

## **United City of Yorkville**

800 Game Farm Road Yorkville, Illinois 60560 Telephone: 630-553-4350

www.yorkville.il.us

### **AGENDA**

## ECONOMIC DEVELOPMENT COMMITTEE MEETING

Tuesday, May 7, 2019 6:00 p.m.

City Hall Conference Room 800 Game Farm Road, Yorkville, IL

## **Citizen Comments:**

Minutes for Correction/Approval: April 2, 2019

### **New Business:**

- 1. EDC 2019-40 Building Permit Report for March 2019
- 2. EDC 2019-41 Building Inspection Report for March 2019
- 3. EDC 2019-42 Property Maintenance Report for March 2019
- 4. EDC 2019-43 Economic Development Report for April 2019
- 5. EDC 2019-44 Gas N Wash Special Use Permit

### **Old Business:**

1. EDC 2019-38 Building Code Update

## **Additional Business:**

2019/2020 City Council Goals – Economic Development Committee						
Goal	Priority	Staff				
"Southside Development"	4	Bart Olson, Krysti Barksdale-Noble & Lynn Dubajic				
"Downtown and Riverfront Development"	5	Bart Olson, Tim Evans & Krysti Barksdale-Noble				
"Metra Extension"	7	Bart Olson, Rob Fredrickson, Eric Dhuse, Krysti Barksdale-Noble & Erin Willrett				
"Manufacturing and Industrial Development"	8 (tie)	Bart Olson, Krysti Barksdale-Noble, Erin Willrett, Lynn Dubajic, Eric Dhuse & Brad Sanderson				
"Expand Economic Development Efforts"	10	Krysti Barksdale-Noble & Lynn Dubajic				
"Revenue Growth"	13	Rob Fredrickson, Krysti Barksdale-Noble & Lynn Dubajic				
"Entrance Signage"	17	Krysti Barksdale-Noble & Erin Willrett				

## UNITED CITY OF YORKVILLE

## WORKSHEET

## ECONOMIC DEVELOPMENT COMMITTEE

Tuesday, May 7, 2019 6:00 PM

CITY HALL CONFERENCE ROOM

CITIZEN COMMENTS:	
MINUTES FOR CORRECTION/APPROVA	<u>\L</u> :
1. April 2, 2019  ☐ Approved ☐ As presented ☐ With corrections	
NEW BUSINESS:	
1. EDC 2019-40 Building Permit Report fo  Moved forward to CC  Approved by Committee  Bring back to Committee  Informational Item  Notes  Notes	consent agenda? Y N

☐ Moved ☐ Approv ☐ Bring ba	41 Building Inspection Reforward to CCed by Committeeeck to Committeetional Item	consent agenda? Y		
B. EDC 2019-  Moved  Approv  Bring be	42 Property Maintenance forward to CCed by Committeeeck to Committeetional Item	Report for March 2019 consent agenda? Y	N	
	43 Economic Developme forward to CCed by Committee	consent agenda? Y	N	

☐ Approved b☐ Bring back	ward to CC  by Committee  to Committee		N	
☐ Information ☐ Notes	nal Item			
D BUSINESS:				
	38 Building Code Update	1.0	V	M
	ward to CC by Committee		Y	N
□ Approved t	to Committee			
Dring book		_		
	nal Item			
☐ Information				
☐ Information	nal Item			
☐ Information				



Reviewed By
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Legal	
Finance	
Engineer	
City Administrator	
Human Resources	
Community Development	
Police	
Public Works	
Parks and Recreation	

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Agend	a Item	ı Nıım	ıhet

Minutes

Tracking Number

## Agenda Item Summary Memo

Title: Minutes of the	e Economic Deve	lopment Committee – April 2, 2019	
Meeting and Date:	Economic Devel	lopment Committee – May 7, 2019	
Synopsis:			
Council Action Prev	viously Taken:		
Date of Action:		Action Taken:	
Item Number:			
Type of Vote Requi	red: Majority		
Council Action Req	uested: Committee	tee Approval	
Submitted by:	Minute Ta	ıker	
	Name	Departmen	t
		Agenda Item Notes:	

# UNITED CITY OF YORKVILLE ECONOMIC DEVELOPMENT COMMITTEE

Tuesday, April 2, 2019, 6:00pm City Conference Room

#### In Attendance:

## **Committee Members**

Chairman Ken Koch Alderman Joel Frieders Alderman Jason Peterson

Absent: Alderman Carlo Colosimo

### **Other City Officials**

City Administrator Bart Olson Assistant City Administrator Erin Willrett Community Development Director Krysti Barksdale-Noble Code Official Pete Ratos

### **Other Guests**

Roger Bauer, Morton Buildings Jason Hinkle, Ryan Homes/Grande Reserve Colleen Murphy, Arch Microblade Studio Seth Sommer, B & F Construction Code

The meeting was called to order at 6:00pm by Chairman Ken Koch.

#### **Citizen Comments:** None

## Minutes for Correction/Approval: March 5, 2019

The minutes were approved on a motion by Jason Peterson and approved unanimously by voice vote

Chairman Koch said item #9 would be moved to the end of the agenda.

#### **New Business**

### 1. EDC 2019-30 Building Permit Report for February 2019

Mr. Ratos reported 15 single family attached home permits and a total of 45 permits issued in February. No further discussion.

### 2. EDC 2019-31 Building Inspection Report for February 2019

There were 236 inspections in February and most of those were single family. Mr. Ratos said the inspections should uptick as the weather improves.

### 3. EDC 2019-32 Property Maintenance Report for February 2019

There were several motor vehicle violations in February and all were dismissed except one. A second citation was issued and the matter became compliant prior to a hearing.

#### 4. EDC 2019-33 Economic Development Report for March 2019

Ms. Dubajic was unable to be present and Mr. Olson said there were many updates on the report included in the agenda packet. Representatives of the proposed Gas N Wash will attend the May EDC meeting. They have been asked to meet with residents to address concerns prior to that meeting. Due to a large number of complaints, Mr. Frieders asked if the city could produce an infograph to explain the process of how certain businesses come to fruition. Mr. Olson added that the city can incur legal trouble by denying a certain type of business to locate in Yorkville. He said the information will also be available on social media and posted on the website. Additionally, Chairman Koch asked for a status update on the hotel. It is scheduled for a year-end opening.

### 5. EDC 2019-34 Grande Reserve Unit 23 – Final Plat Amendment

Ms. Noble said this area was recently approved for 3 bedrooms. There are 6 lots that need lot lines adjustments due to the original building plans for the garage position and the request is to slightly extend the lot lines for 2 lots into the open space and the detention basin. Engineers said there would be no significant impact. This revision would have occurred without the change in the number of bedrooms. Mr. Jason Hinkle of Ryan Homes was present for questions. It was also noted that each development in Grande Reserve has its own HOA. This moves to PZC and then City Council.

### 6. EDC 2019-35 Morton Buildings, Inc. - Rezoning

Ms. Noble said Morton Buildings has been searching for a location in the city and found a spot in the Yorkville Business Development. They are requesting rezoning from B-3 to M-1 on one of the two parcels they are purchasing, while the other one is appropriately zoned M-1. Roger Bauer from Morton Buildings was present to provide information. Mr. Bauer said they hope to be ready for business this summer and this is part of the company redevelopment plan. Morton will be closing two other facilities and consolidating them into the Yorkville site. The local building will be 7,000 square feet for a 4-crew operation and 3-4 sales consultants and all equipment/materials will be inside the building or fence. He said this site was selected because of the unobstructed view to a future 4-lane highway. He described the building facade material and said it will have a metal roof. Alderman Peterson said his experience with metal roofs is that the paint fades or falls off later. Mr. Bauer said the technology has greatly improved and it will be pre-coated before construction.

#### 7. EDC 2019-36 Micropigmentation – Text Amendment

Colleen Murphy, owner of Arch Microblade Studio, wishes to expand her services to include micropigmentation. Ms. Murphy said she has had to send customers elsewhere for this service. Ms. Noble said the text will be amended to include all such services. The committee was OK with this amendment and it moves forward to the Council consent agenda.

#### 8. EDC 2019-37 8225 Galena Road – 1.5 Mile Review

This is a rezoning from A-1 to R-1 and is within the Montgomery boundary. The petitioner is establishing a garage carpentry business and has already gone to the County Planning and Zoning. Ms. Noble said the city is OK with the request and it moves forward to PZC and then to City Council.

### 10. EDC 2019-39 Utility Box Art (out of sequence)

This item went before the Public Works committee and was brought to this committee for further discussion. Alderman Frieders has proposed painting of utility boxes, similar to an Aurora program, as part of the downtown improvements. Due to lack of utility boxes in the downtown, hydrants or manhole covers are other options. Staff is looking for input on how they should proceed with the project. Alderman Frieders said after guidelines are put in place, the program and leadership should be transferred to a curator. He discussed the various aspects of the program and offered to help organize it. It was noted that permission from the Fire Department will be needed to paint the hydrants and manholes will be considered first. It is hoped that a schedule will be in place by the end of summer.

### 9. EDC 2019-38 Building Code Update (out of sequence)

Mr. Ratos presented a letter of support from BKFD to not include fire suppression in single family homes since the cost would be prohibitive. Mr. Ratos said the update process for the International Building Code and International Residential Code began in May 2018. This update will be brought to EDC in May, PZC/Public Hearing in August, open house in June or July and then City Council. A social media campaign was initiated as well as a website with FAQ. A mailer was sent to builders and developers and Mr. Ratos also met with builders. Mr. Ratos went through the various changes made in both codes.

#### **Old Business**

## 1. EDC 2019-26 Short Term Rental Regulations

This was discussed at EDC and they recommended it simply be allowed as a permitted use. The committee was OK with this and it moves to the PZC for a Public Hearing.

#### **Additional Business**

There was no further business and the meeting adjourned at 7:15pm.

Minutes respectfully submitted by Marlys Young, Minute Taker



Reviewed By:	
Legal	
Finance	
Engineer	
City Administrator	
Human Resources	
Community Development	
Police	
Public Works	
Parks and Recreation	

Agenda Item Number
New Business #1
Tracking Number
EDC 2019-40

## **Agenda Item Summary Memo**

Title: Building Pern	nit Report for March 2019						
Meeting and Date:	Meeting and Date: Economic Development Committee – May 7, 2019						
Synopsis: All perm	its issued in March 2019.						
Council Action Pres	viously Taken:						
Date of Action:	N/A Action Ta	ken: N/A					
Item Number:	N/A						
Type of Vote Requi	red: Informational						
Council Action Req	uested: None						
Submitted by:		Community Development					
	Name	Department					
	Agenda I	tem Notes:					
	Agenda I	tem Notes:					



## UNITED CITY OF YORKVILLE

## BUILDING PERMIT REPORT March 2019

	Number of Permits Issued	SFD Single Family Dwelling	B.U.I.L.D. Single Family Dwelling	SFA Single Family Attached	Multi- Family Apartments Condominiums	Commercial Includes all Permits Issued for Commercial Use	Industrial	Misc.	Construction Cost	Permit Fees
March 2019	64	14	0	0	0	13	0	37	2,971,112.00	162,265.84
Calendar Year 2019	149	41	0	0	0	37	0	71	13,146,883.00	472,329.94
Fiscal Period 2020	848	210	0	0	0	112	0	526	52,445,156.00	1,930,052.22
March 2018	99	10	1	24	0	19	0	83	3,611,565.00	414,874.10
Calendar Year 2018	187	20	14	36	0	45	0	72	9,813,619.00	885,896.58
Fiscal Period 2019	884	73	71	48	0	156	0	536	69,276,521.00	2,995,058.32
March 2017	74	13	8	0	0	12	0	41	4,703,074.00	255,593.07
Calendar Year 2017	148	15	18	0	0	32	0	83	7,757,040.00	434,412.51
Fiscal Period 2018	786	53	94	0	0	113	0	526	35,944,779.00	1,821,445.59
March 2016	73	5	11	0	0	12	0	45	3,667,897.00	180,093.14
Calendar Year 2016	124	5	19	0	0	29	0	71	5,469,709.00	296,500.52
Fiscal Period 2017	583	12	73	0	0	124	0	374	19,724,814.00	1,115,381.60



Reviewed By:	
Legal	
Finance	
Engineer	
City Administrator	
Human Resources	
Community Development	
Police	
Public Works	
Parks and Recreation	

Agenda Item Number
New Business #2
Tracking Number
EDC 2019-41

## Agenda Item Summary Memo

Title: Building Inspection Report for March 2019							
Meeting and Date: Economic Development Committee – May 7, 2019							
Synopsis: All inspec	ctions scheduled in March 20	019.					
Council Action Prev	viously Taken:						
Date of Action:	N/A Action Take	en: N/A					
Item Number:	N/A						
Type of Vote Requi	red: Informational						
Council Action Req	uested: None						
Submitted by:	D. Weinert Name	Community Development  Department					
	Agenda Ito						

UNITED CITY OF YORKVILLE CALLS FOR INSPECTION REPORT

PAGE: 1

## ID: PT4A0000.WOW

INSPECTIONS SCHEDULED FROM 03/01/2019 TO 03/31/2019

INSPE			INSPECTION		ADDRESS	LOT	SCHED. DATE	COMP. DATE
ВС		001-FIN ts1: ROOF	FINAL INSPECTION	2015024	2 301 E RIDGE ST		03/06/2019	
ВС		001-FIN	FINAL INSPECTION	2015028	35 301 E RIDGE ST		03/06/2019	
BC		009-FIN	FINAL INSPECTION	2015045	37 301 E RIDGE ST		03/06/2019	
BF	Commen Commen	ts1: 4TH F	LOOR, HOLIDAY INN E SAID HE COULD NOT E	EXPRESS, BF INS	SPE	4 & 5	03/05/2019	
PBF	 Commen		PLUMBING - ROUGH LOOR HOLIDAY INN EX	PRESS CANELLED	)		03/06/2019	
BF			ROUGH FRAMING AY INN XPRESS 4TH E	LOOR MORNING E	PLE			03/06/2019
BF			ROUGH FRAMING LOOR H.I.XPRESS 219	-775-5829				03/11/2019
BF			ROUGH ELECTRICAL LOOR H.I.XPRESS 219	-775-5829				03/11/2019
BF			ROUGH MECHANICAL LOOR H.I.XPRESS 219	-775-5829				03/11/2019
PBF			PLUMBING - ROUGH 4TH FLOOR, AM PLEA	SE 219-775-582	29			03/15/2019
BF		018-INS 1 ts1: 4TH F	INSULATION LOOR HOLIDAY INN					03/19/2019
BF	 Commen	019-REL 1ts1: 2ND F	ROUGH ELECTRICAL LOOR					03/20/2019
BF		020-RMC 1 ts1: 2ND F	ROUGH MECHANICAL LOOR					03/20/2019
PR		021-RFR 1 ts1: 2ND F	ROUGH FRAMING LOOR					03/20/2019
PBF	 Commen	022-PLR 3	PLUMBING - ROUGH 2ND FLOOR					03/20/2019
BF		023-INS : ts1: 3RD F	INSULATION LOOR					03/21/2019

TIME: 11:19:36

#### DATE: 04/01/2019 UNITED CITY OF YORKVILLE CALLS FOR INSPECTION REPORT

ID: PT4A0000.WOW

I	NSPECTIONS	SCHEDULED	FROM	03/01/2019	TO	03/31/2019

INSPE	ECTOR TIME	TYPE OF INSPECTION	PERMIT	ADDRESS	LOT	SCHED. DATE	COMP. DATE
BF		024-INS INSULATION ts1: HOLIDAY INN, 2ND FLOOR					03/29/2019
BF		020-FIN FINAL INSPECTION ts1: GR HORTON	2017093	3 3172 MATLOCK DR	666		03/13/2019
PBF		M 021-PLF PLUMBING - FINAL OSR REAL ts1: GR HORTON					03/13/2019
EEI		022-EFL ENGINEERING - FINAL INSPE ts1: INSPECTION PASSED 11/19/18	Ξ			03/13/2019	
BC		020-FIN FINAL INSPECTION	2017093	6 3162 MATLOCK DR	669		03/20/2019
PBF		021-PLF PLUMBING - FINAL OSR REAL ts1: HORTON, GRANDE RESERVE	O			03/20/2019	
EEI		022-EFL ENGINEERING - FINAL INSPE ts1: OK TO TEMP	Ξ				03/20/2019
BC		014-FIN FINAL INSPECTION	2017093	9 3147 MATLOCK DR	655		03/07/2019
PR		015-PLF PLUMBING - FINAL OSR REAL					03/07/2019
EEI	 Comment	016-EFL ENGINEERING - FINAL INSPE ts1: OK TO TEMP	Ξ				03/07/2019
ВС		007-RFR ROUGH FRAMING	2017094	0 3177 MATLOCK DR	661		03/29/2019
ВC		008-REL ROUGH ELECTRICAL					03/29/2019
BC		009-RMC ROUGH MECHANICAL					03/29/2019
PR		010-PLR PLUMBING - ROUGH					03/29/2019
BF		012-GAR GARAGE FLOOR ts1: UPLAND					03/29/2019
PR		013-PLF PLUMBING - FINAL OSR REAL	2017095	5 2663 MCLELLAN BLVD			03/01/2019
EEI	 Comment	014-EFL ENGINEERING - FINAL INSPE ts1: WINTER CONDITIONS OK TO TEMP	Ξ				03/04/2019
PR		015-FIN FINAL INSPECTION					03/01/2019
ВC		001-FIN FINAL INSPECTION	2018007	4 609 HEUSTIS ST	5		03/26/2019
ВС		002-FIN FINAL INSPECTION	2018013	4 485 E BARBERRY CIR	145		03/26/2019

TIME: 11:19:36

ID: PT4A0000.WOW

#### DATE: 04/01/2019 UNITED CITY OF YORKVILLE CALLS FOR INSPECTION REPORT

### INSPECTIONS SCHEDULED FROM 03/01/2019 TO 03/31/2019

INSPI	ECTOR TIME TYPE OF INSPECTION	PERMIT ADDRESS	LOT	SCHED. DATE	COMP. DATE
вс	002-FIN FINAL INSPECTION	20180136 303 W MAIN ST			03/26/2019
вс	014-FIN FINAL INSPECTION	20180334 3075 JUSTICE DR	634		03/20/2019
PBF	015-PLF PLUMBING - FINAL OSR	READ			03/21/2019
EEI	O16-EFL ENGINEERING - FINAL : Comments1: OK TO TEMP	INSPE			03/20/2019
BC	AM 013-FIN FINAL INSPECTION	20180337 3021 JUSTICE DR	632		03/28/2019
PR	AM 014-PLF PLUMBING - FINAL OSR	READ		03/28/2019	
EEI	015-EFL ENGINEERING - FINAL : Comments1: OK TO TEMP	INSPE			03/27/2019
BC	008-RFR ROUGH FRAMING	20180367 3092 JUSTICE DR			03/06/2019
BC	009-REL ROUGH ELECTRICAL				03/06/2019
BC	010-RMC ROUGH MECHANICAL				03/06/2019
PR	011-PLR PLUMBING - ROUGH				03/06/2019
BC	PM 012-INS INSULATION				03/08/2019
BF	013-STP STOOP Comments1: GR UPLAND				03/08/2019
ВС	014-GAR GARAGE FLOOR Comments1: GR UPLAND				03/13/2019
BC	002-FIN FINAL INSPECTION	20180415 326 PIERPONT LN			03/26/2019
ВС	O01-FIN FINAL INSPECTION Comments1: ABOVE GROUND POOL	20180490 433 E BARBERRY CIR	153		03/29/2019
BC	003-FIN FINAL INSPECTION	20180544 408 E PARK ST			03/26/2019
PR	006-PLU PLUMBING - UNDERSLAB	20180547 3124 MATLOCK DR	678	03/28/2019	
BF	007-BSM BASEMENT FLOOR Comments1: UPLAND & GARAGE FLOOR			03/29/2019	
BC	002-FIN FINAL INSPECTION	20180578 464 E BARBERRY CIR			03/26/2019
ВС	002-FIN FINAL INSPECTION	20180608 1445 ASPEN LN	106		03/27/2019

## UNITED CITY OF YORKVILLE CALLS FOR INSPECTION REPORT

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INSPE		TYPE OF	INSPECTION	PERMIT	ADDRESS	LOT	SCHED. DATE	COMP. DATE
BC		013-FIN	FINAL INSPECTION	20180617	7 2821 SHERIDAN CT	206		03/06/2019
PR		014-PLF	PLUMBING - FINAL OSR READ					03/06/2019
EEI			ENGINEERING - FINAL INSPE OK TO TEMP					03/06/2019
BC		002-FIN	FINAL INSPECTION	20180676	5 201 LEISURE ST			03/05/2019
BC		011-RMC	ROUGH MECHANICAL	20180708	3 928 PURCELL ST	81		03/07/2018
ВС	 Comments		REINSPECTION ING					03/13/2019
ВС		013-INS	INSULATION					03/13/2019
ВС		s1: ANCHO	ROUGH FRAMING OR SUPPORT POSTS ON EACH E BASEMENT	ND OF BE	MA			03/07/2019
PBF			ENGINEERING - SEWER / WAT WINNINGER					03/15/2019
BC		002-FIN	FINAL INSPECTION	20180730	301 E VAN EMMON ST			03/26/2019
BC		001-FIN	FINAL INSPECTION	20180741	l 1202 WILLOW WAY	201		03/05/2019
BC		016-FIN	FINAL INSPECTION	20180744	4 510 WINDETT RIDGE RD	173		03/27/2019
PBF			PLUMBING - FINAL OSR READ ETT, LENNAR					03/27/2019
EEI	 Comments		ENGINEERING - FINAL INSPE O TEMP					03/27/2019
PBF		014-SUM s1: VERUN	SUMP NA, WINDETT	20180745	5 821 CAULFIELD PT	108		03/21/2019
BC		015-FIN	FINAL INSPECTION					03/22/2019
PBF			PLUMBING - FINAL OSR READ ETT RIDGE, LENNAR					03/22/2019
EEI	 Comments		ENGINEERING - FINAL INSPE O TEMP					03/22/2019
PR		008-PLU	PLUMBING - UNDERSLAB	20180747	7 2352 WINTERTHUR GREEN	181		03/06/2019

UNITED CITY OF YORKVILLE CALLS FOR INSPECTION REPORT

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INSPE	ECTOR TIME	TYPE OF	INSPECTION	PERMIT	ADDRESS	LOT	SCHED. DATE	COMP. DATE
вс		009-BSM	BASEMENT FLOOR					03/08/2019
ВС		010-PHD	POST HOLE - DECK					03/08/2019
BC			ROUGH FRAMING ENNAR/RICH					03/27/2019
вс		012-REL	ROUGH ELECTRICAL					03/27/2019
ВС		013-RMC	ROUGH MECHANICAL					03/27/2019
PBF			PLUMBING - ROUGH ETT, LENNAR					03/27/2019
ВC		015-INS	INSULATION					03/28/2019
ВC		002-FIN	FINAL INSPECTION	2018076	2 1204 SUNSET AVE			03/26/2019
ВC		002-FIN	FINAL INSPECTION	2018076	8 344 POPLAR DR	95		03/26/2019
PR	AI	M 013-SUM	SUMP	2018077	3 2642 BURR ST	11		03/26/2019
ВC		014-FIN	FINAL INSPECTION					03/27/2019
PR		015-PLF	PLUMBING - FINAL OSR READ	)				03/27/2019
EEI	 Commen	016-EFL ts1: OK TO	ENGINEERING - FINAL INSPE O TEMP	1				03/27/2019
BC		002-REL	ROUGH ELECTRICAL	2018078	2 478 HONEYSUCKLE LN	160		03/26/2019
ВC		002-FIN	FINAL INSPECTION	2018078	8 807 MORGAN ST			03/26/2019
ВC		002-FIN	FINAL INSPECTION	2018081	2 1704 COTTONWOOD CT			03/01/2019
BC		002-FIN	FINAL INSPECTION	2018083	8 404 JACKSON ST			03/05/2019
ВC		002-FIN	FINAL INSPECTION	2018083	9 404 JACKSON ST B			03/05/2019
BC	AI	M 004-FIN	FINAL INSPECTION	2018084	3 103 E MAIN ST			03/08/2019
BKF		005-FIN	FINAL INSPECTION					03/13/2019
ВС		006-REI ts1: FINA	REINSPECTION L					03/15/2019
ВC		013-STP	STOOP	2018086	1 1041 BLACKBERRY SHORE LN	38		03/22/2019

## UNITED CITY OF YORKVILLE CALLS FOR INSPECTION REPORT

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INSPI	ECTOR TIME	TYPE OF	INSPECTION	PERMIT	ADDRESS	LOT	SCHED. DATE	COMP. DATE
ВС		010-RFR	ROUGH FRAMING	20180864	1 762 KENTSHIRE DR	113		03/11/2019
ВС			ROUGH ELECTRICAL ELECTRICAL OUTLET FOR RAD TTIC	ON SYSTEM	1			03/11/2019
BC		012-RMC	ROUGH MECHANICAL					03/11/2019
PBF	Commen	013-PLR ts1: WIN,	PLUMBING - ROUGH LENNAR					03/11/2019
BC		014-INS	INSULATION					03/12/2019
ВС	 Commen	015-REI ts1: FRAM	REINSPECTION ING					03/12/2019
BC		002-FIN	FINAL INSPECTION	20180868	3 219 W ELIZABETH ST			03/05/2019
BC		012-GAR	GARAGE FLOOR	20180869	2431 FITZHUGH TURN	148		03/04/2019
BC		013-STP	STOOP					03/04/2019
BC		002-RFR	ROUGH FRAMING	20180873	3 211 E SPRING ST			03/01/2019
BC		003-REL	ROUGH ELECTRICAL					03/01/2019
BC		004-RMC	ROUGH MECHANICAL					03/01/2019
PR	 Commen	005-PLR ts1: CONS	PLUMBING - ROUGH ULTATION					03/01/2019
PR	11:30	006-PLR	PLUMBING - ROUGH					03/07/2019
ВС		ts1: SEAL	FIRE OR DRAFT STOPPING ALL SIDES OF WINDOWS. FIR FLOOR PENETRATIONS	E STOP AI	LL			03/15/2019
BC		008-INS	INSULATION					03/15/2019
BC		009-REI	REINSPECTION					03/19/2019
BC		002-FIN	FINAL INSPECTION	20180880	1701 COTTONWOOD CT			03/05/2019
BC	P	M 012-BSM	BASEMENT FLOOR	20180895	5 1972 MEADOWLARK LN	147		03/04/2019
BC		013-GAR	GARAGE FLOOR					03/12/2019
ВС		002-FIN	FINAL INSPECTION	20180907	7 1626 COTTONWOOD TR	20		03/05/2019

UNITED CITY OF YORKVILLE CALLS FOR INSPECTION REPORT

PAGE: 7

INSPE	CTOR TIME	TYPE OF	INSPECTION	PERMIT	ADDRESS	LOT	SCHED. DATE	COMP. DATE
ВС		002-FIN	FINAL INSPECTION	2018090	3 212 FAIRHAVEN DR	77		03/26/2019
вс		001-FIN	FINAL INSPECTION	2018091	3 510 W MADISON ST			03/26/2019
ВС		002-FIN	FINAL INSPECTION	2018093	4 2762 CRANSTON CIR	109		03/27/2019
BF			GARAGE FLOOR PLAND, STOOPS	2018093	5 1911 WREN RD	14		03/07/2019
BF	Commen		GARAGE FLOOR PLAND, STOOPS	2018093	6 1901 WREN RD	13		03/07/2019
BC		001-FIN	FINAL INSPECTION	2018094	3 2752 CRANSTON CIR	112		03/15/2019
PR		015-PLF	PLUMBING - FINAL OSR READ	2018094	9 4254 E MILLBROOK CIR	283		03/08/2019
BF	 Commen	016-FIN ts1: GR R	FINAL INSPECTION YAN					03/13/2019
EEI		017-EFL	ENGINEERING - FINAL INSPE					03/13/2019
BC		015-FIN	FINAL INSPECTION	2018095	0 4242 E MILLBROOK CIR	285		03/19/2019
PR		016-PLF	PLUMBING - FINAL OSR READ					03/19/2019
EEI		017-EFL	ENGINEERING - FINAL INSPE					03/13/2019
BF		ts1: UPLA	FOUNDATION ND. COLD WEATHER PROTECTIO CTION IS ONSITE OKAY TO PO	N REQD -	5 3102 REHBEHN CT P	650		03/01/2019
BF	Commen	003-BKF ts1: GR U	BACKFILL PLAND					03/08/2019
PBF		M 004-WAT ts1: GR H						03/12/2019
PBF		005-ESS	ENGINEERING - STORM					03/12/2019
BF	 Commen	002-FOU ts1: GR U		2018096	7 3108 REHBEHN CT	649		03/08/2019
ВС		003-BKF	BACKFILL					03/14/2019
PR	Al	M 004-ESS	ENGINEERING - STORM					03/18/2019
PR		005-WAT	WATER					03/18/2019

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вс	003-BKF BACKFILL	20180970 3122 REHBEHN CT	648		03/04/2019
PR	004-WAT WATER Comments1: CANCEL			03/06/2019	
PR	005-ESS ENGINEERING - STORM Comments1: CANCEL			03/06/2019	
PBF	AM 006-WAT WATER Comments1: GR HOLIDAY				03/12/2019
PBF	AM 007-ESS ENGINEERING - STORM				03/12/2019
PR	O04-WAT WATER Comments1: CANCEL	20180972 3126 REHBEHN CT	647	03/06/2019	
PR	005-ESS ENGINEERING - STORM Comments1: CANCEL			03/06/2019	
PR	006-ESS ENGINEERING - STORM				03/07/2019
PR	007-WAT WATER				03/07/2019
PR	006-PLU PLUMBING - UNDERSLAB	20180973 3129 REHBEHN CT	642		03/07/2019
BF	007-BSM BASEMENT FLOOR Comments1: GR UPLAND				03/08/2019
BF	008-GAR GARAGE FLOOR Comments1: STOOPS				03/29/2019
BF	007-BSM BASEMENT FLOOR Comments1: UPLAND GR. BASEMENT IS HEAT Comments2: POUR.	20180976 3136 REHBEHN CT PED - OKAY TO	645		03/01/2019
PR	008-PLR PLUMBING - ROUGH				03/19/2019
ВС	009-REL ROUGH ELECTRICAL				03/19/2019
ВС	010-RFR ROUGH FRAMING				03/19/2019
BC	011-RMC ROUGH MECHANICAL				03/19/2019
BC	012-INS INSULATION				03/21/2019
BF	013-GAR GARAGE FLOOR Comments1: UPLAND & STOOPS				03/29/2019

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INSP	ECTOR TIME	TVDE 0	'INSPECTION	PERMIT	ADDECC	LOT	SCHED. DATE	COMP. DATE
			INSECTION				DATE	DATE
BC		001-FIN	FINAL INSPECTION	20180982	2 745 ARROWHEAD DR			03/20/2019
BC		013-FIN	FINAL INSPECTION	20180992	2 2093 SQUIRE CIR	218		03/06/2019
PR		014-PLF	PLUMBING - FINAL OSR READ					03/06/2019
EEI	 Commen	015-EFI ts1: MODE	ENGINEERING - FINAL INSPE L HOME					03/06/2019
BC		016-PPS	PRE-POUR, SLAB ON GRADE					03/29/2019
ВС			ROUGH ELECTRICAL R PROJECT	2018099	5 1739 JOHN ST	183		03/21/2019
BC		013-FIN	FINAL INSPECTION	2018099	5 3287 BOOMBAH BLVD	143		03/20/2019
PBF			PLUMBING - FINAL OSR READ , CALEDONIA					03/20/2019
EEI	 Commen	015-EFL ts1: OK T	. ENGINEERING - FINAL INSPE O TEMP					03/20/2019
BC		012-INS	INSULATION	20181003	3 3162 LAUREN DR	113		03/01/2019
BF		015-STP ts1: F &	STOOP R, CAL MIDWEST					03/15/2019
ВC			; FOOTING GRANDE RESERVE	2018100	4 2581 LYMAN LOOP	37		03/22/2019
BC	A	M 002-FOU	FOUNDATION					03/26/2019
PR		003-WAT	WATER				03/29/2019	
BC		007-GAR	GARAGE FLOOR	2018100	5 2501 LYMAN LOOP	62		03/07/2019
ВС	 Commen	008-STP ts1: F	STOOP					03/07/2019
ВС	A	M 009-STP ts1: R	STOOP					03/07/2019
BC		010-RFR	ROUGH FRAMING					03/08/2019
BC		011-REL	ROUGH ELECTRICAL					03/08/2019
BC		012-RMC	ROUGH MECHANICAL					03/08/2019
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PR		013-PLR	PLUMBING - ROUGH					03/08/2019
вс		014-INS	INSULATION					03/13/2019
BF		015-STP	STOOP AL MIDWEST	20181014	4 3212 LAUREN DR	117		03/15/2019
ВС		005-INS	INSULATION	2018101	5 2679 LILAC WAY	319		03/05/2019
ВС		008-RFR	ROUGH FRAMING	20181019	9 4210 E MILLBROOK CIR	289		03/08/2019
ВС		009-REL	ROUGH ELECTRICAL					03/08/2019
ВC		010-RMC	ROUGH MECHANICAL					03/08/2019
PR		011-PLR	PLUMBING - ROUGH					03/08/2019
ВC		012-INS	INSULATION					03/12/2019
ВC		4 013-STP						03/06/2019
BC		4 014-STP						03/06/2019
PR	AN	001-RMC	ROUGH MECHANICAL	20181022	2 1652 N BEECHER RD	54		03/04/2019
PBF	 Comment	005-PLU		20181025	5 1101 BLACKBERRY SHORE LN	44		03/20/2019
BF	Comment	s1: RAND	BASEMENT FLOOR A, KENDALL MKTPL. MAKE THI THE DAY WON'T BE READY UNT					03/27/2019
PR	AN	4 004-ESW	ENGINEERING - SEWER / WAT	2018102	5 901 BLACKBERRY SHORE LN	24		03/06/2019
ВC		001-FTG	FOOTING BLACKBERRY WOODS	20190001	l 938 PURCELL ST	82		03/22/2019
ВC	AN	1 002-FOU	FOUNDATION					03/27/2019
вс		006-BSM	BASEMENT FLOOR	20190002	2 3258 BOOMBAH BLVD	140		03/14/2019
вс		007-CRL	CRAWL SPACE					03/14/2019
PBF	 Comment	008-PLU	PLUMBING - UNDERSLAB RYAN					03/14/2019

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PR _		009-PLR PLUMBING - ROUGH					03/25/2019
BF _	Comment	010-RFR ROUGH FRAMING s1: CAL - JIM					03/25/2019
BF _		011-REL ROUGH ELECTRICAL					03/25/2019
BF _		012-RMC ROUGH MECHANICAL					03/25/2019
BC _		013-INS INSULATION					03/27/2019
BF _	Comment	014-GAR GARAGE FLOOR s1: STOOPS, CALEDONIA-MIDWEST					03/22/2019
BC _		009-RFR ROUGH FRAMING	2019000	03 3141 LAUREN DR	89		03/07/2019
BC _		010-REL ROUGH ELECTRICAL					03/07/2019
BC _		011-RMC ROUGH MECHANICAL					03/07/2019
PR _		012-PLR PLUMBING - ROUGH					03/07/2019
BC _		013-INS INSULATION					03/11/2019
BC _		014-GAR GARAGE FLOOR					03/07/2019
BF _		015-STP STOOP s1: F & R, CAL MIDWEST					03/15/2019
PBF _		001-WAT WATER s1: GR WINNINGER, NOT READY REINS		04 2834 SILVER SPRINGS CT FEE	256		03/12/2019
PBF _	 Comment	002-REI REINSPECTION s1: WATER, GR WINNINGER					03/13/2019
BC _		003-FTG FOOTING					03/14/2019
BF _	 Comment	004-FOU FOUNDATION s1: GR, MIDWEST					03/15/2019
BF _	 Comment	005-BKF BACKFILL s1: RYAN, GRANDE RESERVE					03/20/2019
PR _		006-PLU PLUMBING - UNDERSLAB				03/28/2019	
BF _	Comment	007-BSM BASEMENT FLOOR s1: GR, RYAN					03/29/2019

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INSPE		TYPE OF	INSPECTION	PERMIT	ADDRESS	LOT	SCHED. DATE	COMP. DATE
ВС		001-FIN s1: WINDO	FINAL INSPECTION DWS	20190010	404 PARK ST			03/25/2019
ВС		001-PHF	POST HOLE - FENCE	20190014	455 NORWAY CIR	82		03/26/2019
ВС		002-REL	ROUGH ELECTRICAL					03/26/2019
PBF	 Comment	004-ESW s1: KMP N		20190015	1001 BLACKBERRY SHORE LN	34		03/12/2019
PR		005-PLU	PLUMBING - UNDERSLAB				03/27/2019	
BC	AM	001-FTG	FOOTING	20190016	991 BLACKBERRY SHORE LN	33		03/15/2019
BC		002-FOU	FOUNDATION					03/22/2019
BF	 Comment	003-BKF s1: KMP N	BACKFILL MCCUE					03/29/2019
PR		006-PLU	PLUMBING - UNDERSLAB	20190017	1093 REDWOOD DR	47		03/26/2019
ВС		003-REI	REINSPECTION	20190021	684 W VETERANS PKWY	9		03/05/2019
BC	PM	007-GAR	GARAGE FLOOR	20190023	2832 SILVER SPRINGS CT	257	03/06/2019	
BC		008-RFR	ROUGH FRAMING					03/12/2019
BC		009-REL	ROUGH ELECTRICAL					03/12/2019
BC		010-RMC	ROUGH MECHANICAL					03/12/2019
PBF	 Comment	011-PLR s1: GR RY	PLUMBING - ROUGH YAN					03/13/2019
ВС		012-INS	INSULATION					03/15/2019
ВС	 Comment	013-STP s1: F	STOOP					03/13/2019
BC	 Comment	014-STP s1: R	STOOP					03/13/2019
PR		005-WAT	WATER	20190030	4351 E MILLBROOK CIR	209		03/01/2019
PR		006-PLU	PLUMBING - UNDERSLAB					03/06/2019
ВС	PM	007-BSM	BASEMENT FLOOR					03/06/2019

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BC	008-GAR GARAGE FLOOR				03/13/2019
PBF	_ 009-PLR PLUMBING - ROUGH nents1: STACK, RYAN GRANDE RESERVE				03/21/2019
BC	010-RFR ROUGH FRAMING				03/21/2019
BC	011-REL ROUGH ELECTRICAL				03/21/2019
BC	012-RMC ROUGH MECHANICAL				03/21/2019
BC	013-INS INSULATION				03/25/2019
	_ AM 014-STP STOOP nents1: F				03/25/2019
BC	_ 015-STP STOOP ments1: R				03/25/2019
BC	001-FTG FOOTING	20190031 3122 LAUREN DR	109		03/14/2019
BC	002-FOU FOUNDATION				03/19/2019
BC	003-BKF BACKFILL				03/21/2019
PR	004-PLU PLUMBING - UNDERSLAB				03/27/2019
PR	005-ESW ENGINEERING - SEWER / W	NAT			03/26/2019
BF	006-BGS BASEMENT GARAGE STOOPS nents1: CAL, MIDWEST				03/28/2019
BC	001-FTG FOOTING	20190032 3291 LAUREN DR	81		03/07/2019
BC	002-FOU FOUNDATION				03/11/2019
BC	003-BKF BACKFILL				03/18/2019
PR	004-ESW ENGINEERING - SEWER / W	TAN			03/19/2019
PR	PM 005-PLU PLUMBING - UNDERSLAB				03/25/2019
BC	PM 006-BSM BASEMENT FLOOR				03/25/2019
BC	007-CRL CRAWL SPACE				03/25/2019
	_ AM 001-FTG FOOTING nents1: MIDWEST, CALEDONIA, AM PLEAS		83		03/27/2019

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INSP		OF INSPECTION		ADDRESS	LOT	SCHED. DATE	COMP. DATE
ВС	002-1	OU FOUNDATION				03/29/2019	
PR	0 0 4 - V	NAT WATER	201900	35 2683 MCLELLAN BLVD	49	03/29/2019	
PBF	PM 004-W	NAT WATER CRUNA, AFTERNOON INSPECTION		36 2692 MCLELLAN BLVD	51		03/14/2019
PBF		REI REINSPECTION CRUNA, GR WATER SERVICE					03/15/2019
ВС	PM 001-F	PHF POST HOLE - FENCE	201900	39 425 SUTTON ST	205		03/13/2019
ВС		BKF BACKFILL	201900	43 2583 LYMAN LOOP	38		03/01/2019
PBF	PM 004-W	NAT WATER CRUNA, AFTERNOON PLEASE					03/14/2019
BF	Comments1: CC	OU FOUNDATION OLD WEATHER PROTECTION REQD ON SITE OKAY TO POUR			193		03/01/2019
ВС	0 0 4 - F	BKF BACKFILL					03/07/2019
PBF	O05-F	PLU PLUMBING - UNDERSLAB R RYAN					03/15/2019
ВС	006-E	SSM BASEMENT FLOOR					03/18/2019
BC	AM 007-0	GAR GARAGE FLOOR					03/25/2019
BC	AM 008-S	STP STOOP					03/25/2019
BC	001-	TTG FOOTING	201900	45 485 SHADOW WOOD DR	105		03/08/2019
PR	002-E	ESW ENGINEERING - SEWER / WA	T				03/07/2019
BF	003-1	FOU FOUNDATION					03/13/2019
BC	004-E	SKF BACKFILL					03/18/2019
PBF		SSW ENGINEERING - SEWER / WA NG SEWER, WINNINGER	T				03/21/2019
PR	PM 006-F	PLU PLUMBING - UNDERSLAB					03/25/2019
ВС	PM 007-E	SSM BASEMENT FLOOR					03/25/2019
ВС		CRL CRAWL SPACE					03/25/2019

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INSPE	CTOR TIME	TYPE OF INSPECTION	PERMIT ADDRESS	LOT	SCHED. DATE	COMP. DATE
вс		001-REL ROUGH ELECTRICAL	20190056 102 STRAWBERRY LN			03/15/2019
BC		002-RFR ROUGH FRAMING				03/15/2019
PR		003-PLR PLUMBING - ROUGH				03/18/2019
BC		004-RMC ROUGH MECHANICAL				03/15/2019
BC	11:30	001-PHF POST HOLE - FENCE	20190059 1407 CHESTNUT LN	65		03/07/2019
BC		002-FOU FOUNDATION	20190060 2445 WYTHE PL	6		03/07/2019
PR	PN	4 003-ESW ENGINEERING - SEWER / W	AT			03/19/2019
PBF	 Comment	004-PLU PLUMBING - UNDERSLAB				03/27/2019
BF	Comment Comment	002-FTG FOOTING cs1: PLEASE MAKE THIS LAST INSP O cs2: OLD WEATHER PROTECTION REQD cs3: UR PROTECTION IS ON SITE. RE cs4: NG WATER BEFORE POURING CONC	F THE DAY. C - OKAY TO PO MOVED STANDI	7		03/01/2019
BC		003-FOU FOUNDATION				03/11/2019
PR	PN	4 004-ESW ENGINEERING - SEWER / W	AT			03/19/2019
PBF		005-PLU PLUMBING - UNDERSLAB				03/27/2019
PR		001-ESW ENGINEERING - SEWER / W	AT 20190064 981 BLACKBERRY SHORE LN	32		03/19/2019
BF	 Comment	002-FTG FOOTING cs1: NORWOOD, KENDALL MARKET PLAC	E			03/21/2019
ВС	PN	4 003-FOU FOUNDATION				03/25/2019
PBF	 Comment	001-ESW ENGINEERING - SEWER / W LS1: WINNINGER, CALEDONIA	AT 20190067 3192 LAUREN DR			03/20/2019
BF	Comment	002-FTG FOOTING				03/20/2019
BF		003-FOU FOUNDATION				03/22/2019
BF		1 004-BKF BACKFILL csl: MIDWEST, CALEDONIA, AM PLEAS	E			03/27/2019

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PR	AN	1 005-SEW	SEWER INSPECTION					03/27/2019
GH		002-FIN	FINAL INSPECTION	20190068	302 TWINLEAF TR	7 4		03/06/2019
BC		001-PHF	POST HOLE - FENCE	20190073	2233 OLIVE LN	286		03/21/2019
BC		002-FIN	FINAL INSPECTION					03/28/2019
PBF	 Comment		ENGINEERING - SEWER / WAT INGER, CALEDONIA	20190075	3272 LAUREN DR	120		03/20/2019
BF		002-FTG	FOOTING , CALEDONIA					03/20/2019
BC		003-FOU	FOUNDATION					03/21/2019
BF			BACKFILL EST, CALEDONIA, AM PLEASE					03/27/2019
ВС		001-PHF	POST HOLE - FENCE	20190081	2241 PRAIRIE GRASS LN	296		03/27/2019
BF		4 001-FTG	FOOTING EST, GRANDE RESERVE, AM PL		2828 KETCHUM CT	215		03/27/2019
PR	AN	002-WAT	WATER					03/27/2019
BC		003-FOU	FOUNDATION					03/29/2019
ВС	11:00	001-FTG	FOOTING	20190089	1941 WREN RD	17		03/18/2019
BF	 Comment		FOUNDATION V, PRESTWICK					03/21/2019
BC		003-BKF	BACKFILL					03/26/2019
PR		004-ESW	ENGINEERING - SEWER / WAT				03/28/2019	
BC		001-PHF	POST HOLE - FENCE	20190091	2354 TITUS DR	240		03/21/2019
BC		002-FIN	FINAL INSPECTION					03/29/2019
BC		001-FIN	FINAL INSPECTION	20190092	809 E MAIN ST	40		03/15/2019
BC	Comment		MISCELLANEOUS LET-LAW OFFICE	20190094	226 S BRIDGE ST			03/18/2019
BC	13:00	001-PHD	POST HOLE - DECK	20190096	1001 HOMESTEAD DR	122		03/28/2019

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вс		001-PHF	POST HOLE - FENCE	2019009	7 734 JOHN ST	2		03/28/2019
PR	P	M 001-ESW	ENGINEERING - SEWE	ER / WAT 2019010	0 501 OMAHA DR	3		03/25/2019
BF		M 002-FTG ts1: HEAR	FOOTING TLAND CIRCLE, MCCUE	3				03/28/2019
PR	10:30	001-ESW	ENGINEERING - SEWI	ER / WAT 2019010	5 800 ALEXANDRA LN	20		03/27/2019
BF		002-FTG ts1: HEAR	FOOTING TLAND MEADOW, SOPRI	IS				03/28/2019
ВС		001-PHF	POST HOLE - FENCE	2019011	3 542 WINDETT RIDGE R	D 170		03/29/2019
BC		001-ROF	ROOF UNDERLAYMENT	ICE & W 2019011	6 76 W COUNTRYSIDE PK	WY		03/18/2019
ВC	11:00	001-ROF	ROOF UNDERLAYMENT	ICE & W 2019011	7 301 ADAMS ST			03/19/2019
ВС		001-ROF	ROOF UNDERLAYMENT	ICE & W 2019012	1 303 STATE ST			03/19/2018
вс		001-ROF	ROOF UNDERLAYMENT	ICE & W 2019012	6 301 E KENDALL DR			03/28/2019
вс		001-PHD	POST HOLE - DECK	2019012	9 2649 FAIRFAX WAY	256	03/28/2019	
PR		M 001-FIN ts1: SEWE	FINAL INSPECTION R REPAIR	2019013	5 511 W MADISON ST		03/22/2019	
BC		001-ROF	ROOF UNDERLAYMENT	ICE & W 2019014	2 4442 PLEASANT CT	1199		03/26/2019
BC		001-ROF	ROOF UNDERLAYMENT	ICE & W 2019015	5 410 W MADISON ST			03/28/2019

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INSPECTOR TIME TYPE OF	F INSPECTION PERMIT ADDRE	SS	LOT	SCHED. DATE	COMP. DATE
PERMIT TYPE SUMMARY:		1			
	ADD ADDITION AGP ABOVE-GROUND POOL	2			
	BIP BUILD INCENTIVE PROGRAM SFD	3			
	BSM BASEMENT REMODEL	5			
	CCO COMMERCIAL OCCUPANCY PERMIT	1			
	COM COMMERCIAL BUILDING	17			
	Delt blett	2			
	FNC FENCE	10			
	FNC FENCE HVC HVAC UNIT/S PKL SIDEWALK CAFE/PARKLET	1			
	PKL SIDEWALK CAFE/PARKLET	1			
	PLM PLUMBING REPAIR OR ALTERATION	1			
	PRG PERGOLA	2			
	PRG PERGOLA REP REPAIR ROF ROOFING	8			
	ROF ROOFING	30			
		247			
	SID SIDING	1			
	SOL SOLAR PANELS	1			
	WIN WINDOW REPLACEMENT	3			
INSPECTION SUMMARY:	BGS BASEMENT GARAGE STOOPS	1			
	DVE DXCVETII	1 2			
	BSM BASEMENT FLOOR	12			
	BSM BASEMENT FLOOR CRL CRAWL SPACE	3			
	EFL ENGINEERING - FINAL INSPECTION	14			
	ESS ENGINEERING - STORM	6			
	ESW ENGINEERING - SEWER / WATER	15			
	ESW ENGINEERING - SEWER / WATER FIN FINAL INSPECTION	50			
	FOU FOUNDATION	18			
	FOU FOUNDATION FTG FOOTING	16			
	GAR GARAGE FLOOR INS INSULATION MIS MISCELLANEOUS PHD POST HOLE - DECK PHF POST HOLE - FENCE	14			
	INS INSULATION	17			
	MIS MISCELLANEOUS	1			
	PHD POST HOLE - DECK	1 3			
	PHF POST HOLE - FENCE	8			
	PLF PLUMBING - FINAL OSR READY PLR PLUMBING - ROUGH	14			
	PLR PLUMBING - ROUGH	17			
	PLU PLUMBING - UNDERSLAB	15			
	PPS PRE-POUR, SLAB ON GRADE	1			
	REI REINSPECTION	7			
	REL ROUGH ELECTRICAL	18			
	REL ROUGH ELECTRICAL RFR ROUGH FRAMING RMC ROUGH MECHANICAL	18			
	RMC ROUGH MECHANICAL	17			
	ROF ROOF UNDERLAYMENT ICE & WATER	6			
	RST FIRE OR DRAFT STOPPING	1			
	SEW SEWER INSPECTION	1			
	STP STOOP	15			
	SUM SUMP	2			

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		INSPECTIONS	SCHEDULED E	FROM	03/01/2019 TO	03/31/2019

INSPECTOR TIME TYP	E OF	INSPECTION PERMI		LOT	SCHED. DATE	COMP. DATE
		WAT WATER	13			
INSPECTOR SUMMARY:		BC BOB CREADEUR	180			
		BF B&F INSPECTOR CODE SERVIC	E 51			
		BKF BRISTOL KENDALL FIRE DEPT	1			
		EEI ENGINEERING ENTERPRISES	14			
		GH GINA HASTINGS	1			
		PBF BF PLUMBING INSPECTOR	33			
		PR PETER RATOS	56			
STATUS SUMMARY:	А	BC	1			
	С	BC	33			
	С	BKF	1			
	С	EEI	1			
	С	GH	1			
	С	PBF	1			
	I	BC	135			
	I	BF	50			
	I	EEI	1			
	I	PBF	27			
	I	PR	4 6			
	M	BC	2			
	M	EEI	1			
	M	PR	1			
	T	BC	9			
	T	BF	1			
	T	EEI	11			
	T	PBF	5			
	Т	PR	9			
REPORT SUMMARY:			336			



Reviewed By:	
Legal	
Finance	
Engineer	
City Administrator	
Human Resources	
Community Development	
Police	
Public Works	
Parks and Recreation	

Agenda Item Number
New Business #3
Tracking Number
EDC 2019-42

## **Agenda Item Summary Memo**

Title: Property Ma	intenance Report for March 20	19
Meeting and Date:	Economic Development Cor	mmittee – May 7, 2019
Synopsis:		
Council Action Pre	eviously Taken:	
Date of Action:	Action Taker	n:
Item Number:		
Type of Vote Requ	ired: Informational	
Council Action Re	quested: None	
	-	
Submitted by:		Community Development
	Name	Department
	Agenda Iter	m Notes:



# Memorandum

To: Economic Development Committee

From: Pete Ratos, Code Official

CC: Bart Olson, Krysti Barksdale-Noble, Lisa Pickering

Date: April 1, 2019

Subject: March Property Maintenance

## **Property Maintenance Report March 2019**

## Adjudication:

11 Property Maintenance Cases heard in March

3/11/2019			
N 0439	404 W Van Emmon St	Motor Vehicle	Liable \$250
N 0440	404 W Van Emmon St	Motor Vehicle	Liable \$250
N 0441	2282 Emerald Ln	Motor Vehicle	Dismissed
N 0442	2272 Hobbs Ct	Motor Vehicle	Liable \$250
N 0443	1945 Marketview Dr	Permits Signs	Dismissed
N 0444	1789 Marketview Dr	Permits Signs	Dismissed
N 0445	2001 S Bridge St	Permits Signs	Dismissed
N 0446	2074 Ingemunson Ln	Motor Vehicle	Liable \$250
N 0447	2074 Ingemunson Ln	Motor Vehicle	Liable \$250
N 0448	2074 Ingemunson Ln	Motor Vehicle	Liable \$250
3/18/2019			
N 0449	1155 N Bridge St	Permits Signs	Dismissed



# **Case Report**

## 03/01/2019 - 03/31/2019

Case #	Case Date	<b>ADDRESS OF</b>	TYPE OF	STATUS	VIOLATION	FOLLOW UP	CITATION	DATE OF
		COMPLAINT	VIOLATION		LETTER	STATUS	ISSUED	HEARING
					SENT			
20190156	3/28/2019	1551 Crimson	•	IN VIOLATION	3/29/2019			
		Ln	Refuse					
20190155	3/29/2019	304 E Main St	Vehicle	IN VIOLATION	3/29/2019			
20190154	3/28/2019	428 Poplar Dr	Lack of Permit	IN VIOLATION	3/28/2019			
20190153			Trailer Parking	IN VIOLATION	3/28/2019			
		Barberry Cir			2 /2 2 /2 2 / 2			
20190152	3/27/2019	2066 <u>Ingemunson</u>	Vehicle	IN VIOLATION	3/28/2019			
20190151	3/27/2019	2074	Vehicle	IN VIOLATION	3/28/2019			
20190150	2/26/2010	Ingemunson 404 W Van	Vehicle	IN VIOLATION	3/26/2019			
20190150		Emmon St		IN VIOLATION	3/20/2019			
20190149	3/26/2019		TRASH AND	IN VIOLATION	3/26/2019			
20100110	2/26/2010	HYDRAULIC	DEBRIS	TALL (TOL A TTOAL	2/26/2010			
20190148	3/26/2019	2772 Hobbs Ct	Vehicle	IN VIOLATION	3/26/2019			
20190147	3/26/2019	4032 Shoeger		IN VIOLATION	3/26/2019			
		Ct	Disrepair					
20190145		801 N Bridge St, 1107 S	Political Sign	IN VIOLATION	3/26/2019			
20190144	3/25/2019	104 W	Trailer	IN VIOLATION	3/26/2019			
		Somonauk St	Storage					
20190143	3/25/2019	8721 Route	Unlicensed	IN VIOLATION	3/26/2019			
		126	Vehicle &					
			Junk, Trash &					
			Refuse					
20190142	3/22/2019	98 E	Sign without	IN VIOLATION	3/25/2019			
		Schoolhouse	Permit					

Page: 1 of 4

20190141	3/22/2019	382 Poplar Dr	Lack of Permit	IN VIOLATION	3/25/2019		
20190140	3/22/2019		Junk, Trash & Refuse	CLOSED	3/25/2019	COMPLIANT	
20190139		1463 Orchid	Junk, Trash & Refuse	CLOSED	3/25/2019	COMPLIANT	
20190138	3/22/2019		Tree Branches/Rub bish	CLOSED	3/22/2019	COMPLIANT	
20190137		Meadowview	Trailer Parking		•	COMPLIANT	
20190136	3/22/2019	688 Red Tail	Vehicle	CLOSED	3/22/2019	COMPLIANT	
20190135	3/22/2019	922 Canyon	Vehicle	CLOSED	3/22/2019	COMPLIANT	
20190134		St	Refuse	IN VIOLATION	3/22/2019		
20190133		Ln	Refuse	IN VIOLATION			
20190132		1505 N Bridge St		IN VIOLATION			
20190131	3/22/2019	108 E Park St	Vehicle Parking & Lack of Premises Identification	IN VIOLATION	3/22/2019		
20190130	3/19/2019	1207 Evergreen Ln	Trailer Parking	IN VIOLATION	3/20/2019		
20190129	3/19/2019	345 E Hydraulic Ave	•	IN VIOLATION	3/20/2019		
20190128	3/15/2019	2758 Canston	Vehicle	CLOSED	3/18/2019	COMPLIANT	
20190127	3/15/2019	2796 Cranston	Vehicle	CLOSED	3/18/2019	COMPLIANT	
20190126	3/14/2019	577 E Kendall Dr	Soil Erosion and Sediment Control Maintenance	IN VIOLATION	3/14/2019		

20190125	3/14/2019	577 E Kendall Dr	Storm Sewer Maintenance/ Safety	IN VIOLATION	3/14/2019		
20190124	3/13/2019	Hydraulic Ave	Junk, Trash & Refuse	CLOSED	3/14/2019	COMPLIANT	
20190123	3/13/2019	202 Church St	Vehicle	IN VIOLATION	3/14/2019		
20190122	3/12/2019	210 F Portage	Vehicle	CLOSED	3/13/2019	COMPLIANT	
20190121	3/12/2019	213 Dickson	Vehicle	CLOSED	3/13/2019	COMPLIANT	
20190120	3/11/2019	Somonauk St	Dead Tree, Vehicle	IN VIOLATION	3/12/2019		
20190119	3/11/2019	Somonauk St	Vehicle Parking, Junk, Trash & Refuse	IN VIOLATION	3/12/2019		
20190118	3/11/2019	510 W Hydraulic Ave	Junk, Trash & Refuse	CLOSED		COMPLIANT	
20190117	3/11/2019	,	Fence in Disrepair	CLOSED	3/12/2019	COMPLIANT	
20190116		1612 Cypress Ln	Trailer Parking		3/11/2019	COMPLIANT	
20190115	3/8/2019	Bristol Bay Vacant Lots	Junk, Trash & Refuse	CLOSED		COMPLIANT	
20190114	3/8/2019	611 River	Vehicle	CLOSED	3/8/2019	COMPLIANT	
20190113	, ,	Lot 1 Menards Commercial Commons	Branches/Rub bish	CLOSED	3/8/2019	COMPLIANT	
20190112	3/8/2019	332 E Veterans Pkwy	Temporary/Ab andoned Sign	CLOSED	3/8/2019	COMPLIANT	
20190111	3/6/2019	578 W	Solicitation	CLOSED			
20190110	3/6/2019	Commercial Dr (Lot 9)	Tree Branches/Rub bish	CLOSED		COMPLIANT	
20190109			Vehicle	CLOSED	3/7/2019	COMPLIANT	
20190108	3/14/2019	577 E Kendall Dr	Junk, Trash & Refuse	IN VIOLATION	3/14/2019		

Page: 3 of 4

20120:5-	0 /= /0 - : -	0=00 :		01.00=0	0/6/00:0	001401741		1
20190107		2732 Lilac Ct	Vehicle	CLOSED		COMPLIANT		
20190106	3/5/2019	1435 Violet Ct	Vehicle	CLOSED	3/6/2019	COMPLIANT		
20190105	3/5/2019	601 Greenfield	Vehicle	IN VIOLATION	3/6/2019			
		Turn						
20190104	3/5/2019	3935	Vehicle	IN VIOLATION	3/22/2019			
		Havenhill Ct						
20190103	3/5/2019	708 Mill St	Junk, Trash &	CLOSED	3/6/2019	COMPLIANT		
			Refuse					
20190102	3/4/2019	118 Naden Ct	Vehicle	CLOSED	3/5/2019	COMPLIANT		
20190101	3/4/2019	115 Conover	Vehicle	CLOSED	3/5/2019	COMPLIANT		
20190100	3/4/2019	2743	Vehicle	CLOSED	3/5/2019	COMPLIANT		
20190099	3/5/2019	2352 Sumac	Vehicle	CLOSED	3/5/2019	COMPLIANT	3/19/2019	4/22/2019
20190098	3/4/2019	2398 Iroquois	Vehicle	PENDING	3/5/2019	COMPLIANT	3/19/2019	4/22/2019
20190097	3/4/2019	1616	Vehicle	CLOSED	3/5/2019	COMPLIANT		
		Cottonwood	Parking					
20190096	3/4/2019	401 E. Main St	Accessory	IN VIOLATION	3/4/2019		3/19/2019	4/22/2019
			Building &					
			Lack of					
			Inspection/Ap					
			proval					
20190095	3/1/2019	104 E Kendall	Vehicle	CLOSED	3/4/2019	COMPLIANT		
20190094	3/1/2019	2602 Burr St	Vehicle	CLOSED	3/4/2019	COMPLIANT		

Total Records: 62 4/1/2019



Reviewed By:		
Legal		
Finance		
Engineer		
City Administrator		
Human Resources		
Community Development		
Police		
Public Works	ΙШ	

Parks and Recreation

Agenda Item Number		
New Business #4		
Tracking Number		
EDC 2019-43		

### **Agenda Item Summary Memo**

Title: Economic Dev	velopment Report for Apr	il 2019	
Meeting and Date: Economic Development Committee – May 7, 2019			
Synopsis: See attach	ned.		
Council Action Prev	iously Taken:		
Date of Action: N/A	Action Ta	aken:	
Item Number:			
Type of Vote Requir	red:		
Council Action Req	uested:		
Submitted by:	Bart Olson	Administration	
	Name	Department	
Agenda Item Notes:			



#### 651 Prairie Pointe Drive, Suite 102 • Yorkville, Illinois 60560 Phone 630-553-0843 • FAX 630-553-0889

#### Monthly Report – for May 2019 EDC Meeting of the United City of Yorkville

#### April 2019 Activity

#### Downtown Redevelopment:

- Worked with parties interested in downtown space, including the former "Capitano's Deli".
- Worked with "Belladonna Tea & Coffee" as they prepare to open their patio, and add liquor sales to their establishment.

#### Development south of Fox River:

- Continue working with Eleno Silva on banquet center. Eleno is completing both exterior and interior construction in Stagecoach Crossing. Official name of the business is "Martini Banquets". He is focusing on opening in summer of 2019.
- Continue to work with "Hively Garden Center" on a new "ground up" business at Routes 71 and 126. Matt is eager to begin construction this year.

#### Development north of the Fox River:

- **Kendall Crossing...**Construction is in full swing for the "Hacienda Real" building, the "Flight Tasting Room & Bottle Shoppe" building, and of course the "Holiday Inn Express & Suites" and "Kendall Banquets". Continue to meet with other complementary business for the new 7000 square foot building. Remaining available space is being negotiated and names of new tenants will be available shortly.
- **Kendall Marketplace**...Continue to work with specialist consultants from "Bespoke" who have been hired by center owner, Alex Berman, to work through a plan to determine new options and opportunities for the remainder of the project. Also working with perspective inline tenants, and a national restaurant for new construction on an outlot. Preparation is also beginning for ICSC convention in May. This includes meeting coordination with Alex's broker, Jason Pesola.
- "Arby's" has submitted their building plans for remodel of the former Hardee's location on Route 47 in early 2019. Yonas Hagos, Yorkville resident, will be the owner. Remodel will begin shortly. Closing on building is days away. The holdup is strictly due to title issues. The new owner is ready to begin remodel immediately.
- "Gas N Wash" held their informational open house with residents and the full public at the Yorkville Public Library on Wednesday. April 24<sup>th</sup>. They continue to move through the process to obtain the "Special Use" for the business.
- Working with a variety of retail and service based businesses that are exploring opportunities in Yorkville. Some of these businesses are negotiating their leases and, I expect to be able to provide details in the near future.
- "Cedarhurst Assisted Living & Memory Care" is preparing to open around May 15th. They are waiting for their final inspection by the State of Illinois at this time. They are currently 62 percent leased.

#### **Industrial Development:**

- Working with "Yorkville Commercial Center" who is building a 34,560 square foot mulit unit industrial condo building on 2 acres of land in the Yorkville Business Center. Yorkville resident Rick Plachtecka will be moving his company "Machine Tool Diagnostics, Inc" into 3 units with 15 employees. The building will also be the home to another start up business called "TankServ360" which will create 15 new jobs and use one additional unit. There are total of 18 units in the building. The project has been designed with features that facilitate manufacturing and service industries, in order to attract business growth to Yorkville. We are working with Yorkville Commercial Center to assist them in obtaining Enterprises Zone status for this project through UIRVDA. The owner hopes to begin construction later this summer, and is hopeful to complete the first phase of the project in 6 to 8 months. The total cost of construction is approximately \$3.5 million dollars.

#### Recreation:

Go for it Sports...continue working with the center. "Go For It Sports" continues to develop exciting new programs such as "Cops, Cadets & Kids Sport Night", "Tackle Football Combine & Player Assessment", and "GFIS Family fun Fest". They are also preparing for "Summer Camps at the Dome".

#### Other Activity:

- Attended strategic planning meetings for Waubonsee Community College and Rush Copley.
- Personally met with 51 existing Yorkville businesses in April.
- Attended quarterly SBA meeting in Chicago to learn about programs available for area businesses.
- Lynn will be out of town the week from May 1st until May 12th but will have full access to email, texts and phone during the entire time.

Respectfully submitted,

Lynn Dubazic

Lynn Dubajic

651 Prairie Pointe Drive, Suite 102

Yorkville, IL 60560 lynn@dlkllc.com 630-209-7151 cell



Reviewed By:		
Legal		
Finance		
Engineer		
City Administrator		
Human Resources		
Community Development		
Police		
Public Works		
Parks and Recreation		

Agenda Item Number		
New Business #5		
Tracking Number		
EDC 2019-44		

### **Agenda Item Summary Memo**

Title: Lenny's Gas N Wash			
Meeting and Date:	Economic Development Co	mmittee - May 7, 2019	
Synopsis: Details	proposed Gas N Wash Special	Use Request	
Council Action Pro	eviously Taken:		
Date of Action:	Action Take	n:	
Item Number:			
Type of Vote Requ	ired:		
<b>Council Action Re</b>	quested:	_	
Submitted by:		Community Development	
	Name	Department	
Agenda Item Notes:			
See attached memo	).		



### Memorandum

To: Economic Development Committee From: Jason Engberg, Senior Planner CC: Bart Olson, City Administrator

Krysti Barksdale-Noble, Community Development Director

Date: April 29, 2019

Subject: PC 2019-14 Lenny's Gas N Wash (Special Use)

Proposed New Fuel Station, Convenience Store & Car Wash

#### **SUMMARY:**

The petitioner, Leonard McEnery, on behalf of Lenny's Gas N Wash, LLC, has filed an application with the United City of Yorkville, Kendall County, Illinois, requesting special use permit approval pursuant to Section 10-6-0 of the Yorkville City Code for a gasoline service station with accessory convenience store and ancillary car wash. The property is zoned B-3 General Business District and is located at the southeast corner of the US 34 (W Veterans Parkway) and Sycamore Road intersection.

#### **PROPERTY INFORMATION:**

The 3.43-acre property is currently being utilized for agricultural purposes and is part of Unit 6 of the Fox Hill Development (see below). The following zoning districts land uses surround the parcel:

	Zoning	Land Use
North	A-1 Agriculture (Kendall County)	Undeveloped Farm Land
East	B-3 General Business District	Advocate Clinic
South	B-3 General Business District	Vacant/Office/Detention
West	B-3 Highway Business District	Commercial Strip Center





#### **PROJECT DESCRIPTION:**

As proposed, the Gas N Wash will be a full-service gas station for personal vehicles and large semi-trucks. The project will also include an automated car wash and convenience store for its patrons. A potential fast food establishment, such as Dunkin Donuts, will be attached to the convenience store and will be accessible internally and externally via a drive-through lane.

#### **SITE PLAN:**

The proposed 3.43-acre site plan was reviewed by various City departments and outside agencies to ensure compliance with applicable ordinances, regulations and standards with regard to building setbacks, parking/parking setbacks, circulation/access roads, stormwater management/utilities, landscaping and signage. Below are the summaries of those reviews.

#### **Bulk Regulations**

The petitioner has depicted the following property's building setback locations:

<b>Building Setback</b>	Required Minimum	Proposed Setback
Front Yard	20 feet	144.8 feet
Interior Side Yard	50 feet	44.3 feet
Corner Side Yard (West)	30 feet	101.7 feet
Corner Side Yard (South)	30 feet	Over 200 feet

The maximum permitted building height in the B-3 District is 80 feet. The overall height of the primary building is 21 feet and the accessory car wash is about 34 feet (at its peak). The maximum lot coverage for the B-3 General Business District including all impervious surfaces is 80 percent. The proposed impervious lot coverage is 67 percent.

#### Residential Proximity

It is important to understand the distance the development is to the nearest residential properties to ensure that the safety, health, and general welfare of the residents is protected. The most southern point of the proposed property is about 325 feet away from the most northern point of the nearest residential property. There is a 1.5 acre commercially zoned vacant property and a 3.5-acre park between the proposed development and the nearest homes in Fox Hill. Due to the distance and larger properties buffering the proposed development from residences, staff is not recommending additional screening efforts for this project.

#### Parking

The submitted plans show a total of 25 parking spaces including 2 handicapped accessible spaces. The total minimum required parking spaces needed per the Yorkville Zoning Ordinance is 15 spaces. Therefore, the proposed 25 spaces exceed the required minimum. Additionally, the petitioner has met the minimum required parking setbacks (as measured by scale bar) of 20 feet from US Route 34 and 10 feet from Sycamore Road.

#### Stacking

All drive-in and drive-through facilities shall provide vehicle stacking in accordance with table 10.16.05 of the Yorkville Zoning Ordinance:

Use	Minimum Number of Vehicles
Car Wash, Automatic	5 vehicles per bay at entrance 2 vehicles per bay at exit
Restaurant, Fast Food	3 vehicles behind menu board 3 vehicles behind first window

The petitioner meets these requirements by providing 6 vehicles behind the entrance and 2 vehicles at the exit for the car wash. Additionally, they provide 5 vehicles behind the menu board and 3 from the window of the primary structure.

#### Loading Zone

A designated loading zone for food delivery services for the convenience store is located at the northwest corner of the parking lot. Staff requested this zone be designated to avoid delivery trucks parking in front of the handicap accessible parking spots. This will also ensure proper maneuverability and sightlines for all patrons of the Gas N Wash.

#### Elevations

Although not required as part of the Special Use process, renderings and building elevations for the proposed Gas N Wash buildings have been provided which appear to meet the following Appearance Code requirements:

Per Section 8-15-5: Criteria for Appearance of the City Code, new non-residential structures shall have at least fifty percent (50%) of the total building constructed of masonry products or precast concrete incorporated as follows:

- i. Front Façade: At least 50% shall incorporate masonry products or precast concrete.
- ii. Any other facade that abuts a street shall incorporate masonry products or precast concrete.

#### Signage

The petitioner has indicated monument signage on the site plan and wall signage on the renderings. There are no dimensions or measurements on these signs. The petitioner must conform to all regulations in Section 10-20 of the Yorkville Zoning Ordinance. The petitioner has been informed of the requirements and is evaluating whether their sign package is consistent with the City's requirements. If the petitioner needs to vary from the City's standards, they will have to apply for sign variance approval.

#### Driveways

Per Section 10-16-3-D of the Yorkville Zoning Ordinance, nonresidential driveways shall be a minimum of two hundred feet (200') when from the driveway edge to the nearest intersecting street right of way line. Driveways not meeting the minimum distances may be approved administratively by the city administrator with a recommendation to approve made by the city engineer.

The northern most access point along Sycamore Road is about 170 feet from the Route 34 and Sycamore Road intersection. While this driveway is closer than 200 feet, it does line up with the existing access point to the west to create a four-way intersection. The layout and configuration of this site plan has been reviewed by the City engineer and they have recommended approval. City staff is receptive to permitting this entrance location moving forward.

#### Lighting

A photometric plan has been provided along with manufacturers cut sheets of the proposed light standards to be installed within the parking lot area. Maximum illumination at the property line shall not exceed 0.1 foot-candle and no glare shall spill onto adjacent properties or rights of way. The current plans indicate the lighting will exceed the City's requirements in some locations. Staff has spoken with the petitioner and the photometric plan will be revised to meet the City's standards before their scheduled public hearing at the Planning and Zoning Commission's June 12, 2019 meeting.

#### Screening

The petitioner meets the requirements for screening a large refuse container as outline in Section 17 of the Yorkville Zoning Ordinance.

#### **COMPREHENSIVE PLAN:**

The 2016 Comprehensive Plan designates this for neighborhood retail. This land use is designated for small to medium scale auto-oriented commercial uses, such as retail centers and restaurants located near residential areas. Therefore, the proposed use is consistent with the designated future land use plan.

#### **ENGINEERING REVIEW:**

The City Engineer has reviewed the plans and continues to work with the petitioner in updating the plans as comments are given. Please see the attached memorandums regarding engineering and landscape review by the City's consultants. All requests made will be required as part of the special use request.

#### **RESIDENTIAL MEETING:**

Due to the proximity of this proposed development to residential homes in the Fox Hill subdivision, Staff required the petitioner to hold a separate residential meeting with nearby property owners to discuss potential or perceived negative impacts of the development. The meeting was conducted by the petitioner on April 24, 2019 at the Yorkville Public Library. The attendance list and notes from that meeting are attached to this memorandum. In summary, the petitioner addressed the following issues with residents:

- Other sites within the City were researched and this site best suits their needs
- Ingress and egress have been modified from initial plans to ensure truck traffic on local roads is reduced to a minimum
- Directional signage will be posted on site to reduce the amount of traffic along Sycamore Road
- The petitioner plans to reduce lighting to zero foot candles at the property line
- The petitioner stated all car wash equipment which generates noise will be located inside
- The Gas N Wash will be a 24 hour a day operation
- The petitioner will be applying for a gaming license from the State

#### ADDITIONAL MATERIALS REQUIRED:

The following items will need to be submitted before the scheduled June 12, 2019 public hearing is held:

- Truck turning template
- Trip generation statistics
- Conforming photometric plan
- Sign package (if seeking sign variance)

#### **SPECIAL USE CRITERIA:**

Section 10-4-9F of the City's Zoning Ordinance establishes standards for special use requests. No special use shall be recommended by the plan commission unless said commission shall find that:

- 1. The establishment, maintenance or operation of the special use will not be unreasonably detrimental to or endanger the public health, safety, morals, comfort or general welfare.
- 2. The special use will not be injurious to the use and enjoyment of other property in the immediate vicinity for the purpose already permitted, nor substantially diminish and impair property values within the neighborhood in which it is to be located.
- 3. The establishment of the special use will not impede the normal and orderly development and improvement of surrounding property for uses permitted in the district.
- 4. Adequate utilities, access roads, drainage or other necessary facilities have been or are being provided.
- 5. Adequate measures have been or will be taken to provide ingress or egress so designed as to minimize traffic congestion in the public streets.
- 6. The proposed special use is not contrary to the objectives of the official comprehensive plan of the City as amended.

The applicant has provided written responses to these special use standards as part of their application and requests inclusion of those responses into the public record during the public hearing at the Planning and Zoning Commission meeting.

#### **STAFF COMMENTS:**

Staff is seeking input and comments from the Economic Development Committee. The proposed special use is tentatively scheduled for a public hearing on June 12, 2019 before the Planning and Zoning Commission. A recommendation will be forwarded to the City Council for consideration at the July 9, 2019 regularly scheduled meeting. Staff will be available to answer any question the Economic Development Committee may have at Tuesday night's meeting.

#### **ATTACHMENTS:**

- 1. Petitioner Application
- 2. Land Title Survey
- 3. Gas N Wash Elevations
- 4. Gas N Wash Site Plan (4-24-19 submission)
- 5. Gas N Wash Landscape Plan (4-24-19 submission)
- 6. Gas N Wash Photometric Plan (4-24-19 submission)
- 7. Gas N Wash Renderings
- 8. Gas N Wash Residential Meeting Sign-in Sheet and Notes
- 9. Plan Council Staff Reviews
- 10. EEI Review Memorandums (4-25-19)



#### **INTENT AND PURPOSE:**

The purpose of the zoning code is based upon the authority of the city to divide its land into districts by use, bulk, location of building and structures, in a substantially uniform manner. It is recognized that while some uses are permitted under the zoning code to keep uniformity, a case-by-case analysis must be conducted for certain permitted uses to discover the impact of those uses on neighboring land and of the public need for the particular use at the particular location. In these cases a special use must be granted.

This packet explains the process to successfully submit and complete an Application for Special Use. It includes a detailed description of the process and the actual application itself. Please type the required information in the application on your computer. The application will need to be printed and signed by the petitioner. The only item that needs to be submitted to the city from this packet is the application. The rest of the packet is to help guide you through the process unto completion.

For a complete explanation of what is legally required throughout the Special Use process, please refer to "Title 10, Chapter 4, Section 9 Special Uses" of the Yorkville, Illinois City Code.

#### APPLICATION PROCEDURE:

#### **STAGE 1**

Submit
Application, Fees,
and All Pertinent
Information to
the Community
Development
Department

### STAGE 2 Plan Council

Review

Meets on the 2nd and 4th Thursday

of the Month

### STAGE 3

Economic
Development
Committee

Meets on the 1st Tuesday of the Month

### STAGE 4

Planning and Zoning Commission Public Hearing

Meets on the 2nd Wednesday of the Month

### STAGE 5

City Council Public Hearing

Meets on the 2nd and 4th Tuesday of the Month

#### **STAGE 1: APPLICATION SUBMITTAL**

The following must be submitted to the Community Development Department:

- One (1) original signed application with legal description.
- Three (3) 11" x 17" copies each of the exhibits, proposed drawings, location map, and site plan. Large items must be folded to fit in a 10" x 13" envelope.
- Appropriate filing fee.
- One (1) CD or portable USB drive containing one (1) electronic copy (pdf) of each of the following: signed application (complete with exhibits), proposed drawings, location map, and site plan. A Microsoft Word document with the legal description is also required.

Within one (1) week of submittal, the Community Development Department will determine if the application is complete or if additional information is needed. These materials must be submitted a minimum of forty five (45) days prior to the targeted Planning and Zoning Commission meeting. An incomplete submittal could delay the scheduling of the project.

Petitioner will be responsible for payment of recording fees and public hearing costs, including written transcripts of the public hearing and outside consultant costs (i.e. legal review, land planner, zoning coordinator, environmental, etc.). The petitioner will be required to establish a deposit account with the city to cover these fees. The Petitioner Deposit Account/Acknowledgment of Financial Responsibility form is attached to this document and must be submitted with the application.



#### **STAGE 2: PLAN COUNCIL**

Petitioner must present the proposed plan to the Plan Council. The Plan Council meets on the 2nd and 4th Thursday of the month. The members of the Council include the Community Development Director, City Engineer, the Building Department Official, the Public Works Director, the Director of Parks and Recreation, a Fire Department Representative, and a Police Department Representative. Upon recommendation by the Plan Council, petitioner will move forward to the Planning and Zoning Commission hearing.

#### **STAGE 3: ECONOMIC DEVELOPMENT COMMITTEE**

Applicant must present the proposed plan to the Economic Development Committee. Economic Development Committee meets at 7:00 p.m. on the 1st Tuesday of each month. This session is to discuss and consider recommendations prior to full City Council considerations and provide informal feedback. The Economic Development Committee will submit its recommendation to City Council.

#### **STAGE 4: PLANNING AND ZONING COMMISSION**

Petitioner will attend a public hearing conducted by the Planning and Zoning Commission. The Planning and Zoning Commission meets on the 2nd Wednesday of the Month at 7:00pm. Notice will be placed in the Kendall County Record by the United City of Yorkville. The petitioner is responsible for sending certified public hearing notices to adjacent property owners within five hundred (500) feet of the subject property no less than fifteen (15) days and no more than thirty (30) days prior to the public hearing date. Twenty four (24) hours prior to the public hearing, a certified affidavit must be filed by the petitioner with the Community Development Department containing the names, addresses and permanent parcel numbers of all parties that were notified. The Planning and Zoning Commission will conduct a public hearing on the request, take public comments, discuss the request, and make a recommendation to City Council. No special use shall be recommended by the Planning and Zoning Commission unless it follows the standards set forth in City's Zoning Ordinance. The Certified Mailing Affidavit form is attached to this document and must be submitted prior to the scheduled Planning and Zoning Commission meeting.

#### **STAGE 5: CITY COUNCIL**

Petitioner will attend the City Council meeting where the recommendation of the special use will be considered. The City Council meets on the 2nd and 4th Tuesdays of the month at 7:00pm. City Council will make the final approval of the special use.



#### **DORMANT APPLICATIONS**

The Community Development Director shall determine if an application meets or fails to meet the requirements stated above. If the Director determines that the application is incomplete it will become dormant under these circumstances:

- The applicant has been notified of such deficiencies and has not responded or provided a time line for completing the application within ninety (90) days from the time of notification.
- The applicant has not responded in writing to a request for information or documentation from the initial plan commission review within six (6) months from the date of that request.
- The applicant has not responded to a request for legal or engineering deposit replenishment for city incurred costs and fees within ninety (90) days from the date of the request.

If the Community Development Director has sent the required notice and the applicant has not withdrawn their application or brought it into compliance, then the director shall terminate the application. After termination, the application shall not be reconsidered except after the filing of a completely new application.

Withdrawal or termination of an application shall not affect the applicant's responsibility for payment of any costs and fees, or any other outstanding debt owed to the city. The balance of any funds deposited with the city that is not needed to pay for costs and fees shall be returned to the applicant. (Ord. 2011-34, 7-26-2011)



INVOICE & WORKSHEET PETITION APPLICATION			
CONCEPT PLAN REVIEW	☐ Engineering Plan Review deposit \$500.00	Total: \$	
AMENDMENT	☐ Annexation       \$500.00         ☐ Plan       \$500.00         ☐ Plat       \$500.00         ☐ P.U.D.       \$500.00	Total: \$	
	\$250.00 + \$10 per acre for each acre over 5 acres  x \$10 = + \$250 = \$  Amount for Extra Acres Total Amount	Total: \$	
	\$200.00 + \$10 per acre for each acre over 5 acres  ezoning to a PUD, charge PUD Development Fee - not Rezoning Fee	Total: \$	
3.43 5 = # of Acres	\$\sqrt{250.00} + \$10 per acre for each acre over 5 acres $x $10 = {\text{Amount for Extra Acres}} + $250 = $\frac{250.00}{\text{Total Amount}}$	\$250.00 Total: \$	
ZONING VARIANCE	\$85.00 + \$500.00 outside consultants deposit	Total: \$	
PRELIMINARY PLAN FEE	□ \$500.00	Total: \$	
PUD FEE	□ \$500.00	Total: \$	
FINAL PLAT FEE	□ \$500.00	Total: \$	
ENGINEERING PLAN REVIEW DEPOSIT	□ Less than 1 acre       \$5,000.00         ☑ Over 1 acre, less than 10 acres       \$10,000.00         □ Over 10 acres, less than 40 acres       \$15,000.00         □ Over 40 acres, less than 100 acres       \$20,000.00         □ Over 100 acres       \$25,000.00	\$10,000.00 Total: \$	
OUTSIDE CONSULTANTS DEPOSIT Legal, I		\$2,500.00	
	For Annexation, Subdivision, Rezoning, and Special Use:  ☐ Less than 2 acres \$1,000.00  ☐ Over 2 acres, less than 10 acres \$2,500.00  ☐ Over 10 acres \$5,000.00	Total: \$	
	TOTAL AMOUNT DUE:	\$12,750.00	



DATE:	PZC NUMBER:	DEVELOPMENT NAME:	
PETITIONER INFORMATION			
NAME: LEONARD MCENERY, MANAGER (		COMPANY: LENNY'S GAS N WASH Y	ORKVILLE, LLC
MAILING ADDRESS: 8200 W. 185TH ST., UNIT K			
CITY, STATE, ZIP: TINLEY PARK, IL 604	TELEPHONE: 708-444-0117 CELL: 708-805-2525		708-805-2525
EMAIL: LENMCENERY@AOL.COM		FAX: 708-444-0159	
PROPERTY INFORMATION			
NAME OF HOLDER OF LEGAL TITLE: CAST	LE BANK N.A., TRUSTEE UNDER TF	RUST AGREEMENT DATED 11/07/20	003 TRUST NO. 2181
IF LEGAL TITLE IS HELD BY A LAND TRUST,	LIST THE NAMES OF ALL HOLDERS OF ANY E	BENEFICIAL INTEREST THEREIN:	
PROPERTY STREET ADDRESS: 1500 SYCA	AMORE ROAD		
DESCRIPTION OF PROPERTY'S PHYSICAL LOCATION: SOUTHEAST CORNER SYCAMORE ROAD AND ROUTE 34			
CURRENT ZONING CLASSIFICATION: B-3 GENERAL BUSINESS DISTRICT COMPREHENSIVE PLAN FUTURE LAND USE DESIGNATION: COMMERCIAL			
REQUESTED SPECIAL USE: GASOLINE SERVICE STATION			
ZONING AND LAND USE OF SURROUNDING PROPERTIES			
NORTH:			
EAST: B-3 MEDICAL CENTER			
SOUTH: B-3 VACANT			
WEST:			
KENDALL COUNTY PARCEL IDENTIFICATION NUMBER(S)			
02-30-203-006-0000			



ATTORNEY INFORMATION	
NAME: LYMAN C. TIEMAN	COMPANY: LAW OFFICE OF LYMAN C. TIEMAN
MAILING ADDRESS: 12417 TAHOE LANE	
CITY, STATE, ZIP: MOKENA, IL 60448	TELEPHONE: 815-370-3383
EMAIL: LCTIEMAN@YAHOO.COM	FAX: 815-717-6352
ENGINEER INFORMATION	
NAME: BRIAN HERTZ	COMPANY: M. GINGERICH GEREAUX & ASSOC. MG2A
MAILING ADDRESS: 25620 S GOUGAR RD.	
CITY, STATE, ZIP: MANHATTAN, IL 60442	TELEPHONE: 815-478-9680
EMAIL: BHERTZ@MG2A.COM	FAX: 815-478-9685
LAND PLANNER/SURVEYOR INFORMATION	
NAME: SCOTT PRITCHETT	COMPANY: ARSA SCHNEIDER ARCHITECTS
MAILING ADDRESS: 1411 W PETERSON AVE., STE 203	
CITY, STATE, ZIP: PARK RIDGE, IL 60068	TELEPHONE: 847-698-4438
EMAIL: ARSA@ENTERACT.COM	FAX: 847-698-9889
ATTACHMENTS	

Petitioner must attach a legal description of the property to this application and title it as "Exhibit A".

Petitioner must list the names and addresses of any adjoining or contiguous landowners within five hundred (500) feet of the property that are entitled notice of application under any applicable City Ordinance or State Statute. Attach a separate list to this application and title it as "Exhibit B".



#### **SPECIAL USE STANDARDS**

PLEASE STATE HOW THE ESTABLISHMENT, MAINTENANCE OR OPERATION OF THE SPECIAL USE WILL NOT BE UNREASONABLY DETRIMENTAL TO OR ENDANGER THE PUBLIC HEALTH, SAFETY, MORALS, COMFORT OR GENERAL WELFARE:

APPLICANT PROPOSES THE DEVELOPMENT OF A GASOLINE SERVICE STATION WITH CONVENIENCE STORE AND ANCILLARY CAR WASH. THE SUBJECT PROPERTY IS CURRENTLY ZONED B-3 AND APPLICANT'S USE IS A DESIGNATED SPECIAL USE IN THE B-3 ZONING DISTRICT. THE SUBJECT PROPERTY IS BORDERED ON THE EAST AND SOUTH SIDES BY EXISTING B-3 ZONED PROPERTY. THE PROPERTY WILL BE DEVELOPED IN SUCH A FASHION AS TO MINIMIZE THE IMPACT ON NEIGHBORING PROPERTIES WITH RESPECT TO NOISE, LIGHT, TRAFFIC FLOW AND WILL BE IN FULL CONFORMITY WITH EXISTING STATE AND CITY LAWS, ORDINANCES AND DESIGN STANDARDS. NO VARIANCES FROM THE ZONING ORDINANCE ARE ANTICIPATED.

PLEASE STATE HOW THE SPECIAL USE WILL NOT BE INJURIOUS TO THE USE AND ENJOYMENT OF OTHER PROPERTY IN THE IMMEDIATE VICINITY FOR THE PURPOSE ALREADY PERMITTED, NOR SUBSTANTIALLY DIMINISH AND IMPAIR PROPERTY VALUES WITHIN THE NEIGHBORHOOD:

SUBJECT PROPERTY WILL BE DEVELOPED WITH DIRECT INGRESS AND EGRESS FROM AND TO SYCAMORE ROAD AND ROUTE 34 WITH LITTLE OR NO IMPACT UPON NEIGHBORING PROPERTIES. APPLICANT IS MAKING A SUBSTANTIAL MONETARY INVESTMENT IN THIS PROJECT AND ALL FACILITIES WILL BE DESIGNED AND CONSTRUCTED TO BE COMPATABLE WITH THE EXISTING AND PROPOSED USES OF SURROUNDING PROPERTIES.

PLEASE STATE HOW THE ESTABLISHMENT OF THE SPECIAL USE WILL NOT IMPEDE THE NORMAL AND ORDERLY DEVELOPMENT AND IMPROVEMENT OF SURROUNDING PROPERTY FOR USES PERMITTED IN THE DISTRICT:

PROPERTIES TO THE NORTH AND EAST ARE ALREADY DEVELOPED. BECAUSE OF EXISTING AND PROPOSED INGRESS AND EGRESS, THIS PROJECT WILL HAVE NO DIRECT IMPACT ON THE DEVELOPMENT OF PROPERTIES TO THE SOUTH AND WEST.

PLEASE STATE HOW ADEQUATE UTILITIES, ACCESS ROADS, DRAINAGE OR OTHER NECESSARY FACILITIES HAVE BEEN OR ARE BEING PROVIDED:
ACCESS IS PROPOSED IN ACCORDANCE WITH THE ATTACHED SITE PLAN FROM ROUTE 34 AND
SYCAMORE ROADAS WELL AS THE INTERNAL SUBDIVISION ROAD TO THE SOUTH. UTILITIES ARE
CURRENTLY AVAILABLE AT OR IN CLOSE PROXIMITY TO TE SITE.



SPFC			

PLEASE STATE HOW ADEQUATE MEASURES HAVE BEEN OR WILL	BE TAKEN TO PROVIDE INGRESS OR EGRESS SO DESIGNED AS TO MINIMIZE TRAFFIC	CONGESTION IN THE
PIIRI IC STREETS.		

A RIGHT-IN RIGHT-OUT ACCESS WILL BE PROVIDED TO IDOT STANDARDS FOR ACCESS TO ROUTE 34. TWO FULL ACCESS POINTS WILL BE PROVIDED TO SYCAMORE ROAD WITH AN ADDITIONAL FULL ACCES TO THE INTERNAL SUBDIVISION ROAD TO THE SOUTH ALL IN ACCORDANCE WITH STATE AND CITY DESIGN STANDARDS AS PROPOSED ON THE ATTACHED SITE PLAN.

PLEASE STATE HOW THE SPECIAL USE SHALL IN ALL OTHER RESPECTS CONFORM TO THE APPLICABLE REGULATIONS OF THE DISTRICT IN WHICH IT IS LOCATED, EXCEPT AS SUCH REGULATIONS MAY IN EACH INSTANCE BE MODIFIED BY THE CITY COUNCIL PURSUANT TO THE RECOMMENDATIONS OF THE PLANNING AND ZONING COMMISSION: A GASOLINE SERVICE STATION IS DESIGNATED AS A SPECIAL USE IN THE B-3 ZONING DISTRICT. NO VARIANCES TO THE ZONING ORDINANCE ARE BEIG REQUESTED BY THE APPLICANT.

#### **AGREEMENT**

I VERIFY THAT ALL THE INFORMATION IN THIS APPLICATION IS TRUE TO THE BEST OF MY KNOWLEDGE. I UNDERSTAND AND ACCEPT ALL REQUIREMENTS AND FEES AS OUTLINED AS WELL AS ANY INCURRED ADMINISTRATIVE AND PLANNING CONSULTANT FEES WHICH MUST BE CURRENT BEFORE THIS PROJECT CAN PROCEED TO THE NEXT SCHEDULED COMMITTEE MEETING.

I UNDERSTAND ALL OF THE INFORMATION PRESENTED IN THIS DOCUMENT AND UNDERSTAND THAT IF AN APPLICATION BECOMES DORMANT IT IS THROUGH MY OWN FAULT AND I MUST THEREFORE FOLLOW THE REQUIREMENTS OUTLINED ABOVE.

PETITIONER SIGNATURE LEONARD MCENERY	DATE MARCH, 2019

OWNER HEREBY AUTHORIZES THE PETITIONER TO PURSUE THE APPROPRIATE ENTITLEMENTS ON THE PROPERTY.

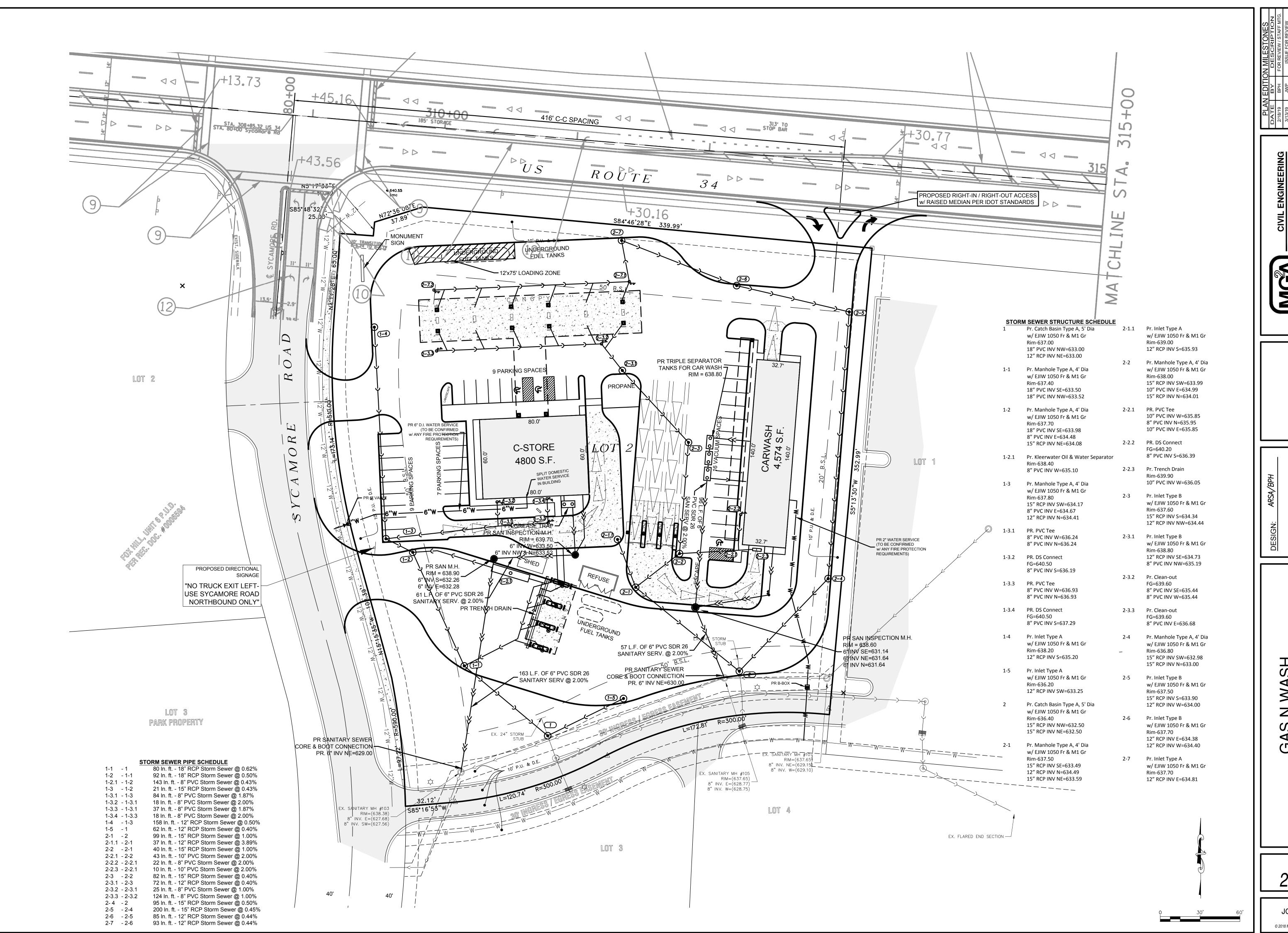
OWNER SIGNATURE PETER KAPPOS, BENEFICIARY CAPITAL BANK TRUST 2181 DATE

THIS APPLICATION MUST BE NOTARIZED PLEASE NOTARIZE HERE:



# PETITIONER DEPOSIT ACCOUNT/ ACKNOWLEDGMENT OF FINANCIAL RESPONSIBILITY

PROJECT NUMBER:	FUND ACCOUNT NUMBER:	PROPERTY ADDRESS	:				
PETITION/APPROVAL TYPE (check appropriate box(es) of approval requested):							
☐ CONCEPT PLAN REVIEW	CONCEPT PLAN REVIEW   AMENDMENT (TEXT)			REZONING			
✓ SPECIAL USE	☐ MILE AND 1/2 REVIEW	ZONING VARIAN	CE	☐ PRELIMINARY PI	LAN		
☐ FINAL PLANS	☐ PLANNED UNIT DEVELOPMENT	☐ FINAL PLAT					
cover all actual expenses occurred as a rest include, but are not limited to, plan review fees, engineering and other plan reviews, p is established with an initial deposit based against to pay for these services related to an invoice reflecting the charges made ag Financially Responsible Party will receive a to the project are required. In the event the suspended until the account is fully rep Financially Responsible Party. A written receive and the suspended until the account is fully rep Financially Responsible Party. A written received	le to require any petitioner seeking approva ult of processing such applications and reque of development approvals/engineering per processing of other governmental application upon the estimated cost for services provided the project or request. Periodically through ainst the account. At any time the balance in invoice requesting additional funds equal to at a deposit account is not immediately repletenished. If additional funds remain in the deposit account is not immediately repletes the submitted by the Financially Refollowing month. All refund checks will be	ests. Typical requests is mits. Deposit account is, recording fees and od in the <b>INVOICE &amp; Wo</b> tout the project review of the fund account factor one-hundred percer lenished, review by the leposit account at the esponsible Party to the	requiring the establish funds may also be use other outside coordinated by the routside coordinated by the routside coordinated by the routside coordinated by the routside completion of the property of the property by the 15th of the routside completion of the property by the 15th of the routside coordinated by the 15th of the routside by the routs	ment of a Petitioner D d to cover costs for ser tion and consulting fee APPLICATION. This in e Financially Responsil (10%) of the original deposit if subsequent consultants, boards ar ject, the city will refur e month in order for th	Deposit Account Fund rvices related to legal es. Each fund account itial deposit is drawn ble Party will receive deposit amount, the reviews/fees related nd commissions may nd the balance to the refund check to be		
ACKNOWLEDGMENT OF FINANCIAL RE	SPONSIBILITY						
NAME: LEONARD MCENERY		COMPANY LENNY'S GAS N WASH YORKVILLE, LLC					
MAILING ADDRESS: 8200 W. 185TH	ST., UNIT K						
CITY, STATE, ZIP: TINLEY PARK, IL	TELEPHONE: 708-4	144-0117					
EMAIL: LENMCENERY@AOL.CO	FAX: 708-444-015	59					
I will provide additional funds to maintain Corporation of their obligation to maintain	Financially Responsible Party, expenses may the required account balance. Further, the a positive balance in the fund account, unl I City work may stop until the requested replace.	sale or other disposit ess the United City of	ion of the property do Yorkville approves a C received.	oes not relieve the ind	lividual or Company/		
SIGNATURE		DATE					
ACCOUNT CLOSURE AUTHORIZATION							
DATE REQUESTED:		☐ COMPLETED	☐ INACTIVE				
PRINT NAME:		WITHDRAWN	COLLECTIONS				
SIGNATURE:		☐ OTHER					
DEPARTMENT ROUTING FOR AUTHORIZATI	ON: COM. DEV.	BUILDING	☐ ENGINEERING	☐ FINANCE	☐ ADMIN.		



 AGINEERING
 DATE BY FOR 2/18/19
 BPH FOR 3/13/19
 JWP I
 I

 SURVEYING
 3/13/19
 JWP I
 I

 ASSOCIATES
 4/19/19
 BPH FOR I
 PEI

 # 184.005003
 1.815-478-9685
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 I

 ITAN, IL. 60442
 III. 60442
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 III. 60442

SHEET NO.

OF 2

STORMWAT

∞

JOB NO. 19-101
© 2018 M.GINGERICH, GEREAUX & ASSOCIATES

## ALTA/NSPS LAND TITLE SURVEY

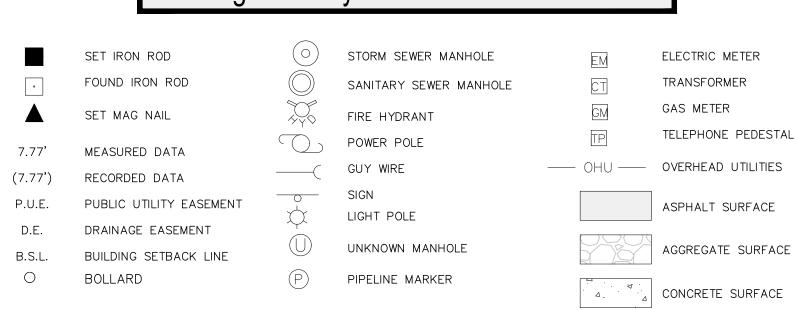
## Items Corresponding to Schedule B

THE FOLLOWING ARE ITEMS IN SCHEDULE B IN TITLE INSURANCE COMPANY TITLE COMMITMENT NO. WITH AN EFFECTIVE DATE OF

## **Legal Description**

LOT 2, IN RESUBDIVISION OF LOT 1 IN FOX HILL, UNIT 6, A PLANNED UNIT DEVELOPMENT, BEING A RESUBDIVISION OF LOT 1 IN FOX HILL, UNIT 6, BEING A SUBDIVISION OF PART OF SECTION 30, TOWNSHIP 37 NORTH, RANGE 7 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT OF SAID RESUBDIVISION RECORDED AUGUST 30, 2005 AS DOCUMENT 200500026016, AND CERTIFICATE OF CORRECTION RECORDED SEPTEMBER 25, 2005 AS DOCUMENT 200500029458, IN KENDALL COUNTY, ILLINOIS.

## Legend of Symbols & Abbreviations



TO: TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS () OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON .

DATED:

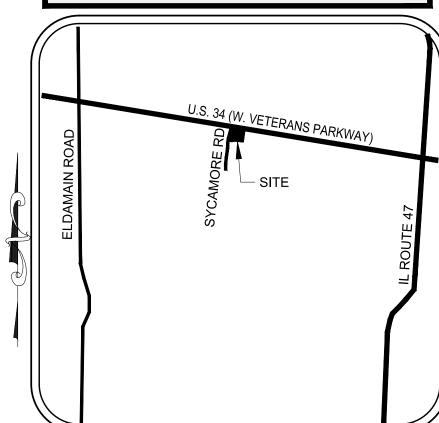
ROBERT F. SLUIS
ILLINOIS PROFESSIONAL LAND SURVEYOR #35-3558
LICENSE EXPIRES NOVEMBER 30, 2020

DRAFT FOR REVIEW ONLY 3/13/19

َ 35-3558 مَرِّ PROFESSIONAL

LAND SURVEYOR STATE OF ILLINOIS

USROUTE34 10.42 S85°48'32"E 25.00 S84°46'28"E 339.99' LOT 2 3.43 Ac 42' BC/BC NOBUILDINGS *OBSERVED* \_\_ \_\_ \_FOUND\_PK\_NAIL\_\_ - Vicinity Map



## Miscellaneous Notes

DIMENSIONS ON THIS PLAT ARE EXPRESSED IN FEET AND DECIMAL PARTS THEREOF UNLESS OTHERWISE NOTED.

MN2 AREA = 148,172 SQ. FT.3.4 ACRES

BEARING BASIS IS ASSUMED

(MN3) PIN - 02-30-203-006-0000

## **Utility Notes**

THE LOCATION OF UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES ONLY. THE SURVEYOR WAS NOT PROVIDED WITH UNDERGROUND PLANS OR SURFACE GROUND MARKINGS TO

DETERMINE THE LOCATION OF ANY SUBTERRANEAN USES.

UN2 CALL "J.U.L.I.E." FOR FIELD LOCATIONS OF UNDERGROUND UTILITY LINES 1-800-892-0123

CIVIL ENGINEERING			
SSOCIATES se # 184.005003 n_ <b>F. 815-478-9685</b> IATTAN, IL. 60442			
4			

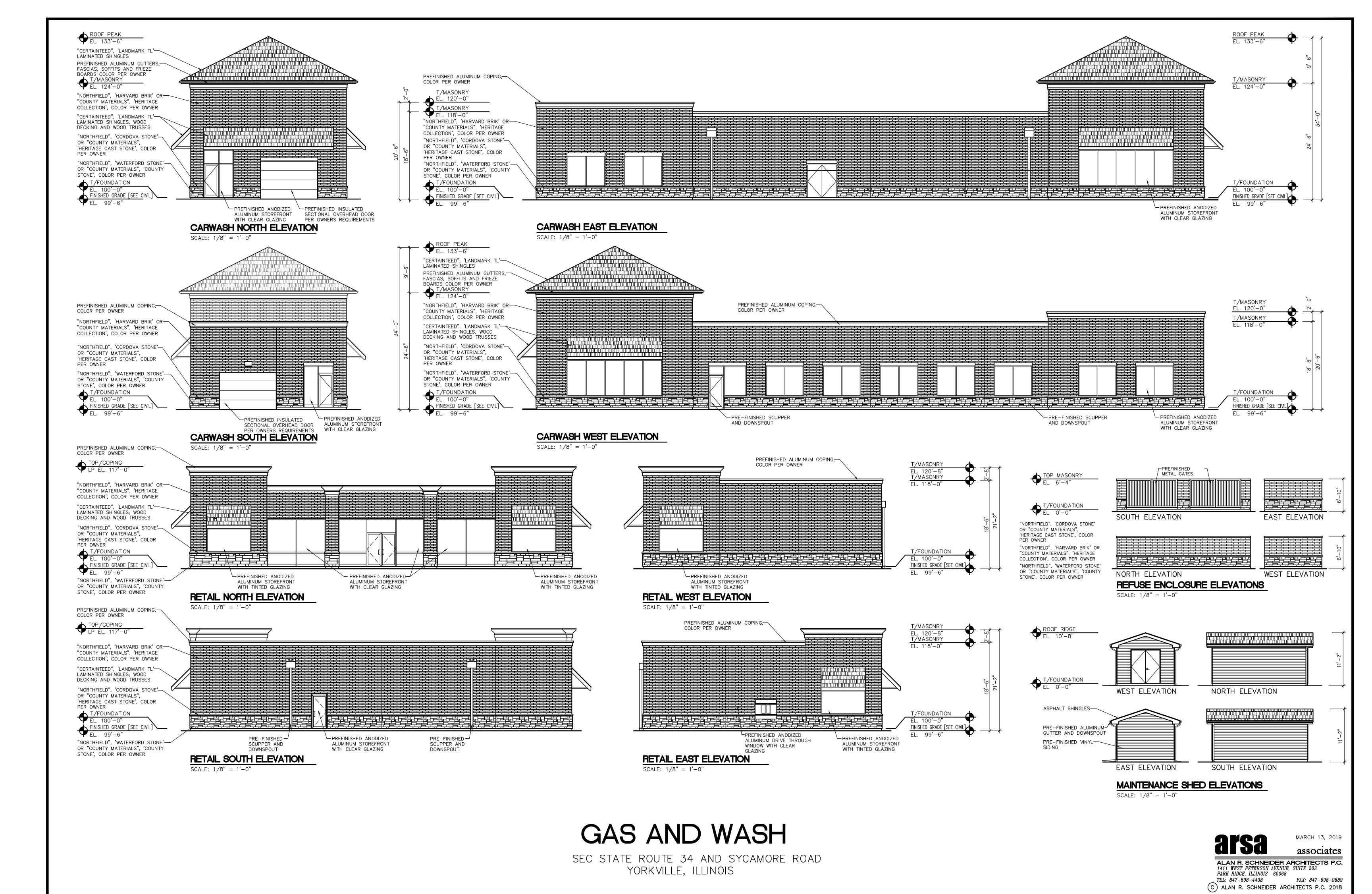
03-06-2019

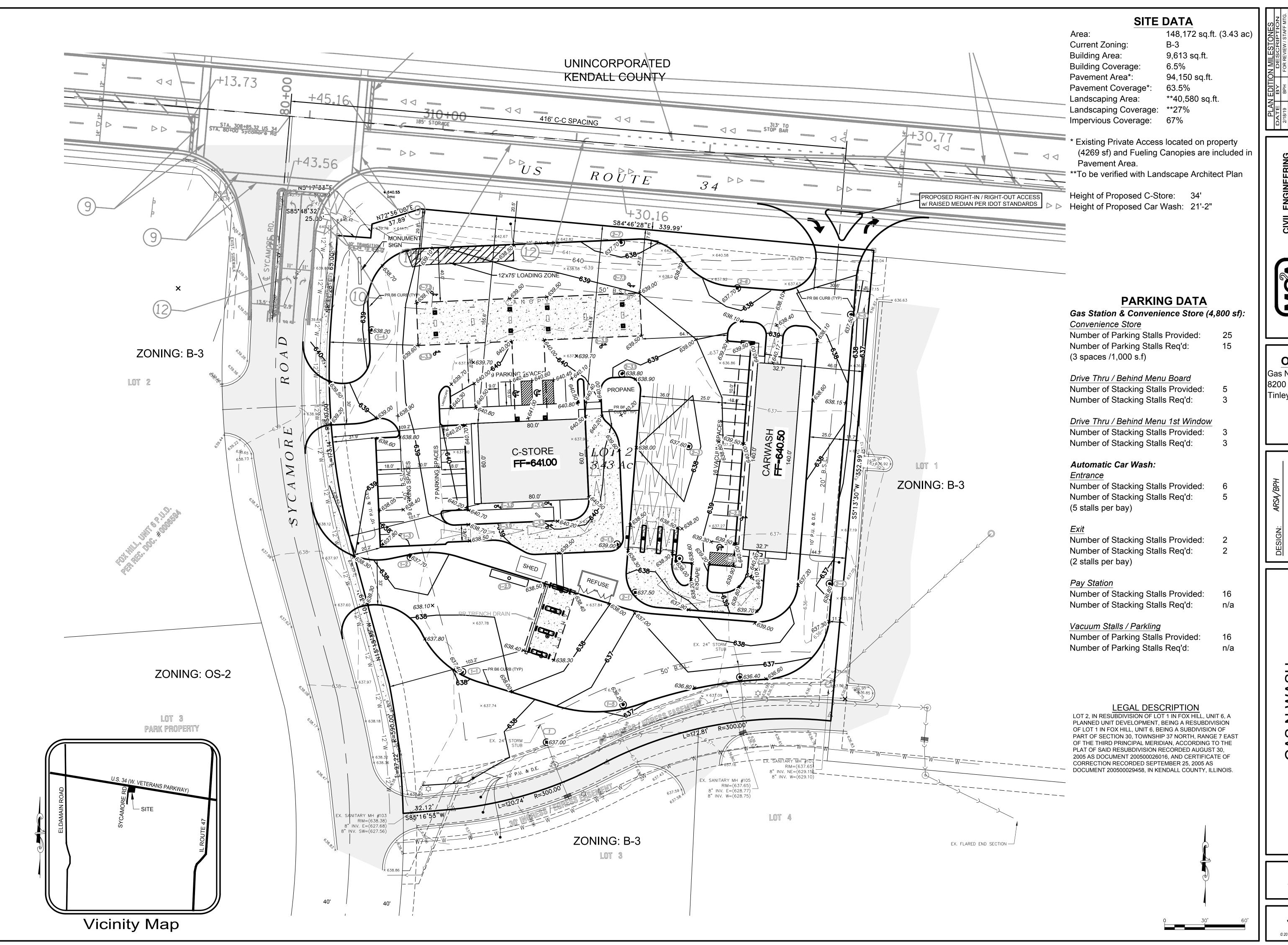
B NO.:**19-101** 

SCALE: 1" = 30'

DR. BY:**NIB** 

CK. BY:**RFS** | 1





PLAN EDITION MILESTONES
ATE BY DESCRIPTION
7/18/19 BPH FOR REVIEW ISSUE FOR REVIEW
7/19/19 BPH PER PLAN COUNCIL MTG

IVIL ENGINEERING SURVEYING

M GINGERICH GERE
Professional Design Firr
P. 815-478-9680 www.mg

OWNER DATA

Gas N Wash - Yorkville LLC 8200 185th Street, Unit K Tinley Park, IL 60487

RAWING: NIB
HECKED: BPH
PPROVED: BPH

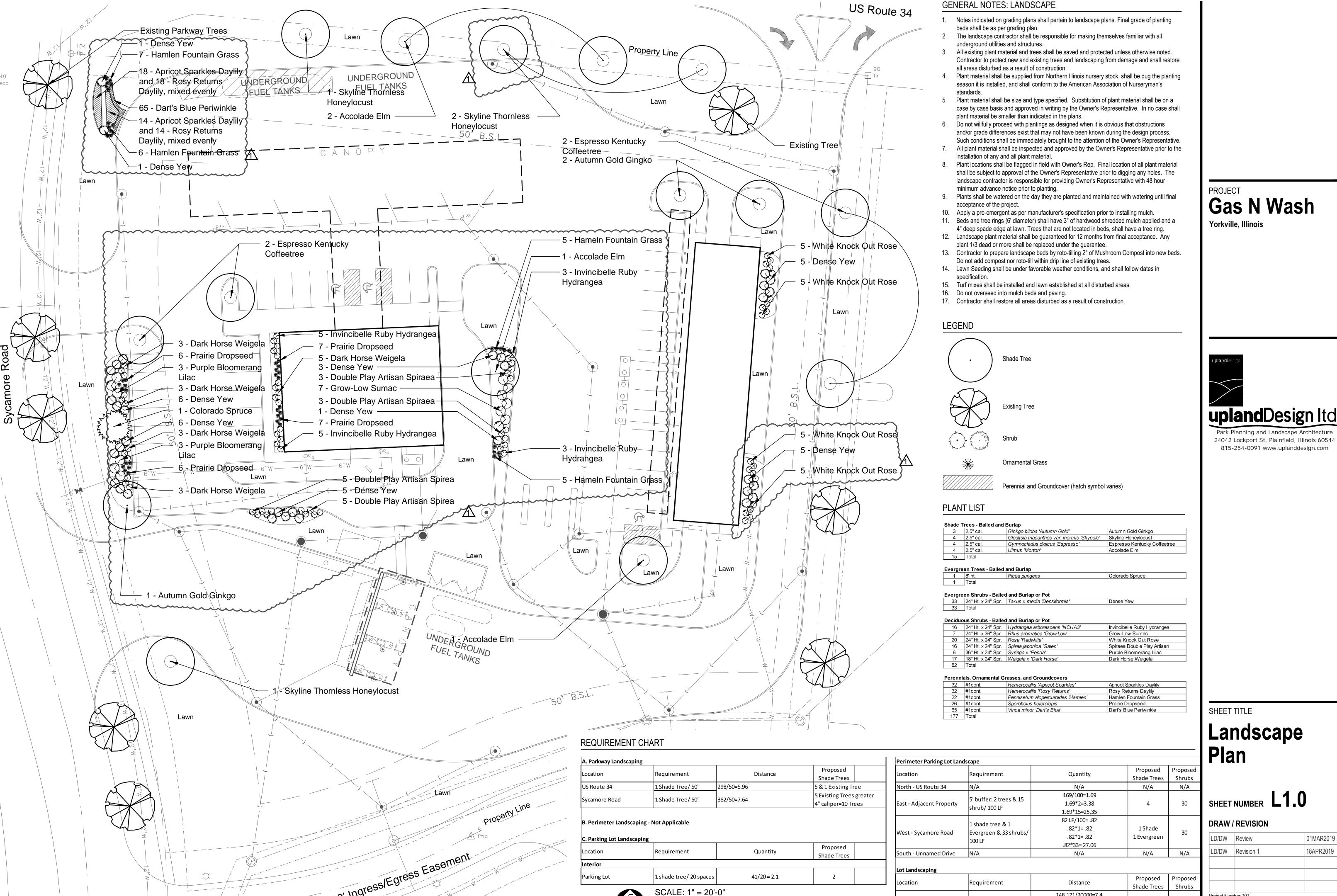
ITE PLAN (GEOMETRIC)

PRELIMINARY SITE PI

SHEET NO.

OF 2

JOB NO. 19-101
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PROJECT

## Gas N Wash

Yorkville, Illinois



SHEET TITLE

## Landscape Plan

SHEET NUMBER L1.0

### DRAW / REVISION

© Copyright 2019 Upland Design Ltd.

W:\707-Gas N Wash- Yorkville\20-Concepts

148,171/20000=7.4

7.4\*2=14.8

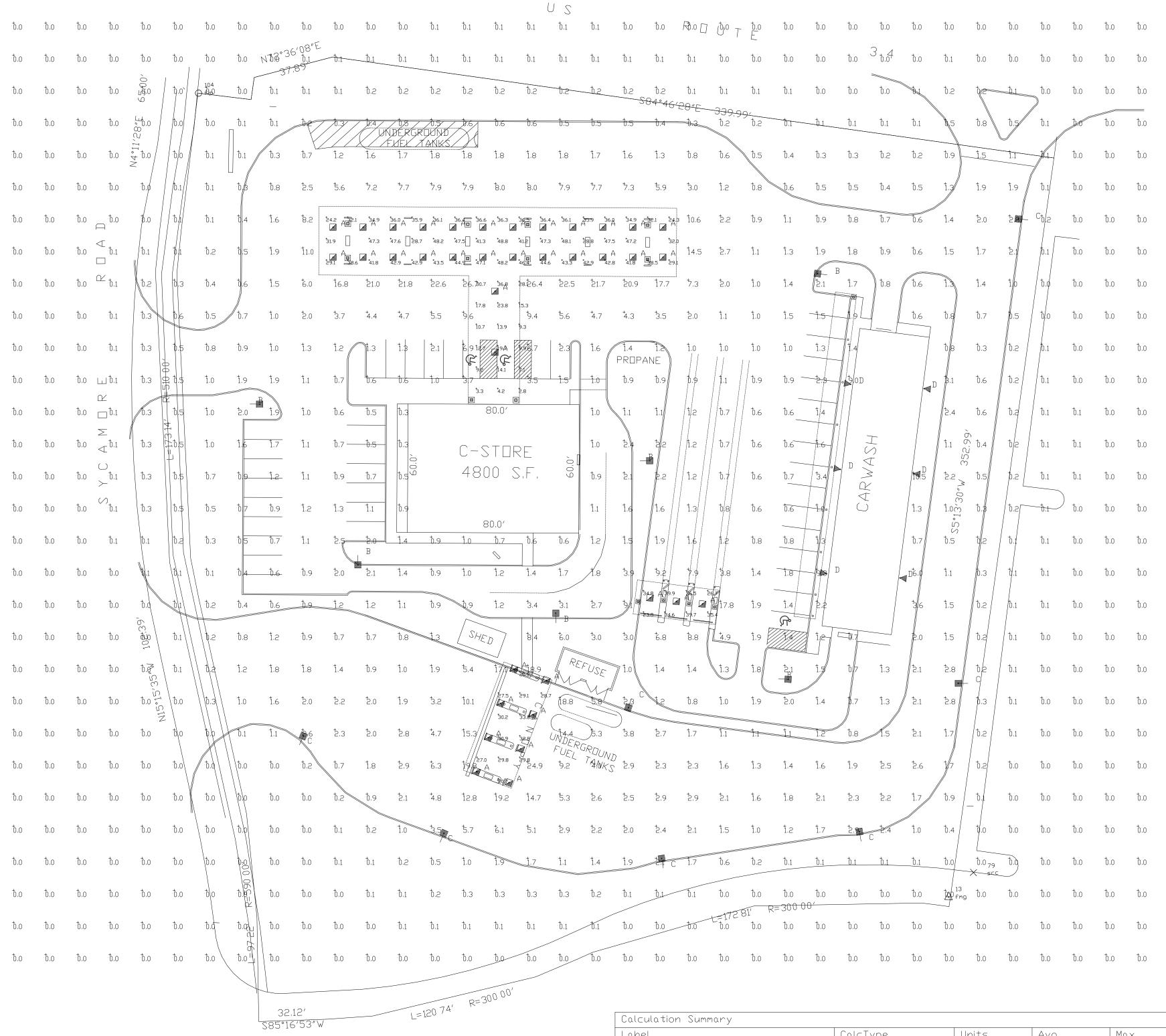
7.4\*15=111

2 trees & 15 shrubs/

20,000 sf of lot

Entire Lot

LD/DW	Review	01MAR2019
LD/DW	Revision 1	18APR2019
Project Nur	nber 707	









Click image to open Product Page

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Ma×/Min
ALL CALC POINTS	Illuminance	Fc	1.35	26.7	0.0	N.A.	N.A.
DIESEL CANOPY	Illuminance	Fc	28,43	33.8	20.7	1.37	1.63
GAS CANDPY	Illuminance	Fc	32.71	48.8	2.8	11.68	17.43
PAY CANOPY	Illuminance	Fc	33,93	39.9	23.8	1.43	1,68
INSIDE CURB	Illuminance	Fc	3.27	26.7	0.2	16.35	133.50

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine the applicability of the layout to existing or future field conditions.

This lighting plan represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with The Illuminating Engineering Society (IES) approved methods. Actual performance of any manufacturer's luminaires may vary due to changes in electrical voltage, tolerance in lamps/LED's and other variable field conditions. Calculations do not include obstructions such as buildings, curbs, landscaping, or any other architectural elements unless noted. Fixture nomenclature noted does not include mounting hardware or poles. This drawing is for photometric evaluation purposes only and should not be used as a construction document or as a final document for ordering product.

Luminaire Schedule Qty Label Arrangement Description LLD UDF LLF Arr. Lum. Lumens Arr. Watts SCV-LED-13L-SC-50 MTD @ 10'PAY,15'GAS,18'DIESEL SINGLE 1.000 1,000 1.000 12933 84.3 SLM-LED-09L-SIL-5W-50-70CRI-SINGLE-17'POLE+3'BASE SINGLE 1.000 1.000 1.000 9262 68.2 SLM-LED-09L-SIL-FT-50-70CRI-IL-SINGLE-17'PDLE+3'BASE SINGLE 1.000 1.000 1.000 6351 68.2 TMWP-LED-04L-50 MTD @ 10' SINGLE 1,000 1.000 1.000 31,23

Total Project Watts Total Watts = 4193.081



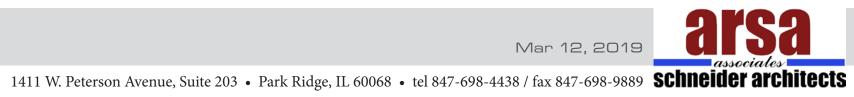


_IGHTING	PROPOSAL	LD-146399-2			
GAS N WASI SYCAMORE F YORKVILLE,	ROAD				
3Y:MWE	DATE:2-21-19	REV:4-22-19	SHEET 1 OF 1		

SCALE: 1"=30'







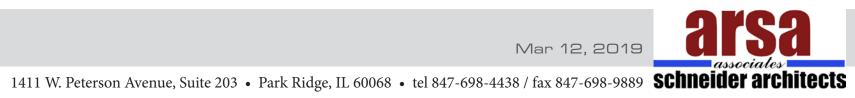


















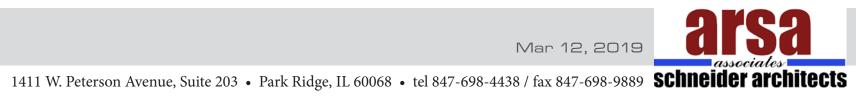
























# YORKVILLE NEIGHBORHOOD MEETING YORKVILLE PUBLIC LIBRARY APRIL 24, 2019 5PM TO 7PM

#### **SIGN-IN SHEET**

NAME	ADDRESS	PHONE	EMAIL	REPRESENTING
Felicia Molimon ELICIA Molimon CHAD LOCKAMA AMBERLOCHAMA TYN BOLLING Jennifor Tak	rl nt To			Corcia Pr
Molly Miller				
	√. N . - ∳			

From: <u>Lyman Tieman</u>

To: Jason Engberg; Kevin McEnery; Greg Galgan (Lenny"s); Brian Hertz; ARSA Schneider Architects

**Subject:** Lenny"s Gas N Wash Yorkville, LLC Resident Engagement Meeting

**Date:** Monday, April 29, 2019 10:53:32 AM

Attachments: YORKVILLE SIGN-IN.pdf

Jason, this is to confirm that we conducted the required Resident Engagement Meeting on April 24, 2019 at the Yorkville Public Library.

Attached is a sign-in sheet from that meeting.

In addition to those who signed in, there were 5 representatives from Lenny's present. The Lenny's representatives were Lyman Tieman (attorney), Brian Hertz (civil engineer), Scott Pritchett (architect/planner), Kevin McEnery (ownership representative) and Greg Galgan (construction supervisor). We were also pleased to have Alderman Funkhouser stop by.

The most prominent question raised was whether we had investigated other locations in the area for use as a gas station. We indicated that we had looked at other sites, but that each of the other sites had issues relating to public utilities, zoning, physical conditions of the site and location. This site best suits our needs since it is on a major highway, is currently zoned to accommodate our use, has utilities available at the site, is bordered by other commercial and farm property and is not adjacent to residential uses.

#### Other issues raised were:

Truck Traffic: The flow of traffic into and out of our site is specifically addressed by our site plan which utilizes the proposed right-in right-out onto Route 34 as a means to minimize traffic flow on Sycamore Road. Additionally, our northern entrance on Sycamore has been re-aligned at staff's suggestion to line up with the access to the commercial property on the west side of Sycamore and the southern most entrance on Sycamore has been moved slightly north to minimize impact on the neighborhood park. Further directional signage will be posted on site directing any trucks to avoid going further south on Sycamore. We explained that the vast majority of diesel customers are smaller box type trucks, pickups with trailers landscape trucks and other delivery vehicles. We generally separate the diesel users from the gasoline users to avoid traffic conflicts on site.

Lighting: Our lighting is designed to minimize any impact on neighboring properties thru the use of LED lighting, recessed canopy lighting and downward directional lighting. Our lighting will be designed and constructed to meet all City standards and will be zero foot candles at the property line.

Noise: In relation to the car wash, all equipment that is noise generating is locate within the building including vacuum pumps. Only the vacuum hoses are located outside. The drying equipment is located at the north end of the car wash building and is pointed away from any residences.

Hours of Operation: The fueling and convenience store will operate 24 hours a day. The car wash and drive-up food service windows will have restricted hours of operation.

Gaming: With regard to gaming, we advised that we intend to apply to the State for a gaming license and that it is up to the State as to whether we meet the criteria for the issuance of a license under State law.

LYMAN C. TIEMAN ATTORNEY AT LAW 12417 TAHOE LANE MOKENA, IL 60448 815-717-6365 (OFFICE) 815-370-3383 (CELL) LCTIEMAN@YAHOO.COM



April 4, 2019

Ms. Krysti Barksdale-Noble Community Development Director United City of Yorkville 800 Game Farm Road Yorkville, IL 60560

Re: Gas N Wash

Preliminary Site Plan –1st Submittal

United City of Yorkville, Kendall County, Illinois

#### Dear Krysti:

We are in receipt of the following items for the above referenced project:

- Preliminary Site Plans (2 sheets) dated March 13, 2019 and prepared by MG<sup>2</sup>A.
- Photometric Plan (1 sheet) dated February 21, 2019.
- Landscape Plan (1 sheet) dated March 1, 2019 and prepared by Upland Design ltd.
- Land Title Survey (1 sheet) dated March 6, 2019 and prepared by MG<sup>2</sup>A.
- Special Use Application.

Our review of these plans is to generally determine their compliance with local ordinances and whether the improvements will conform to existing local systems and equipment. This review and our comments do not relieve the designer from his duties to conform to all required codes, regulations, and acceptable standards of engineering practice. Engineering Enterprises, Inc.'s review is not intended as an in-depth quality assurance review, we cannot and do not assume responsibility for design errors or omissions in the plans. As such, we offer the following comments:

#### <u>General</u>

- 1. The following permits may be required and should be provided to the City when obtained. The City and EEI should be copied on all correspondence with the agencies.
  - YBSD approval is needed for the connection of the proposed sanitary lines to the existing sanitary sewer.
  - IEPA permit may be needed for the sanitary sewer service depending on the use and calculated flow from the development.
  - IEPA NPDES General Construction Permit is required. The Notice of Intent must be filed with IEPA 30 days prior to start of construction.
  - IDNR and IHPA permits should be obtained, and the City and EEI should be copied on all correspondence.
  - IDOT approval of the right-in/right-out on Route 34 will be needed.
- 2. The plans should be reviewed and approved by the Fire District for emergency vehicle access and turning movements.
- 3. A truck turning exhibit should be provided. The intended truck usage routes should be provided.
- 4. The proposed parking provided should be confirmed by the City.

5. The Landscape Plan is under review by the City's landscaping consultant and comments will be forwarded under separate cover.

#### Photometric Plan

- 6. We have reviewed the Photometric plan and have the following comments:
  - The average pavement luminance needs to be reduced to an average of 2.5 foot-candles.
  - The ratio of the maximum pavement luminance to average pavement luminance needs to be reduced to 3:1.
  - The luminance at the property lines needs to be reduced to 0 foot-candles.
- 7. Manufacturer's cut sheets should be provided for the light fixtures. The City will need to approve the light fixtures selected.

#### **Engineering Plans**

- 8. The Final Engineering plans should include the following:
  - Construction Notes and Specifications
  - Existing Conditions plan
  - · Erosion Control plan and details
  - Striping and Signage plan
  - Pavement plan

#### Geometric Plan (Sheet 1 of 2)

- 9. The Zoning Ordinance requires that non-residential driveways be setback 200 feet from any intersection (10-16-3). The proposed entrance configuration on Sycamore does not comply with this requirement and should be further discussed with City Staff.
- 10. The entrance on the access road along the south property line should align with the entrance across the street.
- 11. The Zoning Ordinance requires a 12' bypass land adjacent to the drive through stacking lane (10-16-5).
- 12. The pavement plan to be provided should include sidewalk, curb, and pavement sections as well as spot elevations for all paved sections.
- 13. Provide tie-in spot elevations and grading information at the proposed entrances. An entrance detail should be provided for connection to the existing curb and gutter.

#### Utility and Stormwater Plan (Sheet 2 of 2)

- 14. All utility conflicts should be called out on the plans with the top and bottom of pipe elevations identified at the crossings. The utility conflict details should be provided.
- 15. All water main fittings should be called out on the plans.
- 16. A detail should be provided for the 6" water service connection to the 12" main and for the corresponding 6" valve.
- 17. A detail should be provided for the 2" water service connection to the water main and for the corresponding b-box.

Ms. Krysti Barksdale-Noble April 4, 2019 Page 3

- 18. The rim elevation of structure 1-1 is called out as 667.4, but this is not consistent with the surrounding grading. The rim elevation information should be corrected.
- 19. Details should be provided for all storm catch basins, manholes, inlets, and frames and grates as well as the oil & water separator, cleanouts, the trench drain, and for storm sewer pipe and trench.
- 20. The length, size, slope, and pipe material information should be provided for all proposed sanitary services.
- 21. Details should be provided for the triple separator tanks, sanitary manholes, the sanitary core and boot connection, and the grease trap.
- 22. The slope of the 188' section of 6" sanitary pipe is called out as having a 2% slope, but it appears that it should be called out as a slope of 1.5% based on calculating the drop between inverts over the distance of the pipe.

#### Stormwater Management

- 23. Detention Volume is provided for this development in the subdivision detention basin south of the Dreyer Site. The on-site storm sewer connects to existing storm sewer stubs previously installed to provide conveyance to the stormwater basin.
- 24. Supporting calculations should be provided for the sizing of the on-site storm sewer.
- 25. Details and supporting calculations should be provided for the proposed oil and gas separator. The plan should demonstrate that all fueling areas are tributary to the separator or similar water quality control structures.

The Developer should make the necessary revisions and re-submit plans and supporting documents along with a disposition letter for further review. If you have any questions or require additional information, please contact our office.

Sincerely,

ENGINEERING ENTERPRISES, INC.

Bradley P. Sanderson, P.E.

Vice President

#### BPS/TNP/BCS

pc: Mr. Bart Olson, City Administrator (Via e-mail)

Ms. Erin Willrett, Assistant City Administrator (Via e-mail)

Mr. Jason Engberg, Senior Planner (Via e-mail)

Mr. Eric Dhuse, Director of Public Works (Via e-mail)

Mr. Pete Ratos, Building Department (Via e-mail)

Ms. Dee Weinert, Admin Assistant (Via e-mail)

Ms. Lisa Pickering, Deputy Clerk (Via e-mail)

Mr. Brian Hertz, P.E., MG<sup>2</sup>A (Via e-mail)

TNP. JAM. EEI (Via e-mail)



To: Plan Council

From: Krysti Barksdale-Noble, Community Development Director

Date: April 3, 2019

Subject: PC 2019-14 Lenny's Gas N Wash (Special Use)

Proposed New Fuel Station & Convenience Store

I have reviewed the application for Special Use approval received March 13, 2019 as submitted by Lenny's Gas N Wash Yorkville, LLC, Petitioner, as well as a Preliminary Site Plan, Preliminary Utility & Stormwater Plan and ALTA Survey prepared by M Gingerich Gereaux & Associates dated March 13, 2019; Landscape Plan prepared by Upland Design LTD dated March 6, 2019; Photometric Plans; and architectural renderings and elevations prepared by ARSA Associates dated March 12, 2019 and March 13, 2019, respectively.

The petitioner is seeking special use permit authorization of a proposed new fuel station and convenience store building to be constructed on approximately 3.43-acres of vacant land located at the southeast corner of US 34 and Sycamore Road.

Based upon my review of the application documents and preliminary plans, I have compiled the following comments:

## **GENERAL ZONING/PLANNING COMMENTS:**

1. **ZONING** - The subject property is currently zoned as B-3 General Business District. The following are the current immediate surrounding zoning and land uses:

	Zoning	Land Use
North	A-1 Agriculture (Kendall County)	Undeveloped Farm Land
South	B-3 General Business District	Vacant/Office
East	B-3 General Business District	Medical Office
West	B-3 Highway Business District	Multi-tenant Commercial Retail

2. **BUILDING SETBACKS** – Staff notes that the petitioner has depicted the following property's building setback locations:

BUILDING SETBACK	REQUIRED MINIMUM	PROPOSED SETBACK
Interior Side Yard	20'	+/- 44.3' (East)
Front Yard	50'	+/- 135' (North)
Corner Yard Setback	30'	+/- 140' (West)
		+/- 240' (South)

3. **MAXIMUM BUILDING HEIGHT** - Maximum building height for the B-3 District is 80 feet. The overall height of the primary building is 34' and the accessory structures are 21'-2".

- 4. **PARKING** According to the data table on the Site Plans submitted, there are 25 total parking stalls provided for the convenience store, including two (2) ADA handicapped accessible space. Per Section 10-16-3 of the Yorkville Zoning Code, the total required minimum parking needed is 15 spaces, which is exceeded by the 25 on-site spaces provided.
- 5. **PARKING SETBACKS** The applicant appears to have met the required minimum parking lot setback of 20 feet from arterial roadways (US 34) and 10 feet from non-arterial roadways (Sycamore Road) for the proposed development as follows:

PARKING LOT SETBACK	REQUIRED MINIMUM	PROPOSED PARKING LOT SETBACK
US Route 34 – North (Arterial)	20'	Please Verify
Sycamore Road –West (Non-Arterial)	10'	Please Verify

Per Section 10-2-3 of the Yorkville Zoning Ordinance, "Parking Area, Private" is an open, hard surfaced area, other than a street or public way for the *storage* of private passenger vehicles. "Driveway" is defined as a paved or unpaved private roadway providing vehicular access between the right of way of the street and a parking space (storage area).

6. **VEHICLE STACKING** - All drive-in and drive-through facilities shall provide vehicle stacking in accordance with table 10.16.05 of the Yorkville Zoning Ordinance as seen below:

Use	Minimum Number of Vehicles Required	Minimum Number of Vehicles Provided
Car wash, automatic	5 vehicles per bay at entrance	6 vehicles per bay at entrance
	2 vehicles per bay at exit	2 vehicles per bay at exit
Restaurant, fast food	3 vehicles behind menu board	5 vehicles behind menu board
	3 vehicles behind first window	3 vehicles behind first window

Stacking space dimension: 12' x 20' and the minimum pavement lane width shall be twelve feet (12'). A twelve-foot (12') bypass lane is required adjacent to the stacking lane to allow vehicles to circumvent the stacking lane. The plans illustrate compliance with this requirement.

7. **LOADING ZONE** – Please verify the location of any loading zone area for convenience and food delivery services. Per Section 10-2-3, Off-Street Loading and Unloading Spaces shall be exclusive of access aisles and maneuvering space. Since a loading berth or dock is not required for the size and use of the proposed convenience building, staff suggests

locating the loading zone area on site where it does not interfere with gas station users' maneuverability or sight lines.

- 8. **MAXIMUM LOT COVERAGE** Per Section 10-7-1 of the Yorkville Zoning Code, the maximum lot coverage for the B-3 General Business District (inclusive of sidewalks, parking areas and all impervious surfaces) is 80%. The Site Data Table indicates a maximum impervious coverage of 67%.
- 9. **BUILDING ELEVATIONS** Although not required as part of the Special Use process, color renderings and building elevations for the proposed Gas N Wash buildings have been provided which meet the following Appearance Code requirements:
  - a. Per Section 8-15-5: Criteria for Appearance of the City Code, new non-residential structures shall have at least fifty percent (50%) of the total building constructed of masonry products or precast concrete incorporated as follows:
    - i. Front Façade: At least 50% shall incorporate masonry products or precast concrete.
    - ii. Any other facade that abuts a street shall incorporate masonry products or precast concrete.
- 10. SIGNAGE The petitioner is indicated monument signage on site plan and architectural renderings. Additionally, wall signage is illustrated on the convenience building and canopies at the gas pumps. However, no dimensions, material or details are provided regarding these signs.
  - a. Per Section 10-20-9-A-2 of the Yorkville Zoning Ordinance, the maximum sign area for building mounted signs shall not exceed 2 square feet for each linear foot for each exterior wall of that part of the building in which the sign is located. Additionally, no wall sign shall extend more than 75% of the width of the building façade to which it is attached. In addition, signs located on exterior walls not having a public entrance shall not exceed 1 square for for each square foot of wall length for a maximum of 50% of the overall length of that wall. All façade dimensions shall be provided in a site data table to determine if this requirement is being met.
  - b. Per Section 10-20-5-R of the Yorkville Zoning Ordinance, permanent, non-flashing signs on vending machines, gas pumps, ice and propane storage units are exempt from the Sign regulations.
  - c. Due to the varying depths in wall elevations and wall heights illustrated on the convenience building, the following regulations for sign measurement shall apply:
    - i. Per Section 10-20-6-A of the Yorkville Zoning Ordinance, building mounted wall sign area calculations are based on each wall of an exterior building facing a lot line and a public right-of-way. An exterior building wall which faces a lot line may contain more than a single wall for sign area calculation purposes. If portions of the exterior building wall face the same lot line and are separated by four feet (4') or more in depth from that lot line, then they are considered two (2) separate walls for sign area calculation purposes. If separated by less than four feet (4') they shall be considered a single exterior building wall for sign area calculation

- purposes. If two (2) exterior walls create an angle greater than one hundred thirty-five degrees (135°) on the horizontal plane, then it shall be considered a single exterior wall. Any two (2) exterior walls which create an angle of less than one hundred thirty-five degrees (135°) on the horizontal plane shall be considered two (2) separate walls.
- d. Per Section 10-20-9-A of the Yorkville Zoning Ordinance, free standing monument signs on lots less than 3 acres shall have a maximum sign area of 32 square feet and a maximum height of 12 feet, as measured from the crown of the adjacent roadway. Additionally, Section 10-20-9-A-3 of the Zoning Ordinance states a maximum sign area for electronic message signs is 32 square feet. All monument sign dimensions shall be provided in a site data table to determine if this requirement is being met.
- 11. **DRIVEWAYS** Per Section 10-16-3-D of the Yorkville Zoning Ordinance, Nonresidential driveways shall be a minimum of two hundred feet (200') when from the driveway edge to the nearest intersecting street right of way line. Driveways not meeting the minimum distances may be approved administratively by the city administrator with a recommendation to approve made by the city engineer. If administrative approval is not granted, a variance must be approved. Please provide dimensions that illustrate compliance with this requirement.
- 12. **LIGHTING** A photometric plan has been provided along with manufacturers cut sheets of the proposed light standards to be installed within the parking lot area. Maximum illumination at the property line shall not exceed 0.1 foot-candle and no glare shall spill onto adjacent properties or rights of way.
- 13. **OUTDOOR SALES AND DISPLAY AREAS** Due to the proposed use as a gas station with retail convenience store, staff assumes there will be outdoor sales and display areas located on the property. Therefore, the following provisions of the Zoning Ordinance shall apply:
  - a. Per Section 10-3-10-F of the Yorkville Zoning Code, outdoor sales and display areas shall not exceed 35% of the gross floor area of the primary building (max 1400 sq. ft for Lot 102). Staff is seeking confirmation from the Petitioner that the overall area of the Outdoor Sales area will not exceed 1,400 square feet at any given time.
  - b. Per Section 10-3-10-H of the Yorkville Zoning Code, outdoor sales and display areas, when located on a sidewalk and/or walkway, must allow for an unconstructive area of 3 feet for pedestrian access and shall not block the ingress or egress of the building at any time.
- 14. **TRUCK TURNING TEMPLATE** <u>Please provide a truck turning template</u> demonstrating the maneuverability of standard sized semitrucks within the site layout.
- 15. LANDSCAPE PLAN Refer to engineer's comments.

- 16. **COMPREHENSIVE PLAN** Refer to Senior Planner's comments.
- 17. **SIDEWALKS** <u>Sidewalks exist on Sycamore Road along the site's western properly line</u>. Are sidewalks being proposed along the northern property line along US 34?
- 18. <u>ADJACENT PUBLIC PARK</u> There have been concerns from residents regarding the proximity of the proposed far south driveway entrance along Sycamore Road for the diesel pumps to the nearby public park entrance to the baseball field. <u>Would the petitioner consider signage which restricts semitruck traffic from utilizing the access point onto the existing southern private drive thereby requiring trucks to head north and exit directly onto US 34 and eliminating trucks heading west to Sycamore Road as they exit?</u>



To: Plan Council

From: Jason Engberg, Senior Planner

Date: April 8, 2019

Subject: PC 2019-14 Lenny's Gas N Wash (Special Use)

Proposed New Fuel Station, Convenience Store & Car Wash

I have reviewed the application for Special Use approval received March 13, 2019 as submitted by Lenny's Gas N Wash Yorkville, LLC, petitioner, as well as a Preliminary Site Plan, Preliminary Utility & Stormwater Plan and ALTA Survey prepared by M Gingerich Gereaux & Associates dated March 13, 2019; Landscape Plan prepared by Upland Design LTD dated March 6, 2019; Photometric Plans; and architectural renderings and elevations prepared by ARSA Associates dated March 12, 2019 and March 13, 2019, respectively.

The petitioner is seeking special use permit authorization of a proposed new fuel station with accessory convenience store and car wash to be constructed on approximately 3.4 acres of vacant land located at the southeast corner of US 34 and Sycamore Road.

Based upon my review of the application documents and preliminary plans, I have compiled the following comments:

#### **ZONING**

The subject property is currently zoned as B-3 General Business District. The following are the current immediate surrounding zoning and land uses:

	Zoning	Land Use
North	A-1 Agriculture (Kendall County)	Undeveloped Farm Land
East	B-3 General Business District	Advocate Clinic
South	B-3 General Business District	Vacant/Office/Detention
West	B-3 Highway Business District	Commercial Strip Center

#### **BULK REGULATIONS**

Staff notes that the petitioner has depicted the following property's building setback locations:

<b>Building Setback</b>	Required Minimum	Proposed Setback*
Front Yard	20 feet	142 feet
Interior Side Yard	50 feet	44.3 feet
Corner Side Yard (Sycamore)	30 feet	104 feet
Corner Side Yard (John)	30 feet	190 feet

<sup>\*</sup> Approximate measurement, measured with scale bar on site plans

The maximum building height in the B-3 District is 80 feet. The overall height of the primary building is 21 feet and the accessory car wash is about 34 feet (at its peak). The maximum lot coverage for the B-3 General Business District including all impervious surfaces is 80 percent. The proposed impervious lot coverage is 67 percent.

#### **PARKING**

The submitted plans show a total of 25 parking spaces including 2 handicapped accessible spaces. The total minimum required parking spaces needed per the Yorkville Zoning Ordinance is 15 spaces. Therefore, the proposed 25 spaces exceed the required minimum. Additionally, the petitioner has met the minimum required parking setbacks (as measured by scale bar) of 20 feet from US Route 34 and 10 feet from Sycamore Road.

#### **STACKING**

All drive-in and drive-through facilities shall provide vehicle stacking in accordance with table 10.16.05 of the Yorkville Zoning Ordinance:

Use	Minimum Number of Vehicles
Car Wash, Automatic	5 vehicles per bay at entrance 2 vehicles per bay at exit
Restaurant, Fast Food	3 vehicles behind menu board 3 vehicles behind first window

The petitioner meets these requirements by providing 6 vehicles behind the entrance and 2 vehicles at the exit for the car wash. Additionally, they provide 5 vehicles behind the menu board and 3 from the window of the primary structure.

#### **BUILDING ELEVATIONS**

Although not required as part of the Special Use process, renderings and building elevations for the proposed Gas N Wash buildings have been provided which meet the following Appearance Code requirements:

Per Section 8-15-5: Criteria for Appearance of the City Code, new non-residential structures shall have at least fifty percent (50%) of the total building constructed of masonry products or precast concrete incorporated as follows:

- i. Front Façade: At least 50% shall incorporate masonry products or precast concrete.
- ii. Any other facade that abuts a street shall incorporate masonry products or precast concrete.

#### **SIGNAGE**

The petitioner has indicated monument signage on the site plan and wall signage on the renderings. There are no dimensions or measurements on these signs. The petitioner must conform to all regulations in Section 10-20 of the Yorkville Zoning Ordinance. If the petitioner is concerned about meeting these requirements, they should discuss their plans with staff and possibly create a sign package for review.

#### **DRIVEWAYS**

Per Section 10-16-3-D of the Yorkville Zoning Ordinance, nonresidential driveways shall be a minimum of two hundred feet (200') when from the driveway edge to the nearest intersecting street right of way line. Driveways not meeting the minimum distances may be approved administratively by the city administrator with a recommendation to approve made by the city engineer. If administrative approval is not granted, the petitioner must request a variance for this item.

#### LIGHTING

A photometric plan has been provided along with manufacturers cut sheets of the proposed light standards to be installed within the parking lot area. Maximum illumination at the property line shall not exceed 0.1 foot-candle and no glare shall spill onto adjacent properties or rights of way. The current plans indicate the lighting will exceed the City's requirements and must be revised.

#### FENCING AND SCREENING

As outlined in the Yorkville Zoning Ordinance, the petitioner must meet the following standards for large refuse containers:

Commercial trash dumpsters and other large waste receptacles or equipment shall be screened on three (3) sides with a solid opaque material wall at least six feet (6') in height or to the extent where the wall screens the dumpster from view. The material must match the building and have an opaque single or double access gate on the fourth side. A detail of the enclosure is required on the plan. Landscaping is preferred to be put around the perimeter of the three (3) solid walls.

The petitioner's plans meet these requirements. There are no proposed fences indicated on the site plan and there are none required. Although, adjacent uses may prefer screening from the gas station and it may be requested in the future by residents or committee/commission members. If one is requested and added as a condition to the special use, the fence will need to conform to all standards in Section 10-17 of the Yorkville Zoning Ordinance.

#### COMPREHENSIVE PLAN

The 2016 Comprehensive Plan designates this for neighborhood retail. This land use is designated for small to medium scale auto-oriented commercial uses, such as retail centers and restaurants located near residential areas. Therefore, the proposed use is consistent with the designated future land use plan.

#### TRAFFIC PATTERN

There have been concerns from residents regarding the proximity of the proposed driveway entrance along Sycamore Road for the diesel pumps to the nearby public park entrance to the baseball field. Additionally, the access on John Street may not be suitable for large semi-truck traffic. The petitioner may want to reconsider laying out the traffic pattern on the site to accommodate these concerns. This may include one larger access point along sycamore and removing the location along John Street.



To: Krysti Noble, Community Development Director

From: Eric Dhuse, Director of Public Works

CC: Jason Engberg, Senior Planner

Date: April 1, 2019

Subject: Plan Council Review

I received the packet for PZC 2019-14 Lenny's Car Wash Special Use, and have the following comments and questions.

- 1. Has there been contact with IDOT regarding the Rt. 34 access? If so, what was the response?
- 2. Has a traffic study been performed? If so, can we see the results? If not, when is it scheduled to be performed?
- 3. With the additional traffic, Sycamore Rd. should be repaved from Rt. 34 to the south end of the property. The projected traffic count will determine the pavement thickness.
- 4. The north entrance on Sycamore Rd. should line up with the entrance to the strip mall on the opposite side of Sycamore Rd.
- 5. North entrance on Sycamore Rd. should be perpendicular to Sycamore Rd.
- 6. There can be no trees within 20' of the end of radius of the entrances, please adjust accordingly. The city would be open to removal and replacement of parkway trees if entrance radii cannot be altered.



April 25, 2019

Ms. Krysti Barksdale-Noble Community Development Director United City of Yorkville 800 Game Farm Road Yorkville, IL 60560

Krysti:

Please find attached comments from PRI as to the review of the Landscaping Plana

The Developer should make the necessary revisions and re-submit plans and supporting documents as necessary along with a disposition letter for further review. If you have any questions or require additional information, please contact our office.

Sincerely,

ENGINEERING ENTERPRISES, INC.

Bradley P. Sanderson, P.E.

Vice President

#### **BPS/TNP**

pc: Mr. Bart Olson, City Administrator (Via e-mail)

Ms. Erin Willrett, Assistant City Administrator (Via e-mail)

Mr. Jason Engberg, Senior Planner (Via e-mail)

Mr. Eric Dhuse, Director of Public Works (Via e-mail)

Mr. Pete Ratos, Building Department (Via e-mail)

Ms. Dee Weinert, Admin Assistant (Via e-mail)

Ms. Lisa Pickering, Deputy Clerk (Via e-mail)

Mr. Brian Hertz, P.E., MG<sup>2</sup>A (Via e-mail)

TNP, JAM, EEI (Via e-mail)



## RESOURCES INC.

913 Parkview Boulevard Lombard, Illinois 60148 Web: www.planres.com P: 630.668.3788

F: 630.668.4125

## Memorandum

PP13032-45

To:

Tim Paulson, P.E., CFM

Engineering Enterprises, Inc.

From:

Joseph Murphy, PLA, ASLA, CLARB

Planning Resources, Inc.

Date:

April 19, 2019

Subject:

Lenny's Gas 'N Wash

Landscape Review #1

This review is based on the following documents, pursuant to requirements of the City of Yorkville's Ordinance Section 8-12 (Landscape Ordinance)

Landscape Plan (Sheets L1.0) prepared by UplandDesign; dated 3/1/19.

#### Review Comments

- 1. Need to provide a details sheet showing all planting details applicable to the plan. Note: the detail for the canopy tree needs to have branches to 'start no less than 8' above the pavement' to maintain proper sitelines.
- 2. All other requirements for the landscape plan have been met.

At this time, Planning Resources recommends the approval of the landscape plan as submitted.

#### END OF COMMENTS

Respectfully submitted,

Joseph Murphy, PLA, ASLA, CLARB

Landscape Architect



Reviewed By:		
Legal		
Finance		
Engineer		
City Administrator		
Human Resources		
Community Development		
Police		
Public Works		
Parks and Recreation		

Agenda Item Number
Old Business #1
Tracking Number
EDC 2019-38

## **Agenda Item Summary Memo**

	8	v			
Title: 2018 Building Code Update					
Meeting and Date: Economic Development Committee – May 7, 2019					
Synopsis: Discussion	on of proposed update to the	eity's current 2009 International Code series to			
the 2018	International Code series in	relation to fire sprinklers.			
Council Action Pres	viously Taken:				
Date of Action: N/A	Action Take	n: <u>N/A</u>			
Item Number: N/A					
Type of Vote Requi	red:				
Council Action Req	uested:				
Submitted by:	Peter Ratos	Building Department			
	Name	Department			
	Agenda Ite	m Notes:			
See attached memorandum.					
		_			



To: Economic Development Committee From: Peter Ratos Building Code Official

Krysti J. Barksdale-Noble, Community Development Director

CC: Bart Olson, City Administrator

Date: March 29, 2019

Subject: 2018 ICC Fire Sprinkler Recommendation

#### **Background**

In May, of 2018, the United City of Yorkville's Building and Zoning Division of the Community Development Department began the process of thoroughly reviewing and analyzing our current building code ordinance. A major part of this process was reviewing the requirements for fire suppression in single family homes in the 2018 ICC Codes. Currently the City enforces the 2009 International Code Council (ICC) series which were adopted by Yorkville on July 26, 2011. The requirement for fire suppression in single family detached homes was removed from the 2009 ICC Codes during the adoption process. Concerns of the cost to install the fire sprinkler systems and the cost to homeowners in maintaining the system had been raised by builders and residents during the adoption of the 2009 ICC Codes.

## **Summary**

The 2018 IRC Code is a comprehensive guide to the proper construction of residential property. While the Code does require fire sprinklers in all residential structures, the writers of the Code did understand that the cost and feasibility of the installation of sprinklers would vary between communities. For that reason, the Code still contains provisions for the construction of single family detached homes without fire sprinklers. The provisions are a mixture of increased protection for the structure and alternative building planning methods to ensure the safety of the occupants of non-sprinklered homes. There are four (4) provisions in the Code which requires this increased level of protection, and they are as follows:

- 1. Exterior Walls Section R302.1(1) Non-fire rated exterior walls may not be within five (5) feet of the property line and must maintain a one-hour fire rating. Openings in the exterior wall may not exceed 25% of the wall area. Projections in an exterior wall must maintain a one-hour fire rating on the underside of the projection.
  - (Explanation) In the home being built today there is no requirement for fire rating of exterior walls or projections unless the wall is adjacent from another property. The 2018 IRC requires all walls within five (5) feet of the property line or within five (5) feet of any structure to have a one-hour fire rating. Also, any projections of the exterior wall (cantilevers, bay windows, etc.) require the same one-hour fire rating as the exterior wall.
- 2. <u>Protection of Floors</u> Section- R302.13- Light framed floor assemblies that are not fire rated are required to be provided with a ½ inch gypsum wall-board or 5/8 wood structural panel.
  - (Explanation) Floors constructed out of materials such as I-joists, open web trusses, laminated veneer plywood and dimensional lumber smaller then 2x10 are now required to have a minimum of one layer of drywall. The major area of impact for this provision would be the first-floor to basement floor assembly. In the current 2009 Code, there is no requirement to fire protect the floor system.

- 3. A. <u>Flame Spread Index</u> Section R302.9.1- Walls and ceiling finishes shall have a flame spread index of not greater than 200.
  - B. <u>Smoke Development Index</u> Walls and ceiling finishes shall have a smoke development index of not greater than 450.

(Explanation)- In the 2018 Code, the need to control the amount and type of combustible material used to finish the building is addressed. As part of this effort, the amount of smoke the materials create when burning is also taken into consideration. All approved materials have been tested in accordance with the American Society for Testing and Materials (ASTM) E84 or the Underwriters Laboratories (UL) 723. During the testing process the product is given a flame spread rating and a smoke development rating. These ratings are reviewed to ensure that the finishings in the home do not cause a hazard if a fire occurs. The most common materials that are reviewed include wall paper and natural and synthetic wall texturing systems.

4. <u>Egress</u> - Section R310 - Basements, habitable attics and every sleeping room shall have not less than one emergency escape and rescue opening.

(Explanation)- Under the 2018 Code, a house with a fire sprinkler system needs only one way in or out of a basement, attic living area or bedroom. This provision would require an approved emergency exit and rescue opening (9 sq. ft window well or 5.7 sq. ft openable area window) from every sleeping area or living area.

#### **Cost of sprinkler systems**

The cost of the installation of a fire suppression system has been estimated between \$2 to \$4 per square foot of building area. The building area is established by adding all the condition space together in the home including unfinished spaces. This translates to a cost of between \$8,000 and \$16,000 for the average 2000 sq. ft ranch home with a full basement.

The cost of maintaining a fire system includes the certification of the back-flow preventer every year at a cost of \$100 to \$225. All fire systems are recommended to be inspected by a State Licensed fire installer every 5 to 7 years. Sprinkler heads are recommended to be replaced ever 10 years at a cost of \$5 to \$20 per sprinkler head.

Additionally, some areas in the City do not possess an adequate water supply to properly supply both domestic potable water and a fire suppression system. The cost to increases the water tap size per dwelling is between \$3,000 and \$5,000, depending on the conditions that exist on each site.

## **Surrounding Communities**

At the onset of the adoption process we have endeavored to make sure that Yorkville's building code requirements were in keeping with our neighboring communities. Oswego, Plano, Sandwich, Plainfield, Morris, and Minooka do not require the installation of fire sprinklers in single family detached homes.

The following chart provides more details related to the fire suppression requirements in residential homes in nearby communities:

Municipality	Sprinkled	Code or Ordinance	Explanation				
Plano	No	2015 IRC	R313 Sprinkler Requirements Deleted				
Sandwich	No	2006 IRC	Does not contain SFR sprinkler requirer	nents			
Oswego	Exemptions	2009 IRC	Underside of all interior stairs are prote	cted with	5/8" gypsu	m board o	r equal
		Ord. 17-20 5-2-2017	SFD & Duplex has at least 2 means of eg	ress			
			All engineered floor joist and or trusses shall be pro	tected with at	least 1/2" gyp	osum board oi	equivalent
Plainfield	No	2015 IRC	R313 Sprinkler Requirements Deleted				
Naperville	Exemptions	2018 IRC	Underside of all interior stairs are prote	cted with	1/2" gypsu	m board o	r equal
			SFD & Duplex has at least 2 means of eg	ress			
Aurora		IRC	(Unclear Version)				
Minooka	No	2009 IRC	R313 Sprinkler Requirements Deleted				
Kendall County	No	2012 IRC	R313 Sprinkler Requirements Deleted				
Elgin	Exemptions	2015 IRC	Multiple Exemptions				
North Aurora		2009 IRC					
Kane County	Amended	2012 IRC	R313 Amended from shall to may				
Morris	No	2003 IRC	Does not contain SFR sprinkler requirer	nents			
Sugar Grove	Modified	2015 IRC	Does not contain SFR sprinkler requirer	nents			

#### Recommendation

It is the recommendation of the Building and Zoning Division, in coordination with the Bristol Kendall Fire Department, that the requirement for fire sprinklers in single family homes be removed from the 2018 International Residential Code at this time. We believe that requiring the installing of fire suppression in all residential housing would increase the costs of construction beyond our community's limits. Furthermore, we believe that the provisions provided for non-sprinklered homes within the 2018 ICC Code will increase the safety of the homes being built for the residents and first responders.



# 2015 IRC® Transition from the 2009 IRC®

Based on the International Residential Code® (IRC®)



#### 2015 IRC Transition from the 2009 IRC

Second Printing: May 2015

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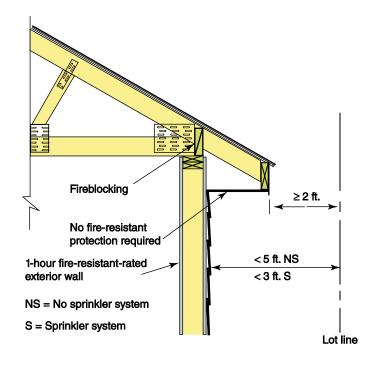
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Topic	2012	2015
Part 1 Scope and	Administration (Chapter 1)	
Scope – Accessory Structures		R101.2  The maximum height for accessory structures has been increased from two to three stories above grade plane. Technical requirements have been removed from the definition, and accessory structures are now permitted to be unlimited in area.
Alternative Materials, Design, and Methods of Construction and Equipment		R104.11 When proposed alternatives are not approved, the reason for the disapproval must be stated in writing by the building official.
Fences Exempt from Permit	R105.2 Fences up to 7 feet high are exempt from permit requirements.	
Existing Buildings in Flood Hazard Areas		R105.3.1.1  Determination of substantial improvement for existing buildings in flood hazard areas is the responsibility of the building official. The related provisions are now consolidated in Section R105.3.1.1.
Information for Construction in Flood Hazard Areas		R106.1.4 Construction documents for dwellings in Coastal A Zones shall include the elevation of the bottom of the lowest horizontal structural member.
Part 2 Building Pl	lanning (Chapter 3)	
Climatic and Geographic Design Criteria		Table R301.2(1) The jurisdiction must indicate if it contains special wind regions or wind borne debris zones.
Wind Design Criteria	R301.2.1 A new map indicates the geographic locations that require wind design, which means an engineered design in accordance with the IBC or ASCE 7, or a design in accordance with the applicable provisions of ICC-600, the WFCM, or AISI S230.	R301.2  Ultimate design wind speed values replace basic wind speed values for 3-sec gust wind speeds in Section R301.2.2. A wind speed conversion table has been added for conversion from ultimate design to nominal design wind speeds.
Sunrooms		R301.2.1.1.1  The 2015 IRC requires sunrooms to comply with AAMA/NPEA/NSA 2100-12. The standard contains requirements for habitable and non-habitable sunrooms.
Protection of Openings in Wind Borne Debris Regions		R301.2.1.2  The mean roof height limit has been increased from 33 feet to 45 feet for the prescriptive attachment provisions for wood structural panels protecting glazing. The ASTM E 1996 standard has been modified to classify wind zones according to ultimate design wind speed.
Wind Exposure Category		R301.2.1.4 Wind Exposure Category A has been deleted because it no longer exists in the IBC and ASEC 7, which is the basis for determination of wind exposure categories. Wind Exposure Category D now applies to open water, mud and salt flats, and unbroken ice fields, which includes hurricane-prone regions.

Topic	2012	2015
Part 2 Building P	lanning (Chapter 3), Continued	
Floodplain Construction		R301.2.4  Buildings located in a flood hazard area must comply with the provisions for the most restrictive flood hazard area and may use ASCE 24 for design.
Story Height		R301.3 Story height of wood and steel wall framing, insulated concrete, and SIP walls may not exceed 11ft, 7in. Masonry wall height is limited to 13ft 7in.
Exterior Walls	R302.1 The minimum clearances to lot lines have been reduced from 5 feet to 3 feet for unrated exterior walls when the dwelling is protected with a fire sprinkler system. The code now permits construction of unrated exterior walls on the lot line when all dwellings in the subdivision are protected with automatic fire sprinkler systems and the opposing lot maintains a minimum 6-foot clearance from the common lot line.	R302.1 Unprotected roof overhangs are now permitted to project to within 2ft of the property line when fireblocking is installed between the top of the wall and the roof sheathing. In most cases, projections are not permitted less than 2ft from the property line. For dwellings with or without fire sprinkler protection, penetrations of exterior walls do not require fire-resistant protection unless they are located less than 3ft from the property line.

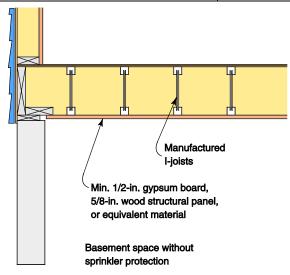


One-hour common wall for townhouses with sprinklers

Topic	2012	2015
Part 2 Building P	anning (Chapter 3), Continued	
Townhouse Separation R302.2.2 Parapet Exception	R302.2 When a parapet is not installed, openings and penetrations of the roof are no longer permitted within 4 feet of the separating wall between townhouse dwelling units.	R302.2 The provisions for separating townhouses with structurally independent fire-resistant-rated walls in accordance with Section R302.1 have been removed in favor of the common wall provisions of Section R302.2. Common walls separating townhouses must now be rated for 2hrs when an automatic fire sprinkler system is not installed in the townhouse dwelling units.
Common 1-hour fire-resistance-rated wall continuous from foundation to	Electrical installations are permitted in common wall Electrical boxes must mee fire-resistant penetration requirements.	I. fire-resistance-rated
roof sheathing	No plumbing, mechanical, ducts, or vents—in common wall	
Townhouse dwelling unit A		Townhouse dwelling unit B
2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		

Two-hour common wall for townhouses without sprinklers

Topic	2012	2015
Part 2 Building P	lanning (Chapter 3), Continued	
Garage Opening Protection	R302.5.1 Doors between the garage and dwelling unit now require self-closing devices.	
Fire Protection of Floors	R302.13 (R501.3) With some exceptions, the code now requires 1/2-inch gypsum board or equivalent material to be applied to the underside of floor assemblies in buildings regulated by the IRC.	R302.13 The provisions for fire protection of floors have been relocated from Chapter 5 to the fire-resistant construction provisions of Section R302. New language clarifies that the code does not regulate penetrations or openings in the fire protection membrane.



#### Fire protection of floors

Topic	2012	2015
Mechanical Ventilation	R303 When used for satisfying the ventilation requirements for dwellings, mechanical ventilation must now comply with new provisions in Section M1507 for whole-house ventilation of habitable rooms and local exhaust of bathrooms. A whole-house mechanical ventilation system is now required for any dwelling that is tested with a blower door test and determined to have an air infiltration rate of less than 5 air changes per hour. Definitions for whole-house mechanical ventilation system and local exhaust have been added to Section R202.	
Ventilation Intake Openings	R303.5 The minimum vertical clearance between a contaminant source and an outdoor air intake below has increased from 2 feet to 3 feet.	
Stairway Illumination		R303.7, R303.8 Interior and exterior stairway illumination provisions have been placed in separate sections. Conflicting language has been removed to clarify the requirements.
Minimum Habitable Room Area		R304.1  The requirement for one habitable room with a minimum floor area of 120sf has been removed from the code.

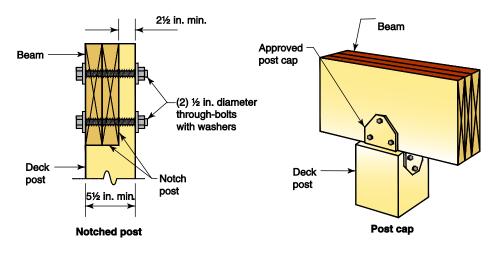
Topic	2012	2015
•	anning (Chapter 3), Continued	,
Ceiling Height		R305 The minimum ceiling height for bathrooms, toilet rooms, and laundry rooms has been reduced to 6ft 8in. The exception for allowing beams, girders, ducts or other obstructions to project to with 6ft 4in of the finished floor has been expanded to include basement with habitable space.
Hazardous Locations for	R308.4	include basement with habitable space.
Glazing	The provisions for hazardous locations related to the installation of glazing have been reorganized for ease of use and consistent application. Each item in the numbered list of hazardous locations has been placed in a separate subsection and given a descriptive title.	
Glazing Adjacent to Doors		R308.4.2 Glazing installed perpendicular to a door in a closed position and within 24in of the door only requires safety glazing if it is on the hinge side of an inswinging door.
Glazing and Wet Surfaces	R308.4.5 The separate provisions regulating glazing near tubs and swimming pools have been consolidated into one subsection titled Glazing and Wet Surfaces.	R308.4.5  The exception from the safety glazing requirement for glazing that is 60 in. or greater from the water's edge of a bathtub, hot tub, spa, whirlpool, or swimming pool has been expanded to include glazing that is an equivalent distance from the edge of a shower, sauna, or steam room.
Glazing Adjacent Stairs and Ramps	R308.4.6 The glazing that is not considered to be in a hazardous location, the rule for the minimum height above a tread at the side of a stairway is now 36 inches to correspond to the height of a guard as previously found in the exception. Other revisions to the test clarify the meaning and application of the glazing requirements at stairways.	
Glazing Adjacent to the Bottom Stair Landing	R308.4.7  The provisions for glazing installed near the landing at the bottom of a stairway have been revised to clarify the application. The threshold for the minimum height above the walking surface is now 36 inches for determining that the glazing is not in a hazardous location.	R308.4.7 Glazing adjacent to the bottom stair landing is now defined as the area in front of the plane of the bottom tread.
Garage Fire Sprinklers	R309.5 In a subdivision where all homes are protected with dwelling fire sprinkler systems, nonrated exterior walls of garages are permitted to be constructed on a lot line when the garage is protected with a fire sprinkler system and meets the other conditions of Section R302.1.	
Emergency Escape and Rescue Openings		R310 The emergency escape and rescue openings provisions have been reorganized. Separate provisions spell out the requirements for windows and doors used for emergency escape and rescue.

Topic	2012	2015
Part 2 Building Pl	anning (Chapter 3), Continued	
Window Well Drainage	R310.2.2  Except for locations with well-drained soils, window wells serving emergency escape and rescue openings now require a means to drain surface water to the foundation drainage system.	
Emergency Escape and Rescue Openings for Additions, Alterations and Repairs		R310.5, R310.6  The basement of a dwelling addition does not require an emergency escape and rescue opening if there is access to a basement that does have an emergency escape and rescue opening. Remodeling of an existing basement does not trigger the emergency escape and rescue opening requirements unless a new bedroom is created.
Stair Risers		R311.7.3, R311.7.5.1  The total vertical rise in a stairway without an intermediate landing has increased from 144in to 147 in. The provision for allowing open risers has been clarified. It is based on the distance above grade or the floor below, not on the total rise of the stair. A new exception clarifies that open risers are permitted on spiral stairways.
Landing for Stairways	R311.7.6  For a turn in a stairway, the IRC now specifically permits angular and curved stair landing with certain dimensions less than 36 inches if the prescribed depth is provided at the walk line and minimum area criteria are satisfied. The maximum vertical rise requirement of 12 feet has been moved from the exception to a new Section R311.7.3.	
Spiral Stairways		R311.7.10.1  The code adds a definition of spiral stairway that omits any requirement for a center post to allow for design flexibility. The code now limits the size of spiral stairways by restricting the radius at the walk line to a dimension not greater than 24 ½ ins. The method of measurement for tread depth now matches the winder provisions and measures at the intersection of the walk line and the tread nosing rather than perpendicular to the leading edge of the tread.
Alternating Tread Devices and Ship Ladders		R311.7.11, R311.7.12  Alternating tread devices and ship ladders have been added to the stair provisions. Neither device is approved for use as a means of egress.
Ramps		R311.8 Ramps that do not serve the required egress door are now permitted to have a slope not greater than 1 unit vertical in 8 units horizontal.
Guard Height		R312.1.2  The provision requiring that the guard height be measured from the surface of adjacent fixed seating has been removed from the code.

Topic	2012	2015
Part 2 Building Pl	lanning (Chapter 3), Continued	
Window Fall Protection	R312.2 The provisions for window fall protection have been relocated from Chapter 6 to Chapter 3. The terminology for window opening control devices has been updated for consistency with the referenced standard ASTM F 2090. Operation criteria found in the 2008 edition of the standard have been deleted from the prescriptive provisions of the IRC.	R312.2  The window fall protection provisions have been revised to clarify the meaning, remove redundant language, and achieve consistency with the IBC provisions.
Smoke Alarms	R314  The code now specifically recognizes wireless technology in lieu of interconnection for smoke alarm installation in both new and existing dwelling units. The interconnection provisions have been moved out of the sections related to location and power source and placed in a new section.	R314 Battery-operated smoke alarms are permitted for satisfying the smoke alarm power requirements when alternations, repairs, and additions occur. Household fire alarm systems no longer require monitoring by an approved supervising station. New provisions address nuisance alarms related to devices installed near bathrooms and cooking appliances.
Carbon Monoxide Alarms	R315 The code now specifically recognizes carbon monoxide detection systems with separate detectors and notification appliances installed in accordance with NFPA 720.	R315 Carbon monoxide alarms now require connection to the house wiring system with battery backup. Exterior work such as roofing, sliding, windows, doors, and decks and porch additions no longer trigger the carbon monoxide alarm provisions for existing buildings. An attached garage is one criterion for requiring carbon monoxide alarms, but only if the garage has an opening into the dwelling. A carbon monoxide alarm is required in bedrooms when there is a fuel-fired appliance in the bedroom and adjoining bathroom. Carbon Monoxide detection systems only require detectors installed in the locations prescribed by the code and not those locations described in NFPA 720.
Thermal Barrier	R316.4 Reference to a new standard, NFPA 275, replaces references to previous standards for determining an acceptable thermal barrier material other than 1/2–inch gypsum wallboard.	R316.4 23/32-inch wood structural panels satisfy the thermal barrier requirements for foam plastic insulation.
Thermal Barrier for Floors	R316.5.13  New provisions allow the installation of structural insulated panels and other materials containing foam plastic insulation as part of a floor system without requiring a thermal barrier on the upper surface. The code requires a minimum ½-inch wood structural panel or equivalent material to protect the foam plastic insulation.	
Flood Hazards		R322.1, R322.2 Section R322.1 is modified to emphasize that the provision applies to existing buildings in flood hazard areas where 50% or more of the structure has damage and requires restoration. Section R322.2 limits the minimum elevation allowed for dwellings in flood hazard areas and defines a Coastal A Zone.
Coastal High-Hazard Areas		R322.3 Coastal A Zones are defined and an exception for foundation types in Coastal A Zones is added.

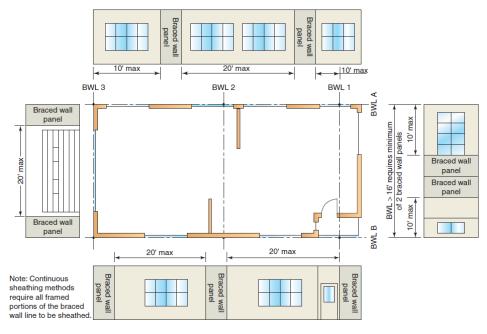
Topic	2012	2015
Part 3 Building Co	onstruction (Chapters 4 - 10)	
Mezzanines	, ,	R325  New provisions place limitations on the construction of mezzanines related to ceiling height and openings consistent with the IBC.
Swimming Pools, Spas and Hot Tubs		R326 The design and construction of pools and spas shall comply with the International Swimming Pool and Spa Code (ISPSC). Appendix G, Swimming Pools, Spas and Hot Tubs, has been deleted.
Minimum Footing Size		R403.1.1  The table for minimum footing size and thickness is divided into three expanded tables based on the type of construction being supported: light frame, light frame with veneer, and concrete or masonry. The values are also based on the type of foundations: slab on grade, crawl space, or basement.
Footing and Stem Wall Reinforcing in Seismic Design Categories $D_0$ , $D_1$ , and $D_2$		R403.1.3 Updated figures sand code provisions in Section R403.1.3 now clearly define minimum required reinforcement in footings and stem walls located in Seismic Design Categories (SDC) D <sub>0</sub> , D <sub>1</sub> , and D <sub>2</sub>
Foundation Anchorage		R403.1.6 Anchor bolts are now required to be placed in the middle third of the sill plate.
Masonry Foundation Walls in SDC $D_0$ , $D_1$ , and $D_2$		R404.1.4.1  Minimum vertical reinforcement in masonry stem walls has been increased from No. 3 bars to No. 4 bars spaced in maximum of 4ft on center in grouted cells.
Isolated Masonry Piers	R404.1.9 The IRC now includes prescriptive provisions for the construction of isolated masonry pier foundations supporting raised floor systems.	cens.
Retaining Walls		R404.4 Retaining walls, freestanding walls not supported at the top, with more than 48ins of unbalanced backfill must be designed by an engineer. Retaining walls resisting additional lateral loads and with more than 24ins of unbalanced backfill must also be designed in accordance with accepted engineering practice.
Foundation Drainage	R405.1 A filter membrane is now required for perforated foundation drains.	
Floor Joist Spans for Common Lumber Species		Tables R502.3.1(1), R502.3.1(2) Changes to Southern Pine (SP), Douglas Fir-Larch (DFL), and Hemlock Fir (HF) lumber capacities have changed the floor joist span length in the prescriptive tables of the IRC. Span lengths for Southern Pine have decreased: lengths for DFL and HF joists have increased.

Topic	2012	2015
Part 3 Building Co	onstruction (Chapters 4 - 10), Conti	nued
Framing of Floor Openings		R502.10 Requirements for header joist and trimmer connections in the framing of floor openings have been deleted. This section conflicted with Section R502.6, which contains minimum bearing lengths for all joists and headers.
Decks	R507 All deck provisions have been relocated to a new section. The prescriptive provisions related to the placement of bolts and lags for deck ledger attachment to the band joist have been revised to correlate with the National Design Specifications (NDS) for Wood Construction.	
Deck Ledger Connection to Band Joist		R507.2  The deck ledger section is reorganized to better describe the minimum requirements for connection of deck ledgers to band joists.
Alternative Deck Lateral Load Connection		R507.2.4  When the prescriptive deck lateral load connection that has appeared in the previous editions of the code is chosen as a design option, the code now requires the two hold-down devices to be within 2 feet of the ends of the deck. A new lateral load connection option prescribes four hold-downs installed below the deck structure.
Decking		R507.4 The code sets the maximum allowable spacing for deck joists supporting the various types of common decking materials.
Deck Joists and Beams		R507.5, R507.6, R507.7  New sections and tables provide prescriptive methods for joists and beams in deck construction. Section R507.5 describes requirements for deck joists, Section R507.6 lists requirements for deck beams, and Section R507.7 describes minimum bearing requirements for joists and beams.



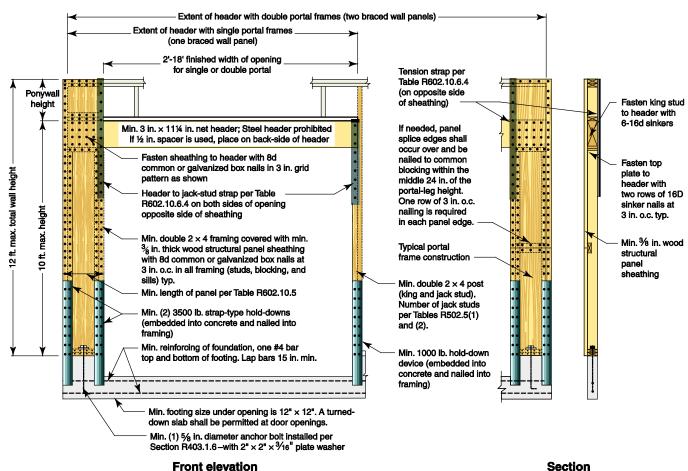
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Topic	2012	2015
Part 3 Building (	Construction (Chapters 4 - 10), Conti	nued
Deck Posts		R507.8  New Section R507.8 establishes minimum sizes of wood posts supporting wood decks and describes the requirements for connection of deck posts to the footing.
Fastener Schedule for Structural Members	Table R602.3 (1) Table R602.3 (1) now includes requirements for nailing roof trusses to plates, abutting studs at intersecting wall corners, and connection of rim board to sill plates.	Table R602.3 (1) The Fastening Schedule now contains multiple nail size options. Roof rafter connections at ridge, valley, and hip are revised. Double top plate splicing is clarified. Clarification of the joist-to-band-joist (rim board) connection is added.
Stud Size, Height, and Spacing		R602.3.1  Table R602.3.1 is deleted and the exception for walls greater than 10ft tall is added to the text of Section R602.3.1. If studs in a tall wall meet Exception 2, they meet the requirements of the IRC and do not need engineering or use of an alternate standard.
Headers	R602.7, Table R602.7.1  The code now includes prescriptive provisions for single member headers under limited conditions.	R602.7, Tables R602.7(1), R602.7(2), R602.7(3), R602.7.5  The girder and header span tables of Chapter 5 have been moved to the header section in Chapter 6, Multi-ply and single header tables are combined. A new section describing rim board headers is added.
Braced Wall Lines	R602.10.1  The section has been reorganized to address braced wall lines only, including provisions for spacing and offsets.	
Braced Wall Panels	R602.10.2 Information on braced wall panels has been placed in one section. Braced wall panels now may be located up to 10 feet from both ends of the braced wall line. Maximum braced wall panel spacing is 20 ft measured edge to edge.	



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Topic	2012	2015	
Part 3 Building Co	Part 3 Building Construction (Chapters 4 - 10), Continued		
Required Length of Bracing	R602.10.3 Information on the required length of wall bracing is consolidated into one section. Wind wall bracing adjustments have been placed in a separate table from the bracing requirements based on wind speed.	Table R602.10.3(1)  Table values for bracing requirements based on wind speed have changed slightly due to use of ultimate design wind speed values to calculate required bracing length.	
Construction Methods for Braced Wall Panels	R602.10.4  Bracing construction methods and the allowable mixing of bracing methods have been grouped into a single section. Braced wall lines that change from exterior to interior wall lines may now mix bracing methods along the braced wall line.		
Minimum Length of a Braced Wall Panel	R602.10.5 Braced wall panel minimum lengths are combined in Table R602.10.5. Other braced wall panel length information also is placed in this section.	Table R602.10.5 The contributing length of continuously sheathed portal frames (Method CS-PF) in low-seismic regions has increased by 50%	
Construction of Methods ABW, PFH, PFG, CS-PF, and BV-WSP	R602.10.6  This change places all of the alternate braced wall panel methods into one section and adds a new Method BV-WSP, Wall Bracing for Dwellings with Stone and Masonry Veneer in Seismic Design Categories D <sub>0</sub> , D <sub>1</sub> , and D <sub>2</sub> .	R602.10.6.2  Due to recent testing of Method PFH (Portal Frame with Hold-downs), the minimum required capacity of the hold-downs is lowered to 3500lbs in the 2015 IRC. Additionally, the new testing confirms that two sill plates are sufficient under each braced wall panel of the portal rather than the three plates used in Method PFH for the 2012 IRC.	



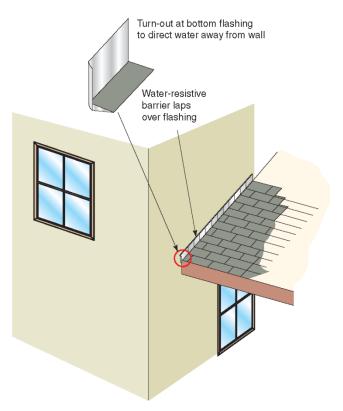
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Topic	2012	2015
Part 3 Building Co	onstruction (Chapters 4 - 10, Contin	ued)
Ends of Braced Wall Lines with Continuous Sheathing	R602.10.7 Braced wall line end conditions for continuous sheathing have been placed in one section. A fifth end condition is defined for braced wall panel connections. When a 48-inch braced wall panel is at the end of a wall line, the code does not require a return panel or hold-down at the corner.	
Braced Wall Panel Support	R602.10.9  Concrete stem walls 48 inches long or less and that are less than 6 inches thick require reinforcement similar to narrow masonry stem walls for supporting braced wall panels.	
Cripple Wall Bracing		R602.10.11  A reduction is no longer required in determining the maximum distance between braced wall panels in a cripple wall. References to the bracing length adjustment tables clarify that increased bracing is required if gypsum wall finish is not applied to the cripple wall.
Simplified Wall Bracing	R602.12 This new section offers an alternative method to braced wall lines for detached dwellings located in SDC A, B, C and townhouses in SDC A or B. The code also places limitations on wind speed, exposure category, building size and other criteria.	R602.12 Simplified wall bracing is now allowed for one-to three-story dwellings and townhouse in Wind Exposure Category B or C with ultimate design wind speeds ( <i>V ult</i> ) of 130 mph or less.
Structural Sheathing over Steel Framing for Stone and Masonry Veneer		R603.9.5 Section R603.9.5 addressing the bracing requirements for cold-formed steel framing with stone or masonry veneer has been expanded to include the higher seismic design categories. This section directs the user to increase bracing length when a structure is located in SCD C, D <sub>0</sub> , D <sub>1</sub> , and D <sub>2</sub> and has stone or masonry veneer.
Grouting Requirements for Masonry Construction		R606.3.5 With reorganization of the masonry wall provisions in the 2015 IRC, the section covering provisions for grouting above-ground masonry walls now combines all the requirements for single, mulitwythe, and reinforced masonry construction in one section. Clarified provisions address grout placement, cleanouts, and construction for all three types of masonry construction.
Drilling and Notching in Structural Insulated Panels Siding Material Thickness and Attachment		R610.7 Drilling and notching provisions for structural insulated panels (SIP) are clarified. R703.3 New code language clarifies limitations of use of Table R703.4 and describes fastener type, length, and penetration criteria. Table R703.4, Weather Resistant Siding Attachment and Minimum Thickness, is simplified.

Topic	2012	2015
Part 3 Building Co	onstruction (Chapters 4 - 10, Contin	nued
Wood, Hardboard, and Wood Structural Panel Siding		R703.5 Minimum spacing based on siding thickness has been moved from 2012 IRC Table R703.4 footnote i, siding attachment and minimum thickness, to 2015 IRC Section R703.5.2, panel siding. Requirements for vertical wood siding have moved from 2012 IRC footnote j to 2015 IRC Section R703.5.1 vertical wood siding.
Wood Shakes and Shingles on Exterior Walls		R703.6  The provisions for the application of wood shakes and shingles on exterior walls have been reorganized to give more information and for ease of use.
Masonry Veneer Lintel	R703.7.3.2  Minimum and Maximum heights of masonry veneer are established for masonry lintels spanning not greater than 18 feet 3 inches.	ized to give more imormation and for ease of use.
Masonry Veneer Anchorage	R703.7.4  The fastener and air space requirements for anchored veneer have been placed in a new table for ease of use. The veneer tie spacing requirements have been modified for consistency with Building Code Requirements and Specification for Masonry Structures (TMS 402/ACI 530/ASCE 5).	
Grout Fill Behind Masonry Veneer	R703.7.4.2  Mortar is no longer permitted to fill the air space behind anchored masonry veneer.	
Exterior Insulation and Finish Systems	bening anchored masonity vehicle.	R703.9 Limitations for exterior insulation and finish systems (EIFS) with and without drainage have been added to the 2015 IRC. EIFS with drainage is required over all wall assemblies except concrete
Vinyl Siding Attachment		and masonry.  R703.11.1  This clarifies nailing penetration and spacing requirements for horizontal and vertical vinyl siding.
Adhered Masonry Veneer	R703.12  Minimum clearance and flashing requirements have been added to apply to the base of adhered masonry veneer on exterior walls.	Julie.
Insulated Vinyl Siding and Polypropylene Siding		R703.13, R703.14  New sections set minimum requirements for insulated vinyl siding and polypropylene siding. Polypropylene siding requires a minimum 5-ft fire separation distance and must maintain 10-ft separation from buildings on other lots.
Cladding Attachment over Foam Sheathing		R703.15, R703.16, R703.17  Three new sections set minimum requirements for cladding attachment over foam sheathing to wood framing (R703.15), cold-formed steel framing (R703.16), and masonry or concrete walls (R703.17). For light-frame construction, prescriptive requirements are given. Connection to concrete and masonry construction continues to require engineered design in most cases when placing foam over the concrete or masonry wall.

Topic	2012	2015	
Part 3 Building C	Part 3 Building Construction (Chapters 4 – 10), Continued		
Ceiling Joist and Rafter Span Tables		Tables R802.4, R802.5 Changes to Southern Pine, Douglas Fir-Larch, and Hemlock Fir capacities have changed the maximum spans for lumber in the ceiling joist and rafter span tables of the IRC.	
Cutting, Drilling, and Notching of Roof Members	R802.7 Text in Section R802.7 has been deleted in favor of referencing Section R502.8.1 for provisions related to cutting, drilling, and notching of solid lumber. Provisions for notching of cantilevered rafters are placed in a new section, and the nominal dimension is replaced by the actual minimum dimension of 3 ½ inches for the remaining portion of the rafter. A new section clarifies the limits for taper cuts on the ends of ceiling joists. Two new figures aid in determine the correct application of cantilevered		
Roof Uplift Resistance	rafters and ceiling joist taper cut requirements.  802.11  The provisions for roof connections to resist wind uplift forces have been updated to current standards and simplified for ease of use. Table R802.11 has been replaced to provide accurate values for both low- and high-slope roofs in Wind		
Roof Ventilation	R806 The provisions for minimum vent area have been revised by placing two exceptions after the general rule to clarify the meaning. The exception for reducing the ventilation area when a vapor retarder is installed on the ceiling now only applies to cold-weather climates. The reduction in vent area based on cross ventilation now requires no less than 40% and no more than 50% (previously 50% and 80%) of the required ventilating area to be placed in the upper portion of the roof and no more than 3 feet below the ridge. The requirement for the upper vents to be at least 3 feet below the ridge. The requirement for the upper vents to be a least 3 feet above the eave vents has been removed.		
Unvented Attic Assemblie		Table R806.5 For unvented attics and unvented rafter spaces, Table R806.5 has a new footnote allowing calculation of insulation thickness when the insulation is placed above the structural roof sheathing.	

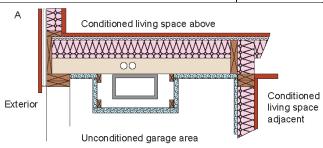
Topic	2012	2015
Part 3 Building Construction (Chapters 4 – 10), Continued		
Roof Flashing Locations	R903.2.1 The general roof flashing provisions for Chapter 9 now require a kick-out flashing where the eave of the roof intersects a wall to prevent water instruction into the wall assembly.	

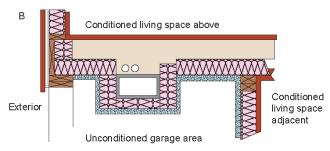


Topic	2012	2015
Crickets and Saddles	R903.2.2 Unit skylights or roof windows must be installed in accordance with the manufacturer's installation instructions, which may not require a cricket even when they exceed 30 inches in width.	
Underlayment	R905.2.7.2  The requirements for installation of roof covering underlayment have been added for high-wind areas. Adhered underlayment that conforms to ASTM D1970 is exempt from the fastening requirements.	R905.1.1, R905.1.2 Roof underlayment provisions have been combined into Section R905.1.1 with three tables listing underlayment type, application, and attachment. Sections on ice barriers from the 2012 IRC are reorganized and combined into Section R905.1.2

Topic	2012	2015
•	onstruction (Chapters 4 - 10), Conti	nued
Sidewall Flashing	R905.2.8.3  For asphalt shingles, the IRC now recognizes both step and continuous base flashings where sloped roofs meet walls. Where the wall has anchored or adhered masonry veneer, or stucco, the provisions are clarified by referencing the applicable section of the code for counterflashing.	
Roof Drip Edge	R905.2.8.5 A roof drip edge is now required for asphalt shingles.	
Wood Shingle Application		R905.7.5 The minimum requirements for application of wood shingles are expanded. Fastener type is clarified and a new table lists minimum sizes for box nails. Labeling requirements for fastener packaging have also been added.
Wood Shake Installation		R905.8.6 The minimum requirements for application of wood shakes are expanded. Fastener type is clarified, and a new table lists minimum sizes for box nails. Labeling requirements for fastener packaging have also been added.
Photovoltaic Shingles		R905.16 Additional requirements and limits for photovoltaic shingles have been added to Section R905.16
Rooftop-Mounted Photovoltaic Systems		907 This code provision describes the requirements and limits of rooftop-mounted photovoltaic.
Recovering versus Replacement of Roofing	R907.3  The hail exposure map, related definitions, and the limitations on reroofing in hail zones have been deleted from the code. A new exception clarifies that the reroofing provisions do not require the removal of self-adhered ice barrier underlayment.	
Masonry Chimney Caps and Rain Caps	R1003.9.1, R1003.3.3  New language includes provisions for commonly used masonry chimney caps and rain caps consistent with ASTM C 1283.	
Factory-Built Chimney Offsets	R1005.7 Factory-built chimney assemblies must be installed vertically with no offsets greater than 30 degrees. No more than four elbows are permitted within the entire length of chimney assembly.	
Part 4 Energy Conservation (Chapter 11)		
Energy Efficiency	Chapter 11 The IRC energy efficiency provisions have been replaced with the applicable residential requirements of the IECC.	
Compliance Paths		N1101.13  The compliance paths in the energy provisions have been clarified. The mandatory provisions combined with either the prescriptive provisions or the performance provisions are deemed to comply with the code.

Topic	2012	2015
Part 4 Energy Con	servation (Chapter 11), Continued	l
Permanent Energy Certificate	N1101.14 (N1101.16)  The permanent certificate must list the results of the blower door test for air leakage of the building envelope and the results of required duct system testing.	N1101.14  The code now requires the permanent energy certificate to be placed on a wall in proximity to the furnace, in a utility room, or in another approved location inside the building.
R-Valve Computation- Insulated Siding		N1102.1.3  The code now allows insulated siding to be used in the calculation for satisfying the wall insulation <i>R</i> -value. The labeled <i>R</i> -value for the siding must be reduced by R-0.6 for calculation purposes.
Access Hatches and Doors		N1102.2.4  Vertical doors that access unconditioned attics and crawl spaces do not require an <i>R</i> -value to match the required wall insulation. Such doors must comply with the fenestration <i>U</i> -factor requirements of Table N1102.1.2.
R-Value Reduction for Walls with Partial Structural Sheathing		N1102.2.7, Table N1102.1.2  The allowed R-value reduction for portions of walls with structural sheathing and requiring continuous insulation has been moved from footnote h of Table N1102.1.2 and placed in a new section to clarify the application.
Floor Framing Cavity Insulation		N1102.2.8, Table N1102.4.1.1  The code now permits an air space above required insulation installed in a floor framing cavity above unconditioned space. Table N1102.4.1.1 has been reformatted into three columns to separate the air barrier requirements from the insulation requirements.
Insulation at Wall Corners and Headers		Table N1102.4.1.1 Insulation requirements at framed wall corners and headers only apply when there is space to install insulation. The minimum insulation thermal resistance is R-3 per inch of insulation.

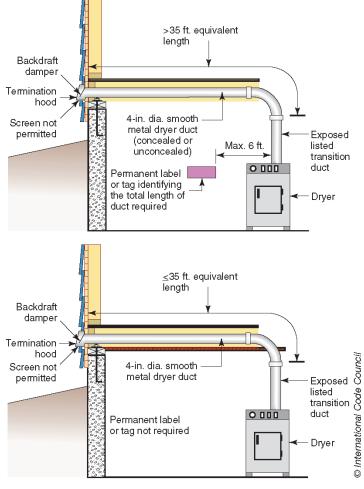




Two options for floor insulation above unconditioned space

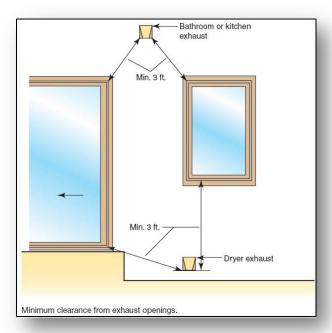
Topic	2012	2015
Part 4 Energy Con	servation (Chapter 11), Continued	
Building Thermal Envelope Testing	N1102.4.1.2  The code requires a blower door test to be performed on all dwelling units to determine compliance with the maximum air leakage rate for the applicable climate zone.	
Wood-burning Fireplace Doors		N1102.4.2, Table N1102.4.1.1  Doors on wood-burning fireplaces must be listed for the application. The requirement for gasketed doors on fireplaces has been removed.
Duct Sealing and Testing		N1103.3  The duct sealing and testing provisions have been reorganized to clarify the application. The maximum duct leakage rates are now prescriptive rather than mandatory provisions to accommodate design flexibility.
Building Cavities	N1103.3.5 (N1103.2.3) Building framing cavities are no longer permitted to be used for ducts or plenums.	
Heated Water Circulation and Temperature Maintenance Systems		N1103.5  The code now requires automatic controls to maintain hot water temperature for heated water circulation systems and for heat trace temperature maintenance systems when such systems are installed. To save energy, continuously operating circulation pumps are no longer permitted. Heat trace systems must comply with one of the referenced standards.
Hot Water Pipe Insulation	N1103.5.3 (N1103.4.2) The code sets minimum insulation requirements for hot water piping.	
Lighting Equipment	N1104.1 High-efficacy lamps are required in at least 75 percent of permanent lighting fixtures.	
Part 5 Mechanica	l (Chapters 12 through 23)	
Identification and Certification of Pipe, Tubing, and Fittings	M1301 All pipe, tubing, and fittings used in mechanical systems now require a manufacturer's mark and third-party testing or certification. New definitions supplement the provisions.	
Locking Access Port Caps	M1411.6 The code now recognizes any approved means to prevent unauthorized access to outdoor refrigerant ports.	

Topic	2012	2015
Part 5 Mechanical (Chapters 12 through 23), Continued		
Dryer Exhaust Duct	M1502.4  The maximum support spacing for dryer exhaust ducts has increased from 4 feet to 12 feet. Dryer exhaust ducts now specifically require mechanical fastening. Screw fasteners are permitted to penetrate the exhaust duct no more than 1/8 inch. The maximum specified length of dryer exhaust duct has been increased from 25 to 35 feet and now matches the corresponding dryer exhaust provisions of the IMC, IFGC, and the IRC fuel-gas provisions.	
Dryer Exhaust Duct Power Ventilators		M1502.4.4, M1502.4.5 The code now recognizes the use of dryer exhaust duct power ventilators (DEDPVs) to increase the allowable exhaust duct length for clothes dryers.
Dryer Duct Length Identification		M1502.4.6 A permanent label identifying the concealed length of the dryer exhaust duct is no longer required where the equivalent duct length does not exceed 35ft. For the dryer exhaust duct exceeding 35ft, a label or tag is required whether the duct is concealed or not.



A permanent label or tag is only required when the equivalent length of the dryer exhaust duct exceeds 35 feet.

Topic	2012	2015	
Part 5 Mechanic	Part 5 Mechanical (Chapters 12 through 23), Continued		
Makeup Air for Range Hoods		M1503.4 Automatic operation of a mechanical damper is no longer required for supplying makeup air for kitchen exhaust systems exceeding a rating of 400 cubic feet per minute (cfm). Transfer openings are permitted to obtain makeup air from rooms other than the kitchen.	
Exhaust Openings	M1506 A minimum clearance of 3 ft is required between air exhaust terminations and openings into the building.		



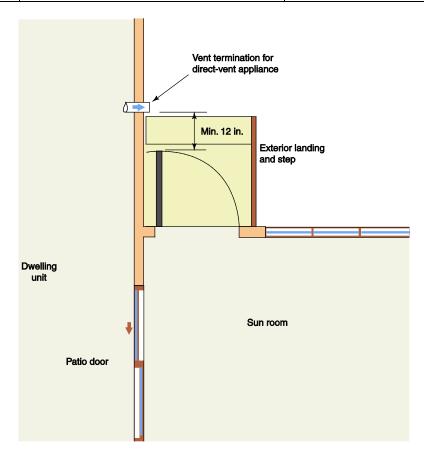
Topic	2012	2015
Exhaust Duct Length		M1506.2  The code establishes maximum exhaust duct lengths based on duct diameter, type of duct and the exhaust fan airflow rating.
Mechanical Ventilation	M1507 Prescriptive design criteria for whole-house ventilation systems have been added to the mechanical ventilation provisions. Mechanical ventilation of kitchens and bathrooms is now described as local exhaust. New definitions for whole-house ventilation and local exhaust have been added to Section R202.	
Above-Ground Duct Systems	M1601.1 Stud cavities of exterior walls are no longer permitted to be used for return air plenums.	
Above-Ground Duct Systems		M1601.1.1, Table M1601.1.1, M1601.2  The list of duct system requirements has been revised to reference the applicable standards and delete redundant language. The table for material thickness of metal ducts was replaced with what is

Topic	2012	2015
'		currently consistent with the SMACNA sheet metal
		construction standard.
Part 5 Mechanic	al (Chapters 12 through 23), Continu	ued
Duct Installation		M1601.4
		Tapes and mastics used to seal sheet metal ducts must be listed to UL 181 B as has been required for sealing flexible ducts. Snap-lock and button-lock seams are no longer exempt from the sealing requirements.
Duct Joints, Seams and	M1601.4.1	
Connections	The IRC provisions for duct connections have been replaced with language from the IMC and now reference the SMACNA HVAC Duct Construction Standards. Unlisted duct tape is not permitted for sealing joints or seams of ductwork.	
Return Air		M1602
		The provisions for return air have been simplified and clarified to improve understanding while preserving the intent of keeping contaminants out of the airstream of the heating, ventilation and airconditioning (HVAC) system. The provisions for outdoor air openings have been removed and the code now references the applicable provisions for outdoor air in Chapter 3.
	M1602.2	
Prohibited Sources of Outdoor and Return Air	The prohibition on taking return air from a garage does not apply to an HVAC system that serves the garage only. Mechanical rooms are no longer listed as prohibited sources of return air. Modifications of the 10-foot rule for separation of return air inlets and fuel-burning appliances clarifies that the requirement applies to the draft hood and open combustion chamber of atmospheric burner appliances, not direct vent appliances with sealed combustion chambers.	
Ranges and Ovens	M1901 The provisions for kitchen ranges have been updated to match those for gas-fired ranges in Section G2447. References in Sections M1504.1 and M1505.1 alert the code user to specific provisions related to installation of cooking appliances above ranges and clearances for open-top broiler units. Mandatory code language now clarifies that cooking appliances used in swellings must be listed and labeled for household use. Commercial cooking appliances are not permitted in dwelling units.	

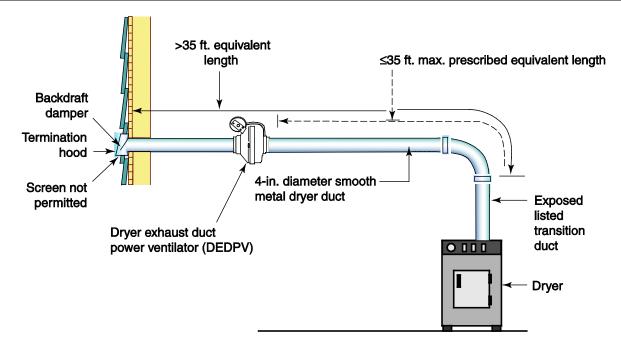
Topic	2012	2015
Part 6 Fuel Gas (C	Chapter 24)	•
Condensate Pumps		G2404.11 Condensate pumps located in uninhabitable spaces must be connected to the appliance to shut down the equipment in the event of pump failure.
Reduced Clearance to Combustible Materials	G2409.1 Gypsum board is now specifically identified as a combustible material for purposes of determining required clearances around gas-fired appliances.	
Electrical Bonding of Corrugated Stainless Steel Tubing		G2411.1.1  The maximum allowable length of the bonding jumper for corrugated stainless steel tubing (CSST) is 75ft. Bonding methods must comply with NFPA 70 and devices, such as clamps, must be listed in accordance with UL 467.
Pipe Identification and Certification	G2412, G2415 All pipe, tubing, and fittings used in a fuel-gas system now require a manufacture's mark and third-party testing or certification. New definitions supplement the provisions.	
Maximum Gas Demand		G2413.2  Table G2413.2 and the reference to it were deleted to clarify that the code requires the actual maximum input rating of the appliances to be known and used for gas pipe sizing purposes.
Plastic Pipe, Tubing and Fitting		G2414.6 PVC and CPVC pipe are expressly prohibited materials for supplying fuel gas.
Fittings in Concealed Locations		G2415.5  This section retains the basic intent while being completely reorganized to clarify the correct application. Threaded elbows, tees and coupling are now specifically approved for concealed locations as the code always intended. The code now provides the applicable referenced standards for fittings that are listed for concealed locations.
Protection of Concealed Piping Against Physical Damage		G2415.7  The section on protection of piping has been completely rewritten to address more than just bored holes and notches in structural members. It now addresses piping parallel to framing members and piping within framing members. The new text requires that the protection extend well beyond the edge of members that are bored or notched.
Sediment Trap	G2419.4 A new figure illustrates the correct configuration of a sediment trap. Gas-fired decorative vented appliances installed in vented fireplaces and gas fireplaces are not required to be equipped with a sediment trap.	
Medium-Pressure Regulators		G2421.2  Medium-Pressure (MP) line regulators installed in rigid piping must have a union installed to allow removal of the regulator.

#### 2015 International Residential Code –Transition from the 2009 IRC

Topic	2012	2015	
Part 6 Fuel Gas (C	Part 6 Fuel Gas (Chapter 24), Continued		
Connecting Portable and Movable Appliances		G2422.1 Where portable gas appliances are used outdoors, such as gas grills, fire pits, and patio heaters, the options for connecting to the gas distribution system are practically limited to gas hoses designed for the purpose. Such hoses must comply with ANSI Z21.54.	
Door Clearance to Vent Terminals		G2426.7.1  An appliance vent terminal is not permitted in a location with 12 inches of the arc of a swinging door.	

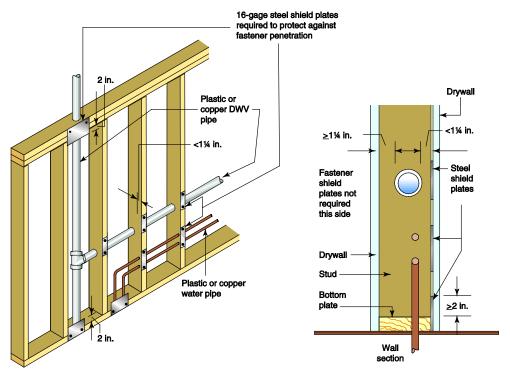


Topic	2012	2015	
Part 6 Fuel Ga	Part 6 Fuel Gas (Chapter 24), Continued		
Plastic Piping for Appli Vents	ance	G2427.4.1, G2427.6.8.3  The approval of plastic pipe for venting appliances is no longer a responsibility of the building official and, instead that responsibility rests with the appliance manufacturer and the appliance listing agency. The code previously addressed only vents, which are defined as listed and labeled factorymade products. The code is no longer silent on the sizing of plastic pipe vents that do not fall under the definition of "vent".	
Venting System Termination Location		G2427.8  New text addresses the location of sidewall vent terminals with respect to adjoining buildings. A 10-foot separation is required when a vent discharges in the direction of an opening in an adjacent building.	
Clothes Dryer Exhaust Ducts		G2439.4, G2439.7  New text recognizes the use of dryer exhaust duct power ventilators (DEDPVs) to increase the allowable exhaust duct length for clothes dryers. A permanent label identifying the concealed length of dryer exhaust duct is no longer required where the equivalent duct length does not exceed 35ft. For dryer exhaust duct exceeding 35ft, a label or tag is required whether the duct is concealed or not. Instead of prohibiting all duct fasteners such as screws and rivets, the code now limits the penetration of fasteners, where installed.	



Topic	2012	2015
Part 6 Fuel Gas (	Chapter 24), Continued	
Prohibited Sources of Outdoor and Return Air	G2442.4 For an HVAC system that services the garage only, return air is permitted to be taken from the garage. The requirement for a 10-foot separation between return air inlets and fuel-burning appliances applies only to the draft hood and open combustion chamber of atmospheric burner appliances, not direct vent appliances with sealed combustion chambers.	
Prohibited Location of Commercial Cooking Appliances		2447.2 The code does not prohibit the installation of cooking appliances that are listed as both commercial and domestic appliances.
Part 7 Plumbing	(Chapter 25 through 33)	
Inspection and Tests for Building Sewer		P2502.1, P2503.4  New text clarifies the method for examining existing building sewers and building drains when the entire sanitary drainage system is replaced. Internal examination is required to verify the size, slope, and condition of the existing piping. A new provision prescribes a pressure test for a forced sewer at a test pressure of 5psi (34.5 kPa) greater than the pump rating.
Drain, Waste, and Vent Systems Testing		P2503.5 The head pressure for a water test on drain, waste, and vent (DWV) systems has been reduced from 10ft to 5ft.
Rough Plumbing Test	P2503.5.1  The IRC no longer permits air testing of plastic piping in DWV systems.	
Connections to Drainage Systems	P2601.2 Waste water from lavatories, bathtubs, showers, clothes washers, and laundry trays I now defined as gray water and is permitted to be discharged to an approved gray-water system.	

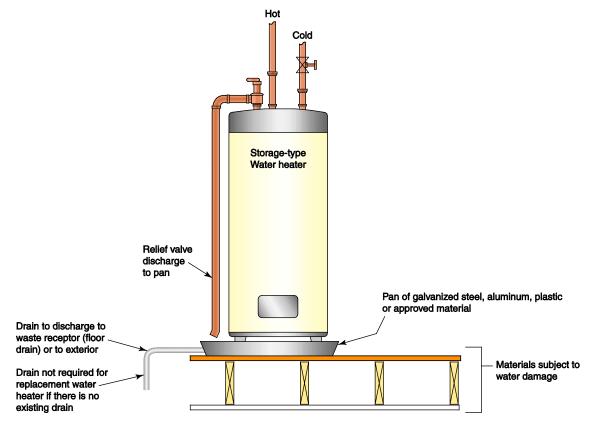
Topic	2012	2015
Part 7 Plumbing (	Chapter 25 through 33), Continued	1
Protection Against Physical		P2603.2.1
Damage		For piping installed through bored holes or in
		notches, the minimum clearance distance from the
		concealed piping to the edge of the framing
		member has been reduced from 1 ½ in to 1 ¼ in.
		Protection is required for piping installed less than
		1 ¼ in from the edge of the framing member.



Topic	2012	2015
Protection Against		P2603.3
Corrosion		The minimum thickness of sheathing material for protection of piping against corrosion has been reduced from 0.025 in to 0.008 in (8mil). The corrosion protection requirement applies to metallic piping other than cast iron, ductile iron, and galvanized steel that is in direct contact with concrete, masonry or steel framing. Previously, protection was only required for materials passing through walls and floors of these materials. All metallic piping requires corrosion protection when located in corrosive soils.
Pipes through Foundation	P2603.4	
Walls	A sleeve or relieving arch is not required for pipes passing under a footing.	
Piping Support		Table P2605.1
		Support spacing requirements for PEX and PE-RT
		tubing 1 ¼ in and greater in diameter have been
		added to the table. Footnote b of Table P2605.1
		clarifies the mid-story guide requirements for some
		types of vertical pipe 2 ins and smaller in diameter.

Торіс	2012	2015
Part 7 Plumbing (	Chapter 25 through 33), Continued	1
Sealing of Annular Spaces	P2606 Provisions for sealing pipe penetrations of the building envelope have been placed in a new section and revised to more precisely prescribe the approved types of materials and their correct application. The new language also correlates with the provisions for sealing against air leakage in the IECC.	
Identification and	P2609.1, 2609.4	
Certification	Pipe, fittings, and plumbing components are required to meet the marking requirements of the applicable referenced standard in addition to bearing the identification of the manufacturer. The code now requires all plumbing products and materials to be listed by a third-party certification agency. Table P2608.4 and third-party testing requirements have been deleted.	
Plumbing Fixtures, Waste	P2702.1, P2706.1	P2702.1, P2706.1
Receptors	The definition of plumbing fixture has been revised to include receptacles and devices that discharge to the drainage system but are not connected to a water supply, such as a floor drains and standpipes. The requirement for strainers on plumbing fixture outlets has been clarified by specifically excluding hub drains and standpipes. Attics and crawlspaces are now listed as prohibited locations for waste receptors and standpipes. Clothes-washer standpipes are permitted to be installed in bathrooms.	A definition of waste receptor has been added to the code. Waste receptors are now permitted in bathrooms and closets.
Shower Receptors and Lining	P2709.1, P2709.2  The distance shower liners must extend above finished thresholds has been reduced from 3 inches to 2 inches. Minimum thickness requirements for PVC and CPE shower liners have been deleted in favor of requirements in referenced standards.	
Dishwashing Machines		P2717 The code now references the applicable standards for integral air gaps protecting the potable water supply to dishwashers. The term "food waste disposer" replaces "food waste grinder." Section P2717.2 and P2717.3 regarding dishwasher discharge to the sink tailpiece or the food waste disposer have been combined into a single Section P2717.2, eliminating redundant language and improving understanding of the provisions.

Topic	2012	2015
Part 7 Plumbing (	Chapter 25 through 33), Continued	1
Water Heater Drain Valves and Pans	P2801.5  The provisions for safety pans under water heaters have been clarified by prescribing such protection for water heaters with storage tanks only. Tankless water heaters do not require pans.	P2801 The code now specifically requires drain valves with a threaded outlet for water heaters. The water heater pan requirements have been expanded to accept aluminum and plastic pans of the prescribed thickness. The code clarifies that a pan drain is not required when a water heater is replaced and there is no existing drain.

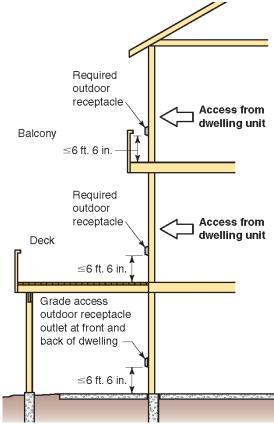


Topic	2012	2015
Water Heater Relief Valve Discharge Piping		P2804.6.1  The temperature and pressure (T&P) relief valve discharge pipe termination must have an air gap suitable to protect the potable water supply distribution system of the building. PEX and PE-RT tubing used for relief valve discharge piping must be one size larger than the T&P valve discharge
		outlet, and the outlet end of the tubing must be fastened in place.

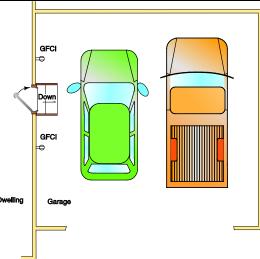
Topic	2012	2015
	Chapter 25 through 33), Continued	i
Nonpotable Water Systems		P2901, P2910 through P2913  Nonpotable water outlets, such as hose connections, that utilize nonpotable water must be identified with a warning and a symbol that nonpotable water is being used. The color purple is established for identifying distribution piping conveying nonpotable water. New Sections P2910 through P2913 are extracted from the IgCC and intend to provide guidance on the collection, storage, and distribution of various types of nonpotable water for residential buildings.
Minimum Fire Sprinkler Separation from Obstructions	P2904.2.4.2 A new figure provides prescriptive values for minimum separation distances between fire sprinklers and obstructions. Lesser distances are permitted in accordance with the manufacturer's installation instructions.	
Heated Water Distribution Systems		P2905 Pointers have been added to the IRC plumbing provisions to direct the user to the applicable energy conservation provisions of IRC Chapter 11 related to heated water distribution systems. Section N1103.5 requires automatic controls to maintain hot water temperature for heated water circulation systems and for heat trace temperature maintenance systems when such systems are installed.
Lead Content of Drinking Water Pipe and Fittings		P2906.2 The code has a more stringent limitation for lead content in pipe, pipe fittings, joints, valves, faucets, and fixture fittings that convey water used for drinking and cooking.
Solvent Cementing of PVC Joints		P3003.9  The application of a primer to drain, waste, and vent PVC pipe and fittings prior to solvent cementing is not required for 4-inch pipe size and smaller, provided that the piping is for a non-pressure application.
Joints between Drainage Piping and Water Closets	P3003.19 Use of waste connector and sealing gasket is now permitted as an alternative to a flanged connection for floor-mounted water closets.	
Cleanouts		P3005.2  The section on cleanouts has been completely reorganized and reworded for clarity. Brass cleanout plugs are only permitted for metallic piping. Where located at a finished wall, the cleanout must be within 1 ½ in of the finished surface. A cleanout is no longer required at the base of each waste or soil stack.

Topic	2012	2015
Part 7 Plumbing (	Chapter 25 through 33), Continued	
Ejector Connection to the Drainage System	P3007.3.5 The discharge from ejector pumps is now permitted to connect to soil stacks, waste stacks, and horizontal branch drains in addition to building sewers and building drains.	
Backwater Valves	<b>0</b>	P3008.1 For existing buildings, fixtures that are located above the next upstream manhole cover are allowed to discharge through a backwater valve.
Vent Terminals		P3103.1, P3103.2  Where a minimum 3-inch diameter vent terminal is required to prevent frost blockage in cold climates, the 3-inch diameter pipe must extend at least 12 in inside the building's thermal envelope. The minimum 7-foot height requirement for vent terminations applies only to roofs used for purposes similar to residential decks, patios and balconies.
Location of Vent Terminal	P3103.5 The minimum clearance to vent terminations above openings within 10 feet has been increased from 2 feet to 3 feet.	
Trap Seal Protection Against Evaporation		P3201.2 Trap seal protection against evaporation can now be accomplished in a variety of ways, including trap seal primer valves supplied with nonpotable water and barrier-type trap seal protection devices
Part 8 Electrical (	Chapters 34 through 43)	
Concrete-Encased Electrodes	E3608.1.2 The provisions for concrete-encased electrodes have been broken into separate parts to clarify the meaning and application.	
Supplemental Electrode Required	E3608.4 A rod, pipe, or plate electrode requires a supplemental electrode unless testing confirms that the single electrode has a resistance to earth of 25 ohms or less.	

Topic	2012	2015
Part 8 Electrical (Ch	apters 34 through 43), Continued	
Outdoor Outlets	E3901.7  An outdoor outlet is now required for any size of deck, porch, or balcony that is accessible from inside the swelling unit.	



Topic	2012	2015
Receptacle Outlets for		E3901.9
Garages		Garage receptacle outlets must be served by a
		separate branch circuit that does not supply other
		outlets. At least one receptacle outlet is required
		for each car space in a garage.



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Торіс	2012	2015
Part 8 Electrical (	Chapters 34 through 43), Continued	d
Receptacle Outlets in Foyers	E3901.11 When exceeding 60 square feet in area, foyers in dwelling units now require receptacle outlets.	
Ground-Fault Circuit Interrupter Protection		E3902.8, E3902.9, E3902.10  Laundry areas have been added to the list of locations requiring ground-fault circuit interrupter (GFCI) protection. Receptacles within 6 feet of bathtubs and showers, and receptacles for dishwashers also require CFGI protection.
Location of Ground-Fault Circuit Interrupters	E3902.11 When provided, ground-fault circuit interrupter devices must be placed in a readily accessible location.	
Boxes at Fan Outlets	E3905.8  When a ceiling outlet box is wired for a future ceiling fan, the box must be listed for the support of a ceiling fan.	
Switching Controlling Lighting Loads	E4001.15 Unless a means of access for rewiring is provided, a grounded circuit conductor must be provided at the switch outlet.	
Tamper-Resistant Receptacles	E4002.14  Receptacles that are located more than 5-1/2 feet above the floor, are part of a luminaire or appliance, or in a dedicated space for an appliance are no longer required to be tamper-resistant.	
Location of Low-Voltage Luminaires Adjacent to Swimming Pools		E4203.4.3 Listed low-voltage luminaires meeting the prescribed conditions are permitted to be located less than 5 feet from the water's edge of swimming pools, spas, and hot tubs.
Bonded Parts of Pools, Spas, and Hut Tubs	E4204.2 Where walls are at least 5 feet high and less than 3 feet from the edge of the pool, equipotential bonding is required on the pool side of the wall only. Metal parts, including awnings, fences, and door and window frames constructed of metal, require bonding if located within 5 feet of the edge of the pool.	
Accessibility to Electrical Equipment of Hydromassage Bathtubs	E4209.3  When located behind access panels and serving hydromassage bathtubs, receptacle outlets must have their face in direct view and within 1 foot of the access opening.	

#### 2015 International Residential Code –Transition from the 2009 IRC

Topic	2012	2015			
Part 9 Appendices	Part 9 Appendices				
Light Straw-Clay Construction		Appendix R  Prescriptive requirements for light straw-clay construction have been added as an appendix to the 2015 IRC. Light straw-clay walls are non-bearing infill around a structural frame.			
Strawbale Construction		Appendix S Prescriptive requirements for strawbale construction have been added as an appendix to the 2015 IRC. Strawbale walls may be non-bearing infill around a structural frame or bearing walls depending upon the method of construction and detailing. Appendix S contains requirements for both construction methods.			

# **Notes**

# **Notes**

# **Notes**

# 2018 IRC Update

Based on the 2018 International Residential Code,® (IRC®)



The *International Residential Code*<sup>®</sup> (IRC<sup>®</sup>) establishes minimum regulations for residential construction.

This handout will identify important changes in the IRC from 2015 to 2018 edition. Participants will be presented with those changes that will most impact their use of the code when they adopt these I-Codes. The learner will receive an overview of the most important code changes.

#### Goal

Participants will be able to use this document to identify changes between the 2015 and 2018 IRC allowing them to apply theses code requirements to design, plan submittals and/or inspection.

The lecture and activity format allows participants to discuss the changes, reasons for the changes, and answer knowledge review questions. Information presented will allow participants to apply these new code requirements to design, plan review, and/or inspection.

### **Objectives**

Upon completion, participants will be better able to:

- Identify the most significant differences between the 2015 and the 2018 IRC.
- Explain the differences between the current and previous edition.
- Identify changes in organization and code requirements.
- Identify the applicability of design, plan review and inspection requirements.

#### **Content**

Chapters of the IRC included in this handout:

- Chapter 1, Scope and Administration
- Chapter 3, Building Planning
- Chapter 4, Foundations
- Chapter 5, Floors
- Chapter 6, Wall Construction
- Chapter 7, Wall Covering
- Chapter 8, Roof-ceiling Construction
- Chapter 9, Roof Assemblies
- Chapter 10, Chimneys and Fireplaces

- Chapter N11, Energy Efficiency
- Chapter M13, General Mechanical System Requirements
- Chapter M16, Duct Systems
- Chapter M21, Hydronic Piping
- Chapter G24, Fuel Gas
- Chapter P 25, Plumbing Administration
- Chapter P27, Plumbing Fixtures
- Chapter P28, Water Heaters
- Chapter P29, Water Supply and Distribution

- Chapter P30, Sanitary Drainage
- Chapter P31, Vents
- Chapter E37, Branch Circuit and Feeder Requirements
- Chapter E39, Power and Lighting Distribution
- Chapter E41, Appliance Installation
- Appendix Q, Tiny Homes

	Chapter 1: Scope and Administration				
Code Section		Section Title	Description of Change		
2018	2015	Section Title	Joon Provide Charles		
Modification R101.2	R101.2	Scope	All instances where the International Building Code (IBC) permits construction under the IRC are now listed in the exception to the scope of the IRC.		
Clarification R105.1, R110.1, R202	R105.1, R110.1, R202	Change of Occupancy	A definition for "Change of Occupancy" has been added and the requirement for a certificate of occupancy when there is a change of occupancy or use has been clarified.		

ľ	Chapter 3: Building Planning			
Code Section		Section Title	Description of Change	
2018	2015	occion Title	Description of Ghange	
Modification Table R301.2(1)	Table R301.2(1)	Climatic and Geographic Design Criteria	The requirement for a Manual J assessment or engineered equivalent has been in the International Residential Code for several editions. To assist the designer, jurisdictions will now include variables for Manual J assessments with other climatic and geographic design criteria available from the building department.	
Modification R301.2.2.1	R301.2.2.1	Seismic Design Category	New seismic design category (SDC) maps are included in the 2018 IRC. One map contains the most conservative 'good quality' soil type, assuming Site Class C or D, and may increase the local SDC. The second map is allowed if the site is identified as being Site Class A, B or D by geotechnical report or known local soil conditions; this map may lower the design spectral response acceleration, $S_{DS}$ , potentially lowering the seismic design category.	
Modification R302.1	R302.1	Exterior Walls	References to the International Building Code (IBC) offer additional options and provide flexibility in determining the fire resistance rating of exterior wall assemblies. Table footnotes have been revised to clarify the correlation between gable end vents and the fire resistance requirements for projections.	
Modification R302.2	R302.2	Townhouse Separation	Two paths for achieving the fire-resistant separation between townhouse dwelling units – two 1-hour walls or a common wall – are spelled out in the townhouse provisions.	
Modification R302.13	R302.13	Fire Protection of Floors above Crawl Spaces	Fire-resistant membrane protection is now required for the applicable floor framing materials above crawl spaces containing fuel-fired or electric-powered heating appliances.	

Chapter 3: Building Planning, Continued			
Code Section		Continu Title	Description of Ohen pe
2018	2015	Section Title	Description of Change
Modification R308.4.2	R308.4.2	Glazing Adjacent to Doors	Glazing within 24 inches of the hinge side of an in-swinging door now requires safety glazing where the glazing is at an angle less than 180 degrees from the plane of the door.
Modification R308.4.4	R308.4.4	Glazing in Guards and Railings	Unless laminated glass is used, structural glass baluster panels in guards now require an attached top rail or handrail.
Clarification R308.4.7	R308.4.7	Glazing Adjacent to the Bottom Stair Landing	Figure R308.4.7 has been replaced with a new figure and the caption modified to more accurately reflect when safety glazing is required near the bottom landing.
Modification R310.1	R310.1	Emergency Escape and Rescue Openings	Emergency escape and rescue openings are no longer required for bedrooms in basements when the dwelling unit is protected with an automatic fire sprinkler system and other conditions are met.
Modification R310.3	R310.3	Area Wells for Emergency Escape and Rescue Doors	For emergency escape and rescue doors in basements, a change in terminology replaces "bulkhead enclosures" with "area wells" and provisions for ladders and steps for area wells are added.
Modification R311.7.1, R311.7.8	R311.7.1, R311.7.8	Handrail Projection	A new exception to the handrail projection limitation provides for adequate clearance behind the handrail when it passes the projection of a floor, landing or tread return.
Modification R311.7.3	R311.7.3	Maximum Stair Rise between Landings	The maximum rise of a flight of stairs has increased by 4 inches, from 147 to 151 inches.
Modification R311.7.11, R311.7.12	R311.7.11, R311.7.12	Alternating Tread Devices and Ships Ladders	Alternating tread devices and ships ladders are now permitted as a means of egress for lofts with an area that does not exceed 200 square feet.
Clarification R312.1	R312.1	Guards	The guard requirements only apply to the specific portion of a walking surface that exceeds 30 inches above grade.
Modification R314	R314	Smoke Alarms	The exemption for interconnection of alarms during alterations based on feasibility has been removed from the code.
Modification R315	R315	Carbon Monoxide Alarms	Interconnection is now required where multiple carbon monoxide alarms are required in a dwelling unit.

	Chapter 3: Building Planning, Continued			
Code Section		Section Title	December of Change	
2018	2015	Section Title	Description of Change	
Modification R322.3	R322.3	Coastal High- Hazard Flood Zones	In coastal high-hazard areas (V Zones) and Coastal A Zones, the IRC now provides specific guidance for the design and construction of concrete slabs, stairs, guards, decks and porches to reduce damage to the dwelling in a flood event.	
Addition R324.6		Roof Access for Photovoltaic Solar Energy Systems	Requirements for roof access and pathways for firefighters have been introduced into the IRC provisions for rooftop mounted photovoltaic solar energy systems.	
Addition R324.6.2.2		Solar Panels near Emergency Escape and Rescue Openings	Rooftop mounted photovoltaic solar energy panels and modules are not permitted to be installed below emergency escape and rescue openings.	
Modification R325.3		Mezzanine Area Limitation	The area limitation for mezzanines has been increased from one-third to one-half of the area of the room containing the mezzanine under certain conditions.	
Addition R325.6, R202		Habitable Attics	The definition of habitable attic has been revised and the technical requirements have been placed with mezzanines.	

	Chapter 4: Foundations				
Code Section		Section Title	Description of Ohemon		
2018	2015	Section Title	Description of Change		
Modification Table R403.3(1)	Table R403.3(1)	Insulation requirements for frost protected footings	Insulation thickness requirements for Type II and IX extruded polystyrene (EPS) have changed. The minimum R-value for specific types of EPS has been clarified while requirements for horizontal insulation were added.		
Modification Table R403.4	Table R403.4	Crushed stone footings	Table R403.4 is updated to include both the minimum depth and width of a crushed stone footing for a precast concrete wall.		
Modification R408.3	R408.3	Unvented crawl space	Ventilation of the under-floor space is not required when an adequately-sized dehumidifier is provided.		

	Chapter 5: Floors				
Code S	ection	Section Title	Description of Change		
2018	2015	Section Title	Description of Change		
Modification R507	R507	Decks	Section R507 is reorganized for ease of use and additional provisions are added to simplify prescriptive construction of a deck.		
Modification R507.2	R507.2, R507.3	Deck materials	Section R507.2 adds requirements for fasteners and fastener connections, flashing and alternative materials.		
Addition R507.3		Deck footings	A new section on footing minimum size is added to help describe minimum prescriptive (non-engineered) requirements for an exterior deck footing based on snow load, soil quality, and footing shape and size.		
Clarification R507.6	R507.5	Deck joists	Maximum joist spacing and total length have been clarified. In Table R507.6, maximum span length is listed followed by maximum cantilever length.		
Clarification R507.7- R507.9	R507.2, R507.4	Decking, Vertical and Lateral Support	Decking material options and fastener systems are clarified. Vertical and horizontal support of an exterior deck is updated while support and attachment of ledgers is added to the decking section.		

	Chapter 6: Wall Construction			
Code S	ection	Section Title	Description of Change	
2018	2015	Section Title	Description of Change	
Addition Table R602.3(6)		Alternate Stud Height	To help clarify when studs greater than 10 feet long may be used, an exception is added to Section R602.3.1 as well as a reference to new Table R602.3(6) which applies only to 11- and 12-foot tall walls in one- and two-story buildings.	
Modification Tables R602.7(1), R602.7(2)	Tables R602.7(1), R602.7(2)	Girder and Header Spans	Girder and header spans are updated assuming No. 2 Southern Pine rather than No. 1 Southern Pine as used in the 2015 IRC. A footnote is added to clarify that headers and girders are assumed to be braced; for headers with pony walls above, a further reduction in span is taken for 2x8 and larger headers.	
Modification Table R602.7.5	Table R602.7.5	Support for headers	The 2015 IRC full height stud table is significantly altered. The table increases the number of king studs in higher wind regions and requires only one or two king studs at each end of a header in regions with 115 mph wind speeds.	
Modification Table R602.10.3 (4)	Table R602.10.3 (4)	Seismic Adjustment Factors	Attempts to clarify roof and ceiling dead loads in the top story of a multistory dwelling and use of the BV-WSP bracing method have been added. Table R602.10.3(4) now allows use of Methods WSP and CS-WSP with brick veneer in the second story of a dwelling.	

	Chapter 6: Wall Construction, Continued				
Code Section		Section Title	Description of Change		
2018	2015	Section Title	Description of Change		
Modification R602.10.4.1	R602.10.4.1	Mixing bracing methods	Mixing of continuous sheathing methods with an intermittent alternate bracing method is clarified. Braced wall line(s) containing an alternate method must have sufficient bracing length for an intermittent method, not just for the continuous sheathing method when the alternate method is Method PFH, PFG or ABW.		
Modification R602.10.6.5	R602.10.6.5	Method BV-WSP	An attempt to clarify use of the BV-WSP method is made. New limits are added to Section R602.10.6.5.		
Modification Tables R603.3.1, R603.3.1.1 (2)	Tables R603.3.1, R603.3.1.1 (2)	Cold-Formed Steel Wall Construction	Cold-formed steel connection tables are updated for wind speeds less than 140 miles per hour. Values in the IRC tables now match AISI S230, Standard for Cold-Formed Steel Framing - Prescriptive Method for Oneand Two-Family Dwellings.		

	Chapter 7: Wall Covering				
Code S	Section	Section Title	Description of Change		
2018	2015	occion rite			
Modification R703.2	R703.2	Water-resistive barrier	Water-resistive barrier materials other than No. 15 asphalt felt must be installed following the manufacturer's installation instructions. The exemption for detached accessory buildings is deleted.		
Modification R703.3.1	R703.3.1, R703.11.1.4	Soffit installation	Requirements for wood structural panel soffits are added to Section R703.3.1 and vinyl soffit requirements are clarified.		
Modification R703.8.4	R703.8.4	Veneer anchorage through insulation	Masonry veneer is explicitly allowed to attach to through insulation into the underlying wood structural panels. Attachment must follow Table R703.8.4(2).		
Modification R703.11.2	R703.11.2	Vinyl siding installation over foam plastic sheathing	Testing has been done on vinyl siding over insulation in an attempt to determine fastener requirements for vinyl siding attachment in high wind regions. New Table R703.11.2 gives design wind pressures for vinyl siding resisting all wind loads without reliance on wood structural panel sheathing.		

# 2018 IRC Update

	Chapter 8: Roof-Ceiling Construction				
Code S	Section				
2018	2015	Section Title	Description of Change		
Modification R802	R802	Roof Framing	Section R802, Design and construction of roofs, has been clarified by dividing the content into three separate sections on roof ridges, rafters and ceiling joists.		
Modification R802.1.5.4	R802.1.5.4	Labeling	Each stick of fire-retardant-treated lumber and individual wood structural panel will be labeled with eight specific items of information		
Modification R806.2	R806.2	Minimum vent area	The minimum vent area exception is clarified, stating that net free ventilation may be less than 1/150 only if two required conditions are met. Lower vents must be located in the bottom third of the attic space.		

	Chapter 9: Roof Assemblies			
Code Section		Soction Title	Description of Change	
2018	2015	Section Title	Description of Change	
Addition R905.17		Building Integrated Photovoltaic Panels	New Section R905.17 addresses installation and attachment of building-integrated photovoltaic (BIPV) roof panels.	

Chapter 10: Chimneys and Fireplaces				
Code Section		Spation Title	Description of Change	
2018	2015	Section Title	2000 ipiloli di Ghango	
Addition R1005.8		Chimney insulation shield	Factory-built chimneys, which have been required to maintain a minimum clearance to insulation, are now required to have an insulation shield to provide the clearance to the insulation.	

	Chapter 11: Energy Efficiency				
Code Section		Continu Title	Description of Change		
2018	2015	Section Title			
Clarification N1101.6, Tables N1101.10.3 (1) and N1101.10.3 (2)	Tables N1101.10.3		The definitions for skylights and vertical fenestration have been moved under the definition for fenestration, and a definition for opaque door has been added.		

	Chapter 11: Energy Efficiency, Continued			
Code Section			Description of Change	
2018	2015	Section Title	Description of Change	
Modification N1102.1	N1102.1	Building Thermal Envelope for Log Homes	Log homes are now exempt from the prescriptive building thermal envelope requirements when designed in accordance with ICC-400, Standard on the Design and Construction of Log Structures.	
Modification N1102.1.2 and N1102.1.4	N1102.1.2 and N1102.1.4	Insulation and Fenestration Requirements	The prescriptive U-factors for fenestration have been lowered to improve the energy efficiency of dwellings and townhouses.	
Modification N1102.2.2	N1102.2.2	Reduction of Ceiling Insulation	When applying the exception for insulation in ceilings without attics, the insulation must extend to the outside of the top plate.	
Clarification N1102.2.5	N1102.2.5	Mass Walls	The mass wall provisions have been itemized in a numbered list to bring accuracy and clarity to the technical requirements.	
Modification N1102.2.6	N1102.2.6	Cold-Formed Steel Framing R- Values	Conflicting entries have been removed from the table establishing cold-formed steel R-values equivalent to those for wood framing.	
Modification N1102.4	N1102.4	Testing for Air Leakage	A new standard for air-leakage testing, RESNET/ICC 380, is now referenced in the IRC to provide flexibility for the testing industry.	
Addition N1103.3.6 and N1103.3.7		Ducts Buried within Ceiling Insulation	New provisions address the methods, minimum coverage requirements and thermal benefits for ducts buried within ceiling insulation, and when those ducts are considered inside the building thermal envelope.	
Modification N1104.1	N1104.1	Lighting	The required percentage of permanent lighting fixtures having high-efficacy lamps has increased from 75 to 90 percent.	
Modification N1106.3, N1106.4	N1106.3, N1106.4	Maximum Energy Rating Index	The maximum rating index values based on climate zone have increased slightly to make the ERI provisions less restrictive and improve the flexibility of the energy provisions.	

	Chapter M13: General Mechanical System Requirements				
Code Section Section Title Description of Change					
2018	2015	Section Title	becomplied of change		
Deletion M1305.1.1	M1305.1.1	Access to Furnaces within Compartments	The appliance access requirements for furnaces in compartments have been removed from the code in favor of other code provisions and the manufacturer's instructions.		
Modification M1305.1.3.2	M1305.1.4.2	Appliances Installed in Pits	The requirements for appliance installation in pits has been expanded to provide more detail and to be similar to language found in other ICC codes. The minimum bottom clearance has been reduced from 6 inches to 3 inches.		

	Chapter 15: Exhaust Systems				
Code S	ection	Section Title	Description of Change		
2018	2015	Section Title	ı ü		
Modification M1502.3.1	M1502.3.1	Dryer Exhaust Duct Termination	A minimum area of 12.5 square inches has been established for the terminal outlet of dryer duct exhaust.		
Modification M1502.4.2	M1502.4.2	Concealed Dryer Exhaust Ducts	Wall and ceiling cavities enclosing dryer exhaust duct must provide sufficient space that the 4-inch duct is not squeezed out of its round shape.		
Modification M1503.6	M1503.6	Makeup Air for Kitchen Exhaust Systems	Makeup air for domestic cooking exhaust systems is no longer required if all fuel-burning appliances in the dwelling unit have a direct vent or mechanical draft vent system.		

	Chapter M16: Duct Systems			
Code Section		Continu Title	Description of Change	
2018	2015	Section Title	becomplied of change	
Modification M1601.1.2		Underground Duct Systems	Underground ducts, including both direct-burial ducts and those encased in concrete, require sealing and testing.	

	Chapter M21: Hydronic Piping				
Code S	ection	Section Title	Description of Change		
2018	2015	Section little	Sompton of the second		
Modification M2101.10	M2101.10		Compressed air testing of PEX hydronic piping is now allowed when testing is in accordance with the manufacturer's instructions.		
Modification M2103.2	M2103.2	for Radiant Floor	For hydronic floor heating systems, the minimum insulation R-values have been removed from Section M2103.2 and a reference to the energy provisions of Chapter 11 has been added.		

	Chapter G24: Fuel Gas			
Code Section			Description of Change	
2018	2015	Section Title	Decemplion of Onlings	
Modification G2406.2	G2406.2	Prohibited Locations for Appliances	A gas-fired clothes dryer is now allowed to be installed in a bathroom and toilet room where a permanent opening communicates with other permitted spaces.	
Modification G2411.2, G2411.3	G2411.2, G2411.3	Electrical Bonding of CSST	The existing provisions for electrical bonding apply to CSST without an arcresistant jacket or coating and a new section addresses electrical continuity and bonding of arc-resistant CSST.	
Modification G2414.4.2, G2414.10.1	G2414.4.2, G2414.10.1	Schedule 10 Steel Gas Piping	The code now allows Schedule 10 steel pipe to be used for fuel gas piping.	
Modification G2415.11	G2415.11	Protection against Corrosion	Reorganization of this section includes new provisions to address corrosion protection of underground steel gas piping and protection for steel risers other than anodeless risers.	
Clarification G2420.5.1	G2420.5.1	Shutoff Valve Location	Shutoff valves located behind movable appliances are considered as meeting the requirement for access.	
Addition G2420.6		Support for Shutoff Valves in Tubing Systems	Shutoff valves in gas tubing systems require rigid support separate from the tubing to prevent damage at the valve connection.	
Deletion G2442.2	G2442.2	Forced Air Furnace Duct Size	The prescriptive duct size requirements for forced air furnaces have been deleted in favor of other sizing methods specific to the appliance.	
Modification G2447.2	G2447.2	Commercial Cooking Appliances	Commercial cooking appliances are now permitted in dwelling units when installed in accordance with an engineered design and the manufacturer's instructions.	

# 2018 IRC Update

ľ	Chapter P25: Plumbing Administration				
Code Section		Section Title	Description of Change		
2018	2015	Section Title	2 cccpc.r of offungo		
Modification P2503.7	P2503.7	Air Testing of PEX Piping	Compressed air testing of PEX water supply piping is now allowed when testing is in accordance with the manufacturer's instructions.		

	Chapter P26: General Plumbing Requirements				
Code S	ection	- Section Title	Description of Change		
2018	2015				
Modification P2602.1	P2602.1	Connections to Public Sewer or Private Sewage Disposal System	The International Private Sewage Disposal Code (IPSDC) is referenced for installation of private sewage disposal systems where there are no state or local requirements for such systems.		

	Chapter P27: Plumbing Fixtures				
Code S	ection	- Section Title	Description of Change		
2018	2015				
Modification P2704	P2704	Slip Joint Connections	Slip joint connections are permitted anywhere between the fixture outlet and the drainage piping, and are no longer limited to the trap inlet, outlet and trap seal locations.		
Modification P2713.1	P2713.1	Bathtub Overflow	Bathtub overflow outlets are no longer required.		

	Chapter P28: Water Heaters			
Code Section		Ocation Title	Description of Change	
2018	2015	Section Title	2 cool, phon c. c. analgo	
Modification P2801.6	P2801.6	Plastic Pan for Gas-Fired Water Heaters	Plastic safety pans are now allowed under gas water heaters provided the material falls within the prescribed flame spread and smoke developed indices.	

	Chapter P29: Water Supply and Distribution			
Code S	ection	Section Title	Description of Change	
2018	2015	Section Title		
Modification P2902.5.4, P2904.	P2902.5.4, P2904.	Backflow Protection for Fire Sprinkler Systems	Sections P2902.5.4 and P2904.1 are revised and coordinated to clarify that stand-alone and multipurpose fire sprinkler systems complying with Section P2904 or NFPA 13D do not require backflow protection under most circumstances.	
Modification P2903.5	P2903.5	Water Hammer Arrestors	A water hammer arrestor is now required where quick-closing valves are used in the water distribution system.	
Addition P2906.6.1	P2906.6.1	Saddle Tap Fittings on Water Distribution Piping	Saddle tap fittings are no longer permitted on water distribution system piping.	
Modification P2906.18.2	P2906.18.2	Joints between PVC and CPVC Piping	A single solvent-cement transition joint is now an acceptable method for connecting a CPVC water distribution system to a PVC water service pipe.	

	Chapter P30: Sanitary Drainage			
Code S	ection	- Section Title	Description of Change	
2018	2015		g.	
Modification P3003.2	P3003.2	Prohibited Joints for Sanitary Drainage	A solvent cement joint is now permitted for joining ABS and PVC piping at the connection of the building drain to the building sewer.	
Modification P3005.1.6	P3005.1.6	Reduction in Pipe Size	Water closet flanges, offset bend fittings and offset flanges are now specifically listed as exceptions to the provision that drainage piping must not be reduced in size in the direction of flow.	

	Chapter P31: Vents			
Code S	ection		Description of Change	
2018	2015	Section Title	2000 pilon o change	
Modification P3103.1	P3103.1	Vent Pipe Terminations	The provisions for vent terminals have been reorganized and a new option has been added to allow a 2-inch vent extension through a sloped roof when the vent is covered.	
Modification P3111	P3111	Combination Waste and Vent System	Food waste disposers and drinking fountains are now permitted to connect to a combination waste and vent system.	
Modification P3114.8	P3114.8	Prohibited Installations for Air Admittance Valves	An air admittance valve cannot be used to resolve the problem of an open vent terminal that is too close to a building air intake.	

Chapter E37: Branch Circuit and Feeder Requirements				
Code Section		O and a Title	Description of Change	
2018	2015	Section Title	Dood splich of Ghange	
Addition E3703.5		Garage Branch Circuits	A separate 20-ampere branch circuit is now required to serve receptacle outlets of attached garages and detached garages with electric power.	

	Chapter E39: Power and Light Distribution			
Code S	ection	Section Title	Description of Change	
2018	2015	Section Title		
Modification E3901.2	E3901.2	Wall Space for Receptacle Distribution	Cabinets with countertops are now considered wall space in determining required locations for general purpose receptacle outlets.	
Modification E3901.3	E3901.3	Appliances on 15 Amp Circuits	An individual 15-ampere branch circuit is permitted to serve any specific kitchen appliance.	
Addition E3902.4		GFCI Protection for Crawl Space Lighting Outlets	Ground-fault circuit-interrupter (GFCI) protection is now required for lighting outlets of crawl spaces.	
Addition E3905.2.1		Nonmetallic- Sheathed Cable and Metal Boxes	Where entering a metal box, nonmetallic-sheathed cable must extend into the box at least 1/4 inch and extend past the cable clamp.	

	Chapter E41: Appliance Installation				
Code Section		Continu Title	Description of Change		
2018	2015	Section Title	Description of Change		
Modification E4101.3	E4101.3	Cord- and-Plug- Connected Appliances	The maximum cord lengths for range hoods and built-in dishwashers have increased and the code clarifies that the receptacle outlet for the dishwasher has to be in the space adjacent to the appliance.		

Appendix Q: Tiny Houses					
Code Section		Section Title	Description of Change		
2018	2015	Section Title	2 cccpc.i on ango		
Appendix Q Addition		Tiny Houses	A new Appendix Q covers provisions for tiny houses, defined as dwellings with a maximum floor area of 400 square feet.		



# ESTIMATED COSTS OF THE 2018 IRC CODE CHANGES

**Prepared For** 

**National Association of Home Builders** 

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#### ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

ACCA Air Conditioning Contractors Association

ACH50 Air changes per hour at a test pressure differential of 50 Pascals

ASCE American Society of Civil Engineers

ASHRAE American Society of Heating, Refrigeration and Air-Conditioning Engineers

BPS Builder Practices Survey—national survey conducted annually by Home Innovation

Research Labs

Bsmt. Basement

BWL Braced wall line

ccSPF Closed-cell spray polyurethane foam insulation

CF Cubic feet

CFM Cubic feet per minute (a measure of flow)

CS-PF Bracing method consisting of a continuously sheathed portal frame around a large door

or window opening

CY Cubic yards

CZ Climate Zone, as defined by the International Code Council (ICC)

DOE Department of Energy

EA Each

ERI Energy Rating Index

ERV Energy recovery ventilator

FEMA Federal Emergency Management Agency

Gal Gallon

HERS Home Energy Rating System

HR Hour

HRV Heat recovery ventilator

HVAC Heating, ventilation, and cooling

ICC International Code Council

IECC International Energy Conservation Code

IRC International Residential Code

LB Pounds
LF Linear feet
MPH Miles per hour

NEHRP National Earthquake Hazard Reduction Program

O&P Overhead and profit
OSB Oriented strand board

PF Portal frame

PSF Pounds per square foot

RCD Residential Cost Data 2017, RSMeans

SDC Seismic design category

SF Square feet

SHGC Solar heat gain coefficient, a measure of the reflectivity versus the absorbed radiation of

glass; the lower the SHGC number, the less radiation is absorbed by the glass unit

SOG Slab-on-grade

U-Factor U-value; a measure of the conductance of building components like windows and doors;

the lower the U-Factor the less conductive the component, or the higher the R-value,

which is the inverse of U-value

USGS United States Geological Society

WRB Water-resistive barrier

XPS Extruded polystyrene (rigid foam sheathing)

#### **BACKGROUND**

The National Association of Home Builders (NAHB) provided a list of code changes approved for the 2018 International Residential Code (2018 IRC). Home Innovation Research Labs (Home Innovation) estimated the expected cost impact of these code changes on construction practices and materials for a number of reference houses sited in various cities nationwide. Cost estimates are aggregated in ranges of high to low based on various methods or components that might be used to comply with the code.

#### **METHODOLOGY**

#### **National Construction Cost**

Reference houses and their site locations were initially defined in a report titled *Estimated Costs of the 2015 Code Changes*.<sup>2</sup> The four reference houses were selected for their similarity to new home offerings in the six metropolitan areas selected as site locations - Miami, Dallas, Los Angeles, Seattle, New York, and Chicago, and their size proximity to a national average of 2,607 SF.<sup>3</sup> Elevations and floor plans for these reference houses are provided in *Appendices C through F*. These single-family detached houses define the reference or base house that provides the starting point for estimation of the added cost (or savings) of each code change for the 2018 IRC relative to the 2015 IRC or IECC.

Cost impacts in this analysis have been developed primarily with data adapted from the following sources: (1) RSMeans' *Residential Cost Data 2017*;<sup>4</sup> (2) *ASHRAE 1481 RP*<sup>5</sup> and similar reports by Home Innovation; (3) U.S. government reporting from the Census<sup>6</sup> and the Bureau of Labor Statistics;<sup>7</sup> and (4) distributors' or big box retailers' websites. Where a source other than these is used, it is cited in *Appendix A* when applicable to a specific code change.

Costs are reported at the national level and can be modified for a region using builders' known bid prices or by applying a location factor adjustment shown in *Appendix B*. For individual code changes shown in Appendix A, costs are reported as both total to the builder and total to consumer. The total cost to builder includes overhead and profit (designated in the tables as "w/O&P") applied to individual component costs (i.e., materials and labor) to represent the cost charged by the sub-contractor. The total cost to consumer is based on the builder's gross margin, reported as 18.9% of construction cost in the 2016 Cost of Doing Business<sup>8</sup>. The cost summaries shown in Table 6 and Table 7 show the total cost to consumer only.

<sup>&</sup>lt;sup>1</sup> International Code Council, <u>www.iccsafe.org/Pages/default.aspx</u>

<sup>&</sup>lt;sup>2</sup> www.homeinnovation.com/trends and reports/featured reports/estimated costs of the 2015 irc code changes

 $<sup>^{\</sup>rm 3}$  Taylor, Heather. 2014. Cost of Constructing a House.

www.nahb.org/generic.aspx?sectionID=734&genericContentID=221388&channelID=311

<sup>&</sup>lt;sup>4</sup> http://rsmeans.reedconstructiondata.com

<sup>&</sup>lt;sup>5</sup> NAHB Research Center, 2009. Economic Database in Support of ASHRAE 90.2 1481 RP.

https://www.google.com/#q=ashrae+1481+rp

<sup>&</sup>lt;sup>6</sup> http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk

<sup>&</sup>lt;sup>7</sup> http://www.bls.gov/oes/current/oes\_nat.htm#47-0000

<sup>8</sup> National Association of Home Builders. 2016. Cost of Doing Business Study: 2016 Edition. https://builderbooks.com

#### **Reference House Configurations**

The four building designs (see *Appendices C-F*) used in this analysis are based on the data contained in the Census Bureau report, *Characteristics of New Single-Family Construction Completed*. The report provides information about building foundation type (Table 1) and number of stories for new single-family detached construction over the previous nine-year period. (Table 2).

**Table 1. New Construction Foundation Types** 

Slab	54%
Crawlspace	17%
Basement	30%

**Table 2. New Construction Number of Stories** 

One-story	53%
Two-story	43%
Three-story	3%

The Census data supports defining the four reference houses as follows to encompass approximately 85% of the last decade's new single-family construction:

- One-story on slab foundation
- Two-story on slab foundation
- One-story on basement foundation
- Two-story on basement foundation

Table 3 covers the locations where each type of reference house foundation would be pragmatically constructed. All of these selected cities, except Chicago, lie within the top ten states for construction starts in 2013. 10 Chicago was selected to represent a Climate Zone 5 house.

Table 3. Sites for Reference Houses

Reference House	Climate Zone	1	2	3	4
Foundation		Slab	Slab	Basement	Basement
Miami	1	Χ	Χ		
Los Angeles	3	Χ	Χ		Χ*
Dallas	3	Χ	X		Χ*
Seattle	4	Χ	X	Χ	Χ
New York	4	Χ	Х	X	Χ
Chicago	5			Х	Χ
Fairbanks	8			Χ	X

Based on the data compiled by Home Innovation from the 2013 Builder Practices Survey (BPS) $^{11}$ , a nationwide annual survey, the typical Heating, Ventilation, and Cooling (HVAC) systems used in new

<sup>&</sup>lt;sup>9</sup> www.census.gov/construction/chars/completed.html

 $<sup>^{10}\,\</sup>underline{www.census.gov/construction/bps/pdf/2013statepiechart.pdf}$ 

<sup>11</sup> www.homeinnovation.com/trends and reports/data/new construction

houses are summarized in Table 4. According to the BPS, 44% of new homes are cooled with a central air conditioner. These results influenced the selection of a gas furnace with central (electric) air conditioner as the HVAC system in each of the reference houses.

**Table 4. Typical HVAC Systems Supplied with New Houses** 

Feature	% of Stock
Furnace or Boiler, natural gas or propane	48%
Central Air Conditioner, electric	44%
Standard Heat Pump with Backup Heat	41%
Geothermal Heat Pump	4%
Electric furnace, baseboard, or radiant	4%
Furnace or Boiler, oil	2%

#### Reference House Features

The statistics presented in the foregoing tables support reference house features that are detailed in Table 5.

**Table 5. Features of the Reference Houses** 

Reference House	1	2	3	4
Square Feet	2,607	2,607	2,607	2,607
Foundation	Slab	Slab	Basement	Basement
Number of Stories	1	2	1	2
Number of Bedrooms	3	4	3	4
Number of Bathrooms	2	2.5	2	3
Garage, attached	2-car	2-car	2-car	2-car
Heat, Gas Furnace	Yes	Yes	Yes	Yes
Cooling, (Electric) central air	Yes	Yes	Yes	Yes
Hot Water, Gas 50 gallon tank	Yes	Yes	Yes	Yes
9 ft. Ceilings, 1st	Yes	Yes	Yes	Yes
8 ft. Ceilings, 2 <sup>nd</sup>	n/a	n/a	Yes	Yes
Energy Star appliances	Yes	Yes	Yes	Yes
Laundry Room	Yes - Mudroom	Yes	Yes - Mudroom	Yes - Closet
Walls, 2x4 (Climate Zones 1 & 2)	Yes	Yes	n/a	n/a
Walls, 2x6 (Climate Zones 3 thru 8)	n/a	n/a	Yes	Yes
Bsmt., Conditioned, Unfinished	n/a	n/a	Yes	Yes
Furnace Location	Attic	Attic	Basement	Basement
Water Heater Location	Interior	Garage	Basement	Basement
Window SF/% gross wall	360/18%	315/12%	360/18%	330/12%
Cladding	Brick, 4 sides	Brick, 4 sides	Brick, 4 sides	Stucco
Roof Pitch	12/12	6/12	9/12	4/12

The furnace location has been designated as a platform in the attic for both slab reference houses, a practice that is common in Florida and Texas, where the weather is temperate year-round, and thus, the location is practical. A house built on a slab foundation in a cold climate zone would have the HVAC and water heating equipment located within conditioned space.

#### **RESULTS**

#### Estimated Cost of 2018 Code Compliance for Reference Houses by Location

Table 6 summarizes the estimated cumulative impact of the 2018 code changes on the cost of constructing the reference houses. For the purpose of cost aggregation, it was assumed that reference houses were not built in coastal zones or subject to flooding. The aggregated costs are reported in ranges of "High" and "Low" impact based on the applicability of the changes to the features of the reference houses. These changes typically affect elements required or provided in the majority of houses constructed, or non-mandatory code provisions likely to be used by a builder. The results are grouped into four climate zone categories to accommodate the energy efficiency changes in this code edition.

Table 7 summarizes the cost estimates of the code changes that do not apply to the selected reference houses and locations and are not included in the aggregated summary. These changes typically apply only in specific locations (e.g. hurricane-prone areas or flood zones), to items that would be an optional feature for most homes (e.g. decks), or to alternative methods of compliance. Those costs can be added to or subtracted from the aggregated costs in Table 6 as applicable to a particular location or a specific building. A detailed analysis of each individual code change is provided in *Appendix A*.

**Table 6. Estimated Cost to Consumer of 2018 Code Compliance** 

		Select	ed Cities	Mia Los An	•	Dallas, S New	•	Chic	ago	Fairb	anks	
			te Zones	1 8	-	3 8		5 -		8		-
			ce Houses	1 8	. 2	1, 2, 3	3, & 4	3 8	4 4	3 8	4	
Ref#	Code Change	2018 IRC	2018 IRC				Cost Ra					Notes
		Chapter	Reference	High	Low	High	Low	High	Low	High	Low	
R-8 (RB229)	Support for headers: revises table for minimum number of king studs; now only requires 1 or 2 for low-wind urban and suburban conditions.	Wall Construction	R602.7.5	(493)	(516)	0	(210)	0	(90)	0	(90)	Houses with wall openings greater than 3 feet.
R-11 (RB303)	Masonry veneer: adds new provisions for brick tie attachment over foam sheathing and direct to 7/16" sheathing.	Wall Covering	R703.8.4	N/R	N/R	N/R	N/R	325	(73)	325	(73)	Houses with brick veneer and continuous insulation
E-1 (RE31)	Reduces the maximum window U-factor requirement in Climate Zones 3-8.	Energy Efficiency	Table N1102.1.2	N/A	N/A	85	74	85	78	85	78	Houses in Climate Zones 3-8
E-6 (RE127)	Lighting efficiency: increases the percent of permanently installed lighting fixtures that must contain high-efficacy lamps from 75% to 90%.	Energy Efficiency	N1104.1	8	8	8	8	8	8	8	8	Houses in all climate zones
M-1 (RM36)	Duct sealing: eliminates the requirement for sealing longitudinal seams of snaplock and button-lock types of HVAC ducts located inside conditioned space	Duct Systems	M1601.4.1	0	(129)	0	(471)	(348)	(471)	(348)	(471)	Houses with metal HVAC ducts located inside conditioned space
		Consumer		(485)	(637)	93	(599)	70	(548)	70	(548)	

Table 7. Additional Costs to Consumer of 2018 Code Compliance Not Attributed to the Reference Houses

		Selected		Los A	imi, ngeles	New	Seattle, York		ago _		anks	
		Climate			<u> </u>		§ 4		- 7		3	
		Reference		1 8	<u> </u>	1, 2,	3, & 4		<b>&amp;</b> 4	3 8	<u> 4</u>	
Ref#	Code Change	2018 IRC Chapter	2018 IRC Reference	High	Low	High	Cost Ra	nge (\$) High	Low	High	Low	Notes
R-1 (RB17)	Seismic Design Categories: updates the seismic design maps in Section R301.2 to be consistent with those in the 2014 NEHRP Provisions and ASCE 7-16.	Building Planning, Seismic Design Category	R301.2.2.1	7,111	2,446	7,111	2,446	7,111	2,446	7,111	2,446	Applicable where the revised map triggers a change in the assigned SDC
R-2 (RB160)	Flood-Resistant Construction: adds new requirements for exterior slabs (e.g. parking pads, sidewalks) based on ASCE 24.	Building Planning, Flood- Resistant Construction	R322.3.4	2,092	(1,084)	2,092	(1,084)	2,092	(1,084)	2,092	(1,084)	Applicable in coastal high- hazard areas (Zone V) and Coastal A Zones.
R-3 (RB161)	Flood-Resistant Construction: adds new provisions requiring stairways and ramps to be flood resistant, breakaway or be able to be raised.	Building Planning, Flood- Resistant Construction	R322.3.6	11,107	(823)	11,107	(823)	11,107	(823)	11,107	(823)	Applicable in coastal high- hazard areas (Zone V) and Coastal A Zones.
R-4 (RB200)	Decks: reorganizes deck beam requirements and adds minimum spans for single ply beams.	Floors, Exterior Decks	R507	0	(101)	0	(101)	0	(101)	0	(101)	Applicable if a deck is installed
R-5 (RB207)	Decks: adds minimum footing size table for decks and pointer to frost depth requirements.	Floors, Exterior Decks	R507.3	127	(72)	127	(72)	127	(72)	127	(72)	Applicable if a deck is installed
R-6 (RB212)	Decks: relocates deck post section and adds 8x8 posts to the table. Clarifies maximum height for 4x4 posts.	Exterior Decks	R507.4	199	0	199	0	199	0	199	0	Applicable if a deck is installed
R-7 (RB218)	Stud Size, Height & Spacing: adds new table for 11' and 12' tall load-bearing studs.	Wall Construction	R602.3.1	(462)	(998)	(462)	(998)	(435)	(971)	(435)	(971)	Applicable for bearing walls exceeding 10' tall but not exceeding 12' tall.

		Selected	d Cities	Mia Los A	ami, ngeles	•	Seattle, York	Chic	ago	Fairba	anks	
		Climate	Zones	18	<u> </u>	3 8	<b>&amp;</b> 4	5 -	7	8		
		Reference	e Houses	1 8	<u> </u>	1, 2,	3, & 4	3 &	4	3 &	4	'
Ref#	Code Change	2018 IRC	2018 IRC				Cost Ra	nge (\$)				Notes
1101 #		Chapter	Reference	High	Low	High	Low	High	Low	High	Low	
R-9 (RB276)	Vapor Retarders: adds polypropylene siding to list of vented cladding products.	Wall Covering	R702.7.3	N/A	N/A	(119)	(381)	(119)	(381)	(119)	(381)	Applicable in CZ 4C (Marine) and 5 through 8
R-10 (RB284)	Water-Resistive Barriers: deletes exception for detached accessory buildings.	Wall Covering	R703.2	271	51	271	51	271	51	271	51	Applicable for detached accessory buildings
R-11 (RB303)	Masonry Veneer: adds new provisions for brick tie attachment over foam sheathing and direct to 7/16" sheathing.	Wall Covering	R703.8	325	(73)	325	(73)	325	(73)	325	(73)	Houses with brick veneer and continuous insulation
R-12 (RB327)	Unvented Attics: adds new option for constructing an unvented attic with airpermeable insulation if vapor diffusion ports and minimum air flow is provided.	Roof-Ceiling Construction	R806.5	(1,583)	(9,185)	(1,583)	(9,185)	N/A	N/A	N/A	N/A	Houses with unvented attics in CZ 1-3
E-2 (RE99, RE110)	Introduces criteria to allow buried or partially buried ducts and to model buried ducts as R-25.	Energy Efficiency	N1103.3.6	2,057	(731)	2,057	(731)	N/A	N/A	N/A	N/A	Optional method for houses with HVAC ducts in vented attics
E-3 (RE100)	Introduces criteria to allow buried ducts to be performance modeled as if inside conditioned space.	Energy Efficiency	N1103.3.6	2,866	(4,064)	2,866	(4,064)	N/A	N/A	N/A	N/A	Optional method for houses with HVAC ducts in vented attics
E-4 (RE121)	Introduces minimum fan efficacy for HRVs and ERVs.	Energy Efficiency	N1103.6.1	0	(857)	0	(857)	0	(857)	0	(857)	Applicable where an HRV/ERV is installed
E-5 (RE173)	Increases ERI values approximately 10%; also adds a backstop for homes complying with the ERI using on-site generation.	Energy Efficiency	N1106.4	optional measure	ERI path f	or code co	I to decreas empliance. ost savings.	This report	t does not	identify in	dividual	Applicable in all climate zones

# APPENDIX A: DESCRIPTION AND COST IMPACT OF 2018 IRC CODE CHANGES

#### R-1 (RB17)

IRC R301.2 Climatic and geographic design criteria, Fig. R301.2(2), Fig. R301.2(3), R301.2.2.1.1, R301.2.2.1.2

# Summary of Code Change:

The code change updates the seismic design maps to be consistent with those in the 2014 NEHRP Recommended Seismic Provisions and ASCE 7-16 Minimum Design Loads for Buildings and Other Structures.

This code change proposal revises the seismic design category map. The revised map represents an update of the previous map based on a new analysis of earthquake faults conducted by the USGS and increases to the site amplification factors for stiff soils and soft rock. For some jurisdictions located at the boundaries between the adjacent seismic design categories, the result is shifting to a higher seismic design category (see Table R-1-A). It is also noted that in some areas the change results in a downgrade of the seismic design hazard and lowering of assigned seismic design category.

Table R-1-A. Summary of Changes to a Higher Seismic Design Category

SDC Change	Where impacted?	Impact
$A \rightarrow B$	Multiple locations of limited geographical area around the country in non-seismic areas.	No impact on construction.
B → C	A few locations around the country with low-to-moderate seismicity with rural or mountainous areas in Colorado, Wyoming, and Utah the primary areas impacted. Some areas in Oklahoma, New England (particularly New Hampshire) and around the New Madrid Seismic Zone are also impacted.	Limited impact on townhouse construction in SDC C.
$B \rightarrow D_0$	Isolated areas in rural Colorado and Utah.	Substantial impact on bracing provisions.
$C \rightarrow D_0, D_1, D_2$	Isolated areas around the country including eastern Tennessee, Arkansas, Oklahoma, and Utah.	Substantial impact on bracing provisions.
$D_0$ , $D_1$ , $D_2 \rightarrow E$	Areas in California, coastal Oregon, and coastal Washington, and near Charleston South Carolina (all primarily $D_2 \rightarrow E$ ).	Engineered design is required.

#### Cost Implication of Code Change:

The cost impact of transitioning from seismic design category C to seismic design categories  $D_0$  and  $D_2$  is evaluated for a one-story and a two-story reference home based on a structural analysis report for those two homes<sup>12</sup>. The results are summarized in Tables R-1-B through R-1-E. In addition, several structural engineering firms from different regions of the country were contacted for estimates of their engineering fees for wall bracing design. Engineering fees from the survey averaged \$1,150 for an analysis, documentation, and drawings based on the reference homes (\$1,367 to consumer). The cost of

<sup>&</sup>lt;sup>12</sup> Jay H. Crandell, P.E., *Code Comparative Bracing Analysis for Two Representative House Plans,* Rev. Sep 2015, ARES Consulting, as reported in *Estimated Costs of the 2012 IRC Code Changes, Appendix H: ARES Consulting Bracing Report*, Home Innovation Research Labs, Oct 2015. <a href="http://www.homeinnovation.com/">http://www.homeinnovation.com/</a>~/media/Files/Reports/2012-IRC-Cost-Analysis.pdf

engineered lateral design for the entire house is reported for cases where the prescriptive design is not permitted (transition from SDC D to SDC E). The cost of construction is not included in this scenario. Given a broad range of design tools available to engineers, it is possible that the use of engineering design will allow for optimized solutions for the building that do not result in construction cost increases relative to generic prescriptive options. However, other engineers, particularly those not familiar with residential construction, may make conservative simplifications or assumptions, in which case an engineered design may result in additional construction cost increases.

Several geotechnical engineering firms from different regions of the country were contacted for estimates of their fee to conduct a study to determine soil type and seismic design category. Engineering fees ranged from \$950 to \$2,200 for a soil test and report. One firm in California quoted \$500 for a report without a field study based on using their map library and the seismic hazard maps published by the State of California and various cities and counties. They indicated that in some cases local jurisdictions accept this type of analysis for assigning seismic design categories. The additional cost of a geotechnical report can be offset by the savings in construction costs in the case where the report showed a downgrade in seismic design category.

Table R-1-B. Change in Wall Bracing and Foundation Costs for Reference House 1 - One-story (SDC C to SDC Do)

BWL#	Component	Unit	w/O&P	Qty	Cost
А	Engineering Fee	HR	150.00	1	150.00
Α	Galvanized Plate Washers	EA	3.60	16	57.60
В	Engineering Fee	HR	150.00	1	150.00
В	Gypsum board fastened 7" oc	SF	0.30	144	43.20
В	Galvanized Plate Washers	EA	3.60	8	28.80
В	Thickened Slab at Interior Braced Wall Panels	LF	9.70	16	155.20
С	Galvanized Plate Washers	EA	3.60	13	46.80
1	Galvanized Plate Washers	EA	3.60	8	28.80
2	Gypsum board fastened 7" oc edge/field	SF	0.30	108	32.40
2	Galvanized Plate Washers	EA	3.60	6	21.60
2	Thickened Slab	LF	9.90	12	118.80
3	Gypsum board fastened 7" oc edge/field	SF	0.30	108	32.40
3	Galvanized Plate Washers	EA	3.60	6	21.60
3	Thickened Slab	LF	9.90	12	118.80
4	Gypsum board fastened 7" oc edge/field	SF	0.30	108	32.40
4	Galvanized Plate Washers	EA	3.60	6	21.60
4	Thickened Slab	LF	9.90	12	118.80
5	CS-PF Panels	EA	20.40	2	40.80
5	Galvanized Plate Washers	EA	3.60	6	21.60
All Ext	Vertical cold joint dowels at 48" oc	LF	0.49	256	125.44
All Ext	Horizontal footing reinforcement	LF	1.52	256	389.12
	Attach BWP to roof framing, est.				300.00
	Total to Builder				2,055.76
	Total to Consumer				2,446.35

Table R-1-C. Change in Wall Bracing and Foundation Costs for Reference House 1 – One-story (SDC C to SDC D<sub>2</sub>)

BWL#	Component	Unit	w/O&P	Qty	Cost
Α	Engineering Fee	HR	150.00	1	150.00
Α	Galvanized Plate Washers	EA	3.60	16	57.60
В	Engineering Fee	HR	150.00	1	150.00
В	Gypsum board fastened 7" oc	SF	0.30	342	102.60
В	Galvanized Plate Washers	EA	3.60	10	36.00
В	Thickened Slab at Interior Braced Wall Panels	LF	9.70	38	368.60
С	Galvanized Plate Washers	EA	3.60	13	46.80
1	Galvanized Plate Washers	EA	3.60	8	28.80
2	Gypsum board fastened 7" oc edge/field	SF	0.30	207	62.10
2	Galvanized Plate Washers	EA	3.60	6	21.60
2	Thickened Slab	LF	9.90	23	227.70
3	Gypsum board fastened 7" oc edge/field	SF	0.30	242	72.60
3	Galvanized Plate Washers	EA	3.60	8	28.80
3	Thickened Slab	LF	9.90	27	267.30
4	Gypsum board fastened 7" oc edge/field	SF	0.30	180	54.00
4	Galvanized Plate Washers	EA	3.60	7	25.20
4	Thickened Slab	LF	9.90	20	198.00
5	CS-PF Panels	EA	20.40	2	40.80
5	Galvanized Plate Washers	EA	3.60	6	21.60
All Ext	Vertical cold joint dowels at 48" oc	LF	0.49	256	125.44
All Ext	Horizontal footing reinforcement	LF	1.52	256	389.12
	Attach BWP to roof framing, est.				400.00
	Total to Builder				2,874.66
	Total to Consumer				3,420.85

Table R-1-D. Change in Wall Bracing and Foundation Costs for Reference House 4 – Two-story (SDC C to SDC D<sub>0</sub>)

BWL#	Component	Unit	w/O&P	Qty	Cost
	First story				
Α	Galvanized Plate Washers	EA	3.60	8	28.80
В	Gypsum board fastened at 7" oc edge	SF	0.30	216	64.80
В	Galvanized Plate Washers	EA	3.60	4	14.40
В	Blocking	LF	5.00	12	60.00
В	Gypsum board fastened 7" oc edge/field	SF	0.30	144	43.20
С	Hold-downs (9,000 lb)	EA	130.00	2	260.00
С	Engineering Fee	HR	150.00	1	150.00
С	Galvanized Plate Washers	EA	3.60	8	28.80
1	Galvanized Plate Washers	EA	3.60	4	14.40
2	Gypsum board fastened at 7" oc edge	SF	0.30	228	68.40
2	Gypsum board fastened 7" oc edge/field	SF	0.30	148	44.40
2	Galvanized Plate Washers	EA	3.60	6	21.60
3	Galvanized Plate Washers	EA	3.60	8	28.80
All Ext	Vertical rebar in foundation wall @ 48" oc	LF	1.54	188	289.52
All Ext	Horizontal Footing Reinforcement	LF	1.50	6	9.00
	Second Story				
В	Gypsum board fastened 7" oc edge/field	SF	0.30	155	46.50
В	Additional I-Joist for Support	LF	3.60	42	151.20
1	Metal Straps	EA	18.50	4	74.00
1	OSB Sheathing ceiling diaphragm	SF	1.14	110	125.40
2	Gypsum board fastened 7" oc edge/field	SF	0.30	128	300.00
2	Blocking	LF	5.00	20	
	Attach BWP to roof framing, est.				340.00
	Total to Builder				2,163.22
	Total to Consumer				2,574.23

Table R-1-E. Change in Wall Bracing and Foundation Costs for Reference House 4 − Two-story (SDC C to SDC D₂)

BWL#	Component	Unit	w/O&P	Qty	Cost				
	First story								
Α	Galvanized Plate Washers	EA	3.60	8	28.80				
В	Gypsum board fastened at 7" oc edge	SF	0.30	336	100.80				
В	Galvanized Plate Washers	EA	3.60	4	14.40				
В	Blocking	LF	5.00	15	75.00				
В	Gypsum board fastened 7" oc edge/field	SF	0.30	(144)	(43.20)				
С	Hold-downs (9,000 lb)	EA	130.00	2	260.00				
С	Engineering Fee	HR	150.00	1	150.00				
С	Galvanized Plate Washers	EA	3.60	8	28.80				
1	Prefabricated shear wall panel	EA	590.00	3	1770.00				
1	CC-PF panels (SDS C)	EA	21.00	(2)	(42.00)				
2	7/16 OSB	SF	1.14	228	259.92				
2	Gypsum board fastened 7" oc edge/field	EA	0.30	(148)	(44.40)				
2	Galvanized Plate Washers	EA	3.60	6	21.60				
3	Prefabricated shear wall panel	EA	590.00	3	1770.00				
All Ext	Vertical rebar in foundation wall @ 48" oc	LF	1.54	188	289.52				
All Ext	Horizontal Footing Reinforcement	LF	1.50	188	282.00				
	Second Story								
В	Gypsum board fastened 7" oc edge/field	SF	0.30	198	59.40				
В	Additional I-Joist for Support	LF	3.60	42	151.20				
1	Metal Straps	EA	18.50	4	74.00				
1	OSB Sheathing ceiling diaphragm	SF	1.14	110	125.40				
2	Gypsum board fastened 7" oc edge/field	SF	0.30	280	84.00				
2	Blocking	LF	5.00	20	100.00				
	Attach BWP to roof framing, est.				460.00				
	Total to Builder				5,975.24				
Total to Consumer									

# Applicability of Code Change:

This code change is applicable to construction of new homes located in areas where the revised map triggers a change in the assigned SDC. The change is also applicable to those existing buildings undergoing a structural retrofit involving an upgrade of the lateral force resisting system and located in the same areas impacted by the change in the map.

#### R-2 (RB160)

IRC R322.3.3 Foundations, R322.3.4 (new)

# Summary of Code Change:

For coastal high-hazard areas (Zone V) and Coastal A Zones, the code change adds new requirements for exterior concrete slabs – used for parking, floors of enclosures, landings, walkways, patios, and similar uses – that are located beneath structures, or located such that if undermined or displaced during base flood conditions the foundations could sustain structural damage. The provisions are based on ASCE 24-14 *Flood Resistant Design and Construction*. Slabs must either be constructed to break up under flood conditions (structurally independent, frangible, no reinforcement, no turned down edges, no more than 4 in. thick) or designed to resist flood loads, erosion, and scour.

# Cost Implication of Code Change:

This code change is adapted from FEMA Technical Bulletin 5 (Free of Obstruction Requirements). The section of Technical Bulletin 5 that discusses frangible slabs shows two post-flood photos of a parking pad situated below an elevated building with a raised pile foundation, a common residential coastal construction practice. It recommends that the slab have contraction joints placed at 4-ft. squares to encourage failure.



Reinforced slab



Frangible slab

# **Frangible Slab**

The first method of compliance can result in cost savings if a slab is unreinforced, is limited to a 4-in. thickness, and has the recommended control joints. The analysis is conducted on a 14 x 20 ft. parking slab. Table R-2-A shows the cost savings of this method.

Table R-2-A. Cost Savings to Replace Reinforced Slab

Component	Unit	Material	Labor	Equip	Total	w/O&P	Qty	Cost (\$)		
Concrete in place, grade 60 rebar, slab on grade, 3500 psi, 6" thick	CY	137.00	32.50	0.31	169.81	206.00	(5.19)	(1,068.15)		
Slab on grade, 3500 psi, not reinforced, 4" thick	SF	1.58	0.68	0.01	2.27	2.85	280.00	798.00		
Sawcut control joints in green concrete, 1" deep	LF	0.04	0.28	0.08	0.40	0.57	116.00	66.12		
Total to Builder										
Total to Consumer										

The exclusion of turned down edges on slabs indicates that this is somewhat common. If the slab above also had turned down edges, the savings are more substantial, as shown in Table R-2-B.

Table R-2-B. Cost Savings to Replace Reinforced Slab with Turned Down Edges

Component	Unit	Material	Labor	Equip	Total	w/O&P	Qty	Cost (\$)		
Concrete in place, grade 60 rebar, slab on grade, 3500 psi, 6" thick	CY	137.00	32.50	0.31	169.81	206.00	(5.19)	(1,068.15)		
Thickened slab edge, 3500 psi, 8" deep bottom, 8" wide bottom, reinforced	LF	6.05	2.33	0.02	8.30	10.40	(68.00)	(707.20)		
Slab on grade, 3500 psi, not reinforced, 4" thick	SF	1.58	0.68	0.01	2.27	2.85	280.00	798.00		
Sawcut control joints in green concrete, 1" deep	LF	0.04	0.28	0.08	0.40	0.57	116.00	66.12		
Total to Builder										
Total to Consumer										

#### **Flood Resistant Slab**

The second option for compliance (self-supporting, capable of remaining intact under base load conditions) would require an engineered design to resist the flood loads. For the pad above, a structural engineer in Jacksonville, FL indicated that he would specify a turned down slab edge to 12 in. below grade, a plastic membrane below the slab to help with drying, and compacting of the soil. For the original 6 in. parking pad above, this would result in new costs, shown in Table R-2-C.

Table R-2-C. Additional Costs for Engineered Slab

Component	Unit	Total w/ O&P	Qty	Cost (\$)				
Thickened slab edge, 12" deep bottom, 12" wide bottom, reinforced	LF	17.9	68	1,217.20				
4 mil poly below the slab	SF	0.17	280	47.60				
Gravel fill under slab, compacted, 4" deep	SF	0.69	280	193.20				
Engineer's fee	HR	150	2	300.00				
Total to Builder								
Total to Consumer								

# Applicability of Code Change:

This code change is applicable in coastal high-hazard areas (Zone V) and Coastal A Zones.

#### R-3 (RB161)

IRC R322.3.6 Stairways and ramps (new)

# Summary of Code Change:

The code change adds a new provision for homes in coastal high-hazard areas (Zone V) and Coastal A Zones requiring stairways and ramps to be flood resistant, breakaway, or able to be raised.

# Cost Implication of Code Change:

For an elevated home in a Zone V or Coastal A Zone, the simplest way to comply with this new requirement is to build an open-riser stair. This extends the run of the stair as the risers can only be 4-in. high. Table R-3-A shows the cost of building a closed-riser stair. Table R-3-B shows the cost impact building an open-riser stair compared to the closed-riser stair.

Table R-3-A. Cost of Building 8 ft. Tall Staircase with Closed 7.5 in. Riser

Component	Unit	Material	Labor	Equip	Total	w/O&P	Qty	Cost (\$)	
13 treads, oak, 1.25"x10"x3'	EA	29.50	8.75	0.00	38.25	47.00	13.00	611.00	
Risers, 3/4" thick, oak	EA	13.00	3.50	0.00	16.50	20.00	14.00	280.00	
34" oak balusters	EA	8.95	4.66	0.00	13.61	17.65	26.00	458.90	
Handrails, oak, average	LF	13.50	2.91	0.00	16.41	19.70	13.46	265.16	
Stringers, 2x10, 3 each	LF	1.38	4.30	0.00	5.68	8.70	40.38	351.31	
Total to Builder									

Table R-3-B. Cost Increase to Build 8 ft. Tall Stairway with Open 4 in. Riser

Component	Unit	Material	Labor	Equip	Total	w/O&P	Qty	Cost (\$)		
Staircase, closed 7.5" risers				(1.00)	(1,966.37)					
24 treads, oak, 1.25"x10"x3'	EA	29.50	8.75	0.00	38.25	47.00	24.00	1,128.00		
34" oak balusters	EA	8.95	4.66	0.00	13.61	17.65	48.00	847.20		
Handrails, oak, average	LF	13.50	2.91	0.00	16.41	19.70	21.54	424.34		
Stringers, 2x10, 3 each	LF	1.38	4.30	0.00	5.68	8.70	64.62	562.19		
Total to Builder										
Total to Consumer										

The code does not specify what constitutes an "open riser." The analysis above assumes the riser is 100% fully open. It may be possible to construct a stair with partially-open risers that allow floodwaters to flow through and around the stair, but do not allow a 4-in. diameter sphere to pass, in which case 7.5 in. risers could be used and there would be no additional cost.

The code applies to all stairways below the lowest floor elevation for homes built in V Zones and Coastal A Zones. In addition to exterior stairs leading to the front door, they can also have stairs that access an enclosed garage below the first floor. In those cases, the builder may choose to simply install a retractable stairway. Table R-3-C shows the cost savings to install a heavy-duty wood retractable stair (e.g., <a href="https://www.youtube.com/watch?v=8QIEnVhoq4M">https://www.youtube.com/watch?v=8QIEnVhoq4M</a>) compared to building the closed-riser stair. Table R-3-D shows the cost increase to install an electric, automatic, aluminum retractable stair (e.g., <a href="https://www.youtube.com/watch?v=qn2j38po0yg">https://www.youtube.com/watch?v=qn2j38po0yg</a>) compared to building the closed-riser stair.

## Table R-3-C. Cost of Retractable Stairs - Option 1

Component	Unit	Material	Labor	Equip	Total	w/O&P	Qty	Cost (\$)		
Staircase, closed 7.5" risers			See Ta	ble R-3-A	1		(1.00)	(1,966.37)		
Disappearing stairway, heavy duty	EA	1,025.00	93.00	0 1,118.00		1,275.00	1.00	1,275.00		
Total to Builder										
Total to Consumer										

# Table R-3-D. Cost of Retractable Stairs – Option 2

Component	Unit	Material	Labor	Equip	Total	w/O&P	Qty	Cost (\$)		
Staircase, closed 7.5" risers		See Table R-3-A						(1,966.37)		
Disappearing stairway, aluminum, automatic electric	EA	9,450.00	560.00		10,010.00	11,300.0 0	1.00	11,300.00		
Total to Builder										
Total to Consumer										

# Applicability of Code Change:

This code change is applicable in coastal high-hazard areas (Zone V) and Coastal A Zones.

#### R-4 (RB200)

IRC R507 Exterior decks, R507.5.1(2) (new), R507.6, R507.7, R507.7.1

# Summary of Code Change:

The code change reorganizes deck beam requirements and adds minimum spans for single-ply beams.

#### Cost Implication of the Code Change:

There may be a cost savings for a stair landing serving a deck or porch or a porch floor that will now be able to use single-ply beams. There may be additional cost savings where a single-ply beam permits the use of 4x4 posts instead of 4x6 posts. The cost analysis focuses on two example scenarios.

<u>Example 1</u>: a freestanding 5'x5' landing 4' above grade, serving an elevated deck, may now use one 2x8 beam (at both ends, for a total of 10 LF) instead of two 2x8 beams. Further, the supporting posts may now be 4x4 instead of 4x6; there are four posts, each 10' long (4' above grade, 3' below grade, and 3' above the landing to support railing). Table R-4-A shows the associated cost savings.

<u>Example 2</u>: a freestanding 10'x12' deck 4' above grade, may now use one 2x12 beam instead of two 2x8 beams (24 LF total). Further, the supporting posts may now be 4x4 instead of 4x6; there are six posts, each 6' long (4' above grade and 2' below grade). Table R-4-B shows the associated cost savings.

Component Unit Material Labor Total w/O&P Cost (\$) Qty Double 2x8 beam LF 2.17 0.97 3.14 4.02 (10)(40.20)Single 2x8 beam LF 1.09 0.87 1.96 2.66 10 26.60 4x6 post LF 2.06 2.03 4.09 5.65 (40)(226.00)4x4 post LF 1.37 1.43 2.80 3.91 40 156.40 Total to builder (83.20)**Total to Consumer** (99.01)

Table R-4-A. Cost savings for example landing.

Table R-4-B. Cost savings for example deck.

Component	Unit	Material	Labor	Total	w/O&P	Qty	Cost (\$)			
Double 2x8 beam	LF	2.17	0.97	3.14	4.02	(24)	(96.48)			
Double 2x10 beam	LF	2.86	1.02	3.88	4.84					
Single 2x10 beam	LF	1.43	0.92	2.05	3.11	24	74.64			
4x6 post	LF	2.06	2.03	4.09	5.65	(36)	(203.40)			
4x4 post	LF	1.37	1.43	2.80	3.91	36	140.76			
Total to builder										
Total to Consumer										

#### Applicability of Code Change:

This code change is applicable when a deck is constructed with the house, or when a deck is added later.

#### R-5 (RB207)

IRC R507 Exterior Decks, R507.3 Footings (new), R507.3.1 (new), R507.3.2 (new), Table R507.3.1 (new)

# Summary of Code Change:

The code change adds a new table with minimum footing sizes for decks and a pointer to frost depth requirements. The table allows footing selection based on soil bearing capacity (1500, 2000, 2500, >3000 PSF), live or ground snow loads (40, 50, 60, 70 PSF), and tributary area (20, 40, 60, 80, 100, 120, 140, 160 SF).

# Cost Implication of the Code Change:

There may be a cost savings over the American Wood Council's DCA 6 "Prescriptive residential wood deck construction guide" footing sizes, which are based on 1500 PSF soil and an interior post. DCA 6 is not mandated by code, so there may be a cost increase where jurisdictions currently allow a smaller footing (e.g., a 12" diameter sonotube).

The cost analysis compares footing requirements for an example deck for two soil bearing capacities (1500 and 3000 PSF) and two live/snow loads (40 and 60 PSF). The example deck is assumed to be freestanding, 20' x 14' (280 SF), supported by six posts with tributary areas of 70 SF for the two interior posts and 35 SF for the four corner posts. Table R-5-A shows the cost to provide and place a cubic foot of concrete; the table includes the labor cost to excavate the footing by hand (it is assumed that a backhoe digs the hole to the top of the footing and this backhoe cost is constant for all footings). Table R-5-B shows the cost savings for the example deck, using a square footing for the 40 PSF design load and a round footing for the 60 PSF design load.

The cost analysis also compares footing requirements for the same example deck to the case where the jurisdiction previously allowed a 12" diameter, 6" thick footer for all posts. Table R-5-C shows the cost increase for the example deck using a square footing for the 40 PSF design load and a round footing for the 60 PSF design load, both for 1500 PSF soil bearing capacity (worst case for increased costs).

Table R-5-A. Cost of concrete (\$/CF)

Component	Unit	Material	Labor	Equip	Total	w/O&P
Concrete, hand mix	CF	3.96	1.58	1.22	6.76	8.35
Place concrete	CF		0.70	0.08	0.78	1.26
Excavate footing	CF		0.99		0.99	1.65
Total	CF					11.26

Table R-5-B. Cost savings for example deck for two live/snow load scenarios

De	sign Con	ditions	Minin	num footing	size (in.)	Cost/	footing	Deck: 4	IO PSF load	Deck: 6	Deck: 60 PSF load	
Load (PSF)	Soil (PSF)	Tributary Area (SF)	Square	Diameter	Thickness	CF	Cost	Qty	Cost	Qty	Cost	
40	3000	35	12		6	0.50	5.63	4	22.52			
		70	14		6	0.68	7.66	2	15.33			
40	1500	35	14		6	0.68	7.66	(4)	(30.65)			
		70	20		7	1.62	18.25	(2)	(36.49)			
60	3000	35		14	6	0.53	6.02			4	24.06	
		70		19	6	0.98	11.08			2	22.16	
60	1500	35		19	6	0.98	11.08			(4)	(44.32)	
		70		26	9	2.76	31.12			(2)	(62.24)	
	Total to builder										(60.34)	
	Total to consumer										(71.80)	

Table R-5-C. Cost increase for example deck for two live/snow load scenarios

Design (	Condition	s	Minimu	m footing siz	e (in.)	Cost/f	ooting	Deck:	40 PSF load	Deck	: 60 PSF load
Load (PSF)	Soil (PSF)	Tributary Area (SF)	Square	Diameter	Thickness	CF	Cost	Qty	Cost	Qty	Cost
40	1500	35	14		6	0.68	7.66	4	30.65		
		70	20		7	1.62	18.25	2	36.49		
				12	6	0.39	4.42	(6)	(26.52)		
60	1500	35		19	6	0.98	11.08			4	44.32
		70		26	9	2.76	31.12			2	62.24
				12	6	0.39	4.42			(6)	(26.52)
	Total to builder										106.56
	Total to consumer								48.34		126.81

# Applicability of Code Change:

This code change is applicable when a deck is constructed with the house, or when a deck is added later.

#### R-6 (RB212)

IRC R507 Exterior Decks, R507.4 Deck posts

# Summary of Code Change:

The code change relocates the deck post section, clarifies the maximum height for 4x4 posts, and adds 8x8 posts to the table.

# Cost Implication of Code Change:

There may not be a cost impact for most applications. There may be a cost increase for a 3-ply beam on a post cap with a 4x4 post where the deck post height exceeds 6'-9 but does not exceed 8'. In this case a 4x6 post is now required.

Table R-6 shows the cost impact for two example scenarios where 4x6 posts are now required instead of 4x4 posts: 1) an example freestanding deck, 20'x8', 8' high, with six posts 10' long each (8' above grade, 2' below grade); and 2) an example freestanding deck, 20'x14', 8' high, with eight posts 12' long each (8' above grade, 4' below grade).

Table R-6. Estimated cost increase for example deck with post height above 6'-9" up to 8'.

Unit cost of posts (\$/LF)					Example	Deck 1	Example	Deck 2	
Component	Unit	Material	Labor	Total	w/O&P	Qty	Cost	Qty	Cost
4x6 post	LF	2.06	2.03	4.09	5.65	60	339.00	96.00	542.40
4x4 post	LF	1.37	1.43	2.80	3.91	(60)	(234.60)	(96.00)	(375.36)
Total to Builder					104.40		167.04		
Total to Consumer						124.24		198.78	

#### Applicability of Code Change:

This code change is applicable when a deck is constructed with the house, or when a deck is added later.

#### R-7 (RB218)

IRC R602.3.1 Stud size, height, and spacing, Table 602.3(6) (new)

#### Summary of Code Change:

The code change adds a new table for 11' and 12' tall studs in load-bearing walls. The table allows selection of stud size (2x4 and 2x6) based on stud spacing (12", 16", 24"), ultimate design wind speeds (115, 130, 140 MPH), and maximum roof/floor span (12', 24'). The table is applicable where the building is located in Exposure B, the live roof load does not exceed 20 PSF, the ground snow load does not exceed 30 PSF, and studs and plates are #2 grade lumber or better.

# Cost Implication of Code Change:

There may be a cost savings where standard studs can be used in lieu of "tall stud" options, such as laminated strand lumber (LSL) studs, for bearing stud walls exceeding 10' but not exceeding 12' (e.g., walls of step-down garages, tall foyers or great rooms or portions of such rooms). Further, there may be a cost savings where engineering analysis is not required for such walls.

The cost analysis focuses on an example room, 24' x 24', with walls 12' tall, attached to the side of a house (so 48 LF of bearing wall). For this analysis, labor for a wall with standard studs is assumed to be the same as a wall with LSL studs. Table R-7-A shows the cost of studs. Table R-7-B shows the cost savings of building this room using 2x4 studs instead of 2x4 LSL studs, all 12" oc. The analysis is based on 1.25 stud/LF wall to account for typical framing requirements for 12" oc construction (per RSMeans Assemblies section).

Table R-7-C shows the cost savings of building the example room using 2x6 studs instead of 2x6 LSL studs, all 24 oc. The analysis is based on 0.75 stud/LF wall for 24" oc construction (per RSMeans Assemblies section).

Table R-7-D shows the estimated cost savings of not requiring engineering analysis for the example room.

Material Component Unit w/O&P Qty Cost 2x4 stud, 12' tall LF 0.41 5.41 0.45 12 2x6 stud, 12' tall LF 0.63 0.69 12 8.32 2x4 LSL, 12' tall LF 12 0.90 0.99 11.88

1.40

1.54

12

18.48

LF

Table R-7-A. Estimated cost of studs.

Table R-7-B. Estimated savings for an example room with 2x4 walls 12' tall.

Component	Unit	\$/stud	\$/LF wall	Qty	Cost
12' tall wall, 2x4 studs 12 oc	LF	5.41	6.76	48	324.60
12' tall wall, 2x4 LSL 12 oc	LF	11.88	14.85	(48)	(712.80)
To	(388.20)				
Tot	(461.96)				

2x6 LSL, 12' tall

Table R-7-C. Estimated savings for an example room with 2x6 walls 12' tall.

Component	Unit	\$/stud	\$/LF wall	Qty	Cost	
12' tall wall, 2x6 studs 24 oc	LF	8.32	6.24	48	299.52	
12' tall wall, 2x6 LSL 24 oc	LF	18.48	13.86	(48)	(665.28)	
	(365.76)					
To	Total to Consumer					

Table R-7-D. Estimated savings for a tall wall not requiring engineering analysis.

Component	Unit	Material	w/O&P	Qty	Cost		
Engineering analysis	HR		150.00	(3)	(450.00)		
Total to Builder							
Total to Consumer							

# Applicability of the Code Change:

This code change is applicable for homes with walls or portions of walls over 10 feet in height but not exceeding 12 feet in height.

#### R-8 (RB229)

IRC R602.7.5 Supports for headers

# Summary of Code Change:

The code change revises the table for minimum number of king studs (full height studs at each end of headers in exterior walls). The revised table adds two ultimate design wind speed and exposure categories (<140 mph Exposure B or <130 mph Exposure C; ≤115 mph Exposure B), deletes the maximum stud spacing requirements, and revises the maximum header spans (4' to 18' in 2' increments).

# Cost Implication of Code Change:

There may be a cost savings where fewer king studs are required. The cost analysis focuses on the four Reference Houses in Climate Zones 1-2 (2x4 studs) and Climate Zones 3-8 (2x6 studs). Each of the four Reference Houses have different opening widths and opening quantities. Table R-8-A shows the reduced number of king studs required based on a 115 MPH urban or dense suburban location. Table R-8-B shows the number and size of openings for the Reference Houses. The change in number of king studs for each reference house is shown for 2x4 walls in Table R-8-C and for 2x6 walls in Table R-8-D. Table R-8-E shows the installed cost per king stud for 2x4 and 2x6 construction. The associated cost savings for each Reference House by climate is summarized in Table R-8-F.

Table R-8-A. Reduced number of king studs required.

Header		# King St	uds (each side of opening)				
Span	2015	5 IRC	2018 IRC	Chai	nge*		
(ft.)	(ft.) 16 oc 24 oc		≤115/B*	≤115/B* 16 oc			
3	1	1		0	0		
4	2	1	1	(1)	0		
6			1	(2)	(1)		
8	3	2	1	(2)	(1)		
10			2	(3)	(1)		
12	5	3	2	(3)	(1)		
14			2	(4)	(2)		
16	6	4	2	(4)	(2)		
18			2	(4)	(2)		

<sup>\*</sup>Based on ≤115 mph wind speed and Exposure B

Table R-8-B. Number of openings for the Reference Houses.

#### **Reference Houses - # openings**

Header	Reference House						
Span (ft)	1	2	3	4			
3	0	2	9	19			
4	4	10	4	4			
8	3	4	3	0			
12	4	1	0	0			

Table R-8-C. Change in number of 2x4 king studs for the Reference Houses.

Reference Houses - Change in # 2x4 king studs

Header	Reference House						
Span (ft)	1	2	3	4			
3	0	0	0	0			
4	(8)	(20)	(8)	(8)			
8	(12)	(16)	(12)	0			
12	(24)	(6)	0	0			
Total	(44)	(42)	(20)	(8)			

Table R-8-D. Change in number of 2x6 king studs for the Reference Houses.

Reference Houses - Change in # 2x6 king studs

Header	Reference House						
Span (ft)	1	2	3	4			
3	0	0	0	0			
4	0	0	0	0			
8	(6)	(8)	(6)	0			
12	(8)	(2)	0	0			
Total	(14)	(10)	(6)	0			

Table R-8-E. Installed cost per king stud.

#### Installed cost per king stud

Component	Unit	Material	Labor	Total	w/O&P	Qty	Cost
2x4 stud	LF	0.41	0.42	0.83	1.16	8.50	9.86
2x6 stud	LF	0.63	0.47	1.10	1.48	8.50	12.58

Table R-8-F. Cost Savings for the Reference Houses.

# Reference Houses – Summary of Cost Change (\$)

Climate	Cook	Reference House					
Zone	Cost	1	2	3	4		
CZ 1-2	Total to Builder	(434)	(414)	(197)	(79)		
2x4 wall	Total to Consumer	(516)	(493)	(235)	(94)		
CZ 3-8	Total to Builder	(176)	(126)	(75)	0		
2x6 wall	<b>Total to Consumer</b>	(210)	(150)	(90)	0		

# Applicability of Code Change:

This code change is applicable to all houses with exterior wall openings wider than 3 feet.

#### R-9 (RB276)

IRC R702.7.3 Minimum clear airspaces and vented openings for vented cladding

# Summary of Code Change:

The code change adds polypropylene siding to the list of vented cladding products.

# Cost Implication of Code Change:

For Climate Zones 4C and 5 through 8, there may be a cost savings to omit a Class I or Class II vapor retarder where a Class III vapor retarder is applied to the interior side of frame walls.

The IRC considers interior latex or enamel paint to be a Class III vapor retarder (>1 and ≤10 perms), and two coats are assumed in this analysis to meet the requirement. The cost analysis focuses on two scenarios: 1) the cost savings of not installing a Class I vapor retarder (sheet polyethylene); and 2) the cost savings of installing unfaced fiberglass batts instead of a Class II vapor retarder (Kraft-faced fiberglass batts) in wall stud cavities.

Table R-9-A and Table R-9-B show the cost savings of both scenarios for an assumed wall area of 2,000 SF (similar to the Reference Houses).

Table R-9-A. Estimated cost savings to omit a Class I interior vapor retarder (sheet polyethylene)

Component	Unit	Material	Labor	Total	w/O&P	Qty	Cost (\$)
Sheet polyethylene, 4 mil	SF	0.03	0.08	0.11	0.16	(2000)	(320.00)
Total to Builder							(320.00)
Total to Consumer						(380.80)	

Table R-9-B. Estimated cost savings to omit Class II interior vapor retarder (Kraft-faced batts)

2x4 walls in CZ 4C & 5-8 Component	Unit	Material	Labor	Total	w/O&P	Qty	Cost (\$)
R-13 Kraft-faced fiberglass batt	SF	0.33	0.21	0.54	0.71	(2000)	(1420.00)
R-13 unfaced fiberglass batt	SF	0.34	0.17	0.51	0.66	2000	1320.00
	Total to Builder						
	Total	to Consumer					(119.00)
2x6 walls in CZ 4C & 5-8 Component	Unit	Material	Labor	Total	w/O&P	Qty	Cost
R-19 Kraft-faced fiberglass batt	SF	0.45	0.21	0.66	0.85	(2000)	(1700.00)
R-19 unfaced fiberglass batt	R-19 unfaced fiberglass batt SF 0.4 0.21 0.61 0.79 2000						
Total to Builder							(120.00)
Total to Consumer							(142.80)

#### Applicability of Code Change:

This code change is applicable in climate zones 4C (Marine) and 5 through 8.

#### R-10 (RB284)

IR703.2 Water-resistive barrier

# Summary of Code Change

The code change deletes the exception for detached accessory buildings to require a water-resistive barrier for all walls.

# Cost Implication of Code Change:

There may be a cost increase depending on cladding type. Cladding manufacturers typically require installation in accordance with the IRC, but the 2015 IRC did not require a WRB for detached accessory buildings, so compliance represents an additional cost for claddings that require a WRB on a house, including vinyl siding and fiber cement lap siding. There is no additional cost for detached accessory buildings with face-sealed cladding.

The cost analysis focuses on two common WRBs, building paper and house wrap, for two example detached accessory buildings: 1) 8' x 8' shed, 7' high; and 2) 24' x 24' garage, 8' high, with 6:12 gable roof and two 9' x 7' garage doors. Table R-10-A shows the cost impact for both example buildings using building paper for the WRB. Table R-10-B shows the cost impact for both example buildings using house wrap for the WRB.

Table R-10-A. Estimated cost to install building paper WRB on example accessory buildings.

WRB: Building paper		Con	ponent (	cost		Build	ling 1	Building 2		
Component	Unit	Material	Labor	Total	w/O&P	Qty	Cost	Qty	Cost	
Asphalt felt paper #15	SF	0.05	0.08	0.13	0.19	224	42.56	786	149.34	
	Total	to Builder					42.56		149.34	
	Total t	o Consumer	•				50.65		177.71	

Table R-10-B. Estimated cost to install house wrap WRB on example accessory buildings.

WRB: House wrap		Con	ponent	cost		Build	ing 1	Building 2		
Component	Unit	Material	Labor	Total	w/O&P	Qty	Cost	Qty	Cost	
House wrap, spun bonded polypropylene	SF	0.15	0.07	0.22	0.29	224	64.96	786	227.94	
	Total	to Builder					64.96		227.94	
	Total to Consumer						77.30		271.25	

## Applicability of Code Change:

This code change is applicable for detached accessory structures (e.g. sheds, garages).

#### R-11 (RB303)

IRC R703.8.4 Anchorage (masonry veneer), R703.8.4(2) (new)

# Summary of Code Change:

The code change adds new provisions for brick tie attachment over foam sheathing, up to 2" thick, and directly to 7/16" sheathing. A new table shows minimum tie spacing (vertical/horizontal) by wind speed (110, 115, 130, and 140 mph) and Exposure Category (Exposure B, C, and D) using corrosion resistant ring shank nails (0.091" or 0.148" dia.) or screws (#6, 8, 10, or 14). The tie spacing is determined based on Zone 5 (wall edge zone) wind pressures.

# Cost Implication of Code Change:

The code change may represent a cost increase due to 1) a more expensive fastener in all cases, and 2) the greater number of brick ties required where tighter spacing is required. The code change may also represent a labor cost savings due to not needing to locate study through foam sheathing.

For 2015, the minimum tie fastener was one corrosion resistant 8d common nail (Table R703.8.4) (0.131" dia.), and maximum tie spacing was 32" horizontally and 24" vertically with each tie supporting not more than 2.67 SF (R703.8.4.1) (typical spacing was 32"H/12"V or 16"H/24"V).

The cost analysis focuses on three scenarios, all for an example 2,000 SF wall:

- 1. The additional cost using ring shank nails, 0.148" diameter, 3" long, for foam up to 2" thick, for an application with the same tie spacing requirements as prior (e.g., 24/16 spacing, for 115 mph wind, Zone 5, Exposure B), for a 2,000 SF wall. (Table R-11-A.)
- 2. The additional cost for the same scenario as above except with 16/16 spacing (e.g., 115 mph, Zone 5, Exposure C or D, or 130/140 mph, Zone 5, Exposure B). (Table R-11-C.)
- 3. The potential labor cost savings, estimated at 25%, to not locate the studs through the foam, for both spacing scenarios above. (Table R-11-B and Table R-11-D.)

Table R-11-A. Additional cost of ring shank nails, same tie spacing

Component	Unit	Material	Labor	Total	w/O&P	Nails/ LB	Nails/ SF	SF wall	Qty	Cost
Common nail, galv., 0.131"D x 2.5"L	LB	2.08		2.08	2.29	100	0.3745	2,000	(7.49)	(17.14)
Ring Shank nail, galv., 0.148"D x 3"L	LB	3.13		3.13	3.44	66	0.3745	2,000	11.35	39.08
			Total to	Builder	•					21.94
			Total to	Consum	er					26.11

Table R-11-B. Potential labor savings to not locate studs, same tie spacing

Component	Unit	Material	Labor	Total	w/O&P	Nails/ LB	Nails/ SF	SF wall	Qty	Cost
Labor to install tie & nail	С		26.50		44.52					
Labor savings, est. 25%	С				11.13		0.3745	2,000	(7.49)	(83.37)
			Total to	Builder						(83.37)
			Total to	Consume	er					(99.21)

Table R-11-C. Additional cost of ring shank nails and tighter tie spacing.

Component	Unit	Material	Labor	Total	w/O&P	Nails/ LB	Nails/ SF	SF wall	Qty	Cost
Common nail, galv., 0.131"D x 2.5"L	LB	2.08		2.08	2.29	100	0.3745	2,000	(7.49)	(17.14)
Ring Shank nail, galv., 0.148"D x 3"L	LB	3.13		3.13	3.44	66	0.5625	2,000	17.05	58.69
Brick tie, galv., 22 ga, 7/8" x 7"	С	15.35	26.50	41.85	61.50		0.3745	2,000	(7.49)	(460.67)
Brick tie, galv., 22 ga, 7/8" x 7"	С	15.35	26.50	41.85	61.50		0.5625	2,000	11.25	691.88
			Total to	Builder						272.75
			Total to C	onsume	r					324.57

Table R-11-D. Potential labor savings, to not locate studs, for tighter tie spacing.

Component	Unit	Material	Labor	Total	w/O&P	Nails/ LB	Nails/ SF	SF wall	Qty	Cost
Labor to install tie & nail	С		26.50		44.52					
Labor savings, est. 25%	С				11.13		0.5625	2,000	(11.25)	(125.21)
			Total to	Builder						(125.21)
			Total to C	onsume	r					(149.00)

Based on the results of this analysis, the range of costs depends on if labor savings accrue. Where no labor savings accrue, high cost is \$325 and low cost is \$26. Where labor savings always accrue, high cost is \$176 (\$325-\$149) and low cost is -\$73 (\$26-\$99). The maximum range is \$325 high cost for greatest number of additional ties and nails but no labor savings assumed, and -\$73 if only nail size changes and full labor savings are assumed.

The tables are: optional in CZ1 and CZ2 as continuous insulation is not required; optional in CZ3 through CZ5 for 2x6 walls as continuous insulation is not required but required for 2x4 walls where R-5 continuous insulation is required; required for CZ6 through CZ8 where either R-5 or R-10 continuous insulation is required.

# Applicability of Code Change:

This code change is applicable to houses with brick veneer.

#### R-12 (RB327)

IRC R806.5 Unvented attic and unvented enclosed rafter assemblies.

# Summary of Code Change:

The code change adds a new option for insulating an unvented attic using air-permeable insulation installed just below the roof deck (e.g., blown fiberglass in netting hung from the roof trusses/rafters, referred to as netted/blown) if vapor diffusion ports (i.e. a ridge vent covered with a vapor permeable membrane such as a strip of house wrap or vapor permeable roofing underlayment) are installed ( $\geq$  1:600 ratio of vapor diffusion port area to ceiling area, vapor permeance rating of membrane  $\geq$  20 perms) and minimum air flow from the HVAC system is provided ( $\geq$  50 CFM per 1,000 square feet of ceiling area). The code change is limited to Climate Zones 1, 2, and 3 and roof slopes  $\geq$  3:12.

# Cost Implication of Code Change:

There may be a cost savings compared to unvented attics insulated using spray foam, a flash-and-batt method (thinner layer of spray foam applied at the interior side of the roof deck and covered with fiberglass batt insulation, referred to as flash/batt), or foam sheathing above the roof deck and fiberglass batts below. The cost analysis focuses on Reference Houses 1 and 2 in Climate Zone 2 or 3 (R-38 insulation prescriptively required).

Table R-12-A shows the cost impact for Reference House 1, with an unvented attic, by comparing netted/blown fiberglass insulation, with vapor diffusion ports and HVAC supply branch, to closed-cell spray foam at the roof deck. Table R-12-B compares netted/blown fiberglass to a flash/batt approach for Reference House 1. Table R-12-C and Table R-12-D make the same comparisons for Reference House 2. For all tables, a component marked with an asterisk (\*) indicates cost data is based on internet pricing (for vapor permeable roof membrane, membrane tape, and counter-flash tape over membrane tape) or estimated based on pricing provided by the product manufacturer (for netted/blown fiberglass).

Table R-12-A. Estimated cost savings for Reference House 1: netted/blown fiberglass vs. spray foam

Component	Unit	Material	Labor	Equip	Total	w/O&P	Qty	Cost
Closed cell spray foam, R-38, 6" thk.	SF	3.11	0.63	0.67	4.41	5.30	(4,100)	(21,730.00)
Netted/blown fiberglass, R-38*	SF					3.00	4,100	12,300.00
Vapor permeable roof membrane*	SF	1.05			1.05	1.16	153	177.48
Membrane tape*	LF	0.64	0.97			2.33	102	237.66
Counter-flash tape over membrane tape*	LF	0.09	0.97			1.72	102	175.44
Air sealing at eaves	LF	0.35	0.97		1.32	2.01	460	924.60
HVAC supply flex duct	LF	1.60	1.97		3.57	5.05	15	75.75
HVAC supply diffuser	EA	76.50	22.00		98.50	121.00	1	121.00
	Total to Builder (							(7,718.07)
Total to Consumer								(9,184.50)

Table R-12-B. Estimated cost savings for Reference House 1: netted/blown fiberglass vs. flash/batt method

Component	Unit	Material	Labor	Equip	Total	w/O&P	Qty	Cost
Closed cell spray foam, 3" thk., R-19.6	SF	1.55	0.32	0.34	2.21	2.64	(4,100)	(10,824.00)
Fiberglass batt, 6-1/4" thk., R-19	SF	0.40	0.56		0.96	1.38	(4,100)	(5,658.00)
Netted/blown fiberglass, R-38*	SF					3.00	4,100	12,300.00
Vapor permeable roof membrane*	SF	1.05			1.05	1.16	153	177.48
Membrane tape*	LF	0.64	0.97			2.33	102	237.66
Counter-flash tape over membrane tape*	LF	0.09	0.97			1.72	102	175.44
Air sealing at eaves	LF	0.35	0.97		1.32	2.01	460	924.60
HVAC supply flex duct	LF	1.60	1.97		3.57	5.05	15	75.75
HVAC supply diffuser	EA	76.50	22.00		98.50	121.00	1	121.00
	Tota	al to Builder	•					(2,470.07)
Total to Consumer								

Table R-12-C. Estimated cost savings for Reference House 2: netted/blown fiberglass vs. spray foam

Component	Unit	Material	Labor	Equip	Total	w/O&P	Qty	Cost
Closed cell spray foam, R-38, 6" thk.	SF	3.11	0.63	0.67	4.41	5.30	(2,200)	(11,660.00)
Netted/blown fiberglass, R-38*	SF					3.00	2,200	6,600.00
Vapor permeable roof membrane*	SF	1.05			1.05	1.16	42	48.72
Membrane tape*	LF	0.64	0.97			2.33	28	65.24
Counter-flash tape over membrane tape*	LF	0.09	0.97			1.72	28	48.16
Air sealing at eaves	LF	0.35	0.97		1.32	2.01	276	554.76
HVAC supply flex duct	LF	1.60	1.97		3.57	5.05	15	75.75
HVAC supply diffuser	Ea.	76.50	22.00		98.50	121.00	1	121.00
	Total to Builder							
	Total	to Consum	er					(4,934.18)

Table R-12-D. Estimated cost savings for Reference House 2: netted/blown fiberglass vs. flash/batt method

Component	Unit	Material	Labor	Equip	Total	w/O&P	Qty	Cost
Closed cell spray foam, 3" thk., R-19.6	SF	1.55	0.32	0.34	2.21	2.64	(2,200)	(5,808.00)
Fiberglass batt, 6-1/4" thk., R-19	SF	0.40	0.56		0.96	1.38	(2,200)	(3,036.00)
Netted/blown fiberglass, R-38*	SF					3.00	2,200	6,600.00
Vapor permeable roof membrane*	SF	1.05			1.05	1.16	42	48.72
Membrane tape*	LF	0.64	0.97			2.33	28	65.24
Counter-flash tape over membrane tape*	LF	0.09	0.97			1.72	28	48.16
Air sealing at eaves	LF	0.35	0.97		1.32	2.01	276	554.76
HVAC supply flex duct	LF	1.60	1.97		3.57	5.05	15	75.75
HVAC supply diffuser	Ea.	76.50	22.00		98.50	121.00	1	121.00
	Tota	al to Builder	•					(1,330.37)
Total to Consumer (1								

# Applicability of Code Change:

This code change is applicable in Climate Zones 1-3.

# E-1 (RE31)

IECC Table R402.1.2 Insulation and fenestration requirements by component (IRC Table N1102.1.2), IECC Table R402.1.4 (IRC Table N1101.1.4)

#### Summary of Code Change:

The code change decreases the maximum window U-factor requirement in Climate Zones 3-8. For Climate Zones 3 and 4 except 4C, the maximum window U-factor decreases from 0.35 to 0.32. For Climate Zones 4C and 5-8, the maximum window U-factor decreases from 0.32 to 0.30. The maximum window U-factor did not change for Climate Zones 1 and 2, and SHGC values did not change for any climate zone.

# Cost Implication of Code Change:

There may be a cost increase to comply with the code change depending on the window manufacturer and model. Some data (see below) indicates a cost increase to comply with the code change.

The cost analysis is investigated using cost data collected from the U.S. Department of Energy<sup>13</sup>. Based on this data, an incremental cost of \$0.18/SF window area is used for both sets of U-value improvements. Table E-1-A shows the estimated cost increases for the four Reference Houses (window areas are defined in Table 5).

The Department of Energy and EPA Energy Star along with those involved in the development of energy codes have traditionally had problems developing a clear incremental cost for changes in window thermal performance. In this analysis, prices used to develop the incremental cost associated with the code changes are a best guess based on the available data.

Table E-1-A. Estimated change in cost for windows using DOE data.

	Windows					Reference House								
	Increme	ental Cost		1	L	2	2	;	3		4			
U-value improvement	Unit	Incremental Cost (\$)	w/O&P	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost			
0.35>0.32 and 0.32>0.30	SF	0.18	0.20	360	71	315	62	360	71	330	65			
Total to Builder					71		62		71		65			
Total to Consumer					85		74		85		78			

#### Applicability of Code Change:

This code change is applicable in Climate Zones 3-8.

<sup>&</sup>lt;sup>13</sup> Cost-Effectiveness of Improved Fenestration U-Factors: https://www.energycodes.gov/sites/default/files/documents/iecc2018 R-2 analysis final.pdf

# E-2 (RE99 and RE110)

IECC R403.3 Ducts (IRC N1103.3)

IECC R403.3.6 Ducts buried within ceiling insulation (new) (IRC N1103.3.6)

IECC R403.3.6.1 Deeply buried ducts effective R-value (new) (IRC N1103.3.6.1)

# Summary of Code Change:

This code change provides an optional construction method for houses with HVAC ducts installed in vented attics with the intent to improve energy performance. The code change provides the criteria to explicitly allow ducts buried, or partially buried, within ceiling insulation in vented attics ("buried ducts") as an option in lieu of suspending them from the roof framing. The sum of the insulation above and below the duct is at least R-19 total, excluding the duct R-value; minimum required duct insulation is R-8 except in Climate Zones 1A, 2A, and 3A where the minimum required supply duct insulation is R-13.

Additionally, the code change allows buried ducts to be modeled using an effective duct insulation value of R-25 where certain criteria are met: the duct is located directly on the ceiling or within 5.5 in. of the ceiling; the duct is surrounded with ceiling insulation of at least R-30; the duct is covered on top with at least 3.5 in. of ceiling insulation (approximately R-11 assuming a minimum R-value of R-3.2 per in.).

# Cost Implication of Code Change:

Compared to conventional attic ducts, there may be a cost increase to install buried ducts (where R-13 supply ducts are required, and where additional ceiling insulation above the ducts is required), and concurrently there may be a cost savings to install buried ducts (labor and material savings for shorter duct runs installed at the ceiling plane instead of high in the attic). The analysis does not include a potential reduced cost associated with installing a lower capacity HVAC system.

The cost analysis will focus on Reference Houses 1 and 2 in all climate zones. Reference Houses 1 and 2 were selected because those have ducts and air handlers in the attic (Reference Houses 3 and 4 have ducts and air handlers in the basement). The area of supply ducts is assumed to be 23% of conditioned floor area, and the area of return ducts is assumed to be 7% of conditioned floor area. These values are consistent with ACCA and ASHRAE standards. For the two-story house, 60% of the duct area is assumed to be in the attic (the second floor represents approximately 60% of the floor area of the house). For the one-story house, 100% of the duct area is assumed to be in the attic.

In Climate Zones 1A-3A, R-13 duct insulation is required for supply ducts that are buried or partially buried. For this component, the cost analysis is based on R-5 (installed R-value, 2" thick) foil-faced duct wrap installed over R-8 supply ducts. (Ducts installed in attics are most commonly R-8 insulated flexible ducts; R-13 flexible ducts are not commercially available yet; R-13 duct wrap (foil-faced, non-perforated) installed over rectangular metal duct or un-insulated flexible duct is a viable approach but such duct construction is not as common for ducts in attics).

Table E-2-A shows the cost impact to install buried ducts for Reference Houses 1 and 2 in all climate zones. For this prescriptive path, it is assumed that no additional ceiling insulation is required. Labor and material savings is estimated at 15%.

Table E-2-A. Estimated cost impact to install buried ducts (prescriptive path).

Puriod Duete (proceriptive	Buried Ducts (prescriptive path)						
Buried Ducts (prescriptive)	patiij		Reference	ce House	Reference House		
Component	Unit	w/O&P	1	2	1	2	
R-13 supply ducts (incremental cost)	SF	3.32	1991	1194	0	0	
Labor & material savings, est. 15%	SF	(1.02)	(614)	(368)	(614)	(368)	
Total to builder			1377	826	(614)	(368)	
Total to consumer	1638	983	(731)	(438)			

For modeling of buried ducts in accordance with the performance path, the cost analysis is based on the prescriptive requirements plus the additional ceiling insulation required above the supply and return ducts. The unit cost of this insulation is based on R-11 blown fiberglass with an adjustment factor of 0.75 to account for the estimated portion of duct area that requires coverage. Table E-2-B shows the cost impact to install buried ducts in accordance with the performance path for Reference Houses 1 and 2 in all climate zones.

Table E-2-B. Estimated cost impact to install buried ducts (performance path).

Buried Ducts (performance path)			CZ: 1A, 2A, 3A		CZ: all others	
			Reference House		Reference House	
Component	Unit	w/O&P	1	2	1	2
R-13 supply ducts (incremental cost)	SF	3.32	1,991	1,194	0	0
Labor & material savings, est. 15%	SF	(1.02)	(614)	(368)	(614)	(368)
Add ceiling insulation above ducts	SF	0.45	352	211	352	211
Total to builder			1,729	1,038	(262)	(157)
Total to consumer			2,057	1,235	(312)	(187)

# Applicability of Code Change:

This code change is applicable in all climate zones.

#### E-3 (RE100)

IECC R403.3 Ducts (IRC N1103.3)
IECC R403.3.6 Ducts buried within ceiling insulation (new) (IRC N1103.3.6)
IECC R403.3.7 Ducts located in conditioned space (new) (IRC N1103.3.7)

#### Summary of Code Change:

This code change provides an optional construction method for houses with HVAC ducts installed in vented attics. The code change provides the criteria to explicitly allow ducts buried, or partially buried, within ceiling insulation in vented attics ("buried ducts"). The sum of the insulation above and below the duct is at least R-19 total; minimum required duct insulation is R-8 except in Climate Zones 1A, 2A, and 3A where the minimum required supply duct insulation is R-13.

Additionally, the code change provides the criteria to allow buried ducts to be modeled as being located inside conditioned space: the air handler is located inside conditioned space (not the attic); duct leakage is within prescribed limits (1.5 CFM25/100SFcfa, measured either by a rough-in stage test or post-construction stage total-system-leakage-to-outdoors test); the R-value of insulation above the duct is at least the proposed ceiling insulation R-value, used in the model, less the R-value of the duct insulation.

#### Cost Implication of Code Change:

There may be a cost increase to install buried ducts based on the additional criteria. There may be a net cost savings where buried ducts are installed in lieu of building an unvented attic or installing ducts inside conditioned space (i.e., below the ceiling plane within framed bulkheads).

The cost analysis for the prescriptive component of this change is provided in section E-2. The cost analysis for the performance component of this change will focus on Reference Houses 1 and 2 in all climate zones (same as prescriptive component). The analysis does not include a potential reduced cost associated with installing a lower capacity HVAC system or a potential cost increase associated with a higher level of duct sealing. The analysis does include the cost to build a mechanical closet to house the air handler that is no longer in the attic; credit is taken for omitting pull-down stairs for attic access. The analysis also includes the additional ceiling insulation required above the ducts: minimum R-25 in Climate Zones 1A, 2A, and 3A (R-38 ceiling insulation less R-13 ducts; it is understood that this could be reduced in Climate Zone 1 that requires minimum R-30 ceiling insulation, but this was not calculated separately); minimum R-41 in Climate Zones 4-8 (R-49 ceiling insulation less R-8 ducts).

Table E-3-A shows the cost impact to install buried ducts in accordance with the performance criteria for Reference Houses 1 and 2 in all climate zones. Note Climate Zones 2B and 3B are unique compared to Climate Zones 2A and 3A because R-13 supply ducts are not required.

Table E-3-B shows the estimated cost savings to install buried ducts in accordance with the performance criteria compared to installing ducts within bulkheads constructed below the ceiling (i.e., in conditioned space).

Table E-3-A. Estimated cost to install buried ducts (performance path).

Divided divists (nonformance math)			CZ: 1A, 2A, 3A		CZ: 2B, 3B		CZ: 4-8	
Buried ducts (performance path)			Reference House		Reference House		Reference House	
Component Unit w/O&P		1	2	1	2	1	2	
R-13 supply ducts (Table E-2-A)	SF	3.32	1,991	1,194	0	0	0	0
Labor/material savings (Table E-2-A) SF (1.02)		(614)	(348)	(614)	(348)	(614)	(348)	
Ceiling insulation above ducts, CZ 1-3	SF	0.82	641	385	641	385	0	0
Ceiling insulation above ducts, CZ 4-8 SF 1.15		0	0	0	0	899	540	
Mechanical closet EA 390			390	390	390	390	390	390
Total to builder			2,408	1,621	417	427	675	582
Total to consumer			2,866	1,929	496	508	803	693

Table E-3-B. Estimated cost savings for installing buried ducts vs. installing ducts within bulkheads below the ceiling.

Buried ducts vs. ducts within	CZ: 1A, 2A, 3A		CZ: 2	CZ: 2B, 3B		CZ: 4-8	
bulkheads below ceiling	Reference House		Reference House		Reference House		
Component	1	2	1	2	1	2	
Buried ducts (see Table above)	2,408	1,621	417	427	675	582	
Building bulkheads to conceal ducts	(3,832)	(2,298)	(3,832)	(2,298)	(3,832)	(2,298)	
Total to builder	(1,424)	(677)	(3,415)	(1,871)	(3,157)	(1,716)	
Total to consumer	(1,694)	(806)	(4,064)	(2,227)	(3,757)	(2,042)	

### Applicability of Code Change:

This code change is applicable in all climate zones.

#### E-4 (RE121)

IECC R403.6.1 Whole-house mechanical ventilation system fan efficacy (IRC N1103.6.1), IECC Table R403.6.1 (IRC Table N1103.6.1)

#### Summary of Code Change:

The code change introduces a minimum fan efficacy (1.2 CFM/Watt) for HRVs and ERVs. The minimum HRV/ERV efficacy is the same as required by ENERGY STAR Canada. Prior to the change, an HRV/ERV was generally classified as an in-line fan (minimum fan efficacy 2.8 CFM/Watt), so in effect the code change relaxed the minimum fan efficacy requirement for an HRV/ERV.

#### Cost Implication of Code Change:

Many HRV/ERV models already meet the new requirement, so no cost change is expected in many cases. The Home Ventilating Institute (HVI) publishes HRV/ERV performance and energy data<sup>14</sup>. A review of this database shows there is a wide selection of models that meet or exceed 1.2 CFM/Watt. Manufacturer product data is also available on manufacturer web sites. The fan efficacy is not a published number and may need to be interpolated based on product data. Further, different data points may provide different fan efficacy ratios.

There may be a cost decrease in cases where a builder substitutes an HRV/ERV with a lower fan efficacy (less than 2.8 CFM/Watt but still greater than 1.2 CFM/Watt) as shown in Table E-4-A (note: the models shown are the lowest capacities for each model that meet the 2.8 or 1.2 CFM/Watt efficacy requirements).

Selected energy rating data at CFM 32F **Brand** Model w/O&P Style range Unit min/max **CFM** Watts CFM/W Broan HRV HRV200ECM 50/245 64 19 3.37 EΑ (1,870)Broan HRV HRV160 65/183 65 54 1.20 EΑ 1,150 Total to builder (720)**Total to consumer** (857)

Table E-4-A. Example cost savings to meet fan efficacy requirement.

#### Applicability of Code Change:

This code change is applicable where an HRV or ERV is provided to meet mechanical ventilation requirements.

<sup>&</sup>lt;sup>14</sup> Home Ventilating Institute (HVI), see HVI-Certified Products Directory, Section 3 Directory: https://www.hvi.org/proddirectory/

#### E-5 (RE173)

IECC Table R406.4 Maximum energy rating index (IRC Table N1106.4)

#### Summary of Code Change:

The code change increases the ERI values in all climates zones by approximately 10%. It also adds a backstop for houses complying with the ERI using on-site generation, so houses must still meet mandatory requirements and minimum insulation and fenestration requirements.

#### Cost Implication of Code Change:

The revised ERI target values correspond to a house that on average is about 5-15% more efficient compared to a house designed using the prescriptive path (using the ERI Index scale). The 2015 ERI target values correspond to a house that on average is about 10-20% more efficient. Therefore, this code change is expected to decrease costs for builders who are using the optional ERI path for code compliance. This report does not identify individual measures or quantify their cost savings. A general discussion is offered below for context.

In a separate study<sup>15</sup>, Home Innovation reported the predicted HERS indices for over 300 typical house configurations simulated to meet the 2015 IECC minimum requirements and then simulated with high efficiency heating and cooling equipment. The summary of results for an average sized house (2,352 SF not including basement) is shown in Table E-5-A. The results of the study indicate that the 2018 ERI targets can be achieved in large part by upgrading the efficiency of the heating and cooling equipment in combination with using an enclosure that meets the prescriptive code requirements. Therefore, this code change enables builders to rely on practical energy efficient construction practices to achieve code compliance.

Table E-5-A. Typical predicted HERS Indices for high efficiency heating and cooling equipment compared to 2015 IECC minimum requirements.

Climate Zone	HERS Index standard efficiency	HERS Index high efficiency	2015 ERI Target	2018 ERI Target
1	72.7	64.0	52	57
2	71.1	59.7	52	57
3	67.0	58.0	51	57
4	70.4	61.6	54	62
5	71.1	62.2	55	61
6	66.5	59.6	54	61
7,8	63.9	57.7	53	58

In a follow-up study<sup>16</sup>, analysis of select zones and additional energy measures, including high efficiency lighting and appliances, balanced whole-house mechanical ventilation (ERV or HRV), and reduced

<sup>&</sup>lt;sup>15</sup> Equivalency Between IECC Prescriptive Path and IECC Energy Rating Index, Oct 2016.

<sup>&</sup>lt;sup>16</sup> Equivalency Between IECC Prescriptive Path and IECC Energy Rating Index: Alternative High Efficiency Appliances Scheme, Oct 2016

infiltration (1.5 ACH), further indicates options for achieving the revised 2018 ERI targets if additional level of energy savings is needed. The incremental results of this analysis are summarized in Table E-5-B.

Table E-5-B. Average predicted HERS Index improvement compared to standard efficiency house.

Average predicted HERS Index improvement compared to standard efficiency house							
Climate Zone High eff. Lights & Appliances ERV 1.5 ACH50							
1	5.2	1.0	0.6				
4	3.7	3.7	2.0				
7	2.7	4.7	4.0				

### Applicability of Code Change:

This code change is applicable in all climate zones.

#### E-6 (RE127)

IECC Section R404.1 Lighting Equipment (IRC Section N1104.1)

#### Summary of Code Change:

The code change increases the percent of permanently installed lighting fixtures that must contain high-efficacy lamps from 75% to 90%.

#### Cost Implication of Code Change:

The revised percent of fixtures that must contain high efficacy lamps will result in a slight cost increase. Incandescent and halogen bulbs will generally not meet the efficacy requirements in the IECC to qualify as a "high-efficacy lamp" (60 lumens per watt for greater than 40 watts) and, by definition, all CFL and LED lamps would be classified as high-efficacy.

Based on surveys of big box retailers, the average cost of an incandescent 60-watt lamp is \$0.97, the average cost of a 60-watt equivalent CFL lamp (13 -watt, 800 lumens) is \$2.20, and the average cost of a 60-Watt equivalent LED lamp (10-Watt, 800 lumens) is \$1.97.

Assuming the average home requires 40 lamps for the permanently installed fixtures, this would require a net increase of 6 high-efficacy lamps per house. The resultant cost increase is shown in Table E-6-A.

Table E-6-A. Cost increase for increased number of high efficacy lamps

Component	Unit	Material	Labor	Total	w/O&P	Qty	Cost (\$)
60W incandescent lamp	EA	0.97		0.97	1.07	(6)	(6.40)
60W equivalent LED lamp	EA	1.97		1.97	2.17	6	13.00
Total to Builder						6.60	
	Т	otal to Cons	umer				7.85

#### Applicability of Code Change:

This code change is a mandatory requirement that is applicable to all homes in all climate zones.

#### M-1 (RM36)

IRC M1601.4.1 Joints, seams and connections (ducts).

#### Summary of Code Change:

The code change eliminates the requirement for sealing longitudinal seams of snap-lock and button-lock types of HVAC ducts located inside of conditioned space.

#### Cost Implication of Code Change:

The code change represents a cost savings where metal ducts with longitudinal seams are installed inside conditioned space.

The cost analysis focuses on cost savings per linear foot of metal duct inside conditioned space for the reference houses. Consistent with the 2012 IRC cost study, the reference houses are assumed to have a main trunk serving each story. Ducts are assumed to be metal snap-lock when located within the first and second floor framing and insulated flexible duct in attics. Rectangular metal ducts are assumed to have two longitudinal seams, and round metal ducts are assumed to have one longitudinal seam.

All ducts for Reference House 1 are assumed to be in the attic so there is no cost savings. For Reference House 2, 40% of the ducts are assumed to be inside conditioned space (the first floor is approximately 40% of the total floor area of this house). For Reference Houses 3 and 4, all ducts are inside conditioned space.

Table M-1-A shows the estimated cost of sealing metal ducts using duct mastic applied with a brush. The material and labor costs are based on product manufacturer data for typical applications (125 linear feet per gallon of mastic; one-hour labor per gallon), internet pricing (for material cost), and RSMeans (for labor cost). Table M-2-B shows the cost savings to not install duct mastic on longitudinal seams of ducts inside conditioned space for the reference houses.

Table M-1-A. Estimated cost to seal ducts (\$/LF).

Component	Unit	Material	Labor	Total	w/O&P
Duct Mastic	LF	0.17	0.32	0.49	0.70

Table M-1-B. Estimated cost savings for not sealing longitudinal seams of ducts inside conditioned space.

Component	Units		ce House		
Component	Ullits	1	2	3	4
6" Branch - Flexible (no seams)	LF	216	180	N/A	N/A
Trunk Line	LF	144	168	128	128
Vertical Supply - seams	LF	14	25	14	20
Return - seams	LF	28	50	28	40
6" Branch, metal - seams	LF	N/A	144	248	378
Longitudinal seams, total	LF	186	387	418	566
Longitudinal seams, sealing not required	LF	0	(155)	(418)	(566)
Cost to Seal Ducts (from Table M-1-A)	\$/LF	0.70	0.70	0.70	0.70
Total cost to Builder	\$	0.00	(108.36)	(292.60)	(396.20)
<b>Total cost to Consumer</b>	\$	0.00	(128.95)	(348.19)	(471.48)

### Applicability of Code Change:

This code change is applicable for houses where metal ducts with longitudinal seams are installed inside conditioned space.

## APPENDIX B: LOCATION ADJUSTMENT FACTORS

State	City	Cost Adjustment Factor	State	City	Cost Adjustment Factor
Alabama	Birmingham	0.84	Montana	Billings	0.88
Alabama	Mobile	0.84	Nebraska	Omaha	0.89
Alaska	Fairbanks	1.27	Nevada	Las Vegas	1.01
Arizona	Phoenix	0.85	New Hampshire	Portsmouth	0.95
Arizona	Tucson	0.84	New Jersey	Jersey City	1.19
Arkansas	Little Rock	0.80	New Mexico	Albuquerque	0.83
California	Alhambra	1.16	New York	Long Island City	1.41
California	Los Angeles	1.15	New York	Syracuse	1.01
California	Riverside	1.14	North Carolina	Charlotte	0.96
California	Stockton	1.19	North Carolina	Greensboro	0.96
Colorado	Boulder	0.91	North Carolina	Raleigh	0.94
Colorado	Colorado Springs	0.84	North Dakota	Fargo	0.88
Colorado	Denver	0.87	Ohio	Columbus	0.91
Connecticut	New Haven	1.11	Oklahoma	Oklahoma City	0.82
Delaware	Dover	1.02	Oklahoma	Tulsa	0.82
District of Columbia	Washington, D.C.	0.90	Oregon	Bend	1.00
Florida	Fort Meyers	0.80	Pennsylvania	Norristown	1.10
Florida	Miami	0.81	Pennsylvania	State College	0.93
Florida	Orlando	0.83	Rhode Island	Providence	1.08
Florida	Tampa	0.83	South Carolina	Greenville	0.94
Georgia	Atlanta	0.89	Tennessee	Memphis	0.84
Hawaii	Honolulu	1.21	Texas	Austin	0.79
Idaho	Boise	0.90	Texas	Dallas	0.84
Illinois	Carbondale	1.01	Texas	Houston	0.82
Indiana	Indianapolis	0.92	Texas	San Antonio	0.81
lowa	Des Moines	0.92	Utah	Ogden	0.80
Kansas	Wichita	0.84	Utah	Provo	0.81
Kentucky	Louisville	0.87	Utah	Salt Lake City	0.82
Louisiana	Baton Rouge	0.86	Vermont	Burlington	0.93
Maine	Portland	0.91	Virginia	Fairfax	1.01
Maryland	Baltimore	0.92	Virginia	Winchester	1.02
Michigan	Ann Arbor	1.00	Washington	Tacoma	1.02
Minnesota	St. Paul	1.05	West Virginia	Charleston	0.95
Mississippi	Biloxi	0.84	Wisconsin	La Crosse	0.98
Missouri	Springfield	0.89	Wyoming	Casper	0.81

## APPENDIX C: ONE-STORY HOUSE WITH SLAB FOUNDATION (REFERENCE HOUSE 1)



Courtesy: LionsGate Homes at The Creekside



## APPENDIX D: TWO-STORY HOUSE WITH SLAB FOUNDATION (REFERENCE HOUSE 2)



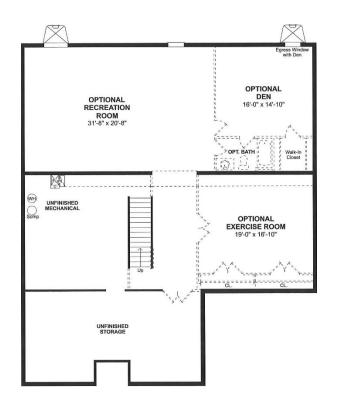
Courtesy: Meritage Homes at Riverstone

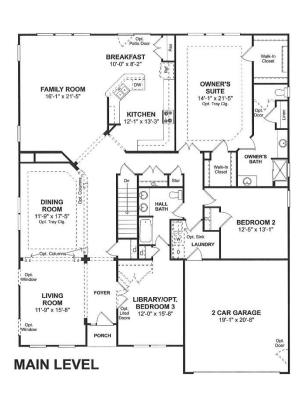


## APPENDIX E: ONE-STORY HOUSE WITH BASEMENT FOUNDATION (REFERENCE HOUSE 3)



Courtesy: K Hovnanian Four Seasons at New Kent Vineyards

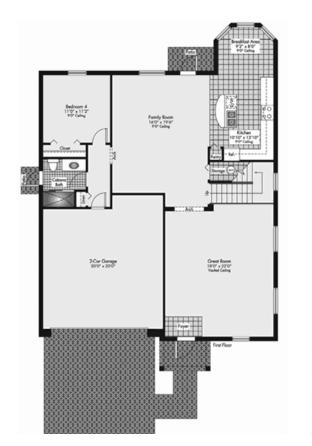




# APPENDIX F: TWO-STORY HOUSE WITH BASEMENT FOUNDATION (REFERENCE HOUSE 4)



Courtesy: Lennar at Sorento Estates





### APPENDIX G: REFERENCES

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