CITY OF DARIEN

PLANNING AND ZONING COMMISSION

AGENDA

Wednesday, July 1, 2015
7:00 PM

City Hall
Council Chambers

1. Call to Order

2. Establish Quorum

3. Regular Meeting:

   A. Public hearing
   PZC 2015-06: 951 N. Frontage Road, WoodSpring Suites (formerly Value Place Hotel): Petitioner seeks approval of the following:
   1. To rezone subject property from OR&I Office, Research and Light Industry to B- 3 General Business, Zoning Ordinance Section 5A-6-2.
   2. Special use for a hotel within the B-3 zoning district, Zoning Ordinance Section 5A-8-4-4.
   3. Variation to increase the maximum permitted building from 40 feet to 50 feet, Zoning Ordinance Section 5A-8-4-9.
   4. Variation to decrease the minimum required foundation landscaping with from 10 feet to 7 feet, Zoning Ordinance Section 5A-10-7(A).
   5. Variation to increase the maximum permitted free-standing sign height from 12 feet to 30 feet, Sign Code Section 4-3-10(B)(3).
   6. Variation to permit a pole sign, Sign Code Section 4-3-7(B)(1);
   7. Variation to permit an electronic message board sign, Sign Code Section 4-3-10(B)(3).
   8. Variation to permit wall signage on the east and west building facades which do not face either a public right-of-way or building frontage, Sign Code Section 4-3-10(B)(2).

4. Correspondence

5. Old Business/Planner's Report

6. Minutes: May 20, 2015

6. Next Meeting: **July 15, 2015, 7:00 PM**

7. Adjournment

AGENDA MEMO
PLANNING AND ZONING COMMISSION
MEETING DATE: July 1, 2015

Issue Statement

PZC 2015-06: 951 N. Frontage Road, WoodSpring Suites (formerly Value Place Hotel):
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1. To rezone subject property from OR&I Office, Research and Light Industry to B- 3 General Business, Zoning Ordinance Section 5A-6-2.
2. Special use for a hotel within the B-3 zoning district, Zoning Ordinance Section 5A-8-4-4.
3. Variation to increase the maximum permitted building from 40 feet to 50 feet, Zoning Ordinance Section 5A-8-4-9.
4. Variation to decrease the minimum required foundation landscaping with from 10 feet to 7 feet, Zoning Ordinance Section 5A-10-7(A).
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7. Variation to permit an electronic message board sign, Sign Code Section 4-3-10(B)(3).
8. Variation to permit wall signage on the east and west building facades which do not face either a public right-of-way or building frontage, Sign Code Section 4-3-10(B)(2).

General Information

Petitioner:	Holladay Properties 6370 Ameriplex Drive, Suite 110 Portage, IN 46368
Property Owner:	Endlichhofer Trust 1S2780 Summit Court, C-2 Oakbrook Terrace, IL 60181
Property Location:	951 N. Frontage Road
PIN:	09-34-302-019
Existing Zoning:	OR&I Office, Research and Light Industry
Existing Land Use:	Vacant
Proposed Zoning:	B-3 General Business
Proposed Land Use:	Hotel
Comprehensive Plan Update:	Office

Surrounding Zoning and Land Use:

North: R-3 Multi-Family Residence: townhomes (single-family attached homes)
East: B-1 Local Business (DuPage County): single-family residence

South: R-1 Single-Family Residence and I-1 General Industrial: I-55, City's Municipal Services Facility on south side of I-55.
West: B-1 Local Business (DuPage County): landscape

Size of Property:	3.4 acres
Floodplain:	None.
Natural Features:	Property has several small wetland areas.
Transportation:	Property has access onto N. Frontage Road
History:	Planning and Zoning Commission reviewed a concept plan in December 2014.

Documents Submitted

This report is based on the following information submitted to the Community Development Department by the Petitioner:

1. Plans, includes ALTA Survey, site plan, engineering, landscape, building elevations and photometric plans, 18 sheets, prepared by Holladay Properties, Nelson Surveyors, Inc., and CivWorks Consulting, LLC., submittal date May 18, 2015.
2. Sign Survey, 7 sheets, prepared by AGI, dated May 23, 2015.
3. Traffic Study, prepared by KLOA, dated March 10, 2015

Planning Overview/Discussion

The subject property is located on the south side of N. Frontage Road at Mystic Trace.

The petitioner proposes a 4-story, 42,604 square foot, 124 room extended stay type hotel.

Rezoning
In order to accommodate the proposed use, the property needs to be rezoned from OR&I Office, Research and Light Industry to B-3 General Business. Staff does not object to the proposed zoning classification.

Special Use
Within the B-3 zoning district, a hotel requires special use approval. Special uses are those uses specifically listed as such, that is, the use of the property requires City Council approval. Staff does not object to the proposed special use.

Site Plan
Generally, staff finds the site plan is laid out well. Building and parking setbacks are met, building floor area ratio and lot coverage comply. The trash enclosure is located on the south

side of the property, screened by CMU block masonry enclosure.

The number of parking spaces provided complies, 1 space per room plus 1 space per employee required and provided. The number of handicapped spaces provided complies. The site plan shows a total of 129 parking spaces, which includes 5 handicapped accessible spaces. The parking stall dimensions as well as driveway aisles and maneuvering areas comply.

Driveway location and dimensions comply with the Darien Zoning Ordinance. However, N. Frontage Road (Joliet Road) and I-55 are the State's jurisdiction. Therefore, work within these right-of-ways requires a permit from the Illinois Department of Transportation (IDOT). Among the comments from IDOT, the driveway entrance is to be moved so it is opposite Mystic Trace. Due to the wetlands in that portion of the property, coordination with DuPage County will be needed.

Landscaping
The landscape plan shows plantings along the perimeter of the site (areas outside of the wetlands at the northwest area of the parcel), within parking lot landscape islands, around the building foundation and along the north edge of the parking lot. Generally, the landscape plan meets the intent of the Zoning Ordinance.

Perimeter yard landscaping is lacking along the north and west side of the parcel. However, the northwest corner of the parcel is occupied by wetlands which are shown to remain. The Zoning Ordinance allows for existing vegetation and other landscape features which are to be preserved to meet the landscape requirements. The petitioner should confirm how the wetlands will be maintained and/or enhanced.

Within parking lot landscape islands, additional shrubs are required. However, if the landscape planner believes the proposed planting schedule will fill the landscape island with plant material, then this item can be addressed at the time of final inspection.

The petitioner is seeking a variation for a building foundation landscape strip less than 10 feet wide (shown to be between 7-8 feet), and parking landscape islands have less than the required amount of landscaping. The petitioner should explain the need for this variation. The plan shows landscaping along the building foundation, combination of trees and shrubs.

Building Elevations
The exterior building materials include: face brick, Hardiplank lap siding and trim, glass and aluminum doors, plastic shutters, composition shingles.

The petitioner is requesting a variation from the Zoning Ordinance to permit a 4-story, 50-foot tall building where 3-stories not to exceed 40 feet is permitted. Given the site's location along I-55 and the proposed use, staff does not object to this variation. The building has been pushed away from N. Frontage Road, the building is over 140 feet from N. Frontage Road.

Signage
The plan proposes two free standing signs, a ground sign located along N. Frontage Road and a pole or pylon sign located along I-55. The pole sign includes an electronic message board. Wall signage is proposed on the north, east and west sides of the building.

The ground sign and wall sign on the front façade of the building comply in terms of location, size and height.

The petitioner is seeking variations from the Sign Code for the pole sign, pole sign height, electronic message board and wall signage on the east and west building facades. Given this site's location along I-55, the need for motorists on I-55 to be able to see and find the hotel site, staff does not object to this variation.

Photometric
The exterior lighting plan shows the amount of light at the property line complies. Regardless, once constructed, light shields will be required if there is light glare onto an adjacent property or road right-of-way.

Traffic Study
The petitioner submitted a traffic study conducted by Kenig, Lindgren, O'Hara, Aboona, INC (KLOA) dated March 10, 2015. The traffic study concludes:

- The development will generate a low volume of traffic, as a result, will not have a significant impact on area roadways.
- The existing roadway system is sufficient to accommodate the traffic to be generated by the development.
- The Cass Avenue and N. Frontage Road intersection is and will continue operating at acceptable levels of service.
- N. Frontage Road westbound maximum queues currently experienced at the Cass Avenue intersection will not be exacerbated by the proposed development.
- The proposed single access driveway in/out of the development will be able to sufficiently accommodate all development traffic.

The traffic study does not recommend any improvements or alterations to adjacent roadways.

Engineering/Stormwater Management/Wetlands
The property contains several small wetlands. Wetlands fall under DuPage County's jurisdiction. The petitioner has submitted plans to the County for review. The County must certify plans comply with the Countywide Stormwater Management Ordinance before any construction permits can be issued by the City. The petitioner has made their submittal to DuPage County.

A combination of basins and underground storage vaults will provide stormwater detention. City

The City Engineer provided comments in a letter dated June 23, 2015, from Christopher B. Burke Engineering. The comments are minor.

Zoning Ordinance Variation Criteria

1. Whether the general character of the property will be adversely altered.
2. Whether the overall value of the property will be improved and there will not be any potential adverse effects on the neighboring properties.
3. Whether the alleged need for the variation has been created by any person presently having a proprietary interest in the premises.
4. Whether the proposed variation will impair an adequate supply of light and air in adjacent property, substantially increase congestion in the public streets, increase the danger of fire or endanger the public safety.
5. Whether the proposed variation will adversely alter the essential character of the neighborhood.

Sign Code Variation Criteria

1. To promote and protect the public health, safety, comfort, morals, convenience and general welfare of the residents of the City.
2. To enhance the physical appearance of the City by preserving the scenic and natural beauty of the area.
3. To promote the safety and recreational value of public travel.
4. To protect the public investment in streets and highways by reducing sign or advertising distractions that may increase traffic accidents.
5. To ensure compatibility of signs with surrounding land uses.
6. To enhance the economy of the City by promoting the reasonable, orderly and effective display of outdoor advertising.
7. To protect the pedestrians and motorists within the City from damage or injury caused by distractions, obstructions and hazards created by a proliferation of off-site advertising signs.
8. To prevent the proliferation of off-site advertising signs which distract from the development of the City in an aesthetically pleasing manner.
9. To preserve the character of the City which is a single-family residential community by assuring the compatibility of signs with the surrounding land uses.

Staff Findings/Recommendations

The requested variations from the Zoning Ordinance will not will impair an adequate supply of light and air in adjacent property, will not substantially increase congestion in the public streets, will not increase the danger of fire or endanger the public safety.

The requested variations from the Sign Code will enhance the economy of the City by promoting reasonable, orderly and effective display of outdoor advertising.

Therefore, staff recommends the Planning and Zoning Commission make the following

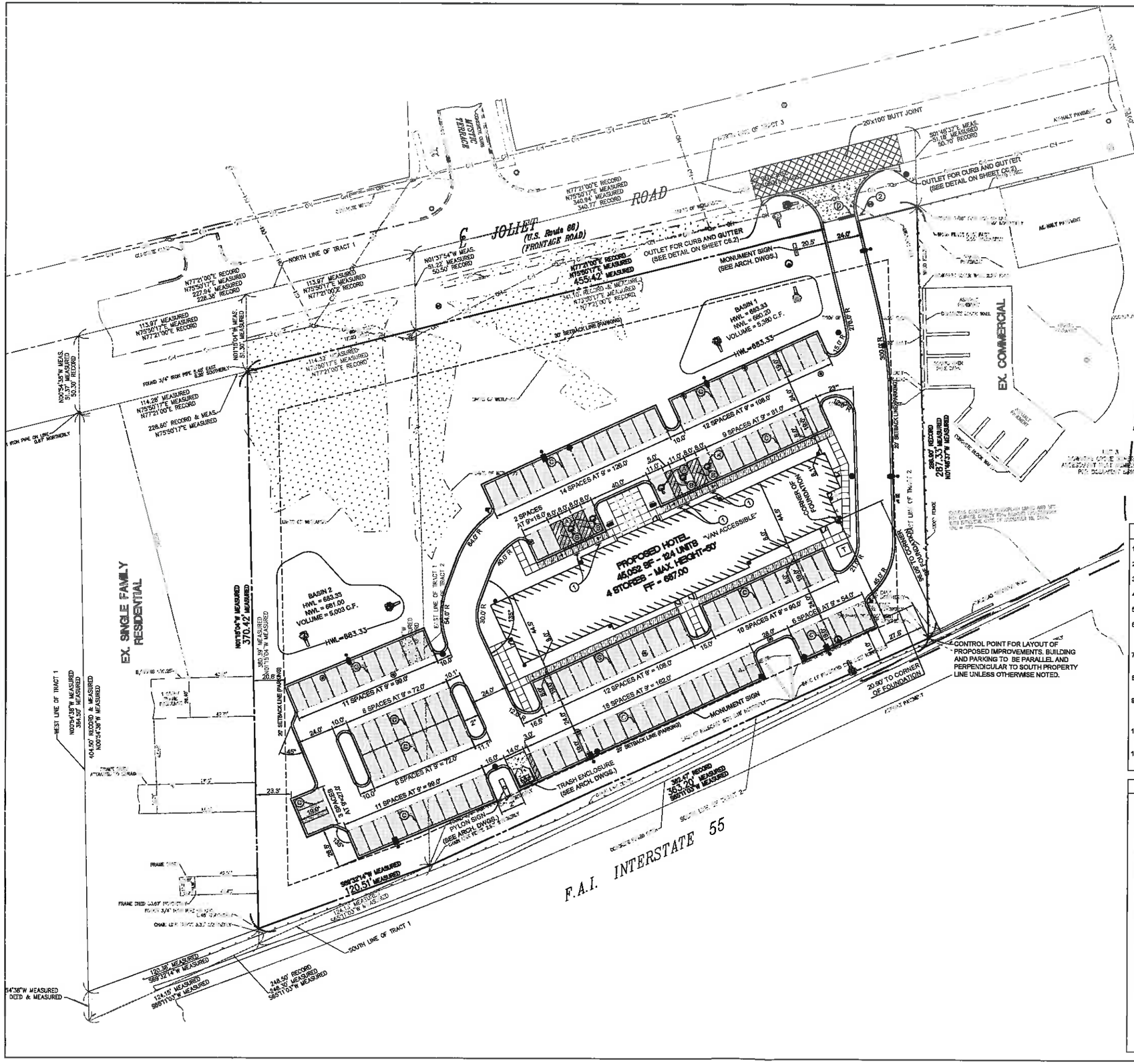
recommendation approving the petition subject to conditions:

Based upon the submitted petition and the information presented, the request associated with PZC 2015-06 is in conformance with the standards of the Darien City Code and, therefore, I move the Planning and Zoning Commission approve the petition as presented, subject to the following conditions:

1. Address comments noted in letter dated June 23, 2015, from Dan Lynch, PE, Christopher B. Burke Engineering, Ltd.
2. Parking landscape islands to be full of plant material, final inspection to verify.
3. All exterior lighting to be directed in a way to avoid causing glare onto adjacent properties. The need for light shields to be verified during final inspection.

Decision Mode

Planning and Zoning Commission: July 1, 2015



SITE DATA

TOTAL SITE AREA = 3.40± AC

TOTAL BUILDING AREA = 45,052 G.S.F.

PARKING REQUIRED:
1 SPACE PER UNIT = 124 SPACES
1 SPACE PER EMPLOYEE = 5 SPACES

TOTAL PARKING REQUIRED = 129 SPACES

PARKING PROVIDED:
REGULAR PARKING PROVIDED = 124 SPACES
HANDICAP PARKING PROVIDED = 5 SPACES

TOTAL PARKING PROVIDED = 129 SPACES

PAVEMENT MARKING AND SIGN LEGEND

1. R7-8 HANDICAP PARKING SIGN (12"X18") WITH $250 FINE AND R7-8A VAN ACCESSIBLE SIGN WHERE NOTED
2. R1-1 STOP SIGN (30"X30")
- (A) HANDICAP SYMBOL PER LATEST ADA STANDARDS
- (B) 4" SOLID YELLOW AT 24" C-C AT 45 DEGREES
- (C) 4" SOLID YELLOW STRIPE (TYP)
- (D) 24" WIDE WHITE STOP BAR

GENERAL NOTES

1. ALL RADII ARE 5.0' UNLESS OTHERWISE NOTED.
2. CURB SHALL BE B6.12 CURB AND GUTTER UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS AND CURB RADII ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
4. ALL SITE SIGNAGE SHALL BE IN CONFORMANCE WITH M.U.T.C.D. STANDARDS, LATEST EDITION.
5. ALL PARKING SPACES SHALL BE ANGLED AT 90° TO THE ASSOCIATED DRIVE AISLE.
6. DETECTABLE WARNING STRIPS WITH TRUNCATED DOMES ON ALL CURB RAMPS SHALL CONSIST OF CONTRASTING COLOR TO ADJACENT PAVEMENT COLOR PER IDOT REGULATIONS, PREFERRED COLOR IS RED (FEDERAL COLOR STANDARD 30108)
7. REFER TO ARCHITECTURAL AND SIGNAGE PLANS FOR ANY ADDITIONAL SITE SIGNAGE AND PAVEMENT MARKINGS.
8. ALL TRAFFIC SIGNS SHALL BE INSTALLED AT 7' HIGH MEASURED FROM THE GROUND ELEVATION TO THE BOTTOM OF SIGN.
9. IF THE FRONTAGE ROAD PAVEMENT IS DAMAGED DURING CONSTRUCTION, THE PAVEMENT SHALL BE SAW CUT (PARTIAL DEPTH) A MINIMUM OF 2' FROM THE EDGE OF THE NEW CURB/GUTTER FLAG AND REPLACED WITH LIKE MATERIALS (SURFACE COURSE ONLY).
10. ALL UNDERGROUND UTILITIES ARE TO BE INSTALLED PRIOR TO BEGINNING PAVEMENT CONSTRUCTION.
11. REFER TO ARCHITECTURAL DRAWINGS FOR LIGHT POLE AND MONUMENT SIGN DESIGN, LOCATION DIMENSIONS, AND CONSTRUCTION DETAILS.

SITE PAVING LEGEND

HEAVY DUTY ASPHALT PAVEMENT
1.5" BITUMINOUS SURFACE COURSE, HOT MIX ASPHALT, MIX D, N50
2.5" BITUMINOUS BINDER COURSE, HOT MIX ASPHALT, IL-19, N50
12" AGGREGATE BASE COURSE, TYPE B (IDOT GRAD CA-6)

LIGHT DUTY ASPHALT PAVEMENT
1.5" BITUMINOUS SURFACE COURSE, HOT MIX ASPHALT, MIX D, N50
2.5" BITUMINOUS BINDER COURSE, HOT MIX ASPHALT, IL-19, N50
10" AGGREGATE BASE COURSE, TYPE B (IDOT GRAD CA-6)

CONCRETE PAVEMENT
8" P.C. CONCRETE PAVEMENT
4" AGGREGATE BASE (CA-6)

SIDEWALK PAVEMENT
5" P.C. CONCRETE PAVEMENT
4" AGGREGATE BASE (CA-6)

COMBINATION SIDEWALK AND CURB AND GUTTER PAVEMENT
5" P.C. CONCRETE PAVEMENT
4" AGGREGATE BASE (CA-6)

REVISIONS
1 | 05-22-15 | REVISED PER CITY REVIEW

CIVIL ENGINEERS - PLANNERS - DEVELOPMENT CONSULTANTS
CivWorks Consulting, LLC
3343 N. NEVA AVE
CHICAGO, ILLINOIS 60634
Ph: (312) 637-9570
Fax: (312) 637-4454
E-mail: info@civworks.com
Web: www.civworks.com

SITE DIMENSIONAL AND PAVING PLAN

PROPOSED VALUE PLACE HOTEL

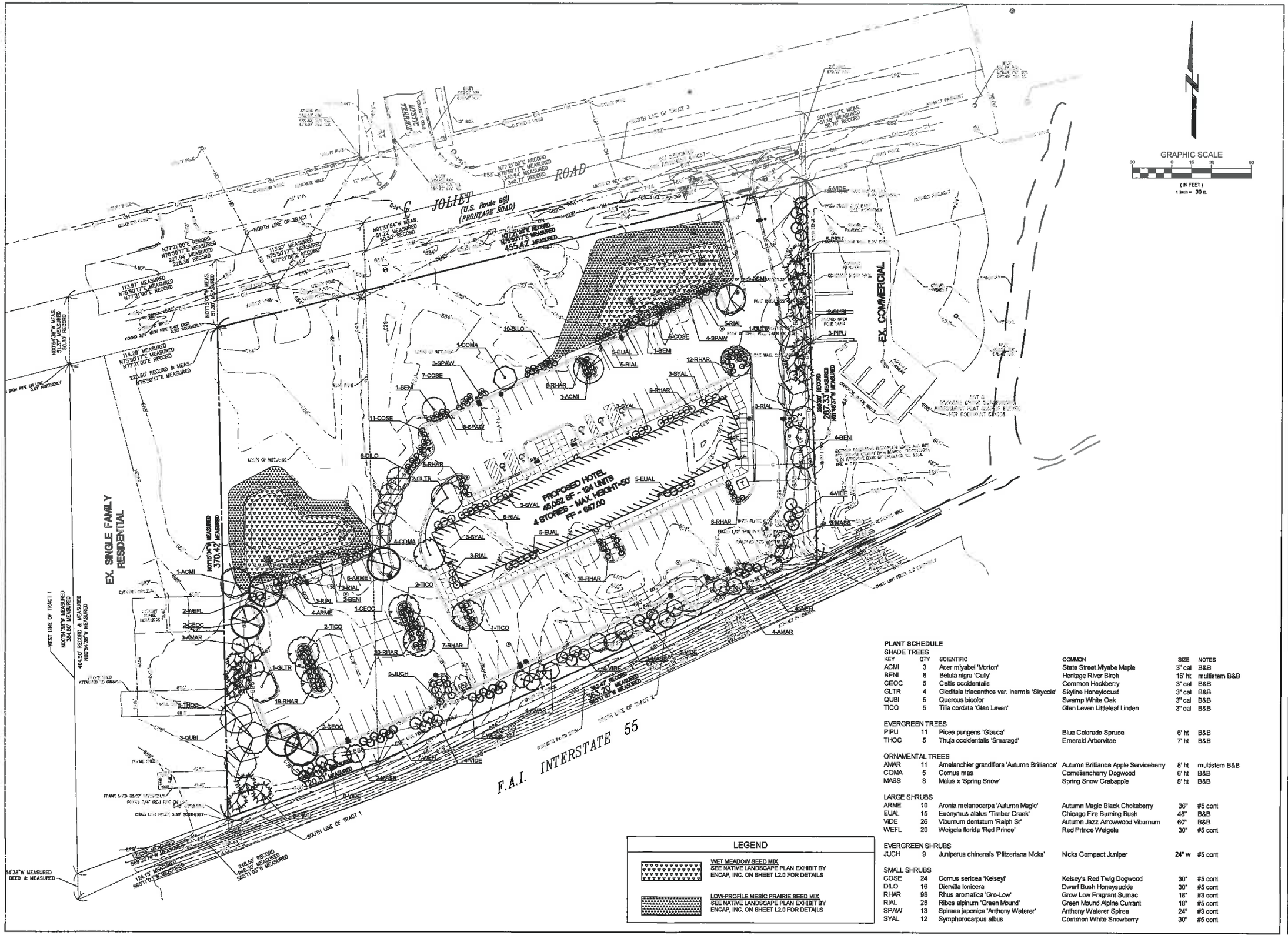
951 N. FRONTAGE ROAD, DARIEN, IL

PROJ. MGR.:	OP
PROJ. ENG.:	OP
DRAWN BY:	
DATE:	04-03-2015
SCALE:	1"=30'

SHEET NO.
C3.0

PROJ. NUMBER: 14013

REVIEW SET - PENDING APPROVAL - NOT FOR CONSTRUCTION



LEGEND

WET MEADOW SEED MIX
SEE NATIVE LANDSCAPE PLAN EXHIBIT BY ENCAP, INC. ON SHEET L2.0 FOR DETAILS

LOW-PROFILE MESIC PRAIRIE SEED MIX
SEE NATIVE LANDSCAPE PLAN EXHIBIT BY ENCAP, INC. ON SHEET L2.0 FOR DETAILS

PLANT SCHEDULE

SHADE TREES

KEY	QTY	SCIENTIFIC	COMMON	SIZE	NOTES
ACMI	3	Acer miyabei 'Morton'	State Street Miyabe Maple	3" cal	B&B
BENI	8	Betula nigra 'Cully'	Heritage River Birch	16' ht	multistem B&B
CEOC	5	Celtis occidentalis	Common Hackberry	3" cal	B&B
GLTR	4	Gleditsia triacanthos var. inermis 'Skycole'	Skyline Honeylocust	3" cal	B&B
QUBI	5	Quercus bicolor	Swamp White Oak	3" cal	B&B
TICO	5	Tilia cordata 'Glen Leven'	Glen Leven Littleleaf Linden	3" cal	B&B

EVERGREEN TREES

PIPU	11	Picea pungens 'Glauca'	Blue Colorado Spruce	6' ht	B&B
THOC	5	Thuja occidentalis 'Smaragd'	Emerald Arborvitae	7' ht	B&B

ORNAMENTAL TREES

AMAR	11	Amelanchier grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	8' ht	multistem B&B
COMA	5	Cornus mas	Corneliancherry Dogwood	6' ht	B&B
MASS	8	Malus x 'Spring Snow'	Spring Snow Crabapple	8' ht	B&B

LARGE SHRUBS

ARME	10	Aronia melanocarpa 'Autumn Magic'	Autumn Magic Black Chokeberry	36"	#5 cont
EUAL	15	Euonymus alatus 'Timber Creek'	Chicago Fire Burning Bush	48"	B&B
VIDE	26	Viburnum dentatum 'Ralph Sr'	Autumn Jazz Arrowwood Viburnum	60"	B&B
WEFL	20	Weigela florida 'Red Prince'	Red Prince Weigela	30"	#5 cont

EVERGREEN SHRUBS

JUCH	9	Juniperus chinensis 'Pfitzeriana Nicks'	Nicks Compact Juniper	24" w	#5 cont

SMALL SHRUBS

COSE	24	Cornus sericea 'Kelseyi'	Kelsey's Red Twig Dogwood	30"	#5 cont
DILO	16	Diervilla lonicera	Dwarf Bush Honeysuckle	30"	#5 cont
RHAR	98	Rhus aromatica 'Gro-Low'	Grow Low Fragrant Sumac	18"	#3 cont
RIAL	28	Ribes alpinum 'Green Mound'	Green Mound Alpine Currant	18"	#5 cont
SPAW	13	Spiraea japonica 'Anthony Waterer'	Anthony Waterer Spirea	24"	#3 cont
SYAL	12	Symphoricarpus albus	Common White Snowberry	30"	#5 cont

REVISIONS

1	05-22-15	REVISED PER CITY REVIEW

CIVIL ENGINEERS - PLANNERS - DEVELOPMENT CONSULTANTS
CIVWORKS Consulting, LLC
3343 N. NEVA AVE
CHICAGO, ILLINOIS 60634
Ph. (312) 637-9570
Fax (312) 637-9454
E-mail: info@civworks.com
Web: www.civworks.com

SITE LANDSCAPING PLAN

PROPOSED VALUE PLACE HOTEL

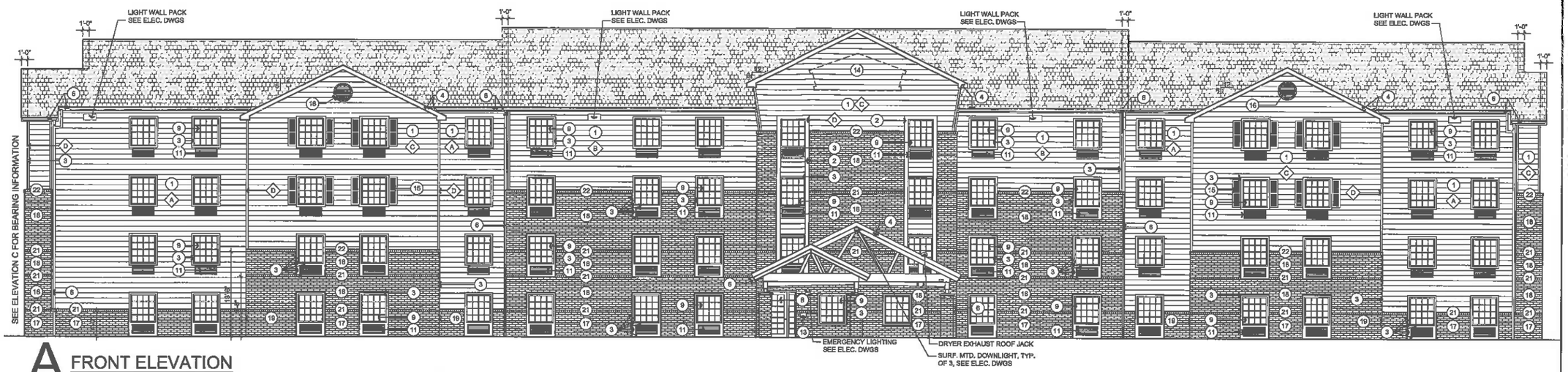
951 N. FRONTAGE ROAD, DARIEN, IL

PROJ. MGR.:	OP
PROJ. ENG.:	OP
DRAWN BY:	
DATE:	04-03-2015
SCALE:	1"=30'

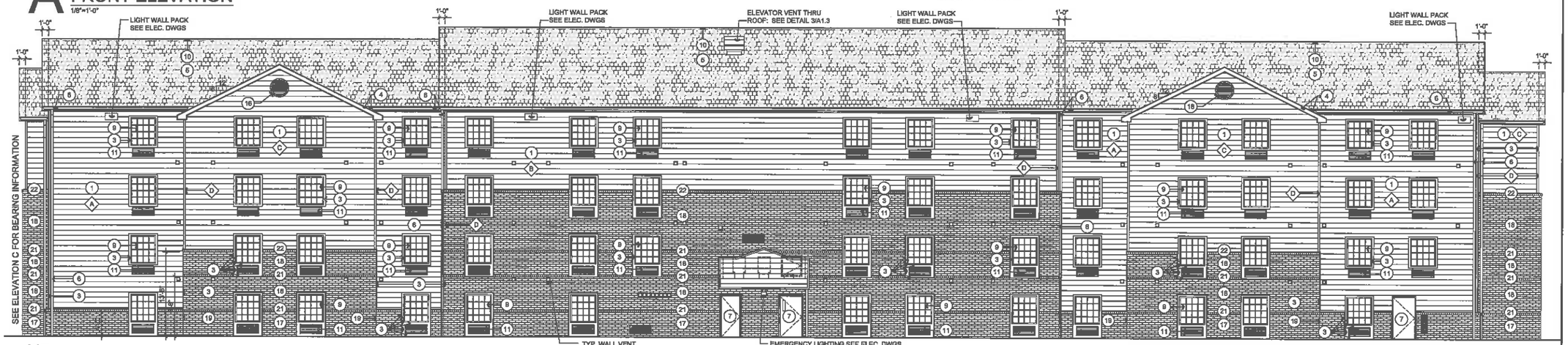
SHEET NO.
L1.0

PROJ. NUMBER: 14013

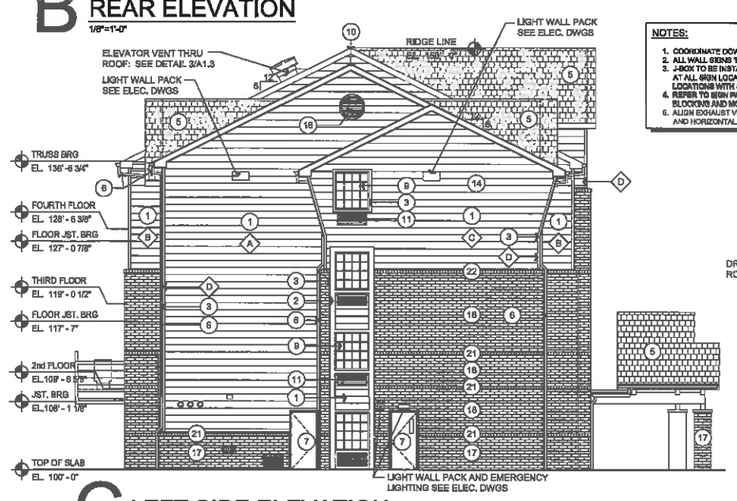
REVIEW SET - PENDING APPROVAL - NOT FOR CONSTRUCTION



A FRONT ELEVATION
1/8"=1'-0"



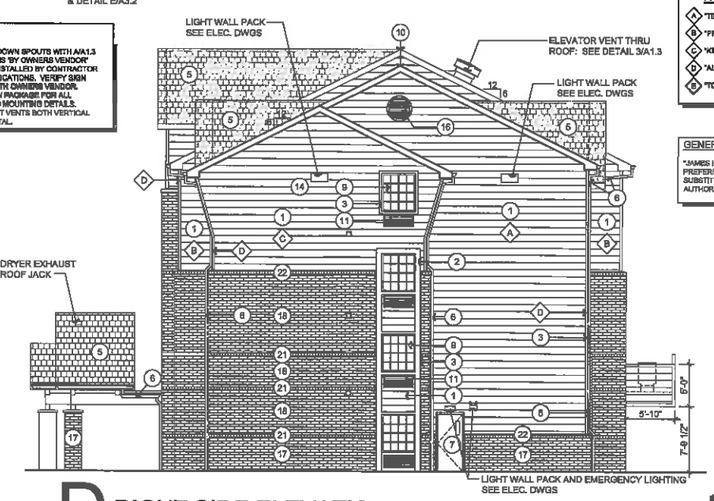
B REAR ELEVATION
1/8"=1'-0"



C LEFT SIDE ELEVATION
1/8"=1'-0"

NOTES:

1. COORDINATE DOWN SPOUTS WITH A/A1.3
2. ALL WALL SIGNS BY OWNERS VENDOR
3. J-BOX TO BE INSTALLED BY CONTRACTOR AT ALL SIGN LOCATIONS. VERIFY SIGN LOCATIONS WITH OWNERS VENDOR.
4. REFER TO SIGN PACKAGE FOR ALL BLOCKING AND MOUNTING DETAILS.
6. ALIGN EXHAUST VENTS BOTH VERTICAL AND HORIZONTAL.



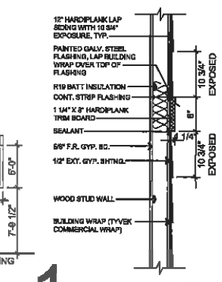
D RIGHT SIDE ELEVATION
1/8"=1'-0"

PAINT SCHEDULE

- A "TIKI HUT" SW7509
- B "PRACTICAL BEIGE" SW9100
- C "KILIM BEIGE" SW9106
- D "ALABASTER" SW7008
- E "TOTALLY TAN" SW9116

GENERAL NOTE

"JAMES HARDIE" SIDING PRODUCTS ARE THE PREFERRED EXTERIOR CONCRETE SIDING. SUBSTITUTIONS ONLY WITH OWNERS WRITTEN AUTHORIZATION.



1 TRIM BAND
N.T.S.

ELEVATION MATERIALS

1. WALLS: 10¾" EXPOSURE "HARDIPLANK" LAP SIDING
2. 4/4 X 8" WIDE "HARDIPANK" TRIM: SEE COLOR SCHEDULE: SEE DETAIL 1/A2.1 (NOTE: DIM. TO BTM. OF TRIM IS APPROX. - G.C. TO V.I.F. TO KEEP FROM CUTTING SIDING AS MUCH AS POSSIBLE)
3. "HARDIPLANK" TRIM: SEE DETAILS FOR SIZES
4. "HARDIPLANK" TRIM FASCIA
5. ROOF: COMPOSITION SHINGLES
6. 5"x 4" ALUMINUM GUTTERS AND DOWN SPOUTS: SEE COLOR SCHEDULE
7. HOLLOW METAL DOORS PAINTED BRONZETONE. TRIM TO BE D
8. GLASS / ALUMINUM DOORS
9. SLIDING WINDOW TYP.: SEE SPECS
10. RIDGE VENT: SEE ROOF PLAN A/A1.3 & DETAIL 1/A1.3
11. THRU-WALL HVAC UNIT
12. MECH. LOUVERS: SEE MECH. DWGS. FOR SIZE, ALSO REF. STRUCT. DWGS. FOR HEADER SIZE AND LOCATION: PAINT LOUVER TO MATCH ADJACENT SURFACE
13. KNOX BOX - VERIFY SIZE, LOCATION, AND TYPE WITH LOCAL FIRE DEPARTMENT
14. COORDINATE SIGNAGE TYPE(S) AND LOCATION(S) WITH OWNER
15. MOLDED PLASTIC SHUTTER: INTEGRAL COLOR - COLOR: BLACK
16. 36" DIA. PLASTIC GABLE VENT, INTEGRAL COLOR W/ INSECT SCREEN: COLOR TO MATCH ADJACENT SURFACE: SEE SPECS
17. UTILITY FACE BRICK, RUNNING BOND. SIOUX CITY "FINE ART VELOUR"
18. UTILITY FACE BRICK, RUNNING BOND. SIOUX CITY "TOASTED FINE ART VELOUR"
19. CONTROL JOINT IN BRICK
20. NOT USED
21. UTILITY FACE BRICK, ROWLOCK COURSE. SIOUX CITY "CLEAR BUFF VELOUR"
22. UTILITY BRICK ROWLOCK CAP. SIOUX CITY "CLEAR BUFF VELOUR"

PRINTS ISSUED

DATE	PURPOSE	NO.
7/7/11	?	

VALUE PLACE HOTEL
LOCATION
CITY, STATE

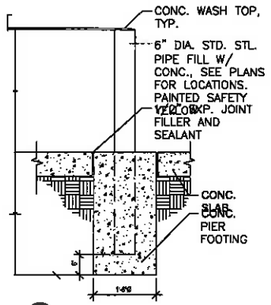
VALUE PLACE
2014A PROTOTYPE 124L
02-07-2014

CONTACT:
DRAWN: ?? / ??
CHECKED: ?

PROJECT NUMBER:
00000

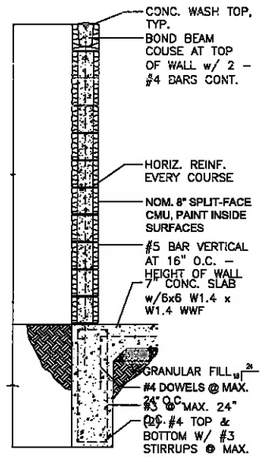
SHEET TITLE:
EXTERIOR ELEVATIONS

SHEET NUMBER:
A2.1-45B



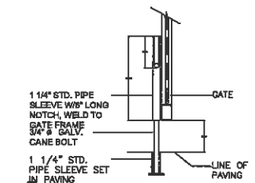
2 PIPE BOLLARD

1/2"=1'-0"



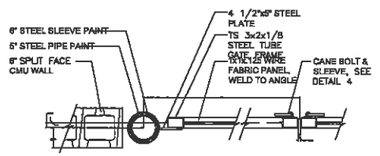
1 TRASH ENCLOSURE WALL SECTION

1/2"=1'-0"



4 LATCH DETAIL

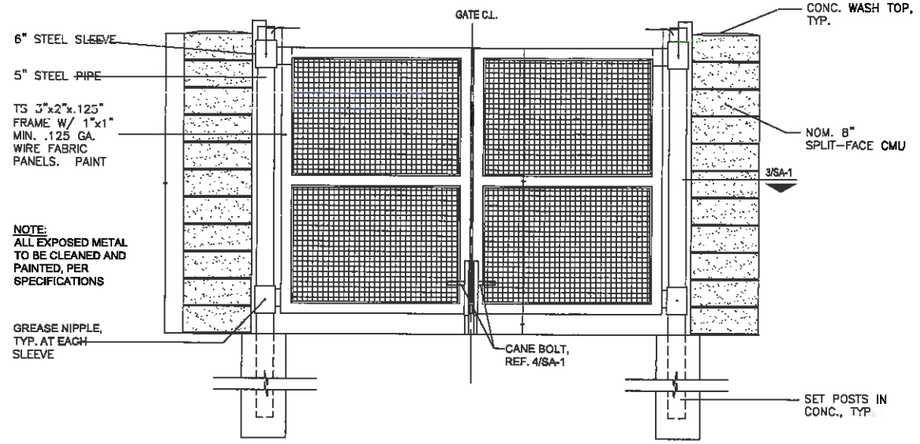
1" = 1'-0"



3 SECTION THRU GATE

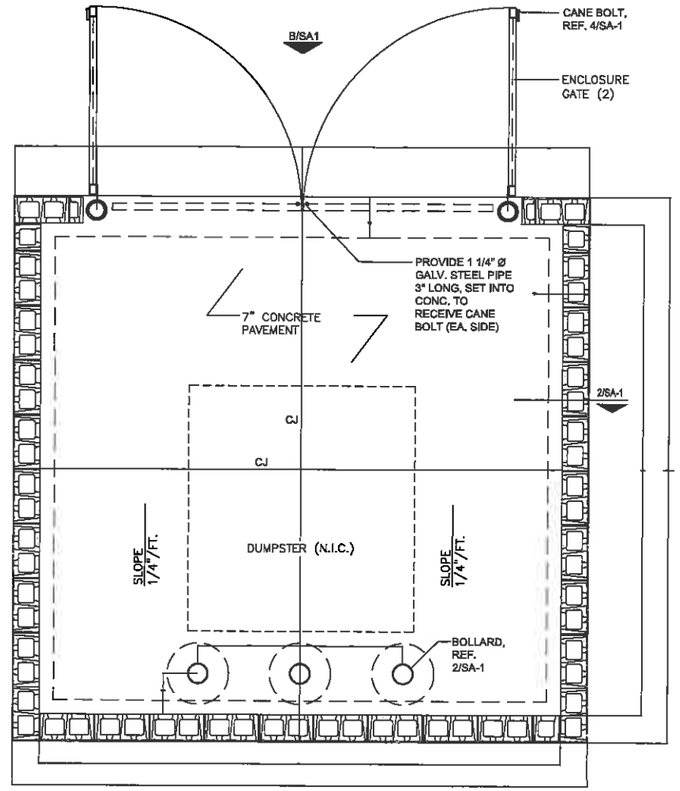
1" = 1'-0"

PAINT ALL METAL PARTS PER SPECS.



B TRASH ENCLOSURE GATE ELEVATION

1/2"=1'-0"



A TRASH ENCLOSURE PLAN

1/2"=1'-0"

HOLLADAY PROPERTIES
www.holladayproperties.com
6370 AmeriPlex Dr., Suite 110
Portage, Indiana 46368
Phone: 219.841.6416
Fax: 219.764.0446

CERTIFICATION

WOODSPRING SUITES
951 FRONTAGE RD.
DARIEN, ILLINOIS

WOODSPRING SUITES
2014B PROTOTYPE 124R

PRINTS ISSUED

DATE	PURPOSE	NO.
05/18/15	PC SUBMITTAL	

DRAWN: RPK

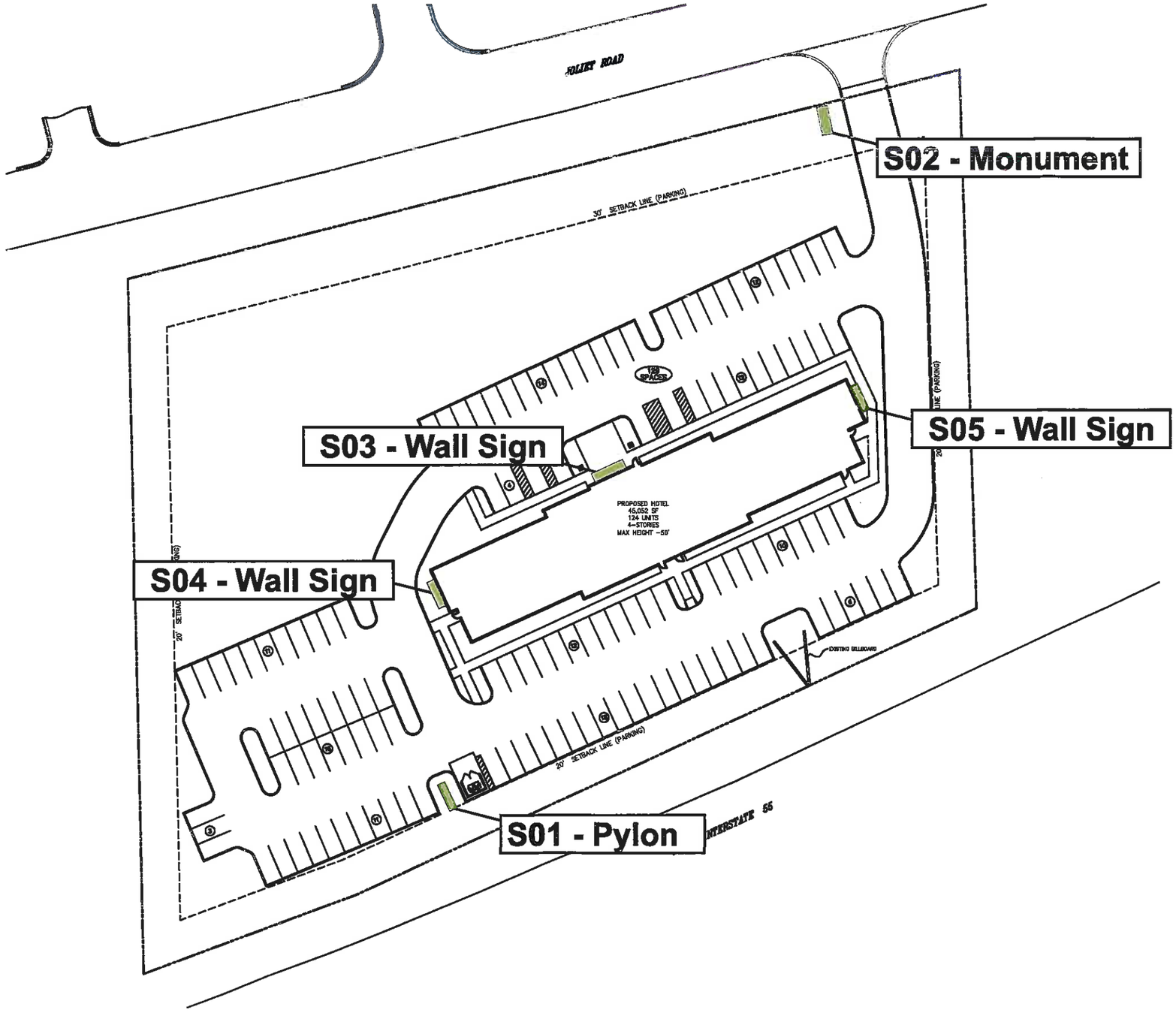
PROJECT NUMBER:
HP VP-2

SHEET TITLE:
TRASH ENCLOSURE

SHEET NUMBER:
SA.1

holladay properties 24 x 36

SITE MAP



WOODSPRING SUITES
AN EXTENDED STAY HOTEL

LOCATION #:
ADDRESS: 951 Frontage Rd
Darien, IL
DRAWN BY: JER

DATE: 05/23/15

PAGE: 2

AGI YOUR IMAGE. OUR PRIORITY.
2655 International Parkway
Virginia Beach, VA 23452

RECOMMENDATION: SIGN 01

SIGN DETAILS:

Sign Type: P-125S

Description: 133.9 sq. ft.
Woodspring Suites pylon

Sign Text: Woodspring Suites Signature

Restoration SOW: N/A

Electrical SOW: N/A

Landscaping SOW: N/A

Comments: N/A

WOODSPRING SUITES
AN EXTENDED STAY HOTEL

LOCATION #:
ADDRESS: 951 Frontage Rd
Darien, IL
DRAWN BY: JER

DATE: 05/23/15
SCALE: 1/2" = 1'-0"
PAGE: 2

AGI YOUR IMAGE. OUR PRIORITY.
2655 International Parkway
Virginia Beach, VA 23452

RECOMMENDATION: SIGN 02

SIGN DETAILS:

Sign Type: M-60S

Description: 60.0 sq. ft.
Woodspring Suites monument

Sign Text: Woodspring Suites Signature

Restoration SOW: N/A

Electrical SOW: N/A

Landscaping SOW: N/A

Comments: N/A

WOODSPRING SUITES
AN EXTENDED STAY HOTEL

LOCATION #:
ADDRESS: 951 Frontage Rd
Darien, IL
DRAWN BY: JER

DATE: 05/23/15
SCALE: 1/2" = 1'-0"
PAGE: 3

YOUR IMAGE. OUR PRIORITY.
2655 International Parkway
Virginia Beach, VA 23452

RECOMMENDATION: SIGN 03

SIGN DETAILS:

Sign Type: W-125-FF

Description: 128.26 sq. ft.
Woodspring Suites Flex Face Wall Sign

Sign Text: Woodspring Suites Signature

Restoration SOW: N/A

Electrical SOW: N/A

Landscaping SOW: N/A

Comments: N/A

WOODSPRING SUITES
AN EXTENDED STAY HOTEL

LOCATION #:
ADDRESS: 951 Frontage Rd
Darien, IL
DRAWN BY: JER

DATE: 05/23/15
SCALE: 1/8" = 1'-0"

PAGE: 4

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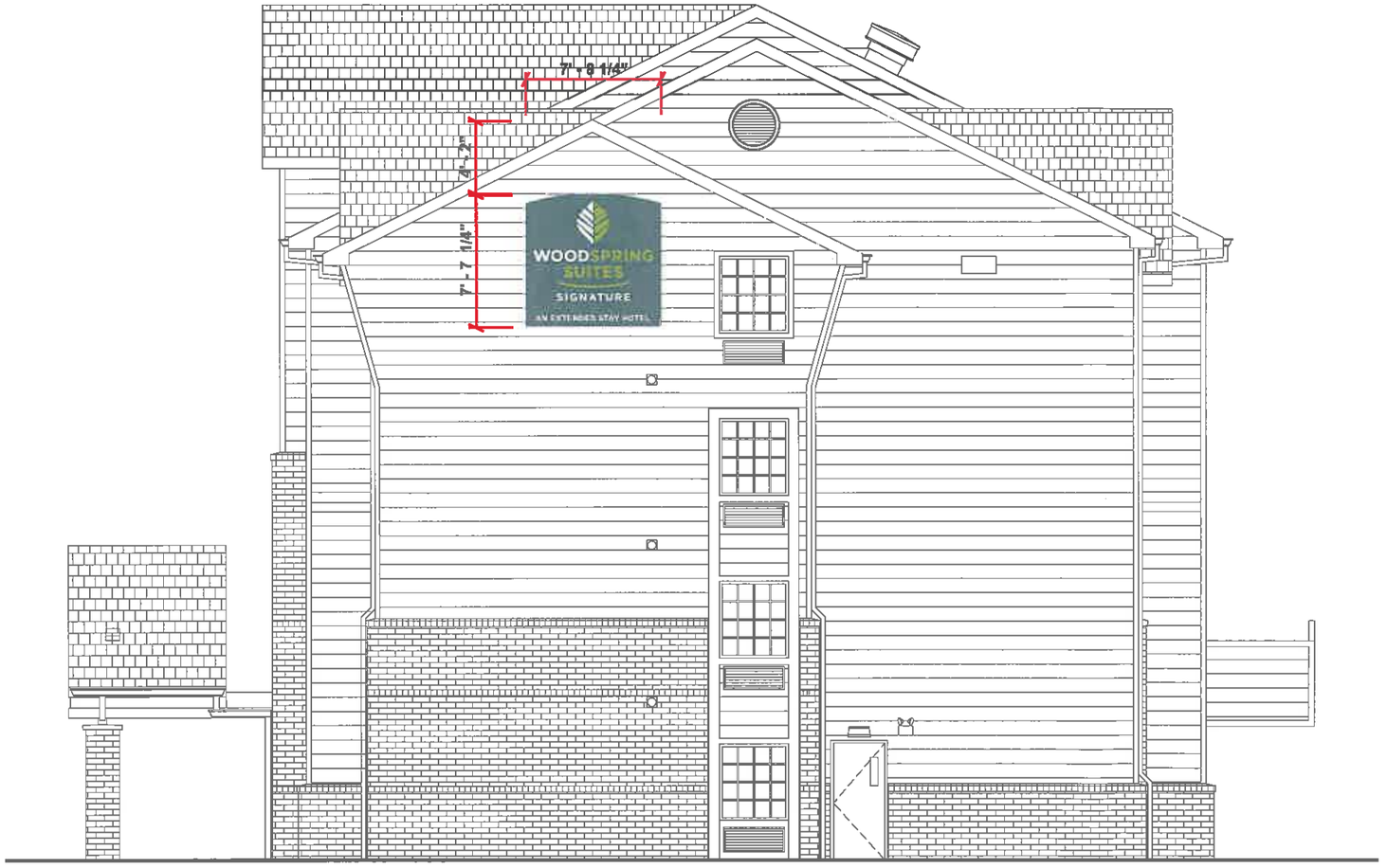
2655 International Parkway
Virginia Beach, VA 23452

RECOMMENDATION: SIGN 04



SIGN DETAILS:

Sign Type: W-60-FF

Description: 58.46 sq. ft.
Woodspring Suites Flex Face Wall Sign

Sign Text: Woodspring Suites Signature

Restoration SOW: N/A

Electrical SOW: N/A

Landscaping SOW: N/A

Comments: N/A

WOODSPRING SUITES
AN EXTENDED STAY HOTEL

LOCATION #:
ADDRESS: 951 Frontage Rd
Darien, IL
DRAWN BY: JER

DATE: 05/23/15
SCALE: 1/8" = 1'-0"
PAGE: 5

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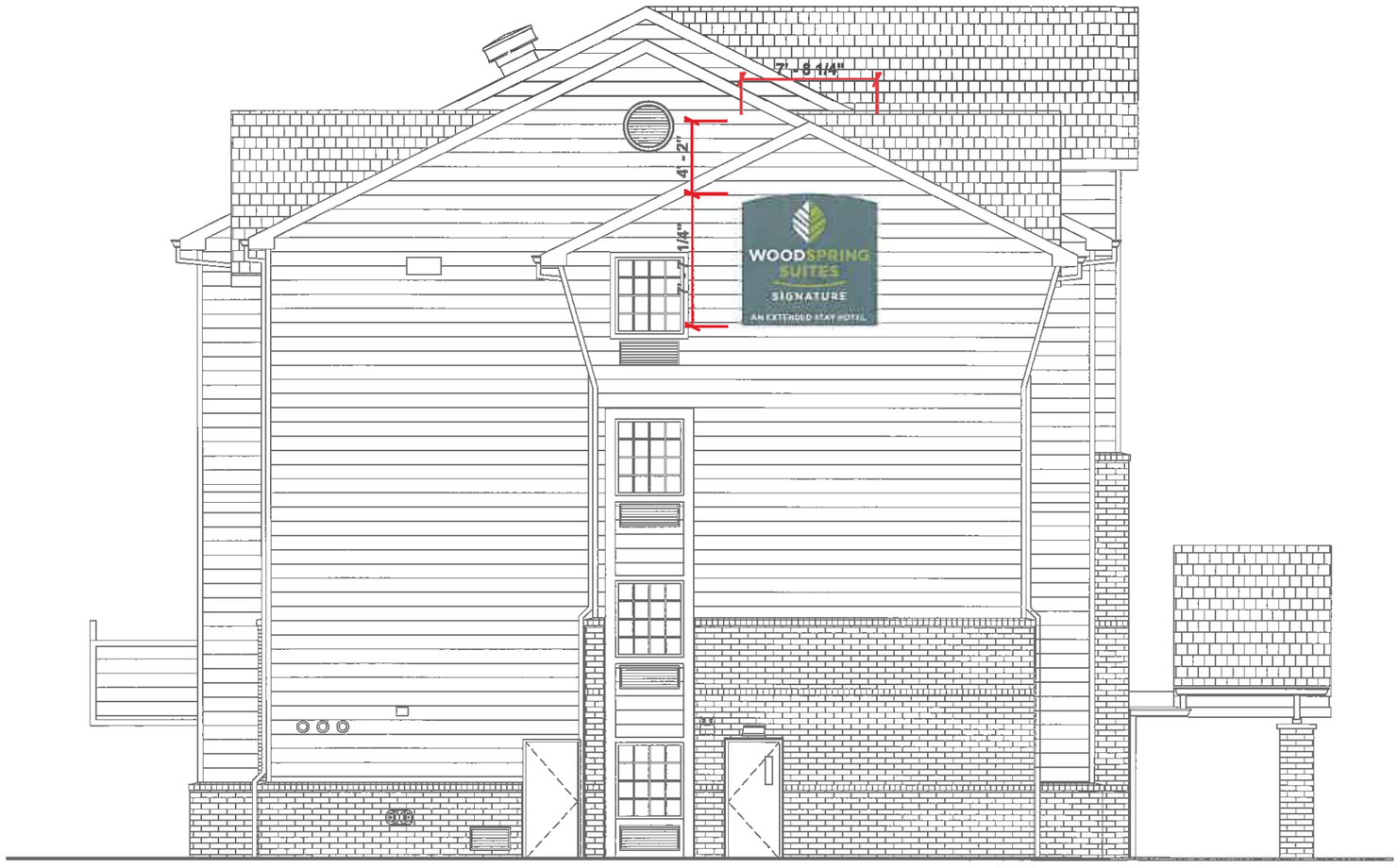
2655 International Parkway
Virginia Beach, VA 23452

RECOMMENDATION: SIGN 05



SIGN DETAILS:

Sign Type: W-60-FF

Description: 58.46 sq. ft.
Woodspring Suites Flex Face Wall Sign

Sign Text: Woodspring Suites Signature

Restoration SOW: N/A

Electrical SOW: N/A

Landscaping SOW: N/A

Comments: N/A

WOODSPRING SUITES
AN EXTENDED STAY HOTEL

LOCATION #:
ADDRESS: 951 Frontage Rd
Darien, IL
DRAWN BY: JER

DATE: 05/23/15
SCALE: 1/8" = 1'-0"
PAGE: 6

YOUR IMAGE. OUR PRIORITY.
2655 International Parkway
Virginia Beach, VA 23452

Kenig, Lindgren, O'Hara, Aboona, Inc.

9575 West Higgins Road, Suite 400 | Rosemont, Illinois 60018
p: 847-518-9990 | f: 847-518-9987

MEMORANDUM TO: Osvaldo Pastrana, P.E., LEED AP
CivWorks Consulting, LLC

FROM: Javier Millan
Senior Consultant

Michael Werthmann, PE, PTOE
Principal

DATE: March, 10, 2015

SUBJECT: Traffic Impact Study
Proposed Hotel Development
Darien, Illinois

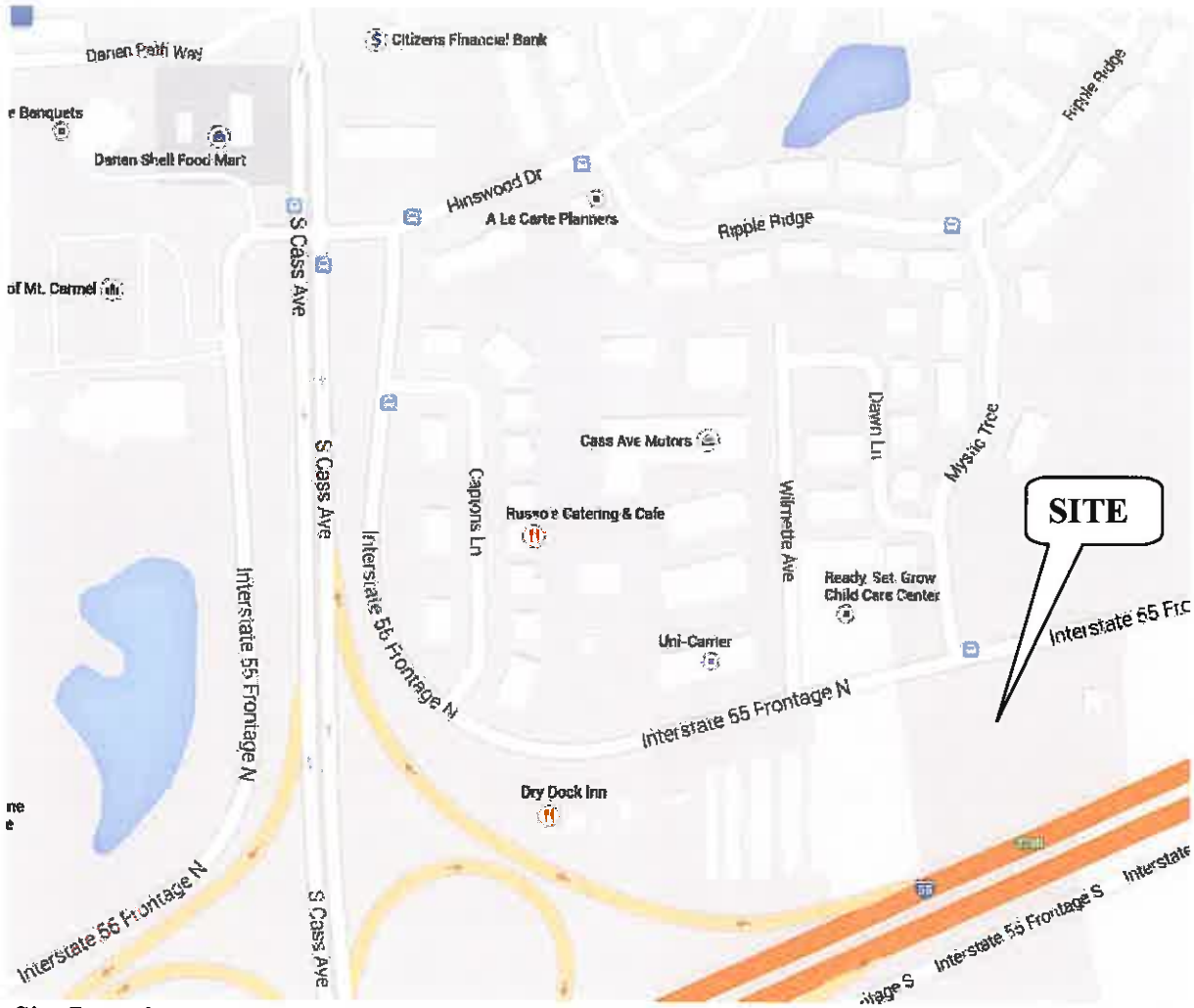
This memorandum summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed hotel to be located at 951 North Frontage Road in Darien, Illinois. The plan calls for a 124-room hotel with 129 off-street parking spaces. Access will be provided via a single full-ingress/egress access drive on North Frontage Road.

Figure 1 shows the location of the development in relation to the area roadway system and **Figure 2** shows an aerial view of the site.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any roadway improvements are necessary to accommodate traffic generated by the proposed development.

The sections of this memorandum present the following.

- Existing conditions of the study area
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Traffic analyses for the weekday morning and evening peak hours
- Recommendations with respect to adequacy of the development access and the adjacent roadway network



Site Location **Figure 1**

Aerial View of Site Location **Figure 2**

Existing Conditions

Existing transportation conditions in the vicinity of the site were documented based on field visits conducted by KLOA, Inc. in order to obtain a database for projecting future traffic conditions. The following provides a summary of the physical characteristics of the area roadways including geometry, traffic control, and existing peak hour traffic volumes.

Site Location

The site is bounded by I-55 (Stevenson Expressway) to the south and the I-55 North Frontage Road to the north. Access to and from I-55 is provided to the southwest of the site via a full interchange with Cass Avenue. The frontage road provides access to multiple residential developments and businesses in the area.

Existing Roadway System Characteristics

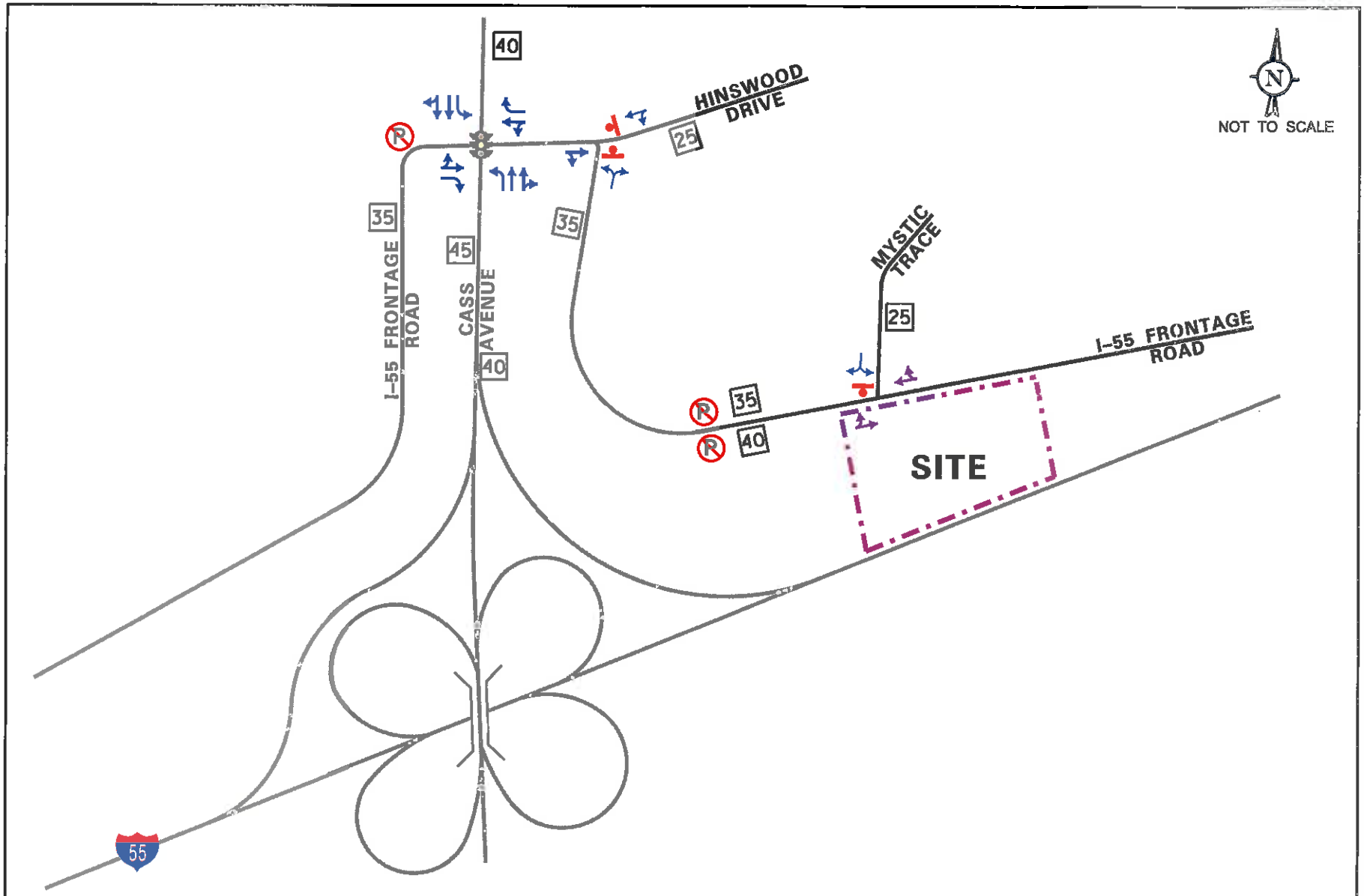
The characteristics of the existing roads within the study area are described below and illustrated in **Figure 3**.

Cass Avenue is a north-south arterial roadway that generally has two lanes in each direction. At its signalized intersection with I-55 Frontage Road/Hinswood Drive, Cass Avenue provides one exclusive left-turn lane, one through lane, and one combined through/right-turn lane on each approach. Northbound and southbound Cass Avenue provides interchange ramps for all directions onto I-55. Cass Avenue has an Average Daily Traffic (ADT) volume of 23,200 vehicles, has a posted speed limit of 40 mph, and is under the jurisdiction of the DuPage County Division of Transportation (DuDOT).

I-55 North Frontage Road is a two-lane road that provides local access along I-55 from Lemont Road to the west to 79th Street to the east. The posted speed limit is 35 mph increasing to 40 mph along the frontage of the site. On-street parking is prohibited on both sides of the road. No exclusive turn lanes are provided at its unsignalized intersections with Mystic Trace and Hinswood Drive. The three-way intersection of the frontage road with Hinswood Drive is under two-way stop sign control, with stop signs provided for the east and south approaches. The frontage road has an ADT of 3,000 vehicles and is under the jurisdiction of IDOT.

Hinswood Drive is an east-west two-lane local road that provides access to numerous multi-family residential developments. At its unsignalized intersection with the frontage road, Hinswood Drive is under stop sign control and provides a combined left/through lane. Hinswood Drive is under the jurisdiction of the City of Darien and has a posted speed limit of 25 mph.

Mystic Trace is a north-south, two-lane local road that extends from the frontage road north to its terminus at Ripple Ridge. The road has a posted speed limit of 25 mph and is under the jurisdiction of the City of Darien. At its intersection with the frontage road, Mystic Trace has a one-lane approach that is under stop sign control.



PROJECT:	TITLE:	
I-55 Frontage Road Hotel Development Darien, Illinois	Existing Street Characteristics	KLOA Job No: 15-046 Figure: 3

Existing Traffic Volumes

In order to determine current traffic conditions within the study area, KLOA, Inc. conducted peak period traffic counts at the following intersections.

- Cass Avenue and I-55 North Frontage Road/Hinswood Drive
- I-55 North Frontage Road and Hinswood Drive
- I-55 North Frontage Road and Mystic Trace

The traffic counts were conducted on Tuesday, February 24, 2015 during the morning (7:00 A.M. to 9:00 A.M.) and evening (4:00 P.M. to 6:00 P.M.) peak periods. Summary of the traffic count data indicated that the peak hour of traffic occurs between 7:15 A.M. and 8:15 A.M. during the morning peak hour and 4:45 P.M. to 5:45 P.M. during the evening peak hour. **Figure 4** illustrates the existing peak hour traffic volumes. The turning movement count volumes are included in the Appendix.

Existing Traffic Observations

In addition to the traffic counts, KLOA, Inc. also observed traffic conditions during the morning and evening peak hours, particularly the westbound queues on the frontage road at its signalized intersection with Cass Avenue and how it impacts the intersection of the frontage road with Hinswood Drive. The following is a summary of our observations:

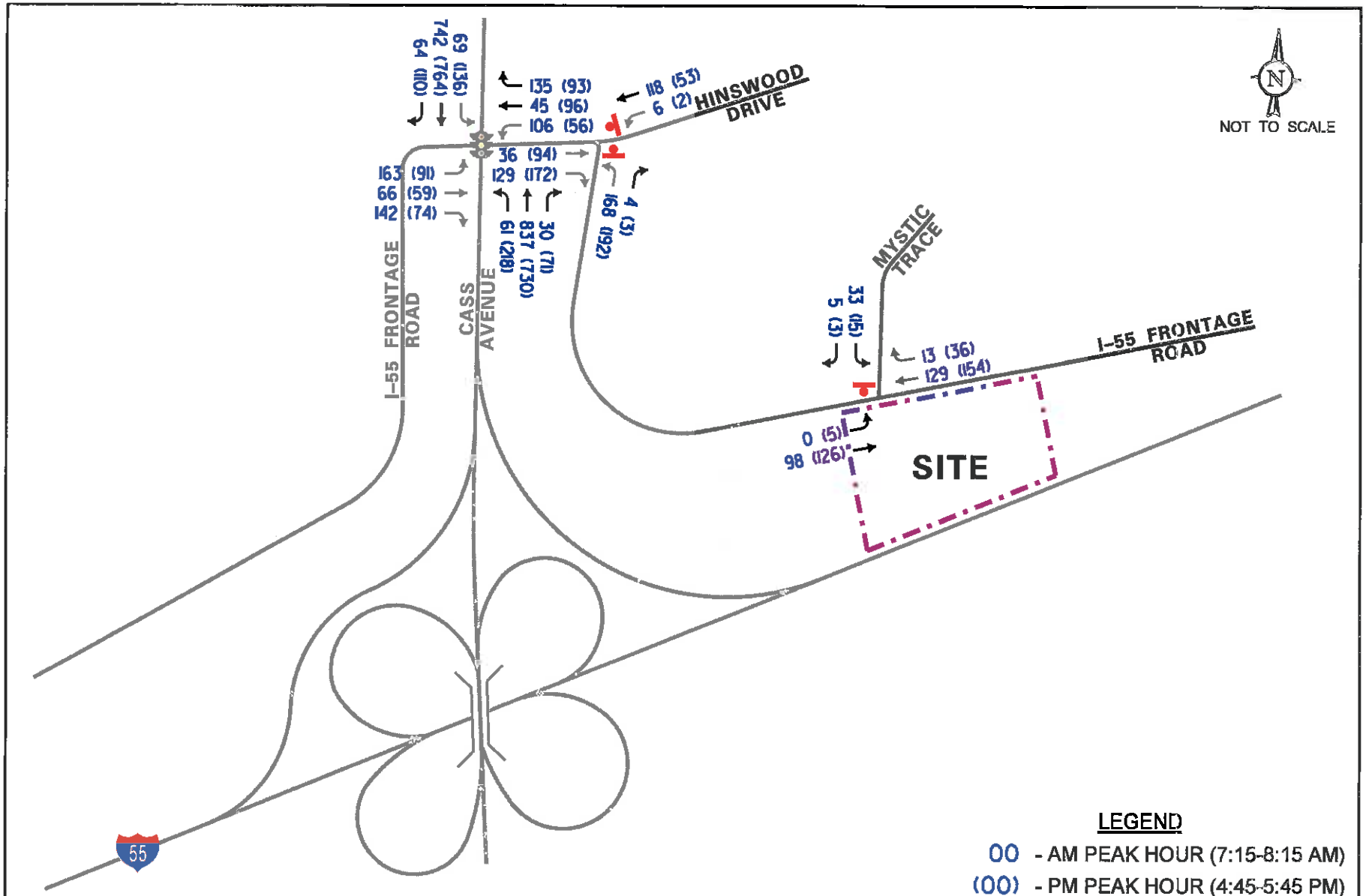
Morning Peak Period

- Wesstbound queues on the frontage road at its intersection with Cass Avenue were typically two to three vehicles and were contained within the approximately 90 feet of storage provided between Cass Avenue and Hinswood Drive.

- On a few occasions, the westbound queues extended beyond the provided storage area with one vehicle waiting on the east approach (Hinswood Drive) and another vehicle waiting on the south approach (frontage road). All of these vehicles cleared within the green phase of the traffic signal.

- There was one time (8:22 A.M.) in which the westbound queues extended beyond the provided storage area and it was observed that three vehicles were queued on Hinswood Drive and on the frontage road. All of these vehicles cleared within the green phase of the traffic signal.

- Northbound queues on the frontage road at its intersection with Hinswood Drive were mostly one to two vehicles with a maximum queue of four vehicles occurring only once.



PROJECT:	TITLE:	
I-55 Frontage Road Hotel Development Darien, Illinois	Existing Traffic Volumes	KLOA Job No: 15-046 Figure: 4

Evening Peak Period

- On four occasions, westbound queues extended beyond the provided storage area with three vehicles waiting on the south approach (frontage road). All of these vehicles cleared within the green phase of the traffic signal.

- There was one time (5:15 P.M.) in which the westbound queues extended beyond the provided storage area and it was observed that six vehicles were queued on the frontage road. All of these vehicles cleared within the green phase of the traffic signal.

Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volume of traffic that it will generate.

Proposed Development Plan

As proposed, the site will be developed as a four-story, 124-unit hotel. The hotel will provide approximately 129 parking spaces with a drop-off/pick-up area at the front of the building.

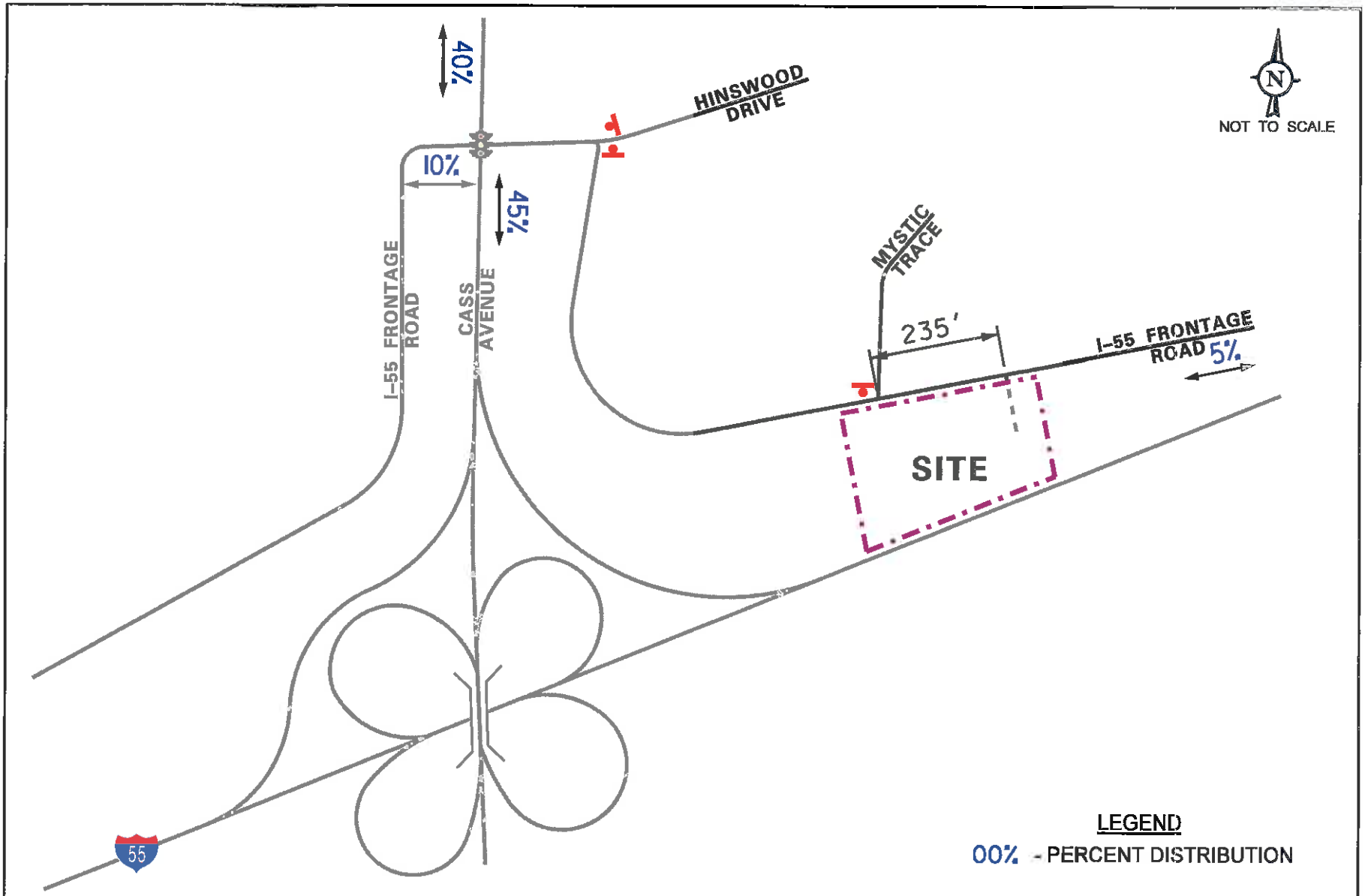
Access to the proposed development will be provided on the south side of the I-55 north frontage road via one full ingress/egress access drive located approximately 235 feet east of Mystic Trace. The access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.

Directional Distribution

The directional distribution for the proposed development was estimated based on the location of the site relative to the primary roadway system and the existing travel patterns as determined from the traffic counts. **Figure 5** illustrates the directional distribution.

Trip Generation Estimate

The volume of traffic generated by a development is based on the type of land use and the size of the development. The number of peak hour trips that will be generated by the proposed development was estimated based on trip rates published by the Institute of Transportation Engineers (ITE) in its 9th Edition of the *Trip Generation Manual*. **Table 1** shows the peak hour traffic to be generated by the proposed hotel development during the peak hours and on a daily basis.



PROJECT:	TITLE:	
I-55 Frontage Road Hotel Development Darien, Illinois	Estimated Directional Distribution	KLOA Job No: 15-046 Figure: 5

Table 1
ESTIMATED SITE-GENERATED TRAFFIC VOLUMES

ITE Land-Use Code	Type/Size	Weekday A.M. Peak Hour			Weekday P.M. Peak Hour			Daily Trips		
		In	Out	Total	In	Out	Total	In	Out	Total
310	Hotel (124 units)	39	27	66	38	36	74	368	368	736

Traffic Assignment

The estimated new weekday morning and evening peak hour trips that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution and illustrated in **Figure 6**. To account for other growth in the area, a background traffic growth rate was determined based on the Chicago Metropolitan Agency for Planning (CMAP) population projections. The growth rate was applied over a six year period, increasing traffic by a total of four percent. **Figure 7** illustrates the total future traffic volumes taking into account the traffic generated by the development as well as background growth.

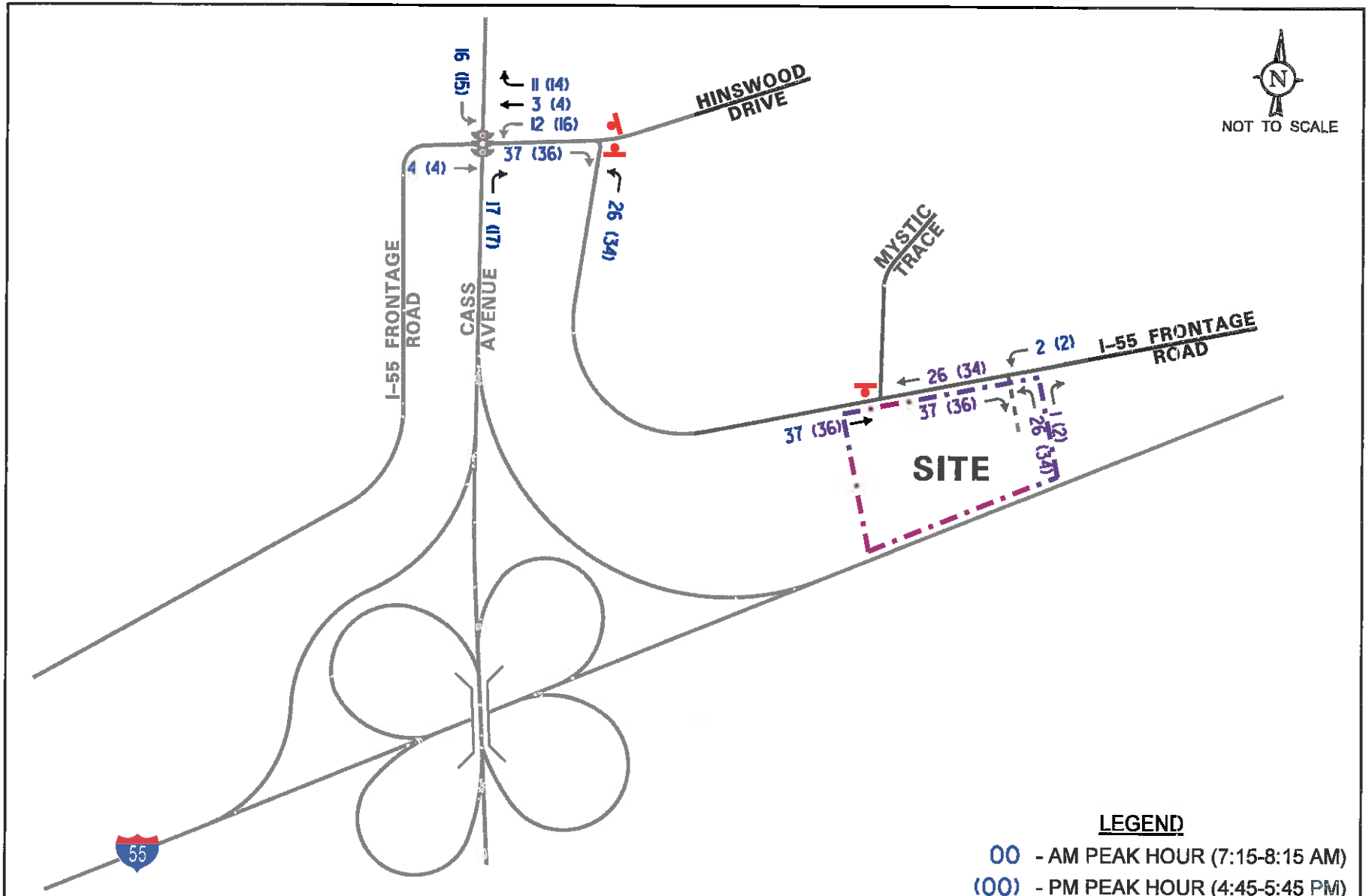
Traffic Analysis

Traffic analyses were performed for the intersections within the study area to determine the operation of the existing roadway system, evaluate the impact of the proposed development, and determine the ability of the existing roadway system to accommodate projected traffic demands. Analyses were performed for the weekday morning and evening peak hours for the existing and projected traffic volumes.

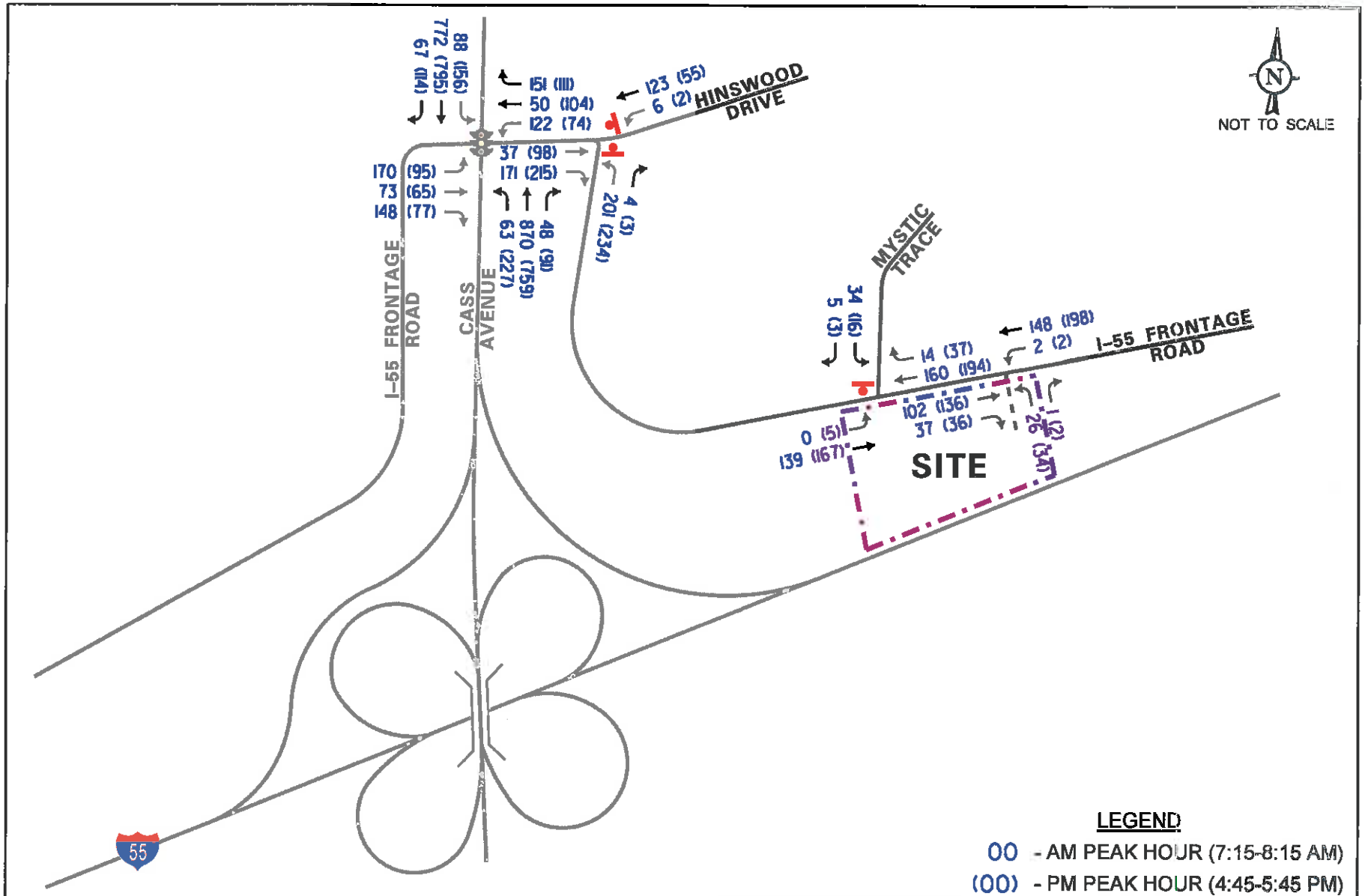
The traffic analyses were performed using the Synchro/SimTraffic 9 computer software, which is based on the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM), 2010*. The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter grade from A to F based on the average control delay experienced by vehicles passing through the intersection. Control delay is that portion of the total delay attributed to the traffic signal or stop sign control operation and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Level of Service A is the highest grade (best traffic flow and least delay), Level of Service E represents saturated or at-capacity conditions, and Level of Service F is the lowest grade (oversaturated conditions, extensive delays).

For two-way stop controlled (TWSC) intersections, levels of service are only calculated for the approaches controlled by a stop sign (not for the intersection as a whole).

The results of the capacity analysis are summarized in **Table 2** for the existing and projected traffic volumes. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for unsignalized intersections are shown in the Appendix.



PROJECT:	TITLE:	
I-55 Frontage Road Hotel Development Darien, Illinois	Estimated Site-Generated Traffic Volumes	KLOA Job No: 15-046 Figure: 6



PROJECT:	TITLE:	
I-55 Frontage Road Hotel Development Darien, Illinois	Total Traffic Volumes	KLOA Job No: 15-046 Figure: 7

Table 2
CAPACITY ANALYSIS RESULTS

Intersection	Weekday Morning Peak Hour LOS	Weekday Morning Peak Hour Delay	Weekday Evening Peak Hour LOS	Weekday Evening Peak Hour Delay
Existing Conditions				
Cass Avenue and I-55 North Frontage Road/Hinswood Drive[1]	C	23.7	C	21.0
I-55 North Frontage Road and Hinswood Drive[2 3]	A	--	A	--
I-55 North Frontage Road and Mystic Trace[2]	B	10.1	B	10.4
Projected Conditions				
Cass Avenue and I-55 North Frontage Road/Hinswood Drive[1]	C	26.0	C	24.2
I-55 North Frontage Road and Hinswood Drive[2 3]	A	--	A	--
I-55 North Frontage Road and Mystic Trace[2]	B	10.6	B	11.1
I-55 North Frontage Road and Proposed Access Drive[2]	B	10.4	B	11.1

LOS - Level of Service
Delay - Measured in seconds
[1] – Signalized Intersection
[2] – Stop-Sign-Controlled Intersection
[3] – Two of the three approaches at this intersection are under stop sign control with the third approach uncontrolled. Therefore, HCM delay cannot be determined. The operation of these intersections is based on a critical volume to saturation flow (v/s) evaluation also known as the Intersection Capacity Utilization (ICU) method.

Traffic Evaluation

The following section summarizes the results of the traffic analysis for both intersections within the study area. The capacity analysis reports are included in the Appendix.

Cass Avenue and I-55 North Frontage Road/Hinswood Drive

The results of the capacity analysis indicate that the intersection currently operates at satisfactory Levels of Service C during the weekday morning and evening peak hours. Under projected conditions, the intersection will continue to operate at the same levels of service with minimal increases in the overall delay. Furthermore, inspection of the projected traffic volumes indicate that the development generated traffic will amount to an approximate two percent increase in the existing peak hour traffic volumes at the intersection of Cass Avenue and the frontage road.

In addition to the capacity analyses, KLOA, Inc. ran several simulation models of the existing and projected traffic conditions. The existing condition simulation models indicated that from time to time westbound traffic will queue beyond the storage area and traffic on the east and south approach will have to wait to enter the intersection which was observed in the field. However, as it was also observed, these queues cleared with every green phase of the traffic signal validating the simulation model. Under projected conditions and based on a review of the simulation model, maximum queues will increase by one or two vehicles and will continue to clear with every green phase of the traffic signal thus indicating that the proposed development will have minimal impact on traffic conditions at this intersection. As such, no geometric or signal timing improvements are necessary to accommodate future traffic volumes.

I-55 North Frontage Road and Hinswood Drive

The existing intersection of I-55 North Frontage Road and Hinswood Drive is a three legged intersection with the westbound and northbound approaches under stop sign control therefore allowing the eastbound approach to operate under free flow conditions in order to prevent back-ups onto Cass Avenue. It should be noted that this traffic control configuration cannot be analyzed using typical HCM procedures. Given this configuration and HCM limitations, the intersection was analyzed using the intersection capacity utilization (ICU) level of service. The ICU indicates how much reserve capacity is available or how much an intersection is overcapacity. Based on the ICU analysis, the intersection is and will continue utilizing less than 40 percent of the capacity of the intersection. Further, as discussed above, field observations and simulation models confirm that this intersection is currently operating well with limited delays and queues. Therefore, no geometric or traffic control improvements will be necessary to accommodate future traffic volumes.

I-55 North Frontage Road and Mystic Trace

The results of the capacity analysis indicate that this intersection currently operates at a Level of Service B during the morning and evening peak hours. Under projected conditions, this intersection will continue to operate at the same levels of service. As such, no geometric or traffic control improvements will be necessary to accommodate future traffic volumes.

I-55 North Frontage Road and Proposed Access Drive

As proposed, the development will be served by a full ingress/egress access drive located approximately 235 feet east of Mystic Trace. As previously indicated, the access drive will provide one inbound lane and one outbound lane with the outbound movements under stop sign control. Based on the results of the capacity analyses, the intersection will operate at a Level of Service B during the morning and evening peak hours. Based on a review of the projected traffic volumes and the requirements set forth in IDOT's Bureau of Design and Environment (BDE) Manual, an exclusive left-turn lane or an exclusive right-turn lane will not be required on the I-55 north frontage road serving the access drive.

Parking Evaluation

The proposed development will provide 124 hotel rooms, five employees and 129 off-street parking spaces. Based on a review of the City of Darien Zoning Ordinance, the hotel should provide one parking space per room and one parking space per employee for a total 129 parking spaces. Therefore, the proposed development meets the City of Darien parking requirements. Based on a review of the Institute of Transportation Engineers (ITE) Parking Generation Manual, 4th Edition, a 124 room hotel will have a weekday peak parking demand of 77 parking spaces. As such, the proposed development's parking supply meets the City's requirement and will be adequate in accommodating the anticipated peak parking demand.

A review of the Illinois Vehicle Accessibility Code indicates that a development with 129 parking spaces should provide at a minimum five (5) handicapped accessible parking spaces. Based on a review of the site plan, the proposed development is providing five (5) handicapped parking spaces therefore meeting the requirement.

Conclusions and Recommendations

Based on the preceding analyses and recommendations, the following conclusions and recommendations were made.

- The development will generate a low volume of traffic and as a result will not have a significant impact on area roadways.

- The results of the capacity analyses have shown that the existing roadway system is sufficient to accommodate the traffic to be generated by the development.

- The intersection of Cass Avenue with the frontage road is and will continue operating at acceptable levels of service.

- The westbound maximum queues currently experienced on the frontage road at its intersection with Cass Avenue clear with every green phase and will not be exacerbated by the proposed development.

- A single access drive in and out of the development will be able to sufficiently accommodate all development traffic. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.

Appendix

- **Turning Movement Count Data**
- **Level of Service Table**
- **Capacity Analysis Reports**

LEVEL OF SERVICE CRITERIA

Signalized Intersections

Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	>10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	>55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor and the cycle length is long. Most cycles fail to clear the queue.	>80.0

Unsignalized Intersections

Level of Service	Average Total Delay (SEC/VEH)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 2010.

Turning Movement Count Data

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Cass Ave/Hinswood
Site Code:
Start Date: 02/24/2015
Page No: 1

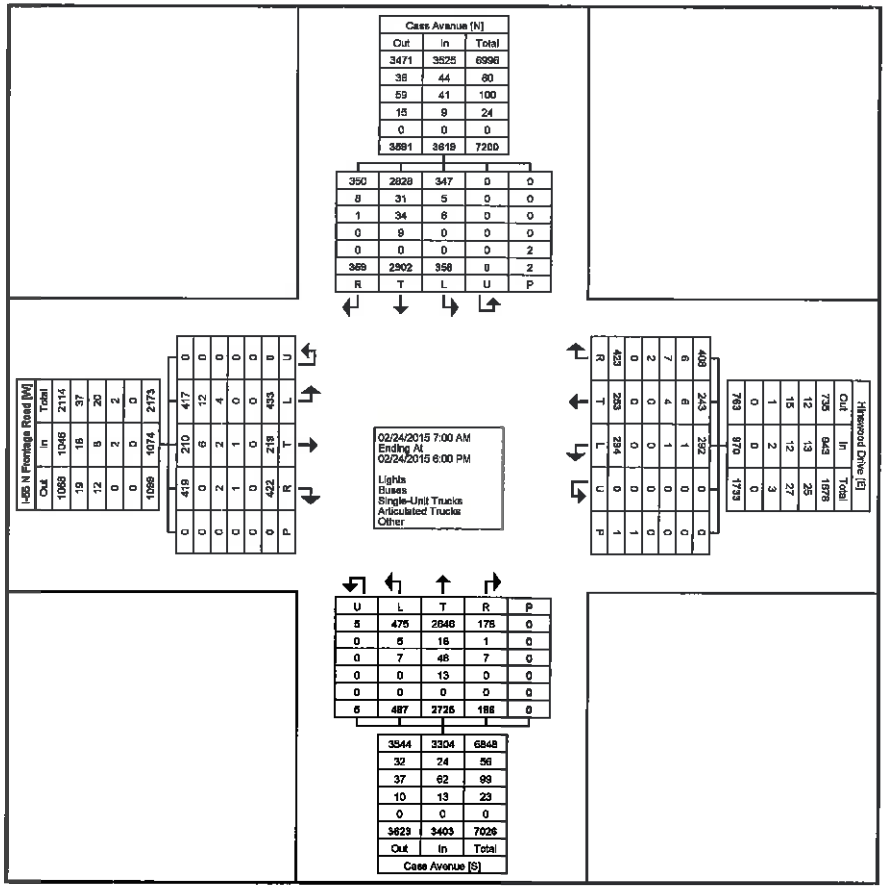
Turning Movement Data

Start Time	I-55 N Frontage Road Eastbound						Hinswood Drive Westbound						Cass Avenue Northbound						Cass Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	24	12	35	0	71	0	12	3	27	0	42	0	11	165	7	0	183	0	12	136	5	0	153	449
7:15 AM	0	39	22	38	0	99	0	38	12	28	0	78	0	21	206	5	0	232	0	14	182	12	0	208	617
7:30 AM	0	41	22	27	0	90	0	31	11	36	0	78	0	17	227	9	0	253	0	16	211	12	0	239	660
7:45 AM	0	45	11	39	0	95	0	18	14	34	0	66	0	12	228	9	0	249	0	16	176	10	0	202	612
Hourly Total	0	149	67	139	0	355	0	99	40	125	0	264	0	61	826	30	0	917	0	58	705	39	0	802	2338
8:00 AM	0	38	4	38	0	80	0	19	8	37	0	64	0	11	176	7	0	194	0	23	173	30	0	226	564
8:15 AM	0	27	13	29	0	69	0	22	16	26	0	64	1	27	146	8	0	182	0	13	174	16	0	203	518
8:30 AM	0	29	20	38	0	87	0	25	8	21	0	54	0	15	140	8	0	163	0	16	177	27	0	220	524
8:45 AM	0	17	2	31	0	50	0	20	11	18	0	49	0	17	141	10	0	168	0	15	137	31	0	183	450
Hourly Total	0	111	39	136	0	286	0	86	43	102	0	231	1	70	603	33	0	707	0	67	661	104	0	832	2056
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	18	8	14	0	40	0	14	18	28	0	60	1	31	114	9	0	155	0	23	160	22	0	225	480
4:15 PM	0	24	15	18	0	57	0	16	17	32	0	65	0	36	122	10	0	168	0	28	194	24	0	246	536
4:30 PM	0	25	15	26	0	66	0	14	17	22	0	53	0	37	143	10	0	190	0	15	205	33	0	253	562
4:45 PM	0	23	18	21	0	62	0	9	17	23	0	49	1	37	171	16	0	225	0	34	211	21	0	266	602
Hourly Total	0	90	56	79	0	225	0	53	69	105	0	227	2	141	550	45	0	738	0	100	790	100	0	990	2180
5:00 PM	0	17	20	19	0	56	0	10	21	22	0	53	0	52	179	23	0	254	0	27	196	41	0	264	627
5:15 PM	0	33	12	22	0	67	0	24	26	26	1	76	0	61	192	18	0	271	0	32	192	24	2	248	662
5:30 PM	0	18	9	12	0	39	0	13	32	22	0	67	1	66	188	14	0	269	0	43	165	24	0	232	607
5:45 PM	0	15	16	15	0	46	0	9	22	21	0	52	1	36	187	23	0	247	0	31	193	27	0	251	596
Hourly Total	0	83	57	68	0	208	0	56	101	91	1	248	2	215	746	78	0	1041	0	133	746	116	2	995	2492
Grand Total	0	433	219	422	0	1074	0	294	253	423	1	970	5	487	2725	186	0	3403	0	358	2902	359	2	3619	9066
Approach %	0.0	40.3	20.4	39.3	-	-	0.0	30.3	26.1	43.6	-	-	0.1	14.3	80.1	5.5	-	-	0.0	9.9	80.2	9.9	-	-	-
Total %	0.0	4.8	2.4	4.7	-	11.8	0.0	3.2	2.8	4.7	-	10.7	0.1	5.4	30.1	2.1	-	37.5	0.0	3.9	32.0	4.0	-	39.9	-
Lights	0	417	210	419	-	1046	0	292	243	408	-	943	5	475	2646	178	-	3304	0	347	2828	350	-	3525	8818
% Lights	-	96.3	95.9	99.3	-	97.4	-	99.3	96.0	96.5	-	97.2	100.0	97.5	97.1	95.7	-	97.1	-	96.9	97.5	97.5	-	97.4	97.3
Buses	0	12	6	0	-	18	0	1	6	6	-	13	0	5	18	1	-	24	0	5	31	8	-	44	99
% Buses	-	2.8	2.7	0.0	-	1.7	-	0.3	2.4	1.4	-	1.3	0.0	1.0	0.7	0.5	-	0.7	-	1.4	1.1	2.2	-	1.2	1.1
Single-Unit Trucks	0	4	2	2	-	8	0	1	4	7	-	12	0	7	48	7	-	62	0	6	34	1	-	41	123
% Single-Unit Trucks	-	0.9	0.9	0.5	-	0.7	-	0.3	1.6	1.7	-	1.2	0.0	1.4	1.8	3.8	-	1.8	-	1.7	1.2	0.3	-	1.1	1.4
Articulated Trucks	0	0	1	1	-	2	0	0	0	2	-	2	0	0	13	0	-	13	0	0	9	0	-	9	26
% Articulated Trucks	-	0.0	0.5	0.2	-	0.2	-	0.0	0.0	0.5	-	0.2	0.0	0.0	0.5	0.0	-	0.4	-	0.0	0.3	0.0	-	0.2	0.3
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Cass Ave/Hinswood
Site Code:
Start Date: 02/24/2015



Turning Movement Data Plot

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Cass Ave/Hinswood
Site Code:
Start Date: 02/24/2015

Turning Movement Peak Hour Data (7:15 AM)

Start Time	I-55 N Frontage Road Eastbound						Hinswood Drive Westbound						Cass Avenue Northbound						Cass Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:15 AM	0	39	22	38	0	99	0	38	12	28	0	78	0	21	206	5	0	232	0	14	182	12	0	208	617
7:30 AM	0	41	22	27	0	90	0	31	11	36	0	78	0	17	227	9	0	253	0	16	211	12	0	239	660
7:45 AM	0	45	11	39	0	95	0	18	14	34	0	66	0	12	228	9	0	249	0	16	176	10	0	202	612
8:00 AM	0	38	4	38	0	80	0	19	8	37	0	64	0	11	176	7	0	194	0	23	173	30	0	226	564
Total	0	163	59	142	0	364	0	106	45	135	0	286	0	61	837	30	0	928	0	69	742	64	0	875	2453
Approach %	0.0	44.8	16.2	39.0	-	-	0.0	37.1	15.7	47.2	-	-	0.0	6.6	90.2	3.2	-	-	0.0	7.9	84.8	7.3	-	-	-
Total %	0.0	6.6	2.4	5.8	-	14.8	0.0	4.3	1.8	5.5	-	11.7	0.0	2.5	34.1	1.2	-	37.8	0.0	2.8	30.2	2.6	-	35.7	-
PHF	0.000	0.906	0.670	0.910	-	0.919	0.000	0.697	0.804	0.912	-	0.917	0.000	0.726	0.918	0.833	-	0.917	0.000	0.750	0.879	0.533	-	0.915	0.929
Lights	0	158	56	142	-	356	0	106	43	127	-	276	0	61	808	28	-	897	0	62	712	60	-	834	2363
% Lights	-	96.9	94.9	100.0	-	97.8	-	100.0	95.6	94.1	-	96.5	-	100.0	96.5	93.3	-	96.7	-	89.9	96.0	93.8	-	95.3	96.3
Buses	0	4	3	0	-	7	0	0	2	4	-	6	0	0	6	1	-	7	0	4	17	4	-	25	45
% Buses	-	2.5	5.1	0.0	-	1.9	-	0.0	4.4	3.0	-	2.1	-	0.0	0.7	3.3	-	0.8	-	5.8	2.3	6.3	-	2.9	1.8
Single-Unit Trucks	0	1	0	0	-	1	0	0	0	3	-	3	0	0	17	1	-	18	0	3	9	0	-	12	34
% Single-Unit Trucks	-	0.6	0.0	0.0	-	0.3	-	0.0	0.0	2.2	-	1.0	-	0.0	2.0	3.3	-	1.9	-	4.3	1.2	0.0	-	1.4	1.4
Articulated Trucks	0	0	0	0	-	0	0	0	0	1	-	1	0	0	6	0	-	6	0	0	4	0	-	4	11
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.7	-	0.3	-	0.0	0.7	0.0	-	0.6	-	0.0	0.5	0.0	-	0.5	0.4
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

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(847)518-9990

Count Name: Cass Ave/Hinswood
Site Code:
Start Date: 02/24/2015
Page No: 5

Peak Hour Data

02/24/2015 7:15 AM
Ending At
02/24/2015 8:15 AM

Lights
Buses
Single-Unit Trucks
Articulated Trucks
Other

Cass Avenue [N]

	Out	In	Total
Lights	1093	834	1927
Buses	14	25	39
Single-Unit Trucks	21	12	33
Articulated Trucks	7	4	11
Other	0	0	0
Total	1135	875	2010

	R	T	L	U	P
Lights	60	712	62	0	0
Buses	4	17	4	0	0
Single-Unit Trucks	0	9	3	0	0
Articulated Trucks	0	4	0	0	0
Other	0	0	0	0	0
Total	64	742	69	0	0

I-55 N Frontage Road [W]

	Out	In	Total
Lights	164	356	520
Buses	6	7	13
Single-Unit Trucks	0	1	1
Articulated Trucks	0	0	0
Other	0	0	0
Total	170	364	534

	U	L	T	R	P
Lights	0	158	56	142	0
Buses	0	4	3	0	0
Single-Unit Trucks	0	1	0	0	0
Articulated Trucks	0	0	0	0	0
Other	0	0	0	0	0
Total	0	163	59	142	0

Hinswood Drive [E]

	Out	In	Total
Lights	146	276	422
Buses	8	6	14
Single-Unit Trucks	4	3	7
Articulated Trucks	0	1	1
Other	0	0	0
Total	158	286	444

	R	T	L	U	P
Lights	127	43	106	0	0
Buses	4	2	0	0	0
Single-Unit Trucks	3	0	0	0	0
Articulated Trucks	1	0	0	0	0
Other	0	0	0	0	0
Total	135	45	106	0	0

Cass Avenue [S]

	U	L	T	R	P
Lights	0	61	808	28	0
Buses	0	0	6	1	0
Single-Unit Trucks	0	0	17	1	0
Articulated Trucks	0	0	6	0	0
Other	0	0	0	0	0
Total	0	61	837	30	0

	Out	In	Total
Lights	960	897	1857
Buses	17	7	24
Single-Unit Trucks	9	18	27
Articulated Trucks	4	6	10
Other	0	0	0
Total	990	928	1918

Turning Movement Peak Hour Data Plot (7:15 AM)

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400
Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Cass Ave/Hinswood
Site Code:
Start Date: 02/24/2015

Turning Movement Peak Hour Data (4:45 PM)

Start Time	I-55 N Frontage Road Eastbound						Hinswood Drive Westbound						Cass Avenue Northbound						Cass Avenue Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:45 PM	0	23	18	21	0	62	0	9	17	23	0	49	1	37	171	16	0	225	0	34	211	21	0	266	602
5:00 PM	0	17	20	19	0	56	0	10	21	22	0	53	0	52	179	23	0	254	0	27	196	41	0	264	627
5:15 PM	0	33	12	22	0	67	0	24	26	26	1	76	0	61	192	18	0	271	0	32	192	24	2	248	662
5:30 PM	0	18	9	12	0	39	0	13	32	22	0	67	1	66	188	14	0	269	0	43	165	24	0	232	607
Total	0	91	59	74	0	224	0	56	96	93	1	245	2	216	730	71	0	1019	0	136	764	110	2	1010	2498
Approach %	0.0	40.6	26.3	33.0	-	-	0.0	22.9	39.2	38.0	-	-	0.2	21.2	71.6	7.0	-	-	0.0	13.5	75.6	10.9	-	-	-
Total %	0.0	3.6	2.4	3.0	-	9.0	0.0	2.2	3.8	3.7	-	9.8	0.1	8.6	29.2	2.8	-	40.8	0.0	5.4	30.6	4.4	-	40.4	-
PHF	0.000	0.689	0.738	0.841	-	0.836	0.000	0.583	0.750	0.894	-	0.806	0.500	0.818	0.951	0.772	-	0.940	0.000	0.791	0.905	0.671	-	0.949	0.943
Lights	0	90	58	74	-	222	0	55	95	91	-	241	2	215	716	69	-	1002	0	136	756	103	-	1000	2465
% Lights	-	98.9	98.3	100.0	-	99.1	-	98.2	99.0	97.8	-	98.4	100.0	99.5	98.1	97.2	-	98.3	-	100.0	99.0	98.2	-	99.0	98.7
Buses	0	0	1	0	-	1	0	1	0	1	-	2	0	0	6	0	-	6	0	0	4	2	-	6	15
% Buses	-	0.0	1.7	0.0	-	0.4	-	1.8	0.0	1.1	-	0.8	0.0	0.0	0.8	0.0	-	0.6	-	0.0	0.5	1.8	-	0.6	0.6
Single-Unit Trucks	0	1	0	0	-	1	0	0	1	1	-	2	0	1	7	2	-	10	0	0	3	0	-	3	16
% Single-Unit Trucks	-	1.1	0.0	0.0	-	0.4	-	0.0	1.0	1.1	-	0.8	0.0	0.5	1.0	2.8	-	1.0	-	0.0	0.4	0.0	-	0.3	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	1	0	-	1	2
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.1	0.0	-	0.1	-	0.0	0.1	0.0	-	0.1	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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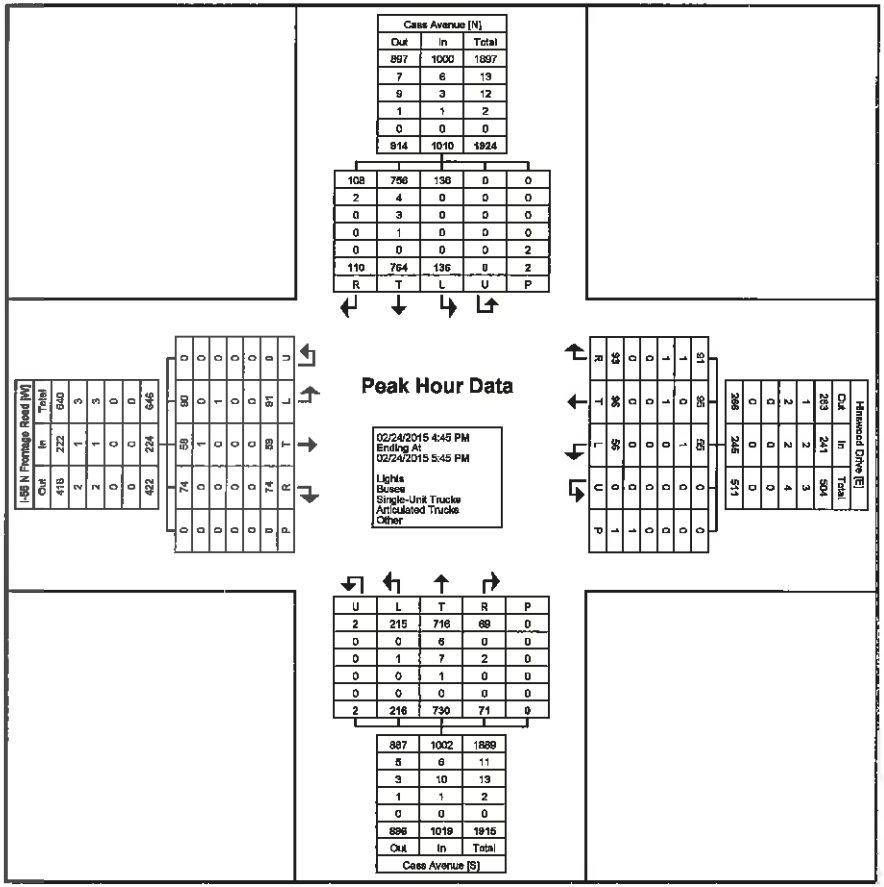
Count Name: Cass Ave/Hinswcod
Site Code:
Start Date: 02/24/2015



Turning Movement Peak Hour Data Plot (4:45 PM)

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: I-55 Frontage/Hinswood
Site Code:
Start Date: 02/24/2015

Turning Movement Data

Start Time	Hinswood Drive Eastbound					Hinswood Drive Westbound					I-55 N Frontage Road Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:00 AM	0	3	27	0	30	0	0	16	0	16	0	30	1	0	31	77
7:15 AM	0	2	39	0	41	0	0	25	0	25	0	55	0	0	55	121
7:30 AM	0	7	41	0	48	0	2	31	0	33	0	47	1	0	48	129
7:45 AM	0	9	32	0	41	0	3	29	0	32	0	38	2	0	40	113
Hourly Total	0	21	139	0	160	0	5	101	0	106	0	170	4	0	174	440
8:00 AM	0	18	17	0	35	0	1	33	0	34	0	29	1	0	30	99
8:15 AM	1	9	25	0	35	0	0	31	0	31	0	37	0	0	37	103
8:30 AM	0	15	27	0	42	0	0	24	0	24	0	30	0	0	30	96
8:45 AM	0	3	25	0	28	0	0	24	0	24	0	24	0	0	24	76
Hourly Total	1	45	94	0	140	0	1	112	0	113	0	120	1	0	121	374
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	11	28	0	39	0	1	8	0	9	0	47	2	0	49	97
4:15 PM	0	21	35	0	56	0	0	15	0	15	0	46	1	0	47	118
4:30 PM	0	12	30	0	42	0	0	15	0	15	0	43	0	0	43	100
4:45 PM	0	20	47	0	67	0	0	13	0	13	0	37	1	0	38	118
Hourly Total	0	64	140	0	204	0	1	51	0	52	0	173	4	0	177	433
5:00 PM	0	26	46	0	72	0	0	11	0	11	0	50	1	0	51	134
5:15 PM	0	24	38	1	62	0	2	18	1	20	0	52	1	0	53	135
5:30 PM	0	24	41	0	65	0	0	11	0	11	0	57	0	0	57	133
5:45 PM	0	26	45	0	71	0	1	11	0	12	0	39	1	0	40	123
Hourly Total	0	100	170	1	270	0	3	51	1	54	0	198	3	0	201	525
Grand Total	1	230	543	1	774	0	10	315	1	325	0	661	12	0	673	1772
Approach %	0.1	29.7	70.2	-	-	0.0	3.1	96.9	-	-	0.0	98.2	1.8	-	-	-
Total %	0.1	13.0	30.6	-	43.7	0.0	0.6	17.8	-	18.3	0.0	37.3	0.7	-	38.0	-
Lights	1	227	525	-	753	0	9	310	-	319	0	644	10	-	654	1726
% Lights	100.0	98.7	96.7	-	97.3	-	90.0	98.4	-	98.2	-	97.4	83.3	-	97.2	97.4
Buses	0	3	9	-	12	0	1	3	-	4	0	8	2	-	10	26
% Buses	0.0	1.3	1.7	-	1.6	-	10.0	1.0	-	1.2	-	1.2	16.7	-	1.5	1.5
Single-Unit Trucks	0	0	8	-	8	0	0	2	-	2	0	9	0	-	9	19
% Single-Unit Trucks	0.0	0.0	1.5	-	1.0	-	0.0	0.6	-	0.6	-	1.4	0.0	-	1.3	1.1
Articulated Trucks	0	0	1	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.2	-	0.1	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	1	-	-	-	-	1	-	-	-	-	0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: I-55 Frontage/Hinswood
Site Code:
Start Date: 02/24/2015
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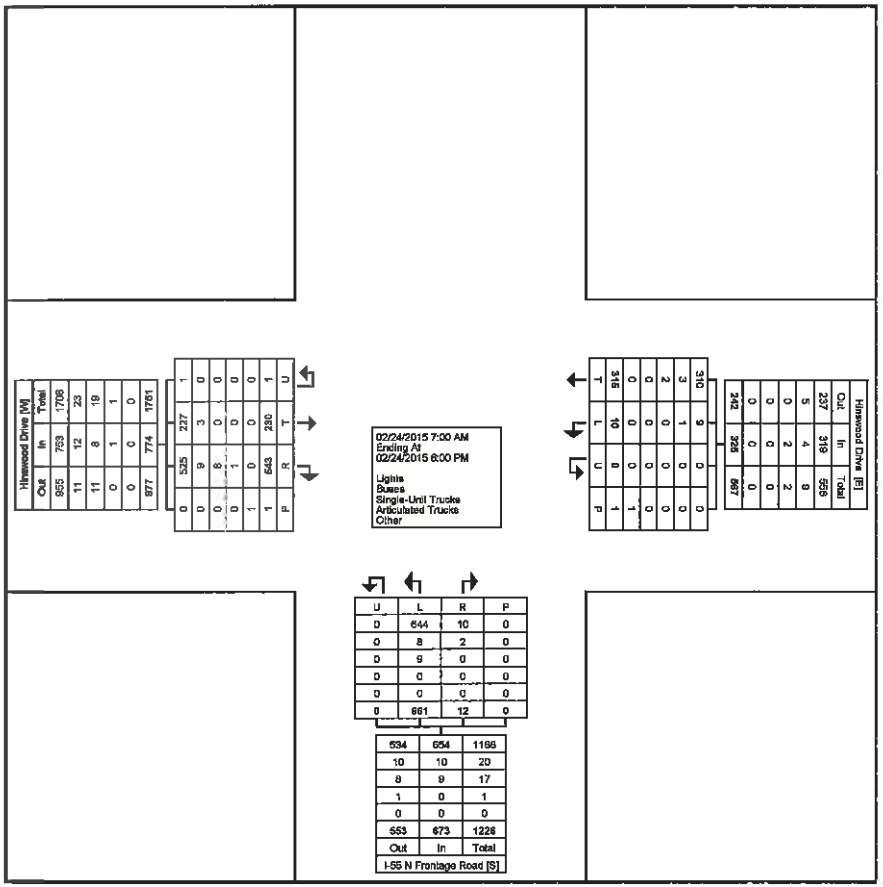

Turning Movement Data Plot

Konig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: I-55 Frontage/Hinswood
Site Code:
Start Date: 02/24/2015

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Hinswood Drive Eastbound					Hinswood Drive Westbound					I-55 N Frontage Road Northbound					
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
7:15 AM	0	2	39	0	41	0	0	25	0	25	0	55	0	0	55	121
7:30 AM	0	7	41	0	48	0	2	31	0	33	0	47	1	0	48	129
7:45 AM	0	9	32	0	41	0	3	29	0	32	0	38	2	0	40	113
8:00 AM	0	18	17	0	35	0	1	33	0	34	0	29	1	0	30	99
Total	0	36	129	0	165	0	6	118	0	124	0	169	4	0	173	462
Approach %	0.0	21.8	78.2	-	-	0.0	4.8	95.2	-	-	0.0	97.7	2.3	-	-	-
Total %	0.0	7.8	27.9	-	35.7	0.0	1.3	25.5	-	26.8	0.0	36.6	0.9	-	37.4	-
PHF	0.000	0.500	0.787	-	0.859	0.000	0.500	0.894	-	0.912	0.000	0.768	0.500	-	0.786	0.895
Lights	0	35	122	-	157	0	5	116	-	121	0	162	3	-	165	443
% Lights	-	97.2	94.6	-	95.2	-	83.3	98.3	-	97.6	-	95.9	75.0	-	95.4	95.9
Buses	0	1	6	-	7	0	1	1	-	2	0	4	1	-	5	14
% Buses	-	2.8	4.7	-	4.2	-	16.7	0.8	-	1.6	-	2.4	25.0	-	2.9	3.0
Single-Unit Trucks	0	0	1	-	1	0	0	1	-	1	0	3	0	-	3	5
% Single-Unit Trucks	-	0.0	0.8	-	0.6	-	0.0	0.8	-	0.8	-	1.8	0.0	-	1.7	1.1
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kenig Lindgren O'Hara Aboona, Inc.
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Count Name: I-55 Frontage/Hinswood
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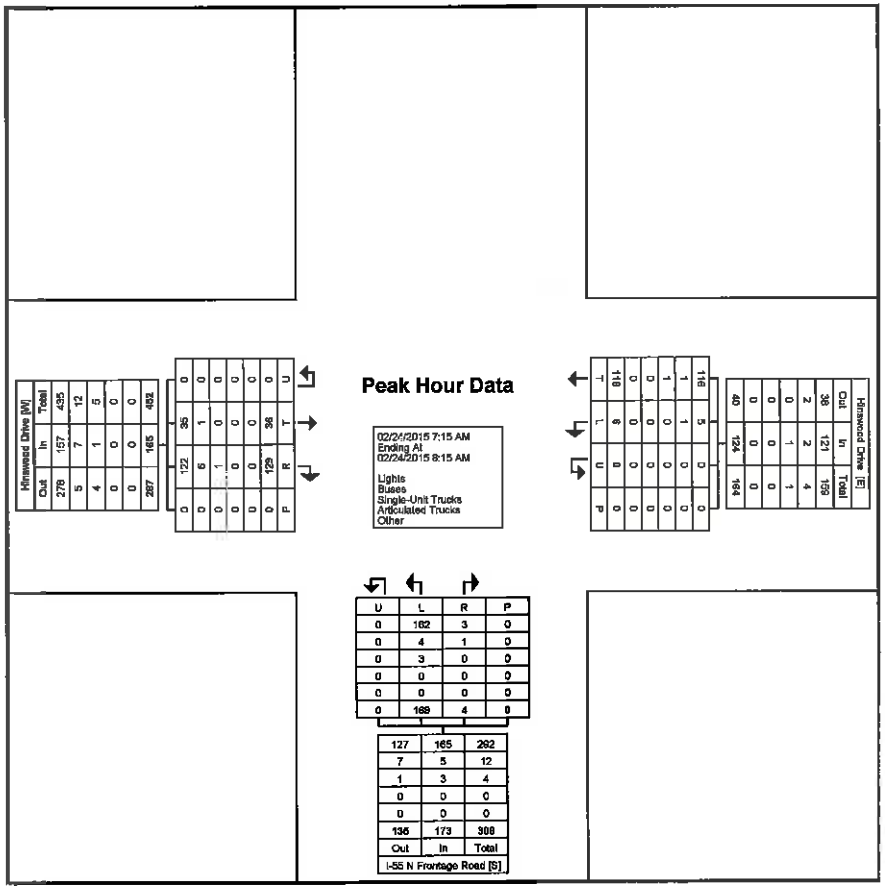

Turning Movement Peak Hour Data Plot (7:15 AM)

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: I-55 Frontage/Hinswood
Site Code:
Start Date: 02/24/2015

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Hinswood Drive Eastbound					Hinswood Drive Westbound					I-55 N Frontage Road Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:45 PM	0	20	47	0	67	0	0	13	0	13	0	37	1	0	38	118
5:00 PM	0	26	46	0	72	0	0	11	0	11	0	50	1	0	51	134
5:15 PM	0	24	38	1	62	0	2	18	1	20	0	52	1	0	53	135
5:30 PM	0	24	41	0	65	0	0	11	0	11	0	57	0	0	57	133
Total	0	94	172	1	266	0	2	53	1	55	0	196	3	0	199	520
Approach %	0.0	35.3	64.7	-	-	0.0	3.6	96.4	-	-	0.0	98.5	1.5	-	-	-
Total %	0.0	18.1	33.1	-	51.2	0.0	0.4	10.2	-	10.6	0.0	37.7	0.6	-	38.3	-
PHF	0.000	0.904	0.915	-	0.924	0.000	0.250	0.736	-	0.688	0.000	0.860	0.750	-	0.873	0.963
Lights	0	93	171	-	264	0	2	52	-	54	0	193	3	-	196	514
% Lights	-	98.9	99.4	-	99.2	-	100.0	98.1	-	98.2	-	98.5	100.0	-	98.5	98.8
Buses	0	1	1	-	2	0	0	1	-	1	0	1	0	-	1	4
% Buses	-	1.1	0.6	-	0.8	-	0.0	1.9	-	1.8	-	0.5	0.0	-	0.5	0.8
Single-Unit Trucks	0	0	0	-	0	0	0	0	-	0	0	2	0	-	2	2
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	1.0	0.0	-	1.0	0.4
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	1	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-

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Count Name: I-55 Frontage/Hinswood
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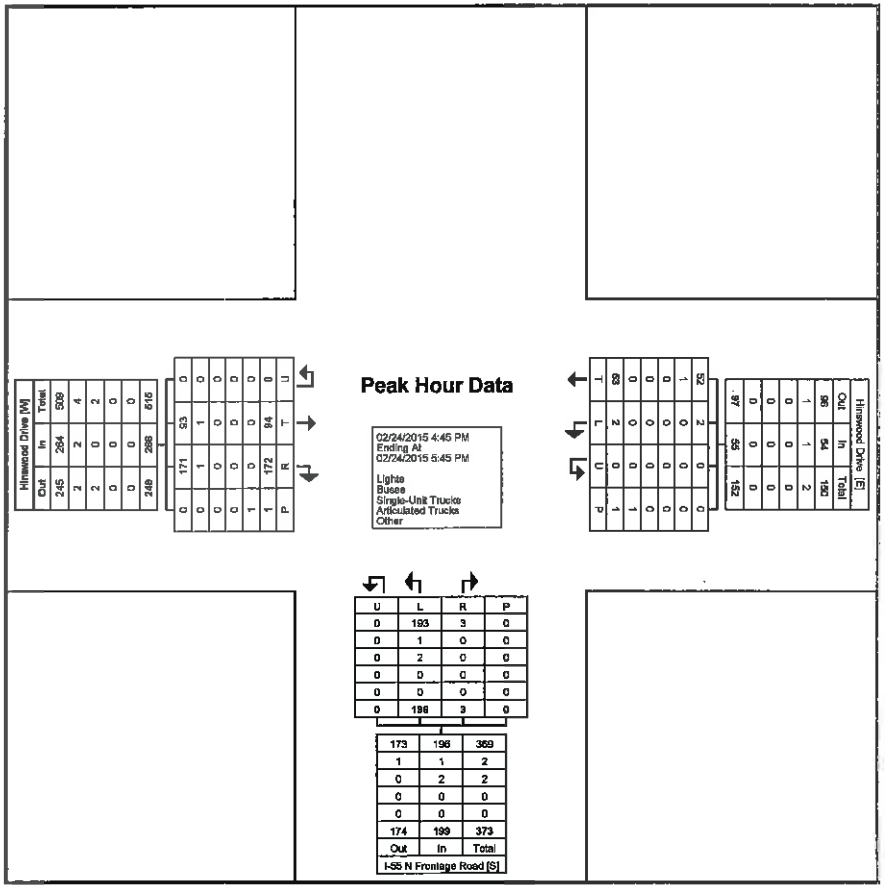

Turning Movement Peak Hour Data Plot (4:45 PM)

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: I-55 Frontage/Mystic Trace
Site Code:
Start Date: 02/24/2015
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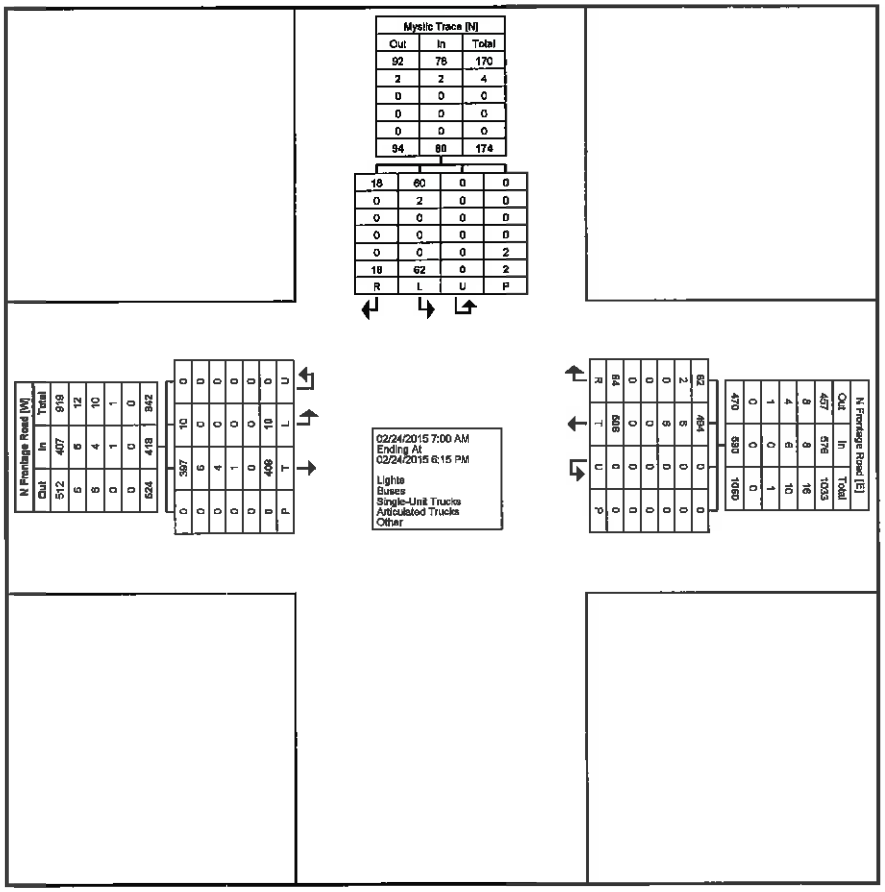
Turning Movement Data

Start Time	N Frontage Road Eastbound					N Frontage Road Westbound					Mystic Trace Southbound					Int. Total
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:00 AM	0	0	17	0	17	0	18	0	0	18	0	2	3	0	5	40
7:15 AM	0	0	25	0	25	0	46	0	0	46	0	10	0	0	10	81
7:30 AM	0	0	28	0	28	0	31	6	0	37	0	7	2	0	9	74
7:45 AM	0	0	30	0	30	0	30	4	0	34	0	12	3	0	15	79
Hourly Total	0	0	100	0	100	0	125	10	0	135	0	31	8	0	39	274
8:00 AM	0	0	15	0	15	0	22	3	0	25	0	4	0	0	4	44
8:15 AM	0	1	15	0	16	0	24	2	0	26	0	0	0	0	0	42
8:30 AM	0	0	22	0	22	0	24	1	0	25	0	2	2	1	4	51
8:45 AM	0	1	18	0	19	0	19	0	0	19	0	2	2	0	4	42
Hourly Total	0	2	70	0	72	0	89	6	0	95	0	8	4	1	12	179
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	1	23	0	24	0	36	8	0	44	0	4	1	0	5	73
4:15 PM	0	0	30	0	30	0	37	10	0	47	0	0	2	0	2	79
4:30 PM	0	2	26	0	28	0	27	8	0	35	0	2	0	0	2	65
4:45 PM	0	1	34	0	35	0	28	10	0	38	0	5	1	0	6	79
Hourly Total	0	4	113	0	117	0	128	36	0	164	0	11	4	0	15	296
5:00 PM	0	3	32	0	35	0	44	8	0	52	0	5	1	0	6	93
5:15 PM	0	0	32	0	32	0	39	9	0	48	0	4	1	1	5	85
5:30 PM	0	1	28	0	29	0	43	9	0	52	0	1	0	0	1	82
5:45 PM	0	0	33	0	33	0	38	6	0	44	0	2	0	0	2	79
Hourly Total	0	4	125	0	129	0	164	32	0	196	0	12	2	1	14	339
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	10	408	0	418	0	506	84	0	590	0	62	18	2	80	1088
Approach %	0.0	2.4	97.6	-	-	0.0	85.8	14.2	-	-	0.0	77.5	22.5	-	-	-
Total %	0.0	0.9	37.5	-	38.4	0.0	46.5	7.7	-	54.2	0.0	5.7	1.7	-	7.4	-
Lights	0	10	397	-	407	0	494	82	-	576	0	60	18	-	78	1061
% Lights	-	100.0	97.3	-	97.4	-	97.6	97.6	-	97.6	-	96.8	100.0	-	97.5	97.5
Buses	0	0	6	-	6	0	6	2	-	8	0	2	0	-	2	16
% Buses	-	0.0	1.5	-	1.4	-	1.2	2.4	-	1.4	-	3.2	0.0	-	2.5	1.5
Single-Unit Trucks	0	0	4	-	4	0	6	0	-	6	0	0	0	-	0	10
% Single-Unit Trucks	-	0.0	1.0	-	1.0	-	1.2	0.0	-	1.0	-	0.0	0.0	-	0.0	0.9
Articulated Trucks	0	0	1	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	-	0.0	0.2	-	0.2	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: I-55 Frontage/Mystic Trace
Site Code:
Start Date: 02/24/2015



Turning Movement Data Plot

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(847)518-9990

Count Name: I-55 Frontage/Mystic Trace
Site Code:
Start Date: 02/24/2015

Turning Movement Peak Hour Data (7:15 AM)

Start Time	N Frontage Road Eastbound					N Frontage Road Westbound					Mystic Trace Southbound					
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
7:15 AM	0	0	25	0	25	0	46	0	0	46	0	10	0	0	10	81
7:30 AM	0	0	28	0	28	0	31	6	0	37	0	7	2	0	9	74
7:45 AM	0	0	30	0	30	0	30	4	0	34	0	12	3	0	15	79
8:00 AM	0	0	15	0	15	0	22	3	0	25	0	4	0	0	4	44
Total	0	0	98	0	98	0	129	13	0	142	0	33	5	0	38	278
Approach %	0.0	0.0	100.0	-	-	0.0	90.8	9.2	-	-	0.0	86.8	13.2	-	-	-
Total %	0.0	0.0	35.3	-	35.3	0.0	46.4	4.7	-	51.1	0.0	11.9	1.8	-	13.7	-
PHF	0.000	0.000	0.817	-	0.817	0.000	0.701	0.542	-	0.772	0.000	0.688	0.417	-	0.633	0.858
Lights	0	0	94	-	94	0	125	11	-	136	0	31	5	-	36	266
% Lights	-	-	95.9	-	95.9	-	96.9	84.6	-	95.8	-	93.9	100.0	-	94.7	95.7
Buses	0	0	4	-	4	0	2	2	-	4	0	2	0	-	2	10
% Buses	-	-	4.1	-	4.1	-	1.6	15.4	-	2.8	-	6.1	0.0	-	5.3	3.6
Single-Unit Trucks	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	2
% Single-Unit Trucks	-	-	0.0	-	0.0	-	1.6	0.0	-	1.4	-	0.0	0.0	-	0.0	0.7
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: I-55 Frontage/Mystic Trace
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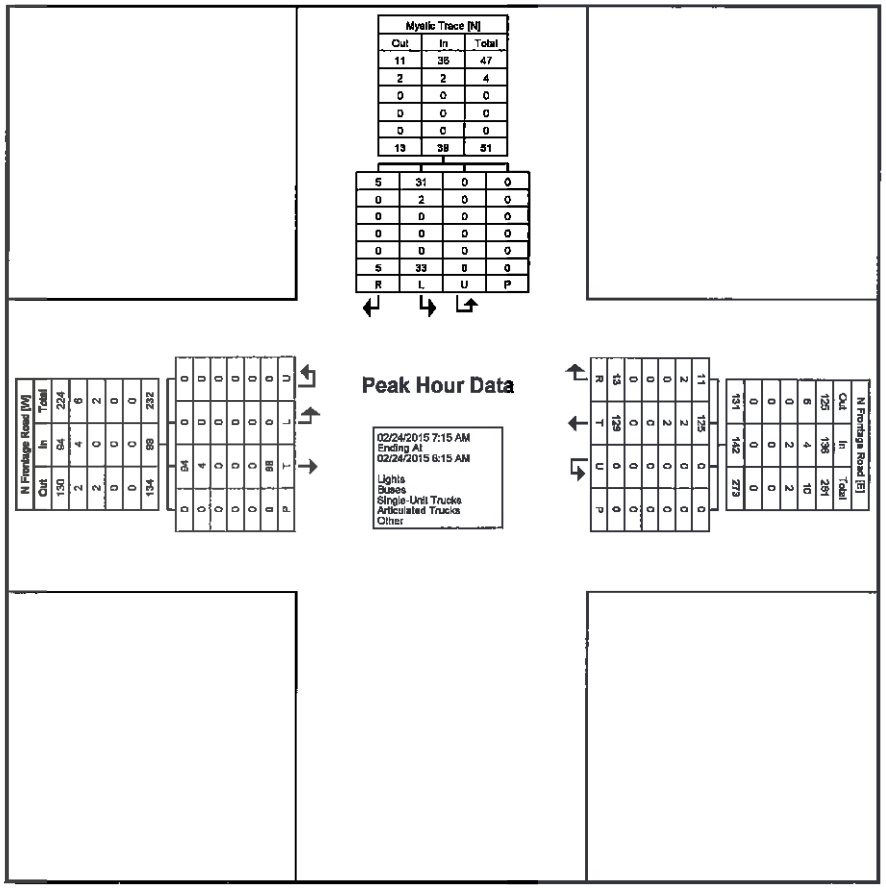
Start Date: 02/24/2015



Turning Movement Peak Hour Data Plot (7:15 AM)

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9575 W. Higgins Rd., Suite 400

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(847)518-9990

Count Name: I-55 Frontage/Mystic Trace
Site Code:
Start Date: 02/24/2015

Turning Movement Peak Hour Data (4:45 PM)

Start Time	N Frontage Road Eastbound					N Frontage Road Westbound					Mystic Trace Southbound					
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
4:45 PM	0	1	34	0	35	0	28	10	0	38	0	5	1	0	6	79
5:00 PM	0	3	32	0	35	0	44	8	0	52	0	5	1	0	6	93
5:15 PM	0	0	32	0	32	0	39	9	0	48	0	4	1	1	5	85
5:30 PM	0	1	28	0	29	0	43	9	0	52	0	1	0	0	1	82
Total	0	5	126	0	131	0	154	36	0	190	0	15	3	1	18	339
Approach %	0.0	3.8	96.2	-	-	0.0	81.1	18.9	-	-	0.0	83.3	16.7	-	-	-
Total %	0.0	1.5	37.2	-	38.6	0.0	45.4	10.6	-	56.0	0.0	4.4	0.9	-	5.3	-
PHF	0.000	0.417	0.926	-	0.936	0.000	0.875	0.900	-	0.913	0.000	0.750	0.750	-	0.750	0.911
Lights	0	5	126	-	131	0	152	36	-	188	0	15	3	-	18	337
% Lights	-	100.0	100.0	-	100.0	-	98.7	100.0	-	98.9	-	100.0	100.0	-	100.0	99.4
Buses	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Buses	-	0.0	0.0	-	0.0	-	0.6	0.0	-	0.5	-	0.0	0.0	-	0.0	0.3
Single-Unit Trucks	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Single-Unit Trucks	-	0.0	0.0	-	0.0	-	0.6	0.0	-	0.5	-	0.0	0.0	-	0.0	0.3
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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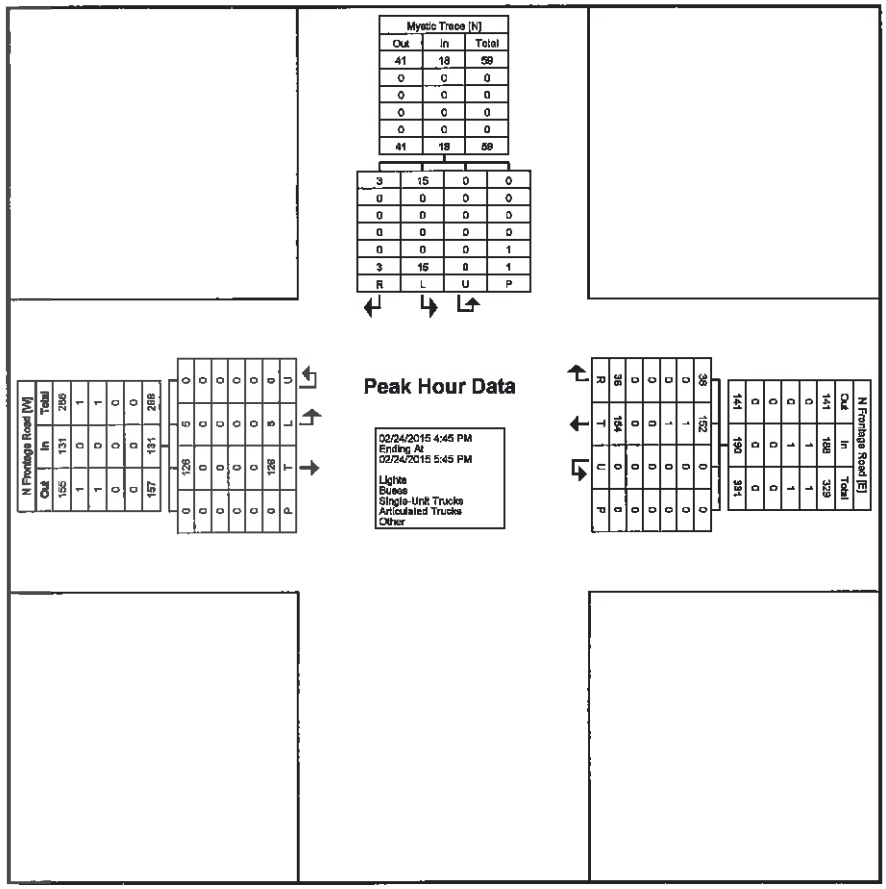


Turning Movement Peak Hour Data Plot (4:45 PM)

Capacity Analysis Reports

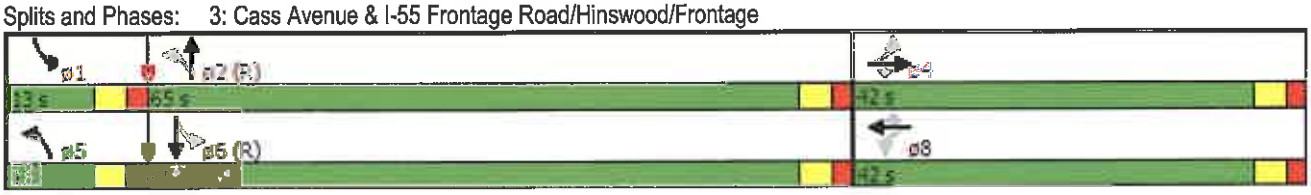
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	66	142	106	45	135	61	837	30	69	742	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	185		0	155		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			160			170		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.995			0.988	
Flt Protected		0.966			0.966		0.950			0.950		
Satd. Flow (prot)	0	1799	1583	0	1799	1583	1770	3522	0	1770	3497	0
Flt Permitted		0.598			0.442		0.271			0.244		
Satd. Flow (perm)	0	1114	1583	0	823	1583	505	3522	0	455	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			135			145		4			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		249			172			408			402	
Travel Time (s)		5.7			3.9			9.3			9.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	246	153	0	162	145	66	932	0	74	867	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	9.0	21.0		9.0	21.0	
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	13.0	65.0		13.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	10.8%	54.2%		10.8%	54.2%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)		29.6	29.6		29.6	29.6	76.2	70.4		76.5	70.5	
Actuated g/C Ratio		0.25	0.25		0.25	0.25	0.64	0.59		0.64	0.59	
v/c Ratio		0.89	0.31		0.80	0.29	0.17	0.45		0.20	0.42	
Control Delay		75.9	8.9		68.8	6.5	9.4	16.6		9.7	15.9	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		75.9	8.9		68.8	6.5	9.4	16.6		9.7	15.9	
LOS		E	A		E	A	A	B		A	B	
Approach Delay		50.2			39.4			16.1			15.4	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)		183	11		117	0	16	215		18	193	
Queue Length 95th (ft)		#276	59		191	47	38	308		42	280	
Internal Link Dist (ft)		169			92			328			322	
Turn Bay Length (ft)			100				185			155		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		343	581		253	588	407	2068		379	2059	
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		0.72	0.26		0.64	0.25	0.16	0.45		0.20	0.42	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 23.7 Intersection LOS: C
Intersection Capacity Utilization 59.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Cass Avenue & I-55 Frontage Road/Hinswood/Frontage



HCM Unsignalized Intersection Capacity Analysis

10: Frontage Road & Mystc Trace

3/9/2015

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	98	129	13	33	5
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)	0	107	140	14	36	5
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	154				254	147
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	154				254	147
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	1426				735	900

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	107	154	41
Volume Left	0	0	36
Volume Right	0	14	5
cSH	1426	1700	753
Volume to Capacity	0.00	0.09	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.0	0.0	10.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.1
Approach LOS			B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Capacity Utilization

5: Frontage Road & Hinswood/Frontage/Hinswood Drive

3/9/2015

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	36	129	6	118	168	4
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	165	0	0	124	172	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.88	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	1677	0	0	1895	1801	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	No			No	No	
Reference Time (s)		0.0				0.0
Adj Reference Time (s)		0.0				0.0
Permitted Option						
Adj Saturation A (vph)	1677		0	1117	120	
Reference Time A (s)	11.8		0.0	13.3	171.9	
Adj Saturation B (vph	1677		NA	NA	NA	
Reference Time B (s)	11.8		NA	NA	NA	
Reference Time (s)	11.8			13.3		
Adj Reference Time (s)	15.8			17.3		
Split Option						
Ref Time Combined (s)	11.8		0.0	7.9	11.5	
Ref Time Seperate (s)	2.6		0.4	7.5	11.2	
Reference Time (s)	11.8		7.9	7.9	11.5	
Adj Reference Time (s)	15.8		11.9	11.9	15.5	

Summary	EB WB	NB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	17.3	Err	
Split Option (s)	27.7	15.5	
Minimum (s)	17.3	15.5	32.8

Right Turns	
Adj Reference Time (s)	
Cross Thru Ref Time (s)	
Oncoming Left Ref Time (s)	
Combined (s)	

Intersection Summary			
Intersection Capacity Utilization	27.3%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	59	74	56	96	93	218	730	71	136	764	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	185		0	155		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			160			170		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.987			0.981	
Flt Protected		0.971			0.982		0.950			0.950		
Satd. Flow (prot)	0	1809	1583	0	1829	1583	1770	3493	0	1770	3472	0
Flt Permitted		0.551			0.643		0.249			0.299		
Satd. Flow (perm)	0	1026	1583	0	1198	1583	464	3493	0	557	3472	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			79			99		12			19	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		249			172			408			402	
Travel Time (s)		5.7			3.9			9.3			9.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	79	0	162	99	232	853	0	145	930	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	9.0	21.0		9.0	21.0	
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	13.0	65.0		13.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	10.8%	54.2%		10.8%	54.2%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)		20.4	20.4		20.4	20.4	86.9	76.2		82.3	73.9	
Actuated g/C Ratio		0.17	0.17		0.17	0.17	0.72	0.64		0.69	0.62	
v/c Ratio		0.92	0.24		0.80	0.28	0.51	0.38		0.31	0.43	
Control Delay		98.5	9.9		74.1	9.5	9.4	12.1		7.2	13.8	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		98.5	9.9		74.1	9.5	9.4	12.1		7.2	13.8	
LOS		F	A		E	A	A	B		A	B	
Approach Delay		69.2			49.6			11.5			12.9	
Approach LOS		E			D			B			B	
Queue Length 50th (ft)		123	0		122	0	45	152		27	180	
Queue Length 95th (ft)		#196	40		187	44	93	247		59	295	
Internal Link Dist (ft)		169			92			328			322	
Turn Bay Length (ft)			100				185			155		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		316	542		369	556	454	2222		474	2146	
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		0.51	0.15		0.44	0.18	0.51	0.38		0.31	0.43	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 21.0 Intersection LOS: C
Intersection Capacity Utilization 64.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Cass Avenue & I-55 Frontage Road/Hinswood/Frontage

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	126	154	36	15	3
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)	5	137	167	39	16	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	207				335	187
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	207				335	187
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1365				658	855

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	142	207	20
Volume Left	5	0	16
Volume Right	0	39	3
cSH	1365	1700	684
Volume to Capacity	0.00	0.12	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.3	0.0	10.4
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Capacity Utilization
5: Frontage Road & Hinswood/Frontage/Hinswood Drive

3/9/2015

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	94	172	2	53	192	3
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	266	0	0	55	195	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.90	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	1716	0	0	1897	1802	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	No			No	No	
Reference Time (s)		0.0				0.0
Adj Reference Time (s)		0.0				0.0
Permitted Option						
Adj Saturation A (vph)	1716		0	1248	120	
Reference Time A (s)	18.6		0.0	5.3	194.8	
Adj Saturation B (vph	1716		NA	NA	NA	
Reference Time B (s)	18.6		NA	NA	NA	
Reference Time (s)	18.6			5.3		
Adj Reference Time (s)	22.6			9.3		
Split Option						
Ref Time Combined (s)	18.6		0.0	3.5	13.0	
Ref Time Seperate (s)	6.6		0.1	3.3	12.8	
Reference Time (s)	18.6		3.5	3.5	13.0	
Adj Reference Time (s)	22.6		8.0	8.0	17.0	

Summary	EB WB	NB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	22.6	Err	
Split Option (s)	30.6	17.0	
Minimum (s)	22.6	17.0	39.6

Right Turns	
Adj Reference Time (s)	
Cross Thru Ref Time (s)	
Oncoming Left Ref Time (s)	
Combined (s)	

Intersection Summary			
Intersection Capacity Utilization	33.0%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	73	148	122	50	151	63	870	48	88	772	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	185		0	155		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			160			170		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.992			0.988	
Flt Protected		0.966			0.966		0.950			0.950		
Satd. Flow (prot)	0	1799	1583	0	1799	1583	1770	3511	0	1770	3497	0
Flt Permitted		0.571			0.438		0.256			0.210		
Satd. Flow (perm)	0	1064	1583	0	816	1583	477	3511	0	391	3497	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			132			162		7			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		249			172			408			402	
Travel Time (s)		5.7			3.9			9.3			9.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	261	159	0	185	162	68	987	0	95	902	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	9.0	21.0		9.0	21.0	
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	13.0	65.0		13.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	10.8%	54.2%		10.8%	54.2%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)		31.9	31.9		31.9	31.9	72.7	65.7		74.3	68.1	
Actuated g/C Ratio		0.27	0.27		0.27	0.27	0.61	0.55		0.62	0.57	
v/c Ratio		0.92	0.31		0.86	0.30	0.19	0.51		0.29	0.45	
Control Delay		79.4	9.5		74.3	6.1	10.2	19.1		11.3	17.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		79.4	9.5		74.3	6.1	10.2	19.1		11.3	17.4	
LOS		E	A		E	A	B	B		B	B	
Approach Delay		52.9			42.5			18.6			16.9	
Approach LOS		D			D			B			B	
Queue Length 50th (ft)		192	15		133	0	19	254		27	220	
Queue Length 95th (ft)		#326	66		#244	49	39	332		52	295	
Internal Link Dist (ft)		169			92			328			322	
Turn Bay Length (ft)			100				185			155		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		328	579		251	600	379	1925		334	1990	
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		0.80	0.27		0.74	0.27	0.18	0.51		0.28	0.45	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 26.0 Intersection LOS: C
Intersection Capacity Utilization 62.9% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Cass Avenue & I-55 Frontage Road/Hinswood/Frontage

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	102	37	2	148	26	1
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)	111	40	2	161	28	1
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			151		296	131
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			151		296	131
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	100
cM capacity (veh/h)			1430		694	919

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	151	163	29
Volume Left	0	2	28
Volume Right	40	0	1
cSH	1700	1430	700
Volume to Capacity	0.09	0.00	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.1	10.4
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	10.4
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	139	160	14	34	5
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)	0	151	174	15	37	5
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	189				333	182
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	189				333	182
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	99
cM capacity (veh/h)	1385				662	861

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	151	189	42
Volume Left	0	0	37
Volume Right	0	15	5
cSH	1385	1700	683
Volume to Capacity	0.00	0.11	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.0	10.6
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.6
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	19.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	37	171	6	123	201	4
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	208	0	0	129	205	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.88	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	1666	0	0	1896	1802	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	No			No	No	
Reference Time (s)		0.0				0.0
Adj Reference Time (s)		0.0				0.0
Permitted Option						
Adj Saturation A (vph)	1666		0	1136	120	
Reference Time A (s)	15.0		0.0	13.6	204.8	
Adj Saturation B (vph	NA		NA	NA	NA	
Reference Time B (s)	NA		NA	NA	NA	
Reference Time (s)	15.0			13.6		
Adj Reference Time (s)	19.0			17.6		
Split Option						
Ref Time Combined (s)	15.0		0.0	8.2	13.7	
Ref Time Seperate (s)	2.7		0.4	7.8	13.4	
Reference Time (s)	15.0		8.2	8.2	13.7	
Adj Reference Time (s)	19.0		12.2	12.2	17.7	

Summary	EB WB	NB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	19.0	Err	
Split Option (s)	31.2	17.7	
Minimum (s)	19.0	17.7	36.6

Right Turns	
Adj Reference Time (s)	
Cross Thru Ref Time (s)	
Oncoming Left Ref Time (s)	
Combined (s)	

Intersection Summary			
Intersection Capacity Utilization	30.5%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.

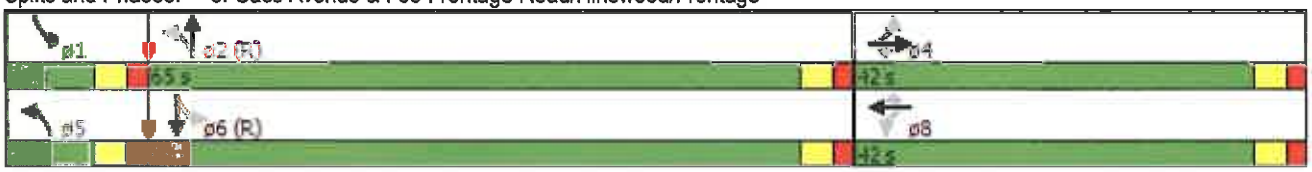
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	65	77	74	104	111	227	759	91	156	795	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	185		0	155		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			160			170		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.984			0.981	
Flt Protected		0.971			0.980		0.950			0.950		
Satd. Flow (prot)	0	1809	1583	0	1825	1583	1770	3483	0	1770	3472	0
Flt Permitted		0.505			0.606		0.231			0.273		
Satd. Flow (perm)	0	941	1583	0	1129	1583	430	3483	0	509	3472	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			118		15			19	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		249			172			408			402	
Travel Time (s)		5.7			3.9			9.3			9.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	170	82	0	190	118	241	904	0	166	967	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	9.0	21.0		9.0	21.0	
Total Split (s)	42.0	42.0	42.0	42.0	42.0	42.0	13.0	65.0		13.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	10.8%	54.2%		10.8%	54.2%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)		22.4	22.4		22.4	22.4	84.7	73.5		80.5	71.4	
Actuated g/C Ratio		0.19	0.19		0.19	0.19	0.71	0.61		0.67	0.60	
v/c Ratio		0.97	0.23		0.90	0.30	0.56	0.42		0.38	0.47	
Control Delay		107.9	9.1		87.8	8.4	11.5	14.0		8.7	15.6	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		107.9	9.1		87.8	8.4	11.5	14.0		8.7	15.6	
LOS		F	A		F	A	B	B		A	B	
Approach Delay		75.7			57.4			13.5			14.6	
Approach LOS		E			E			B			B	
Queue Length 50th (ft)		132	0		145	0	51	176		34	205	
Queue Length 95th (ft)		#217	39		217	46	105	289		73	321	
Internal Link Dist (ft)		169			92			328			322	
Turn Bay Length (ft)			100				185			155		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		290	544		348	569	428	2137		442	2072	
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		0.59	0.15		0.55	0.21	0.56	0.42		0.38	0.47	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 24.2 Intersection LOS: C
Intersection Capacity Utilization 66.9% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Cass Avenue & I-55 Frontage Road/Hinswood/Frontage



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	167	194	37	16	3
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)	5	182	211	40	17	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	251				423	231
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	251				423	231
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1314				585	808

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	187	251	21
Volume Left	5	0	17
Volume Right	0	40	3
cSH	1314	1700	612
Volume to Capacity	0.00	0.15	0.03
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.3	0.0	11.1
Lane LOS	A		B
Approach Delay (s)	0.3	0.0	11.1
Approach LOS			B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	136	36	2	198	34	2
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)	148	39	2	215	37	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			187		387	167
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			187		387	167
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		94	100
cM capacity (veh/h)			1387		615	877

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	187	217	39
Volume Left	0	2	37
Volume Right	39	0	2
cSH	1700	1387	626
Volume to Capacity	0.11	0.00	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.1	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	11.1
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Capacity Utilization
5: Frontage Road & Hinswood/Frontage/Hinswood Drive

3/9/2015

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	98	215	2	55	234	3
Pedestrians						
Ped Button						
Pedestrian Timing (s)						
Free Right		No				No
Ideal Flow	1900	1900	1900	1900	1900	1900
Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0
Refr Cycle Length (s)	120	120	120	120	120	120
Volume Combined (vph)	313	0	0	57	237	0
Lane Utilization Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Factor (vph)	0.90	0.85	0.95	1.00	0.95	0.85
Saturated Flow (vph)	1704	0	0	1897	1803	0
Ped Intf Time (s)	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Frequency (%)	0.00			0.00	0.00	
Protected Option Allowed	No			No	No	
Reference Time (s)		0.0				0.0
Adj Reference Time (s)		0.0				0.0
Permitted Option						
Adj Saturation A (vph)	1704		0	1263	120	
Reference Time A (s)	22.0		0.0	5.4	236.6	
Adj Saturation B (vph	1704		NA	NA	NA	
Reference Time B (s)	22.0		NA	NA	NA	
Reference Time (s)	22.0			5.4		
Adj Reference Time (s)	26.0			9.4		
Split Option						
Ref Time Combined (s)	22.0		0.0	3.6	15.8	
Ref Time Seperate (s)	6.9		0.1	3.5	15.6	
Reference Time (s)	22.0		3.6	3.6	15.8	
Adj Reference Time (s)	26.0		8.0	8.0	19.8	

Summary	EB WB	NB	Combined
Protected Option (s)	NA	NA	
Permitted Option (s)	26.0	En	
Split Option (s)	34.0	19.8	
Minimum (s)	26.0	19.8	45.8

Right Turns	
Adj Reference Time (s)	
Cross Thru Ref Time (s)	
Oncoming Left Ref Time (s)	
Combined (s)	

Intersection Summary			
Intersection Capacity Utilization	38.2%	ICU Level of Service	A

Reference Times and Phasing Options do not represent an optimized timing plan.

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 West Higgins Road Suite 600 Rosemont, Illinois 60018 TEL (847) 823-0500 FAX (847) 823-0520

June 23, 2015

City of Darien
1702 Plainfield Road
Darien, IL 60561

Attention: Mike Griffith

Subject: Value Place Hotel – Final Site Development Plans
(CBBEL Project No. 950323H186)

Dear Mike:

As requested, we have reviewed the Final Site Development Plans and supporting documents for the aforementioned property. The following comments are submitted for your consideration:

FINAL SITE DEVELOPMENT PLANS

The following comments pertain to the Final Site Development Plans prepared by Civil Works Consulting, LLC and dated May 12, 2015.

Sheet C0.0 – Cover Sheet

No Comments.

Sheet C1.0 – Existing Conditions

1. Provide documentation that the survey complies with the datum criteria outlined in Section 15-33 of the DuPage County Stormwater Ordinance.

Sheet C2.0 – Site Demolition Plan

1. Impact to the existing wetlands will have to be reviewed and certified by DuPage County. We understand it is under review.

Sheet C3.0 – Site Dimensional and Paving Plan

No Comments

Sheet C4.0 - Site Utility Plan

1. The proposed sanitary sewer is crossing less than six (6") inches below the existing 20" watermain. Please show the proposed auger pit locations as it appears the proposed auger pit would impact the existing watermain. Consider moving the auger

pit south and auger the sanitary sewer beneath the existing watermain. If the casing pipe extends to 10 feet south of the watermain, that would meet the protection standards. If another method is used, it must be specified on the plan.

2. Add a note the Frames and Grates Specifications that all storm grates will have a "Drains to Creeks" emblem.

Sheet C5.0 – Site Grading and Erosion Control Plan

No Comments.

Sheet C5.1 – Soil Erosion and Sediment Control Details

No Comments.

Sheet C6.0, C6.1, C6.2 Construction Details

1. Revise note 2 of the pipe bedding detail to ductile iron pipe, not PVC for watermain.

Sheet C7.0 General Conditions and Detailed Specifications

1. All water valves shall be resilient wedge type.

Sheet L1.0 – Site Landscaping Plan

No Comments.

Sheet L2.0 – Landscape Details and Notes

Not Reviewed.

Sheet P1.0 – Site Photometrics Plan

No comments.

Sheet P2.0 – Site Photometrics Plan

No comments.

General Comments

1. The sanitary sewer shall be reviewed and approved by the DuPage County Public Works.
2. An IEPA NPDES permit is require and the SWPPP must be submitted to the City.
3. An engineer's estimate must be submitted to establish the letter of credit as required in the City Stormwater Ordinance.
4. A permit is required from IDOT for work within the IDOT right of way.

STORM WATER MANAGEMENT REPORT

The revised pages must be incorporated into the Stormwater Submittal, and a complete tabular submittal provided for the file.

Exhibit No. 2.2 and 2.4:

No Comments.

TR55 Tc Worksheet – Hyd. No. 9

No Comments

Curve Number Calculations

1. Subarea 4B and 5A areas do not match the exhibit areas. Please revise.

Storm Trap Details

1. Add geotextile fabric to separate the aggregate stone and soil to minimize migration of soil into the infiltration system.
2. Provide mastic for the frames and adjusting rings.
3. The plans must be signed and sealed by a Registered Professional Engineer or Structural Engineer.

General Comments

1. Review will be required by DuPage County for impacts and mitigation to the wetland. The tabs in the stormwater submittal should be numbered as detailed in the flow chart found on the County website. References in the following comments that reference a tab, refer to the numbered tab from the flow chart.
2. Provide the signed statement by the land owner and developer as required in Section 15-47.A.3.

If you have any questions, please feel free to contact me.

Sincerely,

Daniel L. Lynch, PE, CFM
Head, Municipal Engineering Department

Cc: Dan Gombac – City of Darien
Osvaldo Pastrana
Civil Works Consulting, LLC
3343 N. Neva Avenue
Chicago, IL 60634

DLL/jmc
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