible to the franchised solid waste and recycling collection firm.*
- f. *Recycling and solid waste service areas shall be used only for purposes of storing solid waste and recyclable materials and shall not be a general storage area to store personal belongings of tenants, lessees, property management or owners of the development or premises.*
- g. *Recyclable material service areas shall be maintained in a clean and safe condition.*

Response: Recycling and solid waste areas are proposed to be placed within two enclosures specified on the approved site plan (attached to this letter). The enclosure will be covered and the location does not interfere with required fire access. The owner of the property or maintenance company will ensure these facilities are clean and safe and not used as a general storage area. These standards are met.

- 4. *Special Wastes or Recyclable materials*
 - a. *Environmentally hazardous wastes defined in ORS 466.005 shall be located, prepared, stored, maintained, collected, transported, and disposed in a manner acceptable to the Oregon Department of Environmental Quality.*
 - b. *Containers used to store cooking oils, grease or animal renderings for recycling or disposal shall not be located in the principal recyclable materials or solid waste storage areas. These materials shall be stored in a separate storage area designed for such purpose.*

Response: The approved development does not include uses with hazardous wastes or other materials listed in this standard. This standard does not apply.

- 5. *Screening and Buffering*
 - a. *Enclosures shall include a curbed landscape area at least three (3) feet in width on the sides and rear. Landscaping shall include, at a minimum, a continuous hedge maintained at a height of 36 inches.*
 - b. *Placement of enclosures adjacent to residentially zoned property and along street frontages is strongly discouraged. They shall be located so as to conceal them from public view to the maximum extent possible.*
 - c. *All dumpsters and other trash containers shall be completely screened on all four sides with an enclosure that is comprised of a durable material such as masonry with a finish that is architecturally compatible with the project. Chain link fencing, with or without slats, will not be allowed.*

Response: Surrounding the exterior of the proposed enclosures on the side and rear is a landscaped area within concrete curbs. The placement has been located for functionality for the various buildings, and is not adjacent to residentially zoned property or the site's street frontage. The enclosure will be constructed of a 6'-tall masonry unit wall, compatible with the proposed exterior of the buildings. These standards are met.

6. *Litter receptacles.*
 - a. *Location. Litter receptacles may not encroach upon the minimum required walkway widths.*
 - b. *Litter receptacles may not be located within public right-of-ways except as permitted through an agreement with the City in a manner acceptable to the City Attorney or his/her designee.*
 - c. *Number. The number and location of proposed litter receptacles shall be based on the type and size of the proposed uses. However, at a minimum, for non-residential uses, at least one (1) external litter receptacle shall be provided for every 25 parking spaces for first 100 spaces, plus one (1) receptacle for every additional 100 spaces. (ORD. 1565)*

Response: Required litter receptacles will be provided with the approved development. A total of 835 parking spaces have been approved, requiring a total of 12 trash receptacles. Of the total 12 receptacles, 6 will be constructed in Phase I with the first building, and an additional 6 during Phase II with the construction of the other two buildings. This standard is met.

CDC 55.110 The Site Analysis

14. *Identify applicable Goal 5 Resources identified in the City's Comprehensive Plan.*

Response: The subject site does not contain Goal 5 Resources per the inventories adopted in the City's Comprehensive Plan (attached to this letter). This standard does not apply.

CDC 55.125 Transportation Analysis

Certain development proposals required that a Traffic Impact Analysis (TIA) be provided which may result in modifications to the site plan or conditions of approval to address or minimize any adverse impacts created by the proposal. The purpose, applicability and standards of this analysis are found in CDC Section 85.170. B.2. (ORD 1584)

85.170 Supplemental Submittal Requirements for a Tentative Subdivision or Partition Plan

B. Transportation.

2. Traffic Impact Analysis (TIA).

- A. *Purpose. The purpose of this section of the code is to implement Section 660-012-0045 (2) (e) of the State Transportation Planning Rule that requires the City to adopt a process to apply conditions to development proposals in order to minimize adverse impacts to and protect transportation facilities. This section establishes the standards for when a proposal must be reviewed for potential traffic impacts; when a Traffic Impact Analysis must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; what must be in a Traffic Impact Study; and who is qualified to prepare the Study.*

- B. *Typical Average Daily Trips. The latest edition of the Trip Generation manual, published by the Institute of Transportation Engineers (ITE) shall be used as the standards by which to gauge average daily vehicle trips.*
- C. *When Required. A Traffic Impact Analysis may be required to be submitted to the City with a land use application, when the following conditions apply:*
 - a. *The development application involves one or more of the following actions:*
 - (1) *A change in zoning or a plan amendment designation; or*
 - (2) *Any proposed development or land use action that ODOT states may have operational or safety concerns along a state highway; and*
 - (3) *The development shall cause one or more of the following effects, which can be determined by field counts, site observation, traffic impact analysis or study, field measurements, crash history, Institute of Transportation Engineers Trip Generation manual; and information and studies provided by the local reviewing jurisdiction and/or ODOT:*
 - (a.) *An increase in site traffic volume generation by 250 Average Daily Trips (ADT) or more (or as required by the City Engineer); or*
 - (b.) *An increase in use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day; or*
 - (c.) *The location of the access driveway does not meet minimum intersection sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the State highway, creating a safety hazard; or*
 - (d.) *The location of the access driveway does not meet the access spacing standard of the roadway on which the driveway is located; or*
 - (e.) *A change in internal traffic patterns that may cause safety problems, such as back-up onto the highway or traffic crashes in the approach area.*
- D. *Traffic Impact Analysis Requirements.*
 - 1. *Preparation. A Traffic Impact Analysis shall be prepared by a professional engineer in accordance with OAR 734-051-180. The City shall commission the traffic analysis and it will be paid for by the applicant,*
 - 2. *Transportation Planning Rule Compliance. See Section 105.050 Transportation Planning Rule Compliance.*

3. *Pre-application Conference. The applicant will meet with West Linn Public Works prior to submitting an application that requires a Traffic Impact Application. This meeting will determine the required elements of the TIA and the level of analysis expected.*

E. Approval Criteria.

1. *Criteria. When a Traffic Impact Analysis is required, approval of the development proposal requires satisfaction of the following criteria:*
 - (a) *The Traffic Impact Analysis was prepared by a professional traffic engineer in accordance with OAR 734-051-180; and*
 - (b) *If the proposed development shall cause one or more of the effects in Section 55.125(A)(3), above, or other traffic hazard or negative impact to a transportation facility, the Traffic Impact Analysis includes mitigation measures that meet the City's Level-of-Service and satisfactory to the City Engineer, and ODOT when applicable; and*
 - (c) *The proposed site design and traffic and circulation design and facilities, for all transportation modes, including any mitigation measures, are designed to:*
 - (1.) *Have the least negative impact on all applicable transportation facilities; and*
 - (2.) *Accommodate and encourage non-motor vehicular modes of transportation to the extent practicable; and*
 - (3.) *Make the most efficient use of land and public facilities as practicable; and*
 - (4.) *Provide the most direct, safe and convenient routes practicable between on-site destinations, and between on-site and off-site destinations; and*
 - (5.) *Otherwise comply with applicable requirements of the City of West Linn Community Development Code.*

F. Conditions of Approval. The City may deny, approve, or approve the proposal with appropriate conditions.

1. *Dedication of land for streets, transit facilities, sidewalks, bikeways, paths, or accessways shall be required where the existing transportation system will be impacted by or is inadequate to handle the additional burden caused by the proposed use.*
2. *Improvements such as paving, curbing, installation or contribution to traffic signals, construction of sidewalks, bikeways, accessways, paths, or streets that serve the proposed use where the existing transportation system may be burdened by the proposed use may be required. (ORD. 1584)*

Response: This section of the code simply states changes to the site plan may be necessary based on the traffic analysis findings. The original traffic analysis has already addressed access locations and site circulation, and did not recommend any changes to the approved site plan. It also references Section 85.170(B)(2), which identifies the traffic study requirements. The original traffic study meets these requirements. New information enacted since the project's approval in March 23, 2010 has been addressed with a supplemental analysis included with this letter. This standard is met.

2. *there are no demonstrated material misrepresentations, errors, omissions, or changes in facts that directly impact the project, including, but not limited to, existing conditions, traffic, street alignment and drainage; or*

Response: The extension application addresses all changes to applicable approval criteria enacted since the initial approval in March 23, 2010, which are limited to minor changes in refuse and recycling standards adopted by the City. No other misrepresentations, errors, omissions, or changes in facts that directly impact the project, including, but not limited to, existing conditions, traffic, street alignment, and drainage have occurred or have been identified. Specifically, an analysis of potential changes in transportation conditions has been prepared and has confirmed proposed off-site improvements identified in AP 07-01 are still applicable and satisfy requirements of Section 85.170(B)(2). No other changes are applicable to the requested extension. This standard is met.

3. *the applicant has modified the approved plans to conform with current approval criteria and remedied any inconsistency with Subsection 2, in conformance with any applicable limits on modifications to approvals established by the CDC.*

Response: The approved plans have been modified to conform to current approval criteria related to refuse and recycling standards of Section 55.100(O), and are included with this extension request. As confirmed by City staff, the previously approved plans are in conformance with all other approval criterion and standards. This standard is met.

- B. *The Planning Commission may grant an extension from the effective date of approval of two (2) years pertaining to applications listed in Section 99.060.B, consistent with subsections 99.325 A (1-3).*

Response: CDC 99.060.B states, "I. Extension of approval when the Planning Commission acted as the initial decision making authority." This application is for an extension of a Class II Design Review application and the Planning Commission was the initial decision making authority. Subsections 99.325 A (1-3) are addressed above. This standard is met.

- C. *The Historic Review Board may grant an extension from the effective date of approval of two (2) years for applications listed in Section 99.060.D, consistent with subsections 99.325 A (1-3).*

Response: This application is for an extension for a Class II Design Review that is not listed in Section 99.060.D. This standard does not apply.

- D. *Eligibility for extensions.*
 1. *Only those applications approved between July 1, 2006 and December 31, 2009 shall be eligible for an extension.*

Response: The City Council approved the subject application on February 15, 2007 and the decision became final on March 23, 2007. This application is eligible for an extension request.

2. *Any application eligible for an extension under Subsection D(1) that would expire by June 30, 2010 shall be exempt from expiration pending a decision regarding the extension application, provided that a complete application and deposit fee has been submitted to the Planning Director prior to that date. However, the extension shall begin on the date that the application's initial approval lapsed.*

Response: The final decision for this application expired on March 23, 2010; however, this section allows the extension of the application as the deposit fee and a completed application have been submitted prior to June 30, 2010. Assuming this application, which was submitted prior to June 30, 2010, is approved, the two-year extension will extend the prior approval to March 23, 2012. This approval criterion is met.

E. Extension Procedures.

1. *The application for extension of approval may be submitted only after a pre-application meeting under Section 99.030(B).*

Response: A pre-application conference meeting regarding the requested extension was held on May 6, 2010 (notes included with this letter). This approval criterion is met.

2. *The application shall satisfy the neighborhood meeting requirements of Section 99.038 for those cases that require compliance with that section.*

Response: Two separate meetings were held on June 3, 2010 with the Savanna Oaks Neighborhood Association and on June 9, 2010 with the Willamette Neighborhood Association (the site is actually located in the Willamette Neighborhood Association, but both associations were included since the applicant met with both of them during the original approval process). Documentation, as required by Section 99.038, has been included with this extension request. This approval criterion is met.

3. *Applications for extensions must be submitted along with the appropriate deposit to the Planning Department.*

Response: Per the pre-application conference notes, the deposit for this application is half the original request. The appropriate deposit of \$10,000 has been provided with this application, meeting this requirement.

4. *Applications for extensions will be processed if the initial approval lapses prior to issuance of a decision, consistent with subsection (D)(2) of this section.*

Response: As indicated in our response to Subsection (D)(2) above, the final decision for this application expired on March 23, 2010; however, this section allows the extension of the application as the deposit fee and a completed application have been submitted prior to June 30, 2010. Assuming this application, which was submitted prior to June 30, 2010, is approved, the two-year extension will extend the prior approval to March 23, 2012. This approval criterion is met.

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5. *Notice of the decision shall be issued consistent with Section 99.080.*

Response: Section 99.080 requires Type A notice for a Class II Design Review application. This requirement will be met by staff providing public notice.

6. *The decision shall not become effective until resolution of all appeal periods, including an opportunity for City Council call-up pursuant to this chapter. (ORD. 1589 § 1 (Exh. A), 2010)*

Response: The final decision of the requested extension by the Planning Commission, and an opportunity for appeal before the City Council, will conform with this approval criterion.

In summary, the City's adoption of Ordinance Number 1589 established specific approval criteria that must be met to allow for an extension of the prior design review decision granted in 2007. This project's initial unanimous approval by the City Council continues to be in compliance with relevant approval criteria. Where new code standards have been adopted or revised, this letter and enclosures demonstrate compliance as required by Ordinance Number 1589.

Please feel free to contact me with any questions.

Sincerely,



Rhys Konrad, LEED AP, Planner
Associate

Enclosures: AP 07-01 Final Decision
May 6, 2010 Pre-Application Conference Meeting Notes
Neighborhood Meeting materials
City of West Linn Goal 5 Maps
Revised Site Plan
June 11, 2010 Traffic Update Letter
Approved Design Review package
Approved Traffic Analysis

c: Jeff Parker, Paul Price – Blackhawk Development
Mike Robinson – Perkins Coie
Bob Thompson, Tom Wright, Brent Ahrend – Group Mackenzie

WEST LINN CITY COUNCIL
FINAL DECISION NOTICE
AP 07-01

IN THE MATTER OF THE CONSTRUCTION OF THREE OFFICE BUILDINGS AND A PARKING STRUCTURE AT THE NORTHWEST CORNER OF BLANKENSHIP ROAD AND TANLER DRIVE

At a special meeting on January 15, 2007, the West Linn City Council held a public hearing to consider the appeal of the Tanner Basin Neighborhood Association of the Planning Commission's decision to approve an application submitted by Blackhawk LLC. The application proposes to redevelop the 11.3-acre property at the northwest corner of Tannler Drive and Blankenship Road with three office buildings totaling 289,000 square feet and a 4-level parking structure with space for 756 vehicles. The approval criteria for the design review application are found within Chapter 55 of the Community Development Code (CDC). The hearing was conducted pursuant to the provisions of CDC Chapter 99.

The hearing commenced with a staff report presented by Gordon Howard, Senior Planner. The appellants then testified, with the Tanner Basin Neighborhood Association represented by Ed Schwarz. The applicant then provided a presentation, represented by Bob Thompson, Dick Spies Brent Ahrend, and Bill Wilt. Kathy Halicki, James Bents, Roberta Schwarz, and Ken Pryor provided testimony in support of the appeal, while Alice Richmond, Gordon Root, and Andrew Stamp spoke in favor of the application (against the appeal). The appellant and the applicant then each provided a final rebuttal.

FINDINGS

The City Council adopted the findings of the West Linn Planning Commission in their decision approving the original application, which incorporated the findings proposed by staff and the applicant in the Staff Report to the Planning Commission. The City Council made the following additional findings:

1. In response to the appellants' assertion that the applicant had not looked at alternative site designs that reduced grading and drainageway impacts, the City Council determined that the applicant had prepared alternative site designs in the application and had chosen a site plan that minimized grading disturbance on the site by stepping buildings up from Blankenship Road along the slope, concentrating parking into a 4-level structure, and maintaining the upper ½ of the site as undisturbed open space. Additionally, the City Council determined that the site does not contain a natural drainageway.
2. The City Council determined that the Planning Commission's conditions of approval did not include any requirements that improperly deferred matters for subsequent discretionary review. The Council determined that review of the joint use agreement for the entrance drive, street lighting details, and specific trees within the landscape plan were sufficiently administrative in nature in terms of applying city standards, and did not involve significant discretion on the part of City officials reviewing these conditions.

3. The City Council determined that the Planning Commission correctly determined that the proposed lot line adjustment was within the definition of “minor” contained in CDC 85.210 based upon past city practice.

4. The City Council determined that the applicant’s noise analysis was appropriate and adopted its findings instead of the alternative analysis offered by the appellants. The Council further noted that garbage trucks, parking lot sweepers, and other service vehicles will have their noise screened from residences to the north by the proposed upper buildings. The Council noted that HVAC units on the buildings would need to be constructed in a way so as to direct noise away from existing residences to the north.

5. The City Council dismissed the appellant’s argument that the project was improperly staged, and that all traffic improvements should therefore be constructed with the first phase. The Council determined that the applicant’s proposal to construct Building “A” next to Blankenship Road in the first stage was appropriate because, if the later stage of the development were never constructed, the first stage standing alone would satisfy all relevant CDC approval criteria. The Council also determined that requirements for rough proportionality between project impacts and mitigation measures mandated that the City allow a similar staged set of transportation improvements.

6. The City Council reaffirmed the Planning Commission’s determination that construction of an above-ground storm water detention facility was impracticable, and further determined that the appellant’s example of an attractive surface water detention facility in Lake Oswego was not comparable because, unlike the Lake Oswego facility, any surface water detention pond on this site would have to be constructed on sloped land and thus would require large retaining walls.

7. The City Council reaffirmed the Planning Commission’s finding that the proposed traffic mitigation measures were appropriate. The Council determined that traffic mitigation was appropriately analyzed on a large-scale level encompassing the entire Tenth Street corridor area, and not on small individual segments of the corridor, such as the intersection of Tannler Drive and Blankenship Road. The applicant’s proposed mitigations will have a significant benefit for the entire Tenth Street corridor in terms of a new traffic signal, lane widenings, and additional turn lanes. The Council determined that the additional traffic mitigation measures recommended by the Oregon Department of Transportation were appropriate and necessary to fully mitigate traffic impacts. The Council also determined that the speed at which the Tenth Street task force was proceeding with its deliberations meant that a slight modification to Condition of Approval #14 relating to later stages of the development was appropriate.

8. Regarding the intersection of Tannler Drive and Blankenship Road, the Council determined that the project and proposed traffic mitigations would result in an increase in PM peak hour turn movements from Tannler Drive to Blankenship Road from 35 to 95. While this remains at level of service “F,” the applicant’s proposed traffic plan mitigates this impact by adding an exclusive left turn lane onto Tannler and installing a traffic signal to the west at the project entrance to Blankenship (allowing “platooning” of traffic and corresponding gaps in traffic along Blankenship to allow left turns from Tannler). In the context of an overall view of mitigation of traffic impacts proposed by the applicant, the solution for the intersection of Tannler and Blankenship is acceptable.

9. The City Council determined the applicant's placement of a traffic signal at the site driveway entrance and Blankenship Road required additional measures for pedestrians from that intersection into the site. The existing driveway into the site has no pedestrian walkway, and such a walkway is necessary to reach the existing and proposed office buildings from the intersection. Also, a direct stairway from the intersection to the south entrance of Building "A" is also necessary and appropriate to ensure proper pedestrian circulation and access.

10. The City Council determined that, along Tannler Drive, exceptions to the requirement for both a sidewalk and a planter strip along the upper portion of the site were necessary only to protect the three significant trees along this frontage. Thus, a meandering sidewalk that was curb-tight to Tannler Drive (no landscape strip between the sidewalk and the roadway) only where necessary to preserve a significant tree was appropriate.

11. The City Council determined that internal site circulation and proper integration of the proposed development with the existing office buildings to the west required a direct pedestrian connection from the west side of the proposed parking structure to the walkways of the existing office development.

12. The City Council determined that Tri-Met may agree to move the existing transit stop along the north side of Blankenship Road closer to the new traffic signal at the project entrance driveway. Thus, the condition of approval requiring construction of appropriate bus shelter facilities should reflect this possibility.

13. The City Council determined that the proposed street medians in Tannler Drive to be constructed as part of this project should be landscaped to make them more attractive.

DECISION

Based upon the findings discussed above, a motion was made by Councilor Gates and seconded by Councilor Eberle to deny the appeal and uphold the decision of the West Linn Planning Commission to approve the application, with the following conditions of approval.

1. The applicant shall not allow construction of any walls, entryway features, or signs that would impair clear vision at the intersection of Tannler Drive and the access driveway from Tannler Drive pursuant to the standards of Community Development Code (CDC) Chapter 42.
2. The applicant shall provide satisfactory legal evidence establishing joint use of the existing driveway access to Blankenship Road on the adjacent Willamette 205 Corporate Park property (1800 Blankenship Road) to the west. Such evidence shall be in the form of deeds, easements, leases, or contracts to establish joint use, and shall be placed on permanent file with the City.
3. The applicant shall preserve trees #6, #7, and #12 as identified on Sheet C 1.1 and in the arborist's tree inventory along the northern portion of the site adjacent to Tannler Drive. Tree #5 is not significant and may be removed. The applicant shall design a meandering sidewalk along the upper portion of Tannler Drive that incorporates a curb-tight sidewalk location to protect these significant trees, and a sidewalk separated from the Tannler

Drive traveled way with a six-foot wide planter strip where no significant trees are located.

4. The applicant shall not remove any of the trees designated as “hazard” trees amongst trees #1-#53 unless approved by the City Arborist through the tree removal provisions of the West Linn Municipal Code.
5. The applicant shall plant 24 caliper inches of replacement trees to mitigate the removal of Pacific Madrone species required by improvements to Tannler Drive on the southeastern portion of the property. Replacement trees are to be planted within the landscaped portions of the site as is shown on the applicant’s landscape plan submitted with the application, and not in the northern portion of the site.
6. In accordance with Section 55.100(B)(2)(b), the applicant shall place a tree conservation easement over the significant trees within the northern, undeveloped portion of the site that prohibits any disturbance or improvements without approval of the City of West Linn. Alternatively, the applicant may choose to dedicate this area to the city.
7. Prior to any site development or grading, the applicant shall delineate the southern boundary of the proposed open space area with an anchored chain link fence. The fence shall remain in place until the completion of all site development work.
8. The applicant shall improve the existing pedestrian trail along the northern boundary of the site. The trail shall be a width of eight feet, paved with asphalt. The applicant shall dedicate a fifteen-foot wide pedestrian easement centered on the constructed trail.
9. Prior to occupancy of the lower building on the site, the applicant shall have completed all street and traffic improvements listed as “Phase I mitigation” in the application, particularly, the November 3, 2006 letter from the applicant’s traffic engineer, including the recommendations from city traffic consultant Carl Springer in his memorandum dated October 30, 2006, and the recommendations of the Oregon Department of Transportation (ODOT) contained in their letters of November 21, 2006. Prior to occupancy of either of the two upper buildings on the site, the applicant shall have completed all improvements listed as “Full Development Mitigation” in the application, as stated in the same letter as above, and as modified or amended by the recommendations of Carl Springer and ODOT dated October 30, 2006 and November 21, 2006 respectively. All improvements must be coordinated with and approved by the City, and ODOT in their areas of responsibility.
10. The applicant shall complete half-street improvements to Tannler Drive along the property frontage, consisting of sidewalk and planter strip to current city standards. The planter strip may be eliminated in locations where preservation of significant trees is required.
11. The applicant shall submit a street lighting plan and shall install street lights pursuant to that plan along both Blankenship and Tannler to illumination standards of the City of West Linn.
12. The applicant shall construct a bus shelter along Blankenship Road between Tannler Drive and Summerlinn Lane at a location to be determined by Tri-Met and to design specifications of Tri-Met.
13. The underground storm water detention and treatment facility shall be private and shall meet City design standards. The applicant shall execute a maintenance agreement that provides for proper operation of the storm water system, requires annual reports to the

city regarding ongoing maintenance and operation of the facility, requires professional certification that the facility is operating to city-prescribed standards, allows for city inspection of the facility upon reasonable notice, and requires and guarantees improvements or repair of the system as directed by the City Engineer or Public Works Operations Manager

14. In the event that the Tenth Street Task Force, or another City transportation study, recommends a transportation improvement that could be preferable to a transportation improvement that is approved as a condition of approval of this project, the following shall occur:
 - a. The Planning director will notify the applicant to schedule a meeting to discuss the condition; and
 - b. if the applicant agrees that the alternative improvement should replace a condition of approval; then
 - c. an application will be processed, at no cost to the applicant, to consider whether a modification to a specific condition of approval should be made.
15. The applicant shall consult with and receive approval from the City Arborist prior to removal or modification of any vegetation or application of any herbicides in the undeveloped area on the northern portion of the site. The City Arborist's approval shall be based upon the impact on the health of the existing trees in this undeveloped area and the integrity of the natural habitat on the site.
16. The improvements associated with the Tenth Street/Salamo Road/Blankenship Road intersection shall allow for future installation of a second left turn lane from Tenth Street onto Blankenship Road without significant removal of recently installed improvements.
17. The applicant shall construct a continuous sidewalk along one side of the driveway from Blankenship Road connecting with the existing walkway north of the first parking bay within the existing Corporate Park project. A crosswalk at this location shall connect across the driveway to walkway north of proposed Building "A."
18. The road medians on Tannler Drive shall be landscaped with plantings as approved by the City Parks and Recreation Director.
19. Heating and Air Conditioning (HVAC) units on the building roofs shall be oriented away from existing residences to the north so as to minimize noise in that direction.
20. The applicant shall construct a stairway connecting the main entrance to Building "A" facing Blankenship Road to the intersection of Blankenship Road and the main access driveway.
21. The applicant shall construct a walkway connecting the western entry of the parking structure north and up to the pedestrian walkway for the upper (northern) building in the existing Corporate Park development.

This decision may be appealed to the Land Use Board of Appeals (LUBA) within 21 days of this notice pursuant to LUBA's rules and applicable statutes. Those parties with standing (i.e., those individuals who submitted letters into the record, or provided oral or written testimony during the course of the hearing, or signed in on the attendance sheet at the hearing, or who have contacted City Planning staff and made their identities known to staff) may appeal this decision to the Land Use Board of Appeals within 21 days of the mailing of this decision pursuant to the provisions of Chapter 99 of the Community Development Code.

NORMAN B. KING, MAYOR

DATE

Mailed this _____ day of _____, 2007.

Therefore, this decision becomes final at 5 p.m., _____, 2007.

Devrev/Finaldecisions/ap0701 final

City of West Linn
PRE-APPLICATION CONFERENCE MEETING
Notes
DRAFT
May 6, 2010

SUBJECT: Extension of previous approval for 3 office buildings with parking structure and surface parking at the northwest corner of Blankenship Road and Tannler Drive

ATTENDEES: Applicants: Rhys Konrad
Staff: Tom Soppe (Planning Department), Khoi Le (Engineering Department)

The following is a summary of the meeting discussion provided to you from staff meeting notes. Additional information may be provided to address any "follow-up" items identified during the meeting. These comments are PRELIMINARY in nature. Please contact the Planning Department with any questions regarding approval criteria, submittal requirements, or any other planning-related items. Please note disclaimer statement below.

Project Details

The applicant has applied for a pre-application conference for a two-year extension for a Class II Design Review for a project consisting of three office buildings and a parking structure at the northwest corner of Tannler Drive and Blankenship Road in the Willamette neighborhood of West Linn. The design review file DR-06-24 was originally applied for on June 30, 2006. After its approval by the Planning Commission the file was appealed to the City Council as file AP-07-01. This was approved by the City Council on February 15, 2007. After the decision was signed on March 1, 2007 it was sent the next day, and became effective on March 23rd 2007. Therefore the application's expiration date was March 23rd 2010, but the applicant can still apply for an Extension application under the new extension section of the Community Development Code (CDC), Section 99.325.

Community Development Code (CDC) 99.325(D)(1) states "Only those applications approved between July 1, 2006 and December 31, 2009 shall be eligible for an extension." The previous application therefore qualifies the applicant to be able to apply for an extension since its effective approval date is March 23, 2007. CDC 99.325(D)(2) allows applicants with applications that expire before June 30, 2010 to apply for extensions by June 30, 2010 even if the application has already passed its 3-year expiration by this date. Therefore, despite the 3-year expiration date having occurred in March, the applicant can still apply for the Extension, but must do so by June 30. The two-year extension itself, if approved, would be measured from the original expiration

date. Therefore if the Extension application is approved, the expiration date would be March 23rd, 2012.

Proposed by the applicant and eventually approved by City Council on the 11.3 acre property were 289,000 square feet of floor space in the three buildings, along with 756 parking spaces in the four story parking garage and 79 additional surface parking spaces.

For responses to Chapter 55 criteria, the applicant needs to respond to those that have changed due to code amendments since the submittal date of the original Class II Design Review application. Per staff analysis, only Section 55.100(O) Refuse and Recycling Standards has been added to 55.100 since the submittal of the original application, and other sections of 55.100 have not changed. If the new standards of 55.100(O) necessitate changes in the site plan or other aspects of the proposal, in order for the proposal to meet current code, this should be explained in the narrative and plans should be altered accordingly for the submittal of the Extension application. If such changes alter the nature of the application in other ways that would require a change in the narrative response to other 55.100 sections as well, the applicant shall respond to these section in the new narrative as well.

Section 55.125 has been modified since the previous application. The applicant should compare the current requirements of this section and determine whether the traffic study or the proposal or conditions related to transportation should be modified for the extension application accordingly. In the requirements for the site analysis, 55.110(B)(14) has been added and requires identifying Goal 5 resources on site.

Appendix I of the 2008 Transportation System Plan discusses the Tannler/Blankenship intersection and the possible reconfigurations and improvements to this intersection, including a scenario where Tannler Drive would be re-routed through parts of this site. The Extension application will need to be reviewed in the context of the new Transportation System Plan.

Engineering Comments

TRAFFIC ANALYSIS

Provide updated traffic analysis and recommendations based on the new TSP and ITE as well as other relating publishing manuals such MUTCD, Highway Capacity Manuals, etc.

WATER

The project is located between two different water pressure zones: Bland Pressure Zone and Willamette Pressure Zone. The City Water Master Plan indicates both pressure zones are deficient under emergency conditions.

The developer shall require paying Murray & Smith Associates for the analysis, making sure the increased demand will not worsen the current water system.

Process

The Extension permit is required.

A neighborhood meeting following the provisions of 99.038 is required for an Extension permit for a commercial development of over 1,500 square feet, per 99.325(E)(2) and 99.038. Contact Beth Kieres, president of the Willamette Neighborhood Association at (503) 722-1531 or willametteneighborhood@gmail.com, and Dave Rittenhouse, president of the Savanna Oaks Neighborhood Association at 503-635-0800 or daver@europa.com. The property is in Willamette, but Savanna Oaks is immediately across Tannler Drive. The applicant is required to provide the neighborhood association with conceptual plans and other material at least 10 days prior to the meeting. The Extension application cannot be accepted unless the neighborhood meeting provisions are fulfilled by the time the application is submitted.

In a narrative the applicant shall respond to Section 55.100(O) which has been implemented since the original application. The applicant should also respond to any other 55.100 sections that would require a change in response due to any site changes necessitated by responses to 55.100(O), or due to responses to any other changes in Chapter 55 since the submittal of the original application. The site analysis should be modified per the aforementioned change in 55.110, and the applicant shall be sure to submit a modified traffic study and modified transportation-related proposals if the changes in 55.125 necessitate this.

The CDC is online at <http://westlinnoregon.gov/planning/community-development-code-cdc>.

Follow the submittal requirements for Chapter 55. Submittal requirements may be waived but the applicant must first identify the specific submittal requirement and request, in letter form, that it be waived by the Planning Director and must identify the specific grounds for that waiver. The waiver may or may not be granted by the Planning Director.

N/A is not an acceptable response to the approval criteria. Prepare the application and submit to the Planning Department with deposit fees and signed application form.

The deposit for an Extension is half the deposit of the original application. The original application for the Design Review (excluding the variance and lot line adjustment that were not approved in the final decision) had a deposit of \$20,000 so the deposit for the Extension application will be \$10,000. Any cost overruns to the Extension deposit will result in additional billings.

Once the submittal is deemed complete, the staff will schedule a hearing with the Planning Commission and will send out public notice of the hearing at least 20 days before it occurs. The Planning Commission's decision may be appealed to City Council by the applicant or anyone with standing.

Pre-application notes are void after 18 months. After 18 months with no application approved or in process, a new pre-application conference is required.

Typical land use applications can take 6-10 months from beginning to end.

DISCLAIMER: This summary discussion covers issues identified to date. It does not imply that these are the only issues. The burden of proof is on the applicant to demonstrate that all approval criteria have been met. These notes do not constitute an endorsement of the proposed application. Staff responses are based on limited material presented at this pre-application meeting. New issues, requirements, etc. could emerge as the application is developed.

Pre-app2010/Preapp 2010—05-06/pa-10-13 Tannler West Extension

GROUP
MACKENZIE
 CELEBRATING 50 YEARS

May 14, 2010

Re: **Willamette 205 Corporate Center**
Land Use Approval Extension

Dear Neighbor/Interested Party:

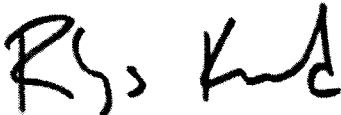
You are invited to attend one of two neighborhood meetings with the Savanna Oaks Neighborhood Association and the Willamette Neighborhood Association for a discussion on an upcoming land use approval extension request of the approved Willamette 205 Corporate Center office complex. The project is located on a vacant site at the northwest corner of Tannler and Blankenship in West Linn. The property owner is proposing to extend the existing development approval in accordance with the City process recently adopted by City Council. No design modifications are proposed from the approved plan.

A copy of the notice boundary and approved site plan has been included with this letter. Specifics on the meeting dates, time, and location are below:

Savanna Oaks Neighborhood	Willamette Neighborhood
<i>Time:</i> Thursday, June 3, 2010, 7:00 p.m.	<i>Time:</i> Wednesday, June 9, 2010, 7:00 p.m.
<i>Location:</i> West Linn City Hall 22500 Salamo Road West Linn, OR 97068	<i>Location:</i> Tualatin Valley Fire & Rescue Community Room 1860 Willamette Falls Drive, West Linn 97068

Our presentation will include a review of the proposal and new information requested by the City for the extension application. Your input is appreciated. If you have any questions regarding the proposal, please contact us at 503-224-9560 or rk@grpmack.com.

Sincerely,



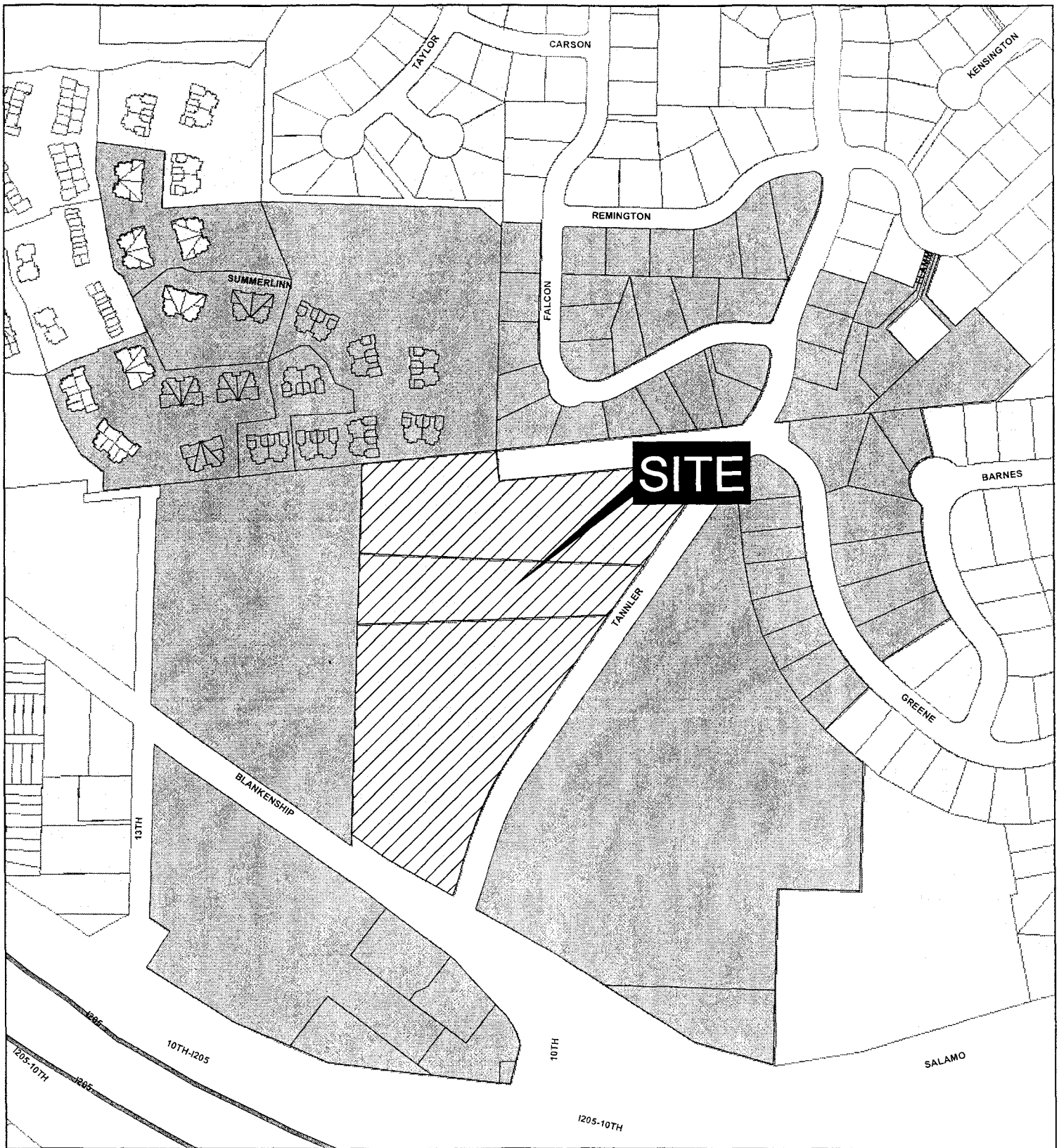
Rhys Konrad, LEED AP, Planner
 Associate

RiverEast Center | 1515 SE Water Avenue, Suite 100 | Portland, OR 97214
 P.O. Box 14310 | Portland, OR 97293
 Tel: 503.224.9560 Web: www.grpmack.com Fax: 503.228.1285

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 Civil Engineering
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 Transportation
 Planning
 Landscape
 Architecture

Locations:
 Portland, Oregon
 Seattle, Washington
 Vancouver, Washington



ADJACENT PROPERTY OWNERSHIP NOTIFICATION
 ADJACENT PROPERTIES WITHIN 500 FEET OF THE SITE

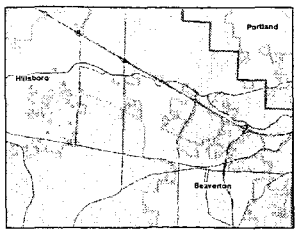
DISCLAIMER: This property ownership information is derived from Metro's Regional Land Information System (RLIS-Lite). Metro's RLIS Lite is updated on a quarterly basis. As such, this information is based on the most recent subscription from August 2009. No liability is assumed for any errors in this report.

0 150 300 Feet

GROUP MACKENZIE
 PORTLAND, OR | SEATTLE, WA | VANCOUVER, WA
 RiverEast Center | 1515 Water Avenue, Suite 100 | Portland, OR 97224
 P.O. Box 1430 | Portland, OR 97209
 T: 503.224.9560 | F: 503.228.1285 | www.groupmackenzie.com

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Date: 05/12/10 Map Created by: RK
 File: notification-2009.mxd Project No: 0960016.10



LOCATION MAP

GROUP
MACKENZIE
CELEBRATING 50 YEARS

May 28, 2010

Re: **Willamette 205 Corporate Center**
Land Use Approval Extension

Dear Neighbor/Interested Party:

The purpose of this duplicate notice is to ensure the proper contact information has been provided in the event there are questions about the proposal. Please contact your association president with questions in advance of the meeting (contact information is listed below).

You are invited to attend one of two neighborhood meetings with the Savanna Oaks Neighborhood Association and the Willamette Neighborhood Association for a discussion regarding an upcoming land use approval extension request for the approved Willamette 205 Corporate Center office complex. The project is located on a vacant site at the northwest corner of Tannler and Blankenship in West Linn. The property owner is proposing to extend the existing development approval in accordance with the City process recently adopted by the City Council. No design modifications are proposed from the approved plan.

The meeting dates, times, and locations are:

Savanna Oaks Neighborhood

Time:

Thursday, June 3, 2010, 7:00 p.m.

Location:

West Linn City Hall
22500 Salamo Road
West Linn, OR 97068

President Contact:

David Rittenhouse
503-635-0800

Willamette Neighborhood

Time:

Wednesday, June 9, 2010, 7:00 p.m.

Location:

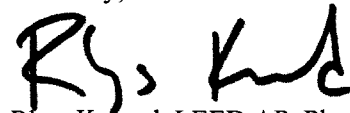
Tualatin Valley Fire & Rescue
Community Room
1860 Willamette Falls Drive
West Linn, OR 97068

President Contact:

Beth Kieres
503-722-1531

We encourage you to attend the meeting for your neighborhood listed above. This topic may not be the only item discussed; our presentation will include a review of the proposal and new information requested by the City for the extension application. Your input is appreciated.

Sincerely,



Rhys Kohrad, LEED AP, Planner
Associate

RiverEast Center | 1515 SE Water Avenue, Suite 100 | Portland, OR 97214

P.O. Box 14310 | Portland, OR 97293

Tel: 503.224.9560 Web: www.grpmack.com Fax: 503.228.1285

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Transportation
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Landscape
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Locations:

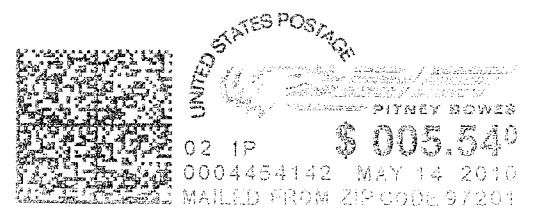
Portland, Oregon
Seattle, Washington
Vancouver, Washington



120 0001 3478 1087

E

W.P.B.



Earl & Elizabeth Rittenhouse
2101 Greene St
West Linn OR 97068

5/15
2011

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Earl & Elizabeth Rittenhouse
 2101 Greene St.
 West Linn, OR 97068

August 2006 See Reverse for Instructions

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Beth Kieres
 1852 4th Ave.
 West Linn OR 97068

2. Article Number
(Transfer from service label) 7007 3020 0001 3478 1094

COMPLETE THIS SECTION ON DELIVERY

A. Signature: *[Signature]* Agent Addressee

B. Received by (Printed Name): *E KIERES*

C. Date of Delivery: *5/20/11*

D. Is delivery address different from item 1? Yes No
 If YES, enter delivery address below:

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

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2539 REMINGTON DR
WEST LINN, OR 97068

21E35AC02700
OZERUGA LUDMILA
PO BOX 11778
PORTLAND, OR 97211

21E35AC02800
FISCHER EDWARD & M A
FISCHER-CHESLOCK
2525 REMINGTON DR
WEST LINN, OR 97068

21E35AC03300
CUSHMAN CHRISTOPHER J &
CARMA
2335 TANNLER DR
WEST LINN, OR 97068

21E35AC03400
LIU JIN & FANNY ZHEN
2345 TANNLER DR
WEST LINN, OR 97068

21E35AC03500
ELLIOT JOHN A TRUSTEE
2355 TANNLER DR
WEST LINN, OR 97068

21E35AC03600
CITY OF WEST LINN
22500 SALAMO RD #600
WEST LINN, OR 97068

21E35BC80000
MADISON HEIGHTS LLC
1965 EGAN WAY
LAKE OSWEGO, OR 97034

21E35BC80001
HAYES MICHAEL J
4830 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80002
KUYKENDALL RACHEL J
4800 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80003
FROLAND LAWRENCE A &
CATHERINE N
4840 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80004
PIKE LESLIE
4850 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80005
GILLIS JACQUELINE
4860 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80006
DICKSON LINDA J
4890 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80007
COVEY L GAYE
4705 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80008
SWANSON WALTER A & KATHI
4701 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80009
HENDERSON JERRILYN &
DAVID
4735 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80010
TAUBE MARY E
4755 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80011
DOBROTH HENRY V TRUSTEE
4775 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80012
HUBBARD ROBERT E & JAN R
4795 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80013
ARKEBAUER SUSAN J
4905 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80014
IRWIN LISA G
4901 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80015
GILES ROBERT B & MARILYN J
4935 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80016
JOHNSTON ETHEL LINDA
4955 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80017
BETTIN KAREN J
4975 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80018
BACCHUS JOAN & RONALD F
4995 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80019
DARBY GERALD L &
JACQUELYN C
5105 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80020
RATHJE EDWARD S
5101 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80021
WEST CURTISS E
5135 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80022
HILGENDORF STEPHANIE J
5155 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80023
ACHORD JOLENE
5175 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80024
WEAVER LISA M
5195 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80025
RASMUSSEN ARTHUR L &
MARILYN C
5301 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80026
SCHOEPKE CAROL
5305 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80027
ALLISON LOLA A
11520 SE SUNNYSIDE RD #506
CLACKAMAS, OR 97015

21E35BC80028
HERTEL DIANA M
5355 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80029
SWEET STAN A & LEONORE
5375 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80030
GRILL LEONARD E & LINDA L
17411 SE 15TH WAY
VANCOUVER, WA 98683

21E35BC80031
JOHNSON KATHY L
5505 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80032
LEWIS M MARIE TRUST
5501 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80033
ALLSUP DAN D & JOYCE B
35932 ELLINGTON DR
SPRINGFIELD, OR 97478

21E35BC80034
BLAZEK JOSEPH W & JUDITH L
2504 S PECAN VALLEY PL
GREEN VALLEY, AZ 85614

21E35BC80035
WOLCOTT MARSHALL &
RHONDA
52160 FOXTAIL RD
LAPINE, OR 97739

21E35BC80036
MRKONIC MICHAEL TRUSTEE
PO BOX 716
COOS BAY, OR 97420

21E35BC80037
BEMENT SUSAN ELAINE
5630 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80038
BEMENT ROBERT STEPHEN
18151 W OCOTILLO AVE
GOODYEAR, AZ 85338

21E35BC80039
CASWELL LAURIE
5640 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80040
DRYDEN THOMAS J
5650 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80041
JOHNSON DOROTHY E
5660 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80042
DANIEL JOHN P JR & MARY K
22118 S HWY 213
OREGON CITY, OR 97045

21E35BC80043
VIECELI GREGORY R &
KATHERINE M
622 TIMBER CREEK DR NW
ISSAQUAH, WA 98027

21E35BC80044
OVEREN GERALD & JOANN
5800 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80045
BROWN TAMARA RAE
5840 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80046
MOORE STEPHEN R & JUANITA
E
5850 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80047
WILLIAMS JANET C
5860 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80048
WALSH LAWRENCE P
5890 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80049
WILCH RICHARD
6030 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80050
BALLARD ROBERT C
6000 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80051
WEAVER LISA M
5195 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80052
SWANSON MICHELLE V
6050 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC80053
BARGER WILLIAM R & TANA
M
460 FIESTA CT
TRACY, CA 95376

21E35BC80054
YOUNG TODD M
1500 SW 11TH AVE UNIT 1401
PORTLAND, OR 97201

21E35BC80700
MADISON HEIGHTS LLC
1965 EGAN WAY
LAKE OSWEGO, OR 97034

21E35BC80800
MADISON HEIGHTS LLC
1965 EGAN WAY
LAKE OSWEGO, OR 97034

21E35BC80900
MADISON HEIGHTS LLC
1965 EGAN WAY
LAKE OSWEGO, OR 97034

21E35BC90000
KG INVESTMENT CO LLC
1502 SW MONTGOMERY
PORTLAND, OR 97201

21E35BC94200
KORMAN NANCY L
4200 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94230
VELANDER PETER L &
ANGELINE M
1980 PEARL ST APT 4624
DENVER, CO 80203

21E35BC94240
RODIGER JOHN
4240 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94250
WOODHOUSE KATIE E
4250 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94260
BELL TIMOTHY
4260 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94290
SAUER MARIANNE L
4290 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94501
MCCLESKEY SHELLEY
4501 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94505
HASKELL NORANN M
4505 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94535
COTERILL DAVID M
4535 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94555
AUSTIN VAUGHN & TAMMY
4555 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94575
FORST LEE G
4575 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94595
ANDERSON DONNA G
4595 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94600
JOHNSTON THOMAS B
TRUSTEE
4600 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94630
TROSS ROBERT P & DOROTHY
M
4630 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94640
CIESLIK SHEILA
4640 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94650
SILVA GARY A
4650 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94660
KALINOWSKI FRANK E &
SANDRA
4660 SUMMERLINN WAY
WEST LINN, OR 97068

21E35BC94690
MEYERS ALFRED H &
ANNABELLE
411 BRAZOS DR
GEORGETOWN, TX 78628

21E35BD00100
WYATT MARVIN L TRUSTEE
2340 TANNER DR
WEST LINN, OR 97068

21E35BD00300
RICHARDSON WARREN P
945 N MAPLE GROVE RD APT
304
BOISE, ID 83704

21E35BD00400
LEMMERS MICHAEL J
2375 FALCON DR
WEST LINN, OR 97068

21E35BD00500
JELINEO JOHN T & SUZANNE R
2369 FALCON DR
WEST LINN, OR 97068

21E35BD00600
LANGENDOEN BRIAN J &
DEBORAH L
2353 FALCON DR
WEST LINN, OR 97068

21E35BD00700
ZANDER STEPHEN R A
TRUSTEE
2333 FALCON DR
WEST LINN, OR 97068

21E35BD00800
CABINE MONROE & BETTY J
2325 FALCON DR
WEST LINN, OR 97068

21E35BD01100
BUCKMAN DENNIS D
2348 FALCON DR
WEST LINN, OR 97068

21E35BD01400
RIAD SHERIF K & NAGWA N
2366 FALCON DR
WEST LINN, OR 97068

21E35BD01700
SHERWOOD JAMES & NINA
18822 OLD RIVER DR
WEST LINN, OR 97068

21E35BD03100
KHEMLANI R B & KUMARI R
2405 REMINGTON DR
WEST LINN, OR 97068

21E35BD03400
KARIMI MISAGH
2423 REMINGTON DR
WEST LINN, OR 97068

21E35C 00801
BLACKHAWK NEVADA LLC
2020 8TH AVE STE C
WEST LINN, OR 97068

21E35C 00804
WEST LINN ASSOCIATES LLC
2625 NORTHRUP WAY
BELLEVUE, WA 98004

21E35C 01200
STATE OF OREGON
TRANSPORTATION BLDG
SALEM, OR 97310

21E35DB01400
PRYOR KENNETH A & SHERRY
O
2119 GREENE ST
WEST LINN, OR 97068

21E35BD00900
SARYMOTLAGH DAWOOD & K
GHAEDGHALEH
2330 FALCON DR
WEST LINN, OR 97068

21E35BD01200
JAY JAMES D & ANGELA
21499 S CLEAR CREEK RD
ESTACADA, OR 97023

21E35BD01500
PHILLIPS FAMILY TRUST
2372 FALCON DR
WEST LINN, OR 97068

21E35BD01800
SHERWOOD JAMES
18822 S OLD RIVER RD
WEST LINN, OR 97068

21E35BD03200
KEELE TERRY & MICHELLE
2413 REMINGTON DR
WEST LINN, OR 97068

21E35BD03500
MACK PETER & PAMELA
JOYCE
2425 REMINGTON DR
WEST LINN, OR 97068

21E35C 00802
NEW ALBERTSONS INC
PO BOX 20
BOISE, ID 83726

21E35C 00805
WEST LINN ASSOCIATES LLC
2625 NORTHRUP WAY
BELLEVUE, WA 98004

21E35D 00700
RKM DEVELOPMENT INC
15285 NW CENTRAL DR #100
PORTLAND, OR 97229

21E35DB01500
KEMP DONALD L &
CONSTANCE V
2117 GREENE ST
WEST LINN, OR 97068

21E35BD01000
JONES GARY M & SANDRA A
2338 FALCON DR
WEST LINN, OR 97068

21E35BD01300
TRIBOU THOMAS R &
DELORES J
2360 FALCON DR
WEST LINN, OR 97068

21E35BD01600
AUSTIN VAUGHN R & TAMMY
E
2378 FALCON DR
WEST LINN, OR 97068

21E35BD03000
NASON JANICE & STEVE
2328 FALCON DR
WEST LINN, OR 97068

21E35BD03300
FIRST TECHNOLOGY CREDIT
UNION
PO BOX 2100
BEAVERTON, OR 97075

21E35BD03600
STADELL STEVE & JANET
2429 REMINGTON DR
WEST LINN, OR 97068

21E35C 00803
FOODMAKERS INC
9330 BALBOA AVE
SAN DIEGO, CA 92123

21E35C 00806
WEST LINN ASSOCIATES LLC
2625 NORTHRUP WAY
BELLEVUE, WA 98004

21E35D 00800
RKM DEVELOPMENT INC
15285 NW CENTRAL DR #100
PORTLAND, OR 97229

21E35DB01600
KOLSTAD TOBY M & LINDA C
2115 GREENE ST
WEST LINN, OR 97068


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21E35DB01700
ANDERSEN PAUL W & BRENDA
D
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WEST LINN, OR 97068

21E35DB02000
BUTLER KIMBERLY
2103 GREENE ST
WEST LINN, OR 97068

21E35DB03800
ODMAN DENNIS M & SHARON
A
1818 BARNES CIR
WEST LINN, OR 97068

21E35DB04100
KIM MICHAEL S & MINDY M
2102 GREENE ST
WEST LINN, OR 97068

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WEST LINN, OR 97068

21E35DB02100
RITTENHOUSE EARL J &
ELIZABETH A
2101 GREENE ST
WEST LINN, OR 97068

21E35DB03900
INNES FAMILY TRUST
1820 BARNES CIR
WEST LINN, OR 97068

21E35DB04200
HENRIOT PHILIPPE
1826 BARNES CIR
WEST LINN, OR 97068

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SHERIDAN WILLIAM G JR &
NANCY O
1816 BARNES CIR
WEST LINN, OR 97068

21E35DB04000
COSTELLOE DANIEL L & HEIDI
P
1822 BARNES CIR
WEST LINN, OR 97068

21E35DB04300
READ DONALD N & SHERYL D
1828 BARNES CIR
WEST LINN, OR 97068

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Neighborhood Meeting

You are invited to attend a joint meeting with the Savanna Oaks Neighborhood Association and the Willamette Neighborhood Association for a discussion on an upcoming extension request of the approved Willamette 205 Corporate Center office complex. The project is located on a vacant site at the northwest corner of Tannler and Blankenship in West Linn. The property owner is proposing to extend this significant development approval in accordance with the City process recently adopted by City Council. No new design information is proposed, and this application is limited to the approval criteria, which require addressing new information since the project's approval in 2007.

Savanna Oaks Neighborhood	Willamette Neighborhood
<i>Time:</i> Thursday, June 3, 2010, 7:00 p.m.	<i>Time:</i> Wednesday, June 9, 2010, 7:00 p.m.
<i>Location:</i> West Linn City Hall 22500 Salamo Road West Linn, OR 97068	<i>Location:</i> Tualatin Valley Fire & Rescue Community Room 1860 Willamette Falls Drive, West Linn 97068

AFFIDAVIT OF MAILING

STATE OF OREGON)
) SS
COUNTY OF CLACKAMAS)

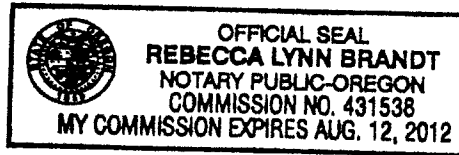
I, Rhys Konrad, being first duly sworn, depose and say:

That on the 14th day of MAY, 2010, I served upon the persons shown on Exhibit "A," attached hereto and by this reference incorporated herein, a copy of the Notice of early neighborhood meeting marked Exhibit "B," attached hereto by this reference incorporated herein, by mailing to them a true and correct copy of the original hereof. I further certify that the addresses shown on said Exhibit "A" are their regular addresses as determined from the books and records of the Clackamas County Department of Assessment and Taxation Tax Rolls, and that said envelopes were placed in the United States Mail with postage fully prepared thereon.

Rhys Konrad
Signature

SUBSCRIBED AND SWORN to before me on this 10 day of June, 2010

Rebecca J. Brandt
Notary Public for Oregon
My commission expires: 8/12/12



RE: Tanner West Extension

AFFIDAVIT OF POSTING

STATE OF OREGON)
) SS
COUNTY OF CLACKAMAS)

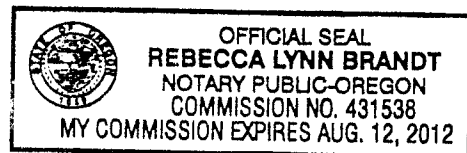
I, Rhys Konrad, being first duly sworn, depose and say:

As the applicant for the Tanner West Extension project, I hereby certify that I posted a sign for the early neighborhood meeting in accordance with the requirements of the West Linn Community Development Code on the 14th day of May, 2010.
Dated this 10th day of June, 2010.

Rhys Konrad
Signature

SUBSCRIBED AND SWORN to before me on this 10 day of June, 2010

Rebecca J. Brandt
Notary Public for Oregon
My commission expires: 8/12/12



RE: Tanner West Extension

MEMORANDUM

DATE: June 8, 2010
TO: File
FROM: Tom Wright, Bob Thompson, and Brent Ahrend

SUBJECT: Savannah Oaks Neighborhood Association Meeting

Representatives of the applicant developing the Willamette 205 Corporate Center Phase II project (Bob Thompson, Architect; Tom Wright, Planner; and Brent Ahrend, Traffic Engineer of Group Mackenzie) attended the June 3, 2010 meeting of the Savannah Oaks Neighborhood Association. The reason for meeting with the neighborhood was that an application will be submitted to the city in the next week or two for Willamette 205 Corporate Center Phase II, which is an office complex previously approved for the site located at Tannler Drive and Blankenship Road. The following is a summary of the presentation by the applicant's representative.

- This project was approved by the City Council in March 2007, but will expire unless a two-year extension is granted by the City.
- Therefore, the only request we have of the City is to extend the decision. This type of request is truly a sign of the economic times, and the City of West Linn adopted an ordinance allowing the opportunity for an extension similar to many other jurisdictions in the Portland area.
- The approval criteria for an extension request is focused primarily around if the project continues to comply with City standards at the time of the original approval, and that it complies with any standards that have changed since the original approval.
- The applicant is not proposing any changes to the project or to the conditions of approval from what was approved in 2007.
- The only changes in City standards that have occurred since 2007, according to our review and City staff, are those related to the recycling/trash enclosure standard and the number of trash receptacles.
- It appears the project already complies with the trash enclosure standard, and will be adding a few trash receptacles in the parking lot to address the new standard.
- The applicant also reviewed transportation conditions to determine if anything significant has changed since the 2007 decision.

Since it has been a few years since the approval, and possibly some of the meeting attendees are not familiar with the project, the applicant's representative provided a general overview of the previously approved project design.

Following the presentation, there were a number of questions and concerns regarding the design of the project and traffic congestion. It was pointed out by the applicant's representative that the request is only to extend the design review decision and not to change the design of the project or any of the conditions of approval, unless there are standards that have changed since the original 2007 approval. Regardless, there were several comments/concerns expressed regarding traffic, scale of the building adjacent to Blankenship, storm drainage, and the future of the undeveloped open space area at the north end of the site. The majority of concerns were regarding traffic, and specifically the intersection of Tannler and Blankenship. There was a comment from one of the neighborhood attendees that the project was very attractive.

There was a request for a copy of the traffic report conducted for the prior approval, as well as further information on timing of phases of the project and a traffic simulation model of the site. There were concerns about the recent opening and traffic generated from the VA Clinic and about potential cut-through trips anticipated through the site to access the signal opposite Albertsons. Additional traffic counts were requested for more than one day.

MEMORANDUM

DATE: June 10, 2010
TO: File
FROM: Rhys Konrad, Bob Thompson, and Brent Ahrend

SUBJECT: Willamette Neighborhood Association Meeting

Representatives of the applicant developing the Willamette 205 Corporate Center Phase II project (Bob Thompson, Architect; Rhys Konrad, Planner; and Brent Ahrend, Traffic Engineer of Group Mackenzie) attended the June 9, 2010 meeting of the Willamette Neighborhood Association. The reason for meeting with the neighborhood was that an application will be submitted to the City for the Willamette 205 Corporate Center Phase II, which is an office complex previously approved for the site located at Tannler Drive and Blankenship Road. The following is a summary of the presentation by the applicant's representative.

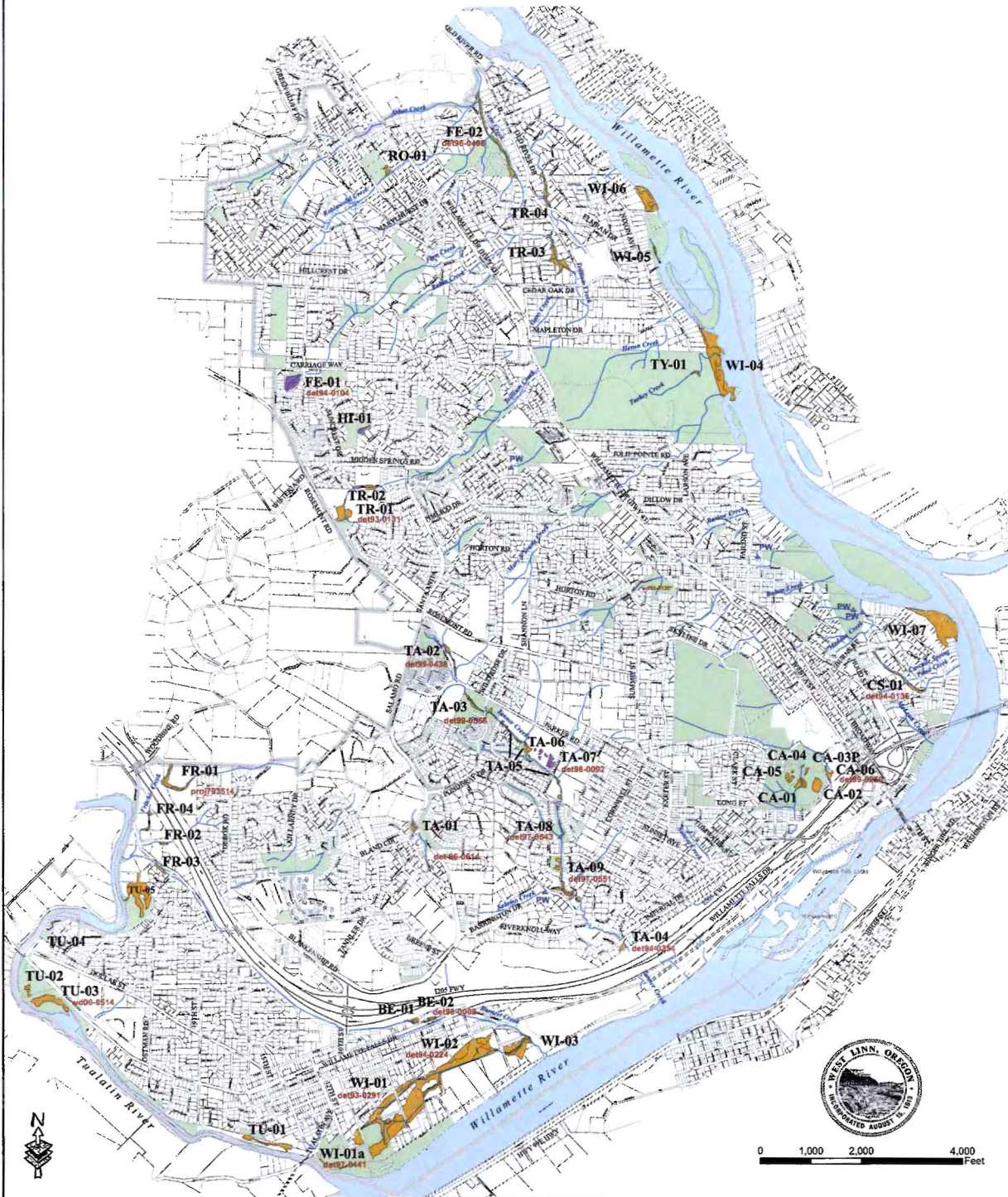
Since it has been a few years since the approval, and possibly some of the meeting attendees are not familiar with the project, the applicant's representative provided a general overview of the previously approved project design.

- This project was approved by the City Council in March 2007, but will expire unless a two-year extension is granted by the City.
- Therefore, the only request we have of the City is to extend the decision. This type of request is truly a sign of the economic times, and the City of West Linn adopted an ordinance allowing the opportunity for an extension similar to many other jurisdictions in the Portland area.
- The approval criteria for an extension request is focused primarily around if the project continues to comply with City standards at the time of the original approval, and that it complies with any standards that have changed since the original approval.
- The applicant is not proposing any changes to the project or to the conditions of approval from what was approved in 2007.
- The only changes in City standards that have occurred since 2007, according to our review and City staff, are those related to the recycling/trash enclosure standard and the number of trash receptacles.
- It appears the project already complies with the trash enclosure standard, and will be adding a few trash receptacles in the parking lot to address the new standard.
- The applicant also reviewed transportation conditions to determine if anything significant has changed since the 2007 decision.

Following the presentation, there were a number of questions and concerns regarding the traffic issues in the general project's vicinity, and more specifically at Tannler and Blankenship. A detailed review of the conditions of approval and the approximately \$2 million of required mitigation was illustrated. Several questions and concerns followed, mainly about the potential alignment of Tannler. It was pointed out the approved project allows two of the three options proposed by the City for Tannler, in addition to the traffic mitigation. It was stated the request is only to extend the design review decision and not to change the design of the project or any of the conditions of approval, unless there are standards that have changed since the original 2007 approval. There were concerns about potential cut-through traffic from Tannler through the site to access the new signal at Albertsons. Also, there was concern about the traffic counts and whether they included the residences above Summerlinn and the new VA Clinic. It was pointed out recent counts indicated lower volumes than those of the approved traffic analysis, including the recent opening of the VA Clinic.

Local Wetland Inventory

WEST LINN GOAL 5 INVENTORY, JAN 2005



Legend

- Locally Significant Wetlands, DSL 2005
- Other Wetlands, DSL 2005
- Possible Wetlands, DSL 2005
- Study Area Boundary
- Streams
- Taxlot Base, West Linn GIS 2006
- Parks, Open Space, & Natural Areas
Includes some areas of other misc. city property ("City" type classification). See Parks, Open Space, & Natural Areas Map

MAP PREPARED IN JUNE 2006

Map Labels
BE-01 Wetland ID code
 de198-0002 DSL Delineation Numbers
 PW Possible Wetland

Wetlands shown on this map were approved by the Division of State Lands (DSL) in January 2005

GOALS_2006\1WETLANDS.MXD\1\K\A\A\15-16-06 (1st draft)
 6-5-06 council wr (2nd draft)



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Property information Taxlot Base Source: Clackamas County GIS

WETLANDS/GOAL 5 DISCLAIMER (DSL STANDARD):
 Information shown on this map is for planning purposes only and wetland information is subject to change. There may be unmapped wetlands subject to regulation and all wetland boundary mapping is approximate. In all cases, actual field conditions determine wetland boundaries. You are advised to contact the Oregon Division of State Lands and the U.S. Army Corps of Engineers with any regulatory questions.

Open Spaces

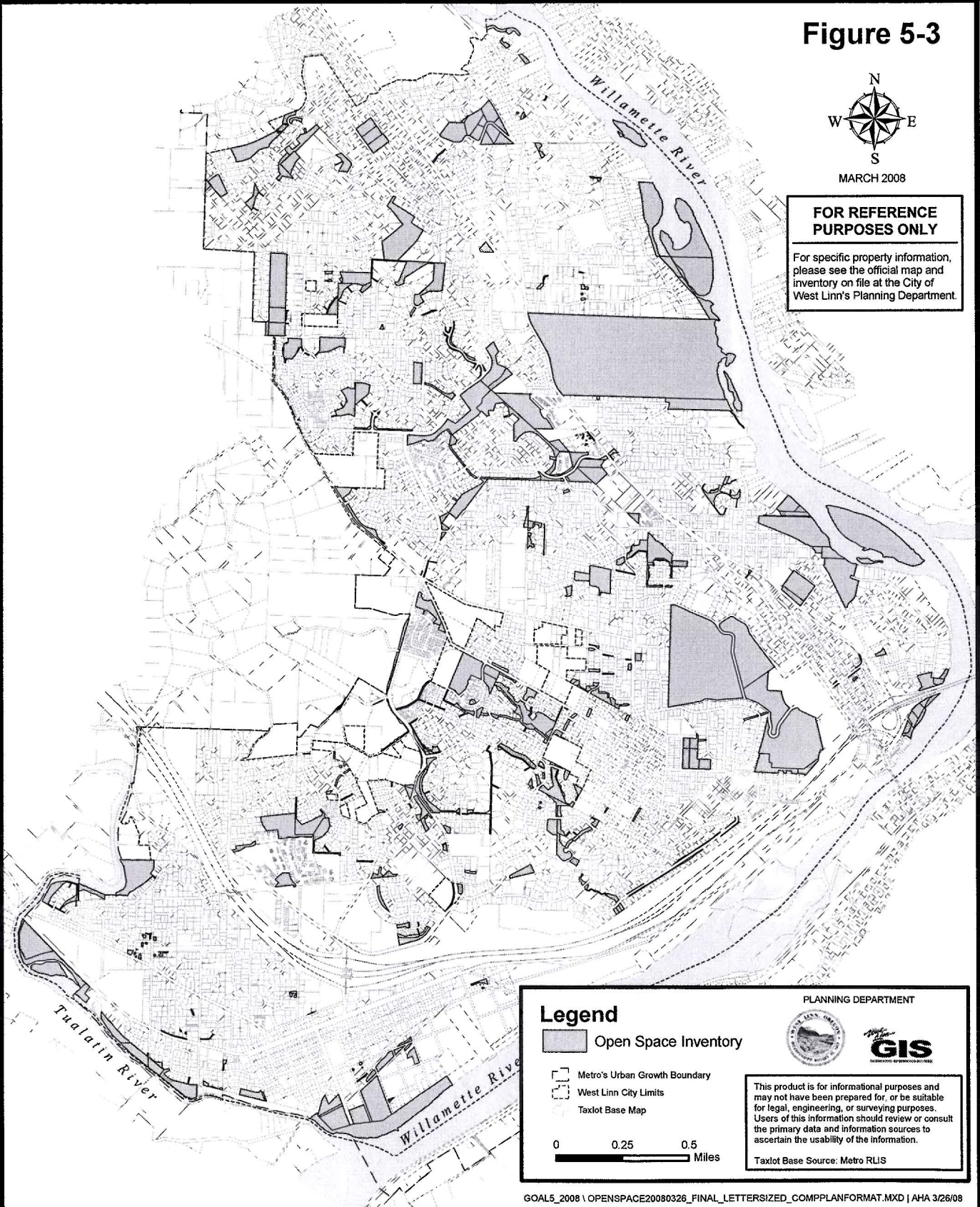
Figure 5-3



MARCH 2008

**FOR REFERENCE
PURPOSES ONLY**

For specific property information,
please see the official map and
inventory on file at the City of
West Linn's Planning Department.



Legend

Open Space Inventory

Metro's Urban Growth Boundary

West Linn City Limits

Taxlot Base Map

0 0.25 0.5
Miles

PLANNING DEPARTMENT

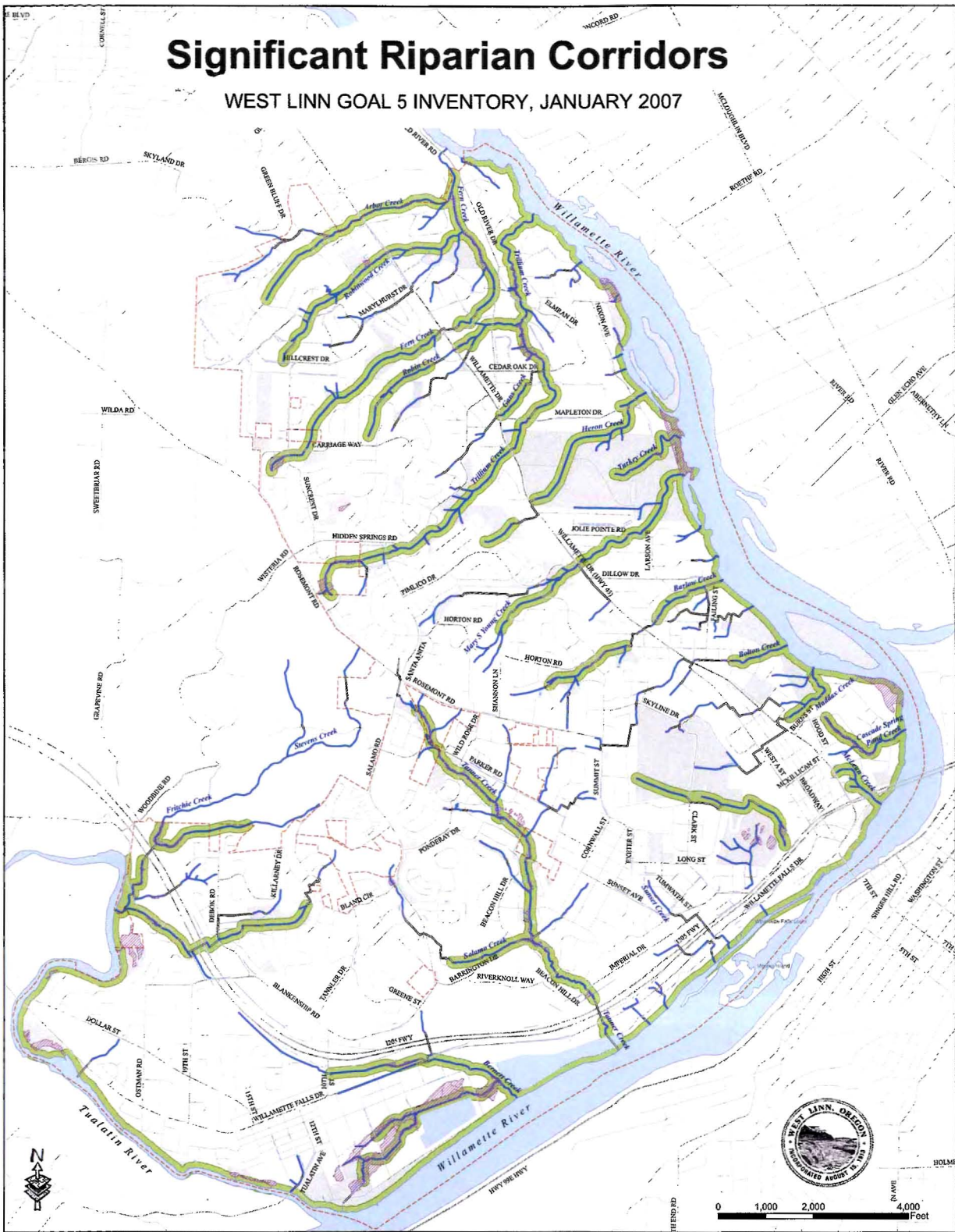


This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Taxlot Base Source: Metro RLIS

Significant Riparian Corridors

WEST LINN GOAL 5 INVENTORY, JANUARY 2007



Legend

-  Significant Riparian Corridors
-  Streams
-  Piped Segments
-  Other Open Ditches
-  Rivers
-  DSL Approved Wetlands, 2005
-  Parks, Open Space, & Natural Areas*
-  West Linn City Limits

* Includes some areas of other misc. city property ("City" type classification) See Parks, Open Space, & Natural Areas Map



0 1,000 2,000 4,000 Feet



GOALS 2006 1 sig/goal5.mxd | KAHN | 1-2-07 (1st draft)
This map was created from Riparian.mxd and published map dated July 2006

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Property information Taxlot Base Source: Clackamas County GIS

WETLANDS/GOAL 5 DISCLAIMER (DSL STANDARD):
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Wildlife Habitat Inventory

Figure 5-4



JULY 2008

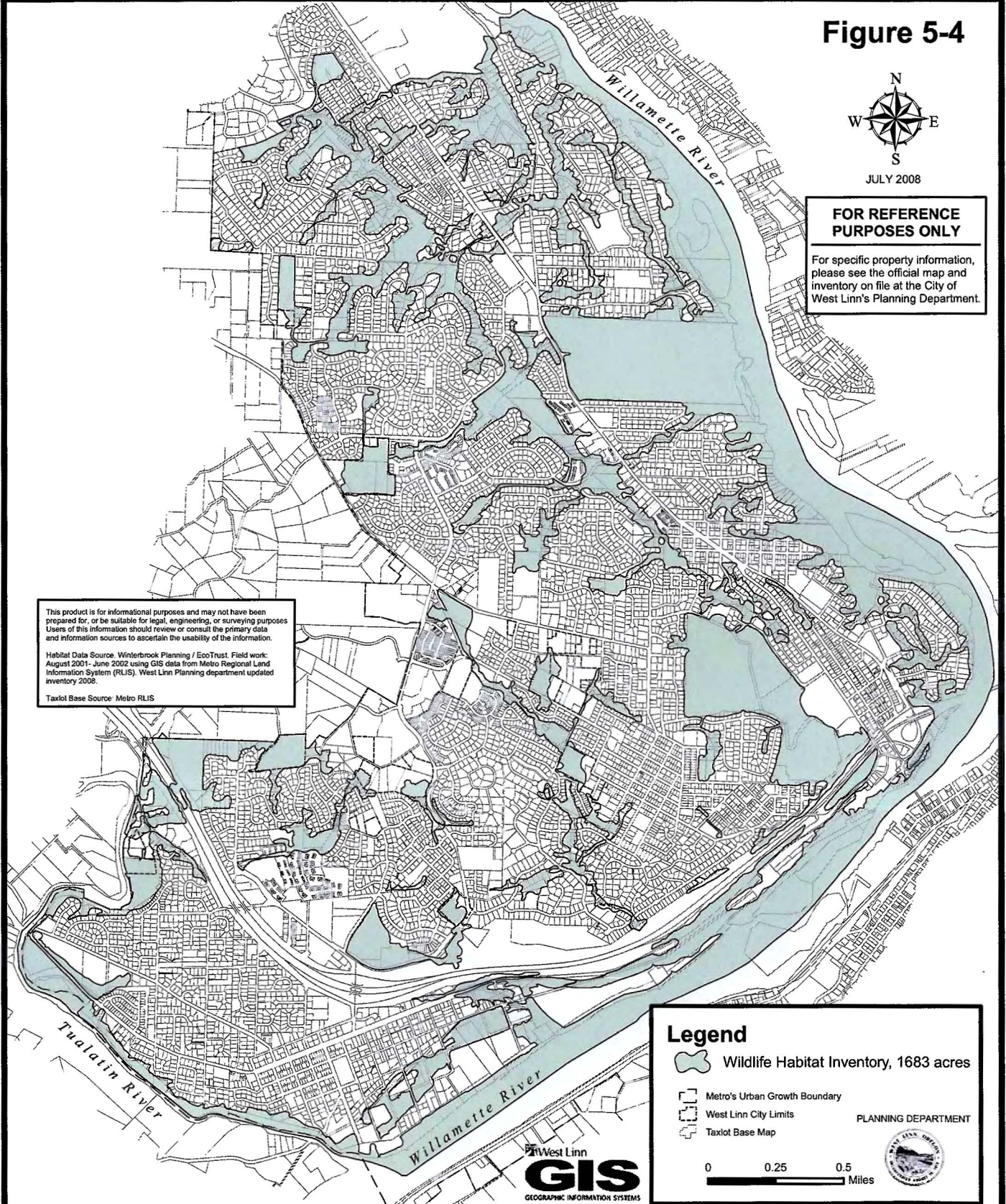
**FOR REFERENCE
PURPOSES ONLY**

For specific property information,
please see the official map and
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West Linn's Planning Department.

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Habitat Data Source: Winterbrook Planning / EcoTrust. Field work: August 2001- June 2002 using GIS data from Metro Regional Land Information System (RLIS). West Linn Planning department updated inventory 2008.

Taxlot Base Source: Metro RLIS



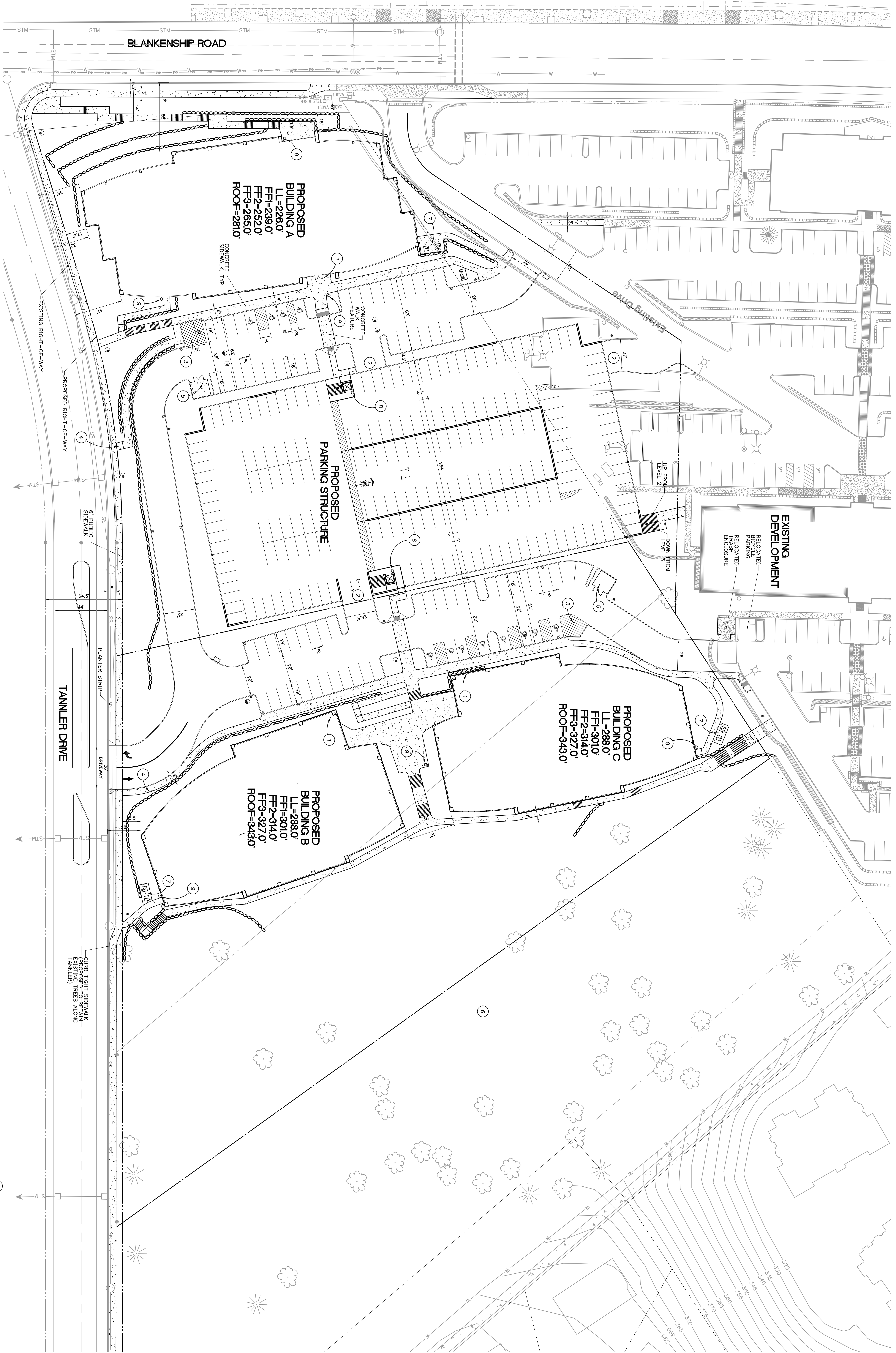
Legend

- Wildlife Habitat Inventory, 1683 acres
- Metro's Urban Growth Boundary
- West Linn City Limits
- Taxlot Base Map

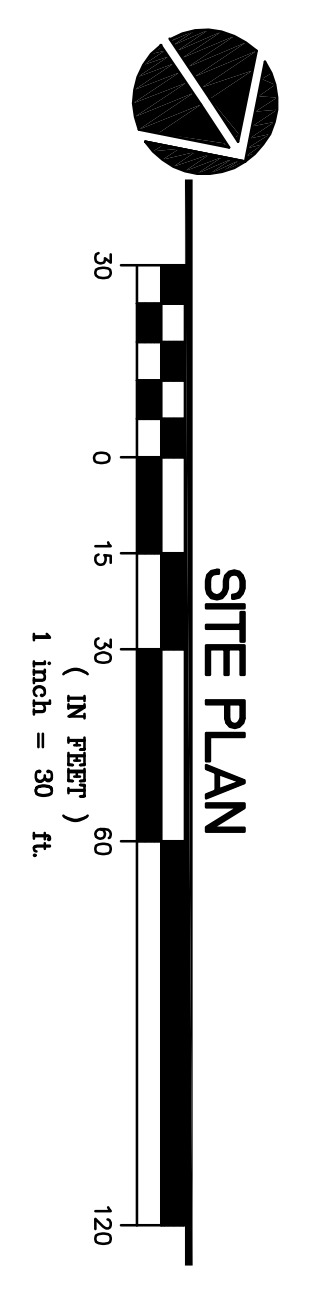
PLANNING DEPARTMENT

0 0.25 0.5 Miles





- LEGEND**
- PEDESTRIAN WALKWAY/PLAZA
 - LOADING AREA
 - LANDSCAPE IMPROVEMENT AREA
 - RETAINING WALL
 - FIRE HYDRANT
 - CATCH BASIN
 - MANHOLE
 - PROPERTY/RIGHT-OF-WAY LINE



PROPOSED BUILDING A
 LL=226.0'
 FF1=299.0'
 FF2=252.0'
 FF3=265.0'
 ROOF=281.0'

PROPOSED PARKING STRUCTURE

PROPOSED BUILDING C
 LL=288.0'
 FF1=301.0'
 FF2=314.0'
 FF3=327.0'
 ROOF=343.0'

PROPOSED BUILDING B
 LL=288.0'
 FF1=301.0'
 FF2=314.0'
 FF3=327.0'
 ROOF=343.0'

EXISTING DEVELOPMENT
 RELOCATED BICYCLE PARKING
 RELOCATED ENCLOSURE

- KEYNOTES**
1. 11 BICYCLE PARKING SPACES UNDER ENTRANCE CANOPY
 2. PARKING STRUCTURE ACCESS
 3. LOADING SPACE
 4. ADA ACCESS TO PUBLIC R.O.W.
 5. TRASH ENCLOSURE
 6. OPEN SPACE
 7. GENERATOR/TRANSFORMER LOCATION
 8. 3 TRASH RECEPTACLES, ONE LOCATED NEAR ELEVATOR ON EACH FLOOR.
 9. TRASH RECEPTACLE

SHEET TITLE:
SITE PLAN

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 REVISIONS:
 2. REVISION DATA SHEET

ELECTRICAL ENGINEERING
 705 SW 7TH AVENUE
 SUITE 400
 PORTLAND, OR 97204
 Phone: 503.382.2266
 FAX: 503.382.2262

WILLAMETTE 205 CORPORATE CENTER

Project:
WILLAMETTE 205 CORPORATE CENTER

GROUP MACKENZIE

Civil Engineering
 Structural Engineering
 Transportation Planning
 Landscape Architecture

Architecture
 Interior Design
 Land Use Planning

Portland OR 503.224.9560
 Vancouver WA 360.895.7879
 Seattle WA 206.749.9993

JOB NO. 2060016.00
 DRAWN BY: JSR
 CHECKED BY: MWB
 SHEET **C2.1**

DESIGN REVIEW SUBMITTAL 8/22/06

June 11, 2010

City of West Linn
Attention: Tom Soppe
22500 Salamo Road
West Linn, OR 97068

Re: **Willamette 205 Corporate Center Phase II**
Extension Traffic Analysis
Project Number 2060016.10

Dear Tom:

Group Mackenzie prepared this traffic analysis update for the two-year design review extension for the Willamette 205 Corporate Center Phase II office building project. Engineering comments provided at the May 6, 2010 pre-application conference requested an updated traffic analysis and recommendations based on changes to the Community Development Code, the new Transportation System Plan, ITE Trip Generation rates, and other manuals such as MUTCD and Highway Capacity Manual. Based on our review, the original traffic analysis, prepared in August 2006, is still valid and there is no need to prepare an updated analysis for the reasons noted below.

COMMUNITY DEVELOPMENT CODE

Several changes to the applicable CDC have been made since the project approval. These changes are addressed below.

48.010 – requires implementation of access management techniques. The project proposes to share access with the adjacent building at a location on Blankenship opposite the Albertsons' driveway. A second site driveway is proposed directly to Tannler Drive, outside of the influence area of any other driveways or intersections. The driveways as proposed meet this standard.

48.0825 – addresses access control, requiring adequate levels of service on roadways and consolidated access locations if practicable. The original traffic analysis includes mitigation to provide adequate levels of service on area roadways, and a shared access is proposed on Blankenship Road. Driveway spacing standards for collector roadways such as Blankenship and Tannler along the site frontage are 150 feet for private driveways. As proposed, the site driveways meet this standard at approximately 250 feet on Blankenship and 645 feet on Tannler.

55.125 – This section of the code simply states changes to the site plan may be necessary based on the traffic analysis findings. The original traffic analysis already addressed access locations and site circulation, and did not recommend any changes to the currently proposed site plan. It also references 85.170(B)(2), which identifies the traffic study requirements. The original traffic study meets these requirements.

TRANSPORTATION SYSTEM PLAN/COMPREHENSIVE PLAN

The City of West Linn updated their TSP in 2008, after the original project approval. The TSP does not include any new roadways or projects in the site vicinity that would change the original traffic analysis findings. Improvements are still identified along the 10th Street corridor.

Along with the updated TSP, changes in the Comprehensive Plan Goal 12: Transportation were made in late 2008 (Ordinance No. 1584). Changes include an identified group of improvements on 10th Street including improved signal timing, adding lanes, and restricting movements. Updated policies include having new development pay their fair share toward transportation improvements, requiring traffic impact analyses, and mitigation of specific development impacts. The project meets these goals as currently approved and conditioned. No changes are required.

A level of service "D" condition is the preferred minimum for all facilities. The project meets this level of service standard, with all intersections operating at a "D" with proposed mitigation, except for an unsignalized left turn to Blankenship Road. It is recognized that not all unsignalized turning movements can be mitigated due to limits on traffic signal installation and the availability of alternate routes. The conditions of approval recognize that a traffic signal can be installed at the intersection of Blankenship with Tannler or at the Albertsons and site driveway location on Tannler, but not at both locations.

A new pedestrian policy requires developers to include pedestrian facilities and walkway connections within the development and to adjacent land uses. The proposed internal walkways and sidewalks along Tannler and Blankenship meet this requirement.

ITE TRIP GENERATION

The original analysis used the 7th Edition of ITE's *Trip Generation* to estimate trips for the three buildings, based on rates for Land Use Code 710, General Office Building. The 8th Edition of *Trip Generation* was published in 2008; however, there were no changes in the trip rates for General Office Building. The estimated trip generation would not change from the original analysis.

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

The MUTCD was updated in 2009 from the 2003 version used in the original traffic analysis. The only MUTCD reference was in the review of traffic signal warrants, specifically the peak hour warrant. No change was made in the peak hour warrant in the 2009 MUTCD. The original analysis is consistent with the current standard.

HIGHWAY CAPACITY MANUAL

The original analysis was prepared using the 2000 HCM. The 2010 HCM is scheduled for release in December 2010, so no changes in the capacity analysis would be required at this time.

TRAFFIC VOLUMES

Traffic counts used in the original analysis were conducted in February 2006. In addition to the counts, future traffic volume estimates included in-process projects and a general background growth rate of 3%. The in-process project list included the Tannler East project, all in-process projects included in the Tannler East traffic study (Willamette Marketplace, 145 residential lots), and the Fields Park II and Cove Place subdivisions.

Updated traffic counts were conducted in May 2010, at the intersections of Blankenship Road with Tannler Drive and Salamo/10th Street, to compare volumes with the original analysis. These two intersections are the closest to the site, and the location at which the project would have the greatest impact.

At the intersection of Blankenship/Tannler, traffic volumes have decreased from 2006 to 2010 by approximately 8%. At the Blankenship/Salamo/10th Street intersection, volumes have decreased by 3.5% in both the AM and PM peak hours. This decrease in volumes has occurred even with the development activity in the area that was included as in-process trips. The attached figure presents the 2006 and 2010 traffic counts.

With a reduction in traffic volumes since the original analysis, any update would show traffic conditions slightly improved. Therefore, the findings and recommendations of the original analysis are still valid, and an updated traffic analysis is not needed.

10TH STREET AREA PLAN

The City's TSP includes a 10th Street Area Plan as Appendix I. This plan identifies options for addressing many of the existing and anticipated future deficiencies in the corridor.

Three options are considered for the Tannler Drive intersection with Blankenship. Option 1 would install a traffic signal at the west driveway serving Albertsons and the driveway proposed to be shared with the project, while limiting the Tannler intersection to right turns. This is most similar to the project proposal. Option 2 would align Tannler to the east, opposite 10th Street, which would also work with the proposal. Option 3 would align Tannler through the project, aligning opposite the west Albertsons' driveway. This option would impact the project and has cost and grade issues.

Several improvements along the 10th Street corridor are recommended for advancement, including roadway widening to provide two through lanes, turn lanes at the Blankenship/Salamo intersection, added turn lanes at the northbound I-205 off-ramp, and upgraded traffic control at the west Albertsons' driveway. All of these improvements are conditioned in full or part on the proposed project.

A single-point urban interchange has been recommended for the long-term interchange improvement. Such an improvement would be expensive, requiring modification to the existing freeway overpass structures. In the interim, improvements can be made to the existing intersection alignment to address capacity concerns, as has been proposed and conditioned on the project.

Further, Condition 14 of the Final Decision allows for modification to the project conditions related to 10th Street improvements if an alternate improvement is found to be preferable by the City.

TRAFFIC CONDITIONS OF APPROVAL

The current project approval requires improvements at the proposed site access locations on Tannler Drive and Blankenship Road, as well as off-site improvements along the 10th Street corridor (Condition 9). Specifically, the following improvements will be made.

Phase 1 Mitigation

1. Widen the eastbound Blankenship approach to 10th Street to provide full-width through and right-turn lanes, providing 250 feet and 200 feet of queuing, respectively.
2. Install a traffic signal at the intersection of Tannler with Blankenship with permitted left-turn phasing on Blankenship and split phasing for Tannler and the Albertsons' driveway **OR** install a traffic signal at the intersection of Blankenship and the western Albertsons' driveway.
3. If a signal is installed at the Tannler/Blankenship intersection, lengthen the existing left-turn lane from Blankenship to the east Albertsons' driveway from 100 feet to 150 feet with a short transition area.
4. Provide two lanes southbound on 10th Street, ending in a left-turn trap lane at the I-205 northbound ramps.
5. Stripe the Tannler approach at Blankenship to provide a 300-foot left-turn lane.
6. Stripe a 100-foot left-turn lane on Tannler at the site access.
7. Lengthen the northbound off-ramp to provide 200 feet of storage in the left- and right-turn lanes.
8. Coordinate the proposed signal on Blankenship at Tannler (or the site driveway) and the 10th Street/I-205 northbound ramps with the existing signals on 10th Street at Blankenship/Salamo and the I-205 southbound ramps.
9. Provide sight distance in accordance with AASHTO standards at the site driveways on Blankenship and Tannler. Landscaping and retaining walls should be placed such that there are no obstructions within the clear vision area.

City of West Linn
Willamette 205 Corporate Center Phase II
Project Number 2060016.10
June 11, 2010
Page 5

10. Restripe the existing through-lane approach at the intersection of Blankenship and 10th Street to allow for left turns and through movements from the rightmost lane. This would require modifications to the traffic signal heads on this approach and minor changes to the signal operations.

Full Development Mitigation

1. Provide all Phase 1 mitigation measures.
2. If a traffic signal is installed at Blankenship/Tannler, modify signal timing to provide protected/permitted left-turn phasing for westbound left turns.
3. Add a second eastbound right-turn lane on Blankenship at 10th Street. With a signal at the Tannler intersection, this lane should extend back to the intersection with Tannler Drive to provide 200 feet of queuing. With a signal at the site driveway, the second lane can taper back to a single lane at the Tannler intersection.
4. Provide a second northbound through lane along 10th Street from 200 feet south of the I-205 northbound ramp intersection to Blankenship, where the two through lanes align with the existing left- and right-turn lanes.
5. Extend the northbound left-turn lane on 10th Street at the I-205 southbound ramp to 300 feet.

Based on our review of the updated City of West Linn code and policies, as well as accepted traffic engineering standards, the original traffic analysis is still consistent with the applicable documents. Further, traffic counts conducted in May 2010 are 3.5% lower than the 2006 counts used in the original analysis. Therefore, the original traffic analysis does not need to be updated for this application extension.

Please contact us if you have any questions regarding this analysis.

Sincerely,



Brent Ahrend, PE
Traffic Engineer

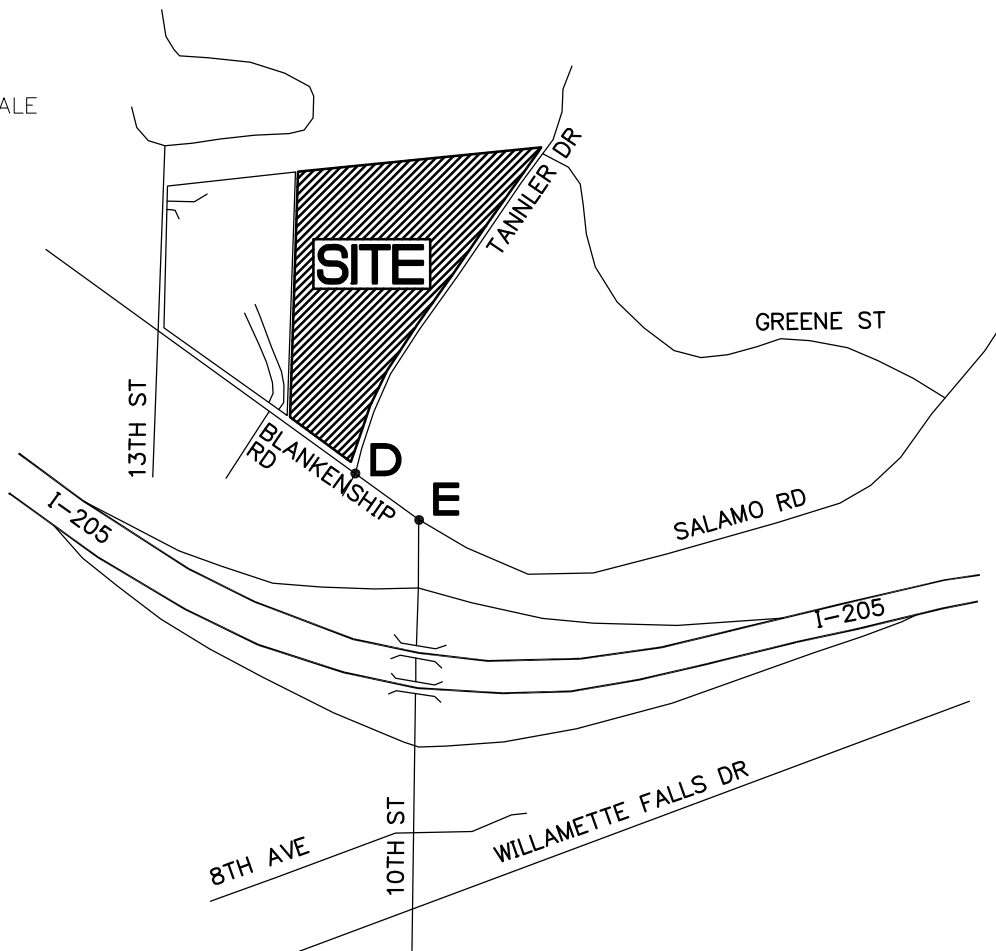
Enclosures: Volume Figure
Traffic Counts

c: Jeff Parker – Blackhawk, LLC
Rhys Konrad, Tom Wright, Bob Thompson – Group Mackenzie



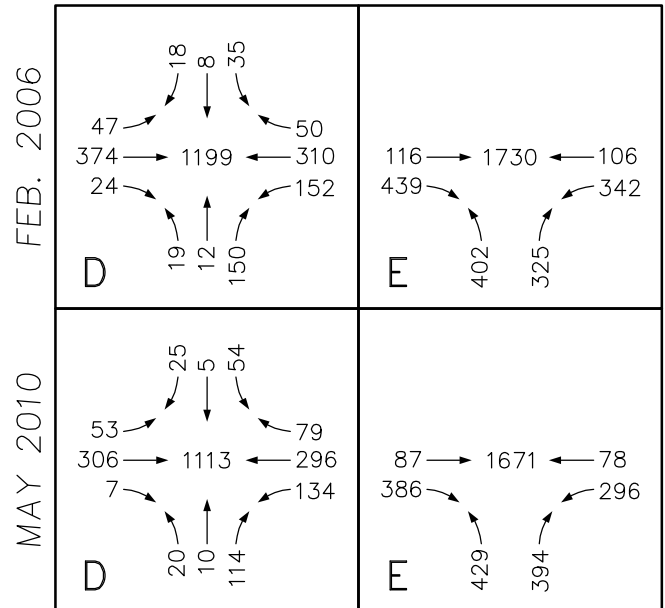
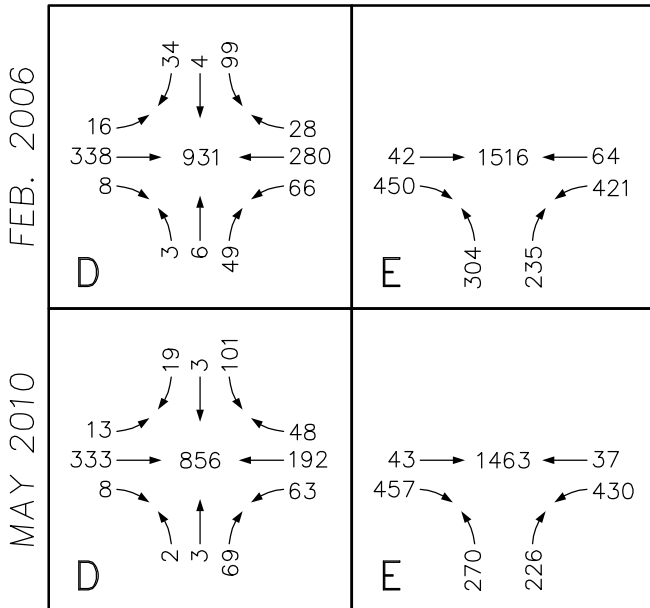


NOT TO SCALE



AM PEAK HOUR VOLUMES
(7:30-8:30 AM)

PM PEAK HOUR VOLUMES
(5:00-6:00 PM)



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DATE: 06.11.10

DRAWN BY: DAH

CHECKED BY: BTA

JOB NO:
2060016.10

**2006 AND 2010 WEEKDAY
 PEAK HOUR TRAFFIC**

**WILLAMETTE 205 CORP CENTER
 WEST LINN, OREGON**

FIGURE

A

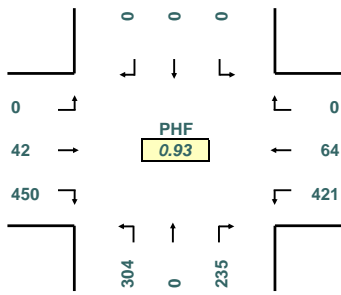
INTERSECTION: 10th St.--/Blankenship Rd.--
 PROJECT ID#: 2060016
 QC JOB #: 10142103

START TIME: 7:00 AM
 END TIME: 9:00 AM
 DATE: 2/2/2006

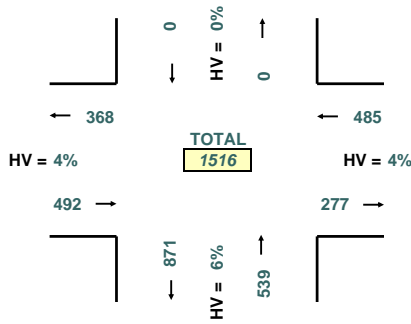


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PEAK HOUR TURNING MOVEMENTS



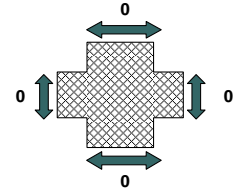
PEAK HOUR LINK VOLUMES



PEAK HOUR: 7:30 AM TO 8:30 AM

PEAK 15 MINUTES: 7:30 AM TO 7:45 AM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD BEGINNING AT	10th St.-- (Southbound)			Blankenship Rd.-- (Westbound)			10th St.-- (Northbound)			Blankenship Rd.-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
7:00 AM	0	0	0	0	1	31	9	0	15	31	2	0	0	0	0	0	89	0
7:05 AM	0	0	0	0	1	26	15	0	12	47	1	0	0	0	0	0	102	0
7:10 AM	0	0	0	0	2	31	10	0	17	43	5	0	0	0	0	0	108	0
7:15 AM	0	0	0	0	5	36	6	0	17	38	5	0	0	0	0	0	107	0
7:20 AM	0	0	0	0	7	33	11	0	17	39	0	0	0	0	0	0	107	0
7:25 AM	0	0	0	0	12	44	14	0	18	43	5	0	0	0	0	0	136	0
7:30 AM	0	0	0	0	4	46	13	0	17	41	4	0	0	0	0	0	125	0
7:35 AM	0	0	0	0	7	38	14	0	22	54	5	0	0	0	0	0	140	0
7:40 AM	0	0	0	0	7	45	14	0	24	47	5	0	0	0	0	0	142	0
7:45 AM	0	0	0	0	7	49	30	0	28	32	0	0	0	0	0	0	146	0
7:50 AM	0	0	0	0	1	34	24	0	29	36	4	0	0	0	0	0	128	0
7:55 AM	0	0	0	0	5	34	21	0	29	36	3	0	0	0	0	0	128	0
8:00 AM	0	0	0	0	7	32	16	0	21	37	5	0	0	0	0	0	118	0
8:05 AM	0	0	0	0	0	29	14	0	22	28	7	0	0	0	0	0	100	0
8:10 AM	0	0	0	0	3	23	18	0	26	37	1	0	0	0	0	0	108	0
8:15 AM	0	0	0	0	7	35	15	0	37	33	2	0	0	0	0	0	129	0
8:20 AM	0	0	0	0	7	34	29	0	23	33	4	0	0	0	0	0	130	0
8:25 AM	0	0	0	0	9	22	27	0	26	36	2	0	0	0	0	0	122	0
8:30 AM	0	0	0	0	4	28	21	0	27	32	3	0	0	0	1	0	115	1
8:35 AM	0	0	0	0	4	28	27	0	31	32	3	0	0	0	0	0	125	0
8:40 AM	0	0	0	0	1	40	36	0	23	35	3	0	0	0	0	0	138	0
8:45 AM	0	0	0	0	2	37	17	0	23	25	1	0	0	0	0	0	105	0
8:50 AM	0	0	0	0	4	27	27	0	25	27	6	0	0	0	0	0	116	0
8:55 AM	0	0	0	0	6	29	33	0	28	22	3	0	0	0	0	0	121	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
7:00 AM	0	0	0	0	59	447	181	0	245	487	39	0	0	0	0	0	1458	0
7:15 AM	0	0	0	0	65	443	195	0	270	468	44	0	0	0	0	0	1485	0
7:30 AM	0	0	0	0	64	421	235	0	304	450	42	0	0	0	0	0	1516	0
7:45 AM	0	0	0	0	55	388	278	0	322	407	37	0	0	0	1	0	1487	1
8:00 AM	0	0	0	0	54	364	280	0	312	377	40	0	0	0	1	0	1427	1

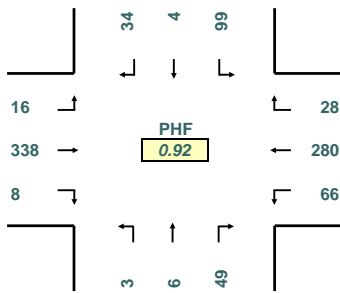
INTERSECTION: *Tannler--/Blankenship--*
 PROJECT ID#: **2060016**
 QC JOB #: **10142104**

START TIME: *7:00 AM*
 END TIME: *9:00 AM*
 DATE: *2/6/2006*

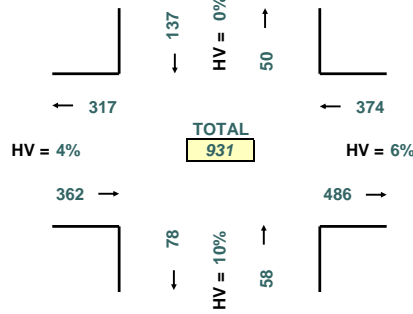


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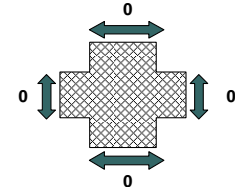
PEAK HOUR TURNING MOVEMENTS



PEAK HOUR LINK VOLUMES



PEAK HOUR PED CROSSING VOLUMES



PEAK HOUR: **7:30 AM TO 8:30 AM**

PEAK 15 MINUTES: **7:30 AM TO 7:45 AM**

5-MINUTE COUNT PERIOD	Tannler-- (Southbound)			Blankenship-- (Westbound)			Tannler-- (Northbound)			Blankenship-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
7:00 AM	1	1	9	1	13	5	3	0	0	1	16	0	0	0	0	0	50	0
7:05 AM	0	0	9	2	8	3	3	0	1	1	36	1	0	0	0	0	64	0
7:10 AM	2	0	6	1	9	2	5	0	0	1	35	1	0	0	0	0	62	0
7:15 AM	5	1	6	1	15	8	4	0	0	1	30	0	0	0	0	0	71	0
7:20 AM	3	1	8	1	12	9	9	0	0	1	26	3	0	0	0	0	73	0
7:25 AM	3	0	6	1	20	3	6	0	0	1	35	0	0	0	0	0	75	0
7:30 AM	2	0	10	0	22	2	1	0	0	1	39	2	0	0	0	0	79	0
7:35 AM	7	0	14	5	16	3	3	0	0	1	37	0	0	0	0	0	86	0
7:40 AM	4	1	10	2	24	7	4	1	0	1	34	0	0	0	0	0	88	0
7:45 AM	2	0	9	2	32	4	1	1	1	0	22	1	0	0	0	0	75	0
7:50 AM	5	0	6	2	22	6	2	0	0	0	32	3	0	0	0	0	78	0
7:55 AM	2	0	9	5	24	4	3	0	0	0	24	3	0	0	0	0	74	0
8:00 AM	1	0	6	1	21	7	6	1	1	2	31	2	0	0	0	0	79	0
8:05 AM	4	0	8	2	15	6	3	0	0	1	21	0	0	0	0	0	60	0
8:10 AM	1	1	7	3	21	5	7	1	0	0	24	2	0	0	0	0	72	0
8:15 AM	1	0	6	0	37	5	5	0	0	0	28	1	0	0	0	0	83	0
8:20 AM	3	1	8	3	19	12	5	1	0	1	24	1	0	0	0	0	78	0
8:25 AM	2	1	6	3	27	5	9	1	1	1	22	1	0	0	0	0	79	0
8:30 AM	2	1	5	5	19	8	6	0	0	1	26	1	0	0	0	0	74	0
8:35 AM	2	0	5	4	27	3	5	1	1	0	27	0	0	0	0	0	75	0
8:40 AM	0	0	7	1	18	11	8	0	0	1	19	2	0	0	0	0	67	0
8:45 AM	3	0	5	2	18	5	8	0	1	0	13	1	0	0	0	0	56	0
8:50 AM	1	0	6	1	19	8	6	0	1	1	15	3	0	0	0	0	61	0
8:55 AM	2	0	5	3	21	11	5	0	0	0	16	0	0	0	0	0	63	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
7:00 AM	36	4	102	23	217	56	44	2	2	9	366	14	0	0	0	0	875	0
7:15 AM	39	4	99	25	244	64	49	4	2	9	355	16	0	0	0	0	910	0
7:30 AM	34	4	99	28	280	66	49	6	3	8	338	16	0	0	0	0	931	0
7:45 AM	25	4	82	31	282	76	60	6	4	7	300	17	0	0	0	0	894	0
8:00 AM	22	4	74	28	262	86	73	5	5	8	266	14	0	0	0	0	847	0

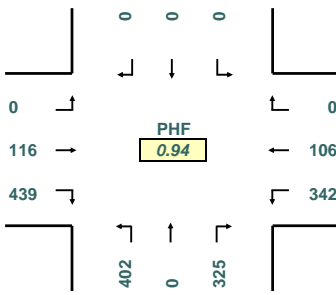
INTERSECTION: *Trees (10th St)--/Blankenship Rd.--*
 PROJECT ID#: 2060016
 QC JOB #: 10142110

START TIME: 4:00 PM
 END TIME: 6:00 PM
 DATE: 2/2/2006

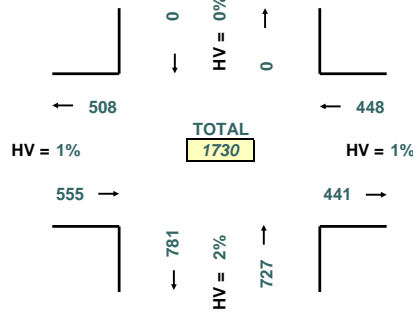


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PEAK HOUR TURNING MOVEMENTS



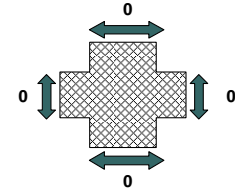
PEAK HOUR LINK VOLUMES



PEAK HOUR: 5:00 PM TO 6:00 PM

PEAK 15 MINUTES: 5:30 PM TO 5:45 PM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD BEGINNING AT	<i>Trees (10th St)--</i> (Southbound)			<i>Blankenship Rd.--</i> (Westbound)			<i>10th St.--</i> (Northbound)			<i>Blankenship Rd.--</i> (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	0	0	0	5	15	22	0	32	29	7	0	0	0	0	0	110	0
4:05 PM	0	0	0	0	8	22	15	0	26	28	6	0	0	0	0	0	105	0
4:10 PM	0	0	0	0	4	12	28	0	34	41	4	0	0	0	0	0	123	0
4:15 PM	0	0	0	0	9	25	20	0	21	29	10	0	0	0	1	0	114	1
4:20 PM	0	0	0	0	9	28	21	0	33	35	12	0	0	0	0	0	138	0
4:25 PM	0	0	0	0	11	14	23	0	25	28	9	0	0	0	0	0	110	0
4:30 PM	0	0	0	0	6	28	19	0	37	38	9	0	0	0	0	0	137	0
4:35 PM	0	0	0	0	9	28	20	0	31	29	6	0	0	0	0	0	123	0
4:40 PM	0	0	0	0	9	15	25	0	34	35	8	0	0	0	0	0	126	0
4:45 PM	0	0	0	0	7	28	25	0	38	38	4	0	0	0	0	0	140	0
4:50 PM	0	0	0	0	6	21	15	0	38	39	11	0	0	0	0	0	130	0
4:55 PM	0	0	0	0	4	15	29	0	35	30	7	0	0	0	0	0	120	0
5:00 PM	0	0	0	0	7	33	22	0	32	36	9	0	0	0	0	0	139	0
5:05 PM	0	0	0	0	10	30	24	0	32	50	15	0	0	0	0	0	161	0
5:10 PM	0	0	0	0	20	28	30	0	39	35	7	0	0	0	0	0	159	0
5:15 PM	0	0	0	0	8	23	20	0	35	35	10	0	0	0	0	0	131	0
5:20 PM	0	0	0	0	4	25	30	0	26	34	11	0	0	0	0	0	130	0
5:25 PM	0	0	0	0	7	28	24	0	29	24	7	0	0	0	0	0	119	0
5:30 PM	0	0	0	0	8	29	23	0	44	30	11	0	0	0	0	0	145	0
5:35 PM	0	0	0	0	5	21	33	0	41	41	6	0	0	0	0	0	147	0
5:40 PM	0	0	0	0	14	35	31	0	27	51	12	0	0	0	0	0	170	0
5:45 PM	0	0	0	0	10	31	26	0	33	38	18	0	0	0	0	0	156	0
5:50 PM	0	0	0	0	5	27	34	0	36	33	4	0	0	0	0	0	139	0
5:55 PM	0	0	0	0	8	32	28	0	28	32	6	0	0	0	0	0	134	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
4:00 PM	0	0	0	0	87	251	262	0	384	399	93	0	0	0	1	0	1476	1
4:15 PM	0	0	0	0	107	293	273	0	395	422	107	0	0	0	1	0	1597	1
4:30 PM	0	0	0	0	97	302	283	0	406	423	104	0	0	0	0	0	1615	0
4:45 PM	0	0	0	0	100	316	306	0	416	443	110	0	0	0	0	0	1691	0
5:00 PM	0	0	0	0	106	342	325	0	402	439	116	0	0	0	0	0	1730	0

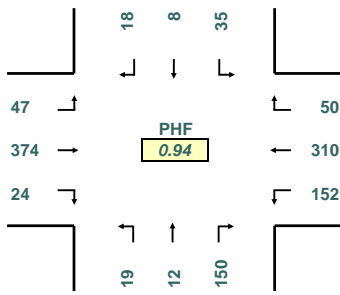
INTERSECTION: *Tannler--/Blankenship Rd.--*
 PROJECT ID#: **2060016**
 QC JOB #: **10142111**

START TIME: **4:00 PM**
 END TIME: **6:00 PM**
 DATE: **2/2/2006**

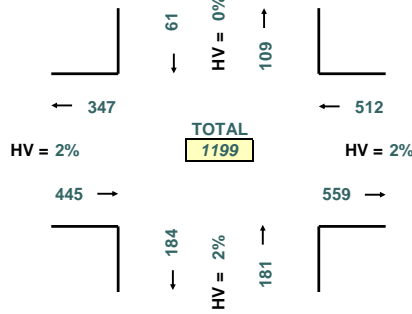


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PEAK HOUR TURNING MOVEMENTS



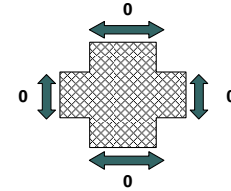
PEAK HOUR LINK VOLUMES



PEAK HOUR: **5:00 PM TO 6:00 PM**

PEAK 15 MINUTES: **5:30 PM TO 5:45 PM**

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD BEGINNING AT	Tannler-- (Southbound)			Blankenship Rd.-- (Westbound)			Tannler-- (Northbound)			Blankenship Rd.-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	2	0	2	2	22	11	9	1	1	0	26	4	0	0	0	0	80	0
4:05 PM	2	1	5	3	18	9	15	2	0	0	14	1	0	0	0	0	70	0
4:10 PM	1	1	5	6	21	5	6	0	2	2	34	2	0	0	0	0	85	0
4:15 PM	2	0	3	2	16	10	7	1	2	1	29	3	0	0	0	0	76	0
4:20 PM	1	1	3	2	24	16	12	0	0	0	31	1	0	0	0	0	91	0
4:25 PM	2	0	3	2	20	14	9	2	1	1	25	4	0	0	0	0	83	0
4:30 PM	0	0	5	6	21	15	9	0	1	2	34	1	0	0	0	0	94	0
4:35 PM	2	0	5	6	21	13	10	3	1	0	21	6	0	0	0	0	88	0
4:40 PM	1	0	3	7	18	14	9	0	1	1	31	5	0	0	0	0	90	0
4:45 PM	5	0	6	8	28	16	8	4	2	0	28	0	0	0	0	0	105	0
4:50 PM	3	0	4	6	23	12	15	0	1	1	31	3	0	0	0	0	99	0
4:55 PM	3	1	1	6	24	13	6	0	0	1	30	2	0	0	0	0	87	0
5:00 PM	3	0	1	3	19	13	12	1	0	3	32	4	0	0	0	0	91	0
5:05 PM	2	0	3	5	31	5	12	1	1	3	51	5	0	0	0	0	119	0
5:10 PM	0	2	3	2	35	22	14	0	0	3	25	2	0	0	0	0	108	0
5:15 PM	1	1	1	4	27	14	13	2	1	1	32	2	0	0	0	0	99	0
5:20 PM	4	0	1	3	22	9	8	2	1	1	37	5	0	0	0	0	93	0
5:25 PM	2	1	1	4	24	10	10	1	0	1	20	2	0	0	0	0	76	0
5:30 PM	0	0	3	3	32	15	7	0	1	3	32	5	0	0	0	0	101	0
5:35 PM	1	0	6	4	24	12	10	0	2	1	31	1	0	0	0	0	92	0
5:40 PM	1	0	2	5	30	17	21	3	4	0	40	4	0	0	0	0	127	0
5:45 PM	2	1	2	6	25	10	17	2	1	2	37	7	0	0	0	0	112	0
5:50 PM	1	0	6	5	19	16	9	0	3	6	22	4	0	0	0	0	91	0
5:55 PM	1	3	6	6	22	9	17	0	5	0	15	6	0	0	0	0	90	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
4:00 PM	24	4	45	56	256	148	115	13	12	9	334	32	0	0	0	0	1048	0
4:15 PM	24	4	40	55	280	163	123	12	10	16	368	36	0	0	0	0	1131	0
4:30 PM	26	5	34	60	293	156	126	14	9	17	372	37	0	0	0	0	1149	0
4:45 PM	25	5	32	53	319	158	136	14	13	18	389	35	0	0	0	0	1197	0
5:00 PM	18	8	35	50	310	152	150	12	19	24	374	47	0	0	0	0	1199	0

LOCATION: BLANKENSHIP RD @ 10TH 0700-0900
CITY: WEST LINN, OR
FILENAME: V11KI 10-020

Site: 0015
Date: 5/19/2010
Wednesday

Peak Hour Detail

Interval Begin	Southbound			Westbound SALAMO RD			Northbound 10TH ST			Eastbound BLANKENSHIP			Total				
	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left		Ped4	Right	Thru	Left
7:00 AM	0	0	0	95	0	0	7	0	33	0	38	0	0	110	4	0	287
7:15 AM	0	0	0	98	0	0	9	0	17	0	47	0	0	110	4	0	285
7:30 AM	0	0	0	138	0	0	6	0	44	0	55	0	0	131	13	0	387
7:45 AM	0	0	0	112	0	0	8	0	67	0	84	0	0	117	10	0	398
8:00 AM	0	0	0	92	0	0	14	0	56	0	67	0	0	102	9	0	340
8:15 AM	0	0	0	88	0	0	9	0	59	0	64	0	0	107	11	0	338
8:30 AM	0	0	0	110	0	0	15	0	46	0	70	0	0	89	7	0	337
8:45 AM	0	0	0	108	0	0	15	0	61	0	75	0	0	87	13	0	359
Totals Entering	0	0	0	841	0	0	83	0	383	0	500	0	0	853	71	0	2731
Totals Exiting			0			0	924		883					924			
			0			0	454		1694					583			
Vehicle Totals																	
Cars	0	0	0	816	0	0	79	0	337	0	477	0	0	833	69	0	2611
Light	0	0	0	97.0%	0	0	95.2%	0	88.0%	0	95.4%	0	0	97.7%	97.2%	0	95.6%
Bike	0	0	0	2.4%	0	0	4.8%	0	9.9%	0	4.4%	0	0	2.2%	1.4%	0	3.8%
Medium	0	0	0	0.0%	0	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0.0%	0	0.0%
Heavy	0	0	0	0.5%	0	0	0.0%	0	0.3%	0	0.2%	0	0	0.1%	1.4%	0	0.3%
				0.1%	0	0	0.0%	0	1.8%	0	0.0%	0	0	0.0%	0.0%	0	0.3%
				0.1%	0	0	0.0%	0									

LOCATION: BLANKENSHIP RD @ 10TH 0700-0900
CITY: WEST LINN, OR
FILENAME: V11KI 10-020

Site: 0015
Date: 5/19/2010
Wednesday

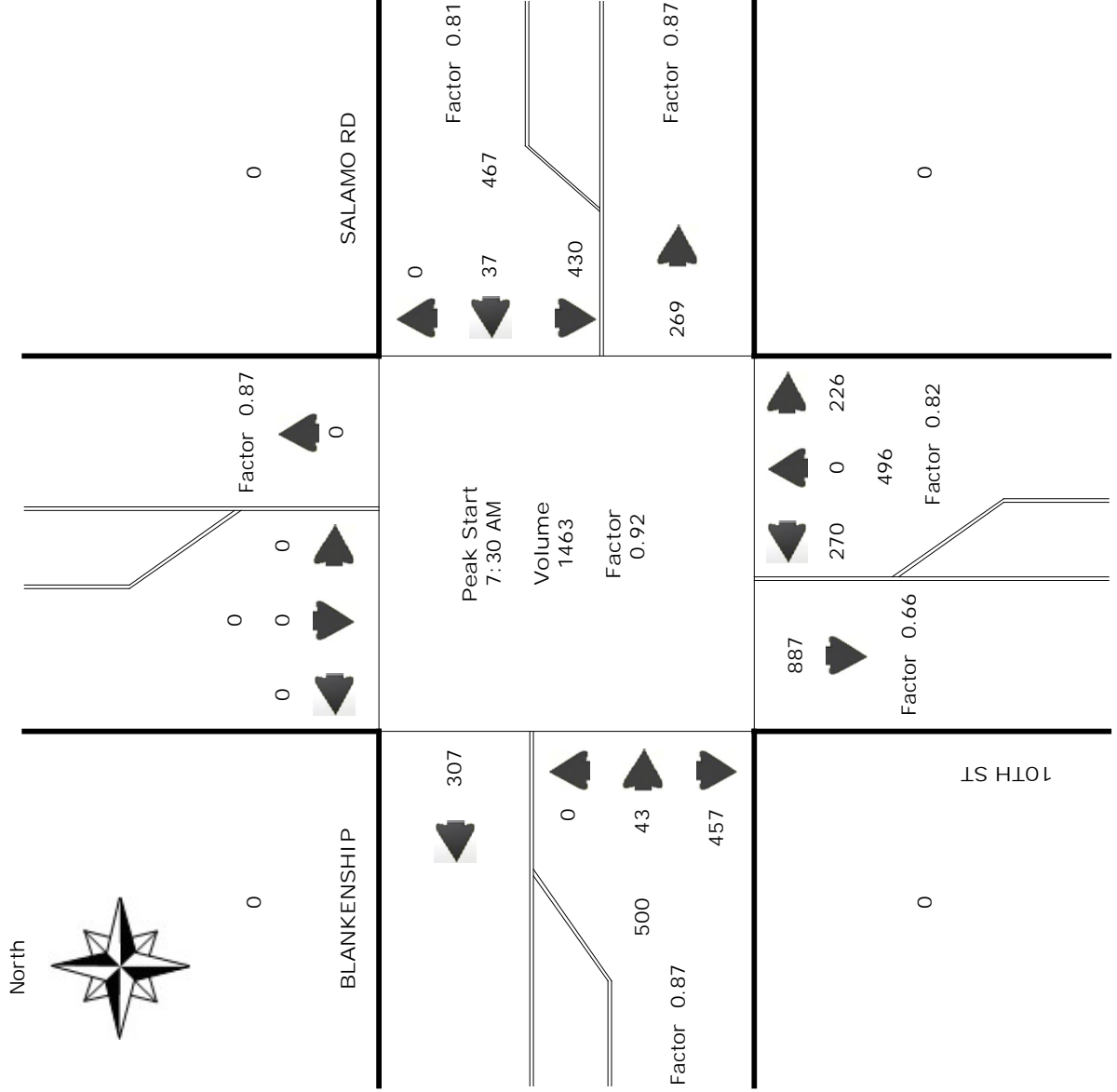
Peak Hour Detail

Peak Hour: 7:30 AM - 8:30 AM

Interval Begin	Southbound			Westbound SALAMO RD			Northbound 10TH ST			Eastbound BLANKENSHIP			Total				
	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left		Ped4	Right	Thru	Left
Totals	0	0	0	430	0	0	0	270	0	0	0	0	0	457	43	0	1463
Factor				0.78				0.80						0.87	0.83		0.92
Entering Factor			0				496							500			
Exiting Factor			0				0.82							0.87			
			0				887							307			
			0.87				0.66										
Peak Vehicles																	
Cars	0	0	0	415	0	0	201	0	0	0	0	261	0	447	42	0	1402
Light	0	0	0	96.5%	0	0	88.9%	0	0	0	0	96.7%	0	97.8%	97.7%	0	95.8%
Bike	0	0	0	11	0	0	20	8	0	0	0	8	0	10	0	0	50
Medium	0	0	0	2.6%	0	0	8.8%	0	0	0	0	3.0%	0	2.2%	0.0%	0	3.4%
Heavy	0	0	0	0.0%	0	0	0.0%	0	0	0	0	0.0%	0	0.0%	0.0%	0	0.0%
	0	0	0	0.9%	0	0	0.4%	1	0	0	1	0.4%	0	0.0%	2.3%	0	0.5%
	0	0	0	0.0%	0	0	1.8%	4	0	0	0	0.0%	0	0.0%	0.0%	0	4
				0.0%				0.0%				0.0%					0.3%

Peak Hour Detail

Peak Hour Diagram



LOCATION: BLANKENSHIP RD @ TANNIER DR 0700-0900
CITY: WEST LINN, OR
FILENAME: V11KF 10-020

Site: 0015
Date: 5/19/2010
Wednesday

Peak Hour Detail

Interval Begin	Southbound TANNIER			Westbound BLANKENSHIP			Northbound RETAIL DRIVEWAY			Eastbound BLANKENSHIP		Total
	Ped1	Right	Left	Ped2	Right	Left	Ped3	Right	Left	Right	Left	
7:00 AM	0	6	28	0	2	11	0	12	0	4	4	171
7:15 AM	0	5	20	0	3	15	1	15	0	2	85	185
7:30 AM	0	7	32	0	9	12	1	18	0	2	94	220
7:45 AM	0	2	26	0	15	18	0	14	1	1	82	215
8:00 AM	0	4	19	0	11	16	0	15	1	2	82	214
8:15 AM	0	6	24	0	13	17	1	22	1	3	75	207
8:30 AM	0	2	19	0	8	22	3	14	0	1	62	201
8:45 AM	0	3	14	0	6	22	2	16	0	2	74	202
Totals Entering	0	35	182	0	67	133	8	126	4	17	624	1615
Totals Exiting		225	96		580	932		135	158	666	420	

Vehicle Totals

Category	Light	Bike	Medium	Heavy
Cars	0	0	0	0
Light	34 97.1%	1 2.9%	0 0.0%	0 0.0%
Bike	0	0	0	0
Medium	0	0	0	0
Heavy	0	0	0	0
Totals	34 96.6%	1 3.2%	0 0.0%	0 0.0%
Right	63 94.0%	4 6.0%	0 0.0%	0 0.0%
Left	127 95.5%	5 3.8%	0 0.0%	0 0.0%
Thru	7 87.5%	0 0.0%	0 0.0%	0 0.0%
Right	121 96.0%	4 3.2%	0 0.0%	0 0.0%
Left	24 96.0%	1 4.0%	0 0.0%	0 0.0%
Thru	17 100%	0 0.0%	0 0.0%	0 0.0%
Totals	1560 96.6%	52 3.2%	0 0.0%	3 0.2%

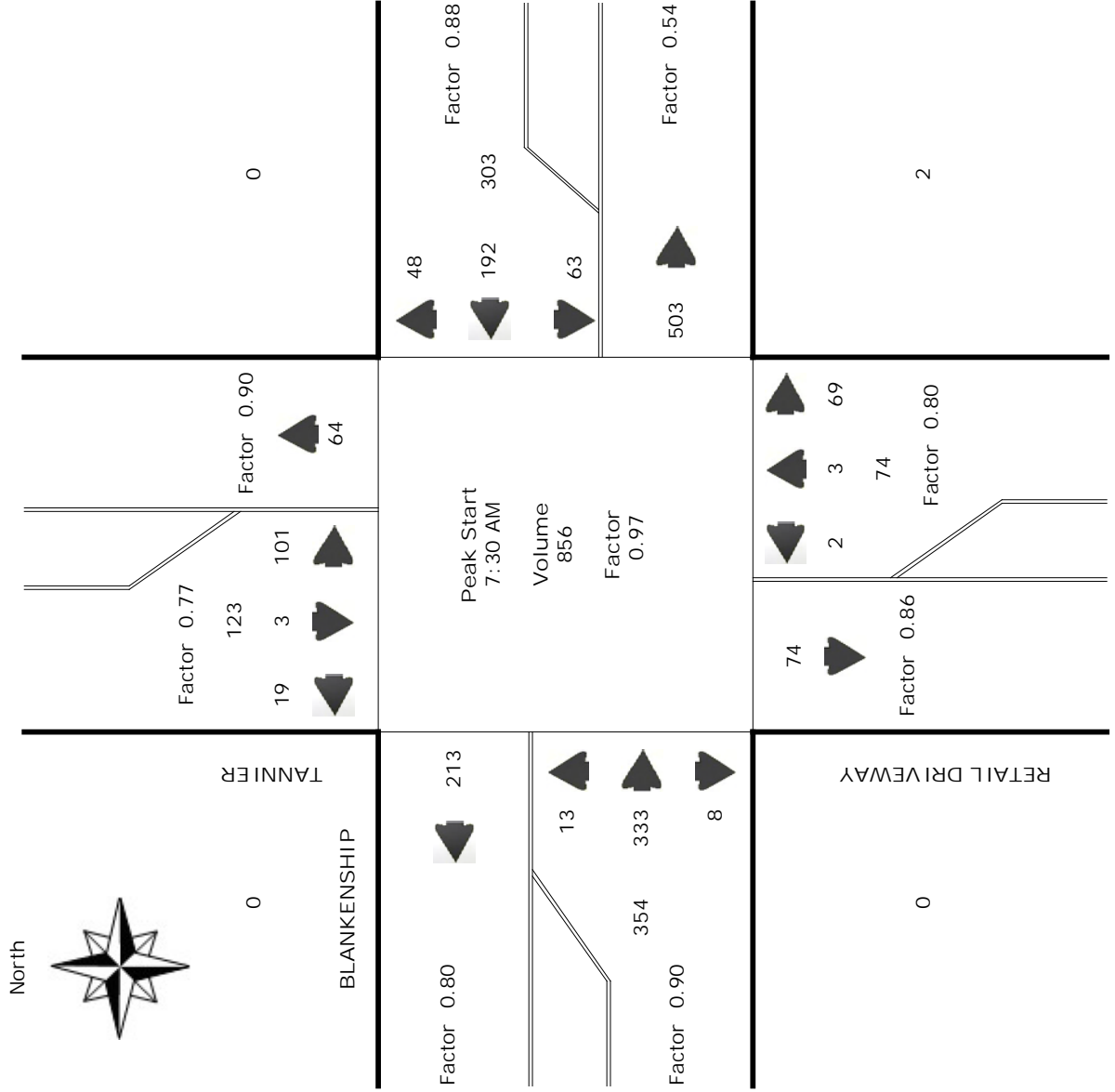
Peak Hour Detail

Peak Hour: 7:30 AM - 8:30 AM

Interval Begin	Southbound TANNIER		Westbound BLANKENSHIP		Northbound RETAIL DRIVEWAY		Eastbound BLANKENSHIP		Total
	Ped1	Right Thru Left	Ped2	Right Thru Left	Ped3	Right Thru Left	Ped4	Right Thru Left	
Totals	0	19 3 101	0	48 192 63	2	69 3 2	0	8 333 13	856
Factor		0.68 0.38 0.79		0.80 0.84 0.88	0.50	0.78 0.75 0.25		0.67 0.89 0.65	0.97
Entering Factor		123 0.77		303 0.88		74 0.80		354 0.90	
Exiting Factor		64 0.90		503 0.54		74 0.86		213 0.80	
Peak Vehicles									
Cars	0	19 3 101	0	45 187	2	66 3	0	8 324	833
Light	0	100% 0.0% 0.0%	0	93.8% 97.4%	100% 0.0%	95.7% 100%	0	100% 97.3%	97.3%
Bike	0	0.0% 0.0% 0.0%	0	6.3% 2.6%	0.0% 0.0%	2.9% 0.0%	0	0.0% 2.7%	2.5%
Medium	0	0.0% 0.0% 0.0%	0	0.0% 0.0%	0.0% 0.0%	0.0% 0.0%	0	0.0% 0.0%	0.0%
Heavy	0	0.0% 0.0% 0.0%	0	0.0% 0.0%	0.0% 0.0%	1.4% 0.0%	0	0.0% 0.0%	0.2%

Peak Hour Detail

Peak Hour Diagram



LOCATION: BLANKENSHIP RD @ 10TH 1600-1800
CITY: WEST LINN, OR
FILENAME: V11KH 10-020

Site: 0015
Date: 5/19/2010
Wednesday

Peak Hour Detail

Interval Begin	Southbound			Westbound SALAMO RD			Northbound 10TH			Eastbound BLANKENSHIP			Total			
	Ped1	Right	Thru	Left	Right	Thru	Left	Ped2	Ped3	Right	Thru	Left		Right	Thru	Left
4:00 PM	0	0	0	97	0	25	97	0	0	62	0	92	89	18	0	383
4:15 PM	0	0	0	85	0	35	85	0	0	77	1	78	91	20	0	387
4:30 PM	0	0	0	87	0	18	87	0	0	64	0	80	102	22	0	373
4:45 PM	0	0	0	79	0	16	79	0	0	80	0	86	83	20	0	352
5:00 PM	0	0	0	66	0	19	66	0	0	86	0	110	117	22	0	433
5:15 PM	0	0	0	88	0	22	88	0	0	104	0	119	101	21	0	455
5:30 PM	0	0	0	63	0	19	63	0	0	94	0	101	87	26	0	390
5:45 PM	0	0	0	66	0	18	66	0	0	110	1	99	81	18	0	393
Totals Entering	0	0	0	632	0	172	632	0	0	677	2	765	751	167	0	3166
Totals Exiting			0		804					1444	918		918			
			2		844					1383	937		937			
Vehicle Totals																
Cars	0	0	0	608	0	171	608	0	0	672	2	755	741	165	0	3114
Light	0	0	0	23	0	1	23	0	0	5	0	10	10	2	0	51
Bike	0	0	0	3.6%	0	0.6%	3.6%	0	0	0.7%	0.0%	1.3%	1.3%	1.2%	0	1.6%
Medium	0	0	0	0.0%	0	0.0%	0.0%	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%
Heavy	0	0	0	0.2%	0	0.0%	0.2%	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%
	0	0	0	0.0%	0	0.0%	0.0%	0	0	0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%

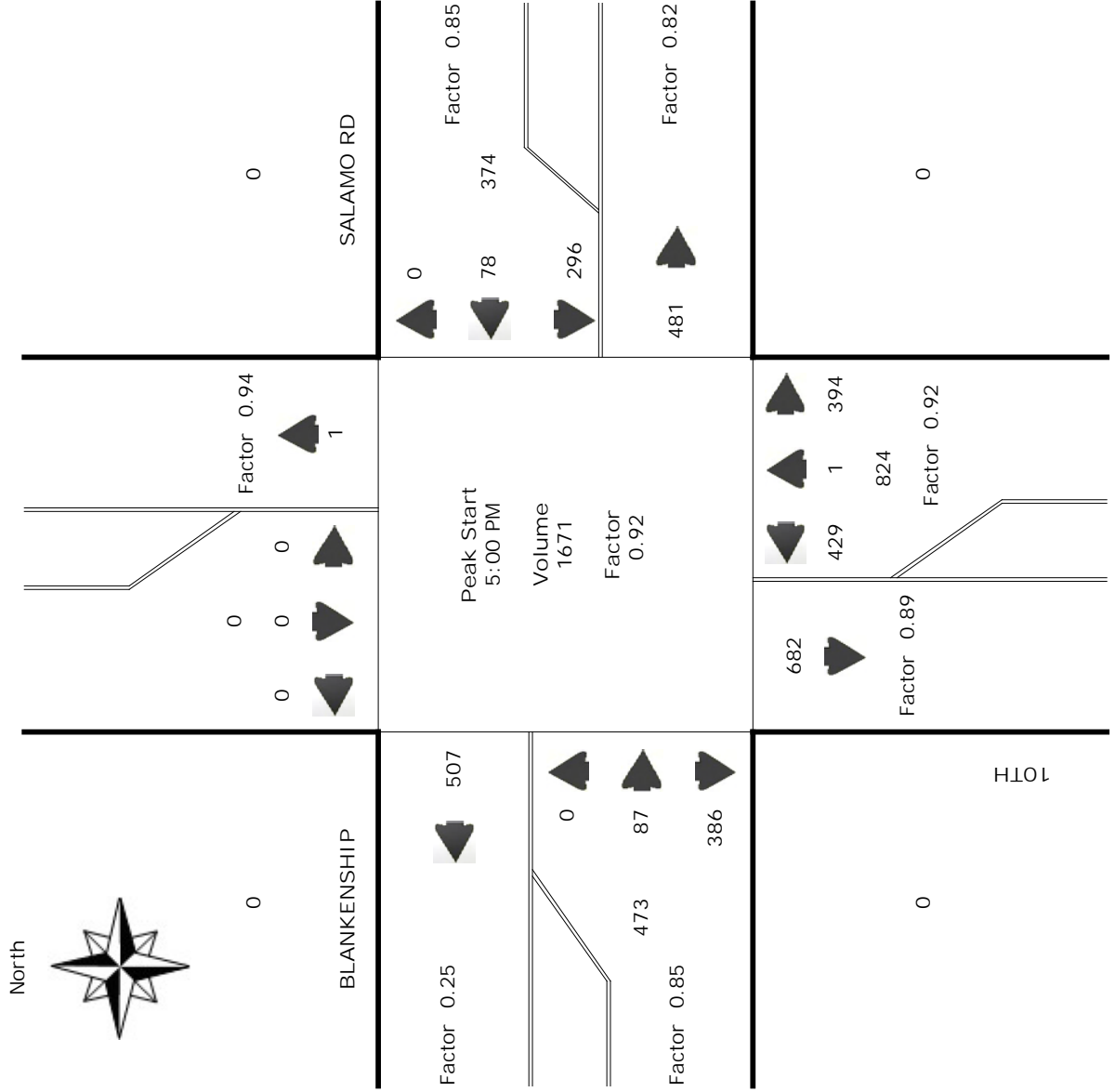
Peak Hour Detail

Peak Hour: 5:00 PM - 6:00 PM

Interval Begin	Southbound			Westbound SALAMO RD			Northbound 10TH			Eastbound BLANKENSHIP			Total			
	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left		Ped4	Right	Thru
Totals	0	0	0	296	0	394	1	429	0	386	87	0	0	386	87	1671
Factor				0.84		0.90	0.25	0.90		0.82	0.84			0.82	0.84	0.92
Entering Factor			0	374		824		473								
Exiting Factor			1	0.85		0.92		0.85								
			0.94	481		682		507								
				0.82		0.89		0.25								
Peak Vehicles																
Cars	0	0	0	288	0	393	1	423	0	383	86	0	0	383	86	1652
Light	0	0	0	7	0	1	6	18	0	3	1	0	0	3	1	18
Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Medium	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0.0%		0.0%	0.0%	0.0%		0.0%	0.0%			0.0%	0.0%	0.0%
				97.3%		99.7%	100%	98.6%		99.2%	98.9%			99.2%	98.9%	98.9%
				2.4%		0.3%	1.4%	1.1%		0.8%	1.1%			0.8%	1.1%	1.1%
				0.0%		0.0%	0.0%	0.0%		0.0%	0.0%			0.0%	0.0%	0.0%
				0.3%		0.0%	0.0%	0.0%		0.0%	0.0%			0.0%	0.0%	0.0%
				0.0%		0.0%	0.0%	0.0%		0.0%	0.0%			0.0%	0.0%	0.0%

Peak Hour Detail

Peak Hour Diagram



LOCATION: BLANKENSHIP RD @ TANNIER DR 1600-1800
CITY: WEST LINN, OR
FILENAME: V11KG 10-020

Site: 0015
Date: 5/19/2010
Wednesday

Peak Hour Detail

Interval Begin	Ped1		Southbound TANNIER		Ped2		Westbound BLANKENSHIP		Ped3		RETAIL DRIVEWAY		Ped4		Eastbound BLANKENSHIP		Total
	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	13	0	10	38	0	68	38	1	0	2	7	0	3	61	15	257
4:15 PM	0	7	2	15	32	0	66	32	0	2	4	4	0	1	73	11	246
4:30 PM	0	11	0	13	24	0	63	24	1	4	3	3	0	3	80	15	255
4:45 PM	0	16	3	12	29	0	57	29	1	1	1	25	0	5	65	11	235
5:00 PM	0	11	0	21	41	0	63	41	1	0	4	4	1	1	91	20	295
5:15 PM	0	17	2	19	41	2	83	41	0	4	6	27	3	5	86	12	315
5:30 PM	0	12	1	15	29	0	74	29	0	4	5	27	0	0	71	12	258
5:45 PM	0	14	2	24	23	0	76	23	2	2	5	26	1	1	58	9	245
Totals Entering	46	101	10	129	257	2	550	257	6	19	35	237	5	19	585	105	2106
Totals Exiting	157	253	936	923	291	286	709	631									

Vehicle Totals

Category	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Cars	0	100%	46	100%	101	100%	2	100%	2	100%	10	100%	101	100%	10	100%	101	100%
Light	0	0.0%	0	0.0%	0	0.0%	6	0.0%	0	0.0%	2	0.0%	0	0.0%	0	0.0%	1	0.0%
Bike	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Medium	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Heavy	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Totals	0	0.0%	46	100%	101	100%	2	100%	2	100%	10	100%	101	100%	10	100%	101	100%

LOCATION: BLANKENSHIP RD @ TANNIER DR 1600-1800
CITY: WEST LINN, OR
FILENAME: V11KG 10-020

Site: 0015
Date: 5/19/2010
Wednesday

Peak Hour Detail

Peak Hour: 5:00 PM - 6:00 PM

Interval Begin	Southbound TANNIER		Ped2		Westbound BLANKENSHIP		Ped3		Northbound RETAIL DRIVEWAY		Eastbound BLANKENSHIP		Total				
	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left					
Totals	0	25	5	54	2	79	296	134	3	114	10	20	5	7	306	53	1113
Factor		0.78	0.63	0.79	0.25	0.82	0.89	0.82	0.38	0.84	0.63	0.83	0.42	0.35	0.84	0.66	0.88
Entering Factor				84			509				144				366		
Exiting Factor				0.78			0.89				0.95				0.82		
				142			474				146				341		
				0.84			0.54				0.87				0.86		
Peak Vehicles																	
Cars	0	25	5	54	2	79	293	132	3	113	10	20	5	7	304	53	1105
Light	0	100%	100%	100%	100%	100%	99.0%	98.5%	100%	99.1%	100%	100%	100%	100%	99.3%	100%	99.3%
Bike	0	0	0	0	0	0	3	2	0	1	0	0	0	0	2	0	8
Medium	0	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.5%	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.7%
Heavy	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Peak Hour Detail

Peak Hour Diagram

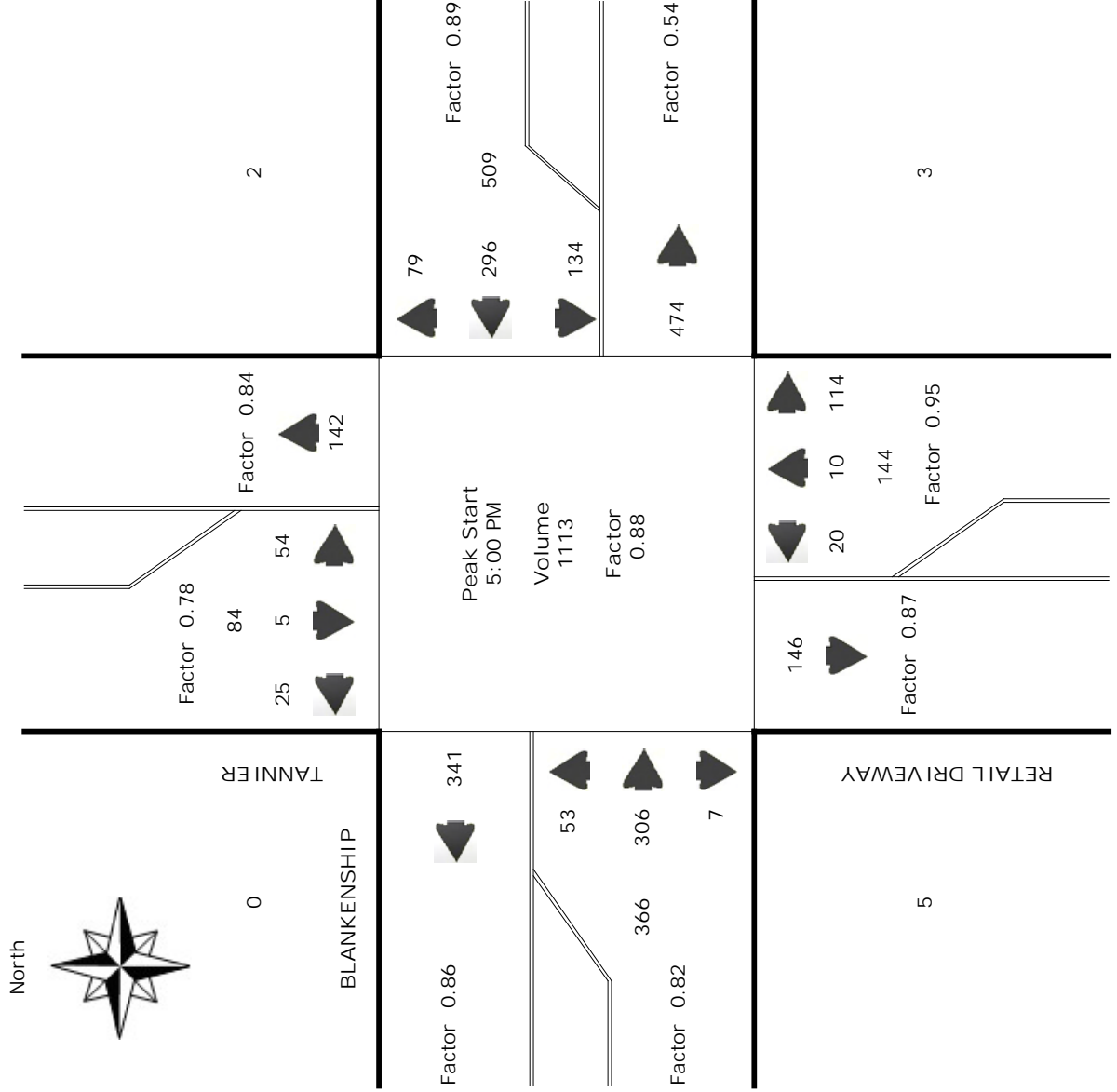




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Class II Design
Review

Lot Line Adjustment

ATTACHMENTS

- Materials Board
- Transportation Impact Analysis
- Stormwater Report

To
City of West Linn
Planning and Building
Department

For
Willamette 205 Corporate
Center Phase II

Submitted
June 30, 2006

Re-Submitted
August 22, 2006

Project Number
2060016.00

1. PROJECT SUMMARY

Applicant: West Linn Corporate Park II, LLC
1800 Blankenship Rd.
West Linn, OR 97068

Owner: West Linn Corporate Park II, LLC
1800 Blankenship Rd.
West Linn, OR 97068

Representative: Group Mackenzie
PO Box 69039
Portland, OR 97239
Contact: Rhys Konrad/Matt Butts
(503) 224-9560

Cross Streets: Tannler Drive and Blankenship Road

Tax Lot of Site: 2S 1E 35C Tax Lots 100, 102, 200

Site Area: 10.71 Acres (466,597 SF)
11.3 Acres (494,136 SF) Adjusted

Zoning: OBC – Office-Business Center

Requests: Class II Design Review
Lot Line Adjustment

Code Chapters Addressed: Chapter 55 Design Review
Chapter 85.210 Lot Line Adjustment

2. INTRODUCTION

West Linn Corporate Park II, LLC is proposing to develop a three-building office complex on the 10.71-acre vacant site located on the northwest corner of Blankenship Road and Tannler Drive. More specifically, the site comprises tax lots 100, 102, and 200 of Map 2S1E35C.

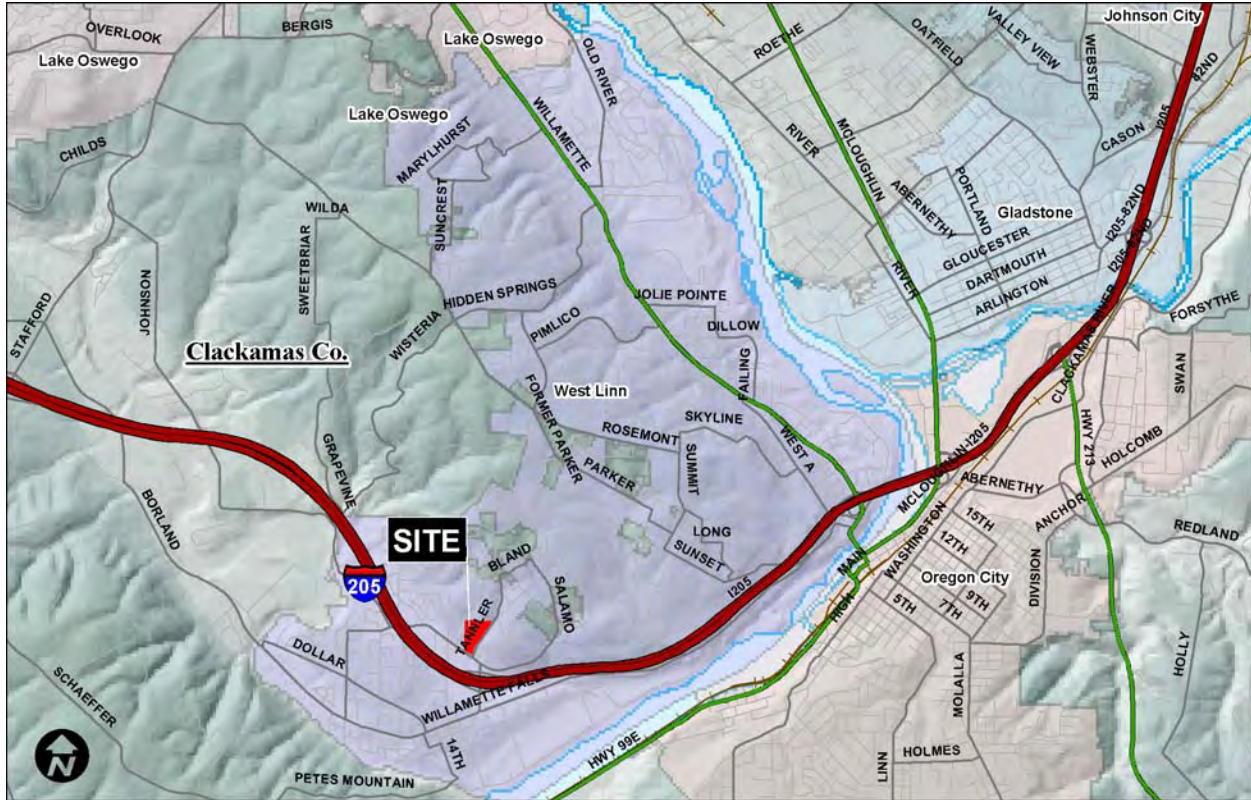
The site is zoned OBC – Office Business Center, and the proposed office use is permitted outright in this zone. The proposed development will adjoin the existing Willamette Corporate Center to the west of the subject site (i.e., tax lot 801). The subject site in combination with the site directly to the east, remain as two of the most prominent vacant office sites due to their close proximity to I-205.

In addition to the three office buildings proposed, a multi-story terraced parking structure is proposed to house the parking associated with the proposed project and limit the amount of surface parking. Drive aisles and pedestrian walkways connect the adjacent site to the west creating a complete corporate center. This will provide increased employment opportunities and expand the City’s economic potential, which is the intent of the OBC zone.

After additional neighborhood meetings and a follow up meeting with city staff, the site has been redesigned to further consolidate the proposed development on the southern portion of the site and save all significant trees located on the site. The following chart specifically identifies the changes as a result of the revised design:

Revised Site Data		
Standard	June 30 th Submittal	Proposed
Site Area	494,136 SF (Adjusted)	494,136 SF (Adjusted)
Lot Coverage	33%	28%
Building Height	45'/55'	45'/55'
Landscaping	46%	67%
Auto Parking Spaces	917	835
Bicycle Parking Spaces	150	145

This application proposes a Type II Design Review approval for a three-building office development including the parking structure, and a Lot Line Adjustment with the property to the west of the site to accommodate the parking structure.



Vicinity Map

CURRENT SITE CONDITIONS

Existing Development

The site is currently vacant. The topography of the site slopes from the northeast to the southwest of the site, including some areas over 25%. As defined by the City Code, lands over 25% are considered to be Type I or II lands. The attached site analysis plan (Sheet C1.0) shows the total Type I and II lands based upon evaluation of a site survey for the property.

In addition to some steep slopes, the site contains several trees, with a majority of them located on the northerly one-third of the site. Several of the trees have been deemed significant (mainly the Oaks in the northern portion of the site) by Mike Perkins, City Arborist, while the remaining trees are comprised of non-significant species. As is shown on the tree survey (Sheet C1.1), the trees in the northern portion of the site are scattered throughout.

No significant natural resources, as is shown on the attached exhibits (E and F), exist on the subject site. In addition, nothing is shown on Metro’s most recent (March 2005) Goal 5 inventory for the subject site (see Exhibit F) or on the City’s most recent (June 2006) Goal 5 inventory maps (see attached).

Surrounding Development

Surrounding development includes the following:

- West: Two-building office complex (Zoned OBC – Office Business Center)
- North: Single-family residential and condominiums (R-10 – low density residential and R-2.5 – medium/high multi-family residential)
- East: Vacant land (Proposed Tannler East Project) (Zoned OBC – Office Business Center)
- South: Commercial development (Zoned GC – General Commercial)

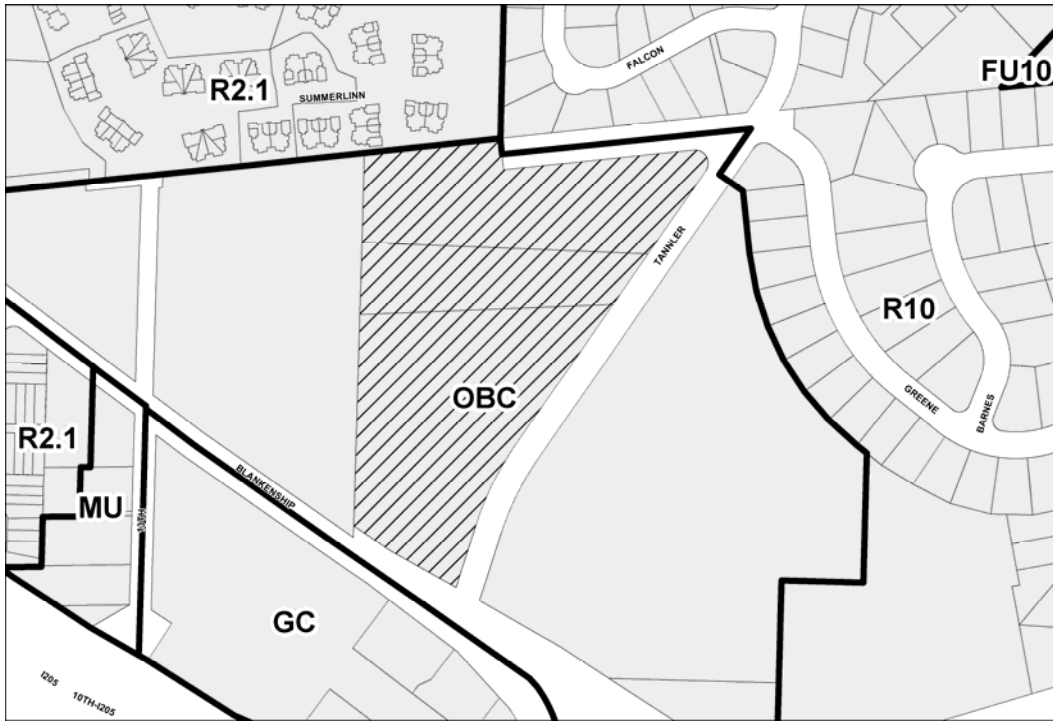
All adjacent sites, except for the northern abutting, are zoned for uses similar to the proposed development. As such, the proposed development for professional and administrative uses (permitted outright in the OBC zone) will be situated on the lower half of the site, which creates a buffer between the adjacent residential uses to the north.

Streets

The site is located at the northwest corner of Blankenship Road and Tannler Drive, both collector streets, just north of the 10th street interchange with I-205. ODOT controls the portion of Blankenship Road fronting the south side of the site.



Aerial Map



Existing Zoning Map

3. PROPOSED SITE DEVELOPMENT

BUILDING

The proposed use on the site is a three-building office complex, totaling approximately 289,935 SF, and parking structure. While the construction of the three buildings and parking structure will occur separately over time, this application requests Design Review approval of all structures proposed. A market analysis prepared by Norris Beggs and Simpson for the second quarter of 2006 is attached as Exhibit Q. The study notes that the vacancy in the suburban office market is reducing, and specifically the amount of Class A Office space is at a shortage. Please see the attached building plans for more detail (Sheets A1.0 – A3.7).

SITE IMPROVEMENTS

The proposed site improvements with this application include all the necessary grading, utility, and other improvements needed for the development of the site. Due to the sloped nature of the site, retaining walls are proposed throughout the site of which the exact location and height are shown on Sheet C3.1. Treatment of retaining walls includes a matching stone pattern similar to the base of the buildings and landscaping draping over the tops. Code requires a minimum of 828 and a maximum of 911 off-street parking spaces under the Office Use category for 289,935 SF of building area. Proposed parking consists of 79 surface parking stalls near the buildings, and a parking structure containing 756 spaces to accommodate the remaining required parking for a total of 835 spaces. All proposed parking meets all of the parking and circulation development standards in the Code for the proposed zone.

In addition to the buildings and parking structure proposed, 67% (331,056 SF) of the total site is proposed to be landscaped and/or left as open space. Specifically, of the total 7.6 acres of the site to be landscaped, 51% of the site or 5.8 acres (not including Greene Street right-of-way) is proposed to remain as undisturbed natural open space which will provide a natural buffer for adjacent residential neighbors.

As mentioned above, drive aisles and pedestrian connections are proposed to connect the existing adjacent office development with the subject site as is shown on Sheet C2.2.

The proposed site improvements necessary for the proposed development require the removal of several of the existing trees on the site. As shown on Sheet C1.1, the trees that front Tannler Drive will be removed due to the development of public frontage improvements required by the City, which include a sidewalk and planter strip along Tannler Drive. The applicant has proposed to construct a curb-tight sidewalk for the portion of Tannler Drive to the north of the proposed access, which will enable the preservation of the existing trees to the north of the proposed access. In addition the landscape trees associated with the existing development to the west will be removed due to the development of the site. All trees proposed to be removed due to public improvements and the proposed development will be replaced as a part of the site landscaping associated with this application and shown on Sheet L1.0.

The trees in the northern portion of the site have the best chance of preservation, as is identified in the attached arborist report (Exhibit G). The project arborist has identified

53 trees located on the northern portion of the site, of which many are assumed to be significant based upon preliminary meetings with the City Arborist. It appears from the site survey that tree #53 is located on the adjacent property. Of the 53 trees located in the northern portion of the site, 3 are identified as hazardous (10, 13, and 53b) and 3 have major defects or problems. Tree #53b is proposed to remain; however, as it is identified as a hazard it may need to be removed at a later date if determined to remain hazardous. All additional significant trees, whether identified as hazardous or having major defects or problems, will remain as a result of the redesign effort, which consolidates the development to the southern most portion of the site.

Tree #53, while located on the adjacent property, was included in the attached arborist report and was identified as a hazard as it, “pose[s] an unacceptable risk to the users of that property and to the project site.” The adjacent property owner will be applying for a tree removal permit in accordance with the Municipal Code at a later date to remove tree #53.

SITE LAYOUTS

As the attached exhibits demonstrate, numerous site layouts have been attempted and evaluated to minimize the loss of significant trees on the subject site. A few of the design schemes are attached (Exhibit H) to generally explain how the design has been approached.

The first two scenarios (Options A and B) show a traditional office complex development with three or four buildings proposed and surface parking, much like the existing office development to the west. The amount of building square footage is not uncommon for the size of the site as is shown in the Floor Area Ratio (FAR) Case Study below. The average square footage and FAR for suburban office developments associated with the FAR Case Study exceed what is proposed with this application.

Options C and D propose a scheme similar to the one associated with our application, except that an additional building is shown on the upper portion of the site for Option C. Several of the significant trees located in the northern portion of the site are affected with the proposed layouts. Although fewer trees are impacted with these options, Building D is positioned in the upper portion of the site adjacent to the existing residential homes. In addition, this option includes the improvement of Green Street, which would further impact the adjacent homes.

The revised, proposed development has taken into great consideration the adjacent residential uses and views impacted by the development of the subject site. As is shown on the attached site plan, the proposed development provides a large buffer of natural open space between the adjacent residential homes. In addition to situating the development on the lower portion of the site, and as shown in the study below, the scale of the proposed development does not exceed what is common for suburban office development.

FAR CASE STUDY

A case study of similar suburban office developments has been completed to demonstrate that the proposed development is not overbuilt in terms of the floor to area ratio (FAR).

FAR Case Study for Suburban Office Developments			
Address	Square Footage	Site Size (Acres)	FAR
4800 Meadows Road	125,000	3.74	0.77
Tigard Triangle	285,000	12.49	0.52
4949 Meadows Road	125,340	5.0	0.58
Kruse Woods V	190,000	5.84	0.75
Average Development	181,335	6.77	0.66
Proposed Development	289,935	11.3	0.58

The average FAR for the referenced office projects is 0.66. In addition, the projects mentioned above nearly all have a FAR higher than the proposed development. The FAR of the proposed development is approximately 0.58. Based on the above information, at a FAR of .66:1 and a site size of 11.3 acres, approximately 325,000 SF of office would be reasonable for this size of site from a design and economic standpoint.

The adjacent residential neighbors are concerned with preserving natural resources and views. This is largely addressed by consolidating the proposed development on the lower half of the site by providing structured parking – instead of consuming the site with surface parking. In addition, a 5.8 acre buffer of natural landscape is provided at the north of the site. Of the total 11.3-acre site (494,136 SF), 67% will either be landscaping or preserved natural open space. This results in only 33% or 3.73 acres of the 11.3-acre site proposed to be developed with this application.

4. COMPLETENESS RESPONSE

This section details changes that have been made in response to the July 14, 2006 letter of incompleteness for the proposed Willamette 205 Corporate Center (DR 06-24), attached as Exhibit M. A follow up meeting with staff to discuss specific issues pertaining to the application was held on July 24, 2006. As a result of staff's concerns and those of the surrounding neighborhood, an extensive redesign of the site has been conducted. The revised plans address all of the completeness items as is outlined below.

1. *Phasing*

Revised language has been incorporated into the following submittal which clarifies that the project will be constructed in phases, while this application requests Design Review approval for the project as a whole.

2. *Permission for connections from adjacent property owner*

A letter from the adjacent property owner authorizes the proposed connections. See Exhibit N.

3. *Community development code 21.070(A)(5).*

Discussions with staff have concluded that the maximum setback requirement along Blankenship Road does not apply, as Blankenship is not designated an Arterial. Please see the attached email (Exhibit O).

4. *CDC Chapter 33 and CDC 55.100(I)(2)*

The attached Stormwater Report identifies the approval criteria and addresses how an above-ground system is impractical.

5. *CDC Chapter 46*

All approval criteria are identified in Section 5 below.

6. *CDC Chapter 52*

No building signage is proposed with this application, although it has been noted that there will be a maximum height of 25' for all future building signage. A monument sign is proposed similar to the previous application as is shown on Sheet C2.2.

7. *CDC Chapter 54*

All approval criteria are identified in Section 5 below.

8. *CDC 55.100(B)(2)*

As a result of staff's comments and the concerns of the surrounding neighbors, the site has been redesigned. This application proposes to save all significant trees located on the site, meeting this requirement. Please see the revised site plan (Sheet C2.1).

9. *CDC 55.100(B)(3)*

The height and location of all proposed retaining walls necessary for the construction of the site are shown on the attached site plan. In addition the proposed grades for the site are shown on the grading plan and in the attached elevation. (See Sheet C3.1)

10. *CDC55.100 (B)(6)(i)*

Building A as it relates to Blankenship Road, including the proposed improvements is shown on the attached plan set. A specific elevation has been attached with this application, which identifies the proposed pedestrian connection from Blankenship to the building with associated improvements (See Exhibit C).

11. *CDC 55.100 (B)(7)(a) and (f)*

The revised site plan provides a pedestrian connection from Blankenship Road to the entrance of Building A, meeting this requirement.

12. *CDC 55.100(D)(3)*

A noise analysis has been provided with this application as Exhibit J.

13. *CDC 55.100(I)(1)*

A transportation analysis has been included with this application as Attachment 1. A copy of this analysis has been forwarded to Sonya Kazen of ODOT as requested.

14. *CDC Chapter 75*

This revised application has removed the request for a Type II Variance, as all significant trees are proposed to be saved with the new site plan.

TRANSPORTATION ISSUES

Attendance at the Tannler East Planning Commission and City Council Hearings has brought specific attention to transportation issues associated with the proposed development. Unlike the Tannler East application, traffic mitigation proposed for the Willamette 205 Development retains left turns into the commercial site to the south. Because the status of Tannler East is unknown at this time, the TIA presents mitigation strategies with or without Tannler East developing. Additionally, the 2015 traffic analysis prepared for the Tannler East development was reviewed to ensure transportation planning consistency. Findings and conclusions presented in Tannler East analysis accurately address 2015 conditions and are consistent with findings presented in the TIA. Further, because the proposed Willamette 205 Corporate Center development is consistent with the comprehensive plan designation, it is concluded additional 2015 analysis is not necessary.

Existing right-of-way widths necessary for the proposed mitigation efforts are sufficient enough to accommodate the proposed mitigation methods. Specifically, the worst-case scenario mitigation is listed below as is shown on the attached aerial (Exhibit P):

Proposed Mitigation for Tannler East

- Stripe a 150' left-turn lane southbound on Tannler at Blankenship.
- Modify the Salamo approach to 10th Avenue to provide a shared through/left lane and split phasing at the signal.
- Install a signal at Tannler/Blankenship and stripe a 150' left-turn lane

Additional Mitigation for First Willamette 205 Building

- Add a second eastbound right-turn lane on Blankenship at 10th Avenue.
- Adjust the Blankenship/Salamo/10th signal to provide more AM green time to Salamo and increase the westbound left-turn lane storage to 300'.

- Increase the storage from 150' to 350' for the southbound left-turn lane on Tannler at Blankenship.

Additional Mitigation for all Three Willamette 205 Buildings

- Stripe two through lanes on 10th between the I-205 ramps (requires pavement widening).
- Add a second 150' northbound through lane on 10th at the southbound I-205 ramps.
- Add a westbound right-turn lane on Blankenship at Tannler (provides second receiving lane).
- Re-stripe northbound 10th Avenue to a shared left/right lane at Blankenship.

Other Traffic Concerns in the area

- As is stated above, the proposed mitigation allows the existing left-turn into the commercial development to the south with the addition of a new signal at Tannler and Blankenship.
- As was discussed in previous discussions with the City and neighborhood groups, the applicant proposes to restrict the access from Tannler into the site to prohibit left-out movements. This restriction will eliminate trips associated with the proposed development from entering adjacent residential areas. completeness concerns

5. CLASS II DESIGN REVIEW

The following addresses the approval criteria identified in Chapter 21 Office Business Center, OBC of the West Linn Development Code:

21.010 PURPOSE

The purpose of this zone is to provide for groups of business and offices in centers, to accommodate the location of intermediate uses between residential districts and areas of more intense development, to provide opportunities for employment and for business and professional services in close proximity to residential neighborhoods and major transportation facilities, to expand the City's economic potential, to provide a range of compatible and supportive uses, and to locate office employment where it can support other commercial uses. The trade area will vary and may extend outside the community. This zone is intended to implement the policies and criteria set forth in the Comprehensive Plan.

Response: The proposed development is for a three-building office complex in the OBC zone. Existing surrounding development is comprised of adjacent residential and commercial uses. The proposed development will provide employment opportunities and business and professional services for the West Linn area in conjunction with the purpose of this zone. The proposed development provides an excellent opportunity for professional services to locate to West Linn due to one of the largest amenities of the site, close proximity and easy access to the site from I-205. This opportunity provides a great potential to expand the City’s economy and employment. The proposed project strongly supports the purpose of the OBC zone.

21.030 PERMITTED USES

The following uses are uses permitted outright in this zone:

- 11. Professional and administrative services

Response: The proposed professional and administrative uses associated with the proposed office development are permitted outright in the OBC zone. This standard is met.

21.070 DIMENSIONAL REQUIREMENTS, USES PERMITTED OUTRIGHT AND USES PERMITTED UNDER PRESCRIBED CONDITIONS

- A. *Except as may be otherwise provided by the provisions of this Code, the following are requirements for uses within this zone:*

Response: These standards are met as shown below:

Site Data	
Site Area (Adjusted)	494,136 SF
Parking Structure Footprint	65,285 SF
Building Footprint	74,410 SF
Total Building Footprint	139,695 SF
Gross Floor Area	289,935 SF

Applicable Development Standards (Commercial/Retail Use)		
Standard	Requirement	Provided
Minimum Front Lot Line Length	35'	More than 35'
Average Minimum Lot Width	35'	More than 35'
Average Lot Depth	No less than 90'	Greater than 90'
Minimum Building Setbacks		
<i>Front</i>	0'	28.5'
<i>Side – Interior Side Yard</i>	7.5'	28'
<i>Side – Abutting a Street</i>	15'	20'
<i>Rear</i>	25'	299'
<i>Abutting an Arterial</i>	20' maximum	N/A
Maximum Lot Coverage	50%	28%
Maximum Height (see note below)	45'/55'	55'
Landscaping	20% of gross site area	67%
Auto Parking Spaces	(1/350 gross SF)	835
Bicycle Parking Spaces	0.5 spaces per 1000 SF	145

Note: The criterion for maximum building height is found in Section 21.070, A.7:

The maximum building height shall be two and one-half stories or 35 feet for any structure located within 50 feet of a low or medium density residential zone and three and one-half stories or 45 feet for any structure located 50 feet or more from a low or medium density residential area.

The proposed structures on the subject site are more than 50' from the adjacent residential lots. As such, the maximum height for the site is 45'.

The definition of “building height” is found in Section 02.030 of the Code:

Building Height. *The vertical distance above a reference datum measured to the highest point of the coping of a flat roof or to the deck line of a mansard roof or to the average height of the highest gable of a pitched or hipped roof. The reference datum shall be selected by either of the following, whichever yields a greater height of building:*

The elevation of the highest adjoining sidewalk or ground surface within a five-foot horizontal distance of the exterior wall of the building when such sidewalk or ground surface is not more than 10 feet above lowest grade; or an elevation 10 feet higher than the lowest grade when the sidewalk or ground surface described above is more than 10 feet above lowest grade. The height of a stepped or terraced building is the maximum height of any segment of the building.

Based on the definition of building height, when the adjacent sidewalk or ground surface adjacent to the building is more than 10' above lowest grade, an elevation 10' higher than the lowest grade is used as the base point for measuring height. As the subject site is sloped significantly, there is more than 10' of grade change from the south side to the north side of the proposed buildings.

Thus, the definition of building height allows the proposed structure’s maximum height to be 55'. The proposed building heights vary between 45' on the high sides and 55' on the low sides as is permitted with the definition stated above. The proposed parking structure is terraced up the hill with a maximum height of approximately 35' on the south side and 3.5' on the north side, as the parking is almost on grade. This standard is met.

6. DESIGN REVIEW STANDARDS

This section addresses the applicable Design Review standards of Chapter 55.100 of the Code.

55.100 APPROVAL STANDARDS

A. *The provision of the following chapters shall be met.*

Response: Standards in the chapters identified below have been reviewed and incorporated into the accompanying plans as applicable.

1. *Chapter 33, Storm Water Quality and Detention*

Response: Please see the attached Stormwater Report. The standards of this chapter are met.

2. *Chapter 34, Accessory Structures*

Response: No accessory uses are proposed with this application. This chapter does not apply.

3. *Chapter 38, Additional Yard Area Required*

Response: All setbacks required in the OBC zone are met with this application. This chapter does not apply.

4. *Chapter 40, Building Height Limitations and Exceptions*

Response: The proposed building height is in compliance with the dimensional standards set forth in the OBC zone. Please see Section 4 above.

5. *Chapter 42, Clear Vision Areas*

Response: The subject site is a corner lot with a right-of-way width greater than 24'. As such, the appropriate clear vision triangle has been provided along the intersection of Tannler Drive and Blankenship Road. The standards of this chapter have been met.

6. *Chapter 44, Fences & Screening Outdoor Storage*

Response: No outdoor storage or fences are proposed with this application. This chapter does not apply.

7. *Chapter 46, Off-Street Parking and Loading*

46.150 Design and Standards

The following standards apply to the design and improvement of areas used for vehicle parking, storage, loading, and circulation:

A. *Design Standards:*

1. *"One standard parking space" means a minimum for a parking stall of 8 feet in width and 16 feet in length. These stalls shall be identified as "compact." To accommodate larger cars, 50 percent of the required parking spaces shall have a minimum dimension of 9 feet in width and 18 feet in length (9 X 18).*

Response: As is shown on the attached site plan (Sheet C2.1), 835 parking spaces are proposed, of which 348 are "compact" (8'x16'), and 480 are "standard" (9'x18') spaces. This standard is met.

2. *Disabled parking and maneuvering spaces shall be consistent with current federal dimensional standards and Section 46.150(B) and placed nearest to accessible building entryways and ramps.*

Response: All proposed disabled parking spaces associated with the proposed development are consistent with all applicable dimensional standards. This standard is met.

3. *Parking spaces located in the public right-of-way that require backing movements or other maneuvering within a street or right-of-way are permitted with City Engineer approval as is in the case of Willamette Falls Drive parking facilities.*

Response: This standard does not apply.

4. *Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety of traffic access and egress, and maximum safety of pedestrians and vehicular traffic on the site.*

Response: All proposed service and access drives have been designed to accommodate internal circulation and connectivity to ensure safe and efficient access to and from the site. In addition ADA accessible connections have been provided to all proposed buildings and through the parking structure. This standard is met.

5. *Each parking and/or loading space shall have clear access, whereby the relocation of other vehicles to utilize the parking space is not required.*

Response: All parking areas have been designed so that no double stacking areas exist. In addition all loading spaces have clear access to the proposed buildings as is shown on the attached site plan (Sheet C2.0). This standard is met.

6. *Except for single and two-family residences, any area intended to be used to meet the off-street parking requirements as contained in this chapter shall have all parking spaces clearly marked using a permanent paint. All interior drives and access aisles shall be clearly marked and signed to show direction of flow and maintain vehicular and pedestrian safety.*

Response: All areas proposed to be used for parking and drive aisles will be marked with a permanent paint and directional signage to facilitate safe circulation through the site. This standard is met.

7. *Except for residential parking, and parking for public parks and trailheads, at least 50 percent of all areas used for the parking and/or storage and/or maneuvering of any vehicle, boat and/or trailer shall be improved with asphalt or concrete surfaces according to the same standards required for the construction and acceptance of city streets.*

Response: All proposed parking areas will be paved with asphalt. This standard is met.

9. *Access drives from the street to off-street parking or loading areas shall be designed and constructed to facilitate the flow of traffic and provide maximum safety for pedestrian and vehicular traffic on the site. The number of access drives shall be limited to the minimum that will allow the property to accommodate and service the anticipated traffic. Access drives shall be clearly and permanently marked and defined through use of rails, fences, walls, or other barriers or markers on frontage not occupied by service drives.*

Response: The proposed access drive from Tannler Drive, and proposed connections to the existing development ensure safe and efficient will be provided on the site with the proposed development. In addition pedestrian walkways and connections have been provided to circulate pedestrians throughout the site,

including specific ADA pathways. The proposed access drive from Tannler is easily identifiable with the proposed improvements associated with the development, and the construction of a standard commercial driveway apron. This standard is met.

10. *Access drives shall have a minimum vision clearance as provided in Chapter 42, Clear Vision Areas.*

Response: The subject site is a corner lot with a right-of-way width greater than 24'. As such, the appropriate clear vision triangle has been provided along the intersection of Tannler Drive and Blankenship Road. This standard is met.

11. *Parking spaces along the boundaries of a parking lot or adjacent to interior landscaped areas or sidewalks shall be provided with a wheel stop at least 4 inches high located 2 feet back from the front of the parking stall. Alternately, landscaped areas or sidewalks adjacent to the parking stalls without wheel stops shall be two feet wider.*

Response: No wheel stops are proposed for the associated on-site parking. The adjacent landscaped or sidewalks adjacent to the proposed parking areas have been increased in width as is shown on the attached site plan (Sheet C2.0). This standard is met.

12. *Off-street parking and loading areas shall be drained in accordance with plans and specifications approved by the City Engineer. Storm drainage at commercial sites may also have to be collected to treat oils and other residue.*

Response: As is shown on the attached utility plan, all stormwater associated with parking and loading areas will be treated by water quality and detention methods prior to its connection to the City's system. This standard is met.

13. *Artificial lighting on all off-street parking facilities shall be designed to deflect all light downward away from surrounding residences and so as not to create a hazard to the public use of any road or street.*

Response: The proposed site lighting associated with this application is designed to deflect light downward away from the northerly abutting residences as is shown on the attached lighting models (See Exhibit K). This standard is met.

17. *The parking area shall have less than a five percent grade. No drainage across adjacent sidewalks or walkways is allowed.*

Response: All proposed parking areas have a grade no greater than 5%. No drainage across adjacent sidewalks or walkways is proposed. This standard is met.

18. *Commercial, office, industrial, and public parking lots may not occupy more than 50 percent of the main lot frontage of a development site.*

Response: The main lot frontage associated with the proposed development is along Blankenship, and no proposed parking occurs along the main frontage property line. This standard is met.

19. *Areas of the parking lot improved with asphalt or concrete surfaces shall be designed into areas of 12 or less spaces through the use of defined landscaped area.*

Response: Parking areas proposed with this application are designed by one of the approved arrangements, and are separated with the use of landscaping (See Sheet L1.0). This standard is met.

20. *Pedestrian walkways shall be provided in parking areas having 20 or more spaces. Walkways or sidewalks shall be constructed between major buildings/activity areas (an example in multi-family housing: between recreation center, swimming pool, manager's office, park or open space areas, parking lots, etc.) within a development, between adjacent developments and the new development, as feasible, and between major buildings/activity areas within the development and adjacent streets and all adjacent transit stops. Internal parking lot circulation and design should maintain ease of access for pedestrians from streets and transit stops. Walkways shall be constructed using a material that visually contrasts with the parking lot and driveway surface. Walkways shall be further identifiable to pedestrians and motorists by grade separation, walls, curbs, surface texture, (surface texture shall not interfere with safe use of wheelchairs, baby carriages, shopping carts, etc.) and/or landscaping. Walkways shall be six feet wide. The arrangement and layout of the paths shall depend on functional requirements.*

Response: Pedestrian walkways are provided on the site from Tannler Drive, Blankenship Road, and to the existing development to the west. In addition specific connections which cross drive aisles will be marked with scored concrete and striped. This standard is met.

21. *The parking and circulation patterns are easily comprehended and defined. The patterns shall be clear to minimize traffic hazards and congestion and to facilitate emergency vehicles.*

Response: The parking and vehicle circulation areas associated with the proposed development provide accessible traffic patterns for emergency vehicles by providing numerous access points and internal circulation in combination with the adjacent site. This standard is met.

22. *The parking spaces shall be close to the related use.*

Response: The proposed parking spaces are located as close to the proposed buildings as is possible, considering the slopes of the existing site. This standard is met.

- B. *Accessible Parking Standards for Persons With Disabilities: If any parking is provided for the public or visitors, or both, the needs of the people with disabilities shall be based upon the following standards or current applicable federal standards, whichever is more stringent:*

1. *Minimum number of accessible parking space requirements:*

Response: The proposed 289,935 SF of building requires a minimum of 828 spaces. As such 2% of the required minimum (or 17 spaces) are required to be accessible. As is shown on the attached site plan, 19 accessible spaces have been provided. This standard is met.

2. *Location of parking spaces. Parking spaces for the individual with a disability that serve a particular building shall be located on the shortest possible accessible circulation route to an accessible entrance to a building. In separate parking structures or lots that do not serve a particular building, parking spaces for the persons with disabilities shall be located on the shortest possible circulation route to an accessible pedestrian entrance of the parking facility.*

Response: All proposed accessible parking spaces are provided nearest the building entrances, or in the case of the spaces within the parking structure, nearest the ADA walkways. This standard is met.

3. *Accessible parking space and aisle shall meet ADA vertical and horizontal slope standards.*

Response: All accessible parking spaces and aisles meet the ADA standards. This standard is met.

5. *One in every eight accessible spaces, but not less than one, shall be served by an access aisle 96 inches wide. The van stall shall have an adjacent 8-foot wide aisle. All other accessible stalls shall have a 6-foot wide aisle. Two vehicles may share the same aisle if it is between them. The vertical clearance of the van space shall be 96 inches.*

Response: A total of 19 ADA spaces have been provided on the site. A total of nine access aisles have been provided to serve the 19 spaces, exceeding the above requirement. This standard is met.

D. Bicycle Facilities and Parking:

1. *Provisions shall be made for pedestrian and bicycle ways if such facilities are shown on an adopted plan.*

Response: Provisions have been provided for pedestrian and bicycle paths, see Sheet C2.2. This standard is met.

2. *Bicycle parking facilities shall either be lockable enclosures in which the bicycle is stored, or secure stationary racks which accommodate bicyclist's locks securing the frame and both wheels. The bicycle parking shall be no more than 50 feet from the entrance to the building, well lit, observable, and properly signed.*

Response: A total of 144 bicycle parking spaces are required with this application. As the subject site is sloped heavily, the requirement for the total number of bicycle spaces may be unrealistic to the actual usage. Nonetheless 145 bicycle parking spaces have been provided for the subject site. 23% of the total required spaces have been provided within 50 from the entrance to the buildings, of which all are covered. The remaining 112 spaces have been provided for in the parking structure, or which 80 are covered. This standard is met.

3. *Bicycle parking must be provided in the following amounts:*

Response: The proposed commercial office development requires 2, or 0.5 spaces per 1000 gross SF, whichever is greater; and 10 % to be covered. As is shown on the attached site plan, 145 spaces have been provided of which 113 or 78% are covered. This standard is met.

- E. *Office or industrial developments shall be allowed a 10 percent reduction in the number of required parking spaces when the property owner agrees to a demand management program that includes three or more of the following measures:*

Response: A reduction in the number of required spaces is not proposed with this application. This standard does not apply.

8. *Chapter 48, Access*

Response: Access to the subject site is proposed from Tannler Drive, as well as by connecting to the existing development to the west. All proposed access driveways meet the minimum dimensional standards (see the site plan C2.0). The standards of this chapter have been met.

9. *Chapter 52, Signs*

Response: The standards of this chapter have been met as shown on the attached sign plan (see Sheet C2.2).

10. Chapter 54, Landscaping

54.020 Approval Criteria

- A. *Every development proposal requires inventorying existing site conditions which include trees and landscaping. In designing the new project, every reasonable attempt should be made to preserve and protect existing trees and to incorporate them into the new landscape plan. Similarly, significant landscaping (e.g., bushes, shrubs) should be integrated. The rationale is that saving a 30-foot tall mature tree helps maintain the continuity of the site, they are qualitatively superior to two or three 2-inch caliper street trees, they provide immediate micro-climate benefits (e.g., shade), they soften views of the street, and they can increase the attractiveness, marketability, and value of the development.*

Response: The attached existing conditions plan shows all existing trees located on the site. The proposed development includes the removal of several of the existing trees due to the slopes of the site (specifically the trees located along Tannler Drive) and the existing landscape trees planted with the existing development to the west. All trees proposed to be removed will be replaced with the new landscaping as is shown on Sheet L1.0. This standard is met.

- B. *To encourage tree preservation, the parking requirement may be reduced by one space for every significant tree that is preserved in the parking lot area for a maximum reduction of 10 percent of the required parking. The City Parks supervisor or arborist shall determine the significance of the tree and/or landscaping to determine eligibility for these reductions.*

Response: No significant trees, as identified by the City Arborist are proposed to be removed. This standard does not apply.

- C. *Developers must also comply with the Municipal Code chapter on tree protection.*

Response: Compliance with the tree protection section of the Municipal Code is demonstrated by the proposed development. This standard is met.

- D. *Heritage trees. Heritage trees are trees which, because of their age, type, notability, or historical association are of special importance.*

Response: No heritage trees are located on the subject site. This standard does not apply.

- E. *Landscaping - by type, location and amount.*

2. *Non-residential uses. A minimum of 20 percent of the gross site area shall be landscaped. Parking lot landscaping may be counted in the percentage.*

Response: As is shown on the attached Site Plan (Sheet C2.0), a total of 331,056 SF or 67% of the site is proposed to be landscaped. This standard is met.

3. *All uses (residential uses [non-single family] and non-residential uses):*

- a. *The landscaping shall be located in defined landscaped areas which are uniformly distributed throughout the parking or loading area. There shall be one shade tree planted for every eight parking spaces. These trees shall be evenly distributed throughout the parking lot to provide shade. Parking lots with over 20 spaces shall have a minimum 10 percent of the interior of the parking lot devoted to landscaping. Pedestrian walkways in the landscaped areas are not to be counted in the percentage. The perimeter landscaping, explained in Section 54.020(E)(3)(d), shall not be included in the 10 percent figure.*

Response: The proposed parking areas include trees that will provide shade for the parking area in conformance with the above standard. In addition, 28 % of the

parking area is proposed to be landscaped, excluding the perimeter landscaping. This standard is met.

b. The landscaped areas shall not have a width of less than five feet.

Response: All proposed landscape areas are no less than five feet. This standard is met.

c. The soils, site, proposed soil amendments, and proposed irrigation system shall be appropriate for the healthy and long term maintenance of the proposed plant species.

Response: The proposed landscape improvements and associated irrigation system will ensure a long-lasting effect for the subject site. This standard is met.

d. A parking, loading, or service area which abuts a street shall be set back from the right-of-way line by perimeter landscaping in the form of a landscaped strip at least 10 feet in width. When a parking, loading, or service area, or driveway is contiguous to an adjoining parcel, there shall be an intervening five-foot wide landscape strip. The landscaped area shall contain:

- 1) Street trees spaced as appropriate to the species, not to exceed 50 feet apart on the average;*
- 2) Shrubs, not to reach a height greater than three feet six inches, spaced no more than five feet apart on the average; or,*
- 3) Vegetative ground cover such as grass, wild flowers, or other landscape material to cover 100 percent of the exposed ground within two growing seasons. No bark mulch shall be allowed except under the canopy of low level shrubs.*

Response: The proposed landscaping spacing and materials proposed will cover the ground of the subject site within two growing seasons. This standard is met.

e. If over 50 percent of the lineal frontage of the main street or arterial adjacent to the development site comprises parking lot, the landscape strip between the right-of-way and parking lot shall be increased to 15 feet in width and shall include terrain variations (e.g., 1-foot high berm) plus landscaping. This extra requirement only applies to one street frontage.

Response: The subject site does not front on a main street or arterial. This standard does not apply.

f. A parking, loading, or a service area which abuts a property line shall be separated from the property line by a landscaped area at least five feet in width and which shall act as a screen and noise buffer and the adequacy of the screen and buffer shall be determined by the criteria set forth in Section 55.100(C) and (D) except where shared parking is approved under Section 46.040. (ORD. 1408)

Response: No parking areas are proposed to abut a property line. This standard does not apply.

g. All areas in a parking lot not used for parking, maneuvering, or circulation shall be landscaped.

Response: All parking areas not used for parking, maneuvering, or circulation are landscaped as is shown on Sheet L1.0. This standard is met.

h. The landscaping in parking areas shall not obstruct lines of sight for safe traffic operation.

Response: The proposed landscape does not obstruct lines of sight for safe traffic movements. This standard is met.

- i. *Outdoor storage areas, service areas (loading docks, refuse deposits, and delivery areas), and above-ground utility facilities shall be buffered and screened to obscure their view from adjoining properties and to reduce noise levels to acceptable levels at the property line. The adequacy of the buffer and screening shall be determined by the criteria set forth in Section 55.100(C)(1).*

Response: The proposed trash enclosures are proposed to be screened using a concrete or masonry material similar in color and texture to the proposed buildings. This standard is met.

- j. *Crime prevention shall be considered and plant materials shall not be located in a manner which prohibits surveillance of public and semi-public areas (shared or common areas).*

Response: The proposed landscaping and plant materials do not adversely affect the safety of the site in terms of security. This standard is met.

- k. *Irrigation facilities shall be located so that landscaped areas can be properly maintained and so that the facilities do not interfere with vehicular or pedestrian circulation.*

Response: The proposed irrigation will be located so as to affectively enhance the proposed landscape improvements associated with this application, and will not affect the on-site circulation. This standard is met.

- l. *For commercial, office, multi-family, and other sites, the developer shall select trees that possess the following characteristics:*

- 1) *Provide generous "spreading" canopy for shade.*
- 2) *Roots do not break up adjacent paving.*
- 3) *Tree canopy spread starts at least six feet up from grade in, or adjacent to, parking lots, roads, or sidewalks unless the tree is columnar in nature.*
- 4) *No sticky leaves or sap dripping trees (no honey dew excretion).*
- 5) *No seed pods or fruit bearing trees (flowering trees are acceptable).*
- 6) *Disease resistant.*
- 7) *Compatible to planter size.*
- 8) *Drought tolerant unless irrigation is provided.*
- 9) *Attractive foliage or form all seasons.*

Response: All proposed landscape materials comply with the above-mentioned criteria as shown on the landscape plan. This standard is met.

- n. *Plant materials (shrubs, ground cover, etc.) shall be selected for their appropriateness to the site, drought tolerance, year-round greenery and coverage, staggered flowering periods, and avoidance of nuisance plants (Scotch broom, etc.).*

Response: All proposed landscape materials comply with the above standards.

11. Chapter 55 Design Review

55.100.B. Relationship to the natural and physical environment.

1. *The buildings and other site elements shall be designed and located...*

Response: No City designated Heritage Trees are located on the site. This standard is not applicable.

2. *All heritage trees, as defined in the Municipal Code...*

- a) *Non-residential and residential projects on Type I and Type II lands shall protect all heritage trees and all significant trees and tree clusters by either the dedication of these areas or establishing tree conservation easements. Development of Type I and II lands shall require the careful layout . . .*

Response: The attached site tree survey plan (Sheet C1.1) provides documentation of all existing trees assumed to be deemed significant, based upon a preliminary meeting with the City Arborist and the attached tree inventory and arborist report prepared by Steve Goetz (Exhibit G). The project arborist identifies the trees in the northern most portion of the site (54 trees) as having the best chance for preservation. A 10' drip line buffer has been placed around each tree which delineates the area for non-disturbance. The area on the site determined to be Type I and II lands, per the City definition, has also been identified on the site plan (i.e., 96,793 SF). As is stated above, no City designated Heritage Trees are located on the site.

The trees in the northern portion of the site have the best chance of preservation, as is identified in the attached arborist report (Exhibit G). The project arborist has identified 53 trees located on the northern portion of the site, of which many are assumed to be significant based upon preliminary meetings with the City Arborist. It appears from the site survey that tree #53 is located on the adjacent property. Of the 53 trees located in the northern portion of the site, 3 are identified as hazardous (10, 13, and 53b) and 3 have major defects or problems. Tree #53b, although identified as a hazard, is proposed to remain, however may need to be removed at a later date if determined to remain hazardous. All additional significant trees, whether identified as hazardous or having major defects or problems, will remain as a result of the redesign effort, which consolidates the development to the southern most portion of the site.

Tree #53, while located on the adjacent property, was included in the attached arborist report and was identified as a hazard as it, “pose[s] an unacceptable risk to the users of that property and to the project site.” The adjacent property owner will be applying for a tree removal permit in accordance with the Municipal Code at a later date to remove tree #53 as it is identified as a hazard and poses potential risk to the existing and proposed building users.

- b) *Non-residential and residential projects on non-Type I and II lands shall set aside up to 20 percent of the area to protect trees and tree clusters that are determined to be significant, plus any heritage trees*

Response: The total adjusted site area for the subject site is 494,136 SF. Of the total site area, 96,793 SF is comprised of Type I and II lands as defined in the City Code. As a result, 367,343 SF remains available to be preserved for the protection of significant trees. As is shown on the site tree survey plan (Sheet C1.1), the total amount of area that incorporates the tree canopy plus 10' drip line is 10,546 SF, which is 2.9% of the total site. As a result, per Section 55.100.B.2.b a total of up to 79,469 SF is required to be preserved for significant trees.

Of the 54 total significant trees located on the 11.3-acre site, all are proposed to remain with the exception of tree #53, which will be removed as a hazard tree.

- c) *Where stubouts of streets occur on abutting properties, and the extension of those streets will mean the loss of significant trees, tree clusters, or heritage trees.*

Response: This standard is not applicable.

- d) *For both non-residential and residential development, the layout shall achieve at least 70 percent of maximum density for the developable net area. The developable net*

area excludes all Type I and II lands and up to 20 percent of the remainder of the site . .

Response: Please see the following breakdown:

Total Adjusted Site Area	494,136 SF
Total Type I/II Lands	- (96,793 SF)
Remaining Site Area	397,343 SF
20% of Remaining site Area	- (79,467 SF)
Net Developable Area	317,876 SF
50% (maximum lot coverage for the site) of Net Area	158,938 SF
70% of the Maximum Allowed Density	111,257 SF
Proposed building Coverage	139,695 SF

The proposed building coverage associated with this site includes all three building footprints as well as the proposed parking structure. As is shown on the above table the proposed amount is over 70% of the maximum density allowed for the site. This standard is met.

3. *The topography and natural drainage shall be preserved to the greatest degree possible.*

Response: The existing site is sloped as is not uncommon in the City of West Linn and adjacent sites. In order to accommodate development and provide acceptable grades for circulation, grading of the site must occur. The design of the proposed development takes into consideration the natural challenges of the site by using retaining walls, and building basement walls to step-up the site. As such, careful placement of structures and matching of existing grade lines have been provided to the best degree possible. In addition to the area proposed for development, a large area of the site is proposed to be left as undisturbed open space, which keeps the natural grades intact. This standard is met.

4. *The structures shall not be located in areas subject to slumping and sliding...*

Response: According to the City’s Natural Disasters and Hazards map and the calculated slopes on the attached site plan, the subject site contains slopes along the eastern property line and scattered in the northern portion greater than 25%. The proposed grading and construction of retaining walls will mitigate the impacts from the surrounding steep slopes (see attached grading plan Sheet C3.1). This standard is met.

5. *There shall be adequate distance between on site buildings and on site off site buildings...*

Response: The minimum distance between buildings on site (i.e., Buildings 2 and 3) is 40'. The minimum distance between on site and off site structures is 49'. Both distances provide adequate light and air movement as well as enough room for fire protection. This standard is met.

6. *Architecture*

a) *The predominant architecture of West Linn identified in the West Linn vision process was contemporary vernacular residential designs emphasizing natural materials...*

Response: The proposed structures associated with this application have been designed as contemporary professional office buildings utilizing several types of masonry and glass with sun shades. The exterior façades of the proposed office buildings are designed to break up the scale of the buildings by using a light sandstone masonry material in an Ashler pattern to provide a strong stone-looking base. The upper floors are a combination of brick veneer and blue/green glass in a storefront and curtain wall system. The upper

floors are broken up to provide interest to the buildings, and include several exterior deck areas. The façade was designed to reflect the natural site features by providing angular corners and curved sections.

The reinforced concrete parking structure is cut into the side of the hill to minimize its appearance. The parking structure is open with a cable rail system that provides natural light and air (Exhibit I). This also provides an open area of visual interest along Tannler Drive. In addition to the cable rail, the landscape design features a “green screen” landscape material that will grow up and soften the edges of the parking structure (Exhibit I). This standard is met.

b) The proposed structure(s) scale shall be compatible with the existing structure(s) on site and on adjoining sites...

Response: The proposed development is compatible with the existing office developments to the west. The building scales are similar to the new building at the intersection of Blankenship and Summerline, as well as the existing buildings to the west. The proposed buildings are three-story buildings with a daylight basement. The maximum height of all buildings is 55', which complies with the maximum allowable height as discussed in Section 4 above.

The proposed office buildings are situated close to the adjacent rights-of-way fronting the subject site and are within the minimum setback requirements. The parking structure is within the interior of the site to centralize the parking for the development, as well as to minimize its impact on adjacent residential property. This standard is met.

c) While there has been discussion in Chapter 24 about transition, it is appropriate that new buildings should architecturally transition in terms of bulk and mass to work with...

Response: The building is designed with a strong stone base to help anchor the building to the site. The building’s mass will appear to grow out of the site with the use of the Ashler stone pattern for the base of the building and the material chosen for the retaining walls. The upper three floors of the building will be lighter and have a much wider appearance with the glass and brick features.

All three buildings have similar patterns and designs featuring curtain wall, brick, and Ashler stone base.

The buildings are located in the lower half of the site to have less impact on the residential property above. As is shown on the attached site section (Sheet C9.0), the roof of the upper building will be at an elevation of approximately 343’ (353’ with parapet). The bottom elevation of the northern abutting residential properties is approximately 410-415’. As such the proposed development does not affect the views from the adjacent properties. This standard is met.

d) Contrasting architecture shall only be permitted when the design is manifestly superior to adjacent architecture in terms of creativity, design, and workmanship...

Response: The architecture of the proposed structures does not contrast with the surrounding development that exists. This standard is not applicable.

e) Human scale is a term that seeks to accommodate the users of the building and the notion that building should be designed around the human scale...

Response: The bases of the proposed buildings are proposed to be constructed with an Ashler stone which is carried out in the retaining walls proposed. Horizontal reveals in

the building's elevations articulate the building to provide for human proportions. The floor lines and ceiling lines of the interior space also break up the building mass. The building entrances include plazas for pedestrians which are covered with the building canopies. This standard is met.

- f) *The main front elevation of commercial and office building shall provide at least 60 percent windows or transparency at the pedestrian level to create more interesting streetscape...*

Response: The main and side elevations of all buildings exceed the minimum glazing amounts at the pedestrian level. This criterion is met.

- g) *Variations in depth and roof line are encouraged for all elevations. . .*

Response: The proposed buildings include traditional contemporary design elements as is seen with the large curtain walls and flat roof. A painted metal fascia board caps the top of the building, which provides a transition from the base materials described above to the screening of the mechanical units located on the tops of the buildings. Additional building projections provide variations along the building's elevations. Additional transitions in materials and horizontal courses help break up the building façades. This standard is met.

- h) *Consideration of the micro-climate (e.g., sensitivity to wind, sun angles, shade, etc.) shall be made for building users, pedestrians, and transit users, including features like awnings.*

Response: The sunshades along the building's south facing façade provide protection for the building's users by casting a shadow line. This helps efficiencies of the building by demanding less of the mechanical units for each building. Additional canopies are proposed which help protect the building users from the natural elements. This standard is met.

- i) *The Vision Statement identified a strong commitment to developing safe and attractive pedestrian environments with broad sidewalks, canopied with trees and awnings...*

Response: A safe and efficient pedestrian access system is proposed with this application which is enhanced with the proposed interior landscaping. In addition, large entrance plazas frame the main entrances to the buildings which connect directly to the main pedestrian walkways throughout the site. This standard is met.

- j) *Sidewalk cafes, kiosks, vendors, and street furniture are encouraged...*

Response: All sidewalks associated with this application are at least 6' in width. This standard is met.

7. *Transportation Planning Rule (TPR) compliance. The automobile shall be shifted from a dominant role, relative to other modes of transportation, by the following means:*

- a) *Commercial and office development shall be oriented to the street. At least one public entrance shall be located facing an arterial street...*

Response: The proposed development is a three-building office complex on the existing 10.76 acre undeveloped site. As such, the building entrance criteria of this section do not apply. However, Building A comprises over 20% of the right-of-way frontage along Blankenship Road. This standard is met.

- b) *Multi-family projects shall be required to keep the parking at the side or rear of the buildings or behind the building line of the structure as it would appear from the right-of-way...*

Response: The proposed project is not a multi-family project. This standard is not applicable.

- c) *Commercial, office, and multi-family projects shall be built as close to the adjacent main right-of-way as practical to facilitate safe pedestrian and transit access...*

Response: Both Buildings A and B have been positioned as close as possible to their respective adjacent rights-of-way to facilitate safe pedestrian and transit access to the proposed development. In addition, four pedestrian connections to Tannler Drive are proposed which connect to the main internal pedestrian circulation system. This standard is met.

- d) *Accessways, parking lots, and internal driveways shall accommodate pedestrian circulation and access by specially textured, colored, or clearly defined foot paths at least six feet wide...*

Response: Pedestrian paths are proposed throughout the site to connect the building users between buildings and the parking structure, and to provide direct connections between the upper and lower structures. The pedestrian pathways are to be constructed of scored concrete to create a defined pathway for safe pedestrian movement throughout the site and across the asphalt driveways. Landscaping is proposed adjacent to the pedestrian paths, as well as near both of the proposed entrance plazas adjacent to the buildings. This standard is met.

- e) *Paths shall provide direct routes that pedestrians will use between buildings, adjacent rights-of-way, and adjacent commercial developments...*

Response: Four pedestrian connections are proposed from the Tannler Drive right-of-way. Additional connections to the existing development further facilitate efficient and safe pedestrian access through the site. This standard is met.

- f) *At least one entrance to the building shall be on the main street, or as close as possible to the main street. The entrance shall be designed to identify itself as a main point of ingress/egress.*

Response: A main entrance to Building A has been provided with the redesigned site plan. This standard is met.

- g) *Where transit service exists, or is expected to exist, there shall be a main entrance within a safe and reasonable distance of the transit stop...*

Response: An existing transit stop is located adjacent to the subject site on the corner of Blankenship Road and Tannler Drive. A pedestrian path is proposed which connects the main entrance of Building A to the sidewalk of Tannler Drive, this will provide access to the transit stop mentioned above. This standard is met.

- h) *Projects shall bring at least part of the project adjacent to, or near the main street right-of-way in order to enhance the height-to-width ratio along that particular street...*

Response: The proposed development situates Building A and B as close as is possible to their respective rights-of-way to emphasize the height to width ratio as is perceived from the individual streets. This standard is met.

- i) *These architectural standards shall apply to public facilities such as reservoirs, water towers, treatment plants, fire stations, pump stations, power transmission facilities, etc. It is recognized that many of these facilities, due to their...*

Response: The proposed development is not a public facility. This standard is not applicable.

- j) *Parking spaces at trailheads shall be located so as to preserve the view of, and access to, the trailhead entrance from the roadway...*

Response: The proposed parking spaces associated with this application do not affect the public trail located at the northern most boundary of the subject site. This standard is not applicable.

C. Compatibility between adjoining uses, buffering, and screening.

1. *In addition to the compatibility requirements contained in Chapter 24, buffering shall be provided between different land uses...*

Response: The subject site is zoned OBC and all boundaries of the site share the same designation and similar uses except the northern lot line. The adjacent properties to the north are zoned R-10 – low density residential and R-2.5 – medium/high multi-family residential. The proposed site plan shows a large amount of the subject site proposed to be left as open space adjacent to the residential zoned parcels. The open space in combination with the natural slopes of the site, acts as a buffer between the proposed commercial use and the existing residential use. This standard is met.

2. *On-site screening from view from adjoining properties of such things as service areas, storage areas, and parking lots shall be provided and the following factors will be considered in determining the adequacy of the type and extent of the screening...*

Response: In addition to the open space buffer mentioned above, which screens the buildings and the associated development, additional screening is proposed on the site. Screening of the mechanical units for all of the buildings is accomplished by using a 12' penthouse with a decorative trellis attached to the top. In addition, the trash enclosures proposed will be screened by landscaping and a wall with a stone similar to that used on the buildings. The proposed site is compatible in use with the remaining adjacent properties. This standard is met.

3. *Roof top air cooling and heating systems and other mechanical equipment shall be screened from view from adjoining properties.*

Response: Please see the above section. This standard is met.

D. Privacy and Noise.

1. *Structures which include residential dwelling units shall provide private outdoor areas for each ground floor unit which is screened from view by adjoining units.*

Response: This proposal does not include residential units. This standard is not applicable.

2. *Residential dwelling units shall be placed on the site in areas having minimal noise exposure to the extent possible...*

Response: This proposal does not include residential units. This standard is not applicable.

3. *Structures or on site activity areas which generate noise, lights, or glare shall be buffered from adjoining residential uses in accordance with the standards in Section 55.100(C) where applicable..*

Response: As indicated in the Noise Analysis (Exhibit L), the proposal will not create any noticeable increase in noise level. As is shown on the attached lighting model, a very limited amount of light is visible from the residential (homes) above. This standard is met.

E. Private Outdoor Area.

Response: This section only applies to multi-family projects. This criterion is not applicable.

F. Shared Outdoor Recreation Areas.

Response: This section only applies to multi-family projects and projects with 10 or more duplexes or single-family attached dwellings on lots under 4,000 SF. This standard is not applicable.

G. Demarcation of Public, Semi-Public, and Private Spaces. The structures and site improvements shall be designed so that public areas such as streets or public gathering places, semi-public areas, and private outdoor areas are clearly defined in order to establish persons having a right to be in the space, to provide for crime prevention, and to establish maintenance responsibility. These areas may be defined by...

Response: The proposed development is easily identifiable as a private area with the prominence of the proposed structures from the adjacent rights-of-way, and through the treatment of the perimeter of the site using landscaping. In addition, standard commercial driveways and signage further identify the site as a private area. This standard is met.

H. Public Transit. Provisions for public transit may be required where the site abuts an existing or planned public transit route. The required facilities shall be based on the following...

Response: The existing transit stop located on the corner of Blankenship Road and Tannler Drive is sufficient enough in size and proximity to serve the proposed development. This standard is met.

I. Public Facilities.

1) Streets. Sufficient right-of-way and slope easement shall be dedicated to accommodate all abutting streets to be improved to City's Improvement Standards and Specifications . . .

Response: Sufficient right-of-way is planned to be dedicated on both Blankenship Road and Tannler Drive to meet future improvements by the City of West Linn and ODOT as is required. This standard is met.

2) Drainage. A registered civil engineer shall prepare a plan and statement which shall be supported by factual data that clearly shows that there will be no adverse impacts from increased intensity of runoff off . . .

Response: As indicated in the attached Stormwater Report, there will be no adverse impacts from the increased intensity of runoff from the site. This standard is met.

3) Municipal water. A registered civil engineer shall prepare a sewerage collection system plan which demonstrated sufficient onsite capacity to serve the proposed development. . .

Response: Sufficient water capacity is available for the proposed development. Please refer to the attached utility plan for the proposed locations, size, and connection points to the existing public infrastructure. This standard is met.

4) Sanitary sewers. A registered civil engineer shall prepare a sewerage collection system plan which demonstrates sufficient onsite capacity to serve the proposed development . . .

Response: Sufficient sanitary sewer capacity is available for the proposed development. Please refer to the attached utility plan for the proposed locations, size, and connection points to the existing public infrastructure. This standard is met.

5) Solid waste and recycling storage areas. Appropriately sized and located solid waste and recycling areas shall be provided. Metro standards shall be used.

Response: Two trash areas are proposed with this development which are easily accessible and in close proximity to their respective buildings. Please see the attached site plan (Sheet C2.1) for specific locations. This standard is met.

J. Crime prevention and safety/defensible space.

1) *Windows shall be located so that areas vulnerable to crime can be surveyed by the occupants.*

Response: The proposed building elevations include large amounts of windows on all façades. This provision provides the occupants of the building the opportunity to view the property which provides no area vulnerable to crime on the site. In addition, sufficient lighting will be provided as is shown on the attached lighting plan (Sheet E1.0) which will provide adequate safety during night hours. This standard is met.

2) *Interior laundry and service areas shall be located in a way that they can be observed by others.*

Response: Both loading areas have been positioned as close to the buildings as possible to facilitate ease of movement from the parking areas to the buildings. In addition, the buildings have large amounts of windows on all sides which allow the building users to view the service activities from within. This standard is met.

3) *Mail boxes, recycling, and solid waste facilities shall be located in lighted areas having vehicular or pedestrian traffic.*

Response: All outdoor pedestrian areas (i.e., walkways, trash, and recycling areas, etc.) will be lighted. Mailboxes will be located within each building. This standard is met.

4) *The exterior lighting levels shall be selected and the angles shall be oriented towards areas vulnerable to crime.*

Response: The exterior lighting was selected to match the existing site lighting and to evenly illuminate the drive aisle and parking areas. Metal halide lamps are being used for their higher color rendering index (CRI). Calculations show that the lighting levels meet and exceed the recommended maintained illuminance values for parking lots (personal/enhanced security) shown in the IESNA handbook figures 22-21 and 22-22. Lighting levels also meet, and in most cases exceed, the recommended average illuminances for security lighting shown in the IESNA handbook figure 29-17. This standard is met.

5) *Light fixtures shall be provided in areas having heavy pedestrian or vehicular traffic and in potentially dangerous areas such as parking lots, stairs, ramps, and abrupt grade changes.*

Response: The site lighting poles are located in such a way that it provides even illumination at the parking areas, drive aisles, and sidewalks. Calculations show that the lighting levels meet and exceed the recommended maintained illuminance and maximum-to-minimum illumination ratios for parking lots (basic) shown in the IESNA handbook figure 22-21. This standard is met.

6) *Fixtures shall be placed at a height so that light patterns overlap at a height of seven feet which is sufficient to illuminate a person...*

Response: The site lighting poles are located at a height of 30' to match site lighting on the existing site to the west. 400-watt metal halide lamps are used and are at a height of 30'. See attached sketch (Exhibit M). This standard is met.

7) *Lines of sight shall be reasonably established so that the development site is visible to police and residents.*

Response: As shown on the site plan, the proposed development is visible from both Blankenship Road and Tannler Drive. This standard is met.

8) *Security fences for utilities (e.g., power transformers, pump stations, pipeline control equipment, etc.) or wireless communication facilities may be up to eight feet tall in order to protect public safety...*

Response: This standard is not applicable.

K. Provisions for persons with disabilities.

Response: All applicable regulations set forth in the ADA have been provided including the appropriate number of accessible parking spaces and walkways. This standard is met.

L. Signs.

Response: The sign is proposed to be attached to the lower retaining wall adjacent to the intersection of Blankenship and Tannler as is shown on the attached sign plan (Sheet C2.2). This standard is met.

M. Utilities

Response: The applicant will be responsible for arrangements with utility companies related to changes in electrical lines and other wires including but not limited to communication, street lighting, and cable television.

N. Wireless Communication Facilities.

Response: This section is not applicable.

7. LOT LINE ADJUSTMENT

West Linn Corporate Center, LLC is proposing a lot line adjustment and lot consolidation between the common property line of tax lots 801, 100, 102, and 200 of Map 2S 1E 35C. The proposed adjustments are listed in the table below:

Lot	Zoning	Existing	Proposed	Change
801	OBC	7.43 acres	6.68 acres	- 0.75 acres
100	OBC	3.63 acres	3.63 acres	0.00 acres
102	OBC	1.97 acres	3.98 acres	+ 2.01 acres
200	OBC	5.11 acres	3.96 acres	- 1.15 acres

Standard	Requirement	Phase I (After Adjustment)	Phase II
Minimum Front Lot Line	35'	Greater than 35'	269.76
Average Minimum Lot Width	35'	Greater than 35'	Approximately 506'
Average Lot Depth	No less than 90'	Greater than 90'	Greater than 90'
Minimum Building Setbacks			
<i>Front</i>	0'	25'	28.5'
<i>Side – Interior Side Yard</i>	7.5'	20'	28'
<i>Side – Abutting a Street</i>	15'	25'	20'
<i>Rear</i>	25'	165'	299'
<i>Abutting and Arterial</i>	20' maximum	N/A	N/A
Maximum Lot Coverage	50%	28%	28%
Landscaping	20% of gross site area	32%	67%
Auto Parking Spaces	(1/350 gross SF)	359	835
Bicycle Parking Spaces	0.5 spaces per 1000 SF	52	145

85.210 LOT LINE ADJUSTMENTS – APPROVAL STANDARDS

A. *The Director shall approve or deny a request for a lot line adjustment based on the criteria stated below:*

1. *An additional lot or buildable lot shall not be created by the lot line adjustment and the existing parcel shall not be reduced in size by the adjustments below the minimum lot size established by the approved zoning for that district.*

Response: The proposed lot line adjustment will involve moving the adjoining property lines between lots 801, 100, 102, and 200 of Map 2S 1E 35C. The minimum lot size requirements of the OBC zone are provided as is shown on the table above. No additional lots will be created. This standard is met.

2. *By reducing the lot size, the lot or structure(s) on the lot shall not be in violation of the site development regulations for that district. For example, the lot line adjustment shall not result in an overall loss of density below 70 percent except as allowed by CDC Section 85.200(J)(7). (ORD. 1442)*

Response: Lot 801 is proposed to be reduced in size by .75 acres (see the above chart). The proposed lot coverage of lot 801 is 28% which satisfies the density requirement listed above. This standard is met.

3. *The lot line adjustment is intended to allow minor lot line deviations, or to consolidate undersized or irregular shaped lots. It can also be used to change a limited number of property lines up to the point that the County Surveyor would determine a re-plat of the subdivision is in order. A replat is the complete reconfiguration and realignment of a subdivision's lot lines.*

Response: The proposed lot line adjustment is a minor reconfiguration of the common property line between lots 801, 100, 102, and 200 as well as a consolidation of lot 102 with lot 200. The proposed adjustments do not necessitate a replat of the subdivision. This standard is met

4. *New lot lines shall be generally straight with only a few deviations. Lot lines shall not gerrymander or excessively zig zag along to accommodate tool sheds, accessory structures, other buildings, etc.*

Response: The proposed lot lines have been placed to meet all applicable dimensional standards of the OBC zone, and to create a definition between the existing corporate center and the proposed phase II expansion, specifically to include the proposed parking structure. This standard is met.

5. *The lot line adjustment will not affect existing public utility easements nor existing utilities unless an easement vacation is obtained and any required utility relocations are paid for by the applicant. (ORD. 1401)*

Response: No existing utility easements are affected with the proposed property line adjustment. This standard is met.

8. CONCLUSION

Based on the information presented and discussed in this narrative and the attached supporting plans and documents, the proposed zone change, conditional use, design review, and variance meet the established standards and approval criteria and therefore merit approval.

9. EXHIBITS

- A. Application
- B. Plan Set
- C. Color Building Elevations
- D. Color Perspective
- E. City of West Linn Goal 5 Inventory (June 2006)
- F. Metro Goal 5 Inventory Aerial (March 2004)
- G. Arborist Report
- H. Site Layouts
- I. Examples of Green Screens and Cable Rail System
- J. Noise Analysis
- K. Lighting Sketches, Models, and Cut Sheets
- L. Neighborhood Contact Materials
- M. July 14 letter from the City
- N. Letter authorizing connections to adjacent property
- O. 7/18 Email from Gordon Howard
- P. Traffic Mitigation Aerial
- Q. Norris Beggs and Simpson Market Study

West Linn

DEVELOPMENT REVIEW APPLICATION

TYPE OF REVIEW (Please check all boxes that apply):

- | | |
|---|---|
| <input type="checkbox"/> Annexation | <input type="checkbox"/> Non-Conforming Lots, Uses & Structures |
| <input type="checkbox"/> Appeal and Review | <input type="checkbox"/> Planned Unit Development |
| <input type="checkbox"/> Conditional Use | <input type="checkbox"/> Quasi-Judicial Plan or Zone Change |
| <input checked="" type="checkbox"/> Design Review | <input type="checkbox"/> Street Vacation |
| <input type="checkbox"/> Easement Vacations | <input type="checkbox"/> Subdivision |
| <input type="checkbox"/> Flood Management Area | <input type="checkbox"/> Temporary Uses |
| <input type="checkbox"/> Historic District Review | <input type="checkbox"/> Tualatin River Greenway |
| <input type="checkbox"/> Home Occupation - Type II | <input checked="" type="checkbox"/> Variance |
| <input type="checkbox"/> Legislative Plan or Change | <input type="checkbox"/> Wetland |
| <input checked="" type="checkbox"/> Lot Line Adjustment | <input type="checkbox"/> Willamette River Greenway |
| <input type="checkbox"/> Minor Partition | <input type="checkbox"/> Other/Misc. |
| <input type="checkbox"/> Natural Drainageway Protection | |

TOTAL FEES/DEPOSIT \$22,600

West Linn Corporate Park II 1800 Blankenship Rd Ste 145 West Linn 97068
 OWNER ADDRESS CITY ZIP PHONE(res. & bus.)

BLACK HAWK
 APPLICANT ADDRESS CITY ZIP PHONE(res. & bus.)

Group Mackenzie -- Rhys Konrad 0690 SW Bancroft Portland 97239 503.224.9560
 CONSULTANT ADDRESS CITY ZIP PHONE (bus.)

SITE LOCATION NW corner of Tanner and Blankenship

Assessor's Map No.: 2S 1E 35C Tax Lot(s): 100, 102, 200 Total Land Area: 10.71 ac

1. Three complete sets of application material required.
2. All application fees are non-refundable (excluding deposit).
3. The owner/applicant or their representative should be present at all public hearings.
4. A denial or grant may be reversed on appeal. No permit will be in effect until the appeal period has expired.

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application.

SIGNATURE OF PROPERTY OWNER(S)

X 

Date 6-13-06

SIGNATURE OF APPLICANT(S)

X _____

Date _____

BY SIGNING THIS APPLICATION, THE CITY IS AUTHORIZED REASONABLE ACCESS TO THE PROPERTY.
 ACCEPTANCE OF THIS APPLICATION DOES NOT INFER A COMPLETE SUBMITTAL.
 COMPLETENESS WILL BE DETERMINED WITHIN 30 DAYS OF SUBMITTAL.

PLANNING AND BUILDING; 22500 SALAMO RD #1000; WEST LINN, OR 97068
PHONE: 503-656-4211 FAX: 503-656-4106

CODE ANALYSIS

BASED ON THE 2003 INTERNATIONAL BUILDING CODE (IBC) WITH OREGON STRUCTURAL SPECIALTY CODE AMENDMENTS

CONSTRUCTION TYPE: I-B
 FOUR STORIES
 FIRE PROTECTION: NON-SPRINKLERED PER OSSC 803.3.1.1
 OCCUPANCY: OPEN PARKING GARAGE S-2 PER SECTION 406.3

BUILDING DATA

LEVEL	NET FLOOR AREA
GROUND FLOOR	43,424 SF
FIRST FLOOR	65,285 SF
SECOND FLOOR	65,285 SF
THIRD FLOOR	65,285 SF
TOTAL	239,279 SF

ALLOWABLE AREA - FORMULA (SECTION 506.1)

$$A_0 = A_1 \left[\frac{A_1 I_f}{100} \right] + \left[\frac{A_1 I_b}{100} \right] \quad (\text{EQUATION 5-1})$$

A₀=ALLOWABLE AREA PER FLOOR (SQUARE FEET)
 A₁=TABULAR AREA PER FLOOR IN ACCORDANCE W/ TABLE 503 (SQUARE FEET)
 I_f=AREA INCREASE DUE TO GARAGE (PERCENT) W/ SECTION 506.2
 I_b=AREA INCREASE DUE TO SPRINKLER PROTECTION (PERCENT) AS CALCULATED IN ACCORDANCE W/ SECTION 506.3

ALLOWABLE AREA - CALCULATION

$$A_0 = 79,000 + \left[\frac{79,000(0)}{100} \right] + \left[\frac{79,000(0)}{100} \right]$$

$$A_0 = 79,000 + 50,250 + 0$$

$$A_0 = 138,250 \text{ SF}$$

AREA DETERMINATION (SECTION 506.4)

$$A_0 = 138,250 \text{ SF}$$

85,285 SF PROPOSED (183,250 SF ALLOWABLE)

FRONTAGE INCREASE - FORMULA (SECTION 506.2)

$$I_f = 100 \left[\frac{F}{P} - 0.25 \right] \frac{W}{30} \quad (\text{EQUATION 5-2})$$

$$I_f = 100 \left[\frac{0.86}{0.86} - 0.25 \right] \frac{30}{30}$$

$$I_f = 100(0.75)(1.0)$$

$$I_f = 75\%$$

I_f=AREA INCREASE DUE TO FRONTAGE
 F=BUILDING PERIMETER WHICH FRONTS ON A PUBLIC WAY OR OPEN SPACE HAVING 20 FEET (6096mm) OPEN MINIMUM WIDTH (FEET)
 P=PERIMETER OF ENTIRE BUILDING (FEET)
 W=WIDTH OF PUBLIC WAY OR OPEN SPACE (FEET) IN ACCORDANCE WITH SECTION 506.2.1

BUILDING HEIGHT PER TABLE 503

ALLOWABLE: 55'-0" / 4 STORIES

PROVIDED: 4 FLOORS(3 ELEVATED DECKS)

FIRE RESISTIVE RATING

BASED ON FIRE SEPARATION (TABLE 602)

> 30'

BUILDING FIRE RESISTIVE REQUIREMENTS (TABLE 601)

STRUCTURAL FRAME	2 HRS
EXTERIOR BEARING WALLS	2 HRS
EXTERIOR NON-BEARING WALLS	0 HRS
INTERIOR NON-BEARING WALLS	0 HRS
FLOORS	2 HRS
ROOF	NA
SHAFTS (707.2)	NA
STAIRS (1019.1 EXCEPTION 5)	NR

OCCUPANT LOAD CALCULATION

LEVEL	AREA	LOAD FACTOR (1004.1.2)	OCCUPANT LOAD	EXIT WIDTH REQUIRED/	
				RECD. EXITS (1014.1)	EXIT WIDTH PROVIDED
GROUND FLOOR	43,424 SF	200 (GROSS)	8,685	2	38'-4" / 7'-2"
FIRST FLOOR	65,285 SF	200 (GROSS)	13,057	4	80'-2" / 21'-6"
SECOND FLOOR	65,285 SF	200 (GROSS)	13,057	2	80'-0" / 21'-6"
THIRD FLOOR	65,285 SF	200 (GROSS)	13,057	2	41'-8" / 14'-4"

EGRESS LIGHTING

EGRESS LIGHTING AND EMERGENCY ILLUMINATION POWER IS REQUIRED (1006.3).

GRUPP
 MACKENZIE
 Architectural
 Interior Design
 Land Use Planning
 Seattle WA 208.749.8899
 Vancouver WA 360.995.7879
 Portland OR 503.224.9560

Client:
BLACKHAWK
TRANSPORTATION LLC
 20200 SW 88th AVE
 PMB 166
 WEST Linn, OR
 97708

Project:
WILLAMETTE 205
CORPORATE CENTER

ELECTRICAL
INTERFACE ENGINEERING
 708 SW THIRD AVENUE
 SUITE 400
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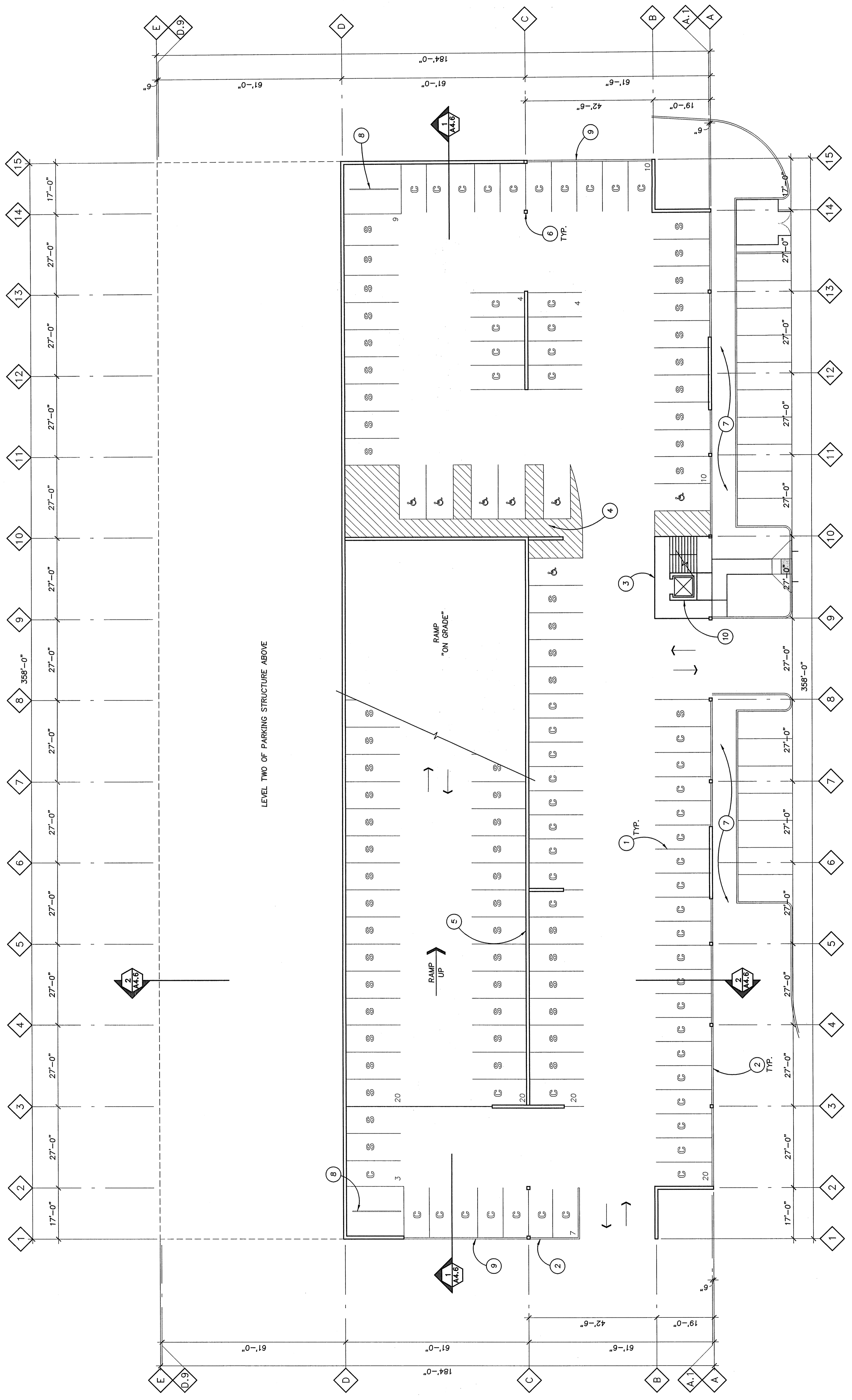
SHEET TITLE:

PARKING
STRUCTURE
BUILDING INFO
AND
CODE SUMMARY

DRAWN BY: ARS
 CHECKED BY: RCT
 SHEET

A4.0

JOB NO. 20600016.00



LEVEL TWO OF PARKING STRUCTURE ABOVE

1 PARKING GARAGE - LEVEL ONE PLAN
 A4.1 1/16"=1'-0"

GENERAL NOTES
 1. VERIFY AND CONFIRM ALL DIMENSIONS. PRIOR TO START OR
 COSTUMER. NOTIFY ARCHITECT/ENGINEER OF ANY
 DISCREPANCIES.

KEYNOTES
 1. 4" WIDE WHITE STRIPING, TYPICAL
 2. 3'-6" HIGH GUARD RAIL (MAX
 OPENING 4")
 3. 4" RAISED "SIDEWALK"
 4. 6'-0" WIDE STRIPED WALK WAY
 5. CONCRETE COLUMN
 6. LANDSCAPING
 7. BIKE PARKING FOR 16 BICYCLES
 8. 3" CONCRETE WALL
 10. ELEVATOR

OPEN PARKING STRUCTURE CALCULATIONS

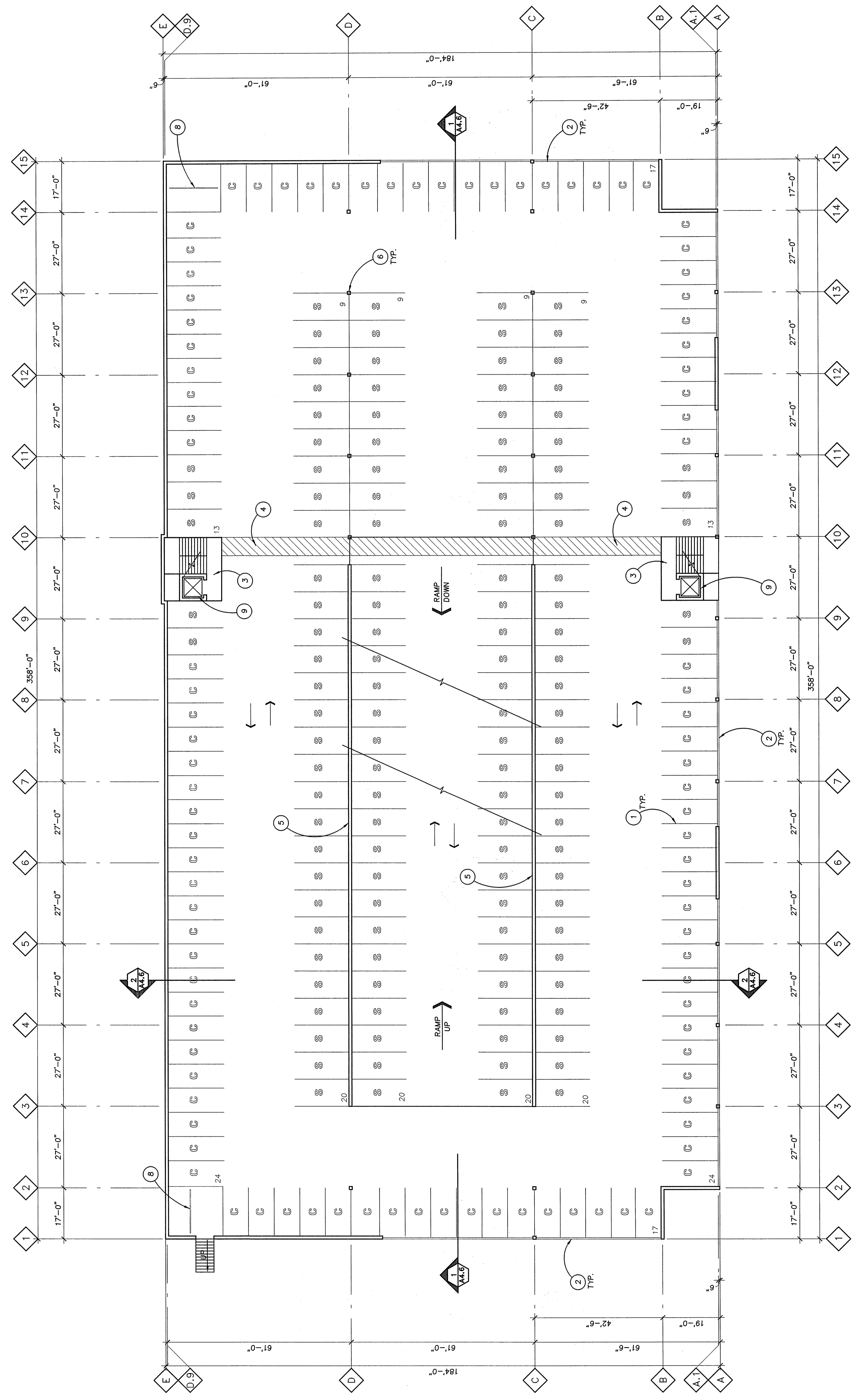
- LEVEL ONE HAS THE FOLLOWING CHARACTERISTICS:
 A. TOTAL PERIMETER WALL AREA: 961 LF
 B. PERIMETER WALL WHICH IS OPEN : 391 LF (40.6 %)
 C. TOTAL PERIMETER WALL AREA 961' x 10' = 9,610 SF
 D. PERIMETER WALL AREA WHICH IS OPEN: (391' x 7.5')=2,948 SF (30.5 %)
 THEREFORE THIS MEETS AND EXCEEDS THE OPEN PARKING STRUCTURE
 REQUIREMENTS OF THE IBC - SECTION 406.

PARKING GARAGE DATA

	STANDARD	COMPACT	HANDICAP
LEVEL ONE	71	56	7
LEVEL TWO	126	98	-
LEVEL THREE	126	98	-
LEVEL FOUR	78	96	-
TOTAL	401	348	7

TOTAL PARKING SPACES
756 SPACES

BIKE PARKING	
LEVEL ONE	32
LEVEL TWO	32
LEVEL THREE	16
LEVEL FOUR	32
TOTAL	112



1 PARKING GARAGE - LEVEL TWO PLAN
 1/16"=1'-0"

KEYNOTES

- 4" WIDE WHITE STRIPING, TYPICAL
- 3'-6" HIGH GUARD RAIL (MAX OPENING 4")
- 4" RAISED "SIDEWALK"
- 6'-0" WIDE STRIPED WALK WAY
- CONCRETE SHEAR WALL
- CONCRETE COLUMN
- BIKE PARKING FOR 16 BICYCLES
- ELEVATOR

GENERAL NOTES

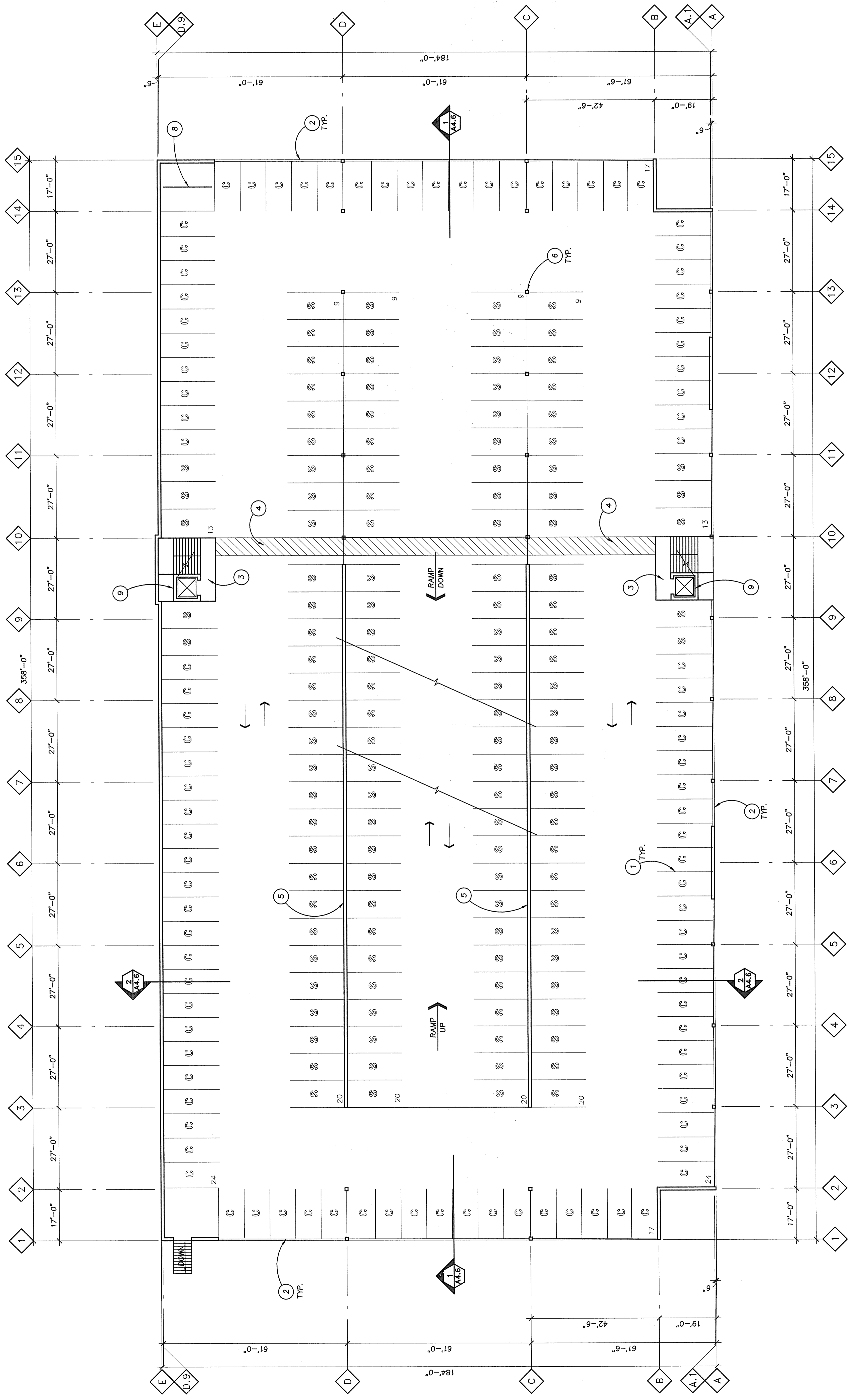
- VERIFY AND CONFIRM ALL DIMENSIONS, PRIOR TO START OR CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

OPEN PARKING STRUCTURE CALCULATIONS

- LEVEL ONE HAS THE FOLLOWING CHARACTERISTICS:
 A. TOTAL PERIMETER WALL AREA: 1084 LF
 B. PERIMETER WALL WHICH IS OPEN: 449 LF (41.4 %)
 C. TOTAL PERIMETER WALL AREA (1084 x 10%) = 108.40 SF
 D. PERIMETER WALL AREA WHICH IS OPEN: (449 x 7.5%) = 33.68 SF (31.1 %)
 THEREFORE THIS MEETS AND EXCEEDS THE OPEN PARKING STRUCTURE REQUIREMENTS OF THE IBC - SECTION 406.

PARKING GARAGE DATA

	STANDARD	COMPACT	HANDICAP	BIKE PARKING
LEVEL ONE	71	56	7	32
LEVEL TWO	126	98	-	32
LEVEL THREE	126	98	-	16
LEVEL FOUR	78	96	-	32
TOTAL	401	348	7	112
TOTAL PARKING SPACES	756 SPACES			



OPEN PARKING STRUCTURE CALCULATIONS

- LEVEL ONE HAS THE FOLLOWING CHARACTERISTICS:
 A. TOTAL PERIMETER WALL AREA: 1084 LF
 B. PERIMETER WALL WHICH IS OPEN: 527 LF (48.6%)
 C. TOTAL PERIMETER WALL AREA (1084 x 10') = 10,840 SF
 D. PERIMETER WALL AREA WHICH IS OPEN (527 x 7.5') = 3,735 SF (36.4%)
 THEREFORE THIS MEETS AND EXCEEDS THE OPEN PARKING STRUCTURE REQUIREMENTS OF THE IBC - SECTION 406.

KEYNOTES

- 4" WIDE WHITE STRIPING, TYPICAL
- 3'-6" HIGH BOARD RAIL (MAX OPENING 4")
- 4" RAISED "SIDEWALK"
- 6'-0" WIDE STRIPED WALK WAY
- CONCRETE SHEAR WALL
- CONCRETE COLUMN
- NOT USED
- BIKE PARKING FOR 16 BICYCLES
- ELEVATOR

GENERAL NOTES

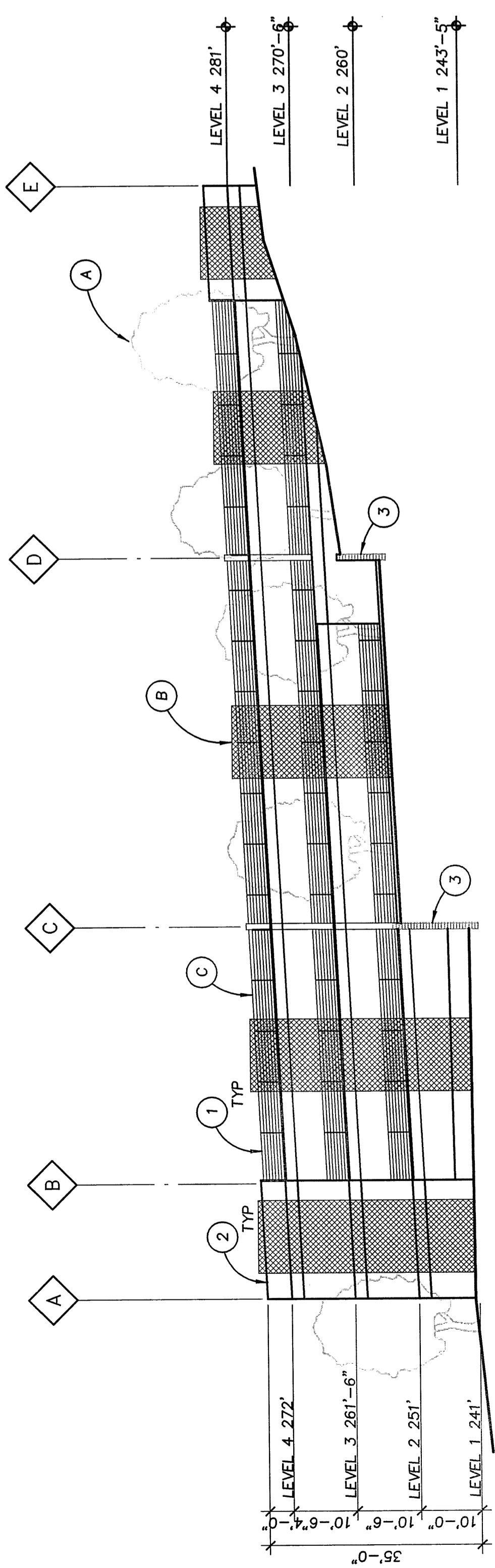
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PARKING GARAGE DATA

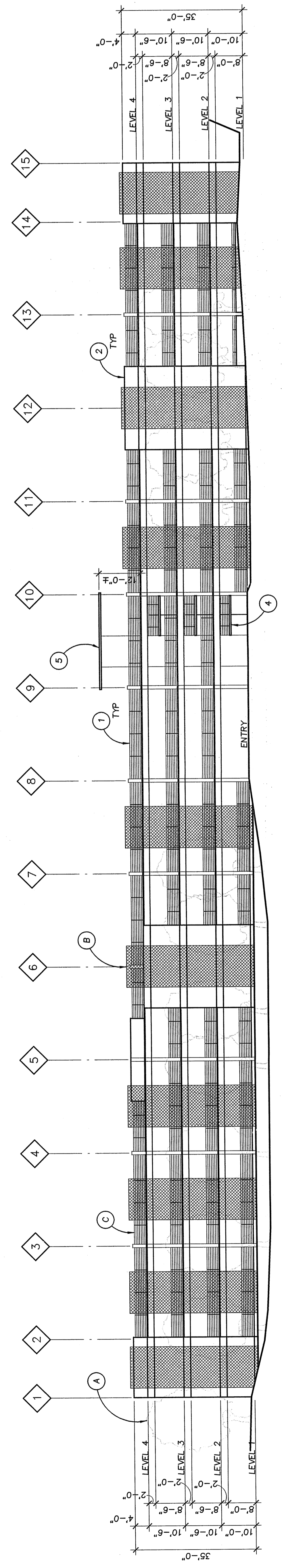
	STANDARD	COMPACT	HANDICAP
LEVEL ONE	71	56	7
LEVEL TWO	126	88	-
LEVEL THREE	126	98	-
LEVEL FOUR	78	96	-
TOTAL	401	348	7

TOTAL PARKING SPACES	756 SPACES
----------------------	------------

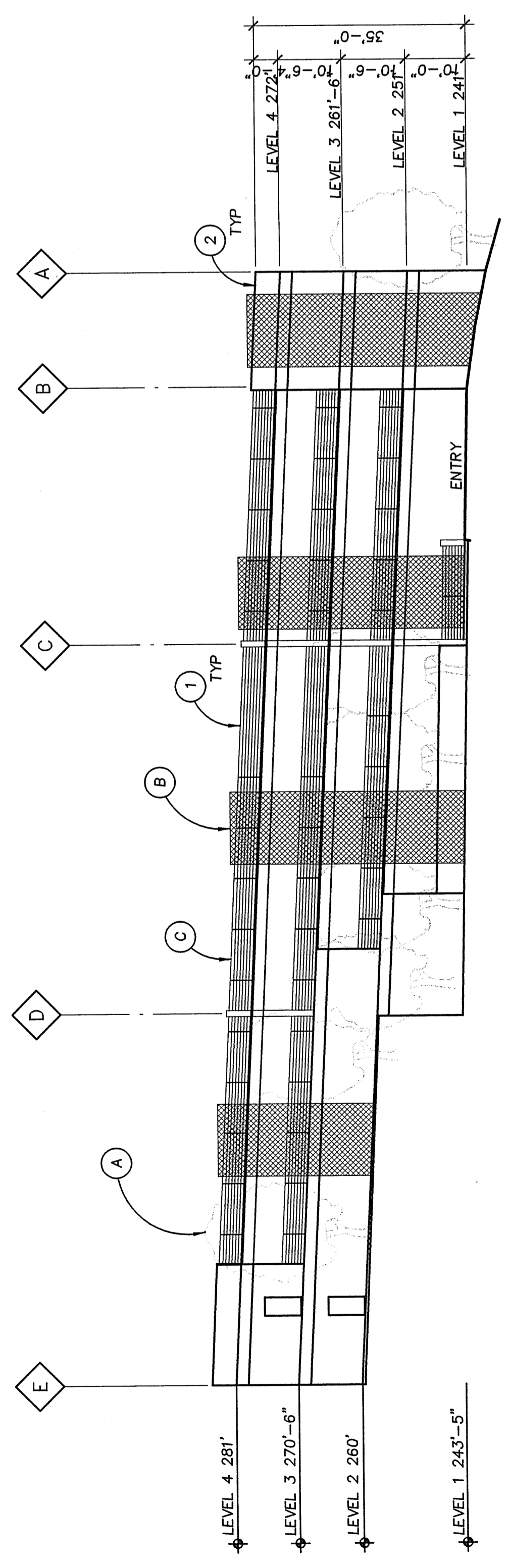
1 PARKING GARAGE - LEVEL THREE PLAN
 A4.3 / 1/16"=1'-0"



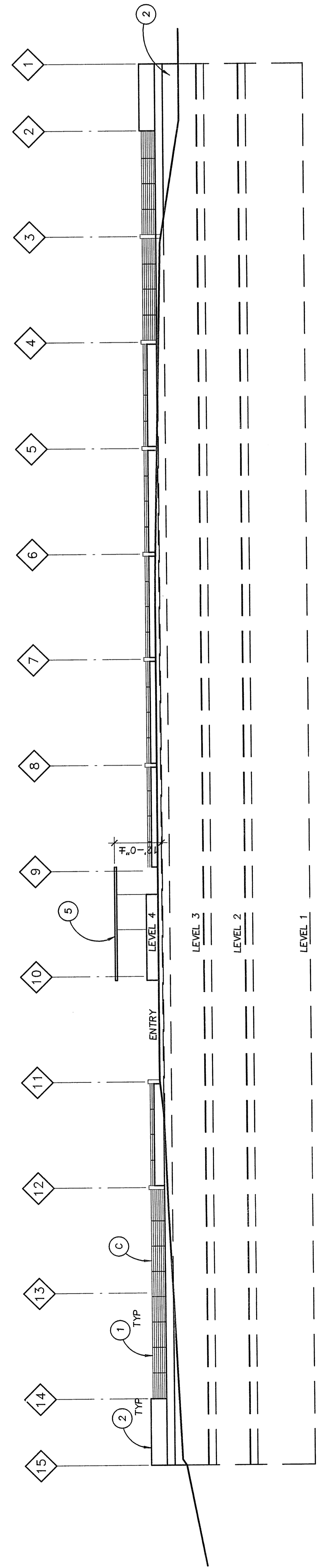
1 EAST ELEVATION
 A4.5 1/16"=1'-0"



2 SOUTH ELEVATION
 A4.5 1/16"=1'-0"



3 WEST ELEVATION
 A4.5 1/16"=1'-0"



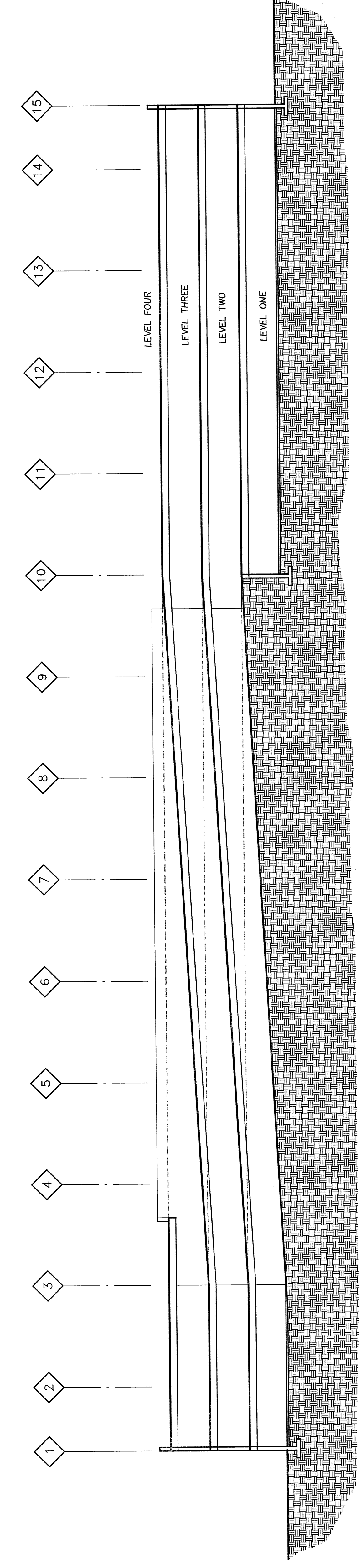
4 NORTH ELEVATION
 A4.5 1/16"=1'-0"

GENERAL NOTES

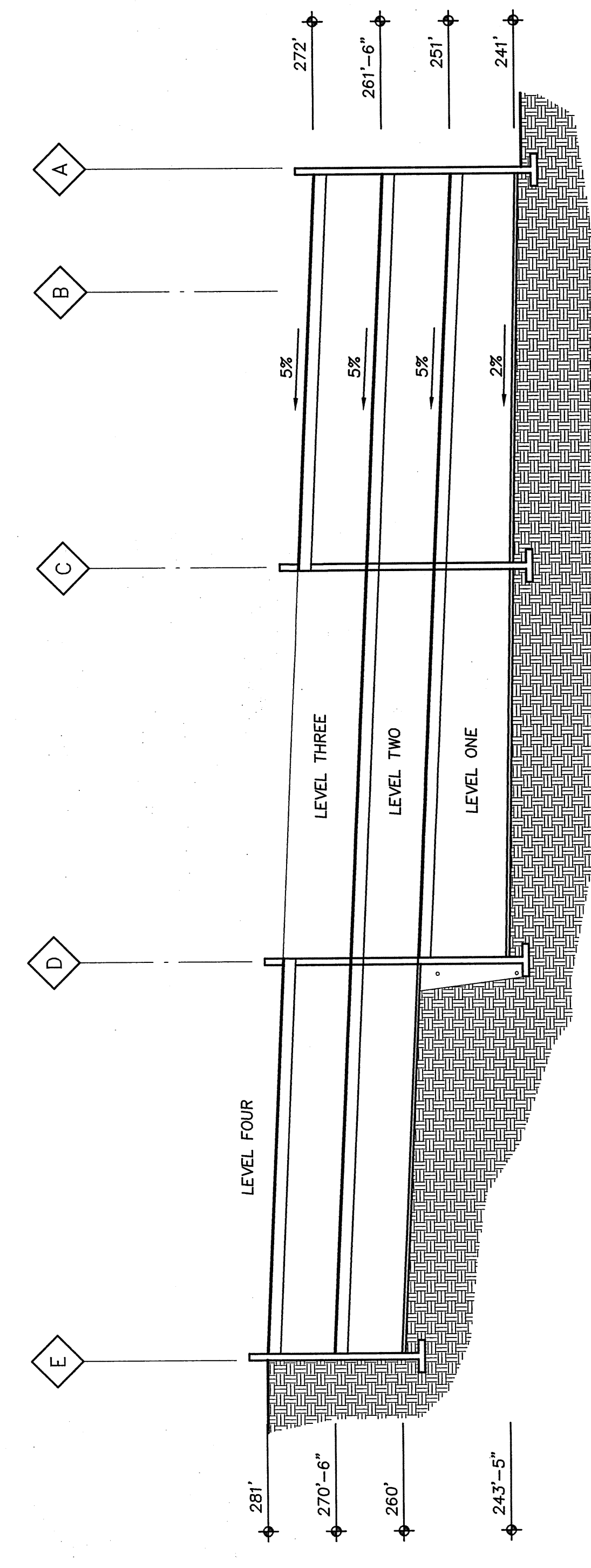
- A. TREES SEE LANDSCAPE PLANS
- B. SEE REPORT FOR DESCRIPTIONS ON GREEN SCREEN
- C. SEE REPORT FOR DESCRIPTIONS ON CABLE RAIL

KEYNOTES

- 1. 3'-6" HIGH GUARD RAIL (MAX OPENING 4")
- 2. PAINTED CONCRETE
- 3. RETAINING WALL SEE CIVIL
- 4. STAIRS
- 5. FLAT ROOF AT ELEVATOR AND STAIR ENCLOSURE



1 SECTION - EAST/WEST
 1/8"=1'-0"



2 SECTION - NORTH/SOUTH
 1/8"=1'-0"

NOTES
 TYPE OF ELEVATED CONCRETE STRUCTURAL SYSTEM TO BE DETERMINED (T.B.D).
 COULD BE POST TENSION FLAT SLAB, PRECAST DOUBLE TEES, FLAT SLAB W/BEAMS...ECT...



206.746.8893
 Seattle WA
 Vanover WA
 503.224.9560
 Portland OR
 960.685.7878
 Landscape Architecture
 Land Use Planning
 Interior Design
 Architecture
MACKENZIE
 GROUP

Client:
BLACHAWK
 Structural Engineering
 2020C SW 8TH AVE
 PMB 166
 WEST LINN, OR
 97068

Project:
WILLAMETTE 205
CORPORATE CENTER

ELECTRICAL
INTERFACE ENGINEERING
 708 SW THIRD AVENUE
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REVISIONS:
 REVISION NUMBER
 REVISION DESCRIPTION
 CLOSING DATE

SHEET TITLE:
**SITE PLAN -
 PHOTOMETRICS**

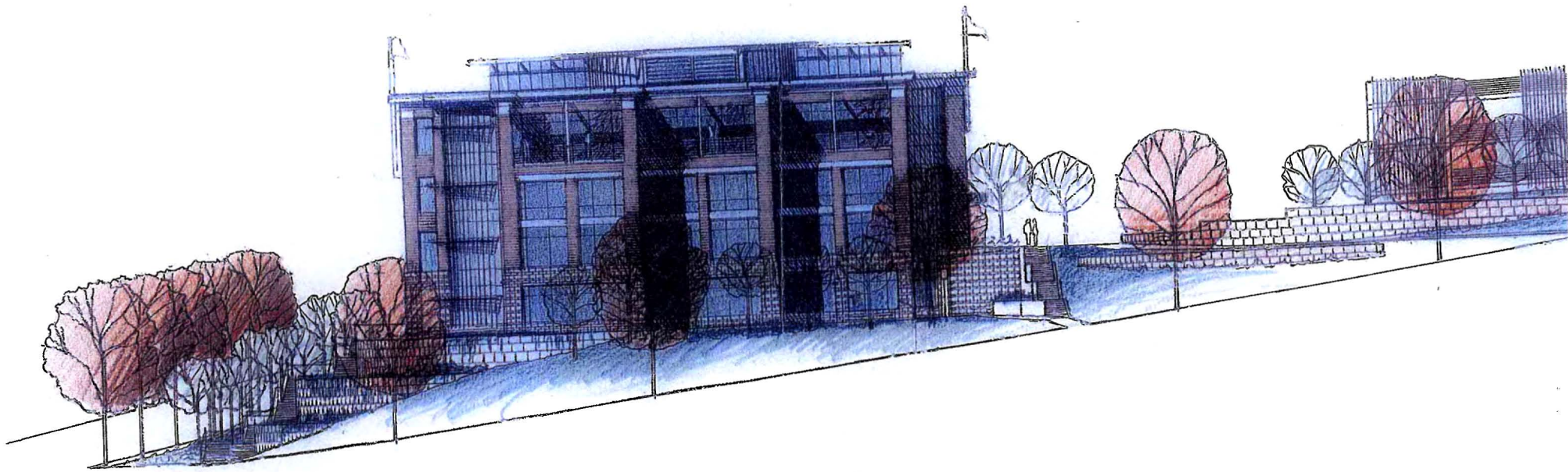
DRAWN BY: JEM
 CHECKED BY: JHN
 SHEET

JOB NO. 2060016.00

Location Summary	Calc Type	Units	Avg	Max	Min	Avg/Ft	Max/Ft
open parking_top	illumance	FC	1.48	3.5	0.1	11.60	36.00
parking_top	illumance	FC	1.49	5.3	0.1	14.80	50.00
open parking_top	illumance	FC	1.09	3.3	0.3	8.00	26.00
parking garage entra	illumance	FC	0.0	0.0	0.0	0.00	0.00
Midrise Side 4	illumance	FC	0.0	0.0	0.0	0.00	0.00
Side 1_top	illumance	FC	0.84	1.7	0.2	4.20	8.50

Luminaire Schedule	Label	Qty	Arrangement	Lumens	LF	Description
SAT 6	TYPE 3 TRS - BRKARS	5	SINGLE	34000	0.596	MS2-3-400HHS
SAT 6	TYPE 4 - GRFHH	8	SINGLE	34000	0.596	MS2-F4-400H
SAT 6	TYPE 5 - GRHAM	6	SINGLE	34000	0.596	MS2-F5-400H
SAT 6	GR87H	2	SINGLE	34000	0.596	MS2-F8-400H

1 SITE PLAN - PHOTOMETRICS
 1/20" = 1' - 0"



BUILDING A

EAST ELEVATION

GROUP
MACKENZIE

Civil Engineering Architecture
Structural Engineering Interior Design
Transportation Planning Land Use Planning

Portland OR Vancouver WA Seattle WA
503.224.0500 360.935.7070 206.740.8899

WILLAMETTE 205 CORPORATE CENTER

2060016.00



BUILDING A

SOUTH ELEVATION

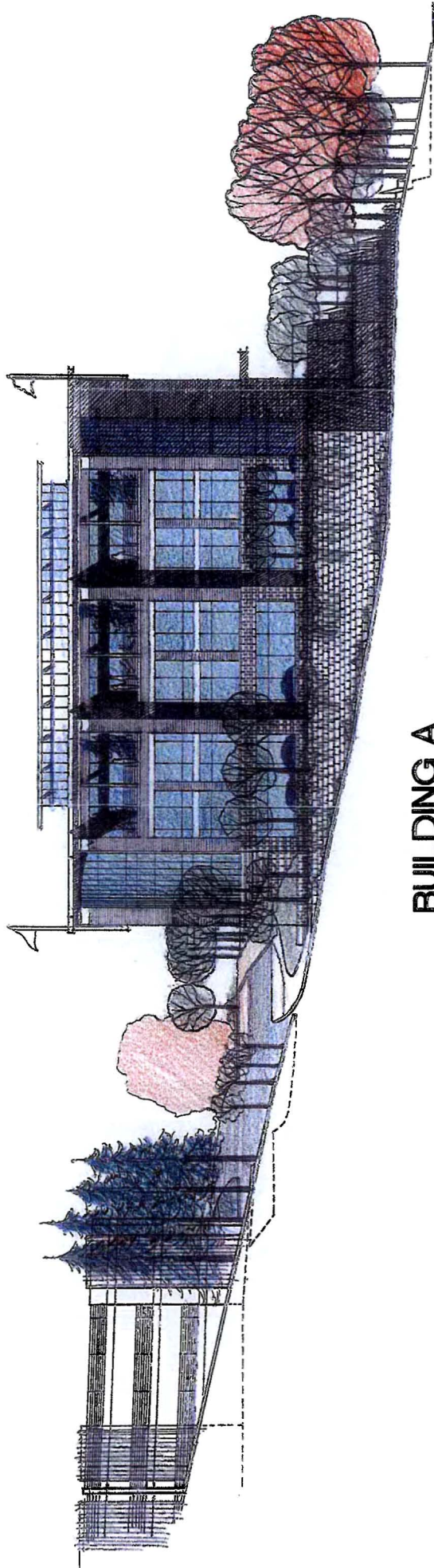
WILLAMETTE 205 CORPORATE CENTER

GROUP
MACKENZIE

Civil Engineering	Architects
Structural Engineering	Interior Design
Transportation Planning	Land Use Planning

Portland OR	Vancouver WA	Seattle WA
503.224.9590	360.683.7878	206.743.9930

2060016.00



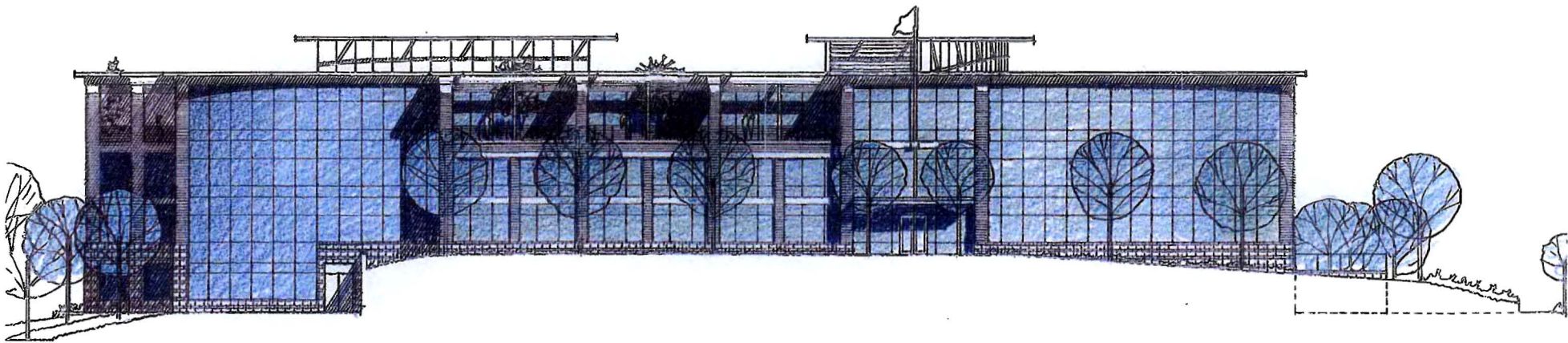
BUILDING A
WEST ELEVATION

GROUP
MACKENZIE
Civil Engineering
Structural Engineering
Transportation Planning
Portland OR 503.224.6500

Architecture
Interior Design
Landscape Planning
Seattle WA
Vancouver WA
360.685.7070

WILLAMETTE 205 CORPORATE CENTER

2060016.00



BUILDING A

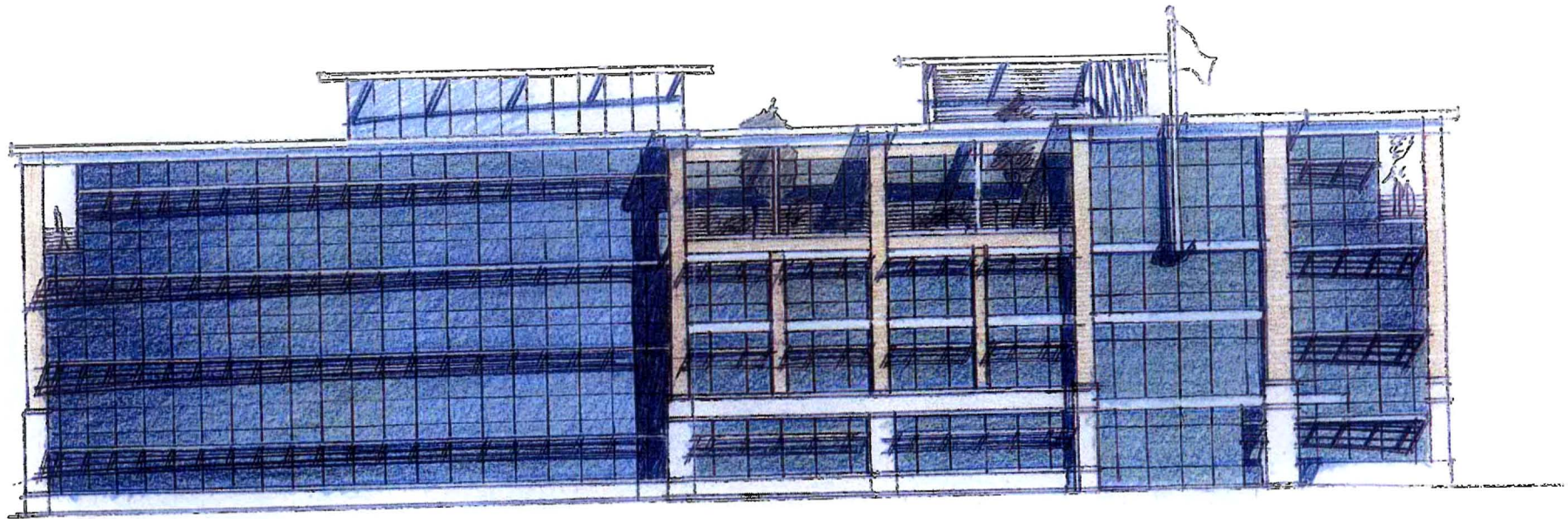
NORTH ELEVATION

WILLAMETTE 205 CORPORATE CENTER

GROUP
MACKENZIE

Civil Engineering	Architecture	
Structural Engineering	Interior Design	
Transportation Planning	Land Use Planning	
Portland OR 503.244.8500	Vancouver WA 360.685.7878	Seattle WA 206.749.9899

2060016.00



BUILDING B

SOUTH ELEVATION

WILLAMETTE 205 CORPORATE CENTER

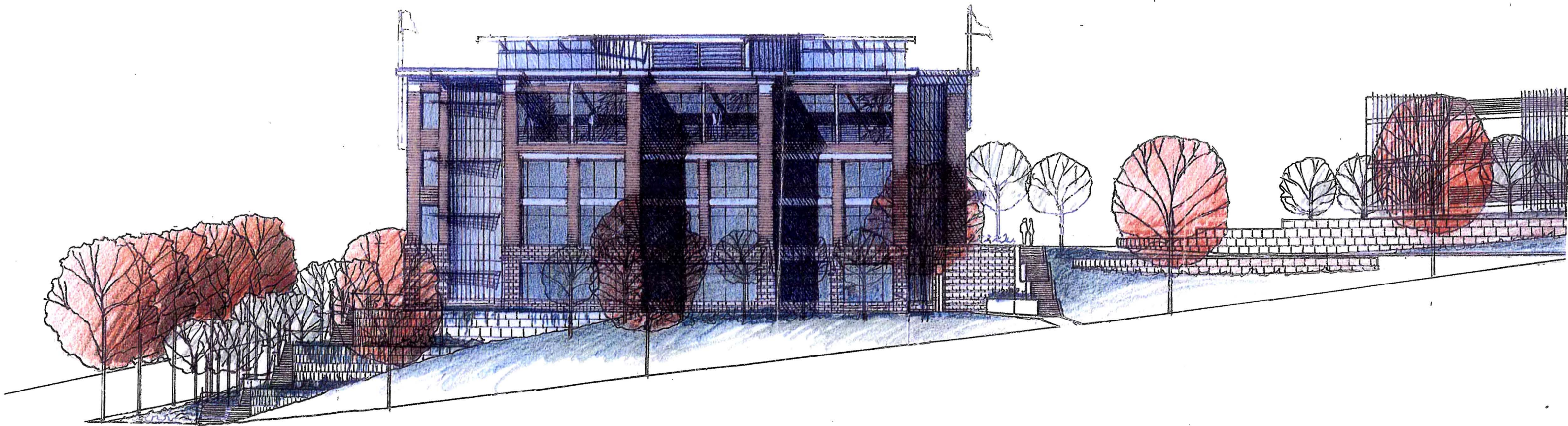
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GROUP
MACKENZIE

Civil Engineering
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BUILDING A

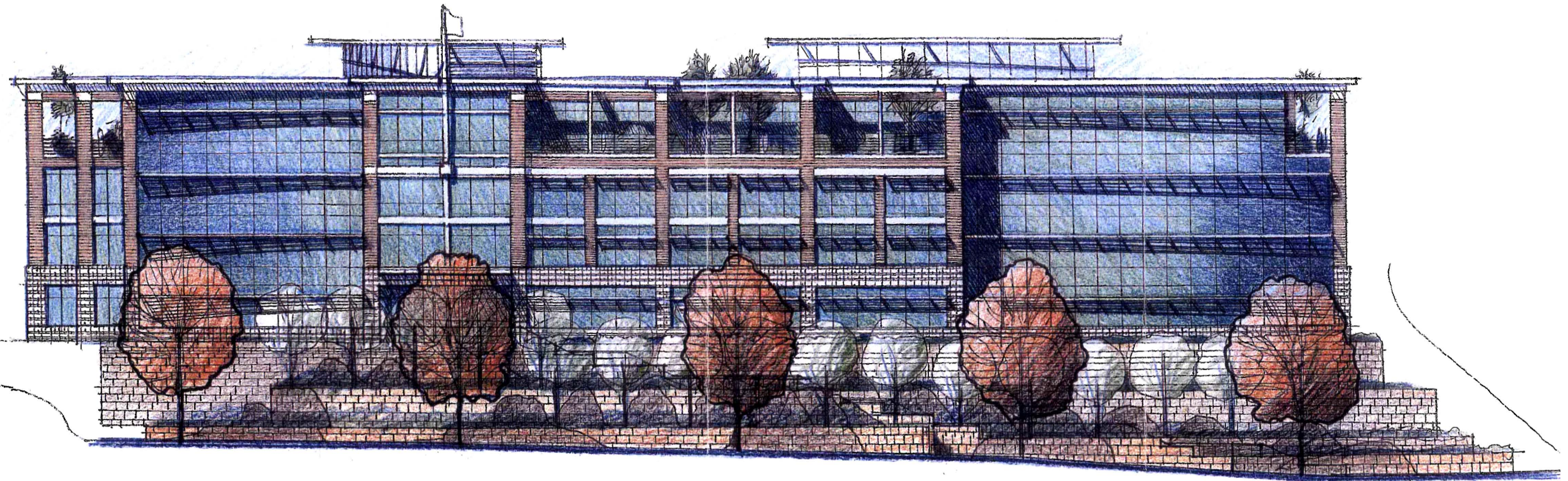
EAST ELEVATION

WILLAMETTE 205 CORPORATE CENTER

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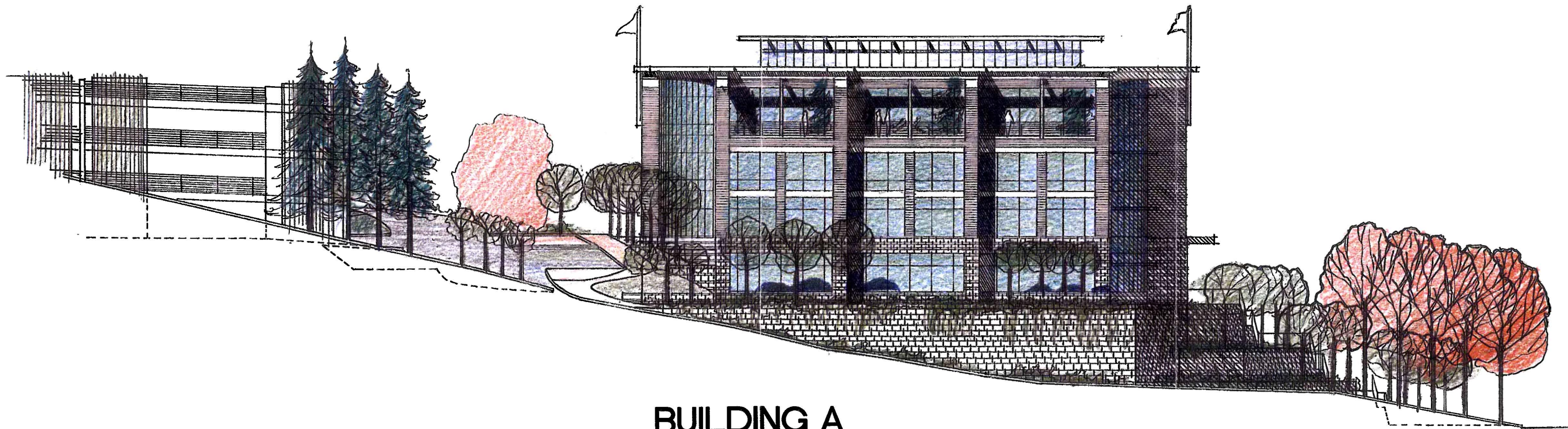
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BUILDING A

SOUTH ELEVATION

WILLAMETTE 205 CORPORATE CENTER



BUILDING A

WEST ELEVATION

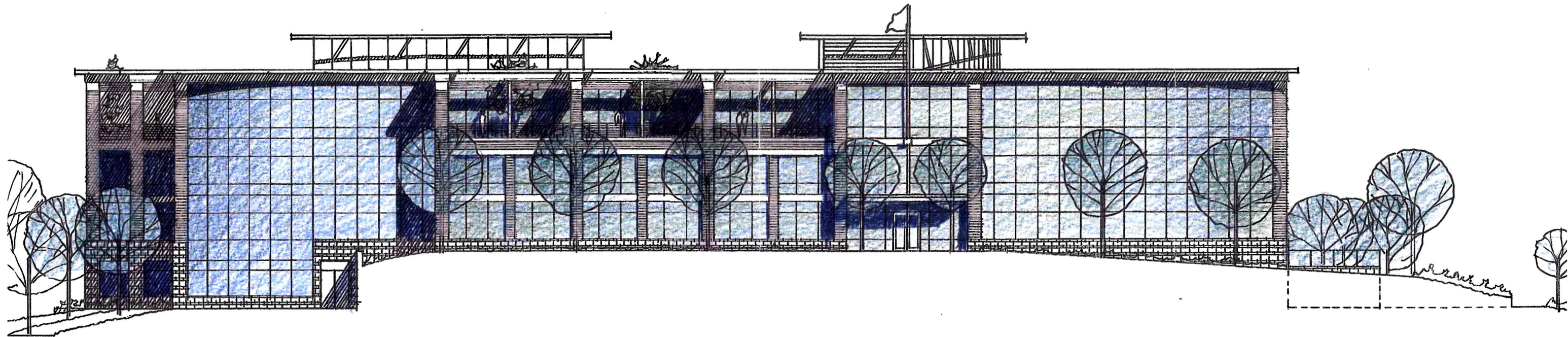
WILLAMETTE 205 CORPORATE CENTER

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Structural Engineering Interior Design
Transportation Planning Land Use Planning

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503.224.9560 360.695.7878 206.749.9993

2060016.00



BUILDING A

NORTH ELEVATION

WILLAMETTE 205 CORPORATE CENTER

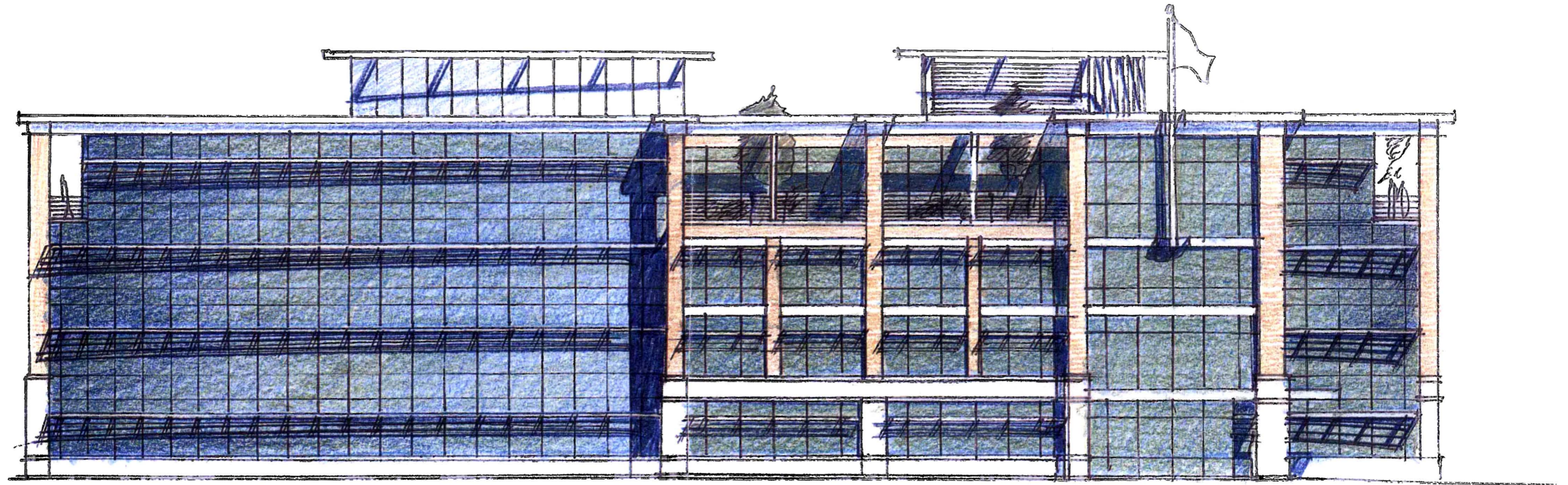
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2060016.00



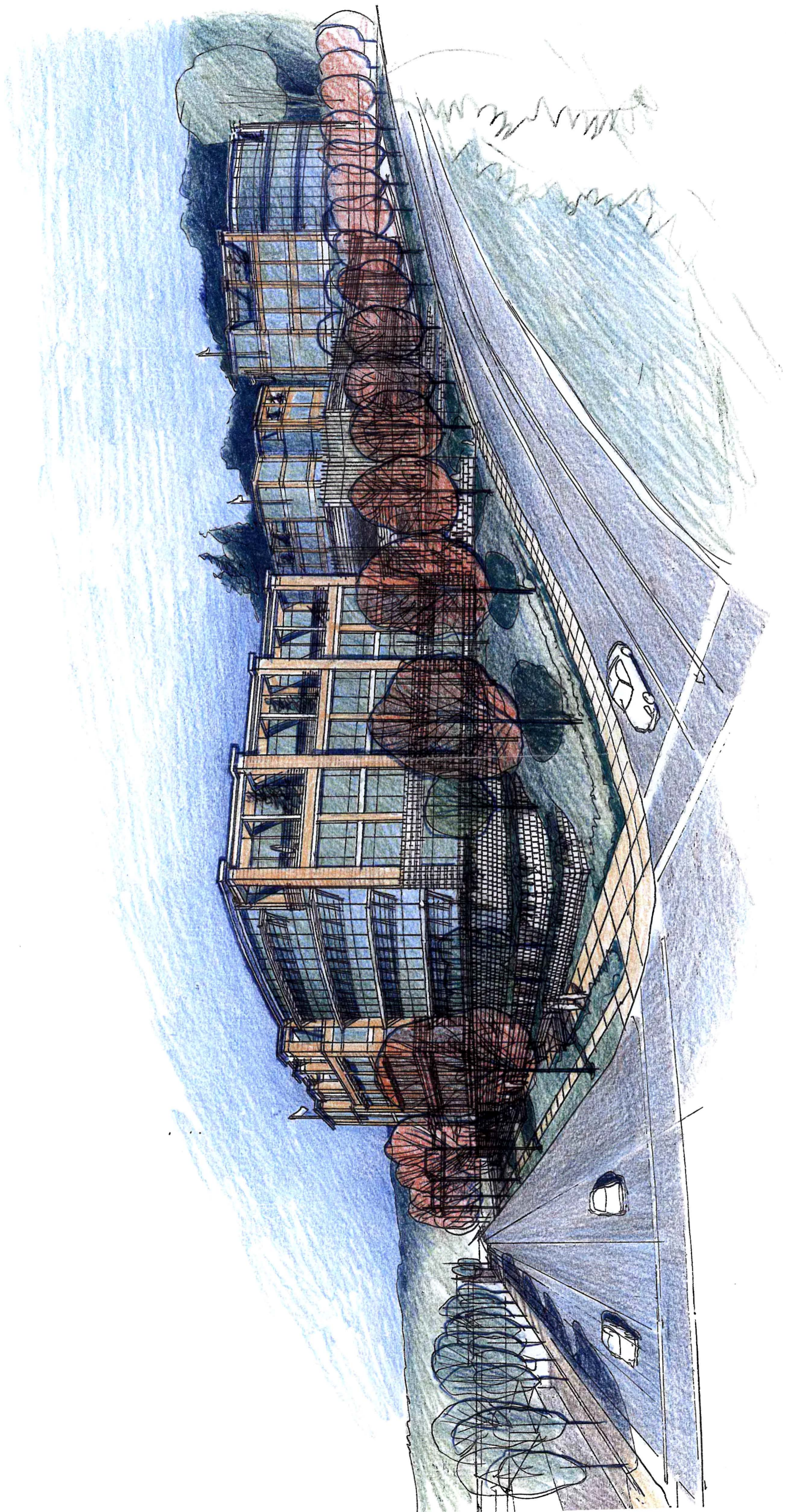
BUILDING B

SOUTH ELEVATION

WILLAMETTE 205 CORPORATE CENTER

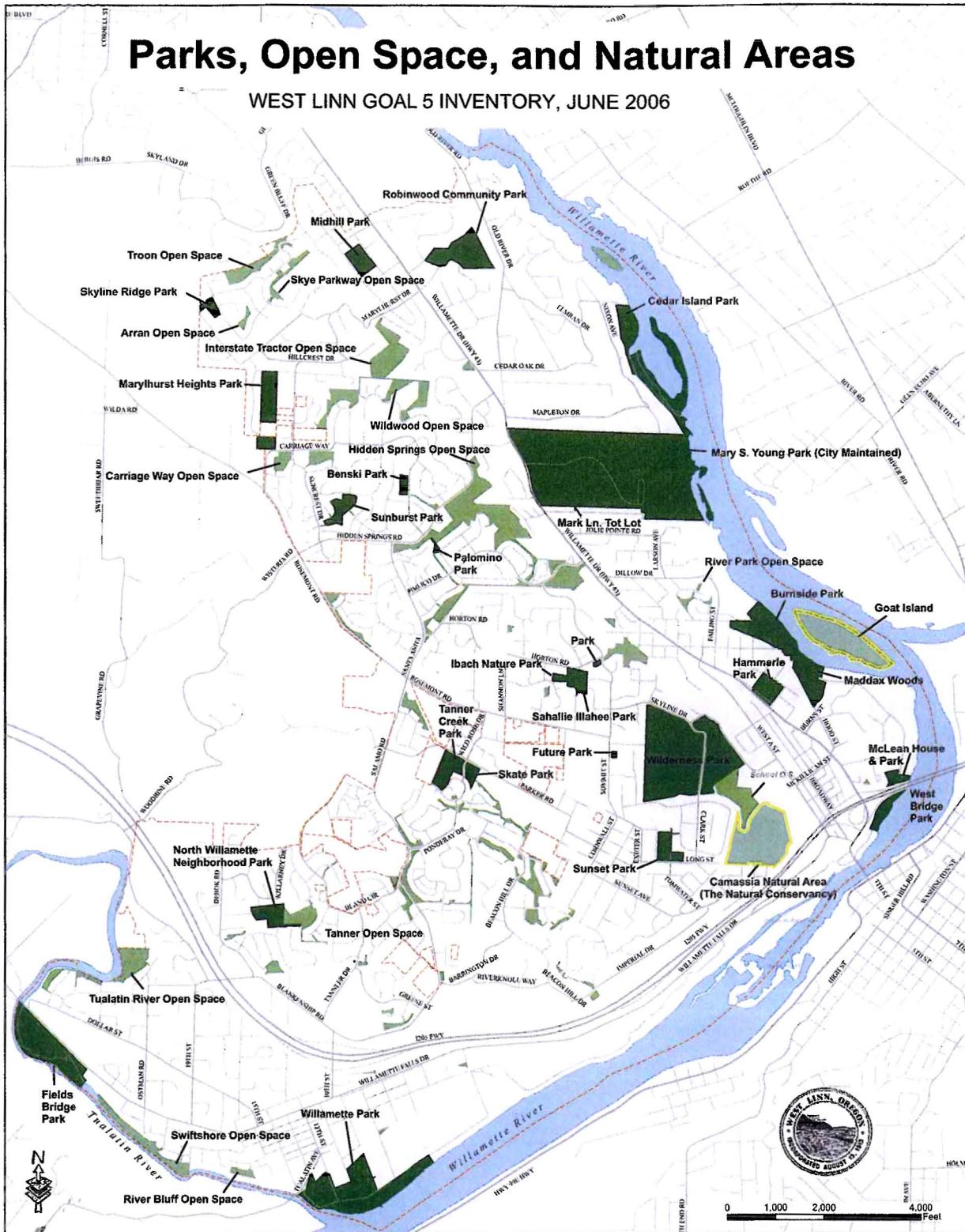
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Vancouver WA 360.895.7879
Seattle WA 206.749.9993

2060016.00



Parks, Open Space, and Natural Areas

WEST LINN GOAL 5 INVENTORY, JUNE 2006



Legend

Inventory

-  Parks
-  Open Space Includes some areas of other misc city property ("City" type classification).
-  Natural Areas, Camassia & Goat Island
-  West Linn City Limits

GOALS_2006\1\OPENSOURCE\K.A.H.A.12-24-06 (1st draft)
2-27-06 (2nd draft) | 5-16-06 (3rd draft) | 6-5-06 (4th draft) |
6-6-06 council wt. (5th draft)



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Property information Taxlot Base Source Clackamas County GIS

Riparian Corridors

WEST LINN GOAL 5 INVENTORY, JUNE 2006



Legend

Riparian Areas

- Streams
- Piped Segments
- Other Open Ditches
- Rivers
- DSL Approved Wetlands, 2005
- Parks, Open Space, & Natural Areas*
- FEMA's 100 Year Flood Plain, Metro RLIS-Lite**
- Riparian Corridors
- West Linn City Limits

* Includes some areas of other misc city property ("City" type classification) See Parks, Open Space, & Natural Areas Map
 ** The FEMA flood line is not accurate for use on single taxlots

GOALS 2006 RIPARIAN LAND - KATA 15-16-06 (1st draft)
 5-17-06 (2nd draft), 6-5-06 (3rd draft), 6-6-06 consult vs 6th draft



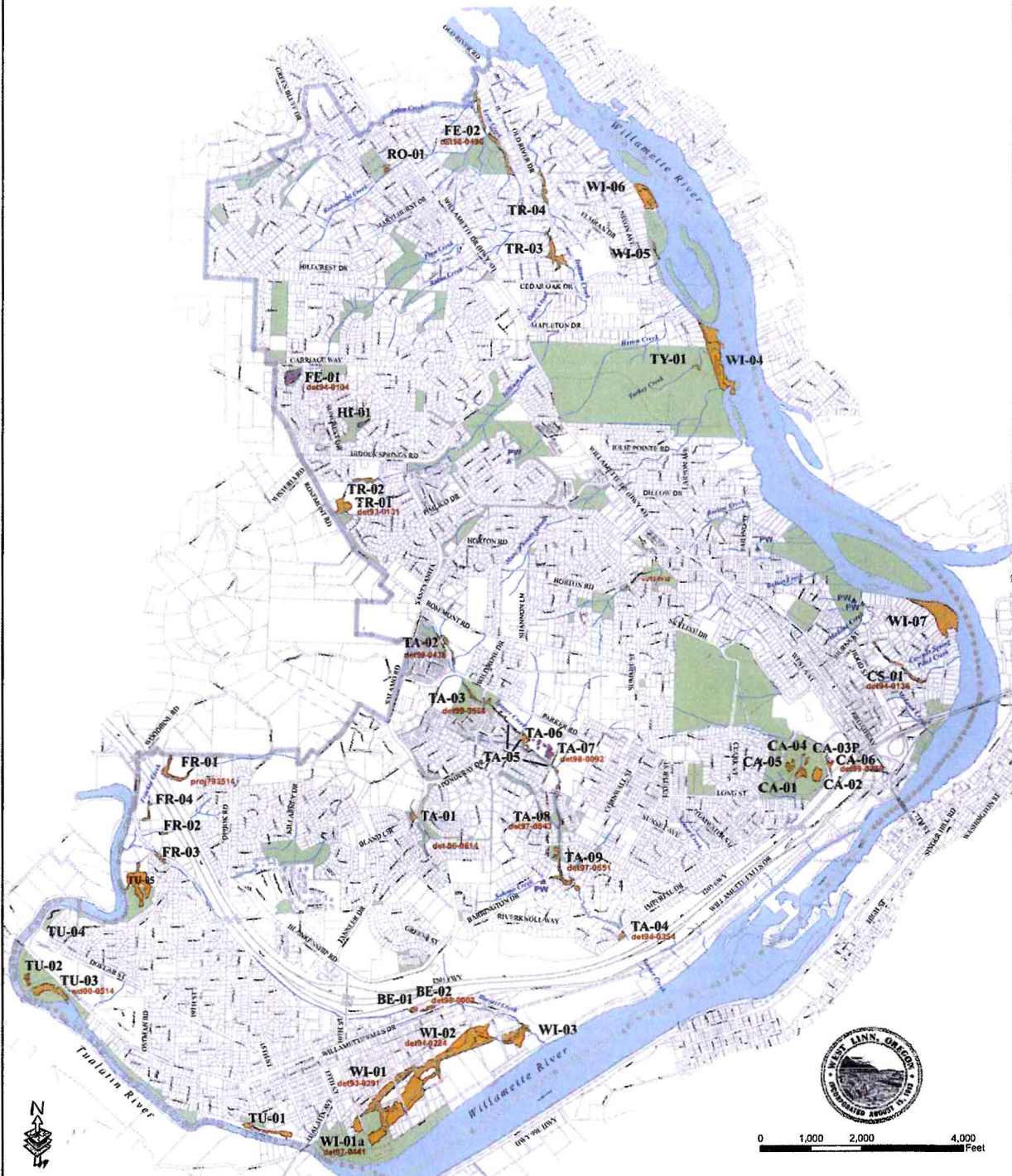
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Property information Taxlot Base Source: Clackamas County GIS

WETLANDS/GOAL 5 DISCLAIMER (DSL STANDARD):
 Information shown on this map is for planning purposes only and wetland information is subject to change. There may be unmapped wetlands subject to regulation and all wetland boundary mapping is approximate. In all cases, actual field conditions determine wetland boundaries. You are advised to contact the Oregon Division of State Lands and the U.S. Army Corps of Engineers with any regulatory questions.

Local Wetland Inventory

WEST LINN GOAL 5 INVENTORY, JAN 2005



Legend

- Locally Significant Wetlands, DSL 2005
- Other Wetlands, DSL 2005
- Possible Wetlands, DSL 2005
- Study Area Boundary
- Streams
- Taxlot Base, West Linn GIS 2006
- Parks, Open Space, & Natural Areas
Includes some areas of other msc city property ("City" type classification). See Parks, Open Space, & Natural Areas Map

MAP PREPARED IN JUNE 2006

Map Labels
BE-01 Wetland ID code
 de98-0002 DSL Delineation Numbers
 PW Possible Wetland

Wetlands shown on this map were approved by the Division of State Lands (DSL) in January 2005

GOALS_2006\WETLANDS.MXD\KAHA\5-16-06 (1st draft)
 6-5-06 council vs (2nd draft)



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Properly information Taxlot Base Source: Clackamas County GIS

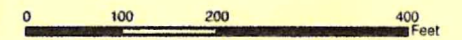
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WILLAMETTE 205 CORPORATE CENTER

**Metro Habitat Conservation
Area (March 2005) Map**

Legend

- site
- High
- Moderate
- Low



SCALE: 1"=260'

Source Data

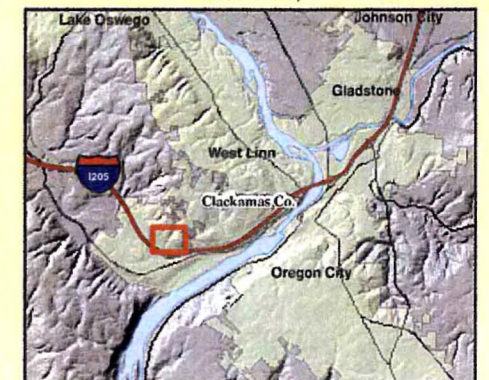
Base Data: Metro RLIS Lite, November 2005
Aerial Photography, USGS, 2001

Geographic Projection Information

NAD 83 HARN, Oregon North
Lambert Conformal Conic



Location Map



**GROUP
MACKENZIE**

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Date: 02/03/06 | Map Created by: RK
File: WIL205CC_aer1117.mxd | Project No:





T H E P A C I F I C R E S O U R C E S G R O U P
LAND MANAGERS · URBAN FORESTERS · NATURAL RESOURCE CONSULTANTS

August 15, 2006

Mr. Jeff Parker
Blackhawk Development
2020C SW 8th Avenue
PMB 166
West Linn, Oregon 97068-4612

Reference: Tree Assessment for Willamette 205 Corporate Center II, West Linn, Oregon

Dear Mr. Parker,

The following report is the result of my assessment of the trees on the proposed project, located on the northwest corner of SW Blankenship and SW Tannler Roads. The purpose of my visit was to verify the size, species and condition of trees on site with the intent to preserve as many as is reasonable. The site is undeveloped and is bordered by a single family residential neighborhood to the north and a commercial office complex to the west. The site slopes significantly from north to south.

OBSERVATIONS AND FINDINGS

As proposed, the site is to be developed with three office buildings, surface parking, parking structures, access drives and landscaping. Due to the sloping topography, developing this site will be very challenging. This makes tree preservation problematic as well. The soils report indicates that the soil is relatively shallow, with bedrock located at or near the surface. The report indicates an average depth of 3 to 5 feet of soil above bedrock. The shallow droughty soil may be the reason for the average to below average health of some of the trees. I assessed 130 trees as shown on the tree survey. The accompanying chart lists each tree with its size, species, approximate crown diameter, health, condition and comments on notable physical characteristics.

At the time of my site visits to assess the trees I was unable to determine the locations of the property lines. The accompanying tree chart indicates only three of a number of trees that are actually off the project site, however, I suspect that there are a number of them that may be located on an adjacent parcel and in the Tannler Road right of way. A more precise determination of which trees are actually off the project site will have to be made at some point. For those trees that appear to be on property adjacent to the project but which are close to property lines, some form of tree protection may be appropriate, depending on expected construction activities. The recommendations for post construction care later in this report may be applied to these trees as well. It appears that in order to construct improvements on this site, a number of trees along the east and west sides of the site will be removed. The remaining trees on the northern portion of the site will remain.

I found 9 trees that are too hazardous to remain due to disease, decay or serious structural defects. In my opinion these trees are not repairable and pose too great a risk of damage to property or injury to users of the area near them. These include trees #10, 13, 32, 37, 38, 45, 53, 53b and 120b. Trees #53 and 53b appear to be located on the adjacent property, but pose an unacceptable risk to the users of that property and to the project site. An additional 7 trees have major defects or problems, have significant hazard potential, are likely to become future hazards, or their future survival is questionable. For various reasons these trees are unlikely to provide a reasonable return on the invested resources which will be necessary to preserve them. These trees include #11, 17, 23, 25, 36, 40 and 52. Tree #52 has 2 stems, the smaller of which has internal decay at the base and up into the stem. The larger stem has fine, medium and large deadwood in the crown, below average annual twig growth and may be affected by the decay in the smaller stem. The smaller stem is hazardous and should be removed.

The remaining trees appear to be in average to good health. Most are in fair condition. For those not located on steep slopes, and depending on their proximity to areas to be excavated, some of these may be good candidates for preservation. The majority of the trees along the west property line are smaller ornamentals planted as part of the landscape of the adjacent office complex. Those that conflict with the proposed development could may be replaced or relocated to more suitable locations. The proposed site plan shows the trees on the steep bank along Tanner Road will be removed to make room for utilities and street improvements required by the City. The trees with the best chance for preservation are those on the upper or northern portion of the site. Fifty three (53) of the trees on the survey are located on the northern portion of the site.

SIGNIFICANT TREES

The development code for the City of West Linn places particular importance on what it terms "significant" trees. This term is not defined in the code. The City Arborist is given discretion in determining what is "significant" based upon accepted arboricultural standards. I am fairly knowledgeable in the fields of arboriculture, urban forestry and landscape architecture and to my knowledge there is no accepted definition, criteria or standards for such a designation. In my experience, this is not a commonly used term or designation used by other municipalities in the region. Such a designation is therefore, subjective and arbitrary. In working with the design team at Group Mackenzie I can attest to the fact that a considerable amount of time and expense went into looking at a number of alternatives aimed at saving as many trees as practical while proposing an economically viable project. I typically recommend balancing the desire to retain trees with an evaluation of the risk and reward of the effort involved. Trees to be preserved should be relatively healthy, free of serious non-correctable defects and have a high probability of long-term survival. When feasible, they should be incorporated so that they make a valuable contribution to the landscape of the site. Finally, I recommend making an objective assessment of the value of the trees being considered for preservation. Assuming the other criteria are met, in most instances the effort or resources invested to preserve trees should not exceed their appraised value. Otherwise, planting new trees is a better investment.

GENERAL RECOMMENDATIONS

It is too early in the design process to have determined the locations of utility, irrigation or electrical lines. However, if they must be placed within the root protection zone of any of the trees being retained on site, it would be desirable to place them as far from the trees as possible. If any such lines must cross the tree protection zones, the trenches can be hand or machine dug, leaving the larger roots (over 2" diameter) intact. The excavations for other utilities (sanitary, storm, gas, cable, telephone and electric) will require a deeper trench and the portion of the trench that passes through the root protection zone can be dug with a combination of hand and

machine to preserve larger roots. I recommend that I be called once the location of the utility trenches are determined and excavation is underway. I can then recommend ways to minimize the effects on the affected trees, assess the amount of root loss and recommend any post construction care that would improve the trees' chances of survival.


Trees located near proposed grading or proposed improvements should be protected from inadvertent damage during construction. For those that will have any excavation within the root protection zone (defined as a circle around the tree with a radius equal to 1' for each inch of diameter at DBH), I recommend that you consider exploratory excavation for any improvements within 10' to 12' of the trunk. This will help in locating their structural roots and in the installation of tree protection fencing, intended as protection from inadvertent damage. The improvements nearest the trees (utilities, retaining or foundation walls) should be located as precisely as possible by staking the edge of excavation closest to the trees. If needed, the exploratory excavation can be done either by hand or using an AirSpade™ to expose any roots that are in or under the proposed improvements. If the roots are under the excavation or not present at all, the trees can be left standing. However, if a significant portion of the larger structural roots cannot be preserved, the trees may not be safe to leave standing. I recommend that you contact me as soon as the improvements are staked so I can suggest a course of action regarding these trees.

In addition to protecting the trees from inadvertent physical injury, the tree protection fencing should serve to minimize any soil compaction that might occur within the trees' root protection zone. This will require keeping construction materials, soil, foot traffic and equipment out of the area within the tree protection zone to the extent practical. In cases where excavation must take place within the root protection zone, the tree protection fencing should be installed no closer than 4' to 5' off the base of the tree. It should protect as much of the root protection zone as possible, without including the excavation for the utilities, foundation walls, etc. If it is necessary to work closer to the tree than this or to work inside the tree protection fencing, you should notify me. Either chain link or orange plastic construction fencing, staked every 8' to 10', will meet the functional requirement for tree protection, however I suggest checking with the appropriate City official as to the current requirement.

Any existing trees that are retained and those newly planted will benefit greatly from a fertilization program that will help promote root growth following construction. For any newly planted trees the fertilization can be delayed until the next growing season. To accomplish this I recommend the landscape contractor or maintenance staff fertilize the entire area beneath the preserved trees using a highly soluble high nitrogen fertilizer applied at a time when surface vegetation is dormant and tree roots are still growing. The best time to do this is in late October or early November and/or in mid to late February. The fertilizer is best applied just prior to or during a rain, otherwise it should be watered into the soil. I recommend using Ammonium Sulfate (21-0-0 or 23-0-0) at a rate of 2 lbs. of Nitrogen per 1000 square feet of area treated. This equates to applying 9 lbs. of the fertilizer to each 1000 square feet of area within the drip line of each tree or woody plant. The annual amount of Nitrogen that should be applied is between 2 to 4 lbs. per 1000 square feet, the first year, and half that amount in subsequent years. If a single application is made, it should be done in late November, otherwise two applications of nitrogen can be made, one each in late fall and early spring. The fertilizer can be applied to the surface of the ground with a cyclone or "whirly" type spreader. The fertilization should be done within the drip line and to an area a few feet outside the drip line. To determine the area to be treated for trees such as this, with the tree at the center, the area to be treated is within the circle that has a radius equal to one foot for every inch of the tree's diameter. After the first application I recommend that you take soil samples to determine existing nutrient levels and get a recommendation on the composition of fertilizer or other soil amendments that are needed by the plants on site. Contact A & L Western Agricultural Lab at 503-968-9225 for soil analysis instructions and assistance.

This completes my report. If any additional information, which would effect my observations or recommendations becomes available I would welcome the opportunity to consider it and revise this report accordingly. If I omitted any information or if you have any questions please do not hesitate to contact me.

Respectfully yours,



Stephen F. Goetz, Principal
American Society of Consulting Arborists, Reg #260
American Society of Landscape Architects, Oregon Lic. #80
Society of American Foresters

SG:mac
Attachment

DISCLAIMER : I am not an attorney, engineering or insurance expert. There is no substitute for any of these in assessing or evaluating construction or liability matters. I consult and testify only in regard to some arboricultural, horticultural and landscape architectural matters. This publication is not intended as, and does not represent, legal, engineering or insurance advice and should not be relied upon to take the place of such advice. Although every effort has been made to assure the accuracy of the information included in this publication as of the date on which observations were made and or the date it was issued, conditions in these situations are all subject to frequent change and therefore its applicability is strictly limited to that time. The content of this report is my own work and is based upon my professional experience and judgement. Any fees that I receive are not contingent upon nor related to the conclusions or recommendations included. I have no personal or professional interest in the subject property(s).

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Willamette 205 Corporate Center II, Tree Assessment, West Linn, Oregon

Tree No.	Size inches	Species	Crwn Dia. Ft.	Health	Condition	Comments
1	7	Norway Maple	10	Fair/Average	Moderate & Non-correctable Defects	Street tree, poor branch connection with included bark
2	7	Pacific Madrone	10	Good	Few & Minor or Correctable Defects	
3	9	Douglas Fir	15	Good	Few & Minor or Correctable Defects	
4	10	Black Cottonwood	20	Good	Moderate & Non-correctable Defects	Previously broken top at 50', regrown top has poor connection
5	9	Douglas Fir	12	Fair/Average	Moderate & Non-correctable Defects	On steep slope, covered with black berries
6	14	Douglas Fir	20	Good	Few & Minor or Correctable Defects	On steep slope, covered with black berries
7	13	Black Cottonwood	20	Good	Few & Minor or Correctable Defects	On steep slope, covered with black berries
8	31	Douglas Fir	40	Fair/Average	Moderate & Non-correctable Defects	Moderate amount of large deadwood throughout crown, hazard prune to remove deadwood
9	6	Oregon White Oak	10	Fair/Average	Moderate & Non-correctable Defects	Sweep in trunk, growing out of hillside, thin crown
10	20	Oregon White Oak	40	Poor	Major Defects or Problems, Hazard, Remove	Tree toppled over, 3 branches continue to grow, Hazard, Remove
11	39	Oregon White Oak	50	Good	<i>Major Defects or Problems</i>	2 stems are split from first crotch to 2' above ground, west stem is likely to fail, cabling & bracing may reduce probable failure, Potential Hazard - Do Not Preserve
12	8	Pacific Madrone	10	Good	Few & Minor or Correctable Defects	Growing in steep bank covered with black berries
13	20	Oregon White Oak	40	Poor	Major Defects or Problems, Hazard, Remove	Tree toppled over, hollow stem, 5 branches continue to grow, Hazard, Remove
14	19	Oregon White Oak	30	Fair/Average	Few & Minor or Correctable Defects	Crown off balance to south
15	7	Oregon White Oak	25	Fair/Average	Few & Minor or Correctable Defects	Clump of 3 trees with 5 stems (6,6,6,7,3). Partial crowns due to crowding.
16	12	Oregon White Oak	25	Fair/Average	Moderate & Non-correctable Defects	Partial crown, off balance to south, some girdling from barb wire fence wrapped around trunk.
16b	726	Oregon White Oak	15	Fair/Average	Moderate & Non-correctable Defects	Partial crown in 2 stem tree, off balance to south.

Willamette 205 Corporate Center II, Tree Assessment, West Linn, Oregon

Tree No.	Size inches	Species	Crwn Dia. Ft.	Health	Condition	Comments
17	8,8,8,7,6 ,5,4,3	Oregon White Oak	25	Fair/Average	<i>Major Defects or Problems</i>	Multiple root suckers from dead stump, all lean out from center with poor connections at ground. Survival long-term unlikely. <i>Future Hazard, Do Not Preserve</i>
18	6,6,4	Oregon White Oak	12	Fair/Average	Moderate & Non-correctable Defects	3 stems at ground, partial crown off balance to south
19	8,6,5,3	Oregon White Oak	20	Fair/Average	Moderate & Non-correctable Defects	4 stems at ground, lots of epicormic sprouts on all stems. Questionable long term survival.
20	6	Oregon White Oak	15	Fair/Average	Few & Minor or Correctable Defects	
21	17	Oregon White Oak	21	Fair/Average	Few & Minor or Correctable Defects	
22	17	Oregon White Oak	26	Fair/Average	Few & Minor or Correctable Defects	
23	6,6,5,5,4 ,3,3	Oregon White Oak	2	Good	<i>Major Defects or Problems</i>	Multiple root suckers from dead stump, all lean out from center with poor connections at ground. Survival long-term unlikely. <i>Future Hazard, Do Not Preserve</i>
24	7	Douglas Fir	10	Good	Few & Minor or Correctable Defects	
24b	7,6,5	Oregon White Oak	17	Good	Moderate & Non-correctable Defects	3 stems begin at ground
24c	14	Oregon White Oak	30	Good	Few & Minor or Correctable Defects	
25	8,7,7,5,4	Oregon White Oak	18	Good	<i>Major Defects or Problems</i>	Multiple root suckers from dead stump, all lean out from center with poor connections at ground. Survival long-term unlikely. <i>Future Hazard, Do Not Preserve</i>
26	37	Douglas Fir	35	Good	Few & Minor or Correctable Defects	
27	7,6	Oregon White Oak	18	Fair/Average	Few & Minor or Correctable Defects	2 stems at ground
28	22	Oregon White Oak	28	Fair/Average	Few & Minor or Correctable Defects	Thin crown
29	7,6	Oregon White Oak	14	Fair/Average	Few & Minor or Correctable Defects	
30	7,7,7,6	Oregon White Oak	20	Fair/Average	Moderate & Non-correctable Defects	4 stems at ground, root sprouts from dead stump, all lean out from center

Willamette 205 Corporate Center II, Tree Assessment, West Linn, Oregon

Tree No.	Size inches	Species	Crwn Dia. Ft.	Health	Condition	Comments
31	7	Oregon White Oak	15	Fair/Average	Few & Minor or Correctable Defects	
32	10	Oregon White Oak	7	Poor	Hazard Remove	Large cavity at base, exposed internal decay in wood from ground to 8', Hazard Remove
33	20	Oregon White Oak	33	Fair/Average	Few & Minor or Correctable Defects	
34	11	Oregon White Oak	18	Fair/Average	Moderate & Non-correctable Defects	Partial crown, crown full of vines, prune for structure & remove vines
35	11,7	Oregon White Oak	21	Fair/Average	Moderate & Non-correctable Defects	2 stems at 2' off ground, east stems lean to east. Cable together. Prune to balance crown.
36	12,12, 11,11, 10,10, 7	Big Leaf Maple	28	Fair/Average	Major Defects or Problems	Multiple root suckers from dead stump, large cavity at base on north side. Remove 2 stems with internal decay & cable remaining stems. Monitor as Potential Hazard .
37	23	Oregon White Oak	35	Fair/Average	Major Defects or Problems, Hazard, Remove	Main stem leans to south, large open cavity at 6' to 10' with internal decay above and below. Too little sound wood around cavity. Hazard. Remove.
38	20	Oregon White Oak	35	Fair/Average	Major Defects or Problems, Hazard, Remove	Crown off balance to SE, Large cavity on west side from ground to 5', decay above. Hazard tree, Remove.
39	21	Oregon White Oak	36	Fair/Average	Moderate & Non-correctable Defects	Barb wire fence in the trunk, thin crown
40	6,6,6,6, 5,4,3 & 2	Oregon White Oak	20	Fair/Average	Major Defects or Problems	Multiple root suckers from dead stump, all lean out from center with poor connections at ground. Survival long-term unlikely. Future Hazard, Do Not Preserve
41		Oregon White Oak	36	Fair/Average	Few & Minor or Correctable Defects	Thin crown, some large deadwood in crown, 2 main stem have included bark at 10', cable & or brace stems at connection
42	7,6	Oregon White Oak	14	Fair/Average	Few & Minor or Correctable Defects	Crown full of vines, 2 stems start at 1' off ground
43	22	Oregon White Oak	37	Fair/Average	Few & Minor or Correctable Defects	Crown off balance to SE
44	17,13	Oregon White Oak	38 x 20	Fair/Average	Moderate & Non-correctable Defects Major Defects or Problems	2 stems at ground, cavity at base of east stem buried 24" - 30" deep on north side. Both stems have old wounds on north side. Check for internal decay.
45	8	Oregon White Oak	18	Fair/Average	Major Defects or Problems, Hazard, Remove	Roots cut 2' from trunk on north side, potential Hazard Remove.

Willamette 205 Corporate Center II, Tree Assessment, West Linn, Oregon

Tree No.	Size inches	Species	Crwn Dia. Ft.	Health	Condition	Comments
46	26	Douglas Fir	36	Fair/Average	Few & Minor or Correctable Defects	Very poor annual twig growth, well below average. Tree may benefit from fertilization.
47	17	Douglas Fir	20	Good	Few & Minor or Correctable Defects	
48	23	Oregon White Oak	37	Good	Few & Minor or Correctable Defects	Thin Crown.
49	31	Douglas Fir	26	Fair/Average	Few & Minor or Correctable Defects	Partial crown due to crowding
50	33	Douglas Fir	32	Fair/Average	Few & Minor or Correctable Defects	Partial crown due to crowding
51	30	Douglas Fir	30	Fair/Average	Few & Minor or Correctable Defects	Partial crown due to crowding
52	31,21	Douglas Fir	30	Fair/Average	Major Defects or Problems	2 stems at ground, large dead wood, smaller stem has many defects & internal decay. Remove small stem.
53	14,15	Oregon White Oak	31	Fair/Average	Major Defects or Problems, Hazard, Remove	2 stem at 4' included bark & cavity from ground to 3' on south side. Hazard , recommend removal. Notify owner. OFF SITE.
53 b	30	Oregon White Oak	36	Fair/Average	Major Defects or Problems, Hazard, Remove	Large cavity with internal decay on west side, Insufficient sound wood, Hazard Remove. OFF SITE.
54	6	Austrian Pine	10	Good	Sound, no obvious defects.	
55	6	London Planetree	10	Good	Sound, no obvious defects.	
56	6	Austrian Pine	8	Fair/Average	Few & Minor or Correctable Defects	
57	4,4	Austrian Pine	8	Fair/Average	Defects Major Defects or Problems	2 stems at 4.5'
58	4,3	Austrian Pine	8	Fair/Average	Defects Major Defects or Problems	2 stems at 4.5'
59	6	London Planetree	10	Fair/Average	Few & Minor or Correctable Defects	
60	6	Ash,species	13	Good	Sound, no obvious defects.	
61	6	London Planetree	18	Good	Few & Minor or Correctable Defects	

Willamette 205 Corporate Center II, Tree Assessment, West Linn, Oregon

Tree No.	Size inches	Species	Crwn Dia. Ft.	Health	Condition	Comments
62	6	London Planetree	16	Good	Few & Minor or Correctable Defects	
63	4	Austrian Pine	10	Good	Sound, no obvious defects.	
64	6	London Planetree	18	Good	Few & Minor or Correctable Defects	
65	6	London Planetree	17	Good	Few & Minor or Correctable Defects	
66	5	Douglas Fir	8	Good	Few & Minor or Correctable Defects	OFF SITE
67	3	London Planetree	12	Good	Few & Minor or Correctable Defects	
68	8	Scotch Pine	10	Good	Defects Major Defects or Problems	2 stems at 4.5' Remove upright subdominant stem.
69	6	London Planetree	15	Good	Few & Minor or Correctable Defects	
70	6	Scotch Pine	11	Fair/Average	Defects Major Defects or Problems	
71	6	Scotch Pine	12	Good	Few & Minor or Correctable Defects	
72	6	Leyland Cypress	12	Good	Defects Major Defects or Problems	
73	6	Leyland Cypress	12	Good	Few & Minor or Correctable Defects	
74	7	Douglas Fir	12	Good	Few & Minor or Correctable Defects	
75	10	Black Cottonwood	20	Fair/Average	Few & Minor or Correctable Defects	Growing on steep bank
76	6	Pacific Madrone	8	Fair/Average	Major Defects or Problems	Leaning over, prune to improve structure & growth habit.
77	8	Black Cottonwood	10	Fair/Average	Few & Minor or Correctable Defects	Growing on steep bank
78	6	Douglas Fir	12	Fair/Average	Few & Minor or Correctable Defects	Growing on steep bank

Willamette 205 Corporate Center II, Tree Assessment, West Linn, Oregon

Tree No.	Size inches	Species	Crwn Dia. Ft.	Health	Condition	Comments
79	14, 2	Black Cottonwood	32	Fair/Average	Moderate & non correctable defects	2 stems at 2' above ground, growing on steep bank.
80	12,12,8	Black Cottonwood	30	Fair/Average	Moderate & non correctable defects	3 stem at ground, growing on steep bank.
81	6	Douglas Fir	8	Fair/Average	Moderate & non correctable defects	Partial crown due to crowding
82	10	Douglas Fir	18	Fair/Average	Few & Minor or Correctable Defects	
83	6,6	Douglas Fir	10	Good	Sound No Obvious Defects	2 trees, growing 1' apart.
84	11	Douglas Fir	13	Fair/Average	Few & Minor or Correctable Defects	
85	12,11,8	Black Cottonwood	22	Good	Moderate & non correctable defects	
86	12	Douglas Fir	14	Good	Few & Minor or Correctable Defects	Partial crown due to crowding
87	11	Douglas Fir	15	Good	Few & Minor or Correctable Defects	Partial crown due to crowding
88	7	Douglas Fir	13	Good	Few & Minor or Correctable Defects	Partial crown due to crowding
89	6	Douglas Fir	10	Good	Few & Minor or Correctable Defects	Partial crown due to crowding
90	10,9	Pacific Madrone	18 x 14	Good	Few & Minor or Correctable Defects	Partial crown due to crowding
91	9	Black Cottonwood	13	Good	Few & Minor or Correctable Defects	
92	13	Douglas Fir	12	Good	Sound No Obvious Defects	
93	14	Black Cottonwood	18	Good	Sound No Obvious Defects	
94	8	Black Cottonwood	12	Good	Few & Minor or Correctable Defects	
95	7	Black Cottonwood	12	Good	Few & Minor or Correctable Defects	
96	7	Douglas Fir	13	Good	Few & Minor or Correctable Defects	Partial crown due to crowding

Willamette 205 Corporate Center II, Tree Assessment, West Linn, Oregon

Tree No.	Size inches	Species	Crwn Dia. Ft.	Health	Condition	Comments
97	12	Black Cottonwood	17	Good	Few & Minor or Correctable Defects	
98	8	Big Leaf Maple	12	Fair/Average	Few & Minor or Correctable Defects	
99	7	Big Leaf Maple	10	Good	Few & Minor or Correctable Defects	
100	10	Douglas Fir	16	Good	Few & Minor or Correctable Defects	
101	22	Black Cottonwood	20	Good	Few & Minor or Correctable Defects	
102	6	Douglas Fir	12	Good	Few & Minor or Correctable Defects	
103	6	Douglas Fir	10	Fair/Average	Moderate & non correctable defects	Swoop in trunk, poor specimen.
104	7	Douglas Fir	12	Fair/Average	Moderate & non correctable defects	Partial crown, with dead top. Prune out deadwood.
105	9	Black Cottonwood	12	Fair/Average	Moderate & non correctable defects	Broken & regrown top, connection defect at 30'
106	14	Black Cottonwood	16	Fair/Average	Moderate & non correctable defects	Wound on east side at base
107	10	Douglas Fir	14	Fair/Average	Moderate & non correctable defects	Defects in upper crown
108	8	Douglas Fir	14	Fair/Average	Few & Minor or Correctable Defects	Partial crown due to crowding
109	9	Douglas Fir	14	Fair/Average	Few & Minor or Correctable Defects	Partial crown due to crowding
110	11	Black Cottonwood	13	Fair/Average	Few & Minor or Correctable Defects	Partial crown due to crowding
111	12	Black Cottonwood	14	Fair/Average	Few & Minor or Correctable Defects	
112	7	Black Cottonwood	13	Fair/Average	Few & Minor or Correctable Defects	
113	7	Big Leaf Maple	14	Fair/Average	Few & Minor or Correctable Defects	Partial crown due to crowding

Willamette 205 Corporate Center II, Tree Assessment, West Linn, Oregon

Tree No.	Size inches	Species	Crwn Dia. Ft.	Health	Condition	Comments
114	12,10	Black Cottonwood	17	Fair/Average	Few & Minor or Correctable Defects	2stems at 2', poor connection
115	7,5	Big Leaf Maple	16	Fair/Average	Few & Minor or Correctable Defects	2 stem at 3', remove smaller stem with poor connection to main
116	15	Black Cottonwood	17	Fair/Average	Few & Minor or Correctable Defects	
117	12	Black Cottonwood	16	Fair/Average	Few & Minor or Correctable Defects	Reverse root growing up steep bank, tree will be potential hazard if root is cut.
118	8	Douglas Fir	12	Fair/Average	Few & Minor or Correctable Defects	Partial crown due to crowding
119	9	Douglas Fir	14	Fair/Average	Few & Minor or Correctable Defects	Partial crown due to crowding
120	12,11	Black Cottonwood	21	Fair/Average	Moderate & non correctable defects	2 stem at 1', major roots exposed to north and east (down scope)
120b	7,4	Big Leaf Maple	16	Fair/Average	Major Defects & Problems, Hazard Remove	Swoop in trunk, leans out over bank, Hazard Remove
121	15	Black Cottonwood	16	Fair/Average	Few & Minor or Correctable Defects	
121b	7	Big Leaf Maple	13	Fair/Average	Few & Minor or Correctable Defects	
121c	11	Douglas Fir	19	Fair/Average	Few & Minor or Correctable Defects	
122	13	Black Cottonwood	17	Fair/Average	Few & Minor or Correctable Defects	
123	19,8	Black Cottonwood	17	Fair/Average	Moderate & non correctable defects	Roots exposed down scope and across drainage ditch

NOTE: NOTES:

Trees that are dead, dying, hazardous or potentially hazardous are shown in **BOLD**.

Trees that have significant defects, non-correctable structural problems and are poor specimens which should not be preserved, are shown in **BOLD ITALICS**

Species Key:

Ash - Fraxinus species

Austrian Pine - Pinus nigra

Bigleaf maple - Acer macrophyllum

Black Cottonwood - Populus trichocarpa

Douglas fir -Pseudotsuga menziesii

Leyland Cypress - x Cupressocyparis Leylandii

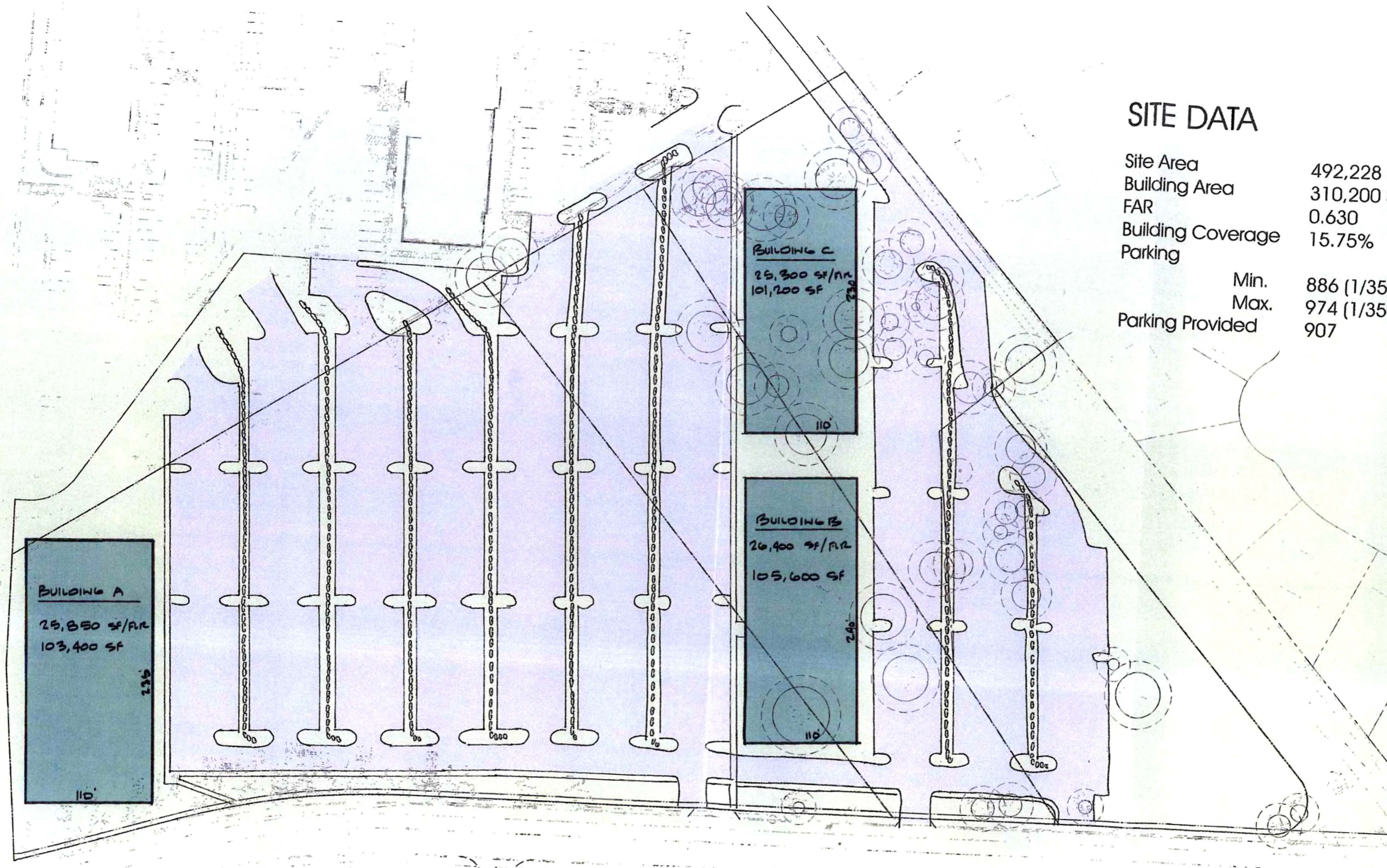
London Plane - Platanus acerifolia

Norway Maple - Acer platanoides

Oregon White Oak - Quercus garryana

Pacific Madrone - Arbutus menziesii

Scotch Pine - Pinus sylvestris



SITE DATA

Site Area	492,228 SF (11.3 ac)
Building Area	310,200 SF
FAR	0.630
Building Coverage	15.75%
Parking	
	Min. 886 (1/350)
	Max. 974 (1/350 + 10%)
Parking Provided	907

310,200 SF OPTION
 WILLAMETTE 205 CORPORATE CENTER - PHASE II

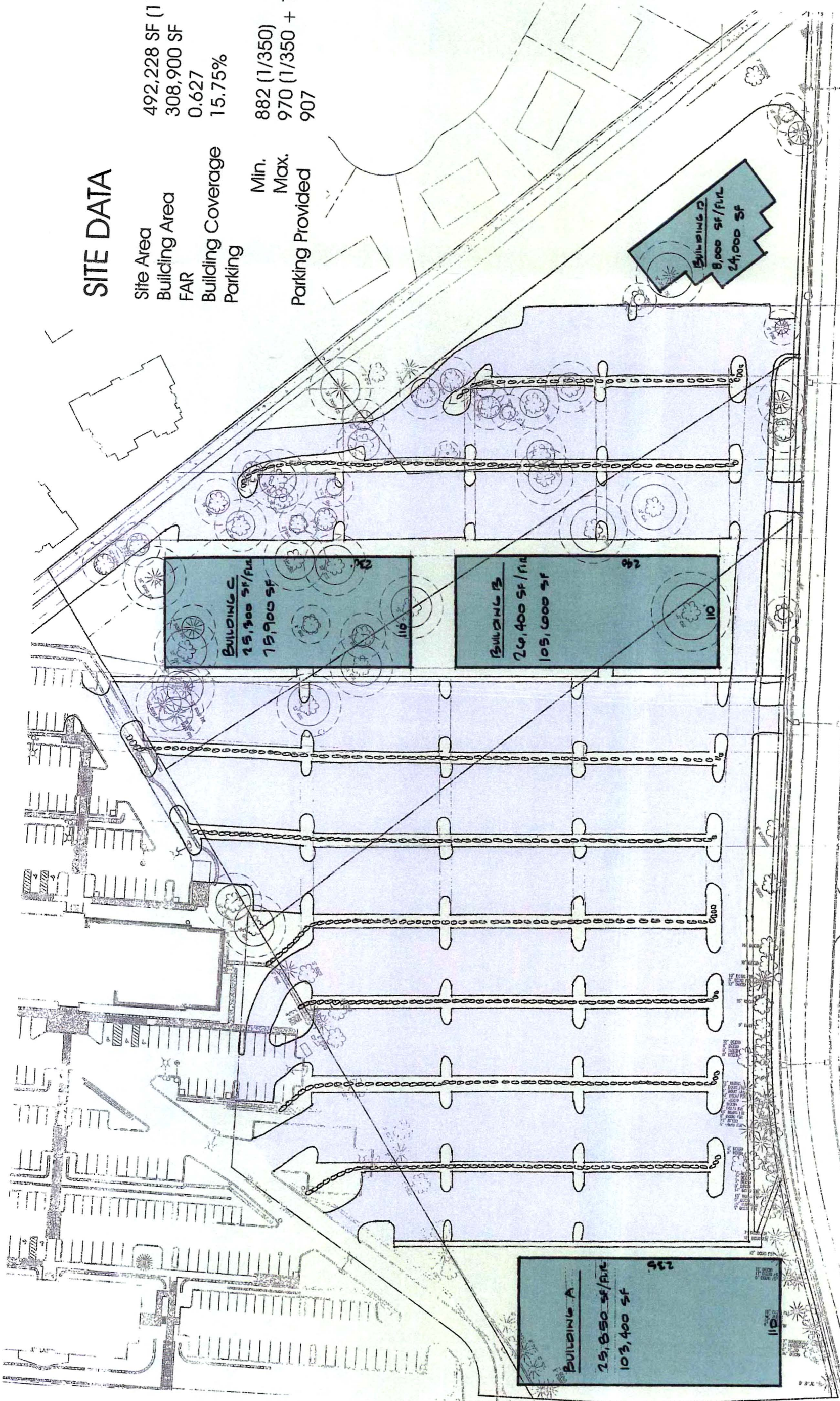


DESIGN SCHEME "A"
 MAY 15, 2006

GROUP MACKENZIE ARCHITECTS

SITE DATA

Site Area 492,228 SF (11.3 ac)
 Building Area 308,900 SF
 FAR 0.627
 Building Coverage 15.75%
 Parking 882 (1/350)
 Min. 970 (1/350 + 10%)
 Max. 907
 Parking Provided



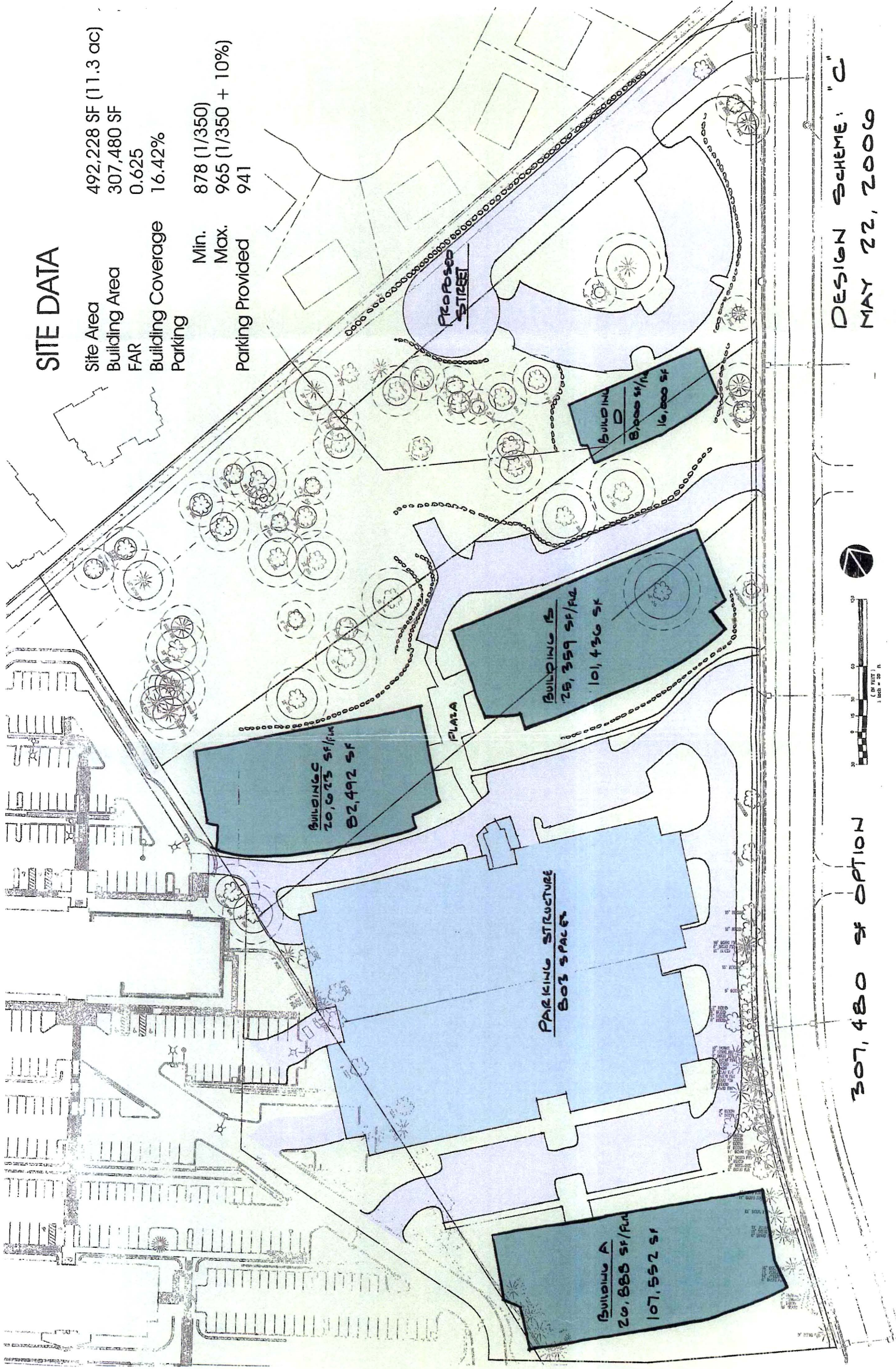
DESIGN SCHEME "B"
 MAY 15, 2006

308,900 SF OPTION
 WILLAMETTE 205 CORPORATE CENTER - PHASE II

CAROL MACKENZIE ARCHITECTS

SITE DATA

Site Area 492,228 SF (11.3 ac)
 Building Area 307,480 SF
 FAR 0.625
 Building Coverage 16.42%
 Parking
 Min. 878 (1/350)
 Max. 965 (1/350 + 10%)
 Parking Provided 941



DESIGN SCHEME: "C"
 MAY 22, 2000

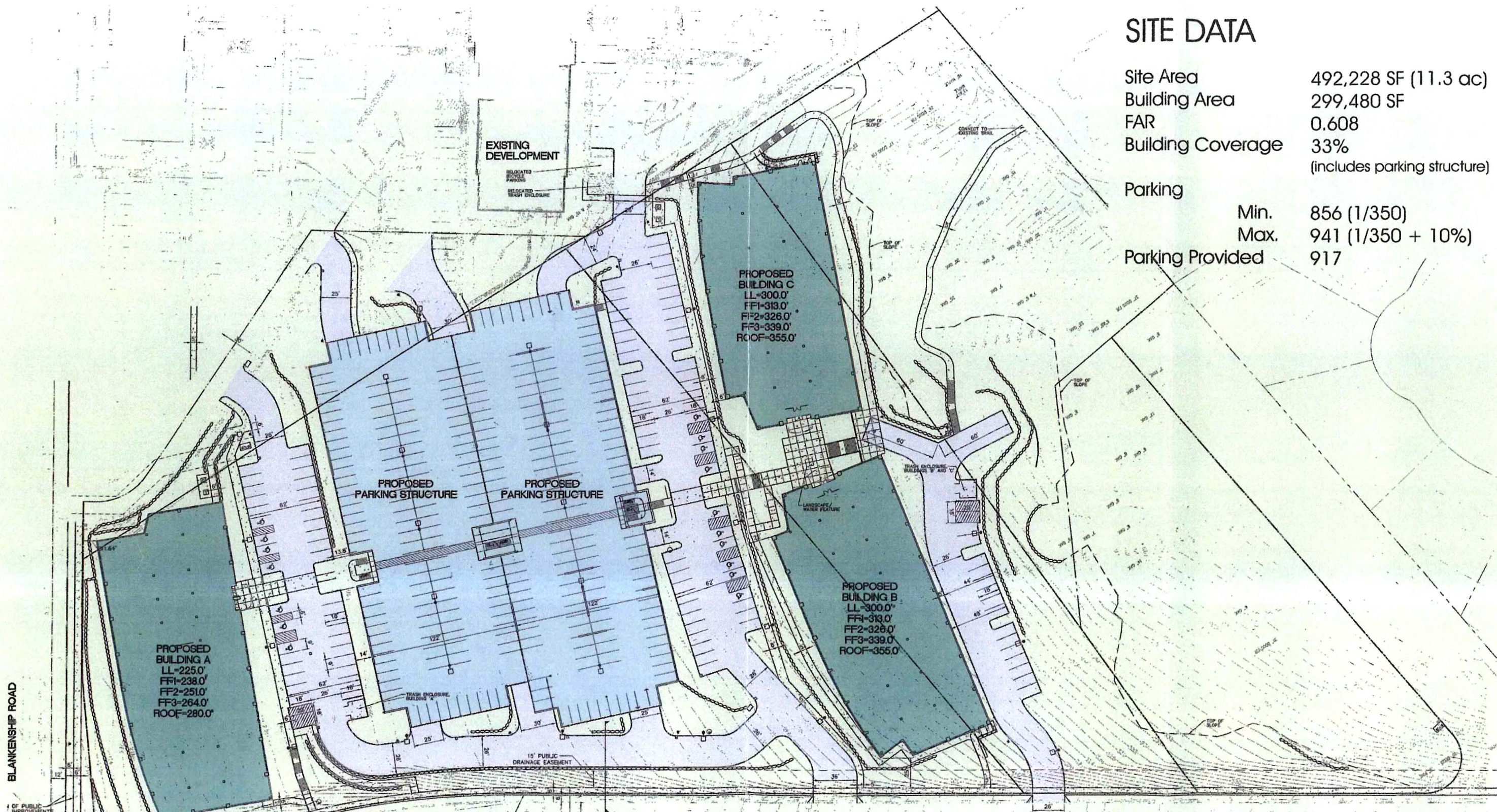


307,480 SF OPTION

SITE DATA

Site Area 492,228 SF (11.3 ac)
 Building Area 299,480 SF
 FAR 0.608
 Building Coverage 33%
 (includes parking structure)

Parking
 Min. 856 (1/350)
 Max. 941 (1/350 + 10%)
 Parking Provided 917



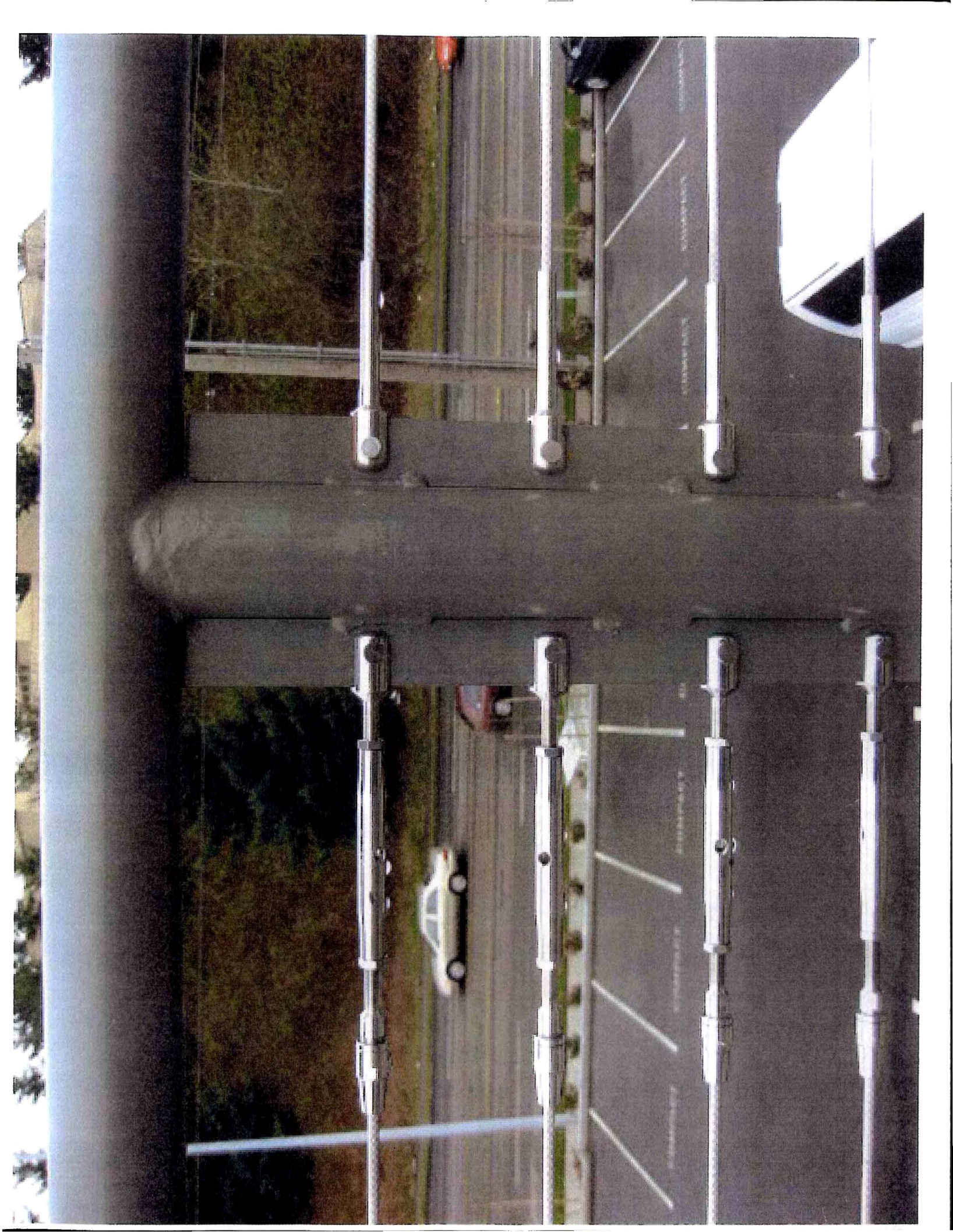
299,480 SF Option
 WILLAMETTE 205 CORPORATE CENTER - PHASE II

PROPOSED DESIGN SCHEME
 JUNE 1, 2005
 GROUP MACKENZIE ARCHITECTS









August 24, 2006



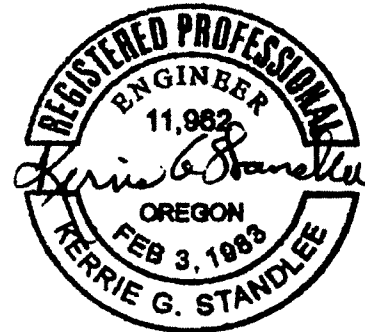
Blackhawk, LLC
2020-C SW 8th Avenue, P.O. Box 170
West Linn, OR 97068

Daly • Standlee & Associates, Inc.
4900 S.W. Griffith Drive
Suite 216
Beaverton, Oregon 97005
(503) 646-4420
Fax (503) 646-3385

Attn: Mr. Jeff Parker

From: Kerrie G. Standlee
Senior Principal

Re: **Willamette 205 Corporate Center
Phase II Noise Study**
DSA File #: 154062



EXPIRES: 6/30/08

Introduction

Daly-Standlee & Associates, Inc. (DSA) conducted a noise study for the proposed Willamette 205 Corporate Center Phase II office complex development in West Linn, Oregon. Under the West Linn development code, the applicant, when requesting building permits for a proposed development, is required to submit a noise study showing that the noise associated with the development will comply with both the Oregon DEQ Noise Regulations and the sections of the West Linn Municipal code that relate to noise. Therefore, the noise study was conducted to determine if the noise that will be generated by the proposed development will be in compliance with those codes.

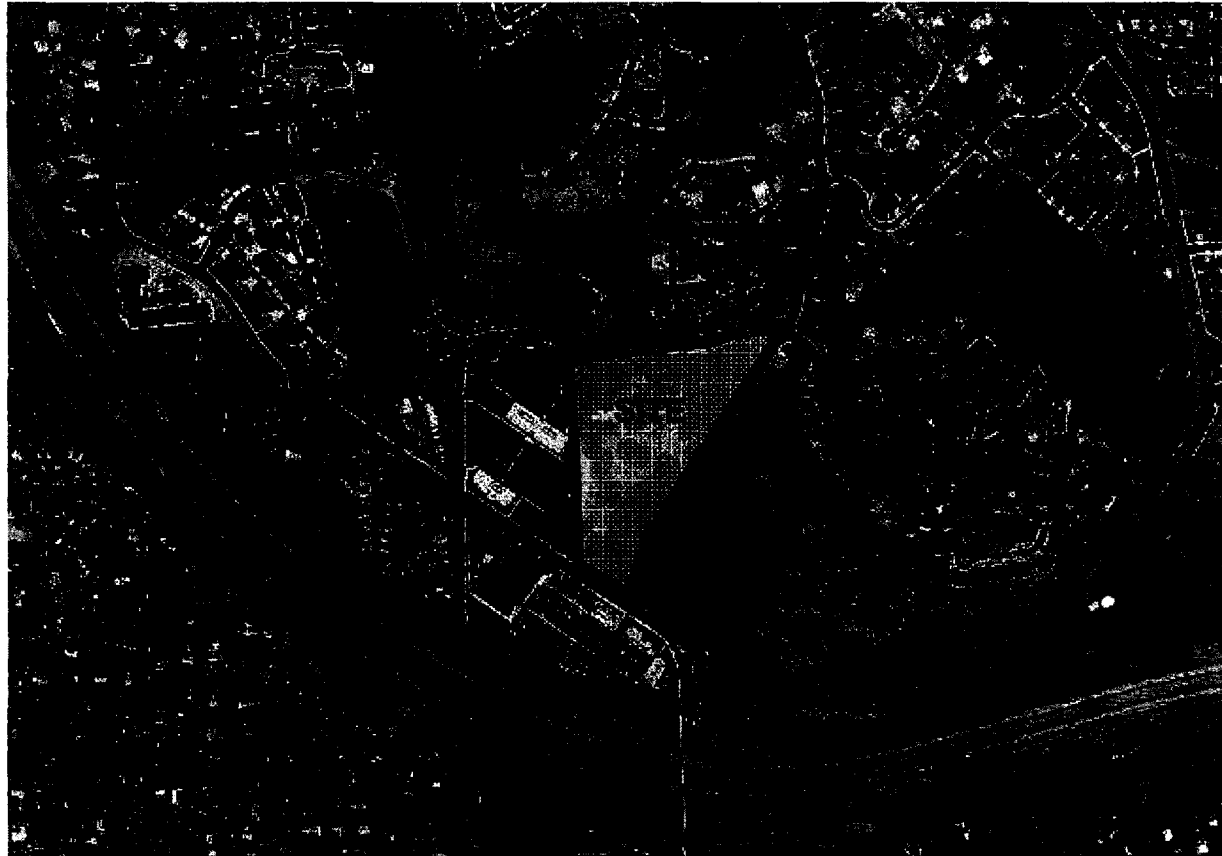
This report provides the results of the noise study and the conclusions based on those results.

Summary of Findings

Based on the results of ambient noise levels measured over a 3 day period that included weekday and weekend periods, and based on the noise levels predicted to radiate from the proposed Willamette 205 Corporate Center Phase II office buildings, the noise radiating from the office park will meet all state and city noise regulations during all hours.

Site Description

The Willamette 205 Corporate Center Phase II development will be a commercial development that will be located at the northwest corner of Blankenship Road and Tannler Drive in West Linn, OR (see Figure 1). The development will be bordered on the south by Blankenship Road, on the west by the West Linn Corporate Park I which has two existing office buildings (1800 Blankenship Road "Building A" and 1830 Blankenship Road "Building B"), on the north by the Summer Linn Apartment Complex and the Barrington Heights residential development, and on the east by Tannler Drive (see Figure 2).



Daly-Standlee & Associates, Inc.

Phone: 503/646-4420
 Fax: 503/646-3385
 Email: DSA@acoustechgroup.com

Vicinity Map

DESIGNED BY:

M. Shiach

DRAWN BY:

M. Shiach

DATE:

7/12/06

PROJECT NO.

154061

Figure 1



Daly-Standlee & Associates, Inc.

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 email: DSA@acoustechgroup.com

**Proposed Office Complex and
 Noise Measurement Locations**

DESIGNED BY:

DRAWN BY:

CLA

DATE:

8/23/2006

PROJECT NO.

154061

Figure 2



The topography at the site slopes upward from the site's southwest corner to its northeast corner. The southwest corner of the site has an elevation of approximately 210 feet above sea level and the elevation in the northeast corner of the site is approximately 100 feet above that found in the southwest corner.

Three office buildings are proposed on the site. Building "A", a three-story office building spanning the east-west width of the site, is proposed in the lower, southeast portion of the site. Office Building "B" and "C", both three-story buildings, are proposed side-by-side along a line running east-west across the site in the upper portion of the site approximately 200 to 225 feet south of the northwest corner of the site (see Figure 2). Parking for the three office buildings will be located in a parking structure that will be located between the lower three story building and the upper two, three story buildings.

The roof of the three-story office building on the lower portion of the site will be at an elevation of approximately 280 feet above sea level (approximately 50 feet above the ground elevation at its building site) while the roof of the upper three story office buildings will be at an elevation of approximately 343 feet above sea level (approximately 47 feet above the ground on the south side of the building and 37 feet above the ground elevation in the northwest corner of the site).

The nearest occupied residential properties are located north of the site and east of the site. The Summer Linn Apartments are located immediately adjacent to the northwest corner of the site and represent the nearest residential structures to the proposed office buildings. The Barrington Heights residential development, located immediately east of the Summer Linn Apartments, border the majority of the north property line of the proposed office buildings. Homes are located on Greene Street across Tannler Drive, east of the northeast corner of the office building site.

The apartment in the Summer Linn Apartment complex nearest the proposed development will be approximately 252 feet from the northwest corner of the western office building in upper portion of the site. The apartment building is constructed in an old rock quarry so that the ground elevation at the apartments is approximately the same as that found in the northwest corner the project site (approximately 320 feet above sea level). The top floor of the apartments will be approximately 13 feet below the roof of the nearest 3-story office building. People living on the top floor of the apartment buildings should not be able to see the surface of the roof of the upper two office buildings but they could likely see the walls being constructed around the rooftop HVAC equipment.

The closest house to the office buildings in the Barrington Heights development will be approximately 398 feet from the northwest corner of the eastern office building in the upper portion of the site. The homes located in that development along the north property line will be at a much higher elevation than the roof of the office building (the elevation of the ground floor levels of the homes range from 375 feet above sea level to 385 feet above sea level) so that people in the homes will be overlooking the roof of the office buildings but they will not be able to see the HVAC equipment due to a proposed 10 foot high barrier wall constructed around the equipment.



The nearest home on Greene Street will be approximately 530 feet from the east side of the eastern office building proposed in the upper portion of the site. Most of the homes in the development will be at a higher elevation than the roof of the office buildings so that the occupants of those homes will overlook the roof of the buildings but they will not be able to see the HVAC equipment due to the presence of a 10 foot high wall around the equipment.

An Albertsons Food Store is located on the south side of Blankenship Road south of the proposed development site. Undeveloped land zoned for commercial use is located west of the Albertsons store. Interstate Highway 205 is located further south of the Albertson store approximately 650 feet from the southern boundary of the site.

The site will be cleared of vegetation to allow for the construction of the three buildings, the parking area between the buildings and the access drives. However, there will be approximately 200 feet of bushes and trees left between the eastern building along the north portion of the site and the residential developments to the northeast and east (Barrington Heights and Greene Street).

Facility Information:

Noise sources expected at the office complex are:

- rooftop HVAC equipment,
- road traffic generated by the building,
- automobiles driving in the parking lot,
- slamming automobile doors,
- garbage trucks,
- delivery trucks,
- lawn maintenance equipment,
- routine parking lot maintenance equipment (such as parking lot sweeps and leaf blowers).

No emergency generators are expected on the exterior of the building. It is expected that routine parking lot maintenance equipment (such as parking lot sweeps and leaf blowers) will only operate between the hours of 7 AM and 10 PM.

According to representatives of the Willamette 205 Corporate Center Phase II LLC, two, 70-ton Trane Intellipak commercial packaged rooftop units are proposed on the two 3-story office buildings in the northern portion of the site and three, 70-ton Trane Intellipak commercial packaged rooftop units are proposed on the office building in the southern portion of the site.

Vehicles will access the proposed office center complex at two locations along Tannler Drive near the center of the east side of the site and at four locations on the west side of the site along the driveway leading to the existing office building west of the proposed development.



Noise Criterion

The Oregon Department of Environmental Quality (DEQ) noise regulations (OAR Chapter 340-35-035) control noise radiating from “new” and “existing” industrial or commercial noise sources. A new industrial or commercial noise source is defined as any noise source that begins operation after January 1, 1975. Therefore, under the DEQ noise regulations, the proposed office park will be a “new commercial noise source”.

The DEQ noise regulation categorizes a new commercial noise source as a new source located on a “previously used commercial site” or as new source located on a “previously unused commercial site”. A “previously used commercial site” is defined as a site on which commercial or industrial activity occurred within the 20 years preceding the operation of the new noise source on the site. The proposed Willamette 205 Corporate Center Phase II development will be located on property that has never been used for a commercial operation. Therefore, the DEQ regulation for new commercial sound sources located on a previously unused site will apply to the development.

The Oregon DEQ noise regulation for a new commercial noise sources on a previously unused site states that the noise radiating from the new source cannot exceed the maximum allowable limits in Table 8 of the regulation (see Table 1 below) nor increase the existing ambient hourly statistical L₁₀ and L₅₀ noise levels by more than 10 dBA at any appropriate noise sensitive receiver. The second part of the limitation (the 10 dBA increase limitation) is commonly known as the ambient degradation rule in the regulation. The hourly L₁₀, and L₅₀ sound levels are defined as those sound levels at a receiver that are equaled or exceeded 10% and 50% of an hour, respectively. The appropriate noise sensitive receiver location is defined as any point 25 feet from a residence, motel, church, school or hospital or the property line of the noise sensitive property which ever is farther from the noise source.

**TABLE 1
DEQ Maximum Allowable Hourly Statistical Noise Levels**

OAR 340-35-035 - Table 8 New Industrial and Commercial Noise Source Standards Allowable Statistical Noise Levels in Any One Hour	
7 am - 10 pm	10 pm - 7 am
L ₅₀ - 55 dBA	L ₅₀ - 50 dBA
L ₁₀ - 60 dBA	L ₁₀ - 55 dBA
L ₀₁ - 75 dBA	L ₀₁ - 60 dBA

The West Linn Community Development Code Section 55.100(D), Approval Standards – *Privacy and Noise*, requires that all “Businesses or activities that can reasonably be expected to generate noise shall undertake and submit appropriate noise studies and mitigate as necessary.” Office buildings are generally considered to be businesses that



generate noise in the City of West Linn. Therefore, the West Linn *Privacy and Noise* code will also apply to the Willamette 205 Corporate Center Phase II development.

The West Linn Community Development Code states that for any new commercial development on a vacant or previously unused commercial site, the operation of a noise source shall not cause or permit noise levels which would increase the ambient hourly statistical L_{10} and L_{50} noise level by more than 5 dBA at any appropriate receiver. This part of the City code is similar to the DEQ ambient degradation criteria with the exception that the City of West Linn criteria more stringent than the DEQ ambient degradation criteria.

The West Linn Community Development Code Section 55.100(D) also regulates the maximum allowable hourly statistical sound levels that can be generated by a new commercial development and the limits specified by the City are shown in Table 2.

TABLE 2
West Linn Maximum Allowable Hourly Statistical Noise Levels

Section 55.100(D) - Table 1	
Businesses or activities that can be expected to generate noise	
Allowable Statistical Noise Levels in Any One Hour	
7 am - 7 pm	7 pm - 7 am
L_{50} - 55 dBA	L_{50} - 50 dBA
L_{10} - 60 dBA	L_{10} - 55 dBA
L_{01} - 75 dBA	L_{01} - 60 dBA

The maximum allowable criteria limits specified in the City code are the same as those specified in the state. However, there are more hours included in the “Nighttime” hour category in the West Linn code than in the DEQ code. As a result, Section 55.100(D) of the West Linn Community Development code becomes more stringent than the DEQ code..

Existing Ambient Noise Levels at Residences around the Development

Noise measurements were made for 24 hours at two locations near the northeast corner of the site in the vicinity of homes nearest the site in the Barrington Heights development and homes nearest the site on Greene Street (Measurement Locations 2 and 3 of Figure 2). Those measurements began at 4 p.m. on January 21, 2004 and ended at 4 p.m. on January 22. Forty eight (48) hour noise measurements were made at a third location near the Summer Linn Apartments (Measurement Location 1 in Figure 2) beginning at 12 noon on January 24, 2004 and ending at 12 noon on January 26, 2004. The longer term measurements at Location 1 were made to provide information about the weekend noise levels generally found in the area.



Measurement Procedure

Noise levels were measured using three Larson Davis Model 720 sound level meters which meet the American National Institute (ANSI) requirements for a Type 2 sound level meter. The detectors of the meters were set for “fast” response. The meters have a built-in microprocessor and memory capability that allowed calculations and storage of a variety of statistical data. The microphones were located approximately five feet above ground level. All three sound level meters were field calibrated prior to the noise measurement with a Larson Davis Model CA 250 sound level calibrator.

Measurement Locations

Measurement Location 1 was located in the northwest corner of the site, approximately 450 feet east of Summerlin Drive, and approximately 50 feet south of the Summer Linn Apartments (see Figure 2). Measurement Location 1 was selected to provide information on the ambient noise levels experienced by the occupants of the Summer Linn Apartment buildings nearest the proposed development.

Measurement Location 2 was located approximately 150 feet west of Tannler Drive, and approximately 75 feet south of the houses in Barrington Heights (see Figure 2). Measurement Location 2 was selected to provide information on the ambient noise levels experienced by the residents of homes in the Barrington Heights area nearest the proposed development.

Measurement Location 3 was located approximately 25 feet east of Tannler Drive, and approximately 35 feet from the first home on Greene Street (see Figure 2). Measurement Location 3 was selected as a measurement point because it was at a much lower elevation than any other home in the area and the noise from Interstate 205 traffic (the major source of ambient noise in the area) appeared to be lower at that home than at any other home in the area. Therefore, to be conservative in defining the ambient noise, the measurement site was selected to provide ambient noise level data for the homes on Greene Street.

Measurement Results

Figure 3 presents the ambient noise levels recorded at measurement Location 1. Figure 4 presents the ambient noise levels recorded at measurement Location 2 and Figure 5 presents the ambient noise levels recorded at measurement Location 3.

The ambient sound level measurement results indicate the noise levels at residences around the proposed office site already approach or exceed the West Linn and DEQ maximum allowable hourly statistical sound level limits for commercial and industrial sources. Therefore, the ambient degradation rule in the West Linn and DEQ regulations would be less stringent than the maximum allowable hourly statistical sound level limits and the predicted noise levels should be compared with the maximum allowable limits of both rules.

Figure 3
Ambient hourly L01, L10, & L50 sound levels - Location 1 (Summer Linn Apartments)
Measured January 24, 2004 - January 26, 2004
(See Figure 2 For Location)

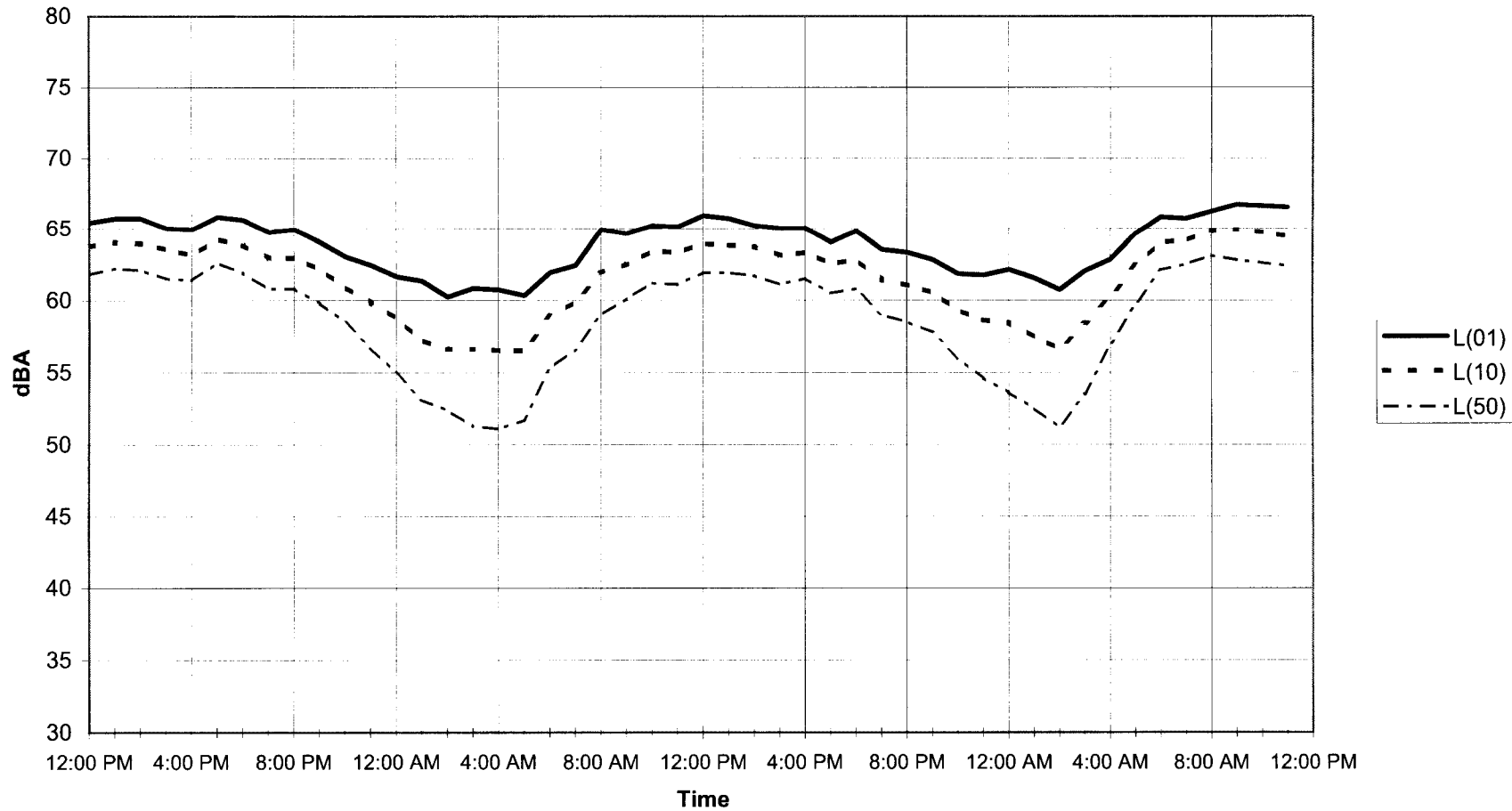


Figure 4
Ambient hourly L01, L10, & L50 sound levels - Location 2 (Barrington Heights home)
Measured January 21, 2004 - January 22, 2004
(See Figure 2 For Location)

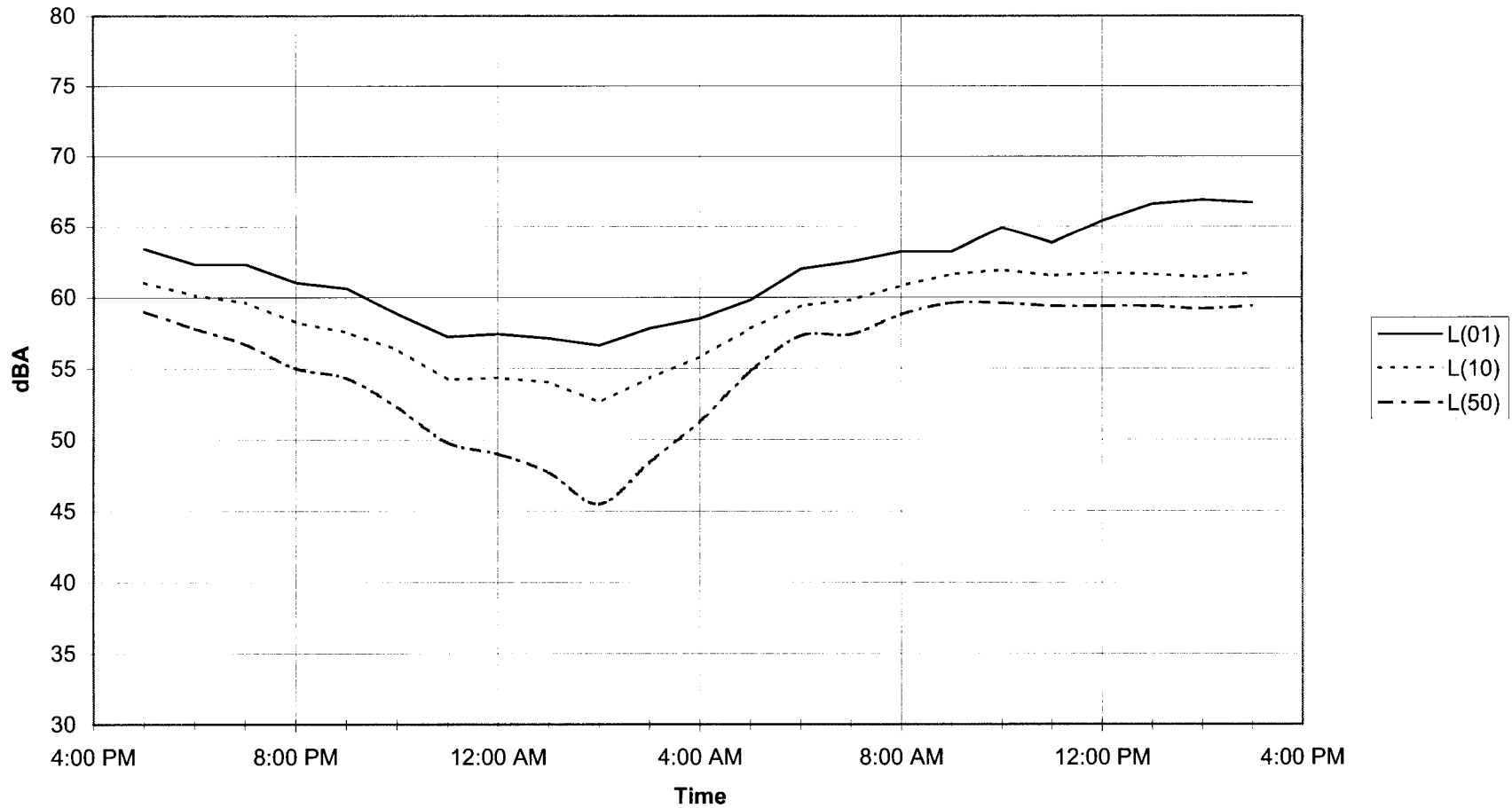
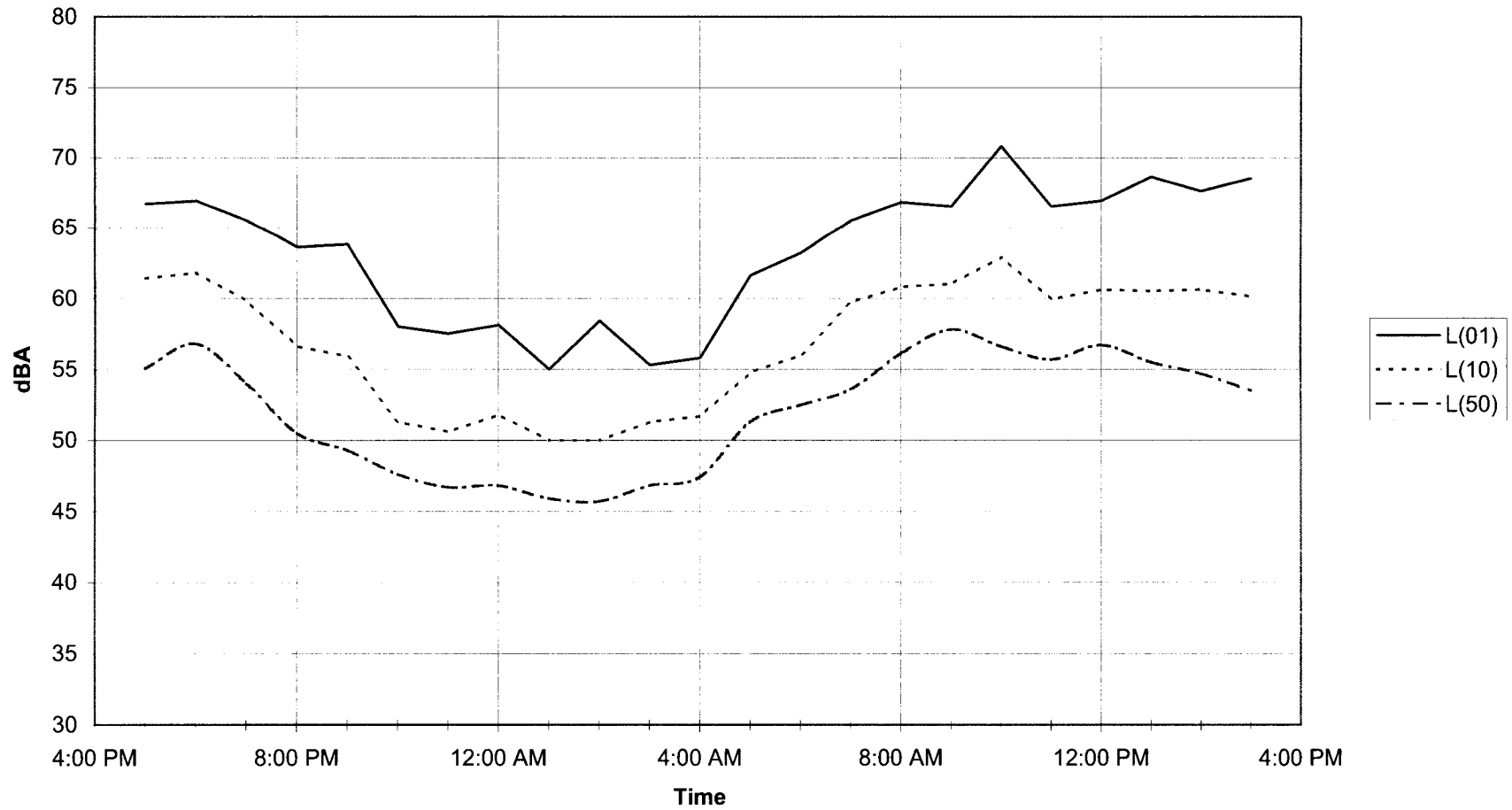


Figure 5
Ambient hourly L01, L10, & L50 sound levels - Location 3 (Greene Street home)
Measured January 21, 2004 - January 22, 2004
(See Figure 2 For Location)





Observations

Observations were made at each measurement location during various periods of the day to help establish the source of the ambient noise found at the locations. Traffic on Interstate 205 was the primary noise source influencing the hourly L_{01} , L_{10} , and L_{50} noise levels measured in the vicinity of all 3 measurement locations. Noise from traffic on I-205 varied with the time of day as the volume of traffic changed but in general, the noise from the freeway was always present at a high enough level to be the primary source of environmental noise in the area.

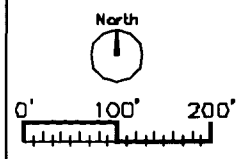
At measurement Location 1, a train horn was observed for a brief duration during an observation period, but sound from the horn was seldom observed to exceed 60 dBA. During an early morning observation period, people were arriving in their cars to the existing Building A office building in the West Linn Corporate Park I development. During that time period, the noise generated by closing car doors was never audible above the ambient noise caused by the freeway traffic. At times, noise from aircraft could be heard for a very brief duration at Location 1 as well as at Location 2 and Location 3.

At measurement Location 2 and 3, cars on Tannler Drive contributed some noise to the measured hourly statistical L_{01} and L_{10} sound levels during periods of higher traffic volumes along the road.

Predicted Noise Radiating from the Office Complex

Analysis Procedure

The highest possible hourly statistical noise levels radiating from the Willamette 205 Corporate Center Phase II development were predicted at four residential locations. One location was directly north in the Summer Linn Apartments. A second location was to the north at the nearest home in the Barrington Heights development. The third location was at the Greene Street home with the quietest ambient noise levels and the fourth location was at the home on Greene Street nearest the proposed development. The four locations chosen are believed to have the greatest potential of receiving the highest noise levels from the proposed development or of having the greatest change in ambient noise caused by the development. The positions are labeled A, B, C, and D in Figure 6.



Daly-Standlee & Associates, Inc. ph: 503-646-4420 fax: 503-646-3385 email: DSA@acoustechgroup.com		Nearby Residence Locations and Noise Prediction Locations	
DESIGNED BY:	DRAWN BY: CLA	DATE: 8/23/2006	PROJECT NO. 154061
			Figure 6



The noise levels were predicted at positions 25 feet from the existing structures at those sites in accordance with the City of West Linn and the Oregon DEQ noise regulations. Noise levels were predicted using a computer program that includes the effects of atmospheric conditions, spreading loss, berms, barriers, vegetation, etc. Reference noise levels for HVAC units, automobiles, garbage trucks, and leaf blowers were obtained from published reference data and noise data measured by DSA. Car door slams were also measured by DSA, and included in the analysis of the predicted noise generated by the proposed Office Complex. The reference noise data used in the analysis are presented in Table 3.

TABLE 3

Reference Sound Levels Used in Predicting the Noise Radiating from the Office Complex

Source	Distance (ft)	Maximum Noise Level (dBA)
130-ton Trane Intellipak Commercial Packaged Rooftop Unit	33	67
Automobile – driving slowly	50	70
Automobile – idling	50	49
Automobile – car door slam*	50	71
Garbage Truck	50	72
Recycling Truck	50	65
Delivery Truck	50	59
Leaf Blower	10	83
Parking Lot Sweeper	50	60

*The sound during a car door slam was found to exist for approximately 180ms. During that time, the SPL rose to the maximum level shown and then decreased back down to below the ambient noise during the measurement.

To predict the loudest nighttime (7 PM – 7 AM) hour statistical noise levels, the following assumptions were included in the analysis:

- All of the rooftop units are operating continuously and simultaneously during the entire loudest nighttime hour. The rooftop units will be located close to the center of the three buildings. The source height of the noise radiating from the rooftop units was assumed to be 4 feet above the roof elevation.
- A garbage truck (the loudest of a garbage, a recycling, or a delivery truck) is at the site during the loudest nighttime hour.
- 4 automobiles are traveling at 15 mph during the entire hour in the parking lot and
- 4 automobiles are idling during the entire hour in the parking lot.
- 50 car door slams occur in the parking area during the hour.



To predict the loudest daytime (7 AM – 7 PM) hour statistical noise levels, the following assumptions were included in the analysis:

- All of the rooftop units are operating continuously and simultaneously during the entire loudest daytime hour.
- 10 automobiles are idling in the parking lot simultaneously for an entire hour and
- 10 automobiles are driving at 15 mph in the parking lot simultaneously for an entire hour.
- A leaf blower (with a higher noise level than a parking lot sweeper) is at the site during the loudest hour.
- A garbage truck (the loudest of a garbage, a recycling, or a delivery truck) is at the site during the loudest hour.
- 200 car door slams occur during the loudest hour.

With both scenarios, the assumptions are very conservative because, as one example, it is very unlikely that there will ever be a time when all the rooftop HVAC equipment will operate continuously during any hour. Also, it is not likely that every person arriving at the building will actually “slam” their car door which is assumed in the analysis.

In assessing the site generated noise, the loudest possible daytime and nighttime hour noise levels were compared with the West Linn and Oregon DEQ daytime and nighttime criteria.

Analysis Results

The loudest possible hourly statistical sound levels predicted at the nearest residences are shown in Table 4.

TABLE 4
Loudest Possible Hourly L₀₁, L₁₀, and L₅₀ Noise Levels Radiating from Willamette 205 Corporate Center Phase II during Daytime and Nighttime Hours

Residence Location	Loudest Nighttime Hour (7PM – 7 AM)			Loudest Daytime Hour (7AM – 7 PM)		
	L(01)	L(10)	L(50)	L(01)	L(10)	L(50)
A – Nearest Summer Linn Apartment	45	40	40	50	40	40
B – Nearest Barrington Heights Home	47	42	42	53	42	42
C – Greene Street Home w/quietest ambient	53	38	38	56	38	38
D – Nearest Greene Street Home	53	38	38	56	38	38
*Note – noise levels presented are the loudest noise levels that could ever be expected to radiate from the site, but they are not considered typical. **See Figure 6 for Residence Locations.						



The results of the analysis show that the noise radiating from the Willamette 205 Corporate Center Phase II Office buildings will be well under the West Linn and DEQ maximum allowable hourly statistical noise limits during daytime and nighttime hours (see Table 1 and Table 2 for criteria).

Because there have been concerns voiced by members of the West Linn City Council in the past with the impact of noise generated by car door closures in parking lots, it should be noted that the noise generated by “slamming” car doors would virtually be inaudible because the parking area will be blocked from view of the nearest residences by the northern buildings. It is predicted that the loudest hourly L_{01} noise level caused by slamming car doors would be in the range of 29 dBA at the nearest residence; Location A (the Summer Linn Apartments); well below the ambient noise in the area. Slamming car doors would provide no contribution to the predicted hourly L_{10} or L_{50} noise level because the duration of one slam is less than 187 milliseconds and there could never be enough total occurrences in an hour to contribute a total of 30 minutes of sound (the hourly L_{30} period) much less 6 minutes of sound (the hourly L_{10} period).

Even though the ambient degradation rule will not be the controlling criteria for this project, a prediction was made of the change that would occur in the ambient noise level at the four prediction locations if the project was allowed to be constructed. It was predicted that there would be no change in ambient hourly L_{10} or L_{50} noise levels with the construction of the Willamette 205 Corporate Center Phase II.

Conclusions

Based on the results of the noise study, we conclude that the noise radiating from the proposed Willamette 205 Corporate Center Phase II office complex will meet all state and local noise regulations during daytime and nighttime hours

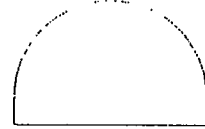
The noise radiating from the proposed office center will have virtually no influence on the existing environmental noise levels found at residences around the site.

Notes:

Job: WILLAMETTE 205
 Type: 'SA', 'SA1', 'SA2'

FORM 10 ROUND

CA/MA ARM MOUNT



GENERAL DESCRIPTION: The Gardco Round arm mounted Form 10 products are cylindrical (CA) or semi-spherical (MA) sharp cutoff luminaires using high intensity discharge lamps up to 1000 watts (400w in the MA). Housings are one-piece seamless spun aluminum and finished with either Architectural Class 1 anodizing or electrostatically applied polyurethane. Luminaires can accept one of eight (8) interchangeable and rotatable precision segmented optical systems.

ORDERING Flat glass lens luminaires meet IESNA Full Cutoff criteria. Sag Lens luminaires meet IESNA Cutoff criteria.

PREFIX	CONFIGURATION	DISTRIBUTION	WATTAGE	VOLTAGE	FINISH	OPTIONS

Enter the order code into the appropriate box above. Note: Gardco reserves the right to refuse a configuration. Not all combinations and configurations are valid. Refer to notes below for exclusions and limitations. For questions or concerns, please consult the factory.

PREFIX

- CA17 17" Diameter Cylindrical Luminaire
- MA17 17" Diameter Semi-Spherical Luminaire
- CA22 22" Diameter Cylindrical Luminaire
- MA22 22" Diameter Semi-Spherical Luminaire

CONFIGURATION

- 1 Single Assembly 3 Triple at 90°
- 2 Twin Assembly 3@120 Triple at 120°
- 2@90 Twin Assembly at 90° 4 Quad Assembly

DISTRIBUTION

Horizontal Lamp

- 1 Type I
- 3 Type III
- 4X Type IV (22" luminaires only)
- FM Type IV
- Q Type V

Vertical Lamp

- VS Type V
(Supplied with acrylic sag lens. Medium base only on 17" luminaires only)
- FC3V* Type III, Full cutoff
- FCVS* Type V, Full cutoff
*22" 320PSMH only. Supplied with MS32/BU/ED28/LLC/PS lamp

WATTAGE

CA17	MA17	CA22	MA22
50MH ¹	50MH ¹	250MH	250MH
70MH ¹	70MH ¹	400MH	400MH
100MH ¹	100MH ¹	1000MH ^{2,7,14}	250PSMH ⁹
150MH ¹	150MH ¹	250PSMH ⁹	320PSMH ¹⁰
175MH	175MH	320PSMH ⁹	350PSMH
200MH	175PSMH ^{2,12}	350PSMH	400PSMH
250MH ¹³	70HPS	400PSMH ¹¹	450PSMH ¹¹
175PSMH ^{2,12}	100HPS	450PSMH ²	250HPS
250PSMH ⁹	150HPS ⁴	750PSMH ⁸	400HPS
70HPS		875PSMH	
100HPS		1000PSMH ^{2,14}	
150HPS ⁴		250HPS	MH Metal Halide
		400HPS	PSMH Pulse Start Metal Halide
		750HPS ⁵	HPS High Pressure Sodium

VOLTAGE

120	240	347	QUAD
208	277	480	120/208/240/277, Factory tied to 277V.

FINISH

- | | |
|---|---------------------|
| BRP Bronze Paint | BLA Black Anodized |
| BLP Black Paint | BRA Bronze Anodized |
| WP White Paint | NA Natural Anodized |
| NP Natural Aluminum Paint | |
| OC Optional Color Paint
Specify RAL designation ex: OC-RAL7024 | |
| SC Special Color Paint
Specify. Must supply color chip | |

1. Medium base lamp
2. Available with vertical lamp optics only.
3. Available with horizontal lamps only.
4. Operates 55V lamp.
5. Uses BT37 lamps only.
6. Furnished standard with Sag Glass Lens.
7. Available with 4X and VS optics only.
8. M149 only. Horizontal optics require MS750PS/BU-HOR/BT37 Lamp
9. M138 or M153
10. M132 or M154
11. M135 or M155
12. M137 or M152
13. Horizontal optics only.
14. For 1000w CA22 with 4X optics.

For 1000 Metal Halide, use:		
Brand	Product Code	Catalog Number
Venture	53702	MS1000W/HOR/BT37/3K
G.E.	18205	MVR1000/U/BT37
Venture	15332	MH1000W/U/BT37

For 1000 Pulse Start, use:		
Brand	Product Code	Catalog Number
G.E.	10389	MVR1000/U/BT37/PA
Venture	49111	MS1000W/HOR/T25/PS

WARNING: Use of other lamps voids warranty

OPTIONS

- | | | |
|--|--|--|
| HS Internal House Side Shield
Supplied standard w/FM optics | PCR Photocontrol Receptacle only
N/A with MA units | PTF2 Pole Top Fitter - 2 3/8" Dia. Tenon |
| F Fusing In Head. N/A above 400w | POLY Polycarbonate Sag Lens
In lieu of flat glass. N/A w/4X optics, 750 - 1000w | PTF3 Pole Top Fitter - 3-3.5" Dia. Tenon |
| LF In-Line/In-Pole Fusing | QS Quartz Standby N/A above 400w | PTF4 Pole Top Fitter - 3.5-4" Dia. Tenon |
| MF Mast Arm Fitter | SG Sag Glass Lens In lieu of flat glass
Supplied standard w/4X optics and 750-1000w | |
| PC Photocontrol and Receptacle
N/A with MA units or 480V. | | |

Gardco Lighting reserves the right to change materials or modify the design of its product without notification as part of the company's continuing product improvement program.

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 Genlyte Group

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 San Marcos, TX 78666

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 (512) 753-1000
 FAX: (512) 753-7855
 www.site-lighting.com



FORM 10 ROUND

CA/MA ARM MOUNT

SPECIFICATIONS

GENERAL: Each Gardco Form 10 arm mounted Hardtop is a cylindrical (CA) or semi-spherical (MA) sharp cutoff luminaire for high intensity discharge lamps. Internal components are totally enclosed, rain-tight, dust-tight and corrosion resistant. No venting of optical system or electrical components is required or permitted. Luminaires are completely assembled with no disassembly required for installation. Lamping requires no lifting or hinging the luminaire housing, disturbing wiring or exposing uninsulated live parts.

HOUSING: Housing is one piece, .100"/.25cm seamless aluminum with integral rolled circumferential reveal and lower section aperture incorporating a returned flange stiffener to protect against housing edge deformation. Units are offered in profiles of 17" (43.18cm) or 22" (55.88cm) diameter.

ARM: Extruded aluminum arm is secured to prewired fixture by contractor. Assembly is suitable for mounting to pole without requiring access to luminaire. Internal extruded channels capture tie rods for proper luminaire to pole alignment.

LENS: One piece, diecast aluminum door frame retains the optically clear, heat and impact resistant tempered flat glass or sag polycarbonate in a sealed manner using hollow section, high compliance, memory retentive extruded silicone rubber. Type 4X luminaire features sag glass lens and VS unit employs sag acrylic lens. Concealed stainless steel hinge and two (2) flush quarter-turn fasteners secure lens assembly to luminaire.

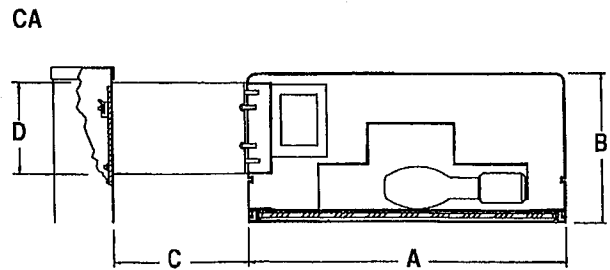
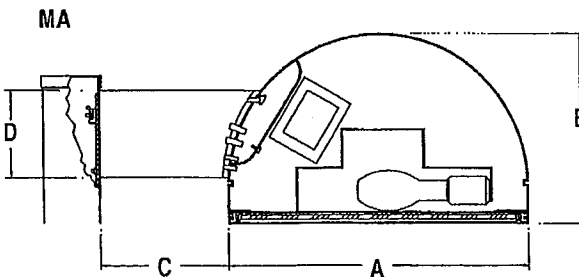
OPTICAL SYSTEMS: The segmented Form Ten optical system is homogeneous sheet aluminum, electrochemically brightened, anodized and sealed. The segmented reflectors are set in faceted arc tube image duplicator patterns to achieve IES Types I, III, IV and V distributions. The mogul base lampholder is glazed porcelain with a nickel plated screw shell and is securely attached to the reflector assembly. 50MH, 70MH and 100MH units have medium base lampholders. All horizontal Metal Halide units in the 22" housings have lamp stabilizers ensuring precise arc tube positioning.

ELECTRICAL: Each high power factor ballast is the separate component type, capable of providing reliable lamp starting down to -20°F/-29°C. The ballast is mounted on a unitized tray and secured within the luminaire, above the reflector system. Component-to-component wiring within the luminaire will carry no more than 80% of rated current and is listed by UL for use at 600 VAC at 150°C or higher. Plug disconnects are listed by UL for use at 600 VAC, 15A or higher.

FINISH: Anodized housings are created with an Aluminum Association Architectural Class I anodizing process to achieve a bronze, black or natural aluminum finish. Painted units are finished with hardcoat, fade resistant, electrostatically applied polyurethane.

LABELS: All fixtures bear UL or CUL (where applicable) Wet Location labels.

DIMENSIONS



MA Style Size	A	B	C	D	EPA			Avg. Weight Single
					Single	Twin	Quad	
MA17	17"	11"	5"	5"	.8 ft'	1.6 ft'	2.3 ft'	27 lbs
	43.18 cm	27.94 cm	12.70 cm	12.70 cm	.07 m'	.15 m'	.21 m'	12.25 kg
MA22	22"	14"	7"	5"	1.3 ft'	2.7 ft'	3.7 ft'	40 lbs
	55.88 cm	35.56 cm	17.78 cm	12.70 cm	.12 m'	.25 m'	.34 m'	18.14 kg

CA Style Size	A	B	C	D	EPA			Avg. Weight Single
					Single	Twin	Quad	
CA17	17"	8"	5"	5"	.7 ft'	1.5	2.1	27 lbs
	43.18 cm	20.32 cm	12.70 cm	12.70 cm	.07 m'	.14 m'	.20 m'	12.25 kg
CA22	22"	11"	7"	5"	1.2	2.3	3.3	42 lbs
	55.88 cm	27.94 cm	17.78 cm	12.70 cm	.11 m'	.21 m'	.31 m'	19.05 kg

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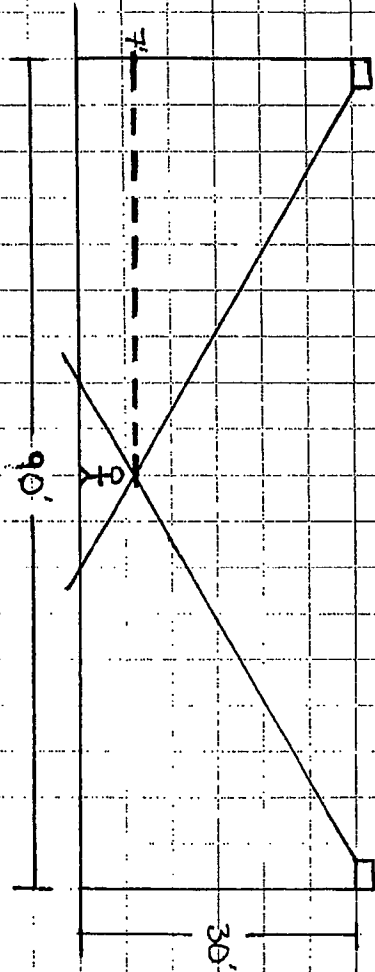
BY: _____

DATE: _____

SUBJECT/PROJECT: _____

PROJECT NUMBER: _____

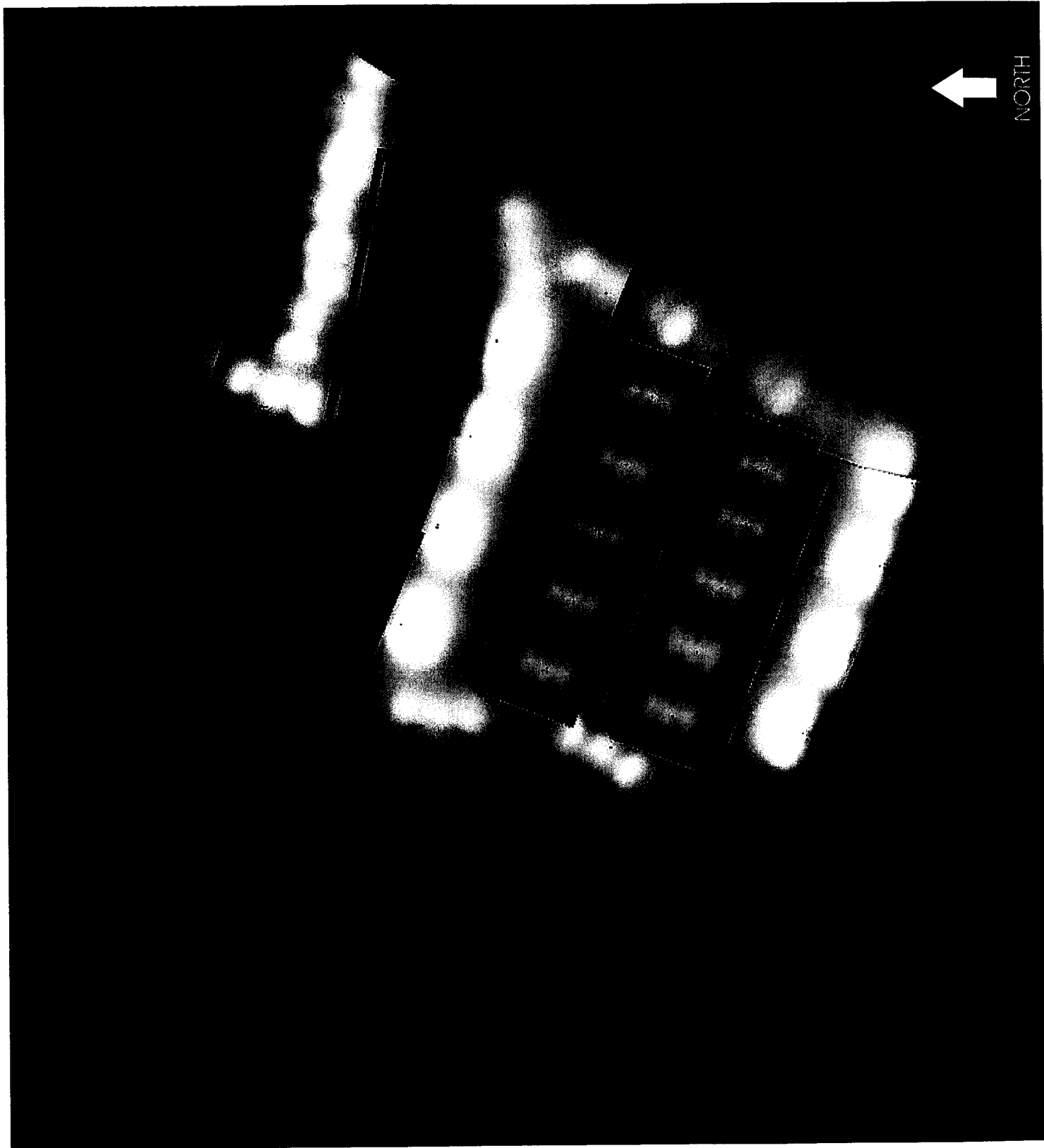
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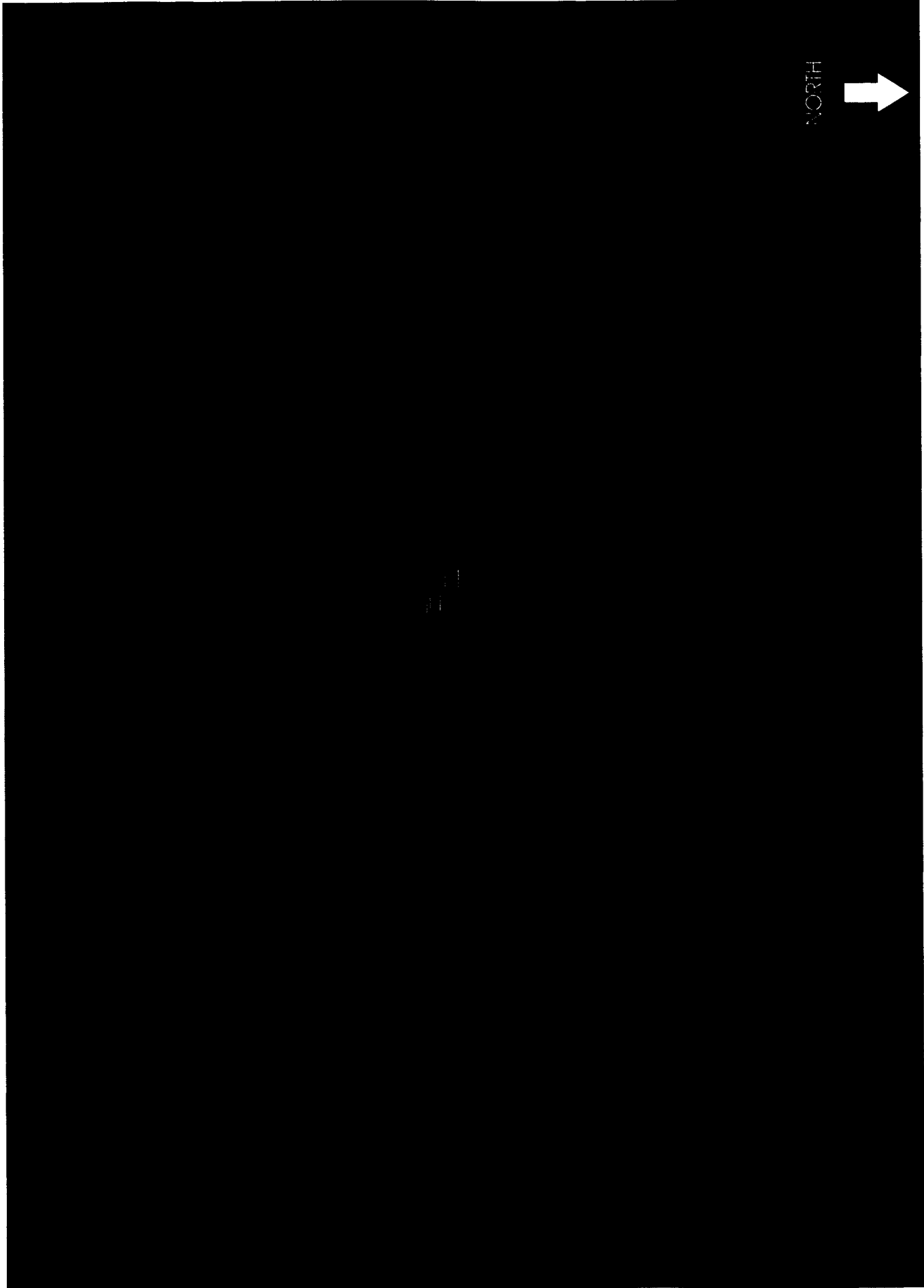


NORTH

WILLAMETTE 205 CORPORATE CENTER - PHASE II Photometric Model - VIEW FROM SOUTH







NORTH



GROUP

MACKENZIE

February 7, 2006

Re: **Willamette 205 Corporate Center, West Linn, Oregon**
Development Proposal
Project Number 2060016.00

Dear Neighbor:

You are invited to attend the March meeting of the Tanner Basin Neighborhood Association and the Willamette Neighborhood Association for a presentation on the proposed Willamette 205 Corporate Center office complex. The project is located on a vacant site at the northwest corner of Tannler and Blankenship in West Linn, Oregon. Blackhawk Development proposes to develop an office complex consisting of three buildings. Each is proposed to be 2 - 3 stories and approximately 60,000 SF - 90,000 SF in size. As currently envisioned, the total office space on the site would be approximately 180,000 SF - 270,000 SF. Developing a portion of the site for residential use is also being considered. Group Mackenzie is assisting Blackhawk Development during the Land Use Review process. We encourage you to attend the meeting for your neighborhood listed below.

Tanner Basin Neighborhood	Willamette Neighborhood
<i>Time:</i> Wednesday, March 1, 2006, 7:00 p.m.	<i>Time:</i> Wednesday, March 8, 2006, 7:00 p.m.
<i>Location:</i> West Linn City Hall 22500 Salamo Road West Linn, OR 97068	<i>Location:</i> Willamette School Library 1403 12th Street West Linn, OR 97068

No plans of the proposed development have been prepared; however, our presentation will include a review of the proposal, site opportunities and constraints, and a question and answer period. Your input is appreciated. If you have any questions regarding the proposal, please contact us at 503-224-9560 or pbeck@grp Mack.com.

Sincerely,

Preston Beck
Planner

0690 SW Bancroft St | PO Bx 139 | Portland, OR 97239-0039
Tel: 503.224.9560 Web: www.grpmack.com Fax: 503.228.1285

Group Mackenzie, Incorporated
Architecture
Interiors
Land Use Planning

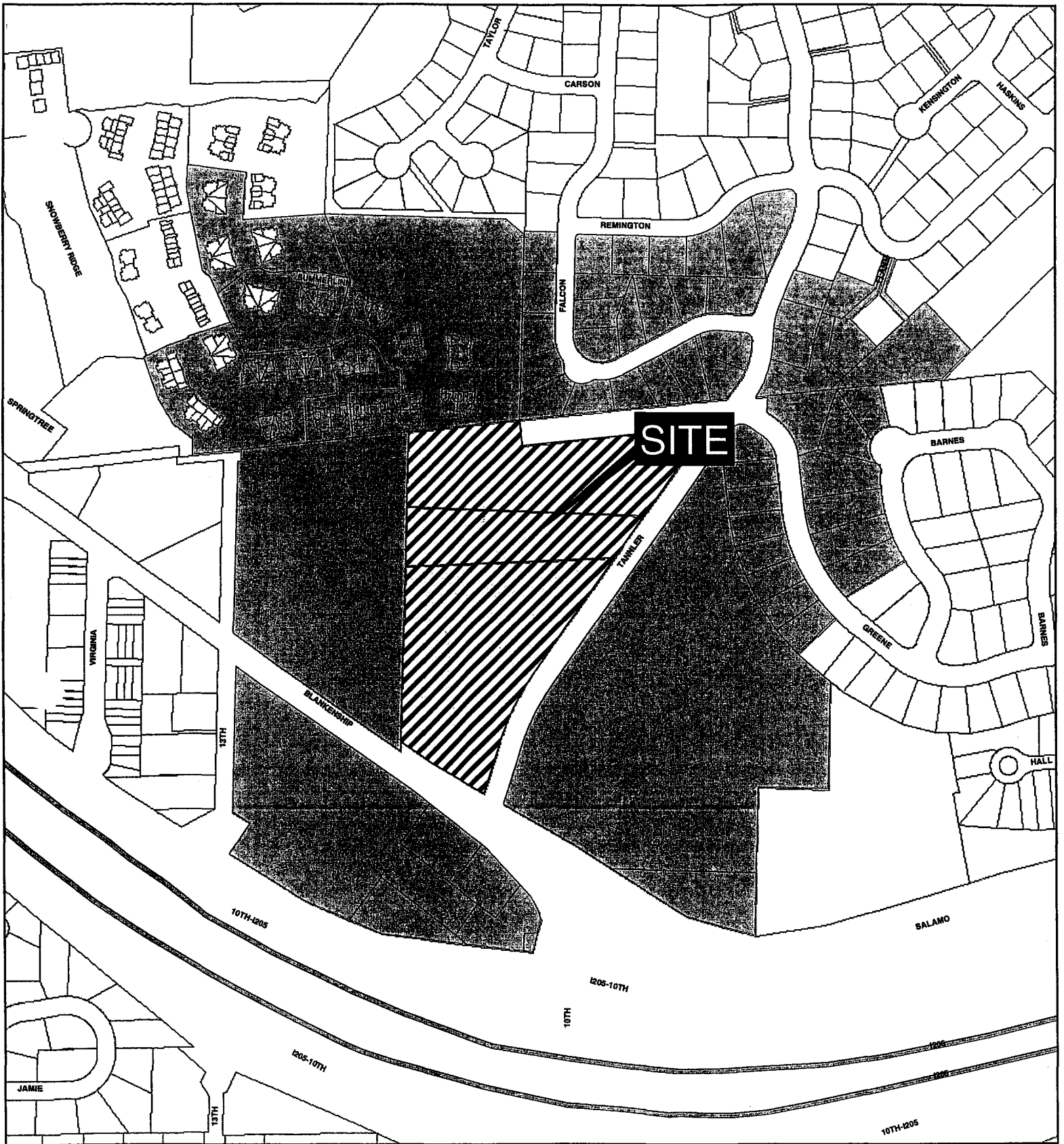
Group Mackenzie Engineering, Incorporated

Civil/Structural Engineering

Transportation Planning

Locations:

Portland, Oregon
Seattle, Washington
Vancouver, Washington

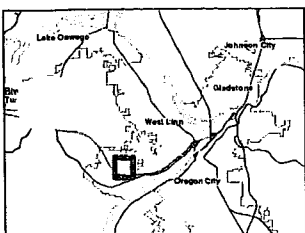


ADJACENT PROPERTY OWNERSHIP NOTIFICATION

ADJACENT PROPERTIES WITHIN 500 FT OF 1600 14TH ST

DISCLAIMER: This property ownership information is derived from Metro's Regional Land Information System (RLIS-Lite). Metro's RLIS Lite is updated on a quarterly basis. As such, this information is based on the most recent subscription from May 2005. No liability is assumed for any errors in this report.

0 50 100 200 Feet



LOCATION MAP

GROUP
MACKENZIE
 8090 SW Hancock Street | PO Box 88028 | Portland, OR 97288
 www.groupmackenzie.com | info@groupmackenzie.com
 t: 503.524.9229 | fax: 503.747.7479 | e: 503.524.1245

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Date: 02/09/06 Map Created by: RK
 File: notification-5208.mxd Project No: 2060218.00

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>C. Date of Delivery</p>
<p>1. Article Addressed to:</p> <p>Tanner Basin Neigh. Assoc Attn: Valerie Ramaswamy 2270 Crestview Dr West Linn, OR 97068</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p> <p>3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label)</p>	<p>7004 2890 0004 1173 3416</p>

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>C. Date of Delivery</p>
<p>1. Article Addressed to:</p> <p>Willamette Neighborhood Assoc. ATTN JODY CARSON 1296 12TH ST. West Linn, OR 97068</p>	<p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p> <p>3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label)</p>	<p>7004 2890 0004 1173 3423</p>

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

7004 2890 0004 1173 3423

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Postage	\$.39	
Certified Fee	2.30	
Return Receipt Fee (Endorsement Required)	1.85	
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$4.54	

Sent To Williamette Neighbor
 Street, Apt. No., or PO Box No. 1296 12th St
 City, State, ZIP+4 West Linn 97068

PS Form 3800, June 2002 See Reverse for Instructions

7004 2890 0004 1173 3416

U.S. Postal Service™
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OFFICIAL USE

Postage	\$.39	
Certified Fee	2.30	
Return Receipt Fee (Endorsement Required)	1.85	
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$4.54	

Sent To Tenne Basin North Assoc.
 Street, Apt. No., or PO Box No. 2270 Westview Dr
 City, State, ZIP+4 West Linn 97068

PS Form 3800, June 2002 See Reverse for Instructions

From: Kathy Morten
To: Preston Beck
Date: 2/9/2006 12:46:21 PM
Subject: Re: Posting for Neighborhood Mtg

Preston: I posted the signs on the West Linn property this morning about 10:30 for the Willamette 205 Corporate Center.

Kathy

>>> Preston Beck 2/9/2006 12:03:36 PM >>>

Kathy

Please confirm the postings the site for the two Neighborhood Meetings in West Linn for the Willamette 205 Corporate Center. I need to have a paper trail that the site was posted.

Thanks

prb

Preston Beck
Planner | Project Planner

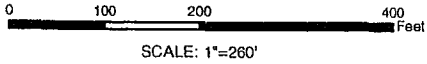
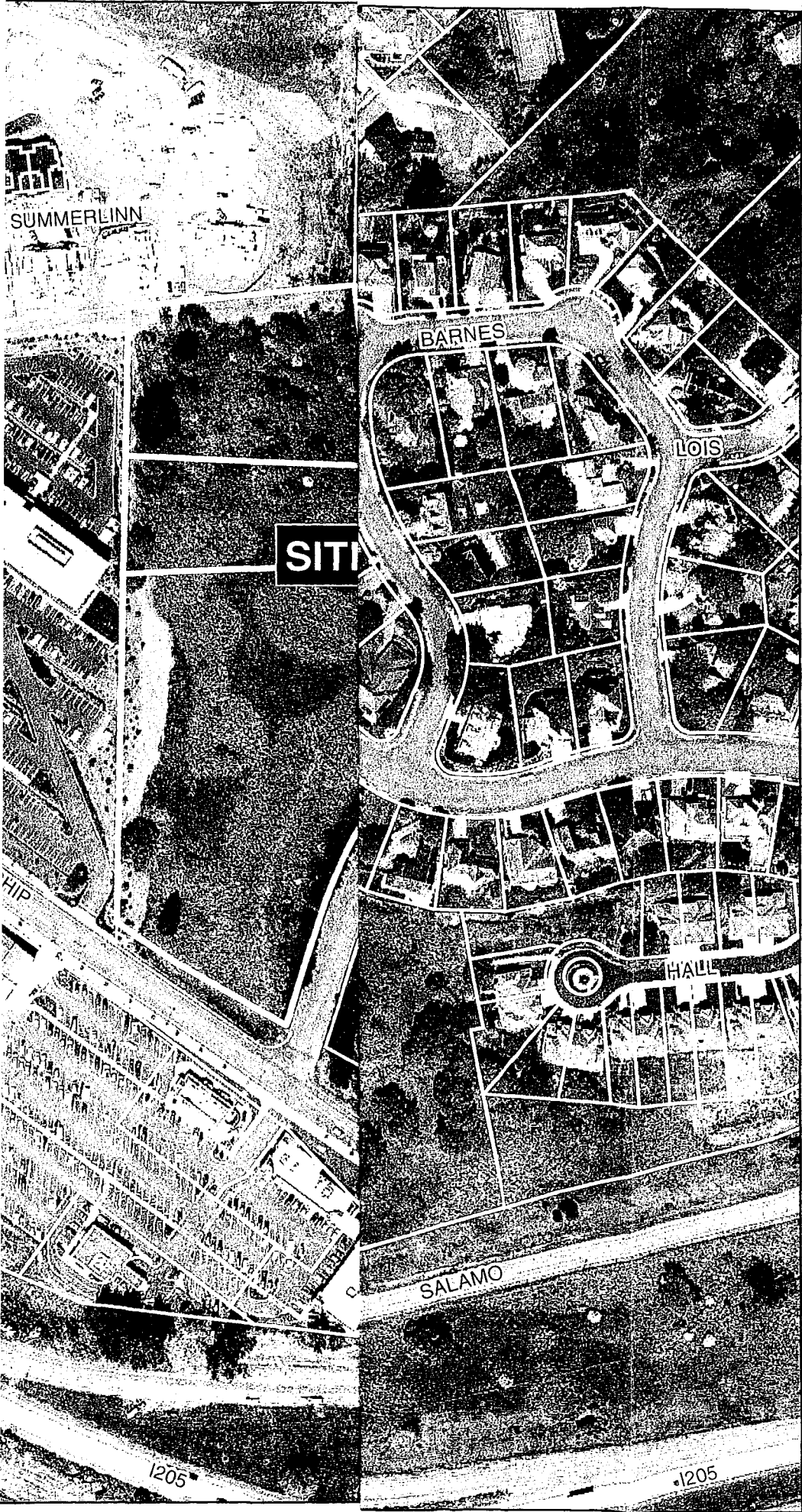
Group Mackenzie
0690 SW Bancroft Street | PO Box 69039 | Portland, OR 97239-0039
T: 503.224.9560 | F: 503.228.1285 | www.groupmackenzie.com

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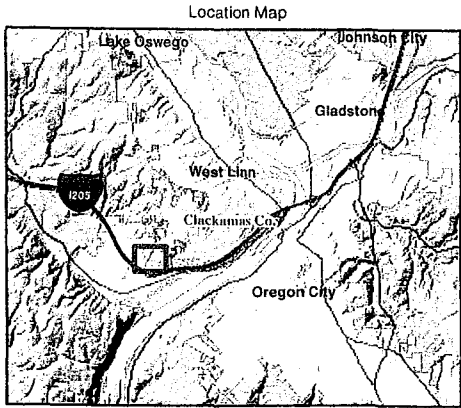
WILLAMETTE 205 CORPORATE CENTER

AERIAL SITE MAP



Source Data
Base Data, Metro RLIS Lite, November 2005
Aerial Photography, USGS, 2001

Geographic Projection Information
NAD 83 HARN, Oregon North
Lambert Conformal Conic



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MACKENZIE

0690 SW Bancroft Street | PO Box 69039 | Portland, OR 97239
■ www.groupmackenzie.com | info@grpmack.com ■
tel: 503.224.9560 | 360.695.7879 | fax: 503.228.1285

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Date: 02/03/06
File: WIL205CC_aer1117.mxd | Map Created by: RK
Project No:

MEETING MINUTES

PROJECT NUMBER: 2060016.00 DATE: 3/1/06
 PROJECT NAME: Willamette 205 Corporate Center Phase II 'Tannler West'

RECORDED BY: Preston Beck
 TO: File
 PRESENT: Tanner Basin Neighborhood Association Attendees

**SUBJECT: Willamette 205 Corporate Center Phase II 'Tannler West' Development Proposal -
 Presentation to Tanner Basin Neighborhood Association
 March 1, 2006**

Presentation

Group Mackenzie presented the proposed development scheme for the Willamette 205 Corporate Center Phase II to the Tanner Basin Neighborhood Association. The purpose of the presentation was to review the overall preliminary development scheme, review site opportunities/constraints, zoning parameters, transportation issues, and to receive feedback from the Neighborhood Association.

This presentation was the first of a two part presentation. Comments from this meeting will be considered during further site plan development and preliminary design of the project. Next month on April 5th, the project team will return to present a more defined site plan and review how the project has incorporated neighborhood concerns into the design.

The following items represent comments from the Feedback Session at the presentation.

TANNER BASIN NEIGHBORHOOD MEETING COMMENTS

Site Related

- Comment: There is an interest in having "local shops" with essential services incorporated within the development to help serve the residential area to the north
- Comment: There is a strong concern that buildings do not block views of residential areas
- Comment: It would be good to see a portion of Tannler West and/or Tannler East dedicated as a park or open space. Metro is currently pursuing a ballot measure that would authorize spending public bond money on acquiring open space.
- Comment: Do what you can to preserve groves of trees in northwest corner of site
- Request: Would like pledge from developer that tree removal will be done in accordance with the City's tree ordinance
- Comment: Concern about adequate parking on site
- Comment: Interest in development providing open space park area near residential area to north. Open space area could be used as selling point for owner. Walking trails could also be incorporated into the site

Transportation Related

- General Comment: Traffic is one of the top areas of concern of the neighbors. Neighbors are concerned about cut-through traffic on Tannler as well as any impact further negatively impacting the immediate surrounding street system, including Blankenship, 10th, Salamo
- Comment: Project team strongly encouraged to take a comprehensive and holistic approach toward addressing traffic problems within the immediate area
- Comment: Concern that the required traffic signal related to Blackhawk Development's other site (on Blankenship) must be in operation prior to occupancy
- Comment: Previous plans for the I-205 intersection showed an off-ramp connecting to Salamo, including an overhaul to the intersection at 10th. Consider this in your traffic analysis
- Comment: Concern about traffic from Tannler West development accessing Tannler and conflicting with traffic traveling down slope (High Speeds)
- Comment: Concern about cut-through traffic from Tannler East Development crossing over to Tannler West and negatively impacting Tannler St.
- Comment: There is concern about adequate provision of interior pedestrian circulation and immediate surrounding streets. Make sure there is connectivity to surrounding street system/sidewalks
- Comment: Include area farther to the north in your traffic analysis
- Comment: Consider closing Tannler as an option in your traffic analysis

Building Related

- Comment: Strive to include 'interesting architecture' in the design
- Comment: Make the buildings look different not another "wall"
- Comment: Think about views from Green Street. Picture yourself as a resident and imagine what views should be like
- Comment: Consider "Green" rooftops in the design. Think about how residents up the hill see the proposed development.
- Comment: Consider material other than brick in the building design
- Request: Provide past project examples of buildings on steep terrain for neighbors to visualize

Misc

- Comment: Very concerned about allowing variances. If proposed, neighborhood will need to see very compelling reasons to gain neighborhood support
- Request: Would like to see existing occupancy report (e.g., list of tenants) for Phase I site and then some description of what type of occupancy is forecasted for Phase II. How did Blackhawk Development determine this office space is warranted?
- Comment: Consider having members from the Willamette Neighborhood and Tannler Neighborhood members sit down with project team to review site plan/building concept to ensure there is common understanding and direction in the proposed development
- Comment: The site sign of the contractor that cleared the black berries on the site appears to be a sign code violation
- Question: When trees are marked, does that mean they will be cut or preserved? [Response: Marked trees are part of survey work on site]

March 1, 2006
Willamette 205 Corporate Center Phase II 'Tannler West'
Project Number 2060016.00
3/1/06
Page 4

- Comment: Concerned about any development that decreases property values of nearby properties

[* INITIALS/initials *]

CC: Valerie Ramaswamy, Tanner Basin Neighborhood Association
Jeff Parker, Bill Wilt, Blackhawk Development
Tom Wright, Dick Spies, Andrew Schafer, Jeff Reaves, Bob Thompson, Matt Butts, Brent Ahrend –
Group Mackenzie
Mke O'Brien, Viridian Environmental Design

MEETING MINUTES

PROJECT NUMBER: 2060016.00 DATE: March 8, 2006
PROJECT NAME: Willamette 205 Corporate Center Phase II 'Tannler West'

RECORDED BY: Preston Beck
TO: FILE
PRESENT: Willamette Neighborhood Association Attendees

SUBJECT: Meeting Minutes from Presentation of the 'Tannler West' Development Proposal to the Willamette Neighborhood Association

PRESENTATION

Group Mackenzie presented the proposed development scheme for the Willamette 205 Corporate Center Phase II, also known as 'Tannler West' to the Willamette Neighborhood Association. The purpose of the presentation was to review the overall preliminary development scheme, review site opportunities and constraints, zoning parameters, transportation issues, and to receive feedback from the Neighborhood Association.

This presentation was the first of a two part presentation. Comments from this meeting will be considered during further site plan development and preliminary design of the project. On April 12, 2006, the project team will return to present a more defined site plan and review how the project has incorporated neighborhood concerns into the design.

The following items represent comments from the presentation.

WILLAMETTE NEIGHBORHOOD MEETING COMMENTS

Site Related

- Very concerned about tree protection on site. Even before submitting your application to the City, demonstrate your overall intent, especially in regards to protecting trees on the site.
- Special attention needs to be paid to the type of trees on the site (e.g., Oregon White Oak)
- Also be sure to protect environment around trees (i.e., drip line area). Ensure there is protection against compaction
- Have consultant Arborist & City Arborist work together on tree inventory/plan to ensure tree protection
- Consider not using upper area of site for residential, would like to see upper area as greenspace.
- There is concern that residential proposal on northern part of site would not serve as a 'buffer' as intended. Would rather see increased vegetation.
- Consider residential as part of the office development rather than a separate use (mixed use concept).

Transportation Related

- There is concern about an increase in cut-through traffic up Tannler. Make sure traffic analysis considers this
- There is concern about cut-through west on Blankenship, traffic cutting through to Willamette Dr to get on I-205.
- Look at traffic comprehensively. Provide solutions
- Bring back visuals of traffic concepts for association to see and visualize.
- Look into incorporating access to transit with development
- Incorporate good landscaping on site TREES (emphasis request), planters, benches, not just chunks of asphalt.
- Consider a park in the upper area as a place of solitude

Building Related

- There is a strong interest in having the site (buildings) being design in a human scale
- Consider covered walkways in the design
- Consider building materials that blend in with environment

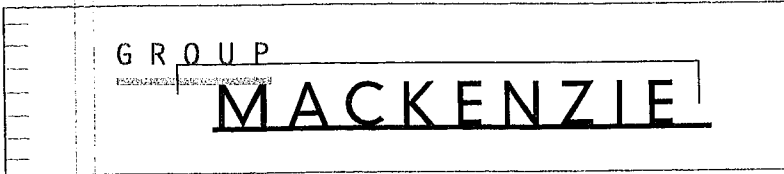
Miscellaneous

- Concern that site lighting negatively impacting views up from Willamette Neighborhood area. Strive to reduce offense light pole glare, especially for off-site views.
- Don't be afraid to exceed the standards.

Every effort has been made to accurately record this meeting. If any errors or omissions are noted, please provide written response within five days of receipt.

c: Jody Carson – Willamette Neighborhood Association
Jeff Parker, Bill Wilt – Blackhawk Development
Mike O'Brien – Viridian Environmental Design
Steve Goetz – The Pacific Resources Group
Tom Wright, Dick Spies, Andrew Schafer, Jeff Reaves, Bob Thompson, Matt Butts, Brent Ahrend – Group Mackenzie

TCW



February 7, 2006

Willamette Neighborhood Association
Attention: Jody Carson
1296 12th Street
West Linn, OR 97068

Re: **Willamette 205 Corporate Center Proposal**
Neighborhood Association Presentation
Project Number 2060016.00

Dear Jody:

The purpose of this letter is to request a meeting with the Willamette Neighborhood Association regarding the proposed Willamette 205 Corporate Center office complex located on a vacant site at the northwest corner of Tannler and Blankenship in West Linn, Oregon.

Blackhawk Development proposes to develop an office complex consisting of three buildings. Each would be 2 - 3 stories and approximately 60,000 SF - 90,000 SF in size. As currently envisioned, the total office space on the site would be approximately 180,000 SF - 270,000 SF.

The site is zoned Office Business Center (OBC). The proposed use is allowed under the West Linn Community Development Code, and will require Design Review approval through the City.

As part of the land use review process, applicants must initiate a Neighborhood Association contact. We would like to present our proposal at your monthly Neighborhood Association meeting on March 8, 2006. At this meeting we will provide an overview of the proposal, review the land use process, and answer any questions from attendees. We would like to present again on April 12, 2006.

Our client, Jeff Parker, may contact you to set up an informal meeting, in addition to the Neighborhood Contact process, to gather community input regarding the proposed development.

Please contact us if you have any questions.

Sincerely,

Preston Beck
Planner

Enclosure: Site Map

c: Jeff Parker – Blackhawk Development
Tom Wright, Bob Thompson – Group Mackenzie
Willamette Neighborhood Association Officers

0690 SW Bancroft St | PO Box 69039 | Portland, OR 97239-0039
Tel: 503.224.9560 Web: www.grpmack.com Fax: 503.228.1285

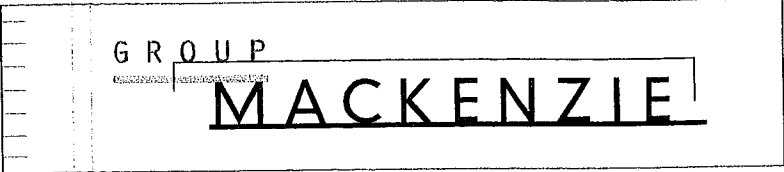
Group Mackenzie, Incorporated
Architecture
Interiors
Land Use Planning

Group Mackenzie Engineering, Incorporated
Civil/Structural Engineering

Transportation Planning

Locations:
Portland, Oregon
Seattle, Washington
Vancouver, Washington

TCW



February 7, 2006

Tanner Basin Neighborhood Association
Attention: Valerie Ramaswamy
2270 Crestview Drive
West Linn, OR 97068

Re: **Willamette 205 Corporate Center Proposal**
Neighborhood Association Presentation
Project Number 2060016.00

Dear Valerie:

The purpose of this letter is to request a meeting with the Tanner Basin Neighborhood Association regarding the proposed Willamette 205 Corporate Center office complex located on a vacant site at the northwest corner of Tannler and Blankenship in West Linn, Oregon.


Blackhawk Development proposes to develop an office complex consisting of three buildings. Each would be 2 - 3 stories and approximately 60,000 SF - 90,000 SF in size. As currently envisioned, the total office space on the site would be approximately 180,000 SF - 270,000 SF.

The site is zoned Office Business Center (OBC). The proposed use is allowed under the West Linn Community Development Code, and will require Design Review approval through the City.

As part of the land use review process, applicants must initiate a Neighborhood Association contact. We would like to present our proposal at your monthly Neighborhood Association meeting on March 1, 2006. At this meeting we will provide an overview of the proposal, review the land use process, and answer any questions from attendees. We would like present again on April 5, 2006.

Our client, Jeff Parker, may contact you to set up an informal meeting, in addition to the Neighborhood Contact process, to gather community input regarding the proposed development.

Please contact us if you have any questions.

Sincerely,

Preston Beck
Planner

Enclosure: Site Map

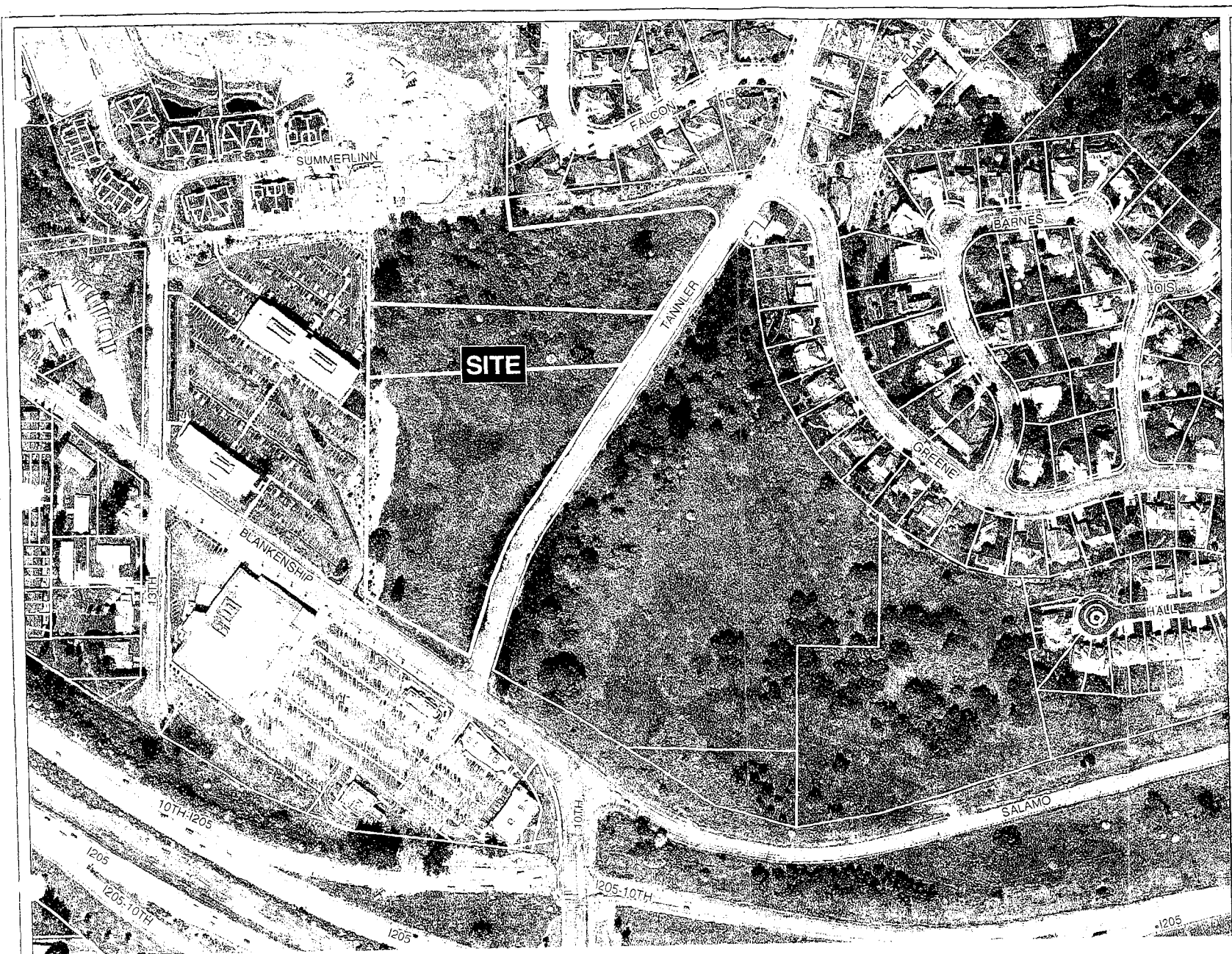
c: Jeff Parker – Blackhawk Development
Tom Wright, Bob Thompson – Group Mackenzie
Tanner Basin Neighborhood Association Officers

0690 SW Bancroft St | PO Box 69039 | Portland, OR 97259-0039
Tel: 503.224.9560 Web: www.gmpmack.com Fax: 503.228.1285

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Land Use Planning

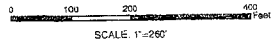
Group Mackenzie Engineering, Incorporated
Civil/Structural Engineering
Transportation Planning

Locations:
Portland, Oregon
Seattle, Washington
Vancouver, Washington



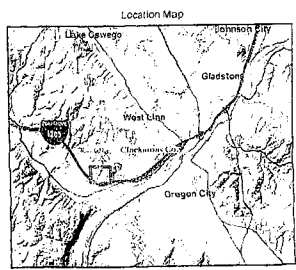
WILLAMETTE 205 CORPORATE CENTER

AERIAL SITE MAP



Source Data
 Site Data, Micro R/LIS L/R, November 2005
 Aerial Photography, USGS, 2001

Geographic Projection Information
 NAD 83 HARN, Oregon North
 Lambert Conformal Conic



GROUP
MACKENZIE

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 ■ www.groupmackenzie.com | info@gpmack.com ■
 t e l : 503.224.9560 | 360.655.7679 | f a x : 503.226.1285

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Draw: 03/05/05
 File: VAL205CC_04a117.mxd | Job: C:\P\205\205.rvt
 Project No:



Planning Department

RECEIVED
JUL 17 2006
GROUP MACKENZIE

July 14, 2006

West Linn Corporate Park II
1800 Blankenship Road, Suite #145
West Linn, OR 97068

SUBJECT: DR 06-24, VAR 06-02, West Linn Corporate Park II ("Tannler West")

Thank you for your submittal for Class II design review and variance for the construction of three office buildings at the northwest corner of Tannler and Blankenship Roads in West Linn. Staff has reviewed it and finds that the application is **incomplete** per the submittal requirements of the City of West Linn. You have 180 days from the date of application, or until December 27, 2006, to make the application complete. The following information will be needed to make your application complete:

PHASING: The project is proposed in two phases, but it is not made clear which part of the project is proposed first and what the estimated schedule is for the phasing. Please provide a paragraph narrative and a clearly marked site plan indicating the two phases and the proposed timing.

PERMISSION FOR CONNECTIONS FROM ADJACENT PROPERTY OWNER: Please provide verification that the property owner of the adjacent office development to the west has authorized your application as regards its connections into his existing development.

COMMUNITY DEVELOPMENT CODE (CDC) 21,070(A)(5): This section requires that office buildings fronting an arterial be a maximum of 20 feet set back from the street right of way. This applies to Building "A" along Blankenship Road, which is an arterial roadway (Tannler is a collector road). Please address specific compliance with this code section.

CDC CHAPTER 33 AND CDC 55.100(I)(2): Please provide a full storm drainage report, and provide a narrative addressing the submittal requirements and approval criteria set forth in this section of the CDC.

Since the applicant has decided on an underground stormwater detention system, the storm drainage report must specifically address the City's Engineering standards, which allow such a detention system only if an above-ground public system is "impractical."

The storm drainage detention and treatment system must be designed to handle a 25-year storm event, not a 10-year storm event.

CDC CHAPTER 46: Please provide a point-by-point analysis of all of the approval criteria set forth in CDC 46.150.

The application does not include the required minimum number of bicycle parking spaces. Please provide additional discussion of this deficiency, and address why you believe a formal variance from the city's codes is not required.

CDC CHAPTER 52: While a detailed sign plan for the buildings is not required at this stage, it may be in your best interest to review this information and provide a conceptual sign plan for the on-wall building signs as well as the monument sign information you have provided. Given the height of the buildings, the 25-foot maximum height for any building's wall signs may pose a future problem if you do not consider the future locations of such signs on the buildings.

CDC CHAPTER 54: Please provide a narrative demonstrating compliance with each of the relevant approval criteria set forth in CDC Section 54.020.

CDC 55.100(B)(2): Please provide a detailed site plan for the area where the five significant trees are proposed for removal that shows the exact location of the trees in relation to the proposed project improvements.

CDC 55.100(B)(3): Please provide more detailed information on the height of all proposed retaining walls within the proposed project, and the height of all graded slopes within the proposed project. Of special interest are the proposed grades along Tannler.

CDC 55.100(B)(6)(i): Please provide details of the proposed treatment of Building A as it relates to Blankenship Road, showing the building façade and elevations, graded slopes, retaining walls, proposed landscaping, Blankenship street improvements, connections between the building and Blankenship, and location of building entrances. Provide this information both as an elevation and in plan view.

CDC 55.100(B)(7)(a) and (f): Please provide justification for your claim that Building A does not need an entrance facing Blankenship.

CDC 55.100(D)(3): Please provide a noise analysis for the proposed project.

CDC 55.100(I)(1): Please provide a detailed traffic analysis for the proposed project. Because this vital and complex information was not submitted with the initial application, staff reserves the right to hold open the initial review period for this application for an additional 30 days after the date the traffic report is submitted.

Please provide a copy of this traffic analysis to Sonya Kazen of the Oregon Department of Transportation.

CDC CHAPTER 75: Please provide a design scheme that preserves all of the significant trees on the site, while continuing to maintain the needed buffer between the site and residential uses to the north. Staff believes that such a design scheme would be similar to Design Scheme "C", except without the proposed 16,000 square foot upper building and improvements to Greene Street. Staff believes that it will be very difficult for you to gain approval of any variance regarding removal of significant trees. Presentation of a viable project alternative that preserves all significant trees while not compromising other desirable aspects of the plan may mean the difference between outright denial of your application, and approval of an alternative to your proposed application that is variance-free.

Please contact me at ghoward@ci.west-linn.or.us for a prompt response to any questions. Alternately, you may telephone 656-4211.

Sincerely,



Gordon Howard
Senior Planner

c: Rhys Konrad, Group McKenzie, 0690 SW Bancroft, Portland, OR 97239
David Rittenhouse, Tanner Basin Neighborhood Association, 2101 Greene St.,
West Linn, OR 97068
Sonya Kazen, ODOT, 123 NW Flanders, Portland, OR 97209

August 18, 2006

West Linn Corporate Park, LLC

I, Jeff Parker, managing partner of West Linn Corporate Park, LLC, or the property located at 1800 Blankenship Rd or more specifically identified on map 2N 1E 35C #801, authorize Blackhawk LLC to construct the proposed connections and associated improvements as proposed with DR 06-24 associated with the property located at 2N 1E 35 C 3200.



Jeff Parker, Managing Partner

From: "Howard, Gordon" <GHoward@ci.west-linn.or.us>
To: "Rhys Konrad" <rkonrad@grpmack.com>
Date: 7/18/2006 10:58:44 AM
Subject: RE: Tannler West

Hello Rhys, you are correct, Blankenship changes from an arterial to a collector at Tannler going west (it used to be entirely an arterial when I worked on the neighboring office project in 1998). So, while the building orientation requirements of Chapter 55 still apply, you do not have to have a maximum 20 foot setback.

Gordon

-----Original Message-----

From: Rhys Konrad [mailto:rkonrad@grpmack.com]
Sent: Monday, July 17, 2006 4:51 PM
To: Howard, Gordon
Subject: Tannler West

Gordon,

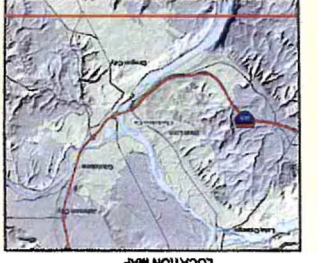
Thanks for your initial comments regarding the proposed Tannler West application. I had one immediate question regarding the required front setback along Blankenship. As far as I can tell using the City's maps, Blankenship is a collector not an arterial and the 20' max setback should not apply. If you could please let me know if the classification has been changed I would appreciate it.

Thanks
Rhys

Rhys Konrad
Group Mackenzie
0690 SW Bancroft Street | PO Box 69039 | Portland, OR 97239-0039
T: 503.224.9560 | F: 503.228.1285 | www.groupmackenzie.com

PORTLAND, OREGON | SEATTLE, WASHINGTON | VANCOUVER, WASHINGTON

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Source Data
Base Data, Metro RUS Lia, February 2008
Geographic Projection Information
MAD 83 HARN, Oregon North
Lambert Conformal Conic

Proposed Traffic Mitigation



MACKENZIE GROUP
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P: 503.228.9500 | F: 503.228.1205
www.mackenziegroup.com | info@mackenziegroup.com
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Map Created by PRB
Date: 12/01/08
File Name: MND
Project No:



Office market report

PORTLAND METRO AREA

Second Quarter
2006

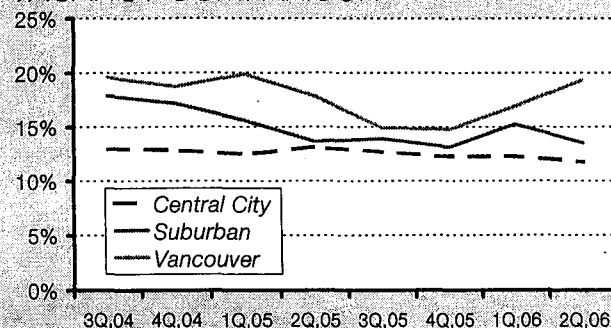
MARKET HIGHLIGHTS

- Vacancy rates in the Central City office market are trending towards single digits. Overall vacancy dropped from 12.27% to 11.75% and 130,098 square feet (sf) were absorbed this quarter. The market experienced healthy activity in both high-end and lower-quality properties. This was due to several factors, most importantly, a revitalized economy. We are seeing upward pressure on rates. Certain Class A buildings in the Central Business District (CBD) have increased rates by as much as \$2.50/sf already this year.
- The suburban market saw a decrease in vacancy from 15.26% last quarter to 13.53% currently and the absorption of 315,229 sf. Class A space is very tight in the suburban market and the squeeze on inventory is driving rental rates up. There are only 3 submarkets with vacancies higher than 6%. Class B inventory has been reporting higher vacancy rates as many tenants upgraded space in the last few quarters, but we are starting to see greater absorption this quarter. Currently, Class B space is absorbing more square footage than either Class A or Class C.
- The Vancouver office market experienced a negative absorption of 83,126 sf, but added 64,975 sf of inventory this quarter. Though vacancy is at 19.33%, it is interesting to note that Vancouver's market has experienced some of the most growth over the past year. Since second quarter of 2005, the Vancouver market has added over 400,000 sf of office space, making it the largest market of the Suburban submarkets.

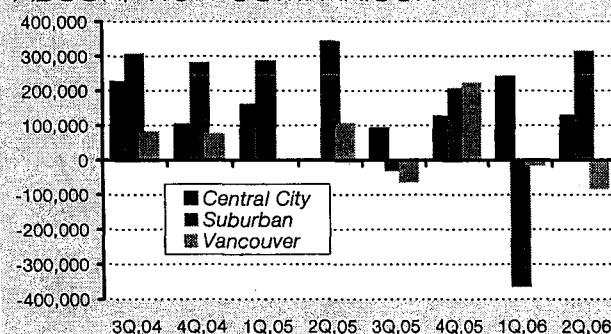
SIGNIFICANT DEALS

- **Laika Inc.**, Phil Knights animation studio, announced on June 23 its expansion into a 60,000 sf Northwest Portland office building

VACANCY COMPARISON



ABSORPTION COMPARISON



a few blocks away from the Laika's current headquarters on Northwest 22nd Ave and Pettygrove Street.

- **IPERS Nimbus Oaks-Oregon, Inc.** has purchased 171,828 sf of office space at 9000 - 9560 SW Nimbus Avenue, referred to as Nimbus Oaks Office Park, for \$25.125 million from Schnitzer Investment Corporation.

- **John Neimeyer** has sold the Convention Plaza, located at 123 NE 3rd Ave. in Portland, for \$8.866 million. The Portland Development Commission purchased the 96,000 sf of office building.

MARKET SUMMARY

SUBMARKET	INVENTORY	AVAILABLE ** SQUARE FEET	%** VACANT	NET** ABSORPTION	UNDER CONSTRUCTION
Central City*					
Central Business	14,250,943	1,625,726	11.41	68,322	0
Lloyd	2,087,070	240,068	11.50	11,938	0
Northwest	2,427,050	338,919	13.96	49,838	0
TOTAL	18,765,063	2,204,713	11.75	130,098	0
Suburban*					
Sunset Corridor	3,173,148	700,112	22.06	77,810	57,514
Central 217	1,673,040	269,984	16.14	28,137	0
Southern 217	940,876	62,250	6.62	9,227	0
Barbur Boulevard	581,268	99,194	17.07	(5,003)	0
Beav-Hillsdale/Sylvan	773,809	153,176	19.80	7,570	0
Central Beaverton	623,431	93,860	15.06	17,924	0
I-5 South	1,662,225	145,412	8.75	60,212	128,621
SW Waterfront/Johns Lndg	1,105,097	112,580	10.19	5,927	0
Kruse Way	2,068,258	118,078	5.71	(1,206)	107,490
Lake Oswego/West Linn	506,935	48,896	9.65	(12,974)	81,000
North/Northeast	896,532	148,362	16.55	3,720	99,558
Central 205	1,215,433	176,456	14.52	14,797	0
Southeast	656,253	19,634	2.99	109,088	30,000
TOTAL	15,876,305	2,147,994	13.53	315,229	504,183
Vancouver	3,524,286	681,073	19.33	(83,126)	75,748

*Additions and Subtractions to the numbers above are in our detailed report.
**Numbers only reflect direct space.



NAI Norris, Beggs
& Simpson

Commercial Real Estate Services, Worldwide.

121 SW Morrison Suite 200
Portland OR 97204
tel 503 223 7181
www.nai-nbs.com

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GROUP

REGISTERED PROFESSIONAL ENGINEERS ARCHITECTS PLANNERS

MACKENZIE

TRANSPORTATION
IMPACT ANALYSIS

**WILLAMETTE 205
CORPORATE CENTER**

West Linn, Oregon



Prepared For
Blackhawk, LLC

Revised On
August 16, 2006

Submittal To
City of West Linn

Project Number
2060016.00

GROUP MACKENZIE
Since 1960

0690 SW Bancroft Street PO Box 69039 Portland, OR 97239-0039
T 503.224.9560 360.695.7879 F 503.228.1285 groupmackenzie.com

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I. INTRODUCTION

This Transportation Impact Analysis has been prepared for the Willamette 205 Corporate Center located on the northwest corner of the Blankenship Road/Tannler Drive intersection in West Linn, Oregon. Figure 1 is a vicinity map indicating site location.

PROJECT DESCRIPTION

The proposed Willamette 205 Corporate Center will consist of three office buildings totaling up to 300,000 SF. The buildings will be constructed in phases with the southern building along Blankenship constructed first. Figure 2A presents the proposed Phase 1 site plan with the first building, and Figure 2B presents the full site plan.

SCOPE OF REPORT

This analysis conforms to City of West Linn and ODOT requirements for a traffic study, including intersection impact analysis, sight distance review, crash history and local pedestrian and bicycle facilities. Based on a review of the applicable standards and a discussion with City and ODOT staff, the study area for this analysis includes the following intersections:

- 10th Street/I-205 Southbound Ramps
- 10th Street/I-205 Northbound Ramps
- 10th Street/Blankenship Road
- Blankenship Road/Tannler Drive
- Blankenship Road/13th Street
- Tannler Drive/Site Access

Analysis was conducted for the following scenarios during the weekday AM and PM peak hours:

- 2006 Existing
- 2007 Pre-Development without Tannler East
- 2007 Phase 1 without Tannler East
- 2007 Post-Development without Tannler East
- 2007 Pre-Development with Tannler East
- 2007 Phase 1 with Tannler East
- 2007 Post-Development with Tannler East

SUMMARY OF ISSUES

Attendance at the Tannler East Planning Commission and City Council Hearings has brought specific attention to transportation issues associated with the proposed development. Unlike the Tannler East application, traffic mitigation proposed for the Willamette 205 Development retains left-turns into the commercial site to the south.

Because the status of Tannler East is unknown at this time, the TIA presents mitigation strategies with or without Tannler East developing. Additionally, the 2015 traffic analysis prepared for the Tannler East development was reviewed to ensure transportation planning consistency. Findings and conclusions presented in Tannler East analysis accurately address 2015 conditions and are consistent with findings presented in the TIA. Further, because the proposed Willamette 205 Corporate Center development is consistent with the comprehensive plan designation, it is concluded additional 2015 analysis is not necessary.

Existing right-of-way widths necessary for the proposed mitigation efforts are sufficient enough to accommodate the proposed mitigation methods. Specifically, the worst-case scenario mitigation is listed below:

Proposed Mitigation for Tannler East

- Stripe a 150' left-turn lane southbound on Tannler at Blankenship.
- Modify the Salamo approach to 10th Avenue to provide a shared through/left lane and split phasing at the signal.
- Install a signal at Tannler/Blankenship and stripe a 150' left-turn lane

Additional Mitigation for First Willamette 205 Building

- Add a second eastbound right-turn lane on Blankenship at 10th Avenue.
- Adjust the Blankenship/Salamo/10th signal to provide more AM green time to Salamo and increase the westbound left-turn lane storage to 300'.
- Increase the storage from 150' to 350' for the southbound left-turn lane on Tannler at Blankenship.

Additional Mitigation for all Three Willamette 205 Buildings

- Stripe two through lanes on 10th between the I-205 ramps (requires pavement widening).
- Add a second 150' northbound through lane on 10th at the southbound I-205 ramps.
- Add a westbound right-turn lane on Blankenship at Tannler (provides second receiving lane).
- Re-stripe northbound 10th Avenue to a shared left/right lane at Blankenship.

Other Traffic Concerns in the area

- As is stated above, the proposed mitigation allows the existing left-turn into the commercial development to the south with the addition of a new signal at Tannler and Blankenship.
- As was discussed in previous discussions with the City and neighborhood groups, the applicant proposes to restrict the access from Tannler into the site to prohibit left-out movements. This restriction will eliminate trips associated with the proposed development from entering adjacent residential areas.

II. EXISTING CONDITIONS

SITE CONDITIONS

The site is currently vacant and overall site area is 10.71 acres in size. The site is currently zoned Office Business Center (OBC) and the proposed uses are allowed outright.

TRANSPORTATION FACILITIES

The following is a summary of the study area roadway classifications and descriptions as identified in the City of West Linn's Transportation Plan and field observations by Group Mackenzie staff.

Roadway	City Classification	Posted Speed	Travel Lanes	Bike Lanes	Sidewalks
I-205 Ramps	Interstate Highway	55 mph	4	No	No
10 th Street	Arterial	Not Posted	3	Yes	Yes
Salamo Road	Arterial	40/25 mph	2/3	No	No
Blankenship Road	Collector	25 mph	3	Yes	Yes
Tannler Drive	Collector	25 mph	2	Yes	No
13 th Street/Summerlinn	Local Street	Not Posted	2	No	Yes

Source: City of West Linn Transportation System Plan

The 10th Street/I-205 Southbound Ramp and Blankenship/Salamo intersections are signalized and operated by a single controller maintained by ODOT.

A traffic signal has recently been constructed at the 10th Street/I-205 Northbound Ramp intersection. This signal is mitigation for an office building on Blankenship Road.

The Blankenship Road/Tannler Drive intersection is two-way stop-controlled on Tannler Drive and the shopping center approach, and provides left-turn lanes on Blankenship Road.

Existing lane configurations and traffic control are identified in Figure 3.

PLANNED IMPROVEMENTS

The City of West Linn's Capital Improvement Plan indicates no roadway or intersection projects are planned in the study area.

With the proposed Tannler East development, proposed mitigation includes a traffic signal at the Blankenship Road/Tannler Drive intersection, striping a left-turn lane on Tannler Drive and modifying the Salamo approach to 10th Street to provide a shared through/left lane and split signal phasing. Due to the recent project denial at both Planning Commission and City Council hearings, this report contains analysis with and without the project trips and proposed mitigation measures.

Additionally, the 2015 traffic analysis prepared for the Tannler East development was reviewed to ensure transportation planning consistency. Findings and conclusions presented in Tannler East analysis accurately address 2015 conditions and are consistent with findings presented in this analysis. Further, because the proposed Willamette 205 Corporate Center development is consistent with the comprehensive plan designation, it is concluded additional 2015 analysis is not necessary. Rather, this analysis focuses on near-term (2007), development-related impacts.

EXISTING TRAFFIC COUNTS

Existing traffic turning movement counts were obtained in February 2006 on weekdays between 7:00 – 9:00 AM and 4:00 – 6:00 PM. The weekday AM and PM peak hour volumes are presented in Figures 4A and 4B.

PEDESTRIAN AND BICYCLE FACILITIES

Sidewalks will be provided along Tannler Drive with site development. Currently, sidewalks and bicycle lanes are located on the site frontage of Blankenship Road.

TRANSIT SERVICE

Transit service in the area is provided by Tri-Met. The nearest route, 154 Willamette, travels between the Willamette neighborhood and the Oregon City Transit Center. The nearest stop is located on Blankenship Road at Tannler Drive. Buses run every half-hour during weekday commutes and hourly on weekdays.

CRASH ANALYSIS

When evaluating the relative intersection safety, consideration is not only given to the total number and types of crashes occurring, but also the number of vehicles entering the intersection. This leads to the concept known as “crash rate,” which is usually expressed in terms of the number of crashes occurring per one million vehicles entering the intersection (mev). Intersections having a crash rate less than 1.0/mev are generally considered relatively safe. At crash rates higher than 1.0/mev, consideration may be given to correcting operational problems.

Crash data for the study area intersections were obtained from ODOT staff for January 2001 through December 2005. Crash rates were calculated in accordance with standard guidelines. The following table represents calculated crash rates at the study intersections for the five-year data period. Annual traffic entering the intersections was estimated by multiplying the average annual daily traffic (AADT) entering the intersection by 365. AADT was estimated by multiplying the intersection PM peak hour volumes by 10.

Crash data for the study area intersections is presented in the following table.

TABLE 2 - INTERSECTION CRASH RATES								
Intersection	2001	2002	2003	2004	2005	Total	AADT	Rate
10 th Street/I-205 SB Ramps	0	3	2	0	1	6	17,540	0.19
10 th Street/I-205 NB Ramps	1	2	1	2	2	8	15,510	0.28
10 th Street/Blankenship Road	2	0	0	0	2	4	17,300	0.13
Blankenship Road/Tannler Drive	1	1	1	0	2	5	11,990	0.23
Blankenship Road/13 th Street	0	0	0	0	0	0	7,810	0.00

There were a total of 23 crashes reported at the study area intersections. Crash rates are below the threshold rate of 1.0/mey; therefore, the study area intersections do not currently warrant further consideration for safety mitigation measures. Crash data and calculations are located within the appendix.

III. PRE-DEVELOPMENT CONDITIONS

BACKGROUND GROWTH

Background growth is general growth in traffic not related to traffic from specific projects. The Tannler East traffic study, prepared by Lancaster Engineering, anticipates a 3% per year growth rate that is also assumed in this analysis. One year of growth at this rate was applied to existing traffic volumes to project traffic 2007 volumes. Background growth for study area intersections is presented in Figures 5A and 5B for the AM and PM peak hours.

IN-PROCESS TRAFFIC

In-process traffic is traffic that will be generated by approved projects not complete at the time of analysis. We have included all in-process traffic volumes from the Lancaster Engineering study for Tannler East, as well as two additional residential projects identified by City staff. These include:

- Fields Park
- Cove Place

Trips generated by these two sites were estimated from the Institute of Transportation Engineers (ITE) *Trip Generation*, 7th Edition, using single-family homes. Trip generation and distribution for the two sites are included in the appendix. Figures 6A and 6B summarize the AM and PM peak hour trip assignment for the in-process projects.

The proposed Tannler East development has not yet been approved; therefore, this analysis has been prepared with and without the project. This includes both the trips it would generate and the proposed mitigation measures. Trip assignment for Tannler East is presented in Figures 6C and 6D.

PRE-DEVELOPMENT TRAFFIC VOLUMES

Pre-development traffic is the sum of existing volumes, background growth and in-process traffic; and represents conditions without the proposed development. Figures 7A and 7B present the 2007 AM and PM peak hour pre-development traffic volumes without Tannler East. Volumes with Tannler East are shown in Figures 7C and 7D.

IV. SITE DEVELOPMENT

TRIP GENERATION

Trip generation calculations were prepared using the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 7th Edition. Trip generation for the site was calculated based on regression equations for Land Use Code 710, General Office. The table below presents the anticipated trip generation for Phase 1 with a 107,500 SF building, and full buildout of all three buildings, totaling 300,000 SF.

Scenario	KSF	ADT	AM Peak		PM Peak	
			Enter	Exit	Enter	Exit
Phase 1	107.5	1,119	143	19	26	124
Three Buildings	300.0	3,109	397	54	71	344

For purposes of this analysis, all trips are assumed to be automobile trips, and no transportation demand management measures have been assumed.

TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution is based upon evaluation of existing traffic patterns at the adjacent office buildings and study area intersections and a review of recent traffic studies prepared in the area. Approximately 60% of site traffic is expected to travel to and from the site on Interstate 205, while 20% will travel north on Tannler and Salamo to residential areas in Lake Oswego and West Linn. It is estimated 5% of site traffic will also travel to and from the retail develop on the south side of Blankenship and 5% of site traffic will travel to and from the west on Blankenship. The remaining 10% of trips are divided along Willamette Falls Drive.

The distribution of trips for the first building in Phase 1 is presented in Figures 8A and 8B. This assumes a small number of trips arriving from the south would use the main site access on Tannler Drive to gain access to the upper level of the parking structure. The overall distribution and assignment with full development of all three buildings is shown in Figures 9A and 9B for the AM peak and PM peak hours, respectively.

POST-DEVELOPMENT TRAFFIC

Post-development traffic is the sum of pre-development traffic volumes and site traffic volumes. Figures 10A-10D illustrate 2007 Phase 1 post-development traffic volumes, both without and with Tannler East.

Full buildout post-development volumes are presented in Figures 11A-11D.

ACCESS ANALYSIS

The site will have use of three driveways.

The two existing driveways of the West Linn Corporate Park adjacent to the west will be available for access to the site. Limited use of the driveway on Summerlinn is expected. The driveway to Blankenship, opposite the Albertsons driveway, will be the primary access point for the Phase 1 building at the south end of the site.

One new driveway is proposed on Tannler Drive. The main access will be located approximately 645' north of Blankenship Road and will be constructed with Phase 1 development.

With low volumes of left turns to the northern site access and Tannler East access, no turning movement conflicts are anticipated.

SIGHT DISTANCE ANALYSIS

The recommended sight distances in AASHTO's *A Policy on Geometric Design of Highways and Streets*, 2004 Edition, for minor street left and right turns are based on the vehicular speed as described in AASHTO Exhibits 9-55 and 9-58, respectively. The sight distance recommendations provide sufficient time for the minor-road vehicle to accelerate from a stop and complete a turn without unduly interfering with major-road traffic operations. Vehicular speeds were assumed to be the posted speeds. A speed study was not conducted in this area.

For Tannler Drive, with a posted speed of 25 mph, 280' is needed for left turns and 240' for right turns. Sight distances at the proposed driveways to Tannler Drive were measured in accordance with AASHTO standards to be available in excess of 350' in both directions.

Landscaping should be placed such that there are no obstructions within the clear vision area.

V. INTERSECTION AND ROADWAY ANALYSIS

INTERSECTION CAPACITY AND LEVEL OF SERVICE

Intersection capacity calculations were conducted using the methodologies presented in the *2000 Highway Capacity Manual*. A summary of the methodology is included in the appendix. Synchro/SimTraffic software was used to prepare the capacity and level of service calculations. Copies of the calculations are also included in the appendix.

The concept of level of service (LOS) has been developed as a national standard by traffic engineers to allow a qualitative measure of an intersection's operation. LOS "A" is representative of generally free-flowing conditions while a LOS "F" is representative of side street delays greater than 50 seconds for an unsignalized intersection. For the study area roadways, City of West Linn considers a LOS "D" as acceptable.

Unsignalized intersections are evaluated on the delay experienced by each lane or lane group and the total intersection average. This delay corresponds to the lane or lane group's reserve capacity, which is a measure of the capacity of a movement that is unused. Because major street traffic is nearly unimpeded, the intersection average does not always reflect the delays experienced by side street traffic. For this reason, the lane or lane group that experiences the highest delay is reported for the intersection as a whole, along with the corresponding level of service and volume to capacity (v/c) ratio.

ODOT uses the v/c ratio to measure performance of its highways. For the ramp interchanges at 10th Street, ODOT requires a v/c of 0.99 during the design hour. The traffic analysis has been prepared using Synchro/SimTraffic software. The current ODOT phasing and timing for the 10th Street/I-205 Southbound Ramp and Blankenship/Salamo intersections was used in this model. The two intersections have a single controller that maintains a fixed time operation to ensure traffic progresses through the closely spaced intersections without blocking either one. All mitigation measures assume the intersections will retain the current timing plan with minor revision to improve operation.

Due to Tannler East development uncertainty, we have analyzed conditions both with and without its trips. Operation analysis was performed for the weekday AM and PM peak hour at the study area intersections for the following scenarios:

- 2006 Existing
- 2007 Pre-Development without Tannler East
- 2007 Phase 1 without Tannler East
- 2007 Post-Development without Tannler East
- 2007 Pre-Development with Tannler East
- 2007 Phase 1 with Tannler East
- 2007 Post-Development with Tannler East

Calculation results are summarized in the following tables. The improvements proposed at the study area intersections are consistent with the long-term recommendations identified in the Tannler East analysis.

2007 Pre-Development without Tannler East

Pre-development traffic conditions without the Tannler East development result in unacceptable operation at the intersections of Blankenship Road at Tannler Drive and at 10th Street. Left turns from Tannler and the shopping center would experience long delays, particularly in the PM peak hour. At this time there is no plan for a traffic signal. At the Blankenship/10th/Salamo intersection the long queues in the AM on the Salamo approach will result in an overall delay corresponding to LOS F.

2007 Phase 1 without Tannler East

With the addition of Phase 1 building trips, operations at the Blankenship/10th/Salamo intersection would result in long queues on the Salamo approach during the AM peak hour. To mitigate these long queues and provide the necessary capacity without increasing the green time for the Salamo approach, the existing through lane could be converted to a shared through/left lane with corresponding signal phasing changes. The signal would need to be modified to allow split phasing for the Salamo and Blankenship approaches. Currently, the left and through movements from Salamo run first (24 seconds), followed by a common green phase for through trips (18 seconds) on both Salamo and Blankenship. By changing to a split phase, the through movement on Blankenship would not lose any green time, while the through movement on Salamo has its total time reduced from 42 to 26 seconds. This change does not result in capacity or queuing problems for the through movements. Pedestrian times for the south crossing of the intersection would not be changed.

The intersections of the existing office/Albertsons driveway to Blankenship Road, as well as the Tannler/East Albertsons driveway to Blankenship Road will experience long delays (LOS F) for side street left turns. Even with these delays, a traffic signal would not be warranted at either location based on the peak hour volumes.

2007 Post-Development without Tannler East

With full site development, a signal will be needed at the Blankenship Road/Tannler intersection. In addition, a separate left-turn lane and shared through/right lane should be striped on Tannler at the intersection. The signal should operate with permitted left turns on Blankenship and split phasing for Tannler and the East Albertsons driveway.

The additional site traffic also requires further changes to the Blankenship/10th/Salamo intersection. A second eastbound right-turn lane on Blankenship is needed to mitigate queues from backing up to Tannler. This lane could be added along the shopping center frontage and would not require any signal timing changes. Timing changes would be needed on the Salamo approach to provide adequate capacity for the left-turn/through movements in the AM peak hour. The total time would need to be increased from 24 to 28 seconds. This would reduce the Blankenship through movement's total time from 18 to 14 seconds. This will have little impact on the pedestrian crossings at the south end of the intersection. With a total crossing distance of 104', 26 seconds is needed to cross at 4' per second. The current green time is only 14 seconds, so pedestrians would override the

signal timing. With the low volume of pedestrian crossings at this location, the intersection would have little disruption.

At the 10th Street/I-205 Southbound Ramp intersection, a second northbound through lane with storage of 150' should be provided.

On 10th Street between the two ramp intersections, the two southbound lanes at the southbound ramp merge into a single-through lane. In order to better utilize these two lanes, we recommend the two through lanes on 10th Street be striped all the way to the northbound ramp intersection with a trap lane for the left-turn movement to the on ramp.

The following table presents a summary of intersection operation with all of the recommended improvements.

TABLE 4A - INTERSECTION OPERATION ANALYSIS WITHOUT TANNER EAST													
Intersection		2006 Existing			2007 Pre			Phase 1			2007 Post		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
13th Street/ Office Access	AM	0.01	9.1	A	0.01	9.1	A	0.01	9.1	A	0.01	9.1	A
	PM	0.08	9.3	A	0.08	9.3	A	0.08	9.3	A	0.08	9.3	A
13th Street/ Blankenship Road	AM	0.16	15.2	C	0.22	18.9	C	0.22	19.2	C	0.22	19.6	C
	PM	0.22	18.8	C	0.30	25.5	D	0.31	25.9	D	0.31	26.6	D
Blankenship Road/ Albertsons Access	AM	0.11	14.1	B	0.13	16.5	C	0.13	23.6	C	0.21	32.4	D
	PM	0.27	25.2	D	0.50	27.7	D	1.16	173.6	F	1.44	281.8	F
Blankenship Road/ Tanner Drive	AM	0.57	35.4	E	0.79	63.0	F	0.90	122.8	F	0.60	16.2	B
	PM	0.57	68.8	F	0.91	171.0	F	1.13	376.7	F	0.55	21.1	C
Blankenship Road/ 10 th Street	AM	0.65	73.5	E	0.68	85.6	F	0.60	33.8	C	0.72	24.8	C
	PM	0.57	39.1	D	0.65	41.9	D	0.65	24.1	C	0.57	23.7	C
10 th Street/ I-205 SB Ramp	AM	0.53	25.6	C	0.57	30.6	C	0.60	33.8	C	0.53	30.2	C
	PM	0.55	29.0	C	0.61	30.8	C	0.64	31.5	C	0.68	31.5	C
10 th Street/ I-205 NB Ramp	AM	0.58	13.6	B	0.64	15.0	B	0.67	16.8	B	0.74	20.0	C
	PM	0.52	12.0	B	0.56	12.7	B	0.60	13.5	B	0.66	15.1	B
Tanner Drive/ Site Access	AM							0.01	9.6	A	0.04	10.3	B
	PM							0.03	9.3	A	0.22	10.0	B

v/c, delay and LOS are calculated for the critical approach at unsignalized intersections

2007 Pre-Development with Tannler East

The Tannler East development proposes to construct mitigation including installation of a traffic signal at the Tannler/Blankenship Road intersection and modifying the Salamo approach to 10th Street to provide a shared through/left lane and split phasing at the signal. With these improvements, all intersections are expected to operate at acceptable levels of service.

2007 Phase 1 with Tannler East

With traffic from the first building, additional improvements will be needed at the Blankenship/10th/Salamo intersection. A second eastbound right-turn lane on Blankenship is needed to mitigate queues from backing up to Tannler. This lane could be added along the shopping center frontage and would not require any signal timing changes. Timing changes would be needed on the Salamo approach to provide adequate capacity for the left-turn/through movements in the AM peak hour. The total time would need to be increased from 24 to 28 seconds. This would reduce the Blankenship through movement's total time from 18 to 14 seconds. This will have little impact on the pedestrian crossings at the south end of the intersection. With a total crossing distance of 104', 26 seconds is needed to cross at 4' per second. The current green time is only 14 seconds, so pedestrians would override the signal timing. With the low volume of pedestrian crossings at this location, the intersection would have little disruption.

2007 Post-Development with Tannler East

At the 10th Street/I-205 Southbound Ramp intersection, a second northbound through lane with storage of 150' should be provided.

On 10th Street between the two ramp intersections, the two southbound lanes at the southbound ramp merge into a single-through lane. In order to better utilize these two lanes, we recommend the two through lanes on 10th Street be striped all the way to the northbound ramp intersection with a trap lane for the left-turn movement to the on ramp.

The northbound 10th Street approach to Blankenship/Salamo should be striped to provide a left-turn lane and shared left/right lane. This does not require any signal timing or phasing changes.

In order to provide a second receiving lane on Blankenship Road for the double left-turn lanes from 10th Street, a westbound right-turn lane needs to be provided at the intersection with Tannler. This lane would extend back to the 10th Street intersection.

The following table presents a summary of intersection operation with all of the recommended improvements.

Intersection		2006 Existing			2007 Pre			Phase 1			2007 Post		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
13th Street/ Office Access	AM	0.01	9.1	A	0.01	9.1	A	0.01	9.1	A	0.01	9.1	A
	PM	0.08	9.3	A	0.08	9.3	A	0.08	9.3	A	0.08	9.3	A
13th Street/ Blankenship Road	AM	0.16	15.2	C	0.22	19.5	C	0.23	19.8	C	0.23	20.5	C
	PM	0.22	18.8	C	0.32	27.0	D	0.32	27.7	D	0.33	28.4	D
Blankenship Road/ Albertsons Access	AM	0.11	14.1	B	0.03	17.1	C	0.13	26.2	D	0.21	31.9	D
	PM	0.27	25.2	D	0.41	40.9	E	1.18	185.8	F	1.42	239.0	F
Blankenship Road/ Tanner Drive	AM	0.57	35.4	E	0.46	16.4	B	0.54	16.3	B	0.47	15.3	B
	PM	0.57	68.8	F	0.41	16.6	B	0.48	17	B	0.61	20.3	C
Blankenship Road/ 10th Street	AM	0.65	73.5	E	0.62	34.7	C	0.66	24.3	C	0.62	24.8	C
	PM	0.57	39.1	D	0.64	26.4	C	0.62	25.5	C	0.58	25.0	C
10th Street/ I-205 SB Ramp	AM	0.53	25.6	C	0.58	30.6	C	0.61	33.8	C	0.55	30.5	C
	PM	0.55	29.0	C	0.68	34.2	C	0.70	33.8	C	0.65	28.2	C
10th Street/ I-205 NB Ramp	AM	0.58	13.6	B	0.69	17.1	B	0.72	19.1	B	0.78	22.9	C
	PM	0.52	12.0	B	0.63	14.2	B	0.66	15.2	B	0.72	17.3	B
Tanner Drive / Site Access	AM							0.01	10.0	A	0.05	10.6	B
	PM							0.03	9.7	A	0.23	10.5	B

v/c, delay and LOS are calculated for the critical approach at unsignalized intersections

QUEUING ANALYSIS

Queuing analysis was performed in accordance with ODOT standards using SimTraffic software with a 10 minute seeding interval and a 60-minute recording interval. The average queue lengths and 95th percentile queue lengths are reported for all movements in the study area intersections. The 95th Percentile queuing is used for design purposes, and is reported to the nearest 25' increment. The existing storage lengths and summary of the peak queue at the study area intersections are listed in the Tables 5A and 5B below for scenarios without and with the Tanner East development, respectively. The peak queue reported as the longest of either the AM or PM analysis. Queues that exceed the available storage are shown in bold.

TABLE 5A - QUEUING CALCULATIONS WITHOUT TANNER EAST

Intersection	Lane Groups		2006 Existing		2007 Pre		Phase 1		2007 Post	
			Storage	Queue	Storage	Queue	Storage	Queue	Storage	Queue
Blankenship/ Site Access/ Albertsons	EB	Lt	100	25/25	100	25/25	100	25/25	100	25/50
	WB	Lt	100	25/50	100	25/50	100	25/50	100	25/75
	NB	Lt/Th/Rt	100	50/125	100	75/125	100	100/250	100	100/200
	SB	Lt/Th/Rt	200	25/75	200	25/75	200	150/375	200	350/625
Blankenship/ Tanner	EB	Lt	100	25/50	100	25/75	100	50/100	100	50/100
		Th/Rt	300	0/0	300	0/0	300	200/375	300	275/400
	WB	Lt	100	50/75	100	50/100	100	50/100	200	100/150
		Th	250	0/0	250	0/0	250	25/50	250	175/300
		Rt								
	NB	Th/Lt	100	25/100	100	100/275	100	150/350	100	25/75
	SB	Rt	100	75/125	100	200/350	100	275/300	100	75/150
		Lt	NA	75/150	NA	150/375	250	200/275	250	175/250
Th/Rt	NA	300/575					NA	75/300		
Blankenship/ 10 th Street	EB	Th	150	100/175	150	125/200	150	150/200	150	150/225
		Rt	200	175/275	200	225/300	200	250/250	200	175/300
	WB	Lt	125	150/150	125	200/275	300	225/275	300	225/350
		Th	NA	800/875	NA	800/1025	NA	700/1000	NA	775/975
	NB	Lt	175	100/175	175	100/175	175	125/200	175	150/225
Rt		150	50/175	150	50/125	150	50/150	150	75/225	
10 th Street/ I-205 SB	WB	Th/Lt	225	125/225	225	170/275	225	175/325	225	225/575
		Rt	225	100/200	225	125/225	225	125/250	225	175/350
	NB	Lt	225	125/225	225	175/250	225	175/275	225	150/275
		Th	460	250/350	460	275/375	460	200/350	460	275/375
SB	Th/Rt	100	125/250	100	200/275	100	200/275	100	175/225	
10 th Street/ I-205 NB	EB	Th/Lt	100	75/125	100	125/250	100	225/475	100	200/350
		Rt	100	25/50	100	50/75	100	75/225	100	50/150
	NB	Th	250	125/200	250	250/550	250	375/800	250	325/650
		Rt	75	50/75	75	75/200	75	125/325	75	100/250
	SB	Lt	100	100/150	100	125/150	100	125/150	460	200/300
Th	460	125/275	460	175/350	460	225/350	460	125/225		

Average Queue / 95th Queue (Feet)

TABLE 5B - QUEUING CALCULATIONS WITH TANNER EAST										
Intersection	Lane Groups		2006 Existing		2007 Pre		Phase 1		2007 Post	
			Storage	Queue	Storage	Queue	Storage	Queue	Storage	Queue
Blankenship/ Site Access/ Albertsons	EB	Lt	100	25/25	100	25/25	100	25/25	100	25/50
	WB	Lt	100	25/50	100	25/50	100	25/50	100	25/75
	NB	Lt/Th/Rt	100	50/125	100	75/175	100	100/150	100	175/375
	SB	Lt/Th/Rt	200	25/75	200	50/75	200	125/250	200	375/625
Blankenship/ Tanner	EB	Lt	100	25/50	100	25/100	100	50/100	100	50/125
		Th/Rt	300	0/0	300	0/0	300	200/350	300	300/375
	WB	Lt	100	50/75	100	50/100	100	75/150	200	125/150
		Th	250	0/0	250	0/50	250	125/250	250	225/325
		Rt								
	NB	Th/Lt	100	25/100	100	150/325	100	25/75	100	25/75
		Rt	100	75/125	100	225/350	100	75/100	100	75/150
	SB	Lt	NA	75/150	NA	175/200	350	100/175	350	200/350
Th/Rt		300/475				NA	25/50	NA	75/275	
Blankenship/ 10 th Street	EB	Th	150	100/175	150	125/200	150	150/200	150	150/200
		Rt	200	175/275	200	225/275	200	150/250	200	200/300
	WB	Lt	125	150/150	125	225/275	300	200/275	300	250/400
		Th	NA	800/875	NA	500/875	NA	700/1000	NA	775/975
	NB	Lt	175	100/175	175	125/200	175	125/200	175	150/225
		Rt	150	50/175	150	75/200	150	75/225	150	100/225
10 th Street/ I-205 SB	WB	Th/Lt	225	125/225	225	175/300	225	200/475	225	400/1125
		Rt	225	100/200	225	150/250	225	200/375	225	250/475
	NB	Lt	225	125/225	225	175/275	225	175/275	225	150/250
		Th	460	250/350	460	300/375	460	300/350	460	200/325
SB	Th/Rt	100	125/250	100	200/300	100	150/225	100	200/350	
10 th Street/ I-205 NB	EB	Th/Lt	100	75/125	100	150/300	100	250/525	100	200/350
		Rt	100	25/50	100	50/125	100	75/225	100	50/125
	NB	Th	250	125/200	250	350/750	250	500/925	250	225/500
		Rt	75	50/75	75	125/325	75	175/400	75	75/200
	SB	Lt	100	100/150	100	125/150	100	200/300	460	200/320
		Th	460	125/275	460	225/350	460	125/225	460	125/250

Average Queue / 95th Queue (Feet)

SIGNAL WARRANT ANALYSIS

Guidelines for installation of traffic signals are presented in the Millennium Edition of the *Manual on Uniform Traffic Control Devices* (MUTCD). These guidelines are referred to as signal warrants. The MUTCD identifies eight signal warrants that present criteria for consideration of a traffic signal. Typically, an intersection will first meet the peak hour volume signal warrant (MUTCD Warrant 3). For this reason, it is the first warrant reviewed, although meeting it alone is generally not considered sufficient for installation of a traffic signal. If the peak hour warrant is met, then other warrants may be reviewed.

Peak hour warrants were reviewed for the intersections of Blankenship Road with Tannler and the site/Albertsons access. Signal warrants are not met at either location under the Phase 1 scenario without development of Tannler East. With Tannler East, a signal has been proposed at the Tannler intersection with Blankenship.

Under full development conditions, a signal would be warranted at the Tannler intersection with Blankenship.

A signal is not recommended at the site/Albertsons access due to the close proximity to the proposed signal at the Tannler intersection and geometrics of the driveway approaches, including slopes, alignment and storage.

Copies of the signal warrant worksheets are located within the appendix.

VI. SUMMARY

This transportation impact analysis has been prepared for the Willamette 205 Corporate Center located on the northwest corner of the Blankenship Road/Tannler Drive intersection in West Linn, Oregon. The project will consist of three office buildings totaling 300,000 SF. The buildings will be built in phases with the southern building along Blankenship constructed first.

The study area and analysis scenarios were determined based on City of West Linn and ODOT standards. Six intersections were reviewed during the weekday AM and PM peak hours for existing conditions and development scenarios both with and without the proposed Tannler East development.

The site is currently vacant and overall site area is 10.71 acres in size. The site is currently zoned Office Business Center (OBC) and the proposed uses are allowed outright.

The City of West Linn's Capital Improvement Plan indicates no roadway or intersection projects are planned in the study area. With the proposed Tannler East development, mitigation has been proposed that includes a traffic signal at the intersection of Blankenship Road with Tannler Drive, striping a left-turn lane on Tannler Drive and modifying the Salamo approach to 10th Street to provide a shared through/left lane and split phasing at the signal. Due to the uncertainty of the approval of Tannler East, we have considered conditions both with and without the project trips and mitigation measures.

A traffic signal has recently been constructed at the 10th Street/I-205 Northbound Ramp intersection. This signal is mitigation for an office building on Blankenship Road.

Existing intersection turning movement counts were obtained in February 2006 on weekdays between 7:00 – 9:00 AM and 4:00 – 6:00 PM.

Transit service in the area is provided by Tri-Met route 154 Willamette, with stops on Blankenship Road at Tannler Drive. Sidewalks will be provided along the entire site frontage of Blankenship Road and Tannler Drive.

Crash data for the study area intersections was obtained from ODOT staff for January 2001 through December 2005. Road Crash rates were calculated in accordance with standard guidelines. There were a total of 23 crashes reported at the study area intersections. Crash rates are below the threshold rate of 1.0/mev; therefore, the study area intersections do not currently warrant further consideration for safety mitigation measures.

A background growth rate of 3% per year was applied to existing traffic volumes. This rate is consistent with other analyses in the area and transportation modeling estimates. Traffic from the approved, but not yet constructed, in-process projects was added to existing volumes as well. We have included all in-process traffic volumes from the study for Tannler East, as well as the Fields Park and Cove Place residential developments.

Trip generation for the proposed Willamette 205 Corporate Center was estimated based on trip rates for office buildings presented in the Institute of Transportation Engineers (ITE) *Trip Generation, 7th Edition*. With the Phase 1 building of 107,500 SF, a total of 1,119 daily, 162 AM and 150 PM trips are anticipated. At full buildout of all three buildings, totaling 300,000 SF, the site is expected to generate 3,109 daily, 451 AM and 415 PM trips.

Three driveways will be available to the proposed site including the two existing driveways of the West Linn Corporate Park, and one new driveway to Tannler Drive. The new driveway on Tannler Drive will be located approximately 645 feet north of Blankenship Road. Sight distance is available in excess of minimum AASHTO standards.

Intersection capacity calculations were conducted using the methodologies presented in the 2000 Highway Capacity Manual with Synchro and SimTraffic software. The current ODOT phasing and timing for the 10th Street/I-205 Southbound Ramp and Blankenship/Salamo intersections was used in this analysis. All mitigation measures assume the intersections will remain with the current timing plan with minor noted revisions to improve operations.

The following projects are proposed to mitigate traffic impacts of the Willamette 205 project both without and with the Tannler East development.

TRAFFIC MITIGATION WITHOUT TANNER EAST

Mitigation for the First Willamette 205 Building

- Modify the Salamo approach to 10th Street to provide a shared through/left lane with 300' of queuing and split phasing at the signal.
- Stripe a southbound left-turn lane on Tannler at Blankenship with 250' of queuing.

Additional Mitigation for all Three Willamette 205 Buildings

- Add a second eastbound right-turn lane on Blankenship at 10th Street.
- Adjust the Blankenship/Salamo/10th signal to provide more AM green time to Salamo.
- Stripe two through lanes on 10th between the I-205 ramps (requires pavement widening).
- Add a second 150' northbound through lane on 10th at the southbound I-205 ramps.
- Install signal at Tannler/Blankenship.

TRAFFIC MITIGATION WITH TANNLER EAST

Proposed Mitigation for Tannler East

- Stripe a 150' left-turn lane southbound on Tannler at Blankenship.
- Modify the Salamo approach to 10th Street to provide a shared through/left lane and split phasing at the signal.
- Install a signal at Tannler/Blankenship and strip a 150' left-turn lane.

Additional Mitigation for First Willamette 205 Building

- Add a second eastbound right-turn lane on Blankenship at 10th Street.
- Adjust the Blankenship/Salamo/10th signal to provide more AM green time to Salamo and increase the westbound left-turn lane storage to 300'.
- Increase the storage from 150' to 350' for the southbound left-turn lane on Tannler at Blankenship.

Additional Mitigation for all Three Willamette 205 Buildings

- Stripe two through lanes on 10th between the I-205 ramps (requires pavement widening).
- Add a second 150' northbound through lane on 10th at the southbound I-205 ramps.
- Add a westbound right-turn lane on Blankenship at Tannler (provides second receiving lane).
- Restripe northbound 10th Street to a shared left/right lane at Blankenship.

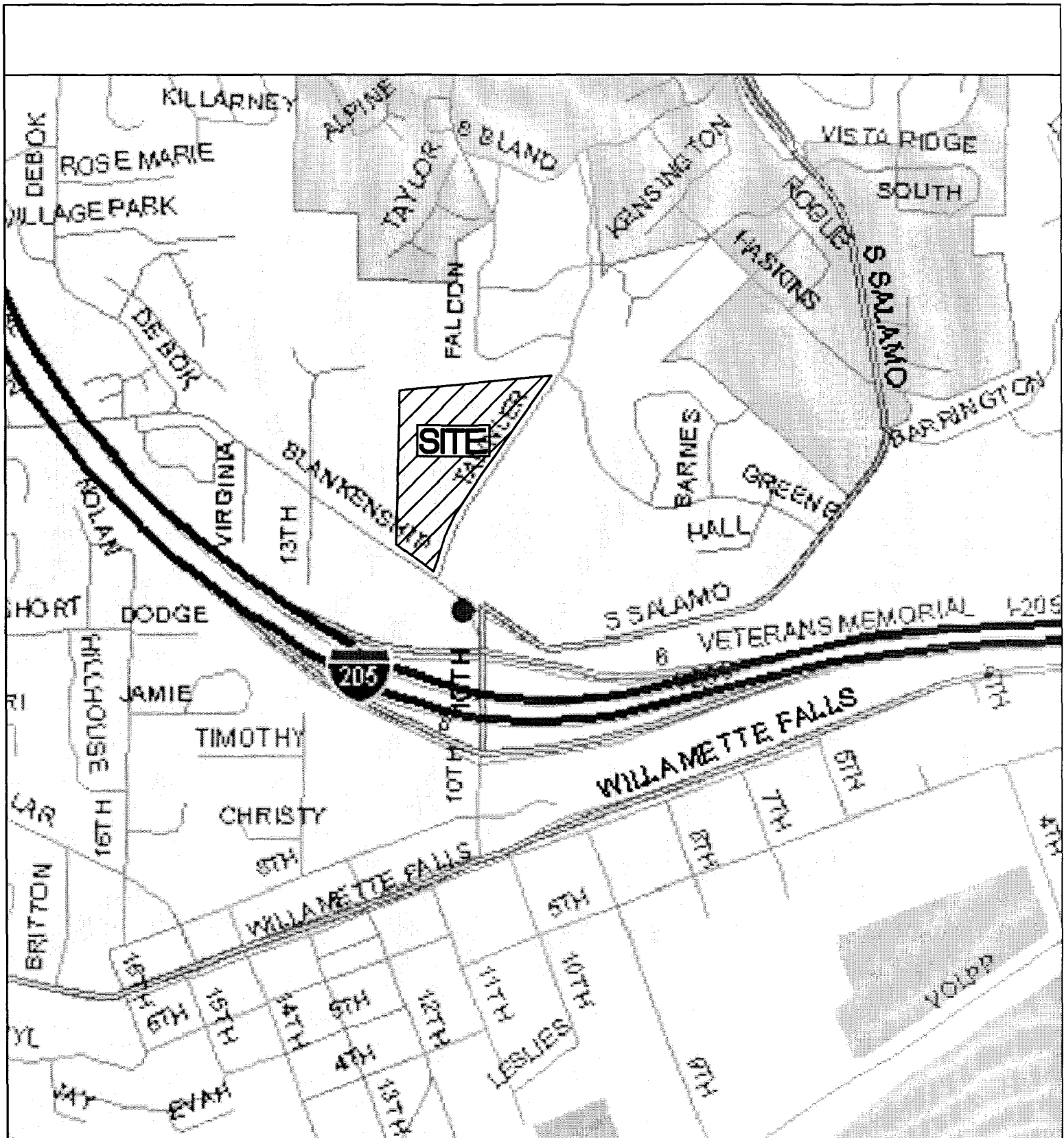
The following recommendations are made to mitigate impacts of the proposed Willamette 205 Corporate Center regardless of development on the Tannler East site.

- Landscaping should be placed such that there are no obstructions within the clear vision area.

VII. APPENDIX

- A. Figures
- B. Traffic Count Summaries
- C. Transit Routes
- D. Crash Data
- E. In-Process Traffic
- F. Trip Generation
- G. Trip Distribution
- H. Warrant Analysis
- I. Capacity Calculations
- J. Queuing Calculations

APPENDIX A
Figures



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VICINITY MAP

WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE

1

MACKENZIE GROUP
 Civil Engineering
 10000 Mack Centre Drive
 Suite 100
 Portland, OR 97266
 Phone: 503.253.1234
 Fax: 503.253.1235

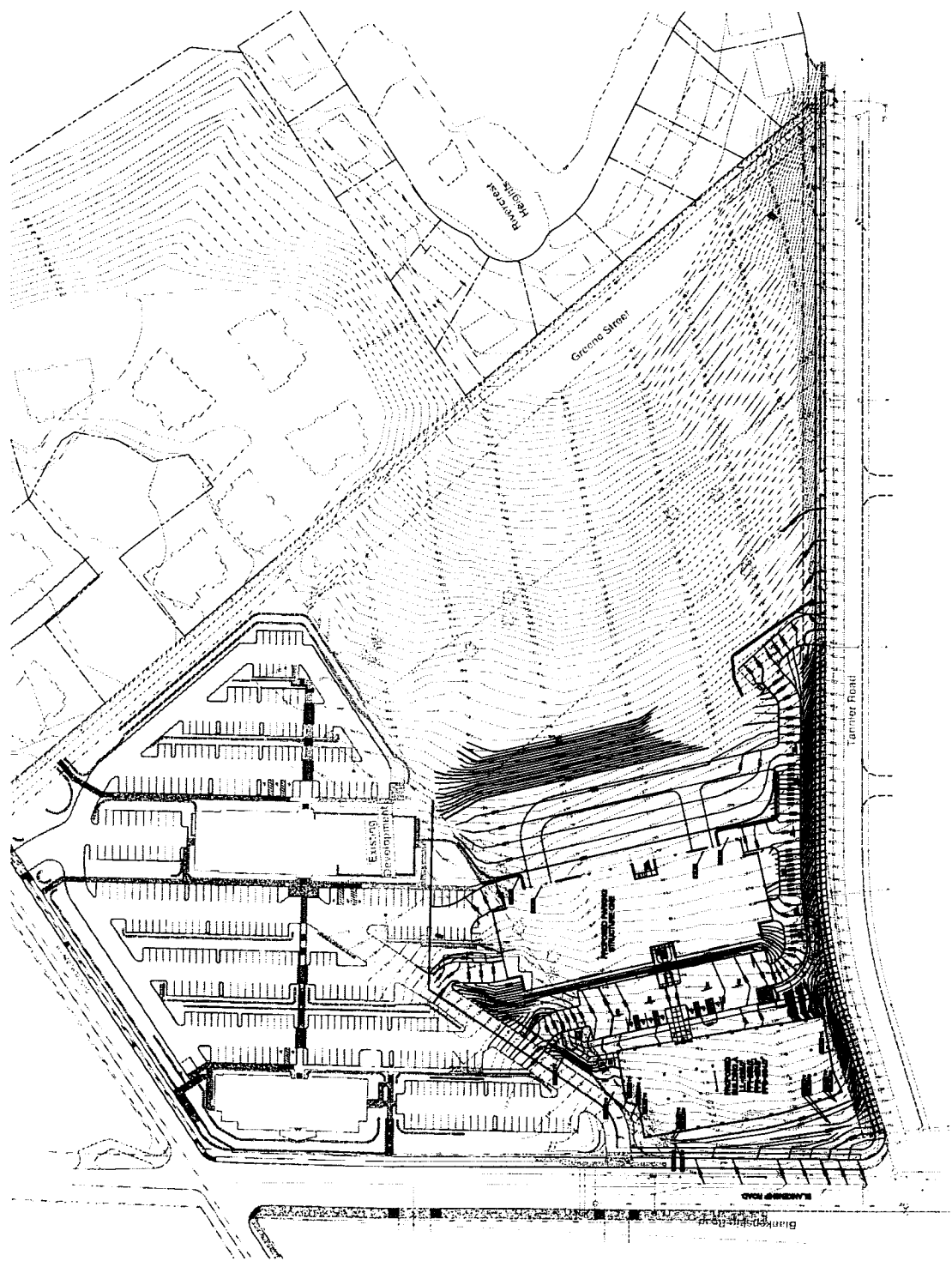
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 Project
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 Checked by: [Name]
 Date: [Date]

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 Project
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 Date: [Date]

WILLAMETTE 300 CORPORATE CENTER
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 Project
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 Date: [Date]

WILLAMETTE 300 CORPORATE CENTER
 Project
 Prepared by: [Name]
 Checked by: [Name]
 Date: [Date]



C3.0A

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MACKENZIE
 ARCHITECTS
 1000 W. 10TH AVENUE
 SUITE 100
 DENVER, CO 80202
 PHONE: 303.733.2200
 FAX: 303.733.2201

PROJECT
 WILLAMETTE 200
 CORPORATE CENTER

DATE
 06/22/2006

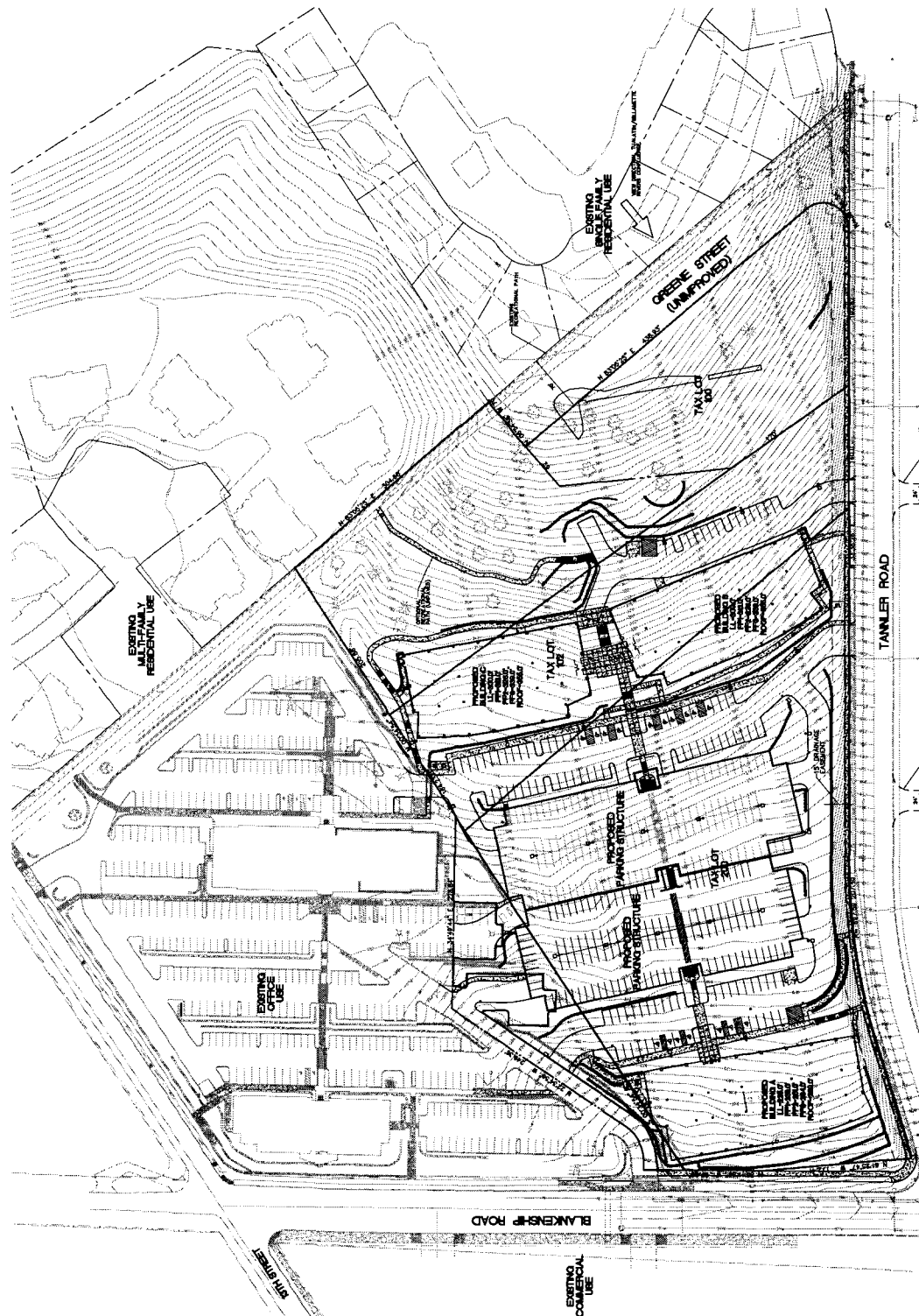
CLIENT
 WILLAMETTE 200
 CORPORATE CENTER

PROJECT
 WILLAMETTE 200
 CORPORATE CENTER

DATE
 06/22/2006

PROJECT
 WILLAMETTE 200
 CORPORATE CENTER

DATE
 06/22/2006



PROPERTY DATA SUMMARY

EXISTING LOT AREA	444,597 SF (10.21 AC)
PROPOSED LOT AREA	444,597 SF (10.21 AC)
PROPOSED LOT LINE ADJUSTMENT AREA	+3,819 SF (0.09 AC)
PROPOSED TANNER REDEVELOPMENT AREA	-5,000 SF (0.12 AC)
PROPOSED OVERALL PROPERTY AREA	444,136 SF (10.14 AC)

LOT ADJUSTMENTS

TAX LOT	EXISTING	PROPOSED
TAX LOT 200	222,298 SF (5.10 AC)	222,298 SF (5.10 AC)
TAX LOT 102	86,813 SF (1.97 AC)	86,813 SF (1.97 AC)
TAX LOT 101	37,483 SF (0.86 AC)	37,483 SF (0.86 AC)
EXISTING DEVELOPMENT	333,601 SF (7.63 AC)	333,601 SF (7.63 AC)

UNDEVELOPED OFFICE/COMMERCIAL ZONING (TANNER EAST)

PROPOSED - PHASE 1	444,597 SF (10.21 AC)
PROPOSED - PHASE 2	444,597 SF (10.21 AC)
PROPOSED - PHASE 3	444,597 SF (10.21 AC)
TOTAL	1,333,791 SF (30.43 AC)

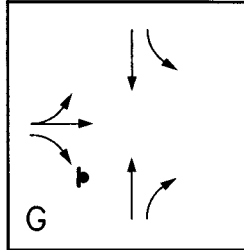
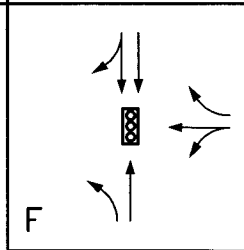
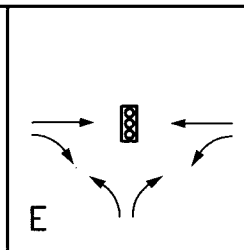
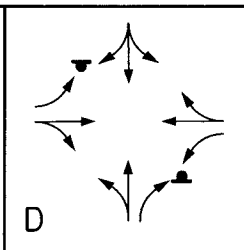
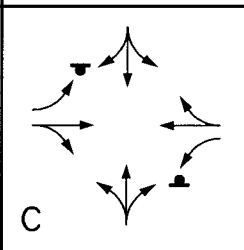
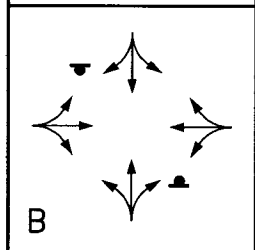
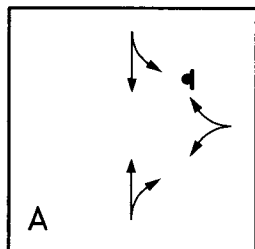
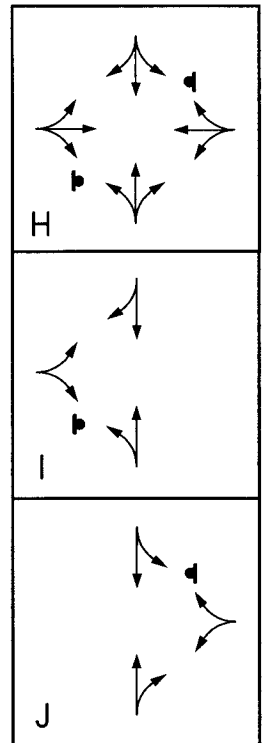
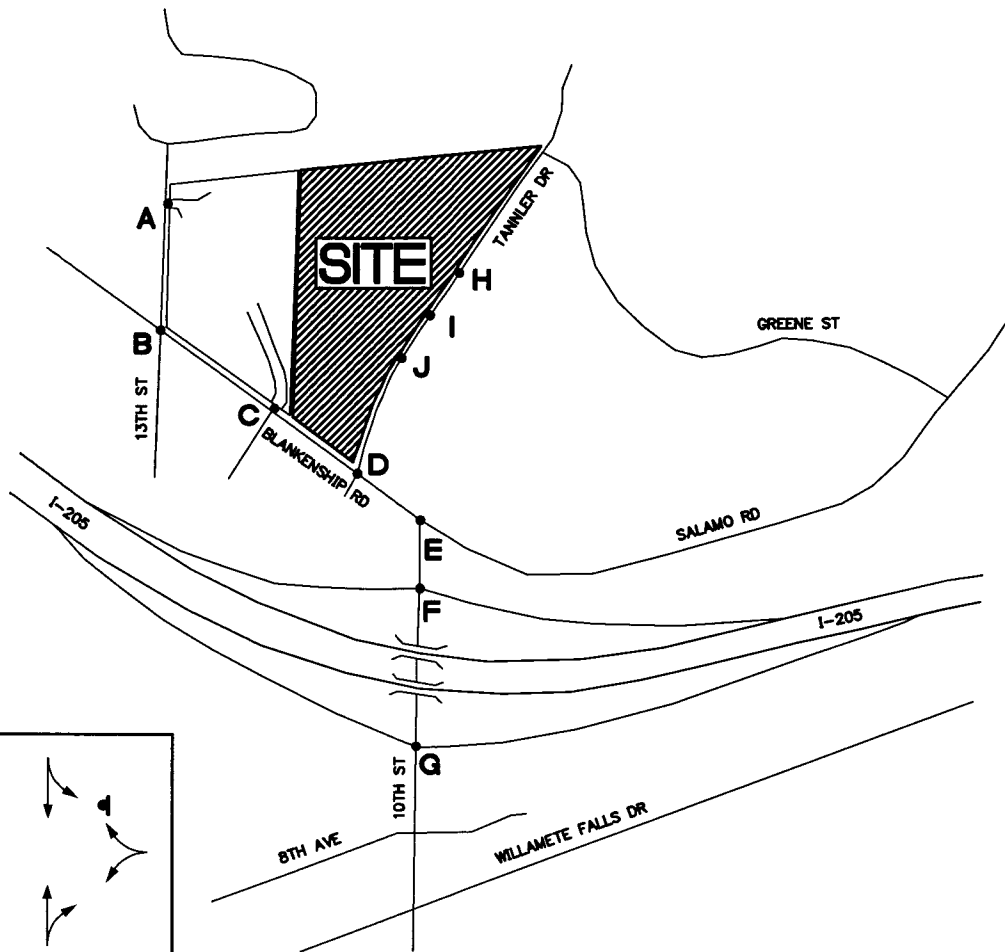
EXISTING - PHASE 1



EXISTING - PHASE 1	333,601 SF (7.63 AC)
ADJUSTED OVERALL SITE AREA	444,136 SF (10.14 AC)
OVERALL LANDSCAPE AREA PROVIDED	102,000 SF (2.33 AC)
PARKING LOT LANDSCAPE AREA PROVIDED	87,515 SF (1.99 AC)
OVERALL BUILDING AREA (GROSS)	84,818 SF
OVERALL BUILDING AREA (NET)	78,000 SF
OVERALL PARKING PROVIDED	374
OVERALL BIKE SPACES PROVIDED	374
OVERALL BIKE SPACES PROVIDED	374

NOTE: BASED ON OVERALL SITE AREA (EXISTING)
 * BASED ON ADJUSTED OVERALL SITE AREA (EXISTING)
 ** NET AREA OF BIKE SPACES PROVIDED

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- VIEW DIRECTION
- COMPLIANCE



 = STOP SIGN
 = TRAFFIC SIGNAL



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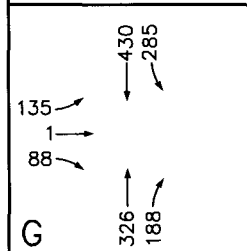
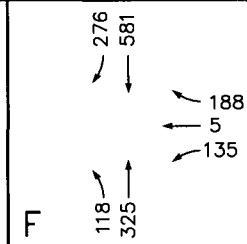
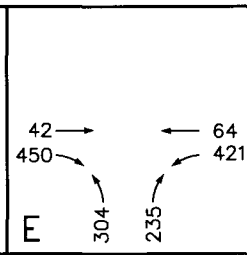
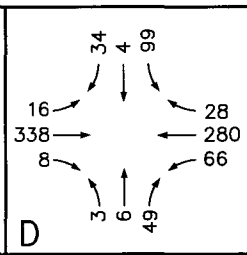
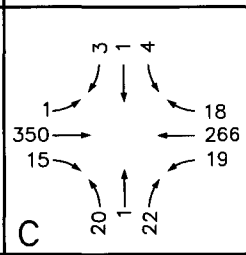
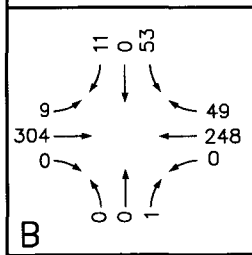
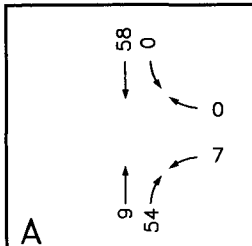
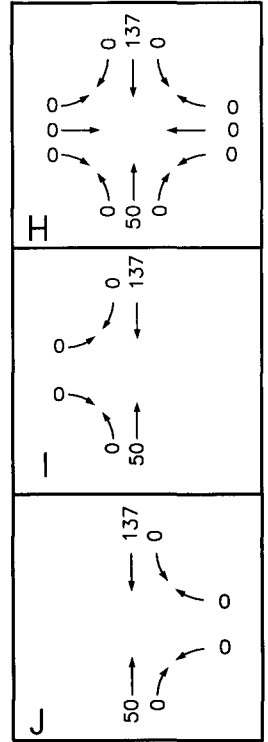
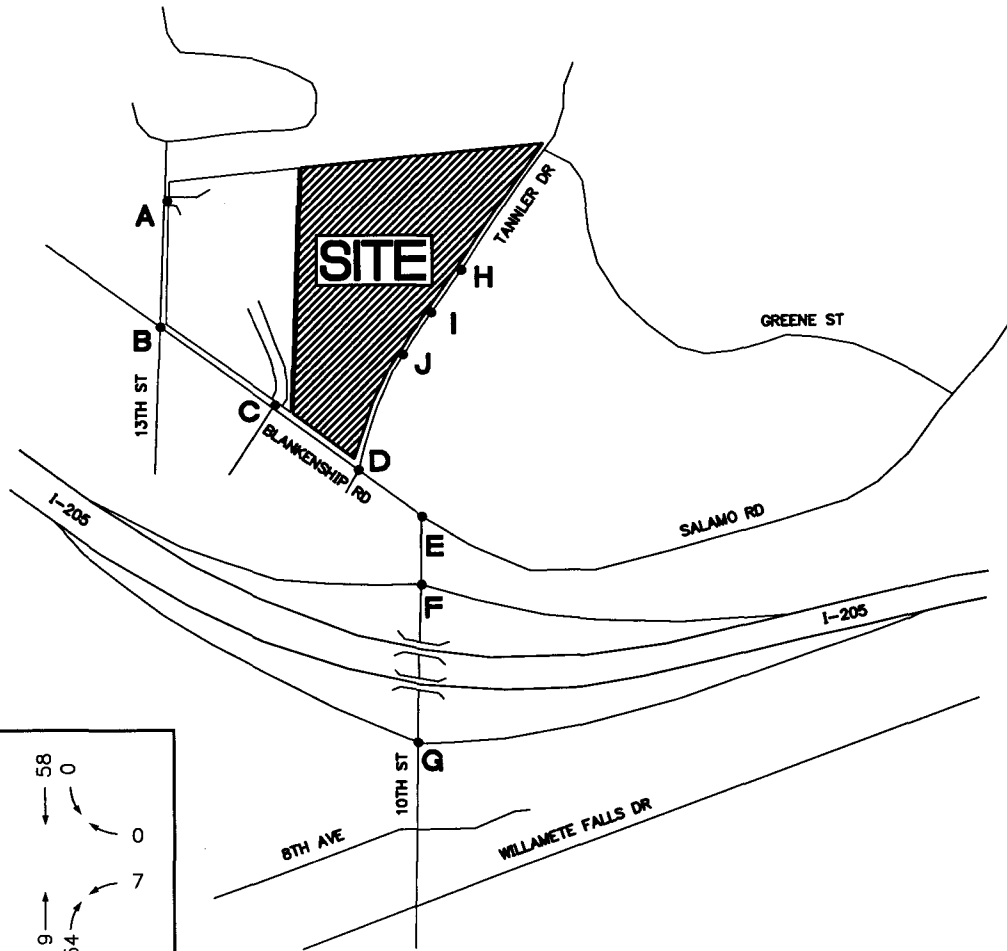
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**EXISTING LANE CONFIGURATIONS
AND TRAFFIC CONTROL**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

FIGURE

3



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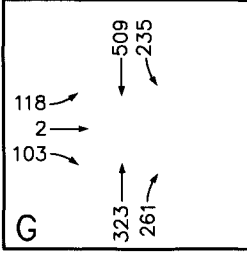
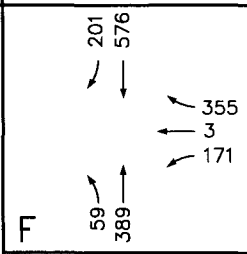
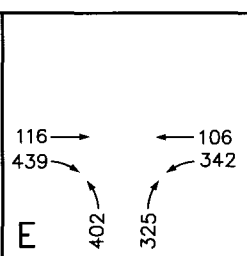
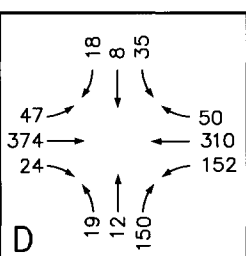
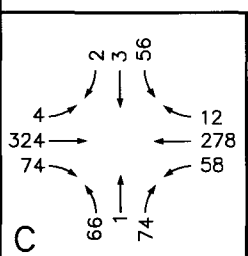
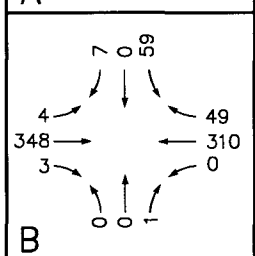
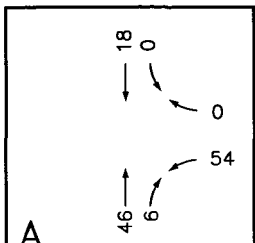
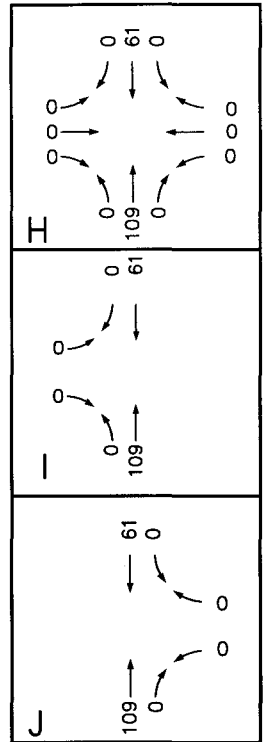
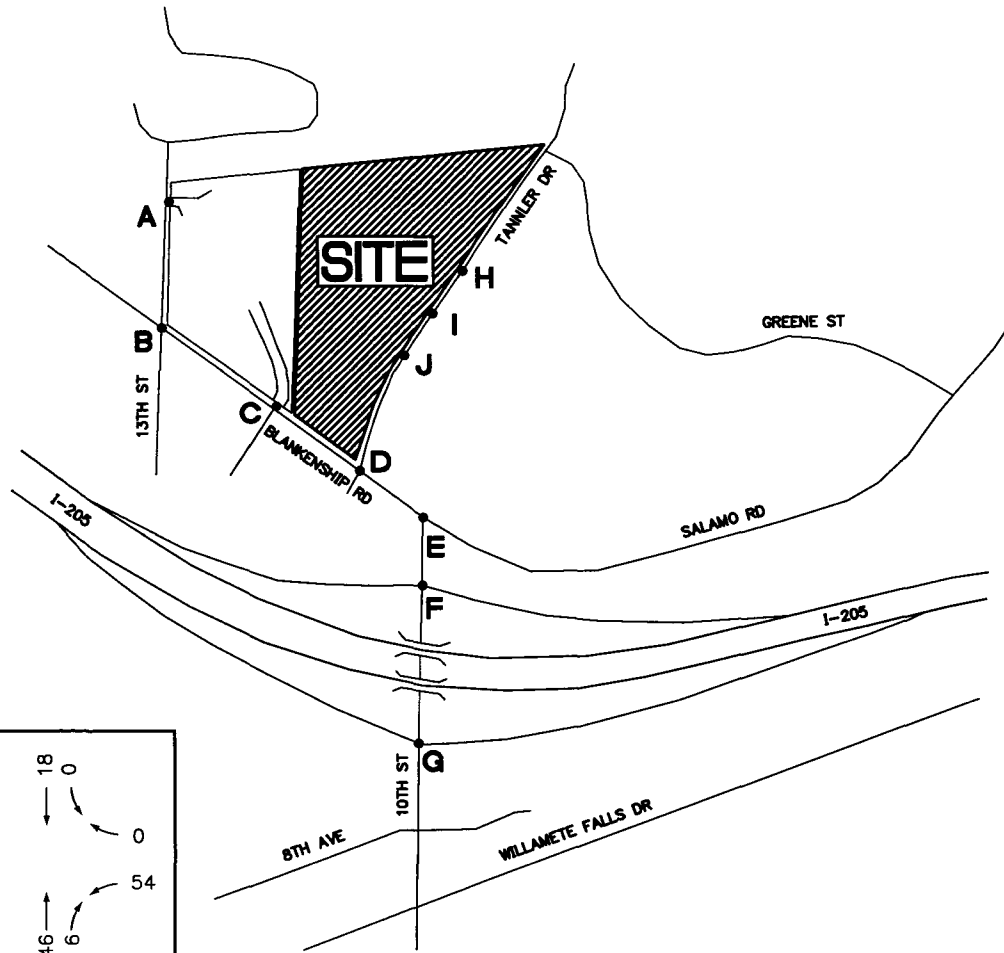
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**2006 EXISTING TRAFFIC
WEEKDAY AM PEAK HOUR**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

FIGURE

4A



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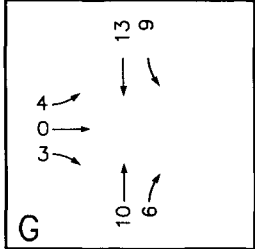
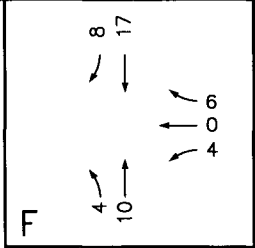
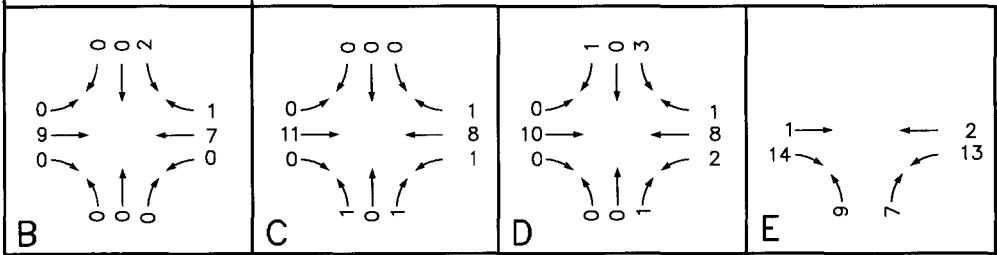
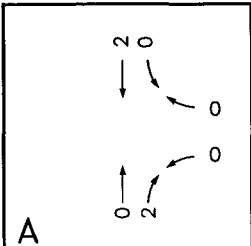
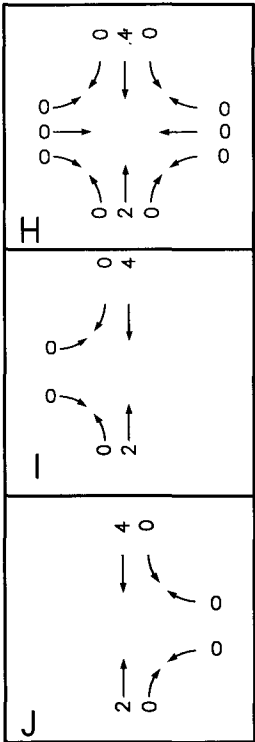
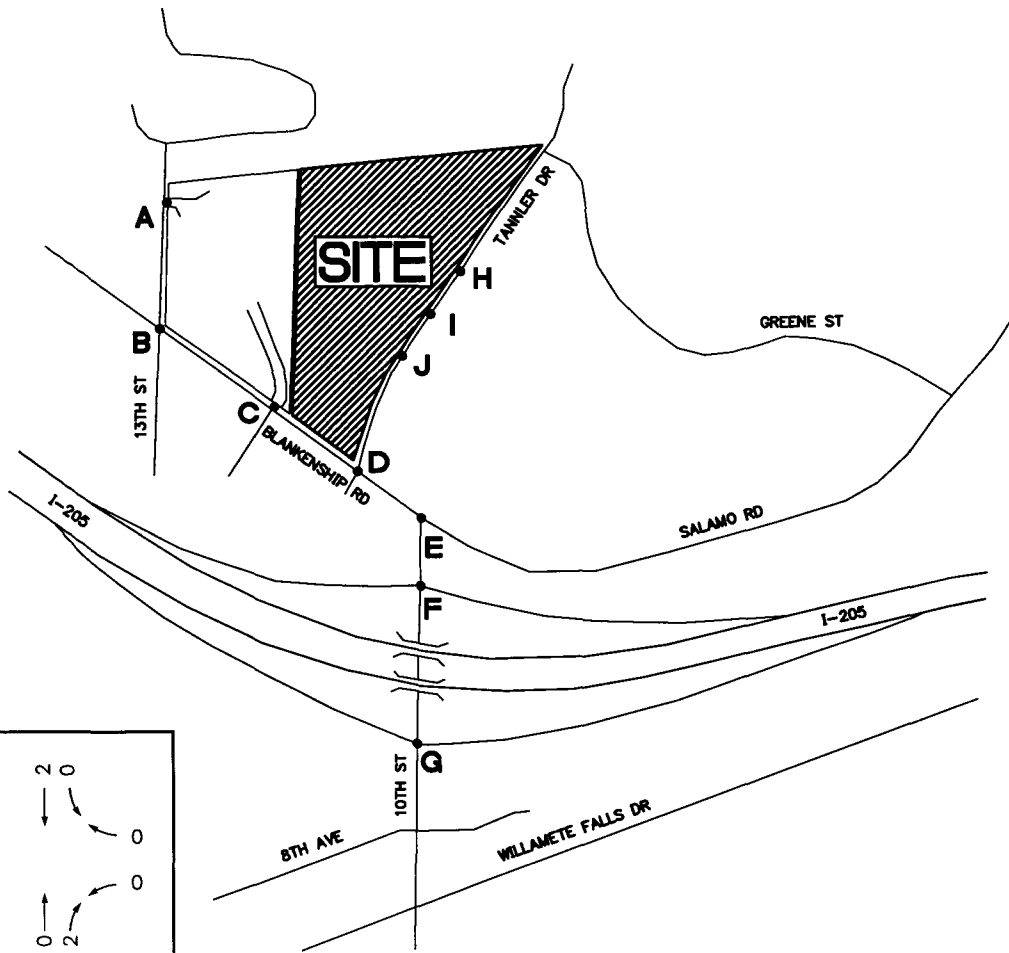
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**2006 EXISTING TRAFFIC
WEEKDAY PM PEAK HOUR**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

FIGURE

4B



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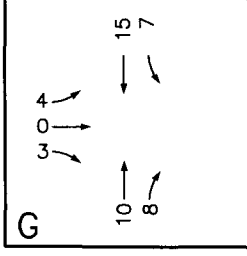
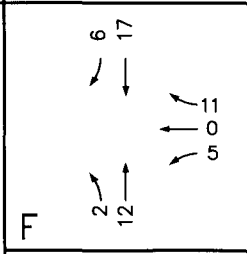
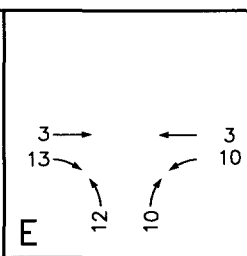
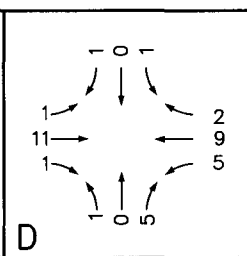
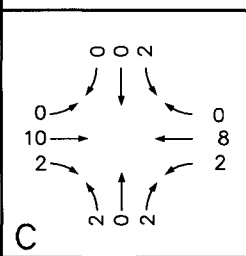
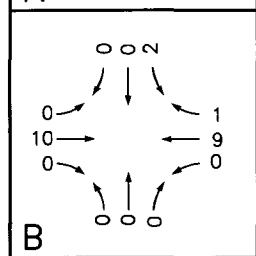
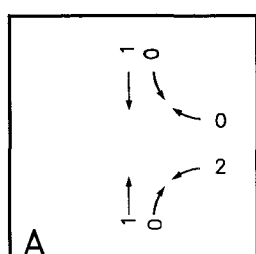
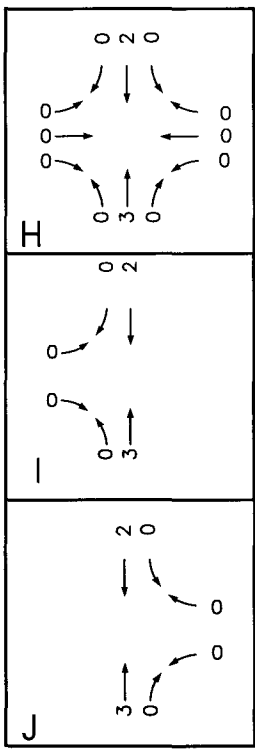
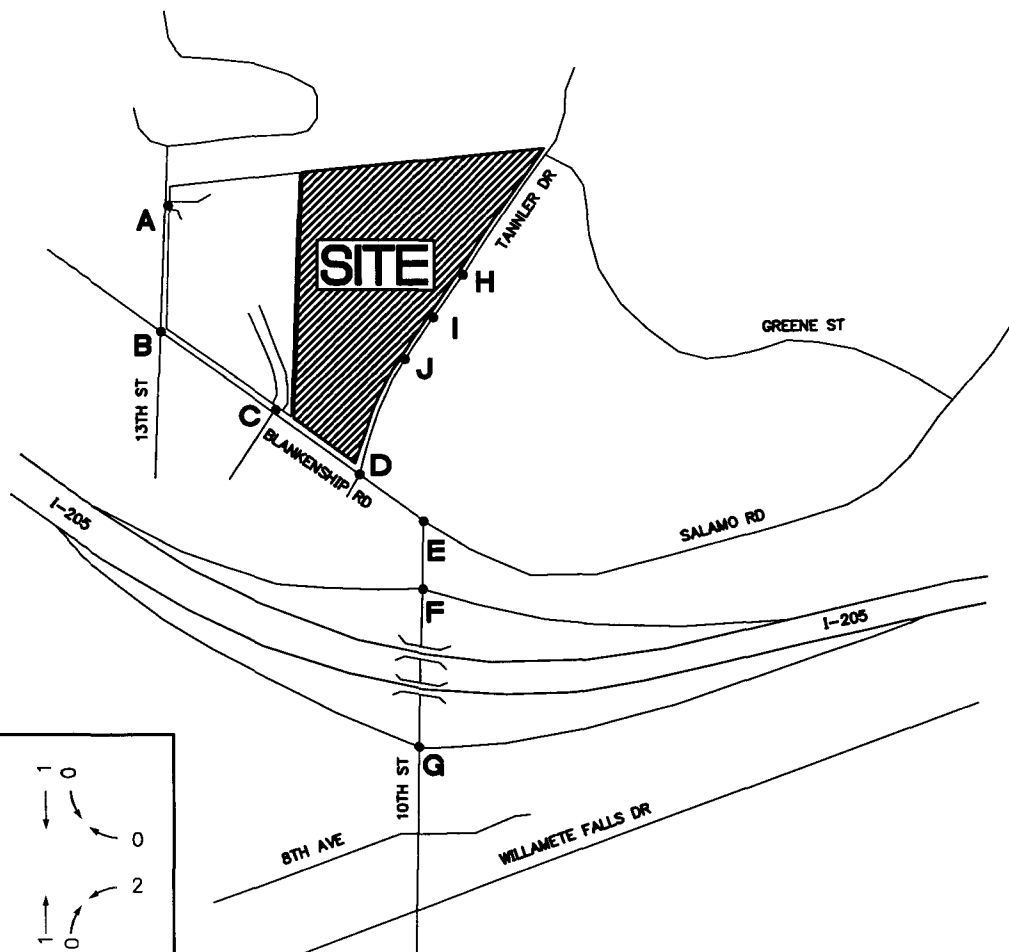
2060016.00

**2007 BACKGROUND GROWTH-3%
AM INTERSECTION VOLUMES**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

FIGURE

5A



NOT TO SCALE

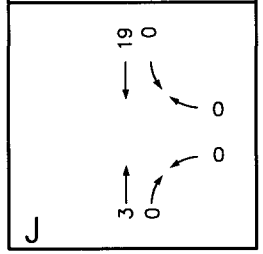
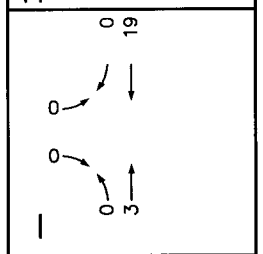
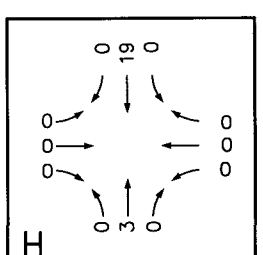
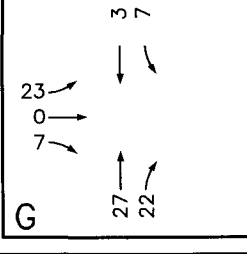
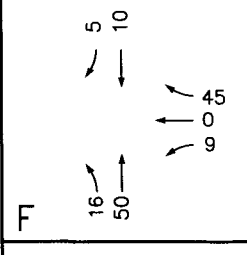
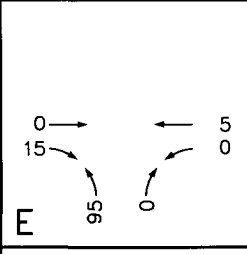
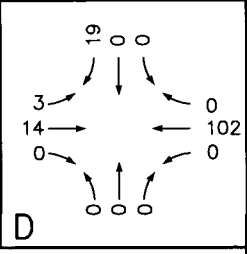
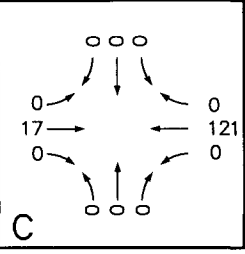
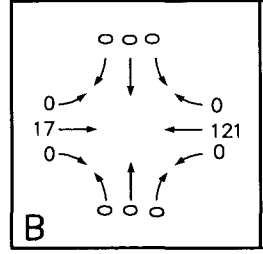
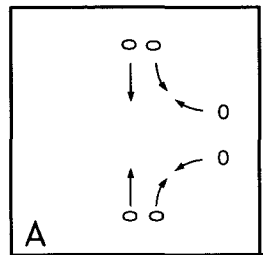
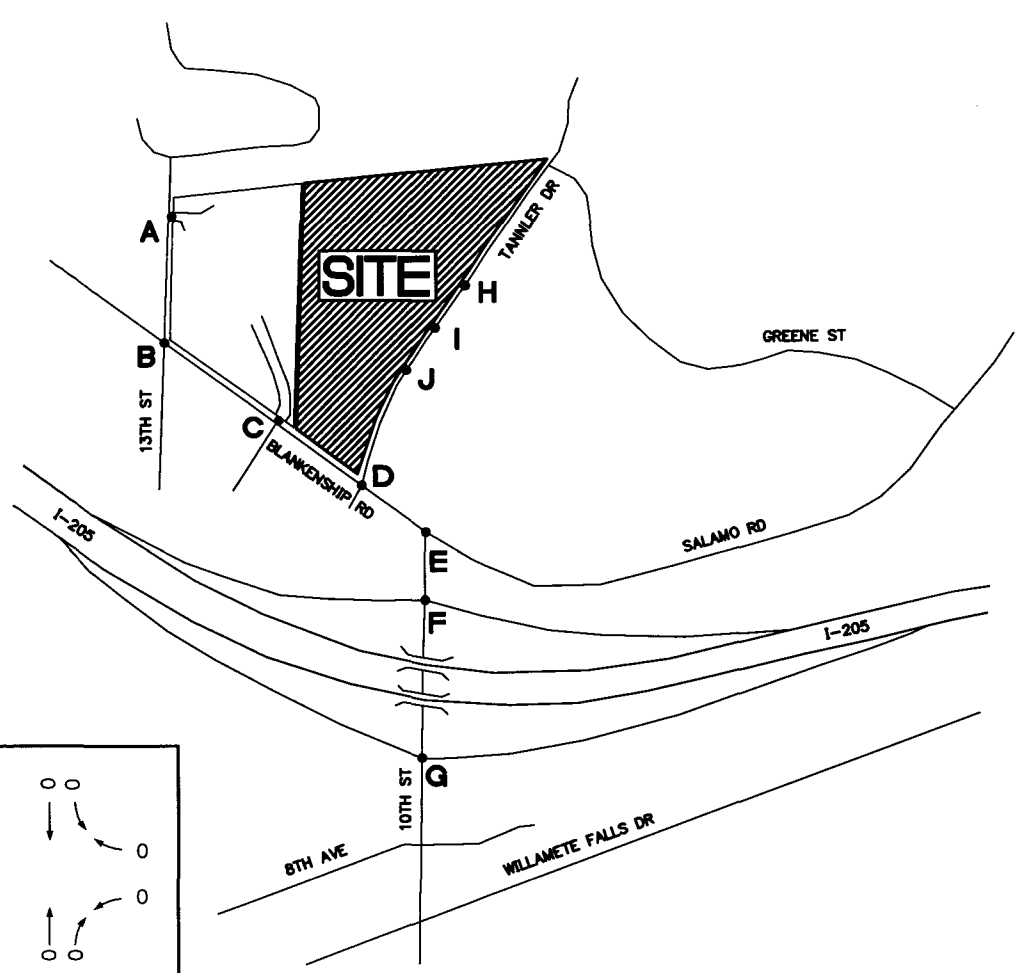
GROUP
MACKENZIE
 Portland OR Vancouver WA Tacoma WA Seattle WA
 503.224.9560 360.695.7879 253.471.0551 206.749.9993

DATE: 6.20.06
 DRAWN BY: WSB
 CHECKED BY: BTA
 JOB NO:
 2060016.00

**2007 BACKGROUND GROWTH-3%
 PM INTERSECTION VOLUMES**
 WILLAMETTE 205 CORP CENTER
 WEST LINN, OREGON

**FIGURE
 5B**

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GROUP
MACKENZIE

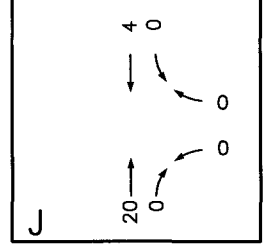
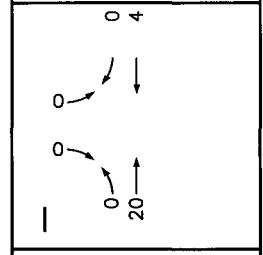
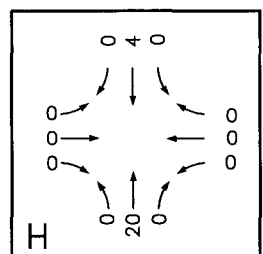
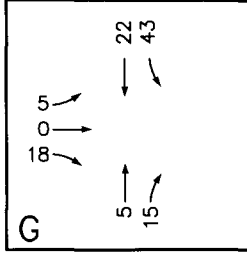
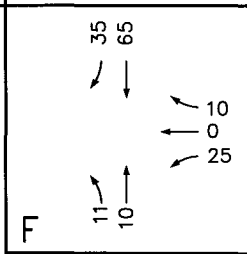
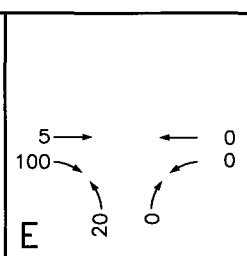
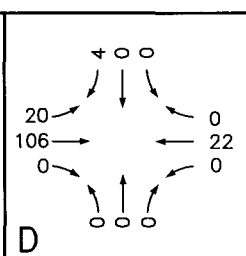
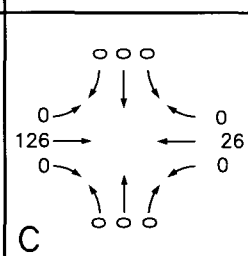
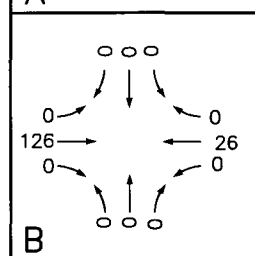
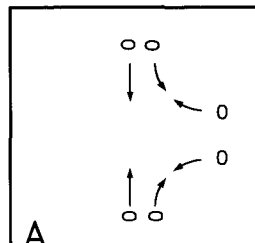
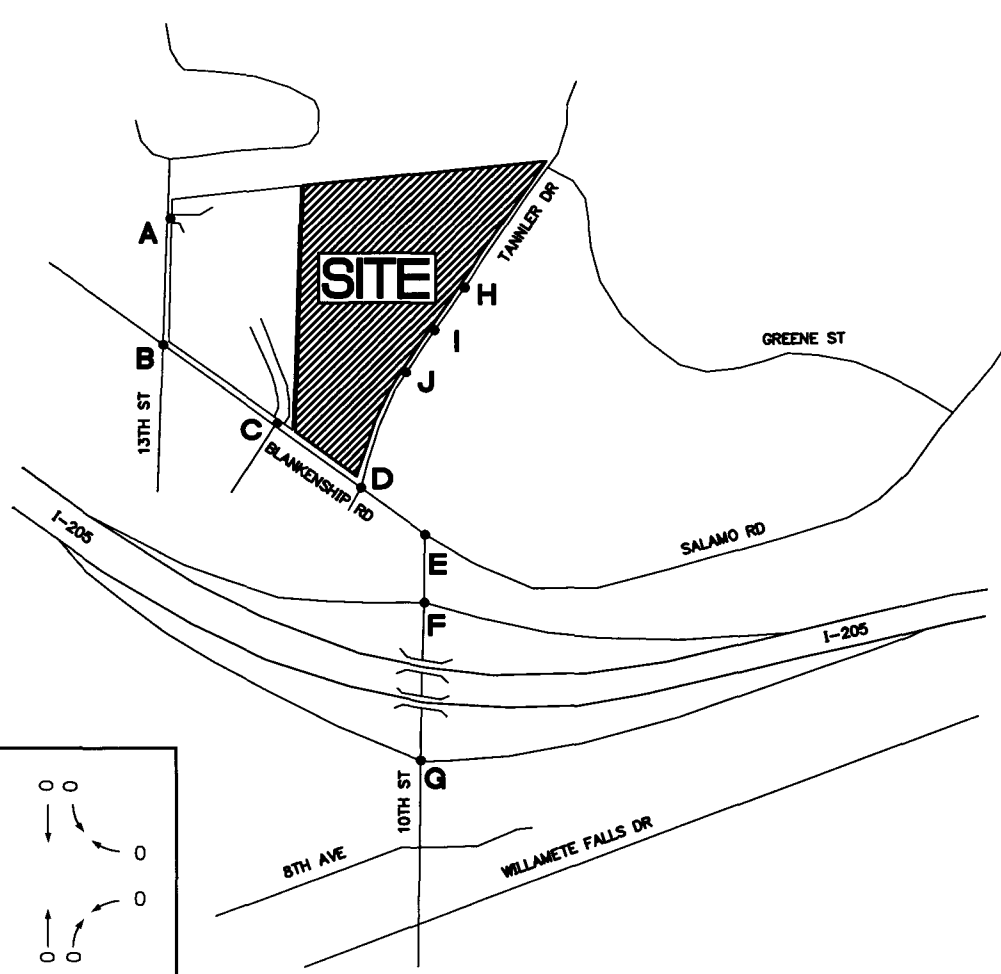
Portland OR Vancouver WA Tacoma WA Seattle WA
503.224.9580 360.695.7879 253.471.0551 206.749.9993

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2060016.00

IN PROCESS TRAFFIC
AM INTERSECTION VOLUMES
WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE
6A



NOT TO SCALE

GROUP
MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
503.224.9560 360.695.7879 253.471.0551 206.749.9993

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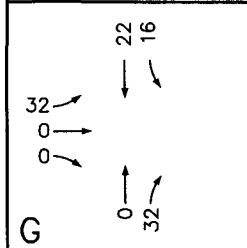
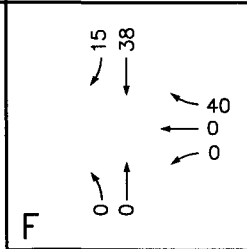
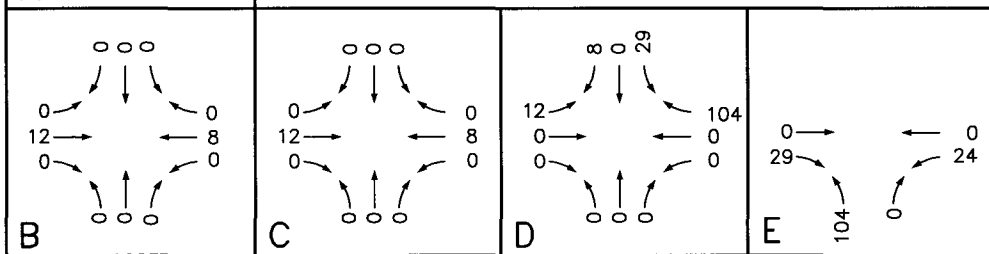
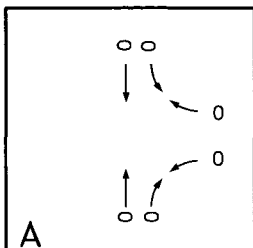
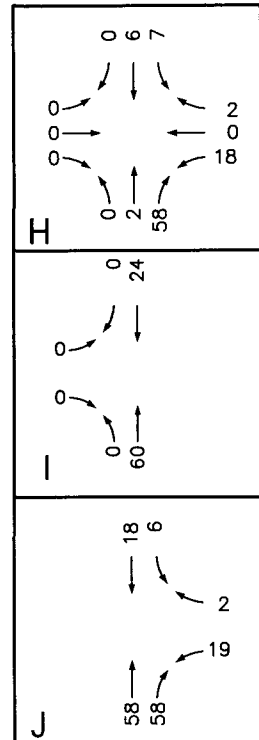
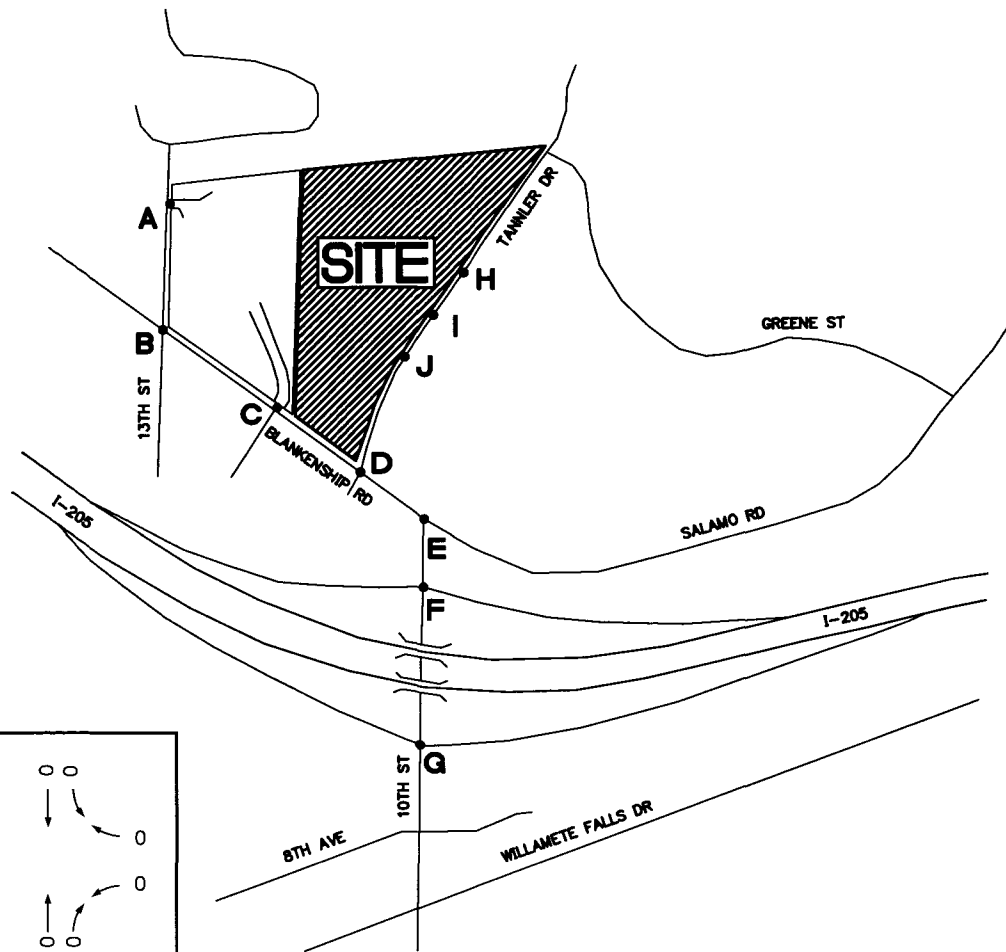
JOB NO:
2060016.00

IN PROCESS TRAFFIC
PM INTERSECTION VOLUMES

WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE

6B



NOT TO SCALE

GROUP
MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
503.224.9560 360.695.7879 253.471.0551 206.749.9993

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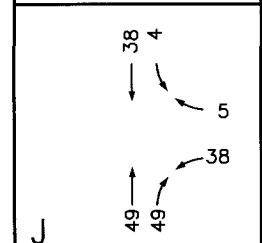
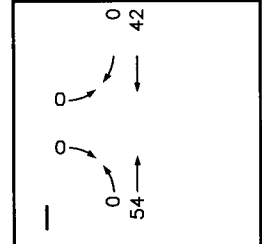
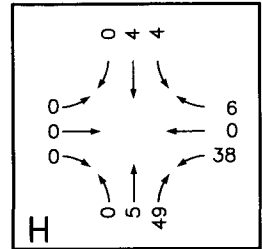
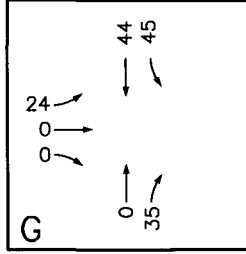
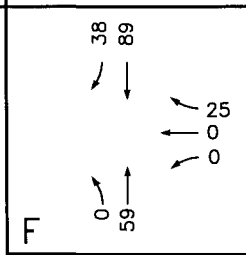
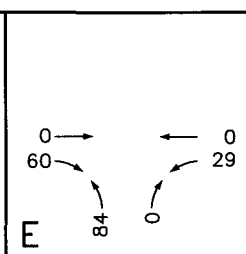
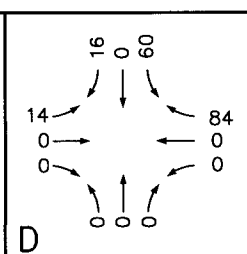
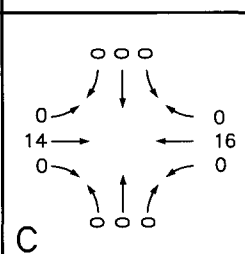
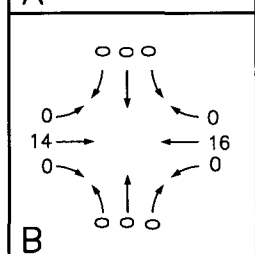
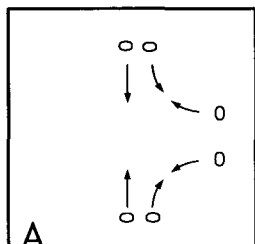
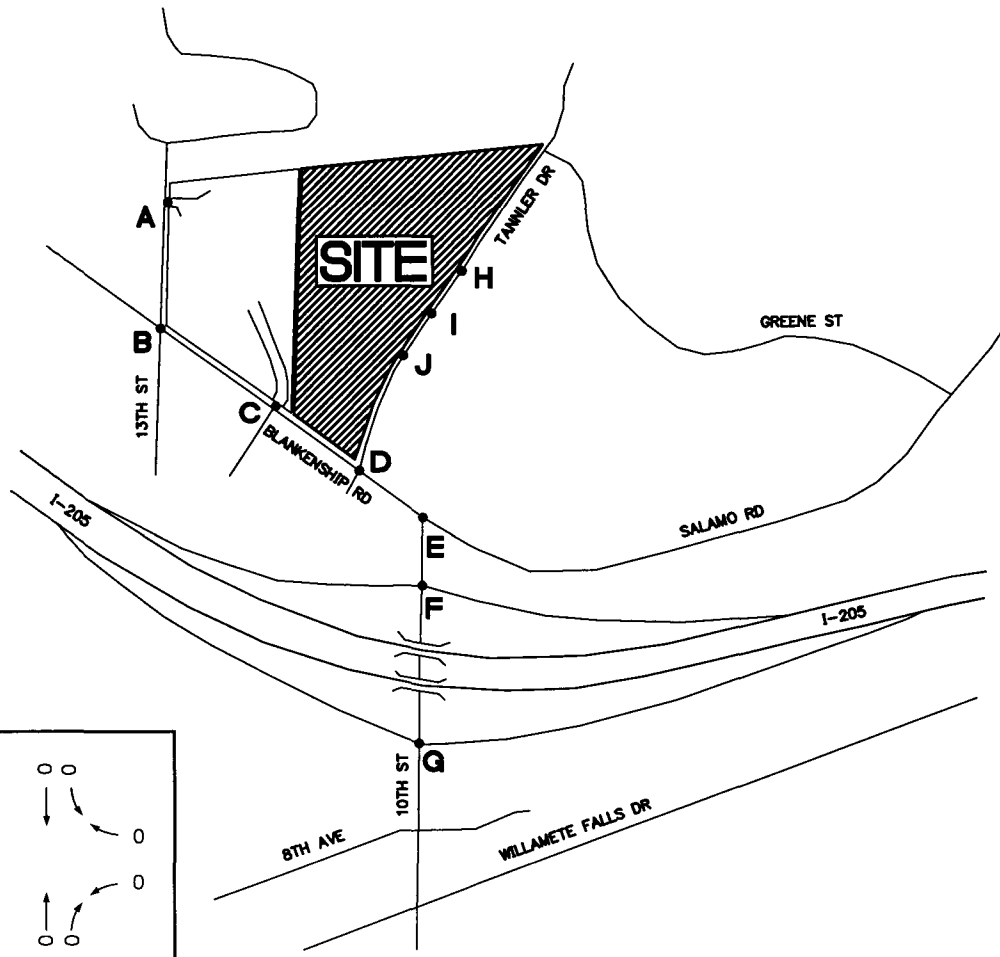
JOB NO:
2060016.00

IN PROCESS TRAFFIC
TANNLER EAST (AM)

WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE

6C



NOT TO SCALE

GROUP
MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
503.224.9580 360.695.7879 253.471.0551 206.749.9893

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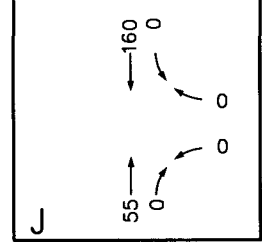
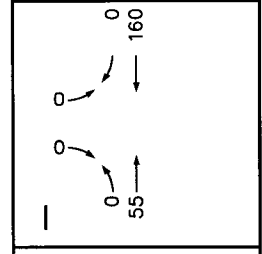
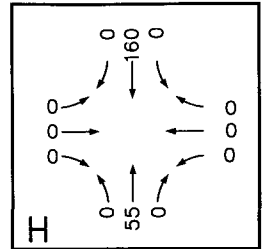
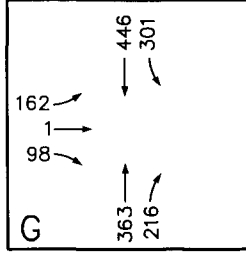
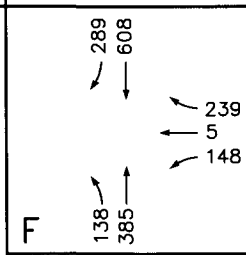
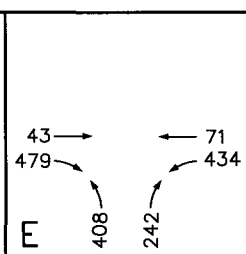
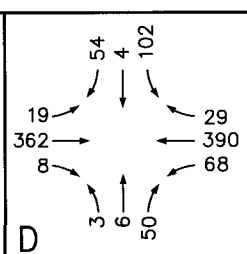
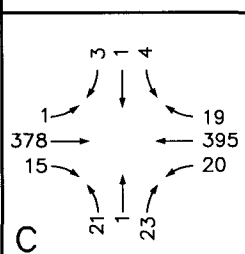
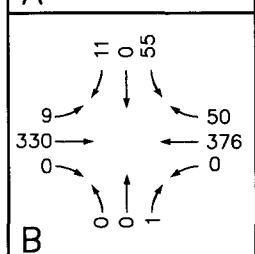
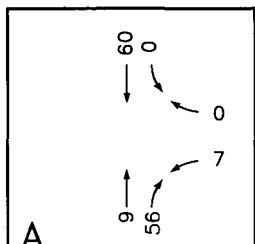
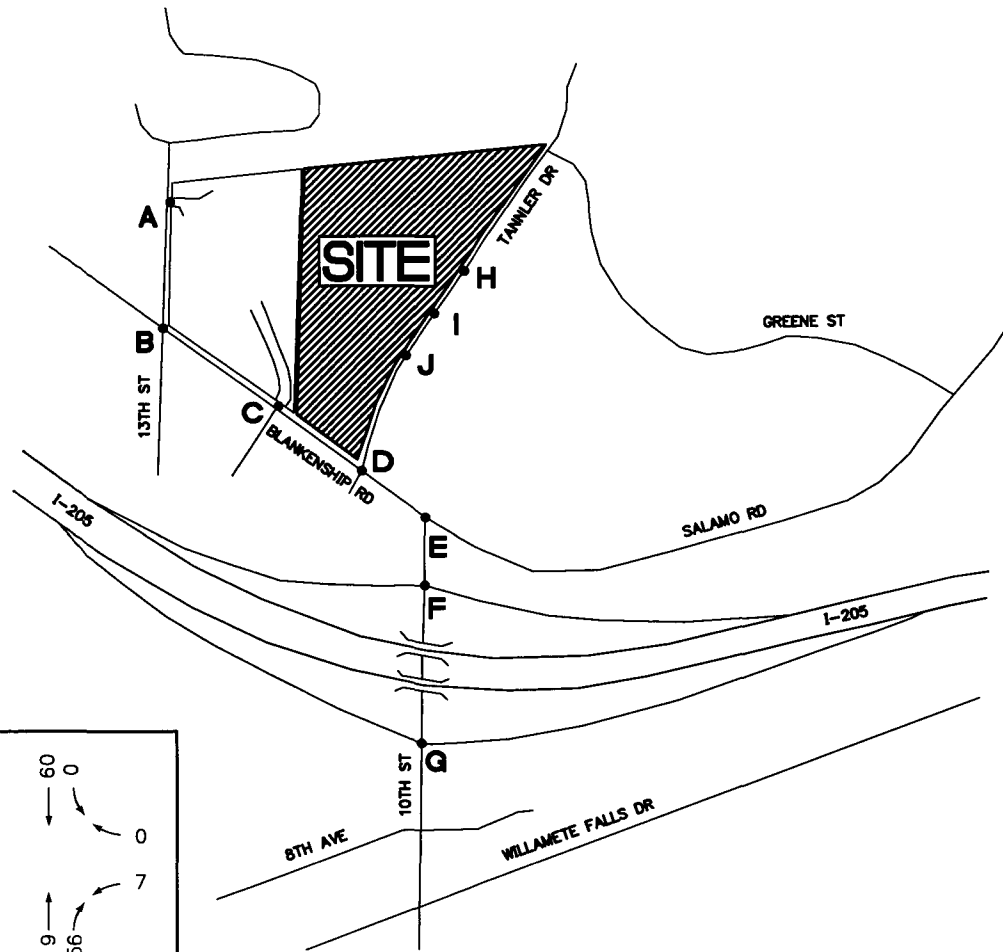
2060016.00

IN PROCESS TRAFFIC
TANNLER EAST (PM)

WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE

6D



NOT TO SCALE

GROUP
MACKENZIE

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503.224.9580 360.695.7879 253.471.0551 206.749.9993

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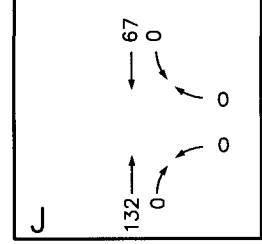
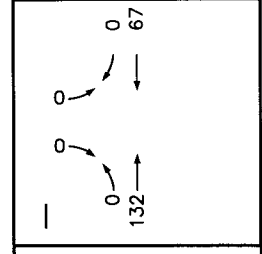
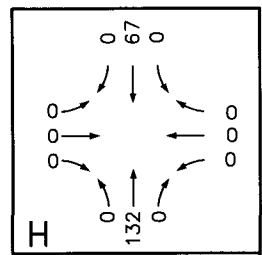
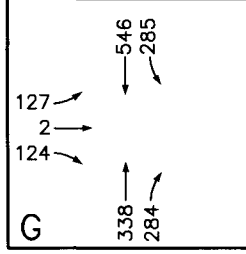
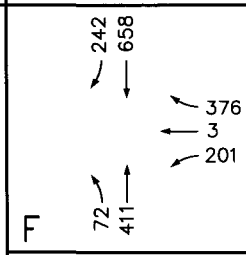
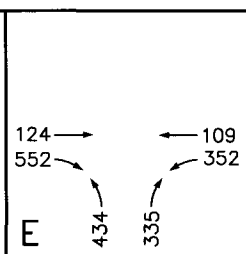
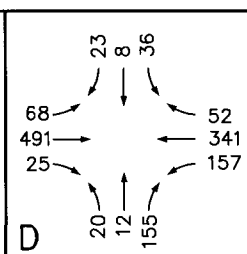
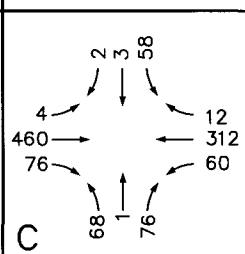
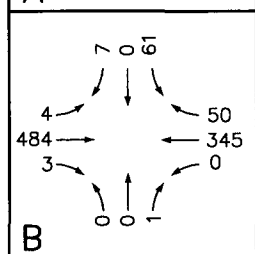
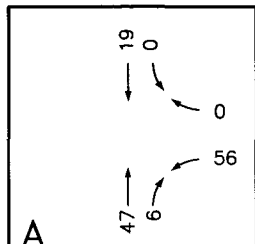
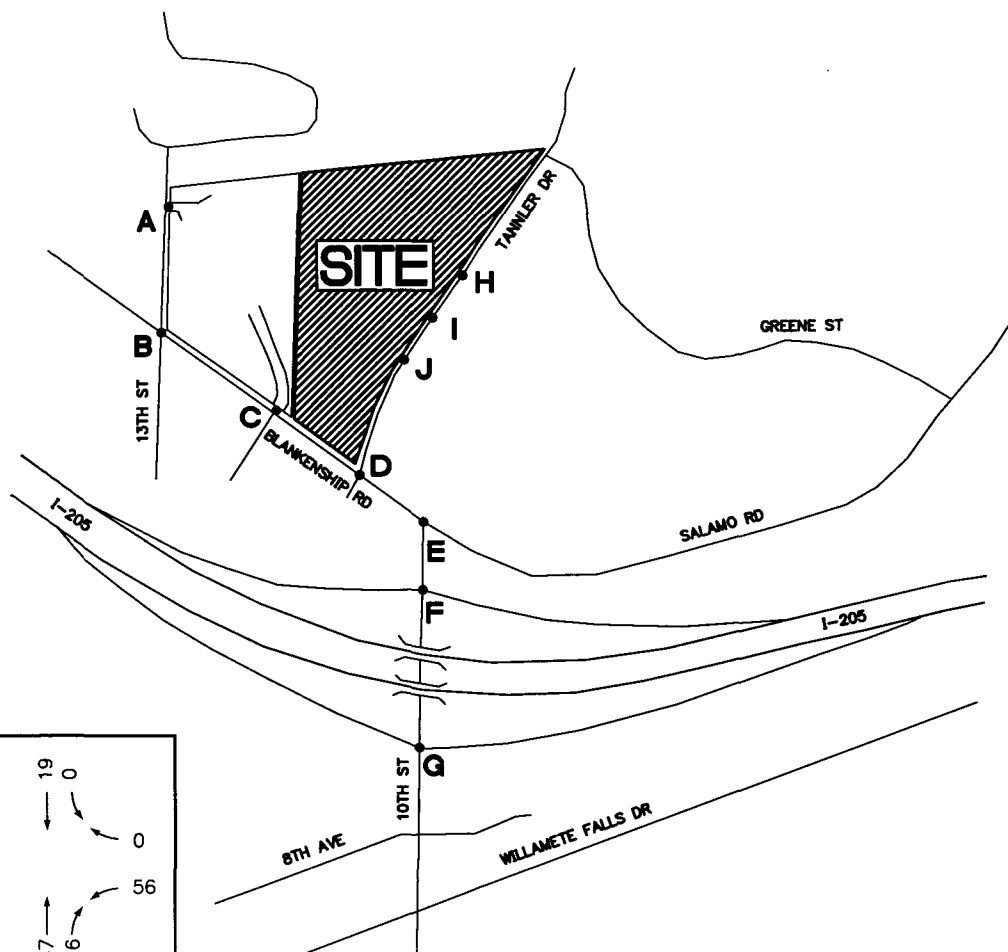
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**2007 PRE-DEVELOPMENT
AM INTERSECTION VOLUMES**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

FIGURE

7A



NOT TO SCALE

GROUP
MACKENZIE

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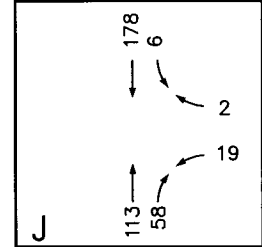
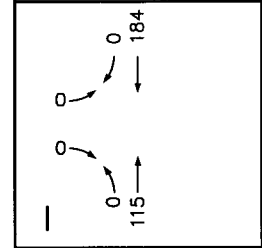
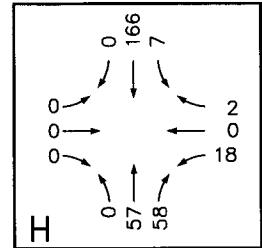
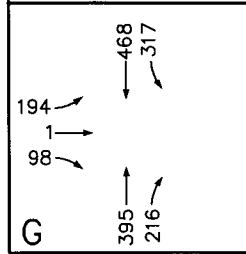
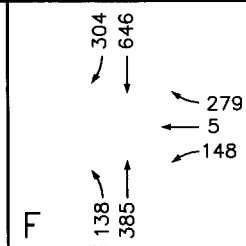
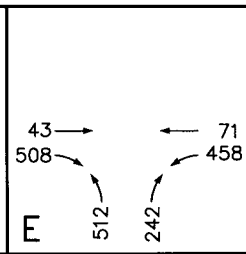
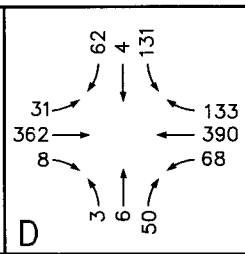
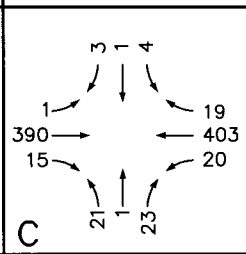
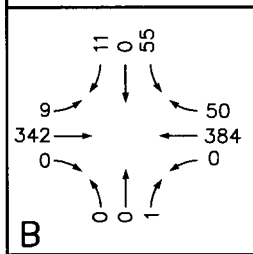
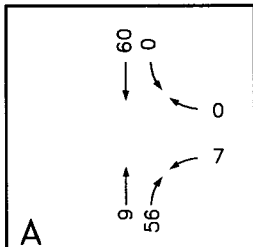
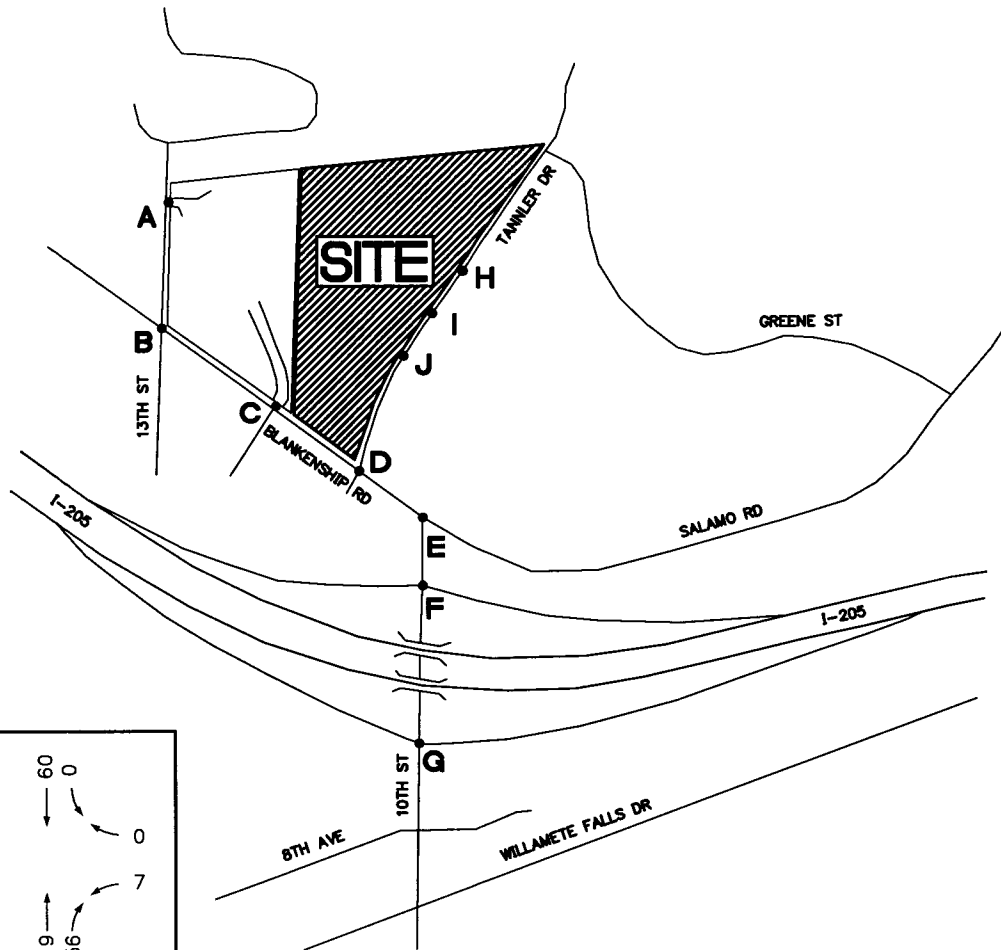
2060016.00

**2007 PRE-DEVELOPMENT
PM INTERSECTION VOLUMES**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

FIGURE

7B



NOT TO SCALE

GROUP
MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
503.224.9560 360.696.7879 253.471.0551 206.749.9893

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CHECKED BY: BTA

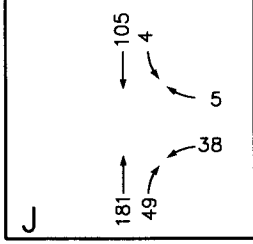
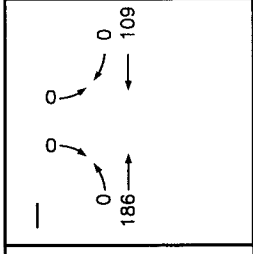
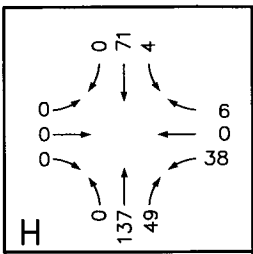
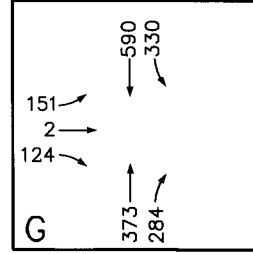
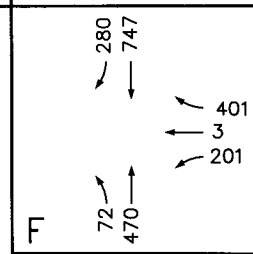
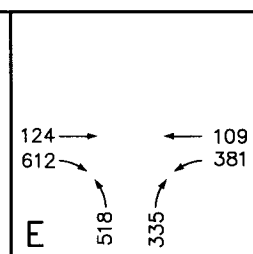
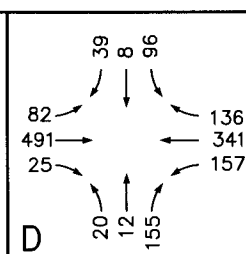
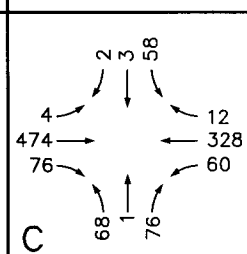
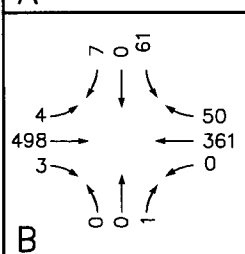
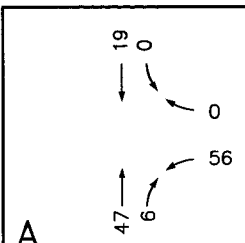
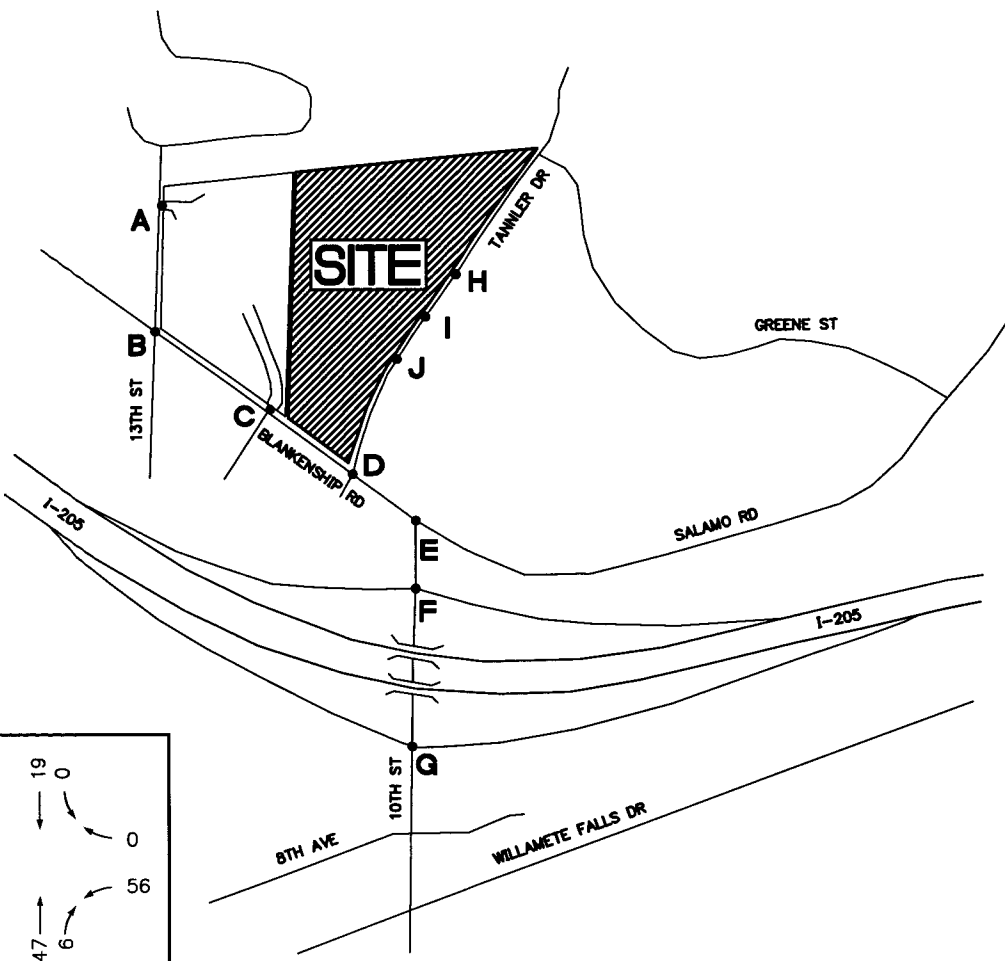
JOB NO:
2060016.00

2007 PRE-DEVELOPMENT
W/ TANNLER EAST (AM)

WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE

7C



NOT TO SCALE

GROUP
MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
503.224.9560 360.895.7879 253.471.0551 206.749.8993

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DATE: 6.20.06

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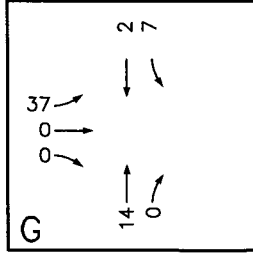
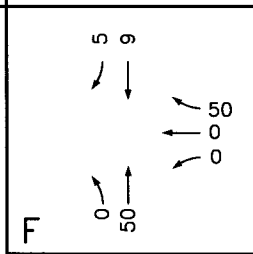
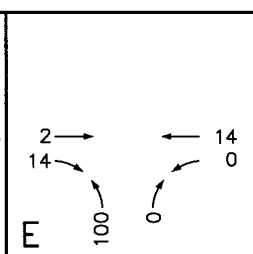
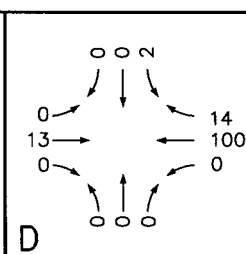
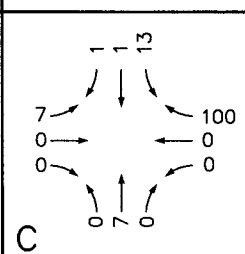
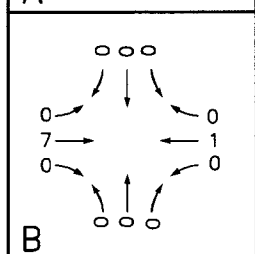
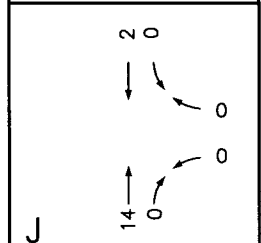
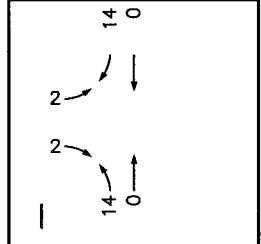
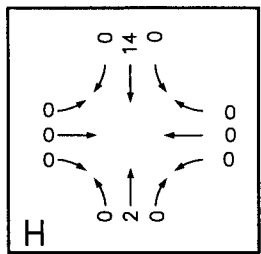
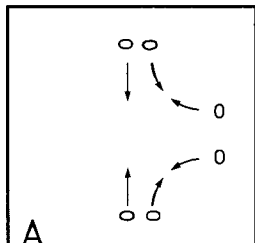
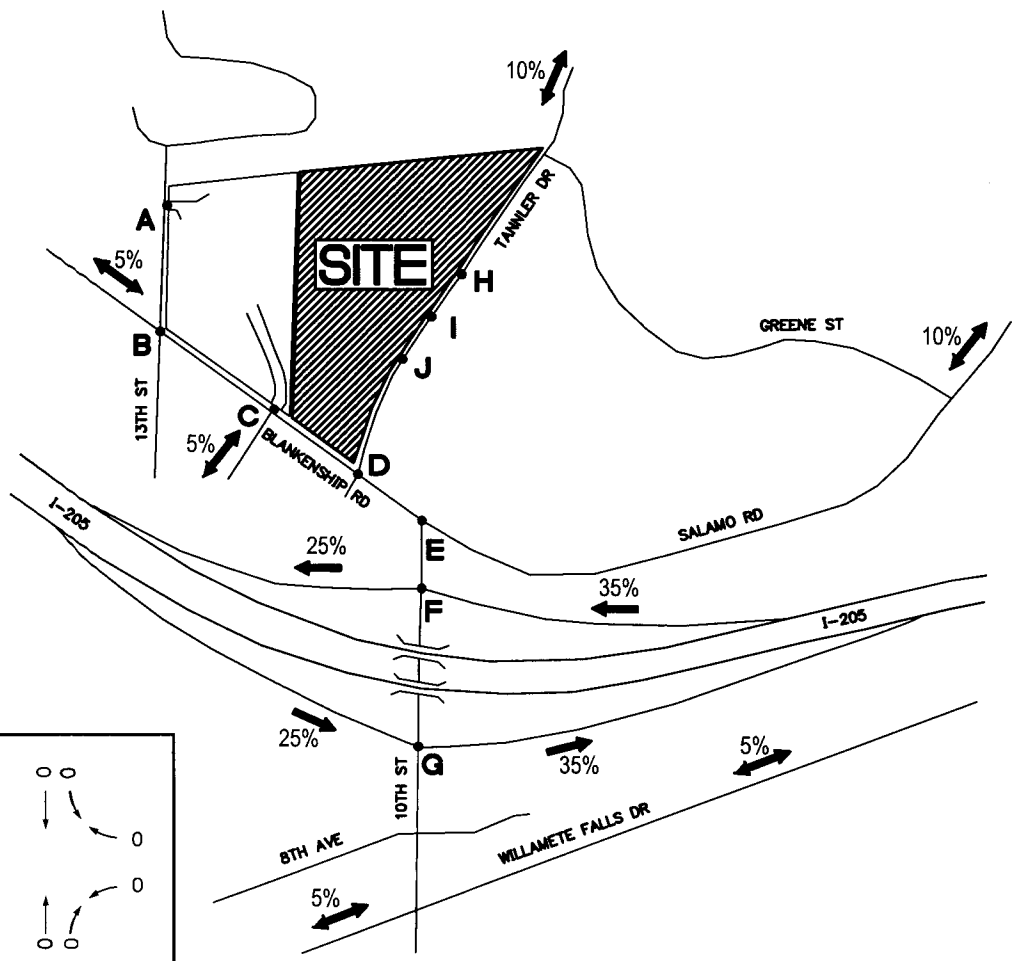
CHECKED BY: BTA

JOB NO:
2060016.00

**2007 PRE-DEVELOPMENT
W/ TANNLER EAST (PM)**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

**FIGURE
7D**




 NOT TO SCALE

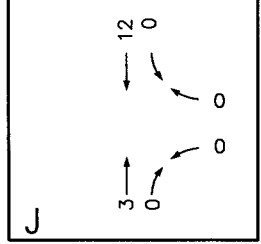
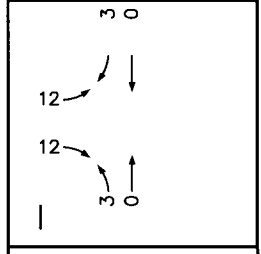
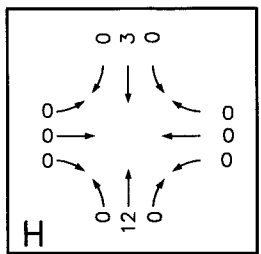
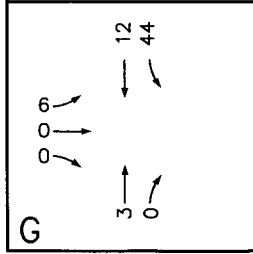
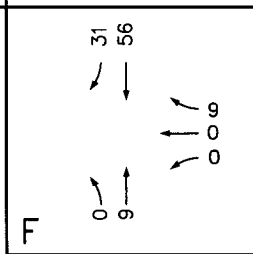
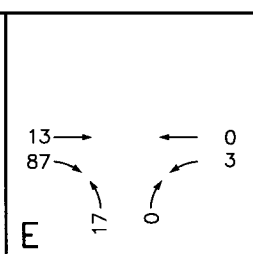
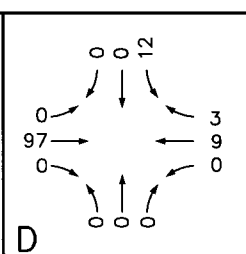
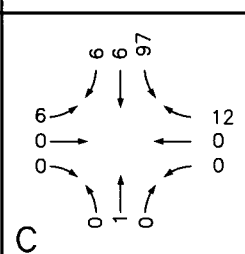
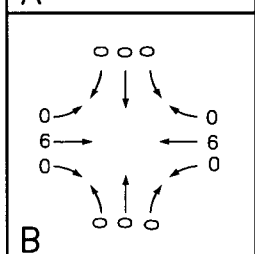
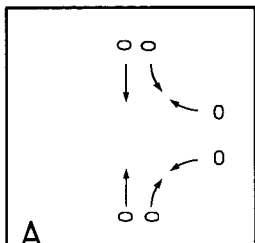
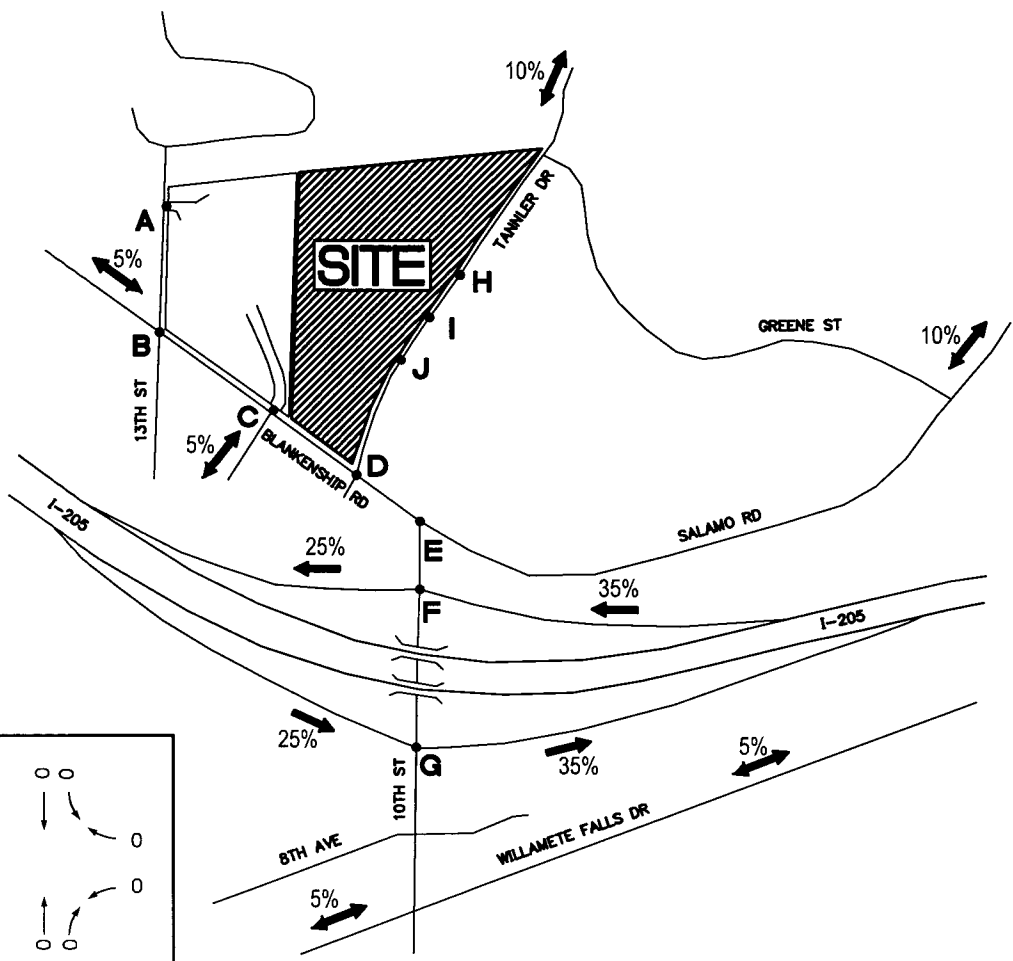
TOTAL TRIPS
 ENTER 143
 EXIT 19

GROUP
MACKENZIE
 Portland OR Vancouver WA Tacoma WA Seattle WA
 503.224.9560 360.895.7879 253.471.0551 206.749.9983
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DATE: 6.20.06
 DRAWN BY: WSB
 CHECKED BY: BTA
 JOB NO:
 2060016.00

PHASE 1 TRIP DISTRIBUTION AND ASSIGNMENT (AM)
WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE
8A




 NOT TO SCALE

TOTAL TRIPS
 ENTER 26
 EXIT 124

GROUP
MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
 503.224.9560 360.895.7879 253.471.0551 206.749.9983

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DATE: 6.20.06

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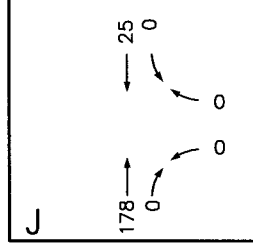
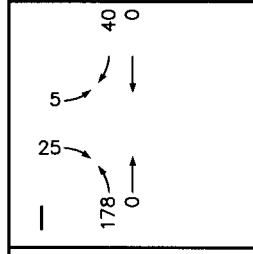
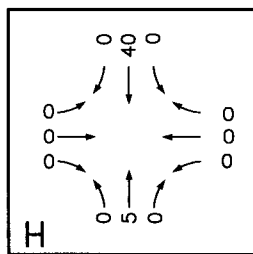
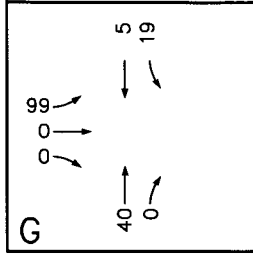
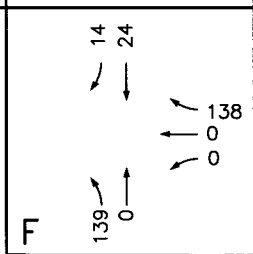
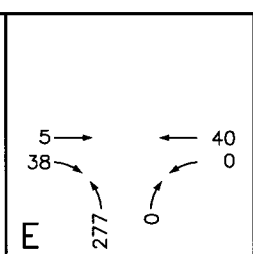
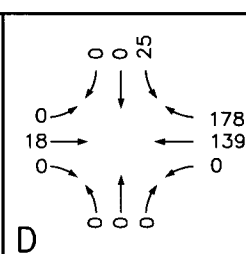
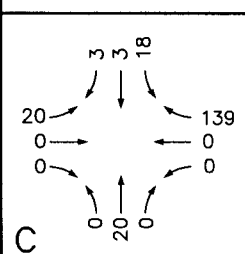
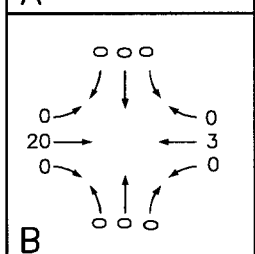
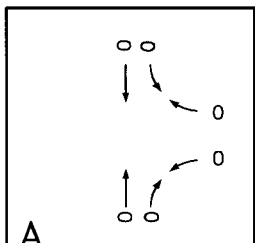
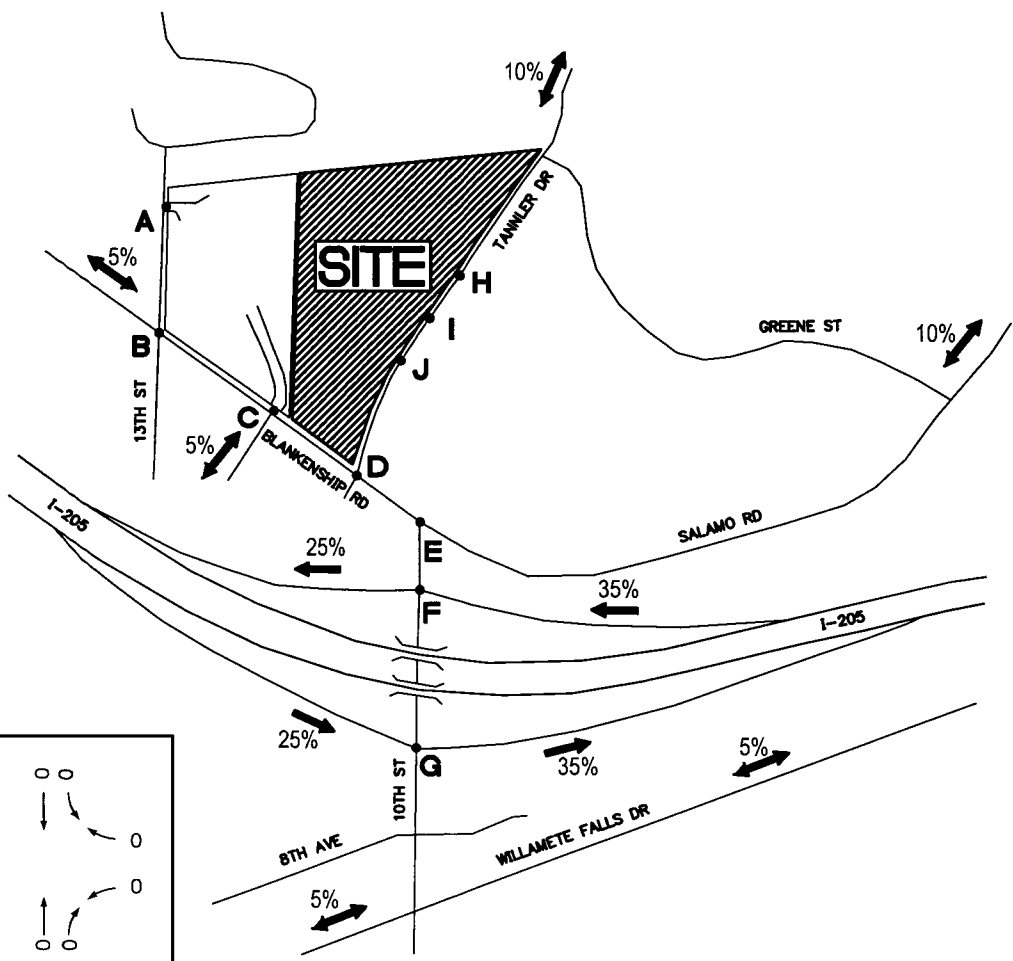
CHECKED BY: BTA

JOB NO:
 2060016.00

**PHASE 1 TRIP DISTRIBUTION
 AND ASSIGNMENT (PM)**

**WILLAMETTE 205 CORP CENTER
 WEST LINN, OREGON**

FIGURE
8B



TOTAL TRIPS
ENTER 397
EXIT 54

GROUP
MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
503.224.9560 360.695.7879 253.471.0551 208.749.9983

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DATE: 6.20.06

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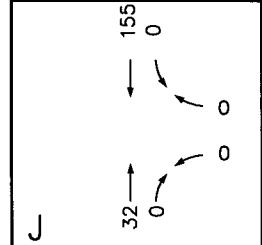
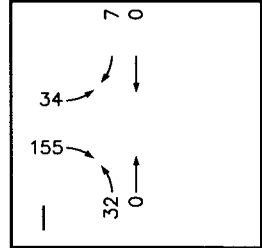
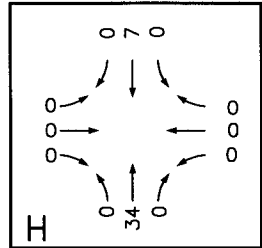
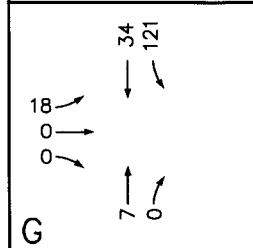
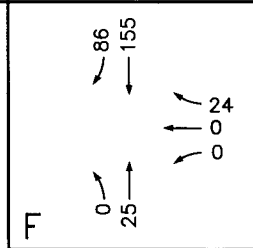
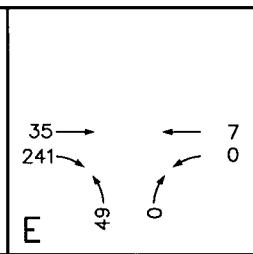
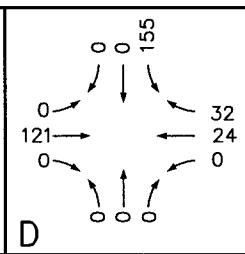
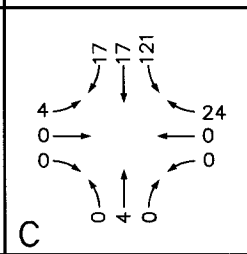
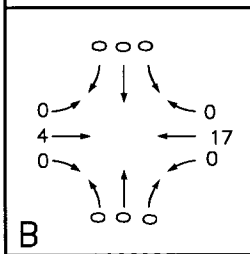
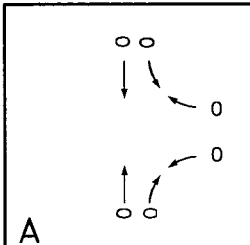
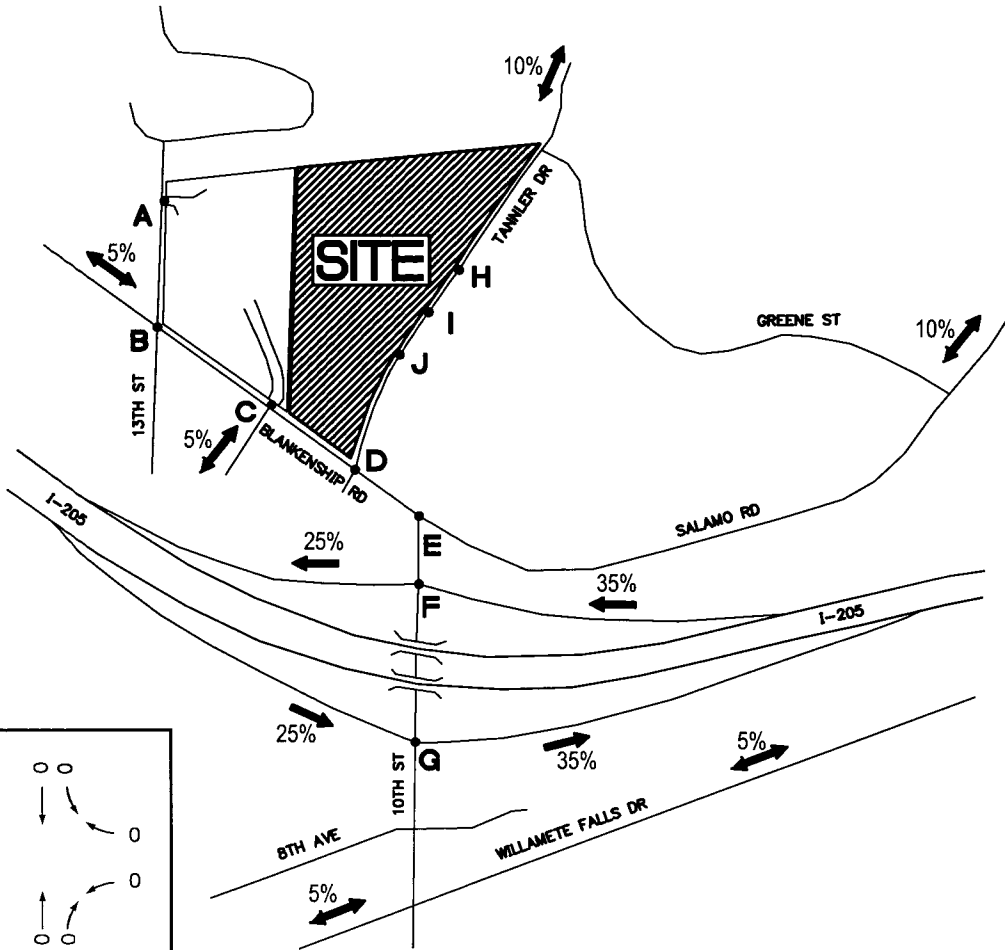
CHECKED BY: BTA

JOB NO:
2060016.00

**BUILDOUT TRIP DISTRIBUTION
AND ASSIGNMENT (AM)**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

**FIGURE
9A**



NOT TO SCALE

TOTAL TRIPS
ENTER 71
EXIT 344

GROUP
MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
 503.224.9560 360.695.7878 253.471.0551 206.749.8983

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DATE: 6.20.06

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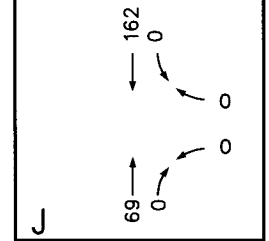
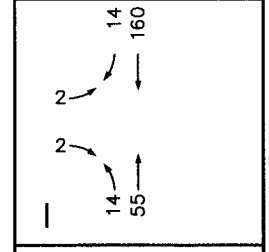
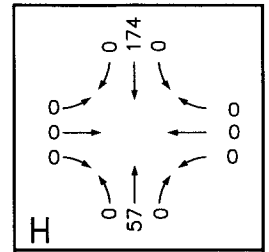
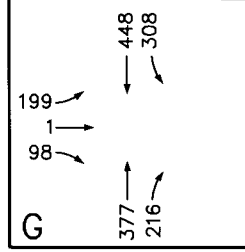
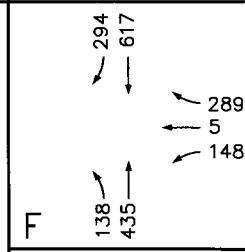
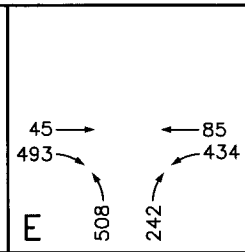
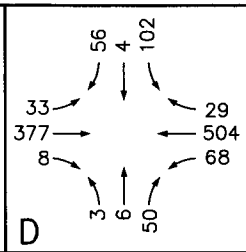
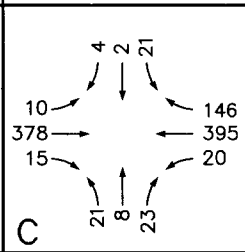
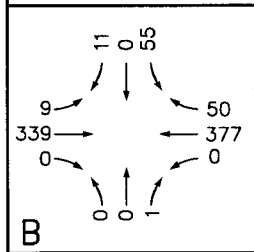
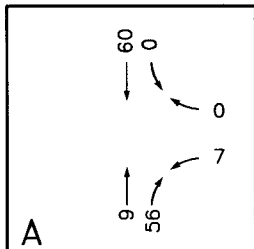
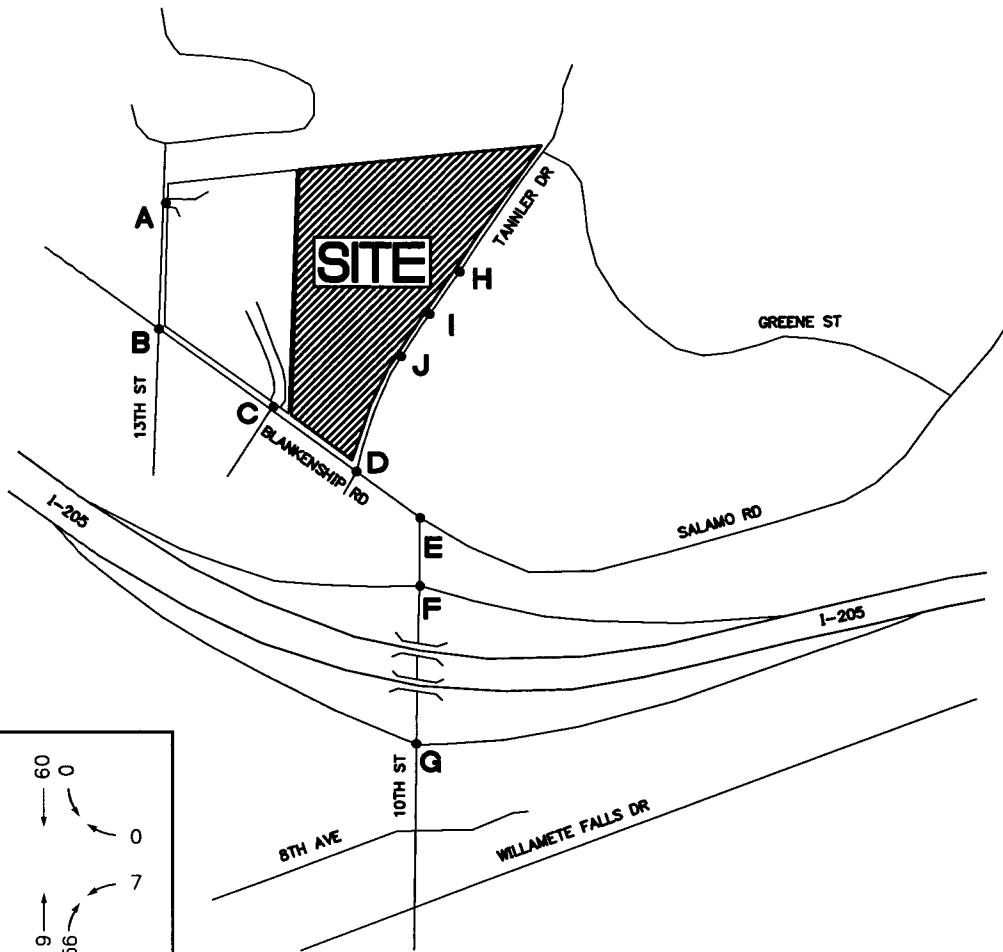
CHECKED BY: BTA

JOB NO:
 2060016.00

BUILDOUT TRIP DISTRIBUTION AND ASSIGNMENT (PM)

WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE
9B



NOT TO SCALE

GROUP
MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
503.224.9580 360.895.7879 253.471.0551 206.749.9993

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DATE: 6.20.06

DRAWN BY: WSB

CHECKED BY: BTA

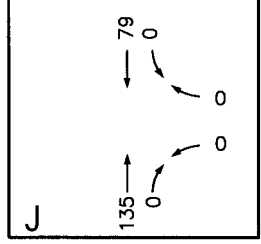
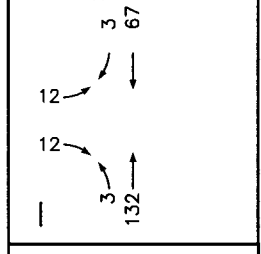
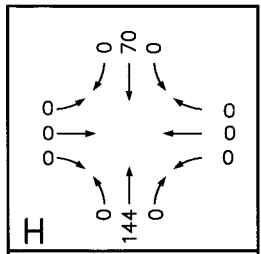
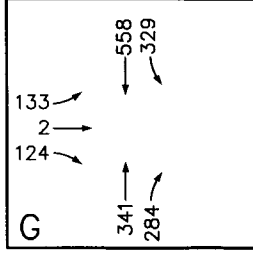
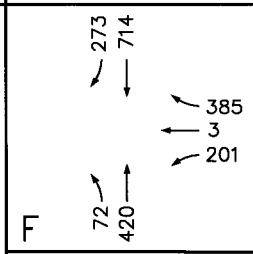
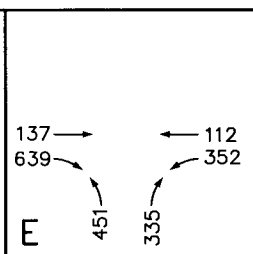
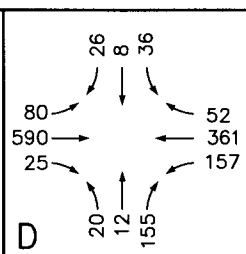
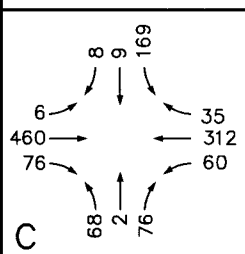
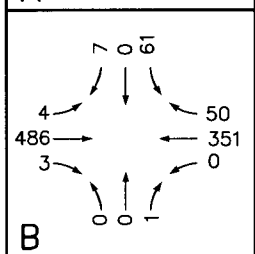
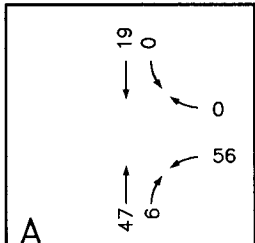
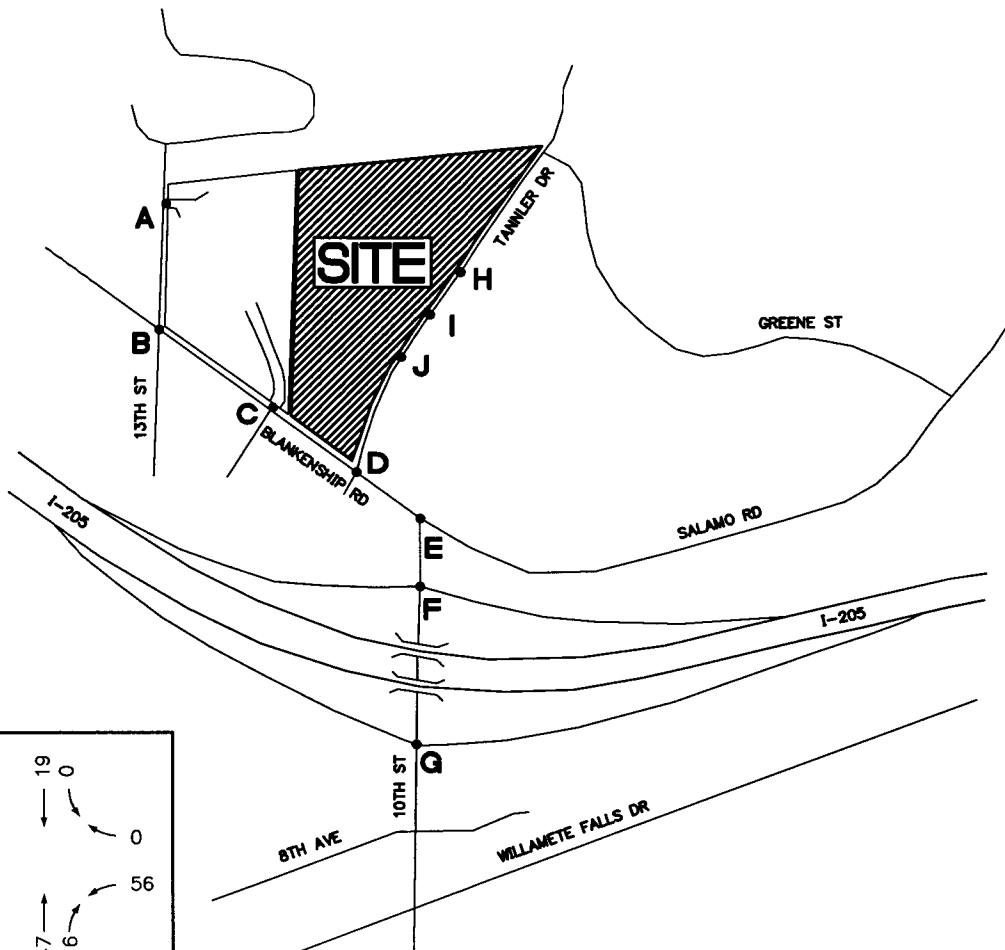
JOB NO:
2060016.00

**2007 PHASE 1 POST-DEVELOPMENT
AM INTERSECTION VOLUMES**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

FIGURE

10A



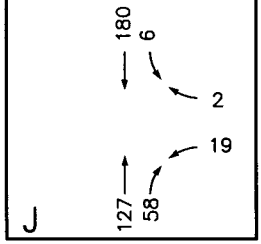
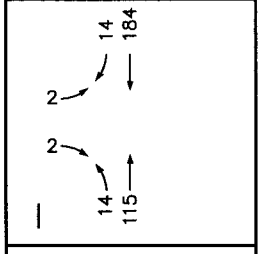
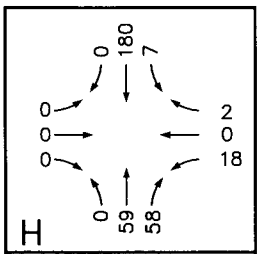
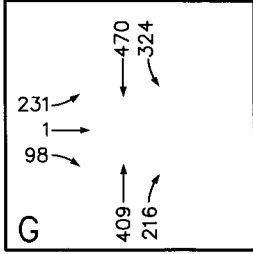
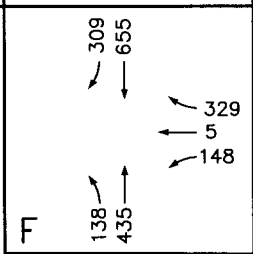
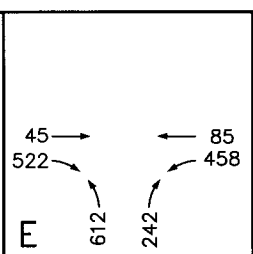
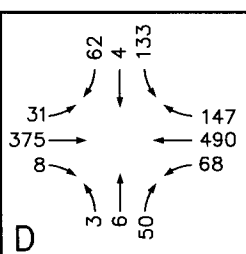
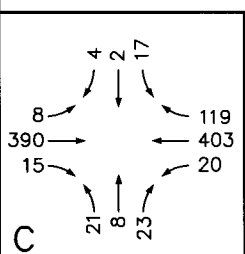
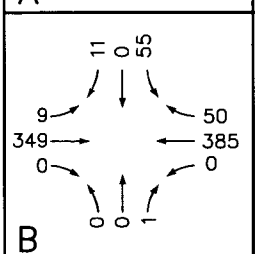
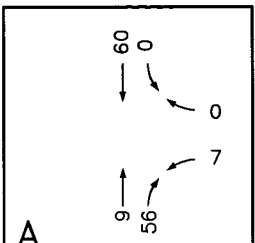
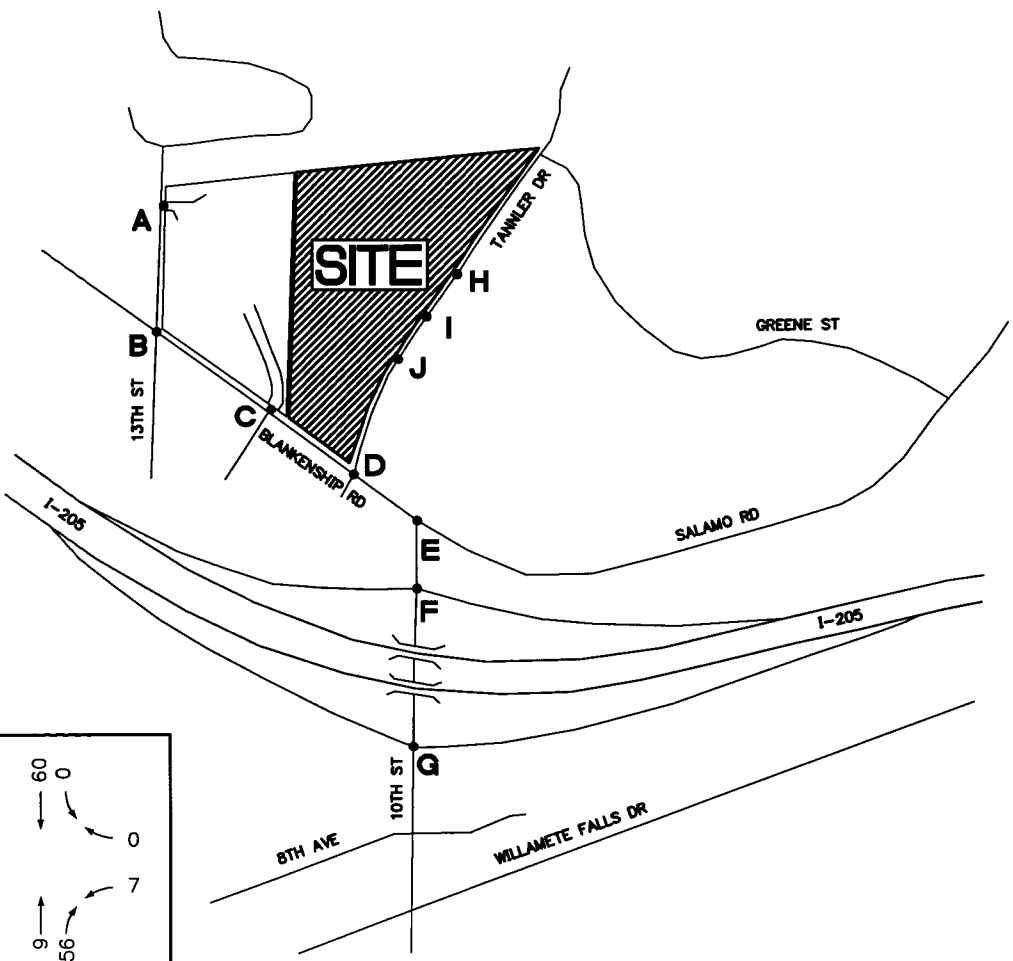

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MACKENZIE
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 503.224.9580 360.695.7879 253.471.0551 206.749.9993
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DATE: 6.20.06
 DRAWN BY: WSB
 CHECKED BY: BTA
 JOB NO:
 2060016.00

2007 PHASE 1 POST-DEVELOPMENT
 PM INTERSECTION VOLUMES
 WILLAMETTE 205 CORP CENTER
 WEST LINN, OREGON

FIGURE
10B



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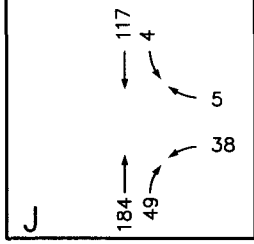
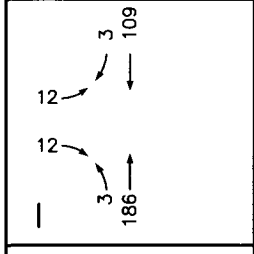
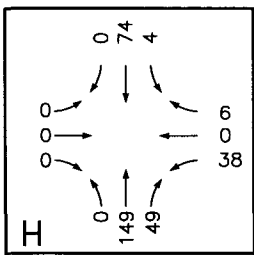
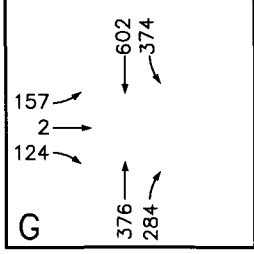
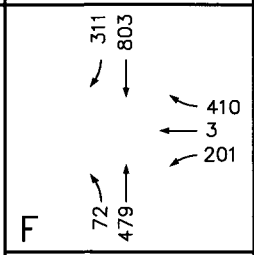
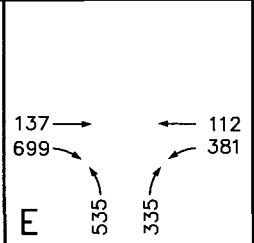
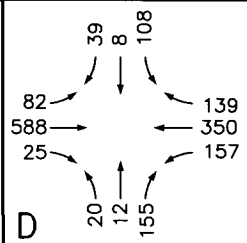
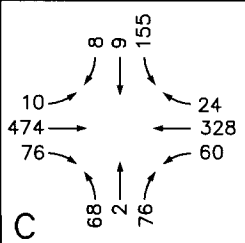
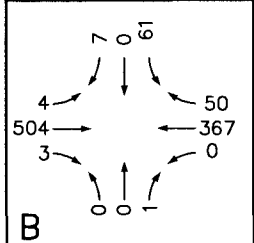
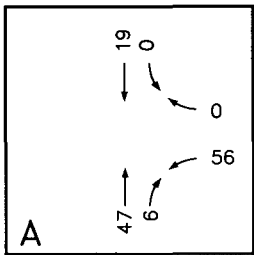
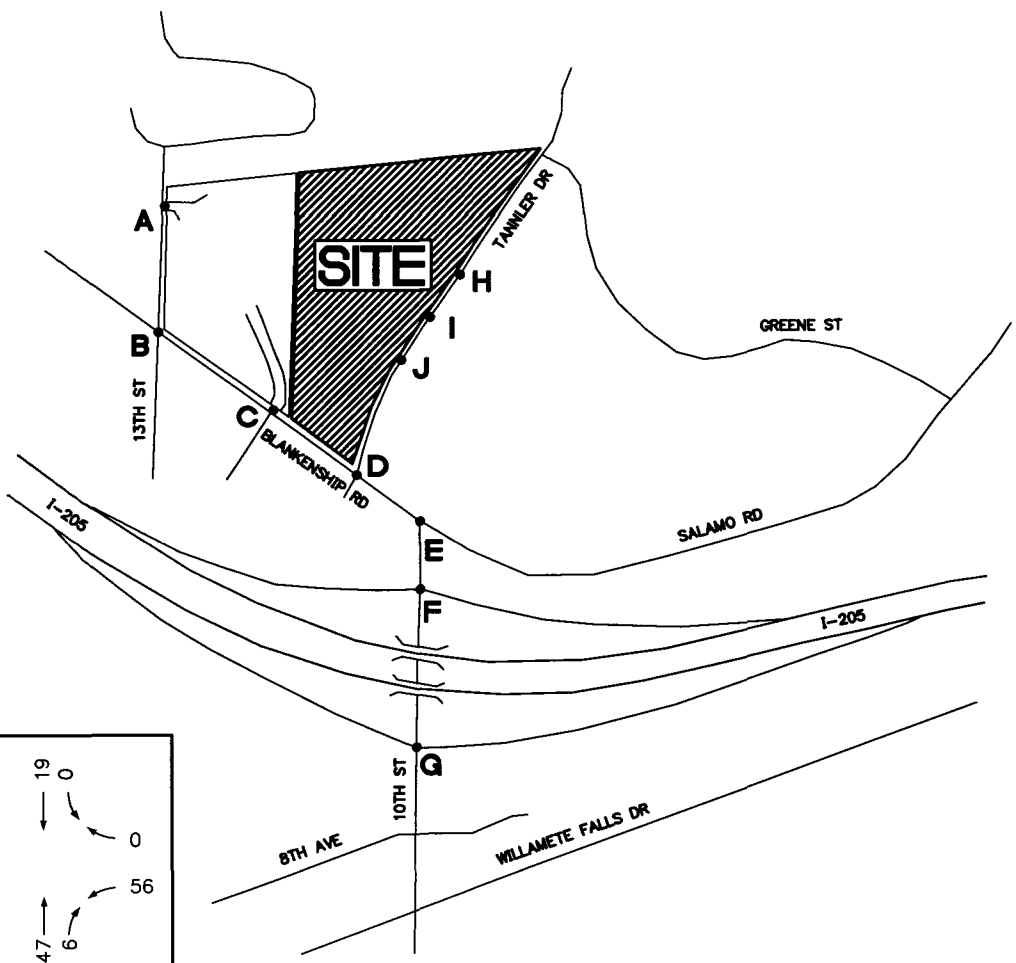
JOB NO:
2060016.00

2007 PHASE 1 POST-DEVELOPMENT
W/ TANNLER EAST (AM)

WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE

10C



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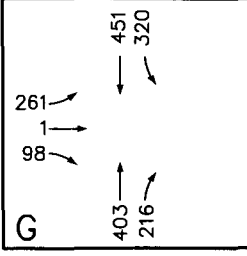
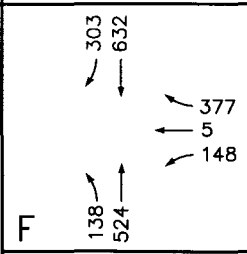
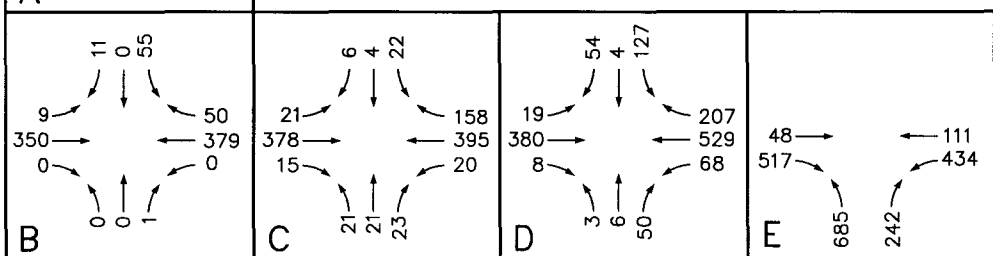
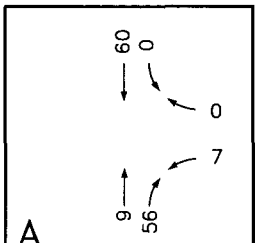
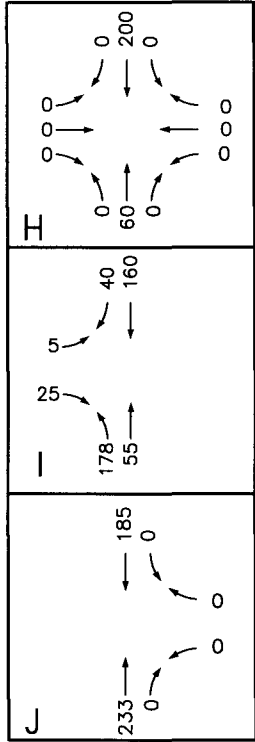
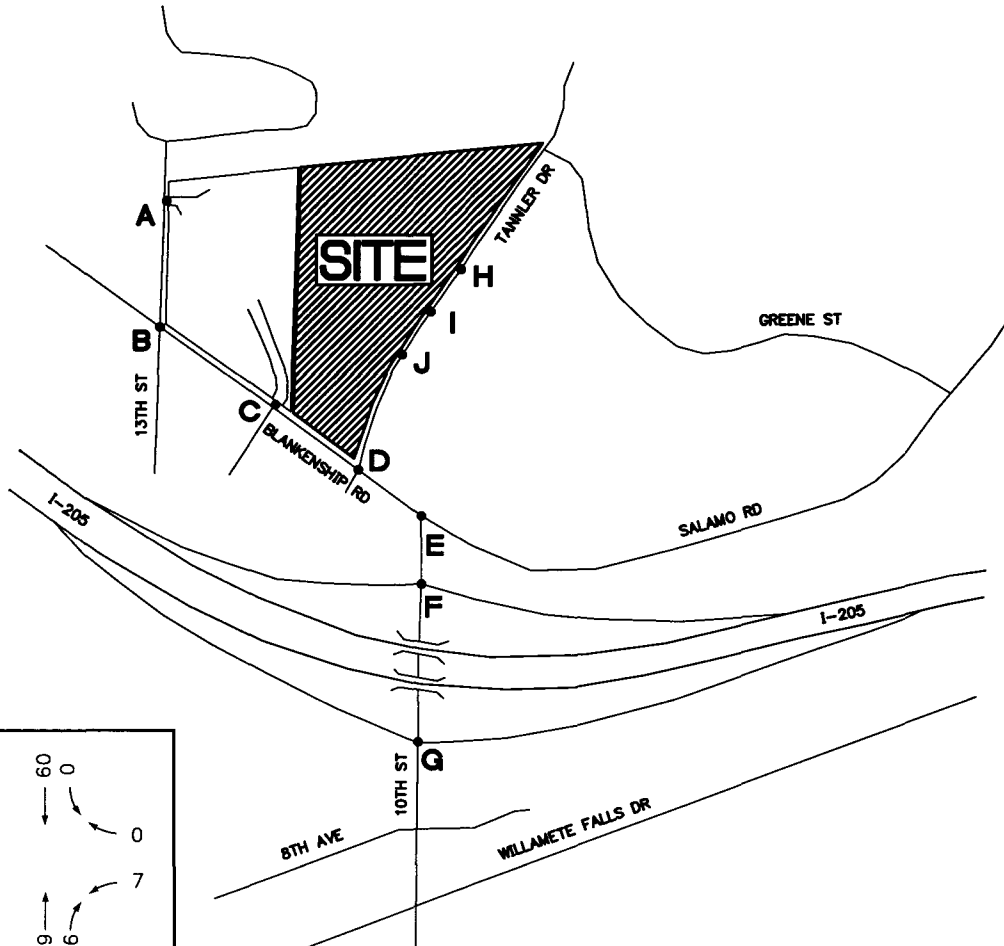
CHECKED BY: BTA

JOB NO:
2060016.00

2007 PHASE 1 POST-DEVELOPMENT
W/ TANNER EAST (PM)

WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE
10D



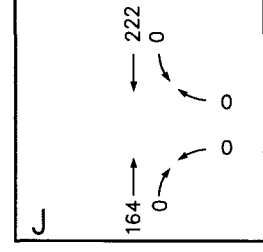
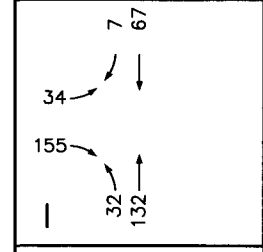
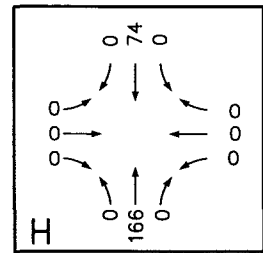
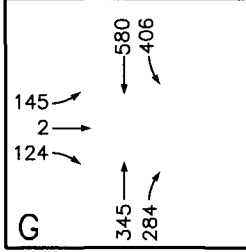
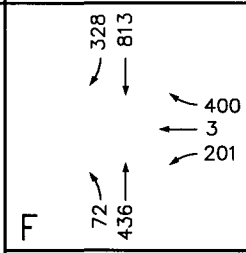
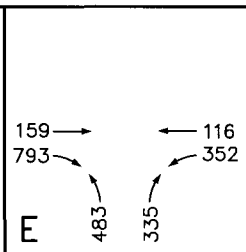
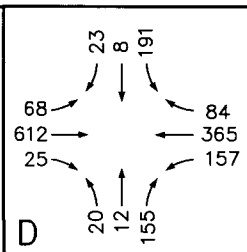
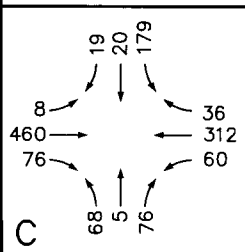
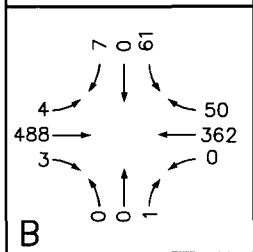
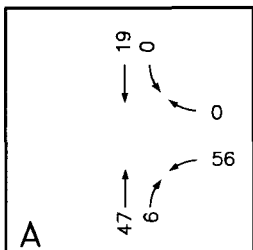
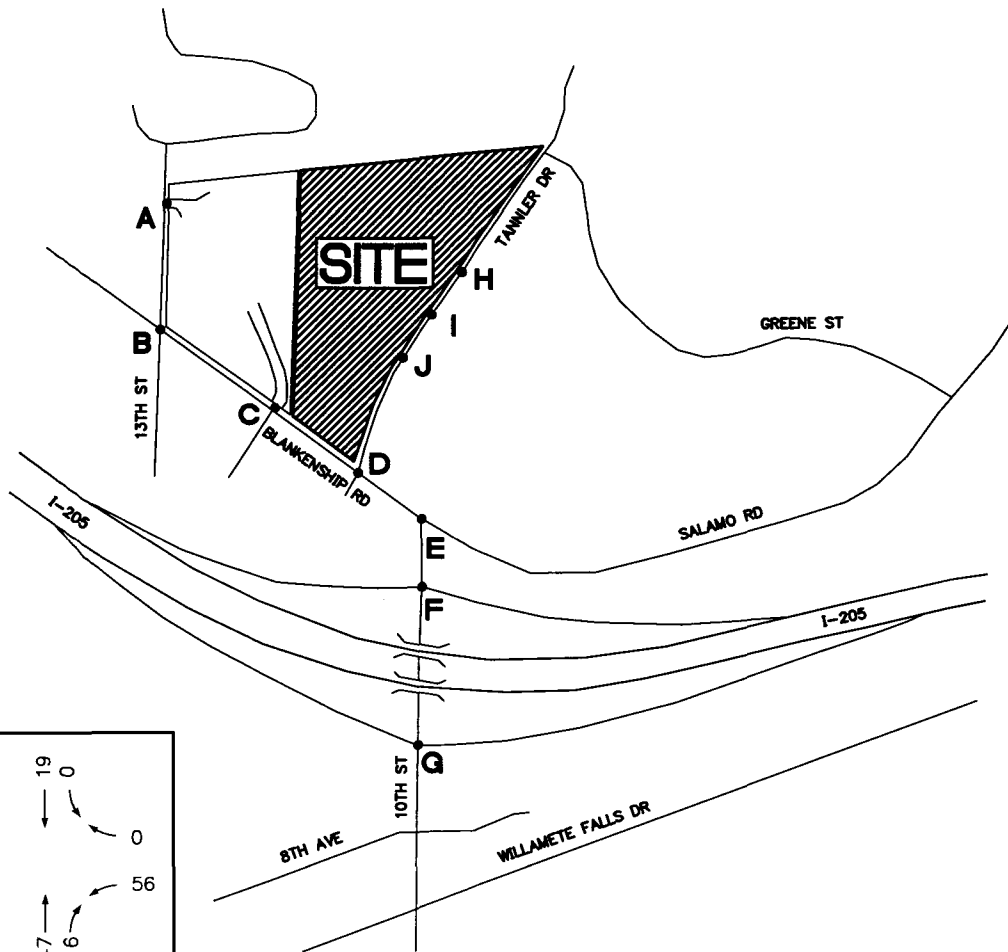

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 2060016.00

2007 BUILDOUT POST-DEVELOPMENT
 AM INTERSECTION VOLUMES
 WILLAMETTE 205 CORP CENTER
 WEST LINN, OREGON

FIGURE
11A



NOT TO SCALE

GROUP
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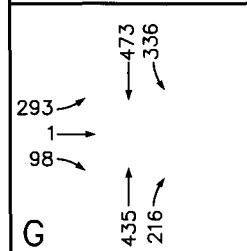
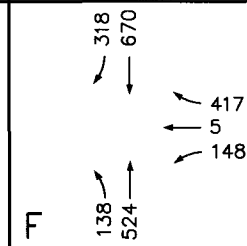
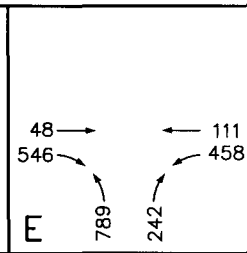
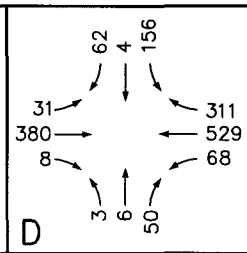
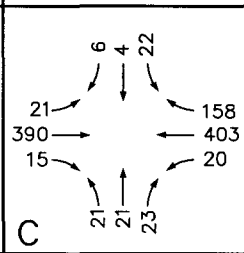
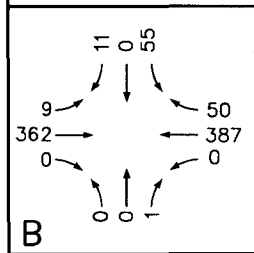
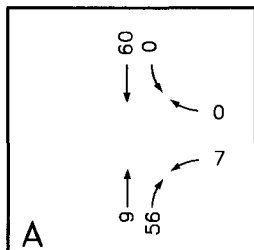
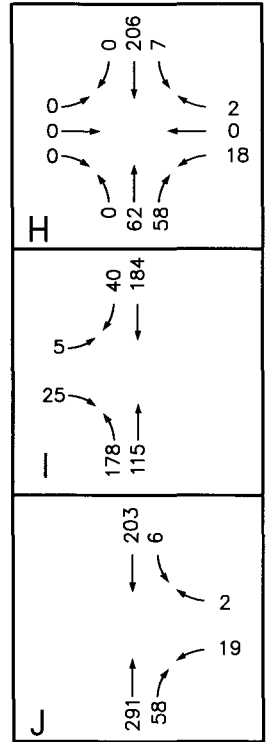
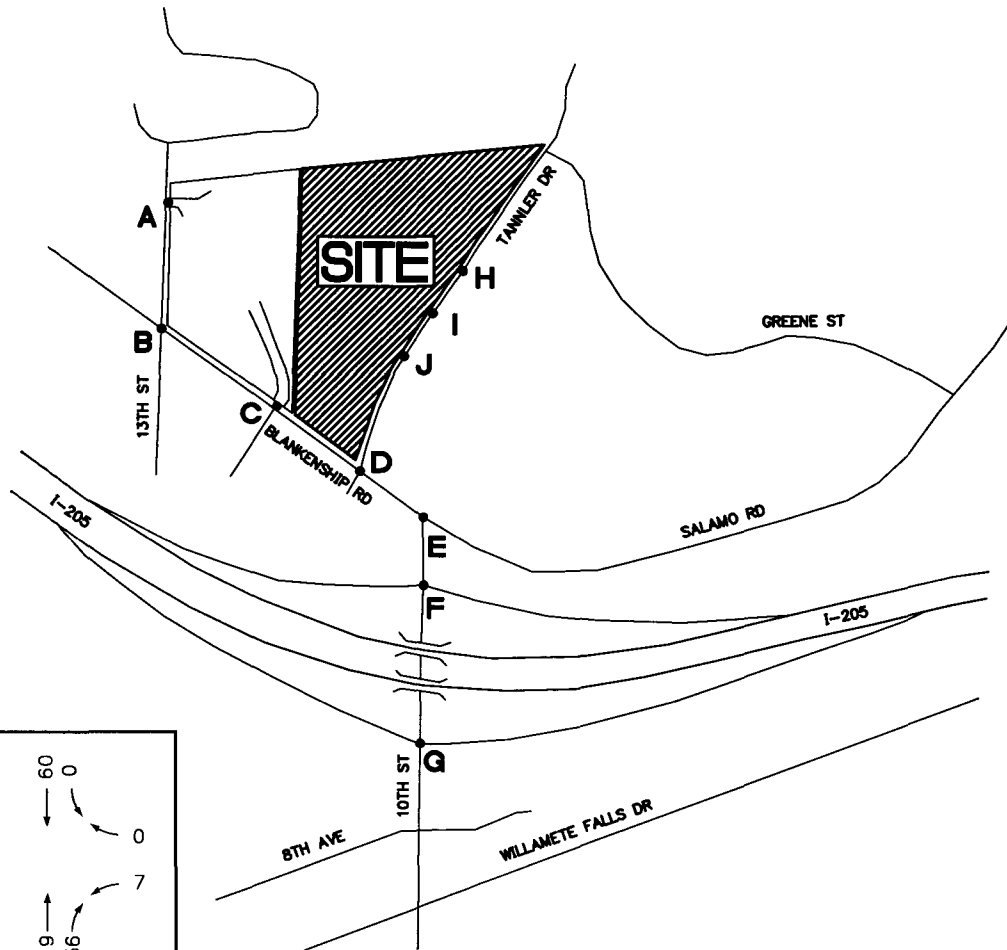
JOB NO:
2060016.00

**2007 BUILDOUT POST-DEVELOPMENT
PM INTERSECTION VOLUMES**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

FIGURE

11B



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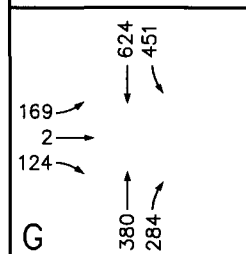
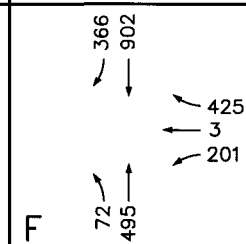
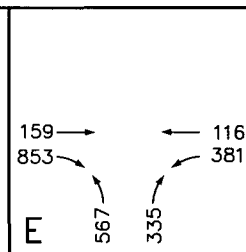
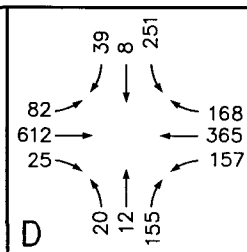
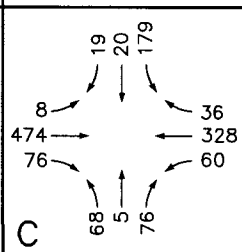
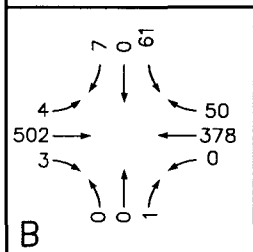
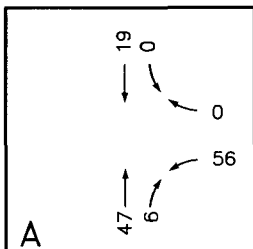
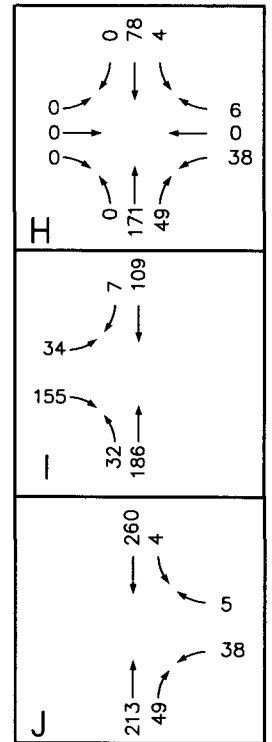
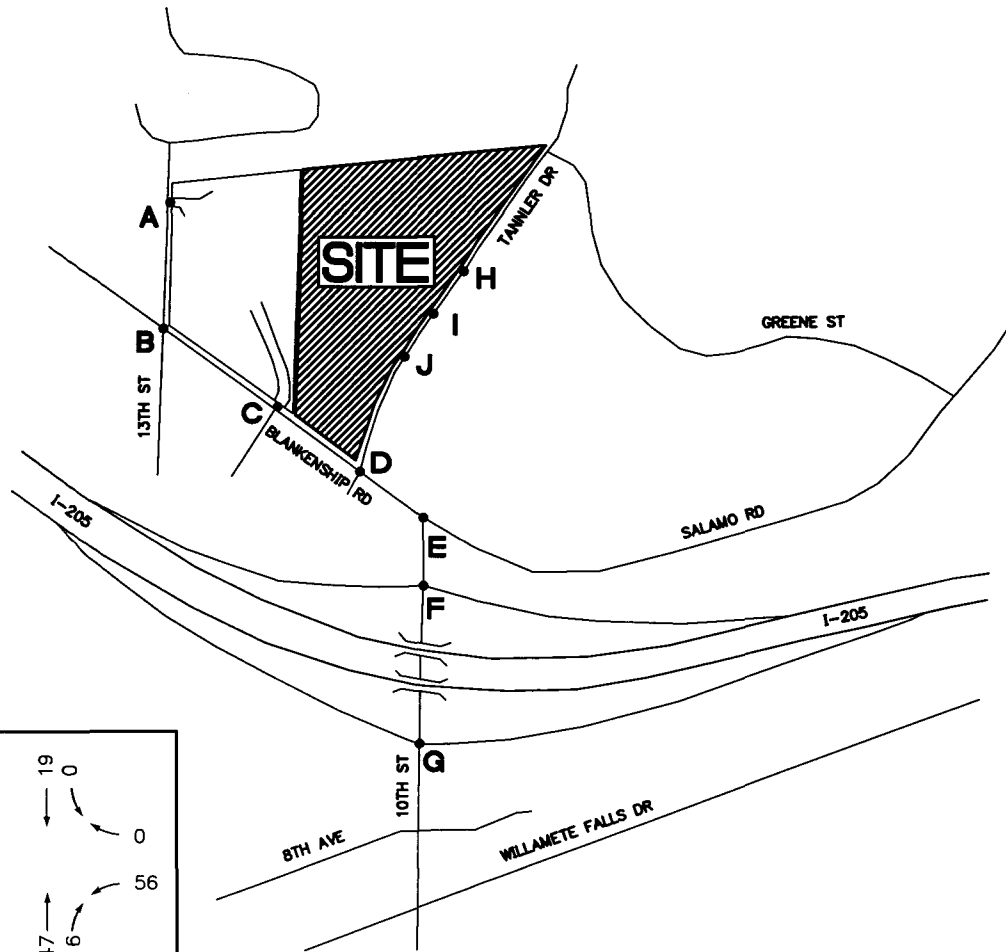
JOB NO:
2060016.00

2007 BUILDOUT POST-DEVELOPMENT
W/ TANNER EAST (AM)

WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON

FIGURE

11C



NOT TO SCALE

GROUP
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503.224.9560 360.695.7879 253.471.0551 206.749.9993

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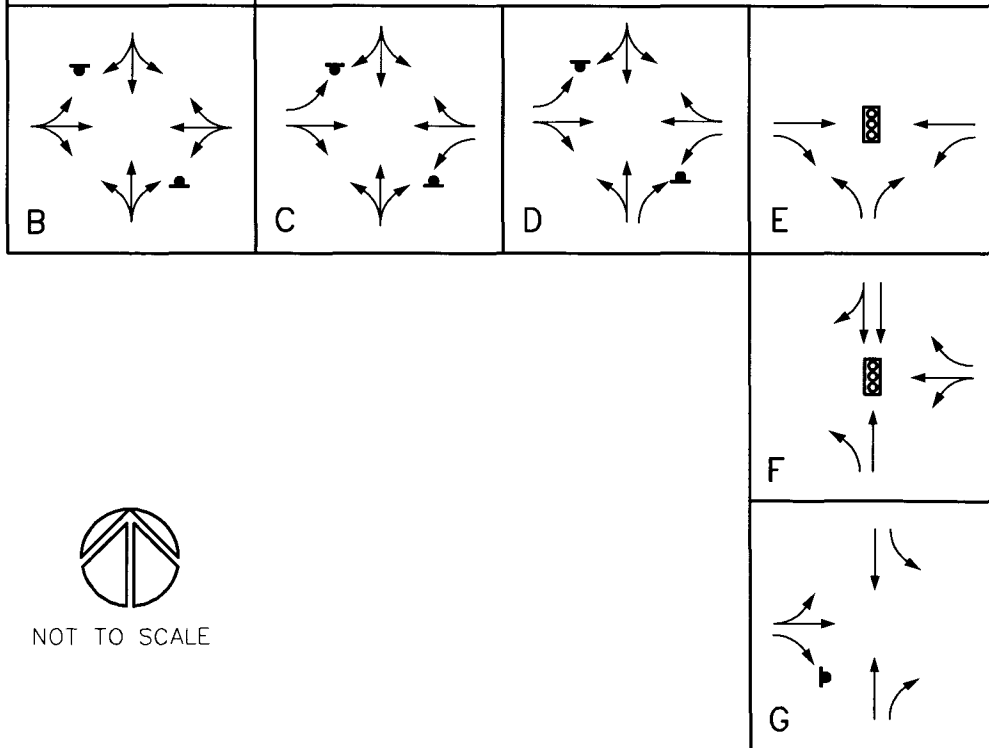
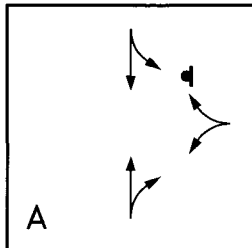
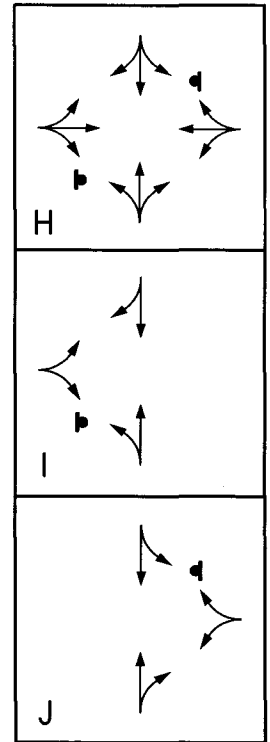
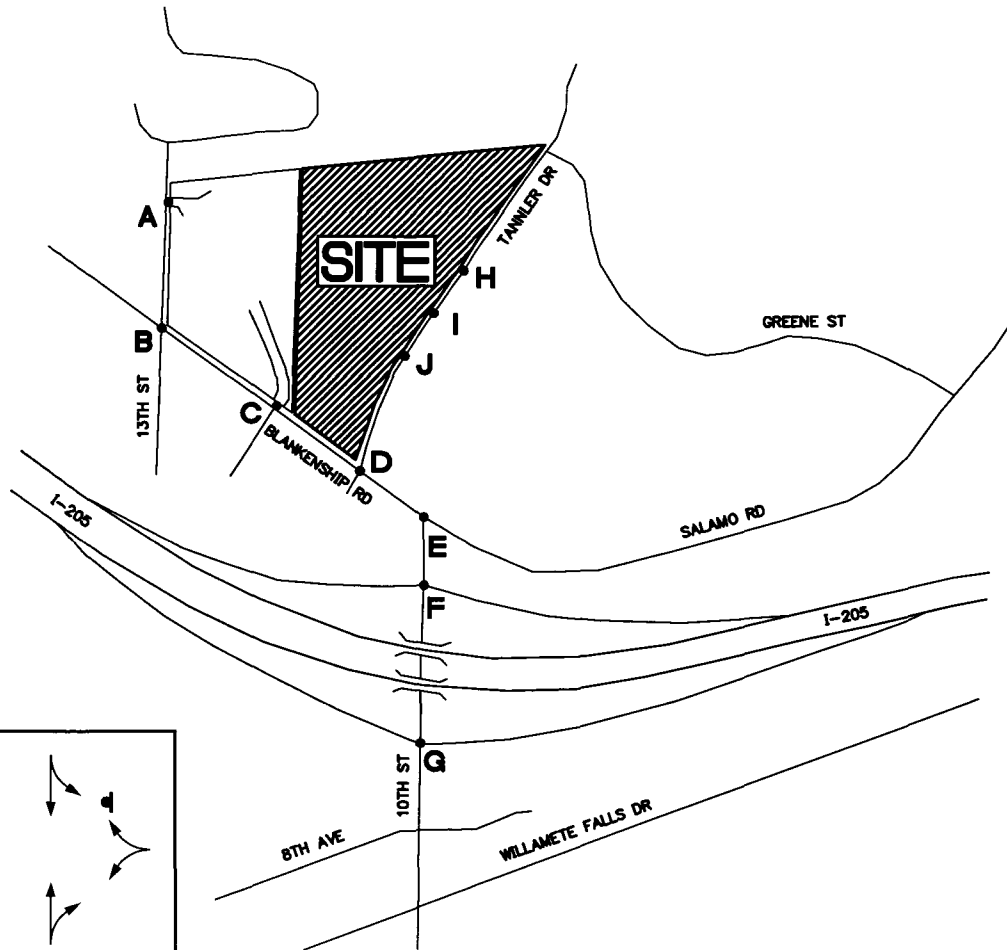
2060016.00



**2007 BUILDOUT POST-DEVELOPMENT
W/ TANNER EAST (PM)**

**WILLAMETTE 205 CORP CENTER
WEST LINN, OREGON**

FIGURE

11D



 = STOP SIGN
 = TRAFFIC SIGNAL



NOT TO SCALE

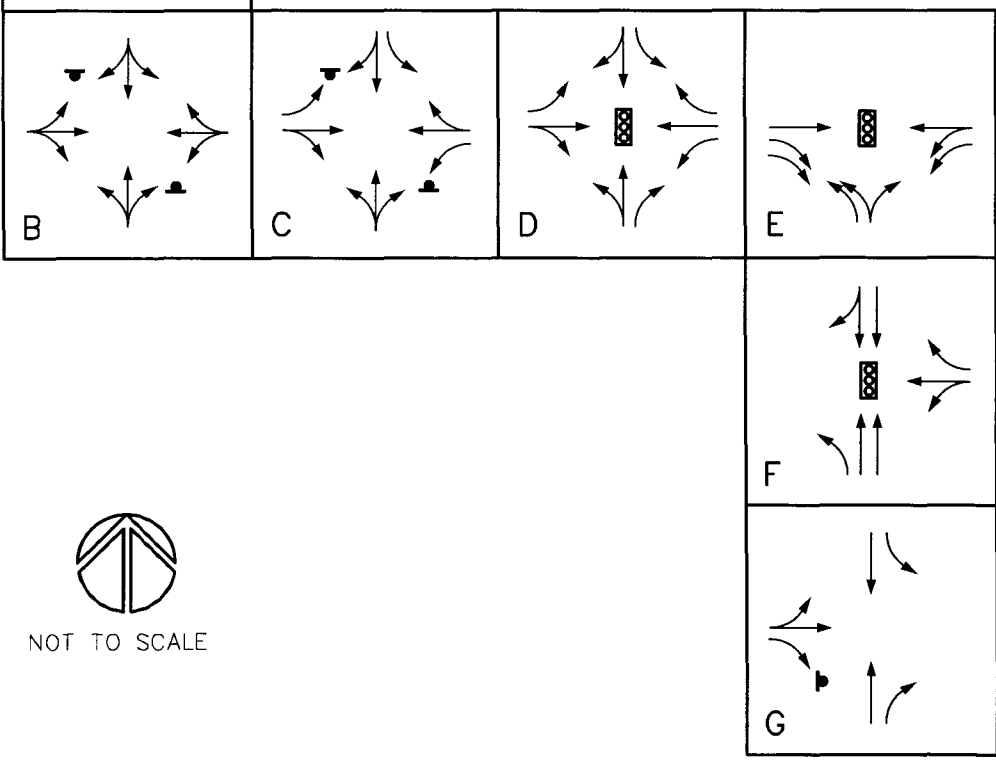
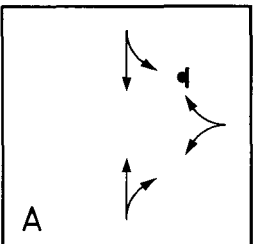
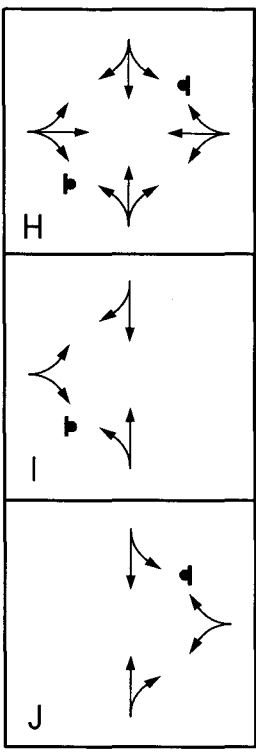
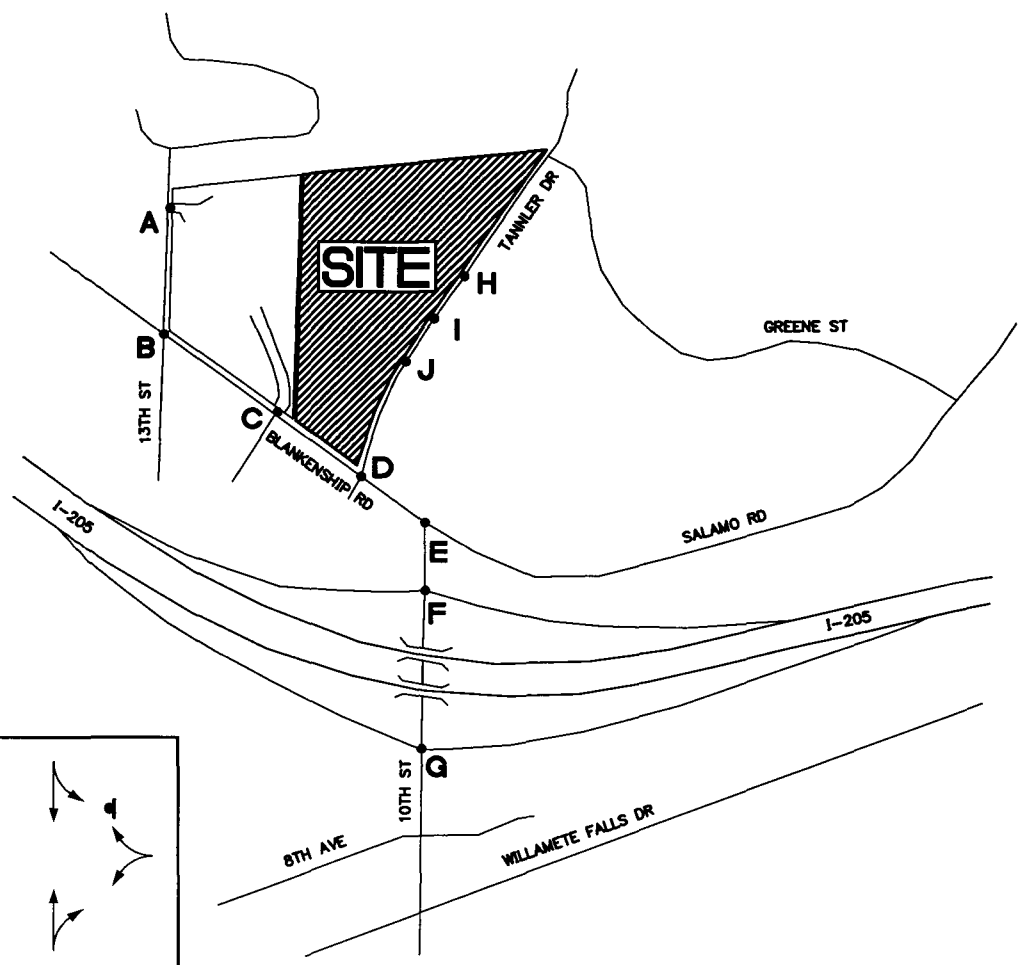
GROUP
MACKENZIE
 Portland OR Vancouver WA Tacoma WA Seattle WA
 503.224.9560 360.695.7879 253.471.0551 206.749.9993

DATE: 6.20.06
 DRAWN BY: WSB
 CHECKED BY: BTA
 JOB NO:
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2007 PHASE 1 MITIGATED LANE
 CONFIGURATIONS AND TRAFFIC CONTROL
 WILLAMETTE 205 CORP CENTER
 WEST LINN, OREGON

FIGURE
12A

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 = STOP SIGN
 = TRAFFIC SIGNAL



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 503.224.9560 360.695.7879 253.471.0551 206.749.9983

DATE: 6.20.06
 DRAWN BY: WSB
 CHECKED BY: BTA
 JOB NO:
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2007 BUILDOUT MITGATED LANE
 CONFIGURATIONS AND TRAFFIC CONTROL
 WILLAMETTE 205 CORP CENTER
 WEST LINN, OREGON

FIGURE
12B

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APPENDIX B
**Traffic Count
Summaries**

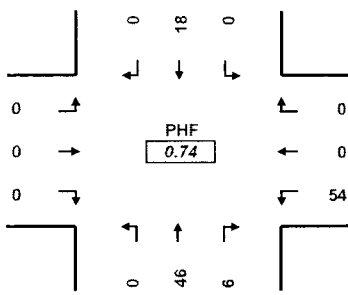
INTERSECTION: Summerlinn Dr.--/Office Access--
 PROJECT ID#: 2060016
 QC JOB #: 10142114

START TIME: 4:00 PM
 END TIME: 6:00 PM
 DATE: 2/2/2006

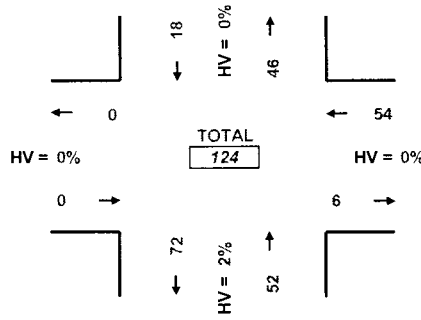


QUALITY COUNTS
 16285 SW 85th Avenue, Ste. 105
 Tigard, OR 97224
 Phone: 503-620-4242
 Fax: 503-620-4545
 email: jrw@qualitycounts.net
 www.qualitycounts.net

PEAK HOUR TURNING MOVEMENTS



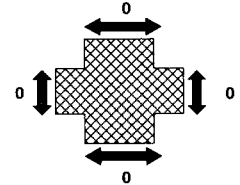
PEAK HOUR LINK VOLUMES



PEAK HOUR: 4:30 PM TO 5:30 PM

PEAK 15 MINUTES: 5:00 PM TO 5:15 PM

PEAK HOUR PED CROSSING VOLUMES

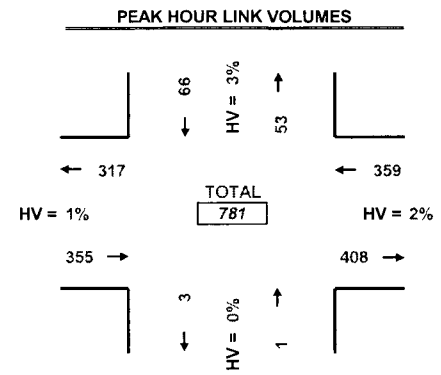
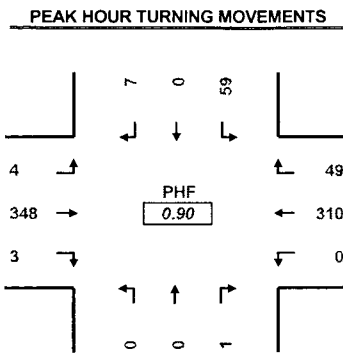


5-MINUTE COUNT PERIOD BEGINNING AT	Summerlinn Dr.-- (Southbound)			Office Access-- (Westbound)			Summerlinn Dr.-- (Northbound)			--- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0	4	0
4:05 PM	0	3	0	0	0	2	2	6	0	0	0	0	0	0	0	0	13	0
4:10 PM	0	1	0	0	0	1	1	2	0	0	0	0	0	0	0	0	5	0
4:15 PM	0	1	0	0	0	3	0	3	0	0	0	0	0	0	0	0	7	0
4:20 PM	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3	0
4:25 PM	0	1	0	0	0	3	0	4	0	0	0	0	0	0	0	0	8	0
4:30 PM	0	0	0	0	0	3	3	3	0	0	0	0	0	0	0	0	9	0
4:35 PM	0	2	0	0	0	5	0	3	0	0	0	0	0	0	0	0	10	0
4:40 PM	0	2	0	0	0	6	1	5	0	0	0	0	0	0	0	0	14	0
4:45 PM	0	2	0	0	0	6	0	3	0	0	0	0	0	0	0	0	11	0
4:50 PM	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0	0	5	0
4:55 PM	0	2	0	0	0	7	1	4	0	0	0	0	0	0	0	0	14	0
5:00 PM	0	3	0	0	0	9	0	6	0	0	0	0	0	0	0	0	18	0
5:05 PM	0	0	0	0	0	8	1	2	0	0	0	0	0	0	0	0	11	0
5:10 PM	0	1	0	0	0	6	0	6	0	0	0	0	0	0	0	0	13	0
5:15 PM	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3	0
5:20 PM	0	1	0	0	0	1	0	4	0	0	0	0	0	0	0	0	6	0
5:25 PM	0	4	0	0	0	2	0	4	0	0	0	0	0	0	0	0	10	0
5:30 PM	0	1	0	0	0	3	0	3	0	0	0	0	0	0	0	0	7	0
5:35 PM	0	2	0	0	0	1	0	8	0	0	0	2	0	0	0	0	11	2
5:40 PM	0	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	5	0
5:45 PM	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	4	0
5:50 PM	0	3	0	0	0	0	0	5	0	0	0	0	0	0	0	0	9	0
5:55 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
4:00 PM	0	16	0	0	0	39	9	39	0	0	0	0	0	0	0	0	103	0
4:15 PM	0	14	0	0	0	58	7	44	0	0	0	0	0	0	0	0	123	0
4:30 PM	0	18	0	0	0	54	6	46	0	0	0	0	0	0	0	0	124	0
4:45 PM	0	18	0	0	0	44	2	50	0	0	0	0	2	0	0	0	114	2
5:00 PM	0	19	0	0	0	32	1	47	0	0	0	0	2	0	0	0	99	2

INTERSECTION: Summerlin Dr.--/Blankenship Rd.--
 PROJECT ID#: 2060016
 QC JOB #: 10142113

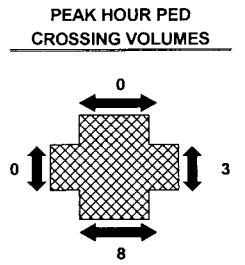
START TIME: 4:00 PM
 END TIME: 6:00 PM
 DATE: 2/2/2006

QC
QUALITY COUNTS
 16285 SW 85th Avenue, Ste. 105
 Tigard, OR 97224
 Phone: 503-620-4242
 Fax: 503-620-4545
 email: jrj@qualitycounts.net
 www.qualitycounts.net



PEAK HOUR: 4:45 PM TO 5:45 PM

PEAK 15 MINUTES: 5:30 PM TO 5:45 PM



5-MINUTE COUNT PERIOD BEGINNING AT	Summerlin Dr.-- (Southbound)			Blankenship Rd.-- (Westbound)			Summerlin Dr.-- (Northbound)			Blankenship Rd.-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	0	2	1	26	0	0	0	0	0	23	0	0	0	0	0	52	0
4:05 PM	1	0	5	6	27	0	0	0	0	0	14	0	0	0	0	0	53	0
4:10 PM	0	0	1	3	23	0	0	0	0	0	31	1	0	0	0	0	59	0
4:15 PM	2	0	3	2	17	0	0	0	0	0	25	1	0	0	0	0	50	0
4:20 PM	0	0	0	2	23	1	1	0	0	0	19	0	0	0	0	0	46	0
4:25 PM	3	0	2	3	17	0	0	0	0	0	25	1	0	0	0	0	51	0
4:30 PM	0	0	3	2	27	1	1	0	0	0	1	26	3	0	0	0	64	0
4:35 PM	0	0	5	4	15	1	0	0	0	0	34	0	1	0	0	0	59	1
4:40 PM	0	0	11	4	18	0	0	1	0	0	18	1	0	0	0	0	53	0
4:45 PM	0	0	7	3	29	0	0	0	0	0	31	0	0	0	0	0	70	0
4:50 PM	0	0	2	4	29	0	0	0	0	0	1	24	0	0	0	0	60	0
4:55 PM	0	0	7	5	18	0	0	0	0	0	28	0	0	0	4	0	58	4
5:00 PM	2	0	8	4	23	0	0	0	0	1	26	2	0	0	0	0	66	0
5:05 PM	1	0	12	3	27	0	0	0	0	0	26	0	0	0	0	0	69	0
5:10 PM	0	0	7	7	35	0	1	0	0	0	19	0	0	0	0	0	69	0
5:15 PM	0	0	2	1	19	0	0	0	0	0	34	1	0	0	1	0	57	1
5:20 PM	1	0	2	4	24	0	0	0	0	0	29	0	0	0	1	0	60	1
5:25 PM	2	0	2	4	18	0	0	0	0	0	28	0	0	0	0	0	54	0
5:30 PM	1	0	5	3	34	0	0	0	0	0	42	1	0	3	2	0	86	5
5:35 PM	0	0	4	7	25	0	0	0	0	1	30	0	0	0	0	0	67	0
5:40 PM	0	0	1	4	29	0	0	0	0	0	31	0	0	0	0	0	65	0
5:45 PM	1	0	1	2	19	0	0	0	0	0	35	0	0	0	3	0	58	3
5:50 PM	0	0	4	5	27	0	0	0	0	0	17	0	0	0	0	0	53	0
5:55 PM	0	0	1	2	31	0	1	0	0	0	29	0	0	0	0	0	64	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
4:00 PM	6	0	48	39	269	3	2	1	0	2	298	7	1	0	4	0	675	5
4:15 PM	8	0	67	43	278	3	3	1	0	3	301	8	1	0	4	0	715	5
4:30 PM	6	0	68	45	282	2	2	1	0	3	323	7	1	0	6	0	739	7
4:45 PM	7	0	59	49	310	0	1	0	0	3	348	4	0	3	8	0	781	11
5:00 PM	8	0	49	46	311	0	2	0	0	2	346	4	0	3	7	0	768	10

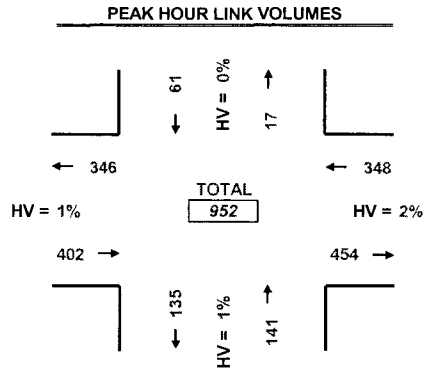
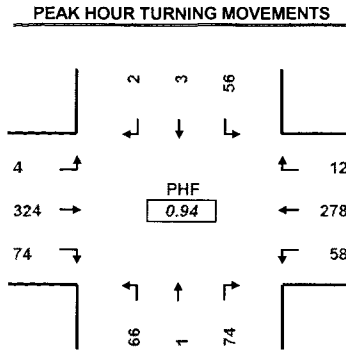
Albertsons

INTERSECTION: Office Access--/Blankenship Rd.--
 PROJECT ID#: 2060016
 QC JOB #: 10142112

START TIME: 4:00 PM
 END TIME: 6:00 PM
 DATE: 2/2/2006

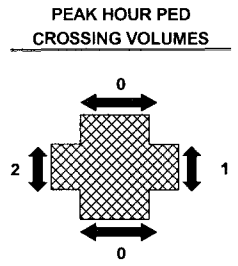


QUALITY COUNTS
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 Tigard, OR 97224
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 Fax: 503 620-4545
 email: jrww@qualitycounts.net
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PEAK HOUR: 4:45 PM TO 5:45 PM

PEAK 15 MINUTES: 5:00 PM TO 5:15 PM



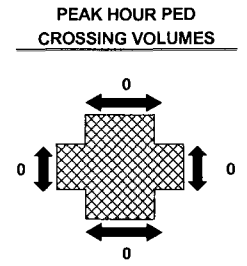
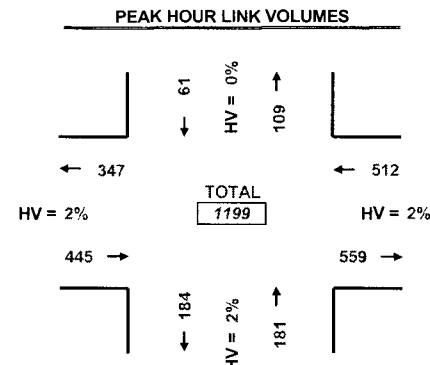
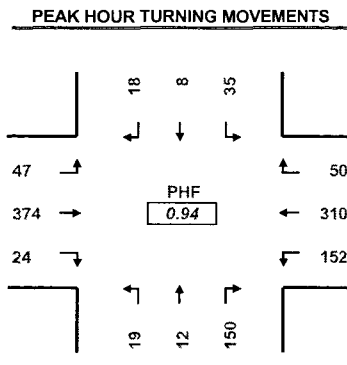
5-MINUTE COUNT PERIOD BEGINNING AT	Office Access-- (Southbound)			Blankenship Rd.-- (Westbound)			Albertsons Access-- (Northbound)			Blankenship Rd.-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	0	4	0	23	8	4	0	5	3	17	1	0	0	0	0	65	0
4:05 PM	0	0	2	0	19	3	4	0	5	8	15	0	0	0	0	0	56	0
4:10 PM	2	0	5	2	25	3	7	0	10	4	20	0	0	0	0	0	78	0
4:15 PM	0	0	2	0	19	3	7	0	1	5	28	0	0	0	0	0	65	0
4:20 PM	0	0	4	2	18	6	7	0	5	3	14	0	0	0	0	0	59	0
4:25 PM	0	0	2	0	16	4	3	0	3	2	27	0	0	1	0	0	57	1
4:30 PM	0	0	4	6	17	4	5	0	10	4	23	0	0	0	0	0	73	0
4:35 PM	0	2	1	2	18	1	3	0	2	4	28	0	0	0	0	0	61	0
4:40 PM	0	1	2	1	20	6	5	0	3	8	27	0	0	0	0	0	73	0
4:45 PM	0	0	1	1	22	5	5	0	6	8	34	0	0	0	0	0	82	0
4:50 PM	0	1	2	3	24	2	5	0	8	6	20	0	0	1	0	0	71	1
4:55 PM	0	0	8	4	23	1	7	0	8	6	24	0	0	0	0	0	81	0
5:00 PM	1	0	8	1	18	6	5	0	2	5	26	1	0	0	0	1	73	1
5:05 PM	0	1	10	1	24	8	6	0	8	4	34	1	0	0	0	1	97	1
5:10 PM	0	0	7	0	31	6	2	0	7	7	23	1	0	0	0	0	84	0
5:15 PM	0	1	1	2	18	9	4	1	4	4	24	0	0	0	0	0	68	0
5:20 PM	0	0	4	0	18	5	9	0	5	6	30	0	0	0	0	0	77	0
5:25 PM	0	0	1	0	24	3	9	0	2	6	21	0	0	0	0	0	66	0
5:30 PM	0	0	5	0	30	3	8	0	5	9	30	0	0	0	0	0	90	0
5:35 PM	1	0	5	0	22	6	4	0	7	9	29	1	0	0	0	0	84	0
5:40 PM	0	0	4	0	24	4	10	0	4	4	29	0	0	0	0	0	79	0
5:45 PM	0	0	4	0	20	6	11	0	3	4	28	0	0	0	0	0	76	0
5:50 PM	0	0	1	0	21	2	3	0	4	5	26	0	0	0	0	0	62	0
5:55 PM	0	0	3	0	28	3	6	0	11	3	16	0	0	0	0	0	70	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
4:00 PM	2	4	37	21	244	46	62	0	66	61	277	1	0	2	0	0	821	2
4:15 PM	1	5	51	21	250	52	60	0	63	62	308	3	0	2	0	2	876	4
4:30 PM	1	6	49	21	257	56	65	1	65	68	314	3	0	1	0	2	906	3
4:45 PM	2	3	56	12	278	58	74	1	66	74	324	4	0	1	0	2	952	3
5:00 PM	2	2	53	4	278	61	77	1	62	66	316	4	0	0	0	2	926	2

INTERSECTION: Tannler--/Blankenship Rd.--
 PROJECT ID#: 2060016
 QC JOB #: 10142111

START TIME: 4:00 PM
 END TIME: 6:00 PM
 DATE: 2/2/2006



QUALITY COUNTS
 16285 SW 85th Avenue, Ste. 105
 Tigard, OR 97224
 Phone: 503-620-4242
 Fax: 503 620-4545
 email: jrw@qualitycounts.net
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PEAK HOUR: 5:00 PM TO 6:00 PM

PEAK 15 MINUTES: 5:30 PM TO 5:45 PM

5-MINUTE COUNT PERIOD BEGINNING AT	Tannler-- (Southbound)			Blankenship Rd.-- (Westbound)			Tannler-- (Northbound)			Blankenship Rd.-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	2	0	2	2	22	11	9	1	1	0	26	4	0	0	0	0	80	0
4:05 PM	2	1	5	3	18	9	15	2	0	0	14	1	0	0	0	0	70	0
4:10 PM	1	1	5	6	21	5	6	0	2	2	34	2	0	0	0	0	85	0
4:15 PM	2	0	3	2	16	10	7	1	2	1	29	3	0	0	0	0	76	0
4:20 PM	1	1	3	2	24	16	12	0	0	0	31	1	0	0	0	0	91	0
4:25 PM	2	0	3	2	20	14	9	2	1	1	25	4	0	0	0	0	83	0
4:30 PM	0	0	5	6	21	15	9	0	1	2	34	1	0	0	0	0	94	0
4:35 PM	2	0	5	6	21	13	10	3	1	0	21	6	0	0	0	0	88	0
4:40 PM	1	0	3	7	18	14	9	0	1	1	31	5	0	0	0	0	90	0
4:45 PM	5	0	6	8	28	16	8	4	2	0	28	0	0	0	0	0	105	0
4:50 PM	3	0	4	6	23	12	15	0	1	1	31	3	0	0	0	0	99	0
4:55 PM	3	1	1	6	24	13	6	0	0	1	30	2	0	0	0	0	87	0
5:00 PM	3	0	1	3	19	13	12	1	0	3	32	4	0	0	0	0	91	0
5:05 PM	2	0	3	5	31	5	12	1	1	3	51	5	0	0	0	0	119	0
5:10 PM	0	2	3	2	35	22	14	0	0	3	25	2	0	0	0	0	108	0
5:15 PM	1	1	1	4	27	14	13	2	1	1	32	2	0	0	0	0	99	0
5:20 PM	4	0	1	3	22	9	8	2	1	1	37	5	0	0	0	0	93	0
5:25 PM	2	1	1	4	24	10	10	1	0	1	20	2	0	0	0	0	76	0
5:30 PM	0	0	3	3	32	15	7	0	1	3	32	5	0	0	0	0	101	0
5:35 PM	1	0	6	4	24	12	10	0	2	1	31	1	0	0	0	0	92	0
5:40 PM	1	0	2	5	30	17	21	3	4	0	40	4	0	0	0	0	127	0
5:45 PM	2	1	2	6	25	10	17	2	1	2	37	7	0	0	0	0	112	0
5:50 PM	1	0	6	5	19	16	9	0	3	6	22	4	0	0	0	0	91	0
5:55 PM	1	3	6	6	22	9	17	0	5	0	15	6	0	0	0	0	90	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
4:00 PM	24	4	45	56	256	148	115	13	12	9	334	32	0	0	0	0	1048	0
4:15 PM	24	4	40	55	280	163	123	12	10	16	368	36	0	0	0	0	1131	0
4:30 PM	26	5	34	60	293	156	126	14	9	17	372	37	0	0	0	0	1149	0
4:45 PM	25	5	32	53	319	158	136	14	13	18	389	35	0	0	0	0	1197	0
5:00 PM	18	8	35	50	310	152	150	12	19	24	374	47	0	0	0	0	1199	0

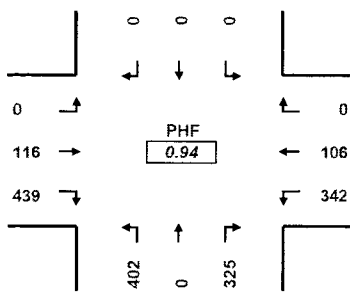
INTERSECTION: Trees (10th St)--Blankenship Rd.--
 PROJECT ID#: 2060016
 QC JOB #: 10142110

START TIME: 4:00 PM
 END TIME: 6:00 PM
 DATE: 2/2/2006

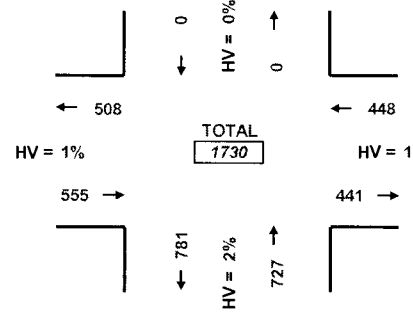


QUALITY COUNTS
 16285 SW 85th Avenue, Ste. 105
 Tigard, OR 97224
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 Fax: 503 620-4545
 email: jrw@qualitycounts.net
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PEAK HOUR TURNING MOVEMENTS



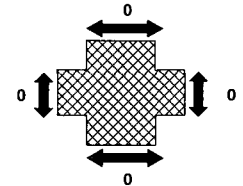
PEAK HOUR LINK VOLUMES



PEAK HOUR: 5:00 PM TO 6:00 PM

PEAK 15 MINUTES: 5:30 PM TO 5:45 PM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD BEGINNING AT	Trees (10th St)-- (Southbound)			Blankenship Rd.-- (Westbound)			10th St.-- (Northbound)			Blankenship Rd.-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	0	0	0	5	15	22	0	32	29	7	0	0	0	0	0	110	0
4:05 PM	0	0	0	0	8	22	15	0	26	28	6	0	0	0	0	0	105	0
4:10 PM	0	0	0	0	4	12	28	0	34	41	4	0	0	0	0	0	123	0
4:15 PM	0	0	0	0	9	25	20	0	21	29	10	0	0	0	1	0	114	1
4:20 PM	0	0	0	0	9	28	21	0	33	35	12	0	0	0	0	0	138	0
4:25 PM	0	0	0	0	11	14	23	0	25	28	9	0	0	0	0	0	110	0
4:30 PM	0	0	0	0	6	28	19	0	37	38	9	0	0	0	0	0	137	0
4:35 PM	0	0	0	0	9	28	20	0	31	29	6	0	0	0	0	0	123	0
4:40 PM	0	0	0	0	9	15	25	0	34	35	8	0	0	0	0	0	126	0
4:45 PM	0	0	0	0	7	28	25	0	38	38	4	0	0	0	0	0	140	0
4:50 PM	0	0	0	0	6	21	15	0	38	39	11	0	0	0	0	0	130	0
4:55 PM	0	0	0	0	4	15	29	0	35	30	7	0	0	0	0	0	120	0
5:00 PM	0	0	0	0	7	33	22	0	32	36	9	0	0	0	0	0	139	0
5:05 PM	0	0	0	0	10	30	24	0	32	50	15	0	0	0	0	0	161	0
5:10 PM	0	0	0	0	20	28	30	0	39	35	7	0	0	0	0	0	159	0
5:15 PM	0	0	0	0	8	23	20	0	35	35	10	0	0	0	0	0	131	0
5:20 PM	0	0	0	0	4	25	30	0	26	34	11	0	0	0	0	0	130	0
5:25 PM	0	0	0	0	7	28	24	0	29	24	7	0	0	0	0	0	119	0
5:30 PM	0	0	0	0	8	29	23	0	44	30	11	0	0	0	0	0	145	0
5:35 PM	0	0	0	0	5	21	33	0	41	41	6	0	0	0	0	0	147	0
5:40 PM	0	0	0	0	14	35	31	0	27	51	12	0	0	0	0	0	170	0
5:45 PM	0	0	0	0	10	31	26	0	33	38	18	0	0	0	0	0	156	0
5:50 PM	0	0	0	0	5	27	34	0	36	33	4	0	0	0	0	0	139	0
5:55 PM	0	0	0	0	8	32	28	0	28	32	6	0	0	0	0	0	134	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
4:00 PM	0	0	0	0	87	251	262	0	384	399	93	0	0	0	1	0	1476	1
4:15 PM	0	0	0	0	107	293	273	0	395	422	107	0	0	0	1	0	1597	1
4:30 PM	0	0	0	0	97	302	283	0	406	423	104	0	0	0	0	0	1615	0
4:45 PM	0	0	0	0	100	316	306	0	416	443	110	0	0	0	0	0	1691	0
5:00 PM	0	0	0	0	106	342	325	0	402	439	116	0	0	0	0	0	1730	0

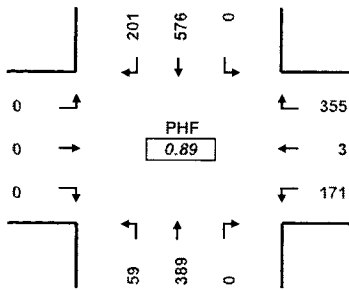
INTERSECTION: 10th St--/I-205 SB Ramp--
 PROJECT ID#: 2060016
 QC JOB #: 10142109

START TIME: 4:00 PM
 END TIME: 6:00 PM
 DATE: 2/2/2006

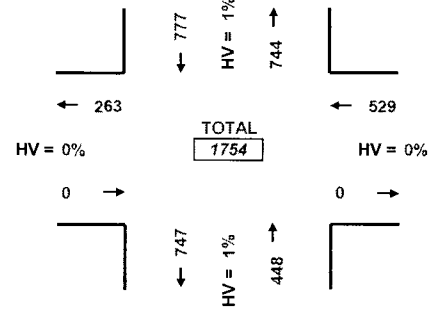


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PEAK HOUR TURNING MOVEMENTS



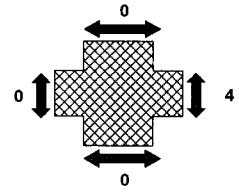
PEAK HOUR LINK VOLUMES



PEAK HOUR: 5:00 PM TO 6:00 PM

PEAK 15 MINUTES: 5:30 PM TO 5:45 PM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD BEGINNING AT	10th St-- (Southbound)			I-205 SB Ramp-- (Westbound)			10th St-- (Northbound)			I-205 SB Ramp-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	14	30	0	25	0	14	0	20	7	0	0	0	0	0	0	0	110	0
4:05 PM	14	35	0	15	0	20	0	21	3	0	0	0	0	0	0	0	108	0
4:10 PM	15	38	0	24	0	15	0	36	3	0	0	0	0	0	0	0	131	0
4:15 PM	17	36	0	16	1	14	0	33	7	0	0	0	0	0	0	0	124	0
4:20 PM	21	42	0	26	1	16	0	24	8	0	0	0	0	0	0	0	138	0
4:25 PM	9	32	0	16	0	14	0	26	5	0	0	0	0	0	0	0	102	0
4:30 PM	16	50	0	13	0	9	0	35	5	0	0	0	0	0	0	0	128	0
4:35 PM	23	34	0	23	0	23	0	21	4	0	0	0	0	0	0	0	128	0
4:40 PM	13	37	0	33	0	12	0	22	5	0	0	0	0	0	0	0	122	0
4:45 PM	14	52	0	18	0	23	0	31	2	0	0	0	0	0	0	0	140	0
4:50 PM	11	49	0	23	1	13	0	22	5	0	0	0	0	0	0	0	124	0
4:55 PM	14	30	0	26	0	9	0	32	3	0	0	0	0	0	0	0	114	0
5:00 PM	19	50	0	29	0	12	0	24	6	0	0	0	0	0	0	0	140	0
5:05 PM	19	60	0	44	0	10	0	24	4	0	0	0	0	0	0	0	161	0
5:10 PM	20	43	0	30	0	13	0	23	7	0	0	0	0	0	0	0	136	0
5:15 PM	15	42	0	30	0	17	0	37	5	0	0	0	0	0	0	0	146	0
5:20 PM	19	39	0	20	1	12	0	37	2	0	0	0	0	0	0	0	130	0
5:25 PM	19	33	0	25	0	19	0	30	2	0	0	0	0	0	0	0	128	0
5:30 PM	17	43	0	32	0	15	0	37	4	0	0	0	0	4	0	0	148	4
5:35 PM	17	44	0	28	0	18	0	49	9	0	0	0	0	0	0	0	165	0
5:40 PM	18	68	0	36	1	18	0	35	4	0	0	0	0	0	0	0	180	0
5:45 PM	18	50	0	23	0	17	0	22	3	0	0	0	0	0	0	0	133	0
5:50 PM	10	49	0	29	1	10	0	34	7	0	0	0	0	0	0	0	140	0
5:55 PM	10	55	0	29	0	10	0	37	6	0	0	0	0	0	0	0	147	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
4:00 PM	181	465	0	258	3	182	0	323	57	0	0	0	0	0	0	0	1469	0
4:15 PM	196	515	0	297	3	168	0	317	61	0	0	0	0	0	0	0	1557	0
4:30 PM	202	519	0	314	2	172	0	338	50	0	0	0	0	0	0	0	1597	0
4:45 PM	202	553	0	341	3	179	0	381	53	0	0	0	0	4	0	0	1712	4
5:00 PM	201	576	0	355	3	171	0	389	59	0	0	0	0	4	0	0	1754	4

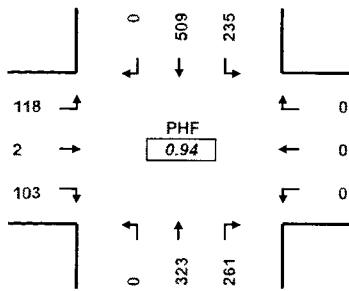
INTERSECTION: 10th St.--/I-205 NB Ramp--
 PROJECT ID#: 2060016
 QC JOB #: 10142108

START TIME: 4:00 PM
 END TIME: 6:00 PM
 DATE: 2/2/2006

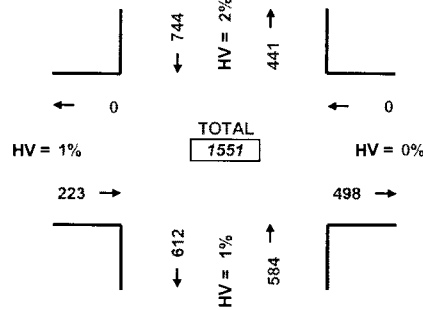


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PEAK HOUR TURNING MOVEMENTS



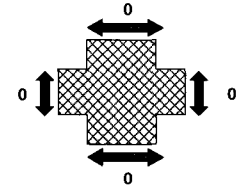
PEAK HOUR LINK VOLUMES



PEAK HOUR: 5:00 PM TO 6:00 PM

PEAK 15 MINUTES: 5:30 PM TO 5:45 PM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD BEGINNING AT	10th St.-- (Southbound)			I-205 NB Ramp-- (Westbound)			10th St.-- (Northbound)			I-205 NB Ramp-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
4:00 PM	0	32	13	0	0	0	18	21	0	8	0	6	0	0	0	0	98	0
4:05 PM	0	42	14	0	0	0	19	19	0	13	0	8	0	0	0	0	115	0
4:10 PM	0	37	16	0	0	0	23	28	0	6	0	7	0	0	0	0	117	0
4:15 PM	0	35	16	0	0	0	28	19	0	8	0	12	0	0	0	0	118	0
4:20 PM	0	37	22	0	0	0	22	22	0	7	0	5	0	0	0	0	115	0
4:25 PM	0	30	17	0	0	0	32	26	0	5	0	6	0	0	1	0	116	1
4:30 PM	0	36	23	0	0	0	26	29	0	6	0	5	0	0	0	0	125	0
4:35 PM	0	40	18	0	0	0	20	21	0	4	0	6	0	0	0	0	109	0
4:40 PM	0	35	14	0	0	0	16	27	0	7	0	7	0	0	0	0	106	0
4:45 PM	0	46	29	0	0	0	29	30	0	9	0	4	0	0	0	0	147	0
4:50 PM	0	36	16	0	0	0	22	19	0	13	0	9	0	0	0	0	115	0
4:55 PM	0	39	21	0	0	0	21	30	0	5	0	6	0	0	1	0	122	1
5:00 PM	0	34	22	0	0	0	23	31	0	6	0	11	0	0	0	0	127	0
5:05 PM	0	37	27	0	0	0	22	22	0	12	0	10	0	0	0	0	130	0
5:10 PM	0	36	16	0	0	0	22	27	0	3	0	7	0	0	0	0	111	0
5:15 PM	0	49	18	0	0	0	30	28	0	9	0	4	0	0	0	0	138	0
5:20 PM	0	32	19	0	0	0	26	30	0	6	0	8	0	0	0	0	121	0
5:25 PM	0	40	12	0	0	0	34	25	0	7	0	4	0	0	0	0	122	0
5:30 PM	0	33	25	0	0	0	26	22	0	8	0	14	0	0	0	0	128	0
5:35 PM	0	42	21	0	0	0	18	27	0	16	1	16	0	0	0	0	141	0
5:40 PM	0	66	20	0	0	0	21	23	0	6	0	9	0	0	0	0	145	0
5:45 PM	0	53	15	0	0	0	12	27	0	12	0	11	0	0	0	0	130	0
5:50 PM	0	40	22	0	0	0	13	40	0	8	1	7	0	0	0	0	131	0
5:55 PM	0	47	18	0	0	0	14	21	0	10	0	17	0	0	0	0	127	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
4:00 PM	0	445	219	0	0	0	276	291	0	91	0	81	0	0	2	0	1403	2
4:15 PM	0	441	241	0	0	0	283	303	0	85	0	88	0	0	2	0	1441	2
4:30 PM	0	460	235	0	0	0	291	319	0	87	0	81	0	0	1	0	1473	1
4:45 PM	0	490	246	0	0	0	294	314	0	100	1	102	0	0	1	0	1547	1
5:00 PM	0	509	235	0	0	0	261	323	0	103	2	118	0	0	0	0	1551	0

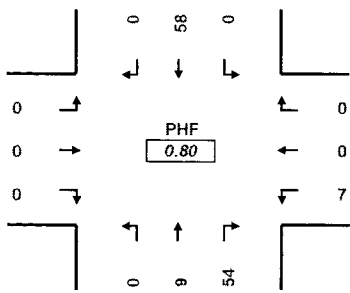
INTERSECTION: Summerlinn Dr--/Office Access--
 PROJECT ID#: 2060016
 QC JOB #: 10142107

START TIME: 7:00 AM
 END TIME: 9:00 AM
 DATE: 2/2/2006

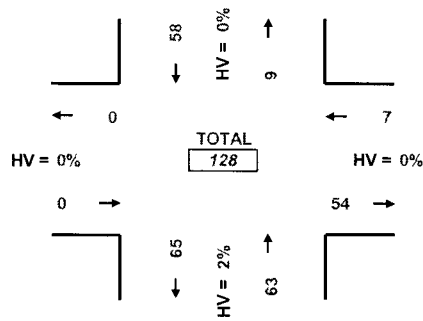


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PEAK HOUR TURNING MOVEMENTS



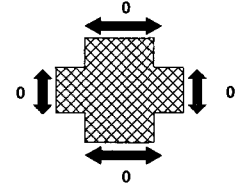
PEAK HOUR LINK VOLUMES



PEAK HOUR: 7:30 AM TO 8:30 AM

PEAK 15 MINUTES: 7:45 AM TO 8:00 AM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD BEGINNING AT	Summerlinn Dr-- (Southbound)			Office Access-- (Westbound)			Summerlinn Dr-- (Northbound)			Buildings-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
7:00 AM	0	3	0	0	0	1	5	3	0	0	0	0	0	0	0	0	12	0
7:05 AM	0	5	0	0	0	1	2	0	0	0	0	0	0	0	0	0	8	0
7:10 AM	0	7	1	0	0	0	0	1	0	0	0	0	0	0	0	0	9	0
7:15 AM	0	5	0	0	0	0	2	1	0	0	0	0	0	0	0	0	8	0
7:20 AM	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	8	0
7:25 AM	0	6	0	0	0	1	3	0	0	0	0	0	0	0	0	0	10	0
7:30 AM	0	5	0	0	0	0	4	0	0	0	0	0	0	0	0	0	9	0
7:35 AM	0	10	0	0	0	0	1	0	0	0	0	0	0	0	0	0	11	0
7:40 AM	0	5	0	0	0	1	5	1	0	0	0	0	0	0	0	0	12	0
7:45 AM	0	1	0	0	0	0	5	2	0	0	0	0	0	0	0	0	8	0
7:50 AM	0	8	0	0	0	0	10	0	0	0	0	0	0	0	0	0	18	0
7:55 AM	0	3	0	0	0	1	8	2	0	0	0	0	0	0	0	0	14	0
8:00 AM	0	3	0	0	0	2	5	0	0	0	0	0	0	0	0	0	10	0
8:05 AM	0	5	0	0	0	0	2	0	0	0	0	0	0	0	0	0	7	0
8:10 AM	0	4	0	0	0	1	2	0	0	0	0	0	0	0	0	0	7	0
8:15 AM	0	5	0	0	0	0	6	2	0	0	0	0	0	0	0	0	13	0
8:20 AM	0	6	0	0	0	0	2	1	0	0	0	0	0	0	0	0	9	0
8:25 AM	0	3	0	0	0	2	4	1	0	0	0	0	0	0	0	0	10	0
8:30 AM	0	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6	0
8:35 AM	0	5	0	0	0	0	3	0	0	0	0	0	0	0	0	0	8	0
8:40 AM	0	4	0	0	0	1	3	1	0	0	0	0	0	0	0	0	9	0
8:45 AM	0	1	0	0	0	0	2	1	0	0	0	0	0	0	0	0	4	0
8:50 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0
8:55 AM	0	1	0	0	0	0	8	0	0	0	0	0	0	0	0	0	9	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
7:00 AM	0	62	1	0	0	5	49	10	0	0	0	0	0	0	0	0	127	0
7:15 AM	0	59	0	0	0	6	51	6	0	0	0	0	0	0	0	0	122	0
7:30 AM	0	58	0	0	0	7	54	9	0	0	0	0	0	0	0	0	128	0
7:45 AM	0	52	0	0	0	7	51	9	0	0	0	0	0	0	0	0	119	0
8:00 AM	0	43	0	0	0	7	38	6	0	0	0	0	0	0	0	0	94	0

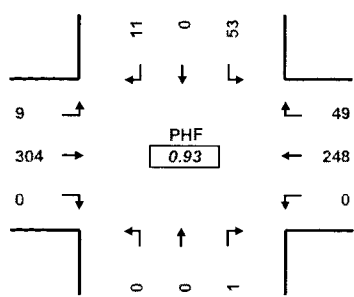
INTERSECTION: Blankenship Rd.--/Summerlin Dr.--
 PROJECT ID#: 2060016
 QC JOB #: 10142106

START TIME: 7:00 AM
 END TIME: 9:00 AM
 DATE: 2/2/2006



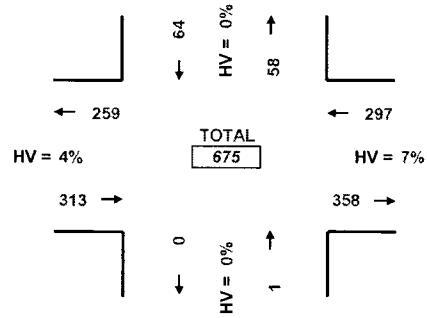
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PEAK HOUR TURNING MOVEMENTS



PHF
0.93

PEAK HOUR LINK VOLUMES

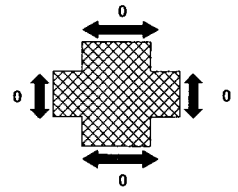


TOTAL
675

PEAK HOUR: 7:15 AM TO 8:15 AM

PEAK 15 MINUTES: 7:45 AM TO 8:00 AM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD BEGINNING AT	Blankenship Rd.-- (Southbound)			Summerlin Dr.-- (Westbound)			Blankenship Rd.-- (Northbound)			Summerlin Dr.-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
7:00 AM	0	0	4	5	9	0	0	0	0	18	2	0	0	0	0	0	38	0
7:05 AM	0	0	6	2	6	0	0	0	0	29	0	0	0	0	0	0	43	0
7:10 AM	1	0	6	1	13	0	0	0	0	32	0	0	0	0	0	0	53	0
7:15 AM	2	0	4	3	18	0	0	0	0	28	2	0	0	0	0	0	57	0
7:20 AM	0	0	3	2	10	0	0	0	0	22	0	0	0	0	0	0	37	0
7:25 AM	1	0	6	3	13	0	0	0	0	30	0	0	0	0	0	0	53	0
7:30 AM	3	0	4	4	13	0	0	0	0	32	1	0	0	0	0	0	57	0
7:35 AM	2	0	8	2	17	0	0	0	0	33	0	0	0	0	0	0	62	0
7:40 AM	0	0	4	6	22	0	1	0	0	27	0	0	0	0	0	0	60	0
7:45 AM	1	0	0	10	25	0	0	0	0	18	0	0	0	0	0	0	54	0
7:50 AM	0	0	7	7	32	0	0	0	0	26	1	0	0	0	0	0	73	0
7:55 AM	0	0	5	5	22	0	0	0	0	19	3	0	0	0	0	0	54	0
8:00 AM	0	0	5	3	27	0	0	0	0	26	0	0	0	0	0	0	61	0
8:05 AM	0	0	4	1	23	0	0	0	0	20	1	0	0	0	0	0	49	0
8:10 AM	2	0	3	3	26	0	0	0	0	23	1	0	0	0	0	0	58	0
8:15 AM	1	0	4	6	17	0	0	0	0	19	0	0	0	0	0	0	47	0
8:20 AM	2	0	5	2	22	1	0	0	0	15	4	0	0	0	0	0	51	0
8:25 AM	0	0	6	3	18	0	0	0	0	20	0	0	0	0	0	0	47	0
8:30 AM	0	0	3	2	21	0	0	0	0	21	0	0	0	0	0	0	47	0
8:35 AM	0	0	4	4	23	0	0	0	0	20	0	0	0	0	0	0	51	0
8:40 AM	2	0	3	2	22	0	0	0	0	21	0	0	0	0	0	0	50	0
8:45 AM	0	0	1	2	11	0	1	0	0	9	0	0	0	0	0	0	24	0
8:50 AM	1	0	1	1	15	0	0	0	0	18	2	0	0	0	0	0	38	0
8:55 AM	0	0	1	5	10	0	0	0	0	12	2	0	0	0	0	0	30	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
7:00 AM	10	0	57	50	200	0	1	0	0	0	314	9	0	0	0	0	641	0
7:15 AM	11	0	53	49	248	0	1	0	0	0	304	9	0	0	0	0	675	0
7:30 AM	11	0	55	52	264	1	1	0	0	0	278	11	0	0	0	0	673	0
7:45 AM	8	0	49	48	278	1	0	0	0	0	248	10	0	0	0	0	642	0
8:00 AM	8	0	40	34	235	1	1	0	0	0	224	10	0	0	0	0	553	0

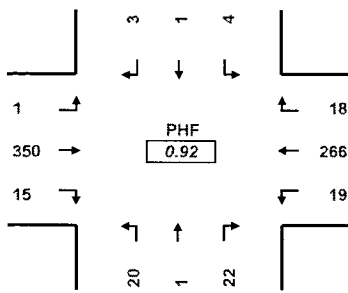
INTERSECTION: *Albertsons--/Blankenship--*
 PROJECT ID#: 2060016
 QC JOB #: 10142105

START TIME: 7:00 AM
 END TIME: 9:00 AM
 DATE: 2/2/2006

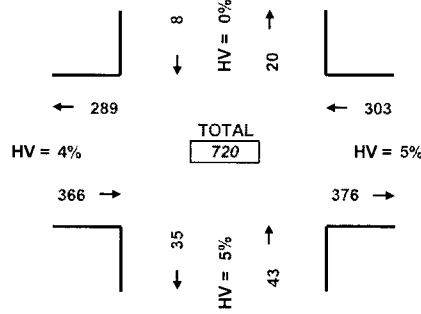


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PEAK HOUR TURNING MOVEMENTS



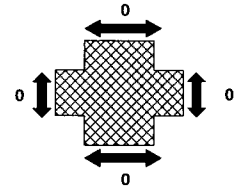
PEAK HOUR LINK VOLUMES



PEAK HOUR: 7:15 AM TO 8:15 AM

PEAK 15 MINUTES: 7:30 AM TO 7:45 AM

PEAK HOUR PED CROSSING VOLUMES



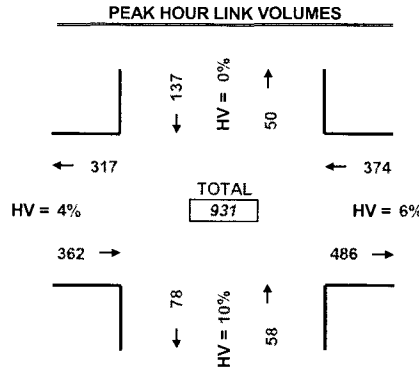
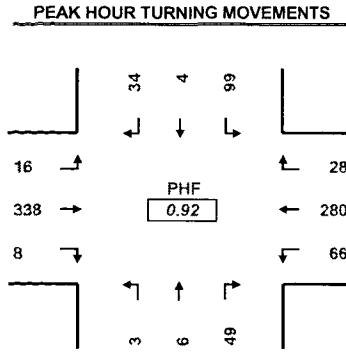
5-MINUTE COUNT PERIOD BEGINNING AT	Albertsons-- (Southbound)			Blankenship-- (Westbound)			Albertsons-- (Northbound)			Blankenship-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
7:00 AM	0	0	0	2	10	0	0	0	3	2	18	0	0	0	0	0	35	0
7:05 AM	0	0	1	1	7	1	2	0	1	3	39	0	0	0	0	0	55	0
7:10 AM	0	0	0	0	14	2	0	0	1	4	33	0	0	0	0	0	54	0
7:15 AM	0	0	0	1	18	0	3	0	2	2	30	0	0	0	0	0	56	0
7:20 AM	0	0	0	2	13	0	1	0	0	0	27	0	0	0	0	0	43	0
7:25 AM	0	0	0	3	14	4	2	0	2	1	38	0	0	0	0	0	64	0
7:30 AM	0	0	1	7	14	2	5	0	3	1	32	0	0	0	0	0	65	0
7:35 AM	0	0	0	0	18	1	0	1	0	2	38	1	0	0	0	0	61	0
7:40 AM	1	0	1	2	24	4	1	0	2	3	32	0	0	0	0	0	70	0
7:45 AM	0	0	0	2	27	1	1	0	6	0	18	0	0	0	0	0	55	0
7:50 AM	1	0	0	1	32	0	3	0	3	1	31	0	0	0	0	0	72	0
7:55 AM	0	0	0	0	27	0	2	0	0	0	24	0	0	0	0	0	53	0
8:00 AM	1	0	1	0	30	1	1	0	0	1	31	0	0	0	0	0	66	0
8:05 AM	0	1	0	0	21	3	2	0	2	2	23	0	0	0	0	0	54	0
8:10 AM	0	0	1	0	28	3	1	0	0	2	26	0	0	0	0	0	61	0
8:15 AM	0	0	0	0	22	1	3	1	1	1	18	0	0	0	0	0	47	0
8:20 AM	0	0	0	0	22	1	2	1	2	0	23	0	0	0	0	0	51	0
8:25 AM	0	1	0	0	20	5	3	0	0	3	22	0	0	0	0	0	54	0
8:30 AM	0	0	1	0	21	2	6	2	2	3	23	0	0	0	0	0	60	0
8:35 AM	1	0	1	1	23	1	1	0	1	2	27	0	0	0	0	0	58	0
8:40 AM	0	0	2	2	21	2	0	0	1	2	22	0	0	0	0	0	52	0
8:45 AM	0	1	0	0	13	1	1	0	0	1	13	2	0	0	0	0	32	0
8:50 AM	0	0	1	5	14	2	3	0	1	4	20	0	0	0	0	0	50	0
8:55 AM	0	0	0	1	15	0	3	0	0	1	12	0	0	0	0	0	32	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
7:00 AM	2	0	3	21	218	15	20	1	23	19	360	1	0	0	0	0	683	0
7:15 AM	3	1	4	18	266	19	22	1	20	15	350	1	0	0	0	0	720	0
7:30 AM	3	2	4	12	285	22	24	3	19	16	318	1	0	0	0	0	709	0
7:45 AM	3	2	6	6	294	20	25	4	18	17	288	0	0	0	0	0	683	0
8:00 AM	2	3	7	9	250	22	26	4	10	22	260	2	0	0	0	0	617	0

INTERSECTION: *Tanner--/Blankenship--*
 PROJECT ID#: 2060016
 QC JOB #: 10142104

START TIME: 7:00 AM
 END TIME: 9:00 AM
 DATE: 2/6/2006



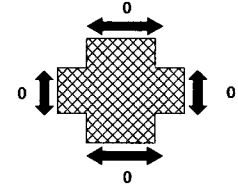
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PEAK HOUR: 7:30 AM TO 8:30 AM

PEAK 15 MINUTES: 7:30 AM TO 7:45 AM

PEAK HOUR PED CROSSING VOLUMES



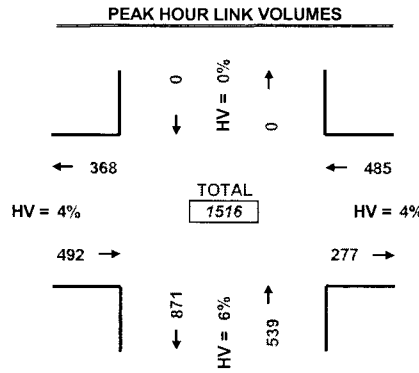
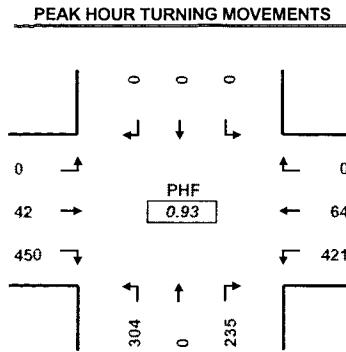
5-MINUTE COUNT PERIOD BEGINNING AT	Tanner-- (Southbound)			Blankenship-- (Westbound)			Tanner-- (Northbound)			Blankenship-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
7:00 AM	1	1	9	1	13	5	3	0	0	1	16	0	0	0	0	0	50	0
7:05 AM	0	0	9	2	8	3	3	0	1	1	36	1	0	0	0	0	64	0
7:10 AM	2	0	6	1	9	2	5	0	0	1	35	1	0	0	0	0	62	0
7:15 AM	5	1	6	1	15	8	4	0	0	1	30	0	0	0	0	0	71	0
7:20 AM	3	1	8	1	12	9	9	0	0	1	26	3	0	0	0	0	73	0
7:25 AM	3	0	6	1	20	3	6	0	0	1	35	0	0	0	0	0	75	0
7:30 AM	2	0	10	0	22	2	1	0	0	1	39	2	0	0	0	0	79	0
7:35 AM	7	0	14	5	16	3	3	0	0	1	37	0	0	0	0	0	86	0
7:40 AM	4	1	10	2	24	7	4	1	0	1	34	0	0	0	0	0	88	0
7:45 AM	2	0	9	2	32	4	1	1	1	0	22	1	0	0	0	0	75	0
7:50 AM	5	0	6	2	22	6	2	0	0	0	32	3	0	0	0	0	78	0
7:55 AM	2	0	9	5	24	4	3	0	0	0	24	3	0	0	0	0	74	0
8:00 AM	1	0	6	1	21	7	6	1	1	2	31	2	0	0	0	0	79	0
8:05 AM	4	0	8	2	15	6	3	0	0	1	21	0	0	0	0	0	60	0
8:10 AM	1	1	7	3	21	5	7	1	0	0	24	2	0	0	0	0	72	0
8:15 AM	1	0	6	0	37	5	5	0	0	0	28	1	0	0	0	0	83	0
8:20 AM	3	1	8	3	19	12	5	1	0	1	24	1	0	0	0	0	78	0
8:25 AM	2	1	6	3	27	5	9	1	1	1	22	1	0	0	0	0	79	0
8:30 AM	2	1	5	5	19	8	6	0	0	1	26	1	0	0	0	0	74	0
8:35 AM	2	0	5	4	27	3	5	1	1	0	27	0	0	0	0	0	75	0
8:40 AM	0	0	7	1	18	11	8	0	0	1	19	2	0	0	0	0	67	0
8:45 AM	3	0	5	2	18	5	8	0	1	0	13	1	0	0	0	0	56	0
8:50 AM	1	0	6	1	19	8	6	0	1	1	15	3	0	0	0	0	61	0
8:55 AM	2	0	5	3	21	11	5	0	0	0	16	0	0	0	0	0	63	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
7:00 AM	36	4	102	23	217	56	44	2	2	9	366	14	0	0	0	0	875	0
7:15 AM	39	4	99	25	244	64	49	4	2	9	355	16	0	0	0	0	910	0
7:30 AM	34	4	99	28	280	66	49	6	3	8	338	16	0	0	0	0	931	0
7:45 AM	25	4	82	31	282	76	60	6	4	7	300	17	0	0	0	0	894	0
8:00 AM	22	4	74	28	262	86	73	5	5	8	266	14	0	0	0	0	847	0

INTERSECTION: 10th St.--/Blankenship Rd.--
 PROJECT ID#: 2060016
 QC JOB #: 10142103

START TIME: 7:00 AM
 END TIME: 9:00 AM
 DATE: 2/2/2006

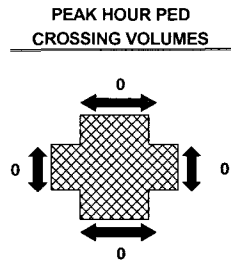


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PEAK HOUR: 7:30 AM TO 8:30 AM

PEAK 15 MINUTES: 7:30 AM TO 7:45 AM



5-MINUTE COUNT PERIOD BEGINNING AT	10th St.-- (Southbound)			Blankenship Rd.-- (Westbound)			10th St.-- (Northbound)			Blankenship Rd.-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
7:00 AM	0	0	0	0	1	31	9	0	15	31	2	0	0	0	0	0	89	0
7:05 AM	0	0	0	0	1	26	15	0	12	47	1	0	0	0	0	0	102	0
7:10 AM	0	0	0	0	2	31	10	0	17	43	5	0	0	0	0	0	108	0
7:15 AM	0	0	0	0	5	36	6	0	17	38	5	0	0	0	0	0	107	0
7:20 AM	0	0	0	0	7	33	11	0	17	39	0	0	0	0	0	0	107	0
7:25 AM	0	0	0	0	12	44	14	0	18	43	5	0	0	0	0	0	136	0
7:30 AM	0	0	0	0	4	46	13	0	17	41	4	0	0	0	0	0	125	0
7:35 AM	0	0	0	0	7	38	14	0	22	54	5	0	0	0	0	0	140	0
7:40 AM	0	0	0	0	7	45	14	0	24	47	5	0	0	0	0	0	142	0
7:45 AM	0	0	0	0	7	49	30	0	28	32	0	0	0	0	0	0	146	0
7:50 AM	0	0	0	0	1	34	24	0	29	36	4	0	0	0	0	0	128	0
7:55 AM	0	0	0	0	5	34	21	0	29	36	3	0	0	0	0	0	128	0
8:00 AM	0	0	0	0	7	32	16	0	21	37	5	0	0	0	0	0	118	0
8:05 AM	0	0	0	0	0	29	14	0	22	28	7	0	0	0	0	0	100	0
8:10 AM	0	0	0	0	3	23	18	0	26	37	1	0	0	0	0	0	108	0
8:15 AM	0	0	0	0	7	35	15	0	37	33	2	0	0	0	0	0	129	0
8:20 AM	0	0	0	0	7	34	29	0	23	33	4	0	0	0	0	0	130	0
8:25 AM	0	0	0	0	9	22	27	0	26	36	2	0	0	0	0	0	122	0
8:30 AM	0	0	0	0	4	28	21	0	27	32	3	0	0	0	1	0	115	1
8:35 AM	0	0	0	0	4	28	27	0	31	32	3	0	0	0	0	0	125	0
8:40 AM	0	0	0	0	1	40	36	0	23	35	3	0	0	0	0	0	138	0
8:45 AM	0	0	0	0	2	37	17	0	23	25	1	0	0	0	0	0	105	0
8:50 AM	0	0	0	0	4	27	27	0	25	27	6	0	0	0	0	0	116	0
8:55 AM	0	0	0	0	6	29	33	0	28	22	3	0	0	0	0	0	121	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
7:00 AM	0	0	0	0	59	447	181	0	245	487	39	0	0	0	0	0	1458	0
7:15 AM	0	0	0	0	65	443	195	0	270	468	44	0	0	0	0	0	1485	0
7:30 AM	0	0	0	0	64	421	235	0	304	450	42	0	0	0	0	0	1516	0
7:45 AM	0	0	0	0	55	388	278	0	322	407	37	0	0	0	1	0	1487	1
8:00 AM	0	0	0	0	54	364	280	0	312	377	40	0	0	0	1	0	1427	1

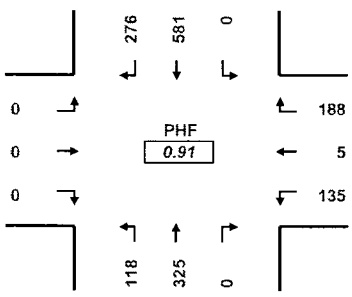
INTERSECTION: 10th St--/I-205 SB Ramps--
 PROJECT ID#: 2060016
 QC JOB #: 10142102

START TIME: 7:00 AM
 END TIME: 9:00 AM
 DATE: 2/2/2006

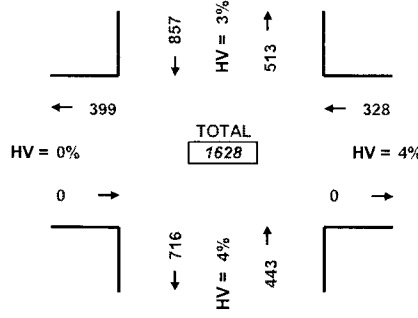


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PEAK HOUR TURNING MOVEMENTS



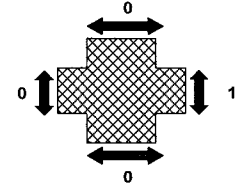
PEAK HOUR LINK VOLUMES



PEAK HOUR: 7:30 AM TO 8:30 AM

PEAK 15 MINUTES: 7:45 AM TO 8:00 AM

PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD BEGINNING AT	10th St-- (Southbound)			I-205 SB Ramps-- (Westbound)			10th St-- (Northbound)			I-205 SB Ramps-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
7:00 AM	24	37	0	4	0	6	0	18	10	0	0	0	0	0	0	0	99	0
7:05 AM	30	43	0	6	0	3	0	22	13	0	0	0	0	0	0	0	117	0
7:10 AM	31	41	0	4	0	6	0	22	16	0	0	0	0	0	0	0	120	0
7:15 AM	27	51	0	5	0	7	0	16	6	0	0	0	0	0	0	0	112	0
7:20 AM	23	49	0	8	0	11	0	27	11	0	0	0	0	0	0	0	129	0
7:25 AM	28	55	0	4	0	7	0	28	6	0	0	0	1	0	0	0	128	1
7:30 AM	25	66	0	12	0	8	0	15	9	0	0	0	0	0	0	0	135	0
7:35 AM	23	60	0	11	0	13	0	23	7	0	0	0	0	0	0	0	137	0
7:40 AM	22	60	0	10	0	8	0	29	7	0	0	10	0	0	0	0	136	0
7:45 AM	33	58	0	13	1	9	0	39	5	0	0	0	0	0	0	0	158	0
7:50 AM	29	46	0	25	3	7	0	28	9	0	0	0	0	1	0	0	147	1
7:55 AM	19	48	0	18	0	12	0	29	18	0	0	0	0	0	0	0	144	0
8:00 AM	15	48	0	18	0	17	0	16	12	0	0	0	0	0	0	0	126	0
8:05 AM	25	29	0	13	0	11	0	25	8	0	0	0	0	0	0	0	111	0
8:10 AM	17	45	0	13	0	3	0	32	8	0	0	0	0	0	0	0	118	0
8:15 AM	25	47	0	18	0	13	0	28	7	0	0	0	0	0	0	0	138	0
8:20 AM	20	45	0	20	1	19	0	31	11	0	0	0	0	0	0	0	147	0
8:25 AM	23	29	0	17	0	15	0	30	17	0	0	0	0	0	0	0	131	0
8:30 AM	12	47	0	24	0	16	0	23	9	0	0	0	0	0	0	0	131	0
8:35 AM	22	44	0	17	5	10	0	35	7	0	0	17	0	0	0	0	140	0
8:40 AM	30	31	1	17	0	3	0	40	9	0	0	0	0	0	0	0	131	0
8:45 AM	23	39	0	13	0	7	1	24	6	0	0	0	0	0	0	0	113	0
8:50 AM	20	33	0	24	0	6	0	26	6	0	0	0	0	0	0	0	115	0
8:55 AM	18	31	0	24	0	14	0	34	7	0	0	0	0	0	0	0	128	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
7:00 AM	314	614	0	120	4	97	0	296	117	0	0	0	1	1	0	0	1562	2
7:15 AM	286	615	0	150	4	113	0	307	106	0	0	0	1	1	0	0	1581	2
7:30 AM	276	581	0	188	5	135	0	325	118	0	0	0	0	1	0	0	1628	1
7:45 AM	270	517	1	213	10	135	0	356	120	0	0	0	0	1	0	0	1622	1
8:00 AM	250	468	1	218	6	134	1	344	107	0	0	0	0	0	0	0	1529	0

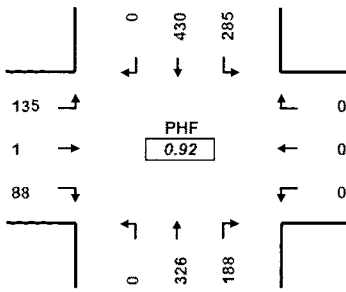
INTERSECTION: 10th St--/I-205 Ramps--
 PROJECT ID#: 2060016
 QC JOB #: 10142101

START TIME: 7:00 AM
 END TIME: 9:00 AM
 DATE: 2/2/2006

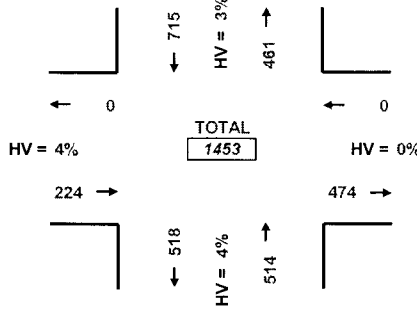


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PEAK HOUR TURNING MOVEMENTS



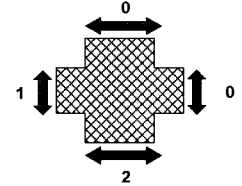
PEAK HOUR LINK VOLUMES



PEAK HOUR: 7:30 AM TO 8:30 AM

PEAK 15 MINUTES: 7:30 AM TO 7:45 AM

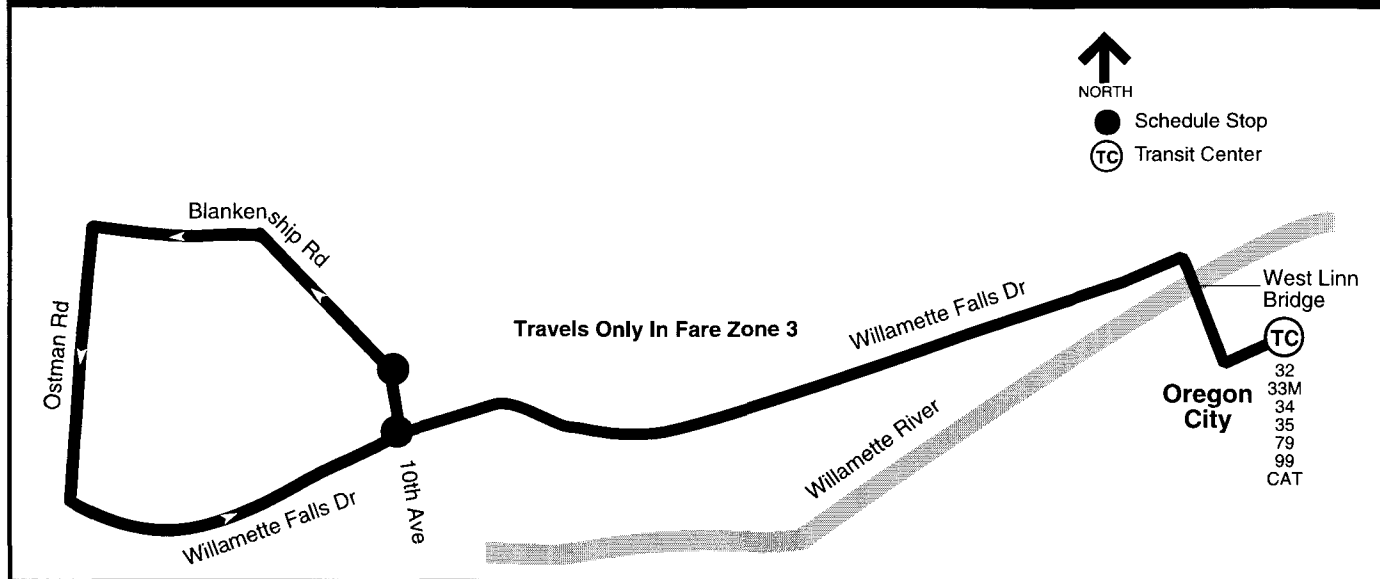
PEAK HOUR PED CROSSING VOLUMES



5-MINUTE COUNT PERIOD BEGINNING AT	10th St-- (Southbound)			I-205 NB Ramp-- (Westbound)			10th St-- (Northbound)			I-205 NB Ramp-- (Eastbound)			Crosswalk Usage (Peds By Approach)				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	North	East	South	West	Veh	Peds
7:00 AM	0	19	22	0	0	0	16	18	0	7	0	10	0	0	0	0	92	0
7:05 AM	0	12	26	0	0	0	16	28	0	6	0	4	0	0	0	0	92	0
7:10 AM	0	15	29	0	0	0	19	22	0	11	0	12	0	0	0	0	108	0
7:15 AM	0	27	29	0	0	0	9	21	0	7	0	7	0	0	0	0	100	0
7:20 AM	0	23	31	0	0	0	16	22	0	7	0	6	0	0	0	0	105	0
7:25 AM	0	30	34	0	0	0	16	13	0	16	0	14	0	0	0	0	123	0
7:30 AM	0	35	38	0	0	0	20	19	0	7	1	7	0	0	0	0	127	0
7:35 AM	0	45	25	0	0	0	16	24	0	5	0	6	0	0	0	0	121	0
7:40 AM	0	53	26	0	0	0	23	27	0	9	0	8	0	0	0	1	146	1
7:45 AM	0	43	12	0	0	0	12	35	0	5	0	9	0	0	2	0	116	2
7:50 AM	0	27	24	0	0	0	23	39	0	4	0	9	0	0	0	0	126	0
7:55 AM	0	30	33	0	0	0	8	37	0	4	0	12	0	0	0	0	124	0
8:00 AM	0	32	29	0	0	0	11	22	0	10	0	6	0	0	0	0	110	0
8:05 AM	0	28	22	0	0	0	16	16	0	10	0	10	0	0	0	0	102	0
8:10 AM	0	35	17	0	0	0	11	23	0	9	0	17	0	0	0	0	112	0
8:15 AM	0	34	19	0	0	0	22	17	0	6	0	14	0	0	0	0	112	0
8:20 AM	0	31	31	0	0	0	16	39	0	10	0	19	0	0	0	0	146	0
8:25 AM	0	37	9	0	0	0	10	28	0	9	0	18	0	0	0	0	111	0
8:30 AM	0	40	27	0	0	0	13	22	0	5	0	7	0	0	0	0	114	0
8:35 AM	0	30	33	0	0	0	8	22	0	9	0	15	0	0	0	0	117	0
8:40 AM	0	24	22	0	0	0	19	32	0	11	0	13	0	0	0	0	121	0
8:45 AM	0	23	15	0	0	0	19	23	0	9	0	13	0	0	0	0	102	0
8:50 AM	0	21	18	0	0	0	12	19	0	8	0	10	0	0	0	0	88	0
8:55 AM	0	28	19	0	0	0	15	28	0	7	0	9	0	0	0	0	106	0
HOURLY TOTALS	Southbound			Westbound			Northbound			Eastbound			Pedestrians By Approach				TOTAL	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	West	East	North	South	Veh	Peds
7:00 PM	0	359	329	0	0	0	194	305	0	88	1	104	0	0	2	1	1380	3
7:15 PM	0	408	320	0	0	0	181	298	0	93	1	111	0	0	2	1	1412	3
7:30 PM	0	430	285	0	0	0	188	326	0	88	1	135	0	0	2	1	1453	3
7:45 PM	0	391	278	0	0	0	169	332	0	92	0	149	0	0	2	0	1411	2
8:00 PM	0	363	261	0	0	0	172	291	0	103	0	151	0	0	0	0	1341	0

APPENDIX C
Transit Routes

154-Willamette



APPENDIX D
Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE

I-205 Southbound ramp at 10th Street in West Linn
 2001 - 2005 2005 data could change as quality control is finished

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2005														
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
2005 TOTAL	0	0	1	1	0	0	0	0	1	1	0	1	0	0
YEAR: 2003														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2003 TOTAL	0	0	2	2	0	0	0	2	0	2	0	2	0	0
YEAR: 2002														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	1	0	1	0	1
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2002 TOTAL	0	0	3	3	0	0	0	2	1	3	0	3	0	1
FINAL TOTAL	0	0	6	6	0	0	0	4	2	6	0	6	0	1

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

$$\begin{aligned}
 \text{CRASH RATE} &= \frac{6(1 \times 10^6)}{(17,540 \text{ ADT}) (5 \text{ yrs} \times 365 \frac{\text{days}}{\text{yr}})} \\
 &= 0.19 \text{ crashes per MEV}
 \end{aligned}$$

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CONTINUOUS SYSTEM CRASH LISTING

064 EAST PORTLAND FREEWAY

I-205 Southbound ramp at 10th Street in West Linn
 2001 - 2005 2005 data could change as quality control is finished

SER#	INVEST	S P E L D C S L K	D R S W U C O D A T E D A Y T I M E	COUNTY CITY URBAN AREA	CLASS COMPNT MLG TYP MILEPNT	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCNT	INT-TYP				SPCL USE			MOVE FROM TO	A G E X	S L I C N S R E S	P E D L O C	E R R O R	ACTN	EVENT	CAUSE										
								(MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	TRLR QTY OWNER VEH TYPE	P#									INJ TYPE SVRTY									
04879	N N N N N		09/13/2003	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 6.57	2 10TH ST WB EXTO 10TH	INTER S 06	CROSS N 0	N TRF	N SIGNAL	N CLR	S-1STOP DRY PDO	01 NONE PSNGR	0 0 CAR	STRGHT S N	01	NONE		15	M	OR-Y OR<25	016	094	27	000	000	094	27				
													02	NONE PRVTE PSNGR	0 S N	STOP		01	DRVR	NONE				28	M	OR-Y OR<25	000	000	000	00	00	
04410	N N N N N		08/07/2002	CLACKAMAS WEST LINN PORTLAND UA	16 6 0 6.57	2 10TH ST WB ENFR 10TH	INTER CN 01	CROSS N 0	N TRF	N SIGNAL	N CLR	O-1TURN DRY PDO	01 NONE PSNGR	0 0 CAR	TURN-L S SW	01	NONE	00	U	UNK UNK		004				000	000		02	02		
													02	NONE PRVTE PSNGR	0 N S	STRGHT		01	DRVR	NONE				26	F	OR-Y OR<25	000	000		000	00	
00227	N N N N N		01/15/2003	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 6.57	2 10TH ST WB EXTO 10TH	INTER CN 01	CROSS N 0	N TRF	N SIGNAL	N CLR	ANGL-OTH DRY PDO	01 NONE PSNGR	0 0 CAR	STRGHT N S	01	NONE	27	M	OR-Y OR<25	000	000				000	000		04	00		
													02	NONE PRVTE PSNGR	0 SE S	TURN-L		01	DRVR	NONE				44	F	OTH-Y OR<25	020	000	000	00	04	
06682	N N N N N		11/17/2002	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 7.01	4 10TH ST WB EXTO 10TH	INTER NE 06	CROSS N 0	N UNKNOWN		N CLD	S-1STOP WET PDO	01 NONE PSNGR	0 0 CAR	STRGHT NE SW	01	NONE	33	F	OR-Y OR<25	014						000	000		07	07	
													02	NONE PRVTE PSNGR	0 NE SW	STOP		01	DRVR	NONE				39	F	N-VAL OR<25	000	011		000	00	
00428	N N N		01/28/2005	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 7.01	4 10TH ST WB EXTO 10TH	INTER NE 06	CROSS N 0	N TRF	N SIGNAL	N RAIN	S-1STOP WET PDO	01 NONE PSNGR	0 0 CAR	STRGHT NE SW	01	NONE	22	M	OR-Y OR>25	026						000	000		07	00	
													02	NONE PRVTE PSNGR	0 NE SW	STOP		01	DRVR	NONE				40	F	OR-Y OR<25	000	000		011	00	
05280	N N N N N		09/17/2002	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 7.01	4 10TH ST WB EXTO 10TH	INTER SE 05	CROSS N 0	N TRF	N SIGNAL	Y CLR	FIX OBJ DRY PDO	01 NONE PSNGR	0 0 CAR	STRGHT SE NW	01	NONE	39	F	OR-Y OR<25	017						000	000	053	053	11	11

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE

I-205 Northbound ramp at 10th Street in West Linn
 2001 - 2005 2005 data could change as quality control is finished

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2005														
TURNING MOVEMENTS	0	0	2	2	0	0	0	1	1	1	1	2	0	0
2005 TOTAL	0	0	2	2	0	0	0	1	1	1	1	2	0	0
YEAR: 2004														
REAR-END	0	1	0	1	0	1	0	1	0	0	1	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	0	1	1	0	0
2004 TOTAL	0	1	1	2	0	1	0	2	0	0	2	2	0	0
YEAR: 2003														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2003 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2002														
REAR-END	0	0	2	2	0	0	0	2	0	1	1	2	0	0
2002 TOTAL	0	0	2	2	0	0	0	2	0	1	1	2	0	0
YEAR: 2001														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2001 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	1	7	8	0	1	0	7	1	4	4	8	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

$$\text{CRASH RATE} = \frac{8(1 \times 10^6)}{15,510 \text{ ADT} (5 \text{ yr} \times 365 \frac{\text{days}}{\text{yr}})}$$

$$= 0.28 \text{ crashes per MEV}$$

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CONTINUOUS SYSTEM CRASH LISTING

064 EAST PORTLAND FREEWAY

I-205 Northbound ramp at 10th Street in West Linn
 2001 - 2005 2005 data could change as quality control is finished

SER#	INVEST	S D P R S W E A U C O E L G H R D C S L K	DATE	COUNTY CITY URBAN AREA	CLASS COMPNT MLG TYP MILEPNT	CONN # FIRST STREET SECOND STREET	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVMY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	A S G E E X RES	LICNS OR-Y OR<25	PED LOC	ERROR	ACTN EVENT	CAUSE
00087	NONE	NNNNN	01/06/2001	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 6.43	1 10TH ST EB EXTO 10TH ST	INTER NW 06	CROSS 0	N TRF SIGNAL	N N	CLR DRY DAY	S-1STOP REAR PDO	01 NONE 0 PRVTE 0 PSNGR CAR	0 STRGHT NW SE	01	DRVR	NONE	16 M OR-Y OR<25		026	000	10	10
													02 NONE 0 PRVTE 0 PSNGR CAR	0 STOP NW SE	01	DRVR	NONE	23 F OR-Y OR<25		000	011		
05997	NONE	NNNNN	10/23/2002	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 6.43	1 10TH ST EB EXTO 10TH ST	INTER NW 06	CROSS 0	N STOP SIGN	N N	CLR DRY DAY	S-1STOP REAR PDO	01 NONE 0 PRVTE 0 PSNGR CAR	0 STRGHT NW SE	01	DRVR	NONE	61 F OR-Y OR<25		026	000	10	10
													02 NONE 0 PRVTE 0 PSNGR CAR	0 STOP NW SE	01	DRVR	NONE	47 M OR-Y OR<25		000	012		
06045	NONE	NNNNN	10/24/2002	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 6.43	1 10TH ST EB EXTO 10TH ST	INTER NW 06	CROSS 0	N STOP SIGN	N N	CLR DRY DLIT	S-1STOP REAR PDO	01 NONE 0 PRVTE 0 PSNGR CAR	0 STRGHT NW SE	01	DRVR	NONE	59 M OR-Y OR<25		014	000	07	07
													02 NONE 0 PRVTE 0 PSNGR CAR	0 STOP NW SE	01	DRVR	NONE	42 M OR-Y OR<25		000	012		
05819	NONE	NNN	10/27/2003	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 6.43	1 10TH ST EB EXTO 10TH	INTER NW 06	CROSS 0	N TRF SIGNAL	N N	CLR DRY DAY	S-1STOP REAR PDO	01 NONE 0 PRVTE 0 PSNGR CAR	0 STRGHT NW SE	01	DRVR	NONE	38 M OR-Y OR<25		014	000	27	00
													02 NONE 0 PRVTE 0 PSNGR CAR	0 STOP NW SE	01	DRVR	NONE	44 F OR-Y OR<25		000	011	00	00
02088	STATE	NNNNN	05/21/2005	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 6.43	1 10TH ST EB EXTO 10TH	INTER CN 04	CROSS 0	N STOP SIGN	N N	RAIN WET DARK	ANGL-OTH TURN PDO	01 NONE 0 PRVTE 0 PSNGR CAR	0 TURN-L NW N	01	DRVR	NONE	48 F OTH-Y OR<25		028	000	02	00
													02 NONE 0 PRVTE 0 PSNGR CAR	0 STRGHT S N	01	DRVR	NONE	32 F OR-Y OR<25		000	000	00	00
00982	CITY	NYNNN	03/19/2004	CLACKAMAS WEST LINN PORTLAND UA	19 6 0 6.46	1 10TH ST EB EXTO 10TH	INTER SE 06	CROSS 0	N STOP SIGN	N N	CLD DRY DARK	S-1STOP REAR INJ	01 NONE 0 PRVTE 0 PSNGR CAR	0 STRGHT NW SE	01	DRVR	NONE	42 M OR-Y OR<25		047	000	013	01

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE

10th Street at Blankenship Road/Salamo Road in West Linn
 2001 - 2005 2005 data could change as quality control is finished

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2005														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	0	1	1	0	1
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2005 TOTAL	0	1	1	2	0	1	0	2	0	1	1	2	0	1
YEAR: 2001														
REAR-END	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
2001 TOTAL	0	0	2	2	0	0	0	0	2	1	1	2	0	0
FINAL TOTAL	0	1	3	4	0	1	0	2	2	2	2	4	0	1

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

$$\begin{aligned}
 \text{CRASH RATE} &= \frac{4(1 \times 10^6)}{17,300 \left(5 \text{ yrs} \times 365 \frac{\text{days}}{\text{yr}} \right)} \\
 &= 0.13 \text{ crashes per MEV}
 \end{aligned}$$

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Blankenship Road at Tannler Drive in West Linn
 2001 - 2005 2005 data could change as quality control is finished

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2005														
ANGLE	0	1	1	2	0	1	0	2	0	2	0	2	0	0
2005 TOTAL	0	1	1	2	0	1	0	2	0	2	0	2	0	0
YEAR: 2003														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2003 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2002														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2002 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2001														
ANGLE	0	1	0	1	0	3	0	0	1	1	0	1	0	0
2001 TOTAL	0	1	0	1	0	3	0	0	1	1	0	1	0	0
FINAL TOTAL	0	2	3	5	0	4	0	4	1	5	0	5	0	0

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

$$\begin{aligned}
 \text{CRASH RATE} &= \frac{5(1 \times 10^6)}{11,990 \text{ ADT} \left(5 \text{ yrs} \times 365 \frac{\text{days}}{\text{yr}} \right)} \\
 &= 0.23 \text{ crashes per MEV}
 \end{aligned}$$

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 URBAN NON-SYSTEM CRASH LISTING

CITY OF WEST LINN, CLACKAMAS COUNTY

Blankenship Road at Tannler Drive in West Linn

2001 - 2005 2005 data could change as quality control is finished

SER#	INVEST	S P E A L D R U C G H S R W O C H R	DATE	CLASS	CITY STREET	RD CHAR	INT-TYP	INT-REL	OFF-RD	WTHR	CRASH TYP	SPCL USE	MOVE	PRTC	INJ	A S	PED	ACTN	EVENT	CAUSE	
		D C S L K	DAY	DIST	FIRST STREET	DIRECT	(MEDIAN)	TRAF-	RDNBT	SURF	COLL TYP	TRLR QTY	FROM	TYPE	SVRTY	G E	LOC				
			TIME	FROM	SECOND STREET	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	VEH TYPE	TO		X RES	ERROR				
07505	CITY	N N N N N	12/11/2001 Tue 1P	17 0	BLANKENSHIP RD TANNLER DR	INTER CN 02	3-LEG	N STOP SIGN	N	RAIN WET Y	ANGL-OTH ANGL INJ	01 NONE PRVTE PSNGR CAR	0 SE NW	01	DRVR	INJC	44	F	OR-Y OR<25	000	02
												02 NONE PRVTE PSNGR CAR	0 SW NE	01	DRVR	INJB	56	F	OR-Y OR<25	028	018 02
														02	PSNG	INJA	36	F			
01899	CITY	N N N	05/13/2005 Fri 4P	16 0	BLANKENSHIP RD TANNLER DR	INTER CN 02		N STOP SIGN	N	CLD DRY N	ANGL-OTH ANGL INJ	01 NONE PRVTE PSNGR CAR	0 SE NW	01	DRVR	NONE	18	F	OR-Y OR<25	021,028	000 00 02,04
												02 NONE PRVTE PSNGR CAR	0 NE SW	01	DRVR	INJC	23	F	OR-Y OR<25	000	022 000 00
												03 NONE PRVTE PSNGR CAR	0 NW SE	01	DRVR	NONE	34	M	OR-Y OR<25	000	011 000 00
02108	CITY	N N N	05/26/2005 Thu 11A	16 0	BLANKENSHIP RD TANNLER DR	INTER CN 02		N STOP SIGN	N	CLR DRY N	ANGL-OTH ANGL PDO	01 NONE PRVTE PSNGR CAR	0 NE SW	01	DRVR	NONE	56	F	OR-Y OR<25	000	02 00 02
												02 NONE PRVTE PSNGR CAR	0 SE NW	01	DRVR	NONE	00	F	OR-Y OR<25	000	000 00 00
03498	CITY	N N N N N	07/09/2003 Wed 8P	17 0	BLANKENSHIP RD TANNLER DR	INTER CN 03	3-LEG	N UNKNOWN	N	CLR DRY Y	O-1TURN TURN PDO	01 NONE PRVTE PSNGR CAR	0 SE SW	01	DRVR	NONE	47	F	OR-Y OR<25	004	08,02 00 026 08,02
												02 NONE PRVTE PSNGR CAR	0 NW SE	01	DRVR	NONE	31	F	OR-Y OR<25	000	000 00 00
01892	NONE	N N N N N	04/02/2002 Tue 5P	17 0	BLANKENSHIP RD TANNLER DR	INTER CN 04	3-LEG	N STOP SIGN	N	CLR DRY N	S-1TURN TURN PDO	01 NONE PRVTE PSNGR CAR	0 SW NE	01	DRVR	NONE	16	M	OR-Y OR<25	044	092 007 092 26,10
												02 NONE PRVTE PSNGR CAR	0 SW SE	01	DRVR	NONE	17	M	OR-Y OR<25	000	000

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Blankenship Road at 13th Street in West Linn
2001 - 2005 2005 data could change as quality control is finished

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
----------------	------------------	--------------------------	----------------------------	------------------	------------------	-------------------	--------	-------------	-------------	-----	------	-------------------	------------------------------	--------------

YEAR:

TOTAL

FINAL TOTAL

Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CRASH RATE = 0.00 crashes per MEV

APPENDIX E
**Background
Growth**



OPERATIONAL ANALYSIS

Background Traffic

Prior to assigning the site trips and diverted-linked trips to the study intersections, the existing volumes were increased in order to account for anticipated growth in the study area. Based on historical traffic volumes in the site vicinity and on the 10th Street corridor, a three percent growth rate was applied to the year 2006 traffic volume data. It is expected that this site could be developed and occupied by 2007, so the growth rate was applied over a period of one year to generate year 2007 background traffic volumes.

In addition to the growth rate, in-process trips from approved development were added to the existing traffic volumes to accommodate for the expected site trips associated with the Blackhawk Office Building. The in-process trips for all analysis periods are illustrated in figures included in the technical appendix.

The anticipated year 2007 background traffic volumes are shown in Figures 12, 13 and 14 on pages 22, 23 and 24. The sum of the background traffic volumes and all site-generated traffic from the proposed development is shown in Figures 15, 16 and 17 on pages 25, 26 and 27.



APPENDIX F
In-Process Traffic



Roy Kim
January 25, 2006
Page 2 of 9

Existing Conditions

Blankenship Road is a three-lane minor arterial with a center two-way left-turn lane on the west side of Tannler Drive and left turn lanes on the east side of Tannler Drive. The posted speed is 25 mph. Bike lanes are in place on both sides of the street west of Tannler. The south side of Blankenship Road also has existing sidewalk.

Tannler Drive is a two-lane minor arterial with a posted speed of 25 mph. It has existing curb and gutter, and striped on-street parking on both sides.

Salamo Road is a two-lane minor arterial with a posted speed of 40 mph. It currently does not have curbs, gutters or on-street parking.

Tenth Street is a three-lane minor arterial with no posted speed. It has curb, gutter and sidewalk in place on the west side, and a paved shoulder on the east side. A bike lane is in place on the west side of 10th Street.

Manual turning movement count data was collected from April of 2004 through January of 2006 from 4:00 to 6:00 PM. Count data more than one year old was updated by applying a growth factor of 3 percent per year and balancing the resulting traffic volumes to match with the newer count data. The peak hour was approximately 4:55 to 5:55 PM weekdays. The existing traffic volumes at the study area intersections are included in Figure 2 the appendix. Detailed count data for each existing intersection is also included in the appendix.

Trip Generation

To estimate the number of trips that could be generated by future development in the area, trip rates from the manual *TRIP GENERATION*, Seventh Edition, published by the Institute of Transportation Engineers (ITE), were used.

For year 2015 traffic conditions, nearby undeveloped properties were examined to determine the level of development possible under the current zoning. The anticipated future traffic volumes included trips from the following anticipated developments:

- 206,000 square feet of office space on the "Tannler West" parcel located west of Tannler Drive and north of Blankenship Road,



Roy Kim
January 25, 2006
Page 3 of 9

- 50 single family dwellings on property located west of Salamo Road and north of Greene Street,
- 50 single family dwellings on property located at the end of Wisteria Road,
- 27 single family dwellings on property located at the end of Tamarisk Drive, and
- 18 single-family dwellings on property located at the north end of Tannler Drive.

Trip generation calculations for each of these developments are included in the appendix to this report.

Trip Distribution

For the anticipated office development on the "Tannler West" parcel, trips were assigned to the street system using the "Office Uses" trip distribution percentages shown in Figure 3 of the appendix. This distribution was also used for the office portion of the Tannler East development.

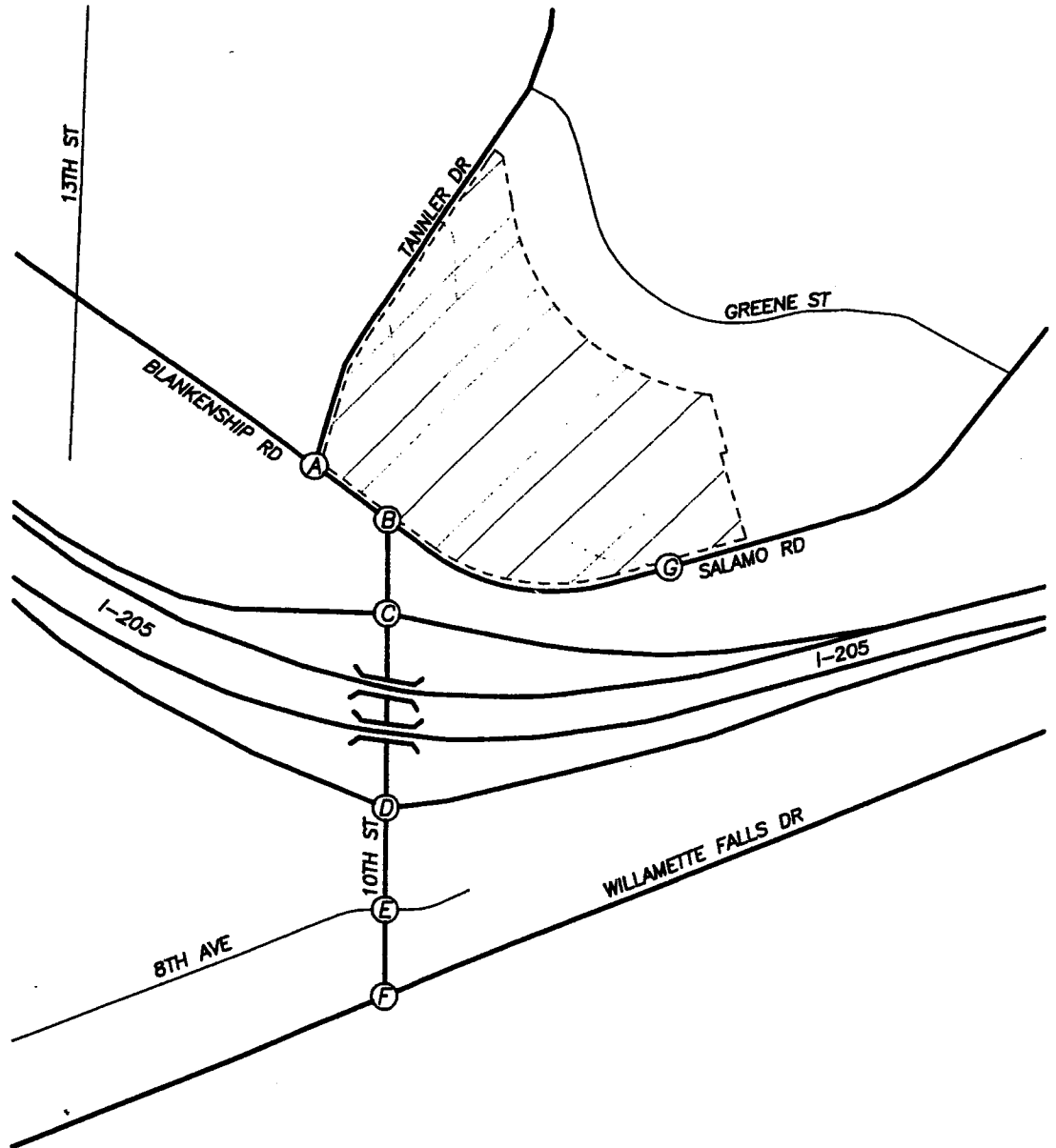
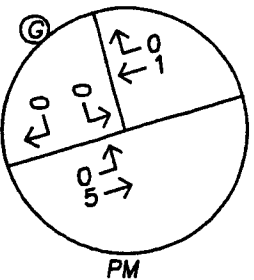
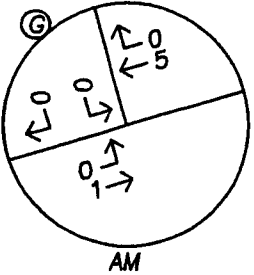
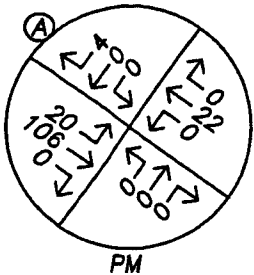
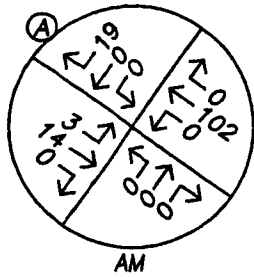
Since the surrounding community is primarily residential in character, trips generated by the four residential developments were assigned to the street system based primarily on the existing intersection turning movement volumes.

The trips assignment for the previously approved Blackhawk Building and the proposed Tannler East Development, turning movement volumes were taken from the traffic impact studies prepared for these projects. Site trips and diverted-linked trips from the Tannler East Development are illustrated in Figures 4 and 5 in the appendix.

The anticipated in-process trips from all other known and potential developments in this area are illustrated in Figure 6 in the appendix to this letter.

These developments account for the majority of the potential traffic growth in the site vicinity. An additional background growth rate of one percent per year was added to the existing traffic volumes, however, in order to account for additional trips generated by facilities outside the immediate area of the site.

The projected total year 2015 traffic volumes including site trips from all potential development are shown in Figure 7 in the appendix. These volumes also account for the anticipated realignment of Tannler Drive.



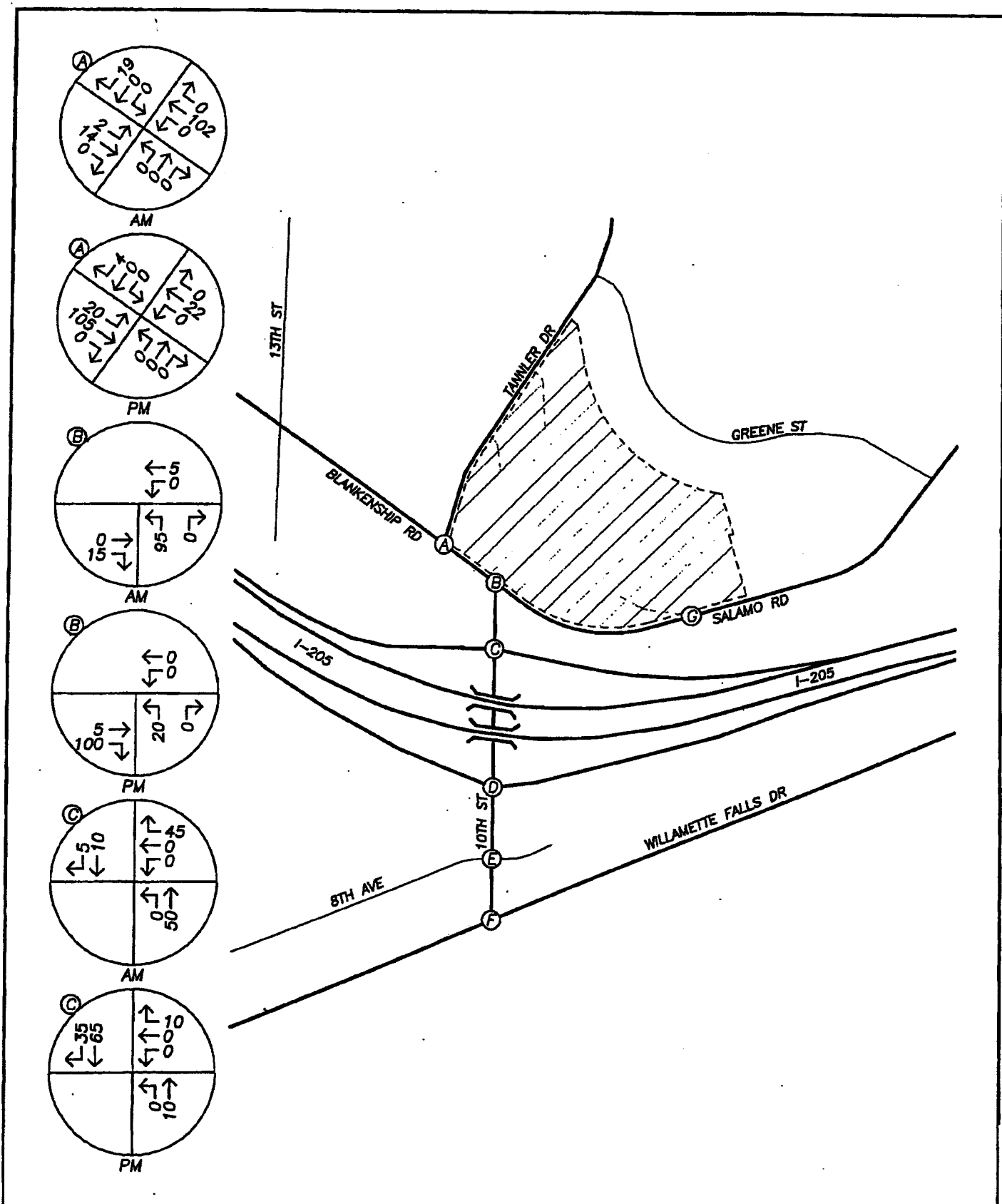
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IN PROCESS DEVELOPMENT TRIPS
Approved Development through 2006
Weekday AM and PM Peak Hours



FIGURE
11

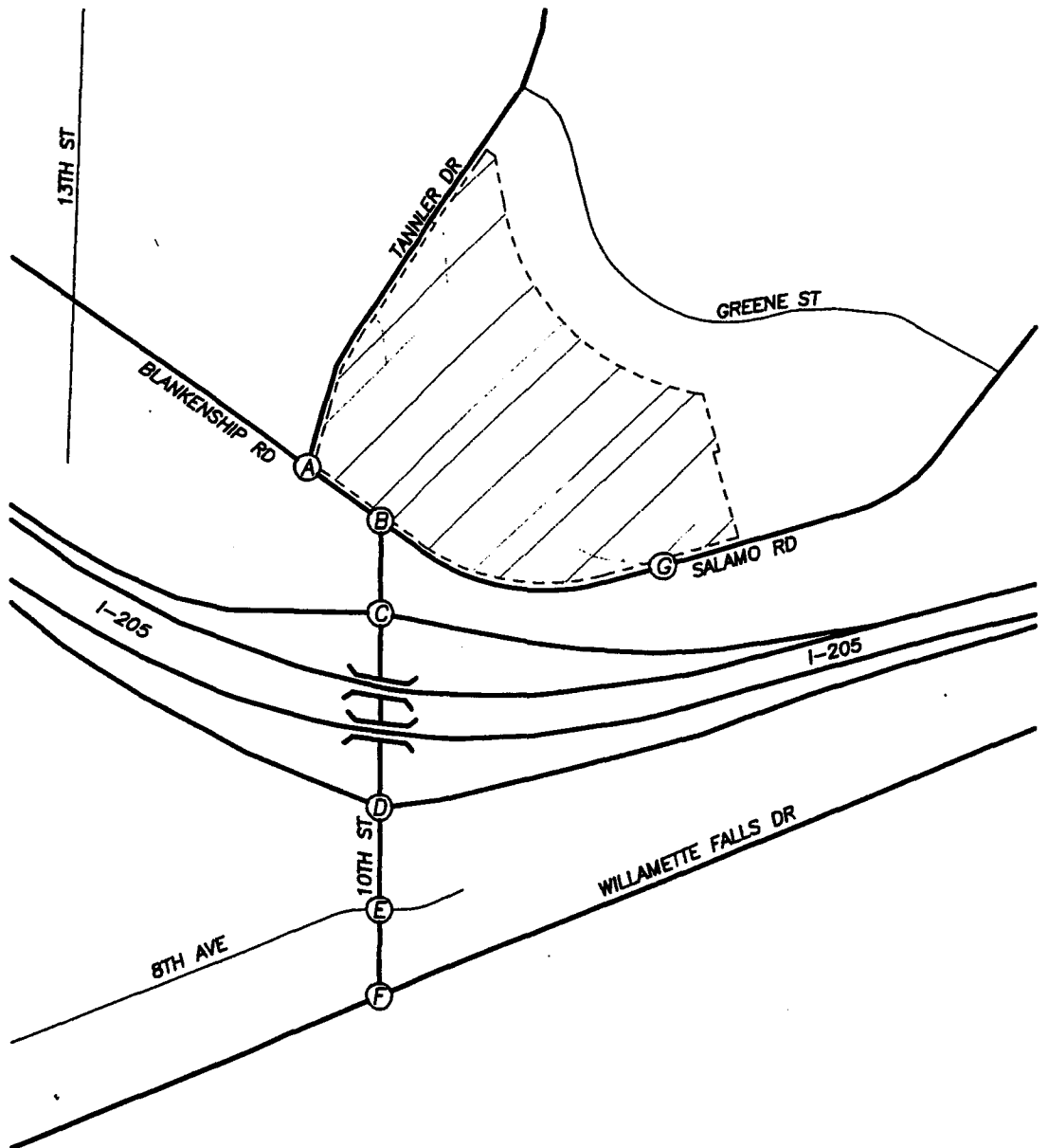
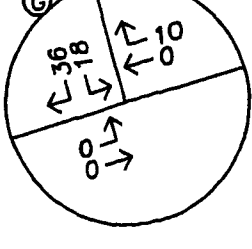
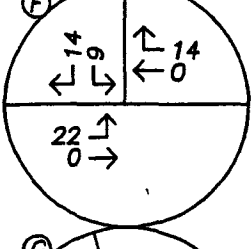
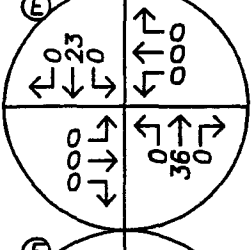
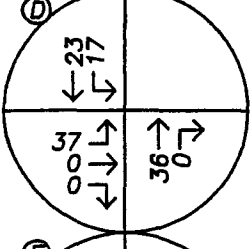
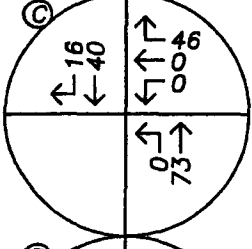
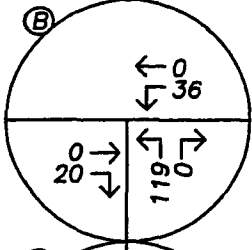
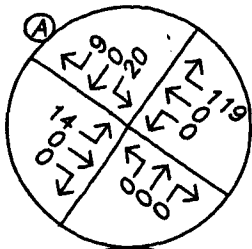
PAGE
20



IN PROCESS DEVELOPMENT TRIPS
 Approved Development through 2006
 Weekday AM and PM Peak Hours

no scale

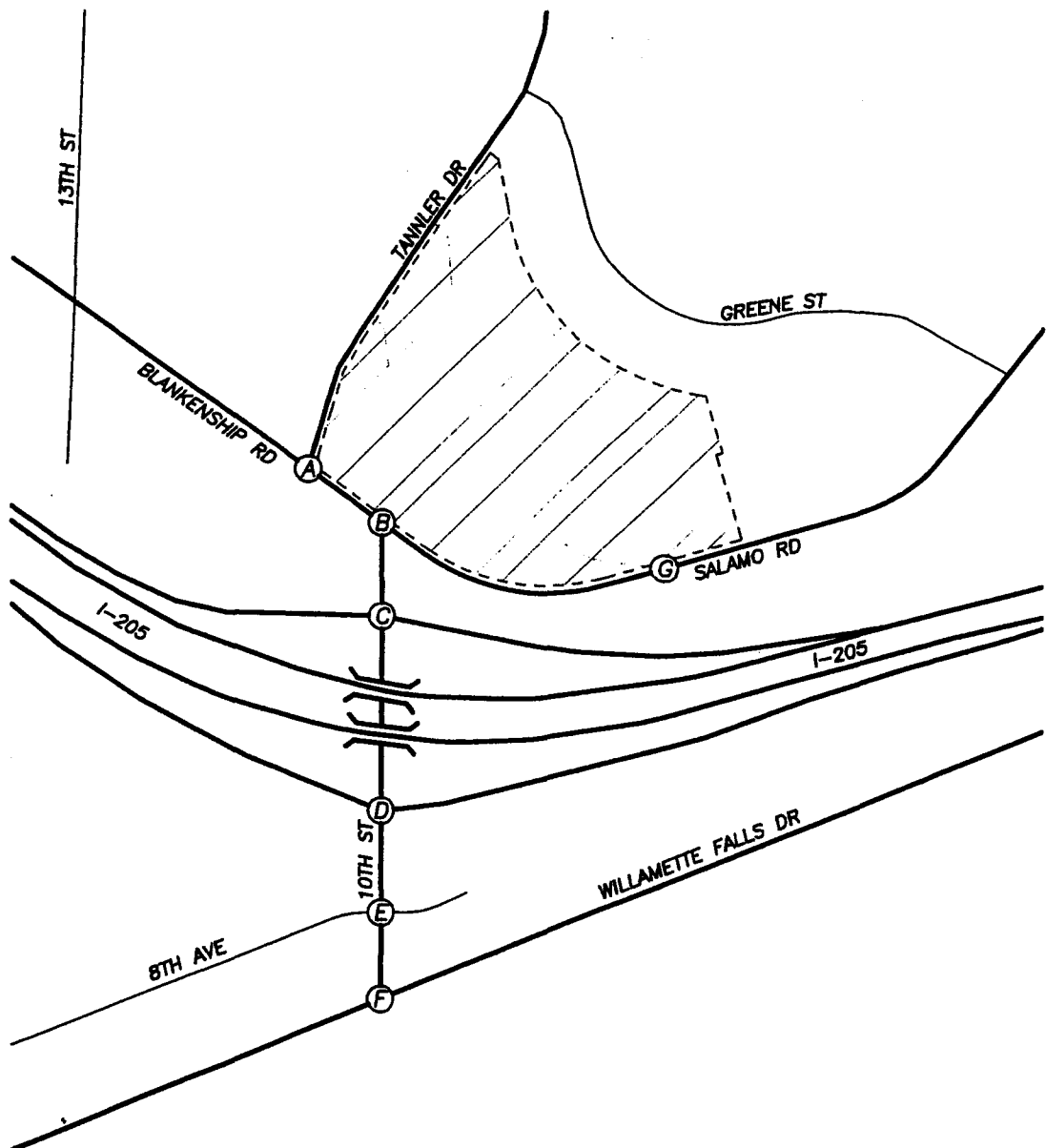
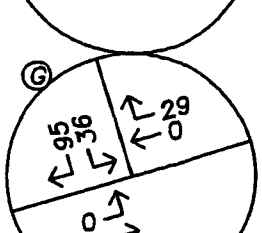
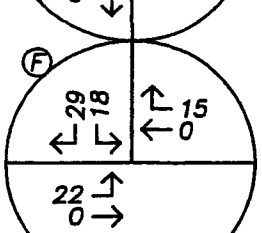
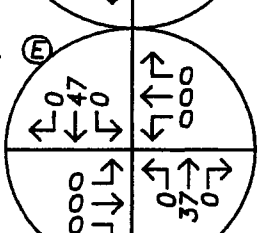
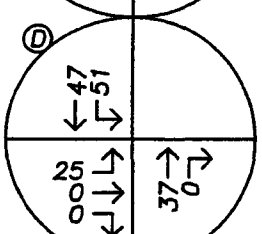
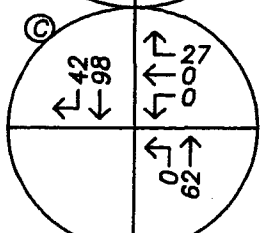
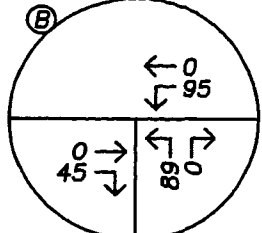
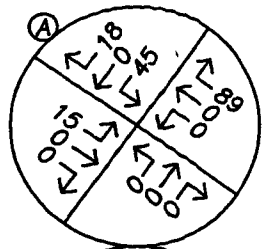
FIGURE 2
 APPENDIX



26

SITE-GENERATED TRAFFIC (Tanner East In-Process)
 Proposed Development Plan
 Weekday AM Peak Hour





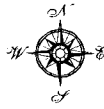
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SITE-GENERATED TRAFFIC (Tannler East In-Process)
 Proposed Development Plan
 Weekday PM Peak Hour

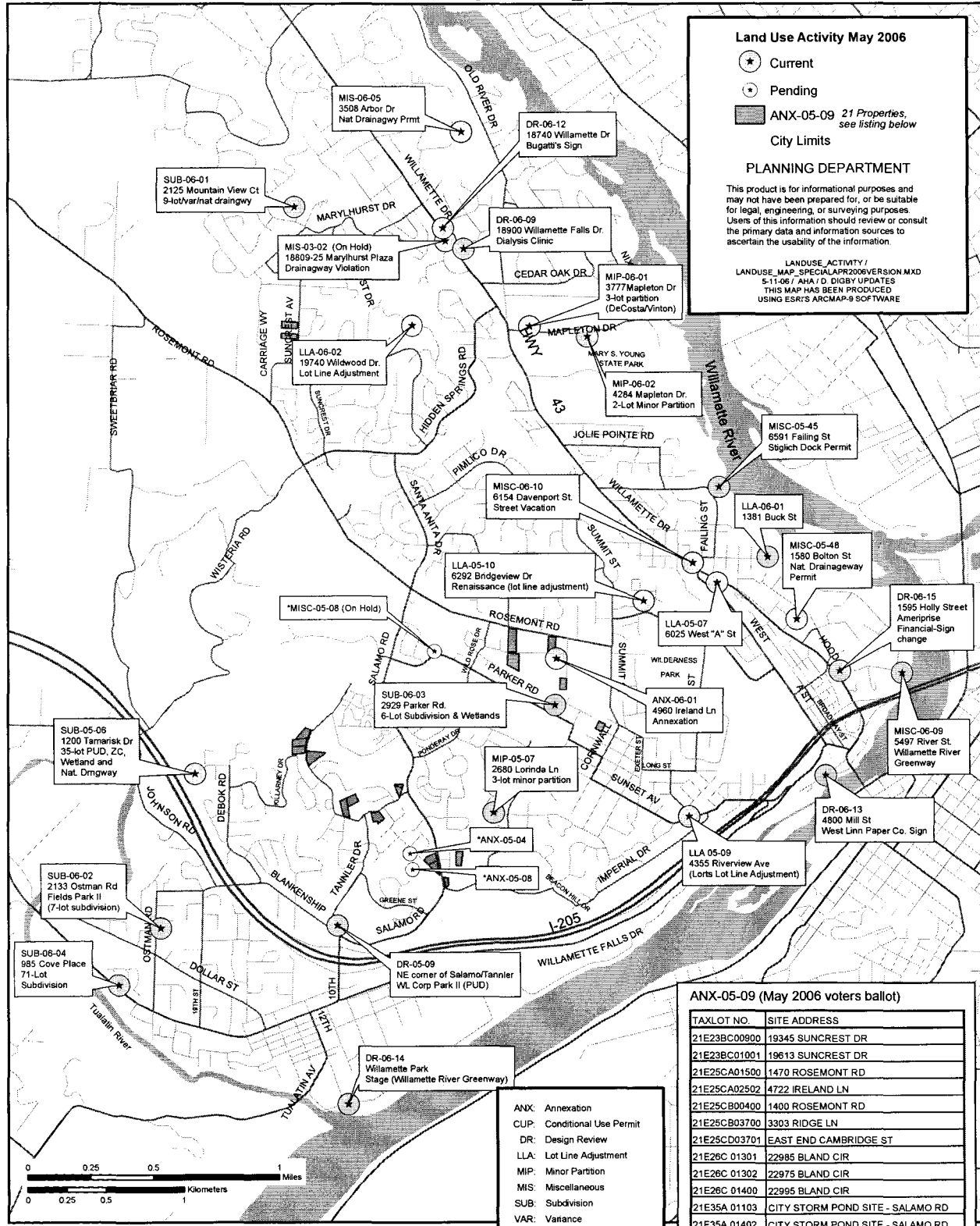


FIGURE 7

PAGE 15



City of West Linn Land Use Activity Map May 2006



Land Use Activity May 2006

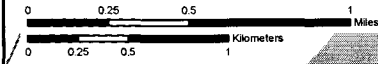
- ★ Current
- Pending
- ANX-05-09 21 Properties, see listing below

City Limits

PLANNING DEPARTMENT

This product is for informational purposes and may not have been prepared for, or be suitable for, legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

LANDUSE ACTIVITY 1
LANDUSE_MAP_SPECIALAPR2006VERSION.MXD
5-11-06 / AHA / D. DIGBY UPDATES
THIS MAP HAS BEEN PRODUCED
USING ESRI'S ARCMAP-9 SOFTWARE



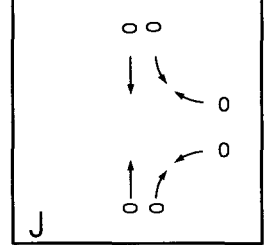
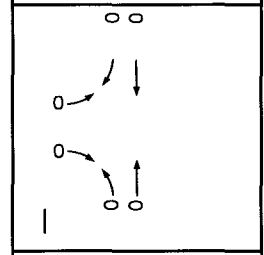
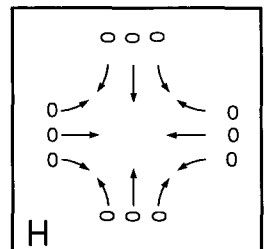
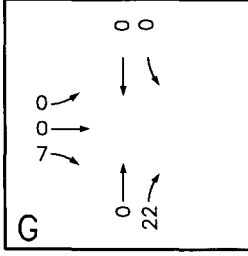
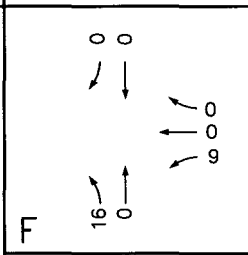
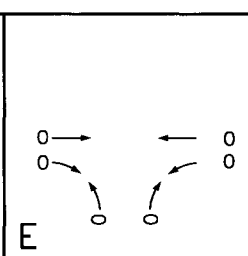
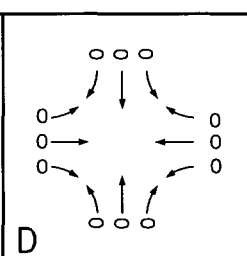
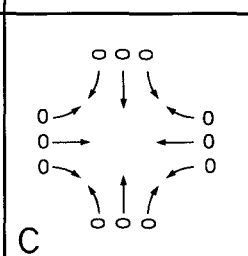
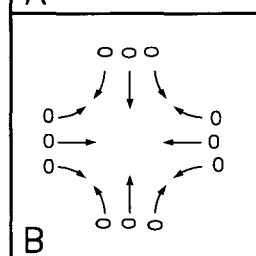
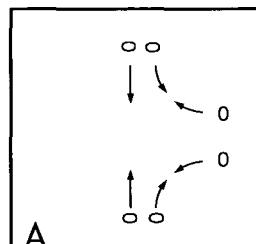
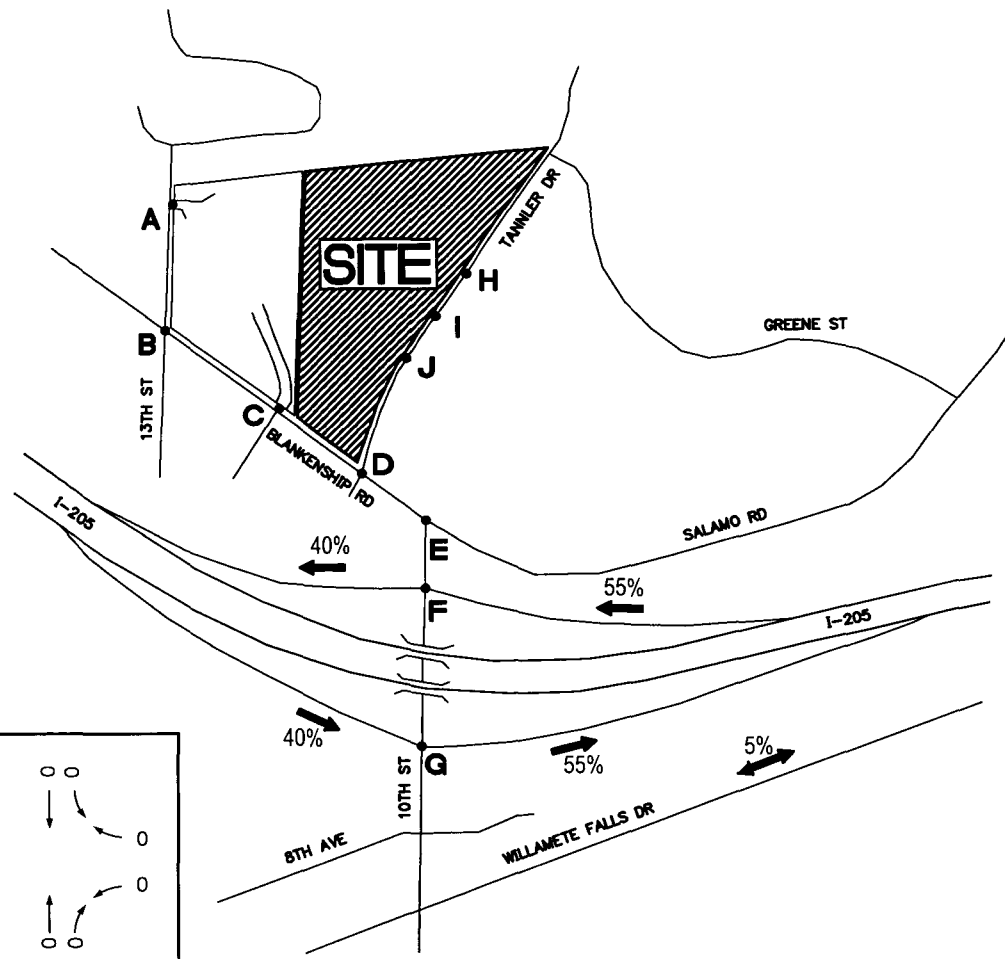
- ANX: Annexation
- CUP: Conditional Use Permit
- DR: Design Review
- LLA: Lot Line Adjustment
- MIP: Minor Partition
- MIS: Miscellaneous
- SUB: Subdivision
- VAR: Variance

***Pending Land Use Applications/Projects**

PROJECT / FILE NO.	DESCRIPTION	PROJECT NAME	STATUS
*ANX-05-04	3000 Haskins Rd	Jajou annexation	May 2006 voters ballot
*ANX-05-08	3130 Haskins Rd	ICON annexation	May 2006 voters ballot
*MIS-05-08 (On Hold)	3151 Parker Rd	city/sch dist/lacrosse	boundary adjustment

ANX-05-09 (May 2006 voters ballot)

TAXLOT NO.	SITE ADDRESS
21E23BC00900	19345 SUNCREST DR
21E23BC01001	19613 SUNCREST DR
21E25CA01500	1470 ROSEMONT RD
21E25CA02502	4722 IRELAND LN
21E25CB00400	1400 ROSEMONT RD
21E25CB03700	3303 RIDGE LN
21E25CD03701	EAST END CAMBRIDGE ST
21E26C 01301	22985 BLAND CIR
21E26C 01302	22975 BLAND CIR
21E26C 01400	22995 BLAND CIR
21E35A 01103	CITY STORM POND SITE - SALAMO RD
21E35A 01402	CITY STORM POND SITE - SALAMO RD
21E35A 02600	3401 HASKINS LN
21E35AC00500	3185 HASKINS RD
21E35AC00600	3165 HASKINS RD
21E35AC11500	23162 BLAND CIR
21E35B 00400	23010 BLAND CIR
21E35B 00502	23112 BLAND CIR
21E35B 00504	RESERVOIR SIITE - BLAND CIR
21E35DA02201	CITY OPEN SPACE SITE - SALAMO RD
21E36BA03900	4194 REED ST




 NOT TO SCALE

TOTAL TRIPS
ENTER 17
EXIT 40

GROUP
MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
 503.224.9560 360.895.7879 253.471.0551 206.749.9993

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DATE: 6.20.06

DRAWN BY: WSB

CHECKED BY: BTA

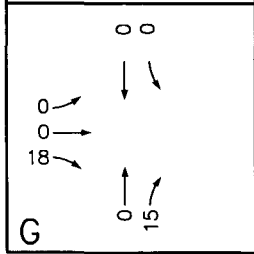
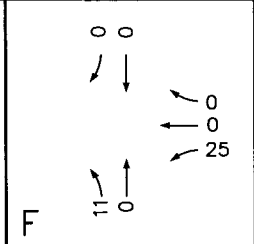
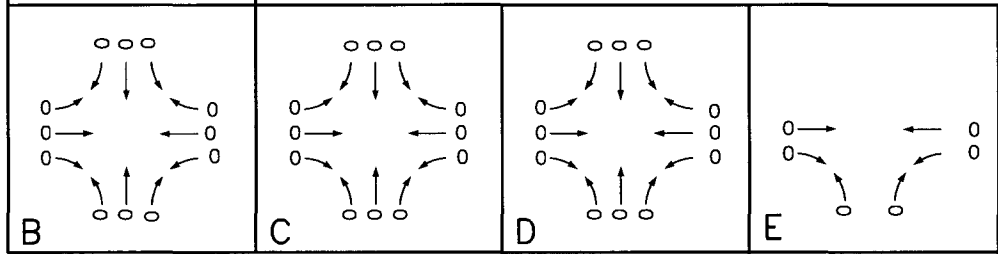
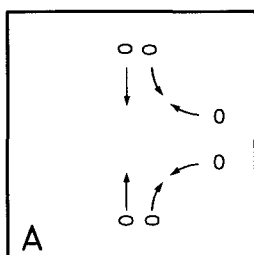
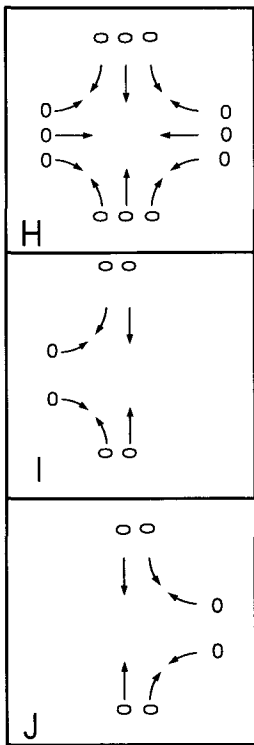
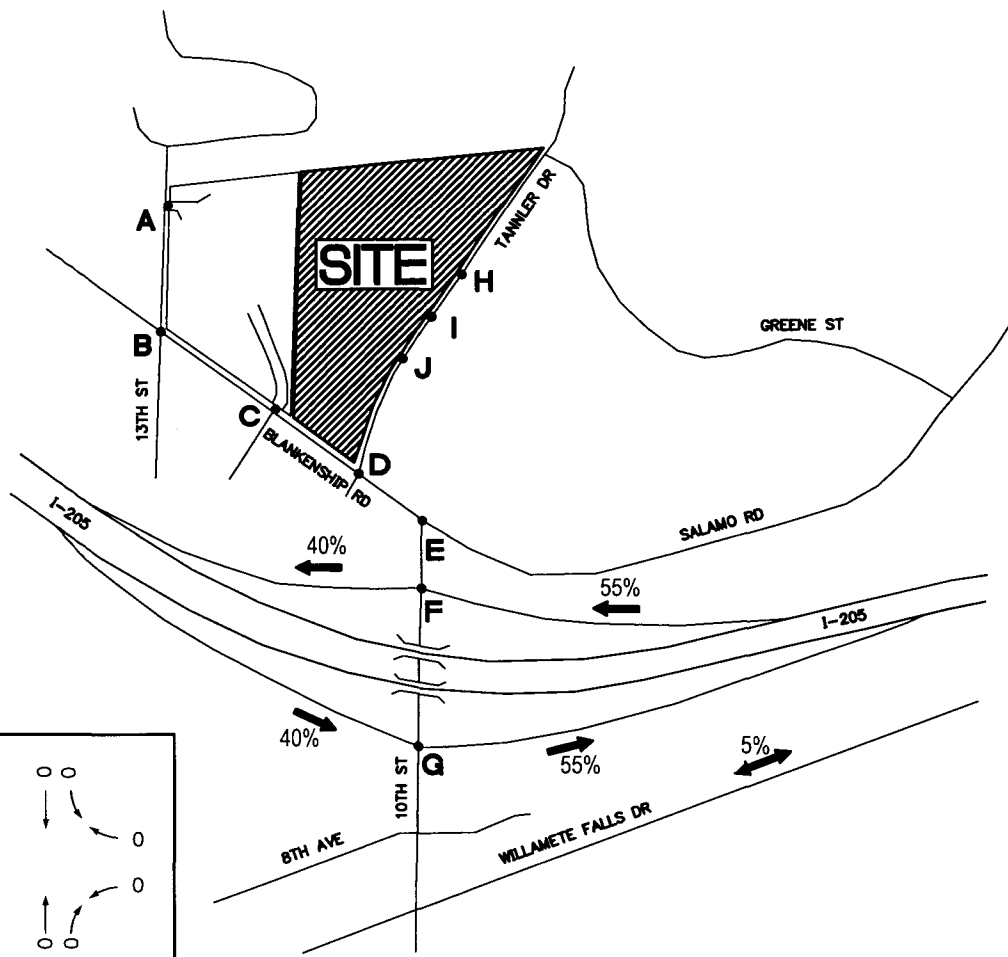
JOB NO:

2060016.00

IN PROCESS TRAFFIC (AM)
FIELDS PARK II AND 985 COVE PLACE

WILLAMETE 205 CORP CENTER
WEST LINN, OREGON

FIGURE



TOTAL TRIPS
ENTER 45
EXIT 27



NOT TO SCALE

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MACKENZIE

Portland OR Vancouver WA Tacoma WA Seattle WA
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DATE: 6.20.06

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CHECKED BY: BTA

JOB NO:
2060016.00

IN PROCESS TRAFFIC (PM)
FIELDS PARK II AND 985 COVE PLACE

WILLAMETE 205 CORP CENTER
WEST LINN, OREGON

FIGURE

APPENDIX G
Trip Generation

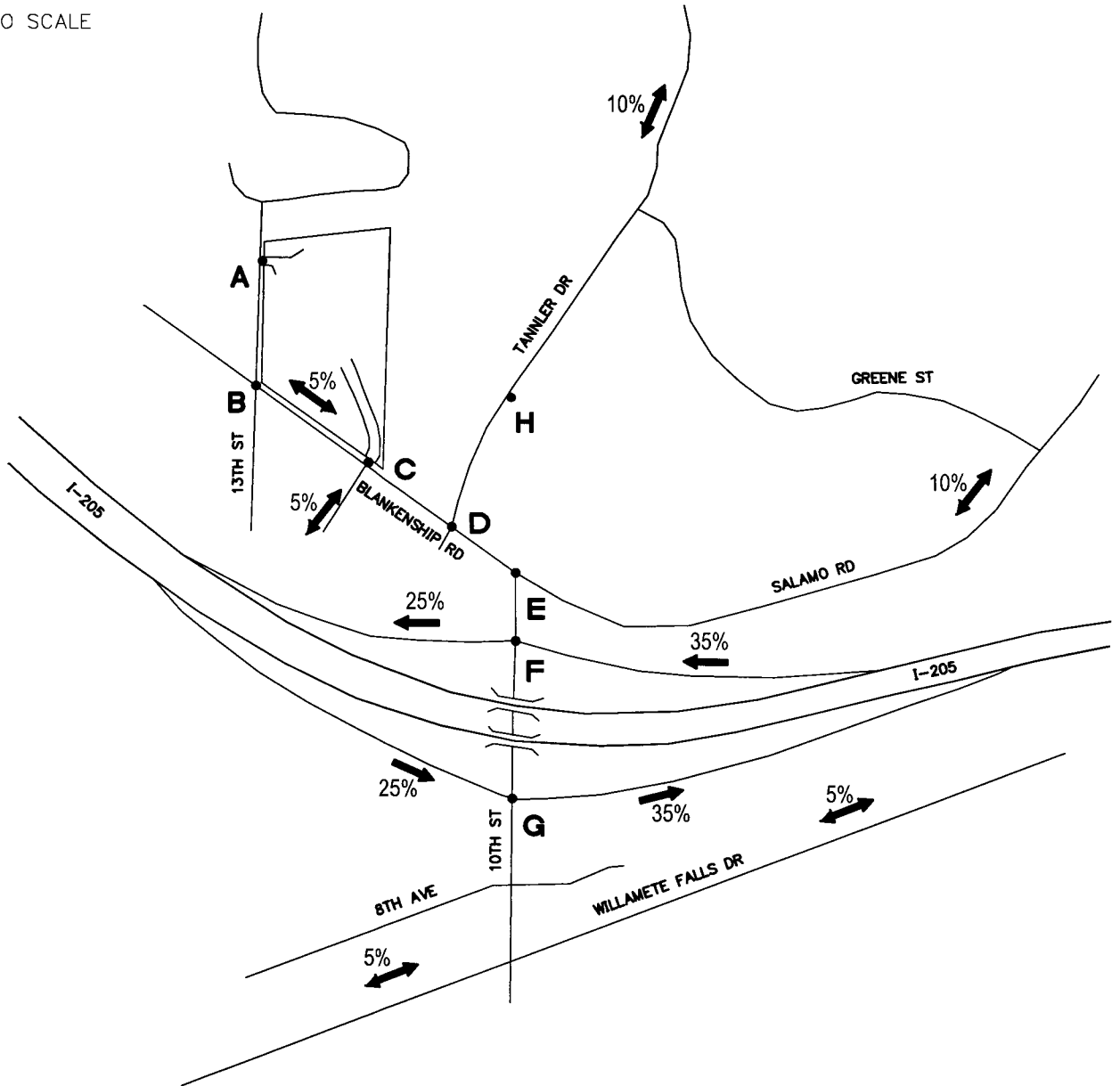
ITE TRIP GENERATION RATES - Willamette 205 Corp Center

ITE Ed.	ITE CODE	LAND USE	VAR	RATE	ADT	AM Enter	AM Exit	PM Enter	PM Exit
7	710	General Office (Buildout)	KSF	300	3109	397	54	71	344
		Phase 1 (36%)	KSF	107.5	1119	143	19	26	124

APPENDIX H
Trip Distribution



NOT TO SCALE



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MACKENZIE

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DATE: 6.20.06

DRAWN BY: WSB

CHECKED BY: BTA

JOB NO:
 2060016.00

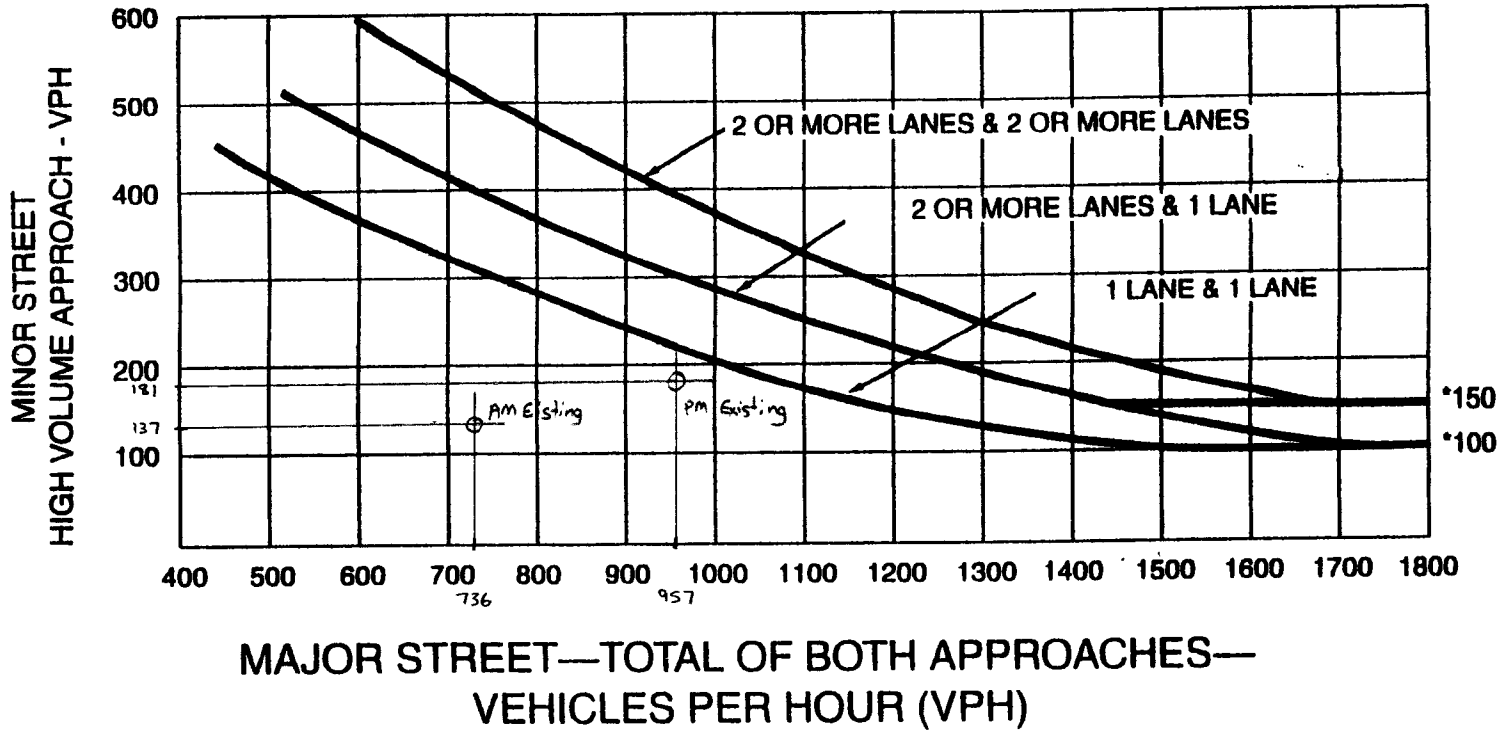
SITE TRIP DISTRIBUTION

**WILLAMETTE 205 CORP CENTER
 WEST LINN, OREGON**

FIGURE

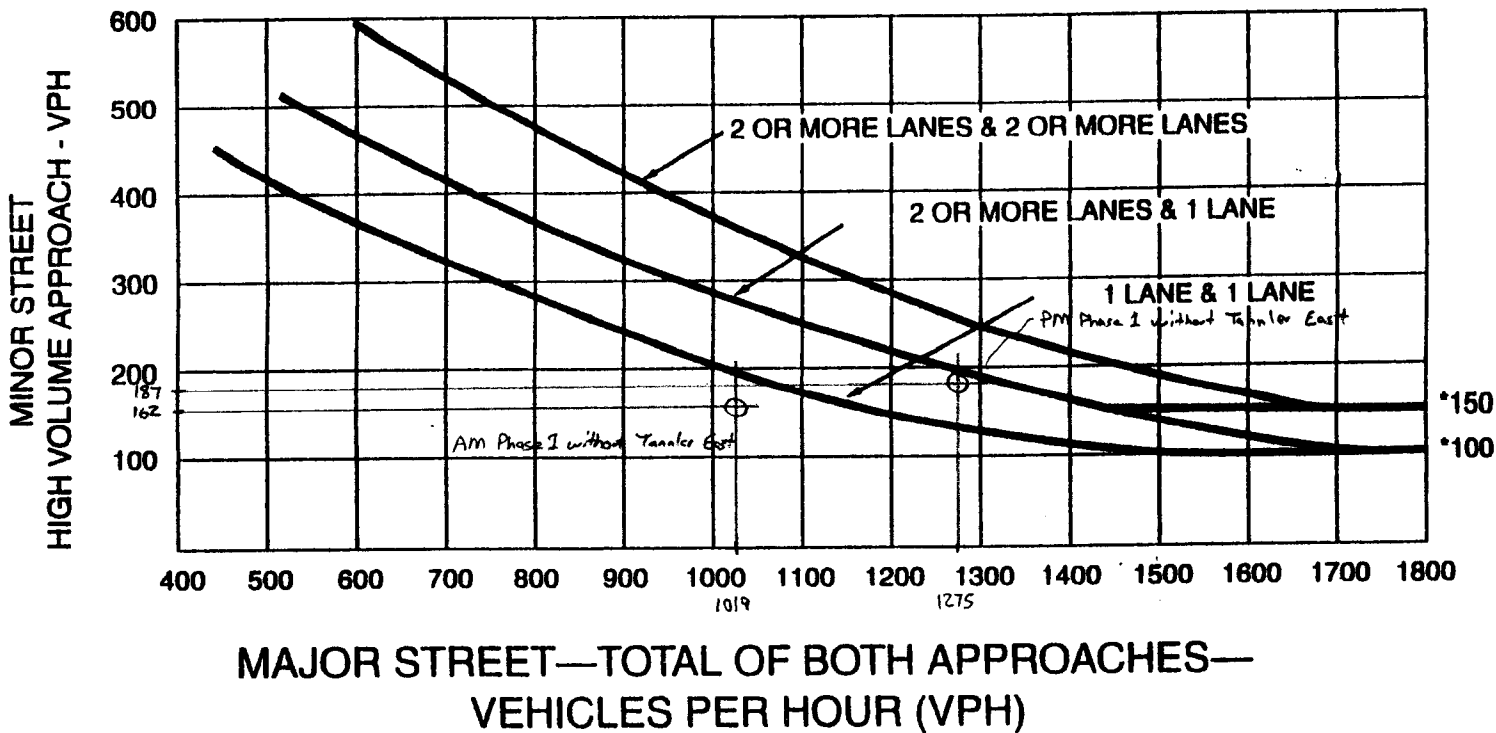
APPENDIX I
Warrant Analysis

Existing
 Blankenship Rd / Tanner Dr
Figure 4C-3. Warrant 3, Peak Hour



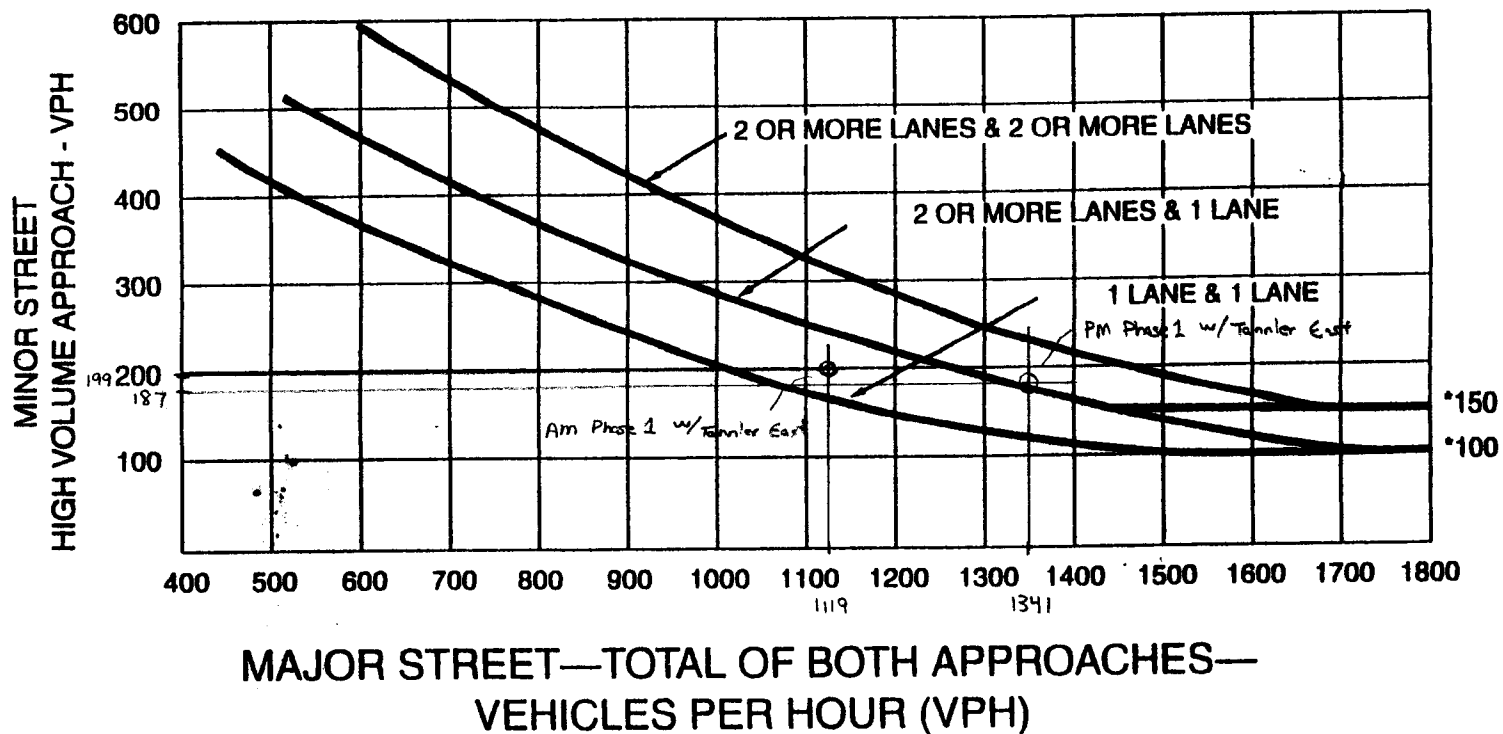
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Phase 1 without Tanner East
 Blankenship Rd / Tanner Dr
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Phase 1 with Tanner East
 Blankenship Rd / Tanner Dr.
Figure 4C-3. Warrant 3, Peak Hour

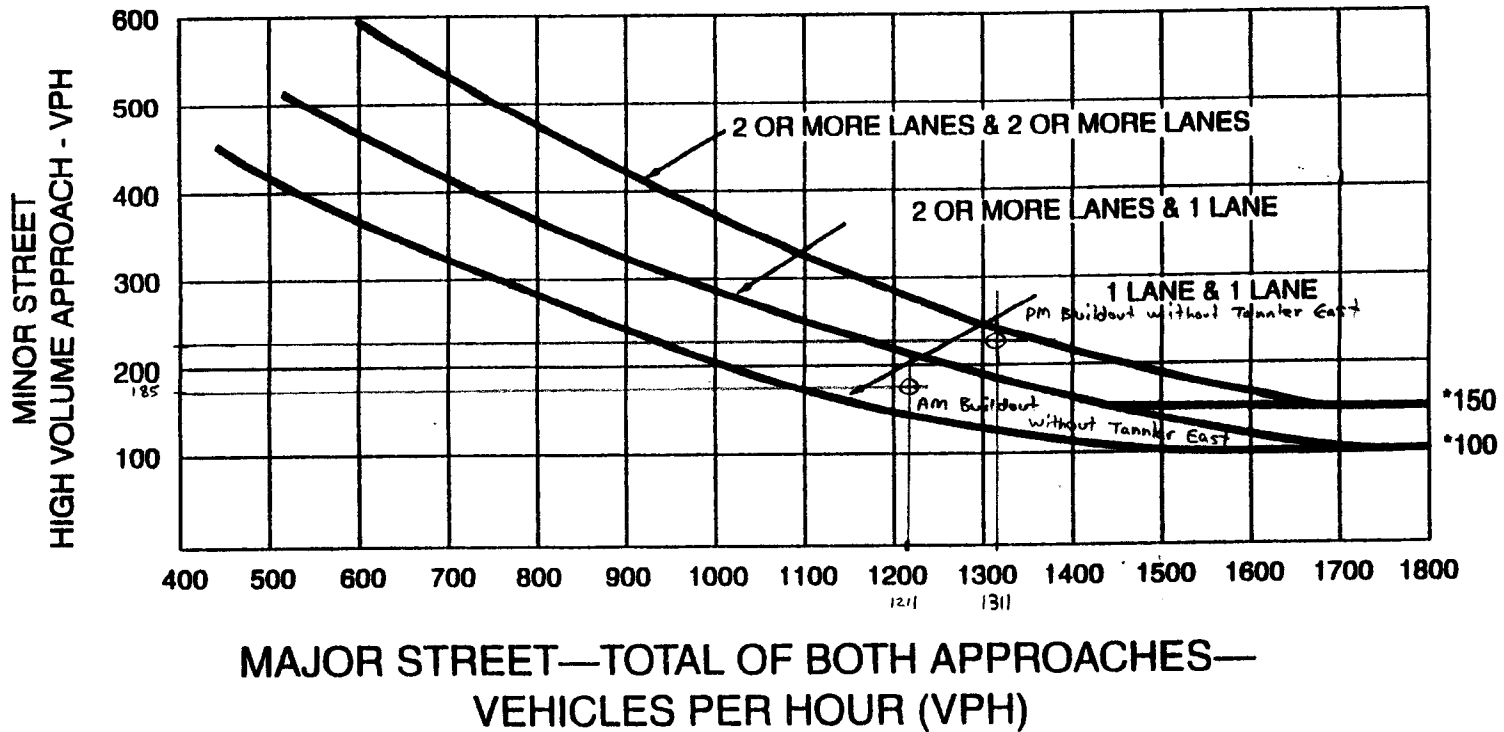


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Buildout without Tanner East

Blankenship Rd / Tanner Dr

Figure 4C-3. Warrant 3, Peak Hour

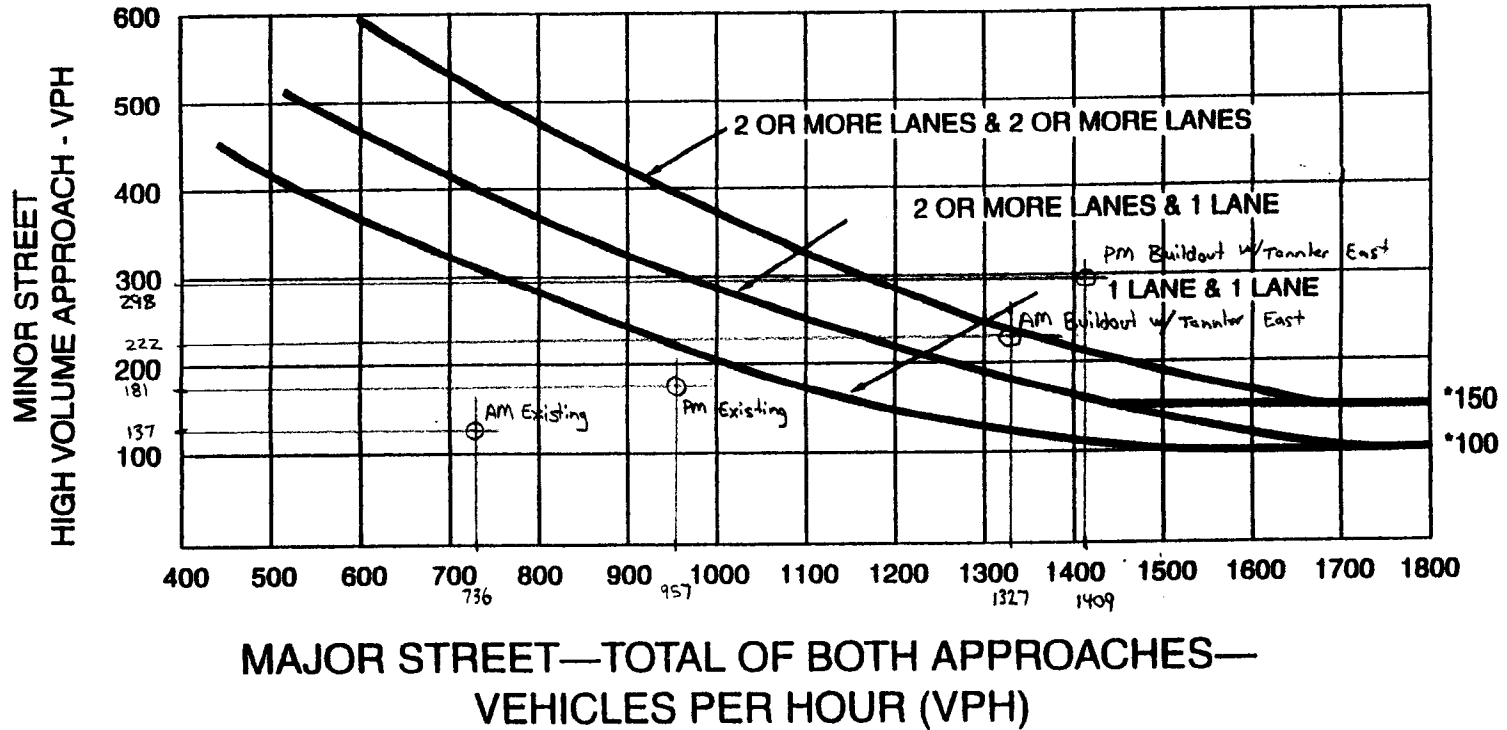


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Buildout with Tanner East

Blankenship Rd / Tanner Dr

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

APPENDIX J
**Capacity
Calculations**

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

6/22/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑		↔	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	7	0	9	54	0	58
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	9	0	11	68	0	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	118	45			79	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	118	45			79	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	883	1031			1532	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	79	72
Volume Left	9	0	0
Volume Right	0	68	0
cSH	883	1700	1532
Volume to Capacity	0.01	0.05	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay			0.5
Intersection Capacity Utilization	13.8%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

6/22/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	54	0	46	6	0	18
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	73	0	62	8	0	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	91	66			70	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	91	66			70	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	100			100	
cM capacity (veh/h)	915	1003			1543	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	73	70	24
Volume Left	73	0	0
Volume Right	0	8	0
cSH	915	1700	1543
Volume to Capacity	0.08	0.04	0.00
Queue Length 95th (ft)	6	0	0
Control Delay (s)	9.3	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.3	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		4.0	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 2: Blankenship Rd & 13th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	304	0	0	248	49	0	0	1	53	0	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	327	0	0	267	53	0	0	1	57	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)					1124							
pX, platoon unblocked												
vC, conflicting volume	319			327			651	666	327	640	639	293
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	319			327			651	666	327	640	639	293
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	85	100	98
cM capacity (veh/h)	1229			1205			375	379	717	388	393	751

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	337	319	1	69
Volume Left	10	0	0	57
Volume Right	0	53	1	12
cSH	1229	1205	717	423
Volume to Capacity	0.01	0.00	0.00	0.16
Queue Length 95th (ft)	1	0	0	14
Control Delay (s)	0.3	0.0	10.0	15.2
Lane LOS	A		B	C
Approach Delay (s)	0.3	0.0	10.0	15.2
Approach LOS			B	C

Intersection Summary			
Average Delay		1.6	
Intersection Capacity Utilization	40.2%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

2: Blankenship Rd & 13th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕		↕				↕	
Sign Control	Free				Free		Stop				Stop	
Grade	0%				0%		0%				0%	
Volume (veh/h)	4	348	3	0	310	49	0	0	1	59	0	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	387	3	0	344	54	0	0	1	66	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)	1124											
pX, platoon unblocked												
vC, conflicting volume	399			390			777	796	388	770	771	372
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	399			390			777	796	388	770	771	372
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	79	100	99
cM capacity (veh/h)	1165			1169			312	321	664	315	328	672

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	394	399	1	73
Volume Left	4	0	0	66
Volume Right	3	54	1	8
cSH	1165	1169	664	334
Volume to Capacity	0.00	0.00	0.00	0.22
Queue Length 95th (ft)	0	0	0	21
Control Delay (s)	0.1	0.0	10.4	18.8
Lane LOS	A		B	C
Approach Delay (s)	0.1	0.0	10.4	18.8
Approach LOS			B	C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
 3: Blankenship Rd & Driveway

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations	↖	↗		↖	↗			↕			↕							
Sign Control	Free		Free				Stop				Stop							
Grade	0%		0%				0%				0%							
Volume (veh/h)	1	350	15	19	266	18	20	1	22	4	1	3						
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)	1	380	16	21	289	20	22	1	24	4	1	3						
Pedestrians																		
Lane Width (ft)																		
Walking Speed (ft/s)																		
Percent Blockage																		
Right turn flare (veh)																		
Median type							None			None								
Median storage veh																		
Upstream signal (ft)	685																	
pX, platoon unblocked																		
vC, conflicting volume	309		397				725		741		389		747		739		299	
vC1, stage 1 conf vol																		
vC2, stage 2 conf vol																		
vCu, unblocked vol	309		397				725		741		389		747		739		299	
tC, single (s)	4.1		4.1				7.2		6.6		6.2		7.1		6.5		6.2	
tC, 2 stage (s)																		
tF (s)	2.2		2.2				3.5		4.0		3.3		3.5		4.0		3.3	
p0 queue free %	100		98				93		100		96		99		100		100	
cM capacity (veh/h)	1241		1146				330		334		653		314		341		745	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	1	397	21	309	47	9
Volume Left	1	0	21	0	22	4
Volume Right	0	16	0	20	24	3
cSH	1241	1700	1146	1700	442	406
Volume to Capacity	0.00	0.23	0.02	0.18	0.11	0.02
Queue Length 95th (ft)	0	0	1	0	9	2
Control Delay (s)	7.9	0.0	8.2	0.0	14.1	14.1
Lane LOS	A		A		B	B
Approach Delay (s)	0.0		0.5		14.1	14.1
Approach LOS					B	B

Intersection Summary		
Average Delay		1.2
Intersection Capacity Utilization	29.3%	ICU Level of Service A
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis
 3: Blankenship Rd & Driveway

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Sign Control	Free		Free		Free		Stop		Stop		Stop	
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	4	324	74	58	278	12	66	1	74	56	3	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	4	345	79	62	296	13	70	1	79	60	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)	685											
pX, platoon unblocked												
vC, conflicting volume	309			423			815	824	384	858	857	302
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	309			423			815	824	384	858	857	302
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			75	100	88	75	99	100
cM capacity (veh/h)	1258			1136			281	291	666	235	280	742

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	4	423	62	309	150	65
Volume Left	4	0	62	0	70	60
Volume Right	0	79	0	13	79	2
cSH	1258	1700	1136	1700	403	242
Volume to Capacity	0.00	0.25	0.05	0.18	0.37	0.27
Queue Length 95th (ft)	0	0	4	0	42	26
Control Delay (s)	7.9	0.0	8.4	0.0	19.1	25.2
Lane LOS	A		A		C	D
Approach Delay (s)	0.1		1.4		19.1	25.2
Approach LOS					C	D

Intersection Summary		
Average Delay	5.0	
Intersection Capacity Utilization	42.5%	ICU Level of Service A
Analysis Period (min)	15	

HCM Unsignalized Intersection Capacity Analysis
 4: Blankenship Rd & Tannler Drive

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕	↗		↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	338	8	66	280	28	3	6	49	99	4	34
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)	17	367	9	72	304	30	3	7	53	108	4	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)					310							
pX, platoon unblocked												
vC, conflicting volume	335			376			893	885	372	922	874	320
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	335			376			893	885	372	922	874	320
tC, single (s)	4.1			4.2			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	99			94			99	97	92	50	98	95
cM capacity (veh/h)	1213			1161			224	255	657	215	268	726

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	17	376	72	335	10	53	149
Volume Left	17	0	72	0	3	0	108
Volume Right	0	9	0	30	0	53	37
cSH	1213	1700	1161	1700	244	657	262
Volume to Capacity	0.01	0.22	0.06	0.20	0.04	0.08	0.57
Queue Length 95th (ft)	1	0	5	0	3	7	80
Control Delay (s)	8.0	0.0	8.3	0.0	20.4	11.0	35.4
Lane LOS	A		A		C	B	E
Approach Delay (s)	0.4		1.5		12.4		35.4
Approach LOS					B		E

Intersection Summary			
Average Delay		6.7	
Intersection Capacity Utilization	46.4%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 4: Blankenship Rd & Tannler Drive

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕	↗		↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	47	374	24	152	310	50	19	12	150	35	8	18
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	50	398	26	162	330	53	20	13	160	37	9	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None				None	
Median storage (veh)												
Upstream signal (ft)					310							
pX, platoon unblocked	1.00						1.00	1.00		1.00	1.00	1.00
vC, conflicting volume	383			423			1187	1217	411	1344	1203	356
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	383			423			1187	1217	411	1344	1203	356
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			86			85	91	75	53	94	97
cM capacity (veh/h)	1175			1136			133	148	641	79	153	692

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	50	423	162	383	33	160	65
Volume Left	50	0	162	0	20	0	37
Volume Right	0	26	0	53	0	160	19
cSH	1175	1700	1136	1700	138	641	117
Volume to Capacity	0.04	0.25	0.14	0.23	0.24	0.25	0.56
Queue Length 95th (ft)	3	0	12	0	22	24	66
Control Delay (s)	8.2	0.0	8.7	0.0	39.0	12.5	68.8
Lane LOS	A		A		E	B	F
Approach Delay (s)	0.9		2.6		17.0		68.8
Approach LOS					C		F

Intersection Summary			
Average Delay		7.5	
Intersection Capacity Utilization	49.7%		ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis

5: Blankenship Rd & 10th St

6/22/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1827	1553	1736	1827	1703	1524
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1827	1553	1736	1827	1703	1524
Volume (vph)	42	450	421	64	304	235
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	45	484	453	69	327	253
RTOR Reduction (vph)	0	0	0	0	0	51
Lane Group Flow (vph)	45	484	453	69	327	202
Heavy Vehicles (%)	4%	4%	4%	4%	6%	6%
Turn Type	custom		Prot	custom		
Protected Phases	4	4 5 7	3	8	5 6 7 3 5 6 7	
Permitted Phases						5 6 7
Actuated Green, G (s)	14.2	70.7	20.3	37.5	62.6	86.9
Effective Green, g (s)	14.2	70.7	20.3	38.5	62.6	86.9
Actuated g/C Ratio	0.13	0.65	0.19	0.35	0.57	0.80
Clearance Time (s)	4.0		4.0	5.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	238	1006	323	645	977	1214
v/s Ratio Prot	0.02	c0.31	c0.26	0.04	c0.19	0.13
v/s Ratio Perm						
v/c Ratio	0.19	0.48	1.40	0.11	0.33	0.17
Uniform Delay, d1	42.3	9.8	44.4	23.7	12.3	2.6
Progression Factor	1.00	1.00	1.00	1.00	0.29	0.00
Incremental Delay, d2	0.4	0.4	198.8	0.1	0.2	0.1
Delay (s)	42.7	10.2	243.2	23.8	3.7	0.1
Level of Service	D	B	F	C	A	A
Approach Delay (s)	12.9		214.2		2.1	
Approach LOS	B		F		A	

Intersection Summary			
HCM Average Control Delay	73.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	109.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 5: Blankenship Rd & 10th St

6/22/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1881	1599	1787	1881	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1881	1599	1787	1881	1770	1583
Volume (vph)	116	439	342	106	402	325
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	123	467	364	113	428	346
RTOR Reduction (vph)	0	0	0	0	0	53
Lane Group Flow (vph)	123	467	364	113	428	293
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Turn Type	custom		Prot	custom		
Protected Phases	4	4 5 7	3	8	5 6 7 3 5 6 7	
Permitted Phases					5 6 7	
Actuated Green, G (s)	14.1	77.6	20.1	37.2	69.5	93.6
Effective Green, g (s)	14.1	77.6	20.1	38.2	69.5	93.6
Actuated g/C Ratio	0.12	0.67	0.17	0.33	0.60	0.81
Clearance Time (s)	4.0		4.0	5.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	229	1072	310	621	1063	1281
v/s Ratio Prot	c0.07	c0.29	c0.20	0.06	c0.24	0.19
v/s Ratio Perm						
v/c Ratio	0.54	0.44	1.17	0.18	0.40	0.23
Uniform Delay, d1	47.7	8.9	47.8	27.6	12.2	2.6
Progression Factor	1.00	1.00	1.00	1.00	0.36	0.00
Incremental Delay, d2	2.4	0.3	107.0	0.1	0.2	0.1
Delay (s)	50.2	9.1	154.8	27.8	4.5	0.1
Level of Service	D	A	F	C	A	A
Approach Delay (s)	17.7			124.7	2.5	
Approach LOS	B			F	A	

Intersection Summary			
HCM Average Control Delay	39.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	115.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

6: I-205 SB on-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↖	↑			↕	
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
Lane Util. Factor					1.00	1.00	1.00	1.00				0.95
Flt					1.00	0.85	1.00	1.00				0.95
Flt Protected					0.95	1.00	0.95	1.00				1.00
Satd. Flow (prot)					1743	1553	1736	1827				3336
Flt Permitted					0.95	1.00	0.95	1.00				1.00
Satd. Flow (perm)					1743	1553	1736	1827				3336
Volume (vph)	0	0	0	135	5	188	118	325	0	0	581	276
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	148	5	207	130	357	0	0	638	303
RTOR Reduction (vph)	0	0	0	0	0	169	0	0	0	0	46	0
Lane Group Flow (vph)	0	0	0	0	153	38	130	357	0	0	895	0
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Turn Type				Split	Prot	Prot						
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					19.8	19.8	11.1	28.7			66.2	
Effective Green, g (s)					19.8	19.8	11.1	28.7			66.2	
Actuated g/C Ratio					0.18	0.18	0.10	0.26			0.61	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					316	282	177	481			2024	
v/s Ratio Prot					c0.09	0.02	0.07	c0.20			c0.27	
v/s Ratio Perm												
v/c Ratio					0.48	0.13	0.73	0.74			0.44	
Uniform Delay, d1					40.1	37.5	47.6	36.8			11.5	
Progression Factor					1.00	1.00	1.00	1.00			0.76	
Incremental Delay, d2					1.2	0.2	14.6	6.1			0.1	
Delay (s)					41.2	37.7	62.2	42.9			8.9	
Level of Service					D	D	E	D			A	
Approach Delay (s)		0.0			39.2			48.1			8.9	
Approach LOS		A			D			D			A	

Intersection Summary

HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	109.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: I-205 SB on-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↖	↑			↕	
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	
Lane Util. Factor					1.00	1.00	1.00	1.00			0.95	
Frts					1.00	0.85	1.00	1.00			0.96	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1811	1615	1787	1881			3435	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1811	1615	1787	1881			3435	
Volume (vph)	0	0	0	171	3	355	59	389	0	0	576	201
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	192	3	399	66	437	0	0	647	226
RTOR Reduction (vph)	0	0	0	0	0	321	0	0	0	0	28	0
Lane Group Flow (vph)	0	0	0	0	195	78	66	437	0	0	845	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					22.7	22.7	9.3	32.8			71.7	
Effective Green, g (s)					22.7	22.7	9.3	32.8			71.7	
Actuated g/C Ratio					0.20	0.20	0.08	0.28			0.62	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					355	317	144	533			2129	
v/s Ratio Prot					c0.11	0.05	0.04	c0.23			c0.25	
v/s Ratio Perm												
v/c Ratio					0.55	0.25	0.46	0.82			0.40	
Uniform Delay, d1					41.9	39.3	50.8	38.7			11.1	
Progression Factor					1.00	1.00	1.00	1.00			0.84	
Incremental Delay, d2					1.7	0.4	2.3	9.6			0.1	
Delay (s)					43.6	39.7	53.1	48.3			9.4	
Level of Service					D	D	D	D			A	
Approach Delay (s)		0.0			41.0			48.9			9.4	
Approach LOS		A			D			D			A	

Intersection Summary

HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	115.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: I-205 NB off-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↖	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frst		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1740	1553					1827	1553	1752	1845	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1740	1553					1827	1553	1752	1845	
Volume (vph)	135	1	88	0	0	0	0	326	188	285	430	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	1	96	0	0	0	0	354	204	310	467	0
RTOR Reduction (vph)	0	0	81	0	0	0	0	0	130	0	0	0
Lane Group Flow (vph)	0	148	15	0	0	0	0	354	74	310	467	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	4%	4%	4%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4					2				
Actuated Green, G (s)		8.5	8.5					20.0	20.0	15.0	39.0	
Effective Green, g (s)		8.5	8.5					20.0	20.0	15.0	39.0	
Actuated g/C Ratio		0.15	0.15					0.36	0.36	0.27	0.70	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		266	238					658	560	474	1296	
v/s Ratio Prot								c0.19		c0.18	0.25	
v/s Ratio Perm		0.09	0.01						0.05			
v/c Ratio		0.56	0.06					0.54	0.13	0.65	0.36	
Uniform Delay, d1		21.8	20.1					14.1	11.9	17.9	3.3	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.5	0.1					0.9	0.1	3.2	0.2	
Delay (s)		24.3	20.2					14.9	12.0	21.2	3.5	
Level of Service		C	C					B	B	C	A	
Approach Delay (s)		22.7		0.0				13.9			10.5	
Approach LOS		C		A				B			B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: I-205 NB off-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↘	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1793	1599					1881	1599	1770	1863	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1793	1599					1881	1599	1770	1863	
Volume (vph)	118	2	103	0	0	0	0	323	261	235	509	0
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)	126	2	110	0	0	0	0	344	278	250	541	0
RTOR Reduction (vph)	0	0	94	0	0	0	0	0	160	0	0	0
Lane Group Flow (vph)	0	128	16	0	0	0	0	344	118	250	541	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		7.9	7.9					22.7	22.7	10.9	37.6	
Effective Green, g (s)		7.9	7.9					22.7	22.7	10.9	37.6	
Actuated g/C Ratio		0.15	0.15					0.42	0.42	0.20	0.70	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		265	236					798	678	361	1309	
v/s Ratio Prot								0.18		c0.14	c0.29	
v/s Ratio Perm		0.07	0.01						0.07			
v/c Ratio		0.48	0.07					0.43	0.17	0.69	0.41	
Uniform Delay, d1		20.9	19.6					10.9	9.6	19.7	3.3	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.4	0.1					0.4	0.1	5.7	0.2	
Delay (s)		22.3	19.8					11.2	9.7	25.4	3.5	
Level of Service		C	B					B	A	C	A	
Approach Delay (s)		21.1			0.0			10.5			10.5	
Approach LOS		C			A			B			B	

Intersection Summary

HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	53.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

8: Access & Tannler Drive

6/22/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↑	↑	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	50	137	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	53	144	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	197	144	144			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	197	144	144			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	792	903	1438			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	53	144
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1438	1700
Volume to Capacity	0.00	0.00	0.08
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay			0.0
Intersection Capacity Utilization	10.5%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis

8: Access & Tannler Drive

6/22/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			↑	↑	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	109	61	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	115	64	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	179	64	64			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	179	64	64			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	811	1000	1538			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	115	64			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1538	1700			
Volume to Capacity	0.00	0.00	0.04			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			9.1%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

6/22/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	7	0	9	56	0	60
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	9	0	11	70	0	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	121	46			81	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121	46			81	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	879	1029			1529	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	81	75
Volume Left	9	0	0
Volume Right	0	70	0
cSH	879	1700	1529
Volume to Capacity	0.01	0.05	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay			0.5
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

6/22/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	56	0	47	6	0	19
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	76	0	64	8	0	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	93	68			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	93	68			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	100			100	
cM capacity (veh/h)	912	1001			1541	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	76	72	26
Volume Left	76	0	0
Volume Right	0	8	0
cSH	912	1700	1541
Volume to Capacity	0.08	0.04	0.00
Queue Length 95th (ft)	7	0	0
Control Delay (s)	9.3	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.3	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay			4.1
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis
 2: Blankenship Rd & 13th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕				↕			
Sign Control	Free				Free				Stop			
Grade	0%				0%				0%			
Volume (veh/h)	9	330	0	0	376	50	0	0	1	55	0	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	355	0	0	404	54	0	0	1	59	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)	1124											
pX, platoon unblocked												
vC, conflicting volume	458			355			817	832	355	806	805	431
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	458			355			817	832	355	806	805	431
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	80	100	98
cM capacity (veh/h)	1092			1177			289	303	691	300	315	628

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	365	458	1	71
Volume Left	10	0	0	59
Volume Right	0	54	1	12
cSH	1092	1177	691	329
Volume to Capacity	0.01	0.00	0.00	0.22
Queue Length 95th (ft)	1	0	0	20
Control Delay (s)	0.3	0.0	10.2	18.9
Lane LOS	A		B	C
Approach Delay (s)	0.3	0.0	10.2	18.9
Approach LOS			B	C

Intersection Summary			
Average Delay			1.6
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis
 2: Blankenship Rd & 13th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	484	3	0	345	50	0	0	1	61	0	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	538	3	0	383	56	0	0	1	68	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)					1124							
pX, platoon unblocked												
vC, conflicting volume	439			541			967	987	539	961	961	411
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	439			541			967	987	539	961	961	411
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	71	100	99
cM capacity (veh/h)	1126			1027			232	248	546	234	254	639

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	546	439	1	76
Volume Left	4	0	0	68
Volume Right	3	56	1	8
cSH	1126	1027	546	250
Volume to Capacity	0.00	0.00	0.00	0.30
Queue Length 95th (ft)	0	0	0	31
Control Delay (s)	0.1	0.0	11.6	25.5
Lane LOS	A		B	D
Approach Delay (s)	0.1	0.0	11.6	25.5
Approach LOS			B	D

Intersection Summary			
Average Delay		1.9	
Intersection Capacity Utilization	46.0%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 3: Blankenship Rd & Driveway

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Sign Control	Free		Free				Stop				Stop	
Grade	0%		0%				0%				0%	
Volume (veh/h)	1	378	15	20	395	19	21	1	23	4	1	3
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)	1	411	16	22	429	21	23	1	25	4	1	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)						685						
pX, platoon unblocked												
vC, conflicting volume	450		427				898		915		440	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	450		427				898		915		440	
tC, single (s)	4.1		4.1				7.2		6.6		6.2	
tC, 2 stage (s)												
tF (s)	2.2		2.2				3.5		4.0		3.3	
p0 queue free %	100		98				91		100		99	
cM capacity (veh/h)	1100		1116				251		264		622	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	1	427	22	450	49	9
Volume Left	1	0	22	0	23	4
Volume Right	0	16	0	21	25	3
cSH	1100	1700	1116	1700	363	316
Volume to Capacity	0.00	0.25	0.02	0.26	0.13	0.03
Queue Length 95th (ft)	0	0	1	0	12	2
Control Delay (s)	8.3	0.0	8.3	0.0	16.5	16.7
Lane LOS	A		A		C	C
Approach Delay (s)	0.0		0.4		16.5	
Approach LOS					C	

Intersection Summary		
Average Delay		1.2
Intersection Capacity Utilization	31.9%	ICU Level of Service A
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis
 3: Blankenship Rd & Driveway

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑		↙	↓			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	460	76	60	312	12	68	1	76	58	3	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	4	489	81	64	332	13	72	1	81	62	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)					685							
pX, platoon unblocked												
vC, conflicting volume	345			570			1002	1011	530	1045	1045	338
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345			570			1002	1011	530	1045	1045	338
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			65	100	85	63	99	100
cM capacity (veh/h)	1220			1002			208	224	551	168	215	709

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	4	570	64	345	154	67
Volume Left	4	0	64	0	72	62
Volume Right	0	81	0	13	81	2
cSH	1220	1700	1002	1700	309	174
Volume to Capacity	0.00	0.34	0.06	0.20	0.50	0.38
Queue Length 95th (ft)	0	0	5	0	66	42
Control Delay (s)	8.0	0.0	8.8	0.0	27.7	38.0
Lane LOS	A		A		D	E
Approach Delay (s)	0.1		1.4		27.7	38.0
Approach LOS					D	E

Intersection Summary		
Average Delay		6.2
Intersection Capacity Utilization	50.0%	ICU Level of Service A
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis
 4: Blankenship Rd & Tannler Drive

7/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗		↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	362	8	68	390	29	3	6	50	102	4	54
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)	21	393	9	74	424	32	3	7	54	111	4	59
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)					310							
pX, platoon unblocked												
vC, conflicting volume	455			402			1072	1042	398	1080	1031	440
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	455			402			1072	1042	398	1080	1031	440
tC, single (s)	4.1			4.2			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	98			93			98	97	91	33	98	91
cM capacity (veh/h)	1095			1135			160	204	635	165	216	622

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	21	402	74	455	10	54	174
Volume Left	21	0	74	0	3	0	111
Volume Right	0	9	0	32	0	54	59
cSH	1095	1700	1135	1700	187	635	221
Volume to Capacity	0.02	0.24	0.07	0.27	0.05	0.09	0.79
Queue Length 95th (ft)	1	0	5	0	4	7	141
Control Delay (s)	8.4	0.0	8.4	0.0	25.3	11.2	63.0
Lane LOS	A		A		D	B	F
Approach Delay (s)	0.4		1.2		13.4		63.0
Approach LOS					B		F

Intersection Summary		
Average Delay		10.6
Intersection Capacity Utilization	51.4%	ICU Level of Service A
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis

4: Blankenship Rd & Tannler Drive

7/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕	↗		↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	68	491	25	157	341	52	20	12	155	36	8	23
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	72	522	27	167	363	55	21	13	165	38	9	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)					310							
pX, platoon unblocked	0.99						0.99	0.99		0.99	0.99	0.99
vC, conflicting volume	418			549			1406	1432	536	1563	1418	390
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	415			549			1408	1435	536	1566	1420	387
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			84			76	88	70	20	92	96
cM capacity (veh/h)	1138			1021			87	104	545	48	107	662

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	72	549	167	418	34	165	71
Volume Left	72	0	167	0	21	0	38
Volume Right	0	27	0	55	0	165	24
cSH	1138	1700	1021	1700	93	545	78
Volume to Capacity	0.06	0.32	0.16	0.25	0.37	0.30	0.91
Queue Length 95th (ft)	5	0	15	0	36	32	119
Control Delay (s)	8.4	0.0	9.2	0.0	64.5	14.4	171.0
Lane LOS	A		A		F	B	F
Approach Delay (s)	1.0		2.6		23.0		171.0
Approach LOS					C		F

Intersection Summary		
Average Delay		12.8
Intersection Capacity Utilization	56.5%	ICU Level of Service B
Analysis Period (min)		15

HCM Signalized Intersection Capacity Analysis

5: Blankenship Rd & 10th St

7/14/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↗	↘
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1827	1553	1736	1827	1703	1524
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1827	1553	1736	1827	1703	1524
Volume (vph)	43	479	434	71	408	242
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	46	515	467	76	439	260
RTOR Reduction (vph)	0	0	0	0	0	50
Lane Group Flow (vph)	46	515	467	76	439	210
Heavy Vehicles (%)	4%	4%	4%	4%	6%	6%
Turn Type	custom		Prot	custom		
Protected Phases	4	4 5 7	3	8	5 6 7	3 5 6 7
Permitted Phases						5 6 7
Actuated Green, G (s)	14.1	77.2	20.1	37.2	69.1	93.2
Effective Green, g (s)	14.1	77.2	20.1	38.2	69.1	93.2
Actuated g/C Ratio	0.12	0.67	0.17	0.33	0.60	0.81
Clearance Time (s)	4.0		4.0	5.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	223	1040	303	605	1021	1232
v/s Ratio Prot	0.03	c0.33	c0.27	0.04	c0.26	0.14
v/s Ratio Perm						
v/c Ratio	0.21	0.50	1.54	0.13	0.43	0.17
Uniform Delay, d1	45.6	9.4	47.6	26.9	12.5	2.5
Progression Factor	1.00	1.00	1.00	1.00	0.28	0.00
Incremental Delay, d2	0.5	0.4	259.4	0.1	0.2	0.0
Delay (s)	46.0	9.8	307.0	27.0	3.7	0.0
Level of Service	D	A	F	C	A	A
Approach Delay (s)	12.8			267.8	2.4	
Approach LOS	B			F	A	

Intersection Summary			
HCM Average Control Delay	85.6	HCM Level of Service	F
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	115.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Blankenship Rd & 10th St

7/14/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1881	1599	1787	1881	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1881	1599	1787	1881	1770	1583
Volume (vph)	124	552	352	109	434	335
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	132	587	374	116	462	356
RTOR Reduction (vph)	0	0	0	0	0	47
Lane Group Flow (vph)	132	587	374	116	462	309
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Turn Type	custom		Prot	custom		
Protected Phases	4	4 5 7	3	8	5 6 7 3 5 6 7	
Permitted Phases						5 6 7
Actuated Green, G (s)	14.1	79.4	20.0	37.1	71.4	95.4
Effective Green, g (s)	14.1	79.4	20.0	38.1	71.4	95.4
Actuated g/C Ratio	0.12	0.68	0.17	0.32	0.61	0.81
Clearance Time (s)	4.0		4.0	5.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	226	1081	304	610	1076	1285
v/s Ratio Prot	0.07	c0.37	c0.21	0.06	c0.26	0.20
v/s Ratio Perm						
v/c Ratio	0.58	0.54	1.23	0.19	0.43	0.24
Uniform Delay, d1	48.9	9.8	48.8	28.6	12.2	2.6
Progression Factor	1.00	1.00	1.00	1.00	0.35	0.00
Incremental Delay, d2	3.8	0.6	129.0	0.2	0.2	0.1
Delay (s)	52.7	10.3	177.8	28.7	4.5	0.1
Level of Service	D	B	F	C	A	A
Approach Delay (s)	18.1			142.5	2.6	
Approach LOS	B			F	A	

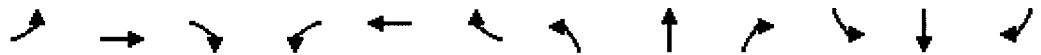
Intersection Summary			
HCM Average Control Delay	41.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

6: I-205 SB on-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↖	↑			↕	
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	
Lane Util. Factor					1.00	1.00	1.00	1.00			0.95	
Fr _t					1.00	0.85	1.00	1.00			0.95	
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1742	1553	1736	1827			3335	
Fl _t Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1742	1553	1736	1827			3335	
Volume (vph)	0	0	0	148	5	239	138	385	0	0	608	289
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	163	5	263	152	423	0	0	668	318
RTOR Reduction (vph)	0	0	0	0	0	211	0	0	0	0	48	0
Lane Group Flow (vph)	0	0	0	0	168	52	152	423	0	0	938	0
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					22.6	22.6	11.7	32.5			69.0	
Effective Green, g (s)					22.6	22.6	11.7	32.5			69.0	
Actuated g/C Ratio					0.20	0.20	0.10	0.28			0.60	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					341	304	176	515			1996	
v/s Ratio Prot					c0.10	0.03	0.09	c0.23			c0.28	
v/s Ratio Perm												
v/c Ratio					0.49	0.17	0.86	0.82			0.47	
Uniform Delay, d ₁					41.2	38.5	51.0	38.7			12.9	
Progression Factor					1.00	1.00	1.00	1.00			0.79	
Incremental Delay, d ₂					1.1	0.3	32.8	10.2			0.1	
Delay (s)					42.4	38.8	83.8	48.8			10.3	
Level of Service					D	D	F	D			B	
Approach Delay (s)		0.0			40.2			58.1			10.3	
Approach LOS		A			D			E			B	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	115.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 6: I-205 SB on-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↖	↑			↕	
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	
Lane Util. Factor					1.00	1.00	1.00	1.00			0.95	
Frts					1.00	0.85	1.00	1.00			0.96	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1811	1615	1787	1881			3430	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1811	1615	1787	1881			3430	
Volume (vph)	0	0	0	201	3	376	72	411	0	0	658	242
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	226	3	422	81	462	0	0	739	272
RTOR Reduction (vph)	0	0	0	0	0	339	0	0	0	0	30	0
Lane Group Flow (vph)	0	0	0	0	229	83	81	462	0	0	981	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type				Split	Prot	Prot						
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					23.2	23.2	10.0	34.1			72.3	
Effective Green, g (s)					23.2	23.2	10.0	34.1			72.3	
Actuated g/C Ratio					0.20	0.20	0.09	0.29			0.62	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					358	319	152	546			2111	
v/s Ratio Prot					c0.13	0.05	0.05	c0.25			c0.29	
v/s Ratio Perm												
v/c Ratio					0.64	0.26	0.53	0.85			0.46	
Uniform Delay, d1					43.3	39.9	51.5	39.2			12.2	
Progression Factor					1.00	1.00	1.00	1.00			0.98	
Incremental Delay, d2					3.7	0.4	3.6	11.6			0.1	
Delay (s)					47.0	40.3	55.1	50.8			12.1	
Level of Service					D	D	E	D			B	
Approach Delay (s)		0.0			42.7			51.4			12.1	
Approach LOS		A			D			D			B	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: I-205 NB off-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↖	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1740	1553					1827	1553	1752	1845	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1740	1553					1827	1553	1752	1845	
Volume (vph)	162	1	98	0	0	0	0	363	216	301	446	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	176	1	107	0	0	0	0	395	235	327	485	0
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	151	0	0	0
Lane Group Flow (vph)	0	177	17	0	0	0	0	395	84	327	485	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	4%	4%	4%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		9.1	9.1					20.9	20.9	16.2	41.1	
Effective Green, g (s)		9.1	9.1					20.9	20.9	16.2	41.1	
Actuated g/C Ratio		0.16	0.16					0.36	0.36	0.28	0.71	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		272	243					656	558	488	1303	
v/s Ratio Prot								c0.22		c0.19	0.26	
v/s Ratio Perm		0.10	0.01						0.05			
v/c Ratio		0.65	0.07					0.60	0.15	0.67	0.37	
Uniform Delay, d1		23.1	20.9					15.3	12.6	18.6	3.4	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.5	0.1					1.6	0.1	3.6	0.2	
Delay (s)		28.5	21.1					16.8	12.8	22.2	3.6	
Level of Service		C	C					B	B	C	A	
Approach Delay (s)		25.7			0.0			15.3			11.1	
Approach LOS		C			A			B			B	

Intersection Summary

HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: I-205 NB off-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↖	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1793	1599					1881	1599	1770	1863	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1793	1599					1881	1599	1770	1863	
Volume (vph)	127	2	124	0	0	0	0	338	284	285	546	0
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)	135	2	132	0	0	0	0	360	302	303	581	0
RTOR Reduction (vph)	0	0	113	0	0	0	0	0	190	0	0	0
Lane Group Flow (vph)	0	137	19	0	0	0	0	360	112	303	581	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type		Perm	Perm						Perm	Prot		
Protected Phases			4					2		1	6	
Permitted Phases	4		4					2				
Actuated Green, G (s)		8.0	8.0					20.2	20.2	14.5	38.7	
Effective Green, g (s)		8.0	8.0					20.2	20.2	14.5	38.7	
Actuated g/C Ratio		0.15	0.15					0.37	0.37	0.27	0.71	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		262	234					695	590	469	1318	
v/s Ratio Prot								c0.19		c0.17	0.31	
v/s Ratio Perm		0.08	0.01						0.07			
v/c Ratio		0.52	0.08					0.52	0.19	0.65	0.44	
Uniform Delay, d1		21.6	20.2					13.5	11.7	17.8	3.4	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.9	0.2					0.7	0.2	3.1	0.2	
Delay (s)		23.5	20.3					14.1	11.9	20.9	3.6	
Level of Service		C	C					B	B	C	A	
Approach Delay (s)		21.9			0.0			13.1			9.5	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	54.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 8: Access & Tannler Drive

6/22/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↕	↗	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	55	160	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	58	168	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	226	168	168			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	226	168	168			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	762	876	1409			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	58	168			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1409	1700			
Volume to Capacity	0.00	0.00	0.10			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			11.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Access & Tannler Drive

6/22/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙			↑	↓	↘
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	132	67	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	139	71	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	209	71	71			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	209	71	71			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	779	992	1530			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	139	71			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1530	1700			
Volume to Capacity	0.00	0.00	0.04			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			10.3%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

6/22/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑	↔		↕
Sign Control	Stop		Free	Stop		Free
Grade	0%		0%	0%		0%
Volume (veh/h)	7	0	9	56	0	60
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	9	0	11	70	0	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	121	46			81	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121	46			81	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	879	1029			1529	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	81	75
Volume Left	9	0	0
Volume Right	0	70	0
cSH	879	1700	1529
Volume to Capacity	0.01	0.05	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

6/22/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑		↗	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	56	0	47	6	0	19
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	76	0	64	8	0	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	93	68			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	93	68			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	100			100	
cM capacity (veh/h)	912	1001			1541	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	76	72	26
Volume Left	76	0	0
Volume Right	0	8	0
cSH	912	1700	1541
Volume to Capacity	0.08	0.04	0.00
Queue Length 95th (ft)	7	0	0
Control Delay (s)	9.3	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.3	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		4.1	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 2: Blankenship Rd & 13th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	9	342	0	0	384	50	0	0	1	55	0	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	368	0	0	413	54	0	0	1	59	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)	1124											
pX, platoon unblocked												
vC, conflicting volume	467		368		839		854		368		440	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	467		368		839		854		368		440	
tC, single (s)	4.1		4.2		7.1		6.5		6.2		6.2	
tC, 2 stage (s)												
tF (s)	2.2		2.3		3.5		4.0		3.3		3.3	
p0 queue free %	99		100		100		100		100		98	
cM capacity (veh/h)	1084		1164		279		295		680		622	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	377	467	1	71
Volume Left	10	0	0	59
Volume Right	0	54	1	12
cSH	1084	1164	680	318
Volume to Capacity	0.01	0.00	0.00	0.22
Queue Length 95th (ft)	1	0	0	21
Control Delay (s)	0.3	0.0	10.3	19.5
Lane LOS	A		B	C
Approach Delay (s)	0.3	0.0	10.3	19.5
Approach LOS			B	C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

2: Blankenship Rd & 13th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	4	498	3	0	361	50	0	0	1	61	0	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	553	3	0	401	56	0	0	1	68	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)					1124							
pX, platoon unblocked												
vC, conflicting volume	457			557			1001	1021	555	994	994	429
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	457			557			1001	1021	555	994	994	429
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	69	100	99
cM capacity (veh/h)	1109			1014			220	237	535	222	243	624

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	561	457	1	76
Volume Left	4	0	0	68
Volume Right	3	56	1	8
cSH	1109	1014	535	238
Volume to Capacity	0.00	0.00	0.00	0.32
Queue Length 95th (ft)	0	0	0	33
Control Delay (s)	0.1	0.0	11.7	27.0
Lane LOS	A		B	D
Approach Delay (s)	0.1	0.0	11.7	27.0
Approach LOS			B	D

Intersection Summary			
Average Delay		1.9	
Intersection Capacity Utilization	46.7%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 3: Blankenship Rd & Driveway

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↘		↙	↘			↕				↕
Sign Control	Free		Free				Stop				Stop	
Grade	0%		0%				0%				0%	
Volume (veh/h)	1	390	15	20	403	19	21	1	23	4	1	3
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)	1	424	16	22	438	21	23	1	25	4	1	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)	685											
pX, platoon unblocked												
vC, conflicting volume	459			440			920	936	432	943	934	448
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	459			440			920	936	432	943	934	448
tC, single (s)	4.1			4.1			7.2	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			91	100	96	98	100	99
cM capacity (veh/h)	1092			1104			243	256	617	230	262	615

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	1	440	22	459	49	9
Volume Left	1	0	22	0	23	4
Volume Right	0	16	0	21	25	3
cSH	1092	1700	1104	1700	352	307
Volume to Capacity	0.00	0.26	0.02	0.27	0.14	0.03
Queue Length 95th (ft)	0	0	2	0	12	2
Control Delay (s)	8.3	0.0	8.3	0.0	16.9	17.1
Lane LOS	A		A		C	C
Approach Delay (s)	0.0		0.4		16.9	17.1
Approach LOS					C	C

Intersection Summary		
Average Delay		1.2
Intersection Capacity Utilization	32.4%	ICU Level of Service A
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis

3: Blankenship Rd & Driveway

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Sign Control	Free		Free				Stop				Stop	
Grade	0%		0%				0%				0%	
Volume (veh/h)	4	474	76	60	328	12	68	1	76	58	3	2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	4	504	81	64	349	13	72	1	81	62	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)						685						
pX, platoon unblocked												
vC, conflicting volume	362		585				1034		1043		355	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	362		585				1034		1043		355	
tC, single (s)	4.1		4.1				7.1		6.5		6.2	
tC, 2 stage (s)												
tF (s)	2.2		2.2				3.5		4.0		3.3	
p0 queue free %	100		94				63		100		85	
cM capacity (veh/h)	1202		990				198		215		693	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	4	585	64	362	154	67
Volume Left	4	0	64	0	72	62
Volume Right	0	81	0	13	81	2
cSH	1202	1700	990	1700	296	165
Volume to Capacity	0.00	0.34	0.06	0.21	0.52	0.41
Queue Length 95th (ft)	0	0	5	0	70	45
Control Delay (s)	8.0	0.0	8.9	0.0	29.6	40.9
Lane LOS	A		A		D	E
Approach Delay (s)	0.1		1.3		29.6	
Approach LOS					D	E

Intersection Summary		
Average Delay	6.4	
Intersection Capacity Utilization	50.7%	ICU Level of Service A
Analysis Period (min)	15	

HCM Signalized Intersection Capacity Analysis
 4: Blankenship Rd & Tannler Drive

7/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Fr _t	1.00	0.99		1.00	0.96			1.00	0.85	1.00	0.88	
Fl _t Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1849		1770	1783			1807	1583	1805	1666	
Fl _t Permitted	0.43	1.00		0.41	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (perm)	802	1849		758	1783			1807	1583	1805	1666	
Volume (vph)	82	491	25	157	341	136	20	12	155	96	8	39
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)	87	522	27	167	363	145	21	13	165	102	9	41
RTOR Reduction (vph)	0	1	0	0	6	0	0	0	154	0	37	0
Lane Group Flow (vph)	87	548	0	167	502	0	0	34	11	102	13	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%	0%	0%
Turn Type	Perm		Perm				Split		Perm		Split	
Protected Phases	2		6				4		4		8	
Permitted Phases	2		6						4			
Actuated Green, G (s)	88.1	88.1		88.1	88.1			8.1	8.1	11.8	11.8	
Effective Green, g (s)	88.1	88.1		88.1	88.1			8.1	8.1	11.8	11.8	
Actuated g/C Ratio	0.73	0.73		0.73	0.73			0.07	0.07	0.10	0.10	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	589	1357		556	1309			122	107	177	164	
v/s Ratio Prot	c0.30						c0.02		c0.06		0.01	
v/s Ratio Perm	0.11		0.22						0.01			
v/c Ratio	0.15	0.40		0.30	0.38			0.28	0.10	0.58	0.08	
Uniform Delay, d ₁	4.8	6.0		5.4	5.9			53.2	52.5	51.7	49.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d ₂	0.5	0.9		1.4	0.9			1.2	0.4	4.5	0.2	
Delay (s)	5.3	6.9		6.8	6.8			54.4	53.0	56.2	49.4	
Level of Service	A		A				D		D		E	
Approach Delay (s)	6.7		6.8				53.2				54.0	
Approach LOS	A		A				D				D	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 4: Blankenship Rd & Tannler Drive

7/14/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗	↖	↗	
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	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Fr _t	1.00	1.00		1.00	0.96			1.00	0.85	1.00	0.86	
Fl _t Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1821		1703	1724			1702	1468	1805	1631	
Fl _t Permitted	0.40	1.00		0.49	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)	722	1821		886	1724			1702	1468	1805	1631	
Volume (vph)	31	362	8	68	390	133	3	6	50	131	4	62
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	393	9	74	424	145	3	7	54	142	4	67
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	51	0	59	0
Lane Group Flow (vph)	34	402	0	74	563	0	0	10	3	142	12	0
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	10%	10%	10%	0%	0%	0%
Turn Type	Perm		Perm		Split		Perm		Split			
Protected Phases	2		6		4		4		8		8	
Permitted Phases	2		6				4					
Actuated Green, G (s)	88.0	88.0		88.0	88.0			5.6	5.6	14.4	14.4	
Effective Green, g (s)	88.0	88.0		88.0	88.0			5.6	5.6	14.4	14.4	
Actuated g/C Ratio	0.73	0.73		0.73	0.73			0.05	0.05	0.12	0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	529	1335		650	1264			79	69	217	196	
v/s Ratio Prot	0.22		c0.33		c0.01		c0.08		0.01			
v/s Ratio Perm	0.05		0.08		0.00							
v/c Ratio	0.06	0.30		0.11	0.45			0.13	0.04	0.65	0.06	
Uniform Delay, d ₁	4.5	5.5		4.7	6.3			54.9	54.6	50.4	46.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d ₂	0.2	0.6		0.4	1.1			0.7	0.2	6.9	0.1	
Delay (s)	4.7	6.1		5.0	7.5			55.6	54.8	57.3	46.9	
Level of Service	A	A		A	A			E	D	E	D	
Approach Delay (s)	5.9		7.2		55.0		53.9					
Approach LOS	A		A		D		D					

Intersection Summary

HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 5: Blankenship Rd & 10th St

6/22/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↕	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.96	0.95	1.00
Satd. Flow (prot)	1827	1553	1649	1674	1703	1524
Flt Permitted	1.00	1.00	0.95	0.96	0.95	1.00
Satd. Flow (perm)	1827	1553	1649	1674	1703	1524
Volume (vph)	43	508	458	71	512	242
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	46	546	492	76	551	260
RTOR Reduction (vph)	0	0	0	0	0	49
Lane Group Flow (vph)	46	546	277	291	551	211
Heavy Vehicles (%)	4%	4%	4%	4%	6%	6%
Turn Type	custom		Split		custom	
Protected Phases	4	4 5 7	3	3	5 6 7	3 5 6 7
Permitted Phases						5 6 7
Actuated Green, G (s)	14.0	79.2	20.0	20.0	71.2	95.2
Effective Green, g (s)	14.0	79.2	20.0	20.0	71.2	95.2
Actuated g/C Ratio	0.12	0.68	0.17	0.17	0.61	0.81
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	218	1049	281	286	1035	1238
v/s Ratio Prot	0.03	c0.35	0.17	c0.17	c0.32	0.14
v/s Ratio Perm						
v/c Ratio	0.21	0.52	0.99	1.02	0.53	0.17
Uniform Delay, d1	46.6	9.5	48.5	48.6	13.3	2.4
Progression Factor	1.00	1.00	1.00	1.00	0.34	0.00
Incremental Delay, d2	0.5	0.5	49.3	57.8	0.4	0.1
Delay (s)	47.1	10.0	97.8	106.4	5.0	0.1
Level of Service	D	A	F	F	A	A
Approach Delay (s)	12.9			102.2	3.4	
Approach LOS	B			F	A	

Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	117.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 5: Blankenship Rd & 10th St

6/22/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↖	↙	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Fr _t	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (prot)	1881	1599	1698	1738	1770	1583
Flt Permitted	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (perm)	1881	1599	1698	1738	1770	1583
Volume (vph)	124	612	381	109	518	335
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	132	651	405	116	551	356
RTOR Reduction (vph)	0	0	0	0	0	46
Lane Group Flow (vph)	132	651	254	267	551	310
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Turn Type	custom		Split		custom	
Protected Phases	4	4 5 7	3	3	5 6 7 3 5 6 7	
Permitted Phases						5 6 7
Actuated Green, G (s)	14.0	82.0	20.0	20.0	74.0	98.0
Effective Green, g (s)	14.0	82.0	20.0	20.0	74.0	98.0
Actuated g/C Ratio	0.12	0.68	0.17	0.17	0.62	0.82
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	219	1093	283	290	1092	1293
v/s Ratio Prot	0.07	c0.41	0.15	c0.15	c0.31	0.20
v/s Ratio Perm						
v/c Ratio	0.60	0.60	0.90	0.92	0.50	0.24
Uniform Delay, d ₁	50.4	10.1	49.0	49.2	12.8	2.5
Progression Factor	1.00	1.00	1.00	1.00	0.32	0.00
Incremental Delay, d ₂	4.6	0.9	28.4	32.8	0.2	0.1
Delay (s)	55.0	11.0	77.4	82.0	4.4	0.1
Level of Service	D	B	E	F	A	A
Approach Delay (s)	18.4			79.7	2.7	
Approach LOS	B			E	A	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 6: I-205 SB on-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↖	↑			↕	
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	
Lane Util. Factor					1.00	1.00	1.00	1.00			0.95	
Frts					1.00	0.85	1.00	1.00			0.95	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1742	1553	1736	1827			3337	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1742	1553	1736	1827			3337	
Volume (vph)	0	0	0	148	5	279	138	385	0	0	646	304
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	163	5	307	152	423	0	0	710	334
RTOR Reduction (vph)	0	0	0	0	0	245	0	0	0	0	47	0
Lane Group Flow (vph)	0	0	0	0	168	62	152	423	0	0	997	0
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					23.7	23.7	11.8	33.5			69.7	
Effective Green, g (s)					23.7	23.7	11.8	33.5			69.7	
Actuated g/C Ratio					0.20	0.20	0.10	0.29			0.59	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					352	314	175	522			1985	
v/s Ratio Prot					c0.10	0.04	0.09	c0.23			c0.30	
v/s Ratio Perm												
v/c Ratio					0.48	0.20	0.87	0.81			0.50	
Uniform Delay, d1					41.3	38.8	51.9	38.9			13.7	
Progression Factor					1.00	1.00	1.00	1.00			0.80	
Incremental Delay, d2					1.0	0.3	33.6	9.3			0.1	
Delay (s)					42.3	39.2	85.6	48.1			11.2	
Level of Service					D	D	F	D			B	
Approach Delay (s)		0.0			40.3			58.0			11.2	
Approach LOS		A			D			E			B	

Intersection Summary

HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	117.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 6: I-205 SB on-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↘	↑			↕	
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	
Lane Util. Factor					1.00	1.00	1.00	1.00			0.95	
Fr _t					1.00	0.85	1.00	1.00			0.96	
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1811	1615	1787	1881			3428	
Fl _t Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1811	1615	1787	1881			3428	
Volume (vph)	0	0	0	201	3	401	72	470	0	0	747	280
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	226	3	451	81	528	0	0	839	315
RTOR Reduction (vph)	0	0	0	0	0	361	0	0	0	0	31	0
Lane Group Flow (vph)	0	0	0	0	229	90	81	528	0	0	1123	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					24.0	24.0	10.1	36.0			73.9	
Effective Green, g (s)					24.0	24.0	10.1	36.0			73.9	
Actuated g/C Ratio					0.20	0.20	0.08	0.30			0.62	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					362	323	150	564			2111	
v/s Ratio Prot					c0.13	0.06	0.05	c0.28			c0.33	
v/s Ratio Perm												
v/c Ratio					0.63	0.28	0.54	0.94			0.53	
Uniform Delay, d1					44.0	40.7	52.7	40.9			13.2	
Progression Factor					1.00	1.00	1.00	1.00			1.02	
Incremental Delay, d2					3.6	0.5	3.9	23.1			0.2	
Delay (s)					47.5	41.1	56.6	63.9			13.7	
Level of Service					D	D	E	E			B	
Approach Delay (s)		0.0			43.3			63.0			13.7	
Approach LOS		A			D			E			B	

Intersection Summary			
HCM Average Control Delay	34.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 7: I-205 NB off-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↖	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1740	1553					1827	1553	1752	1845	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1740	1553					1827	1553	1752	1845	
Volume (vph)	194	1	98	0	0	0	0	395	216	317	468	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	1	107	0	0	0	0	429	235	345	509	0
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	151	0	0	0
Lane Group Flow (vph)	0	212	17	0	0	0	0	429	84	345	509	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	4%	4%	4%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		10.0	10.0					22.2	22.2	17.6	43.8	
Effective Green, g (s)		10.0	10.0					22.2	22.2	17.6	43.8	
Actuated g/C Ratio		0.16	0.16					0.36	0.36	0.28	0.71	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		282	251					656	558	499	1308	
v/s Ratio Prot								c0.23		c0.20	0.28	
v/s Ratio Perm		0.12	0.01						0.05			
v/c Ratio		0.75	0.07					0.65	0.15	0.69	0.39	
Uniform Delay, d1		24.7	22.0					16.6	13.4	19.7	3.6	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		10.8	0.1					2.3	0.1	4.1	0.2	
Delay (s)		35.5	22.1					18.9	13.5	23.8	3.8	
Level of Service		D	C					B	B	C	A	
Approach Delay (s)		31.0			0.0			17.0			11.9	
Approach LOS		C			A			B			B	

Intersection Summary

HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 7: I-205 NB off-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↖	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1793	1599					1881	1599	1770	1863	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1793	1599					1881	1599	1770	1863	
Volume (vph)	151	2	124	0	0	0	0	373	284	330	590	0
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)	161	2	132	0	0	0	0	397	302	351	628	0
RTOR Reduction (vph)	0	0	112	0	0	0	0	0	195	0	0	0
Lane Group Flow (vph)	0	163	20	0	0	0	0	397	107	351	628	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		8.7	8.7					20.5	20.5	16.9	41.4	
Effective Green, g (s)		8.7	8.7					20.5	20.5	16.9	41.4	
Actuated g/C Ratio		0.15	0.15					0.35	0.35	0.29	0.71	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		268	239					664	564	515	1328	
v/s Ratio Prot								c0.21		c0.20	0.34	
v/s Ratio Perm		0.09	0.01						0.07			
v/c Ratio		0.61	0.08					0.60	0.19	0.68	0.47	
Uniform Delay, d1		23.1	21.3					15.4	13.0	18.2	3.6	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		3.9	0.1					1.5	0.2	3.7	0.3	
Delay (s)		27.0	21.4					16.9	13.2	21.9	3.9	
Level of Service		C	C					B	B	C	A	
Approach Delay (s)		24.5			0.0			15.3			10.4	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

8: Access & Tannler Drive

6/22/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙			↑	↓	↘
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	50	137	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	53	144	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	197	144	144			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	197	144	144			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	792	903	1438			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	53	144			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1438	1700			
Volume to Capacity	0.00	0.00	0.08			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization	10.5%		ICU Level of Service	A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

8: Access & Tannler Drive

6/22/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↑	↓	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	0	0	132	67	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	139	71	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	209	71	71			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	209	71	71			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	779	992	1530			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	139	71
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1530	1700
Volume to Capacity	0.00	0.00	0.04
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	10.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

7/7/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑		↔	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	7	0	9	56	0	60
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	9	0	11	70	0	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	121	46			81	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121	46			81	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	879	1029			1529	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	81	75
Volume Left	9	0	0
Volume Right	0	70	0
cSH	879	1700	1529
Volume to Capacity	0.01	0.05	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay			0.5
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

7/7/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑		↔	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	56	0	47	6	0	19
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	76	0	64	8	0	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	93	68			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	93	68			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	100			100	
cM capacity (veh/h)	912	1001			1541	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	76	72	26
Volume Left	76	0	0
Volume Right	0	8	0
cSH	912	1700	1541
Volume to Capacity	0.08	0.04	0.00
Queue Length 95th (ft)	7	0	0
Control Delay (s)	9.3	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.3	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

2: Blankenship Rd & 13th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕		↕				↕	
Sign Control	Free				Free		Stop				Stop	
Grade	0%				0%		0%				0%	
Volume (veh/h)	9	339	0	0	377	50	0	0	1	55	0	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	365	0	0	405	54	0	0	1	59	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)	1124											
pX, platoon unblocked												
vC, conflicting volume	459			365			828	843	365	817	816	432
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	459			365			828	843	365	817	816	432
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	80	100	98
cM capacity (veh/h)	1091			1167			284	299	683	295	311	628

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	374	459	1	71
Volume Left	10	0	0	59
Volume Right	0	54	1	12
cSH	1091	1167	683	324
Volume to Capacity	0.01	0.00	0.00	0.22
Queue Length 95th (ft)	1	0	0	21
Control Delay (s)	0.3	0.0	10.3	19.2
Lane LOS	A		B	C
Approach Delay (s)	0.3	0.0	10.3	19.2
Approach LOS			B	C

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
 2: Blankenship Rd & 13th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	4	486	3	0	351	50	0	0	1	61	0	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	540	3	0	390	56	0	0	1	68	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (ft)	1124											
pX, platoon unblocked												
vC, conflicting volume	446			543			976	996	542	969	970	418
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	446			543			976	996	542	969	970	418
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	71	100	99
cM capacity (veh/h)	1120			1026			229	245	545	231	251	633

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	548	446	1	76
Volume Left	4	0	0	68
Volume Right	3	56	1	8
cSH	1120	1026	545	247
Volume to Capacity	0.00	0.00	0.00	0.31
Queue Length 95th (ft)	0	0	0	31
Control Delay (s)	0.1	0.0	11.6	25.9
Lane LOS	A		B	D
Approach Delay (s)	0.1	0.0	11.6	25.9
Approach LOS			B	D

Intersection Summary			
Average Delay		1.9	
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

3: Blankenship Rd & Driveway

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Sign Control	Free		Free				Stop				Stop	
Grade	0%		0%				0%				0%	
Volume (veh/h)	10	378	15	20	395	146	21	8	23	21	2	4
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)	11	411	16	22	429	159	23	9	25	23	2	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)	685											
pX, platoon unblocked												
vC, conflicting volume	588			427			919	1072	419	1014	1001	509
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	588			427			919	1072	419	1014	1001	509
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			90	96	96	89	99	99
cM capacity (veh/h)	977			1116			239	211	628	199	237	568

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	11	427	22	588	57	29
Volume Left	11	0	22	0	23	23
Volume Right	0	16	0	159	25	4
cSH	977	1700	1116	1700	320	223
Volume to Capacity	0.01	0.25	0.02	0.35	0.18	0.13
Queue Length 95th (ft)	1	0	1	0	16	11
Control Delay (s)	8.7	0.0	8.3	0.0	18.6	23.6
Lane LOS	A		A		C	C
Approach Delay (s)	0.2		0.3		18.6	23.6
Approach LOS					C	C

Intersection Summary		
Average Delay		1.8
Intersection Capacity Utilization	39.7%	ICU Level of Service A
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis

3: Blankenship Rd & Driveway

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Sign Control	Free		Free				Stop				Stop	
Grade	0%		0%				0%				0%	
Volume (veh/h)	6	460	76	60	312	35	68	2	76	169	9	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	6	489	81	64	332	37	72	2	81	180	10	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	369		570				1015		1039		351	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	369		570				1015		1039		351	
tC, single (s)	4.1		4.1				7.1		6.5		6.2	
tC, 2 stage (s)												
tF (s)	2.2		2.2				3.5		4.0		3.3	
p0 queue free %	99		94				63		99		99	
cM capacity (veh/h)	1195		1002				197		216		697	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	6	570	64	369	155	198
Volume Left	6	0	64	0	72	180
Volume Right	0	81	0	37	81	9
cSH	1195	1700	1002	1700	296	170
Volume to Capacity	0.01	0.34	0.06	0.22	0.52	1.16
Queue Length 95th (ft)	0	0	5	0	71	263
Control Delay (s)	8.0	0.0	8.8	0.0	29.8	173.6
Lane LOS	A		A		D	F
Approach Delay (s)	0.1		1.3		29.8	173.6
Approach LOS					D	F

Intersection Summary

Average Delay	29.1
Intersection Capacity Utilization	59.1%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

4: Blankenship Rd & Tannler Drive

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗	↖	↗	
Sign Control		Free			Free			Stop				Stop
Grade		0%			0%			0%				0%
Volume (veh/h)	33	377	8	68	504	29	3	6	50	102	4	56
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)	36	410	9	74	548	32	3	7	54	111	4	61
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)					310							
pX, platoon unblocked												
vC, conflicting volume	579			418			1245	1213	414	1251	1202	564
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	579			418			1245	1213	414	1251	1202	564
tC, single (s)	4.1			4.2			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	96			93			97	96	91	10	97	88
cM capacity (veh/h)	985			1119			116	158	621	123	168	529

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	36	418	74	579	10	54	111	65
Volume Left	36	0	74	0	3	0	111	0
Volume Right	0	9	0	32	0	54	0	61
cSH	985	1700	1119	1700	141	621	123	463
Volume to Capacity	0.04	0.25	0.07	0.34	0.07	0.09	0.90	0.14
Queue Length 95th (ft)	3	0	5	0	6	7	143	12
Control Delay (s)	8.8	0.0	8.4	0.0	32.4	11.3	122.8	14.1
Lane LOS	A		A		D	B	F	B
Approach Delay (s)	0.7		1.0		14.6		82.5	
Approach LOS					B		F	

Intersection Summary		
Average Delay		12.2
Intersection Capacity Utilization	53.9%	ICU Level of Service
Analysis Period (min)		15
		A

HCM Unsignalized Intersection Capacity Analysis

4: Blankenship Rd & Tannler Drive

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗	↖	↗	
Sign Control	Free		Free				Stop				Stop	
Grade	0%		0%				0%				0%	
Volume (veh/h)	80	590	25	157	361	52	20	12	155	36	8	26
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	85	628	27	167	384	55	21	13	165	38	9	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)						310						
pX, platoon unblocked												
vC, conflicting volume	439		654				1561		1585		412	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	439		654				1561		1585		412	
tC, single (s)	4.1		4.1				7.1		6.5		6.2	
tC, 2 stage (s)												
tF (s)	2.2		2.2				3.5		4.0		3.3	
p0 queue free %	92		82				68		84		65	
cM capacity (veh/h)	1121		933				66		82		475	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	85	654	167	439	34	165	38	36
Volume Left	85	0	167	0	21	0	38	0
Volume Right	0	27	0	55	0	165	0	28
cSH	1121	1700	933	1700	71	475	34	252
Volume to Capacity	0.08	0.38	0.18	0.26	0.48	0.35	1.13	0.14
Queue Length 95th (ft)	6	0	16	0	49	38	102	12
Control Delay (s)	8.5	0.0	9.7	0.0	95.6	16.6	376.7	21.6
Lane LOS	A		A		F	C	F	C
Approach Delay (s)	1.0		2.7		30.1		204.2	
Approach LOS					D		F	

Intersection Summary			
Average Delay	14.5		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
 5: Blankenship Rd & 10th St

7/14/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↖	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (prot)	1827	1553	1649	1678	1703	1524
Flt Permitted	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (perm)	1827	1553	1649	1678	1703	1524
Volume (vph)	45	493	434	85	508	242
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	48	530	467	91	546	260
RTOR Reduction (vph)	0	0	0	0	0	48
Lane Group Flow (vph)	48	530	272	286	546	212
Heavy Vehicles (%)	4%	4%	4%	4%	6%	6%
Turn Type	custom		Split		custom	
Protected Phases	4	4 5 7	3	3	5 6 7	3 5 6 7
Permitted Phases					5 6 7	
Actuated Green, G (s)	14.0	80.4	20.0	20.0	72.4	96.4
Effective Green, g (s)	14.0	80.4	20.0	20.0	72.4	96.4
Actuated g/C Ratio	0.12	0.68	0.17	0.17	0.61	0.81
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	216	1055	279	283	1041	1241
v/s Ratio Prot	0.03	c0.34	0.16	c0.17	c0.32	0.14
v/s Ratio Perm						
v/c Ratio	0.22	0.50	0.97	1.01	0.52	0.17
Uniform Delay, d1	47.3	9.3	49.0	49.2	13.2	2.4
Progression Factor	1.00	1.00	1.00	1.00	0.27	0.00
Incremental Delay, d2	0.5	0.4	46.6	56.2	0.3	0.0
Delay (s)	47.8	9.6	95.5	105.4	3.9	0.0
Level of Service	D	A	F	F	A	A
Approach Delay (s)	12.8			100.6	2.7	
Approach LOS	B			F	A	

Intersection Summary

HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	118.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 5: Blankenship Rd & 10th St

7/14/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Fr _t	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (prot)	1881	1599	1698	1741	1770	1583
Flt Permitted	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (perm)	1881	1599	1698	1741	1770	1583
Volume (vph)	137	639	352	112	451	335
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	146	680	374	119	480	356
RTOR Reduction (vph)	0	0	0	0	0	39
Lane Group Flow (vph)	146	680	240	253	480	317
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Turn Type	custom		Split		custom	
Protected Phases	4	4 5 7	3	3	5 6 7	3 5 6 7
Permitted Phases						5 6 7
Actuated Green, G (s)	14.0	80.4	20.0	20.0	72.4	96.4
Effective Green, g (s)	14.0	80.4	20.0	20.0	72.4	96.4
Actuated g/C Ratio	0.12	0.68	0.17	0.17	0.61	0.81
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	222	1086	287	294	1082	1289
v/s Ratio Prot	0.08	c0.43	0.14	c0.15	c0.27	0.20
v/s Ratio Perm						
v/c Ratio	0.66	0.63	0.84	0.86	0.44	0.25
Uniform Delay, d ₁	49.9	10.6	47.6	47.8	12.3	2.6
Progression Factor	1.00	1.00	1.00	1.00	0.35	0.00
Incremental Delay, d ₂	6.9	1.1	18.6	21.8	0.2	0.1
Delay (s)	56.8	11.7	66.2	69.6	4.5	0.1
Level of Service	E	B	E	E	A	A
Approach Delay (s)	19.7			68.0	2.6	
Approach LOS	B			E	A	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	118.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 6: I-205 SB on-ramp & 10th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↖	↑			↕	↔
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	
Lane Util. Factor					1.00	1.00	1.00	1.00			0.95	
Fr _t					1.00	0.85	1.00	1.00			0.95	
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1742	1553	1736	1827			3335	
Fl _t Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1742	1553	1736	1827			3335	
Volume (vph)	0	0	0	148	5	289	138	435	0	0	617	294
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	163	5	318	152	478	0	0	678	323
RTOR Reduction (vph)	0	0	0	0	0	254	0	0	0	0	48	0
Lane Group Flow (vph)	0	0	0	0	168	64	152	478	0	0	953	0
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Turn Type				Split		Prot		Prot				
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					23.7	23.7	11.9	34.7			70.8	
Effective Green, g (s)					23.7	23.7	11.9	34.7			70.8	
Actuated g/C Ratio					0.20	0.20	0.10	0.29			0.60	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					349	311	174	535			1994	
v/s Ratio Prot					c0.10	0.04	0.09	c0.26			c0.29	
v/s Ratio Perm												
v/c Ratio					0.48	0.20	0.87	0.89			0.48	
Uniform Delay, d ₁					41.9	39.5	52.5	40.1			13.4	
Progression Factor					1.00	1.00	1.00	1.00			0.81	
Incremental Delay, d ₂					1.0	0.3	35.0	17.1			0.1	
Delay (s)					43.0	39.8	87.5	57.2			10.9	
Level of Service					D	D	F	E			B	
Approach Delay (s)		0.0			40.9			64.5			10.9	
Approach LOS		A			D			E			B	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	118.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 6: I-205 SB on-ramp & 10th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↖	↑			↕	
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	
Lane Util. Factor					1.00	1.00	1.00	1.00			0.95	
Frt					1.00	0.85	1.00	1.00			0.96	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1811	1615	1787	1881			3426	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1811	1615	1787	1881			3426	
Volume (vph)	0	0	0	201	3	385	72	420	0	0	714	273
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	226	3	433	81	472	0	0	802	307
RTOR Reduction (vph)	0	0	0	0	0	346	0	0	0	0	32	0
Lane Group Flow (vph)	0	0	0	0	229	87	81	472	0	0	1077	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					23.7	23.7	10.0	34.7			72.7	
Effective Green, g (s)					23.7	23.7	10.0	34.7			72.7	
Actuated g/C Ratio					0.20	0.20	0.08	0.29			0.61	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					363	323	151	551			2104	
v/s Ratio Prot					c0.13	0.05	0.05	c0.25			c0.31	
v/s Ratio Perm												
v/c Ratio					0.63	0.27	0.54	0.86			0.51	
Uniform Delay, d1					43.3	40.0	52.0	39.5			12.9	
Progression Factor					1.00	1.00	1.00	1.00			1.10	
Incremental Delay, d2					3.6	0.4	3.6	12.4			0.2	
Delay (s)					46.9	40.5	55.6	51.9			14.3	
Level of Service					D	D	E	D			B	
Approach Delay (s)		0.0			42.7			52.5			14.3	
Approach LOS		A			D			D			B	

Intersection Summary			
HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	118.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 7: I-205 NB off-ramp & 10th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↘	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Fr't		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1740	1553					1827	1553	1752	1845	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1740	1553					1827	1553	1752	1845	
Volume (vph)	199	1	98	0	0	0	0	377	216	308	448	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	216	1	107	0	0	0	0	410	235	335	487	0
RTOR Reduction (vph)	0	0	89	0	0	0	0	0	152	0	0	0
Lane Group Flow (vph)	0	217	18	0	0	0	0	410	83	335	487	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	4%	4%	4%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		10.0	10.0					21.4	21.4	17.3	42.7	
Effective Green, g (s)		10.0	10.0					21.4	21.4	17.3	42.7	
Actuated g/C Ratio		0.16	0.16					0.35	0.35	0.29	0.70	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		287	256					644	548	499	1298	
v/s Ratio Prot								c0.22		c0.19	0.26	
v/s Ratio Perm		0.12	0.01						0.05			
v/c Ratio		0.76	0.07					0.64	0.15	0.67	0.38	
Uniform Delay, d1		24.2	21.4					16.4	13.4	19.2	3.6	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		10.8	0.1					2.1	0.1	3.5	0.2	
Delay (s)		35.0	21.5					18.5	13.6	22.7	3.8	
Level of Service		C	C					B	B	C	A	
Approach Delay (s)		30.5			0.0			16.7			11.5	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: I-205 NB off-ramp & 10th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↘	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Fr _t		1.00	0.85					1.00	0.85	1.00	1.00	
Fl _t Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1793	1599					1881	1599	1770	1863	
Fl _t Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1793	1599					1881	1599	1770	1863	
Volume (vph)	133	2	124	0	0	0	0	341	284	329	558	0
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)	141	2	132	0	0	0	0	363	302	350	594	0
RTOR Reduction (vph)	0	0	113	0	0	0	0	0	197	0	0	0
Lane Group Flow (vph)	0	143	19	0	0	0	0	363	105	350	594	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		8.1	8.1					19.4	19.4	16.4	39.8	
Effective Green, g (s)		8.1	8.1					19.4	19.4	16.4	39.8	
Actuated g/C Ratio		0.14	0.14					0.35	0.35	0.29	0.71	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		260	232					653	555	519	1326	
v/s Ratio Prot								c0.19		c0.20	0.32	
v/s Ratio Perm		0.08	0.01						0.07			
v/c Ratio		0.55	0.08					0.56	0.19	0.67	0.45	
Uniform Delay, d ₁		22.2	20.7					14.8	12.8	17.4	3.4	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d ₂		2.5	0.2					1.0	0.2	3.5	0.2	
Delay (s)		24.7	20.8					15.8	12.9	20.9	3.6	
Level of Service		C	C					B	B	C	A	
Approach Delay (s)		22.9			0.0			14.5			10.0	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	55.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 8: Access & Tannler Drive

7/7/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↕	↗	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	2	2	14	55	160	14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	2	15	58	168	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	263	176	183			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	263	176	183			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	99			
cM capacity (veh/h)	718	867	1392			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	4	73	183
Volume Left	2	15	0
Volume Right	2	0	15
cSH	786	1392	1700
Volume to Capacity	0.01	0.01	0.11
Queue Length 95th (ft)	0	1	0
Control Delay (s)	9.6	1.6	0.0
Lane LOS	A	A	
Approach Delay (s)	9.6	1.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

8: Access & Tannler Drive

7/7/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↕	↗	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	12	12	3	132	67	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	13	13	3	139	71	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	217	72	74			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	217	72	74			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	769	990	1526			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	25	142	74
Volume Left	13	3	0
Volume Right	13	0	3
cSH	866	1526	1700
Volume to Capacity	0.03	0.00	0.04
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	0.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay			1.1
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

7/7/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↘	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	7	0	9	56	0	60
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	9	0	11	70	0	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	121	46			81	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121	46			81	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	879	1029			1529	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	81	75
Volume Left	9	0	0
Volume Right	0	70	0
cSH	879	1700	1529
Volume to Capacity	0.01	0.05	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

7/7/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑			↘
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	56	0	47	6	0	19
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	76	0	64	8	0	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	93	68			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	93	68			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	100			100	
cM capacity (veh/h)	912	1001			1541	

Direction	Lane #	WB 1	NB 1	SB 1
Volume Total		76	72	26
Volume Left		76	0	0
Volume Right		0	8	0
cSH		912	1700	1541
Volume to Capacity		0.08	0.04	0.00
Queue Length 95th (ft)		7	0	0
Control Delay (s)		9.3	0.0	0.0
Lane LOS		A		
Approach Delay (s)		9.3	0.0	0.0
Approach LOS		A		

Intersection Summary			
Average Delay		4.1	
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 2: Blankenship Rd & 13th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations	↕				↕				↕		↕									
Sign Control	Free				Free				Stop		Stop									
Grade	0%				0%				0%		0%									
Volume (veh/h)	9	349	0	0	385	50	0	0	1	55	0	11								
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93								
Hourly flow rate (vph)	10	375	0	0	414	54	0	0	1	59	0	12								
Pedestrians																				
Lane Width (ft)																				
Walking Speed (ft/s)																				
Percent Blockage																				
Right turn flare (veh)																				
Median type							None			None										
Median storage veh																				
Upstream signal (ft)					814															
pX, platoon unblocked																				
vC, conflicting volume	468				375				847		862		375		837		835		441	
vC1, stage 1 conf vol																				
vC2, stage 2 conf vol																				
vCu, unblocked vol	468				375				847		862		375		837		835		441	
tC, single (s)	4.1				4.2				7.1		6.5		6.2		7.1		6.5		6.2	
tC, 2 stage (s)																				
tF (s)	2.2				2.3				3.5		4.0		3.3		3.5		4.0		3.3	
p0 queue free %	99				100				100		100		100		79		100		98	
cM capacity (veh/h)	1083				1156				275		291		673		286		303		621	

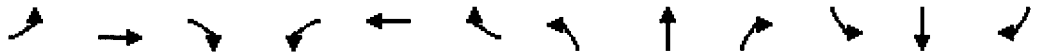
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	385	468	1	71
Volume Left	10	0	0	59
Volume Right	0	54	1	12
cSH	1083	1156	673	314
Volume to Capacity	0.01	0.00	0.00	0.23
Queue Length 95th (ft)	1	0	0	21
Control Delay (s)	0.3	0.0	10.4	19.8
Lane LOS	A		B	C
Approach Delay (s)	0.3	0.0	10.4	19.8
Approach LOS			B	C

Intersection Summary			
Average Delay			1.7
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis

2: Blankenship Rd & 13th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕		↕				↕	
Sign Control	Free				Free		Stop				Stop	
Grade	0%				0%		0%				0%	
Volume (veh/h)	4	504	3	0	367	50	0	0	1	61	0	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	560	3	0	408	56	0	0	1	68	0	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)	814											
pX, platoon unblocked												
vC, conflicting volume	463			563			1014	1034	562	1007	1008	436
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	463			563			1014	1034	562	1007	1008	436
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	69	100	99
cM capacity (veh/h)	1103			1008			216	233	531	217	239	619

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	568	463	1	76
Volume Left	4	0	0	68
Volume Right	3	56	1	8
cSH	1103	1008	531	233
Volume to Capacity	0.00	0.00	0.00	0.32
Queue Length 95th (ft)	0	0	0	34
Control Delay (s)	0.1	0.0	11.8	27.7
Lane LOS	A		B	D
Approach Delay (s)	0.1	0.0	11.8	27.7
Approach LOS			B	D

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
 3: Blankenship Rd & Driveway

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	390	15	20	403	119	21	8	23	17	2	4
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)	9	424	16	22	438	129	23	9	25	18	2	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)					375							
pX, platoon unblocked	0.86						0.86	0.86		0.86	0.86	0.86
vC, conflicting volume	567			440			936	1060	432	1017	1004	503
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	497			440			926	1070	432	1020	1004	422
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			89	95	96	89	99	99
cM capacity (veh/h)	909			1104			204	182	617	169	203	547

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	9	440	22	567	57	25
Volume Left	9	0	22	0	23	18
Volume Right	0	16	0	129	25	4
cSH	909	1700	1104	1700	282	195
Volume to Capacity	0.01	0.26	0.02	0.33	0.20	0.13
Queue Length 95th (ft)	1	0	2	0	18	11
Control Delay (s)	9.0	0.0	8.3	0.0	20.9	26.2
Lane LOS	A		A		C	D
Approach Delay (s)	0.2		0.3		20.9	26.2
Approach LOS					C	D

Intersection Summary		
Average Delay		1.9
Intersection Capacity Utilization	38.4%	ICU Level of Service A
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis

3: Blankenship Rd & Driveway

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↖	↗		↖	↗			↕			↕			
Sign Control	Free		Free				Stop				Stop			
Grade	0%		0%				0%				0%			
Volume (veh/h)	10	474	76	60	328	24	68	2	76	155	9	8		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94		
Hourly flow rate (vph)	11	504	81	64	349	26	72	2	81	165	10	9		
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)														
Median type							None			None				
Median storage veh														
Upstream signal (ft)						375								
pX, platoon unblocked	0.97							0.97	0.97			0.97	0.97	0.97
vC, conflicting volume	374			585				1056	1068	545	1097	1096	362	
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	355			585				1058	1070	545	1100	1099	342	
tC, single (s)	4.1			4.1				7.1	6.5	6.2	7.1	6.5	6.2	
tC, 2 stage (s)														
tF (s)	2.2			2.2				3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	99			94				59	99	85	0	95	99	
cM capacity (veh/h)	1173			990				177	200	540	148	193	684	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	11	585	64	374	155	183
Volume Left	11	0	64	0	72	165
Volume Right	0	81	0	26	81	9
cSH	1173	1700	990	1700	273	155
Volume to Capacity	0.01	0.34	0.06	0.22	0.57	1.18
Queue Length 95th (ft)	1	0	5	0	81	255
Control Delay (s)	8.1	0.0	8.9	0.0	34.2	185.8
Lane LOS	A		A		D	F
Approach Delay (s)	0.1		1.3		34.2	185.8
Approach LOS					D	F

Intersection Summary		
Average Delay	29.1	
Intersection Capacity Utilization	59.1%	ICU Level of Service B
Analysis Period (min)	15	

HCM Signalized Intersection Capacity Analysis

4: Blankenship Rd & Tannler Drive

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Fr _t	1.00	1.00		1.00	0.97			1.00	0.85	1.00	0.86	
Fl _t Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1821		1703	1730			1702	1468	1805	1631	
Fl _t Permitted	0.33	1.00		0.48	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)	596	1821		867	1730			1702	1468	1805	1631	
Volume (vph)	31	375	8	68	490	147	3	6	50	133	4	62
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	408	9	74	533	160	3	7	54	145	4	67
RTOR Reduction (vph)	0	1	0	0	7	0	0	0	51	0	59	0
Lane Group Flow (vph)	34	416	0	74	686	0	0	10	3	145	12	0
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	10%	10%	10%	0%	0%	0%
Turn Type	Perm			Perm			Split		Perm	Split		
Protected Phases		2			6		4	4		8	8	
Permitted Phases	2			6					4			
Actuated Green, G (s)	87.4	87.4		87.4	87.4			5.7	5.7	14.9	14.9	
Effective Green, g (s)	87.4	87.4		87.4	87.4			5.7	5.7	14.9	14.9	
Actuated g/C Ratio	0.73	0.73		0.73	0.73			0.05	0.05	0.12	0.12	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	434	1326		631	1260			81	70	224	203	
v/s Ratio Prot		0.23			c0.40			c0.01		c0.08	0.01	
v/s Ratio Perm	0.06			0.09					0.00			
v/c Ratio	0.08	0.31		0.12	0.54			0.12	0.04	0.65	0.06	
Uniform Delay, d ₁	4.7	5.7		4.8	7.3			54.8	54.5	50.0	46.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d ₂	0.4	0.6		0.4	1.7			0.7	0.2	6.3	0.1	
Delay (s)	5.0	6.4		5.2	9.0			55.4	54.7	56.3	46.5	
Level of Service	A	A		A	A			E	D	E	D	
Approach Delay (s)		6.3			8.7			54.9			53.1	
Approach LOS		A			A			D			D	

Intersection Summary

HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: Blankenship Rd & Tannler Drive

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗	↖	↗	
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	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Fr _t	1.00	0.99		1.00	0.96			1.00	0.85	1.00	0.88	
Fl _t Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1851		1770	1783			1807	1583	1805	1666	
Fl _t Permitted	0.42	1.00		0.35	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (perm)	784	1851		645	1783			1807	1583	1805	1666	
Volume (vph)	82	588	25	157	350	139	20	12	155	108	8	39
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)	87	626	27	167	372	148	21	13	165	115	9	41
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	154	0	37	0
Lane Group Flow (vph)	87	652	0	167	512	0	0	34	11	115	13	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%	0%	0%
Turn Type	Perm		Perm				Split		Perm		Split	
Protected Phases	2		6				4		4		8	
Permitted Phases	2		6						4			
Actuated Green, G (s)	87.1	87.1		87.1	87.1			8.2	8.2	12.7	12.7	
Effective Green, g (s)	87.1	87.1		87.1	87.1			8.2	8.2	12.7	12.7	
Actuated g/C Ratio	0.73	0.73		0.73	0.73			0.07	0.07	0.11	0.11	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	569	1344		468	1294			123	108	191	176	
v/s Ratio Prot	c0.35						c0.02		c0.06		0.01	
v/s Ratio Perm	0.11		0.26						0.01			
v/c Ratio	0.15	0.49		0.36	0.40			0.28	0.10	0.60	0.08	
Uniform Delay, d ₁	5.1	7.0		6.1	6.3			53.1	52.5	51.2	48.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d ₂	0.6	1.3		2.1	0.9			1.2	0.4	5.3	0.2	
Delay (s)	5.6	8.2		8.2	7.2			54.3	52.9	56.5	48.5	
Level of Service	A		A				D		D		E	
Approach Delay (s)	7.9		7.5				53.1				54.1	
Approach LOS	A		A				D				D	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 5: Blankenship Rd & 10th St

7/7/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (prot)	1827	2733	1649	1677	1703	1524
Flt Permitted	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (perm)	1827	2733	1649	1677	1703	1524
Volume (vph)	45	522	458	85	612	242
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	48	561	492	91	658	260
RTOR Reduction (vph)	0	0	0	0	0	39
Lane Group Flow (vph)	48	561	284	299	658	221
Heavy Vehicles (%)	4%	4%	4%	4%	6%	6%
Turn Type	custom		Split		custom	
Protected Phases	4	4 5 7	3	3	5 6 7 3 5 6 7	
Permitted Phases						5 6 7
Actuated Green, G (s)	10.0	77.2	23.8	23.8	73.2	101.0
Effective Green, g (s)	10.0	77.2	23.8	23.8	73.2	101.0
Actuated g/C Ratio	0.08	0.65	0.20	0.20	0.62	0.85
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	154	1773	330	335	1048	1293
v/s Ratio Prot	0.03	c0.21	0.17	c0.18	c0.39	0.14
v/s Ratio Perm						
v/c Ratio	0.31	0.32	0.86	0.89	0.63	0.17
Uniform Delay, d1	51.3	9.2	46.0	46.4	14.4	1.6
Progression Factor	1.00	1.00	1.00	1.00	0.33	0.00
Incremental Delay, d2	1.2	0.1	19.9	24.4	0.8	0.0
Delay (s)	52.4	9.3	65.8	70.8	5.6	0.0
Level of Service	D	A	E	E	A	A
Approach Delay (s)	12.7			68.4	4.0	
Approach LOS	B			E	A	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 5: Blankenship Rd & 10th St

7/7/2006



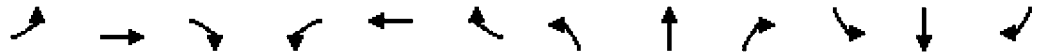
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (prot)	1881	2814	1698	1739	1770	1583
Flt Permitted	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (perm)	1881	2814	1698	1739	1770	1583
Volume (vph)	137	699	381	112	535	335
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	146	744	405	119	569	356
RTOR Reduction (vph)	0	0	0	0	0	39
Lane Group Flow (vph)	146	744	255	269	569	317
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Turn Type	custom		Split		custom	
Protected Phases	4	4 5 7	3	3	5 6 7 3 5 6 7	
Permitted Phases						5 6 7
Actuated Green, G (s)	14.0	82.0	20.0	20.0	74.0	98.0
Effective Green, g (s)	14.0	82.0	20.0	20.0	74.0	98.0
Actuated g/C Ratio	0.12	0.68	0.17	0.17	0.62	0.82
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	219	1923	283	290	1092	1293
v/s Ratio Prot	c0.08	0.26	0.15	c0.15	c0.32	0.20
v/s Ratio Perm						
v/c Ratio	0.67	0.39	0.90	0.93	0.52	0.25
Uniform Delay, d1	50.8	8.2	49.0	49.3	13.0	2.5
Progression Factor	1.00	1.00	1.00	1.00	0.32	0.00
Incremental Delay, d2	7.5	0.1	29.3	34.0	0.2	0.1
Delay (s)	58.2	8.3	78.4	83.2	4.4	0.1
Level of Service	E	A	E	F	A	A
Approach Delay (s)	16.5			80.9	2.7	
Approach LOS	B			F	A	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 6: I-205 SB on-ramp & 10th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↘	↑			↕	
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	
Lane Util. Factor					1.00	1.00	1.00	1.00			0.95	
Fr _t					1.00	0.85	1.00	1.00			0.95	
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1742	1553	1736	1827			3336	
Fl _t Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1742	1553	1736	1827			3336	
Volume (vph)	0	0	0	148	5	329	138	435	0	0	655	309
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	163	5	362	152	478	0	0	720	340
RTOR Reduction (vph)	0	0	0	0	0	289	0	0	0	0	47	0
Lane Group Flow (vph)	0	0	0	0	168	73	152	478	0	0	1013	0
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					24.0	24.0	11.9	35.2			71.1	
Effective Green, g (s)					24.0	24.0	11.9	35.2			71.1	
Actuated g/C Ratio					0.20	0.20	0.10	0.30			0.60	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					351	313	174	540			1993	
v/s Ratio Prot					c0.10	0.05	0.09	c0.26			c0.30	
v/s Ratio Perm												
v/c Ratio					0.48	0.23	0.87	0.89			0.51	
Uniform Delay, d ₁					42.0	39.8	52.8	40.0			13.8	
Progression Factor					1.00	1.00	1.00	1.00			0.89	
Incremental Delay, d ₂					1.0	0.4	35.0	15.9			0.2	
Delay (s)					43.0	40.2	87.8	55.9			12.5	
Level of Service					D	D	F	E			B	
Approach Delay (s)		0.0			41.1			63.6			12.5	
Approach LOS		A			D			E			B	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 6: I-205 SB on-ramp & 10th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↖	↑			↕	
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	
Lane Util. Factor					1.00	1.00	1.00	1.00			0.95	
Fr _t					1.00	0.85	1.00	1.00			0.96	
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1811	1615	1787	1881			3425	
Fl _t Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1811	1615	1787	1881			3425	
Volume (vph)	0	0	0	201	3	410	72	479	0	0	803	311
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	226	3	461	81	538	0	0	902	349
RTOR Reduction (vph)	0	0	0	0	0	369	0	0	0	0	33	0
Lane Group Flow (vph)	0	0	0	0	229	92	81	538	0	0	1218	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					24.0	24.0	10.1	36.0			73.9	
Effective Green, g (s)					24.0	24.0	10.1	36.0			73.9	
Actuated g/C Ratio					0.20	0.20	0.08	0.30			0.62	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					362	323	150	564			2109	
v/s Ratio Prot					c0.13	0.06	0.05	c0.29			c0.36	
v/s Ratio Perm												
v/c Ratio					0.63	0.29	0.54	0.95			0.58	
Uniform Delay, d ₁					44.0	40.7	52.7	41.2			13.7	
Progression Factor					1.00	1.00	1.00	1.00			0.89	
Incremental Delay, d ₂					3.6	0.5	3.9	26.6			0.3	
Delay (s)					47.5	41.2	56.6	67.8			12.5	
Level of Service					D	D	E	E			B	
Approach Delay (s)		0.0			43.3			66.3			12.5	
Approach LOS		A			D			E			B	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: I-205 NB off-ramp & 10th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↕	↗	↖	↕	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1740	1553					1827	1553	1752	1845	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1740	1553					1827	1553	1752	1845	
Volume (vph)	231	1	98	0	0	0	0	409	216	324	470	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	251	1	107	0	0	0	0	445	235	352	511	0
RTOR Reduction (vph)	0	0	84	0	0	0	0	0	161	0	0	0
Lane Group Flow (vph)	0	252	23	0	0	0	0	445	74	352	511	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	4%	4%	4%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		13.7	13.7					20.3	20.3	18.4	42.7	
Effective Green, g (s)		13.7	13.7					20.3	20.3	18.4	42.7	
Actuated g/C Ratio		0.21	0.21					0.32	0.32	0.29	0.66	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		370	330					576	490	501	1223	
v/s Ratio Prot								c0.24		c0.20	0.28	
v/s Ratio Perm		0.14	0.01						0.05			
v/c Ratio		0.68	0.07					0.77	0.15	0.70	0.42	
Uniform Delay, d1		23.3	20.3					20.0	15.9	20.6	5.1	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.1	0.1					6.4	0.1	4.4	0.2	
Delay (s)		28.4	20.3					26.3	16.0	25.0	5.3	
Level of Service		C	C					C	B	C	A	
Approach Delay (s)		26.0			0.0			22.8			13.3	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: I-205 NB off-ramp & 10th St

7/7/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↖	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1793	1599					1881	1599	1770	1863	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1793	1599					1881	1599	1770	1863	
Volume (vph)	157	2	124	0	0	0	0	376	284	374	602	0
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)	167	2	132	0	0	0	0	400	302	398	640	0
RTOR Reduction (vph)	0	0	113	0	0	0	0	0	201	0	0	0
Lane Group Flow (vph)	0	169	19	0	0	0	0	400	101	398	640	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		8.8	8.8					20.1	20.1	19.2	43.3	
Effective Green, g (s)		8.8	8.8					20.1	20.1	19.2	43.3	
Actuated g/C Ratio		0.15	0.15					0.33	0.33	0.32	0.72	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		263	234					629	535	565	1342	
v/s Ratio Prot								c0.21		c0.22	0.34	
v/s Ratio Perm		0.09	0.01						0.06			
v/c Ratio		0.64	0.08					0.64	0.19	0.70	0.48	
Uniform Delay, d1		24.2	22.2					16.9	14.2	18.0	3.6	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		5.3	0.2					2.1	0.2	4.0	0.3	
Delay (s)		29.5	22.3					19.0	14.4	21.9	3.8	
Level of Service		C	C					B	B	C	A	
Approach Delay (s)		26.3			0.0			17.0			10.8	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 8: Access & Tannler Drive

7/7/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↑	↓	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	2	2	14	115	184	14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	2	15	121	194	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	457					
pX, platoon unblocked						
vC, conflicting volume	352	201	208			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	352	201	208			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	99			
cM capacity (veh/h)	639	840	1362			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	4	136	208			
Volume Left	2	15	0			
Volume Right	2	0	15			
cSH	726	1362	1700			
Volume to Capacity	0.01	0.01	0.12			
Queue Length 95th (ft)	0	1	0			
Control Delay (s)	10.0	0.9	0.0			
Lane LOS	A	A				
Approach Delay (s)	10.0	0.9	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			27.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

8: Access & Tannler Drive

7/7/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			↑	↑	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	12	12	3	186	109	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	13	13	3	196	115	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)	457					
pX, platoon unblocked						
vC, conflicting volume	318	116	118			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	318	116	118			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	673	936	1470			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	25	199	118
Volume Left	13	3	0
Volume Right	13	0	3
cSH	783	1470	1700
Volume to Capacity	0.03	0.00	0.07
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.7	0.1	0.0
Lane LOS	A	A	
Approach Delay (s)	9.7	0.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	22.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

6/27/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↔
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	7	0	9	56	0	60
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	9	0	11	70	0	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	121	46			81	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121	46			81	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	879	1029			1529	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	81	75
Volume Left	9	0	0
Volume Right	0	70	0
cSH	879	1700	1529
Volume to Capacity	0.01	0.05	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

6/27/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑		↔	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	56	0	47	6	0	19
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	76	0	64	8	0	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	93	68			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	93	68			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	100			100	
cM capacity (veh/h)	912	1001			1541	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	76	72	26
Volume Left	76	0	0
Volume Right	0	8	0
cSH	912	1700	1541
Volume to Capacity	0.08	0.04	0.00
Queue Length 95th (ft)	7	0	0
Control Delay (s)	9.3	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.3	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		4.1	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

2: Blankenship Rd & 13th St

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Volume (veh/h)	9	350	0	0	379	50	0	0	1	55	0	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	376	0	0	408	54	0	0	1	59	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)	814											
pX, platoon unblocked												
vC, conflicting volume	461			376			842	857	376	831	830	434
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	461			376			842	857	376	831	830	434
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	80	100	98
cM capacity (veh/h)	1089			1155			278	293	672	289	305	626

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	386	461	1	71
Volume Left	10	0	0	59
Volume Right	0	54	1	12
cSH	1089	1155	672	317
Volume to Capacity	0.01	0.00	0.00	0.22
Queue Length 95th (ft)	1	0	0	21
Control Delay (s)	0.3	0.0	10.4	19.6
Lane LOS	A		B	C
Approach Delay (s)	0.3	0.0	10.4	19.6
Approach LOS			B	C

Intersection Summary			
Average Delay			1.7
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis
 2: Blankenship Rd & 13th St

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations	↕				↕		↕				↕							
Sign Control	Free				Free		Stop				Stop							
Grade	0%				0%		0%				0%							
Volume (veh/h)	4	488	3	0	362	50	0	0	1	61	0	7						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90						
Hourly flow rate (vph)	4	542	3	0	402	56	0	0	1	68	0	8						
Pedestrians																		
Lane Width (ft)																		
Walking Speed (ft/s)																		
Percent Blockage																		
Right turn flare (veh)																		
Median type							None			None								
Median storage veh																		
Upstream signal (ft)					814													
pX, platoon unblocked																		
vC, conflicting volume	458				546		991		1011		544		984		984		430	
vC1, stage 1 conf vol																		
vC2, stage 2 conf vol																		
vCu, unblocked vol	458				546		991		1011		544		984		984		430	
tC, single (s)	4.1				4.1		7.1		6.5		6.2		7.1		6.5		6.2	
tC, 2 stage (s)																		
tF (s)	2.2				2.2		3.5		4.0		3.3		3.5		4.0		3.3	
p0 queue free %	100				100		100		100		100		70		100		99	
cM capacity (veh/h)	1108				1024		224		241		543		225		246		623	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	550	458	1	76
Volume Left	4	0	0	68
Volume Right	3	56	1	8
cSH	1108	1024	543	241
Volume to Capacity	0.00	0.00	0.00	0.31
Queue Length 95th (ft)	0	0	0	32
Control Delay (s)	0.1	0.0	11.6	26.6
Lane LOS	A		B	D
Approach Delay (s)	0.1	0.0	11.6	26.6
Approach LOS			B	D

Intersection Summary			
Average Delay			1.9
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis

3: Blankenship Rd & Driveway

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↙	↘		↙	↘			↕			↕		
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Volume (veh/h)	21	378	15	20	395	158	21	21	23	22	4	6	
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)	23	411	16	22	429	172	23	23	25	24	4	7	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None			None			
Median storage veh													
Upstream signal (ft)					375								
pX, platoon unblocked	0.82						0.82	0.82			0.82	0.82	0.82
vC, conflicting volume	601			427				946	1109	419	1052	1032	515
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	515			427				935	1133	419	1063	1038	411
tC, single (s)	4.1			4.1				7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)													
tF (s)	2.2			2.2				3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98				88	85	96	83	98	99
cM capacity (veh/h)	856			1116				187	157	628	138	183	531

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	23	427	22	601	71	35
Volume Left	23	0	22	0	23	24
Volume Right	0	16	0	172	25	7
cSH	856	1700	1116	1700	230	166
Volume to Capacity	0.03	0.25	0.02	0.35	0.31	0.21
Queue Length 95th (ft)	2	0	1	0	31	19
Control Delay (s)	9.3	0.0	8.3	0.0	27.4	32.4
Lane LOS	A		A		D	D
Approach Delay (s)	0.5		0.3		27.4	32.4
Approach LOS					D	D

Intersection Summary		
Average Delay		2.9
Intersection Capacity Utilization	40.7%	ICU Level of Service A
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis

3: Blankenship Rd & Driveway

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑		↖	↑			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	460	76	60	312	36	68	5	76	179	20	19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	9	489	81	64	332	38	72	5	81	190	21	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)					375							
pX, platoon unblocked	0.93						0.93	0.93		0.93	0.93	0.93
vC, conflicting volume	370			570			1037	1045	530	1069	1066	351
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	323			570			1040	1048	530	1074	1071	302
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			94			56	97	85	0	89	97
cM capacity (veh/h)	1155			1002			164	198	551	147	192	690

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	9	570	64	370	159	232
Volume Left	9	0	64	0	72	190
Volume Right	0	81	0	38	81	20
cSH	1155	1700	1002	1700	257	161
Volume to Capacity	0.01	0.34	0.06	0.22	0.62	1.44
Queue Length 95th (ft)	1	0	5	0	92	369
Control Delay (s)	8.1	0.0	8.8	0.0	39.0	281.8
Lane LOS	A		A		E	F
Approach Delay (s)	0.1		1.3		39.0	281.8
Approach LOS					E	F

Intersection Summary		
Average Delay		51.4
Intersection Capacity Utilization	60.9%	ICU Level of Service B
Analysis Period (min)		15

HCM Signalized Intersection Capacity Analysis

4: Blankenship Rd & Tannler Drive

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↑	↗	↖	↗	
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	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	0.96			1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1821		1703	1717			1702	1468	1805	1633	
Flt Permitted	0.27	1.00		0.48	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)	500	1821		863	1717			1702	1468	1805	1633	
Volume (vph)	19	380	8	68	529	207	3	6	50	127	4	54
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	413	9	74	575	225	3	7	54	138	4	59
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	51	0	52	0
Lane Group Flow (vph)	21	421	0	74	792	0	0	10	3	138	11	0
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	10%	10%	10%	0%	0%	0%
Turn Type	Perm			Perm			Split			Perm	Split	
Protected Phases	2			6			4	4		8		8
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)	87.9	87.9		87.9	87.9		5.7	5.7	14.4	14.4		
Effective Green, g (s)	87.9	87.9		87.9	87.9		5.7	5.7	14.4	14.4		
Actuated g/C Ratio	0.73	0.73		0.73	0.73		0.05	0.05	0.12	0.12		
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	366	1334		632	1258		81	70	217	196		
v/s Ratio Prot	0.23			c0.46			c0.01			c0.08	0.01	
v/s Ratio Perm	0.04			0.09			0.00					
v/c Ratio	0.06	0.32		0.12	0.63		0.12	0.04	0.64	0.06		
Uniform Delay, d1	4.5	5.6		4.7	8.0		54.8	54.5	50.3	46.8		
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		
Incremental Delay, d2	0.3	0.6		0.4	2.4		0.7	0.2	6.0	0.1		
Delay (s)	4.8	6.2		5.1	10.4		55.4	54.7	56.3	46.9		
Level of Service	A	A		A	B		E	D	E	D		
Approach Delay (s)	6.1			9.9			54.9			53.3		
Approach LOS	A			A			D			D		

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: Blankenship Rd & Tannler Drive

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Fr _t	1.00	0.99		1.00	0.97			1.00	0.85	1.00	0.89	
Fl _t Protected	0.95	1.00		0.95	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1852		1770	1811			1807	1583	1805	1693	
Fl _t Permitted	0.43	1.00		0.31	1.00			0.97	1.00	0.95	1.00	
Satd. Flow (perm)	802	1852		578	1811			1807	1583	1805	1693	
Volume (vph)	68	612	25	157	365	84	20	12	155	191	8	23
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)	72	651	27	167	388	89	21	13	165	203	9	24
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	154	0	20	0
Lane Group Flow (vph)	72	677	0	167	472	0	0	34	11	203	13	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%	0%	0%
Turn Type	Perm			Perm			Split			Perm	Split	
Protected Phases		2			6		4	4			8	8
Permitted Phases	2			6					4			
Actuated Green, G (s)	81.3	81.3		81.3	81.3			8.2	8.2	18.5	18.5	
Effective Green, g (s)	81.3	81.3		81.3	81.3			8.2	8.2	18.5	18.5	
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.07	0.07	0.15	0.15	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	543	1255		392	1227			123	108	278	261	
v/s Ratio Prot		c0.37			0.26			c0.02		c0.11	0.01	
v/s Ratio Perm	0.09			0.29					0.01			
v/c Ratio	0.13	0.54		0.43	0.38			0.28	0.10	0.73	0.05	
Uniform Delay, d1	6.9	9.8		8.8	8.4			53.1	52.5	48.4	43.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	1.7		3.4	0.9			1.2	0.4	9.5	0.1	
Delay (s)	7.4	11.5		12.1	9.3			54.3	52.9	57.8	43.3	
Level of Service	A	B		B	A			D	D	E	D	
Approach Delay (s)		11.1			10.1			53.1			55.8	
Approach LOS		B			B			D			E	

Intersection Summary

HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Blankenship Rd & 10th St

6/27/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑↑	↙	↕	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	1.00
Fr _t	1.00	0.85	1.00	1.00	1.00	0.85
Fl _t Protected	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (prot)	1827	2733	1649	1685	1703	1524
Fl _t Permitted	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (perm)	1827	2733	1649	1685	1703	1524
Volume (vph)	48	517	434	111	685	242
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	52	556	467	119	737	260
RTOR Reduction (vph)	0	0	0	0	0	40
Lane Group Flow (vph)	52	556	286	300	737	220
Heavy Vehicles (%)	4%	4%	4%	4%	6%	6%
Turn Type	custom		Split		custom	
Protected Phases	4	4 5 7	3	3	5 6 7	3 5 6 7
Permitted Phases						5 6 7
Actuated Green, G (s)	10.0	74.8	23.6	23.6	70.9	98.5
Effective Green, g (s)	10.0	74.8	23.6	23.6	70.9	98.5
Actuated g/C Ratio	0.09	0.64	0.20	0.20	0.61	0.85
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	157	1755	334	341	1036	1289
v/s Ratio Prot	0.03	c0.20	0.17	c0.18	c0.43	0.14
v/s Ratio Perm						
v/c Ratio	0.33	0.32	0.86	0.88	0.71	0.17
Uniform Delay, d ₁	50.1	9.4	44.8	45.1	15.7	1.6
Progression Factor	1.00	1.00	1.00	1.00	0.58	0.00
Incremental Delay, d ₂	1.2	0.1	18.9	21.8	1.9	0.1
Delay (s)	51.3	9.5	63.7	66.9	11.0	0.1
Level of Service	D	A	E	E	B	A
Approach Delay (s)	13.1			65.3	8.1	
Approach LOS	B			E	A	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	116.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 5: Blankenship Rd & 10th St

6/27/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑↑	↙	↕	↘	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.88	0.95	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (prot)	1881	2814	1698	1742	1770	1583
Flt Permitted	1.00	1.00	0.95	0.97	0.95	1.00
Satd. Flow (perm)	1881	2814	1698	1742	1770	1583
Volume (vph)	159	793	352	116	483	335
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	169	844	374	123	514	356
RTOR Reduction (vph)	0	0	0	0	0	30
Lane Group Flow (vph)	169	844	242	255	514	326
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Turn Type	custom		Split		custom	
Protected Phases	4	4 5 7	3	3	5 6 7	3 5 6 7
Permitted Phases						5 6 7
Actuated Green, G (s)	14.0	81.6	20.0	20.0	73.6	97.6
Effective Green, g (s)	14.0	81.6	20.0	20.0	73.6	97.6
Actuated g/C Ratio	0.12	0.68	0.17	0.17	0.62	0.82
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	220	1920	284	291	1089	1292
v/s Ratio Prot	c0.09	c0.30	0.14	c0.15	c0.29	0.21
v/s Ratio Perm						
v/c Ratio	0.77	0.44	0.85	0.88	0.47	0.25
Uniform Delay, d1	51.2	8.6	48.4	48.6	12.5	2.5
Progression Factor	1.00	1.00	1.00	1.00	0.35	0.03
Incremental Delay, d2	14.8	0.2	21.1	24.2	0.2	0.1
Delay (s)	66.0	8.8	69.4	72.8	4.5	0.1
Level of Service	E	A	E	E	A	A
Approach Delay (s)	18.3			71.2	2.7	
Approach LOS	B			E	A	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	119.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

6: I-205 SB on-ramp & 10th St

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↘	↑↑			↑↑	
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	
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.95	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1742	1553	1736	3471			3335	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1742	1553	1736	3471			3335	
Volume (vph)	0	0	0	148	5	377	138	524	0	0	632	303
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	163	5	414	152	576	0	0	695	333
RTOR Reduction (vph)	0	0	0	0	0	328	0	0	0	0	49	0
Lane Group Flow (vph)	0	0	0	0	168	86	152	576	0	0	979	0
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					24.1	24.1	11.8	32.7			68.6	
Effective Green, g (s)					24.1	24.1	11.8	32.7			68.6	
Actuated g/C Ratio					0.21	0.21	0.10	0.28			0.59	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					360	321	176	974			1964	
v/s Ratio Prot					c0.10	0.06	c0.09	c0.17			c0.29	
v/s Ratio Perm												
v/c Ratio					0.47	0.27	0.86	0.59			0.50	
Uniform Delay, d1					40.6	38.8	51.6	36.1			13.9	
Progression Factor					1.00	1.00	1.00	1.00			0.91	
Incremental Delay, d2					1.0	0.4	32.8	1.0			0.2	
Delay (s)					41.5	39.2	84.3	37.1			12.8	
Level of Service					D	D	F	D			B	
Approach Delay (s)		0.0			39.9			47.0			12.8	
Approach LOS		A			D			D			B	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	116.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

6: I-205 SB on-ramp & 10th St

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↖	↑			↕	
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	
Lane Util. Factor					1.00	1.00	1.00	1.00			0.95	
Frt					1.00	0.85	1.00	1.00			0.96	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1811	1615	1787	1881			3420	
Flt Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1811	1615	1787	1881			3420	
Volume (vph)	0	0	0	201	3	400	72	436	0	0	813	328
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	226	3	449	81	490	0	0	913	369
RTOR Reduction (vph)	0	0	0	0	0	359	0	0	0	0	35	0
Lane Group Flow (vph)	0	0	0	0	229	90	81	490	0	0	1247	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					24.0	24.0	10.1	35.6			73.5	
Effective Green, g (s)					24.0	24.0	10.1	35.6			73.5	
Actuated g/C Ratio					0.20	0.20	0.08	0.30			0.61	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					363	324	151	560			2102	
v/s Ratio Prot					c0.13	0.06	0.05	c0.26			c0.36	
v/s Ratio Perm												
v/c Ratio					0.63	0.28	0.54	0.88			0.59	
Uniform Delay, d1					43.7	40.5	52.5	39.9			14.0	
Progression Factor					1.00	1.00	1.00	1.00			1.05	
Incremental Delay, d2					3.6	0.5	3.6	14.2			0.4	
Delay (s)					47.3	40.9	56.1	54.1			15.1	
Level of Service					D	D	E	D			B	
Approach Delay (s)		0.0			43.1			54.4			15.1	
Approach LOS		A			D			D			B	

Intersection Summary

HCM Average Control Delay	31.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	119.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: I-205 NB off-ramp & 10th St

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↖	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Fr _t		1.00	0.85					1.00	0.85	1.00	1.00	
Fl _t Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1740	1553					1827	1553	1752	1845	
Fl _t Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1740	1553					1827	1553	1752	1845	
Volume (vph)	261	1	98	0	0	0	0	403	216	320	451	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	284	1	107	0	0	0	0	438	235	348	490	0
RTOR Reduction (vph)	0	0	83	0	0	0	0	0	162	0	0	0
Lane Group Flow (vph)	0	285	24	0	0	0	0	438	73	348	490	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	4%	4%	4%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		14.9	14.9					20.3	20.3	18.3	42.6	
Effective Green, g (s)		14.9	14.9					20.3	20.3	18.3	42.6	
Actuated g/C Ratio		0.23	0.23					0.31	0.31	0.28	0.65	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		396	353					566	481	489	1200	
v/s Ratio Prot								c0.24		c0.20	0.27	
v/s Ratio Perm		0.16	0.02						0.05			
v/c Ratio		0.72	0.07					0.77	0.15	0.71	0.41	
Uniform Delay, d ₁		23.4	19.9					20.5	16.4	21.2	5.5	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d ₂		6.2	0.1					6.5	0.1	4.9	0.2	
Delay (s)		29.5	19.9					27.0	16.5	26.1	5.7	
Level of Service		C	B					C	B	C	A	
Approach Delay (s)		26.9			0.0			23.4			14.1	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 7: I-205 NB off-ramp & 10th St

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↖	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1793	1599					1881	1599	1770	1863	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1793	1599					1881	1599	1770	1863	
Volume (vph)	145	2	124	0	0	0	0	345	284	406	580	0
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)	154	2	132	0	0	0	0	367	302	432	617	0
RTOR Reduction (vph)	0	0	113	0	0	0	0	0	207	0	0	0
Lane Group Flow (vph)	0	156	19	0	0	0	0	367	95	432	617	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		8.5	8.5					18.7	18.7	20.1	42.8	
Effective Green, g (s)		8.5	8.5					18.7	18.7	20.1	42.8	
Actuated g/C Ratio		0.14	0.14					0.32	0.32	0.34	0.72	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		257	229					593	504	600	1345	
v/s Ratio Prot								c0.20		c0.24	0.33	
v/s Ratio Perm		0.09	0.01						0.06			
v/c Ratio		0.61	0.08					0.62	0.19	0.72	0.46	
Uniform Delay, d1		23.8	22.0					17.3	14.8	17.1	3.4	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		4.0	0.2					1.9	0.2	4.1	0.2	
Delay (s)		27.9	22.2					19.2	15.0	21.3	3.7	
Level of Service		C	C					B	B	C	A	
Approach Delay (s)		25.3			0.0			17.3			10.9	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	59.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

8: Access & Tannler Drive

6/27/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙ ↘			↑	↓	↘
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	25	178	55	160	40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	26	187	58	168	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)	457					
pX, platoon unblocked						
vC, conflicting volume	622	189	211			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	622	189	211			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	97	86			
cM capacity (veh/h)	388	852	1360			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	32	245	211			
Volume Left	5	187	0			
Volume Right	26	0	42			
cSH	711	1360	1700			
Volume to Capacity	0.04	0.14	0.12			
Queue Length 95th (ft)	3	12	0			
Control Delay (s)	10.3	6.4	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.3	6.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.9			
Intersection Capacity Utilization			36.9%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Access & Tannler Drive

6/27/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↕	↕	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	34	155	32	132	67	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	36	163	34	139	71	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)	457					
pX, platoon unblocked						
vC, conflicting volume	281	74	78			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	281	74	78			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	83	98			
cM capacity (veh/h)	694	987	1521			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	199	173	78
Volume Left	36	34	0
Volume Right	163	0	7
cSH	918	1521	1700
Volume to Capacity	0.22	0.02	0.05
Queue Length 95th (ft)	21	2	0
Control Delay (s)	10.0	1.6	0.0
Lane LOS	B	A	
Approach Delay (s)	10.0	1.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		5.0	
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

6/22/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↓
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	7	0	9	56	0	60
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	9	0	11	70	0	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	121	46			81	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	121	46			81	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	879	1029			1529	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	9	81	75
Volume Left	9	0	0
Volume Right	0	70	0
cSH	879	1700	1529
Volume to Capacity	0.01	0.05	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.1	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.1	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization	13.9%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

1: Access & 13th St

6/22/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑	↘		↓
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	56	0	47	6	0	19
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	76	0	64	8	0	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	93	68			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	93	68			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	100			100	
cM capacity (veh/h)	912	1001			1541	













Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	76	72	26
Volume Left	76	0	0
Volume Right	0	8	0
cSH	912	1700	1541
Volume to Capacity	0.08	0.04	0.00
Queue Length 95th (ft)	7	0	0
Control Delay (s)	9.3	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.3	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		4.1	
Intersection Capacity Utilization		13.3%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

2: Blankenship Rd & 13th St

6/22/2006

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	362	0	0	387	50	0	0	1	55	0	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	10	389	0	0	416	54	0	0	1	59	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)					814							
pX, platoon unblocked	0.98						0.98	0.98		0.98	0.98	0.98
vC, conflicting volume	470			389			863	878	389	853	852	443
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	459			389			861	876	389	850	849	432
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	78	100	98
cM capacity (veh/h)	1070			1142			264	280	661	275	292	616
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	399	470	1	71								
Volume Left	10	0	0	59								
Volume Right	0	54	1	12								
cSH	1070	1142	661	303								
Volume to Capacity	0.01	0.00	0.00	0.23								
Queue Length 95th (ft)	1	0	0	22								
Control Delay (s)	0.3	0.0	10.5	20.5								
Lane LOS	A		B	C								
Approach Delay (s)	0.3	0.0	10.5	20.5								
Approach LOS			B	C								
Intersection Summary												
Average Delay			1.7									
Intersection Capacity Utilization			43.3%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

2: Blankenship Rd & 13th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↕			↕			↕			↕			
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Volume (veh/h)	4	503	3	0	378	50	0	0	1	61	0	7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	4	559	3	0	420	56	0	0	1	68	0	8	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None			None			
Median storage veh													
Upstream signal (ft)	814												
pX, platoon unblocked	1.00						1.00	1.00			1.00	1.00	1.00
vC, conflicting volume	476				562			1025	1045	561	1018	1019	448
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	473				562			1025	1045	561	1018	1019	445
tC, single (s)	4.1				4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)													
tF (s)	2.2				2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100				100			100	100	100	68	100	99
cM capacity (veh/h)	1089				1009			211	229	531	213	234	608

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	567	476	1	76
Volume Left	4	0	0	68
Volume Right	3	56	1	8
cSH	1089	1009	531	228
Volume to Capacity	0.00	0.00	0.00	0.33
Queue Length 95th (ft)	0	0	0	35
Control Delay (s)	0.1	0.0	11.8	28.4
Lane LOS	A		B	D
Approach Delay (s)	0.1	0.0	11.8	28.4
Approach LOS			B	D

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
 3: Blankenship Rd & Driveway

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	↶	↷		↶	↷			↕			↕			
Sign Control	Free		Free				Stop				Stop			
Grade	0%		0%				0%				0%			
Volume (veh/h)	21	390	15	20	403	158	21	21	23	22	4	6		
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)	23	424	16	22	438	172	23	23	25	24	4	7		
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)														
Median type							None			None				
Median storage (veh)														
Upstream signal (ft)						375								
pX, platoon unblocked	0.86							0.86	0.86			0.86	0.86	0.86
vC, conflicting volume	610			440				968	1131	432	1073	1053	524	
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	549			440				963	1152	432	1085	1062	449	
tC, single (s)	4.1			4.1				7.2	6.6	6.2	7.1	6.5	6.2	
tC, 2 stage (s)														
tF (s)	2.2			2.2				3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	97			98				88	86	96	83	98	99	
cM capacity (veh/h)	874			1104				188	161	617	140	186	531	

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	23	440	22	610	71	35
Volume Left	23	0	22	0	23	24
Volume Right	0	16	0	172	25	7
cSH	874	1700	1104	1700	233	168
Volume to Capacity	0.03	0.26	0.02	0.36	0.30	0.21
Queue Length 95th (ft)	2	0	2	0	31	19
Control Delay (s)	9.2	0.0	8.3	0.0	27.1	31.9
Lane LOS	A		A		D	D
Approach Delay (s)	0.5		0.3		27.1	31.9
Approach LOS					D	D

Intersection Summary		
Average Delay		2.8
Intersection Capacity Utilization	41.2%	ICU Level of Service A
Analysis Period (min)		15

HCM Unsignalized Intersection Capacity Analysis
 3: Blankenship Rd & Driveway

6/22/2006

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	474	76	60	328	36	68	5	76	179	20	19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	9	504	81	64	349	38	72	5	81	190	21	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None				None	
Median storage veh												
Upstream signal (ft)					375							
pX, platoon unblocked	0.91						0.91	0.91		0.91	0.91	0.91
vC, conflicting volume	387			585			1069	1077	545	1101	1098	368
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	325			585			1076	1084	545	1111	1108	304
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			94			52	97	85	0	88	97
cM capacity (veh/h)	1126			990			150	184	540	134	179	672
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2					
Volume Total	9	585	64	387	159	190	41					
Volume Left	9	0	64	0	72	190	0					
Volume Right	0	81	0	38	81	0	20					
cSH	1126	1700	990	1700	240	134	278					
Volume to Capacity	0.01	0.34	0.06	0.23	0.66	1.42	0.15					
Queue Length 95th (ft)	1	0	5	0	104	316	13					
Control Delay (s)	8.2	0.0	8.9	0.0	45.2	286.7	20.2					
Lane LOS	A		A		E	F	C					
Approach Delay (s)	0.1		1.3		45.2	239.0						
Approach LOS					E	F						
Intersection Summary												
Average Delay				44.1								
Intersection Capacity Utilization			59.5%		ICU Level of Service		B					
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

4: Blankenship Rd & Tannler Drive

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗		↖	↗	↖	↗	
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	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1821		1703	1792	1524		1702	1468	1805	1631	
Flt Permitted	0.38	1.00		0.48	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (perm)	702	1821		854	1792	1524		1702	1468	1805	1631	
Volume (vph)	31	380	8	68	529	311	3	6	50	156	4	62
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	413	9	74	575	338	3	7	54	170	4	67
RTOR Reduction (vph)	0	1	0	0	0	97	0	0	51	0	58	0
Lane Group Flow (vph)	34	421	0	74	575	241	0	10	3	170	13	0
Heavy Vehicles (%)	4%	4%	4%	6%	6%	6%	10%	10%	10%	0%	0%	0%
Turn Type	Perm			Perm		Perm	Split		Perm	Split		
Protected Phases		2			6		4	4		8	8	
Permitted Phases	2			6		6			4			
Actuated Green, G (s)	85.6	85.6		85.6	85.6	85.6		5.7	5.7	16.7	16.7	
Effective Green, g (s)	85.6	85.6		85.6	85.6	85.6		5.7	5.7	16.7	16.7	
Actuated g/C Ratio	0.71	0.71		0.71	0.71	0.71		0.05	0.05	0.14	0.14	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
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)	501	1299		609	1278	1087		81	70	251	227	
v/s Ratio Prot		0.23			c0.32			c0.01		c0.09	0.01	
v/s Ratio Perm	0.05			0.09		0.16			0.00			
v/c Ratio	0.07	0.32		0.12	0.45	0.22		0.12	0.04	0.68	0.06	
Uniform Delay, d1	5.2	6.4		5.4	7.3	5.9		54.8	54.5	49.1	44.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.7		0.4	1.1	0.5		0.7	0.2	7.1	0.1	
Delay (s)	5.4	7.1		5.8	8.4	6.3		55.4	54.7	56.2	44.9	
Level of Service	A	A		A	A	A		E	D	E	D	
Approach Delay (s)		7.0			7.5			54.9			52.8	
Approach LOS		A			A			D			D	

Intersection Summary

HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: Blankenship Rd & Tannler Drive

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗		↖	↗	↖	↗	
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	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Fr _t	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	0.88	
Fl _t Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1852		1770	1863	1583		1807	1583	1805	1666	
Fl _t Permitted	0.46	1.00		0.25	1.00	1.00		0.97	1.00	0.95	1.00	
Satd. Flow (perm)	865	1852		475	1863	1583		1807	1583	1805	1666	
Volume (vph)	82	612	25	157	365	168	20	12	155	251	8	39
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)	87	651	27	167	388	179	21	13	165	267	9	41
RTOR Reduction (vph)	0	1	0	0	0	77	0	0	151	0	32	0
Lane Group Flow (vph)	87	677	0	167	388	102	0	34	14	267	18	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	0%	0%	0%
Turn Type	Perm			Perm		Perm	Split		Perm	Split		
Protected Phases		2			6		4	4		8	8	
Permitted Phases	2			6		6			4			
Actuated Green, G (s)	51.5	51.5		51.5	51.5	51.5		7.7	7.7	18.8	18.8	
Effective Green, g (s)	51.5	51.5		51.5	51.5	51.5		7.7	7.7	18.8	18.8	
Actuated g/C Ratio	0.57	0.57		0.57	0.57	0.57		0.09	0.09	0.21	0.21	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	4.0	4.0	
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)	495	1060		272	1066	906		155	135	377	348	
v/s Ratio Prot		c0.37			0.21			c0.02		c0.15	0.01	
v/s Ratio Perm	0.10			0.35		0.06			0.01			
v/c Ratio	0.18	0.64		0.61	0.36	0.11		0.22	0.10	0.71	0.05	
Uniform Delay, d ₁	9.2	13.0		12.7	10.4	8.8		38.3	38.0	33.1	28.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d ₂	0.8	2.9		10.0	1.0	0.3		0.7	0.3	6.0	0.1	
Delay (s)	9.9	15.9		22.6	11.4	9.1		39.1	38.3	39.0	28.5	
Level of Service	A	B		C	B	A		D	D	D	C	
Approach Delay (s)		15.2			13.4			38.4			37.4	
Approach LOS		B			B			D			D	

Intersection Summary

HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Blankenship Rd & 10th St

6/22/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑↑	↙	↕	↙↘	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.88	0.95	0.95	0.97	
Frt	1.00	0.85	1.00	1.00	0.96	
Flt Protected	1.00	1.00	0.95	0.97	0.96	
Satd. Flow (prot)	1827	2733	1649	1683	3231	
Flt Permitted	1.00	1.00	0.95	0.97	0.96	
Satd. Flow (perm)	1827	2733	1649	1683	3231	
Volume (vph)	48	546	458	111	789	242
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	52	587	492	119	848	260
RTOR Reduction (vph)	0	0	0	0	25	0
Lane Group Flow (vph)	52	587	298	313	1083	0
Heavy Vehicles (%)	4%	4%	4%	4%	6%	6%
Turn Type	custom		Split			
Protected Phases	4	4 5 7	3	3	5 6 7	
Permitted Phases						
Actuated Green, G (s)	10.0	76.1	24.0	24.0	72.1	
Effective Green, g (s)	10.0	76.1	24.0	24.0	72.1	
Actuated g/C Ratio	0.08	0.64	0.20	0.20	0.61	
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	155	1761	335	342	1973	
v/s Ratio Prot	0.03	c0.21	0.18	c0.19	c0.34	
v/s Ratio Perm						
v/c Ratio	0.34	0.33	0.89	0.92	0.55	
Uniform Delay, d1	50.9	9.5	45.8	46.1	13.5	
Progression Factor	1.00	1.00	1.00	1.00	0.40	
Incremental Delay, d2	1.3	0.1	23.7	28.0	0.3	
Delay (s)	52.2	9.6	69.4	74.1	5.6	
Level of Service	D	A	E	E	A	
Approach Delay (s)	13.1			71.8	5.6	
Approach LOS	B			E	A	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 5: Blankenship Rd & 10th St

6/22/2006



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑↑	↑	↑	↑↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.88	0.95	0.95	0.97	
Fr _t	1.00	0.85	1.00	1.00	0.94	
Fl _t Protected	1.00	1.00	0.95	0.97	0.97	
Satd. Flow (prot)	1881	2814	1698	1740	3308	
Fl _t Permitted	1.00	1.00	0.95	0.97	0.97	
Satd. Flow (perm)	1881	2814	1698	1740	3308	
Volume (vph)	159	853	381	116	567	335
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	169	907	405	123	603	356
RTOR Reduction (vph)	0	0	0	0	78	0
Lane Group Flow (vph)	169	907	257	271	881	0
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Turn Type	custom		Split			
Protected Phases	4	4 5 7	3	3	5 6 7	
Permitted Phases						
Actuated Green, G (s)	14.0	80.4	20.0	20.0	72.5	
Effective Green, g (s)	14.0	80.4	20.0	20.0	72.5	
Actuated g/C Ratio	0.12	0.68	0.17	0.17	0.61	
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	222	1909	287	294	2024	
v/s Ratio Prot	c0.09	c0.32	0.15	c0.16	c0.27	
v/s Ratio Perm						
v/c Ratio	0.76	0.48	0.90	0.92	0.44	
Uniform Delay, d ₁	50.6	9.0	48.2	48.5	12.2	
Progression Factor	1.00	1.00	1.00	1.00	0.27	
Incremental Delay, d ₂	14.2	0.2	27.8	32.6	0.1	
Delay (s)	64.9	9.2	76.0	81.1	3.4	
Level of Service	E	A	E	F	A	
Approach Delay (s)	18.0			78.7	3.4	
Approach LOS	B			E	A	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 6: I-205 SB on-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↘	↑↑			↑↔	
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	
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	
Fr _t					1.00	0.85	1.00	1.00			0.95	
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1742	1553	1736	3471			3336	
Fl _t Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1742	1553	1736	3471			3336	
Volume (vph)	0	0	0	148	5	417	138	524	0	0	670	318
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	163	5	458	152	576	0	0	736	349
RTOR Reduction (vph)	0	0	0	0	0	365	0	0	0	0	48	0
Lane Group Flow (vph)	0	0	0	0	168	93	152	576	0	0	1037	0
Heavy Vehicles (%)	0%	0%	0%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					24.0	24.0	11.8	34.1			70.3	
Effective Green, g (s)					24.0	24.0	11.8	34.1			70.3	
Actuated g/C Ratio					0.20	0.20	0.10	0.29			0.60	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					354	316	173	1002			1986	
v/s Ratio Prot					c0.10	0.06	c0.09	c0.17			c0.31	
v/s Ratio Perm												
v/c Ratio					0.47	0.29	0.88	0.57			0.52	
Uniform Delay, d ₁					41.5	39.9	52.4	35.8			14.0	
Progression Factor					1.00	1.00	1.00	1.00			0.93	
Incremental Delay, d ₂					1.0	0.5	36.0	0.8			0.2	
Delay (s)					42.5	40.4	88.4	36.6			13.2	
Level of Service					D	D	F	D			B	
Approach Delay (s)		0.0			41.0			47.4			13.2	
Approach LOS		A			D			D			B	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	118.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 6: I-205 SB on-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕	↗	↘	↑↑			↑↑	
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	
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	
Fr _t					1.00	0.85	1.00	1.00			0.96	
Fl _t Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1811	1615	1787	3574			3420	
Fl _t Permitted					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (perm)					1811	1615	1787	3574			3420	
Volume (vph)	0	0	0	201	3	425	72	495	0	0	902	366
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	226	3	478	81	556	0	0	1013	411
RTOR Reduction (vph)	0	0	0	0	0	381	0	0	0	0	35	0
Lane Group Flow (vph)	0	0	0	0	229	97	81	556	0	0	1389	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type				Split		Prot	Prot					
Protected Phases				7	7	7	1	5			2 3 4	
Permitted Phases												
Actuated Green, G (s)					24.0	24.0	10.0	34.4			72.5	
Effective Green, g (s)					24.0	24.0	10.0	34.4			72.5	
Actuated g/C Ratio					0.20	0.20	0.08	0.29			0.61	
Clearance Time (s)					4.0	4.0	4.0	4.0				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)					367	327	151	1038			2092	
v/s Ratio Prot					c0.13	0.06	0.05	c0.16			c0.41	
v/s Ratio Perm												
v/c Ratio					0.62	0.30	0.54	0.54			0.66	
Uniform Delay, d1					43.1	40.1	52.0	35.3			15.0	
Progression Factor					1.00	1.00	1.00	1.00			1.06	
Incremental Delay, d2					3.3	0.5	3.6	0.5			0.7	
Delay (s)					46.4	40.6	55.7	35.9			16.6	
Level of Service					D	D	E	D			B	
Approach Delay (s)		0.0			42.5			38.4			16.6	
Approach LOS		A			D			D			B	

Intersection Summary			
HCM Average Control Delay	28.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: I-205 NB off-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↖	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1740	1553					1827	1553	1752	1845	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1740	1553					1827	1553	1752	1845	
Volume (vph)	293	1	98	0	0	0	0	435	216	336	473	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	318	1	107	0	0	0	0	473	235	365	514	0
RTOR Reduction (vph)	0	0	82	0	0	0	0	0	160	0	0	0
Lane Group Flow (vph)	0	319	25	0	0	0	0	473	75	365	514	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	4%	4%	4%	3%	3%	3%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		16.9	16.9					22.6	22.6	19.6	46.2	
Effective Green, g (s)		16.9	16.9					22.6	22.6	19.6	46.2	
Actuated g/C Ratio		0.24	0.24					0.32	0.32	0.28	0.65	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		414	369					581	494	483	1199	
v/s Ratio Prot								c0.26		c0.21	0.28	
v/s Ratio Perm		0.18	0.02						0.05			
v/c Ratio		0.77	0.07					0.81	0.15	0.76	0.43	
Uniform Delay, d1		25.3	21.0					22.3	17.4	23.6	6.0	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		8.6	0.1					8.6	0.1	6.6	0.2	
Delay (s)		33.9	21.1					30.9	17.5	30.2	6.3	
Level of Service		C	C					C	B	C	A	
Approach Delay (s)		30.7			0.0			26.4			16.2	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

7: I-205 NB off-ramp & 10th St

6/22/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗					↑	↗	↖	↑	
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	
Lane Util. Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1793	1599					1881	1599	1770	1863	
Flt Permitted		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1793	1599					1881	1599	1770	1863	
Volume (vph)	169	2	124	0	0	0	0	380	284	451	624	0
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)	180	2	132	0	0	0	0	404	302	480	664	0
RTOR Reduction (vph)	0	0	113	0	0	0	0	0	209	0	0	0
Lane Group Flow (vph)	0	182	19	0	0	0	0	404	93	480	664	0
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Actuated Green, G (s)		9.3	9.3					19.6	19.6	23.0	46.6	
Effective Green, g (s)		9.3	9.3					19.6	19.6	23.0	46.6	
Actuated g/C Ratio		0.15	0.15					0.31	0.31	0.36	0.73	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		261	233					577	490	637	1359	
v/s Ratio Prot								c0.21		c0.27	0.36	
v/s Ratio Perm		0.10	0.01						0.06			
v/c Ratio		0.70	0.08					0.70	0.19	0.75	0.49	
Uniform Delay, d1		26.0	23.6					19.6	16.3	18.0	3.6	
Progression Factor		1.00	1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2		7.9	0.2					3.8	0.2	5.0	0.3	
Delay (s)		33.8	23.8					23.4	16.5	23.0	3.9	
Level of Service		C	C					C	B	C	A	
Approach Delay (s)		29.6			0.0			20.4			11.9	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
 8: Tannler East Access & Tannler Drive

6/27/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↘	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	19	2	291	58	6	203
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	20	2	306	61	6	214
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)	455					
pX, platoon unblocked						
vC, conflicting volume	563	337			367	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	563	337			367	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			99	
cM capacity (veh/h)	485	705			1191	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	22	367	220
Volume Left	20	0	6
Volume Right	2	61	0
cSH	500	1700	1191
Volume to Capacity	0.04	0.22	0.01
Queue Length 95th (ft)	3	0	0
Control Delay (s)	12.5	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	12.5	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay			0.6
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis
 8: Tannler East Access & Tannler Drive

6/27/2006



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙ ↘		↑		↙ ↘	
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	38	5	213	49	4	260
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	40	5	224	52	4	274
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	455					
pX, platoon unblocked						
vC, conflicting volume	532	250			276	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	532	250			276	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	99			100	
cM capacity (veh/h)	506	789			1287	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	45	276	278
Volume Left	40	0	4
Volume Right	5	52	0
cSH	528	1700	1287
Volume to Capacity	0.09	0.16	0.00
Queue Length 95th (ft)	7	0	0
Control Delay (s)	12.5	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	12.5	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay		1.0	
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis

9: Tannler West Access & Tannler Drive

6/27/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			↑	↑	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	25	178	115	184	40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	26	187	121	194	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)	645					
pX, platoon unblocked						
vC, conflicting volume	711	215	236			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	711	215	236			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	97	86			
cM capacity (veh/h)	343	825	1331			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	32	308	236			
Volume Left	5	187	0			
Volume Right	26	0	42			
cSH	669	1331	1700			
Volume to Capacity	0.05	0.14	0.14			
Queue Length 95th (ft)	4	12	0			
Control Delay (s)	10.6	5.4	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.6	5.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization	41.4%			ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

9: Tannler West Access & Tannler Drive

6/27/2006



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T	T	
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	34	155	32	186	109	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	36	163	34	196	115	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)	645					
pX, platoon unblocked						
vC, conflicting volume	382	118	122			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	382	118	122			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	83	98			
cM capacity (veh/h)	607	933	1465			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	199	229	122
Volume Left	36	34	0
Volume Right	163	0	7
cSH	851	1465	1700
Volume to Capacity	0.23	0.02	0.07
Queue Length 95th (ft)	23	2	0
Control Delay (s)	10.5	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	10.5	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay			4.3
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)			15

HCM Unsignalized Intersection Capacity Analysis
 10: Tannler Access & Tannler Drive

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	18	0	2	0	62	58	7	206	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	19	0	2	0	65	61	7	217	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)								825				
pX, platoon unblocked												
vC, conflicting volume	329	358	217	327	327	96	217			126		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	329	358	217	327	327	96	217			126		
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 %	100	100	100	97	100	100	100			99		
cM capacity (veh/h)	620	566	823	623	588	961	1353			1460		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	21	126	224
Volume Left	0	19	0	7
Volume Right	0	2	61	0
cSH	1700	646	1353	1460
Volume to Capacity	0.00	0.03	0.00	0.01
Queue Length 95th (ft)	0	3	0	0
Control Delay (s)	0.0	10.8	0.0	0.3
Lane LOS	A	B		A
Approach Delay (s)	0.0	10.8	0.0	0.3
Approach LOS	A	B		

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization	26.5%		ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
 10: Tannler Access & Tannler Drive

6/27/2006



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	38	0	6	0	171	49	4	78	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	40	0	6	0	180	52	4	82	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)								825				
pX, platoon unblocked												
vC, conflicting volume	303	322	82	296	296	206	82			232		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	303	322	82	296	296	206	82			232		
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 %	100	100	100	94	100	99	100			100		
cM capacity (veh/h)	643	593	978	654	613	835	1515			1336		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	46	232	86
Volume Left	0	40	0	4
Volume Right	0	6	52	0
cSH	1700	674	1515	1336
Volume to Capacity	0.00	0.07	0.00	0.00
Queue Length 95th (ft)	0	6	0	0
Control Delay (s)	0.0	10.7	0.0	0.4
Lane LOS	A	B		A
Approach Delay (s)	0.0	10.7	0.0	0.4
Approach LOS	A	B		

Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization	22.0%		ICU Level of Service A
Analysis Period (min)		15	

APPENDIX K
Queuing
Calculations

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	6
95th Queue (ft)	27
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LR	LR
Maximum Queue (ft)	50	4	17	73
Average Queue (ft)	5	0	1	35
95th Queue (ft)	29	3	9	62
Link Distance (ft)	634	377	400	314
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	6	4	34	75	39
Average Queue (ft)	0	0	7	29	8
95th Queue (ft)	4	3	30	62	31
Link Distance (ft)		377		364	513
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100		100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	LT	R	LTR
Maximum Queue (ft)	41	115	61	4	47	93	189
Average Queue (ft)	4	14	17	0	9	34	75
95th Queue (ft)	24	70	46	3	34	73	153
Link Distance (ft)		317		230	257	257	394
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100		100				
Storage Blk Time (%)		0					
Queuing Penalty (veh)		0					

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	L	T	T	L	R
Maximum Queue (ft)	171	246	160	817	1487	139	59
Average Queue (ft)	50	167	153	809	1318	56	15
95th Queue (ft)	120	265	158	823	1916	119	45
Link Distance (ft)		230		742	1464		173
Upstream Blk Time (%)		4		80	60	0	
Queuing Penalty (veh)		18		0	0	0	
Storage Bay Dist (ft)	150		125			200	
Storage Blk Time (%)	0	11	80			0	
Queuing Penalty (veh)	0	5	51			0	

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	209	151	230	318	168	164	226
Average Queue (ft)	104	54	128	216	19	128	117
95th Queue (ft)	179	108	230	330	98	195	248
Link Distance (ft)	1642			245	216	173	173
Upstream Blk Time (%)			0	7	0	2	6
Queuing Penalty (veh)			0	35	2	10	24
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)			2	12			
Queuing Penalty (veh)			6	14			

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10
Directions Served	LT	R	T	R	L	T	T
Maximum Queue (ft)	151	77	271	111	132	288	80
Average Queue (ft)	71	30	115	40	103	123	5
95th Queue (ft)	122	58	208	58	149	269	37
Link Distance (ft)	1525		750			216	245
Upstream Blk Time (%)						2	
Queuing Penalty (veh)						17	
Storage Bay Dist (ft)		350		300	100		
Storage Blk Time (%)			0		10	3	
Queuing Penalty (veh)			0		42	7	

Intersection: 8: Access & Tannler Drive

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 233

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	78
Average Queue (ft)	30
95th Queue (ft)	59
Link Distance (ft)	148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	NB	SB
Directions Served	LTR	LR	LR
Maximum Queue (ft)	30	20	79
Average Queue (ft)	2	1	39
95th Queue (ft)	16	9	66
Link Distance (ft)	634	400	314
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	20	17	44	147	70
Average Queue (ft)	2	1	19	62	34
95th Queue (ft)	15	6	47	112	62
Link Distance (ft)		377		364	513
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100		100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	LT	R	LTR
Maximum Queue (ft)	62	132	94	5	109	155	148
Average Queue (ft)	19	17	35	0	35	68	48
95th Queue (ft)	52	79	75	3	102	133	100
Link Distance (ft)		317		230	257	257	394
Upstream Blk Time (%)					0	0	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)	100		100				
Storage Blk Time (%)		0	0				
Queuing Penalty (veh)		0	1				

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	L	T	T	L	R
Maximum Queue (ft)	179	245	154	815	1395	164	206
Average Queue (ft)	106	164	153	798	1034	95	38
95th Queue (ft)	185	267	156	883	1861	172	127
Link Distance (ft)		230		742	1464		173
Upstream Blk Time (%)		3		72	33	1	1
Queuing Penalty (veh)		18		0	0	0	4
Storage Bay Dist (ft)	150		125			200	
Storage Blk Time (%)	4	8	79			1	1
Queuing Penalty (veh)	18	10	83			2	2

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	292	222	229	320	194	165	226
Average Queue (ft)	126	100	82	251	37	130	108
95th Queue (ft)	224	188	184	355	139	192	246
Link Distance (ft)	1642			245	216	173	173
Upstream Blk Time (%)			0	14	1	4	6
Queuing Penalty (veh)			0	64	2	16	23
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)			0	22			
Queuing Penalty (veh)			1	13			

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10
Directions Served	LT	R	T	R	L	T	T
Maximum Queue (ft)	141	81	220	85	132	288	78
Average Queue (ft)	61	33	108	42	98	115	4
95th Queue (ft)	114	61	194	68	146	243	35
Link Distance (ft)	1525		750			216	245
Upstream Blk Time (%)							2
Queuing Penalty (veh)							13
Storage Bay Dist (ft)		350		300	100		
Storage Blk Time (%)			0		8		4
Queuing Penalty (veh)			0		43		9

Intersection: 8: Access & Tannler Drive

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 323

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	34
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LR	LR
Maximum Queue (ft)	61	6	20	79
Average Queue (ft)	5	0	1	36
95th Queue (ft)	29	5	10	67
Link Distance (ft)	634	377	400	314
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	14	44	50	5	78	40
Average Queue (ft)	0	2	8	0	32	10
95th Queue (ft)	7	32	33	3	64	36
Link Distance (ft)		377		311	364	513
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	100		100			
Storage Blk Time (%)		0				
Queuing Penalty (veh)		0				

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	L	TR
Maximum Queue (ft)	56	252	57	4	45	102	309	264
Average Queue (ft)	9	40	17	0	9	39	133	60
95th Queue (ft)	38	164	45	2	34	83	329	198
Link Distance (ft)		311		224	257	257	393	393
Upstream Blk Time (%)		0					5	0
Queuing Penalty (veh)		2					4	0
Storage Bay Dist (ft)	100		100					
Storage Blk Time (%)		4						
Queuing Penalty (veh)		1						

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	L	LT	T	L	R
Maximum Queue (ft)	164	246	230	762	543	165	170
Average Queue (ft)	55	180	207	592	298	88	27
95th Queue (ft)	123	274	268	1021	897	165	106
Link Distance (ft)		224		742	1464		173
Upstream Blk Time (%)		9		34		1	0
Queuing Penalty (veh)		49		0		0	3
Storage Bay Dist (ft)	150		200			200	
Storage Blk Time (%)	0	17	36	42		1	0
Queuing Penalty (veh)	0	7	103	90		1	2

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	269	217	230	320	239	181	227
Average Queue (ft)	121	76	168	281	127	141	145
95th Queue (ft)	224	152	255	375	288	199	278
Link Distance (ft)	1642			245	216	173	173
Upstream Blk Time (%)			0	31	11	7	11
Queuing Penalty (veh)			0	166	60	31	51
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)			12	32			
Queuing Penalty (veh)			47	45			

Queuing and Blocking Report
without Tannler East

7/6/2006

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10
Directions Served	LT	R	T	R	L	T	T
Maximum Queue (ft)	287	85	572	239	135	294	271
Average Queue (ft)	116	34	239	71	117	187	50
95th Queue (ft)	237	65	549	208	149	349	191
Link Distance (ft)	1525		750			216	245
Upstream Blk Time (%)			1			11	1
Queuing Penalty (veh)			0			82	5
Storage Bay Dist (ft)		350		300	100		
Storage Blk Time (%)	0		9	0	20	6	
Queuing Penalty (veh)	0		19	0	89	18	

Intersection: 8: Access & Tannler Drive

Movement	SB
Directions Served	TR
Maximum Queue (ft)	112
Average Queue (ft)	11
95th Queue (ft)	80
Link Distance (ft)	1034
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 877

Queuing and Blocking Report
without Tannler East

7/14/2006

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	62
Average Queue (ft)	31
95th Queue (ft)	57
Link Distance (ft)	148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	NB	SB
Directions Served	LTR	LR	LR
Maximum Queue (ft)	14	9	84
Average Queue (ft)	1	1	41
95th Queue (ft)	10	10	70
Link Distance (ft)	634	400	314
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	17	127	74	159	72
Average Queue (ft)	1	6	22	74	36
95th Queue (ft)	8	52	57	129	64
Link Distance (ft)		377		364	513
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100		100		
Storage Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		

Queuing and Blocking Report
without Tannler East

7/14/2006

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	LT	R	LTR
Maximum Queue (ft)	129	333	116	114	276	282	270
Average Queue (ft)	28	116	46	4	91	202	150
95th Queue (ft)	78	273	91	52	267	339	385
Link Distance (ft)		317		230	257	257	394
Upstream Blk Time (%)		1		0	5	42	13
Queuing Penalty (veh)		4		1	0	0	9
Storage Bay Dist (ft)	100		100				
Storage Blk Time (%)	0	8	1				
Queuing Penalty (veh)	0	5	4				

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	L	T	T	L	R
Maximum Queue (ft)	184	271	230	818	1488	165	201
Average Queue (ft)	130	228	227	805	1095	106	40
95th Queue (ft)	210	289	231	863	1953	178	132
Link Distance (ft)		230		742	1464		173
Upstream Blk Time (%)		20		74	38	1	1
Queuing Penalty (veh)		135		0	0	0	5
Storage Bay Dist (ft)	150		200			200	
Storage Blk Time (%)	10	28	78			1	1
Queuing Penalty (veh)	53	35	85			2	3

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	324	257	228	319	210	165	227
Average Queue (ft)	165	113	91	266	62	154	190
95th Queue (ft)	278	219	173	359	188	187	280
Link Distance (ft)	1642			245	216	173	173
Upstream Blk Time (%)			0	17	1	9	16
Queuing Penalty (veh)			0	80	3	39	74
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)			0	25			
Queuing Penalty (veh)			1	18			

Queuing and Blocking Report
without Tannler East

7/14/2006

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10
Directions Served	LT	R	T	R	L	T	T
Maximum Queue (ft)	148	71	274	204	131	291	222
Average Queue (ft)	64	37	128	47	112	160	20
95th Queue (ft)	115	64	224	95	150	310	115
Link Distance (ft)	1525		750			216	245
Upstream Blk Time (%)						5	0
Queuing Penalty (veh)						44	1
Storage Bay Dist (ft)		350		300	100		
Storage Blk Time (%)			0	0	14	5	
Queuing Penalty (veh)			0	0	77	14	

Intersection: 8: Access & Tannler Drive

Movement	SB
Directions Served	TR
Maximum Queue (ft)	58
Average Queue (ft)	25
95th Queue (ft)	128
Link Distance (ft)	1034
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 694

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	34
Average Queue (ft)	6
95th Queue (ft)	28
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	NB	SB
Directions Served	LTR	LR	LR
Maximum Queue (ft)	46	27	90
Average Queue (ft)	4	1	38
95th Queue (ft)	22	11	71
Link Distance (ft)	634	400	314
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	7	44	66	40
Average Queue (ft)	0	9	32	9
95th Queue (ft)	5	35	60	33
Link Distance (ft)			364	513
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100	100		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	L	TR
Maximum Queue (ft)	53	232	59	12	53	131	180	370
Average Queue (ft)	18	36	17	1	13	47	134	164
95th Queue (ft)	50	136	45	6	42	104	221	407
Link Distance (ft)		311		224	257	257		393
Upstream Blk Time (%)		0						5
Queuing Penalty (veh)		0						8
Storage Bay Dist (ft)	100		100				150	
Storage Blk Time (%)		2	0				45	0
Queuing Penalty (veh)		1	0				30	0

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	L	LT	T	L	R
Maximum Queue (ft)	154	245	238	820	1312	165	184
Average Queue (ft)	44	196	224	791	801	108	27
95th Queue (ft)	106	285	248	902	1597	176	106
Link Distance (ft)		224		742	1464		173
Upstream Blk Time (%)		11		60	10	1	1
Queuing Penalty (veh)		59		0	0	0	4
Storage Bay Dist (ft)	150		200			200	
Storage Blk Time (%)	0	20	60	54		1	1
Queuing Penalty (veh)	0	9	181	124		3	3

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	264	206	230	322	247	176	233
Average Queue (ft)	124	87	185	294	167	149	168
95th Queue (ft)	223	175	269	383	312	191	287
Link Distance (ft)	1642			245	216	173	173
Upstream Blk Time (%)			1	35	15	7	13
Queuing Penalty (veh)			0	205	85	36	63
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)			18	33			
Queuing Penalty (veh)			70	45			

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10
Directions Served	LT	R	T	R	L	T	T
Maximum Queue (ft)	344	140	649	227	137	294	287
Average Queue (ft)	150	39	362	123	121	220	72
95th Queue (ft)	288	94	758	332	149	349	238
Link Distance (ft)	1525		750			216	245
Upstream Blk Time (%)			6			12	2
Queuing Penalty (veh)			0			100	9
Storage Bay Dist (ft)		350		300	100		
Storage Blk Time (%)	1	0	19	0	23	8	
Queuing Penalty (veh)	1	0	41	0	107	27	

Intersection: 8: Access & Tannler Drive

Movement	SB
Directions Served	TR
Maximum Queue (ft)	144
Average Queue (ft)	13
95th Queue (ft)	104
Link Distance (ft)	1034
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1212

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	62
Average Queue (ft)	33
95th Queue (ft)	55
Link Distance (ft)	148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	NB	SB
Directions Served	LTR	LR	LR
Maximum Queue (ft)	74	19	79
Average Queue (ft)	5	1	42
95th Queue (ft)	38	9	71
Link Distance (ft)	634	400	314
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	20	145	67	215	104
Average Queue (ft)	1	10	24	83	43
95th Queue (ft)	9	72	57	178	82
Link Distance (ft)		377		364	513
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)	100		100		
Storage Blk Time (%)		1	0		
Queuing Penalty (veh)		0	0		

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	L	TR
Maximum Queue (ft)	120	323	121	75	276	281	180	409
Average Queue (ft)	42	141	44	4	138	224	174	301
95th Queue (ft)	99	310	88	43	332	347	197	470
Link Distance (ft)		311		224	257	257		393
Upstream Blk Time (%)		1		0	7	54		21
Queuing Penalty (veh)		9		0	0	0		14
Storage Bay Dist (ft)	100		100				150	
Storage Blk Time (%)	0	11	1				94	0
Queuing Penalty (veh)	0	9	4				44	0

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	L	LT	T	L	R
Maximum Queue (ft)	185	274	232	738	434	166	216
Average Queue (ft)	132	233	209	502	149	127	69
95th Queue (ft)	204	270	268	885	639	194	194
Link Distance (ft)		224		742	1464		173
Upstream Blk Time (%)		21		17		1	1
Queuing Penalty (veh)		156		0		0	12
Storage Bay Dist (ft)	150		200			200	
Storage Blk Time (%)	9	30	35	40		1	1
Queuing Penalty (veh)	53	37	104	76		5	7

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	357	302	230	322	238	190	227
Average Queue (ft)	164	142	99	297	140	159	202
95th Queue (ft)	288	256	209	352	294	183	270
Link Distance (ft)	1642			245	216	173	173
Upstream Blk Time (%)			0	35	13	10	17
Queuing Penalty (veh)			0	183	68	52	85
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)	0	0	0	41			
Queuing Penalty (veh)	0	0	0	29			

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10
Directions Served	LT	R	T	R	L	T	T
Maximum Queue (ft)	258	174	516	243	133	292	276
Average Queue (ft)	113	49	291	97	120	210	67
95th Queue (ft)	247	135	690	257	148	349	224
Link Distance (ft)	1525		750			216	245
Upstream Blk Time (%)			6			11	2
Queuing Penalty (veh)			0			105	9
Storage Bay Dist (ft)		350		300	100		
Storage Blk Time (%)	1	0	13	0	20	9	
Queuing Penalty (veh)	1	0	35	0	115	28	

Intersection: 8: Access & Tannler Drive

Movement	SB
Directions Served	TR
Maximum Queue (ft)	141
Average Queue (ft)	30
95th Queue (ft)	135
Link Distance (ft)	1034
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1241

Queuing and Blocking Report
without Tannler East

7/14/2006

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	7
95th Queue (ft)	29
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	NB	SB
Directions Served	LTR	LR	LR
Maximum Queue (ft)	60	21	69
Average Queue (ft)	6	1	35
95th Queue (ft)	33	13	61
Link Distance (ft)	634	400	314
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	TR	LTR	LTR
Maximum Queue (ft)	40	34	5	87	56
Average Queue (ft)	4	7	0	38	25
95th Queue (ft)	23	30	3	72	53
Link Distance (ft)			311	364	513
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100	100			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report
without Tannler East

7/14/2006

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	L	TR
Maximum Queue (ft)	85	182	58	6	54	118	278	132
Average Queue (ft)	16	29	19	0	11	39	87	41
95th Queue (ft)	53	110	50	3	39	85	194	94
Link Distance (ft)		311		224	257	257	393	393
Upstream Blk Time (%)							0	0
Queuing Penalty (veh)							0	0
Storage Bay Dist (ft)	100		100					
Storage Blk Time (%)		1						
Queuing Penalty (veh)		0						

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	L	LT	T	L	R
Maximum Queue (ft)	150	244	237	820	997	166	202
Average Queue (ft)	49	178	216	745	554	116	44
95th Queue (ft)	115	277	265	984	1528	188	152
Link Distance (ft)		224		742	1464		173
Upstream Blk Time (%)		6		44	12	3	2
Queuing Penalty (veh)		34		0	0	0	12
Storage Bay Dist (ft)	150		200			200	
Storage Blk Time (%)	0	14	50	56		3	2
Queuing Penalty (veh)	1	6	151	121		6	8

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	248	212	230	322	240	165	229
Average Queue (ft)	118	96	161	298	154	143	144
95th Queue (ft)	212	182	258	351	296	194	275
Link Distance (ft)	1642			245	216	173	173
Upstream Blk Time (%)			1	35	12	4	9
Queuing Penalty (veh)			0	198	68	20	40
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)			6	38			
Queuing Penalty (veh)			26	53			

Queuing and Blocking Report
without Tannler East

7/14/2006

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10
Directions Served	LT	R	T	R	L	T	T
Maximum Queue (ft)	267	147	531	328	139	294	254
Average Queue (ft)	134	39	264	83	121	197	36
95th Queue (ft)	247	94	609	238	148	340	147
Link Distance (ft)	1525		750			216	245
Upstream Blk Time (%)			5			8	0
Queuing Penalty (veh)			0			59	2
Storage Bay Dist (ft)		350		300	100		
Storage Blk Time (%)	1		10	0	20	6	
Queuing Penalty (veh)	0		22	0	88	19	

Intersection: 8: Access & Tannler Drive

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	26	35	22
Average Queue (ft)	3	4	1
95th Queue (ft)	19	22	12
Link Distance (ft)	139	393	1034
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 935

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	64
Average Queue (ft)	30
95th Queue (ft)	58
Link Distance (ft)	148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	NB	SB
Directions Served	LTR	LR	LR
Maximum Queue (ft)	161	26	116
Average Queue (ft)	13	1	42
95th Queue (ft)	142	10	92
Link Distance (ft)	634	400	314
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	34	199	62	279	358
Average Queue (ft)	2	30	23	103	162
95th Queue (ft)	13	152	54	234	375
Link Distance (ft)		377		364	513
Upstream Blk Time (%)		1		3	6
Queuing Penalty (veh)		4		0	0
Storage Bay Dist (ft)	100		100		
Storage Blk Time (%)		2			
Queuing Penalty (veh)		0			

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	L	TR
Maximum Queue (ft)	128	331	122	79	278	282	230	435
Average Queue (ft)	46	210	55	3	145	272	207	303
95th Queue (ft)	107	365	108	39	355	285	266	567
Link Distance (ft)		311		224	257	257		393
Upstream Blk Time (%)		4		0	18	98		53
Queuing Penalty (veh)		30		0	0	0		41
Storage Bay Dist (ft)	100		100				200	
Storage Blk Time (%)	0	19	2				77	0
Queuing Penalty (veh)	0	16	7				26	0

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	L	LT	T	L	R
Maximum Queue (ft)	185	279	232	790	150	166	213
Average Queue (ft)	136	239	203	444	11	112	49
95th Queue (ft)	210	260	268	775	99	183	153
Link Distance (ft)		224		742	1464		173
Upstream Blk Time (%)		28		3		1	1
Queuing Penalty (veh)		218		0		0	7
Storage Bay Dist (ft)	150		200			200	
Storage Blk Time (%)	10	36	30	40		1	1
Queuing Penalty (veh)	67	50	87	71		4	4

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	397	332	229	320	236	178	227
Average Queue (ft)	168	132	96	283	88	159	210
95th Queue (ft)	328	258	192	356	236	180	264
Link Distance (ft)	1642			245	216	173	173
Upstream Blk Time (%)			0	25	3	9	19
Queuing Penalty (veh)			0	119	16	45	92
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)	1	0		32			
Queuing Penalty (veh)	2	0		23			

Queuing and Blocking Report
without Tannler East

7/14/2006

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10
Directions Served	LT	R	T	R	L	T	T
Maximum Queue (ft)	178	98	440	198	131	292	271
Average Queue (ft)	74	40	164	55	119	213	69
95th Queue (ft)	138	75	329	129	148	358	218
Link Distance (ft)	1525		750			216	245
Upstream Blk Time (%)			0			11	1
Queuing Penalty (veh)			0			104	7
Storage Bay Dist (ft)		350		300	100		
Storage Blk Time (%)			2		19	6	
Queuing Penalty (veh)			5		107	21	

Intersection: 8: Access & Tannler Drive

Movement	EB	SB
Directions Served	LR	TR
Maximum Queue (ft)	134	360
Average Queue (ft)	61	126
95th Queue (ft)	149	368
Link Distance (ft)	147	1034
Upstream Blk Time (%)	23	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1173

Queuing and Blocking Report
with Tannler East

7/14/2006

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LR	LR
Maximum Queue (ft)	88	9	19	80
Average Queue (ft)	9	0	1	37
95th Queue (ft)	50	5	10	68
Link Distance (ft)	634	377	400	314
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	35	20	39	7	103	50
Average Queue (ft)	5	1	7	0	39	18
95th Queue (ft)	24	9	31	5	81	48
Link Distance (ft)		377		311	364	513
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	100		100			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	L	TR
Maximum Queue (ft)	88	263	95	245	48	56	222	82
Average Queue (ft)	23	80	30	119	8	28	99	36
95th Queue (ft)	61	179	70	260	32	56	189	70
Link Distance (ft)		311		228	245	245	393	393
Upstream Blk Time (%)		0		2				
Queuing Penalty (veh)		1		13				
Storage Bay Dist (ft)	100		100					
Storage Blk Time (%)	0	3	0	6				
Queuing Penalty (veh)	0	1	1	4				

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	R	L	LT	T	L	R
Maximum Queue (ft)	122	209	203	332	716	61	182	52
Average Queue (ft)	44	85	96	221	350	1	134	10
95th Queue (ft)	97	163	172	349	602	18	202	32
Link Distance (ft)		228	228		740	1464	163	163
Upstream Blk Time (%)		0	0		1		8	
Queuing Penalty (veh)		0	0		0		29	
Storage Bay Dist (ft)	150			300				
Storage Blk Time (%)	0	1		1	15			
Queuing Penalty (veh)	1	0		4	34			

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	252	265	230	323	256	221	200
Average Queue (ft)	113	115	174	313	215	134	139
95th Queue (ft)	207	222	269	335	295	216	210
Link Distance (ft)	1638			245	216	163	163
Upstream Blk Time (%)			1	48	28	7	8
Queuing Penalty (veh)			0	308	178	34	41
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)			11	45			
Queuing Penalty (veh)			49	62			

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10
Directions Served	LT	R	T	R	L	T	T
Maximum Queue (ft)	717	381	770	332	287	250	73
Average Queue (ft)	326	92	475	152	180	115	6
95th Queue (ft)	697	298	865	372	286	218	36
Link Distance (ft)	1525		750		216	216	245
Upstream Blk Time (%)			12		4	0	
Queuing Penalty (veh)			0		18	2	
Storage Bay Dist (ft)		350		300			
Storage Blk Time (%)	16	0	29	0			
Queuing Penalty (veh)	16	0	63	0			

Intersection: 8: Access & Tannler Drive

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	26	36
Average Queue (ft)	4	3
95th Queue (ft)	21	21
Link Distance (ft)	139	393
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 859

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	69
Average Queue (ft)	31
95th Queue (ft)	62
Link Distance (ft)	148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	NB	SB
Directions Served	LTR	LR	LR
Maximum Queue (ft)	83	35	100
Average Queue (ft)	3	2	39
95th Queue (ft)	33	14	76
Link Distance (ft)	634	400	314
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	53	187	63	223	387
Average Queue (ft)	4	18	26	90	165
95th Queue (ft)	28	103	56	189	394
Link Distance (ft)		377		364	513
Upstream Blk Time (%)		0		1	6
Queuing Penalty (veh)		1		0	0
Storage Bay Dist (ft)	100		100		
Storage Blk Time (%)		1			
Queuing Penalty (veh)		0			

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	L	TR
Maximum Queue (ft)	129	329	131	274	91	128	206	70
Average Queue (ft)	50	194	86	118	35	62	99	29
95th Queue (ft)	99	354	144	254	76	107	177	62
Link Distance (ft)		311		228	245	245		393
Upstream Blk Time (%)		3		3				
Queuing Penalty (veh)		19		21				
Storage Bay Dist (ft)	100		100				200	
Storage Blk Time (%)	0	15	8	7			1	
Queuing Penalty (veh)	1	12	39	11			0	

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	R	L	LT	T	L	R
Maximum Queue (ft)	179	264	238	232	815	844	153	225
Average Queue (ft)	124	135	139	195	704	419	128	73
95th Queue (ft)	194	233	225	269	985	1286	184	208
Link Distance (ft)		228	228		742	1464		160
Upstream Blk Time (%)		2	1		39	4	4	3
Queuing Penalty (veh)		8	3		0	0	0	31
Storage Bay Dist (ft)	150			200			200	
Storage Blk Time (%)	8	3		15	66		4	3
Queuing Penalty (veh)	30	5		45	125		12	18

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	642	409	229	321	241	216	205
Average Queue (ft)	191	195	91	307	198	153	157
95th Queue (ft)	478	365	203	347	311	223	219
Link Distance (ft)	1642			245	216	160	160
Upstream Blk Time (%)			0	50	27	9	13
Queuing Penalty (veh)			0	267	144	51	69
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)	0	3	2	53			
Queuing Penalty (veh)	0	7	8	39			

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10	B10
Directions Served	LT	R	T	R	L	T	T	T
Maximum Queue (ft)	414	214	717	332	292	259	86	15
Average Queue (ft)	175	62	537	191	192	133	8	1
95th Queue (ft)	414	194	977	409	291	251	46	10
Link Distance (ft)	1525		750		216	216	245	245
Upstream Blk Time (%)			21		6	1		
Queuing Penalty (veh)			0		30	5		
Storage Bay Dist (ft)		350		300				
Storage Blk Time (%)	5	0	37	0				
Queuing Penalty (veh)	6	0	106	1				

Intersection: 8: Access & Tannler Drive

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	46	14
Average Queue (ft)	21	1
95th Queue (ft)	51	9
Link Distance (ft)	147	393
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1114

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	40
Average Queue (ft)	7
95th Queue (ft)	30
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LR	LR
Maximum Queue (ft)	64	11	21	76
Average Queue (ft)	5	0	1	37
95th Queue (ft)	29	5	11	69
Link Distance (ft)	634	377	400	314
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	43	10	47	112	58
Average Queue (ft)	12	1	9	45	24
95th Queue (ft)	40	6	34	86	54
Link Distance (ft)		377		364	513
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100		100		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	L	TR
Maximum Queue (ft)	70	201	107	251	57	68	172	74
Average Queue (ft)	16	79	28	114	9	32	83	33
95th Queue (ft)	51	163	69	258	37	59	147	66
Link Distance (ft)		311		228	245	245	393	393
Upstream Blk Time (%)				2				
Queuing Penalty (veh)				16				
Storage Bay Dist (ft)	100		100					
Storage Blk Time (%)		3	0	5				
Queuing Penalty (veh)		1	0	4				

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	R	L	LT	T	L	R
Maximum Queue (ft)	127	180	203	332	714	92	185	44
Average Queue (ft)	46	80	94	218	375	9	146	10
95th Queue (ft)	99	145	174	340	695	68	213	31
Link Distance (ft)		228	228		740	1464	163	163
Upstream Blk Time (%)			0		2		12	
Queuing Penalty (veh)			1		0		54	
Storage Bay Dist (ft)	150			300				
Storage Blk Time (%)	0	1		2	18			
Queuing Penalty (veh)	0	0		7	39			

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	T	TR
Maximum Queue (ft)	384	379	230	319	212	243	212	203
Average Queue (ft)	130	158	158	285	88	151	139	145
95th Queue (ft)	304	331	262	367	171	305	214	218
Link Distance (ft)	1630			243	243	216	163	163
Upstream Blk Time (%)			1	31	0	11	5	9
Queuing Penalty (veh)			0	103	0	72	25	41
Storage Bay Dist (ft)		400	200					
Storage Blk Time (%)		1	12	33				
Queuing Penalty (veh)		2	31	45				

Queuing and Blocking Report
without Tannler East

7/6/2006

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10	B10
Directions Served	LT	R	T	R	L	T	T	T
Maximum Queue (ft)	474	194	689	281	290	228	73	17
Average Queue (ft)	194	42	316	90	167	104	6	1
95th Queue (ft)	358	140	656	256	276	200	37	12
Link Distance (ft)	1525		750		216	216	243	243
Upstream Blk Time (%)			4		4	0		
Queuing Penalty (veh)			0		14	1		
Storage Bay Dist (ft)		350		300				
Storage Blk Time (%)	2	0	12	0				
Queuing Penalty (veh)	2	0	27	0				

Intersection: 8: Access & Tannler Drive

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	55	74	5
Average Queue (ft)	22	28	0
95th Queue (ft)	50	65	0
Link Distance (ft)	139	393	1034
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 487

Queuing and Blocking Report
without Tannler East

7/6/2006

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	73
Average Queue (ft)	32
95th Queue (ft)	62
Link Distance (ft)	148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	NB	SB
Directions Served	LTR	LR	LR
Maximum Queue (ft)	81	13	87
Average Queue (ft)	3	1	38
95th Queue (ft)	35	9	73
Link Distance (ft)	634	400	314
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	34	274	80	7	249	471
Average Queue (ft)	2	66	26	0	106	338
95th Queue (ft)	17	223	63	5	208	635
Link Distance (ft)		377		311	364	513
Upstream Blk Time (%)		0				31
Queuing Penalty (veh)		1				0
Storage Bay Dist (ft)	100		100			
Storage Blk Time (%)		4	0			
Queuing Penalty (veh)		0	0			

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	LT	R	L	TR
Maximum Queue (ft)	128	343	131	277	108	171	229	327
Average Queue (ft)	47	270	97	168	30	72	164	83
95th Queue (ft)	105	395	154	307	73	142	247	292
Link Distance (ft)		311		228	245	245		393
Upstream Blk Time (%)		9		9		0		5
Queuing Penalty (veh)		63		57		0		11
Storage Bay Dist (ft)	100		100				200	
Storage Blk Time (%)	0	26	21	13			12	
Queuing Penalty (veh)	1	18	94	20			4	

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	R	L	LT	T	L	R
Maximum Queue (ft)	181	289	256	230	818	1484	153	235
Average Queue (ft)	144	185	161	186	783	974	125	76
95th Queue (ft)	214	296	261	288	962	1849	179	213
Link Distance (ft)		228	228		742	1464		160
Upstream Blk Time (%)		6	2		67	25	5	4
Queuing Penalty (veh)		30	10		0	0	0	37
Storage Bay Dist (ft)	150			200			200	
Storage Blk Time (%)	19	6		17	73		5	4
Queuing Penalty (veh)	76	10		49	128		16	21

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	B10	SB	SB
Directions Served	LT	R	L	T	T	T	TR
Maximum Queue (ft)	691	382	229	320	238	215	206
Average Queue (ft)	229	174	88	283	122	164	163
95th Queue (ft)	580	357	183	369	281	219	215
Link Distance (ft)	1642			245	216	160	160
Upstream Blk Time (%)			0	32	9	15	17
Queuing Penalty (veh)			0	156	42	86	96
Storage Bay Dist (ft)		400	200				
Storage Blk Time (%)	0	4	0	37			
Queuing Penalty (veh)	1	8	0	27			

Queuing and Blocking Report
without Tannler East

7/6/2006

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B10	B10
Directions Served	LT	R	T	R	L	T	T	T
Maximum Queue (ft)	238	101	530	245	290	251	171	66
Average Queue (ft)	94	43	230	77	191	114	15	3
95th Queue (ft)	183	80	560	206	303	225	86	51
Link Distance (ft)	1525		750		216	216	245	245
Upstream Blk Time (%)			4		7	1		0
Queuing Penalty (veh)			0		37	4		0
Storage Bay Dist (ft)		350		300				
Storage Blk Time (%)			8	0				
Queuing Penalty (veh)			22	0				

Intersection: 8: Access & Tannler Drive

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	132	55	31
Average Queue (ft)	70	5	5
95th Queue (ft)	126	29	40
Link Distance (ft)	147	393	1034
Upstream Blk Time (%)	6		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 1126

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	7
95th Queue (ft)	29
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	NB	SB
Directions Served	LTR	LR	LR
Maximum Queue (ft)	91	14	72
Average Queue (ft)	9	1	37
95th Queue (ft)	49	11	65
Link Distance (ft)	634	400	314
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	TR	LTR	LTR
Maximum Queue (ft)	44	38	9	134	80
Average Queue (ft)	12	7	0	51	28
95th Queue (ft)	40	29	5	107	60
Link Distance (ft)			311	364	513
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100	100			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	LT	R	L	TR
Maximum Queue (ft)	82	233	109	230	83	48	56	237	90
Average Queue (ft)	22	81	33	97	30	8	29	105	27
95th Queue (ft)	61	172	83	214	66	34	55	188	66
Link Distance (ft)		311		222	222	245	245	368	368
Upstream Blk Time (%)				1					
Queuing Penalty (veh)				6					
Storage Bay Dist (ft)	100		100						
Storage Blk Time (%)	0	4	0	4					
Queuing Penalty (veh)	0	1	1	3					

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	R	L	LT	T	L	LR
Maximum Queue (ft)	124	185	198	333	822	660	186	180
Average Queue (ft)	47	87	95	259	612	210	115	96
95th Queue (ft)	99	162	170	378	989	731	192	184
Link Distance (ft)		222	222		745	1464	166	166
Upstream Blk Time (%)		0	0		24		3	2
Queuing Penalty (veh)		0	0		0		14	10
Storage Bay Dist (ft)	150			300				
Storage Blk Time (%)	0	1		6	45			
Queuing Penalty (veh)	0	1		19	103			

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	NB	B28	SB	SB
Directions Served	LT	R	L	T	T	T	T	TR
Maximum Queue (ft)	230	299	230	314	283	231	214	198
Average Queue (ft)	115	123	148	198	174	18	142	152
95th Queue (ft)	202	249	253	312	275	107	216	215
Link Distance (ft)	1630			243	243	216	166	166
Upstream Blk Time (%)			0	4	1	1	7	10
Queuing Penalty (veh)			0	14	5	5	38	51
Storage Bay Dist (ft)		400	200					
Storage Blk Time (%)		0	4	7				
Queuing Penalty (veh)		0	11	10				

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B28	B28
Directions Served	LT	R	T	R	L	T	T	T
Maximum Queue (ft)	400	203	543	328	287	251	132	18
Average Queue (ft)	195	42	218	72	173	101	9	1
95th Queue (ft)	345	129	396	208	282	198	61	13
Link Distance (ft)	1525		750		216	216	243	243
Upstream Blk Time (%)					4	0		
Queuing Penalty (veh)					17	2		
Storage Bay Dist (ft)		350		300				
Storage Blk Time (%)	1	0	3	0				
Queuing Penalty (veh)	1	0	7	0				

Intersection: 8: Tannler East Access & Tannler Drive

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	55	7	49
Average Queue (ft)	19	0	2
95th Queue (ft)	50	5	20
Link Distance (ft)	217	368	145
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Tannler West Access & Tannler Drive

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	53	120	19
Average Queue (ft)	24	41	1
95th Queue (ft)	55	90	7
Link Distance (ft)	153	145	118
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Tannler Access & Tannler Drive

Movement	WB	SB
Directions Served	LR	LTR
Maximum Queue (ft)	61	34
Average Queue (ft)	19	2
95th Queue (ft)	51	17
Link Distance (ft)	187	563
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 320

Queuing and Blocking Report
with Tannler East

7/7/2006

Intersection: 1: Access & 13th St

Movement	WB
Directions Served	LR
Maximum Queue (ft)	72
Average Queue (ft)	31
95th Queue (ft)	59
Link Distance (ft)	148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Blankenship Rd & 13th St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LR	LR
Maximum Queue (ft)	182	4	14	105
Average Queue (ft)	19	0	1	41
95th Queue (ft)	127	3	9	85
Link Distance (ft)	634	371	400	314
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Blankenship Rd & Driveway

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	LTR	L	TR
Maximum Queue (ft)	90	380	80	12	348	526	498
Average Queue (ft)	7	116	28	0	186	381	231
95th Queue (ft)	44	318	66	9	380	619	607
Link Distance (ft)		371		306	365	512	512
Upstream Blk Time (%)		2			13	29	10
Queuing Penalty (veh)		11			0	0	0
Storage Bay Dist (ft)	100		100				
Storage Blk Time (%)		10	0				
Queuing Penalty (veh)		1	0				

Intersection: 4: Blankenship Rd & Tannler Drive

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	LT	R	L	TR
Maximum Queue (ft)	131	337	131	311	106	98	195	363	340
Average Queue (ft)	60	289	117	217	30	33	78	196	66
95th Queue (ft)	134	382	155	326	89	72	153	347	269
Link Distance (ft)		306		222	222	245	245	368	368
Upstream Blk Time (%)		18		28	0		0	2	6
Queuing Penalty (veh)		132		95	0		0	3	9
Storage Bay Dist (ft)	100		100						
Storage Blk Time (%)	1	38	52	16					
Queuing Penalty (veh)	7	31	188	24					

Intersection: 5: Blankenship Rd & 10th St

Movement	EB	EB	EB	WB	WB	B20	NB	NB
Directions Served	T	R	R	L	LT	T	L	LR
Maximum Queue (ft)	180	289	262	333	819	1485	201	220
Average Queue (ft)	152	202	178	252	785	1075	149	103
95th Queue (ft)	209	299	273	412	964	1965	230	221
Link Distance (ft)		222	222		745	1464	166	166
Upstream Blk Time (%)		11	4		72	42	22	5
Queuing Penalty (veh)		58	18		0	0	97	21
Storage Bay Dist (ft)	150			300				
Storage Blk Time (%)	23	9		5	77			
Queuing Penalty (veh)	98	15		16	145			

Intersection: 6: I-205 SB on-ramp & 10th St

Movement	WB	WB	NB	NB	NB	B25	SB	SB
Directions Served	LT	R	L	T	T	T	T	TR
Maximum Queue (ft)	1183	430	228	314	305	240	232	209
Average Queue (ft)	412	245	90	202	193	54	174	169
95th Queue (ft)	1121	483	195	326	312	201	223	215
Link Distance (ft)	1630			243	243	216	166	166
Upstream Blk Time (%)	1		0	12	9	5	16	18
Queuing Penalty (veh)	0		0	31	24	29	100	112
Storage Bay Dist (ft)		400	200					
Storage Blk Time (%)	0	15	0	17				
Queuing Penalty (veh)	0	30	0	12				

Intersection: 7: I-205 NB off-ramp & 10th St

Movement	EB	EB	NB	NB	SB	SB	B25	B25
Directions Served	LT	R	T	R	L	T	T	T
Maximum Queue (ft)	259	101	523	294	291	268	225	86
Average Queue (ft)	112	42	230	77	206	129	22	4
95th Queue (ft)	199	78	500	201	312	251	114	43
Link Distance (ft)	1525		750		216	216	243	243
Upstream Blk Time (%)			2		9	1	0	0
Queuing Penalty (veh)			0		49	7	1	0
Storage Bay Dist (ft)		350		300				
Storage Blk Time (%)			5	0				
Queuing Penalty (veh)			14	0				

Intersection: 8: Tannler East Access & Tannler Drive

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	76	104
Average Queue (ft)	29	15
95th Queue (ft)	64	83
Link Distance (ft)	188	145
Upstream Blk Time (%)		3
Queuing Penalty (veh)		8
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Tannler West Access & Tannler Drive

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	125	53	44
Average Queue (ft)	55	5	4
95th Queue (ft)	99	27	36
Link Distance (ft)	167	145	118
Upstream Blk Time (%)	1		0
Queuing Penalty (veh)	0		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Tannler Access & Tannler Drive

Movement	WB	SB
Directions Served	LR	LTR
Maximum Queue (ft)	54	21
Average Queue (ft)	27	1
95th Queue (ft)	54	12
Link Distance (ft)	218	762
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Nework Summary

Network wide Queuing Penalty: 1389