AGENDA
CITY OF CEDAR FALLS, IOWA
PLANNING AND ZONING COMMISSION
WEDNESDAY, FEBRUARY 14, 2018
5:30 PM AT CITY HALL - COUNCIL CHAMBERS

1. Call to Order and Roll Call

2. Approval of Minutes

3. Public Comments

4. Old Business

A. Gateway Business Park at Cedar Falls – Preliminary Plat

Location:	Northeast corner of Hudson Road and W. Ridgeway Avenue
Applicant:	CF Gateway Park, Inc.; Russell Construction; Shive-Hattery.
Previous Discussion:	January 10, 2018
Staff Recommendation:	*Approval.*
P&Z Action Needed:	*Recommend approval and forward to City Council.*

5. New Business

A. Guest Speaker on the CBD Overlay – Carol Lilly

B. Central Business District Site Plan Review – Hampton Inn

Location:	Northwest Corner of W. 1st Street and Main Street
Applicant:	Hawkeye Hotels, Om Patel – contract buyer; Base 4 Architects; VJ Engineering
Previous Discussion:	None.
Staff Recommendation:	*Introduction and initial discussion.*
P&Z Action Needed:	*Provide direction, comments and continue the discussion at the February 28, 2018 P&Z meeting.*

C. Hwy-1 District Site Plan Review – Holiday Inn & Suites/Conference Center

Location:	Northeast corner of Hudson Road and W. Ridgeway Avenue
Applicant:	CF Gateway Park, Inc.; Russell Construction; Shive-Hattery.
Previous Discussion:	None.
Staff Recommendation:	*Introduction and initial discussion.*
P&Z Action Needed:	*Provide direction, comments and continue the discussion at the February 28, 2018 P&Z meeting.*

D. College Hill Neighborhood District Site Plan Review – 917 W 23rd Street Sign & Awning Review

Location:	917 W 23rd Street
Applicant:	Kyle Dehmlow (Owner); Signs & Designs, INC (Contractor)
Previous Discussion:	None.
Staff Recommendation:	*Approval.*
P&Z Action Needed:	*Recommend approval and forward to City Council.*

E. Central Business District Site Plan Review – Chamber Building Relocation

Location:	Northeast end of E 4th Street at the entrance of the Water Reclamation Plant
Applicant:	Community Main Street
Previous Discussion:	None.
Staff Recommendation:	*Introduction and initial discussion.*
P&Z Action Needed:	*Provide direction, comments and continue the discussion at the February 28, 2018 P&Z meeting.*

F. Zoning Ordinance Update – Introduction
Purpose: Terminology changes pursuant to HF134 and consistency among city codes.

6. Adjournment

Reminders:

- February 28th and March 14th Planning & Zoning Commission Meeting
- February 19th and March 5th City Council meetings

Cedar Falls Planning and Zoning Commission
Regular Meeting
January 24, 2018
City Hall Council Chambers
220 Clay Street, Cedar Falls, Iowa

MINUTES

The Cedar Falls Planning and Zoning Commission met in regular session on Wednesday, January 24, 2018 at 5:30 p.m. in the City Hall Council Chambers, 220 Clay Street, Cedar Falls, Iowa. The following Commission members were present: Adkins, Arntson, Giarusso, Hartley, Holst, Leeper, Oberle, Saul (via phone) and Wingert. Stephanie Houk Sheetz, Director of Community Development, David Sturch, Planner III, Shane Graham, Planner II, and Iris Lehmann, Planner I, were also present.

1.) Chair Oberle noted the Minutes from the January 10, 2018 regular meeting are presented. She noted a correction to Item #1 to change the Acting Chair to Mr. Holst. Mr. Holst made a motion to approve the Minutes with the change as presented. Mr. Wingert seconded the motion. The motion was approved unanimously with 9 ayes (Adkins, Arntson, Giarusso, Hartley, Holst, Leeper, Oberle, Saul and Wingert), and 0 nays.

2.) The first item of business was the Nominating Committee Report. Chair Oberle introduced the item and Mr. Arntson stated that the Committee recommends the 2018 slate of officers to include Ms. Oberle as the Chair for her second term and Mr. Holst as the Vice-Chair for his second term.

Mr. Arntson made a motion to approve. Ms. Giarusso seconded the motion. The motion was approved unanimously with 9 ayes (Adkins, Arntson, Giarusso, Hartley, Holst, Leeper, Oberle, Saul and Wingert), and 0 nays.

3.) The next item for consideration by the Commission was a College Hill Neighborhood Site Plan Review for 2118 College Street. Chair Oberle introduced the item and Mr. Graham provided background information. He explained that the item has been brought to the Commission at past meetings for discussion and gave a brief overview of the site plan. He showed the original and the revised plans to illustrate the changes that have been made since previous meetings. He discussed additional site plan review items, such as height, building setbacks, trash enclosures, lighting details, and the landscaping plan. An illustration comparing building heights was reviewed. He also discussed the principle commercial use and parking standards. Staff recommends approval of the site plan. Mr. Graham noted that letters that have been submitted since the last meeting were handed out to the Commission.

Larry James, 801 Grand Avenue, Des Moines, Iowa, (attorney on behalf of the applicant), stated that staff laid out the case, the project meets the code requirements and asks that the Commission support the project. He noted that precedent and the code should be considered, and based on the applicant's submittals, the project should be approved.

James Bunkofske, 1706 Cottage Lane, is a property owner in the area and indicated that he provides adequate parking for his rental properties. He doesn't feel that this development is providing enough parking, which will force taxpayers to pay for future parking lots for their tenants.

Dan Manning, 317 6th Avenue, Des Moines, Iowa, (attorney on behalf of the concerned citizens of College Hill), stated that he believes that the definition of principle use is the main use for the building, which is a residential building. He felt that this was covered at the November meeting and he felt that staff and the Commission were in agreement. He asked that the application be rejected and revised.

Mr. Bunkofske suggested that the developer create parking on other locations that he owns.

Dr. Brian Sires, owner of University Manor at 1939 College Street, feels that this project is not being considered correctly and that there are more cars than are being accounted for. He feels that they are reinventing the code for the project and that this should be considered a residential project. The City is supposed to follow its own code as codes are legal restrictions.

Kurt Rickard, 223 W. 2nd Street, discussed principle permitted use, as well as parking requirements and his interpretation of the code.

Nick Taiber, 1709 Clay Street, believes that people are changing single-family homes into rental homes to meet market demand. He feels the developer is trying to meet that demand. He stated he feels the Commission should start looking at this as a chance to solve problems in neighborhoods and encourage these projects. He suggested that slight modifications to the parking policies will also help.

Dave Deibler, 1616 Campus Street, owner of properties on College Hill, is in favor of the project and feels that it is good for the district.

Andy Fuchtman, 422 N. Ellen Street, (owner of Sidecar Coffee), feels that this will be great for the area and the businesses.

Kara Bigelow Baker, 1826 Quail Run Lane, (works at the Razor's Edge Hair Salon), feels that the project is needed, but feels that the parking is a big issue. She stated that the Commission was sent a request for a parking study in the area and asked why that has not been done. She also discussed issues with the Urban Flats building, University parking passes, and how parking issues have been created in the City lots. The Overlay Districts are in place to preserve the special characteristics of the areas. If the parking availability is continually disrupted, business occupancy will decline.

Dennis Bigelow, 3909 Beaver Ridge Circle, had concerns about the project with regard to deciding whether the principle use is commercial or residential. He suggests that there be a collaborative effort between the City, property owners, and the developer to complete a parking study. He feels that if you open the door to problems now, the door

is open to future problems. He believes the project is a good concept, but parking issues need to be dealt with first.

Ms. Oberle closed the public comment period and asked if the petitioner would like to address any comments. Mr. James stated that he appreciates the comments and that he can see that there are a lot of people who care about their city. He feels his client has heard the concerns of the neighbors and has made adjustments accordingly.

Mr. Arntson feels the building looks great and utilizes solid materials. He feels that the effort to put full underground parking with 47 spaces is not an insignificant investment and agrees that there should be a reduction in the number of conversions from single-family to multi-unit in the area to get the population more concentrated in the neighborhood. Mr. Arntson stated that he is torn between the option of limiting the building size or creating an overflow parking area at another location, assuming that there is a parking problem.

Mr. Leeper asked about future development and if staff is encouraging these types of projects. Mr. Graham clarified that staff doesn't really have a preference but would like there to be more clarity in the code if it does come up again.

Ms. Giarusso asked about the zoning district boundary and the parking requirements for R-3 zoning. Mr. Graham explained the standards and parking requirements.

Mr. Holst stated that he feels the need to be fair and look at the intent. He noted that parking regulations need to be maintained for the uses and that there are different requirements in neighboring districts. C-3 is intended for commercial. He doesn't feel it's fair for this to be allowed to have half of the parking that would be expected anywhere else in the City.

Ms. Saul feels that the Commission has to get back to what the zoning ordinance says, and maintains that the primary principle use of the property is residential and should refer to R-4 zoning ordinance requirements. She likes the project and feels we need something like this, but at this time it conflicts with the ordinance.

Mr. Leeper agrees that the primary use is residential and also agrees that these are the kind of projects we should be moving toward. He realizes that people are unhappy with the parking, but hopes that the changes to the zoning ordinance will help to enable more projects like this.

Mr. Wingert agrees that a zoning change is needed to accomplish the growth seen in other communities. He asked about what the facts are with regard to parking and feels a parking study should be done. He completed his own independent parking study and doesn't feel there is a parking problem.

Mr. Hartley made a motion to approve. Mr. Wingert seconded the motion. The motion was approved with 5 ayes (Arntson, Hartley, Leeper, Oberle, and Wingert), and 4 nays (Adkins, Giarusso, Holst and Saul).

4.) The Commission then considered a zoning ordinance amendment for the Central Business District Overlay. Chair Oberle introduced the item and Ms. Lehmann provided background information. She defined overlay zoning and explained that staff has been working closely with the Community Main Street Design Committee to review the overlay and ways to improve it. She noted that the item is for discussion only at this time.

Ms. Lehmann noted one of the main reasons for updating the code is to clarify the process of review. Staff is proposing to remove projecting signage as a "substantial improvement" so review of new projecting signs within the district would no longer require P&Z and City Council review/approval. It is also proposed to clarify the role of Community Main Street in project review. Community Main Street is not intended to be an authority, but a resource. Ms. Lehmann also stated that staff would like to look at the applicability and threshold of the review criteria. This includes clarifying the parking requirements outside of the C-3 Zoning, providing additional flexibility for new building setbacks, and incorporating more objectivity into façade reviews.

Ms. Lehmann provided the current categories that are considered with façade reviews, and discussed the proposed changes to the items. She reminded the Commission to keep in mind that these changes will have to be enforced in the future and they will shape the future of development in this area.

Ms. Lehmann first discussed proportion, noting that the Code currently states that the width and height of adjacent buildings shall be considered in the construction or alteration of a building. The current description is very open to interpretation and staff would like to encourage density and height in the downtown but still be respectful to the existing buildings and character of the district. Staff would like to propose a minimum and maximum height, or stories, for different areas in the district, as well as changing the title of the section to massing (as opposed to proportion).

Mr. Holst asked about restriction on height on Main Street, and Mr. Arntson stated that there should be protection for the properties on Main Street through a reasonable transition area.

Ms. Saul noted that if there is no restriction of height on buildings, there could be a parking problem similar to what is being discussed on College Hill. Ms. Lehmann clarified that there are different rules in place regarding parking for residential downtown.

Ms. Lehmann stated that no changes are recommended for roof shape, pitch, and direction. Staff and Community Main Street feel that the section regarding pattern is mostly fine, but ask that more direction be provided on the use of windows in a building. They feel transparency is important for promoting a walkable downtown area and suggest a possible percentage of windows on the first floor. She asked the Commission to consider what percentages they find to be appropriate. Mr. Holst noted concerns with restricting design. Ms. Saul noted that one of the things downtowns worry about is what is called "blank spaces," stating that it hinders walkability where areas have no windows and no doors, and discourages people from walking further.

The next topic Ms. Lehmann covered was materials and textures, and she noted staff and Community Main Street feel that it would benefit the section to be more specific in those areas. For instance, possibly adding specific materials or prohibiting certain materials. Ms. Oberle noted that this seems that it would be subject to change as building materials and styles evolve. Mr. Arntson stated that if it's on Main Street he would like to see some continuity, but if you go to the other streets the styles can be different. It was agreed that it is a reasonable approach to create specific areas within the downtown overlay and create specific regulations accordingly.

Ms. Lehmann discussed the category of colors, noting the suggestion of limiting colors to earth or neutral colors, specifying all other colors can be used as highlights within a certain percentage. Ms. Oberle asked where this restriction would apply. Ms. Saul stated that she feels they should allow flexibility for color as it is good for business and is inviting. Ms. Lehmann noted that the issue with not having more specific guidelines leaves the Commission in a tough position as it becomes very subjective and it becomes difficult from a legal standpoint if it is challenged. Mr. Holst feels it would be reasonable to put a percentage on the color.

Ms. Lehmann noted that no changes are suggested for the architectural features or the exterior mural wall drawing/painted artwork/exterior painting sections. Staff is exploring suggestions from Community Main Street with regard to signage. She noted that this will be discussed at a future meeting. Ms. Lehmann thanked the Commission for their initial feedback. Mr. Holst asked staff to send out preliminary language to the Commission to give them an idea of what is being proposed.

Karen Smith, 816 Hudson Road, (member of the Historical Society and speaking on behalf of the Community Main Street Design Committee) thanked the Commission for taking time to look over the ordinance and consider their advice in the past. She did want to caution against different areas being expected to follow different guidelines.

5.) The next item of business was a zoning ordinance discussion with regard to principle and accessory/secondary uses. Chair Oberle introduced the item and Mr. Sturch provided background information. He introduced elements for consideration with regard to mixed use developments within the C-3 District. They would like to maintain and promote the usage and development while maintaining commercial street level uses. Comprehensive plan goals include mixed land uses, rental expansion and promoting walkable neighborhoods.

Mr. Sturch presented three separate ideas to consider when drafting the ordinance amendments. These include the following:

1) Calculate the entire area of the structure with residential less than 50% of the total building area
2) First floor (street level) commercial use only. If parking is used under the building footprint, that area must be compensated on the upper floors as a commercial use.
3) Calculate the area of the first floor (street level). The majority (define) of said floor area within the building's footprint to be used as commercial.

Ms. Giarusso noted that there is a need to better define accessory. Mr. Sturch provided additional considerations, including:

1.) Residential dwelling units to be established on the upper floors of a commercial structure.
2.) The residential use shall comply with the residential parking guidelines.
* Exceptions: apply a minimum standard for a number of units/bedrooms (ex. Remodel, contributing buildings in the historic district)
3.) All parking under building must be placed behind the street level storefront (commercial use).

Mr. Sturch explained that the C-3 District does not have parking requirements for residential as an accessory use. The City began to apply the requirements based on the State Street development as the lots were assembled. This proposal would better define the building use and set up parking requirements.

Mr. Wingert stated that it is expensive to redevelop and feels the 50% use restricts development. He asked where staff has gotten these guidelines and percentages for parking. Mr. Sturch stated that it has been carried on from older codes. Ms. Giarusso stated that if the Commission is looking at C-3 zoning, residential should be considered as well. Mr. Holst asked when the process of rewriting the zoning ordinance will begin. Stephanie Houk Sheetz, Director of Community Development, stated that the staff changes that have happened over the last few years have impacted the ability to get it started as it will be a lengthy process. Ms. Saul stated many shoppers are from outside the area, which means that parking still needs to be considered no matter how walkable we would like it to be. Ms. Sheetz noted that there is a plan in place to hire a consultant to help with rewriting the code who will be familiar with other communities to help consider appropriate changes.

Mr. Sturch discussed efficiency/studio unit considerations, which include:

1) Define an efficiency/studio unit – residential unit less than 600 sq. ft.
2) Adopt an efficiency/studio unit parking ration – 1 stall/unit
3) Apply citywide

He stated that the recommendation is to focus on the first floor, making sure the majority use is commercial, and if parking is required and located on the first floor, that commercial area should be compensated on the upper floors. It is also recommended to keep residential units on the upper floor and look at the parking regulations for the residential side of the project. There could also be consideration for using adjacent properties for parking and have the commercial on first floor define the use, keeping all parking behind the commercial storefronts.

Kurt Rickard, 223 W. 2nd, encouraged the Commission to look at the residential areas in the C-3 and require the parking be the same as R-4 use. He feels parking is needed for commercial use downtown.

Dan Drendel, Slingshot Architecture, stated that Des Moines is about to adopt a new zoning ordinance, and part of their process included teaming up with the University of Iowa to have several community events over the course of a year to discuss what they wanted to achieve. That led into a master plan which laid the groundwork for codifying

the ordinance. They brought in people from the public as well as professionals to discuss what they would like to see. It helped to develop the vision first and then work on updating the ordinance.

Jeannette Geisler, agrees that we do want more density, but she feels that there is a definite problem with parking on College Hill. She has issues all the time with business and residential units that she owns. She noted that a parking ramp would be appropriate in these kinds of areas.

Mr. Holst stated that the Comprehensive Plan that was done a few years ago would be a good lead in to working on the zoning ordinance. Ms. Sheetz suggested having workshops to go over the Comprehensive Plan as a precursor to leading into the ordinance. Mr. Wingert asked about the metered and non-metered parking in the City lots. He noted that the metered parking lot on College Hill is almost always empty and asked if it can be changed to non-metered.

Mr. Leeper suggested having future developers share costs of amenities to help provide for future parking.

6.) As there were no further comments, Mr. Arntson made a motion to adjourn. Mr. Leeper seconded the motion. The motion was approved unanimously with 9 ayes (Adkins, Arntson, Giarusso, Hartley, Holst, Leeper, Oberle, Saul and Wingert), and 0 nays.

The meeting adjourned at 8:00 p.m.

Respectfully submitted,

Stephanie Houk Sheetz
Director of Community Development

Joanne Goodrich
Administrative Clerk

DEPARTMENT OF COMMUNITY DEVELOPMENT

City of Cedar Falls
220 Clay Street
Cedar Falls, Iowa 50613
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Fax: 319-273-8610
www.cedarfalls.com

MEMORANDUM

Planning & Community Services Division

TO: Planning & Zoning Commission

FROM: Shane Graham, Planner II

DATE: February 8, 2018

SUBJECT: Gateway Business Park at Cedar Falls Preliminary Plat

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REQUEST:	Request to approve the Gateway Business Park at Cedar Falls Preliminary Plat
PETITIONER:	CF Gateway Park, Inc., Owner; Shive-Hattery, Engineer; Russell Construction, Contractor
LOCATION:	46 acre parcel at the northeast corner of Hudson Road and W Ridgeway Avenue

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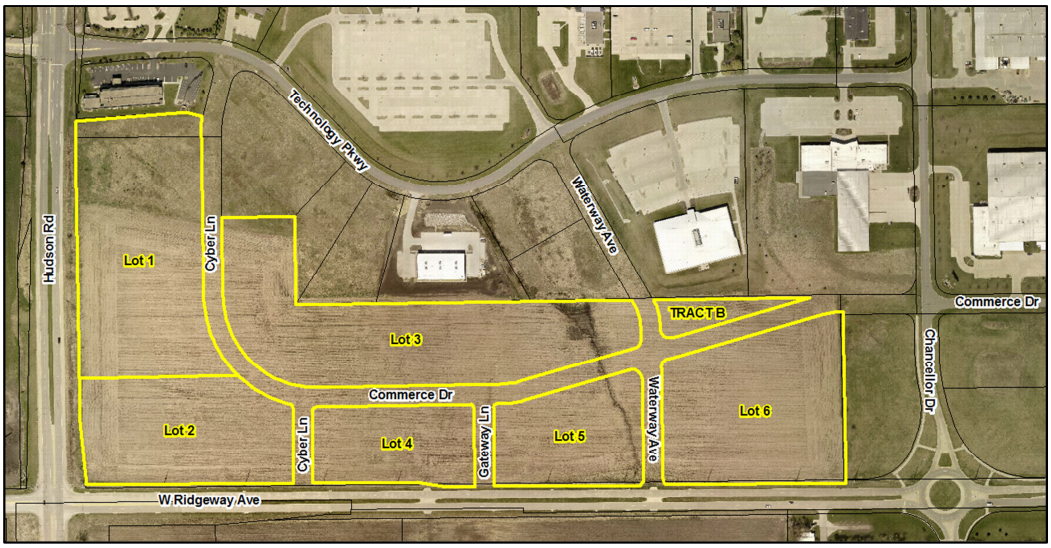
PROPOSAL

It is proposed to create six (6) lots zoned HWY-1 Highway Commercial District for commercial development on a 46-acre parcel in southwestern Cedar Falls.



BACKGROUND

This 46-acre property has been utilized as farm ground for as far back as City records go, and was purchased by the applicant in the fall of 2017 with the intent of developing it into lots for

potential commercial and office uses.

ANALYSIS

The subdivision plat is located on 46 acres of land in the southwest portion of Cedar Falls. Cyber Lane will be a new north/south street that connects the subdivision to Technology Parkway to the north and W Ridgeway Avenue to the south. Commerce Drive will be extended from Chancellor Drive to the west through the subdivision and will connect into Cyber Lane. Waterway Avenue will extend from the north through the plat and connect with W Ridgeway Avenue to the south. And Gateway Lane will be a new road that connects from Commerce Drive to W Ridgeway Avenue. All of the new streets within the development will be constructed as 31-foot wide public streets. The original submittal that the Commission reviewed on January 10, 2018 showed a roundabout at the intersection of Commerce Drive and Cyber Lane. This has been revised to remove the roundabout and replace it with a standard “t” intersection. This was done in part because the intersection of Cyber Lane and W Ridgeway Avenue was requested by City staff to move further to the east in order to keep the intersection further away from Hudson Road. Because this intersection moved approximately 150 feet to the east, the intersection of Gateway Lane and W Ridgeway Avenue also moved 150 feet to the east as well. The location of the intersection of Waterway Avenue and W Ridgeway Avenue remains unchanged.

The six lots range in size from 3.37 acres to 9.79 acres. There is one tract (Tract B) shown for storm water detention purposes, with several other detention areas shown on the individual lots. All lots, except for Lot 1, would gain access from the new interior streets and not from W Ridgeway Avenue or Hudson Road. Lot 1, which the applicant has submitted a site plan for, would include 2 right-in/right-out accesses onto Hudson Road. Development within this subdivision will include a site plan review by the Planning & Zoning Commission and City Council for each proposed use, as the property is zoned HWY-1 Highway Commercial District.

A future trail connection along Hudson Road and W Ridgeway Avenue is also shown. An existing trail is located along W Ridgeway Avenue, and ends at the roundabout at the intersection of W Ridgeway Avenue and Chancellor Drive.

TECHNICAL COMMENTS

City technical staff, including Cedar Falls Utilities (CFU) personnel, noted that the water, gas and communication services are available to the site. The developer will be responsible for extending the utility services to the proposed development. The easements identified on the plat satisfy CFU requirements.

The plat shows 3 full accesses onto W Ridgeway Avenue. At Cyber Lane, there currently exists a median within W Ridgeway Avenue that will need to be removed in order to gain access. At Gateway Avenue, there was a median cross-over to gain access to the road; however, the intersection is being moved approximately 150 feet to the east, so the existing median cross-over will need to be closed, and a new cross-over constructed where the location of the new intersection will be located. Waterway Avenue already has a median cross-over, and no changes are being made to that intersection location. It should be noted that left turn lanes will also be needed at these intersections in order for traffic to turn onto these streets from W Ridgeway Avenue. The developer is responsible for installing the median cross-overs where necessary, closing the existing median cross-over, and installing the left turn lanes, as these intersections develop.

Although the accesses from W Ridgeway Avenue are shown as typical intersections, staff and the developer are looking to see if there is an opportunity to install roundabouts at one or more of these intersections. If there is that opportunity, additional right-of-way may be needed from the developer to construct such roundabout(s).

All necessary infrastructure will be extended to serve the subdivision, including a public water main, storm sewer and sanitary sewer. Water mains will be extended along W Ridgeway Avenue and Hudson Road, and from Commerce Drive and Technology Parkway. A 15" Sanitary sewer will extend along Hudson Road south to the corner of W Ridgeway Avenue. An 8" main will extend between Lots 1 and 2 and will connect in with Cyber Lane and over to Commerce Drive. Also, 8" sanitary sewer mains will be located within Gateway Avenue, Waterway Avenue and Commerce Drive, which will head north through Waterway Avenue to tie into an existing main located within Technology Parkway. Storm sewers are located within the public right-of-way, and will collect storm water runoff from the streets to several regional detention basins located on Lots 1, 2 and 3, and Tract B. Gas, electric and fiber optic service are also included in this subdivision.

A storm water management plan has been submitted and reviewed for this plat. The plan for the storm water will be collected via intakes along the new streets and directed to several regional detention basins. These basins are located on the north side of Lot 1, the north side of Lot 2, the east side of Lot 3, and all of Tract B. The developer is planning on phasing this development, where only the approximate west half of the 46-acre parcel would be final graded at this time. This would call for the construction of detention basins A and B right away, with basins C and D being constructed at a later time. There have been some minor technical comments from our Engineering Department regarding the stormwater management plan, and the developer has answered those questions to the satisfaction of the City.

A wetland delineation report has been submitted for this plat, which shows several areas of wetlands on or near the property. There is a wetland area shown along the ditch along the east side of Hudson Road adjacent to the property, an area at the east end of Lot 3 where storm water detention basin C is located, and a very small area located at the southeast corner of Lot 5. The developer's engineer has submitted an application to the Iowa DNR and US Army Corps of Engineers to determine if the wetland areas need to be mitigated or not as part of this development. Any applicable permits from all regulation authorities must be submitted prior to final stormwater management approval during the final plat approval process.

A traffic impact study has been submitted and reviewed for this plat, with several comments/questions noted by the City Engineer. Those comments/questions were given back to the developer's traffic engineer, who has made some changes to the report based on the feedback from the City Engineer. A revised report has been resubmitted, to the satisfaction of the City Engineer.

City zoning staff notes that the proposed lots appear to be of sufficient lot area to meet the anticipated development plans. The HWY-1 District requires a 20-foot setback along the perimeter of the district and interior street network. Buildings and parking lots must be located outside this setback area. A more detailed site plan for these lots will be presented to the Commission in the coming months once they are proposed to be developed.

The property is located outside of the designated 100-year floodplain.

Approval of a Preliminary Plat allows the developer to proceed with the construction and installation of all required public infrastructure such as streets, sewers and other utilities. The platting documents including the Deed of Dedication, proof of ownership, and a plat fee of $300.00 have been submitted.

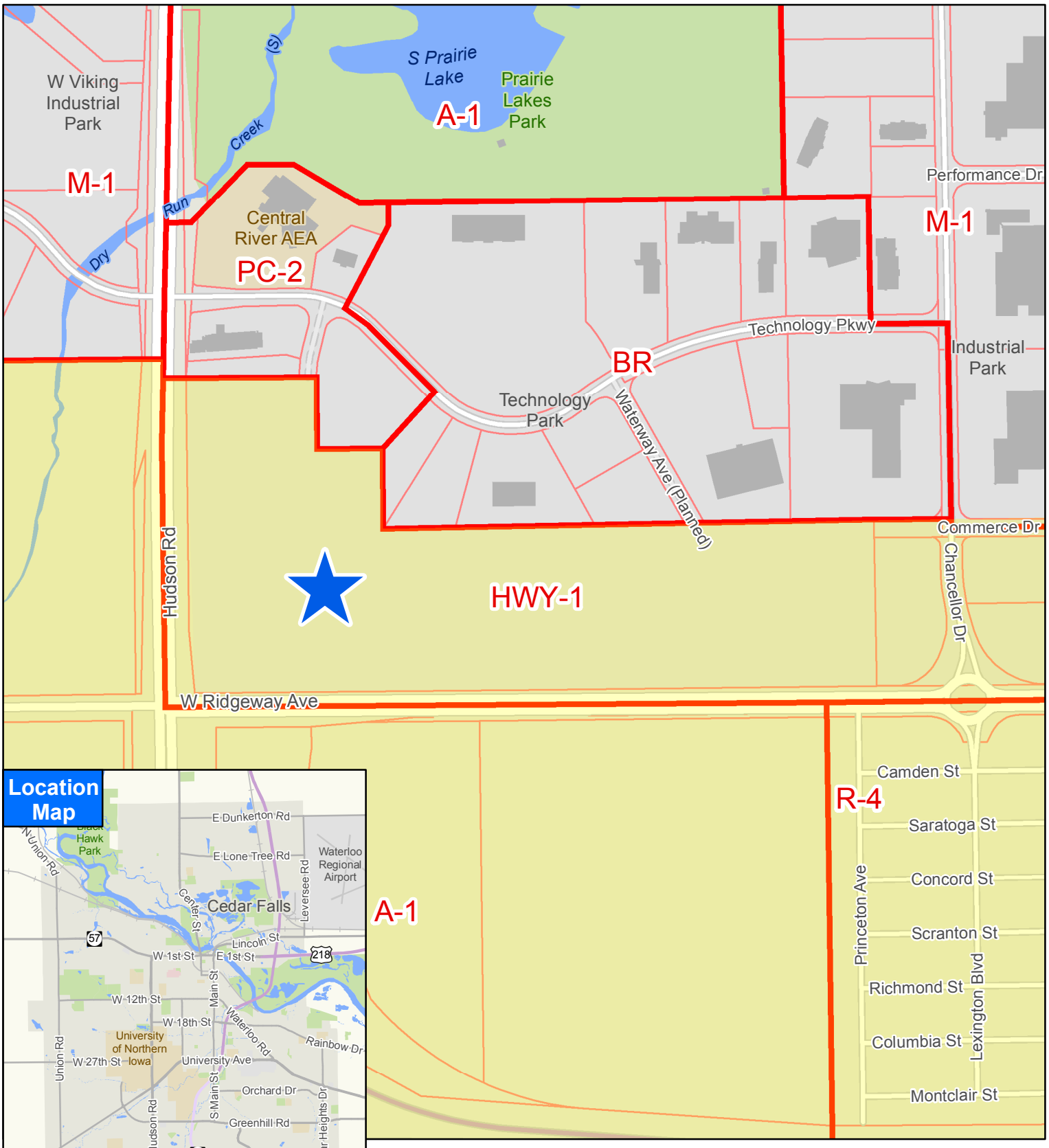
STAFF RECOMMENDATION

The Community Development Department recommends approval of the preliminary plat of Gateway Business Park and Cedar Falls.

PLANNING & ZONING COMMISSION

Discussion 1/10/2018	Acting Chair Holst introduced the item and Mr. Graham provided background information. Staff answered brief questions by the Commission regarding the traffic study and turn lanes, as well as curb cuts. The item was continued to the next meeting.

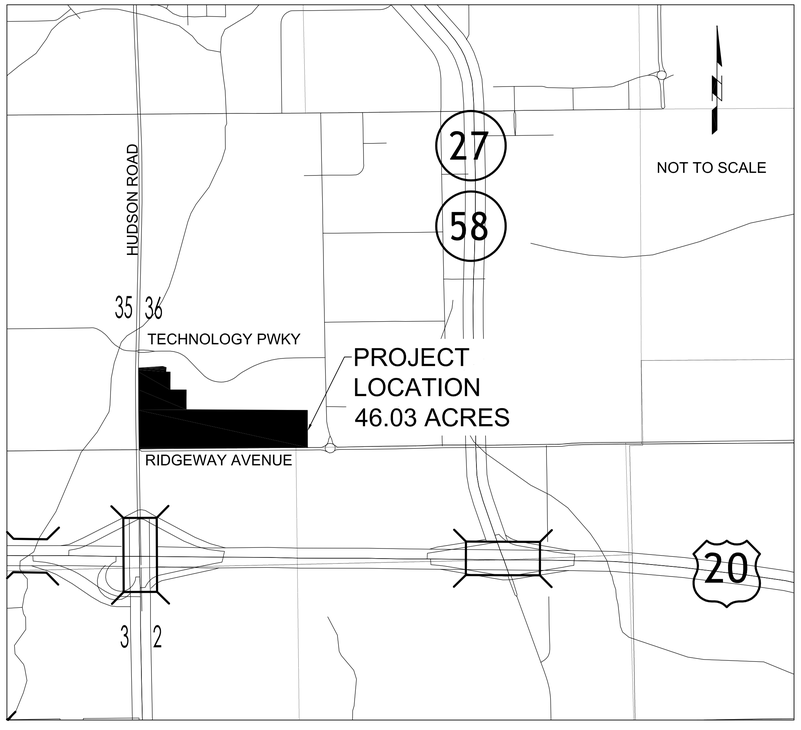
Cedar Falls Planning & Zoning Commission
February 14, 2018



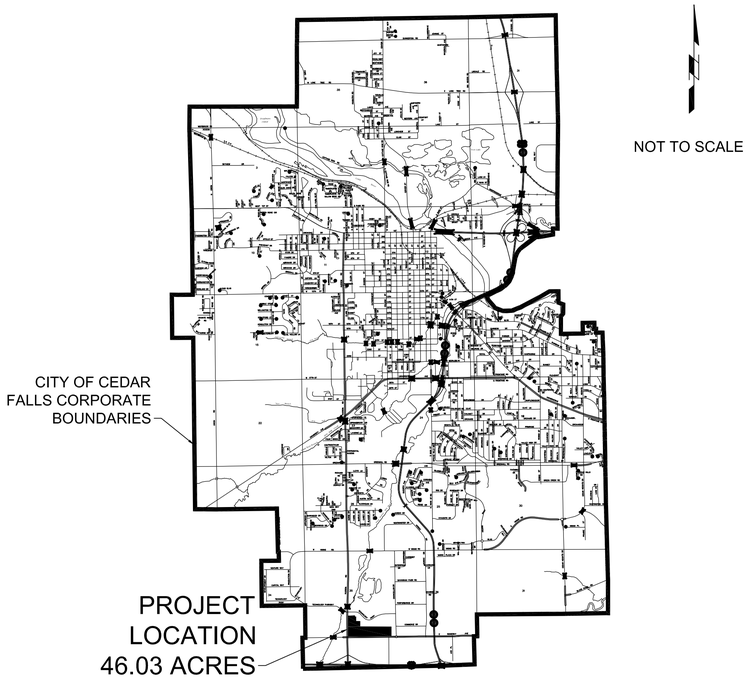
Gateway Business Park at Cedar Falls Preliminary Plat

PRELIMINARY PLAT
GATEWAY BUSINESS PARK AT CEDAR FALLS I
IN THE CITY OF CEDAR FALLS, BLACK HAWK COUNTY, IOWA

SITE LOCATION MAP



CITY MAP



OWNER AND APPLICANT:
CEDAR FALLS GATEWAY PARK, INC.
ATTN: ATUL PATEL
307 WINDING RIDGE ROAD
CEDAR FALLS, IA 50613

OWNER'S AGENT:
RUSSELL CONSTRUCTION
ATTN: ALISHA SCHMITZ
4600 EAST 53RD STREET
DAVENPORT, IA 52807
563-459-4600

PLAT PREPARER:
SHIVE-HATTERY
ATTN: ISAAC HODGINS
316 SECOND STREET SE SUITE 500
CEDAR RAPIDS, IA 52406
319-364-0227

LEGAL DESCRIPTION:

That part of the Southeast Quarter of Section No. 35, Township No. 89 North, Range No. 14 West of the Fifth Principal Meridian in the City of Cedar Falls, Black Hawk County, Iowa, lying Southerly of Cedar Falls Technology Park Phase II, City of Cedar Falls, Iowa, except those parcels deeded for road purposes in 112 LD 487, 539 LD 335, 539 LD 338 and 552 LD 935.

AND

Lot 23 In Cedar Falls Technology Park Phase II, City of Cedar Falls, Iowa, except that part of Lot 23, Cedar Falls Technology Park, Phase II described as follows:

Commencing at the Southwest corner of said Lot 23;

Thence N04° 09 '06" E 62.91 feet along the West line of said Lot 23 to the point of beginning;

Thence N85° 40' 03" E 374.63 feet; thence S75° 44' 42" E 57.22 feet to the East line of said Lot 23;

Thence Northerly 42.91 feet along a 433.00 foot radius curve, concave Easterly (said curve having a long chord of 42.90 feet and bearing N11° 24' 00" E);

Thence N14° 14' 21" E 81.41 feet along the East line of Lot 23;

Thence Northwesterly 100.58 feet along a 55.00 foot radius curve, concave Southwesterly (said curve having a long chord of 87.14 feet and bearing N38° 09' 02" W);

Thence S89° 27' 35" W 196.82 feet along the North line of said Lot 23;

Thence S83° 44' 57" W 182.43 feet along the North line of said Lot 23;

Thence Southwesterly 20.84 feet along a 15 foot radius curve, concave Southeasterly (said curve having a long chord of 19.20 feet and bearing S43° 57' 02" W);

Thence S 04° 09' 06" W 168.60 feet along the West line of said Lot 23 to the point of beginning,

Subject to restrictive covenants, ordinances, and limited access provisions of record, if any, and to existing easements of record.

FLOODPLAIN NOTE:

FEMA FLOOD INSURANCE RATE MAP PANEL 0277F SHOWS THAT A FLOODPLAIN IS LOCATED WEST OF HUDSON ROAD AND NORTH OF TECHNOLOGY PARKWAY AND THAT THERE ARE NONE LOCATED WITHIN THE PROPOSED SUBDIVISION.

WETLAND NOTE:

INITIAL CONSTRUCTION SHALL ONLY INCLUDE LOT 1 AND THE INSTALLATION OF TWO (2) ENTRANCES ONTO HUDSON ROAD WHICH WILL CROSS AN EXISTING WETLAND, IMPACTING 0.02 ACRES. ACTIVITY IN AND AROUND THE DELINEATED WETLAND WILL BE COORDINATED WITH THE US ARMY CORPS OF ENGINEERS AND THE IOWA DEPARTMENT OF NATURAL RESOURCES. NO WORK WILL COMMENCE PRIOR TO RECEIVING WETLAND BOUNDARY APPROVALS/CONCURRENCE AND APPLICABLE PERMITS FROM ALL REGULATING AUTHORITIES.

FUTURE CONSTRUCTION OF COMMERCE ROAD AND THE ADJACENT LOTS WILL DISTURB ADDITIONAL WETLAND AREAS. THIS WORK WILL ALSO BE COORDINATED WITH THE USACE AND IDNR. NO WORK WILL COMMENCE PRIOR TO RECEIVING WETLAND BOUNDARY APPROVALS/CONCURRENCE AND APPLICABLE PERMITS FROM ALL REGULATING AUTHORITIES, INCLUDING AN APPROVED COMPENSATORY MITIGATION PLAN SHOULD MITIGATION BE REQUIRED.

MISCELLANEOUS NOTES:

1. THE DEVELOPER'S INTENTION IS TO FINAL PLAT LOT 1, LOT 2 AND CYBER LANE AS THE FIRST ADDITION. THE INTENDED FIRST ADDITION WILL BE AREAS THAT DRAIN TO DETENTION BASINS A AND B. THOSE ARE THE ONLY AREAS INTENDED TO BE DISTURBED IN THE NEAR FUTURE. ALL DISTURBED AREAS PLANNED DURING THE FINAL PLAT PHASE WILL REQUIRE THE ASSOCIATED REGIONAL BASIN TO BE CONSTRUCTED AT THAT TIME.
2. ALL PROPOSED GRADING SHOWN IN PRELIMINARY PLAT IS PRELIMINARY. INDIVIDUAL LOT BUILDOUT WILL NEED TO PROVIDE FLOOD PROTECTION AND ADEQUATE COVER FOR ALL UTILITIES.
3. TOPOGRAPHIC SLOPES THROUGHOUT THE PARCEL GENERALLY RANGE FROM 1% TO 6% WITH THE MAJORITY OF SLOPES FALLING IN THE 2%-4% RANGE.
4. TOPOGRAPHIC CHANGES INCLUDE FLATTENING THE WESTERN PORTION OF THE PROPERTY AND FILLING IN THE AREA OF THE EXISTING SWALE TO THE EAST (WITH CULVERT INSTALLATION UNDER THE PROPOSED ROADWAY).
5. A CULVERT IS SHOWN UNDER COMMERCE ROAD, BUT AN UNDERGROUND STORM SEWER SYSTEM IS POSSIBLE FOR CONVEYING THE EXISTING DRAINAGE WAY WITH INDIVIDUAL LOT DEVELOPMENT.
6. THE DISTURBED AREA IS GREATER THAN ONE (1) ACRE. AN NPDES PERMIT WILL BE APPLIED FOR AND ACQUIRED PRIOR TO CONSTRUCTION.

THIS PRELIMINARY PLAT HAS BEEN APPROVED BY THE CITY COUNCIL BY RESOLUTION NO.

ON _____

_____
PLANNING & DEVELOPMENT DIRECTOR DATE

LEGEND

EXISTING	DESCRIPTION	PROPOSED
	CABLE LINE - OVERHEAD	
	CABLE LINE - UNDERGROUND	
OE	ELECTRIC LINE - OVERHEAD	OE
E	ELECTRICAL LINE - UNDERGROUND	E
G	GAS MAIN	G
	SANITARY SEWER	
	STEAM	
	STORM SEWER	
T	OVERHEAD TELEPHONE	
	FIBER OPTICS	
T	UNDERGROUND TELEPHONE	T
W	WATER MAIN	W
	UTILITY EASEMENT	
	PROPERTY BOUNDARY	
	ADJACENT PROPERTY	
	CHAIN LINK FENCE	
1098	CONTOUR	1098

TELEPHONE PEDESTAL	T	LIGHT POLE	
GAS VALVE		POWER POLE	
SANITARY MANHOLE	S	TRANSFORMER	TRANS
WATER VALVE		ELECTRIC MANHOLE	E
FIRE HYDRANT		TRAFFIC SIGN	
WATER MAIN REDUCER		CURB INTAKE	
WATER MANHOLE	W	AREA INTAKE	
SIGNAL BASE		CURB INTAKE W/ GRATE	
SIGNAL CONTROLLER		STORM MANHOLE	D
HANDHOLE		FLARED END SECTION	
SIGNAL HEAD		PROPERTY PIN	
JUNIPER TREE		BUILDING/STRUCTURE FOOTPRINT	EXISTING / PROPOSED
DECIDUOUS TREE		GRANULAR SURFACE	
		PROPOSED PAVEMENT LIMITS	
SHRUB		PARKING SPACE COUNT	X

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GATEWAY BUSINESS PARK AT CEDAR FALLS I
PRELIMINARY PLAT

RUSSELL CONSTRUCTION

GATEWAY BUSINESS PARK AT CEDAR FALLS I, CEDAR FALLS, IA

PRELIMINARY
- NOT FOR
CONSTRUCTION

DRAWN: KAL
APPROVED: IJH
ISSUED FOR: REVIEW
02/05/2018
J:\2171620

PRELIMINARY PLAT
- COVER SHEET

1 of 1

Item 4.A.

-15-

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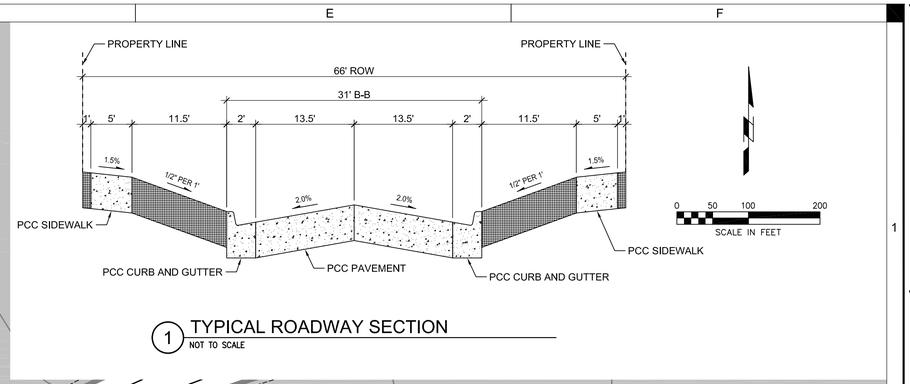

1 TYPICAL ROADWAY SECTION
NOT TO SCALE

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GATEWAY BUSINESS PARK AT CEDAR FALLS I
PRELIMINARY PLAT

RUSSELL CONSTRUCTION

GATEWAY BUSINESS PARK AT CEDAR FALLS I, CEDAR FALLS, IA

PRELIMINARY - NOT FOR CONSTRUCTION

DRAWN: KAL
APPROVED: IJH
ISSUED FOR: REVIEW
DATE: 02/05/2018
PROJECT NO: 217I020
FIELD BOOK: —
CLIENT NO: —

PRELIMINARY PLAT - SITE MAP

2 of 4

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EXISTING WATER MAIN, TYP.
TECHNOLOGY PARKWAY
EX. 10' UTILITY EASEMENT
CYBER LANE
EXISTING ELECTRIC, TYP.
EXISTING UTILITY EASEMENT, TYP. (WIDTH VARIES)
EX. SAN MH RIM 922.27 IE N 912.16
EX. SAN MH RIM 937.42 IE SE 924.64
EXISTING SANITARY SEWER, TYP.
DETENTION BASIN A
LOT 1 8.98 ACRES
PROPOSED STORM SEWER, TYP.
HUDSON ROAD
20' CITY RECREATIONAL TRAIL AND UTILITY EASEMENT ALONG HUDSON ROAD RIGHT-OF-WAY
EXISTING FIBER OPTIC, TYP.
EXISTING GAS, TYP.
WATERWAY AVENUE
100' RIGHT TURN LANE
WETLAND AREA 0.32 ACRES
10' PROPOSED UTILITY EASEMENT, TYP.
10' PROPOSED UTILITY EASEMENT, TYP.
EX. 20' UTILITY EASEMENT
GATEWAY BUSINESS PARK AT CEDAR FALLS I 46.03 ACRES
WETLAND AREA 0.29 ACRES
DETENTION BASIN C
BACKFLOW PREVENTOR, TYP.
DETENTION BASIN D
TRACT A 6.15 ACRES
EX. 10' UTILITY EASEMENT
EX. STORM FES IE 927.17
EX. 16.5' TELEPHONE EASEMENT (TO BE RELOCATED AND VACATED)
TRACT B 0.83 ACRES
COMMERCE DRIVE
20 ' PROPOSED SANITARY SEWER EASEMENT, TYP.
PROPOSED WATER MAIN, TYP.
10' PROPOSED UTILITY EASEMENT, TYP.
LOT 3 9.79 ACRES
PROPOSED SANITARY SEWER, TYP.
10' PROPOSED UTILITY EASEMENT, TYP.
100' RIGHT TURN LANE
DETENTION BASIN B
LOT 2 5.79 ACRES
10' PROPOSED UTILITY EASEMENT, TYP.
GATEWAY LANE
10' PROPOSED UTILITY EASEMENT, TYP.
EX. 20' GAS MAIN EASEMENT
LOT 6 7.26 ACRES
20' CITY RECREATIONAL TRAIL EASEMENT ALONG RIDGEWAY AVE RIGHT-OF-WAY
LOT 4 3.37 ACRES
3.90 ACRES
EX. 20' ELECTRIC TRANSMISSION EASEMENT
EX. DRAINAGE EASEMENT
WETLAND AREA 0.01 ACRES
EX. SAN MH RIM 938.92 IE S 923.34
EX. STORM FES IE 933.88
10' FUTURE CITY RECREATIONAL TRAIL, TYP.
RIDGEWAY AVENUE
EX. STORM FES IE 854.41
EXISTING STORM SEWER, TYP.
20' SETBACK, TYP.
CLOSE MEDIAN CROSS-OVER

0 50 100 200
SCALE IN FEET

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GATEWAY BUSINESS PARK AT CEDAR FALLS I
PRELIMINARY PLAT

RUSSELL CONSTRUCTION

GATEWAY BUSINESS PARK AT CEDAR FALLS I, CEDAR FALLS, IA

PRELIMINARY - NOT FOR CONSTRUCTION

DRAWN: KAL
APPROVED: LIH
ISSUED FOR: REVIEW
02/05/2018
2170620

PRELIMINARY PLAT - UTILITY PLAN 1

Item 4.A.

3 (

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STORM SEWER PIPE SIZE TABLE

PIPE	DIAMETER (in.)	LENGTH (ft.)	SLOPE		PIPE	DIAMETER (in.)	LENGTH (ft.)	SLOPE
A-O-1	24	78	1.00%		D-O-1	24	62	1.00%
A-1-1	30	92	1.00%		D-1-1	36	60	1.00%
A-2-1	18	87	1.00%		D-1-2	12	36	1.00%
A-3-1	18	36	1.00%		MH-D-1	36	76	1.00%
A-4-1	30	96	1.00%		D-2-1	12	244	1.00%
A-4-2	24	270	1.00%		D-3-1	12	12	1.00%
A-4-3	24	267	1.00%		D-3-2	12	117	1.00%
A-5-1	30	36	1.00%		D-3-3	12	118	1.00%
A-6-1	18	36	1.00%		D-4-1	12	36	1.00%
A-7-1	18	36	1.00%		D-5-1	12	36	1.00%
B-O-1	24	137	1.00%		E-1-1	12	44	0.50%
B-1-1	36	49	1.00%		E-1-2	12	158	0.50%
B-1-2	36	32	1.00%		E-1-3	12	158	0.50%
B-2-1	36	66	1.00%		E-1-4	12	144	0.50%
B-2-2	36	64	1.00%		E-1-5	12	144	0.50%
B-2-3	36	36	1.00%		E-2-1	12	42	0.50%
B-2-4	18	50	1.00%		E-3-1	12	31	0.50%
B-2-5	18	36	1.00%		E-4-1	12	31	0.50%
B-3-1	30	105	1.00%		E-5-1	12	31	0.50%
B-3-2	30	220	1.00%		E-6-1	12	31	0.50%
B-3-3	24	24	1.00%		F-1-1	15	28	0.50%
MH-B-1	18	64	1.00%		F-1-2	12	140	0.50%
B-3-4	12	55	1.00%		F-1-3	12	141	0.50%
B-4-1	12	36	1.00%		F-1-4	12	186	0.50%
B-5-1	12	36	1.00%		F-2-1	12	41	0.50%
B-6-1	12	36	1.00%		F-3-1	12	36	0.50%
B-7-1	12	185	1.00%		F-4-1	12	31	0.50%
B-8-1	12	36	1.00%		F-5-1	12	34	0.50%
B-9-1	12	36	1.00%					
C-O-1	24	71	1.00%					
C-1-1	12	74	1.00%					
C-1-2	12	3	1.00%					
C-1-3	12	146	1.00%					
C-1-4	12	36	1.00%					
C-2-1	12	60	1.00%					
C-2-2	4	36	1.00%					
C-2-3	12	50	1.00%					
C-2-4	12	187	1.00%					
C-2-5	12	147	1.00%					
C-2-6	12	40	3.00%					

STORM SEWER NOTES:
1. ALL STORM SEWER IS RCP (DIAMETER VARIES).
2. ALL CURB INTAKES ARE PER SUDAS DETAIL SW-510.
3. SEE THIS SHEET FOR STORM PIPE LOCATIONS.

-18-

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GATEWAY BUSINESS PARK AT CEDAR FALLS I
PRELIMINARY PLAT

RUSSELL CONSTRUCTION

GATEWAY BUSINESS PARK AT CEDAR FALLS I, CEDAR FALLS, IA

PRELIMINARY
- NOT FOR
CONSTRUCTION

DRAWN: KAL
APPROVED: IJH
ISSUED FOR: REVIEW
DATE: 02/05/2018
PROJECT NO: 2171620
FIELD BOOK: —
CLIENT NO: —

PRELIMINARY PLAT
- UTILITY PLAN 2

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Printed: 2/2/2018 11:06:10 AM

Prepared by and Return to: Jennifer Belby, PC, 4600 E. 53rd Street, Davenport, IA 52807, (563) 459-4600

(Space above this line for recording purposes)

DEED OF DEDICATION

OF

GATEWAY BUSINESS PARK AT CEDAR FALLS FIRST ADDITION
IN THE CITY OF CEDAR FALLS, BLACK HAWK COUNTY, IOWA

KNOW ALL PERSONS BY THESE PRESENTS:

That, Cedar Falls Gateway Park, Inc., with its principal office in Independence, Iowa, being desirous of setting and platting into lots and streets the land described in the attached Certificate of Survey by VJ Engineering, a licensed land surveyor, dated the _____ day of _____, 2017, does by these presents designate and set apart the aforesaid premises as a subdivision of the City of Cedar Falls, Iowa, the same to be known as

GATEWAY BUSINESS PARK AT CEDAR FALLS FIRST ADDITION
IN THE CITY OF CEDAR FALLS, BLACK HAWK COUNTY, IOWA

all of which is with the free consent and the desire of the undersigned, and the undersigned does hereby designate and set apart for public use the streets and avenues as shown upon the attached plat.

EASEMENTS

The owner does hereby grant and convey to the City of Cedar Falls, Iowa, its successors and assigns, and to any private corporation, firm or person furnishing utilities for the transmission and/or distribution of water, sanitary sewer, storm sewer, drain tile, surface drainage, gas, electricity, communication services or cable television, perpetual easements for the erection, laying, building, and maintenance of said services over, across, on and/or under the property as shown on the attached plat.

RESTRICTIONS

Be it also known that the undersigned does hereby covenant and agree for itself and its successors and assigns that each and all of the lots in said subdivision be and the same are hereby made subject to the following restrictions upon their use and occupancy as fully and effectively to all intents and purposes as if the same were contained and set forth in each deed of conveyance or mortgage that the undersigned or its successors in interest may hereinafter make for any of said lots and that such restrictions shall run with the land and with each individual lot thereof of for length of time and in all particulars hereinafter started to wit:

I. DEFINITIONS.

For the purpose of this Declaration, the following terms shall have the following definitions, except as otherwise specifically provided:

A. “Plat” shall mean and refer to the real property described as Lot 1, Gateway Business Park at Cedar Falls First Addition in the City of Cedar Falls, Black Hawk County, Iowa.

B. “Declarant” shall mean and refer to Cedar Falls Gateway Park, Inc.

C. “Lot” shall mean and refer to an individual parcel of land within the Plat.

D. “Owner” shall mean and refer to the record owner, whether one or more persons or entities, of the legal or equitable title to any Lot that is a part of the Plat.

E. “City” shall mean the City of Cedar Falls, Iowa.

II. DESIGNATION OF USE.

All Lots shall be known and described as commercial or neighborhood commercial lots and shall not be improved, used or occupied for other than those purposes. Commercial activity may be conducted on any Lot or in any structure constructed or maintained on any Lot as permitted under the terms of the zoning ordinance of the City. The authority to enforce the restrictions and easements set forth herein shall be vested in the Declarant.

III. BUILDING TYPES.

The development of the subdivision shall be in accordance with the current zoning district classification set forth in the City of Cedar Falls, Iowa, zoning ordinance.

IV. BUILDING AREA DESIGN AND CONSTRUCTION.
All buildings erected on any Lot in the subdivision shall be construed in accordance with the Building, Plumbing, and Electrical Codes of the City of Cedar Falls, Iowa.

The Declarant, its successors or assigns, shall have the right to review and approve all building and site plan designs, including, but not limited to, location of access, drives, landscaping, and other improvements. All plans and specifications for structures to be built on any Lot in the subdivision, shall be submitted in writing to and approved in writing by the Declarant or its authorized agent or agents. All buildings on any Lot in the subdivision shall be kept in a reasonable state of repair and upkeep.

V. EASEMENTS.

Easements for installation and maintenance of utilities and drainage facilities, and sewer, are reserved as shown on the Plat as recorded. The Owner of each Lot, shall, at the expense of such Owner, maintain, keep, and preserve that portion of the easement within the Lot at all times in good repair and condition and shall neither erect nor permit erection of any building, structure, fence or other improvement of any kind within the easement areas (except customary ground cover) which might interfere in any way with the use, maintenance, replacement, inspection or patrolling of any of the utility services, drainage facilities and pedestrian trail, within such easements areas. Any berm and/or swale constructed for drainage purposes shall be preserved and maintained to accomplish the purposes for which it was constructed.

VI. NUISANCE.

No noxious or offensive activity or odors shall be permitted on or to escape from any Lot, nor shall anything be done thereon which is or may become an annoyance or a nuisance, either temporarily or permanently.

VII. SIGNS.

Any signs erected on any Lot in the subdivision shall be constructed in accordance with the Sign Ordinance of the City of Cedar Falls, Iowa, and subject to the review and approval of Declarant.

VIII. UTILITIES.

Except for necessary above ground utility devices, all utility lines shall be underground.

IX. CURBLINE MAINTENANCE.

The Owner and/or occupant of each Lot shall jointly and severally be responsible to keep in good order or to maintain the area between the curbline and the property line abutting their property including keeping said area free of holes, pitfalls, stumps of trees, fences, brick, stone, cement, stakes, posts or rods to which a metal, plastic or similar receptacle designed to hold newspapers are affixed, private irrigation or sprinkler systems, retaining walls, landscaping brick, block, stone, timber or other similar material, or any other similar obstructions.

X. MAINTENANCE.

The Owner and/or occupant of each Lot shall be responsible to keep the same free of trash, weeds and debris and to keep the lawn and landscaping well maintained in accordance with governing ordinances. The Owner and/or occupant of each Lot shall be responsible to maintain the exterior of any structure and all other improvements.

XI. SURFACE WATER.

The topography of the Plat is such that the surface water may flow from certain Lots onto other Lots. In regard to all matters concerning surface water, each Lot shall be subject to an benefited by such easements as may exist from the flowage of surface water under the laws of the State of Iowa, as may be in effect from time to time; and all Owners shall have such rights and obligations with respect thereto as may be provided by such laws.

XII. DEVIATION BY AGREEMENT.

The Declarant hereby reserves the right to enter into agreements with the purchaser of any Lot in the subdivision to deviate from any and all of these restrictive covenants and any such deviation (which shall be manifested by an agreement in writing) shall not constitute a waiver of the particular covenant involved or any other as to the remaining Plat. Such deviation shall be reasonably consistent with the purpose of these restrictions, and provide that the requested deviation is in the best interest of the part or parts of the Plat and the variance requested is compatible with the character of the Plat.

Whenever, in the exercise of its discretion, the Declarant grants a deviation, each Owner of a Lot hereby acknowledges that such variance shall constitute a waiver of any conflicting provisions of these restrictions and this Declaration. Each Owner of a Lot appoints the Declarant as its true and lawful attorney-in-fact for the limited purpose of consenting to and granting variances in compliance with the terms of these covenants.

XIII. ENFORCEMENT OF COVENANTS.

This Declaration shall be deemed to run with the land, and the Declarant or the Owner of any Lot may bring an action in any court of competent jurisdiction to enforce this Declaration to enjoin its violation or for damages for the breach thereof, or for any other remedy or combination of remedies recognized at law or in equity, and shall further be entitled to recover reasonable legal fees and costs if the Declarant or Owner prevails in any such action.

XIV. AMENDMENTS OF COVENANTS.

A. For so long as Declarant owns any Lot or any part of the Plat, Declarant may amend these Restrictions by an instrument in writing filed and recorded in the records of Black Hawk County, Iowa, without the approval of any Owner of any Lot or part of the Plat estate. Provided,

however, that (i) in the event that such instrument materially alters or changes any Owner's and/or occupant's right to the use and enjoyment of such Owner's and/or occupant's Lot or if such amendment adversely effects the title to any Lot or part of the Plat, such amendment shall be valid only upon approval thereof by all Owners and/or occupants affected thereby, and (ii) in the event that such amendment adversely affects the security, title and interest of any mortgagee, such amendment shall be valid only upon the approval thereof by all mortgagees affected thereby. Each Owner, by acceptance of a deed or other conveyance to a Lot or part of the real estate, agrees to be bound by such amendments as are permitted by this section and further agrees that, if requested to do so by Declarant, such Owner will consent to the amendment of this Declaration or any other instruments related to the real estate: (i) if such amendment is necessary to bring any provisions hereof or thereof into compliance or conformity with the provisions of any applicable governmental statute, rule or ordinance or any judicial determination which shall be in conflict therewith; (ii) if such amendment is necessary to enable any reputable title insurance company to issue title insurance coverage with respect to any Lot subject to these restrictions; and (iii) if such amendment is necessary to correct a scrivener's error in the drafting of these restrictions.

B. At such time as Declarant no longer owns any Lot or any part of the Plat, these restrictions may be amended from time to time with the approval of the Owners. Such approval shall be given by the affirmative vote of not less than two-thirds (2/3) of the Owners. The Owner of each Lot (or joint Owners of a single Lot in the aggregate) shall be entitled to cast one vote on account of each Lot owned.

XV. PERIOD OF COVENANTS.

This Declaration shall continue and remain in full force and effect at all times as to the Plat and as to the Owners of any Lot, regardless of how title was acquired, until the date twenty-one (21) years after the recording of this Declaration, on which date this Declaration shall automatically be extended for two (2) successive periods of five (5) years each, unless on or before the end of the base period, or the first extension period, the Owners of not less than fifty percent (50%) of the Lots, by written instrument duly recorded, declare a termination of the same.

XVI. ENFORCEMENT AND WAIVER.

A. In the event that any one or more of the foregoing covenants, conditions or restrictions shall be declared for any reason by a court of competent jurisdiction to be null and void, such judgment or decree shall not in any manner whatsoever affect, modify, change, abrogate, or nullify any of the covenants, conditions and restrictions not so expressly held to be void, which shall continue unimpaired and in full force and effect.

B. The Plat shall also be subject to any and all rights and privileges of the City, now held or hereafter acquired, by dedication or conveyance, or by reason of the platting and recording of the Plat, or by this Declaration or by law. Wherever there is a conflict between this Declaration and the zoning ordinance of the City, the more restrictive shall be binding.

C. This Declaration shall not be applicable to property dedicated to the City, and the City may allow appropriate public use on city-owned property within the Plat.

XVII. PUBLIC IMPROVMENTS REQUIRED IN PLAT.

The Owner, in consideration of approval of this Plat by the Cedar Falls Planning and Zoning Commission and the City Council of the City of Cedar Falls, Iowa, agrees for itself, its successors and assigns, as follows:

A. That the streets shown on the attached Plat will be brought to city grade and that the streets will be thirty-one (31) feet, back of curb to back of curb, with approved hard surface pavement in accordance with City of Cedar Falls Standard Specifications. Parking shall be allowed on only one side of each street as determined by the City Engineer.

B. That concrete sidewalks four (4) inches thick will be installed during or immediately after construction of a building on any particular Lot, and the sidewalks constructed shall be across the full width of the Lot and on corner Lots and also across the parking and full length of the Lot.

C. That sanitary sewer, together with the necessary manholes and sewer service lines to all Lots in the subdivision will be provided.

D. That underground utilities, as required by the City of Cedar Falls Subdivision Ordinance, shall be installed.

E. That City water shall be provided and stubbed in to each Lot as required by the Cedar Falls Municipal Utilities.

F. That Municipal fire hydrants will be provided as required by the Cedar Falls Public Safety Department.

G. That storm sewer will be provided as required by the City Engineer of the City of Cedar Falls.

H. That handicap ramps will be provided as required by law.

I. All buildings erected on any Lot in said subdivision shall be constructed in accordance with the building, plumbing and electrical codes of the City of Cedar Falls.

J. The Declarant shall construct and install all required public improvements within the subdivision plat, to conform with approved construction plans which meet the specifications of the City of Cedar Falls, Iowa. Such required public improvements shall meet the following requirements:

1. Shall be constructed and installed in a good and workmanlike manner;

2. Shall be free of defects in workmanship or materials;

3. Shall be free of any conditions that could result in structural or other failure of said improvements;

4. Shall be constructed and installed in accordance with the design standards and technical standards established for such public improvements by the City and by Cedar Falls Utilities;

5. Shall be constructed and installed in strict compliance with the minimum acceptable specifications for the construction of public improvements set forth in the Cedar Falls Code of Ordinances, including without limitation, Chapter 24, Subdivisions, and as such specifications shall be recommended for approval by the City Engineer from time to time, and approved by the City Council.

The Developer's construction plans are now on file in the Office of the City Engineer.

K. That the work and improvements called for herein shall be in accordance with City specifications under the supervision of the City Engineer, and shall be completed within eighteen (18) months of the date of approval of the final Plat. Further, the Owner and its successors and assigns shall comply with site plan review and approval by the Cedar Falls Planning and Zoning Commission and the Cedar Falls City Council.

L. That in the event the improvements called for herein shall not be performed in accordance with the City Ordinances and the above Agreement, the City may perform said work, levy the costs thereof as assessments, and the undersigned agree that said assessments so levied shall be a lien on all of the Lots in this Addition with the same force and effect as though all legal provisions relating to the levy of such special assessments have been observed and further authorize the City Clerk to certify such assessments to the County Auditor as assessments to be paid in installments as provided by law.

IN WITNESS WHEREOF, this Deed of Dedication, was made the date first written above by the Declarant.

DECLARANT:

CEDAR FALLS GATEWAY PARK, INC.

By: _____
Atuldesi Patel, Officer

STATE OF IOWA)
) ss.
COUNTY OF BLACK HAWK)

This record was acknowledged before me on this _____ day of _____, 2017, by Atuldesi Patel, as Officer of Cedar Falls Gateway Park, Inc.

_____
Notary Public in and for the State of Iowa

Traffic Impact Study:

Proposed Open Door Hospitality Development

Cedar Falls, Iowa

January 2, 2018

Prepared for: Open Door Hospitality.

Prepared by:

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
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Executive Summary

The Open Door Hospitality (ODH) Group initiated this traffic impact study to identify potential traffic impacts on the adjacent roadway network and provide traffic mitigation measures, if necessary, due to their proposed multi-use development. The proposed development will be bounded by Hudson Road to the west, Ridgeway Avenue to the south, Chancellor Drive to the east, and Technology Parkway to the north in Cedar Falls, IA. The following study intersections within the study area were identified for analysis:

1. Hudson Road & Technology Parkway
2. Hudson Road & West Ridgeway Avenue (Hudson Road & Ridgeway Avenue hereafter)
3. Chancellor Drive & Technology Parkway
4. Chancellor Drive/Lexington Boulevard & West Ridgeway Avenue (Chancellor Drive & Ridgeway Avenue hereafter)

The above list assigns each study intersection with a number that is used throughout the report. (e.g. #1 = Hudson Road and Technology Parkway).

The area immediately surrounding the proposed development generally incorporates lodging, service, office, residential, agricultural and undeveloped land uses.

The proposed ODH development is an approximate 49 acre multi-use development. Two right-in/right out access points are proposed along Hudson Road between Technology Parkway and Ridgeway Avenue, three full access points are proposed along Ridgeway Avenue between Hudson Road and Chancellor Drive and one full access point is proposed and would become the westbound approach to the existing T-intersection of Chancellor Drive and Commerce Drive. None of the site access points are anticipated to present safety or operational concerns. Sight visibility zones corresponding to intersection sight distance calculations as defined through AASHTO should be identified and maintained at these access points. These zones should not contain structures or plantings that would preclude unobstructed views of oncoming traffic. Current designs for the development do not indicate obstructions within the sight visibility zones. For the purposes of this traffic impact study two future projected analysis years were analyzed. The first analysis year analyzed land uses expected to be built by the end of 2019. The second analysis year is 2040, which assumes full buildout of the development

Morning (AM) and evening (PM) peak hour volumes at the study intersections were collected between the hours of 7:00 AM to 9:00 AM and between 4:00 PM to 6:00 PM, respectively. The AM and PM peak hour volumes were collected on Wednesday, May 25, 2017. The peak hours of the study intersections were determined based on the highest consecutive 15-minute turning movement counts at Hudson Road and Technology Parkway. The AM and PM peak hours at Hudson Road and Technology Parkway governed the AM and PM peak hours at the study intersections because it is the study intersection with the highest volume of entering vehicles. The AM peak hour was determined to occur between 7:15 and 8:15. The PM peak hour was determined to occur between 4:30 and 5:30. The raw and refined volume data are provided in Appendix 2 of this report.

Projected traffic analysis will typically apply an annual growth rate to study intersections' existing turning movement volumes prior to adding project development trips to account for growth in background traffic (traffic growth unrelated to the proposed ODH development). A review of 2001 through 2014 Annual Average Daily Traffic (AADT) volumes obtained from the Iowa DOT, along Ridgeway Avenue indicated an approximate 2.8 percent annual growth rate. Thus, a 2.8 percent annual growth rate was applied to existing 2017 study intersection volumes to reflect projected future background traffic volume growth, which can be expected through a sustained constant area growth without the ODH development. It should be noted, over time growth rates generally do not exhibit a straight line growth, but rather tend to level off as the surrounding area continues to develop. Therefore, the use of a straight line growth rate for the prediction of future events can be thought of as conservative and should be considered as such when reviewing the output of this analysis. It should be noted, existing 2017 refined peak hour turning movement volumes at roadway

approaches with less than 5 vehicles per hour (VPH) were adjusted to 5 VPH to allow for background traffic growth.

The Safety Analysis, Visualization, and Exploration Resource (SAVER) website administered by Iowa DOT was used to collect available crash data near the project site for the five-year period between January 1, 2012 and December 31, 2016. All of the study intersections had crash rates that were lower than the statewide average for intersections with a similar daily volume of entering vehicles.

Project trip generation is based on nationally accepted trip generation rates contained in the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, 2012 and procedures outlined in the ITE Trip Generation Handbook, Second Edition, June 2004.

Trip distribution percentages for the ODH development, which are based upon expected travel patterns in the surrounding roadway network over the 2040 design year, is presented in the following figure.

Figure ES1 Project Trip Distribution

Currently, the closest bus stop to the proposed development is just east of the Kaplan University building, which is located on the southwest corner of the Nordic Drive and Performance Drive intersection. As the area develops, the City of Cedar Falls should coordinate with the Waterloo – Cedar Falls Metropolitan Transit Authority (MET) to a provide transit service stop or stops within the proposed development site. Prairie Lake Park is located to the north of the proposed development, which has a multi-use trail system around the lake and extending down to intersect with Technology Parkway. Sidewalks, bike lanes, and bike racks should be considered throughout the proposed ODH development.

The analysis presented herein indicates the study intersections will operate at an acceptable LOS D or better during the AM and PM peak hour conditions through 2040 with buildout of the proposed development, except for the intersection of Hudson Road and Ridgeway Avenue. Under projected 2019 no build PM peak hour conditions the intersection is expected to fall to LOS E. Under projected 2019 buildout AM and PM peak hour conditions the intersection is expected to fall to LOS E and LOS F, respectively. This analysis assumes existing lane configuration and control for 2017 existing and 2019 projected conditions as identified in Figure 3 and recommended lane configuration and control for 2040 projected conditions as identified in Figure 12. The study intersection of Hudson Road and Ridgeway Avenue is not projected to meet MUTCD Warrant 2 criteria to justify a traffic control signal upon buildout 2019 conditions, but is upon buildout 2029 conditions. It is recommended this intersection be regularly assessed to determine when it should be signalized based upon MUTCD criteria and operational and safety considerations. Assuming the identified intersection improvements presented in Figure 12 are implemented, no other improvements at the study intersections is considered necessary.

Existing Conditions

The Open Door Hospitality (ODH) Group initiated this traffic impact study to identify potential traffic impacts on the adjacent roadway network and provide traffic mitigation measures, if necessary, due to their proposed multi-use development. The proposed development will be bounded by Hudson Road to the west, Ridgeway Avenue to the south, Chancellor Drive to the east, and Technology Parkway to the north in Cedar Falls, IA. The following study intersections within the study area were identified for analysis:

1. Hudson Road & Technology Parkway
2. Hudson Road & West Ridgeway Avenue (Hudson Road & Ridgeway Avenue hereafter)
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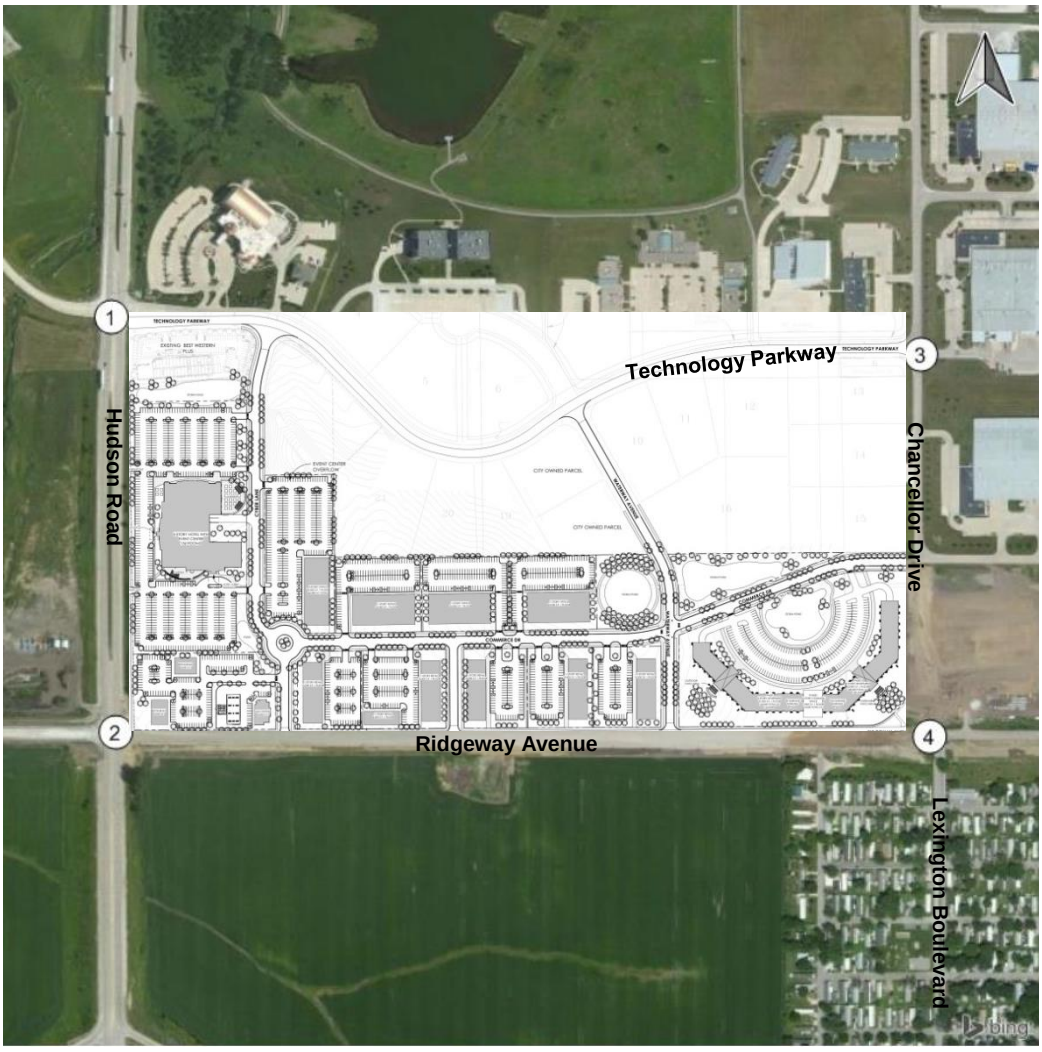
4. Chancellor Drive/Lexington Boulevard & West Ridgeway Avenue (Chancellor Drive & Ridgeway Avenue hereafter)

The above list assigns each study intersection with a number that is used throughout the report. (e.g. #1 = Hudson Road and Technology Parkway).

The area immediately surrounding the proposed development generally incorporates lodging, service, office, residential, agricultural and undeveloped land uses. A study area map depicting the location of the study intersections, as well the location of proposed development is depicted in Figure 1.

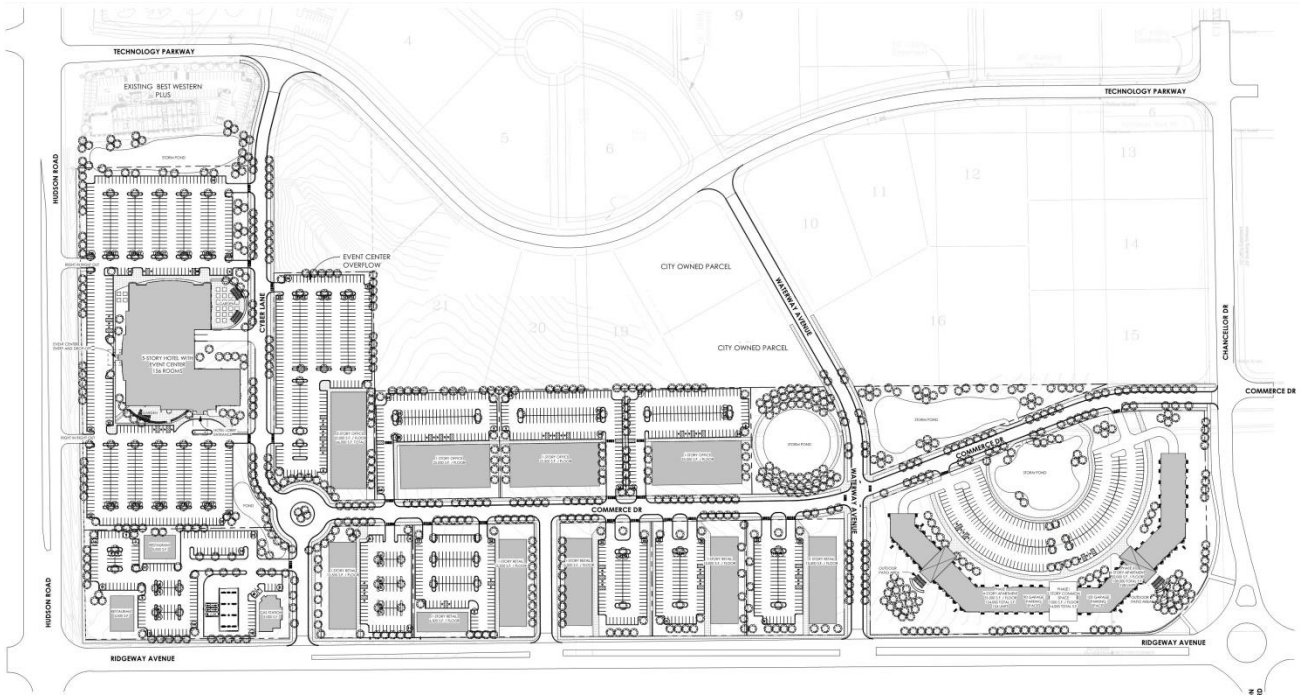
Figure 1 Study Area Map



Project Description

The proposed ODH development is an approximate 49 acre multi-use development. Two right-in/right out access points are proposed along Hudson Road between Technology Parkway and Ridgeway Avenue, three full access points are proposed along Ridgeway Avenue between Hudson Road and Chancellor Drive and one full access point is proposed and would become the westbound approach to the existing T-intersection of Chancellor Drive and Commerce Drive. None of the site access points are anticipated to present safety or operational concerns. For the purposes of this traffic impact study two future projected analysis years will be analyzed. The first analysis year will analyze land uses expected to be built by the end of 2019. The second analysis year will be 2040, which assumes full buildout of the development. A preliminary site plan is provided in Figure 2 and included as Appendix 1.

Figure 2 Preliminary Site Plan



Adjacent Streets

Hudson Road between Technology Parkway and Ridgeway Avenue is a four lane (two through lanes in each direction) divided minor arterial roadway with a posted speed limit of 45 mph. Parking is prohibited along Hudson Road.

Ridgeway Avenue between Hudson Road and Chancellor Drive is a four lane (two through lanes in each direction) divided minor arterial roadway with a posted speed limit of 45 mph. Parking is prohibited along Ridgeway Avenue.

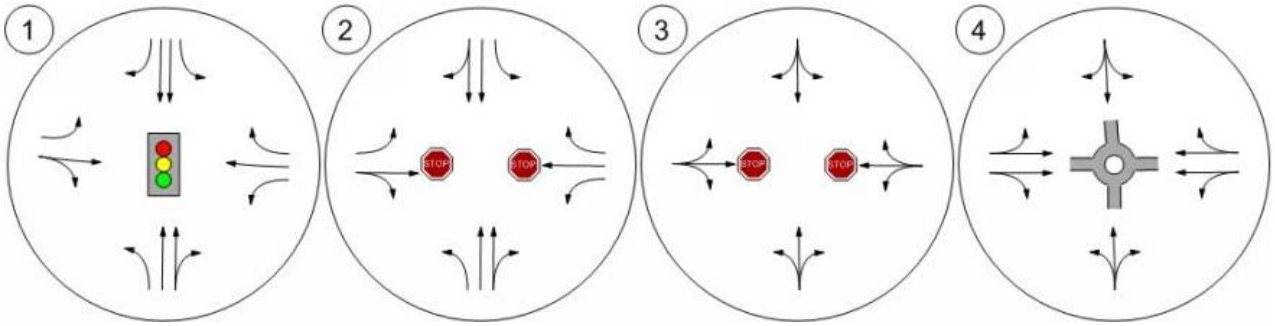
Chancellor Drive between Technology Parkway and Ridgeway Avenue is a two lane (one through lane in each direction) local roadway with a posted speed limit of 25 mph. No parking restrictions are posted along Chancellor Drive.

Technology Parkway between Hudson Road and Chancellor Drive is a two lane (one through lane in each direction) local roadway with a posted speed limit of 25 mph. No parking restrictions are posted along Technology Parkway.

Existing Intersection Conditions

The existing lane configuration and control for the study intersections are presented in Figure 3.

Figure 3 Study Intersections - Existing (2017) Lane Configuration and Control



Traffic Volume Data

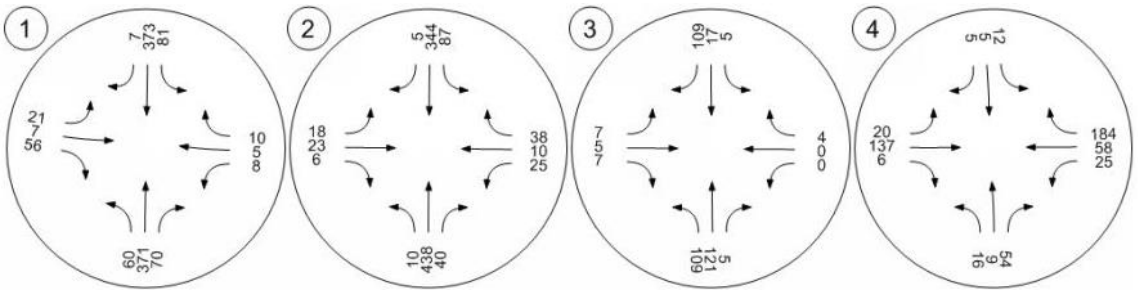
Morning (AM) and evening (PM) peak hour volumes at the study intersections were collected between the hours of 7:00 AM to 9:00 AM and between 4:00 PM to 6:00 PM, respectively. The AM and PM peak hour volumes were collected on Wednesday, May 25, 2017. The peak hours of the study intersections were determined based on the highest consecutive 15-minute turning movement counts at Hudson Road and Technology Parkway. The AM and PM peak hours at Hudson Road and Technology Parkway governed the AM and PM peak hours at the study intersections because it is the study intersection with the highest volume of entering vehicles. The AM peak hour was determined to occur between 7:15 and 8:15. The PM peak hour was determined to occur between 4:30 and 5:30. The raw and refined volume data are provided in Appendix 2 of this report.

Background Traffic Growth

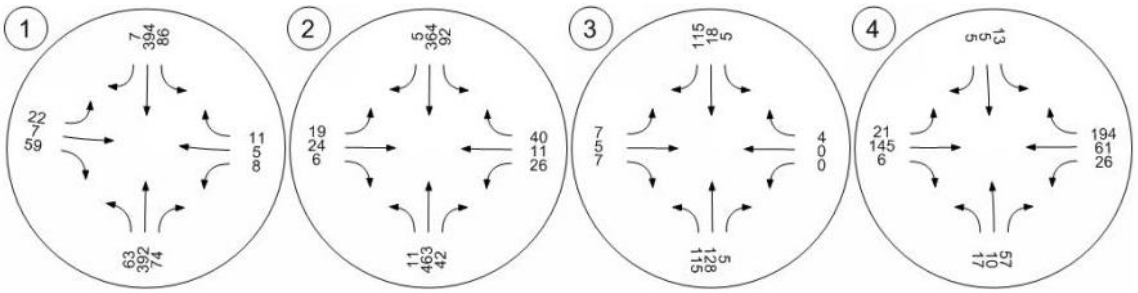
Projected traffic analysis will typically apply an annual growth rate to study intersections' existing turning movement volumes prior to adding project development trips to account for growth in background traffic (traffic growth unrelated to the proposed ODH development). A review of 2001 through 2014 Annual Average Daily Traffic (AADT) volumes obtained from the Iowa DOT, along Ridgeway Avenue indicated an approximate 2.8 percent annual growth rate. Thus, a 2.8 percent annual growth rate was applied to existing 2017 study intersection volumes to reflect projected future background traffic volume growth, which can be expected through a sustained constant area growth without the ODH development. It should be noted, over time growth rates generally do not exhibit a straight line growth, but rather tend to level off as the surrounding area continues to develop. Therefore, the use of a straight line growth rate for the prediction of future events can be thought of as conservative and should be considered as such when reviewing the output of this analysis. It should be noted, existing 2017 refined peak hour turning movement volumes at roadway approaches with less than 5 vehicles per hour (VPH) were adjusted to 5 VPH to allow for background traffic growth. Existing 2017 and projected 2019 and 2040 AM and PM peak hour turning movement volumes without the proposed development (no build) are presented in Figure 4 and Figure 5, respectively.

Figure 4 Study Intersections – AM Peak Hour No Build Volumes

2017 AM Peak Hour



2019 AM Peak Hour



2040 AM Peak Hour

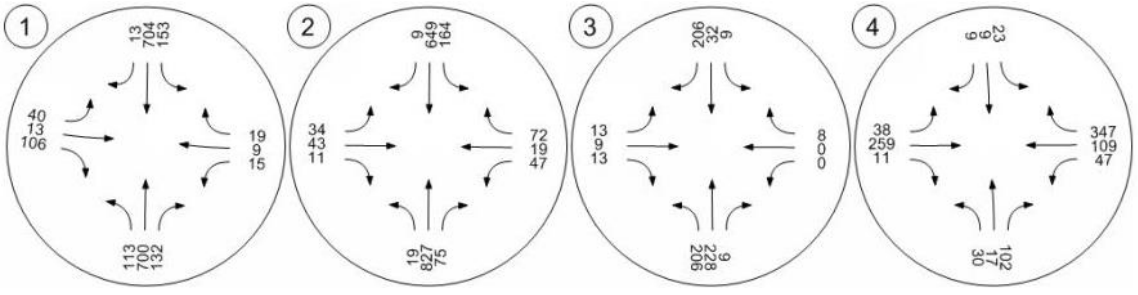
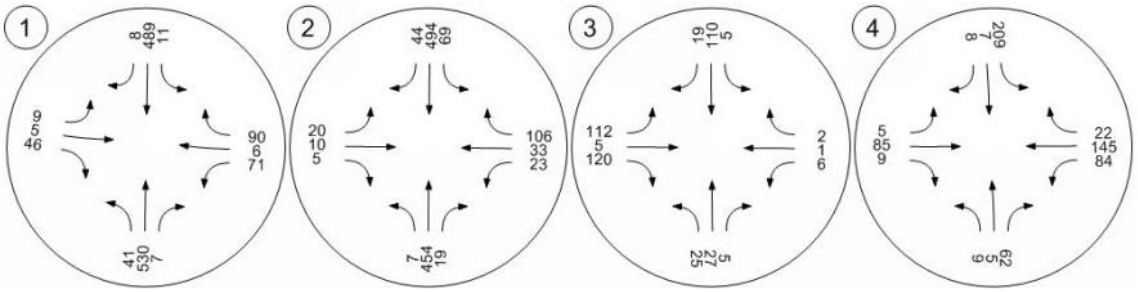
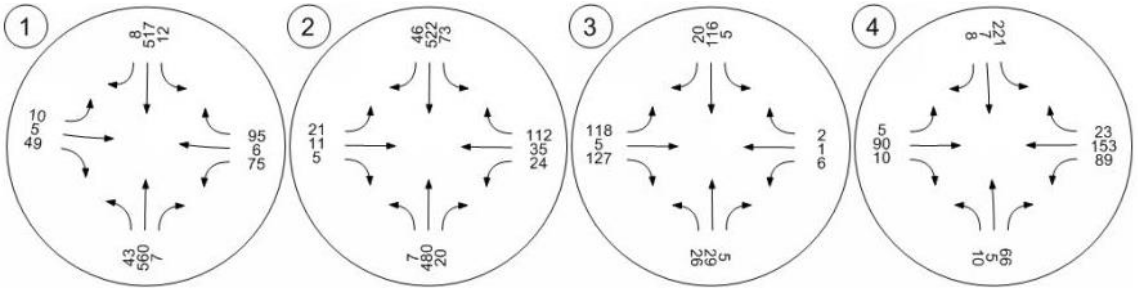


Figure 5 Study Intersections – PM Peak Hour No Build Volumes

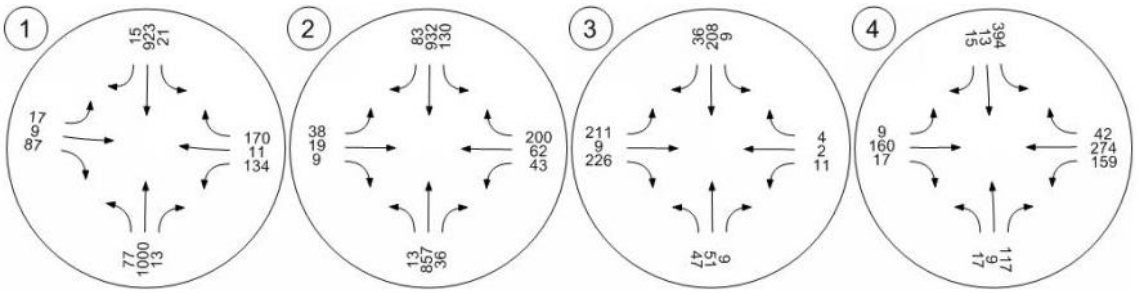
2017 PM Peak Hour



2019 PM Peak Hour



2040 PM Peak Hour



Crash Analysis

The Safety Analysis, Visualization, and Exploration Resource (SAVER) website administered by Iowa DOT was used to collect available crash data near the project site for the five-year period between January 1, 2012 and December 31, 2016. Over this analysis period 27 crashes were reported at the study intersections. No crashes were reported near the vicinity of any of the proposed access points.

Table 1 presents crash statistics at each study intersection organized by crash type.

Table 1 Crash Type by Intersection (1/1/12 – 12/31/16)

Study Intersection		Crash Type						
		Rear End	Sideswipe Same Direction	Sideswipe Opposite Direction	Oncoming Left Turn	Broadside	Single Vehicle	Total
1	Hudson Rd & Technology Pkwy	1	2	1	2	1	0	**7**
2	Hudson Rd & Ridgeway Ave	2	2	0	1	9	1	**15**
3	Chancellor Dr & Technology Pkwy	0	0	0	0	1	0	**1**
4	Chancellor Dr & Ridgeway Ave	0	1	0	0	0	3	**4**
Total		**3**	**5**	**1**	**3**	**11**	**4**	**27**

Source: Iowa Department of Transportation, Bureau of Transportation Safety.

A total of 27 crashes occurred at the study intersections over the analysis period. Twenty-three (23) of the 27 crashes occurred during dry conditions; the remaining 4 crashes occurred during inclement weather (snow and ice/frost).

The intersection of Hudson Road and Ridgeway Avenue experienced the highest number of crashes, with Broadside crashes being reported as the highest crash type. Broadside crashes commonly occur due to drivers failing to yield the right-of-way. Major contributing factors for the crashes at this intersection included failure to yield the right-of-way (9 crashes), ran stop sign (1 crash), driving too fast for conditions (1 crash), improper lane changing (1 crash), lost control (1 crash), ran off the road (1 crash), and distracted driving (1 crash).

Intersection crash rates are expressed in crashes per million entering vehicles (crashes/MEV) and can be calculated with the following equation:

$$\text{Crash Rate} = \frac{1{,}000{,}000 \times \text{Total Crashes}}{\text{AADT}_{\text{Entering vpd}} \times 365 \times \#\text{ of Years in Study Period}}$$

Table 2 summarizes crash rates at the study intersections and compares it to average statewide crash rates for intersections with a similar number of entering vehicles. The statewide average crash rate for intersections with a similar number of entering vehicles was prepared by the Iowa DOT, Bureau of Transportation Safety. For the purposes of this analysis, the weekday PM peak hour entering traffic volume

at the study intersections was assumed to be 10% of the daily weekday entering volume, which is standard for urban intersections and is consistent with methodology used by the Federal Highway Administration.

Table 2 Intersection Crash Rate Summary

Study Intersection		Total Crashes	Daily Entering Volume	Crash Rate (crashes/MEV)	Statewide Average Crash Rate (crashes/MEV)	Comparison to Statewide Average Crash Rate
1	Hudson Rd & Technology Pkwy	7	13,130	0.29	0.80	**Lower**
2	Hudson Rd & Ridgeway Ave	15	12,840	0.64	0.80	**Lower**
3	Chancellor Dr & Technology Pkwy	1	4,370	0.13	1.00	**Lower**
4	Chancellor Dr & Ridgeway Ave	4	6,500	0.34	0.70	**Lower**

Source: Iowa Department of Transportation, Bureau of Transportation Safety.

All of the study intersections had crash rates that were lower than the statewide average for intersections with a similar daily volume of entering vehicles.

Table 3 presents crash injury statistics at the study intersections organized by severity.

Table 3 Crash Injuries at each Intersection by Crash Severity (1/1/12 – 12/31/16)

Study Intersection		Number of Crashes	Severity					
			Suspected Injury		Possible Injury	Uninjured	Unknown	Injuries per Crash
			Serious	Minor				
1	Hudson Rd & Technology Pkwy	7	0	0	4	15	0	0.57
2	Hudson Rd & Ridgeway Ave	15	1	5	7	17	0	0.87
3	Chancellor Dr & Technology Pkwy	1	0	0	0	2	0	0.00
4	Chancellor Dr & Ridgeway Ave	4	0	1	0	4	1	0.25

Over the five-year analysis period there were a total of 57 people involved in 27 crashes at the study intersections. One (1) suspected serious and 6 suspected minor injuries were reported, as well as 11 possible injuries and 1 unknown. All other 38 individuals involved in the crash incidents were reported as uninjured. Study intersection crash data for the analysis period is provided in Appendix 3.

Proposed Site Improvements

Trip Generation

Project trip generation is based on nationally accepted trip generation rates contained in the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, 2012. For the purposes of this traffic impact study two future projected analysis years were analyzed. The first analysis year analyzed land uses expected to be built by the end of 2019. The second analysis year is 2040, which assumes full buildout of the development. Trips were generated for the expected type of project and correspond to the AM and PM peak hour of the adjacent roadway network.

Table 4 identifies the amount of development expected to be built by the end of 2019 and the associated raw (prior to internal capture and pass-by reductions) AM and PM peak hour trip generation.

Table 4 Raw Trip Generation Estimates – End of 2019

Land Use	ITE Code [1]	Quantity [2]	AM Peak Hour					PM Peak Hour				
			Trips	% In	% Out	Trips In	Trips Out	Trips	% In	% Out	Trips In	Trips Out
Shopping Center (Retail)	820	31 KSF	76	62%	38%	47	29	285	48%	52%	137	148
General Office Building	710	0 KSF	0	88%	12%	0	0	0	17%	83%	0	0
Quality Restaurant	931	10 KSF	8	50%	50%	4	4	75	67%	33%	50	25
Gas Station with Convenience Market	945	18 VFP	182	50%	50%	91	91	244	50%	50%	122	122
Apartments	220	124 DU	64	20%	80%	13	51	91	65%	35%	59	32
Hotel	310	156 Occupied Rooms	152	58%	42%	88	64	92	49%	51%	45	47
Convention Center	NA	53.882 KSF	75	85%	15%	64	11	75	15%	85%	11	64
Total Trips			**557**			**307**	**250**	**862**			**424**	**438**

[1] Institue of Transportation Engineers Trip Generation Handbook, 9th Edition, 2012
[2] KSF = Thousand Square Feet, DU = Dwelling Units, VFP = Vehicle Fueling Positions

The development is assumed to be completely built out by the end of 2040. Table 5 identifies the developments full buildout raw (prior to internal capture and pass-by reductions) AM and PM peak hour trip generation.

Table 5 Raw Trip Generation Estimates – End of 2040

Land Use	ITE Code [1]	Quantity	AM Peak Hour					PM Peak Hour				
			Trips	% In	% Out	Trips In	Trips Out	Trips	% In	% Out	Trips In	Trips Out
Shopping Center (Retail)	820	84 KSF	140	62%	38%	87	53	533	48%	52%	256	277
General Office Building	710	141 KSF	252	88%	12%	222	30	236	17%	83%	40	196
Quality Restaurant	931	10 KSF	8	50%	50%	4	4	75	67%	33%	50	25
Gas Station with Convenience Market	945	18 VFP	182	50%	50%	91	91	244	50%	50%	122	122
Apartments (Residential)	220	248 DU	125	20%	80%	25	100	154	65%	35%	100	54
Hotel	310	156 Occupied Rooms	152	58%	42%	88	64	110	49%	51%	54	56
Convention Center	NA	53.882 KSF	75	85%	15%	64	11	75	15%	85%	11	64
Total Trips			**934**			**581**	**353**	**1,427**			**633**	**794**

[1] Institue of Transportation Engineers Trip Generation Handbook, 9th Edition, 2012
[2] KSF = Thousand Square Feet, DU = Dwelling Units, VFP = Vehicle Fueling Positions

Internal Trip Capture

Generally, within multi-use developments such as the one proposed for this site, there is a likelihood of internal interaction between the various land uses contained within the development. For example, some trips generated by retail and residential development land uses can be reasonably expected to originate from each other within the proposed ODH development site. This internal interaction between land uses at a site is known as internal capture and reduces the quantity of trips generated to the site via the surrounding roadway system. Following the guidelines in the Trip Generation Handbook 2nd Edition, An ITE Recommended Practice, 2004 for multi-use developments, the internal capture between the proposed land uses at this site was identified to be approximately 16% and 15% for the generated PM peak hour trips by the end of 2019 and 2040, respectively. No internal capture reduction is assumed for the AM peak hour, because the Trip Generation Handbook 2nd Edition, An ITE Recommended Practice, 2004 does not provide any data for the AM peak hour. It is important to note the internal capture reduction is separate from the pass-by trips (discussed below) reductions. Internal capture calculation tables are presented in Appendix 4.

Primary versus Pass-by Trips

As discussed in the ITE Trip Generation Handbook, Second Edition, June 2004, pass-by trips are those trips that are attracted from the existing traffic stream passing the site on an adjacent street with direct access to the site. Consequently, these types of trips do not add new traffic to the adjacent street system, but do add trips to the development's access points. For this study, it can be reasonably assumed some pass-by trips

will be attracted from the direct access points along Hudson Road, Ridgeway Avenue, and Chancellor Drive. Primary trips, as discussed by ITE, are trips generally made for the specific purpose of visiting the generator. The stop at the generator (i.e. the ODH development) is the primary reason for the trip. Primary trips typically go from origin to generator and then returns to the origin. For example, a home-to-shopping-to-home combination of trips is a primary trip set.

The percent of primary and pass-by trips attracted to the ODH development are based upon the Trip Generation Handbook, Second Edition, June 2004, as well as existing traffic patterns as reflected in the existing AM and PM peak hour turning movement volumes. As discussed above, reductions for internal trip capture between the various land uses is included in the following estimates of primary and pass-by trips. Assumed primary and pass-by trip percentages by end of 2019 and 2040 are presented in Table 6 and Table 7, respectively.

Table 6 Primary and Pass-by Trips - 2019

Condition	AM Peak Hour				PM Peak Hour			
	Percent	In	Out	Total	Percent	In	Out	Total
Primary Trips [1]								
Shopping Center (Retail)	100%	47	29	79	66%	75	86	161
General Office Building	100%	0	0	0	100%	0	0	0
Quality Restaurant	100%	4	4	8	56%	28	14	42
Gas Station with Convenience Market	37%	34	34	68	34%	41	41	82
Apartments (Residential)	100%	13	51	64	100%	44	13	57
Hotel	100%	88	64	152	100%	45	47	92
Convention Center	100%	64	11	75	100%	11	64	75
Subtotal Primary Trips		**250**	**193**	**443**		**247**	**266**	**513**
Pass-by Trips [1]								
Shopping Center (Retail)	0%	0	0	0	34%	39	44	83
General Office Building	0%	0	0	0	0%	0	0	0
Quality Restaurant	0%	0	0	0	44%	22	11	33
Gas Station with Convenience Market	63%	58	58	116	66%	80	41	121
Apartments (Residential)	0%	0	0	0	0%	0	0	0
Hotel	0%	0	0	0	0%	0	0	0
Convention Center	0%	0	0	0	0%	0	0	0
Subtotal Pass-by Trips		**58**	**58**	**116**		**141**	**96**	**237**
Total Generation (Includes Internal Capture Reduction)		**308**	**251**	**559**		**385**	**361**	**746**

[1] Calculated based on the expected amount of pass-by trips and primary trips as reported by Trip Generation Handbook 2nd Edition, An ITE Recommended Practice, 2004.

Table 7 Primary and Pass-by Trips - 2040

Condition	AM Peak Hour				PM Peak Hour			
	Percent	In	Out	Total	Percent	In	Out	Total
Primary Trips [1]								
Shopping Center (Retail)	100%	87	53	140	66%	145	162	307
General Office Building	100%	222	30	252	100%	32	189	221
Quality Restaurant	100%	4	4	8	56%	28	14	42
Gas Station with Convenience Market	37%	34	34	68	34%	41	41	82
Apartments (Residential)	100%	25	100	125	100%	75	23	98
Hotel	100%	88	64	152	100%	45	47	92
Convention Center	100%	64	11	75	100%	11	64	75
Subtotal Primary Trips		**524**	**296**	**820**		**377**	**540**	**917**
Pass-by Trips [1]								
Shopping Center (Retail)	0%	0	0	0	34%	75	84	159
General Office Building	0%	0	0	0	0%	0	0	0
Quality Restaurant	0%	0	0	0	44%	22	11	33
Gas Station with Convenience Market	63%	58	58	116	66%	80	80	160
Apartments (Residential)	0%	0	0	0	0%	0	0	0
Hotel	0%	0	0	0	0%	0	0	0
Convention Center	0%	0	0	0	0%	0	0	0
Subtotal Pass-by Trips		**58**	**58**	**116**		**177**	**175**	**352**
Total Generation (Includes Internal Capture Reduction)		**582**	**354**	**936**		**554**	**715**	**1,269**

[1] Calculated based on the expected amount of pass-by trips and primary trips as reported by Trip Generation Handbook 2nd Edition, An ITE Recommended Practice, 2004.

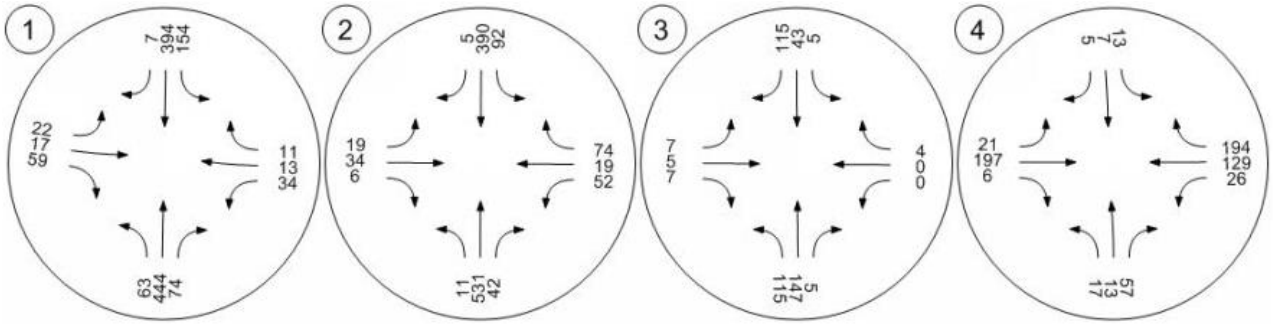
Trip Distribution

Trip distribution percentages for the ODH development, which are based upon expected travel patterns in the surrounding roadway network over the 2040 design year, is presented in Figure 6. Projected 2019 and 2040 AM and PM peak hour turning movement volumes upon buildout of the ODH development are presented in Figure 7 and Figure 9, respectively. Approaching turning movement volume percentages for projected 2019 and 2040 AM and PM buildout scenarios are presented in Figure 8 and 10, respectively.

Figure 6 Project Trip Distribution

Figure 7 Study Intersections – AM Peak Hour Buildout Volumes

2019 AM Peak Hour



2040 AM Peak Hour

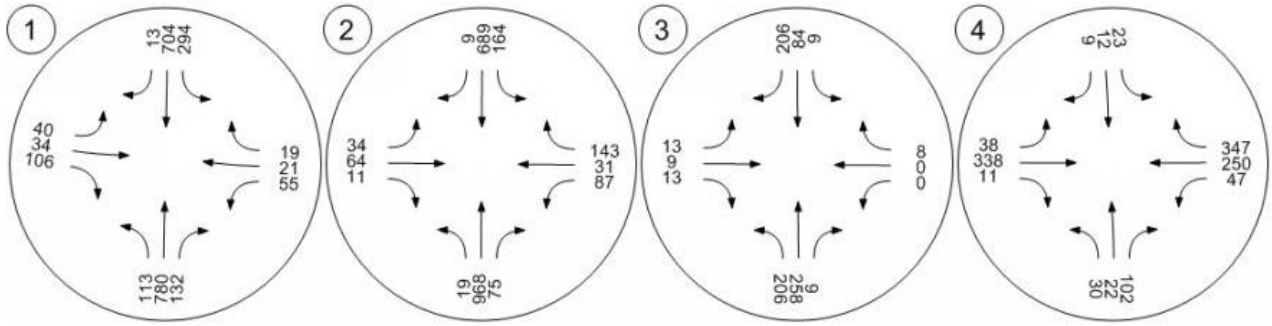
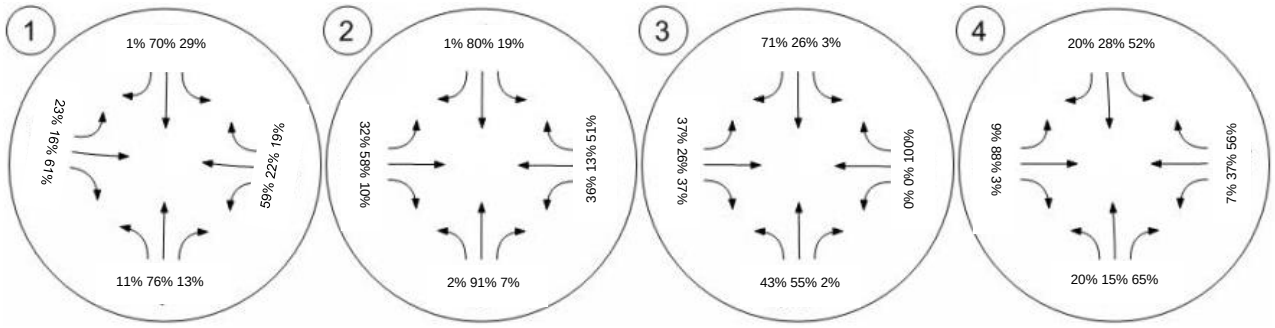


Figure 8 **Study Intersections – Percentage of Approaching Turning Movement Volume – AM Peak Hour Buildout**

2019 AM Peak Hour



2040 AM Peak Hour

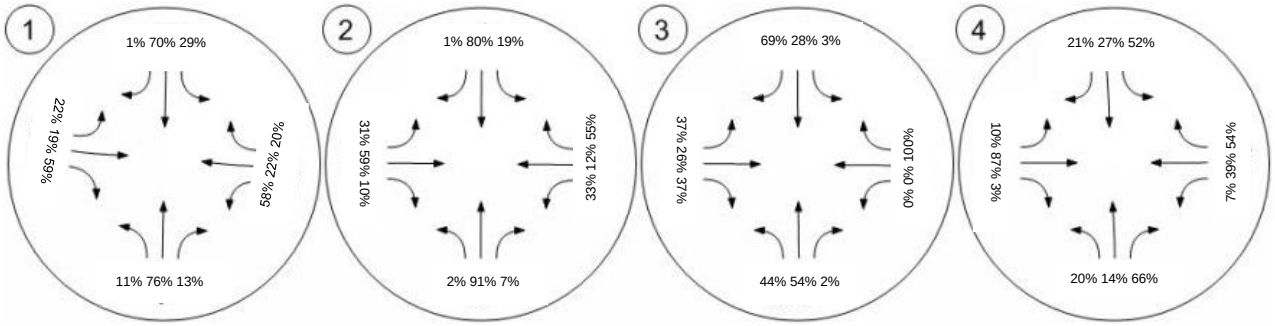
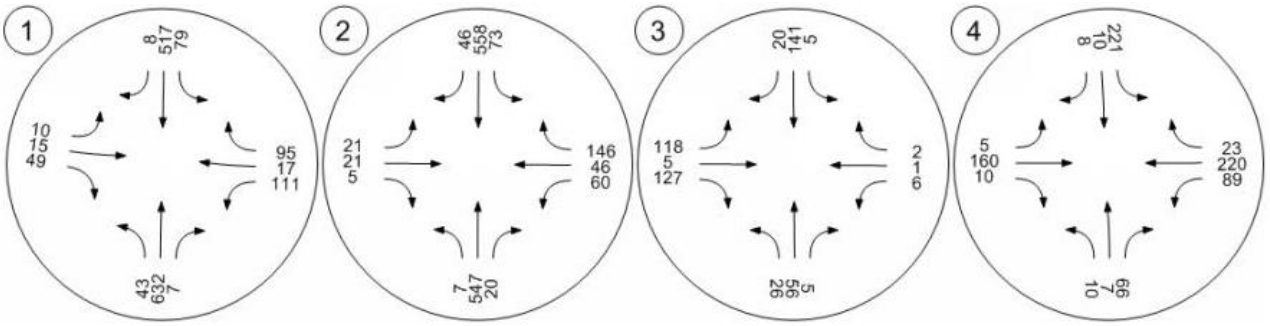


Figure 9 Study Intersections – PM Peak Hour Buildout Volumes

2019 PM Peak Hour



2040 PM Peak Hour

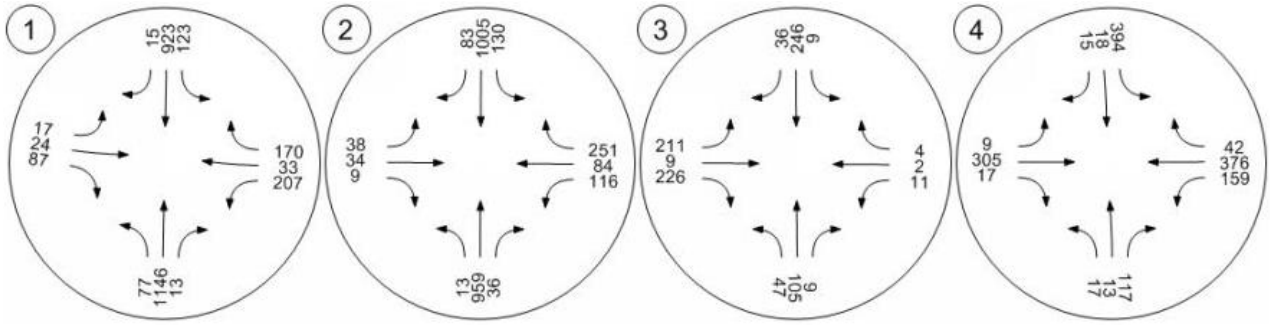
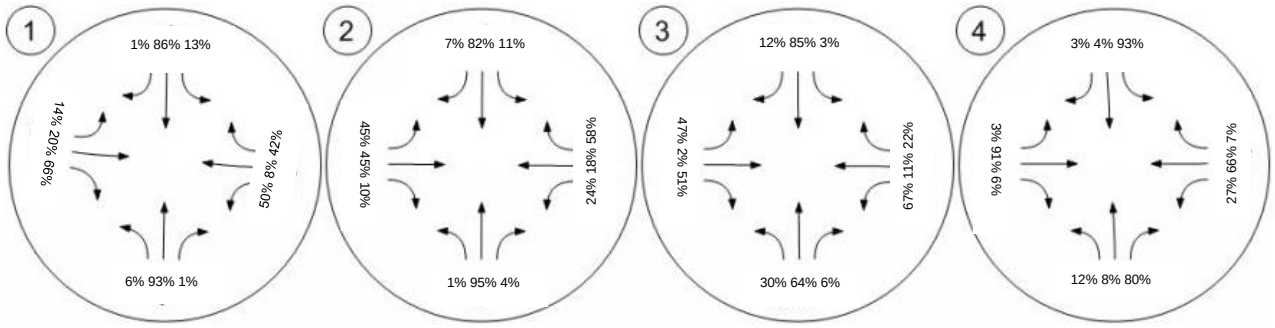
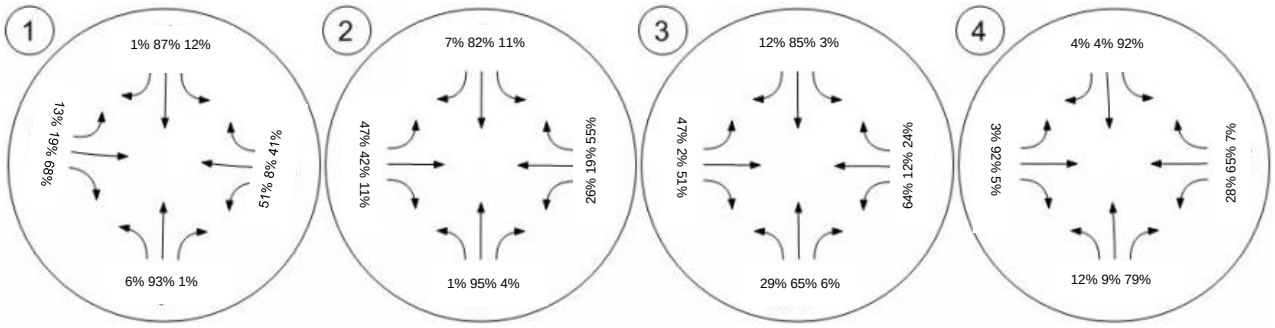


Figure 10 **Study Intersections – Percentage of Approaching Turning Movement Volume – PM Peak Hour Buildout**

2019 PM Peak Hour



2040 PM Peak Hour



Traffic Modeling

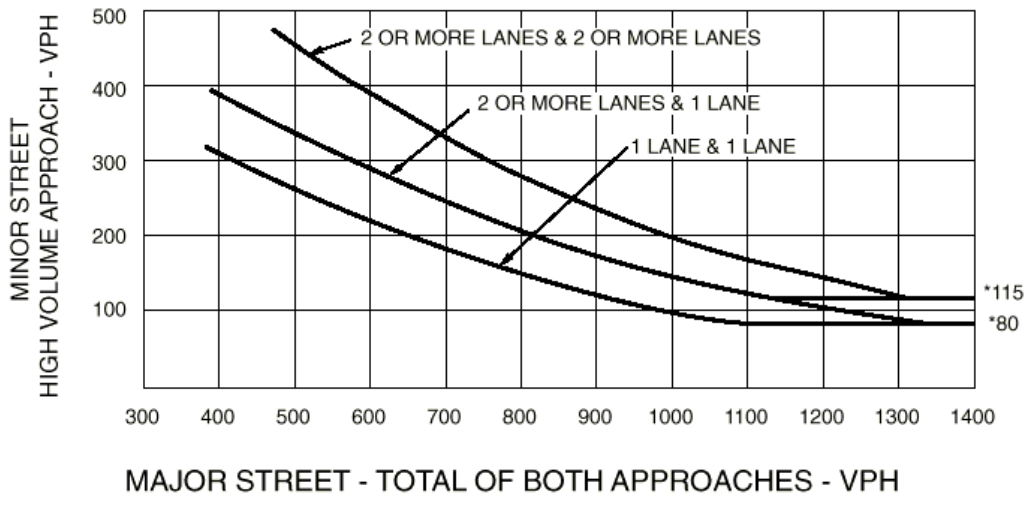
Traffic Control Warrant Analysis

The traffic control warrant analysis presented herein was conducted for the study intersections of Hudson Road and Ridgeway Avenue under projected 2019 and 2029 buildout conditions. Traffic volume counts for this intersection were collected in late May 2017. The analysis was performed under the guidelines and procedures as outlined in the 2009 Manual of Uniform Traffic Control Devices (MUTCD). The satisfaction of a traffic control warrant or warrants does not in itself require a modification to the existing traffic control. In general, a modification to an existing traffic control should not be made unless analysis indicates it will improve the overall safety and or operations of the intersection. The ultimate decision resides on engineering judgement.

Warrant 2 – Four-Hour Vehicular Volume

The Four-Hour Vehicular Volume signal warrant condition is intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. This warrant is satisfied when the plotted points representing vehicles per hour on the major street (total of both approaches) and corresponding vehicles per hour on the higher volume minor street approach (one direction only) all fall above the curve in Figure 11 for the existing combination of approach lanes for all four selected hours of an average day. On the minor street, the higher volume is not required to be on the same approach during each of the four hours. For the purposes of this analysis, the hours between 7:00 and 9:00 AM and 4:00 and 6:00 PM were selected.

Figure 11 Four Hour Vehicular Volume Warrant



*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

Source: Manual of Uniform Traffic Control Devices, December 2009, page 440.

Summary of the traffic control warrant results is presented in Table 8. Signal warrant analysis worksheets are provided in Appendix 5.

Table 8 Traffic Control Warrant Analysis Summary

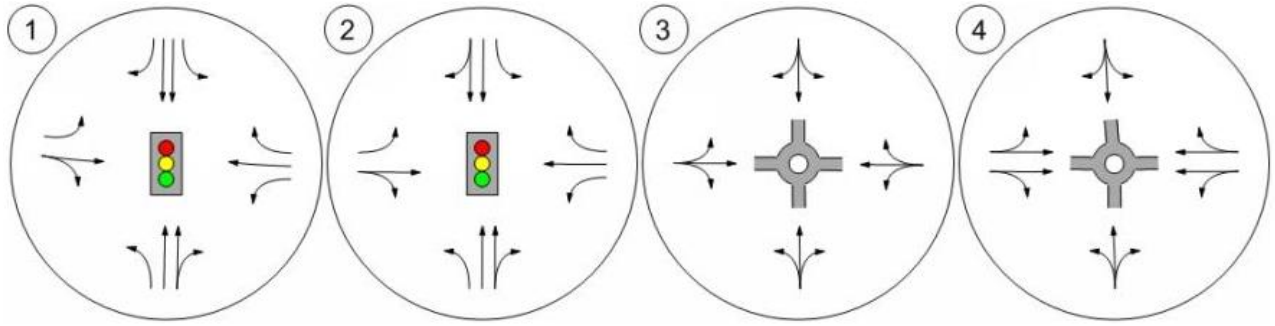
	Hudson Road & Ridgeway Avenue	
	2019 Buildout Conditions	2029 Buildout Conditions
	4 Hours Required	4 Hours Required
Hours Met	2 Hour Met	4 Hours Met
Warranted?	**No**	**Yes**

The study intersection of Hudson Road and Ridgeway Avenue is projected to meet MUTCD Warrant 2 criteria to justify a traffic control signal upon full buildout 2029 conditions.

The study intersection recommended lane configuration and control by the analysis year of 2040 is presented in Figure 12. Figure 12 recommends the study intersection of Hudson Road and Ridgeway Avenue be signalized and the study intersection of Chancellor Drive and Technology Parkway be converted to a single lane roundabout. It should be noted the frequency of broadside crashes, which was the highest reported crash type at the intersection of Hudson Road and Ridgeway Avenue, is expected to be reduced as result of converting the intersection from two-way stop control to a signalized intersection. Similarly, the frequency of all types of crashes is expected to be reduced at the intersection of Chancellor Drive and Technology Parkway as a result of converting the intersection from two-way stop control to a roundabout. [1] Roundabouts generally reduce the frequency and severity of crashes over signalized/stop controlled intersections due to fewer conflict points and lower vehicular speeds transiting the intersection. In addition to safety considerations, these intersection improvements will be needed in order to provide an acceptable LOS at these two intersections. No intersection improvements are recommended at the other two intersections of Hudson Road and Technology Parkway and Chancellor Drive and Ridgeway Avenue.

[1] Highway Safety Manual 1st Edition, 2010

Figure 12 Study Intersections – 2040 Recommended Lane Configuration and Control



Operational Analysis

Vehicular operational analysis for this study was performed using the methodology of the Highway Capacity Manual (HCM) 6th Edition through PTV Vistro 5:00-00 traffic analysis software. Operational analysis is generally categorized in terms of Level of Service (LOS). LOS describes the quality of traffic operations and is graded from A to F; with LOS A representing free-flow conditions and LOS F representing congested conditions.

A queueing analysis was also performed at signalized intersections. A vehicle queue is a line of vehicles waiting to pass through an intersection. Queue lengths at intersection approaches are constantly changing. As vehicles arrive the queue grows, and as the movement is served, the queue length shrinks. To account for this variation, it is common to consider the 95th percentile queue length. The 95th percentile queue is the length of which the queue will be less than 95 percent of the time.

Procedures outlined in the signalized intersection chapter of the HCM were used to analyze intersection performance at signalized intersections. The primary measure used to quantify LOS at signalized intersections is average intersection control delay. Control delay is the delay experienced by vehicles slowing down as they are approaching the intersection, the wait time at the intersection and the time for vehicles to speed up through the intersection and enter into the traffic stream. The average intersection control delay is

a volume weighted average of delay experienced by all motorists entering the intersection on all intersection approaches.

Procedures outlined in the unsignalized intersection chapter of the HCM were used to analyze intersection performance at unsignalized (stop control and roundabout) intersections. While LOS for signalized intersections is primarily based on the volume weighted average delay per vehicle traveling through the intersection (intersection control delay), LOS for unsignalized intersections is based primarily on the approach with the longest delay. LOS thresholds and methodology for roundabouts are consistent with those for other unsignalized intersections.

It should be noted delay thresholds for a given LOS for unsignalized intersections are lower than those given for signalized intersections. This difference, as explained in HCM, is to account for the greater variability in delay associated with unsignalized movements in addition to different driver expectations associated with each type of intersection control, with the expectation that signalized intersections are designed to carry higher traffic volumes and therefore will experience greater delay than an unsignalized intersection.

Table 9 presents the range of traffic delays associated for signalized and unsignalized intersections.

Table 9 LOS Criteria for Signalized and Unsignalized Intersections

LOS	Signalized Intersection Average Control Delay (sec/veh)	Unsignalized Intersection Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

Source: HCM 6th Edition
sec/veh = seconds per vehicle

LOS D or better is generally identified as acceptable in urban conditions. The analysis presented herein indicates the study intersections will operate at an acceptable LOS D or better during the AM and PM peak hour conditions through 2040 with buildout of the proposed development, except for the intersection of Hudson Road and Ridgeway Avenue. Under projected 2019 no build PM peak hour conditions the intersection is expected to fall to LOS E. Under projected 2019 buildout AM and PM peak hour conditions the intersection is expected to fall to LOS E and LOS F, respectively. This analysis assumes existing lane configuration and control for 2017 existing and 2019 projected conditions as identified in Figure 3 and recommended lane configuration and control for 2040 projected conditions as identified in Figure 12.

Table 10 presents signalized operational conditions including 95th percentile queue lengths. Signalized operations at the study intersections assumes optimized cycle lengths and phasing splits as identified through Vistro 5:00-00. Table 11 presents unsignalized operational conditions. Operational analysis worksheets are contained in Appendix 6.

Table 10 Existing & Projected Signalized Intersection Operations

Intersection		Scenario	Metric	AM Peak Hour				PM Peak Hour			
				NB	SB	EB	WB	NB	SB	EB	WB
1	Hudson Rd & Technology Pkwy	2017 Existing Conditions	Approach Delay	6.04	5.21	40.06	30.40	6.44	7.05	37.10	26.97
			Approach LOS	A	A	D	C	A	A	D	C
			95th %tile Queue	T	T	TR	R	T	T	TR	R
			(Longest Movement) in Feet	62	45	71	9	61	58	47	69
			Intersection Delay & LOS	8.89, A				10.71, B			
		2019 No Build	Approach Delay	6.31	5.42	39.45	30.28	6.71	7.31	37.41	27.29
			Approach LOS	A	A	D	C	A	A	D	C
			95th %tile Queue	T	T	TR	L	T	T	TR	R
			(Longest Movement) in Feet	68	49	74	10	66	64	50	74
			Intersection Delay & LOS	9.03, A				10.97, B			
		2019 Buildout	Approach Delay	8.17	6.36	37.74	26.71	7.97	6.53	47.33	34.38
			Approach LOS	A	A	D	C	A	A	D	C
			95th %tile Queue [2]	T	T	TR	L	T	T	TR	R
			(Longest Movement) in Feet	94	59	82	26	111	77	77	98
			Intersection Delay & LOS	10.47, B				12.98, B			
		2040 No Build [1]	Approach Delay	10.48	8.52	30.64	23.99	11.77	12.17	31.76	25.56
			Approach LOS	A	A	C	C	B	B	C	C
			95th %tile Queue [2]	T	T	TR	R	T	T	TR	R
			(Longest Movement) in Feet	136	96	87	12	171	160	71	116
			Intersection Delay & LOS	11.51, B				14.59, B			
		2040 Buildout [1]	Approach Delay	14.36	11.38	29.34	20.42	18.10	12.10	32.76	24.70
			Approach LOS	B	B	C	C	B	B	C	C
			95th %tile Queue [2]	T	T	TR	L	T	T	TR	R
			(Longest Movement) in Feet	190	114	100	26	255	163	80	114
			Intersection Delay & LOS	14.47, B				17.26, B			
2	Hudson Rd & Ridgeway Ave	2040 No Build [1]	Approach Delay	10.77	6.69	27.44	29.88	16.90	14.02	18.00	25.62
			Approach LOS	B	A	C	C	B	B	B	C
			95th %tile Queue [2]	T	T	TR	R	T	TR	L	R
			(Longest Movement) in Feet	142	71	36	53	198	200	15	126
			Intersection Delay & LOS	11.15, B				16.67, B			
		2040 Buildout [1]	Approach Delay	16.68	9.55	23.81	25.84	23.41	18.54	17.75	22.84
			Approach LOS	B	A	C	C	C	B	B	C
			95th %tile Queue [2]	T	T	TR	R	T	T	TR	R
			(Longest Movement) in Feet	220	101	44	94	257	247	21	153
			Intersection Delay & LOS	15.39, B				21.00, C			

[1] Arrival rates are assumed to be more consistent by 2040.
Queue, Delay, and LOS analysis based on HCM 6th Edition Signalized Methodology

Table 11 Existing & Projected Unsignalized Intersection Operations

Intersection		Scenario	AM Peak Hour			PM Peak Hour		
			Worst Approach Delay (sec)		HCM LOS	Worst Approach Delay (sec)		HCM LOS
2	Hudson Rd & Ridgeway Ave	2017 Existing Conditions	EB	27.46	D	EB	32.39	D
		2019 No Build	EB	31.07	D	EB	37.66	E
		2019 Buildout	EB	42.28	E	EB	53.65	F
3	Chancellor Dr & Technology Pkwy	2017 Existing Conditions	EB	14.29	B	EB	13.93	B
		2019 No Build (Two-way Stop)	EB	14.88	B	EB	14.68	B
		2019 Buildout (Two-way Stop)	EB	16.03	C	EB	16.46	C
		2040 No Build [1] (Roundabout)	NB	5.78	A	EB	7.89	A
		2040 Buildout [1] (Roundabout)	NB	6.04	A	EB	8.41	A
4	Chancellor Dr & Ridgeway Ave	2017 Existing Conditions	NB	4.09	A	SB	6.26	A
		2019 No Build	NB	4.20	A	SB	6.59	A
		2019 Buildout	NB	4.57	A	SB	7.41	A
		2040 No Build [1]	NB	5.06	A	SB	11.06	B
		2040 Buildout [1]	NB	5.63	A	SB	13.63	B

Delay and LOS analysis based on HCM 6th Edition
[1] Arrival rates are assumed to be more consistent by 2040.

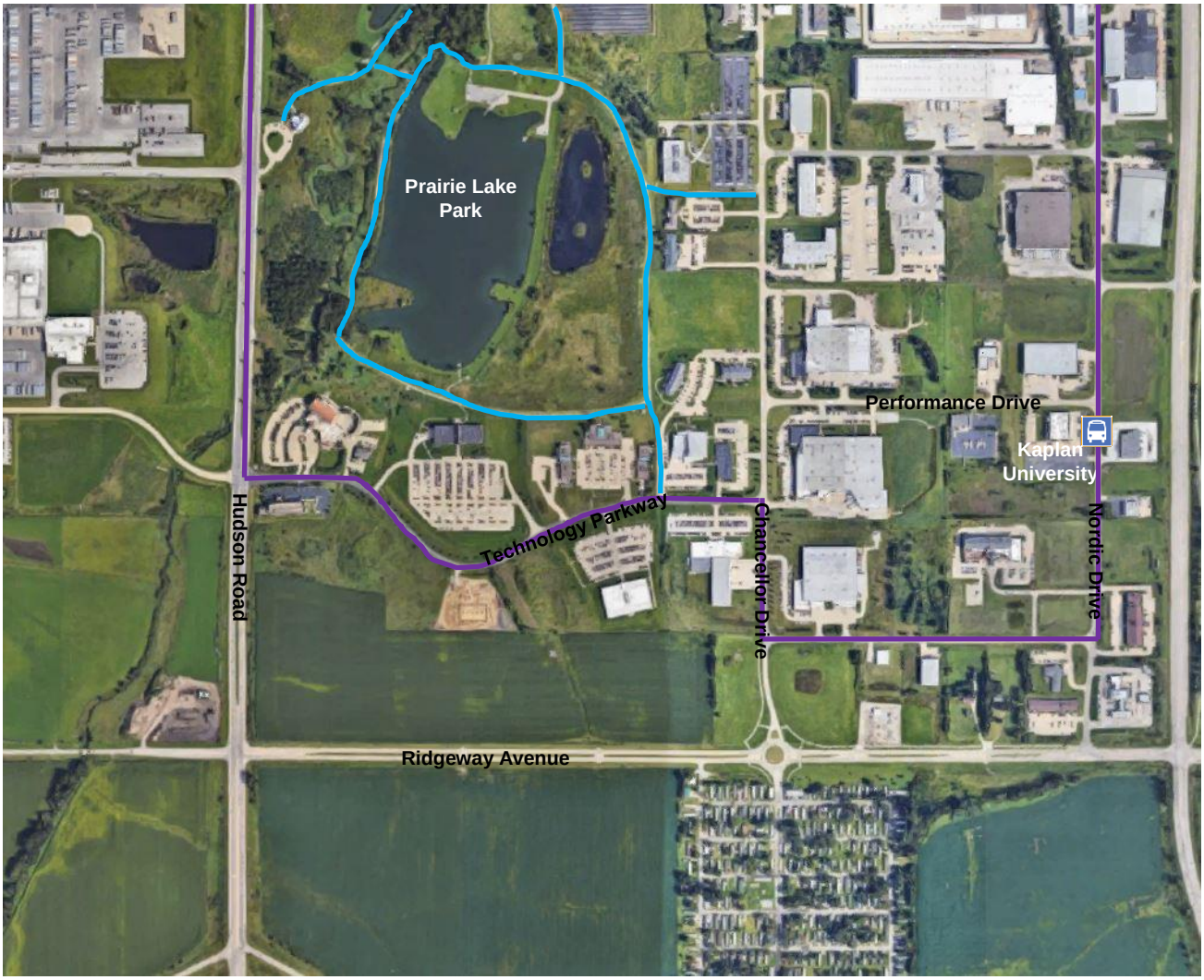
Multimodal Review

Currently, the closest bus stop to the proposed development is just east of the Kaplan University building, which is located on the southwest corner of the Nordic Drive and Performance Drive intersection. The #9 Cedar Falls Loop (purple route indicated below) serves this bus stop. As the area develops, the City of Cedar Falls should coordinate with the Waterloo – Cedar Falls Metropolitan Transit Authority (MET) to a provide transit service stop or stops within the proposed development site.

Prairie Lake Park is located to the north of the proposed development, which has a multi-use trail system around the lake and extending down to intersect with Technology Parkway. Sidewalks, bike lanes, and bike racks should be considered throughout the proposed ODH development.

Figure 13 identifies the bus stop location near the Kaplan University building and the multi-use trail system (blue line) at the Prairie Lake Park.

Figure 13 Transit and Bicycle/Pedestrian Facilities



Conclusion and Recommendations

The proposed ODH development is an approximate 49 acre multi-use development. Two right-in/right out access points are proposed along Hudson Road between Technology Parkway and Ridgeway Avenue, three full access points are proposed along Ridgeway Avenue between Hudson Road and Chancellor Drive and one full access point is proposed and would become the westbound approach to the existing T-intersection of Chancellor Drive and Commerce Drive. None of the site access points are anticipated to present safety or operational concerns. Sight visibility zones corresponding to intersection sight distance calculations as defined through AASHTO should be identified and maintained at these access points. These zones should not contain structures or plantings that would preclude unobstructed views of oncoming traffic. Current designs for the development do not indicate obstructions within the sight visibility zones. For the purposes of this traffic impact study two future projected analysis years were analyzed. The first analysis year analyzed land uses expected to be built by the end of 2019. The second analysis year is 2040, which assumes full buildout of the development.

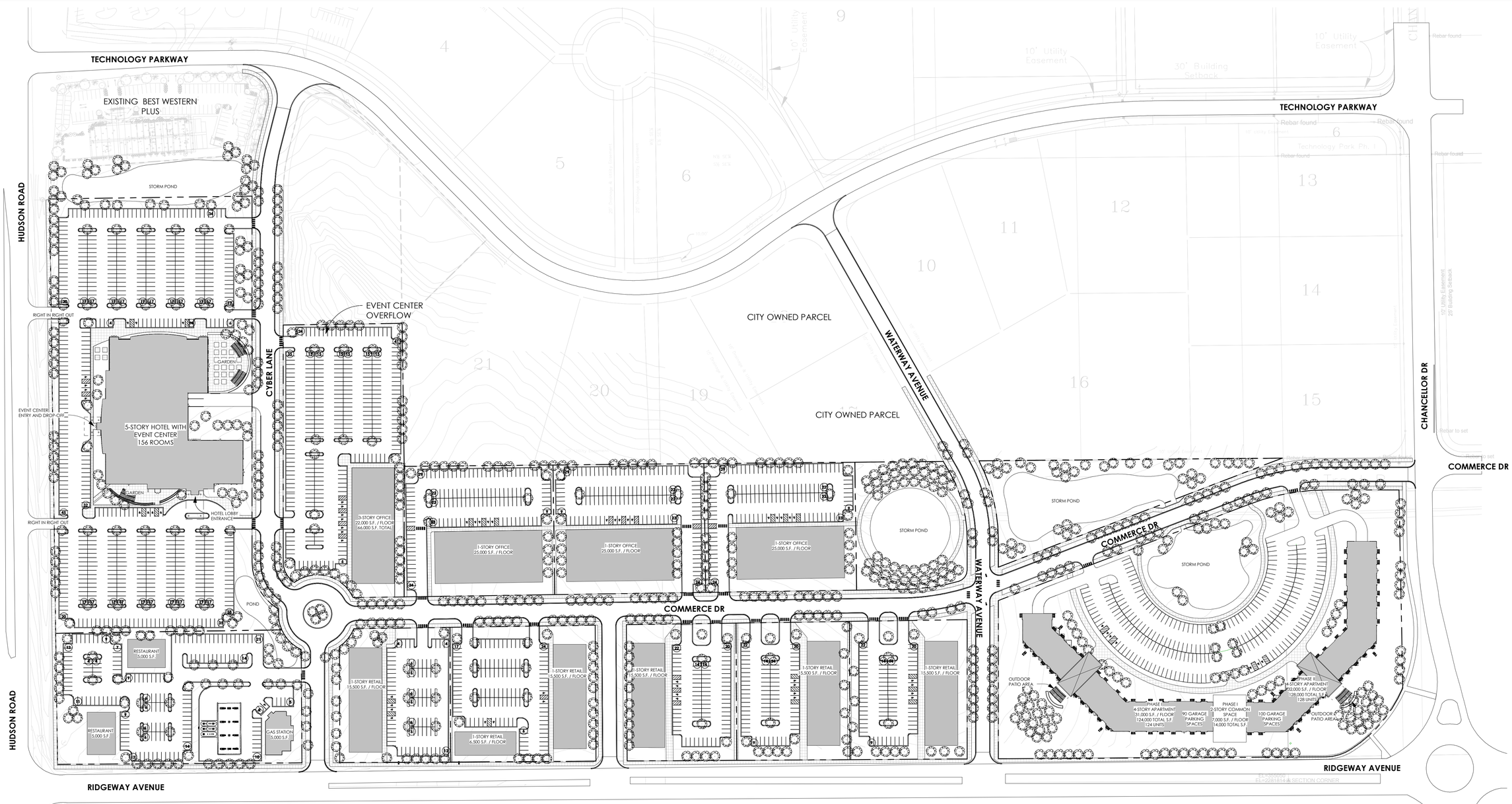
The Safety Analysis, Visualization, and Exploration Resource (SAVER) website administered by Iowa DOT was used to collect available crash data near the project site for the five-year period between January 1, 2012 and December 31, 2016. All of the study intersections had crash rates that were lower than the statewide average for intersections with a similar daily volume of entering vehicles. It should be noted the frequency of broadside crashes, which was the highest reported crash type at the intersection of Hudson Road and Ridgeway Avenue, is expected to be reduced as result of converting the intersection from two-way stop control to a signalized intersection. Similarly, the frequency of all types of crashes is expected to be reduced at the intersection of Chancellor Drive and Technology Parkway as a result of converting the intersection from two-way stop control to a roundabout. [2] Roundabouts generally reduce the frequency and severity of crashes over signalized/stop controlled intersections due to fewer conflict points and lower vehicular speeds transiting the intersection.

Currently, the closest bus stop to the proposed development is just east of the Kaplan University building, which is located on the southwest corner of the Nordic Drive and Performance Drive intersection. As the area develops, the City of Cedar Falls should coordinate with the Waterloo – Cedar Falls Metropolitan Transit Authority (MET) to a provide transit service stop or stops within the proposed development site. Prairie Lake Park is located to the north of the proposed development, which has a multi-use trail system around the lake and extending down to intersect with Technology Parkway. Sidewalks, bike lanes, and bike racks should be considered throughout the proposed ODH development.

The analysis presented herein indicates the study intersections will operate at an acceptable LOS D or better during the AM and PM peak hour conditions through 2040 with buildout of the proposed development, except for the intersection of Hudson Road and Ridgeway Avenue. Under projected 2019 no build PM peak hour conditions the intersection is expected to fall to LOS E. Under projected 2019 buildout AM and PM peak hour conditions the intersection is expected to fall to LOS E and LOS F, respectively. This analysis assumes existing lane configuration and control for 2017 existing and 2019 projected conditions as identified in Figure 3 and recommended lane configuration and control for 2040 projected conditions as identified in Figure 12. The study intersection of Hudson Road and Ridgeway Avenue is not projected to meet MUTCD Warrant 2 criteria to justify a traffic control signal upon buildout 2019 conditions, but is upon buildout 2029 conditions. It is recommended this intersection be regularly assessed to determine when it should be signalized based upon MUTCD criteria and operational and safety considerations. Assuming the identified intersection improvements presented in Figure 12 are implemented, no other improvements at the study intersections is considered necessary.

[2] Highway Safety Manual 1st Edition, 2010

Appendix 1



DEVELOPMENT SUMMARY

OVERALL SITE AREA:
TOTAL PROPOSED SITE AREA: 49.20 ACRES

TOTAL USABLE SITE AREA: 42.20 ACRES

TOTAL ROAD R-O-W AREA: 7.00 ACRES

HOTEL SUMMARY:
SITE:
TOTAL SITE AREA: 392,543 SF (9.01 ACRES)
TOTAL PARKING PROVIDED: 599 PARKING SPACES

HOTEL SUMMARY:
TOTAL ROOMS: 156

	EVENT	HOTEL	TOTAL
FIRST FLOOR - PHASE 1	28,978SF	18,613 SF	47,591 SF
FIRST FLOOR - PHASE 2	25,217 SF	N/A	25,217 SF
SECOND FLOOR	N/A	17,733 SF	17,733 SF
THIRD FLOOR	N/A	17,733 SF	17,733 SF
FOURTH FLOOR	N/A	17,733 SF	17,733 SF
FIFTH FLOOR	N/A	17,733 SF	17,733 SF
GRAND TOTAL	54,195 SF	89,545 SF	143,740 SF

OFFICE SUMMARY:
SITE:
TOTAL SITE AREA: 403,365 S.F. (9.26 ACRES)
TOTAL PARKING PROVIDED: 665 PARKING SPACES

BUILDING SUMMARY:
TOTAL OFFICE SPACE: 141,000 S.F.

RETAIL SUMMARY:
SITE:
TOTAL SITE AREA: 366,000 S.F. (8.40ACRES)
TOTAL PARKING PROVIDED: 422 PARKING SPACES

BUILDING SUMMARY:
TOTAL RETAIL SPACE: 84,000 S.F.

STORMWATER SUMMARY:
SITE:
TOTAL SITE AREA: 130,069 SF(2.99 ACRES)

RESTAURANT & CONVENIENCE FOOD / FUEL SUMMARY:
SITE:
TOTAL SITE AREA: 144,082 SF(3.31 ACRES)
RESTAURANT:
RESTAURANT PARKING PROVIDED: 150 PARKING SPACES
BUILDING SUMMARY:
TOTAL RESTAURANT SPACE: 10,000 S.F.

CONVENIENCE FOOD / FUEL:
CONVENIENCE FOOD /
FUEL PARKING PROVIDED: 18 PARKING SPACES

BUILDING SUMMARY:
TOTAL CONVENIENCE FOOD /
FUEL SPACE: 5,000 S.F.

APARTMENT SUMMARY:
SITE:
TOTAL SITE AREA: 404,322 SF(9.28 ACRES)
TOTAL PARKING PROVIDED: 430 PARKING SPACES

BUILDING SUMMARY:
PHASE I:
APARTMENT BUILDING: 31,000 S.F. / FLOOR
124,000 S.F. TOTAL
124 UNITS

2 - STORY COMMON SPACE: 7,000 S.F. / FLOOR
14,000 S.F. TOTAL

PHASE II:
APARTMENT BUILDING: 32,000 S.F. / FLOOR
128,000 S.F. TOTAL
128 UNITS

N

0' 50' 100' 200'

SCALE = 1" =100'-0"

open door HOSPITALITY

RUSSELL

HOLIDAY INN & SUITES - CONFERENCE CENTER

CEDAR FALLS, IA

MASTER PLAN - OPTION 5

June 13, 2017

TUSHI MONTGOMERY ARCHITECTS

Item 4.A.

Appendix 2

Background Traffic Counts (Raw Data)

(1) Hudson Road and Technology Parkway - All Vehicles

15-min Interval	From North (Southbound) Hudson Road			From East (Westbound) Technology Parkway			From South (Northbound) Hudson Road			From West (Eastbound) Technology Parkway			Int Count	Peak Hour
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right		
7:00 - 7:15	11	70	0	0	0	4	9	72	9	11	1	7	194	1056
7:15 - 7:30	5	84	3	3	0	2	13	100	11	15	4	9	249	1067
7:30 - 7:45	15	108	1	2	2	3	11	107	15	3	2	21	290	1006
7:45 - 8:00	42	105	1	1	0	3	24	97	28	3	1	18	323	934
8:00 - 8:15	19	76	2	2	1	2	12	67	16	0	0	8	205	843
8:15 - 8:30	10	72	2	0	1	0	8	72	10	1	4	8	188	
8:30 - 8:45	7	83	1	1	2	4	9	86	14	5	0	6	218	
8:45 - 9:00	17	83	2	0	0	2	8	95	12	1	1	11	232	

4:00 - 4:15	4	143	0	22	3	20	6	90	3	9	1	22	323	1239
4:15 - 4:30	3	114	4	9	0	16	9	115	3	3	0	15	291	1282
4:30 - 4:45	3	144	1	18	0	22	10	125	3	1	0	7	334	1308
4:45 - 5:00	3	98	4	16	2	13	9	131	2	0	0	13	291	1237
5:00 - 5:15	4	126	0	31	3	39	9	133	0	6	0	15	366	946
5:15 - 5:30	1	121	3	6	1	16	13	141	2	2	0	11	317	
5:30 - 5:45	0	99	1	13	0	15	6	116	2	0	0	11	263	
5:45 - 6:00	1	94	2	4	2	3	9	98	3	1	0	9	226	

* AM and PM counts collected during peak hours on Thursday, May 25, 2017.

AM Intersection Peak Hour Factor (PHF) = 0.83
PM Intersection Peak Hour Factor (PHF) = 0.89

(1) Hudson Road and Technology Parkway - Articulated Trucks

15-min Interval	From North (Southbound) Hudson Road			From East (Westbound) Technology Parkway			From South (Northbound) Hudson Road			From West (Eastbound) Technology Parkway			Int Count	Peak Hour
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right		
7:00 - 7:15	0	2	0	0	0	0	0	2	0	0	0	0	4	28
7:15 - 7:30	0	3	0	0	0	0	0	1	0	1	0	0	5	40
7:30 - 7:45	0	2	0	0	0	0	0	4	1	0	0	1	8	42
7:45 - 8:00	0	7	0	0	0	0	0	4	0	0	0	0	11	42
8:00 - 8:15	0	5	0	0	0	0	0	10	1	0	0	0	16	41
8:15 - 8:30	0	4	0	0	0	0	0	3	0	0	0	0	7	
8:30 - 8:45	0	4	0	0	0	0	1	3	0	0	0	0	8	
8:45 - 9:00	0	3	0	0	0	0	1	6	0	0	0	0	10	

4:00 - 4:15	0	4	0	0	1	0	0	1	0	0	0	1	7	27
4:15 - 4:30	0	2	0	0	0	0	0	4	0	0	0	1	7	27
4:30 - 4:45	0	2	0	1	0	0	0	4	0	0	0	0	7	28
4:45 - 5:00	0	5	0	0	0	0	0	1	0	0	0	0	6	30
5:00 - 5:15	0	2	0	0	0	1	2	2	0	0	0	0	7	29
5:15 - 5:30	0	3	0	0	0	0	2	3	0	0	0	0	8	
5:30 - 5:45	0	5	0	1	0	0	0	3	0	0	0	0	9	
5:45 - 6:00	0	3	0	0	0	0	0	2	0	0	0	0	5	

* AM and PM counts collected during peak hours on Thursday, May 25, 2017.

Background Traffic Counts (Raw Data)

(2) Hudson Road and Ridgeway Avenue - All Vehicles

15-min Interval	From North (Southbound) Hudson Road			From East (Westbound) Ridgeway Avenue			From South (Northbound) Hudson Road			From West (Eastbound) Ridgeway Avenue			Int Count	Peak Hour
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right		
7:00 - 7:15	13	59	0	9	1	9	0	85	5	2	8	0	191	1039
7:15 - 7:30	26	72	1	3	1	11	2	108	10	3	4	2	243	1044
7:30 - 7:45	24	102	1	4	3	11	3	120	10	6	9	2	295	1015
7:45 - 8:00	24	98	1	13	2	12	3	129	14	6	7	1	310	949
8:00 - 8:15	13	72	2	5	4	4	2	81	6	3	3	1	196	850
8:15 - 8:30	18	70	2	3	5	10	0	77	9	5	14	1	214	
8:30 - 8:45	7	84	1	3	3	17	1	85	6	13	7	2	229	
8:45 - 9:00	10	65	8	5	5	8	1	95	4	5	5	0	211	
4:00 - 4:15	22	158	12	8	8	20	1	93	5	1	5	0	333	1231
4:15 - 4:30	20	111	5	5	6	23	0	98	7	5	6	0	286	1253
4:30 - 4:45	18	139	9	1	8	33	1	103	4	9	3	2	330	1281
4:45 - 5:00	7	110	8	6	9	18	2	107	8	5	2	0	282	1210
5:00 - 5:15	27	129	17	6	8	22	3	131	5	4	3	0	355	1171
5:15 - 5:30	17	116	10	10	8	33	1	113	2	2	2	0	314	
5:30 - 5:45	12	95	7	9	5	31	4	83	6	4	3	0	259	
5:45 - 6:00	10	92	11	8	6	26	0	83	3	0	4	0	243	

* AM and PM counts collected during peak hours on Thursday, May 25, 2017.

AM Intersection Peak Hour Factor (PHF) = 0.84
PM Intersection Peak Hour Factor (PHF) = 0.90

(2) Hudson Road and Ridgeway Avenue - Articulated Trucks

15-min Interval	From North (Southbound) Hudson Road			From East (Westbound) Ridgeway Avenue			From South (Northbound) Hudson Road			From West (Eastbound) Ridgeway Avenue			Int Count	Peak Hour
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right		
7:00 - 7:15	0	1	0	0	0	0	0	2	0	0	0	0	3	27
7:15 - 7:30	0	4	0	0	0	0	0	1	0	0	0	0	5	37
7:30 - 7:45	0	2	0	0	0	0	0	5	0	0	0	0	7	40
7:45 - 8:00	0	6	0	0	0	0	1	4	0	1	0	0	12	42
8:00 - 8:15	0	5	0	0	0	1	0	7	0	0	0	0	13	38
8:15 - 8:30	0	4	0	0	0	0	0	4	0	0	0	0	8	
8:30 - 8:45	0	6	0	0	0	0	0	3	0	0	0	0	9	
8:45 - 9:00	0	3	0	0	0	0	0	5	0	0	0	0	8	
4:00 - 4:15	0	6	0	0	0	0	0	1	1	0	0	0	8	25
4:15 - 4:30	0	3	0	0	0	0	0	3	0	0	0	0	6	22
4:30 - 4:45	0	3	0	0	0	0	0	2	0	0	0	0	5	23
4:45 - 5:00	0	5	0	0	0	0	0	1	0	0	0	0	6	28
5:00 - 5:15	0	1	0	0	0	0	0	4	0	0	0	0	5	28
5:15 - 5:30	0	3	0	0	0	0	0	4	0	0	0	0	7	
5:30 - 5:45	0	7	0	0	0	0	0	3	0	0	0	0	10	
5:45 - 6:00	0	4	0	0	0	0	0	2	0	0	0	0	6	

* AM and PM counts collected during peak hours on Thursday, May 25, 2017.

Background Traffic Counts (Raw Data)

(3) Chancellor Drive and Technology Parkway - All Vehicles

15-min Interval	From North (Southbound) Chancellor Drive			From East (Westbound) Technology Parkway			From South (Northbound) Chancellor Drive			From West (Eastbound) Technology Parkway			Int Count	Peak Hour
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right		
7:00 - 7:15	2	7	10	0	0	0	9	16	0	4	0	2	50	356
7:15 - 7:30	1	8	17	0	1	0	21	19	2	2	0	1	72	380
7:30 - 7:45	1	1	27	0	0	1	23	25	0	3	0	1	82	391
7:45 - 8:00	1	4	39	0	0	0	49	53	0	1	0	5	152	368
8:00 - 8:15	1	4	26	0	0	1	16	24	0	1	1	0	74	293
8:15 - 8:30	1	2	25	0	0	2	18	28	1	2	0	4	83	
8:30 - 8:45	1	5	15	0	0	1	16	12	0	2	1	6	59	
8:45 - 9:00	0	2	19	0	0	0	32	19	0	3	0	2	77	
4:00 - 4:15	0	26	6	1	2	0	7	7	0	24	2	22	97	368
4:15 - 4:30	0	19	5	0	0	0	4	5	1	18	1	10	63	424
4:30 - 4:45	1	33	6	2	0	1	12	10	0	32	0	23	120	424
4:45 - 5:00	0	15	6	2	1	1	6	8	0	22	0	27	88	364
5:00 - 5:15	0	46	7	1	0	0	3	2	1	43	0	50	153	321
5:15 - 5:30	0	16	0	1	0	0	4	7	0	15	0	20	63	
5:30 - 5:45	0	19	4	1	0	3	2	5	0	12	0	14	60	
5:45 - 6:00	0	13	3	1	0	0	2	4	0	11	0	11	45	

* AM and PM counts collected during peak hours on Thursday, May 25, 2017.

AM Intersection Peak Hour Factor (PHF) = 0.64
PM Intersection Peak Hour Factor (PHF) = 0.69

(3) Chancellor Drive and Technology Parkway - Articulated Trucks

15-min Interval	From North (Southbound) Chancellor Drive			From East (Westbound) Technology Parkway			From South (Northbound) Chancellor Drive			From West (Eastbound) Technology Parkway			Int Count	Peak Hour
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right		
7:00 - 7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 - 7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:30 - 7:45	1	0	0	0	0	0	0	0	0	0	0	0	1	5
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:00 - 8:15	0	0	0	0	0	1	0	0	0	0	1	0	2	5
8:15 - 8:30	1	0	0	0	0	1	0	0	0	0	0	0	2	
8:30 - 8:45	1	0	0	0	0	0	0	0	0	0	0	0	1	
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 - 4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	8
4:15 - 4:30	0	0	0	0	0	0	0	0	1	0	0	0	1	11
4:30 - 4:45	1	0	1	1	0	0	0	2	0	0	0	0	5	11
4:45 - 5:00	0	1	0	0	0	1	0	0	0	0	0	0	2	7
5:00 - 5:15	0	2	0	0	0	0	1	0	0	0	0	0	3	5
5:15 - 5:30	0	1	0	0	0	0	0	0	0	0	0	0	1	
5:30 - 5:45	0	0	1	0	0	0	0	0	0	0	0	0	1	
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	

* AM and PM counts collected during peak hours on Thursday, May 25, 2017.

Background Traffic Counts (Raw Data)

(4) Chancellor Drive/Lexington Boulevard and Ridgeway Avenue - All Vehicles

15-min Interval	From North (Southbound) Chancellor Drive			From East (Westbound) Ridgeway Avenue			From South (Northbound) Lexington Boulevard			From West (Eastbound) Ridgeway Avenue			Int Count	Peak Hour
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right		
7:00 - 7:15	4	1	2	6	16	18	2	0	9	5	26	1	90	511
7:15 - 7:30	6	1	0	8	9	35	6	3	8	5	41	0	122	524
7:30 - 7:45	0	0	0	3	17	38	3	1	22	7	35	0	126	524
7:45 - 8:00	2	1	0	4	19	78	7	3	13	7	35	4	173	494
8:00 - 8:15	4	1	0	10	13	33	0	2	11	1	26	2	103	423
8:15 - 8:30	1	0	1	10	13	39	2	1	16	5	32	2	122	
8:30 - 8:45	8	0	2	6	22	24	1	0	15	0	17	1	96	
8:45 - 9:00	3	1	0	9	15	43	1	1	8	2	19	0	102	
4:00 - 4:15	41	2	2	17	37	6	0	1	19	1	22	5	153	576
4:15 - 4:30	27	4	0	14	29	4	2	1	9	2	32	2	126	619
4:30 - 4:45	52	3	2	20	40	8	1	2	17	1	20	1	167	648
4:45 - 5:00	28	3	2	17	30	8	1	2	18	1	16	4	130	622
5:00 - 5:15	93	1	3	17	33	3	1	0	11	0	32	2	196	609
5:15 - 5:30	36	0	1	30	42	3	6	0	16	2	17	2	155	
5:30 - 5:45	32	0	2	25	37	3	2	0	16	2	19	3	141	
5:45 - 6:00	17	4	0	20	29	7	3	0	13	1	22	1	117	

* AM and PM counts collected during peak hours on Thursday, May 25, 2017.

AM Intersection Peak Hour Factor (PHF) = 0.76
PM Intersection Peak Hour Factor (PHF) = 0.83

(4) Chancellor Drive/Lexington Boulevard and Ridgeway Avenue - Articulated Trucks

15-min Interval	From North (Southbound) Chancellor Drive			From East (Westbound) Ridgeway Avenue			From South (Northbound) Lexington Boulevard			From West (Eastbound) Ridgeway Avenue			Int Count	Peak Hour
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right		
7:00 - 7:15	0	0	0	0	0	1	0	0	0	0	0	0	1	1
7:15 - 7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 - 7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 - 8:15	0	0	0	0	1	0	0	0	0	0	0	0	1	2
8:15 - 8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 - 8:45	1	0	0	0	0	0	0	0	0	0	0	0	1	
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 - 4:15	0	0	0	0	0	0	0	0	0	0	1	0	1	5
4:15 - 4:30	0	0	0	0	0	1	0	0	0	0	0	0	1	5
4:30 - 4:45	0	0	0	0	0	1	0	0	1	0	0	0	2	6
4:45 - 5:00	1	0	0	0	0	0	0	0	0	0	0	0	1	4
5:00 - 5:15	1	0	0	0	0	0	0	0	0	0	0	0	1	3
5:15 - 5:30	2	0	0	0	0	0	0	0	0	0	0	0	2	
5:30 - 5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	

* AM and PM counts collected during peak hours on Thursday, May 25, 2017.

Peak Hour Turning Movement Volumes

(1) Hudson Road and Technology Parkway - All Vehicles

15-min Interval	From North (Southbound) Hudson Road			From East (Westbound) Technology Parkway			From South (Northbound) Hudson Road			From West (Eastbound) Technology Parkway			Intersection Count
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
7:15 - 7:30	5	84	3	3	1	2	13	100	11	15	4	9	250
7:30 - 7:45	15	108	1	2	2	3	11	107	15	3	2	21	290
7:45 - 8:00	42	105	1	1	1	3	24	97	28	3	1	18	324
8:00 - 8:15	19	76	2	2	1	2	12	67	16	0	0	8	205
2017 Volumes	**81**	**373**	**7**	**8**	**5**	**10**	**60**	**371**	**70**	**21**	**7**	**56**	**1069**
Growth Factor	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057
2019 Volumes	**86**	**394**	**7**	**8**	**5**	**11**	**63**	**392**	**74**	**22**	**7**	**59**	**1128**
Growth Factor	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887
2040 Volumes	**153**	**704**	**13**	**15**	**9**	**19**	**113**	**700**	**132**	**40**	**13**	**106**	**2017**
Percent Heavy Vehicle	0%	5%	0%	0%	0%	0%	0%	5%	3%	5%	0%	2%	-
												PHF =	0.82

4:30 - 4:45	3	144	1	18	0	22	10	125	3	1	1	7	335
4:45 - 5:00	3	98	4	16	2	13	9	131	2	0	2	13	293
5:00 - 5:15	4	126	0	31	3	39	9	133	0	6	1	15	367
5:15 - 5:30	1	121	3	6	1	16	13	141	2	2	1	11	318
2017 Volumes	**11**	**489**	**8**	**71**	**6**	**90**	**41**	**530**	**7**	**9**	**5**	**46**	**1313**
Growth Factor	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057
2019 Volumes	**12**	**517**	**8**	**75**	**6**	**95**	**43**	**560**	**7**	**10**	**5**	**49**	**1387**
Growth Factor	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887
2040 Volumes	**21**	**923**	**15**	**134**	**11**	**170**	**77**	**1000**	**13**	**17**	**9**	**87**	**2477**
Percent Heavy Vehicle	0%	2%	0%	1%	0%	1%	10%	2%	0%	0%	0%	0%	-

Note: Volume adjustments indicated in red are to allow for growth in background traffic. PHF = 0.89

(2) Hudson Road and Ridgeway Avenue - All Vehicles

15-min Interval	From North (Southbound) Hudson Road			From East (Westbound) Ridgeway Avenue			From South (Northbound) Hudson Road			From West (Eastbound) Ridgeway Avenue			Intersection Count
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
7:15 - 7:30	26	72	1	3	1	11	2	108	10	3	4	2	243
7:30 - 7:45	24	102	1	4	3	11	3	120	10	6	9	2	295
7:45 - 8:00	24	98	1	13	2	12	3	129	14	6	7	1	310
8:00 - 8:15	13	72	2	5	4	4	2	81	6	3	3	1	196
2017 Volumes	**87**	**344**	**5**	**25**	**10**	**38**	**10**	**438**	**40**	**18**	**23**	**6**	**1044**
Growth Factor	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057
2019 Volumes	**92**	**364**	**5**	**26**	**11**	**40**	**11**	**463**	**42**	**19**	**24**	**6**	**1103**
Growth Factor	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887
2040 Volumes	**164**	**649**	**9**	**47**	**19**	**72**	**19**	**827**	**75**	**34**	**43**	**11**	**1969**
Percent Heavy Vehicle	0%	5%	0%	0%	0%	3%	10%	4%	0%	6%	0%	0%	-
												PHF =	0.84

4:30 - 4:45	18	139	9	1	8	33	1	103	4	9	3	2	330
4:45 - 5:00	7	110	8	6	9	18	2	107	8	5	2	1	283
5:00 - 5:15	27	129	17	6	8	22	3	131	5	4	3	1	356
5:15 - 5:30	17	116	10	10	8	33	1	113	2	2	2	1	315
2017 Volumes	**69**	**494**	**44**	**23**	**33**	**106**	**7**	**454**	**19**	**20**	**10**	**5**	**1284**
Growth Factor	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057
2019 Volumes	**73**	**522**	**46**	**24**	**35**	**112**	**7**	**480**	**20**	**21**	**11**	**5**	**1356**
Growth Factor	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887
2040 Volumes	**130**	**932**	**83**	**43**	**62**	**200**	**13**	**857**	**36**	**38**	**19**	**9**	**2422**
Percent Heavy Vehicle	0%	2%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	-

Note: Volume adjustments indicated in red are to allow for growth in background traffic. PHF = 0.90

Peak Hour Turning Movement Volumes

(3) Chancellor Drive and Technology Parkway - All Vehicles

15-min Interval	From North (Southbound) Chancellor Drive			From East (Westbound) Technology Parkway			From South (Northbound) Chancellor Drive			From West (Eastbound) Technology Parkway			Intersection Count
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
7:15 - 7:30	1	8	17	0	0	1	21	19	2	2	2	1	74
7:30 - 7:45	1	1	27	0	0	0	23	25	1	3	1	1	83
7:45 - 8:00	1	4	39	0	0	1	49	53	1	1	1	5	155
8:00 - 8:15	2	4	26	0	0	2	16	24	1	1	1	0	77
2017 Volumes	**5**	**17**	**109**	**0**	**0**	**4**	**109**	**121**	**5**	**7**	**5**	**7**	**389**
Growth Factor	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057
2019 Volumes	**5**	**18**	**115**	**0**	**0**	**4**	**115**	**128**	**5**	**7**	**5**	**7**	**409**
Growth Factor	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887
2040 Volumes	**9**	**32**	**206**	**0**	**0**	**8**	**206**	**228**	**9**	**13**	**9**	**13**	**733**
Percent Heavy Vehicle	20%	0%	0%	#DIV/0!	#DIV/0!	25%	0%	0%	0%	0%	20%	0%	-

Note: Volume adjustments indicated in red are to allow for growth in background traffic. PHF = 0.63

4:30 - 4:45	1	33	6	2	0	1	12	10	1	32	1	23	122
4:45 - 5:00	2	15	6	2	1	1	6	8	2	22	2	27	94
5:00 - 5:15	1	46	7	1	0	0	3	2	1	43	1	50	155
5:15 - 5:30	1	16	0	1	0	0	4	7	1	15	1	20	66
2017 Volumes	**5**	**110**	**19**	**6**	**1**	**2**	**25**	**27**	**5**	**112**	**5**	**120**	**437**
Growth Factor	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057
2019 Volumes	**5**	**116**	**20**	**6**	**1**	**2**	**26**	**29**	**5**	**118**	**5**	**127**	**460**
Growth Factor	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887
2040 Volumes	**9**	**208**	**36**	**11**	**2**	**4**	**47**	**51**	**9**	**211**	**9**	**226**	**823**
Percent Heavy Vehicle	20%	4%	5%	17%	0%	50%	4%	7%	0%	0%	0%	0%	-

Note: Volume adjustments indicated in red are to allow for growth in background traffic. PHF = 0.70

(4) Chancellor Drive/Lexington Boulevard and Ridgeway Avenue - All Vehicles

15-min Interval	From North (Southbound) Chancellor Drive			From East (Westbound) Ridgeway Avenue			From South (Northbound) Lexington Boulevard			From West (Eastbound) Ridgeway Avenue			Intersection Count
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
7:15 - 7:30	6	1	1	8	9	35	6	3	8	5	41	0	123
7:30 - 7:45	0	2	2	3	17	38	3	1	22	7	35	0	130
7:45 - 8:00	2	1	1	4	19	78	7	3	13	7	35	4	174
8:00 - 8:15	4	1	1	10	13	33	0	2	11	1	26	2	104
2017 Volumes	**12**	**5**	**5**	**25**	**58**	**184**	**16**	**9**	**54**	**20**	**137**	**6**	**531**
Growth Factor	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057
2019 Volumes	**13**	**5**	**5**	**26**	**61**	**194**	**17**	**10**	**57**	**21**	**145**	**6**	**560**
Growth Factor	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887
2040 Volumes	**23**	**9**	**9**	**47**	**109**	**347**	**30**	**17**	**102**	**38**	**259**	**11**	**1001**
Percent Heavy Vehicle	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	-

Note: Volume adjustments indicated in red are to allow for growth in background traffic. PHF = 0.76

4:30 - 4:45	52	3	2	20	40	8	1	2	17	1	20	1	167
4:45 - 5:00	28	3	2	17	30	8	1	2	18	1	16	4	130
5:00 - 5:15	93	1	3	17	33	3	1	1	11	1	32	2	198
5:15 - 5:30	36	0	1	30	42	3	6	0	16	2	17	2	155
2017 Volumes	**209**	**7**	**8**	**84**	**145**	**22**	**9**	**5**	**62**	**5**	**85**	**9**	**650**
Growth Factor	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057	1.057
2019 Volumes	**221**	**7**	**8**	**89**	**153**	**23**	**10**	**5**	**66**	**5**	**90**	**10**	**687**
Growth Factor	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887	1.887
2040 Volumes	**394**	**13**	**15**	**159**	**274**	**42**	**17**	**9**	**117**	**9**	**160**	**17**	**1226**
Percent Heavy Vehicle	2%	0%	0%	0%	0%	5%	0%	0%	2%	0%	0%	0%	-

Note: Volume adjustments indicated in red are to allow for growth in background traffic. PHF = 0.82

Appendix 3

Quick Report

Crash Incidence Summary	
Possible/Unknown	4
Property Damage Only	3
	7

Injury Status Summary	
Possible (complaint of pain/injury)	4
Uninjured	15
	19

Property Damage		
	Total:	58,050.00
	Average:	8,292.86

Average Severity		
	Fatalites/Fatal Crash	0.00
	Fatalities/Crash	0.00
	Injuries/Crash	0.57

Crash Criteria

Jurisdiction: Cities (Cedar Falls)
Year: 2012, 2013, 2014, 2015, 2016
Map Selection: Yes
Filter: None

Manner of Crash/Collision Impact

Rear-end (front to rear)	1
Angle, oncoming left turn	2
Broadside (front to side)	1
Sideswipe, same direction	2
Sideswipe, opposite direction	1
	7

Surface Condition Summary

Dry	6
Snow	1
	7

Major Cause Summary

1 Ran Traffic Signal

1 Improper or erratic lane changing

1 Driver Distraction: Reaching for object(s)/fallen object(s)

2 FTYROW: Making left turn

1 Followed too close

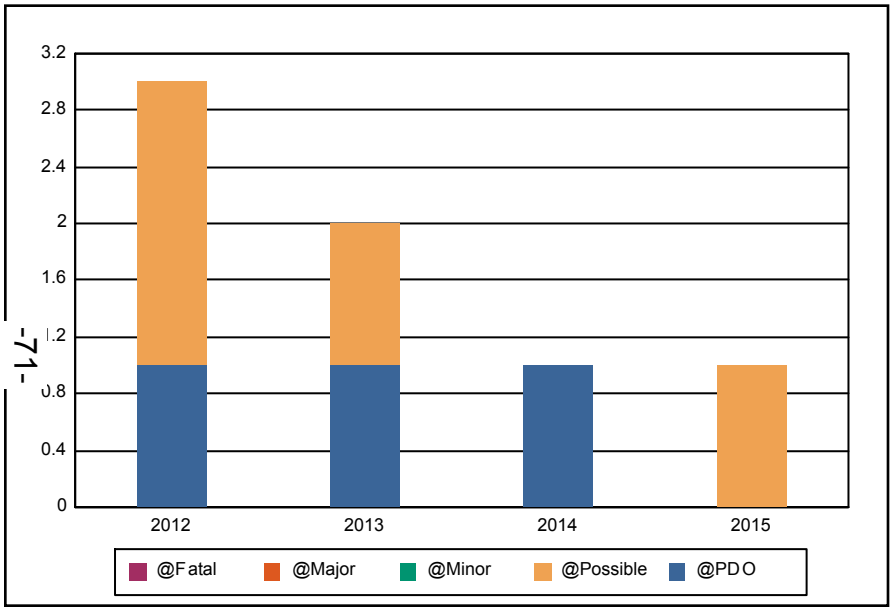
1 Swerving/Evasive Action

Crash Time of Day Summary

	00:00 01:59	02:00 03:59	04:00 05:59	06:00 07:59	08:00 09:59	10:00 11:59	12:00 13:59	14:00 15:59	16:00 17:59	18:00 19:59	20:00 21:59	22:00 23:59	Total	%
Tuesday	0	0	0	0	0	0	1	0	1	0	0	0	2	28.57
Wednesday	0	0	0	0	0	0	0	1	0	0	0	0	1	14.29
Friday	0	0	0	0	1	1	0	2	0	0	0	0	4	57.14
	0	0	0	0	1	1	1	3	1	0	0	0	7	
	0.00	0.00	0.00	0.00	14.29	14.29	14.29	42.86	14.29	0.00	0.00	0.00		

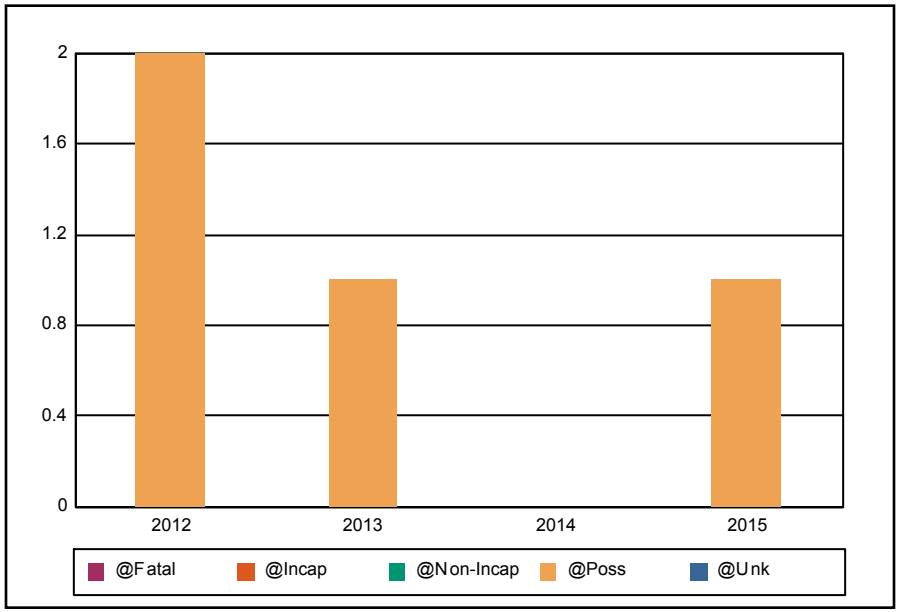
Crash Severity by Year

	Fatal	Major Injury	Minor Injury	Poss Injury	PDO	Totals
2012	0	0	0	2	1	3
2013	0	0	0	1	1	2
2014	0	0	0	0	1	1
2015	0	0	0	1	0	1
	0	0	0	4	3	7



Injury Status - Annual

	Fatal	Incapac.	Non-Incapac.	Poss	Unk	Total
2012	0	0	0	2	0	2
2013	0	0	0	1	0	1
2014	0	0	0	0	0	0
2015	0	0	0	1	0	1
	0	0	0	4	0	4



Quick Report

Crash Incidence Summary	
Major Injury	1
Minor Injury	3
Possible/Unknown	5
Property Damage Only	6
	15

Injury Status Summary	
Suspected serious/incapacitating	1
Suspected minor/non-incapacitating	5
Possible (complaint of pain/injury)	7
Uninjured	17
	30

Property Damage		
	Total:	178,000.00
	Average:	11,866.67

Average Severity		
	Fatalites/Fatal Crash	0.00
	Fatalities/Crash	0.00
	Injuries/Crash	0.87

Crash Criteria

Jurisdiction: Cities (Cedar Falls)
Year: 2012, 2013, 2014, 2015, 2016
Map Selection: Yes
Filter: None

Manner of Crash/Collision Impact

Non-collision (single vehicle)	1
Rear-end (front to rear)	2
Angle, oncoming left turn	1
Broadside (front to side)	9
Sideswipe, same direction	2
	15

Surface Condition Summary

Dry	13
Ice/frost	1
Snow	1
	15

Major Cause Summary

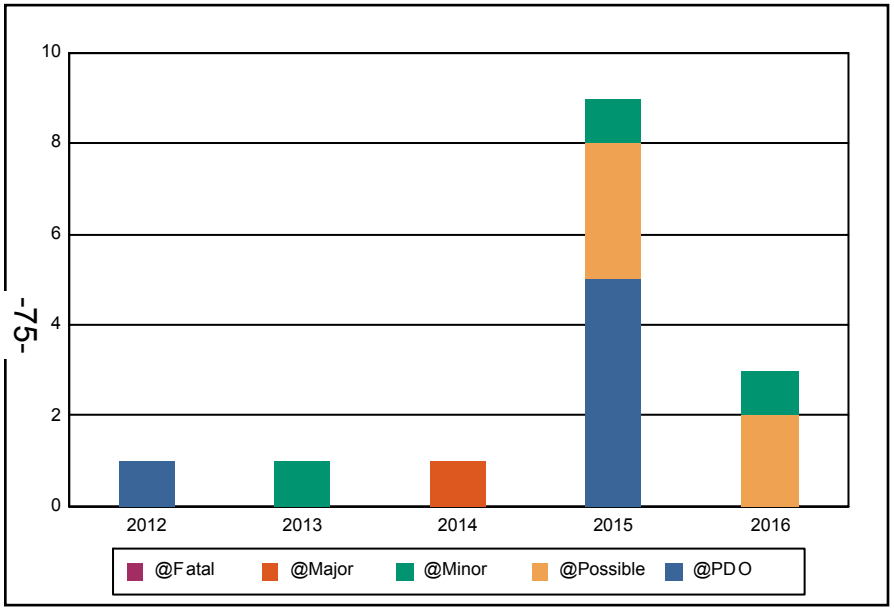
1 Ran Stop Sign
2 FTYROW: Making left turn
1 Improper or erratic lane changing
1 Ran off road - right
7 FTYROW: From stop sign
1 Driving too fast for conditions
1 Driver Distraction: Inattentive/lost in thought
1 Lost Control

Crash Time of Day Summary

	00:00 01:59	02:00 03:59	04:00 05:59	06:00 07:59	08:00 09:59	10:00 11:59	12:00 13:59	14:00 15:59	16:00 17:59	18:00 19:59	20:00 21:59	22:00 23:59	Total	%
Tuesday	0	0	0	0	1	0	0	0	2	0	0	0	3	20.00
Wednesday	0	0	0	1	0	0	0	1	2	0	0	0	4	26.67
Thursday	0	0	1	0	0	0	1	0	0	0	0	0	2	13.33
Friday	0	0	0	0	0	0	1	1	0	2	0	0	4	26.67
Saturday	0	0	0	0	1	0	1	0	0	0	0	0	2	13.33
	0	0	1	1	2	0	3	2	4	2	0	0	15	
	0.00	0.00	6.67	6.67	13.33	0.00	20.00	13.33	26.67	13.33	0.00	0.00		

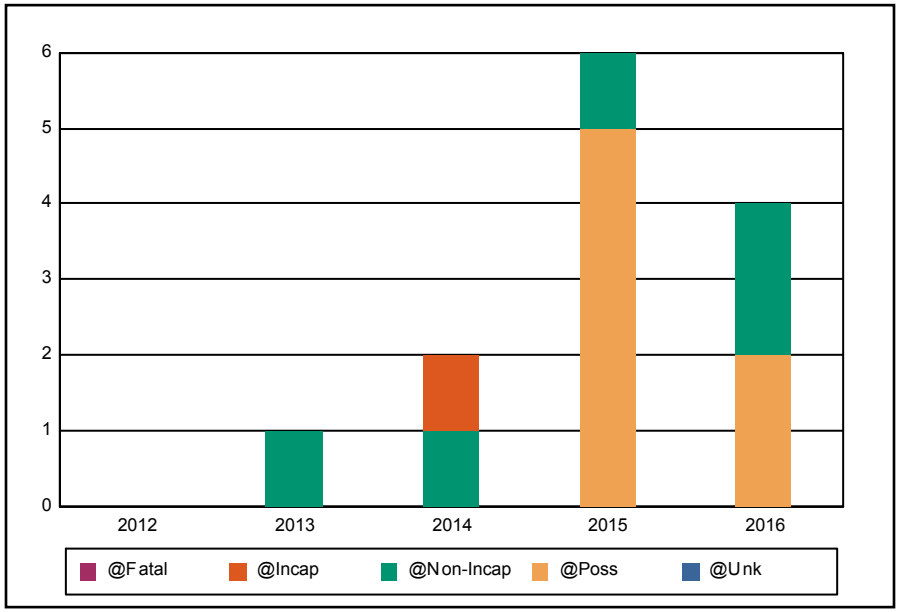
Crash Severity by Year

	Fatal	Major Injury	Minor Injury	Poss Injury	PDO	Totals
2012	0	0	0	0	1	1
2013	0	0	1	0	0	1
2014	0	1	0	0	0	1
2015	0	0	1	3	5	9
2016	0	0	1	2	0	3
	0	1	3	5	6	15



Injury Status - Annual

	Fatal	Incapac.	Non-Incapac.	Poss	Unk	Total
2012	0	0	0	0	0	0
2013	0	0	1	0	0	1
2014	0	1	1	0	0	2
2015	0	0	1	5	0	6
2016	0	0	2	2	0	4
	0	1	5	7	0	13



Quick Report

Crash Incidence Summary

Property Damage Only	1
	1

Injury Status Summary

Uninjured	2
	2

Property Damage

Total:	4,000.00
Average:	4,000.00

Average Severity

Fatalites/Fatal Crash	0.00
Fatalities/Crash	0.00
Injuries/Crash	0.00

Crash Criteria

Jurisdiction: Cities (Cedar Falls)
Year: 2012, 2013, 2014, 2015, 2016
Map Selection: Yes
Filter: None

Manner of Crash/Collision Impact	
Broadside (front to side)	1
	1

Surface Condition Summary	
Dry	1
	1

Major Cause Summary

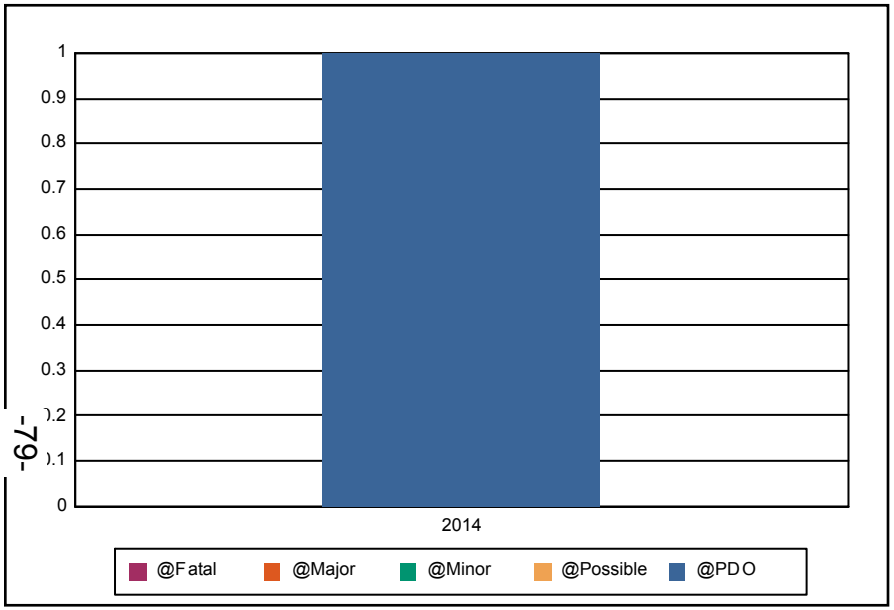
1 FTYROW: From stop sign

Crash Time of Day Summary

	00:00 01:59	02:00 03:59	04:00 05:59	06:00 07:59	08:00 09:59	10:00 11:59	12:00 13:59	14:00 15:59	16:00 17:59	18:00 19:59	20:00 21:59	22:00 23:59	Total	%
Monday	0	0	0	0	1	0	0	0	0	0	0	0	1	100.00
	0	0	0	0	1	0	0	0	0	0	0	0	1	
	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

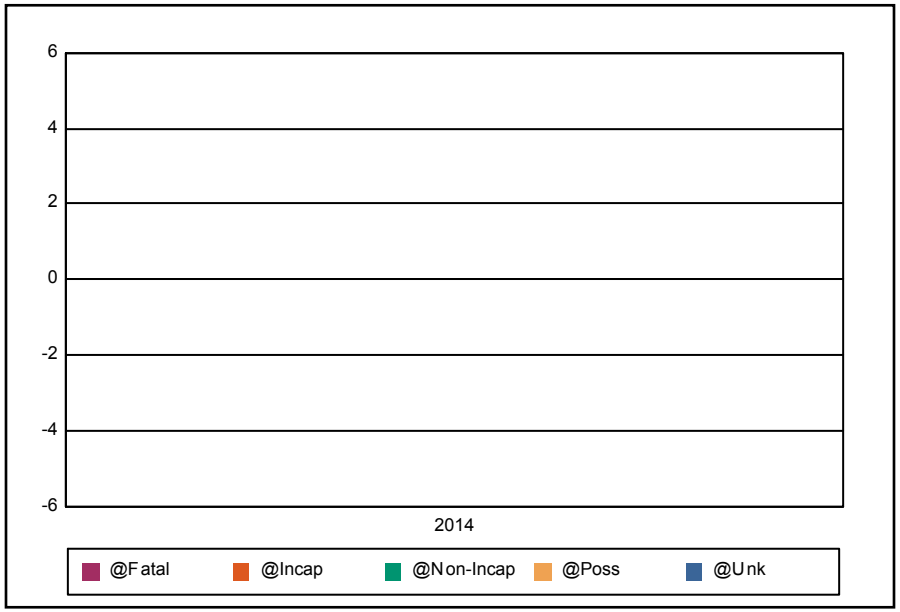
Crash Severity by Year

	Fatal	Major Injury	Minor Injury	Poss Injury	PDO	Totals
2014	0	0	0	0	1	1
	0	0	0	0	1	1



Injury Status - Annual

	Fatal	Incapac.	Non-Incapac.	Poss	Unk	Total
2014	0	0	0	0	0	0
	0	0	0	0	0	0



Quick Report

Crash Incidence Summary	
Minor Injury	1
Possible/Unknown	1
Property Damage Only	2
	4

Injury Status Summary	
Suspected minor/non-incapacitating	1
Uninjured	4
Unknown	1
	6

Property Damage		
	Total:	7,000.00
	Average:	1,750.00

Average Severity		
	Fatalites/Fatal Crash	0.00
	Fatalities/Crash	0.00
	Injuries/Crash	0.25

Crash Criteria

Jurisdiction: Cities (Cedar Falls)
Year: 2012, 2013, 2014, 2015, 2016
Map Selection: Yes
Filter: None

Manner of Crash/Collision Impact	
Non-collision (single vehicle)	3
Sideswipe, same direction	1
	4

Surface Condition Summary	
Dry	3
Ice/frost	1
	4

Major Cause Summary

3 Lost Control

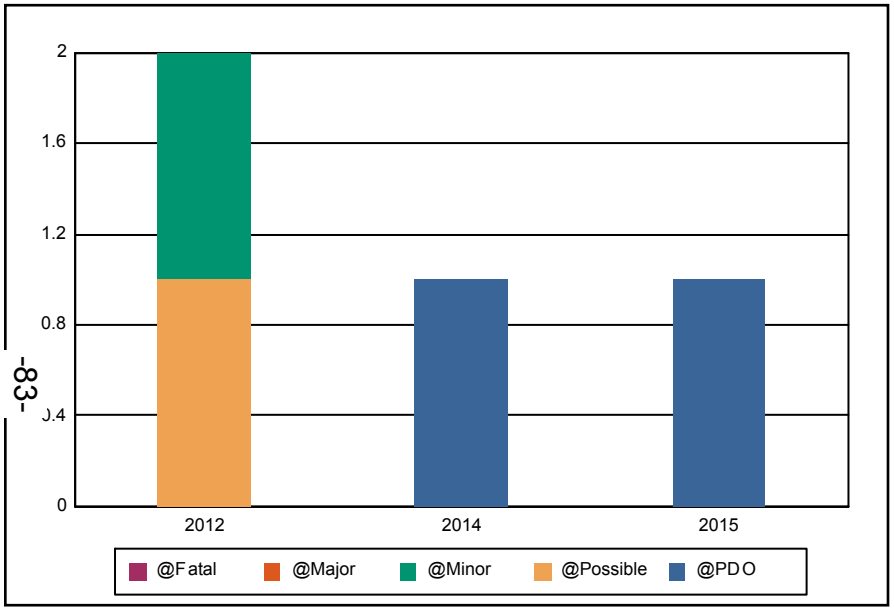
1 Unknown

Crash Time of Day Summary

	00:00 01:59	02:00 03:59	04:00 05:59	06:00 07:59	08:00 09:59	10:00 11:59	12:00 13:59	14:00 15:59	16:00 17:59	18:00 19:59	20:00 21:59	22:00 23:59	Total	%
Monday	0	0	0	1	0	0	0	0	0	0	0	0	1	25.00
Wednesday	0	0	0	1	0	0	0	0	0	0	0	0	1	25.00
Thursday	0	0	1	0	0	0	0	0	0	1	0	0	2	50.00
	0	0	1	2	0	0	0	0	0	1	0	0	4	
	0.00	0.00	25.00	50.00	0.00	0.00	0.00	0.00	0.00	25.00	0.00	0.00		

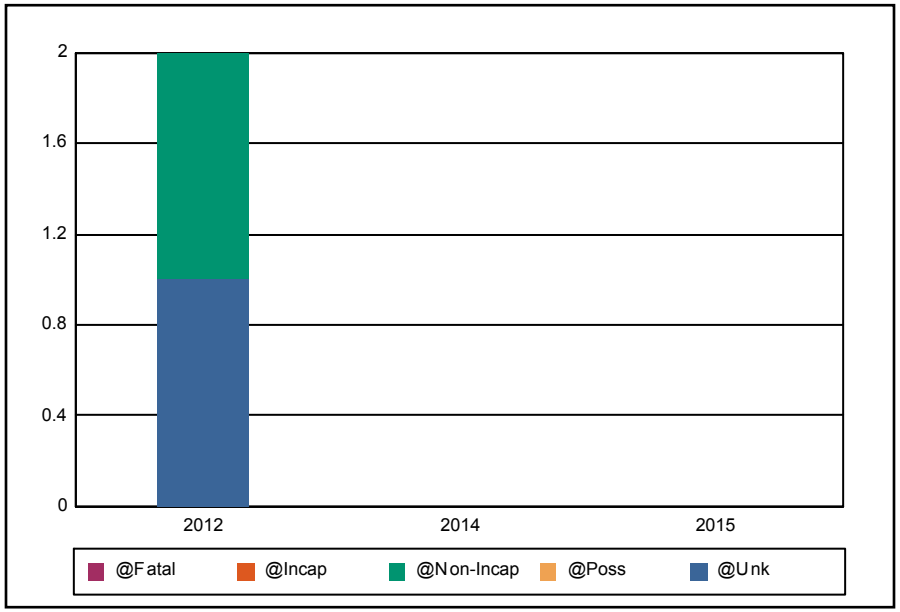
Crash Severity by Year

	Fatal	Major Injury	Minor Injury	Poss Injury	PDO	Totals
2012	0	0	1	1	0	2
2014	0	0	0	0	1	1
2015	0	0	0	0	1	1
	0	0	1	1	2	4



Injury Status - Annual

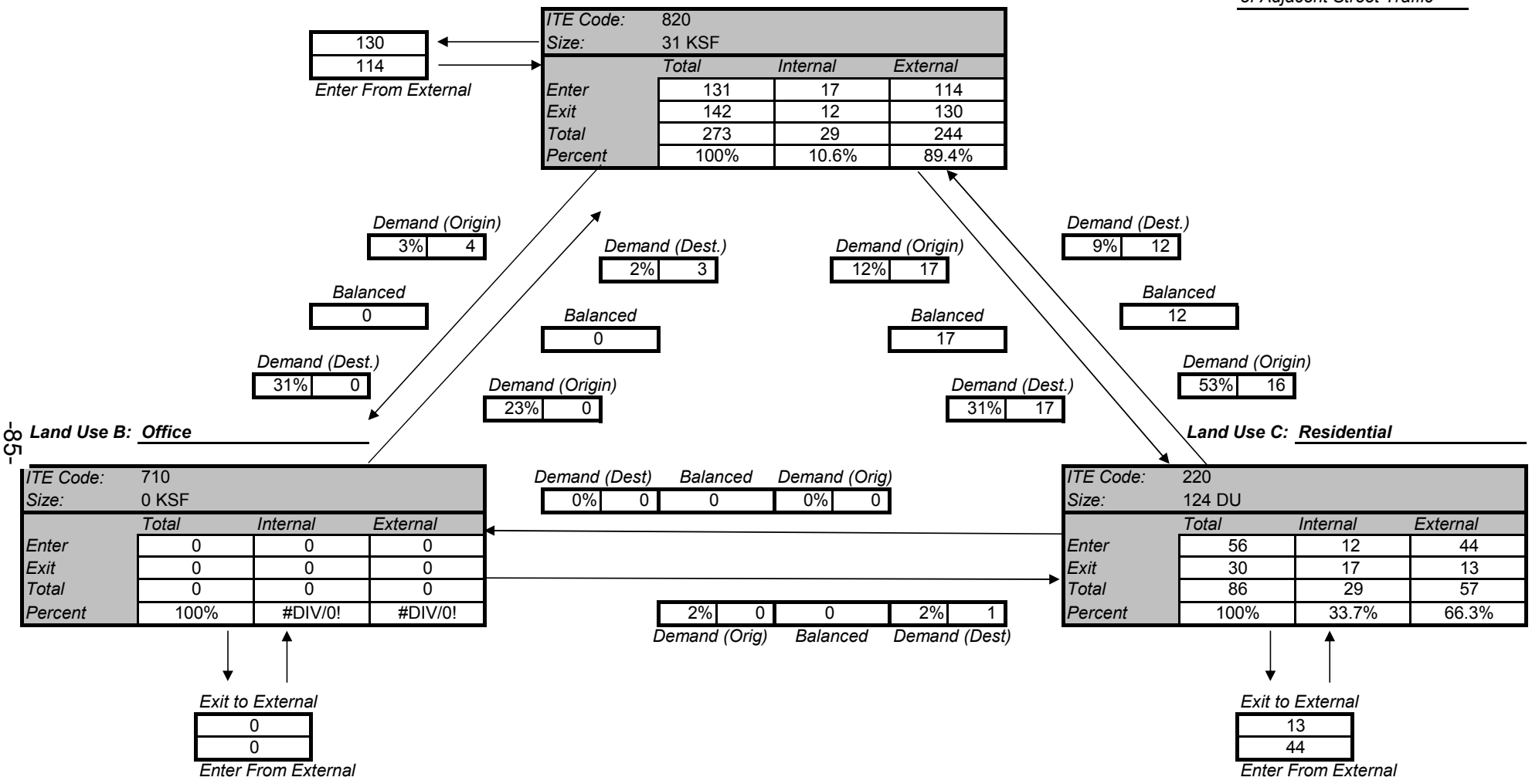
	Fatal	Incapac.	Non-Incapac.	Poss	Unk	Total
2012	0	0	1	0	1	2
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
	0	0	1	0	1	2



Appendix 4

MULTI-USE DEVELOPMENT
TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Development: Open Door Hospitality
Time Period: PM Peak Hour 2019 of Adjacent Street Traffic

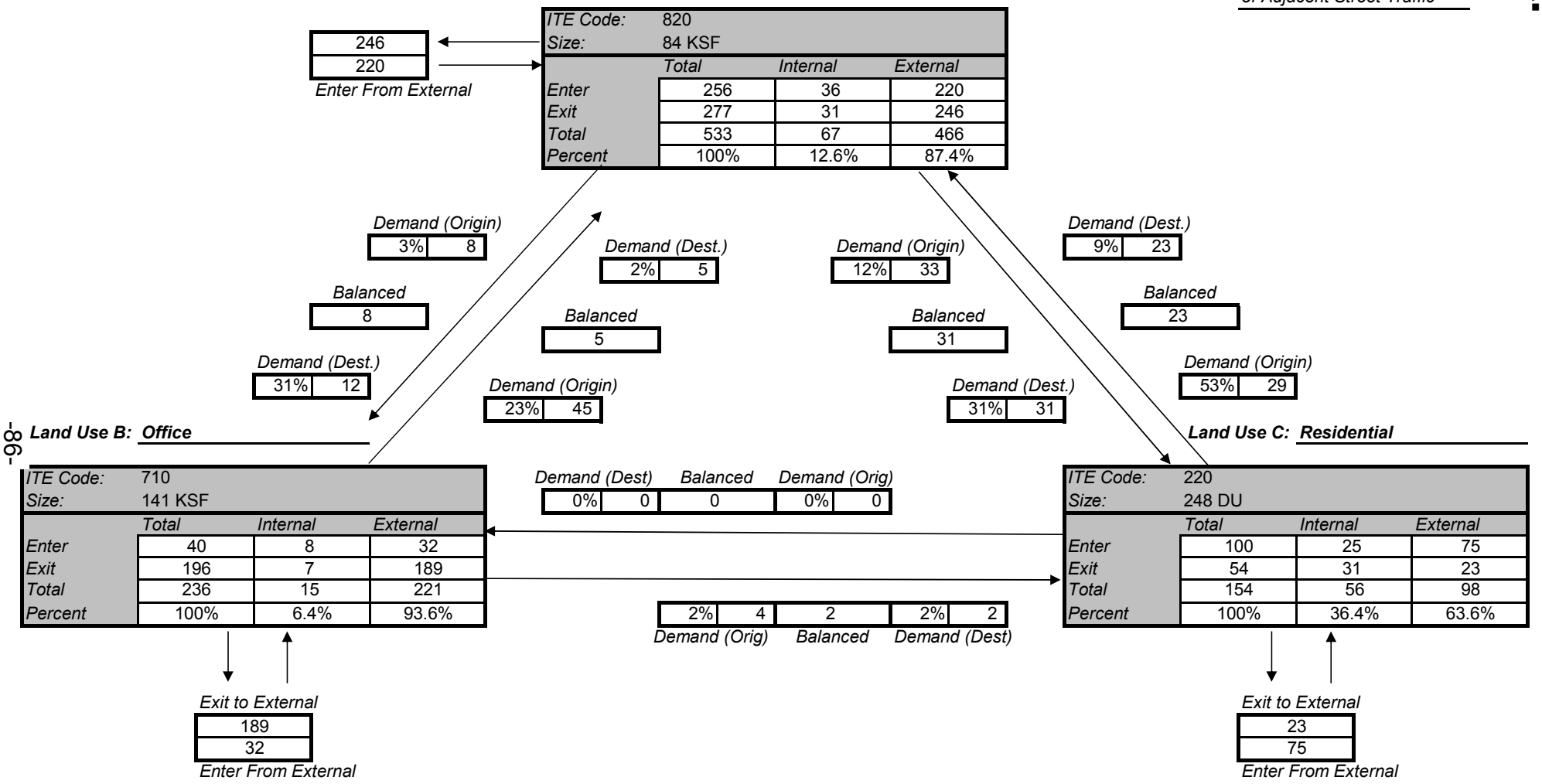


Net External Trips for Multi-Use Developments				
	Land Use A	*Land Use B*	*Land Use C*	*Total*
Enter	114	0	44	158
Exit	130	0	13	143
Total	244	0	57	301
Single Use Trip Gen Est.	273	0	86	359

Internal Capture
16%

MULTI-USE DEVELOPMENT
TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Development: Open Door Hospitality
Time Period: PM Peak Hour 2040 of Adjacent Street Traffic



Net External Trips for Multi-Use Developments	Land Use A	Land Use B	Land Use C	Total
Enter	220	32	75	327
Exit	246	189	23	458
Total	466	221	98	785
Single Use Trip Gen Est.	533	236	154	923

Internal Capture
15%

Appendix 5

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

316 Second Street SE
Cedar Rapids, Iowa 52401
Telephone (319) 364-0227
FAX (319) 364-4251

TRAFFIC SIGNAL WARRANTS – 2019 Future With Project

PROJECT NUMBER: 2171620 DATE: June 15, 2017
PROJECT NAME: Open Door Hospitality
PREPARED BY: Shive-Hattery

Major Street: Hudson Road — Critical Approach Speed: **45** mph
Minor Street: Ridgeway Avenue — Critical Approach Speed: **45** mph

Critical speed of major street traffic > 40mph ☐ RURAL (R)
In built up area of isolated community of < 10,000 population ☐ RURAL (R)
☒ URBAN (U)

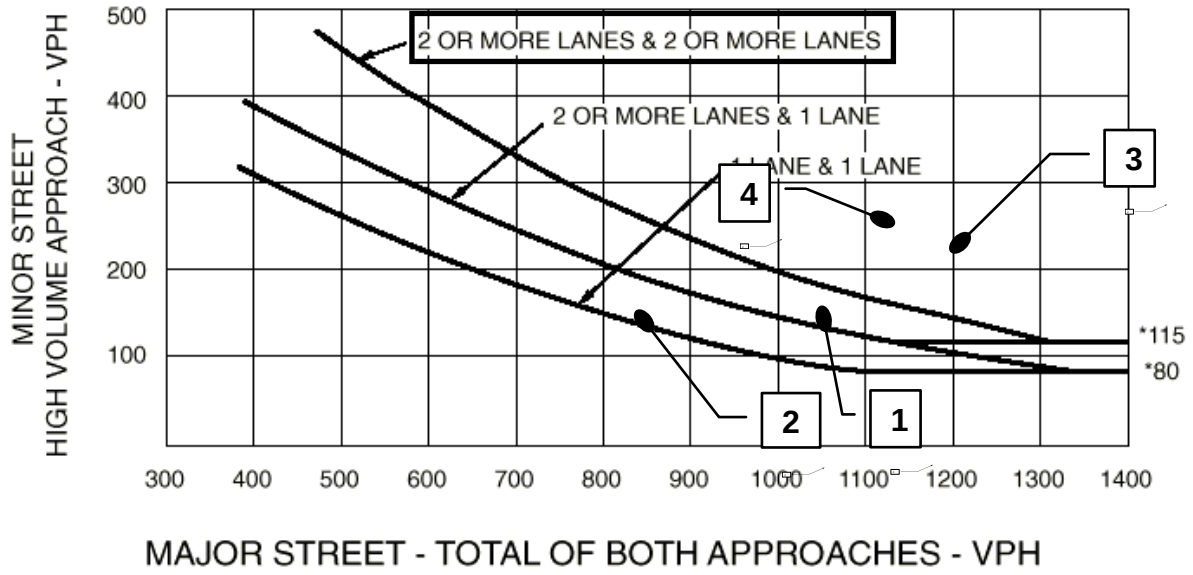
WARRANT 2 – Four Hour Vehicular Volume

SATISFIED* YES ☐ NO ☒

	APPROACH LANES		4-Hours			
APPROACH LANES	ONE	2 or MORE	7-8 AM (#1)	8-9 AM (#2)	4-5 PM (#3)	5-6 PM (#4)
Both Approaches – Major Street		**X**	**1056**	**854**	**1,211**	**1,135**
Highest Approach – Minor Street		**X**	**151**	**144**	**234**	**263**

*Refer to Figure-1 to determine if this warrant is satisfied.

FIGURE 1 - FOUR HOUR VEHICULAR VOLUME



*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

316 Second Street SE
Cedar Rapids, Iowa 52401
Telephone (319) 364-0227
FAX (319) 364-4251

TRAFFIC SIGNAL WARRANTS – 2029 Future With Project

PROJECT NUMBER: 2171620 DATE: June 15, 2017
PROJECT NAME: Open Door Hospitality
PREPARED BY: Shive-Hattery

Major Street: Hudson Road — Critical Approach Speed: **45** mph
Minor Street: Ridgeway Avenue — Critical Approach Speed: **45** mph

Critical speed of major street traffic > 40mph ☐ RURAL (R)
In built up area of isolated community of < 10,000 population ☐ RURAL (R)
☒ URBAN (U)

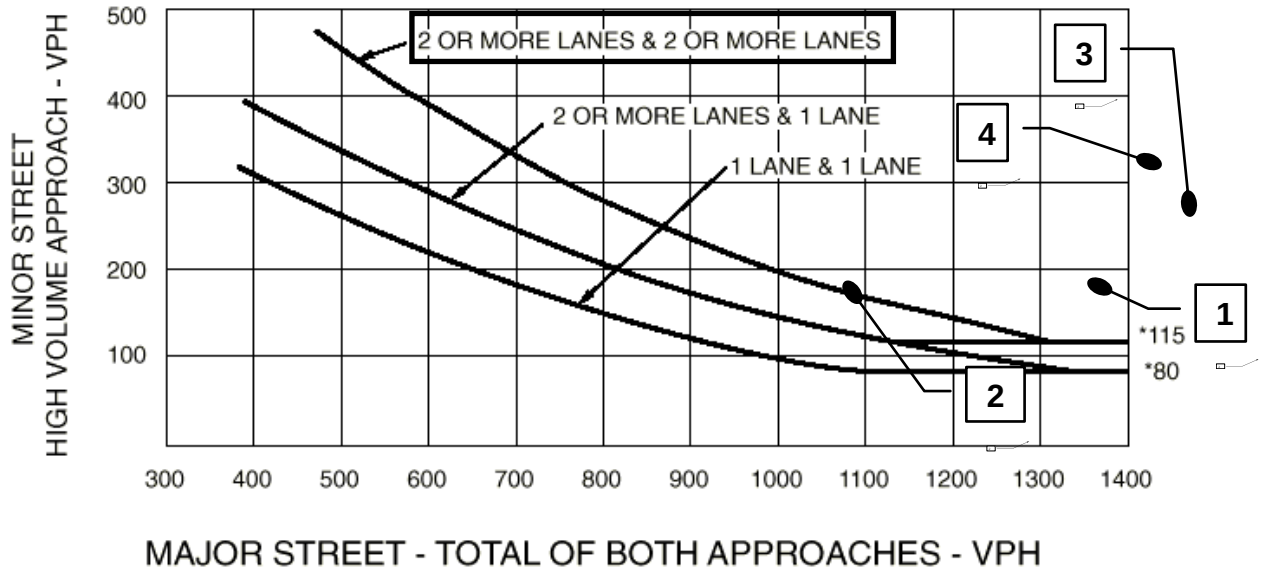
WARRANT 2 – Four Hour Vehicular Volume

SATISFIED* YES ☒ NO ☐

	APPROACH LANES		4-Hours			
APPROACH LANES	ONE	2 or MORE	7-8 AM (#1)	8-9 AM (#2)	4-5 PM (#3)	5-6 PM (#4)
Both Approaches – Major Street		**X**	**1,362**	**1,095**	**1,563**	**1,464**
Highest Approach – Minor Street		**X**	**178**	**168**	**283**	**321**

*Refer to Figure-1 to determine if this warrant is satisfied.

FIGURE 1 - FOUR HOUR VEHICULAR VOLUME



*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

The satisfaction of a warrant is not necessarily justification for a signal. Delay, congestion, confusion or other evidence of the need for right-of-way assignment must be shown.

Appendix 5

Generated with PTV VISTRO

2017 Existing AM No Build

Version 5.00-00

Intersection Level Of Service Report

Intersection 1: Hudson Road & Technology Parkway

Control Type:	Signalized	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.247

Intersection Setup

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	320.00	100.00	100.00	200.00	100.00	200.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Base Volume Input [veh/h]	60	371	70	81	373	7	21	7	56	8	5	10
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	3.00	0.00	5.00	0.00	5.00	0.00	2.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	371	70	81	373	7	21	7	56	8	5	10
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	113	21	25	114	2	6	2	17	2	2	3
Total Analysis Volume [veh/h]	73	452	85	99	455	9	26	9	68	10	6	12
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	18	33	0	9	24	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	53	44	44	53	45	45	10	5	10	4	4
g / C, Green / Cycle	0.75	0.63	0.63	0.75	0.64	0.64	0.14	0.07	0.14	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.08	0.17	0.17	0.11	0.15	0.01	0.02	0.05	0.01	0.00	0.01
s, saturation flow rate [veh/h]	943	1642	1554	895	3127	1454	1377	1479	1339	1710	1454
c, Capacity [veh/h]	791	1032	976	749	1986	923	337	99	279	87	74
d1, Uniform Delay [s]	2.55	5.83	5.84	2.69	5.48	4.71	26.53	32.27	26.32	31.75	31.90
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.23	0.63	0.68	0.08	0.27	0.02	0.10	12.32	0.05	0.33	1.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.09	0.27	0.27	0.13	0.23	0.01	0.08	0.78	0.04	0.07	0.16
d, Delay for Lane Group [s/veh]	2.78	6.46	6.51	2.77	5.75	4.73	26.63	44.59	26.37	32.08	32.91
Lane Group LOS	A	A	A	A	A	A	C	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.15	1.38	1.33	0.15	1.01	0.04	0.38	1.58	0.14	0.10	0.21
50th-Percentile Queue Length [ft]	3.78	34.50	33.18	3.87	25.14	0.92	9.44	39.56	3.61	2.55	5.25
95th-Percentile Queue Length [veh]	0.27	2.48	2.39	0.28	1.81	0.07	0.68	2.85	0.26	0.18	0.38
95th-Percentile Queue Length [ft]	6.80	62.10	59.73	6.97	45.25	1.65	16.99	71.21	6.49	4.59	9.44

Movement, Approach, & Intersection Results

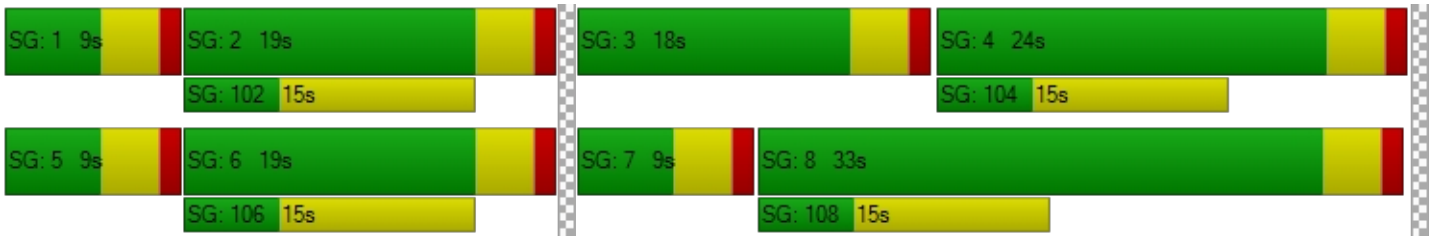
d_M, Delay for Movement [s/veh]	2.78	6.48	6.51	2.77	5.75	4.73	26.63	44.59	44.59	26.37	32.08	32.91
Movement LOS	A	A	A	A	A	A	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	6.04			5.21			40.06			30.40		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	8.89											
Intersection LOS	A											
Intersection V/C	0.247											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.58	26.58	26.58	26.58
l_p,int, Pedestrian LOS Score for Intersection	2.624	2.701	2.060	2.267
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	429	429	829	571
d_b, Bicycle Delay [s]	21.61	21.61	12.01	17.86
l_b,int, Bicycle LOS Score for Intersection	2.063	2.024	1.730	1.606
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report

Intersection 2: Hudson Road & Ridgeway Avenue

Control Type:	Two-way stop	Delay (sec / veh):	32.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.188

Intersection Setup

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	250.00	100.00	100.00	220.00	100.00	100.00	250.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	10	438	40	87	344	5	18	23	6	25	10	38
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	4.00	0.00	0.00	5.00	0.00	6.00	0.00	0.00	0.00	0.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	438	40	87	344	5	18	23	6	25	10	38
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	130	12	26	102	1	5	7	2	7	3	11
Total Analysis Volume [veh/h]	12	521	48	104	410	6	21	27	7	30	12	45
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.10	0.00	0.00	0.12	0.17	0.01	0.19	0.07	0.06
d_M, Delay for Movement [s/veh]	8.36	0.00	0.00	8.96	0.00	0.00	27.56	31.03	13.36	32.65	28.18	10.42
Movement LOS	A	A	A	A	A	A	D	D	B	D	D	B
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.34	0.00	0.00	0.39	0.62	0.62	0.67	0.23	0.20
95th-Percentile Queue Length [ft]	0.84	0.00	0.00	8.55	0.00	0.00	9.69	15.42	15.42	16.64	5.73	5.07
d_A, Approach Delay [s/veh]	0.17			1.79			27.46			20.53		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	3.48											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 3: Chancellor Drive & Technology Parkway

Control Type:	Two-way stop	Delay (sec / veh):	17.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Base Volume Input [veh/h]	109	121	5	5	17	109	7	5	7	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	20.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	25.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	121	5	5	17	109	7	5	7	0	0	4
Peak Hour Factor	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	48	2	2	7	43	3	2	3	0	0	2
Total Analysis Volume [veh/h]	173	192	8	8	27	173	11	8	11	0	0	6
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.00	0.00	0.01	0.00	0.00	0.03	0.03	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	7.97	0.00	0.00	7.85	0.00	0.00	16.69	17.61	9.48	16.44	17.49	9.59
Movement LOS	A	A	A	A	A	A	C	C	A	C	C	A
95th-Percentile Queue Length [veh]	1.10	1.10	1.10	0.58	0.58	0.58	0.23	0.23	0.23	0.02	0.02	0.02
95th-Percentile Queue Length [ft]	27.42	27.42	27.42	14.60	14.60	14.60	5.78	5.78	5.78	0.57	0.57	0.57
d_A, Approach Delay [s/veh]	3.70			0.30			14.29			9.59		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	3.13											
Intersection LOS	C											

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Intersection Level Of Service Report

Intersection 4: Chancellor Drive/Lexington Boulevard & Ridgeway Avenue

Control Type:	Roundabout	Delay (sec / veh):	3.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	16	9	54	12	5	5	20	137	6	25	58	184
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	9	54	12	5	5	20	137	6	25	58	184
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	18	4	2	2	7	45	2	8	19	61
Total Analysis Volume [veh/h]	21	12	71	16	7	7	26	180	8	33	76	242
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	222			132			56			59		
Exiting Flow Rate [veh/h]	196			99			40			38		
Demand Flow Rate [veh/h]	16	9	54	12	5	5	20	137	6	25	58	184
Adjusted Demand Flow Rate [veh/h]	21	12	71	16	7	7	26	180	8	33	76	242

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	1.00	1.00	1.00	1.00	0.99	1.00
Entry Flow Rate [veh/h]	104	30	101	114	111	244
Capacity of Entry and Bypass Lanes [veh/h]	1101	1207	1350	1350	1346	1346
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1101	1207	1350	1350	1328	1340
X, volume / capacity	0.09	0.02	0.07	0.08	0.08	0.18

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.31	0.08	0.24	0.27	0.27	0.66
95th-Percentile Queue Length [ft]	7.81	1.91	6.03	6.87	6.70	16.46
Approach Delay [s/veh]	4.09	3.18	3.30		3.93	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	3.73					
Intersection LOS	A					

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Intersection Level Of Service Report

Intersection 1: Hudson Road & Technology Parkway

Control Type:	Signalized	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.268

Intersection Setup

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	320.00	100.00	100.00	200.00	100.00	200.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Base Volume Input [veh/h]	41	530	7	11	489	8	9	5	46	71	6	90
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	530	7	11	489	8	9	5	46	71	6	90
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	149	2	3	137	2	3	1	13	20	2	25
Total Analysis Volume [veh/h]	46	596	8	12	549	9	10	6	52	80	7	101
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	9	23	0	9	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	41	36	36	41	34	34	11	3	11	6	6
g / C, Green / Cycle	0.69	0.60	0.60	0.69	0.57	0.57	0.18	0.05	0.18	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.18	0.01	0.17	0.01	0.01	0.04	0.06	0.00	0.07
s, saturation flow rate [veh/h]	814	1683	1675	811	3204	1454	1377	1476	1428	1710	1442
c, Capacity [veh/h]	652	1009	1004	653	1826	828	426	80	395	175	148
d1, Uniform Delay [s]	3.45	5.89	5.89	3.36	6.73	5.61	20.20	28.09	21.16	24.38	26.11
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.76	0.77	0.01	0.42	0.02	0.02	11.92	0.25	0.09	5.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.30	0.30	0.02	0.30	0.01	0.02	0.73	0.20	0.04	0.68
d, Delay for Lane Group [s/veh]	3.66	6.65	6.66	3.37	7.15	5.64	20.22	40.01	21.41	24.47	31.55
Lane Group LOS	A	A	A	A	A	A	C	D	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.12	1.35	1.35	0.02	1.29	0.04	0.11	1.05	0.93	0.09	1.54
50th-Percentile Queue Length [ft]	2.96	33.76	33.65	0.56	32.30	0.95	2.78	26.13	23.37	2.24	38.52
95th-Percentile Queue Length [veh]	0.21	2.43	2.42	0.04	2.33	0.07	0.20	1.88	1.68	0.16	2.77
95th-Percentile Queue Length [ft]	5.33	60.77	60.57	1.01	58.14	1.70	5.00	47.03	42.07	4.04	69.34

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.66	6.66	6.66	3.37	7.15	5.64	20.22	40.01	40.01	21.41	24.47	31.55
Movement LOS	A	A	A	A	A	A	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	6.44			7.05			37.10			26.97		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	10.71											
Intersection LOS	B											
Intersection V/C	0.268											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.680	2.747	2.003	2.175
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	633	633
d_b, Bicycle Delay [s]	16.88	16.88	14.01	14.01
l_b,int, Bicycle LOS Score for Intersection	2.096	2.030	1.672	1.870
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Intersection Level Of Service Report

Intersection 2: Hudson Road & Ridgeway Avenue

Control Type:	Two-way stop	Delay (sec / veh):	39.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.175

Intersection Setup

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	250.00	100.00	100.00	220.00	100.00	100.00	250.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	7	454	19	69	494	44	20	10	5	23	33	106
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	454	19	69	494	44	20	10	5	23	33	106
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	126	5	19	137	12	6	3	1	6	9	29
Total Analysis Volume [veh/h]	8	504	21	77	549	49	22	11	6	26	37	118
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							No					
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.07	0.01	0.00	0.17	0.07	0.01	0.14	0.24	0.16
d_M, Delay for Movement [s/veh]	8.67	0.00	0.00	8.69	0.00	0.00	39.53	29.47	11.55	27.31	35.82	10.77
Movement LOS	A	A	A	A	A	A	E	D	B	D	E	B
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.24	0.00	0.00	0.61	0.25	0.25	0.47	0.90	0.56
95th-Percentile Queue Length [ft]	0.61	0.00	0.00	5.91	0.00	0.00	15.16	6.36	6.36	11.82	22.48	14.08
d_A, Approach Delay [s/veh]	0.13			0.99			32.39			18.26		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	3.72											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: Chancellor Drive & Technology Parkway

Control Type:	Two-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Base Volume Input [veh/h]	25	27	5	5	110	19	112	5	120	6	1	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.00	7.00	0.00	20.00	4.00	5.00	0.00	0.00	0.00	17.00	0.00	50.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	27	5	5	110	19	112	5	120	6	1	2
Peak Hour Factor	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	10	2	2	39	7	40	2	43	2	0	1
Total Analysis Volume [veh/h]	36	39	7	7	157	27	160	7	171	9	1	3
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.00	0.25	0.01	0.19	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	7.68	0.00	0.00	7.49	0.00	0.00	14.71	15.11	13.15	13.69	11.33	9.17
Movement LOS	A	A	A	A	A	A	B	C	B	B	B	A
95th-Percentile Queue Length [veh]	0.19	0.19	0.19	0.45	0.45	0.45	2.42	2.42	2.42	0.08	0.08	0.08
95th-Percentile Queue Length [ft]	4.74	4.74	4.74	11.31	11.31	11.31	60.43	60.43	60.43	2.02	2.02	2.02
d_A, Approach Delay [s/veh]	3.37			0.27			13.93			12.46		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	8.33											
Intersection LOS	C											

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Intersection Level Of Service Report

Intersection 4: Chancellor Drive/Lexington Boulevard & Ridgeway Avenue

Control Type:	Roundabout	Delay (sec / veh):	4.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	9	5	62	209	7	8	5	85	9	84	145	22
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	5	62	209	7	8	5	85	9	84	145	22
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	2	19	64	2	2	2	26	3	26	44	7
Total Analysis Volume [veh/h]	11	6	76	255	9	10	6	104	11	102	177	27
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	370			290			371			23		
Exiting Flow Rate [veh/h]	364			188			111			12		
Demand Flow Rate [veh/h]	9	5	62	209	7	8	5	85	9	84	145	22
Adjusted Demand Flow Rate [veh/h]	11	6	76	255	9	10	6	104	11	102	177	27

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	1.00	1.00	1.00	0.99
Entry Flow Rate [veh/h]	95	280	57	65	144	164
Capacity of Entry and Bypass Lanes [veh/h]	947	1027	1014	1014	1391	1391
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	931	1008	1014	1014	1391	1382
X, volume / capacity	0.10	0.27	0.06	0.06	0.10	0.12

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.33	1.11	0.18	0.20	0.35	0.40
95th-Percentile Queue Length [ft]	8.30	27.67	4.45	5.06	8.63	9.95
Approach Delay [s/veh]	4.80	6.26	4.08		3.48	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	4.68					
Intersection LOS	A					

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Intersection Level Of Service Report

Intersection 1: Hudson Road & Technology Parkway

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.261

Intersection Setup

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	320.00	100.00	100.00	200.00	100.00	200.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Base Volume Input [veh/h]	60	371	70	81	373	7	21	7	56	8	5	10
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	0.00	5.00	3.00	0.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	392	74	86	394	7	22	7	59	8	5	11
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	120	23	26	120	2	7	2	18	2	2	3
Total Analysis Volume [veh/h]	77	478	90	105	480	9	27	9	72	10	6	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	19	33	0	9	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	52	44	44	52	44	44	10	5	10	4	4
g / C, Green / Cycle	0.75	0.63	0.63	0.75	0.63	0.63	0.14	0.07	0.14	0.05	0.05
(v / s)_i Volume / Saturation Flow Rate	0.08	0.18	0.18	0.12	0.15	0.01	0.02	0.05	0.01	0.00	0.01
s, saturation flow rate [veh/h]	928	1642	1553	877	3127	1454	1375	1478	1333	1710	1454
c, Capacity [veh/h]	773	1024	969	729	1970	916	341	104	280	92	78
d1, Uniform Delay [s]	2.65	6.05	6.06	2.82	5.68	4.84	26.32	32.11	26.11	31.56	31.73
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.70	0.74	0.09	0.29	0.02	0.10	11.68	0.05	0.29	0.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.28	0.29	0.14	0.24	0.01	0.08	0.78	0.04	0.07	0.17
d, Delay for Lane Group [s/veh]	2.91	6.75	6.80	2.91	5.97	4.86	26.42	43.79	26.16	31.86	32.72
Lane Group LOS	A	A	A	A	A	A	C	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.17	1.52	1.45	0.17	1.10	0.04	0.39	1.64	0.14	0.10	0.23
50th-Percentile Queue Length [ft]	4.18	37.88	36.37	4.34	27.49	0.94	9.76	41.11	3.59	2.53	5.64
95th-Percentile Queue Length [veh]	0.30	2.73	2.62	0.31	1.98	0.07	0.70	2.96	0.26	0.18	0.41
95th-Percentile Queue Length [ft]	7.52	68.18	65.46	7.81	49.48	1.69	17.56	74.00	6.46	4.56	10.16

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Movement, Approach, & Intersection Results

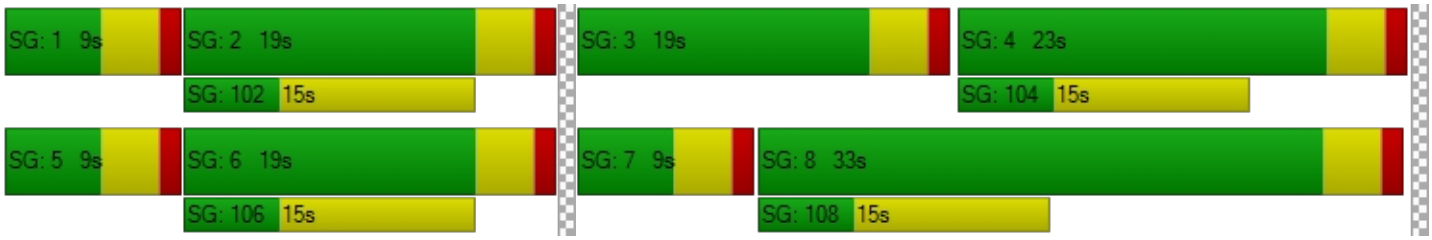
d_M, Delay for Movement [s/veh]	2.91	6.77	6.80	2.91	5.97	4.86	26.42	43.79	43.79	26.16	31.86	32.72
Movement LOS	A	A	A	A	A	A	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	6.31			5.42			39.45			30.28		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	9.03											
Intersection LOS	A											
Intersection V/C	0.261											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.58	26.58	26.58	26.58
l_p,int, Pedestrian LOS Score for Intersection	2.643	2.716	2.066	2.274
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	429	429	829	543
d_b, Bicycle Delay [s]	21.61	21.61	12.01	18.58
l_b,int, Bicycle LOS Score for Intersection	2.092	2.050	1.738	1.607
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report
Intersection 2: Hudson Road & Ridgeway Avenue

Control Type:	Two-way stop	Delay (sec / veh):	37.9
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.222

Intersection Setup

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	250.00	100.00	100.00	220.00	100.00	100.00	250.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	10	438	40	87	344	5	18	23	6	25	10	38
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	10.00	4.00	0.00	0.00	5.00	0.00	6.00	0.00	0.00	0.00	0.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	463	42	92	364	5	19	24	6	26	11	40
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	138	13	27	108	1	6	7	2	8	3	12
Total Analysis Volume [veh/h]	13	551	50	110	433	6	23	29	7	31	13	48
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.11	0.00	0.00	0.14	0.20	0.01	0.22	0.09	0.07
d_M, Delay for Movement [s/veh]	8.43	0.00	0.00	9.11	0.00	0.00	31.08	34.97	14.89	37.90	31.14	10.58
Movement LOS	A	A	A	A	A	A	D	D	B	E	D	B
95th-Percentile Queue Length [veh]	0.04	0.00	0.00	0.38	0.00	0.00	0.49	0.75	0.75	0.81	0.28	0.22
95th-Percentile Queue Length [ft]	0.93	0.00	0.00	9.38	0.00	0.00	12.17	18.79	18.79	20.15	6.97	5.57
d_A, Approach Delay [s/veh]	0.18			1.83			31.07			22.69		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	3.83											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 3: Chancellor Drive & Technology Parkway

Control Type:	Two-way stop	Delay (sec / veh):	18.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Base Volume Input [veh/h]	109	121	5	5	17	109	7	5	7	0	0	4
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	20.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	25.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	115	128	5	5	18	115	7	5	7	0	0	4
Peak Hour Factor	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	51	2	2	7	46	3	2	3	0	0	2
Total Analysis Volume [veh/h]	183	203	8	8	29	183	11	8	11	0	0	6
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.00	0.00	0.01	0.00	0.00	0.04	0.03	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.03	0.00	0.00	7.88	0.00	0.00	17.55	18.48	9.60	17.26	18.39	9.66
Movement LOS	A	A	A	A	A	A	C	C	A	C	C	A
95th-Percentile Queue Length [veh]	1.20	1.20	1.20	0.63	0.63	0.63	0.25	0.25	0.25	0.02	0.02	0.02
95th-Percentile Queue Length [ft]	29.97	29.97	29.97	15.80	15.80	15.80	6.14	6.14	6.14	0.58	0.58	0.58
d_A, Approach Delay [s/veh]	3.73			0.29			14.88			9.66		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	3.13											
Intersection LOS	C											

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Intersection Level Of Service Report

Intersection 4: Chancellor Drive/Lexington Boulevard & Ridgeway Avenue

Control Type:	Roundabout	Delay (sec / veh):	3.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	16	9	54	12	5	5	20	137	6	25	58	184
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	10	57	13	5	5	21	145	6	26	61	194
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	3	19	4	2	2	7	48	2	9	20	64
Total Analysis Volume [veh/h]	22	13	75	17	7	7	28	191	8	34	80	255
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	236			138			58			63		
Exiting Flow Rate [veh/h]	208			104			41			41		
Demand Flow Rate [veh/h]	17	10	57	13	5	5	21	145	6	26	61	194
Adjusted Demand Flow Rate [veh/h]	22	13	75	17	7	7	28	191	8	34	80	255

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	1.00	1.00	1.00	1.00	0.99	1.00
Entry Flow Rate [veh/h]	110	31	107	121	116	257
Capacity of Entry and Bypass Lanes [veh/h]	1085	1200	1347	1347	1341	1341
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1085	1200	1347	1347	1323	1335
X, volume / capacity	0.10	0.03	0.08	0.09	0.09	0.19

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.34	0.08	0.26	0.29	0.28	0.70
95th-Percentile Queue Length [ft]	8.44	1.99	6.44	7.34	7.06	17.62
Approach Delay [s/veh]	4.20	3.21	3.34		4.02	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	3.80					
Intersection LOS	A					

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Intersection Level Of Service Report

Intersection 1: Hudson Road & Technology Parkway

Control Type:	Signalized	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.283

Intersection Setup

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	320.00	100.00	100.00	200.00	100.00	200.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Base Volume Input [veh/h]	41	530	7	11	489	8	9	5	46	71	6	90
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	10.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	560	7	12	517	8	10	5	49	75	6	95
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	157	2	3	145	2	3	1	14	21	2	27
Total Analysis Volume [veh/h]	48	629	8	13	581	9	11	6	55	84	7	107
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	9	23	0	9	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	41	36	36	41	34	34	11	3	11	6	6
g / C, Green / Cycle	0.68	0.60	0.60	0.68	0.57	0.57	0.18	0.05	0.18	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.06	0.19	0.19	0.02	0.18	0.01	0.01	0.04	0.06	0.00	0.07
s, saturation flow rate [veh/h]	797	1683	1676	792	3204	1454	1378	1475	1426	1710	1442
c, Capacity [veh/h]	635	1002	998	634	1812	822	430	82	397	179	151
d1, Uniform Delay [s]	3.57	6.09	6.09	3.46	6.95	5.72	20.06	28.05	21.06	24.28	26.12
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.23	0.84	0.84	0.01	0.47	0.02	0.02	12.48	0.26	0.09	6.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.32	0.32	0.02	0.32	0.01	0.03	0.74	0.21	0.04	0.71
d, Delay for Lane Group [s/veh]	3.80	6.93	6.93	3.48	7.42	5.75	20.09	40.53	21.32	24.37	32.17
Lane Group LOS	A	A	A	A	A	A	C	D	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.13	1.47	1.47	0.03	1.41	0.04	0.12	1.11	0.98	0.09	1.65
50th-Percentile Queue Length [ft]	3.19	36.83	36.72	0.63	35.30	0.96	3.04	27.64	24.50	2.24	41.29
95th-Percentile Queue Length [veh]	0.23	2.65	2.64	0.05	2.54	0.07	0.22	1.99	1.76	0.16	2.97
95th-Percentile Queue Length [ft]	5.74	66.30	66.09	1.13	63.54	1.74	5.48	49.76	44.10	4.02	74.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.80	6.93	6.93	3.48	7.42	5.75	20.09	40.53	40.53	21.32	24.37	32.17
Movement LOS	A	A	A	A	A	A	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	6.71			7.31			37.41			27.29		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	10.97											
Intersection LOS	B											
Intersection V/C	0.283											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.702	2.765	2.006	2.178
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	633	633
d_b, Bicycle Delay [s]	16.88	16.88	14.01	14.01
l_b,int, Bicycle LOS Score for Intersection	2.125	2.057	1.678	1.886
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Intersection Level Of Service Report

Intersection 2: Hudson Road & Ridgeway Avenue

Control Type:	Two-way stop	Delay (sec / veh):	47.0
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.212

Intersection Setup

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	250.00	100.00	100.00	220.00	100.00	100.00	250.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	7	454	19	69	494	44	20	10	5	23	33	106
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	480	20	73	522	46	21	11	5	24	35	112
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	133	6	20	145	13	6	3	1	7	10	31
Total Analysis Volume [veh/h]	8	533	22	81	580	51	23	12	6	27	39	124
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.08	0.01	0.00	0.21	0.09	0.01	0.16	0.28	0.17
d_M, Delay for Movement [s/veh]	8.78	0.00	0.00	8.81	0.00	0.00	47.01	32.49	12.18	30.44	41.02	10.98
Movement LOS	A	A	A	A	A	A	E	D	B	D	E	B
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.26	0.00	0.00	0.76	0.31	0.31	0.56	1.09	0.61
95th-Percentile Queue Length [ft]	0.63	0.00	0.00	6.42	0.00	0.00	18.90	7.66	7.66	13.89	27.14	15.33
d_A, Approach Delay [s/veh]	0.12			1.00			37.66			19.91		
Approach LOS	A			A			E			C		
d_I, Intersection Delay [s/veh]	4.06											
Intersection LOS	E											

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Intersection Level Of Service Report

Intersection 3: Chancellor Drive & Technology Parkway

Control Type:	Two-way stop	Delay (sec / veh):	15.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Base Volume Input [veh/h]	25	27	5	5	110	19	112	5	120	6	1	2
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	4.00	7.00	0.00	20.00	4.00	5.00	0.00	0.00	0.00	17.00	0.00	50.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	29	5	5	116	20	118	5	127	6	1	2
Peak Hour Factor	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	10	2	2	41	7	42	2	45	2	0	1
Total Analysis Volume [veh/h]	37	41	7	7	166	29	169	7	181	9	1	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.00	0.27	0.01	0.21	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	7.71	0.00	0.00	7.49	0.00	0.00	15.50	15.89	13.86	14.12	11.48	9.19
Movement LOS	A	A	A	A	A	A	C	C	B	B	B	A
95th-Percentile Queue Length [veh]	0.20	0.20	0.20	0.48	0.48	0.48	2.74	2.74	2.74	0.08	0.08	0.08
95th-Percentile Queue Length [ft]	4.97	4.97	4.97	12.09	12.09	12.09	68.61	68.61	68.61	2.10	2.10	2.10
d_A, Approach Delay [s/veh]	3.36			0.26			14.68			12.78		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	8.74											
Intersection LOS	C											

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Intersection Level Of Service Report

Intersection 4: Chancellor Drive/Lexington Boulevard & Ridgeway Avenue

Control Type:	Roundabout	Delay (sec / veh):	4.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	9	5	62	209	7	8	5	85	9	84	145	22
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	5	66	221	7	8	5	90	10	89	153	23
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	2	20	67	2	2	2	27	3	27	47	7
Total Analysis Volume [veh/h]	12	6	80	270	9	10	6	110	12	109	187	28
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	391			308			393			24		
Exiting Flow Rate [veh/h]	385			199			118			12		
Demand Flow Rate [veh/h]	10	5	66	221	7	8	5	90	10	89	153	23
Adjusted Demand Flow Rate [veh/h]	12	6	80	270	9	10	6	110	12	109	187	28

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	1.00	1.00	1.00	0.99
Entry Flow Rate [veh/h]	100	295	61	68	153	173
Capacity of Entry and Bypass Lanes [veh/h]	926	1008	993	993	1390	1390
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	911	990	993	993	1390	1381
X, volume / capacity	0.11	0.29	0.06	0.07	0.11	0.12

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.36	1.22	0.19	0.22	0.37	0.42
95th-Percentile Queue Length [ft]	9.01	30.52	4.83	5.49	9.21	10.62
Approach Delay [s/veh]	4.97	6.59	4.20		3.53	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	4.86					
Intersection LOS	A					

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Intersection Level Of Service Report

Intersection 1: Hudson Road & Technology Parkway

Control Type:	Signalized	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.326

Intersection Setup

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	320.00	100.00	100.00	200.00	100.00	200.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Base Volume Input [veh/h]	60	371	70	81	373	7	21	7	56	8	5	10
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	0.00	5.00	3.00	0.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	52	0	68	0	0	0	10	0	26	8	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	444	74	154	394	7	22	17	59	34	13	11
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	135	23	47	120	2	7	5	18	10	4	3
Total Analysis Volume [veh/h]	77	541	90	188	480	9	27	21	72	41	16	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	23	33	0	9	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	50	41	41	50	42	42	12	6	12	6	6
g / C, Green / Cycle	0.71	0.58	0.58	0.71	0.60	0.60	0.18	0.08	0.18	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.08	0.20	0.20	0.22	0.15	0.01	0.02	0.06	0.03	0.01	0.01
s, saturation flow rate [veh/h]	932	1642	1562	854	3127	1454	1340	1504	1362	1710	1454
c, Capacity [veh/h]	737	953	906	669	1857	863	380	120	326	154	131
d1, Uniform Delay [s]	3.43	7.71	7.72	4.03	6.85	5.83	24.14	31.69	24.45	29.36	29.34
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.97	1.02	0.23	0.34	0.02	0.08	9.98	0.17	0.29	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.34	0.34	0.28	0.26	0.01	0.07	0.77	0.13	0.10	0.10
d, Delay for Lane Group [s/veh]	3.71	8.68	8.74	4.26	7.19	5.86	24.22	41.66	24.62	29.65	29.67
Lane Group LOS	A	A	A	A	A	A	C	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.23	2.09	2.01	0.49	1.31	0.04	0.37	1.83	0.57	0.25	0.21
50th-Percentile Queue Length [ft]	5.68	52.32	50.30	12.17	32.66	1.11	9.25	45.66	14.23	6.31	5.17
95th-Percentile Queue Length [veh]	0.41	3.77	3.62	0.88	2.35	0.08	0.67	3.29	1.02	0.45	0.37
95th-Percentile Queue Length [ft]	10.23	94.18	90.55	21.90	58.80	1.99	16.64	82.19	25.61	11.36	9.31

Movement, Approach, & Intersection Results

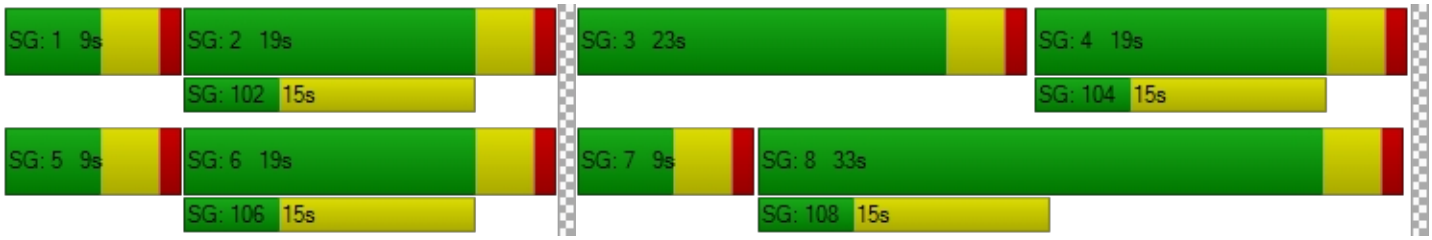
d_M, Delay for Movement [s/veh]	3.71	8.71	8.74	4.26	7.19	5.86	24.22	41.66	41.66	24.62	29.65	29.67
Movement LOS	A	A	A	A	A	A	C	D	D	C	C	C
d_A, Approach Delay [s/veh]	8.17			6.36			37.74			26.71		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	10.47											
Intersection LOS	B											
Intersection V/C	0.326											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.58	26.58	26.58	26.58
l_p,int, Pedestrian LOS Score for Intersection	2.676	2.753	2.070	2.373
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	429	429	829	429
d_b, Bicycle Delay [s]	21.61	21.61	12.01	21.61
l_b,int, Bicycle LOS Score for Intersection	2.144	2.118	1.758	1.675
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Intersection Level Of Service Report

Intersection 2: Hudson Road & Ridgeway Avenue

Control Type:	Two-way stop	Delay (sec / veh):	81.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.597

Intersection Setup

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	250.00	100.00	100.00	220.00	100.00	100.00	250.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	10	438	40	87	344	5	18	23	6	25	10	38
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	10.00	4.00	0.00	0.00	5.00	0.00	6.00	0.00	0.00	0.00	0.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	68	0	0	26	0	0	10	0	26	8	34
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	531	42	92	390	5	19	34	6	52	19	74
Peak Hour Factor	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	158	13	27	116	1	6	10	2	15	6	22
Total Analysis Volume [veh/h]	13	632	50	110	464	6	23	40	7	62	23	88
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.12	0.00	0.00	0.19	0.32	0.01	0.60	0.18	0.13
d_M, Delay for Movement [s/veh]	8.53	0.00	0.00	9.44	0.00	0.00	41.81	46.14	21.77	81.37	39.23	11.38
Movement LOS	A	A	A	A	A	A	E	E	C	F	E	B
95th-Percentile Queue Length [veh]	0.04	0.00	0.00	0.41	0.00	0.00	0.67	1.34	1.34	2.87	0.63	0.47
95th-Percentile Queue Length [ft]	0.96	0.00	0.00	10.14	0.00	0.00	16.77	33.43	33.43	71.72	15.70	11.63
d_A, Approach Delay [s/veh]	0.16			1.79			42.28			40.17		
Approach LOS	A			A			E			E		
d_I, Intersection Delay [s/veh]	7.28											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Chancellor Drive & Technology Parkway

Control Type:	Two-way stop	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.031

Intersection Setup

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Base Volume Input [veh/h]	109	121	5	5	17	109	7	5	7	0	0	4
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	20.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	25.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	19	0	0	25	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	115	147	5	5	43	115	7	5	7	0	0	4
Peak Hour Factor	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300	0.6300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	58	2	2	17	46	3	2	3	0	0	2
Total Analysis Volume [veh/h]	183	233	8	8	68	183	11	8	11	0	0	6
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.00	0.00	0.01	0.00	0.00	0.04	0.03	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.15	0.00	0.00	7.95	0.00	0.00	19.16	20.05	9.97	18.78	19.83	9.85
Movement LOS	A	A	A	A	A	A	C	C	A	C	C	A
95th-Percentile Queue Length [veh]	1.39	1.39	1.39	0.80	0.80	0.80	0.27	0.27	0.27	0.02	0.02	0.02
95th-Percentile Queue Length [ft]	34.82	34.82	34.82	19.94	19.94	19.94	6.85	6.85	6.85	0.61	0.61	0.61
d_A, Approach Delay [s/veh]	3.52			0.25			16.03			9.85		
Approach LOS	A			A			C			A		
d_I, Intersection Delay [s/veh]	2.91											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 4: Chancellor Drive/Lexington Boulevard & Ridgeway Avenue

Control Type:	Roundabout	Delay (sec / veh):	4.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	16	9	54	12	5	5	20	137	6	25	58	184
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	2	0	0	52	0	0	68	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	13	57	13	7	5	21	197	6	26	129	194
Peak Hour Factor	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600	0.7600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	4	19	4	2	2	7	65	2	9	42	64
Total Analysis Volume [veh/h]	22	17	75	17	9	7	28	259	8	34	170	255
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	304			229			60			67		
Exiting Flow Rate [veh/h]	276			195			43			45		
Demand Flow Rate [veh/h]	17	13	57	13	7	5	21	197	6	26	129	194
Adjusted Demand Flow Rate [veh/h]	22	17	75	17	9	7	28	259	8	34	170	255

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	1.00	1.00	1.00	1.00	0.98	0.99
Entry Flow Rate [veh/h]	114	33	139	157	208	258
Capacity of Entry and Bypass Lanes [veh/h]	1013	1093	1345	1345	1337	1337
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1013	1093	1345	1345	1315	1326
X, volume / capacity	0.11	0.03	0.10	0.12	0.16	0.19

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.38	0.09	0.34	0.39	0.55	0.71
95th-Percentile Queue Length [ft]	9.49	2.34	8.60	9.84	13.73	17.77
Approach Delay [s/veh]	4.57	3.55	3.56		4.19	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	4.01					
Intersection LOS	A					

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Intersection Level Of Service Report

Intersection 1: Hudson Road & Technology Parkway

Control Type:	Signalized	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.352

Intersection Setup

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	320.00	100.00	100.00	200.00	100.00	200.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Base Volume Input [veh/h]	41	530	7	11	489	8	9	5	46	71	6	90
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	10.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	72	0	67	0	0	0	10	0	36	11	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	43	632	7	79	517	8	10	15	49	111	17	95
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	178	2	22	145	2	3	4	14	31	5	27
Total Analysis Volume [veh/h]	48	710	8	89	581	9	11	17	55	125	19	107
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	9	43	0	9	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	58	50	50	58	51	51	14	5	14	9	9
g / C, Green / Cycle	0.73	0.62	0.62	0.73	0.64	0.64	0.17	0.06	0.17	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.06	0.21	0.21	0.11	0.18	0.01	0.01	0.05	0.09	0.01	0.07
s, saturation flow rate [veh/h]	776	1683	1676	777	3204	1454	1355	1507	1413	1710	1442
c, Capacity [veh/h]	625	1044	1040	616	2029	920	358	92	326	187	158
d1, Uniform Delay [s]	3.49	7.34	7.35	3.82	6.59	5.43	27.51	37.12	29.70	32.16	34.35
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.90	0.91	0.11	0.36	0.02	0.03	13.23	0.74	0.23	4.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.08	0.34	0.34	0.14	0.29	0.01	0.03	0.78	0.38	0.10	0.68
d, Delay for Lane Group [s/veh]	3.73	8.25	8.25	3.92	6.95	5.45	27.55	50.36	30.44	32.39	39.34
Lane Group LOS	A	A	A	A	A	A	C	D	C	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.17	2.48	2.47	0.25	1.72	0.05	0.18	1.70	2.17	0.34	2.18
50th-Percentile Queue Length [ft]	4.16	61.89	61.69	6.37	42.92	1.15	4.38	42.55	54.22	8.44	54.43
95th-Percentile Queue Length [veh]	0.30	4.46	4.44	0.46	3.09	0.08	0.32	3.06	3.90	0.61	3.92
95th-Percentile Queue Length [ft]	7.48	111.40	111.03	11.47	77.25	2.08	7.88	76.59	97.59	15.20	97.97

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Movement, Approach, & Intersection Results

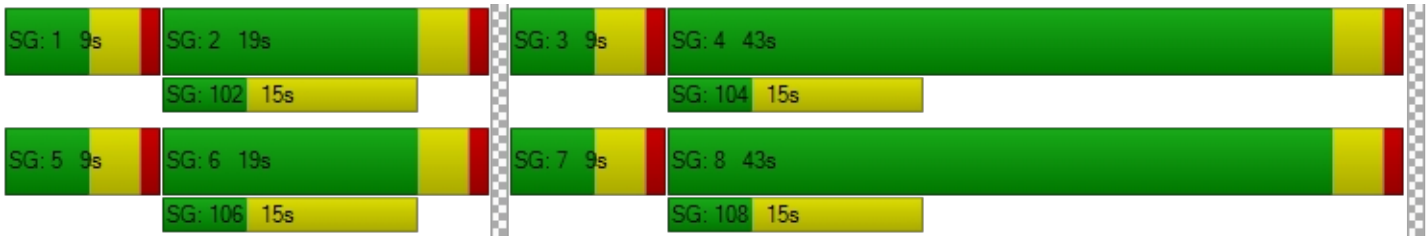
d_M, Delay for Movement [s/veh]	3.73	8.25	8.25	3.92	6.95	5.45	27.55	50.36	50.36	30.44	32.39	39.34
Movement LOS	A	A	A	A	A	A	C	D	D	C	C	D
d_A, Approach Delay [s/veh]	7.97			6.53			47.33			34.38		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	12.98											
Intersection LOS	B											
Intersection V/C	0.352											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	31.51	31.51	31.51
l_p,int, Pedestrian LOS Score for Intersection	2.757	2.818	2.033	2.298
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	375	375	975	975
d_b, Bicycle Delay [s]	26.41	26.41	10.51	10.51
l_b,int, Bicycle LOS Score for Intersection	2.192	2.120	1.697	1.974
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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2019 PM Peak Hour Buildout

Version 5.00-00

Intersection Level Of Service Report

Intersection 2: Hudson Road & Ridgeway Avenue

Control Type:	Two-way stop	Delay (sec / veh):	75.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.315

Intersection Setup

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	250.00	100.00	100.00	220.00	100.00	100.00	250.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	7	454	19	69	494	44	20	10	5	23	33	106
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	67	0	0	36	0	0	10	0	36	11	34
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	547	20	73	558	46	21	21	5	60	46	146
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	152	6	20	155	13	6	6	1	17	13	41
Total Analysis Volume [veh/h]	8	608	22	81	620	51	23	23	6	67	51	162
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.08	0.01	0.00	0.32	0.19	0.01	0.52	0.44	0.24
d_M, Delay for Movement [s/veh]	8.91	0.00	0.00	9.09	0.00	0.00	75.61	41.36	16.62	59.65	57.65	11.85
Movement LOS	A	A	A	A	A	A	F	E	C	F	F	B
95th-Percentile Queue Length [veh]	0.03	0.00	0.00	0.28	0.00	0.00	1.16	0.72	0.72	2.46	1.89	0.91
95th-Percentile Queue Length [ft]	0.65	0.00	0.00	6.88	0.00	0.00	29.11	18.04	18.04	61.45	47.16	22.84
d_A, Approach Delay [s/veh]	0.11			0.98			53.65			31.63		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	7.23											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 3: Chancellor Drive & Technology Parkway

Control Type:	Two-way stop	Delay (sec / veh):	17.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Base Volume Input [veh/h]	25	27	5	5	110	19	112	5	120	6	1	2
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	4.00	7.00	0.00	20.00	4.00	5.00	0.00	0.00	0.00	17.00	0.00	50.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	27	0	0	25	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	56	5	5	141	20	118	5	127	6	1	2
Peak Hour Factor	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	20	2	2	50	7	42	2	45	2	0	1
Total Analysis Volume [veh/h]	37	80	7	7	201	29	169	7	181	9	1	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.00	0.30	0.01	0.22	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	7.79	0.00	0.00	7.58	0.00	0.00	17.54	17.86	15.40	15.41	12.17	9.47
Movement LOS	A	A	A	A	A	A	C	C	C	C	B	A
95th-Percentile Queue Length [veh]	0.31	0.31	0.31	0.61	0.61	0.61	3.20	3.20	3.20	0.10	0.10	0.10
95th-Percentile Queue Length [ft]	7.72	7.72	7.72	15.18	15.18	15.18	79.92	79.92	79.92	2.38	2.38	2.38
d_A, Approach Delay [s/veh]	2.33			0.22			16.46			13.79		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	8.75											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 4: Chancellor Drive/Lexington Boulevard & Ridgeway Avenue

Control Type:	Roundabout	Delay (sec / veh):	5.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	9	5	62	209	7	8	5	85	9	84	145	22
Base Volume Adjustment Factor	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568	1.0568
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	3	0	0	70	0	0	67	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	7	66	221	10	8	5	160	10	89	220	23
Peak Hour Factor	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200	0.8200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	2	20	67	3	2	2	49	3	27	67	7
Total Analysis Volume [veh/h]	12	9	80	270	12	10	6	195	12	109	268	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	476			389			396			27		
Exiting Flow Rate [veh/h]	470			280			121			15		
Demand Flow Rate [veh/h]	10	7	66	221	10	8	5	160	10	89	220	23
Adjusted Demand Flow Rate [veh/h]	12	9	80	270	12	10	6	195	12	109	268	28

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	103	298	101	113	191	216
Capacity of Entry and Bypass Lanes [veh/h]	849	929	990	990	1386	1386
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	836	912	990	990	1386	1380
X, volume / capacity	0.12	0.32	0.10	0.11	0.14	0.16

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.41	1.39	0.34	0.38	0.48	0.55
95th-Percentile Queue Length [ft]	10.27	34.74	8.41	9.62	11.91	13.77
Approach Delay [s/veh]	5.50	7.41	4.62		3.79	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	5.18					
Intersection LOS	A					

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2040 Projected AM No Build

Intersection Level Of Service Report
Intersection 1: Hudson Road & Technology Parkway

Control Type:	Signalized	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.397

Intersection Setup

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	320.00	100.00	100.00	200.00	100.00	200.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Base Volume Input [veh/h]	60	371	70	81	373	7	21	7	56	8	5	10
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	0.00	5.00	3.00	0.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	700	132	153	704	13	40	13	106	15	9	19
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	179	34	39	180	3	10	3	27	4	2	5
Total Analysis Volume [veh/h]	115	714	135	156	718	13	41	13	108	15	9	19
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	13	23	0	9	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	41	32	32	41	32	32	11	6	11	5	5
g / C, Green / Cycle	0.68	0.53	0.53	0.68	0.54	0.54	0.19	0.10	0.19	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.14	0.27	0.27	0.20	0.23	0.01	0.03	0.08	0.01	0.01	0.01
s, saturation flow rate [veh/h]	822	1642	1553	766	3127	1454	1366	1477	1292	1710	1454
c, Capacity [veh/h]	624	869	822	578	1673	778	434	156	336	142	120
d1, Uniform Delay [s]	4.30	9.10	9.10	4.98	8.46	6.58	20.17	26.25	19.99	25.50	25.70
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.65	2.07	2.19	0.25	0.81	0.04	0.09	7.90	0.05	0.19	0.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.50	0.50	0.27	0.43	0.02	0.09	0.77	0.04	0.06	0.16
d, Delay for Lane Group [s/veh]	4.95	11.17	11.29	5.23	9.27	6.62	20.26	34.15	20.04	25.68	26.30
Lane Group LOS	A	B	B	A	A	A	C	C	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.34	3.03	2.89	0.36	2.13	0.06	0.46	1.93	0.17	0.12	0.26
50th-Percentile Queue Length [ft]	8.52	75.76	72.30	8.94	53.13	1.58	11.48	48.37	4.15	3.00	6.50
95th-Percentile Queue Length [veh]	0.61	5.45	5.21	0.64	3.83	0.11	0.83	3.48	0.30	0.22	0.47
95th-Percentile Queue Length [ft]	15.33	136.37	130.14	16.10	95.64	2.84	20.66	87.07	7.47	5.40	11.71

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	4.95	11.22	11.29	5.23	9.27	6.62	20.26	34.15	34.15	20.04	25.68	26.30
Movement LOS	A	B	B	A	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	10.48			8.52			30.64			23.99		
Approach LOS	B			A			C			C		
d_I, Intersection Delay [s/veh]	11.51											
Intersection LOS	B											
Intersection V/C	0.397											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.811	2.845	2.111	2.322
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	633	500
d_b, Bicycle Delay [s]	16.88	16.88	14.01	16.88
l_b,int, Bicycle LOS Score for Intersection	2.355	2.291	1.827	1.631
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Intersection Level Of Service Report

Intersection 2: Hudson Road & Ridgeway Avenue

Control Type:	Signalized	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.397

Intersection Setup

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	250.00	100.00	100.00	220.00	100.00	100.00	250.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	10	438	40	87	344	5	18	23	6	25	10	38
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	10.00	4.00	0.00	0.00	5.00	0.00	6.00	0.00	0.00	0.00	0.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	827	75	164	649	9	34	43	11	47	19	72
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	211	19	42	166	2	9	11	3	12	5	18
Total Analysis Volume [veh/h]	19	844	77	167	662	9	35	44	11	48	19	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	9	21	0	11	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	42	33	33	42	36	36	11	4	11	4	4
g / C, Green / Cycle	0.69	0.55	0.55	0.69	0.60	0.60	0.18	0.06	0.18	0.07	0.07
(v / s)_i Volume / Saturation Flow Rate	0.03	0.28	0.28	0.23	0.20	0.20	0.03	0.03	0.03	0.01	0.05
s, saturation flow rate [veh/h]	718	1656	1608	731	1642	1635	1352	1652	1415	1710	1419
c, Capacity [veh/h]	588	900	874	568	983	978	404	104	392	123	102
d1, Uniform Delay [s]	3.37	8.75	8.75	4.92	6.11	6.11	20.87	27.40	21.04	26.27	27.38
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.10	2.14	2.20	0.29	0.95	0.95	0.09	4.16	0.14	0.58	9.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.52	0.52	0.29	0.34	0.34	0.09	0.53	0.12	0.15	0.72
d, Delay for Lane Group [s/veh]	3.48	10.89	10.95	5.21	7.06	7.06	20.96	31.56	21.18	26.85	36.40
Lane Group LOS	A	B	B	A	A	A	C	C	C	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.05	3.15	3.07	0.34	1.57	1.56	0.38	0.81	0.52	0.25	1.18
50th-Percentile Queue Length [ft]	1.18	78.72	76.82	8.49	39.18	39.03	9.40	20.23	13.01	6.24	29.40
95th-Percentile Queue Length [veh]	0.08	5.67	5.53	0.61	2.82	2.81	0.68	1.46	0.94	0.45	2.12
95th-Percentile Queue Length [ft]	2.12	141.70	138.28	15.29	70.53	70.26	16.92	36.41	23.41	11.23	52.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.48	10.91	10.95	5.21	7.06	7.06	20.96	31.56	31.56	21.18	26.85	36.40
Movement LOS	A	B	B	A	A	A	C	C	C	C	C	D
d_A, Approach Delay [s/veh]	10.77			6.69			27.44			29.88		
Approach LOS	B			A			C			C		
d_I, Intersection Delay [s/veh]	11.15											
Intersection LOS	B											
Intersection V/C	0.397											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.773	2.809	2.005	2.543
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	567	633
d_b, Bicycle Delay [s]	16.88	16.88	15.41	14.01
l_b,int, Bicycle LOS Score for Intersection	2.335	2.251	1.708	1.791
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Intersection Level Of Service Report

Intersection 3: Chancellor Drive & Technology Parkway

Control Type:	Roundabout	Delay (sec / veh):	5.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Base Volume Input [veh/h]	109	121	5	5	17	109	7	5	7	0	0	4
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	20.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	25.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	206	228	9	9	32	206	13	9	13	0	0	8
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	58	2	2	8	53	3	2	3	0	0	2
Total Analysis Volume [veh/h]	210	233	9	9	33	210	13	9	13	0	0	8
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	35			210			44			456		
Exiting Flow Rate [veh/h]	22			210			33			246		
Demand Flow Rate [veh/h]	206	228	9	9	32	206	13	9	13	0	0	8
Adjusted Demand Flow Rate [veh/h]	210	233	9	9	33	210	13	9	13	0	0	8

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	0.99	0.96	0.80
Entry Flow Rate [veh/h]	452	254	37	10
Capacity of Entry and Bypass Lanes [veh/h]	1333	1114	1320	867
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1333	1108	1264	694
X, volume / capacity	0.34	0.23	0.03	0.01

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.52	0.88	0.09	0.04
95th-Percentile Queue Length [ft]	37.99	21.92	2.14	0.88
Approach Delay [s/veh]	5.78	5.35	3.07	5.31
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.50			
Intersection LOS	A			

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Intersection Level Of Service Report

Intersection 4: Chancellor Drive/Lexington Boulevard & Ridgeway Avenue

Control Type:	Roundabout	Delay (sec / veh):	4.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	16	9	54	12	5	5	20	137	6	25	58	184
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	17	102	23	9	9	38	259	11	47	109	347
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	4	26	6	2	2	10	66	3	12	28	89
Total Analysis Volume [veh/h]	31	17	104	23	9	9	39	264	11	48	111	354
Pedestrian Volume [ped/h]	0			0			0			0		

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2040 Projected AM No Build

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	326			192			80			87		
Exiting Flow Rate [veh/h]	287			144			57			56		
Demand Flow Rate [veh/h]	30	17	102	23	9	9	38	259	11	47	109	347
Adjusted Demand Flow Rate [veh/h]	31	17	104	23	9	9	39	264	11	48	111	354

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	1.00	1.00	1.00	1.00	0.99	1.00
Entry Flow Rate [veh/h]	152	41	148	167	162	356
Capacity of Entry and Bypass Lanes [veh/h]	990	1135	1321	1321	1312	1312
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	990	1135	1321	1321	1294	1306
X, volume / capacity	0.15	0.04	0.11	0.13	0.12	0.27

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.54	0.11	0.38	0.43	0.42	1.11
95th-Percentile Queue Length [ft]	13.54	2.81	9.41	10.78	10.48	27.64
Approach Delay [s/veh]	5.06	3.47	3.69		4.72	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	4.40					
Intersection LOS	A					

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2040 Projected PM No Build

Version 5.00-00

Intersection Level Of Service Report

Intersection 1: Hudson Road & Technology Parkway

Control Type:	Signalized	Delay (sec / veh):	14.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.459

Intersection Setup

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	320.00	100.00	100.00	200.00	100.00	200.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Base Volume Input [veh/h]	41	530	7	11	489	8	9	5	46	71	6	90
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	10.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	77	1000	13	21	923	15	17	9	87	134	11	170
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	255	3	5	235	4	4	2	22	34	3	43
Total Analysis Volume [veh/h]	79	1020	13	21	942	15	17	9	89	137	11	173
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	23	0	9	23	0	9	19	0	9	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	38	32	32	38	30	30	14	5	14	9	9
g / C, Green / Cycle	0.63	0.54	0.54	0.63	0.50	0.50	0.24	0.09	0.24	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.12	0.31	0.31	0.03	0.29	0.01	0.01	0.07	0.10	0.01	0.12
s, saturation flow rate [veh/h]	653	1683	1676	606	3204	1454	1362	1474	1390	1710	1442
c, Capacity [veh/h]	468	898	894	444	1594	723	498	133	436	261	220
d1, Uniform Delay [s]	6.16	9.45	9.45	5.76	10.76	7.68	17.51	26.65	19.06	21.73	24.54
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	2.69	2.70	0.04	1.62	0.05	0.03	7.58	0.41	0.07	6.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.17	0.58	0.58	0.05	0.59	0.02	0.03	0.73	0.31	0.04	0.79
d, Delay for Lane Group [s/veh]	6.94	12.13	12.15	5.80	12.38	7.73	17.54	34.23	19.47	21.80	30.63
Lane Group LOS	A	B	B	A	B	A	B	C	B	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.32	3.80	3.79	0.06	3.56	0.08	0.17	1.57	1.52	0.13	2.59
50th-Percentile Queue Length [ft]	8.08	95.12	94.78	1.55	89.00	2.08	4.30	39.33	37.91	3.24	64.68
95th-Percentile Queue Length [veh]	0.58	6.85	6.82	0.11	6.41	0.15	0.31	2.83	2.73	0.23	4.66
95th-Percentile Queue Length [ft]	14.54	171.21	170.61	2.79	160.21	3.75	7.75	70.79	68.24	5.83	116.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.94	12.14	12.15	5.80	12.38	7.73	17.54	34.23	34.23	19.47	21.80	30.63
Movement LOS	A	B	B	A	B	A	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	11.77			12.17			31.76			25.56		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	14.59											
Intersection LOS	B											
Intersection V/C	0.459											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.971	2.971	2.052	2.217
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	633	633	500	500
d_b, Bicycle Delay [s]	14.01	14.01	16.88	16.88
l_b,int, Bicycle LOS Score for Intersection	2.477	2.366	1.749	2.089
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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2040 Projected PM No Build

Version 5.00-00

Intersection Level Of Service Report

Intersection 2: Hudson Road & Ridgeway Avenue

Control Type:	Signalized	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.475

Intersection Setup

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	250.00	100.00	100.00	220.00	100.00	100.00	250.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	7	454	19	69	494	44	20	10	5	23	33	106
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	857	36	130	932	83	38	19	9	43	62	200
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	219	9	33	238	21	10	5	2	11	16	51
Total Analysis Volume [veh/h]	13	874	37	133	951	85	39	19	9	44	63	204
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	9	22	0	10	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	35	27	27	35	30	30	17	10	17	11	11
g / C, Green / Cycle	0.58	0.44	0.44	0.58	0.50	0.50	0.28	0.17	0.28	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.27	0.27	0.17	0.31	0.31	0.03	0.02	0.03	0.04	0.14
s, saturation flow rate [veh/h]	599	1683	1659	761	1683	1635	1331	1618	1364	1710	1454
c, Capacity [veh/h]	398	737	727	490	834	811	521	282	551	304	259
d1, Uniform Delay [s]	7.22	13.08	13.08	7.76	11.14	11.15	15.74	20.91	15.77	21.15	23.70
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.15	3.93	3.98	0.30	3.59	3.70	0.06	0.15	0.06	0.33	5.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.03	0.62	0.62	0.27	0.63	0.63	0.07	0.10	0.08	0.21	0.79
d, Delay for Lane Group [s/veh]	7.37	17.01	17.07	8.05	14.73	14.85	15.80	21.06	15.83	21.48	29.00
Lane Group LOS	A	B	B	A	B	B	B	C	B	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.06	4.45	4.40	0.53	4.51	4.41	0.34	0.30	0.39	0.69	2.80
50th-Percentile Queue Length [ft]	1.54	111.27	109.97	13.36	112.69	110.27	8.60	7.59	9.72	17.36	69.96
95th-Percentile Queue Length [veh]	0.11	7.91	7.84	0.96	7.99	7.85	0.62	0.55	0.70	1.25	5.04
95th-Percentile Queue Length [ft]	2.77	197.77	195.97	24.05	199.73	196.37	15.47	13.67	17.49	31.25	125.94

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.37	17.04	17.07	8.05	14.78	14.85	15.80	21.06	21.06	15.83	21.48	29.00
Movement LOS	A	B	B	A	B	B	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	16.90			14.02			18.00			25.62		
Approach LOS	B			B			B			C		
d_I, Intersection Delay [s/veh]	16.67											
Intersection LOS	B											
Intersection V/C	0.475											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.857	2.961	2.042	2.516
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	600	633
d_b, Bicycle Delay [s]	16.88	16.88	14.70	14.01
l_b,int, Bicycle LOS Score for Intersection	2.322	2.524	1.670	2.073
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Intersection Level Of Service Report

Intersection 3: Chancellor Drive & Technology Parkway

Control Type:	Roundabout	Delay (sec / veh):	6.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Base Volume Input [veh/h]	25	27	5	5	110	19	112	5	120	6	1	2
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	4.00	7.00	0.00	20.00	4.00	5.00	0.00	0.00	0.00	17.00	0.00	50.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	51	9	9	208	36	211	9	226	11	2	4
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	13	2	2	53	9	54	2	58	3	1	1
Total Analysis Volume [veh/h]	48	52	9	9	212	37	215	9	231	11	2	4
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	235			65			244			321		
Exiting Flow Rate [veh/h]	20			52			233			271		
Demand Flow Rate [veh/h]	47	51	9	9	208	36	211	9	226	11	2	4
Adjusted Demand Flow Rate [veh/h]	48	52	9	9	212	37	215	9	231	11	2	4

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.95	0.96	1.00	0.83
Entry Flow Rate [veh/h]	115	270	455	21
Capacity of Entry and Bypass Lanes [veh/h]	1087	1292	1076	996
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1034	1235	1076	824
X, volume / capacity	0.11	0.21	0.42	0.02

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.35	0.79	2.14	0.06
95th-Percentile Queue Length [ft]	8.81	19.69	53.50	1.58
Approach Delay [s/veh]	4.42	4.73	7.89	4.57
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.40			
Intersection LOS	A			

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Intersection Level Of Service Report

Intersection 4: Chancellor Drive/Lexington Boulevard & Ridgeway Avenue

Control Type:	Roundabout	Delay (sec / veh):	7.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	9	5	62	209	7	8	5	85	9	84	145	22
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	9	117	394	13	15	9	160	17	159	274	42
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	2	30	101	3	4	2	41	4	41	70	11
Total Analysis Volume [veh/h]	17	9	119	402	13	15	9	163	17	162	280	43
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	582			459			585			35		
Exiting Flow Rate [veh/h]	573			297			175			18		
Demand Flow Rate [veh/h]	17	9	117	394	13	15	9	160	17	159	274	42
Adjusted Demand Flow Rate [veh/h]	17	9	119	402	13	15	9	163	17	162	280	43

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	1.00	1.00	1.00	0.99
Entry Flow Rate [veh/h]	148	439	89	101	228	259
Capacity of Entry and Bypass Lanes [veh/h]	763	865	834	834	1376	1376
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	750	849	834	834	1376	1367
X, volume / capacity	0.19	0.51	0.11	0.12	0.17	0.19

Movement, Approach, & Intersection Results

Lane LOS	A	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.71	2.92	0.36	0.41	0.59	0.69
95th-Percentile Queue Length [ft]	17.81	73.03	8.91	10.19	14.84	17.29
Approach Delay [s/veh]	6.91	11.06	5.44		4.08	
Approach LOS	A	B	A		A	
Intersection Delay [s/veh]	7.02					
Intersection LOS	A					

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2040 AM Peak Hour Buildout

Version 5.00-00

Intersection Level Of Service Report

Intersection 1: Hudson Road & Technology Parkway

Control Type:	Signalized	Delay (sec / veh):	14.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.505

Intersection Setup

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	320.00	100.00	100.00	200.00	100.00	200.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Base Volume Input [veh/h]	60	371	70	81	373	7	21	7	56	8	5	10
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	0.00	5.00	3.00	0.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	80	0	141	0	0	0	21	0	40	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	780	132	294	704	13	40	34	106	55	21	19
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	199	34	75	180	3	10	9	27	14	5	5
Total Analysis Volume [veh/h]	115	796	135	300	718	13	41	35	108	56	21	19
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	13	23	0	9	19	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	38	29	29	38	29	29	14	7	14	8	8
g / C, Green / Cycle	0.63	0.48	0.48	0.63	0.49	0.49	0.24	0.12	0.24	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.14	0.29	0.29	0.40	0.23	0.01	0.03	0.09	0.04	0.01	0.01
s, saturation flow rate [veh/h]	833	1642	1561	752	3127	1454	1331	1509	1314	1710	1454
c, Capacity [veh/h]	583	781	742	518	1522	707	485	184	390	224	191
d1, Uniform Delay [s]	5.54	11.70	11.70	8.70	10.31	8.02	17.83	25.69	18.22	23.05	23.06
k, delay calibration	0.50	0.50	0.50	0.31	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.76	3.56	3.74	2.88	1.05	0.05	0.07	6.94	0.17	0.18	0.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.61	0.61	0.58	0.47	0.02	0.08	0.78	0.14	0.09	0.10
d, Delay for Lane Group [s/veh]	6.30	15.26	15.45	11.58	11.36	8.06	17.90	32.62	18.39	23.23	23.29
Lane Group LOS	A	B	B	B	B	A	B	C	B	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.45	4.25	4.07	1.39	2.54	0.07	0.42	2.22	0.59	0.26	0.24
50th-Percentile Queue Length [ft]	11.26	106.15	101.84	34.71	63.42	1.86	10.60	55.49	14.71	6.47	5.91
95th-Percentile Queue Length [veh]	0.81	7.63	7.33	2.50	4.57	0.13	0.76	4.00	1.06	0.47	0.43
95th-Percentile Queue Length [ft]	20.27	190.63	183.31	62.48	114.15	3.35	19.08	99.88	26.47	11.65	10.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	6.30	15.33	15.45	11.58	11.36	8.06	17.90	32.62	32.62	18.39	23.23	23.29
Movement LOS	A	B	B	B	B	A	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	14.36			11.38			29.34			20.42		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	14.47											
Intersection LOS	B											
Intersection V/C	0.505											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.857	2.903	2.115	2.468
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	633	500
d_b, Bicycle Delay [s]	16.88	16.88	14.01	16.88
l_b,int, Bicycle LOS Score for Intersection	2.423	2.410	1.863	1.718
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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2040 AM Peak Hour Buildout

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Intersection Level Of Service Report

Intersection 2: Hudson Road & Ridgeway Avenue

Control Type:	Signalized	Delay (sec / veh):	15.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.497

Intersection Setup

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	250.00	100.00	100.00	220.00	100.00	100.00	250.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	10	438	40	87	344	5	18	23	6	25	10	38
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	10.00	4.00	0.00	0.00	5.00	0.00	6.00	0.00	0.00	0.00	0.00	3.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	141	0	0	40	0	0	21	0	40	12	71
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	968	75	164	689	9	34	64	11	87	31	143
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	247	19	42	176	2	9	16	3	22	8	36
Total Analysis Volume [veh/h]	19	988	77	167	703	9	35	65	11	89	32	146
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	9	23	0	9	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	38	29	29	38	32	32	14	6	14	8	8
g / C, Green / Cycle	0.63	0.48	0.48	0.63	0.54	0.54	0.24	0.11	0.24	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.33	0.33	0.24	0.22	0.22	0.03	0.05	0.06	0.02	0.10
s, saturation flow rate [veh/h]	703	1656	1614	692	1642	1635	1305	1667	1383	1710	1419
c, Capacity [veh/h]	519	793	773	474	877	873	473	182	463	234	194
d1, Uniform Delay [s]	4.93	12.15	12.15	8.10	8.38	8.38	17.71	25.06	18.35	22.90	25.05
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.13	4.68	4.80	0.44	1.40	1.41	0.07	1.52	0.20	0.26	5.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.68	0.68	0.35	0.41	0.41	0.07	0.42	0.19	0.14	0.75
d, Delay for Lane Group [s/veh]	5.06	16.83	16.95	8.55	9.78	9.78	17.78	26.59	18.55	23.17	30.86
Lane Group LOS	A	B	B	A	A	A	B	C	B	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.07	5.11	5.01	0.56	2.25	2.24	0.34	0.98	0.89	0.37	2.08
50th-Percentile Queue Length [ft]	1.76	127.75	125.23	13.88	56.16	55.95	8.39	24.50	22.13	9.30	52.09
95th-Percentile Queue Length [veh]	0.13	8.82	8.68	1.00	4.04	4.03	0.60	1.76	1.59	0.67	3.75
95th-Percentile Queue Length [ft]	3.17	220.43	216.99	24.99	101.08	100.71	15.10	44.09	39.84	16.74	93.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	5.06	16.88	16.95	8.55	9.78	9.78	17.78	26.59	26.59	18.55	23.17	30.86
Movement LOS	A	B	B	A	A	A	B	C	C	B	C	C
d_A, Approach Delay [s/veh]	16.68			9.55			23.81			25.84		
Approach LOS	B			A			C			C		
d_I, Intersection Delay [s/veh]	15.39											
Intersection LOS	B											
Intersection V/C	0.497											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.850	2.888	2.020	2.571
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	633	633
d_b, Bicycle Delay [s]	16.88	16.88	14.01	14.01
l_b,int, Bicycle LOS Score for Intersection	2.454	2.285	1.743	2.000
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Chancellor Drive & Technology Parkway

Control Type:	Roundabout	Delay (sec / veh):	5.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Base Volume Input [veh/h]	109	121	5	5	17	109	7	5	7	0	0	4
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	20.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	25.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	30	0	0	52	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	206	258	9	9	84	206	13	9	13	0	0	8
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	66	2	2	21	53	3	2	3	0	0	2
Total Analysis Volume [veh/h]	210	263	9	9	86	210	13	9	13	0	0	8
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	35			210			97			486		
Exiting Flow Rate [veh/h]	22			210			86			276		
Demand Flow Rate [veh/h]	206	258	9	9	84	206	13	9	13	0	0	8
Adjusted Demand Flow Rate [veh/h]	210	263	9	9	86	210	13	9	13	0	0	8

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	0.99	0.96	0.80
Entry Flow Rate [veh/h]	482	307	37	10
Capacity of Entry and Bypass Lanes [veh/h]	1333	1114	1251	841
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1333	1109	1197	673
X, volume / capacity	0.36	0.28	0.03	0.01

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.67	1.13	0.09	0.04
95th-Percentile Queue Length [ft]	41.86	28.16	2.26	0.90
Approach Delay [s/veh]	6.04	5.85	3.25	5.48
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	5.85			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 4: Chancellor Drive/Lexington Boulevard & Ridgeway Avenue

Control Type:	Roundabout	Delay (sec / veh):	4.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	16	9	54	12	5	5	20	137	6	25	58	184
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	0	3	0	0	79	0	0	141	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	22	102	23	12	9	38	338	11	47	250	347
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	6	26	6	3	2	10	86	3	12	64	89
Total Analysis Volume [veh/h]	31	22	104	23	12	9	39	345	11	48	255	354
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	407			339			83			92		
Exiting Flow Rate [veh/h]	368			291			60			61		
Demand Flow Rate [veh/h]	30	22	102	23	12	9	38	338	11	47	250	347
Adjusted Demand Flow Rate [veh/h]	31	22	104	23	12	9	39	345	11	48	255	354

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	1.00	1.00	1.00	1.00	0.98	0.99
Entry Flow Rate [veh/h]	157	44	186	210	309	357
Capacity of Entry and Bypass Lanes [veh/h]	912	977	1317	1317	1306	1306
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	912	977	1317	1317	1285	1296
X, volume / capacity	0.17	0.05	0.14	0.16	0.24	0.27

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.62	0.14	0.49	0.56	0.92	1.12
95th-Percentile Queue Length [ft]	15.51	3.53	12.27	14.12	22.98	27.94
Approach Delay [s/veh]	5.63	4.09	3.97		5.03	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	4.74					
Intersection LOS	A					

Generated with PTV VISTRO

2040 PM Peak Hour Buildout

Version 5.00-00

Intersection Level Of Service Report

Intersection 1: Hudson Road & Technology Parkway

Control Type:	Signalized	Delay (sec / veh):	18.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.548

Intersection Setup

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	320.00	100.00	100.00	200.00	100.00	200.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			45.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Technology Parkway			Technology Parkway		
Base Volume Input [veh/h]	41	530	7	11	489	8	9	5	46	71	6	90
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	10.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	146	0	102	0	0	0	15	0	73	22	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	77	1146	13	123	923	15	17	24	87	207	33	170
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	292	3	31	235	4	4	6	22	53	8	43
Total Analysis Volume [veh/h]	79	1169	13	126	942	15	17	24	89	211	34	173
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	26	0	9	26	0	9	56	0	9	56	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	68	59	59	68	59	59	24	15	24	18	18
g / C, Green / Cycle	0.68	0.59	0.59	0.68	0.59	0.59	0.24	0.15	0.24	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.13	0.35	0.35	0.23	0.29	0.01	0.01	0.08	0.16	0.02	0.12
s, saturation flow rate [veh/h]	597	1683	1676	555	3204	1454	1316	1501	1292	1710	1442
c, Capacity [veh/h]	422	988	985	385	1895	860	399	231	334	316	267
d1, Uniform Delay [s]	7.17	13.14	13.14	9.07	11.83	8.44	28.91	38.73	36.11	33.91	37.76
k, delay calibration	0.50	0.50	0.50	0.27	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.98	2.68	2.69	1.23	0.94	0.04	0.04	1.60	1.97	0.15	2.65
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.19	0.60	0.60	0.33	0.50	0.02	0.04	0.49	0.63	0.11	0.65
d, Delay for Lane Group [s/veh]	8.15	15.82	15.84	10.30	12.77	8.48	28.95	40.34	38.08	34.06	40.42
Lane Group LOS	A	B	B	B	B	A	C	D	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh]	0.57	7.93	7.91	0.87	5.43	0.13	0.32	2.63	4.58	0.70	4.08
50th-Percentile Queue Length [ft]	14.16	198.32	197.74	21.80	135.70	3.17	7.91	65.63	114.62	17.48	102.10
95th-Percentile Queue Length [veh]	1.02	12.55	12.52	1.57	9.25	0.23	0.57	4.73	8.10	1.26	7.35
95th-Percentile Queue Length [ft]	25.50	313.80	313.04	39.24	231.22	5.70	14.24	118.13	202.42	31.46	183.78

Movement, Approach, & Intersection Results

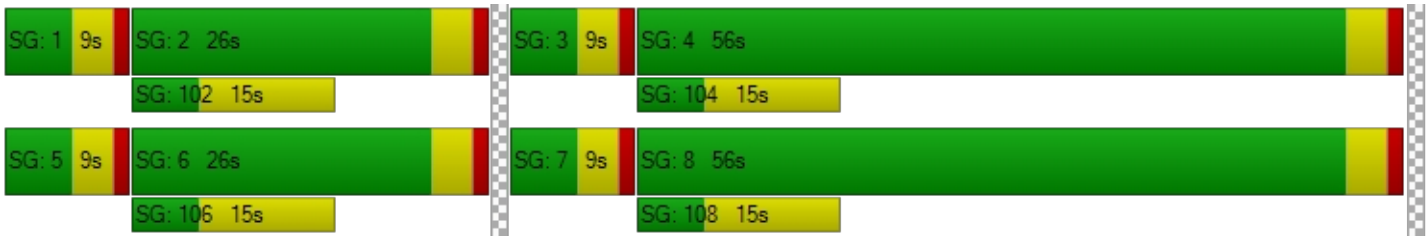
d_M, Delay for Movement [s/veh]	8.15	15.83	15.84	10.30	12.77	8.48	28.95	40.34	40.34	38.08	34.06	40.42
Movement LOS	A	B	B	B	B	A	C	D	D	D	C	D
d_A, Approach Delay [s/veh]	15.35			12.42			38.85			38.72		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	18.69											
Intersection LOS	B											
Intersection V/C	0.548											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.41	41.41	41.41	41.41
l_p,int, Pedestrian LOS Score for Intersection	3.131	3.060	2.099	2.388
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	440	440	1040	1040
d_b, Bicycle Delay [s]	30.42	30.42	11.52	11.52
l_b,int, Bicycle LOS Score for Intersection	2.600	2.453	1.774	2.249
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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2040 PM Peak Hour Buildout

Version 5.00-00

Intersection Level Of Service Report

Intersection 2: Hudson Road & Ridgeway Avenue

Control Type:	Signalized	Delay (sec / veh):	21.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.544

Intersection Setup

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	250.00	100.00	100.00	220.00	100.00	100.00	250.00	100.00	100.00	400.00	100.00	100.00
Speed [mph]	45.00			45.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Hudson Road			Hudson Road			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	7	454	19	69	494	44	20	10	5	23	33	106
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	0.00	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	102	0	0	73	0	0	15	0	73	22	51
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	13	959	36	130	1005	83	38	34	9	116	84	251
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	245	9	33	256	21	10	9	2	30	21	64
Total Analysis Volume [veh/h]	13	979	37	133	1026	85	39	35	9	118	86	256
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	5	5	0	5	5	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	19	0	9	19	0	9	23	0	9	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	33	24	24	33	28	28	19	11	19	13	13
g / C, Green / Cycle	0.54	0.40	0.40	0.54	0.46	0.46	0.32	0.18	0.32	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.02	0.30	0.30	0.18	0.33	0.33	0.03	0.03	0.09	0.05	0.18
s, saturation flow rate [veh/h]	575	1683	1661	734	1683	1638	1299	1650	1375	1710	1454
c, Capacity [veh/h]	351	672	664	432	769	749	548	301	595	371	315
d1, Uniform Delay [s]	8.96	15.62	15.62	9.96	13.35	13.36	14.11	20.71	14.80	19.48	22.45
k, delay calibration	0.50	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.20	7.92	8.02	0.40	6.06	6.26	0.05	0.22	0.16	0.32	5.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.76	0.76	0.31	0.73	0.73	0.07	0.15	0.20	0.23	0.81
d, Delay for Lane Group [s/veh]	9.16	23.54	23.64	10.36	19.41	19.63	14.16	20.93	14.97	19.79	27.50
Lane Group LOS	A	C	C	B	B	B	B	C	B	B	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh]	0.07	6.20	6.14	0.64	5.91	5.81	0.32	0.48	1.01	0.90	3.40
50th-Percentile Queue Length [ft]	1.81	155.07	153.54	15.91	147.79	145.26	7.94	11.89	25.27	22.40	85.12
95th-Percentile Queue Length [veh]	0.13	10.29	10.21	1.15	9.90	9.76	0.57	0.86	1.82	1.61	6.13
95th-Percentile Queue Length [ft]	3.26	257.18	255.15	28.64	247.48	244.09	14.28	21.40	45.49	40.32	153.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.16	23.59	23.64	10.36	19.51	19.63	14.16	20.93	20.93	14.97	19.79	27.50
Movement LOS	A	C	C	B	B	B	B	C	C	B	B	C
d_A, Approach Delay [s/veh]	23.41			18.54			17.75			22.84		
Approach LOS	C			B			B			C		
d_I, Intersection Delay [s/veh]	21.00											
Intersection LOS	C											
Intersection V/C	0.544											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	21.68	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.955	3.031	2.060	2.557
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	633	633
d_b, Bicycle Delay [s]	16.88	16.88	14.01	14.01
l_b,int, Bicycle LOS Score for Intersection	2.409	2.586	1.697	2.319
Bicycle LOS	B	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Chancellor Drive & Technology Parkway

Control Type:	Roundabout	Delay (sec / veh):	6.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Chancellor Drive			Chancellor Drive			Technology Parkway			Access		
Base Volume Input [veh/h]	25	27	5	5	110	19	112	5	120	6	1	2
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	4.00	7.00	0.00	20.00	4.00	5.00	0.00	0.00	0.00	17.00	0.00	50.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	54	0	0	38	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	47	105	9	9	246	36	211	9	226	11	2	4
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	27	2	2	63	9	54	2	58	3	1	1
Total Analysis Volume [veh/h]	48	107	9	9	251	37	215	9	231	11	2	4
Pedestrian Volume [ped/h]	0			0			0			0		

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Version 5.00-00

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	235			65			285			379		
Exiting Flow Rate [veh/h]	20			52			274			329		
Demand Flow Rate [veh/h]	47	105	9	9	246	36	211	9	226	11	2	4
Adjusted Demand Flow Rate [veh/h]	48	107	9	9	251	37	215	9	231	11	2	4

Lanes

Overwrite Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.95	0.96	1.00	0.83
Entry Flow Rate [veh/h]	174	311	455	21
Capacity of Entry and Bypass Lanes [veh/h]	1087	1292	1033	938
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1028	1236	1033	776
X, volume / capacity	0.16	0.24	0.44	0.02

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.57	0.94	2.29	0.07
95th-Percentile Queue Length [ft]	14.17	23.55	57.30	1.68
Approach Delay [s/veh]	4.97	5.04	8.41	4.86
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	6.67			
Intersection LOS	A			

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2040 PM Peak Hour Buildout

Version 5.00-00

Intersection Level Of Service Report

Intersection 4: Chancellor Drive/Lexington Boulevard & Ridgeway Avenue

Control Type:	Roundabout	Delay (sec / veh):	7.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Lexington Boulevard			Chancellor Drive			Ridgeway Avenue			Ridgeway Avenue		
Base Volume Input [veh/h]	9	5	62	209	7	8	5	85	9	84	145	22
Base Volume Adjustment Factor	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873	1.8873
Heavy Vehicles Percentage [%]	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	0	0	5	0	0	145	0	0	102	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	13	117	394	18	15	9	305	17	159	376	42
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	3	30	101	5	4	2	78	4	41	96	11
Total Analysis Volume [veh/h]	17	13	119	402	18	15	9	311	17	162	384	43
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	730			563			590			39		
Exiting Flow Rate [veh/h]	721			401			180			22		
Demand Flow Rate [veh/h]	17	13	117	394	18	15	9	305	17	159	376	42
Adjusted Demand Flow Rate [veh/h]	17	13	119	402	18	15	9	311	17	162	384	43

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	1.00	1.00	1.00	1.00
Entry Flow Rate [veh/h]	152	444	159	179	277	314
Capacity of Entry and Bypass Lanes [veh/h]	656	778	831	831	1371	1371
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	646	764	831	831	1371	1364
X, volume / capacity	0.23	0.57	0.19	0.22	0.20	0.23

Movement, Approach, & Intersection Results

Lane LOS	A	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.89	3.65	0.70	0.81	0.76	0.88
95th-Percentile Queue Length [ft]	22.21	91.32	17.54	20.36	18.88	22.11
Approach Delay [s/veh]	8.40	13.63	6.46		4.44	
Approach LOS	A	B	A		A	
Intersection Delay [s/veh]	7.93					
Intersection LOS	A					

Russell Construction Cedar Falls Hotel Conference Center Wetland Delineation

Prepared For:

Russell Construction Co.

Project No. 2171620

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

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Introduction

Shive-Hattery was contracted by Russell Construction Co. to complete a wetland and other Waters of the United States (WUS) survey on a parcel of land located in Cedar Falls, Black Hawk County, Iowa (Figures 1-2). Shive-Hattery delineated 0.62 acres of wetlands within the survey area. Russell Construction Co. is planning to undertake a project to construct a new hotel conference center on this parcel.

Background

General Description of Project Area

The project site is located in Cedar Falls, Black Hawk County, Iowa (Figures 1-2). The site is bordered by W. Ridgeway Ave. on the south, Hudson Rd. on the west, developed commercial parcels on the north, and a grassed parcel on the east. The survey area consists mostly of cropped fields (corn and soybean rotation), with a grassed area in the northwest portion. A drainageway runs from south to north on the site, originating at a culvert that passes under W. Ridgeway Ave., and continuing through to a city-owned parcel on the north side of the survey area.

A pre-delineation investigation was performed to gather information to assist with identifying wetland areas and other WUS in the survey area. Each source of information included as part of this investigation is described below.

U.S. Geological Survey Topographic Map and LiDAR Data

The U.S. Geological Survey (USGS) 7.5-Minute Topographic Map (topo) (Figure 3) includes towns, roads, streams, landmark features, contour lines, general delineation of wet areas, latitude, longitude, drainage, and general land uses. This was used to identify drainages or WUS within the project site. In addition, LiDAR 2-foot contours were obtained to assess the drainage of the survey area (Figure 3).

The east half of the survey area slopes to the drainageway that runs from the south boundary at W. Ridgeway Ave. to the adjacent parcel to the north. This area is currently cropped, in a soybean and corn rotation. The west half of the survey area slopes to the west, ultimately to the drainage ditch that runs north-south the length of the property along Hudson Rd. Much of this area is also cropped, in a corn soybean rotation, with the very northwest portion of the survey area characterized by herbaceous upland vegetation.

National Wetland Inventory Map

The National Wetlands Inventory (NWI) maps are produced at a scale of 1:24,000. Wetlands on NWI maps are classified in accordance with Cowardin at al. (1979), and depict probable wetland areas based on stereoscopic analysis of high altitude aerial photographs. The NWI map was reviewed to identify potential wetland areas located on the project site. The NWI does not show any mapped wetlands or WUS within the wetland survey area (Figure 4).

NRCS Soil Survey

The NRCS soil survey map for the project area (Figure 4), was obtained from the Web Soil Survey (WSS) to identify soil types. The NRCS Map Unit Symbol, Map Unit Name, and WSS Hydric Soil Rating status for the soils of the delineation area are listed in **Table 1**.

Table 1: NRCS Map Units and Names for Soil Groups within the Wetland Delineation Limits

NRCS Map Unit Symbol	NRCS Map Unit Name	WSS Hydric Soil Rating
83B	Kenyon loam, 2 to 5 percent slopes	No
184	Klinger silty clay loam, 1 to 4 percent slopes	No
391B	Clyde-Floyd complex, 1 to 4 percent slopes	Yes
426C	Aredale loam, 5 to 9 percent slopes	No

Climate Data

An evaluation of the antecedent precipitation conditions for the site was conducted using the Combined Method of 30-Day Rolling Totals and NRCS Engineering Field Handbook Weighting Factors as outlined in Sprecher and Warne, 2000. The NRCS Field Office Technical Guide (FOTG) website was utilized for compiling WETS data for the site, specifically for Waterloo (WATERLOO MUNI AP, IA). The WETS data provides a month by month summary and probability analysis of precipitation, providing the normal range of monthly precipitation, utilizing NRCS National Water and Climate Center historical climatic data from the National Weather Service data station. Daily precipitation values were obtained from the NWS COOP station [IA8706] Waterloo, from which 30-day rolling totals were determined. All data was plotted to determine if the 30-day rolling totals were within range of normal precipitation for the 1st, 2nd, and 3rd prior 30 days from the date of observation. Condition values and weights were then used to determine that the prior period has been normal with regard to antecedent precipitation conditions (Appendix B).

Methodology

The wetland delineation was conducted on November 8th, 2017 by John Mottet (Civil Engineer Intern) and Kasey Hutchinson (Water Resources Consultant), both of Shive-Hattery, using the Level 2 routine onsite determination method defined in the 1987 Corps of Engineers Wetlands Delineation Manual and the U.S. Army Corps of Engineers (USACE) Midwest Regional Supplement, Version 2.0 (Delineation Manual). Wetland boundaries are determined by examining the vegetation, soils, and hydrology for wetland indicators. Criteria and indicators for each are outlined in the Delineation Manual.

Wetland boundaries were flagged and surveyed using a Trimble R8 Model 2 GPS unit. All sample points were also flagged and surveyed (Figure 5).

Wetland and other WUS Delineation

Three wetlands were delineated within the survey area: WL1, WL2, and WL3. A summary of characteristics are provided in **Table 2**. The attached data sheets (Appendix B) document additional detail on the dominant plant species, results of the soil sampling, and hydrology observations for each sample point. Photographs of delineated wetland as well as other potential WUS are provided in Appendix C.

Sample points are restricted to the delineated wetlands themselves. This is because the areas adjacent to the identified wetlands had markedly different vegetation that did not satisfy wetland criteria according to the vegetation indicator tests.

Wetland WL1

0.01 acres
Sample Point SP-1

Wetland WL1 is a palustrine emergent wetland located where the culvert that runs beneath W. Ridgeway Ave. discharges into the north-south drainageway. This area is slightly depressed, and was inundated during the time of the survey. The upland/wetland transition is marked by both a change in slope as well as a change in vegetation.

Wetland WL2

0.29 acres
Sample Points SP-2, SP-3

Wetland WL2 is a palustrine emergent wetland located in the cropped farm field at the north boundary of the survey area. Much of this area is disturbed due to farming activities. Even so, sporadic wetland vegetation was identified within the corn/soybean residue, as were soil indicators. The upland/wetland transition is marked by both a change in slope, as the delineated wetland area flattens out relative to the upslope portion of the drainageway, as well as an absence of wetland vegetation upslope from the identified wetland.

Wetland WL3

0.32 acres
Sample Points SP-4, SP-5

Wetland WL3 is a palustrine emergent wetland that runs the entire length of the drainage ditch on the west side of the survey area along Hudson Rd. This ditch is heavily vegetated and the side slopes are relatively steep, especially along the south portion of the ditch; the delineated wetland is in large part restricted to the bottom of the ditch. Portions of the ditch were inundated during the time of the survey.

Table 2. Project Area Wetlands and other Water Resources

Area ID	Dominant Vegetation	Hydric Soil Indicator	Hydrology Indicators
WL1	Black Willow Broad-Leaf Cattail Reed Canary Grass	Assumed-Saturated	A1: Surface Water A2: High Water Table A3: Saturation D2: Geomorphic Position D5: FAC-Neutral Test
WL2	Broad-Leaf Cattail Black Willow Reed Canary Grass Sedge	F6: Redox Dark Surface	A3: Saturation C3: Oxidized Rhizospheres on Living Roots D2: Geomorphic Position D5: FAC-Neutral Test

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WL3	Reed Canary Grass Broad-Leaf Cattail	F6: Redox Dark Surface	A1: Surface Water A2: High Water Table A3: Saturation D2: Geomorphic Position D5: FAC-Neutral Test

Conclusions and Recommendations

The wetland survey conducted by Shive-Hattery staff using standard practices, procedures, and professional judgment, resulted in the identification of palustrine emergent wetland in three different locations within the survey area, totaling 0.62 acres. The scientific-based wetland analysis of the site presented in this report reflects the conditions of the wetland survey area at the time the work was conducted. Boundary and jurisdictional decisions ultimately rest with the USACE. If work is planned to be completed within or around these areas, work should be coordinated with the USACE and the IDNR, and no activities that will disturb or impact the delineated wetlands should commence prior to receiving wetland boundary approvals/concurrences and relevant permits from all regulating authorities.

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Appendix A - Figures

Shive-Hattery | 316 Second Street SE | Suite 500 | PO Box 1803 | Cedar Rapids, IA 52406-1803 | 319.364.0227 | fax 319.364.4251 | shive-hattery.com

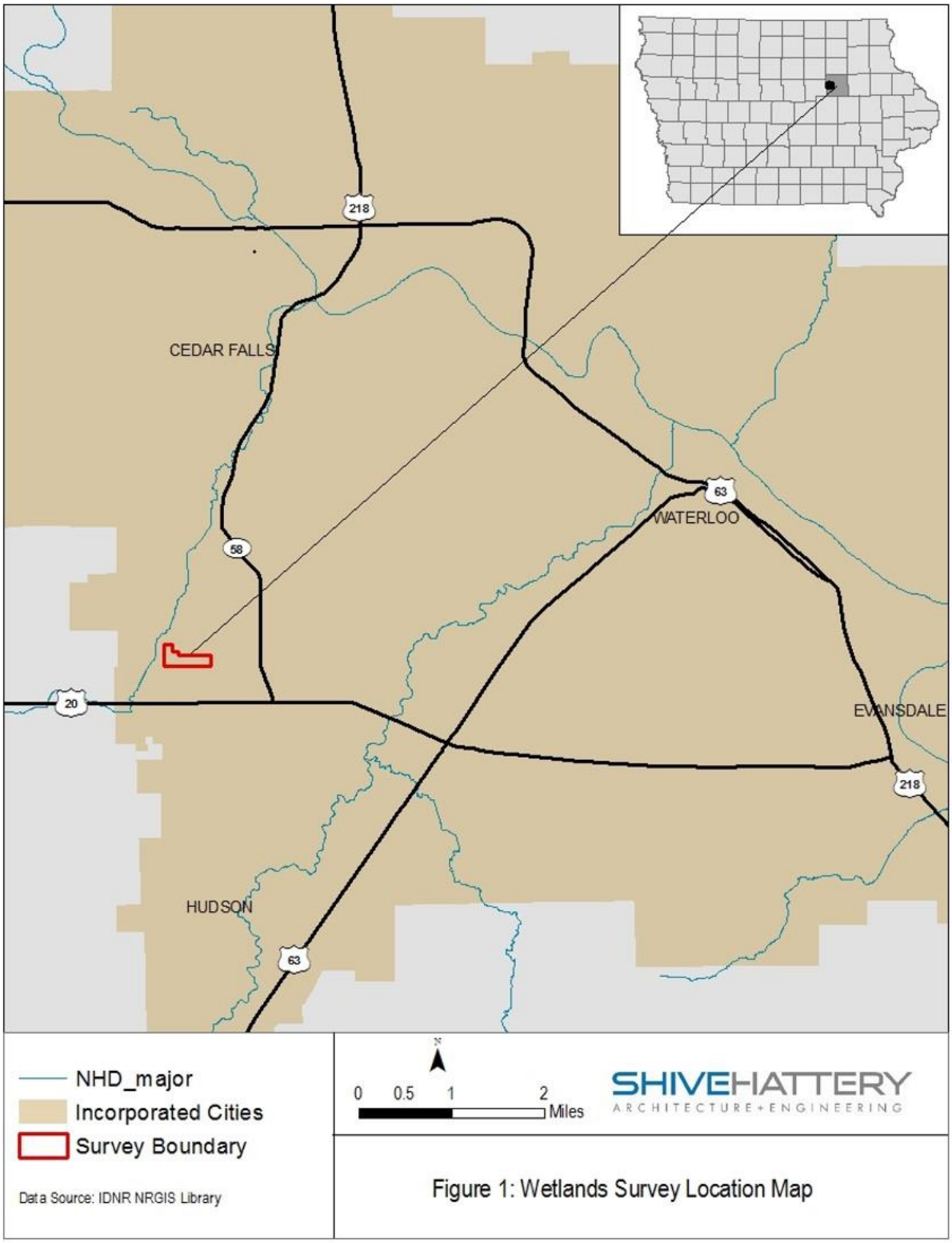

Figure 1: Wetlands Survey Location Map

Project #2171620

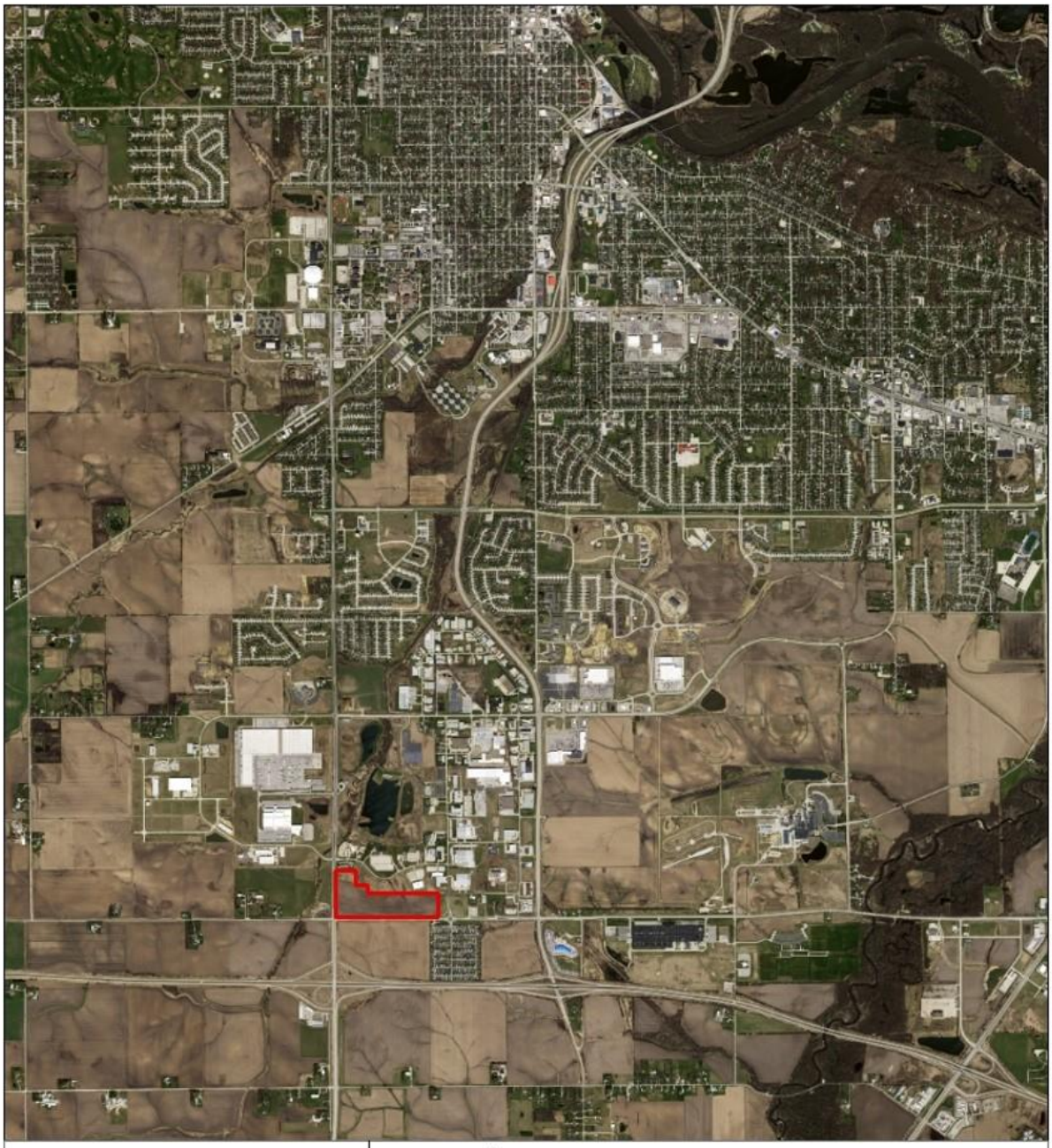

Figure 2: Wetland Survey Area Map

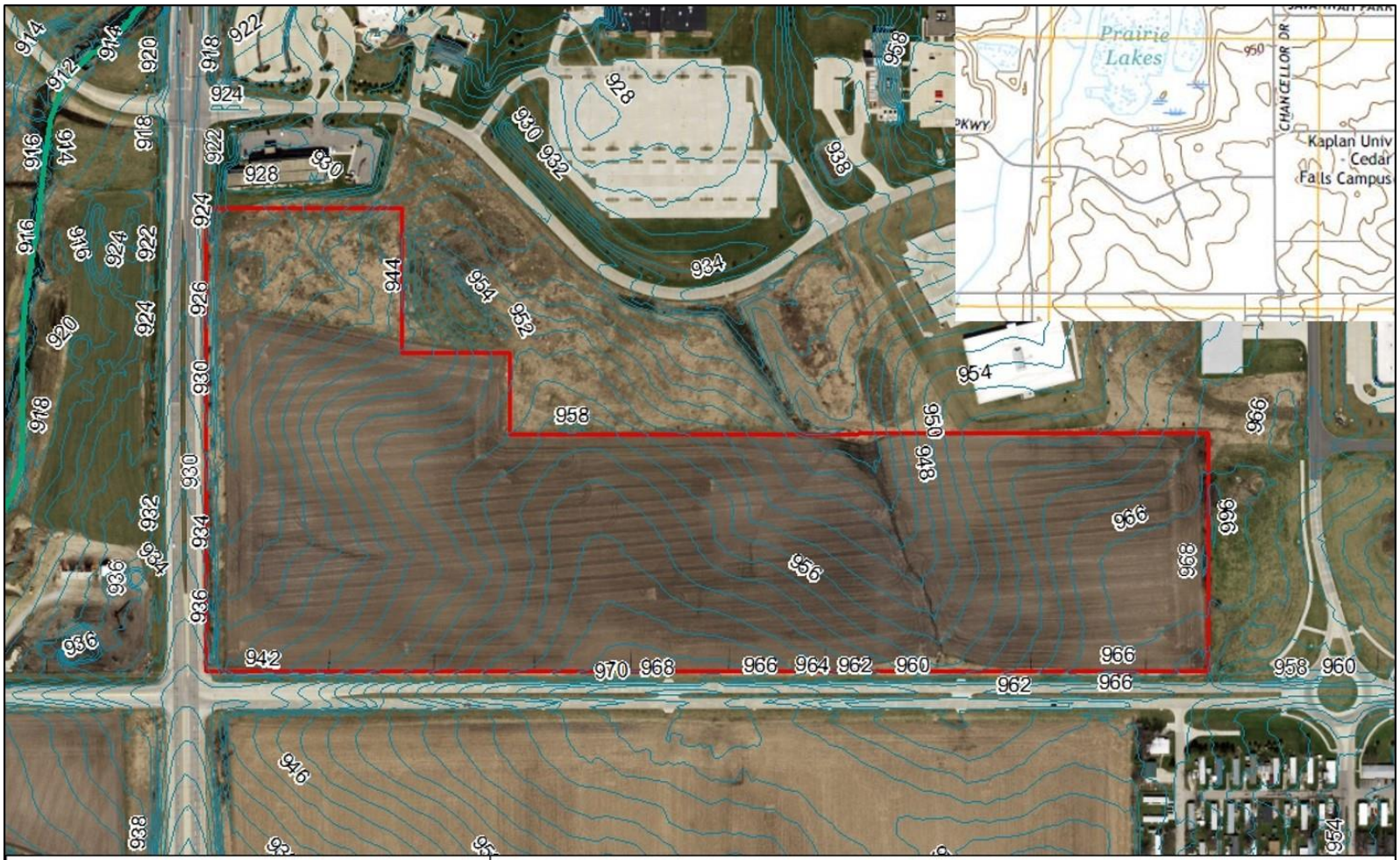

Figure 3: LiDAR 2-Foot Contours and USGS 7.5-Minute Topographic Map

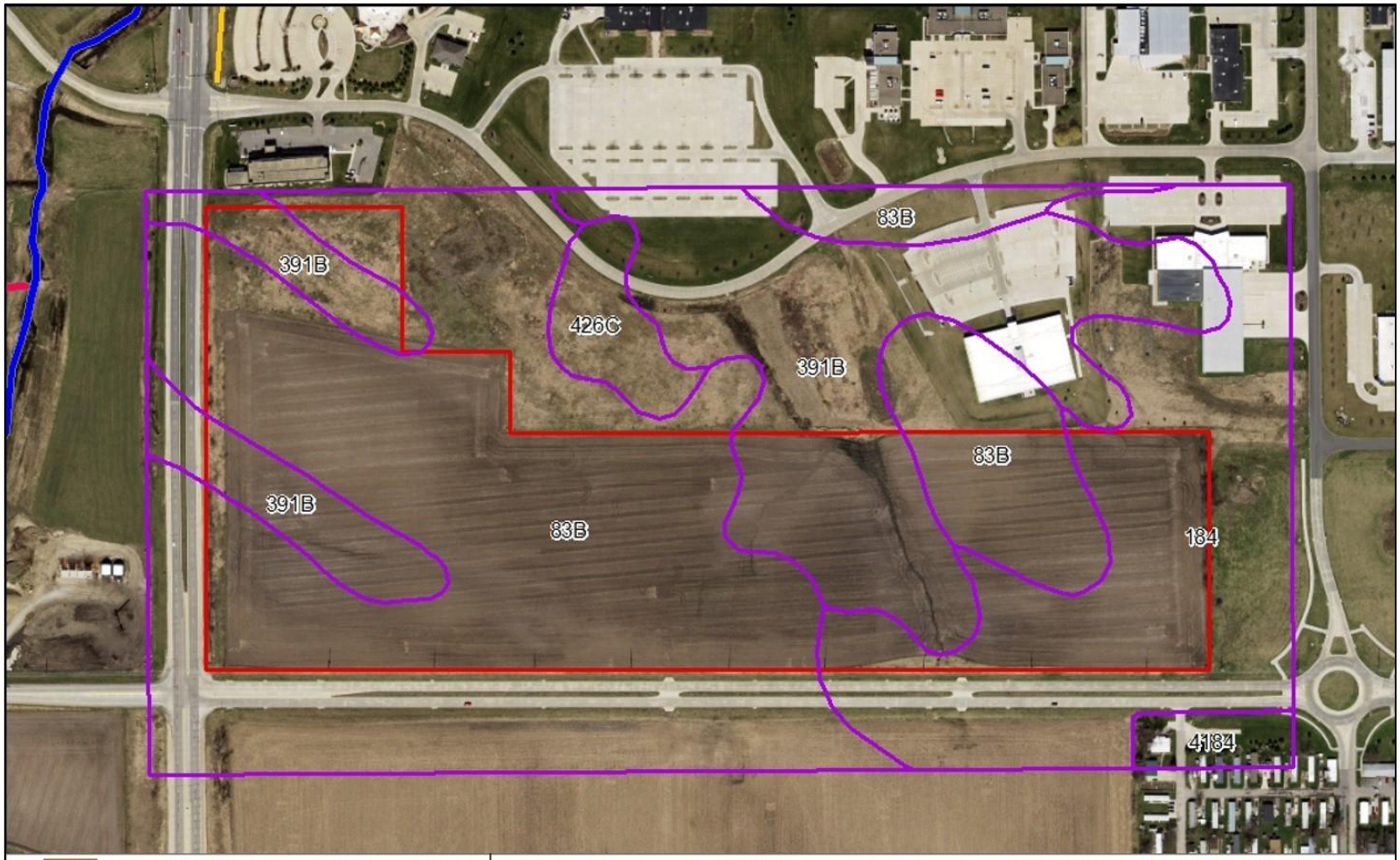

Figure 4: National Wetlands Inventory Classification and NRCS Soil Survey Data

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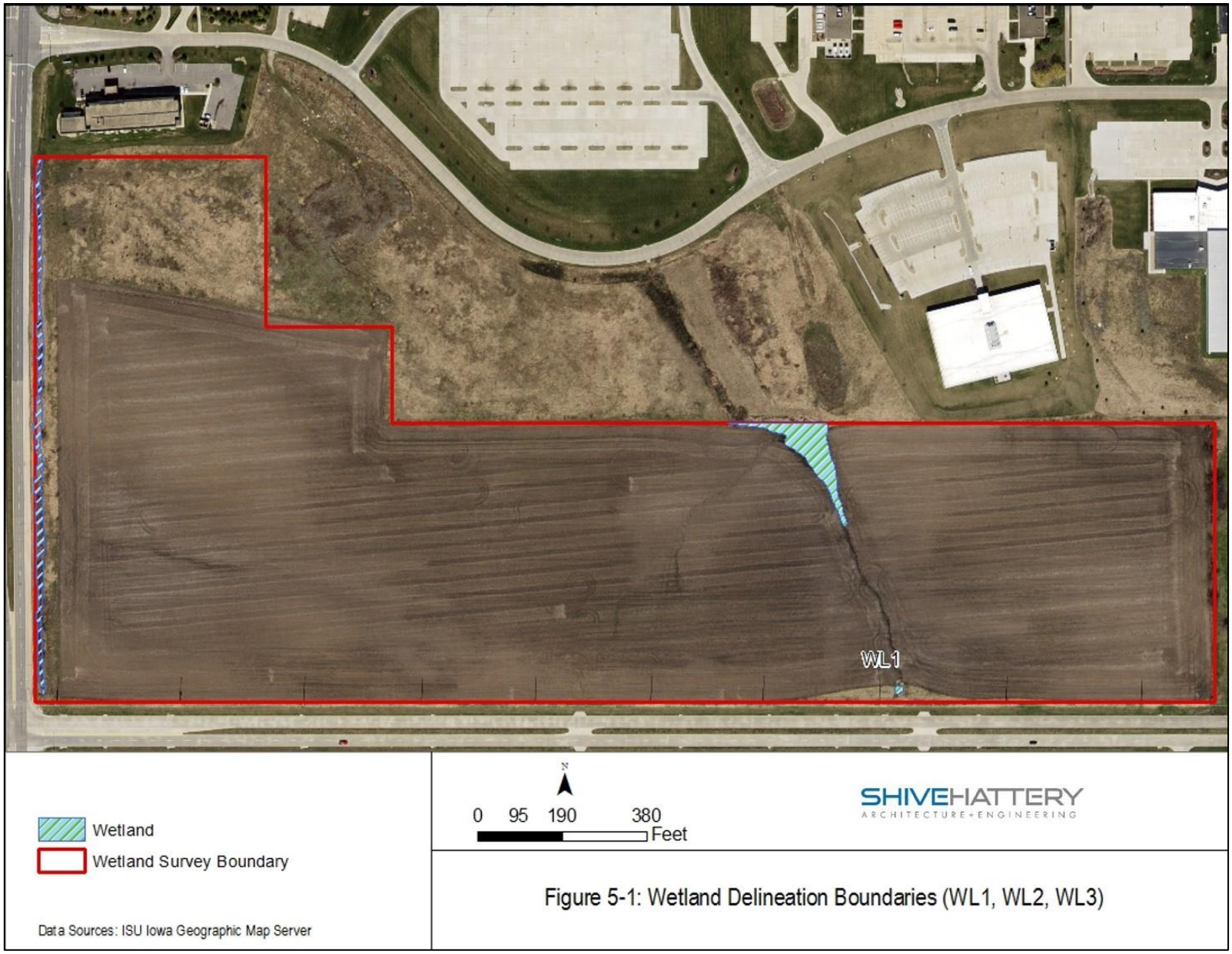

Figure 5-1: Wetland Delineation Boundaries (WL1, WL2, WL3)

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Figure 5-2: Wetland Delineation Boundaries (WL1, WL2) and Sample Points

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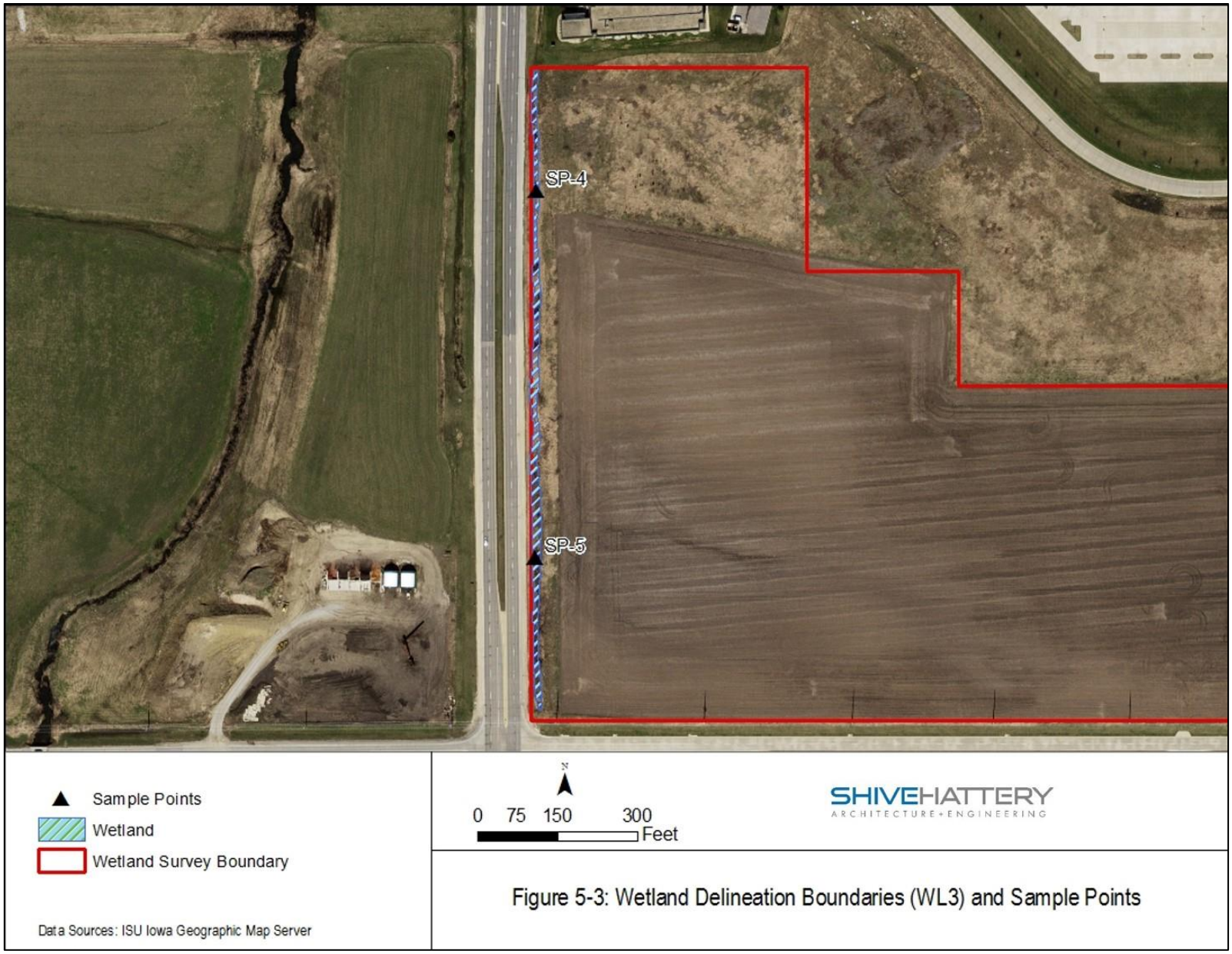

Figure 5-3: Wetland Delineation Boundaries (WL3) and Sample Points

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Appendix B – Evaluation of Antecedent Precipitation

Evaluation of Antecedent Precipitation, Combined Methods of 30-day Rolling Totals and NRCS Engineering Field Handbook Weighting Factors

Prior Period	**Condition** Dry, Wet, Normal	**Condition Value**	**Period Weight Value**	**Product of Previous 2 Columns**
1st prior 30 days	W	3	3	9
2nd prior 30 days	D	1	2	2
3rd prior 30 days	D	1	1	1
			Sum	12
			Precipitation Condition	Prior period has been normal

If sum is 6-9, prior period has been drier than normal.
If sum is 10-14, prior period has been normal.
If sum is 15-18, prior period had been wetter than normal

Appendix C - Photographs

Photo 1: Looking north down drainageway toward wetland WL2, from the perimeter of wetland WL1.

Photo 2: Looking south at wetland WL1. This small wetland is restricted to a depression located around the culvert that runs beneath W. Ridgeway Ave.

Photo 3: Looking north at sample point SP-2 in wetland WL2. The grassed areas marks the parcel boundary, and is located on the City-owned parcel.

Photo 4: Looking south at wetland WL2 that runs up a portion of the partially-disturbed drainageway. Photo taken from within wetland WL2.

Photo 5: Standing within wetland WL3 looking south toward W. Ridgeway Ave. Hudson Rd. runs the length of wetland WL3, to the right in this photo.

Photo 6: Looking north standing along the edge of wetland WL3 and Hudson Rd. Wetland WL3 runs the length of this ditch. This ditch has steep side slopes, sloping to upland.

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Appendix D – Wetland Delineation Data Sheets

Shive-Hattery | 316 Second Street SE | Suite 500 | PO Box 1803 | Cedar Rapids, IA 52406-1803 | 319.364.0227 | fax 319.364.4251 | shive-hattery.com

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: _____ City/County: _____ Sampling Date: _____

Applicant/Owner: _____ State: _____ Sampling Point: _____

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** **Yes _____ No _____**
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes _____ No _____**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: _____ City/County: _____ Sampling Date: _____

Applicant/Owner: _____ State: _____ Sampling Point: _____

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	**Is the Sampled Area within a Wetland?** **Yes _____ No _____**
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes _____ No _____**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: _____ City/County: _____ Sampling Date: _____

Applicant/Owner: _____ State: _____ Sampling Point: _____

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	**Is the Sampled Area within a Wetland?** **Yes _____ No _____**
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes _____ No _____**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: _____ City/County: _____ Sampling Date: _____

Applicant/Owner: _____ State: _____ Sampling Point: _____

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** **Yes _____ No _____**
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes _____ No _____**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: _____ City/County: _____ Sampling Date: _____

Applicant/Owner: _____ State: _____ Sampling Point: _____

Investigator(s): _____ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____

Slope (%): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** **Yes _____ No _____**
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes _____ No _____**

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
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- ___ Gauge or Well Data (D9)
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Secondary Indicators (minimum of two required)

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- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

November 20, 2017

Shane Graham
City of Cedar Falls, IA
Department of Planning
220 Clay Street
Cedar Falls, IA 50613-2726

RE: Subdivision Application – Reason of Request Letter

Dear Mr. Graham:

Thank you for your consideration of the proposed subdivision located at the northeast corner of Hudson Road and Ridgeway Avenue named Gateway Business Park at Cedar Falls. Although the parcel is currently being used in an agricultural capacity the current zoning is HWY-1 Highway Commercial and the intent of this subdivision is to fully develop the parcel into that use. The ultimate buildout of the entire parcel (46.03 acres) will be mixed use commercial with the focal point and primary user an IHG brand hotel (Holiday Inn, 8.76 acres).

Specific uses of the remaining area are not determined at this time but potential uses could include office and retail in addition to restaurant and convenience food/fuel. Market conditions will dictate the development speed and use of the remaining undeveloped land as time progresses.

Again, thank you for your consideration of the proposed subdivision and please do not hesitate to call if you required any additional information.

Sincerely,

SHIVE-HATTERY, INC.

Isaac J. Hodgins, PE
Civil Engineer

dlc/IJH

Project #2171620

DEPARTMENT OF COMMUNITY DEVELOPMENT
SUBDIVISION APPLICATION

City of Cedar Falls
220 Clay Street
Cedar Falls, Iowa 50613

Application Type:
- ☐ Minor Plat
- ☒ Major Plat – Preliminary
- ☐ Major Plat – Final: Preliminary approval/renewal date: _____

Proposed Subdivision Name: Gateway Business Park at Cedar Falls

Parcel #: 8914-35-451-003

Parcel's Address: W 1/2 of the SE 1/4 of Section 35, T89N, R14W and part of Lot 23, Cedar Falls Technology Park Phase II

City: Cedar Falls State: IA ZIP: 50613

Current zoning of parcel: HWY-1 Current # of lots: 2 Proposed # of lots: 7

Applicant's Name: CF Gateway Park, Inc. Attn: Atul Patel

Applicant's mailing address (if other): 307 Winding Ridge Road

City: Cedar Falls State: IA ZIP: 50613

Applicant's Email: atuldesi@yahoo.com Daytime Phone: (319) 493-0686

A COMPLETE SUBMITTAL INCLUDES A PAPER AND AN ELECTRONIC COPY OF:

**Original signed versions of these documents are not required until before City Council approval.*

- ☒ Completed application
- ☒ $300 nonrefundable fee
- ☒ Sewer tapping fee, if applicable City staff indicated not required at this time
- ☒ Traffic Study, if applicable
- ☒ Letter explaining reason for request and details about future uses (Word)
- ☒ *2 signed surveyor certificates Draft Certificate
- ☒ *6 full size signed appropriate plats; see engineering checklists (AutoCAD and PDF 11x17). If applicable also include low water entry elevations.
- ☒ Stormwater management plan with site grading proposed - see section 27- 405 of Ordinance
- ☒ Environmental Checklist and Report - required if the parcel is 3 acres or more
- ☒ Topographic and soils map analysis plat
  - ☒ Topographic elevations and contours at two-foot intervals of the property
  - ☒ A soils map analysis of the property, which describes soil types and soil characteristics.
  - ☒ An aerial photograph with identified soil types
  - ☒ Proposed lot lines and street locations of the plat map.
- ☒ Signed approval of subdivision plat name by Black Hawk County Auditor
- ☒ Signed proof of ownership Recorded Warranty Deed included

Over →

- ☐ Minor Plat: Affidavit of ownership including dates of acquisition
- ☐ Final Plat: Abstract of Title and Attorney Opinion

☐ *2 signed proposed owner's statements or deeds, addressing at minimum: (Word) **Under Review by Owner**

- ☐ Restrictions
- ☐ Easements
- ☐ Building lines
- ☐ Relationship to public streets and public utilities
- ☐ Public improvements and connections
- ☐ "Tracts" – land not intended to be developed must be identified as to their intended usage, future maintenance and ownership.

☒ Legal description of property (Word)

☒ Names and addresses of neighboring property owners of the requested area (Word)

To the best of my knowledge the foregoing and attached statements are true and correct, I sign this completed application with the intent of having my property subdivided and consent to having the property plated. *Note: if there is more than one property owner all will need to sign and date this document.*

_____ Date: 11/20/17

Property Owner's Signature:

_____ Date: _____

Applicant's Signature (if different):

DEPARTMENT OF COMMUNITY DEVELOPMENT

City of Cedar Falls
220 Clay Street
Cedar Falls, Iowa 50613
Phone: 319-273-8600
Fax: 319-273-8610
www.cedarfalls.com

MEMORANDUM
Planning & Community Services Division

TO: Planning and Zoning Commission

FROM: David Sturch, Planner III

DATE: February 7, 2018

SUBJECT: Hampton Inn Site Plan Review

REQUEST: Request to approve the Hampton Inn site development plan.

PETITIONER: Hawkeye Hotels, Om Patel – contract buyer; Base 4 Architects; VJ Engineering

LOCATION: 10 Main Street. The property is located at the northwest corner of W. 1st Street and Main Street.

PROPOSAL

It is proposed to redevelop the former Chamber and Broom Factory site at the corner of Main Street and W. 1st Street into a new Hampton Inn hotel. The existing building at 10 Main Street is proposed to be relocated to the east end of E. 4th Street to make room for this new development. The property is just under 2 acres in area and is located in the C-3, commercial zoning district.

The proposed building includes a 6 story, 82,000 ft² (14,000 hotel ft² base area) with 127 guest rooms located near the southeast corner of the lot. The hotel will provide on-site parking for their guest and employees with a drive-up canopy on the north side of the building. A pedestrian entrance is located at the southeast corner of the building near the W. 1st and Main Street intersection. The plan also includes the reconstruction of the driveway from W. 1st Street and sidewalks around the building with trail connections.

BACKGROUND

In the winter of 2008, the Old Broom Factory restaurant was demolished to make way for the redevelopment of this two acre site on W. 1st Street. At that time, the owner submitted a series of plans for condominium and restaurant development. The designs were presented to the Planning and Zoning Commission for review and discussion. The Commission tabled this request and in the spring of 2008, the City Council authorized a contract with a planning consultant from Madison, Wisconsin (JJR) to study potential development options for this site. These options included a mixed use concept with hotels, condominiums, restaurants in buildings with 6-7 stories in height. Eventually the original owner sold the property to Eagle View Partners

to develop this site in conjunction with the River Place development on State Street. A comprehensive development plan for the River Place Riverwalk redevelopment was approved by the City Council on May 29, 2012. Attached is the plan for the RiverWalk Redevelopment that shows the Mill Race condominium project in a 6-8 story building. Eagle View eventually sold the property to Western Home Inc. for a new senior living condominium project. That building included two floors of parking topped with four floors of living units. In summary, the planning for this site has been on-going for the past 10 years.

The property at 10 Main Street and the adjoining land is owned by Western Home Inc. Hawkeye Hotels entered into an agreement with Western Homes to purchase the property for the construction of a new hotel. This report will focus on the site development elements of this project along with a utility easement vacation across the central portion of this site.

ANALYSIS

The property is located in the C-3 Commercial zoning district (Section 29-151). The property conforms to and is compatible with the prevailing C-3 commercial zoning in the downtown area. A commercial use in the C-3 district has no parking requirements (Section 29-177(a)(1)). However, staff feels that a hotel facility should provide the adequate parking for the hotel guests and employees since there is ample space on this site for the parking. Since this property is located in the central business district overlay zoning district (Section 29-168) this site plan is subject to review and approval by the Planning and Zoning Commission and City Council. The developer and their architect and engineer have been working with city staff to complete the necessary documents for review. The Planning and Community Services Division has the following comments regarding the proposed development site plan:

1) Proposed Use: The proposed hotel at 10 Main Street is permitted in the C-3 Commercial district. **Use permitted.**

2) Setbacks: There are no building setbacks in the C-3 Commercial district. It should be noted that there is an existing 10-foot easement along W. 1st Street that will remain in place. Therefore, a 10-foot setback is established along W. 1st Street; a 5-foot setback is along Main Street. The proposed hotel is approximately 25 feet from the northerly lot line and 100 feet from the westerly lot line. All parking lot areas provide the minimum 5-foot setback from the lot lines. **Setbacks satisfied.**

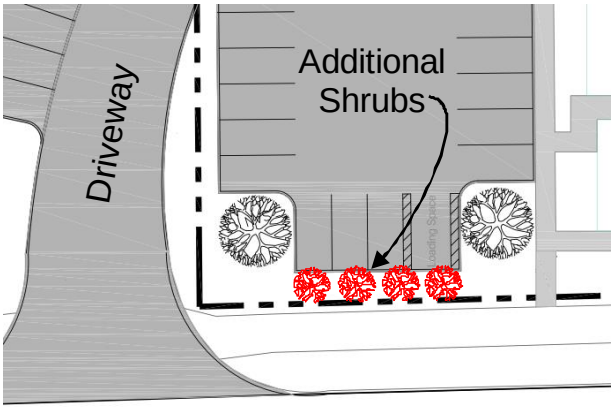
3) Parking/Access: The off-street parking requirement for a hotel is one (1) stall per guestroom and one (1) stall for every two employees. It is proposed to have 127 guestrooms with 10 employees. This equates to 132 on-site parking stalls. The site plan shows a total of 132 parking stalls located behind the proposed hotel. This parking lot satisfies the minimum setback of 5 feet from the property line.

   The parking lot will be accessed by a parking kiosk located at the north end of the driveway off of W. 1st Street. This kiosk will allow hotel guest to access the parking lot during their stay in downtown Cedar Falls. As part of this project, the petitioner will reconstruct the driveway and shift it to the west in order to line up with the north end of Washington Street. This will involve moving the storm sewer, storm inlets and water main under W. 1st Street. A portion of W. 1st Street will be closed during this phase of construction. The petitioner will have to coordinate these events with the Iowa DOT for proper road closures and public notices. The petitioner will install five parking stalls along the west side of the driveway for parking at the Little Red Schoolhouse.

Since this driveway from W. 1st Street will be the single access into this site, a secondary access is provided in the case of an emergency. This access will use the recreational trail along the north side of the building that allows guests to exist the site. This will be used in extreme measures in the event that emergency vehicles block the driveway access from W. 1st Street. This access will be controlled with removable bollards located at the edge of the parking lot next to the recreational trail. **Overall, the submitted parking lot plan and access plan is satisfied.**

4) Open Space/Landscaping: There are no open green space requirements in the C-3 Commercial district. The open space is located around the building and parking areas. The total site is approximately 84,000 ft² and the open space calculation is approximately 15,000 ft² or 18% of the total site.

The site plan identifies a number of overstory trees in and around the parking lot area and bushes around the building. Parking lots have some limited landscaping requirements, per Section 29-177(i)(4)(a). Street trees are planted at a rate of one tree for every 50 lineal feet of street frontage and shrubbery or similar plantings presenting a continuous, effective visual screen along the perimeter of a parking lot are needed components. There are some exceptions to this requirement for parking lots located behind buildings (see Section 29- 177(i)(4)(b), therefore continuous screening is only applicable along the south side of the parking lot along W. 1st Street. The plan shows two trees placed in the parking lot between the driveway and the west side of the hotel. These trees satisfy the ordinance requirements. **However, staff recommends additional shrubbery between the trees is needed to achieve an effective vegetative screen.**



5) Sidewalks/Recreational Accommodations: The existing sidewalks/trails along W. 1st Street and Main Street will remain in place during the construction phase of this project. During the construction of the hotel, the petitioner will be responsible to repair any damaged sections of these sidewalks/trails. New sidewalks will be installed around the hotel and connect into the aforementioned trails. Bike racks will be located near the northeast corner of the building next to an outdoor patio area. The petitioner will construct the section of the recreational trail along the flood wall in order to accommodate any emergency vehicles that may access this site. The trail will be 12 feet in width and reconstructed according to the plans for the levee and floodwall improvements. The petitioner will be responsible for the maintenance and upkeep of this trail segment along the north side of the hotel. **Sidewalk plan satisfied.**

6) Building Design: Section 29-168(h), Central Business Overlay District states that the architectural character, materials, and textures of all buildings shall be compatible with those primary design elements on structures located on adjoining properties and also in consideration of said design elements commonly utilized on other nearby properties on the same block or within the immediate neighborhood. Comparable scale and character in

relation to adjoining properties and other nearby properties in the immediate neighborhood shall be maintained by reviewing several design elements. These are noted below with a review on how each element is addressed.

a) ***Proportion:*** *The relationship between the width and height of the front elevations of adjacent buildings shall be considered in the construction or alteration of a building; the relationship of width and height of windows and doors of adjacent buildings shall be considered in the construction or alteration of a building.*

The property is zoned C-3 Commercial District, which has a building height limitation of 165 feet or three times the width of the road that the building faces (whichever is greater). In this case, W. 1st Street is 60 feet in width, meaning that the maximum building height allowed would be 180 feet (60 feet x 3). This structure is 75 feet 7 inches in height to the top of the turret. The majority of the building on all sides is 69 feet to the top of the parapet wall on the sixth floor. This building would meet the height requirement of the Zoning Ordinance. This property is also located within the Central Business Overlay Zoning District. This overlay district does not have a specific height limitation for buildings, but it does call for reviewing the scale of a proposed building in relation to adjoining properties and other nearby properties within the immediate neighborhood.

To study the relationship of this site to other adjoining properties, a unique situation is presented for this development. Is it reasonable to compare the height of the proposed hotel with the Little Red School House, Rapp Gas Station or the Ice House Museum? Or should one look across the street at the height of the existing buildings on Main Street for comparison. Most of the buildings along the “parkade” are two or three stories in height with a few four story buildings in the downtown area. The proposed hotel will be six (6) stories in height. The petitioner’s architect provided a height comparison drawing of the existing buildings in the downtown area which include the Oster Theatre, Black Hawk Hotel, and River Place. The 4th and Main building was not included in this height study. That building is approximately 55 feet in height. So, the average height of these buildings is 51 feet or three/four stories. The proposed hotel is 18 feet taller than this average or 14 feet taller than the Black Hawk Hotel or 4th and Main building.

The topography of the subject site is similar to the land on the south side of W. 1st Street. So one can’t conclude that the proposed hotel will have a finish floor elevation either below or above the existing grade of the buildings on Main Street. Another analysis shows that the proposed hotel cannot compare to other adjacent buildings, since this will be the only structure on the site. This site, while situated on the north side of W. 1st Street offers a different perspective to the building height criteria that is reflected in the design and height of the building. The previous plans mentioned in the background portion of this staff report included multi-story buildings (6-8 stories) for condominiums, restaurants and hotels. The proposed 6 story Hampton Inn continues with the plan for this site. Another factor to consider is the relationship of the width and height of windows and doors of adjacent buildings. The design of the hotel offers similar treatments in this aspect. **A discussion with the Commission members on the building height component of this request is necessary to move this project forward.**

b) ***Roof shape, pitch, and direction****: The similarity or compatibility of the shape, pitch, and direction of roofs in the immediate area shall be considered in the construction or alteration of a building.*

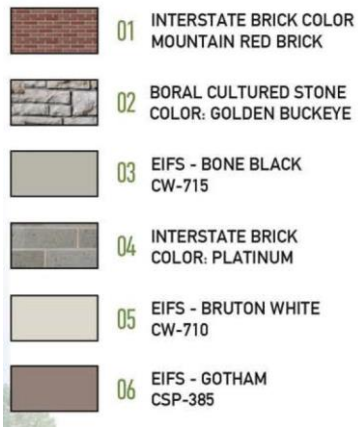
The design of the proposed hotel includes a flat roof with a parapet wall similar to the other buildings in the downtown area. The curved turret at the southeast corner of the building provides a new aspect to the design of the downtown district. This creates a focal point at the 1st and Main Street intersection when traveling into downtown from the highways to the east.

c) ***Pattern:*** *Alternating solids and openings (wall to windows and doors) in the front facade and sides and rear of a building create a rhythm observable to viewers. This pattern of solids and openings shall be considered in the construction or alteration of a building.*

Overall, the design of the hotel is an attractive building which represents a new design for Hampton Inn. The pattern includes long horizontal and vertical lines repeated around the building with a two tone brick color to separate these patterns. The front and back of the building includes raised and recessed portions of the facade wall to interrupt the massing of the wall. This design is extended to the roof parapets varying height to separate the building materials and color. The windows include precast lintels and sills or banding elements. The southeast corner of the building includes a curved feature with balconies on the second through sixth floor. A pedestrian entry is located at this corner with a glass canopy covered with awnings.

d) ***Materials and texture****: The similarity or compatibility of existing materials and textures on the exterior walls and roofs of buildings in the immediate area shall be considered in the construction or alteration of a building. A building or alteration shall be considered compatible if the materials and texture used are appropriate in the context of other buildings in the immediate area.*

The primary materials used on the building are brick, stone, glass and EIFS treatments. The southeast corner of the building is covered with a stone treatment and brick to define the balcony section of the hotel. The recessed portion of the balconies is in EIFS with score lines around the doorway and windows.



The overall percentage of materials on this building is as follows:

- North elevation: Stone = 0%; Brick = 95%; EIFS = 5%
- South elevation: Stone = 7%; Brick = 86%; EIFS = 7%
- East elevation: Stone = 7%; Brick = 89%; EIFS = 4%
- West elevation: Stone = 1%; Brick = 94%; EIFS = 5%

e) ***Color****: The similarity or compatibility of existing colors of exterior walls and roofs of buildings in the area shall be considered in the construction or alteration of a building.*

The majority of the hotel includes a red and gray brick colors with white and gray EIFS treatments on the cornice and overhang. These colors are found on other buildings in the downtown area.

f) ***Architectural features****: Architectural features, including but not limited to, cornices, entablatures, doors, windows, shutters, and fanlights, prevailing in the immediate area, shall be considered in the construction or alteration of a building. It is not intended that the details of existing buildings be duplicated precisely, but those features should be regarded as suggestive of the extent, nature, and scale of details that would be appropriate on new buildings or alterations.*

The building has a majority of brick and stone on the facade. Raised and recessed portions give opportunity for contrasting brick colors and the main feature corner is wrapped in stone and curved around the balconies. Windows include precast lintels and either precast sills or precast banding elements. This treatment, their proportion and double hung appearance along with the overall shape matches other buildings in the downtown. Cornices provide varied depth and the corner has an embellished cornice for a visual impact. Awnings are used on the corner and above entry doors for both aesthetic appeal and rain cover. The main corner has a glass canopy. Balconies on the feature corner have a slim profile rail with recesses back from the main building facade for the guest room suites. Parapets vary along the elevations to give appeal and separate building materials.

It should be noted that the hotel will have an internal HVAC system for each individual room and there will be no exposed vents below the windows. **Overall, the design of the proposed hotel provides similar design elements found on other buildings in the downtown area.**

Enclosed in the packet are some comments received on this project.

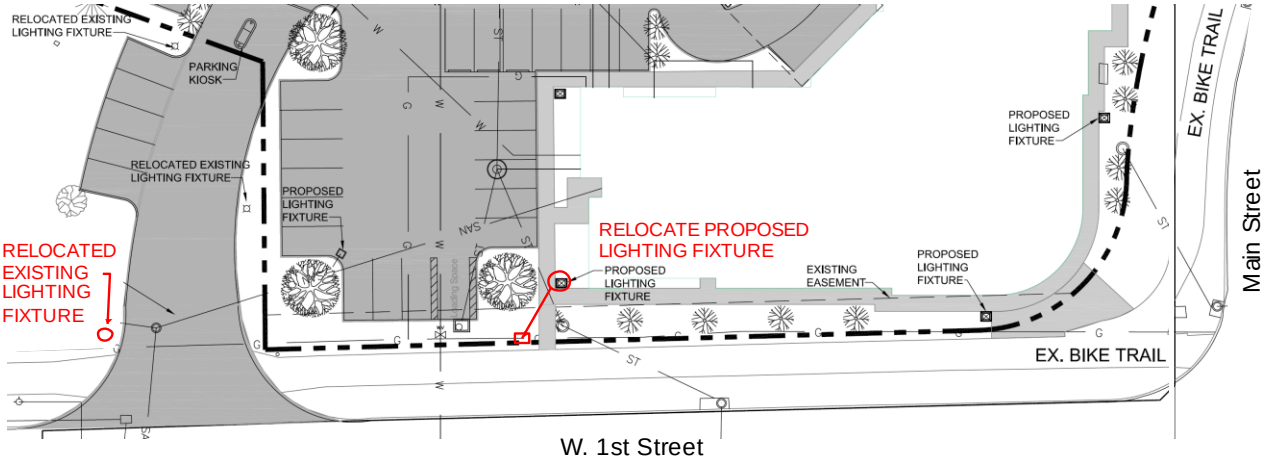
7) Trash Dumpsters: A trash dumpster location is identified in the parking lot on the west side of the site. The petitioner must submit a dumpster enclosure detail. The enclosure should identify the materials, height of the walls around the dumpster and details of the gate. Staff will recommend that the enclosure matches the materials used on the hotel. **More details are needed on the dumpster enclosure.**

8) Storm Water Management: A storm water management plan has been submitted for review by City Engineering Division staff. The plan is to install an underground detention system within the parking lot area. This detention system will collect all the storm water runoff from the site and buildings and release into the storm sewer on W. 1st Street. The owner is responsible for the maintenance of the underground detention system. A stormwater maintenance and repair agreement has been submitted to the City for review.

9) Lighting Plan: The existing two head antique light fixtures along the driveway will be removed and replaced after the relocation of the driveway. New LED light fixtures will be installed in and around the parking lot. These are the same LED fixtures that were installed in the new parking lot behind the 100 block of Main Street. The downtown streetscape plan identifies the

LED Parking Lot Fixture

north side of W. 1st Street for antique light fixtures with banner arms. The petitioner will install two additional antique single head light fixtures behind the recreational trail along W. 1st Street from the relocated driveway to the intersection of W. 1st and Main Street. Additional antique light fixtures will be placed around the hotel. These antique light fixtures will match the existing antique style lights in the downtown. A photometric lighting plan has been submitted. This plan shows the lumens restricted to the parking lot area with a slight overcast near the property line. **Relocate the proposed single head antique fixture by the corner of the hotel and existing double head antique fixture by the driveway to the area identified in the drawing below.**



10) Signage: The signage for the proposed hotel is included on the attached building elevation drawings. Hampton Inn wall signs are located on the east and west facade and the corner of the building. Any additional signage must be included as a part of this review. Permits will be required prior to installation.

11) Levee construction: The City of Cedar Falls is under contract for improvements to the levee system from Center Street to the Cedar Falls Utilities site. These improvements include adding additional height to the existing earthen levee and flood wall. The area behind the hotel site includes a flood wall section of the levee. Two additional feet will be added to the top of this wall section. The base of the flood wall is approximately 15 feet north of the property line. The parking lot is 5 feet inside the property line. The final paving in the parking lot is approximately 0.2' higher at its closest location to the toe of the berm next to the wall. This will allow the hotel contractor to balance the grade difference from the new parking lot to the existing grade. No private construction activity will extend beyond the limits of the property line.

Another important comment on the levee project is the construction staging of the levee and the hotel. This city has obtained a temporary construction easement adjacent to the base of the levee. The City's contractor will utilize this easement area for construction staging and material storage through the end of June, 2018. There is also a 70' wide easement along the south end of the site in place until the end of June for additional

construction staging. It is anticipated that the majority of the levee work in this area will be completed by the end of June.

12) Utility Easement Vacation: The existing utility easement that runs through the central portion of the site will be vacated. Mediacom is the only utility that occupies this easement. The petitioner's engineer has notified Mediacom of this easement vacation and they plan to relocate their services during the site grading portion of the project.

13) Existing Chamber Building: The existing Chamber building is proposed to be relocated this spring to the east end of E. 4th Street for the new Main Street office. Plans are being developed to relocate this building. If this does not occur, we anticipate the building will be demolished.

14) Streetscape Plan Implementation: As previously mentioned, the petitioner will install single head antique style lights with banner arms along the north side of W. 1st Street from their driveway to Main Street. These lights will be located behind the recreational trail. **Streetscape elements satisfied.**

TECHNICAL COMMENTS

City technical staff, including Cedar Falls Utilities (CFU) personnel, noted that the water, gas and communication services are available to the site. Water, electric, gas, and communications are available along W. 1st Street. There is also a transformer that can be relocated further south within the 10 foot easement near the south property line of the site at the owners expense. There is an 8" gas main between the sidewalk and the north property line of W. 1st Street. An 8" water main is available along W 1st Street and a 6" water main along Main Street. If an 8" water service is required, it should be connected to the water main on W 1st Street. It is recommended to create a looped connection from Main Street to W 1st Street. The petitioner and their contractor will have to coordinate these connections with CFU.

STAFF RECOMMENDATION

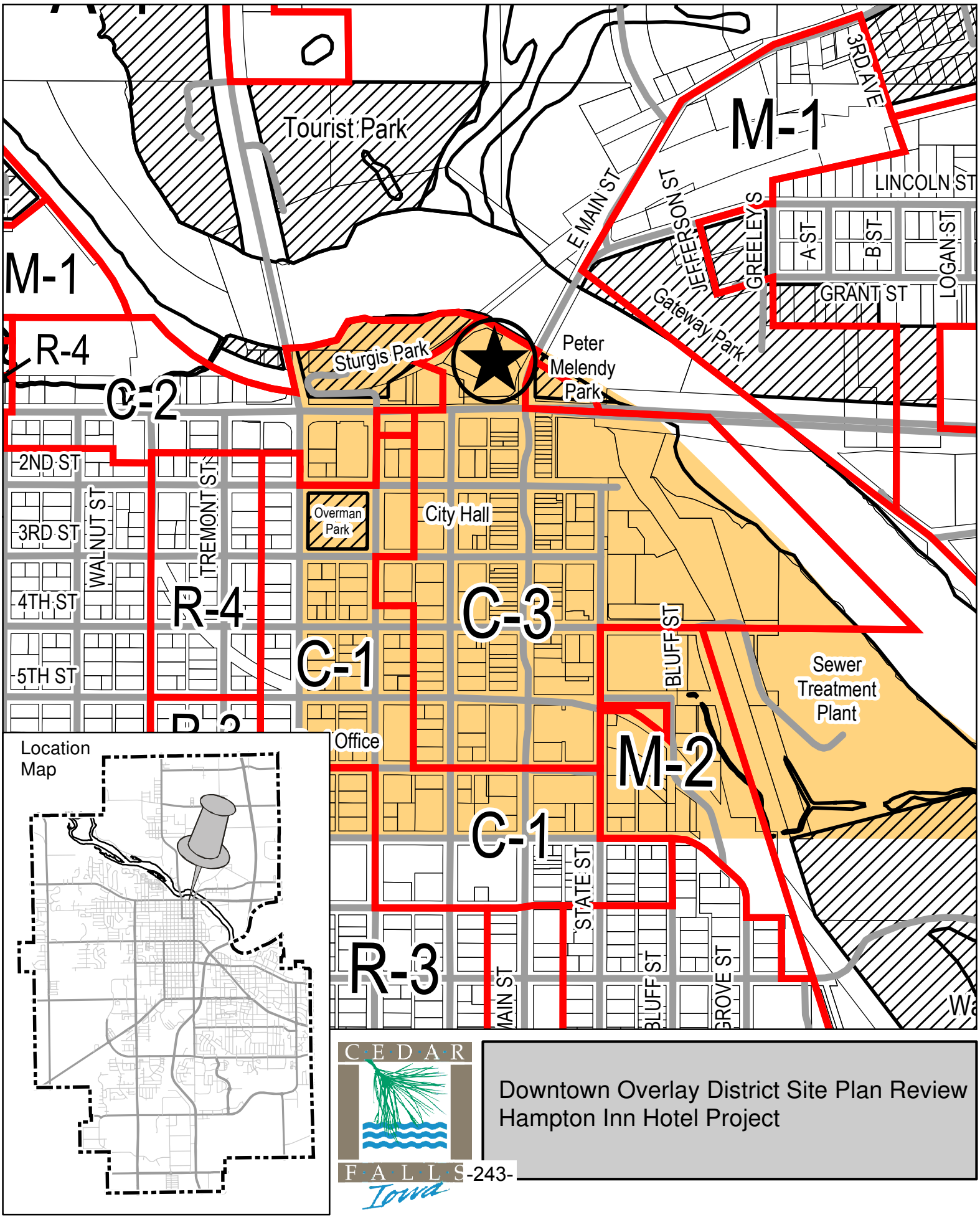
Initial discussion on the Hampton Inn site plan will occur at the February 14, 2018 Commission meeting. Staff is seeking discussion and direction on the site plan and proposed the following conditions at this time:

1. Meet all technical review comments.
2. Provide details on the dumpster gates.
3. Add additional shrubbery along south side of the parking lot adjacent to W. 1st Street.
4. Relocate the three existing double head antique light fixtures along the new driveway and relocate the proposed single head antique light fixture from the southwest corner of the hotel to the area behind the recreational trail along W. 1st Street.
5. This site will be used for the levee construction per the approved temporary construction easements.
6. No private construction activity to occur outside the property line.

This project may proceed to the February 28, 2018 Planning and Zoning Commission if the above recommendations are met by the resubmittal date of February 19, 2018.

PLANNING & ZONING COMMISSION

Discussion
2/14/2018

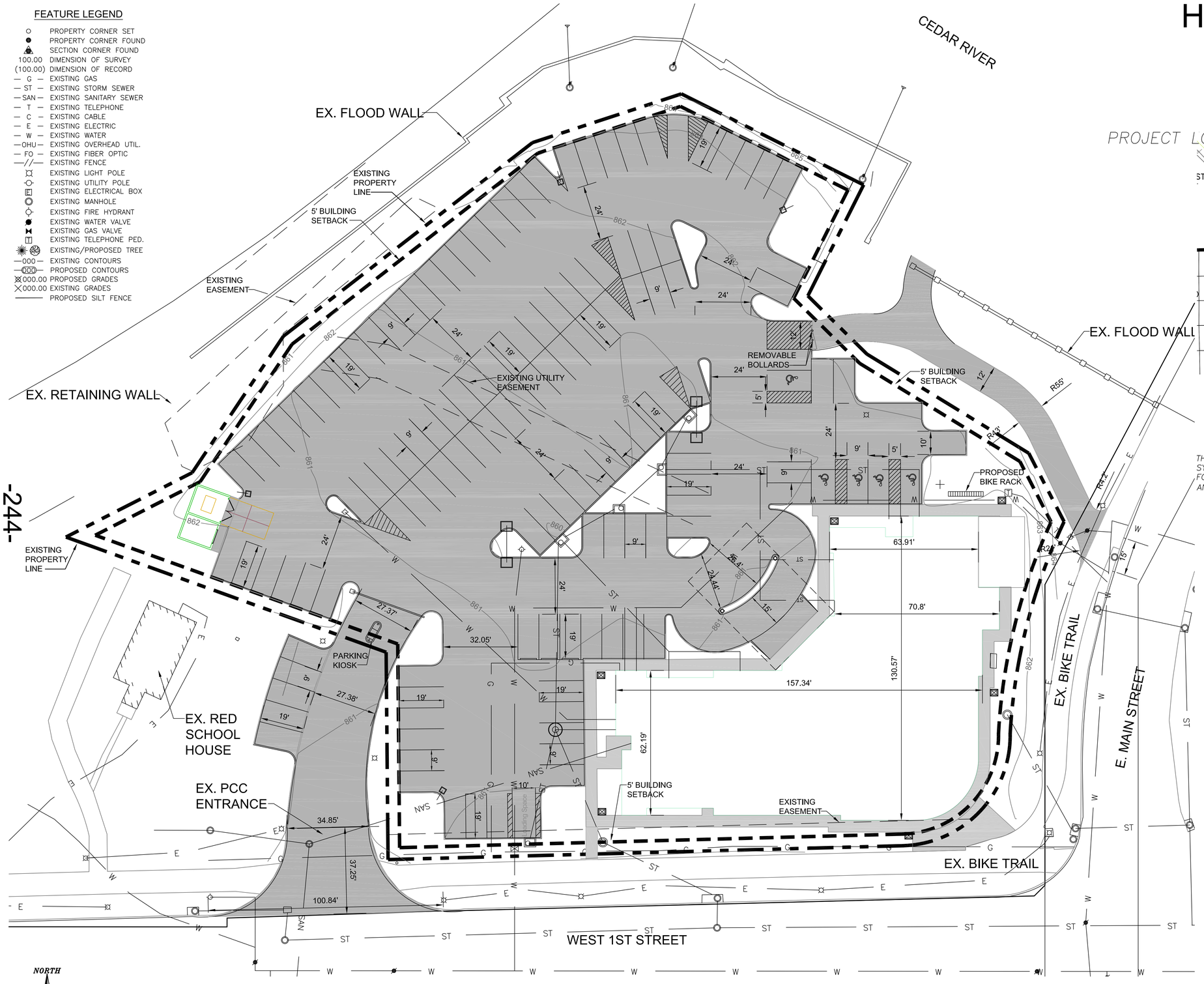


Downtown Overlay District Site Plan Review
Hampton Inn Hotel Project

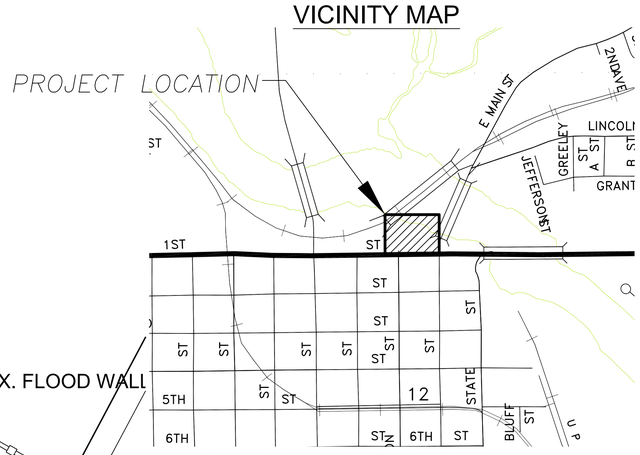
HAMPTON INN HOTEL
CEDAR FALLS, IOWA

FEATURE LEGEND

- PROPERTY CORNER SET
- PROPERTY CORNER FOUND
- SECTION CORNER FOUND
- 100.00 DIMENSION OF SURVEY
- (100.00) DIMENSION OF RECORD
- — G — EXISTING GAS
- — ST — EXISTING STORM SEWER
- —SAN— EXISTING SANITARY SEWER
- — T — EXISTING TELEPHONE
- — C — EXISTING CABLE
- — E — EXISTING ELECTRIC
- — W — EXISTING WATER
- —OHU— EXISTING OVERHEAD UTIL.
- — FO — EXISTING FIBER OPTIC
- —//— EXISTING FENCE
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING ELECTRICAL BOX
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING GAS VALVE
- EXISTING TELEPHONE PED.
- EXISTING/PROPOSED TREE
- —000— EXISTING CONTOURS
- —000— PROPOSED CONTOURS
- 000.00 PROPOSED GRADES
- 000.00 EXISTING GRADES
- PROPOSED SILT FENCE



VICINITY MAP



CITY OF CEDAR FALLS, IOWA

NOT TO SCALE

THE CONSTRUCTION OF THE SANITARY SEWER, STORM SEWER, AND WATER SYSTEMS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL IMPROVEMENTS WITHIN THE CITY OF CEDAR FALLS, IOWA, AND THE STATEWIDE URBAN DESIGNS AND SPECIFICATIONS (SUDAS).

INDEX OF SHEETS

OWNER
HAWKEYE HOTELS
2706 JAMES STREET
CORALVILLE, IOWA 52241

CURRENT ZONING:
C-3 COMMERCIAL,
CENTRAL BUSINESS DISTRICT

AUDITORS MILL COMPANY PLAT
TOTAL SITE AREA = 1.938 ACRES

NOTES

1. *THE LOCATION OF UTILITIES INDICATED ON THE DRAWINGS ARE TAKEN FROM EXISTING PUBLIC RECORDS. THE EXACT LOCATION AND ELEVATION OF ALL PUBLIC UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE DUTY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL UTILITIES OTHER THAN THOSE SHOWN ON THE DRAWINGS MAY BE PRESENT.*

IOWA ONE CALL 800 / 292-8989 TOLL FREE CALL - BEFORE - YOU - DIG

NORTH

V J

0 10 20 40

LICENSED PROFESSIONAL ENGINEER Licensed 22647 Daniel M. Arends IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

DANIEL M. ARENDS, P.E. DATE
License number 22647
My license renewal date is December 31, 2018
Pages or sheets covered by this seal:

Item 5.B.

VJ Engineering
1501 Technology Parkway
Cedar Falls, Iowa

HAMPTON INN
TITLE SHEET
10 EAST MAIN STREET

DOWNTOWN CEDAR FALLS, IOWA

1 OF 9

scale	1:20
drawn by	JLK
approved by	DMA
date	12/12/2017
revisions	01/31/2018

168060

CENTRAL BUSINESS DISTRICT LANDSCAPING REQUIREMENTS:
-THERE ARE NO REQUIRED LANDSCAPING POINTS IN THIS DISTRICT

-TOTAL SITE AREA: 84,588 S.F.
-LANDSCAPED AREA PROVIDED: 15,503 S.F.
-LANDSCAPED AREA: 18.33%

-PARKING AREA PLANTINGS - 18 OVERSTORY TREES
- 11 FIVE GALLON BUSHES

STREET TREE PLANTINGS - 2 OVERSTORY TREES
- 9 FIVE GALLON BUSHES

PARKING STALLS REQUIRED:
1 STALL FOR EVERY GUESTROOM
PLUS ONE STALL FOR EVERY TWO EMPLOYEES
-127 ROOMS = 127 PARKING STALLS
-10 EMPLOYEE MAX = 5 PARKING STALLS

-REQUIRED = 132 PARKING STALLS

-PROVIDED = 132 PARKING STALLS ON SITE
5 PUBLIC PARKING STALLS

CEDAR RIVER
EX. FLOOD WALL
EXISTING PROPERTY LINE
EXISTING EASEMENT
EX. RETAINING WALL
EXISTING TREES
PROPERTY LINE
PROPOSED LIGHTING FIXTURE
PROPOSED OVERSTORY TREE
EXISTING UTILITY EASEMENT
PROPOSED 5 GALLON BUSH
PROPOSED GATE
RELOCATED EXISTING LIGHTING FIXTURE
PARKING KIOSK
EX. RED SCHOOL HOUSE
MEMORIAL TREE
EX. PCC ENTRANCE
REMOVABLE BOLLARDS
PROPOSED BIKE RACK
EX. FLOOD W/
EX. BIKE TRAIL
E. MAIN STREET
WEST 1ST STREET
NORTH
0 10 20 40

VJ Engineering
1501 Technology Parkway
Cedar Falls, Iowa - 319-266-5829

HAMPTON INN
LANDSCAPING PLAN
10 EAST MAIN STREET
DOWNTOWN CEDAR FALLS, IOWA

Item 5.B.

VJ Engineering
1501 Technology Parkway
Cedar Falls, Iowa

EX. FLOOD WALL
NO GRADING BEYONG THIS LINE
CEDAR RIVER
EXISTING PROPERTY LINE
EXISTING EASEMENT
EX. RETAINING WALL
54,625 S.F. PRO 6" PCC PARKING AREA
EXISTING UTILITY EASEMENT
PRO 6" PCC PARKING AREA
PROPOSED DUMPSTER FFE=861.63
CURB DROP AT DUMPSTER LOCATION
4' SIDEWALK
NO GRADING BEYONG THIS LINE
PROPOSED GATE
54,626 S.F. PRO 6" PCC PARKING AREA
PROPOSED BOLLARDS
PARKING KIOSK
PRO 6" PCC PARKING AREA
PROPOSED PARKING STOPS
PRO 6" PCC DRIVE AREA
EX. RED SCHOOL HOUSE
EX. PCC ENTRANCE
NO GRADING BEYONG THIS LINE
VERIFY LOCATION OF PROPOSED REC TRAIL BY OTHERS
MATCH GRADES TO PROPOSED REC TRAIL ENTRANCE RELOCATION (BY OTHERS)
FIRE LANE
REMOVABLE BOLLARDS
EX. FLOOD WALL
PRO 6" PCC PARKING AREA
PROPOSED REDESIGNED 6IN PCC REC. TRAIL
PROPOSED BIKE RACK
3,024SF 4" PCC, 5' SIDEWALK
5' x 6' ADA CURB RAMP WITH DETECTABLE WARNINGS
MATCH GRADES TO EXISTING PCC REC. TRAIL
15' CURB DROP FOR FIRE LANE
PRO ADA CURB RAMP WITH DETECTABLE WARNING
PROPOSED HAMPTON INN HOTEL
AREA= 13,795SF
FFE=862.05
EX. BIKE TRAIL
E. MAIN STREET
EXISTING EASEMENT
3,024SF 4" PCC, 5' SIDEWALK
NO GRADING BEYONG THIS LINE
EX. BIKE TRAIL
WEST 1ST STREET

NORTH
V-J
0 10 20 40

HAMPTON INN
PAVEMENT & GRADING PLAN
10 EAST MAIN STREET
DOWNTOWN CEDAR FALLS, IOWA

6 OF 9

scale	1:20
drawn by	JLK
approved by	DMA
date	12/12/2017
revisions	01/31/2018

168060

Rendering 01

Hampton Inn

HAMPTON INN

CEDAR FALLS, IA

BASE4

Base4
2901 Clint Moore Road,#114, Boca Raton, Florida 33496, USA
www.base-4.com | 1.720.72.BASE4

Rendering 02

HAMPTON INN

CEDAR FALLS, IA

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1st Floor Plan

NOT TO SCALE

ROOM MATRIX							
ROOM TYPE	1ST	2ND	3RD	4TH	5TH	6TH	TOTAL
KING	0	4	4	4	4	4	20
KING SOFA	0	8	8	8	8	8	40
ACCESSIBLE KING CORNER SUITE -W.RIS	0	1	1	1	1	1	5
DOUBLE QUEEN A	0	3	3	2	2	2	12
DOUBLE QUEEN	0	9	9	9	9	9	45
ACCESSIBLE DOUBLE QUEEN	0	1	1	1	1	1	5
GRAND TOTAL	**0**	**26**	**26**	**25**	**25**	**25**	**127**

GROSS AREA	
Level	Area
1ST FLOOR	14,134 SF
2ND FLOOR	13,591 SF
3RD FLOOR	13,591 SF
4TH FLOOR	13,591 SF
5TH FLOOR	13,591 SF
6TH FLOOR	13,591 SF
Grand total: 6	82,089 SF

N

LEGEND

- GUESTROOMS
- TOILETS
- COMMON AREA
- BOH
- CORE
- ROOF ABOV

HAMPTON INN

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2nd Floor Plan

NOT TO SCALE

ROOM MATRIX						
ROOM TYPE	1ST	2ND	3RD	4TH	5TH	6TH
KING	0	4	4	4	4	4
KING SOFA	0	8	8	8	8	8
ACCESSIBLE KING CORNER SUITE -W.RIS	0	1	1	1	1	1
DOUBLE QUEEN A	0	3	3	2	2	2
DOUBLE QUEEN	0	9	9	9	9	9
ACCESSIBLE DOUBLE QUEEN	0	1	1	1	1	1
GRAND TOTAL	**0**	**26**	**26**	**25**	**25**	**25**

GROSS AREA	
Level	Area
1ST FLOOR	14,134 SF
2ND FLOOR	13,591 SF
3RD FLOOR	13,591 SF
4TH FLOOR	13,591 SF
5TH FLOOR	13,591 SF
6TH FLOOR	13,591 SF
Grand total: 6	82,089 SF

N

LEGEND

- GUESTROOMS
- TOILETS
- BOH
- CORE
- FLOOR BELOW

HAMPTON INN

CEDAR FALLS, IA

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3rd Floor Plan

NOT TO SCALE

ROOM MATRIX							
ROOM TYPE	**1ST**	**2ND**	**3RD**	**4TH**	**5TH**	**6TH**	**TOTAL**
KING	0	4	4	4	4	4	20
KING SOFA	0	8	8	8	8	8	40
ACCESSIBLE KING CORNER SUITE -W.RIS	0	1	1	1	1	1	5
DOUBLE QUEEN A	0	3	3	2	2	2	12
DOUBLE QUEEN	0	9	9	9	9	9	45
ACCESSIBLE DOUBLE QUEEN	0	1	1	1	1	1	5
GRAND TOTAL	**0**	**26**	**26**	**25**	**25**	**25**	**127**

GROSS AREA	
Level	Area
1ST FLOOR	14,134 SF
2ND FLOOR	13,591 SF
3RD FLOOR	13,591 SF
4TH FLOOR	13,591 SF
5TH FLOOR	13,591 SF
6TH FLOOR	13,591 SF
Grand total: 6	82,089 SF

LEGEND

- GUESTROOMS
- TOILETS
- BOH
- CORE

HAMPTON INN

CEDAR FALLS, IA

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Typical Floor Plan (4th to 6th)

NOT TO SCALE

ROOM MATRIX						
ROOM TYPE	1ST	2ND	3RD	4TH	5TH	6TH
KING	0	4	4	4	4	4
KING SOFA	0	8	8	8	8	8
ACCESSIBLE KING CORNER SUITE -W.RIS	0	1	1	1	1	1
DOUBLE QUEEN A	0	3	3	2	2	2
DOUBLE QUEEN	0	9	9	9	9	9
ACCESSIBLE DOUBLE QUEEN	0	1	1	1	1	1
GRAND TOTAL	0	26	26	25	25	25

GROSS AREA	
Level	Area
1ST FLOOR	14,134 SF
2ND FLOOR	13,591 SF
3RD FLOOR	13,591 SF
4TH FLOOR	13,591 SF
5TH FLOOR	13,591 SF
6TH FLOOR	13,591 SF
Grand total: 6	82,089 SF

N

LEGEND

- GUESTROOMS
- TOILETS
- BOH
- CORE

HAMPTON INN

CEDAR FALLS, IA

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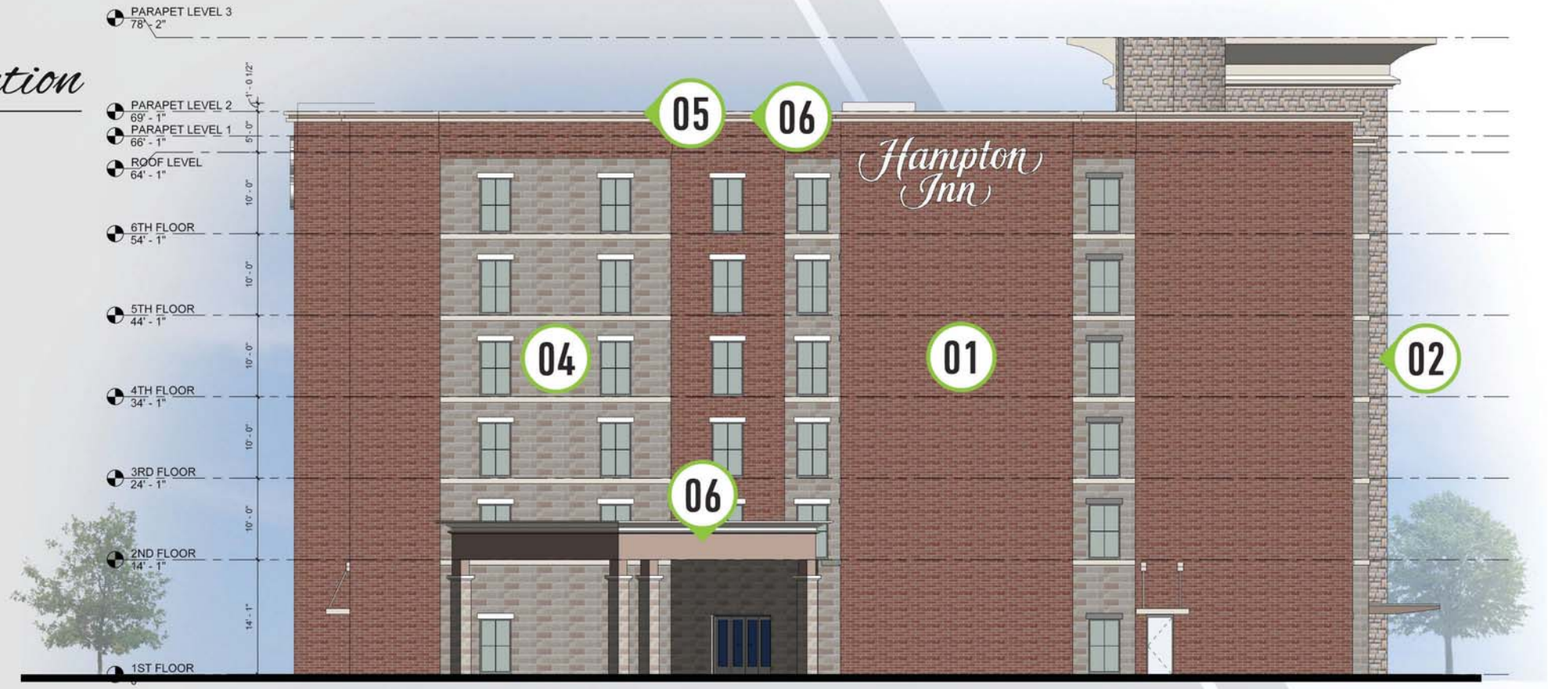
West Elevation

NOT TO SCALE



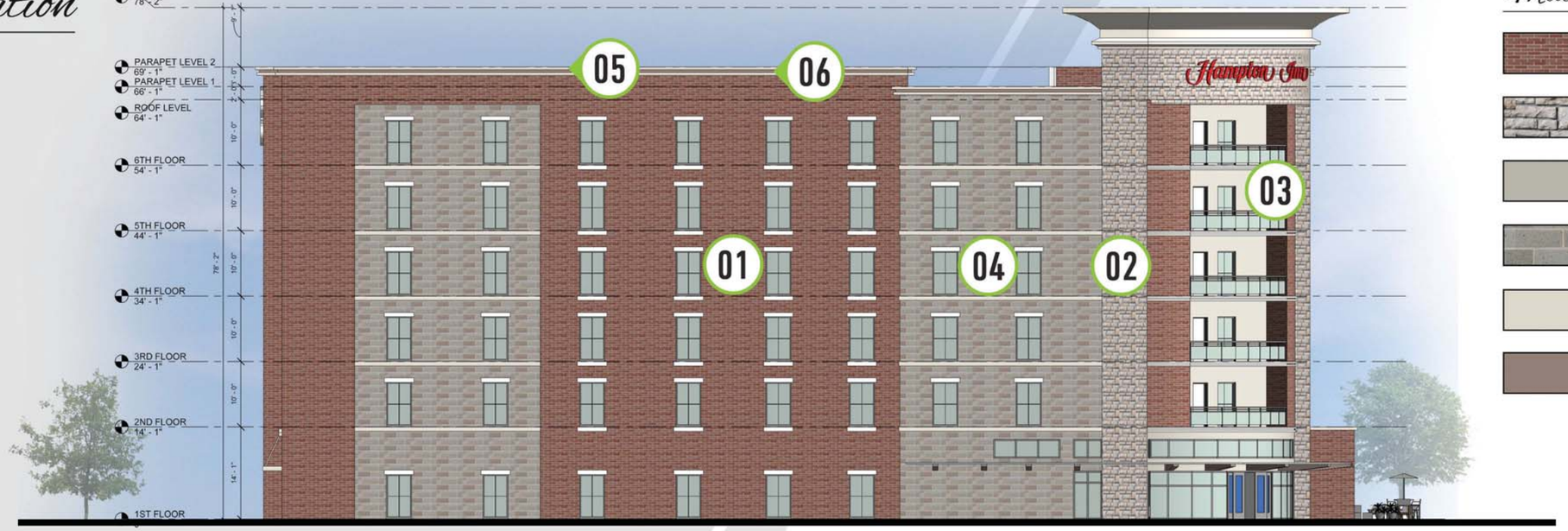
WEST FAÇADE MATERIALS	PERCENTAGE
BORAL CULTURED STONE	1%
INTERSTATE BRICK COLOR:- MIDNIGHT BLACK	75%
INTERSTATE BRICK COLOR:- PLATINUM	18%
EIFS BONE BLACK	0%
EIFS BRUTON WHITE	1%
EIFS GOTHAM	4%
TOTAL	**100%**

SOUTH FAÇADE MATERIALS	PERCENTAGE
BORAL CULTURED STONE	7%
INTERSTATE BRICK COLOR:- MIDNIGHT BLACK	50%
INTERSTATE BRICK COLOR:- PLATINUM	29%
EIFS BONE BLACK	8%
EIFS BRUTON WHITE	5%
EIFS GOTHAM	2%
TOTAL	**100%**

TOTAL BUILDING FAÇADE MATERIALS	PERCENTAGE
BORAL CULTURED STONE	3%
INTERSTATE BRICK COLOR:- MIDNIGHT BLACK	23%
INTERSTATE BRICK COLOR:- PLATINUM	63%
EIFS BONE BLACK	5%
EIFS BRUTON WHITE	2%
EIFS GOTHAM	3%
TOTAL	**100%**

South Elevation

NOT TO SCALE



Material Legend

- 01 INTERSTATE BRICK COLOR MOUNTAIN RED BRICK
- 02 BORAL CULTURED STONE COLOR: GOLDEN BUCKEYE
- 03 EIFS - BONE BLACK CW-715
- 04 INTERSTATE BRICK COLOR: PLATINUM
- 05 EIFS - BRUTON WHITE CW-710
- 06 EIFS - GOTHAM CSP-385

-253-

Item 5.B.

HAMPTON INN

CEDAR FALLS, IA

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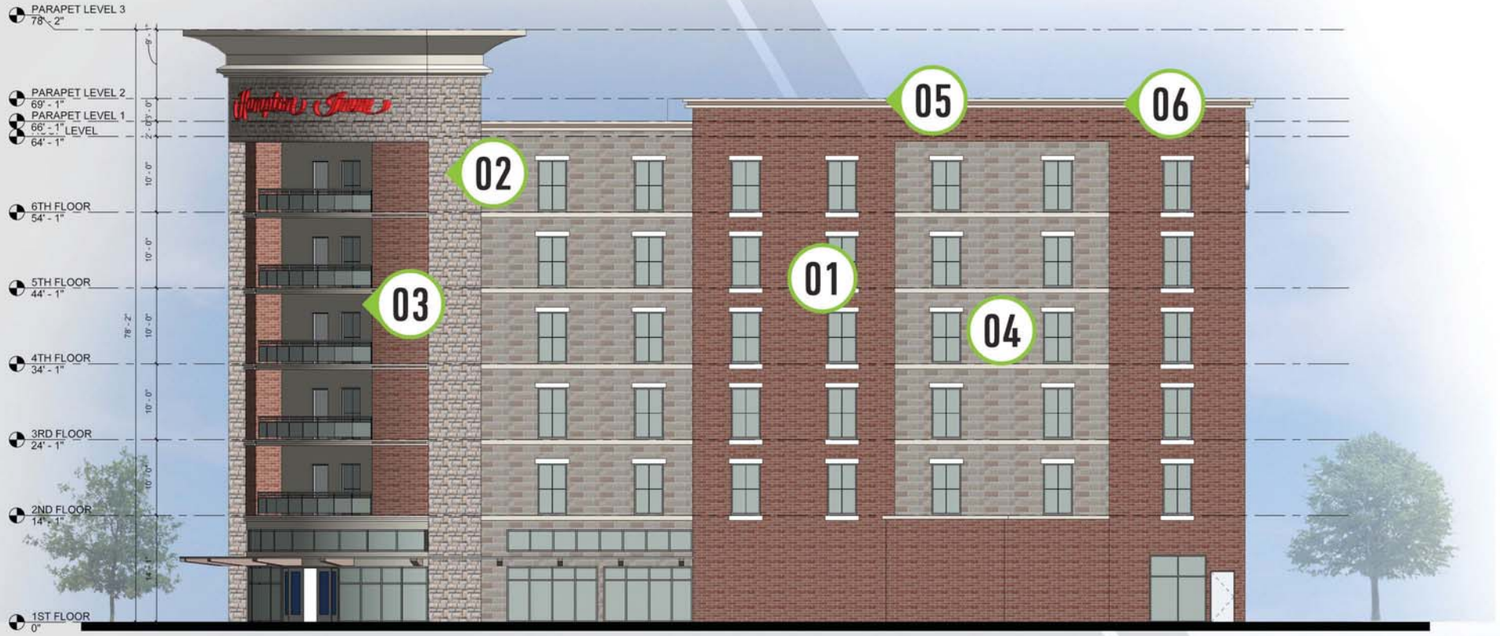
09

OF

East Elevation

NOT TO SCALE



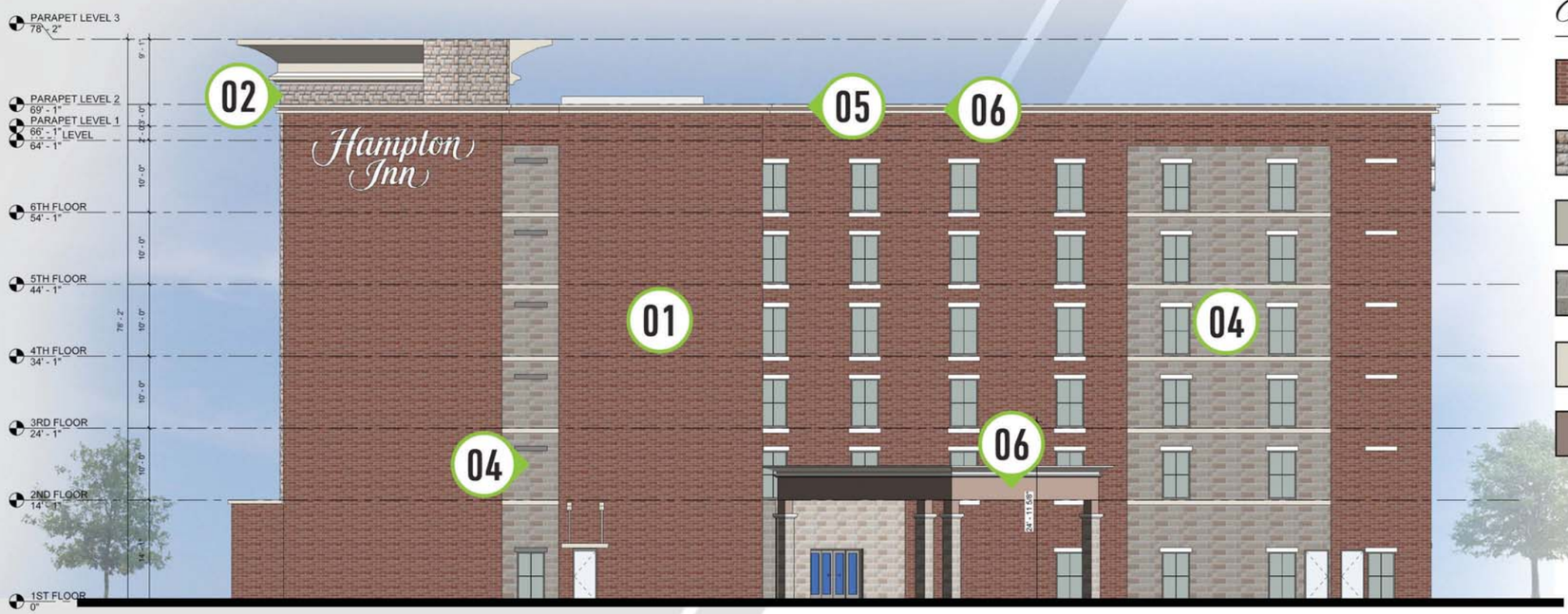
EAST FAÇADE MATERIALS	PERCEN
BORAL CULTURED STONE	7%
INTERSTATE BRICK COLOR:- MIDNIGHT BLACK	44%
INTERSTATE BRICK COLOR:- PLATINUM	31%
EIFS BONE BLACK	14%
EIFS BRUTON WHITE	2%
EIFS GOTHAM	2%
TOTAL	100

NORTH FAÇADE MATERIALS	PERCEN
BORAL CULTURED STONE	0%
INTERSTATE BRICK COLOR:- MIDNIGHT BLACK	79%
INTERSTATE BRICK COLOR:- PLATINUM	16%
EIFS BONE BLACK	0%
EIFS BRUTON WHITE	2%
EIFS GOTHAM	3%
TOTAL	100%

TOTAL BUILDING FAÇADE MATERIALS	PERCENTAGE
BORAL CULTURED STONE	3%
INTERSTATE BRICK COLOR:- MIDNIGHT BLACK	63%
INTERSTATE BRICK COLOR:- PLATINUM	23%
EIFS BONE BLACK	5%
EIFS BRUTON WHITE	2%
EIFS GOTHAM	3%
TOTAL	100%

North Elevation

NOT TO SCALE



Material Legend

01 INTERSTATE BRICK COLOR MOUNTAIN RED BRICK

02 BORAL CULTURED STONE COLOR: GOLDEN BUCKEYE

03 EIFS - BONE BLACK CW-715

04 INTERSTATE BRICK COLOR: PLATINUM

05 EIFS - BRUTON WHITE CW-710

06 EIFS - GOTHAM CSP-385

HAMPTON INN

CEDAR FALLS, IA

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Cedar Falls Building Heights

NOT TO SCALE

HAMPTON INN

CEDAR FALLS, IA

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RELOCATED LIGHT

PARKING KIOSK

PROPOSED SHIFTED DRIVE LOCATION

EXISTING MEMORIAL TREE

RELOCATED LIGHT

RELOCATE EX LIGHT POLE

PROPOSED SHIFTED DRIVE LOCATION

RELOCATE EX HYDRANT

REMOVE AND RELOCATE EX INTAKE

REMOVE AND REROUTE WATER MAIN AS NECESSARY

REMOVE INTAKE AND NECESSARY STORM SEWER

REMOVE EXISTING PAVEMENT FROM WEST 1ST STREET TO EX PAVEMENT JOINT

8" SANITARY SEWER

Loading Space

Item 5.B.

scale 1:20
drawn by JLK
date 01/26/2018

VJ Engineering
1501 Technology Parkway
Cedar Falls, Iowa - 319-266-5829

HAMPTON INN
DRIVE SHIFTED ALIGNMENT

16-8060

Item 5.B.

NOTES:
-PROPOSED ELEVATIONS REPRESENT TOP OF CURB GRADES.
-EXISTING ELEVATIONS REPRESENT TOP OF GROUND ELEVATIONS FROM TOPOGRAPHIC SURVEY.

CEDAR RIVER

EX. FLOOD WALL

PRO:863.32 EX:863.50
PRO:863.33 EX:863.30
PRO:863.47 EX:863.00
PRO: 863.65 EX:863.01
PRO:863.87 EX:863.95
PRO:863.96 EX:864.10
PRO: 864.38 EX:864.45
PRO: 863.75 EX:863.54
PRO:864.13 EX:864.25

EXISTING PROPERTY LINE

PRO:862.77 EX:862.50
PRO:862.22 EX:861.54
PRO:862.40 EX:861.95
PRO:863.08 EX:862.50
PRO:861.58 EX:860.94
PRO:861.95 EX:861.40
PRO:863.17 EX:862.62
PRO:861.35 EX:859.84
PRO:861.21 EX:860.61
REMOVABLE BOLLARDS
EX. FLOOD WALL
EX. RETAINING WALL
PRO:861.47 EX:859.83
PRO:861.63 EX:860.00
PRO:861.84 EX:860.98
PRO:861.80 EX:860.99
PRO:862.50 EX:862.58
EXISTING PROPERTY LINE
PARKING KIOSK
EX. RED SCHOOL HOUSE
EX. PCC ENTRANCE
EX. BIKE TRAIL
E. MAIN STREET
EX. BIKE TRAIL
WEST 1ST STREET
NORTH
V J
0 10 20 40

FEATURE LEGEND

- PROPERTY CORNER SET
- PROPERTY CORNER FOUND
- SECTION CORNER FOUND
- 100.00 DIMENSION OF SURVEY
- (100.00) DIMENSION OF RECORD
- G — EXISTING GAS
- ST — EXISTING STORM SEWER
- SAN — EXISTING SANITARY SEWER
- T — EXISTING TELEPHONE
- C — EXISTING CABLE
- E — EXISTING ELECTRIC
- W — EXISTING WATER
- OHU — EXISTING OVERHEAD UTIL.
- FO — EXISTING FIBER OPTIC
- //— EXISTING FENCE
- EXISTING LIGHT POLE
- EXISTING UTILITY POLE
- EXISTING ELECTRICAL BOX
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING GAS VALVE
- EXISTING TELEPHONE PED.
- EXISTING/PROPOSED TREE
- 000 — EXISTING CONTOURS
- 000 — PROPOSED CONTOURS
- 000.00 PROPOSED GRADES
- 000.00 EXISTING GRADES
- PROPOSED SILT FENCE

168060

VJ Engineering
1501 Technology Parkway
Cedar Falls, Iowa - 319-266-5829

-257-

HAMPTON INN
GRADING AROUND LEVEE
10 EAST MAIN STREET

DOWNTOWN CEDAR FALLS, IOWA

1 OF 1

scale
1:20
drawn by
JLK
approved by
DMA
date
01/26/2018
revisions

168060

Item 5.B. *nent Vacation*

Part of Lot 2 & Lot 4
Auditor's Mill Company Plat
Cedar Falls, Iowa

Reserved for County Recorder's Use

Index Legend
Description: Lot 2 & Lot 4, Auditor's Mill Company Plat
Surveyor: Matthew Kofta, PLS 22561
Company: VJ Engineering
1501 Technology Parkway, Suite 100
Cedar Falls, IA 50613
319-266-5829
Proprietor: Western Home Independent Living Services, Inc.
Vacation Requested by: Hawkeye Hotels

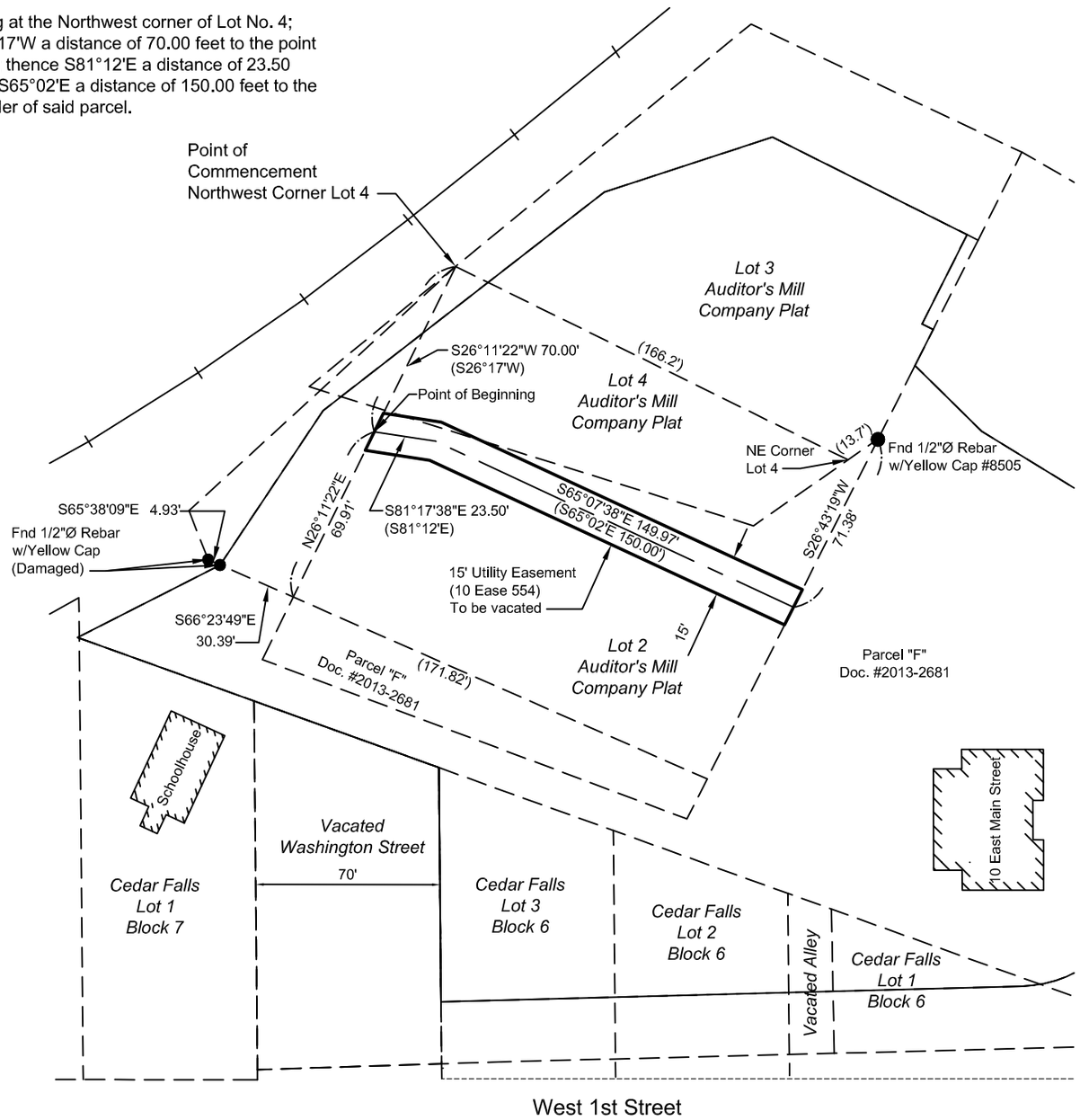
Easement Description (10 Ease 554):
That part of Lot 2 and Lot 4 in Auditor's Mill Company Plat in Cedar Falls, Iowa, described as follows:

A fifteen (15) foot wide easement of which the centerline is described as follows:

Commencing at the Northwest corner of Lot No. 4; thence S26°17'W a distance of 70.00 feet to the point of beginning; thence S81°12'E a distance of 23.50 feet; thence S65°02'E a distance of 150.00 feet to the easterly border of said parcel.

This Easement Vacation has been reviewed by the City of Cedar Falls, Iowa.

Signature of City of Cedar Falls Ordinance Administrator — Date



Feature Legend
- ○ Set 5/8"Ø x 24" Rebar w / Orange Cap L.S. #22561
- ● Property Corner Found
- △ Set Section Corner
- ▲ Section Corner Found
- 100.00' Dimension of Survey
- (100.00') Dimension of Record

0 30 60 120

NORTH

PROFESSIONAL LAND SURVEYOR
Matthew A. Kofta
22561
IOWA

I hereby certify that this land surveying document was prepared and the related survey work was performed by me or under my direct personal supervision and that I am a duly licensed Land Surveyor under the laws of the State of Iowa.

Matthew A. Kofta, P.L.S. — Date

License number 22561
My license renewal date is December 31, 2018
Pages or sheets covered by this seal:

168060

VJ Engineering
1501 Technology Parkway
Cedar Falls, Iowa - 319-2-258-9

15' Utility Easement Vacation
Lot 2 & Lot 4
Auditor's Mill Company Plat

scale 1"=60'
drawn by MAK
date 2/1/18

Community Main Street
DESIGN COMMITTEE MEETING MINUTES
September 15, 2017

IN ATTENDANCE: Dave Schachterle, Julie Shimek, Tom Nagle, Mary Taylor, Karen Smith, Audrey Dodd, Don Blau, Dawn Wilson, Andrew Bell, Kara Shugar-Davis, Julie Etheridge, Iris Lehmann, Sally Timmer, Dan Lynch, Shellie Murphy, Scott Kane, Larry Wessels, Carol Lilly, Meridith Main

1. Design Review
    a. First National Bank
        i. A new video board will be installed upon the existing base. There will be a rebuild o the upper cabinet to fit the logo. There will be angled toppers so that it will match the building. It will be around 15ft tall, similar to the height of Farmers State Bank's sign across the street.
        ii. It will have the brand standard colors, with their newly approved logo.
        iii. The new video sign was accepted.
    b. New Hotel- Hampton Inn
        i. This was a first initial design submittal- a very preliminary glance at their ideas.
        ii. There is a possible issue with a curbside drop off on First Street. Along with the main entrance/exit onto first street as well.
        iii. It is great that they have a door leading out onto Main Street.
        iv. They are short parking spaces for their ratio to rooms. They could possibly take off a floor to then have extra parking. It would also be less overbearing on the downtown. The Little Red Schoolhouse would lose their parking and drop off sites for kids.
        v. Is this plan functional with the possible river activities that may arise? It would be beneficial to their business for trail access and bike storage.
        vi. The west elevation is a visible one, it could use more detail with the corner accentuated possibly to lessen the stucco. Note the stucco considerations in the New Construction Guidelines.
        vii. Would the landscaping be consistent with the district and the master streetscape plans?
2. Fall Clean Up- One bag Challenge
    a. This was a suggestion from staff to committee. We would only have a budget for the bags.
    b. A lot of ideas were discussed on how to coordinate this.
    c. The committee decided on the week of October 15th. There will be more details to come when we talk to the city about pick up.
3. Banner Contest- need to get their meeting set.
4. Updates
    a. Historic District
        i. It is at the National level so we will hear mid-late winter.
        ii. We need to contact someone to find out about the brown signs.
        iii. We are still waiting to hear back from the Wild District Grant.
        iv. The Historic Preservation Commission has a new member.
    b. Design Guidelines
        i. The New Construction Guidelines are on their final proof. They will then go on the website and into your binders.
        ii. The committee now has Design binders, which will remain in the CMS office. It has checklists, design guidelines, and then the new construction guidelines as well for reference during the meetings.
5. One Sheet
    a. November 14-15 is Deck the Falls. We will prep at 9am and then start at 10am.
    b. Design meetings will be moved to Mill Race for a larger space.

From: Carol Lilly [mailto:cmsdirector@cfu.net]
Sent: Saturday, September 16, 2017 7:06 PM
To: Om Patel
Cc: Planning; David Sturch
Subject: Re: Downtown Cedar Falls Hotel Project

Mr. Patel,

Community Main Street has been working on improving the downtown business climate for over 30 years and our stakeholders are very excited at the prospect of another hotel in the district!

It was a pleasure visiting with you the other day. Thank you for providing a draft of the building plans. Our Design Committee took a look at them during their meeting on Friday and they look forward to viewing more as the plans unfold. Following is feedback based on their discussion. Many of the items have probably been discussed with city staff, but I wanted to include all questions/committee feedback in my report back to you.

- Is the drop off on 1st Street allowed (state highway)?
- Does the plan use the existing entrance off 1st Street? How does it aline with Washington Street?
- It appears to be close to meeting parking requirements, but not quite there.
- The change will affect access to the Little Red School House. Has the Historical Society been contacted so they are aware other arrangements may need to be made? In the past, shared parking has been provided to them.
- The plan doesn't appear to engage the Cedar River as much as we had hoped. We believe you would benefit greatly taking the water trails and proposed white water park into consideration.
- The trail system brings many users to the community, particularly biking enthusiasts. If the biking community is one of your target markets, you may want to consider an indoor bike storage option.
- The master streetscape plan adopted by CMS and the city should be reflected in the sidewalk and landscape plans. I'm sure the city will provide more detail.
- There is a lot of one material (3) used, particularlyon the west and the north elevations. More brick would be preferred. Also a more pronounced, decorative cornice would fit into the built environment better. Could the corners be accentuated with a different material?
- Signage isn't reflected in the plan.

All of the benefits our accredited main street program affiliation brings to Cedar Falls are available to you by your selection of the downtown location. I look forward to working with you and your management team for years to come.

Thank you for recognizing the opportunity our downtown Cedar Falls location offers your company. We appreciate your investment! Please don't hesitate to contact me with any questions you may have.

Kind regards,
Carol

Carol Lilly
Executive Director, Community Main Street
206 Main Street, Suite B
Cedar Falls, IA 50613
(O)319-277-0213
(C)319-429-0468

From: Gary Froyen <flashcube@cfu.net>
Subject: Hampton Inn
Date: January 3, 2018 at 8:40:44 PM CST
To: Rob Green <robgreeniowa@gmail.com>, Mark Miller <markm@cfu.net>

OK Fellas……I 'll tone down from my previous "rant" on the proposed Hampton Inn @ 1st and Main. Still….I have issues, but I also have a compromise idea too.

That is a PRIME area, right? It's also contiguous to Historical Main St. A development should be complimentary. I suggest this project be "scaled back". 3 story building set back to about where the Broom Factory was, and about 60 rooms. Some architect could come up a great design with materials; at least in appearance, that would compliment the Theatre.

P&Z will probably approve. Maybe some changes, but will be approved since all the ordinances will be met. Even if everything is "cool", is the Hampton Inn what we want on that property? What if the answer was NO? Is noone else going to have an interest in that spot? Something more "appealing"? I don't think so. Cedar Falls is a hot-bed. Developers want a piece. Don't think we have to jump at the first option that comes along.

Maybe this email should be shared with all council members and the mayor. Don't want this to be considered priveleged information. :-) Feel free to share.

Regards,

G. Froyen

POSSIBLE DESIGN CHANGES TO HELP THE PROPOSED CEDAR FALLS HOTEL TO FIT INTO THE OVERALL HISTORICAL BALANCE THAT IS PRESENT IN DOWNTOWN CEDAR FALLS.

ADDITIONS SUCH AS:

Decorative pediments and brickwork above doors or windows, the use of arches above window and the entrance areas, cornerstone embellishments, use of columns throughout, dental molding and an additional layer of fascia along rooflines. Also the exchange of angular lines rather than more futuristic curved lines. The building would also all be red brick to match downtown building with possible lighter colored brick for pediments, cornerstone embellishments, and dental molding.

SEE ATTACHED PAGES SHOWING A COMPARISON OF THE PROPOSED DESIGN TO "STILLS" FROM THE 1960s TV SHOW THE "JETSONS". ALSO PAGES SHOWING THE EXISTING BUILDINGS WE NOW HAVE IN DOWNTOWN CEDAR FALLS.

Steve Wikert, 110 W. 16th St. Cedar Falls, Iowa 50613 319-277-6390

DOWNTOWN CEDAR FALLS HOTEL DESIGN COMPARED TO JETSON CARTOONS FROM THE 1960's

CURRENT DOWNTOWN CEDAR FALLS BUILDING FACADES DESIGNED FROM THE 1880s TO THE TURN OF THE 20TH CENTURY

CEDAR FALLS RAILROAD DEPOT

DEPARTMENT OF COMMUNITY DEVELOPMENT

City of Cedar Falls
220 Clay Street
Cedar Falls, Iowa 50613
Phone: 319-273-8600
Fax: 319-273-8610
www.cedarfalls.com

MEMORANDUM

Planning & Community Services Division

TO: Planning & Zoning Commission

FROM: Shane Graham, Planner II

DATE: February 8, 2018

SUBJECT: Holiday Inn & Suites/Conference Center Site Plan Review

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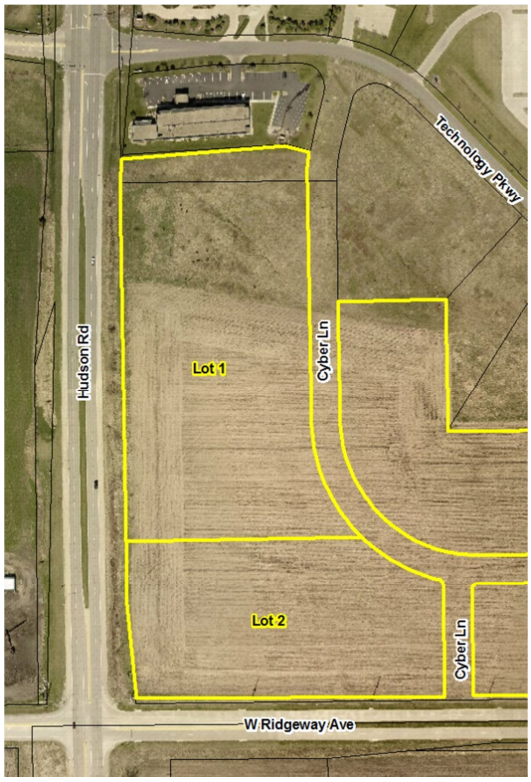
REQUEST: Site plan approval for a new 126-room hotel and 31,142 square foot conference center.

PETITIONER: CF Gateway Park, Inc. (owner); Shive-Hattery (engineer); Russell Construction. (contractor); Tushie Montgomery Architects (architect)

LOCATION: Lot 1 of Gateway Business Park at Cedar Falls

PROPOSAL

It is proposed to construct a new 4-story, 126-room Holiday Inn & Suites Hotel on an 8.98 acre parcel located within a new development located south of Technology Parkway and North of W Ridgeway Avenue (Lot 1 on the image to the right). Attached to the hotel will also be a new single-story, 31,142 square foot conference center. A future hotel is also shown on the site plan at the north end of the parcel, but it is not part of this site plan review request. The site will provide parking for their guests and employees, and includes a drive-up canopy along the south side of the building in front of the hotel and along the west side in front of the conference center.



BACKGROUND

The applicant recently purchased the 46-acre parcel in order to develop it into commercial and/or office uses. This report will focus on Lot 1 of this development only, along with the site development elements of this project.

ANALYSIS

The property is zoned HWY-1, Highway Commercial District, which is intended to promote general services commercial uses intended to serve a broader market area (i.e. City-wide or regional customer base). The property is also located within the Highway 20 Overlay Zoning District, which provides enhanced development guidelines for commercial uses located within this corridor. The ordinance requires detailed site plan review prior to approval in order to ensure that the development site satisfies a number of basic aesthetic standards. Attention to details such as parking, open green space, landscaping, signage, building design and other similar factors help to ensure orderly development in the entire area. Following is a review of the zoning ordinance requirements:

1) Use: A hotel and conference center can have a regional customer base, thus fitting within the permitted uses of the HWY-1 District Such a use is also allowed within the Highway 20 Overlay Zoning District. **Use is allowed.**

2) Setbacks: 20-ft. setbacks are required along the edge of the district and along any internal streets/principal access ways. These areas must be landscaped. Open space and landscaping is shown on the plan within these areas. Both the hotel and conference center meet the setback requirements. **Building setbacks are satisfied.**

3) Parking/Access: A hotel is required to provide 1 parking space for each guest room, plus 1 parking space for every 2 employees. A conference center is required to provide 1 parking space for every 200 square feet of floor area, plus 1 parking space for every 2 employees. Based on the number of rooms in the hotel (126), conference center area (34,310 SF), and employees (90), the site will be required to provide 343 parking spaces. The site plan provided shows 346 parking stalls, which exceeds the required amount by 3 parking spaces.

   Also, the site plan shows an additional 76 parking stalls at the north end of the parking lot. These spaces would be utilized for a new hotel at the north end of the site in the future. The north end of the parking lot will have curbing along it where it meets the future parking area. This will prohibit vehicles from driving past the parking area in the grass/open space area until the future parking spaces are constructed.

   Access to the property will be gained from four different locations. There are two right-in/right-out accesses shown from Hudson Road. These accesses will also include an approximate 100 foot turn lane in order to get traffic safely off of Hudson Road and into the site. Also, there are three accesses being proposed from Cyber Lane. Two of the accesses would be for general traffic to the site, while the third access would be mainly for deliveries and trash removal. Cyber Lane will be a new road that will be extended from Technology Parkway to the north and connect with W Ridgeway Avenue to the south. This will be a typical 31-foot wide street. **Overall, the submitted parking lot and access plan is satisfied.**

4) Open Green Space: This property is located within the Highway 20 Commercial Corridor Overlay Zoning District. This overlay district requires that open green space/landscape area be provided at the rate of 15% of the development site. Following is a summary from the landscape plan that details how this provision is met.

Development Site	391,025 SF	
Required Open/Green Space	58,653 SF	15%
Provided Open/Green Space	**63,754 SF**	**16.4%**

Landscaping is shown throughout the site, both around the building as well as within the parking lot and along the street frontages. **The open green space exceeds the minimum requirement and is well distributed.**

5) Landscaping: The Highway 20 Commercial Corridor Overlay Zoning District requires landscaping at the rate of 0.02 points per sq. ft. of total development site area. Following are the requirements for the convention center site and new hotel site and what is proposed.

Description	*Required*	*Proposed*
Development Lot 391,025 * .02	7,821 pts.	9,450 pts.
Parking lot trees *422/15 = 29 trees @ 80 pts.*	2,320 pts.	2,800 pts.
Street Tree Planting (.75 points per linear foot → 1,628' on Hudson Rd and Cyber Ln)	1,221 pts.	1,260 pts.
	11,362 pts	13,510 pts

As detailed in the table, trees are required in the vehicular use area at the rate of one tree per 15 parking spaces. With a total buildout of 422 parking spaces, 29 trees would be required. The landscape plan shows a total of 35 trees, which would meet the requirement.

In addition to parking lot trees, there are trees located along the street frontages, with shrubs and additional trees being located around each of the buildings. In total, there will be over 200 deciduous and evergreen trees planted on the site. **Landscaping requirements are met.**

6) Sidewalks/Recreational Accommodations: A new 10-foot wide recreational trail will be installed along Hudson Road. A connection from this trail to the property is shown near the south access off of Hudson Road. This trail will eventually lead south and connect to W Ridgeway Avenue, and then head east to connect to the existing trail located at Chancellor Drive. This trail will be installed by the developer as the property is developed. Also, a new 5' wide sidewalk will also be installed along Cyber Lane, and would have a connection point to the hotel site near the south entrance. **Trail/sidewalk plan satisfied.**

7) Building Design: The HWY-1, Highway Commercial District states that all structures established within the district shall be reviewed for architectural compatibility with surrounding structures. Below is a review on the elements that are to be addressed.

> *Proportion: The relationship between the width and height of the front elevations of adjacent buildings shall be considered in the construction or alteration of a building; the relationship of width to height of windows and doors of adjacent buildings shall be considered in the construction or alteration of a building.*

The scale and proportion of the new hotel will be similar to the existing hotel located adjacent to the north. That hotel is 3 stories in height, while this hotel will be 4 stories in height. The conference center portion of the building will be one story in height. There is not a lot of development located adjacent to this property, however most of the office buildings located within the technology park nearby range from 1-3 stories in height.

Roof shape, pitch, and direction: The similarity or compatibility of the shape, pitch, and direction of roofs in the immediate area shall be considered in the construction or alteration of a building.

The design of the hotel/conference center includes a flat roof with a parapet wall. The hotel to the north, as well as a number of industrial and office uses nearby, utilize flat roofs as well.

Pattern: Alternating solids and openings (wall to windows and doors) in the front facade and sides and rear of a building create a rhythm observable to viewers. This pattern of solids and openings shall be considered in the construction or alteration of a building.

The building was created with a contemporary design approach to meet the standards of the hotel company while also adapting to local conditions resulting in a more custom design for the building. Exterior materials were designed with a strong masonry base, such as the brick and stone, with a consistent pattern to the middle of the building and a defined top with an enhanced cornice.

Materials and texture: The similarity or compatibility of existing materials and textures on the exterior walls and roofs of buildings in the immediate area shall be considered in the construction or alteration of a building. A building or alteration shall be considered compatible if the materials and texture used are appropriate in the context of other buildings in the immediate area.

Stone, brick, stucco, and glass are the exterior materials that will be found on the hotel building. The conference center portion of the building will utilize stone and brick. Similar materials are found on nearby structures, as the hotel to the north utilizes brick on its first floor and EIFS on its 2nd and 3rd floors. Many of the other buildings within the area also utilize a combination of brick, glass and EIFS materials. In total, the building will be made up of 57.2% stucco, 28.5 % brick, 7.5% stone, and 6.8% metal paneling (found with the glass on the front and rear portion of building where the signage will be located).

There is an area on each side of the main glass section of the building that is shown with stucco materials (see image to the right). Staff questioned if those materials could be changed to either brick or stone like on the lower portions of the building, as that could help to break up the stucco look across the façade, and add a nice element to the main visual part of the building. The developer has not made any changes as suggested by staff, noting that *"the exterior materials and building design approach was developed with a strong masonry base, repetitive and consistent pattern to the middle of the building and defined top with enhanced cornice. Adding masonry to the middle of the building would be inconsistent with this design approach."* Staff would like to receive input from the Planning & Zoning Commission on whether a change to the aesthetics of the building is needed.

Color: The similarity or compatibility of existing colors of exterior walls and roofs of buildings in the area shall be considered in the construction or alteration of a building.

Many of the existing buildings in this area utilize a neutral color exterior, which include brown, tan, and cream. Some buildings also utilize red or gray tones as well. The hotel/conference center building will include two shades of white in the stucco material, with reddish-brown brick materials and gray stone materials. These colors appear to be compatible with what is generally found in the area.

Architectural features: Architectural features, including but not limited to, cornices, entablatures, doors, windows, shutters, and fanlights, prevailing in the immediate area, shall be considered in the construction or alteration of a building. It is not intended that the details of existing buildings be duplicated precisely, but those features should be regarded as suggestive of the extent, nature, and scale of details that would be appropriate on new buildings or alterations.

Architectural features of the hotel/conference center include large ground to ceiling windows along the front and rear of the hotel. The hotel building has a prominent raised center element to create a visual centerpiece to the building. Windows are found in every hotel room, however additional windows are found near the entrance to

give it a more appealing look and to allow more natural light into the main lobby area of the hotel.

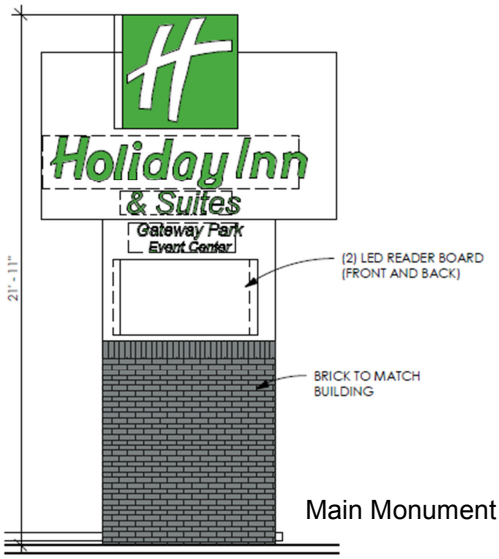
Overall, the design of the proposed hotel/conference center is architecturally compatible with other buildings in the surrounding area.

8) Trash Dumpster Site: The trash dumpsters will be entirely located within the building, where an overhead door can be opened to allow for emptying the contents. This door to the trash dumpster will be located on the east end of the building, near the middle access from Cyber Lane. **Dumpster enclosure plan is acceptable.**

9) Lighting Plan: The HWY-1 District regulations do not have specific lighting design guidelines. The site plan shows the location of light poles throughout the site. The parking lot lights will be mounted atop a 20' tall light pole and will include both single head and dual head fixtures. These fixtures will be housed in a die-cast aluminum housing with LED lights. Also, wall pack lights will be located on the walls of the building in various locations, and recessed downlights will be located within the drive-up canopies. **Lighting plan is acceptable.**

LED Parking Lot Fixture

10) Signage: Several monument signs are illustrated on the site plan near each of the 4 main entrances to the property. The main sign, located at the southwest corner of the property along Hudson Road, will be 21 feet in height and 51 square feet in area. The sign will sit on a brick base that matches the color of the brick on the building. Below the sign lettering will be an LED reader board for messaging.



Main Monument Sign

Two smaller 7'6" tall, 32 square foot signs will be located at the two north entrances onto the property, along Hudson Road and Cyber Lane. These signs will also have a brick base, but will not have an LED reader board. The last monument sign will be located at the southeast corner of the property along Cyber Lane, and will be 7 feet in height with a size of 15 square feet. This sign will also have a brick base, and no LED reader board.

It should be noted that per the Highway 20 Commercial Corridor Overlay Zoning District. The signage requirements in this district state that one freestanding sign may be allowed that does not exceed 25 feet in height and 200 square feet in area. The main monument sign would meet those requirements. However, the ordinance goes on to state that smaller monument signs, measuring no more than 15 feet in height and 150 square feet in area, are permitted, with a maximum of two such signs per parcel. It would appear that this parcel has 3 such signs. One option would be to modify one of the smaller signs to meet the definition of a directional sign, which has a maximum height of 6 feet, and a maximum square footage of 8 square feet.

The proposed wall signs appear to be well within the District limitations of no larger than 20% of the wall area to which the wall sign is attached. However, this will be reviewed in detail at the time a sign permit is requested. **Signage plan needs to be revised to meet the Highway 20 Overlay District sign regulations.**

11) Storm Water Management: A storm water detention basin will be located at the north end of the property to collect the storm water runoff from the site. The water runoff from the building and parking areas will be collected via intakes within the parking area and transferred via piping to the detention basin. **Stormwater Management Plan has been reviewed and approved by the Engineering Department.**

TECHNICAL COMMENTS

Technical review on January 17, 2018 noted only a couple of items all of which have been addressed.

Water, electric, gas, and communications utility services are available to the site in accordance with the service policies of Cedar Falls Utilities. The property owner/contractor is responsible to extend all utility services to the building. These utility extensions will be reviewed by CFU personnel as part of the building plan review.

STAFF RECOMMENDATION

The introduction of this site plan is for discussion and public comment purposes only. The Community Development Department has reviewed the plan and provides the following comments:

1) Review signage plan for conformance with the Highway 20 Commercial Corridor Overlay Zoning District.
2) Review building design elements to include additional brick or stone.
3) Any comments or direction specified by the Planning & Zoning Commission.

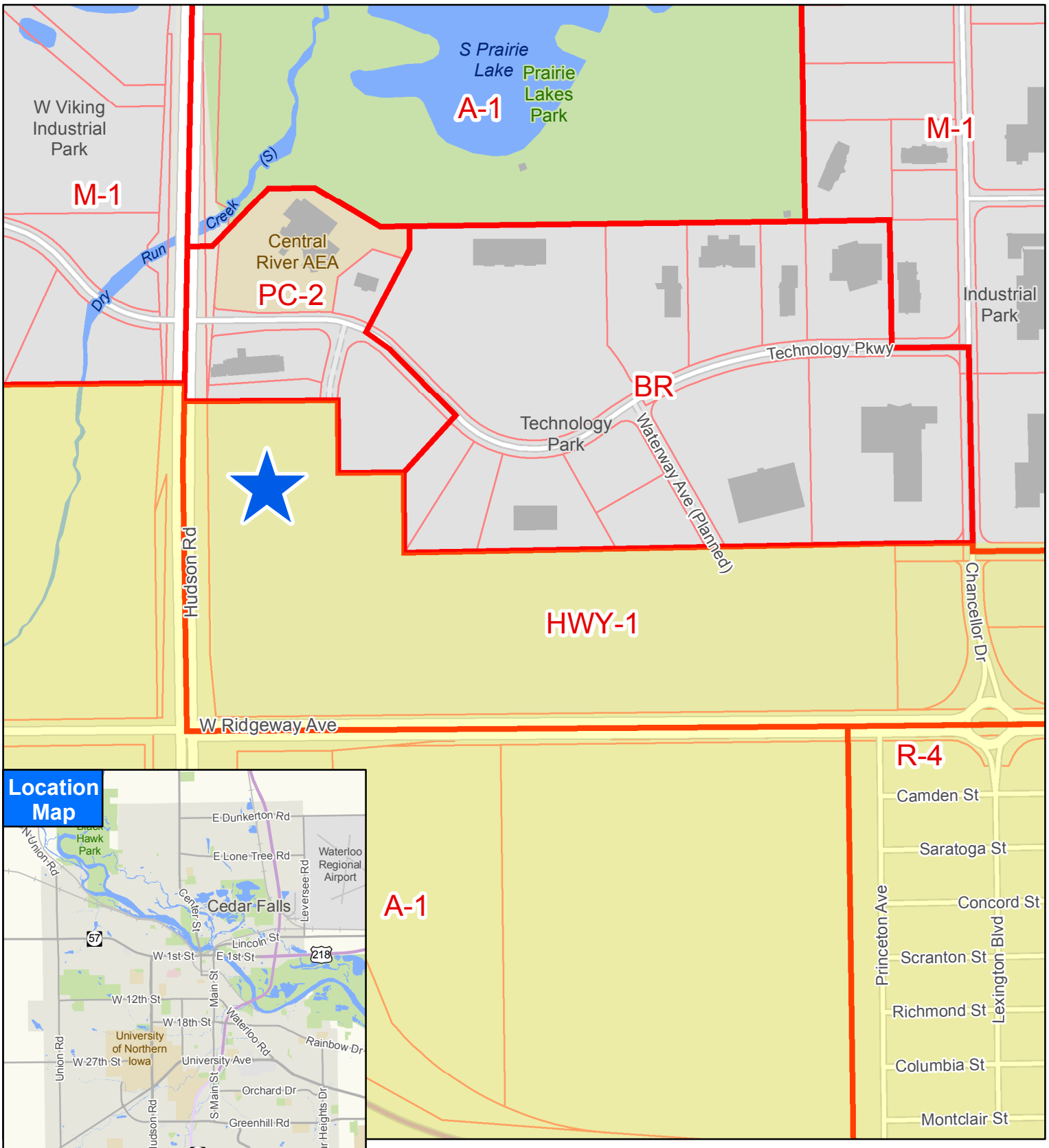
Subject to the above comments being addressed, staff anticipates that this will be referred to the Planning and Zoning Commission for a vote on February 28, 2018.

PLANNING & ZONING COMMISSION

Discussion
2/14/2018
Vote
2/28/2018

Cedar Falls Planning & Zoning Commission
February 14, 2018

Item 5.C.



CEDAR FALLS Iowa

Holiday Inn & Suites/Convention Center
Hwy-1 Site Plan Review

HOLIDAY INN & SUITES CONFERENCE CENTER

XXX HUDSON ROAD
CEDARFALLS, IOWA 50613

Project Description

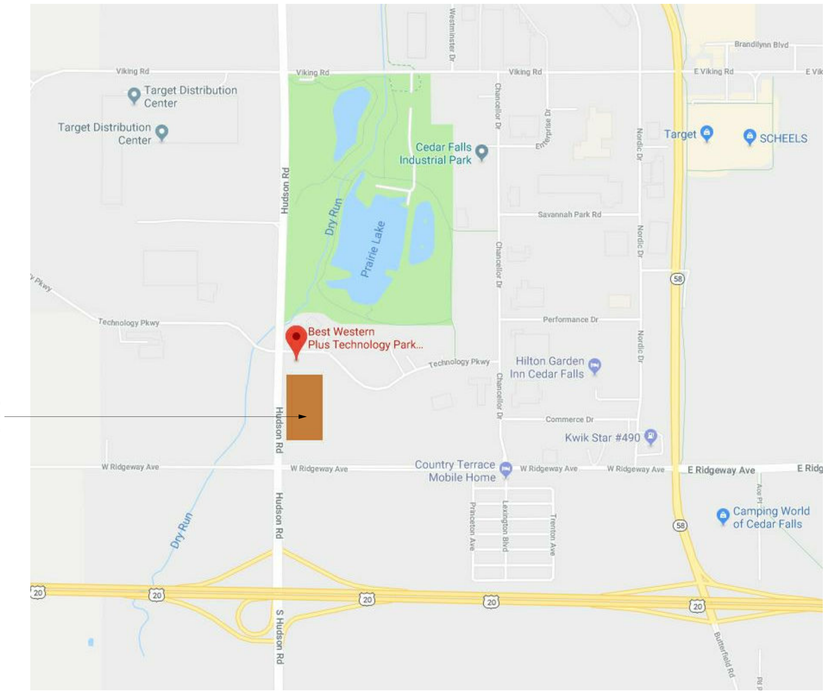
The proposed Holiday Inn and Suites Hotel and Conference Center is the first phase of the newly platted Gateway Business Park at Cedar Falls. The Business park is located on the south side of Cedar Falls, adjacent to the existing industrial park at the corner of Hudson Road and Ridgeway Avenue East.

The 6.6 Acre site is located off of the Hudson Road. It will accommodate the proposed Holiday Inn and Suites, the Conference Center and a future hotel on the north end of the site. The site expands the cities bike/walking trails along Hudson Road and Cyber Lane. Cyber Lane is proposed to extend to Ridgeway Avenue West. The site is heavily landscaped. Numerous outdoor patios surround the event center to extend the centers event space to the exterior. The storm retention ponds on the north and south sides of the site will be formed and landscaped to provide a natural setting creating a stunning water feature on the grounds. The design of this site will be the tone for the rest of the sites within the future business park.

The Hotel is a four story wood structure clad in brick, stone, stucco and glass. The hotel has 126 guestrooms; single king, double queen, and suites with separate living and sleeping areas with kitchenettes. Amenities in the hotel include a full service restaurant and bar, conference rooms, swimming pool, exercise room, lounges, business center and guest laundry facilities. The hotel totals 86,700 sq.ft.

The Conference center is a one story steel and masonry structure clads in brick, stone, and glass.
The center can be divided into many configurations and hold up to 1,200 people. This conference center will be a great amenity not only to the community but also the greater Cedar Falls/ Waterloo region.

PROJECT SITE



-277-

SITE LOCATION

GENERAL NOTES

ALL NECESSARY AND/OR REQUIRED TESTS, INSPECTIONS SHOP DRAWING REVIEWS AND DRAWING INTERPRETATIONS, REQUIRED BY THE GENERAL CONDITIONS, SHALL BE EXECUTED BY A REGISTERED ARCHITECT AND/OR BY A REGISTERED ENGINEER; IF NOT, THE ARCHITECT OF RECORD AND/OR THE ENGINEER OF RECORD SHALL BE HELD HARMLESS FOR THAT PORTION OF THE WORK IMPROPERLY EXECUTED. THE INSPECTION ARCHITECT AND/OR ENGINEER SHALL BECOME RESPONSIBLE FOR THOSE INSPECTIONS, DECISIONS AND/OR DOCUMENT INTERPRETATIONS MADE AS THEY RELATE TO THE CONTRACT DOCUMENTS AND THEIR INTENT.

- DIMENSIONS GIVEN FOR MASONRY ON ARCHITECTURAL DRAWINGS, ARE NOMINAL UNLESS OTHERWISE NOTED.
- SCALED MEASUREMENTS OF DRAWINGS SHALL NOT BE ALLOWED.
- DIMENSION FOR STUD WALLS ARE TO FACE OF STUD AND DIMENSIONS FOR MASONRY WALLS ARE TO FACE OF BLOCK UNLESS STATED OTHERWISE.
- ALL CONSTRUCTION SHALL MEET ALL APPLICABLE CODES AND MOST STRINGENT SHALL APPLY.

PROJECT TEAM

OWNER:
SHRI SIDHIPRIYA, INC.
2000 1ST ST WEST (319) 493-0686
INDEPENDENCE, IOWA 50644
ATUL PATEL INFO@OPENDOORHOSPITALITY.COM

CONTRACTOR:
RUSSELL
4600 E. 53RD ST. (563) 459-4600
DAVEPORT, IOWA 52807
ALISHA SCHMITZ ASCHMITZ@RUSSELLCO.COM

ARCHITECT:
TUSHIE MONTGOMERY ARCHITECTS
7645 LYNDALE AVENUE SOUTH, #100 (612) 861-9636
MINNEAPOLIS, MINNESOTA 55423
DANIEL PELLINEN DANP@TMIARCHTECTS.COM

STRUCTURAL ENGINEER:
NEEDHAM-DBS
15950 COLLEGE BLVD (913) 385-5300
LENEXA, KANSAS
JEFFREY NEEDHAM JRN@NEEDHAM-DBS.COM
(913) 689-1513
TIM BENGFORT TBENGFORT@NEEDHAM-DBS.COM
(XXX) XXX-XXXX

CIVIL ENGINEER:
SHIVE + HATTERY
316 2ND STREET SE, #500 P.O. BOX 1803, (319) 364-0227
CEDAR RAPIDS, IA 52491
ISAAC J. HODGINS IHODGINS@SHIVE-HATTERY.COM
(319) 213-1005

MECH. DESIGN / BUILD CONTRACTOR:
COMPANY NAME
STREET ADDRESS GENERAL PHONE / FAX
CONTACT email@address
DIRECT PHONE

ELEC. DESIGN / BUILD CONTRACTOR:
BERD ELECTRIC
3308 SOUTHWAY DRIVE (320) 656-0847
ST. CLOUD, MN 56301
KEN EGGERT KEN@BERDELECTRIC.COM
(320) 248-8705

SPRINKLER DESIGN / BUILD CONTRACTOR:
SECURITY FIRE SPRINKLER
3308 SOUTHWAY DRIVE (320) 656-0847
ST. CLOUD, MN 56301
MIKE LOREN MIKE@SFSPRINKLER.COM
(678) 409-4955

KITCHEN CONSULTANT:
BOELTER
206 COLLEGE AVE (770) 535-3700
GAINSVILLE, GA 30501 RSTAGGS@BOELTER.COM
RUSTY STAGGS (678) 409-4955

PROJECT INFO.

BUILDING AREA SUMMARY

HOTEL LOT AREA	381,573 SF (8.8 ACRES)

BUILDING GROSS SF

EVENT CENTER	34568 SF
HOTEL 1ST FLOOR	29040 SF
HOTEL 2ND FLOOR	19791 SF
HOTEL 3RD FLOOR	19791 SF
HOTEL 4TH FLOOR	19791 SF
Grand total	122982 SF

GUESTROOM SUMMARY

UNIT TYPES	1ST FLOOR	2ND FLOOR	3RD FLOOR	4TH FLOOR	TOTAL
ADA DBL Q SUITE	N/A	1	1	1	3
ADA KING	N/A	1	1	1	3
DOUBLE QUEEN	7	25	25	25	82
KING	N/A	7	7	7	21
DBL QUEEN SUITE	N/A	5	5	5	15
KING BRIDAL SUITE	1	N/A	N/A	N/A	1
ADA KING B. SUITE	1	N/A	N/A	N/A	1
TOTAL	9	39	39	39	126

UNIT MIX BY UNIT TYPE

ADA DBL QUEEN	3	2.4%
ADA KING	3	2.4%
DOUBLE QUEEN	82	65%
KING	21	16.7%
DBL QUEEN S	15	12%
KING BRIDAL S	1	0.75%
ADA KING BRIDAL S	1	0.75%
TOTALS	126	100%

PARKING COUNT SUMMARY

TOTAL SURFACE PARKING SPACES 420 PARKING SPACES

EMPLOYEE SUMMARY

HOTEL FULL-TIME	40
HOTEL PART-TIME	30
CONFERENCE CENTER FULL-TIME	6
CONFERENCE CENTER PART-TIME	60

DRAWING INDEX

TUSHIE MONTGOMERY ARCHITECTS
7645 LYNDALE AVENUE SOUTH, #100
MINNEAPOLIS, MINNESOTA 55423-4084
612.861.9636 FAX612.861.9632
WWW.TMIARCHITECTS.COM

HOLIDAY INN & SUITES CONFERENCE CENTER
CEDAR FALLS, IOWA 50613

PREPARED FOR:
open door HOSPITALITY
RUSSELL

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA.
PRINT NAME: Gary Fischer

SIGNATURE:

DATE: 01/08/2018 **LICENSE #: 3955**

SITE PLAN APPLICATION 02/02/2018

N INSTRUCTION

InterContinental
Location : 193
Inn Code : ALC
Project : 326

217

COVE

CS

Item 5.C.

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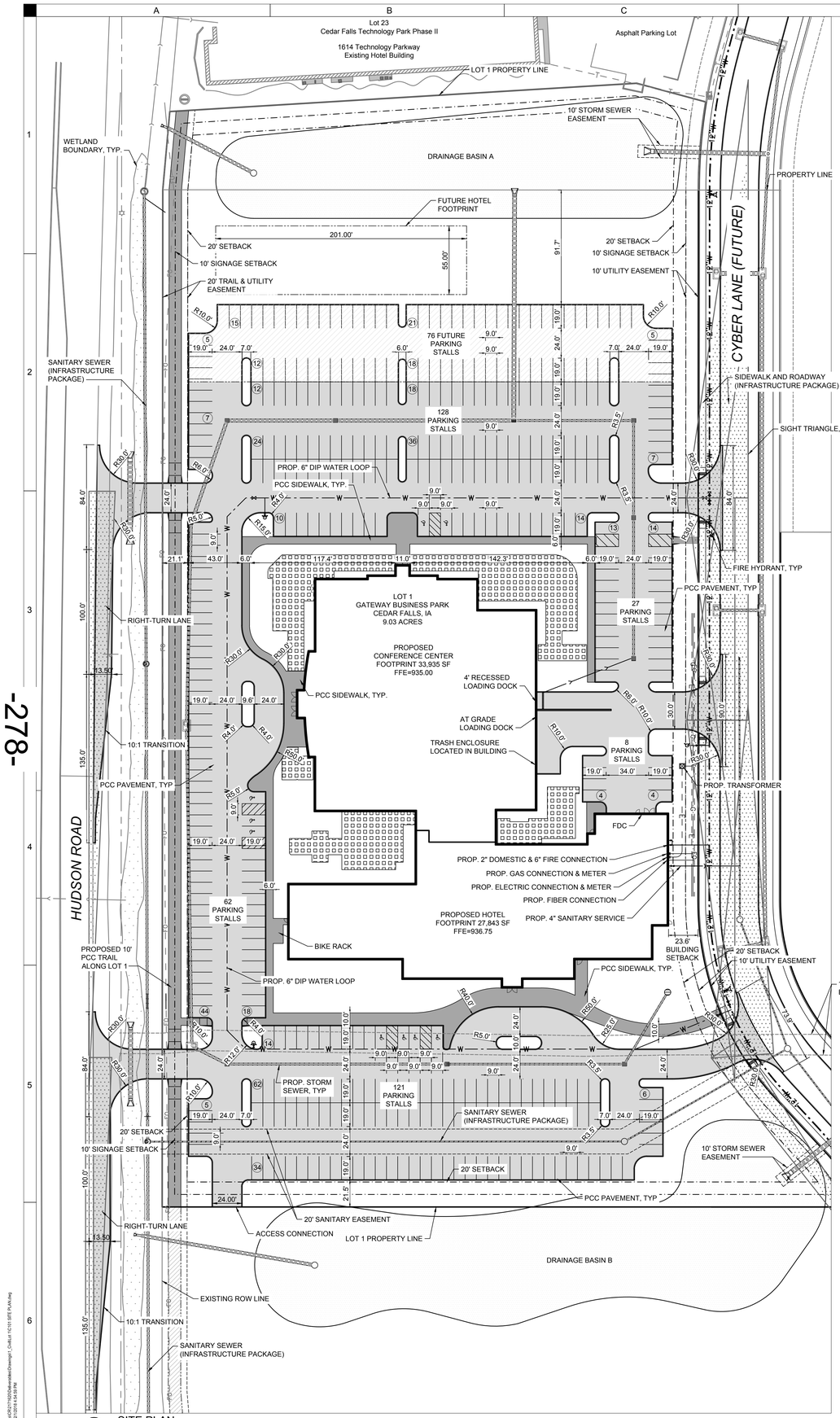


1 SITE PLAN
1" = 40'

0 20 40 80
SCALE IN FEET

MATERIALS LEGEND

- PATIO AREA
- PCC PAVEMENT
- PCC SIDEWALK
- FUTURE IMPROVEMENTS
- BUILDING FOOTPRINT

OWNER OF RECORD
CEDAR FALLS GATEWAY PARK, INC.

APPLICANT INFORMATION
CEDAR FALLS GATEWAY PARK, INC.
307 WINDING RIDGE RD.
CEDAR FALLS, IOWA 50613
CONTACT: ATUL PATEL
PHONE: (319) 493-0686
EMAIL: atuldesi@yahoo.com

CONTRACTOR INFORMATION
RUSSELL CONSTRUCTION
4600 E 53RD STREET
DAVENPORT, IA 52807
CONTACT: ALISHA SCHMITZ
PHONE: (563) 459-4530
EMAIL: aschmitz@russellco.com

ZONING INFORMATION
CURRENT ZONING: HWY-1 (HIGHWAY COMMERCIAL)
PROPOSED ZONING: HWY-1 (HIGHWAY COMMERCIAL)
BUILDING SETBACKS:
FRONT YARD: 20 FEET
INTERIOR SIDE YARD: 20 FEET
REAR YARD: 20 FEET

PARKING INFORMATION

		REQUIREMENTS:	
HOTEL UNITS	126	1 STALL/UNIT	126 STALLS
CONFERENCE CENTER AREA	34,310	1 STALL/200 SF	172 STALLS
EMPLOYEES	90	1 STALL/2 EMPLOYEES	45 STALLS

	PROVIDED:	REQUIRED:
STANDARD:	337 STALLS	343 STALLS
HANDICAP ACCESSIBLE:	9 STALLS	9 STALLS
TOTAL:	346 STALLS	343 STALLS
FUTURE PARKING:	76 STALLS	

FLOODPLAIN INFORMATION
NO FLOODPLAIN PRESENT PER FIRM PANEL #19013C0277F

BUILDING INFORMATION
AREA: 119,748 GSF
AREA: 63,421 SF FOOTPRINT
HEIGHT: 45' - 11 3/8"

EXISTING EASEMENTS
EXISTNG 16.5' TELEPHONE EASEMENT (TO BE VACATED).

PROPOSED EASEMENTS
A 20' TRAIL & UTILITY EASEMENT IS TO BE PROVIDED ALONG THE WEST PROPERTY LINE OF LOT 1

A 20' SANITARY EASEMENT IS TO BE PROVIDED IN THE SOUTH PARKING LOT OF LOT 1 AS SHOWN ON PLANS

A 10' UTILITY EASEMENT IS TO BE PROVIDED ALONG THE EAST PROPERTY LINE OF LOT 1

A 10' STORM SEWER EASEMENT IS TO BE PROVIDED ON THE INLET PIPE TO BASIN A

A 10' STORM SEWER EASEMENT IS TO BE PROVIDED ON THE INLET PIPE TO BASIN B

STORMWATER MANAGEMENT
STORMWATER MANAGEMENT TO BE PROVIDED BY REGIONAL DETENTION PONDS

PROPERTY USE
PREVIOUS: AGRICULTURAL
PROPOSED: COMMERCIAL

PHASE
DEVELOPMENT OF LOT 1 OF GATEWAY BUSINESS PARK AT CEDAR FALLS TO BE CORRDINATED WITH INFRASTRUCTURE CONSTRUCTION.

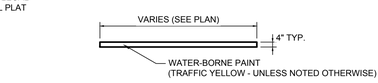
LIGHTING
LIGHTING DESIGN PERFORMED BY BERD ELECTRIC, SEE E SERIES.

SIGHT TRIANGLES
CYBER LANE (30 MPH DESIGN SPEED):
RIGHT: 290' & 27.5'
LEFT: 335' & 42.5'
HUDSON ROAD (50 MPH DESIGN SPEED):
RIGHT: 480' & 27.5'

SITE
TOTAL SITE AREA: 9.03 ACRES
IMPERVIOUS AREA: 5.60 ACRES (62%)
PERVIOUS AREA: 3.43 ACRES (38%)

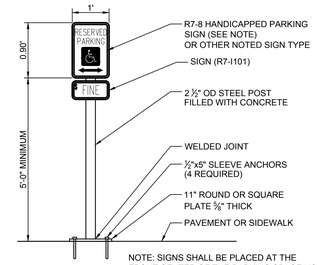
GENERAL NOTES
1. PROPOSED LOT ADDRESSES, EASEMENTS AND LEGAL DESCRIPTIONS SHALL BE FINALIZED WITH FINAL PLAT
2. DIMENSIONS ARE TO BACK-OF-CURB

CONTACT PERSON
NICK HATZ, P.E.
SHIVE-HATTERY INC.
P.O. BOX 1803, 52406-1803
316 SECOND ST. SE SUITE 500
CEDAR RAPIDS, IA 52401
PH (319) 364-0227
FAX (319) 364-4251
NHATZ@SHIVE-HATTERY.COM



NOTE: ALL STRIPING SHALL CONFORM TO THE LATEST EDTION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND LOCAL STANDARDS.

2 STANDARD STALL PAINT STRIPING
NOT TO SCALE



NOTE: SIGNS SHALL BE PLACED AT THE FRONT CENTER OF THE PARKING SPACE NO MORE THAN 12" FROM THE FRONT OF THE PARKING SPACE.

3 HANDICAPPED PARKING SIGN
NOT TO SCALE

4 HANDICAP PARKING SPACE STRIPING
NOT TO SCALE

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ARCHITECTURE + ENGINEERING
HOLIDAY INN & SUITES - CONFERENCE CENTER
RUSSELL CONSTRUCTION
CEDAR FALLS, IOWA
PRELIMINARY - NOT FOR CONSTRUCTION
DRAWN: EAV
APPROVED: CNH
ISSUED FOR: SITE PLAN
DATE: 02/02/2018
PROJECT NO: 2171620
FIELD BOOK: --
CLIENT NO: --
SITE PLAN
C101

EXISTING HOTEL BUILDING
FFE=930.5 ±

MAINTAIN EXISTING
DRAINAGE SWALE

DRAINAGE BASIN A
SEE DETAIL 2/C201

HIGH POINT
934.65

LOW POINT
930.73

100 YEAR FLOW PATH

LOW POINT
931.38

HIGH POINT
932.96

CYBER LANE (FUTURE)

FFE 935.00

FFE 936.75

PROPOSED HOTEL &
CONFERENCE CENTER
FOOTPRINT 63,421 SF

SWALE DRAINAGE SWALE

BEGIN PIPE SIZED FOR
100-YEAR STORM EVENT
TO BASIN

LOW POINT
936.00

LOW POINT
934.53

LOW POINT
935.53

LOW POINT
935.53

HIGH POINT
938.91

GRADE BREAK, TYP

HIGH POINT
939.26

DRAINAGE BASIN B
SEE DETAIL 3/C201

HUDSON ROAD

0 20 40 80
SCALE IN FEET

GRADE BREAKS

100-YEAR
OVERFLOW ROUTES

1 GRADING PLAN
1" = 40'

GRADING NOTES

1. FINISHED GRADE CONTOURS ARE SHOWN AT 1' AND 5' INTERVALS. EXISTING GRADE CONTOURS ARE SHOWN AT 2' AND 10' INTERVALS.
2. FINISHED GRADE IS TO TOP OF PAVEMENT AND TOP OF TOPSOIL
3. EXISTING GRADE IS THE SURFACE OF THE SITE PRIOR TO PAD PREPARATION CONSTRUCTION ACTIVITIES.
4. 4" OF TOPSOIL IS REQUIRED FOR AREAS RECEIVING SEED OR SOD. 6" OF TOP SOIL IS REQUIRED FOR ANY PLANTING BEDS. 12" MINIMUM OF TOP SOIL, WITH 18" PREFERRED IS REQUIRED FOR PLANTER BEDS WITH TREES. TOP SOIL REQUIREMENTS PER LANDSCAPE ARCHITECTURE DESIGN AND SPECIFICATIONS SHALL SUPERSEDE GRADING PLAN NOTES SUPPLIED FOR BIDDING CONVENIENCE.

0 15 30 60
SCALE IN FEET

IE = 922.50

SEE DETAIL 4 BELOW

DETENTION BASIN A

FES 36" RCP FES
RIM = 927.79
IE = 925.00 P-D7

FES-A1 30" HDPE FES
RIM = 927.72
IE = 925.00 P-A1

HIGH POINT

2 DETENTION BASIN A DETAIL
NOT TO SCALE

0 15 30 60
SCALE IN FEET

HIGH POINT
939.26

RETENTION BASIN B

FES-C10 36" RCP FES
RIM = 934.83
IE = 933.00 P-C10

P-O2 139LF 24" RCP @ 0.50%

FES-O2 24" RCP FES
RIM = 934.17
IE = 932.50 P-O2

SEE DETAIL 5 BELOW

3 DETENTION BASIN B DETAIL
NOT TO SCALE

TOP OF RISER
ELEVATION=931.5

INSTALL TRASH RACK

CENTERLINE OF RISER
LOCATION STATION

TOP ELEVATION OF
BERM=933.00

6' WIDE BERM

SEE PLANS

36"Ø RCP RISER PIPE

(2) 3"Ø HOLE AT ELEV= 926.5 WITH
AGRI DRAIN BAR GUARD OR
APPROVED EQUAL

(2) 3"Ø HOLE AT ELEV= 923.0 WITH
AGRI DRAIN BAR GUARD OR
APPROVED EQUAL

BOTTOM ELEVATION OF
BASIN AT OUTLET= 923.0

15' EMERGENCY OVERFLOW
ELEVATION=932.00
(SEE PLANS FOR LOCATION)

24"Ø RCP OUTLET PIPE

INVERT ELVATION OF 24"Ø RCP
AT OUTLET STRUCTURE=923.0

SEE PLANS FOR END
OF OUTLET PIPE

P.C. CONCRETE PAD

NOTES:
1. RISER TO BE SECURELY FASTENED TO CONCRETE PAD.

4 DETENTION BASIN A OUTLET STRUCTURE DETAIL
NOT TO SCALE

TOP OF RISER
ELEVATION=938.75

INSTALL TRASH RACK

CENTERLINE OF RISER
LOCATION STATION

TOP ELEVATION OF
BERM=940.0

6' WIDE BERM

SEE PLANS

36"Ø RCP RISER PIPE

(2) 4"Ø HOLE AT ELEV= 936.5
WITH AGRI DRAIN BAR GUARD
OR APPROVED EQUAL

(3) 4"Ø HOLE AT ELEV= 933.0
WITH AGRI DRAIN BAR GUARD
OR APPROVED EQUAL

BOTTOM ELEVATION OF
BASIN AT OUTLET=933.0

15' EMERGENCY OVERFLOW
ELEVATION=939.0
(SEE PLANS FOR LOCATION)

24"Ø RCP OUTLET PIPE

INVERT ELVATION OF 24"Ø RCP
AT OUTLET STRUCTURE=933.0

SEE PLANS FOR END
OF OUTLET PIPE

P.C. CONCRETE PAD

NOTES:
1. RISER TO BE SECURELY FASTENED TO CONCRETE PAD.

5 DETENTION BASIN B OUTLET STRUCTURE DETAIL
NOT TO SCALE

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
316 Second Street SE Suite 500 | Cedar Rapids, Iowa 52401
319.364.0227 | fax: 319.364.4251 | www.shive-hattery.com
Iowa | Illinois | Indiana

HOLIDAY INN & SUITES - CONFERENCE CENTER

RUSSELL CONSTRUCTION
CEDAR FALLS, IOWA

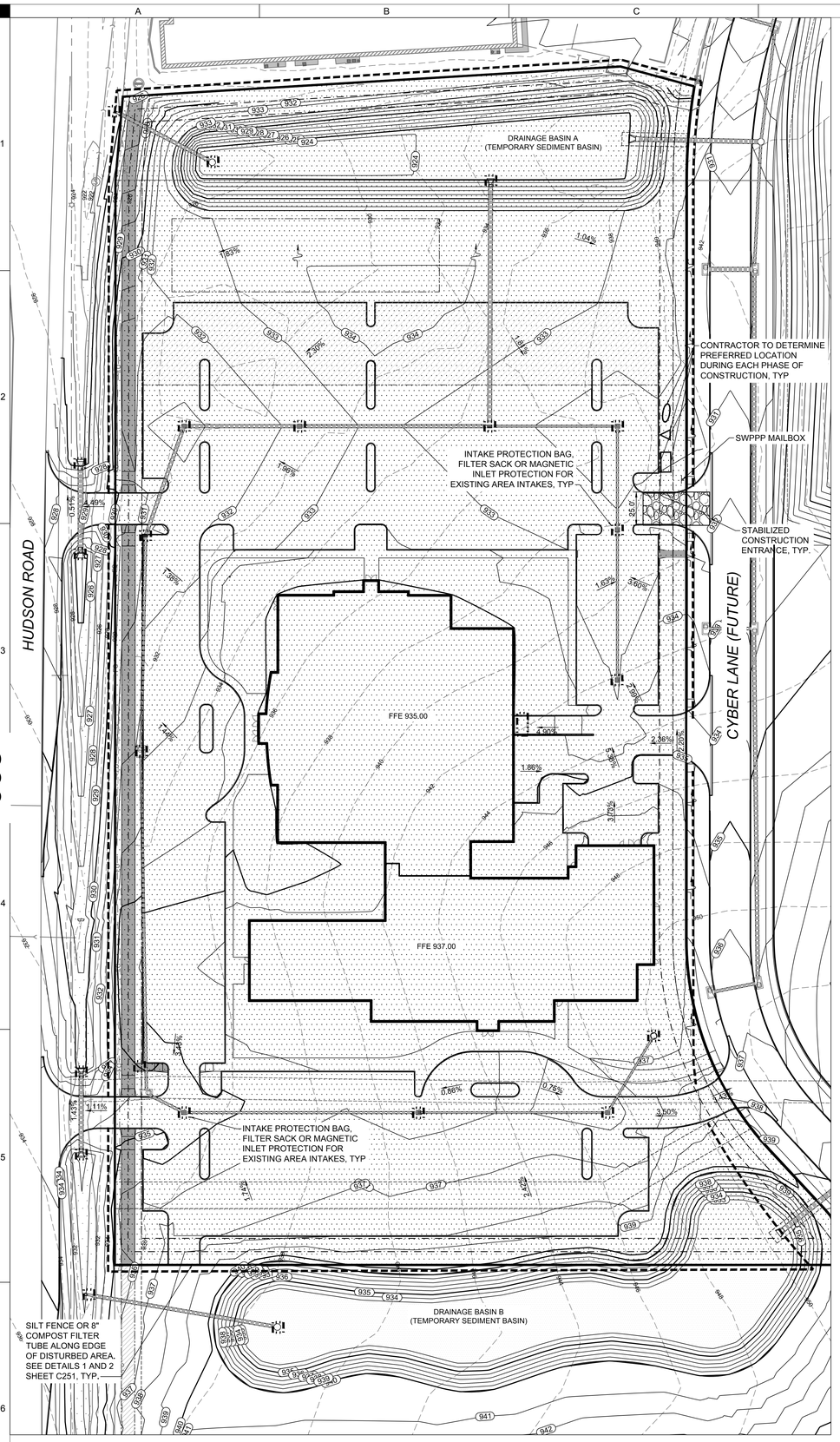
PRELIMINARY
- NOT FOR
CONSTRUCTION

DRAWN: EAV
APPROVED: CNH

GRADING AND
DRAINAGE PLAN

C3.0

Item 5.



1 EROSION AND SEDIMENT CONTROL PLAN
NOT TO SCALE

0 20 40 80
SCALE IN FEET

LEGEND

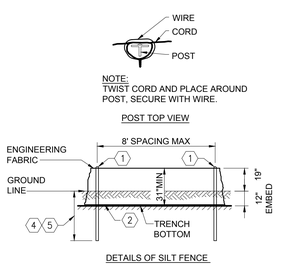
- PROJECT SITE/DISTURBED AREA
- EROSION CONTROL BLANKET
- STABILIZED CONSTRUCTION ENTRANCE
- SILT FENCE OR 8" COMPOST FILTER TUBE
- 8" COMPOST FILTER TUBE
- CURB INLET FILTER
- INTAKE PROTECTION BAG, FILTER SACK OR MAGNETIC INLET PROTECTION
- INTAKE PROTECTION BAG OR FILTER SACK
- FILTER FABRIC
- INTAKE PROTECTION BAG WITH CURB FILTER OR MAGNETIC INLET PROTECTION WITH CURB FILTER
- PROPOSED PAVEMENT
- 2.9% FINISHED GRADE
- DIRECTION OF DRAINAGE
- SWPPP MAILBOX
- CONCRETE, PAINT AND GROUT WASHOUT AREA. PROTECT WITH (2) 18" STACKED COMPOST FILTER TUBES LINED WITH AN IMPERMEABLE PLASTIC LINER. CONTRACTOR TO HAUL OFF WASTE MATERIAL. RELOCATE AS REQUIRED FOR CONSTRUCTION.
- SPILL KIT TO BE INSTALLED AND RELOCATED AS REQUIRED FOR CONSTRUCTION
- CONTRACTOR STAGING AREA FOR PORTABLE RESTROOM FACILITIES, TEMPORARY FUEL TANKS, WASTE CONTAINERS AND OTHER HAZARDOUS CHEMICALS. PROTECT WITH (1) 12" COMPOST FILTER TUBE. RELOCATE AS REQUIRED FOR CONSTRUCTION.

PHASING NOTES

1. THIS PROJECT MAY BE CONSTRUCTED OVER SEVERAL PHASES. EROSION/SEDIMENT CONTROL DEVICES IDENTIFIED ON THE PLAN WILL BE IMPLEMENTED ON A PER PHASE BASIS TO ALLOW FOR MAXIMUM PEDESTRIAN ACCESS AND EASE OF CONSTRUCTION.
2. UPON COMPLETION OF EACH PHASE AND APPROVAL BY THE OWNER'S REPRESENTATIVE, EROSION/SEDIMENT CONTROL DEVICES MAY BE REMOVED/RELOCATED.

SITE INFORMATION:
PROJECT SITE/DISTURBED AREA = 9.03 AC
PRE-DEVELOPMENT COEFFICIENT= 0.35
POST-DEVELOPMENT COEFFICIENT= 0.73
NEAREST SURFACE WATER ACCEPTING SITE DISCHARGE: DRY RUN CREEK

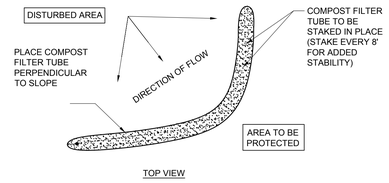
THIS PROJECT WILL BE INCORPORATED INTO THE GATEWAY BUSINESS PARK AT CEDAR FALLS NPDES GENERAL PERMIT NO. 2. CEDAR FALLS GATEWAY PARK, INC. IS THE APPLICANT FOR THE NPDES GENERAL PERMIT NO. 2 AND THE CONTRACTOR AND ALL SUB-CONTRACTORS ARE REQUIRED TO SIGN ON AS CO-PERMITTEE. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING, OBTAINING (INCLUDING PAYING PERMIT FEE) AND MAINTAINING THIS PERMIT. ALL RECORDS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE AS THEY ARE PRODUCED. SEE SPECIFICATIONS FOR CONTRACT FULFILLMENT REQUIREMENTS.



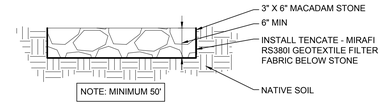
GENERAL NOTES:

1. SECURE TOP OF ENGINEERING FABRIC TO STEEL POST.
2. ENGINEERING FABRIC TO BE FOLDED ACROSS BOTTOM OF TRENCH.
3. ENGINEERING FABRIC SHALL HAVE A MINIMUM 36" WIDTH.
4. FOR MACHINE INSTALLATION, POSTS SHALL BE EMBEDDED 28" BELOW GROUND LINE. ALL COMPACTION SHALL BE ACCOMPLISHED BY DRIVING OVER EACH SIDE OF SILT FENCE 2-4 TIMES WITH DEVICE EXERTING 60PSI OR GREATER.
5. FOR TRENCH INSTALLATION, POSTS SHALL BE EMBEDDED 28" BELOW THE TRENCH BOTTOM. ALL COMPACTION SHALL BE ACCOMPLISHED WITH A MECHANICAL OR PNEUMATIC TAMPER.

2 SILT FENCE DETAIL
NOT TO SCALE



3 COMPOST FILTER TUBE DETAIL
NOT TO SCALE



4 STABILIZED CONSTRUCTION ENTRANCE/ CONTRACTOR STAGING AND LAYDOWN AREA
NOT TO SCALE

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

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01

HOLIDAY INN & SUITES - CONFERENCE CENTER

RUSSELL CONSTRUCTION
CEDAR FALLS, IOWA

PRELIMINARY - NOT FOR CONSTRUCTION

DRAWN: EAV
APPROVED: CNH
ISSUED FOR: SITE PLAN
DATE: 02/02/2018
PROJECT NO: 2171820
FIELD BOOK: --
CLIENT NO: --

EROSION AND SEDIMENT CONTROL PLAN

C250

-280-

P:\Projects\C\2171820\Active\Sites\Drawings\1_CAD\Lyt 1C250 EROSION AND SEDIMENT CONTROL PLAN.dwg
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UTILITY PLAN

DRAWN: EAV
APPROVED: CNH

PRELIMINARY - NOT FOR CONSTRUCTION

RUSSELL CONSTRUCTION
CEDAR FALLS, IOWA

HOLIDAY INN & SUITES - CONFERENCE CENTER

SHIVEHATTERY
ARCHITECTURE + ENGINEERING
316 Second Street SE Suite 500 | Cedar Rapids, Iowa 52401
319.364.0227 | fax: 319.364.4251 | www.shive-hattery.com
Iowa | Illinois | Indiana

1 STORM PLAN
1" = 40'

1 SANITARY AND WATER PLAN
1" = 40'

HOTEL SITE DEVELOPMENT SUMMARY

HOTEL LOT 1 AREA 391,023 SF 8.98 ACRES

HOTEL LOT 1 AREA TABLE

HOTEL - IMPROVEMENT AREA	327,271 SF	7.51		86%
HOTEL OPEN SPACE	63,754 SF	1.46	ACRES	17% (HOTEL OPEN SPACE REQUIRED 10%)
HOTEL IMPERVIOUS AREA	242,215 SF	5.56	ACRES	63%

TOTAL SURFACE PARKING SPACES
346 PARKING SPACES
74 PARKING SPACES ALTERNATE #1 (DASHED SPACES)
420 TOTAL PARKING SPACES

SITE LAYOUT NOTES:

1. SEE ARCHITECTURAL SITE PLAN FOR CONSTRUCTION DETAILS

2. CONTRACTOR SHALL VERIFY LOCATIONS AND LAYOUT OF ALL SITE ELEMENTS PRIOR TO BEGINNING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO, LOCATIONS OF EXISTING AND PROPOSED PROPERTY LINES, EASEMENTS, SETBACKS, UTILITIES, BUILDINGS AND PAVEMENTS. CONTRACTOR IS RESPONSIBLE FOR FINAL LOCATIONS OF ALL ELEMENTS FOR THE SITE. ANY REVISIONS REQUIRED AFTER COMMENCEMENT OF CONSTRUCTION, DUE TO LOCATIONAL ADJUSTMENTS SHALL BE CORRECTED AT NO ADDITIONAL COST TO OWNER. ADJUSTMENTS TO THE LAYOUT SHALL BE APPROVED BY THE ENGINEER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF MATERIALS. STAKE LAYOUT FOR APPROVAL.

3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, INCLUDING A RIGHT-OF-WAY AND STREET OPENING PERMIT.

4. THE CONTRACTOR SHALL VERIFY RECOMMENDATIONS NOTED IN THE GEO TECHNICAL REPORT PRIOR TO INSTALLATION OF SITE IMPROVEMENT MATERIALS.

5. CONTRACTOR SHALL FIELD VERIFY COORDINATES AND LOCATION DIMENSIONS OF THE BUILDING AND STAKE FOR REVIEW AND APPROVAL BY THE OWNERS REPRESENTATIVE PRIOR TO INSTALLATION OF FOOTING MATERIALS.

6. LOCATIONS OF STRUCTURES, ROADWAY PAVEMENTS, CURBS AND GUTTERS, BOLLARDS, AND WALKS ARE APPROXIMATE AND SHALL BE STAKED IN THE FIELD, PRIOR TO INSTALLATION, FOR REVIEW AND APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT.

7. CURB DIMENSIONS SHOWN ARE TO FACE OF CURB. BUILDING DIMENSIONS ARE TO FACE OF CONCRETE FOUNDATION. LOCATION OF BUILDING IS TO BUILDING FOUNDATION AND SHALL BE AS SHOWN ON THE DRAWINGS.

8. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR SAMPLES AS SPECIFIED FOR REVIEW AND APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT PRIOR TO FABRICATION FOR ALL PREFABRICATED SITE IMPROVEMENT MATERIALS SUCH AS, BUT NOT LIMITED TO THE FOLLOWING, FURNISHINGS, PAVEMENTS, WALLS, RAILINGS, BENCHES, FLAGPOLES, LANDING PADS FOR CURB RAMPS, AND LIGHT AND POLES. THE OWNER RESERVES THE RIGHT TO REJECT INSTALLED MATERIALS NOT PREVIOUSLY APPROVED.

9. PEDESTRIAN CURB RAMPS SHALL BE CONSTRUCTED WITH TRUNCATED DOME LANDING AREAS IN ACCORDANCE WITH A.D.A. REQUIREMENTS-SEE DETAIL.

10. CROSSWALK STRIPING SHALL BE 24" WIDE WHITE PAINTED LINE, SPACED 48" ON CENTER PERPENDICULAR TO THE FLOW OF TRAFFIC. WIDTH OF CROSSWALK SHALL BE 5' WIDE. ALL OTHER PAVEMENT MARKINGS SHALL BE WHITE IN COLOR UNLESS OTHERWISE NOTED OR REQUIRED BY ADA OR LOCAL GOVERNING BODIES.

11. CURB AND GUTTER TYPE SHALL BE B612 UNLESS OTHERWISE NOTED ON THE DRAWINGS-TAPER BETWEEN CURB TYPES-SEE DETAIL.

12. ALL CURB RADII ARE MINIMUM 3' UNLESS OTHERWISE NOTED.

13. CONTRACTOR SHALL REFER TO FINAL PLAT FOR LOT BOUNDARIES, NUMBERS, AREAS AND DIMENSIONS PRIOR TO SITE IMPROVEMENTS.

14. FIELD VERIFY ALL EXISTING SITE CONDITIONS, DIMENSIONS.

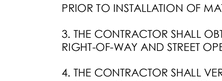
15. PARKING IS TO BE SET PARALLEL OR PERPENDICULAR TO EXISTING BUILDING UNLESS NOTED OTHERWISE.

16. ALL PARKING LOT PAINT STRIPPING TO BE WHITE, 4" WIDE TYP.

17. BITUMINOUS PAVING TO BE "LIGHT DUTY" UNLESS OTHERWISE NOTED. SEE DETAIL SHEETS FOR PAVEMENT SECTIONS.

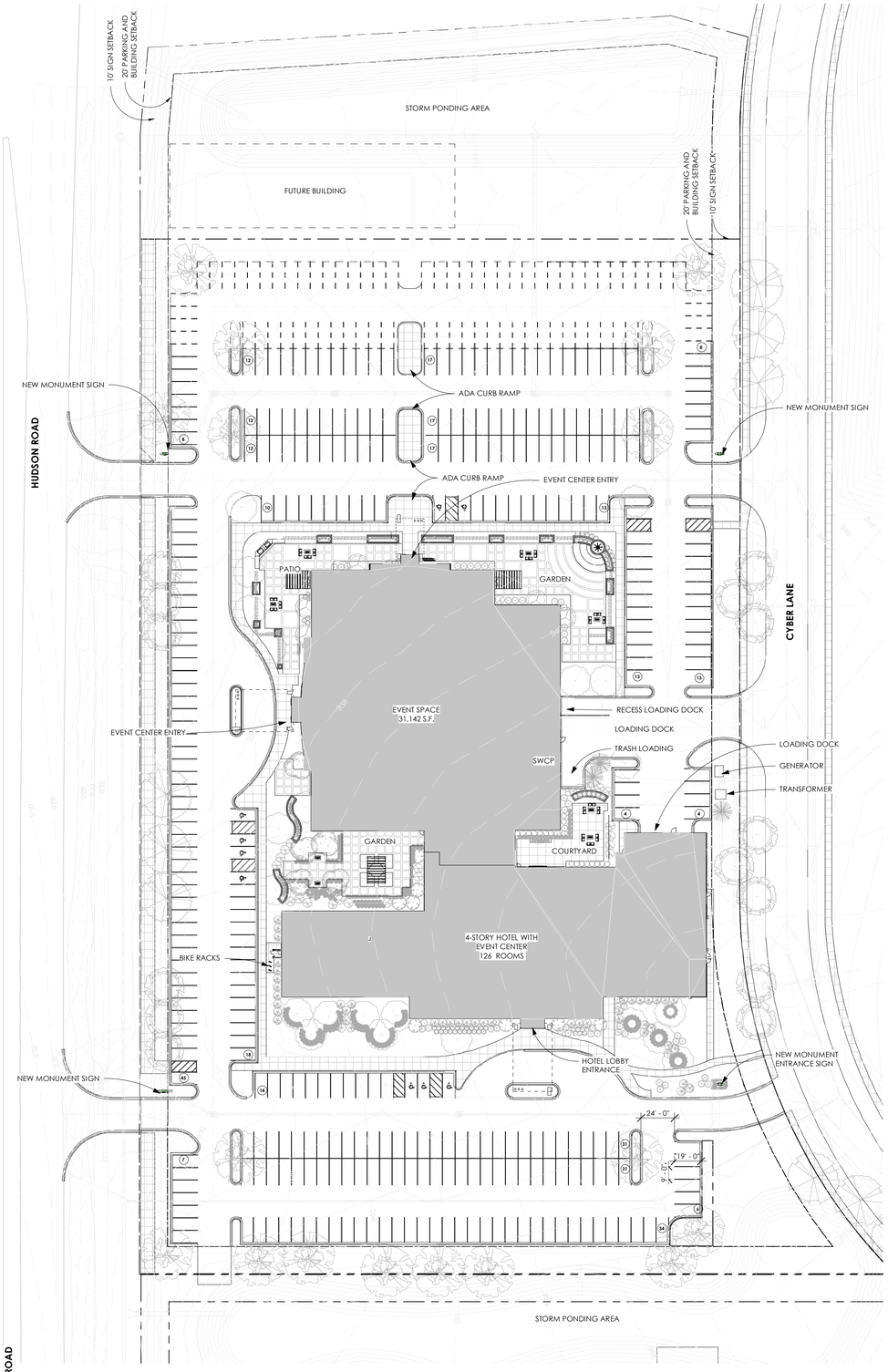
18. ALL TREES THAT ARE TO REMAIN ARE TO BE PROTECTED FROM DAMAGE WITH A CONSTRUCTION FENCE AT THE DRIP LINE. SEE LANDSCAPE DOCUMENTS.

SITE OPERATIONAL NOTES:
1. TRASH COLLECTION SHALL OCCUR INSIDE THE BUILDING AT THE SWCP (SOLID WASTE COLLECTION POINT)



SCALE = 1" =40'-0"

1 SITE PLAN
SCALE 1" = 40'-0"



TUSHIE MONTGOMERY ARCHITECTS
7645 LYNDALE AVE S #100
MINNEAPOLIS, MN 55423-4084
612.861.9636
WWW.TMTARCH.COM

Item 5.c.

HOLIDAY INN & SUITES - CONFERENCE CENTER
CEDAR FALLS, IA

PREPARED FOR:
open door HOSPITALITY
RUSSELL

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA.
PRINT NAME: Kevin V. Kroen

SIGNATURE:

DATE: 02/01/2018 **LICENSE #: 00703**

SITE PLAN APPLICATION 02/02/2018

NOT FOR CONSTRUCTION

InterContinental Hotels Group
Location : 19394
Inn Code : ALOCF
Project : 32669

217035

OVERALL SITE PLAN

L-1.0

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Planting Schedule - Overall						
Count	ID	Common Name	Botanical Name	Size	Points Per Plant	Points Provided
1. Deciduous Tree						
7	ABSC	Autumn Brilliance Serviceberry	Amelanchier x grandiflora 'Autumn Brilliance'	6' Tall Ball and Burlap	80.00	560
22	ERB	Eastern Redbud	Cercis canadensis	2.5" Caliper Ball and Burlap	80.00	1,760
9	GLN	Greenspire Linden	Tilia cordata 'Greenspire'	3" Caliper Ball and Burlap	90.00	810
4	JME	Japanese Maple Emperor	Acer palmatum 'Wolff'	2 1/2" Caliper Ball and Burlap	40.00	160
4	LHT	Limelight Hydrangea Tree	Viburnum lentago	2" Caliper Ball and Burlap	40.00	160
14	NPO	Northern Pin Oak	Quercus ellipsoidalis	3" Caliper Ball and Burlap	90.00	1,260
5	PDW	Pagoda Dogwood	Cornus alternifolia	6' Tall Ball and Burlap	80.00	400
17	SWO	Swamp White Oak	Quercus bicolor	3" Caliper Ball and Burlap	90.00	1,530
2. Evergreen Tree						
5	ASP	Austrian Pine	Pinus nigra	6' Tall Ball and Burlap	80.00	400
6	CF	Concolor Fir	Abies concolor	8' Tall Ball and Burlap	90.00	540
101	HA	Holmstrup Arbrovitae	Thuja occidentalis 'Holmstrup'	#10 Container	10.00	1,010
24	RA	Rushmore Arborvitae	Thuja occidentalis 'Rushmore'	#10 Container	10.00	240
3. Shrub						
46	AFD	Arctic Fire Dogwood	Cornus stalonifera ' Farrow'	#5 Container	10.00	460
60	BMV	Blue Muffin Viburnum	Viburnum dentatum 'Christom'	#5 Container	10.00	600
17	DBH	Dwarf Bush Honeysuckle	Diervilla lonicera	#5 Container	10.00	170
65	KNR	Knock Out	Rosa'Radrazz'	#5 Container	10.00	650
4. Perennial						
7	PPH	Coral Bells	Heuchera sanguinea	#1 Container	0.00	0
21	GSH	Gold Standard Hosta	Hosta 'Gold Standard'	#1 Container	0.00	0
14	GVH	Hakonechloa Golden Variegated	H. macra 'Aureola'	#1 Container	0.00	0
98	FRG	Karl Foerster Feather Reed Grass	Calamagrostis x acutiflora 'Karl Foerster'	#5 Container	0.00	0
252	SFG	Miscanthus Silver Feather Grass	Miscanthus sinensis 'Silberfeder'	#1 Container	0.00	0
109	SDD	Stella De Oro Daylily	Hemerocallis 'Stella De Oro'	#1 Container	0.00	0
Grand total: 907						10,710

LANDSCAPE SUMMARY

HOTEL LOT 1 AREA — 337,604 SF 7.75 ACRES
(SETBACK AREA NOT INCLUDED) — 330,732 SF 7.59

LANDSCAPE SPACE — 209,990 SF 4.82 — 64%

PLANTING REQUIREMENTS

SITE PLANTING

HOTEL LOT 1 AREA 391,023 SF — 7820 POINTS REQUIRED

#5 Container	3. Shrub	188	10.00	1,880	
#10 Container	2. Evergreen Tree	125	10.00	1,250	
2 1/2" Caliper Ball and Burlap	1. Deciduous Tree	4	40.00	160	
2" Caliper Ball and Burlap	1. Deciduous Tree	4	40.00	160	
2.5" Caliper Ball and Burlap	1. Deciduous Tree	22	80.00	1,760	
3" Caliper Ball and Burlap	1. Deciduous Tree	26	90.00	2,340	
6' Tall Ball and Burlap	1. Deciduous Tree	12	80.00	960	
6' Tall Ball and Burlap	2. Evergreen Tree	5	80.00	400	
8' Tall Ball and Burlap	2. Evergreen Tree	6	90.00	540	
		392		9,450	POINTS PROVIDED

STREET PLANTING

1,628 L.F. STREET FRONTAGE X 0.75 POINTS = 1,221 POINTS REQUIRED

14 3" Caliper Ball and Burlap 90.00 — 1,260 POINTS PROVIDED

PARKING AREA PLANTING REQUIRED

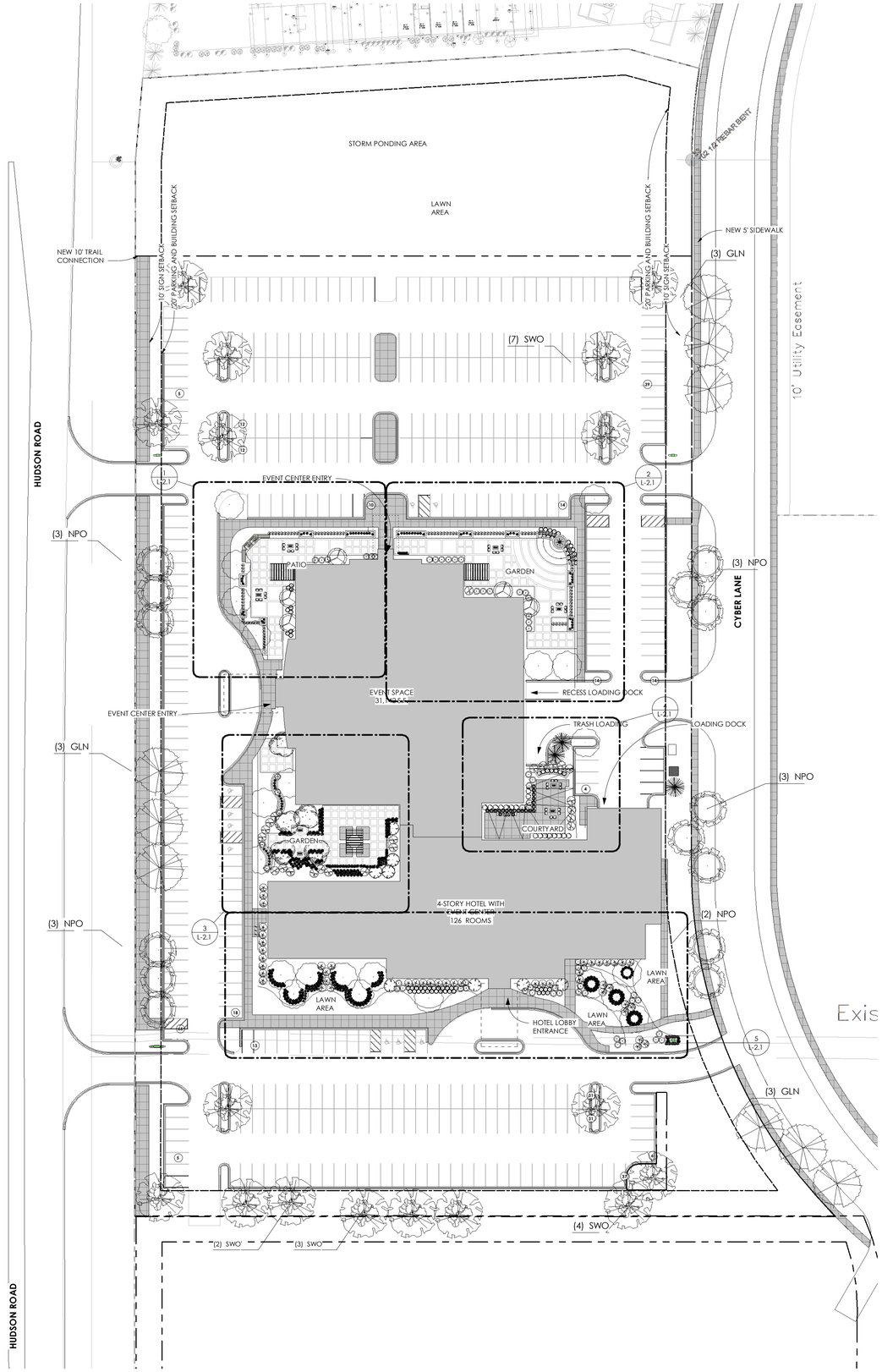
PROVIDING 424 PARKING STALLS AROUND EVENT CENTER AND HOLIDAY INN AND SUITES

1 OVERSTORY TREE PER 15 STALLS REQUIRED
(420 SPACES / 15 SPACES) = 28.00 TREES REQUIRED
TOTAL PROVIDED = 35 TREES PROVIDED

LANDSCAPE NOTES:

1. LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR. FROM THE DATE OF CERTIFICATION OF SUBSTANTIAL COMPLETION FOR THE PROJECT OR LATER IF INSTALLATION IS DELAYED BECAUSE OF PLANTING SEASON.
2. ALL PLANT MATERIAL SHALL MEET MINIMUM REQUIREMENTS SHOWN IN THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1-2004).
3. NO PLANT OR MATERIAL, SHALL BE SUBSTITUTED WITHOUT AUTHORIZATION OF THE LANDSCAPE ARCHITECT.
4. TREES SHALL ONLY BE STAKED AND GUYED WITH THE APPROVAL OF THE LANDSCAPE ARCHITECT, IN CASES OF EXTREMELY WINDY LOCATIONS AND/OR WET CLAY OR VERY SANDY SOIL. REFER TO LANDSCAPE PLAN AND DETAILS FOR SPECIFIC PLANTING INSTRUCTIONS.
5. IF THERE IS A DISCREPANCY BETWEEN PLANT QUANTITIES IN THE PLANT LIST AND THOSE GRAPHICALLY REPRESENTED, THE GRAPHIC REPRESENTATION SHALL TAKE PRECEDENCE.
6. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND PROTECT ALL UTILITIES AND STRUCTURES. DAMAGE TO UTILITIES AND STRUCTURES SHALL BE REPAIRED BY THE LANDSCAPE CONTRACTOR TO THE SATISFACTION OF THE OWNER.
7. IF PLANTS OR LANDSCAPE ELEMENTS CANNOT BE INSTALLED AS SHOWN ON THE LANDSCAPE PLAN, THE CONTRACTOR SHALL STAKE LOCATIONS FOR THE LANDSCAPE ARCHITECT'S APPROVAL PRIOR TO ANY EXCAVATION OR INSTALLATION.
8. UNLESS INDICATED OTHERWISE, ALL LANDSCAPE AREAS WITHIN THE SITE BOUNDARY SHALL RECEIVE SOD. AREAS OUTSIDE THE SITE BOUNDARY WHICH HAVE BEEN DISTURBED SHALL RECEIVE SEED OR BE REPAIRED BACK TO THEIR ORIGINAL CONDITION, UNLESS NOTED OTHERWISE.
9. ALL SOD AND LANDSCAPE INSTALLATIONS SHALL BE IRRIGATED, UNLESS NOTED OTHERWISE.
10. WOOD FIBER BLANKET MULCH SHALL BE APPLIED OVER SEED ON ALL SLOPES. NATIVE GRASS HAY MULCH MAY BE USED ON RELATIVELY FLAT AREAS.
11. IN AREAS WHERE AN EXISTING PARKING LOT OR DRIVE AREAS HAVE BEEN REMOVED, ALL SUB-BASE SHALL BE REMOVED AND REPLACED WITH TOPSOIL AND ORGANIC MATTER.
12. UNLESS INDICATED OTHERWISE, ALL PLANTS TO RECIEVE MINIMUM 4" OF WALNUT HARDWOOD MULCH.

SCALE = 1" =40'-0"



1 **LANDSCAPE PLAN**
SCALE 1" = 40'-0"

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MINNEAPOLIS, MINNESOTA 55423-4084
612 . 861 . 9636 FAX:612 . 861 . 9632
WWW.TMIARCHITECTS.COM

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CEDAR FALLS, IA

PREPARED FOR:
open door HOSPITALITY
RUSSELL

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PRINT NAME: Kevin V. Kroen

SIGNATURE:

DATE: 02/01/2018 **LICENSE #:** 00703

SITE PLAN APPLICATION 02/02/2018

InterContinental
Location : 193
Inn Code : ALC
Project : 326

OVE
LANDSC

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Item 5.C.

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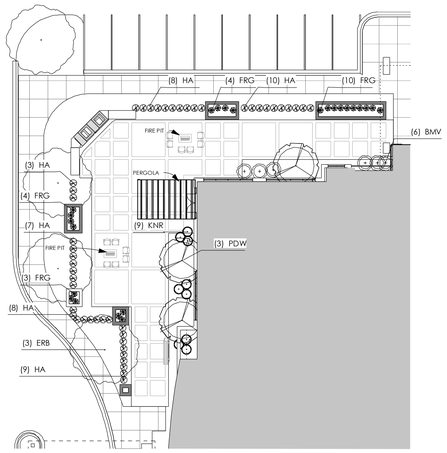


1 Courtyard (1)

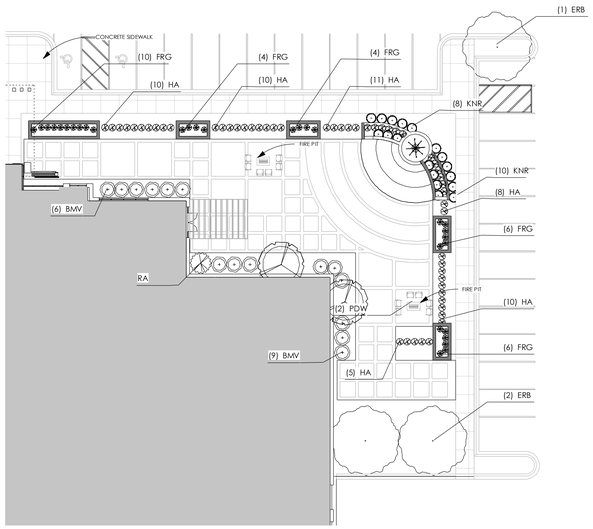
SCALE 1" = 20'-0"

0' 10' 20' 40'

SCALE = 1" =20'-0"

Planting Schedule - Courtyard 1						
Count	ID	Common Name	Botanical Name	Size	Points Per Plant	Points Provided
1. Deciduous Tree						
3	ERB	Eastern Redbud	Cercis canadensis	2.5" Caliper Ball and Burlap	80.00	240
3	PDW	Pagoda Dogwood	Cornus alternifolia	6' Tall Ball and Burlap	80.00	240
2. Evergreen Tree						
47	HA	Holmstrup Arbrovitae	Thuja occidentalis 'Holmstrup'	#10 Container	10.00	470
3. Shrub						
6	BMV	Blue Muffin Viburnum	Viburnum dentatum 'Christom'	#5 Container	10.00	60
9	KNR	Knock Out	Rosa'Radrazz'	#5 Container	10.00	90
4. Perennial						
24	FRG	Karl Foerster Feather Reed Grass	Calamagrostis x acutiflora 'Karl Foerster'	#5 Container	0.00	0
Grand total: 92						1,100

Planting Schedule - Courtyard 2						
Count	ID	Common Name	Botanical Name	Size	Points Per Plant	Points Provided
1. Deciduous Tree						
4	ERB	Eastern Redbud	Cercis canadensis	2.5" Caliper Ball and Burlap	80.00	320
2	PDW	Pagoda Dogwood	Cornus alternifolia	6' Tall Ball and Burlap	80.00	160
2. Evergreen Tree						
54	HA	Holmstrup Arbrovitae	Thuja occidentalis 'Holmstrup'	#10 Container	10.00	540
1	RA	Rushmore Arborvitae	Thuja occidentalis 'Rushmore'	#10 Container	10.00	10
3. Shrub						
15	BMV	Blue Muffin Viburnum	Viburnum dentatum 'Christom'	#5 Container	10.00	150
18	KNR	Knock Out	Rosa'Radrazz'	#5 Container	10.00	180
4. Perennial						
30	FRG	Karl Foerster Feather Reed Grass	Calamagrostis x acutiflora 'Karl Foerster'	#5 Container	0.00	0
Grand total: 124						1,360

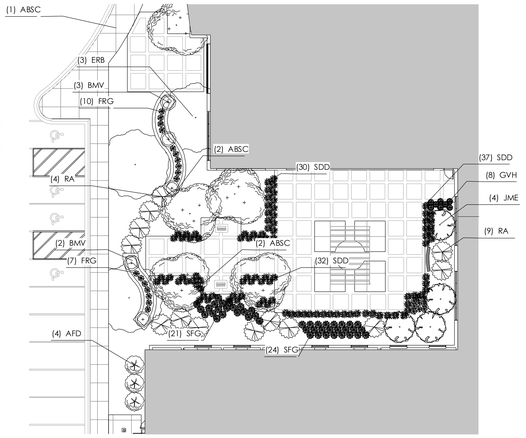


2 Courtyard (2)

SCALE 1" = 20'-0"

0' 10' 20' 40'

SCALE = 1" =20'-0"



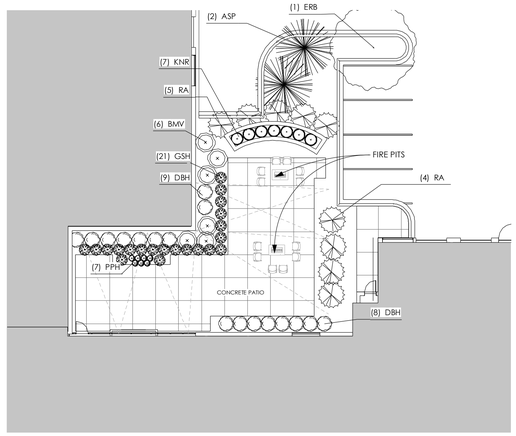
3 Courtyard (3)

SCALE 1" = 20'-0"

0' 10' 20' 40'

SCALE = 1" =20'-0"

Planting Schedule - Courtyard 3						
Count	ID	Common Name	Botanical Name	Size	Points Per Plant	Points Provided
1. Deciduous Tree						
5	ABSC	Autumn Brilliance Serviceberry	Amelanchier x grandiflora 'Autumn Brilliance'	6' Tall Ball and Burlap	80.00	400
3	ERB	Eastern Redbud	Cercis canadensis	2.5" Caliper Ball and Burlap	80.00	240
4	JME	Japanese Maple Emperor	Acer palmatum 'Wolff'	2 1/2" Caliper Ball and Burlap	40.00	160
2. Evergreen Tree						
13	RA	Rushmore Arborvitae	Thuja occidentalis 'Rushmore'	#10 Container	10.00	130
3. Shrub						
3	AFD	Arctic Fire Dogwood	Cornus stolonifera ' Farrow'	#5 Container	10.00	30
5	BMV	Blue Muffin Viburnum	Viburnum dentatum 'Christom'	#5 Container	10.00	50
4. Perennial						
8	GVH	Hakonechloa Golden Variegated	H. macra 'Aureola'	#1 Container	0.00	0
26	FRG	Karl Foerster Feather Reed Grass	Calamagrostis x acutiflora 'Karl Foerster'	#5 Container	0.00	0
45	SFG	Miscanthus Silver Feather Grass	Miscanthus sinensis 'Silberfeder'	#1 Container	0.00	0
99	SDD	Stella De Oro Daylily	Hemerocallis 'Stella De Oro'	#1 Container	0.00	0
Grand total: 211						1,010



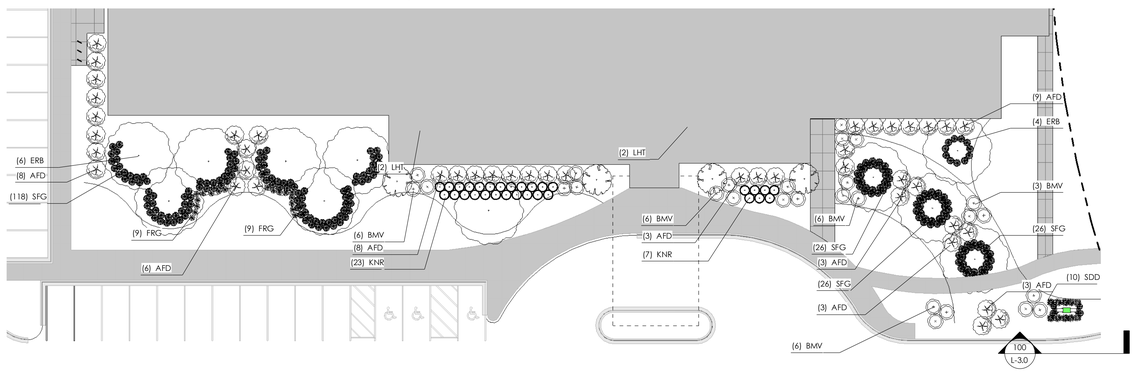
4 Courtyard (4)

SCALE 1/16" = 1'-0"

0' 8' 16' 32'

SCALE = 1" =16'-0"

Planting Schedule - Courtyard 4						
Count	ID	Common Name	Botanical Name	Size	Points Per Plant	Points Provided
1. Deciduous Tree						
1	ERB	Eastern Redbud	Cercis canadensis	2.5" Caliper Ball and Burlap	80.00	80
2. Evergreen Tree						
2	ASP	Austrian Pine	Pinus nigra	6' Tall Ball and Burlap	80.00	160
9	RA	Rushmore Arborvitae	Thuja occidentalis 'Rushmore'	#10 Container	10.00	90
3. Shrub						
6	BMV	Blue Muffin Viburnum	Viburnum dentatum 'Christom'	#5 Container	10.00	60
17	DBH	Dwarf Bush Honeysuckle	Diervilla lonicera	#5 Container	10.00	170
7	KNR	Knock Out	Rosa'Radrazz'	#5 Container	10.00	70
4. Perennial						
7	PPH	Coral Bells	Heuchera sanguinea	#1 Container	0.00	0
21	GSH	Gold Standard Hosta	Hosta 'Gold Standard'	#1 Container	0.00	0
Grand total: 70						630



5 LANDSCAPE PLAN @ HOTEL ENTRANCE

SCALE 1" = 20'-0"

0' 10' 20' 40'

SCALE = 1" =20'-0"

Planting Schedule - Hotel Entrance						
Count	ID	Common Name	Botanical Name	Size	Points Per Plant	Points Provided
1. Deciduous Tree						
1	ERB	Eastern Redbud	Cercis canadensis	2.5" Caliper Ball and Burlap	80.00	80
2. Evergreen Tree						
2	ASP	Austrian Pine	Pinus nigra	6' Tall Ball and Burlap	80.00	160
9	RA	Rushmore Arborvitae	Thuja occidentalis 'Rushmore'	#10 Container	10.00	90
3. Shrub						
6	BMV	Blue Muffin Viburnum	Viburnum dentatum 'Christom'	#5 Container	10.00	60
17	DBH	Dwarf Bush Honeysuckle	Diervilla lonicera	#5 Container	10.00	170
7	KNR	Knock Out	Rosa'Radrazz'	#5 Container	10.00	70
4. Perennial						
7	PPH	Coral Bells	Heuchera sanguinea	#1 Container	0.00	0
21	GSH	Gold Standard Hosta	Hosta 'Gold Standard'	#1 Container	0.00	0
Grand total: 70						630

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HOLIDAY INN & SUITES - CONFERENCE CENTER

CEDAR FALLS, IA

PREPARED FOR:

open door HOSPITALITY

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PRINT NAME: Kevin V. Kroen

SIGNATURE:

DATE: 02/01/2018 **LICENSE #:** 00703

SITE PLAN APPLICATION 02/02/2018

NOT FOR CONSTRUCTION

InterContinental Hotels Group

Location : 19394
Inn Code : ALOCF
Project : 32669

217035

ENLARGED LANDSCAPE PLAN

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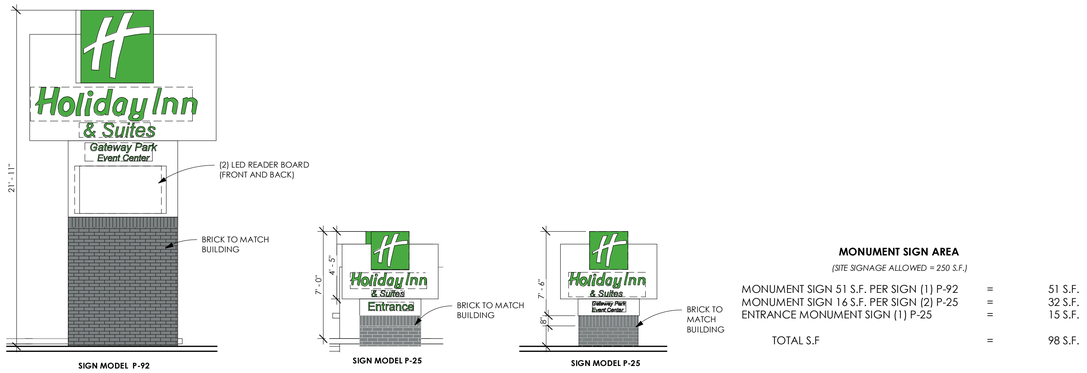

MONUMENT SIGN AREA

(SITE SIGNAGE ALLOWED = 250 S.F.)

MONUMENT SIGN 51 S.F. PER SIGN (1) P-92	=	51 S.F.
MONUMENT SIGN 16 S.F. PER SIGN (2) P-25	=	32 S.F.
ENTRANCE MONUMENT SIGN (1) P-25	=	15 S.F.
TOTAL S.F	=	98 S.F.

1 Monument Signs

SCALE 1/4" = 1'-0"

TUSHIE MONTGOMERY ARCHITECTS
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MINNEAPOLIS, MINNESOTA 55423-4084
612.861.9636 FAX 612.861.9632
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HOLIDAY INN & SUITES - CONFERENCE CENTER

CEDAR FALLS, IA

PREPARED FOR:

open door HOSPITALITY

RUSSELL

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PRINT NAME: Kevin V. Kroen

SIGNATURE:

DATE: 02/01/2018 **LICENSE #: 00703**

SITE PLAN APPLICATION 02/02/2018

NOT FOR CONSTRUCTION

InterContinental

Location : 193

Inn Code : ALC

Project : 326

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SITE D

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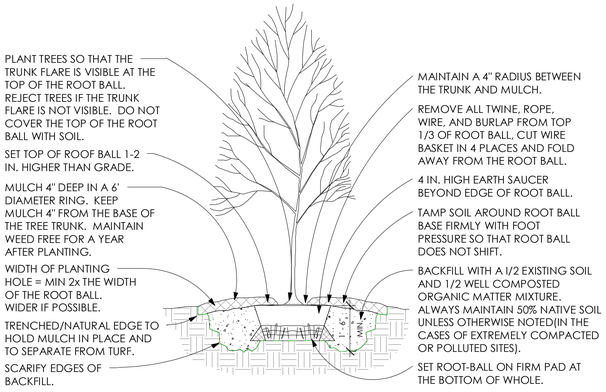
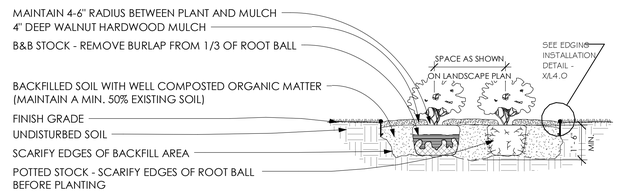


NOTES:

1. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. DO NOT REMOVE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE CROWN.
2. STAKE AND WRAP TREES ONLY IF DIRECTED BY LANDSCAPE ARCHITECT, SEE STAKING AND/OR WRAPPING DETAILS AS NEEDED.
3. LOCATE PLANTS AS DIRECTED ON LANDSCAPE PLAN.
4. MAKE SURE PLANTING BED SOIL IS LOOSENED AND NOT TOO WET PRIOR TO PLANTING AND AVOID SOIL COMPACTION DURING PLANTING.
5. MULCH LAYER TO EVENLY COVER THE ENTIRE BED AREA 4"-6" THICK, MAINTAIN A 4" RADIUS BETWEEN MULCH AND TRUNK.
6. NO SUBSTITIONS OF PLANTS OR ADJUSTMENTS TO PLANT LOCATIONS, WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.

1 B&B TREE PLANTING

SCALE 1/2" = 1'-0"

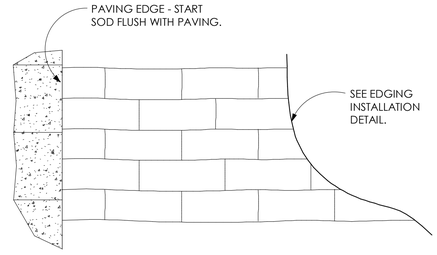


NOTES:

1. AVOID PLANTING IN WET OR SATURATED SOIL TO PREVENT SOIL COMPACTION DURING PLANTING.
2. MULCH LAYER TO EVENLY COVER THE ENTIRE BED AREA, EXCEPT KEEP MULCH 4" FROM BASE OF SHRUB BRANCHES.
3. SPACING BETWEEN PLANTS AS DIRECTED ON LANDSCAPE PLAN.
4. MAKE SURE PLANTING BED SOIL IS LOOSENED AND NOT TOO WET PRIOR TO PLANTING AND AVOID SOIL COMPACTION DURING PLANTING.
5. SPACING BETWEEN PLANTS AS INDICATED ON LANDSCAPE PLAN.
6. USE WOVEN GEO-TEXTILE FILTER FABRIC WHEN USING ROCK OR INORGANIC MULCHES.
7. NO SUBSTITIONS OF PLANTS OR ADJUSTMENTS TO PLANT LOCATIONS, WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.

2 SHRUB PLANTING

SCALE 3/8" = 1'-0"



NOTES:

1. TILL TO A DEPTH OF 4-6", ADD TOPSOIL IS NONE IS PRESENT ON SITE, AND AMEND SOIL ACCORDING TO SOIL TEST.
2. REMOVE ALL DEBRIS.
3. SMOOTH AND DO A FINAL GRADING AWAY FROM BUILDINGS, FILL ANY LOW SPOTS, AND 1" BELOW HARD SURFACE AREAS(SIDEWALKS, DRIVEWAYS, CURBS, ETC.).
4. ROLL SOIL SURFACE LIGHTLY.
5. WATER SOIL SURFACE, SO IT IS MOIST BEFORE LAYING SOD.
6. SOD ACROSS SLOPE NOT DOWN SLOPE.
7. STAGGER SOD SO SEAMS DO NOT LINE UP TO PREVENT WASHOUTS.
8. PLACE SOD WITH SEAMS FLUSH AGAINST EACH OTHER, LEAVING NO GAPS BETWEEN ROLLS.
9. COMPRESS SOD WITH WEIGHTED ROLLER AND WATER AFTER LAYING IT.
10. SOD DISTURBED AREAS AND OTHER AREAS AS DIRECTED.

3 SOD INSTALLATION

SCALE 1/4" = 1'-0"

TUSHIE MONTGOMERY ARCHITECTS
7645 YNDALE AVE #100
MINNEAPOLIS, MN 55428-4084
612.861.9636 632
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HOLIDAY INN & SUITES - CONFERENCE CENTER

CEDAR FALLS, IA

PREPARED FOR:

217035

LANDSCAPE DETAILS

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TUSHIE MONTGOMERY ARCHITECTS
7645 LYNDALE AVENUE SOUTH, #100
MINNEAPOLIS, MINNESOTA 55423-4084
612. 861. 7626 FAX 612. 861. 9032
WWW.TMJARCHITECTS.COM

HOLIDAY INN & SUITES CONFERENCE CENTER

CEDAR FALLS, IOWA 50613

PREPARED FOR:

open door™ RUSSELL

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA.

PRINT NAME: Gary Fischer

SIGNATURE:

DATE: 02/01/2018 **LICENSE #:** 3955

SITE PLAN APPLICATION 02/02/2018

INSTRUCTION

Item 5.C.

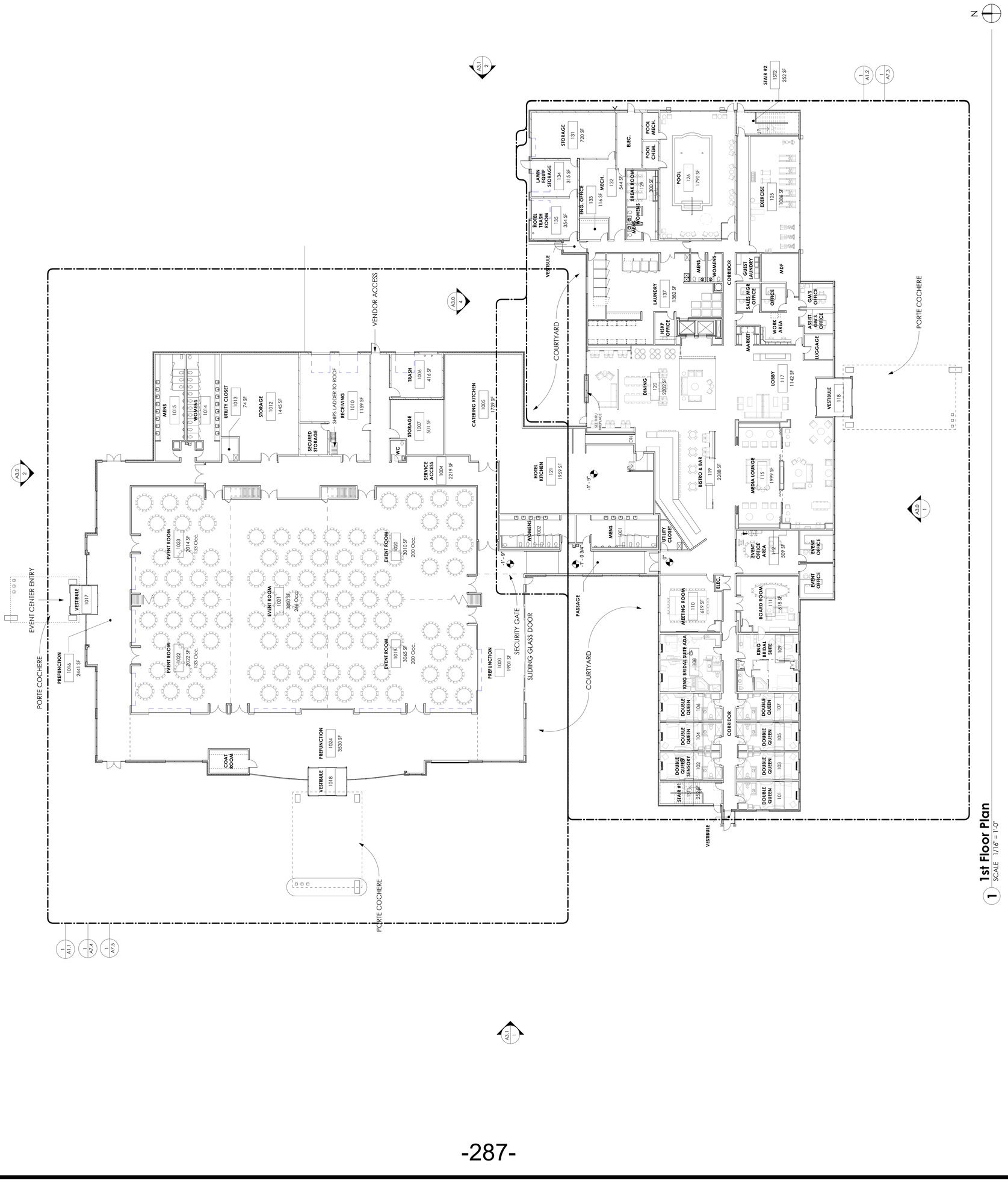
InterContinental
Location : 193
Inn Code : AC
Project : 226

217

OVERA FLOOI

A1.0

N



3/1/2018 4:54:59 PM

1 2ND TO 4TH FLOOR PLAN

SCALE 1/8" = 1'-0"

TUSHIE MONTGOMERY ARCHITECTS
7645 LYNDALE AVE S #100
MINNEAPOLIS, MN 55423-4084
612.861.9636
WWW.TMARCH.COM

Item 5.c.

HOLIDAY INN & SUITES CONFERENCE CENTER

CEDAR FALLS, IOWA 50613

PREPARED FOR:

open door HOSPITALITY

RUSSELL

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PRINT NAME: Gary Fischer

SIGNATURE:

DATE: 02/01/2018 **LICENSE #:** 3955

SITE PLAN APPLICATION 02/02/2018

NOT FOR CONSTRUCTION

InterContinental Hotels Group

Location : 19394
Inn Code : ALOCF
Project : 32669

217035A

SECOND - FOURTH FLOOR PLAN

A1.1

2/1/2018 4:56:39 PM

TUSHIE MONTGOMERY ARCHITECTS
7645 LYNDALE AVENUE SOUTH, #100
MINNEAPOLIS, MINNESOTA 55423-4084
612. 861. 7626 FAX612. 861. 9032
WWW.TMJARCHITECTS.COM

HOLIDAY INN & SUITES CONFERENCE CENTER

CEDAR FALLS, IOWA 50613

PREPARED FOR:

open door™ ARCHITECTURE

RUSSELL

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PRINT NAME: Gary Fischer

SIGNATURE:

DATE: 02/01/2018 **LICENSE #: 3955**

SITE PLAN APPLICATION 02/02/2018

N

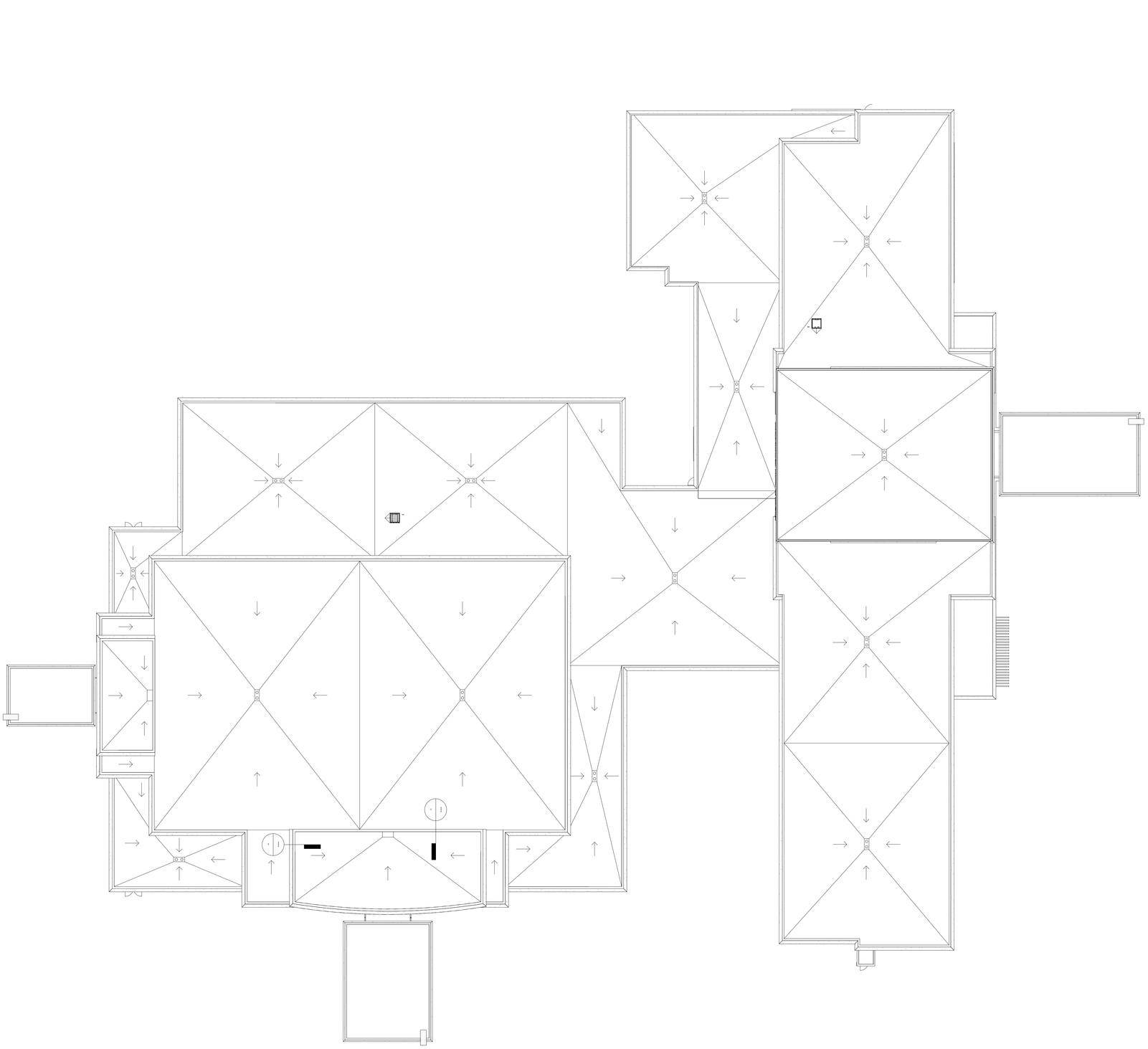
INSTRUCTION

InterContinental	
Location	: 193
Jim Code	: AJC
Project	: 225

217

OVERALL R

A1.2



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1 Overall Roof Plan
SCALE 1/16" = 1'-0"

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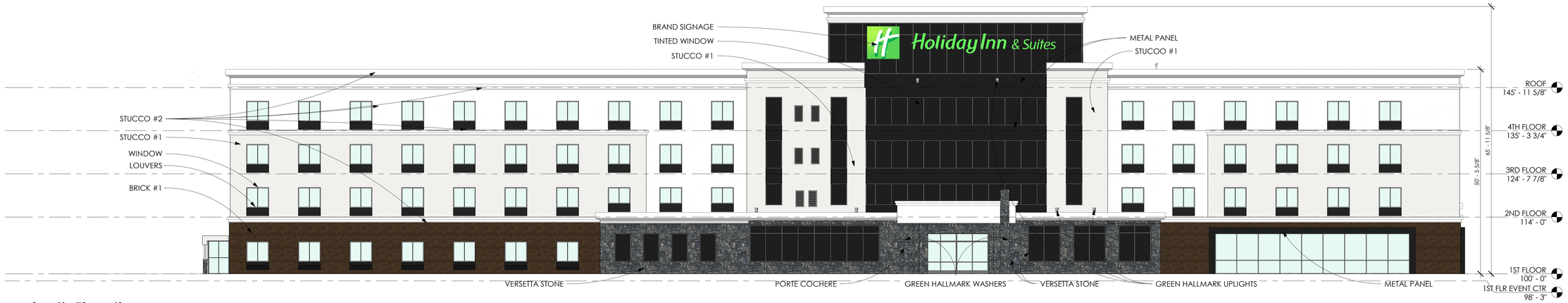
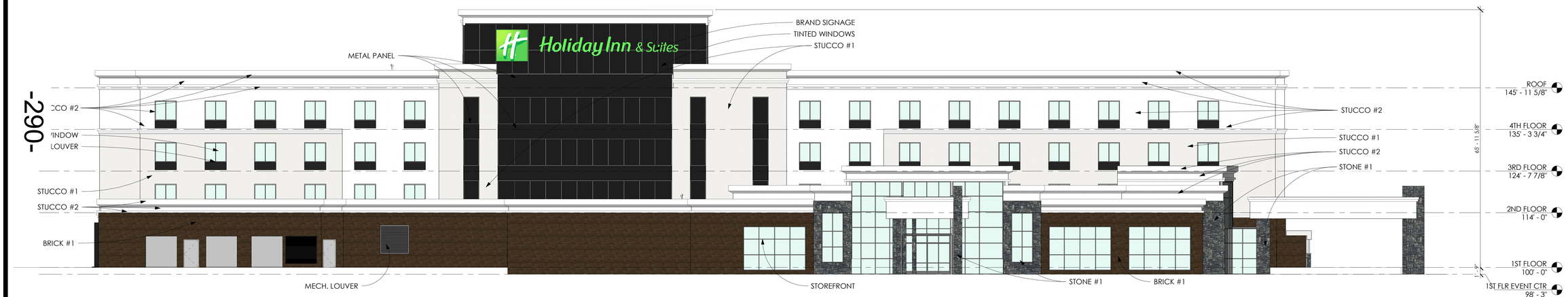
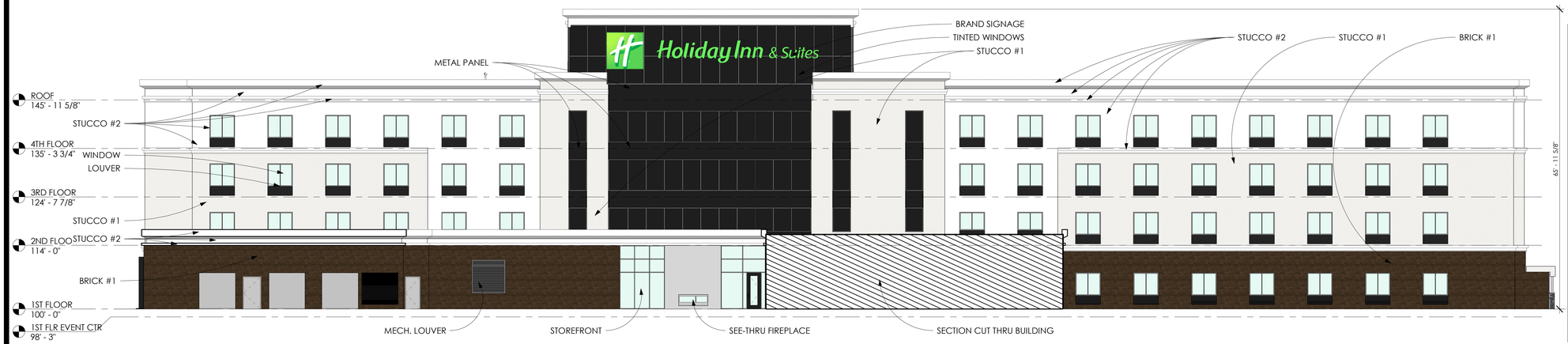


1 South Elevation
SCALE 3/32" = 1'-0"



2 North Elevation
SCALE 3/32" = 1'-0"



4 Hotel North Elevation
SCALE 3/32" = 1'-0"

EXTERIOR FINISH SCHEDULE

BRICK #1: MANUFACTURER: SIOUX CITY BRICK TYPE: UTILITY COLOR: FINE ART VELOUR SIZE: 4"x4"x12"	28.5%
STONE #1: MANUFACTURER: VERSETTA STONE TYPE: LEDGESTONE COLOR: NORTHERN ASH	7.5%
STUCCO #1: MANUFACTURER: DRYVIT FINISH: QUARZPUTZ COLOR: 113 AMARILLO WHITE	30%
STUCCO#2: MANUFACTURER: STO CORP. FINISH: QUARZPUTZ COLOR: 306 SNOW WHITE	27.2%
METAL PANEL: MANUFACTURER: FIRESTONE TYPE: ACM FLUSH METAL PANEL COLOR: MATTE BLACK	6.8%

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MINNEAPOLIS, MN 55423-4084
612.861.9636
WWW.TMTARCH.COM

Item 5.c.

HOLIDAY INN & SUITES CONFERENCE CENTER
CEDAR FALLS, IOWA 50613

PREPARED FOR:
open door HOSPITALITY
RUSSELL

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PRINT NAME: Gary Fischer

SIGNATURE:

DATE: 02/01/2018 **LICENSE #:** 3955

SITE PLAN APPLICATION 02/02/2018

NOT FOR CONSTRUCTION

InterContinental Hotels Group
Location : 19394
Inn Code : ALOCF
Project : 32669

217035A

EXTERIOR ELEVATION

A1.3

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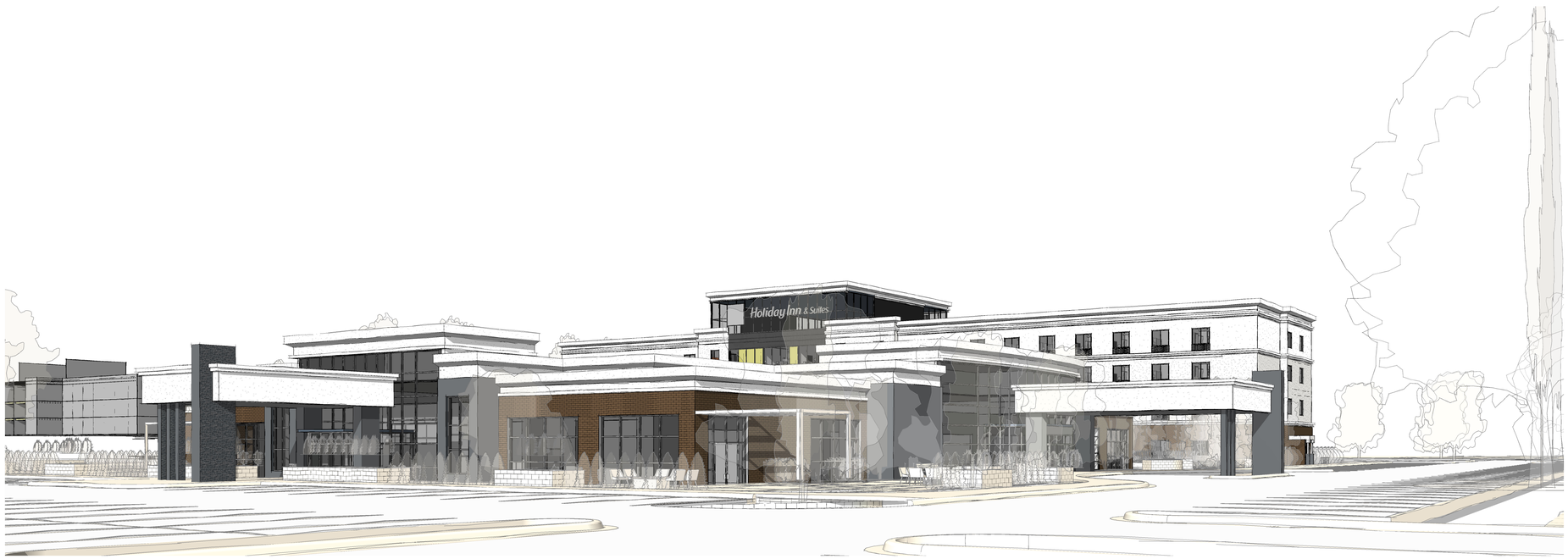
-290-

Hotel Exterior Perspective



Event Center Exterior Perspective

2/1/2018 4:56:49 PM

TUSHIE MONTGOMERY ARCHITECTS
7645 LYNDALE AVENUE SOUTH, #100
MINNEAPOLIS, MINNESOTA 55423-4084
612.861.9636 FAX 612.861.9632
WWW.TMIARCHITECTS.COM

HOLIDAY INN & SUITES CONFERENCE CENTER

CEDAR FALLS, IOWA 50613

PREPARED FOR:

open door HOSPITALITY

RUSSELL

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PRINT NAME: Gary Fischer

SIGNATURE:

DATE: 02/01/2018 **LICENSE #: 3955**

SITE PLAN APPLICATION 02/02/2018

NSTRUCTION

InterContinental
Location : 193
Inn Code : ALC
Project : 326

217

EXTE
PERSP

A1.5

Item 5.C.

POWER & COMMUNICATION LEGEND

- 120V DUPLEX OUTLET
- 120V QUAD OUTLET
- 240 VOLT RECEPTACLE
- DATA/COMMUNICATIONS OUTLET
- TELEPHONE OUTLET
- TELEVISION OUTLET
- DATA/TV COMBO OUTLET
- TELE/TV OUTLET
- FLOOR OUTLET
- JUNCTION BOX
- PUSHBUTTON STATION
- SPEAKER
- TC TIME CLOCK
- NC NURSE CALL PULL STATION
- MOTOR CONNECTION
- ELECTRICAL DISCONNECT
- ELECTRICAL STARTER DISCONNECT
- ELECTRICAL CONNECTION W/NON-FUSED DISCONNECT
- ELECTRICAL CONNECTION W/FUSED DISCONNECT
- ELECTRICAL CONNECTION W/WEATHER PROOF DISCONNECT3
- ELECTRICAL CONNECTION W/20A SWITCH FUSE
- PANELBOARD
- T THERMOSTAT MOUNTED AT 48" A.F.F.
- EX INDICATES EXISTING DEVICE
- RL INDICATES RELOCATED DEVICE
- NURSE CALL LIGHT

LIGHTING LEGEND

- RECESSED 2x4 FLUORESCENT FIXTURE
- RECESSED 2x2 FLUORESCENT FIXTURE
- INDICATES NIGHTLIGHT FIXTURE
- INDICATES EMERGENCY FIXTURE
- INDICATES EMERGENCY/NIGHTLIGHT FIXTURE
- SURFACE MOUNT 1x4 FLUORESCENT FIXTURE
- HIGH BAY 2x4 FLUORESCENT FIXTURE
- SURFACE WALL MOUNTED FLUORESCENT FIXTURE
- SURFACE CEILING MOUNT FLUORESCENT FIXTURE
- RECESSED DOWNLIGHT
- SURFACE WALL MOUNTED FIXTURE
- SURFACE MOUNTED FIXTURE
- SURFACE MOUNTED PENDANT FIXTURE
- OUTSIDE POLE-MOUNT LIGHT FIXTURE
- EXTERIOR GROUND MOUNTED LIGHT FIXTURE
- EMERGENCY LIGHTING FIXTURE
- LED EXIT SIGN-SHADED AREA INDICATES ILLUMINATED FACE
- LED EXIT/EMERGENCY SIGN-SHADED AREA INDICATES ILLUMINATED FACE
- EXTERIOR EMERGENCY EGRESS LIGHT
- $ SINGLE POLE SWITCH
- $2 2-POLE SWITCH
- $3 3-WAY SWITCH
- $4 4-WAY SWITCH
- $P SWITCH W/PILOT LIGHT
- OS1 WALL MOUNTED SINGLE LEVEL OCCUPANCY SENSOR
- OS2 WALL MOUNTED DUAL LEVEL OCCUPANCY SENSOR
- OS CEILING MOUNTED OCCUPANCY SENSOR
- NL INDICATES FIXTURE TO REMAIN ON FOR SECURITY PURPOSES
- A,B INDICATES LIGHT FIXTURE SWITCH-LEGS
- P-X INDICATES PANEL AND CIRCUIT NUMBER
- 1 INDICATES LIGHT FIXTURE TYPE
- EX INDICATES EXISTING FIXTURE
- RL INDICATES RELOCATED FIXTURE
- TC INDICATES FIXTURE CONTROLLED BY TIMECLOCK
- EM INDICATES EMERGENCY FIXTURE

SITE NOTES

1. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR A COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEM.
2. MATERIALS AND INSTALLATION SHALL COMPLY WITH CODES, UTILITY REQUIREMENTS, LAWS AND ORDINANCES OF FEDERAL, STATE, OSHA AND LOCAL GOVERNING BODIES HAVING JURISDICTION.
3. THE CONTRACTOR SHALL COMPLY WITH ALL CODES AND STANDARDS APPLICABLE TO THIS PROJECT THAT ARE LISTED BUT NOT LIMITED TO: NEC, NFPA, NEMA, ANSI, IES, IEEE, NFPA LIFE SAFETY 101, ASHRAE 90.1, IECC ENERGY CODE AND IBC BUILDING CODE.
4. PRIOR TO ANY DIGGING, TRENCHING, ETC. CONTACT ALL LOCAL UTILITY COMPANIES AND MUNICIPALITIES AND CONFIRM EXACT LOCATIONS OF ALL EXISTING UTILITIES.
5. MATERIALS AND EQUIPMENT SHALL BE LISTED AND/OR LABELED BY UL OR ANOTHER NATIONALLY RECOGNIZED TESTING LABORATORY.
6. ALL MATERIAL, EQUIPMENT, WIRING DEVICES, ETC SHALL BE NEW, UNLESS SPECIFICALLY NOTED AS EXISTING TO BE REUSED.
7. ALL MATERIALS AND EQUIPMENT SHALL BE STORED, HANDLED, ERECTED, INSTALLED, CONNECTED, CLEANED, ADJUSTED, TESTED, CONDITIONED AND PLACED IN SERVICE IN ACCORDANCE WITH THE MANUFACTURERS DIRECTIONS AND RECOMMENDATIONS.
8. COORDINATE THE UTILITY COMPANY SERVICE FEEDS AND INSTALLATION.
9. ALL POLE FIXTURES TO BE LOCATED 4' AWAY FROM EDGE OF CURB.
10. ALL EXTERIOR LIGHT FIXTURES TO BE CONNECTED TO A COMMON EQUIPMENT GROUND. USE #8, TYPE THWN.
11. ALL CIRCUIT TO BE PLACED IN 1" CONDUITS UNLESS OTHERWISE NOTED. CIRCUIT TO USE COPPER WIRE, TYPE THWN.
12. THE CONTROLLING LIGHTING CONTACTORS SHALL BE MOUNTED INSIDE THE BUILDING WITH TIME-CLOCK CONTROL & REMOTE PHOTOCELLS LOCATED ON THE EXTERIOR SIDE OF THE BUILDING WALL. INSTALL PHOTOCELLS AT LOCATIONS WHERE BUILDING OR OTHER OBSTRUCTIONS WILL NOT INTERFERE WITH THEIR PROPER OPERATION. FINAL BRANCH CIRCUIT SUPPLY CONNECTIONS WILL BE PROVIDED BY THE BUILDING ELECTRICAL CONTRACTORS.
13. MIN. BURIAL DEPTH FOR THE LIGHTING CIRCUIT SHALL BE 24". A SLIGHT DECREASE IN DEPTH IS ALLOWED WITHIN 10' OF THE POLES.
14. VERIFY CONSTRUCTION AREAS ON OTHER SITE PLANS FOR POTENTIAL OBSTACLES AND CONSTRUCTION LIMITS.

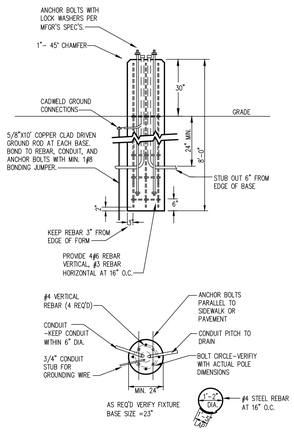
ELECTRIC GENERAL NOTES

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH NATIONAL, STATE AND LOCAL ELECTRICAL CODES.
2. ENERGY CODE WILL BE IN ACCORDANCE WITH ASHRAE 90.1 2010.
3. COORDINATE WORK WITH ALL OTHER TRADES.
4. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
5. ALL WIRING SHALL BE INSTALLED IN APPROVED RACEWAYS.
6. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED AT ALL LOCATIONS.
7. ALL MEASUREMENTS TO TOP OF BOX. RECEPTACLES SHALL BE 20" A.F.F. SWITCHES SHALL BE 48" A.F.F.
8. GFI PROTECT ALL RECEPTACLES WITHIN 6' OF EVERY SINK.

LIGHTING FIXTURE SCHEDULE

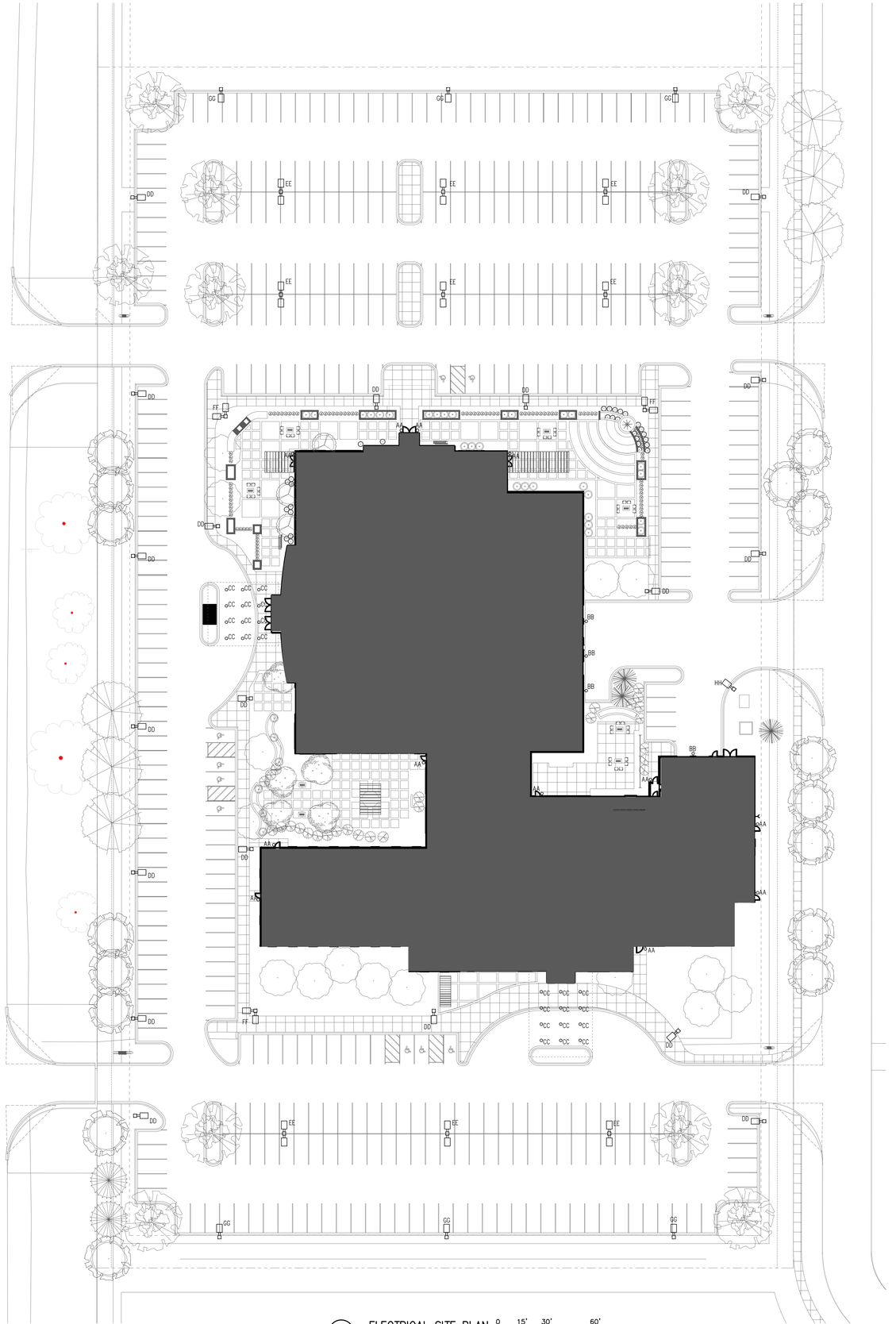
TYPE	LAMPS	WATTAGE	DESCRIPTION	NOTES
AA	LED	18	SMALL EXTERIOR WALL PACK	–
BB	LED	26	MEDIUM EXTERIOR WALL PACK	–
CC	LED	18	EXTERIOR RECESSED DOWNLIGHT	–
DD	LED	78	POLE MOUNT FIXTURE, TYPE II OPTICS, 20' POLE	–
EE	LED	(2) 78	DUAL HEAD 180° POLE MOUNT FIXTURE, TYPE III OPTICS, 20' POLE	–
FF	LED	(2) 78	DUAL HEAD 90° POLE MOUNT FIXTURE, TYPE II OPTICS, 20' POLE	–
GG	LED	105	POLE MOUNT FIXTURE, TYPE II OPTICS, 20' POLE	–
HH	LED	105	POLE MOUNT FIXTURE, TYPE III OPTICS, 20' POLE	–

NOTES:



NOTE:
1.) USE MFGR'S DIMENSIONS FOR EXACT ANCHOR BOLT AND COVER PLACEMENT.
2.) INSTALL INLINE FUSES IN EACH UNGROUNDED CONDUCTOR WITHIN POLE BASE HAND HOLE.
3.) TROWEL FINISH EXPOSED PORTION OF BASE TO REMOVE/COVER FORM MARKS.

2 / E1.1 POLE BASE DETAIL
NOT TO SCALE



1 / E1.1 ELECTRICAL SITE PLAN
SCALE: 1" = 30'
0 15' 30' 60'

DRAWN BY: DJK
CHECKED BY: TJA
DATE: 1/4/18
DWG FILE:
REF FILE:
JOB NUMBER:

BERDI ELECTRIC LLC
3308 Southway Drive
St. Cloud, MN 56301
PHONE: 320-656-0317
FAX: 320-656-0312

CORPORATE OFFICE
400 Technology Drive E.
Suite 4
Watertown, WI 53094
Tel 715-252-2690
Fax 715-252-2692

BRANCH OFFICE
3320 Baker Street
Suite 101
Wausau, WI 54401
Tel 715-581-5277

A/C/a Auth Consulting/associates

PROJECT:
PROPOSED PROJECT FOR:
HOLIDAY INN & SUITES CONFERENCE CENTER
CEDAR FALLS, IA

ELECTRICAL SITE PLAN

SHEET NO.
E1.1

Holiday Inn & Suites Conference Center

Cedar Falls, IA

Prelim Site Lighting 1-5-2018

WPLED18

Ultra-high efficiency LED 18 Watt wallpack. Patent Pending thermal management system. 100,000 hour L70 lifespan. 5 Year Warranty.

Color: Bronze Weight: 7.5 lbs

Project:	Type:
Prepared By:	Date:

Driver Info		LED Info	
Type:	Constant Current	Watts:	18W
120V:	0.17A	Color Temp:	5000K
208V:	0.11A	Color Accuracy:	73 CRI
240V:	0.09A	L70 Lifespan:	100000
277V:	0.08A	Lumens:	2508
Input Watts:	20W	Efficacy:	124 LPW
Efficiency:	89%		

Technical Specifications

Listings

UL Listing:

Suitable for wet locations. Suitable for mounting within 1.2m (4ft) of the ground.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P0000175I

IESNA LM-79 & LM-80 Testing:

RAB LED luminaries have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80, and have received the Department of Energy "Lighting Facts" label.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

LED:

Multi-chip, high-output, long-life LED

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Electrical

Driver:

Constant Current, Class 2, 100-277V, 50/60 Hz, 4 kV surge protection, 500mA, 100-240VAC: 0.3-0.15A, 277VAC: 0.15A, Power Factor: 99%

Construction

Maximum Ambient Temperature:

Suitable for use in 40°C (104°F) ambient temperatures

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior heat sinking with external Air-Flow fins

Finish:

Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contain no VOC or toxic heavy metals.

Reflector:

Semi-specular, vacuum-metalized polycarbonate

Gaskets:

High-temperature silicone gaskets

Housing:

Die-cast aluminum housing, lens frame and mounting arm

Mounting:

Heavy-duty mounting arm with "O" ring seal & stainless steel screws

Green Technology:

Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

Other

California Title 24:

WPLED18 with available photocell options comply with 2013 California Title 24 building and electrical codes as a commercial outdoor non-pole-mounted fixture ≤ 30 Watts. Add /PC, /PC2, /PCS or /PCS2 to RAB catalog number to add a photocell.

For Use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Patents:

The design of WPLED18 is protected by US patent D608,040, Canada patent 138280, and China patent CN301649064S.

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Replacement:

Replaces 150W Metal Halide.

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

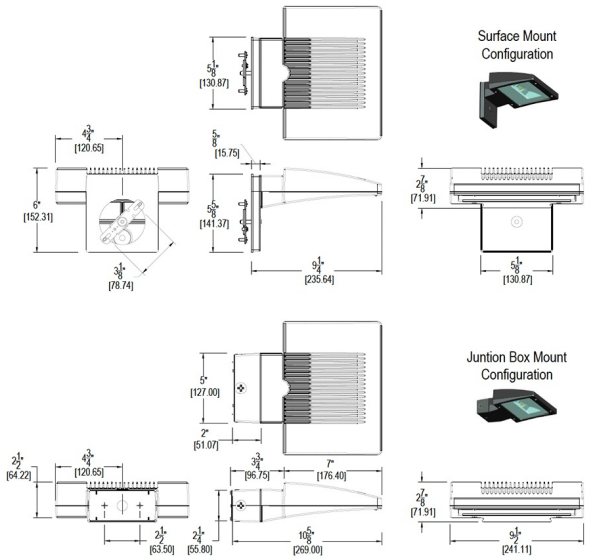
Optical

BUG Rating:

B1 U0 G0

WPLED18

Dimensions



Features

- Ultra-high efficiency LED 18 Watt wallpack
- Replaces 150W Metal Halide Wallpacks
- 100,00-Hour LED Lifespan
- 5-Year Warranty

Ordering Matrix

Family	Wattage	Color Temp	Finish	Emergency Battery Backup	Options
WPLED	18				
	18 = 18W	**Blank** = 5000K (Cool) **N** = 4000K (Neutral) **Y** = 3000K (Warm)	**Blank** = Bronze **W** = White	**Blank** = No Battery Backup **/E** = Standard Battery Backup **/EC** = Battery Backup with Cold Start	**Blank** = No Option **/PC** = 120V Button Photocell **/PC2** = 277V Button Photocell **/PCS** = 120V Swivel Photocell **/PCS2** = 277V Swivel Photocell

WPLED26

LED 26W Wallpacks. Patent Pending thermal management system. 100,000 hour L70 lifespan. 5 Year Warranty.

Color: Bronze Weight: 7.5 lbs

Project:	Type:
Prepared By:	Date:

Driver Info

Type:	Constant Current
120V:	0.26A
208V:	0.16A
240V:	0.14A
277V:	0.12A
Input Watts:	30W
Efficiency:	88%

LED Info

Watts:	26W
Color Temp:	5000K
Color Accuracy:	73 CRI
L70 Lifespan:	100000
Lumens:	3475
Efficacy:	118 LPW

Technical Specifications

Listings

UL Listing:

Suitable for wet locations. Suitable for mounting within 1.2m (4ft) of the ground.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code:_P0000170I

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

Color Consistency:

7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IP Rating:

Ingress Protection rating of IP66 for dust and water

Finish:

Formulated for high-durability and long lasting color.

Ambient Temperature:

SuitableFor use in 40°C (104°F) ambient temperatures.

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Green Technology:

Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

For use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Electrical

Driver:

Multi-chip 26W high output long life LED Driver Constant Current, 720mA, Class 2, 6kV Surge Protection, 100V-277V, 50-60 Hz, 100-240V.4 Amps.

Other

California Title 24:

See WPLED26/PC for a 2013 California Title 24 compliant model.

Patents:

The WPLED design is protected by U.S. Pat. D634878, Canada Pat 134878, China Pat. CN301649064S.

Equivalency:

Equivalent to 175W Metal Halide.

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

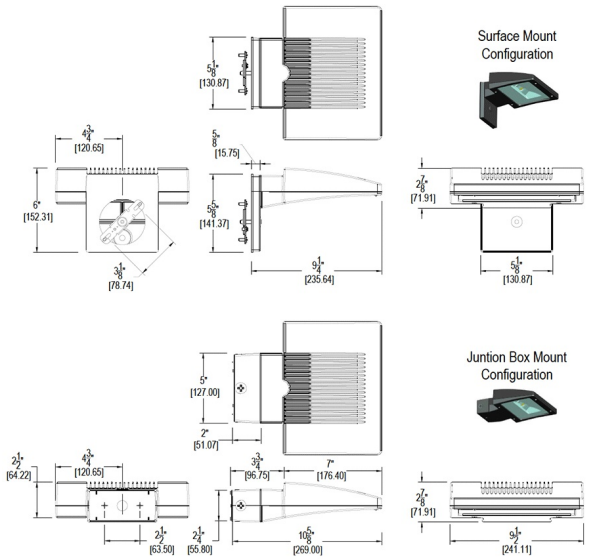
Optical

BUG Rating:

B1 U0 G0

WPLED26

Dimensions



Features

- High performance LED light engine
- Maintains 70% of initial lumens at 100,000 hours
- Weatherproof high temperature silicone gaskets
- Superior heat sinking with die cast aluminum housing and external fins
- 100 up to 277 Volts
- 5-year warranty

Ordering Matrix

Family	Wattage	Color Temp	Sensor	Finish	Photocell	Dimming
WPLED						
	26 = 26W	**Blank** = 5000K (Cool) **Y** = 3000K (Warm) **N** = 4000K (Neutral)	**Blank** = No Sensor **MS** = Mini Sensor	**Blank** = Bronze **W** = White	**Blank** = No Photocell **/PC** = 120V Button **/PCS** = 120V Swivel **/PC2** = 277V Button	**Blank** = No Dimming **/D10** = Dimmable

New and Existing Construction

LBSLEDA10L
LBSQLEDA10L

LED Surface Mount
1000 Lumen Module
Wet Location
120V

DATE: TYPE:

FIRM NAME:

PROJECT:

LiteBox 7"

APPLICATIONS:
LiteBox Surface Mount LED modules are designed for use in new construction or retrofit IC or non-IC applications. It can be installed onto a standard 4" J-box, or into a 4", 5" or 6" recessed housing with optional mounting kit. Lumen output and distribution comparable to a 100 watt incandescent lamp while consuming only 17 watts of electricity. Energy Star qualified. Suitable for use with continuous room side temperatures up to 40°C (104°F).

LIGHT ENGINE:
High efficacy LED light engine integrated with durable aluminum heat sink for excellent thermal management. 120V, 50/60Hz, powered directly to AC without the need for a driver. Output over-voltage, over-current, and short circuit protection.System designed for optimal life and lumen maintenance (42,000 hours at 70% lumen maintenance per TM-21).

DIMMING:
Continuous dimming to 15% with many LED rated dimmer controls. (See Dimming Notes on pg 3 for recommended dimmers.)

LENS/REFLECTOR:
All LiteBox LED modules are provided standard with a diffuse impact resistant polycarbonate lens for uniform illumination.

INSTALLATION:
New Construction: Install onto a standard 4" J-Box, or use with Prescolite's DBX Quicklink Housing. Quicklink connector mates directly to housing connector without a screw-base adapter.

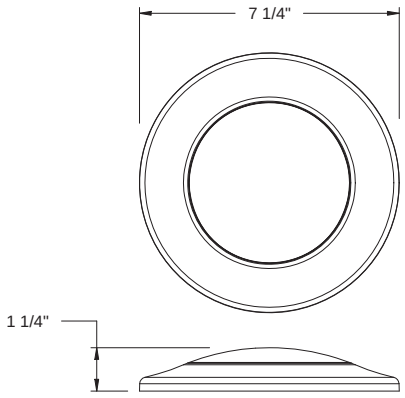
Retrofit: Install onto a standard 4" J-Box, or use in Prescolite or competitive 4", 5" or 6" recessed cans with optional mounting kit.

CERTIFICATIONS:
CSA certified to US and Canadian safety standards. ENERGY STAR qualified. Suitable for wet locations.

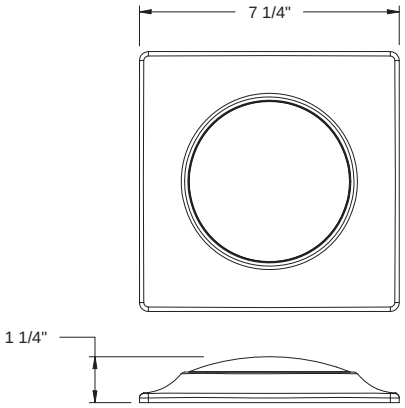
WARRANTY:
5 year warranty

See www.prescolite.com for details.

7" Round LiteBox LED



7" Square LiteBox LED



CATALOG NUMBER EXAMPLE: LBSLEDA10L30K9 WH

TRIM	LED COLOR	CRI	TRIM COLOR	-	ACCESSORIES
❑ **LBSLEDA10L** 7" Surface Mount Round LED Module ❑ **LBSQLEDA10L** 7" Surface Mount Square LED Module	❑ **27K**[1] 2700 Kelvin ❑ **30K**[1] 3000 Kelvin ❑ **35K**[1] 3500 Kelvin ❑ **40K**[2] 4000 Kelvin ❑ **50K**[2] 5000 Kelvin	❑ **8** 80+ CRI ❑ **9** 90+ CRI	❑ **WH** White ❑ **BL** Black ❑ **Z** Zet ❑ **BZ** Bronze		❑ **LBSMTGKIT** Mounting Kit for LiteBox LED Surface fixtures to install into most 4", 5", or 6" recessed cans. Set of 8. Not required for J-Box mounting.

Notes
[1]Available only in 90 CRI
[2]Available only in 80 CRI

prescolite
ABOVE AND BEYOND
A Division of Hubbell Lighting, Inc.

In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product.

PHOTOMETRIC DATA

LiteBox LED - Surface Mount LED Downlight Modules

ELECTRICAL DATA	LBSLEDA10L	LBSQLEDA10L
Input Voltage	120V AC	120V AC
Input Frequency	50/60 Hz	50/60 Hz
Input Current	0.14A	0.14A
Input Power	16.4W	16.4W
Power Factor	>0.90	>0.90
THD	<20%	<20%
EMI Filtering	FCC 47CFR Part 15, Class B	FCC 47CFR Part 15, Class B
Operating Temperature	-30°C to 40°C	-30°C to 40°C
Dimming	Yes*	Yes*

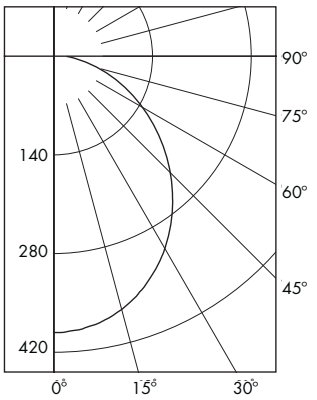
Over-voltage, over-current, short-circuit protected

*See Dimming Notes for more information

LBSLEDA10L30K9 WH
LED Light Engine: 3000K, 90+ CRI
System Wattage: 16.4
Fixture delivered lumens: 1032
Fixture Efficacy: 63.0
Spacing Criteria: 1.2

Performance Datachart

Single Unit, Initial Footcandles, 30" Work Plane							Ceiling to Floor Height (ft)	Multiple Units, Initial Footcandles, 30" Work Plane			
Nadir	10°		20°		30°			Spacing is Maximum Over Work Plane, SMH= 1.2			
FC	FC	Dia (ft)	FC	Dia (ft)	FC	Dia (ft)		Fixture Spacing (ft)	RCR 2	RCR 5	RCR 7
29	28	1	22	3	16	4	**6**	4.0	50	35	29
12	11	2	9	4	6	6	**8**	7.0	20	14	12
6	5	3	4	6	3	9	**10.5**	10.0	9	7	5
4	4	3	3	7	2	11	**12**	11.0	7	5	4



CANDELA DISTRIBUTION

DEG	CANDELA
0	392
5	390
15	372
25	337
35	290
45	234
45	175
55	117
65	66
75	28
90	16

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0-30	297	28.8
0-40	478	46.3
0-60	814	78.9
0-90	1032	100.0

Test No. 14.00619 2768255-3
Tested at 25° Ambient in accordance to IESNA LM-79-2008

COEFFICIENTS OF UTILIZATION
Zonal Cavity Method

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance: 80%				70%		50%		30%	
	20% Effective Floor Cavity Reflectance									
	% Wall Reflectance									
	70	50	30	10	70	10	50	30	50	30
1	108	104	99	95	106	94	97	94	93	90
3	90	80	71	65	88	64	75	69	72	67
5	76	63	54	58	74	47	60	53	58	52
7	65	52	43	37	64	37	50	42	48	41
9	57	44	35	30	56	30	42	35	41	34

LBSLEDA10L30K9 WH Test No. 14.00619 2768255-3

Central Inverters

For full fixture output in back-up mode, we recommend you visit www.dual-lite.com for your Central Lighting Inverter options. Please contact your local Hubbell representative for any assistance with proper sizing and loading of your inverter selection. Central lighting inverters must be ordered separately.

LiteGear: www.dual-lite.com/products/litegear_lg_series
LPS Series: www.dual-lite.com/products/lps

NOTES
Refer to www.prescolite.com for additional photometric tests (IES Files).

DIMMING NOTES:
Surface Mount LED modules are designed to be compatible with many dimmer controls. Electronic low-voltage rated dimmer controls may offer favorable dimming performance. Incandescent type dimmers are not recommended. The following is a list of known compatible dimmer controls:

Manufacturer	Series	Part Number
Leviton	Renoir II	AWRMG-EAW
Leviton	Sure Slide	6615-8
Lutron	Diva Series	(Part Number DVELV-300)
Lutron	Maestro Series	(Part Number MAELV-600)
Lutron	Nova T Series	(Part Number NTELV-300)
Lutron	Spacer Series	(Part Number SPSELV-600)
Lutron	Vierti Series	(Part Number VTELV-600)

LED Rated Controls

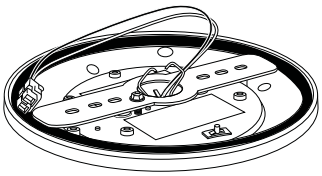
Pass & Seymour (Part Number DCL453PTCCCV6)

Incandescent Digital type dimmers are not recommended

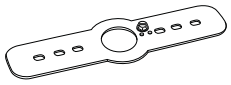
Dimming capabilities will vary depending on the dimmer control, load, and circuit installation. Always refer to dimmer manufacturer instructions or a controls specialist for specific requirements.

Dimmer control brand names where identified above are tradenames or registered trademarks of each respective company.

J-Box Mount with quick link

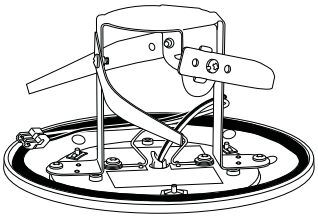


J-Box Adapter

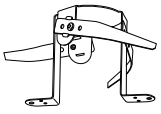


Optional LBSMTGKIT Mounting Options:

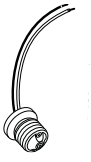
Recessed Mount with quick link



Recessed Adapter



E26 Edison Base Adapter



ALED2T78

Specification grade area lights available in IES Type II distributions. For use in parking lots, roadways, pathways and general area lighting. Patent pending thermal management system. 5 Year Warranty.

Color: Bronze Weight: 32.0 lbs

Project:	Type:
Prepared By:	Date:

Driver Info		LED Info	
Type:	Constant Current	Watts:	78W
120V:	0.66A	Color Temp:	5000K
208V:	0.41A	Color Accuracy:	71 CRI
240V:	0.35A	L70 Lifespan:	100000
277V:	0.30A	Lumens:	9552
Input Watts:	78W	Efficacy:	123 LPW
Efficiency:	N/A		

Technical Specifications

Listings

UL Listing:

Suitable for wet locations as a downlight.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code:_P0000179P

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

LEDs:

Six (6) multi-chip, 13W, high-output, long-life LEDs.

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IES Classification:

The Type II distribution is ideal for wide walkways, on ramps and entrance roadways, bike paths and other long and narrow lighting applications. This type is meant for lighting larger areas and usually is located near the roadside. This type of lighting is commonly found on smaller side streets or jogging paths.

Effective Projected Area:

EPA = 0.75

Ambient Temperature:

SuitableFor use in 40°C (104°F) ambient temperatures.

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior heat sinking with external Air-Flow fins.

Lens:

Tempered glass lens.

Housing:

Die cast aluminum housing, lens frame and mounting arm.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Mounting:

Universal mounting arm compatible for hole spacing patterns from 1" to 5 1/2" center to center. Round Pole Adaptor plate included as a standard. Easy slide and lock to mount fixture with ease.

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High temperature silicone gaskets.

Finish:

Formulated for high-durability and long lasting color.

Green Technology:

Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

For use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Electrical

Driver:

Constant Current, Class 2, 2000mA, 100-277V, 50-60Hz, 1.1A, Power Factor 99%

THD:

5.0% at 120V, 12.3% at 277V

Surge Protection:

4kV

Technical Specifications (continued)

Electrical

Surge Protector:

ALED78 is available with a 6kV surge protector (SP6). SP6 available .

Other

California Title 24:

See ALED2T78/D10, ALED2T78/BL, ALED2T78/PCS, ALED2T78/PCS2, or ALED2T78/PCT for a 2013 California Title 24 compliant product. Any additional component requirements will be listed in the Title 24 section under technical specifications on the product page.

Compatibility:

Compatible with Round Poles with a diameter of 2.5" to 6"

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Patents:

The ALED design is protected by patents in the U.S. Pat. 668,370, Canada Pat. 144956, China ZL201230100154.X, and Mexico Pat. 38423. Pending patents in Taiwan.

Replacement:

Replaces 250W Metal Halide.

Buy American Act Compliance:

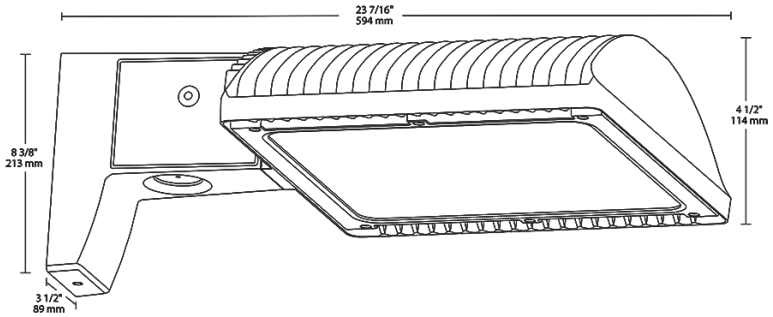
RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Optical

BUG Rating:

B1 U0 G2

Dimensions



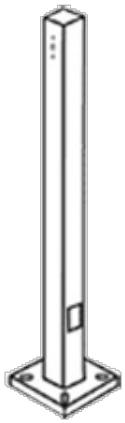
Features

- 66% energy cost savings vs. HID
- 100,000-hour LED lifespan
- Type II distribution
- 5-year warranty

Ordering Matrix

Family	Optics	Wattage	Mounting	Color Temp	Finish	Driver Options	Photocell Options
ALED	2T	78					
	2T = Type II **3T** = Type III **4T** = Type IV	**50** = 50W **78** = 78W **105** = 105W **125** = 125W **150** = 150W	**Blank** = Pole mount **SF** = Slipfitter	**Blank** = 5000K (Cool) **N** = 4000K (Neutral) **Y** = 3000K (Warm)	**Blank** = Bronze **RG** = Roadway Gray **W** = White	**Blank** = 120-277V **/480** = 480V (not available for 150W) **/BL** = Bi-Level **/D10** = 0-10V Dimming	**Blank** = No Option **/PC** = 120V Button Photocell (Pole mount models only) **/PC2** = 277V Button Photocell (Pole mount models only) **/PCT** = 120-277V Twistlock Photocell (Pole mount models only) **/PCT4** = 480V Twistlock Photocell (Pole mount models only) **/PCS** = 120V Swivel Photocell **/PCS2** = 277V Swivel Photocell **/PCS4** = 480V Swivel Photocell **/WS2** = Multi-Level Motion Sensor 20 ft. (Only available 0-10V dimming models) **/WS4** = Multi-Level Motion Sensor 40 ft. (Only available 0-10V dimming models)

PS4-11-20D2



Square steel poles drilled for 2 Area Lights at 180°. Designed for ground mounting. Poles are stocked nationwide for quick shipment. Protective packaging ensures poles arrive at the job site good as new.

Color: Bronze Weight: 137.0 lbs

Project:	Type:
Prepared By:	Date:

Lamp Info		Ballast Info	
Type:	N/A	Type:	N/A
Watts:	0W	120V:	N/A
Shape/Size:	N/A	208V:	N/A
Base:	N/A	240V:	N/A
ANSI:	N/A	277V:	N/A
Hours:	N/A	Input Watts:	0W
Lamp Lumens:	N/A		
Efficacy:	N/A		

Technical Specifications

Listings

CSA Listed:

Suitable for wet locations.

Construction

Shaft:

46,000 p.s.i. minimum yield.

Hand Holes:

Reinforced with grounding lug and removable cover.

Base Plates:

Slotted base plates 36,000 p.s.i.

Shipping Protection:

All poles are shipped in individual corrugated cartons to prevent finish damage.

Color:

Bronze powder coating.

Height:

20 FT.

Weight:

137 lbs.

Gauge:

11

Wall Thickness:

1/8".

Shaft Size:

4".

Hand Hole Dimensions:

3" x 5".

Bolt Circle:

8 1/2".

Base Dimension:

8".

Anchor Bolt:

Galvanized anchor bolts and galvanized hardware and anchor bolt template. All bolts have a 3" hook.

Anchor Bolt Templates:

WARNING Template must be printed on 11" x 17" sheet for actual size. CHECK SCALE BEFORE USING. Templates shipped with anchor bolts and available .

Pre-Shipped Anchor Bolts:

Bolts can be pre-shipped upon request for additional freight charge.

MaxEPA's/Max Weights:

70MPH 8.3 ft_/240 lb
80MPH 5.6 ft_/165 lb
90MPH 3.6 ft_/110 lb
100MPH 2.2 ft_/75 lb
110MPH 1.0 ft_/45 lb
120MPH 0.2 ft_/20 lb.

Other

Terms of Sale:

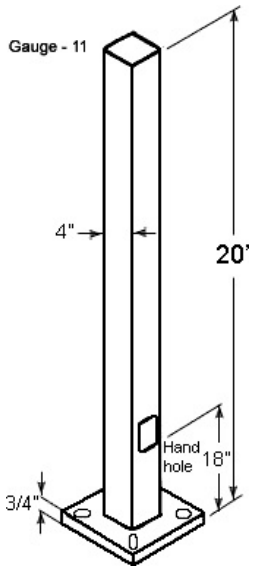
Pole Terms of Sale is available .

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

PS4-11-20D2

Dimensions



Features

- Designed for ground mounting
- Heavy duty TGIC polyester coating
- Reinforced hand holes with grounding lug and removable cover for easy wiring access
- Anchor Bolt Kit includes pole cap and base cover (sold separately)
- Custom manufactured for each application

ALED3T78

Specification grade area lights available in IES Type III distributions. For use for roadway, general parking and other area lighting applications where a larger pool of lighting is required. Patent pending thermal management system. 5 Year Warranty.

Color: Bronze Weight: 30.4 lbs

Project:	Type:
Prepared By:	Date:

Driver Info

Type:	Constant Current
120V:	0.66A
208V:	0.41A
240V:	0.35A
277V:	0.30A
Input Watts:	77W
Efficiency:	N/A

LED Info

Watts:	78W
Color Temp:	5000K
Color Accuracy:	71 CRI
L70 Lifespan:	100000
Lumens:	9263
Efficacy:	121 LPW

Technical Specifications

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

LEDs:

Six (6) multi-chip, 13W, high-output, long-life LEDs.

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Listings

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code:_P0000179S

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

UL Listing:

Suitable for wet locations as a downlight.

Construction

IES Classification:

The Type III distribution is ideal for roadway, general parking and other area lighting applications where a larger pool of lighting is required. It is intended to be located near the side of the area, allowing the light to project outward and fill the area.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Ambient Temperature:

SuitableFor use in 40°C (104°F) ambient temperatures.

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior heat sinking with external Air-Flow fins.

Effective Projected Area:

EPA = 0.75

Lens:

Tempered glass lens.

Housing:

Die cast aluminum housing, lens frame and mounting arm.

Mounting:

Universal mounting arm compatible for hole spacing patterns from 1" to 5 1/2" center to center. Round Pole Adaptor plate included as a standard. Easy slide and lock to mount fixture with ease.

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High temperature silicone gaskets.

Finish:

Formulated for high-durability and long lasting color.

Green Technology:

Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

For use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Electrical

Driver:

Constant Current, Class 2, 2000mA, 100-277V, 50-60Hz, 1.1A, Power Factor 99%

THD:

5.3% at 120V, 13.3% at 277V

Surge Protection:

4kV

Technical Specifications (continued)

Electrical

Surge Protector:

ALED78 is available with a 6kV surge protector (SP6). SP6 available .

Other

California Title 24:

See ALED3T78/D10, ALED3T78/BL, ALED3T78/PCS, ALED3T78/PCS2, or ALED3T78/PCT for a 2013 California Title 24 compliant product. Any additional component requirements will be listed in the Title 24 section under technical specifications on the product page.

Compatibility:

Compatible with Round Poles with a diameter of 2.5" to 6"

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Patents:

The ALED design is protected by patents in the U.S. Pat. 668,370, Canada Pat. 144956, China ZL201230100154.X, and Mexico Pat. 38423. Pending patents in Taiwan.

Replacement:

Replaces 250W Metal Halide.

Buy American Act Compliance:

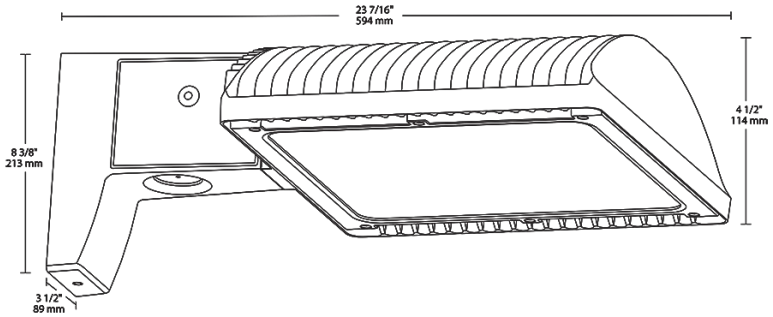
RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Optical

BUG Rating:

B1 U0 G2

Dimensions



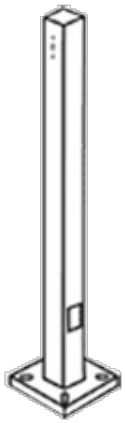
Features

- 66% energy cost savings vs. HID
- 100,000-hour LED lifespan
- Type III distribution
- 5-year warranty

Ordering Matrix

Family	Optics	Wattage	Mounting	Color Temp	Finish	Driver Options	Photocell Options
ALED	3T	78					
	2T = Type II **3T** = Type III **4T** = Type IV	**50** = 50W **78** = 78W **105** = 105W **125** = 125W **150** = 150W	**Blank** = Pole mount **SF** = Slipfitter	**Blank** = 5000K (Cool) **N** = 4000K (Neutral) **Y** = 3000K (Warm)	**Blank** = Bronze **RG** = Roadway Gray **W** = White	**Blank** = 120-277V **/480** = 480V (not available for 150W) **/BL** = Bi-Level **/D10** = 0-10V Dimming	**Blank** = No Option **/PC** = 120V Button Photocell (Pole mount models only) **/PC2** = 277V Button Photocell (Pole mount models only) **/PCT** = 120-277V Twistlock Photocell (Pole mount models only) **/PCT4** = 480V Twistlock Photocell (Pole mount models only) **/PCS** = 120V Swivel Photocell **/PCS2** = 277V Swivel Photocell **/PCS4** = 480V Swivel Photocell **/WS2** = Multi-Level Motion Sensor 20 ft. (Only available 0-10V dimming models) **/WS4** = Multi-Level Motion Sensor 40 ft. (Only available 0-10V dimming models)

PS4-11-20D2



Square steel poles drilled for 2 Area Lights at 180°. Designed for ground mounting. Poles are stocked nationwide for quick shipment. Protective packaging ensures poles arrive at the job site good as new.

Color: Bronze Weight: 137.0 lbs

Project:	Type:
Prepared By:	Date:

Lamp Info		Ballast Info	
Type:	N/A	Type:	N/A
Watts:	0W	120V:	N/A
Shape/Size:	N/A	208V:	N/A
Base:	N/A	240V:	N/A
ANSI:	N/A	277V:	N/A
Hours:	N/A	Input Watts:	0W
Lamp Lumens:	N/A		
Efficacy:	N/A		

Technical Specifications

Listings

CSA Listed:

Suitable for wet locations.

Construction

Shaft:

46,000 p.s.i. minimum yield.

Hand Holes:

Reinforced with grounding lug and removable cover.

Base Plates:

Slotted base plates 36,000 p.s.i.

Shipping Protection:

All poles are shipped in individual corrugated cartons to prevent finish damage.

Color:

Bronze powder coating.

Height:

20 FT.

Weight:

137 lbs.

Gauge:

11

Wall Thickness:

1/8".

Shaft Size:

4".

Hand Hole Dimensions:

3" x 5".

Bolt Circle:

8 1/2".

Base Dimension:

8".

Anchor Bolt:

Galvanized anchor bolts and galvanized hardware and anchor bolt template. All bolts have a 3" hook.

Anchor Bolt Templates:

WARNING Template must be printed on 11" x 17" sheet for actual size. CHECK SCALE BEFORE USING. Templates shipped with anchor bolts and available .

Pre-Shipped Anchor Bolts:

Bolts can be pre-shipped upon request for additional freight charge.

MaxEPA's/Max Weights:

70MPH 8.3 ft_/240 lb
80MPH 5.6 ft_/165 lb
90MPH 3.6 ft_/110 lb
100MPH 2.2 ft_/75 lb
110MPH 1.0 ft_/45 lb
120MPH 0.2 ft_/20 lb.

Other

Terms of Sale:

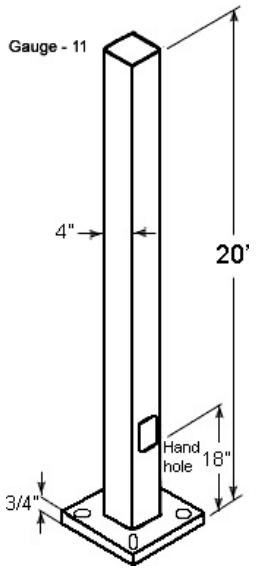
Pole Terms of Sale is available .

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

PS4-11-20D2

Dimensions



Features

- Designed for ground mounting
- Heavy duty TGIC polyester coating
- Reinforced hand holes with grounding lug and removable cover for easy wiring access
- Anchor Bolt Kit includes pole cap and base cover (sold separately)
- Custom manufactured for each application

ALED2T78

Specification grade area lights available in IES Type II distributions. For use in parking lots, roadways, pathways and general area lighting. Patent pending thermal management system. 5 Year Warranty.

Color: Bronze Weight: 32.0 lbs

Project:	Type:
Prepared By:	Date:

Driver Info		LED Info	
Type:	Constant Current	Watts:	78W
120V:	0.66A	Color Temp:	5000K
208V:	0.41A	Color Accuracy:	71 CRI
240V:	0.35A	L70 Lifespan:	100000
277V:	0.30A	Lumens:	9552
Input Watts:	78W	Efficacy:	123 LPW
Efficiency:	N/A		

Technical Specifications

Listings

UL Listing:

Suitable for wet locations as a downlight.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code:_P0000179P

IESNA LM-79 & IESNA LM-80 Testing:

RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

LEDs:

Six (6) multi-chip, 13W, high-output, long-life LEDs.

Color Consistency:

3-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IES Classification:

The Type II distribution is ideal for wide walkways, on ramps and entrance roadways, bike paths and other long and narrow lighting applications. This type is meant for lighting larger areas and usually is located near the roadside. This type of lighting is commonly found on smaller side streets or jogging paths.

Effective Projected Area:

EPA = 0.75

Ambient Temperature:

SuitableFor use in 40°C (104°F) ambient temperatures.

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior heat sinking with external Air-Flow fins.

Lens:

Tempered glass lens.

Housing:

Die cast aluminum housing, lens frame and mounting arm.

IP Rating:

Ingress Protection rating of IP66 for dust and water

Mounting:

Universal mounting arm compatible for hole spacing patterns from 1" to 5 1/2" center to center. Round Pole Adaptor plate included as a standard. Easy slide and lock to mount fixture with ease.

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High temperature silicone gaskets.

Finish:

Formulated for high-durability and long lasting color.

Green Technology:

Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

For use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Electrical

Driver:

Constant Current, Class 2, 2000mA, 100-277V, 50-60Hz, 1.1A, Power Factor 99%

THD:

5.0% at 120V, 12.3% at 277V

Surge Protection:

4kV

Technical Specifications (continued)

Electrical

Surge Protector:

ALED78 is available with a 6kV surge protector (SP6). SP6 available .

Other

California Title 24:

See ALED2T78/D10, ALED2T78/BL, ALED2T78/PCS, ALED2T78/PCS2, or ALED2T78/PCT for a 2013 California Title 24 compliant product. Any additional component requirements will be listed in the Title 24 section under technical specifications on the product page.

Compatibility:

Compatible with Round Poles with a diameter of 2.5" to 6"

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Patents:

The ALED design is protected by patents in the U.S. Pat. 668,370, Canada Pat. 144956, China ZL201230100154.X, and Mexico Pat. 38423. Pending patents in Taiwan.

Replacement:

Replaces 250W Metal Halide.

Buy American Act Compliance:

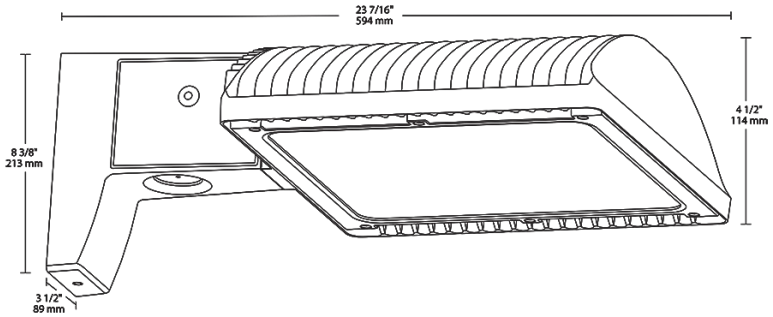
RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

Optical

BUG Rating:

B1 U0 G2

Dimensions



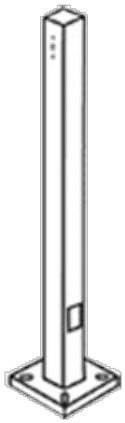
Features

- 66% energy cost savings vs. HID
- 100,000-hour LED lifespan
- Type II distribution
- 5-year warranty

Ordering Matrix

Family	Optics	Wattage	Mounting	Color Temp	Finish	Driver Options	Photocell Options
ALED	2T	78					
	2T = Type II **3T** = Type III **4T** = Type IV	**50** = 50W **78** = 78W **105** = 105W **125** = 125W **150** = 150W	**Blank** = Pole mount **SF** = Slipfitter	**Blank** = 5000K (Cool) **N** = 4000K (Neutral) **Y** = 3000K (Warm)	**Blank** = Bronze **RG** = Roadway Gray **W** = White	**Blank** = 120-277V **/480** = 480V (not available for 150W) **/BL** = Bi-Level **/D10** = 0-10V Dimming	**Blank** = No Option **/PC** = 120V Button Photocell (Pole mount models only) **/PC2** = 277V Button Photocell (Pole mount models only) **/PCT** = 120-277V Twistlock Photocell (Pole mount models only) **/PCT4** = 480V Twistlock Photocell (Pole mount models only) **/PCS** = 120V Swivel Photocell **/PCS2** = 277V Swivel Photocell **/PCS4** = 480V Swivel Photocell **/WS2** = Multi-Level Motion Sensor 20 ft. (Only available 0-10V dimming models) **/WS4** = Multi-Level Motion Sensor 40 ft. (Only available 0-10V dimming models)

PS4-11-20D2



Square steel poles drilled for 2 Area Lights at 180°. Designed for ground mounting. Poles are stocked nationwide for quick shipment. Protective packaging ensures poles arrive at the job site good as new.

Color: Bronze Weight: 137.0 lbs

Project:	Type:
Prepared By:	Date:

Lamp Info		Ballast Info	
Type:	N/A	Type:	N/A
Watts:	0W	120V:	N/A
Shape/Size:	N/A	208V:	N/A
Base:	N/A	240V:	N/A
ANSI:	N/A	277V:	N/A
Hours:	N/A	Input Watts:	0W
Lamp Lumens:	N/A		
Efficacy:	N/A		

Technical Specifications

Listings

CSA Listed:

Suitable for wet locations.

Construction

Shaft:

46,000 p.s.i. minimum yield.

Hand Holes:

Reinforced with grounding lug and removable cover.

Base Plates:

Slotted base plates 36,000 p.s.i.

Shipping Protection:

All poles are shipped in individual corrugated cartons to prevent finish damage.

Color:

Bronze powder coating.

Height:

20 FT.

Weight:

137 lbs.

Gauge:

11

Wall Thickness:

1/8".

Shaft Size:

4".

Hand Hole Dimensions:

3" x 5".

Bolt Circle:

8 1/2".

Base Dimension:

8".

Anchor Bolt:

Galvanized anchor bolts and galvanized hardware and anchor bolt template. All bolts have a 3" hook.

Anchor Bolt Templates:

WARNING Template must be printed on 11" x 17" sheet for actual size. CHECK SCALE BEFORE USING. Templates shipped with anchor bolts and available .

Pre-Shipped Anchor Bolts:

Bolts can be pre-shipped upon request for additional freight charge.

MaxEPA's/Max Weights:

70MPH 8.3 ft_/240 lb
80MPH 5.6 ft_/165 lb
90MPH 3.6 ft_/110 lb
100MPH 2.2 ft_/75 lb
110MPH 1.0 ft_/45 lb
120MPH 0.2 ft_/20 lb.

Other

Terms of Sale:

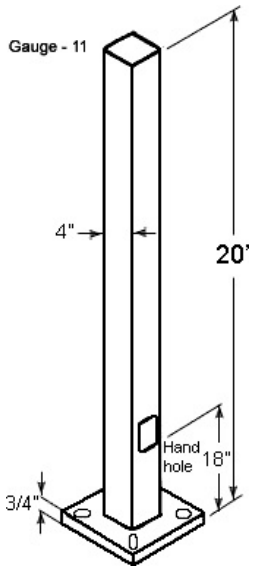
Pole Terms of Sale is available .

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

PS4-11-20D2

Dimensions



Features

- Designed for ground mounting
- Heavy duty TGIC polyester coating
- Reinforced hand holes with grounding lug and removable cover for easy wiring access
- Anchor Bolt Kit includes pole cap and base cover (sold separately)
- Custom manufactured for each application

ALED2T105

Specification grade area lights available in IES Type II distributions. For use in parking lots, roadways, pathways and general area lighting. Patent pending thermal management system. 5 Year Warranty.

Color: Bronze Weight: 32.0 lbs

Project:	Type:
Prepared By:	Date:

Driver Info

Type:	Constant Current
120V:	0.89A
208V:	0.58A
240V:	0.50A
277V:	0.44A
Input Watts:	108W
Efficiency:	98%

LED Info

Watts:	105W
Color Temp:	5000K
Color Accuracy:	70 CRI
L70 Lifespan:	100000
Lumens:	13213
Efficacy:	123 LPW

Technical Specifications

Listings

UL Listing:

Suitable for wet locations.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code:_P0000177B

IESNA LM-79 & LM-80 Testing:

RAB LED luminaries have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80, and have been received the Department of Energy "Lighting Facts" label.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

LEDs:

Multi-chip, high-output, long-life LEDs

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IES Classification:

The Type II distribution is ideal for wide walkways, on ramps and entrance roadways, bike paths and other long and narrow lighting applications. This type is meant for lighting larger areas and usually is located near the roadside. This type of lighting is commonly found on smaller side streets or jogging paths.

Effective Projected Area:

EPA = 0.75

Maximum Ambient Temperature:

Suitable for use in 40°C (104°F) ambient temperatures

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior thermal management with external "Air-Flow" fins.

Lens:

Tempered glass lens.

Housing:

Die-cast aluminum housing, lens frame and mounting arm.

Mounting:

Universal mounting arm compatible for hole spacing patterns from 1" to 5 1/2" center to center. Round Pole Adaptor plate included as a standard. Easy slide and lock to mount fixture with ease.

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High-temperature silicone gaskets

IP Rating:

Ingress Protection rating of IP66 for dust and water

Finish:

Formulated for high-durability and long lasting color.

Green Technology:

Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

For use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Electrical

Drivers:

Two Drivers, Constant Current, Class 2, 1400mA, 100-277V, 50/60Hz, 0.8A, Power Factor 99%

THD:

7.6% at 120V, 16.4% at 277V

Surge Protection:

4kV

Other

California Title 24:

See ALED2T105/BL, ALED2T105/PCS, ALED2T105/PCS2, or ALED2T105/PCT for a 2013 California Title 24 compliant product. Any additional component requirements will be listed in the Title 24 section under technical specifications on the product page.

Technical Specifications (continued)

Other

Compatibility:

Compatible with Round Poles with a diameter of 2.5" to 6"

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

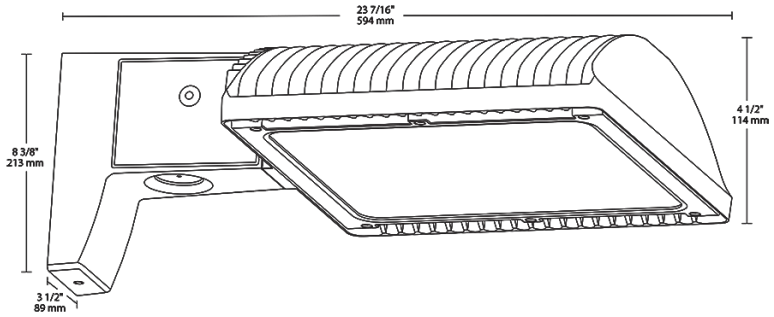
Optical

BUG Rating:

B2 U0 G2

ALED2T105

Dimensions



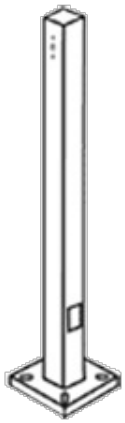
Features

- 66% energy cost savings vs. HID
- 100,000-hour LED lifespan
- Type II distribution
- 5-year warranty

Ordering Matrix

Family	Optics	Wattage	Mounting	Color Temp	Finish	Driver Options	Photocell Options
ALED	2T	105					
	2T = Type II **3T** = Type III **4T** = Type IV	**50** = 50W **78** = 78W **105** = 105W **125** = 125W **150** = 150W	**Blank** = Pole mount **SF** = Slipfitter	**Blank** = 5000K (Cool) **N** = 4000K (Neutral) **Y** = 3000K (Warm)	**Blank** = Bronze **RG** = Roadway Gray **W** = White	**Blank** = 120-277V **/480** = 480V (not available for 150W) **/BL** = Bi-Level **/D10** = 0-10V Dimming	**Blank** = No Option **/PC** = 120V Button Photocell (Pole mount models only) **/PC2** = 277V Button Photocell (Pole mount models only) **/PCT** = 120-277V Twistlock Photocell (Pole mount models only) **/PCT4** = 480V Twistlock Photocell (Pole mount models only) **/PCS** = 120V Swivel Photocell **/PCS2** = 277V Swivel Photocell **/PCS4** = 480V Swivel Photocell **/WS2** = Multi-Level Motion Sensor 20 ft. (Only available 0-10V dimming models) **/WS4** = Multi-Level Motion Sensor 40 ft. (Only available 0-10V dimming models)

PS4-11-20D2



Square steel poles drilled for 2 Area Lights at 180°. Designed for ground mounting. Poles are stocked nationwide for quick shipment. Protective packaging ensures poles arrive at the job site good as new.

Color: Bronze Weight: 137.0 lbs

Project:	Type:
Prepared By:	Date:

Lamp Info		Ballast Info	
Type:	N/A	Type:	N/A
Watts:	0W	120V:	N/A
Shape/Size:	N/A	208V:	N/A
Base:	N/A	240V:	N/A
ANSI:	N/A	277V:	N/A
Hours:	N/A	Input Watts:	0W
Lamp Lumens:	N/A		
Efficacy:	N/A		

Technical Specifications

Listings

CSA Listed:

Suitable for wet locations.

Construction

Shaft:

46,000 p.s.i. minimum yield.

Hand Holes:

Reinforced with grounding lug and removable cover.

Base Plates:

Slotted base plates 36,000 p.s.i.

Shipping Protection:

All poles are shipped in individual corrugated cartons to prevent finish damage.

Color:

Bronze powder coating.

Height:

20 FT.

Weight:

137 lbs.

Gauge:

11

Wall Thickness:

1/8".

Shaft Size:

4".

Hand Hole Dimensions:

3" x 5".

Bolt Circle:

8 1/2".

Base Dimension:

8".

Anchor Bolt:

Galvanized anchor bolts and galvanized hardware and anchor bolt template. All bolts have a 3" hook.

Anchor Bolt Templates:

WARNING Template must be printed on 11" x 17" sheet for actual size. CHECK SCALE BEFORE USING. Templates shipped with anchor bolts and available .

Pre-Shipped Anchor Bolts:

Bolts can be pre-shipped upon request for additional freight charge.

MaxEPA's/Max Weights:

70MPH 8.3 ft_/240 lb
80MPH 5.6 ft_/165 lb
90MPH 3.6 ft_/110 lb
100MPH 2.2 ft_/75 lb
110MPH 1.0 ft_/45 lb
120MPH 0.2 ft_/20 lb.

Other

Terms of Sale:

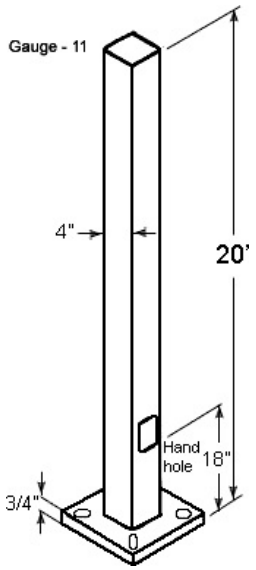
Pole Terms of Sale is available .

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

PS4-11-20D2

Dimensions



Features

- Designed for ground mounting
- Heavy duty TGIC polyester coating
- Reinforced hand holes with grounding lug and removable cover for easy wiring access
- Anchor Bolt Kit includes pole cap and base cover (sold separately)
- Custom manufactured for each application

ALED31105

Specification grade area lights available in IES Type III distributions. For use for roadway, general parking and other area lighting applications where a larger pool of lighting is required. Patent pending thermal management system. 5 Year Warranty.

Color: Bronze Weight: 32.0 lbs

Project:	Type:
Prepared By:	Date:

Driver Info

Type:	Constant Current
120V:	0.89A
208V:	0.58A
240V:	0.50A
277V:	0.44A
Input Watts:	109W
Efficiency:	96%

LED Info

Watts:	105W
Color Temp:	5000K
Color Accuracy:	70 CRI
L70 Lifespan:	100000
Lumens:	12476
Efficacy:	115 LPW

ALED3T105

Technical Specifications

Listings

UL Listing:

Suitable for wet locations.

DLC Listed:

This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.
DLC Product Code: P0000177E

IESNA LM-79 & LM-80 Testing:

RAB LED luminaries have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80, and have been received the Department of Energy "Lighting Facts" label.

Dark Sky Approved:

The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

LED Characteristics

Lifespan:

100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

LEDs:

Multi-chip, high-output, long-life LEDs

Color Stability:

LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

Construction

IES Classification:

The Type III distribution is ideal for roadway, general parking and other area lighting applications where a larger pool of lighting is required. It is intended to be located near the side of the area, allowing the light to project outward and fill the area.

Effective Projected Area:

EPA = 0.75

Maximum Ambient Temperature:

Suitable for use in 40°C (104°F) ambient temperatures

Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

Thermal Management:

Superior thermal management with external "Air-Flow" fins.

Lens:

Tempered glass lens.

Housing:

Die-cast aluminum housing, lens frame and mounting arm.

Mounting:

Universal mounting arm compatible for hole spacing patterns from 1" to 5 1/2" center to center. Round Pole Adaptor plate included as a standard. Easy slide and lock to mount fixture with ease.

Reflector:

Specular vacuum-metallized polycarbonate

Gaskets:

High-temperature silicone gaskets

IP Rating:

Ingress Protection rating of IP66 for dust and water

Finish:

Formulated for high-durability and long lasting color.

Green Technology:

Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

For use on LEED Buildings:

IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Electrical

Drivers:

Two Drivers, Constant Current, Class 2, 1400mA, 100-277V, 50/60Hz, 0.8A, Power Factor 99%

THD:

7.9% at 120V, 16.2% at 277V

Surge Protection:

4kV

Other

California Title 24:

See ALED3T105/BL, ALED3T105/PCS, ALED3T105/PCS2, or ALED3T105/PCT for a 2013 California Title 24 compliant product. Any additional component requirements will be listed in the Title 24 section under technical specifications on the product page.

Technical Specifications (continued)

Other

Compatibility:

Compatible with Round Poles with a diameter of 2.5" to 6"

Warranty:

RAB warrants that our LED products will be free from defects in materials and workmanship for a period of five (5) years from the date of delivery to the end user, including coverage of light output, color stability, driver performance and fixture finish.

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

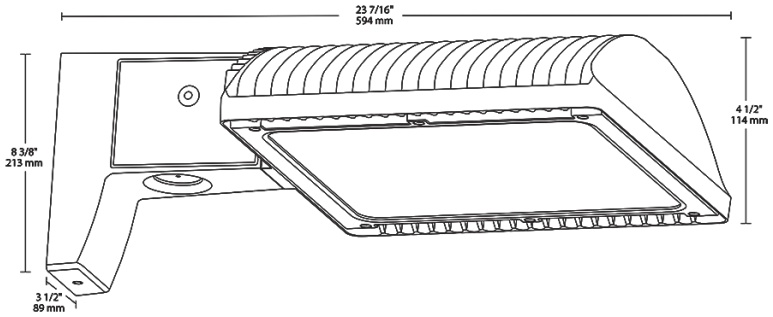
Optical

BUG Rating:

B1 U0 G2

ALED31105

Dimensions



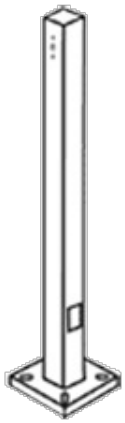
Features

- 66% energy cost savings vs. HID
- 100,000-hour LED lifespan
- Type III distribution
- 5-year warranty

Ordering Matrix

Family	Optics	Wattage	Mounting	Color Temp	Finish	Driver Options	Photocell Options
ALED	3T	105					
	2T = Type II **3T** = Type III **4T** = Type IV	**50** = 50W **78** = 78W **105** = 105W **125** = 125W **150** = 150W	**Blank** = Pole mount **SF** = Slipfitter	**Blank** = 5000K (Cool) **N** = 4000K (Neutral) **Y** = 3000K (Warm)	**Blank** = Bronze **RG** = Roadway Gray **W** = White	**Blank** = 120-277V **/480** = 480V (not available for 150W) **/BL** = Bi-Level **/D10** = 0-10V Dimming	**Blank** = No Option **/PC** = 120V Button Photocell (Pole mount models only) **/PC2** = 277V Button Photocell (Pole mount models only) **/PCT** = 120-277V Twistlock Photocell (Pole mount models only) **/PCT4** = 480V Twistlock Photocell (Pole mount models only) **/PCS** = 120V Swivel Photocell **/PCS2** = 277V Swivel Photocell **/PCS4** = 480V Swivel Photocell **/WS2** = Multi-Level Motion Sensor 20 ft. (Only available 0-10V dimming models) **/WS4** = Multi-Level Motion Sensor 40 ft. (Only available 0-10V dimming models)

PS4-11-20D2



Square steel poles drilled for 2 Area Lights at 180°. Designed for ground mounting. Poles are stocked nationwide for quick shipment. Protective packaging ensures poles arrive at the job site good as new.

Color: Bronze Weight: 137.0 lbs

Project:	Type:
Prepared By:	Date:

Lamp Info		Ballast Info	
Type:	N/A	Type:	N/A
Watts:	0W	120V:	N/A
Shape/Size:	N/A	208V:	N/A
Base:	N/A	240V:	N/A
ANSI:	N/A	277V:	N/A
Hours:	N/A	Input Watts:	0W
Lamp Lumens:	N/A		
Efficacy:	N/A		

Technical Specifications

Listings

CSA Listed:

Suitable for wet locations.

Construction

Shaft:

46,000 p.s.i. minimum yield.

Hand Holes:

Reinforced with grounding lug and removable cover.

Base Plates:

Slotted base plates 36,000 p.s.i.

Shipping Protection:

All poles are shipped in individual corrugated cartons to prevent finish damage.

Color:

Bronze powder coating.

Height:

20 FT.

Weight:

137 lbs.

Gauge:

11

Wall Thickness:

1/8".

Shaft Size:

4".

Hand Hole Dimensions:

3" x 5".

Bolt Circle:

8 1/2".

Base Dimension:

8".

Anchor Bolt:

Galvanized anchor bolts and galvanized hardware and anchor bolt template. All bolts have a 3" hook.

Anchor Bolt Templates:

WARNING Template must be printed on 11" x 17" sheet for actual size. CHECK SCALE BEFORE USING. Templates shipped with anchor bolts and available .

Pre-Shipped Anchor Bolts:

Bolts can be pre-shipped upon request for additional freight charge.

MaxEPA's/Max Weights:

70MPH 8.3 ft_/240 lb
80MPH 5.6 ft_/165 lb
90MPH 3.6 ft_/110 lb
100MPH 2.2 ft_/75 lb
110MPH 1.0 ft_/45 lb
120MPH 0.2 ft_/20 lb.

Other

Terms of Sale:

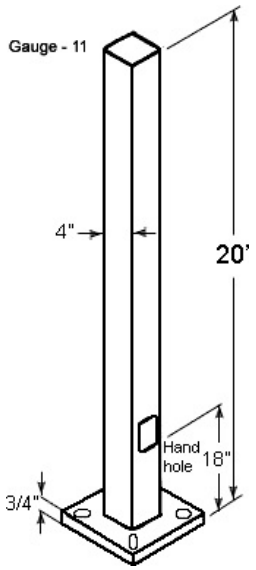
Pole Terms of Sale is available .

Buy American Act Compliance:

RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

PS4-11-20D2

Dimensions



Features

- Designed for ground mounting
- Heavy duty TGIC polyester coating
- Reinforced hand holes with grounding lug and removable cover for easy wiring access
- Anchor Bolt Kit includes pole cap and base cover (sold separately)
- Custom manufactured for each application

Holiday Inn & Suites and Conference Center

Project Description:

The proposed Holiday Inn and Suites Hotel and Conference Center is the first phase of the newly platted Gateway Business Park at Cedar Falls. The Business Park is located on the South side of Cedar Falls, adjacent to the existing industrial park at the corner of Hudson Road and Ridgeway Avenue East.

The 6.6 Acre site is located off of the Hudson Road. It will accommodate the proposed Holiday Inn and Suites, the Conference Center and a future hotel on the north end of the site. The site expands the cities bike/walking trails along Hudson Road and Cyber Lane. Cyber Lane is proposed to extend to Ridgeway Avenue West. The site is heavily landscaped. Numerous outdoor patios surround the event center to extend the centers event space to the exterior. The storm retention ponds on the north and south sides of the site will be formed and landscaped to provide a natural setting creating a stunning water feature on the grounds. The design of this site will be the tone for the rest of the sites within the future business park.

The Hotel is a four story wood structure clad in brick, stone, stucco and glass. The hotel has 126 guestrooms; single king, double queen, and suites with separate living and sleeping areas with kitchenettes. Amenities in the hotel include a full service restaurant and bar, conference rooms, swimming pool, exercise room, lounges, business center and guest laundry facilities. The hotel totals 86,700 sq.ft.

The Conference center is a one story steel and masonry structure clads in brick, stone, and glass. The center can be divided into many configurations and hold up to 1,200 people. This conference center will be a great amenity not only to the community but also the greater Cedar Falls/ Waterloo region.

DEPARTMENT OF COMMUNITY DEVELOPMENT

City of Cedar Falls
220 Clay Street
Cedar Falls, Iowa 50613
Phone: 319-273-8600
Fax: 319-273-8610
www.cedarfalls.com

MEMORANDUM

Planning & Community Services Division

TO: Planning and Zoning Commission

FROM: Iris Lehmann, Planner I

DATE: February 6, 2018

SUBJECT: Sign review of property in the College Hill Neighborhood Overlay

---

REQUEST: New signage on storefront

PETITIONER: Kyle Dehmlow (Owner); Signs & Designs, INC (Contractor)

LOCATION: 917 W 23rd Street

PROPOSAL

The applicant is requesting a site plan review for a new projecting sign and awnings at 917 W 23rd Street to advertise the building's new tenant, Greenhouse Kitchen. 917 W 23rd Street is located in the College Hill Neighborhood Overlay. See image of proposed signage to the right.

BACKGROUND

This proposal requires review by the Planning & Zoning Commission and the City Council due to the fact that this property, 917 W 23rd Street, is located within the College Hill Neighborhood (Section 29-160). The College Hill Neighborhood district requires a site plan review (i.e. design review) for any "substantial improvement" to an exterior façade, including new signs and awnings. A substantial improvement to properties in the College Hill Neighborhood is defined in Section 29-160 (c, 20) and includes: "any new, modified or replacement awnings, signs or similar projections over public sidewalk areas."

Typically signage is not part of the review process unless the review is mandated by the Ordinance Section 29-160 (c, 20). In this case, when a new projecting sign is installed that overhangs the public right-of-way the Planning & Zoning Commission and City Council must review and approve the request. Not all signs are reviewed in this manner. If a sign or projecting sign is simply replaced, review of this level is not triggered and a permit can be issued with only staff level review.

ANALYSIS

The projecting sign will be placed above the store's entrance on W 23rd Street. The proposed sign will be lighted, roughly 12 square feet, and elevated at least 12 feet above the sidewalk. The size and placement of the sign meets city code and height clearances. The proposed awnings will go on the west and south side windows of the building and extend 12 inches. The height and placement of the awnings are consistent with other awnings along this street. If approved by the Planning and Zoning Commission, this item will be placed on the next regularly scheduled City Council meeting. If the City Council approves this request, a sign permit will be issued for the new sign.

TECHNICAL COMMENTS

No comments.

PLANNING & ZONING COMMISSION

Discussion/Vote
2/14/2018

STAFF RECOMMENDATION

The Community Development Department recommends approval of the submitted facade plan for 917 W 23rd Street.

Attachments: Letter of intent from property owners
Additional details about proposed work

SIGNS & DESIGNS

5600 NORDIC DRIVE
CEDAR FALLS, IOWA 50613
PHONE: 319-277-8829 FAX: 319-268-2298

1/18/2018
917 West 23rd street
Cedar Falls, Iowa

P&Z Letter of intent:

Location:
917 West 23rd Street Cedar Falls, Iowa

Overview:
Installation of a 4' aluminum cabinet , lighted projecting sign. This sign is 2-sided and will extend over the sidewalk 60" on the South side of the Building over the entrance. There will also be 2) awnings over the West windows on the South side that will be 8' to the bottom and project 12" from the building
The purpose is to identify the business along 23rd St..

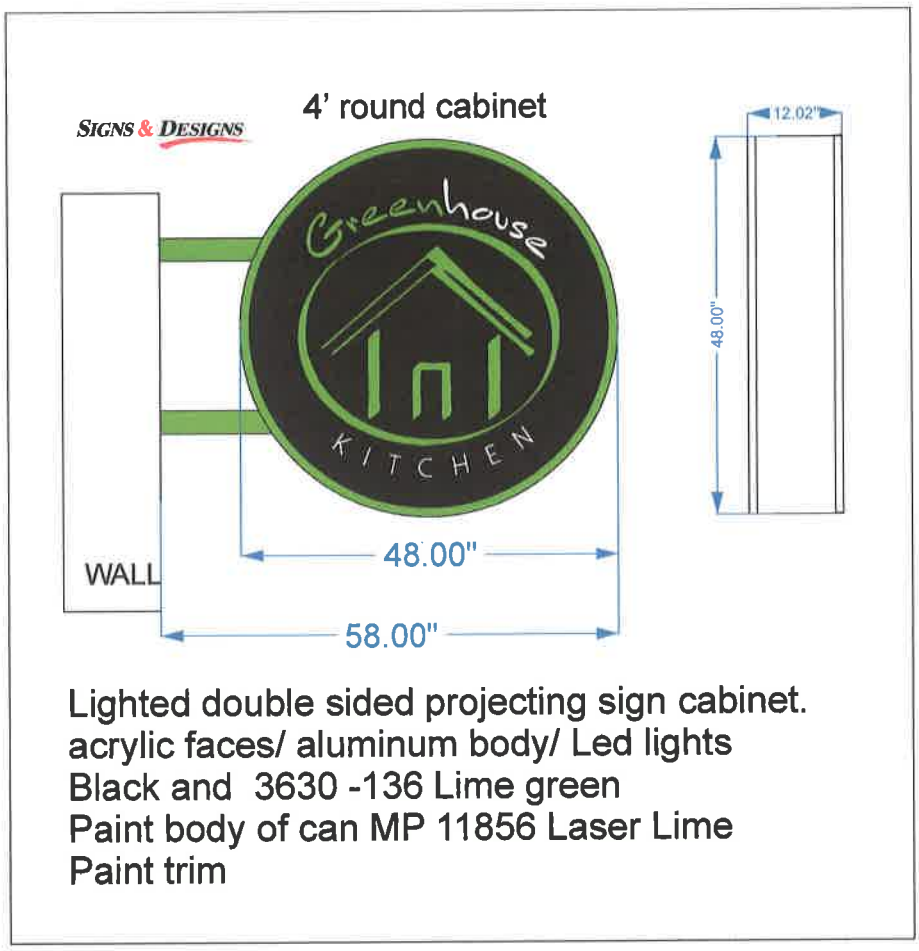
Applicant Contact:
Landlord: Kyle Dehmlow for CV Properties II LC
Or
David Schachterle, 5600 Nordic Drive, Cedar Falls, Iowa 50613 T: 319-277-8829

Sincerely,

David R. Schachterle
Vice President
Signs & Designs, Inc.
319-277-8829
Dave@thesignpeople.net


Greenhouse
KITCHEN

2 awnings 32" x 82" café style



Lighted double sided projecting sign cabinet.
acrylic faces/ aluminum body/ Led lights
Black and 3630 -136 Lime green
Paint body of can MP 11856 Laser Lime
Paint trim

Qty 2 awnings /café style. Black frames/
Black sunbrella eradicated
Vinyl color 3630-136 lime green Trans.

DEPARTMENT OF COMMUNITY DEVELOPMENT

City of Cedar Falls
220 Clay Street
Cedar Falls, Iowa 50613
Phone: 319-273-8606
Fax: 319-273-8610
www.cedarfalls.com

MEMORANDUM
Planning & Community Services Division

TO: Planning and Zoning Commission

FROM: Iris Lehmann, Planner I

DATE: February 9, 2018

SUBJECT: CMS Chamber Building Relocation

REQUEST: Request to approve the CMS former Chamber Building Relocation

PETITIONER: Community Main Street; AHTS Architects, PLC

LOCATION: South eastern corner of the River Place First Addition Lot 1. This property is located at the end of E 4th Street at the entrance of the Water Reclamation Plant.

PROPOSAL

The former Chamber Building is currently located on the corner of 1st and Main Street in Cedar Falls. Due to proposed development on the site the Chamber Building will either need to be demolished or relocated. Community Main Street is proposing to relocate the Chamber Building to the south eastern corner of the River Place Development. See circled area to the right. Community Main Street is working with State Street Residences to acquire the site with the goal that this will become Community Main Street's new office location.

Community Main Street is requesting a site plan review for the relocation of the Chamber Building within the Central Business District.

BACKGROUND

All substantial improvements in the Central Business District, as defined in Section 29-168 CBD, Central business district overlay zoning district, must be reviewed and approved by the Planning & Zoning Commission as well as City Council. The proposed relocation of the former

Chamber Building is considered a substantial improvement. By moving the building to a new location the building's "grandfathered" status is lost and it must be considered new construction. The proposal requires a site plan and design review.

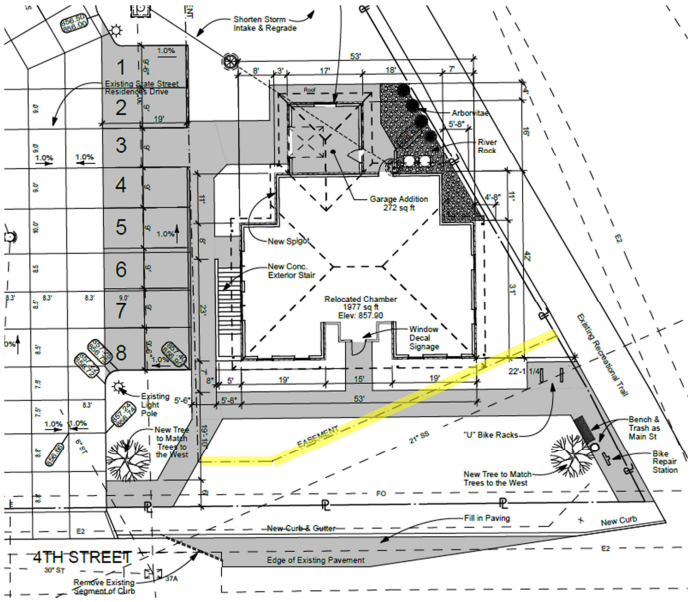
The Central Business District design review is in place to ensure that proposed improvements or development will complement existing nearby uses and building designs. The property in question is surrounded by the Water Reclamation Plant and bike trail to the east, Viking Pump to the south, and River Place Development to the north east.

ANALYSIS

The property is located in the C-3 Commercial zoning district and the Central Business District overlay. If approved, the roughly 2,000 square foot former Chamber Building will be utilized as an office with a garage for storage if materials and a gator. The Planning and Community Services Division has the following comments regarding the proposed development site plan:

1) Proposed Use: The proposed office use is permitted in the C-3 Commercial district. **Use permitted.**

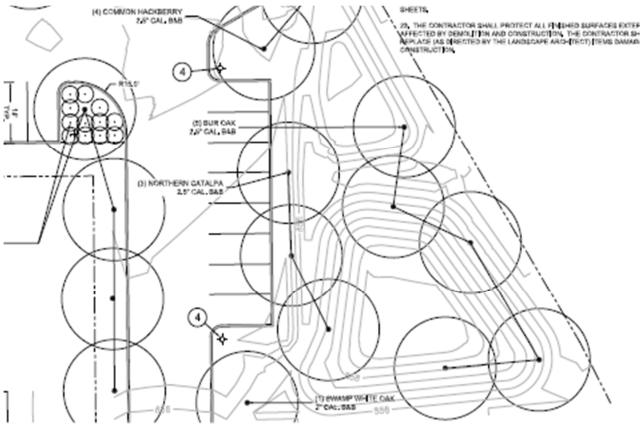
2) Setbacks: There are no building setbacks in the C-3 Commercial district. It should be noted that there is a utility easement through the south portion of the lot that will remain in place, highlighted in yellow below. The proposed building will be placed outside of the easement area. **Setbacks satisfied.**



3) Parking: One feature of C-3 zoning is that permitted commercial uses do not have to provide on-site parking. However, the area that the former Chamber Building will be locating is part of River Place Development. As part of the Developer's agreement with the City parking for all the residential units in the development would be provided. The site that the former Chamber Building is proposed to be located on is an area where 8 parking stalls had been originally approved for the River Place Development. To be consistent with the approved plan, the proposed office building will provide 8 stalls. No changes will be made to the River Place Development's parking plan. This proposed parking lot satisfies the minimum setback of 5 feet from the property line and commercial stall dimensions (9 feet by 19 feet).

ADA guidelines require that every parking lot have a certain number of handicap accessible stalls. The approved River Place Development met those standards. Now that a building is being proposed at this location, one handicap accessible spot is required for access to the building. No ADA compliant spot is proposed on the submitted site plan for the former Chamber Building Relocation. This item will need to be addressed. **One ADA compliant parking spot is required.**

3) Open Space/Landscaping: There are no open green space requirements in the C-3 Commercial zoning district. However, parking lots have some limited landscaping requirements per section 29-177. Part of the River Place Development approval was a landscaping plan. The image to the right shows the section of the River Place Development landscaping plan for the site in question. There were a number of trees proposed for this area. The proposed site plan of the former Chamber Building Relocation shows two trees and some arborvitae screening by their utilities; see image on previous page. Additional trees or landscaping must be provided for consistency. **Additional landscaping is required.**



4) Sidewalks: The existing public sidewalk on E. 4th Street is approximately 5 feet wide and ends at the eastern entrance of the Viking Pump parking lot. The applicant is proposing to install a 6 foot wide sidewalk along the remainder of E. 4th Street that will connect to the proposed building and the existing recreational trail. A sidewalk connection from the 8 proposed parking stalls is also being provided. The applicant proposes to install new curb and gutter along E 4th Street as well as improve the current gravel area of the road. The area between the sidewalks and street curb will be grass. All sidewalks and sidewalk ramps must be ADA compliant. Two “U” bike racks will be installed along the east side of the building by the trail as well as a bike repair station. **Sidewalk requirement met.**

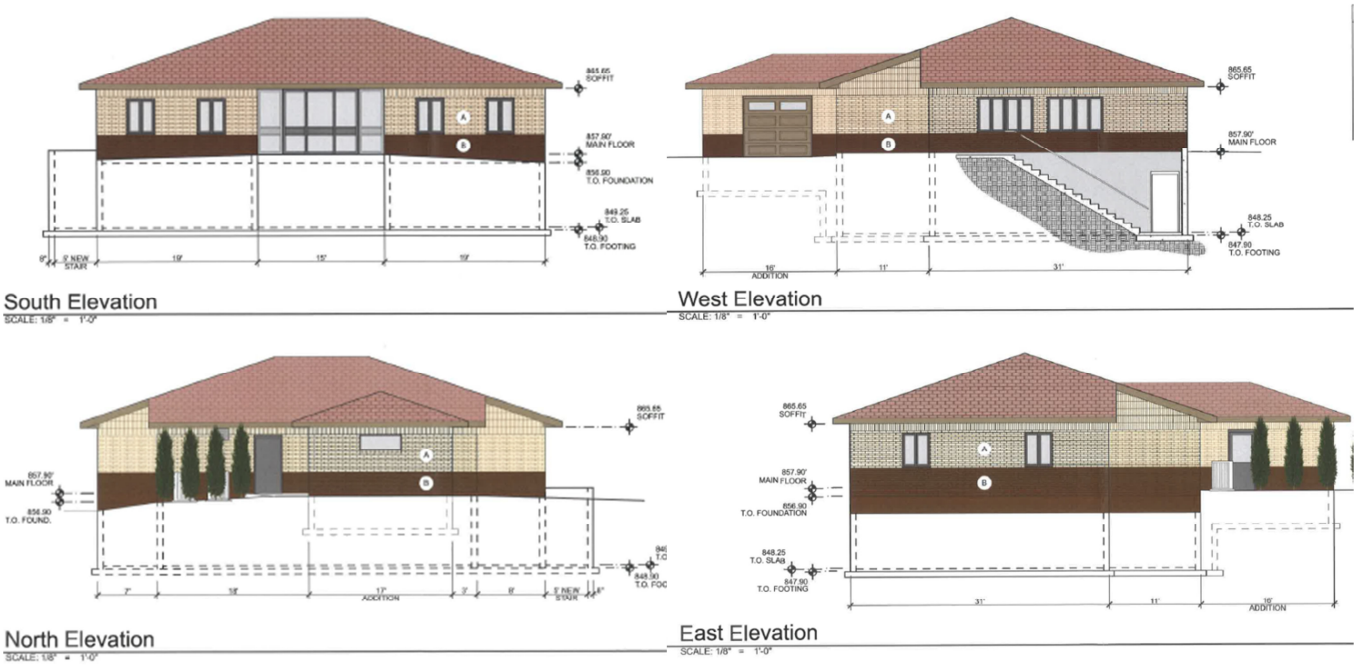
5) Trash Dumpsters: The applicant is not proposing a dumpster. A trash bin will be moved from in the building to and from the curb on garbage collection days. **Requirement met.**

6) Storm Water Management: The area under consideration is part of River Place Development. A Storm Water Management Plan was submitted and approved with that development. This site utilizes an in line treatment system. As the proposed building creates less than 5,000 square feet of additional impervious area an update to the development’s stormwater management plan is not required at this time. **Requirement met.**

7) Lighting Plan: Existing light poles will be utilized on the site. **Requirement met.**

8) Signage: A window decal sign is proposed on the main entrance. If any additional signage is added in the future sign permit applications and review will be required at that time. **Requirement met.**

9) Design Review: The Central Business District overlay states that the architectural character, materials, and textures of all buildings shall be compatible with those primary design elements on structures located on adjoining properties and also in consideration of said design elements commonly utilized on other nearby properties on the same block or within the immediate neighborhood. Comparable scale and character in relation to adjoining properties and other nearby properties in the immediate neighborhood shall be maintained by reviewing several design elements. These are noted on the next few pages with a review on how each element is addressed.



a) Proportion: *The relationship between the width and height of the front elevations of adjacent buildings shall be considered in the construction or alteration of a building; the relationship of width and height of windows and doors of adjacent buildings shall be considered in the construction or alteration of a building.*

The applicant is proposing to move the former Chamber Building from its current site and set it on a new basement at the new location on E 4th Street. The height of the building will remain the same. Even though this is an existing building, by moving the structure to a new location, it must be viewed as new construction and looses any "grandfathered" status. The code's design review for proportion, outlined above, needs to be met. It states that the height of adjacent buildings needs to be considered. Adjacent buildings to this site include the Water Reclamation Plant to the east, Viking Pump to the south, and River Place Development to the north and west. The heights of buildings in the Water Reclamation Plant vary from 1 to 3 stories. Viking Pump is 2 stories at State Street and then tapers down to 1 story further east. The SSR1 building (300 State Street) and the SSR2 building are the closest buildings of the River Place Development to this site. SSR1 is 3 stories high and SSR2 is 4 stories. Overall 2 or more stories would be ideal for this location but there are a number of one story buildings within the district. **Height needs discussion and direction from the Planning and Zoning Commission.**

b) Roof shape, pitch and direction: *The similarity or compatibility of the shape, pitch, and direction of roofs in the immediate area shall be considered in the construction or alteration of a building.*

The applicant is proposing to move the former Chamber Building from its current site and set it on a new basement at the new location. The hip roof of the building will remain. All directly adjacent buildings have flat roofs; however there are a number of other buildings in the overlay that have pitched roofs. See attached map with

examples. **Roof shape needs discussion and direction from the Planning and Zoning Commission.**

c) Pattern: *Alternating solids and openings (wall to windows and doors) in the front facade and sides and rear of a building create a rhythm observable to viewers. This pattern of solids and openings shall be considered in the construction or alteration of a building.*

The majority of existing commercial buildings in Cedar Falls Downtown District have a higher proportion of openings to wall area. The current building's front façade along E 4th Street has a number of openings. However all other sides are primarily solid; the window pattern from the front is not carried around. The north and east elevation of the building will be highly visible to the public from the adjacent trail. **The pattern provision is not met. More windows or openings should be provided.**

d) Materials and texture: *The similarity or compatibility of existing materials and textures on the exterior walls and roofs of buildings in the immediate area shall be considered in the construction or alteration of a building. A building or alteration shall be considered compatible if the materials and texture used are appropriate in the context of other buildings in the immediate area.*

The applicant is proposing to move the former Chamber Building from its current site and set it on a new basement at the new location. Brick from the building will be removed for the relocation and then replaced. The existing asphalt shingles on the building's roof will remain. Viking Pump directly across the street is an all brick building. The River Place Development to the north also utilizes masonry. The materials proposed are compatible with the district. **This criterion is met.**

e) Color: *The similarity or compatibility of existing colors of exterior walls and roofs of buildings in the area shall be considered in the construction or alteration of a building.*

The former Chamber Building's existing tan brick, the Sioux City Brick shown to the right, will be kept on roughly the top two thirds of the building. The applicant is proposing to replace the brick on the bottom third with a Coffee Blend Brick to create a wainscot. The existing brown red shingles on the roof will remain. These neutral colors are consistent with the buildings in the area. **This criterion is met.**

SIOUX CITY BRICK
ELK CREEK
KINGSIZED BRICK

CLOUD CERAMIC
COFFEE BLEND
KINGSIZE BRICK

f). Architectural features: *Architectural features, including but not limited to, cornices, entablatures, doors, windows, shutters, and fanlights, prevailing in the immediate area, shall be considered in the construction or alteration of a building. It is not intended that the details of existing buildings be duplicated precisely, but those features should be regarded as suggestive of the extent, nature, and scale of details that would be appropriate on new buildings or alterations.*

The proposed Coffee Blend Brick creates a horizontal band, or wainscot, on the former Chamber Building. This provides for a break in color and adds visual interest.

The adjacent buildings in the River Place Development and Viking Pump include vertical color or material breaks in their design to create the illusion of modules. Providing vertical breaks may not be necessary for this proposed building as its scale is a lot smaller than the other noted structures. The use of a horizontal band is consistent with other buildings of this size within the district, for example Regions Bank at 415 State Street that was built in 2003 (see image to the right). Note that the CBD overlay was first established in 2004.

The former Chamber Building's casement windows have brick window sills, see image to the right. The majority of windows in the overlay district are typically some form of double-hung or casement sash. The building also has a solider course brick design along the bottom of the eave. Similar treatments are found on buildings in the overlay area. The addition of a decorative lintel or cap over the windows should be considered.

The building has a primarily brick façade. The south elevation of the building has glass doors and equally spaced windows. This provides for a more transparent entrance that is pedestrian friendly. The same cannot be said for the other three sides of the building. The north and east sides of the building abut to the riverfront trail and will be extremely visible. Additional thought should be put into the appeal of the building, especially the north and east elevations.

The proposed building design needs discussion and direction from the Planning and Zoning Commission.

TECHNICAL COMMENTS

City Technical Staff, including Cedar Falls Utilities (CFU) personnel, noted that gas and communication services are available to the site. Remaining technical comments from staff are summarized below.

1) One ADA compliant handicap accessible spot is required.
2) More landscaping is required.

STAFF RECOMMENDATION

Initial discussion of the former Chamber Building Relocation will occur on the February 14, 2018 Commission meeting. Staff is seeking discussion and direction on the following comments.

1. Meet all technical review comments.

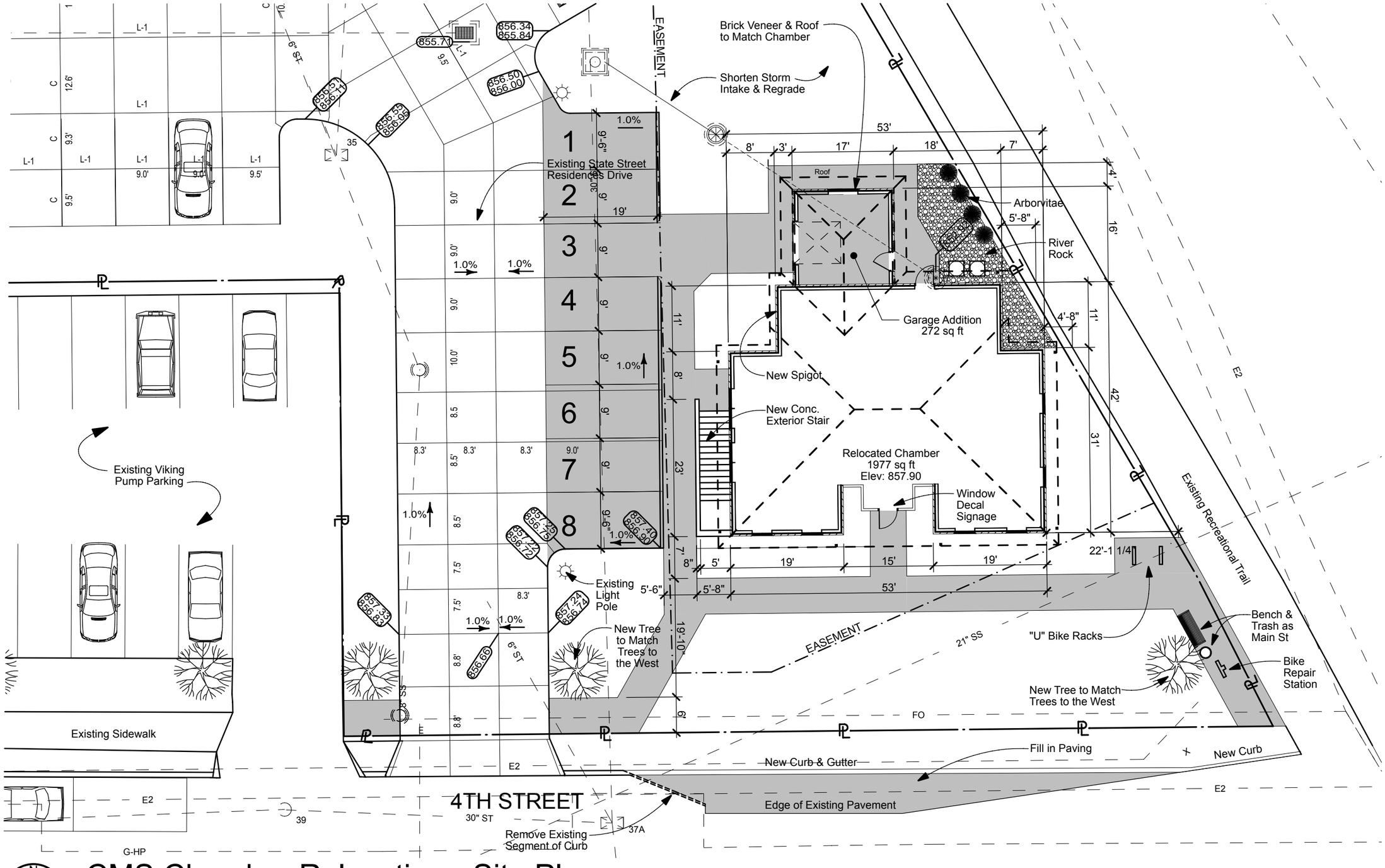
2. Two and higher story buildings are recommended.
3. Roof shape needs to better mirror adjacent buildings.
4. Provide more openings/windows on the north and east elevations.
5. Addition architectural features should be considered.

It is anticipated that this request will be referred to the Planning and Zoning Commission for further discussion and potential approval on February 28th, 2018.

PLANNING & ZONING COMMISSION
Discussion
2/14/2018

Vote
2/28/2018

Attachments: Proposed Site Plan
Elevations
Pitch roof structures in the Central Business District overlay
Master plan for River Place Development
Site Plan for SSR1 (landscaping)



CMS Chamber Relocation - Site Plan

SCALE: 1/16" = 1'-0"

VERIFY GRADES & DRAINAGE PRIOR TO CONSTRUCTION

SHADED REGIONS INDICATE NEW PAVING

ahts ARCHITECTS
327 East Fourth Street
Suite 204
Waterloo, Iowa 50703
Ph.: 319-233-1163
Fax: 319-233-9863

CMS Chamber Relocation
East 4th Street
Cedar Falls, IA 50613

Item 5.E.

Project 2017-0

Feb. 6,

/Users/andrewbell/Desktop/CMS Revised Site 02.05.18.pdf 2-6-2018 4:41:34 PM

CMS Chamber Relocation

East 4th Street
Cedar Falls, IA 50613

Project No. 2017-0061
A1
Feb. 1,

327 East Fourth Street
Suite 204
Waterloo, Iowa 50703
Ph.: 319-233-1163
Fax: 319-233-9863
ARCHITECTS

MATERIAL LEGEND

A	SIOUX CITY BRICK ELK CREEK KINGSIZED BRICK
B	CLOUD CERAMIC COFFEE BLEND KINGSIZE BRICK

1 South Elevation
SCALE: 1/8" = 1'-0"

2 North Elevation
SCALE: 1/8" = 1'-0"

ARCH
327 East Fourth Street
Suite 204
Waterloo, Iowa 50703
Ph.: 319-233-1163
Fax: 319-233-9863

CMS Chamber Relocation

East 4th Street
Cedar Falls, IA 50613

Project No.
2017-0061

A2

Feb. 1, 2018

MATERIAL LEGEND

A	SIOUX CITY BRICK ELK CREEK KINGSIZED BRICK
B	CLOUD CERAMIC COFFEE BLEND KINGSIZE BRICK

1 West Elevation
SCALE: 1/8" = 1'-0"

2 East Elevation
SCALE: 1/8" = 1'-0"

Chamber Building Relocation

Examples of Pitch Roof Structures within Central Business District

ICM Financial (Depot)
422 Main St

Taylor Vet Clinic
315 State St

Maid Rite
116 E 4th St

Custom Image Embroidery
415 State St

E-Clips
506 State St

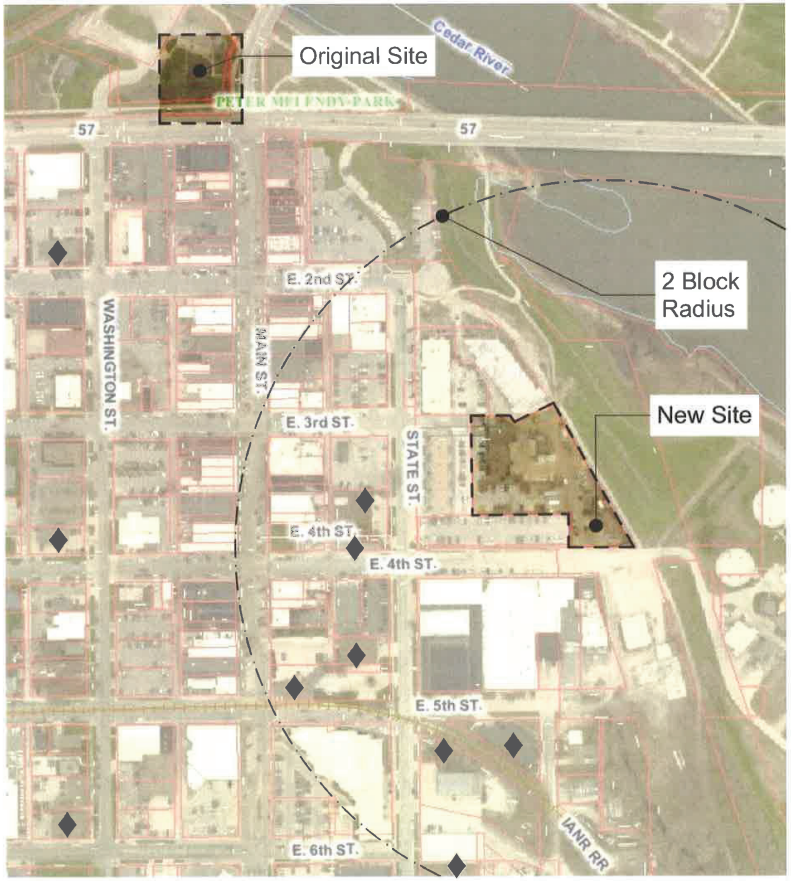
La Riviere Condos
221 E 5th St

602 State St

NXT Bank
205 W 2nd St

Varsity Cleaners
323 Washington St

Agape Therapy
211 W 6th St



ahts ARCHITECTS
327 East Fourth Street
Suite 204
Waterloo, Iowa 50703
Ph.: 319-233-1163
Fax: 319-233-9863

CMS Chamber Relocation
East 4th Street
Cedar Falls, IA 50613

Project No.
2017-0061

A-

Feb. 1

Item 5.E.

River Place | Master Plan

Cedar Falls, Iowa

RIVER PLACE
downtown lifestyle opportunities

100 Block

MU2 - 2nd Street

3 Floors	
Retail	10,000 sq ft
Residential Units	14 Single Occupant studio units
	10 One Bedroom units
Required Private Parking	34 Stalls

Surface Parking Provided

MU2 (Private)	34 Stalls
Public	97 Stalls
Total	**131 Stalls**

100 Block Parking	Required	Provided
Total Private Parking	34 Stalls	34 Stalls
Total Public Parking	91 Stalls	97 Stalls
		+6 Stalls

200/300 Block

MU1 - 200 State Street: Constructed

4 Floors	
Retail	10,000 sq ft
Office	10,000 sq ft
Residential Units	20 Single Occupant studio units
	10 One Bedroom units
Required Private Parking	40 Stalls

SSR1 - State Street Residential: Constructed

3 Floors	
Residential Units	21 Units
Structured Parking	32 Stalls
Required Private Parking	42 Stalls

SSR2 - Riverfront Residential

4 Floors	
Residential Units	3 Single Occupant studio units
	30 One Bedroom units
	12 Two Bedroom units
Structured Parking	33 Stalls
Required Private Parking	87 Stalls

Surface Parking Provided

MU1 (Private)	40 Stalls
SSR1 (Private)	10 Stalls
SSR2 (Private)	60 Stalls
Public	7 Stalls
Total	**117 Stalls**

200/300 Block Parking	Required	Provided
Total Private Parking	169 Stalls	175 Stalls
Total Public Parking	0 Stalls	7 Stalls

Total Parking	Required	Provided
Total Private Parking	203 Stalls	209 Stalls
Total Public Parking	91 Stalls	104 Stalls
Overall Parking	**294 Stalls**	**313 Stalls**

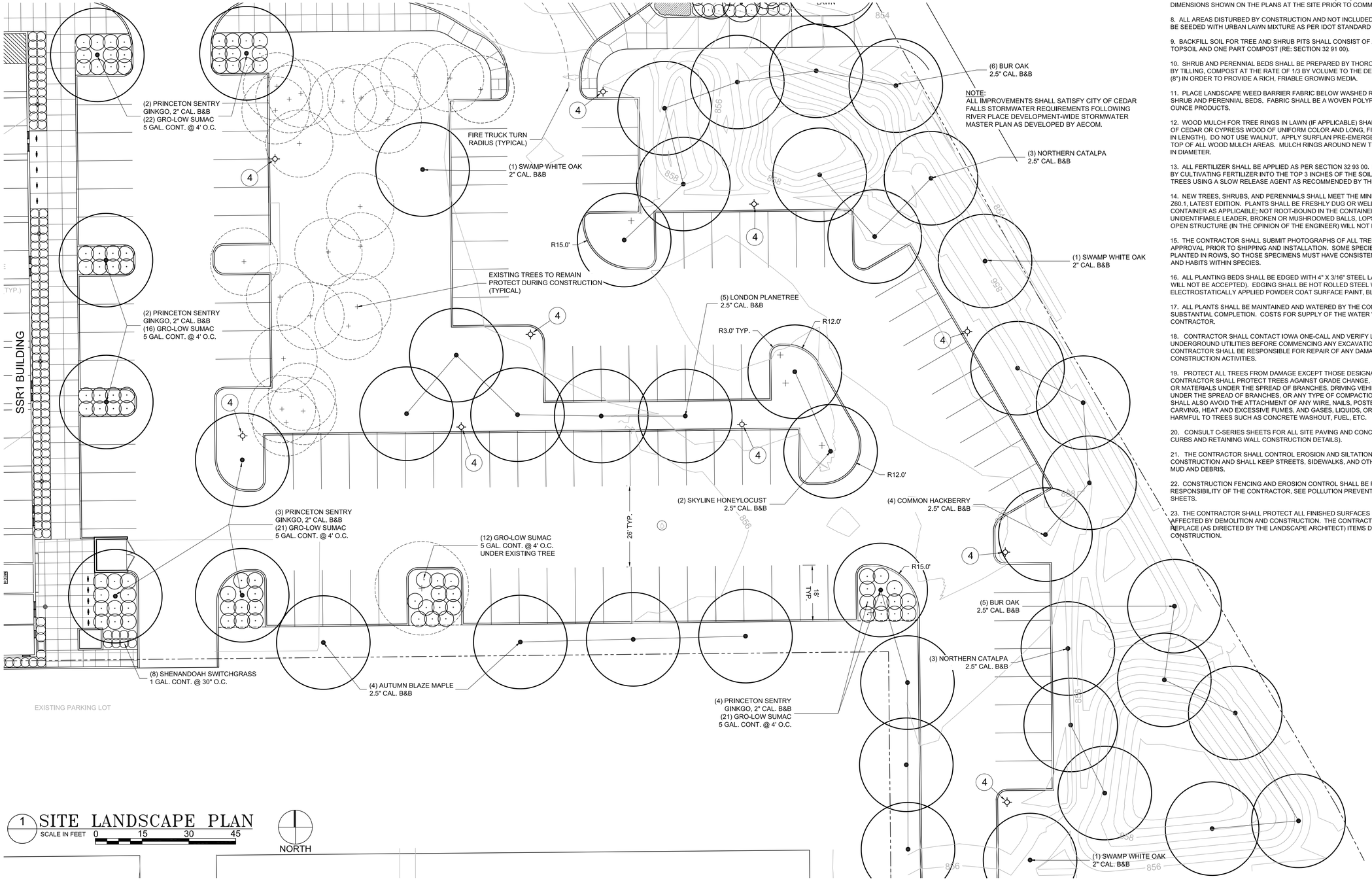
Revised: November 10, 2015

VANDEWALLE & ASSOCIATES INC.

0' 50' 100'

PLAN NOTES

1. BENCHES SHALL BE 58 SERIES (6' LENGTH, PAINTED BLACK) AS MANUFACTURED BY DUMOR FURNISHINGS, INC. (OUTDOOR RECREATION PRODUCTS 800-747-5437) TO MATCH CEDAR FALLS MAIN STREET.
2. WASTE RECEPTACLES SHALL BE IRONSITES SD-42 (SIDE DOOR WITH LOCK, SMOOTH TAPERED LID, PAINTED BLACK) AS MANUFACTURED BY VICTOR STANLEY, INC. (1-800-368-2573) TO MATCH CEDAR FALLS MAIN STREET.
3. BIKE RACKS SHALL BE PI RACK (SURFACE MOUNT, PAINTED BLACK) AS MANUFACTURED BY LANDSCAPE FORMS, INC. (SITE SOURCE 816-678-2004) TO MATCH CEDAR FALLS MAIN STREET.
4. PARKING LOT LIGHTS SHALL BE PHILIPS GARDCO ECOFORM LED FIXTURES (ECF-1-4-215LA-641A-NW-UNV-BLP) ON 5" ROUND STEEL POLES (PAINTED BLACK) AS SUPPLIED BY NRG SALES (319-365-5259) TO MATCH RIVER PLACE SSR1 SITE.
5. PEDESTRIAN LIGHT BOLLARDS SHALL BE ANNAPOLIS LED LIGHTED BOLLARD (6" EMBEDDED MOUNTING, PAINTED BLACK) AS MANUFACTURED BY LANDSCAPE FORMS, INC. (SITE SOURCE 816-678-2004) TO MATCH RIVER PLACE SSR1 SITE.
6. PEDESTRIAN SCALE SINGLE LIGHT FIXTURES SHALL BE LUMEC SERENADE (S55-80WLED4K-R-ACDR-LE3-VOLT-SFOK-FN8-GN8TX) ON PERIOD POLES (RTA906V-14-GFII-BAS18/2-GN8TX) AS SUPPLIED BY NRG SALES (319-350-5298) OR APPROVED EQUAL.
7. PEDESTRIAN SCALE DOUBLE LIGHT FIXTURES SHALL BE LUMEC SERENADE (S55-80WLED4K-R-ACDR-LE3-VOLT-SFOK-FN8-GN8TX) ON PERIOD POLES (CRE-2-GN8TX-RTA906V-12-GFII-BAS18/2-GN8TX) AS SUPPLIED BY NRG SALES (319-350-5298) OR APPROVED EQUAL.



1 SITE LANDSCAPE PLAN
SCALE IN FEET 0 15 30 45

NORTH

LANDSCAPE NOTES

1. ALL LANDSCAPE WORK SHALL CONFORM TO SECTION 32 93 00 OF THE SPECIFICATIONS AND APPLICABLE CITY OF CEDAR FALLS STANDARD SPECIFICATIONS.
2. LOCATE PLANT MATERIAL AND LAYOUT OF BEDS AND EDGING BY MEASURING OFF OF THE DRAWING TO THE NEAREST 6".
3. SEE PLANT MATERIAL SCHEDULE FOR PLANT SIZES AND QUANTITIES. VERIFY PLANT QUANTITIES WITH PLAN NOTES AND NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
4. ALL SHRUBS SHALL BE PLANTED IN EXCAVATED BED OR TRENCH AS APPLICABLE. PREPARE BACKFILL MIXTURE IN A HOMOGENEOUS BLEND TO ENSURE UNIFORM TEXTURE AND QUALITY OF SOIL THROUGHOUT THE SHRUB ROW OR BED.
5. REMOVE ANY EXCESS SOIL AND DEBRIS FROM AREA AND DISPOSE OF IN AN APPROVED MANNER.
6. EXERCISE EXTREME CARE IN EXCAVATING AND WORKING AROUND EXISTING TREES AND UTILITIES. VERIFY LOCATION AND CONDITION OF ALL UTILITIES. FIELD ADJUST PLANT LOCATIONS SO AS TO AVOID CONFLICTS WITH UTILITIES.
7. SURVEY INFORMATION WAS PROVIDED BY AECOM (2013). VERIFY ALL CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS AT THE SITE PRIOR TO COMMENCEMENT OF WORK.
8. ALL AREAS DISTURBED BY CONSTRUCTION AND NOT INCLUDED IN PLANTING BEDS SHALL BE SEEDED WITH URBAN LAWN MIXTURE AS PER IDOT STANDARD SPECIFICATION 2601.
9. BACKFILL SOIL FOR TREE AND SHRUB PITS SHALL CONSIST OF A MIXTURE OF TWO PARTS TOPSOIL AND ONE PART COMPOST (RE: SECTION 32 91 00).
10. SHRUB AND PERENNIAL BEDS SHALL BE PREPARED BY THOROUGHLY INCORPORATING, BY TILLING, COMPOST AT THE RATE OF 1/3 BY VOLUME TO THE DEPTH OF THE PREPARATION (8") IN ORDER TO PROVIDE A RICH, FRIABLE GROWING MEDIA.
11. PLACE LANDSCAPE WEED BARRIER FABRIC BELOW WASHED RIVER ROCK MULCH IN SHRUB AND PERENNIAL BEDS. FABRIC SHALL BE A WOVEN POLYPURPERENE, 3.5 TO 4.0 OUNCE PRODUCTS.
12. WOOD MULCH FOR TREE RINGS IN LAWN (IF APPLICABLE) SHALL BE 3" DEEP, COMPOSED OF CEDAR OR CYPRESS WOOD OF UNIFORM COLOR AND LONG, FIBROUS NATURE (2-4 INCHES IN LENGTH). DO NOT USE WALNUT. APPLY SURFLAN PRE-EMERGENCE OR EQUAL OVER THE TOP OF ALL WOOD MULCH AREAS. MULCH RINGS AROUND NEW TREES SHALL BE MINIMUM 6' IN DIAMETER.
13. ALL FERTILIZER SHALL BE APPLIED AS PER SECTION 32 93 00. FERTILIZE PLANTING BEDS BY CULTIVATING FERTILIZER INTO THE TOP 3 INCHES OF THE SOIL SURFACE. FERTILIZE TREES USING A SLOW RELEASE AGENT AS RECOMMENDED BY THE PLANT SUPPLIER.
14. NEW TREES, SHRUBS, AND PERENNIALS SHALL MEET THE MINIMUM STANDARDS OF ANSI Z60.1, LATEST EDITION. PLANTS SHALL BE FRESHLY DUG OR WELL-ESTABLISHED IN CONTAINER AS APPLICABLE; NOT ROOT-BOUND IN THE CONTAINER. TREES WITH BROKEN OR UNIDENTIFIABLE LEADER, BROKEN OR MUSHROOMED BALLS, LOPSIDED GROWTH, OR WEAK OPEN STRUCTURE (IN THE OPINION OF THE ENGINEER) WILL NOT BE ACCEPTABLE.
15. THE CONTRACTOR SHALL SUBMIT PHOTOGRAPHS OF ALL TREE SPECIMENS FOR APPROVAL PRIOR TO SHIPPING AND INSTALLATION. SOME SPECIES ARE MATCHED AND PLANTED IN ROWS, SO THOSE SPECIMENS MUST HAVE CONSISTENT BRANCHING HEIGHTS AND HABITS WITHIN SPECIES.
16. ALL PLANTING BEDS SHALL BE EDGED WITH 4" X 3/16" STEEL LAWN EDGING (ALUMINUM WILL NOT BE ACCEPTED). EDGING SHALL BE HOT ROLLED STEEL WITH AN ELECTROSTATICALLY APPLIED POWDER COAT SURFACE PAINT, BLACK IN COLOR.
17. ALL PLANTS SHALL BE MAINTAINED AND WATERED BY THE CONTRACTOR THROUGH SUBSTANTIAL COMPLETION. COSTS FOR SUPPLY OF THE WATER WILL BE PAID FOR BY THE CONTRACTOR.
18. CONTRACTOR SHALL CONTACT IOWA ONE-CALL AND VERIFY LOCATION OF EXISTING UNDERGROUND UTILITIES BEFORE COMMENCING ANY EXCAVATION TO AVOID DAMAGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES.
19. PROTECT ALL TREES FROM DAMAGE EXCEPT THOSE DESIGNATED TO BE REMOVED. CONTRACTOR SHALL PROTECT TREES AGAINST GRADE CHANGE, STORAGE OF EQUIPMENT OR MATERIALS UNDER THE SPREAD OF BRANCHES, DRIVING VEHICLES AND EQUIPMENT UNDER THE SPREAD OF BRANCHES, OR ANY TYPE OF COMPACTION. THE CONTRACTOR SHALL ALSO AVOID THE ATTACHMENT OF ANY WIRE, NAILS, POSTERS, ETC., CUTTING OR CARVING, HEAT AND EXCESSIVE FUMES, AND GASES, LIQUIDS, OR SOLID SUBSTANCES HARMFUL TO TREES SUCH AS CONCRETE WASHOUT, FUEL, ETC.
20. CONSULT C-SERIES SHEETS FOR ALL SITE PAVING AND CONCRETE WORK (INCLUDING CURBS AND RETAINING WALL CONSTRUCTION DETAILS).
21. THE CONTRACTOR SHALL CONTROL EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION AND SHALL KEEP STREETS, SIDEWALKS, AND OTHER PAVEMENTS FREE OF MUD AND DEBRIS.
22. CONSTRUCTION FENCING AND EROSION CONTROL SHALL BE PROVIDED BY AND IS THE RESPONSIBILITY OF THE CONTRACTOR. SEE POLLUTION PREVENTION PLAN IN C-SERIES SHEETS.
23. THE CONTRACTOR SHALL PROTECT ALL FINISHED SURFACES EXTERNAL TO THOSE AFFECTED BY DEMOLITION AND CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE (AS DIRECTED BY THE LANDSCAPE ARCHITECT) ITEMS DAMAGED DURING CONSTRUCTION.

SNIDER ARCHITECTURE
305 EAST COURT AVENUE, DES MOINES, IA 50309 T 515-243-0074
RITLAND+KUIPER LANDSCAPE ARCHITECTS
501 SYCAMORE STREET - MEZZ. A
WATERLOO, IOWA 50703
319-233-8090 www.ritlandkuiper.com

RIVER PLACE SSR2
300 BLOCK PARKING LOT DEVELOPMENT

SSA PROJECT # 2015.13

P&Z SUBM
12.09.2(

REVISION SCH
NO. DESCRIPTI

NOT FOR CONSTRUCTION

LANDSC
PLAI

L.10

Item 5.E.

DEPARTMENT OF COMMUNITY DEVELOPMENT

City of Cedar Falls
220 Clay Street
Cedar Falls, Iowa 50613
Phone: 319-273-8600
Fax: 319-273-8610
www.cedarfalls.com

MEMORANDUM

Planning & Community Services Division

TO: Planning and Zoning Commission

FROM: Iris Lehmann, Planner I

DATE: February 7, 2018

SUBJECT: Zoning Ordinance to reflect changes to the Rental Ordinance

In April 2017 the Iowa Legislature passed House Fill 134. The new legislation states that no city can adopt or enforce any rental regulations after January 1, 2018 that are based on familial or non-familial relationships. A copy of House File 134 is attached for your reference. In response to House File 134, City Council approved amendments to the City's Rental Code on December 18th, 2017.

To meet House File 134 all references and definitions of "family", "related", and "unrelated" needed to be removed from the Rental Code. This was accomplished through primarily terminology changes. For consistency all other sections of the City Code are being updated, including the Zoning Code, and the City's Zoning Map. The proposed changes to the Zoning Code and Map, attached, reflect these terminology changes. For instance "single family homes" is being updated to "single family units".

Staff will present an introduction to the proposed changes at the upcoming Planning and Zoning Commission meeting. A public hearing for these proposed changes will be held at the February 28th Planning and Zoning Commission meeting.

If you have any questions or need additional information, please feel free to contact this office.

Xc: Stephanie Sheetz, Director
Kevin Rogers, City Attorney

House File 134 - Enrolled

House File 134

AN ACT

RELATING TO THE AUTHORITY OF CITIES TO REGULATE AND RESTRICT THE OCCUPANCY OF RESIDENTIAL RENTAL PROPERTY.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF IOWA:

Section 1. Section 414.1, subsection 1, Code 2017, is amended to read as follows:

1. *a.* For the purpose of promoting the health, safety, morals, or the general welfare of the community or for the purpose of preserving historically significant areas of the community, any city is hereby empowered to regulate and restrict the height, number of stories, and size of buildings and other structures, the percentage of lot that may be occupied, the size of yards, courts, and other open spaces, the density of population, and the location and use of buildings, structures, and land for trade, industry, residence, or other purposes.

b. A city shall not, after January 1, 2018, adopt or enforce any regulation or restriction related to the occupancy of residential rental property that is based upon the existence

of familial or nonfamilial relationships between the occupants of such rental property.

LINDA UPMEYER
Speaker of the House

JACK WHITVER
President of the Senate

I hereby certify that this bill originated in the House and is known as House File 134, Eighty-seventh General Assembly.

CARMINE BOAL
Chief Clerk of the House

Approved _____, 2017

TERRY E. BRANSTAD
Governor

Chapter 29 - ZONING[1]

Footnotes:

--- (**1**) ---

Cross reference— Advertising, ch. 3; airport, ch. 4; buildings and building regulations, ch. 7; fire prevention and protection, ch. 11; housing, ch. 14; mobile homes, mobile home parks and mobile home subdivisions, ch. 17; parks and recreation, ch. 20; planning, ch. 21; public safety, ch. 22; subdivisions, ch. 24.

State Law reference— Municipal zoning generally, I.C.A. § 414.1 et seq.; restricted residence districts generally, I.C.A. § 414.24.

ARTICLE I. - IN GENERAL

Sec. 29-1. - Title of chapter.

This chapter shall be known and may be cited and referred to as the Zoning Ordinance of the city.

(Code 1971, § 32-22)

Sec. 29-2. - Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning. The word "used" or "occupied" includes the words "intended, designed or arranged to be used or occupied."

Access drive means a driveway or easement allowing access to a lot not having frontage upon a street.

Accessory use or structure means a use or structure on the same lot with and of a nature customarily incidental and subordinate to the principal use or structure. Said accessory structures are customarily used for storage or parking purposes. No residential dwelling unit or business or commercial office may be established within an accessory structure.

Administrator means the federal insurance administrator, to whom the secretary has delegated the administration of the program.

Alley means a public way, other than a street, 20 feet or less in width, affording a secondary means of access to abutting property.

Apartment hotel means a building containing both dwelling units and rooming units, used primarily for permanent occupancy.

Assessed value means the assessed value for general property tax purposes of a property as established by the Assessor of Black Hawk County, Iowa.

Base Flood means the flood having a one percent (1%) chance of being equaled or exceeded in any given year (See 100-year (1%) flood). This is the regulatory standard also referred to as the "100-year flood". The base flood is the national standard used by the National Flood Insurance Program (NFIP) and all Federal Agencies for the purpose of requiring the purchase of flood insurance and regulating new

development. Base Flood Elevations (BFEs) are typically shown on the Flood Insurance Rate Maps (FIRMs).

Basement means any enclosed area of a building which has its floor or lowest level below ground level (subgrade) on all sides. Any basement situated with less than one-half of its height below grade shall be counted as a story for the purpose of height regulations. A basement having more than one-half of its height below grade is not included in computing the number of stories for the purpose of height measurement. Also see "Lowest floor."

Bed and breakfast enterprises is synonymous with lodging house or guest lodging and means any building or portion thereof containing not more than five guest rooms for which compensation is received for short-term overnight lodging.

Bed and breakfast inn is synonymous with hotel, and means a lodging establishment containing six or more guest rooms.

Boardinghouse means a building other than a hotel or other overnight lodging facility where, for compensation, lodging and meals are provided by the building owners or managers for resident boarders with meals for all resident boarders provided in a central kitchen facility within said building. Residents within said boardinghouse facility shall be accommodated with weekly, monthly, or yearly tenant agreements or leases.

Building means all residential housing, cabins, factories, warehouses, storage sheds and other walled or roofed structures constructed for occupancy by people or animals or for storage of materials.

Building, height of means the vertical distance from grade to the highest point of any roof ridge.

Building line means a line on a plat of official record indicating the minimum distance of open space that must be maintained between the property line and any structure on the lot.

Building setback (see Yard) means the minimum required area of unobstructed open space on a lot measured from the property line.

Carport means a roofed structure providing space for the parking of motor vehicles and enclosed on not more than two sides. A carport attached to a principal building shall be considered as part of the principal building and subject to all yard requirements in this chapter.

Channel means a natural or artificial watercourse having definite banks and beds with visible evidence of flow or occurrence of water.

Clinic means a building used by physicians or dentists, osteopaths, chiropractors and allied professions for outpatient care of persons requiring such professional service.

Day nursery or nursery school means any private agency, institution, establishment or place which provides supplemental parental care or educational work, other than lodging overnight, to more than 12 children.

Development means any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations.

Driveway, commercial means an improved area that is designed and intended to provide vehicular ingress and egress from a public street or public alley to and across a private property. It provides access to facilities on the private property including parking lots, garages, warehouses or business sites. Commercial driveways may cross property lines to access multiple businesses when specifically permitted by the city.

Driveway, hard surface means a paved area, as defined in article VI, of chapter 23, of this Code. It does not include gravel or granular surface materials.

Driveway, residential means an improved area that is designed and intended or used to provide vehicular ingress and egress from a public street or public alley to and across a private property. Driveways shall be entirely paved with a hard surface material. Driveways may provide off-street parking

for dwellings and access to garages, parking areas and parking lots, when these facilities are specifically permitted. See section 29-179 for additional regulations.

~~*Dwelling* means any building or portion thereof which is designed or used exclusively for residential purposes, but not including a tent, cabin or travel trailer.~~

Dwelling means any building or structure containing one or more units used, intended, or designed for occupancy by persons, including any attached appurtenances.

Dwelling unit means any building, room, or group of adjoining rooms providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.

Dwelling, condominium means a multiple dwelling whereby the fee title to each dwelling unit is held independently of the others.

~~*Dwelling, multiple* means a residence designed for or occupied by three or more families, with separate housekeeping and cooking facilities for each.~~

Dwelling, Multiple means any structure containing three or more dwelling units.

Dwelling, row means any one of three or more attached dwellings in a continuous row, each such dwelling designed and erected as a unit on a separate lot, and separated from one another by an approved wall.

~~*Dwelling, single-family* means a detached residence designed for or occupied by one family only.~~

Dwelling, Single-unit means a structure containing one dwelling unit.

Dwelling, single-~~family~~unit bi-attached means a dwelling designed for or occupied by one ~~family~~unit only which is erected on a separate lot and is joined to another such residence on one side only by a wall located on the lot line and which has yards on the remaining sides.

Dwelling, Two-unit means a structure containing two dwelling units.

Dwelling, Two-unit conversion means a structure that was originally constructed as a single-unit dwelling, but which was subsequently converted to a two-unit dwelling.

~~*Dwelling, two-family* means a residence designed for or occupied by two families only, with separate housekeeping and cooking facilities for each.~~

~~*Dwelling unit* means a room or group of rooms which is arranged, designed or used as living quarters for the occupancy of one family, containing bathroom or kitchen facilities.~~

Elevating means raising a structure or property by fill or other means to or above the minimum flood protection level.

Encroachment limits means a set of lines which delineate the boundaries of the floodway established in the floodplains as the designated width of channel and overbank areas through which the regulatory flood must pass.

Factory-built home park means a parcel or contiguous parcels of land divided into two or more factory-built housing lots for rent or sale.

Factory-built housing means any structure, designed for residential use, which is wholly or in substantial part made, fabricated, formed or assembled in manufacturing facilities for installation or assembly and installation on a building site. Factory-built housing includes mobile homes, manufactured homes and modular homes and also includes park trailers and other similar vehicles placed on a site for greater than 180 consecutive days.

Factory-built structure means any structure which is, wholly or in substantial part, made, fabricated, formed or assembled in manufacturing facilities for installation, or assembly and installation, on a building site.

Fair market value means the dollar amount a person would be willing but not obligated to accept, and a buyer would be willing but not compelled to pay, for an item of sale. It is an estimate of what is a fair, economic, just and equitable value under normal local market conditions. In appropriate circumstances this may be the assessed value of the property.

Family means one or more persons occupying a single dwelling unit, provided that, unless all members are related by blood, marriage or adoption, no such family shall contain over four persons.

Family day care home means an occupied residence in which a person provides supplemental parental care or educational work, other than lodging overnight, to more than six but not more than 12 children.

Flood means a temporary rise in the channel flow or stage, resulting from the overflow of streams or rivers or from the unusual and rapid runoff of surface waters from any source, that results in water overflowing and inundating normally dry lands adjacent to the channel.

Flood elevation means the elevation flood-waters would reach at a particular site during the occurrence of a specific flood. For instance, the "100-year flood" or the "100-year (1%) flood" is that flood, the magnitude of which has a one percent (1%) chance of being equaled or exceeded in any given year. The "500-year flood" or the "500-year (0.2%) flood" is that flood, the magnitude of which has a two-tenths of one percent (0.2%) chance of being equaled or exceeded in any given year.

Flood insurance rate map (FIRM) means the official map prepared as part of, but published separately from, the flood insurance study, which delineates both the flood hazard areas and the risk premium zones applicable to the community.

Flood insurance study means a study initiated, funded or published by the Federal Insurance Administration and approved by the Federal Emergency Management Agency (FEMA), for the purpose of evaluating in detail the existence and severity of flood hazards, providing the city with the necessary information for adopting a floodplain management program, and establishing actuarial flood insurance rates.

Floodplain means any land susceptible to being inundated by water as a result of a flood.

Floodplain buildable area means that portion of the lot remaining after the minimum yard area requirements (i.e., setbacks) of this chapter have been met, and shall not include that portion of the property within the 500-year floodplain.

Flood profile means a graph or a longitudinal profile showing the relationship of the water surface elevation of a flood event to a location along a stream or river.

Floodproofing means a combination of structural provisions, changes or adjustments incorporated in the design or construction and alteration of individual buildings, structures or properties, including utilities, water treatment and sanitary facilities, which will reduce or eliminate flood damages.

Floodway means the channel of a river or stream and those portions of the floodplain adjoining the channel which are reasonably required to carry and discharge floodwaters or flood flows associated with the regulatory flood, so that confinement of flood flows to the floodway area will not result in substantially higher flood levels and flow velocities.

Floodway fringe means the land adjacent to a body of water between the floodway and the outer (landward) limits of the special flood hazard area, as defined by the regulatory flood as delineated on the official floodplain zoning map.

Floor area ratio means the gross floor area of all buildings on a lot, divided by the lot area on which the buildings are located.

Garage, private means an enclosed structure intended for the parking of the private motor vehicle of the families resident upon the premises.

Gasoline filling station means any building or premises used for:

(1) The retail sale of liquefied petroleum products for the propulsion of motor vehicles, including sale of such products as kerosene, fuel oil, package naphtha, lubricants, tires, batteries, antifreeze, motor vehicle accessories and other items customarily associated with the sale of such products;

(2) The rendering of services and making of adjustments and replacements to motor vehicles, and the washing, waxing and polishing of motor vehicles, as incidental to other services rendered; and

(3) The making of repairs to motor vehicles, except those of a major type. Repairs of a major type are defined to be spray painting, body, fender, clutch, transmission, differential, axle, spring and frame repairs, major overhauling of engines requiring the removal of the engine cylinder head or crankcase pan, repairs to radiators requiring the removal thereof, or complete recapping or retreading of tires.

Group home means a community-based residential home which is licensed as a residential care facility or an intermediate care facility for the mentally retarded under I.C.A. ch. 135C or as a child foster care facility under I.C.A. ch. 237 to provide room and board, personal care, habilitation services and supervision in a family environment exclusively for handicapped persons, as defined in section 3602(f) of the Fair Housing Amendments Act, and any necessary support personnel. However, group home does not mean an individual foster care family home licensed under I.C.A. ch. 237.

Guest room means a room that is intended, arranged or designed to be occupied by no more than three guests, but in which no mechanical provision is made for cooking, heating or cooling of food or beverages.

Habitable space for flood protection purposes means any floor or level, including a basement, which is suitable for human habitation. It excludes a garage, a detached accessory structure, or an area for housing electrical, plumbing, heating, ventilating and other utility systems underneath a structure elevated to comply with flood protection requirements.

Historic structure means a structure that is:

(a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of Interior as meeting the requirements for individual listing on the National Register.

(b) Certified or preliminarily determined by the Secretary of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

(c) Individually listed on a state inventory of historic places in states with historic places in states with historic preservation programs which has been approved by the Secretary of Interior; or

(d) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:

1. By an approved state program as determined by the Secretary of Interior or

2. Directly by the Secretary of Interior in states without approved programs.

Home occupation means a secondary use carried on entirely within the residence where there is no evidence of such occupation being conducted on the premises by virtue of outside storage, displays, noise, odors, electrical disturbances or traffic generation, with no more than one nonresident assistant and where not more than one-half of the floor area of any one floor is devoted to such use. Only one nameplate shall be allowed.

Hotel means a building in which lodging is provided and offered to the public for compensation, and which is open to transient guests, in contradistinction to a boardinghouse or roominghouse.

Junkyard means any area where waste, discarded or salvaged materials are bought, sold, exchanged, baled or packed, disassembled, kept, stored or handled, including house wrecking yards, used lumber yards and places or yards for storage of salvaged house wrecking and structural steel

materials and equipment; but not including areas where such uses are conducted entirely within a completely enclosed building, and not including automobile, tractor or machinery wrecking and used parts yards and the processing of used, discarded or salvaged materials as part of manufacturing operations, and not including contractors' storage yards.

Kennel means any premises on which four or more dogs or four or more cats, six months old or older, are kept. The term shall not include a veterinary hospital.

Landscape area means that area of private property maintained as open or "green" space, not subject to vehicular traffic, which consists of living landscape material.

Lot means a parcel of land of at least sufficient size to meet minimum zoning requirements for use, coverage and area to provide such yards and other open space as are required in this chapter. No portion of an established floodway area lying within a lot or any access drive through a property shall be used in computing the number of dwelling units to be constructed. Such lot shall have frontage on a public street or private street and may consist of:

(1) A single lot of record;

(2) A portion of a lot of record;

(3) A combination of complete lots of record, of complete lots of record and portions of lots of record, or of portions of lots of record; and

(4) A parcel of land described by metes and bounds;

provided that in no case of division or combination shall any residual lot or parcel be created which does not meet the requirements of this chapter.

Lot, corner means a lot abutting upon two or more streets at their intersection.

Lot depth means the mean horizontal distance between the front and rear lot lines.

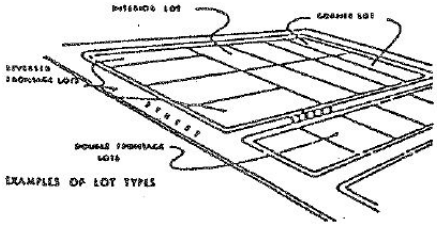
Lot, double frontage means a lot having a frontage on two nonintersecting streets, as distinguished from a corner lot.

Lot, interior means a lot other than a corner lot.

Lot lines means the lines bounding a lot.

Lot of record means a lot which is a part of a subdivision recorded in the office of the county recorder, or a lot or parcel described by metes and bounds, the description of which has been so recorded.

Lot, reversed frontage means a corner lot, the side street line of which is substantially a continuation of the front line of the first platted lot to its rear.



;p0; *Lot width* means the width of a lot measured at the building line and at right angles to its depth.

Lowest floor means the floor of the lowest enclosed area in a building, including a basement, except when all the following criteria are met:

(1) The enclosed area is designed to flood to equalize hydrostatic pressure during floods, with walls or openings that satisfy the floodway fringe performance standard pertaining to new and substantially improved structures;

(2) The enclosed area is unfinished (not carpeted, drywalled, etc.) and used solely for low damage potential uses such as building access, parking or storage;

(3) Machinery and service facilities (e.g., hot water heater, furnace and electrical service) contained in the enclosed area are located at least one foot above the 500-year (0.2%) flood level; and

(4) The enclosed area is not a basement.

In cases where the lowest enclosed area satisfies the criteria of subsections (1), (2), (3) and (4) of this definition, the lowest floor is the floor of the next highest enclosed area that does not satisfy such criteria.

Main body means that portion of a dwelling encompassed by the exterior walls as originally assembled or built. When a dwelling is irregularly shaped, the main body shall be construed as that portion of the structure occupying the majority of geometric bulk.

Manufactured home means a factory-built single-~~family~~unit structure, which is manufactured or constructed under the authority of 42 USC section 5403, Federal Manufactured Home Construction and Safety Standards, and is to be used as a place for human habitation, but which is not constructed with a permanent hitch or other device allowing it to be moved other than for the purpose of moving to a permanent site, and which does not have permanently attached to its body or frame any wheels or axles. A mobile home is not a manufactured home unless it has been converted to real property and is taxed as

a site-built dwelling. Manufactured homes shall be considered the same as any site-built single-~~family~~unit detached dwelling.

Mini-storage warehouses means a building or group of buildings in a controlled access and fenced compound that contains varying sizes of individual compartmentalized stalls or lockers for the storage of customers' goods or wares.

Mobile home means any vehicle without motive power used or so manufactured or constructed as to permit its being used as a conveyance upon the public streets and highways, and so designed, constructed or reconstructed as will permit the vehicle to be used as a place for human habitation by one or more persons; but shall also include any such vehicle with motive power not registered as a motor vehicle in the state. A mobile home is factory-built housing built on a chassis. A mobile home shall not be construed to be a travel trailer or other form of recreational vehicle. A mobile home shall be construed to remain a mobile home, subject to all regulations applying thereto, whether or not wheels, axles, hitch or other appurtenances of mobility are removed and regardless of the nature of the foundation provided. However, certain mobile homes may be classified as manufactured homes. Nothing in this chapter shall be construed as permitting a mobile home in other than an approved mobile home park, unless such mobile home is classified as a manufactured home.

Mobile home accessory building or structure means any awning, cabana, ramada, storage structure or carport, fence, windbreak or porch established for the use of the occupants of the mobile home on a mobile home space.

Mobile home space means a designated portion of the mobile home park designed for the accommodation of one mobile home and for its accessory buildings or structures for the exclusive use of the occupant.

Modular home means factory-built housing certified as meeting the Iowa State Building Code as applicable to modular housing. Once certified by the state, modular homes shall be subject to the same standards as site-built homes.

New construction (new buildings, new mobile home parks) means those structures or development for which the start of construction commenced on or after February 1, 1985.

Nursing or convalescent home means a building or structure having accommodations and where care is provided for invalid, infirm, aged, convalescent or physically disabled or injured persons, not including insane and other mental cases, inebriates or contagious cases.

Obstruction means any dam, wall, wharf, embankment, levee, dike, pile, abutment, projection, excavation, channel rectification, bridge, conduit, culvert, building, wire, fence, rock, gravel, refuse, fill, structure or matter in, along, across or projecting into any watercourse or floodplain area which may impede, retard or change the direction of the flow of water, either in itself or by catching or collecting debris carried by such water, or that is placed where the flow of water might carry material or structure downstream to the damage of other properties.

Official floodplain zoning map means the maps on file with the city that indicate those portions of land known as the floodway, floodway fringe and general floodplain, which are subject to the regulations of this chapter.

One hundred (100) year flood means a flood, the magnitude of which has a one percent (1%) chance of being equaled or exceeded in any given year or which, on average, will be equaled or exceeded at least once every one hundred (100) years.

Parking area means that portion of a parcel of land that is improved and designated or commonly used for the parking of one or more motor vehicles.

Parking lot means an area improved and designated or commonly used for the parking of three or more motor vehicles.

Parking space, also Parking stall means an area measuring at least nine feet wide and 19 feet long for all commercial, institutional, or manufacturing uses or eight feet wide and 18 feet long for residential uses only, connected to a public street or alley by a driveway not less than ten feet wide, and so arranged

as to permit ingress and egress of motor vehicles without moving any other vehicle parked adjacent to the parking space.

Permanent storage means the volume of water which is stored upstream from a dam or in an impoundment up to the level of the principal outlet works of the structure, usually expressed in acre-feet.

Porch, unenclosed means a roofed projection which has no more than 50 percent of each outside wall area enclosed by a building or siding material other than meshed screens.

Principal use means the main use of land or structures, as distinguished from an accessory use.

Program means the National Flood Insurance Program (NFIP).

Public damages shall consist of but not necessarily be limited to the following:

(1) Physical flood damage to:

a. Streets.

b. Sewers.

c. Water mains.

d. Other public utilities.

e. Public buildings.

f. Bridges.

g. Recreational trails.

(2) Expenditures for:

a. Emergency flood protection.

b. Evacuation and relief.

c. Rehabilitation and cleanup.

(3) Losses due to:

a. Interruption of utilities and transportation routes.

b. Interruption of commerce and employment.

Public sewer system means a municipally owned, operated and maintained sanitary sewer system.

Public water supply means a municipally owned, operated and maintained water supply.

Reach is a hydraulic engineering term used to describe longitudinal segments of a stream or river. A reach will generally include the segment of the flood hazard area where flood heights are primarily controlled by manmade or natural obstructions or constrictions. In an urban area, an example of a reach would be the segment of a stream or river between two consecutive bridge crossings.

Recreational vehicle means a vehicle built on a single chassis; 400 square feet or less when measured at the largest horizontal projection; designed to be self-propelled or permanently towable by a light duty truck; and designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational camping, travel, or seasonal use.

Regulatory flood means a flood, the magnitude of which has a two-tenths (0.2%) of one percent chance of being equaled or exceeded in any given year. Regulatory flood is also referred to in this chapter as the "500-year flood" and the "500-year (0.2%) flood."

Roominghouse means an owner-occupied or manager-occupied single dwelling unit wherein individual sleeping rooms are provided to not less than three ~~unrelated~~ resident tenants aged 18 years or older. Not more than one kitchen facility shall be established within said structure wherein meals may be prepared by resident tenants. Said rooming or boarding facility shall be distinctive from transient lodging facilities such as hotels, beds and breakfasts, other overnight lodging facilities or public eateries.

Residents within said roominghouse facility shall be accommodated with weekly, monthly, or yearly tenant agreements or leases.

Satellite receiving dish means a device whose purpose is to receive communication or other signals from orbiting satellites and other extraterrestrial sources, most often comprised of an antenna/dish, a low-noise amplifier, and a coaxial cable whose purpose is to carry the signals to a receiver.

Site coverage ratio means that proportion of the lot on which buildings and outdoor storage of materials and products may be placed.

Special Exception Permit means an authorization by the City Board of Adjustment to allow building improvements or other development when such project conforms with specified rules, regulations and/or performance standards required for said improvements or development in special areas of the City as identified by the Zoning Ordinance.

Story means that portion of a building included between the surface of any floor and the surface of the floor next above it, or, if there is no floor above it, then the space between the floor and the ceiling or roof next above it.

Story, half means a space under a sloping roof which has the line of intersection of roof decking and wall face not more than four feet above the top floor level.

Street line means the right-of-way line of a street.

Street, private means any private way 20 feet or more in width which is approved by the city council after recommendation by the city planning and zoning commission.

Street, public means any thoroughfare or public way not less than 30 feet in width which has been dedicated to the public or deeded to the city for street purposes, and also any such public way as may be created after enactment of this chapter, provided it is 40 feet or more in width.

Structural alterations means any replacement or changes in the type of construction or in the supporting members of a building, such as bearing walls or partitions, columns, beams or girders, beyond ordinary repairs and maintenance.

Structure means anything constructed or erected on the ground or attached to the ground, including but not limited to buildings, factories, sheds, cabins, factory-built housing, storage tanks and other similar uses. For zoning purposes anything, excluding fences, judged to be permanently affixed to the site and measuring at least 30 inches in height, as measured from natural grade, shall be considered a structure.

Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the fair market value of the structure before the damage occurred.

Substantial improvement means any improvement to a structure which satisfies either of the following criteria:

(1) Any reconstruction, rehabilitation, addition or other improvement of a structure, the cost of which equals or exceeds 50 percent of the fair market value of the structure before the start of construction of the improvement. This term includes structures which have incurred substantial damage, regardless of the actual repair work performed. The term does not, however, include either:

   a. Any project for improvement of a structure to correct existing violations of state or local health, sanitary or safety code specifications which have been identified by the local code enforcement officer and which are the minimum necessary to ensure safe living conditions; or

   b. Any alteration to an historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure.

(2) Any addition which increases the original floor area of a structure by 25 percent or more. All additions constructed after February 1, 1985, shall be added to any proposed addition in

determining whether the total increase in original floor space would exceed 25 percent. The term does not, however, include either:

a. Any project or improvement of a structure to correct existing violations of state or local health, sanitary or safety code specifications which have been identified by the local code enforcement officer and which are the minimum necessary to ensure safe living conditions; or

b. Any alteration which will not preclude the structure's continued designation as a historic structure.

Temporary storage means a volume of water which may be stored upstream from a dam or in an impoundment above the level of the principal outlet works, usually expressed in acre-feet.

Travel trailer means a towed recreational vehicle ranging from ten to 35 feet in length and a maximum of eight feet in width.

Wind energy conversion system means a device or assemblage of devices which directly or indirectly converts wind energy to usable thermal, mechanical or electrical energy.

Variance means a grant of relief by a community from the terms of the zoning ordinance.

Violation means the failure of a structure, property, property use or other development to be fully compliant with City regulations.

Yard means an open space on the same lot with a building or structure unoccupied and unobstructed by any portion of a structure from 30 inches above the general ground level of the graded lot upward. In measuring a yard for the purpose of determining the depth of a front yard or the depth of a rear yard, the least distance between the lot line and the main building shall be used. In measuring a yard for the purpose of determining the width of a side yard, the least distance between the lot line and the nearest permitted building shall be used.

Yard, front means a yard extending across the full width of the lot and measured between the front lot line and the building.

Yard, rear means a yard extending across the full width of the lot and measured between the rear lot line and the building or any projections other than steps, unenclosed balconies or unenclosed porches. On both corner lots and interior lots, the rear yard is the opposite end of the lot from the front yard.

Yard, required means that portion of the front yard, side yard and rear yard as established by the setback requirements of the zoning district or of this chapter. It must be maintained in open, unobstructed space as measured from the property line to the required setback line except for allowable yard encroachments as outlined in section 29-83. If the building structure is located at the required setback line, then the setback distance shall be measured from the property line to the foundation of the structure. Refer to Figure 1.

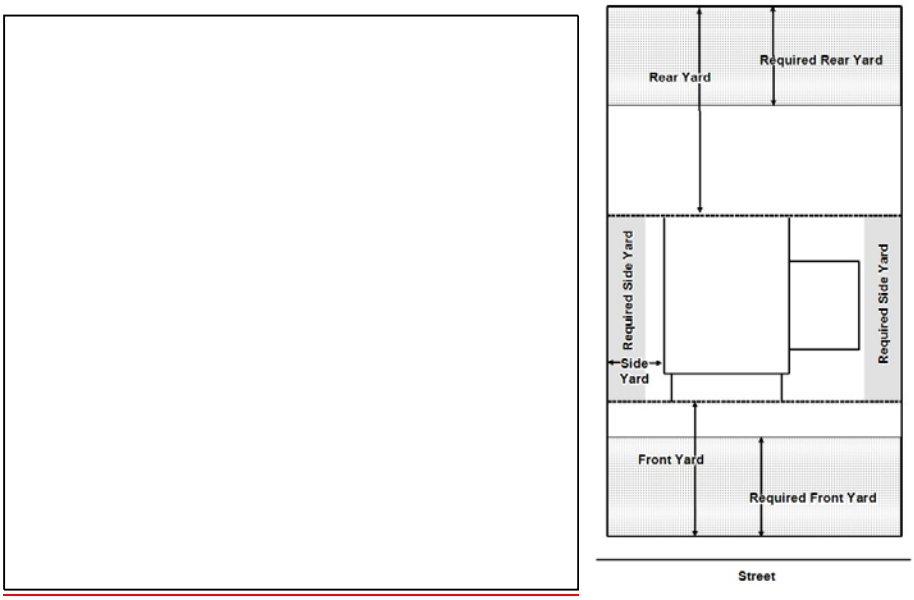


Figure 1

Yard, side means a yard extending from the front yard to the rear yard and measured between the side lot lines and the nearest building.

(Ord. No. 2750, § 1, 7-11-11; Ord. No. 2837, § 1, 3-2-15; Ord. No. 2847, § 1, 7-20-15)

Cross reference— Definitions and rules of construction generally, § 1-2.

Sec. 29-3. - Interpretation of chapter.

In their interpretation and application, the provisions of this chapter shall be held to be minimum requirements. Where this chapter imposes a greater restriction than is imposed or required by other provisions of law or by other rules or regulations or ordinances, the provisions of this chapter shall control.

(Code 1971, § 32-23)

Sec. 29-4. - Amendments to chapter.

(a) The city council may, from time to time, on its own action or on petition, after public notice and hearings as provided by law, and after reports by the city planning and zoning commission, amend, supplement or change the boundaries or regulations established in this chapter or subsequently established. Such amendment shall not become effective except by the favorable vote of a majority of all the members of the city council.

(b) Prior to and in addition to the requirements of subsection (a) of this section, whenever any person desires that any amendment or change be made in this chapter as to any property in the city, there shall be presented to the city planning and zoning commission a petition requesting such change or amendment signed by the owners of at least 50 percent of the area of all the real estate included within the boundaries of the tract as described in the petition. The petition shall contain a legal description of the real estate for which rezoning is requested, the existing zoning classification and the requested zoning classification. The petition shall also have attached to it a plat which identifies

the real estate for which rezoning is requested and which also shows all public streets and highways within a distance of 300 feet; the platted addition, if any, or the government section number and quarters in which the real estate is located; the existing zoning classification; and the requested zoning classification. Such plats shall be of a scale of not less than 300 feet to one inch. Within 30 days after the filing of such petition, the city planning and zoning commission, acting as a commission or acting through its chairman, vice-chairman or other authorized agent, shall fix a time, date and place of hearing on the petition, which date shall be no more than 60 days after the filing of such petition. The petitioner for such change or amendment shall thereafter cause a notice of hearing to be published once in a newspaper of general circulation published within the city, at least seven but not more than 14 days before the date fixed for such hearing. Such notice shall contain the time, date and place of the hearing, the existing zoning classification, the requested zoning classification and a reproduction of the plat attached to the petition, and shall be signed by the petitioners. The city planning and zoning commission may, upon the unanimous approval of the members present at a meeting, act upon a petition for rezoning or initiate a zoning change or amendment without the necessity of such a plat, notice or hearing.

(c) In case the proposed amendment, supplement or change is disapproved by the city planning and zoning commission, such amendment, supplement or change shall not become effective except by the favorable vote of at least two-thirds 2/3 of all the members of the city council. In case a written protest against a proposed amendment, supplement or change is filed with the city clerk duly signed by the owners of 20 percent or more of the area of the lots included in such proposed change, or by the owners of 20 percent or more of the property which is located within 200 feet of the exterior boundaries of the property for which the amendment, supplement or change is proposed, such amendment shall not become effective except by the favorable vote of at least three-fourths ¾ of all the members of the city council. Whenever any petition for an amendment, supplement or change of the zoning or regulations contained in this chapter or subsequently established shall have been denied by the city council, then no new petition covering the same property or the same property and additional property shall be filed with or considered by the city council until six months shall have elapsed from the date of the filing of the first petition.

(d) Unless any lot, tract or parcel of land hereafter zoned to a less restrictive classification than as provided in this chapter has been used or developed for such less restrictive classification within two years from such rezoning, or unless there exists an unexpired building permit for the development thereof at the end of such two years, the city planning and zoning commission may, prior to the bona fide commencement of the use or development of the land in its less restrictive classification, after seven days' notice, in writing, to the then record owner of the land providing a reasonable opportunity to be heard, initiate and recommend to the city council that the land be rezoned to its zoning classification as established at the date of the passage of this chapter.

(e) Before any action has been taken as provided in this section, the party proposing or recommending a change in district regulations or district boundaries shall deposit with the city clerk such sum as established by the council from time to time to cover the costs of this procedure. The fee will be nonrefundable.

(Code 1971, § 32-50; Ord. No. 2439, § 1, 6-23-03)

Secs. 29-5—29-30. - Reserved.

ARTICLE II. - ADMINISTRATION AND ENFORCEMENT

DIVISION 1. - GENERALLY

Sec. 29-31. - Penalty for violation of chapter.

Any person who violates, disobeys, omits, neglects or refuses to comply with or who resists the enforcement of any of the provisions of this chapter, shall be guilty of a municipal infraction and subject to punishment as provided in section 1-9 of this Code.

(Code 1971, § 32-52)

Sec. 29-32. - Enforcement of chapter.

The department of developmental services is hereby designated and ordered to enforce this chapter. In case any building or structure is erected, constructed, reconstructed, altered, repaired, moved, converted or maintained, or any building, structure or land is used in violation of this chapter, the department, in addition to other remedies, shall institute any proper action or proceedings in the name of the city to prevent such unlawful erection, moving, construction, reconstruction, alteration, repair, conversion, maintenance or use, to restrain, correct or abate such violation, to prevent the occupancy of the building, structure or land, or to prevent any illegal act, conduct of business or use in or about the premises.

(Code 1971, § 32-51)

Sec. 29-33. - Occupancy permit.

(a) No land shall be occupied or used, and no building hereafter erected or structurally altered shall be occupied or used in whole or in part for any purpose whatsoever, until a certificate is issued by the department of developmental services stating that the building and use comply with the provisions of this chapter. No change of use shall be made in any building or part thereof erected or structurally altered without an occupancy permit being issued therefor by the department. No occupancy permit shall be issued to make a change unless the changes are in conformity with the provisions of this chapter, and a certificate issued as provided in this subsection.

(b) Nothing in this section shall prevent the continuance of a nonconforming use as authorized in this chapter, unless a discontinuance is necessary for the safety of life or property.

(c) Certificates for occupancy and compliance shall be applied for coincidentally with the application for a building permit and shall be issued within ten days after the lawful erection or alteration of the building is completed. A record of all certificates shall be kept on file in the office of the department, and copies shall be furnished on request to any person having a proprietary or tenancy interest in the building affected.

(d) No permit for excavation for or the erection or alteration of any building shall be issued before the application has been made for certificate of compliance and application has been made for certificate of occupancy, and no building or premises shall be occupied until that occupancy certificate and permit are issued.

(e) A certificate of occupancy shall be required of all nonconforming uses. Application for a certificate of occupancy for nonconforming uses shall be filed within 12 months from the effective date of this Ordinance No. 1633, accompanied by affidavits of proof that such nonconforming use was not established in violation of Ordinance No. 855 or amendments thereto.

(Code 1971, § 32-49)

Sec. 29-34. - Floodplain development permit.

(a) A floodplain development permit issued by the zoning administrator shall be secured prior to initiation of any floodplain development. Application for a floodplain development permit shall be made on forms supplied by the zoning administrator and shall include the following information:

(1) A description of the work to be covered by the permit for which application is to be made.

(2) A description of the land on which the proposed work is to be done, i.e., lot, block, tract, street address or similar description, that will readily identify and locate the work to be done.

(3) An indication of the use or occupancy for which the proposed work is intended.

(4) The elevations of the 100-year (1%) and 500-year (0.2%) flood.

(5) The elevation, in relation to the North American Vertical Datum of 1988 (NAVD), of the lowest floor, including basement, of buildings or of the level to which a building is to be floodproofed.

(6) For buildings being improved or rebuilt, the estimated cost of improvements and fair market value of the building prior to the improvements.

(7) Such other information as the administrator deems reasonably necessary for the purpose of this chapter.

(b) Floodplain development permits issued on the basis of approved plans and applications authorize only the use, arrangement and construction set forth in such approved plans and applications and no other use, arrangement or construction. Any use, arrangement or construction at variance with that authorized shall be deemed a violation of this chapter and shall be punishable as provided in this chapter. The applicant shall be required to submit certification by a professional engineer or land surveyor, as appropriate, registered in the state, that the finished fill, building floor elevations, floodproofing or other flood protection measures were accomplished in compliance with the provisions of this chapter prior to the use or occupancy of any structure.

(c) All uses or structures in the floodway, floodway fringe and general floodplain districts requiring special exception permits shall be allowed only upon application to the zoning administrator with issuance of the special exception permit by the board of adjustment. Petitioners shall include information ordinarily submitted with applications, as well as any additional information deemed necessary by the board of adjustment. Where required, approval of the state department of natural resources shall precede issuance of the special exception permit by the board of adjustment.

(d) The zoning administrator shall, within a reasonable time, make a determination as to whether the proposed floodplain development meets the applicable provisions and standards of this chapter, and shall approve or disapprove the application. In case of disapproval, the applicant shall be informed, in writing, of a specific reason therefor. The zoning administrator shall not issue permits for special exception permits or variances except as directed by the board of adjustment.

(Ord. No. 2750, § 2, 7-11-11)

Editor's note— Ord. No. 2750, § 2, adopted July 11, 2011, repealed § 29-34, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-34 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-35. - Variances and special exception permits.

(a) The board of adjustment may authorize, upon request, in specific cases, such variances from the terms of this chapter as will not be contrary to the public interest, where owing to special conditions a literal enforcement of the provisions of this chapter will result in unnecessary hardship. Variances granted must meet the following applicable standards:

(1) No variance shall be granted for any development within the floodway district which would result in any increase in floods during the occurrence of the 500-year flood. Consideration of the effects of any development on flood levels shall be based upon the assumption that an equal degree of development would be allowed for similarly situated lands.

(2) Variances shall only be granted upon:

a. A showing of good and sufficient cause;

b. A determination that failure to grant the variance would result in exceptional hardship to the applicant; and

c. A determination that the granting of the variance will not result in increased flood heights, additional threats to public safety or extraordinary public expense, create nuisances, or cause fraud on or victimization of the public.

(3) Variances shall only be granted upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(4) In cases where the variance involves a lower level of flood protection for buildings than what is ordinarily required by this chapter, the applicant shall be notified in writing over the signature of the zoning administrator that:

a. The issuance of a variance will result in increased premium rates for flood insurance up to amounts as high as $25.00 for $100.00 of insurance coverage; and

b. Such construction increases risk to life and property.

(5) All variances granted shall have the concurrence or approval of the state department of natural resources.

(b) In passing upon applications for special exception permits or requests for variances, the board shall consider all relevant factors specified in other sections of this chapter and:

(1) The danger to life and property due to increased flood heights or velocities caused by encroachments.

(2) The danger that materials may be swept onto other lands or downstream to the injury of others.

(3) The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination and unsanitary conditions.

(4) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner.

(5) The importance of the services provided by the proposed facility to the community.

(6) The requirements of the facility for a floodplain location.

(7) The availability of alternative locations not subject to flooding for the proposed use.

(8) The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.

(9) The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.

(10) The safety of access to the property in times of flood for ordinary and emergency vehicles.

(11) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwater expected at the site.

(12) Such other factors which are relevant to the purpose of this chapter.

(c) Upon consideration of the factors listed in subsection (b) of this section, the board may attach such conditions to the granting of special exception permits or variances as it deems necessary to further the purpose of this chapter. Such conditions may include but shall not necessarily be limited to:

(1) Modification of waste disposal and water supply facilities.

(2) Limitation on periods of use and operation.

(3) Imposition of operational controls, sureties and deed restrictions.

(4) Requirements for construction of channel modifications, dikes, levees and other protective measures, provided such are approved by the state department of natural resources and are deemed the only practical alternative for achieving the purposes of this chapter.

(5) Floodproofing measures shall be designed consistent with the flood protection elevation for the particular area, flood velocities, durations, rate of rise, hydrostatic and hydrodynamic forces, and other factors associated with the regulatory flood. The board of adjustment shall require that the applicant submit a plan or document certified by a registered professional engineer that the floodproofing measures are consistent with the regulatory flood protection elevation and associated flood factors for the particular area. Such floodproofing measures may include but are not necessarily limited to the following:

a. Anchorage to resist flotation and lateral movement.

b. Installation of watertight doors, bulkheads and shutters, or similar methods of construction.

c. Reinforcement of walls to resist water pressures.

d. Use of paints, membranes or mortars to reduce seepage of water through walls.

e. Addition of mass or weight structures to resist flotation.

f. Installation of pumps to lower water levels in structures.

g. Construction of water supply and waste treatment systems so as to prevent the entrance of floodwaters.

(6) Pumping facilities or comparable practices for subsurface drainage systems for building to relieve external foundation wall and basement flood pressures.

(7) Construction to resist rupture or collapse caused by water pressure or floating debris.

(8) Installation of valves or controls on sanitary and storm drains which will permit the drains to be closed to prevent backup of sewage and stormwaters into the buildings or structures.

(9) Location of all electrical equipment, circuits and installed electrical appliances in a manner which will ensure that they are not subject to flooding.

(Ord. No. 2750, § 3, 7-11-11)

Editor's note— Ord. No. 2750, § 3, adopted July 11, 2011, repealed § 29-35, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-35 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-36. - Development requiring approval by state department of natural resources.

In addition to the variance and conditional uses otherwise enumerated in this article requiring approval by the state department of natural resources, state authorization shall also be required for the following uses prior to issuance of the special exception permit from the board of adjustment:

(1) Bridges, culverts, temporary stream crossings or road embankments in or on the floodway of any river or stream draining more than two square miles.

(2) Construction, operation and maintenance of channel alterations on any river or stream draining more than two square miles.

(3) Construction, operation and maintenance of dams and impounding structures in the following instances:

a. Any dam designed to provide permanent storage in excess of 18 acre-feet.

b. Any dam which has a height of ten feet or more and is designed to temporarily store more than five acre-feet at the top of the dam elevation, or which impounds a stream draining two or more square miles.

(4) Construction, operation and maintenance of any levee or dike along any stream or river draining more than two square miles.

(5) Waste or water treatment facilities on the floodplains of any river or stream draining more than two square miles.

(6) Construction, operation and maintenance of any sanitary landfill located on a floodplain or floodway of any river or stream draining more than two square miles at the landfill site.

(7) Construction, operation and maintenance of pipeline crossings on any river or stream draining more than two square miles.

(8) Stream bank protective devices as follows:

a. Stream bank protective devices along any river or stream draining more than 100 square miles.

b. Stream bank protective devices along any river or stream draining between two and 100 square miles, where the cross sectional area of the river or stream channel is reduced more than three percent.

(9) Excavation on the floodway of any stream draining more than two square miles.

(10) Boat docks located on any river or stream, other than a lake, other than exempted nonfloating boat docks permitted by the state conservation commission.

(11) Miscellaneous structures, obstructions or deposits not otherwise provided for, on the floodway or floodplains of any river or stream draining more than two square miles.

(Code 1971, § 32-47.1(3))

Sec. 29-37. - Duties of zoning administrator relative to development in flood hazard areas.

It shall be the responsibility of the zoning administrator or his/her official designee to:

(1) Review all floodplain development permit applications to ensure that the provisions of this chapter will be satisfied.

(2) Review all floodplain development permit applications to ensure that all necessary permits have been obtained from federal, state or local governmental agencies.

(3) Obtain and record the actual elevation, in relation to the North American Vertical Datum of 1988 (NAVD), of the lowest floor, including basement, of all new or substantially improved structures, and whether or not the structure contains a basement.

(4) For all new substantially improved floodproofed structures:

a. Verify and record the actual elevation, in relation to the North American Vertical Datum of 1988 (NAVD); and

b. Maintain the floodproofing certifications required in subsection 29-34(b).

(5) Maintain for public information all records pertaining to the provisions of this chapter.

(6) Submit to the Federal Insurance Administrator an annual report concerning the community's participation in the National Flood Insurance Program.

(7) Review subdivision proposals to ensure that such proposals minimize flood damage, provide adequate drainage and are consistent with the purpose of this chapter, and advise the city council or potential conflicts.

(8) Notify adjacent communities and counties and the state department of natural resources prior to any proposed alteration or relocation of a watercourse, and submit evidence of such notifications to the Federal Insurance Administration.

(9) Notify the Federal Insurance Administration of any allexations or modifications to the city's boundaries.

(Ord. No. 2750, § 4, 7-11-11)

Editor's note— Ord. No. 2750, § 4, adopted July 11, 2011, repealed § 29-37, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-37 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-38. - Liability limitations.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes. Larger floods may occur on rare occasions, or the flood height may be increased by manmade or natural causes such as ice jams and bridge openings restricted by debris. This chapter does not imply that areas outside of the floodway, floodway fringe and general floodplain districts or land uses permitted within those districts will be free from flooding or flood damages. The granting of approval of any structure or use shall not constitute a representation, guarantee or warranty of any kind or nature by the city or the board of adjustment, or by any officer or employee thereof, of the practicality or safety of any structure or use proposed, and shall create no liability upon or cause action against any such body, officer or employee for any damage that may result pursuant thereto.

(Code 1971, § 32-54)

Sec. 29-39. - Flood insurance rate map (FIRM).

The Flood Insurance Rate Map (FIRM) for Black Hawk County and Incorporated Areas, City of Cedar Falls, Panels 19013C0145F, 0153F, 0154F, 0158F, 0161F, 0162F, 0163F, 0164F, 0166F, 0168F, 0276F, 0277F, 0278F, 0279F, 0281F, 0282F, and 0283F, dated July 18, 2011, which were prepared as part of the Flood Insurance Study for Black Hawk County, are hereby adopted by reference and declared to be the Official Floodplain Zoning Map. The flood profiles and all explanatory material contained within the Flood Insurance Study are also declared to be a part of this chapter.

(Ord. No. 2750, § 5, 7-11-11)

Secs. 29-40—29-55. - Reserved.

DIVISION 2. - BOARD OF ADJUSTMENT[2]

Footnotes:

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Cross reference— Airport zoning commission, § 4-26 et seq.

Sec. 29-56. - Membership; appointment of members.

A board of adjustment is hereby established, which shall consist of seven members, each to be appointed by the mayor subject to approval of the city council for the term of five years. Members shall be removable for cause by the appointing authority upon written charges and after public hearing. Vacancies shall be filled for the unexpired term of any member whose term becomes vacant.

(Code 1971, § 32-48(a))

Sec. 29-57. - Meetings and rules of procedure.

The board of adjustment shall adopt rules in accordance with the provisions of this chapter. Meetings of the board shall be held at the call of the chairman and at such other times as the board may determine. Such chairman, or, in his/her absence, the acting chairman, may administer oaths and compel the attendance of witnesses. All meetings of the board shall be open to the public, and the presence of four members shall constitute a quorum. The board shall keep minutes of its proceedings, showing the vote of each member upon each question, or, if absent or failing to vote, indicating such fact, and shall keep records of its examinations and other official actions, all of which shall be immediately filed in the office of the board and shall be a public record.

(Code 1971, § 32-48(b))

Sec. 29-58. - Powers and duties.

The board of adjustment shall have the following powers and duties:

(1) In appropriate cases and subject to appropriate conditions and safeguards, to make special exceptions to the terms of this chapter in harmony with its general purpose and intent. Any property owner aggrieved by the provisions of this chapter or any regulations or restrictions under this chapter may petition the board of adjustment directly to modify the regulations and restrictions as applied to such property owner, and the following rules shall apply:

   a. The board of adjustment shall have a public hearing on the petitions under the same terms and conditions as provided in this division for the hearing of appeals by the board of adjustment.

   b. The board of adjustment, in making any exception to this chapter, shall be guided by the general rule that the exceptions shall by their design, construction and operation adequately safeguard the health, safety and welfare of the occupants of adjoining and surrounding property, shall not impair an adequate supply of light and air to adjacent property, shall not increase congestion in the public streets, shall not increase public danger of fire and safety and shall not diminish or impair established property values in surrounding areas.

   c. The board of adjustment is specifically authorized to permit erection and use of a building or the use of premises or vary the height and area regulations in any location for a public service corporation for public utility purposes or for purposes of public communication, including the distribution of newspapers, which the board determines reasonably necessary for public convenience or welfare.

   d. The board of adjustment is specifically authorized to permit the extension of a district where the boundary line of a district divides a lot in a single ownership as shown of record or by existing contract or purchase at the time of the passage of this chapter, but in no case shall extension of the district boundary line exceed 40 feet in any direction.

(2) To hear and decide appeals where it is alleged there is an error in any order, requirement, decision or determination made by the department of developmental services in the enforcement of this chapter.

(3) To authorize upon appeal in specific cases such variance from the terms of this chapter as will not be contrary to the public interest, where owing to special conditions a literal enforcement of the provisions of this chapter will result in unnecessary hardship, and so that the spirit of this chapter shall be observed and substantial justice done. Special conditions shall include but not be limited to a property owner who can show that his/her property was acquired in good faith and that, by reason of exceptional narrowness, shallowness or shape of a specific piece of property, or by reason of exceptional topographical conditions or other extraordinary or exceptional situations, the strict application of the terms of this chapter actually prohibits the use of his/her property in a manner reasonably similar to that of other property in the district.

(Code 1971, § 32-48(c))

Sec. 29-59. - Appeals.

(a) Appeals to the board of adjustment may be taken by any person aggrieved or by any officer, department, board or bureau of the city affected by any decision of the department of developmental services. Such appeal shall be taken within a reasonable time, as provided by the rules of the board, by filing with the department and with the board of adjustment a notice of appeal specifying the grounds thereof. The department shall forthwith transmit to the board all the papers constituting the record upon which the action appealed from is taken.

(b) An appeal stays all proceedings in furtherance of the action appealed from, unless the department certifies to the board, after notice of appeal has been filed with the department, that by reason of the facts stated in the certificate a stay would, in its opinion, cause imminent peril to life or property. In such case, proceedings shall not be stayed otherwise than by a restraining order, which may be granted by the board or by a court of record on application, with notice to the department, and on due cause shown.

(c) The appealing party shall be required to submit to the secretary of the board, ten days prior to the public hearing, a petition duly signed by the owners of the property immediately adjacent, in the rear and to the side thereof, extending the depth of one lot but not to exceed 200 feet therefrom, and of those directly opposite thereto, extending the depth of one lot or not to exceed 200 feet from the street frontage of such opposite lots, indicating knowledge of the appeal and the date of the public hearing. Should an adjacent property owner refuse to sign the petition, it shall then be the duty of the appealing party to contact the adjacent property owner by certified mail, notifying the property owner of the appeal before the board, and the appealing party shall submit proof of the certified mail to the secretary of the board ten days prior to the public hearing.

(d) The board of adjustment shall give a reasonable time for hearing the appeal. The board shall publish notice of the public hearing on the appeal once, not less than seven nor more than 14 days before the date of the hearing, in a newspaper having general circulation in the city.

(e) At the hearing, any party may appear in person or by agent, or by attorney. Before an appeal is filed with the board of adjustment, the appellant shall pay to the city clerk, to be credited to the general fund of the city, the cost of publishing the notice and the administrative costs of the appeal as determined by the board.

(f) In exercising the powers mentioned in this section, the board may, in conformity with the provisions of law, reverse or affirm, wholly or partly, or modify the order, requirement, decision or determination as it believes proper, and to that end shall have all the zoning administration powers of the department of developmental services. The concurring vote of four members of the board shall be necessary to reverse any order, requirement, decision or determination of the department, or to decide in favor of the applicant on any matter upon which it is required to pass under this chapter;

provided, however, that the action of the board shall not become effective until after the resolution of the board, setting forth the full reason of its decision and the vote of each member participating therein, has been spread upon the minutes. Such resolution, immediately following the board's final decision, shall be filed in the office of the board, and shall be open to public inspection.

(Code 1971, § 32-48(d); Ord. No. 2631, § 1, 7-23-07)

Secs. 29-60—29-75. - Reserved.

DIVISION 3. - EXCEPTIONS AND MODIFICATIONS

Sec. 29-76. - Generally.

The regulations specified in this chapter shall be subject to the exceptions and interpretations set out in this division.

(Code 1971, § 32-47)

Sec. 29-77. - Review of proposed public improvements by planning and zoning commission.

(a) No statuary, memorial or work of art in a public place, and no public building, bridge, viaduct, street fixture, public structure or appurtenance, shall be located or erected, or a site therefor obtained, nor shall any permit be issued by any department of the city for the erection or location thereof, until and unless the design and proposed location of any such improvement shall have been submitted to the city planning and zoning commission and its recommendations thereon obtained. If the commission disapproves the proposed improvement, it may be approved by the city council only by an affirmative vote of a simple majority of all the membership of the council.

(b) Such requirements for recommendations shall not act as a stay upon action for such improvements where such commission, after 60 days' written notice requesting such recommendations, shall have failed to file the recommendations.

(Code 1971, § 32-47(h))

Sec. 29-78. - Use of existing lots of record.

In any district where dwellings are permitted, a single-~~family~~unit dwelling may be located on any lot or plot of official record as of April 3, 1970, irrespective of its area or width; and, in addition, any two-~~family~~unit dwelling may be located on any lot or plot in an R-3 residence district that has a lot width of not less than 60 feet and a lot area of not less than 8,000 square feet and is of official record as of April 3, 1970, provided, however, that:

(1) The sum of the side yard widths of any such lot or plot shall not be less than 20 percent of the width of the lot, but in no case shall the width be less than five feet for any one side yard.

(2) The depth of the rear yard of any such lot need not exceed 20 percent of the depth of the lot, but in no case shall the depth be less than ten feet.

(3) In the case of a lot of record where the requirements of subsection (1) or (2) of this section are greater than those of the district in which it is located, the lesser requirement shall apply.

(4) In the case of platted building setback lines established on lots of record as of April 3, 1970, such setback lines may apply in lieu of those required by this section unless existing adjacent

building setbacks are greater than specified on the plat of record, in which case the provisions of sections 29-111 through 29-121 shall apply.

(Code 1971, § 32-47(a); Ord. No. 2023, § 3, 8-23-93; Ord. No. 2299, § 1, 5-8-00; Ord. No. 2329, § 1, 4-9-01)

Sec. 29-79. - Exceptions to height limits.

The building height limitations of this chapter shall be modified as follows:

(1) Chimneys, cooling towers, elevator bulkheads, fire towers, monuments, penthouses, stacks, stage towers or scenery lofts, tanks, water towers, spires and radio or television towers or necessary mechanical appurtenances may be erected to a height in accordance with the ordinances of the city. Wind energy conversion systems shall be permitted in all zoning districts, subject to approval by the board of adjustment. The board of adjustment may compel applicants to provide documentation indicating that the design, construction and operation of the system adequately safeguards the health, safety and welfare of the occupants of all adjoining and surrounding properties.

(2) Public, semipublic or public service buildings, hospitals, medical clinics, senior housing facilities, nursing homes, housing for the elderly, professional offices, professional services, sanatoriums or schools, or other uses permitted in a district, may be erected to a height not exceeding 60 feet to the ridge line or top of the roof, and churches and temples, when permitted in a district, may be erected to a height not exceeding 75 feet, if the building is set back from each building setback line at least one foot for each foot of additional building height above the height limit otherwise provided for in the district in which the building is built. The additional setback area must be provided in open green space with living landscape material, berming and other vegetative screening elements along any property line adjacent to a public right-of-way. The building will utilize high quality materials such as brick, natural stone, glass or other materials used in the neighborhood. These materials shall be incorporated on all sides of the building. In addition, restrictive covenants, developmental agreements or design guidelines may be used to further supplement the building or site design.

(3) Single-~~family~~unit dwellings and two-~~family~~unit dwellings in the dwelling districts may be increased in height by not more than ten feet when two side yards of not less than 15 feet each are provided, but they shall not exceed three stories in height.

(Code 1971, § 32-47(b); Ord. No. 2843, § 1, 5-18-15; Ord. No. 2888, § 1, 11-7-16)

Sec. 29-80. - Exceptions to lot area requirements.

In any district where public water supply or public sanitary sewer is not accessible, the lot area requirements shall be determined and approved by the planning and zoning commission upon recommendation by the county board of health, the city public works department and the department of developmental services. The commission shall evaluate the longterm use of the property and projected provision of public service to the area to determine the lot size and type of water and sewer service to be required. However, should public water or public sewer not be available, the minimum lot size required shall not be less than 15,000 square feet nor more than three acres. In all cases, if the lot requirement of the district is more restrictive than this regulation, the district lot requirement shall apply.

(Code 1971, § 32-47(c))

Sec. 29-81. - Measurement of rear or side yard when yard opens onto alley.

In computing the depth of a rear yard or the width of a side yard where the rear or side yard opens on an alley, one-half of the alley width may be included as a portion of the rear or side yard, as the case may be.

(Code 1971, § 32-47(e))

Sec. 29-82. - Yards for double frontage lots.

Buildings on through lots and extending through from street to street shall provide the required front yard on both streets.

(Code 1971, § 32-47(d))

Sec. 29-83. - Other exceptions to yard requirements.

(a) *Obstructions in required yards.* Every part of a required yard shall be open to the sky, unobstructed with any above-grade building or structure with the following exceptions:

(1) The ordinary projections of skylights, sills, belt courses, cornices, roof eaves and ornamental features, such projections not to exceed 36 inches.

(2) Handicap accessible ramps, railings or walkways that may extend to the property line in order to accommodate handicap access and egress.

(3) The usual steps of enclosed or unenclosed porches, stoops, or other entryways, said steps to extend no closer than five feet from the property line.

(4) Unenclosed and unroofed decks may extend no closer than five feet from a side yard property line. Said unenclosed and unroofed decks shall extend no further than ten feet into the required front yard or required rear yard area.

(5) Other decorative lawn ornaments such as bird feeders, lighting fixtures, art work, or any similar item not recognized by the uniform building code as a building or structure shall be allowed.

(6) Permitted accessory structures and fences. Said accessory structures, including but not limited to garages or storage sheds, shall not be allowed in any portion of a required front yard.

(b) *Swimming pools.* In all residential zoning districts detached above-ground and in-ground swimming pools are permitted for private use. The size and location of said swimming pools on the site will be governed by the regulations controlling detached accessory structures (section 19-115). However, said swimming pools will be allowed the area permitted in section 29-115 exclusive of any existing or proposed accessory structures on the lot, provided that minimum setbacks and building separations are maintained. No permanent swimming pools will be permitted in the required front yard. In addition, a fence measuring at least five feet in height shall be established around the perimeter of said swimming pool.

(c) *Rowhouses and condominiums.* In all districts providing for multiple-~~family~~unit dwellings, the front, rear and side yard requirements shall apply to the building where utilized as a row or condominium dwelling, and shall not be required for each individual unit.

(d) *Conversion of duplex to bi-attached dwelling.* In the case of a duplex conversion to bi-attached dwelling status, the front, rear and side yard requirements shall apply to the duplex structure as a whole, as required by the zoning classification in which the duplex is located, if the duplex was constructed prior to March 9, 1981.

(Code 1971, § 32-47(f); Ord. No. §§ 4, 5, 8-23-93; Ord. No. 2163, § 1, 10-14-96)

Sec. 29-84. - Satellite receiving dishes.

Satellite receiving dishes shall be permitted in all districts subject to the following:

(1) Satellite receiving dishes shall be classified as an incidental use, and shall not be permitted upon a lot unless such lot has a principal permitted use located thereon. No more than one dish shall be permitted on any parcel.

(2) The size of satellite receiving dishes shall not be subject to the total square footage limitation for accessory buildings as outlined in section 29-115, but the dish shall be set back at least two feet from private property lines as measured at the most extreme axis.

(3) A building permit shall be issued by the city prior to the installation or structural alteration of any satellite receiving dish. The dish shall meet all requirements of the building and electrical codes.

(4) No satellite receiving dish shall be permitted within a provided front yard, or within any portion of a required side yard lying closer to the front lot line than the rear of the principal structure.

(5) Satellite receiving dishes shall not exceed a maximum height of 20 feet, as measured at the most extreme vertical axis.

(6) Roof-mounted satellite receiving dishes shall be restricted to commercial and industrial zoning districts, and shall not extend more than ten feet above the height limit established for the district in which the structure is located.

(7) No satellite receiving dish shall be permitted to cause electrical disturbances, nor interfere with the transmission of communication signals to adjacent properties.

(Code 1971, § 32-47(f))

Sec. 29-85. - Enclosing of open porches.

An existing open porch may be remodeled or rebuilt to an enclosed nonhabitable vestibule entranceway, which may include closet space, when projecting not more than one-fourth of the width of the residence.

(Code 1971, § 32-47(g))

Sec. 29-86. - Walls, fences and hedges.

(a) In any residential or agricultural zoning district, a wall, fence or hedge not to exceed four feet in height may be located and maintained on any part of a lot, except in the case of a corner lot it shall not exceed three feet in height above the curb level in the triangular area formed by the intersection of two public rights-of-way, excluding alleys, with two sides of the triangle being 30 feet in length along the abutting public right-of-way line measured from their point of intersection and the third side being a line connecting the ends of the other two lines. However, a fence not to exceed four feet in height may be located within this triangular area if it is constructed of materials which provide openings of not less than 75 percent in area of the vertical surface of the fence to permit transmission of light, air and vision through the vertical surface at a right angle. A wall, fence or hedge not to exceed eight feet in height may be located and maintained anywhere on a lot to the rear line of the required front yard. However, in the case of a corner lot or reversed lot, it shall not be closer to the property line than to the rear of the side yard requirement. Fences shall be constructed of materials commonly used for landscape fencing, such as masonry, block, lumber or chain link, but shall not include corrugated sheetmetal, barbed wire or salvage material, or be electrified.

(b) In any commercial or industrial zoning district, no wall or fence, except as noted in this subsection, shall be located or maintained within the following described areas:

(1) The areas of property on both sides of an accessway, driveway or alley formed by an intersection with a public right-of-way with two sides of each triangle being formed by lines extending a distance of ten feet in length from the point of intersection and the third side being a line connecting the ends of the ten-foot sides.

(2) The area of property located at a corner formed by the intersection of two public rights-of-way, excluding alleys, with two sides of the triangle being 30 feet in length along the abutting public right-of-way lines measured from their point of intersection, and the third side being a line connecting the ends of the other two lines.

However, fences not exceeding height requirements may be located within these triangular areas if constructed of materials which provide openings of not less than 75 percent in area of the vertical surface of the fence to permit transmission of light, air and vision through the vertical surface at a right angle. No structure, material storage, vehicle or other obstruction shall be situated therein preventing the view of traffic approaching the intersection from either way.

(c) In any commercial zoning district, a wall, fence or hedge not to exceed eight feet in height may be located and maintained on any part of a lot, except as provided in subsection (b) of this section.

(d) In any industrial zoning district, a wall, fence or hedge not to exceed ten feet in height may be located and maintained on any part of a lot, except as provided in subsection (b) of this section.

(e) In any commercial or industrial zoning district, fences shall not be constructed of salvage material, shall not be electrified, and shall not use barbed wire closer than six feet to the ground or higher than the maximum allowable fence height in the applicable zoning district.

(f) In all zoning districts, no portion of any wall, fence or hedge shall extend beyond the owner's private property line.

(g) Fences used solely for permitted livestock containment purposes may be electrified or utilize barbed wire or corrugated sheet metal within the height requirements of the applicable zoning district.

(h) No wall, fence or hedge shall be so located as to obstruct the view of traffic approaching an intersection from any direction.

(i) No wall, fence or hedge shall be located as to obstruct direct access to a fire hydrant from the public right-of-way, nor shall any wall, fence or hedge be situated closer than four feet to a fire hydrant.

(Code 1971, § 32-47(j))

Sec. 29-87. - Stormwater detention.

(a) *Required; request for review.* In all zoning districts, in connection with every industrial, commercial, business, trade, institutional, recreational or dwelling use, and similar uses, stormwater detention shall be provided and shall be subject to the review and approval of the city engineer. A request for stormwater detention review shall be accompanied by two copies of plans showing all existing landscaping, surface treatments, structures, measurements and elevations and two copies of plans showing proposed improvements, surface types, measurements, elevations, stormwater detention calculations and method of detention. In all zoning districts, all uses shall provide stormwater detention in accordance with the criteria in this section.

(b) *Exceptions.* Stormwater detention will not be required for:

(1) Individual single-~~family~~unit dwelling units, duplexes, bi-attached dwelling units or similar uses or lots with low runoff coefficients.

(2) All uses on undeveloped lots of record as of September 26, 1983, where the difference between the runoff of a ten-year frequency rainfall, as applied to the entire lot, including the proposed improvements, is less than or equal to one cubic foot per second when compared to the amount of total stormwater runoff generated from a two-year frequency rainfall on the lot as it existed in

its natural, undeveloped state. However, following initial development, should any deed transfer, lot split, resubdivision or addition reduce the computed lot area or increase the amount of impervious surface, increasing the runoff by an amount greater than one cubic foot per second, then stormwater detention shall be provided for the entire lot in conformance to the criteria in subsection (c) of this section.

(3) Additions to existing structures or new structures on developed lots of record as of September 26, 1983, where the total stormwater runoff generated from a ten-year frequency rainfall, applied to the entire area of the addition or new structure, including the proposed improvements and required parking addition, is less than or equal to one cubic foot per second when compared to the amount of total stormwater runoff generated from a two-year frequency rainfall on the affected area in its existing state. However, following completion of the proposed addition or new structure without stormwater detention, should any deed transfer, lot split, resubdivision, new addition or structures be added to the lot which reduce the computed lot area or increase the amount of impervious surface such that the sum of the improvements generate a runoff greater than one cubic foot per second, then stormwater detention shall be provided for all additions or new structures added after September 26, 1983, in conformance to the criteria in subsection (c) of this section.

(4) Reconstruction, repair or replacement of uses on developed lots in conformance with all other applicable sections of this chapter and this Code, provided that such reconstruction, repair or replacement may not increase the total stormwater runoff generated by the lot as it existed prior to reconstruction. Should the reconstruction, repair or replacement generate runoff greater than that discharged prior to construction, the lot shall conform to the criteria in subsection (b)(3) of this section.

(5) Individual lots recorded after September 26, 1983, if the plat in which the lots are located provides stormwater detention for all lots, onsite or offsite, equal to the difference between the total stormwater runoff generated from a ten-year frequency rainfall applied to the entire plat, including proposed improvements, public and private, and a two-year frequency rainfall applied to the site as it existed in its natural undeveloped state.

(6) Any lot where a governmental body or private drainage district has provided overall drainage basin detention facilities and the city has waived by resolution the detention criteria for individual lots in that basin.

(c) *Detention requirements.* All lots not exempted by subsection (b) of this section shall detain all onsite stormwater runoff equal to the difference between the total stormwater runoff generated from a ten-year frequency rainfall as applied to the entire lot, including the proposed improvements, and a two-year frequency rainfall applied to the lot as it existed in its natural undeveloped state.

(d) *Special detention requirements.* The city council, upon recommendation of the planning and zoning commission or at its own discretion, may prescribe that a higher degree of stormwater detention be required if it is in the best interest of the general public. The special detention requirement will normally be reserved for developments with large quantities of impervious surfaces, where the drainage basin in which the development is located is experiencing flooding problems, or where receiving stormwater facilities cannot accept the normal two-year storm discharge.

(e) *Waivers.* Stormwater detention requirements may be waived by the city council following receipt of sufficient written justification from the property owner indicating that it is not physically or economically feasible to detain stormwater and that such discharge will not be injurious to downstream properties in the drainage basin.

(f) *Evaluation of drainage system.* All developments and subdivisions which are required by this section to provide stormwater detention or installation of a public storm sewer system shall provide an evaluation of the 100-year storm overflow from the development's primary drainage system. The evaluation will be reviewed by the city to ensure unobstructed overflow areas are provided for a 100-year storm as a protection to new construction in the development and downstream properties.

(g) *Determination of specific requirements.* The charts following this section shall be used to determine if stormwater detention is required.

(h) *Inspection and approval.* All required stormwater detention shall be in place, inspected and approved by the city engineer or his/her staff designees prior to issuance of an occupancy permit. However, installation prior to occupancy may be waived in accordance with section 29-177(g)(6).

(Code 1971, § 32-47(k))

TABLE B-1. RAINFALL INTENSITIES, WATERLOO, IOWA

(Compiled from U.S. Weather Bureau Technical Paper #40)

Rainfall Intensities are in Inches per Hour

(24 hours)	1440	.11	.13	.16	.19	.22	.24	.27
(12 hours)	720	.19	.23	.29	.33	.38	.42	.47
(6 hours)	360	.32	.38	.48	.57	.65	.73	.80
(3 hours)	180	.55	.67	.85	.93	1.10	1.23	1.35
(2 hours)	120	.76	.90	1.15	1.31	1.55	1.70	1.85
Storm Duration (Minutes)	90	1.03	1.23	1.53	1.76	2.00	2.20	2.50
	60	1.29	1.54	1.95	2.22	2.55	2.82	3.15
	50	1.44	1.72	2.14	2.46	2.80	3.08	3.50
	40	1.65	1.97	2.45	2.82	3.20	3.52	4.00
	30	2.06	2.46	3.06	3.52	4.00	4.40	5.00
	20	2.57	3.07	3.82	4.40	5.00	5.50	6.25
	15	2.97	3.54	4.41	5.07	5.76	6.34	7.20
	10	3.52	4.21	5.23	6.02	6.84	7.52	8.55
	5	4.57	5.46	6.79	7.81	8.88	9.77	11.10

	0	_____						
		1-year	2-year	5-year	10-year	25-year	50-year	100-year
		Storm Frequency (Years)						

TIME OF CONCENTRATION

(Overland Flow)

;reserved=38.6p;

EXAMPLE: Bare, Rocky Soil on 1.5% Slope. Find Time of Concentration for Overall Length of 1000 feet.	PROCEDURE: Connect Overland Condition (1) with Slope (2). Where Line Crosses the Pivot Line (3), Extend a Line from the Length (4) through the Pivot Line (3) to the Time of Concentration (5).

RUNOFF COEFFICIENTS FOR VARIOUS AREAS

Type of Drainage Area	Runoff Coefficient, C
Residential:	
Single ~~family~~unit areas	0.30—0.50
Multiunits, detached	0.40—0.60
Multiunits, attached	0.60—0.75
Apartment dwelling areas	0.50—0.70
Suburban	0.25—0.40
Business:	
Downtown areas	0.70—0.95

Neighborhood areas	0.50—0.70
Industrial:	
Light areas	0.50—0.80
Heavy areas	0.60—0.90
Parks, cemeteries	0.10—0.25
Playgrounds	0.20—0.35
Railroad yard areas	0.20—0.40
Unimproved areas	0.10—0.30
Streets:	
Asphalt	0.70—0.95
Concrete	0.80—0.95
Brick	0.70—0.85
Gravel	0.45—0.60
Drives and walks	0.75—0.85
Roofs	0.75—0.95
Lawns:	
Sandy soil, flat (0—2% slope)	0.05—0.10
Sandy soil, average (2—7% slope)	0.10—0.15
Sandy soil, steep (7% or greater slope)	0.15—0.20
Heavy soil, flat (0—2% slope)	0.13—0.17

Heavy soil, average (2—7% slope)	0.18—0.22
Heavy soil, steep (7% or greater slope)	0.25—0.35

RUNOFF COEFFICIENTS FOR RURAL AREAS

Topography and Vegetation	Open Sandy Loam	Clay and Silt Loam	Tight Clay
Woodland:			
Flat (0—5% slope)	0.10	0.30	0.40
Rolling (5—10% slope)	0.25	0.35	0.50
Hilly (10—30% slope)	0.30	0.50	0.60
Pasture:			
Flat	0.10	0.30	0.40
Rolling	0.16	0.36	0.55
Hilly	0.22	0.42	0.60
Cultivated:			
Flat	0.30	0.50	0.60
Rolling	0.40	0.60	0.70
Hilly	0.52	0.72	0.82

Secs. 29-88—29-105. - Reserved.

ARTICLE III. - DISTRICTS AND DISTRICT REGULATIONS

DIVISION 1. - GENERALLY

Sec. 29-106. - Districts established.

In order to classify, regulate and restrict the location of trades and industries and the location of buildings designed for specified uses, to regulate and limit the height and bulk of buildings erected or altered, to regulate and limit the intensity of the use of lot areas and to regulate and determine the area of yards, courts and other open spaces within and surrounding such buildings, the city is hereby divided into 26 classes of districts. The use, height and area regulations are uniform in each class of district, and the districts shall be known as:

A-1	Agricultural District
R-1SU~~F~~	Single-~~Family~~Unit Residence District
R-1	Residence District
R-2	Residence District
R-3	Multiple Residence District
R-4	Multiple Residence District
R-5	Residence District
S-1	Shopping Center District
C-1	Commercial District
C-2	Commercial District
C-3	Commercial District
M-1	Light Industrial District
M-2	Heavy Industrial District
M-P	Planned Industrial District
F-W	Floodway Overlay District

F-F	Floodway Fringe Overlay District
F-P	General Floodplain Overlay District
R-P	Planned Residence District
HCG	Highway Corridor and Greenbelt Overlay Zoning District
CHN	College Hill Neighborhood Overlay Zoning District
MPC	Major Thoroughfare Planned Commercial District
PO-1	Professional Office District
BR	Business/Research Park District
MU	Mixed Use Residential District
HWY-1	Highway Commercial District
PC-2	Planned Commercial District
HWY-20	Highway 20 Commercial Corridor Overlay District
CBD	Central Business District Overlay Zoning District
P	Public Zoning District

(Code 1971, § 32-25; Ord. No. 2416, § 1, 2-24-03;Ord. No. 2477, 5-10-04; Ord. No. 2545, 9-12-05)

Sec. 29-107. - District boundaries.

(a) *Zoning maps.*

(1) *Zoning map.* The boundaries of the districts established by this article are indicated upon the zoning map of the city, which map is made a part of this chapter by reference. The zoning map of the city and all the notations, references and other matters shown thereon shall be as much a part of this chapter as if the notations, references and other matters set forth by the map were all fully described in this chapter. The zoning map is on file in the office of the city planner, at the

City Hall. It shall be the responsibility of the city planner to see that the zoning map is kept current at all times.

(2) *Digital zoning map.* An electronic computerized version of the zoning map that displays the boundaries of the districts established by this article are indicated upon the digital zoning map of the city, which map is made a part of this chapter by reference. The digital zoning map of the city and all the notations, references and other matters shown thereon shall be as much a part of this chapter as if the notations, references and other matters set forth by the map were all fully described in this chapter. The digital zoning map is on file in the office of the city planner, at the City Hall. It shall be the responsibility of the city planner to see that the digital zoning map is kept current at all times.

(3) *Resolving inconsistencies between zoning maps.* To the extent there is any inconsistency between the Zoning Map referenced in subsection (a)(1) and the digital zoning map referenced in subsection (a)(2) of this section, the digital zoning map shall take precedence.

(b) *Interpretation of boundaries.* Where uncertainty exists with respect to the boundaries of the various districts as shown on the map accompanying and made a part of this chapter, the following rules apply:

(1) The district boundaries are either street lines or alley lines unless otherwise shown, and where the districts designated on the map accompanying and made a part of this chapter are bounded approximately by street lines or alley lines, the street lines or alley lines shall be construed to be the boundary of the district. Street and alley rights-of-way are not included in zoned areas.

(2) In unsubdivided property, the district boundary lines on the map accompanying and made a part of this chapter shall be determined by use of the scale appearing on the map.

(3) Publication of the legal description of property zoned or rezoned shall constitute an official amendment to the official zoning map, and, as such, the map or portion of the map need not be published.

(Code 1971, § 32-26; Ord. No. 2246, § 3, 10-26-98; Ord. No. 2248, § 3, 12-28-98; Ord. No. 2261, § 1, 4-26-99; Ord. No. 2267, § 1—3, 7-12-99; Ord. No. 2281, §§ 1—3, 12-13-99; Ord. No. 2345, §§ 1—3, 7-23-01; Ord. No. 2365, § 3, 3-11-02; Ord. No. 2413, 2-10-03; Ord. No. 2415, 3-10-03; Ord. No. 2562, § 1, 11-28-05)

Editor's note— The map referred to in the preceding section is on file in the city clerk's office and may be seen by the general public.

Sec. 29-108. - Establishment of floodplain districts.

(a) *Statutory authorization.* The legislature of the state has, in I.C.A. ch. 414, delegated the responsibility to cities to enact zoning regulations to secure safety from flood and to promote health and the general welfare.

(b) *Findings of fact.*

(1) The flood hazard areas of the city are subject to periodic inundation which can result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the health, safety and general welfare of the community.

(2) Such losses, hazards and related adverse effects are caused by:

a. The occupancy of flood hazard areas by uses vulnerable to flood damages which create hazardous conditions as a result of being inadequately elevated or otherwise protected from flood; and

b. The cumulative effect of floodplain construction on flood flows, which causes increases in flood heights and floodwater velocities.

(3) This chapter relies upon engineering methodology for analyzing flood hazards which is consistent with the standards established by the department of natural resources.

(c) *Classes of districts.* In order to classify, regulate and restrict the location of trades and industries and the location of buildings designed for specific uses, to regulate and limit the height and bulk of buildings erected or altered, to regulate and limit the intensity of the use of lot areas and to regulate and determine the area of yards, courts and other open spaces within and surrounding such buildings within established floodprone areas, the city is hereby divided into three classes of floodplain districts. The use, height and area regulations are uniform in each class of district, and the districts shall be known as F-W Floodway District, the F-F Floodway Fringe District and the F-P General Floodplain District.

(d) *Purpose of districts.* It is the purpose of the floodplain districts to promote the public health, safety and general welfare and to minimize public and private damages due to flood conditions in specific areas by provisions designed to:

(1) Protect human life and health.

(2) Minimize expenditure of public money for costly flood control projects.

(3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.

(4) Minimize prolonged business interruptions.

(5) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard.

(6) Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize flood blight areas.

(7) Ensure that potential buyers are notified that property is in an area of special flood hazard.

(8) Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

(9) Reserve sufficient floodplain area for the conveyance of flood flows so that flood heights and velocities will not be increased substantially.

(10) Ensure that eligibility is maintained for property owners in the community to purchase flood insurance through the National Flood Insurance Program.

(Code 1971, § 32-26.1)

Sec. 29-109. - Boundaries of floodplain districts.

(a) The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled Flood Insurance Study for the City of Cedar Falls, Iowa, dated February 1, 1985, with accompanying flood insurance rate maps and flood boundary and floodway maps, are hereby adopted by reference and declared to be a part of this chapter. The maps shall be referenced in this chapter as the official floodplain zoning map. The boundaries of the floodway, floodway fringe and general floodplain districts shall be determined by scaling distances on the official floodplain zoning map. When an interpretation is needed as to the exact location of the boundaries, the zoning administrator or his/her official designee shall make the necessary interpretation. Any person contesting the location of the district boundary shall be given a reasonable opportunity to present his/her case and submit technical evidence.

(b) There shall be established and maintained by the zoning administrator of the city the official floodplain zoning map, which shall indicate thereon or encompass the boundaries of the floodway, floodway fringe and general floodplain districts provided for by this chapter. The floodplain management regulations found within this chapter shall apply only within the floodway, floodway fringe and general floodplain districts and shall be null and void and of no effect in areas not being mapped as being included in such districts. It is not intended by this chapter to repeal, abrogate, or impair any existing easements, covenants or deed restrictions. However, where this chapter imposes greater restrictions, the provisions of this chapter shall prevail.

(Code 1971, § 32-26.2)

Sec. 29-110. - Classification of territory annexed to city.

All territory which may hereafter be annexed to the city shall automatically be classed as lying in the A-1 agricultural district unless the city council, having a recommendation from the city planning and zoning commission at the time of its annexation proceedings, determines that a different zoning classification is more appropriate.

(Code 1971, § 32-27)

Sec. 29-111. - Compliance with district regulations.

Except as specified in this chapter, no building or structure shall be erected, converted, enlarged, reconstructed, moved or structurally altered, nor shall any building or land be used, which does not comply with all of the district regulations established by this chapter for the district in which the building or land is located.

(Code 1971, § 32-28(a))

Sec. 29-112. - Nonconforming uses.

(a) *Continuation of existing uses.* The use of a building existing at the time of the enactment of this chapter may be continued even though such use may not conform with the regulations of this chapter for the district in which it is located. Any use in existence at the adoption of this chapter which was not an authorized nonconforming use under previous zoning ordinances shall not be authorized to continue as a nonconforming use pursuant to this chapter or amendments thereto.

(b) *Nonconforming uses or buildings in A and R districts.* No existing building or premises devoted to a use not permitted by this chapter in a residence district in which such building or premises is located, except when required by law, shall be enlarged, extended, reconstructed, substituted or structurally altered, unless the use thereof is changed to a use permitted in the district in which such building or premises is located, except as follows:

(1) Substitution. If no structural alterations are made, a nonconforming use of a building may be changed to another nonconforming use of the same or of a more restricted classification. Whenever a nonconforming use has been changed to a more restricted use or to a conforming use, such use shall not thereafter be changed to a less restricted use.

(2) *Discontinuance.* If a nonconforming use of any building or premises is discontinued for a period of one year, the use of the building or premises shall conform thereafter to the uses permitted in the district in which it is located.

(3) *Additions.* If the existing building or premises is devoted to a use permitted in the district but the structure is nonconforming by virtue of inadequate yard area, such structure may be enlarged:

a. Into those yard areas exceeding yard requirements of this chapter, provided the addition meets the requirements of this chapter as these apply to the new construction and yard area in which construction takes place; and

b. Into those yard areas not meeting yard requirements only to the extent the addition does not exceed the building lines established by already existing walls of the structure or building. The term "existing walls" shall not include fences, independent walls on or near the property line or other such similar structures independent from principal use structures.

In neither case shall this construction infringe upon the sight distance requirements for corner or triangular lots as set out in this chapter.

(c) Nonconforming uses or buildings in districts other than A and R districts.

(1) *Structural alterations and enlargements.* Any buildings in any district other than an R district devoted to a use made nonconforming by this chapter may be structurally altered or enlarged in conformity with the lot area, lot frontage, yard and height requirements of the district in which situated, provided such construction shall be limited to buildings on land owned of record by the owner of the land devoted to the nonconforming use prior to the effective date of this chapter. In the event of such structural alteration or enlargement of buildings, the premises involved may not be used for any nonconforming use other than the use existing on the effective date of this chapter, other provisions of this chapter notwithstanding.

(2) *Discontinuance.* If a nonconforming use of any building or premises is discontinued for a period of one year, the use of the building or premises shall conform thereafter to the uses permitted in the district in which it is located.

(d) *Replacement of damaged buildings.* Any nonconforming building or structure damaged to an extent 50 percent or more of its fair market value at the time of damage of any origin, including but not limited to, fire, flood, tornado, storm, explosion, war, riot or act of God shall not be restored or reconstructed and used as before such happening unless restored or reconstructed in compliance with this chapter, provided that such restoration or reconstruction work is started within six months of such happening. Any pre-existing residential use established in a district where such use is not permitted shall be allowed to be restored or reconstructed, provided such property is not located in a designated flood way or flood way fringe district. If the building or structure is less than 50 percent damaged, it may be restored, reconstructed or used as before, provided that such restoration or reconstruction work is started within six months of such happening. Restoration or reconstruction of nonconforming buildings or structures located in the floodplain that are damaged by flood is further governed by Sections 29-155 and 29-156 of this chapter.

(Ord. No. 2750, § 6, 7-11-11; Ord. No. 2787, § 1, 12-26-12)

Editor's note— Ord. No. 2750, § 6, adopted July 11, 2011, repealed § 29-112, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-112 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-113. - Construction under existing building permit.

Nothing contained in this chapter shall require any change in the overall layout, plans, construction, size or designated use of any building, or part thereof, for which approvals and required building permits have been granted before the enactment of this chapter, the construction of which conforms with such plans, when construction has been started prior to the effective date of this chapter and completion thereof carried on in a normal manner and not discontinued for reasons other than those beyond the builder's control.

(Code 1971, § 32-28(n))

Sec. 29-114. - Access to public street for residential buildings.

Residential lots may be established for building purposes within existing residential neighborhoods on residentially zoned properties where said lots provide less than 40 feet public street frontage under the following conditions:

(a) The property must contain at least one acre of land area prior to subdivision.

(b) A subdivision plat must be submitted for review and approval by the planning and zoning commission and city council in conformance with normal subdivision platting requirements with regards to the provision of basic utility easements and sanitary sewer service. No such lot may be created without connection to municipal sanitary sewer service. Private septic sewerage systems are prohibited.

(c) The lots being created must provide lot area that is in conformance with prevailing neighborhood lot area standards. Proposed lots must be as large as and no smaller than lots immediately abutting the property. Data must be submitted with the plat application that illustrates the size and location of all immediately adjacent properties along with the property owners' names and addresses for those immediately abutting properties. In addition, the names and addresses of all property owners for all properties within 200 feet of the proposed subdivision area must be submitted.

(d) In lieu of public street frontage of at least 40 feet width, access and utility easements must be provided to the proposed lots, said easements intended to provide route of vehicular and pedestrian access and also a route for the establishment/extension of utility services, municipal sanitary sewers and other necessary public infrastructure. Said easements must be at least 25-foot width servicing one single-~~family~~unit dwelling and 50 feet width for two single-~~family~~unit dwellings or for a duplex dwelling or multi-~~family~~unit dwellings.

(e) No duplex residence or multi-~~family~~unit dwellings (three units or more) shall be established on such lots in neighborhoods where at least 50 percent of the abutting properties are occupied by single-~~family~~unit dwellings or where the prevailing use of properties on the same block (50 percent or more of all properties) are single-~~family~~unit residential dwellings. In those cases where it is appropriate to establish a lot for an allowable duplex or multi-~~family~~unit use, an access easement measuring at least 50 feet wide shall be provided to not more than one duplex or one multi-~~family~~unit dwelling (three units or more).

(f) No driveway access to any new lots shall be located closer than five feet from an adjacent property line. Screen fencing measuring at least four feet height and in conformance with general fencing requirements of the zoning ordinance (section 29-86) shall be installed when a new driveway created for this purpose is located closer than 20 feet from an abutting residential structure on an adjacent property.

(g) Driveway width shall be at least ten feet. for one single-~~family~~unit residential structure. A driveway measuring at least 20 feet width to permit two-way traffic shall be provided for lots where two single-~~family~~unit dwellings are being created or where a duplex residential dwelling or multi-~~family~~unit dwelling (three or more units) is being established. All driveways must be hard surfaced with either concrete or asphalt surface. Permeable hard surfacing will be permitted, not to include gravel or granular surfaced driveways.

(h) A pedestrian sidewalk measuring at least four feet in width extending from the public sidewalk or public right of way to the dwellings on newly created lots must be established within the access easement area in those situations where more than one single-~~family~~unit dwelling is established (i.e. for multiple dwellings, duplex or multi-~~family~~unit dwelling).

(i) A lighting plan must be submitted in conjunction with new building construction that illustrates the placement of any external lights and their potential impact upon nearby residences. No yard light, spotlight, landscaping light or any other similar external light shall create any glare or disturbance to any pre-existing residential dwelling occupants.

(j) Any building construction or land alteration activities on such lots must comply with all stormwater management ordinances of the city. No project may create added storm water run-off upon adjacent properties compared to pre-construction run-off rates. No landscaping, berming or other land alterations shall direct the flow of stormwater towards a neighboring property. In addition, normal water runoff generated by sump pumps, drainage spouts or other typical sources of water discharge shall not be directed towards or encroach upon adjacent properties.

(Ord. No. 2713, § 1, 8-9-10)

Editor's note— Ord. No. 2713, § 1, adopted Aug. 9, 2010, repealed § 29-114 in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-114 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-115. - Detached accessory structures.

Accessory structures shall be permitted in all zoning districts, subject to the floodplain regulations contained in this chapter, where applicable, in accordance with the following criteria:

(1) Such detached accessory structures shall not be closer to a side lot line than ten percent of the width of the lot, unless the front line of such accessory structure is situated at least 18 feet behind the front line of the principal structure, in which case the accessory structure may be two feet from the side lot line, except on corner lots, and two feet from the rear lot line. In any case, when the rear lot line abuts an alley, the structure may be built within one foot of the rear property line. However, no portion of the accessory structure, including roof eaves, shall extend across the private property line. On corner lots, accessory structures shall be no closer to the side property line abutting the longer street side of the property than the rear of the required side yard setback in that district, or no closer to the longer street side than the building line of the principal structure, whichever setback is greater. No detached accessory structure shall be allowed in the required front yard of any district.

(2) Regardless of its location, an unattached accessory structure shall maintain a clearance of eight feet, wall-to-wall, between structures on a single lot.

(3) An accessory structure serving principal single-~~family~~unit or two-~~family~~unit residences shall not exceed 1,024 square feet in area, nor 45 percent of the required rear yard, whichever is less. An accessory structure serving a commercial, professional office, industrial or institutional use, including religious, educational, government, hospital, or nursing homes or convalescent centers shall not exceed 1,200 square feet in area. The maximum allowable square footage of the floor area of accessory structures serving residential uses shall be calculated in the following manner: lot width times required rear yard times 45 percent (LW × RY × .45 = maximum allowable square footage). The total allowable square footage calculation shall be based upon the area of the base or "footprint" of the structure.

(4) In agricultural zoning districts, accessory structures serving principal agricultural uses on properties larger than 20 acres in area shall not be subject to the size or height limitations specified herein. However, on those properties in agricultural districts which contain less than 20 acres in area and where the principal use is residential, the regulations specified herein for residential uses shall apply.

(5) An accessory building serving a commercial, professional office, industrial or institutional use including religious, educational, government, hospital, nursing homes, or convalescent centers shall not exceed 20 feet in height as measured from the slab floor of the structure to the top of the roof ridge. For all residential uses, including single-~~family~~unit, duplex, and multi-~~family~~unit residences, the maximum height of detached accessory structures shall be 18 feet as measured from the slab floor to the top of the roof ridge.

However, on properties containing principal residential structures exceeding one story in height, the residential accessory structure may exceed the 18 foot overall height limitation provided that the structure does not exceed the following components:

a. Maximum allowable wall height for two opposite walls as measured from the slab floor to the top of the wall is 18 feet.

b. The maximum overall height of the detached structure, as measured from the slab floor to the roof ridge, shall not exceed 30 feet.

c. The overall height of the detached structure shall not exceed the height of the principal residence on the property. The height of the principal residential structure shall be determined from the natural grade immediately adjacent to the residential structure to the highest point of the roof ridge of the structure. The natural grade adjacent to the principal residential structure shall be considered to be at a point that represents the prevailing or average grade surrounding the structure excluding the at-grade elevation of an exterior basement entryway.

d. There shall be no more than two floors, including the base or main floor of the structure, within any detached accessory structure.

(6) When more than one accessory structure is constructed on a lot, the total floor area of all accessory structures on the lot shall not exceed the area requirements specified in this section.

(7) In all districts, when additions are made to accessory structures, the entire structure shall thereafter meet all the requirements specified in this section.

(8) No accessory structure is permitted on any lot unless such lot has a principal permitted use located thereon.

(9) No portion of an accessory structure shall be allowed to encroach into a public utility easement.

(10) An accessory structure used in conjunction with a multi~~family~~unit residence (3 or more dwelling units) shall not exceed a total size of more than 576 square feet in area per dwelling unit, or 45 percent of the total required rear yard, whichever is less.

(11) The exception to size limitations for detached accessory structures set out in this section shall apply to any lot which measures at least one acre in area, but not more than 20 acres in area, and which contains a principal permitted use located thereon. All detached accessory structures must be located on the same lot where the principal permitted use is located. For any lot which measures one acre or more in area, but not more than 20 acres in area, the maximum allowable sizes of detached accessory structures, as measured by the combined base floor area of all detached accessory structures which are located on the property, shall be limited as follows:

Lot area	Maximum size of all detached accessory structures on lot
At least 1 acre but not more than 2 acres	1,200 sq. ft.
More than 2 acres but not more than 3 acres	1,400 sq. ft.
More than 3 acres but not more than 5 acres	1,600 sq. ft.

More than 5 acres but not more than 8 acres	3,000 sq. ft.
More than 8 acres but not more than 11 acres	4,000 sq. ft.
More than 11 acres but not more than 20 acres	5,000 sq. ft.

Each detached accessory structure which measures 1,200 square feet or more in base floor area on any property containing a residential or commercial principal permitted use shall be located on the property at least 18 feet behind the front line of the structure which comprises the principal permitted use on the property. Furthermore, there shall be established a minimum separation of eight feet, as measured wall-to-wall, between each detached accessory structure of any size and each principal structure, and between each such detached accessory structure and any other detached accessory structure of any size located on the property. In addition, each detached accessory structure measuring more than 1,200 square feet in base floor area must satisfy minimum required side yard and minimum required rear yard setback requirements as specified for the zoning district within which the principal permitted use on the property is located. No detached accessory structure of any size shall be allowed within the required front yard area of any property in any district.

Building height limitations as specified in this section shall apply to each detached accessory structure, regardless of base floor area dimension.

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(12) Each detached structure which measures 600 square feet or more in base floor area on any property containing a residential principal permitted use shall be located on the property at least 18 feet behind the front line of the structure which comprises the principal permitted use on the property. Furthermore, there shall be established a minimum separation of eight feet as measured wall to wall, between each detached structure of any size and each principal structure and between each such detached accessory structure and any other detached accessory structure of any size located on the property. In addition, each detached accessory structure measuring 600 square feet or larger in base floor area must provide minimum building setbacks of ten feet as measured from the rear yard property boundaries to the base of the detached accessory structure and a side yard setback of ten percent of the lot width as measured from the side property line to the base of the detached structure. In residential districts no detached accessory structure of any size shall be placed in the front yard area of any residential structure. This provision shall not recognize the "required front yard," but shall recognize any portion of the front area of the lot extending from the front lot line and extending to the front line of the principal residential structure.

All pre-existing detached accessory structures that are damaged or destroyed more than 50 percent of their value by fire, flood, tornado, storm, explosion, war, riot, or act of God shall be allowed to be re-established on the same building footprint as previously existed before the damage occurred.

(13) All detached accessory structures measuring at least 600 square feet in base floor area but no larger than 1,200 square feet in base floor area, which are established in residential zoning districts in compliance with the regulations set forth in this chapter, shall be consistent with the architectural style of the principal residential structure located on the property at the time such detached accessory structure is established, and shall be required to adhere to the following design guidelines:

a. The detached accessory structure must utilize similar exterior wall siding materials as then exist on the principal residential structure on the property. Siding panels must approximate the size and dimensions of those siding materials on the principal residential structure. No corrugated metal coverings or siding materials shall be established on the detached accessory structure. No vertical siding materials shall be established unless similar vertical siding materials are then established on the principal residential structure. No steel siding materials shall be permitted unless the principal residential structure then utilizes steel siding materials. In the case of residential structures utilizing brick siding materials, similar brick or masonry materials must be used on the front portion of the exterior walls of the detached accessory structure. Masonry or brick "accents" or trim elements matching similar components on the principal residence are acceptable to complement a residence constructed with brick siding materials. For the remainder of the accessory structure located on a lot with a brick residence, siding materials must resemble siding materials utilized on at least one other non-brick residential structure found on an adjacent property or on the same block in the residential neighborhood if any. In cases where the preceding option is unclear, the proposed structure shall be referred to the planning and zoning commission in conformance with subsection (f).

b. The color and texture of exterior wall materials used on the detached accessory structure must be similar to the color and texture of exterior wall materials on the principal residential structure.

c. Roof lines and angles on the detached accessory structure must resemble or be similar to the roof lines and angles of the principal residential structure on the property. No flat roofs shall be permitted on the detached structure unless the main residential structure then has a flat roof covering more than half of the residence, excluding a garage or carport flat roof feature attached to the principal residential structure.

d. Other architectural features of the detached accessory structure must resemble or be similar to features found on the principal residential structure including the size and dimensions of windows. Windows shall be established on at least two walls of detached accessory structures.

e. Roofing materials utilized on the detached accessory structure must be similar to roofing materials used on the principal residential structure. Metal roofing materials may be utilized only if the principal residential structure on the property then utilizes metal roofing materials.

f. For preexisting structures that are enlarged or improved resulting in a structure size 600 square feet in base floor area or larger, the entire enlarged or improved structure shall comply with the design and architectural requirements stated herein.

g. Every property owner applying for a detached accessory structure in a residential zoning district measuring at least 600 square feet in base floor area but no larger than 1,200 square feet in base floor area shall submit to the city planning division office renderings illustrating materials and design characteristics on all four sides of the proposed detached accessory structure, along with then-current photographs of all four sides of the principal residential structure on the property, and a description of the siding and roofing materials and colors of those materials along with a description of the roof pitch on the principal residential structure and how those features compare with the proposed detached accessory structure. City planning division staff shall evaluate the architectural consistency between the proposed detached accessory structure and the principal residential structure based upon the guidelines set forth in this subsection, before issuing a land use permit. In the case of a dispute or uncertainty between city planning division staff and the property owner relating to architectural details or features, or in the event the planning division staff does not approve the architectural/design plans submitted by the property owner, the application for the proposed detached accessory structure shall be submitted to the city

planning and zoning commission followed by referral to the city council for architectural/design review purposes.

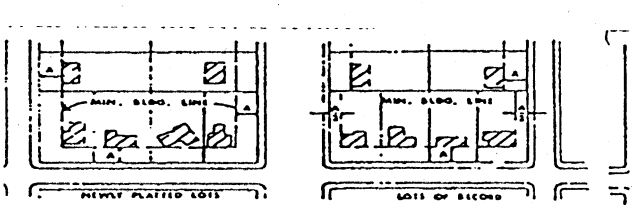
(Code 1971, § 32-28(g); Ord. No. 2265, § 2, 6-28-99; Ord. No. 2546, § 1, 9-26-05; Ord. No. 2714, § 1, 8-9-10)

Sec. 29-116. - Setbacks for corner lots.

(a) For corner lots platted after the effective date of this chapter, the street side yard shall be equal in width to the setback regulation of the lots to the rear having frontage on the intersecting street.

(b) On corner lots platted and of record at the time of the effective date of this chapter, the side yard regulation shall apply to the longer street side of the lot, except in the case of reverse frontage where the corner lot faces an intersecting street. In this case there shall be a side yard on the longer street side of the corner lot of not less than 50 percent of the setback required on the lots to the rear of such corner lot, and no accessory building on the corner lot shall project beyond the setback line of the lots in the rear; provided that this regulation shall not be so interpreted as to reduce the buildable width of the corner lot facing an intersecting street and of record, or as shown by existing contract of purchase at the time of the effective date of this chapter, to less than 28 feet, nor to prohibit the erection of an accessory building.

(c) On corner lots, frontage may be considered on either street, provided that, if front and rear yards are parallel to the lot line having the longer dimension, then setbacks along both streets shall conform to the front yard requirements of the district in which the lot is located.



Corner Lot Setback

(Code 1971, § 32-28(h)—(j))

Sec. 29-117. - Front yard setback for developed blocks in R districts.

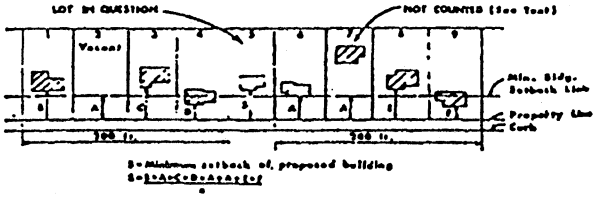
In any R district there shall be a minimum front yard required as stated in the yard requirements for that particular district; provided, however, that where lots comprising 30 percent or more of the frontage within 200 feet of either side lot line are developed with buildings at a greater setback, the average of

these building setbacks shall be established. The required front yard setback shall be the average setback line plus ten feet towards the front yard. In no case, however, shall a setback line established in this manner be less restrictive than the minimum setback required for that district. In computing the average setback line, buildings located on reversed corner lots or entirely on the rear half of lots shall not be counted.

(Code 1971, § 32-28(k))

METHOD OF COMPUTING BUILDING SETBACK IN A DEVELOPED BLOCK

(See Section 29-117, Front Yard)



Front Yard Setback

Sec. 29-118. - Reduction of required yards.

No lot shall be reduced in area so as to make any yard or any other open space less than the minimum required by this chapter. No part of a yard or other open space provided about any building or structure for the purpose of complying with the provisions of this chapter shall be included as part of a yard or other open space required under this chapter for another building or structure. Offstreet parking and loading areas may occupy all or part of any required yard or open space except as otherwise specified in this chapter.

(Code 1971, § 32-28(l))

Sec. 29-119. - Reserved.

Editor's note— Ord. No. 2382, § 1, adopted July 8, 2002, repealed § 29-119 in its entirety. Formerly, said section pertained to conformance with building lines on approved plats.

Sec. 29-119.1. - Encroachment into required setback area.

Any principal use as defined in Ordinance No. 1300 [Chapter 29], as amended, in existence as of the date of the final passage of this section [Ordinance No. 1975] for which a building permit has been obtained as required by the City of Cedar Falls, Iowa, is hereby declared to meet and conform to all front, side, and rear yard requirements of Ordinance No. 1300 [Chapter 29], as amended, if said principal use does not encroach into the required setback area more than 10 percent of said required setback.

(Ord. No. 1975, § 1, 6-8-92)

Editor's note— Provisions enacted by § 1 of Ord. No. 1975, adopted June 8, 1992, and designated as a new subsection 8(n) of Ord. No. 1300, have been included herein at the discretion of the editor as § 29-119.1.

Sec. 29-120. - Minimum dimension of dwellings.

The minimum dimension of the main body of a dwelling shall not be less than 20 feet.

(Code 1971, § 32-28(p))

Sec. 29-121. - Bi-attached dwellings.

(a) All bi-attached dwelling units in existence on March 9, 1981, which do not contain a one-hour fire-resistive wall between units shall become a bi-attached dwelling equipped with smoke detectors, the detectors to be placed in corridors used in common, the nominal spacing of which shall not exceed 30 feet. All bi-attached dwellings constructed after March 9, 1981, shall be separated vertically and horizontally from each other and from corridors used in common by not less than one-hour fire-resistive construction.

(b) No dwelling shall be entitled to the status of a bi-attached dwelling unless the owner thereof obtains approval of such status by the zoning administrator and executes a covenant and easement agreement regarding the dwelling. The owner shall submit to the zoning administrator for review and approval the information required in section 29-143, including a copy of the proposed covenant and easement agreement.

(Code 1971, § 32-28(o))

Sec. 29-122. - Bed and breakfast establishments.

(a) Bed and breakfast establishments shall consist of bed and breakfast enterprises and bed and breakfast inns.

(b) Bed and breakfast enterprises shall be permitted as an accessory use within a single-~~family~~unit residence where such residence is occupied by the owner or the owner's designee.

(c) Bed and breakfast establishments shall not be permitted in R-1 SF districts.

(d) Bed and breakfast enterprises are permitted in R-1, R-2, and R-5 zoning districts if the bed and breakfast enterprises meet the following minimum guidelines:

(1) Provide minimum living area as defined by the city minimum rental housing code: 220 square feet for the first person; 200 square feet for each additional person. Minimum living area requirements shall be calculated for the entire structure (except garage, porches and decks) in relation to the number of resident families plus the potential number of overnight lodging guests. Potential lodging guests shall be assumed to be two persons per lodging room.

(2) The principal residence shall meet minimum lot area and lot width requirements of the respective zoning district.

(3) One sign may be erected on the property and shall be limited in size to six square feet in sign area. The sign may be illuminated.

(e) No minimum offstreet parking area shall be required of a bed and breakfast enterprise.

(f) Bed and breakfast enterprises containing no more than five guest rooms may be established in other zoning districts, provided such enterprises meet the following minimum requirements.

(Ord. No. 1963, § 2, 1-13-92; Ord. No. 2023, § 7, 8-23-93)

Sec. 29-123. - Communication towers.

(a) *Purpose.* The provisions of this section are intended to regulate and guide the location of new communication towers, antennas and related accessory structures. The goals of this ordinance are to:

(1) Protect residential areas and land uses from potential adverse impacts of towers and antennas;

(2) Encourage the location of towers in non-residential areas;

(3) Minimize the total number of towers throughout the community;

(4) Strongly encourage the joint use or co-location of new and existing tower sites as a primary option rather than construction of additional single-use towers;

(5) Encourage users of towers and antennas to locate them, to the extent possible, in areas where the adverse impact on the community is minimal;

(6) Encourage users of towers and antennas to configure them in a way that minimizes the adverse visual impact of the towers and antennas through careful design, siting, landscape screening, and innovative camouflaging techniques;

(7) Enhance the ability of the providers of telecommunications services to provide such services to the community quickly, effectively, and efficiently;

(8) Consider the public health and safety of communication towers; and

(9) Avoid potential damage to adjacent properties from tower failure through engineering and careful siting of tower structures.

In furtherance of these goals, the city shall give due consideration to the city's comprehensive plan, zoning map, existing land uses, and environmentally sensitive areas in approving sites for the location of towers and antennas.

(b) *Definitions.*

(1) *Antenna:* Any exterior transmitting or receiving device mounted on a tower, building or structure and used in communications that radiate or capture electromagnetic waves, digital signals, analog signals, radio frequencies (excluding radar signals), wireless telecommunications signals or other communication signals.

(2) *Backhaul network:* The lines that connect a provider's towers/cell sites to one or more cellular telephone switching offices, and/or long distance providers, or the public switched telephone network.

(3) *Camouflage design:* Camouflage design is a term describing a communication tower or communications facility which takes on the appearance of a piece of art or of some natural feature, or of an architectural structural component or other similar element and which blends in naturally and aesthetically with the surrounding building environment. Examples of camouflage design include, but are not limited to, flagpoles, trees, vegetation, clock towers, monuments, and church steeples, but only if situated in an appropriate location or setting. Camouflage design also applies in the architectural integration of communication facilities (i.e., antennas) onto existing buildings, sports fields lights, highway signs, water towers, or other existing structures.

(4) C *o-location of communication equipment:* In an effort to reduce the proliferation of multiple communication towers throughout the city, existing communication towers and other structures to the greatest extent practicable shall be utilized for mounting or locating communication antennas or related communication equipment.

(5) *Communication tower structure:* Any tower or any other elevated structure that supports antennas, as defined herein.

(6) *Communication tower structure site:* A tract or parcel of land that contains the wireless communication tower structure, accessory support buildings, and on-site parking, and which may include other uses associated with the normal operations of wireless communications and transmissions.

(7) *Monopole construction:* A tower consisting of a single vertical structure not supported by radiating guy wires or support structure. A monopole tower shall be distinctive from a two-legged or multi-legged, lattice constructed tower structure.

(8) *Private radio operator of communication towers:* Refer to personal, amateur or hobby radio operators and communication equipment, including towers and antennas necessary to conduct personal, amateur or hobby radio operations.

(9) *Tower:* Any structure that is designed and constructed primarily for the purpose of supporting one or more antennas for telephone, radio and similar communication purposes, including self-supporting lattice towers, guyed towers, or monopole towers. The term includes radio and television transmission towers, microwave towers, common-carrier towers, cellular telephone towers, and the like. The term includes the structure and any support thereto.

(10) *Tower height measurement:* The distance between the base of the tower (ground level) and the top of the tower or the top of the highest appurtenance mounted on the tower, whichever measurement is greater.

(11) The following documents and agencies referenced herein are applicable to the extent specified:

a. *EIA-222.* Electronics Industries Association, Standard 222 Structural Standards for steel antenna towers and antenna support structures.

b. *FAA.* Federal Aviation Administration.

c. *FCC.* Federal Communications Commission.

d. *ANSI-95.1.* The most recently adopted standard of the American National Standards Institute which establishes guidelines for human exposure to non-ionizing electromagnetic radiation.

(c) *General requirements.*

(1) *Principal or accessory use.* Antennas and towers may be considered either principal or accessory uses, but shall in any event comply with all of the requirements of this section and of

this chapter relating to principal and/or accessory uses. A different existing use of an existing structure on the same lot shall not preclude the installation of an antenna or tower on such lot.

(2) *Lot size.* For purposes of determining whether the installation of a tower or antenna complies with zoning district de-velopment regulations, including but not limited to setback requirements, lot-coverage requirements, and other such requirements, the dimensions of the entire lot shall control, even though the antennas or towers may be located on leased parcels within such lot.

(3) *Inventory of existing sites.* Each applicant for an antenna and/or tower shall provide to the city planner an inventory of its existing towers, antennas, or sites approved for towers or antennas, that are either within the jurisdiction of the city, or within one mile of the border thereof, including specific information about the location, height, and design of each tower. The city planner may share such information with other applicants applying for a land use permit under this section or other organizations seeking to locate antennas within the jurisdiction of the city, provided, however, that the city planner is not, by sharing such information, in any way representing or warranting that such sites are available or suitable.

(4) *Exemption for certain towers of governmental bodies.* Communications towers and/or antennas erected by city, county or state governmental bodies for public safety or other essential public purposes shall be exempt from the provisions of this section.

(d) *Regulation of all communication towers.*

(1) *General requirements.*

a. *State or federal requirements.* All towers must meet or exceed current standards and regulations of the FAA, the FCC, and any other agency of the state or federal government with the authority to regulate towers and antennas. If such standards and regulations are changed, then the owners of the towers and antennas governed by this section shall bring such towers and antennas into compliance with such revised standards and regulations within six months of the effective date of such standards and regulations, unless a different compliance schedule is mandated by the controlling state or federal agency. Failure to bring all towers and antennas into compliance with such revised standards and regulations shall constitute grounds for the city to require the removal of the tower or antenna at the owner's expense.

b. *NIER.* The NIER (non-ionizing electromagnetic radiation) emitted from a communications tower or associated equipment shall not exceed the most recently adopted standard of the American National Standards Institute (ANSI-95.1).

c. *Height.* Towers (including top-mounted appurtenances) shall not exceed the overall height recommended by the FAA or the FCC or as limited herein.

d. *Precedence.* Where regulations and requirements of this section conflict with those of the FAA or FCC, the federal requirements shall take precedence.

e. *Advertising.* Advertising on communication towers shall be prohibited. Commercial signage or other type of sign messaging on towers, other than specific tower site signage such as safety messaging, ownership signs or no trespassing signs, shall also be prohibited.

f. *Building codes; safety standards.* To ensure the structural integrity of towers, the owner of a tower shall ensure that it is maintained in compliance with standards contained in applicable state or local building codes and the applicable standards for towers that are published by the Electronic Industries Association, as amended from time to time. If, upon inspection, the city concludes that a tower fails to comply with such codes and standards and constitutes a danger to persons or property, then upon notice being provided to the owner of the tower, the owner shall have a period of 30 days to bring such tower into compliance with such codes and standards. Failure to bring such tower into compliance within said 30 day period shall constitute grounds for the city to require the removal of the tower or antenna at the owner's expense.

g. *Not essential services.* Towers and antennas shall be regulated and permitted pursuant to this section and shall not be regulated or permitted as essential services, public utilities, or private utilities.

h. *Tower removal.* The tower owner and/or operator shall notify the City of Cedar Falls Inspection Services Division when a tower is removed, no longer in use, or is knocked down, or blown down, or damaged to such an extent that major structural repairs are required. If a tower is removed, knocked down, blown down, or damaged to such an extent that major structural repairs are required, said tower shall not be reconstructed or replaced without prior review and approval by the planning and zoning commission and city council. If said damaged tower is abandoned or inoperable with no intention by the owner to replace said tower, the tower shall be removed in a timely fashion at the expense of the tower owner or the property owner where the tower is located, as directed by the city planner. Any antenna or tower that is not operated for a continuous period of 12 months shall be considered abandoned, and the owner of such antenna or tower shall remove the same within 90 days of receipt of notice from the city notifying both the tower owner and the owner of the property on which the tower is located, of such abandonment. Failure of the tower owner or property owner to remove an abandoned antenna or tower within said 90 days shall be grounds for the city to require removal of the tower or antenna at the expense of the tower owner or property owner. If there are two or more users of a single tower, then this provision shall not become effective until all users cease using the tower. If the city is required to remove a tower at the expense of the tower owner or property owner, the costs of removal, if not paid by the tower owner, or by the owner of the property on which the tower is located, within 30 days of the city's written demand for payment, shall be reported to the city clerk, who shall levy the cost thereof as an assessment, which shall be a lien on the real estate on which the tower is located. The city clerk shall certify such assessments to the county auditor to be paid by the owner of the property on which the tower is located, in installments in the same manner as property taxes, as provided by law.

i. *Interference.* Any signal interference complaints associated with communication towers or related equipment shall be addressed in accordance with FCC rules and procedures.

j. *Lighting.* No towers shall be artificially lighted unless required by the FAA or other federal or state authority. If lighting is required, the lighting alternatives and design chosen must cause the least disturbance to the surrounding views and/or the surrounding or abutting properties.

k. *Coloration.* Towers, accessory structures, and other related components shall use paint or coloration which blends in, to the maximum extent possible, with the surrounding environment and surrounding buildings.

l. *Aesthetics.* Towers and antennas shall meet the following requirements:

   1. Towers shall either maintain a galvanized steel finish or, subject to any applicable standards of the FAA, be painted a neutral color so as to reduce visual obtrusiveness to the maximum extent possible.

   2. At a tower site, the design of the buildings and related structures shall, to the maximum extent possible, use materials, colors, textures, screening, and landscaping that will blend them into the natural setting and surrounding buildings.

   3. If an antenna is installed on a structure other than a tower, the antenna and supporting electrical and mechanical equipment must be of a neutral color that is identical to, or closely compatible with, the color of the supporting structure so as to make the antenna and related equipment as visually unobtrusive as possible.

m. *Property owner information.* It shall be the responsibility of the tower owner to furnish to the city any change in name or address of the owner of the property upon which the tower is situated.

n. *[Tower separation requirements.]* If any tower is removed from a site within the city for any reason, including, without limitation, a tower that is knocked down, blown down, or damaged to such an extent that major structural repairs are required, or if the tower is removed for any other reason, and if a new or replacement tower is proposed on the same property and at the same location, such new or replacement tower may be considered for erection at the same location on the same property, subject to compliance with the review process and standards contained in this section. Any such application shall be subject to review and approval by the planning and zoning commission and city council.

The tower separation requirements of this section shall not, in and of themselves, necessarily serve as a basis for denial of such an application. The planning and zoning commission and city council may waive the tower separation requirements with respect to said application if, after considering all relevant circumstances, including whether the applicant has clearly demonstrated to the satisfaction of the commission and the council that all practical and feasible co-location alternatives have been investigated, considered and appropriately rejected, and, based upon all other relevant factors and circumstances, the commission and council determine that approval of the application shall serve the interests of the community.

o. *Tower design.* In furtherance of the goal set forth in subsection (a)(4) of this section, to strongly encourage co-location of communication antennas on existing towers or other existing structures, each applicant proposing to construct a new communications tower shall be required to design the proposed new tower so as to accommodate the co-location of the antenna arrays of at least three additional telecommunications carriers or providers, in addition to the antenna requirements of the applicant proposing to construct the new tower.

(2) *Tower application.* Prior to the installation of any communication tower within the city the owner/operator shall submit to the city planner an application for a land use permit. Said application shall include at a minimum the following information and/or documentation:

a. Detailed, scaled site plan illustrating property location and address, including a location map, property dimensions, tower location, tower height, and adjacent land uses and zoning districts within 200 feet of the tower site, on-site land uses and zoning classification of the property under consideration, adjacent roadways, proposed means of access, setbacks from property lines, elevation drawings of the proposed tower and any other structures, topography, parking, and any other information the city planner deems to be necessary to determine compliance with this section. Names and addresses of property owners within 200 feet of the property on which the tower is proposed to be located shall be shown on the site plan.

b. Description of tower usage and ownership including name of tower company and principal company contact person, including telephone number and address.

c. Name and address of owner of the property where the tower facility is proposed to be located together with a description of the terms of the proposed lease between the tower owner and property owner, including, but not limited to, duration of lease, renewal provisions, liability provisions and tower removal arrangements in the event of tower failure, lease expiration, or antenna or tower abandonment. The application shall be accompanied by a written consent of the property owner that provides that if the application is granted, the property owner acknowledges the provisions regarding tower removal contained in this section, and agrees to be responsible for removal of the tower, or payment of the costs of removal, on the terms and conditions set forth in subsection (d)(1)(h) of this section.

d. Landscaping plan, with a description of exterior fencing, and finished color and, if applicable, the method of camouflage and illumination, and a description of on-site

landscaping along with the description of related communication tower facilities that may be established in adjacent structures on the communication tower site.

e. Copies of FAA and/or FCC permits.

f. Structural specifications as verified by a licensed professional engineer relating to: structural materials, soils information, method of installation and erection, list of types of antennas, cables and other appurtenances, a statement that the structure is designed in accordance with current EIA 222 structural standards, and wind load/ice load specifications.

g. Description of camouflage design options and opportunities for the proposed facility. The applicant must give a description, including photographs or illustrations, of the proposed tower design and general appearance, including coloration details, and comment upon whether or not camouflage options have been considered or are practical to apply.

h. Description of co-location efforts in accordance with the requirements of subsection (f), including list of companies and tower sites within the city that were investigated, and the reasons why co-location is not possible. Technical data shall be submitted to support this explanation. Information must be submitted to city staff in order to verify that co-location inquiries have been made with other existing tower facility owners. Furthermore, a description of future co-location opportunities on the proposed tower must also be presented in conjunction with the proposed tower structure, as provided for in subsection (f) of this section.

i. Safety narrative. Submittal of a written description of tower structural components, including basic construction methods, weight or load capacity, durability in terms of wind and ice loads, structural failure probability and predicted fall zones, and other relevant data requested by the city planner, all certified by the applicant's engineer.

j. A non-refundable fee as established by resolution of the city council to reimburse the city for the costs of reviewing the application.

k. All information of an engineering nature that the applicant submits to the city in connection with the application, whether civil, mechanical, or electrical, shall be certified as true, correct and complete by a licensed professional engineer who is qualified to make such certification with respect to that field of engineering.

l. Legal description and street address of the tract of land and of the leased parcel, if applicable, on which the tower will be located.

m. A notarized statement by the applicant's engineer as to whether construction of the tower will accommodate co-location of additional antennas for future users, and if so, how many and what size and type of such antennas.

n. Identification of the entities providing the backhaul network for the tower described in the application, and for other tower sites owned or operated by the applicant in the city.

o. A description of the suitability of the use of existing towers, other structures or alternative technology not requiring the use of towers or structures, including co-location on an existing tower or other structure, to provide the services to be provided through the use of the proposed tower, accompanied by a certification thereof from the applicant's engineer.

p. The distance between the proposed tower and the nearest residential unit, platted residentially zoned properties, and unplatted residentially zoned properties.

q. The separation distance from other towers described in the inventory of existing sites submitted pursuant to subsection (c)(3) of this section shall be shown on an updated site plan or map. The applicant shall also identify the type of construction of the existing tower(s) and the owner/operator of the existing tower(s), if known.

r. The separation distance between the location of the proposed new tower and all other existing communications towers located within 5,000 feet of the proposed tower, together with the specific location, type of construction, and name of owner/operator of each such existing tower, and whether such existing tower is structurally and technologically capable of accommodating any additional antennas on such tower, and if so, how many and what type of antennas may be accommodated on each such other existing tower.

s. A description of the feasible location(s) of future towers or antennas within the city based upon existing physical, engineering, technological or geographical limitations in the event the proposed tower is erected.

t. A description of any artificial lighting proposed with respect to the applicant's tower, including a description of how such lighting will impact the surrounding views and the surrounding or abutting properties.

u. Information and documentation which demonstrates that the applicant complies with all of the provisions of this section, and all applicable federal, state and other local laws.

v. The inventory of existing sites as required in subsection (c)(3) of this section.

w. Description of vehicular access route to the proposed tower site, including proposed curb cuts, subject to review and approval by the city engineer.

x. Such other information and documentation as may be requested by the city planner to evaluate the application and to determine whether it satisfies the requirements of this section.

(3) *[Request for tower construction.]* Following receipt of all completed materials and documentation the city planner shall, if appropriate, refer the request for tower construction to the planning and zoning commission and the city council for further review.

(4) *[Applications for tower installation.]* The planning and zoning commission and city council shall review such applications for tower installation to assure that the structure meets all safety requirements, is properly engineered, is compatible with surrounding land uses, will have no adverse impact upon nearby properties, and complies with the requirements of this section.

(5) *Antenna application.* Prior to the installation of any antenna on an existing communication tower, building, or other structure of any kind, the owner/operator of the antenna shall submit to the city planner an application for an antenna/land use permit. Said application shall include at a minimum the following information and/or documentation:

a. A description of the number, size, and type of antennas proposed to be installed.

b. A description of the structure to which the proposed antennas will be affixed, whether communication tower, building or other structure, including the street address, legal description, location map and other information that will assist the city planner in determining where the antennas will be installed, together with the name, including principal contact person, telephone number and address of the owner of the tower, building or other structure upon which the antennas will be installed, and the written consent of such owner to the installation of the antennas.

c. Structural specifications as verified by a licensed professional engineer, that the installation of the antennas on the tower or other structure will meet the structural specifications contained in this section.

d. Any other information and documentation as may be requested by the city planner to evaluate the application and to determine whether it satisfies the requirements of this section and of applicable federal, state and other local laws.

e. A non-refundable fee, if any, as established by resolution of the city council to reimburse the city for the costs of reviewing the antenna application.

f. A description of the accessory cabinet, structure or building that will serve the proposed antennas, together with documentation demonstrating that such accessory structure complies with the requirements of all applicable city ordinances, including applicable local building codes and ordinances.

Following receipt of all completed materials and documentation, the city planner shall either approve the application, if the city planner determines that the application complies with all requirements of this section or, in the discretion of the city planner, the application may be referred to the planning and zoning commission and city council for further review. The planning and zoning commission and city council shall review any antenna applications referred by the city planner to assure that the proposed antennas meet all safety requirements, are properly engineered, and otherwise comply with the requirements of this section and all applicable federal, state and other local laws.

(e) *Factors considered in granting land use permits for towers.* The planning and zoning commission and city council shall consider the following factors in determining whether to issue a land use permit, although the planning and zoning commission and city council may waive or reduce the burden on the applicant of one or more of these criteria if the planning and zoning commission and city council conclude that the goals of this ordinance are better served thereby:

(1) Height of the proposed tower;

(2) Proximity of the tower to residential structures and residential district boundaries;

(3) Nature of uses on adjacent and nearby properties;

(4) Surrounding topography;

(5) Surrounding tree coverage and foliage;

(6) Design of the tower, with particular reference to design characteristics that have the effect of reducing or eliminating visual obtrusiveness. This consideration shall involve evaluation of any proposed camouflage design options and whether any such camouflage options are in character with the surrounding area and that the proposed design achieves the desired camouflage effect.

(7) Proposed ingress and egress; and

(8) Availability of suitable existing towers, other structures, or alternative technologies not requiring the use of towers or structures.

(f) *Availability of suitable existing towers, other structures, or alternative technology.* No new tower shall be permitted unless the applicant demonstrates to the reasonable satisfaction of the planning and zoning commission and city council that no existing tower, structure or alternative technology that does not require the use of towers or structures can accommodate the applicant's proposed tower structure and/or antennas. An applicant shall submit information requested by the city planner related to the availability of suitable existing towers, other structures or alternative technology. Evidence submitted to demonstrate that no existing tower, structure or alternative technology can accommodate the applicant's proposed antenna may consist of any of the following:

(1) No existing towers or structures are located within the geographic area which meet applicant's reasonable and technologically sound engineering requirements.

(2) Existing towers or structures are not of sufficient height to meet applicant's reasonable and technologically sound engineering requirements.

(3) Existing towers or structures do not have sufficient structural strength to support applicant's proposed antenna and related equipment, and still meet applicable structural requirements described in this section.

(4) The applicant's proposed antenna would cause electromagnetic interference with the antenna on the existing towers or structures, or the antenna on the existing towers or structures would

cause interference with the applicant's proposed antenna such that the applicant's antenna would not be technologically feasible.

(5) The fees, costs, or contractual provisions required by the owner in order to share an existing tower or structure or to adapt an existing tower or structure for sharing are unreasonable. Costs exceeding new tower development are presumed to be unreasonable, based on reasonable technological and/or engineering criteria.

(6) The applicant demonstrates that there are other limiting factors that render existing towers and structures unsuitable, based on reasonable technological and/or engineering criteria.

(7) The applicant demonstrates that an alternative technology that does not require the use of towers or structures, such as a cable microcell network using multiple low-powered transmitters/receivers attached to a wire line system, is unsuitable, based on reasonable technological and/or engineering criteria. Costs of alternative technology that exceed new tower or antenna development shall not be presumed to render the technology unsuitable.

(g) *Setbacks.* The following setback requirements shall apply to all towers for which a land use permit is required:

(1) Towers must satisfy the minimum zoning district setback requirements that are applicable to principal uses on the property where the proposed tower will be situated.

(2) Guy wire and other structural support elements and accessory buildings must satisfy the minimum zoning district setback requirements that are applicable to principal uses on the property where the proposed tower will be situated.

(3) If towers are established on properties located adjacent to a freeway, state highway, a major or minor arterial street/roadway or collector street, all such streets and roadways indicated on the City Major Thoroughfare Map, the tower structure must be located at least the height of said tower in distance from the adjacent said public right-of-way.

(h) *Location and installation.*

(1) Residential districts: Communication towers intended to serve personal and amateur radio operators, including hobby radio operators (i.e. "private radio operators") shall be permitted within any residential zoning district as an accessory use to a principal permitted residential use, subject to the following requirements:

a. Said private radio communication towers in residential districts shall not be located in front of any residence and not within any required side or rear yard areas. If the tower is supported with guy anchors or other radiating support structure, said anchors or support structure shall not be allowed within five feet of a rear or side property line. Said anchors or support structure shall not be allowed within a required front yard.

b. The maximum allowable height of a fixed tower including antennas and appurtenances serving private radio operators and also including roof mounted communication antennas within a residential zoning district serving private radio communication towers shall be 80 feet. Said maximum height shall be measured from the average natural grade of the property immediately adjacent to the tower.

c. Prior to the installation of any private radio communication tower in a residential zoning district, the owner/operator shall submit to the city planner an application for a land use permit as outlined in subsection (d)(1). For those proposed towers or roof mounted antennas that have an overall height of less than 40 feet as measured from the natural grade, the city planner may issue a land use permit without any further review by the planning and zoning commission or the city council.

d. If the overall height of the proposed private radio communication tower or antenna exceeds 40 feet above the natural grade, the request shall be reviewed by the planning and zoning commission and the city council. The owner/applicant shall submit evidence that the tower and, if roof-mounted, the tower and building to which it is attached, are constructed to

specifications of tower industry standards. The owner/applicant shall be responsible for providing a statement from an independent structural engineer that the proposed tower or antenna structural specifications satisfy basic industry safety standards as described in this section.

(2) Communication tower structures intended for use for commercial purposes or by any entity other than a private radio operator shall be strongly discouraged within the city in any zoning district that allows residential uses as a principal permitted use. However, in those instances where an applicant demonstrates to the satisfaction of the planning and zoning commission and the city council that the interests of the community will be served by the installation of a tower in any such residential zoning district, such application may be granted, provided that said proposed tower must be of an acceptable camouflage design and shall not exceed 80 feet in overall height. The planning and zoning commission and city council shall determine whether the proposal to place the tower in any such residential zoning district is in conformity with the purposes set forth in subsection (a) of this section, and otherwise meets all of the applicable requirements of this section. No two-legged or multi-legged lattice structure or guy wire supported towers shall be permitted in any residential zoning district under any circumstances. Commercial and private communication equipment, including antennas and accessory support facilities (i.e., small detached structures) may be permitted within any such residential zoning district only when all of the following requirements are met:

a. It is proposed to affix communication antennas to a camouflaged tower, existing structure such as a church steeple, water tower, telephone or electric pole, or other acceptable camouflage design;

b. The antenna and accessory communication equipment are camouflaged or heavily screened so as to be as unobtrusive and unnoticeable within the neighborhood as possible;

c. The applicant demonstrates compliance with all of the applicable requirements of this section; and

d. Subject to review and approval by the planning and zoning commission and the city council, if applicable under subsection (d)(5) of this section.

(3) Commercial districts: Communication towers intended for use for commercial purposes or by any entity other than a private hobby radio operator shall be permitted as a principal permitted use in the following zoning districts: A-1, except as limited herein, C-2, PC-2, C-3, M-1 or M-2, upon site plan review and approval by the planning and zoning commission and the city council. Said communication towers shall not be allowed as principal permitted uses in the following zoning districts: C-1, MPC, S-1, PO-1, BR, MU, HWY-1, HWY-20 Districts or within the HCG highway corridor greenbelt overlay zoning district.

(i) *Towers as principal permitted or accessory uses.*

(1) Towers that are proposed as principal permitted uses or accessory uses shall be subject to the following standards:

a. Towers proposed to be established as principal permitted or accessory uses in the A-1 agriculture zoning district shall be guided by the city's schematic land use map. There are many A-1 agriculture zoning districts within the city which are located adjacent to residential zoning districts and which have not yet been rezoned for development purposes. Therefore, in order to discourage the establishment of commercial communication towers immediately adjacent to or within existing residential neighborhoods, the city's schematic land use map shall be utilized as a guide in evaluating which properties are designated as future residential development areas. It is the intent of this section that towers proposed to be established in the A-1 agriculture zoning district must be located in those areas intended for future commercial or industrial development areas and shall not be permitted in those areas designated for future residential development as indicated on the city's schematic land use map, except as otherwise

expressly provided in subsection (h)(2). Said towers will be governed by the following standards outlined herein.

b. Towers proposed to be established as principal permitted or accessory uses in A-1, M-1 or M-2 districts shall be limited to an overall height, as measured from natural grade, of 250 feet. All such towers that are 150 feet or less in overall tower height must be of monopole construction.

c. Towers proposed to be established as principal permitted or accessory uses in C-2, PC-2 or C-3 zoning districts shall be limited in overall height to 120 feet. All such towers must be of monopole construction.

d. All towers proposed to be established as principal permitted or accessory uses shall be located on the lot so that the distance from the base of the tower to any adjoining property line, or leased property boundary, meets the minimum building setback requirement for the zoning district in which the tower is located.

e. Guy wires or radiating tower support structures, if utilized in conjunction with a tower, shall maintain a setback from the property line equal to the building setback requirement in the zoning district in which it is located.

f. All towers proposed to be established as principal permitted or accessory uses shall be certified by a registered engineer stating that the tower structure will withstand wind pressures of 80 miles per hour with one-half inch ice load. If said tower is roof-mounted the same engineering certification shall be provided for both the tower and the building to which it is attached.

g. Camouflage design options for the tower structure and related facilities must be evaluated based upon the requirements of this section. It is the intent of this regulation to seek out and pursue camouflage design options to the maximum extent possible.

h. Security fencing, measuring at least six feet in height, shall be required around the base of the tower and also around guy anchors of any tower, and shall also be equipped with an appropriate anti-climbing device, unless waived by the city council, as it deems appropriate.

i. Landscaping. The following requirements shall govern the landscaping surrounding towers for which a land use permit is required; provided, however, that the city council may waive such requirements if the goals of this ordinance would be better served thereby.

    1. Tower facilities shall be landscaped with a buffer of plant materials that effectively screens the view of the tower compound from property used for residences. The standard buffer shall consist of a landscaped strip at least four feet wide and six feet high at the time of planting, located outside the perimeter of the compound.

    2. In locations where the visual impact of the tower would be minimal, the landscaping requirement may be reduced or waived by the commission and city council.

    3. Existing mature tree growth and natural land forms on the site shall be preserved to the maximum extent possible. In some cases, such as towers sited on large, wooded lots, natural growth around the property perimeter may be considered a sufficient buffer.

j. Upon completion of tower site construction, a placard containing the name, address and telephone number of the principal owner or operator of the tower structure shall be affixed in a location so that it is clearly visible at the perimeter of the site. Said placard shall not exceed three square feet in area. The pertinent ownership information on the placard shall be kept current and updated as needed.

k. Separation distances between towers.

1. Separation distances between towers shall be applicable for and measured between the proposed tower and preexisting towers. The separation distances shall be measured by drawing or following a straight line between the base of the existing tower and the proposed tower base, pursuant to a site plan, of the proposed tower. The separation distances (listed in linear feet) shall be as shown in Table 1.
2. Table 1: Existing Towers—Types.

			Monopole Height	
	Lattice	Guyed	80 Feet or Greater	Less Than 80 Feet
Lattice	5,000	5,000	1,500	750
Guyed	5,000	5,000	1,500	750
Monopole 80 Feet in Height or Greater	1,500	1,500	1,500	750
Monopole Less Than 80 Feet in Height	750	750	750	750

(2) Other zoning districts. Other zoning districts where tower structures are generally prohibited may be considered for the installation of towers and related communication equipment, including antennas and accessory support facilities under the same guidelines as outlined in section (h)(2), residential districts, provided that said consideration does not conflict with any other requirements of this chapter.

(3) Roof-mounted towers shall be permitted in any allowable commercial or industrial zoning district as specified herein subject to the following standards:

a. Maximum height of the tower shall be 40 feet above the roof upon which the tower is established, but not more than 120 feet above ground level.

(j) *Additional requirements of application.* Every application for a land use permit to install a communication tower or antenna in the city must comply with all provisions of this section, all provisions of this chapter, including but not limited to, compliance with all on-site parking requirements including driveway/aisle access requirements of this chapter applicable to the site on which the communication tower or antenna will be installed, and all other provisions of this code which are applicable to the site, the installation of the tower or antenna, and all other provisions of this code which are in any way applicable to said application.

(k) *Additional conditions on approval of application.* In granting a land use permit under this section, the planning and zoning commission and city council may impose reasonable conditions to the extent such conditions are deemed necessary to satisfy the purposes of this section and in order to minimize any adverse effect or impact of the proposed tower on adjoining properties.

(Ord. No. 2093, § 1, 4-10-95; Ord. No. 2304, § 1, 7-24-00; Ord. No. 2590, § 1, 8-28-06; Ord. No. 2697, §§ 1, 2, 10-26-09)

Sec. 29-124. - Adult entertainment establishments; general regulations.

Adult entertainment establishment regulations:

(1) *General statement of intent.* Adult entertainment establishments, because of their special characteristics, are recognized as having potential deleterious impacts on surrounding establishments and areas, thereby contributing to creation of blight and to the decline of the neighborhoods. These negative impacts appear to increase significantly if several adult entertainment establishments concentrate in one area.

Recognized also is the need to protect lawful rights of expression and use of property and to not unduly restrain general public access.

Therefore, it is the intent of these regulations to prevent concentrations of adult entertainment establishments in all areas, to more severely limit their locations in areas where minors would be expected to live or congregate and to otherwise regulate their locations in order to protect and preserve the welfare of the community. It is the intent also to provide for sufficient locations for such establishments to protect basic legal rights of expression and public access. These regulations have been enacted with full consideration of the legal and constitutional issues heretofore adjudicated.

(2) *Definitions.* The following definitions shall govern the interpretation of the regulations of adult entertainment establishments:

a. *Adult artist-body painting studio.* An establishment or business which provides the services of applying paint or other substance whether transparent or nontransparent to or on the human body distinguished or characterized by an emphasis on specified sexual activities or specified anatomical areas (as defined herein).

b. *Adult book store.* An establishment having at least 25 percent of the retail floor space presently being used by said business or at least 25 percent of the gross business income derived from or attributable to printed matter, pictures, slides, records, audio tapes, video tapes or motion picture films, which are distinguished or characterized by an emphasis on matter depicting, describing or relating to "specified sexual activities" or "specified anatomical areas", as hereinafter defined.

c. *Adult cabaret.* Any place holding a liquor license or beer permit, or combination permit for consumption of beer or liquor, or both, on the premises wherein entertainment is characterized by emphasis on matters depicting, describing or relating to specified sexual activities or specified anatomical areas (as described herein).

d. *Adult conversation/rap parlor.* Any establishment which excludes minors by reason of age and which provides the service of engaging in or listening to conversation, talk or discussion, if such service is distinguished or characterized by an emphasis on specified sexual activities or specified anatomical areas, as herein defined.

e. *Adult entertainment establishment.* Any other establishment not otherwise defined herein, but of the same general classification as the other establishments herein defined, having as a substantial or significant portion of its business, stock in trade of materials, scenes, or other presentations characterized by emphasis on depiction or description of specified sexual activities or specified anatomical areas, as herein defined.

f. *Adult health/sport club.* A health/sport club which excludes minors by reason of age and is distinguished or characterized by an emphasis on specified sexual activities or specified anatomical areas, as herein defined.

g. *Adult massage parlor.* Any place of business which restricts minors by reason of age, wherein any method of pressure on or friction against, or rubbing, stroking, kneading, tapping, pounding or vibrating the external parts of the body with the hand or any body parts, or by a mechanical or electrical instrument, under such circumstances that is

reasonably expected that the individual to whom the treatment is provided or some third person on his or her behalf will pay money or give other consideration or gratuity therefor, wherein the massage is distinguished or characterized by an emphasis on specified sexual activities, or involving specified anatomical areas, as defined herein.

h. *Adult mini-motion picture theater.* An enclosed building with a capacity for less than 50 persons used for presenting material distinguished or characterized by an emphasis on matter depicting, describing or relating to specified sexual activities or specified anatomical areas, as defined herein, for observation by patrons therein.

i. *Adult motion picture theater.* A building or portion of a building with a capacity of 50 or more persons used for presenting material if such building or portion of a building as a prevailing practice excludes minors by virtue of age, or if such material is distinguished or characterized by an emphasis on the depiction or description of specified sexual activities or specified anatomical areas, as defined herein, for observation by patrons therein.

j. *Adult modeling studio.* An establishment or business which provides the services of modeling for the purposes of reproducing the human body by any means of photography, painting, sketching, drawing or otherwise wherein the activity is distinguishing or characterized by a an emphasis on specified sexual activities or specified anatomical areas, as defined herein.

k. *Adult sexual encounter center.* An enclosed building with a capacity of 50 or more persons used for presenting material distinguished or characterized by an emphasis on matter depicting, describing or relating to specified sexual activities or specified anatomical areas, as defined herein, for observation by patrons therein.

l. *Adult sexual encounter center.* Any business, agency or persons who, for any form of consideration or gratuity, provide a place for three or more persons, not all members of the same family, may congregate, assemble or associate for the purpose of performing activities distinguished or characterized by an emphasis on specified sexual activities or specified anatomical areas, as defined herein.

m. *Adult steam room/bathhouse facility.* A building or portion of a building used for providing a steam bath or heat bath room used for the purpose of pleasure, bathing, relaxation, reducing, utilizing steam or hot air as a cleaning, relaxing or reducing agent if such a building or portion of a building restricts minors by reason of age or if the service provided by the steam room/bathhouse facility is distinguished or characterized by an emphasis on specified sexual activities or specified anatomical areas, as defined herein.

n. *Adult theater.* A motion picture theater or stage show theater or combination thereof used for presenting materials distinguished or characterized by an emphasis on matters depicting, describing, or relating to specified sexual activities or specified anatomical areas, as defined herein, for observation by patrons therein.

o. *Adult uses.* Adult uses include, but are not limited to, adult bookstores, adult motion picture theaters, adult mini-motion picture theaters, adult massage parlors, adult steam room/bathhouse facilities, adult rap/conversation parlors, adult health/sport clubs, adult cabarets and other premises, enterprises, businesses, private clubs/establishments or places open to some or all members of the public, at or in which there is an emphasis on the presentation, display, depiction or description of specified sexual activities or specified anatomical areas, as defined herein, which are capable of being seen by members of the public.

p. *Protected uses.* Protected uses include a building in which at least 25 percent of the gross floor area is used for residential purposes; a day care center where such day care center is a principal use; a house of worship; a public library; an elementary, junior high or high school (public, parochial or private); public park; public recreation center or public specialized recreation facility as identified in the parks and recreation element of the Cedar Falls Long Range Plan; a civic/convention center; a community residential facility; a

mission. However, this definition shall not apply if the protected use is a legal non-conforming use.

q. *Specified anatomical areas.* Shall include the following:

1. Less than completely and opaquely covered (a) human genitals, pubic region; (b) buttock; and (c) female breast below a point immediately above the top of the areola; and

2. Human male genitals in a discernibly turgid state, even if completely and opaquely covered.

r. *Specified sexual activities.* Shall include the following:

1. Human genitals in a state of sexual stimulation or arousal.

2. Acts of human masturbation, sexual intercourse or sodomy.

3. Fondling or other erotic touching of human genitals, pubic region, buttock, or female breast.

(3) *Regulations governing the location of adult entertainment establishment.*

a. *Zoning districts where allowed:*

1. All adult bookstores, adult motion picture theaters, adult mini motion picture theaters, adult massage parlors, adult theaters, adult artist-body painting studios, adult modeling studios, adult sexual encounter centers, adult cabaret, and all other adult entertainment establishments shall be allowed in the C-2 and C-3 zoning districts as a principle permitted use. Said uses shall not be allowed in any other zoning district.

b. *Minimum separation requirements:*

1. No such adult entertainment establishment described in subparagraph a.1. immediately above shall be located within 600 feet of any other such establishment.

2. No such adult entertainment establishment described in subparagraph a.1. immediately above shall be established within 600 feet from any residential (R) zoning district or within 600 feet from any protected use as defined herein which distance shall be measured in a straight line from the closest point of the property line on which the adult use is located to the closest point of the property line on which is located an aforementioned protected use. If a protected use is a legal nonconforming use, this provision shall not apply.

(Ord. No. 2155, § 1, 8-12-96)

Sec. 29-125. - Addition or expansion of attached garage to principal residential structure.

Any proposed garage addition or expansion of an existing attached garage to an existing principal residential structure shall satisfy the following requirements:

(1) All minimum building setback or yard requirements shall be satisfied as specified for principal permitted uses within the zoning district where the structure is located;

(2) The garage addition/expansion must be connected to the principal residential structure or existing attached garage by a continuous footing/foundation and must also be connected to the principal residential structure or existing attached garage by wall and roof structural connections;

(3) The garage addition/expansion must be constructed utilizing same or similar external finish building materials and same or similar coloration of said materials as found on the principal residential structure;

(4) The garage addition/expansion must establish similar roof pitch with similar or same roof materials and coloration of said roof materials as exist on the principal residential structure;

(5) The garage addition/expansion shall not exceed the existing height of the principal residential structure;

(6) The expanded, completed garage addition/ expansion shall not exceed in base floor area the total base floor area or ground floor area of the existing principal residential structure, excluding porches, deck areas and excluding any existing attached garage floor area.

(Ord. No. 2478, § 1, 5-10-04)

Sec. 29-126. - Temporary storage containers.

(a) Except as otherwise expressly provided in subsection (b) or subsection (c) of this section, temporary storage containers, including but not limited to truck trailers, storage box shipping containers, storage moving "pods," or any other similar portable storage containers, whether with or without wheels, and whether with or without a chassis, may only be placed upon a property for a period not to exceed 60 days in any consecutive 12-month period. No more than one such temporary container can be placed on a property during any 12-month period. The owner or tenant in possession of the property must first obtain a temporary land use permit from the city planner prior to the placement of any such temporary portable storage containers on the property. The provisions of this subsection (a) shall be applicable in all zoning districts in the city except as otherwise expressly provided for in subsection (c) of this section. The foregoing provisions shall also apply to tents or similar temporary enclosures that are established for purposes of storage. This section shall not apply to pre-fabricated garden sheds or similar structures specifically designed and intended for use on properties for storage purposes and which comply with all city ordinances applicable to detached accessory structures.

(b) The city planner shall have the discretion to permit the placement of temporary storage containers on a property for a period longer than 60 days in any consecutive 12-month period if the placement of such temporary storage container on the property is reasonably required in order to accommodate the storage of construction equipment during a construction or reconstruction project on the property. The owner of the property and the owner's contractor, if any, shall apply for the land use permit for the temporary storage container as part of the application for a building permit for the construction or reconstruction project. The land use permit for the temporary storage container shall only be allowed for such period as is reasonably necessary for, and only with demonstrated progress towards, completion of such construction or reconstruction project, all as determined in the discretion of the city planner and the city building official, and in any event, shall expire no later than the time the building permit for the construction or reconstruction project expires. Such temporary portable storage containers shall meet all requirements of this chapter, including but not limited to the location and setback requirements specified in section 29-114 for detached accessory structures.

(c) The owner or tenant in possession of property located in a commercial or industrial zoning district upon which is located the principal permitted use of a trucking business or a similar transportation or warehousing business, may place temporary storage containers, including but not limited to truck trailers, storage box shipping containers, storage moving "pods" or any other similar portable storage containers, whether with or without wheels, and whether with or without a chassis, on such property for periods longer than 60 days and without obtaining a land use permit as otherwise provided for in subsection (a) of this section. For all other properties located in commercial or industrial zoning districts, the placement of such temporary storage containers on any property is expressly prohibited except as provided for in subsection (a) of this section.

(d) Any temporary storage container existing on any property in the city on the date of enactment of this section shall either be removed from such property, or brought into compliance with the provisions of this section, within 60 days of the date of enactment of this section.

(Ord. No. 2701, § 1, 1-11-10)

Sec. 29-127. - Wind energy facilities.

(a) *Applicability.*

(1) The requirements of this section shall apply to all Wind Energy Facilities (Large and Small) for which an application for a Special Permit or building permit has been submitted to the City of Cedar Falls, Iowa after the effective date of this section.

(2) Wind Energy Facilities for which a required permit has been properly issued prior to the effective date of this section shall not be required to meet the requirements of this section; provided, however, that any such preexisting wind energy facility which is discontinued or does not provide energy for a continuous period of twelve (12) months shall meet the requirements of this section prior to recommencing production of energy. However, no modification or alteration to an existing wind energy facility shall be allowed unless in compliance with this section.

(b) *Purpose.*

(1) The purpose of this section is to provide a regulatory means for controlling the construction and operation of Large and Small Wind Energy Facilities in the City of Cedar Falls, with the use of reasonable restrictions, which will preserve the public health, safety, and welfare. The city adopts these provisions to promote the effective and efficient use of the city's wind energy resource.

(c) *Findings.*

(1) The city council finds and declares that:

a. Wind energy is an abundant, renewable and nonpolluting energy resource for the city and its conversion to electricity may reduce dependence on nonrenewable energy sources and decrease the air and water pollution that results from the use of conventional energy sources.

b. The generation of electricity from properly sited Wind Energy Facilities can be cost effective and can reduce consumption of traditional energy sources and in many cases existing power distribution systems can be used to transmit electricity from wind-generating systems to utilities or other electric power users.

c. Regulation of the siting and installation of Wind Energy Facilities is necessary for the purpose of protecting the health, safety, and welfare of neighboring property owners and the general public.

d. Wind Energy Facilities represent significant potential aesthetic and environmental impacts because of their potential size, lighting, noise generation, ice shedding and shadow "flicker" effects, if not properly sited and planned.

e. If not properly sited, Wind Energy Facilities may present risks to the property values of adjoining property owners.

f. Without proper planning, construction of Large Wind Energy facilities can create traffic problems and damage local roads.

g. If not properly sited, Wind Energy Facilities can interfere with various types of communications or otherwise interfere with electromagnetic waves.

(d) *Definitions.*

(1) As used in this section, the following terms are hereby defined:

a. *Decommissioning:* The process of use termination and removal of all or part of a Large or Small Wind Energy Facility by the owner of the wind energy facility.

b. *FAA:* The Federal Aviation Administration.

c. *FCC:* The Federal Communications Commission.

d. *Facility owner:* Means the property owner, entity or entities having an equity interest in the wind energy facility.

e. *Hub height:* When referring to a wind turbine, the distance measured from ground level to the center of the turbine hub.

f. *MET tower:* A meteorological tower used for the measurement of wind speed.

g. *Site:* The parcel(s) of land where a Wind Energy Facility is to be placed. The site can be publicly or privately owned by an individual or group of individuals controlling single or adjacent properties. Where multiple lots are in joint ownership or control, the combined lots shall be considered as one for purposes of applying setback requirements.

h. *Total height:* When referring to a Wind Energy Facility, the distance measured from ground level to the windmill blade or similar wind-capture device mounted on the facility extended at its highest point.

i. *Use termination:* The point in time at which a Wind Energy Facility owner provides notice to the city that the Wind Energy Facility is no longer used to produce electricity unless due to a temporary shutdown for repairs. Such notice of use termination shall occur no less than 30 days after actual use termination.

j. *Wind Energy Facility, Large:* A facility that includes a tower structure, wind turbine and other related fixtures and facilities that generates electricity or performs other work consisting of one or more wind turbines under common ownership or operating control, and includes substations, MET towers, cables/wires and other buildings accessory to such facility, whose main purpose is to supply electricity to offsite customers. The power output of such facility shall exceed 100 kilowatts (kw). It also includes any Wind Energy Facility not falling under the definition of a Small Wind Energy facility.

k. *Wind Energy Facility, Small:* A facility that may include a tower structure, wind turbine and other related fixtures and facilities that generates electricity or performs other work, has a total height of one hundred twenty (120) feet or less or is affixed to an existing structure, has a power output rated capacity of 100 kilowatts (kw) or less, and is intended to primarily reduce the onsite consumption of electricity of the principal use on the property. Small wind energy systems may include roof-mounted facilities. Any wind energy facilities not falling under this definition shall be deemed Large Wind Energy Facilities.

l. *Wind farm:* Two or more Large Wind Energy Facilities under common ownership or control.

m. *Wind turbine:* A wind energy conversion system which converts wind energy into electricity through the use of a wind turbine generator, and includes the turbine, blade, or other wind-capturing device, tower, base, and pad. Turbines may be of a horizontal or vertical design.

(e) *Regulatory framework.*

(1) Large Wind Energy Facilities exceeding 120 feet in overall tower height and not to exceed 250 feet in overall tower height may only be constructed in areas that are zoned "A1" Agricultural District, M-1, Light Industrial, MP Planned Industrial or M-2, Heavy Industrial Districts subject to review and approval of a special exception permit by the city planning and zoning commission and city council.

(2) Small Wind Energy Facilities that are less than 120 feet in overall height and generate less than 100 kw of power may be constructed in any "C" Commercial District or Planned Commercial District or within mixed use Residential [D]istricts as either a principal or accessory use subject to approval of a special exception permit by the planning and zoning commission and the city council. Taller tower structures, not to exceed 150 feet in overall height, may be allowed in "C" Commercial Districts, Planned Commercial Districts or within mixed use residential districts subject to careful review of special conditions and circumstances that justify increased tower structure height by the commission and city council. Taller tower structures allowed within mixed use residential districts or within larger multiple ~~family~~unit residential development areas shall

be established for the benefit of multiple users, dwellings or businesses within the facility project area. More than one Wind Energy Facility may be considered with larger commercial or residential development projects.

(3) Small wind energy facilities intended for use in "R", Residential Districts shall be guided by the recommendation that wind energy facilities or tower structures should generally conform to the maximum height limits in that Residential District, but shall not exceed 60 feet in overall height. The Commission may recommend and the city council may consider allowance of taller tower structures up to 80 f[ee]t in height in special circumstances where the natural topography of the property under consideration is substantially lower than the natural topography of immediately abutting properties. The presence of taller trees or buildings on or near the property under consideration shall not be sufficient justification for a taller tower structure. A single tower structure will be permitted for each single residential property. Additional wind generating mechanisms may be permitted, such as roof-mounted mechanisms on individual residential properties where a tower structure already exists. However, the roof-mounted mechanisms may not extend more than 15 feet above the height of the residential structure in all cases.

(4) Roof mounted Wind Energy Systems shall be permitted in all Districts. It is anticipated that these types of systems will be designed for smaller scale, single-site power generating applications. Roof-mounted systems must be reviewed and approved in the same fashion as tower-mounted wind energy system proposals. Setback requirements for roof-mounted systems may be less than the setback required for tower structures; however, an analysis of the height of the mechanism along with considerations of "ice-throw" distances will establish a safe setback distance for roof-mounted mechanisms.

(5) Application for a special exception permit for a Large or Small Wind Energy Facility including tower structures or roof-mounted structures shall be submitted with the following information:

a. A signed petition by the property owner detailing the request for one or more Large or Small Wind Energy System on a single property including address and legal description of the property, name of the managing company or interest in the Wind Energy Facility and general description of the proposed facility or tower or roof-mounted facility, such as number of tower structures, number of energy-generating turbines, height of the proposed tower structure, general characteristics, etc. Any related lease agreement with an outside party relating to establishment or maintenance of the wind energy facility must also be submitted with the name and address of the leasing party clearly presented. A proposed time line for installation and operation of the proposed system must be described.

b. A signed statement indicating that the applicant or leasing party has legal authority to construct, operate, and develop the Wind Energy Facilities under state, federal and local laws and regulations, including Federal Aviation Administration (FAA), Federal Communications Commission (FCC), and state and local building codes.

c. A description of the number and kind of Wind Energy Facilities to be installed along with a description of the key structural components such as type of tower structure with illustrations provided. In addition, any proposed accessory structures to be installed in conjunction with the wind energy system need to be described with illustrations and description of building materials and building design.

d. Submittal of a professionally prepared detailed site plan illustrating the specific location(s) of the proposed Wind Energy Facilities(s) or tower structure(s), showing property boundaries, existing utility easements or other types of easements across the property, topography of the site at 2-f[ee]t increments, proposed setbacks from the property boundary and also showing all other structures and facilities on the property including other accessory structures, parking lots and nearby streets. Multiple Wind Energy Facilities, if part of an overall project plan, may be portrayed on the submitted site plan with a "phasing plan" clearly delineated. The proposed Wind Energy Facility must not eliminate or interfere with any on-site parking stalls or driveway access to parking areas on the property. In addition, properties within 200 feet of the property where the Wind Energy Facilities or

tower structures are to be located need to be illustrated with names and addresses of all property owners of those properties shown on the site plan application. The site plan must also illustrate all structures on abutting properties and the distance between those structures and the proposed Wind Energy Facilities or tower structure(s). Nearby streets and roadways, including the entire public right of way located closest to the proposed Wind Energy Facility also needs to be clearly illustrated. All above-ground utility structures, including but not limited to overhead electric lines need to be illustrated on the site plan.

e. A diagram illustrating the potential "fall zone" (i.e. in the event of catastrophic collapse of the tower structure(s) of the Wind Energy System and/or tower structures(s) with property boundaries, building structures and public right of ways clearly illustrated within the potential "fall zone."

f. A diagram illustrating the estimation of "ice throw" distances that can be anticipated from the Wind Energy Facility during operation.

g. A diagram illustrating anticipated prevailing wind directions and how those prevailing winds will serve the proposed wind energy system. Trees, building structures or other impediments to prevailing wind flows on or off the property must be delineated. No off-site trees, hills, structures, or other facilities not located on the property under review may be trimmed, graded, altered or removed to benefit the wind circulation serving the proposed Wind Energy Facility without approval from the city council and the owner of the off-site property.

h. A description of the large or small Wind Energy Facility's height and design, including cross sections, elevation, and diagram of how the Wind Energy Facility will be anchored to the ground or structures, prepared by a professional engineer licensed in the State of Iowa. A description of the facility's function must also be described (i.e. whether a horizontal or vertical turbine) and general direction of rotation with a description of anticipated noise generation by a properly maintained mechanism. An illustration of ice shedding or "ice throw" areas and any affected building structures or nearby properties also need to be clearly illustrated by a professional engineer.

i. A statement from the applicant that all Wind Energy Facilities will be installed in compliance with manufacturer's specifications, and a copy of those manufacturer's specifications must be provided with particular attention to wind load capacity and other details regarding structural integrity. Other details relating to matters such as "ice throw" distances, shadow "flicker" or noise generation must also be provided.

j. A signed statement from the landowner(s) of the site stating that he/she will abide by all applicable terms and conditions of this section particularly with respect to responsibility for proper maintenance of the Wind Energy Facility and responsibility for removal of the Wind Energy Facility including tower structure in the event of severe damage, disuse or abandonment.

k. A statement indicating what hazardous materials will be used or stored on the site in conjunction with the Wind Energy Facility or tower structure or its operation.

l. A statement indicating how the Wind Energy Facility will be illuminated, if applicable, with demonstration that any such required illumination will not affect nearby properties. Illumination of or on wind energy systems or tower structures(s) shall be prohibited unless required by the FCC or FAA.

m. A statement by an appropriate authority with regard to any potential electromagnetic interference with radio, television or cellular communication air waves in the vicinity of the proposed Wind Energy Facility.

n. A description of noise levels anticipated to be generated by the Wind Energy Facility.

o. A statement from the city electric utility that the proposed Wind Energy Facility is compatible with the local energy grid system and that the proposal is acceptable to the

local electric power utility. A description of electrical generation and use of "excess" power must be provided. Any proposed Wind Energy Facility to be installed with the intent to distribute electricity directly to Cedar Falls Utilities (CFU) or any other electrical distributor or to a facility with electric service from CFU must meet CFU safety and interconnection requirements and receive pre-approval from CFU or any other local electrical utility.

p. For Large and Small Wind Energy Facilities, including roof-mounted facilities, photo exhibits illustrating the proposed Wind Energy Facilities and/or tower structures shall be provided to illustrate the finished product.

q. Each application shall contain an indemnification provision which meets the requirements of subsection (f)(2)(i) of this section.

(6) Submittal of a plan for site grading, erosion control, storm water drainage, and storm water pollution prevention plan (SWPPP) shall be submitted to the City Engineer for review and approval prior to granting building permits.

(7) All other permits, including Building Permits and permits for work done in public rights-of-way, shall be applied for by the applicant to the appropriate agency prior to construction.

(8) Wind Energy Facilities shall not include offices, vehicle storage, or other outdoor storage unless permitted by the Special Exception Permit. Accessory storage building may be permitted for Large Wind Energy Facilities at the discretion of the planning and zoning commission and the city council. The size and location of any proposed accessory building shall be shown on the site plan. No other structure or buildings accessory to the Wind Energy Facility are permitted unless used for the express purpose of the generation of electricity or performing other work related to the Wind Energy Facility.

(9) No grading, filling, or construction shall begin until a building permit is issued. A separate building permit shall be required for each individual Wind Energy Facility including tower structures and appurtenant facilities prior to construction of each wind turbine tower and appurtenant facilities to be constructed.

(10) A Wind Energy Facility authorized by special exception permit shall be started within twelve (12) months of special permit issuance and completed within thirty-six (36) months of special permit issuance, or in accordance with a timeline approved by the planning and zoning commission and city council.

(11) For Large Wind Energy Facilities, the applicant shall submit a copy of all "as built plans" prepared by a professional engineer licensed in the State of Iowa including structural engineering and electrical plans for all facilities following construction to the city to use for removal of Large Wind Energy Facilities, if the Large Wind Energy Facility owner fails to meet the requirements of this section or the special permit.

(12) The planning and zoning commission and city council may require additional conditions as deemed necessary upon the proposed Wind Energy Facility(s) or tower structure(s) to ensure public health, safety, and welfare.

(13) Wind Energy Facilities that are constructed and installed in accordance with the provisions of this section shall not be deemed to constitute the expansion of a nonconforming use or structure.

(14) Nothing in this section shall be deemed to give any applicant the right to cut down surrounding trees and vegetation on any property not on the applicant's site for the purpose of reducing wind flow turbulence or increasing wind flow to the wind energy facility. Nothing in this section shall be deemed a guarantee against any future construction or city approvals of future construction that may in any way impact the wind flow to any Wind Energy Facility.

(f) *General requirements.*

(1) Standards:

a. No television, radio or other communication antennas may be affixed or otherwise made part of a wind energy facility, except pursuant to the regulations for wireless communication towers. Applications may be jointly submitted for Wind Energy Facilities and wireless communication facilities.

b. Wind Energy Facilities shall utilize measures to reduce the visual impact of the facility to the extent practicable. Facilities with multiple tower structures shall be constructed with an appearance that is similar throughout the site, to provide reasonable uniformity in overall size, geometry, and rotational speeds. No signage, lettering, company insignia, advertising, or graphics shall be established on any part of the Wind Energy Facility including tower structure, blades or any other component of the system.

c. For Small Wind Energy Facilities constructed as an accessory use to a residential use, only one small wind energy tower per site shall be allowed. In addition to a single tower structure, more than 1 roof-mounted wind mechanism may be installed provided the height of the roof-mounted facility is no more than 15 feet above the height of the residential structure.

d. For larger multi-~~family~~unit or "mixed use" residential/commercial complexes, more than one Small Wind Energy Facility may be permitted to serve the needs of the on-site complex subject to review and approval by the commission and city council.

e. Small Wind Energy Facilities shall be used primarily to reduce the onsite consumption of electricity by the principal use(s) located thereon.

f. At least one warning or notice sign shall be posted on the Wind Energy Facility or tower structure at a height of no more than five (5) feet above natural grade warning of electrical shock or high voltage, harm from revolving machinery, and the hazard of falling ice. The name, address and contact information for the primary operator of the Wind Energy Facility must be posted in a location clearly visible from adjacent property, said sign to be no more than 6 sq[uare] f[ee]t in area and located no higher than 5 feet above natural grade. This contact information may be waived in the case of small residential wind energy systems clearly serving an existing residential structure.

g. Wind Energy Facilities including tower structures exceeding 60 f[ee]t in height and located on commercial or industrial properties shall be constructed to provide one of the following means of access control:

   a) Tower-climbing apparatus mounted on the tower located no closer than twelve (12) feet from the ground.

   b) A locked anti-climb device installed on the tower structure.

   c) A locked, protective fence at least six feet in height that encloses the tower structure.

h. Monopole tower construction is recommended for Wind Energy Facility tower structures exceeding 60 feet in height. Lattice-designed towers are to be discouraged, but may be permitted upon site plan review and approval of safety considerations by the planning and zoning commission and city council. Guy wires or other external stabilizing components shall be discouraged in all cases. However, for Small Wind Energy Facilities serving residential properties, limited guy wire support systems may be allowed subject to review and approval by the commission and city council.

(2) *Design and installation:*

a. Wind Energy Facilities shall be painted a non-reflective, non-obtrusive color, such as grey, white, or off-white.

b. At Large Wind Energy Facility sites, the design of any allowed accessory buildings and related building structures shall, to the extent possible, use materials, colors, textures, screening, and landscaping that will blend the Large Wind Energy Facility to the natural setting and existing environment.

c. Minimum lighting necessary for safety and security purposes shall be permitted. Techniques shall be implemented to prevent casting glare from the site, except as otherwise required by the FAA or other applicable authority.

d. No form of advertising including signs, banners, balloons or pennants shall be allowed on the Wind Energy Facility including tower structure, wind turbine, blades, or other buildings or facilities associated with the facility, except for reasonable identification of the manufacturer or contact information of the operator of the wind energy facility as noted in subsection 6-a-6.

e. All Wind Energy Facilities shall be equipped with a redundant braking system for the rotating mechanism. This includes both aerodynamic over-speed controls (including variable pitch, tip, and other similar systems) and mechanical brakes. Mechanical brakes shall be operated in a failsafe mode. Stall regulation shall not be considered a sufficient braking system for over-speed protection.

f. All Wind Energy Facilities shall comply with all applicable city building codes and standards.

g. Electrical controls, control wiring, and power lines shall utilize wireless or underground service connections except where wiring is brought together for connection to the transmission or distribution network, adjacent to that network. This provision may be waived by the commission and city council for any Wind Energy Facility approved by special permit if deemed appropriate.

h. All electrical components of the wind energy facility shall conform to relevant and applicable local, state, and national electrical codes, and relevant and applicable international standards.

i. The owner of a Wind Energy Facility shall defend, indemnify, and hold harmless the city and its officials from and against any and all claims, demands, losses, suits, causes of action, damages, injuries, costs, expenses, and liabilities whatsoever including attorney fees arising out of the acts or omissions of the operator or the operator's contractors concerning the construction or operation of the Wind Energy Facility without limitation, whether said liability is premised on contract or tort. Owner's submittal for a building permit for a Wind Energy Facility shall constitute agreement to defend, indemnify, and hold harmless the City of Cedar Falls and its officials.

j. The owner of a Large Wind Energy Facility shall reimburse the City and/or Black Hawk County for any and all repairs and reconstruction to the public roads, culverts, and natural drainage ways resulting directly from the construction of the Large Wind Energy Facility.

k. Where Wind Energy Facility construction cuts through a private or public drain tile field, the drain tile must be repaired and reconnected to properly drain the site to the satisfaction of the city engineer.

l. Any recorded access easement across private lands to a Wind Energy Facility shall in addition to naming the Wind Energy Facility owner as having access to the easement shall also name the city as having access to the easement for purposes of inspection or decommissioning. If no such access easement exists, approval of the special exception permit for a Wind Energy Facility shall constitute granting to the city a right to access the Wind Energy Facility for purposes of inspection or decommissioning.

m. Any Wind Energy Facility that does not produce energy for a continuous period of twelve months shall be considered abandoned and shall be removed in accordance with the removal provisions of this section. Failure to abide by and faithfully comply with this section or with any and all conditions that may be attached to the granting of any building permit for a wind energy facility shall constitute grounds for the revocation of the permit by the city.

n. A Large Wind Energy Facility owner and operator shall maintain a telephone number and identify a responsible person for the public to contact with inquiries and complaints throughout the life of the project, and shall provide updated information on such to the city planning division.

(g) *Setbacks.*

(1) The following setbacks and separation requirements shall apply to all Wind Energy Facilities:

a. Each wind turbine associated with a Large Wind Energy Facility shall be set back from the nearest nonparticipating landowner's property line and from any other wind turbine a distance of no less than 1.5 times its total height.

b. Each wind turbine associated with a Small Wind Energy Facility shall be set back from the nearest property line a distance of no less than 1.0 times its total height, except that a wind turbine associated with a Small Wind Energy Facility may be located closer than 1.0 times its total height if approved provided it is demonstrated that such a setback will not have an adverse impact on the adjoining properties. The planning and zoning commission and city council may grant a waiver to the setback requirements where strict enforcement would not serve the public interest and where it is demonstrated that such a setback will not have an adverse impact on the adjoining properties, however the setback shall generally not be less than 0.5 times the total height of the tower structure or any support element of the structure including poles and guy wires.

c. Wind Energy Facilities must satisfy all utility setbacks and/or easement separations. The owner of the Wind Energy Facility is responsible for contacting the appropriate utility entities to determine the location of all above-ground and underground utility lines on the site including, but not limited to, electricity, natural gas, cable television, communication, fiber optic/communications, etc.

(h) *Noise and vibration.*

(1) Except during short-term events including severe windstorms, audible noise due to Wind Energy Facility operations shall not exceed maximum allowable noise decibel levels, when measured at the site property lines. If audible noise exceeds maximum allowable decibel levels as specified in the applicable provisions of this code relating to nuisance and/or noise the offending wind turbine must be inoperable until repairs are completed.

(2) Wind Energy Facilities shall not create an audible steady, pure tone such as a whine, screech, hum, or vibration.

(i) *Minimum ground clearance.*

(1) For Small Wind Energy Facilities, the minimum distance between the ground and any part of the rotor or blade system shall be fifteen (15) feet.

(2) For Large Wind Energy Facilities, the minimum distance between the ground and any part of the rotor or blade system shall be thirty (30) feet.

(j) *Signal interference.*

(1) The Wind Energy Facility owner shall mitigate any interference with electromagnetic communications, such as radio, telephone, computers, communication devices, or television signals, including any public agency radio systems, caused by any Wind Energy Facility. However, in no case shall a wind energy facility be located within the microwave path of an emergency communication tower.

(k) *Shadow flicker.*

(1) The Wind Energy Facility owner shall attempt to avoid shadow flicker from the facility affecting any offsite residences. The Wind Energy Facility owner and/or operator shall make reasonable efforts to minimize or mitigate shadow flicker to any offsite residence to the reasonable determination of the city planner.

(l) *Ice shedding.*

(1) The Wind Energy Facility owner and/or operator shall ensure that ice from the wind turbine blades does not impact any offsite property.

(m) *Waste management.*

(1) All hazardous waste generated by the operation and maintenance of the facility, including, but not limited to lubricating materials, shall be handled in a manner consistent with all local, state, and federal rules and regulations.

(n) *Removal:*

(1) *Wind Energy Facility or Tower removal.* The tower owner and/or operator shall notify the City of Cedar Falls Inspection Services Division when a tower is removed, no longer in use, or is knocked down, or blown down, or damaged to such an extent that major structural repairs are required. If a tower is removed, knocked down, blown down, or damaged to such an extent that major structural repairs are required, said tower shall not be reconstructed or replaced without prior review and approval by the planning and zoning commission and city council. If said damaged wind energy facility or tower is abandoned or inoperable with no intention by the owner to replace said facility, the facility or tower shall be removed in a timely fashion at the expense of the facility or tower owner or the property owner where the facility is located, as directed by the city planner. Any wind energy facility or tower that is not operated for a continuous period of 12 months shall be considered abandoned, and the owner of such wind energy facility or tower shall remove the same within 90 days of receipt of notice from the city notifying both the wind facility owner and the owner of the property on which the win facility or tower is located, of such abandonment. Failure of the owner or property owner to remove an abandoned wind energy facility or tower within said 90 days shall be grounds for the city to require removal of the facility or tower at the expense of the facility owner or property owner. If there are two or more users of a single facility, then this provision shall not become effective until all users cease using the wind energy facility. If the city is required to remove a facility at the expense of the owner or property owner, the costs of removal, if not paid by the wind energy facility owner, or by the owner of the property on which the tower is located, within 30 days of the city's written demand for payment, shall be reported to the city clerk, who shall levy the cost thereof as an assessment, which shall be a lien on the real estate on which the wind energy facility or tower is located. The city clerk shall certify such assessments to the county auditor to be paid by the owner of the property on which the facility is located, in installments in the same manner as property taxes, as provided by law.

(2) The Wind Energy Facility site shall be stabilized, graded, and cleared of any debris by the owner of the facility or its assigns. If the site is not to be used for agricultural practices following removal, the site shall be seeded to prevent soil erosion.

(3) Any foundation of the Wind Energy Facility shall be removed to a minimum depth of four (4) feet below grade, or to the level of the bedrock if less than four (4) feet below grade, by the owner of the facility or its assigns. Following removal, the location of any remaining Wind Energy Facility foundation shall be identified on a map as such and recorded with the deed to the property with the Office of the Black Hawk County Recorder.

(4) Any access roads to the Wind Energy Facility shall be removed, cleared, and graded by the owner of the facility, unless the property owner wants to keep the access road. The city will not be assumed to take ownership of any access road unless through official action of the city council.

(5) Any expenses related to the decommissioning and removal of a Wind Energy Facility shall be the responsibility of the Wind Energy Facility owner, including any expenses related to releasing any easements.

(6) Removal of the Wind Energy Facility shall conform to the contract between the property owner and the owner/operator of a Wind Energy Facility, in addition to the requirements set forth in this section.

(o) *Violation and permit revocation.*

(1) All Wind Energy Facilities shall be maintained in operational condition at all times, subject to reasonable maintenance and repair outages. Operational condition includes meeting all noise requirements and other permit conditions. Should a Wind Energy Facility become inoperable, or should any part of the Wind Energy Facility be damaged, or should a Wind Energy Facility violate a permit condition, the owner/operator shall remedy the situation within three (3) months after written notice from the city.

(2) Notwithstanding any other abatement provision, if the Wind Energy Facility is not repaired or made operational or brought into compliance after said notice, the city council may, after a public meeting at which the operator or owner shall be given opportunity to be heard and present evidence, including a plan to come into compliance, (1) order either remedial action within a specified timeframe, or (2) order revocation of the permit and require removal of the Wind Energy Facility within three (3) months.

(3) Any Wind Energy Facility that does not meet the requirements of this section, including, but not limited to those dealing with noise, height, setback, or visual appearance, or does not meet any conditions attached to approval of the Wind Energy Facility shall be deemed an unlawful structure and shall provide grounds for the revocation of the permit.

(Ord. No. 2755, § 1, 12-27-11)

Sec. 29-128. - Prohibition on conversion of single-~~family~~unit residences located in R-1 and R-2 residence districts to two-~~family~~unit dwelling units.

Notwithstanding the provisions of any other section of this chapter, no existing single-~~family~~unit residential structure located in a R-1 residence zoning district or in a R-2 residence zoning district of the city shall be converted or otherwise structurally altered or expanded for the purpose of accommodating the creation or establishment of a second separate dwelling unit within, around or adjacent to the original single-~~family~~unit residential structure.

(Ord. No. 2806, § 1, 4-28-14)

Secs. 29-129—29-140. - Reserved.

DIVISION 2. - SPECIFIC DISTRICTS

Sec. 29-141. - A-1 agricultural district.

(a) *Purpose:* The purpose of the A-1, Agricultural Zoning District is to act as a "holding zone" in areas of the city that are undeveloped and not served by essential municipal services (i.e.: sanitary sewer, water, roadways) but where future growth and development is anticipated according to the city plan. No use shall be installed or established within the Agricultural Zone that in the judgement of the planning and zoning commission or the city council will discourage or inhibit normal commercial or residential urban growth and development patterns as indicated by the city plan.

(b) *Principal permitted uses.* The following listed uses are permitted:

(1) Agricultural uses and the usual agricultural accessory structures as limited herein. Minimum parcel size: 20 acres.

Typical agricultural uses shall include, but not necessarily be limited to, land based production activities including grains, small grains, hay, legumes, vegetables, fruits, orchards, and other specialty crops including seeds, tubers, roots and bulbs provided that said crops are not considered nuisance or hazardous crops by the Iowa Department of Agriculture. On-farm facilities shall be permitted for the storage, drying, processing, and finishing for commercial purposes products produced on-farm.

Animal production, including breeding, feeding and finishing for private or commercial use shall be allowed within the limitations specified herein.

(a) Agricultural accessory structures shall be those facilities or buildings normally associated with and generally essential to the operation of an agricultural use. Such structures or facilities shall include, but not be limited to:

- Machine sheds,
- Storage sheds, granaries,
- Grain bins for the storage of on-farm produced crop products, silos, animal housing facilities, animal feeding floors, repair shop, paddocks, etc.

(b) Enclosed, unenclosed, or partially enclosed animal feedlots or other animal housing facilities shall be considered to be accessory structures to a principal permitted agricultural use. Prior to the establishment of such accessory structures involving any number or species of animals, detailed building, management, and business plans shall be submitted for review by the planning and zoning commission and the city council. No animal feedlot or animal housing facility shall be established that, in the judgement of the city council does not meet recognized principles of sound land use planning or that will have a negative impact upon the quality of life of the residents of Cedar Falls.

No animal feedlot or animal housing facility shall be established within one quarter (¼) mile from the nearest off-site residence as measured from property line to property line.

(c) *Nonconforming animal facilities.*

1. No existing animal feedlot or animal housing facility shall be expanded, reconstructed, or structurally altered without the prior review and approval of the planning and zoning commission and the city council. Said change or use shall not be permitted if, in the judgment of the city council, the proposal does not meet recognized principles of sound land use planning or that will have a negative impact upon the quality of life of the residents of Cedar Falls.
2. If an existing animal feedlot or animal housing facility is discontinued for a period of one year the premises shall not be reestablished for such use without the prior review and approval of the planning and zoning commission and the city council. Said change or use shall not be permitted if, in the judgement of the city council, the proposal does not meet recognized principles of sound land use planning or that will have a negative impact upon the quality of life of the residents of Cedar Falls.

(2) Nurseries, greenhouses for commercial purposes provided that the tract contains at least five acres.

(3) Riding stables for commercial or recreational uses provided that:

(a) The parcel measures at least 10 acres in area.

(b) Animal density is limited to no less than 5,000 sq. ft. per adult animal as measured within the principal animal holding areas.

(c) The use is established at least one quarter (¼) mile from the nearest residence as measured from property line to property line.

(4) Agricultural infrastructure facilities including grain elevators, commercial feed outlets, farm supply stores, truck and animal weigh stations, agricultural chemical or fuel bulk and storage facilities provided that:

(a) The facility is located on a parcel measuring at least five acres in area.

(5) Mining and extraction of minerals or raw materials subject to review and approval of a business plan, environmental plan, and land rehabilitation recovery plan by the planning and zoning commission and the city council provided that:

(a) The use is established at least one mile from the nearest residence as measured from property line to property line.

(b) The owner and/or his/her successors agree to leave or rehabilitate the land to a condition suitable for typical urban development (including recreational) patterns and uses in conformance with the long range city land use plan.

(6) Airports and landing fields in conformance with FAA guidelines and requirements.

(7) Forest and forestry.

(a) A business plan including planting/harvesting plan is submitted for review and approval by the planning and zoning commission and the city council.

(8) Parks, playgrounds, golf courses, both public and private, and other recreational uses such as nature trails, bicycle trails or snowmobile trails, but excluding gun or shooting ranges, auto race tracks or other motorized vehicle racing areas or challenge courses.

(9) Public utility structures and equipment for the operation thereof.

(10) Radio and television transmitting stations and related accessory structures provided that:

(a) Setbacks as measured from the property line to the base of the tower or to the base of support structures extending from the tower, whichever is nearest to the property line, shall be at least 100 feet.

(b) The facility shall be located at least one quarter (¼) mile from any residence as measured from property line to property line.

(11) Residential dwellings, limited to no more than one-~~family~~unit or one two-~~family~~unit dwelling, may be permitted only in the following circumstances:

(a) Incidental to the following principal permitted uses:

1. Agriculture (20 acres minimum lot area).

(b) If located on a lot of record as of August 1, 1979 with a minimum lot area of three acres.

(12) *Mandatory review.* Prior to the establishment of any principal permitted use or any accessory use related to animal housing facilities said request with detailed site plan and description of operation shall be submitted to the planning and zoning commission for review and recommendation to the city council. Said use shall not be permitted if, in the judgement of the city council, the proposal does not meet recognized principles of sound land use planning or that will have a negative impact upon the quality of life of the residents of Cedar Falls.

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(13) *Lot area, frontage and yards.* Minimum lot area, lot frontage and yard requirements for the A-1 agricultural district shall be as follows:

Use	Lot Area	Lot Width	Lot Area per ~~Family~~Unit	Front Yard Depth	Side Yard Widths (Least Width on Any One Side)	Rear Yard Depth
Dwellings				50 ft.	50 ft.	50 ft.
Other permitted uses				50 ft.	50 ft.	50 ft.

The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way lines as shown on the official major street plan.

(Code 1971, § 32-29.1; Ord. No. 2053, § 1, 4-25-94)

Sec. 29-142. - R-1SU~~F~~ single-~~family~~unit residence district.

In the R-1SU~~F~~ single-~~family~~unit residence district, the following provisions, regulations and restrictions shall apply:

(1) *Principal permitted uses.* Principal permitted uses are as follows:

a. Single-~~family~~unit dwellings.

b. Churches and accessory buildings, upon approval of the city council after recommendation of the city planning and zoning commission.

c. Private noncommercial recreational areas and facilities, swimming pools, and institutional or community recreation centers, including country clubs and golf courses.

d. Group homes.

(2) *Accessory uses.* Permitted accessory uses are as follows:

a. Private garages, tool storage, fences and other incidental uses. Stables and the keeping of animals are not a permissible accessory use.

b. Temporary buildings for uses incidental to construction work, which buildings shall be removed upon the completion or abandonment of the construction work.

c. Home occupations.

(3) *Height regulations.* No building shall exceed 2½ stories or 35 feet in height, whichever is lower, and no accessory structure shall exceed one story or 18 feet in height, whichever is lower.

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(4) *Lot area, frontage and yards.* Minimum lot area, frontage and yard requirements for the R-1SU~~F~~ single-~~family~~unit residence district shall be as follows:

Use	Lot	Lot	Lot Area per	Front Yard	Side Yard Width	Rear Yard

	Area	Width	~~Family~~Unit	Depth [1]	[2] (Least on Any One Side)	Depth
Single-~~family~~unit	9,000 sq. ft.	75 ft.	9,000 sq. ft.	30 ft.	10% of lot width	30 ft.
Other permitted uses	10,000 sq. ft.	80 ft.	—	35 ft.	10% of lot width	35 ft.

[1] The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way lines as shown on the official street plan.

[2] Where structures do not exceed 2½ stories or 35 feet in height, the maximum side yard required need not exceed 20 feet.

(Code 1971, § 32-29.1)

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Sec. 29-143. - R-1 residence district.

In the R-1 residence district, the following provisions, regulations and restrictions shall apply:

(1) *Principal permitted uses.* Principal permitted uses are as follows:

a. One- and two-~~family~~unit dwellings.

b. Churches and accessory buildings, upon approval of the city council after recommendation of the city planning and zoning commission.

c. Public and parochial schools, elementary and high, and other educational institutions having an established current curriculum the same as ordinarily given in city public schools.

d. Private noncommercial recreational areas and facilities, swimming pools, and institutional or community recreation centers, including country clubs and golf courses.

e. Farming and truck gardening, but not on a scale that would be obnoxious to adjacent areas because of noise or odors.

f. Group homes.

(2) *Accessory uses.* Permitted accessory uses are as follows:

a. Private garages, tool storage, fences and other incidental uses.

b. Temporary buildings for uses incidental to construction work, which buildings shall be removed upon the completion or abandonment of the construction work.

c. Home occupations.

d. Stables, noncommercial, where there exists an area devoted to such purposes of 20,000 square feet, with an additional 10,000 square feet per animal exceeding two in number housed or tethered, and provided further than no structure or building for the stabling of animals or tethering area shall be closer than 50 feet to the abutting residential properties. The area devoted to such uses shall be kept in a clean and sanitary condition.

(3) *Height regulations.* No building shall exceed 2½ stories or 35 feet in height, whichever is lower.

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(4) *Lot area, frontage and yards.* Minimum lot area, frontage and yard requirements for the R-1 residential district shall be as follows:

Use	Lot Area	Lot Width	Lot Area per ~~Family~~Unit	Front Yard Depth [1]	Side Yard Width (Least on Any One Side) [2]	Rear Yard Depth
One-~~family~~unit dwellings	9,000 sq. ft.	75 ft.	9,000 sq. ft.	30 ft.	10% of lot width	30 ft.
Two-~~family~~unit dwellings	10,000 sq. ft.	80 ft.	5,000 sq. ft.	30 ft.	10% of lot width	30 ft.
One-~~family~~unit bi-attached dwellings	5,000 sq. ft.	40 ft.	5,000 sq. ft.	30 ft.	20% of lot width	30 ft.
Other permitted uses	10,000 sq. ft.	80 ft.	—	35 ft.	10% of lot width	35 ft.

[1] The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way lines as shown on the official major street plan.

[2] Where structures do not exceed 2½ stories or 35 feet in height, the maximum side yard required need not exceed 20 feet.

(Code 1971, § 32-30; Ord. No. 2023, § 8, 8-23-93; Ord. No. 2265, § 3, 6-28-99)

Sec. 29-144. - R-2 residence district.

In the R-2 residence district, the following provisions, regulations and restrictions shall apply:

(1) *Principal permitted uses.* Principal permitted uses are any use permitted in the R-1 residence district, but not including animal and poultry husbandry on any lands used or platted for residential purposes.

(2) *Accessory uses.* Permitted accessory uses are as follows:

a. Any accessory use permitted in the R-1 district with the exception of noncommercial stables.

b. Family day care homes. The offstreet parking area required of the principal residence shall suffice.

(3) *Height regulations.* Height regulations are the same as specified in the R-1 residence district.

(4) *Lot area, frontage and yards.* Minimum lot area, lot frontage and yard requirements for the R-2 residence district shall be as follows:

Use	Lot Area	Lot Width	Lot Area per ~~Family~~Unit	Front Yard Depth [1]	Side Yard Width (Least on Any One Side) [2]	Rear Yard Depth
One-~~family~~unit	7,200 sq. ft.	60 ft.	7,200 sq. ft.	25 ft.	10% of lot width	30 ft.
Two-~~family~~unit	8,000 sq. ft.	70 ft.	4,000 sq. ft.	25 ft.	10% of lot width	30 ft.
One-~~family~~unit bi-attached dwellings	4,000 sq. ft.	35 ft.	4,000 sq. ft.	25 ft.	20% of lot width	30 ft.
Other permitted uses	10,000 sq. ft.	80 ft.	—	35 ft.	10% of lot width	35 ft.

[1] The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way lines as shown on the official major street plan.

[2] Where structures do not exceed 2½ stories or 35 feet in height, the maximum side yard required need not exceed 20 feet.

(Code 1971, § 32-31; Ord. No. 2319, §§ 1, 2, 1-8-01)

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Sec. 29-145. - R-3 multiple residence district.

In the R-3 residence district, the following provisions, regulations, and restrictions shall apply:

(1) *Principal permitted uses.* Principal permitted uses are as follows:

a. Any use permitted in the R-2 district.

b. Multiple dwellings, including condominiums and row dwellings.

c. Boardinghouses and lodginghouses.

d. Institutions of a religious, educational or philanthropic nature, including libraries.

e. Hospitals, day nurseries and nursing and convalescent homes, excepting animal hospitals and clinics.

f. Private clubs, fraternities, sororities and lodges, excepting those the principal activity of which is a service customarily carried on as a business.

(2) *Accessory uses.* Permitted accessory uses are as follows:

a. Accessory uses permitted in the R-2 district.

b. Other accessory uses and structures, not otherwise prohibited, customarily accessory and incidental to any permitted principal use.

c. Storage garages for personal belongings and tools relevant to the maintenance of buildings, where the lot is occupied by multiple dwelling, hospital or institutional building.

(3) *Height regulations.* No principal building shall exceed three stories or 45 feet in height, whichever is lower, except that additional height for additional stories may be added at the rate of two feet in height for each one foot that the building or portion thereof is set back from the required yard lines.

(4) *Lot area, frontage and yards.* Minimum lot area, lot frontage and yard requirements for the R-3 multiple residence district shall be as follows:

Use	Lot Area	Lot Width	Lot Area per ~~Family~~Unit	Front Yard Depth [1]	Side Yard Width [2]	Rear Yard Depth
One-~~family~~unit	7,200 sq. ft.	60 ft.	7,200 sq. ft.	25 ft.	10% of lot width	30 ft.
Two-~~family~~unit	8,000 sq. ft.	70 ft.	4,000 sq. ft.	25 ft.	10% of lot width	30 ft.
One-~~family~~unit bi-attached dwellings	4,000 sq. ft.	35 ft.	4,000 sq. ft.	25 ft.	20% of lot width	30 ft.
Multi~~family~~unit	10,000 sq. ft.	80 ft.	2,500 sq. ft.	30 ft.	10% of lot width	30 ft.
Other permitted uses	10,000 sq. ft.	80 ft.	—	35 ft.	10% of lot width	35 ft.

[1] The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way lines as shown on the official major street plan.

[2] Where structures do not exceed 2½ stories or 35 feet in height, the maximum side yard required need not exceed 20 feet.

(Code 1971, § 32-32)

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Sec. 29-146. - R-4 multiple residence district.

In the R-4 residence district, the following provisions, regulations and restrictions shall apply:

(1) *Principal permitted uses.* Principal permitted uses are as follows:

a. Any use permitted in the R-3 district.

b. Funeral homes and mortuaries.

c. Hotels, motels and auto courts, in which retail shops may be operated for convenience of the occupants of the building; provided, however, that there shall be no entrance to such place of business except from the inside of the building, nor shall any display of stock or goods for sale be so arranged that it can be viewed from the outside of the building.

d. Offices such as the following:

1. Accountants.
2. Architects.
3. Art schools.
4. Artists.
5. Barbershops.
6. Beauty shops.
7. Church offices.
8. Civil engineers.
9. Collection agencies.
10. Credit bureaus.
11. Dental offices.
12. Entertainment bureaus.
13. Insurance offices.
14. Lawyers.
15. Medical offices with dispensary.
16. Nurses registries.
17. Public stenographers.
18. Psychologists.
19. Real estate offices.
20. Other similar uses, subject to review by the city planning and zoning commission and approval of the city council.

e. Tourist home.

f. Mobile home park.

(2) *Accessory uses.* Permitted accessory uses are accessory uses permitted in the R-3 district.

(3) *Height regulations.* No building shall exceed three stories or 45 feet in height, whichever is lower, except that additional height for additional stories may be added at the rate of two feet in height for each one foot that the building or portion thereof is set back from the required yard lines.

(4) *Lot area, frontage and yards.* Minimum lot area, lot frontage and yard requirements for the R-4 multiple residence district shall be as follows:

					Side Yard Width [4]		
Use	Lot Area	Lot Width	Lot Area per ~~Family~~Unit	Front Yard Depth [1]	Least on Any One Side	Minimum Sum of Both Sides	Rear Yard Depth
One-~~family~~unit	6,000 sq. ft.	60 ft.	6,000 sq. ft.	20 ft.	10% of lot width	—	30 ft.
Two-~~family~~unit	7,200 sq. ft.	60 ft.	3,600 sq. ft.	20 ft.	10% of lot width	—	30 ft.
One-~~family~~unit bi-attached dwellings	4,000 sq. ft.	30 ft.	4,000 sq. ft.	20 ft.	20% of lot width		30 ft.
Multi~~family~~unit and other permitted uses:							
1 and 1½ stories	8,000 sq. ft.	65 ft.	2,000 sq. ft. for the first 4 units, plus	20 ft.	8 ft.	16 ft.	35 ft.
2 and 2½ stories	8,000 sq. ft.	65 ft.	850 sq. ft. per unit on 1st, 2nd and 3rd floors, and	20 ft.	10 ft.	22 ft.	35 ft.
3 stories	8,000 sq. ft.	70 ft.	450 sq. ft. per unit above 3rd floor	20 ft.	10 ft.	25 ft.	35 ft.
4 or more stories	10,000 sq. ft.	80 ft.	See subsection 29-146(3) for yard requirements				
Motels and auto courts [2]	1 acre	100 ft.	1,500 sq. ft. per unit	25 ft.	20 ft.	40 ft.	40 ft.

Mobile home parks [2, 3]	20 acres	100 ft.	3,500 sq. ft. per unit	25 ft.	20 ft.	40 ft.	40 ft.

[1] The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way lines as shown on the official major street plan.

[2] All access drives to motels, auto courts and mobile home parks shall be of all-weather, dustfree surfacing. Yard requirements for motels, auto courts and mobile home parks apply to total area and not individual units. Side yard requirements for motels, auto courts and mobile home parks may be reduced to ten feet where such motel, court or park abuts a less restrictive zoning district.

[3] Where any boundary of a mobile home park directly abuts property which is improved with a permanent residential building located within 25 feet of such boundary, or directly abuts unimproved property which may, under existing laws and regulations, be used for permanent residential construction, a fence, wall or hedge shall be provided along such boundary.

[4] For one- and two-~~family~~unit dwellings where the structures do not exceed 2½ stories or 35 feet in height, the maximum side yard required need not exceed 20 feet.

(Code 1971, § 32-33)

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Sec. 29-147. - R-5 residence district.

In the R-5 residence district, the following provisions, regulations and restrictions shall apply:

(1) *Purpose.* The R-5 residence district is to provide for longterm low-density residential uses of a semisuburban character which provide for ultimate design densities compatible with public health and safety regulations and the land use plan.

(2) *Principal permitted uses.* Principal permitted uses are any use permitted in the R-1 residence district, except two-~~family~~unit dwellings.

(3) *Accessory uses.* Permitted accessory uses are any accessory use permitted in the R-1 residence district.

(4) *Height regulations.* Height regulations are the same as specified for the R-1 residence district.

(5) *Lot area, frontage and yards.* Minimum lot area, lot frontage and yard requirement for the R-5 residence district shall be as follows:

Use	Lot Area	Lot Width	Lot Area per ~~Family~~Unit	Front Yard Depth [1]	Side Yard Depth	Rear Yard Depth
One-~~family~~unit	3 acres [2]	100 ft.	43,560 sq. ft.	50 ft. [3]	20 ft.	50 ft. [3]

Other permitted uses	3 acres [2]	100 ft.		50 ft. [3]	20 ft.	50 ft. [3]

[1] The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way line as shown in the official major street plan.

[2] Minimum lot area may be reduced to no less than one acre by the city council following recommendation by the planning and zoning commission. Acceptance of the lot area reduction shall be in accordance with long range land use plans, platting standards, soil conditions, sewer availability (longterm and short range), water availability, adopted large lot development policies of the city, and existing and future street condition and access.

[3] No access shall be granted on any major thoroughfare shown on the official street plan unless no other prudent alternative is available. In all cases, the building setback lines shall be measured from the proposed right-of-way line of the thoroughfare.

(Code 1971, § 32-33.1)

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Sec. 29-148. - S-1 shopping center district.

In the S-1 shopping center district, the following provisions, regulations and restrictions shall apply:

(1) *Purpose.* The S-1 district is intended to provide for the development of shopping centers. For the purpose of this section, the term "shopping center" shall mean a planned retail and service area under single ownership, management or control characterized by a concentrated grouping of stores and compatible uses, with various facilities designed to be used in common, such as ingress and egress roads, extensive parking accommodations, etc.

(2) *Procedures.* The owner of any tract of land comprising an area of not less than five acres shall submit to the city planning and zoning commission and city council, in addition to the requirements of subsection 29-4(b), a plan for the commercial use and development of such tract for the purpose of meeting the requirements of this section. The city planning and zoning commission shall review the conformity of the proposed development with the standards of the comprehensive plan and with recognized principles of civic design, land use planning and landscaping architecture. The commission may approve the plan as submitted or, before approval, may require that the applicant modify, alter, adjust or amend the plan as the commission deems necessary to the end that it preserve the intent and purpose of this chapter to promote public health, safety, morals and general welfare. The plan shall be accompanied by evidence concerning the feasibility of the project and its effects on surrounding property and shall include each of the following:

a. A site plan defining the areas to be developed for buildings, the areas to be developed for parking, the location of sidewalks and driveways and the points of ingress and egress, including access streets where required, the location and height of walls, the location and type of landscaping, and the location, size and number of signs.

b. An analysis of market conditions in the area to be served, including the types and amount of service needed and general economic justification.

c. A traffic analysis of the vicinity indicating the effect of the proposed shopping center on the adjacent streets.

d. A statement of financial responsibility or reasonable financial arrangements or potential to ensure construction of the shopping center, including landscaping, in accordance with the plan and the requirements of this section.

A copy of such plan shall be filed with the building official and maintained as a permanent part of the records of the city.

(3) *Standards.* Uses permitted in the S-1 district shall include any use permitted in the C-3 district and as limited by this district; provided, however, that the council may consider any additional restrictions proposed by the owner. The lot area, lot frontage and yard requirements of the C-2 district shall be considered minimum for the S-1 district; however, it is expected that these minimums will be exceeded in all but exceptional situations. Buildings may be erected to heights greater than those allowed in the C-2 district in accordance with the intent and purpose of this section.

(4) *Completion.* The construction of the shopping center and improvements shall be completed within a reasonable period of time; provided, however, that, in the determination of such period, the scope and magnitude of the project and any schedule or timetable submitted by the developer shall be considered. Failure to complete the construction and improvement within such period of time shall be deemed sufficient cause for the rezoning of the property as provided in subsection 29-4(b).

(5) *Changes and modifications.*

a. *Major.* All changes, modifications or amendments to the plans for the commercial use and development of property in the S-1 zone, deemed to be substantial by the planning and zoning staff after city approval of the plans, shall be resubmitted and considered in the same manner as originally required. Examples of major modifications include but are not limited to the following: new building construction, vehicular access rerouting, significant parking changes and general design and orientation changes.

b. *Minor.* Minor changes, modifications or amendments to the plans for the commercial use and development of property in the S-1 zone shall be administratively reviewed by the planning and zoning staff. If the change is deemed insignificant in nature, the staff may recommend to the council that the change be approved without the benefit of a mandatory review before the planning and zoning commission. The council may approve such change, or may determine that the magnitude of the change is significant in nature and requires that the appropriate plat or plan be resubmitted and considered in the same manner as originally required. Changes pertaining to the location, construction or replacement of signs shall be administratively reviewed and approved by the planning and zoning staff. If the staff deems that sign changes are significant in nature, it may submit the proposal to the council for review and approval.

(6) *Existing shopping centers.* Shopping centers in existence at the time of the passage of this chapter which are zoned S-1 by this chapter shall be considered as having met all the requirements of this section. All new construction, additions, enlargements, etc., to structures within these shopping centers shall be in accord with the use and bulk regulations of the C-2 district, except in cases where more restrictive controls have been imposed by agreement between the city and the property owners involved.

(Code 1971, § 32-34)

Sec. 29-149. - C-1 commercial district.

In the C-1 commercial district, the following provisions, regulations and restrictions shall apply. For the purpose of this section, a C-1 commercial district is defined as a commercial district adjacent to residence districts in which such uses are permitted as are normally required for the daily local retail business needs of the residents of the locality.

(1) *Principal permitted uses.* Principal permitted uses are as follows:

a. Any non-residential use permitted in the R-4 district.

b. Residential uses subject to review by the planning and zoning commission and approval by the city council of a development site plan and other required elements as specified herein. A development site plan must be submitted which clearly illustrates the proposed residential facility, on-site parking, building setbacks and prevailing topography along with an illustration of surrounding land uses, roadways, streets and utility services within 200 feet of the development site. The proposed residential use must be in conformance with standards of the comprehensive plan and recognized principles of civic design, land use planning and landscape architecture. The commission and city council shall consider the appropriateness of the residential use with respect to considerations for protection and preservation of existing commercial zoning districts for commercial uses in the city. In addition, provisions for adequate access for vehicles and pedestrians, including sidewalk provision, shall be clearly illustrated and provided. Impacts upon local municipal services such as sanitary sewer, storm sewer and other utility needs shall be considered. Certain amenities appropriate for residential uses such as open green space, landscaping, and outdoor recreation areas shall be provided in order to be generally consistent with other similar residential developments. Storm water run-off and soil erosion controls shall be established in accordance with city regulation. Building design shall be of an appropriate architectural design and utilize similar building materials compared to similar residential facilities in residential zoning districts. Signage shall be limited and of a size, height and scale normally allowed in typical residential neighborhoods. Commercial scale signage shall not be allowed for residential uses in commercial districts. Minimum required building and parking lot setbacks shall generally conform to those requirements specified in the R-4 district. However, these standards may be modified by the city council in consideration of special circumstances of the property in question. Lot area and density standards shall generally conform to standards outlined in the R-4 district. Construction of the proposed residential development must commence (i.e., city building permits secured) within one year following city council approval, or the original approval shall be void and the application shall be resubmitted to the planning and zoning commission and the city council, to review any changes in local conditions.

c. Any local retail business or service establishment such as the following:

1. Animal hospital or veterinary clinic, provided all phases of the business conducted upon the premises be within a building where noises and odors are not evident to adjacent properties.

2. Antique shop.

3. Apparel shop.

4. Bakery whose products are sold only at retail and only on the premises.

5. Financial institution.

6. Barbershop or beauty parlor.

7. Bicycle shop, sales and repair.

8. Bookstore.

9. Candy shops, where products are sold only at retail and only on the premises.

10. Clothes cleaning and laundry pickup station.

11. Collection office of public utility.

12. Commercial parking lots for passenger vehicles in accordance with the provisions in subsections 29-177(d) and (e).

13. Dairy store, retail.
14. Dance or music studio.
15. Drapery shop.
16. Drugstore.
17. Filling station.
18. Florist and nursery shop, retail.
19. Fruit and vegetable market.
20. Furniture store.
21. Gift shop.
22. Grocery and delicatessen.
23. Hardware store.
24. Hobby shop.
25. Household appliances, sales and repair.
26. Ice storage and distributing station of not more than five-ton capacity.
27. Jewelry shop.
28. Key shop.
29. Landscape gardener.
30. Launderette.
31. Locker plant for storage and retail sales only.
32. Music store.
33. Paint and wallpaper store.
34. Post office substation.
35. Photographic studio.
36. Radio and television sales and service.
37. Restaurant, cafe and soda fountain.
38. Shoe repair shop.
39. Sporting goods store.
40. Tailor shop.
41. Theaters.
42. Variety store.

d. Business or professional offices and the like, supplying commodities or performing services primarily for residents of the neighborhood.

(2) *Accessory uses.*

a. The following accessory uses are permitted in a C-1 district in which the contiguous area of such C-1 district is ten acres or less:

1. Accessory uses permitted in the R-4 district.
2. Storage of merchandise incidental to the principal use, but not to exceed 40 percent of the floor area used for such use.

b. The following accessory uses are permitted in a C-1 district in which the contiguous area of such C-1 district is more than ten acres:

1. Accessory uses permitted in the R-4 district.

2. Storage of merchandise incidental to the principal use, but not to exceed 40 percent of the floor area used for such use.

(3) *Height regulations.* No building shall exceed two stories or 35 feet in height, whichever is lower.

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(4) *Lot area, frontage and yards.* Minimum lot area, lot frontage and yard requirements for the C-1 commercial district shall be as follows:

					Side Yard Width		
Use	Lot Area	Lot Width	Lot Area per ~~Family~~Unit	Front Yard Depth [1]	Least Width on Any One Side	Minimum Sum of Both Side Yards	Rear Yard Depth
Dwellings				Same as specified in the R-4 district			
Motels and auto courts				Same as specified in the R-4 district			
Mobile home parks	5 acres	100 ft.	3,500 sq. ft. per unit	25 ft.	25 ft. [2]	50 ft.	25 ft. [2]
Other permitted uses				25 ft.	None required except when adjoining any R district, in which case not less than 10 ft.		No less than 10 feet

[1] The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way lines as shown on the official major street plan.

[2] Where the adjoining land use (existing or permitted) is a nonresidential use, visual barriers of a size and character to ensure reasonable privacy and visual appeal (e.g., solid or louvered fencing, or open fencing with appropriate planting) shall be provided at a distance of not less than 20 feet from the nearest unit by the park developers.

(Code 1971, § 32-35; Ord. No. 2241, § 1, 9-28-98; Ord. No. 2782, § 1, 11-26-12)

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Sec. 29-150. - C-2 commercial district.

In the C-2 commercial district, the following provisions, regulations and restrictions shall apply:

(1) *Principal permitted uses.* Principal permitted uses are as follows:

a. Any use permitted in the C-1 district.

b. Animal hospitals, veterinary clinics or kennels; provided any exercising runway shall be at least 200 feet from any R district and 100 feet from any C-1 district boundary.

c. Automobile, motorcycle, trailer and farm implement establishments for display, hire and sales, including sales lots, including as incidental to these major uses all repair work in connection with their own and customers' vehicles, but not including uses in which the major source of revenue is from body and fender work. In addition, this subsection shall not be construed to include automobile, tractor or machinery wrecking and rebuilding and used parts yards.

d. Ballrooms and dancehalls.

e. Billiard parlors and pool halls.

f. Bookbinding.

g. Bowling alleys.

h. Carpenter and cabinet shops.

i. Clothes dry cleaning and dyeing establishments using flammable cleaning fluids with a flash point higher than 100 degrees Fahrenheit.

j. Commercial baseball fields, swimming pools, skating, golf driving ranges or similar open air recreational uses and facilities.

k. Drive-in eating and drinking establishments, summer gardens and roadhouses, including entertainment and dancing, provided the principal building is distant at least 100 feet from any R district.

l. Laundries.

m. Lawn mower repair shops.

n. Lumberyards, retail, but not including any manufacturing or fabricating for wholesale operations.

o. Monument sales yards.

p. Offices, business and professional.

q. Pet shops, including sales of aquariums.

r. Plumbing and heating shops.

s. Printing shops, not to include more than two 12-inch by 18-inch job presses.

t. Sheet metal shops.

u. Sign painting shops.

v. Taverns and restaurants.

w. Mobile home parks.

x. Used auto sales lots or any similar use.

y. Photo processing establishments using flammable fluids with a flash point higher than 100 degrees Fahrenheit and utilizing a floor area no longer than 20,000 square feet.

z. Residential uses subject to review by the planning and zoning commission and approval by the city council of a development site plan and other required elements as specified herein.

A development site plan must be submitted which clearly illustrates the proposed residential facility, on-site parking, building setbacks and prevailing topography along with an illustration of surrounding land uses, roadways, streets and utility services within 200 feet of the development site. The proposed residential use must be in conformance with standards of the comprehensive plan and recognized principles of civic design, land use planning and landscape architecture. The commission and city council shall consider the appropriateness of the residential use with respect to considerations for protection and preservation of existing commercial zoning districts for commercial uses in the city. In addition, provisions for adequate access for vehicles and pedestrians, including sidewalk provision, shall be clearly illustrated and provided. Impacts upon local municipal services such as sanitary sewer, storm sewer and other utility needs shall be considered. Certain amenities appropriate for residential uses such as open green space, landscaping, and outdoor recreation areas shall be provided in order to be generally consistent with other similar residential developments. Storm water run-off and soil erosion controls shall be established in accordance with city regulation. Building design shall be of an appropriate architectural design and utilize similar building materials compared to similar residential facilities in residential zoning districts. Signage shall be limited and of a size, height and scale normally allowed in typical residential neighborhoods. Commercial scale signage shall not be allowed for residential uses in commercial districts. Minimum required building and parking lot setbacks shall generally conform to those requirements specified in the R-4 district. However, these standards may be modified by the city council in consideration of special circumstances of the property in question. Lot area and density standards shall generally conform to standards outlined in the R-4 district. Construction of the proposed residential development must commence (i.e. city building permits secured) within one year following city council approval, or the original approval shall be void and the application shall be resubmitted to the planning and zoning commission and the city council, to review any changes in local conditions.

aa. Mini-storage warehouse, upon site plan review and approval by the planning and zoning commission and city council of the City of Cedar Falls, Iowa. This use must conform to the standards of the comprehensive plan, recognized principles of civic design, land use planning and landscape architecture.

(2) *Accessory uses.* Permitted accessory uses are as follows:

a. Accessory uses permitted in the C-1 district.

b. Accessory uses and structures customarily incidental to any permitted principal uses.

(3) *Height regulations.* No building shall exceed three stories or 48 feet in height, whichever is lower.

(4) *Lot area, frontage and yards.* Minimum lot area, lot frontage and yard requirements for the C-2 commercial district shall be as follows:

					Side Yard Width		
Use	Lot Area	Lot Width	Lot Area per ~~Family~~Unit	Front Yard Depth [1]	Least Width on Any One Side	Minimum Sum of Both Side Yards	Rear Yard Depth
Dwellings				Same as specified in the R-4 district			
Motels and				Same as specified in the R-4 district			

auto courts							
Mobile home parks	5 acres	100 ft.	3,500 sq. ft.	25 ft.	25 ft. [3]	50 ft.	25 ft. [4]
Other permitted uses				See footnote 2	None, except when adjacent to an R district, in which case not less than 10 ft.		[5]

[1] The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way lines as shown on the official major street plan.

[2] Where all the frontage on one side of the street between two intersecting streets is located in the C-2 commercial district, no front yard shall be required unless a front yard setback is required to meet a proposed right-of-way line. Where the frontage on one side of the street between two intersecting streets is located in the C-2 commercial district, and a C-1 commercial or R residence district, one-half of the front yard requirements of the C-1 commercial or R residential districts shall apply to the C-2 commercial district. Where a lot is located at the intersection of two or more streets, the front yard requirements stated shall apply to each street side of the corner lot, except that the buildable width of such lot shall not be reduced to less than 28 feet. No accessory building shall project beyond the front yard line on either street.

[3] Where a mobile home park has frontage on more than one street, the required front yard depth shall be maintained from all streets.

[4] Where the adjoining land use (existing or permitted) is a nonresidential use, visual barriers of a size and character to ensure reasonable privacy and visual appeal (e.g., walls, solid or louvered fencing, or open fencing with appropriate planting) shall be provided at a distance not less than 20 feet from the nearest unit by the park developers.

[5] No requirement except when adjoining an R District in which case not less than 10 feet.

(Code 1971, § 32-36; Ord. No. 1988, § 2, 9-14-92; Ord. No. 2241, § 2, 9-28-98; Ord. No. 2782, § 2, 11-26-12)

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Sec. 29-151. - C-3 commercial district.

In the C-3 commercial district, the following provisions, regulations and restrictions shall apply:

(1) *Principal permitted uses.* Principal permitted uses are as follows:

a. Any use permitted in the C-2 commercial district.

b. Automobile body or fender repair shop.

c. Department store.

d. Exterminator sales.

e. Lumberyards or building material sales yards.

f. Manufacture or treatment of products clearly incidental to the conduct of a retail business conducted on the premises.

g. Office buildings.

h. Printing or publishing houses.

i. Storage warehouse or business.

j. Tire shop, including vulcanizing and retreading.

k. Wholesale warehouse or business.

l. Residential uses subject to review by the planning and zoning commission and approval by the city council of a development site plan and other required elements as specified herein. A development site plan must be submitted which clearly illustrates the proposed residential facility, on-site parking, building setbacks and prevailing topography along with an illustration of surrounding land uses, roadways, streets and utility services within 200 feet of the development site. The proposed residential use must be in conformance with standards of the comprehensive plan and recognized principles of civic design, land use planning and landscape architecture. The commission and city council shall consider the appropriateness of the residential use with respect to considerations for protection and preservation of existing commercial zoning districts for commercial uses in the city. In addition, provisions for adequate access for vehicles and pedestrians, including sidewalk provision, shall be clearly illustrated and provided. Impacts upon local municipal services such as sanitary sewer, storm sewer and other utility needs shall be considered. Certain amenities appropriate for residential uses such as open green space, landscaping, and outdoor recreation areas shall be provided in order to be generally consistent with other similar residential developments. Storm water run-off and soil erosion controls shall be established in accordance with city regulation. Building design shall be of an appropriate architectural design and utilize building materials compared to similar residential facilities in residential zoning districts. Signage shall be limited and of a size, height and scale normally allowed in typical residential neighborhoods. Commercial scale signage shall not be allowed for residential uses in commercial districts. Minimum required building and parking lot setbacks shall generally conform to those requirements specified in the R-4 district. However, these standards may be modified by the city council in consideration of special circumstances of the property in question. Lot area and density standards shall generally conform to standards outlined in the R-4 district. In the case of a redevelopment of the site, a density bonus may be considered up to one unit per 450 square feet and a maximum height of four stories, provided the total number of bedrooms is no more than what would be permitted when the base density standards of the R-4 district are applied. To determine the base number of bedrooms, multiply the number of units by four. Construction of the proposed residential development must commence (i.e., city building permits secured) within one year following city council approval, or the original approval shall be void and the application shall be resubmitted to the planning and zoning commission and the city council, to review any changes in local conditions.

(2) *Accessory uses.* Permitted accessory uses are accessory uses permitted in the C-2 district.

(3) *Height regulations.* No building shall exceed the cubical content of a prism having a base equal to the area of the lot and a height equal to 165 feet or three times the width of a street on which it faces, whichever is the greater; provided, however, that a tower not to exceed 20 percent of the lot area may be constructed without reference to the limitations set out in this subsection.

(4) *Lot area, frontage and yards.* Minimum lot area, lot frontage and yard requirements for the C-3 commercial district shall be as follows:

					Side Yard Width	
Use	Lot Area	Lot Width	Lot Area per ~~Family~~Unit	Front Yard Depths [1]	Least Width on Any One Side	Minimum Sum of Both Side Yards
Dwellings			Same as specified in the R-4 district			
Mobile home parks			Same as specified in the C-2 district			
Motels and auto courts			Same as specified in the R-4 district			
Other permitted uses					None, except when adjacent to an R district, in which case not less than 15 ft.	None, except when abutting an R district, in which case not less than 25 ft.

[1] None required unless fronting on the proposed right-of-way of a thoroughfare shown on the official major street plan, in which case the building setback line shall be the proposed right-of-way line.

(Code 1971, § 32-37; Ord. No. 2782, § 3, 11-26-12; Ord. No. 2844, § 1, 6-1-15)

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Sec. 29-152. - M-1 light industrial district.

In the M-1 light industrial district, the following provisions, regulations and restrictions shall apply:

(1) *Principal permitted uses.* Permitted principal uses are as follows:

a. Any use permitted in the C-3 district, except that no occupancy permit shall be issued for any dwelling, school, hospital, clinic or other institution for human care, except where incidental to a permitted principal use.

b. Automobile assembly.

c. Bag, carpet and rug cleaning; provided necessary equipment is installed and operated for the effective precipitation or recovery of dust.

d. Bakeries, other than those whose products are sold at retail only on the premises.

e. Welding or other metalworking shops, excluding shops with drop hammers and the like.

f. Contractor's equipment storage yard or plant, or rental of equipment commonly used by contractors, storage and sale of livestock, feed or fuel, provided dust is effectively controlled, and storage yards for vehicles of a delivery or draying service.

g. Carting, express, hauling or storage yards.

h. Circus, carnival or similar transient enterprises, provided such structures or buildings shall be at least 200 feet from any R district.

i. Coal, coke or wood yard.

j. Concrete mixing and concrete products manufacture.

k. Cooperage works.

l. Creamery, bottling works, ice cream manufacturing (wholesale), ice manufacturing and cold storage plant.

m. Enameling, lacquering or japanning.

n. Foundry casting lightweight nonferrous metals, or electric foundry not causing noxious fumes or odors.

o. Flammable liquids, underground storage only, not to exceed 25,000 gallons, if located not less than 200 feet from any R district.

p. Junk, iron or rags, storage or baling, where the premises upon which such activities are conducted are wholly enclosed within a building, wall or fence not less than six feet in height, completely obscuring the activity, but not including automobile, tractor or machinery wrecking or used parts yards.

q. Laboratories, experimental, film or testing.

r. Livery stable or riding academy.

s. Machine shop.

t. Manufacture of musical instruments and novelties.

u. Manufacture or assembly of electrical appliances, instruments and devices.

v. Manufacture of pottery or other similar ceramic products, using only previously pulverized clay and kilns.

w. Manufacture and repair of electric signs, advertising structures and sheetmetal products, including heating and ventilating equipment.

x. Milk distributing station, other than a retail business conducted on the premises.

y. Sawmill or planing mill, including manufacture of wood products not involving chemical treatment.

z. The manufacturing, compounding, processing, packaging or treatment of cosmetics, pharmaceuticals and food products except fish and meat products, cereals, sauerkraut, vinegar, yeast, stock feed, flour and the rendering or refining of fats and oils.

aa. The manufacture, compounding, assembling or treatment of articles or merchandise from previously prepared materials such as bone, cloth, cork, fibre, leather, paper, plastics, metals or stones, tobacco, wax, yarns and wood.

(2) *Accessory uses.* Permitted accessory uses are as follows:

a. Any accessory uses permitted in the C-3 commercial district.

b. Any accessory uses customarily accessory and incidental to a permitted principal use.

(3) *Required conditions.* No use shall be permitted to be established or maintained which by reason of its nature or manner of operation is or may become hazardous, noxious or offensive owing to the emission of odor, dust, smoke, cinders, gas, fumes, noise, vibrations, refuse matter or water-carried waste.

(4) *Height regulations.* No building shall exceed the cubical content of a prism having a base equal to the buildable area of the lot and a height of 75 feet, or 1½ times the width of the street on which it faces, whichever is the least.

(5) *Lot area, frontage and yards.* Minimum lot area, lot frontage and yard requirements for the M-1 light industrial district shall be as follows:

Use	Lot Area	Lot Width	Lot Area Per ~~Family~~Unit	Front Yard Depth [1]	Side Yard Width	Rear Yard Depth
Dwellings			Same as specified in the R-4 district			
Mobile home parks			Same as specified in the C-2 district			
Motels and auto courts			Same as specified in the R-4 district			
Other permitted uses				25 ft.	None required except when adjacent to an R district, in which case not less than 25 ft.	25 ft. [2]

[1] The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way lines as shown on the official major street plan.

[2] For every additional foot the front yard depth is increased over 25 feet, the rear yard may be decreased in direct proportion thereto, but in no case shall the rear yard be less than eight feet; and, in addition, if any portion of this rear yard area is used for an enclosed offstreet loading space, the area above such an enclosure may be used for building purposes.

(Code 1971, § 32-38)

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Sec. 29-153. - M-2 heavy industrial district.

In the M-2 heavy industrial district, the following provisions, regulations and restrictions shall apply:

(1) *Principal permitted uses.* A building or premises may be used for any purpose whatsoever except those listed in subsections (1)a., b. and c. of this section:

a. No occupancy shall be issued for any use in conflict with any ordinance of the city or law of the state regulating nuisances.

b. No occupancy permit shall be issued for any dwelling, school, hospital, clinic or other institution for human care, except where incidental to a permitted principal use.

c. No occupancy permit shall be issued for any of the following uses until and unless the location of such use and suitable enclosure shall have been authorized by the city council after report by the fire operations division and zoning commissioner:

1. Abattoirs and slaughterhouses or stockyards.
2. Acid manufacture or wholesale storage of acids.
3. Automobile, tractor or machinery wrecking and used parts yards.
4. Cement, lime gypsum or plaster of paris manufacture.
5. Distillation of bones.
6. Explosive manufacture or storage.
7. Fat rendering.
8. Fertilizer manufacture.
9. Garbage, offal or dead animal reduction or dumping.
10. Gas manufacture and cylinder recharging.
11. Glue, size or gelatine manufacture.
12. Petroleum or its products, refining or wholesale storage.
13. Rubber goods manufacture.
14. Sand or gravel pits.
15. Smelting of tin, copper, zinc or iron ores.
16. Transmitting stations.
17. Waste paper yard.
18. Wholesale storage of gasoline.

(2) *Required conditions.*

a. The best practical means known for the disposal of refuse matter or water-carried waste and the abatement of obnoxious or offensive odor, dust, smoke, gas, noise or similar nuisances shall be employed.

b. All principal buildings and all accessory buildings or structures, including loading and unloading facilities, shall be located at least 200 feet from any R district and not less than 100 feet from any other district except an M-1 district.

(3) *Height regulations.* No structure shall exceed in height the distance measured to the centerline of the nearest street from any portion of the proposed building or structure.

(4) *Yards.* Minimum yard requirements for the M-2 heavy industrial district shall be as follows:

Use	Front Yard Depth [1]	Side Yard Width	Rear Yard Depth
Permitted	25 ft.	None required except when adjacent to an R district, in	40 ft.

uses		which case not less than 200 ft.	

[1] The front yard depth of any lot abutting on a major street shall be measured from the proposed right-of-way lines as shown on the official major street plan.

(Code 1971, § 32-39)

Sec. 29-154. - MP planned industrial district.

In the MP planned industrial district, the following provisions, regulations and restrictions shall apply:

(1) *Purpose.* The purpose of this section is to permit the establishment of industrial parks and to provide for the orderly planned growth of industries in larger portions of land. The district shall normally contain lots not less than ten acres in size, and may not be further subdivided into less than one-half-acre lots. It is also intended that such industrial districts be developed to maximize the potentials of industrial areas and at the same time minimize any adverse effects upon adjacent properties in other zoning districts.

(2) *Principal permitted uses.* Principal permitted uses are as follows:

a. In the M-1,P planned light industrial district, any use permitted in the M-1 light industrial district except the following:

1. Contractor's equipment storage yard or plant or rental of equipment commonly used by contractors, or storage and sale of livestock, feed or fuel.
2. Storage yards.
3. Circuses, carnivals or similar transient enterprises.
4. Coal, coke or wood yard.
5. Concrete mixing or concrete products manufacture.
6. Cooperage works.
7. Storage of flammable liquids exceeding the amount necessary for normal operation and maintenance of a principal permitted use.
8. Storage or baling of junk, iron or rags.
9. Livery stable or riding academy.
10. Sawmill or planing mill.

b. In the M-2,P planned heavy industrial district, any use permitted in the M-2 heavy industrial district.

(3) *Procedure for establishment and approval.*

a. *Establishment of zoning district.* A zoning district plan shall be provided indicating location and boundaries and providing as many details as are available. This plan shall be submitted for approval to the planning and zoning commission and the city council in accordance with subsection 29-4(b).

b. *Approval of development plan.* Prior to development of all or a portion of the district, a development plan for that specific portion shall be approved by the planning and zoning commission and city council.

1. The development plan shall include the following information: The relation of the portion to be developed to the overall zoning district, internal street location and lines, lot sizes, railroad tracks and right-of-way, and proposed sanitary and storm sewer lines and water and power facilities.

2. Front building setback lines shall not be less than 25 feet, except that there shall be 35-foot setbacks from arterial streets as identified upon the major thoroughfare map. Such yards shall be landscaped with trees, shrubs or grass in such a manner as to reflect the intent of an industrial park. Offstreet parking lots may be permitted in such yard areas, provided that they extend no closer than 25 feet to property lines abutting arterial streets. No outdoor storage shall be permitted within the identified front yard areas. All yards on the perimeter of the development plan abutting an A-1, R-1, R-2, R-3, R-4, R-5 or R-P zoning district shall maintain a 40-foot landscaped strip of trees, shrubs or grass, free of buildings and storage areas.

3. If applicable, the development plan must conform with the requirements and regulations of the state department of natural resources.

4. In considering the development plan, the planning and zoning commission shall review restrictive covenants and the landowner's agreement.

c. *Implementation of development plan.* A copy of the development plan required under subsection (3)b. of this section, upon approval by the planning and zoning commission and the city council, shall be filed with the zoning administrator and maintained as a permanent part of the records of the city. No building permit shall be issued for any building or structure unless the location and use are in substantial conformance with the plan on file.

d. *Change and modification of plan.*

1. *Major.* All changes, modifications and amendments to the development plan required for M-P development, deemed to be substantial by the planning and zoning staff after city approval of such plan, shall be resubmitted and considered in the same manner as originally required. Examples of major changes include but are not limited to the following: street realignment, reconfiguration of lots and revisions to storm or sanitary sewer designs.

2. *Minor.* Minor changes, modifications or amendments to the development plan required for M-P development shall be administratively reviewed by the planning and zoning staff. If the change is deemed insignificant in nature, the staff may recommend to the council that the change be approved without the benefit of a mandatory review before the planning and zoning commission. The council may approve such change, or may determine that the magnitude of the change is significant in nature and require that the development plan be resubmitted and considered in the same manner as originally required.

(4) *Site requirements.*

a. Outdoor storage shall be permitted only when related to a permitted principal use and only when storage areas are suitably screened. Maximum height of outdoor storage shall be 20 feet and shall not exceed the height of the screen. Outdoor storage shall be located inside the required yard areas and not within 200 feet of a residence district (R-1, R-2, R-3, R-4 or R-P).

b. All landscaped areas shall be maintained in such a manner as to reflect the intent of an industrial park.

c. Loading docks or doors shall be located 115 feet from the perimeter property line of the development plan. Yard areas must be adequate to accommodate movement of trucks and other vehicles within property boundaries and off landscaped areas. Loading docks and overhead doors may be located on any side of the building, but all loading, parking and

backing areas shall be inside the property line and shall be subject to the approval of the zoning administrator and city engineer.

d. Building height within an M-1,P area shall not exceed 45 feet, and building height within an M-2,P area shall not exceed 90 feet.

e. Parking area requirements shall meet the standards established in section 29-177.

(5) *Lot area, yards and site coverage.* Requirements for lot area, yards and site coverage are as follows:

a. Minimum lot area: Two acres.

b. Maximum site coverage: 0.75.

c. Maximum floor ratio: 1.00.

d. Minimum front yard depth: 25 feet.

e. Least width on any one side: Ten feet.

f. Minimum rear yard depth: Ten feet.

g. In reviewing the development plan, the city council may, following the planning and zoning commission's recommendations, approve the inclusion of one-half-acre lots in all or a portion of the development plan. Acceptance of the one-half-acre minimum lot area shall be in accordance with recognized principles of civil design, land use planning and landscape architecture.

h. The rear yard shall not be less than 30 feet where the proposed use adjoins a residence district (R-1, R-2, R-3, R-4, R-5 or R-P).

(Code 1971, § 32-40)

Sec. 29-155. - F-W floodway overlay district.

(a) *Principal permitted uses.* The following uses shall be permitted within the F-W floodway district to the extent they are not prohibited by other provisions of this chapter or of this Code, or the underlying zoning district, and provided they do not require placement of structures, factory-built homes, fill or other obstruction, the storage of materials or other equipment, excavation or alteration of a watercourse:

(1) Agricultural uses such as general farming, pasture, grazing, outdoor plant nurseries, horticulture, viticulture, truck farming, forestry, sod farming and wild crop harvesting.

(2) Industrial-commercial uses such as loading areas, parking areas and airport landing strips.

(3) Private and public recreational uses such as golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, boat launching ramps, swimming areas, parks, wildlife and nature preserves, game farms, fish hatcheries, shooting preserves, target ranges, trap and skeet ranges, hunting and fishing areas and hiking and horse riding trails.

(4) Residential uses such as lawns, gardens, parking areas and play areas.

(5) Other open space uses similar in nature to the uses listed in this subsection.

(b) *Conditional uses.* The following uses, which involve structures (temporary or permanent), fill, storage of materials or other equipment, may be permitted only upon issuance of a special exception permit by the board of adjustment, and then only to the extent they are not prohibited by other provisions of this section or of this Code or the underlying zoning district. Such uses must also meet the applicable provisions of the floodway district performance standards:

(1) Uses or structures accessory to open space uses.

(2) Circuses, carnivals and similar transient amusement enterprises.

(3) Drive-in theaters, new and used car lots, roadside stands, signs and billboards.

(4) Extraction of sand, gravel and other material.

(5) Marinas, boat rentals, docks, piers and wharves.

(6) Utility transmission lines and underground pipelines.

(7) Other uses similar in nature to the principal permitted and conditional uses described in this section which are consistent with the floodway district performance standards and the general spirit and purpose of this chapter.

(c) *Performance standards.* All floodway district uses allowed as a principal permitted or conditional use shall meet the following standards:

(1) No use shall be permitted in the floodway district that would result in any increase in the 100-year (1%) flood level. Consideration of the effects of any development on flood levels shall be based upon the assumption that an equal degree of development would be allowed for similarly situated lands.

(2) All uses within the floodway district shall:

a. Be consistent with the need to limit flood damage.

b. Use construction methods and practices that will limit flood damage.

c. Use construction materials and utility equipment that are resistant to flood damage.

(3) No use shall affect the capacity or conveyance of the channel or floodway or any tributary to the main stream, drainage ditch or any other drainage facility or system.

(4) Structures, buildings and sanitary and utility systems, if permitted, shall meet the applicable performance standards of the floodway fringe district and shall be constructed or aligned to present the minimum possible resistance to flood flows.

(5) From and after January 1, 2010, there shall be no construction of any new building or structure (temporary or permanent) of any type whatsoever, anywhere within the floodway overlay district in the city, including but not limited to new detached garages, storage buildings, or other accessory structures.

(6) From and after January 1, 2010, there shall be no restoration or reconstruction of any previously existing nonconforming building or structure located in the floodway overlay district that suffers damage to the extent of fifty percent (50%) or more of its fair market value at the time of damage of any origin, including but not limited to, fire, flood, tornado, storm, explosion, war, riot or act of God, unless permitted upon issuance of a variance and a special exception permit by the board of adjustment, in accordance with the provisions of sections 29-34 and 29-35 of this chapter.

(7) Any restoration or reconstruction of any building or structure located in the floodway overlay district that suffers damage to the extent of less than fifty percent (50%) of its fair market value at the time of damage of any origin, including but not limited to fire, flood, tornado, storm, explosion, war, riot or act of God, may be restored or reconstructed without issuance of a variance or a special exception permit by the board of adjustment, and then only as follows:

[a.] May commence only upon issuance of a valid building permit issued by the city;

[b.] Must not allow any fill material to be used or placed on the lot in connection with the elevation and reconstruction of such building or structure; and

[c.] Must comply in all other respects with all applicable city building codes in effect at the time of reconstruction;

[d.] Such restoration, rebuilding or reconstruction shall not allow any building addition or expansion without obtaining a variance or special exception permit from the board of adjustment.

[e.] Any addition or expansion to an existing building or structure located in the floodway shall not be allowed, unless permitted upon issuance of a variance and special exception permit by the board of adjustment, in accordance with Sections 29-34 and 29-35 of this chapter.

(8) Buildings, if permitted, shall have a low flood damage potential and shall not be utilized for human habitation.

(9) Storage of materials or equipment that is buoyant, flammable, explosive or injurious to human, animal or plant life is prohibited. Storage of other material may be allowed if readily removable from the floodway district within the time available after flood warning.

(10) Stream, watercourse, drainage channel or other water channel embankment stabilization, filling, alterations or relocations, including removal of vegetation, must be designed to maintain the flood-carrying capacity within the altered area, and shall not be allowed or undertaken without all required permits from and approvals by the state department of natural resources, and shall not proceed without approval of the city planner and oversight by the city engineer.

(11) Any fill allowed in the floodway must be shown to have some beneficial purpose and shall be limited to the minimum amount necessary.

(12) Pipeline river or stream crossings shall be buried in the streambed and banks or otherwise sufficiently protected to prevent rupture due to channel degradation and meandering or due to the action of flood flows.

(13) Recreational vehicles placed on sites within the Floodway District shall either:

a. Be on site for fewer than 180 consecutive days.

b. Be fully licensed and ready for highway use.

A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by disconnect type utilities and security devices, and has no permanent attached additions.

(Ord. No. 2750, § 7, 7-11-11)

Editor's note— Ord. No. 2750, § 7, adopted July 11, 2011, repealed § 29-155, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-155 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-156. - F-F floodway fringe overlay district.

(a) Except as otherwise expressly provided in this section, development shall be allowed in the floodway fringe overlay district only on lots of record as defined in this chapter which were in existence prior to January 1, 2010.

(b) The floodway fringe overlay district shall include and incorporate both the 100-year (1%) and 500-year (0.2%) flood boundaries as illustrated on the official floodplain zoning maps. The elevation of the regulatory flood shall be considered to be the 500-year (0.2%) flood elevation. Flood insurance policies and insurance rates may continue to be evaluated and established based on federal and state laws and regulations. For all other city flood regulatory purposes, however, the regulatory elevation shall be the 500-year flood elevation.

(c) No new lots shall be established within the 500-year flood boundaries after January 1, 2010, unless the newly created lot has a floodplain buildable area outside of the 500-year flood boundary, provided further, that the 500-year floodplain does not encompass more than 25 percent of the newly created lot. All building lots which have been properly established under state law and this Code, filed with the county recorder and approved by the county auditor, all prior to January 1, 2010, shall

be considered to be lots of record. A lot of record which is in existence on January 1, 2010, may be diminished in size via subdivision if the newly-created lot being separated from the existing lot has a floodplain buildable area outside of the 500-year flood boundary, provided further, that the diminished original lot of record will not be permitted a replacement or new structure constructed thereon if that structure is located within the 500-year floodplain boundaries. An existing structure located on the original lot of record, if located within the 500-year floodplain, will be allowed to be maintained, upgraded, enlarged or replaced in conformance with this Code.

(d) Critical facilities shall be located outside the 500-year floodplain boundaries. Critical facilities shall include but not be limited to hospitals, municipal government buildings, schools and residential facilities for elderly or infirmed/handicapped persons. The restriction on critical facilities shall not apply to structures required to be located in low-lying areas such as streets and roadways, bridges, culverts, waste water treatment facilities or sanitary sewer lift stations.

(e) *Performance standards.* All uses must be consistent with the need to limit flood damage to the maximum practicable extent, and shall meet the following applicable performance standards:

(1) All new development on lots of record in existence prior to January 1, 2010, must comply with all required standard flood protection measures, and must meet the following requirements:

a. May commence only upon issuance of a valid building permit issued by the city;

b. Any open areas underneath the lowest floor shall be floodable in order to allow the unimpeded free flow of flood waters, in conformity with the requirements of subsections (e)(7)(a)(1) through (4), inclusive; and

c. Must comply in all other respects with all applicable city building codes in effect at the time of reconstruction.

(2) Any existing building or structure located in the floodway fringe that suffers damage to the extent of less than fifty percent (50%) of its fair market value from any origin including, but not limited to, fire, flood, tornado, storm, explosion, war, or act of God, may be reconstructed at its existing elevation, without issuance of a variance or special exception permit, if the reconstructed structure meets the following requirements:

a. May commence only upon issuance of a valid building permit issued by the city; and

b. Must comply in all other respects with all applicable city building codes in effect at the time of reconstruction.

(3) Any existing building or structure that is substantially damaged, may be reconstructed if the reconstructed structure meets all required standard flood protection measures, including but not limited to elevating the structure to a level such that the lowest floor is established one (1) foot above the 500-year flood level, and is constructed either on elevated foundations, piers or similar elevated techniques that are in compliance with then applicable city building code requirements, or using fill which meets the requirements of this section, and which meets the following requirements:

a. May commence only upon issuance of a valid building permit issued by the city;

b. Any enclosed building areas underneath the lowest floor shall be floodable in order to allow the unimpeded free flow of flood waters, in conformity with the requirements of subsections (e)(7)(a)(1) through (4), inclusive; and

c. Must comply in all other respects with all applicable city building codes in effect at the time of reconstruction.

(4) All structures shall be:

a. Adequately anchored to prevent flotation, collapse or lateral movement of the structure.

b. Constructed with materials and utility equipment resistant to flood damage to the maximum practicable extent.

c. Constructed by methods and practices that limit flood damage to the maximum practicable extent.

(5) Any new, substantially improved or substantially damaged residential structure, that is to be established or reconstructed as authorized in this chapter, shall have the lowest floor, including basement, elevated a minimum of one foot above the 500-year flood level. Construction may be upon limited amounts of compacted fill which shall, at all points, be no lower than one foot above the 0.2% (500-year) flood level unless the necessary amount of fill to satisfy this requirement exceeds allowable fill heights specified in subsection (e)(8)(b), and shall extend at such elevation at least 18 feet beyond the limits of any structure erected thereon. Alternate methods of elevating, such as piers or elevated foundations, may be allowed where existing topography, street grades or other compelling factors preclude elevating by the use of compacted fill material. In all such cases, the methods used for structural elevation must be adequate to support the structure as well as withstand the various forces and hazards associated with flooding as verified by a structural engineer.

(6) Any new, substantially improved or substantially damaged nonresidential structure, that is to be established or reconstructed as authorized in this chapter, shall have the lowest floor, including basement, elevated a minimum of one foot above the 500-year flood level. Construction may be upon limited amounts of compacted fill which shall, at all points, be no lower than one foot above the 0.2% (500-year) flood level or, together with attendance utility and sanitary sewerage systems, be flood-proofed to such a level. When utilizing fill material, the amount placed on the site shall be in conformance with subsection (e)(8)(b). When flood-proofing is utilized, a professional engineer registered in the state of Iowa shall certify that the flood-proofing methods used are adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the 100-year and 500-year flood event, and that the structure established below the 500-year flood elevation level, is watertight with walls substantially impermeable to the passage of water. A record of certification, indicating the specific elevation, in relation to the North American Vertical Datum of 1988, to which any structures are flood-proofed, shall be maintained by the zoning/ floodplain administrator.

(7) Any new, substantially improved or substantially damaged structure that is to be established or reconstructed as authorized in this chapter shall meet the following requirements:

a. Fully enclosed areas below the lowest floor, not including basements, that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. All said areas below the lowest floor shall be designed for low damage potential and shall not be habitable space. Such areas shall be used solely for parking of vehicles, building access and low damage potential storage. Machinery and service facilities (e.g. hot water heater, furnace, electrical service) contained in the enclosed area are located at least one (1) foot above the 500-year flood level.

Designs for meeting this requirement must either be certified by a registered professional engineer or meet or exceed the following minimum criteria:

1. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.

2. The bottom of all openings shall be no higher than one foot above natural grade.

3. Openings may be equipped with screens, louvers, valves or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

4. Openings must be designed and installed so as to allow the natural entry and exit of floodwaters without the aid of any manual, mechanical or electrical systems either for operating the openings or assisting in the discharge of water from the lower area.

b. Any new, substantially improved or substantially damaged structure that is being established or reconstructed as authorized in this chapter, must be designed or modified

and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

c. Any new, substantially improved or substantially damaged structure that is being established or reconstructed must be constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and located so as to prevent water from entering or accumulating within the components during conditions of flooding. All such facilities including heating, cooling and ventilating systems or ducts shall be located or installed at least one foot above the (0.2%) 500-year flood level.

(8) Filling in the floodway fringe:

a. Fill activities may be permitted in the floodway fringe overlay district upon approval by the city planner and city engineer. All fill application permits shall be valid for a period of six (6) months from date of issuance, may be renewed only upon filing of an application for renewal with the city planner, and then may only be renewed upon a showing of demonstrated progress towards completion of the fill activity. All fill application permits must be accompanied by a detailed plan describing the area to be filled, the estimated amount of fill to be used and the purpose of the fill project. Elevation and topographic data must also be submitted by a professional engineer registered in the State of Iowa that illustrates changes in the topography and estimated impacts upon local flood flows. No fill project shall fill in or obstruct any local drainage channels without an alternative drainage plan design, and shall limit soil erosion and water run-off onto adjacent properties to the maximum practicable extent, and in compliance with the NPDES standards contained in Chapter 27 of this code. Except as provided in subsections (e)(8)(f) and (g), adjacent property owners shall be identified and notified of the fill project by the applicant with proof of notification provided to the city planner. Any fill project must be designed to limit negative impacts upon adjacent property owners during flood events to the maximum practicable extent.

b. The amount of allowable fill must not increase the existing natural grade of the property, by more than three (3) vertical feet at any point, and shall be placed on no more than 33.33% of the total three (3) vertical feet lot area.

c. Where fill is authorized under this chapter, any fill placed on a lot of record must be mitigated by removal of an equal volume of fill material from a comparable elevation within the 500-year floodplain, in order to provide the hydraulic equivalent volume of fill removal as compared to the placement of fill on any single property located in the floodplain.

d. The only portion of the property that may be filled is the area underneath the elevated structure, together with driveway access to the structure. In no case shall the maximum lot area of the property filled exceed 33.33 percent of the total area of the lot, and shall extend at least 18 feet from the outer foundation of the structure.

e. If a new or reconstructed structure is to be elevated utilizing fill material, any required building elevation standard exceeding the 3-foot fill limitation as referenced in subsection (e)(8)(b) must be achieved through the use of elevated foundations, piers or similar structural elevation techniques that are in compliance with then applicable city building code requirements as certified by a structural engineer.

f. Fill is allowed for property maintenance purposes in the floodway fringe area upon approval of the city planner. For purposes of this subsecton, the term, "property maintenance purposes," shall mean landscaping, gardening or farming activities, erosion control, and filling in of washed-out sections of land. Property maintenance purposes shall only include the placement of such quantities of fill not to exceed the limitations specified herein and that do not inhibit the free flow of water. Said limited amounts of fill for property maintenance purposes need not be compensated by an equivalent amount of excavation area as specified in subsection (e)(8)(c) above.

g. Filling on public property is prohibited in the floodway fringe district with the exception of property maintenance purposes of public facilities, upon approval of the city planner. Limited quantities of asphalt, concrete and yard waste may be temporarily stored in the floodway fringe district when said materials are being staged for further processing. Raw materials may be stockpiled in the floodway fringe district when said materials are mined or excavated from a site in the floodway or floodway fringe.

(9) No floodplain map revisions (Letter of Map Revision-fill or LOMR-f) involving placement of fill or involving land alterations in the floodway fringe overlay district, even if otherwise approved by FEMA, shall be allowed after January 1, 2010, provided, however, that owners of properties in the floodway fringe who have applied for a LOMR and which were in the process of being approved as of January 1, 2010, shall be exempt from this prohibition.

(10) Factory-built housing and factory-built structures shall meet the following requirements:

a. Factory-built homes, including those placed in existing factory-built home parks or subdivisions, shall be anchored to resist flotation, collapse or lateral movement.

b. Factory-built housing and factory-built structures, including those placed in existing factory-built home parks or subdivisions, shall be elevated on a permanent foundation such that the lowest floor of the structure is a minimum of one foot above the 500-year flood level.

c. Openings shall be established in the lower area to allow the natural entry and exit of floodwaters in compliance with subsections (e)(7)(a)(1) through (4).

(11) Subdivisions, including factory-built home parks and subdivisions, shall meet the following requirements. Subdivisions shall be consistent with the need to limit flood damage to the maximum practicable extent, and shall have adequate drainage provided to reduce exposure to flood damage. Development associated with subdivision proposals shall meet the applicable performance standards. Subdivision proposals intended for residential development shall provide all lots with a means of vehicular access that is above the (0.2%) 500-year flood level.

(12) Utility and sanitary systems shall meet the following requirements:

a. All new and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system as well as the discharge of effluent into floodwaters. Wastewater treatment facilities shall be provided with a level of flood protection equal to or greater than one foot above the 500-year flood elevation.

b. On-site waste disposal systems shall be located or designed to avoid impairment to the system or contamination from the system during flooding.

c. New or replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system. Water supply treatment facilities shall be provided with a level of protection equal to or greater than one foot above the 500-year flood elevation.

d. Utilities such as gas and electrical systems shall be located and constructed to minimize or eliminate flood damage to the system and the risk associated with such flood damaged or impaired systems.

(13) Storage of materials and equipment that are flammable, explosive or injurious to human, animal or plant life is prohibited unless elevated a minimum of one foot above the 500-year flood level. Other material and equipment must either be similarly elevated or:

a. Not be subject to major flood damage and be anchored to prevent movement due to floodwaters; or

b. Be readily removable from the area within the time available after flood warning.

(14) Flood control structural works such as levees and floodwalls, shall provide, at minimum, protection from a 1% (100-year) flood with a minimum of three feet of design freeboard and shall provide for adequate interior drainage, or at such higher elevation as may be mandated by

the state or federal government. In addition, structural flood control works shall be approved by the state department of natural resources.

(15) No use shall affect the capacity or conveyance of the channel or any tributary to the main stream, drainage ditch or other drainage facility or system.

(16) Detached garages and storage sheds and other detached accessory structures shall be allowed in the floodway fringe district with no minimum elevation requirement provided that all the following criteria are satisfied:

a. The total combined floor areas of all such structures located on the lot does not exceed a total of 576 square feet in area.

b. The structures are not suitable for and shall not be used for human habitation.

c. The structures will be designed to have low flood damage potential.

d. The structures will comply with minimum required permanent openings as specified in subsections (d)(4)(a)(1) through (4).

e. The structures will be constructed and placed on the building site so as to limit resistance to the greatest practicable extent to the flow of floodwaters.

f. Structures shall be firmly anchored to prevent flotation, which may result in damage to other structures.

g. The structure's service facilities such as electrical, heating and ventilating equipment shall be elevated or floodproofed to at least one foot above the (.2%) 500-year flood level.

(17) Recreational vehicles, if permitted in the underlying zoning district, are exempt from the requirements of this chapter regarding anchoring and elevation of factory built homes when the following criteria are satisfied:

a. Be on site for fewer than 180 consecutive days.

b. Be fully licensed and ready for highway use.

(18) Pipeline river or stream crossings shall be buried in the streambed and banks or otherwise sufficiently protected to prevent rupture due to channel degradation or due to action of flood flows.

A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by disconnect type utilities and security devices, and has no permanent attached additions.

(Ord. No. 2750, § 8, 7-11-11; Ord. No. 2847, § 2, 7-20-15)

Editor's note— Ord. No. 2750, § 8, adopted July 11, 2011, repealed § 29-156 and enacted new provisions to read as herein set out. Prior to amendment, § 29-156 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-157. - F-P general floodplain overlay district.

(a) *Principal permitted uses.* The following uses shall be permitted within the F-P general floodplain district to the extent they are not prohibited by any other ordinance or underlying zoning district and provided they do not require placement of structures, factory-built homes, fill or other obstruction, the storage of materials or equipment, excavation or alteration of a watercourse:

(1) Agricultural uses such as general farming, pasture, grazing, outdoor plant nurseries, horticulture, viticulture, truck farming, forestry, sod farming and wild crop harvesting.

(2) Industrial-commercial uses such as loading areas, parking areas and airport landing strips.

(3) Private and public recreation uses such as golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, boat launching ramps, swimming areas, parks, wildlife and nature preserves, game farms, fish hatcheries, shooting preserves, target ranges, trap and skeet ranges, hunting and fishing areas and hiking and horseback riding trails.

(4) Residential uses such as lawns, gardens, parking areas and play areas.

(b) *Conditional uses.* Any use which involves placement of structures, factory-built homes, fill or other obstructions, the storage of materials or equipment, excavation or alteration of a watercourse may be allowed only upon issuance of a special exception permit by the board of adjustment. All such uses shall be reviewed by the state department of natural resources to determine:

(1) Whether the land involved is either wholly or partly within the floodway or floodway fringe; and

(2) The 100-year or 500-year flood level.

The applicant shall be responsible for providing the state department of natural resources with sufficient technical information to make the determination.

(c) *Performance standards.*

(1) All conditional uses or portions thereof to be located in the floodway, as determined by the state department of natural resources, shall meet the applicable provisions and standards of the floodway district.

(2) All conditional uses or portions thereof to be located in the floodway fringe, as determined by the state department of natural resources, shall meet the applicable standards of the floodway fringe district.

(d) Prohibited uses. No structure located within the designated floodplain district may be subdivided or converted for the purpose of establishing a separate dwelling unit either wholly or partially below the 500-year flood elevation.

(Ord. No. 2750, § 9, 7-11-11)

Editor's note— Ord. No. 2750, § 9, adopted July 11, 2011, repealed § 29-157 and enacted new provisions to read as herein set out. Prior to amendment, § 29-157 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-158. - R-P planned residence district.

In the R-P planned residence district, the following provisions, regulations and restrictions shall apply:

(1) *Purpose.* The purpose of the R-P planned residence district is to permit the establishment of multiuse and integrated use residential developments and to provide for the orderly planned growth of residential developments in larger tracts of land. The district shall normally be reserved for development of tracts not less than ten acres in size. It is also intended that such planned residence districts be designed and developed in substantial conformity with the standards of the comprehensive plan and with recognized principals of civic design, land use planning and landscape architecture. It is further intended that such planned residence districts be designed and developed to promote public health, safety, morals and general welfare, to reasonably prevent and minimize undue injury to adjoining areas and to encourage appropriate land use.

(2) *Permitted uses.* Permitted uses are as follows:

a. Any use permitted in the R-4 residence district.

b. Any use permitted in the C-1 commercial district within the commercial area of the planned residence district.

(3) *General standards.* The land usage, minimum lot area, yard, height and accessory uses shall be determined by the requirements set forth below, which shall prevail over conflicting requirements of this chapter or any other ordinance:

a. There shall be no minimum yard or height requirements in a planned residence district except that minimum yards, as specified in the R-4 residence district, shall be provided around the boundaries of the planned residence district.

b. Uses along the project boundary lines that are less restrictive than R-4 uses shall not be in conflict with those allowed in adjoining or opposite property. To this end the city planning and zoning commission may require, in the absence of an appropriate physical barrier, that uses of at least intensity or a buffer of open space or screening be arranged along the borders of the project.

c. After final approval and zoning by the city council, a plan of the planned residence district, showing building lines, building locations, common land, streets, easements, utilities and other applicable items shall be filed with the zoning administrator and maintained as a permanent part of the records of the city. The applicant for the planned residence district may also record or file such plan in the office of the county recorder.

d. In their review of the plan, the city planning and zoning commission and city council may consider any deed restrictions or covenants entered into or contracted for by the developer concerning the use of common land or permanent open space. For purposes of this section, common land shall refer to land dedicated to the public use and to land retained in private ownership but intended for the use of the residents of the development unit or the general public.

e. No permit for any commercial structure or building shall be issued until at least 25 percent of the planned residence district in question is developed for residential uses.

(4) *Land use and density requirements.*

a. No more than 15 percent of the total area of the planned residence district may be used for commercial uses.

b. The lot area per ~~family~~unit in any one- and two-~~family~~unit areas in the planned residence district shall be the same as in the R-4 residence district.

c. Lot area requirements in the multiple-~~family~~unit area of the planned residence district shall be the same as in the R-4 residence district.

d. All density requirements shall be computed on a total area basis using private streets and drives, common open space, park areas, recreation areas and offstreet parking areas, as well as building site areas.

(5) *Modifications to plans.*

a. *Major.* All changes, modifications and amendments in the various plats and plans required for R-P development, deemed to be substantial by the planning and zoning staff after city approval of such plats and plans, shall be resubmitted and considered in the same manner as originally required. Examples of major changes include but are not limited to the following: land use changes, increased densities and street location or size.

b. *Minor.* Minor changes, modifications and amendments in the various plats and plans required for R-P development shall be administratively reviewed by the planning and zoning staff. If the change is deemed insignificant in nature, the staff may recommend to the council that the change be approved without the benefit of a mandatory review before the planning and zoning commission. The council may approve such change, or may determine that the magnitude of the change is significant in nature and require that the

appropriate plat or plan be resubmitted and considered in the same manner as originally required. Changes pertaining to the location, construction or replacement of signs shall be administratively reviewed and approved by the planning and zoning staff. If the staff deems that the sign changes are significant in nature, it may submit the proposal to the council for review and approval.

(Code 1971, § 32-42)

Sec. 29-159. - HCG Highway corridor and greenbelt overlay zoning district.

(a) *Boundaries.* The highway corridor greenbelt (HCG) overlay zoning district boundaries are shown on the HCG Master Plan and legally described in Attachments to ordinance number 2000. [Said attachments are not set out at length herein but are on file in office of the city.]

(b) *Purpose and intent.* The purpose and intent of this section is to establish a greenbelt corridor overlay district or the orderly development of properties located within the HCG overlay district. The emphasis of the greenbelt overlay district is to regulate the development within the Highway 58 and Greenhill Road Corridor and the West Lake area in order to promote the health, safety and welfare of the citizens of Cedar Falls, Iowa. New structures, certain modifications to existing structures that require building permits and certain site improvements shall conform to this section. The provisions of this section shall apply in addition to any other zoning district regulations and requirements in which the land may be classified. In the case of conflict, the most restrictive provisions shall govern, except as otherwise expressly provided in this section.

(c) *Definitions.* The following definitions shall apply only for the purposes of this section:

(1) *Landscaped area.* An area not subject to vehicular traffic, which consists of living landscape material.

(2) *Vehicular use areas.* All areas subject to vehicular traffic including, but not limited to, accessways, driveways, loading areas, service areas, and parking stalls for all types of vehicles. This definition shall not apply to covered parking structures or underground parking lots.

(3) *Overstory tree.* A self-supporting woody plant having at least one well defined stem or trunk and normally attaining a mature height and spread of at least 30 feet, and having a trunk that may, at maturity, be kept clear of leaves and branches at least eight feet above grade.

(4) *Understory tree.* A self-supporting woody plant having at least one well defined stem or trunk and normally attaining a mature height and spread of less than 30 feet.

(5) *Shrub.* A woody or perennial plant with multiple stems.

(6) *Living landscape.* Low growing woody or herbaceous ground cover, turfgrasses, shrubs, and trees.

(7) *Screen.* An area of planting which provides an effective visual barrier. For a single row the screen shall consist of spruce, firs, or pines spaced at a maximum spacing of 15 feet or a double staggered row of spruce, firs, or pine spaced at a maximum spacing of 20 feet within each row; for arborvitae and juniper the spacing shall be a double staggered row with maximum spacing of ten feet within each row, or a single row with maximum spacing of six feet.

(8) *Parking strip.* That portion of city-owned property between the curb line, shoulder line or traveled portion of the roadway or alley and the private property line.

(9) *On-premise signs.* A sign on the same property as the activity it advertises.

(10) *Off-premise signs.* A sign not entirely on the same property as the activity it advertises.

(d) *Administrative regulations.* The provisions of this section shall constitute the requirements for all zones that lie within the boundaries of the highway corridor greenbelt overlay district. This section shall apply to all new construction, a change in use, or the following alteration or enlargement:

(1) In commercial or residential zones or for commercial or residential uses in those zones a ten percent increase in total area or 1,000 square feet, whichever is less.

(2) For industrial uses in manufacturing zones, but not for any commercial or residential use in manufacturing zones, a 20 percent increase in total area or 3,000 square feet, whichever is less.

In addition to the above, this section shall also apply to all sites being developed for the provision of parking as a primary use or for any improvement which results in the provision of or an increase in parking.

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Expansion of existing uses. For existing commercial and residential uses which will be expanding the following amounts of the ordinance requirements relating to total points and total landscape area shall be applied to the project dependent upon the total size of all additions since November 1, 1992:

The lesser of:	Shall require that:
10% - 20% addition or 1000 square feet	25% of ordinance requirements be provided
21% - 40% addition or 2000 square feet	50% of ordinance requirements be provided
41% - 50% addition or 2500 square feet	75% of ordinance requirements be provided
51% addition or 2501 square feet	100% of ordinance requirements be provided

For existing industrial uses which will be expanding the following amounts of the ordinance requirements relating to total points and total landscape area shall be applied to the project dependent upon the total size of all additions since November 1, 1992:

The lesser of:	*Shall require that:*
20% - 39% addition or 3,000 square feet	25% of ordinance requirements be provided
40% - 50% addition or 4,000 square feet	50% of ordinance requirements be provided
51% - 60% addition or 5,000 square feet	75% of ordinance requirements be provided
61% addition or 5,001 square feet	100% of ordinance requirements be provided

For projects as indicated above, no certificate of occupancy or building permit shall be issued unless such development project is found to be in conformance with this section.

(e) *Landscape requirements:*

(1) *Submittal procedures.*

a. Submittals for landscape approval shall include a separate planting plan showing species, type, size, and number of plantings; a site plan drawn to a scale not more than 1″=100′ showing total area and total landscaped area and any supplementary information as required to demonstrate conformance to the landscape requirements. Any deviations from the approved landscape plan must receive approval from the Department of Developmental Services of the City of Cedar Falls, Iowa, prior to installation.

b. Each submittal shall include fiscal arrangements by bond, certificate of deposit, or a nonrevocable letter of credit payable to the City of Cedar Falls, Iowa, to ensure that the landscaping will be installed. Said city may at its discretion accept other evidence of ability to pay. The fiscal arrangements shall reflect the cost of required landscaping not yet in place to ensure that such landscaping will be installed. The submittal must also grant said city or its licensed and contracted agent the right to enter upon the land for the purposes of installing the required landscaping, in the event that such landscaping is not in place by the date specified in the agreement. Such fiscal arrangements shall be released when landscape installation is verified.

(2) *Measured compliance.* The following point schedule and conditions apply to required landscaping in all zones and shall be used in determining achieved points for required planting:

Overstory trees	
4 inch caliper or greater	100 points
3 inch caliper or greater	90 points
2 inch caliper or greater	80 points
Understory trees	
2 inch caliper or greater	40 points
1½ inch caliper or greater	30 points
1 inch caliper or greater	20 points
Shrubs	
5 gallon or greater	10 points
2 gallon or greater	5 points

Conifers	
10 foot height or greater	100 points
8 foot height or greater	90 points
6 foot height or greater	80 points
5 foot height or greater	40 points
4 foot height or greater	30 points
3 foot height or greater	20 points

(3) *Minimum requirements for designated zones:*

a. *"R" zones and residential uses.* The minimum required landscape area shall be 65 percent of the lot exclusive of buildings. The yard shall be planted with a combination of trees and shrubs to achieve a minimum of .05 points per square foot of the landscaped area.

b. *"C-3" commercial zone.* The minimum required landscape area shall be 65 percent of the lot exclusive of buildings and parking. The landscape area shall be planted with a combination of trees and shrubs to achieve a minimum of .05 points per square foot of landscaped area.

c. *"C" and "M" zones.* The minimum required landscape area shall be 25 percent of the total lot area. The landscape area shall be planted with a combination of trees and shrubs to achieve a minimum of .04 points per square foot of total lot area.

1. For commercial and industrial lots exceeding one acre in size, the minimum required landscape area shall be 25 percent of the total lot area. The landscaped area shall be planted with a combination of trees and shrubs to achieve a minimum of .03 points per square foot of total lot area. In addition to said requirements, a 50 point reduction in minimum total landscape points required will be allowed based on each percentage point of green space (grass) provided in excess of the 25 percent required minimum. However, the total number of points reduced shall not exceed the following:

200 points	—	1.00 to 2 acres
400 points	—	2.01 to 3 acres
800 points	—	3.01 to 4 acres
1,200 points	—	4.01 to 5 acres

1,600 points	—	5.01 to 6 acres
2,000 points	—	6.01 to 7 acres
Etc.	—	Etc.

There shall be no reduction of required landscaping points for sites less than one acre in area.

(4) *Additional landscaping requirements.* The following additional landscaping requirements apply to all zones:

a. *Vehicular use areas.*

1. For vehicular use areas greater than 6,000 square feet, an area equivalent to a minimum of five percent of the total vehicular use area shall be landscaped. The required landscape area shall be located within the vehicular use area.

2. For vehicular use areas 6,000 square feet or less, a combination of trees and shrubs shall be planted in either the vehicular use area or within five feet of the perimeter or both to achieve the minimum landscape points as required by the underlying zone.

3. Tree spacing shall be such that no designated parking space is more than 50 feet from the trunk of a tree.

4. There shall be sufficient barriers to protect all landscaped areas from vehicular damage.

5. Wherever a parking area is located adjacent to the greenbelt boundary the parking area shall be separated from the boundary line by a landscaped area(s) of a width no less than eight feet measured perpendicular to the boundary. This area must contain an effective visual screen for a minimum of eighty percent of that parking area. This screen must be at least six feet in height, and may be achieved through the use of landscaped berms and/or plant materials. If plant materials are used to achieve this screen there will be one point assigned per linear foot of the screen, no individual plant points will be assigned for this screen.

6. The vehicular use area must terminate at least five feet from any exterior building wall. Exceptions may be made where it is necessary to cross the nonvehicular use area to gain access to the building(s) and for drive up facilities such as banks and restaurants.

7. All trees in the interior of the vehicular use area shall be two inch caliper or greater measured six inches above grade at the time of planting.

8. Areas less than 40 square feet in size or having an average dimension of less than three feet, shall not be included for purposes of calculating the required landscape area in the vehicular use area.

b. *Maintenance.* The owner of the real estate contained in this zoning district shall be solely responsible for the maintenance of any and all landscaping. This maintenance shall include but not be limited to removal of litter, pruning, mowing of lawns, adequate watering for all growing plant life, weeding, and replacement, as necessary, in order to preserve the

landscaping plan as approved by this section. A maintenance agreement and right to enter agreement shall be signed prior to a building permit and occupancy permit being issued.

c. *Street tree planting.* A minimum of .75 points per linear foot of street frontage must be achieved in the city parking area (right-of-way). This point requirement shall be met through the provision of trees, and planting shall comply with guidelines established by the Park and Grounds Maintenance of the Cedar Falls Park Division. If circumstances do not allow planting within the city parking area, street tree points shall be provided along the perimeter of the applicant's property.

d. *Residential development.* For one and two ~~family~~unit residential development in zoning districts other than residential zones, the residential requirements of this section shall apply.

e. *Point distribution.* A minimum of 65 percent of all required points shall be achieved through tree plantings. A minimum of ten percent of all required points shall be achieved through living landscape other than trees.

f. *Reduction of landscaped area.* A point score in excess of that required may be used to reduce the required landscaped area at a rate of one square foot per excess point up to a maximum reduction of 25 percent.

g. *Screening.* For any use that is oriented away from the Highway Corridor Greenbelt Boundary a screen shall be installed along the lot line adjacent to the boundary. There will be no individual tree points given for this screen. The screen will receive three points per linear foot if the trees are greater than six feet in height at the time of planting. The screen will receive one point per linear foot if the trees are greater than four feet in height at the time of planting. In no case shall the trees be less than four feet at the time of planting.

(f) *Sign regulations; general prohibition:* No person, firm, or corporation shall develop, install, locate, or construct any sign within the HCG overlay district except as expressly authorized in this section. The provisions of this section shall apply in addition to any other zoning district in which land may be classified and that such lands may be used as permitted by such other districts. In the case of conflict the most restrictive provisions shall govern except as otherwise expressly provided in this section.

(1) *Permitted signs.*

a. *On-premise signs.*

1. In residential, "S-1" and "A-1" districts only those signs permitted in the underlying districts shall be allowed.

(2) *Commercial C-1.*

a. *Freestanding signs.* One freestanding sign per use, not to exceed 40 square feet on each face and not to exceed 20 feet in overall height. If more than two faces are used the area of each side shall be reduced proportionately.

b. *Wall signs.* Wall signs shall not exceed ten percent of the wall area; in no case shall the wall sign exceed ten percent of the first 15 vertical feet of wall area. The length of a wall sign shall not exceed 2/3 of the building wall length. Wall signs shall be mounted flat against the building. No more than two sides of a building shall have wall signs. For the purpose of this part signs painted on awnings shall be considered as wall signs.

(3) *Commercial "C-2" and all other zoning classifications:*

a. *Freestanding signs.* One freestanding sign per use, not to exceed 40 feet in height with an area not to exceed the smaller of the following:

1. Two square feet for each foot of street frontage.

2. 250 square feet.

If more than two faces are used the area of each side shall be reduced proportionately. For multiple businesses under common ownership that share common parking, access, or structures they shall comply with this section as if a single business.

For multiple businesses under diverse ownership that share common parking, access, or structures they shall be allowed one freestanding sign per use if the following conditions are met:

1. The additional freestanding sign shall not be located closer than one hundred fifty feet to any other freestanding sign.
2. The maximum combined area of all freestanding signs on the site shall not exceed the allowed area for a single freestanding sign in that zone.
3. A sign plan showing square footage or proposed signs for each parcel be submitted for the entire site prior to sign permit approval.

b. *Wall signs.* Wall signs shall not exceed ten percent of the wall area; in no case shall the wall signs exceed ten percent of the first 15 vertical feet of wall area. The length of a wall sign shall not exceed 2/3 of the building wall length. Wall signs shall be mounted flat against the building. No more than two sides of a building shall have wall signs. For the purpose of this part, signs painted on awnings shall be considered as wall signs.

c. *Direction signs.* Each use shall also be allowed directional signs as necessary to facilitate the orderly flow of traffic with a maximum area of six square feet each. A logo is permitted on the directional signs, but shall not exceed ten percent of the total sign area. These signs are for directional, not advertising purposes. The square footage of directional signs shall not be included in the calculation of the allowable square footage of other signage.

d. *Menu signs.* For drive-up menu signs for ordering, only one single sided menu sign shall be allowed with no advertisement on the back of the sign permitted. This sign shall have a maximum area of 32 square feet. The square footage of menu signs shall not be included in the calculation of the allowable square footage of other signage.

e. *Roof signs.* Roof signs shall be allowed in place of the wall sign only when both of the following conditions are met:

1. Insufficient area for a wall sign;
2. The building has a pitched roof and the roof sign does not project higher than the peak of the roof.

f. *Off-premise signs.* Off-premise signs shall not be allowed in the overlay district.

(4) *Additional sign regulations.* Freestanding signs shall be allowed in the front yard or the yard furthest from the HCG boundary. Freestanding signs as set forth in this ordinance shall be allowed in the yard closest to the HCG boundary only when they conform as listed:

a. The signs shall have a maximum height of 25′ above the surface of the highway or a maximum height of 40′ above the grade on which they are mounted, whichever is less.

b. Each sign shall have a pole covering in proportion to its size. The covering shall be at least 50 percent of the sign cabinet face width. The construction material of the covering shall be compatible with the construction material of the building.

c. When a business ceases operation the on-premise signage shall be removed by the owner according to the following schedule:

Sign or sign cabinet — within 180 days

Supporting structure — within 1 year

When off-premise advertising is bare or in disrepair for a period of 90 days it shall be removed. If it is bare or in disrepair for a period of one year the structure shall be removed.

(5) *Prohibited signs.* The following signs are not considered appropriate within the HCG overlay district and shall not be permitted:

a. Portable signs.

b. Signs painted directly on buildings.

c. Signs painted on bus benches.

d. Billboard signs.

1. Billboard signs in existence within the district at the time of enactment of this section shall be permitted to remain as legal nonconforming uses in the underlying zoning district. Existing billboards may be maintained and repaired but not enlarged in area or in height nor reconstructed or replaced. Furthermore, if said existing billboard is damaged to an extent more than 50 percent of its fair market value it shall not be repaired, reconstructed, or replaced.

(Ord. No. 2000, § 1, 1-11-93; Ord. No. 2066, § 1, 9-12-94; Ord. No. 2139, § 1, 5-31-96)

Sec. 29-160. - CHN, College Hill Neighborhood overlay zoning district.

General Regulations

(a) *Boundaries.* The College Hill Neighborhood zoning district (CHN District) boundaries are shown in the College Hill Neighborhood Master Plan and legally described in Attachment A. (Said attachment is not set out at length herein but is on file in the office of the city planner.)

(b) *Purpose and intent:* The purpose of the College Hill Neighborhood overlay zoning district is to regulate development and land uses within the College Hill Neighborhood and to provide guidance for building and site design standards, maintenance and development of the residential and business districts in a manner that complements the University of Northern Iowa campus, promotes community vitality and safety and strengthens commercial enterprise. New structures, including certain types of fences, certain modifications to existing structures and certain site improvements and site maintenance shall conform to this section.

The provisions of this section shall apply in addition to any other zoning district regulations and requirements in which the land may be classified. In the case of conflict, the most restrictive provisions shall govern unless otherwise expressly provided in this section.

(c) *Definitions.*

(1) *Bedroom:* A room unit intended for sleeping purposes containing at least 70 square feet of floor space for each occupant. Neither closets nor any part of a room where the ceiling height is less than five feet shall be considered when computing floor area.

~~(2) *Boardinghouse:* A building other than a hotel or other overnight lodging facility where, for compensation, lodging and meals are provided by the building owners or managers for resident boarders with meals for all resident boarders provided in a central kitchen facility within said building. Residents within said boardinghouse facility shall be accommodated with weekly, monthly or yearly tenant agreements or leases.~~

(~~3~~2) *Change in use:* Change in use shall include residential uses changed from single-~~family~~unit to two-~~family~~unit or two-~~family~~unit to multi-~~family~~unit or to any increase in residential intensity within a structure (i.e. change from duplex to fraternity house). The term shall also apply to changes in use classifications (i.e. residential to commercial).

~~(4) *Dwelling, multiple, also multi-family:* Means a residence designated or ococupied by three or more families with separate housekeeping and cooking facilities for each; also three or more dwelling units.~~

~~(5) *Dwelling unit:* A room or group of rooms which is arranged, designed or used for human living quarters for the occupancy of one family, containing bathroom and kitchen facilities.~~

~~(6) *Family:* Means one or more persons occupying a single dwelling unit, provided that, unless all members are related by blood, marriage or adoption, no such family shall contain more than four persons.~~

(3~~7~~) *Fraternity/sorority:* Residential facilities provided for college students and sponsored by university affiliated student associations. Such facilities may contain individual or common sleeping areas and bathroom facilities but shall provide common kitchen, dining, and lounging areas. Such facilities may contain more than one ~~family~~unit.

(4~~8~~) *Greenway:* Open landscaped area maintained for floodplain protection, stormwater management and public access. Such area may contain pedestrian walkways or bicycle pathways but is not intended for regular or seasonal usage by motorized recreational vehicles.

(5~~9~~) *Landscaped area:* An area not subject to vehicular traffic, which consists of living landscape material including grass, trees and shrubbery.

(6~~10~~) *Lot split, property transfer:* Not a subdivision plat where a new lot is being created; includes any transfer of small segments of property or premises between two abutting properties, whether commonly owned or owned by separate parties, where one property (the "sending property") is dedicating or deeding additional land to another abutting property (the "receiving property."[)]

(7~~11~~) *Neighborhood character:* The College Hill Neighborhood area is one of Cedar Falls' oldest and most densely populated neighborhoods. As the University of Northern Iowa has grown the original single-~~family~~unit residential neighborhood surrounding the campus area has been transformed into a mixture of single-~~family~~unit, duplex and multiple ~~family~~unit dwelling units along with a few institutional uses and other university-related uses such as fraternities and sorority houses. These various uses are contained in a variety of underlying zoning districts (i.e. R-2, R-3, R-4, Residential and C-3, commercial districts). Architectural styles vary significantly among existing building structures while differing land uses and building types are permitted in different zoning districts. When references are made in this ordinance to preservation of neighborhood character, uniformity of building scale, size, bulk and unusual or widely varying appearance are of primary concern regardless of the nature of the proposed building use.

New construction, including significant improvements to existing structures, shall be of a character that respects and complements existing neighborhood development. The following variables or criteria shall be used in determining whether a newly proposed construction or building renovation is in keeping with the character of the neighborhood:

a. Overall bulk/size of the building;

b. Overall height of the building;

c. Number of proposed dwelling units in comparison to surrounding properties;

d. Lot density (lot area divided by number of dwelling units);

e. Off-street parking provision;

f. Architectural compatibility with surrounding buildings.

(8~~12~~) *Parking area:* That portion of a parcel of land that is improved and designated or commonly used for the parking of one or more motor vehicles.

(9~~13~~) *Parking lot:* That area improved and designated or commonly used for the parking of three or more vehicles.

(10~~14~~) *Parking space,* also *parking stall:* An area measuring at least nine feet wide and 19 feet long for all commercial, institutional or manufacturing uses or eight feet wide and 18 feet long for residential uses only, connected to a public street or alley by a driveway not less than ten feet wide, and so arranged as to permit ingress and egress of motor vehicles without moving any other vehicle parked adjacent to the parking space.

(11~~5~~) *Premises:* A lot, plot or parcel of land including all structures thereon.

(12~~6~~) *Residential conversion:* The alteration or modification of a residential structure that will result in an increase in the number of rooming units or dwelling units within the residential structure. The addition or creation of additional rooms within an existing rooming unit or dwelling unit does not constitute a residential conversion.

~~(17) *Rooming house:* An owner-occupied or manager-occupied single-dwelling unit wherein individual sleeping rooms are provided to not less than three unrelated resident tenants. Not more than one kitchen facility shall be established within said structure wherein meals may be prepared by resident tenants. Said rooming or boarding facility shall be distinctive from transient lodging facilities such as hotels, bed and breakfasts, other overnight lodging facilities or public eateries. Residents within said roominghouse facility shall be accommodated with weekly, monthly or yearly tenant agreements or leases.~~

~~(18) *Rooming unit:* Any habitable room or group of adjoining habitable rooms located within a dwelling and collectively form a single dwelling unit with facilities, which are used or intended to be used primarily for living and sleeping by a single-family.~~

(19~~3~~) *Structural alteration:* Any alteration, exterior or interior that alters the exterior dimension of the structure. This provision shall apply to residential, commercial and institutional uses including churches or religious institutions.

(14~~20~~) *Substantial improvement:* Any new construction within the district or any renovation of an existing structure, including the following:

a. Any increase in floor area or increased external dimension of a residential or commercial structure. Additional bedrooms proposed in an existing duplex or multi-~~family~~unit residence shall be considered a substantial improvement. Bedroom additions to single-~~family~~unit residences shall not be considered to be a substantial improvement.

b. Any modification of the exterior appearance of the structure by virtue of adding or removing exterior windows or doors. Repair or replacement of existing windows or doors which does not result in any change in the size, number or location of said windows and doors shall not be considered to be a substantial improvement.

c. Any structural alteration that increases the number of bedrooms or dwelling units. Interior room additions, including bedroom additions, may be made to single-~~family~~unit residential structures without requiring additional on-site parking.

d. All facade improvements, changes, alterations, modifications or replacement of existing facade materials on residential or commercial structures. Routine repair and replacement of existing siding materials with the same or similar siding materials on existing structures shall be exempt from these regulations.

e. Any new, modified or replacement awnings, signs or similar projections over public sidewalk areas.

f. Any increase or decrease in existing building height and/or alteration of existing roof pitch or appearance. Routine repair or replacement of existing roof materials that do not materially change or affect the appearance, shape or configuration of the existing roof shall not be considered a substantial improvement.

g. Any construction of a detached accessory structure measuring more than 300 sq. ft. in base floor area for a residential or commercial principal use.

h. Any increase in area of any existing parking area or parking lot or any new construction of a parking area or parking lot, which existing or new parking area or parking lot contains or is designed to potentially accommodate a total of three or more parking stalls.

i. Any proposed property boundary fence, which utilizes unusual fencing materials such as stones, concrete blocks, logs, steel beams or similar types of atypical or unusual fence materials. Standard chain link fences, wooden or vinyl privacy fences shall be exempt from these provisions.

j. Demolition and removal of an entire residential, commercial or institutional structure on a property shall not be considered a substantial improvement.

(d) *Administrative review.*

(1) Applicability. The provisions of this section shall constitute the requirements for all premises and properties that lie within the boundaries of the College Hill Neighborhood overlay zoning district. This section and the requirements stated herein shall apply to all new construction, change in use, structural alterations, substantial improvements or site improvements including:

a. Any substantial improvement to any residential, commercial or institutional structure, including churches.

b. Any new construction, change in use, residential conversion or structural alteration, as defined herein, for any structure.

c. Any new building structure including single-~~family~~unit residences.

(2) In the case of emergency repairs required as the result of unanticipated building or facade damages due to events such as fire, vandalism, flooding or weather-related damages, site plan review by the planning and zoning commission and the city council will not be required for completion of said emergency repairs, provided that the extent of damages and cost of said repairs are less than 50 percent of the value of the structure. However, said emergency repairs along with cost estimates related to the extent of building structural damages shall be verified by the city planner in conjunction with the city building inspector. Said emergency repairs, to the extent possible, shall repair and re-establish the original appearance of the structure. In the event that said emergency repairs result in dramatic alteration of the exterior appearance of the structure as determined by the city planner, the owner of the property shall make permanent repairs or renovations that re-establish the original appearance of the structure with respect to facade features, window and door sizes, locations and appearances of said windows and doors within six months following completion of said emergency repairs. Said emergency repairs shall not alter the number, size or configuration of pre-existing rooms, bedrooms or dwelling units within the structure.

(3) Submittal requirements. Applicants for any new construction, change in use, structural alteration, facade alteration, residential conversion, substantial improvement, parking lot construction or building enlargement shall submit to the city planning division an application accompanied by such additional information and documentation as shall be deemed appropriate by the city planner in order for the planning division to properly review the application. The required application for any project may include one or more of the following elements depending upon the nature of the application proposal. Some applications will require submittal of more information than other types of applications. The city planner will advise the applicant which of these items need to be submitted with each application with the goal of providing sufficient information so that decision makers can make an informed decision on each application.

a. Written description of building proposal, whether a new structure, facade improvement, parking lot improvement, building addition, etc. The name and address of the property owner and property developer (if different) must be provided.

b. Building floor plans;

c. Building materials;

d. Dimensions of existing and proposed exterior building "footprint";

e. Facade details/exterior rendering of the structure being modified, description of proposed building design elements including but not limited to building height, roof design, number and location of doors and windows and other typical facade details;

f. Property boundaries, existing and proposed building setbacks;

g. Parking lot location, setbacks, parking stall locations and dimensions along with parking lot screening details;

h. Lot area and lot width measurements with explanation if any portion of an adjacent lot or property is being transferred to the property under consideration;

i. Open green space areas and proposed landscaping details with schedule for planting new landscaping materials;

j. Trash dumpster/trash disposal areas;

k. Storm water detention/management plans.

Following submittal of the appropriate application materials as determined by the city planner, said application materials shall be reviewed by the City of Cedar Falls Planning and Zoning Commission and the City Council to determine if the submittal meets all ordinance requirements and conforms to the standards of the comprehensive plan, recognized principles of civic design, land use planning and landscape architecture. The commission may recommend and the city council may approve the application as submitted, may deny the application, or may require the applicant to modify, alter, adjust or amend the application as deemed necessary to the end that it preserves the intent and purpose of this section to promote the public health, safety and general welfare.

(e) *District requirements and criteria for review.*

(1) Minimum on-site parking requirements.

a. *Single-~~family~~unit residence:* Two parking stalls per residence.

b. *Two-~~family~~unit residence:* Two stalls per dwelling units plus one additional stall for each bedroom in each dwelling unit in excess of two bedrooms.

c. *Multi-~~family~~unit residence:* Two stalls per dwelling unit plus one additional stall for each bedroom in excess of two bedrooms. One additional stall shall be provided for every five units in excess of five units for visitor parking.

d. *Boardinghouse/rooming house:* Five stalls plus one stall for every guest room in excess of four guest rooms.

e. *Fraternity/sorority:* Five parking stalls plus one stall for every two residents in excess of four residents.

f. Where fractional spaces result, the number required shall be the next higher whole number.

g. *Bicycle accommodations:* All new multi-~~family~~unit residential facilities are encouraged to provide for the establishment of bicycle racks of a size appropriate for the anticipated residential occupancy of the facility. A general suggested bike parking standard is 2 bike stalls per residential unit. For commercial projects, if lot area is available, bike racks are encouraged to be installed in conjunction with the commercial project.

(2) Parking lot standards:

a. All newly constructed or expanded parking lots (three or more parking stalls) shall be hard surfaced with concrete or asphalt, provided with a continuous curb, be set back a minimum five feet from adjacent property lines or public right-of-way with the exception of alleyways, in which case a three foot permeable setback will be required, and otherwise conform to all parking guidelines as specified in this section and in section 29-177 of the Zoning Ordinance. Alternative parking lot surfaces may be considered to the extent that such surfaces provide adequate storm water absorption rates, subject to city engineering review and approval, while providing an acceptable surface material and finished appearance. Gravel or crushed asphalt parking lots will not be permitted. However, other types of ecologically sensitive parking lot designs will be encouraged and evaluated on a case-by-case basis.

b. Landscaping in parking lots shall be classified as either internal or peripheral. The following coverage requirements shall pertain to each classification:

1. *Peripheral landscaping.* All parking lots containing three (3) or more parking spaces shall provide peripheral landscaping. Peripheral landscaping shall consist of a landscaped strip not less than five feet in width, exclusive of vehicular obstruction, and shall be located between the parking area and the abutting property lines. One tree for each 25 lineal feet of such landscaping barrier or fractional part thereof shall be planted in the landscaping strip. At least one tree shall be planted for every parking lot (such as a 3-stall parking lot) regardless of the lineal feet calculation. In addition to tree plantings, the perimeter of the parking lot shall be screened with shrubbery or similar plantings at least 3-f[ee]t in height as measured from the finished grade of the parking lot at the time of planting for purposes of vehicular screening. The vegetative screen should present a continuous, effective visual screen adjacent to the parking lot for purposes of partially obscuring vehicles and also deflecting glare from headlights. If landscaped berms are utilized, the berm and vegetative screening must achieve at least a 3-foot tall screen at time of installation as measured from the grade of the finished parking lot. Each such planting area shall be landscaped with grass, ground cover or other landscape material excluding paving, gravel, crushed asphalt or similar materials, in addition to the required trees, shrubbery, hedges or other planting material. Existing landscaping upon abutting property shall not be used to satisfy the requirements for said parking lot screening requirements unless the abutting land use is a parking lot.

2. *Exceptions:*

(a) Peripheral landscaping shall not be required for single-~~family~~unit or two-~~family~~unit residential structures where the primary parking area is designed around a standard front entrance driveway and/or attached or detached residential garage. However, if an open surface parking lot containing three (3) or more parking stalls is established in the rear yard of a two-~~family~~unit residential structure, the perimeter landscaping/screening requirements as specified herein shall apply.

(b) Peripheral landscaping shall not be required for parking lots that are established behind building structures where the parking lots do not have any public street or alley frontage or is not adjacent to any open properties such as private yards, parks or similar open areas. Examples of such a parking lot would be one designed with a multiple ~~family~~unit apartment facility where the parking lot is encircled with building structures within the project site and where the parking lot is completely obscured from public view by building structures.

(c) Underground or under-building parking lots.

(d) Above-ground parking ramps shall provide perimeter screening as specified herein around the ground level perimeter of the parking structure.

3. *Internal landscaping.* All parking lots measuring 21 parking stalls or more shall be required to landscape the interior of such parking lot. At least one over-story tree shall be established for every 21 parking stalls. Each tree shall be provided sufficient open planting area necessary to sustain full growth of the tree. Not less than five percent of the proposed paved area of the interior of the parking lot shall be provided as open space, excluding the tree planting areas. These additional open space areas must be planted with bushes, grasses or similar vegetative materials. Each separate open green space area shall contain a minimum of 40 square feet and shall have a minimum width dimension of a least five feet.

4. *Exceptions:* Internal landscaping shall not be required for vehicular storage lots, trucking/warehousing lots or for automobile sales lots. However, perimeter landscaping/screening provisions, as specified herein, shall be required for all such parking areas when they are installed or enlarged in area.

5. *Parking Garages or Parking Ramps:* All such facilities where one or more levels are established for parking either below ground or above ground and where structural walls provide for general screening of parked vehicles, internal landscaping shall not be provided.

6. It is the intent of this regulation that in parking development sites open green space and landscape areas should be distributed throughout the parking development site rather than isolated in one area or around the perimeter of the parking lot. Trees and shrubs planted within parking areas shall be protected by concrete curbs and provide adequate permeable surface area to promote growth and full maturity of said vegetation.

c. Parking stalls must provide a minimum separation of four feet from the exterior walls of any principal structure on the property as measured from the vehicle (including vehicular overhang) to the nearest wall of the structure. No vehicular parking stall shall be so oriented or positioned as to block or obstruct any point of egress from a structure, including doorways or egress windows.

d. No portion of required front or side yards in any residential (R) zoning district shall be used for the establishment of any parking space, parking area, or parking lot, except for those driveways serving a single ~~family~~unit or two-~~family~~unit residence. For all other uses, a single driveway no more than 18 feet in width may be established across the required front and side yards, provided that side yard driveway setbacks are observed, as an access to designated rear yard parking areas, unless said lot is dedicated entirely to a parking lot, in which case a wider driveway access will be allowed across the required yard area to access said parking lot.

e. When a driveway or access off a public street no longer serves its original purpose as access to a garage or parking lot due to redevelopment of the property or is replaced with an alternative parking lot or parking arrangement with an alternate route of access, the original driveway access shall be re-curbed by the owner at the owner's expense and the parking/ driveway area shall be returned to open green space with grass plantings or other similar landscaping materials.

f. Routine maintenance of existing parking areas and parking lots, including resurfacing of said areas with similar materials or with hard surfacing will be permitted without requiring review by the planning and zoning commission and city council, provided that no increase in area of said existing parking area or parking lot, or any new construction of a parking area or parking lot, which existing or new parking area or parking lot contains or is designed to potentially accommodate a total of three or more parking stalls, occurs. Any newly paved or hard surfaced parking lot, excluding those existing hard surface parking lots that are merely being resurfaced, must satisfy minimum required setbacks from the property line or alley and must provide a continuous curb around the perimeter of said improved parking lot. Hard surfacing of any existing unpaved parking area or parking lot

will require an evaluation by the city engineering division regarding increased storm water run-off/possible storm water detention.

(3) Storm water drainage:

a. Storm water detention requirements as outlined in City Code Section 27-405 and in Section 29-87 of the Zoning Ordinance shall apply to all newly developed parking lots and new building uses. In addition, said requirements shall apply to any existing parking lot that is resurfaced, reconstructed or enlarged subject to review by the city engineer. In those cases where no municipal storm sewer is readily available to serve a particular property or development site, the use of the property will be limited. The maximum allowable use that shall be permitted on any particular property or development site which is not served by a municipal storm sewer shall be limited to the following uses in Residential zoning districts: a parking lot; a single-~~family~~unit residence; a two-~~family~~unit residence; or a multi-~~family~~unit residence. Provided, however, that the applicant shall be required to submit calculations, which shall be subject to review and approval by the city engineering division, that verify that the total impervious surface area on the particular property or development site that will exist immediately following completion of the proposed new development shall be no greater than the total impervious surface area on the particular property or development site that existed immediately prior to the proposed new development.

b. Soil erosion control: At the time of new site development, including parking lot construction, soil erosion control measures must be installed on the site in conformance with city engineering standards. Said soil erosion measures must be maintained until the site is stabilized to the satisfaction of the city engineering division.

(4) Open space/landscaping requirements:

a. Principal permitted uses within the district shall provide minimum building setbacks as required in the zoning ordinance. With the exception of construction periods said required front and side setback areas (required yards) shall be maintained with natural vegetative materials and shall not be obstructed with any temporary or permanent structure, on-site vehicular parking including trailers or recreational vehicles, nor disturbed by excavations, holes, pits or established recreational areas that produce bare spots in the natural vegetation.

b. Driveways measuring no more than 18 feet in width, sidewalks and pedestrian access ways measuring no more than six feet in width may be established across the required front and side yard areas.

c. All newly constructed office or institutional buildings in the R-3 or R-4 districts and all newly constructed single ~~family~~unit, two-unit or multi-~~family~~unit residential structures in residential or commercial districts shall provide on-site landscaping within the required yard areas or in other green space areas of the property at the rate of 0.04 points per square foot of total lot area of the site under consideration for the proposed residential development or improvement. Landscaping shall consist of any combination of trees and shrubbery, subject to review and approval by the planning and zoning commission and the city council. In addition to these requirements, parking lot plantings and/or screening must be provided as specified herein. Plantings must be established within one year following issuance of a building permit. This provision shall not apply to commercial uses or commercial structures established in the C-3, commercial district.

d. Measured compliance: The following landscaping point schedule applies to required landscaping in all zoning districts within the College Hill Neighborhood overlay district with the exception of commercial uses in the C-3 commercial business district, and shall be used in determining achieved points for required plantings. The points are to be assigned to plant sizes at time of planting/installation.

Over-Story Trees:	
4-inch caliper or greater	100 points
3-inch caliper to 4-inch caliper	90 points
2-inch caliper to 3-inch caliper	80 points
1-inch caliper to 2-inch caliper	60 points

Under-Story Trees:	
2-inch caliper or greater	40 points
1½-inch caliper to 2-inch caliper	30 points
1-inch to 1½-inch caliper	20 points

Shrubs:	
5-gallon or greater	10 points
2-gallon to 5-gallon	5 points

Conifers:	
10-foot height or greater	100 points
8-foot to 10-foot height	90 points
6-foot to 8-foot height	80 points

5-foot to 6-foot height	40 points
4-foot to 5-foot height	30 points
3-foot to 4-foot height	20 points

(5) Fences/retaining walls:

a. Fences shall be permitted on properties in accordance with the height and location requirements outlined in section 29-86 of the Zoning Ordinance. Zoning/land use permits shall be required for fences erected within the district.

b. Any existing fence or freestanding wall that is, in the judgment of the building inspector, structurally unsound and a hazard to adjoining property shall be removed upon the order of the building inspector.

c. Retaining walls may be installed on property as a measure to control soil erosion or storm water drainage. However, said retaining walls shall be permitted only after review and approval by the city engineer.

(6) Detached accessory structures. All newly constructed detached accessory structures or expansions of existing detached accessory structures exceeding 300 sq. ft. in base floor area proposed to be situated on residential or commercial properties shall be subject to review and approval by the planning and zoning commission and city council. Maximum allowable building height, size and location requirements for accessory structures as specified in section 29-115 shall apply. In addition to those standards, proposed detached accessory structures or expanded structures larger than 300 sq. ft. in area shall be designed in such a manner as to be consistent with the architectural style of the principal residential or commercial structure on the property. Similar building materials, colors, roof lines, roof pitch and roofing materials shall be established on the accessory structure to match as closely as possible those elements on the principal structure. In addition, vertical steel siding along with "metal pole barn" type construction shall not be allowed.

(7) No existing single-~~family~~unit residential structure in the R-2 district shall be converted or otherwise structurally altered in a manner that will result in the creation or potential establishment of a second dwelling unit within the structure.

(8) No duplex (two-~~family~~unit) or multi-~~family~~unit dwelling shall add dwelling units or bedrooms to any dwelling unit without satisfying minimum on-site parking requirements. If additional parking spaces are required, the entire parking area must satisfy parking lot development standards as specified herein.

(9) No portion of an existing parcel of land or lot or plot shall be split, subdivided or transferred to another abutting lot or parcel for any purpose without prior review and approval by the city planning and zoning commission and the city council. Land cannot be transferred or split from one lot or property to be transferred to another for purposes of benefiting the "receiving" property while diminishing the minimum required lot area, lot width or building or parking lot setback area of the "sending" property. Such lot transfer or split shall not create a nonconforming lot by virtue of reduction of minimum required lot area, lot width or reduction of minimum required building or parking lot setbacks. Said lot transfer or split shall not affect any existing nonconforming property by further reducing any existing nonconforming element of the lot or property including lot area, lot width or building or parking lot setbacks in order to benefit another abutting property for development purposes. This provision shall not apply to those

instances where separate lots or properties are being assembled for purposes of new building construction where existing structures on the assembled lots will be removed in order to accommodate new building construction.

(10) Site plan revisions/amendments: All changes, modifications, revisions and amendments made to development site plans that are deemed to be major or substantial by the city planner shall be resubmitted to the planning and zoning commission in the same manner as originally required in this section. Examples of major or substantial changes shall include but are not limited to changes in building location, building size, property size, parking arrangements, enlarged or modified parking lots, open green space or landscaping modifications, setback areas or changes in building design elements.

(11) Trash dumpster/trash disposal areas must be clearly marked and established on all site plans associated with new development or redevelopment projects. No required parking area or required parking stalls shall be encumbered by a trash disposal area.

a. Large commercial refuse dumpsters and recycling bins serving residential or commercial uses shall be located in areas of the property that are not readily visible from public streets. No such dumpster or bin shall be established within the public right of way. All dumpsters and bins shall be affixed with a solid lid covering and shall be screened for two purposes: (1) visual screening; and (2) containing dispersal of loose trash due to over-filling. Screening materials shall match or be complementary to the prevailing building materials.

(f) *Design review.* Any new construction, building additions, facade renovations or structural alterations to commercial or residential structures, or substantial improvements to single-~~family~~unit residences that, in the judgment of the city planner, substantially alters the exterior appearance or character of permitted structures shall require review and approval by the Cedar Falls Planning and Zoning Commission and City Council.

(1) *Criteria for review:*

a. Applications involving building design review. Neighborhood character, as herein defined, shall be considered in all.

b. The architectural character, materials, textures of all buildings or building additions shall be compatible with those primary design elements on structures located on adjoining properties and also in consideration of said design elements commonly utilized on other nearby properties on the same block or within the immediate neighborhood.

c. Comparable scale and character in relation to adjoining properties and other nearby properties in the immediate neighborhood shall be maintained by reviewing features such as:

1. Maintaining similar roof pitch.

2. Maintaining similar building height, building scale and building proportion.

3. Use of materials comparable and similar to other buildings on nearby properties in the immediate neighborhood.

d. Mandated second entrances or fire escapes established above grade shall not extend into the required front yard area.

e. Existing entrances and window openings on the front facades and side yard facades facing public streets shall be maintained in the same general location and at the same general scale as original openings or be consistent with neighboring properties.

f. Projects involving structural improvements or facade renovations to existing structures must provide structural detail and ornamentation that is consistent with the underlying design of the original building.

g. The primary front entrances of all residential buildings shall face toward the public street. Street frontage wall spaces shall provide visual relief to large blank wall areas with the use of windows or doorways and other architectural ornamentation.

(2) *Building entrances for multi-~~family~~unit residential dwellings.* Main entrances should be clearly demarcated by one of the following:

a. Covered porch or canopy.

b. Pilaster and pediment.

c. Other significant architectural treatment that emphasizes the main entrance. Simple "trim" around the doorway does not satisfy this requirement.

(3) *Building scale for multi-~~family~~unit residential dwellings.* Street facing walls that are greater than 50 feet in length shall be articulated with bays, projections or alternating recesses according to the following suggested guidelines:

a. Bays and projections should be at least 6 feet in width and at least 16 inches, but not more than 6 feet, in depth. Recesses should be at least 6 feet in width and have a depth of at least 16 inches.

b. The bays, projections and recesses should have corresponding changes in roofline or, alternatively, should be distinguished by a corresponding change in some architectural elements of the building such as roof dormers, alternating exterior wall materials, a change in window patterns, the addition of balconies, variation in the building or parapet height or variation in architectural details such as decorative banding, reveals or stone accents.

(4) *Building scale for commercial buildings.* The width of the front façade of new commercial buildings shall be no more than 40 feet. Buildings may exceed this limitation if the horizontal plane of any street-facing façade of a building is broken into modules that give the appearance or illusion of smaller, individual buildings. Each module should satisfy the following suggested guidelines that give the appearance of separate, individual buildings:

[Insert illustration/find commercial building examples]

a. Each module should be no greater than 30 feet and no less than 10 feet in width and should be distinguished from adjacent modules by variation in the wall plane of at least 16 inches depth. For buildings 3 or more stories in height the width module may be increased to 40 feet.

b. Each module should have a corresponding change in roof line for the purpose of separate architectural identity.

c. Each module should be distinguished from the adjacent module by at least one of the following means:

1. Variation in material colors, types, textures

2. Variation in the building and/or parapet height

3. Variation in the architectural details such as decorative banding, reveals, stones or tile accent

4. Variation in window pattern

5. Variation in the use of balconies and recesses.

(5) *Balconies and exterior walkways, corridors and lifts serving multi-~~family~~unit residences.*

a. Exterior stairways refer to stairways that lead to floors and dwelling units of a building above the first or ground level floor of a building. Exterior corridors refer to unenclosed corridors located above the first floor or ground level floor of a building. Balconies and exterior stairways, exterior corridors and exterior lifts must comply with the following:

1. Materials must generally match or be complementary to the building materials utilized on that portion of a building where the exterior corridor or balcony is established.

2. Unpainted wooden materials are expressly prohibited.

3. Stained or painted wood materials may only be utilized if said material and coloration is guaranteed for long term wear and the material is compatible with the principal building materials on that portion of the building where the exterior corridor is established.

4. The design of any balcony, exterior stairway, exterior lift or exterior corridor must utilize columns, piers, supports, walls and railings that are designed and constructed of materials that are similar or complementary to the design and materials used on that portion of the building where the feature is established.

5. Exterior stairways, exterior lifts, corridors and balconies must be covered with a roof similar in design and materials to the roof over the rest of the structure. Said roof shall be incorporated into the overall roof design for the structure. Alternatively, such features (stairways, lifts, corridors or balconies) may be recessed into the façade of the building.

6. Exterior corridors may not be located on a street-facing wall of the building.

b. Exterior fire egress stairways serving second floor or higher floors of multi-~~family~~unit residences shall be allowed according to city requirements on existing buildings that otherwise are not able to reasonably satisfy city fire safety code requirements, provided the fire egress stairway or structure is not located on the front door wall of a building that faces a street. All such egress structures that are located on the front door wall of a building that faces a street, whether new or replacement of an existing egress structure, shall be subject to review by the commission and approval by the city council. Areas of review shall be general design, materials utilized and location of the proposed egress structure. On corner lots, if a side street-facing mandated access is necessary and other options are unavailable, the side-street facing wall shall be used for this egress structure. In any case, fire egress stairways must utilize similar materials as outlined above; i.e., no unpainted wooden material shall be allowed.

(6) *Building materials for multi-~~family~~unit residential dwellings.*

a. For multiple ~~family~~unit dwellings, at least 30% of the exterior walls of the front facade level of a building must be constructed with a masonry finish such as fired brick, stone or similar material, not to include concrete blocks and undressed poured concrete. Masonry may include stucco or similar material when used in combination with other masonry finishes. The following trim elements shall be incorporated into the exterior design and construction of the building, with the following recommended dimensions to be evaluated on a case-by-case basis:

1. Window and door trim that is not less than 3 inches wide.

2. Corner boards that are not less than 3 inches wide unless wood clapboards are used and mitered at the corners.

3. Frieze boards not less than 5 inches wide, located below the eaves.

b. Any portion of a building with a side street façade must be constructed using similar materials and similar proportions and design as the front facade.

c. In those cases where the developer of the property chooses not to utilize at least 30% masonry finish as specified above, the developer shall be required to incorporate building scale specifications outlined in subsection (f)(3) of this section, pertaining to articulation of bays, projections and recesses.

d. Exposed, unpainted or unstained lumber materials are prohibited along any facade that faces a street-side lot line (i.e., public street frontage).

e. Where an exterior wall material changes along the horizontal plane of a building, the material change must occur on an inside corner of the building.

f. For buildings where the exterior wall material on the side of the building is a different material than what is used on the street facing or wall front, the street facing or wall front material must wrap around the corners to the alternate material side of the building at least 3 additional feet.

g. Where an exterior wall material changes along the vertical plane of the building, the materials must be separated by a horizontal band such as a belt course, soldier course, band board or other trim to provide a transition from one material to another.

(g) *Commercial district.* The College Hill Neighborhood commercial district is defined by the boundaries of the C-3, commercial zoning district. The district is made up primarily of commercial uses as the principal uses on individual properties. However, some properties are occupied or may be occupied in the future by residential uses that serve as the principal permitted use on individual properties. Residential uses established on individual properties as the principal use are to be discouraged due to the limited area available for commercial uses. In some cases residential uses may be contained within principal commercial uses and in such cases the residential uses are considered to be secondary or accessory uses to the principal commercial use on the property.

(1) Principal permitted residential uses are allowable within the district subject only to planning and zoning commission and city council review and approval. In general, principal permitted residential uses are to be discouraged from being established within the commercial district due to the limited area available for commercial establishments. In those cases where a residential use is permitted and said use serves as the principal use on an individual property, that residential use will be governed by minimum lot area, lot width and building setback requirements as specified in the R-4, Residential zoning district. In addition, all other applicable requirements pertaining to substantial improvements or new construction of any principal permitted residential use shall conform to the requirements of this section, including on-site parking, landscaping, and building setbacks, with no vehicular parking allowed in the required front and side yards, said required yards being those as defined within the R-4, Residential district.

(2) Secondary or accessory residential uses to be established on the upper floors of principal permitted commercial uses are allowed. On-site parking will not be required for secondary, accessory residential uses. No accessory or secondary residential use may be established on the main floor or street level floor of any storefront or commercial shop front of a principal permitted commercial building structure within the C-3, commercial district. Planning and zoning commission and city council review relating to the establishment of secondary or accessory residential uses shall not be required unless the property owner proposes to utilize any portion of the ground floor area of a commercial use on a property for residential purposes.

(3) Conditional uses. The following uses may be allowed as a conditional use subject to review and approval by the planning and zoning commission and the city council. The proposed use must conform to the prevailing character of the district and such use shall not necessitate the use of outdoor storage areas. In addition such conditional uses must not generate excessive amounts of noise, odor, vibrations, or fumes, or generate excessive amounts of truck traffic. Examples of uses that may be allowed subject to approval of a conditional use permit are:

a. Printing or publishing facility;

b. Limited manufacturing activity that is directly related to the operation of a retail business conducted on the premises;

c. Home supply business.

(4) Prohibited uses. In all cases the following uses will not be allowed within the C-3, commercial district either as permitted or conditional uses:

a. Lumber yards;

b. Used or new auto sales lots and displays;

c. Auto body shop;

d. Storage warehouse or business;

e. Mini-storage warehouse;

f. Sheet metal shop;

g. Outdoor storage yard;

h. Billboard signs.

(5) Signage. Typical business signage shall be permitted without mandatory review by the planning and zoning commission and approval by the city council unless a proposed sign projects or extends over the public right-of-way, or a free-standing pole sign is proposed which is out of character with the prevailing height or size of similar signs, in which case planning and zoning commission review and approval by the city council shall be required. All signage within the district shall conform to the general requirements of the Cedar Falls Zoning Ordinance, with the exception that excessively tall free-standing signs (i.e., 30 feet or more in height) shall not be allowed.

Exterior mural wall drawings, painted artwork and exterior painting of any structure within the commercial district shall be subject to review by the planning and zoning commission and approval by the city council for the purpose of considering scale, context, coloration, and appropriateness of the proposal in relation to nearby facades and also in relation to the prevailing character of the commercial district.

(Ord. No. 2797, § 1, 9-23-13)

Editor's note— Ord. No. 2797, § 1, adopted Sept. 23, 2013, repealed § 29-160, in its entirety and enacted new provisions to read as herein set out. Prior to this amendment, § 29-160 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-161. - MPC, Major thoroughfare planned commercial district.

(a) *Purpose and intent:* The major thoroughfare planned commercial zoning district is intended to provide for the orderly growth and development of land immediately adjacent to University Avenue and other transportation corridors and in similarly situated portions of Cedar Falls. The district is intended to permit the development of a mixture of residential, institutional, professional office and commercial oriented land uses in a manner that will result in minimal negative impacts upon adjacent low density residential zoning districts or residential uses.

It is also intended that development within the district will conform to sound land use planning and building design principles as outlined herein. Specific planning objectives include:

A. To establish uses that do not overburden or conflict with available public infrastructure including, but not limited to, sanitary sewer, storm sewer services, or traffic flow and access patterns.

B. To establish effective and efficient pedestrian and traffic circulation patterns within the development site while also providing sufficient on-site parking areas.

C. To provide minimum standards for open space and landscaping areas within the development site in order to enhance the appearance of the community.

(b) *Principal permitted uses:*

(1) The following land uses may be allowed:

— Multi-~~family~~unit residences not to exceed a density of ten units per acre.

— Funeral homes.

— Hotels/Motels in which retail shops may be operated for the convenience of the occupants of the building.

— Any professional office or professional service activity.

— Any local retail business or service establishment such as:

1. Animal hospital or veterinary clinic, provided all phases of the business conducted upon the premises be within a building where noises and odors are not evident to adjacent properties.
2. Antique shop.
3. Apparel shop.
4. Bakery whose products are sold only at retail and only on the premises.
5. Financial institution.
6. Barbershop or beauty parlor.
7. Bicycle shop, sales and repair.
8. Bookstore.
9. Candy shops, where products are sold only at retail and only on the premises.
10. Clothes cleaning and laundry pickup station.
11. Collection office of public utility.
12. Dairy store, retail.
13. Dance or music studio.
14. Drapery shop.
15. Drugstore.
16. Florist and nursery shop, retail.
17. Fruit and vegetable market.
18. Furniture store.
19. Gift shop.
20. Delicatessen.
21. Hardware store.
22. Hobby shop.
23. Household appliances, sales and repair.
24. Jewelry shop.
25. Key shop.
26. Launderette.
27. Locker plant for storage and retail sales only.
28. Music store.

29. Paint and wallpaper store.
30. Post office substation.
31. Photographic studio.
32. Radio and television sales and service.
33. Restaurant.
34. Shoe repair shop.
35. Sporting goods store.
36. Tailor shop.

(2) *Expressly prohibited uses:*

— auto repair shops or auto sales lots

— storage warehouse

— lumberyards

— taverns

— mobile home parks

— any light manufacturing, fabricating or assembly use

— gasoline station

— off premise billboard signs

(c) *Land use approval guidelines:* Specifically permitted land uses may be limited in size upon site plan review by the planning and zoning commission and city council if it is determined that the proposed development will overburden local infrastructure services (i.e. sanitary sewer, storm sewer, utilities) or if the projected traffic demand will conflict or interfere with normal traffic flow patterns on adjacent roadways.

(d) *Method of approval:* Submittal of a request to zone or rezone one or more parcels of land to the major thoroughfare planned commercial district (MPC) shall be accompanied by a detailed development site plan. In addition, site plans shall be accompanied with traffic demand analyses, detailed descriptions of storm water runoff control measures, and estimated sanitary sewer load estimates. Zoning approval shall coincide with development site plan approval by the planning and zoning commission and the city council.

(e) *Site plan revisions:* If, in the judgment of the city planner, substantial or major changes are made to the site plan at the time of building permit application the site plan shall be resubmitted to the planning and zoning commission in the manner of the original application.

Major site plan changes shall include, but not be limited to, building location, building size, reduction in parking area, reduction in building setbacks, or reduction of open space or landscaped areas. Land use changes that require increased parking areas or that generate excessive traffic demand shall also be considered to be a major change.

(f) *Minimum site development requirements:* Development within the MPC district shall be reviewed and approved by the planning and zoning commission and shall meet the following requirements:

(1) *Building setbacks:*

Front yard setback: 25 feet.

Side yard setback: 10 feet, unless the development abuts a residential zone or residential use at the time of development, in which case not less than 20 feet.

Rear yard setback: 20 feet unless the development abuts a residential zoning district or residential use in which case not less than 30 feet.

(2) *Minimum lot width:* 150 feet, except in those situations where a single lot containing less than the minimum required lot width is located between parcels zoned for commercial purposes.

(3) *Open space requirements:* The required yards (i.e. building setbacks) as specified herein shall be maintained as open landscaped areas and shall consist primarily of grass or other vegetative material. No portion of any building or parking area shall be permitted within the required yard area. Accessways or driveways will be permitted across the front yard area but shall not be permitted across the side yard or rear yard area.

In addition to the open landscaped space provided by the required yards, those parcels or development sites exceeding one acre in total area shall provide open landscaped areas on at least five percent of the site. The additional five percent area shall be calculated for that portion of the property or development site exclusive of the required yard areas.

(4) *Landscaping requirement:* A minimum of .04 points per square foot of total lot area or total development site area must be achieved with planting of a combination of trees and shrubs. The measured compliance table outlines the point schedule.

(5) *Street tree planting:* A minimum of .75 points per linear foot of street frontage must be achieved in the city parking area (right-of-way). This point requirement shall be met through the establishment of trees. Planting shall comply with guidelines established by the City of Cedar Falls Park Division.

(6) *Measured compliance:* The following point schedule and conditions apply to required landscaping and shall be used in determining achieved points for required planting:

Overstory Trees:

4 inch caliper or greater ..... 100 points

3 inch caliper or greater ..... 90 points

2 inch caliper or greater ..... 80 points

Understory Trees:

2 inch caliper or greater ..... 40 points

1½ inch caliper or greater ..... 30 points

1 inch caliper or greater ..... 20 points

Shrubs:

5 gallon or greater ..... 10 points

2 gallon or greater ..... 5 points

Conifers:

10 foot height or greater ..... 100 points

8 foot height or greater ..... 90 points

6 foot height or greater ..... 80 points

5 foot height or greater ..... 40 points

4 foot height or greater ..... 30 points

3 foot height or greater ..... 20 points

(7) *Building design:* The architectural character, building materials and exterior colors of all proposed buildings shall be compatible with adjoining or nearby structures. The planning and zoning commission shall have the authority to review all building design components.

(8) *Screening requirements:* Any permitted use established within the district shall provide an effective visual screen or barrier if the use or property abuts a residential zoning district or residential use property. The screen may consist of vegetative material, brick or wooden wall or fence materials or a dirt berm measuring, at the time of installation, at least eight feet in height. The screen shall be located at the property line.

(9) *Parking requirements:* Any permitted use established within the UPC district shall meet on-site parking requirements as outlined in section 29-177 of the Zoning Ordinance.

(10) *Building height:* Maximum of 30 feet as measured from finished grade to the peak of the roof. However, building height may be increased if building setbacks are increased proportionately.

(11) *Signage:* Uses within the MPC district will be allowed, upon sign permit approval, to install on-site signs that do not exceed the following criteria:

a. Accessory wall signs not to exceed ten percent of the surface area of any single wall to which the signs are affixed.

b. Directional signs limited to one sign per curb cut and limited in size to six square feet in area and no taller than four feet in height.

c. Accessory freestanding signs as follows:

1. Monument signs no taller than six feet in height nor larger than 40 square feet in area.

2. Number of signs limited to one sign per separate principal permitted structure.

3. No off-premise signs are permitted.

(12) *Outdoor storage:* No outdoor merchandise displays or storage of materials in an unenclosed outdoor storage area will be permitted.

(13) *Lighting:* Any lighting used to illustrate any sign, parking area, or any portion of the premises shall be situated in such a manner that the light is reflected from adjoining residential premises.

(Ord. No. 2037, § 1, 12-13-93)

Sec. 29-162. - PO-1, Professional Office District.

(a) *Purpose and intent:* The purpose of the following provisions are to promote and facilitate the development of comprehensively planned campus-like office parks with high quality building design, careful site planning, and neighborhood compatibility which are harmoniously designed to complement surrounding areas.

(b) *Definition and locational criteria:* The Professional Office District is established to promote low intensity business activity areas. Said district may be established within existing high density residential districts, in commercial districts as well as in undeveloped areas of the city that are indicated on the city land use plan as appropriate for professional office uses.

(c) *Minimum site plan:* In order to develop a comprehensively Planned Office District, a minimum site area of two acres shall be required. Smaller tracts may be applied for if the site is amendable to long term planning and/or the site is in a location where the surrounding neighborhood dictates the need for careful site planning and building design.

(d) *Principal permitted uses* The following uses or similar uses are permitted:

(1) Professional services, administrative offices.

(2) Medical offices and facilities.

(3) Educational, vocational facilities.

(4) Recreational clubs with indoor facilities.

(5) Limited retail commercial or food services primarily intended to serve the needs of business tenants, and employees within the identified office district.

(6) Telemarketing offices.

(7) Financial services.

(8) Television, radio studios, not to include attendant transmitting stations or towers exceeding the maximum height allowed within the district.

(e) *Prohibited uses:* The following uses or similar uses are prohibited:

(1) Commercial uses designed on a scale intended to serve the general community. Examples would be grocery store, movie theatre, larger retail center, service station, furniture store, etc.

(2) Funeral homes.

(3) Residential uses.

(4) Group homes.

(5) Warehousing or shipping/transit facilities.

(6) Night clubs, taverns.

(7) Hotels, lodging facilities.

(f) *Performance criteria:* The uses established within the district will not, in their normal operations, produce noise perceptible from the zoning district boundary line nor will the uses generate smoke, heat, glare or truck traffic. The businesses within the district will not establish outdoor storage or display areas.

(g) *Maximum building height:* 48 feet or 4 stories, whichever is less.

(h) *Submittal requirements:* Any person seeking approval of development within the district shall submit a detailed development site plan in conjunction with a request to establish the Professional Office District zoning on the property. Zoning approval cannot be given without an approved development site plan. Said site plan along with other pertinent development information shall be reviewed by the city planning and zoning commission and city council.

Said review shall evaluate whether or not the proposed development plan conforms to the standards of the comprehensive plan, recognized principles of civic design, land use planning. landscape architecture, and building architectural design.

The planning and zoning commission may recommend and the city council may: deny the plan approve the plan as submitted, or, before approval, may require that the applicant modify, alter, adjust or amend the plan to the end that the plan preserves the intent and purpose of this section to promote the public health, safety and general welfare.

The petitioner shall submit at least five copies of professionally prepared plans detailing the following:

(1) Building locations.

(2) Streets. drives, accessways, sidewalks.

(3) Parking lots.

(4) Landscape plan, open space areas.

(5) Pedestrian traffic plan.

(6) Architectural renderings of all sides of each building.

(7) Signage plan.

(8) List of expected uses within the development.

(9) Stormwater detention and erosion control plans.

(10) Topographic features of the site including land and soils capability analysis.

(11) Natural drainageways, floodplain areas.

(12) Municipal utility locations.

The plan shall be accompanied by a traffic generation analysis with particular attention to impacts upon surrounding roadways.

The plan shall be accompanied by a developmental procedures agreement that will describe the timing and phasing of the project and outline other development details as necessary.

(i) *Site development requirements.*

(1) For comprehensively planned sites containing two acres or more a setback area of 20 feet shall be provided around the perimeter of the development site. Said setback area shall remain in open landscaped green space where no structures or parking areas shall be established. All signage shall provide a 10-foot setback from the property line along all public rights-of-way and principal accessways.

(2) For interior streets or principal accessways within the interior of said development site, a 20-foot setback consisting of open landscaped green space area shall be provided adjacent to, and on both sides of, said interior public right-of-way or principal accessway. No structure or parking areas will be allowed within this setback area. All signage shall provide a ten-foot setback from the property line along all public rights-of-way and principal accessways. All signage installed prior to September 19, 2016 shall be considered conforming signs.

(3) Structures established within said development site shall provide a minimum separation of 20 feet between other structures on the site.

(4) Commercial establishments, including retail and personal services, may be integrated into the principal office park area as a minor component of the overall plan. Said uses shall be viewed as secondary and accessory to the office park development and shall not be established until at least 25 percent of the planned office development is completed.

(5) Landscaping/open space requirements: The minimum required landscape area shall be ten (10) percent of the total development site area of the district excluding the perimeter setback area as specified herein.

It is the intent of this regulation that in larger development sites open space and landscape areas should be distributed throughout the development site rather than isolated in one area of the site.

A minimum of .02 points per square foot of total development site area shall be achieved with planting of a combination of trees and shrubs. If, in the judgment of the planning and zoning commission the required number of points result in an excessive number of plantings, up to ten percent of the total required points can be assigned to open green space at the rate of 1 point for each 500 square feet of open green space.

Street tree planting: a minimum of .75 points per linear foot of street frontage shall be required.

(6) Parking areas: In addition to the open space and landscaping requirements specified herein, tree plantings and other vegetative treatments shall be required within and surrounding designated parking areas. The intent of this requirement shall be to provide shade and visual relief in large parking areas. It is recommended that at least one overstory tree be established for every fifteen parking stalls or 2500 square feet of parking space area. Said trees shall be provided a protected island and adequate permeable surface area to promote growth and full maturity. Shrubbery, understory trees, and landscaped berms are to be encouraged around the perimeter of all parking areas.

(7) Measured compliance. The following point schedule and conditions apply to required landscaping in all zones and shall be used in determining achieved points for required planting:

Overstory trees	
4 inch caliper or greater	100 points
3 inch caliper or greater	90 points
2 inch caliper or greater	80 points

Understory trees	
2 inch caliper or greater	40 points
1½ inch caliper or greater	30 points
1 inch caliper or greater	20 points

Shrubs	
5 gallon or greater	10 points
2 gallon or greater	5 points

Conifers	
10 foot height or greater	100 points
8 foot height or greater	90 points
6 foot height or greater	80 points
5 foot height or greater	40 points
4 foot height or greater	30 points
3 foot height or greater	20 points

(j) *Design review:* All structures established within the district shall be reviewed for architectural compatibility with surrounding structures. Paramount in this review will include building materials, exterior materials on all sides, roof line, size and location of windows and doors, roof mounted appurtenances, facades and signage.

(1) *Proportion:* the relationship between the width and height of the front elevations of adjacent buildings shall be considered in the construction or alteration of a building; the relationship of width to height of windows and doors of adjacent buildings shall be considered in the construction or alteration of a building.

(2) *Roof shape, pitch, and direction:* the similarity or compatibility of the shape, pitch, and direction of roofs in the immediate area shall be considered in the construction or alteration of a building.

(3) *Pattern:* alternating solids and openings (wall to windows and doors) in the front facade and sides and rear of a building create a rhythm observable to viewers. This pattern of solids and openings shall be considered in the construction or alteration of a building.

(4) *Materials and texture:* the similarity or compatibility of existing materials and textures on the exterior walls and roofs of buildings in the immediate area shall be considered in the construction or alteration of a building. A building or alteration shall be considered compatible if the materials and texture used are appropriate in the context of other buildings in the immediate area.

(5) *Color:* the similarity or compatibility of existing colors of exterior walls and roofs of buildings in the area shall be considered in the construction or alteration of a building.

(6) *Architectural features:* architectural features, including but not limited to, cornices, entablatures, doors, windows, shutters, and fanlights, prevailing in the immediate area, shall be considered in the construction or alteration of a building. It is not intended that the details of existing buildings be duplicated precisely, but those features should be regarded as suggestive of the extent, nature, and scale of details that would be appropriate on new buildings or alterations.

(k) *Signage:* The following signs may be established within the district.

(1) Wall signs not to exceed in total sign area ten percent of the surface area of the single wall to which it is affixed. No more than two wall surfaces of any single structure may be utilized for sign displays.

No wall sign shall extend above the top of the wall face to which it is attached.

(2) *Freestanding signs:*

a. One main entrance sign may be located adjacent to the adjoining thoroughfare. Said sign shall be limited in overall height to 15 feet with a maximum sign area of 150 square feet.

b. Individual signs identifying specific uses may be established adjacent to interior accessways or streets. There shall be a minimum separation of 50 feet between said signs.

1. Single use signs shall be limited in overall height to eight feet with a maximum sign area of 40 square feet.

2. Multiple use signs containing displays of at least three or more uses may be established at a maximum height of 12 feet with a maximum sign area of 60 square feet.

Particular uses may advertise on one but not on both types of interior freestanding side.

c. Directional signs, measuring no more than six feet in height and six square feet in area may be established for traffic management purposes at appropriate locations. One business logo or name will be permitted on each sign.

d. Signs may be illuminated with interior or exterior lighting. However, no blinking, flashing or chasing lights will be permitted. Digital message signs will be permitted.

(3) Signs not permitted:

a. Billboard signs.

b. Roof signs.

c. Signs as limited within section 29-199.

(l) *Site plan revisions/amendments:* All changes, modifications, revisions and amendments made to development plans deemed to be major or substantial by the city planner after city approval of such plans shall be resubmitted and considered in the same manner as originally required. Examples of major or substantial changes include but are not limited to: land use changes, building locations, residential densities, street alignments, parking lot arrangements, interior traffic patterns, landscaping plans, signage plan and building design elements.

(m) *Change in use/reconstruction:* No use established within the district shall be removed, altered or replaced by a new use without prior authorization by the city planner. No building or parking area shall be reconstructed or substantially altered in any fashion without preliminary review and approval by the city planner.

If, in the judgment of the city planner the proposed change in use, proposed building reconstruction or parking lot alteration represents a substantial change from the originally approved district plan, the proposal shall be referred to the planning and zoning commission and the city council for review.

(Ord. No. 2117, § 1, 10-9-95; Ord. No. 2879, § 1, 9-19-16)

Sec. 29-163. - BR, Business/Research Park District.

(a) *Purpose and intent:* The purpose of the Business/Research Park District is to provide for the establishment of planned business office and research facility parks. It is the goal of these

regulations to encourage the establishment of employment and business centers that promote large scale high technology and other clean, light industries, research facilities and office centers that meet high aesthetic standards.

(b) *Locational criteria:* The Business/Research Park District may be established in existing light industrial zoning districts as well as in undeveloped areas of the city that are indicated on the city land use plan as appropriate for Business/Research Park.

(c) *Principle permitted uses:* The following uses or similar uses are permitted:

(1) Research offices, laboratories and testing facilities provided that such facilities are entirely enclosed.

(2) Corporate headquarters, regional headquarters, administrative offices.

(3) Local service or professional service offices such as real estate, insurance, lawyers. doctors office, financial institution.

(c-1) *Conditional uses:* The following uses are permitted within the business/research park district subject to the review and approval of the planning and zoning commission and the city council. Said review is intended to determine the compatibility of said users with principal permitted users within the BR district:

(1) Light manufacturing where the manufacturing activity occurs entirely within the principal structure with no outdoor storage areas established and when said use is compatible with other uses within the district.

(2) Limited commercial/retail uses intended to serve the needs of the business tenants/employees only. Such permitted uses would include: restaurant, health club, convenience store, retail bakery shop, gift shop, post office substation, shoe repair, photographic studio, clothes, cleaning, barbershop, hair stylist.

(d) *Uses not permitted:*

(1) Any residential use.

(2) Warehouses including mini-storage warehouses.

(3) Any uses with physical and operational characteristics or requirements that generate substantial truck traffic, noise, odor, dust, glare, heat or vibrations, or of a character not compatible with the high aesthetic standards of the district. Examples of inappropriate use would include: wholesaling/warehousing, motor freight terminal, auto or truck storage or repair, machine shops, cabinet shop, animal hospitals, junk/iron storage, concrete mixing, sawmill, auto assembly, manufacture of pottery.

(4) Transmitting stations/communication towers in excess of the district height limitations.

(5) Hotels and motels.

(e) *Submittal requirements:* The owner or option purchaser of a tract of land within the Business/Research Park District shall submit a development site plan to the planning and zoning commission and the city council following approval of Business/Research Park District zoning. Development may occur on individually platted lots or a joint development may occur on common lands.

Said development site plan review shall evaluate whether or not the proposed development plan conforms to the standards of the comprehensive plan, recognized principles of civic design, land use planning, landscape architecture, and building architectural design.

The planning and zoning commission may recommend and the city council may: deny the plan, approve the plan as submitted, or, before approval, may require that the applicant modify, alter, adjust or amend the plan to the end that the plan preserves the intent and purpose of this section to promote the public health, safety and general welfare.

The petitioner shall submit at least five copies of professionally prepared comprehensive plans detailing the following:

(1) Building locations.

(2) Streets, drives, accessways.

(3) Parking lots.

(4) Landscape plan, open space areas.

(5) Pedestrian traffic plan, including sidewalks, bicycle paths.

(6) Architectural renderings of all sides of each building, including accessory structures.

(7) Signage plan.

(8) List of expected uses within the development.

(9) Stormwater detention and erosion control plans.

(10) Topographic features of the site including land and soils capability analysis.

(11) Natural drainageways, floodplain areas.

(12) Municipal utility locations.

The plan shall be accompanied by a traffic generation analysis with particular attention to impacts upon surrounding roadways.

The plan shall be accompanied by a developmental procedures agreement that will describe the timing and phasing of the project and outline other development details as necessary.

(f) *Site development standards:*

(1) The following minimum building and parking lot setbacks shall apply to every building site in the district:

Front yard:	30 feet
Side yard:	10% of lot width (20 feet maximum)
Rear yard:	20 feet

No portion of a principal building, accessory structure or parking lot shall extend into said required setback areas.

(2) *Landscaping/open space requirements:* The minimum required landscape area shall be 20 percent of the total development site area as specified herein.

It is the intent of this regulation that in larger development sites open space and landscape areas should be distributed throughout the development site rather than isolated in one area of the site.

A minimum of 0.02 points per square foot of total development site area, exclusive of required setback areas, shall be achieved with planting of a combination of trees and shrubs. If, in the

judgment of the planning and zoning commission the required number of points result in an excessive number of plantings, up to ten percent of the total required points can be assigned to open green space at the rate of 1 point for each 500 square feet of open green space.

Street tree planting: A minimum of .75 points per linear foot of street frontage shall be required.

Parking areas: In addition to the open space and landscaping requirements specified herein, tree plantings and other landscape treatments shall be required within designated parking areas. The intent of this requirement shall be to provide shade and visual relief in large parking areas. It is recommended that at least one overstory tree be established for every fifteen parking stalls or 2500 square feet of hard surfaced parking space area. Said landscape trees shall be provided with a protected island and adequate permeable surface area to promote growth and full maturity. Shrubbery, understory trees, and landscaped berms are to be required around the perimeter of all parking areas containing ten or more parking stalls.

Measured compliance. The following point schedule and conditions apply to required landscaping in all zones and shall be used in determining achieved points for required planting:

Overstory trees	
4 inch caliper or greater	100 points
3 inch caliper or greater	90 points
2 inch caliper or greater	80 points

Understory trees	
2 inch caliper or greater	40 points
1½ inch caliper or greater	30 points
1 inch caliper or greater	20 points

Shrubs	
5 gallon or greater	10 points

2 gallon or greater	5 points

Conifers	
10 foot height or greater	100 points
8 foot height or greater	90 points
6 foot height or greater	80 points
5 foot height or greater	40 points
4 foot height or greater	30 points
3 foot height or greater	20 points

(g) *Design Review:* All structures established within the district shall be reviewed for architectural compatibility with surrounding structures. Paramount in this review will include building materials, exterior materials on all sides, coloration, roof line, size and location of windows and doors, roof mounted appurtenances, facades and signage.

(1) *Proportion:* The relationship between the width and height of the front elevations of adjacent buildings shall be considered in the construction or alteration of a building; the relationship of width to height of windows and doors of adjacent buildings shall be considered in the construction or alteration of a building.

(2) *Roof shape, pitch, and direction:* The similarity or compatibility of the shape, pitch, and direction of roofs in the immediate area shall be considered in the construction or alteration of a building.

(3) *Pattern:* Alternating solids and openings (wall to windows and doors) in the front facade and sides and rear of a building create a rhythm observable to viewers. This pattern of solids and openings shall be considered in the construction or alteration of a building.

(4) *Materials and texture:* The similarity or compatibility of existing materials and textures on the exterior walls and roofs of buildings in the immediate area shall be considered in the construction or alteration of a building. A building or alteration shall be considered compatible if the materials and texture used are appropriate in the context of other buildings in the immediate area.

(5) *Color:* The similarity or compatibility of existing colors of exterior walls and roofs of buildings in the area shall be considered in the construction or alteration of a building.

(6) *Architectural features:* Architectural features, including but not limited to, cornices, entablatures, doors, windows, shutters, and fanlights, prevailing in the immediate area, shall be considered in

the construction or alteration of a building. It is not intended that the details of existing buildings be duplicated precisely, but those features should be regarded as suggestive of the extent, nature, and scale of details that would be appropriate on new buildings or alterations.

(h) *Signage:* The following signs may be established within the district.

(1) Wall signs not to exceed in total sign area 20 percent of the surface area of the single wall to which it is affixed. No more than two wall surfaces of any single structure may be utilized for sign displays.

No wall sign shall extend above the top of the wall face to which it is attached.

(2) Freestanding signs may include the following:

a. Single use signs shall be limited in overall height to eight feet with a maximum sign area of 40 square feet.

b. Multiple use signs containing displays of at least three or more uses may be established at a maximum height of 12 feet with a maximum sign area of 60 square feet.

Individual uses may advertise on one but not on both types of interior freestanding sign.

c. Directional signs, measuring no more than six feet in height and six square feet in area may be established for traffic management purposes at appropriate locations. One business logo or name will be permitted on each sign.

d. Signs may be illuminated with interior or exterior lighting. However, no blinking, flashing or chasing lights will be permitted. Digital message signs will be permitted.

(3) Signs not permitted:

a. Billboard signs.

b. Roof signs.

c. Signs as limited within section 29-199.

(i) *Site plan revisions/amendments:* All changes, modifications, revisions and amendments made to development plans deemed to be major or substantial by the city planner after city approval of such plans shall be resubmitted and considered in the same manner as originally required. Examples of major or substantial changes include but are not limited to: land use changes, building locations, residential densities, street alignments, parking lot arrangements, interior traffic patterns, landscaping plans, signage plan and building design elements.

(j) *Change in use/reconstruction:* No use established within the district shall be removed, altered or replaced by a new use without prior authorization by the city planner. No building or parking area shall be reconstructed or substantially altered in any fashion without preliminary review and approval by the city planner.

If, in the judgment of the city planner the proposed change in use, proposed building reconstruction or parking lot alteration represents a substantial change from the originally approved district plan, the proposal shall be referred to the planning and zoning commission and the city council for review.

(Ord. No. 2117, § 2, 10-9-95; Ord. No. 2158, §§ 1—4, 9-9-96)

Sec. 29-164. - MU, Mixed Use Residential District.

(a) *Purpose and intent.* The Mixed Use Residential District is established for the purpose of accommodating integrated residential and neighborhood commercial land uses on larger parcels of land for the purpose of creating viable, self-supporting neighborhood districts.

The Mixed Use Residential District strives to encourage innovative development that incorporates high-quality building design, careful site planning, preservation of unique environmental features with an emphasis upon the creation of open spaces and amenities that enhance the quality of life of residents.

(b) *Locational criteria:* Mixed Use Residential Districts may be established in high density residential, commercial zoning districts and in undeveloped areas of the city that are indicated on the city land use plan as appropriate for Mixed Use Residential uses.

(c) *Permitted uses:* The following uses are permitted:

(1) Detached single-~~family~~unit residences including manufactured housing.

(2) Multiple ~~family~~unit dwellings.

(3) Group homes.

(4) Senior citizen centers/retirement communities.

(5) Boardinghouses.

(6) Religious institutions.

(7) Educational facilities.

(8) Professional offices/professional services.

(9) Social clubs.

(10) Recreational facilities (indoor and outdoor).

(11) Day care facilities.

(12) Hotels/motels.

(13) Commercial uses including retail businesses and personal services establishments shall be permitted as limited herein:

Any use generally characterized as "neighborhood commercial" or commercial uses intended to serve surrounding residential areas. Examples of appropriate uses would include: grocery, drug store, restaurant, retail shops, gasoline station, bookstore, theatre, household appliance store, etc.

It is intended that this district be developed with a mixture of uses. Therefore, in order to attain this end an approved district development site plan shall indicate a majority of developable land area dedicated to uses other than detached single-~~family~~unit residential development. Furthermore, no portion of a designated detached single-~~family~~unit development may begin construction until construction has begun in other areas (i.e. multi-~~family~~unit, commercial) of the district.

Prohibited Uses:

(1) Billboards.

(2) Transmitting stations/communication towers.

(3) Warehousing, storage facilities.

(4) Industrial uses.

(5) Intensive commercial uses such as auto dealership, lumberyard, sheet metal, plumbing shops, recycling center, etc.

(d) *Maximum building height:* Principal structures shall be limited to overall height of 35 feet or three stories, whichever is less. Accessory structures shall be limited to 18 feet in overall height.

(e) *Submittal requirements:* The owner or option purchaser of a tract of land may seek approval of a Mixed Use Residential zoning designation with the simultaneous submittal of a comprehensive

development site plan. Zoning approval cannot be given without an approved development site plan. Said site plan along with other pertinent development information shall be reviewed by the planning and zoning commission and the city council.

Said review shall evaluate whether or not the proposed development plan conforms to the standards of the comprehensive plan, recognized principles of civic design, land use planning, landscape architecture, and building architectural design.

The planning and zoning commission may recommend and the city council may: deny the plan, approve the plan as submitted, or, before approval, may require that the applicant modify, alter, adjust or amend the plan to the end that the plan preserves the intent and purpose of this section to promote the public health, safety and general welfare.

The petitioner shall submit at least five copies of professionally prepared comprehensive plans detailing the following:

(1) Building locations.

(2) Streets, drives, accessways.

(3) Parking lots.

(4) Landscape plan, open space areas.

(5) Pedestrian traffic plan, including sidewalks, bicycle paths.

(6) Architectural renderings of all sides of each building, including accessory structures.

(7) Signage plan.

(8) List of expected uses within the development.

(9) Stormwater detention and erosion control plans.

(10) Topographic features of the site including land and soils capability analysis.

(11) Residential densities.

(12) Natural drainageways, floodplain areas.

(13) Municipal utility locations.

(14) Residential recreation or park areas.

The plan shall be accompanied by a traffic generation analysis with particular attention to impacts upon surrounding roadways.

The plan shall be accompanied by a developmental procedures agreement that will describe the timing and phasing of the project and outline other development details as necessary.

(f) *Site development criteria:*

(1) In order to develop a comprehensively planned Mixed Use District a minimum site area of ten acres shall be required. Smaller tracts may be applied for if the site is amendable to long term planning and/or the site is in a location where the surrounding neighborhood dictates the need for careful site planning and building design.

(2) A minimum setback area consisting of open landscaped green space measuring 30 feet in width shall be established around the perimeter of the development site. No structures or parking areas shall be permitted within said setback area. All signage shall provide a 10-foot setback from the property line along all public rights-of-way and principal accessways. This minimum setback area may be reduced to 20 feet on tracts measuring less than ten acres in area subject to review and recommendation by the planning and zoning commission and city council.

(3) Additional setbacks shall be required within the district immediately adjacent to interior streets and principal accessways. Said minimum setbacks shall be 20 feet and shall consist of open landscape green space in which no structure or parking area shall be established. All signage shall provide a 10-foot setback from the property line along all public rights-of-way and principal accessways. All signage installed prior to September 19, 2016 shall be considered conforming signs.

(4) A minimum separation of 20 feet shall be maintained between principal structures established within the district. Accessory structures shall conform to the requirements as specified in section 29-115. No detached accessory structures shall be established in front yard areas.

(5) Landscaping/open space requirements: The minimum required landscape area shall be ten percent of the total development site area excluding the perimeter setback area as specified herein.

It is the intent of this regulation that in larger development sites open space and landscape areas should be distributed throughout the development site rather than isolated in one area of the site. It is also the intent of this section that for larger residential developments common open space or park areas shall be established for the use and enjoyment of residents.

A minimum of .02 points per square foot of total development site area shall be achieved with planting of a combination of trees and shrubs. If, in the judgment of the planning and zoning commission the required number of points result in an excessive number of plantings, up to ten percent of the total required points can be assigned to open green space at the rate of 1 point for each 500 square feet of open green space.

Street tree planting: a minimum of .75 points per linear foot of street frontage shall be required.

Parking areas: In addition to the open space and landscaping requirements specified herein, tree plantings and other landscape treatments shall be required within and surrounding designated parking areas. The intent of this requirement shall be to provide shade and visual relief in large parking areas. It is recommended that at least one overstory tree be established for every 15 parking stalls or every 2500 square feet of parking space area. Said trees shall be provided a protected island and adequate permeable surface area to promote growth and full maturity. Shrubbery, understory trees, and landscaped berms are to be required around the perimeter of all parking areas containing ten or more parking stalls.

Measured compliance. The following point schedule and conditions apply to required landscaping and shall be used in determining achieved points for required planting:

Overstory trees	
4 inch caliper or greater	100 points
3 inch caliper or greater	90 points
2 inch caliper or greater	80 points

Understory trees	

2 inch caliper or greater	40 points
1½ inch caliper or greater	30 points
1 inch caliper or greater	20 points

Shrubs	
5 gallon or greater	10 points
2 gallon or greater	5 points

Conifers	
10 foot height or greater	100 points
8 foot height or greater	90 points
6 foot height or greater	80 points
5 foot height or greater	40 points
4 foot height or greater	30 points
3 foot height or greater	20 points

(6) *Design review.* All structures established within the district shall be reviewed for architectural compatibility with surrounding structures. Paramount in this review will include building materials, exterior materials on all sides, roof line, size and location of windows and doors, roof mounted appurtenances, facades and signage.

a. *Proportion:* The relationship between the width and height of the front elevations of adjacent buildings shall be considered in the construction or alteration of a building; the relationship of width to height of windows and doors of adjacent buildings shall be considered in the construction or alteration of a building.

b. *Roof shape, pitch, and direction:* The similarity or compatibility of the shape, pitch, and direction of roofs in the immediate area shall be considered in the construction or alteration of a building.

c. *Pattern:* Alternating solids and openings (wall to windows and doors) in the front facade and sides and rear of a building create a rhythm observable to viewers. This pattern of solids and openings shall be considered in the construction or alteration of a building.

d. *Materials and texture:* The similarity or compatibility of existing materials and textures on the exterior walls and roofs of buildings in the immediate area shall be considered in the construction or alteration of a building. A building or alteration shall be considered compatible if the materials and texture used are appropriate in the context of other buildings in the immediate area.

e. *Color:* The similarity or compatibility of existing colors of exterior walls and roofs of buildings in the area shall be considered in the construction or alteration of a building.

f. *Architectural features:* Architectural features, including but not limited to, cornices, entablatures, doors, windows, shutters, and fanlights, prevailing in the immediate area, shall be considered in the construction or alteration of a building. It is not intended that the details of existing buildings be duplicated precisely, but those features should be regarded as suggestive of the extent, nature, and scale of details that would be appropriate on new buildings or alterations.

(g) *Signage:* Advertising or entrance signage shall be permitted for the various uses allowed within the district. Residential uses shall be permitted to establish signage in conformance with the general sign regulations for R-3 Residential Districts as specified in section 29-202.

Signage for commercial, professional office or institutional uses shall be allowed with the following limitations:

(1) Wall signs not to exceed in total sign area 20 percent of the surface area of the single wall to which it is affixed. No more than two wall surfaces of any single structure may be utilized for sign displays.

No wall sign shall extend more than four feet above the top of the wall face to which it is attached.

(2) Freestanding signs may include the following:

a. One main entrance sign may be located adjacent to the adjoining major thoroughfare. Said sign shall be limited in overall height to 20 feet with a maximum sign area of 200 square feet.

b. Individual signs identifying specific uses may be established adjacent to interior accessways or streets. There shall be a minimum separation of 150 feet between said signs.

1. Single use signs shall be limited in overall height to eight feet with a maximum sign area of 40 square feet.

2. Multiple use signs containing displays of at least three or more uses may be established at a maximum height of 12 feet with a maximum sign area of 60 square feet.

Particular uses may advertise on one but not on both types of interior freestanding sign.

c. Directional signs, measuring no more than six feet in height and six square feet in area may be established for traffic management purposes at appropriate locations. One business logo or name will be permitted on each sign.

d. Signs may be illuminated with interior or exterior lighting. However, no blinking flashing or chasing lights will be permitted. Digital message signs will be permitted.

(3) Signs not permitted:

a. Billboard signs.

b. Roof signs.

c. Signs as limited within section 29-199.

(h) *Site plan revisions/amendments:* All changes, modifications, revisions and amendments made to development plans deemed to be major or substantial by the city planner after city approval of such plans shall be resubmitted and considered in the same manner as originally required. Examples of major or substantial changes include but are not limited to: land use changes, building locations, residential densities, street alignments, parking lot arrangements, interior traffic patterns, landscaping plans, signage plan and building design elements.

(i) *Change in use/reconstruction:* No use established within the district shall be removed, altered or replaced by a new use without prior authorization by the city planner. No building or parking area shall be reconstructed or substantially altered in any fashion without preliminary review and approval by the city planner.

If, in the judgment of the city planner the proposed change in use or proposed building reconstruction or parking lot alteration represents a substantial change from the originally approved district plan, the proposal shall be referred to the planning and zoning commission and the city council for review.

(Ord. No. 2117, § 3, 10-9-95; Ord. No. 2879, § 2, 9-19-16)

Sec. 29-165. - HWY-1, Highway Commercial District.

(a) *Purpose and intent:* The purpose of the following provisions are to promote and facilitate comprehensively planned commercial developments located adjacent to major transportation corridors and interchanges. It is further the purpose of these regulations to encourage high standards of building architecture and site planning which will foster commercial development that maximizes pedestrian convenience, comfort and pleasure.

(b) *Definition and locational criteria:* A Highway Commercial District is a commercial project containing general service facilities on larger tracts of land intended to serve the traveling public or for the establishment of regional commercial service centers. Said districts can be established adjacent to state or interstate highway corridors at sites best suited to serve the traveling public.

(c) *Minimum site plan:* A Highway Commercial Zoning District designation may be applied to tracts of land measuring at least two acres in area and in locations clearly intended to service an adjacent highway.

(d) *Permitted uses:* Principal permitted uses are as follows:

(1) Regional shopping centers.

(2) Hotels, motels.

(3) Restaurants.

(4) Truck stop.

(5) Motor vehicle sales and display.

(6) Mobile home/travel trailer sales and display.

(7) Service stations with auto repair as a secondary use.

(8) Any commercial or retail use intended to serve the traveling public or a regional customer base.

(9) Auto repair shops.

(e) *Prohibited uses.* The following uses and similar uses will not be permitted within the district:

(1) Residential uses.

(2) Manufacturing or fabricating facilities.

(3) Warehousing facilities.

(4) Billboards.

(5) Transmitting station/communication towers.

(6) Religious or educational institutions that serve primarily the local population.

(7) Auto body shops as a principal use.

(8) Any use with physical and operational characteristics or requirements that generate substantial noise, odor, dust, glare, heat or vibrations, or of a character not compatible with the high aesthetic standards of a regional commercial service district. Examples of uses that would be considered unacceptable would include: motor freight terminal, machine shop, cabinet shop, animal hospital, small engine repair.

(9) Junk yards or vehicle parts yards.

(f) *Outdoor storage or display:* Outdoor storage or display areas generally oriented towards a public view shall be prohibited. Temporary or seasonal displays may be permitted on a limited basis only upon approval by the planning and zoning commission and the city council. Auto dealership, travel trailer or mobile home display plans must also be reviewed by the commission and city council.

(g) *Submittal requirements:* The owner or option purchaser of a tract of land may seek approval of a Highway Commercial District zoning designation with the simultaneous submittal of a comprehensive development site plan. Zoning approval cannot be given without an approved development site plan. Said site plan along with other pertinent development information shall be reviewed by the planning and zoning commission and the city council.

Said review shall evaluate whether or not the proposed development plan conforms to the standards of the comprehensive plan, recognized principles of civic design, land use planning, landscape architecture, and building architectural design.

The planning and zoning commission may recommend and the city council may: deny the plan, approve the plan as submitted, or, before approval, may require that the applicant modify, alter, adjust or amend the plan to the end that the plan preserves the intent and purpose of this section to promote the public health, safety and general welfare.

The petitioner shall submit at least five copies of professionally prepared comprehensive plans detailing the following:

(1) Building locations.

(2) Streets, drives, accessways.

(3) Parking lots.

(4) Landscape plan, open space areas.

(5) Pedestrian traffic plan, including sidewalks.

(6) Architectural renderings of all sides of each building, including accessory structures.

(7) Signage plan.

(8) List of expected uses within the development.

(9) Stormwater detention and erosion control plans.

(10) Topographic features of the site including land and soils capability analysis.

(11) Natural drainageways, floodplain areas.

(12) Municipal utility locations.

The plan shall be accompanied by a traffic generation analysis with particular attention to impacts upon surrounding roadways.

The plan shall be accompanied by a developmental procedures agreement that will describe the timing and phasing of the project and outline other development details as necessary.

(h) *Site development requirements:*

(1) *Setbacks:* A 20-foot setback consisting of landscape material shall be established around the perimeter of the district. No structure or parking areas will be allowed within this setback area. All signage shall provide a 10-foot setback from the property line along all public rights-of-way and principal accessways.

(2) If the development site includes internal streets or principal accessways a 20-foot setback consisting of landscape material shall be provided adjacent to said street right-of-way or principal accessway. No structure or parking areas will be allowed within this setback area. All signage shall provide a 10-foot setback from the property line along all public rights-of-way and principal accessways. All signage installed prior to September 19, 2016 shall be considered conforming signs.

(3) Landscaping/open space requirements: The minimum required landscape area shall be ten percent of the total development site area of the required district excluding the perimeter setback area as specified herein.

It is the intent of this regulation that in larger development sites open space and landscape areas should be distributed throughout the development site rather than isolated in one area of the site.

A minimum of 0.02 points per square foot of total development site area shall be achieved with planting of a combination of trees and shrubbery. If, in the judgment of the planning and zoning commission the required number of points result in an excessive number of plantings, up to ten percent of the total required points can be assigned to open green space at the rate of 1 point for each 500 square feet of open green space.

Street tree planting: A minimum of .75 points per linear foot of street frontage shall be required.

Parking areas: In addition to the open space and landscaping requirements specified herein, tree plantings and other landscape treatments shall be required within designated parking areas. The intent of this requirement shall be to provide shade and visual relief in large parking areas. It is recommended that at least one overstory tree be established for every 15 parking stalls or 2500 square feet of hard surfaced parking space area. Said trees shall be provided with a protected island and adequate permeable surface area to promote growth and full maturity. Shrubbery, understory trees, or landscape berms are to be required around the perimeter of all parking areas containing ten or more parking stalls.

Measured compliance. The following point schedule and conditions apply to required landscaping in all zones and shall be used in determining achieved points for required planting:

Overstory trees	

4 inch caliper or greater	100 points
3 inch caliper or greater	90 points
2 inch caliper or greater	80 points

Understory trees	
2 inch caliper or greater	40 points
1½ inch caliper or greater	30 points
1 inch caliper or greater	20 points

Shrubs	
5 gallon or greater	10 points
2 gallon or greater	5 points

Conifers	
10 foot height or greater	100 points
8 foot height or greater	90 points
6 foot height or greater	80 points
5 foot height or greater	40 points

4 foot height or greater	30 points
3 foot height or greater	20 points

(4) *Design review:* All structures established within the district shall be reviewed for architectural compatibility with surrounding structures. Paramount in this review will include building materials, exterior materials on all sides, coloration, roof line, size and location of windows and doors, roof mounted appurtenances, facades and signage.

a. *Proportion:* The relationship between the width and height of the front elevations of adjacent buildings shall be considered in the construction or alteration of a building; the relationship of width to height of windows and doors of adjacent buildings shall be considered in the construction or alteration of a building.

b. *Roof shape, pitch, and direction:* The similarity or compatibility of the shape, pitch, and direction of roofs in the immediate area shall be considered in the construction or alteration of a building.

c. *Pattern:* Alternating solids and openings (wall to windows and doors) in the front facade and sides and rear of a building create a rhythm observable to viewers. This pattern of solids and openings shall be considered in the construction or alteration of a building.

d. *Materials and texture:* The similarity or compatibility of existing materials and textures on the exterior walls and roofs of buildings in the immediate area shall be considered in the construction or alteration of a building. A building or alteration shall be considered compatible if the materials and texture used are appropriate in the context of other buildings in the immediate area.

e. *Color:* The similarity or compatibility of existing colors of exterior walls and roofs of buildings in the area shall be considered in the construction or alteration of a building.

f. *Architectural features:* Architectural features, including but not limited to, cornices, entablatures, doors, windows, shutters, and fanlights, prevailing in the immediate area, shall be considered in the construction or alteration of a building. It is not intended that the details of existing buildings be duplicated precisely, but those features should be regarded as suggestive of the extent, nature, and scale of details that would be appropriate on new buildings or alterations.

(i) *Signage.* The following signs may be established within the District (HWY-1 Commercial):

(1) Walls signs not to exceed in total area 20 percent of the surface area of the single wall to which it is affixed. No more than two wall surfaces of any single structure may be utilized for sign displays. No wall sign shall extend more than four feet above the top of the wall face to which it is attached.

(2) Freestanding signs including "pole signs" and monument signs are to be evaluated on a case by case basis by the commission and city council. It is the intent of this subsection to limit the size, height and number of on premise signs for each permitted use with the objective of discouraging sign clutter and to encourage the highest aesthetic standards for the development site. The following guidelines and/or limitations shall be followed when evaluating proposed on-site signage:

a. The maximum allowable sign height of any single freestanding sign is 40 feet. No single use is permitted more than one 40-foot tall sign. The maximum allowable square footage

for all freestanding signs combined is 250 square feet for each separately developed and platted parcel.

b. It is recommended, though not required, that signs located in the yard area nearest the adjacent major roadway be limited to a maximum height of 25 feet above the surface of the roadway or 40 feet, whichever is less.

The commission and council may deviate from this recommended standard in consideration of the following circumstances: unusually large site; ten acres or more; unusual topographic circumstances that limit visibility of signage. In no case, however, shall signs be taller than 40 feet be permitted.

c. It is the intent of this subsection that signage permits and allowances pertaining to height and area be consistent throughout the district so that all uses are treated equally.

(3) Directional signs, measuring no more than six feet in height and six square feet in area may be established for traffic management purposes at appropriate locations. One business logo or name will be permitted on each sign.

(4) Signs may be illuminated with interior or exterior lighting. However, no blinking, flashing, or chasing lights will be permitted. Digital message signs will be permitted.

(5) Signs not permitted:

a. Billboard signs.

b. Roof signs.

c. Signs as limited with section 29-199.

(j) *Site plan revisions/amendments:* All changes, modifications, revisions and amendments made to development plans deemed to be major or substantial by the city planner after city approval of such plans shall be resubmitted and considered in the same manner as originally required. Examples of major or substantial changes include but are not limited to: land use changes, building locations, residential densities, street alignments, parking lot arrangements, interior traffic patterns, landscaping plans, signage plan and building design elements.

(k) *Change in use/reconstruction:* No use established within the district shall be removed, altered or replaced by a new use without prior authorization by the city planner. No building or parking area shall be reconstructed or substantially altered in any fashion without preliminary review and approval by the city planner.

If, in the judgment of the city planner the proposed change in use, proposed building reconstruction or parking lot alteration represents a substantial change from the originally approved district plan, the proposal shall be referred to the planning and zoning commission and the city council for review.

(Ord. No. 2117, § 4, 10-9-95; Ord. No. 2231, § 1, 4-27-98; Ord. No. 2879, § 3, 9-19-16)

Sec. 29-166. - PC-2, Planned Commercial District.

(a) *Purpose and intent:* The purpose of the following provisions are to promote and facilitate imaginative and comprehensively planned commercial developments which are harmoniously designed to complement the surrounding community.

It is further the purpose of these regulations to encourage high standards of building architecture and site planning which will foster commercial development that maximizes pedestrian convenience, comfort and pleasure.

(b) *Definition and locational criteria:* A Planned Community Commercial District is a predominantly commercial project containing retail and general services facilities on larger tracts of land that is designed and improved in accordance with a comprehensive project plan. Said district can be

established within any existing commercial zoning district or in undeveloped areas of the city that are indicated on the city land use plan as appropriate for community commercial uses.

(c) *Minimum site plan:* A Planned Community Commercial District may be applied to tracts measuring at least ten acres in area. Smaller tracts may be applied for if the site is amenable to long term planning and/or the site is in a location where the surrounding neighborhood dictates the need for careful site planning and building design.

(d) *Permitted uses:* Principal permitted uses are as follows:

(1) Any use permitted within Commercial Zoning Districts unless herein limited.

(2) Multi-~~family~~unit residential uses shall be permitted subject to site plan review. No more than 20 percent of the district may be devoted to residential uses; however, a greater percentage may be allowed if the residential development is clearly intended to serve as a buffer between the commercial development and adjacent residential neighborhoods.

(3) Professional offices.

(4) Hotels, lodging facilities.

(e) *Prohibited uses:* The following uses and similar uses will not be permitted within the district:

(1) Any use with physical and operational characteristics or requirements that generate substantial truck traffic, noise, odor, dust, glare, heat or vibrations, or of a character not compatible with the high aesthetic standards of the district. Examples of uses that would be considered to be unacceptable would include: wholesaling/warehousing motor freight terminal, auto or truck repair shops, machine shops, cabinet shop, animal hospital, monument sales, recycling center, small engine repair shop, funeral parlor, mobile home sales.

(2) Billboards.

(3) Single-~~family~~unit and two ~~family~~unit residences.

(f) *Outdoor storage or display:* Outdoor storage or display areas generally oriented towards a public view shall be prohibited. Temporary or seasonal displays may be permitted on a limited basis only upon approval by the planning and zoning commission and the city council. Auto dealership display plans must also be reviewed by the commission and city council.

(g) *Submittal requirements:* The owner or option purchaser of a tract of land may seek approval of a Planned Community Commercial zoning designation with the simultaneous submittal of a comprehensive development site plan. Zoning approval cannot be given without an approved development site plan. Said site plan along with other pertinent development information shall be reviewed by the planning and zoning commission and the city council.

Said review shall evaluate whether or not the proposed development plan conforms to the standards of the comprehensive plan, recognized principles of civic design, land use planning, landscape architecture, and building architectural design.

The planning and zoning commission may recommend and the city council may: deny the plan, approve the plan as submitted, or, before approval, may require that the applicant modify, alter, adjust or amend the plan to the end that the plan preserves the intent and purpose of this section to promote the public health, safety and general welfare.

The petitioner shall submit at least five copies of professionally prepared comprehensive plans detailing the following:

(1) Building locations.

(2) Streets, drives, accessways.

(3) Parking lots.

(4) Landscape plan, open space areas.

(5) Pedestrian traffic plan, including sidewalks, bicycle paths.

(6) Architectural renderings of all sides of each building, including accessory structures.

(7) Signage plan.

(8) List of expected uses within the development.

(9) Stormwater detention and erosion control plans.

(10) Topographic features of the site including land and soils capability analysis.

(11) Natural drainageways, floodplain areas.

(12) Municipal utility locations.

(13) Residential densities.

The plan shall be accompanied by a traffic generation analysis with particular attention to impacts upon surrounding roadways.

The plan shall be accompanied by a developmental procedures agreement that will describe the timing and phasing of the project and outline other development details as necessary.

(h) *Site development requirements:*

(1) *Setbacks:* A 30-foot setback consisting of landscape material shall be established around the perimeter of the district. No structure or parking areas will be allowed within this setback area. All signage shall provide a 10-foot setback from the property line along all public rights-of-way and principal accessways. This minimum setback area may be reduced to 20 feet on tracts measuring less than ten acres in area subject to review and recommendation by the planning and zoning commission and the city council.

(2) If the development site includes internal streets or principal accessways a 20-foot setback consisting of landscape material shall be provided adjacent to said street right-of-way or principal accessway. No structure or parking areas will be allowed within this setback area. All signage shall provide a 10-foot setback from the property line along all public rights-of-way and principal accessways. All signage installed prior to September 19, 2016 shall be considered conforming signs.

(3) Landscaping/open space requirements: The minimum required landscape area shall be ten percent of the total development site area of the required district excluding the perimeter setback area as specified herein.

It is the intent of this regulation that in larger development sites open space and landscape areas should be distributed throughout the development site rather than isolated in one area of the site.

A minimum of 0.02 points per square foot of total development site area shall be achieved with planting of a combination of trees and shrubbery. If, in the judgment of the planning and zoning commission the required number of points result in an excessive number of plantings, up to ten percent of the total required points can be assigned to open green space at the rate of 1 point for each 500 square feet of open green space.

Street tree planting: A minimum of .75 points per linear foot of street frontage shall be required.

Parking areas: In addition to the open space and landscaping requirements specified herein, tree plantings and other landscape treatments shall be required within designated parking areas. The intent of this requirement shall be to provide shade and visual relief in large parking areas. It is recommended that at least one overstory tree be established for every 15 parking stalls or 2500 square feet of hard surfaced parking space area. Said trees shall be provided with

a protected island and adequate permeable surface area to promote growth and full maturity. Shrubbery, understory trees, or landscape berms are to be required around the perimeter of all parking areas containing ten or more parking stalls.

Measured compliance. The following point schedule and conditions apply to required landscaping in all zones and shall be used in determining achieved points for required planting:

Overstory trees	
4 inch caliper or greater	100 points
3 inch caliper or greater	90 points
2 inch caliper or greater	80 points

Understory trees	
2 inch caliper or greater	40 points
1½ inch caliper or greater	30 points
1 inch caliper or greater	20 points

Shrubs	
5 gallon or greater	10 points
2 gallon or greater	5 points

Conifers	

10 foot height or greater	100 points
8 foot height or greater	90 points
6 foot height or greater	80 points
5 foot height or greater	40 points
4 foot height or greater	30 points
3 foot height or greater	20 points

(4) *Design review.* All structures established within the district shall be reviewed for architectural compatibility with surrounding structures. Paramount in this review will include building materials, exterior materials on all sides, coloration, roof line, size and location of windows and doors, roof mounted appurtenances, facades and signage.

a. *Proportion:* The relationship between the width and height of the front elevations of adjacent buildings shall be considered in the construction or alteration of a building; the relationship of width to height of windows and doors of adjacent buildings shall be considered in the construction or alteration of a building.

b. *Roof shape, pitch, and direction:* The similarity or compatibility of the shape, pitch, and direction of roofs in the immediate area shall be considered in the construction or alteration of a building.

c. *Pattern:* Alternating solids and openings (wall to windows and doors) in the front facade and sides and rear of a building create a rhythm observable to viewers. This pattern of solids and openings shall be considered in the construction or alteration of a building.

d. *Materials and texture:* The similarity or compatibility of existing materials and textures on the exterior walls and roofs of buildings in the immediate area shall be considered in the construction or alteration of a building. A building or alteration shall be considered compatible if the materials and texture used are appropriate in the context of other buildings in the immediate area.

e. *Color:* The similarity or compatibility of existing colors of exterior walls and roofs of buildings in the area shall be considered in the construction or alteration of a building.

f. *Architectural features:* Architectural features. including but not limited to, cornices, entablatures, doors, windows, shutters, and fanlights, prevailing in the immediate area shall be considered in the construction or alteration of a building. It is not intended that the details of existing buildings be duplicated precisely, but those features should be regarded as suggestive of the extent, nature, and scale of details that would be appropriate on new buildings or alterations.

(5) *Residential component.* If the development plan contains a residential/multi-~~family~~unit component, at least 30 percent of the area devoted to said uses shall be open landscape area with the intention to reserve said area for common residential uses. Said residential structures shall be provided at least a 20-foot separation from other residential structures and at least 100-foot separation from any commercial building, accessory structure or parking lot serving the

commercial facility. Furthermore, a solid screen measuring at least eight feet in height and consisting of a combination of landscape materials and fence or wall material shall be established between the commercial area and the residential area.

(i) *Signage:* The following signs may be established within the district.

(1) Wall signs not to exceed in total sign area 20 percent of the surface area of the single wall to which it is affixed. No more than two wall surfaces of any single structure may be utilized for sign displays.

No wall sign shall extend more than four feet above the top of the wall face to which it is attached.

(2) Freestanding signs may include the following:

a. One main entrance sign may be located adjacent to the adjoining major thoroughfare. Said sign shall be limited in overall height to 20 feet with a maximum sign area of 200 square feet.

b. Individual signs identifying specific uses may be established adjacent to interior accessways or streets. There shall be a minimum separation of 150 feet between said signs.

1. Single use signs shall be limited in overall height to eight feet with a maximum sign area of 32 square feet.

2. Multiple use signs containing displays of at least three or more uses may be established at a maximum height of 12 feet with a maximum sign area of 60 square feet.

Particular uses may advertise on one but not on both types of interior freestanding sign.

c. Directional signs, measuring no more than six feet in height and six square feet in area may be established for traffic management purposes at appropriate locations. One business logo or name will be permitted on each sign.

d. Signs may be illuminated with interior or exterior lighting. However, no blinking, flashing or chasing lights will be permitted. Digital message signs will be permitted.

(3) Signs not permitted:

a. Billboard signs.

b. Roof signs.

c. Signs as limited within section 29-199.

(j) *Site plan revisions/amendments:* All changes, modifications, revisions and amendments made to development plans deemed to be major or substantial by the city planner after city approval of such plans shall be resubmitted and considered in the same manner as originally required. Examples of major or substantial changes include but are not limited to: land use changes, building locations, residential densities, street alignments, parking lot arrangements, interior traffic patterns, landscaping plans, signage plan and building design elements.

(k) *Change in use/reconstruction.* No use established within the district shall be removed, altered or replaced by a new use without prior authorization by the city planner. No building or parking area shall be reconstructed or substantially altered in any fashion without preliminary review and approval by the city planner.

If, in the judgment of the city planner the proposed change in use, proposed building reconstruction or parking lot alteration represents a substantial change from the originally approved district plan, the proposal shall be referred to the planning and zoning commission and the city council for review.

(Ord. No. 2117, § 5, 10-9-95; Ord. No. 2879, § 4, 9-19-16)

Sec. 29-167. - HWY-20, Highway 20 commercial corridor overlay zoning district.

(a) *Purpose and intent.* The Highway 20 commercial corridor overlay zoning district is intended to provide enhanced development guidelines for commercial uses established in the roadway corridor situated on property located a specified distance north of Ridgeway Avenue extending southward to Iowa Highway 20 and also extending from the east city limits to the westerly city limits. The Highway 20 commercial corridor overlay district regulations strive to encourage high quality commercial development at key "entry points" into the city that will incorporate adequate open green space areas, on-site landscaping, high quality building architectural design and adequate visual screening of outdoor storage or display areas. The Highway 20 commercial corridor overlay district regulations will be applied in addition to the underlying zoning district regulations.

(b) *Boundaries.* The HWY-20, Highway 20 commercial corridor overlay zoning district boundaries are legally described in Attachment A to this ordinance (Said attachment is not set out at length herein, but is on file in the office of the city clerk).

(c) *Permitted uses.* The following uses or similar uses are permitted: Any commercial use permitted in the underlying zoning districts (generally anticipated to be either HWY-1 or PC-2 commercial districts). Permitted uses are as follows:

(1) Regional shopping centers.

(2) Hotels, motels.

(3) Restaurants.

(4) Recreation vehicle/travel trailer sales, display and service; not to include manufactured housing or mobile home sales and displays.

(5) Vehicular service/auto repair centers.

(6) Any commercial or retail use intended to serve the traveling public or a regional commercial customer base unless herein limited.

(7) Any commercial use, including office uses, permitted in other commercial zoning districts unless herein limited.

(d) *Prohibited uses.* The following uses or similar uses are prohibited:

(1) Residential uses.

(2) Manufacturing or fabricating facilities.

(3) Billboards.

(4) Transmitting station/communication towers.

(5) Warehousing facilities including mini-storage warehouses.

(6) Religious or educational institutions.

(7) Junk yards/vehicle parts yards.

(8) Manufactured housing/mobile home sales and display areas.

(9) Agricultural implement, equipment or tractor sales and display lots.

(10) Landscaping sales/materials storage lot as a principal permitted use. However, landscaping sales/materials lots may be established in conjunction with and accessory to a permitted commercial retail use.

(11) Any use with physical or operational characteristics that generate substantial noise, odor, dust, glare, heat or vibrations or of a character not compatible with the high aesthetic standards of a

regional commercial service district. Examples of uses that would be considered unacceptable would include motor freight terminal, machine shop, cabinet shop, animal hospital, small engine repair, recycling center, auto body shop.

(e) *Conditional uses.* The following uses may be permitted within the Highway 20 commercial corridor overlay district subject to approval by the planning and zoning commission and the city council. Factors to be evaluated in consideration of allowance of the following uses will involve proposed site location relative to key entry points into the city (i.e. in the vicinity of the Hudson Road and Highway 58 intersections with Ridgeway Avenue). It is recommended that the following uses be located on properties at least 300 feet from the Hudson Road and Highway 58 right-of-way lines.

(1) Truck stop.

(2) Automobile/truck sales and display.

(3) Service stations with auto repair as a secondary use.

(4) Religious facilities may be permitted if incorporated into a principal permitted commercial use where said religious component comprises less than 20 percent of the gross floor area of the permitted commercial building. Said religious uses incorporated within a permitted commercial use need not abide by the separation requirements specified herein (i.e. 300 ft. from Hudson Road and Highway 58).

(5) Limited fabricating or manufacturing of products may occur on a limited basis within a principal permitted commercial building where said fabricating activity comprises less than ten percent of the gross floor area of the permitted commercial building. Said limited fabricating or manufacturing activities that are incorporated within a permitted commercial use need not abide by the separation requirements specified herein (i.e. 300 ft. from Hudson Road and Highway 58).

(f) *Minimum building standards.* All allowable uses, including permitted and conditional uses specified herein, with the exception of restaurants, must establish minimum size building structures on the property/development site at the time of building construction following initial development site plan approval. The minimum size principal building structure, as measured in gross floor area, including all principal permitted structures, but excluding accessory structures, shall be at least 5,000 sq. ft. gross floor area for the first acre of the proposed development site (or 11.47 percent of the first acre) and 3,500 sq. ft. gross floor area (eight percent of each acre) for each additional acre over one acre in area. For those development sites less than one acre in area at the time of initial development site plan review at least ten percent of the development site shall be utilized in gross floor building area excluding accessory structures.

(g) *Development site plan submittals.*

(1) Prior to development or in conjunction with rezoning of any parcel of land within the Highway 20 commercial corridor overlay district a detailed development site plan must be submitted for review and approval by the planning and zoning commission and the city council. Said development site plan review shall evaluate whether or not the proposed development plan conforms to the standards of the comprehensive plan, recognized principles of civic design, land use planning, landscape architecture and building architectural design. It is the intent of this section to encourage the highest standards of development at key entry points and along major roadway corridors of the city.

(2) The planning and zoning commission may recommend and the city council may: deny the plan, approve the plan as submitted, or before approval, may require that the applicant modify, alter, adjust or amend the plan to the end that the plan preserves the intent and purpose of this section to promote the public health/safety and general welfare. All development plans must satisfy the minimum requirements specified herein. In addition, the planning and zoning commission and city council will have discretion in recommending revisions to submitted plans for those elements other than those specifically required herein.

(3) The petitioner shall submit at least five copies of professionally prepared comprehensive plans detailing the following information:

(a) Building locations and size of buildings.

(b) Streets, drives, access ways.

(c) Parking lots with parking stall/driveway dimensions.

(d) Landscape plan, open space plan, professionally prepared.

(e) Pedestrian traffic/access plan, including sidewalks.

(f) Color architectural renderings of each building facade, including accessory structures.

(g) Signage plan.

(h) List of expected uses within the development.

(i) Storm water detention and erosion control plans.

(j) Topographic features of the site including soils information.

(k) Existing vegetation with indication of which on-site trees are to be removed or preserved.

(l) Natural drainage ways, floodplain.

(m) Municipal utility locations.

(4) The development plan must be accompanied by a developmental procedures agreement that describes the proposed use, timing and phasing of the project and outline other development details as necessary, such as platting details or schedule, signage plans, conformance with landscaping, building design standards, establishment of outdoor storage areas, if permitted, etc.

(h) *Site development requirements.*

(1) Setbacks: A 20-foot setback consisting of permeable open green space/landscape material shall be established around the perimeter of the zoning district where the development site is located. If multiple lots or development sites are established within the established zoning district a 20-foot setback must be established adjacent to street right of ways or principal access ways. Zero setbacks are permitted between abutting development sites within the established zoning district. No structure, sign or parking areas will be allowed in the minimum required setback area. Sidewalks/trails and driveways/access points can cross the minimum required setback area subject to site plan review and approval. Said driveways/access points or sidewalks must be oriented generally perpendicular to the required setback area to the end that a minimum amount of open green space area within the required setback is encumbered with hard surface material.

(2) Landscaping/open space requirements: The minimum required open space/landscape area shall be 15 percent of the total development site. It is the intent of this section that on larger development sites open space and landscape areas are to be distributed throughout the development site rather than isolated in one or a few areas of the site. "Berming" features are encouraged as part of landscaping plans for the purpose of providing effective visual screens for large paved areas or storage areas. Berm features cannot substitute for minimum required landscaping points as specified herein.

(3) The landscaped area shall be planted with a combination of trees, shrubbery and similar vegetation to achieve a minimum of 0.02 landscaping points per square foot of total lot area.

(4) In conjunction with development site plan submittal existing vegetation and trees on the site must be identified. No existing trees on a development site at the time of site plan submittal may be removed without prior approval of a specific tree preservation plan by the planning and zoning commission and city council. The purpose of this provision is to protect natural attractiveness of sites in the vicinity of natural drainage ways or pedestrian paths/trails or in

other areas of the site. Existing on-site landscaping/trees may be calculated into the required on-site landscaping planting up to a total of 15 percent of the required on-site landscaping requirement. Existing vegetation that is clustered in one or more portions of the development site can be considered in a portion of the landscaping plan, up to a maximum of 15 percent of the requirement. However, existing landscaping that is situated outside of or beyond the primary development/building site cannot substitute entirely for appropriate landscaping immediately adjacent to proposed building/parking lot areas or other improved areas or in the required yard areas.

(5) Street trees: In addition to the above requirement a minimum of 0.75 landscaping points per linear foot of public street frontage shall be required in tree plantings.

(6) Parking areas: In addition to the open space and landscaping requirements specified herein, including street tree plantings, additional tree plantings and other landscape treatments shall be required within designated parking areas. It is the intent of this regulation to provide shade and visual relief in large parking areas. Landscaped islands within parking areas are encouraged. At least one tree must be established for every 15 parking stalls or 2,500 square feet of hard surface parking area. Shrubbery, landscape berms and trees must be established around the perimeter of all parking areas containing ten or more parking stalls. In certain circumstances parking lot landscape points may be counted towards the overall landscaping point requirement for the entire site subject to approval by the planning and zoning commission and the city council.

(7) Outdoor display and sales areas: Where permitted, larger outdoor sales or display areas will not be required to landscape the interior of the display/sales area. However said sales or display area must be provided with an effective visual screen consisting of landscape plantings and/or berming around the perimeter of said area.

(8) Measured compliance: The following landscaping point schedule and conditions apply to required landscaping as specified herein and shall be utilized in determining achieved points for required planting.

Overstory Trees	
4 inch caliper or greater	100 points
3 inch caliper or greater	90 points
2 inch caliper or greater	80 points

Understory Trees	
2 inch caliper or greater	40 points
1½ inch caliper or greater	30 points
1 inch caliper or greater	20 points

Shrubs	
5 gallon or greater	10 points
2 gallon or greater	5 points

Conifers	
10 foot height or greater	100 points
8 foot height or greater	90 points
6 foot height or greater	80 points
5 foot height or greater	40 points
4 foot height or greater	30 points
3 foot height or greater	20 points

(i) *Signage.*

(1) Wall signs are not to exceed in total area 20 percent of the surface area of the single wall face to which it is affixed. No more than two wall surfaces of any single structure may be utilized for wall sign displays. No wall sign shall extend more than four feet above the top of the wall face to which it is attached. Multiple signs may be placed on a single wall face; however, not to exceed the specified sign area limitation.

(2) Roof signs are prohibited.

(3) Freestanding signs including "pole signs" and monument signs are to be evaluated on a case-by-case basis. It is the intent of this section to limit the size, height, and number of on-premise signs with the objective of discouraging sign clutter and to encourage the highest aesthetic standards for the District. All signage plans must be approved by the planning and zoning commission and the city council.

(4) The maximum allowable height and size of any single free standing sign is 25 feet height, 200 sq. ft. in area. The maximum sign area may be achieved with the placement of multiple sign faces on the sign structure. No more than one 25 ft. tall sign will be allowed per parcel. Smaller monument signs, measuring no more than 15 feet in overall height and 150 sq. ft. in sign area

are also permitted, with a maximum of two such signs per parcel. Directional signage, limited to six ft. [in] height and eight sq. ft. in area may be allowed with a maximum of four directional signs allowed per parcel.

(5) In addition, no banner signs or pennant/flag signs or other temporary signs, including balloon or inflatable signs shall be permitted with the following exception: no more than two banner signs may be affixed to two wall faces (one banner per wall face) of the principal permitted building for a period not to exceed 60 days per year. This restriction does not pertain to displays of the American flag or similar state and national flags. Said flag displays, however, must be kept outside of the minimum required setback area of the site.

(j) *Building design review.*

(1) All structures proposed to be established within the district shall be subject to architectural review. The principal area of review is exterior building materials, roof line, size and location of windows and doors, colors of materials, roof-mounted appurtenances, architectural style, facade, signage and general compatibility with existing commercial structures on adjoining properties. Standards relating to architectural conformance or compatibility with nearby existing structures as outlined in the HWY-1, highway commercial zoning district must be observed.

(2) All development site plans shall include submittal of professionally prepared architectural renderings/elevations of all sides of all proposed structures. Specific building materials and colors of said materials must be provided.

(3) The predominant external building materials of all structures shall be of masonry/stone/brick or similar material. Concrete materials shall be minimal. Stucco materials and/or E.I.F.S. materials are also acceptable if complemented with masonry materials. Glass materials including large window and doorway areas are encouraged. The prime "public view" wall faces of the structure (at least two wall faces), comprising at least 90 percent of said wall areas, must be made up of at least one or more of these specified preferred building materials. Sheet metal or steel sheeting wall materials are to be discouraged unless this is a minor component of the wall surface area of no more than one wall face of the building. Interior metal, steel or concrete structural building components are permitted.

(4) Metal roof systems are permitted provided that an appropriate color scheme complementing or accenting the rest of the structure coloration is maintained.

(5) Roof mounted facilities or service appliances (i.e. heating/cooling/communication facilities) must be adequately screened or disguised from public view.

(6) Pole buildings, whether of metal construction or other external material, or similar structures are prohibited.

(k) *Reconstruction/replacement of structures.*

(1) All approved building sites and structures that are substantially altered, reconstructed or replaced are subject to site plan review and approval by the planning and zoning commission and the city council as specified herein. The term "substantial or major alteration or replacement" shall mean an expansion of an existing parking area of more than 25 percent of the originally approved area. Similar 25 percent or more expansions of other approved outdoor service, storage or display areas shall be considered "substantial." Said outdoor expansions, including parking areas, will not be allowed to reduce the minimum required on-site open green space area or landscaping requirement.

(2) The term also relates to building renovations where a previously approved structure is being enlarged or repaired/reconstructed affecting at least 25 percent of the originally approved building area (either 25 percent or more expansion of the originally approved structure or repair/reconstruction of 25 percent or more of the original building). In addition, any roof repair or replacement that involves the use of new roofing material or a change in color of said roofing material will be considered a "substantial alteration" subject to review and approval. Any revisions to the exterior facade or wall face of any structure, regardless of percentage of wall

area, for example, changing the predominant color of the structure or replacing/changing originally approved building materials such as removing glassed areas, window areas, or replacing masonry materials with new and different materials are subject to review and approval by the planning and zoning commission and the city council.

(Ord. No. 2416, § 1, 2-24-03)

Sec. 29-168. - CBD, Central business district overlay zoning district.

(a) *Purpose and intent* . The purpose of the CBD, central business district overlay zoning district (hereinafter the "overlay district") is to provide guidance for future development in the specified area and to encourage continued successful business development in the downtown Cedar Falls area, particularly in the Main Street Parkade retail and service business area extending from First Street to Sixth Street. However, the overlay district may be extended over other nearby downtown areas. The overlay district is intended to allow land uses and to encourage appropriate building design standards in a manner that complements and strengthens the downtown retail and service business sector. Originally developed as a compact, multi-functional, walkable environment, the overlay is intended to support pedestrian access and use.

(b) *Boundaries.* The CBD, commercial business district overlay zoning district boundaries are legally described on Attachment A to this ordinance (said attachment is not set out at length herein, but is on file in the office of the city clerk).

(c) *Definition.*

" *Substantial improvement* " includes any new building construction within the overlay district or any renovation of an existing structure that involves any modification of the exterior appearance of the structure by virtue of adding or removing exterior windows or doors or altering the color or exterior materials of existing walls. All facade improvements, changes, alterations, modifications or replacement of existing facade materials will be considered a substantial improvement. Included in this definition are any new, modified or replacement awning structures or similar material extensions over the public sidewalk area. A substantial improvement also includes any increase or decrease in existing building height and/or alteration of the existing roof pitch or appearance. Routine repair or replacement of existing roof materials that do not materially change the appearance, shape or configuration of the existing roof will not be considered a "substantial improvement". Any new freestanding sign, projecting wall sign, or monumental sign, or an increase in size or height of any existing freestanding sign, projecting wall sign, or monumental sign, shall be considered a substantial improvement. Owner-occupied detached single ~~family~~unit residences will not be subject to these regulations.

(d) *Permitted uses.*

(1) Allowable uses within the overlay district include typical commercial, professional office and service oriented businesses, uses or facilities, including hotels and lodging facilities, all such uses currently allowed in the C-1 commercial, C-2 commercial and C-3 commercial districts unless herein limited. If the underlying zoning district is more restrictive than the C-3 commercial district, then only those uses permitted in the more restrictive district shall be allowed.

(2) Residential uses are allowable subject to planning and zoning commission and city council review and approval. No residential use may be established on the ground floor of any store front or shop front located within the Main Street Parkade retail and service commercial area extending from First Street south to Sixth Street and also extending at least one-half block in depth on any side street perpendicular to said Main Street Parkade area. Residential uses are encouraged to be established in upper levels of downtown commercial facilities.

(e) *Conditional uses.* Where some question arises whether a particular commercial use is appropriate within the overlay district, the use may be allowed subject to planning and zoning commission and city council review and approval, provided that the proposed use conforms to the prevailing character of the downtown area and provided that the use will not necessitate the use of outdoor storage

areas. In addition, such uses must not generate excessive amounts of noise, odor, vibrations or fumes, or generate excessive amounts of truck traffic. If the underlying zoning district is more restrictive than the C-3 commercial district, allowable conditional uses will be those generally compatible with the more restrictive standards of the underlying zoning district. Examples of uses that may be allowed subject to approval of a conditional use permit are:

(1) Auto repair shop.

(2) Printing or publishing facility.

(3) Limited manufacturing activity that is directly related to the operation of a retail business conducted on the premises.

(4) Plumbing and heating shop.

(5) Sign painting shop.

(6) Appliance repair shop.

(7) Home supply business.

(f) *Prohibited uses.* In all cases the following uses will not be allowed within the overlay district either as permitted or conditional uses:

(1) Lumber yards.

(2) Used or new auto sales lots and displays.

(3) Auto body shop.

(4) Storage warehouse or business.

(5) Mini-storage warehouse.

(6) Sheet metal shop.

(7) Outdoor storage yard.

(g) *Site plan review.* Any proposed substantially improved or new building structure or development, including proposed residential facilities, must submit a detailed site plan and building plans for review and approval by the planning and zoning commission and the city council. Elements to be considered in this review process are proposed use, proposed building improvements or new structural elements, with particular attention to exterior building design elements, parking provision (if any), and how the proposed improvement or development will complement existing nearby uses and building design elements. In the case of emergency repairs needed as the result of unanticipated building or facade damages due to events such as fire, vandalism, or weather related damages, site plan review will not be required, provided that the needed repairs do not alter the appearance of the structure prior to the event causing the unanticipated damages. Owner-occupied detached single-~~family~~unit dwellings will be exempt from this provision.

On-site parking in the downtown area will not be required for principal permitted commercial, professional office or service business uses or facilities. Any proposed residential use established within the overlay district must conform to the parking regulations described in section 29-177.

(h) *Building design review.* All substantially improved or new building structures within the overlay district shall be reviewed by the planning and zoning commission and the city council for architectural compatibility with surrounding structures. Paramount in this review will include consideration of building materials, exterior building materials on all sides, coloration of materials, building height, roof line, size and location of windows and doors, roof mounted appurtenances, and facades. In addition to consideration of typical physical structural improvements to structures, review is also required of any wall painting, mural wall signs or painted artwork or other similar applications to exterior walls. The purpose of review of said exterior wall paintings or drawings is to ensure that said applications are consistent with the prevailing standards and character of the downtown area. The following design elements will be reviewed:

(1) *Proportion:* The relationship of width and height of the front elevations of adjacent buildings shall be considered in the construction or alteration of a building. The relationship of width and height of windows and doors of adjacent buildings shall be considered in the construction or alteration of a building. Particular attention must be given to the scale of street level doors, walls and windows. Large expanses of blank wall spaces at street level are to be discouraged.

(2) *Roof shape, pitch and direction:* The similarity or compatibility of the shape, pitch and direction of roofs in the immediate area shall be considered in the construction or alteration of a building. Routine repair and maintenance or replacement of existing roof materials will not be subject to review provided that the existing roof line and configuration is not altered during the course of said repairs or maintenance.

(3) *Pattern:* Alternating solid surfaces and openings (wall surface versus doors and windows) in the front facade, sides and rear of a building create a rhythm observable to viewers. This pattern of solid surfaces and openings shall be considered in the construction or alteration of a building.

(4) *Materials and texture:* The similarity or compatibility of existing materials and texture on the exterior walls and roofs of the buildings in the immediate area shall be considered in the construction or alteration of a building. A building or alteration will be considered compatible if the materials and texture used are appropriate in the context of other buildings in the immediate area.

(5) *Color:* The similarity or compatibility of existing colors of exterior walls and roofs of buildings in the area shall be considered in the construction or alteration of a building.

(6) *Architectural features:* Architectural features including but not limited to cornices, entablatures, doors, windows, shutters, fanlights and other elements prevailing in the area shall be considered in the construction or alteration of a building. It is not intended that the details of existing buildings be duplicated precisely, but those features should be suggestive of the extent, nature and scale of details that would be appropriate on new buildings or associated with building alterations.

(7) *Exterior mural wall drawings, painted artwork, exterior painting:* These elements shall be reviewed to consider the scale, context, coloration and appropriateness of the proposal in relation to nearby facades and also in relation to the prevailing character of the downtown area. Exterior painting of detached single ~~family~~unit and two-~~family~~unit residential structures within the district shall be exempt from this provision. Other multi-~~family~~unit dwelling structures will be subject to this review.

(i) *Signage* . Typical business signage shall be permitted without mandatory site plan review by the planning and zoning commission and city council, unless said review is mandated by ordinance requirements. All signage shall conform to requirements of the Cedar Falls sign regulations outlined in the Zoning Ordinance, except as provided for below:

(1) Freestanding signs:

(i) When located adjacent to any street other than First Street, shall not exceed 15 feet in height and 40 square feet in surface area.

(ii) When located adjacent to First Street, shall not exceed 25 feet in height and 60 square feet in surface area.

(2) Monumental signs: Shall not exceed 8 feet in height and 40 square feet in surface area.

(j) *Removal or demolition of building structures.* Removal or demolition of structures within the overlay district is allowable, subject to securing a demolition permit with the city inspection services division. If no immediate building reconstruction plans are proposed within 30 days following building removal or demolition, the site shall be filled and graded to a topographic elevation equal to or level with surrounding adjacent property natural grade levels. Within 30 days of final grading of the site or at the earliest opportunity during the growing season conducive to plant germination, the site shall be seeded with grass. Reasonable efforts shall be taken by the property owner to ensure proper

germination of the vegetation and the property owner must maintain the property in accordance with city ordinances.

(Ord. No. 2477, § 1, 5-10-04; Ord. No. 2853, §§ 1—3, 9-8-15)

Sec. 29-169. - P, public zoning district.

The P public zoning district is reserved exclusively for structures and uses of land owned by the federal government, the State of Iowa, Black Hawk County, the city, and the Cedar Falls Community School District. Although such publicly-owned property is generally exempt from city zoning regulations and requirements, it is expected that such governmental authorities shall cooperate with the city's department of developmental services to encourage structures on and uses of public land which shall be compatible with the general character of the area in which such public property is located. The public zoning district classification also serves as notice to those owning or purchasing land in proximity to publicly-owned land, which is not generally subject to the regulations contained in this chapter.

(Ord. No. 2545, § 1, 9-12-05)

Secs. 29-170—29-175. - Reserved.

DIVISION 3. - OFFSTREET LOADING SPACE AND PARKING AREA REQUIREMENTS[3]

Footnotes:

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Cross reference— Stopping, standing and parking of vehicles generally, § 26-251 et seq.

Sec. 29-176. - Offstreet loading spaces.

(a) In any district, except the C-3 commercial district, in connection with every building or part thereof erected having a gross floor area of 10,000 square feet or more which is to be occupied by manufacturing, storage, warehouse, goods display, a retail store, a wholesale store, a market, a hotel, a hospital, a mortuary, a laundry, dry cleaning or other uses similarly requiring the receipt or distribution by vehicles of material or merchandise, there shall be provided and maintained, on the same lot with such building, at least one offstreet loading space, plus one additional such loading space for each 20,000 square feet or major fraction thereof of gross floor area so used in excess of 10,000 square feet.

(b) Each loading space shall be not less than ten feet in width and 25 feet in length.

(c) Such space may occupy all or any part of any required yard or court space or such space as specifically provided for in the district in which it is located.

(Code 1971, § 32-43)

Sec. 29-177. - Offstreet parking spaces.

(a) *Required, number.* In all districts, and in connection with every industrial, commercial, trade, institutional, recreational or dwelling use and similar uses, space for parking and storage of vehicles shall be provided on the same lot or property where said permitted use is established, except as follows:

(1) For a principal permitted commercial use in the C-3 commercial district; and

(2) For a residential use established as a permitted secondary, incidental or accessory use to a principal permitted commercial use in the C-3 commercial district, such as for a dwelling unit or units located on the second or higher floor of a building, the first or lower floor of which comprises the principal permitted commercial use, subject, however, to review and approval by the planning and zoning commission and city council. Such review and approval shall include consideration of whether the proposed residential use is indeed secondary, incidental or accessory to a principal permitted commercial use of the structure or property.

Review by the planning and zoning commission and city council shall include consideration of traffic patterns, both pedestrian and vehicular, adequacy of screening, compatibility with adjacent land uses and construction of fixtures in accordance with the aesthetics of the neighborhood and accepted civic design principles. All off-premise parking areas or parking lots shall be located within a reasonable distance from the principal use in question. During the course of review of off-premise parking areas or parking lots the commission may recommend and the city council may require any improvements or fixtures to the parking area or lot, including hard surfac ing, landscaping, screening, lighting, stormwater detention, etc., that will help to assure compatibility with adjacent land uses.

In addition, space for parking and storage of vehicles shall be provided in accordance with the following schedule. If the offstreet parking requirement as specified herein is to be satisfied with open, surface parking or garage parking, or a combination of these options, parking must be made available for parking use by the occupants:

(1) *Animal hospitals, kennels and animal grooming shops.* One parking space per doctor, plus one parking space for every two employees and one parking space for every 400 square feet of gross floor area excluding dog confinement areas.

(2) *Automatic carwash.* Five stacking spaces for each washing bay, one stacking space for each vacuuming unit, plus one parking space for every two employees.

(3) *Automobile, machinery or equipment sales.* One parking space for every 500 square feet of gross floor area, plus two parking spaces for each service stall and one parking space for every two employees.

(4) *Banks, businesses and professional offices.* Not less than one parking space for every 300 square feet of gross floor area, but in no case less than five parking spaces. Each drive-up window shall provide three stacking spaces per teller.

(5) *Barbershops and beauty parlors.* Two parking spaces per operator.

(6) *Boardinghouse and rooming houses.* Not less than one parking space per guestroom and/or sleeping room.

(7) *Bowling alleys.* Five parking spaces for each bowling lane.

(8) *Church or temple.* One parking space for every eight lineal feet of pew seating or for every four potential occupants in the principal auditorium or, where no auditorium is provided, one parking space for every 80 square feet of gross floor area.

(9) *Community center, museum or art gallery.* One parking space for every 200 square feet of gross floor area, or one parking space for every five potential occupants in the building, whichever is greater.

(10) *Convenience store.* One space for every 100 square feet of retail floor space plus one space for every two employees. If fuel dispensing pumps or car wash is established in conjunction with said use the stacking space requirements for each use as specified in this article shall apply.

(11) *Dance, assembly, skating rink or exhibition halls without fixed seats, including auction houses.* One parking space for every four potential occupants in the building as determined by the uniform building code for maximum occupancy load plus one space for every two employees with a minimum of five spaces for employee parking.

(12) *Dwelling, single ~~family~~unit, including mobile home units.* Two parking spaces per dwelling unit.

(12A) *Dwelling, single ~~family~~unit, renter-occupied, including renter-occupied mobile home units.* Two parking spaces per dwelling unit plus one additional parking stall for each bedroom in excess of two bedrooms.

(12B) *Dwelling, two ~~family~~unit, including single ~~family~~unit bi-attached dwellings, multi-~~family~~unit dwellings including condominiums and apartments, but not including nursing homes, convalescent homes, elderly housing or housing for handicapped.* Two parking spaces per dwelling unit, plus one additional parking space for each bedroom in each dwelling unit in excess of two bedrooms. One additional stall shall be provided for every five units in excess of five units for visitor parking.

(13) *Fraternity house, sorority house or dormitories.* Not less than five parking spaces plus one stall for every two residents in excess of four residents.

(14) *Fuel service station.* Two parking spaces for each service stall, plus three stacking spaces for each fuel dispensing pump.

(15) *Funeral homes and mortuaries.* One parking space for every three potential occupants in the principal auditorium, or, where no auditorium is provided, one parking space for every 50 square feet of gross floor area or five parking spaces for each parlor, whichever is greater.

(16) *Furniture, appliance, hardware and household equipment stores.* One parking space for every 750 square feet of gross floor area, plus one parking space for every two employees.

(17) *Game rooms, poolhalls and billiard parlors.* One and one-half parking spaces for every 100 square feet of gross floor area for any establishment other than one with a liquor license or beer permit.

(18) *Golf courses.* Four parking spaces per hole. All other commercial or recreational land uses established in conjunction with a golf course, not incidental to the sport of golf, shall be subject to the parking regulations regarding that use.

(19) *Hospitals.* One parking space for every five beds, plus one parking space for every two employees and one parking space for every two staff doctors.

(20) *Hotels, motels or lodginghouses.* Not less than one parking space for each guestroom, plus one parking space for every 200 square feet of commercial, assembly or meeting area, and one parking space for every 150 square feet of lounge, coffeeshop or restaurant gross floor area, plus one stall for every two employees.

(21) *Housing for elderly or handicapped.* One and one-half parking spaces for every dwelling unit, plus one stall for every two employees.

(22) *Junk yard.* Two parking spaces per acre, plus one space for every two employees.

(23) *Libraries.* One parking space for every 250 square feet of gross floor area in public use, plus one parking space for every two employees.

(24) *Manufacturing, research and industrial plants.* Four parking spaces for every 10,000 square feet of gross floor area, plus one parking space for every three employees.

(25) *Medical or dental clinics.* Five parking spaces, plus one additional parking space for each 200 square feet of gross floor area over 1,000 square feet.

(26) *Mini-centers, retail stores, shops, etc., under 2,000 square feet in gross floor area.* One parking space for every 200 square feet of gross floor area, but in no case less than five parking spaces.

(27) *Miniwarehouse.* One parking space for every ten storage units, stalls or lockers equally distributed throughout the storage area, plus two parking spaces located at or near the project office for use by prospective customers. A minimum of 35 feet between warehouse buildings for driveway, parking and fire lane purposes is required. When storage units within warehouses do not front one another, a minimum 25-foot drive for driveway, parking and fire lane purposes is also required.

(28) *Nursing care, retirement or convalescent homes.* One parking space for every five beds, plus one parking space for every two nonresident employees and one parking space for every one resident staff.

(29) *Printing, plumbing shop, heating shop or other similar service establishments.* One parking space for every two employees therein, plus one parking space for each service vehicle. If retail trade is carried on in the establishment, one additional parking space shall be provided for every 200 square feet of retail floor area.

(30) *Restaurant, fast food, drive-in or carryout.* One parking space for every 100 square feet of gross floor area, plus one parking space for every two employees with a minimum of five parking spaces for employee parking. Where drive-up window facilities are proposed, five stacking spaces shall be provided per window.

(31) *Restaurant (standard eat in)* . One parking space for every 150 square feet of gross floor area, plus one parking space for every two employees, with a minimum of five parking spaces for employee parking.

(32) *School, college or high school.* Each separate building requires one parking space for every five potential occupants in the main auditorium or one parking space for every five students and one parking space for every staff member, whichever is greater.

(33) *School, daycare, preschool, elementary or junior high school.* One parking space for every ten potential occupants in the auditorium or main assembly room, or one parking space for each classroom, whichever is greater.

(34) *Seasonal camp or cabins.* One parking space for every cabin, sleeping unit, campsite lot or two beds, whichever is greater.

(35) *Shopping centers or retail stores, shops or supermarkets over 2,000 square feet in gross floor area.* Four and one-half parking stalls per 1,000 square feet of gross floor area.

(36) *Sports arena, stadium, gymnasium, theater or auditorium for other than schools.* One parking space for every four potential occupants plus one space for every two employees with a minimum of five spaces for employee parking.

(37) *Taverns, bars and nightclubs.* One parking space for every 100 square feet of gross floor area, plus one parking space for every two employees with a minimum of five parking spaces for employee parking.

(38) *Telemarketing office.* Not less than one parking space for each 150 square feet of gross floor area, but in no case less than five spaces.

(39) *Tennis and racquetball courts.* Two parking spaces per court.

(40) *Union headquarters, private clubs or lodges.* One parking space for every five potential occupants of the building.

(41) *Wholesale establishments or warehouses.* One parking space for every two employees, but in no case less than one parking space for every 1,000 square feet of gross floor area.

(b) *Rules for computation of required parking spaces.* In computing the number of parking spaces required, the following rules shall apply:

(1) *Gross floor area.* Gross floor area shall mean the floor area of the specific use and its associated incidental uses within the exterior walls of a building or portion thereof, exclusive of

vent shafts, open air courts and any portion of a structure above or below ground used for offstreet parking, loading areas or mechanical equipment not incidental to the specific use such as furnaces, air conditioners, elevators, etc. In addition, other nonessential areas of the gross floor area may be deducted including storage areas, closets, bathrooms, etc. to a maximum of ten percent of the total gross floor area.

(2) *Fractional number of spaces.* Where fractional spaces result, the parking spaces required shall be the next higher whole number.

(3) *Uses not specifically provided for.* Where the parking space requirement for a use is not specifically mentioned in this section, the required number of spaces shall be that of a similar use as determined by the city planner.

(4) *Joint or mixed uses.* In the case of mixed or joint uses, the parking spaces required shall equal the sum of the requirements for each use computed separately.

(5) *Determination of seating capacity.* When the unit of measurement determining the number of required parking spaces is based upon the seating capacity of a structure or use, each 24 inches of a pew, bleacher or bench or other seating shall count as one seat.

(6) *Determination of number of employees.* When the unit of measurement determining the number of required parking spaces is based on the number of employees, the maximum shift or employment period during which the greatest number of employees are present at the structure or use shall be used in the computation.

(7) *Unknown uses.* Where new buildings are proposed but the owner or developer does not wish to designate the type of use that will occupy the building, the most intensive use possible with relation to parking in the zoning district shall determine the parking requirements.

(8) *Potential occupants.* The maximum number of potential occupants shall be based upon the assumption that 15 square feet of gross floor area is required per occupant, as documented within the Life Safety Code for places of assembly.

(9) *Stacking space.* All stacking spaces shall be nine feet in width and 19 feet in length and shall not prohibit ingress or egress to any driveway, public street, access aisle or parking space at any time. Stacking spaces may include the vehicular space situated at the point of service.

(10) *Tandem parking.* Vehicles may be parked in tandem, or one directly behind the other, in conjunction with single-~~family~~unit, duplex and mobile home residences. Parking spaces inside carports or garages may be counted as part of the space requirement and may be used in tandem. Tandem stalls shall mean no more than two stalls arranged one in front of the other.

(c) *Access.* Access to all parking areas and lots from streets, alleys and other adjacent areas shall be provided by an access drive not less than ten feet in width for single-~~family~~unit dwellings or one-directional traffic flow and not less than 18 feet in width in all other cases.

(d) *Applicability of section.* Whenever a building or use existing prior to September 26, 1983, is enlarged in floor area, number of employees, number of dwelling units, seating capacity or otherwise, the building or use in its entirety shall then and thereafter comply with all the requirements set forth in this section. All new buildings or uses constructed or established after September 26, 1983, shall comply with the requirements of this section prior to occupancy. A change in use shall mean any change where the new use established requires a greater number of on-site parking spaces than was required for the prior use. However, if the prior use did not provide minimum offstreet parking then parking spaces shall be provided as specified herein before the new use is established.

(e) *General development standards.* Every parcel of land used as a public or private parking area, parking space or parking lot, including a commercial parking lot, shall be developed and maintained in accordance with the following requirements:

(1) With the exception of parking garages or structures and driveways serving residential uses, all parking lots containing three or more parking spaces shall provide minimum setbacks and landscaping as specified herein. Parking structures or ramps (above or below ground) located

on a parcel as a principal permitted use shall meet the minimum building setback requirement of other principal permitted structures within the zoning district where located. When parking spaces are provided within accessory structures, the setbacks for accessory structures shall apply.

(2) All parking lot setback areas, as specified herein, shall be an open, permeable area consisting of landscaping, natural vegetation ground cover or other type of natural ground cover. No vehicle parked in an adjacent parking space shall be permitted to encroach into any portion of said required setback area.

(3) Parking lots shall be hard surfaced. Their design shall be based on the amount, type and weight (axle loads) of anticipated traffic, the quality of the surfacing to be used and the supporting strength and character of the subgrade, all applied to a parking lot layout as selected by the designer and approved by the city engineering division.

(4) Any portion of property that is graded or improved in any fashion to accommodate vehicular parking or is intended or commonly used for vehicular parking shall meet parking lot design standards as specified herein. Any existing parking lot or parking area that does not meet existing standards as specified herein shall not be enlarged or expanded unless the entire parking lot area or parking area meets parking lot design standards as specified herein.

(5) All accessways or driveways to parking areas or parking lots shall be hard surfaced. Unimproved driveways or accessways in existence at the time of enactment of this article shall be hard surfaced only in the event that the on-site parking lot is expanded, hard surfaced or otherwise upgraded.

(6) All parking lots shall be arranged and marked in a manner which provide safe and orderly loading, unloading, maneuvering, parking and storage of self-propelled vehicles. Parking spaces shall be provided in accordance with the following minimum requirements:

a. Parking spaces shall not be less than nine feet in width and 19 feet in length for all nonresidential uses including hotels and other temporary lodging facilities. All residential uses, including multiple-~~family~~unit residences, shall provide parking stalls measuring not less than eight feet in width and 18 feet in length. Compact car spaces shall not be less than eight feet wide and 16 feet in length. Fifteen percent of the parking space requirement may consist of compact car parking spaces in lots which have more than ten stalls. All compact car spaces shall be clearly identified by signs. Where fractional spaces result, the number of permitted compact car spaces shall be rounded to the next higher number.

b. Handicapped parking shall be provided in accordance with the requirements of the state. Iowa Code—Chapter 321L.

c. Buildings and facilities required to provide handicapped parking spaces shall set aside at least one such space. Each space shall be clearly designated as a handicapped parking space by the display of the international symbol of accessibility both in front and within the stall. Parking spaces for handicapped persons and accessible loading zones that serve a particular building shall be located on the shortest accessible route to an entrance to the building. Federal ADA requirements, if more restrictive, shall apply.

d. The property owner shall be responsible for the continued maintenance of the parking lot, including fences, landscaping, all signs, surface material, surface markings and other forms of traffic control.

e. Maneuvering space required to permit safe and convenient parking of motor vehicles shall be provided in accordance with the minimum requirements of Table 1 for a nine-foot by 19-foot stall.

Table 1

Parking Angle	Stall Width	Stall Length (Including 2'0" overhang if applicable) 19-Foot Long	Aisle Width	Curb Length per Car
0 degrees	9'0"	19.0	12.0	23.0
30 degrees	9'0"	17.3	11.0	18.0
45 degrees	9'0"	19.8	13.0	12.7
60 degrees	9'0"	21.0	18.0	10.4
90 degrees	9'0"	19.0	24.0	9.0

(7) When an accessway or driveway intersects a public right-of-way or when a parking lot, area or space abuts any public right-of-way, screening or landscaping shall not exceed three feet in height above the driveway surface and no structure, sign or vehicle shall be allowed in the triangular area formed by:

a. The area of property located at a corner formed by the intersection of two public rights-of-way, excluding alleys, with two sides of the triangle being 30 feet in length along the abutting public right-of-way lines measured from their point of intersection and the third side being a line connecting the ends of the other two lines (see Figure 2).

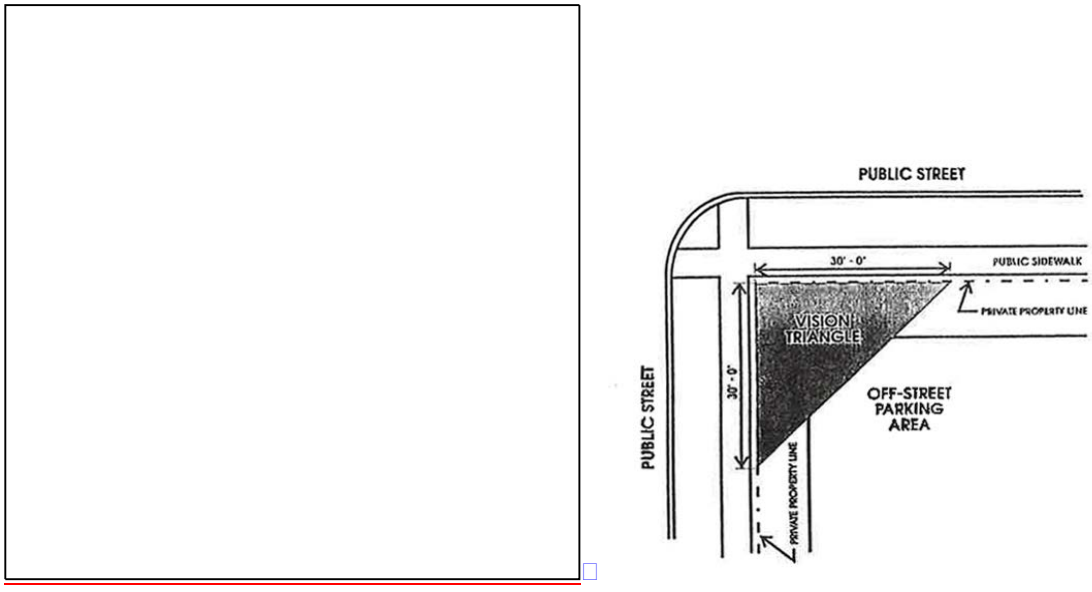


Figure 2 — 30 Foot Vision Triangle

b. The areas of property on both sides of an accessway, driveway or alley formed by an intersection with a public right-of-way, with two sides of each triangle being formed by lines a distance of ten feet in length from the point of intersection and with the third side being a line connecting the ends of the ten-foot sides (see Figure 3).

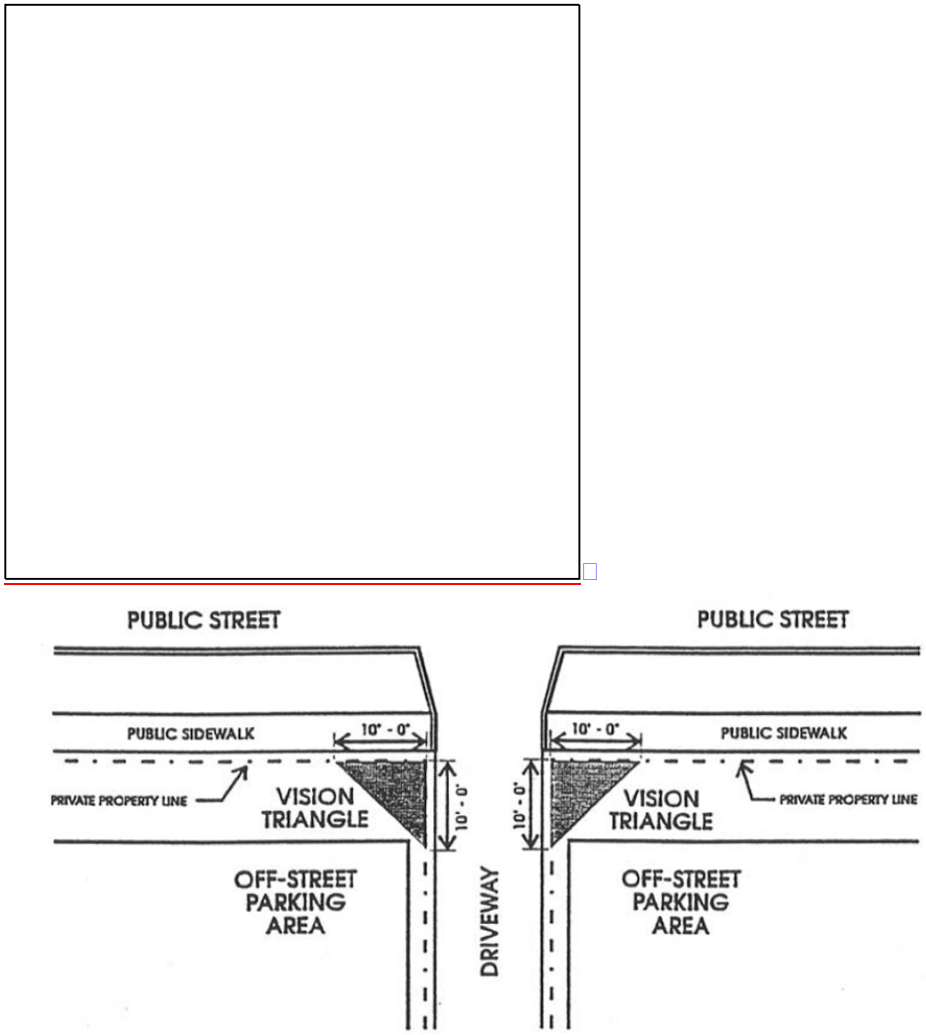


Figure 3 — 10 Foot Vision Triangle

(8) All parking spaces shall be designed to prohibit any vehicle from backing into a public right-of-way to obtain ingress or egress, except when the space is used in conjunction with a single-~~family~~unit or duplex dwelling unit.

(9) Any lighting used to illuminate any offstreet parking area, including any commercial parking lot, shall be provided on private property and shall reflect the light away from adjoining residential premises or from any R district.

(10) Accessways or driveways shall be situated no closer than three feet from any private property line.

(11) Curbing. With the exception of driveways or garages that meet the parking requirements for residential uses, all newly constructed parking lots containing ten or more parking spaces shall provide continuous concrete curbing measuring at least six inches in height around the entire perimeter of said parking lot except at points of ingress, egress and drainage locations. Said

continuous curbing shall be established at that portion of the parking space to serve as a wheel block or barrier in order to prevent the vehicle from overhanging into the required setback area. Vehicular overhang as measured from the front tires shall be considered to be two feet.

Continuous curbing can be substituted with individual wheel blocks or wheel barriers only in the following situations:

a. A parking lot is designed to contain fewer than ten parking stalls.

b. A parking lot containing ten or more parking stalls provides a setback area on all sides at least double the minimum required setback.

(12) Prior to the installation, enlargement, resurfacing or other improvement of any parking lot a plan shall be submitted for review and approved by the city engineering division and the Cedar Falls Utilities.

(f) *Standards for lots in C or M districts:*

(1) In any C, commercial or M, industrial zoning district abutting an R residence district, offstreet parking lots will be permitted in accordance with the following requirements: A six-foot high screen consisting of a fence, wall or plant material of mature height shall be installed and continually maintained when a parking lot or area abuts an R, residential zoning district, except in any required front yard or along any street or alley, where the screen shall be no more than four feet in height. All screening shall comply with the landscaping provisions found in this article.

(2) All parking lots in C or M zoning districts containing three or more parking spaces shall be hard surfaced, shall meet stormwater detention requirements, shall provide a continuous curb (six inches or more) around the perimeter of the parking lot, and shall be marked properly to indicate the location of parking spaces and driveway aisles.

(g) *Standards for R districts.* In any R residence district, off-street parking lots shall be developed and maintained in accordance with the following requirements:

(1) An off-street parking lot located in an R residence district shall provide the front yard and the required side yards in accordance with the district in which it is located. Furthermore, the minimum rear yard setback shall be five feet. The front yard, the required front yard and the required side yards may be used for vehicular access to the parking lot, for fences, walks, or landscaping only. No vehicular parking is permitted in the front yard, in the required front yard or in the required side yard. Where a contiguous development of lots is used for parking purposes under one ownership, no side or rear yards shall be required for abutting parking lots on the common lot line.

(2) Off-street parking lots in any R residence district shall provide screening on all yards of the abutting lots. The screen shall be six feet high and consist of a fence, wall or plant material of mature height, except that, when the screen is in the front yard or when the screen is maintained along an alley or street right-of-way line, then the screen shall be no more than four feet in height. All screening shall comply with the landscaping provisions found in this article.

(3) All parking lots containing three or more parking spaces shall be hard surfaced, shall meet storm water detention requirements, shall provide continuous curbing or wheel blocks for each parking space, and shall be marked properly to indicate the location of parking spaces and driveway aisles.

(4) Every parking area or parking lot must have a connecting driveway that meets the regulations of the zoning ordinance.

(5) Any new parking areas, parking lots or paved surfaces in R-1, R-2, R-3 [1], R-4 , RP , MU zoning districts that are converted to parking, must meet all requirements specified in this section, prior to use for parking.

(6) Parking areas or parking lots in rear yards shall meet the following requirements:

Zoning District	Number of Units	Maximum Rear Yard Coverage for Parking
R-1, R-2, RP [1], MU [1]	1	30%
R-3 [1], R-4 [1]	1	50%
R-2, R-3 [1], R-4 [1], RP [1], MU [1]	2	50%

(7) In the case a parking area or parking lot cannot meet the provisions of section 29-177(g)(6) then review and approval by the city council after recommendation of the city planning and zoning commission is required. The criteria for which additional rear yard parking coverage could be considered include the following:

a. The request serves the existing building use, not an expansion,

b. The maximum rear yard coverage shall not be increased by more than five percentage points above the percentage listed in the table in section 29-177(g)(6),

c. Determination that the character of the neighborhood surrounding the property would not be diminished by the increase in parking area and corresponding reduction of open space,

d. The lot width and lot area of the property are sufficient to accommodate the density of occupants and vehicles that would result from the parking lot or area,

e. Whether buffering of parking meets code, and

f. All other city codes are met, including but not limited to the housing, property maintenance, nuisance, rental housing, building, and fire codes.

(h) *Parking lot setbacks.* Where setbacks required by this section impose a greater restriction than is imposed or required by other provisions of law or by other rules or regulations or ordinances, the provisions of this section shall control.

(1) *Residential districts.* Required setbacks for parking lots in residential zoning districts are as follows:

a. The required setback is three feet along any alley, five feet along any street right-of-way line, and five feet along any adjacent property line.

b. The front yard and the required side yards shall be provided in accordance with the underlying zoning district. The front yard, the required front yard and the required side yards may be used for access to the parking lots, for fences, walks or landscaping only. No vehicular parking is permitted in the front yard, in the required front yard or in the required side yard.

c. Individual driveways intended for exclusive use by one-~~family~~unit dwellings, duplexes, mobile homes, townhouses or multi~~family~~unit dwelling units shall not be classified as parking lots and shall not be required to restrict vehicular parking in the front yard, in the required front yard or in the required side yard upon said driveway as described herein. However, said driveways serving detached residential structures, detached garages, or

parking lots shall provide a minimum three-foot setback from adjacent property lines and shall meet the provisions of section 29-179, unless the driveway is an existing shared drive where the minimum driveway width can only be met by encroaching into said three-foot setback area.

d. All yards and required yards as described herein shall consist of permeable material (grass, wood chips, loose rock, or other ground cover material) and be screened in accordance with the landscaping requirements found within this section, and with the exception of driveways, parking lots and patios, no yard area shall be hard surfaced.

(2) *Commercial and manufacturing districts.* Required setbacks in commercial and manufacturing districts are as follows:

All parking lots in C or M districts shall provide a minimum setback as measured from the private property line to the edge of the hard surface parking area with no vehicular overhang allowed within said setback area. The minimum setbacks shall be:

a. Five feet when adjacent to a public right-of-way with the exception when adjacent to a public alleyway in which case no less than three feet setback shall be required.

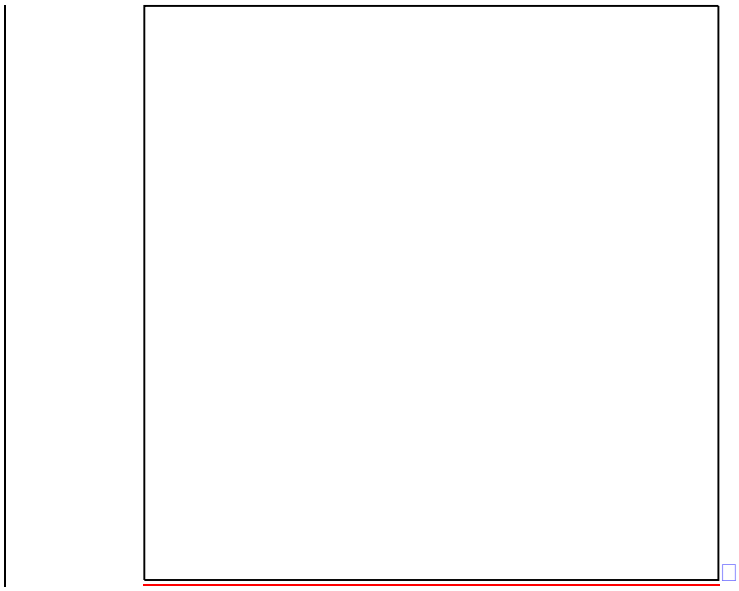
b. Three feet when adjacent to an abutting commercial use or commercial property including an adjacent commercial parking lot.

c. Five feet when adjacent to a residential use in a commercial or industrial district.

d. Ten feet when adjacent to an R, residential zoning district.

e. Residential uses established in a C or M district as a principal use shall provide minimum front yard and side yard setbacks as specified in the R-4 zoning district with no vehicular parking permitted in said required yard areas.

f. All setback areas shall consist of permeable material (grass, wood chips, loose rock or other ground cover material) and be screened in accordance with the peripheral landscaping requirements as stated herein.



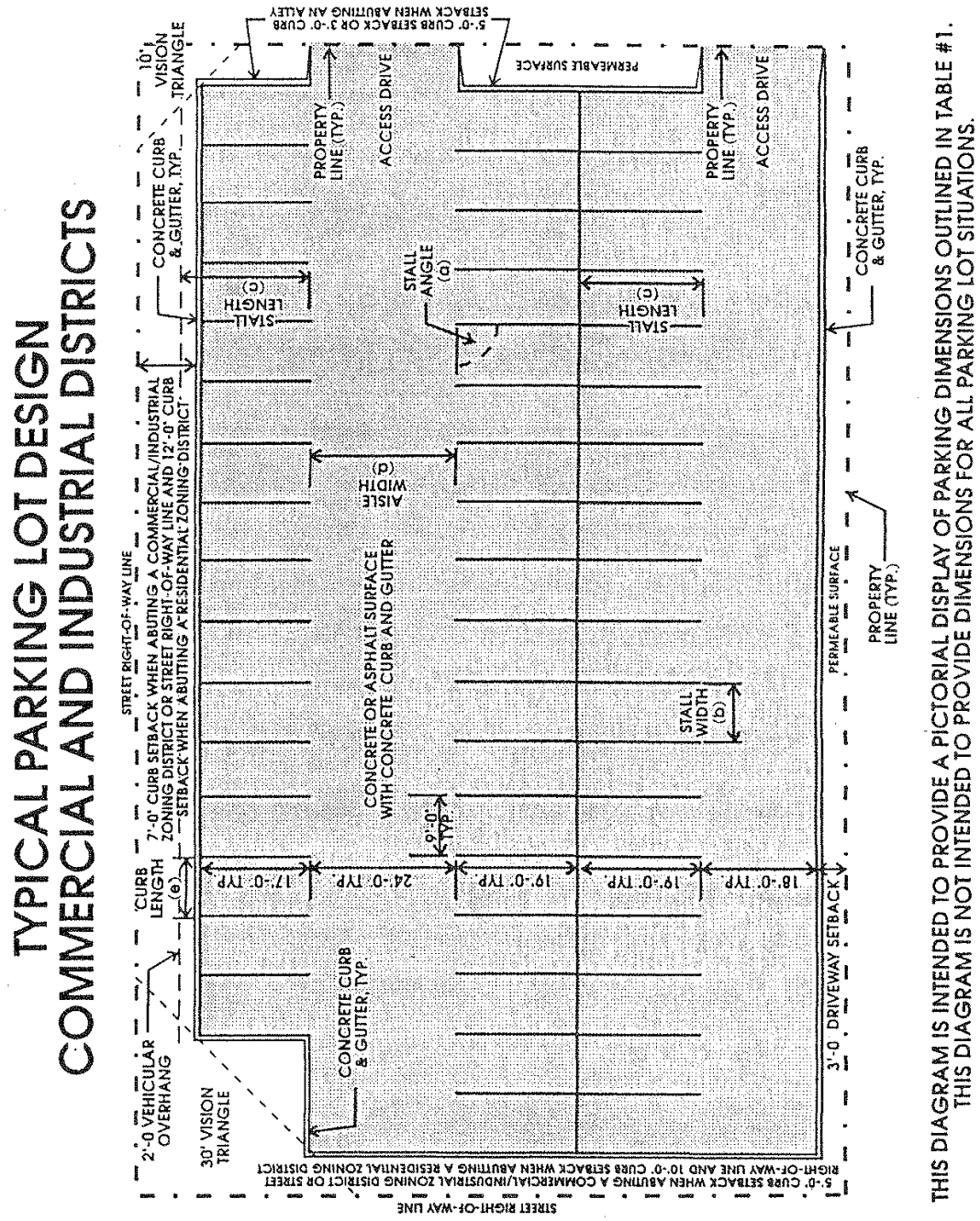


Figure 4

(i) *Landscaping generally.* Landscaped off street parking lots shall be required within all districts in order to protect and preserve the appearance, character and value of the surrounding neighborhoods, to reduce wind and air turbulence, heat and noise and the glare of vehicular lights, to act as a natural drainage system and ameliorate stormwater drainage problems, to provide shade and to otherwise facilitate the creation of a convenient, attractive and harmonious community.

(1) Applicability of landscaping requirements. Landscaping requirements contained within this section shall apply to:

a. New off street parking lots containing three or more parking spaces.

b. Existing off street parking lots containing three or more parking spaces which are effectively altered or enlarged, in whole or in part, other than normal maintenance, repairs, or resurfacing of an existing lot.

(2) No parking lot containing three or more parking spaces shall be constructed or enlarged in the city until a landscape plan for the parking lot has been approved by the city planner and the city arborist or their designees.

Landscape plans submitted pursuant to this section shall not be approved unless they conform to the requirements of this section and, where appropriate, may be submitted as part of the site plan submittal required within other sections of this chapter. Landscape plans shall be drawn to scale, including dimensions and distances, and clearly delineate the existing and proposed parking spaces or other vehicular use areas, access aisles, driveways, and the location, size and description of all landscape materials.

(3) The primary landscaping materials used in parking lots shall be trees which provide shade or are capable of providing shade at maturity. Shrubbery, hedges and other planting material may be used to complement the tree landscaping, but shall not be the sole contribution to the landscaping. Effective use of earth berms and existing topography is also encouraged as a component of the landscape plan. In those instances where plant material exists on a parking lot site prior to its development, such landscape material may be used if approved as meeting the requirements of this chapter.

(4) Landscaping shall be classified as either internal or peripheral. The following coverage requirements shall pertain to each classification:

a. Peripheral landscaping. All parking lots containing three or more parking spaces shall provide peripheral landscaping. Peripheral landscaping shall consist of a landscaped strip not less than five feet in width, exclusive of vehicular obstruction, and shall be located between the parking area and the abutting property lines. One tree for each 50 lineal feet of such landscaping barrier or fractional part thereof shall be planted in the landscaping strip. At least one tree shall be planted for every parking lot (such as a 3-stall parking lot) regardless of the lineal feet calculation. In addition to tree plantings, the perimeter of the parking lot shall be screened with shrubbery or similar plantings at least 3 ft. in height as measured from the finished grade of the parking lot at the time of planting for purposes of vehicular screening. The vegetative screen should present a continuous, effective visual screen adjacent to the parking lot for purposes of partially obscuring vehicles and also deflecting glare from headlights. If landscaped berms are utilized, the berm and vegetative screening must achieve at least a 3-foot tall screen at time of installation as measured from the grade of the finished parking lot. Each such planting area shall be landscaped with grass, ground cover or other landscape material excluding paving, gravel, crushed asphalt or similar materials, in addition to the required trees, shrubbery, hedges or other planting material. Existing landscaping upon abutting property shall not be used to satisfy the requirements for said parking lot screening requirements unless the abutting land use is a parking lot.

b. Exceptions:

1. Peripheral landscaping shall not be required for single-~~family~~unit or two-~~family~~unit residential structures where the primary parking area is designed around a standard front entrance driveway and/or attached or detached residential garage. However, if an open surface parking lot containing three or more parking stalls is established in the rear yard of a two-~~family~~unit residential structure, the perimeter landscaping/screening requirements as specified herein shall apply.

2. Peripheral landscaping shall not be required for parking lots that are established behind building structures where the parking lots do not have any public street or alley

frontage or is not adjacent to any open properties such as private yards, parks or similar open areas. Examples of such a parking lot would be one designed with a multiple ~~family~~unit apartment facility where the parking lot is encircled with building structures within the project site and where the parking lot is completely obscured from public view by building structures.

3. Underground or under-building parking lots.

4. Above-ground parking ramps shall provide perimeter screening as specified herein around the ground level perimeter of the parking structure.

c. Internal landscaping. All parking lots measuring 21 parking stalls or more shall be required to landscape the interior of such parking lot. At least one overstory tree shall be established for every 21 parking stalls. Each tree shall be provided sufficient open planting area necessary to sustain full growth of the tree. Not less than five percent of the interior of the parking lot shall be provided as open space, including the tree planting areas. These additional open space areas must be planted with bushes, grasses or similar vegetative materials. Each separate open green space area shall contain a minimum of 40 square feet and shall have a minimum width dimension of a least five feet.

d. Exceptions: Interior landscaping shall not be required for vehicular storage lots, trucking/warehousing lots or for automobile sales lots. However, perimeter landscaping/screening provisions, as specified herein, shall be required for all such parking areas when they are installed or enlarged in area.

e. Parking garages or parking ramps: All such facilities where one or more levels are established for parking either below ground or above ground and where structural walls provide for general screening of parked vehicles, internal landscaping shall not be provided.

It is the intent of this regulation that in parking development sites open green space and landscape areas should be distributed throughout the parking development site rather than isolated in one area or around the perimeter of the parking lot. Trees and shrubs planted within parking areas shall be protected by concrete curbs and provide adequate permeable surface area to promote growth and full maturity of said vegetation.

(5) No materials shall be approved for use in any parking lot landscaping plan unless approved by the city planner and city arborist. A list of generally permissible plants is on file in the office of the city planner and the city arborist. Landscaping plant materials found unsuitable by the city planner and the city arborist for planting in the city shall not be permitted.

(6) All required screening shall be in place, inspected and approved by the city planner and the city arborist or their staff designees prior to issuance of an occupancy permit. However, installation prior to occupancy may be waived by the city planner and the city arborist if inclement weather conditions or the planting and growing season prohibit installation. In such cases, the owner may be issued a temporary certificate of occupancy by the city planner if the owner enters into a contract with the city to ensure completion of the screening during the next planting season. The performance of such contract shall be secured by the filing of a bond or cash in escrow in an amount not less than the approximate cost of the screening, as estimated by the owner's landscape architect, landscape contractor or nurseryman and approved by the city planner and the city arborist.

(j) *Definitions pertaining to landscape requirements.* When computing the type and amount of landscaping required, the following definitions shall apply:

(1) *Tree* means any self-supporting woody plant which usually produces one main trunk and a more or less distinct head with many branches that establishes a mature height in excess of 30 feet.

a. Deciduous trees shall measure a minimum of 1½ inches in trunk diameter for shade type cultivars and one inch in trunk diameter for ornamental type cultivars.

b. Coniferous trees shall measure a minimum of three feet in height.

(2) *Screening* means natural or manmade materials consisting of one or a combination of the following:

a. Wood or masonry walls or fences when constructed of materials which provide openings of less than 50 percent in area of the vertical surface of the wall or fence.

b. Plant materials consisting of coniferous material or deciduous materials, or a combination of both. In all cases, plant materials shall measure, at a minimum, as follows:

(1) Deciduous plants.

i. *Shade trees:* One and one-half-inch trunk diameter.

ii. *Ornamentals:* One-inch trunk diameter.

iii. *Shrubs:* 18 inches in height.

(2) Coniferous plants.

i. *Large evergreens:* Three feet in height.

ii. *Small evergreens:* 12- to 15-inch spread.

Materials shall be planted and maintained so as to form a continuous, unbroken visual screen.

(3) *Earthen berms.* When earthen berms are provided and the finished elevation of the property is lower at the property line, or within eight feet inside the property line, than an abutting elevation, such change in elevation may be used in lieu of or in combination with additional screening to satisfy the screening requirements for the district.

(4) *Shrub* means a woody plant that usually remains low and produces shoots or trunks from the base; it is not usually tree-like or single stemmed.

(Code 1971, § 32-44; Ord. No. 2102, § 2, 5-22-95; Ord. No. 2173, § 1, 12-23-96; Ord. No. 2180, § 1, 3-10-97; Ord. No. 2329, §§ 2, 3, 4-9-01; Ord. No. 2366, § 1, 3-11-02; Ord. No. 2800, § 1, 10-28-13; Ord. No. 2837, §§ 2—5, 3-2-15; Ord. No. 2841, § 1, 5-4-15; Ord. No. 2884, § 1, 10-3-16)

Footnotes:

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For lots with single-~~family~~unit and two-~~family~~unit dwellings

Sec. 29-178. - Filling stations; public garages and parking lots.

(a) *Location of entrances and exits.* No gasoline filling station or commercial customer or employee parking lot for 25 or more motor vehicles, or parking garage or automobile repair shop, shall have an entrance or exit for vehicles within 200 feet along the same side of a street of any school, public playground, church, hospital, public library or institution for dependents or for children, except where such property is in another block or on another street which the lot in question does not abut.

(b) *Oil draining pits and fuel pumps.* No gasoline filling station or public garage shall be permitted where any oil draining pit or fuel filling appliance is located within 12 feet of any street line or within 25 feet from any R district, except where such appliance or pit is within a building.

(Code 1971, § 32-45)

Sec. 29-179. - Residential driveways: criteria for design and location in front yards and side yards in residential districts.

Allowable residential driveways are set forth below.

(a) An access from the public street, maintaining a three-foot setback from the property line (see section 23-168), that is established to provide vehicular parking at a single-~~family~~unit or two-~~family~~unit residential dwelling. It may also provide access to an attached residential garage, or to a detached residential garage in the rear yard area of the property. Refer to Figure 5. In the situation in which the existing driveway does not meet the three-foot setback, and if strictly enforced would cause the driveway width to be less than ten feet, a reduced driveway setback may be permitted if approved by the Zoning Administrator.

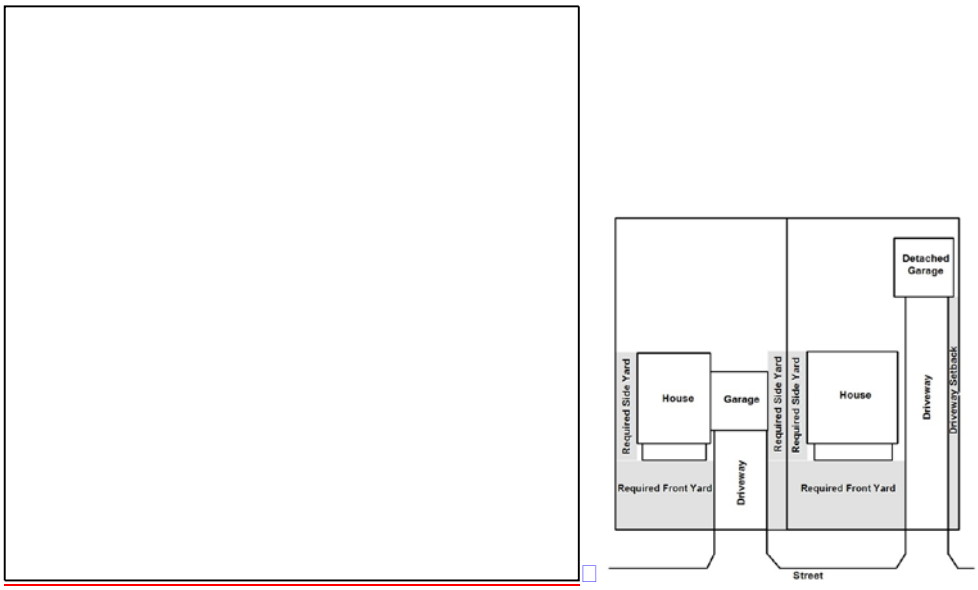


Figure 5

(b) All second curb cuts and second accesses from the public street that extend across the front or side yard are allowed if approved by the City Engineer.

(c) The maximum width, towards the interior of the lot, of a driveway accessing an attached or detached garage shall be proportional to the width of the garage doorways for accommodating the normal width of the vehicles, utilizing a ten-foot driving width of a vehicle. In the case of a one car garage, the driveway may be up to 18 feet wide, provided a three-foot setback from the property line is maintained.

(d) A driveway may have a flare out in the front yard or side yard area of the property only if the entire flare out portion meets all of the following requirements (refer to Figure 6):

(1) Accommodates no more than one vehicle, with a stall dimension no larger than 12 feet in width by 25 feet in length (not including the flare).

(2) Has a taper slope ratio of no more than one to one, so as to create a 45° angle (refer to Figure 6).

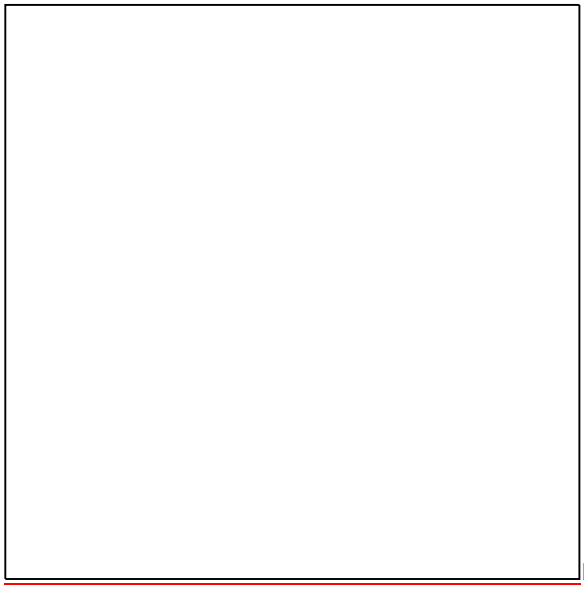
(2) Is parallel to the driveway.

(3) Is hard surfaced.

(4) No encroachment into the required side yard shall be allowed, including into the required side yard as extended into the front yard, unless it is a corner lot on which the garage accesses from the longer street side as shown in Figure 7. In the case of a one car garage, the flare out may have up to a three-foot setback.

(5) Not located toward or in the interior of the lot (i.e., area in front of residence). Flare outs are not allowed on both sides of a driveway unless one common driveway is serving both units of a duplex residence.

(6) If a turn out exists, then a flare out is prohibited in the front and side yards.



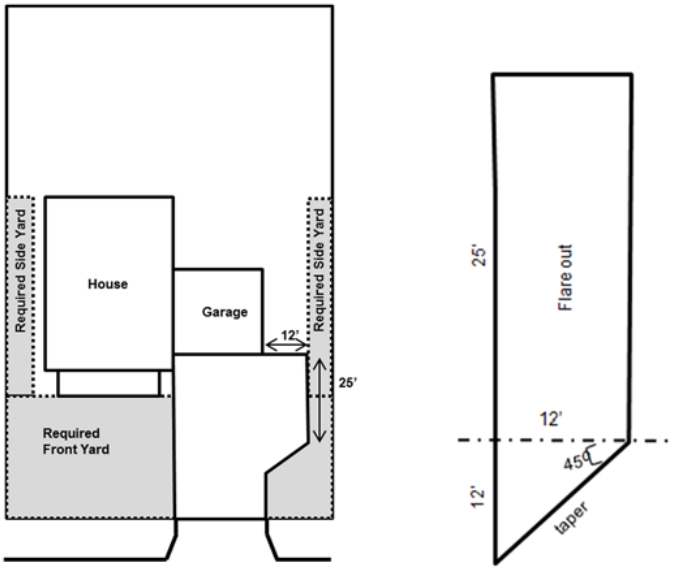


Figure 6

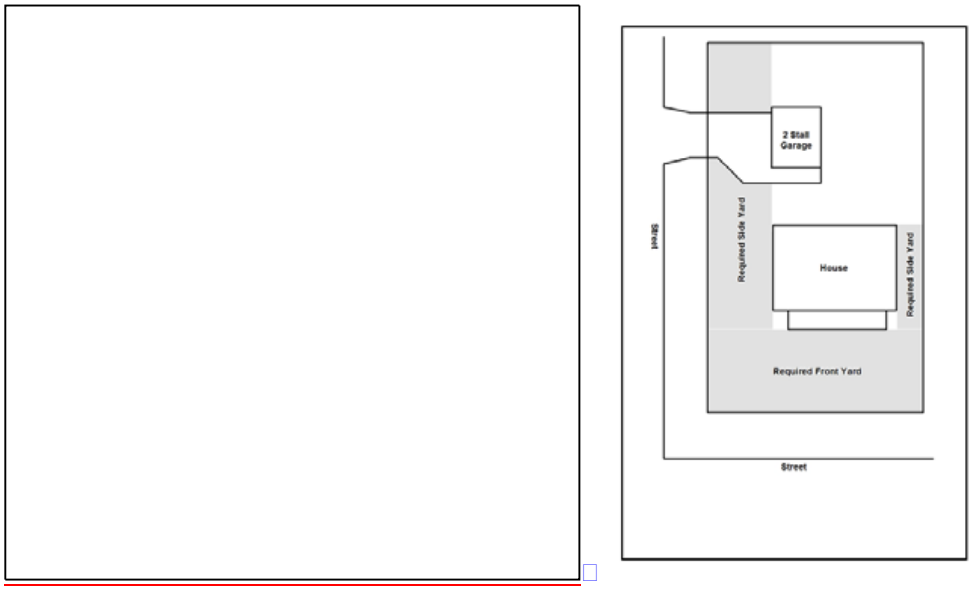


Figure 7

(e) A driveway may have one turn out in order for vehicles to maneuver in the driveway such that a driveway could be exited face-forward, provided the turn out meets the following requirements (refer to Figure 8):

(1) The street is an existing or proposed arterial or collector street, in accordance with the comprehensive plan, that is two or more lanes.

(2) Its maximum width is proportional to the driveway width, as follows:

i. A ten to 15-foot wide driveway is allowed up to 18 feet beyond the driveway.

ii. A 15-foot or wider driveway is allowed up to nine feet beyond the driveway.

(3) It is a maximum of ten feet long, parallel to the driveway.

(4) If located to the side yard, it is a minimum of three feet from the closest property line.

(5) It shall not be used for storage.

(6) It is located back from the right-of-way, no less than the required front yard setback.

(7) It is not located toward or in the interior of the lot (i.e., area in front of residence). Turn outs are not allowed on both sides of a driveway unless one common driveway is serving both units of a duplex residence.

(8) If a flare out exists, then a turn out is prohibited in the front and side yards.

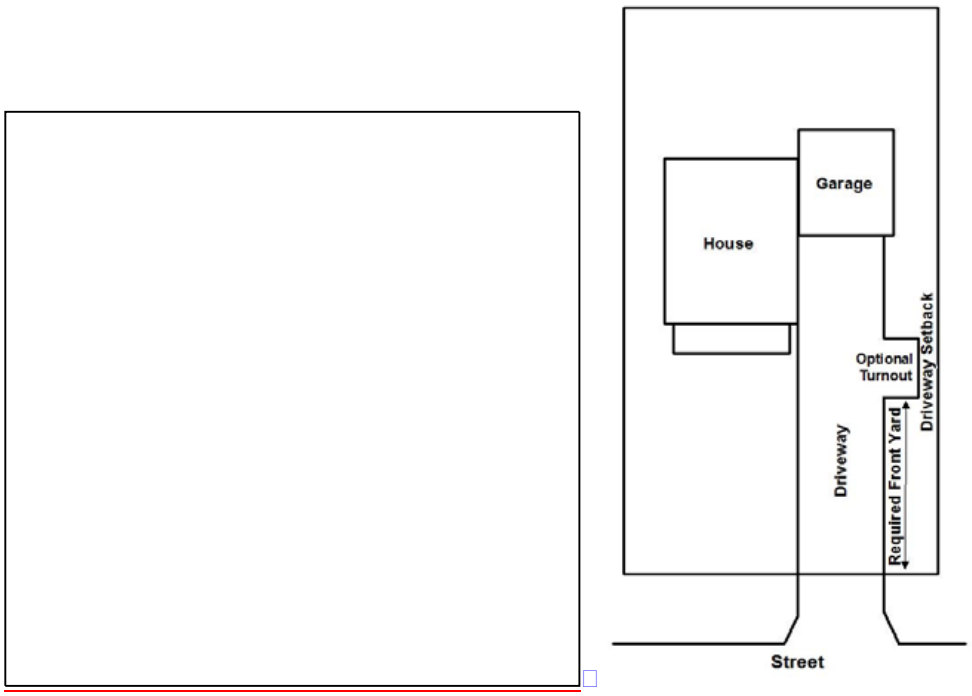


Figure 8

(f) Termination of a driveway in the side yard, with no access to a garage or parking lot in the rear yard shall only be permitted if the driveway meets all of the following requirements:

(1) The extension is a maximum of 12 feet wide.

(2) Is a maximum length not to exceed the length of the building along which it is located. In no case shall this driveway extension exceed 30 feet in length.

(3) Is hard surfaced.

(4) The extension does not occupy any portion of the required side yard and no portion of the vehicle shall be allowed to encroach into the required side yard.

(5) No more than one vehicle, including, but not limited to, trailers, recreational vehicles, boats or similar vehicles, which must be currently and legally licensed, shall be parked in the side yard area.

(6) Only one side yard may be used for vehicular parking.

(7) Side yard parking shall only be allowed in the side yard nearest the established driveway on the property. Refer to Figure 9.

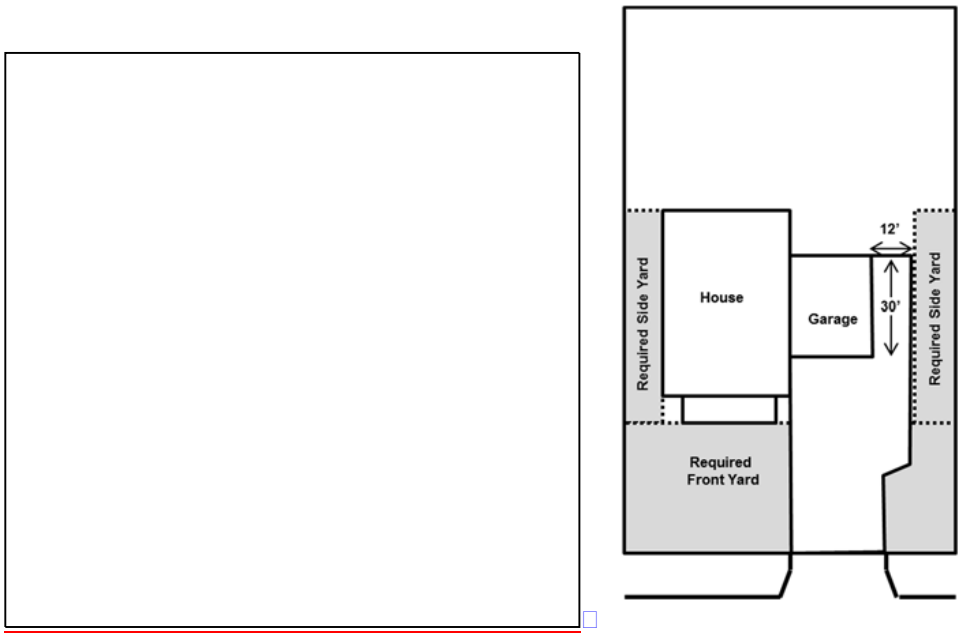


Figure 9

(g) A driveway may be located in the rear yard or in the required rear yard if it accesses a permitted garage, shed or other accessory structure. Furthermore, the following may be permitted (refer to Figures 10 and 11):

(1) One flare out, provided:

a. It accommodates no more than one vehicle, with a stall dimension no larger than 12 feet in width by 25 feet in length.

b. Is parallel to the driveway.

c. Is hard surfaced.

(2) An extension along the side of the accessory structure, provided:

a. The extension is a maximum of 12 feet wide.

b. Is a maximum length not to exceed the length of the building along which it is located. In no case shall this driveway extension exceed 30 feet in length.

c. Is hard surfaced.

d. No more than one vehicle, including, but not limited to, trailers, recreational vehicles, boats or similar vehicles, which must be currently and legally licensed, shall be parked in said extension.

e. It is located only on one side of the building along which it is located.

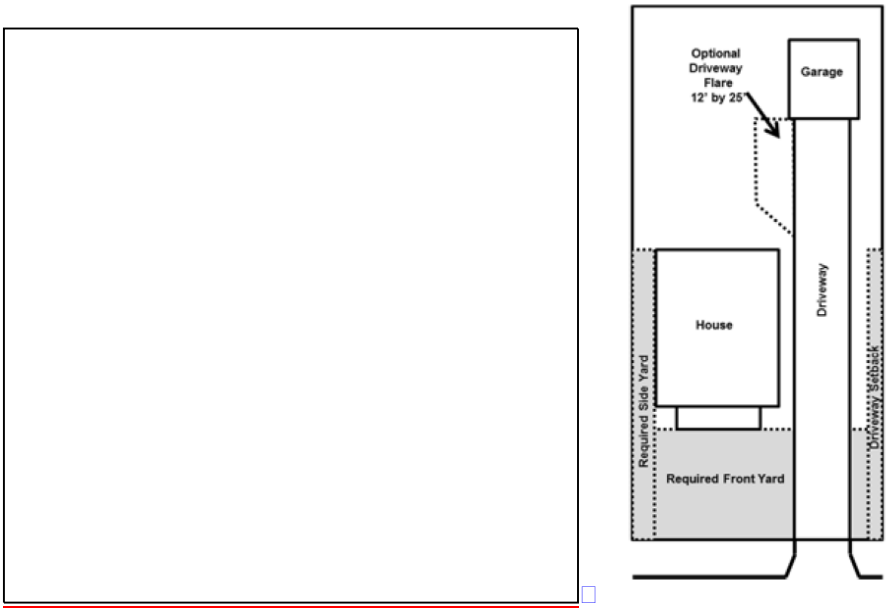


Figure 10

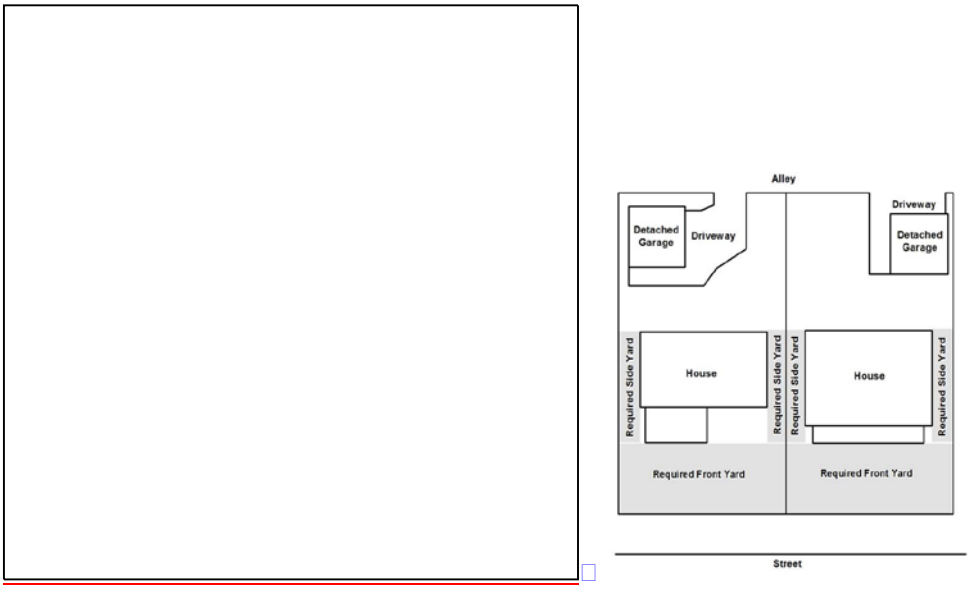


Figure 11

(h) A secondary driveway, connected to the primary driveway, may be installed for purposes of accessing a detached accessory structure provided the following requirements are met:

(1) The accessory structure is intended for vehicular use and has at least one overhead garage door.

(2) The driveway will be no less than three feet from adjacent property lines.

(3) The driveway is a minimum ten feet wide.

(4) The secondary driveway is hard surfaced.

(5) The overall yard open space requirement and yard open space requirement for the yard where said driveway is proposed is met.

(6) In the case of a corner lot, the driveway shall only be permitted on the interior side yard.

(Ord. No. 2837, § 6, 3-2-15; Ord. No. 2875, § 1, 8-15-16)

Secs. 29-180—29-195. - Reserved.

ARTICLE IV. - SIGNS

Sec. 29-196. - Purpose of article.

The purposes of the sign regulations set out in this article are to encourage the effective use of signs as a means of communications in the city, to maintain and enhance the aesthetic environment and the city's ability to attract sources of economic development and growth, to improve pedestrian and traffic safety, to minimize the possible adverse effect of signs on nearby public and private property, and to enable the fair and consistent enforcement of the sign restrictions.

(Code 1971, § 32-46)

Sec. 29-197. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Sign means an identification, description, illustration or device which is affixed to or represented directly or indirectly upon a building, structure or parcel of land and which directs attention to a product, place, activity, person, profession, service, institution or business.

Sign, accessory means a sign relating only to uses of the premises on which the sign is located or products sold or services offered on the premises on which the sign is located, or indicating the name or address of a building or the occupants or management of a building of the premises where the sign is located. (See "Off-premises signs.")

Sign area means that area within a line including the outer extremities of all letters, figures, characteristics or delineations, or within a line including the outer extremities of the framework or background of the sign, whichever line includes the larger area. When the irregularity of a sign shape warrants, such area shall include the extreme points or edges of the sign. The support for the sign background, whether it be columns, pylons or a building or part thereof, shall not be included in the sign area. Only one side of a double-faced sign shall be included in the computation of sign area.

Sign, banner means any sign of lightweight fabric or similar material that is permanently mounted to a pole or a building by a permanent frame at one or more edges.

Sign, billboard means a sign structure designed for the posting of changeable graphics or reading matter advertising a product, place, activity, person, profession, service, institution or business located upon property other than the premises on which the sign is located.

Sign, directional means a sign designed for the purpose of assisting traffic control, which is located on private property and limited to no more than four feet in height and no more than six square feet in area.

Sign, flag means any fabric, banner or bunting containing distinctive colors, patterns or symbols, used as a symbol of a government, political subdivision or other entity.

Sign, freestanding means a sign which is supported by one or more uprights, columns, pylons or braces in or upon the ground and not attached to any building or wall. This term shall also apply to those signs having their framework permanently embedded in the ground.

Sign, home occupation means a sign or nameplate limited to the display of the occupant and the name of the home occupation. The sign shall not exceed four square feet in area, shall be nonilluminated, shall be affixed to the main structure or visible through a window, and shall be limited to one in number per home.

Sign, monumental means an identification device permanently embedded in the ground, upon which is affixed only the name or symbol of a particular neighborhood, subdivision, commercial or industrial development.

Sign, off-premises means a sign displaying or drawing attention to a product, place, activity, person, profession, service, institution or business located upon property other than the premises on which the sign is located.

Sign, pennant means any lightweight plastic, fabric or other material, whether or not containing a message of any kind, suspended from a rope, wire or string, usually in series, designed to move in the wind.

Sign, portable means any sign not permanently attached to the ground or other permanent structure, or a sign designed to be transported, including but not limited to signs designed to be transported by means of wheels, signs converted to "A" or "T" frames, menu and sandwich board signs, umbrellas used for advertising, and signs attached to or painted on vehicles parked and visible from the public right-of-way, unless the vehicle is used in the normal day-to-day operations of the business. Portable signs are not permitted unless specifically authorized for temporary use by the city council.

Sign, roof means a sign erected upon or above a roof or parapet wall of a building and which is wholly or partially supported by the building.

Sign, temporary means a sign or advertising device intended to be displayed for a limited time period typically identifying construction, community or civic projects, show homes or other special events on a temporary basis. Such sign shall not exceed 100 square feet in area.

Sign, wall means a sign, other than a roof sign, which is supported by a building or wall. Such a sign shall not project beyond the peak of the building or wall more than one-third of the sign's longest dimension. Signs surpassing this peak projection shall be designated as roof signs.

(1) *Canopy wall sign* means any sign that is a part of or attached to an awning, canopy or other fabric, plastic or structural protective cover over a door, entrance, window or outdoor service area.

(2) *Fascia wall sign* means a single-faced building or wall sign which is parallel to its supporting wall and does not extend more than 18 inches from a building or wall.

(3) *Mural wall sign* means a one-dimensional graphic illustration or presentation that is painted or otherwise applied to a building, wall or facade.

(4) *Projecting wall sign* means a sign which is attached to and projects more than 18 inches from the face or wall of a building.

(Code 1971, § 32-46(A))

Sec. 29-198. - Signs permitted in all zones.

(a) The following signs shall be permitted in all zoning districts subject to city council approval:

(1) Traffic and other municipal signs, legal notices, railroad crossing and danger signs, and other such necessary, temporary, emergency or nonadvertising signs as may be approved by the city council.

(2) Signs required to be maintained or posted by law or governmental order, rule or regulation, unless specifically prohibited in this article.

(3) Portable signs, banners, pennants and other temporary advertising devices identifying public events, special promotions, holidays and like events, provided that specific approval is granted under regulations established by the city council.

(4) Memorial plaques, cornerstones, historical markers and the like.

(5) Monumental signs intended to identify residential, commercial or industrial developments, in accordance with this article.

(6) Mural wall signs, company logo signs, hand-painted art or any similar sign which is intended to be painted directly on the existing building facade or wall.

(7) In special circumstances, such as road construction, a limited number of temporary directional signs may be placed in the public right-of-way in conformance with the following guidelines:

a. Maximum of two signs per use.

b. Each sign shall be no larger than six square feet nor more than three feet in overall height.

c. Signs shall be installed by a bonded contractor and shall be sited in cooperation with Cedar Falls Utilities and City of Cedar Falls Department of Public Works officials.

d. In those situations where at least three users wish to share common sign space, only two signs will be permitted with a maximum area of 12 square feet and a maximum height of three feet. Only one individual sign will be permitted for each user, if that user is also utilizing common sign space.

e. All such permitted signs shall be removed from the public right-of-way within five days following the end of the special circumstances that stimulated the original request.

(b) The following signs are permissible for display without city council approval. Permits must be secured as required by chapter 3 of this Code of Ordinances.

(1) Signs advertising the sale, rental or lease of the premises or part of the premises on which the sign is displayed. One such nonilluminated sign, not to exceed six square feet in size, shall be permitted on each premises.

(2) Signs advertising the architects, engineers, contractors, occupants or other individuals involved in the construction, reconstruction or remodeling of a building or development project, and such signs announcing the character or purpose of the site. One such nonilluminated sign, not to exceed 100 square feet in size, shall be permitted on each premises. Such signs shall be erected no sooner than 30 days prior to site development, and shall not continue to be displayed longer than 30 days following project completion. Such signs shall be sited in accordance with the regulations found in this article.

(3) Signs announcing candidates seeking public political office or pertinent political issues. Such signs shall be confined to private property and shall be subject to applicable state and local regulations.

(4) Address signs posted in conjunction with doorbells or mailboxes showing only the numerical address and occupants of the premises upon which the sign is situated. One such nonilluminated sign shall be permitted per address.

(5) Home occupation signs.

(6) Accessory signs identifying hospitals or civic, philanthropic, educational or religious organizations. All signs must comply with the general regulations found in section 29-202. All freestanding, monumental and roof signs exceeding 40 square feet in size must be approved by the city council.

(7) Signs which primarily consist of banners, balloons, pennants, ribbons, streamers, spinners or other similar moving devices. Such signs shall be permitted for 60 days in any consecutive 12-month period.

(8) Flag signs; provided, however, that no owner or occupant of any premises shall erect more than one official flag of the institution or business which is situated or located upon the premises where the flag sign is erected.

(Code 1971, § 32-46(B); Ord. No. 2023, § 9, 8-23-93)

Sec. 29-199. - Signs prohibited in all zones.

The following signs shall be prohibited in all zoning districts:

(1) Signs that advertise a product, place, activity, person, service, institution or business no longer conducted on the premises on which the sign is located. Such signs shall be removed in accordance with the provisions of chapter 3 of this Code of Ordinances.

(2) Signs and poles which contain or consist of reflectors or lights which flash, strobe or chase one another, or appear to display these characteristics. This prohibition does not preclude all electronic message signs.

(3) Signs that are not permanently anchored or secured to either a building or the ground.

(4) Signs erected in such a manner as to obstruct free and clear vision of streets, alleys or driveways, or erected, designed or positioned so as to interfere with, obstruct or be confused with any authorized traffic sign, signal or device or which may mislead or confuse traffic.

(5) Signs posted on public property, including utility poles, lighting fixtures, street signs, benches and the like.

(6) Off premise signs, with the exception of billboard signs.

(7) Signs placed within the public right-of-way unless specifically authorized by the city council as limited herein.

(Code 1971, § 32-46(C); Ord. No. 2023, § 10, 8-23-93)

Sec. 29-200. - Location of signs; lighting.

(a) All signs permitted in this article shall be contained entirely upon private property and set back from the existing and proposed public right-of-way, except as permitted by chapter 3 of this Code of Ordinances.

(b) No sign shall be permitted within the ten-foot sight triangles formed at the intersection of a public right-of-way with an accessway, driveway or alley, nor shall any sign be permitted within the 30-foot sight triangles formed at the intersection of two public rights-of-way, with two sides of the respective triangles being measured in length along the stated boundaries from their point of intersection, and the third side being a line connecting the ends of the two sides already established.

(c) No billboard, freestanding sign or roof sign shall be permitted which faces the front or side lot line of any lot in an R district used for residential purposes within 100 feet of such lot lines, unless the subject sign is also permitted within the adjacent R district.

(d) Any light, exclusive of the sign area itself, used to illuminate any sign shall be situated and arranged so as to reflect the light away from adjoining premises.

(Code 1971, § 32-46(D)(1)—(4))

Sec. 29-201. - Nonconforming signs.

Lawful signs, other than portable signs, existing at the effective date of Ordinance No. 1934 which do not meet the terms of this chapter shall be classified as legal nonconforming signs and may be maintained as such, but shall not, except when required by law, be enlarged, extended, reconstructed, substituted or structurally altered, unless altered in a manner to conform with the terms of this article. Any sign in existence at the adoption of this article which was not an authorized nonconforming sign under previous zoning ordinances shall not be authorized to continue as a nonconforming sign pursuant to this article or amendments thereto. If a nonconforming sign is removed, replaced or destroyed, new signs shall thereafter conform to the terms of this article.

(Code 1971, § 32-46(D)(5))

Sec. 29-202. - Permitted signs by zoning district.

In order to carry out the provisions of this article, the following signs are hereby permitted in the various zoning districts, as follows:

(1) *A-1 agricultural district.* Permitted signs in the A-1 district are as follows:

a. Signs permitted and limited as provided in section 29-198.

b. Fascia and mural wall signs used to identify the given name, symbol and occupants of a farmstead located upon the premises. Sign area shall not exceed one-fourth of the surface area of the single wall to which the sign is affixed.

c. Accessory signs, subject to approval by the zoning administrator, appertaining to any material that is mined, grown or treated upon the premises; provided, however, that such signs shall be located upon or immediately adjacent to the building or in the area in which such materials are treated, grown, processed or stored. Such sign shall not exceed 15 feet in height or 40 square feet in area. No more than one such sign shall be permitted per parcel.

(2) *R-1 residence district.* Permitted signs in the R-1 district are as follows:

a. Signs permitted and limited as provided in section 29-198.

b. Accessory signs identifying principal permitted uses, other than single ~~family~~unit and two ~~family~~unit residential dwellings, shall be allowed a maximum of three signs per parcel in the following combination: one wall sign not to exceed ten percent of the surface area of the wall to which it is affixed and two freestanding signs, each freestanding sign not to exceed 30 square feet in area and five feet overall height, or two wall signs not to exceed 10 percent of the surface area of the wall to which affixed. Said wall signs may utilize no more than two wall surfaces, and one freestanding sign not to exceed 30 square feet in area and five feet overall height.

(3) *R-2 residence district.* Permitted signs in the R-2 District are any sign permitted in the R-1 District.

(4) *R-3 multiple residence district.* Permitted signs in the R-3 district are any sign permitted in the R-2 district.

(5) *R-4 multiple residence district.* Permitted signs in the R-4 district are as follows:

a. Signs permitted and limited as provided in section 29-198.

b. Accessory wall signs having a total sign area not to exceed one-third of the surface area of the single wall to which affixed.

c. Accessory freestanding signs, as follows:

1. Signs are permitted upon parcels containing a street frontage along any one public street of at least 150 linear feet.
2. Signs shall be no taller than 20 feet in height and no larger than 40 square feet.
3. Number of signs is limited to one sign per separate principal permitted structure.

(6) *R-5 residence district.* Permitted signs in the R-5 district are any sign permitted in the R-1 district.

(7) *R-P planned residence district.* Permitted signs in the R-P district are any sign permitted in the R-4 district.

(8) *C-1 commercial district.* Permitted signs in the C-1 district are as follows:

a. Signs permitted and limited as provided in section 29-198.

b. Accessory wall signs not to exceed one-third of the surface area of any single wall to which the signs are affixed.

c. Directional signs, limited to one sign per curb cut.

d. Accessory freestanding signs, as follows:

1. Signs shall be no taller than 30 feet in height and no larger than 40 square feet in area.
2. Number of signs is limited to one sign per separate principal permitted structure.

(9) *C-2 commercial district.* Permitted signs in the C-2 district are as follows:

a. Signs permitted and limited as provided in section 29-198.

b. Wall signs not to exceed one-third of the surface area of any single wall to which the signs are affixed.

c. Directional signs, limited to one sign per curb cut.

d. Freestanding and roof signs, as follows:

1. The combined total area of such signs shall not exceed two square feet per lineal foot of street frontage. Land uses situated on corner lots may use their longer street frontage only for purposes of determining the permissible area of signs.
2. In no case shall the area of any one sign exceed 300 square feet in area, nor shall signs be taller than 40 feet in height. Roof signs shall not project more than 15 feet above the roof line.
3. Regardless of lineal street frontage, all parcels shall be permitted at least one such sign, not to exceed 60 square feet in area or 40 feet in height.
4. Billboards shall have a prime message area not to exceed 672 square feet and an embellishment, trim and skirting area not to exceed an additional 250 square feet. The maximum allowable height as measured from natural grade at the base of the sign to the top of the structure is 40 feet. All billboard sign structures, including the outermost edge of the sign panel, must be set back from the immediately abutting street right-of-way line a minimum of 25 feet. Billboard structures shall not be permitted within 600 feet of another billboard structure measured in either direction along both sides of the street which adjoins the billboard structure, measured from the point of intersection of the face of the sign panel, as extended, and either side of the right-of-way line of the adjoining street. Furthermore, no billboard structure shall be permitted closer than 200 feet from a residential zoning district or from the property boundaries of any property which has a principal residential use located thereon, nor closer than 200 feet from the property boundaries of a public park, church, school, including the University of Northern Iowa main campus area, cemetery, hospital, the property boundaries of any

historic district established by state law or local ordinance, or the property boundaries of any certified structure listed on the national register of historic places. In addition, vertical stacking of separate sign panels on a billboard structure shall be prohibited.

(10) *C-3 Commercial District.* Permitted signs in the C-3 district are any sign permitted in the C-2 district, except for billboard signs, which shall not be permitted.

(11) *S-1 shopping center district.* Permitted signs in the S-1 district are as follows:

a. Signs permitted and limited as provided in section 29-198.

b. Accessory wall signs not to exceed one-third of the surface area of any store wall to which the sign is affixed.

c. Directional signs, limited to one sign per curb cut.

d. Accessory freestanding signs, as follows:

1. In keeping with the intent of the S-1 zone, individual freestanding signs should be limited in number and designed to identify the shopping center and the stores contained therein. Individual business identification signs are to be discouraged.

2. To meet this end, one such sign structure shall be permitted for each 500 linear feet, or fractional part thereof, of frontage on a public street. Such signs shall be no larger than 200 square feet and no taller than 40 feet. When separate principal uses are situated on parcels containing less than 500 feet of street frontage, one freestanding sign may be permitted. Such a sign shall be no larger than 100 square feet, and no taller than 30 feet.

e. All signs shall be reviewed and approved in accordance with the S-1 zoning district provisions, regulations and restrictions.

(12) *M-1 Light Industrial District.* Permitted signs in the M-1 district are any sign permitted in the C-2 district, except for billboard signs, which shall not be permitted.

(13) *M-2 heavy industrial district.* Permitted signs in the M-2 district are any sign permitted in the M-1 district.

(14) *M-P planned industrial district.* Permitted signs in the M-P district are as follows:

a. Signs permitted and limited as provided in section 29-198.

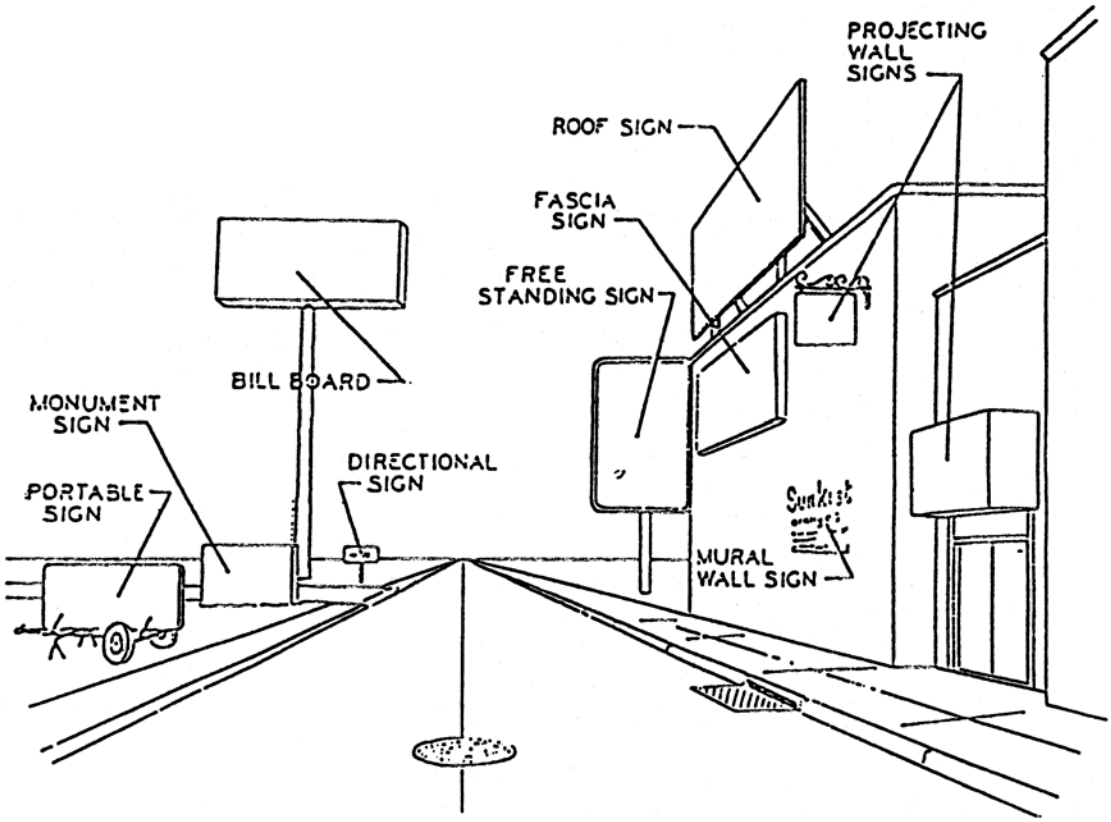
b. Accessory wall signs not to exceed one-third of the surface area of any single wall to which the sign is affixed.

c. Directional signs, limited to one per curb cut.

d. Accessory freestanding signs, as follows:

1. Signs shall be no taller than 40 feet in height, and no larger than 200 square feet.

2. Number of signs shall be limited to one sign per separate principal permitted structure.



Examples of Various Sign Types

Zoning District

	Zoning District

Sign Type	A-1	R-1	R-2	R-3	R-4	R-5	R-P	C-1	C-2	C-3	S-1	M-1	M-2	M-P
Billboard	X	X	X	X	X	X	X	X			X			X
Wall Fascia Wall-Mural	Not to exceed ¼ of surface wall	1 per parcel (excluding dwellings) not to exceed 20 sq. ft.			Not to exceed ½ of surface wall	See R-1	See R-4	Not to exceed ½ of surface wall	See text for sign options, size, number, etc.					
Wall-Projecting	X	X	X	X			X							
Directional		Limited to 1 per curb cut, 4 feet in height, not more than 6 sq. ft.												
Freestanding	See Restrictions	X	X	X	See Restrictions	X	See Restrictions	See Restrictions						
Off-Premises	X	X	X	X	X	X	X	X			X			X
Roof	X	X	X	X	X	X	X	X			X			X
Accessory														
Traffic/City Governmental														
Political/Educational/Religious														
Public Events/Holidays							Permitted in all zones							

Memorial/Monumental														
For Sale/Rent/Etc.														
Temporary/Construction														
Home Occupation/Window														
Portables*							See Restrictions							

Note: Some restrictions pertain to individual sign types within certain zoning districts. Reader is cautioned to confirm permissible signs with the text.

□ = Sign type permitted within the designated zoning district.

X = Sign type not permitted within the designated zoning district.

(Code 1971, § 32-46(E); Ord. No. 2023, § 11, 8-23-93; Ord. No. 2339, § 1, 7-9-01; Ord. No. 2355, §§ 1, 2, 11-12-01; Ord. No. 2414, §§ 1—3, 2-10-03)

DIVISION 1. - GENERALLY

Sec. 29-31. - Penalty for violation of chapter.

Any person who violates, disobeys, omits, neglects or refuses to comply with or who resists the enforcement of any of the provisions of this chapter, shall be guilty of a municipal infraction and subject to punishment as provided in section 1-9 of this Code.

(Code 1971, § 32-52)

Sec. 29-32. - Enforcement of chapter.

The department of developmental services is hereby designated and ordered to enforce this chapter. In case any building or structure is erected, constructed, reconstructed, altered, repaired, moved, converted or maintained, or any building, structure or land is used in violation of this chapter, the department, in addition to other remedies, shall institute any proper action or proceedings in the name of the city to prevent such unlawful erection, moving, construction, reconstruction, alteration, repair, conversion, maintenance or use, to restrain, correct or abate such violation, to prevent the occupancy of the building, structure or land, or to prevent any illegal act, conduct of business or use in or about the premises.

(Code 1971, § 32-51)

Sec. 29-33. - Occupancy permit.

(a) No land shall be occupied or used, and no building hereafter erected or structurally altered shall be occupied or used in whole or in part for any purpose whatsoever, until a certificate is issued by the department of developmental services stating that the building and use comply with the provisions of this chapter. No change of use shall be made in any building or part thereof erected or structurally altered without an occupancy permit being issued therefor by the department. No occupancy permit shall be issued to make a change unless the changes are in conformity with the provisions of this chapter, and a certificate issued as provided in this subsection.

(b) Nothing in this section shall prevent the continuance of a nonconforming use as authorized in this chapter, unless a discontinuance is necessary for the safety of life or property.

(c) Certificates for occupancy and compliance shall be applied for coincidentally with the application for a building permit and shall be issued within ten days after the lawful erection or alteration of the building is completed. A record of all certificates shall be kept on file in the office of the department, and copies shall be furnished on request to any person having a proprietary or tenancy interest in the building affected.

(d) No permit for excavation for or the erection or alteration of any building shall be issued before the application has been made for certificate of compliance and application has been made for certificate of occupancy, and no building or premises shall be occupied until that occupancy certificate and permit are issued.

(e) A certificate of occupancy shall be required of all nonconforming uses. Application for a certificate of occupancy for nonconforming uses shall be filed within 12 months from the effective date of this Ordinance No. 1633, accompanied by affidavits of proof that such nonconforming use was not established in violation of Ordinance No. 855 or amendments thereto.

(Code 1971, § 32-49)

Sec. 29-34. - Floodplain development permit.

(a) A floodplain development permit issued by the zoning administrator shall be secured prior to initiation of any floodplain development. Application for a floodplain development permit shall be made on forms supplied by the zoning administrator and shall include the following information:

(1) A description of the work to be covered by the permit for which application is to be made.

(2) A description of the land on which the proposed work is to be done, i.e., lot, block, tract, street address or similar description, that will readily identify and locate the work to be done.

(3) An indication of the use or occupancy for which the proposed work is intended.

(4) The elevations of the 100-year (1%) and 500-year (0.2%) flood.

(5) The elevation, in relation to the North American Vertical Datum of 1988 (NAVD), of the lowest floor, including basement, of buildings or of the level to which a building is to be floodproofed.

(6) For buildings being improved or rebuilt, the estimated cost of improvements and fair market value of the building prior to the improvements.

(7) Such other information as the administrator deems reasonably necessary for the purpose of this chapter.

(b) Floodplain development permits issued on the basis of approved plans and applications authorize only the use, arrangement and construction set forth in such approved plans and applications and no other use, arrangement or construction. Any use, arrangement or construction at variance with that authorized shall be deemed a violation of this chapter and shall be punishable as provided in this chapter. The applicant shall be required to submit certification by a professional engineer or land

surveyor, as appropriate, registered in the state, that the finished fill, building floor elevations, floodproofing or other flood protection measures were accomplished in compliance with the provisions of this chapter prior to the use or occupancy of any structure.

(c) All uses or structures in the floodway, floodway fringe and general floodplain districts requiring special exception permits shall be allowed only upon application to the zoning administrator with issuance of the special exception permit by the board of adjustment. Petitioners shall include information ordinarily submitted with applications, as well as any additional information deemed necessary by the board of adjustment. Where required, approval of the state department of natural resources shall precede issuance of the special exception permit by the board of adjustment.

(d) The zoning administrator shall, within a reasonable time, make a determination as to whether the proposed floodplain development meets the applicable provisions and standards of this chapter, and shall approve or disapprove the application. In case of disapproval, the applicant shall be informed, in writing, of a specific reason therefor. The zoning administrator shall not issue permits for special exception permits or variances except as directed by the board of adjustment.

(Ord. No. 2750, § 2, 7-11-11)

Editor's note— Ord. No. 2750, § 2, adopted July 11, 2011, repealed § 29-34, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-34 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-35. - Variances and special exception permits.

(a) The board of adjustment may authorize, upon request, in specific cases, such variances from the terms of this chapter as will not be contrary to the public interest, where owing to special conditions a literal enforcement of the provisions of this chapter will result in unnecessary hardship. Variances granted must meet the following applicable standards:

(1) No variance shall be granted for any development within the floodway district which would result in any increase in floods during the occurrence of the 500-year flood. Consideration of the effects of any development on flood levels shall be based upon the assumption that an equal degree of development would be allowed for similarly situated lands.

(2) Variances shall only be granted upon:

a. A showing of good and sufficient cause;

b. A determination that failure to grant the variance would result in exceptional hardship to the applicant; and

c. A determination that the granting of the variance will not result in increased flood heights, additional threats to public safety or extraordinary public expense, create nuisances, or cause fraud on or victimization of the public.

(3) Variances shall only be granted upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(4) In cases where the variance involves a lower level of flood protection for buildings than what is ordinarily required by this chapter, the applicant shall be notified in writing over the signature of the zoning administrator that:

a. The issuance of a variance will result in increased premium rates for flood insurance up to amounts as high as $25.00 for $100.00 of insurance coverage; and

b. Such construction increases risk to life and property.

(5) All variances granted shall have the concurrence or approval of the state department of natural resources.

(b) In passing upon applications for special exception permits or requests for variances, the board shall consider all relevant factors specified in other sections of this chapter and:

(1) The danger to life and property due to increased flood heights or velocities caused by encroachments.

(2) The danger that materials may be swept onto other lands or downstream to the injury of others.

(3) The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination and unsanitary conditions.

(4) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner.

(5) The importance of the services provided by the proposed facility to the community.

(6) The requirements of the facility for a floodplain location.

(7) The availability of alternative locations not subject to flooding for the proposed use.

(8) The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.

(9) The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.

(10) The safety of access to the property in times of flood for ordinary and emergency vehicles.

(11) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwater expected at the site.

(12) Such other factors which are relevant to the purpose of this chapter.

(c) Upon consideration of the factors listed in subsection (b) of this section, the board may attach such conditions to the granting of special exception permits or variances as it deems necessary to further the purpose of this chapter. Such conditions may include but shall not necessarily be limited to:

(1) Modification of waste disposal and water supply facilities.

(2) Limitation on periods of use and operation.

(3) Imposition of operational controls, sureties and deed restrictions.

(4) Requirements for construction of channel modifications, dikes, levees and other protective measures, provided such are approved by the state department of natural resources and are deemed the only practical alternative for achieving the purposes of this chapter.

(5) Floodproofing measures shall be designed consistent with the flood protection elevation for the particular area, flood velocities, durations, rate of rise, hydrostatic and hydrodynamic forces, and other factors associated with the regulatory flood. The board of adjustment shall require that the applicant submit a plan or document certified by a registered professional engineer that the floodproofing measures are consistent with the regulatory flood protection elevation and associated flood factors for the particular area. Such floodproofing measures may include but are not necessarily limited to the following:

a. Anchorage to resist flotation and lateral movement.

b. Installation of watertight doors, bulkheads and shutters, or similar methods of construction.

c. Reinforcement of walls to resist water pressures.

d. Use of paints, membranes or mortars to reduce seepage of water through walls.

e. Addition of mass or weight structures to resist flotation.

f. Installation of pumps to lower water levels in structures.

g. Construction of water supply and waste treatment systems so as to prevent the entrance of floodwaters.

(6) Pumping facilities or comparable practices for subsurface drainage systems for building to relieve external foundation wall and basement flood pressures.

(7) Construction to resist rupture or collapse caused by water pressure or floating debris.

(8) Installation of valves or controls on sanitary and storm drains which will permit the drains to be closed to prevent backup of sewage and stormwaters into the buildings or structures.

(9) Location of all electrical equipment, circuits and installed electrical appliances in a manner which will ensure that they are not subject to flooding.

(Ord. No. 2750, § 3, 7-11-11)

Editor's note— Ord. No. 2750, § 3, adopted July 11, 2011, repealed § 29-35, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-35 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-36. - Development requiring approval by state department of natural resources.

In addition to the variance and conditional uses otherwise enumerated in this article requiring approval by the state department of natural resources, state authorization shall also be required for the following uses prior to issuance of the special exception permit from the board of adjustment:

(1) Bridges, culverts, temporary stream crossings or road embankments in or on the floodway of any river or stream draining more than two square miles.

(2) Construction, operation and maintenance of channel alterations on any river or stream draining more than two square miles.

(3) Construction, operation and maintenance of dams and impounding structures in the following instances:

a. Any dam designed to provide permanent storage in excess of 18 acre-feet.

b. Any dam which has a height of ten feet or more and is designed to temporarily store more than five acre-feet at the top of the dam elevation, or which impounds a stream draining two or more square miles.

(4) Construction, operation and maintenance of any levee or dike along any stream or river draining more than two square miles.

(5) Waste or water treatment facilities on the floodplains of any river or stream draining more than two square miles.

(6) Construction, operation and maintenance of any sanitary landfill located on a floodplain or floodway of any river or stream draining more than two square miles at the landfill site.

(7) Construction, operation and maintenance of pipeline crossings on any river or stream draining more than two square miles.

(8) Stream bank protective devices as follows:

a. Stream bank protective devices along any river or stream draining more than 100 square miles.

b. Stream bank protective devices along any river or stream draining between two and 100 square miles, where the cross sectional area of the river or stream channel is reduced more than three percent.

(9) Excavation on the floodway of any stream draining more than two square miles.

(10) Boat docks located on any river or stream, other than a lake, other than exempted nonfloating boat docks permitted by the state conservation commission.

(11) Miscellaneous structures, obstructions or deposits not otherwise provided for, on the floodway or floodplains of any river or stream draining more than two square miles.

(Code 1971, § 32-47.1(3))

Sec. 29-37. - Duties of zoning administrator relative to development in flood hazard areas.

It shall be the responsibility of the zoning administrator or his/her official designee to:

(1) Review all floodplain development permit applications to ensure that the provisions of this chapter will be satisfied.

(2) Review all floodplain development permit applications to ensure that all necessary permits have been obtained from federal, state or local governmental agencies.

(3) Obtain and record the actual elevation, in relation to the North American Vertical Datum of 1988 (NAVD), of the lowest floor, including basement, of all new or substantially improved structures, and whether or not the structure contains a basement.

(4) For all new substantially improved floodproofed structures:

a. Verify and record the actual elevation, in relation to the North American Vertical Datum of 1988 (NAVD); and

b. Maintain the floodproofing certifications required in subsection 29-34(b).

(5) Maintain for public information all records pertaining to the provisions of this chapter.

(6) Submit to the Federal Insurance Administrator an annual report concerning the community's participation in the National Flood Insurance Program.

(7) Review subdivision proposals to ensure that such proposals minimize flood damage, provide adequate drainage and are consistent with the purpose of this chapter, and advise the city council or potential conflicts.

(8) Notify adjacent communities and counties and the state department of natural resources prior to any proposed alteration or relocation of a watercourse, and submit evidence of such notifications to the Federal Insurance Administration.

(9) Notify the Federal Insurance Administration of any allexations or modifications to the city's boundaries.

(Ord. No. 2750, § 4, 7-11-11)

Editor's note— Ord. No. 2750, § 4, adopted July 11, 2011, repealed § 29-37, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-37 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-38. - Liability limitations.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes. Larger floods may occur on rare occasions, or the flood height may be increased by manmade or natural causes such as ice jams and bridge openings restricted by debris. This chapter does not imply that areas outside of the floodway, floodway fringe and general floodplain districts or land uses permitted

within those districts will be free from flooding or flood damages. The granting of approval of any structure or use shall not constitute a representation, guarantee or warranty of any kind or nature by the city or the board of adjustment, or by any officer or employee thereof, of the practicality or safety of any structure or use proposed, and shall create no liability upon or cause action against any such body, officer or employee for any damage that may result pursuant thereto.

(Code 1971, § 32-54)

Sec. 29-39. - Flood insurance rate map (FIRM).

The Flood Insurance Rate Map (FIRM) for Black Hawk County and Incorporated Areas, City of Cedar Falls, Panels 19013C0145F, 0153F, 0154F, 0158F, 0161F, 0162F, 0163F, 0164F, 0166F, 0168F, 0276F, 0277F, 0278F, 0279F, 0281F, 0282F, and 0283F, dated July 18, 2011, which were prepared as part of the Flood Insurance Study for Black Hawk County, are hereby adopted by reference and declared to be the Official Floodplain Zoning Map. The flood profiles and all explanatory material contained within the Flood Insurance Study are also declared to be a part of this chapter.

(Ord. No. 2750, § 5, 7-11-11)

Secs. 29-40—29-55. - Reserved.

Sec. 29-31. - Penalty for violation of chapter.

Any person who violates, disobeys, omits, neglects or refuses to comply with or who resists the enforcement of any of the provisions of this chapter, shall be guilty of a municipal infraction and subject to punishment as provided in section 1-9 of this Code.

(Code 1971, § 32-52)

Sec. 29-32. - Enforcement of chapter.

The department of developmental services is hereby designated and ordered to enforce this chapter. In case any building or structure is erected, constructed, reconstructed, altered, repaired, moved, converted or maintained, or any building, structure or land is used in violation of this chapter, the department, in addition to other remedies, shall institute any proper action or proceedings in the name of the city to prevent such unlawful erection, moving, construction, reconstruction, alteration, repair, conversion, maintenance or use, to restrain, correct or abate such violation, to prevent the occupancy of the building, structure or land, or to prevent any illegal act, conduct of business or use in or about the premises.

(Code 1971, § 32-51)

Sec. 29-33. - Occupancy permit.

(a) No land shall be occupied or used, and no building hereafter erected or structurally altered shall be occupied or used in whole or in part for any purpose whatsoever, until a certificate is issued by the department of developmental services stating that the building and use comply with the provisions of this chapter. No change of use shall be made in any building or part thereof erected or structurally altered without an occupancy permit being issued therefor by the department. No occupancy permit shall be issued to make a change unless the changes are in conformity with the provisions of this chapter, and a certificate issued as provided in this subsection.

(b) Nothing in this section shall prevent the continuance of a nonconforming use as authorized in this chapter, unless a discontinuance is necessary for the safety of life or property.

(c) Certificates for occupancy and compliance shall be applied for coincidentally with the application for a building permit and shall be issued within ten days after the lawful erection or alteration of the building is completed. A record of all certificates shall be kept on file in the office of the department, and copies shall be furnished on request to any person having a proprietary or tenancy interest in the building affected.

(d) No permit for excavation for or the erection or alteration of any building shall be issued before the application has been made for certificate of compliance and application has been made for certificate of occupancy, and no building or premises shall be occupied until that occupancy certificate and permit are issued.

(e) A certificate of occupancy shall be required of all nonconforming uses. Application for a certificate of occupancy for nonconforming uses shall be filed within 12 months from the effective date of this Ordinance No. 1633, accompanied by affidavits of proof that such nonconforming use was not established in violation of Ordinance No. 855 or amendments thereto.

(Code 1971, § 32-49)

Sec. 29-34. - Floodplain development permit.

(a) A floodplain development permit issued by the zoning administrator shall be secured prior to initiation of any floodplain development. Application for a floodplain development permit shall be made on forms supplied by the zoning administrator and shall include the following information:

(1) A description of the work to be covered by the permit for which application is to be made.

(2) A description of the land on which the proposed work is to be done, i.e., lot, block, tract, street address or similar description, that will readily identify and locate the work to be done.

(3) An indication of the use or occupancy for which the proposed work is intended.

(4) The elevations of the 100-year (1%) and 500-year (0.2%) flood.

(5) The elevation, in relation to the North American Vertical Datum of 1988 (NAVD), of the lowest floor, including basement, of buildings or of the level to which a building is to be floodproofed.

(6) For buildings being improved or rebuilt, the estimated cost of improvements and fair market value of the building prior to the improvements.

(7) Such other information as the administrator deems reasonably necessary for the purpose of this chapter.

(b) Floodplain development permits issued on the basis of approved plans and applications authorize only the use, arrangement and construction set forth in such approved plans and applications and no other use, arrangement or construction. Any use, arrangement or construction at variance with that authorized shall be deemed a violation of this chapter and shall be punishable as provided in this chapter. The applicant shall be required to submit certification by a professional engineer or land surveyor, as appropriate, registered in the state, that the finished fill, building floor elevations, floodproofing or other flood protection measures were accomplished in compliance with the provisions of this chapter prior to the use or occupancy of any structure.

(c) All uses or structures in the floodway, floodway fringe and general floodplain districts requiring special exception permits shall be allowed only upon application to the zoning administrator with issuance of the special exception permit by the board of adjustment. Petitioners shall include information ordinarily submitted with applications, as well as any additional information deemed necessary by the board of adjustment. Where required, approval of the state department of natural resources shall precede issuance of the special exception permit by the board of adjustment.

(d) The zoning administrator shall, within a reasonable time, make a determination as to whether the proposed floodplain development meets the applicable provisions and standards of this chapter, and shall approve or disapprove the application. In case of disapproval, the applicant shall be informed, in writing, of a specific reason therefor. The zoning administrator shall not issue permits for special exception permits or variances except as directed by the board of adjustment.

(Ord. No. 2750, § 2, 7-11-11)

Editor's note— Ord. No. 2750, § 2, adopted July 11, 2011, repealed § 29-34, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-34 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-35. - Variances and special exception permits.

(a) The board of adjustment may authorize, upon request, in specific cases, such variances from the terms of this chapter as will not be contrary to the public interest, where owing to special conditions a literal enforcement of the provisions of this chapter will result in unnecessary hardship. Variances granted must meet the following applicable standards:

(1) No variance shall be granted for any development within the floodway district which would result in any increase in floods during the occurrence of the 500-year flood. Consideration of the effects of any development on flood levels shall be based upon the assumption that an equal degree of development would be allowed for similarly situated lands.

(2) Variances shall only be granted upon:

a. A showing of good and sufficient cause;

b. A determination that failure to grant the variance would result in exceptional hardship to the applicant; and

c. A determination that the granting of the variance will not result in increased flood heights, additional threats to public safety or extraordinary public expense, create nuisances, or cause fraud on or victimization of the public.

(3) Variances shall only be granted upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

(4) In cases where the variance involves a lower level of flood protection for buildings than what is ordinarily required by this chapter, the applicant shall be notified in writing over the signature of the zoning administrator that:

a. The issuance of a variance will result in increased premium rates for flood insurance up to amounts as high as $25.00 for $100.00 of insurance coverage; and

b. Such construction increases risk to life and property.

(5) All variances granted shall have the concurrence or approval of the state department of natural resources.

(b) In passing upon applications for special exception permits or requests for variances, the board shall consider all relevant factors specified in other sections of this chapter and:

(1) The danger to life and property due to increased flood heights or velocities caused by encroachments.

(2) The danger that materials may be swept onto other lands or downstream to the injury of others.

(3) The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination and unsanitary conditions.

(4) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner.

(5) The importance of the services provided by the proposed facility to the community.

(6) The requirements of the facility for a floodplain location.

(7) The availability of alternative locations not subject to flooding for the proposed use.

(8) The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.

(9) The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.

(10) The safety of access to the property in times of flood for ordinary and emergency vehicles.

(11) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwater expected at the site.

(12) Such other factors which are relevant to the purpose of this chapter.

(c) Upon consideration of the factors listed in subsection (b) of this section, the board may attach such conditions to the granting of special exception permits or variances as it deems necessary to further the purpose of this chapter. Such conditions may include but shall not necessarily be limited to:

(1) Modification of waste disposal and water supply facilities.

(2) Limitation on periods of use and operation.

(3) Imposition of operational controls, sureties and deed restrictions.

(4) Requirements for construction of channel modifications, dikes, levees and other protective measures, provided such are approved by the state department of natural resources and are deemed the only practical alternative for achieving the purposes of this chapter.

(5) Floodproofing measures shall be designed consistent with the flood protection elevation for the particular area, flood velocities, durations, rate of rise, hydrostatic and hydrodynamic forces, and other factors associated with the regulatory flood. The board of adjustment shall require that the applicant submit a plan or document certified by a registered professional engineer that the floodproofing measures are consistent with the regulatory flood protection elevation and associated flood factors for the particular area. Such floodproofing measures may include but are not necessarily limited to the following:

a. Anchorage to resist flotation and lateral movement.

b. Installation of watertight doors, bulkheads and shutters, or similar methods of construction.

c. Reinforcement of walls to resist water pressures.

d. Use of paints, membranes or mortars to reduce seepage of water through walls.

e. Addition of mass or weight structures to resist flotation.

f. Installation of pumps to lower water levels in structures.

g. Construction of water supply and waste treatment systems so as to prevent the entrance of floodwaters.

(6) Pumping facilities or comparable practices for subsurface drainage systems for building to relieve external foundation wall and basement flood pressures.

(7) Construction to resist rupture or collapse caused by water pressure or floating debris.

(8) Installation of valves or controls on sanitary and storm drains which will permit the drains to be closed to prevent backup of sewage and stormwaters into the buildings or structures.

(9) Location of all electrical equipment, circuits and installed electrical appliances in a manner which will ensure that they are not subject to flooding.

(Ord. No. 2750, § 3, 7-11-11)

Editor's note— Ord. No. 2750, § 3, adopted July 11, 2011, repealed § 29-35, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-35 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-36. - Development requiring approval by state department of natural resources.

In addition to the variance and conditional uses otherwise enumerated in this article requiring approval by the state department of natural resources, state authorization shall also be required for the following uses prior to issuance of the special exception permit from the board of adjustment:

(1) Bridges, culverts, temporary stream crossings or road embankments in or on the floodway of any river or stream draining more than two square miles.

(2) Construction, operation and maintenance of channel alterations on any river or stream draining more than two square miles.

(3) Construction, operation and maintenance of dams and impounding structures in the following instances:

   a. Any dam designed to provide permanent storage in excess of 18 acre-feet.

   b. Any dam which has a height of ten feet or more and is designed to temporarily store more than five acre-feet at the top of the dam elevation, or which impounds a stream draining two or more square miles.

(4) Construction, operation and maintenance of any levee or dike along any stream or river draining more than two square miles.

(5) Waste or water treatment facilities on the floodplains of any river or stream draining more than two square miles.

(6) Construction, operation and maintenance of any sanitary landfill located on a floodplain or floodway of any river or stream draining more than two square miles at the landfill site.

(7) Construction, operation and maintenance of pipeline crossings on any river or stream draining more than two square miles.

(8) Stream bank protective devices as follows:

   a. Stream bank protective devices along any river or stream draining more than 100 square miles.

   b. Stream bank protective devices along any river or stream draining between two and 100 square miles, where the cross sectional area of the river or stream channel is reduced more than three percent.

(9) Excavation on the floodway of any stream draining more than two square miles.

(10) Boat docks located on any river or stream, other than a lake, other than exempted nonfloating boat docks permitted by the state conservation commission.

(11) Miscellaneous structures, obstructions or deposits not otherwise provided for, on the floodway or floodplains of any river or stream draining more than two square miles.

(Code 1971, § 32-47.1(3))

Sec. 29-37. - Duties of zoning administrator relative to development in flood hazard areas.

It shall be the responsibility of the zoning administrator or his/her official designee to:

(1) Review all floodplain development permit applications to ensure that the provisions of this chapter will be satisfied.

(2) Review all floodplain development permit applications to ensure that all necessary permits have been obtained from federal, state or local governmental agencies.

(3) Obtain and record the actual elevation, in relation to the North American Vertical Datum of 1988 (NAVD), of the lowest floor, including basement, of all new or substantially improved structures, and whether or not the structure contains a basement.

(4) For all new substantially improved floodproofed structures:

a. Verify and record the actual elevation, in relation to the North American Vertical Datum of 1988 (NAVD); and

b. Maintain the floodproofing certifications required in subsection 29-34(b).

(5) Maintain for public information all records pertaining to the provisions of this chapter.

(6) Submit to the Federal Insurance Administrator an annual report concerning the community's participation in the National Flood Insurance Program.

(7) Review subdivision proposals to ensure that such proposals minimize flood damage, provide adequate drainage and are consistent with the purpose of this chapter, and advise the city council or potential conflicts.

(8) Notify adjacent communities and counties and the state department of natural resources prior to any proposed alteration or relocation of a watercourse, and submit evidence of such notifications to the Federal Insurance Administration.

(9) Notify the Federal Insurance Administration of any allexations or modifications to the city's boundaries.

(Ord. No. 2750, § 4, 7-11-11)

Editor's note— Ord. No. 2750, § 4, adopted July 11, 2011, repealed § 29-37, in its entirety and enacted new provisions to read as herein set out. Prior to amendment, § 29-37 pertained to similar subject matter. See Code Comparative Table for derivation.

Sec. 29-38. - Liability limitations.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes. Larger floods may occur on rare occasions, or the flood height may be increased by manmade or natural causes such as ice jams and bridge openings restricted by debris. This chapter does not imply that areas outside of the floodway, floodway fringe and general floodplain districts or land uses permitted within those districts will be free from flooding or flood damages. The granting of approval of any structure or use shall not constitute a representation, guarantee or warranty of any kind or nature by the city or the board of adjustment, or by any officer or employee thereof, of the practicality or safety of any structure or use proposed, and shall create no liability upon or cause action against any such body, officer or employee for any damage that may result pursuant thereto.

(Code 1971, § 32-54)

Sec. 29-39. - Flood insurance rate map (FIRM).

The Flood Insurance Rate Map (FIRM) for Black Hawk County and Incorporated Areas, City of Cedar Falls, Panels 19013C0145F, 0153F, 0154F, 0158F, 0161F, 0162F, 0163F, 0164F, 0166F, 0168F, 0276F, 0277F, 0278F, 0279F, 0281F, 0282F, and 0283F, dated July 18, 2011, which were prepared as part of the Flood Insurance Study for Black Hawk County, are hereby adopted by reference and declared to be the Official Floodplain Zoning Map. The flood profiles and all explanatory material contained within the Flood Insurance Study are also declared to be a part of this chapter.

(Ord. No. 2750, § 5, 7-11-11)

Secs. 29-40—29-55. - Reserved.

DIVISION 2. - BOARD OF ADJUSTMENT[2]

Footnotes:

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Cross reference— Airport zoning commission, § 4-26 et seq.

Sec. 29-56. - Membership; appointment of members.

A board of adjustment is hereby established, which shall consist of seven members, each to be appointed by the mayor subject to approval of the city council for the term of five years. Members shall be removable for cause by the appointing authority upon written charges and after public hearing. Vacancies shall be filled for the unexpired term of any member whose term becomes vacant.

(Code 1971, § 32-48(a))

Sec. 29-57. - Meetings and rules of procedure.

The board of adjustment shall adopt rules in accordance with the provisions of this chapter. Meetings of the board shall be held at the call of the chairman and at such other times as the board may determine. Such chairman, or, in his/her absence, the acting chairman, may administer oaths and compel the attendance of witnesses. All meetings of the board shall be open to the public, and the presence of four members shall constitute a quorum. The board shall keep minutes of its proceedings, showing the vote of each member upon each question, or, if absent or failing to vote, indicating such fact, and shall keep records of its examinations and other official actions, all of which shall be immediately filed in the office of the board and shall be a public record.

(Code 1971, § 32-48(b))

Sec. 29-58. - Powers and duties.

The board of adjustment shall have the following powers and duties:

(1) In appropriate cases and subject to appropriate conditions and safeguards, to make special exceptions to the terms of this chapter in harmony with its general purpose and intent. Any property owner aggrieved by the provisions of this chapter or any regulations or restrictions

under this chapter may petition the board of adjustment directly to modify the regulations and restrictions as applied to such property owner, and the following rules shall apply:

a. The board of adjustment shall have a public hearing on the petitions under the same terms and conditions as provided in this division for the hearing of appeals by the board of adjustment.

b. The board of adjustment, in making any exception to this chapter, shall be guided by the general rule that the exceptions shall by their design, construction and operation adequately safeguard the health, safety and welfare of the occupants of adjoining and surrounding property, shall not impair an adequate supply of light and air to adjacent property, shall not increase congestion in the public streets, shall not increase public danger of fire and safety and shall not diminish or impair established property values in surrounding areas.

c. The board of adjustment is specifically authorized to permit erection and use of a building or the use of premises or vary the height and area regulations in any location for a public service corporation for public utility purposes or for purposes of public communication, including the distribution of newspapers, which the board determines reasonably necessary for public convenience or welfare.

d. The board of adjustment is specifically authorized to permit the extension of a district where the boundary line of a district divides a lot in a single ownership as shown of record or by existing contract or purchase at the time of the passage of this chapter, but in no case shall extension of the district boundary line exceed 40 feet in any direction.

(2) To hear and decide appeals where it is alleged there is an error in any order, requirement, decision or determination made by the department of developmental services in the enforcement of this chapter.

(3) To authorize upon appeal in specific cases such variance from the terms of this chapter as will not be contrary to the public interest, where owing to special conditions a literal enforcement of the provisions of this chapter will result in unnecessary hardship, and so that the spirit of this chapter shall be observed and substantial justice done. Special conditions shall include but not be limited to a property owner who can show that his/her property was acquired in good faith and that, by reason of exceptional narrowness, shallowness or shape of a specific piece of property, or by reason of exceptional topographical conditions or other extraordinary or exceptional situations, the strict application of the terms of this chapter actually prohibits the use of his/her property in a manner reasonably similar to that of other property in the district.

(Code 1971, § 32-48(c))

Sec. 29-59. - Appeals.

(a) Appeals to the board of adjustment may be taken by any person aggrieved or by any officer, department, board or bureau of the city affected by any decision of the department of developmental services. Such appeal shall be taken within a reasonable time, as provided by the rules of the board, by filing with the department and with the board of adjustment a notice of appeal specifying the grounds thereof. The department shall forthwith transmit to the board all the papers constituting the record upon which the action appealed from is taken.

(b) An appeal stays all proceedings in furtherance of the action appealed from, unless the department certifies to the board, after notice of appeal has been filed with the department, that by reason of the facts stated in the certificate a stay would, in its opinion, cause imminent peril to life or property. In such case, proceedings shall not be stayed otherwise than by a restraining order, which may be granted by the board or by a court of record on application, with notice to the department, and on due cause shown.

(c) The appealing party shall be required to submit to the secretary of the board, ten days prior to the public hearing, a petition duly signed by the owners of the property immediately adjacent, in the rear and to the side thereof, extending the depth of one lot but not to exceed 200 feet therefrom, and of those directly opposite thereto, extending the depth of one lot or not to exceed 200 feet from the street frontage of such opposite lots, indicating knowledge of the appeal and the date of the public hearing. Should an adjacent property owner refuse to sign the petition, it shall then be the duty of the appealing party to contact the adjacent property owner by certified mail, notifying the property owner of the appeal before the board, and the appealing party shall submit proof of the certified mail to the secretary of the board ten days prior to the public hearing.

(d) The board of adjustment shall give a reasonable time for hearing the appeal. The board shall publish notice of the public hearing on the appeal once, not less than seven nor more than 14 days before the date of the hearing, in a newspaper having general circulation in the city.

(e) At the hearing, any party may appear in person or by agent, or by attorney. Before an appeal is filed with the board of adjustment, the appellant shall pay to the city clerk, to be credited to the general fund of the city, the cost of publishing the notice and the administrative costs of the appeal as determined by the board.

(f) In exercising the powers mentioned in this section, the board may, in conformity with the provisions of law, reverse or affirm, wholly or partly, or modify the order, requirement, decision or determination as it believes proper, and to that end shall have all the zoning administration powers of the department of developmental services. The concurring vote of four members of the board shall be necessary to reverse any order, requirement, decision or determination of the department, or to decide in favor of the applicant on any matter upon which it is required to pass under this chapter; provided, however, that the action of the board shall not become effective until after the resolution of the board, setting forth the full reason of its decision and the vote of each member participating therein, has been spread upon the minutes. Such resolution, immediately following the board's final decision, shall be filed in the office of the board, and shall be open to public inspection.

(Code 1971, § 32-48(d); Ord. No. 2631, § 1, 7-23-07)

Secs. 29-60—29-75. - Reserved.

Sec. 29-56. - Membership; appointment of members.

A board of adjustment is hereby established, which shall consist of seven members, each to be appointed by the mayor subject to approval of the city council for the term of five years. Members shall be removable for cause by the appointing authority upon written charges and after public hearing. Vacancies shall be filled for the unexpired term of any member whose term becomes vacant.

(Code 1971, § 32-48(a))

Sec. 29-57. - Meetings and rules of procedure.

The board of adjustment shall adopt rules in accordance with the provisions of this chapter. Meetings of the board shall be held at the call of the chairman and at such other times as the board may determine. Such chairman, or, in his/her absence, the acting chairman, may administer oaths and compel the attendance of witnesses. All meetings of the board shall be open to the public, and the presence of four members shall constitute a quorum. The board shall keep minutes of its proceedings, showing the vote of each member upon each question, or, if absent or failing to vote, indicating such fact, and shall keep records of its examinations and other official actions, all of which shall be immediately filed in the office of the board and shall be a public record.

(Code 1971, § 32-48(b))

Sec. 29-58. - Powers and duties.

The board of adjustment shall have the following powers and duties:

(1) In appropriate cases and subject to appropriate conditions and safeguards, to make special exceptions to the terms of this chapter in harmony with its general purpose and intent. Any property owner aggrieved by the provisions of this chapter or any regulations or restrictions under this chapter may petition the board of adjustment directly to modify the regulations and restrictions as applied to such property owner, and the following rules shall apply:

a. The board of adjustment shall have a public hearing on the petitions under the same terms and conditions as provided in this division for the hearing of appeals by the board of adjustment.

b. The board of adjustment, in making any exception to this chapter, shall be guided by the general rule that the exceptions shall by their design, construction and operation adequately safeguard the health, safety and welfare of the occupants of adjoining and surrounding property, shall not impair an adequate supply of light and air to adjacent property, shall not increase congestion in the public streets, shall not increase public danger of fire and safety and shall not diminish or impair established property values in surrounding areas.

c. The board of adjustment is specifically authorized to permit erection and use of a building or the use of premises or vary the height and area regulations in any location for a public service corporation for public utility purposes or for purposes of public communication, including the distribution of newspapers, which the board determines reasonably necessary for public convenience or welfare.

d. The board of adjustment is specifically authorized to permit the extension of a district where the boundary line of a district divides a lot in a single ownership as shown of record or by existing contract or purchase at the time of the passage of this chapter, but in no case shall extension of the district boundary line exceed 40 feet in any direction.

(2) To hear and decide appeals where it is alleged there is an error in any order, requirement, decision or determination made by the department of developmental services in the enforcement of this chapter.

(3) To authorize upon appeal in specific cases such variance from the terms of this chapter as will not be contrary to the public interest, where owing to special conditions a literal enforcement of the provisions of this chapter will result in unnecessary hardship, and so that the spirit of this chapter shall be observed and substantial justice done. Special conditions shall include but not be limited to a property owner who can show that his/her property was acquired in good faith and that, by reason of exceptional narrowness, shallowness or shape of a specific piece of property, or by reason of exceptional topographical conditions or other extraordinary or exceptional situations, the strict application of the terms of this chapter actually prohibits the use of his/her property in a manner reasonably similar to that of other property in the district.

(Code 1971, § 32-48(c))

Sec. 29-59. - Appeals.

(a) Appeals to the board of adjustment may be taken by any person aggrieved or by any officer, department, board or bureau of the city affected by any decision of the department of developmental services. Such appeal shall be taken within a reasonable time, as provided by the rules of the board, by filing with the department and with the board of adjustment a notice of appeal specifying the grounds thereof. The department shall forthwith transmit to the board all the papers constituting the record upon which the action appealed from is taken.

(b) An appeal stays all proceedings in furtherance of the action appealed from, unless the department certifies to the board, after notice of appeal has been filed with the department, that by reason of the facts stated in the certificate a stay would, in its opinion, cause imminent peril to life or property. In such case, proceedings shall not be stayed otherwise than by a restraining order, which may be granted by the board or by a court of record on application, with notice to the department, and on due cause shown.

(c) The appealing party shall be required to submit to the secretary of the board, ten days prior to the public hearing, a petition duly signed by the owners of the property immediately adjacent, in the rear and to the side thereof, extending the depth of one lot but not to exceed 200 feet therefrom, and of those directly opposite thereto, extending the depth of one lot or not to exceed 200 feet from the street frontage of such opposite lots, indicating knowledge of the appeal and the date of the public hearing. Should an adjacent property owner refuse to sign the petition, it shall then be the duty of the appealing party to contact the adjacent property owner by certified mail, notifying the property owner of the appeal before the board, and the appealing party shall submit proof of the certified mail to the secretary of the board ten days prior to the public hearing.

(d) The board of adjustment shall give a reasonable time for hearing the appeal. The board shall publish notice of the public hearing on the appeal once, not less than seven nor more than 14 days before the date of the hearing, in a newspaper having general circulation in the city.

(e) At the hearing, any party may appear in person or by agent, or by attorney. Before an appeal is filed with the board of adjustment, the appellant shall pay to the city clerk, to be credited to the general fund of the city, the cost of publishing the notice and the administrative costs of the appeal as determined by the board.

(f) In exercising the powers mentioned in this section, the board may, in conformity with the provisions of law, reverse or affirm, wholly or partly, or modify the order, requirement, decision or determination as it believes proper, and to that end shall have all the zoning administration powers of the department of developmental services. The concurring vote of four members of the board shall be necessary to reverse any order, requirement, decision or determination of the department, or to decide in favor of the applicant on any matter upon which it is required to pass under this chapter; provided, however, that the action of the board shall not become effective until after the resolution of the board, setting forth the full reason of its decision and the vote of each member participating therein, has been spread upon the minutes. Such resolution, immediately following the board's final decision, shall be filed in the office of the board, and shall be open to public inspection.

(Code 1971, § 32-48(d); Ord. No. 2631, § 1, 7-23-07)

Secs. 29-60—29-75. - Reserved.

DIVISION 3. - EXCEPTIONS AND MODIFICATIONS

Sec. 29-76. - Generally.

The regulations specified in this chapter shall be subject to the exceptions and interpretations set out in this division.

(Code 1971, § 32-47)

Sec. 29-77. - Review of proposed public improvements by planning and zoning commission.

(a) No statuary, memorial or work of art in a public place, and no public building, bridge, viaduct, street fixture, public structure or appurtenance, shall be located or erected, or a site therefor obtained, nor shall any permit be issued by any department of the city for the erection or location thereof, until and unless the design and proposed location of any such improvement shall have been submitted to the city planning and zoning commission and its recommendations thereon obtained. If the commission disapproves the proposed improvement, it may be approved by the city council only by an affirmative vote of a simple majority of all the membership of the council.

(b) Such requirements for recommendations shall not act as a stay upon action for such improvements where such commission, after 60 days' written notice requesting such recommendations, shall have failed to file the recommendations.

(Code 1971, § 32-47(h))

Sec. 29-78. - Use of existing lots of record.

In any district where dwellings are permitted, a single-~~family~~unit dwelling may be located on any lot or plot of official record as of April 3, 1970, irrespective of its area or width; and, in addition, any two-~~family~~unit dwelling may be located on any lot or plot in an R-3 residence district that has a lot width of not less than 60 feet and a lot area of not less than 8,000 square feet and is of official record as of April 3, 1970, provided, however, that:

(1) The sum of the side yard widths of any such lot or plot shall not be less than 20 percent of the width of the lot, but in no case shall the width be less than five feet for any one side yard.

(2) The depth of the rear yard of any such lot need not exceed 20 percent of the depth of the lot, but in no case shall the depth be less than ten feet.

(3) In the case of a lot of record where the requirements of subsection (1) or (2) of this section are greater than those of the district in which it is located, the lesser requirement shall apply.

(4) In the case of platted building setback lines established on lots of record as of April 3, 1970, such setback lines may apply in lieu of those required by this section unless existing adjacent building setbacks are greater than specified on the plat of record, in which case the provisions of sections 29-111 through 29-121 shall apply.

(Code 1971, § 32-47(a); Ord. No. 2023, § 3, 8-23-93; Ord. No. 2299, § 1, 5-8-00; Ord. No. 2329, § 1, 4-9-01)

Sec. 29-79. - Exceptions to height limits.

The building height limitations of this chapter shall be modified as follows:

(1) Chimneys, cooling towers, elevator bulkheads, fire towers, monuments, penthouses, stacks, stage towers or scenery lofts, tanks, water towers, spires and radio or television towers or necessary mechanical appurtenances may be erected to a height in accordance with the ordinances of the city. Wind energy conversion systems shall be permitted in all zoning districts, subject to approval by the board of adjustment. The board of adjustment may compel applicants to provide documentation indicating that the design, construction and operation of the system adequately safeguards the health, safety and welfare of the occupants of all adjoining and surrounding properties.

(2) Public, semipublic or public service buildings, hospitals, medical clinics, senior housing facilities, nursing homes, housing for the elderly, professional offices, professional services, sanatoriums or schools, or other uses permitted in a district, may be erected to a height not exceeding 60 feet to the ridge line or top of the roof, and churches and temples, when permitted in a district, may be erected to a height not exceeding 75 feet, if the building is set back from each building

setback line at least one foot for each foot of additional building height above the height limit otherwise provided for in the district in which the building is built. The additional setback area must be provided in open green space with living landscape material, berming and other vegetative screening elements along any property line adjacent to a public right-of-way. The building will utilize high quality materials such as brick, natural stone, glass or other materials used in the neighborhood. These materials shall be incorporated on all sides of the building. In addition, restrictive covenants, developmental agreements or design guidelines may be used to further supplement the building or site design.

(3) Single-~~family~~unit dwellings and two-~~family~~unit dwellings in the dwelling districts may be increased in height by not more than ten feet when two side yards of not less than 15 feet each are provided, but they shall not exceed three stories in height.

(Code 1971, § 32-47(b); Ord. No. 2843, § 1, 5-18-15; Ord. No. 2888, § 1, 11-7-16)

Sec. 29-80. - Exceptions to lot area requirements.

In any district where public water supply or public sanitary sewer is not accessible, the lot area requirements shall be determined and approved by the planning and zoning commission upon recommendation by the county board of health, the city public works department and the department of developmental services. The commission shall evaluate the longterm use of the property and projected provision of public service to the area to determine the lot size and type of water and sewer service to be required. However, should public water or public sewer not be available, the minimum lot size required shall not be less than 15,000 square feet nor more than three acres. In all cases, if the lot requirement of the district is more restrictive than this regulation, the district lot requirement shall apply.

(Code 1971, § 32-47(c))

Sec. 29-81. - Measurement of rear or side yard when yard opens onto alley.

In computing the depth of a rear yard or the width of a side yard where the rear or side yard opens on an alley, one-half of the alley width may be included as a portion of the rear or side yard, as the case may be.

(Code 1971, § 32-47(e))

Sec. 29-82. - Yards for double frontage lots.

Buildings on through lots and extending through from street to street shall provide the required front yard on both streets.

(Code 1971, § 32-47(d))

Sec. 29-83. - Other exceptions to yard requirements.

(a) *Obstructions in required yards.* Every part of a required yard shall be open to the sky, unobstructed with any above-grade building or structure with the following exceptions:

(1) The ordinary projections of skylights, sills, belt courses, cornices, roof eaves and ornamental features, such projections not to exceed 36 inches.

(2) Handicap accessible ramps, railings or walkways that may extend to the property line in order to accommodate handicap access and egress.

(3) The usual steps of enclosed or unenclosed porches, stoops, or other entryways, said steps to extend no closer than five feet from the property line.

(4) Unenclosed and unroofed decks may extend no closer than five feet from a side yard property line. Said unenclosed and unroofed decks shall extend no further than ten feet into the required front yard or required rear yard area.

(5) Other decorative lawn ornaments such as bird feeders, lighting fixtures, art work, or any similar item not recognized by the uniform building code as a building or structure shall be allowed.

(6) Permitted accessory structures and fences. Said accessory structures, including but not limited to garages or storage sheds, shall not be allowed in any portion of a required front yard.

(b) *Swimming pools.* In all residential zoning districts detached above-ground and in-ground swimming pools are permitted for private use. The size and location of said swimming pools on the site will be governed by the regulations controlling detached accessory structures (section 19-115). However, said swimming pools will be allowed the area permitted in section 29-115 exclusive of any existing or proposed accessory structures on the lot, provided that minimum setbacks and building separations are maintained. No permanent swimming pools will be permitted in the required front yard. In addition, a fence measuring at least five feet in height shall be established around the perimeter of said swimming pool.

(c) *Rowhouses and condominiums.* In all districts providing for multiple-~~family~~unit dwellings, the front, rear and side yard requirements shall apply to the building where utilized as a row or condominium dwelling, and shall not be required for each individual unit.

(d) *Conversion of duplex to bi-attached dwelling.* In the case of a duplex conversion to bi-attached dwelling status, the front, rear and side yard requirements shall apply to the duplex structure as a whole, as required by the zoning classification in which the duplex is located, if the duplex was constructed prior to March 9, 1981.

(Code 1971, § 32-47(f); Ord. No. §§ 4, 5, 8-23-93; Ord. No. 2163, § 1, 10-14-96)

Sec. 29-84. - Satellite receiving dishes.

Satellite receiving dishes shall be permitted in all districts subject to the following:

(1) Satellite receiving dishes shall be classified as an incidental use, and shall not be permitted upon a lot unless such lot has a principal permitted use located thereon. No more than one dish shall be permitted on any parcel.

(2) The size of satellite receiving dishes shall not be subject to the total square footage limitation for accessory buildings as outlined in section 29-115, but the dish shall be set back at least two feet from private property lines as measured at the most extreme axis.

(3) A building permit shall be issued by the city prior to the installation or structural alteration of any satellite receiving dish. The dish shall meet all requirements of the building and electrical codes.

(4) No satellite receiving dish shall be permitted within a provided front yard, or within any portion of a required side yard lying closer to the front lot line than the rear of the principal structure.

(5) Satellite receiving dishes shall not exceed a maximum height of 20 feet, as measured at the most extreme vertical axis.

(6) Roof-mounted satellite receiving dishes shall be restricted to commercial and industrial zoning districts, and shall not extend more than ten feet above the height limit established for the district in which the structure is located.

(7) No satellite receiving dish shall be permitted to cause electrical disturbances, nor interfere with the transmission of communication signals to adjacent properties.

(Code 1971, § 32-47(f))

Sec. 29-85. - Enclosing of open porches.

An existing open porch may be remodeled or rebuilt to an enclosed nonhabitable vestibule entranceway, which may include closet space, when projecting not more than one-fourth of the width of the residence.

(Code 1971, § 32-47(g))

Sec. 29-86. - Walls, fences and hedges.

(a) In any residential or agricultural zoning district, a wall, fence or hedge not to exceed four feet in height may be located and maintained on any part of a lot, except in the case of a corner lot it shall not exceed three feet in height above the curb level in the triangular area formed by the intersection of two public rights-of-way, excluding alleys, with two sides of the triangle being 30 feet in length along the abutting public right-of-way line measured from their point of intersection and the third side being a line connecting the ends of the other two lines. However, a fence not to exceed four feet in height may be located within this triangular area if it is constructed of materials which provide openings of not less than 75 percent in area of the vertical surface of the fence to permit transmission of light, air and vision through the vertical surface at a right angle. A wall, fence or hedge not to exceed eight feet in height may be located and maintained anywhere on a lot to the rear line of the required front yard. However, in the case of a corner lot or reversed lot, it shall not be closer to the property line than to the rear of the side yard requirement. Fences shall be constructed of materials commonly used for landscape fencing, such as masonry, block, lumber or chain link, but shall not include corrugated sheetmetal, barbed wire or salvage material, or be electrified.

(b) In any commercial or industrial zoning district, no wall or fence, except as noted in this subsection, shall be located or maintained within the following described areas:

    (1) The areas of property on both sides of an accessway, driveway or alley formed by an intersection with a public right-of-way with two sides of each triangle being formed by lines extending a distance of ten feet in length from the point of intersection and the third side being a line connecting the ends of the ten-foot sides.

    (2) The area of property located at a corner formed by the intersection of two public rights-of-way, excluding alleys, with two sides of the triangle being 30 feet in length along the abutting public right-of-way lines measured from their point of intersection, and the third side being a line connecting the ends of the other two lines.

However, fences not exceeding height requirements may be located within these triangular areas if constructed of materials which provide openings of not less than 75 percent in area of the vertical surface of the fence to permit transmission of light, air and vision through the vertical surface at a right angle. No structure, material storage, vehicle or other obstruction shall be situated therein preventing the view of traffic approaching the intersection from either way.

(c) In any commercial zoning district, a wall, fence or hedge not to exceed eight feet in height may be located and maintained on any part of a lot, except as provided in subsection (b) of this section.

(d) In any industrial zoning district, a wall, fence or hedge not to exceed ten feet in height may be located and maintained on any part of a lot, except as provided in subsection (b) of this section.

(e) In any commercial or industrial zoning district, fences shall not be constructed of salvage material, shall not be electrified, and shall not use barbed wire closer than six feet to the ground or higher than the maximum allowable fence height in the applicable zoning district.

(f) In all zoning districts, no portion of any wall, fence or hedge shall extend beyond the owner's private property line.

(g) Fences used solely for permitted livestock containment purposes may be electrified or utilize barbed wire or corrugated sheet metal within the height requirements of the applicable zoning district.

(h) No wall, fence or hedge shall be so located as to obstruct the view of traffic approaching an intersection from any direction.

(i) No wall, fence or hedge shall be located as to obstruct direct access to a fire hydrant from the public right-of-way, nor shall any wall, fence or hedge be situated closer than four feet to a fire hydrant.

(Code 1971, § 32-47(j))

Sec. 29-87. - Stormwater detention.

(a) *Required; request for review.* In all zoning districts, in connection with every industrial, commercial, business, trade, institutional, recreational or dwelling use, and similar uses, stormwater detention shall be provided and shall be subject to the review and approval of the city engineer. A request for stormwater detention review shall be accompanied by two copies of plans showing all existing landscaping, surface treatments, structures, measurements and elevations and two copies of plans showing proposed improvements, surface types, measurements, elevations, stormwater detention calculations and method of detention. In all zoning districts, all uses shall provide stormwater detention in accordance with the criteria in this section.

(b) *Exceptions.* Stormwater detention will not be required for:

(1) Individual single-~~family~~unit dwelling units, duplexes, bi-attached dwelling units or similar uses or lots with low runoff coefficients.

(2) All uses on undeveloped lots of record as of September 26, 1983, where the difference between the runoff of a ten-year frequency rainfall, as applied to the entire lot, including the proposed improvements, is less than or equal to one cubic foot per second when compared to the amount of total stormwater runoff generated from a two-year frequency rainfall on the lot as it existed in its natural, undeveloped state. However, following initial development, should any deed transfer, lot split, resubdivision or addition reduce the computed lot area or increase the amount of impervious surface, increasing the runoff by an amount greater than one cubic foot per second, then stormwater detention shall be provided for the entire lot in conformance to the criteria in subsection (c) of this section.

(3) Additions to existing structures or new structures on developed lots of record as of September 26, 1983, where the total stormwater runoff generated from a ten-year frequency rainfall, applied to the entire area of the addition or new structure, including the proposed improvements and required parking addition, is less than or equal to one cubic foot per second when compared to the amount of total stormwater runoff generated from a two-year frequency rainfall on the affected area in its existing state. However, following completion of the proposed addition or new structure without stormwater detention, should any deed transfer, lot split, resubdivision, new addition or structures be added to the lot which reduce the computed lot area or increase the amount of impervious surface such that the sum of the improvements generate a runoff greater than one cubic foot per second, then stormwater detention shall be provided for all additions or new structures added after September 26, 1983, in conformance to the criteria in subsection (c) of this section.

(4) Reconstruction, repair or replacement of uses on developed lots in conformance with all other applicable sections of this chapter and this Code, provided that such reconstruction, repair or replacement may not increase the total stormwater runoff generated by the lot as it existed prior to reconstruction. Should the reconstruction, repair or replacement generate runoff greater than

that discharged prior to construction, the lot shall conform to the criteria in subsection (b)(3) of this section.

(5) Individual lots recorded after September 26, 1983, if the plat in which the lots are located provides stormwater detention for all lots, onsite or offsite, equal to the difference between the total stormwater runoff generated from a ten-year frequency rainfall applied to the entire plat, including proposed improvements, public and private, and a two-year frequency rainfall applied to the site as it existed in its natural undeveloped state.

(6) Any lot where a governmental body or private drainage district has provided overall drainage basin detention facilities and the city has waived by resolution the detention criteria for individual lots in that basin.

(c) *Detention requirements.* All lots not exempted by subsection (b) of this section shall detain all onsite stormwater runoff equal to the difference between the total stormwater runoff generated from a ten-year frequency rainfall as applied to the entire lot, including the proposed improvements, and a two-year frequency rainfall applied to the lot as it existed in its natural undeveloped state.

(d) *Special detention requirements.* The city council, upon recommendation of the planning and zoning commission or at its own discretion, may prescribe that a higher degree of stormwater detention be required if it is in the best interest of the general public. The special detention requirement will normally be reserved for developments with large quantities of impervious surfaces, where the drainage basin in which the development is located is experiencing flooding problems, or where receiving stormwater facilities cannot accept the normal two-year storm discharge.

(e) *Waivers.* Stormwater detention requirements may be waived by the city council following receipt of sufficient written justification from the property owner indicating that it is not physically or economically feasible to detain stormwater and that such discharge will not be injurious to downstream properties in the drainage basin.

(f) *Evaluation of drainage system.* All developments and subdivisions which are required by this section to provide stormwater detention or installation of a public storm sewer system shall provide an evaluation of the 100-year storm overflow from the development's primary drainage system. The evaluation will be reviewed by the city to ensure unobstructed overflow areas are provided for a 100-year storm as a protection to new construction in the development and downstream properties.

(g) *Determination of specific requirements.* The charts following this section shall be used to determine if stormwater detention is required.

(h) *Inspection and approval.* All required stormwater detention shall be in place, inspected and approved by the city engineer or his/her staff designees prior to issuance of an occupancy permit. However, installation prior to occupancy may be waived in accordance with section 29-177(g)(6).

(Code 1971, § 32-47(k))

TABLE B-1. RAINFALL INTENSITIES, WATERLOO, IOWA

(Compiled from U.S. Weather Bureau Technical Paper #40)

Rainfall Intensities are in Inches per Hour

(24 hours)	1440	.11	.13	.16	.19	.22	.24	.27
(12 hours)	720	.19	.23	.29	.33	.38	.42	.47

(6 hours)	360	.32	.38	.48	.57	.65	.73	.80
(3 hours)	180	.55	.67	.85	.93	1.10	1.23	1.35
(2 hours)	120	.76	.90	1.15	1.31	1.55	1.70	1.85
Storm Duration (Minutes)	90	1.03	1.23	1.53	1.76	2.00	2.20	2.50
	60	1.29	1.54	1.95	2.22	2.55	2.82	3.15
	50	1.44	1.72	2.14	2.46	2.80	3.08	3.50
	40	1.65	1.97	2.45	2.82	3.20	3.52	4.00
	30	2.06	2.46	3.06	3.52	4.00	4.40	5.00
	20	2.57	3.07	3.82	4.40	5.00	5.50	6.25
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		1-year	2-year	5-year	10-year	25-year	50-year	100-year
		Storm Frequency (Years)						

TIME OF CONCENTRATION

(Overland Flow)

;reserved=38.6p;

EXAMPLE: Bare, Rocky Soil on 1.5% Slope. Find Time of Concentration for Overall Length of 1000 feet.	PROCEDURE: Connect Overland Condition (1) with Slope (2). Where Line Crosses the Pivot Line (3), Extend a Line from the Length (4) through the Pivot Line (3) to the Time of

	Concentration (5).

RUNOFF COEFFICIENTS FOR VARIOUS AREAS

Type of Drainage Area	Runoff Coefficient, C
Residential:	
Single ~~family~~unit areas	0.30—0.50
Multiunits, detached	0.40—0.60
Multiunits, attached	0.60—0.75
Apartment dwelling areas	0.50—0.70
Suburban	0.25—0.40
Business:	
Downtown areas	0.70—0.95
Neighborhood areas	0.50—0.70
Industrial:	
Light areas	0.50—0.80
Heavy areas	0.60—0.90
Parks, cemeteries	0.10—0.25
Playgrounds	0.20—0.35
Railroad yard areas	0.20—0.40
Unimproved areas	0.10—0.30

Streets:	
Asphalt	0.70—0.95
Concrete	0.80—0.95
Brick	0.70—0.85
Gravel	0.45—0.60
Drives and walks	0.75—0.85
Roofs	0.75—0.95
Lawns:	
Sandy soil, flat (0—2% slope)	0.05—0.10
Sandy soil, average (2—7% slope)	0.10—0.15
Sandy soil, steep (7% or greater slope)	0.15—0.20
Heavy soil, flat (0—2% slope)	0.13—0.17
Heavy soil, average (2—7% slope)	0.18—0.22
Heavy soil, steep (7% or greater slope)	0.25—0.35

RUNOFF COEFFICIENTS FOR RURAL AREAS

Topography and Vegetation	Open Sandy Loam	Clay and Silt Loam	Tight Clay
Woodland:			
Flat (0—5% slope)	0.10	0.30	0.40
Rolling (5—10% slope)	0.25	0.35	0.50

Hilly (10—30% slope)	0.30	0.50	0.60
Pasture:			
Flat	0.10	0.30	0.40
Rolling	0.16	0.36	0.55
Hilly	0.22	0.42	0.60
Cultivated:			
Flat	0.30	0.50	0.60
Rolling	0.40	0.60	0.70
Hilly	0.52	0.72	0.82

Secs. 29-88—29-105. - Reserved.

Sec. 29-76. - Generally.

The regulations specified in this chapter shall be subject to the exceptions and interpretations set out in this division.

(Code 1971, § 32-47)

Sec. 29-77. - Review of proposed public improvements by planning and zoning commission.

(a) No statuary, memorial or work of art in a public place, and no public building, bridge, viaduct, street fixture, public structure or appurtenance, shall be located or erected, or a site therefor obtained, nor shall any permit be issued by any department of the city for the erection or location thereof, until and unless the design and proposed location of any such improvement shall have been submitted to the city planning and zoning commission and its recommendations thereon obtained. If the commission disapproves the proposed improvement, it may be approved by the city council only by an affirmative vote of a simple majority of all the membership of the council.

(b) Such requirements for recommendations shall not act as a stay upon action for such improvements where such commission, after 60 days' written notice requesting such recommendations, shall have failed to file the recommendations.

(Code 1971, § 32-47(h))

Sec. 29-78. - Use of existing lots of record.

In any district where dwellings are permitted, a single-~~family~~unit dwelling may be located on any lot or plot of official record as of April 3, 1970, irrespective of its area or width; and, in addition, any two-~~family~~unit dwelling may be located on any lot or plot in an R-3 residence district that has a lot width of not less than 60 feet and a lot area of not less than 8,000 square feet and is of official record as of April 3, 1970, provided, however, that:

(1) The sum of the side yard widths of any such lot or plot shall not be less than 20 percent of the width of the lot, but in no case shall the width be less than five feet for any one side yard.

(2) The depth of the rear yard of any such lot need not exceed 20 percent of the depth of the lot, but in no case shall the depth be less than ten feet.

(3) In the case of a lot of record where the requirements of subsection (1) or (2) of this section are greater than those of the district in which it is located, the lesser requirement shall apply.

(4) In the case of platted building setback lines established on lots of record as of April 3, 1970, such setback lines may apply in lieu of those required by this section unless existing adjacent building setbacks are greater than specified on the plat of record, in which case the provisions of sections 29-111 through 29-121 shall apply.

(Code 1971, § 32-47(a); Ord. No. 2023, § 3, 8-23-93; Ord. No. 2299, § 1, 5-8-00; Ord. No. 2329, § 1, 4-9-01)

Sec. 29-79. - Exceptions to height limits.

The building height limitations of this chapter shall be modified as follows:

(1) Chimneys, cooling towers, elevator bulkheads, fire towers, monuments, penthouses, stacks, stage towers or scenery lofts, tanks, water towers, spires and radio or television towers or necessary mechanical appurtenances may be erected to a height in accordance with the ordinances of the city. Wind energy conversion systems shall be permitted in all zoning districts, subject to approval by the board of adjustment. The board of adjustment may compel applicants to provide documentation indicating that the design, construction and operation of the system adequately safeguards the health, safety and welfare of the occupants of all adjoining and surrounding properties.

(2) Public, semipublic or public service buildings, hospitals, medical clinics, senior housing facilities, nursing homes, housing for the elderly, professional offices, professional services, sanatoriums or schools, or other uses permitted in a district, may be erected to a height not exceeding 60 feet to the ridge line or top of the roof, and churches and temples, when permitted in a district, may be erected to a height not exceeding 75 feet, if the building is set back from each building setback line at least one foot for each foot of additional building height above the height limit otherwise provided for in the district in which the building is built. The additional setback area must be provided in open green space with living landscape material, berming and other vegetative screening elements along any property line adjacent to a public right-of-way. The building will utilize high quality materials such as brick, natural stone, glass or other materials used in the neighborhood. These materials shall be incorporated on all sides of the building. In addition, restrictive covenants, developmental agreements or design guidelines may be used to further supplement the building or site design.

(3) Single-~~family~~unit dwellings and two-~~family~~unit dwellings in the dwelling districts may be increased in height by not more than ten feet when two side yards of not less than 15 feet each are provided, but they shall not exceed three stories in height.

(Code 1971, § 32-47(b); Ord. No. 2843, § 1, 5-18-15; Ord. No. 2888, § 1, 11-7-16)

Sec. 29-80. - Exceptions to lot area requirements.

In any district where public water supply or public sanitary sewer is not accessible, the lot area requirements shall be determined and approved by the planning and zoning commission upon recommendation by the county board of health, the city public works department and the department of developmental services. The commission shall evaluate the longterm use of the property and projected provision of public service to the area to determine the lot size and type of water and sewer service to be required. However, should public water or public sewer not be available, the minimum lot size required shall not be less than 15,000 square feet nor more than three acres. In all cases, if the lot requirement of the district is more restrictive than this regulation, the district lot requirement shall apply.

(Code 1971, § 32-47(c))

Sec. 29-81. - Measurement of rear or side yard when yard opens onto alley.

In computing the depth of a rear yard or the width of a side yard where the rear or side yard opens on an alley, one-half of the alley width may be included as a portion of the rear or side yard, as the case may be.

(Code 1971, § 32-47(e))

Sec. 29-82. - Yards for double frontage lots.

Buildings on through lots and extending through from street to street shall provide the required front yard on both streets.

(Code 1971, § 32-47(d))

Sec. 29-83. - Other exceptions to yard requirements.

(a) *Obstructions in required yards.* Every part of a required yard shall be open to the sky, unobstructed with any above-grade building or structure with the following exceptions:

(1) The ordinary projections of skylights, sills, belt courses, cornices, roof eaves and ornamental features, such projections not to exceed 36 inches.

(2) Handicap accessible ramps, railings or walkways that may extend to the property line in order to accommodate handicap access and egress.

(3) The usual steps of enclosed or unenclosed porches, stoops, or other entryways, said steps to extend no closer than five feet from the property line.

(4) Unenclosed and unroofed decks may extend no closer than five feet from a side yard property line. Said unenclosed and unroofed decks shall extend no further than ten feet into the required front yard or required rear yard area.

(5) Other decorative lawn ornaments such as bird feeders, lighting fixtures, art work, or any similar item not recognized by the uniform building code as a building or structure shall be allowed.

(6) Permitted accessory structures and fences. Said accessory structures, including but not limited to garages or storage sheds, shall not be allowed in any portion of a required front yard.

(b) *Swimming pools.* In all residential zoning districts detached above-ground and in-ground swimming pools are permitted for private use. The size and location of said swimming pools on the site will be governed by the regulations controlling detached accessory structures (section 19-115). However, said swimming pools will be allowed the area permitted in section 29-115 exclusive of any existing or

proposed accessory structures on the lot, provided that minimum setbacks and building separations are maintained. No permanent swimming pools will be permitted in the required front yard. In addition, a fence measuring at least five feet in height shall be established around the perimeter of said swimming pool.

(c) *Rowhouses and condominiums.* In all districts providing for multiple-~~family~~unit dwellings, the front, rear and side yard requirements shall apply to the building where utilized as a row or condominium dwelling, and shall not be required for each individual unit.

(d) *Conversion of duplex to bi-attached dwelling.* In the case of a duplex conversion to bi-attached dwelling status, the front, rear and side yard requirements shall apply to the duplex structure as a whole, as required by the zoning classification in which the duplex is located, if the duplex was constructed prior to March 9, 1981.

(Code 1971, § 32-47(f); Ord. No. §§ 4, 5, 8-23-93; Ord. No. 2163, § 1, 10-14-96)

Sec. 29-84. - Satellite receiving dishes.

Satellite receiving dishes shall be permitted in all districts subject to the following:

(1) Satellite receiving dishes shall be classified as an incidental use, and shall not be permitted upon a lot unless such lot has a principal permitted use located thereon. No more than one dish shall be permitted on any parcel.

(2) The size of satellite receiving dishes shall not be subject to the total square footage limitation for accessory buildings as outlined in section 29-115, but the dish shall be set back at least two feet from private property lines as measured at the most extreme axis.

(3) A building permit shall be issued by the city prior to the installation or structural alteration of any satellite receiving dish. The dish shall meet all requirements of the building and electrical codes.

(4) No satellite receiving dish shall be permitted within a provided front yard, or within any portion of a required side yard lying closer to the front lot line than the rear of the principal structure.

(5) Satellite receiving dishes shall not exceed a maximum height of 20 feet, as measured at the most extreme vertical axis.

(6) Roof-mounted satellite receiving dishes shall be restricted to commercial and industrial zoning districts, and shall not extend more than ten feet above the height limit established for the district in which the structure is located.

(7) No satellite receiving dish shall be permitted to cause electrical disturbances, nor interfere with the transmission of communication signals to adjacent properties.

(Code 1971, § 32-47(f))

Sec. 29-85. - Enclosing of open porches.

An existing open porch may be remodeled or rebuilt to an enclosed nonhabitable vestibule entranceway, which may include closet space, when projecting not more than one-fourth of the width of the residence.

(Code 1971, § 32-47(g))

Sec. 29-86. - Walls, fences and hedges.

(a) In any residential or agricultural zoning district, a wall, fence or hedge not to exceed four feet in height may be located and maintained on any part of a lot, except in the case of a corner lot it shall not exceed three feet in height above the curb level in the triangular area formed by the intersection of two public rights-of-way, excluding alleys, with two sides of the triangle being 30 feet in length along the abutting public right-of-way line measured from their point of intersection and the third side being a line connecting the ends of the other two lines. However, a fence not to exceed four feet in height may be located within this triangular area if it is constructed of materials which provide openings of not less than 75 percent in area of the vertical surface of the fence to permit transmission of light, air and vision through the vertical surface at a right angle. A wall, fence or hedge not to exceed eight feet in height may be located and maintained anywhere on a lot to the rear line of the required front yard. However, in the case of a corner lot or reversed lot, it shall not be closer to the property line than to the rear of the side yard requirement. Fences shall be constructed of materials commonly used for landscape fencing, such as masonry, block, lumber or chain link, but shall not include corrugated sheetmetal, barbed wire or salvage material, or be electrified.

(b) In any commercial or industrial zoning district, no wall or fence, except as noted in this subsection, shall be located or maintained within the following described areas:

(1) The areas of property on both sides of an accessway, driveway or alley formed by an intersection with a public right-of-way with two sides of each triangle being formed by lines extending a distance of ten feet in length from the point of intersection and the third side being a line connecting the ends of the ten-foot sides.

(2) The area of property located at a corner formed by the intersection of two public rights-of-way, excluding alleys, with two sides of the triangle being 30 feet in length along the abutting public right-of-way lines measured from their point of intersection, and the third side being a line connecting the ends of the other two lines.

However, fences not exceeding height requirements may be located within these triangular areas if constructed of materials which provide openings of not less than 75 percent in area of the vertical surface of the fence to permit transmission of light, air and vision through the vertical surface at a right angle. No structure, material storage, vehicle or other obstruction shall be situated therein preventing the view of traffic approaching the intersection from either way.

(c) In any commercial zoning district, a wall, fence or hedge not to exceed eight feet in height may be located and maintained on any part of a lot, except as provided in subsection (b) of this section.

(d) In any industrial zoning district, a wall, fence or hedge not to exceed ten feet in height may be located and maintained on any part of a lot, except as provided in subsection (b) of this section.

(e) In any commercial or industrial zoning district, fences shall not be constructed of salvage material, shall not be electrified, and shall not use barbed wire closer than six feet to the ground or higher than the maximum allowable fence height in the applicable zoning district.

(f) In all zoning districts, no portion of any wall, fence or hedge shall extend beyond the owner's private property line.

(g) Fences used solely for permitted livestock containment purposes may be electrified or utilize barbed wire or corrugated sheet metal within the height requirements of the applicable zoning district.

(h) No wall, fence or hedge shall be so located as to obstruct the view of traffic approaching an intersection from any direction.

(i) No wall, fence or hedge shall be located as to obstruct direct access to a fire hydrant from the public right-of-way, nor shall any wall, fence or hedge be situated closer than four feet to a fire hydrant.

(Code 1971, § 32-47(j))

Sec. 29-87. - Stormwater detention.

(a) *Required; request for review.* In all zoning districts, in connection with every industrial, commercial, business, trade, institutional, recreational or dwelling use, and similar uses, stormwater detention shall be provided and shall be subject to the review and approval of the city engineer. A request for stormwater detention review shall be accompanied by two copies of plans showing all existing landscaping, surface treatments, structures, measurements and elevations and two copies of plans showing proposed improvements, surface types, measurements, elevations, stormwater detention calculations and method of detention. In all zoning districts, all uses shall provide stormwater detention in accordance with the criteria in this section.

(b) *Exceptions.* Stormwater detention will not be required for:

(1) Individual single-~~family~~unit dwelling units, duplexes, bi-attached dwelling units or similar uses or lots with low runoff coefficients.

(2) All uses on undeveloped lots of record as of September 26, 1983, where the difference between the runoff of a ten-year frequency rainfall, as applied to the entire lot, including the proposed improvements, is less than or equal to one cubic foot per second when compared to the amount of total stormwater runoff generated from a two-year frequency rainfall on the lot as it existed in its natural, undeveloped state. However, following initial development, should any deed transfer, lot split, resubdivision or addition reduce the computed lot area or increase the amount of impervious surface, increasing the runoff by an amount greater than one cubic foot per second, then stormwater detention shall be provided for the entire lot in conformance to the criteria in subsection (c) of this section.

(3) Additions to existing structures or new structures on developed lots of record as of September 26, 1983, where the total stormwater runoff generated from a ten-year frequency rainfall, applied to the entire area of the addition or new structure, including the proposed improvements and required parking addition, is less than or equal to one cubic foot per second when compared to the amount of total stormwater runoff generated from a two-year frequency rainfall on the affected area in its existing state. However, following completion of the proposed addition or new structure without stormwater detention, should any deed transfer, lot split, resubdivision, new addition or structures be added to the lot which reduce the computed lot area or increase the amount of impervious surface such that the sum of the improvements generate a runoff greater than one cubic foot per second, then stormwater detention shall be provided for all additions or new structures added after September 26, 1983, in conformance to the criteria in subsection (c) of this section.

(4) Reconstruction, repair or replacement of uses on developed lots in conformance with all other applicable sections of this chapter and this Code, provided that such reconstruction, repair or replacement may not increase the total stormwater runoff generated by the lot as it existed prior to reconstruction. Should the reconstruction, repair or replacement generate runoff greater than that discharged prior to construction, the lot shall conform to the criteria in subsection (b)(3) of this section.

(5) Individual lots recorded after September 26, 1983, if the plat in which the lots are located provides stormwater detention for all lots, onsite or offsite, equal to the difference between the total stormwater runoff generated from a ten-year frequency rainfall applied to the entire plat, including proposed improvements, public and private, and a two-year frequency rainfall applied to the site as it existed in its natural undeveloped state.

(6) Any lot where a governmental body or private drainage district has provided overall drainage basin detention facilities and the city has waived by resolution the detention criteria for individual lots in that basin.

(c) *Detention requirements.* All lots not exempted by subsection (b) of this section shall detain all onsite stormwater runoff equal to the difference between the total stormwater runoff generated from a ten-year frequency rainfall as applied to the entire lot, including the proposed improvements, and a two-year frequency rainfall applied to the lot as it existed in its natural undeveloped state.

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(e) *Waivers.* Stormwater detention requirements may be waived by the city council following receipt of sufficient written justification from the property owner indicating that it is not physically or economically feasible to detain stormwater and that such discharge will not be injurious to downstream properties in the drainage basin.

(f) *Evaluation of drainage system.* All developments and subdivisions which are required by this section to provide stormwater detention or installation of a public storm sewer system shall provide an evaluation of the 100-year storm overflow from the development's primary drainage system. The evaluation will be reviewed by the city to ensure unobstructed overflow areas are provided for a 100-year storm as a protection to new construction in the development and downstream properties.

(g) *Determination of specific requirements.* The charts following this section shall be used to determine if stormwater detention is required.

(h) *Inspection and approval.* All required stormwater detention shall be in place, inspected and approved by the city engineer or his/her staff designees prior to issuance of an occupancy permit. However, installation prior to occupancy may be waived in accordance with section 29-177(g)(6).

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Apartment dwelling areas	0.50—0.70
Suburban	0.25—0.40
Business:	
Downtown areas	0.70—0.95
Neighborhood areas	0.50—0.70
Industrial:	
Light areas	0.50—0.80
Heavy areas	0.60—0.90
Parks, cemeteries	0.10—0.25
Playgrounds	0.20—0.35
Railroad yard areas	0.20—0.40
Unimproved areas	0.10—0.30
Streets:	
Asphalt	0.70—0.95
Concrete	0.80—0.95
Brick	0.70—0.85
Gravel	0.45—0.60
Drives and walks	0.75—0.85

Roofs	0.75—0.95
Lawns:	
Sandy soil, flat (0—2% slope)	0.05—0.10
Sandy soil, average (2—7% slope)	0.10—0.15
Sandy soil, steep (7% or greater slope)	0.15—0.20
Heavy soil, flat (0—2% slope)	0.13—0.17
Heavy soil, average (2—7% slope)	0.18—0.22
Heavy soil, steep (7% or greater slope)	0.25—0.35

RUNOFF COEFFICIENTS FOR RURAL AREAS

Topography and Vegetation	Open Sandy Loam	Clay and Silt Loam	Tight Clay
Woodland:			
Flat (0—5% slope)	0.10	0.30	0.40
Rolling (5—10% slope)	0.25	0.35	0.50
Hilly (10—30% slope)	0.30	0.50	0.60
Pasture:			
Flat	0.10	0.30	0.40
Rolling	0.16	0.36	0.55
Hilly	0.22	0.42	0.60
Cultivated:			

	Flat	0.30	0.50	0.60
	Rolling	0.40	0.60	0.70
	Hilly	0.52	0.72	0.82

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City of Cedar Falls, Iowa

Zoning & Overlay Map

Item 5.F.

Date
2/7/2018

R-1	One & Two Unit Residential
R-1SF	One Unit Only Residential
R-2	One & Two Unit Residential
R-3	Multiple Unit Residential
R-4	Multiple Unit Residential
R-5	Acreage Residential
RP	Planned Residential
MU	Mixed Use Residential
C-1	Neighborhood Commercial
C-2	Retail Commercial
C-3	High Density Commercial
HWY-1	Highway Commercial
PC-2	Planned Commercial
PO-1	Professional Office District
MPC	Major Thoroughfare Planned Com.
BR	Business/Research District
S-1	Shopping Center
M-1	Light Industrial
M-2	Heavy Industrial
M-P	Planned Industrial
P	Public
A-1	Agricultural

Zoning Overlay

- Central Business District
- College Hill Neighborhood
- Highway 20
- Highway Coridoor & Greenbelt