Submitted by: Chair of the Assembly at the Request of the Mayor
Prepared by: Planning Department
For reading: November 17, 2009

CLERK'S OFFICE
APPROVED
Date: 12-15-09

Anchorage, Alaska
AO 2009-128

AN ORDINANCE OF THE ANCHORAGE ASSEMBLY AMENDING THE ZONING MAP AND PROVIDING FOR THE REZONE OF APPROXIMATELY 12 ACRES FROM I-1 (LIGHT INDUSTRIAL DISTRICT) TO B-3 (GENERAL BUSINESS DISTRICT) FOR DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1, FRAGMENT LOTS 1-5; GENERALLY LOCATED WEST OF C STREET AND NORTH OF WEST INTERNATIONAL AIRPORT ROAD.
(Midtown Community Council) (Planning and Zoning Commission Case 2009-105)

THE ANCHORAGE ASSEMBLY ORDAINS:

Section 1. The zoning map shall be amended by designating the following described property as B-3 (General Business) District:

Doubletree Center Subdivision, Tract A, Block 1, Fragment Lots 1-5, consisting of approximately 12 acres; generally located west of C Street and north of West International Airport Road, as shown on Exhibit "A" attached.

Section 2. This ordinance shall become effective 10 days after the Director of the Planning Department has received the written consent of the owners of the property within the area described in Section 1 above to the special limitations contained herein. The rezone approval contained herein shall automatically expire, and be null and void, if the written consent is not received within 120 days after the date on which this ordinance is passed and approved. In the event no special limitations are contained herein, this ordinance is effective immediately upon passage and approval. The Director of the Planning Department shall change the zoning map accordingly.

PASSED AND APPROVED by the Anchorage Assembly this 15th day of December 2009.

Chair

ATTEST:

Municipal Clerk

(Case 2009-105; Tax I.D. No. 009-221-34;-35; -36;-37;-38)

MUNICIPALITY OF ANCHORAGE
Summary of Economic Effects -- General Government

AO Number: 2009-128

Title: AN ORDINANCE OF THE ANCHORAGE ASSEMBLY AMENDING THE ZONING MAP AND PROVIDING FOR THE REZONE OF APPROXIMATELY 12 ACRES FROM I-1 (LIGHT INDUSTRIAL DISTRICT) TO B-3 (GENERAL BUSINESS DISTRICT) FOR DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1, FRAGMENT LOTS 1-5; GENERALLY LOCATED WEST OF C STREET AND NORTH OF WEST INTERNATIONAL AIRPORT ROAD.

Sponsor: Mayor
Preparing Agency: Planning Department
Others Impacted:

CHANGES IN EXPENDITURES AND REVENUES: **(In Thousands of Dollars)**

	FY09	FY10	FY11	FY12	FY13
Operating Expenditures					
1000 Personal Services					
2000 Non-Labor					
3900 Contributions					
4000 Debt Service					
TOTAL DIRECT COSTS:	$ -	$ -	$ -	$ -	$ -
Add: 6000 Charges from Others					
Less: 7000 Charges to Others					
FUNCTION COST:	$ -	$ -	$ -	$ -	$ -
REVENUES:					
CAPITAL:					
POSITIONS: FT/PT and Temp					

PUBLIC SECTOR ECONOMIC EFFECTS:

Approval of this rezone should have no significant impact on the public sector.

PRIVATE SECTOR ECONOMIC EFFECTS:

Approval of this rezone should have no significant impact on the private sector.

Prepared by: Angela C. Chambers Telephone: 343-7940

MUNICIPALITY OF ANCHORAGE
ASSEMBLY MEMORANDUM

No. AM 646-2009

Meeting Date: November 17, 2009

From: **MAYOR**

Subject: **AN ORDINANCE OF THE ANCHORAGE ASSEMBLY AMENDING THE ZONING MAP AND PROVIDING FOR THE REZONE OF APPROXIMATELY 12 ACRES FROM I-1 (LIGHT INDUSTRIAL DISTRICT) TO B-3 (GENERAL BUSINESS DISTRICT) FOR DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1, FRAGMENT LOTS 1-5; GENERALLY LOCATED WEST OF C STREET AND NORTH OF WEST INTERNATIONAL AIRPORT ROAD.**

On August 3, 2009, the Planning and Zoning Commission recommended approval of the rezone for the subject property owned by International and C Street, LLC, from I-1 to B-3.

A final Commercial Fragment Lot Plat and Site Plan (Plat 2001-113) was recorded October 29, 2008. Each fragment lot has a proposed specific use: a professional office building on Fragment Lot 1, a hotel on Fragment Lot 2 and Lot 5; a restaurant on Fragment Lot 3, and a permanent Type B wetlands open space on Fragment Lot 4. In the I-1 District, hotels are a conditional use. The Planning and Zoning Commission approved a final conditional use for a hotel on Fragment Lot 2 on August 4, 2008.

The property owner has a potential tenant, the Anchorage Neighborhood Health Center, for the professional office building on Fragment Lot 1, for medical and health services. The I-1 District does not allow medical and health services offices. In all other respects, the I-1 and B-3 zoning districts are similar in height, minimum lot size, yards, lot coverage, landscaping, and parking issues and requirements.

The surrounding land is zoned I-1, but developed with commercial and retail uses. Bailey's Furniture and Grand Duchess large retail furniture stores are located to the south, hotel uses to the east, a restaurant and Anchorage Business Park to the north, the Plaza retail strip mall and the Inter Plaza Business Park to the west. To the northwest, a 16-acre tract was recently rezoned from R-3 to B-3 SL. Any type of industrial development on the subject

property would be inappropriate and incompatible with the commercial fragment lot site plan, and the existing surrounding development.

The B-3 District is consistent with *Anchorage 2020* General Land Use Policy numbers 1, 5, and 21, and with the current Commercial designation in the *1982 Comprehensive Plan Land Use Policy Map.*

This rezoning generally meets the rezoning standards in AMC 21.20.090.

The Planning and Zoning Commission recommended APPROVAL of the rezone to B-3 for the subject property by a unanimous vote of seven yeas and zero nays.

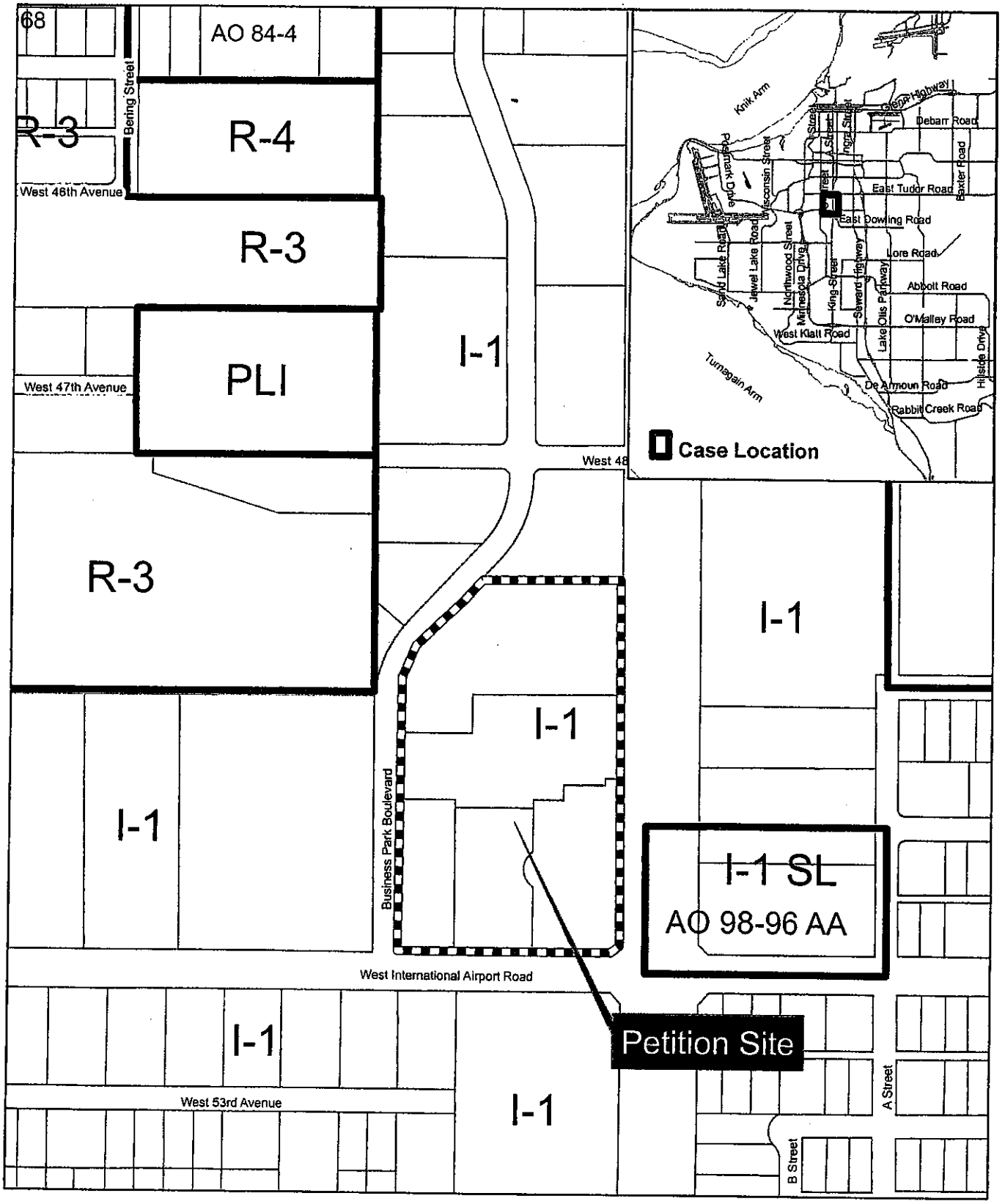
THE ADMINISTRATION RECOMMENDS ADOPTION OF AN ORDINANCE OF THE ANCHORAGE ASSEMBLY AMENDING THE ZONING MAP AND PROVIDING FOR THE REZONE OF APPROXIMATELY 12 ACRES FROM I-1 (LIGHT INDUSTRIAL DISTRICT) TO B-3 (GENERAL BUSINESS DISTRICT) FOR DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1, FRAGMENT LOTS 1-5; GENERALLY LOCATED WEST OF C STREET AND NORTH OF WEST INTERNATIONAL AIRPORT ROAD.

Prepared by:	Angela C. Chambers, Acting Zoning Administrator, Planning Department
Concur:	Jerry T. Weaver Jr., Acting Director, Planning Department
Concur:	Greg Jones, Executive Director, Office of Community Planning and Development
Concur:	Dennis A. Wheeler, Municipal Attorney
Concur:	George J. Vakalis, Municipal Manager
Respectfully submitted,	Daniel A. Sullivan, Mayor

(Case 2009-105; Tax I.D. No 009-221-34;-35;-36;-37;-38)

2009-105

EXHIBIT A



Municipality of Anchorage
Planning Department
Date: June 23, 2009

Flood Limits
- 100 Year
- 500 Year
- Floodway

0 405 810 Feet

N

001

MUNICIPALITY OF ANCHORAGE
PLANNING AND ZONING COMMISSION RESOLUTION NO. 2009-042

A RESOLUTION RECOMMENDING APPROVAL TO REZONE APPROXIMATELY 12 ACRES FROM I-1 (LIGHT INDUSTRIAL DISTRICT) TO B-3 (GENERAL BUSINESS DISTRICT) FOR DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1, FRAGMENT LOTS 1-5; GENERALLY LOCATED WEST OF C STREET AND NORTH OF WEST INTERNATIONAL AIRPORT ROAD.

(Case 2009-105; Tax I.D. No. 009-221-34; -35; 36; 37; -38)

WHEREAS, a request has been received from International and C Street, LLC to rezone approximately 12 acres from I-1 (Light Industrial District) to B-3 (General Business District) for Doubletree Center Subdivision, Tract A, Block 1, Fragment Lots 1-5; generally located west of C Street and north of West International Airport Road.

WHEREAS, notices were published, posted, public hearing notices were mailed, and a public hearing was held on August 3, 2009.

NOW, THEREFORE, BE IT RESOLVED, by the Municipal Planning and Zoning Commission that:

A. The Commission makes the following findings of fact:

1. On February 6, 2008, a commercial fragment lot plat and site plan was approved for the subject property for the following specific uses: professional office building on Fragment Lot 1, a hotel on Fragment Lots 2 and 5; a restaurant on Fragment Lot 3, and a permanent preservation area on Fragment Lot 4 of Type B wetlands. Light industrial development is clearly precluded. The final commercial fragment lot plat and site plan (Plat 2001-113) was recorded October 29, 2008.

2. The Commission approved a final conditional use for a hotel on Fragment Lot 2 on August 4, 2008.

3. Surrounding uses are predominately zoned I-1 but developed as commercial and retail uses including hotels, furniture stores, restaurants and other retail-commercial uses. Bailey's Furniture and Grand Duchess large retail furniture stores are located to the south, hotel uses to the east, restaurants and Anchorage Business Park to the north, Plaza retail strip mall and Inter-Plaza Business Park. A 16 acre tract was recently rezoned from R-3 to B-3 SL, to become effective upon recordation of a plat that dedicates an east-west spine road as a public street connecting Arctic Boulevard on the west and Business Park Boulevard on the east.

4. Although the majority of land in this area is zoned I-1, it is developed with commercial uses. Any type of industrial development on the subject property would be inappropriate and incompatible with the existing commercial uses, and would require amending the final commercial fragment lot plat and site plan (Plat 2001-113).

5. The current adopted *Comprehensive Plan Land Use Policy Map* is from 1982. It designates this property as Commercial.

6. B-3 zoning is consistent with *Anchorage 2020* Policies #1, #5, #21, and #27; the existing developed uses in the surrounding area are commercial uses and consistent with B-3 commercial zoning.

7. The resulting decrease in industrial land is not significant. The *2009 Anchorage Industrial Land Assessment* suggested an impending shortage of industrial land. The report looked at privately owned land but did not include public or quasi-public landowners in either the vacant or underutilized industrial land supply. These include the State of Alaska, the Railroad, Port, Airport and the Municipality.

8. The I-1 District allows banking and financial institutions, business and professional offices, employment agencies, laboratories and establishments for production, fitting and repair of eyeglasses hearing aids, prosthetic appliances and the like, and insurance and real estate offices. I-1 does not permit medical/health services and offices. In all other respects the I-1 and B-3 zoning districts are similar in height, minimum lot size, yards, lot coverage, land-scaping, and parking issues and requirements.

9. The property owner has a potential tenant for medical/health services for the office building approved for Fragment Lot 1. B-3 zoning will allow the property owner to lease offices to medical/health service professionals.

10. This rezoning request generally meets the rezoning standards in AMC 21.20.090.

11. The Commission recommended approval of B-3 zoning by a unanimous vote: 7-yes (Phelps, Weddleton, Isham, Jones, Yoshimura, Fredrick, Pease), 0-nea.

B. The Commission recommends to the Anchorage Assembly that the subject property be rezoned to B-3.

PASSED AND APPROVED by the Municipal Planning and Zoning Commission on the 3rd day of August, 2009.

ADOPTED by the Anchorage Municipal Planning and Zoning Commission this 5th day of October, 2009.

Jerry T. Weaver, Jr.
Secretary

Toni M. Jones
Chair

(Case 2009-105; Tax I.D. No. 009-221-34; -35; 36; 37; -38)

mpa

other buildings. COMMISSIONER WEDDLETON noted there were some real positives to the design in the site layout, and that the walkways showed tremendous improvement.

COMMISSIONER PEASE stated that although the code addresses pedestrian access, the Commission also mentioned providing a formal location or formal support for taxi access, and she added bicycle parking close to and convenient to the entries.

CHAIR JONES hoped the petitioner and staff would be able to work and address these items. She would like to see the grocery store added because it would be valuable to the customers the store serves. She hoped something could be worked out to add a little something to the facade more like the south Anchorage store.

AYE: Phelps, Weddleton, Isham, Jones, Yoshimura, Fredrick, Pease
NAY: None

PASSED

4. CASE: 2009-105
PETITIONER: International and C Street LLC
REQUEST: Rezoning to B-3 General business district

Case 2009-105 is a request from International and C Street LLC to rezone from I-1 (Light Industrial) to B-3 (General Business). The location is Doubletree Subdivision, Tract A, Block 1, Fragment Lots 1-5, generally located west of C Street and north of West International Airport Road.

Mary Autor presented the staff report and recommendations on behalf of the Municipality noting this rezone from I-1 to B-3 will allow offices for medical/health service professionals, a potential tenant for the office building approved for Fragment Lot 1. As currently zoned, the proposed uses of the Commercial Fragment Lot Plat and Site Plan are commercial uses and include most professional office uses except for medical/health professionals. The B-3 zoning would be consistent with the Commercial Fragment Lot Plat and Site Plan approved uses. It is consistent with the most recently adopted 1982 Generalized Land Use Plan Map, and with Anchorage 2020 policies 1, 5, 21 and 27, and generally meets the zoning standards for approval AMC 21.20.090. Discussion followed on commercial land uses in the area and for this site, as well as traffic circulation and pedestrian access.

Tim Potter from Dowl HKM represented the applicant and spoke in support of the rezoning request. He briefly touch on the type of zoning, compatible land uses, landscaping plans, wetlands issues in the area, and related requirements in their Army Corp of Engineers wetlands permit. Mr. Potter noted that the property owner had been approached for a long-term facility for doctors' offices and treatment type clinics (medical, not psychological) on Tract 1, and that many of the clientele would be arriving by means other than their own vehicle, such as transit. Also, it is not a municipal facility, and services all economic diversities. Discussion

followed on the history of zoning in the area, proposed developments in the past for the site that went undeveloped, other locations that were or were not considered for this project, wetlands issues on Fragment Lot 4, and proposed sidewalks on the site.

There was no other testimony presented, and the public hearing was closed at 10:54 p.m.

Commissioner Phelps moved to approve in Case 2009-105, Doubletree Center Subdivision, Tract A, Block 1, Fragment Lots 1 through 5, generally located west of C Street and north of West International Airport Road, the rezoning of that area from I-1 (Industrial) to B-3 (General Business). Recommend to the Anchorage Assembly approval of the request to rezone Doubletree Center Subdivision, Tract A, Block 1, Fragment Lots 1 through 5, from I-1, Light Industrial, to B-3, General Business. Commissioner Weddleton seconded.

Commission Phelps spoke in support of the motion noting this was a pretty straight forward rezoning in most respects. The land development in that area is really commercial, not industrial. The type of zoning they have there is kind of a historic relic. The more recent alignment seems interlocking and comprehensive plan, and the lot lesser one identifies the area as more commercially developed. You can also see this particular project meets the requirements for the standards for zonings and is consistent with the Comprehensive Plan, both the 1982 plan and the more recent plan. Finally I would say that it is not really appropriate for development of an industrial type in this location in any event, and to do so would cause inconsistency in the land use pattern. For all these reasons, I support my motion.

Chair Jones concurred that for any type of industrial development and particularly an intensive industrial development to occur here would be very inappropriate at this point in time, and would really stick out like a sore thumb.

AYE: Pease, Fredrick, Yoshimura, Jones, Isham, Weddleton, Phelps
NAY: None

PASSED

5. CASE: 2009-089 POSTPONED TO 9/14/2009 PETITIONER: Dean Weidner REQUEST: Rezoning to R-O Residential-office district

H. APPEARANCE REQUEST - None

I. REPORTS - None

1. Chair

2. Secretary

3. Committee

DEPARTMENT OF COMMUNITY PLANNING AND DEVELOPMENT
PLANNING STAFF ANALYSIS
REZONING

G.4

DATE:	August 3, 2009
CASE NO.:	2009-105
APPLICANT:	International and C Street LLC
REPRESENTATIVE:	Dowl HKM
REQUEST:	I-1 (Light Industrial) to B-3 (General Business)
LOCATION:	Doubletree Center Subdivision, Tract A, Block 1, Fragment Lots 1-5; generally located west of C Street and north of West International Airport Road.
SITE ADDRESS:	To Be Assigned Business Park Blvd./ Grid 1830
COMMUNITY COUNCIL:	Mid-Town; Taku Campbell
TAX NUMBER:	009-221-34;-35;-36;-37;-38

ATTACHMENTS:

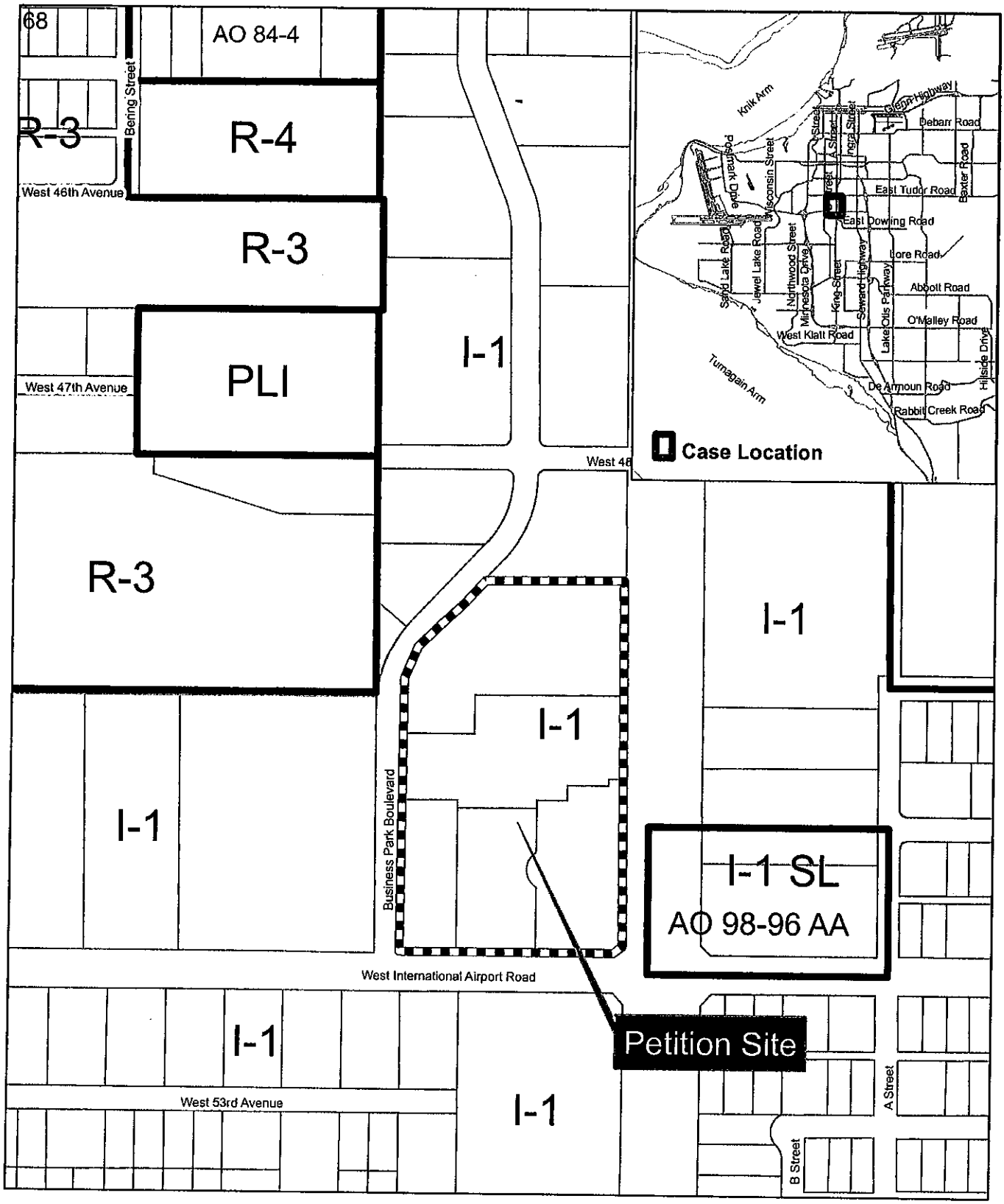
1. Zoning & Location Maps
2. Departmental Comments
3. Application
4. Posting Affidavit
5. Historical Information

RECOMMENDATION SUMMARY: Approval

SITE:

Acres:	12 acres
Vegetation:	Spruce and Birch at edges of property
Zoning:	I-1
Topography:	Generally even
Existing Use:	Vacant
Soils:	Public water and sewer available Class "B" wetlands requiring a Core Fill Permit Seismic Zone 3, moderate ground fail susceptibility.

2009-105



Municipality of Anchorage
Planning Department
Date: June 23, 2009

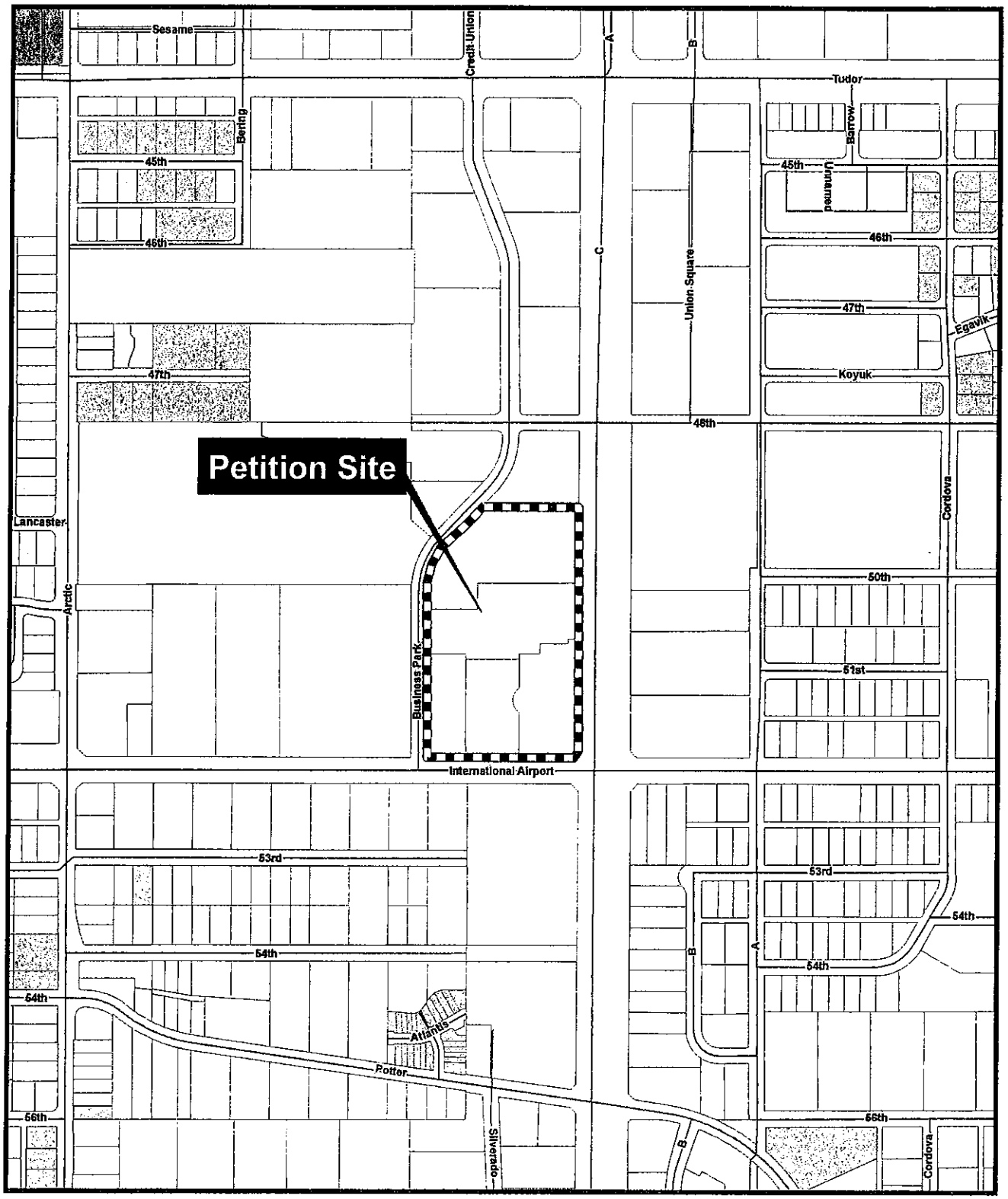
Flood Limits
- 100 Year
- 500 Year
- Floodway

0 405 810 Feet

N

008

2009-105



Municipality of Anchorage
Planning Department

Date: June 16, 2009

Mobile Home Park

Multi-Family

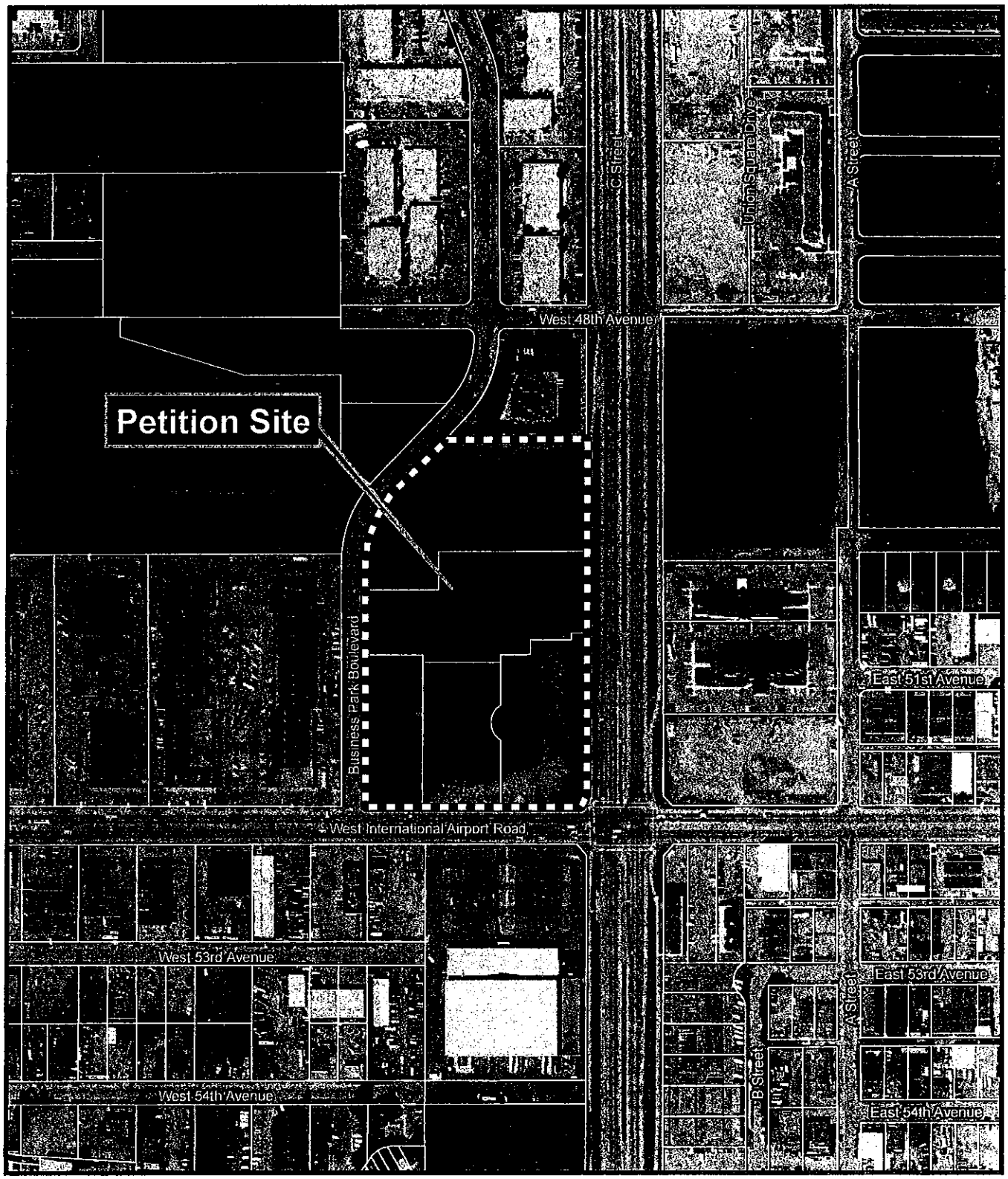
Single Family

0 500 1,000 Feet

N

009

2009-105



Municipality of Anchorage
Planning Department

Date: June 16, 2009

0 450 900 Feet

N

COMPREHENSIVE PLAN:

Anchorage 2020: West Anchorage Planning Area

1982 Anchorage Bowl Comprehensive Plan Generalized Land Use Plan:
Classification: Commercial
Density: N/A

SURROUNDING AREA

	NORTH	EAST	SOUTH	WEST
Zoning:	I-1	I-1/I-1 SL	I-1	I-1/R-3/PLI
Land Use:	Restaurant/ Office Uses/light industrial	C Street/ Hotel	W. Int'l Airport Rd/ Bailey's Furniture/ light industrial	Business PK Blvd Retail Mall

LAND USE COMPARISON

	CURRENT I-1 District AMC 21.40.200	**PROPOSED B-3 District AMC 21.40.180**
Height limitation:	Unrestricted	Unrestricted
Minimum lot size:	6,000 SF/50 feet wide	6,000 SF/50 feet wide
Yards:		
Front	10-Feet	10-Feet
Side	None	10-feet adjacent to residential; otherwise none
Rear	None	15-feet if adjacent to residential; otherwise none
		If Residential:10-foot front; 5-foot side, plus 1-foot for each 5-feet in building height greater than 35 feet; 10-foot rear; multi-family 100 square feet usable yard per dwelling unit
Lot Coverage:	Unrestricted	Residential: 50% All other uses: Unrestricted

	CURRENT I-1 District AMC 21.40.200	PROPOSED B-3 District AMC 21.40.180
Landscaping	Buffer landscaping or a screening structure placed and visual enhancement landscaping along each lot line adjoining a residential district; Visual enhancement along each lot line adjoining a right-of-way for collector or greater capacity	Buffer landscaping along each lot line adjoining in residential district, plus Visual landscaping; If applicable, perimeter, arterial landscaping

PROPERTY HISTORY

12-15-69	I-1 Zoning	Petition site zoned I-1 as part of Areawide Zoning "A", GAAB 122-69
12-31-84	Plat 84-509	Final plat recorded for Doubletree Center Subdivision, Block 1, Lots 1-4 and Tract A
10-09-07		U.A. Army Corps of Engineers issued Permit No. POA, 2006-1215-4, Fish Creek, with special conditions that govern development within Type B wetlands that establishes a permanent mitigation area on Fragment Lot 4 that is to be preserved in perpetuity either by recordation of a conservation easement or other legal mechanisms.
02-06-08	S11652-1	Platting Board approved Commercial Fragment Lot Site Plan Review for Fragment Lots 1-5 within proposed Tract A, Doubletree Center. This created five fragment lots. The proposed development includes a professional office building on Fragment Lot 1, a hotel on Fragment Lots 2 and 5; a restaurant on Fragment Lot 4, and a permanent preservation area on Fragment Lot 4 of Type B wetlands. The function of the commercial fragment lot site plan is one of financing. The site plan creates fragment lots that can be financed independently from other property within the 12 acres.
02-06-08	S-11651-1	Platting Board approved preliminary plat for proposed Tract A, Doubletree Center Subdivision. This is a reversion to acreage in order to create an underlying plat of 12.05 acres for the commercial

		fragment lot site plan. Direct vehicular access to "C" Street and West International Airport Road is prohibited.
08-04-08	PZC Case 2008-109	Planning and Zoning Commission approved a final conditional use approval for a hotel on proposed Tract A, Fragment Lot 2, Doubletree Subdivision per S-11651-1 and S11652-1
10-29-08	Plat 08-112	Final recorded plat of Double tree Center Subdivision, Tract A, Block 1
10-29-08	Plat 08-113	Final recorded plat of Commercial Tract Fragment Lot Site Plan for Doubletree Center Subdivision, Tract A, Block 1 (per plat #2008-112).

REQUEST:

This is a request to rezone the property from I-1 to B-3. B-3 zoning will allow offices for medical/health service professionals, a potential tenant for the office building approved and shown on Fragment Lot 1.

SITE DESCRIPTION:

Roads: Business Park Boulevard abuts the west property boundary and provides access to the petition property; West International Airport Road abuts the south property boundary; and "C" Street abuts on the east property boundary and does not provide direct access.

The *Official Streets and Highways Plan* designate Business Park Boulevard as a local street. However, with a 60-foot wide right-of-way, it meets current standards for a local street serving a commercial/light industrial collector. International Airport Road is a Class IIIB major arterial; and "C" Street is a Class IIIA Major arterial.

Access: A Traffic Impact Analysis was reviewed and approved in 2008 by the MOA and State DOTPF for the entire petition site and its approved future uses. Primary access is from Business Park Boulevard.

Land Use: Property to the west is zoned I-1 developed with a retail mall, and R-3 that is currently undeveloped and recently approved B-3 SL zoning that has not yet become effective. It will become effective upon recordation of a plat that dedicates an east-west spine road as a public street connecting to Arctic Boulevard on the west and Business Park Boulevard on the east; and

creates tracts for individual developments and provision for a detention pond area. Business Park Wetlands, zoned PLI, is located to the northwest. Property to the south, east and north are zoned I-1 and I-1 SL and are developed with hotels, furniture stores, restaurants, and other retail-commercial uses.

Platting: As noted in the property history, the subject property is a recorded Commercial Fragment Lot Site Plan Plat 08-113. The approved plat/plan shows each fragment lot with a building footprint, parking, landscaping, and driveways.

Use, Commercial Fragment Lot Site Plan: The approved commercial fragment lot plat/plan approved the following specific uses: professional office building on Fragment Lot 1, a hotel on Fragment Lots 2 and 5; a restaurant on Fragment Lot 4, and a permanent preservation area on Fragment Lot 4 of Type B wetlands.

Wetlands: Class B wetlands are found on Fragment Lot 4 and is designated by the approved Commercial Tract Site Plan Plat as a Wetland Mitigation Area to ensure preservation. Development of the subject property shall be in accordance with the approved USACE Permit Number POA, 2006-1215-4, Fish Creek.

COMMUNITY COMMENTS:

Thirty-three *(33)* public hearing notices were mailed on July 13, 2009. Public hearing posters were posted on the property on July 6, 2009. At the time this report was written, no returned comments were received.

FINDINGS:

21.30.090 Standards for Zoning Map Amendments.

A. Conformance to the Comprehensive Plan.
This standard is met.

Policy #1 states that the Anchorage 2020 Land Use Policy Map shall guide land use decisions until such time as other strategies are adopted that provide more specific guidance. Though not within either the West Anchorage Planning area or the Industrial Reserve area designated on the Anchorage 2020 Land Use Policy Map, the petition site is at the periphery of each. The site is less than ¼ mile from the Arctic

Boulevard Transit-Supportive Development Corridor and is adjacent to the International Airport Road to the south and "C" Street to the east.

The *1982 Anchorage Comprehensive Plan, Generalized Land Use Plan map* is the most recent adopted land use plan map, and it classifies the petition site as commercial. Although not adopted by the Assembly, the 2006 draft concept land use plan map suggests Industrial/Commercial classification for this property.

Policy #5 rezones shall be compatible in scale with adjacent uses and consistent with the goals and policies of Anchorage 2020. Surrounding uses are predominately commercial and retail uses and zoned I-1, such as Bailey's Furniture and Grand Duchess large retail furniture stores to the south, and hotel uses to the east, restaurants and Anchorage Business Park. The approved uses for the Commercial Fragment Lot Plat and Site Plan are consistent with the surrounding developed commercial/retail uses.

Policy 21: Commercial development is required by this Policy to be located and designed to contribute to improving Anchorage's overall land use efficiency and compatibility. Rezoning of property to commercial use is only permitted when designated in an adopted plan. The *1982 Anchorage Comprehensive Plan, Generalized Land Use Plan map* is the most recently adopted land use plan map, which classifies the petition site as commercial. In 2008 the Commercial Fragment Lot Site Plan for the subject property approved the commercial use development, clearly precluding any light industrial development. Approved development is limited to professional office, hotels and restaurant. It also approved a permanent preservation area on one of the lot. Surrounding uses are predominately commercial and retail uses and zoned I-1, such as Bailey's Furniture and Grand Duchess large retail furniture stores to the south, and hotel uses to the east, restaurants and Anchorage Business Park.

Policy #27 commercial/ light industrial parks may include complementary uses that are compatible with surrounding uses and areas, have integrated safe and efficient customer and freight access to and from the site, and incorporate compatible landscaping and signage and pedestrian facilities. See discussion above.

B. A zoning map amendment may be approved only if it is in the best interest of the public, considering the following factors:

1. The effect of development under the amendment, and the cumulative effect of similar development, on the surrounding neighborhood, the general area and the community; including but not limited to the environment, transportation, public services and facilities, and land use patterns, and the degree to which special limitations will mitigate any adverse effects.

Environment

Noise: All uses are subject to AMC 15.70 Noise Ordinance.

Air: All uses are subject to AMC 15.30 South Central Clean Air Ordinance, and AMC 15.35 South Central Clean Air Ordinance Regulations.

Wetlands: Class B wetlands exist on this site and have been designated by the approved Commercial Tract Site Plan as a Wetland Mitigation Area to ensure that they will be preserved. Development of the property shall be in accordance with the approved USACE Permit Number POA, 2006-1215-4, Fish Creek.

Soils: will be served with public sewer and water.

Seismic: The site is within a seismic zone 3, moderate ground failure susceptibility

Land Use Patterns

The petition site is surrounded by I-1 zoned property developed commercially, which is not industrial in nature. A 16 acre tract of vacant land zoned R-3 is located to the northwest, and was rezoned to B-3 SL pending a recorded plat that dedicates an east-west spine road between Arctic and Business Park Boulevards. Proposed development for this 16 acre tract include hotels, office buildings and residential. The I-1 District regulations include both commercial uses and light industrial uses as permitted and conditional uses. A commercial business park and restaurants are located to the north, hotels and restaurants to the east, large retail furniture uses, and an assortment of professional offices, a school, and retail/commercial shops.

The subject property is an approved Commercial Fragment Lot Site Plan for the following uses: professional office building on Fragment Lot 1, hotels on Fragment Lots 2 and 5, a restaurant on Fragment Lot 4, and a permanent preservation area on Fragment Lot 4 of Type B wetlands. These uses are compatible/consistent with existing and recent land use patterns in the surrounding neighborhood and general area.

Transportation/Drainage

Traffic Engineering and State DOT reviewed and approved a traffic impact analysis for this property in 2008. This rezoning does not impact the approved TIA. Traffic Engineering does not object to this rezone request.

International Airport Road is a Class IIIB major arterial and "C" Street is a Class IIIA major arterial, both are owned and maintained by ADOT/PF. Road, driveway or pedestrian access will not be permitted to "C" Street from the subject property. Road access is from Business Park Boulevard via International Airport Road to the south and West 48th Avenue to the north:

This 12 acre commercial fragment lot development will have three new site driveways shared by the planned uses that provide access directly onto Business Park Boulevard. Internal drive aisles provide connections between each of the proposed buildings and their associated parking. An access agreement was required for access onto the adjoining fragment lots. West 48th Avenue has sidewalks and is a local road owned and maintained by the Municipality.

Project Management & Engineering (PM&E) commented that the developers have been separately coordinating and submitting drainage analyses and calculations to PM&E under the land use permit process. They have no objection to the rezone request. Note: A grading/drainage plan of the whole commercial tract fragment lot site area must be approved by PM&E as part of the normal permit review process.

Public Services and Facilities

Utilities: AWWU water and sanitary sewer mainlines are located within the Business Park Boulevard rights-of-way and are available to the parcel.

Schools: schools are not impacted by this rezoning.

Public Safety: The petition site is located within Police, Fire, and Building Safety service areas.

2. The supply of land in the economically relevant area that is in the use district to be applied by the zoning request or in similar use districts, in relationship to the demand for that land.

Within the general one-mile radius there are over 1,087 acres of I-1 zoned land, of which 124 acres are undeveloped. There are almost 390 acres of B-3 zoned land, of which 25 acres are undeveloped.

Commercial and Industrial Land Use Studies: two studies have been conducted.

The July 1996 study entitled *Anchorage Bowl Commercial and Industrial Land Use Study* (HDR Alaska, Inc.) analyzed an inventory of those land uses, trends and estimated requirements for future commercial and industrial development. The study's key conclusion was that the Anchorage Bowl had a comfortable surplus of industrially zoned land (1109 vacant acres (I-1, I-2, MI). There was no apparent shortage of commercial or industrial zoned land. Site redevelopment and infill will enhance the land supply. The marketplace will play an important role in determining land use. However, because the industrial zoning districts also allow commercial uses, there is no exclusively industrial zone in the Bowl. Future updates to the Comprehensive Plan should consider exclusive industrial zoning districts.

The 2009 *Anchorage Industrial Land Assessment* report looked at privately owned land, and did not include public or quasi-public landowners in either the vacant or underutilized industrial land supply. These include the State of Alaska, the Railroad, Port, Airport and the Municipality. It also noted that Anchorage has developed approximately 30 acres per year for industrial uses. Six hundred (600) acres of developable industrial land is

estimated by 2030. It is recommended that areas of I-1 be identified that can be converted to I-2. (This report did not look at commercially zoned land.)

3. The time when development probably would occur under the amendment, given the availability of public services and facilities, and the relationship of supply to demand found under paragraph 2 above.

   Continuing development is expected within the next 12 months.

4. The effect of the amendment on the distribution of land uses and residential densities specified in the Comprehensive Plan, and whether the proposed amendment furthers the allocation of uses and residential densities in accordance with the goals and policies of the Plan.

   If approved, the rezoning will change the land use classification from industrial to commercial. B-3 will not have a negative effect upon the distribution of land uses because the current I-1 allows both commercial and light industrial uses. The property has an approved and recorded Commercial Fragment Lot Plat and Site Plan with approved commercial uses: professional office building, hotels and restaurant.

DISCUSSION:

The petitioner has a potential tenant for medical/health services for the office building approved for Fragment Lot 1. B-3 zoning would allow the petitioner to lease offices for medical/health service professionals.

As currently zoned, the proposed uses of the Commercial Fragment Lot Plat and Site Plan are commercial uses and include most professional office uses except for medical/health professionals. The I-1 District allows banking and financial institutions, business and professional offices, employment agencies, laboratories and establishments for production, fitting and repair of eyeglasses, hearing aids, prosthetic appliances and the like, and insurance and real estate offices. In all other respects, the two zoning districts are similar in height, minimum lot size, yards, lot coverage, landscaping, and parking issues and requirements.

The proposed uses for the Commercial Fragment Lot Plat and Site Plan do not allow any light industrial uses. B-3 zoning is consistent with the

Commercial Fragment Lot Plat and Site Plan approved uses, it is consistent with the most recently adopted 1982 Generalized Land Use Plan map, is consistent with Anchorage 2020 policies #1, #5, #21, and #27, and generally meets the zoning standards for approval AMC 21.20.090..

DEPARTMENT RECOMMENDATION:

The Department supports the rezoning to B-3.

Reviewed by:

for Tom Nelson
Director

Prepared by:

Mary Autor
Senior Planner

(Tax Parcel ID #009-221-34;-35;-36;-37;-38)
Case 2009-105

2

DEPARTMENTAL COMMENTS

Reviewing Agency Comment Summary
Case No.: 2009-105

Agency	Comments Included in Packet	No Comments and/or Objections	No Response
Air Pollution Control			
Alaska DEC			
Alaska Division of Parks			
Alaska DOT/PF	✓		
Anchorage Police Department			
AWWU			
DHHS Environmental			
DHHS Social Services			
Community Council			
Fire Prevention		✓	
Flood Hazard			
ML&P			
On-Site Water & Wastewater		✓	
Parks and Recreation			
Project Mgt & Engineering	✓		
Right-of-Way			
School District			
Transit			
Treasury			
Traffic & Transportation Planning	✓		
Watershed Management Services			

Municipality of Anchorage

TRAFFIC DEPARTMENT
(4700 Elmore Road.)

TRAFFIC DEPARTMENT

Mark Begich, Mayor

August 20, 2008

Ms. Tanya Hickok
DOWL Engineers
4041 B Street
Anchorage, AK 99503

SUBJECT: Doubletree Subdivision TIA

Dear Ms. Hickok:

The purpose of this letter is to provide our comments on the submitted DoubleTree TIA. As we spoke on the phone, it has been reviewed and approved by Scott Thomas representing the Alaska Department of Transportation and Public Facilities. Based upon our review of the TIA, the current and projected traffic volumes, the pedestrian accommodations already in place, we approve the TIA as submitted.

Please provide us two printed copies of the final TIA (including the Scott Thomas and this letter of approval in the document) along with a CD copy of the document for our records.

Respectfully,

Bob Kniefel, PE
MOA Traffic Engineer

P.O. Box 196650 * Anchorage, Ak. 99519-6650 * Telephone: (907) 343-8410 * Fax: (907) 343-8488
http://www.ci.anchorage.ak.us

Municipality of Anchorage

Project Management & Engineering Department

Comments to Miscellaneous Planning and Zoning Applications

DATE: July 13, 2009

TO: Jerry Weaver, Platting Officer

FROM: Sharen Walsh, P.E. – Private Development - Plan Review Engineer

SUBJECT: Comments for Planning & Zoning Commission Public Hearing date: August 3, 2009

Case No. 2009-101– Site plan review for a large retail/commercial establishment

Drainage - The petitioner is alerted to the requirement to coordinate submission of a drainage analysis and calculations to PM&E under the land use permit process

Roads –
Paragraph d. on Page 4 of the Narrative notes that "Per the Municipal Traffic Engineer's comment, a queuing analysis will be performed at the signalized traffic intersection at Calais Drive and A Street to determine if a right-turn lane is necessary." If the queuing analysis indicates that the turn lane is necessary, the petitioner may be required to enter into an improvement to public places agreement to guarantee the lane construction.

Paragraph C. on Page 5 of the Narrative says "Please refer to the TIA prepared by Lounsbury; a copy is provided with this submittal." PM&E notes that the only TIA included with our packet was a TIA prepared by DOWL Engineers – dated March 4, 1993.

PM&E has no objection to this site plan, pending resolution of the above comments.

Case No. 2009-102 - Zoning conditional use for a day care center

PM&E has no objection to this conditional use.

Case No. 2009-103 - Rezoning to I-1, PLI-p &R-4SL

Advisory Comment
PM&E/PD is concurrently reviewing S11759-1, the preliminary plat associated with the rezone. As presently submitted, the plat does not provide right of way for the continuation of the future Taft Street extension discussed in the narrative. In the absence of this, a temporary turnaround will need to be provided at the new terminus of Van Buren Street, with appropriate easements. PM&E/PD will comment accordingly on the platting action. Meanwhile, figures associated with this zoning action should recognize that the temporary turnaround will be required.

Otherwise, *PM&E/PD has no objection to the rezone request.*

Case No. 2009-105 – Rezoning to B-3 General business district

Informational Comment, Drainage - The developers have been separately coordinating and submitting drainage analyses and calculations to PM&E under the land use permit process.

PM&E has no objection to the rezone request.

Graves, Jill A.

From: Schwan, Martin K.
Sent: Thursday, June 18, 2009 2:38 PM
To: Graves, Jill A.; Pierce, Eileen A; Stewart, Gloria I.
Cc: Weaver Jr., Jerry T.; Long, Patty R.
Subject: Fire plan review

2009-101 Calais Sub. Tract D-11C Comment: 1) In accordance with table B105.1, please provide the required fire flow for the total building area (existing and new). 2) Please show the number and location of required fire hydrants. IFC appendix C, Section C102, C103, C104, Table C105.1.

2009-102 Laurel Acres Helen Carlquist Sub. Comment: 1) Daycare facilities are required to be sprinklered at a licensed capacity of 50. Is the building sprinklered? 2) Obtain all necessary permits. 3) Provide a type I hood in accordance with AFD policy 08-002.

2009-103 Crossroads Business Park No Objection

2009-104 Deborah Sub. #3 Comment: 1) Obtain all necessary permits from the State Fire Marshal's Office. 2) Obtain Land Use permit from the Municipality.

2009-105 Doubletree Center Sub. No Objection

Martin Schwan, Acting Fire Marshal
Division of Fire Prevention
Anchorage Fire Department
4700 Elmore Road
Anchorage AK 99504

"Ability can take you to the top, but it takes character to keep you there."

Office: 267-4968
Fax: 249-7596
Email: schwanmk@muni.org

Helping You Today For Tomorrow

Municipality of Anchorage
Development Services Department
Building Safety Division

MEMORANDUM

RECEIVED
JUN 25 2009
Municipality of Anchorage
Zoning Section

DATE: June 25, 2009

TO: Jerry Weaver, Jr., Platting Officer, CPD

FROM: Deb Wockenfuss, Civil Engineer, On-Site Water and Wastewater Program

SUBJECT: Comments on Cases due July 6, 2009

The On-Site Water & Wastewater Program has reviewed the following cases and has these comments:

2009-105 Rezoning to B-3 General Business District

No objection

2009-101 Site plan review for a large retail/commercial establishment

No objection

2009-102 Zoning conditional use for a day care center

No objection

2009-103 Rezoning to I-1, PLI-p & R-4SL

No objection

Municipality of Anchorage
P. O. Box 196650
Anchorage, Alaska 99519-6650
(907) 343-7943

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0004223700 JUL 13 2009
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009-231-11-000
BASS LLC
5300 A STREET
ANCHORAGE, AK 99518

RECEIVED
JUL 16 2009
Municipality of Anchorage
Zoning Counter

NOTICE OF PUBLIC HEARING - - Monday, August 03, 2009

Planning Dept Case Number 2009-105

The Municipality of Anchorage Planning and Zoning Commission will consider the following:

CASE:	2009-105
PETITIONER:	International and C Street LLC
REQUEST:	Rezoning to B-3 General business district
TOTAL AREA:	12.05 acres
SITE ADDRESS:	5005 BUSINESS PK BLVD
CURRENT ZONE:	I-1 Light industrial district
COM COUNCIL(S):	1---Midtown 2---Taku Campbell

LEGAL/DETAILS: A request to rezone approximately 12.05 acres from I-1 (Light industrial district) to B-3 (General business district). Doubletree Center Subdivision, Tract A, Block 1, Fragment Lots 1 thru 5. Generally located east of Business Park Blvd., west of C Street and north of W. International Airport Road.

The Planning and Zoning Commission will hold a public hearing on the above matter at 6:30 p.m., Monday, August 03, 2009 in the Assembly Chambers of the Z. J. Loussac Library, 3600 Denali Street, Anchorage, Alaska.

The Zoning Ordinance requires that you be sent notice because your property is within the vicinity of the petition area. This will be the only public hearing before the Commission and you are invited and present testimony, if you so desire.

If you would like to comment on the petition this form may be used for your convenience. Mailing Address: Municipality of Anchorage, Department of Planning, P.O. Box 196650, Anchorage, Alaska 99519-6650. For more information call 343-7943; FAX 343-7927. Case information may be viewed at www.muni.org by selecting Departments/Planning/Zoning and Platting Cases.

Name: BASS, LLC
Address: 5300 A Street Anchorage AK 99518
Legal Description:
Comments: We support the rezone it is an appropriate change given the development patterns on the C St. corridor. The entire section from Tudor South to Potter should be B-3.
[illegible] member
BASS, LLC

REZONING/RESIDENTS--PLANNING COMMISSION
2009-105

3

APPLICATION

Application for Zoning Map Amendment

Municipality of Anchorage
Planning Department
PO Box 196650
Anchorage, AK 99519-6650

Please fill in the information asked for below.

PETITIONER*	PETITIONER REPRESENTATIVE (IF ANY)
Name (last name first) International and C Street LLC	Name (last name first) DOWL HKM
Mailing Address PO Box 202845	Mailing Address 4041 B Street
Anchorage, AK 99520	Anchorage, AK 99503
Contact Phone: Day: Night:	Contact Phone: Day: 562-2000 Night:
FAX: 279-8020	FAX: 563-3953
E-mail: lhyde@jlproperties.com	E-mail: mmcnulty@DOWLHKM.com

*Report additional petitioners or disclose other co-owners on supplemental form. Failure to divulge other beneficial interest owners may delay processing of this application.

PROPERTY INFORMATION

Property Tax #(000-000-00-000): 009-221-34; 009-221-35; 009-221-36; 009-221-37; 009-221-38

Site Street Address: N/A; 5005 Business Park Blvd.; N/A; N/A; 251 International Airport Road Utility

Current legal description: (use additional sheet if necessary)

Doubletree Center Subdivision, Tract A, Block 1, Fragment Lot 1
Doubletree Center Subdivision, Tract A, Block 1, Fragment Lot 2
Doubletree Center Subdivision, Tract A, Block 1, Fragment Lot 3
Doubletree Center Subdivision, Tract A, Block 1, Fragment Lot 4
Doubletree Center Subdivision, Tract A, Block 1, Fragment Lot 5

Zoning: I1	Acreage: Approximately 12 Acres	Grid # SW1830

I hereby certify that (I am)(I have been authorized to act for) owner of the property described above and that I petition to rezone it in conformance with Title 21 of the Anchorage Municipal, Code of Ordinances. I understand that payment of the application fee is nonrefundable and is to cover the costs associated with processing this application, and that it does not assure approval of the rezoning. I also understand that assigned hearing dates are tentative and may have to be postponed by Planning Department staff, the Planning and Zoning Commission or the Assembly for administrative reasons.

06/11/2009 — Michelle McNulty

Date — Signature (Agents must provide written proof of authorization)

Accepted by:	Poster & Affidavit:	Fee	Case Number
A. C		8,800.	2009-105

20-002 (Rev. 01/02)*Front

COMPREHENSIVE PLAN INFORMATION

Anchorage 2020 Urban/Rural Services: ☑ Urban ☐ Rural

Anchorage 2020 West Anchorage Planning Area: ☑ Inside ☐ Outside

Anchorage 2020 Major Urban Elements: Site is within or abuts: N/A

☐ Major Employment Center ☐ Redevelopment/Mixed Use Area ☐ Town Center
☐ Neighborhood Commercial Center ☐ Industrial Center
☐ Transit - Supportive Development Corridor

Eagle River-Chugiak-Peters Creek Land Use Classification: N/A

☐ Commercial ☐ Industrial ☐ Parks/opens space ☐ Public Land Institutions
☐ Marginal land ☐ Alpine/Slope Affected ☐ Special Study
☐ Residential at _____ dwelling units per acre

Girdwood- Turnagain Arm N/A

☐ Commercial ☐ Industrial ☐ Parks/opens space ☐ Public Land Institutions
☐ Marginal land ☐ Alpine/Slope Affected ☐ Special Study
☐ Residential at _____ dwelling units per acre

ENVIRONMENTAL INFORMATION (All or portion of site affected)

Wetland Classification:	☐ None	☐ "C"	☑ "B"	☐ "A"	
Avalanche Zone:	☑ None	☐ Blue Zone	☐ Red Zone		
Floodplain:	☑ None	☐ 100 year	☐ 500 year		
Seismic Zone (Harding/Lawson):	☐ "1"	☐ "2"	☑ "3"	☐ "4"	☐ "5"

RECENT REGULATORY INFORMATION (Events that have occurred in last 5 years for all or portion of site)

☐ Rezoning - Case Number:

☐ Preliminary Plat ☑ Final Plat - Case Number(s): S-11651-1; S-11652-1

☐ Conditional Use - Case Number(s):

☐ Zoning variance - Case Number(s):

☐ Land Use Enforcement Action for

☐ Building or Land Use Permit for

☐ Wetland permit: ☐ Army Corp of Engineers ☐ Municipality of Anchorage

APPLICATION ATTACHMENTS

Required:
☑ Area to be rezoned location map ☐ Signatures of other petitioners (if any)
☑ Narrative statement explaining need and justification for the rezoning; the proposed land use and development; and the probable timeframe for development.
☑ Draft Assembly ordinance to effect rezoning.

Optional:
☐ Building floor plans to scale ☐ Site plans to scale ☐ Building elevations
☐ Special limitations ☐ Traffic impact analysis ☐ Site soils analysis
☐ Photographs

APPLICATION CHECKLIST

1. Zoning map amendments require a minimum of 1.75 acres of land excluding right-of-way or a boundary common to the requested zone district.
2. The petitioning property owner(s) must have ownership in at least 51% of property to be rezoned.

International & C Street, LLC
PO Box 202845
Anchorage, Alaska 99520-2845

RECEIVED
JUN 1 0 2009
PLANNING DEPT.

June 9, 2009

Mr. Tom Nelson, Planning Director
Planning Department
Municipality of Anchorage
P O Box 196650
Anchorage, AK 99519-6650

Subject: Letter of Authorization
Doubletree Center Subdivision Tract A, Block 1, Fragment Lots 1, 2, 3, 4, and 5

Dear Mr. Nelson:

International and C Street, LLC is the owner of Doubletree Center Subdivision Tract A, Block 1, Fragment Lots 1, 2, 3, 4, and 5, Parcel No's. 009-221-34, 009-221-35, 009-221-36, 009-221-37, and 009-221-38, per Plats 2008-112 and 2008-113. The site 524,918 square feet and is located in Anchorage, Alaska.

We authorize DOWL HKM, in accordance with Anchorage Municipal Code 21.20.050.A.7, to act on our behalf in submitting and processing land use planning applications.

Sincerely,
International and C Street, LLC

Leonard B. Hyde
Managing Member

DOUBLETREE SUBDIVISION
ZONING MAP AMENDMENT APPLICATION
OVERVIEW

DOWL HKM is submitting this application on behalf of International and C Street LLC for a zoning map amendment. The purpose of this zoning amendment is to rezone the previously replatted Commercial Tract Fragment Lot Site Plan (Case No. S-11652-1) to a more appropriate zoning district that fits the Commercial Tract Site Plan. This zoning amendment will rezone the commercial tract from I-1 (Light Industrial) to B-3 (General Business District) to make the zoning more consistent with the type of development approved for the site and land use characteristics in the surrounding area (Appendix A, Draft AO).

The commercial tract being petitioned for rezone consists of approximately 12 acres of undeveloped land located in the SE 1/4, NW 1/4, of T13N, R3W, Section 31 (Figure 1, Vicinity Map). The subject parcel has an approved fragment lot site plan, which governs the physical development of the parcel. A U.S. Army Corps of Engineers (USACE) 404 Permit has been issued for the site and utility and fill activities began last fall, and is continuing this construction season. A hotel has been approved for one of the fragment lots and construction drawings are being reviewed by the Municipality of Anchorage (MOA), with building permits to be issued very soon. The parcel is legally known as Doubletree Center Subdivision, Tract A, Block 1, Fragment Lots 1, 2, 3, 4, and 5. The MOA concept-approved Land Use Plan Map designates this area as industrial/commercial.

STANDARDS FOR ZONING AMENDMENT APPROVAL (21.20.050)

1. **The effect of development under the amendment, and the cumulative effect of similar development, on the surrounding neighborhood, the general area and the community, including but not limited to the environment, transportation, public services and facilities, and land use patterns, and the degree to which special limitations will mitigate any adverse effects.**

   The proposed zoning amendment is designed to rezone approximately 12 acres of land in Midtown Anchorage from I-1 to B-3 (Figure 2, Current Zoning Map and Figure 3, Proposed

Zoning Map). The commercial tract is located in the northwest corner of International Airport Road and C Street and is currently under development by International and C Street LLC. The commercial tract will be used predominantly for professional offices and commercial businesses.

The MOA's concept-approved Land Use Plan Map identifies the commercial tract as an industrial/commercial area. The rezone request is consistent with land use patterns in the surrounding neighborhood and general area. The surrounding neighborhood and general area is mostly developed with commercial businesses and is zoned light industrial. The proposed rezone will allow for continued development of the tract in a commercial oriented pattern, in light of proposed changes to uses permitted in the new Title 21 for I-1 zoning.

Class B wetlands exist on this site. The proposed development will comply with the wetland policy in the ABC 2020 Plan that preserves the functions and values of important wetlands and restoring Anchorage's aquatic resources. The proposed development will also comply with the MOA's Wetlands Management Plan. The Class B wetlands have been designated by the approved Commercial Tract Site Plan as a Wetland Mitigation Area (Appendix B, Plats 2008-112 and 2008-113) to ensure that they will be preserved. Development of the property shall be in accordance with the approved USACE Permit Number POA, 2006-1215-4, Fish Creek, or any subsequent modifications to the permit (Appendix C).

Access to the site is good, with primary access and egress from Business Park Boulevard. A Traffic Impact Analysis was reviewed and approved by the MOA and State Alaska Department of Transportation and Public Facilities in 2008 (Appendix D).

The proposed rezone furthers the goal of the ABC 2020 Plan by providing the kind of development proposed in the MOA's concept-approved Land Use Plan Map.

Based on the ABC 2020 Plan regarding vacant commercial and industrial land issues, a significant amount of Anchorage's industrial and commercial land is currently underused and can be used to meet the future commercial demands. The July 1996 study titled *Anchorage Bowl Commercial and Industrial Land Use Study* (HDR Alaska, Inc.) analyzed an inventory of those land uses, trends, and estimated land requirements for future commercial and

industrial development. The study's key conclusion was that the Anchorage Bowl had a comfortable surplus of industrially-zoned land. This pool of underutilized industrial property holds potential for more intensive industrial use or for redevelopment to other uses, depending on its location and site characteristics.

No special limitations are required or proposed.

2. **The supply of land in the economically relevant area that is in the use district to be applied by the amendment or in similar use districts, in relation to the demand for that land.**

As discussed above, there is a surplus of underutilized industrial land in the central subarea of Anchorage. There is more demand for commercial and retail uses in this district then demand for industrial uses. Therefore, this rezone better addresses land use needs for this part of Anchorage.

3. **The time when development probably would occur under the amendment, given the availability of public services and facilities, and the relationship of supply to demand found under subsection 2 of this subsection.**

Public services and facilities are available to support the approved commercial tract. Development is anticipated to begin within the next 12 to 14 months.

4. **The effect of the amendment on the distribution of land uses and residential densities specified in the comprehensive plan, and whether the proposed amendment furthers the allocation of uses and residential densities in accordance with the goals and policies of the plan.**

This amendment would not change the distribution of residential land use or the allocation of residential densities proposed by ABC 2020. The proposed amendment would result in a slight decline in light industrial land and a slight increase in commercial land in the central subarea. The over-supply of underutilized industrial-zoned land in the subarea is recognized in the ABC 2020 Plan, which notes that these lands may be developed for other uses, dependent on the location.

This site is at a key location in Midtown and would provide needed commercial opportunities to support the residential growth that has occurred in the area over the last 20 years.

The proposed development for this site meets many of the policies listed in the ABC 2020 Plan, such as:

Policy No. 5. The proposed zoning amendment is compatible in scale with adjacent uses and is consistent with the goals and policies of the ABC 2020 Plan. Across the street, on International Airport Road, there is a large retail furniture store; across C Street there are several chain hotels and motels.

Policy No. 21. The commercial tract is located and designed to contribute to improving Anchorage's overall land use efficiency and compatibility, traffic flow, pedestrian access, and appearance. This area would not generate problems associated with strip commercial development.

Policy No. 26. The site is not located in an industrial reserve.

Policy No. 27. The proposed development has integrated safe and efficient customer and freight access to and from the site via a local street. The zoning amendment would allow for complimentary uses compatible with surrounding uses. Landscaping and compatible signage will be incorporated into the site.

Policy No. 73. Public facilities and services near or to the site meet the adopted level of service standards.

Policy No. 76. This site will use existing transportation and utility infrastructure.

D60344.Zoning Map App.MJM.061109.tla

DOUBLETREE CENTER SUBDIVISION
ZONING MAP AMENDMENT APPLICATION
SUPPLEMENTAL INFORMATION
CASE 2009-105
JUNE 24, 2009

Discuss the supply of land in the economically relevant area that is in the use district to be applied by the amendment or in similar use districts, in relation to the demand for that land.

Within the surrounding neighborhood, defined as within a 1,000-foot radius of the subject commercial tract, there are over 126 acres of I-1 zoned land, of which almost 34 acres, or 27 percent, are undeveloped (Figure 4). There is no B-3 zoned land located in the surrounding neighborhood despite the fact that this area, at the intersection of two major arterials is a classic general business area, similar to the statement of intent for B-3 in AMC 21.40.180. The Doubletree Center Subdivision consists of approximately 12 acres of I-1 zoned land. Rezoning this site to B-3 would leave almost 22 acres, or 19 percent, of undeveloped I-1 zoned land available in the surrounding neighborhood and would result in 12 acres of available B-3 zoned land.

Within the surrounding neighborhood, there are many examples showing both past and recent development has been primarily commercial and retail. In the last 5 years, Bailey's Furniture and Grand Duchess, large retail furniture stores have been developed across from the site on International Airport Road. Along the south side of International Airport Road is Taco Loco restaurant and retail, the A.P.D.E.A. Professional Building, which houses offices for the Anchorage Police Department Employee Association, Habitat for Humanity, Hospice of Anchorage, and the American Lung Association, and Rilke Schule, a German Immersion Charter School. Along the north side of International Airport Road are Sherwin Williams, and the Interplaza Mall, which includes such retail and commercial shops like, a martial arts studio, SPCA Thrift Store, the Packaging Store, Partycraft, New Season Christian Center, Alaska Computer Geeks, Rock Hard Fitness, Guido's Pizza, and Dish Japanese Restaurant.

Several national franchise hotels, such as the Fairfield and Motel 6 have been developed across C Street from the site, and Extended Stay and the Springhill Suites Marriot are located within the neighborhood. Adjacent to the property, to the north, is the Lone Star restaurant, which has

STANDARDS FOR ZONING MAP AMENDMENTS

The petitioner must provide a written narrative that addresses the following standards. Zoning map amendment applications that do not address these items will be considered invalid and will not be accepted for public hearing by the Department of Community Planning and Development. (Use additional paper if necessary.)

A. Conformance to Comprehensive Plan:

1. If the proposed zoning map amendment does not conform to the land use classification map contained in the applicable Comprehensive Plan, explain how the proposed rezoning meets one or more of the following standards:

   a. The proposed use is compatible because of the diversity of uses within the surrounding neighborhood or general area;

   b. The proposed use may be made compatible with conforming uses by special limitations or conditions of approval concerning such matters as access, landscaping, screening, design standards, and site planning; or

   c. The proposed use does not conflict with the applicable Comprehensive Development Plan goals and policies.

a. The land use policy map in Anchorage 2020 does not address this area specifically. The concept-approved Land Use Plan Map designates the area as Industrial/Commercial, which allows for compatible commercial uses. The proposed use is compatible because of the diversity of uses within the surrounding neighborhood or general area. The rezone request is consistent with land use patterns in the surrounding neighborhood and general area. The surrounding neighborhood and general area is mostly developed as commercial businesses, but has been zoned light industrial. This parcel is proposed to be used predominantly for professional offices and commercial businesses, consistent with the surrounding area.

2. If the proposed zoning map amendment does not conform to the generalized residential intensity (density) of the applicable Comprehensive Plan Map, explain how the proposed rezoning meets the following standards:

   a. In cases where the proposed rezoning would result in a greater residential intensity (density), explain how the rezoning does not alter the plan for the surrounding neighborhood or general area, utilizing one of the following criteria:

      i. The area is adjacent to a neighborhood shopping center, other major high density mode, or principal transit corridor.

      ii. Development is governed by a Cluster Housing or Planned Unit Development site plan.

N/A

   b. In cases where the proposed rezoning would result in a lesser residential intensity (density), explain how the rezoning would provide a clear and overriding benefit to the surrounding neighborhood.

N/A

c. Explain how the proposed residential density conforms with the applicable Comprehensive Development Plan goals and policies pertaining to the surrounding neighborhood or the general area.

N/A

B. A zoning map amendment may be approved only if it is in the best Interest of the public, considering the following standards:

1. Describe the effect of development under the amendment and the cumulative effect of similar development on (a) the surrounding neighborhood, (b) the general area, and (c) the community with respect to the following (the discussion should include the degree to which proposed special limitations will mitigate any adverse effects.):

Note:	Surrounding neighborhood	=	500-1,000' radius
	General Area	=	1 mile radius
	Community	=	Anchorage as a whole

a. Environment

No adverse environmental effects are anticipated for the surrounding neighborhood, the general area or the community overall. The class B wetlands have been designated by the approved Commercial Tract Site Plan as a Wetland Mitigation Area to ensure that they will be preserved. Development of the property shall be in accordance with the approved U.S. Army Corps of Engineers Permit Number POA, 2006-1215-4, Fish Creek, or any subsequent modifications to the permit.

b. Transportation

No adverse transportation effects are anticipated for the surrounding neighborhood, the general area or the community overall. Access to the site is good, with primary access and egress from Business Park Boulevard. A Traffic Impact Analysis was reviewed and approved by the MOA and Alaska Department of Transportation and Public Facilities in 2008.

c. Public Services and Facilities

No adverse public services and facilities effects are anticipated for the surrounding neighborhood, the general area or the community overall. Public services and facilities are available to support the approved commercial tract.

d. Land Use Patterns

The commercial tract is subject to a Fragment Lot site plan which creates Fragment Lots 1 through 5. The development of each Fragment Lot is bound by a Declaration of Protective Covenants and Restrictions. Fragment Lot 1 is the site of a proposed office building. Fragment Lot 2 is the site of a proposed hotel building. Fragment Lot 3 is the site of a proposed restaurant building. Fragment Lot 4 is the site of an existing wetland to be preserved. Fragment Lot 5 is the site of a proposed hotel building.

The Declaration of Protective Covenants and Restrictions specifically prohibited uses which cause excessive noise, vibrations, smoke, dust, humidity, heat, glare, or

objectionable odors. The proposed rezone is appropriate for the approved uses of the site.

The Municipality's concept-approved Land Use Plan Map identifies the commercial tract as an industrial/commercial area. The rezone request is consistent with land use patterns in the surrounding neighborhood and general area. The surrounding neighborhood and general area is mostly developed with commercial businesses and is zoned light industrial. The population of Anchorage, as a whole, is increasing, and with that so is the needs for commercial and retail services. The location of this site, at the intersection of major arterials and with exposure to heavy automobile activity is appropriate for commercial uses and is consistent with existing development patterns and recent development in the area.

2. Quantify the amount of undeveloped (vacant) land in the general area having the same zoning or similar zoning requested by this application. Explain why you feel the existing available land is not sufficient or is not adequate to meet the need for land in this zoning category.

Within the general area, defined as within a 1 mile radius of the subject commercial tract, there are over 1,087 acres of I-1 zoned land, of which almost 124 acres, or 11 percent are undeveloped (Figure 4). Within the general area there are almost 390 acres of B-3 zoned lands, of which 25 acres, or 6 percent, are undeveloped. As previously stated, the Doubletree Center Subdivision consists of approximately 12 acres of I-1 zoned land. Rezoning this site to B-3 would leave almost 112 acres, or 10 percent, of undeveloped I-1 zoned land available and would increase the undeveloped B-3 zoned land to almost 37 acres, or 9-percent, within the general area.

Within the general area, both past and recent development has been primarily office, commercial, and retail. There exist many chain hotels, such as the Fairfield, Motel 6, Extended Stay, and the Springhill Suites Marriot, and restaurants such as the Sourdough Mining Company, Taco Del Mar, Starbucks, Golden Corral, Lone Star, Doriola's, and the Peppermill/Sea Galley. There are various retail services such as the Great Alaska Wildberry Factory, the Half Moon Creek Gallery, and Blu Menswear, and offices such as the Centerpoint Campus.

Clearly the trend in this portion of the Municipality is for primarily retail, office, or hotel uses. This is in large part due to the heavy automobile related traffic associated with the system of arterial streets in the area. This is a classic "general business district" grouping of parcels, located at the intersection of two major arterials, as the Title 21 statement of intent for B-3 in AMC 21.40.180 states.

As discussed in the original zoning amendment application submittal, there is a surplus of underutilized industrial land in the central subarea of Anchorage. There is a growing demand for commercial and retail uses in this district as compared to the demand for industrial uses. As the commercial tract is currently zoned, there are only 25 acres of undeveloped land available for

commercial and retail uses in the general area, as opposed to the 124 acres of industrial zoned land. Therefore, this rezone better addresses land use needs for this part of Anchorage by providing additional needed B-3 zoned land to fulfill the commercial and retail demands of the area.

3. When would development occur under the proposed zoning? Are public services (i.e., water, sewer, street, electric, gas, etc.) available to the petition site? If not, when do you expect that it will be made available and how would this affect your development plans under this rezoning?

Public services and facilities are available to support the approved commercial tract. Development is anticipated to begin within the next 12 to 14 months.

4. If the proposed rezoning alters the use of the property from that which is indicated in the applicable Comprehensive Plan, explain how the loss of land from this use category (i.e., residential, commercial, industrial) might be regained elsewhere in the community.

Anchorage 2020's land use policy map does not specifically address this area. The Municipality's concept-approved Land Use Plan Map identifies the commercial tract as an industrial/commercial area. Use of this area for compatible commercial uses does not result in a significant loss of industrial zoned lands in the community. The proposed rezone to B-3 is in conformance and is compatible with the concept-approved Land Use Plan Map.

Autor, Mary P.

From: Timothy C. Potter [tpotter@dowlhkm.com]
Sent: Thursday, July 09, 2009 12:40 PM
To: Autor, Mary P.; Maryellen Tuttell, AICP
Subject: Doubletree Rezone

Mary,
I n response to your question concerning, why B-3 zoning for the Doubletree , there are two primary considerations for the requested rezone from I-1 to B-3, for the Doubletree parcels.

First, a potential tenant for the office building , approved and shown on the fragment lot site plan, has the need to accommodate offices for medical/health service professionals. The proposed rezone would resolve this issue and allow an appropriate use, at this specific location.

Second, the proposed changes in permitted uses within the I-1 zoning district, currently incorporated into the new Title 21 "draft", would render this property inconsistent with the approved fragment site plan and adjacent uses and the "C" Street corridor.

Recent development and approvals for projects have already cast the die for this property, which is not "industrial" in nature.

If you would like to discuss this further, please contact me at your convenience.

Tim

Timothy C. Potter
Senior Planner

DOWL HKM
(907) 562-2000
4041 B Street
Anchorage, AK 99503
Fax (907) 563-3953
www.DOWLHKM.com

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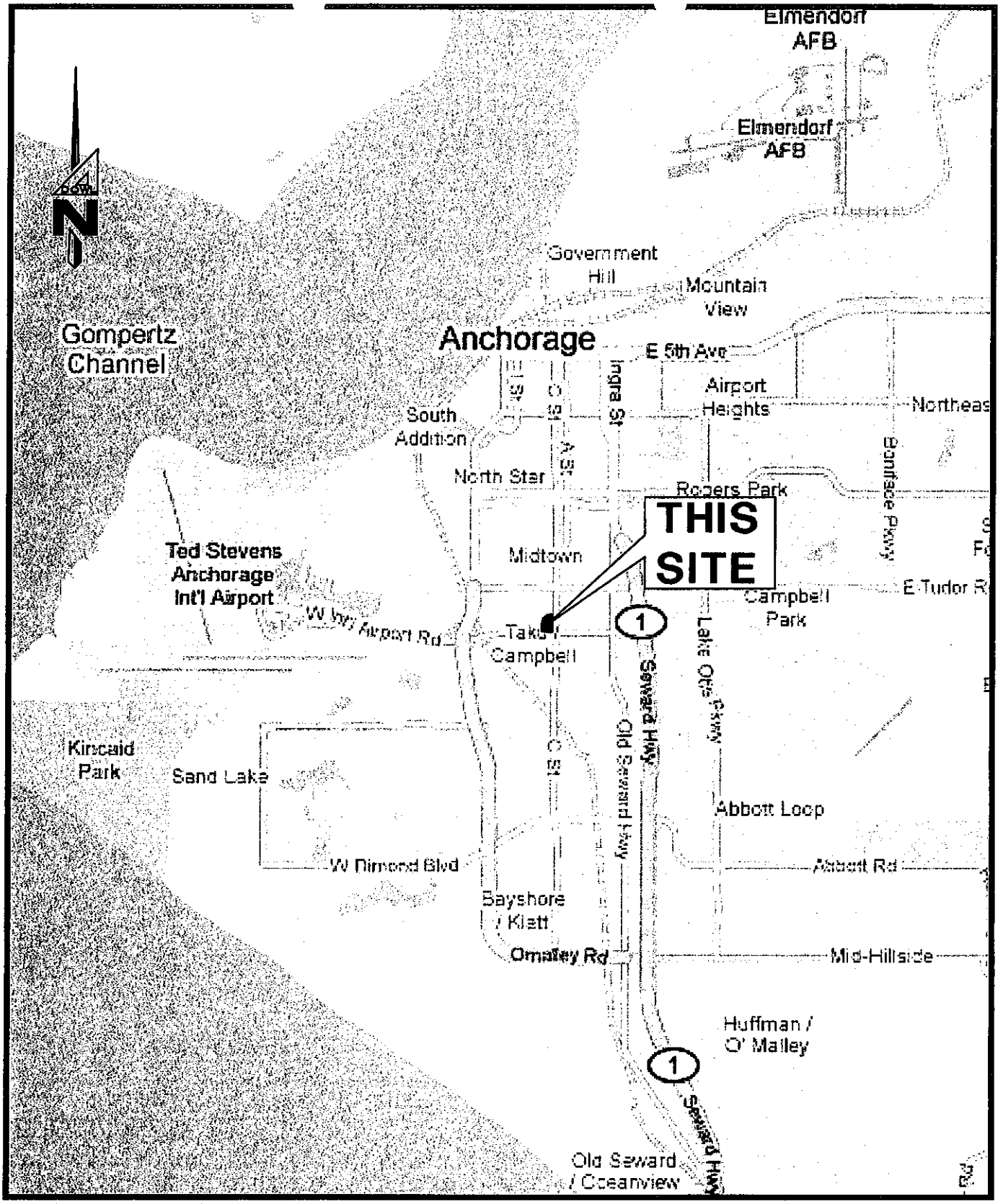
LIST OF FIGURES



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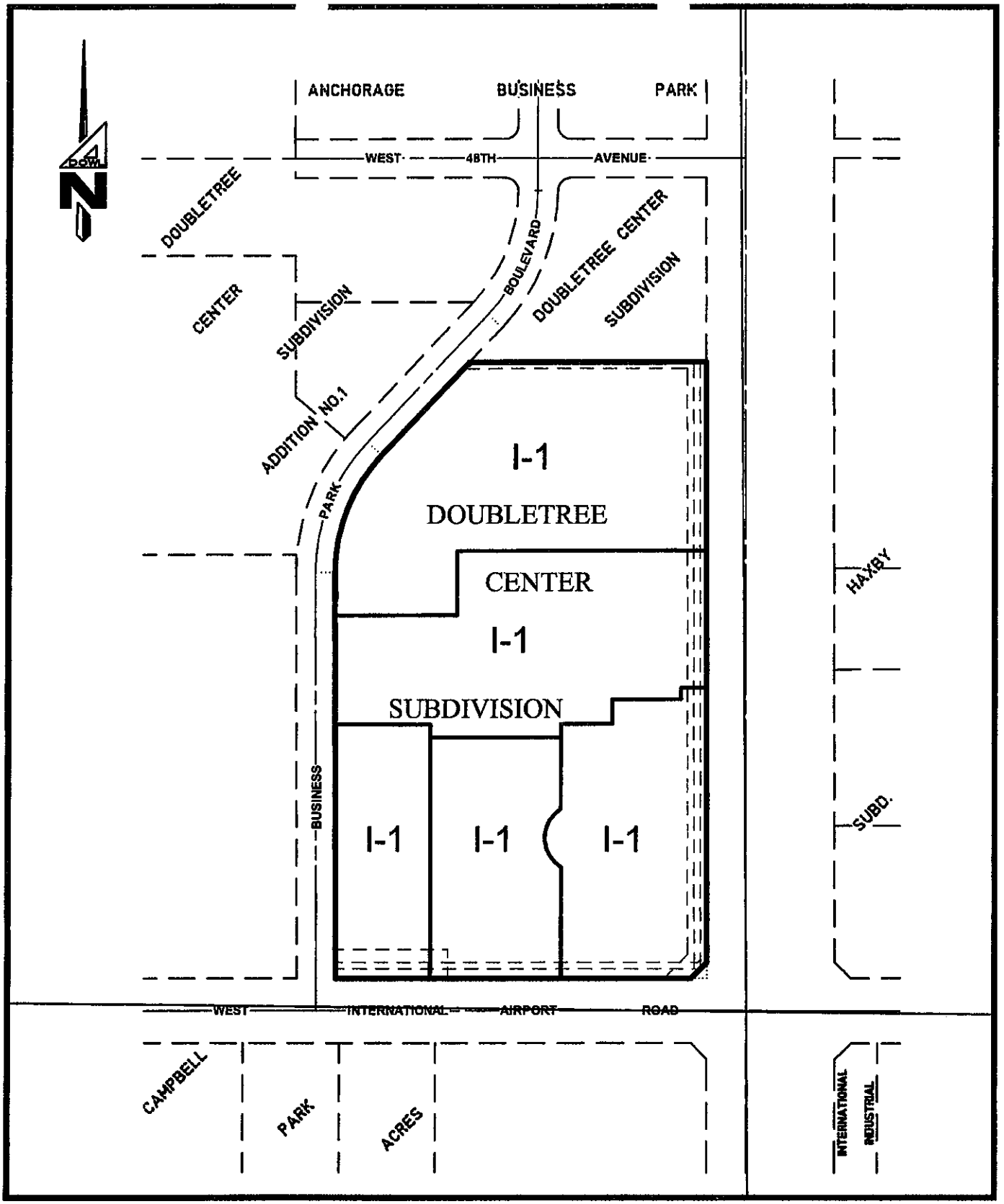
DOWL HKM

VICINITY MAP
DOUBLETREE CENTER SUBDIVISION

ANCHORAGE, ALASKA

FIGURE 1



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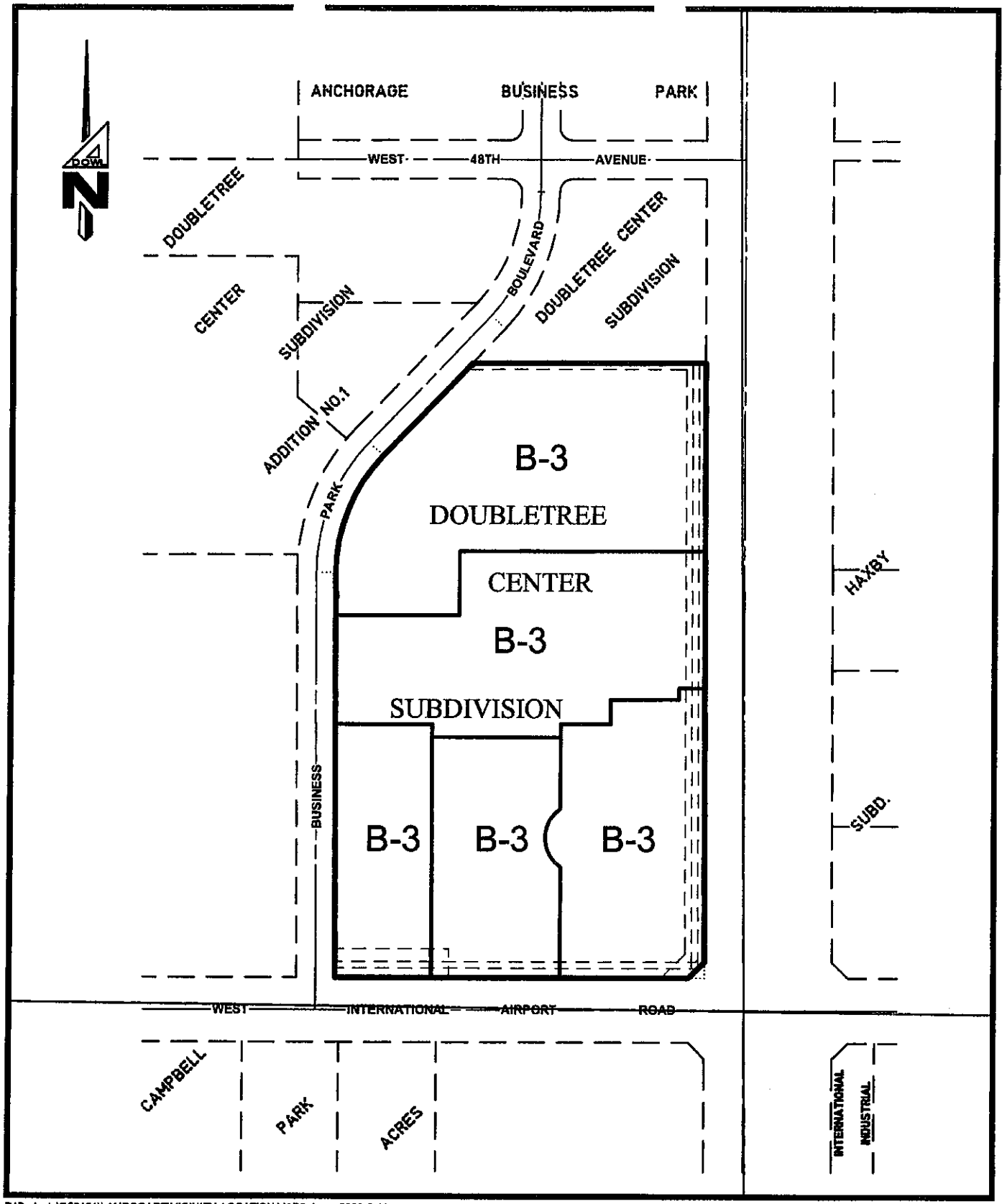
CURRENT ZONING MAP
DOUBLETREE CENTER SUBDIVISION

ANCHORAGE, ALASKA

FIGURE 2



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PROPOSED ZONING MAP
DOUBLETREE CENTER SUBDIVISION

ANCHORAGE, ALASKA

FIGURE 3

APPENDIX A

DRAFT AO

Submitted by: Chairman of the Assembly at the Request

Prepared by:
For reading:

Anchorage, Alaska
AO 2009-

AN ORDINANCE OF THE ANCHORAGE MUNICIPAL ASSEMBLY AMENDING THE ZONING MAP, AND PROVIDING FOR THE REZONING OF DOUBLETREE CENTER SUBDIVISION, BLOCK 1, TRACT A, FRAGMENT LOTS 1, 2, 3, 4, AND 5 FROM I-1 (LIGHT INDUSTRIAL DISTRICT) TO B-3 (GENERAL BUSINESS DISTRICT).

(Spenard Community Council) (Planning and Zoning Case 2009-xxx)

THE ANCHORAGE ASSEMBLY ORDAINS:

Section 1. The zoning map shall be amended by designating the following described property as B-3 (General Business) zone:

Doubletree Center Subdivision, Block 1, Tract A, Fragment Lots 1, 2, 3, 4, and 5; generally located at the northwest corner of C Street and International Airport Road and the SW ¼, Section 7, T13N, R2W, containing approximately 12 acres, as shown on Exhibit "A."

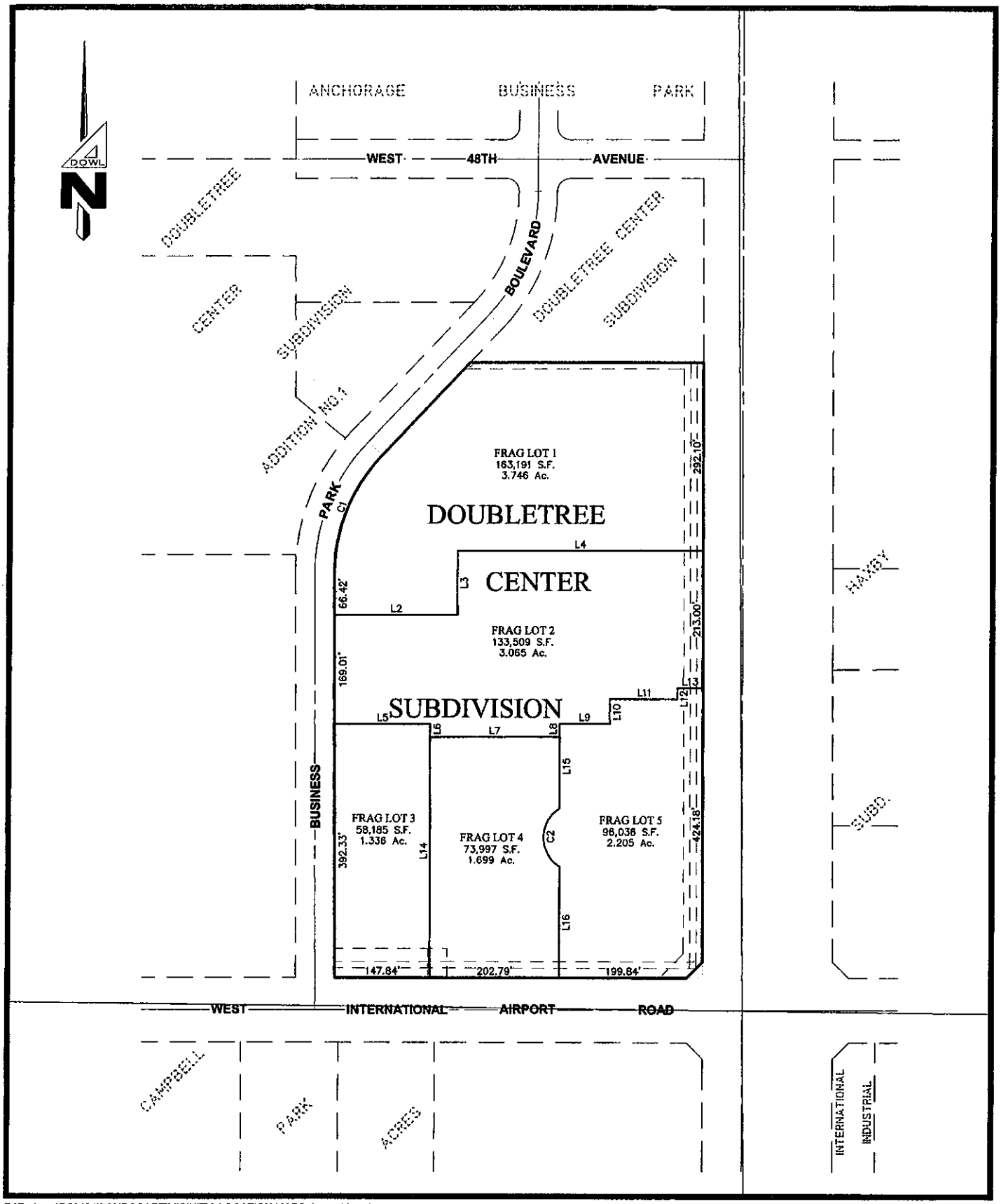
Section 2. The Director of the Planning Department shall change the zoning map accordingly.

Section 3. This ordinance shall be come effective immediately upon approval and passage of this ordinance.

PASSED AND APPROVED by the Anchorage Assembly this _____ day of _____, 2009.

ATTEST: _____
Chairman

_____
Municipal Clerk



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DOUBLETREE CENTER SUBDIVISION

ANCHORAGE, ALASKA

EXHIBIT A

049

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	212	607	67	32	335	112	105	880	46	145	540	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.99		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3486		1770	3406		1770	5047		1770	5085	1583
Flt Permitted	0.18	1.00		0.33	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	340	3486		617	3406		1770	5047		1770	5085	1583
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)	230	660	73	35	364	122	114	957	50	158	587	234
RTOR Reduction (vph)	0	6	0	0	21	0	0	3	0	0	0	132
Lane Group Flow (vph)	230	727	0	35	465	0	114	1004	0	158	587	102
Turn Type	pm+pt			pm+pt			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)	48.1	41.9		26.7	24.5		13.7	53.6		16.8	56.7	56.7
Effective Green, g (s)	48.1	41.9		26.7	24.5		13.7	53.6		16.8	56.7	56.7
Actuated g/C Ratio	0.37	0.32		0.20	0.19		0.10	0.41		0.13	0.43	0.43
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)	340	1119		146	639		186	2073		228	2209	688
v/s Ratio Prot	c0.10	0.21		0.00	0.14		0.06	c0.20		c0.09	c0.12	
v/s Ratio Perm	c0.15			0.05								0.06
v/c Ratio	0.68	0.65		0.24	0.73		0.61	0.48		0.69	0.27	0.15
Uniform Delay, d1	31.5	38.0		42.1	49.9		55.9	28.3		54.4	23.6	22.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.3	1.3		0.9	4.1		5.9	0.8		8.8	0.3	0.5
Delay (s)	36.8	39.3		43.0	54.0		61.7	29.1		63.2	23.9	22.8
Level of Service	D	D		D	D		E	C		E	C	C
Approach Delay (s)		38.7			53.3			32.4			30.0	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	546	61	148	1211	456	61	404	165	134	437	187
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	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3486		1770	3539	1583	1770	3539	1583	1770	3380	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.29	1.00	1.00	0.34	1.00	
Satd. Flow (perm)	1770	3486		1770	3539	1583	531	3539	1583	634	3380	
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)	63	593	66	161	1316	496	66	439	179	146	475	203
RTOR Reduction (vph)	0	6	0	0	0	167	0	0	49	0	27	0
Lane Group Flow (vph)	63	653	0	161	1316	329	66	439	130	146	651	0
Turn Type	Prot			Prot		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)	8.1	53.8		18.1	63.8	63.8	47.0	42.5	42.5	58.1	49.6	
Effective Green, g (s)	8.1	53.8		18.1	63.8	63.8	47.0	42.5	42.5	58.1	49.6	
Actuated g/C Ratio	0.06	0.38		0.13	0.45	0.45	0.33	0.30	0.30	0.41	0.35	
Clearance Time (s)	4.0	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	3.0	
Lane Grp Cap (vph)	101	1321		226	1590	711	215	1059	474	352	1181	
v/s Ratio Prot	0.04	c0.19		0.09	c0.37		0.01	0.12		c0.03	c0.19	
v/s Ratio Perm						0.21	0.09		0.08	0.14		
v/c Ratio	0.62	0.49		0.71	0.83	0.46	0.31	0.41	0.27	0.41	0.55	
Uniform Delay, d1	65.5	33.7		59.5	34.3	27.2	33.5	39.8	38.0	27.9	37.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.4	0.3		10.1	3.7	0.5	0.8	1.2	1.4	0.8	1.9	
Delay (s)	76.9	34.0		69.6	38.0	27.7	34.4	41.0	39.4	28.7	39.1	
Level of Service	E	C		E	D	C	C	D	D	C	D	
Approach Delay (s)		37.7			38.0			39.9			37.2	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	38.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	142.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Volume (veh/h)	1123	25	0	1829	0	119
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1221	27	0	1988	0	129
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				549		
pX, platoon unblocked					0.62	
vC, conflicting volume			1248		2215	610
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1248		1729	610
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	70
cM capacity (veh/h)			554		49	437

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	610	610	27	994	994	129
Volume Left	0	0	0	0	0	0
Volume Right	0	0	27	0	0	129
cSH	1700	1700	1700	1700	1700	437
Volume to Capacity	0.36	0.36	0.02	0.58	0.58	0.30
Queue Length 95th (ft)	0	0	0	0	0	31
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	16.7
Lane LOS						C
Approach Delay (s)	0.0			0.0		16.7
Approach LOS						C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	351	840	86	420	1308	257	159	1062	258	581	1368	362
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	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
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)	382	913	93	457	1422	279	173	1154	280	632	1487	393
RTOR Reduction (vph)	0	0	50	0	0	171	0	0	164	0	0	148
Lane Group Flow (vph)	382	913	43	457	1422	108	173	1154	116	632	1487	245
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	17.0	48.2	48.2	30.8	62.0	62.0	10.0	36.0	36.0	29.0	55.0	55.0
Effective Green, g (s)	17.0	48.2	48.2	30.8	62.0	62.0	10.0	36.0	36.0	29.0	55.0	55.0
Actuated g/C Ratio	0.11	0.30	0.30	0.19	0.39	0.39	0.06	0.22	0.22	0.18	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	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	3.0	3.0	3.0
Lane Grp Cap (vph)	365	1066	477	661	1371	613	215	1144	356	622	1748	544
v/s Ratio Prot	c0.11	0.26		0.13	c0.40		0.05	c0.23		c0.18	0.29	
v/s Ratio Perm			0.03			0.07			0.07			0.15
v/c Ratio	1.05	0.86	0.09	0.69	1.04	0.18	0.80	1.01	0.33	1.02	0.85	0.45
Uniform Delay, d1	71.5	52.6	40.1	60.2	49.0	32.2	74.0	62.0	51.9	65.5	48.7	40.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	59.8	6.9	0.1	3.1	34.5	0.1	19.2	28.8	2.4	40.2	5.4	2.7
Delay (s)	131.3	59.6	40.2	63.3	83.5	32.4	93.3	90.8	54.3	105.7	54.1	43.4
Level of Service	F	E	D	E	F	C	F	F	D	F	D	D
Approach Delay (s)		78.0			72.6			84.7			65.4	
Approach LOS		E			E			F			E	

Intersection Summary			
HCM Average Control Delay	73.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	19	5	14	10	40	1	21	7	27	47	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	10	21	5	15	11	43	1	23	8	29	51	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)												
pX, platoon unblocked												
vC, conflicting volume	54			26			132	128	23	125	109	33
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	54			26			132	128	23	125	109	33
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			99			100	97	99	96	93	100
cM capacity (veh/h)	1551			1588			788	751	1053	813	769	1041

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	70	32	80
Volume Left	10	15	1	29
Volume Right	5	43	8	0
cSH	1551	1588	808	785
Volume to Capacity	0.01	0.01	0.04	0.10
Queue Length 95th (ft)	0	1	3	9
Control Delay (s)	2.0	1.7	9.6	10.1
Lane LOS	A	A	A	B
Approach Delay (s)	2.0	1.7	9.6	10.1
Approach LOS			A	B

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	73	0	0	0	0	1327	0	0	1777	97
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	79	0	0	0	0	1442	0	0	1932	105
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1316			1284	
pX, platoon unblocked	0.80	0.80	0.73	0.80	0.80	0.85	0.73			0.85		
vC, conflicting volume	2465	3427	697	2166	3479	481	2037			1442		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	728	1924	0	356	1990	0	1126			912		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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	90	100	100	100	100			100		
cM capacity (veh/h)	250	53	792	416	48	924	450			633		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	79	0	481	481	481	0	773	773	492
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	79	0	0	0	0	0	0	0	105
cSH	792	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.10	0.00	0.28	0.28	0.28	0.00	0.45	0.45	0.29
Queue Length 95th (ft)	8	0	0	0	0	0	0	0	0
Control Delay (s)	10.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A							
Approach Delay (s)	10.1	0.0	0.0				0.0		
Approach LOS	B	A							

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	771	86	75	723	80	66	520	58	103	405	135
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	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3486		1770	3486		1770	3486		1770	3406	
Flt Permitted	0.09	1.00		0.12	1.00		0.37	1.00		0.28	1.00	
Satd. Flow (perm)	175	3486		220	3486		680	3486		530	3406	
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)	163	838	93	82	786	87	72	565	63	112	440	147
RTOR Reduction (vph)	0	6	0	0	6	0	0	5	0	0	18	0
Lane Group Flow (vph)	163	925	0	82	867	0	72	623	0	112	569	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	55.9	43.1		47.3	38.5		57.9	51.4		65.1	55.0	
Effective Green, g (s)	55.9	43.1		47.3	38.5		57.9	51.4		65.1	55.0	
Actuated g/C Ratio	0.43	0.33		0.37	0.30		0.45	0.40		0.50	0.43	
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)	241	1161		186	1037		359	1385		363	1448	
v/s Ratio Prot	c0.07	c0.27		0.03	0.25		0.01	c0.18		c0.02	0.17	
v/s Ratio Perm	0.22			0.13			0.08			0.13		
v/c Ratio	0.68	0.80		0.44	0.84		0.20	0.45		0.31	0.39	
Uniform Delay, d1	28.0	39.2		29.8	42.5		20.9	28.6		18.4	25.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.3	3.9		1.7	6.0		0.3	1.1		0.5	0.8	
Delay (s)	35.3	43.1		31.5	48.5		21.1	29.7		18.9	26.5	
Level of Service	D	D		C	D		C	C		B	C	
Approach Delay (s)		41.9			47.0			28.8			25.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	37.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	129.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	1107	1064	16	0	52
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	1203	1157	17	0	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)			704			
pX, platoon unblocked	0.78				0.78	0.78
vC, conflicting volume	1174				1799	587
vC1, stage 1 conf vol					1165	
vC2, stage 2 conf vol					634	
vCu, unblocked vol	673				1470	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	93
cM capacity (veh/h)	717				299	851

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	16	602	602	771	403	57
Volume Left	16	0	0	0	0	0
Volume Right	0	0	0	0	17	57
cSH	717	1700	1700	1700	1700	851
Volume to Capacity	0.02	0.35	0.35	0.45	0.24	0.07
Queue Length 95th (ft)	2	0	0	0	0	5
Control Delay (s)	10.1	0.0	0.0	0.0	0.0	9.5
Lane LOS	B					A
Approach Delay (s)	0.1			0.0		9.5
Approach LOS						A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	297	769	85	66	578	193	149	837	44	214	1238	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.99		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3487		1770	3406		1770	5047		1770	5085	1583
Flt Permitted	0.09	1.00		0.25	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	170	3487		457	3406		1770	5047		1770	5085	1583
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)	323	836	92	72	628	210	162	910	48	233	1346	384
RTOR Reduction (vph)	0	5	0	0	21	0	0	4	0	0	0	187
Lane Group Flow (vph)	323	923	0	72	817	0	162	954	0	233	1346	197
Turn Type	pm+pt			pm+pt			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)	72.3	61.4		46.7	39.8		17.2	43.9		23.6	50.3	50.3
Effective Green, g (s)	72.3	61.4		46.7	39.8		17.2	43.9		23.6	50.3	50.3
Actuated g/C Ratio	0.48	0.40		0.31	0.26		0.11	0.29		0.16	0.33	0.33
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)	381	1410		200	893		201	1460		275	1685	525
v/s Ratio Prot	c0.16	0.26		0.02	c0.24		c0.09	0.19		0.13	c0.26	
v/s Ratio Perm	0.24			0.09								0.12
v/c Ratio	0.85	0.65		0.36	0.92		0.81	0.65		0.85	0.80	0.37
Uniform Delay, d1	44.8	36.6		38.2	54.4		65.7	47.3		62.3	46.1	38.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.9	1.1		1.1	13.7		20.5	2.3		20.8	4.1	2.0
Delay (s)	60.7	37.7		39.3	68.1		86.2	49.6		83.1	50.2	40.8
Level of Service	E	D		D	E		F	D		F	D	D
Approach Delay (s)		43.6			65.8			54.9			52.3	
Approach LOS		D			E			D			D	

Intersection Summary

HCM Average Control Delay	53.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	151.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	603	67	164	1338	503	67	446	182	148	483	207
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	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3486		1770	3539	1583	1770	3539	1583	1770	3380	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.18	1.00	1.00	0.27	1.00	
Satd. Flow (perm)	1770	3486		1770	3539	1583	343	3539	1583	506	3380	
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)	70	655	73	178	1454	547	73	485	198	161	525	225
RTOR Reduction (vph)	0	5	0	0	0	165	0	0	50	0	29	0
Lane Group Flow (vph)	70	723	0	178	1454	382	73	485	148	161	721	0
Turn Type	Prot			Prot		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)	8.5	60.7		19.9	72.1	72.1	46.2	38.5	38.5	56.3	44.6	
Effective Green, g (s)	8.5	60.7		19.9	72.1	72.1	46.2	38.5	38.5	56.3	44.6	
Actuated g/C Ratio	0.06	0.41		0.13	0.48	0.48	0.31	0.26	0.26	0.38	0.30	
Clearance Time (s)	4.0	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	3.0	
Lane Grp Cap (vph)	101	1421		237	1714	767	180	915	409	308	1012	
v/s Ratio Prot	c0.04	0.21		0.10	c0.41		0.02	0.14		c0.05	c0.21	
v/s Ratio Perm						0.24	0.10		0.09	0.15		
v/c Ratio	0.69	0.51		0.75	0.85	0.50	0.41	0.53	0.36	0.52	0.71	
Uniform Delay, d1	68.9	33.0		62.1	33.6	26.1	38.3	47.4	45.1	33.0	46.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	18.6	0.3		12.6	4.1	0.5	1.5	2.2	2.5	1.6	4.3	
Delay (s)	87.5	33.2		74.7	37.7	26.6	39.8	49.6	47.6	34.6	50.7	
Level of Service	F	C		E	D	C	D	D	D	C	D	
Approach Delay (s)		38.0			38.0			48.1			47.9	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	41.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	148.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Volume (veh/h)	1256	28	0	2019	0	132
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1365	30	0	2195	0	143
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				549		
pX, platoon unblocked					0.62	
vC, conflicting volume			1396		2462	683
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1396		2130	683
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	63
cM capacity (veh/h)			486		26	392

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	683	683	30	1097	1097	143
Volume Left	0	0	0	0	0	0
Volume Right	0	0	30	0	0	143
cSH	1700	1700	1700	1700	1700	392
Volume to Capacity	0.40	0.40	0.02	0.65	0.65	0.37
Queue Length 95th (ft)	0	0	0	0	0	41
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	19.4
Lane LOS						C
Approach Delay (s)	0.0			0.0		19.4
Approach LOS						C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	388	927	95	464	1444	284	175	1173	285	641	1511	400
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	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
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)	422	1008	103	504	1570	309	190	1275	310	697	1642	435
RTOR Reduction (vph)	0	0	48	0	0	177	0	0	164	0	0	138
Lane Group Flow (vph)	422	1008	55	504	1570	132	190	1275	146	697	1642	297
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	16.0	49.5	49.5	28.5	62.0	62.0	9.0	38.0	38.0	28.0	57.0	57.0
Effective Green, g (s)	16.0	49.5	49.5	28.5	62.0	62.0	9.0	38.0	38.0	28.0	57.0	57.0
Actuated g/C Ratio	0.10	0.31	0.31	0.18	0.39	0.39	0.06	0.24	0.24	0.18	0.36	0.36
Clearance Time (s)	4.0	4.0	4.0	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	3.0	3.0	3.0
Lane Grp Cap (vph)	343	1095	490	612	1371	613	193	1208	376	601	1812	564
v/s Ratio Prot	c0.12	0.28		0.15	c0.44		0.06	c0.25		c0.20	0.32	
v/s Ratio Perm			0.03			0.08			0.09			0.19
v/c Ratio	1.23	0.92	0.11	0.82	1.15	0.22	0.98	1.06	0.39	1.16	0.91	0.53
Uniform Delay, d1	72.0	53.4	39.5	63.3	49.0	32.7	75.4	61.0	51.2	66.0	49.0	40.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	126.6	12.3	0.1	8.8	74.4	0.2	59.8	41.9	3.0	89.4	8.1	3.5
Delay (s)	198.6	65.7	39.6	72.1	123.4	32.9	135.3	102.9	54.2	155.4	57.0	44.3
Level of Service	F	E	D	E	F	C	F	F	D	F	E	D
Approach Delay (s)		100.5			100.8			97.8			79.7	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM Average Control Delay	93.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	105.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	21	6	16	11	45	1	23	8	30	52	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	23	7	17	12	49	1	25	9	33	57	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)												
pX, platoon unblocked												
vC, conflicting volume	61			29			147	143	26	140	122	36
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	61			29			147	143	26	140	122	36
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			99			100	97	99	96	93	100
cM capacity (veh/h)	1542			1584			764	734	1050	791	754	1036

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	78	35	89
Volume Left	11	17	1	33
Volume Right	7	49	9	0
cSH	1542	1584	795	767
Volume to Capacity	0.01	0.01	0.04	0.12
Queue Length 95th (ft)	1	1	3	10
Control Delay (s)	2.0	1.7	9.7	10.3
Lane LOS	A	A	A	B
Approach Delay (s)	2.0	1.7	9.7	10.3
Approach LOS			A	B

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	80	0	0	0	0	1466	0	0	1963	107
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	87	0	0	0	0	1593	0	0	2134	116
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1316			1284	
pX, platoon unblocked	0.78	0.78	0.69	0.78	0.78	0.82	0.69			0.82		
vC, conflicting volume	2723	3785	769	2392	3843	531	2250			1593		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	693	2056	0	268	2130	0	1246			971		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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	88	100	100	100	100			100		
cM capacity (veh/h)	257	43	750	457	38	893	383			581		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	87	0	531	531	531	0	853	853	543
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	87	0	0	0	0	0	0	0	116
cSH	750	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.12	0.00	0.31	0.31	0.31	0.00	0.50	0.50	0.32
Queue Length 95th (ft)	10	0	0	0	0	0	0	0	0
Control Delay (s)	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A							
Approach Delay (s)	10.4	0.0	0.0				0.0		
Approach LOS	B	A							

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	851	95	83	798	89	73	574	64	114	447	149
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	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	0.98		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3486		1770	3486		1770	3486		1770	3406	
Flt Permitted	0.08	1.00		0.11	1.00		0.31	1.00		0.24	1.00	
Satd. Flow (perm)	153	3486		196	3486		579	3486		444	3406	
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)	180	925	103	90	867	97	79	624	70	124	486	162
RTOR Reduction (vph)	0	6	0	0	5	0	0	5	0	0	19	0
Lane Group Flow (vph)	180	1022	0	90	959	0	79	689	0	124	629	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	63.6	50.7		53.5	44.6		59.9	52.2		66.5	55.5	
Effective Green, g (s)	63.6	50.7		53.5	44.6		59.9	52.2		66.5	55.5	
Actuated g/C Ratio	0.46	0.37		0.39	0.32		0.43	0.38		0.48	0.40	
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)	245	1273		176	1120		316	1311		318	1362	
v/s Ratio Prot	c0.08	0.29		0.03	c0.27		0.01	c0.20		c0.03	0.18	
v/s Ratio Perm	0.26			0.16			0.09			0.16		
v/c Ratio	0.73	0.80		0.51	0.86		0.25	0.53		0.39	0.46	
Uniform Delay, d1	33.8	39.6		31.0	44.1		24.1	33.7		22.2	30.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.9	3.7		2.5	6.6		0.4	1.5		0.8	1.1	
Delay (s)	44.7	43.3		33.5	50.7		24.5	35.2		23.0	31.8	
Level of Service	D	D		C	D		C	D		C	C	
Approach Delay (s)		43.5			49.2			34.1			30.4	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	138.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	17	1207	1175	18	0	57
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	1312	1277	20	0	62
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)			704			
pX, platoon unblocked	0.75				0.75	0.75
vC, conflicting volume	1297				1980	648
vC1, stage 1 conf vol					1287	
vC2, stage 2 conf vol					693	
vCu, unblocked vol	741				1647	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	92
cM capacity (veh/h)	650				265	818

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	18	656	656	851	445	62
Volume Left	18	0	0	0	0	0
Volume Right	0	0	0	0	20	62
cSH	650	1700	1700	1700	1700	818
Volume to Capacity	0.03	0.39	0.39	0.50	0.26	0.08
Queue Length 95th (ft)	2	0	0	0	0	6
Control Delay (s)	10.7	0.0	0.0	0.0	0.0	9.8
Lane LOS	B					A
Approach Delay (s)	0.1			0.0		9.8
Approach LOS						A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	328	850	94	72	639	213	164	925	49	237	1367	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.99		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3486		1770	3406		1770	5047		1770	5085	1583
Flt Permitted	0.08	1.00		0.18	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	157	3486		344	3406		1770	5047		1770	5085	1583
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)	357	924	102	78	695	232	178	1005	53	258	1486	424
RTOR Reduction (vph)	0	5	0	0	20	0	0	4	0	0	0	192
Lane Group Flow (vph)	357	1021	0	78	907	0	178	1054	0	258	1486	232
Turn Type	pm+pt			pm+pt			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)	77.4	65.1		51.9	43.6		17.6	43.6		26.0	52.0	52.0
Effective Green, g (s)	77.4	65.1		51.9	43.6		17.6	43.6		26.0	52.0	52.0
Actuated g/C Ratio	0.49	0.41		0.33	0.27		0.11	0.27		0.16	0.33	0.33
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)	379	1427		187	934		196	1384		289	1663	518
v/s Ratio Prot	c0.18	0.29		0.02	0.27		c0.10	0.21		0.15	c0.29	
v/s Ratio Perm	c0.28			0.11								0.15
v/c Ratio	0.94	0.72		0.42	0.97		0.91	0.76		0.89	0.89	0.45
Uniform Delay, d1	50.8	39.2		38.5	57.1		69.9	52.9		65.1	50.9	42.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	31.6	1.7		1.5	22.5		39.2	4.0		27.3	7.8	2.8
Delay (s)	82.4	40.9		40.0	79.6		109.1	56.9		92.4	58.7	44.9
Level of Service	F	D		D	E		F	E		F	E	D
Approach Delay (s)		51.6			76.5			64.5			60.0	
Approach LOS		D			E			E			E	

Intersection Summary

HCM Average Control Delay	61.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	159.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	70	728	178	1454	547	73	485	198	161	750
v/c Ratio	0.57	0.52	0.75	0.84	0.59	0.40	0.53	0.43	0.52	0.72
Control Delay	88.6	34.3	82.6	39.0	13.1	41.1	52.5	36.0	41.0	50.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.6	34.3	82.6	39.0	13.1	41.1	52.5	36.0	41.0	50.3
Queue Length 50th (ft)	71	275	180	664	157	51	238	117	118	359
Queue Length 95th (ft)	129	354	264	770	272	92	305	204	184	445
Internal Link Dist (ft)		1421		1412			2520			1419
Turn Bay Length (ft)	300		300		350	150		50	200	
Base Capacity (vph)	145	1601	315	1938	1012	186	920	462	331	1046
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.45	0.57	0.75	0.54	0.39	0.53	0.43	0.49	0.72

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	422	1008	103	504	1570	309	190	1275	310	697	1642	435
v/c Ratio	1.23	0.92	0.19	0.82	1.15	0.39	0.98	1.06	0.57	1.16	0.91	0.62
Control Delay	182.9	67.0	15.5	75.6	118.3	5.9	134.1	99.2	20.8	145.3	57.2	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	182.9	67.0	15.5	75.6	118.3	5.9	134.1	99.2	20.8	145.3	57.2	24.9
Queue Length 50th (ft)	~279	530	24	268	~1008	13	104	~532	84	~443	598	193
Queue Length 95th (ft)	#393	#626	72	#359	#1146	80	#191	#631	190	#572	665	317
Internal Link Dist (ft)		469			1416			1204			1377	
Turn Bay Length (ft)	350			300		500	400		250	350		450
Base Capacity (vph)	343	1128	552	611	1371	790	193	1208	540	601	1812	702
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.23	0.89	0.19	0.82	1.15	0.39	0.98	1.06	0.57	1.16	0.91	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	180	1028	90	964	79	694	124	648
v/c Ratio	0.73	0.80	0.51	0.86	0.25	0.53	0.39	0.47
Control Delay	49.9	44.2	32.4	52.3	25.0	37.7	26.6	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	44.2	32.4	52.3	25.0	37.7	26.6	32.5
Queue Length 50th (ft)	106	435	45	422	37	250	60	214
Queue Length 95th (ft)	197	516	77	543	87	404	129	340
Internal Link Dist (ft)		1416		1273		1416		2520
Turn Bay Length (ft)	250		250		150		120	
Base Capacity (vph)	329	1802	191	1498	320	1315	360	1379
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.57	0.47	0.64	0.25	0.53	0.34	0.47

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	357	1026	78	927	178	1058	258	1486	424
v/c Ratio	0.94	0.72	0.42	0.97	0.91	0.76	0.89	0.89	0.60
Control Delay	81.3	42.5	31.7	77.9	113.1	57.4	95.7	58.9	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	42.5	31.7	77.9	113.1	57.4	95.7	58.9	17.6
Queue Length 50th (ft)	320	468	43	495	187	379	264	545	117
Queue Length 95th (ft)	#524	552	75	#640	#335	437	#412	610	238
Internal Link Dist (ft)		624		1422		1422		1236	
Turn Bay Length (ft)	250		225		200		350		250
Base Capacity (vph)	381	1435	194	963	200	1388	312	1664	711
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.71	0.40	0.96	0.89	0.76	0.83	0.89	0.60

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX B

Total Traffic Conditions Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	571	61	148	1211	456	61	404	168	139	437	187
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	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3488		1770	3539	1583	1770	3539	1583	1770	3380	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.29	1.00	1.00	0.33	1.00	
Satd. Flow (perm)	1770	3488		1770	3539	1583	541	3539	1583	623	3380	
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)	63	621	66	161	1316	496	66	439	183	151	475	203
RTOR Reduction (vph)	0	5	0	0	0	180	0	0	50	0	27	0
Lane Group Flow (vph)	63	682	0	161	1316	316	66	439	133	151	651	0
Turn Type	Prot			Prot		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)	8.1	53.7		18.2	63.8	63.8	45.7	41.2	41.2	57.7	49.2	
Effective Green, g (s)	8.1	53.7		18.2	63.8	63.8	45.7	41.2	41.2	57.7	49.2	
Actuated g/C Ratio	0.06	0.38		0.13	0.45	0.45	0.32	0.29	0.29	0.41	0.35	
Clearance Time (s)	4.0	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	3.0	
Lane Grp Cap (vph)	101	1323		228	1595	713	214	1030	461	355	1174	
v/s Ratio Prot	0.04	c0.20		0.09	c0.37		0.01	0.12		c0.04	c0.19	
v/s Ratio Perm						0.20	0.09		0.08	0.14		
v/c Ratio	0.62	0.52		0.71	0.83	0.44	0.31	0.43	0.29	0.43	0.55	
Uniform Delay, d1	65.3	33.9		59.1	34.0	26.7	34.2	40.6	38.9	28.1	37.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.4	0.3		9.6	3.6	0.4	0.8	1.3	1.6	0.8	1.9	
Delay (s)	76.7	34.3		68.7	37.6	27.1	35.0	41.9	40.4	28.9	39.2	
Level of Service	E	C		E	D	C	D	D	D	C	D	
Approach Delay (s)		37.8			37.5			40.9			37.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	38.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	141.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Volume (veh/h)	1123	58	0	1829	0	216
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1221	63	0	1988	0	235
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				549		
pX, platoon unblocked					0.62	
vC, conflicting volume			1284		2215	610
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1284		1742	610
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	46
cM capacity (veh/h)			536		49	437

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	610	610	63	994	994	235
Volume Left	0	0	0	0	0	0
Volume Right	0	0	63	0	0	235
cSH	1700	1700	1700	1700	1700	437
Volume to Capacity	0.36	0.36	0.04	0.58	0.58	0.54
Queue Length 95th (ft)	0	0	0	0	0	77
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	22.4
Lane LOS						C
Approach Delay (s)	0.0			0.0		22.4
Approach LOS						C

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	400	906	86	454	1308	257	159	1062	258	581	1402	362
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	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
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)	435	985	93	493	1422	279	173	1154	280	632	1524	393
RTOR Reduction (vph)	0	0	46	0	0	173	0	0	164	0	0	164
Lane Group Flow (vph)	435	985	47	493	1422	106	173	1154	116	632	1524	229
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.0	50.4	50.4	29.6	61.0	61.0	10.0	36.0	36.0	28.0	54.0	54.0
Effective Green, g (s)	19.0	50.4	50.4	29.6	61.0	61.0	10.0	36.0	36.0	28.0	54.0	54.0
Actuated g/C Ratio	0.12	0.32	0.32	0.18	0.38	0.38	0.06	0.22	0.22	0.18	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	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	3.0	3.0	3.0
Lane Grp Cap (vph)	408	1115	499	635	1349	604	215	1144	356	601	1716	534
v/s Ratio Prot	c0.13	0.28		0.14	c0.40		0.05	c0.23		c0.18	0.30	
v/s Ratio Perm			0.03			0.07			0.07			0.14
v/c Ratio	1.07	0.88	0.09	0.78	1.05	0.18	0.80	1.01	0.33	1.05	0.89	0.43
Uniform Delay, d1	70.5	52.0	38.7	62.1	49.5	32.8	74.0	62.0	51.9	66.0	50.1	41.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	63.2	8.5	0.1	5.9	40.1	0.1	19.2	28.8	2.4	51.0	7.3	2.5
Delay (s)	133.7	60.5	38.8	68.0	89.6	33.0	93.3	90.8	54.3	117.0	57.4	43.5
Level of Service	F	E	D	E	F	C	F	F	D	F	E	D
Approach Delay (s)		80.2			77.6			84.7			70.1	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM Average Control Delay	77.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	19	5	63	10	40	1	118	108	27	80	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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)	10	21	5	68	11	43	1	128	117	29	87	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)												
pX, platoon unblocked												
vC, conflicting volume	54			26			256	234	23	394	215	33
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	54			26			256	234	23	394	215	33
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			96			100	80	89	93	87	100
cM capacity (veh/h)	1551			1588			603	633	1053	409	649	1041

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	123	247	116
Volume Left	10	68	1	29
Volume Right	5	43	117	0
cSH	1551	1588	781	565
Volume to Capacity	0.01	0.04	0.32	0.21
Queue Length 95th (ft)	0	3	34	19
Control Delay (s)	2.0	4.3	11.7	13.0
Lane LOS	A	A	B	B
Approach Delay (s)	2.0	4.3	11.7	13.0
Approach LOS			B	B

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	174	0	0	0	0	1327	0	0	1777	146
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	189	0	0	0	0	1442	0	0	1932	159
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1316			1284	
pX, platoon unblocked	0.79	0.79	0.72	0.79	0.79	0.85	0.72			0.85		
vC, conflicting volume	2492	3453	723	2275	3533	481	2090			1442		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	713	1928	0	440	2028	0	1146			917		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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	76	100	100	100	100			100		
cM capacity (veh/h)	253	52	779	300	45	925	435			631		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	189	0	481	481	481	0	773	773	545
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	189	0	0	0	0	0	0	0	159
cSH	779	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.24	0.00	0.28	0.28	0.28	0.00	0.45	0.45	0.32
Queue Length 95th (ft)	24	0	0	0	0	0	0	0	0
Control Delay (s)	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A							
Approach Delay (s)	11.1	0.0	0.0				0.0		
Approach LOS	B	A							

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	804	86	101	774	93	66	520	71	106	405	135
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	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3488		1770	3482		1770	3476		1770	3406	
Flt Permitted	0.09	1.00		0.11	1.00		0.37	1.00		0.27	1.00	
Satd. Flow (perm)	162	3488		198	3482		693	3476		497	3406	
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)	163	874	93	110	841	101	72	565	77	115	440	147
RTOR Reduction (vph)	0	6	0	0	6	0	0	6	0	0	18	0
Lane Group Flow (vph)	163	961	0	110	936	0	72	636	0	115	569	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	59.5	46.0		52.9	42.7		56.7	51.3		65.8	56.4	
Effective Green, g (s)	59.5	46.0		52.9	42.7		56.7	51.3		65.8	56.4	
Actuated g/C Ratio	0.44	0.34		0.39	0.32		0.42	0.38		0.49	0.42	
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)	234	1197		198	1110		337	1331		344	1434	
v/s Ratio Prot	c0.07	c0.28		0.04	0.27		0.01	c0.18		c0.03	0.17	
v/s Ratio Perm	0.24			0.18			0.08			0.14		
v/c Ratio	0.70	0.80		0.56	0.84		0.21	0.48		0.33	0.40	
Uniform Delay, d1	28.8	39.9		29.7	42.5		23.4	31.2		20.2	27.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.7	4.0		3.4	6.0		0.3	1.2		0.6	0.8	
Delay (s)	37.5	43.9		33.0	48.5		23.8	32.5		20.7	27.8	
Level of Service	D	D		C	D		C	C		C	C	
Approach Delay (s)		43.0			46.9			31.6			26.6	
Approach LOS		D			D			C			C	

Intersection Summary

HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	134.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	74	1097	1049	79	0	157
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	80	1192	1140	86	0	171
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)			704			
pX, platoon unblocked	0.78				0.78	0.78
vC, conflicting volume	1226				1940	613
vC1, stage 1 conf vol					1183	
vC2, stage 2 conf vol					757	
vCu, unblocked vol	725				1641	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				100	80
cM capacity (veh/h)	681				261	846

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	80	596	596	760	466	171
Volume Left	80	0	0	0	0	0
Volume Right	0	0	0	0	86	171
cSH	681	1700	1700	1700	1700	846
Volume to Capacity	0.12	0.35	0.35	0.45	0.27	0.20
Queue Length 95th (ft)	10	0	0	0	0	19
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	10.3
Lane LOS	B					B
Approach Delay (s)	0.7			0.0		10.3
Approach LOS						B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	294	762	85	66	586	193	179	832	44	235	1302	363
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3486		1770	3408		1770	5047		1770	5085	1583
Flt Permitted	0.09	1.00		0.23	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	168	3486		432	3408		1770	5047		1770	5085	1583
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)	320	828	92	72	637	210	195	904	48	255	1415	395
RTOR Reduction (vph)	0	5	0	0	20	0	0	4	0	0	0	186
Lane Group Flow (vph)	320	915	0	72	827	0	195	948	0	255	1415	209
Turn Type	pm+pt			pm+pt			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)	71.7	60.8		47.2	40.3		20.1	45.0		26.3	51.2	51.2
Effective Green, g (s)	71.7	60.8		47.2	40.3		20.1	45.0		26.3	51.2	51.2
Actuated g/C Ratio	0.46	0.39		0.30	0.26		0.13	0.29		0.17	0.33	0.33
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)	361	1367		191	886		230	1465		300	1680	523
v/s Ratio Prot	c0.16	0.26		0.02	0.24		c0.11	0.19		0.14	c0.28	
v/s Ratio Perm	c0.25			0.10								0.13
v/c Ratio	0.89	0.67		0.38	0.93		0.85	0.65		0.85	0.84	0.40
Uniform Delay, d1	47.3	38.8		39.5	56.0		66.0	48.1		62.4	48.2	40.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	22.0	1.3		1.2	16.4		24.0	2.2		19.9	5.3	2.3
Delay (s)	69.3	40.1		40.7	72.4		90.0	50.3		82.4	53.5	42.3
Level of Service	E	D		D	E		F	D		F	D	D
Approach Delay (s)		47.6			69.9			57.0			54.9	
Approach LOS		D			E			E			D	

Intersection Summary

HCM Average Control Delay	56.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	155.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	628	67	164	1338	503	67	446	185	153	483	207
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	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3488		1770	3539	1583	1770	3539	1583	1770	3380	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.19	1.00	1.00	0.27	1.00	
Satd. Flow (perm)	1770	3488		1770	3539	1583	345	3539	1583	504	3380	
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)	70	683	73	178	1454	547	73	485	201	166	525	225
RTOR Reduction (vph)	0	5	0	0	0	165	0	0	51	0	29	0
Lane Group Flow (vph)	70	751	0	178	1454	382	73	485	150	166	721	0
Turn Type	Prot			Prot		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)	8.5	60.7		19.9	72.1	72.1	46.1	38.4	38.4	56.4	44.7	
Effective Green, g (s)	8.5	60.7		19.9	72.1	72.1	46.1	38.4	38.4	56.4	44.7	
Actuated g/C Ratio	0.06	0.41		0.13	0.48	0.48	0.31	0.26	0.26	0.38	0.30	
Clearance Time (s)	4.0	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	3.0	
Lane Grp Cap (vph)	101	1421		236	1712	766	180	912	408	310	1014	
v/s Ratio Prot	c0.04	0.22		0.10	c0.41		0.02	0.14		c0.05	c0.21	
v/s Ratio Perm						0.24	0.10		0.09	0.15		
v/c Ratio	0.69	0.53		0.75	0.85	0.50	0.41	0.53	0.37	0.54	0.71	
Uniform Delay, d1	69.0	33.3		62.2	33.7	26.2	38.4	47.6	45.3	33.1	46.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	18.6	0.4		12.8	4.2	0.5	1.5	2.2	2.5	1.8	4.2	
Delay (s)	87.6	33.7		75.0	37.8	26.7	39.9	49.8	47.9	34.9	50.6	
Level of Service	F	C		E	D	C	D	D	D	C	D	
Approach Delay (s)		38.3			38.1			48.3			47.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	41.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	149.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Volume (veh/h)	1256	61	0	2019	0	229
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1365	66	0	2195	0	249
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				549		
pX, platoon unblocked					0.62	
vC, conflicting volume			1432		2462	683
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1432		2139	683
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	36
cM capacity (veh/h)			471		26	392

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	683	683	66	1097	1097	249
Volume Left	0	0	0	0	0	0
Volume Right	0	0	66	0	0	249
cSH	1700	1700	1700	1700	1700	392
Volume to Capacity	0.40	0.40	0.04	0.65	0.65	0.64
Queue Length 95th (ft)	0	0	0	0	0	106
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	28.9
Lane LOS						D
Approach Delay (s)	0.0			0.0		28.9
Approach LOS						D

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	434	978	95	488	1444	284	175	1165	285	641	1536	400
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	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
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)	472	1063	103	530	1570	309	190	1266	310	697	1670	435
RTOR Reduction (vph)	0	0	46	0	0	177	0	0	165	0	0	154
Lane Group Flow (vph)	472	1063	57	530	1570	132	190	1266	145	697	1670	281
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	18.0	51.7	51.7	27.3	61.0	61.0	9.0	37.0	37.0	28.0	56.0	56.0
Effective Green, g (s)	18.0	51.7	51.7	27.3	61.0	61.0	9.0	37.0	37.0	28.0	56.0	56.0
Actuated g/C Ratio	0.11	0.32	0.32	0.17	0.38	0.38	0.06	0.23	0.23	0.18	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	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	3.0	3.0	3.0
Lane Grp Cap (vph)	386	1144	512	586	1349	604	193	1176	366	601	1780	554
v/s Ratio Prot	c0.14	0.30		0.15	c0.44		0.06	c0.25		c0.20	0.33	
v/s Ratio Perm			0.04			0.08			0.09			0.18
v/c Ratio	1.22	0.93	0.11	0.90	1.16	0.22	0.98	1.08	0.40	1.16	0.94	0.51
Uniform Delay, d1	71.0	52.4	38.0	65.1	49.5	33.4	75.4	61.5	52.0	66.0	50.3	41.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	121.4	12.8	0.1	17.4	82.2	0.2	59.8	49.4	3.2	89.4	11.0	3.3
Delay (s)	192.4	65.2	38.1	82.5	131.7	33.6	135.3	110.9	55.2	155.4	61.3	44.4
Level of Service	F	E	D	F	F	C	F	F	E	F	E	D
Approach Delay (s)		100.2			108.3			103.8			82.1	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	97.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	21	6	65	11	45	1	120	103	30	85	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	23	7	71	12	49	1	130	112	33	92	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)												
pX, platoon unblocked												
vC, conflicting volume	61			29			272	250	26	403	229	36
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	61			29			272	250	26	403	229	36
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			96			100	79	89	92	85	100
cM capacity (veh/h)	1542			1584			582	619	1050	402	636	1036

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	132	243	125
Volume Left	11	71	1	33
Volume Right	7	49	112	0
cSH	1542	1584	763	552
Volume to Capacity	0.01	0.04	0.32	0.23
Queue Length 95th (ft)	1	3	34	22
Control Delay (s)	2.0	4.1	11.9	13.4
Lane LOS	A	A	B	B
Approach Delay (s)	2.0	4.1	11.9	13.4
Approach LOS			B	B

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	175	0	0	0	0	1466	0	0	1963	156
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	190	0	0	0	0	1593	0	0	2134	170
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1316			1284	
pX, platoon unblocked	0.77	0.77	0.68	0.77	0.77	0.83	0.68			0.83		
vC, conflicting volume	2750	3812	796	2495	3897	531	2303			1593		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	723	2101	0	392	2211	0	1292			990		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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	74	100	100	100	100			100		
cM capacity (veh/h)	242	39	742	310	34	898	365			575		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	190	0	531	531	531	0	853	853	596
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	190	0	0	0	0	0	0	0	170
cSH	742	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.26	0.00	0.31	0.31	0.31	0.00	0.50	0.50	0.35
Queue Length 95th (ft)	25	0	0	0	0	0	0	0	0
Control Delay (s)	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A							
Approach Delay (s)	11.5	0.0	0.0				0.0		
Approach LOS	B	A							

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	58.9%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	884	95	109	849	102	73	574	77	117	447	149
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	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.98		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3488		1770	3482		1770	3476		1770	3406	
Flt Permitted	0.08	1.00		0.10	1.00		0.30	1.00		0.22	1.00	
Satd. Flow (perm)	144	3488		177	3482		554	3476		411	3406	
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)	180	961	103	118	923	111	79	624	84	127	486	162
RTOR Reduction (vph)	0	6	0	0	6	0	0	6	0	0	19	0
Lane Group Flow (vph)	180	1058	0	118	1028	0	79	702	0	127	629	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	67.3	52.8		58.4	47.9		58.8	50.5		64.8	53.5	
Effective Green, g (s)	67.3	52.8		58.4	47.9		58.8	50.5		64.8	53.5	
Actuated g/C Ratio	0.48	0.37		0.41	0.34		0.42	0.36		0.46	0.38	
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)	246	1305		192	1182		302	1244		298	1291	
v/s Ratio Prot	c0.08	0.30		0.05	c0.30		0.02	c0.20		c0.03	0.18	
v/s Ratio Perm	0.27			0.21			0.09			0.16		
v/c Ratio	0.73	0.81		0.61	0.87		0.26	0.56		0.43	0.49	
Uniform Delay, d1	35.5	39.7		30.4	43.7		25.8	36.5		24.4	33.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.7	3.9		5.7	7.0		0.5	1.9		1.0	1.3	
Delay (s)	46.2	43.6		36.1	50.7		26.3	38.3		25.4	34.7	
Level of Service	D	D		D	D		C	D		C	C	
Approach Delay (s)		44.0			49.2			37.1			33.2	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	42.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	141.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	76	1213	1160	81	0	162
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	83	1318	1261	88	0	176
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)			704			
pX, platoon unblocked	0.76				0.76	0.76
vC, conflicting volume	1349				2129	674
vC1, stage 1 conf vol					1305	
vC2, stage 2 conf vol					824	
vCu, unblocked vol	826				1854	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	86				100	79
cM capacity (veh/h)	608				227	824

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	83	659	659	841	508	176
Volume Left	83	0	0	0	0	0
Volume Right	0	0	0	0	88	176
cSH	608	1700	1700	1700	1700	824
Volume to Capacity	0.14	0.39	0.39	0.49	0.30	0.21
Queue Length 95th (ft)	12	0	0	0	0	20
Control Delay (s)	11.9	0.0	0.0	0.0	0.0	10.6
Lane LOS	B					B
Approach Delay (s)	0.7			0.0		10.6
Approach LOS						B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	325	843	94	72	647	213	194	920	49	258	1431	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3486		1770	3407		1770	5047		1770	5085	1583
Flt Permitted	0.09	1.00		0.16	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	162	3486		298	3407		1770	5047		1770	5085	1583
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)	353	916	102	78	703	232	211	1000	53	280	1555	435
RTOR Reduction (vph)	0	6	0	0	20	0	0	4	0	0	0	189
Lane Group Flow (vph)	353	1012	0	78	915	0	211	1049	0	280	1555	246
Turn Type	pm+pt			pm+pt			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)	74.0	61.6		50.4	42.0		20.0	45.9		28.1	54.0	54.0
Effective Green, g (s)	74.0	61.6		50.4	42.0		20.0	45.9		28.1	54.0	54.0
Actuated g/C Ratio	0.46	0.38		0.32	0.26		0.12	0.29		0.18	0.34	0.34
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)	356	1342		171	894		221	1448		311	1716	534
v/s Ratio Prot	c0.17	0.29		0.02	0.27		c0.12	0.21		0.16	c0.31	
v/s Ratio Perm	c0.28			0.12								0.16
v/c Ratio	0.99	0.75		0.46	1.02		0.95	0.72		0.90	0.91	0.46
Uniform Delay, d1	52.4	42.6		40.5	59.0		69.6	51.4		64.6	50.6	41.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	45.3	2.5		1.9	36.2		47.5	3.2		27.3	8.4	2.8
Delay (s)	97.7	45.1		42.4	95.2		117.0	54.6		91.9	59.0	44.4
Level of Service	F	D		D	F		F	D		F	E	D
Approach Delay (s)		58.6			91.2			65.0			60.3	
Approach LOS		E			F			E			E	

Intersection Summary

HCM Average Control Delay	66.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	70	756	178	1454	547	73	485	201	166	750
v/c Ratio	0.57	0.54	0.75	0.84	0.59	0.40	0.53	0.44	0.53	0.72
Control Delay	88.6	34.7	82.6	39.0	13.1	41.1	52.7	36.2	41.3	50.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.6	34.7	82.6	39.0	13.1	41.1	52.7	36.2	41.3	50.3
Queue Length 50th (ft)	71	289	180	664	157	51	238	119	123	359
Queue Length 95th (ft)	129	371	264	770	272	92	305	208	189	445
Internal Link Dist (ft)		1421		1412			2520			1419
Turn Bay Length (ft)	300		300		350	150		50	200	
Base Capacity (vph)	145	1603	315	1938	1012	186	916	461	331	1046
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.47	0.57	0.75	0.54	0.39	0.53	0.44	0.50	0.72

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	472	1063	103	530	1570	309	190	1266	310	697	1670	435
v/c Ratio	1.22	0.93	0.18	0.90	1.16	0.40	0.98	1.08	0.58	1.16	0.94	0.61
Control Delay	177.5	66.7	15.5	84.4	126.0	6.2	134.1	106.1	21.3	145.3	61.3	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	177.5	66.7	15.5	84.4	126.0	6.2	134.1	106.1	21.3	145.3	61.3	22.7
Queue Length 50th (ft)	~311	561	25	287	~1021	15	104	~538	85	~443	620	172
Queue Length 95th (ft)	#429	#668	72	#402	#1159	84	#191	#636	192	#572	#694	295
Internal Link Dist (ft)		469			1416			1204			1377	
Turn Bay Length (ft)	350			300		500	400		250	350		450
Base Capacity (vph)	386	1172	570	587	1349	780	193	1176	531	601	1780	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.91	0.18	0.90	1.16	0.40	0.98	1.08	0.58	1.16	0.94	0.61

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	180	1064	118	1034	79	708	127	648
v/c Ratio	0.73	0.81	0.62	0.87	0.26	0.57	0.43	0.50
Control Delay	50.5	44.7	39.2	52.5	26.9	40.9	29.2	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	44.7	39.2	52.5	26.9	40.9	29.2	35.4
Queue Length 50th (ft)	110	458	60	465	40	272	66	229
Queue Length 95th (ft)	201	554	118	590	88	417	133	347
Internal Link Dist (ft)		1416		1273		1416		2520
Turn Bay Length (ft)	250		250		150		120	
Base Capacity (vph)	324	1724	225	1500	312	1247	338	1309
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.62	0.52	0.69	0.25	0.57	0.38	0.50

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	353	1018	78	935	211	1053	280	1555	435
v/c Ratio	0.99	0.76	0.46	1.02	0.95	0.73	0.90	0.91	0.60
Control Delay	94.0	46.7	35.5	90.8	117.9	54.9	95.2	59.1	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.0	46.7	35.5	90.8	117.9	54.9	95.2	59.1	18.1
Queue Length 50th (ft)	321	484	45	~533	223	370	287	569	128
Queue Length 95th (ft)	#540	571	79	#674	#393	426	#442	636	248
Internal Link Dist (ft)		624		1422		1422		1236	
Turn Bay Length (ft)	250		225		200		350		250
Base Capacity (vph)	356	1348	178	915	221	1452	332	1716	723
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.76	0.44	1.02	0.95	0.73	0.84	0.91	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX C

Overall Traffic Conditions Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	619	92	164	1338	503	117	492	189	148	503	207
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	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3471		1770	3539	1583	1770	3539	1583	1770	3384	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.15	1.00	1.00	0.27	1.00	
Satd. Flow (perm)	1770	3471		1770	3539	1583	273	3539	1583	505	3384	
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)	70	673	100	178	1454	547	127	535	205	161	547	225
RTOR Reduction (vph)	0	7	0	0	0	163	0	0	48	0	27	0
Lane Group Flow (vph)	70	766	0	178	1454	384	127	535	157	161	745	0
Turn Type	Prot			Prot		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)	9.4	60.2		20.2	71.0	71.0	55.0	43.4	43.4	58.6	45.2	
Effective Green, g (s)	9.4	60.2		20.2	71.0	71.0	55.0	43.4	43.4	58.6	45.2	
Actuated g/C Ratio	0.06	0.39		0.13	0.46	0.46	0.36	0.28	0.28	0.38	0.30	
Clearance Time (s)	4.0	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	3.0	
Lane Grp Cap (vph)	109	1364		233	1640	734	211	1003	448	304	998	
v/s Ratio Prot	0.04	c0.22		0.10	c0.41		c0.05	0.15		c0.05	c0.22	
v/s Ratio Perm						0.24	0.17		0.10	0.16		
v/c Ratio	0.64	0.56		0.76	0.89	0.52	0.60	0.53	0.35	0.53	0.75	
Uniform Delay, d1	70.3	36.2		64.2	37.4	29.1	36.6	46.4	43.7	33.5	48.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.2	0.5		13.8	6.2	0.7	4.8	2.0	2.2	1.7	5.1	
Delay (s)	82.5	36.7		78.0	43.6	29.8	41.3	48.4	45.8	35.1	53.9	
Level of Service	F	D		E	D	C	D	D	D	D	D	
Approach Delay (s)		40.5			43.0			46.7			50.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	44.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	153.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Volume (veh/h)	1256	72	0	2019	0	267
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1365	78	0	2195	0	290
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				549		
pX, platoon unblocked					0.63	
vC, conflicting volume			1443		2462	683
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1443		2147	683
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	26
cM capacity (veh/h)			466		26	392

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	683	683	78	1097	1097	290
Volume Left	0	0	0	0	0	0
Volume Right	0	0	78	0	0	290
cSH	1700	1700	1700	1700	1700	392
Volume to Capacity	0.40	0.40	0.05	0.65	0.65	0.74
Queue Length 95th (ft)	0	0	0	0	0	146
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	36.2
Lane LOS						E
Approach Delay (s)	0.0			0.0		36.2
Approach LOS						E

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	445	1005	95	506	1444	284	175	1165	285	641	1554	400
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	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
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)	484	1092	103	550	1570	309	190	1266	310	697	1689	435
RTOR Reduction (vph)	0	0	44	0	0	177	0	0	165	0	0	163
Lane Group Flow (vph)	484	1092	59	550	1570	132	190	1266	145	697	1689	273
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	19.0	52.3	52.3	26.7	60.0	60.0	9.0	37.0	37.0	28.0	56.0	56.0
Effective Green, g (s)	19.0	52.3	52.3	26.7	60.0	60.0	9.0	37.0	37.0	28.0	56.0	56.0
Actuated g/C Ratio	0.12	0.33	0.33	0.17	0.38	0.38	0.06	0.23	0.23	0.18	0.35	0.35
Clearance Time (s)	4.0	4.0	4.0	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	3.0	3.0	3.0
Lane Grp Cap (vph)	408	1157	517	573	1327	594	193	1176	366	601	1780	554
v/s Ratio Prot	c0.14	0.31		0.16	c0.44		0.06	c0.25		c0.20	0.33	
v/s Ratio Perm			0.04			0.08			0.09			0.17
v/c Ratio	1.19	0.94	0.11	0.96	1.18	0.22	0.98	1.08	0.40	1.16	0.95	0.49
Uniform Delay, d1	70.5	52.4	37.6	66.1	50.0	34.1	75.4	61.5	52.0	66.0	50.6	40.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	106.0	14.9	0.1	27.4	90.4	0.2	59.8	49.4	3.2	89.4	12.2	3.1
Delay (s)	176.5	67.3	37.7	93.6	140.4	34.3	135.3	110.9	55.2	155.4	62.9	43.9
Level of Service	F	E	D	F	F	C	F	F	E	F	E	D
Approach Delay (s)		97.0			116.3			103.8			82.8	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	99.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	21	6	101	11	45	1	158	182	30	96	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	23	7	110	12	49	1	172	198	33	104	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)												
pX, platoon unblocked												
vC, conflicting volume	61			29			356	328	26	588	307	36
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	61			29			356	328	26	588	307	36
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			93			100	69	81	87	81	100
cM capacity (veh/h)	1542			1584			485	546	1050	244	561	1036

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	171	371	137
Volume Left	11	110	1	33
Volume Right	7	49	198	0
cSH	1542	1584	733	428
Volume to Capacity	0.01	0.07	0.51	0.32
Queue Length 95th (ft)	1	6	72	34
Control Delay (s)	2.0	5.0	14.8	17.3
Lane LOS	A	A	B	C
Approach Delay (s)	2.0	5.0	14.8	17.3
Approach LOS			B	C

Intersection Summary			
Average Delay	12.2		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	254	0	0	0	0	1466	0	0	1963	192
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	276	0	0	0	0	1593	0	0	2134	209
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1316			1284	
pX, platoon unblocked	0.77	0.77	0.68	0.77	0.77	0.83	0.68			0.83		
vC, conflicting volume	2769	3832	816	2581	3936	531	2342			1593		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	727	2109	0	482	2245	0	1336			985		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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	63	100	100	100	100			100		
cM capacity (veh/h)	240	39	739	225	32	897	349			576		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	276	0	531	531	531	0	853	853	635
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	276	0	0	0	0	0	0	0	209
cSH	739	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.37	0.00	0.31	0.31	0.31	0.00	0.50	0.50	0.37
Queue Length 95th (ft)	43	0	0	0	0	0	0	0	0
Control Delay (s)	12.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A							
Approach Delay (s)	12.7	0.0	0.0				0.0		
Approach LOS	B	A							

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	181	884	95	96	849	102	73	597	64	122	467	154
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	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3488		1770	3482		1770	3488		1770	3408	
Flt Permitted	0.08	1.00		0.11	1.00		0.28	1.00		0.21	1.00	
Satd. Flow (perm)	144	3488		212	3482		517	3488		384	3408	
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)	197	961	103	104	923	111	79	649	70	133	508	167
RTOR Reduction (vph)	0	5	0	0	6	0	0	5	0	0	19	0
Lane Group Flow (vph)	197	1059	0	104	1028	0	79	714	0	133	656	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	68.9	55.3		57.4	47.8		57.6	49.3		64.2	52.6	
Effective Green, g (s)	68.9	55.3		57.4	47.8		57.6	49.3		64.2	52.6	
Actuated g/C Ratio	0.49	0.39		0.40	0.34		0.41	0.35		0.45	0.37	
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)	266	1360		191	1174		283	1213		287	1264	
v/s Ratio Prot	c0.09	0.30		0.04	c0.30		0.02	c0.20		c0.04	0.19	
v/s Ratio Perm	0.27			0.18			0.10			0.17		
v/c Ratio	0.74	0.78		0.54	0.88		0.28	0.59		0.46	0.52	
Uniform Delay, d1	37.2	37.9		30.1	44.2		27.0	37.9		25.4	34.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.6	2.9		3.2	7.5		0.5	2.1		1.2	1.5	
Delay (s)	47.8	40.8		33.2	51.7		27.6	40.0		26.6	36.3	
Level of Service	D	D		C	D		C	D		C	D	
Approach Delay (s)		41.9			50.0			38.8			34.7	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	42.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	141.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	60	1213	1160	109	0	213
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	1318	1261	118	0	232
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)			704			
pX, platoon unblocked	0.76				0.76	0.76
vC, conflicting volume	1379				2110	690
vC1, stage 1 conf vol					1320	
vC2, stage 2 conf vol					790	
vCu, unblocked vol	863				1826	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	89				100	72
cM capacity (veh/h)	588				232	822

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	65	659	659	841	539	232
Volume Left	65	0	0	0	0	0
Volume Right	0	0	0	0	118	232
cSH	588	1700	1700	1700	1700	822
Volume to Capacity	0.11	0.39	0.39	0.49	0.32	0.28
Queue Length 95th (ft)	9	0	0	0	0	29
Control Delay (s)	11.9	0.0	0.0	0.0	0.0	11.1
Lane LOS	B					B
Approach Delay (s)	0.6			0.0		11.1
Approach LOS						B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	325	843	94	72	655	213	214	920	49	274	1494	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91		1.00	0.91	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3486		1770	3409		1770	5047		1770	5085	1583
Flt Permitted	0.09	1.00		0.15	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	162	3486		281	3409		1770	5047		1770	5085	1583
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)	353	916	102	78	712	232	233	1000	53	298	1624	435
RTOR Reduction (vph)	0	5	0	0	20	0	0	4	0	0	0	181
Lane Group Flow (vph)	353	1013	0	78	924	0	233	1049	0	298	1624	254
Turn Type	pm+pt			pm+pt			Prot			Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)	73.0	60.6		50.4	42.0		22.0	45.2		29.8	53.0	53.0
Effective Green, g (s)	73.0	60.6		50.4	42.0		22.0	45.2		29.8	53.0	53.0
Actuated g/C Ratio	0.46	0.38		0.32	0.26		0.14	0.28		0.19	0.33	0.33
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)	345	1320		167	895		243	1426		330	1684	524
v/s Ratio Prot	c0.17	0.29		0.02	0.27		c0.13	0.21		0.17	c0.32	
v/s Ratio Perm	c0.29			0.12								0.16
v/c Ratio	1.02	0.77		0.47	1.03		0.96	0.74		0.90	0.96	0.48
Uniform Delay, d1	52.7	43.5		40.7	59.0		68.6	52.0		63.7	52.6	42.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	54.5	2.7		2.1	38.7		45.8	3.4		26.5	15.0	3.2
Delay (s)	107.2	46.3		42.7	97.7		114.3	55.4		90.2	67.5	45.8
Level of Service	F	D		D	F		F	E		F	E	D
Approach Delay (s)		61.9			93.5			66.1			66.4	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM Average Control Delay	69.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX D

Signal Warrant Analysis Data

Intersection	**Warrant #1** Eight-Hour Vehicular Volume		**Warrant #2** Four-Hour Vehicular Volume	**Warrant #3** Peak Hour	**Warrant #4** Pedestrian Volume	**Warrant #5** School Crossing	**Warrant #6** Crash Experience	**Warrant #7** Roadway Network
	Condition A	**Condition B**						
Tudor Road/ Business Park Boulevard	Not Met	Not Met	Not Met	***Met***	Not Met	Not Met	Not Met	Not Met

Content ID: 008295

Type: Ordinance - AO

Title: AN ORDINANCE OF THE ANCHORAGE ASSEMBLY AMENDING THE ZONING MAP AND PROVIDING FOR THE REZONE OF APPROXIMATELY 12 ACRES FROM I-1 (LIGHT INDUSTRIAL DISTRICT) TO B-3 (GENERAL BUSINESS DISTRICT) FOR DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1, FRAGMENT LOTS 1-5; GENERALLY LOCATED WEST OF C STREET AND NORTH OF WEST INTERNATIONAL AIRPORT ROAD. (Midtown Community Council) (Planning and Zoning Commission Case 2009-105)

Author: maglaquijp

Initiating Dept: Planning

Date Prepared: 10/19/09 8:50 AM

Director Name: Jerry T. Weaver, Jr.

Assembly Meeting Date: 11/17/09

Public Hearing Date: 12/15/09

Workflow Name	Action Date	Action	User	Security Group	Content ID
Clerk_Admin_SubWorkflow	11/5/09 4:27 PM	Exit	Joy Maglaqui	Public	008295
MuniManager_SubWorkflow	11/5/09 4:27 PM	Approve	Joy Maglaqui	Public	008295
MuniManager_SubWorkflow	11/5/09 4:26 PM	Checkin	Joy Maglaqui	Public	008295
Legal_SubWorkflow	11/5/09 3:07 PM	Approve	Rhonda Westover	Public	008295
Finance_SubWorkflow	11/5/09 2:42 PM	Approve	Lucinda Mahoney	Public	008295
OMB_SubWorkflow	11/5/09 11:33 AM	Approve	Cheryl Frasca	Public	008295
OCPD_SubWorkflow	11/4/09 11:56 AM	Approve	Tawny Klebesadel	Public	008295
Planning_SubWorkflow	11/2/09 11:38 AM	Approve	Jerry Weaver Jr.	Public	008295
AllOrdinanceWorkflow	11/2/09 8:33 AM	Checkin	Angela Chambers	Public	008295
OCPD_SubWorkflow	10/30/09 9:31 AM	Reject	Tawny Klebesadel	Public	008295
Planning_SubWorkflow	10/22/09 11:49 AM	Approve	Jerry Weaver Jr.	Public	008295
AllOrdinanceWorkflow	10/21/09 10:43 AM	Checkin	Angela Chambers	Public	008295
Planning_SubWorkflow	10/20/09 11:46 AM	Reject	Jerry Weaver Jr.	Public	008295
AllOrdinanceWorkflow	10/19/09 8:53 AM	Checkin	Angela Chambers	Public	008295

CONSENT AGENDA - **INTRODUCTION**

APPENDIX B

PLATS 2008-112 AND 2008-113

CERTIFICATE OF OWNERSHIP

I (WE) HEREBY CERTIFY THAT I (WE) HOLD THE HEREIN SPECIFIED PROPERTY INTEREST IN THE PROPERTY SHOWN AND DESCRIBED HEREON. WE HEREBY AGREE TO THIS SITE PLAN AND TO ANY RESTRICTIONS OR COVENANT APPEARING HEREON AND ANY SUCH RESTRICTIONS OR COVENANT SHALL BE BINDING AND ENFORCEABLE AGAINST PRESENT AND SUCCESSIVE OWNERS OF THIS PROPERTY.

OWNER:

INTERNATIONAL AND C STREET, LLC
P.O. BOX 202840
ANCHORAGE, ALASKA 99520

BY: _____ SIGNATURE — Mauaaish Member, TITLE

Leonard Hyde
PRINTED NAME

NOTARY ACKNOWLEDGMENT

SUBSCRIBED AND SWORN TO BEFORE ME THIS 1st DAY OF SEPTEMBER, 2008, PURSUANT TO ITS BY-LAWS OR A RESOLUTION OF ITS BOARD OF DIRECTORS.

Leonard Hyde
PERSONALLY APPEARED

NOTARY PUBLIC

8-1-2010
MY COMMISSION EXPIRES

NOTARY PUBLIC — STATE OF ALASKA

BENEFICIARY INTEREST

FIRST NATIONAL BANK ALASKA
P.O. BOX 100720
ANCHORAGE, ALASKA 99510

BY: _____ SIGNATURE — Vice President, TITLE

Jim McMillan
PRINTED NAME

NOTARY ACKNOWLEDGMENT

SUBSCRIBED AND SWORN TO BEFORE ME THIS 11th DAY OF SEPTEMBER, 2008, PURSUANT TO ITS BY-LAWS OR A RESOLUTION OF ITS BOARD OF DIRECTORS.

Jim McMillan
PERSONALLY APPEARED

NOTARY PUBLIC

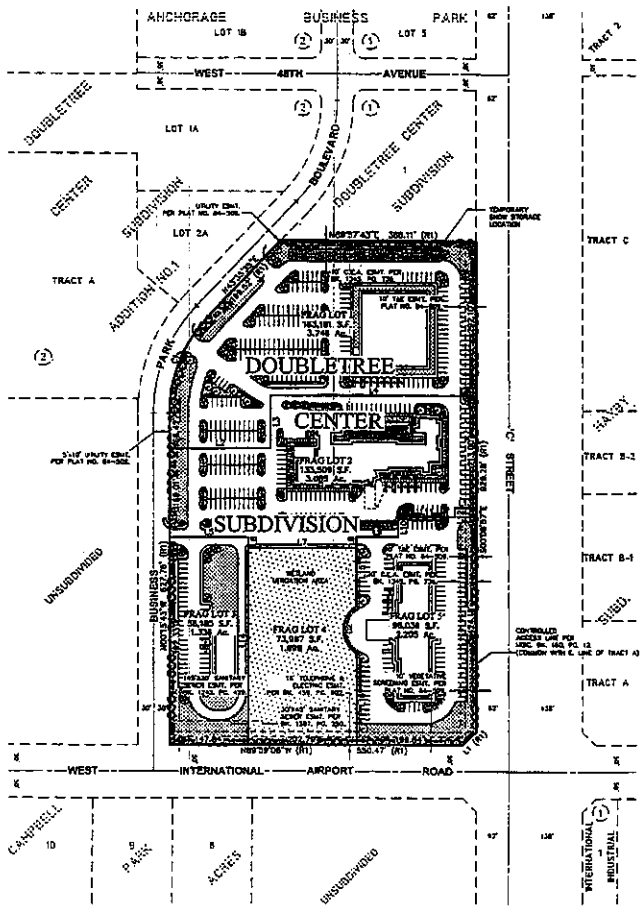
5-30-2010
MY COMMISSION EXPIRES

NOTARY PUBLIC — STATE OF ALASKA

SURVEYOR'S CERTIFICATE

I, STANLEY E. PONSNESS, PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS FRAGMENT LOT SITE PLAN SHOWS A TRUE AND CORRECT REPRESENTATION OF THE RECORD BOUNDARY OF DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1, PER PLAT NO. 2008-112

STATE OF ALASKA — 10TH — STANLEY E. PONSNESS — 3194



LEGEND

(NT) NON TANGENT
(R1) RECORD PER PLAT NO. 2008-112
T&E TELECOMMUNICATIONS AND ELECTRIC.

CURVE DATA TABLE						
CURVE		DELTA	RADIUS	LENGTH	CHORD	CHORD BEARING
C1 (NT)	(R1)	43°46'51"	281.62'	200.29'	195.44'	S21°50'11"W
C2 (NT)		115°49'44"	53.00'	107.14'	89.81'	S00°06'34"E

NOTES

1. THIS SITE PLAN IS PREPARED IN ACCORDANCE WITH THE ANCHORAGE MUNICIPAL CODE 21.13.034.

2. THIS SITE PLAN IS BASED ON RECORD INFORMATION FROM THE PLAT OF DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1, PER PLAT NO. 2008-112. SEE SAID PLAT FOR ADDITIONAL INFORMATION.

3. ALL FEDERAL AND STATE EASEMENTS/PERMITS/LICENSES REFERENCED BY CASE NUMBERS, AND ALL EASEMENTS REFERENCED BY BOOK AND PAGE NUMBERS OR SERIAL NUMBERS WERE CREATED BY DOCUMENTS, AND ARE NOT DEDICATED BY THIS PLAT.

4. STREET RIGHT-OF-WAY WIDTHS SHOWN TO THE NEAREST FOOT REPRESENT ACTUAL DIMENSIONS TO THE NEAREST HUNDREDTH OF A FOOT (I.E. 30'=30.00').

5. SEE DECLARATION OF PROTECTIVE COVENANTS AND RESTRICTIONS, RECORDED UNDER SERIAL NO. 2008-061369-0

6. ALL EASEMENTS THAT ARE REFERENCED BY A RECORDED PLAT NUMBER WERE CREATED BY THOSE RESPECTIVE PLATS, AND ARE NOT DEDICATED BY THIS SITE PLAN.

7. DIRECT VEHICULAR ACCESS TO "C" STREET FROM TRACT A, DOUBLETREE CENTER SUBDIVISION IS PROHIBITED.

8. DIRECT VEHICULAR ACCESS TO WEST INTERNATIONAL AIRPORT ROAD FROM TRACT A, DOUBLETREE CENTER SUBDIVISION IS PROHIBITED, UNLESS OTHERWISE PERMITTED BY ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES (ADOT/PF).

9. DEVELOPMENT OF THIS PROPERTY SHALL BE IN ACCORDANCE WITH THE APPROVED U.S. ARMY CORPS OF ENGINEERS PERMIT NO. POA. 2006-1215-4, FISH CREEK, OR ANY SUBSEQUENT MODIFICATIONS TO THE PERMIT.

10. DEVELOPMENT OF FRAGMENT LOTS 3 AND 5 SHALL CONFORM TO THE SITE PLAN APPROVED BY THE PLANNING AND ZONING COMMISSION AND ANY SUBSEQUENT AMENDMENTS OF THE APPROVED SITE PLAN.

11. A STORM WATER TREATMENT PLAN AND A GRADING PERMIT SHALL BE APPROVED BY THE MUNICIPALITY PRIOR TO CLEARING, GRADING, EXCAVATION, STOCKPILING OR PLACEMENT OF FILL IN THE WETLANDS.

12. ALL LOTS WITHIN THE SUBDIVISION SHALL CONFORM TO THE ELEVATION AND DRAINAGE PATTERNS SHOWN ON THE GRADING AND DRAINAGE PLAN APPROVED BY THE MUNICIPALITY OF ANCHORAGE, AS APPLICABLE.

13. THE PROPERTY OWNER SHALL NOT RAISE, LOWER, OR RE-GRADE THE PROPERTY IN A MANNER THAT WILL ALTER THE DRAINAGE PATTERNS FROM THOSE SHOWN ON THE APPROVED GRADING AND DRAINAGE PLAN WITHOUT PRIOR APPROVAL FROM MUNICIPALITY OF ANCHORAGE BUILDING SAFETY OFFICE.

14. PROPERTY OWNERS SHALL NOT OBSTRUCT, IMPEDE OR ALTER APPROVED DRAINAGE FACILITIES (E.G. SWALES, DITCHES) IN ANY WAY THAT WILL ADVERSELY IMPACT ADJACENT PROPERTIES OR RIGHTS OF WAY.

LINE DATA TABLE		
LINE	BEARING	LENGTH
L1 (R1)	N44°30'20"E	35.00'
L2	S89°51'06"W	181.22'
L3	S00°08'54"E	99.20'
L4	S89°51'06"W	348.33'
L5	N89°51'06"E	148.62'
L6	S00°08'54"E	20.37'
L7	N89°51'06"E	202.79'
L8	S00°08'54"E	20.37'
L9	N89°51'06"E	78.24'
L10	N00°08'54"W	38.05'
L11	N89°51'06"E	108.50'
L12	N00°08'54"W	17.16'
L13	N89°51'06"E	49.92'
L14	S00°08'54"E	182.75'
L15	S00°08'54"E	131.20'
L16	S00°08'54"E	172.33'

2008-113
Anchorage, Recorded
Date 10-27-2008
Time 2:47 P.M.
Recorded By Carl Gustafson
Address
CC

APPROVALS

PLATTING OFFICER — DATE 10-26-08

MUNICIPAL SURVEYOR — DATE 9/25/08

PLAT APPROVAL

PLAT APPROVED BY THE MUNICIPAL PLATTING AUTHORITY THIS 6 DAY OF October, 2008.

Michael E. Kemp
AUTHORIZED OFFICIAL

ACCEPTANCE OF DEDICATION

THE MUNICIPALITY OF ANCHORAGE HEREBY ACCEPTS FOR PUBLIC USES AND FOR PUBLIC PURPOSES THE REAL PROPERTY DEDICATED ON THIS PLAT, INCLUDING BUT NOT LIMITED TO THE EASEMENTS, RIGHTS OF WAY, ALLEYS, ROADWAYS, THOROUGHFARES AND PARKS SHOWN HEREON.

DATED AT ANCHORAGE, ALASKA, THIS 6th DAY OF October, 2008.

MUNICIPAL CLERK — MAYOR OF ANCHORAGE

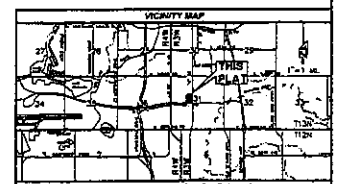
TAX CERTIFICATION

ALL REAL PROPERTY TAXES LEVIED BY THE MUNICIPALITY OF ANCHORAGE ON THE AREA SHOWN ON THIS PLAT HAVE BEEN PAID IN FULL. IF APPROVAL IS SOUGHT BETWEEN JANUARY 1 AND THE TAX DUE DATE, THERE IS AN DEPOSIT WITH THE CHIEF FISCAL OFFICER AN AMOUNT SUFFICIENT TO PAY ESTIMATED REAL PROPERTY TAX FOR THE CURRENT YEAR.

10-30-08
DATE — AUTHORIZED OFFICIAL

RECORDED-FILED

VICINITY MAP



LOCATED WITHIN THE NW 1/4, SEC. 31, T13N, R3W, S.M. AK

PLAT OF

COMMERCIAL TRACT
FRAGMENT LOT SITE PLAN
FOR
DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1
(PER PLAT NO. 2008-112)

FRAGMENT LOTS 1 THROUGH 5

CONTAINING 12.050 ACRES, 5 FRAGMENT LOTS

LOCATED WITHIN
THE NW 1/4, SECTION 31, T13N, R3W, S.M. AK
ANCHORAGE RECORDING DISTRICT

DOWL ENGINEERS
4041 B STREET, ANCHORAGE, ALASKA 99503 PH. (907) 562-2000 FAX (907) 562-2383

DWN: BKF	CHK: KCT	W.O.: D5B4818		DOWL FILE NO: 149-75
SCALE: 1"=100'	FDN: 2182	CRD: SW1830		
DRAWN: SEP-18-2008	SURVEYED: MAY-JUN, 2008			SHEET 1 OF 1
C-F: PRT NO: 00084533	MOA CASE FILE: S-11832-1			

A:\Projects\D5B4818\Plat\PROD\SP-SDD.dwg SEP 18, 2008 14:38:41 (KCT)

CERTIFICATE OF OWNERSHIP AND DEDICATION

I (WE) HEREBY CERTIFY THAT I (WE) HOLD THE HEREIN SPECIFIED PROPERTY INTEREST IN THE PROPERTY SHOWN AND DESCRIBED HEREON. I (WE) HEREBY DEDICATE TO THE MUNICIPALITY ALL AREAS DEPICTED FOR USE AS PUBLIC UTILITY EASEMENTS, STREETS, ALLEYS, THOROUGHFARES, PARKS, AND OTHER PUBLIC AREAS SHOWN HEREON. THERE SHALL BE RESERVED ADJACENT TO THE STREETS SHOWN HEREON A SLOPE RESERVATION EASEMENT SUFFICIENT TO CONTAIN CUT AND FILL SLOPES OF 1.5 FEET HORIZONTAL FOR EACH 1 FOOT VERTICAL (1.5 TO 1) OF CUT OR FILL FOR THE PURPOSE OF PROVIDING AND MAINTAINING THE LATERAL SUPPORT OF THE CONSTRUCTED STREETS. THERE IS RESERVED TO THE GRANTORS, THEIR HEIRS, SUCCESSORS AND ASSIGNS, THE RIGHT TO USE SUCH AREAS AT ANY TIME UPON PROVIDING AND MAINTAINING OTHER ADEQUATE LATERAL SUPPORT, AS APPROVED BY THE MUNICIPALITY.

I (WE) HEREBY AGREE TO THIS PLAT, AND TO ANY RESTRICTION OR COVENANT APPEARING HEREON AND ANY SUCH RESTRICTION OR COVENANT SHALL BE BINDING AND ENFORCEABLE AGAINST PRESENT AND SUCCESSIVE OWNERS OF THIS SUBDIVIDED PROPERTY.

OWNER:

INTERNATIONAL AND C STREET, LLC
P.O. BOX 202845
ANCHORAGE, ALASKA 99520

BY: _____ SIGNATURE Managing Member TITLE

Leonard Hyde
PRINTED NAME

NOTARY ACKNOWLEDGMENT

SUBSCRIBED AND SWORN TO BEFORE ME THIS 1st DAY OF September, 2008, PURSUANT TO ITS BY-LAWS OR A RESOLUTION OF ITS BOARD OF DIRECTORS.

Leonard Hyde
PERSONALLY APPEARED
_____
NOTARY PUBLIC
8-1-2010
MY COMMISSION EXPIRES

NOTARY PUBLIC — STATE OF ALASKA

BENEFICIARY INTEREST

FIRST NATIONAL BANK ALASKA
P.O. BOX 100720
ANCHORAGE, ALASKA 99510

BY: _____ SIGNATURE Vice President TITLE

Lisa McMillan
PRINTED NAME

NOTARY ACKNOWLEDGMENT

SUBSCRIBED AND SWORN TO BEFORE ME THIS 9th DAY OF September, 2008, PURSUANT TO ITS BY-LAWS OR A RESOLUTION OF ITS BOARD OF DIRECTORS.

_____
PERSONALLY APPEARED
_____
NOTARY PUBLIC
5-30-2010
MY COMMISSION EXPIRES

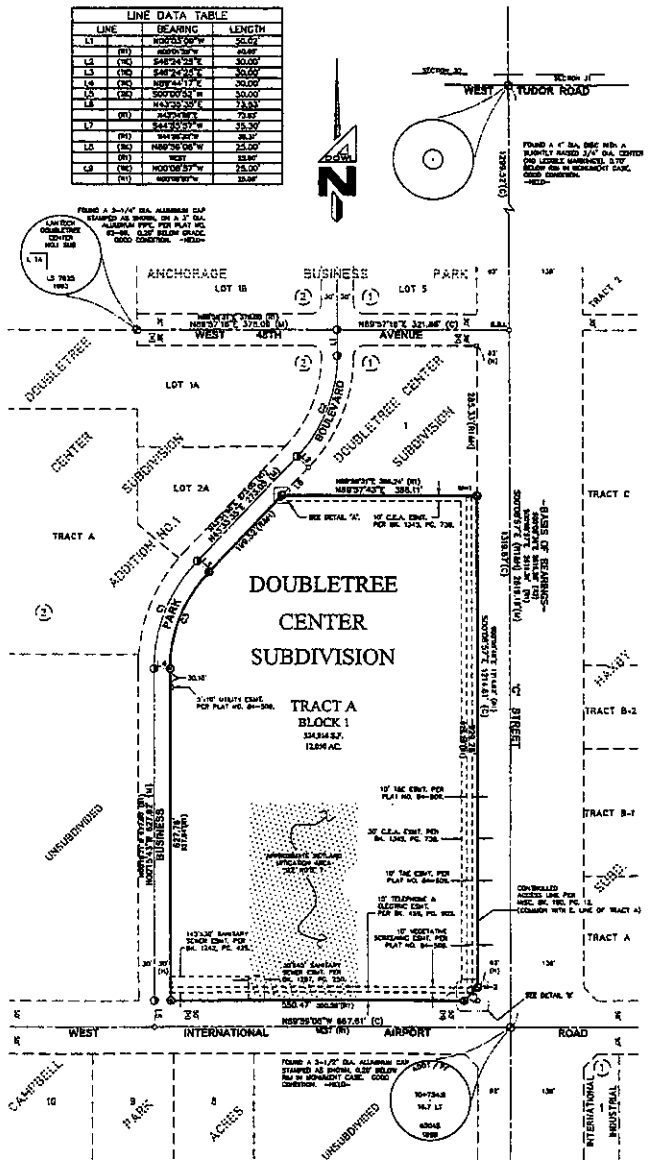
NOTARY PUBLIC — STATE OF ALASKA

SURVEYOR'S CERTIFICATE

I, STANLEY E. PONTHESIS, PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THE PLAT SHOWN HEREON IS A TRUE AND CORRECT REPRESENTATION OF LANDS ACTUALLY SURVEYED AND THAT THE DISTANCES AND BEARINGS ARE SHOWN CORRECTLY AND THAT ALL PERMANENT EXTERIOR CONTROL MONUMENTS, ALL OTHER MONUMENTS, AND LOT CORNERS HAVE BEEN SET AND STAKED, OR IF FINAL COMPLETION IS ASSURED BY SUBDIVISION AGREEMENT, THEY WILL BE SET AS SPECIFIED IN SAID SUBDIVISION AGREEMENT. EXTERIOR CORNERS TO BE SET BY B/A
INTERIOR LOT CORNERS TO BE SET BY B/A

STATE OF ALASKA — 49th — Stanley E. Ponthesis — 7/8/08

LINE DATA TABLE			
LINE		BEARING	LENGTH
L1		N00°03'06"W	30.02'
	(R1)	N00°00'00"W	49.87
L2	(HC)	S48°24'23"E	30.00'
L3	(HC)	S48°24'23"E	30.00'
L4	(HC)	N89°44'17"E	30.00'
L5	(HC)	S00°00'53"W	30.00'
L6		N43°32'30"E	7.83'
	(R1)	N43°34'00"E	73.87
L7		S41°35'57"W	35.30'
	(R1)	S41°35'27"W	35.31'
L8	(HC)	N89°59'08"W	25.00'
	(R1)	WEST	25.00'
L9	(HC)	N00°00'57"W	25.00'
	(R1)	N00°00'57"W	25.00'



LEGEND

- FOUND MONUMENT AS DESCRIBED.
- FOUND 2" DIA. ALUMINUM CAPS ON 5/8" DIA. REBARS PER PLAT NO. 84-509. FLUSH WITH PAVEMENT. -HELD- TYPICALLY STAMPED:
- COMPUTED POINT – NOTHING SET THIS SURVEY.
- SET 2" DIA. ALUMINUM CAPS ON 5/8" DIA. x 30" REBARS, FLUSH WITH GRADE, OR, 9" IN CONCRETE, SET 3" DIA. x 2" STEEL BRASS TABLETS, FLUSH WITH TOP OF CONCRETE, WITH DECP-1 MAGNETS INSERTED WITHIN. TYPICALLY STAMPED:
- SET A 3-1/4" DIA. ALUMINUM CAPS ON A 3-1/2" DIA. x 30" ALUMINUM PIPES FLUSH WITH GRADE, WITH DECP-1 MAGNETS INSERTED WITHIN. STAMPED AS SHOWN BELOW.

(R1) RECORD INFORMATION PER PLAT NO. 84-509.
(R1&H) RECORD INFORMATION PER PLAT NO. 84-509 AND H.D.O.
(R1&M) RECORD INFORMATION PER PLAT NO. 84-509 AND MEASURED.
(R2) RECORD INFORMATION PER A.D.O.T. & P.F. PROJECT NO. STP-0327(13)/52512.
B.B.I. BEARING-BEARING INTERSECTION.
(C) COMPUTED
(H) HELD
(M) MEASURED
(NT) NON-TANGENT
T&E TELECOMMUNICATIONS AND ELECTRIC.
M-1 MONUMENT REFERENCE NUMBER TO PRIMARY MONUMENT DESCRIPTION ABOVE.
C.E.A. CHUGACH ELECTRIC ASSOCIATION

CURVE DATA TABLE						
CURVE		DELTA	RADIUS	LENGTH	CHORD	CHORD BEARING
C1 (NT)	(M)	43°50'00"	291.82'	223.33'	217.85'	N21°10'08"E
	(R1)	43°50'00"	291.82'	223.33'	217.85'	N21°10'08"E
C2 (NT)	(M)	43°30'19"	277.33'	211.18'	206.13'	N21°27'09"E
	(R1)	43°30'19"	277.33'	211.18'	206.13'	N21°27'09"E
C3 (NT)		43°49'51"	291.82'	200.26'	195.44'	N21°10'11"E
	(R1)	43°49'51"	291.82'	200.26'	195.44'	N21°10'11"E

APPROVALS

_____ PLATTING OFFICER 10-26-08 DATE
_____ MUNICIPAL SURVEYOR 10/8/08 DATE

PLAT APPROVAL

PLAT APPROVED BY THE MUNICIPAL PLATTING AUTHORITY THIS 13th DAY OF Oct, 2008.

_____ AUTHORIZED OFFICIAL

2008-117
Anchorage REC'DED
Date 10/29 2008
Time 2:46 PM
Recorded by [illegible]

TAX CERTIFICATION

ALL REAL PROPERTY TAXES LEVIED BY THE MUNICIPALITY OF ANCHORAGE ON THE AREA SHOWN ON THIS PLAT HAVE BEEN PAID IN FULL. IF APPROVAL IS SOUGHT BETWEEN JANUARY 1 AND THE TAX DUE DATE, THERE IS ON DEPOSIT WITH THE CHIEF FISCAL OFFICER, AN AMOUNT SUFFICIENT TO PAY ESTIMATED REAL PROPERTY TAX FOR THE CURRENT YEAR.

10-13-08 _____ DATE AUTHORIZED OFFICIAL

ACCEPTANCE OF DEDICATION

THE MUNICIPALITY OF ANCHORAGE HEREBY ACCEPTS FOR PUBLIC USES AND FOR PUBLIC PURPOSES THE REAL PROPERTY DEDICATED ON THIS PLAT, INCLUDING BUT NOT LIMITED TO THE EASEMENTS, RIGHTS OF WAY, ALLEYS, ROADWAYS, THOROUGHFARES AND PARKS SHOWN HEREON.

DATED AT ANCHORAGE, ALASKA, THIS 8th DAY OF October, 2008.

_____ MUNICIPAL CLERK _____ MAYOR OF ANCHORAGE

NOTES

1. ALL FEDERAL AND STATE EASEMENTS/PERMITS/LICENSES REFERENCED BY CASE NUMBERS, AND ALL EASEMENTS REFERENCED BY BOOK AND PAGE NUMBERS OR SERIAL NUMBERS WERE CREATED BY DOCUMENTS, AND ARE NOT DEDICATED BY THIS PLAT.

2. STREET RIGHT-OF-WAY WIDTHS SHOWN TO THE NEAREST FOOT REPRESENT ACTUAL DIMENSIONS TO THE NEAREST HUNDREDTH OF A FOOT (I.E. 30'=30.00').

3. THE DEVELOPMENT OF THIS SUBDIVISION MAY REQUIRE THE COLLECTION AND TREATMENT OF SURFACE WATER RUNOFF. ANY SURFACE WATER RUNOFF COLLECTION AND TREATMENT SYSTEM WILL REQUIRE THE SUBMITTAL AND APPROVAL OF ENGINEERING PLANS TO THE MUNICIPAL WATERSHED MANAGEMENT SERVICES.

4. VISUAL ENHANCEMENT LANDSCAPING MEETING THE REQUIREMENTS OF AMC 21.45.125.D.1 SHALL BE INSTALLED WITHIN THE 10-FOOT VEGETATIVE EASEMENT ALONG THE EAST AND SOUTH PROPERTY BOUNDARIES WITH THE DEVELOPMENT OF THE SITE. ALL LANDSCAPING SHALL BE INSTALLED AND MAINTAINED BY THE PROPERTY OWNER OR HIS/HER DESIGNEE FOR THE LIFE OF THE USE.

5. DIRECT VEHICULAR ACCESS TO "C" STREET FROM TRACT A, DOUBLETREE CENTER SUBDIVISION IS PROHIBITED.

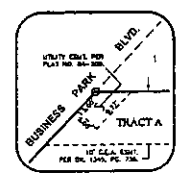
6. DIRECT VEHICULAR ACCESS TO WEST INTERNATIONAL AIRPORT ROAD FROM TRACT A, DOUBLETREE CENTER SUBDIVISION IS PROHIBITED, UNLESS OTHERWISE PERMITTED BY ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES (ADOT/PF).

7. DEVELOPMENT OF THIS PROPERTY SHALL BE IN ACCORDANCE WITH THE APPROVED U.S. ARMY CORPS OF ENGINEERS PERMIT NO. POA. 2006-1373-M, FISH CREEK, OR ANY SUBSEQUENT MODIFICATIONS TO THE PERMIT.

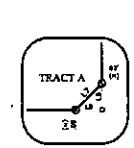
8. A STORM WATER TREATMENT PLAN AND A GRADING PERMIT SHALL BE APPROVED BY THE MUNICIPALITY PRIOR TO CLEARING, GRADING, EXCAVATION, STOCKPILING OR PLACEMENT OF FILL IN THE WETLANDS.

9. EASEMENTS VACATED THIS PLAT:

A) A SANITARY SEWER AND WATER EASEMENT VARYING IN WIDTH PER PLAT NO. 84-509, AFFECTING FORMER LOT 4, BLOCK 1, DOUBLETREE SUBDIVISION.

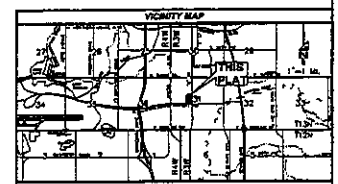


DETAIL 'A'
SCALE: 1"=10'



DETAIL 'B'
SCALE: 1"=20'

VICINITY MAP



LOCATED WITHIN THE NW 1/4, SEC. 31, T13N, R3W, S.M. AK

PLAT OF

DOUBLETREE CENTER SUBDIVISION
TRACT A, BLOCK 1
(WITH EASEMENT VACATION)

A 12.050 ACRE RESUBDIVISION OF LOTS 2, 3, AND 4, BLOCK 1, DOUBLETREE CENTER SUBDIVISION, PER PLAT NO. 84-509.

ANCHORAGE RECORDING DISTRICT,
THIRD JUDICIAL DISTRICT, STATE OF ALASKA.

LOCATED WITHIN
THE NW 1/4, SECTION 31, T13N, R3W, S.M. AK

DOWL ENGINEERS

DWN: LTD	CHK: KET	R.O. D3941B		DOWL FILE NO: 149-86
SCALE: 1"=100'	FBR: 2182	SRC: 3W1830		
DRAWN: SEP-18-2008	SURVEYED: MAY-JUN, 2008			SHEET 1 OF 1
C-P: PNT NO. 00084533	MOA CASE FILE: S-11451-1			

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APPENDIX C

USACE PERMIT NUMBER POA, 2006-1215-4, FISH CREEK, OR ANY SUBSEQUENT MODIFICATIONS TO THE PERMIT

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
REGULATORY DIVISION
P.O. BOX 6898
ELMENDORF AFB, ALASKA 99506-0898

REPLY TO
ATTENTION OF:

Regulatory Division
POA-2006-1215-M1

AUG 27 2008

Mr. Jonathan Rubini
International and C Street, LLC
813 D Street, Suite 200
Anchorage, Alaska 99501

Dear Mr. Rubini:

Enclosed is the signed Department of the Army (DA) permit modification, file number POA-2006-1215-M1, Fish Creek. This is the first permit modification of the original permit for discharge of fill to construct a commercial development including a hotel, restaurant, and office complex at the northwest corner of International Airport Road and C Street, Anchorage, Alaska.

If changes to the plans or location of the work are necessary for any reason, plans must be submitted to us immediately. Federal law requires approval of any changes before construction begins.

Nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

Also enclosed is a Notification of Administrative Appeals Options and Process and Request for Appeal form regarding this DA Permit Modification (see section labeled "Initial Proffered Permit").

You may contact me via email at Mary.Plumb-Mentjes@usace.army.mil, by mail at the address above, by phone at 753-2789, if you have questions. For additional information about our Regulatory Program, visit our web site at www.poa.usace.army.mil/reg.

Sincerely,

Mary Lee Plumb-Mentjes

Mary Lee Plumb-Mentjes
Project Manager

Enclosures

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
REGULATORY DIVISION
P.O. BOX 6898
ELMENDORF AFB, ALASKA 99506-0898

REPLY TO
ATTENTION OF:

Regulatory Division
POA-2006-1215-M1

DEPARTMENT OF THE ARMY
PERMIT MODIFICATION

Department of the Army permit number POA-2006-1215, Fish Creek, was issued to International and C Street, LLC, an affiliate of JL Properties, on October 9, 2007 to:

> "Discharge approximately 61,000 cubic yards (cy) of well-graded sand and gravel in 4.88 acres of wetlands (the total area of the parcel is 12.05 acres). Initially, this fill volume will be placed in the nonbuilding portions of the wetland area to surcharge or pre-consolidate the underlying peat. Following consolidation of the underlying peat material in the nonbuilding areas, the peat in the building footprint areas will be excavated. Excess surcharge material temporarily placed in the non-building areas in the wetland area, approximately 26,000 cy of the original 61,000 cy, will be used to fill the deeper excavations beneath the building footprints in the wetland area. This discharge will be for the construction of approximately 0.695 acre (30,257 square feet) of hotel space, 0.46 acre (20,000 square feet out of a total of 60,000 square feet) of office space, and 0.147 acre (6,419 square feet) of restaurant space. To meet the MOA Title 21 building code requirements, an additional 6.18 acres have been incorporated into the design plans to provide paved parking spaces, accesses, circulation areas, and pedestrian amenities. The remaining 4.57 acres of the property's 12.05 acres would be water permeable areas including approximately 1.7 acres of landscaping around the buildings, 1.17 acre of biofiltration swales along the perimeter of paved areas and within the interior paved areas, and a 1.70-acre wetland mitigation area in the south. Approximately 85 cy of peat material will be discharged in 0.07 acre of wetlands near the south end of Lot 2A and along Business Park Boulevard to construct a vegetated containment berm."

This is the first modification of the original permit. The permit is hereby modified as follows:

> The development will now consist of constructing approximately 1.48 acres of hotel, office, and restaurant space, 5.87 acres of paved parking spaces, accesses, circulation areas and pedestrian amenities, 1.68 acres of landscaping, 1.32 acres of biofiltration swales, and 1.70-acre wetland mitigation area for a total area of 12.05 acres. The large hotel near the center of the site has been shifted toward the east and the bioswale on the north side of the large hotel has been removed. These changes were necessary to maintain the mitigation plan requirement to convey one-third of the surface water drainage to the Southern Wetland Mitigation Area and two-thirds of the surface water drainage to the Business Park Wetlands via the Northwest Forebay. Bioswales along the western boundary

of the project site were widened to encompass the area of the bioswale that was removed on the north side of the large hotel. In order to provide adequate water runoff to the 0.96-acre persistent ponded area of the Southern Wetland Mitigation Area runoff from the roofs of the restaurant and two hotels (1.06 acres) will be conveyed directly to the 0.96-acre persistently ponded area. A storm drain outlet will be placed in the 0.96-acre persistently ponded area at an elevation slightly above the water level of 118 feet to prevent excess flooding. As a result of these changes approximately 65 percent of the surface water runoff will be conveyed to the Business Park Wetlands, and approximately 35 percent of the surface water will be conveyed to the Southern Wetland Mitigation Area. This approximates the distribution of surface water runoff in the approved Mitigation Plan.

The work will be performed in accordance with the enclosed plans, sheets 1-12, dated July 2008, which are incorporated in and made a part of this Permit Modification.

The project site is located within Wetland Unit 40A (Municipality of Anchorage Wetlands Atlas, 2004, Map 43), Section 31, T. 13 N., R. 4 W., Seward Meridian; Latitude 61.1751 N., Longitude -149.8879 W.; Doubletree Subdivision, Block 1, Lots 2, 3, and 4 along the east side of Business Park Boulevard; and Doubletree Center #1 Subdivision, Block 2, Lot 2A along the west side of Business Park Boulevard; northwest of the intersection of International Airport Road and C Street, in Anchorage, Alaska.

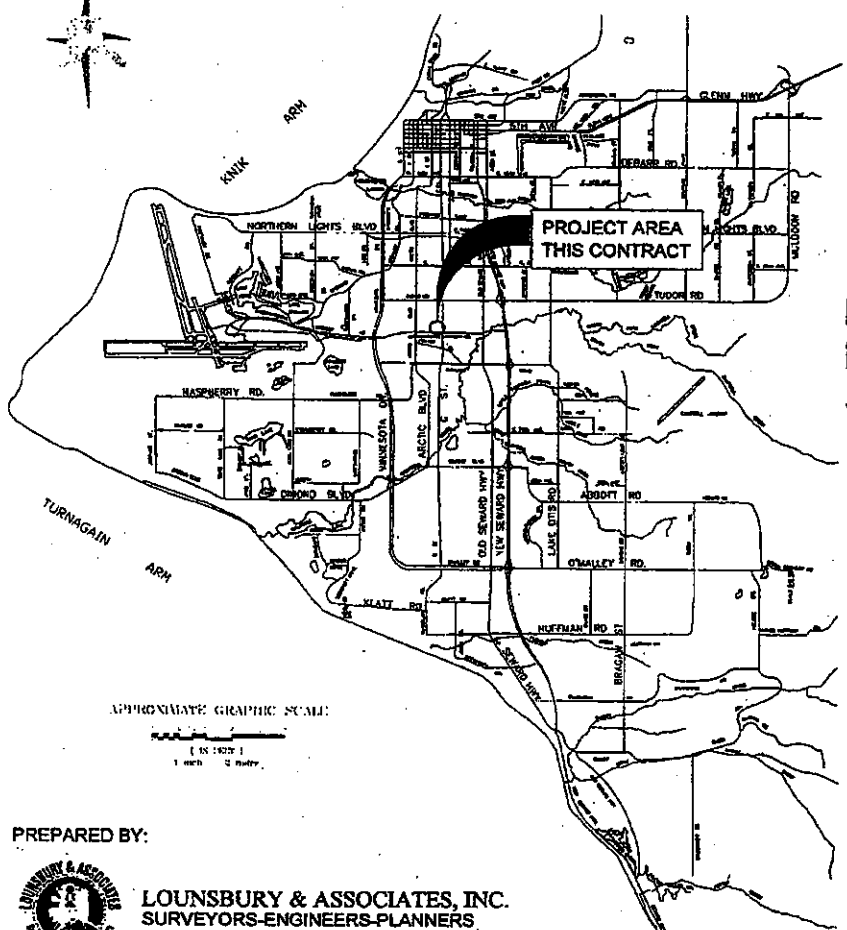
All other conditions under which the subject authorization was made remain in full force and effect.

This authorization and the enclosed modified plans should be attached to the original permit. Also enclosed is a Notice of Authorization that should be posted in a prominent location near the authorized work.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Mary Lee Plumb-Mentjes

Mary Lee Plumb-Mentjes
Project Manager



SHEET INDEX	
Sheet Number	Sheet Title
Top Center	COVER SHEET
1	GRADING NOTES & LEGEND
2	EXISTING CONDITIONS
3	MASTER GRADING PLAN
4	EXCAVATION PLAN
5	EXCAVATION SCHEDULE
6	SURCHARGE GRADING PLAN
7	GRADING SECTIONS
8	SOUTHWEST & SOUTHEAST SWALE
9	WEST & NORTH SWALE
10	BPW RESTORATION PLAN

FRAGMENT LOTS 1-5
DOUBLE TREE SUBDIVISION
SITE PREPARATION AND SURCHARGE PLAN

PREPARED BY:

LOUNSBURY & ASSOCIATES, INC.
SURVEYORS-ENGINEERS-PLANNERS
5300 A STREET
ANCHORAGE, ALASKA 99518

POA-2006-1215-M1
July 2008
Page 1 of 12

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ABBREVIATIONS

A.D.A.	AMERICANS WITH DISABILITIES ACT OF 1990
ADOT/PF	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
B.O.P.	BEGINNING OF PROJECT/BOTTOM OF PIPE
B.O.W.	BOTTOM OF WALL
B.M.	BENCH MARK
B.V.	BUTTERFLY VALVE
B.V.C.S.	BEGIN VERTICAL CURVE STATION
B.V.C.E.	BEGIN VERTICAL CURVE ELEVATION
C & G	CURB AND GUTTER
C.C.	CURB CUT
CH.	CHORD, HORIZONTAL CURB
CONST.	CONSTRUCT
C.P.E.P.	CORRUGATED POLYETHYLENE PIPE
CU	COPPER
D.I.P.	DUCTILE IRON PIPE
DTL.	DETAIL
DWY	DRIVEWAY
E.O.P.	END OF PROJECT
E.P.	EDGE OF PAVEMENT
EL.	ELEVATION
E.	EASEMENT LINE
EST.	ESTIMATED
EX.	EXISTING
F & I	FURNISH AND INSTALL
F.D.	FOUNDATION DRAIN
F.G.	FINISHED GRADE
F.H.	FIRE HYDRANT
F & G	FRAME AND GRATE
F.	FLOW LINE
G.V.	GATE VALVE
H.D.P.E.P.	HIGH DENSITY POLYETHYLENE PIPE
I.A.W.	IN ACCORDANCE WITH
INV.	INVERT
L.C.	LIP OF CURB
LOC.	LOCATION
LT.	LEFT
M.A.S.S.	MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS, STREETS-DRAINAGE-UTILITIES-PARKS, 1994 AS CURRENTLY AMENDED
MAX.	MAXIMUM
M.E.	MATCH EXISTING
M.H.	MANHOLE
MIN.	MINIMUM
MON.	MONUMENT
M.S.L.	MEAN SEA LEVEL
N.A.	NONE APPLICABLE
N.T.S.	NOT TO SCALE
N.W.T.	NO WATER TABLE
O.G.S.	OIL & GRIT SEPARATOR
P.C.C.	PORTLAND CEMENT CONCRETE
P.C.	POINT OF CURVATURE
P.C.M.P.	PRE-COATED CORRUGATED METAL PIPE
PED.	PEDESTRIAN
P.	PROPERTY LINE
P.U.E.	PUBLIC USE EASEMENT
P.C.	POINT OF CURVATURE
P.C.C.	POINT OF COMPOUND CURVE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
P.V.C.	POINT OF VERTICAL CURVE
P.V.I.	POINT OF VERTICAL INTERSECTION
P.V.T.	POINT OF VERTICAL TANGENCY
R.	RADIUS
R & R	REMOVE AND REPLACE/RELOCATE/RE-SET
R.A.P.	RECYCLE ASPHALT PAVEMENT
R.O.W.	RIGHT-OF-WAY
R.B.	RESILIENT SEAT
RT.	RIGHT
S.E.	SUPER ELEVATION
S.I.	STREET INTERSECTION
S.P.	SPECIAL PROVISION
S.S.	SANITARY SEWER
STA.	STATION
STD. DTL.	M.A.S.S. STANDARD DETAIL
ST.	STREET
STR.	STRUCTURE
SW	SIDEWALK
T.B.C.	TOP BACK CURB
T.B.M.	TEMPORARY BENCH MARK
T.B.	THRUST BLOCK
T.O.W.	TOP OF WALL
V.B.	VALVE BOX
V.P.I.	VERTICAL POINT OF INTERSECTION
(DIM)	DIMENSION FROM RECORD DRAWING
⊗	DETAIL AND SHEET NUMBER FOR DETAIL

LEGEND

EXISTING	PROPOSED	
		CENTERLINE
		PROPERTY LINE
		EASEMENT LINE
		SECTION LINE
		UNPAVED (GRAVEL) EDGE OF ROAD
		EDGE OF PAVEMENT
		DRAINAGE ARROW
		CULVERT
		FENCE (AS NOTED)
		ROCK
		BUSH
		DECIDUOUS TREE
		CONIFEROUS TREE
		VEGETATION
		GUARDRAIL
		PRIVATE SIGN
		OIL/GAS/MONITOR WELL
		LAKE OR POND
		CONTOUR LINES
	—SD—	STORM DRAIN LINE
		SANITARY SEWER LINE
		WATER LINE
		GAS LINE
		UNDERGROUND ELECTRIC LINE
		OVERHEAD ELECTRIC LINE
		OVERHEAD ELECT. & TELE.
		UNDERGROUND TELEPHONE LINE
		OVERHEAD TELEPHONE LINE
		UNDERGROUND CABLE TV
		OVERHEAD CABLE TV LINE
		STORM DRAIN MANHOLE
		CATCH BASIN
		SANITARY SEWER MANHOLE
		WATER WELL
		WATER VALVE
		FIRE HYDRANT
		WATER PLUG
		GAS MANHOLE
		GAS METER
		ELECTRIC PEDESTAL
		ELECTRIC METER
		ELECTRIC RISER
		ELECTRIC J-BOX
		ELECTRIC MANHOLE
		LIGHT POLE
		LIGHTING J-BOX
		UTILITY/POWER POLE
		SIGNAL POLE W/MAST ARM
		TRAFFIC J-BOX
		UTILITY POLE
		GUY POLE
		GUY ANCHOR
		CONTROLLER OR ATR CABINET
		LOAD CENTER
		ELECTRIC TRANSFORMER
		TELEPHONE MANHOLE
		TELEPHONE J-BOX
		TELEPHONE PEDESTAL

GRADING NOTES:

1. ALL CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE MUNICIPALITY OF ANCHORAGE 1994 STANDARD SPECIFICATIONS STREETS - DRAINAGE - UTILITIES - PARKS (MASS), AS AMENDED.
2. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO BEGINNING CONSTRUCTION. THE FOLLOWING PERMITS AND SPECIFICATIONS SHALL BE MAINTAINED AT THE JOB SITE:
   - MUNICIPALITY OF ANCHORAGE BUILDING SAFETY PERMITS
   - MUNICIPALITY OF ANCHORAGE STANDARD SPECIFICATIONS
3. ALL BACKFILL SHALL BE COMPACTED TO 95%.
4. THE TOTAL VOLUME OF CLASSIFIED FILL IS APPROXIMATELY 108,000 CUBIC YARDS. TOTAL VOLUME OF EXCAVATION IS APPROXIMATELY 40,000 CUBIC YARDS. CONTRACTOR SHALL VERIFY QUANTITIES.
5. LOCATIONS OF UTILITIES SHOWN ON THE DRAWINGS ARE NOT EXACT. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS BY OBTAINING UTILITY LOCATES AT LEAST 48 HOURS PRIOR TO COMMENCING WORK.
6. METHOD OF CLEARING ACTIVITY WILL BE HYDRO-AXE.
7. EXCESS MATERIALS WILL BE HAULED TO SAND LAKE DISPOSAL SITE.
8. THE PROPERTY IS NOT LOCATED IN A FLOODPLAIN. A DEPARTMENT OF THE ARMY PERMIT POA-2006-1215-4 FISH CREEK HAS BEEN ISSUED FOR THIS SITE. IN ADDITION A MITIGATION PLAN FOR INTERNATIONAL AIRPORT ROAD AND C STREET, ANCHORAGE, ALASKA WAS PREPARED BY SHANNON & WILSON DATED JUNE 2008. ALL WORK WILL BE IN ACCORDANCE WITH THE PERMIT AND MITIGATION PLAN.
9. NO LAND CLEARING SHALL BE ACCOMPLISHED BEFORE ALL EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED.
10. THE CONTRACTOR MUST MAINTAIN HAUL ROUTES TO ORIGINAL OR BETTER CONDITIONS. TRUCK SPILLAGE MUST BE IMMEDIATELY REMOVED FROM PAVED ROADS.
11. DUST CONTROL MEASURES MUST BE PERFORMED DURING HAULING PERIODS WHEN NECESSARY.
12. 19.0 ACRES WILL BE FILLED.
13. 571 FENCE WILL BE INSTALLED AS SHOWN FOR EROSION CONTROL.
14. THE CONTRACTOR IS REQUIRED TO COMPLY WITH MUNICIPAL NOISE AND HOURS OF OPERATION REQUIREMENTS.
15. THE CONTRACTOR/OWNER SHALL NOTIFY THE MUNICIPALITY OF ANCHORAGE TO VERIFY PERMIT COMPLIANCE AT THE SITE. THIS NOTIFICATION MUST BE DONE WHEN 50 AND 100 PERCENT OF THE GRADING WORK IS COMPLETED.
16. THE PURPOSE OF FILLING THIS SITE IS TO PLACE PARKING LOT SURCHARGE TO PREPARE THE SITE FOR DEVELOPMENT.
17. SEE "SWPPP BMP LOCATION PLAN" FOR EROSION AND SEDIMENT CONTROL PLAN
18. FILL LIFTS ARE NOT TO EXCEED 12 INCHES.
19. A GEOTECHNICAL REPORT WAS PREPARED FOR THIS PROJECT BY DOWL ENGINEERS ENTITLED "DRAFT SUBSURFACE EXPLORATIONS AND FOUNDATION RECOMMENDATIONS, HOTEL ON FRAGMENT LOT 2 & LOT 3 C STREET AND INTERNATIONAL AIRPORT ROAD, ANCHORAGE, ALASKA APRIL 2008".
20. PHASE II OF CONSTRUCTION WILL REMOVE THE SURCHARGE AND FINE GRADE THE SITE AND DRAINAGE SWALES. ALL REQUIRED LANDSCAPING WILL BE INSTALLED WITH PHASE II.

REV	DATE	DESCRIPTION	BY

REVISIONS

LOUNSBURY & ASSOCIATES — CONSULTANT

STATE OF ALASKA — SEAL

FRAGMENT LOTS 1-3

GRADING NOTES & LEGEND

DOUBLE TREE SUBDIVISION

SCALE: N/A | DATE: JULY 2008 | DRAWN BY: | JOB NO. 08-049 | SHEET 1 of 10

POA- 2006-1215-M1
July 2008
Page 2 of 12

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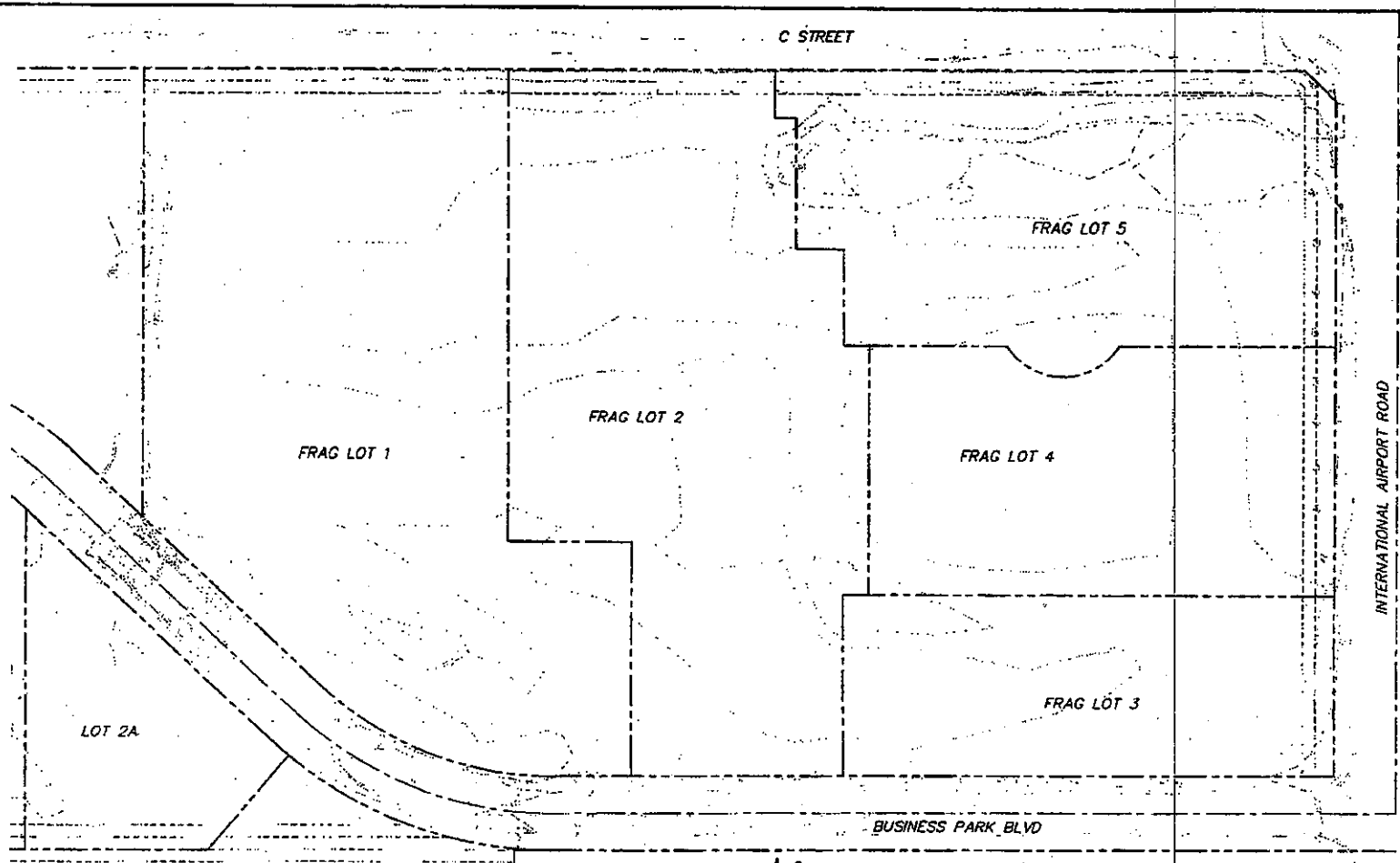

REV.	DATE	DESCRIPTION	BY

REVISIONS

LOUIS KNOTT & ASSOCIATES

CONSULTANT

SEAL

FRAGMENT LOTS 1-5

EXISTING CONDITIONS

DOUBLE TREE SUBDIVISION

SCALE: IN 1" = 40'

DATE: JULY 2008

SHEET 2 of 10

POA-2006-1215-M1
July 2008
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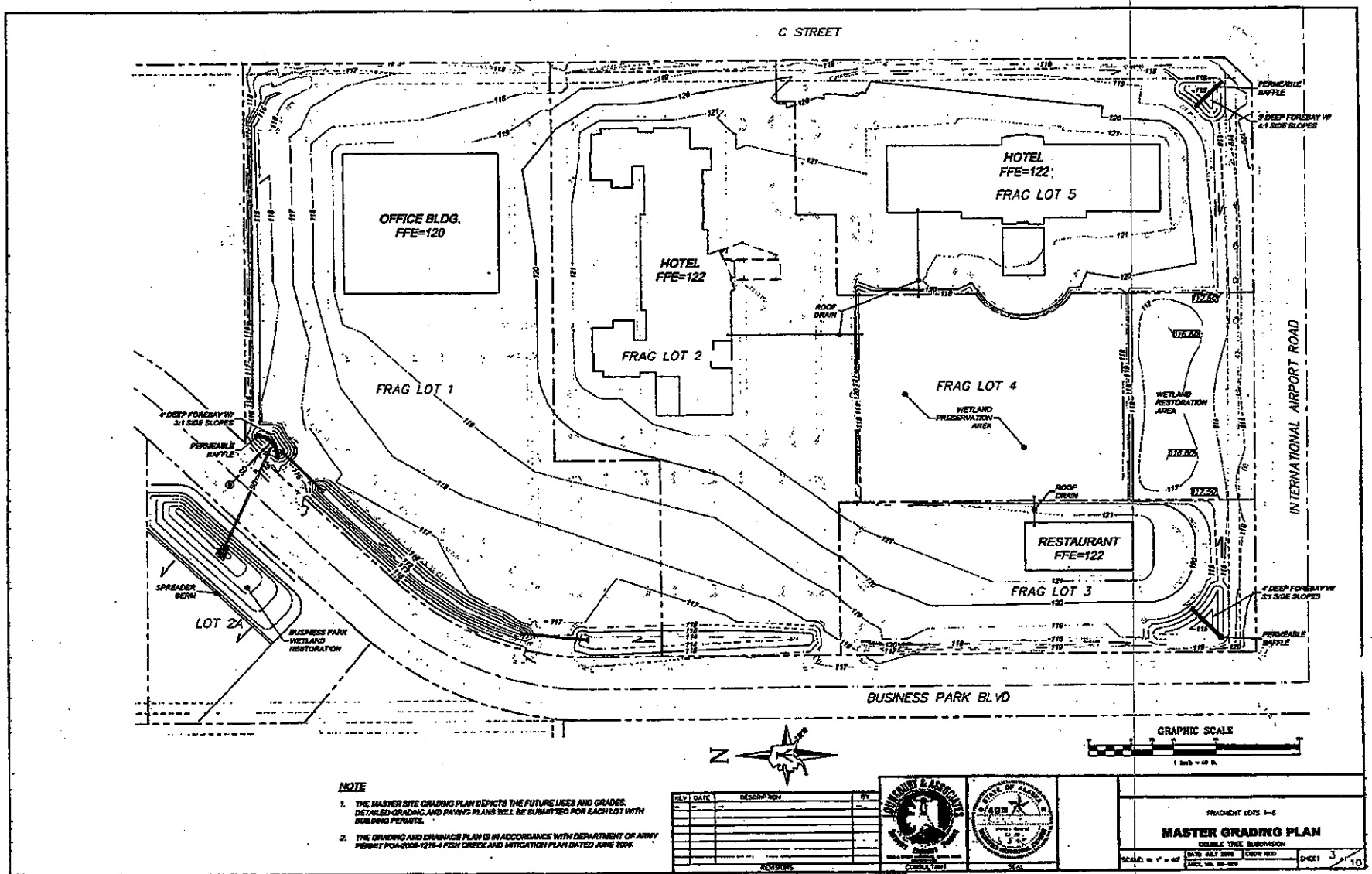


NOTE

1. THE MASTER SITE GRADING PLAN DEPICTS THE FUTURE USES AND GRADES. DETAILED GRADING AND PAVING PLANS WILL BE SUBMITTED FOR EACH LOT WITH BUILDING PERMITS.
2. THE GRADING AND DRAINAGE PLAN IS IN ACCORDANCE WITH DEPARTMENT OF ARMY PERMIT POA-2006-1215-4 FISH CREEK AND MITIGATION PLAN DATED JUNE 2006.

REV	DATE	DESCRIPTION	BY

REVISIONS

LOUNSBURY & ASSOCIATES

STATE OF ALASKA

SEAL

FRAGMENT LOTS 1–5

MASTER GRADING PLAN

DOUBLE TREE SUBDIVISION

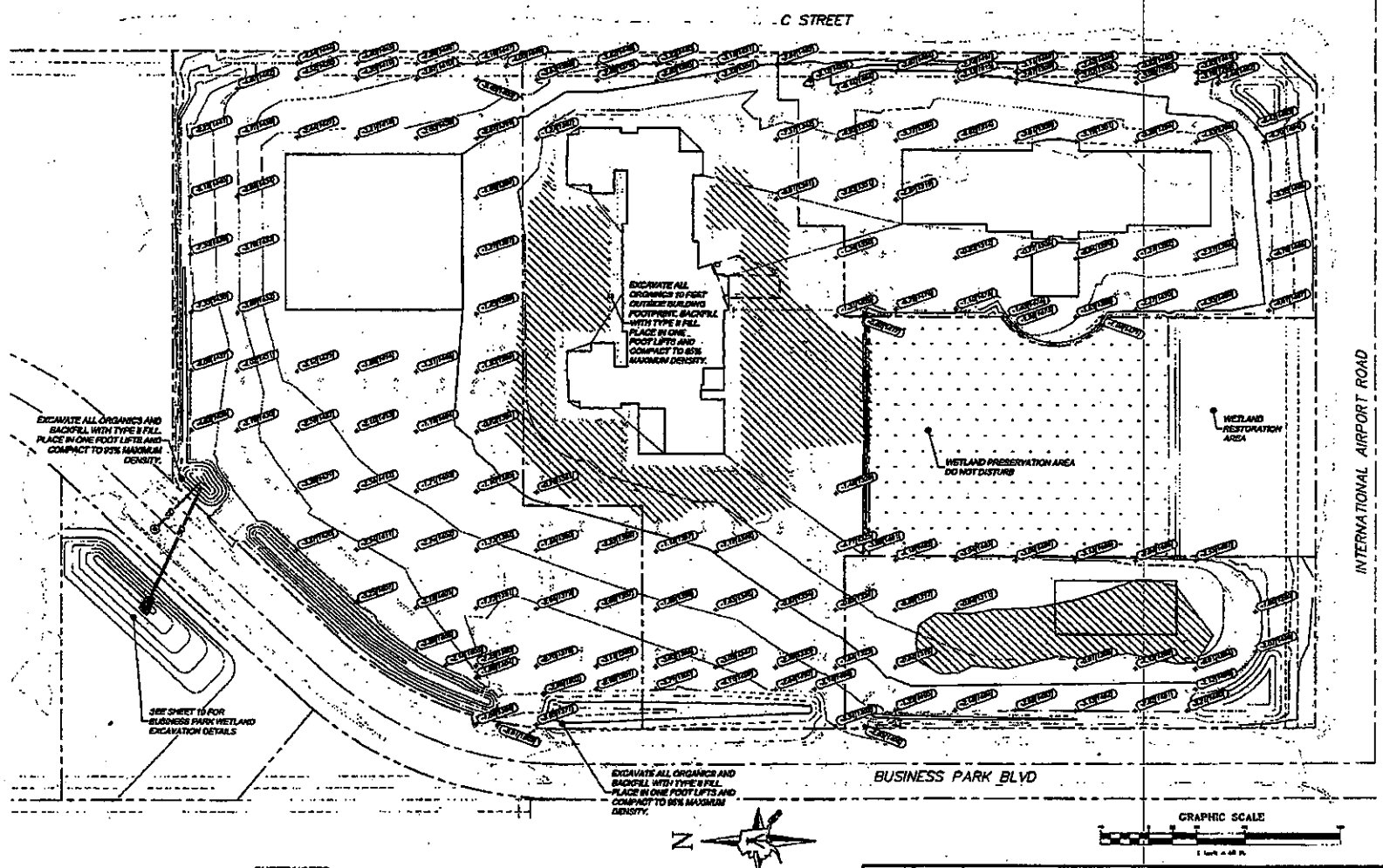
SCALE: 1" = 40'

DATE: JULY 2006

DRAWN BY:

SHEET 3 of 10

POA-2006-1215-M1
July 2008
Page 4 of 12



DENOTES ESTIMATED AREAS NOT TO BE EXCAVATED

WETLAND PRESERVATION AREA DO NOT DISTURB

SHEET NOTES

1. COMPLETE PARTIAL EXCAVATION OF EXISTING ORGANIC SOIL (PEAT).
2. PLACE GEOTEXTILE SEPARATION FABRIC PRIOR TO PLACING TYPE II GRAVEL.
3. SEE SHEET 5 FOR EXCAVATION POINT TABLE.
4. SEE SHEET 8 FOR SURCHARGE GRADING PLAN.

REV	DATE	DESCRIPTION	BY

REVISIONS

CONSULTANT

SEAL

FRAGMENT LOTS 1-5

EXCAVATION PLAN

GOUBLE, INC. SUBDIVISION

SCALE: IN 1" = 40'

DATE: JULY 2008

PROJ. NO. 09-999

SHEET 4 of 10

PO A-2006-1215-M1
July 2008
Page 5 of 12

EXCAVATION POINT SCHEDULE				
POINT ID	NORTHING	EASTING	CUT DEPTH	ELEV
1240	324413.[illegible]	347908.001	-1.60	116.22
1241	324403.[illegible]	347908.001	-3.01	116.62
1242	324400.[illegible]	348034.001	-3.26	116.40
1243	324400.[illegible]	348033.001	-2.62	116.61
1244	324400.[illegible]	348033.001	-3.78	116.13
1245	324413.[illegible]	348034.001	-2.12	116.52
1246	324413.[illegible]	348034.001	-1.23	116.37
1247	324413.[illegible]	348034.001	-3.34	116.42
1248	324413.[illegible]	348034.001	-3.05	116.03
1249	324413.[illegible]	348034.001	-4.01	116.42
1250	324413.[illegible]	348034.001	-1.86	116.21
1251	324413.[illegible]	348034.001	-4.44	116.38
1252	324413.[illegible]	348034.001	-4.18	116.68
1253	324413.[illegible]	348034.001	-3.01	116.62
1254	324413.[illegible]	348034.001	-3.72	116.31
1255	324413.[illegible]	348034.001	-3.00	116.03
1256	324413.[illegible]	348034.001	-3.27	116.10
1257	324413.[illegible]	348034.001	-3.05	116.30
1258	324413.[illegible]	348034.001	-3.05	116.08
1259	324413.[illegible]	348034.001	-3.42	116.44
1260	324413.[illegible]	348034.001	-3.32	116.33
1261	324413.[illegible]	348034.001	-3.23	116.43
1262	324413.[illegible]	348034.001	-3.26	116.40
1263	324413.[illegible]	348034.001	-3.34	116.42
1264	324413.[illegible]	348034.001	-3.34	116.42
1265	324413.[illegible]	348034.001	-3.34	116.42
1266	324413.[illegible]	348034.001	-3.34	116.42
1267	324413.[illegible]	348034.001	-3.34	116.42
1268	324413.[illegible]	348034.001	-3.34	116.42
1269	324413.[illegible]	348034.001	-3.34	116.42
1270	324413.[illegible]	348034.001	-3.34	116.42
1271	324413.[illegible]	348034.001	-3.34	116.42
1272	324413.[illegible]	348034.001	-3.34	116.42
1273	324413.[illegible]	348034.001	-3.34	116.42
1274	324413.[illegible]	348034.001	-3.42	116.44
1275	324413.[illegible]	348034.001	-3.32	116.33
1276	324413.[illegible]	348034.001	-3.23	116.43
1277	324413.[illegible]	348034.001	-3.26	116.40
1278	324413.[illegible]	348034.001	-3.34	116.42
1279	324413.[illegible]	348034.001	-3.34	116.42
1280	324413.[illegible]	348034.001	-3.34	116.42
1281	324413.[illegible]	348034.001	-3.34	116.42
1282	324413.[illegible]	348034.001	-3.34	116.42
1283	324413.[illegible]	348034.001	-3.34	116.42
1284	324413.[illegible]	348034.001	-3.34	116.42
1285	324413.[illegible]	348034.001	-3.34	116.42
1286	324413.[illegible]	348034.001	-3.42	116.44
1287	324413.[illegible]	348034.001	-3.32	116.33
1288	324413.[illegible]	348034.001	-3.23	116.43
1289	324413.[illegible]	348034.001	-3.26	116.40
1290	324413.[illegible]	348034.001	-3.34	116.42
1291	324413.[illegible]	348034.001	-3.34	116.42
1292	324413.[illegible]	348034.001	-3.34	116.42
1293	324413.[illegible]	348034.001	-3.34	116.42
1294	324413.[illegible]	348034.001	-3.34	116.42
1295	324413.[illegible]	348034.001	-3.34	116.42
1296	324413.[illegible]	348034.001	-3.42	116.44
1297	324413.[illegible]	348034.001	-3.32	116.33
1298	324413.[illegible]	348034.001	-3.23	116.43
1299	324413.[illegible]	348034.001	-3.26	116.40
1300	324413.[illegible]	348034.001	-3.34	116.42
1301	324413.[illegible]	348034.001	-3.34	116.42
1302	324413.[illegible]	348034.001	-3.34	116.42
1303	324413.[illegible]	348034.001	-3.34	116.42
1304	324413.[illegible]	348034.001	-3.34	116.42
1305	324413.[illegible]	348034.001	-3.34	116.42
1306	324413.[illegible]	348034.001	-3.42	116.44
1307	324413.[illegible]	348034.001	-3.32	116.33
1308	324413.[illegible]	348034.001	-3.23	116.43
1309	324413.[illegible]	348034.001	-3.26	116.40
1310	324413.[illegible]	348034.001	-3.34	116.42
1311	324413.[illegible]	348034.001	-3.34	116.42
1312	324413.[illegible]	348034.001	-3.34	116.42
1313	324413.[illegible]	348034.001	-3.34	116.42
1314	324413.[illegible]	348034.001	-3.34	116.42
1315	324413.[illegible]	348034.001	-3.42	116.44
1316	324413.[illegible]	348034.001	-3.32	116.33
1317	324413.[illegible]	348034.001	-3.23	116.43
1318	324413.[illegible]	348034.001	-3.26	116.40
1319	324413.[illegible]	348034.001	-3.34	116.42
1320	324413.[illegible]	348034.001	-3.34	116.42
1321	324413.[illegible]	348034.001	-3.34	116.42
1322	324413.[illegible]	348034.001	-3.34	116.42
1323	324413.[illegible]	348034.001	-3.34	116.42
1324	324413.[illegible]	348034.001	-3.42	116.44
1325	324413.[illegible]	348034.001	-3.32	116.33
1326	324413.[illegible]	348034.001	-3.23	116.43
1327	324413.[illegible]	348034.001	-3.26	116.40
1328	324413.[illegible]	348034.001	-3.34	116.42
1329	324413.[illegible]	348034.001	-3.34	116.42
1330	324413.[illegible]	348034.001	-3.34	116.42
1331	324413.[illegible]	348034.001	-3.34	116.42
1332	324413.[illegible]	348034.001	-3.34	116.42
1333	324413.[illegible]	348034.001	-3.42	116.44
1334	324413.[illegible]	348034.001	-3.32	116.33
1335	324413.[illegible]	348034.001	-3.23	116.43
1336	324413.[illegible]	348034.001	-3.26	116.40
1337	324413.[illegible]	348034.001	-3.34	116.42
1338	324413.[illegible]	348034.001	-3.34	116.42
1339	324413.[illegible]	348034.001	-3.34	116.42
1340	324413.[illegible]	348034.001	-3.34	116.42
1341	324413.[illegible]	348034.001	-3.34	116.42
1342	324413.[illegible]	348034.001	-3.42	116.44
1343	324413.[illegible]	348034.001	-3.32	116.33
1344	324413.[illegible]	348034.001	-3.23	116.43
1345	324413.[illegible]	348034.001	-3.26	116.40
1346	324413.[illegible]	348034.001	-3.34	116.42
1347	324413.[illegible]	348034.001	-3.34	116.42
1348	324413.[illegible]	348034.001	-3.34	116.42
1349	324413.[illegible]	348034.001	-3.34	116.42
1350	324413.[illegible]	348034.001	-3.34	116.42
1351	324413.[illegible]	348034.001	-3.42	116.44
1352	324413.[illegible]	348034.001	-3.32	116.33
1353	324413.[illegible]	348034.001	-3.23	116.43
1354	324413.[illegible]	348034.001	-3.26	116.40
1355	324413.[illegible]	348034.001	-3.34	116.42
1356	324413.[illegible]	348034.001	-3.34	116.42
1357	324413.[illegible]	348034.001	-3.34	116.42
1358	324413.[illegible]	348034.001	-3.34	116.42
1359	324413.[illegible]	348034.001	-3.34	116.42
1360	324413.[illegible]	348034.001	-3.42	116.44
1361	324413.[illegible]	348034.001	-3.32	116.33
1362	324413.[illegible]	348034.001	-3.23	116.43
1363	324413.[illegible]	348034.001	-3.26	116.40
1364	324413.[illegible]	348034.001	-3.34	116.42
1365	324413.[illegible]	348034.001	-3.34	116.42
1366	324413.[illegible]	348034.001	-3.34	116.42
1367	324413.[illegible]	348034.001	-3.34	116.42
1368	324413.[illegible]	348034.001	-3.34	116.42
1369	324413.[illegible]	348034.001	-3.42	116.44
1370	324413.[illegible]	348034.001	-3.32	116.33
1371	324413.[illegible]	348034.001	-3.23	116.43
1372	324413.[illegible]	348034.001	-3.26	116.40
1373	324413.[illegible]	348034.001	-3.34	116.42
1374	324413.[illegible]	348034.001	-3.34	116.42
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1377	324413.[illegible]	348034.001	-3.34	116.42
1378	324413.[illegible]	348034.001	-3.42	116.44
1379	324413.[illegible]	348034.001	-3.32	116.33
1380	324413.[illegible]	348034.001	-3.23	116.43
1381	324413.[illegible]	348034.001	-3.26	116.40
1382	324413.[illegible]	348034.001	-3.34	116.42
1383	324413.[illegible]	348034.001	-3.34	116.42
1384	324413.[illegible]	348034.001	-3.34	116.42
1385	324413.[illegible]	348034.001	-3.34	116.42
1386	324413.[illegible]	348034.001	-3.34	116.42
1387	324413.[illegible]	348034.001	-3.42	116.44
1388	324413.[illegible]	348034.001	-3.32	116.33
1389	324413.[illegible]	348034.001	-3.23	116.43
1390	324413.[illegible]	348034.001	-3.26	116.40
1391	324413.[illegible]	348034.001	-3.34	116.42
1392	324413.[illegible]	348034.001	-3.34	116.42
1393	324413.[illegible]	348034.001	-3.34	116.42
1394	324413.[illegible]	348034.001	-3.34	116.42
1395	324413.[illegible]	348034.001	-3.42	116.44
1396	324413.[illegible]	348034.001	-3.32	116.33
1397	324413.[illegible]	348034.001	-3.23	116.43
1398	324413.[illegible]	348034.001	-3.26	116.40
1399	324413.[illegible]	348034.001	-3.34	116.42
1400	324413.[illegible]	348034.001	-3.34	116.42
1401	324413.[illegible]	348034.001	-3.34	116.42
1402	324413.[illegible]	348034.001	-3.34	116.42
1403	324413.[illegible]	348034.001	-3.34	116.42
1404	324413.[illegible]	348034.001	-3.42	116.44
1405	324413.[illegible]	348034.001	-3.32	116.33
1406	324413.[illegible]	348034.001	-3.23	116.43
1407	324413.[illegible]	348034.001	-3.26	116.40
1408	324413.[illegible]	348034.001	-3.34	116.42
1409	324413.[illegible]	348034.001	-3.34	116.42
1410	324413.[illegible]	348034.001	-3.34	116.42
1411	324413.[illegible]	348034.001	-3.34	116.42
1412	324413.[illegible]	348034.001	-3.34	116.42
1413	324413.[illegible]	348034.001	-3.42	116.44
1414	324413.[illegible]	348034.001	-3.32	116.33
1415	324413.[illegible]	348034.001	-3.23	116.43
1416	324413.[illegible]	348034.001	-3.26	116.40
1417	324413.[illegible]	348034.001	-3.34	116.42
1418	324413.[illegible]	348034.001	-3.34	116.42
1419	324413.[illegible]	348034.001	-3.34	116.42
1420	324413.[illegible]	348034.001	-3.34	116.42
1421	324413.[illegible]	348034.001	-3.34	116.42
1422	324413.[illegible]	348034.001	-3.42	116.44
1423	324413.[illegible]	348034.001	-3.32	116.33
1424	324413.[illegible]	348034.001	-3.23	116.43
1425	324413.[illegible]	348034.001	-3.26	116.40
1426	324413.[illegible]	348034.001	-3.34	116.42
1427	324413.[illegible]	348034.001	-3.34	116.42

EXCAVATION POINT SCHEDULE				
POINT ID	NORTHING	EASTING	CUT DEPTH	ELEV
1428	324413.[illegible]	348034.001	-3.34	116.42
1429	324413.[illegible]	348034.001	-3.34	116.42
1430	324413.[illegible]	348034.001	-3.42	116.44
1431	324413.[illegible]	348034.001	-3.32	116.33
1432	324413.[illegible]	348034.001	-3.23	116.43
1433	324413.[illegible]	348034.001	-3.26	116.40
1434	324413.[illegible]	348034.001	-3.34	116.42
1435	324413.[illegible]	348034.001	-3.34	116.42
1436	324413.[illegible]	348034.001	-3.34	116.42
1437	324413.[illegible]	348034.001	-3.34	116.42
1438	324413.[illegible]	348034.001	-3.34	116.42
1439	324413.[illegible]	348034.001	-3.42	116.44
1440	324413.[illegible]	348034.001	-3.32	116.33
1441	324413.[illegible]	348034.001	-3.23	116.43
1442	324413.[illegible]	348034.001	-3.26	116.40
1443	324413.[illegible]	348034.001	-3.34	116.42
1444	324413.[illegible]	348034.001	-3.34	116.42
1445	324413.[illegible]	348034.001	-3.34	116.42
1446	324413.[illegible]	348034.001	-3.34	116.42
1447	324413.[illegible]	348034.001	-3.34	116.42
1448	324413.[illegible]	348034.001	-3.42	116.44
1449	324413.[illegible]	348034.001	-3.32	116.33
1450	324413.[illegible]	348034.001	-3.23	116.43
1451	324413.[illegible]	348034.001	-3.26	116.40
1452	324413.[illegible]	348034.001	-3.34	116.42
1453	324413.[illegible]	348034.001	-3.34	116.42
1454	324413.[illegible]	348034.001	-3.34	116.42
1455	324413.[illegible]	348034.001	-3.34	116.42
1456	324413.[illegible]	348034.001	-3.34	116.42
1457	324413.[illegible]	348034.001	-3.42	116.44
1458	324413.[illegible]	348034.001	-3.32	116.33
1459	324413.[illegible]	348034.001	-3.23	116.43
1460	324413.[illegible]	348034.001	-3.26	116.40
1461	324413.[illegible]	348034.001	-3.34	116.42
1462	324413.[illegible]	348034.001	-3.34	116.42
1463	324413.[illegible]	348034.001	-3.34	116.42
1464	324413.[illegible]	348034.001	-3.34	116.42
1465	324413.[illegible]	348034.001	-3.34	116.42
1466	324413.[illegible]	348034.001	-3.42	116.44
1467	324413.[illegible]	348034.001	-3.32	116.33
1468	324413.[illegible]	348034.001	-3.23	116.43
1469	324413.[illegible]	348034.001	-3.26	116.40
1470	324413.[illegible]	348034.001	-3.34	116.42
1471	324413.[illegible]	348034.001	-3.34	116.42
1472	324413.[illegible]	348034.001	-3.34	116.42
1473	324413.[illegible]	348034.001	-3.34	116.42
1474	324413.[illegible]	348034.001	-3.42	116.44
1475	324413.[illegible]	348034.001	-3.32	116.33
1476	324413.[illegible]	348034.001	-3.23	116.43
1477	324413.[illegible]	348034.001	-3.26	116.40
1478	324413.[illegible]	348034.001	-3.34	116.42
1479	324413.[illegible]	348034.001	-3.34	116.42
1480	324413.[illegible]	348034.001	-3.34	116.42
1481	324413.[illegible]	348034.001	-3.34	116.42
1482	324413.[illegible]	348034.001	-3.42	116.44
1483	324413.[illegible]	348034.001	-3.32	116.33
1484	324413.[illegible]	348034.001	-3.23	116.43
1485	324413.[illegible]	348034.001	-3.26	116.40
1486	324413.[illegible]	348034.001	-3.34	116.42
1487	324413.[illegible]	348034.001	-3.34	116.42
1488	324413.[illegible]	348034.001	-3.34	116.42
1489	324413.[illegible]	348034.001	-3.34	116.42
1490	324413.[illegible]	348034.001	-3.42	116.44
1491	324413.[illegible]	348034.001	-3.32	116.33
1492	324413.[illegible]	348034.001	-3.23	116.43
1493	324413.[illegible]	348034.001	-3.26	116.40
1494	324413.[illegible]	348034.001	-3.34	116.42
1495	324413.[illegible]	348034.001	-3.34	116.42
1496	324413.[illegible]	348034.001	-3.34	116.42
1497	324413.[illegible]	348034.001	-3.34	116.42
1498	324413.[illegible]	348034.001	-3.42	116.44
1499	324413.[illegible]	348034.001	-3.32	116.33
1500	324413.[illegible]	348034.001	-3.23	116.43
1501	324413.[illegible]	348034.001	-3.26	116.40
1502	324413.[illegible]	348034.001	-3.34	116.42
1503	324413.[illegible]	348034.001	-3.34	116.42
1504	324413.[illegible]	348034.001	-3.34	116.42
1505	324413.[illegible]	348034.001	-3.34	116.42
1506	324413.[illegible]	348034.001	-3.34	116.42
1507	324413.[illegible]	348034.001	-3.34	116.42

REV.	DATE	DESCRIPTION	BY
-	-	-	-

REVISIONS

CONSULTANT

SEAL

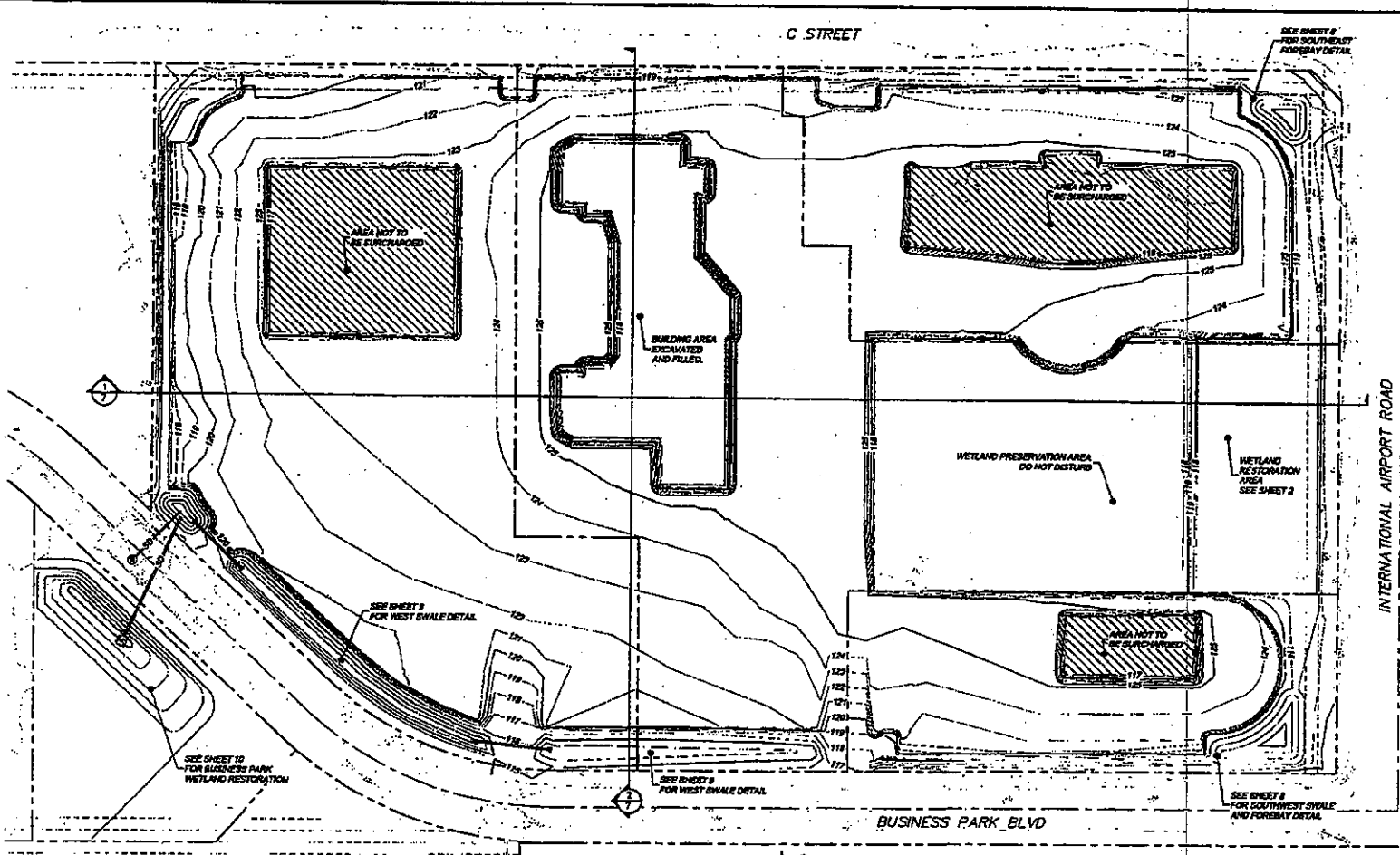
FRAGMENT LOTS 1-5

EXCAVATION SCHEDULE

DOUBLE WEE SUBDIVISION

SCALE: NTS | DATE: JULY 2008 | DRGN: 1030 | ACCT. NO. 05-089 | SHEET 5 of 10

POA-2006-1215-M1
July 2008
Page 6 of 12



SHEET NOTES

1. COMPLETE EXCAVATION PRIOR TO PLACING SURCHARGE FILL.
2. PLACE GEOTEXTILE SEPARATION FABRIC PRIOR TO FILLING.
3. ALL FILL SHALL BE TYPE II.
4. STRUCTURAL FILL SHALL BE PLACED ON ONE FOOT LIFTS AND COMPACTED TO A DENSITY AT LEAST 95% OF THE MAXIMUM DENSITY.
5. ALL DRAINAGE SWALES SHALL BE SEEDED WITH WETLAND SEED MIX.
6. FINAL LANDSCAPING OF SWALES AND OUTLET POND WILL BE COMPLETED AFTER THE SURCHARGE IS REMOVED AND FINISH GRADING IS COMPLETE.
7. FINAL LANDSCAPING SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF THE ARMY PERMIT POA-2006-1215-FISH CREEK AND MITIGATION PLAN DATED JUNE 2008.

REV.	DATE	DESCRIPTION	BY

REVISIONS

CONSULTANT

SEAL

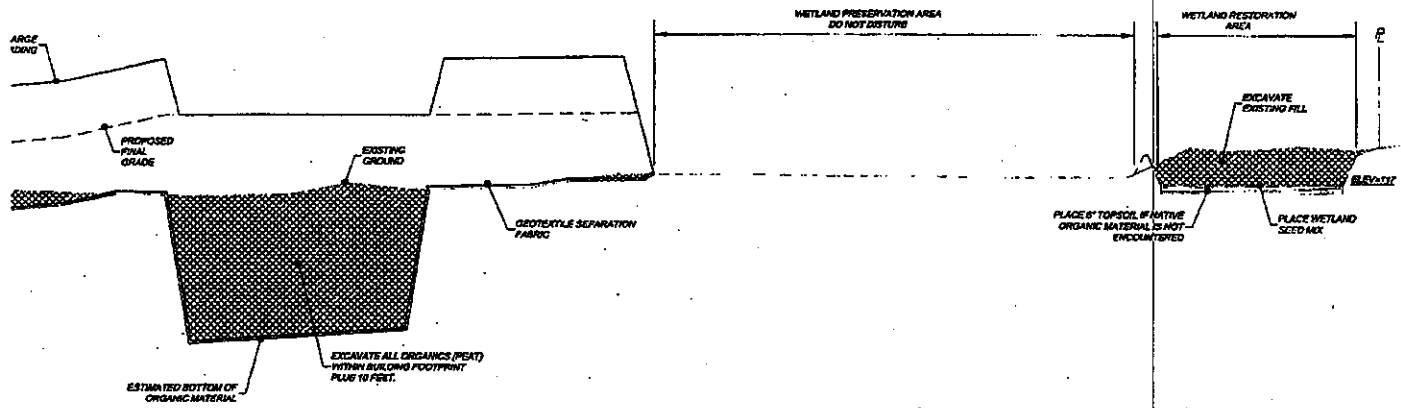
FRAGIOVI LOTS 1-3

SURCHARGE GRADING PLAN

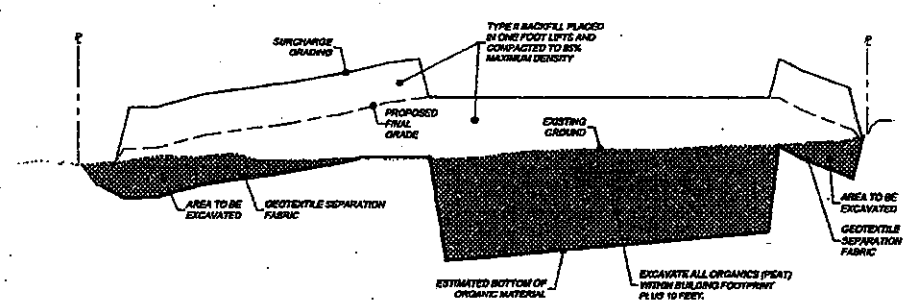
DOUBLE TREE SUBDIVISION

SCALE: H: 1" = 40' | DATE: JULY 2008 | DRAWN: MGM | PROJ. NO. 08-099 | SHEET 6 of 10

POA-2006-1215-M1
July 2008
Page 7 of 12



1 NORTH - SOUTH SECTION



2 NORTH - SOUTH SECTION

REV	DATE	DESCRIPTION	BY

REVISIONS

CONSULTANT

SEAL

FRACHOVT LOTS 1-5

GRADING SECTIONS

DOUBLE TREE SUBDIVISION

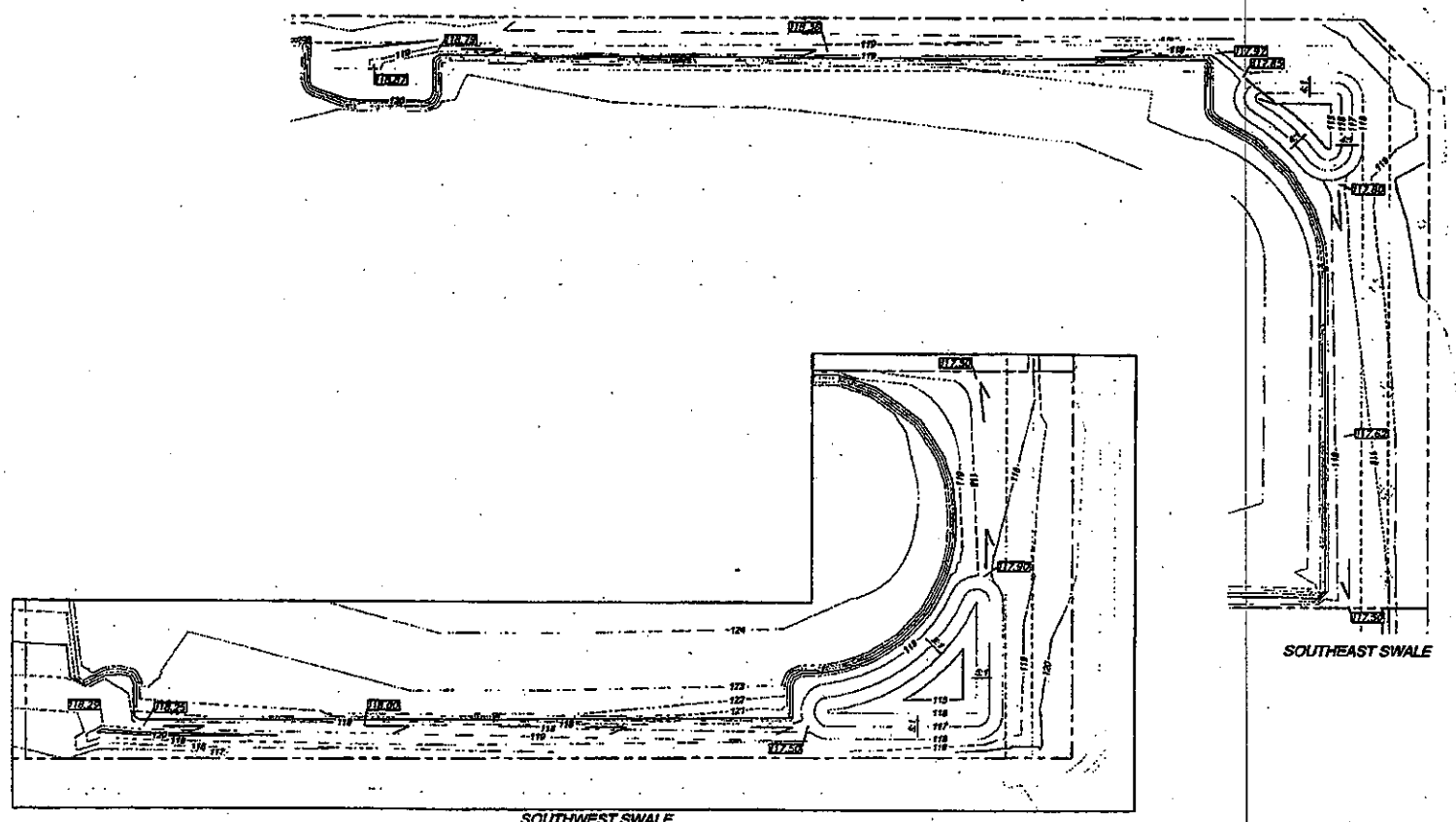
SCALE: H 1" = 40' V 1" = 5'

DATE: JULY 2006 | DRAWN BY:

PROJ. NO. 06-020

SHEET 7 OF 10

POA-2006-1215-M1
July 2008
Page 8 of 12



GRAPHIC SCALE

REV	DATE	DESCRIPTION	BY

REVISIONS

COMPANY

SEAL

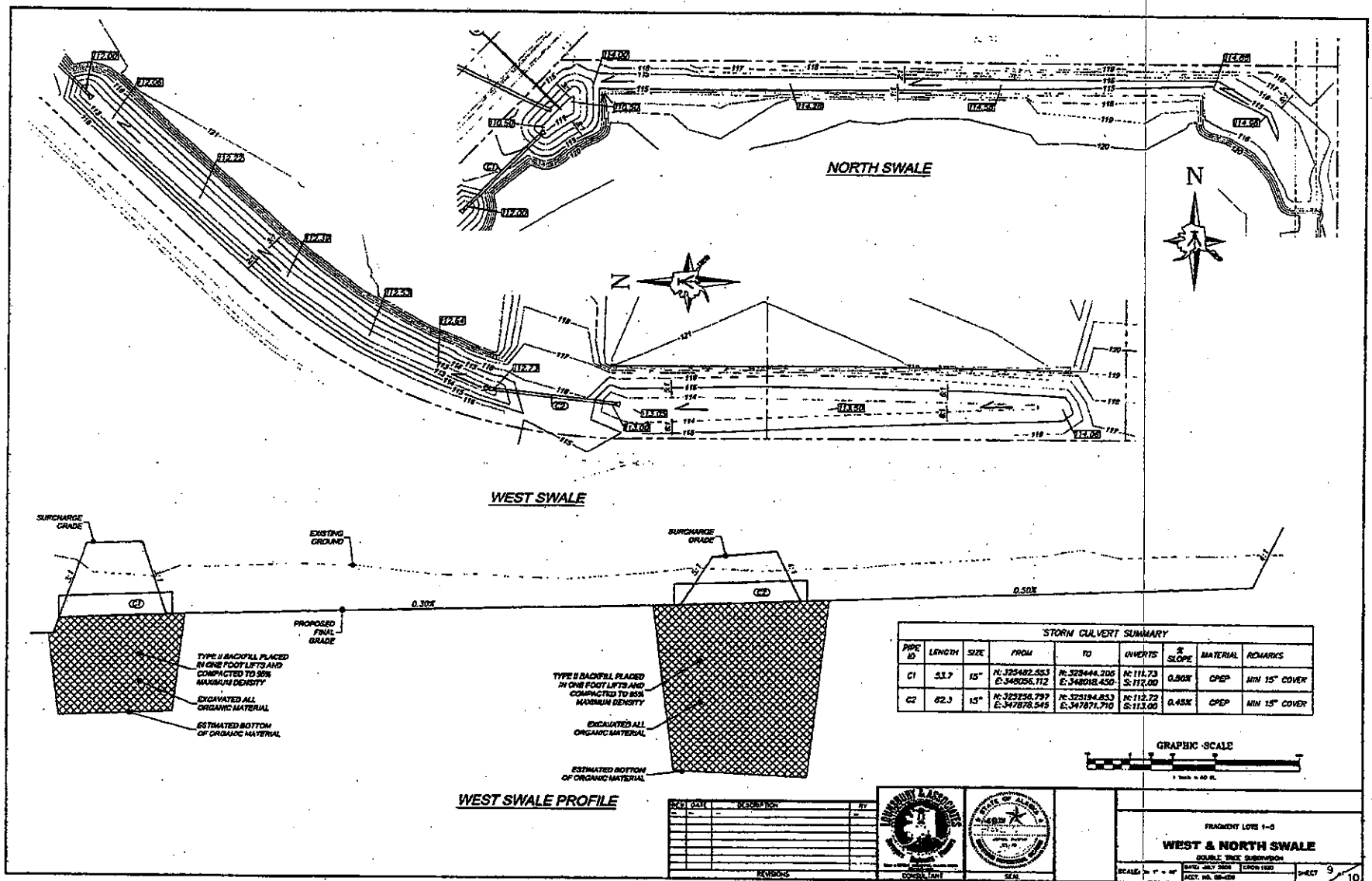
FRACTIONAL LOTS 1-5

SOUTHWEST & SOUTHEAST SWALE

DOUBLE TREE SUBDIVISION

SCALE: 1" = 40' | DATE: JULY 2008 | DRAWN: TEJO | ACCT. NO. 06-009 | SHEET 8 of 10

POA-2006-1215-M1
July 2008
Page 9 of 12



STORM CULVERT SUMMARY

PIPE ID	LENGTH	SIZE	FROM	TO	INVERTS	% SLOPE	MATERIAL	REMARKS
C1	53.7	15"	N: 325482.553 E: 346056.112	N: 325444.206 E: 346018.450	N: 111.73 S: 112.00	0.50%	CPEP	MIN 15" COVER
C2	62.3	15"	N: 325258.797 E: 347878.545	N: 325194.853 E: 347871.710	N: 112.72 S: 113.00	0.45%	CPEP	MIN 15" COVER

POA-2006-1215-M1
July 2008
Page 10 of 12

TABLE 2 - ESTIMATED YEARLY SURFACE WATER RUNOFF

Post Construction Drainage Area - (excludes 1.70-acre Southern Wetland Mitigation Area)	Size (Acres)	Precipitation (Inches/period) [1]	Runoff Curve Number[2]		Runoff Volume (Acre-feet/period)[3]	Total Flow (Acre-feet/period)
	A	P	CN	CN_W	Q_R	
Surrounding Properties						
Inflow From Surrounding Properties						
Pervious Non-Vegetated Areas (Gravel roads, parking lots, yards, etc.)	0.00	16	74	N/A	0.00	
Impervious Areas (Paved roads, parking lots, roofs, driveways, etc.)	0.00	16	98	N/A	0.00	
Impervious Areas (Paved Business Park Boulevard)	0.00	16	98	N/A	0.00	
Subtotal	**0.00**				**0.00**	
Constructed Bioswales/Forebays, Landscaped Areas, and Impervious Areas						
Inflow From On Site Areas						
Impervious Areas Excluding Snow (Paved roads, parking lots, and driveways, etc.)[4]	5.87	10.4	98	84	4.14	
Impervious Areas Including Snow (Roofs)	1.48	16	98	84	1.72	
Created Bioswale/Forebay	1.32	16	60	84	1.54	
Impervious Landscaping areas (sidewalks)	0.34	10.4	98	84	0.01	
Pervious landscaping and other permeable areas	1.34	16	30	84	1.56	
Subtotal	**10.35**				**8.97**	
Net Surface Water Balance (Outflow)[5]	**10.35**					**9.0**

[1] Estimated average precipitation for Anchorage is approximately 16 inches total (NOAA NWS, 2007). Estimated average rainfall (excludes snow) for Anchorage is approximately 10.4 inches total (NOAA NWS, 2007).

[2] CN = Soil Conservation Service Runoff Curve Number obtained from *Urban Hydrology For Small Watersheds, Technical Release 55* (NRCS 1986). Hydrologic Soil Group A used for Post-Construction conditions due to the degree of fill for building footprint and

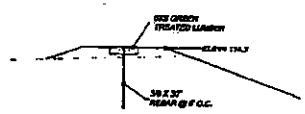
CN_W = Weighted Runoff Curve Number = $\Sigma(CN*A)/A_{Total}$; assumes evaporation of snow during winter, infiltration of snowmelt into unsaturated soil, and spring time snowmelt runoff is accounted for using the Weighted Runoff Curve Number.

[3] Q_R = Runoff Volume = $(P - I_a)^2/(P - Ia+S)$ where P = Annual Precipitation; Ia = 0.2S; and S = $(1000/CN_W) - 10$.

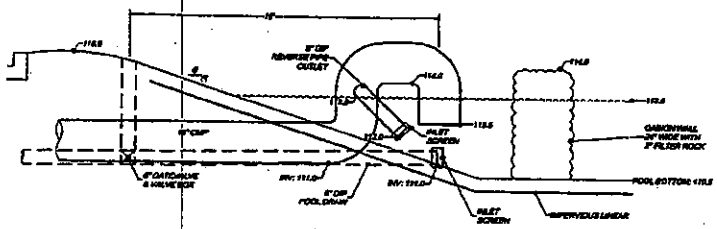
[4] Snow melt from snow that has fallen on paved roads, parking lots, and driveway areas will not contribute to the surface water runoff. Instead, the snow will be temporarily stockpiled and transported to an off-site snow storage area.

[5] Outflow from the Complex (excludes the 1.70-acre Southern Wetland Mitigation Area)

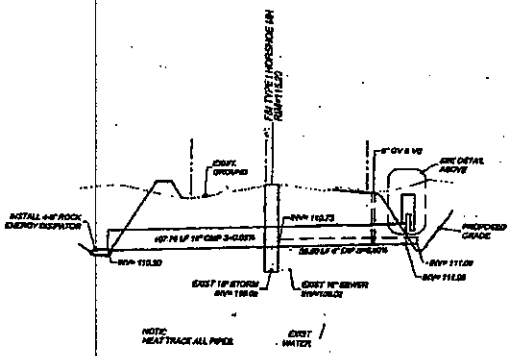
POA-2006-1215-M1
Page 12 of 12



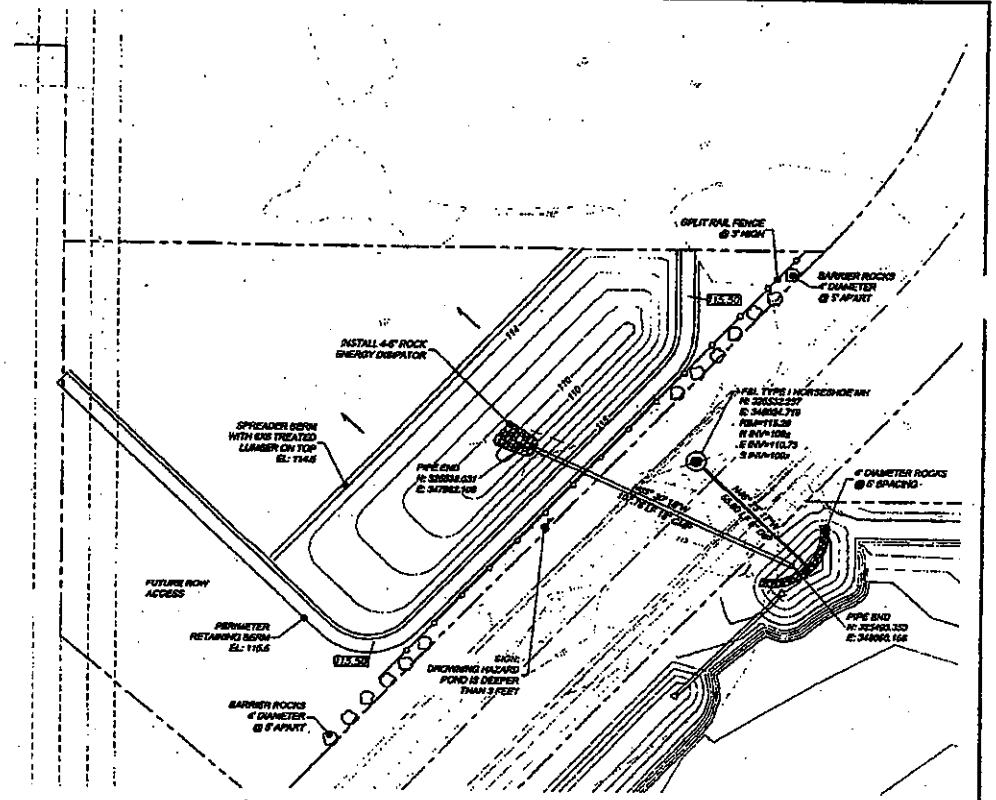
1 SPREADER BERM DETAIL
N.T.S.



1 OUTLET PIPE DETAIL
N.T.S.



1 CULVERT & POOL DRAIN SECTION
H: 1" = 20' V: 1" = 5'



N

GRAPHIC SCALE

REV	DATE	DESCRIPTION	BY

REVISIONS

CONSULTANT

SEAL

FRAGMENT LOTS 1-5

BFW RESTORATION PLAN

DOUBLE TREE SUBDIVISION

SCALE: H: 1" = 20' | DATE: JULY 2008 | DRAWN BY: | SHEET 10 of 10

POA-2006-1215-M1
July 2008
Page 11 of 12.

068

Applicant: International and C Street, LLC	File Number: POA-2006-1215-M1	Date: 1 September 2008
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)	A
X	PROFFERED PERMIT (Standard Permit or Letter of Permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

THIS REQUEST FOR APPEAL FORM MUST BE RECEIVED BY: 31 OCTOBER 2008

SECTION I – The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions.cw/cecw/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the District Engineer. Your objections must be received by the District Engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the District Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or, (c) not modify the permit, having determined that the permit should be issued as previously written. After evaluating your objections, the District Engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer. This form must be received by the Division Engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer. This form must be received by the Division Engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION (JD): You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer. This form must be received by the Division Engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the Preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL OR OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

In order for a Request For Appeal to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the date of the Notice of Appeal Process. It is not necessary to submit a Request For Appeal form to the Division office if you do not object to the decision.

SECTION III - POINT OF CONTACT FOR QUESTIONS OR INFORMATION

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact:
Mary L. Plumb-Mentjes, PM Alaska District Corps of Engineers CEPOA-RD-S P.O. Box 6898 Elmendorf AFB, AK 99506-0898 (907) 753-2789 (800) 478-2712 (toll free in AK)	Commander USAED, Pacific Ocean Division ATTN: CEPOD-PDC/Linda Hihara-Endo, P.E. Building 525 Fort Shafter, HI 96858-5440 **To submit this form, mail to the address above**

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

APPENDIX D

TRAFFIC IMPACT ANALYSIS APPROVAL LETTER

Municipality of Anchorage

TRAFFIC DEPARTMENT
(4700 Elmore Road.)

Mark Begich, Mayor

August 20, 2008

Ms. Tanya Hickok
DOWL Engineers
4041 B Street
Anchorage, AK 99503

SUBJECT: Doubletree Subdivision TIA

Dear Ms. Hickok:

The purpose of this letter is to provide our comments on the submitted DoubleTree TIA. As we spoke on the phone, it has been reviewed and approved by Scott Thomas representing the Alaska Department of Transportation and Public Facilities. Based upon our review of the TIA, the current and projected traffic volumes, the pedestrian accommodations already in place, we approve the TIA as submitted.

Please provide us two printed copies of the final TIA (including the Scott Thomas and this letter of approval in the document) along with a CD copy of the document for our records.

Respectfully,

Bob Kniefel, PE
MOA Traffic Engineer

P.O. Box 196650 * Anchorage, Ak. 99519-6650 * Telephone: (907) 343-8410 * Fax: (907) 343-8488
http://www.ci.anchorage.ak.us

Amy G. Karn

From: Aaron R. Christie, P.E.
Sent: Thursday, June 11, 2009 3:20 PM
To: Amy G. Karn
Subject: FW: Harding VanBuren P&Z submittal Cost

Let me know if this works.

From: Oswald, Russ H. [mailto:OswaldRH@ci.anchorage.ak.us]
Sent: Thursday, June 11, 2009 3:18 PM
To: Aaron R. Christie, P.E.
Cc: Noffke, Jennifer L.
Subject: Harding VanBuren P&Z submittal Cost

Aaron,

The funding numbers for the permitting fees should be as follows:

441.7007.3814.M7R706.2007
Activity: Desig.
Resource Type: Misc.
Resource Category: Perm.

Please let me know if you need anything else.

Russ

Russell Oswald, PE, LS
Project Management & Engineering
E-mail: Oswaldrh@muni.org
voice: 343-8196, cell: 720-3746

4

POSTING

AFFIDAVIT

AFFIDAVIT OF POSTING

Case Number: 2009-105

I, Michelle McNulty, hereby certify that I have posted a **Notice of Public Hearing** as prescribed by Anchorage Municipal Code 21.15.005 on the property that I have petitioned for Zoning Map Amendment. The notice was posted on July 6, 2009 which is at least 21 days prior to the public hearing on this petition. I acknowledge this Notice(s) must be posted in plain sight and displayed until all public hearings have been completed.

Affirmed and signed this 6th day of July, 2009

Michelle McNulty
Signature

LEGAL DESCRIPTION

Tract or Lot A (Fragment Lots 1,2,3,4+5)
Block 1
Subdivision Doubletree Center

Planning Department


Municipality of Anchorage
Notice of Public Hearing
This property proposed
2009-105
For information call:
343-7942
Or visit our website at
www.muni.org


Municipality of Anchorage
Planning Department
Zoning & Platting
Division
Notice of Public Hearing
This property proposed
2009-105
For information call:
343-7943
Or visit our website at
www.muni.org


Notice of
Public
Hearing
For information or
Or visit our website at

5

HISTORICAL INFORMATION

CERTIFICATE OF OWNERSHIP

I (WE) HEREBY CERTIFY THAT I (WE) HOLD THE HEREIN SPECIFIED PROPERTY INTEREST IN THE PROPERTY SHOWN AND DESCRIBED HEREON. WE HEREBY AGREE TO THIS SITE PLAN AND TO ANY RESTRICTIONS OR COVENANT APPEARING HEREON AND ANY SUCH RESTRICTIONS OR COVENANT SHALL BE BINDING AND ENFORCEABLE AGAINST PRESENT AND SUCCESSIVE OWNERS OF THIS PROPERTY.

OWNER:

INTERNATIONAL AND C STREET, LLC
P.O. BOX 202240
ANCHORAGE, ALASKA 99520

BY: _____ SIGNATURE — MANAGING MEMBER, TITLE

LEONARD HYDE
PRINTED NAME

NOTARY ACKNOWLEDGMENT

SUBSCRIBED AND SWORN TO BEFORE ME THIS 18TH DAY OF SEPTEMBER, 2008, PURSUANT TO ITS BY-LAWS OR A RESOLUTION OF ITS BOARD OF DIRECTORS.

LEONARD HYDE
PERSONALLY APPEARED

NOTARY PUBLIC

8-1-2010
MY COMMISSION EXPIRES

NOTARY PUBLIC — STATE OF ALASKA

BENEFICIARY INTEREST

FIRST NATIONAL BANK ALASKA
P.O. BOX 100720
ANCHORAGE, ALASKA 99510

BY: _____ SIGNATURE — VICE PRESIDENT, TITLE

JIM McMILLAN
PRINTED NAME

NOTARY ACKNOWLEDGMENT

SUBSCRIBED AND SWORN TO BEFORE ME THIS 18TH DAY OF SEPTEMBER, 2008, PURSUANT TO ITS BY-LAWS OR A RESOLUTION OF ITS BOARD OF DIRECTORS.

JIM McMILLAN
PERSONALLY APPEARED

NOTARY PUBLIC

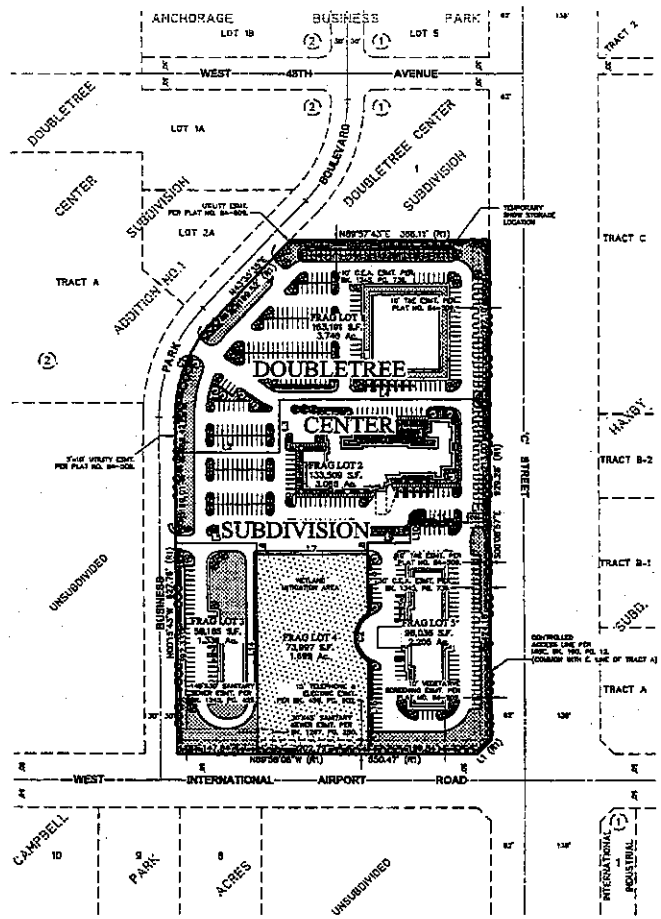
5-30-2010
MY COMMISSION EXPIRES

NOTARY PUBLIC — STATE OF ALASKA

SURVEYOR'S CERTIFICATE

I, STANLEY E. PONSNESS, PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS FRAGMENT LOT SITE PLAN SHOWS A TRUE AND CORRECT REPRESENTATION OF THE RECORD BOUNDARY OF DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1, PER PLAT NO. 2008-112

STATE OF ALASKA — 9231 — PROFESSIONAL LAND SURVEYOR — 9/19/08



LEGEND

(NT) NON TANGENT
(R1) RECORD PER PLAT NO. 2008-112
T&E TELECOMMUNICATIONS AND ELECTRIC.

CURVE DATA TABLE						
CURVE	DELTA	RADIUS	LENGTH	CHORD	CHORD BEARING
C1 (NT) (R1)	43°49'31"	281.82'	209.29'	185.44'	S21°40'11"W
C2 (NT)	115°49'44"	53.00'	107.14'	89.81'	S00°08'54"E

NOTES

1. THIS SITE PLAN IS PREPARED IN ACCORDANCE WITH THE ANCHORAGE MUNICIPAL CODE 21.15.134.

2. THIS SITE PLAN IS BASED ON RECORD INFORMATION FROM THE PLAT OF DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1, PER PLAT NO. 2008-112. SEE SAID PLAT FOR ADDITIONAL INFORMATION.

3. ALL FEDERAL AND STATE EASEMENTS/PERMITS/LICENSES REFERENCED BY CASE NUMBERS, AND ALL EASEMENTS REFERENCED BY BOOK AND PAGE NUMBERS OR SERIAL NUMBERS WERE CREATED BY DOCUMENTS, AND ARE NOT DEDICATED BY THIS PLAT.

4. STREET RIGHT-OF-WAY WIDTHS SHOWN TO THE NEAREST FOOT REPRESENT ACTUAL DIMENSIONS TO THE NEAREST HUNDREDTH OF A FOOT (I.E. 30'=30.00').

5. SEE DECLARATION OF PROTECTIVE COVENANTS AND RESTRICTIONS, RECORDED UNDER SERIAL NO. 2008-060588-0

6. ALL EASEMENTS THAT ARE REFERENCED BY A RECORDED PLAT NUMBER WERE CREATED BY THOSE RESPECTIVE PLATS, AND ARE NOT DEDICATED BY THIS SITE PLAN.

7. DIRECT VEHICULAR ACCESS TO 'C' STREET FROM TRACT A, DOUBLETREE CENTER SUBDIVISION IS PROHIBITED.

8. DIRECT VEHICULAR ACCESS TO WEST INTERNATIONAL AIRPORT ROAD FROM TRACT A, DOUBLETREE CENTER SUBDIVISION IS PROHIBITED, UNLESS OTHERWISE PERMITTED BY ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES (ADOT/PF).

9. DEVELOPMENT OF THIS PROPERTY SHALL BE IN ACCORDANCE WITH THE APPROVED U.S. ARMY CORPS OF ENGINEERS PERMIT NO. POA, 2008-1216-4, FISH CREEK, OR ANY SUBSEQUENT MODIFICATIONS TO THE PERMIT.

10. DEVELOPMENT OF FRAGMENT LOTS 2 AND 3 SHALL CONFORM TO THE SITE PLAN APPROVED BY THE PLANNING AND ZONING COMMISSION AND ANY SUBSEQUENT AMENDMENTS OF THE APPROVED SITE PLAN.

11. A STORM WATER TREATMENT PLAN AND A GRADING PERMIT SHALL BE APPROVED BY THE MUNICIPALITY PRIOR TO CLEARING, GRADING, EXCAVATION, STOCKPILING OR PLACEMENT OF FILL IN THE WETLANDS.

12. ALL LOTS WITHIN THE SUBDIVISION SHALL CONFORM TO THE ELEVATION AND DRAINAGE PATTERNS SHOWN ON THE GRADING AND DRAINAGE PLAN APPROVED BY THE MUNICIPALITY OF ANCHORAGE, AS APPLICABLE.

13. THE PROPERTY OWNER SHALL NOT RAISE, LOWER, OR RE-GRADE THE PROPERTY IN A MANNER THAT WILL ALTER THE DRAINAGE PATTERNS FROM THOSE SHOWN ON THE APPROVED GRADING AND DRAINAGE PLAN WITHOUT PRIOR APPROVAL FROM MUNICIPALITY OF ANCHORAGE BUILDING SAFETY OFFICE.

14. PROPERTY OWNERS SHALL NOT OBSTRUCT, IMPEDE OR ALTER APPROVED DRAINAGE FACILITIES (E.G. SWALES, DITCHES) IN ANY WAY THAT WILL ADVERSELY IMPACT ADJACENT PROPERTIES OR RIGHTS OF WAY.

2008-113
Anchorage, Recording District
Date 10-27-2008
Time 2:47 PM
Receipt No. 2007-060541-0
Address

LINE DATA TABLE		
LINE	BEARING	LENGTH
L1 (R1)	N44°58'57"E	35.30'
L2	S88°31'06"W	191.27'
L3	S00°08'54"E	99.37'
L4	S88°31'06"W	385.70'
L5	N00°31'06"E	148.67'
L6	S00°08'54"E	28.37'
L7	N88°31'06"E	207.79'
L8	S00°08'54"E	29.37'
L9	N88°31'06"E	78.24'
L10	N00°08'54"W	38.03'
L11	N88°31'06"E	105.50'
L12	N00°08'54"W	37.16'
L13	N88°31'06"E	49.08'
L14	S00°08'54"E	192.73'
L15	S00°08'54"E	121.82'
L16	S00°08'54"E	172.37'

APPROVALS

PLATTING OFFICER — DATE 10-26-08

MUNICIPAL SURVEYOR — DATE 9/19/08

PLAT APPROVAL

PLAT APPROVED BY THE MUNICIPAL PLATTING AUTHORITY THIS 20TH DAY OF OCTOBER, 2008.

MICHAEL E. KEEGAN
AUTHORIZED OFFICIAL

ACCEPTANCE OF DEDICATION

THE MUNICIPALITY OF ANCHORAGE HEREBY ACCEPTS FOR PUBLIC USES AND FOR PUBLIC PURPOSES THE REAL PROPERTY DEDICATED ON THIS PLAT, INCLUDING BUT NOT LIMITED TO THE EASEMENTS, RIGHTS OF WAY, ALLEYS, ROADWAYS, THOROUGHFARES AND PARKS SHOWN HEREON.

DATED AT ANCHORAGE, ALASKA, THIS 20TH DAY OF OCTOBER, 2008.

MUNICIPAL CLERK — MAYOR OF ANCHORAGE

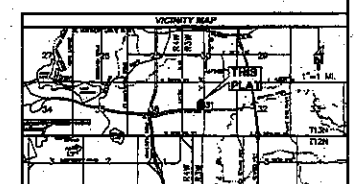
TAX CERTIFICATION

ALL REAL PROPERTY TAXES LEVIED BY THE MUNICIPALITY OF ANCHORAGE OF THE AREA SHOWN ON THIS PLAT HAVE BEEN PAID IN FULL. IF APPROVAL IS ABOUT BETWEEN JANUARY 1 AND THE TAX DUE DATE, TAXES IS ON DEPOSIT WITH THE CHIEF FISCAL OFFICER, AN AMOUNT SUFFICIENT TO PAY ESTIMATED REAL PROPERTY TAX FOR THE CURRENT YEAR.

10-20-08 — DATE — AUTHORIZED OFFICIAL

RECORDED-FILED
NO. 2008-
DATE
TIME
RECORDED BY
RECORDING DISTRICT

VICINITY MAP



LOCATED WITHIN THE NW 1/4, SEC. 31, T13N, R3W, S.M. AK

PLAT OF

COMMERCIAL TRACT
FRAGMENT LOT SITE PLAN
FOR
DOUBLETREE CENTER SUBDIVISION, TRACT A, BLOCK 1
(PER PLAT NO. 2008-112)

FRAGMENT LOTS 1 THROUGH 5

CONTAINING 12.050 ACRES, 5 FRAGMENT LOTS

LOCATED WITHIN
THE NW 1/4, SECTION 31, T13N, R3W, S.M. AK
ANCHORAGE RECORDING DISTRICT

DOWL ENGINEERS
4041 B STREET, ANCHORAGE, ALASKA 99503 PH. (907) 562-2000 FAX (907) 562-1993

DWN: SKF	CHK: KET	W.O. 0594918		DOWL FILE NO: 149-75
SCALE: 1"=100'	FBK: 2182	CRD: SW1830		
DRAWN: SEP-18-2008	SURVEYED: MAY-JUN, 2008			SHEET 1 OF 1
C-F: PRT NO. 00084337	MOA CASE FILE: S-11682-1			

2008-113

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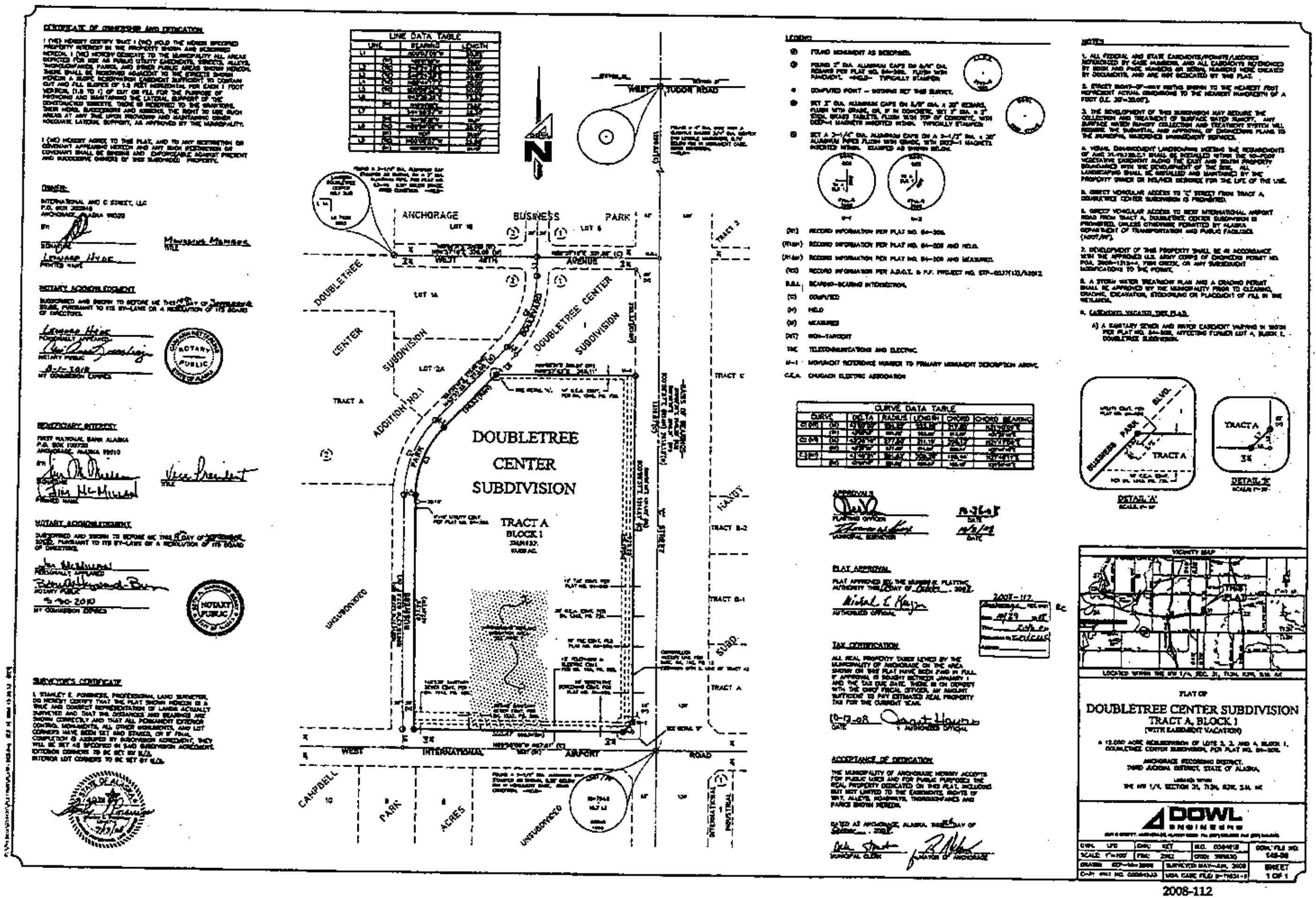


PLAT OF

DOUBLETREE CENTER SUBDIVISION
TRACT A, BLOCK 1
(WITH EASEMENT VACATION)

ANCHORAGE RECORDING DISTRICT,
THIRD JUDICIAL DISTRICT, STATE OF ALASKA,

DOWL
ENGINEERS

SHEET
1 OF 1

2008-112

MUNICIPALITY OF ANCHORAGE
PLANNING AND ZONING COMMISSION
RESOLUTION NO. 2008-056

A RESOLUTION GRANTING FINAL CONDITIONAL USE APPROVAL FOR A HOTEL IN THE I-1 DISTRICT, ON PROPOSED TRACT A, FRAGMENT LOT 2, DOUBLETREE SUBDIVISION (PER PRELIMINARY PLAT S-11651-1, AND PRELIMINARY PLAT S-11652-1 OF COMMERCIAL TRACT FRAGMENT LOT SITE PLAN FOR DOUBLETREE CENTER SUBDIVISION, TRACT A, LOTS 1-5); GENERALLY LOCATED AT THE NORTHEAST OF CORNER OF "C" STREET AND INTERNATIONAL AIRPORT ROAD.

(Case 2008-109; Tax ID. No. 009-221-19; -20; -21)

WHEREAS, an application has been received from International & C Street, LLC, requesting final conditional use approval for a Hotel in the I-1 District, on proposed Tract A, Fragment Lot 2, Doubletree Subdivision (per Preliminary Plat S-11651-1, and Preliminary Plat S-11652-1 for Commercial Tract Fragment Lot Site Plan, Doubletree Center Subdivision, Tract A, Lots 1-5); generally located at the northeast of corner of "C" Street and International Airport Road;

WHEREAS, notices were published, posted and forty-six (46) public hearing notices were mailed on July 14, 2008. An affidavit of posting, signed by the petitioners' representative certified that public hearing posters were posted on the property on June 18, 2008. There were two returned public comments. A public hearing was held August 4, 2008;

WHEREAS, hotels are a conditional use in the I-1 District;

WHEREAS, preliminary plat S-11651-1 is a reversion to acreage in order to create an underlying plat of 12.05 acres for the commercial fragment lot site plan in S-11652-1, which created five fragment lots within Tract A; and

WHEREAS, there are no wetlands located on proposed Fragment Lot 2.

NOW, THEREFORE BE IT RESOLVED, by the Municipal Planning and Zoning Commission that:

A. The Commission makes the following findings of fact:

1. This is a proposal to construct a four-story, 127-room hotel on proposed Fragment Lot 2 of Tract A, Doubletree Subdivision consisting of 2.9 acres. The hotel will include a fitness room and swimming pool. There is no planned public bar or restaurant. Prepared and re-thermalized food as well as bottled beer and poured wine will be available at the café. To serve beer and wine requires a

separate approval.

2. The subject conditional use is the first development of the five fragment lots within the Commercial Tract Fragment Lot Site Plan plat. On-site pedestrian connections for Lot 2 are shown, and the narrative states it will connect to the other fragment lots. However, the connections will not be known until each lot is developed. A condition of approval requires the petitioner resolve with the Planning Department pedestrian access to adjoining Fragment Lots 3, 4, and 5.

3. A traffic impact analysis was a condition of approval for Preliminary Plat S-11651-1 and is under review by ADOT/PF and the Municipal Traffic Engineer. Road access is from Business Park Boulevard via International Airport Road to the south and West 48th Avenue to the north. The subject property is bounded to the east by "C" Street. "C" Street is owned and maintained by ADOT/PF. Road, driveway or pedestrian access will not be permitted to "C" Street by ADOT/PF.

4. The conditional use is consistent with *Anchorage 2020* policies #1, #21, #30, #35, and #49. The conditional use proposal conforms to the general standards for conditional uses found in AMC 21.50.20.

5. A new condition is added that on-site storage of snow shall not exceed 72 hours, except as permitted as part of an approved wetlands pond or recharge area (Fragment Lot 4).

6. The Commission voted seven (7) in favor, none (0) opposed to approve the subject site plan as amended.

B. The Commission approves the subject Site Plan subject to the following conditions:

1. A notice of zoning action shall be filed with the District Recorder's Office and proof of such shall be submitted to the Planning Department.

2. This conditional use approval is intended to allow a 127-room hotel in the I-1 district for proposed Fragment Lot 2, Tract A, Doubletree Center Subdivision, per platting case S-11652-1.

3. All construction shall substantially conform to the following submitted plans on file at the Planning Department, except as modified by other conditions herein:

a. Site Plan for Fragment Lot 2 Tract A, Doubletree Center Subdivision; Sheet 1 of 1; scale 1" = 30'; Date June 10, 2008; Drawn by Lounsbury & Associates.

b. Doubletree Center Hotel, Draft Landscape/Planting Plans; Sheet No. L100, L101, L102, L501, L502; scale as shown; Date 05-27-08; Drawn by Corvus Design.

c. Hyatt Place Hotel First Floor Plan; Sheet No. A2.1; scale 3/32" = 1'; Date 9 June, 2008; Drawn by James A. McArthur, AIA.

d. Hyatt Place Hotel Second Floor Plan; Sheet No. A2.2; scale 3/32" = 1'; Date 9 June, 2008; Drawn by James A. McArthur, AIA.

e. Hyatt Place Hotel Third Floor Plan; Sheet No. A2.3; scale 3/32" = 1'; Date 9 June, 2008; Drawn by James A. McArthur, AIA.

f. Hyatt Place Hotel Fourth Floor Plan; Sheet No. A2.4 scale 3/32" = 1'; Date 9 June, 2008; Drawn by James A. McArthur, AIA

g. Hyatt Place Hotel Roof Plan; Sheet No. A2.5; scale 3/32" = 1'; Date 9 June, 2008; Drawn by James A. McArthur, AIA.

h. Hyatt Place Hotel, Building Elevations, and Monument Sign Elevations; Sheet No. A3.5; scale as shown; Date 4 June 2008; Drawn by James A. McArthur, AIA.

i. Hyatt Place Anchorage Architectural Site Signage Plan, Sheet A1.2, no scale; dated 4 June 2008; Drawn by James A. McArthur.

j. Hyatt Place Identification Program , dated 06 February, 2008 prepared by Transworld Signs; scale as shown;

4. Resolve with the Planning Department, whether the pedestrian access crossing the parking lot shall be raised constructed with a different paving material to allow identification of its use by vehicles for safety.

5. All outdoor fixtures shall be "full cut-off" as defined by IESNA (Illuminating Engineering Society of North America.

6. Signage shall be reviewed and approved with the building permit in accordance with AMC 21.47.060.

7. Resolve the details of a refuse screening with the Planning Department

8. An access and driveway agreement is required for access between the adjoining commercial fragment lots.

9. Resolve future pedestrian connections between the subject property and fragment lots 1, 3, and 5 with the Planning Department.

10. On-site storage of snow shall not exceed 72 hours, except as permitted as part of an approved wetlands pond or recharge area.

C. The Commission approves the subject Site Plan subject to the following effective clause:

Effective Clause: Prior to the conditional use becoming effective, the final plat for cases S-11651-1 and S11652-1 shall be recorded with the State District Recorder's Office.

PASSED AND APPROVED by the Municipal Planning and Zoning Commission this 4th day of August, 2008.

ADOPTED by the Anchorage Municipal Planning and Zoning Commission this 8th day of September, 2008. This written decision/resolution of the Planning and Zoning Commission is final and any party may appeal it within twenty (20) days to the Board of Adjustment pursuant to Anchorage Municipal Code 21.30.030

Tom Nelson
Secretary

Toni M. Jones
Chair

(Case 2008-109; Tax ID. No. 009-221-19; -20; -21)

ma

Submitted by: Chair of the Assembly at the Request of
Prepared by: Planning Department
For reading: February 24, 2009

CLERK'S OFFICE
APPROVED
Date: 2-24-09

Anchorage, Alaska
AO 2008-107(S)

AN ORDINANCE OF THE ANCHORAGE ASSEMBLY AMENDING THE ZONING MAP AND PROVIDING FOR THE REZONING OF APPROXIMATELY 16.54 ACRES, FROM R-3 (MULTIPLE-FAMILY RESIDENTIAL) TO B-3 SL (GENERAL BUSINESS) WITH SPECIAL LIMITATIONS FOR TRACT A, BLOCK 2, DOUBLETREE CENTER SUBDIVISION #1; GENERALLY LOCATED ON THE EAST SIDE OF ARCTIC BOULEVARD AND NORTH OF WEST INTERNATIONAL AIRPORT ROAD.

(Midtown and Spenard Community Councils) (Planning and Zoning Commission Case 2008-083)

THE ANCHORAGE ASSEMBLY ORDAINS:

Section 1. The zoning map shall be amended by designating the following described property as B-3 SL (General Business) District with special limitations zone:

Tract A, Block 2, Doubletree Center Subdivision #1, containing approximately 16.54 acres as shown on Exhibit "A."

Section 2. This zoning map amendment is subject to the following:

A) Uses and Design Standards:

1) The project shall be in general conformance with the "Faith Christian Community Rezone Development Concept Site Design" dated April 10, 2008. The mixed use development shall provide:

   a) Residential: no less than a minimum 202 residential units; the residential component may include fully independent living units with a common commercial kitchen, lounge, and dining area as an accessory use.

   b) Office/Retail: a maximum of 135,000 square feet; Retail is restricted to ground level and limited to a maximum of 45,000 square feet.

   c) Hotel/Office: Maximum 220 hotel guest rooms or 111,000 square feet of office space or proportional combination. Ancillary retail may be allowed but is limited to a maximum 10,000 square feet.

2) Any three of the four hotel/commercial buildings shown on the "Faith Christian Community Rezone Development Concept Site Design" may be built prior to construction of residential housing shown. A Certificate of Occupancy must be granted for all residential housing shown on the plan prior to the granting of a Certificate of Occupancy for the final hotel/commercial structure.

3) A public hearing site plan review and approval is required by the Urban Design Commission before construction of the first commercial building and before the construction of the first residential housing unit. Design guidelines shall be submitted to the Urban Design Commission that address landscaping; pedestrian circulation; signage; architectural design and materials; lighting; ground floor retail access and transparency; and northern design principles. This review shall address the preservation of landscaping along the north and west property lines.

4) Resolve the design of the detention basin with Project Management and Engineering in order to appropriately treat runoff and protect the Business Park Wetlands.

5) Resolve the amount and location of parking with the Traffic and Planning Departments and, based upon need, a joint-parking agreement shall be provided for approval by the Traffic and Planning Departments.

6) On-site storage of snow shall not exceed 72 hours, except as permitted as part of an approved wetlands pond or recharge area.

7) All development shall be consistent with the requirements of an approved Traffic Impact Analysis. Resolve the need for traffic safety improvements on Arctic Boulevard, including possible turning improvements and, in consultation with the Non-Motorized Access Coordinator, improvements for pedestrian crossing.

8) A plat note shall reference future development design guidelines and the zoning ordinance and special limitations.

9) Residential buildings adjacent to the residential parcels to the north and west shall be restricted to four stories, excluding a subterranean garage.

10) No less than 20 feet of landscaping adjacent to residential development shall be provided to the abutting residential parcels to the west and north sides of the project.

B) Conditional uses:

1) Restaurants and other places serving food or beverages involving the retail sale, dispensing or service of alcoholic beverages in accordance with Municipal Code 21.50.160.

Section 3. All provisions of Title 21 of the Anchorage Municipal Code not specifically affected by a special limitation set forth in this ordinance shall apply in the same manner as if the district classification applied by the ordinance was not subject to special limitations.

Section 4. This rezoning shall not become effective until the recordation of a plat that dedicates an east-west spine road as a public street, and creates tracts for the individual developments and provides a detention pond area.

Section 5. This ordinance shall become effective 10 days after the Director of the Planning Department has received the written consent of the owners of the property within the area described in Section 1 above to the special limitations contained herein. The rezone approval contained herein shall automatically expire, and be null and void, if the written consent is not received within 120 days after the date on which this ordinance is passed and approved. In the event no special limitations are contained herein, this ordinance is effective immediately upon passage and approval. The Director of the Planning Department shall change the zoning map accordingly.

PASSED AND APPROVED by the Anchorage Assembly this 24th day of February 2009.

ATTEST:

Chair

Municipal Clerk

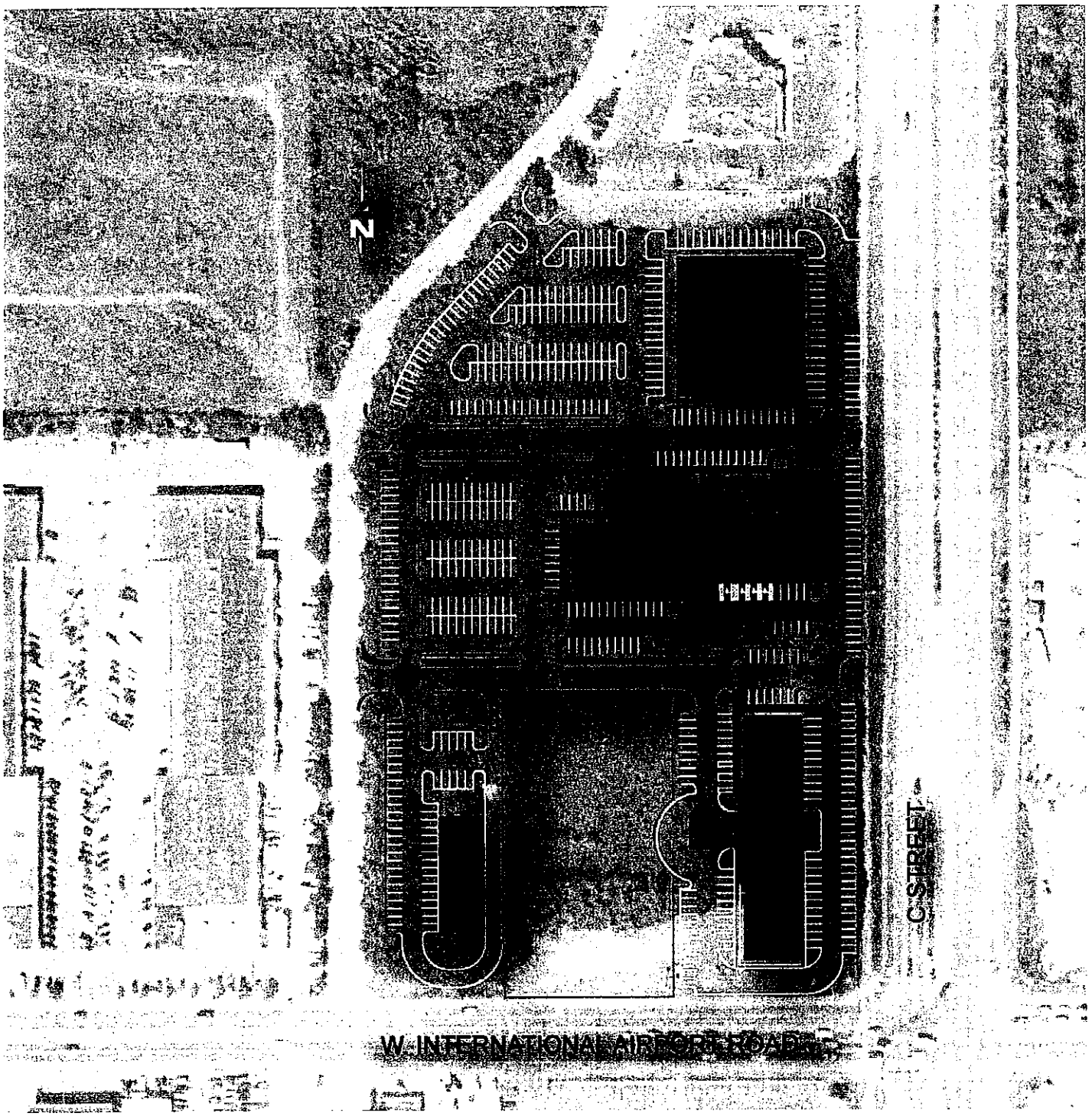
(Tax ID 009-221-27)
(Case 2008-083)

2009-105

F I N A L

TRAFFIC IMPACT ANALYSIS

C STREET AND INTERNATIONAL AIRPORT ROAD



AUGUST 2008

DOWL ENGINE

Municipality of Anchorage

TRAFFIC DEPARTMENT
(4700 Elmore Road.)

TRAFFIC DEPARTMENT

Mark Begich, Mayor

August 20, 2008

Ms. Tanya Hickok
DOWL Engineers
4041 B Street
Anchorage, AK 99503

SUBJECT: Doubletree Subdivision TIA

Dear Ms. Hickok:

The purpose of this letter is to provide our comments on the submitted DoubleTree TIA. As we spoke on the phone, it has been reviewed and approved by Scott Thomas representing the Alaska Department of Transportation and Public Facilities. Based upon our review of the TIA, the current and projected traffic volumes, the pedestrian accommodations already in place, we approve the TIA as submitted.

Please provide us two printed copies of the final TIA (including the Scott Thomas and this letter of approval in the document) along with a CD copy of the document for our records.

Respectfully,

Bob Kniefel, PE
MOA Traffic Engineer

P.O. Box 196650 * Anchorage, Ak. 99519-6650 * Telephone: (907) 343-8410 * Fax: (907) 343-8488
http://www.ci.anchorage.ak.us

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES

CENTRAL REGION - DESIGN AND ENGINEERING SERVICES DIVISION
TRAFFIC, SAFETY & UTILITIES

4111 AVIATION AVENUE
P.O. BOX 196900
ANCHOARAGE, AK 99519-6900
(907) 269-0650 (FAX 907-269-0654)
(TTY 269-0473)

RECEIVED
JUL - 9 2008
DOWL LLC

July 7, 2008

Mr. Bob Kniefel, P.E.
Municipal Traffic Engineer
4700 E Elmore Rd
Anchorage, AK 99507

RE: ARR# 19438: Doubletree TIA, Faith Christian Community TIA, Business Park Blvd Access

Dear Mr. Kniefel,

I want to express our appreciation to the Municipality and Consultants for drafting traffic impact assessments for two major developments in the northeast quadrant of International Airport Road and C Street. Our Department accepts both TIA's indication of impacts on Business Park Boulevard at International Airport Road, and 48th Avenue at C Street. No traffic mitigation improvements are recommended on state roads. I agree with this recommendation.

I have only a few comments for the Municipality to consider on internal roads as the sites are developed:

1. Consider pedestrian facilities adjacent to development along Business Park Boulevard and along Spine Avenue, both eventually leading to International Airport Road.

2. How can internal access to the existing mall on the north side of International Airport Road be improved with an access to Spine Avenue in addition to Business Park Boulevard? It appears possible for the Faith Christian Community site plan to accommodate an internal north/south connection. I support the Arctic Boulevard connection of Spine Road as the optimum available four way intersection, well north of International.

As noted in the Doubletree TIA, future raised median may be installed along International Airport Road as needed. The current disjointing of business access along International Airport Road makes this a complex layout requiring planning from Arctic Boulevard to C Street. We take business access seriously and will not reduce access until necessary. We will monitor this corridor and develop a more complete concept for a large enough segment of this road when necessary.

Thank you for the opportunity to review these traffic increases to Business Park Boulevard,

Sincerely,

Scott E. Thomas, P.E.
Central Region Traffic Engineer

Cc: Steve Noble, Project Manager, DOWL Engineers (Doubletree TIA)
Dwayne Adams, Project Manager, Land Design North (FCC TIA)

FINAL
TRAFFIC IMPACT ANALYSIS

C STREET AND INTERNATIONAL AIRPORT ROAD

Prepared for:

JL Properties, Incorporated
P.O. Box 202845
Anchorage, Alaska 99520

Prepared by:

DOWL Engineers
4041 B Street
Anchorage, Alaska 99503
(907) 562-2000

W.O. D59491B

August 2008

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FIGURES **Page**

TABLES

APPENDICES

LIST OF ACRONYMS

DOT&PF.....State of Alaska Department of Transportation and Public Facilities
DOWL.....DOWL Engineers
ITE.....Institute of Transportation Engineers
LOS.....level of service
MOA.....Municipality of Anchorage
mph.....miles per hour
OS&HP.....Official Streets and Highway Plan
sf.....square feet/foot
TIA.....Traffic Impact Analysis

1.0 INTRODUCTION

The purpose of this Traffic Impact Analysis (TIA) is to determine the transportation-related impacts of the C Street and International Airport Road project in Anchorage, Alaska. The project will be developed by JL Properties, Inc. The property is approximately 12.2 acres in size and is located on the northwest corner of C Street and International Airport Road (Figure 1-1).

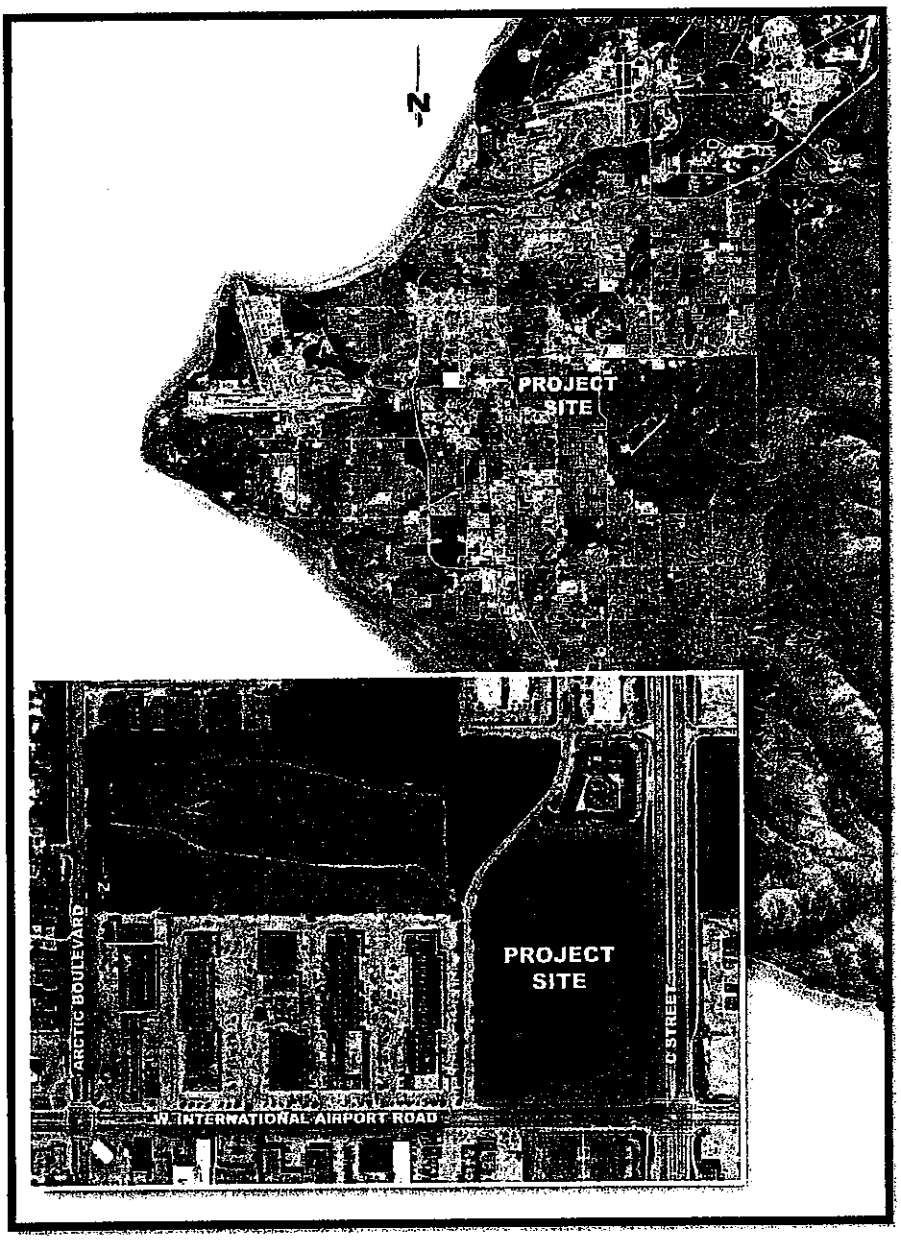

Figure 1-1: Location/Vicinity Map

The proposed development includes approximately 90,000 square feet (sf) of office space, two hotels (120 and 140 rooms), and a 6,400-sf drive-thru restaurant.

The scope of this TIA is based on:

- The conceptual site plan shown on Figure 1-2,
- The requirements of the 2004 Driveway Regulations (State of Alaska Department of Transportation and Public Facilities [DOT&PF]), and
- Discussions with the Municipality of Anchorage (MOA) and DOT&PF Traffic and Planning Departments.

The transportation issues discussed in this TIA include:

- Existing traffic conditions in the vicinity of the proposed development during the a.m. and p.m. peak hour,
- 2009 and 2019 background traffic conditions,
- 2009 and 2019 total traffic conditions,
- Other planned developments and transportation improvements within the study area,
- Pedestrian circulation,
- Transit circulation, and
- Roadway improvements associated with the proposed development necessary to achieve minimum level of service (LOS) per DOT&PF requirements.

The objectives of this TIA include:

- Assessing the traffic impacts associated with the proposed development,
- Identifying the level of off-site access and traffic control improvements required,
- Providing public agencies with a comprehensive transportation study that evaluates and documents the traffic impacts and off-site improvements, where warranted,
- Providing a basis to identify/negotiate mitigation requirements in response to off-site traffic impacts, and
- Providing input on the proposed access plan, internal site circulation, and truck access.

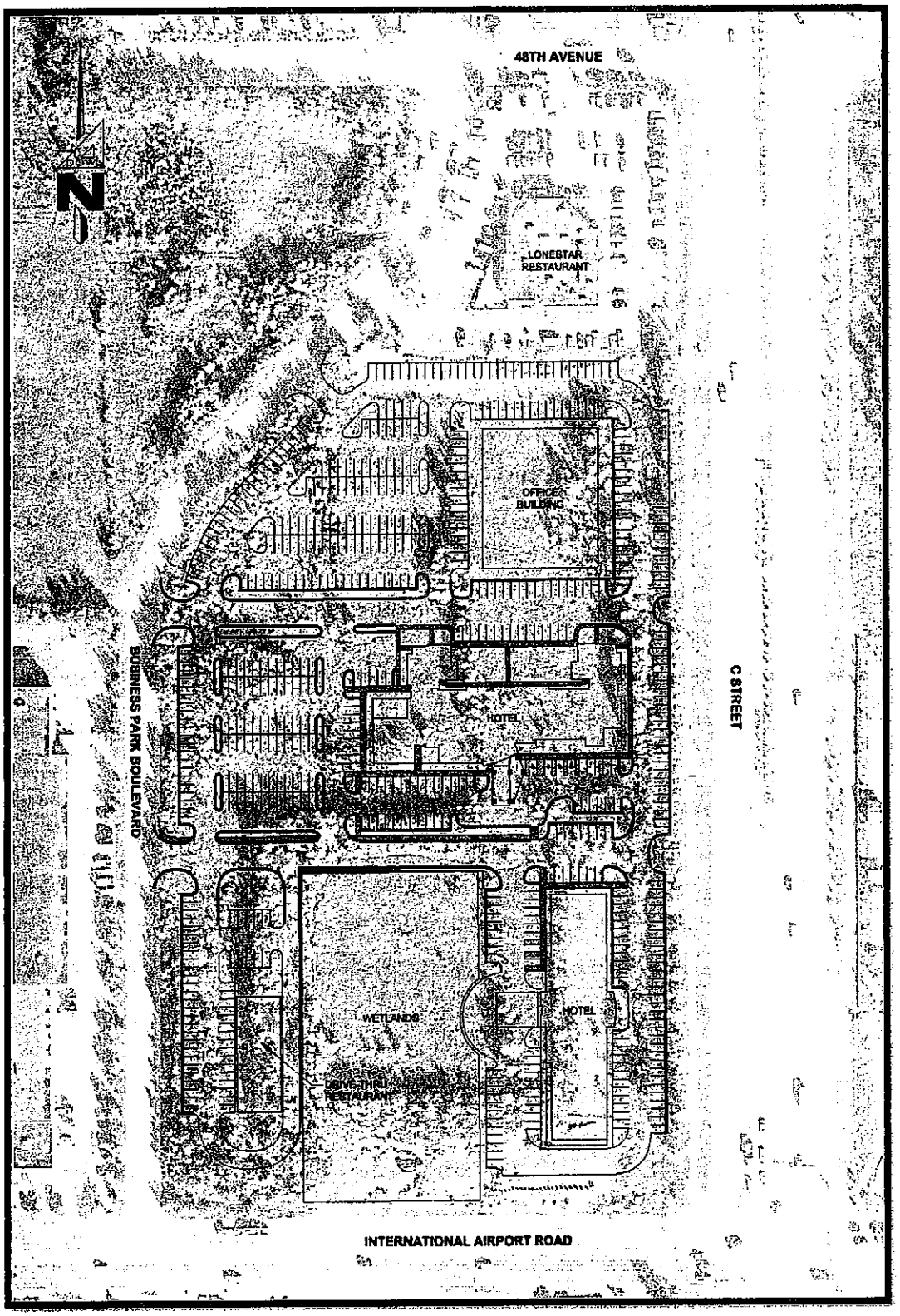

Figure 1-2: Conceptual Site Plan

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2.0 AREA CONDITIONS

2.1 Transportation Network Study Area

2.1.1 Site Access

This site is currently undeveloped with no driveway access.

2.1.2 Area Roadway System

According to MOA's Official Streets and Highway Plan (OS&HP), C Street is classified as Class III major arterial that is owned and maintained by the DOT&PF. C Street between Tudor Road and International Airport Road is a paved, six-lane, divided roadway with a posted speed of 45 miles per hour (mph). South of International Airport Road, C Street is four-lane divided roadway with a posted speed of 50 mph. Traffic near the site is controlled by signals at the Tudor Road and International Airport Road intersections and is stop controlled at the 48th Avenue intersection. C Street is a controlled-access roadway; no driveways are allowed by plat to break the controlled access onto C Street.

Tudor Road and International Airport Road are classified as Class III major arterials and are owned and maintained by the DOT&PF. They are paved, four-lane, two-way roadways with a posted speed of 45 mph. Traffic is controlled by signals at the Arctic Boulevard and C Street intersections and is stop controlled at all other side roads.

Arctic Boulevard is classified as a Class III major arterial in the project area and is owned and maintained by the MOA. It is a paved, four-lane, two-way roadway with a posted speed of 40 mph. Traffic is controlled by signals at Tudor Road and International Airport Road and is stop-controlled at all other side roads.

Business Park Boulevard is a paved, two-lane, local road with one lane in each direction and is owned and maintained by the MOA. It runs north-south between International Airport Road and Tudor Road and is the western boundary of this development. Business Park Boulevard is stop-controlled at the International Airport Road, 48th Avenue, and Tudor Road intersections. On-street parking is currently allowed on the portion south of 48th Avenue, but based on discussions with the MOA, they plan to restripe this area as a three lane section (one-lane each direction with a center two-way left-turn lane).

48th Avenue is a paved, two-lane, local road with one lane in each direction that terminates approximately 350 feet west of the Business Park Boulevard intersection. The speed limit is not posted on 48th Avenue, so it is assumed to be 25 mph.

Figure 2-1 depicts the background lane configurations and intersection controls for the study intersections.

2.1.3 Transit Service

People Mover does not have any routes adjacent to the study area. No bus-stop locations will be impacted by this development.

2.1.4 Pedestrian Trails

All major roads adjacent to the project area have either a sidewalk or a trail on both sides of the road. Sidewalks are provided along 48th Avenue adjacent to existing businesses. There are no pedestrian facilities on Business Park Boulevard.

2.1.5 Area of Significant Traffic Impact

According to DOT&PF's TIA Criteria (17AAC10.070), a TIA must address:

1. Intersections on highways where traffic on any approach is expected to increase as a result of the proposed development by at least 5 percent of the approach's capacity.

2. Segments of highways between intersections where total traffic is expected to increase as a result of the proposed development by at least 5 percent of the segment's capacity.

3. State highways and intersections where the safety of the facilities will deteriorate as a result of the traffic generated by the development.

4. Each driveway or approach road that will allow egress from or ingress to a highway for the proposed development.

5. Parking and circulation routes within the proposed development, to the extent necessary to ensure that traffic does not back up onto a highway.

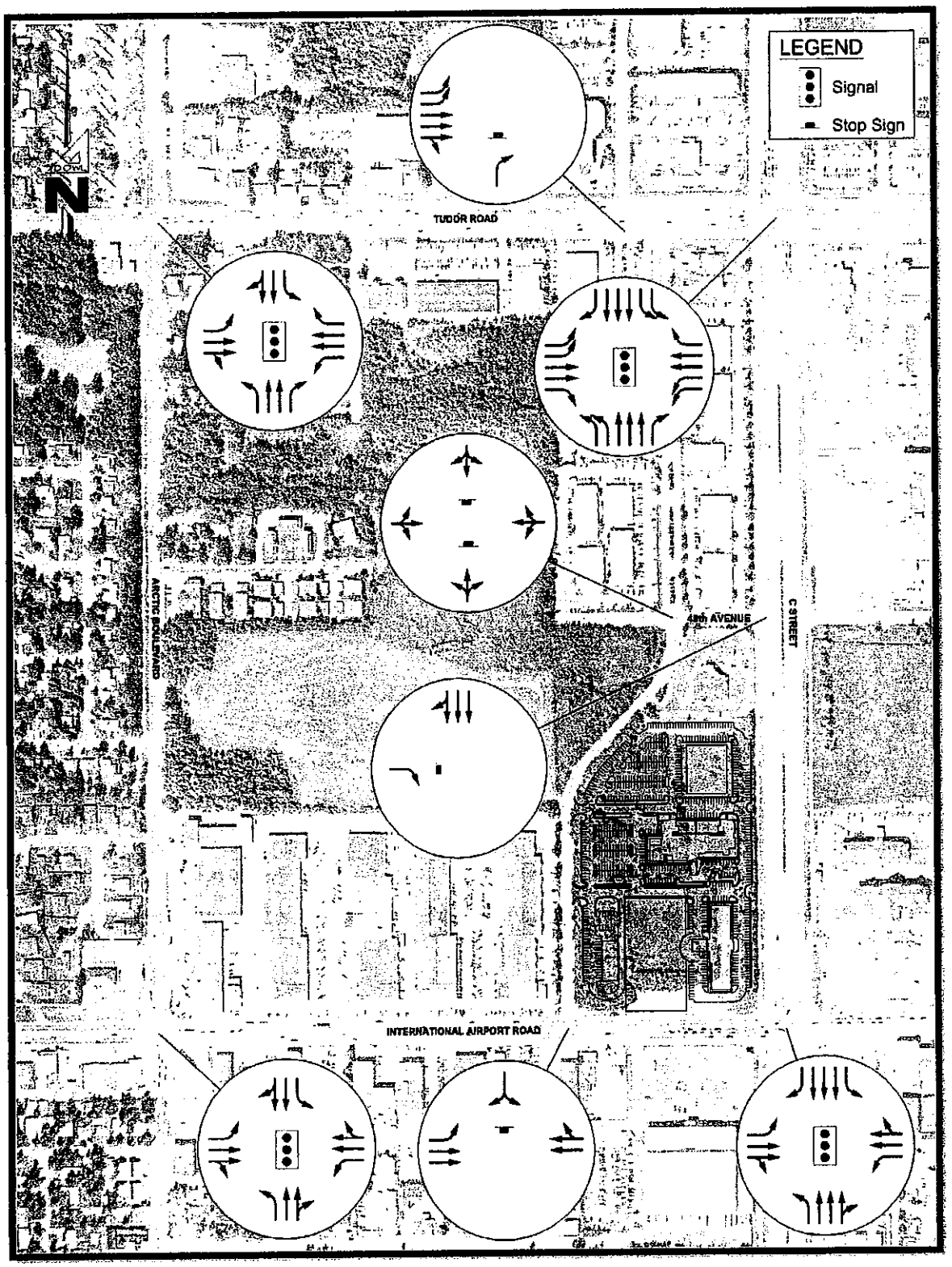

Figure 2-1: Background Lane Configurations and Intersection Controls

6. Pedestrian and bicycle facilities that are part of the highway facilities to which a permit applicant seeks access.

Based on the above criteria and an initial TIA Scoping Meeting with MOA and DOT&PF Traffic Engineers, the following intersections (including the segments in between the intersections) are required to be analyzed for potential off-site mitigation as part of the C Street and International Airport Road Development:

- Tudor Road/Arctic Boulevard,
- Tudor Road/C Street,
- International Airport Road/Arctic Boulevard,
- International Airport Road/C Street,
- Tudor Road/Business Park Boulevard (eastbound right),
- 48th Avenue/C Street (southbound right), and
- International Airport Road/Business Park Boulevard.

2.2 Study Area - Adjacent Land Use

2.2.1 Existing Land Uses

The existing land use in the study area is a mixture of residential, business and commercial activities. The proposed site is currently zoned I-1 (light industrial) and is undeveloped.

2.2.2 Anticipated Future Site Development

The proposed site plan for the project site will fully develop this tract of land.

2.2.2.1 Site Vehicle Circulation and Parking

The project will have three new site driveways that provide access directly onto Business Park Boulevard. Internal drive aisles provide connections between each of the proposed buildings and their associated parking.

2.2.2.2 Site Pedestrian Access and Circulation

Five-foot-wide (minimum) sidewalks along the major internal drives will be located to allow pedestrian access from one end of the project site to the other.

2.2.3 Anticipated or Approved Future Developments/Road Improvements

Directly adjacent to the C Street and International Airport Road development is the proposed Faith Christian Community Development. This project includes 240 rooms of Senior Adult Housing, two hotels (120 and 100 rooms), and two office buildings (90,000 and 45,000 sf). It will also construct an eastbound/westbound roadway that connects Arctic Boulevard to Business Park Boulevard. A separate TIA has been prepared for this development by CRW Engineering, Inc. However, to accurately analyze these adjacent developments, an overall model was developed for the total build-out condition in 2019 and will be discussed later.

2.2.4 Traffic Counts

Traffic counts were conducted on Thursday, May 8, 2008, at the intersections of Tudor Road/Business Park Boulevard, 48th Avenue/Business Park Boulevard, 48th Avenue/ C Street, and International Airport Road/Business Park Boulevard. Intersection loop counts were obtained from MOA for the signalized intersections.

3.0 PROJECTED TRAFFIC

This TIA identifies how the study area's transportation system is presently operating, as well as how it will operate in the design year. The design year is defined by DOT&PF Driveway Regulations as ten years from development completion. For purposes of this report, it was assumed that the C Street and International Airport Road development would be completed in 2009 (hereafter referred to as the "construction year") and thus included in the design year (2019) analysis.

The following methods were used to estimate future traffic volumes:

- P.M. peak hour (4:30 p.m. to 5:30 p.m.) estimates for construction and design year conditions (years 2009 and 2019) without site build-out (referred to as "background" traffic volumes) were used as the basis for comparison. These estimates reflect the future traffic operations that are likely to occur without the proposed development.
- The number of weekday p.m. peak period trips generated by the site and directional distribution (entering/exiting) were estimated for each phase based on the *Institute of Transportation Engineers' (ITE) Trip Generation Manuals*, assuming full build-out in 2009 and 2019.

- A trip distribution pattern was derived through the review of the existing conditions, circulation patterns, area land use, MOA trip distribution model, and previous traffic studies.
- Predicted site-generated traffic for the full build-out of the site was added to the 2009 and 2019 background traffic volumes to determine the total traffic volumes at each of the study intersections.

3.1 Traffic Growth Rate

Traffic growth rates in the corridor were not evaluated as part of this study. The DOT&PF completed a traffic analysis as part of the *Midtown Area Transportation Study* (Harding ESE, 2001), which indicated a two percent per year growth rate for the Midtown area. However, more recent traffic data shows that midtown traffic growth is slowing. Based on recommendations from the DOT&PF and the Moose Lodge site and Faith Christian Community TIAs that are also located in midtown, future traffic volumes are anticipated to grow at an average annual rate of one percent.

3.1.1 Background Conditions

The background conditions analysis identifies how the study area's transportation system will operate in the construction and design year without site-generated traffic from the proposed C Street and International Airport Road development. The background traffic volumes for 2009 in both the a.m. and p.m. peak hours are shown on Figures 3-1 and 3-2, respectively. Both peaks were analyzed to confirm that the p.m. peak hour is the worst case scenario. The results showed that the p.m. peak hour is, in fact, considerably worse than the a.m. peak hour. Thus the p.m. peak hour was used for analysis in this TIA to be conservative. The background traffic volumes for 2019 in the p.m. peak hour are shown on Figure 3-3.

3.2 Site Traffic

3.2.1 Trip Generation

The trip generation analysis yields the total number of vehicles entering the site, net new vehicle trips entering the site, and net new vehicle trips on the adjacent roadways and

driveways during the weekday p.m. peak hour. Site-generated traffic is generally categorized into four types of trips: new, pass-by, diverted, and internal trips.

New trips are trips that would not have existed within the study area without the proposed development.

Pass-by trips are trips that currently exist on the roadways immediately adjacent to the site and visit the proposed development because it is on the way to their ultimate trip destination. A 40 percent pass-by rate was used for the drive-thru restaurant.

Diverted trips are trips that exist on the study area roadways that are re-routed to visit the proposed development. No diverted trips were considered for this TIA.

Internal trips are trips generated by other developments within the C Street and International Airport Road development that only require internal driveways to access the specific development. Internal trips do not represent additional trips on the surrounding study area transportation network. Due to the mixed use nature of the site, a ten percent internal trip rate was used.

Trip generation rates for the proposed development were based on data published in *ITE's Trip Generation Manual, 7th Edition,* using the fitted curve equation to determine the total number of site-generated trips and the projected design hour traffic volumes. See Table 3-1 for the resulting site-generated trips.

Table 3-1: Site Generated Trips (*ITE Trip Generation Manual, 7th Edition*, 2003)

Type of Use	Quantity	Units	ITE Code	Trip Rate	P.M. Hour Trips	Peak Hour Distribution			
						Entering		Exiting	
						%	Vol.	%	Vol.
General Office Building	90	1,000 sf	710	2.0*	180	17	31	83	149
Hotel	260	Rooms	310	0.59	154	53	82	47	72
Drive-Thru Restaurant	6.4	1,000 sf	934	34.64	222	52	115	48	107
Internal Trips	10%				-55	44	24	56	31
Pass-by Trips	40% of Drive-thru				-80	50	40	50	40
Net New Trips					421	39	164	61	257

*Rate given by fitted curve in *ITE Trip Generation Manual.*

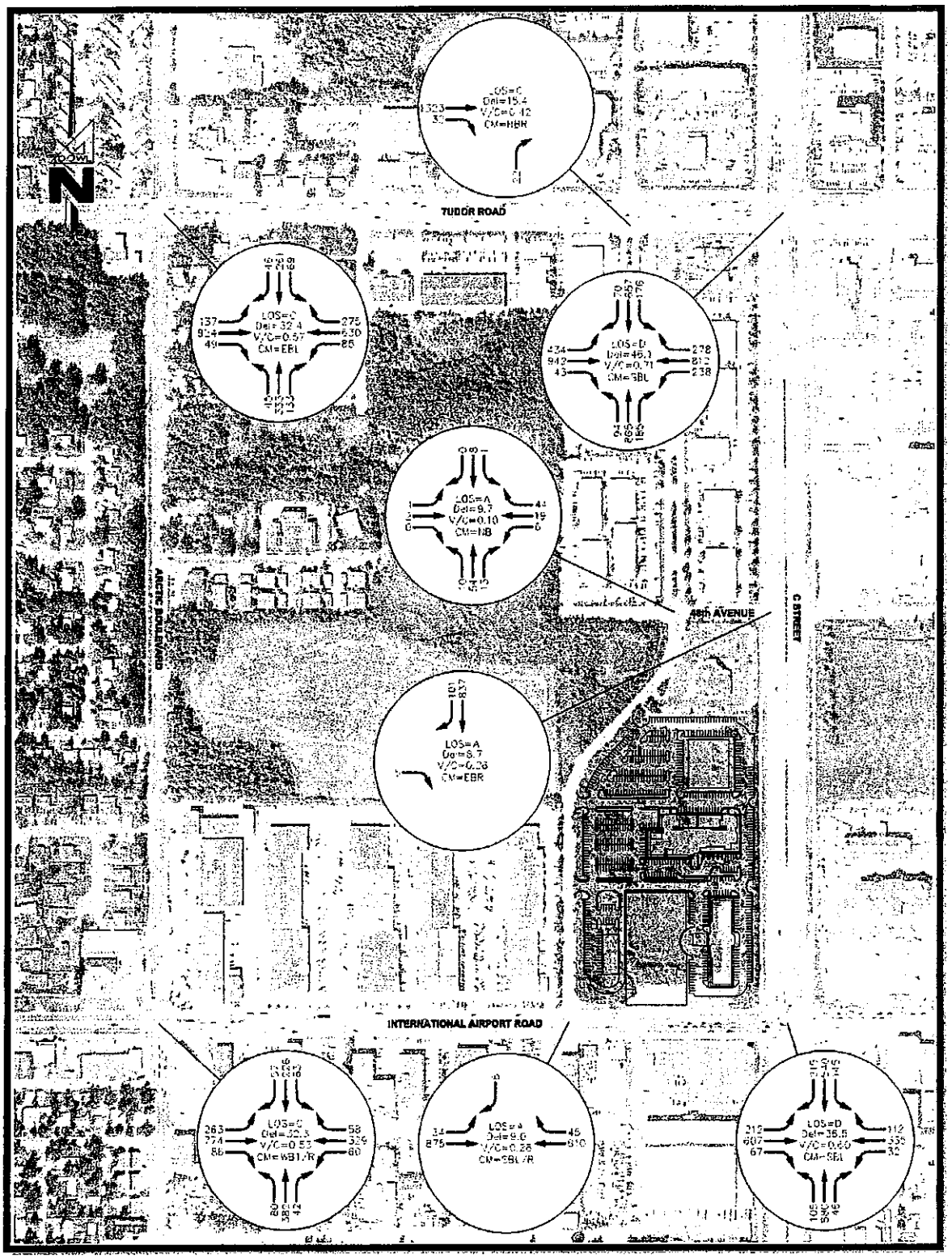

Figure 3-1: 2009 Background Volumes Weekday A.M. Peak Hour

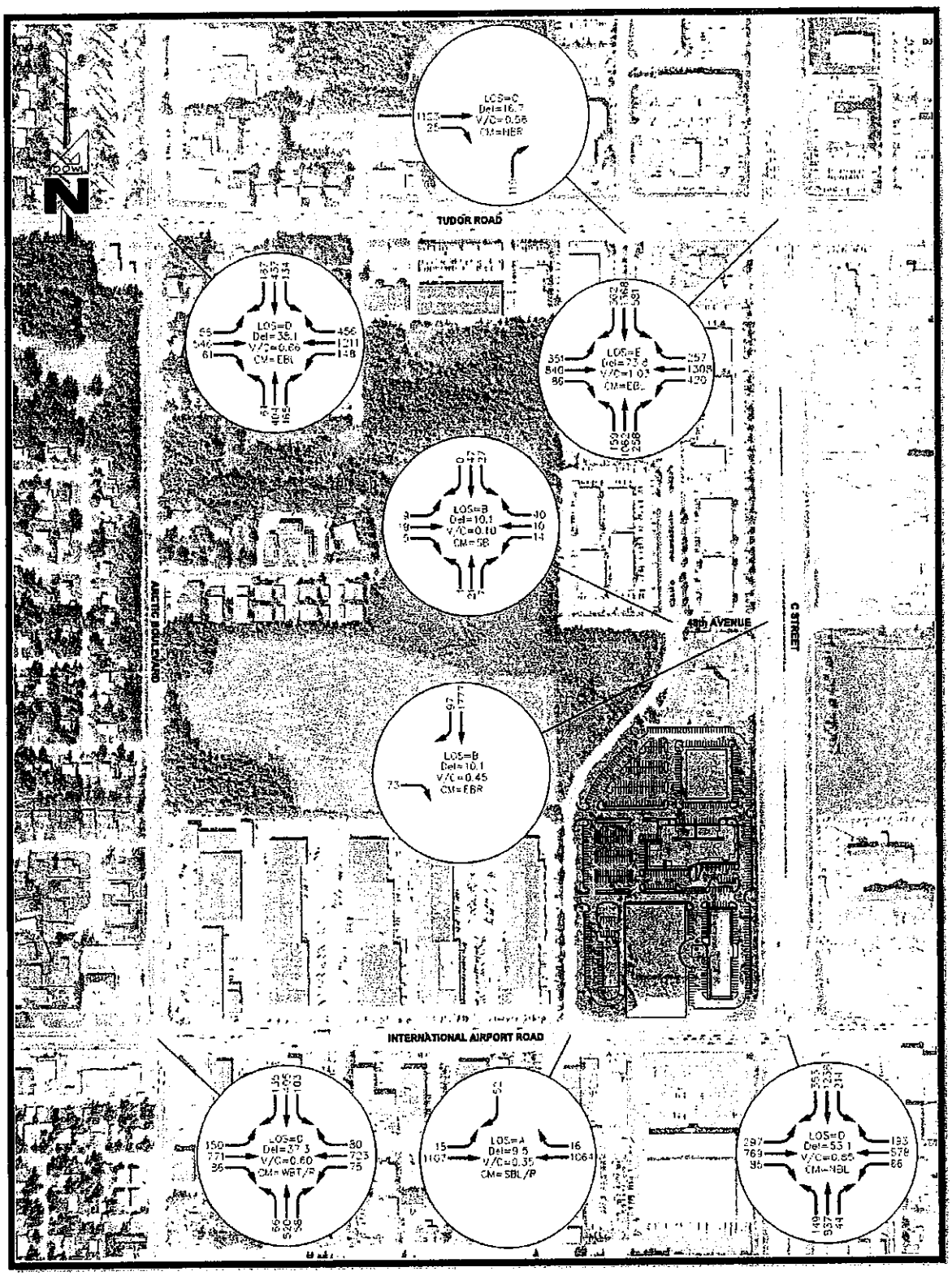

Figure 3-2: 2009 Background Volumes Weekday P.M. Peak Hour

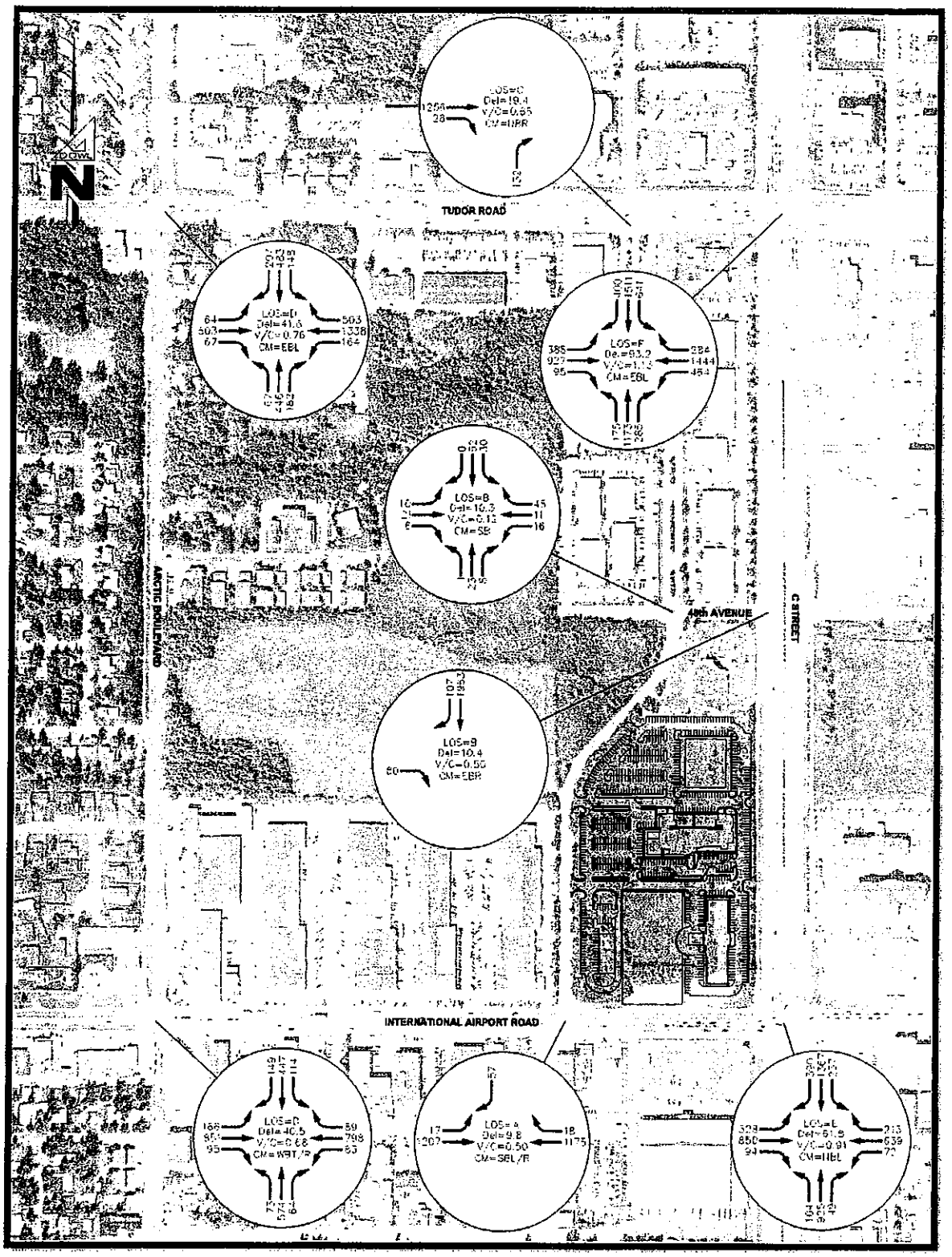

Figure 3-3: 2019 Background Volumes Weekday P.M. Peak Hour

3.2.2 Trip Distribution and Assignment

The distribution of site-generated trips onto the roadway system within the study area was estimated based on the following factors:

- Type and size of proposed development,
- Surrounding land uses and population, and
- Discussions with MOA and DOT&PF planning staff.

The site-generated trip distribution is shown on Figure 3-4. The corresponding site generated trip assignments for the net new trips shown in Table 3-1 are depicted on Figure 3-5.

In discussions with DOT&PF, it was observed that the southbound left-turn movement from Business Park Boulevard onto International Airport Road experiences significant delays during peak periods due to existing eastbound queues on International Airport Road. DOT&PF indicated that a median may be constructed as part of future road improvements in this area to limit left turn movements on International Airport Road (the median would still allow eastbound lefts onto Business Park Boulevard). Taking this into consideration, all existing and proposed southbound left-turn movements were redirected within the system to forecast the impact of eliminating this movement.

3.3 Total Future Traffic

The total traffic is defined as the sum of the background and site-generated traffic. Total traffic volumes for 2009 and 2019 are shown on Figures 3-6 and 3-7, respectively. In addition, the 2019 overall traffic volumes that include this development and the proposed Faith Christian Community development are shown on Figure 3-8.

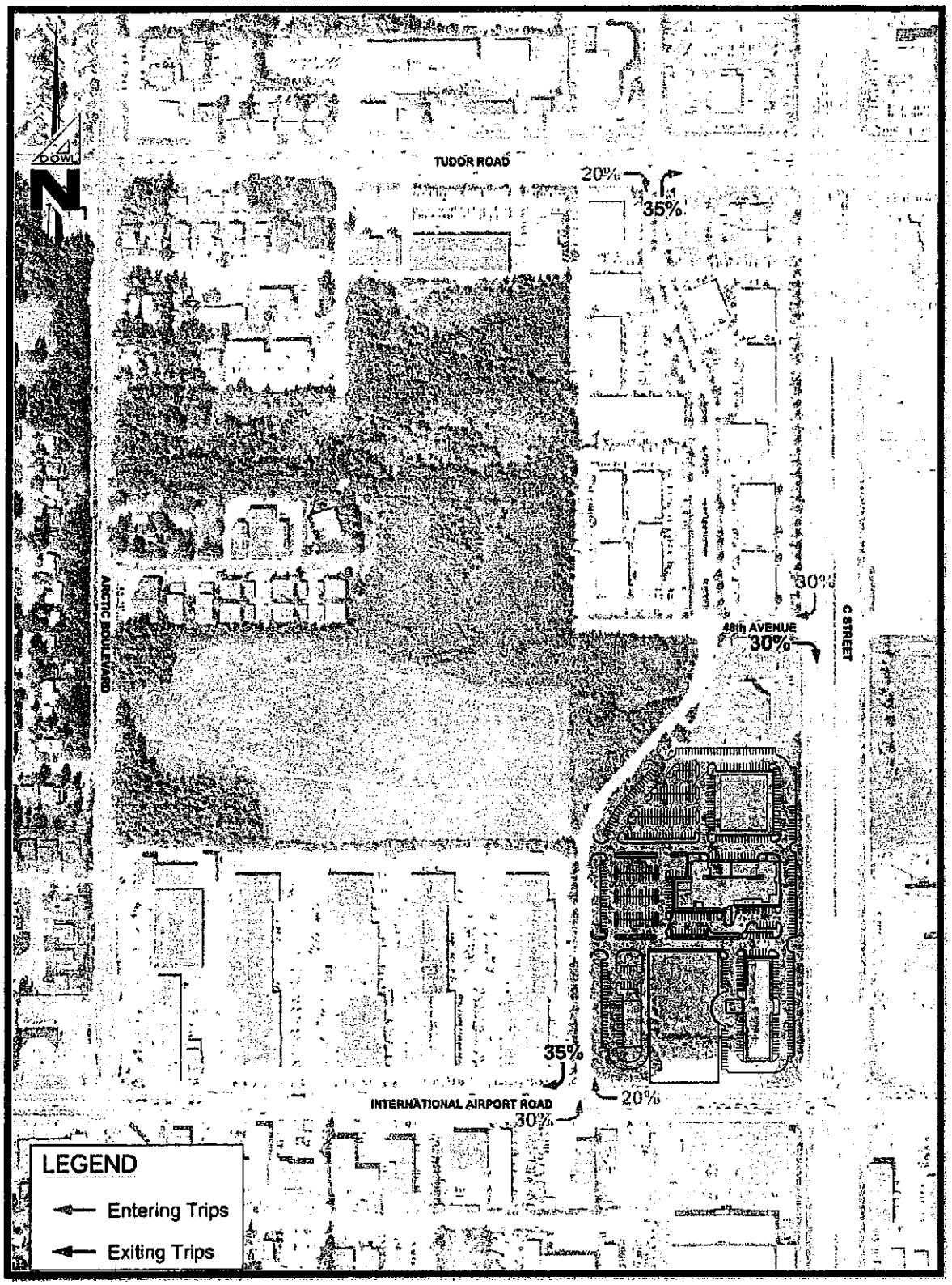

Figure 3-4: Site-Generated Trip Distribution Pattern

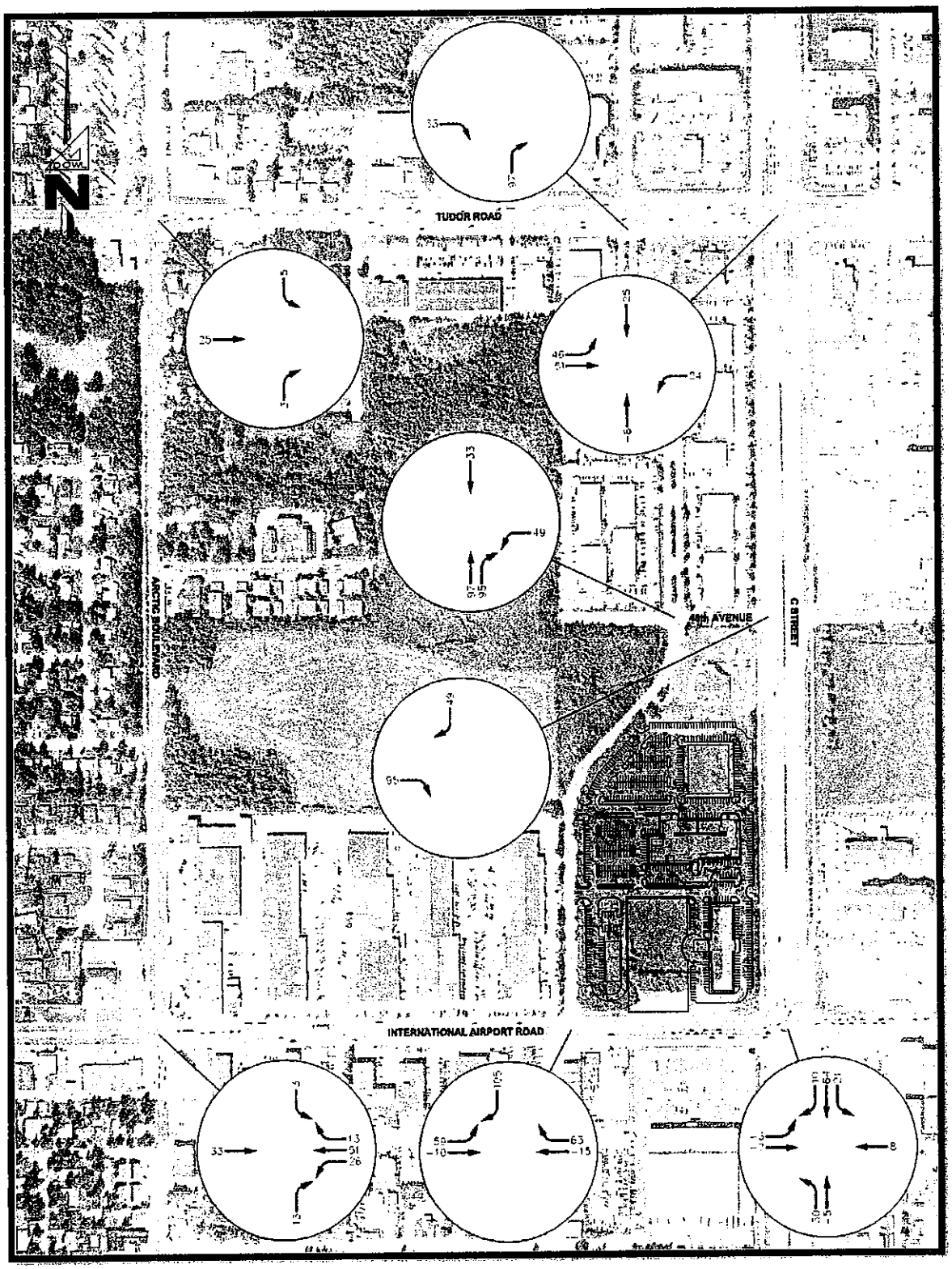

Figure 3-5: Site-Generated Traffic Weekday P.M. Peak Hour

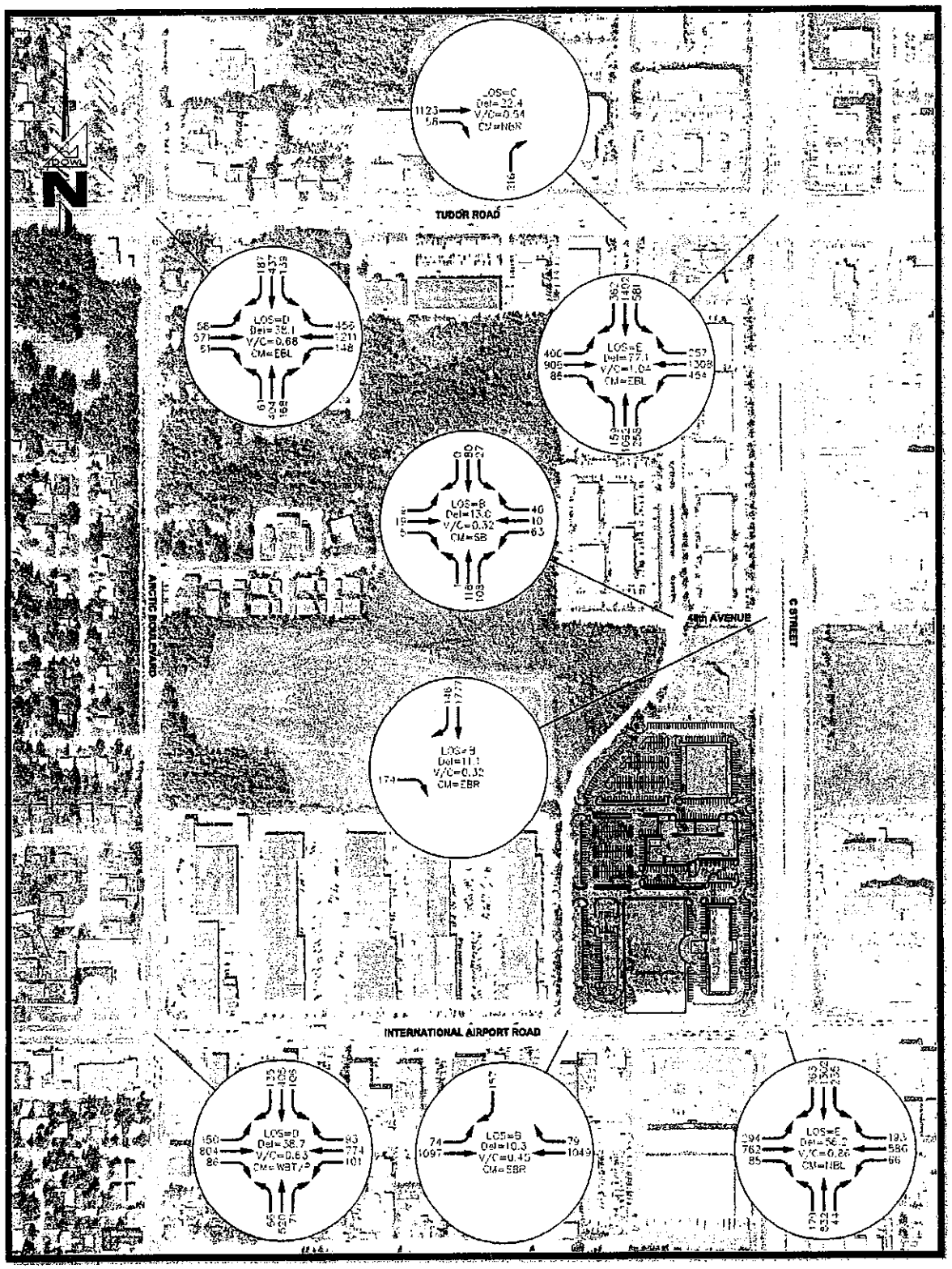

Figure 3-6: 2009 Total Traffic Volumes Weekday P.M. Peak Hour

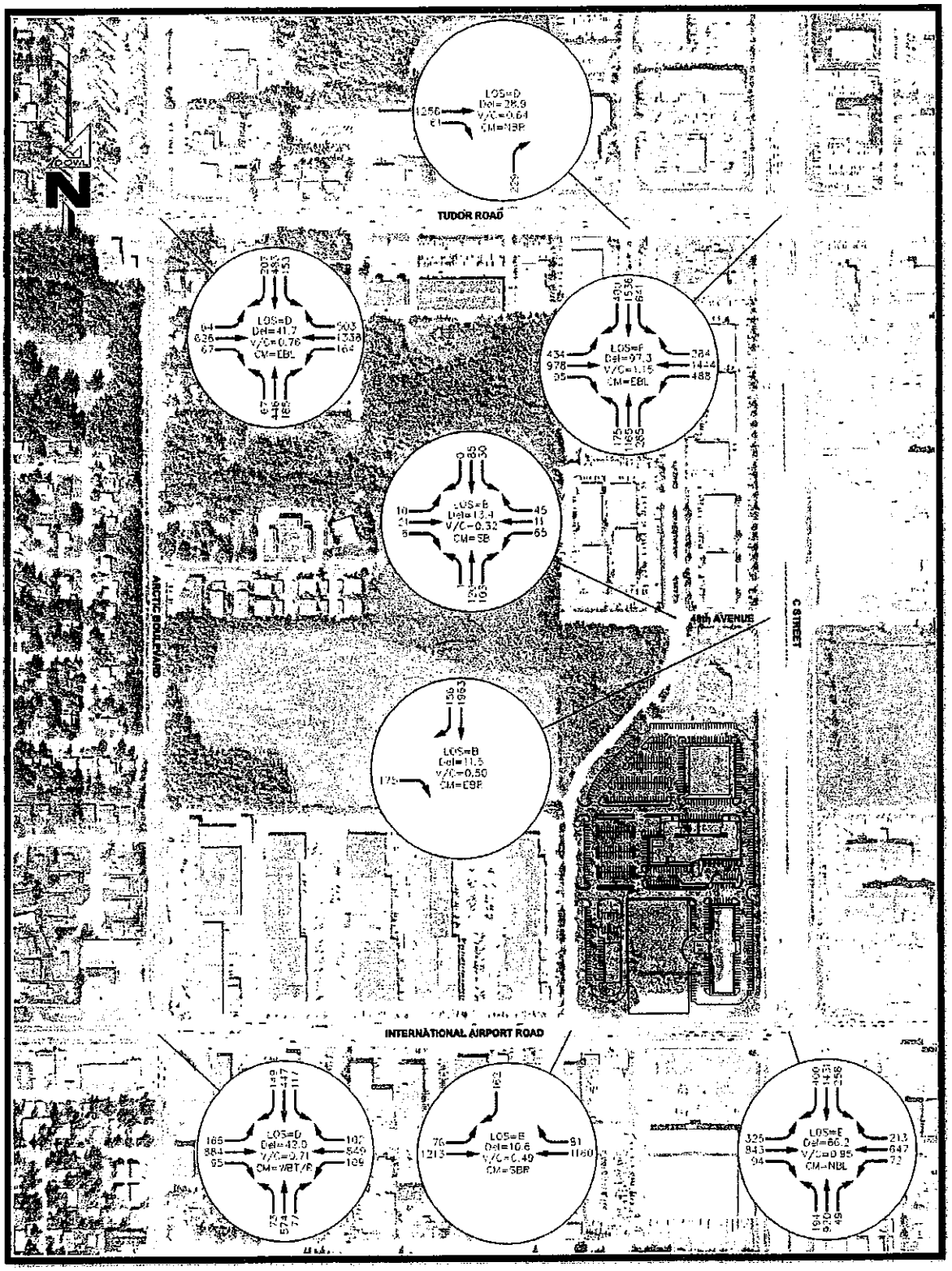

Figure 3-7: 2019 Total Traffic Volumes Weekday P.M. Peak Hour

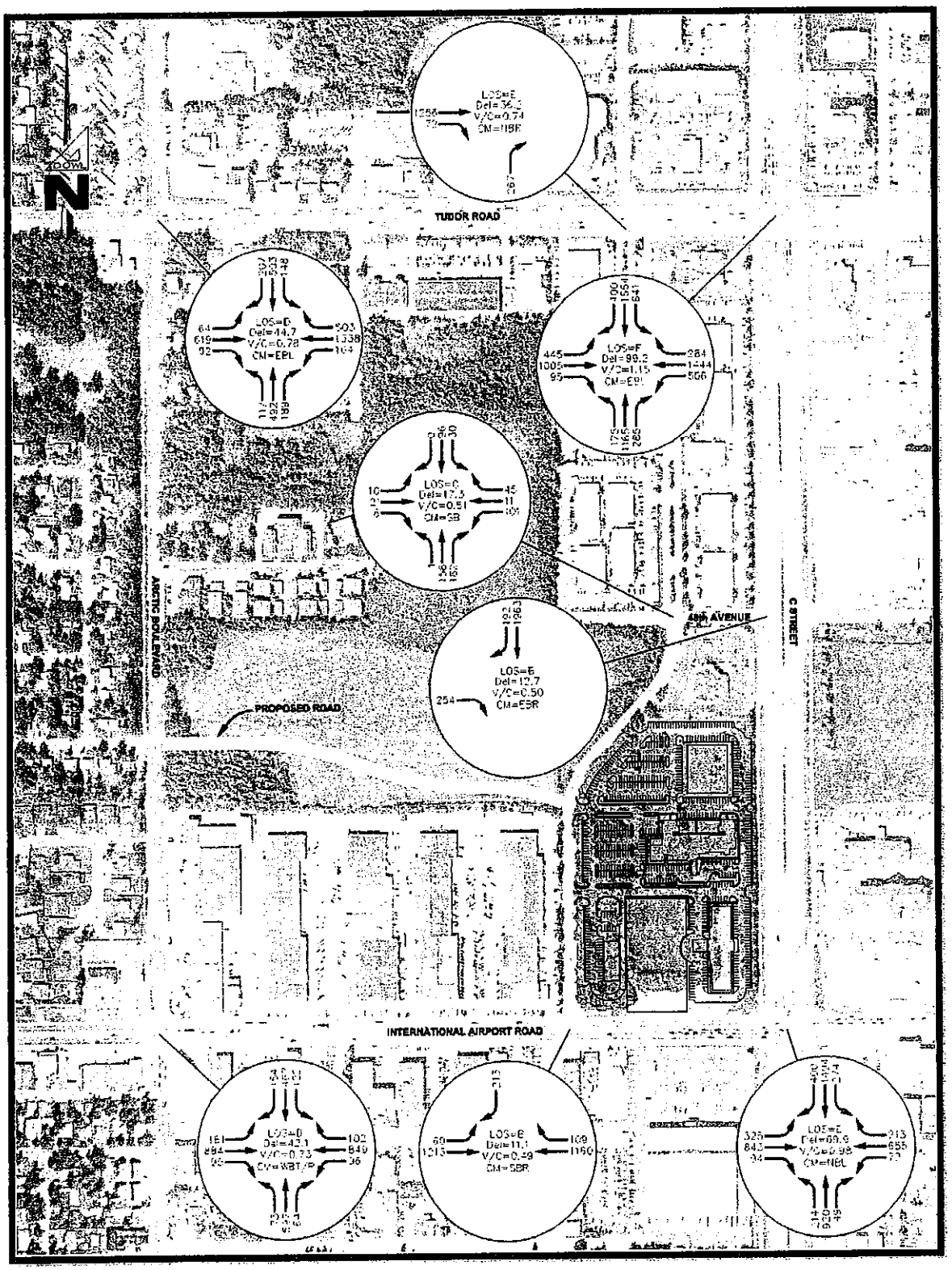

Figure 3-8: 2019 Overall Traffic Volumes Weekday P.M. Peak Hour

4.0 TRAFFIC ANALYSIS

4.1 Traffic Model

The following software programs were used to evaluate the study area roadway segments and intersections:

- Trafficware's Synchro, Version 7 (signalized intersections and queue analyses),
- McTrans' HCS2000 (unsignalized intersection analyses), and
- Strong Concept's TEAPAC, Turns (signal warrant analysis).

4.2 Capacity and Level of Service at the Study Intersection

4.2.1 Minimum Level of Service Criteria

DOT&PF's Driveway Design Standards and Regulations (17 AAC 10) established the following minimum acceptable LOS at study intersections for both the development's opening date (construction year) and in the design year:

Part A: LOS C, if the LOS on the date of application is LOS C or better, or

Part B: LOS D, if the LOS on the date of application is LOS D or poorer. However, if the LOS is poorer than LOS D, a lower minimum LOS is acceptable if the operation of the highway does not deteriorate more than 10 percent in terms of delay time or other appropriate measures of effectiveness from the LOS before the development's opening date.

4.2.2 Level of Service Summary

Table 4-1 summarizes the LOS and delay for the 2009 and 2019 background and total traffic conditions during the p.m. peak hour. Detailed analysis data from the traffic software programs is included in Appendices A and B.

Table 4-1: Weekday P.M. Level of Service and Delay Summary

Intersection		Background Traffic 2009		Total Traffic 2009		Background Traffic 2019		Total Traffic 2019		>10% Δ Delay
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	
Tudor Road/Arctic Boulevard	Signalized	D	38.1	D	38.1	D	41.6	D	41.7	No
Tudor Road/Business Park Boulevard	Unsignalized	C	16.7	C	22.4	C	19.4	D	28.9	Yes, 49%
Tudor Road/C Street	Signalized	E	73.8	E	77.1	F	93.2	F	97.3	No
48th Avenue/Business Park Boulevard	Unsignalized	B	10.1	B	13.0	B	10.3	B	13.4	N/A
48th Avenue/C Street	Unsignalized	B	10.1	B	11.1	B	10.4	B	11.5	N/A
International Airport Road/Arctic Boulevard	Signalized	D	37.3	D	38.7	D	40.5	D	42.0	No
International Airport Road/Business Park Boulevard	Unsignalized	A	9.5	B	10.3	A	9.8	B	10.6	N/A
International Airport Road/C Street	Signalized	D	53.1	E	56.2	E	61.8	E	66.2	No

Based on the information in Table 4-1, the intersections of Tudor Road/Arctic Boulevard, Tudor Road/Business Park Boulevard, Tudor Road/C Street, International Airport Road/Arctic Boulevard, and International Airport Road/C Street all operate at LOS D or worse under total traffic conditions in 2019.

At each of those intersections, except for Tudor Road/Business Park Boulevard, the intersection delay is being impacted by less than ten percent over background, thus mitigation is not required.

The 2019 overall traffic condition, that includes the C Street and International Airport development and the proposed Faith Christian Community development together, was analyzed to determine the total impact if both developments are completed. Table 4-2 summarizes the LOS and delay for the 2019 background and overall traffic conditions during the p.m. peak hour. Detailed analysis data from the traffic software programs is included in Appendix C.

Table 4-2: Overall Traffic Condition Level of Service and Delay Summary

Intersection		Background Traffic 2019		Overall Traffic 2019		>10% Δ Delay
		LOS	Delay	LOS	Delay	
Tudor Road/Arctic Boulevard	Signalized	D	41.6	D	44.7	No
Tudor Road/Business Park Boulevard	Unsignalized	C	19.4	E	36.2	Yes, 87%
Tudor Road/C Street	Signalized	F	93.2	F	99.2	No
48th Avenue/Business Park Boulevard	Unsignalized	B	10.3	C	17.3	N/A
48th Avenue/C Street	Unsignalized	B	10.4	B	12.7	N/A
International Airport Road/Arctic Boulevard	Signalized	D	40.5	D	42.1	No
International Airport Road/Business Park Boulevard	Unsignalized	B	11.0	B	11.1	N/A
International Airport Road/C Street	Signalized	E	61.8	E	69.9	Yes, 13%

Based on the information in Table 4-2, all of the same intersections are impacted in this condition as in the total traffic condition shown in Table 4-1. However, in this scenario, the combined impact to the International Airport Road/C Street intersection is only slightly greater than 10 percent. Mitigation at the International Airport Road/C Street intersection was not pursued further due to:

- the marginal need that is only triggered by combining the effects of both projects, and
- the fact that this intersection is already fully built out, and additional lanes cannot be added without significant right-of-way acquisition and expense.

Since both scenarios show that the Tudor Road/Business Park Boulevard intersection is at LOS D under the total traffic scenario and the delay impact is greater than 10 percent, a signal warrant analysis and consideration of mitigation alternatives are necessary.

4.3 Traffic Signal Warrant Analysis

In accordance with the *Manual on Uniform Traffic Control Devices*, a traffic signal warrant analysis for the construction year (2009) and design year (2019) is required for unsignalized study intersections with an intersection LOS D or worse.

The peak hour signal warrant is met at the Tudor Road/Business Park Boulevard intersection in both background and total traffic conditions. See Appendix D for Signal Warrant Analysis Worksheets.

Other roadway criteria should be reviewed while considering a signal in addition to signal warrants. Roadway geometry is one such consideration. The close proximity of Business Park Boulevard to the Tudor Road/C Street intersection eliminates the signal from consideration. In addition, during the p.m. peak hour, traffic is frequently observed queuing past Business Park Boulevard on Tudor Road. A signal is not recommended at this location due to the close proximity to C Street.

4.4 Queue Analysis

The purpose of the queue analysis is to determine if there is sufficient storage length for existing turning pockets and between intersections, and design for any new turning pockets constructed as part of the proposed development to accommodate the estimated 95th percentile queue length at the design year.

Table 4-3 compares the existing storage lengths to the 95th percentile storage lengths during the 2019 background and total traffic conditions at the locations impacted by the proposed project. If no turn pockets currently exist, the proposed storage pocket length is listed (see Appendices A and B for queue analysis worksheets).

Table 4-3: Queue Analysis - 2019

Intersection	Lane/Direction	Existing or Proposed Storage Length (feet)	Background Traffic 95th Percentile Queue (feet)	Total Traffic 95th Percentile Queue (feet)
Tudor Road/ Arctic Boulevard	Northbound Right Southbound Left	50 200	204 184	208 189
Tudor Road/ Business Park Boulevard	Northbound Right	150*	41	106
Tudor Road/ C Street	Eastbound Left Westbound Left	350 300	393 359	429 402
48th Avenue/ Business Park Boulevard	Northbound Shared Southbound Shared	250* 125*	3 10	34 22
48th Avenue/ C Street	Eastbound Right	250*	10	25
International Airport Road/ Arctic Boulevard	Westbound Left Southbound Left	250 120	77 129	118 133
International Airport Road/ Business Park Boulevard	Eastbound Left Southbound Right	250 400*	2 6	12 20
International Airport Road/ C Street	Northbound Left Southbound Left Southbound Right	200 350 250	335 412 238	393 442 248

*Distance to nearest drive aisle or driveway location.

The queue analysis revealed that the 95th percentile queue lengths during the total traffic volume conditions exceed available storage length at the intersections of Tudor Road/Arctic Boulevard, Tudor Road/C Street, International Airport Road/Arctic Boulevard, and International Airport Road/C Street. As shown in Table 4-3, the storage lengths at these intersections are insufficient under background conditions and the development has minor impact on the queue lengths; typically no more than one to two additional vehicles in the queue.

4.5 Traffic Control during Construction

Temporary traffic control during construction will be needed to maintain traffic flow along C Street, International Airport Road, and Business Park Boulevard, and to maintain adequate access to all surrounding properties. Any rerouted access roads or access closures must be approved in advance by the affected property owners and then must be adequately signed and maintained until existing access roads are restored or new, permanent access roads are in place.

5.0 CONCLUSIONS

Based on the results of this TIA, consideration of mitigation is required at the intersection of Tudor Road/Business Park Boulevard due to the deteriorated LOS that results from the proposed development. The peak hour signal warrant is met at this location. However, installing a signal at this location is not recommended due to the close proximity of the Tudor Road/C Street intersection. Since turning movements have already been restricted to right-in, right-out only, no other mitigation is recommended at this intersection. Furthermore, no mitigation is identified for the traffic generated by the C Street and International Airport Road development.

APPENDIX A

Background Traffic Conditions Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	137	924	49	85	630	275	45	333	133	69	261	46
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	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3513		1770	3539	1583	1770	3539	1583	1770	3460	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.50	1.00	1.00	0.46	1.00	
Satd. Flow (perm)	1770	3513		1770	3539	1583	933	3539	1583	851	3460	
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)	149	1004	53	92	685	299	49	362	145	75	284	50
RTOR Reduction (vph)	0	3	0	0	0	198	0	0	44	0	8	0
Lane Group Flow (vph)	149	1054	0	92	685	101	49	362	101	75	326	0
Turn Type	Prot			Prot		Perm	pm+pt		Perm	pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		
Actuated Green, G (s)	15.0	41.5		11.4	37.9	37.9	42.4	37.1	37.1	43.8	37.8	
Effective Green, g (s)	15.0	41.5		11.4	37.9	37.9	42.4	37.1	37.1	43.8	37.8	
Actuated g/C Ratio	0.13	0.37		0.10	0.34	0.34	0.38	0.33	0.33	0.39	0.34	
Clearance Time (s)	4.0	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	3.0	
Lane Grp Cap (vph)	237	1302		180	1198	536	393	1172	524	382	1168	
v/s Ratio Prot	c0.08	c0.30		0.05	0.19		0.01	c0.10		c0.01	0.09	
v/s Ratio Perm						0.06	0.04		0.06	0.07		
v/c Ratio	0.63	0.81		0.51	0.57	0.19	0.12	0.31	0.19	0.20	0.28	
Uniform Delay, d1	45.9	31.7		47.7	30.4	26.2	22.3	27.9	26.8	21.8	27.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.1	3.8		2.4	0.7	0.2	0.1	0.7	0.8	0.3	0.6	
Delay (s)	51.0	35.5		50.1	31.1	26.4	22.4	28.6	27.6	22.1	27.7	
Level of Service	D	D		D	C	C	C	C	C	C	C	
Approach Delay (s)		37.4			31.4			27.8			26.7	
Approach LOS		D			C			C			C	

Intersection Summary

HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Volume (veh/h)	1323	32	0	976	0	22
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1438	35	0	1061	0	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)				549		
pX, platoon unblocked					0.77	
vC, conflicting volume			1473		1968	719
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1473		1658	719
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	94
cM capacity (veh/h)			454		68	371

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	719	719	35	530	530	24
Volume Left	0	0	0	0	0	0
Volume Right	0	0	35	0	0	24
cSH	1700	1700	1700	1700	1700	371
Volume to Capacity	0.42	0.42	0.02	0.31	0.31	0.06
Queue Length 95th (ft)	0	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	15.4
Lane LOS						C
Approach Delay (s)	0.0			0.0		15.4
Approach LOS						C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	434	942	43	238	812	278	94	865	185	176	657	70
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	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
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)	472	1024	47	259	883	302	102	940	201	191	714	76
RTOR Reduction (vph)	0	0	24	0	0	107	0	0	135	0	0	50
Lane Group Flow (vph)	472	1024	23	259	883	195	102	940	66	191	714	26
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	24.5	52.1	52.1	15.6	43.2	43.2	8.5	44.6	44.6	12.4	48.5	48.5
Effective Green, g (s)	24.5	52.1	52.1	15.6	43.2	43.2	8.5	44.6	44.6	12.4	48.5	48.5
Actuated g/C Ratio	0.17	0.37	0.37	0.11	0.31	0.31	0.06	0.32	0.32	0.09	0.34	0.34
Clearance Time (s)	4.0	4.0	4.0	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	3.0	3.0	3.0
Lane Grp Cap (vph)	598	1310	586	381	1087	486	207	1612	502	303	1753	546
v/s Ratio Prot	c0.14	c0.29		0.08	0.25		0.03	c0.18		c0.06	c0.14	
v/s Ratio Perm			0.01			0.12			0.04			0.02
v/c Ratio	0.79	0.78	0.04	0.68	0.81	0.40	0.49	0.58	0.13	0.63	0.41	0.05
Uniform Delay, d1	55.6	39.3	28.3	60.1	45.0	38.5	64.0	40.3	34.2	61.9	35.1	30.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	3.1	0.0	4.8	4.7	0.5	1.8	1.5	0.5	4.2	0.7	0.2
Delay (s)	62.5	42.4	28.3	64.9	49.7	39.1	65.9	41.8	34.8	66.2	35.8	30.9
Level of Service	E	D	C	E	D	D	E	D	C	E	D	C
Approach Delay (s)		48.1			50.2			42.6			41.4	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	46.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	2	0	6	19	44	10	54	13	1	8	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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	2	0	7	21	48	11	59	14	1	9	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)												
pX, platoon unblocked												
vC, conflicting volume	68			2			66	86	2	105	62	45
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	68			2			66	86	2	105	62	45
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			99	93	99	100	99	100
cM capacity (veh/h)	1533			1620			916	800	1082	812	825	1025

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	75	84	10
Volume Left	1	7	11	1
Volume Right	0	48	14	0
cSH	1533	1620	852	823
Volume to Capacity	0.00	0.00	0.10	0.01
Queue Length 95th (ft)	0	0	8	1
Control Delay (s)	2.5	0.7	9.7	9.4
Lane LOS	A	A	A	A
Approach Delay (s)	2.5	0.7	9.7	9.4
Approach LOS			A	A

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	16.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	5	0	0	0	0	1204	0	0	837	101
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	0	0	5	0	0	0	0	1309	0	0	910	110
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1316			1284	
pX, platoon unblocked	0.92	0.92	0.91	0.92	0.92	0.88	0.91			0.88		
vC, conflicting volume	1401	2273	358	1617	2328	436	1020			1309		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	492	1439	0	727	1499	0	685			862		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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	99	100	100	100	100			100		
cM capacity (veh/h)	423	121	989	286	112	951	825			681		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	5	0	436	436	436	0	364	364	292
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	5	0	0	0	0	0	0	0	110
cSH	989	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.00	0.26	0.26	0.26	0.00	0.21	0.21	0.17
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	0
Control Delay (s)	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A							
Approach Delay (s)	8.7	0.0	0.0				0.0		
Approach LOS	A	A							

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	28.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	263	774	86	60	329	58	80	382	42	83	226	57
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	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3486		1770	3460		1770	3486		1770	3432	
Flt Permitted	0.30	1.00		0.16	1.00		0.53	1.00		0.41	1.00	
Satd. Flow (perm)	550	3486		295	3460		984	3486		771	3432	
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)	286	841	93	65	358	63	87	415	46	90	246	62
RTOR Reduction (vph)	0	7	0	0	9	0	0	4	0	0	12	0
Lane Group Flow (vph)	286	927	0	65	412	0	87	457	0	90	296	0
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	49.6	39.0		33.1	26.5		55.4	46.6		55.4	46.6	
Effective Green, g (s)	49.6	39.0		33.1	26.5		55.4	46.6		55.4	46.6	
Actuated g/C Ratio	0.42	0.33		0.28	0.23		0.47	0.40		0.47	0.40	
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)	432	1162		167	784		525	1388		440	1367	
v/s Ratio Prot	c0.11	c0.27		0.02	0.12		0.01	c0.13		c0.02	0.09	
v/s Ratio Perm	0.17			0.09			0.07			0.08		
v/c Ratio	0.66	0.80		0.39	0.53		0.17	0.33		0.20	0.22	
Uniform Delay, d1	24.1	35.4		32.0	39.7		17.1	24.4		17.3	23.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.8	3.9		1.5	0.6		0.1	0.6		0.2	0.4	
Delay (s)	27.9	39.3		33.5	40.4		17.2	25.0		17.5	23.5	
Level of Service	C	D		C	D		B	C		B	C	
Approach Delay (s)		36.7			39.4			23.8			22.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	117.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	34	875	610	45	0	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	951	663	49	0	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)			704			
pX, platoon unblocked	0.90				0.90	0.90
vC, conflicting volume	712				1237	356
vC1, stage 1 conf vol					688	
vC2, stage 2 conf vol					549	
vCu, unblocked vol	446				1032	49
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	96				100	99
cM capacity (veh/h)	995				417	904

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	37	476	476	442	270	9
Volume Left	37	0	0	0	0	0
Volume Right	0	0	0	0	49	9
cSH	995	1700	1700	1700	1700	904
Volume to Capacity	0.04	0.28	0.28	0.26	0.16	0.01
Queue Length 95th (ft)	3	0	0	0	0	1
Control Delay (s)	8.8	0.0	0.0	0.0	0.0	9.0
Lane LOS	A					A
Approach Delay (s)	0.3			0.0		9.0
Approach LOS						A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		