City of Lawrence
Douglas County
PLANNING & DEVELOPMENT SERVICES

Updated:
2/23/15 @ 11:45am
Added communications for the following items:
Item 2 - Special Use Permit for 1100 Kasold Dr
Items 3A & 3C - Rezoning & Preliminary Plat for Alvamar

2/20/15 @ 2:30pm
Added the following:
Item 5 - Text Amendment for Parking & Access Standards
Communications for Item 1 - Conditional Use Permit for 1211 E 600 Rd
Communications for Items 3A & 3C - Rezoning & Preliminary Plat for Alvamar
Draft January 26, 2015 Planning Commission Minutes

2/19/15 @ 4:30pm
Added Items 3A & 3C - Rezoning & Preliminary Plat for Alvamar; 1800, 1809, 2021 Crossgate

2/18/15 @ 4:30pm
The following items will be added when available:
Item 3A & 3C - Rezoning & Preliminary Plat for Alvamar; 1800, 1809, 2021 Crossgate
Item 5 - Text Amendment for Parking & Access Standards
Draft January 26, 2015 Planning Commission Minutes

LAWRENCE-DOUGLAS COUNTY METROPOLITAN PLANNING COMMISSION
CITY HALL, 6 EAST 6TH STREET, CITY COMMISSION MEETING ROOM
AGENDA FOR PUBLIC & NON-PUBLIC HEARING ITEMS
FEBRUARY 23 ~~& 25~~, 2015 6:30PM - 10:30PM

GENERAL BUSINESS:

PLANNING COMMISSION MINUTES
Receive and amend or approve the minutes from the Planning Commission meeting of January 26, 2015.

COMMITTEE REPORTS
Receive reports from any committees that met over the past month.

COMMUNICATIONS
a) Receive written communications from the public.
   Communications regarding duplex parking regulations
b) Receive written communications from staff, Planning Commissioners, or other commissioners.
   Oread Design Guidelines; Timeline & Future Steps for Adoption
c) Receive written action of any waiver requests/determinations made by the City Engineer.
d) Disclosure of ex parte communications.
e) Declaration of abstentions from specific agenda items by commissioners.

AGENDA ITEMS MAY BE TAKEN OUT OF ORDER AT THE COMMISSION'S DISCRETION

REGULAR AGENDA (FEBRUARY 23, 2015) MEETING
PUBLIC HEARING ITEMS:

ITEM NO. 1 CONDITIONAL USE PERMIT FOR NEW COMMUNICATION TOWER; 1211 E 600 RD (SLD)

CUP-14-00550: Consider a Conditional Use Permit for a new 198' self-supporting communication tower located at 1211 E 600 Rd. Submitted by SSC, Inc and Horvath Communications for Verizon Wireless on behalf of Rex and Shirley Johnson, property owners of record.

ITEM NO. 2 SPECIAL USE PERMIT FOR PRECIOUS ONE'S LEARNING CENTER; 1100 KASOLD DR (KES)

SUP-14-00488: Consider a Special Use Permit for Precious One's Learning Center, located at 1100 Kasold Dr. The proposal includes four pre-school classrooms accommodating approximately 50 children on weekdays. Submitted by Precious One's Learning Center, for Christ Community Church, property owner of record.

ITEM NO. 3A RS7, RM12, PUD TO RM24; 51.85 ACRES; 1800, 1809, & 2021 CROSSGATE DR (SLD)

Z-14-00552: Consider a request to rezone approximately 51.85 acres from RS7 (Single-Dwelling Residential) District, RM12 (Multi-Dwelling Residential) District, and PUD [Alvamar] (Planned Unit Development) District to RM24 (Multi-Dwelling Residential) District including property located at 1800, 1809, and 2021 Crossgate Dr. Submitted by Paul Werner Architects on behalf of Alvamar Inc, property owner of record.

****DEFERRED****

~~**ITEM NO. 3B PUD TO RS7; 5.18 ACRES; N SIDE OF QUAIL CREEK DR (SLD)**~~

~~**Z-14-00553**: Consider a request to rezone approximately 5.18 acres from PUD [Alvamar] (Planned Unit Development) District to RS7 (Single-Dwelling Residential) District located along the north side of Quail Creek Drive. Submitted by Paul Werner Architects on behalf of Alvamar Inc, property owner of record.~~

NON-PUBLIC HEARING ITEMS:

ITEM NO. 3C PRELIMINARY PLAT FOR ALVAMAR INC ONE ADDITION; 1800, 1809, & 2021 CROSSGATE DR (SLD)

PP-14-00554: Consider a Preliminary Plat for Alvamar Inc One Addition, a six lot subdivision containing 51.85 acres, including property located at 1800, 1809, and 2021 Crossgate Dr. The proposed subdivision is proposed to support future residential and recreational uses. Submitted by Paul Werner Architects on behalf of Alvamar Inc, property owner of record.

****DEFERRED****

~~**ITEM NO. 3D PRELIMINARY PLAT FOR ALVAMAR INC TWO ADDITION; N SIDE OF QUAIL CREEK DR (SLD)**~~

~~**PP-14-00555**: Consider a Preliminary Plat for Alvamar Inc Two Addition, a one lot subdivision containing 5.18 acres with frontage on the north side of Quail Creek Drive. The subdivision is proposed to support future low-density residential development. Submitted by Paul Werner Architects on behalf of Alvamar Inc, property owner of record.~~

RESUME PUBLIC HEARING:

ITEM NO. 4 TEXT AMENDMENT FOR INCUBATOR SPACE (SLD)

TA-14-00535: Consider a Text Amendment to the City of Lawrence Land Development Code to add a *Use* that provides incubator space for business/entrepreneurial collaboration and prototyping. Staff will provide a memo for the commission consideration regarding options and articles within the Development Code that would need to be amended. *Initiated by Planning Commission on 11/17/14.*

ITEM NO. 5 TEXT AMENDMENT FOR PARKING & ACCESS STANDARDS (SMS)

TA-13-00235: Continue discussion related to proposed Text Amendments to the City of Lawrence Land Development Code, Article 9 and related sections of Chapter 20, for comprehensive revisions to parking and access standards. Discussion will focus on defining types of Major Recreational Equipment and identifying permitted parking locations for this equipment on residential properties. *Action on this item will not occur until after the commission completes their discussion on several of the elements of the code language and a final draft is available for their review.*

MISCELLANEOUS NEW OR OLD BUSINESS

Consideration of any other business to come before the Commission.

ADJOURN

CALENDAR

January						**2015**
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

February						**2015**
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March						**2015**
Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

PCCM Meeting: (Generally 2nd Wednesday of each month, 7:30am-9:00am)

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2015
LAWRENCE-DOUGLAS COUNTY METROPOLITAN PLANNING COMMISSION
MID-MONTH & REGULAR MEETING DATES

Mid-Month Meetings, Wednesdays 7:30 – 9:00 AM (*Friday Meeting)	**Mid-Month Topics**	**Planning Commission Meetings 6:30 PM, Mon & Wed**	
Jan 14	Work Plan & Topics for 2015	Jan 26	Jan 28
Feb 11	Entrepreneur Incubator Spaces	Feb 23	Feb 25
Mar 11		Mar 23	Mar 25
Apr 8	Legal Review – Open Meetings & Communication Issues	Apr 20	Apr 22
May 6	APA Conference updates	May 18	May 20
Jun 10	Health Impact Assessments - Charlie Bryan, LDCHD	Jun 22	Jun 24
Jul 8 or 10	*TBD – Orientation?*	Jul 20	Jul 22
Aug 12 or 14	*TBD – Orientation?*	Aug 24	Aug 26
Sep 9	*TBD*	Sep 21	Sep 23
Oct 7	*TBD*	Oct 19	Oct 21
Nov 4	*TBD*	Nov 16	Nov 18
Dec 2	*TBD*	Dec 14	Dec 16

	Suggested topics for future meetings: *How City/County Depts interact on planning issues* *Stormwater Stds Update – Stream Setbacks* *Overview of different Advisory Groups – potential overlap on planning issues* *Joint meeting with other Cities' Planning Commissions* *Joint meeting with other Cities and Townships – UGA potential revisions* *New County Zoning Codes* *Tour City/County Facilities* *Water Resources*	*Communication Towers – Stealth Design, # of co-locations, notice area* *WiFi Connectivity & Infrastructure Planning* *Oread Overlay Districts & Design Guidelines* *Comprehensive Plan – Goals & Policies* *Sustainability* *Affordable Housing* *Retail Market Impacts* *Cultural Plan/9th Street Cooridor* *Case Studies*
Meeting Locations	The Planning Commission meetings are held in the City Commission meeting room on the 1st floor of City Hall, 6th & Massachusetts Streets, unless otherwise noticed.	

Planning & Development Services |Lawrence-Douglas County Planning Division |785-832-3150 | www.lawrenceks.org/pds

Revised 01/26/15

2015 PLANNING COMMISSION ATTENDANCE

	Jan 26 2015	Feb 23 2015					
Britton	Yes						
Culver	Yes						
Denney	Yes						
Graham	Yes						
Josserand	Yes						
Kelly	Yes						
Liese	Yes						
Struckhoff	Yes						
von Achen	Yes						

2015 MID-MONTH ATTENDANCE

	Jan 14 2015	Feb 11 2015					
Britton	Yes	Yes					
Culver	Yes	Yes					
Denney	Yes	Yes					
Graham	No	No					
Josserand	No	No					
Kelly	Yes	No					
Liese	Yes	Yes					
Struckhoff	Yes	Yes					
von Achen	Yes	Yes					

City of Lawrence
Douglas County
PLANNING & DEVELOPMENT SERVICES

PLANNING COMMISSION MEETING
January 26, 2015
Meeting Minutes DRAFT

January 26, 2015 – 6:30 p.m.
Commissioners present: Britton, Culver, Denney, Graham, Josserand, Liese, Struckhoff, von Achen.
Commissioner Kelly was absent for a portion of the meeting.
Staff present: McCullough, Stogsdill, Crick, Day, Larkin, M. Miller, Pepper, Ewert

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PLANNING COMMISSION MINUTES

Receive and amend or approve the minutes from the Planning Commission meeting of December 15, 2014.

Motioned by Commissioner Britton, seconded by Commissioner Struckhoff, to approve the December 15, 2014 Planning Commission minutes.

Motion carried 8-0. Commissioner Kelly was not present for the vote.

COMMITTEE REPORTS

Receive reports from any committees that met over the past month.

Commissioner Britton said the Horizon 2020 Steering Committee met twice in January. He said they were working through the information they received and putting it into an issues action report that would identify things that they would like to do in the new plan. He said the governing bodies would see it in the future.

EX PARTE / ABSTENTIONS / DEFERRAL REQUEST

- No ex parte.
- No abstentions.

ITEM NO. 1 PRELIMINARY DEVELOPMENT PLAN FOR HUTTON FARMS WEST PHASE II; N SIDE OF PETERSON RD BETWEEN DAYLILLY DR & WILMA WAY (SLD)

PDP-14-00511: Consider a Preliminary Development Plan for Hutton Farms West Phase II, located on 16.4 acres on the north side of Peterson Road between Daylily Drive and Wilma Way. The plan includes 87 units of duplex and detached residential units. Submitted by Paul Werner Architects, for North Forty LC, property owner of record.

STAFF PRESENTATION
Ms. Sandra Day presented the item.

APPLICANT PRESENTATION
Mr. Paul Werner, Paul Werner Architects, said this was an extension of a project that started over 10 years ago. He said most of the conditions on the staff report dealt with the Utility Department. He said the plan included 87 one-story units. He said access to Peterson made the project work better. He said there was a neighborhood meeting last week and concerns were expressed that traffic not cut through this development to get to Hutton Farms West. He said he agreed that the two properties should be divided with a gate system which would allow emergency access to Hutton Farms West and would also serve as a second exit for Hutton Farms West. He said regarding condition 1 in the staff report, there was not enough room to fit a sidewalk on both sides of the street. He said there were multiple pedestrian pathways in the project. He said if they had to put sidewalks on both sides they may have to consider creating a two-story development to make it fit.

PUBLIC HEARING
Mr. Jay Andrews said he was a resident of Hutton Farms West Phase I and that he was speaking on behalf of other residents. He said they were not opposed to the Phase II development but that they were concerned about the timing of the Phase II development. He said it sounded like the access issues would be mitigated. He said there were a number of empty lots in Phase I and it seemed those would stay empty for an indefinite amount of time. He said the Phase II proposal would have 87 units completed by August of this year which would be much quicker than the Phase I development. He wondered when Phase I would be completed. He felt that Phase II should not to start until 80% of the units in Phase I have started construction. He played a short video that showed a dump site for cement and construction equipment. He expressed concern about the dump site growing if Phase II starts before Phase I ends. He said the access gate was important. He also expressed concern about the loss of greenspace.

APPLICANT CLOSING COMMENTS
Mr. Werner said the project would take about a year to build so that Phase II could be done in April or May of 2016. He said an access gate would be shown on the revised preliminary and final plat. He said most of the construction blight was on the side they were talking about tonight. He said the developer that constructed Hutton Farms West was disappointed with how sales had gone out there. He said the developer would like to build it and be done. He said he would remind the builder about picking up the site and that the builder should be doing a better job.

COMMISSION DISCUSSION
Commissioner Liese asked staff to comment about the sidewalks.

Mr. McCullough said sidewalks were recreational and a transportation system. He said the issue of safety was with crossing of the street. He said staff's position was that new development should have two sidewalks.

Commissioner Liese said Planning Commission had to think about making an exception to the two sidewalk requirement.

Ms. Day said the approved Final Development Plan did speculate that there would be sidewalks on both sides of the interior street. She said there was a design expectation that sidewalks would be there. She said regarding the utility easement staff could continue to work with the applicant.

Commissioner Culver asked staff about the access gate being part of the Final Development Plan.

Ms. Day said the gate was new to staff. She said there were a few issues with adding gates, such as public safety, that staff would need to discuss with other departments. She said the applicant could provide that with the Final Development Plan.

Mr. McCullough said if it was a required condition then there were ways to insure an access gate was included.

Commissioner Denney asked if the driveways were about 30' long from the front of the house to the street.

Ms. Day said in some cases they were less than 30'. She said under the old code there were design standards that required a minimum of 20' from the structure to the back of the sidewalk. She said staff would look at that in more detail with the Final Development Plan. She said adding another sidewalk to the other side would change things and that the building footprint may need to be adjusted.

Commissioner Denney encouraged staff to have Code Enforcement look at the blight on the site.

Mr. McCullough said he did not recall the issue being reported to Code Enforcement but that it was an issue that could be dealt with.

Commissioner Josserand asked if the market for Hutton Farms was short-term or long-term rental property.

Mr. Werner said both and that Hutton Farms has done well.

Commissioner Josserand asked who owned Hutton Farms.

Mr. Werner said it was owned by Tower Properties out of Kansas City.

Commissioner Josserand asked if there were many students living in Hutton Farms.

Mr. Werner said there was a little bit of everybody living there.

Commissioner Josserand asked how the new area would be distinguished or characterized in terms of the market place.

Mr. Werner said it would expand the availability of Hutton Farms. He said the new development would be all single level and all rental.

Commissioner Josserand asked if the structures would be sold off individually.

Mr. Werner said he would never anticipate that. He said it would be rental and was platted as one lot.

Commissioner Josserand inquired about parking.

Mr. Werner said there would be two car garages with the two-bedroom units.

Commissioner Josserand stated parking standards for duplexes was a concern of his. He asked if Mr. Larry Hatfield who sent a letter to Planning Commission was present this evening. An audience member said he was out of town.

Commissioner Josserand said Mr. Hatfield was known in the community and hardly an unsophisticated person in terms of knowledge of real estate.

Commissioner von Achen asked if there was a relationship between finishing the first development and going on to the second phase.

Mr. McCullough said from staff's perspective, no. He said staff does not necessarily control when the phases occur with market timing.

Commissioner Liese said it was coincidence that the owner owned both properties.

Mr. McCullough said they were different developments and different markets. He said there was no Code position that went one way or the other on the topic.

Commissioner Britton said he recalled a similar concern with property in the county that had multi-phases.

Mr. McCullough said that project was a quarry that had phasing. He said he would not necessarily want to compare this project to a quarry. He said they don't typically look at an adjacent project to see how far along it is when looking at the merits of a proposed project.

Commissioner Liese said Planning Commission could not take a position on where the greenspace was located.

Mr. McCullough said the greenspace was set by the previous plan and with the project from the beginning. He said Planning Commission should consider the gate issue and the sidewalk issue.

Commissioner Liese said the gate issue was mutually agreed upon by the applicant and neighborhood.

Commissioner Denney asked if there was a previous plat that laid out apartments. He wondered if it included sidewalks.

Ms. Day said the Final Development Plan showed the spin of the street and the designated areas of openspace and drainage because those were requirements upfront with Phase I. She said that plan showed sidewalks on both sides and that the street ended in a cul-de-sac.

Commissioner Josserand said a lot of history with land use planning was tied up with sidewalks and putting them into places where they weren't originally constructed. He suggested that if they waive the sidewalk they needed to have a good reason.

Commissioner Britton asked the applicant what could be done with the sidewalk issue. He asked if the solution would be to change the building footprint.

Mr. Werner said he would request the sidewalk be placed to the back of the curb which would get sidewalks on both sides.

Ms. Day said it was probably doable but the City Engineer would need to look at it before the Final Development Plan.

Commissioner Struckhoff felt it was important to have sidewalks on each side of the street. He said he was inclined to support the application.

Commissioner Britton felt it was good to address the access issue with a gate. He wished there was something they could do to make the Phase I development move more quickly but there was nothing that they could do. He said it was troubling to hear there were promises about development not occurring. He regretted there was confusion. He said he would support this development with the various conditions noted in the staff report. He asked staff what they needed for the utility issue.

Mr. McCullough asked that their motion have flexibility to work with the Utility Department.

ACTION TAKEN
Motioned by Commissioner Britton, seconded by Commissioner Struckhoff, to approve Hutton Farms West Phase II Preliminary Development Plan, PDP-14-00511, based upon the findings of fact presented in the body of the staff report and subject to the following conditions:

1. Provision of a revised Development Plan to show the following changes:
    a. Show sidewalks on both sides of all streets within the development.
    b. Revise note 1.9 to indicate street width and that street will be built to City Standards.
    c. Revise note 3.1 to include off street parking provided in both garages and driveways within the development and note that 148 spaces are required and that 294 spaces are provided.
2. Provision of a note on the face of the plan indicating the Planning Commission approval of reduced setbacks for units A, B & C as shown in Figure 9 on page 1-10 of report.
3. Provision of a revised Development Plan that includes the following notes and changes:
    a. A note stating who shall own and maintain the common open space within the Planned Development boundary.
    b. Provision of a revised Preliminary Development Plan per the approval of the City Stormwater Engineer to include the following changes:
        i. Show two new curb inlets to be installed over the existing 30" CMP on the south end of Lou Lou Lane. Provide one on the west side and one on the east side of Lou Lou Lane.
        ii. Specify that all curb inlets will be constructed per City storm sewer standard details.

iii. Label the existing storm sewer pipes including the length of pipe run, pipe diameter, material, and slope (i.e. 90 L.F. 15" HDPE @ 0.5%). Label the existing storm sewer structures, including structure dimensions, structure type and elevations (i.e. 4'x4' Curb Inlet, FL Out (S): 900.49 T/Inlet: 902.75).

c. Provision of a revised Preliminary Development Plan per the approval of the City Utility Engineer to include the following changes:
   i. ~~For the existing 15' utility easement east of the homes on the east side of Lou Lou Lane, add 2.5 feet of U/E on the west side of the existing U/E and 5 feet of U/E on the east side of the existing U/E~~. *Utility easements to be revised per staff and applicant.*
   ii. Clarify how the two homes on the west side of Gertie Court nearest to Lou Lou Lane have access to the sanitary sewer for their service.
   iii. For sanitary sewers that are allowed to be in front of the homes, confirm that manhole lids will not be located in driveways.
   iv. Coordinate with Fire Medical if a fire hydrant needs to be located on or near the entrance of Gertie Court and show location of hydrants.

4. Gated access for egress to the neighborhood to the east.

Commissioner Denney asked if the motion was to include a sidewalk on both sides however it got worked out.

Commissioner Britton said yes.

Commissioner Denney expressed concern about the distance from the front of the building to the end of the curb. He said the applicant commented briefly about trying to keep the development to one-story. He suggested a few feet smaller would do the same thing.

Motion carried 8-0. Commissioner Kelly was not present for the vote.

PC Minutes 1/26/15 **DRAFT**

ITEM NO. 2 SPECIAL USE PERMIT FOR LAWRENCE CREATES; 512 E 9TH ST (SLD)

SUP-14-00509: Consider a Special Use Permit for Lawrence Creates, a multi-use facility that includes the following: Personal Improvement and Limited Manufacturing and Production uses, located at 512 E 9th. Submitted by Lawrence Creates Inc., for Hill Family Investments LLC, property owner of record.

STAFF PRESENTATION
Ms. Sandra Day presented the item.

APPLICANT PRESENTATION
Mr. Dave Klamet explained what makerspace meant. He said it was a grassroots movement that where people could learn, do, create and share.

PUBLIC HEARING
No public comment.

COMMISSION DISCUSSION
Commissioner Denney asked staff what activity required a variance.

Ms. Day said the woodworking cabinetry element of the use straddled the line of what would be found in a home shop versus the production of multiple units of the same thing. She said this was the best fit for the use.

Commissioner Denney asked if they were simply clarifying that this was okay.

Ms. Day said yes.

Commissioner Liese asked the applicant if the space had air conditioning.

Mr. Klamet said the space did not have air conditioning.

Commissioner Liese inquired about the staff report condition 2b regarding the doors remaining closed.

Mr. McCullough said noise would be an impact to the neighborhood and the proximity to a residential area was why the condition was recommended.

Commissioner Liese wondered how that would be enforced or controlled.

Mr. McCullough said enforcement on a Special Use Permit allowed for revocation if the conditions were not met. He said the doors were to the alley side which was directly out toward residential property. He said the use had been going on for some time without a complaint. He said the Special Use Permit would help mitigate issues related to the use.

Commissioner Liese said he would vote in favor of the item and felt it was good for the community.

Commissioner Denney said fabricating would include a 3-D printer or cutting a piece of tin with tin snips. He suggested they look at a different word than fabricating to get at the issue they were trying to address.

Commissioner Britton agreed with Commissioners comment about the word fabricating. He suggested using wording that addressed noise producing machinery, such as a table saw.

ACTION TAKEN
Motioned by Commissioner Denney, seconded by Commissioner Graham, to approve Special Use Permit, SUP-14-00509, for Lawrence Creates, a multi-use facility that includes Personal Improvement and Limited Manufacturing and Production uses, located at 512 E 9th, based upon the findings presented in the body of the staff report and subject to the following conditions:

1. Execution of a Site Plan Performance Agreement.
2. Provision of a revised site plan to include a note that states;
    a. *"Exterior storage of materials, equipment or products is prohibited. Exterior fabrication of products is prohibited."*
    b. *~~"Doors shall remain closed when operating noise emanating power equipment such as circular saws, table saws, ban saws, and sanders fabricating in working shop area."~~ The doors facing west (alley side) shall remain closed when operating noise-producing power equipment from within the building such as, but not limited to, circular saws, table saws, band saws, and electric sanders. The doors may remain open if low noise-producing tools and fabrication methods are used in the operation of the use*.

Motion carried 8-0. Commissioner Kelly was not present for the vote.

ITEM NO. 3 COMPREHENSIVE PLAN AMENDMENT TO HORIZON 2020 CHAPTER 14 (JSC)

CPA-14-00516: Consider a Comprehensive Plan Amendment to *Horizon 2020:* Chapter 14 (*An Area Plan for the Intersection Area of West 6th Street & Wakarusa Drive*) to revise the maximum retail cap from 127,487 square feet to 137,490 square feet to permit a commercial/retail development, located at 525 Wakarusa Drive. Submitted by Schwerdt Design Group, Inc., for CPC Ventures, Inc., property owner of record.

ITEM NO. 4A CO TO CC600-PD; 2.982 ACRES; 525 WAKARUSA DR (MKM)

Z-14-00515: Consider a request to rezone approximately 2.982 acres from CO (Office Commercial) District to CC600-PD (Community Commercial with Planned Development Overlay) District, located at 525 Wakarusa Drive. Submitted by Schwerdt Design Group, Inc. for CPC Ventures, Inc., property owner of record.

ITEM NO. 4B PRELIMINARY DEVELOPMENT PLAN FOR A RESTAURANT & RETAIL USE; 525 WAKARUSA DR (MKM)

PDP-14-00517: Consider a Preliminary Development Plan for a Restaurant and Retail use located on approximately 2.982 acres at 525 Wakarusa Dr. Submitted by Schwerdt Design Group, Inc., for CPC Ventures, Inc., property owner of record.

STAFF PRESENTATION
Mr. Jeff Crick presented item 3.
Ms. Mary Miller presented items 4A and 4B together.

APPLICANT PRESENTATION
Mr. Mike Hampton, Schwerdt Design Group, agreed with the staff recommendation.

PUBLIC HEARING
No public comment.

COMMISSION DISCUSSION
Commissioner von Achen asked staff about allowable square footage for each quadrant.

Mr. Crick said traditionally the values for quadrants were divided up to provide adequate spacing of square footage for the node. He said in the case of the CC600 the 600,000 square feet would be divided in some measure among the four quadrants. He said with this particular node when it was designated as a CC200 it was already in excess of 200,000 square feet. He said the number was derived from what was built already and what was expected to be built and was then rounded to the best guess.

Commissioner Josserand asked if the parcel was in the transportation district.

Mr. McCullough said no, it was not in the TDD for Bauer Farm.

Commissioner Britton asked if Wal-Mart was already there when it was zoned Commercial-Office in 2009.

Mr. McCullough said yes.

Commissioner Denney asked if this would bring it into line with the surrounding properties.

Mr. McCullough said in terms of zoning, yes.

Commissioner Denney asked what the area west of Wal-Mart was zoned.

Ms. Miller said it was zoned RM24 and RM15.

Commissioner Josserand said when the intersection was first designated to be a commercial node with limitations on property it was for CC200.

Mr. McCullough said that was the tool in the tool belt they had at the time.

Commissioner Josserand asked if it ever received a CC400 designation.

Mr. McCullough said no.

Commissioner Josserand said there was a node at 6th & K-10 and another node at 6th & Wakarusa. He said this would get them close to halfway between the two nodes.

Mr. McCullough said it was fully within the current node.

Commissioner Josserand said they were in some ways commercializing it more.

Mr. McCullough said the northwest corner of the node was called out in the nodal plan as the corner best suited for commercial retail uses. He said they were very careful on the Bauer Farm side to divide that property up with Champion Lane where there was a west commercial part and an east residential-office part. He said the southern corners of the node were essentially built out at the time of the planning exercises. He said they added a little bit to Congressional Way because they felt that boundary was a reasonable boundary.

Commissioner Josserand said single-family residential was wiped out on the east side.

Mr. McCullough said there was still a residential component east of Champion Lane.

Commissioner Josserand said it was all high-density multi-family. He said the development of the intersection and node caused him heartburn. He said he would make a symbolic vote against the project.

Commissioner Britton inquired about the proximity of the bar use to Free State High School.

Ms. Miller said the bar use was far enough away from the school.

ACTION TAKEN on Item 3
Motioned by Commissioner Culver, seconded by Commissioner von Achen, to approve the Comprehensive Plan Amendment, CPA-14-00516, to *Horizon 2020,* Chapter 14: Specific Plans, and *An Area Plan for the Intersection Area of West 6th Street & Wakarusa Drive* to revise the retail/commercial square-footage cap from 127,487 square feet to 143,637 square feet, and

recommends forwarding this Comprehensive Plan Amendment to the Lawrence City Commission with a recommendation for approval.

Motion carried 7-1, with Commissioner Josserand voting in opposition. Commissioner Kelly was not present for the vote.

Motioned by Commissioner Culver, seconded by Commissioner Struckhoff, to approve and sign Planning Commission Resolution PCR-14-00546.

Motion carried 8-0. Commissioner Kelly was not present for the vote.

ACTION TAKEN on Item 4A
Motioned by Commissioner Culver, seconded by Commissioner von Achen, to approve the rezoning request, Z-14-00515, from CO (Commercial Office) to CC600-PD (Community Commercial with Planned Development Overlay) District and forwarding it to the City Commission with a recommendation for approval based on the findings of fact found in the body of the staff report subject to the following conditions:

1) Approval of the Comprehensive Plan Amendment, CPA-14-00459, revising the land use recommendations in the *Area Plan for the Intersection Area of West 6th Street & Wakarusa Drive* to increase the amount of Commercial/retail square footage permitted in the northwest quadrant of the intersection.
2) The maximum area of commercial/retail uses (as defined in the Comprehensive Plan) that may be located within this CC600 District boundary is 16,150 sq ft.

Commissioner Britton said he had heartburn about the idea that this was not too long ago rezoned. He said he was hesitant about tinkering with a highly planned area. He said he felt comfortable with this particular project and would support the motion.

Commissioner Josserand said he agreed with Commissioner Britton's comment and said he would vote in favor of the motion.

Commissioner Denney said he was hesitant about the closeness of this node to the 6th & K-10 node and the danger of this being a larger geographical area than the regional center on South Iowa. He said he would support the motion because it was the common sense thing to do.

Motion carried 8-0. Commissioner Kelly was not present for the vote.

ACTION TAKEN on Item 4B
Motioned by Commissioner Culver, seconded by Commissioner von Achen, to approve the Preliminary Development Plan, PDP-14-00517, based upon the findings of fact presented in the body of the staff report and subject to the following conditions:

Approval of the Comprehensive Plan Amendment revising the *Area Plan for the Intersection Area of West 6th Street & Wakarusa Drive* to increase the amount of commercial area available for this corner of the intersection prior to the recording of the Final Development Plan with the Douglas County Register of Deeds.
Approval of the rezoning request and publication of the rezoning ordinance for the CC600-PD zoning prior to the recording of the Final Development Plan.

Provision of a revised Preliminary Development Plan with the following changes:

Addition of a continuous hedge of evergreen shrubs for perimeter parking lot landscaping along the Overland Drive and Wakarusa Drive parking area frontages.

Addition of a note indicating the amount of Commercial building area that is provided with this plan.

Minor technical changes per Planning approval.

Motion carried 8-0. Commissioner Kelly was not present for the vote.

PC Minutes 1/26/15 **DRAFT**

ITEM NO. 5 TEXT AMENDMENT FOR SHORT-TERM LOAN OR CAR TITLE LOAN BUSINESS (MKM)

TA-14-00534: Consider a Text Amendment to the City of Lawrence Land Development Code to create a use group for short-term loan or car title loan business, or similar business, and establish standards. *Initiated by Planning Commission on 11/17/14.*

STAFF PRESENTATION
Ms. Mary Miller presented the item.

PUBLIC HEARING
Ms. Cille King, League of Women Voters, said payday advance and car title loan businesses were not desirable and should have more restrictions on them.

ACTION TAKEN
Motioned by Commissioner Struckhoff, seconded by Commissioner Denney, to approve Text Amendment, TA-13-00534, to establish a use group for short-term loan or similar businesses amending Sections 20-402, 20-403, and 20-1744 of the Land Development Code and that the Planning Commission forward a recommendation for approval to the City Commission.

Motion carried 8-0. Commissioner Kelly was not present for the vote.

PC Minutes 1/26/15 **DRAFT**

ITEM NO. 6 TEXT AMENDMENT FOR PARKING & ACCESS STANDARDS (SMS)

TA-13-00235: Continue discussion related to proposed Text Amendments to the City of Lawrence Land Development Code, Article 9 and related sections of Chapter 20, for comprehensive revisions to parking and access standards. Proposed revisions include defining Major Recreational Equipment and identifying permitted parking locations for this equipment on residential properties. *Action on this item will not occur until after the commission completes their discussion on several of the elements of the code language and a final draft is available for their review.*

Commissioner Patrick Kelly arrived back at the meeting at 8:47pm

STAFF PRESENTATION

Ms. Sheila Stogsdill recapped the motions made by Planning Commission during past meetings.

COMMISSION DISCUSSION

Commissioner Denney said there were many driveways that were 30' or less from the curb line. He said they discussed previously that nothing should be parked 18' from the curb line. He said what they decided earlier would prevent any of the people living in duplexes from parking cars in their driveway. He wondered if they really wanted to do that.

Commissioner Liese said they were discussing RV type items, not cars.

Commissioner Denney asked if a car or truck could be parked there but not a camper.

Commissioner Liese said yes, that's what they were saying.

Commissioner Denney said a large pickup truck could block the view just as much as a pop-up camper.

Commissioner Liese asked staff if any of the discussion tonight was about cars.

Mr. McCullough said no. He said Commissioner Denney's point was well taken. He said they had to make some distinctions between RV type items that were big and tall and could obstruct views versus a vehicle.

Commissioner Denney said an SUV could be parked in a driveway back to the sidewalk but not a pop-up camper.

Mr. McCullough said that was correct. He said during last month's discussion they focused mainly on large RV's. He said they had not answered the question yet about if they wanted to see different sizes. He said Planning Commission answered yes to the question that motorized vehicles 22' long should be allowed in the driveway 18' from curb.

Commissioner Denney said even if it was a motorized RV.

Mr. McCullough said yes.

Commissioner Liese said he thought what they were trying to say was that vehicles used on a regular basis could be parked in the driveway. He said they were trying to prevent safety issues with long term parking of utility type vehicles.

Commissioner Graham asked if they had restricted the number of days of parking.

Mr. McCullough said no.

Commissioner Struckhoff said it would be easier to enforce if they produced a list of arbitrary lengths or types. He felt they needed to lump a bunch of stuff together.

Commissioner Kelly said according to the Recreational Vehicle Industry Association the definition of RV was: "A vehicle designed as temporary living quarters for recreational, camping, travel or season use. RVs may be motorized or towable." He said at some point they needed to talk about trailers and RV trailers.

Commissioner Denney expressed concern about restricting people who use trailers for mowing on the weekends, for example.

Commissioner Britton said unless they could find a way to make sure what was allowed was not obnoxious the best thing may be to not allow them in front. He said seeing a trailer in a neighbor's driveway long term could be as or more obnoxious than an RV that was twice as big. He said he would not want to see that in his neighbors drive.

Commissioner Graham agreed with Commissioner Britton. She said it would be easier to put trash or random things on trailers which could be seen versus inside a pop-up camper where it couldn't be seen.

Commissioner Denney felt they may be in danger of coming up with solutions for problems that didn't exist. He said when the issue first came up there were safety concerns involved but he wasn't comfortable with creating regulations for aesthetic purposes.

Commissioner Liese said they could not negate aesthetics in the community.

Commissioner Denney said he believed there were a large number of people in Lawrence who used trailers that don't cause safety hazards or wellbeing issues. He wanted to be sure they weren't creating a regulation that shut off people who weren't causing hazards. He said a 30' trailer parked out to the curb was a problem and there should be something done about those types of safety issues.

Commissioner Kelly said he struggled with this because he understood people use trailers for hauling things. He said what he did not want is a trailer sitting in one spot long term.

Mr. McCullough said the length of time would complicate enforcement.

Commissioner Kelly said from an aesthetic standpoint trailers could be uglier than RV's. He said that people also use utility trailers for good purposes. He said he was trying to weigh the possible use of trailers against it taking the place of a car in the driveway for months at a time.

Commissioner Josserand said parking in the Oread was so difficult that they didn't have a lot of trailers in that neighborhood. He said if they were talking aesthetics he invited them to assist in trying to keep hold of the few aesthetics in the Oread Neighborhood had. He said he could live with a wide variety of regulations on the issue but felt they should move it forward to City Commission.

Commissioner Struckhoff said when people purchase a trailer or RV they should have a place to store it and it shouldn't be out in the front yard at all. He wanted to accommodate people who needed and frequently used a trailer.

Commissioner Josserand said there were lots of communities that were much more strict with these kinds of vehicles and they looked better. He said some communities had no standards.

Commissioner von Achen said ideally there shouldn't be anything parked in the front driveway but that it wasn't realistic. She said some yards did not have access to areas on the side or back to park a trailer. She said she would not object to a small trailer in the front drive and felt they were less objectionable than a huge RV. She said she wouldn't necessarily like it but that some lots may not leave any other choice but to park in the front.

Commissioner Culver said he could support a utility trailer in front of the house with limitations.

ACTION TAKEN
Motioned by Commissioner Graham, seconded by Commissioner Britton, to prohibit parking non-motorized utility trailers of any size in front of the house.

Commissioner Denney asked if the motion excluded boat trailers or other types of trailers.

Commissioner Graham said that was correct.

Commissioner Liese said they were voting on utility trailers only.

Commissioner Denney asked if they would consider amending the motion to include some sort of time length.

Commissioner Graham said not at this time.

> Motion carried 5-4, with Commissioners Britton, Graham, Josserand, Kelly, and Liese voting in favor of the motion. Commissioners Culver, Denney, Struckhoff, von Achen, voted in opposition.

PC Minutes 1/26/15 **DRAFT**

MISCELLANEOUS NEW OR OLD BUSINESS

Consideration of any other business to come before the Commission.

MISC NO. 1 SIX MONTH REVIEW OF SPECIAL USE PERMIT FOR 603 TENNESSEE ST

Six Month Review (June-December 2014) for the Special Use Permit, SUP-14-00049, of Runaway Pony Bed & Breakfast, 603 Tennessee Street.

MISC NO. 2 APA NATIONAL CONFERENCE

American Planning Association National Conference in Seattle April 18-21, 2015.
www.planning.org/APA15

Mr. McCullough said staff was looking for another Planning Commissioner to be on the Oread Design Guidelines Committee.

Commissioner Liese nominated Commissioner Culver. Nomination approved 8-0-1 with Commissioner Culver abstaining.

ADJOURN 9:51pm

Lawrence Association of Neighborhoods

February 7, 2014

Dear Planning Commissioners,

The Lawrence Association of Neighborhoods (LAN) supports a change in the parking regulations for duplexes from "stacked parking" to **one parking space per BR**, the same as all other multi-family dwelling units. The building of duplexes has become a problem throughout the city because the lower parking standard is a financial incentive for developers to add more renters without providing adequate parking. Stacked parking allows for a 50% reduction in the normally required parking standard for most other multi-family housing. Cars now spill over into the street taking up shared public space and sometimes reducing emergency access.

Duplexes have historically been allowed to have stacked parking, which is appropriate for family use due to the shared use of cars. Duplex zoning is intended to be transitional zoning from single-family zoned areas to multi-family zoned areas. Today duplexes are no longer primarily family-oriented or modest in size. Many are being built with 4 BR's on each side and parking has become a neighborhood problem.

Oversized duplexes threaten the destruction of historic homes and degrade the livability and attractiveness to homeowners and tenants in all neighborhoods. A duplex can by-pass city code that limits the number of unrelated individuals that can live in a single-dwelling unit (house or house like), 4 in multi-family and 3 in single-family zoned areas. A duplex is considered 2 units on one property that can house as many as 8 unrelated individuals in multi-family zoned areas and 6 unrelated individuals in single-family zoned areas. When a duplex is sited on what would otherwise be a single lot, this amounts to double the number of unrelated individuals allowed by city code.

Given the high density of these units, they should have the same parking requirement as all other multi-family and congregate living units – one parking space per BR.

Thank you for your consideration,

Linda Bush, Chair
Lawrence Association of Neighborhoods

LawrenceNeighborhoods@gmail.com | lawrenceneighborhoods.wordpress.com | 785-330-3113

Dear Planning Commissioners, 1-9-15

The Oread Residents Association (ORA) is encouraged by your willingness to examine the regulations regarding duplex zoning. Duplex zoning has become a problem in our neighborhood as well as other neighborhoods in the city. It is considered to be a lower zoning area but today it is looking more like high-density zoning but without providing adequate parking as is required in high-density zoned areas. Duplexes have historically been allowed to have "stacked parking", which is appropriate for family use due to the shared use of cars.

In recent years "stacked parking" has become an incentive for developers to be able to add more renters without providing adequate parking and the size of the units has often doubled in size from 2 BR's to 4BR's on each side. **"**Stacked parking," allows for a 50% reduction in the normally required parking standard. All other multi-family units require one parking space per BR- **no** stacked parking. Cars from Duplex units are now spilling into the streets congesting and degrading the Oread Neighborhood as well as other neighborhoods in the city.

A duplex can get around the city code that limits the number of unrelated individuals that can live in a single-dwelling unit (house or house like) - 4 in multi-family and 3 in single-family zoned areas. A duplex is considered 2 units on one property that can house as many as 8 unrelated individuals. They are more like apartment complexes than single-dwelling units. Over-sized duplexes create more revenue for investors, less expense for parking, more problems for neighborhoods.

Duplex zoning is intended to be low density and are often in areas that transition from single-family zoned areas to multi-family zoned areas**. Given the numbers of adults living in today's duplexes, density and parking is a problem.** Parking is not adequate. Over-sized duplexes threaten the historic homes in the Oread Neighborhood and degrade the livability and attractiveness to homeowners and tenants in all neighborhoods.

Since duplexes are no longer family oriented or modest in size, they should have the same parking requirement as all other multi-family and congregate rental units- *one parking space per BR.*

Thank you for your consideration, Candice Davis ORA chair

Memorandum
City of Lawrence/Douglas County
Planning and Development Services

TO: **Oread Design Guidelines Subcommittee**

FROM: **Jeff Crick, AICP, Planner II**

CC: **Scott McCullough, Director, Planning and Development Services**
Lynne Braddock Zollner, Historic Resources Administrator

Date: **February 6, 2015**

RE: **Oread Design Guidelines: Timeline & Future Steps for Adoption**

History
The establishment of the Oread Design Guidelines was an action step of the Oread Neighborhood Plan, which was adopted by the City Commission in September 2010. In spring 2011, city staff applied for and received a Historic Preservation Fund grant to draft design guidelines for the overlay districts identified in the plan, which was accepted by the City Commission on June 7, 2011. Staff subsequently issued a request for proposals for a consultant for the project which resulted in the selection of Urban Development Services with Ann Benson McGlone.

Staff began working with the consultant in January 2012. The first visit by the consultants occurred in February 2012 where they met with staff, design professionals, The Oread Residents Association representatives, and Oread Neighborhood Association representatives.

The first round of public meetings occurred on April 13th and April 14th 2012. Over 400 letters were mailed to property owners, an email was sent to the Oread Neighborhood Plan email listserv, newspaper ads were published advertising the meetings, and information was posted on the City of Lawrence website. The April 13th meeting was held at the Lawrence Public Library where approximately 30 people attended where the consultants were introduced, the general concepts of design guidelines were discussed, and a community input activity was completed. This activity was used to identify preferences and what items/issues are important in the neighborhood. The information from this activity was later used as the goals of the guidelines. The April 14th workshop at the Carnegie Building was held for attendees to help identify development patterns within the neighborhood.

The next public meeting was held on May 3rd at the Lawrence Public Library where approximately 20 people attended. The consultants provided a summary and the findings of the April meetings, and showed pictures to understand what type of density

and development the attendees would find acceptable in the neighborhood. Over 400 letters were mailed to property owners, an email was sent to the Oread Neighborhood Plan email listserv, and information was posted on the City of Lawrence website for this meeting.

The 4th public meeting was held on August 2nd, 2012 at the Lawrence Public Library where approximately 15 people attended. The consultants introduced details of the draft design guidelines, though the actual document was not provided.

In January 2013, a joint Planning Commission/Historic Resources Commission subcommittee was established to review the draft of the Oread Design Guidelines, in order to prepare them for public consumption and review. Each commission appointed two members to this subcommittee. The review process continued through 2014 and is planned to be completed in the spring of 2015, at which time a draft will be made available for public comment.

Future Steps

Staff provides the following **tentative** schedule to delineate the upcoming process for completing the Oread Design Guidelines:

1. Planning Commission/Historic Resources Commission Sub-Committee Review: February – April, 2015
2. Neighborhood Meeting to Present Guidelines: May – June, 2015
3. Full Historic Resources Commission/Planning Commission Joint Review of Draft: July – August, 2015
4. Historic Resources Commission/Planning Commission Joint Public Hearing: September - October 2015
5. Presentation and consideration of the Oread Design Guidelines by the City Commission: November – December, 2015

Planning Commission

Key Links

City of Lawrence Douglas County
PLANNING & DEVELOPMENT SERVICES

Plans & Documents

- Horizon 2020
- Sector/Area Plans
- Transportation 2040
- 2012 Retail Market Study

Development Regulations

- Community Design Manual
- County Zoning Regulations
- Land Development Code
- Subdivision Regulations

Online Mapping

- City of Lawrence Interactive GIS Map
- Douglas Co. Map Viewer
- Submittals to the Planning Office

Planning Commission

- Bylaws
- Mid-Months & Special Meetings
- Minutes
- Planning Commission Schedule/Deadlines

PLANNING COMMISSION REPORT
Regular Agenda – Public Hearing Item

PC Staff Report
2/23/2015

ITEM NO. 1 CONDITIONAL USE PERMIT FOR VERIZON WIRELESS; 1211 E 600 RD (SLD)

CUP-14-00550: Consider a Conditional Use Permit for a new 189' self-supporting communication tower located at 1211 E 600 Rd. Submitted by SSC, Inc and Horvath Communications for Verizon Wireless on behalf of Rex and Shirley Johnson, property owners of record.

STAFF RECOMMENDATION: Staff recommends approval of the Conditional Use Permit for a communication tower located at 1211 E 600 Rd and forwarding it to the County Commission for a recommendation of approval subject to the following conditions:

1. Provision of a note on the face of the site plan sheet T-1 stating: "The owner at the owner's expense shall remove any tower that is not in use for a period of three years or more." And
2. Provision of a note on the face of the site plan stating: "There shall be a sign placed on the exterior of the fence noting the name and telephone number of the tower owner/operator."

Reason for Request: *Enhancement of the area of Clinton Lake located southwest of the City of Lawrence.*

ATTACHMENTS
1. Site plan
2. RF Justification Report
3. Soils Map
4. Clinton Community Area Map

KEY POINTS
- Property is not encumbered by regulatory floodplain.
- Property is not located within any Lawrence Urban Growth Area.

ASSOCIATED CASES/OTHER ACTION REQUIRED
- Board of County Commissioners' approval of the Conditional Use.
- Submission and approval of a local building permit to Douglas County.
- Obtain a Conditional Use Permit from Douglas County.

PUBLIC COMMENT
- None received

SITE SUMMARY/PROJECT DESCRIPTION

Subject Property:	31.77 Acres
Proposed Improvements:	100' x 100' lease area
	11'6" x 25' 5½" pad for equipment building
	180' self-supporting tower with 9' lightning rod
	Ground equipment includes shelter building with a generator.
	The proposed tower shows space for up to five total carriers

GENERAL INFORMATION	
Current Zoning and Land Use:	A (Agricultural) District. Existing rural residential home on large tract including crop land
Surrounding Zoning and Land Use:	A (Agricultural) District in all directions. Existing rural residential home located along existing county roads and Clinton Lake park land.

I. ZONING AND USES OF PROPERTY NEARBY

The area between the Wakarusa River Arm and the Rock Creek Arm of Clinton Lake is zoned A (Agricultural) District. The property is located within the community of Clinton. Surrounding land uses include several rural residential homes located along county roads, larger agricultural areas are located to the west of the subject property, north and south of N 1200 Road. Clinton Presbyterian Church is located south of the subject property along the north side of N 1200 Road. Much of the area to the northeast and east is part of the Clinton Lake State Park land. This area includes boat access to the lake as well as camping and day-use areas.

South of the subject property, located on the south side of N 1200 Road, includes an area zoned B-3 (Limited Business) District that is developed with a residence and a retail store. This area was platted as part of the Clinton Townsite plat recorded in 1863.

South of the subject property, located on the south side of N 1180 Road, is the Clinton School District #25 building listed on the National Register of Historic Places.

Section 12-319-4.31 (d)(5) requires towers to be located in commercial, industrial or agricultural districts.

Staff Finding – This area, immediately surrounding the subject property, is uniformly zoned A (Agricultural) District. The area to the immediate east and south are developed with residential homes and a church while the surrounding area is used for agricultural purposes. Towers are allowed in the Agricultural District subject to a Conditional Use Permit.

II. CHARACTER OF THE AREA

Clinton, Kansas is a peninsula surrounded by Clinton Lake with the main access from N 851 Diagonal Road, County Road 6. The area includes multiple homes in a traditional urban pattern at the heart of the community. The main road, N 1190 Road/County Road 6, provides direct access to primary camping area along Clinton Lake.

Areas to the west are dominated by larger tracts of land with scattered rural residential homes located along county roads and agricultural fields. The area along the lake shoreline includes dense vegetation except where public access and camping areas are located. The subject property includes an area designated as Class 2 soils. The proposed tower site will occupy a small portion in the northeast corner of the parent parcel.

Staff Finding – This area is largely agricultural west of E 600 Road. Property to the north includes Clinton Lake State Park land.

III. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED

This property is currently restricted to uses allowed in the A (Agricultural) District. This district is associated with agricultural activities such as farms, truck gardens, nurseries, grazing and similar activities. The A (Agricultural) District allows both residential and non-residential uses.

The proposed request does not change the base zoning district or alter the allowed uses. Section 12-319.4.31(d) specifically identifies commercial, industrial or agricultural zoning districts as suitable for communication towers.

Staff Finding – The subject property, zoned A (Agricultural) District, is a suitable district for the proposed use. The base zoning district is not altered by this request. A communication tower is an allowed use in the A (Agricultural) District subject to a Conditional Use Permit.

IV. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

The property is not vacant. This site is developed with a rural residence and related accessory buildings. The zoning has remained unchanged since 1966.

Staff Finding – The property is not vacant. The zoning has remained unchanged since 1966.

V. EXTENT TO WHICH REMOVAL OF RESTRICTIONS WILL DETRIMENTALLY AFFECT NEARBY PROPERTY

Section 12-319-1.01 of the County Zoning Regulations recognize that "*….certain uses may be desirable when located in the community, but that these uses may be incompatible with other uses permitted in a district…when found to be in the interest of the public health, safety, morals and general welfare of the community may be permitted, except as otherwise specified in any district from which they are prohibited."*

Communication towers are specifically recommended to be located in commercial, industrial or agricultural zoning districts.

Property on the south and east sides of the site are developed with homes located on rural residential lots. Visibility of the tower is an aesthetic concern that may be perceived by residents as a detriment. The height of the tower does not require lighting. This will mitigate some concerns by maintaining a "dark sky" in the area.

Staff Finding – Detrimental affects are mostly likely to be categorized as aesthetic in nature. The base zoning district is appropriate for the request. The height of the tower mitigates the requirements for lighting.

VI. RELATIVE GAIN TO THE PUBLIC HEALTH, SAFETY AND WELFARE BY THE DESTRUCTION OF THE VALUE OF THE PETITIONER'S PROPERTY AS COMPARED TO THE HARDSHIP IMPOSED UPON THE INDIVIDUAL LANDOWNERS

Approval of the request expands the structural network of towers and structures that are capable of supporting communication equipment. The proposed request facilitates cellular communications and wireless data use within the community. The proposed equipment does not conflict with existing emergency communication equipment.

The property will remain viable for existing land uses and uses permitted within the A (Agricultural) District.

Staff Finding – The benefit to the public is improved cellular communication and wireless data capacity within the Verizon network. Additionally, the structure provides an opportunity for other carriers to co-locate in the future. If denied, the property can continue to be used for current land uses and those uses allowed per the existing zoning of the property.

VII. CONFORMANCE WITH THE COMPREHENSIVE PLAN

The subject property is not located within an identified Urban Growth Area for any of the incorporated cities in Douglas County. Chapter 10; Community Facilities of *Horizon 2020* addresses public utilities. Key strategies (Page 10-10) primarily address municipal utilities such as water and wastewater planning. One strategy states:

- *The visual appearance of utility improvements will be addressed to ensure compatibility with existing and planned land use areas.*

The plan specifically addressed electric and telephone services and encourages this infrastructure to be placed underground in conjunction with new development where feasible. Communication towers support the wireless industry and accommodate the reduction of hardwire infrastructure. However, it should not be interpreted that wireless communication will replace hardwire needs in the community.

The plan recognizes that "telephone and electric utilities have a strong visual presence in the unincorporated Douglas County Landscape." Large transmission lines and easements should be coordinated throughout the community to minimize visual and environmental impacts. This property and the surrounding area are flat. This tower will be very visible to surrounding property owners.

The Comprehensive Plan does not explicitly address communication towers.

Staff Finding – The comprehensive plan does not provide specific land use recommendations regarding communication towers. A Conditional Use Permit can be used to allow specific non-residential uses subject to approval of a site plan. This tool allows proportional development in harmony with the surrounding area. The proposed request is not inconsistent with the Comprehensive Plan.

STAFF REVIEW
In addition to typical site plan design standards, communication towers must address specific requirements of Section 12-319-4.31 of the County Zoning Regulations. As discussed above, the proposed use is located in an appropriate zoning district.

New communication towers require design that accommodates at least three two-way antennas for every 150' of tower height or co-location space. The proposed tower includes space for multiple (up to 5) carriers. The site plan shows pad sites capable of supporting up to five carriers.

Opportunity to Co-locate
As part of the review of any application for a new communication tower the applicant is required to show justification for need for a new structure and that they have exhausted the possibility to co-locate equipment on another structure or tower in the area. The nearest communications towers are located more than 3 miles from the area intended to be covered.

The applicant's justification report is attached to this application. It shows the existing service coverage as well as the proposed coverage with construction of the new communication tower. The following graphics were prepared by staff to demonstrate the location of the existing towers in proximity to the proposed tower location.

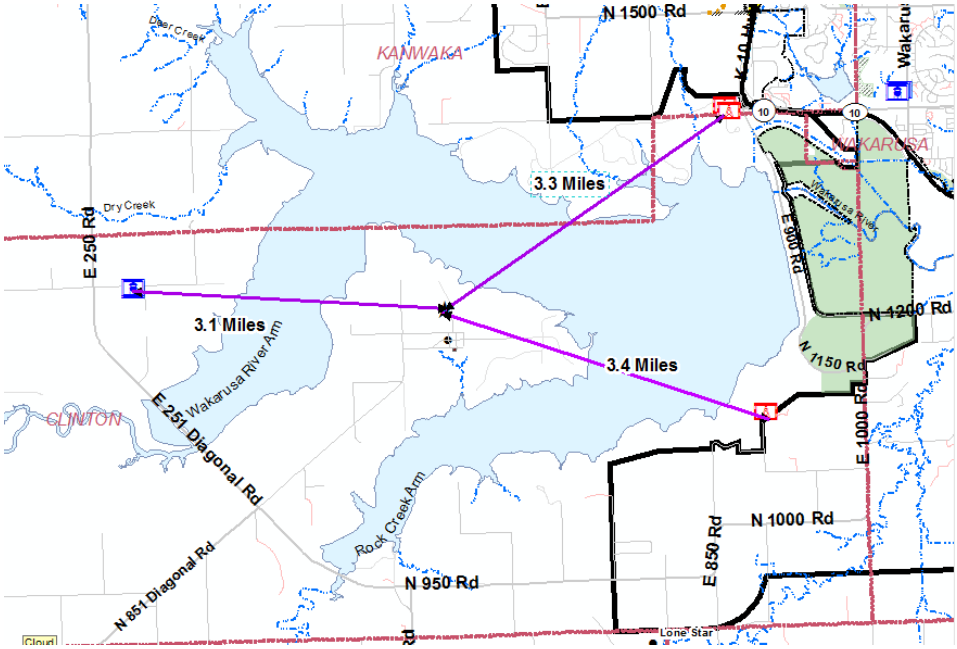


Figure 1: Distance to Nearest Towers

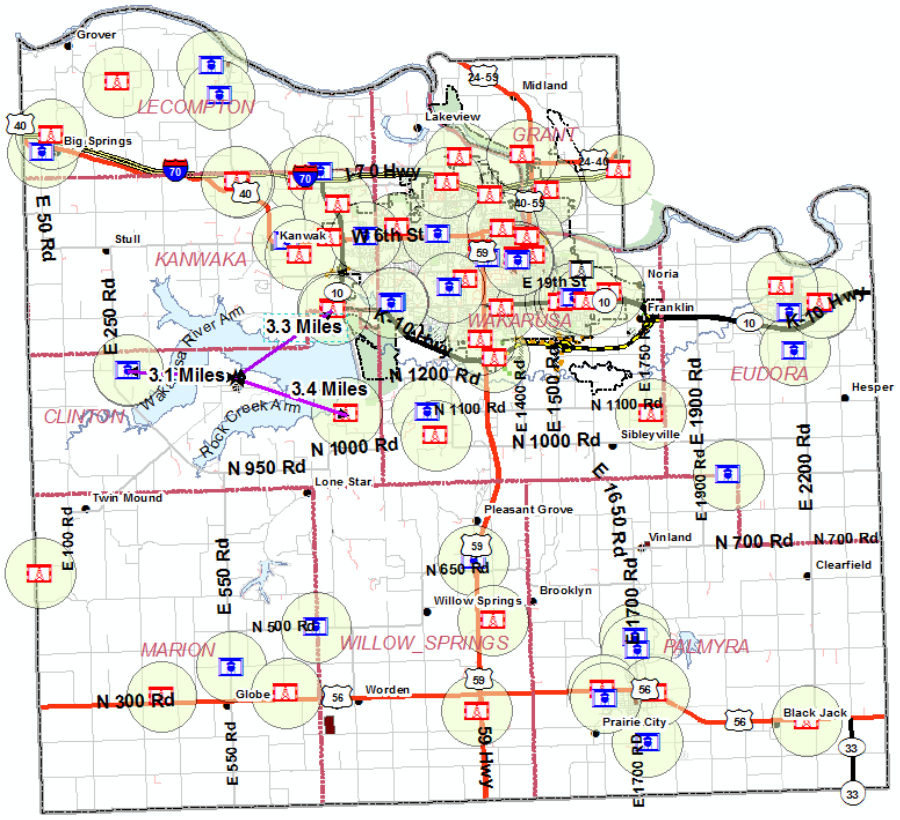


Figure 2: One-Mile Buffer of Existing Towers

Setback
The setback of the communication tower is required per Section 20-319-4.31(d) to be at least equal to the height of the tower to the nearest property line measured from the center of the tower. The tower setback may be reduced when documentation from a registered engineer is submitted certifying the "fall zone" of the tower in the event of a failure. Evaluation of the required structural documentation will continue to be reviewed with the submission of a building permit to the County Zoning and Codes Office. The proposed setback is shown to be 196' from the nearest property line. The proposed tower exceeds the required district setbacks.

The tower and ground equipment will be located in a lease area that is 100' by 100'.

Lighting
Lighting is not proposed with this application for the communication tower. Generally, towers less than 200' are not required to be lit. Lighting of ground equipment must be shielded and directed down.

Access, Circulation, and Off Street Parking
Access to this site is from E 600 Road. The applicant will be required to seek an access permit from the County for the driveway to the tower site. The access drive will provide maintenance access to the tower enclosure. This use does not require off-street parking. The design of the site provides adequate vehicular access and turnaround for maintenance activity at the site. The applicant has been advised that a Douglas County Entrance Permit will be required for this project. This permit will be coordinated with the Building Permit for the site.

Other
This area of land includes extensive shoreline and camping areas that are generally accessible by vehicle from the west side of Clinton Lake. An existing communication tower is located approximately 3.25 miles to the southwest from the subject property. A water tower is located to the northwest of the proposed tower site. The surrounding land uses include large tracts of land that are used for agricultural fields.

Prior to construction of the tower the applicant will be required to obtain a Conditional Use Permit, issued by the County Zoning and Codes Office, as well as applicable building and floodplain development permits.

The subject property includes Class 2 soils. The proposed tower is located in the northeast corner of the site. The majority of the site will not be disturbed with this proposed improvement.

Notes regarding the removal of the tower if vacant for three years or more and provision of signage on the tower providing contact for the owner operator of the tower are needed.

Conclusion
The proposed application meets the required documentation requirements of the County Zoning Regulations as conditioned.

SITE INFORMATION

SITE NAME:	CLINTON LAKE
SITE NUMBER:	HV962
SITE ADDRESS:	1211 E. 600 ROAD LAWRENCE, KS 66047
COUNTY:	DOUGLAS
JURISDICTION:	DOUGLAS COUNTY
SITE COORDINATES:	**N 38° 54' 58.144" (LAT)** **W 95° 23' 33.697" (LON)**
STRUCTURE TYPE:	SELF-SUPPORT
TOWER HEIGHT:	180'
PROPERTY OWNER NAME:	SHIRLEY B. AND REX D. JOHNSON
PROPERTY OWNER ADDRESS:	1211 E. 600 ROAD LAWRENCE, KS 66047
PARCEL NUMBER:	023-125-15-0-00-00-006.00-0
POWER COMPANY:	WESTAR ENERGY (800)-383-1183
FIBER PROVIDER:	AT&T (785)-832-2700
KHA PROJECT MGR.:	CARRIE REINHART

BUILDING CODES AND STANDARDS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

BUILDING/DWELLING CODE:	INTERNATIONAL BUILDING CODE/2012
CONSTRUCTION CODE:	AMERICAN INST. STEEL CONSTRUCTION 13th EDITION
ELECTRIC CODE:	NATIONAL ELECTRIC CODE/2011
FIRE/LIFE SAFETY CODE:	INTERNATIONAL FIRE CODE/2009
DESIGN WIND SPEED:	115 MPH
RISK CATEGORY:	II
EXPOSURE CATEGORY:	C

IN THE EVENT A CONFLICT ARISES BETWEEN STANDARD REQUIREMENTS AND LISTED CODES, THE MORE RESTRICTIVE REQUIREMENT WILL TAKE PRECEDENCE.

SPECIAL NOTES:

HANDICAPPED REQUIREMENTS:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, THEREFORE, HANDICAPPED ACCESS REQUIREMENTS NOT REQUIRED.

PLUMBING REQUIREMENTS:
FACILITY HAS NO PLUMBING OR REFRIGERANTS.

FAA AND FCC REQUIREMENTS:
THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REQUIREMENTS.

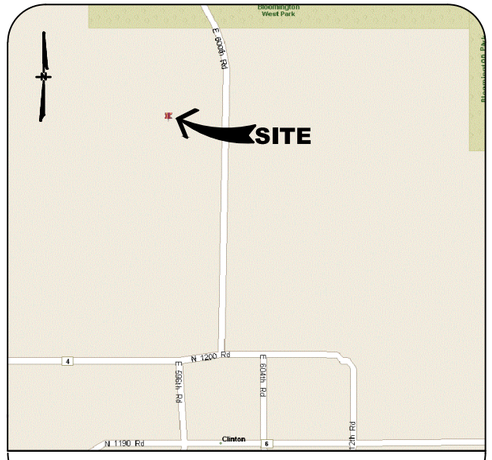
CONSTRUCTION REQUIREMENTS:
ALL WORK MUST CONFORM TO HORVATH & VERIZON WIRELESS CONSTRUCTION INSTALLATION STANDARDS AND ALL APPLICABLE CODES AND ORDINANCES.

PROJECT SCOPE OF WORK:

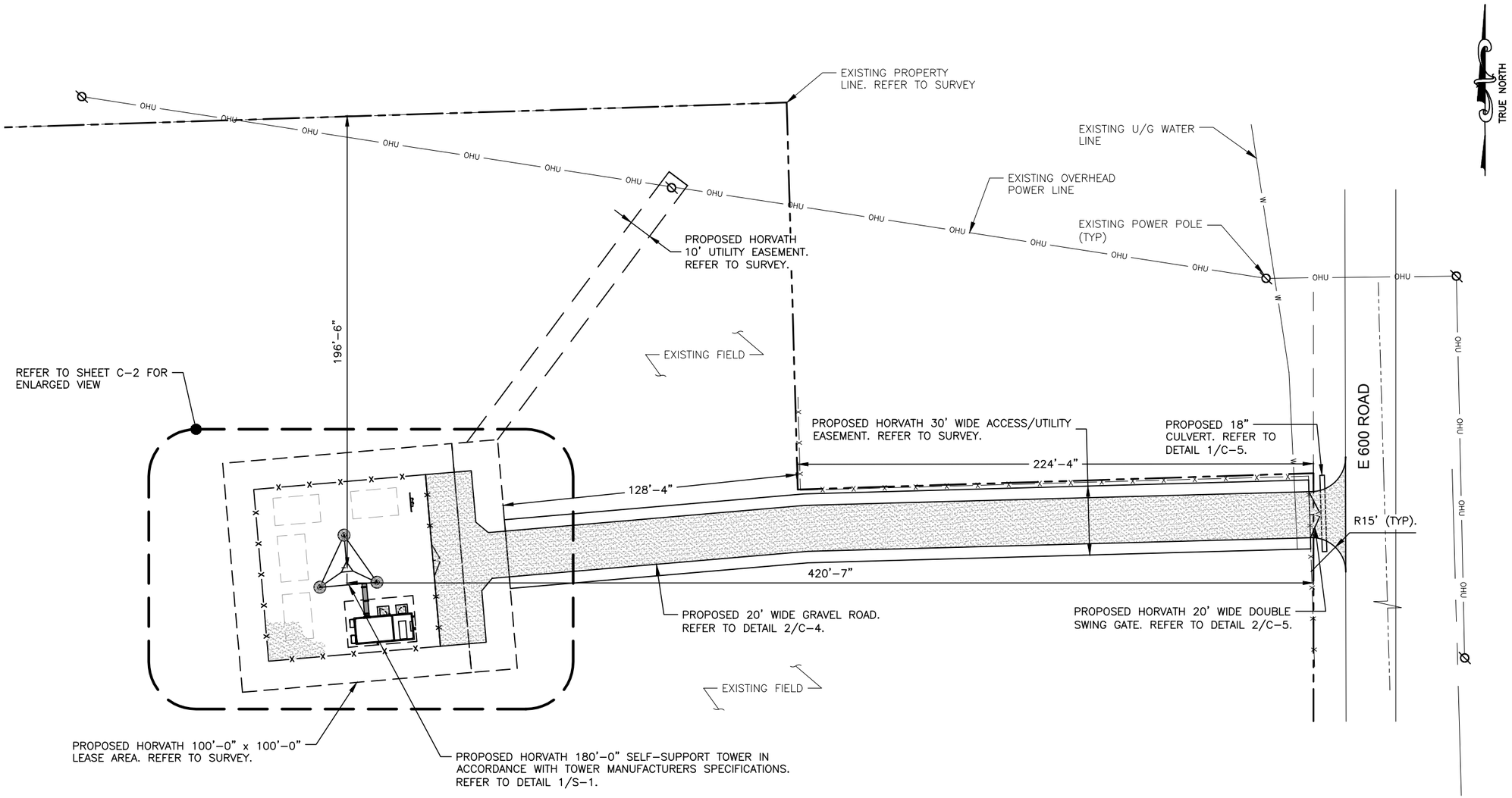
THIS PROJECT CONSISTS OF THE INSTALLATION OF A 180' SELF-SUPPORT TOWER WITH FOUNDATION (REFER TO TOWER DRAWINGS PROVIDED BY TOWER MANUFACTURER), SITE WORK, THE INSTALLATION OF NEW LINES AND ANTENNAS, NEW UNMANNED EQUIPMENT SHELTER, AND ALL ASSOCIATED WORK.

THE CONTRACTOR MUST VERIFY ALL FIELD MEASUREMENTS AND CONDITIONS PRIOR TO BID AND TO COMMENCEMENT OF CONSTRUCTION.

HV962
CLINTON LAKE
RAWLAND



KEY MAP



DIRECTION	REQUIRED SETBACK	PROPOSED TOWER SETBACK
NORTH	±180'	±196'
SOUTH	±180'	±1,049'
EAST	±180'	±436'
WEST	±180'	±868'

1 / C-1 **OVERALL SITE PLAN**
SCALE: 1" = 50'
SCALE BASED ON 11"x17" ONLY

GRAPHIC SCALE
0 25 50 100
(IN FEET)

HORVATH COMMUNICATIONS
312 WEST COLFAX AVENUE
SOUTH BEND IN, 46601
PHONE: (574) 237-0464

verizon wireless
10740 NALL AVENUE, SUITE 400
OVERLAND PARK, KS 66211
(913) 344-2800

PLANS PREPARED BY:
Kimley»Horn
655 NORTH FRANKLIN STREET, SUITE 150
TAMPA, FL 33602
PHONE (813) 620-1460
WWW.KIMLEY-HORN.COM

REV:	DATE:	DESCRIPTION:	BY:
2	02/12/15	REVISED PER COMMENTS	MAM
1	12/11/14	ADDED LANDSCAPE PLAN	MAM
0	10/21/14	ISSUED FOR REVIEW	KBB

DRAWN BY: KBB | CHECKED BY: CAR

KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:

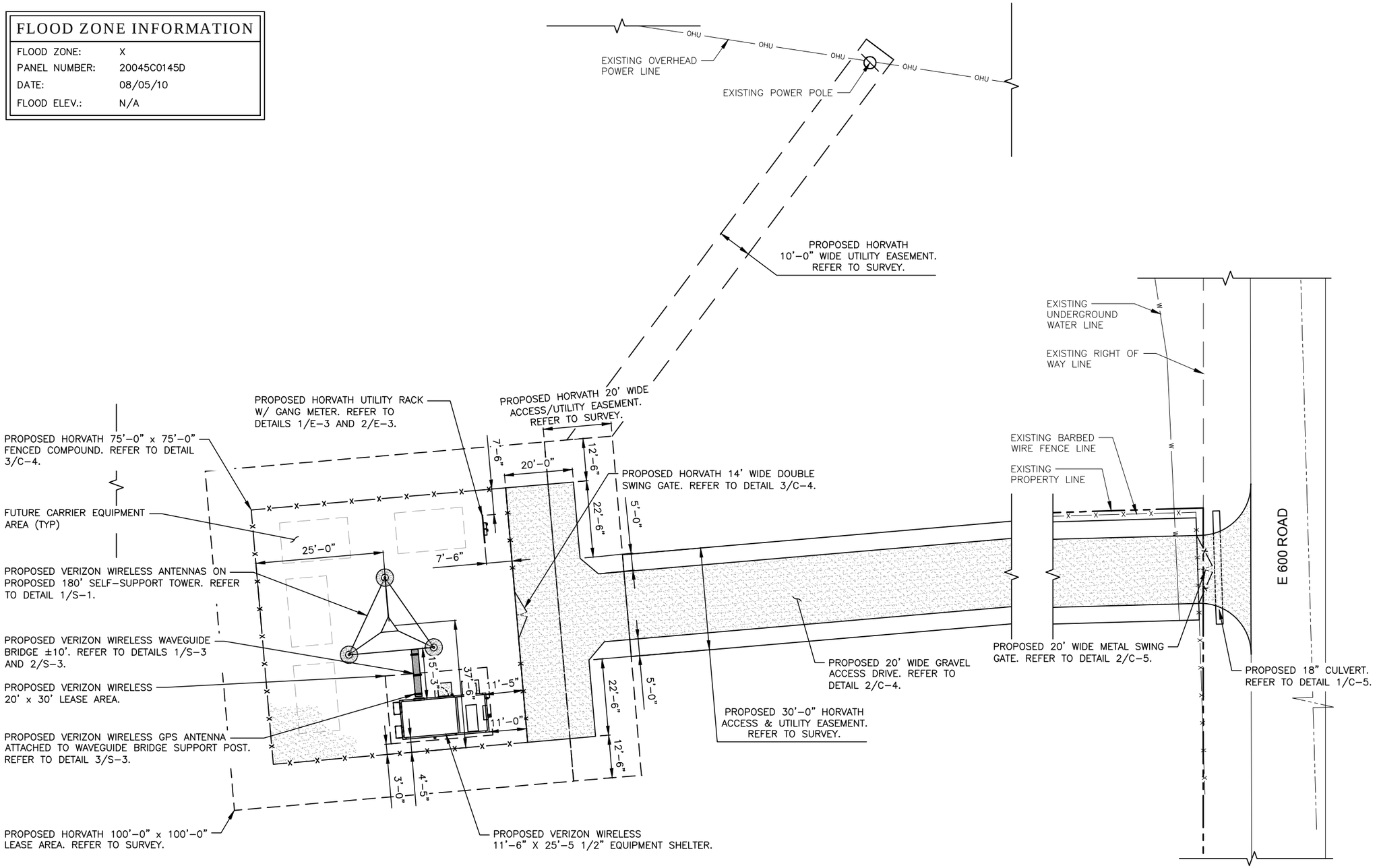
OVERALL SITE PLAN

SHEET NUMBER:

C-1

FLOOD ZONE INFORMATION

FLOOD ZONE:	X
PANEL NUMBER:	20045C0145D
DATE:	08/05/10
FLOOD ELEV.:	N/A



1 / C-2 **SITE PLAN**
SCALE: 1" = 30'
SCALE BASED ON 11"x17" ONLY

GRAPHIC SCALE

0 15 30 60

(IN FEET)

HORVATH COMMUNICATIONS
312 WEST COLFAX AVENUE
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DRAWN BY: KBB | CHECKED BY: CAR

KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

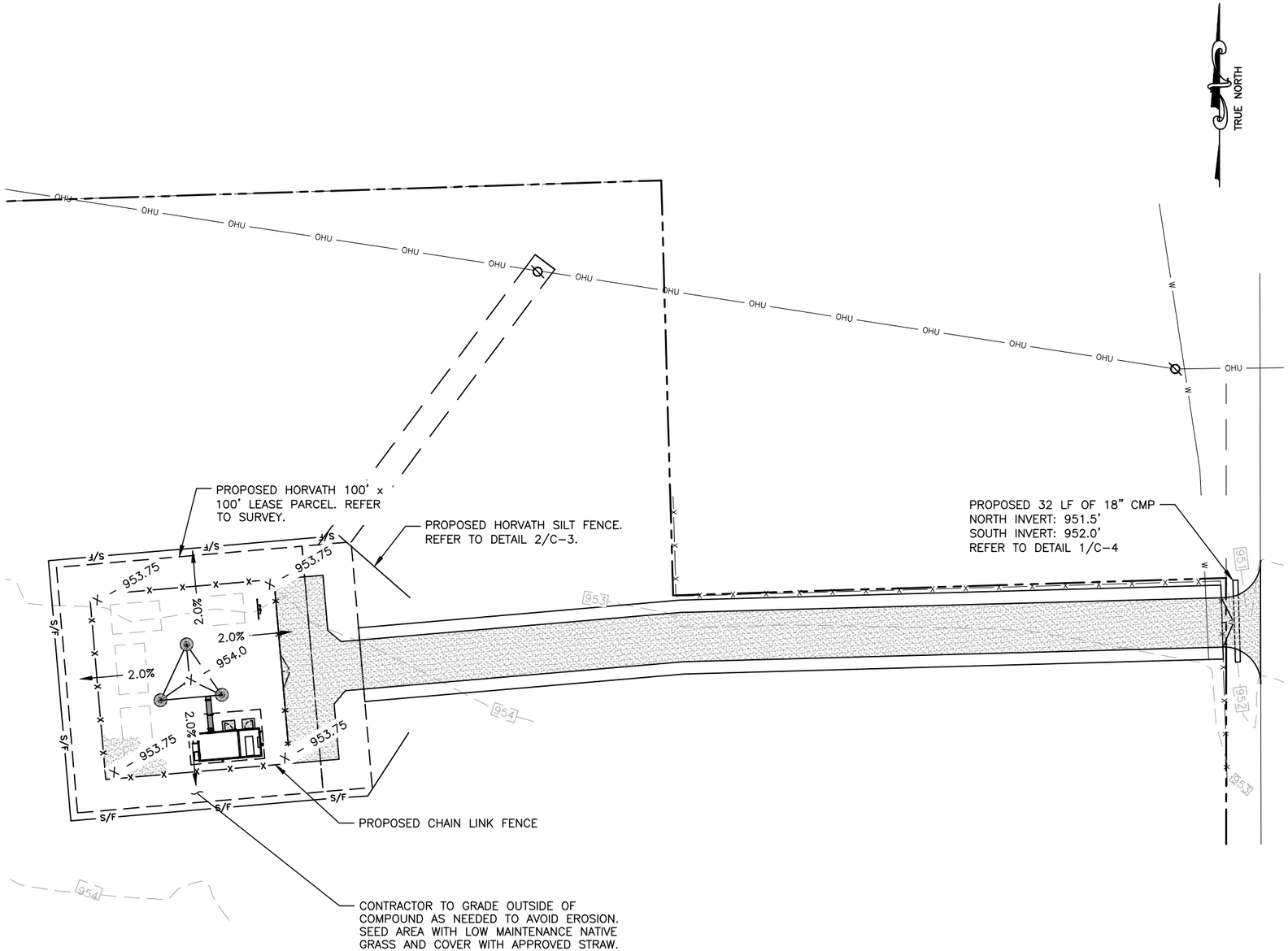
PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

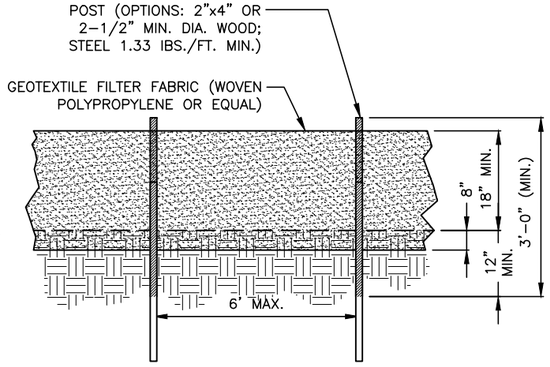
SHEET TITLE: SITE PLAN

SHEET NUMBER: C-2



LEGEND

XXX'	PROPOSED CONTOUR LINE
XXX'	EXISTING CONTOUR LINE
S/F	PROPOSED SILT FENCE
X – 1459.5	SPOT ELEVATION



NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION. INSTALL SILT FENCE AS SHOWN WHERE ADDITIONALLY REQUIRED FOR PROTECTION OF ADJACENT PROPERTIES, ROADWAYS, AND WATERWAYS.
2. CONTRACTOR SHALL INSPECT INSTALLED EROSION CONTROL DEVICE WEEKLY DURING CONSTRUCTION AND AFTER HEAVY RAINS FOR DAMAGE OR EXCESSIVE SILTATION. MAINTENANCE SHALL INCLUDE CLEANING BUILT-UP SEDIMENT BEHIND THE BARRIERS AND/OR REPLACING DAMAGED SECTIONS.
3. THE EROSION CONTROL DEVICES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL PERMANENT STABILIZATION IS ESTABLISHED.
4. HAY BALES SHALL NOT BE USED AS EROSION CONTROL.
5. CONTRACTOR IS RESPONSIBLE FOR PROVIDING SITE FREE OF DRAINAGE PROBLEMS.
6. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICES FOR CONSTRUCTION TO PREVENT THE DIVERSION OF SEDIMENT LADEN STORM WATER RUNOFF OR ERODED MATERIALS FROM LEAVING THE CONSTRUCTION SITE.
7. CONTRACTOR SHALL PREVENT TRACKING OF SEDIMENT OUTSIDE OF CONSTRUCTION LIMITS. THIS MAY REQUIRE CLEANING AND/OR WASHING OF DEBRIS AND SEDIMENT FROM ALL VEHICLES PRIOR TO EXITING THE SITE. ANY SEDIMENT DEPOSITED ON THE ROADWAY SHALL BE SWEPT AS NECESSARY THROUGHOUT THE DAY OR AT THE END OF EVERY DAY AND DISPOSED OF IN AN APPROPRIATE MANNER. SEDIMENT SHALL NOT BE WASHED INTO STORM SEWER SYSTEMS.
8. ANY DEBRIS AND/OR SEDIMENT EXITING THE SITE DUE TO TRACKING OR FAILURE OF A SITE BMP SHALL BE CLEANED IMMEDIATELY BY THE CONTRACTOR BY A METHOD OTHER THAN FLUSHING. CONTRACTOR SHALL ALSO IMMEDIATELY REPAIR ANY BMPS THAT HAVE FAILED AND/OR INSTALL ADDITIONAL BMPS TO ENSURE SEDIMENT DOES NOT LEAVE THE SITE.

GRAPHIC SCALE

0 25 50 100

(IN FEET)

1 / C-3 GRADING PLAN
SCALE: 1" = 50'
SCALE BASED ON 11"x17" ONLY

2 / C-3 SILT FENCE DETAIL
SCALE: N.T.S.

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PLANS PREPARED BY:
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WWW.KIMLEY-HORN.COM

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DRAWN BY: KBB | CHECKED BY: CAR

KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

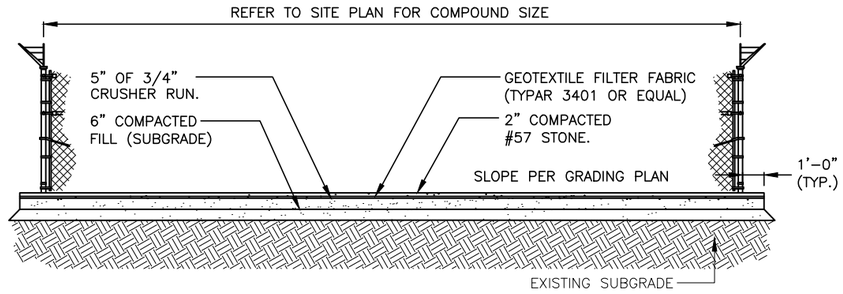
PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE: GRADING PLAN

SHEET NUMBER: C-3

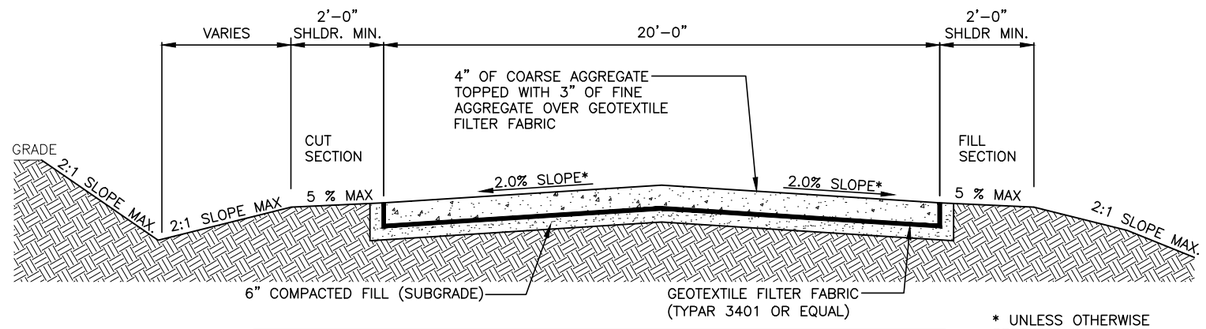


NOTES:

1. SITE WILL BE GRADED TO ALLOW DRAINAGE AWAY FROM TOWER AND SHELTER.
2. PRIOR TO LAYING THE STONE, THE COMPOUND SHOULD BE CLEARED OF ALL ORGANIC MATTER, STERILIZED WITH WEED KILLER, AND THEN TREATED WITH HERBICIDE.
3. AFTER PROJECT COMPLETION ALL DISTURBED AREAS MUST BE SEEDED WITH LOW MAINTENANCE GRASS.
4. STONE SHALL BE COMPACTED 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 TO PREVENT IMMEDIATE EROSION AND EASE IN DRIVING ACCESSIBILITY.

1 C-4 TYPICAL COMPOUND SECTION DETAIL

SCALE: N.T.S.



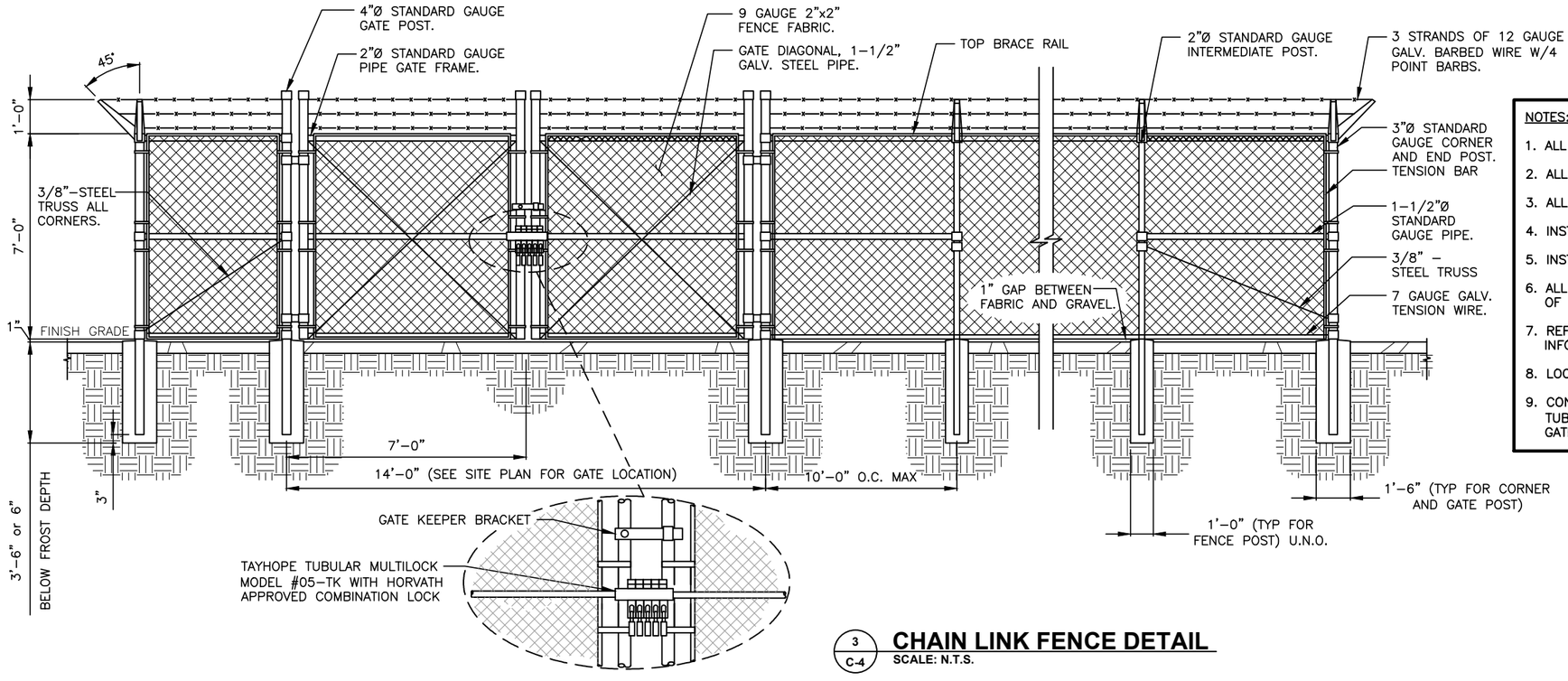
* UNLESS OTHERWISE SPECIFIED IN PLANS

NOTES:

1. STONE SHALL BE COMPACTED 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
2. PRIOR TO LAYING THE STONE THE ACCESS ROADWAY SHOULD BE CLEARED OF ALL ORGANIC MATTER, STERILIZED WITH WEED KILLER, AND THEN TREATED WITH HERBICIDE.
3. A MINIMUM TURNING RADIUS OF THE ACCESS ROAD SHALL BE 55 DEGREES FOR THE SHELTER DELIVERY.
4. THE MAXIMUM LONGITUDINAL SLOPE OF THE ACCESS ROAD SHALL NOT EXCEED 10%.
5. CONTRACTOR, AT MINIMUM, MUST REMOVE OR TRIM ALL TREES THAT ARE WITHIN 3' OF THE ACCESS ROAD ON BOTH SIDES.

2 C-4 TYPICAL ACCESS ROAD SECTION

SCALE: N.T.S.



3 C-4 CHAIN LINK FENCE DETAIL

SCALE: N.T.S.

NOTES:

1. ALL FENCING MATERIAL MUST BE GALVANIZED.
2. ALL POSTS MUST HAVE STEEL CAPS.
3. ALL POSTS AND BRACING MUST BE SCH. 40
4. INSTALL FENCING PER ASTM F-567
5. INSTALL GATES PER ASTM F-900
6. ALL CONCRETE FOUNDATIONS TO HAVE A MINIMUM OF 4000 PSI.
7. REFER TO FENCE SPECIFICATIONS FOR FURTHER INFORMATION.
8. LOCATE FENCE AS SHOWN ON SITE PLAN.
9. CONTRACTOR TO PROVIDE AND INSTALL TAYHOPE TUBULAR MULTILOCK MODEL #05-TK ON COMPOUND GATE WITH HORVATH APPROVED COMBINATION LOCK.

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DRAWN BY:	CHECKED BY:
KBB	CAR

KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE

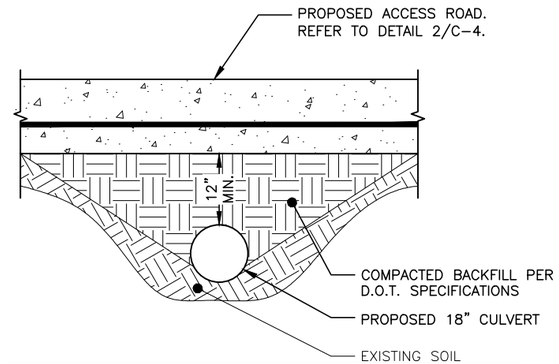
1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:

ROAD, FENCE, AND COMPOUND SECTION

SHEET NUMBER:

C-4

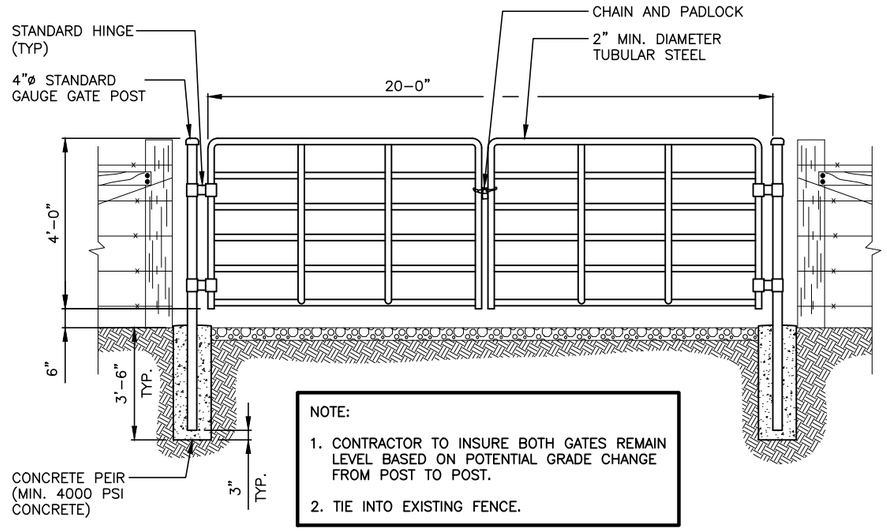


NOTES:

1. CULVERT SPECIFICATIONS MUST COMPLY WITH LOCAL AND D.O.T. CODES AND REQUIREMENTS IF THEY DIFFER FROM THE DETAIL SHOWN.

1/C-5 ROAD CULVERT SECTION

SCALE: N.T.S.



NOTE:

1. CONTRACTOR TO INSURE BOTH GATES REMAIN LEVEL BASED ON POTENTIAL GRADE CHANGE FROM POST TO POST.
2. TIE INTO EXISTING FENCE.

2/C-5 VEHICLE GATE DETAIL

SCALE: N.T.S.

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DRAWN BY:	CHECKED BY:
KBB	CAR

KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:

CULVERT AND TRENCH SECTIONS

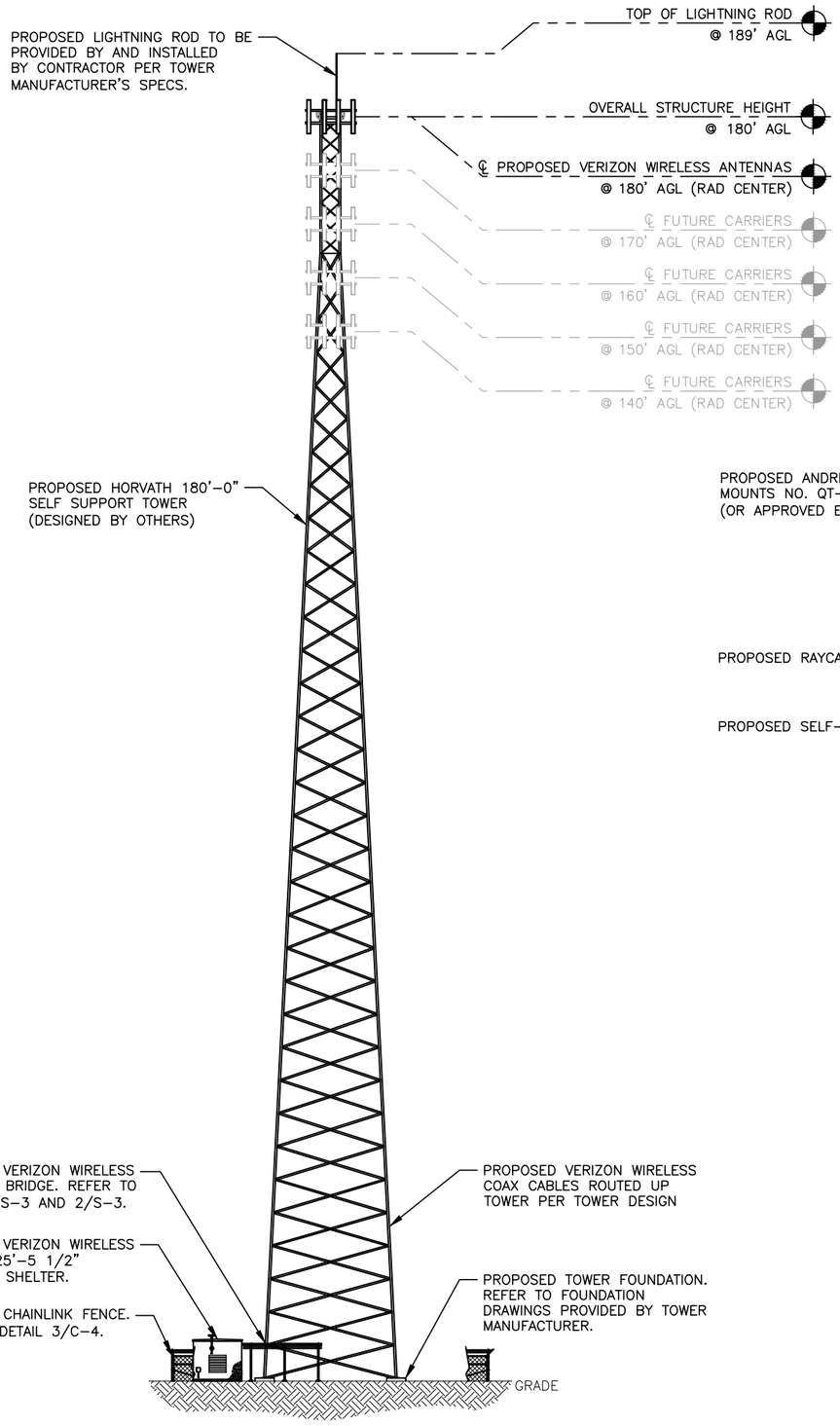
SHEET NUMBER:

C-5

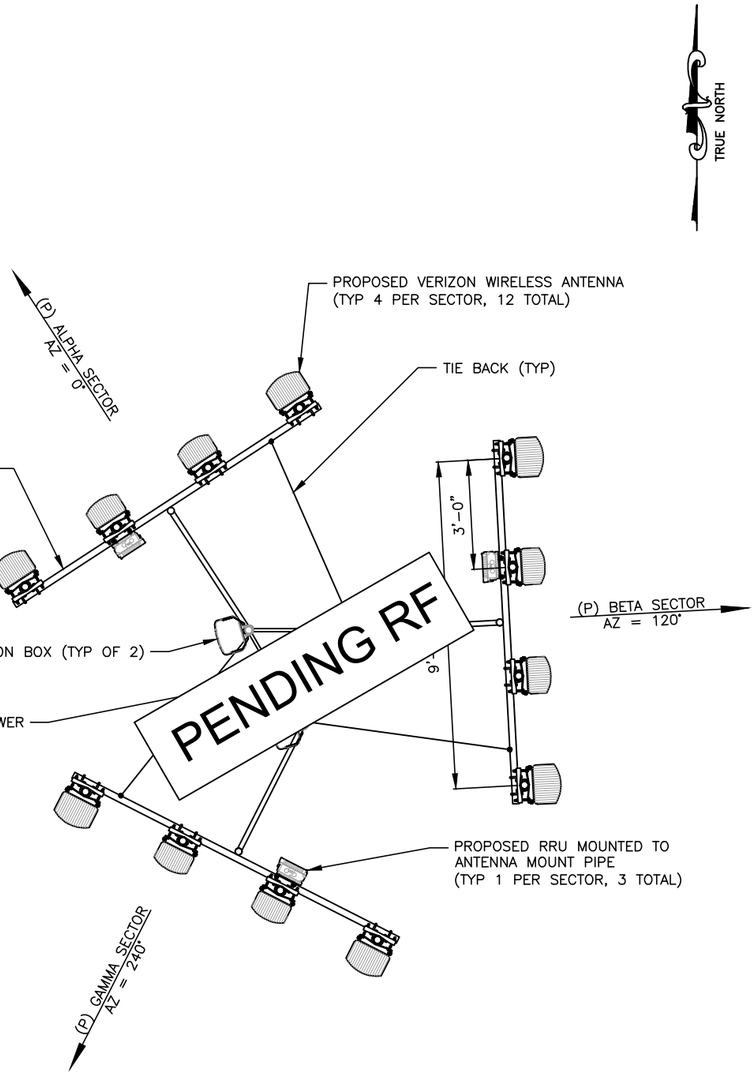
NOTES:

1. THESE DRAWINGS SHALL NOT BE RELIED UPON AS AN INDICATION THAT THE TOWER STRUCTURE, ITS COMPONENTS, AND ITS FOUNDATION HAVE ADEQUATE STRUCTURAL CAPACITY TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, MOUNTS, EQUIPMENT, AND COAXIAL CABLES. KIMLEY-HORN HAS NOT PERFORMED A STRUCTURAL ANALYSIS ON THE TOWER, FOUNDATION, ANTENNA MOUNT, AND ALL ITS COMPONENTS. IT IS THE RESPONSIBILITY OF THE OWNER TO HAVE A STRUCTURAL ANALYSIS PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS PRIOR TO THE INSTALLATION OF ANY PROPOSED EQUIPMENT, COAXIAL CABLES, ANTENNAS, OR APPURTENANCES ON THE TOWER. THIS STRUCTURAL ANALYSIS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
2. IF ANY WORK IS PERFORMED AT THIS SITE THAT REQUIRES THE SITE TO BE OFF AIR OR TURNED DOWN, THE SWITCH IS TO BE NOTIFIED 48 HOURS PRIOR TO CONSTRUCTION VIA NCR/CTS.
3. INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES, AND SUPPORT STRUCTURES. ANTENNA WORK TO BE INSTALLED PER THE REQUIREMENTS OF THE TOWER MANUFACTURER'S SPECIFICATION.
4. ANTENNA AND MOUNT DESIGN MUST COMPLY WITH TIA-EIA-222-G AND ALL LOCAL CODES.
5. CONTRACTOR TO PROVIDE THE PROPER COAX JUMPER SUPPORT ATTACHMENTS TO THE TOWER AND ANTENNA MOUNT.

THE CONTRACTOR MUST FIELD VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.



1 S-1 **TOWER ELEVATION**
SCALE: N.T.S.



NOTES:

1. REFER TO ANTENNA SCHEDULE FOR ADDITIONAL INFO.
2. ADJUST ANTENNA MOUNTS AS REQUIRED TO ACHIEVE THE AZIMUTHS SPECIFIED AND LIMIT RF SHADOWING.
3. VERIFY TYPE AND SIZE OF TOWER LEG PRIOR TO ORDERING MOUNT.
4. UNLESS NOTED OTHERWISE THE CONTRACTOR MUST PROVIDE ALL OF THE MATERIAL NECESSARY.

2 S-1 **ANTENNA CONFIGURATION (VERIZON)**
SCALE: N.T.S.

IT IS THE CLIENT'S RESPONSIBILITY TO VERIFY THE STRUCTURAL CAPACITY OF THE PROPOSED TOWER AND ITS FOUNDATION TO RESIST THE WIND/GRAVITY LOADS FROM THE PROPOSED ANTENNAS.

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ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:

TOWER ELEVATION AND DETAILS

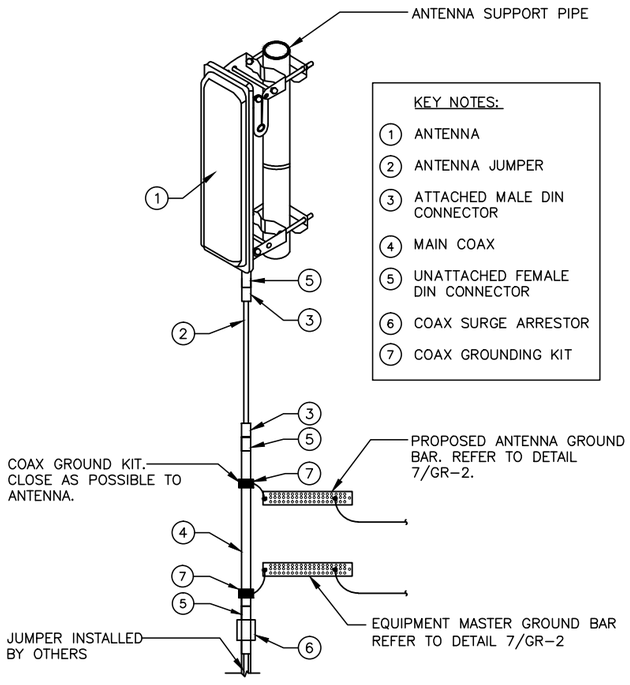
SHEET NUMBER:

S-1

PENDING RF

1/S-2 ANTENNA SCHEDULE

SCALE: N.T.S.



2/S-2 ANTENNA MOUNT DETAIL

SCALE: N.T.S.

PENDING RF

3/S-2 PLUMBING DIAGRAM

SCALE: N.T.S.

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HV962
CLINTON LAKE

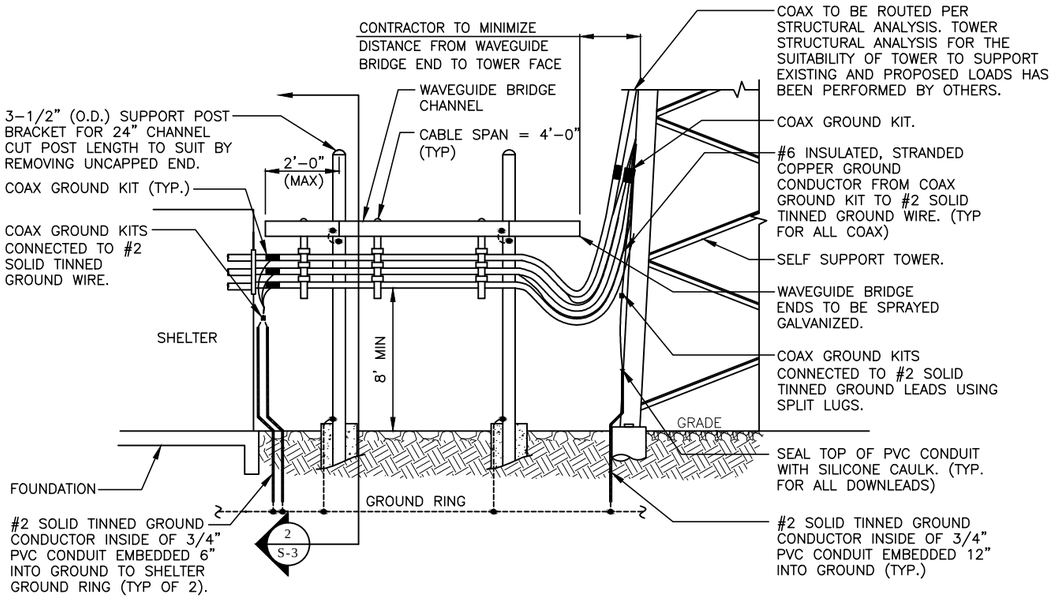
1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:

ANTENNA DETAILS (VERIZON)

SHEET NUMBER:

S-2

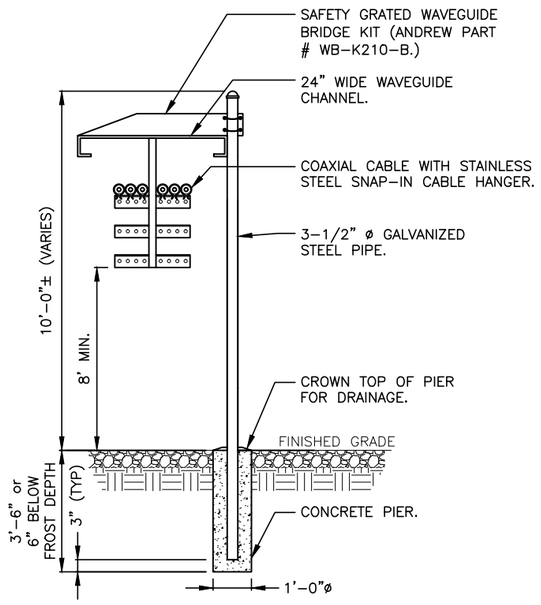


NOTES:

1. MAXIMUM ALLOWABLE SPAN BETWEEN SUPPORTS ON A CONTINUOUS SINGLE SECTION OF BRIDGE CHANNEL SHALL BE 8'
2. WHEN SPLICING BRIDGE CHANNEL SECTIONS, THE SPLICE SHOULD BE PROVIDED AT THE SUPPORT, IF POSSIBLE, OR AT A MAXIMUM OF 2 FEET FROM THE SUPPORT.
3. SUPPORT SHOULD BE PROVIDED AS CLOSE AS POSSIBLE TO THE ENDS OF WAVEGUIDE BRIDGES, WITH A MAXIMUM CANTILEVER DISTANCE OF 2 FEET FROM THE SUPPORT TO THE FREE END OF THE WAVEGUIDE BRIDGE.
4. CUT BRIDGE CHANNEL SECTIONS SHALL HAVE RAW EDGES PAINTED WITH 3 COATS OF ZINC RICH PAINT.
5. DEVIATIONS FROM STANDARDS FOR COMPONENT INSTALLATIONS ARE PERMITTED WITH THE RESPECTIVE MANUFACTURER'S APPROVAL.
6. DEVIATIONS FROM WAVEGUIDE BRIDGE FOUNDATIONS SHOWN ON SITE SPECIFIC DRAWINGS OR STANDARD DETAILS REQUIRE ENGINEERING APPROVAL.
7. ALL COAXIAL CABLE CONNECTIONS AND TRANSMITTER EQUIPMENT SHALL BE AS SPECIFIED BY THE OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL FURNISH ALL CONNECTION HARDWARE REQUIRED TO SECURE THE CABLES. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.

1 S-3 WAVEGUIDE BRIDGE PROFILE

SCALE: N.T.S.

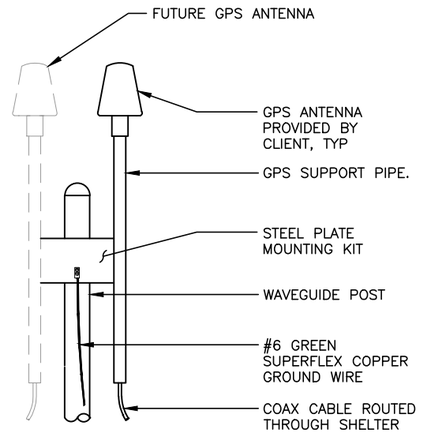


NOTES:

1. ALL SUPPORT POSTS MUST BE GROUNDED.
2. GROUNDING NOT SHOWN FOR CLARITY.
3. COAX CABLE QTY. AND LOCATION MAY VARY.

2 S-3 WAVEGUIDE BRIDGE SECTION

SCALE: N.T.S.

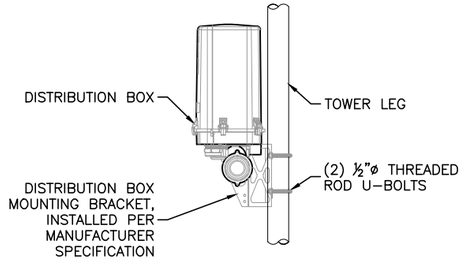


NOTES:

1. CONTRACTOR TO SUPPLY ALL MATERIAL UNLESS OTHERWISE NOTED.
2. GPS ANTENNA MUST BE IN A LOCATION TO BE ABLE TO RECEIVE CLEAR SIGNALS FROM A MINIMUM OF 4 SATELLITES.
3. LOCATION OF ANTENNA MUST BE IN CLEAR VIEW OF THE SKY, WITHOUT ANY OBSTRUCTION OR BLOCKAGE EXCEEDING 25% OF THE SURFACE AREA OF A HEMISPHERE AROUND THE GPS ANTENNA.

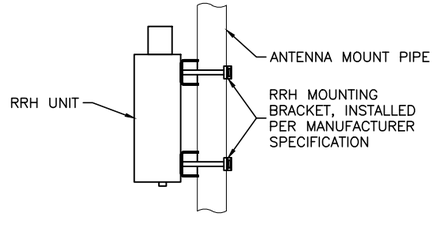
3 S-3 GPS ANTENNA MOUNT DETAIL

SCALE: N.T.S.



4 S-3 DISTRIBUTION BOX CONNECTION DETAIL

SCALE: N.T.S.



5 S-3 RRU CONNECTION DETAIL

SCALE: N.T.S.

HORVATH COMMUNICATIONS
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PHONE: (574) 237-0464

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PLANS PREPARED BY:
Kimley»Horn
655 NORTH FRANKLIN STREET, SUITE 150
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PHONE (813) 620-1460
WWW.KIMLEY-HORN.COM

REV:	DATE:	DESCRIPTION:	BY:
2	02/12/15	REVISED PER COMMENTS	MAM
1	12/11/14	ADDED LANDSCAPE PLAN	MAM
0	10/21/14	ISSUED FOR REVIEW	KBB

DRAWN BY: KBB | CHECKED BY: CAR

KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE
1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:

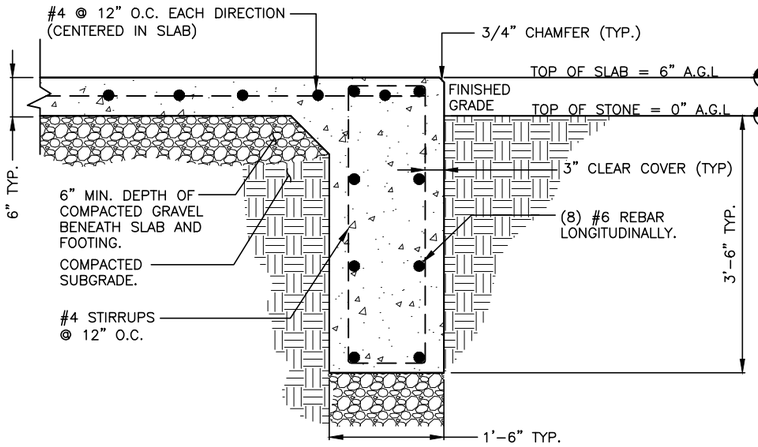
VERIZON MISCELLANEOUS DETAILS

SHEET NUMBER:

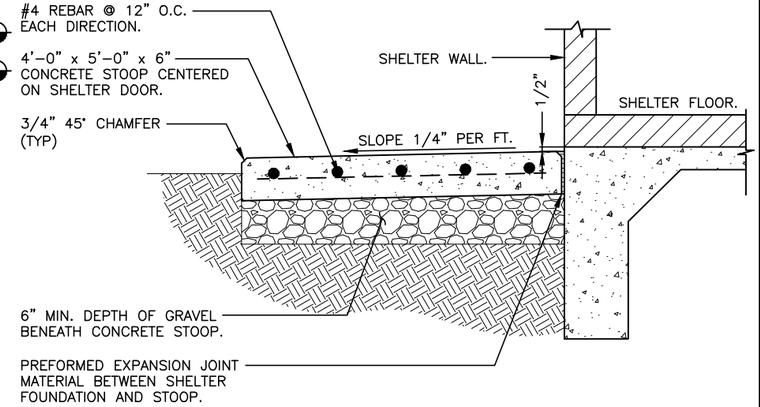
S-3

STRUCTURAL NOTES:

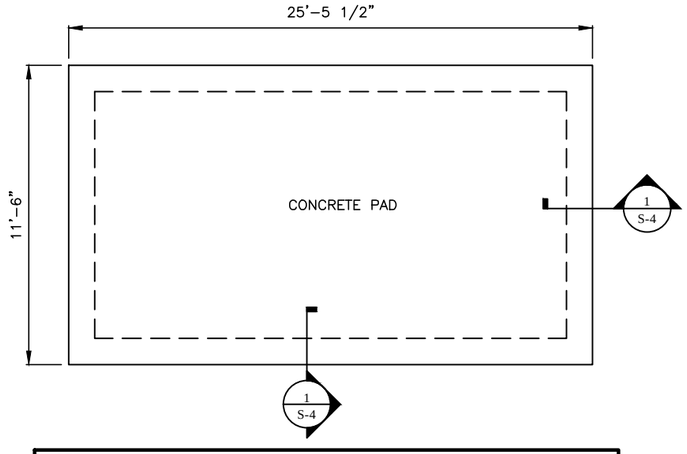
1. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED BY FIELD MEASUREMENT. THE GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH CONSTRUCTION.
2. THE GENERAL CONTRACTOR AND HIS SUB CONSULTANTS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK.
3. STRUCTURAL STEEL SHALL CONFORM TO SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, AISC 360-05 INCLUDING THE COMMENTARY AND THE AISC CODE OF STANDARD PRACTICE.
4. STRUCTURAL STEEL PLATES, ANGLES, AND CHANNELS SHALL CONFORM TO ASTM A36. STRUCTURAL STEEL PIPES SHALL CONFORM TO ASTM A53 GRADE B. STRUCTURAL STEEL BEAMS SHALL CONFORM TO ASTM A992, GRADE 50. ALL STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500 GRADE B. ALL STRUCTURAL STEEL COMPONENTS AND FABRICATED ASSEMBLIES SHALL BE HOT DIP GALVANIZED-ASTM A123 AFTER FABRICATION. FIELD TOUCH UP WITH 3 COATS OF ZINC RICH PAINT ALL RAW EDGES AND/OR AREAS WHERE THE GALVANIZED FINISH HAS BEEN DISTURBED (ALL EXISTING AND NEW AREAS).
5. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWS D1.1). STRUCTURAL WELDING CODE-STEEL WELD ELECTRODES SHALL BE E70XX. FIELD TOUCH UP WITH ZINC RICH PAINT (ALL EXISTING AND NEW AREAS) AFTER WELDING IS COMPLETE.
6. ALL THREADED STRUCTURAL FASTENERS FOR ANTENNA SUPPORT ASSEMBLIES SHALL CONFORM TO ASTM A307 OR ASTM A36. ALL STRUCTURAL FASTENERS FOR STRUCTURAL STEEL FRAMING SHALL CONFORM TO ASTM A325. FASTENERS SHALL BE 5/8 INCH MIN. UNLESS NOTED OTHERWISE, DIAMETER BEARING TYPE CONNECTIONS WITH THREADS EXCLUDED IN THE SHEAR PLANE. ALL EXPOSED FASTENERS, NUTS AND WASHERS SHALL BE GALVANIZED UNLESS OTHERWISE NOTED. CONCRETE EXPANSION ANCHORS SHALL BE HILTI KWIK BOLTS UNLESS OTHERWISE NOTED. ALL ANCHORS INTO CONCRETE SHALL BE STAINLESS STEEL.
7. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60, DEFORMED BILLET STEEL BARS. WELDED WIRE FABRIC REINFORCING SHALL CONFORM TO ASTM A185.
8. CONCRETE FOR THE FOUNDATION PAD SHALL BE 4000 PSI NORMAL WEIGHT CONCRETE. CONCRETE STRENGTH SHALL BE VERIFIED BY CONCRETE CYLINDER TESTS (A MINIMUM SET OF FOUR CYLINDERS). PROVIDE 4 TO 6% AIR ENTRAINMENT FOR ALL CONCRETE SUBJECT TO FREEZE – THAW CYCLE.
9. MINIMUM CONCRETE COVER REINFORCEMENT SHALL BE 2" UNLESS NOTED OTHERWISE. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH SHALL HAVE A MINIMUM CONCRETE COVER OF 3".
10. CONTRACTOR SHALL COORDINATE ALL PENETRATIONS, CONDUIT, CHAMFERS, AND EMBEDDED ITEMS PRIOR TO CONCRETE PLACEMENT AND/OR STEEL ERECTION. CONTRACTOR SHALL VERIFY ALL SIZES AND LOCATIONS.
11. DO NOT IMPOSE SERVICE LOAD (i.e. FLOOR DEAD AND LIVE LOADS, BACKFILL. ETC.) UNTIL THE CONCRETE HAS REACHED ITS SPECIFIED MINIMUM COMPRESSIVE STRENGTH.
12. BACKFILL SHALL BE CLEAN SAND FILL APPROVED FOR USE BY THE ENGINEER. NO UNAPPROVED MATERIAL WILL BE ALLOWED. CLEAN SAND FILL SHALL BE FREE OF ALL ROOTS, BOULDERS, OR OTHER DELETERIOUS MATERIAL.
13. SOIL SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY TO A MINIMUM OF 2 FEET BELOW THE BOTTOM OF THE FOOTINGS, AND SHALL OBTAIN A 2000 PSF MINIMUM ALLOWABLE BEARING CAPACITY.



1 S-4 **SHELTER FOUNDATION DETAIL**
SCALE: N.T.S.



2 S-4 **SHELTER STOOP DETAIL**
SCALE: N.T.S.



NOTE:

FASTEN SHELTER TO CONCRETE PAD PER MANUFACTURER'S SPECIFICATIONS.

3 S-4 **SHELTER FOUNDATION PLAN**
SCALE: N.T.S.

HORVATH COMMUNICATIONS
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KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

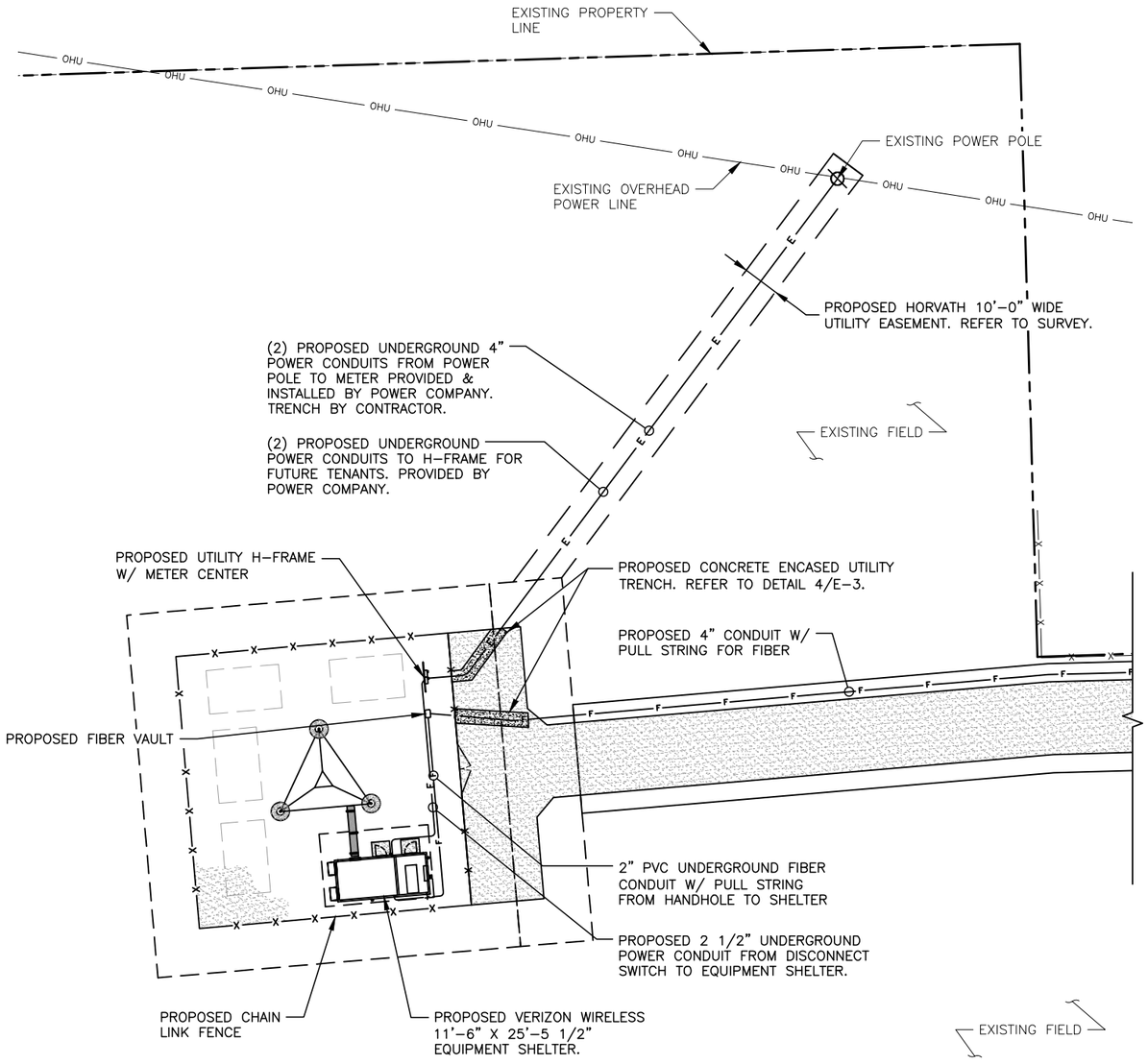
SHEET TITLE:

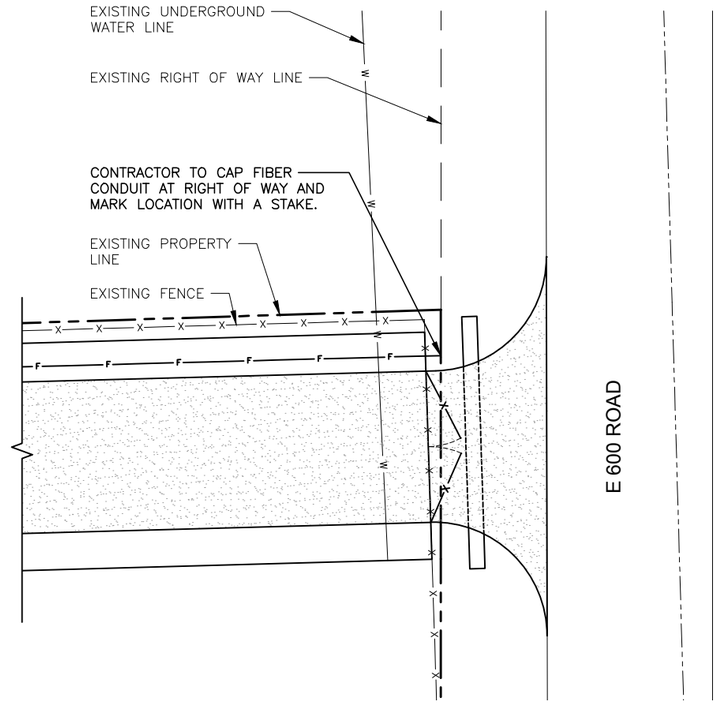
VERIZON FOUNDATIONS DETAILS

SHEET NUMBER:

S-4

POWER DESIGN PENDING





TRUE NORTH

1/E-1 OVERALL ELECTRICAL PLAN

SCALE: 1" = 50'
SCALE BASED ON 11" x 17"

GRAPHIC SCALE

0 25 50 100

(IN FEET)

2/E-1 ENLARGED ENTRANCE ELECTRICAL PLAN

SCALE: 1" = 20'
SCALE BASED ON 11" x 17"

GRAPHIC SCALE

0 10 20 40

(IN FEET)

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KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE

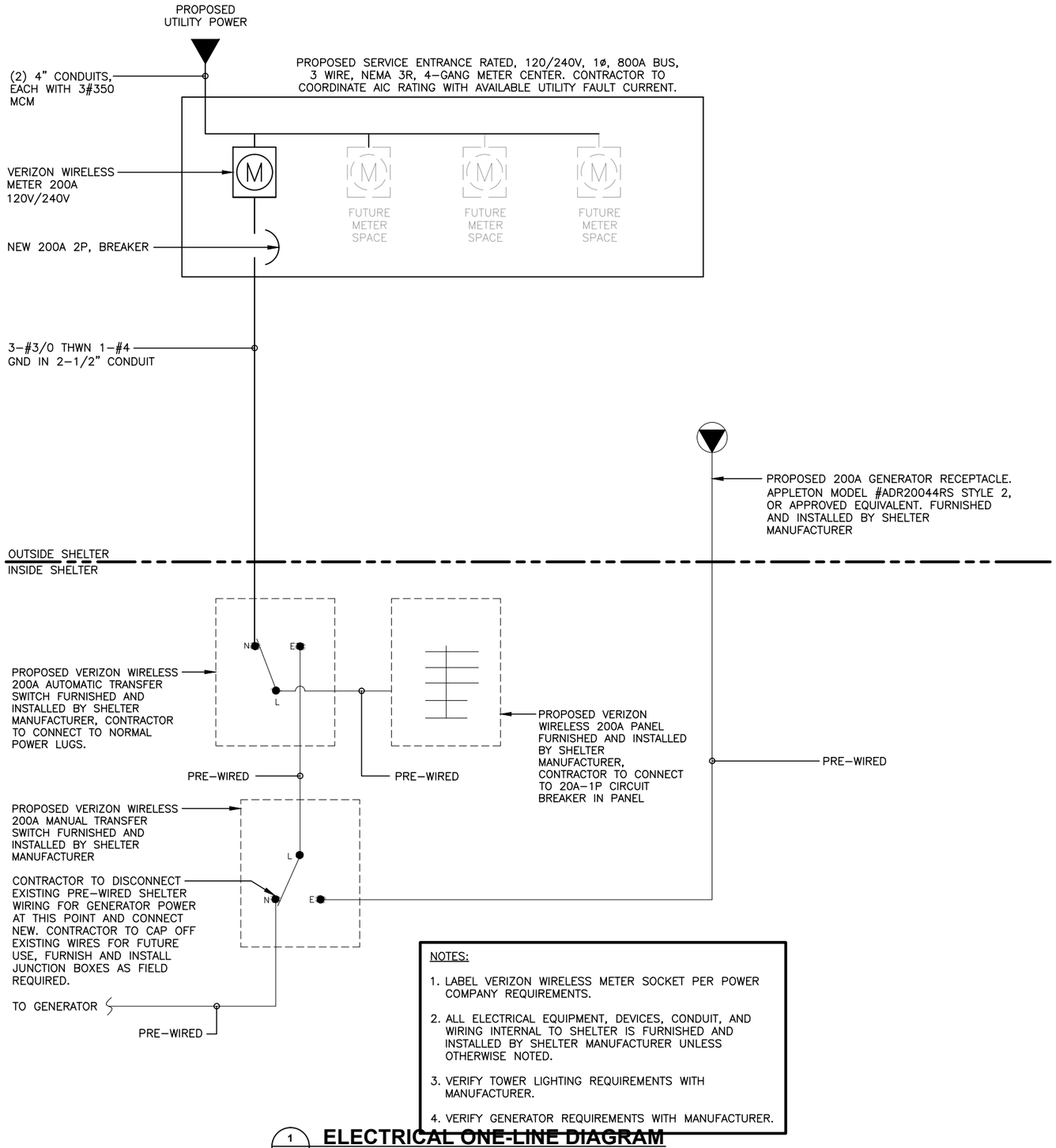
1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:

ELECTRICAL PLAN

SHEET NUMBER:

E-1



NOTES:

1. LABEL VERIZON WIRELESS METER SOCKET PER POWER COMPANY REQUIREMENTS.
2. ALL ELECTRICAL EQUIPMENT, DEVICES, CONDUIT, AND WIRING INTERNAL TO SHELTER IS FURNISHED AND INSTALLED BY SHELTER MANUFACTURER UNLESS OTHERWISE NOTED.
3. VERIFY TOWER LIGHTING REQUIREMENTS WITH MANUFACTURER.
4. VERIFY GENERATOR REQUIREMENTS WITH MANUFACTURER.

1 / E-2 **ELECTRICAL ONE-LINE DIAGRAM**
SCALE: N.T.S.

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PLANS PREPARED BY:
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0	10/21/14	ISSUED FOR REVIEW	KBB

DRAWN BY:	CHECKED BY:
KBB	CAR

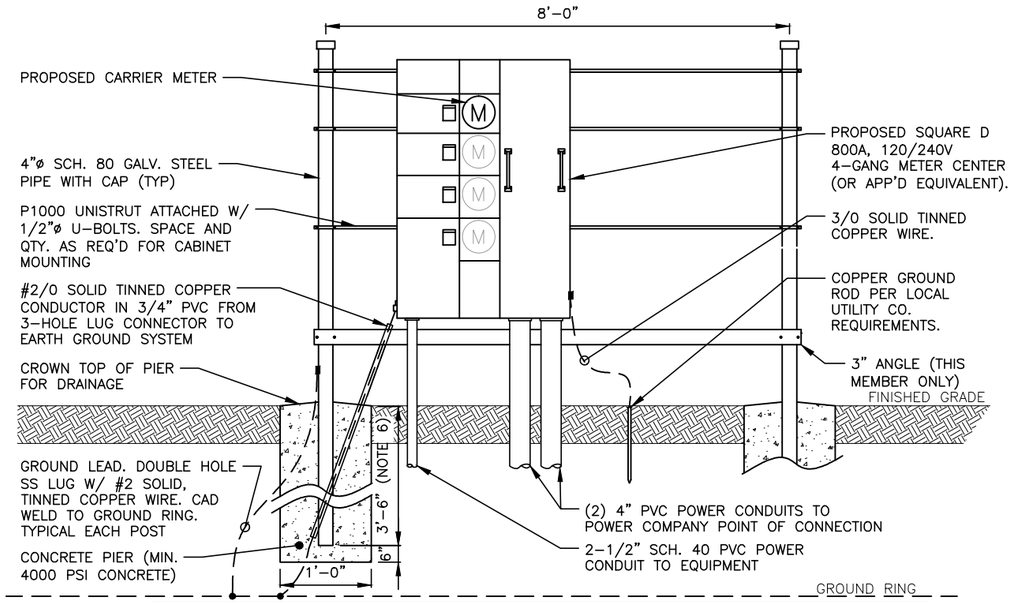
KHA PROJECT NUMBER:
148468002

ENGINEER SEAL:
NOT FOR CONSTRUCTION

PROJECT INFORMATION:
HV962
CLINTON LAKE
1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:
ONE-LINE DIAGRAM

SHEET NUMBER:
E-2

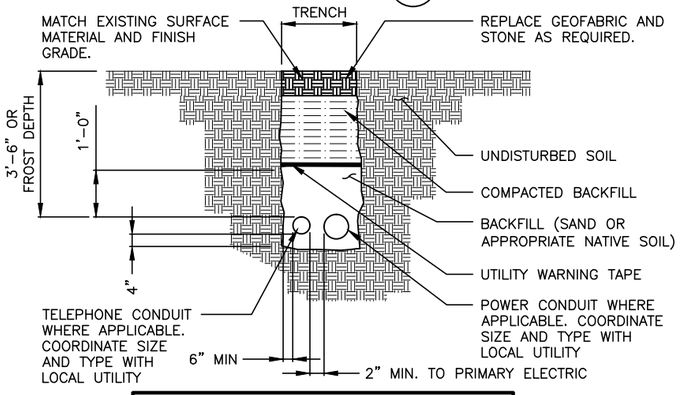


NOTES:

1. STEEL SHALL BE HOT-DIPPED GALVANIZED.
2. CONTRACTOR TO SUPPLY ALL MATERIAL UNLESS OTHERWISE NOTED.
3. ALL HARDWARE TO BE STAINLESS STEEL.
4. CONTRACTOR TO PROVIDE AND INSTALL LUG CONNECTION AT METER CENTER.
5. ADD NAMEPLATES TO INDICATE METERS. COORDINATE TO MATCH METER WITH BREAKER SWITCH. UNUSED METER SOCKETS SHALL BE COVERED W/ LEXAN METER COVER.
6. CONCRETE PIER TO BE 3'-6" IN LENGTH OR 6" BELOW FROST DEPTH.

1 E-3 UTILITY H-FRAME - FRONT PROFILE

SCALE: N.T.S.

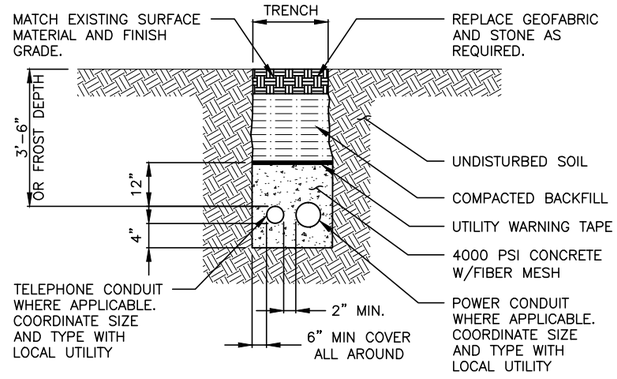


NOTES:

1. CONTRACTOR TO HAND DIG ALL NEW TRENCHES INSIDE COMPOUND.
2. SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.

2 E-3 UTILITY TRENCH DETAIL

SCALE: N.T.S.



NOTES:

1. ENCASE ALL PVC CONDUITS/PIPES IN CONCRETE WHEN INSTALLED UNDER ACCESS ROADS OR HIGH TRAFFIC AREAS.

3 E-3 CONCRETE ENCASED UTILITY TRENCH DETAIL

SCALE: N.T.S.

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(913) 344-2800

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REV: | DATE: | DESCRIPTION: | BY:

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DRAWN BY: KBB | CHECKED BY: CAR

KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE
1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

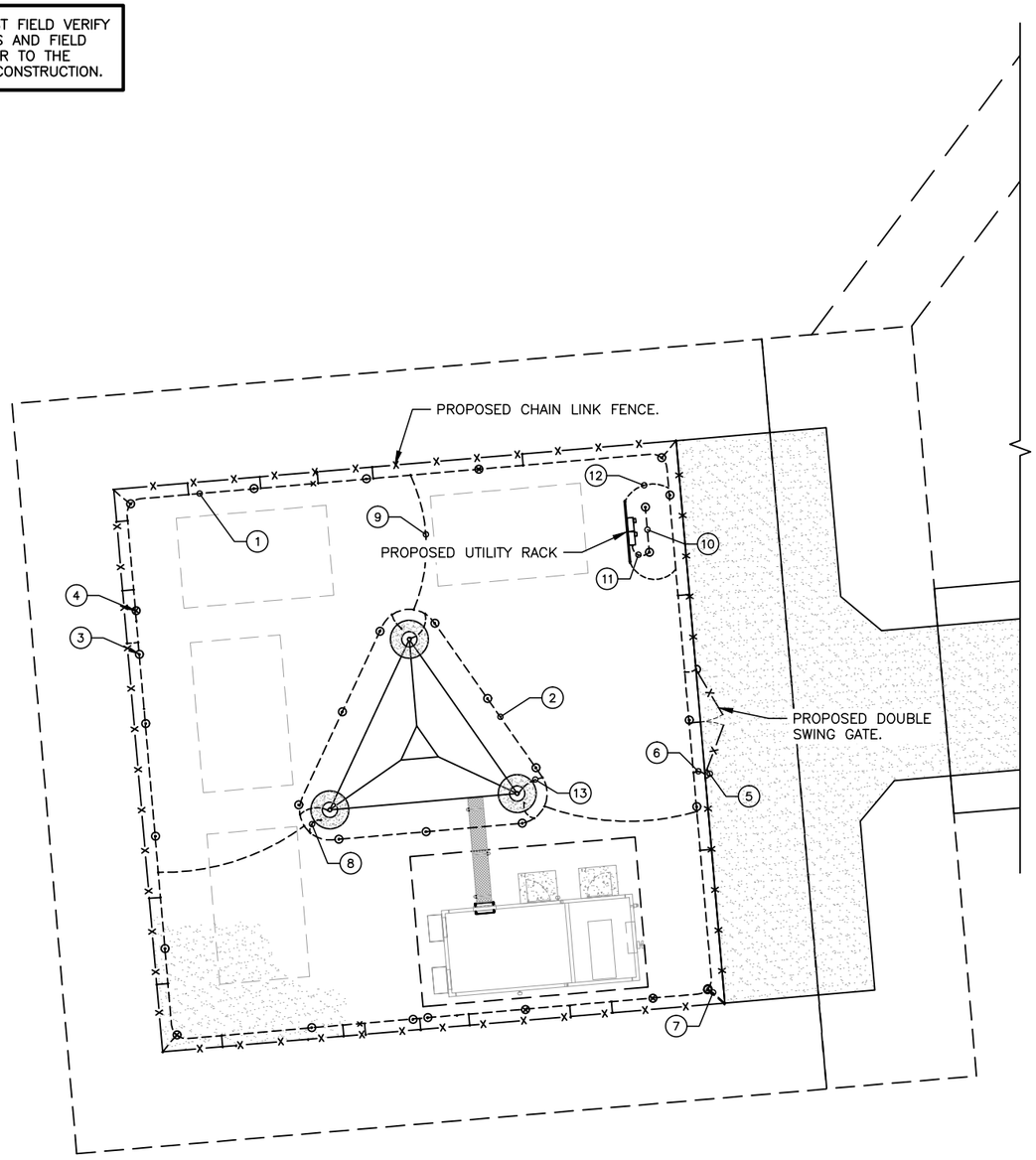
SHEET TITLE:

UTILITY SERVICE DETAILS

SHEET NUMBER:

E-3

THE CONTRACTOR MUST FIELD VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.



KEY NOTES:

1. #2 SOLID, BARE, TINNED, COPPER EXTERNAL SITE GROUND RING. INSTALL MIN. 4 GROUND RODS (ONE AT EACH CORNER) SPACED 10' MIN. APART. BURIED AT 42" MIN. OR 6" BELOW FROST LEVEL, WHICHEVER IS GREATER.
2. #2 SOLID, BARE, TINNED, COPPER TOWER GROUND RING INSTALLED MIN. 4 GROUND RODS SPACED MIN. 10' APART. MAINTAIN 2' FROM TOWER FOUNDATION. BURIED AT 42" MIN. OR 6" BELOW FROST LEVEL, WHICHEVER IS GREATER.
3. 5/8"ø x 8' LONG COPPER GROUND ROD (TYP). REFER TO DETAIL 4/GR-3.
4. 5/8"ø x 8' LONG COPPER GROUND ROD WITH TEST WELL (TYP). REFER TO DETAIL 2/GR-3.
5. #4/0 BRAIDED JUMPER TO GATE PIPE CONNECTOR. GROUNDING CABLE SHALL BE ATTACHED SO THAT IT WILL NOT BE SUBJECTED TO STRAIN WHICH MAY CAUSE DAMAGE WHEN GATE IS FULLY OPENED.
6. #2 SOLID, BARE, TINNED, COPPER INSULATED WELDING CONDUCTOR WITH APPROVED SLEEVE. EXOTHERMICALLY WELDED FROM GATE POST TO SITE GROUND RING. (TYP OF 2).
7. #2 SOLID, BARE, TINNED, COPPER WIRE FROM EXTERNAL SITE GROUND RING TO FENCE POST. (MAX 10' SEPARATION)
8. CONTRACTOR TO GROUND TOWER REINFORCEMENT STEEL TO EXTERNAL GROUND RING PRIOR TO INSTALLING CONCRETE FOUNDATION (TYP FOR 3).
9. #2 SOLID, BARE, TINNED, COPPER WIRE BONDED FROM TOWER GROUND RING TO EXTERNAL SITE GROUND RING (MIN 3 PLACES).
10. #2 BARE TINNED SOLID COPPER GROUND WIRE FROM DISCONNECT SWITCH TO SEPARATE GROUND SYSTEM W/ (2) 5/8"ø X 8' GROUND RODS INSTALLED PER UTILITY COMPANY REQUIREMENTS. INSTALL MIN 6" ABOVE GRADE WITH MIN 8' BELOW GRADE. DO NOT BOND TO ANY EXTERNAL GROUND RING.
11. #2 BARE TINNED SOLID COPPER GROUND WIRE FROM UTILITY GROUND ROD. MAINTAIN MINIMUM 6' DISTANCE BETWEEN GROUND RODS. DO NOT BOND TO ANY EXTERNAL GROUND RING.
12. #2 BARE, TINNED, SOLID COPPER GROUND WIRE FROM THE H-FRAME POSTS TO GROUND RING (TYP).
13. #2 BARE, TINNED, SOLID COPPER GROUND WIRE FROM TOWER STEEL TO TOWER GROUND RING.

GRAPHIC SCALE

0 10 20 40

(IN FEET)

TRUE NORTH

1 / GR-1 **GROUNDING PLAN**

SCALE: 1" = 20'
SCALE BASED ON 11" x 17"

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DRAWN BY:	CHECKED BY:
KBB	CAR

KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

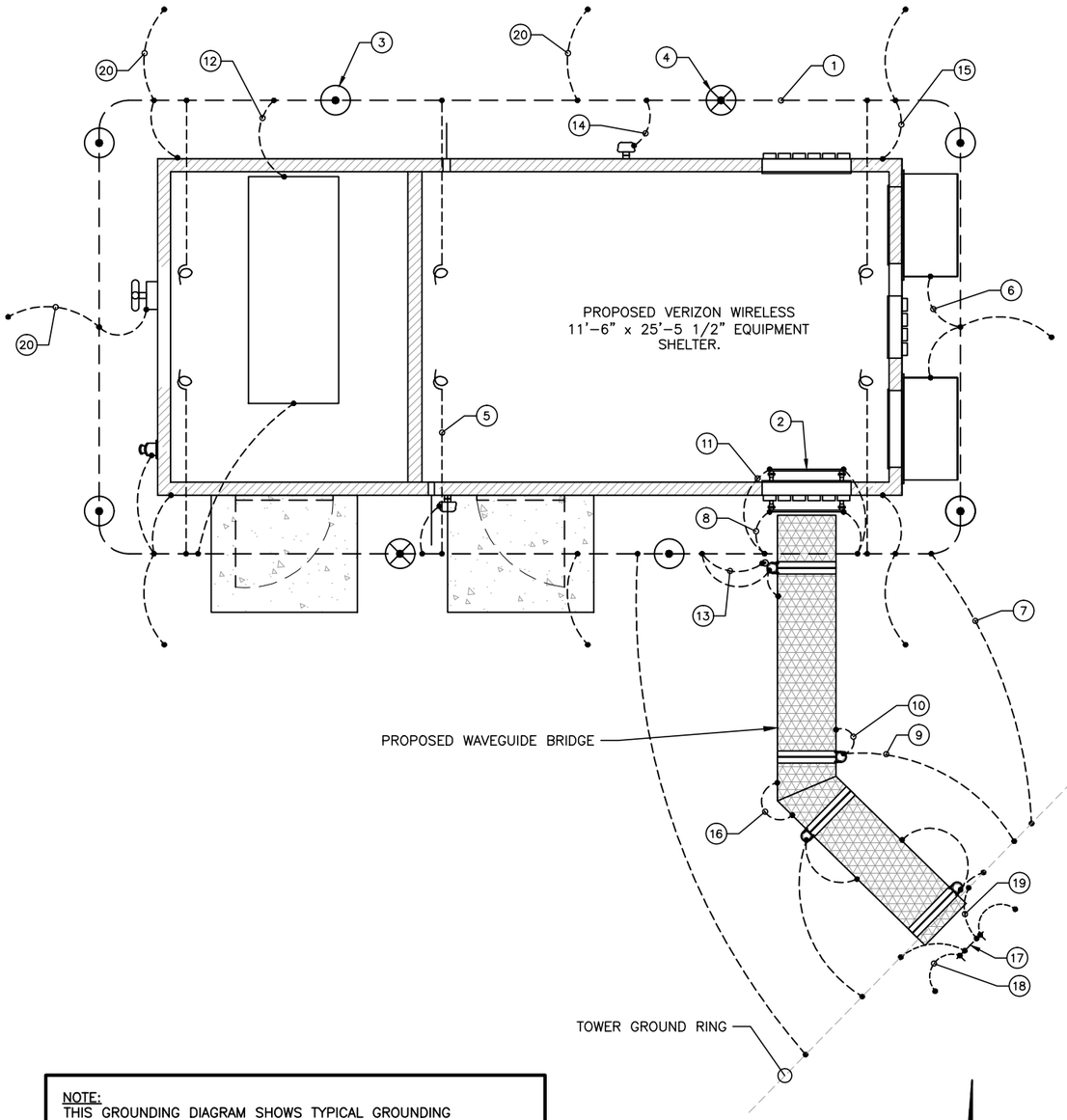
SHEET TITLE:

COMPOUND GROUNDING PLAN

SHEET NUMBER:

GR-1

THE CONTRACTOR MUST FIELD VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.



NOTE:
THIS GROUNDING DIAGRAM SHOWS TYPICAL GROUNDING CONNECTIONS FOR VERIZON SHELTER, ICEBRIDGE AND EQUIPMENT. ACTUAL SITE CONDITIONS AND ORIENTATION MAY VARY.

1 / GR-1 **GROUNDING PLAN**
SCALE: 1" = 5'
SCALE BASED ON 11" x 17"

GRAPHIC SCALE
0 2.5 5 10
(IN FEET)

TRUE NORTH

KEY NOTES:

1. #2 SOLID, BARE, TINNED, COPPER SHELTER GROUND RING. MAINTAIN 24" CLEARANCE FROM SHELTER FOUNDATION. BURIED AT 42" MIN. OR 6" BELOW FROST LEVEL, WHICHEVER IS GREATER.
2. SHELTER GROUND BAR (M.G.B.) REFER TO DETAIL 7/GR-3.
3. 5/8"ø x 8' LONG COPPER GROUND ROD (TYP). REFER TO DETAIL 4/GR-3.
4. 5/8"ø x 8' LONG COPPER GROUND ROD WITH TEST WELL (TYP). REFER TO DETAIL 2/GR-3.
5. BOND SHELTER GROUND RING TO INTERIOR SHELTER GROUND HALO THROUGH SHELTER PENETRATIONS PROVIDED AND SEAL WITH SILICONE CAULK. (TYP FOR 6).
6. #2 SOLID, BARE, TINNED, COPPER GROUND WIRE FROM HVAC EQUIPMENT TO SHELTER GROUND RING BY MEANS OF A MECHANICAL CONNECTION (TYP FOR 2).
7. #2 SOLID, BARE, TINNED, COPPER WIRE FROM SHELTER GROUND RING TO TOWER GROUND RING. (MIN. 2 PLACES)
8. #2 SOLID, BARE, TINNED, COPPER WIRE FROM EXTERIOR SHELTER GROUND BAR TO SHELTER GROUND RING. (MIN. 2 PLACES)
9. #2 SOLID, BARE, TINNED, COPPER WIRE FROM WAVEGUIDE SUPPORT POST TO GROUND RING (TYP FOR ALL POSTS).
10. #2 SOLID, BARE, TINNED, COPPER WIRE GROUNDING JUMPER FROM WAVEGUIDE BRIDGE STEEL TO SUPPORT POST. (TYP FOR ALL POSTS)
11. #2 SOLID, BARE, TINNED, COPPER WIRE FROM INTERIOR MASTER GROUND BAR (M.G.B.) TO SHELTER GROUND RING THROUGH SHELTER PENETRATIONS PROVIDED AND SEAL WITH SILICONE CAULK. (TYP FOR 2).
12. #2 SOLID, BARE, TINNED, COPPER WIRE FROM GENERATOR TO SHELTER GROUND RING THROUGH SHELTER PENETRATIONS PROVIDED AND SEAL WITH SILICONE CAULK. (TYP FOR 2).
13. #2 BARE, TINNED, SOLID COPPER GROUND WIRE FROM SHELTER GROUND RING TO GPS ANTENNA.
14. #2 BARE, TINNED, SOLID COPPER GROUND WIRE FROM MISCELLANEOUS METALLIC EQUIPMENT TO SHELTER GROUND RING.
15. #2 BARE, TINNED, SOLID COPPER GROUND WIRE FROM SHELTER ANCHOR PLATES TO SHELTER GROUND RING.
16. #2 BARE, TINNED, SOLID COPPER GROUND WIRE SPLICE FROM WAVEGUIDE BRIDGE SECTION TO ADJACENT SECTION. BOND BY MEANS OF EXOTHERMIC WELD OR UL APPROVED CLAMP, (TYP).
17. TOWER BOTTOM GROUND BAR. TOWER GROUND BARS SHALL BE COPPER CLAD. REFER TO VERIZON WIRELESS GROUNDING SPECIFICATIONS.
18. #2 SOLID, BARE, TINNED, COPPER WIRE FROM TOWER GROUND BAR TO TOWER FRAME STEEL. BOND BY MEANS OF EXOTHERMIC WELD OR UL APPROVED CLAMP.
19. #2 SOLID, BARE, TINNED, COPPER WIRES FROM TOWER GROUND BAR TO TOWER GROUND RING IN DIFFERENT DIRECTIONS (TYP OF 2)
20. BOND SHELTER GROUND RING TO EXTERNAL GROUND RING WITH #2 , SOLID, BARE, TINNED, COPPER WIRE (TYP).

NOTE:
PROVIDE GROUNDING AND BONDING IN ACCORDANCE WITH VERIZON WIRELESS NETWORK STANDARD NSTD46 "CELL SITE AND MICROWAVE RADIO STATION PROTECTION", LATEST EDITION UNLESS DIRECTED OTHERWISE BY DRAWINGS, NATIONAL ELECTRICAL CODE, OR AUTHORITIES HAVING JURISDICTION. THE ABOVE REFERENCED SPECIFICATIONS ARE AN INTEGRAL PART OF THE DESIGN DOCUMENTS AND MUST BE STRICTLY ADHERED TO. WHERE CONFLICTS BETWEEN THIS SPECIFICATION, CODES, AND AUTHORITIES HAVING JURISDICTION ARISE, THE MOST STRINGENT SHALL GOVERN. BUSS CONNECTORS SHALL BE 2-HOLE LONG BARREL TYPE COMPRESSION LUGS.

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0	10/21/14	ISSUED FOR REVIEW	KBB

DRAWN BY:	CHECKED BY:
KBB	CAR

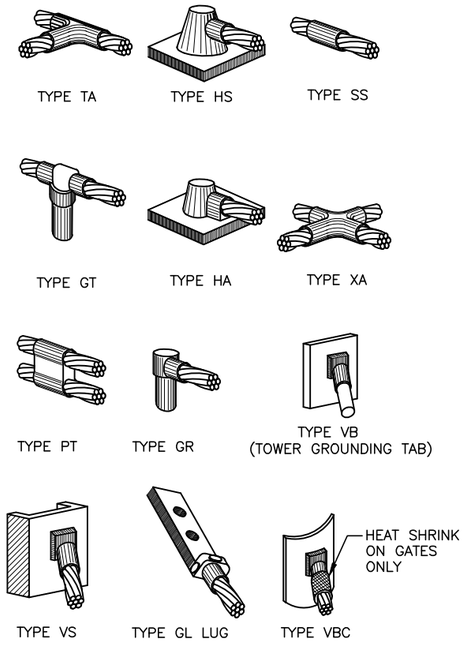
KHA PROJECT NUMBER:
148468002

ENGINEER SEAL:
NOT FOR CONSTRUCTION

PROJECT INFORMATION:
HV962
CLINTON LAKE
1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

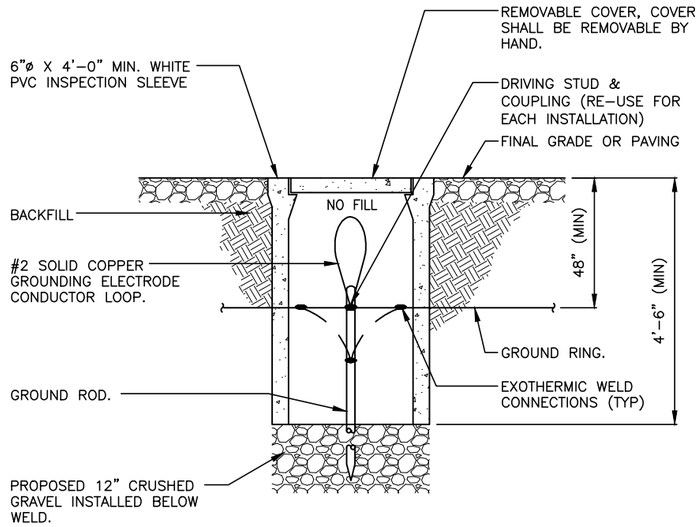
SHEET TITLE:
SHELTER GROUNDING PLAN

SHEET NUMBER:
GR-2

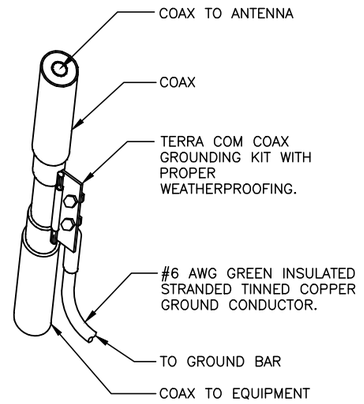


NOTES:
1. CADWELD "TYPES" SHOWN ABOVE ARE EXAMPLES. PROVIDE APPROPRIATE TYPES AS REQUIRED.

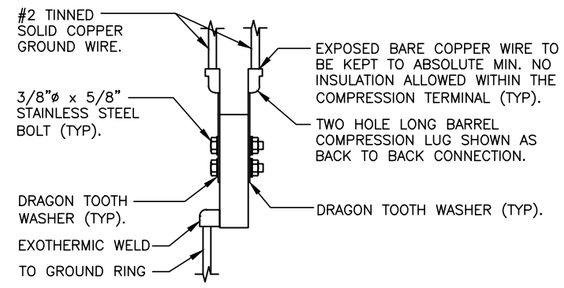
1 GR-3 TYPICAL CAD WELDS
SCALE: N.T.S.



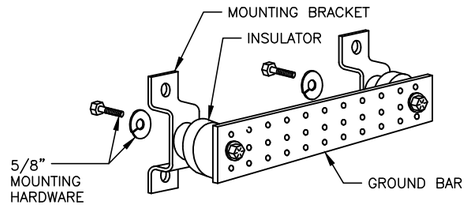
2 GR-3 INSPECTION SLEEVE DETAIL
SCALE: N.T.S.



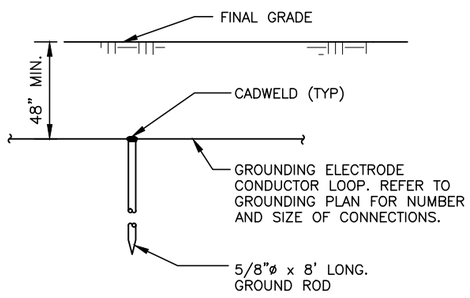
3 GR-3 COAXIAL CABLE GROUNDING DETAIL
SCALE: N.T.S.



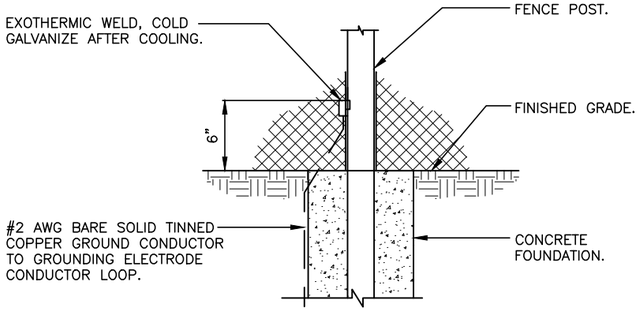
6 GR-3 TYPICAL GROUND BAR BAR CONNECTION DETAIL
SCALE: N.T.S.



NOTES:
1. 1/4" THICK COPPER GROUND BR TIN PLATED AFTER FABRICATION (.0003 THICK).
2. HOLES TO HAVE 1/16" COUNTERSINK ON EACH SIDE.



4 GR-3 GROUND ROD DETAIL
SCALE: N.T.S.



5 GR-3 TYPICAL FENCE BONDING DETAIL
SCALE: N.T.S.

7 GR-3 TYPICAL GROUND BAR BAR DETAIL
SCALE: N.T.S.

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CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:

GROUNDING DETAILS

SHEET NUMBER:

GR-3

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAS MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE CONSTRUCTION MANAGER OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.

4. THE CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THE PROJECT REQUIREMENTS.

6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWING/CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATION UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE. CONTRACTOR SHALL PROVIDE SERVICES FOR OFF LOADING AND PLACEMENT OF SHELTER IN ACCORDANCE WITH MANUFACTURER'S LIFTING PROCEDURES.

8. THE CONTRACTOR SHALL MAINTAIN A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDA OR CLARIFICATIONS AVAILABLE FOR USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT. REDLINED AS-BUILTS ARE TO BE DELIVERED TO THE CLIENT AT CLOSEOUT.

9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.

13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.

14. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.

15. FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (HANDICAPPED ACCESS NOT REQUIRED).

16. FACILITY HAS NO PLUMBING.

17. PRIOR TO OR UPON ENTERING INTO THE SITE COMPOUND, THE PERSONNEL ENTERING THE SITE AND THE SHELTER ARE TO CONTACT THE SWITCH AND THE CLIENT NOC INFORMING THEM OF THE FOLLOWING INFORMATION: WHO IS ENTERING THE SHELTER AND WHAT COMPANY THEY ARE WITH, WHY THEY ARE ENTERING THE SHELTER AND HOW LONG THEY PLAN TO BE AT THE SHELTER.

18. UPON LEAVING THE SHELTER, THE "SITE" PERSONNEL ARE TO CONTACT THE SWITCH AND CLIENT NOC INFORMING THEM OF DEPARTURE.

19. SHOULD THE SHELTER ACCESS OCCUR WHILE THE SWITCH IS UNMANNED, THEN AT MINIMUM THE CLIENT NOC WILL BE NOTIFIED OF THE ABOVE INFORMATION.

20. ALL INSTALLATION DEBRIS AND TRASH SHALL BE REMOVED FROM THE SITE ON A DAILY BASIS. ANY EXPENSE THAT IS INCURRED BY CLIENT FOR TRASH REMOVAL WILL BE BACK-CHARGED TO THE SUBCONTRACTOR.

21. THE CONTRACTOR SHALL NOTIFY ENGINEER, WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE CONSTRUCTION MANAGER.

22. ALL ANTENNA OUTAGES MUST BE PLANNED AT A MINIMUM OF 24 HOURS IN ADVANCE. CONTRACTOR MUST CONTACT THE SWITCH AND THE NOC TO COORDINATE. IF THIS POLICY IS NOT ADHERED TO, THE CONTRACTOR WILL BE REMOVED FROM THE BIDDER'S LIST AND ANY OPPORTUNITY FOR FUTURE WORK.

A/C	AIR CONDITIONING
ADJ.	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
APPROX.	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWG	AMERICAN WIRE GAUGE
A	AMPERE
BTS	BASE TRANSMISSION STATION
BLDG.	BUILDING
BLK.	BLOCK
B/S	BUILDING STANDARD
CIGBE	GROUND BAR
CLG	CEILING
CLR.	CLEAR
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
C.F.C.I.	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
DBL.	DOUBLE
DIA., ø	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DN	DOWN
DTL.	DETAIL
DWG.	DRAWING
E	EAST
EA.	EACH
EL., ELEV.	ELEVATION
ELECT.	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
EQ.	EQUAL
EQUIP.	EQUIPMENT
E.W.	EACH WAY
EXIST.	EXISTING
EXT.	EXTERIOR
FIN.	FINISH
FLR	FLOOR
FT.	FOOT
GRC.	GALVANIZED RIGID CONDUIT
G. OR GRD.	GROUND
GA.	GAUGE
GALV.	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
HORIZ.	HORIZONTAL
HR	HOUR
HT.	HEIGHT
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
I.D.	INSIDE DIA.
IN.	INCH
INFO	INFORMATION
INSUL.	INSULATION
INT.	INTERIOR
KVA	KILOVOLTS-AMPERE
KW	KILOWATT
LB(S)	POUND(S)
MGB	MASTER GROUND BAR
MAX.	MAXIMUM
MECH.	MECHANICAL
MFR.	MANUFACTURER
MGR.	MANAGER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MTD.	MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NEUT.	NEUTRAL
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOC	NETWORK OPERATIONS CENTER
NPS	NOMINAL PIPE SIZE
N.T.S.	NOT TO SCALE
O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
OC, o/c	ON CENTER
OPP	OPPOSITE
OD	OUTSIDE DIAMETER
OHP	OVERHEAD POWER
OHT	OVERHEAD TELEPHONE
OHU	OVERHEAD UTILITY LINES
PLYWD.	PLYWOOD
PR	PAIR
PH	PHASE
PVC	POLYVINYL CHLORIDE
PROJ	PROJECT
PROP	PROPERTY
PT	PRESSURE TREATED
RECPT.	RECEPTACLE
REQ'D	REQUIRED
RGS	RIGID GALVANIZED STEEL
R.O.	ROUGH OPENING
R.O.W.	RIGHT-OF-WAY
S	SOUTH
S.O.	SERVICE GRADE OIL RESISTANT
SHT	SHEET
SIM.	SIMILAR
SPEC.	SPECIFICATION
XXX.XX'	SPOT ELEVATION
SQ.	SQUARE
SF	SQUARE FOOT
SS	STAINLESS STEEL
STL.	STEEL
STRUCT.	STRUCTURAL
THRU	THROUGH
T.O.C.	TOP OF CONCRETE
T.O.M.	TOP OF MASONRY
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
VERT.	VERTICAL
VIF	VERIFY IN FIELD
V	VOLT
W	WEST
W/	WITH
W/O	WITHOUT
W.P.	WEATHERPROOF
XFMR	TRANSFORMER

NORTH ARROW

ELEVATION

SECTIONS & DETAILS

BRICK

CONCRETE

EARTH

GRAVEL

STEEL

METER

GROUND

REVISION

KEYNOTE

MATCH LINE

WORK POINT

MECHANICAL BONDING CONNECTION

EXOTHERMICALLY WELDED BONDING CONNECTION

POWER POLE

DISCONNECT SWITCH

DOUBLE-THROW MANUAL TRANSFER SWITCH

CIRCUIT BREAKER

EMERGENCY GENERATOR RECEPTACLE

TELCO PEDESTAL

GROUND ROD

GROUND ROD INSPECTION WELL

REPRESENTS DETAIL NUMBER

REF. DRAWING NUMBER

LEGEND

EXISTING CONTOUR LINE

EXISTING CHAIN LINK FENCE

EXISTING PROPERTY LINE

EXISTING OVERHEAD UTILITIES

EXISTING SANITARY SEWER LINE

EXISTING STORM DRAIN LINE

PROPOSED CONTOUR LINE

PROPOSED CHAIN LINK FENCE

PROPOSED LEASE AREA

PROPOSED OVERHEAD UTILITIES

PROPOSED UNDERGROUND TELCO

PROPOSED UNDERGROUND ELECTRIC

PROPOSED UNDERGROUND FIBER

PROPOSED EASEMENT

PROPOSED SILT FENCE

PROPOSED GROUNDING

FUTURE FEATURES

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PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:

GENERAL NOTES AND ABBREVIATIONS

SHEET NUMBER:

GN-1

GENERAL NOTES:

1. FENCED SITE AREA SHALL BE CLEARED AND GRUBBED. REMOVE UNSUITABLE SOFT OR LOOSE SOILS, ORGANIC MATERIAL AND OR RUBBLE TO FIRM SUBGRADE. FILL UNDERCUT UP TO 6 INCHES BELOW FINISH GRADE.
2. IF ANY ARCHAEOLOGICAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY EITHER KIMLEY HORN OR THE CLIENT.
3. IN ADDITION TO PROVIDING THEM IN THE CLOSE-OUT PACKAGE, THE CONTRACTOR SHALL LEAVE A COPY OF THE AS-BUILT DRAWINGS, MEG TEST, AND SWEEP TEST IN THE SHELTER AFTER CONSTRUCTION.
4. THE CONTRACTOR MUST CONTACT THE SURVEYOR TO STAKE OUT THE EASEMENTS AND LEASE AREA PRIOR TO CONSTRUCTION. ALL FEES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. THE CONTRACTOR IS TO ENSURE THAT NO DAMAGE OR DEBRIS OCCURS ON THE ADJACENT PROPERTIES.
6. THE CONTRACTOR SHALL SEED ALL DISTURBED AREAS WITH LOW MAINTENANCE NATIVE GRASS TO PREVENT EROSION.
7. UNTIL THE COMPOUND IS SURROUNDED BY A PERMANENT FENCE, THE CONTRACTOR MUST ERECT A TEMPORARY FENCE AROUND THE TOWER AND POST A "NO TRESPASSING" SIGN. ALL CLIMBING PEGS MUST BE REMOVED UP TO 20' UNTIL A PERMANENT FENCE IS INSTALLED.
8. THE CONTRACTOR MUST ENSURE THAT ALL DELIVERY TRUCKS WILL BE ABLE TO DELIVER THE MATERIAL TO THE COMPOUND. IF THE DELIVERY TRUCKS CAN NOT ACCESS THE COMPOUND THEN THE CONTRACTOR MUST MAKE OTHER ARRANGEMENTS TO GET THE MATERIAL TO THE COMPOUND. IF THIS IS REQUIRED THE CONTRACTOR MUST CONTACT KIMLEY HORN IMMEDIATELY. NO ADDITIONAL FEES WILL BE PASSED ON TO KIMLEY HORN OR THE CLIENT.
9. PROPOSED TOWER AND FOUNDATION TO BE INSTALLED IN ACCORDANCE WITH THE TOWER MANUFACTURER PLANS PROVIDED BY CLIENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE UNLOADING OF TOWER MATERIALS DELIVERED TO SITE BY THE TOWER MANUFACTURER.
10. CONTRACTOR MUST REFER TO THE GEOTECH REPORT FOR ALL COMPACTED FILL RECOMMENDATIONS. IF THE GEOTECH REPORT CONFLICTS WITH THE CONSTRUCTION DRAWINGS THEN STOP WORK AND CONTACT THE CLIENT AS SOON AS POSSIBLE.
11. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DOT AND/OR COUNTY SPECIFICATIONS PRIOR TO BID AND CONSTRUCTION. IF THE SPECIFICATIONS DIFFER FROM THE CONSTRUCTION DRAWINGS, THEN THE SPECIFICATIONS WILL GOVERN. NO ADDITIONAL COSTS FOR ADHERING TO THE SPECIFICATIONS WILL BE ALLOWED AFTER THE BID HAS BEEN ISSUED AND ACCEPTED NOR WILL PROJECT DELAYS BE TOLERATED.
12. THE CONTRACTOR MUST FIELD VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
13. PROPOSED LIGHTNING ROD IS TO BE INSTALLED A MINIMUM OF 3' ABOVE HIGHEST APPURTENANCE.
14. IF THE OVERALL HEIGHT OF THE STRUCTURE INCLUDING APPURTENANCES EXCEEDS THE HEIGHT SHOWN ON THE DRAWINGS THEN CONTACT CLIENT IMMEDIATELY.
15. ANTENNA LOADING AND LOCATION BASED ON TOWER MANUFACTURER DRAWINGS.
16. THE TOWER ANCHOR BOLTS WILL BE PRE-SHIPPED AND THE CONTRACTOR MUST COORDINATE DELIVERY WITH CLIENT.
17. CONTRACTOR MUST PROVIDE TEMPORARY TOWER LIGHTING ONCE THE TOWER HAS REACHED 200' UNTIL THE PERMANENT LIGHTING IS INSTALLED.
18. CONTRACTOR SHALL INSTALL BEACON EXTENSION MOUNT PER MANUFACTURERS SPECIFICATIONS.
19. WHEN TOWER LIGHTING IS REQUIRED, THE CONTRACTOR MUST VISUALLY MONITOR THE TOWER LIGHTING AT LEAST ONCE A DAY UNTIL THE LIGHTING IS ELECTRONICALLY MONITORED. IF ANY PROBLEMS OCCUR, THE CONTRACTOR MUST CONTACT CLIENT IMMEDIATELY.
20. PRIOR TO PERFORMING THE WORK, IT IS THE CLIENT'S RESPONSIBILITY TO VERIFY THE STRUCTURAL CAPACITY OF THE TOWER TO RESIST THE WIND/GRAVITY LOADS FROM THE PROPOSED ANTENNAS.
21. IF ANY WORK IS PERFORMED AT THIS SITE THAT REQUIRES THE SITE TO BE OFF AIR OR TURNED DOWN, THE SWITCH IS TO BE NOTIFIED 48 HOURS PRIOR TO CONSTRUCTION.
22. INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES, AND SUPPORT STRUCTURES. ANTENNA WORK TO BE INSTALLED PER THE REQUIREMENTS OF THE TOWER MANUFACTURER'S SPECIFICATION.
23. CONTRACTOR TO PROVIDE THE PROPER COAX JUMPER SUPPORT ATTACHMENTS TO THE TOWER AND ANTENNA MOUNT.
24. CONTRACTOR MUST CALL LOCAL UNDERGROUND UTILITY LOCATING SERVICE BEFORE ANY EXCAVATION OR TRENCHING IS PERFORMED TO FLAG ALL UNDERGROUND UTILITIES. CONTRACTOR MUST HAND DIG ALL TRENCHES & EXCAVATIONS AROUND EXISTING UNDERGROUND UTILITIES IN WORK AREA.
25. CONTRACTOR MUST VERIFY AND COORDINATE ALL POWER AND TELCO DESIGN INFORMATION PRIOR TO CONSTRUCTION WITH LOCAL UTILITY COMPANIES.
26. ENTRY LOCATIONS ON SHELTERS MAY VARY. VERIFY EXACT LOCATION ONCE SHELTER HAS ARRIVED.
27. CONTRACTOR TO COORDINATE THE EXACT LOCATION OF THE NEW TELCO PEDESTAL AND POWER POLE WITH LOCAL UTILITY COMPANIES.
28. IF CONDUIT RUNS HAVE MORE THEN (3)-90° TURNS THEN THE CONTRACTOR MUST INSTALL PULL BOXES AS NEEDED.
29. CONTRACTOR SHALL CORE DRILL THROUGH SHELTER WALL AND PROVIDE WEATHERPROOFING FOR ALL CONDUITS THAT DON'T HAVE A PENETRATION.
30. CONTRACTOR MUST CALL LOCAL UNDERGROUND UTILITY LOCATING SERVICE BEFORE ANY EXCAVATION OR TRENCHING IS PERFORMED TO FLAG ALL UNDERGROUND UTILITIES. CONTRACTOR MUST HAND DIG ALL TRENCHES & EXCAVATIONS AROUND EXISTING UNDERGROUND UTILITIES IN WORK AREA.
31. CONTRACTOR MUST VERIFY AND COORDINATE ALL POWER AND TELCO DESIGN INFORMATION PRIOR TO CONSTRUCTION WITH LOCAL UTILITY COMPANIES.
32. ALL EQUIPMENT INSTALLED ON THE H-FRAMES SHALL MAINTAIN A MINIMUM OF 3' CLEARANCE TO ALL FENCES.
33. ALL CONDUIT ABOVE GROUND SHALL BE RIGID.
34. ALL CONDUIT INSTALLED IN FRONT OF THE GATE SHALL BE ENCLOSED IN CONCRETE.
35. FOR EQUIPMENT SHELTER INTERNAL WIRING REFER TO FIBREBOND SHELTER SHOP DRAWINGS.
36. A RESISTANCE TO GROUND OF FIVE (5) OHMS OR LESS IS THE OBJECTIVE FOR THE EARTH GROUND SYSTEMS AT CELL SITES.
37. ALL UNDERGROUND GROUND WIRE TO BE BURIED 30" DEEP OR 6" BELOW THE FROST LINE, WHICHEVER IS DEEPER.
38. ALL BURIED GROUND CONNECTIONS WILL BE MADE USING THE EXOTHERMIC WELD PROCESS.
39. ALL GROUND WIRES SHALL BE CONNECTED TO GROUND BARS USING TWO-HOLE CRIMP/COMPRESSION CONNECTORS.
40. AN APPROVED ANTIOXIDATION COMPOUND SHALL BE USED ON ALL EXTERNAL CONNECTIONS, EXCLUDING EXOTHERMIC WELDS, AND ON ALL EXTERNAL GROUND BARS. COAT ALL CONDUCTORS AND SURFACES PRIOR TO CONNECTION.
42. REFER TO SHELTER MANUFACTURER AND CLIENT SPECS FOR INTERNAL GROUNDING DETAILS.
43. GROUND CONDUCTOR RUNS SHALL BE STRAIGHT AS POSSIBLE, WITH A 6" MINIMUM RADIUS FOR CONDUCTORS UP TO #6, A 12" MINIMUM RADIUS FOR CONDUCTORS FROM #6 UP TO #4/0, A 24" MINIMUM RADIUS FOR #4/0 CONDUCTORS AND UP.
44. IF GROUNDED METALLIC OBJECTS ARE LESS THAN 6' FROM A FENCE POST, THEN THE POST SHOULD BE GROUNDED TO THE GROUND RING.
45. ALL GROUND WIRES THAT ARE ROUTED ABOVE GROUND SHOULD BE INSTALLED IN 3/4"ø PVC, MINIMUM 12" BELOW GRADE TO 6" FROM ABOVE GROUND CONNECTION POINT.
46. AT THE TIME THE CONSTRUCTION DRAWINGS WERE CREATED, KIMLEY HORN DID NOT POSSESS A COPY OF THE PROPOSED TOWER MANUFACTURER DRAWINGS THUS WE DO NOT KNOW THE EXACT SIZE OF THE OVERALL TOWER FOOTPRINT. THE CONTRACTOR MUST COMPARE THE CONSTRUCTION DRAWINGS WITH THE TOWER DRAWINGS PRIOR TO BID AND/OR CONSTRUCTION AND IF THEY FIND ANY DISCREPANCIES OR POSSIBLE ISSUES THEY MUST NOTIFY THE CLIENT IMMEDIATELY.

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DOUGLAS COUNTY

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

GN-2

CIVIL SPECIFICATION NOTES

GENERAL NOTES:

1. ZONING REGULATIONS AND CONDITIONAL USE PERMITS:

   A. CLIENT WILL SUBMIT FOR AND OBTAIN ALL ZONING AND CONDITIONAL USE PERMITS. SOME USE PERMITS MAY HAVE SPECIFIC REQUIREMENTS FOR THE SITE RELATED TO CONSTRUCTION, SUCH AS NOISE REGULATIONS, HOURS OF WORK, ACCESS LIMITATIONS, ETC. THE CONSTRUCTION MANAGER WILL INFORM THE CONTRACTOR OF THESE REQUIREMENTS AT THE PRE-BID MEETING OR AS SHOWN IN CONSTRUCTION DOCUMENTS.

2. FAA PERMIT AND TOWER LIGHTING:

   A. REFER TO CONSTRUCTION DOCUMENTS AND CONSTRUCTION MANAGER FOR FAA AND STATE LIGHTING REQUIREMENTS. CONTRACTOR SHALL PROVIDE TEMPORARY FAA APPROVED LIGHTING UNTIL PERMANENT LIGHTING IS OPERATIONAL.

3. TOWER SECURITY:

   A. TOWER SHALL BE FENCED BY CONTRACTOR, TEMPORARILY OR PERMANENTLY WITHIN 24 HOURS OF ERECTION. DO NOT ALLOW THE GATE ACCESSING THE TOWER AREA TO REMAIN OPEN AND UNATTENDED AT ANY TIME FOR ANY REASON. KEEP THE GATE CLOSED AND LOCKED WHEN NOT IN USE.

4. CONTRACTOR SHALL BE RESPONSIBLE FOR RECEIVING, UNLOADING, AND INSTALLATION FOR PLACEMENT OF NEW CONCRETE SHELTER BUILDING OR CABINETS AND ERECTION OF TOWER.

5. CONFLICTS:

   A. VERIFY ALL MEASUREMENTS AT THE SITE BEFORE ORDERING MATERIAL OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED DUE TO DIFFERENCES BETWEEN ACTUAL DIMENSIONS OR DIMENSIONS SHOWN ON PLANS. SUBMIT NOTICE OF ANY DISCREPANCY IN DIMENSIONS OR OTHERWISE TO THE CONSTRUCTION MANAGER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.

   B. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OF CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS CONTRACT DOCUMENTS GOVERNING THE WORK.

6. PHOTOS:

   A. PROVIDE PHOTOGRAPHIC EVIDENCE OF ALL FOUNDATION INSTALLATION, GROUNDING AND TRENCHING AFTER PLACEMENT OF UTILITIES PRIOR TO BACKFILL.

SITE PREPARATION:

1. CONTRACTOR'S SCOPE OF WORK:

   A. PROTECTION OF EXISTING TREES, VEGETATION AND LANDSCAPING MATERIALS WHICH MIGHT BE DAMAGED BY CONSTRUCTION ACTIVITIES.

   B. TRIMMING OF EXISTING TREES AND VEGETATION AS REQUIRED FOR PROTECTION DURING CONSTRUCTION ACTIVITIES.

   C. CLEARING AND GRUBBING OF STUMPS, VEGETATION, DEBRIS, RUBBISH, DESIGNATED TREES, AND SITE IMPROVEMENTS.

   D. TOPSOIL STRIPPING AND STOCKPILING.

   E. TEMPORARY EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL CONFORMING TO LOCAL AND STATE REQUIREMENTS AS APPLICABLE.

   F. TEMPORARY PROTECTION OF ADJACENT PROPERTY, STRUCTURES, BENCHMARKS, AND MONUMENTS.

   G. PROTECTION AND TEMPORARY RELOCATION, STORAGE AND REINSTALLATION OF EXISTING FENCING AND OTHER SITE IMPROVEMENTS SCHEDULED FOR REUSE.

   H. REMOVAL AND LEGAL DISPOSAL OF CLEARED MATERIALS.

2. CONTRACTOR'S QUALITY ASSURANCE:

   A. CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR CONTAINMENT OF SEDIMENT AND CONTROL OF EROSION ON SITE. ANY DAMAGE TO ADJACENT OR DOWNSTREAM PROPERTIES WILL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

   B. CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. DO NOT ALLOW WATER TO STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON THE SITE CAUSED BY INADEQUATE MAINTENANCE OF DRAINAGE WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ANY COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE CONTRACTOR'S EXPENSE.

   C. CONTRACTOR SHALL PROPERLY DISPOSE ALL WASTE MATERIAL OFF-SITE OR AS DIRECTED BY THE CONSTRUCTION MANAGER AND IN ACCORDANCE WITH JURISDICTIONAL AUTHORITIES.

3. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS WITHIN THE CONSTRUCTION DOCUMENTS):

   A. MATERIALS USED FOR TREE PROTECTION, EROSION CONTROL, SILTATION.

   B. MATERIALS USED FOR DUST CONTROL AS SUITABLE FOR SPECIFIC SITE CONDITIONS.

EARTHWORK:

1. CONTRACTOR'S SCOPE OF WORK:

   A. EXCAVATION, TRENCHING, FILLING, COMPACTION AND GRADING FOR STRUCTURES, SITE IMPROVEMENTS AND UTILITIES.

   B. MATERIALS FOR SUB-BASE, DRAINAGE FILL, FILL, BACKFILL AND GRAVEL FOR SLABS, PAVEMENTS AND IMPROVEMENTS.

   C. ROCK EXCAVATION WITHOUT BLASTING.

   D. SUPPLY OF ADDITIONAL MATERIALS FROM OFF-SITE AS REQUIRED.

   E. REMOVAL AND LEGAL DISPOSAL OF EXCAVATED MATERIALS AS REQUIRED.

   F. SITE GRADING.

   G. PLACEMENT AND COMPACTION OF FILL, SUBGRADE AND GRAVEL SURFACING.

   H. WHEN REQUIRED, CONSTRUCTION OF COMPOUND, ACCESS ROADS, FENCING AND ALL FOUNDATIONS.

2. CONTRACTOR'S QUALITY ASSURANCE:

   A. COMPACTION: UNDER STRUCTURES, FOUNDATIONS, BUILDING SLABS, PAVEMENTS AND WALKWAYS 95 PERCENT MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 WITH PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT.

   B. GRADING TOLERANCES OUTSIDE BUILDING LINES: LAWNS, UNPAVED AREAS AND WALKS, PLUS OR MINUS 1 INCH. UNDER PAVEMENTS, PLUS OR MINUS 1/2 INCH.

   C. GRADING TOLERANCE FOR FILL UNDER ALL CONCRETE APPLICATIONS: PLUS OR MINUS 1/2 INCH MEASURED WITH 10 FOOT STRAIGHTEDGE.

   D. CONTRACTOR MUST REFER TO THE GEOTECH REPORT FOR ALL COMPACTED FILL RECOMMENDATIONS. IF THE GEOTECH REPORT CONFLICTS WITH THE CONSTRUCTION DRAWINGS THEN STOP WORK AND CONTACT THE CLIENT AS SOON AS POSSIBLE.

3. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS WITHIN CONSTRUCTION DOCUMENTS):

   A. SUB BASE MATERIAL: GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE OR SLAG AND NATURAL OR CRUSHED SAND.

   B. WASHED MATERIAL: UNIFORMLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL, WITH 100 PERCENT PASSING A 1-1/2 INCH SIEVE AND NOT MORE THAN 5 PERCENT PASSING A NO. 4 SIEVE.

   C. GRADING MATERIAL: SATISFACTORY NATIVE OR IMPORTED MATERIALS CONTAINING ROCK OR GRAVEL NOT LARGER THAN 2 INCHES IN ANY DIMENSION. GRADING MATERIAL SHALL NOT INCLUDE DEBRIS, WASTE, FROZEN MATERIALS, AND OTHER UNSUITABLE MATERIALS. IMPORTED MATERIAL SHALL HAVE A FINES CONTENT OF NO MORE THAN 5 PERCENT.

   D. BACKFILL MATERIALS: SATISFACTORY NON-COHESIVE NATIVE OR IMPORTED SOIL MATERIALS FREE OF CLAY, DEBRIS, WASTE, AND OTHER UNSUITABLE MATERIALS. ROCK OR GRAVEL SHALL NOT EXCEED 4 INCHES IN ANY DIMENSION. IMPORTED MATERIAL SHALL HAVE A FINES CONTENT OF NO MORE THAN 5 PERCENT.

   E. GRAVEL MATERIAL: EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL, WITH 100 PERCENT PASSING A 1-1/2 INCH SIEVE AND NOT MORE THAN 5 PERCENT PASSING A NO. 4 SIEVE.

   F. GEOTEXTILE FABRIC: TYPAR 3401 OR EQUIVALENT

4. CLEARING AND GRUBBING:

   A. REMOVE ALL VEGETATION AND MATERIALS TO A MINIMUM DEPTH OF 6 INCHES. REMOVE STUMPS COMPLETELY UNDER FOUNDATIONS AND ROADWAY. DISPOSE OF CLEARING AND GRUBBING OFF-SITE, OR IN AN ON-SITE LOCATION APPROVED BY CONSTRUCTION MANAGER.

5. STRIPPING:

   A. STRIP NOT LESS THAN 3 INCHES OF VEGETATION AND TOPSOIL FROM AREAS THAT WILL UNDERLAY GRAVEL, PAVEMENT, NEW STRUCTURES, OR NEW EMBANKMENTS. STOCKPILE STRIPPED TOPSOIL ON-SITE FOR REUSE IN FINAL LANDSCAPING.

6. COMMON WEEDING:

   A. STERILIZE COMPOUND AREA WITH WEED KILLER/DEFOLIANT. THEN TREAT AREA WITH AN HERBICIDE SUCH AS PARQUET OR EQUIVALENT.

7. COMMON EXCAVATION:

   A. EXCAVATE TO DEPTH, LINES, AND GRADES SHOWN ON THE PLANS OR AS OTHERWISE SPECIFIED.

   B. TEMPORARILY STOCKPILE ON-SITE EXCAVATION AT AN APPROVED LOCATION WITHIN THE WORK AREA UNTIL SITE GRADING IS COMPLETE. STOCKPILE SHALL NOT EXCEED 15 FEET IN HEIGHT.

   C. DISPOSE OF EXCESS EXCAVATION OFF-SITE. MATERIALS REMOVED FROM SITE MUST BE DISPOSED OF IN A LEGAL MANNER.

8. EMBANKMENT:

   A. CONSTRUCT EMBANKMENT TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.

   B. CONSTRUCT EMBANKMENT FROM ON-SITE EXCAVATION MATERIALS. USE IMPORTED BACKFILL ONLY AFTER AVAILABLE ON-SITE EXCAVATION MATERIALS HAVE BEEN USED.

   C. CONSTRUCT IN LIFTS OF NOT MORE THAN 9 INCHES IN LOOSE DEPTH. THE FULL WIDTH OF THE CROSS SECTION SHALL BE BROUGHT UP UNIFORMLY.

   D. MATERIAL SHALL BE PLACED IN LAYERS AND SHALL BE NEAR OPTIMUM MOISTURE CONTENT BEFORE ROLLING TO OBTAIN THE PRESCRIBED COMPACTION. WETTING OR DRYING OF THE MATERIAL AND MANIPULATION TO SECURE A UNIFORM MOISTURE CONTENT THROUGHOUT THE LAYER MAY BE REQUIRED. SUCH OPERATIONS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM. SHOULD THE MATERIAL BE TOO WET TO PERMIT PROPER COMPACTION, REMOVE AND REPLACE FILL WITH MATERIAL IN CONFORMANCE WITH THESE SPECIFICATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIAL WITH AN ACCEPTABLE MOISTURE CONTENT.

   E. WHEN APPLICABLE, DO NOT PLACE FROZEN MATERIAL IN THE EMBANKMENT, AND DO NOT PLACE EMBANKMENT MATERIAL UPON FROZEN MATERIAL.

   F. BE RESPONSIBLE FOR THE STABILITY OF EMBANKMENTS AND REPLACE ANY PORTION WHICH HAS BECOME DISPLACED DUE TO THE CONTRACTOR'S OPERATIONS.

   G. START LAYERS IN THE DEEPEST PORTION OF THE FILL, AND AS PLACEMENT PROGRESSES, CONSTRUCT LAYERS APPROXIMATELY PARALLEL TO THE FINISHED GRADE LINE.

   H. ROUTE EQUIPMENT, BOTH LOADED AND EMPTY, OVER THE FULL WIDTH OF EMBANKMENT TO ENSURE UNIFORMITY OF MATERIAL PLACEMENT.

   I. COMPACT EMBANKMENT UNDERLYING NEW GRAVEL PAVING, FLOOR SLABS, AND STRUCTURES TO 95 PERCENT MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 WITH PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT. COMPACT NON-STRUCTURAL AREA EMBANKMENTS TO A MINIMUM OF 90 PERCENT OF ASTM D-1557.

9. SITE GRADING:

   A. USING ON-SITE EXCAVATION MATERIALS, SHAPE, TRIM, FINISH, AND COMPACT SURFACE AREAS TO CONFORM TO THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE DRAWINGS OR AS DESIGNATED BY THE CONSTRUCTION MANAGER.

   B. GRADE SURFACES TO DRAIN AND ELIMINATE ANY PONDING OR EROSION.

   C. ELIMINATE WHEEL RUTS BY REGRADING.

   D. CONSTRUCT FINISHED SURFACE OF SITE GRADING AREAS WITHIN ONE INCH FROM SPECIFIED GRADE.

10. SUBGRADE PREPARATION:

   A. SHAPE TOP OF SUBGRADE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.

   B. MAINTAIN TOP OF SUBGRADE IN A FREE-DRAINING CONDITION.

   C. DO NOT STOCKPILE MATERIALS ON TOP OF SUBGRADE UNLESS AUTHORIZED BY CONSTRUCTION MANAGER.

   D. COMPACT THE TOP 6 INCHES OF SUBGRADE TO A 95 PERCENT MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.

   E. REMOVE AND REPLACE SOFT SOILS ON AREAS THAT "PUMP" OR DEFORM UNDER WEIGHT OF COMPACTION EQUIPMENT.

   F. CONSTRUCT TOP OF SUBGRADE WITHIN ONE INCH OF ESTABLISHED GRADE AND CROSS-SECTION.

11. GEOTEXTILE FABRIC:

   A. LAY GEOTEXTILE FABRIC OVER COMPACTED SUBGRADE AS PER CONSTRUCTION DOCUMENTS IN COMPOUND AND UNDER LENGTH OF ROAD (WHEN REQUIRED). LAP ALL JOINTS A MINIMUM OF 12 INCHES.

12. GRAVEL SURFACING:

   A. CONSTRUCT GRAVEL SURFACING AREAS USING CRUSHED AGGREGATE BASE AND FINISH COURSES AS SPECIFIED BY CONSTRUCTION MANAGER OR CONSTRUCTION DOCUMENTS.

   B. SPREAD GRAVEL AND RAKE TO A UNIFORM SURFACE.

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REV:	DATE:	DESCRIPTION:	BY:
2	02/12/15	REVISED PER COMMENTS	MAM
1	12/11/14	ADDED LANDSCAPE PLAN	MAM
0	10/21/14	ISSUED FOR REVIEW	KBB

DRAWN BY:	CHECKED BY:
KBB	CAR

KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE: SPECIFICATIONS

SHEET NUMBER: SP-1

CIVIL SPECIFICATION NOTES

TRENCHING:

CONTRACTOR MUST NOTIFY "ONE-CALL" UTILITY LOCATING SERVICE THREE DAYS PRIOR TO CONSTRUCTION TO FLAG ALL UNDERGROUND UTILITIES.

1. MATERIALS:

   A. FILL MATERIAL SHALL BE OBTAINED, TO THE MAXIMUM EXTENT POSSIBLE, FROM EXCAVATIONS ON-SITE. THE STRUCTURAL FILL SHOULD BE SAND AND SHALL BE APPROVED BY THE CONSTRUCTION MANAGER AND SHALL CONFORM TO LOCAL GOVERNING JURISDICTION AND UTILITY COMPANY REQUIREMENTS. THE FILL MATERIAL SHALL BE FREE FROM PERCEPTIBLE AMOUNTS OF WOOD, DEBRIS OR TOPSOIL AND SHALL NOT CONTAIN MARBLE OR OTHER ELEMENTS, WHICH TEND TO KEEP IT IN A PLASTIC STATE. MATERIALS DESIGNATED AS HAZARDOUS OR INDUSTRIAL BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) ARE TO BE AVOIDED. THE FILL MATERIAL SHALL CONTAIN FINES SUFFICIENT TO FILL ALL VOIDS IN THE MATERIAL.

2. PIPE DETECTION AND IDENTIFICATION:

   A. UTILIZING WARNING TAPE: ALL ELECTRIC SERVICE TRENCHES SHALL BE MARKED WITH WARNING TAPE.

3. TRENCH EXCAVATION:

   A. DIG TRENCH TO LINES AND GRADES SHOWN ON THE PLANS OR AS DIRECTED BY CONSTRUCTION MANAGER.

   B. TRENCH WIDTH SHALL BE SUFFICIENT TO ALLOW FOR SATISFACTORY CONSTRUCTION AND INSPECTION OF THE PROJECT, WITHOUT ENDANGERING OTHER CONSTRUCTION WORK OR ADJACENT FACILITIES.

   C. DISPOSAL OF EXCESS AND UNSUITABLE EXCAVATION MATERIAL PROPERLY, AS DIRECTED BY CONSTRUCTION MANAGER.

   D. USE HAND METHODS FOR EXCAVATION THAT CANNOT BE ACCOMPLISHED WITHOUT ENDANGERING EXISTING OR NEW STRUCTURES OR OTHER FACILITIES.

4. TRENCH PROTECTION:

   A. PROVIDE MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO PROTECT TRENCHES AT ALL TIMES.

   B. SHEETING AND BRACING: MEET OR EXCEED OSHA REQUIREMENTS.

5. BACKFILLING:

   A. A PRELIMINARY EARTH RESISTIVITY TEST SHALL BE PERFORMED PRIOR TO BACKFILLING.

   B. BACKFILL AND/OR BEDDING SHALL NOT BE PLACED IN A TRENCH UNTIL THE TRENCH WORK AND BACKFILL HAS BEEN INSPECTED AND APPROVED BY THE CLIENT. CONTRACTOR TO NOTIFY CLIENT'S CONSTRUCTION MANAGER AT LEAST 24 HOURS IN ADVANCE OF EXPECTED BACKFILL.

   C. IF BACKFILL MATERIAL IS NOT SUITABLE (CONTAINS DEBRIS OR ROCK), REPLACE WITH A LOW RESISTANCE GROUND ENHANCEMENT MATERIAL.

   D. WHENEVER CLIENT REQUIRES THE REMOVAL OF WET OR OTHERWISE UNSTABLE SUBGRADE FROM THE FILL MATERIAL PREVIOUSLY PLACED BY THE CONTRACTOR, THE CONTRACTOR SHALL BEAR THE COST OF ALL REMOVAL OF UNSTABLE SOIL AND WITH BACKFILLING OF THE TRENCH.

   E. BACKFILL SHALL BE PLACED AND PACKED DOWN TIGHTLY TO ACHIEVE 95 PERCENT MAXIMUM DRY DENSITY AS OBTAINED THROUGH THE STANDARD PROCTOR METHOD (ASTM D-698).

   F. FOLLOWING AN APPROVED INSPECTION, BACKFILL MATERIAL SHALL BE DEPOSITED IN THE TRENCH WITH HAND SHOVELS (NOT BY MEANS OF WHEELBARROWS, CARTS, TRUCKS, BULLDOZERS, OR SIMILAR EQUIPMENT) IN 4" LAYERS AND COMPACTED BY MECHANICAL TAMPERS UNTIL THE CONDUCTOR OR PIPE HAS A COVER OF NOT LESS THAN 12" THE REMAINDER OF THE BACKFILL MATERIAL SHALL THEN BE DEPOSITED IN THE TRENCH IN 8" LAYERS AND MECHANICALLY COMPACTED.

   G. PROTECT CONDUIT FROM LATERAL MOVEMENT, DAMAGE FROM IMPACT OR UNBALANCED LOADING TO AVOID DISPLACEMENT OF CONDUIT AND/OR STRUCTURES. ANY SUBSEQUENT SETTLEMENT SHALL BE CONSIDERED THE RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY CORRECTED.

   H. IF REQUIRED COMPACTION DENSITY HAS NOT BEEN OBTAINED, REMOVE THE BACKFILL FROM THE TRENCH OR STRUCTURE, REPLACE WITH APPROVED BACKFILL, AND RECOMPACT AS SPECIFIED.

CHAIN LINK FENCES AND GATES

1. GENERAL:

   A. PROVIDE CHAIN LINK FENCES AND GATES AS COMPLETE UNITS BY A SINGLE SUPPLY SOURCE INCLUDING NECESSARY ERECTION ACCESSORIES, FITTINGS, AND FASTENINGS.

2. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS WITHIN CONSTRUCTION DOCUMENTS):

   A. REFER TO DRAWINGS FOR FABRIC HEIGHT AND OVER WITH 2-INCH MESH SHALL BE KNUCKLED AT ONE SELVAGE AND TWISTED AT THE OTHER; ALL MESHES 60 INCHES HIGH AND UNDER SHALL BE KNUCKLED AT BOTH SELVAGES.

   B. STEEL FABRIC:

      COMPLY WITH CHAIN LINK FENCE MANUFACTURER'S INSTITUTE (CLFMI) PRODUCT MANUAL. FURNISH ONE PIECE OF FABRIC WIDTHS. WIRE SIZE INCLUDES ZINC OR ALUMINUM COATING.

      1. SIZE: 2-INCH MESH, 9 GAUGE (0.148-INCH DIAMETER) WIRE.

      2. GALVANIZED STEEL FINISH: ASTM A392, CLASS 2, WITH A MINIMUM 2.0 OZ. ZINC PER SQ. FT. OF UNCOATED WIRE SURFACE.

   C. FRAMEWORK AND ACCESSORIES:

      1. GENERAL REQUIREMENTS: EXCEPT AS INDICATED OTHERWISE, CONFORM TO THE CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFMI) PRODUCT MANUAL, INDUSTRIAL STEEL GUIDE FOR FENCE RAILS, POSTS, GATES AND ACCESSORIES.

      2. STRENGTH REQUIREMENTS FOR POSTS AND RAILS CONFORMING TO ASTM F1043.

      3. TYPE 1 PIPE: HOT-DIPPED GALVANIZED STEEL PIPE CONFORMING TO ASTM F1083, PLAN ENDS, STANDARD WEIGHT (SCHEDULE 40) WITH NOT LESS THAN 1.8 OZ. ZINC PER SQ. FT. OF SURFACE AREA COATED.

      4. FITTINGS: COMPLY WITH ASTM F626. MILL FINISHED ALUMINUM OR GALVANIZED STEEL, TO SUIT MANUFACTURER'S STANDARDS.

      5. TOP RAIL: MANUFACTURER'S LONGEST LENGTHS, WITH EXPANSION TYPE COUPLINGS, APPROXIMATELY 6 INCHES LONG, FOR EACH JOINT. PROVIDE MEANS FOR ATTACHING TOP RAIL SECURELY TO EACH GATE CORNER, PULL AND END POST.

      A. GALVANIZED STEEL: 1-1/4 INCH NPS (1.66 INCH OD) TYPE I OR II STEEL PIPE OR 1.625 INCH X 1.25 INCH ROLL-FORMED C SECTIONS WEIGHTING 1.35 LBS. PER FT.

   D. SWING GATES:

      COMPLY WITH ASTM F900. PROVIDE HARDWARE AND ACCESSORIES FOR EACH GATE, GALVANIZED PER ASTM A153, AND IN ACCORDANCE WITH THE FOLLOWING:

      1. HINGES: NON-LIFT-OFF TYPE, OFFSET TO PERMIT 180 DEG. GATE OPENING.

      2. LATCH: FORKED TYPE OR PLUNGER-BAR TYPE TO PERMIT OPERATION FROM EITHER SIDE OF GATE, WITH PADLOCK EYE AS INTEGRAL PART OF LATCH.

      3. KEEPER: PROVIDE KEEPER FOR VEHICLE GATES, WHICH AUTOMATICALLY ENGAGES GATE LEAF AND HOLDS IT IN OPEN POSITION UNTIL MANUALLY RELEASED.

      4. GATE STOPS: PROVIDE GATE STOPS FOR DOUBLE GATES, CONSISTING OF 2" O.D. x 12" LONG PIPE GATE KEEPER, EMBEDDED IN CONCRETE, AND DESIGNED TO ENGAGE CENTER DROP ROD OR PLUNGER BAR. INCLUDE LOCKING DEVICE AND PADLOCK EYES AS INTEGRAL PART OF LATCH, PERMITTING BOTH GATE LEAVES TO BE LOCKED WITH SINGLE PADLOCK.

   E. CONCRETE:

      PROVIDE CONCRETE CONSISTING OF PORTLAND CEMENT, ASTM C150, AGGREGATES ASTM C33, AND CLEAN WATER.

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REV: | DATE: | DESCRIPTION: | BY:

2	02/12/15	REVISED PER COMMENTS	MAM
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NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE: SPECIFICATIONS

SHEET NUMBER: SP-2

ELECTRICAL SPECIFICATION NOTES

GENERAL NOTES:

1. OBTAIN PERMITS AND PAY FEES RELATED TO ELECTRICAL WORK PERFORMED ON THIS PROJECT. DELIVER COPIES OF ALL PERMITS TO CLIENT REPRESENTATIVE.
2. SCHEDULE AND ATTEND INSPECTIONS RELATED TO ELECTRICAL WORK REQUIRED BY JURISDICTION HAVING AUTHORITY. CORRECT AND PAY FOR ANY WORK REQUIRED TO PASS ANY FAILED INSPECTION.
3. ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM APPROVED BY CLIENT TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED 3 OHMS TO GROUND. THE COMPLETED SITE SHALL BE TESTED AND A REPORT SENT TO CLIENT REPRESENTATIVE.
4. REDLINED AS-BUILTS ARE TO BE DELIVERED TO CLIENT REPRESENTATIVE.
5. PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS IN THREE-RING BINDER.
6. FURNISH AND INSTALL THE COMPLETE ELECTRICAL SERVICE, CABLE TRAY, TELCO CONDUIT AND GROUNDING SYSTEMS.
7. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES AND LOCAL ORDINANCES, INSTALLED IN A NEAT MANNER, AND SHALL BE SUBJECT TO APPROVAL BY CLIENT REPRESENTATIVE.
8. CONDUCT A PRE-CONSTRUCTION SITE VISIT AND VERIFY EXISTING SITE CONDITIONS AFFECTING THIS WORK. REPORT ANY OMISSIONS OR DISCREPANCIES FOR CLARIFICATION PRIOR TO THE START OF CONSTRUCTION.
9. PROTECT ADJACENT STRUCTURES AND FINISHES FROM DAMAGE. REPAIR TO ORIGINAL CONDITION ANY DAMAGED AREA.
10. REMOVE DEBRIS ON A DAILY BASIS. DEBRIS NOT REMOVED IN A TIMELY FASHION WILL BE REMOVED BY OTHERS AND THE RESPONSIBLE SUBCONTRACTOR SHALL BE CHARGED ACCORDINGLY. REMOVAL OF DEBRIS SHALL BE COORDINATED WITH THE CLIENT'S REPRESENTATIVE. DEBRIS SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF LEGALLY. USE OF THE PROPERTY'S DUMPSTER IS PROHIBITED.
11. UPON COMPLETION OF WORK, THE SHELTER SHALL BE CLEAN AND FREE OF DUST AND FINGERPRINTS.
12. ALL CONSTRUCTION SHALL BE INSPECTED AND APPROVED BY LOCAL AUTHORITIES.
13. WIRING DEVICES AND EQUIPMENT SHALL BE UL LISTED AND SPECIFICATION GRADE.
14. FUSES IN SERVICE SWITCHES SHALL BE CLASS "J" CURRENT LIMITING TYPE, 200,000 A.I.C. DISCONNECT SWITCHES TO HAVE REJECTION CLIPS.
15. MATERIALS SHALL BE NEW AND CONFORM TO THE APPLICABLE STANDARDS ESTABLISHED FOR EACH ITEM BY THE ORGANIZATIONS LISTED BELOW:
    - AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
    - UNDERWRITER'S LABORATORY (UL)
    - NATIONAL ELECTRICAL MANUFACTURING ASSOCIATION (NEMA)
    - AMERICAN STANDARDS ASSOCIATION (ASA)
    - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
16. INSTALLATION OF MATERIALS SHALL COMPLY WITH REGULATIONS OF:
    - THE NATIONAL ELECTRICAL CODE (NFPA 70)
    - THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2)
    - THE LIFE SAFETY CODE (NFPA 101)
    - LIQUEFIED PETROLEUM GAS (NFPA58)
    - LOCAL CODES
17. ALL CONDUITS SHALL BE SUPPORTED AS PER 2008 N.E.C (NFPA70).

GROUNDING NOTES:

1. PROVIDE GROUNDING AND BONDING IN ACCORDANCE WITH TIA-607, "COMMERCIAL BUILDING & BONDING REQUIREMENTS FOR TELECOMMUNICATIONS" AND IEEE 1100, "GUIDE FRO MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM" LATEST EDITION UNLESS DIRECTED OTHERWISE BY DRAWINGS, NATIONAL ELECTRICAL CODE, OR AUTHORITIES HAVING JURISDICTION. THE ABOVE REFERENCED SPECIFICATIONS ARE AN INTEGRAL PART OF THE DESIGN DOCUMENTS AN MUST BE STRICTLY ADHERED TO. WHERE CONFLICTS BETWEEN THIS SPECIFICATION, CODES, AND AUTHORITIES HAVING JURISDICTION ARISE, THE MOST STRINGENT SHALL GOVERN. BUSS CONNECTORS SHALL BE 2-HOLE LONG BARREL TYPE COMPRESSION LUGS.
2. LUGS SHALL BE ATTACHED TO BUSSES USING BOLTS, NUTS AND STAR AND LOCK WASHERS. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED.
3. SURFACE CONNECTIONS SHALL BE MADE TO BARE METAL. PAINTED SURFACES SHALL BE FILED TO ENSURE PROPER CONTACT. APPLY NON-OXIDIZING AGENT TO CONNECTIONS.
4. COPPER BUSSES SHALL BE CLEANED, POLISHED, AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
5. GROUND CONDUCTOR RUNS SHALL BE STRAIGHT AS POSSIBLE, WITH A 6" MINIMUM RADIUS FOR CONDUCTORS UP TO #6, A 12" MINIMUM RADIUS FOR CONDUCTORS FROM #6 UP TO #4/0, A 24" MINIMUM RADIUS FOR #4/0 CONDUCTORS AND UP.
6. HARDWARE (I.E., NUTS BOLTS, WASHERS, ETC.) IS TO BE STAINLESS STEEL.
7. GROUND COAXIAL CABLES AT POINTS SHOWN ON GROUNDING RISER DIAGRAM WITH MANUFACTURER'S GROUNDING KITS.
8. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE (CADWELD) TO GROUND RING AND GROUND RODS. REMAINING GROUNDING CONNECTIONS SHALL BE MECHANICAL CONNECTIONS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
9. GROUND RING COMPRISED OF #2 SOLID BARE TINNED COPPER CONDUCTOR SHALL HAVE A MINIMUM DISTANCE OF 24" FROM THE STRUCTURE AND BE BURIED A MINIMUM OF 42" BELOW GRADE.
10. CADWELD GROUND RODS TO GROUND RING. RODS TO BE MINIMUM 5/8" x 8'-0" GALVANIZED STEEL OR AS DIRECTED BY LOCAL UTILITY CODES. THE TOP OF GROUND ROD SHALL EXTEND NO MORE THAN 6 INCHES ABOVE THE BOTTOM OF THE TRENCH.
11. INTERCONNECT SHELTER GROUND RING AND TOWER GROUND RING WITH EXOTHERMIC WELD.
12. INSTALL GROUNDING KIT. BOND COAXIAL CABLE OUTER CONDUCTOR TO GROUNDING CONDUCTOR.
13. INSTALL GROUND RODS ON EXTERNAL GROUND RING AT 10' MIN. INTERVALS, 15' MAX. BOND EXTERNAL GROUND RING TO FENCE POSTS AT 20' INTERVALS, MAXIMUM.
14. ALL ELECTRICAL GROUNDING SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 780, APPROVED BY LOCAL AUTHORITY.
15. ALL GROUNDING CONNECTIONS SHALL BE COATED WITH AN ANTI-CORROSIVE AGENT SUCH AS "T&B KOPR SHIELD", "NO-OXY", "NOALOX" OR "PENETROX". VERIFY PRODUCT WITH CONSTRUCTION ENGINEER.
16. GROUND WIRES SHALL BE #2 SOLID BARE TINNED COPPER FROM CONDUCTOR FOR BONDING CONNECTIONS UNLESS OTHERWISE NOTED ON PLANS.
17. DOCUMENT GROUND RING INSTALLATION AND CONNECTIONS WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PRESENT PHOTO ARCHIVE AT SITE "PUNCH LIST" WALK TO CLIENT REPRESENTATIVE.
18. THE ENTIRE SYSTEM SHALL BE SOLIDLY GROUNDED USING LOCKNUTS AND BONDING NUTS ON CONDUITS AND PROPERLY BONDED GROUND CONDUCTORS. RECEPTACLES AND EQUIPMENT BRANCH CIRCUITS SHALL BE GROUNDED WITH A FULL-SIZED EQUIPMENT GROUNDING CONDUCTOR RUN IN THE CIRCUIT'S CONDUIT.
19. GROUNDING SYSTEM SHALL BE INSPECTED DURING CONSTRUCTION AND BEFORE BACKFILLING. REFER TO VERIZON WIRELESS STANDARD NSTD46 FOR ADDITIONAL REQUIREMENTS.
20. MAKE BONDING CONNECTIONS TO ELEMENTS UNDER TENSION (SUCH AS DOWN GUYS) USING COMPRESSION FITTINGS.
21. PERMANENT CONNECTIONS SHALL BE EITHER EXOTHERMIC WELDS OR IRREVERSIBLE COMPRESSION CONNECTIONS. GROUND CONNECTIONS THAT WILL BE REMOVED DURING TESTING SHALL BE MECHANICAL TYPE FITTINGS.
22. WHEN THE METALLIC FENCING RAILS SPAN FROM POST TO POST CREATING A CONDUCTIVE PATH, CONNECTION POINTS ALONG FENCE SHALL NOT EXCEED 20'. IF RAILS ARE NOT PRESENT, EACH FENCE POST MUST BE BONDED TO GROUND RING.

FAA NOTES:

1. THE FLASHING STROBE LIGHTS, MARKER LIGHTS, FAA LIGHTING CONTROL PANEL AND MOUNTING DETAIL, ALL REQUIRED WIRING (INCLUDING CONDUITS AND WIRES AS SHOWN ON THE DRAWINGS) AND PHOTOCELL UNIT SHALL BE SUPPLIED BY THE TOWER MANUFACTURER.
2. THE STROBE LIGHTS, MARKER LIGHTS, PHOTOCELL UNIT AND FAA LIGHTING CONTROL PANEL AND ALL NECESSARY ACCESSORIES FOR MOUNTING AND WIRING SHALL BE INSTALLED AS SHOWN ON DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER INSTALLATION STANDARDS. INSTALLATION BY CONTRACTOR.
3. THE PHOTO SENSOR MUST BE MOUNTED OUTSIDE FACING THE UNOBSTRUCTED NORTHERN SKY AND AWAY FROM ALL ARTIFICIAL LIGHTS.
4. RELAY CONTACTS FOR THE ALARM ACTUATED BY:
   A. POWER FAILURE.
   B. OBSTRUCTION MARKER LIGHT FAILURE
5. RELAY CONTACTS FOR MARKER ACTUATED BY:
   A. POWER FAILURE
   B. MISSED ALARM FLASHES FOR RED AND WHITE
   C. INCORRECT INTENSITY
   D. PHOTOELECTRIC CELL FAILURE
   E. MODE STATUS CHANGE
6. THE FAA LIGHTING CONTROL PANEL SHALL BE INSTALLED AT THE BASE OF THE TOWER OR AT A CONVENIENT LOCATION IN ACCORDANCE WITH THE TOWER SUPPLIER DESIGN AND IN ACCORDANCE WITH THE NFPA 37 & 58 REQUIREMENTS. CONTROL PANELS SHALL BE LOCATED AT A DISTANCE OF 15' (MIN.) AWAY FROM ANY FUEL TANK.
7. ALL WIRING FROM THE FAA LIGHTING CONTROL PANEL TO THE STROBE LIGHTS, MARKER LIGHTS, AND PHOTOCELL UNIT SHALL BE PERFORMED IN ACCORDANCE WITH MANUFACTURER INSTALLATION STANDARDS. INSTALLATION BY CONTRACTOR.
8. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FAA, FCC REGULATIONS, NEC AND CODES THAT ARE ADOPTED BY THE AUTHORITY HAVING JURISDICTION.
9. CONTRACTOR SHALL REFER TO NSTD46 SECTION 11.9 IN THE CLIENT GROUNDING SPECIFICATIONS FOR FURTHER INFORMATION.
10. CONTRACTOR SHALL REFER TO LIGHTING MANUFACTURERS SPECIFICATIONS FOR FURTHER INFORMATION.
11. CONTRACTOR SHALL SUPPORT AND SECURE S.O. CORD TO TOWER AT LEAST EVERY 100' OR PER THE LIGHTING MANUFACTURERS SPECIFICATIONS.

HORVATH COMMUNICATIONS
312 WEST COLFAX AVENUE
SOUTH BEND IN, 46601
PHONE: (574) 237-0464

verizonwireless
10740 NALL AVENUE, SUITE 400
OVERLAND PARK, KS 66211
(913) 344-2800

PLANS PREPARED BY:
Kimley»Horn
655 NORTH FRANKLIN STREET, SUITE 150
TAMPA, FL 33602
PHONE (813) 620-1460
WWW.KIMLEY-HORN.COM

REV:	DATE:	DESCRIPTION:	BY:
2	02/12/15	REVISED PER COMMENTS	MAM
1	12/11/14	ADDED LANDSCAPE PLAN	MAM
0	10/21/14	ISSUED FOR REVIEW	KBB

DRAWN BY: KBB | CHECKED BY: CAR

KHA PROJECT NUMBER: 148468002

ENGINEER SEAL:

NOT FOR CONSTRUCTION

PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE: SPECIFICATIONS

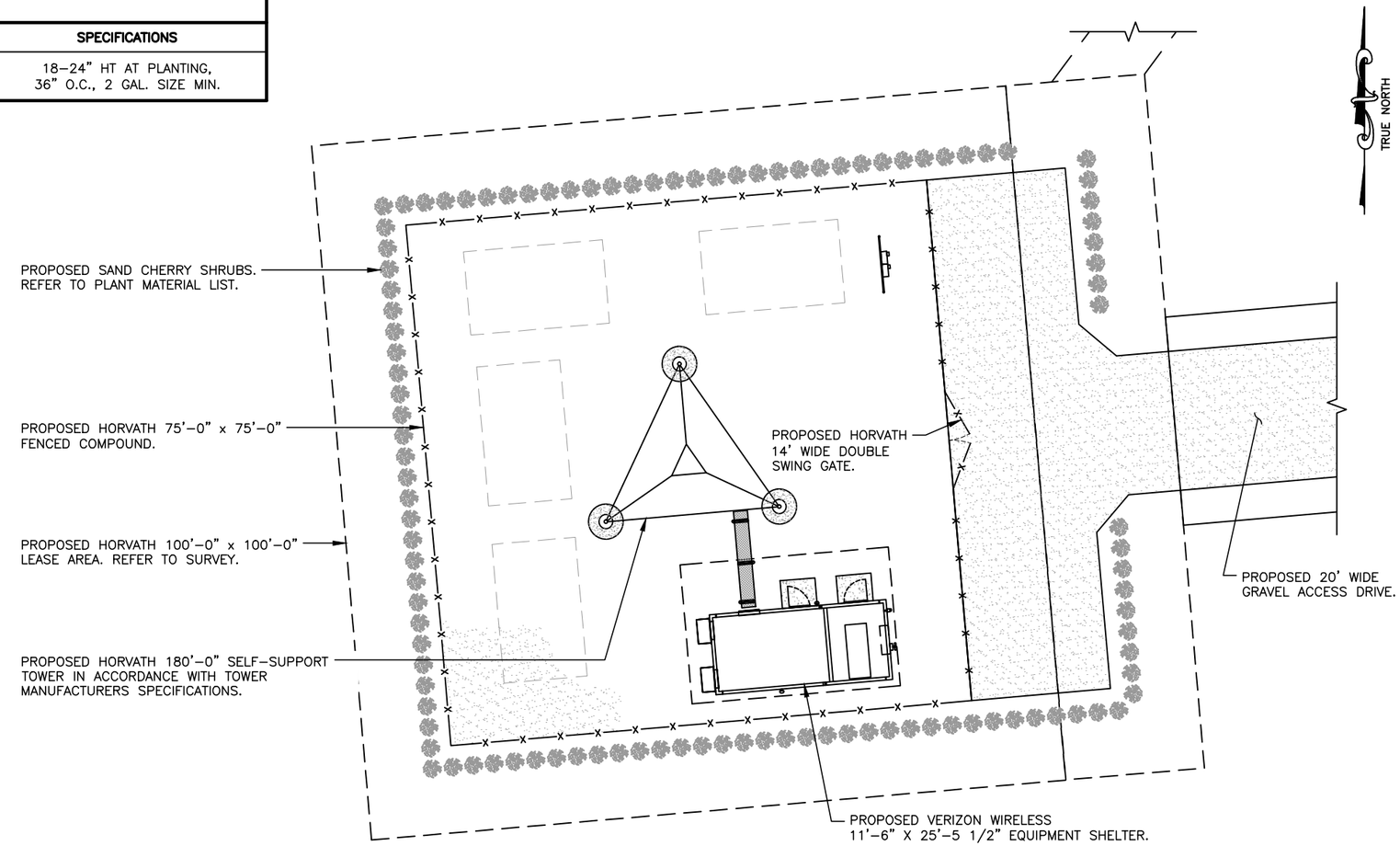
SHEET NUMBER: SP-3

PLANT MATERIAL LIST

SYMBOL	QTY	COMMON NAME	BOTANICAL NAME	SPECIFICATIONS
	108 EA	SAND CHERRY	PRUNUS BESSEYI	18–24" HT AT PLANTING, 36" O.C., 2 GAL. SIZE MIN.

LANDSCAPE INSTALLATION NOTES:

1. SIZES SPECIFIED IN THE PLANT LIST ARE MINIMUM SIZES TO WHICH THE PLANTS ARE TO BE INSTALLED.
2. ALL LANDSCAPING SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE DOUGLAS COUNTY STANDARDS AND IN ACCORDANCE WITH CURRENT INDUSTRY STANDARDS IN A NEAT, HEALTHY, AND WEED FREE CONDITION.
3. IT IS THE LANDSCAPE CONTRACTORS RESPONSIBILITY TO ENSURE THAT ALL PLANT BED AREAS HAVE PROPER DRAINAGE FOR OPTIMUM GROWTH OF LANDSCAPE MATERIAL BEFORE INSTALLATION BEGINS.
4. THE CONTRACTOR SHALL ENSURE THAT ALL PLANTING ISLANDS AND OTHER AREAS SHALL BE CLEAN OF TRASH, CONSTRUCTION DEBRIS OTHER WASTE MATERIALS TO A DEPTH OF 24" PRIOR TO LANDSCAPE INSTALLATION.
5. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL UNDERGROUND AND OVERHEAD UTILITIES. PLANT MATERIAL IS TO BE LOCATED SUCH THAT IT WILL NOT INTERFERE WITH ANY UNDERGROUND OR OVERHEAD UTILITIES.
6. ALL PLANT BEDS AND TREE RINGS SHALL BE TREATED WITH A PRE–EMERGENT HERBICIDE AND THEN TOP–DRESSED WITH 3" DEEP PINE BARK MULCH. ALL NEW TREES SHALL HAVE A TREE RING WITH A MINIMUM 24" RADIUS, ALL NEW TREES AND PALMS SHALL BE STAKED.
7. TREES, SHRUBS AND GROUND COVER SHALL BE INSTALLED USING THE FOLLOWING PROCEDURE: PLANT PITS SHALL BE EXCAVATED TO TWICE THE DIAMETER OF THE PLANT ROOT BALL. AERATE EXISTING SOIL BEFORE BACKFILLING PIT. ADD AGRIFORM FERTILIZER TABLETS TO EACH PLANT PIT, AS PER THE SPECIFICATIONS.
8. THE CONTRACTOR MUST MAINTAIN THE LANDSCAPING FOR 1 YEAR FROM THE DATE OF CONSTRUCTION COMPLETION. THIS INCLUDES BUT IS NOT LIMITED TO WATERING AND INSURING THAT THE LANDSCAPING DOES NOT DIE. IF ANY OF THE LANDSCAPING DIES WITHIN THE 1 YEAR TIME FRAME, THE CONTRACTOR MUST REPLACE IT WITH EQUIVALENT LANDSCAPING. LOCAL JURISDICTION WATERING GUIDELINES SHALL BE FOLLOWED THOROUGHLY.
9. CONTRACTOR MUST CONFIRM LANDSCAPE REQUIREMENTS AND SPECIFICATIONS WITH LOCAL JURISDICTION.
10. IF EXISTING TREES REMAIN, LOCATION/SPACING OF NEW TREES MAY BE MODIFIED TO AVOID CONFLICT.

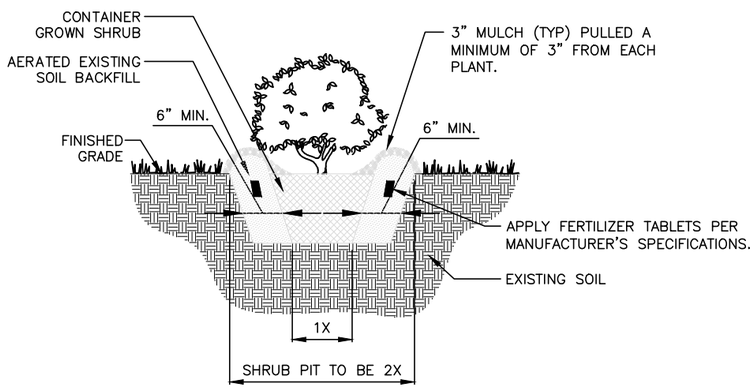


1 / L-1 **LANDSCAPE PLAN**
SCALE: 1" = 20'
SCALE BASED ON 11"x17" ONLY

GRAPHIC SCALE

0 10 20 40

(IN FEET)



2 / L-1 **SHRUB PLANTING DETAIL**
SCALE: N.T.S.

HORVATH COMMUNICATIONS
312 WEST COLFAX AVENUE
SOUTH BEND IN, 46601
PHONE: (574) 237–0464

verizonwireless
10740 NALL AVENUE, SUITE 400
OVERLAND PARK, KS 66211
(913) 344–2800

PLANS PREPARED BY:
Kimley»Horn
655 NORTH FRANKLIN STREET, SUITE 150
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PROJECT INFORMATION:

HV962
CLINTON LAKE

1211 E. 600 ROAD
LAWRENCE, KS 66047
DOUGLAS COUNTY

SHEET TITLE:

LANDSCAPE PLAN AND DETAILS

SHEET NUMBER:

L-1

From: Hank Madden – RF Engineer, Verizon Wireless December 23, 2014

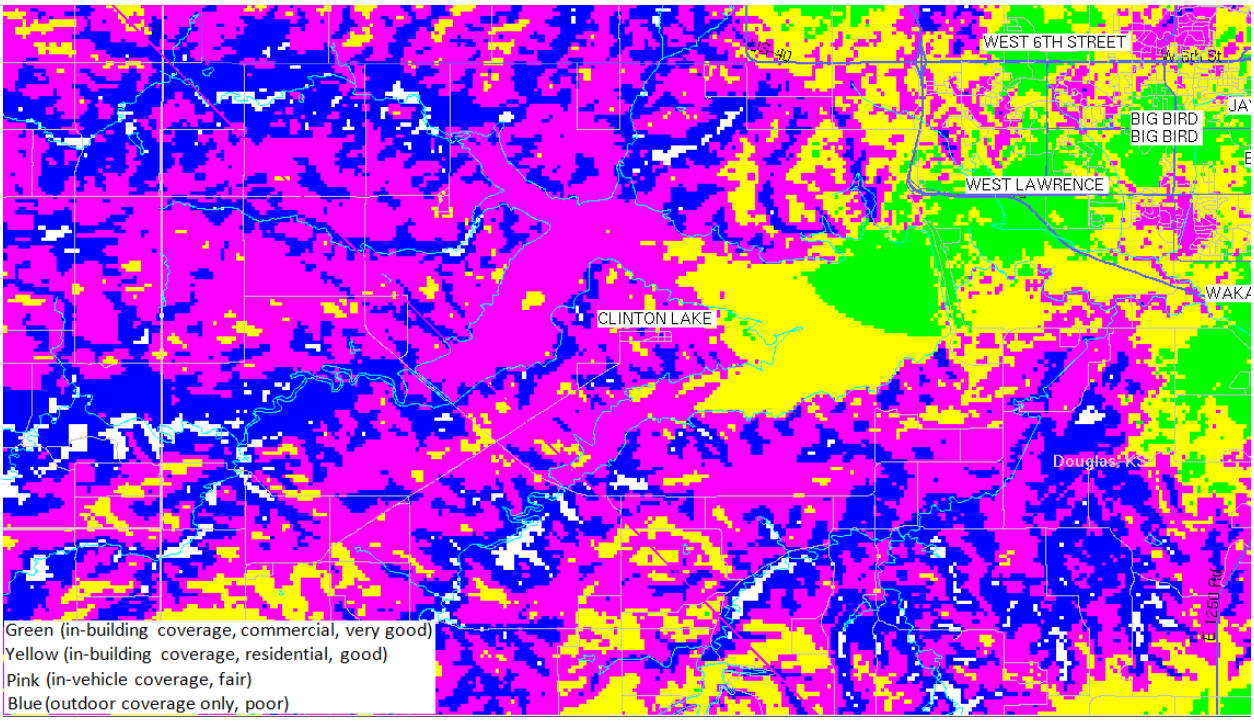
To: **The City Representatives**

RE: **Proposed Clinton Lake cell site**

Dear City/County Representatives,

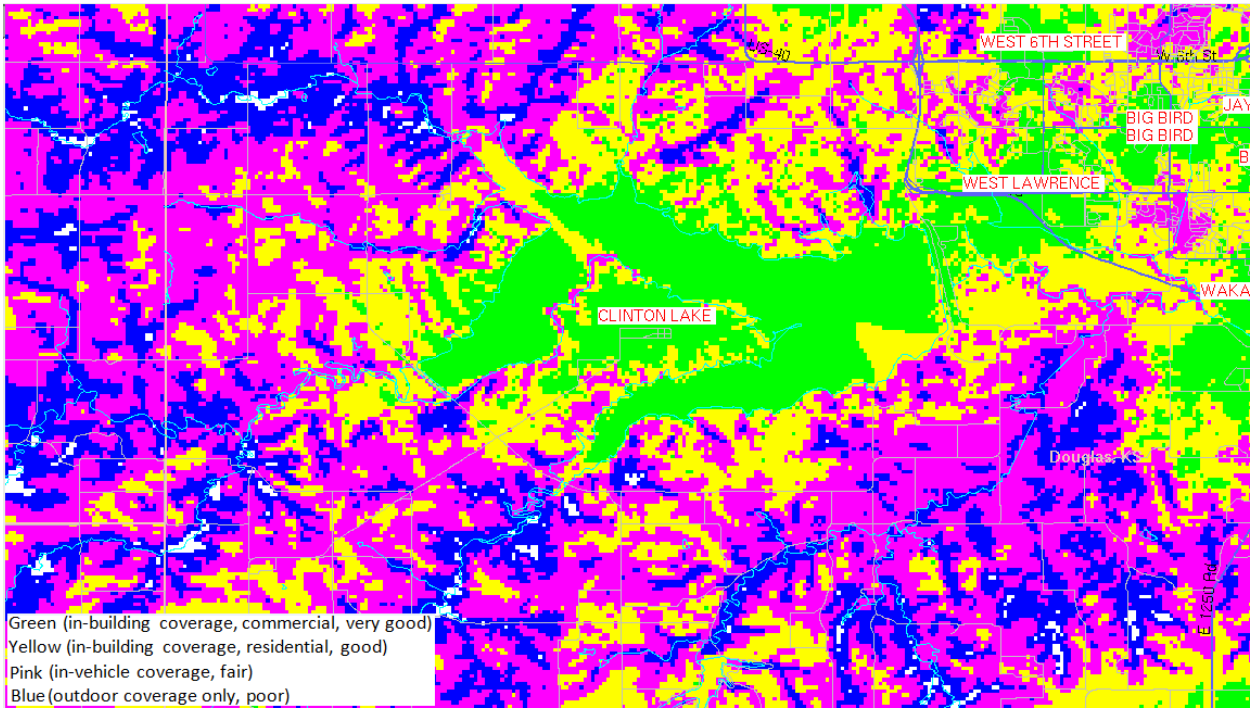
Verizon Wireless is proud to serve the greater Lawrence, KS area and we are always diligent to maintain excellent service and improvements. At this time, we are trying to enhance the area of Clinton Lake located just southwest of the city of Lawrence, KS where coverage service reliability and data performance must be improved. The primary area that needs improvement at this time is the community of Clinton and the areas just west and southwest of the lake. The fast growing 4G (LTE) data usage has required us to plan for a new cell site in this area to improve coverage and data performance. The current signal level in this area is shown below, Map 1.

Map 1 – Existing Coverage



Below is Map 2 showing coverage improvement with the proposed new cell site, Clinton Lake. Notice that the community of Clinton and much of the lake area should improve significantly.

Map 2 – Coverage with the new cell site



As 4G (LTE) data usage continues to increase dramatically as wireless customers utilize their phones for more day to day task and recreation, the demand also increases to meet these needs by creating new opportunities to develop methods of improving coverage, capacity, and data throughput. The most challenging is capacity and data throughput. Verizon Wireless is meeting the expectations of our customers by designing this proposed cell site in the Clinton Lake area.

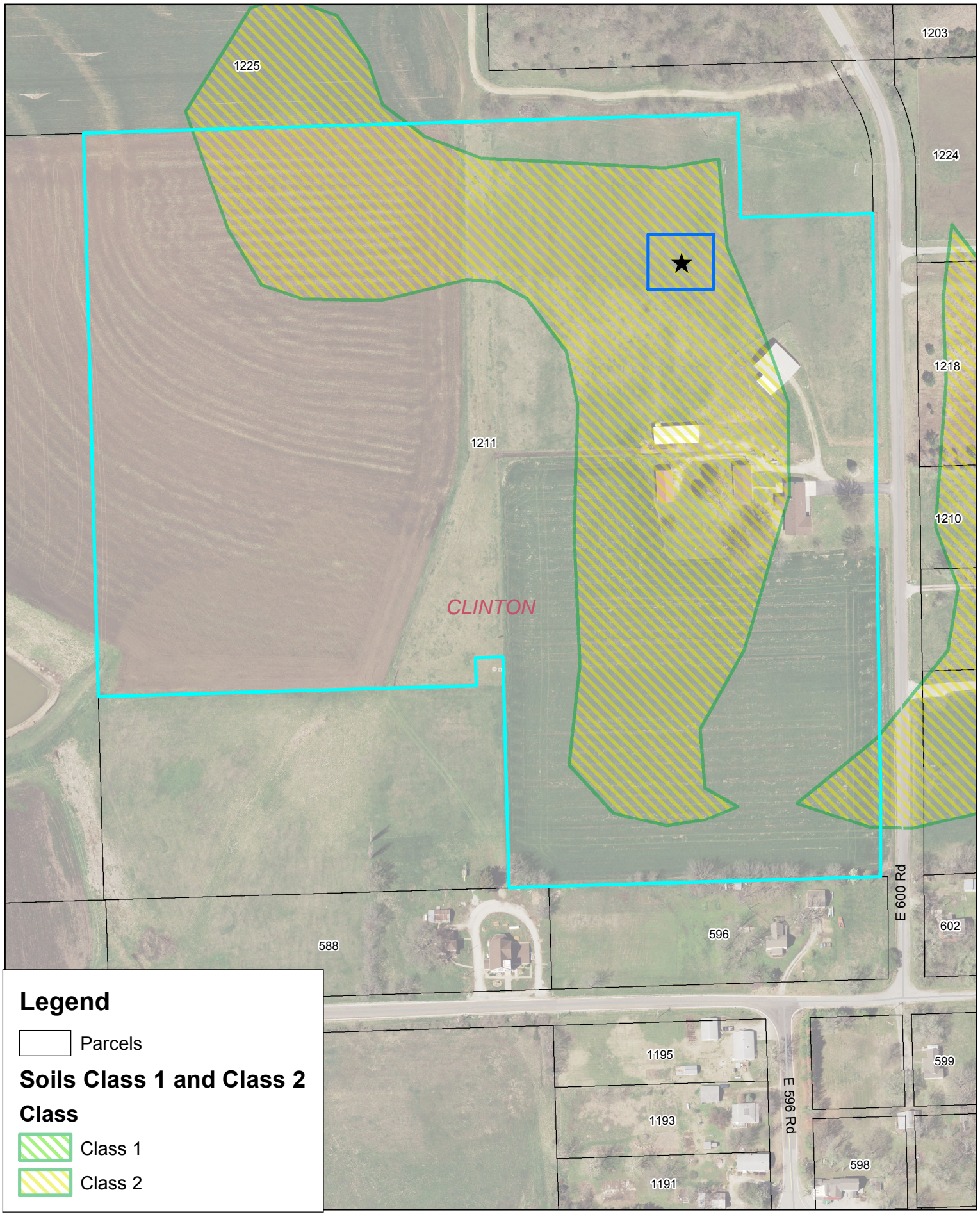
This coverage improvement will afford our customers the best possible data performance at the location identified. Verizon Wireless continues to strive to provide the best possible wireless experience for its customers while still recognizing the needs and desires of the surrounding community and being a good neighbor.

100 50 0 100 200 300 400 Feet

1 inch = 200 feet

DISCLAIMER NOTICE
The map is provided "as is" without warranty or any representation of accuracy, timeliness or completeness. The burden for determining accuracy, completeness, timeliness, merchantability and fitness for or the appropriateness for use rests solely on the requester. The City of Lawrence makes no warranties, express or implied, as to the use of the map. There are no implied warranties of merchantability or fitness for a particular purpose. The requester acknowledges and accepts the limitations of the map, including the fact that the map is dynamic and is in a constant state of maintenance, correction and update.

Date: 2/3/2015



Legend

Parcels

Soils Class 1 and Class 2

Class

Class 1

Class 2

1,400 700 0 1,400 2,800 4,200 5,600 Feet

1 inch = 3,000 feet

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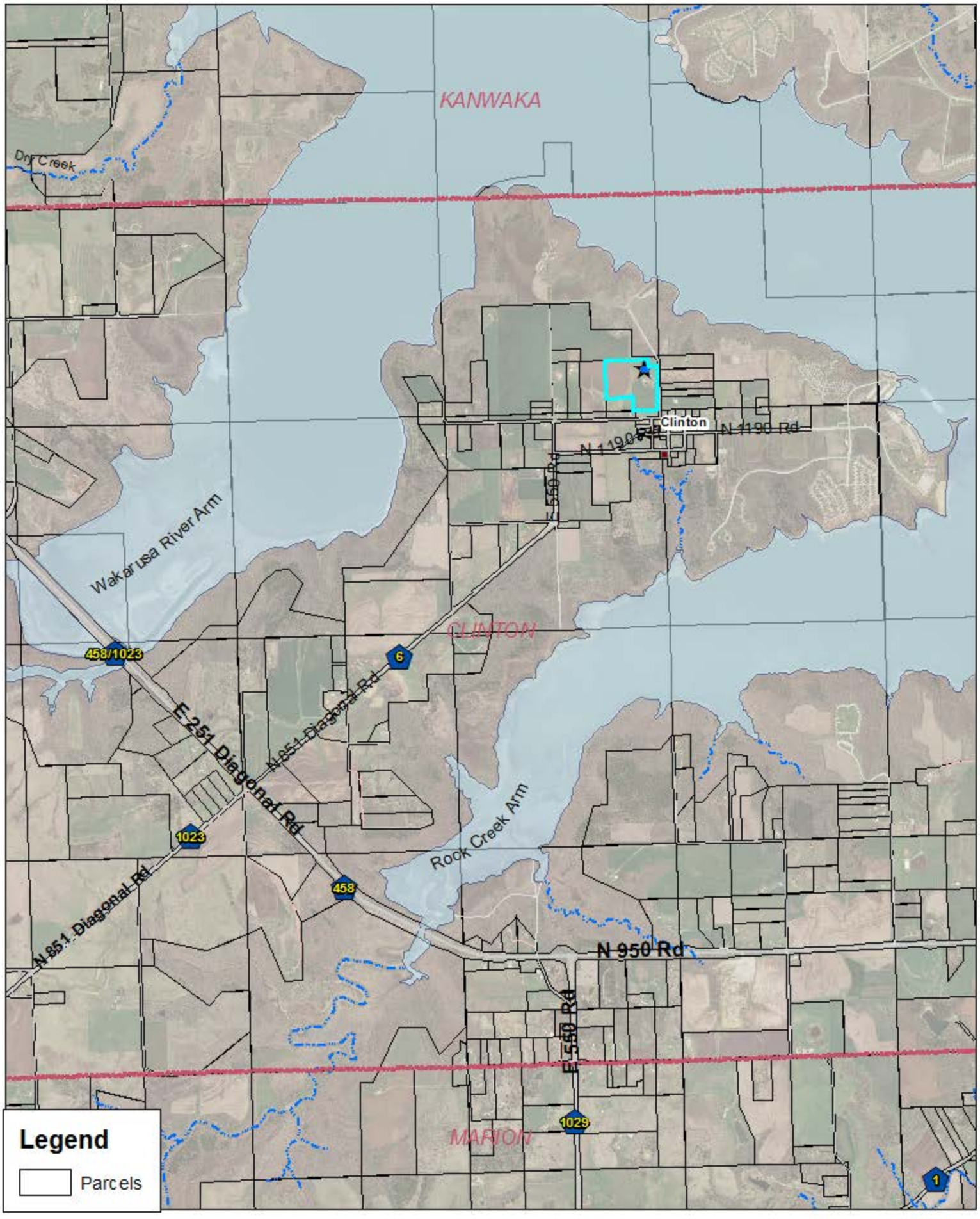
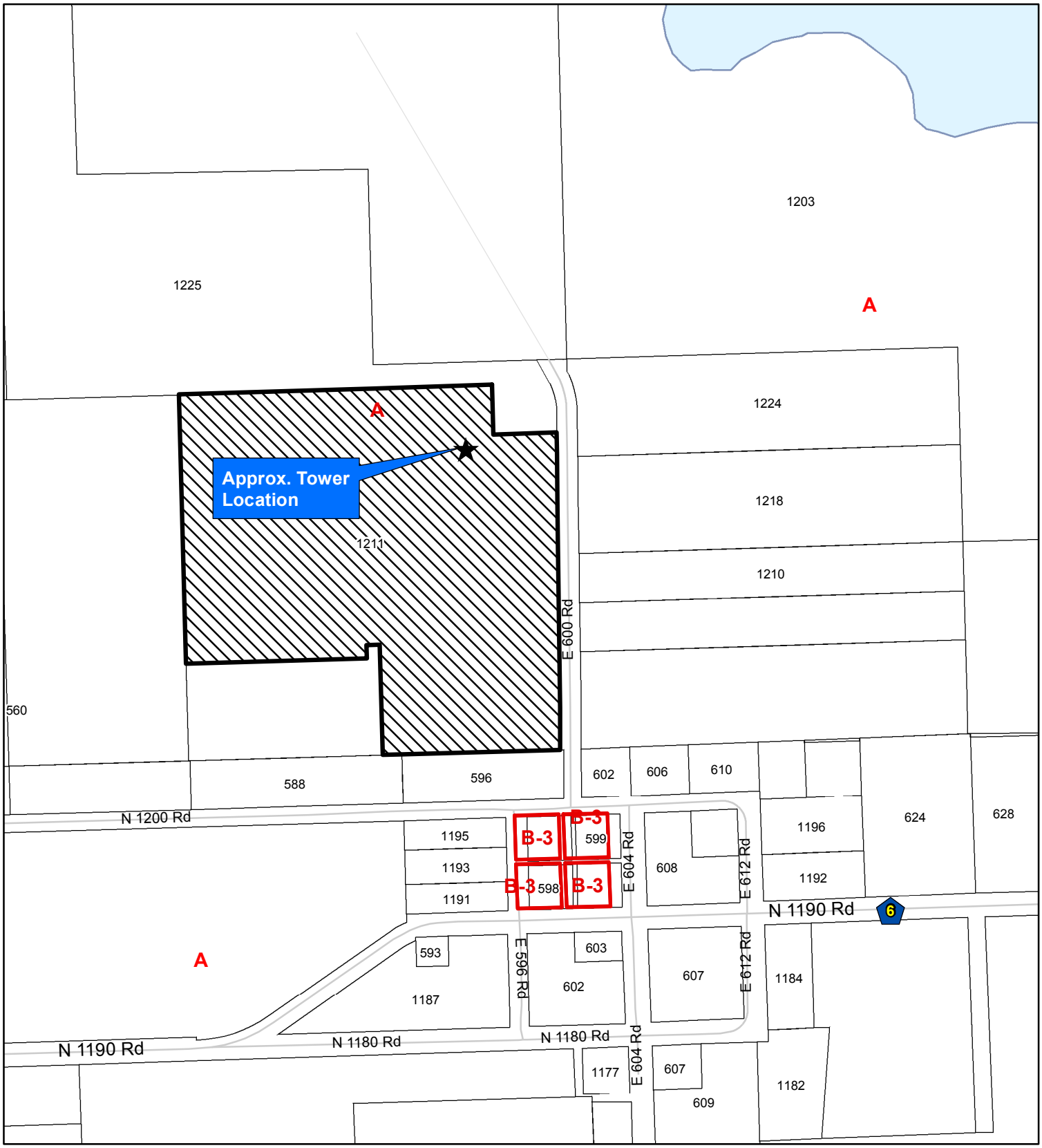
Date: 2/13/2015





CUP-14-00550: Conditional Use Permit for a New Verizon Wireless Communications Tower Located in the Northeast Corner of 1211 E 600 Road

Lawrence-Douglas County Planning Office
February 2015

Subject Property

N
W E
S

I own the property north of the proposed Verizon tower location. I do not want this tower erected right next to my home.

1) City of Lawrence declined Verizon a tower permit after public opposition during the City Commission meeting 9 DEC 2014.
    a. Neighbors stated the tower was too close to their homes and would lower property values.
    b. My home should be given the same considerations as the homes of Lawrence residents.
2) What is the full scope of this project? The height of the tower has increased since we received notification of the intent to build next to our property.
    a. A letter form SSC, Inc. dated 22 DEC 2014 states the tower is 180' in height.
    b. A letter from the City of Lawrence dated 30 JAN 2014 states the tower is 198'.
    c. How big is this structure?
    d. What support facilities accompany the tower?
    e. Will there be permanent noise producing equipment (generators or transformers) on site?
3) If this tower is permitted, what plans are there to remove the tower once its permitted purpose is no longer viable?
    a. Is there a bond or fund established to remove the tower?
    b. Is the property owner responsible to remove the tower once it becomes obsolete or the company finds a better deal elsewhere?
    c. The microwave tower building in downtown Lawrence is a good example of an unsightly structure that no longer serves its permitted purpose to house defunct microwave technology.
4) If this tower is permitted, will there be construction activities on my property?
    a. Someone placed (and did not remove) surveyor stakes on my property adjacent to the proposed tower site late last year. I found one stake with my tractor tire while mowing.
    b. Will workers expect to use my land to access the building site?
    c. Will I be compensated for use of and any damage caused to my property?
5) Has the builder considered alternative sites that afford a greater stand-off distance from occupied residences?
6) The Clinton lake water tower is less than a mile from the proposed building site of this tower.
    a. Can the company use this water tower in lieu of or to augment construction of a new tower?
7) There are already seven (7) towers and 24 antennas supporting cellular signals within a four (4) mile radius from my home.
    a. Can the use of additional low visibility antennas achieve the similar results to the construction of a new tower?
8) If this tower is permitted, it will lower the resale value of my home and property. This fact is based on common sense.
    a. Would you want a 198' tower in your neighbor's yard?
    b. Relators will struggle to sell my home at a price comparable to similar properties because it has a huge tower next to it.
    c. You'll not see too many home listings offering a beautiful view of a cellphone tower to entice prospective buyers.
9) Current studies have determined no harmful effects to humans living next to cellphone towers. We used to line our homes and protective clothing with asbestos too.

Dan Hodges

1225 E 600 Rd.

PLANNING COMMISSION REPORT
Regular Agenda – Public Hearing Item

PC Staff Report
2/23/15

ITEM NO. 2 SPECIAL USE PERMIT FOR PRECIOUS ONE'S LEARNING CENTER; 1100 KASOLD DR. (KES)

SUP-14-00488: Consider a Special Use Permit for a preschool located in the lower level of Christ Community Church at 1100 Kasold Dr. Submitted by Christ Community Church, property owner of record for Nicole M. Harris, proprietor.

STAFF RECOMMENDATION: Planning Staff recommends approval of a weekday three hour Preschool/Daycare Center inside the Christ Community Church located at 1100 Kasold Dr. and forwarding the request to the City Commission with a recommendation of approval, subject to the following conditions to be completed prior to the release of the site plan for issuance of occupancy or building permits:

1. Provisions of a revised site plan with the following changes:
    a. Additional use, number of students and hours of operation identified.
    b. Identify area/location of outdoor play.
    c. A note indicating that City review is required if there is a change in the preschool/daycare operator.

Applicant's Reason for Request: *Use of pre-school/daycare in a RS7 zoning district requires a Special Use Permit.*

OTHER ACTION REQUIRED
- City Commission approval of SUP
- Approval and publication of ordinance.
- Submission and approval of building plans and fire prevention plans associated with change of occupancy or building permit.

PLANS AND STUDIES REQURIED
- *N/A*

KEY POINTS
- Existing classrooms will be used to accommodate 44 children, ranging in age from 2 ½ to 5yrs.
- The pre-school will operate for three hours a day weekday mornings.

FACTORS TO CONSIDER
- Existing developed neighborhood bounded by major arterial street.

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING
- A neighbor communication letter in opposition to the project is attached.

ATTACHMENTS
1. Area Map
2. Communications
3. Floor plan
4. Previous site plan SP-05-37-07

GENERAL INFORMATION	
Legal Description:	Lot 12, Block 4, Orchards No. 4 Subdivision.
Current Zoning and Land Use:	RS7 (Single-Dwelling, Residential) District; Existing improvements include surface parking lot supporting the existing church and Sunday school use.
Surrounding Zoning and Land:	RS7 (Single-Dwelling, Residential) District to the east and south; existing single-dwelling development. PUD (Holiday Hills No. 7, Planned Residential Development) to the north; existing single-dwelling development. PUD (Holiday Hills No. 10, Planned Residential Development) to the west; existing single-dwelling development. RS10 (Single-Dwelling, Residential) District to the west; existing single-dwelling development.

ASSOCIATED CASES
- SP-05-37-07; Site plan for accessory building.
- SP-04-31-86; Site plan for Corpus Christi Church

Summary of Request
This request for a Special Use Permit is to permit a Christian pre-school to operate in the existing Christ Community Church which resides in an RS7 (Single-Dwelling, Residential) District. The pre-school would operate for 3 hours weekday mornings. There would be a maximum of 44 children.

Review and Decision-Making Criteria (Land Development Code Section 20-1306(i))

1. WHETHER THE PROPOSED USE COMPLIES WITH ALL APPLICABLE PROVISIONS OF THIS DEVELOPMENT CODE

Applicant's Response: *Yes, the use of the property as a pre-school is consistent with the Development Code.*

The proposed use as a pre-school is allowed (with a Special Use Permit). The site design complies with the Development Code.

Staff Finding – The proposed use is allowed in the RS7 District subject to approval of a Special Use Permit. The project, as conditioned, complies with the Development Code.

2. WHETHER THE PROPOSED USE IS COMPATIBLE WITH ADJACENT USES IN TERMS OF SCALE, SITE DESIGN, AND OPERATING CHARACTERISTICS, INCLUDING HOURS OF OPERATION, TRAFFIC GENERATION, LIGHTING, NOISE, ODOR, DUST AND OTHER EXTERNAL IMPACTS

Applicant's Response: *Yes. The proposed use will be compatible with the scale, design and characteristics of the existing development. The pre-school will operate for 3 hours weekday*

mornings with a maximum of 44 children. There are two existing parking lot exits on Harvard Dr. as well as one on Kasold. Traffic impact is anticipated to be minimal.

Staff Finding – The proposed development is compatible with the adjacent land uses.

3. WHETHER THE PROPOSED USE WILL CAUSE SUBSTANTIAL DIMINUTION IN VALUE OF OTHER PROPERTY IN THE NEIGHBORHOOD IN WHICH IT IS TO BE LOCATED

Applicant's Response: *No. The use is similar to existing activity on Sundays with less cars arriving and departing the site.*

Staff Finding – There is no diminution in value of adjacent properties anticipated by this proposed development.

4. WHETHER PUBLIC SAFETY, TRANSPORTATION AND UTLITY FACILITES AND SERVICES WILL BE AVAILABLE TO SERVE THE SUBJECT PROPERTY WHILE MAINTAINING SUFFICIENT LEVELS OF SERVICE FOR EXISTING DEVELOPMENT

Staff Finding –The subject property is an existing improved property and no changes to services are being proposed, therefore there is no detrimental impact on public safety, transportation and services.

5. WHETHER THE USE WILL CAUSE SIGNIFICANT ADVERSE IMPACTS ON THE NATURAL ENVIRONMENT

Applicant's Response: *No. No additional buildings or pavement areas are proposed.*

Staff Finding – The proposed use will not cause any adverse impacts on the natural environment.

6. WHETHER THE USE WILL CAUSE SIGNIFICANT ADVERSE IMPACTS ON THE NATURAL ENVIRONMENT

Applicant Response: *No. There a no proposed changes that will impact the natural environment.*

Staff Finding – The subject property is located within a developed urban neighborhood with no changes to the existing site.

7. WHETHER IT IS APPROPPRIATE TO PLACE A TIME LIMIT ON THE PERIOD OF TIME THE PROPOSED USE IS TO BE ALLOWED BY SPECIAL USE PEMRIT AND, IF SO WHAT THAT TIME PERIOD SHOULD BE.

Staff Finding – Historically Special Use Permits for day care centers (UPR's under the 1966 code) have not been restricted with a time limit. However, limitations have been placed on the operator, occupancy, and care. Staff recommends the approval be specific to the operator of the facility. Changes in the operator of the day care center shall be required to notify staff of the change. Additionally, staff recommends that the application be subject to review by staff prior to the addition of before and after school care programs or any other additional hours of operation or service.

STAFF REVIEW

The following section of this report addresses the existing physical site development of this property. There are no proposed changes to the existing site for this use.

A. Site Summary

Site Summary	Existing	Proposed
Total Area:	306,000	306,000
Building: (SF)	7,300	7,300
Impervious Cover: (SF)	68,779	68,779
Pervious Cover: (SF) percent	237,221 77.53%	237,221 77.53%

B. Access and Parking

Access:

Two existing driveways provide access to this site from Harvard Road and one existing driveway provides access from Kasold Drive. There are no proposed changes to access with this use.

On-site Parking:

This property is improved with a three surface parking lots and access drives. The existing parking lots provide 160 spaces.

PARKING SUMMARY: 7,300 sq. ft. existing Church

Use	*Parking Requirements*	*Spaces Required*	*Spaces Provided*
Religious Assembly	1 per 4 seats in sanctuary or principal worship or assembly space plus spaces required for permitted Accessory Uses.		160 spaces
Daycare/Pre-School	*1 per 1.5 employees plus 4 spaces.	4 employess = 3 spaces + 4 = 7 total spaces.	
Total			160 spaces

**Parking is currently existing on site for the Church at 160 spaces. No additional parking will be required for the addition of a pre-school during weekday mornings which is not in conflict with the operational hours of services for the church.*

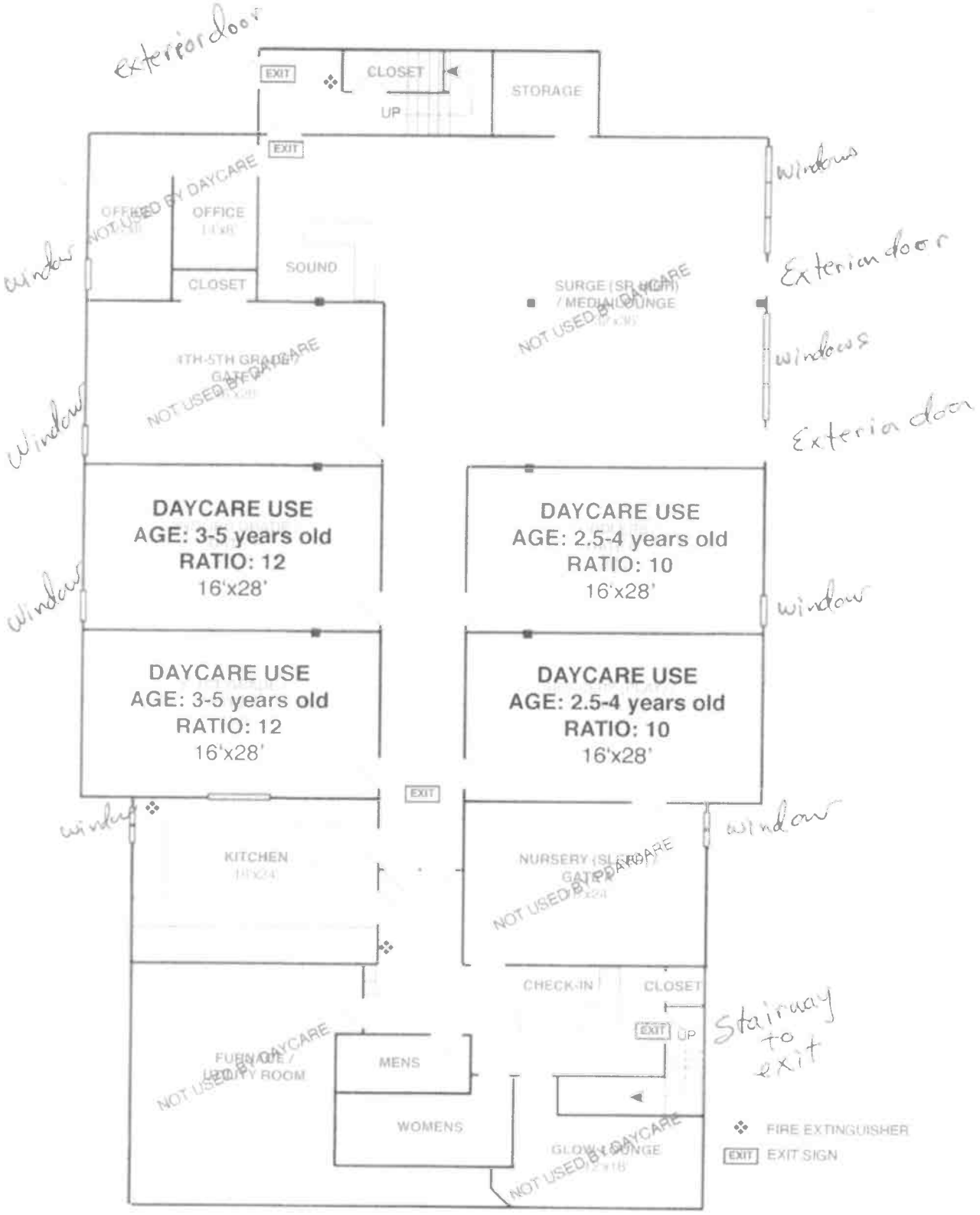
C. Design Standards
This project does not propose any changes to the physical site.

D. Landscaping and Screening
This project does not propose any changes to the landscaping or screening.

E. Lighting
A photometric plan is not required for this special use as no changes are proposed to the existing site or lighting.

F. Floodplain
This property is not located within the regulatory floodplain.

CONCLUSION
The applicant is seeking land use approval prior to issuance of a change of occupancy or building permit. Additional documentation for a change of occupancy or building permit is required for this use. Following the SUP approval, an application including building/fire prevention plans and documentation shall be submitted to Development Services for approval prior to operation.


exterior door
EXIT
CLOSET
STORAGE
UP
EXIT
Windows
OFFICE
NOT USED BY DAYCARE
OFFICE
CLOSET
SOUND
window
Exterior door
SURGE (SR HIGH)
/ MEDIA LOUNGE
NOT USED BY DAYCARE
windows
4TH-5TH GRADE
GATE
NOT USED BY DAYCARE
Window
Exterior door
DAYCARE USE
AGE: 3-5 years old
RATIO: 12
16'x28'
DAYCARE USE
AGE: 2.5-4 years old
RATIO: 10
16'x28'
window
window
DAYCARE USE
AGE: 3-5 years old
RATIO: 12
16'x28'
DAYCARE USE
AGE: 2.5-4 years old
RATIO: 10
16'x28'
EXIT
window
window
KITCHEN
NURSERY (SLEEPING)
GATE
NOT USED BY DAYCARE
CHECK-IN
CLOSET
EXIT
UP
Stairway to exit
FURNACE /
UTILITY ROOM
NOT USED BY DAYCARE
MENS
WOMENS
GLOW LOUNGE
NOT USED BY DAYCARE
FIRE EXTINGUISHER
EXIT
EXIT SIGN

Section Line

Kasold Drive

Install Neenah R-4080 Series Heavy Duty Grate (or Approved Equal) w/ Square Openings for 8" V.C.P.

N 00°00'00" E 765.00'

Top of Grate Elev. = 986.00

2" Asphalt

1.5'

5" B Asphalt Curb

5" Base Rock

Install 20 L.F. ± 8" V.C.P.

* For Revised alignment & elevations, See Below, this sheet.

* I.E. = 984.25 ±

Install 8"x30° Bell & Spigot Cut Curve.

Existing Parking Lot
* 67 Spaces

Proposed Parking Lot - 52 Parking Spaces

128'

992.00 992.00 993.00

153'

992.00

* 3 Existing Spaces to be eliminated

Install 2-4" Steel Pipes to Protect Grate

Benchmark

990.00

990.14

T.C. = 985.75

983.93

983.37

Existing Detention Area

I.E. = 984.02

984.70 984.31

Proposed Detention Area

Top Dike 987.20

I.E. = 984.22

I.E. = 984.50

Install 40 L.F. ± 4" V.C.P. between Detention Areas

Install Steel Grate and 20 L.F. ± 8" V.C.P. See Detail at above left.

Install 200 L.F. 8" Asphalt Curb See Detail @ Left

CORPUS CHRISTI CHURCH

Existing Parking Lot
33 Spaces

Install 193 L.F. 8" Asphalt Curb See Detail @ Left.

Install 4" P.V.C. Pipe in Curb

S 00° 00' 00" W 765.00'

S 89° 53' 30" W 400.00'

N 89° 53' 30" E 400.00'

Jonathan Drive

13th Street

Holiday Drive

Harvard Road

DETENTION INFORMATION

Parking Lot 153' x 128' = 0.45 Acre
Runoff after Improvements = 0.9 x 6.08 x 0.45 = 2.46 cfs
Allowed Runoff = 0.3 x 6.08 x 0.45 = 0.82 cfs
Detention Required 1.64 cfs
Volume Required = 1.64 x 15 x 60 = 1476 cu. ft.
Volume Provided 8685 cu. ft.

Note: The additional 7209 cu. ft. of Dertention over the required shall be implemented for future development.

PARKING LOT SUMMARY

- Number of Existing Parking Spaces	100
- Number of Spaces Eliminated for Entry to Proposed Parking Lot	3
- Number of Parking Spaces Created by Proposed Parking Lot	59
Net Total of Parking Spaces	156

7½"

3½" 4"

8"

2" Asphaltic Concrete (Typ.)

5" Base of AB-3 (Typ.)

8" ASPHALT CURB DETAIL

11 10 9 8 7 6 1

BLOCK 4 - ORCHARDS NO. 4

Scale: 1" = 30'

SITE PLAN APPROVAL

This document has received site plan approval by the City Commission of the City of Lawrence, Kansas, subject to any conditions set forth hereon.

Approved by City Commission on 2-2-86

Director of Planning

Release to Building Inspector on MAR 1986

LEGEND

Proposed Parking Lot
988 Proposed Contour Line
986 Existing Contour Line

Approved & Released
Case No. SP-5-31-85 Date: 5-31-85
Planner Initials: SLP # of Sheets 1
Director:
Accessory Bldg. Addition

FILE COPY

Note: All Construction & Materials Shall Conform to the Standard Specifications for State Road and Bridge Construction Kansas Department of Transportation, 1980 Edition

LEGAL DESCRIPTION

Lot 12, Block 4, Orchards No. 4 Subdivision, a Subdivision in the City of Lawrence, Kansas

BENCHMARK: Southeast Corner of Existing Parking Lot Pavement Elev. 990.00

-07 Portable Storage 2x10 w/ 8 Panels 12x36

REVISIONS	
~~Revised 4/7/86~~	~~Revised 4/30/86~~
Revised 4/17/86	

Parking Lot Improvements for Corpus Christi Parish

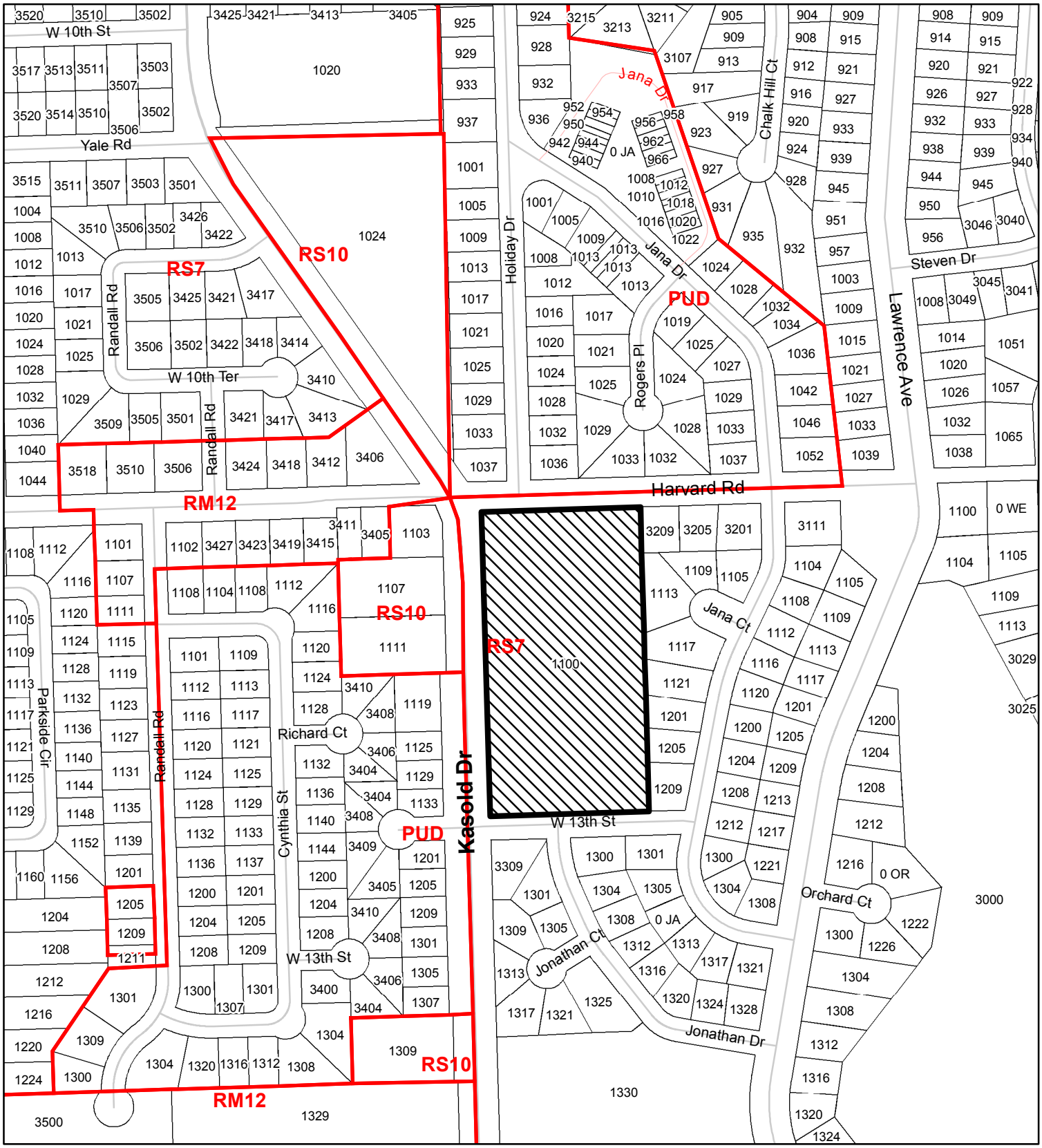
DATE January, 1986

JOB NO.

EVANS • BIERLY • HUTCHISON & ASSOCIATES
GREAT BEND, KS LAWRENCE KS GARDEN CITY, KS

SHEET NO. 1 OF 1

K&E 10-7155 — 7428 — 10-79 — 1M



SUP-14-00488: Special Use Permit for Precious One's Learning Center at Christ Community Church Located at 1100 Kasold Drive

Lawrence-Douglas County Planning Office
February 2015

Subject Property

RECEIVED

FEB 09 2015

City County Planning Office
Lawrence, Kansas

February 3, 2015

City of Lawrence
Planning and Development Services
6 East 6th St.
P.O. Box 708
Lawrence, KS 66044

Re: SUP-14-00488: Special use permit for Precious One's Learning Center at Christ Community Church, at 1100 Kasold.

Dear Commission Members,

As neighbors of the entity making this permit request, we do have concerns regarding the plans to have 50 pre-school children housed (Presumably in addition to what they currently host?) across Harvard Ave. from our property.

First, although we do not dislike small children, by any means, it will represent a daily increase in area noise. We are not in favor of adding to the current ambient noise level of the neighborhood. In fact, this entity has organized extremely loud music events, on numerous occasions, with no "neighborly notice" to other residents. During these events, traffic has also been an issue due to congestion.

Second, in the past we have had issues with the entity's handling of other youth group activities. On several occasions in years past, we have returned home from errands to find groups of young people (teens and younger), obviously at the church for various youth functions, crossing Harvard to use our back yard as a playground. Each time, it was painfully obvious there was no supervision of these young people and they had been on our property for extended periods with no corrective action from church staff. This places unacceptable liability issues onto the entity's neighbors, and we have no data suggesting supervision of these youths would be any different. At the time of these trespasses, attempts to contact the church never yielded any positive results.

Therefore, we wish to express our negative response to this entity's request for a special use permit (SUP-14-00488). In other words, "we vote a resounding NO" since you are asking for our input.

Sincerely,

Ed and Marcia Carney
1029 Rogers Place
Lawrence, KS 66049

Chuck and Sara Holley
1117 Jana Court
Lawrence, Kansas 66049
February 23, 2015

RECEIVED
FEB 23 2015
City County Planning Office
Lawrence, Kansas

City of Lawrence
Planning and Development Services
6th and Massachusetts St.
P.O. Box 708
Lawrence, Kansas 66044-0708

Attn: Katherine Simmons
Planner I

Regarding SUP-14-00488 – special use permit for Precious One's Learning Center located at 1100 Kasold Drive:

About 20 years ago, the Corpus Christi Church located at this site was required to construct a drainage pool or basin because of the flooding taking place on the property below. After a heavy rain, drainage of water into the cul-de-sac can still be seen.

Our concern is that with the new construction on this site that the drainage will not be disturbed. We have taken steps over the years to keep the flooding of our property (basement) from occurring. We hope that the drainage from the property at 1100 Kasold Drive will be maintained.

Sincerely,

Chuck and Sara Holley

PLANNING COMMISSION REPORT
Regular Agenda - Public Hearing Item

PC Staff Report
02/23/2015

ITEM NO. 3A RS7, RM12, PUD TO RM24; 51.85 ACRES; 1800, 1809, & 2021 CROSSGATE DR (SLD)

Z-14-00552: Consider a request to rezone approximately 51.85 acres from RS7 (Single-Dwelling Residential) District, RM12 (Multi-Dwelling Residential) District, and PUD [Alvamar] (Planned Unit Development) District to RM24 (Multi-Dwelling Residential) District including property located at 1800, 1809, and 2021 Crossgate Dr. Submitted by Paul Werner Architects on behalf of Alvamar Inc, property owner of record.

STAFF RECOMMENDATION: Staff recommends deferral of the request to rezone approximately 51.85 acres from RS7 (Single-Dwelling Residential) District, RM12 (Multi-Dwelling Residential) District, and PUD [Alvamar] (Planned Unit Development) District to RM24 (Multi-Dwelling Residential) District and resubmission of the request with a Planned Development Overlay based on the findings presented in the staff report.

Reason for Request: Proposed residential and golf course development.

KEY POINTS

- Property includes developed golf course improvements and open space and includes adding significant residential density and increased traffic from nonresidential uses associated with the golf course redevelopment.
- The proposed development is intended, in part, to maintain the Alvamar Golf Course as a viable amenity to many in the city.
- The impacts to the infrastructure serving the development – streets/traffic, storm water improvements, sewer and water, as well as the compatibility of this request with adjacent uses, depends in large part to the specific development density and size of the nonresidential uses associated with the golf course. Staff recommends that a PD Overlay accompany the rezoning request so that the entirety of the impacts can be identified and assessed.

ASSOCIATED CASES/OTHER ACTION REQUIRED

- PP-14-00554; Alvamar One Preliminary Plat

PLANS AND STUDIES REQURIED

- *Traffic Study* – Not required for rezoning
- *Downstream Sanitary Sewer Analysis* – not required for rezoning
- *Drainage Study* – Not required for rezoning
- *Retail Market Study* – Not applicable to residential request

Refer to related Preliminary Plat for these studies.

ATTACHMENTS

1. Area Map
2. List of communications
3. Heasty Letter
4. Abernathy Letter
5. Alvamar Development Plans 1967 -1986
6. Annotated Development Plan

Project Summary:
Proposed request is for infill development that includes mixed residential and recreational uses accessory to the golf course. Residential uses include multi-dwelling, attached and detached housing. Golf course amenities include a banquet/event facility, outdoor snack bar and grill, swimming pools, fitness center space for the Kansas Golf Hall of Fame and associated office space for the golf course. Planned improvements also include up to 24 extended stay cabins/suites as an accessory use to the golf course amenities but does not include a hotel or motel use. Access to this area is from Crossgate Drive a local street that intersects Clinton Parkway on the south and a private street that intersects Bob Billings Parkway to the north.

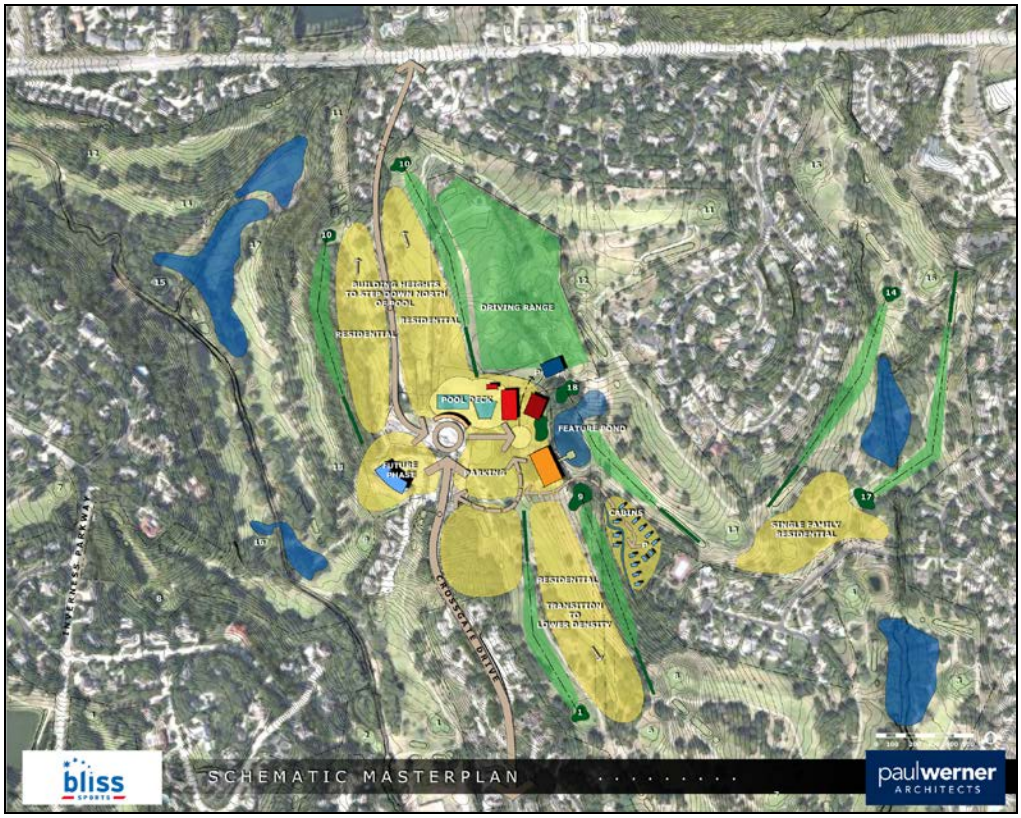


Figure 1: Concept Plan Provided With Application

Table 1: Summary of Uses

Specific Improvements include	
Residential Uses	Non Residential Uses
• 332 apartments • 96 Owned Patio Homes/Townhouses • 96 Owned Condos • 88 Owned Luxury Condos	• New golf clubhouse • Lockers, pro-shop, restaurant • 15,000 SF banquet/event facility • Outdoor snack bar/grill • 2-3 swimming pools • 6,000 Sf fitness center • 1,200 SF Kansas Golf Hall of Fame • 24 extended stay cabins/suites • 4,000 Sf Office Space.

This project also includes off-site changes to the golf course including modifications to pond areas, T-boxes, and fairways.

1. CONFORMANCE WITH THE COMPREHENSIVE PLAN

Applicant's Response: *See attached letter from applicant.*

Basic residential strategies are listed in Chapter 5 of *Horizon 2020*. They include:

- Infill residential development should be considered prior to annexation of new residential areas.
- A mixture of housing types, styles and economic levels should be encouraged for new residential and fill development.
- Compatible densities and housing types should be encouraged in residential neighborhoods by providing appropriate transition zones between low density residential land uses and more intensive residential development, and between higher density residential uses and non-residential land uses.

Horizon 2020 does not specifically address this area. The plan recommends the preservation of neighborhood character and appearance, Policy 3 Neighborhood Conservation. Included in this set of policies are recommendations to minimize traffic impacts, encroachment of nonresidential uses, and encourage compatible infill development with regard to lot size, housing type, scale and general architectural style of the area.

The purpose of the RM24 zoning in this application is to facilitate a mix of housing type that includes multi-dwelling (apartments, townhouses and duplexes) and detached residential housing forms, as reported in the applicant's traffic study. If approved a multi-dwelling development would be subject to Site Plan approval while detached housing would require a Special Use Permit approval.

Depending on the form of the specific development of any individual lot with the proposed RM24 district density could be as high as 24 dwelling units per acre while development of other lots would be lower. For example the following information is summarized from the applicant's Traffic Study and provides an insight to the intensity of the development proposed.

Table 2: Residential Development Summary

Proposed Alvamar One (RM24)									
	Lot Area		Maximum Density	Housing Type					Proposed Density
LOT	Square Feet	Acres	24 units/ Acre	Apartments	Townhomes	Condo	Luxury Condo	TOTAL	DU/AC
Lot 1	336,849	7.73	186	120	24			144	18.6
Lot 2	374,153.73	8.59	206	120	24			144	16.8
Lot 3	268,605.69	6.17	148			48		48	7.8
Lot 4	209,951.30	4.82	116	92				92	19.1
Lot 5	754,588.73	7.32	416		48	48		96	5.5
Lot 6	162,489.00	3.73	90				88	88	23.6
TOTAL	**2,106,637.45**	**48.36**	**1,160**	**332**	**96**	**96**	**88**	**612**	**12.7**

The overall density, 12.7 dwelling units per acre, is less than the maximum that would be permitted in the development.

However, the request does not allow for the evaluation of the compatibility and intensity, as recommended in *Horizon 2020*, of the proposed development through zoning and the related subdivision as proposed.

Staff Finding – *Horizon 2020* does not specifically address this area but provides general policies that are applicable to development if approved. Substantial consideration should be given to compatibility of the surrounding area with regard to intensity and housing form and appearance as well as appropriate transitions and mitigation of impacts such as traffic. Staff finds that more information is required to fully analyze these impacts.

2. ZONING AND USE OF NEARBY PROPERTY, INCLUDING OVERLAY ZONING

This section describes the existing and surrounding zoning and land use for the immediate area of the proposed RM24 district.

Current Zoning and Land Use:	PD-[Alvamar PUD] District. Part of a 422-acre development including golf course and residential development. RS7 (Single-Dwelling Residential) District; Existing parking lot and portion of golf course area. RM12 (Multi-Dwelling Residential District; existing clubhouse located at 1809 Crossgate Drive.
Surrounding Zoning and Land Use: *See Attached Map for Zoning Districts*	To the South/Southwest: PD-[Alvamar PUD] District; RM12 (Multi-Dwelling Residential District; RS7 (Single-Dwelling Residential District and RM12D (Multi-Dwelling-Residential) District. Existing residential uses and golf course areas along Quail Run and Crossgate Drive To the west: PD-[Alvamar PUD] District. Existing Alvmar Golf Course. To the North PD-[Alvamar PUD] District. Existing residential uses along the north leg of Crossgate Drive, a private street and Alvamar Golf Couse. To the east PD-[Alvamar PUD] District. Alvamar Golf Couse and residential uses along Eldorado Drive, Alvamar Drive and Quail Creek Ct.

This area includes approximately 324 acres of golf course that includes the fairways and clubhouse/parking areas and several platted residential subdivision designed with rear yards adjacent to the golf course. Developed subdivisions in the area include both detached and attached housing. With the exception of the golf course facility uses, non-residential uses are

located along the periphery of the neighborhood. Golf course amenity uses are located along Crossgate Drive, a local street.

Staff Finding – The majority of the area is surrounded by the Alvamar Planned Unit development and existing golf course. Clusters of residential uses are located along public and private streets that are adjacent to the proposed request or are separated by portions of the golf course.

3. CHARACTER OF THE NEIGHBORHOOD

Applicant's Response: *The Neighborhoods currently in the PUD consist of apartments, duplexes, townhoues, and a mix of mid to high end single family residences. All of these different housing types can be found backing up to the golf course.*

This neighborhood area is described as the Alvamar Neighborhood. This neighborhood has developed around the Alvamar Golf Couse and includes multiple platted subdvisions. It is bounded on the north by Bob Billings Parkway, Cinton Parkway on the south, Kasold Drive on the east and Wakarusa Drive on the west. It is not a registered neighborhood within the City of Lawrence. A small area known as Quail Ridge East is a registered neighborhood and is located in the northeast corner of the Alvamar PUD. The east half of the neighborhood was developed as part of a Planned Unit Development. The western half was developed through conventional zoning and subdivision platting processes. The existing PUD boundary currently includes approximately 449 acres though should be corrected to remove the PCD located in the southeast corner adjacent to Kasold and Clinton Parkway.

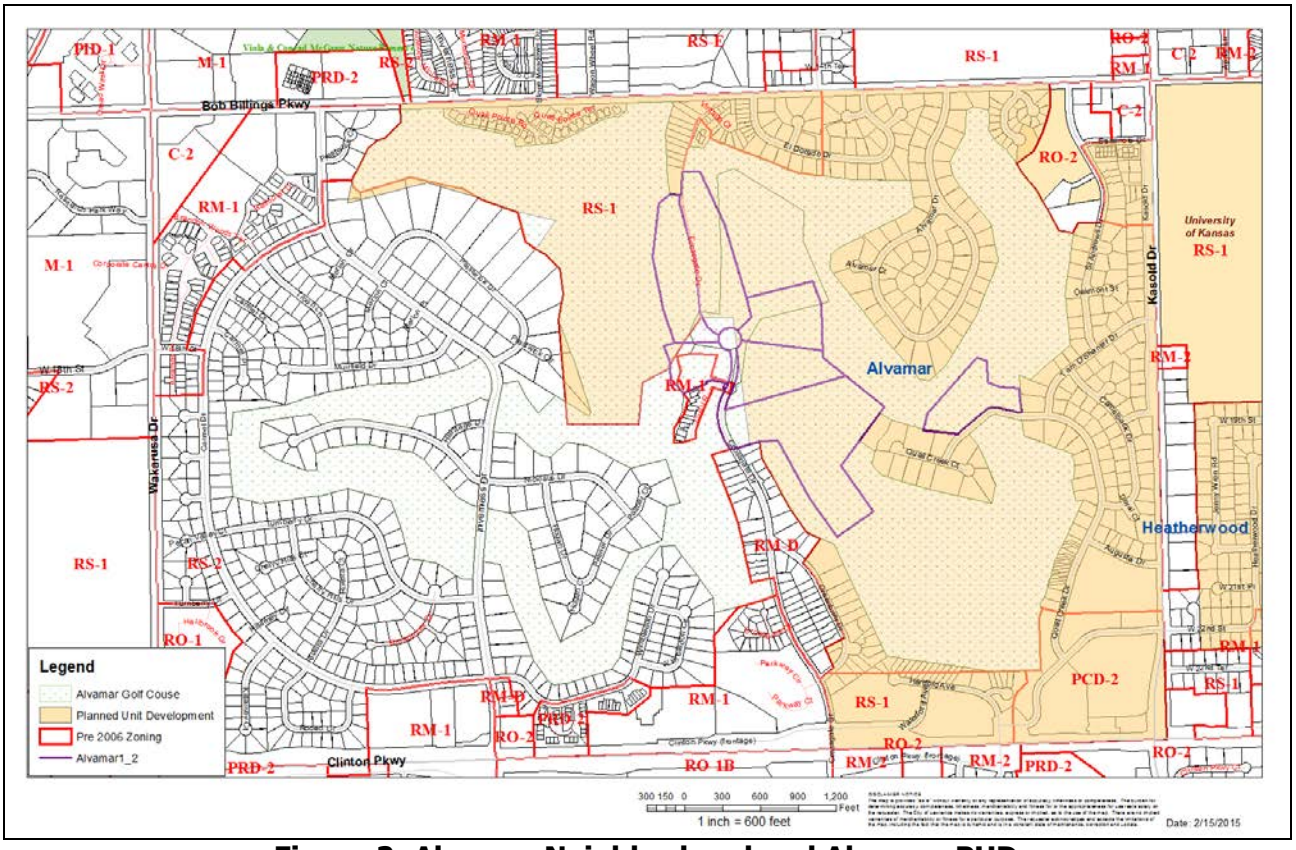


Figure 2: Alvamar Neighborhood and Alvamar PUD

There are three main vehicular paths that provide north south connectivity within this area between Bob Billings Parkway and Clinton Parkway. They are:

1. St. Andrews Drive –Tam O'Shantner Drive – Quail Creek Drive - all local streets
2. Crossgate Drive – a local street; and
3. Inverness Drive a collector street.

Crossgate Drive includes the north 550' as a private drive that includes access through the parking lot area of the clubhouse area. Only Inverness Drive was developed as a through street within the neighborhood. It is not located within the Alvamar PUD.

Residential uses include both attached and detached housing as well as multi-dwelling residences. Common attached housing types include duplex, typically referred to townhouses, as well as triplex and four-plex units that have also been referred to as townhouses throughout the development. Multi-dwelling residential uses are located within the Alvamar Planned Unit Development along Wateford Avenue on the north side of Clinton Parkway, the east side of Quail Creek Drive, and the south side of Seminole Drive. The current development pattern includes low, medium, and high density residential development within the Alvamar PUD. Lots along the south leg of Crossgate Drive are not within the boundary of the Alvamar PUD.

The main portion of the golf course activity area is located at the north end of Crossgate Drive where it changes from a public street to a private street. Site plans were approved in 1983 and 2008 for the club house and the Jayhawk Golf Training Facility. The clubhouse is located outside of the boundary of the Alvamar PUD.

This area includes several creeks and streams. Several ponds are located throughout the golf course area. If approved the development includes modifications to some ponds and natural drainage ways in the area that are outside of the area included in the related subdivision associated with this request. Changes to these features must maintain an appropriate relationship to the existing development and character of the area.

If approved, the proposed request would add residential development along Crossgate Drive and increase the existing amenities associated with the golf course in the same central area.

Staff Finding – The character of the area is defined by the boundaries and presence of the golf course and amenities. The area includes mixed density and housing type. Main portions of the golf course are located along Crossgate Drive. Higher density residential development is typically located along the boundary of the neighborhood with proximity to Kasold Drive and Clinton Parkway. New residential development could be compatible if analyzed within the context of a Planned Development Overlay where densites, height, buffer yards, etc, were available for reivew.

4. PLANS FOR THE AREA OR NEIGHBORHOOD, AS REFLECTED IN ADOPTED AREA AND/OR SECTOR PLANS INCLUDING THE PROPERTY OR ADJOINING PROPERTY

Only a very small and isolated area is within a registered Neighborhood boundary. There are no adopted plans for this area. The eastern area was part of a Planned Unit Development originally approved in the late 1960's. Various revisions to the plan over time have been made through zoning, subdivision plats, site plans and Uses Permitted Upon Review.

Staff reviewed the history of the Alvamar development in an effort to establish a base for the current and any remaining development with the Alvamar Planned Unit Development as a proxy plan for this area.

The approved Planned Community Development Plan, approved by the City Commission on February 28, 1993 shows the total area of the PUD as 378 acres with 243 acres of golf course. The plan also shows 2,153 total dwelling units permitted and 712 dwelling units shown on the plan. An annotated copy of the plan is attached to this report. The following table summarizes the development per this plan for the area. There are disparities in the plan that are not reconcilable.

Table 3: Land Use Summary 1993 Alvamar PUD

Residential Uses		
Area in PUD	**378 Acres** This total does not appear to account for 3 acres withdrawn from PUD in 1989 (375 Acres)	
	Golf Course	*243 Acres*
	Residential Area	*135 Acres*
	Apartments	227 dwelling units
	Townhouses	96 dwelling units
	Duplexes	46 dwelling units
	Single Family	275 dwelling units
Total Dwelling Units	All Housing Types	644 dwelling units
Living Units	Shown	712
Living Units	Permitted	2,153
Density per Family	Gross	26,246 SF (1.6 dwelling units per acre)
Density per Family	Net	23,126 SF (1.8 dwelling units per acre)

Non Residential Uses		
Commercial	Not in PUD	24 Acres
Residential Office	Not in PUD	9 Acres
Future Residential	Out side of City Limits/ Not in PUD	104 Acres
Street Right-of-Way	Within Residential PUD	51 Acres
Street Right-of-way	Not in PUD	6 Acres

The above information is shown on the face of the 1993 Alvamar Planned Unit Development Plan. The total number of existing dwelling units including all housing types is estimated at 647 dwelling units. That number of dwelling units within the existing Alvamar PD is approximately 1.4 dwelling units per acre. This number is comparable to the summary information included in the 1993 plan noted above.

The proposed request, if approved, would add additional density. The proposed development identifies the addition of 612 residential dwelling units. The following formula shows an estimation of the increase of density within the Alvamar PD area.

647 Existing Dwelling Units
612 New Dwelling Units (Per traffic study)
1,259 Total Dwelling Units

Alvamar PD = 449 Acres. 1,259 DU/449 AC = 2.8 dwelling units per acre.

This summary addresses only the residential impact. Assessment of the amenities associated with the golf course would be reviewed through a more specific site plan or development plan applicable to the project. There are typically no residential densities associated with recreation uses.

Staff Finding – There are no adopted area or neighborhood plans for the area included in the proposed zoning and immediately surrounding area. The Alvamar PUD includes only the eastern portion of the area.

5. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED UNDER THE EXISTING ZONING REGULATIONS

Applicant's Response: *The property is suitable for the current uses it is restricted to however, expanding recreational uses on the property would also fit the character of the neighborhood and provide additional recreational amenities.*

The current zoning allows Active Recreation Uses in all residential zoning districts subject to a Special Use Permit. Passive Recreation Uses and Private Recreation Uses are allowed by-right in all residential zoning districts.

> **Active Recreation Uses** include athletic fields and courts, as well as community recreation buildings, accessory structures including public restrooms, refreshment stands, concession shops selling sporting goods, and miniature gold.
>
> **Passive Recreation Uses** include greens and commons, gardens, arboretums, pedestrian, bicycle and equestrian paths, and trails, plaza and seating areas, picnic areas and golf courses.
>
> **Private Recreational Areas** are set aside as open or recreational uses as part of a residential development.

Golf course uses are associated with accessory uses such as club houses, pools, restaurants, limited retail related to the facility and other amenities.

The structure of zoning for this property includes a Planned Unit Development (PUD) approved originally in the late 1960's at the time the zoning was adopted the zoning was considered to be an overlay or special purpose district with a base zoning district. The base zoning for this property included both RS-1 and RS-2 (Single-dwelling Residential) Districts.

The following image shows the boundary of the zoning prior to the adoption of the 2006 Land Development Code.

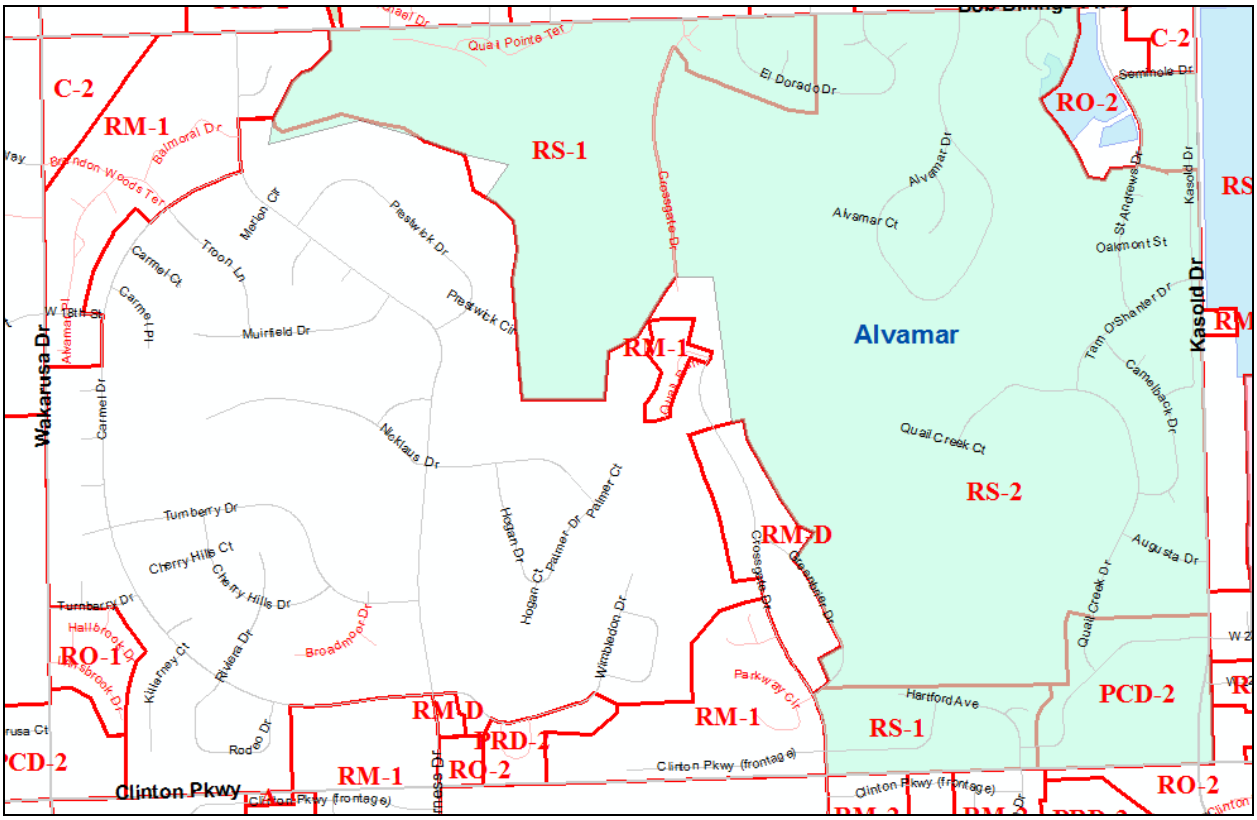


Figure 3: Alvamar Zoning Prior to 2006, RS-1 and RS-2 with PUD Overlay

When the Land Development Code was adopted in 2006 properties that were zoned PUD, regardless of the PUD as an overlay or an independent zoning district, became a Special Purpose District. This history is relevant to the question of suitability because the development of the area within the Alvamar PUD has occurred in a fragmented and inconsistent manner with regard to the applicable zoning district.

As requested, approval of this application would remove area from the existing Alvamar PUD and establish it as a conventional zoning district. The purpose of the request is to facilitate new residential development. development and enhancement of the golf course, related amenities and accessory uses. The non-residential related uses could be developed as a revision to the approved Alvamar PUD without the change of zoning.

Based on the existing zoning and approved development plans, site plans and subdivisions there suggests some total amount of development that is permitted. That total "permitted units" of 2,153 units within 375 acres of the Planned Development is the equivalent to approximatelt 5 dwelling units per acre. The plan states that based on the 1993 plan a total of 712 living units were shown. A review of individual developments within the Alvamar PUD finds a wide range of density and housing type.

A key difference between the existing zoning and the proposed zoning is that the existing zoning would be expected to include a revised preliminary and final development plan prior to construction. The proposed zoning would be subject only to subdivision plat, site plan and special use permit review for some types of projects.

The area requested for rezoning is predominantly used for the golf course and open areas associated with that function. In order to facilitate infill residential development with a mix of housing types, an alternative base zoning district is needed.

The current zoning, assuming the underlying base zoning as RS10 and RS7 (converted from the RS-1 and RS-2 pre 2006 districts), is suitable for the existing uses but does not support a request for development of additional residential units in this area.

Staff Finding – the current zoning is obsolete given the adoption of the Land Development Code in 2006. Assessing development and suitability are complicated by the fact that no previous development plan for the area clearly articulates a maximum build out of the area. If future improvements are limited to only those related to the golf course and accessory uses a change in zoning is not required. To facilitate additional infill development rezoning the base district is suitable.

6. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Applicant's Response: *The property is not vacant and has existed with a golf course and a range of housing types since the early 1980's.*

This area has developed over a period of years starting in the late 1960's. the original approval appears to date to May 1967 and included a total of 1,583 units on 252 acres. The development described areas that were both inside of and outside of the existing 1967 City Limits and include the Alvamar Hills Golf Course. The commercial areas shown on the early plans located on the northwest corner of Kasold and Clinton Parkway were not part of the Planned Use Development. Additionally area zoned RO in the northeast corner of the property at Kasold and Bob Billings Parkway were also removed from the PUD as part of a revised plan approved through the Use Permitted Upon Review (UPR) process (UPR-6-4-76). Another plan revised development through the UPR process (UPR-11-11-76) shows the Planned Unit Development including 381 acres.

Prior to 2006 the majority of the golf course was zoned RS-2 (Single-family residence) District with a planned unit development overlay. Over time the boundary of the PUD has been modified an area in the northwest and northeast corners have been removed. The area along St. Andrews Drive in the northeast portion of the development was rezoned in 1972 to RO and was removed from the PUD. In 1989 the area around Prestwick court was withdrawn from the PUD.

Throughout the Alvamar Planned Unit Development density has been transferred from within the development as each specific subdivision has been platted and built out. An example of this transfer of density is shown in UPR-11-11-76. This phase of the Planned Development modified the early plans from 48 townhouses to 25 detached residences located along Medinah Drive. Other examples occur in individual subdivisions that were platted for detached dwelling units but individuals built across lot lines and effectively combined two or more lots into a single parcel.

The earliest plans included the extension of a street between what is today Clinton Parkway and Bob Billings Parkway known as Greenbrier Drive as shown in the 1967 plan attached. Plans from the mid 1970's show Greenbriar Drive extended from Clinton Parkway north to the center part of the site terminating with a street called Club Drive. Greenbriar Drive was renamed Crossgate Drive in later plans. Crossgate Drive did not extended to Bob Billings Parkway until revisions were made for the Woodfiled Meadows Development at the north end of Crossgate Drive in the early 1980's. the approved plan from 1986 shows a public street for Crossgate Drive extended to the golf club

area in the central portion of the development and a private access from Bob Billings Parkway south to the club area.

Golf club activity areas have historically been located in the central portion of the development.

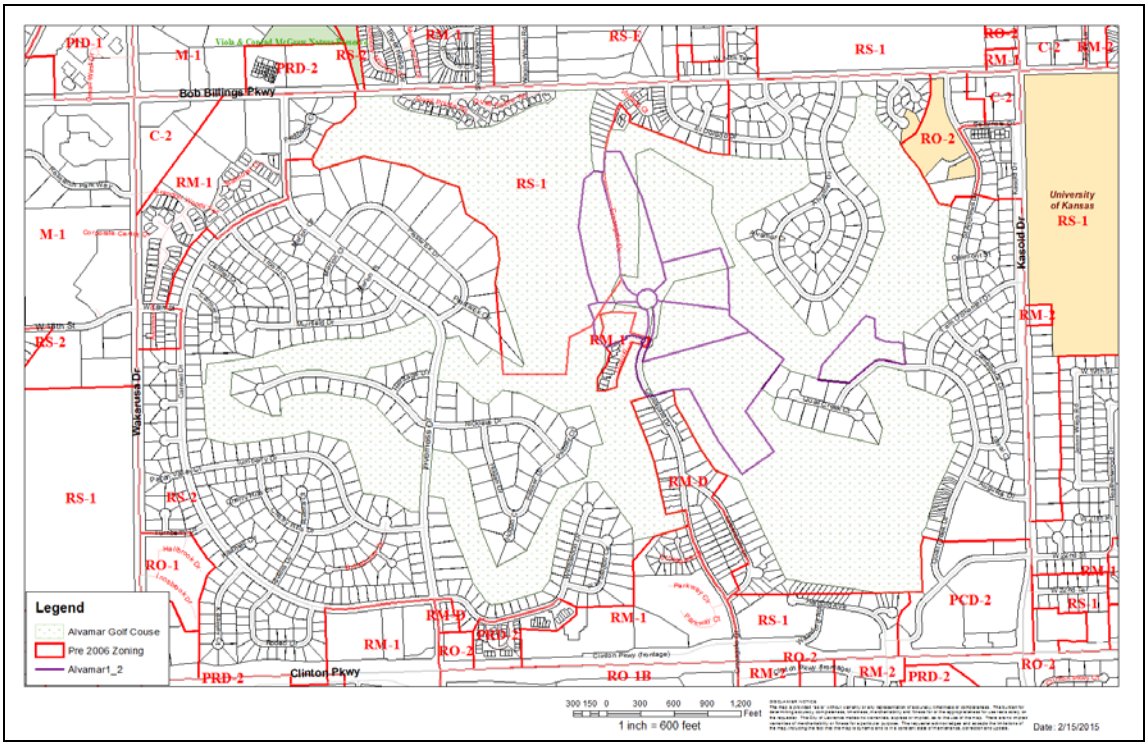


Figure 4: Base Zoning without PUD Overlay

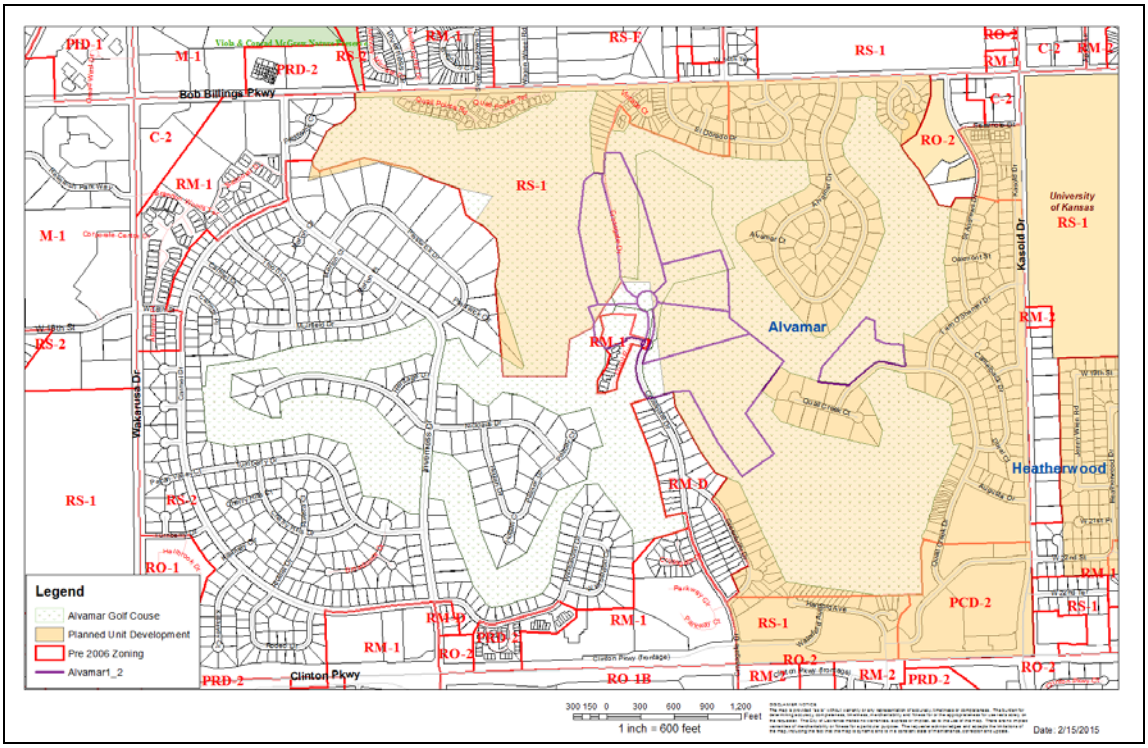


Figure 5: Base Zoning with PUD Overlay

Staff Finding – Zoning within the Alvamar PUD has been modified over time to accommodate development of individual subdivision, multi-dwelling projects, and amenities associated with the golf course.

7. EXTENT TO WHICH APPROVING THE REZONING WILL DETRIMENTALLY AFFECT NEARBY PROPERTIES

Applicant's Response: *Rezoning for this project is necessary to allow new recreational uses other than the golf course to be built. The proposed housing is already an allowed use and exists in the current PUD in the form of apartments, townhomes, duplexes and single-family homes.*

With a few exceptions this proposed rezoning is surrounded by the existing golf course. The significant feature of the request is the addition of development intensity associated with both the golf course and the additional residential uses proposed. Approval of the request will add additional traffic along Crossgate Drive. Crossgate Drive is the only access for 7 existing subdivisions between Bob Billings Parkway to the north and Clinton Parkway to the south.

Residents have contacted planning staff regarding traffic concerns as well as obstruction of their view of the golf course, water runoff, compatibility and style of development consistent with the surrounding residential character of the existing residential uses. Traffic is an acknowledged issue as there are limited options for providing street access to this area without substantially changing the surrounding neighborhood. Options such as extending a new north south street parallel to Crossgate Drive, as a public street, to connect to Bob Billings Parkway, redeveloping the north segment of Crossgate Drive as a public Street or extending a new public street from Quail Creek Drive to intersect with Crossgate Drive will significantly impact the existing residents.

A possible mitigation of the effects of the project could include the applicant submitting a Planned Development per the Land Development Code. This would take the form of a zoning recommendation for a change to the base district with a PD overlay and the submission of a Preliminary Development Plan to be considered concurrently with the rezoning.

Staff Finding – In staff's opinion, the request should be modified to include a PD overlay in order to more accurately assess the potential impacts of traffic, compatibility, stormwater and related issues.

8. THE GAIN, IF ANY, TO THE PUBLIC HEALTH, SAFETY AND WELFARE DUE TO THE DENIAL OF THE APPLICATION, AS COMPARED TO THE HARDSHIP IMPOSED UPON THE LANDOWNER, IF ANY, AS A RESULT OF DENIAL OF THE APPLICATION

Applicant's Response: *The gain to the public health, safety and welfare would be additional recreational opportunities to provide people with more health and active lifestyle. The hardship imposed upon the landowner would be they would not be able to sell the property and the course itself would decline.*

Evaluation of this criterion includes weighing the benefits to the public versus the benefit of the owners of the subject property. Benefits are measured based on anticipated impacts of the rezoning request on the public health, safety, and welfare.

Development within this area, as proposed, will require extension of municipal services such as sanitary sewer and water lines. Additional improvements to the street network are needed including traffic calming methods that have been approved for Crossgate Drive but not yet installed (south street segment to Clinton Parkway). Additionally improvements to the golf course

and stormwater runoff are anticipated to support this development that are outside of the boundary of the rezoning and proposed preliminary plat. The traffic study states that turn lanes are needed at Crossgate Drive and Bob Billings Parkway as well as changes to signal timing at Crossgate Drive and Clinton Parkway. How all these development issues are satisfied remains somewhat undetermined with the current development applications.

Approval of the rezoning provides a framework to assess land uses and gross density. Conventional zoning will not address basic design considerations such as transition between housing types. The addition of a Planned Development Overlay district will provide more information to assure compatibility concerns are addressed and integrated into the overall development project and would allow those with a vested interest in the development, the nearby owners to have that information necessary to more fully assess the impacts. .

Approval of the request, as proposed, allows for additional development intensity and residential development within the existing city limits and as infill within an existing neighborhood with an established character.

Benefit could be gained by regenerating golf course amenities and adding residential use to enhance the Alvmar Development.

Staff Finding – If issues such as traffic, density, compatibility, etc. are adequately address through site planning, than these would be gains to the Alvamar Development and adjacent owners by keeping the golf course open and successful.

9. PROFESSIONAL STAFF RECOMMENDATION

Numerous changes in the original 1966 zoning ordinance and the adoption of the Land Development Code in 2006 make the current zoning for this area difficult to administer. Rezoning the area to a current zoning district is beneficial in establishing development potential for the area. A more appropriate tool in this application is a Planned Development Overlay to assure both coordination of infrastructure improvements to the area and compatibility of the development with the surrounding area.

The purpose of a Planned Development Overlay District is to ensure the consistency with the Comprehensive Plan, ensure that development can be conveniently, efficiently, and economically served by utilities and services and to allow design flexibility as stated in Section 20-701 of the Land Development Code.

Staff recommends the application be deferred and resubmitted with a PD overlay and a preliminary development plan with sufficient detail to assess the impact on the adjacent neighborhood.

CONCLUSION

The rezoning application, as requested, may be suitable with the addition of a Planned Development. Clarification and assessment of off-site improvements are needed and would be available with a Planned Development Overlay.

paulwerner
ARCHITECTS

December 22, 2014

Sandra Day
Planning and Development Services
6 East 6th St.
Lawrence, KS 66044

RE: Alvamar PUD Withdraw

Dear Sandra,

The information below is supplemental to the rezoning applications for the withdraw of 45.08 acres from the Alvamar PUD and the rezoning of 6.77 acres from RS7 and RM12 to RM24. It is important to note that the proposed RM24 zoning provides a way for the current and proposed Country Club uses to exist in the correct zoning designation.

1. How does the request conform with the Comprehensive Plan, Horizon 2020?

Alvamar has the available room and the desire to expand.
Horizon 2020 addresses growth rates in Lawrence and Douglas County and was correct in assuming Lawrence would continue to grow and be a desirable place for existing businesses to expand. (p. 2-6)

Business retention and expansion - Nationally and locally, over 80% of new jobs and investment growth in a community come from the expansion of existing businesses.(p.12-2)

Mixed residential types, styles and economic levels currently occur in the existing Alvamar PUD. The new development around the clubhouse area would continue to enhance the following strategies.
Horizon 2020 supports infill development and redevelopment, encourages the development of neighborhoods in a range of densities and economic levels, proposes the progression of land uses to help achieve a transition in land use and intensity levels to help avoid abrupt changes in density and building type. (p.3-1, p.5-1)

The Alvamar Estates PUD has approximately 706 of the allowed 2,153 units built. With this proposal new units will be built however, we anticipate being considerably under the allowed units due to pools, clubhouses, etc., taking up some of the non-residential area. While RM15 zoning would likely be appropriate for this rezoning request when applied to the entire site we believe it would not be dense enough in some areas. We also believe it is important to preserve as much open space as possible on the golf course for current residents and the community. With that in mind we believe that rezoning to RM24 would allow the residential areas shown on the concept plan to be densely yet, appropriately built to maximize the development areas while

Office : 123 W 8th Street Suite B2 : Lawrence, Kansas : 66044
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info@paulwernerarchitects.com

leaving as much open space as possible. This small concentration of high-density housing would seek to implement the following design features:
A range of densities and housing types should be encouraged. The design and development of all new high-density residential development should be carefully controlled to ensure compatibility with surrounding uses, adequate screening and buffering, and attractive appearance from nearby roadways, and a high-quality living environment.(p.5-5)

Alvamar golf course is a great amenity to the City and to surrounding residents because of the recreation and open space it provides. It is important for golf courses to evolve into providing other recreational amenities because it's been suggested that only 25% of people who live in golf course developments actually play golf. Due to homebuyers in general preferring to be near open space it's important to provide other recreational amenities for the community in this area.
...New parks and recreational facilities should extend and enhance the existing and/or future open space system.(p.9-2) Conserve and protect natural features and functions while accommodating new development that is sensitive to both the recreational needs and the environmental and ecological needs of the community.(p.9-23) Encourage and incorporate open space areas, especially natural areas, into development to increase the overall quality of life for residents of the City.(p.9-24)

2. To what extent will approving the rezoning detrimentally affect nearby properties?

Rezoning for this project is necessary to allow new recreational uses other than the golf course to be built. The proposed housing is already an allowed use and exists in the current PUD in the form of apartments, townhomes, duplexes and single family homes.

3. Describe the character of the neighborhood.
The neighborhoods currently in the PUD consist of apartments, duplexes, townhomes, and a mix of mid to high end single family residences. All of these different housing types can be found backing up to the golf course.

4. What is the suitability of the subject property for the uses to which it has been restricted under the existing zoning regulations?
The property is suitable for the current uses it is restricted to however, expanding recreational uses on the property would also fit the character of neighborhood and provide additional recreational amenities.

5. What is the length of time the subject property has remained vacant as zoned?
The property is not vacant and has existed with a golf course and a range of housing types since the early 1980's.

6. What is the gain, if any, to the public health, safety, and welfare if this application were approved as compared to the hardship imposed upon the landowner, if any, as a result of denial of the application?
The gain to the public health, safety and welfare would be additional recreational opportunities to provide people with more healthy and active lifestyle. The hardship imposed upon the landowner would be they would not be able to sell the property and the course itself would decline.

The future SUP for this property would include pools for families and athletes, a outside dining and restaurant opportunities, a KU Golf facility, a new clubhouse/banquet/event center, new ponds and cabins for weekend or vacation golfers. These changes to the existing site layout would require a few holes to be adjusted and redone on the golf course.

Approximately 300 people have been able to attend three meetings to discuss the project. Two of the meetings were for neighbors adjacent to the new development and the other meeting was for the Alvamar Country Club members. The proposal has been very well received and positive feedback has been provided to the design team. It would seem most people in attendance have been on board with project and the main concern has been the access to the from Bob Billings Parkway via Crossgate Drive.

It is anticipated the phasing of this project would be:

Winter 2015 - Rezone and Plat Property

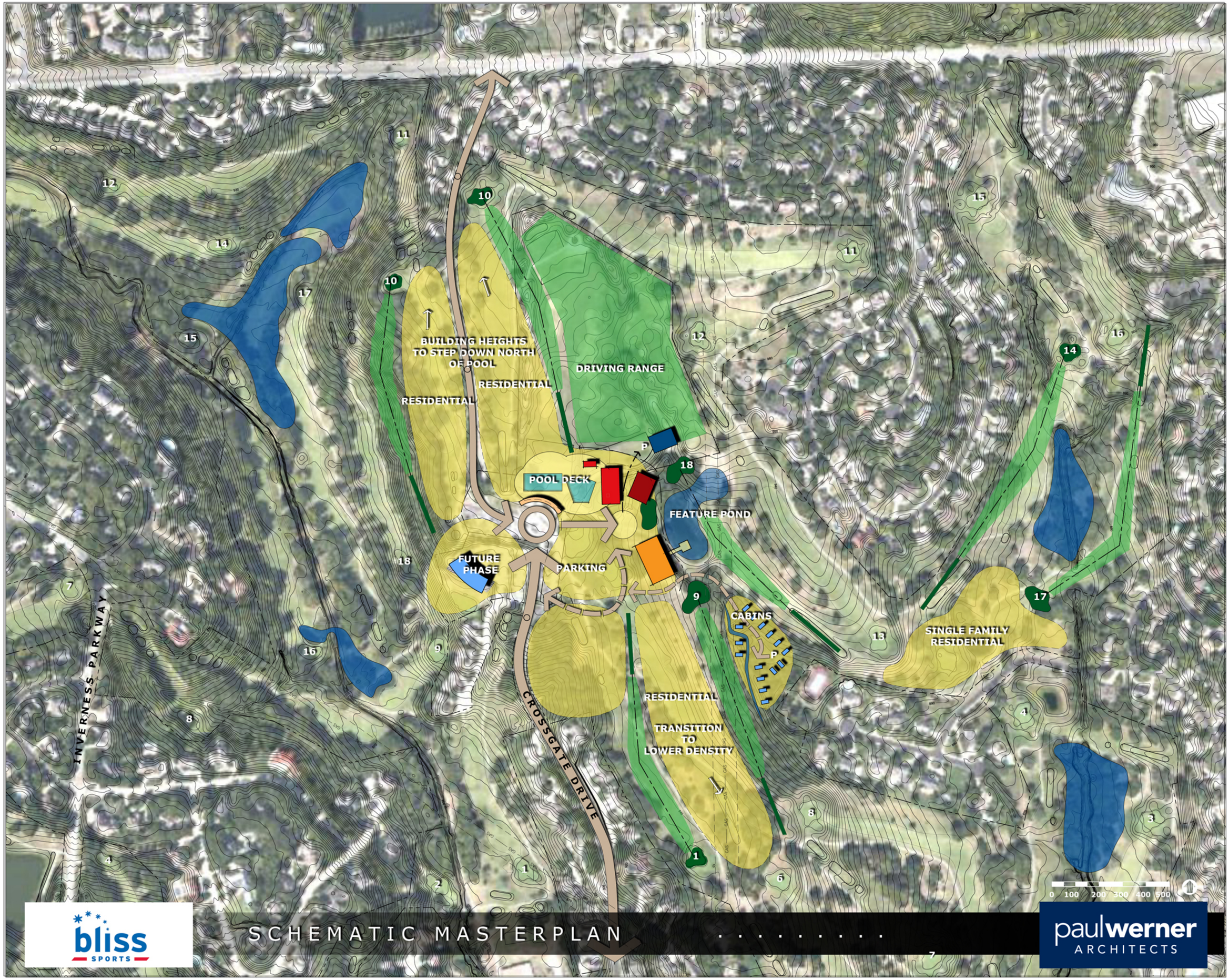
Spring 2015 - Submit SUP/SP for recreational and residential uses

Summer 2015 - Winter 2016 - Build the updated amenities and residential uses.

Sincerely,

Joy Rhea

Joy Rhea, RLA



SCHEMATIC MASTERPLAN

bliss SPORTS

paulwerner ARCHITECTS

J:\Projects\213-600\213-560\CAD & GAD PDF's\Site\CAD\PRELIMINARY SITE\CONCEPTS\base_bubble-ak11.dwg, 12/22/2014 10:17:05 AM, DWG To PDF.pc3

PRELIMINARY
PLANNED UNIT DEVELOPMENT

ALVAMAR ESTATES

H.M. RUBENSTEIN LANDSCAPE ARCH
2426 REDBUD LANE

SECTION 31, TOWNSHIP 13S, RANGE 19E
DESIGNED FOR - ALVAMAR INCORPORATED
CONTOUR INTERVAL 2' LAWRENCE, KANSAS

FEBRUARY 1, 1967

NORTH
SCALE 1"=200'

LEGEND

LAND USE	ACRES
RESIDENTIAL	232
GOLF COURSE	188
STREETS	72
COMMERCIAL	23
TOTAL	515

RESIDENTIAL	UNITS
APARTMENTS	788
TOWNHOUSES	324
DUPLEXES	50
SINGLE FAMILY	421
TOTAL	1583

NET DENSITY PER ACRE 6.34 LIVING UNITS
NET DENSITY PER FAMILY 6,934 SQ FT

ALVAMAR ESTATES

LAWRENCE, KANSAS

PRELIMINARY PLANNED COMMUNITY DEVELOPMENT

ORDINANCE #3500

NORTH
SCALE: 1"=200'-0"

0 200 400 600

PAYNE & BROCKWAY ENGINEERS
OLATHE, KANSAS

PETERS WILLIAMS KUBOTA
PLANNING
ENGINEERING
CONSTRUCTION MANAGEMENT
LAWRENCE, KANSAS KANSAS CITY, MISSOURI

LEGAL DESCRIPTION

Beginning at the SE corner Section 3, T13S, R19E, thence north along east section line 5228.50' to NE corner of said section, thence west along north section line 6340', thence south 1285', thence east 1350' to section line, thence south 1300', thence east along half section line 1326.76', thence south 994.08', thence east 294', thence southeasterly 437.23' to a point 1746.76' east and 1230' north of SW corner of said section, thence south 700', thence S65°30'E 240', thence S16°22'E 448.78' to south line of said section, thence east along south section line 3223.08' to point of Beginning, excluding the following areas:

1) Beginning at the southeast corner Section 3, T13S, R19E, thence north along east section line 1015.12', thence west to centerline of Quail Creek Drive, thence N72°54'W 160', thence S17°06'W 87.95', thence southerly along centerline of creek to point on south section line, thence east along south section line to the Point of Beginning.

2) Beginning at the northeast corner Section 3, T13S, R19E, thence south along east section line 487', thence westerly along centerline of Seminole Drive 564.53', thence southerly along centerline of St. Andrew's Drive 667.4', thence west 173.22', thence S29°18'30"W 91.74', thence N77°45'W 117.77', thence N25°35'W 332.26', thence N31°-48'W 260', thence easterly 525'± to centerline of St. Andrew's Drive, thence northerly along centerline of St. Andrew's Drive to north section line, thence east 663'± to Point of Beginning.

The remaining area encompassing approximately 429 acres.

NOTE: ALL PARK AREAS SHOWN ON PLAT WILL BE OWNED AND MAINTAINED BY A PROPERTY OWNERS ASSOCIATION COMPRISED OF PROPERTY OWNERS IN ALVAMAR

LAND USE	ACRES
GOLF COURSE	255
RESIDENTIAL	128 *
TOTAL P.U.D.	383
COMMERCIAL (NOT IN P.U.D.)	24
RESIDENTIAL - OFFICE (NOT IN P.U.D.)	9
FUTURE RESIDENTIAL (OUTSIDE CITY LIMITS-NOT IN P.U.D.)	104
STREET R/W (W/I LIMITS OF RESIDENTIAL P.U.D.)	40
STREET R/W (NOT W/I LIMITS OF P.U.D.)	12
	TOTAL 52
TOTAL AREA W/I PROPERTY LIMITS	572

RESIDENTIAL	UNITS
APARTMENTS	151
TOWNHOUSES	315
DUPLEXES	49
SINGLE FAMILY	206
TOTAL	721

GROSS DENSITY PER FAMILY (INCLUDES STREET R/W)	2591 SQ FT
NET DENSITY PER FAMILY (EXCLUDES STREET R/W)	2313.9 SQ FT
* 40 ACRES ZONE RS-1	174 LIVING UNITS PERMITTED
88 ACRES ZONE RS-2	547
	721 TOTAL LIVING UNITS PERMITTED
LIVING UNITS SHOWN	721

FUTURE COMMERCIAL 20.7 ACRES NOT PART OF P.U.D.

FUTURE RESIDENTIAL AREA

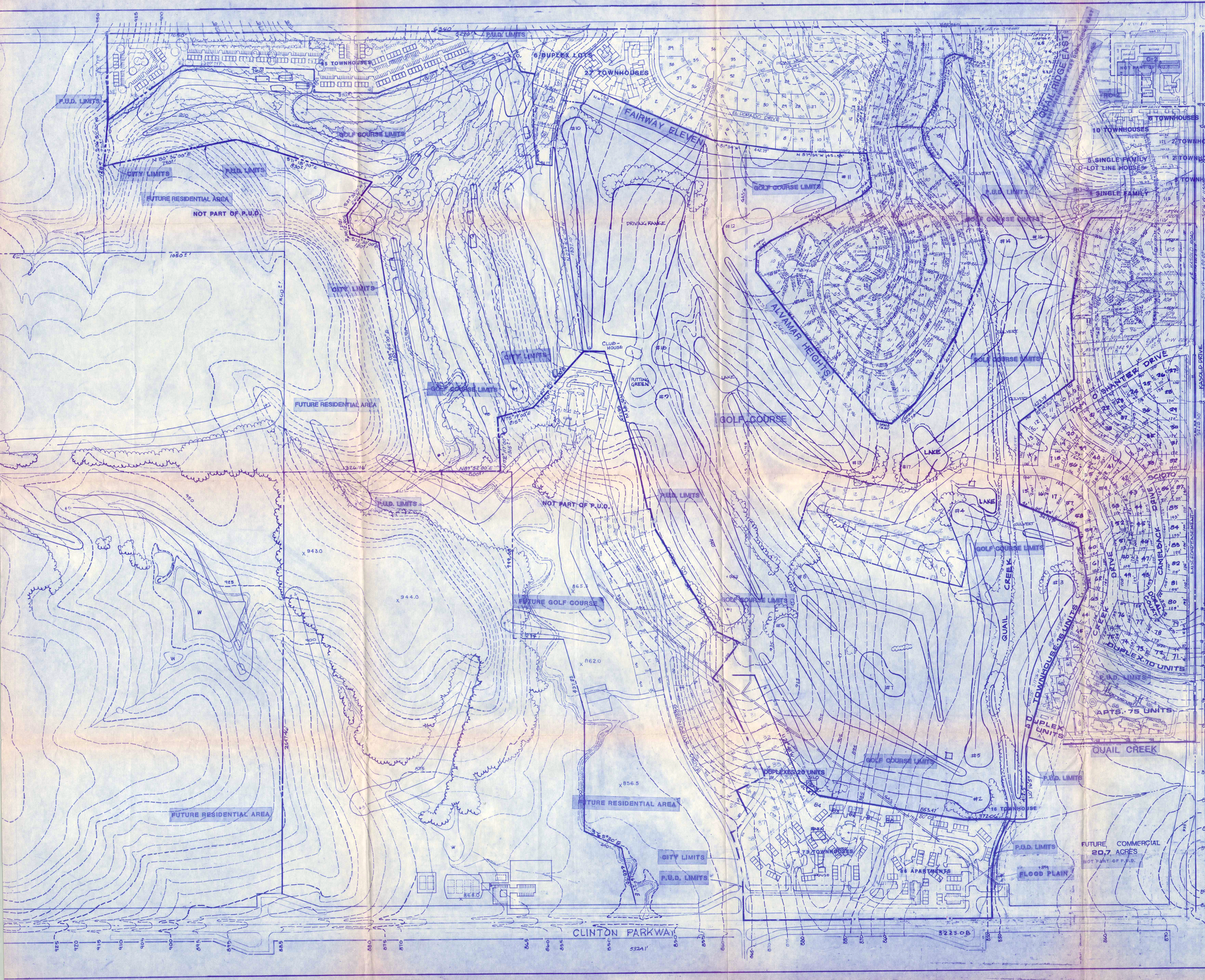
ALVAMAR HEIGHTS

FAIRWAY ELEVEN

CLINTON PARKWAY

DRAG STRIP ROAD

Developments Plan approved UDR-6-4-76
Final approved subject to meeting conditions of approval



LEGAL DESCRIPTION

Beginning at the SE corner Section 3, T13S, R19E, thence north along east section line 5228.50' to NE corner of said section, thence west along north section line 6340', thence south 1285'±, thence east 1050'± to section line, thence south 1300'±, thence east along half section line 1326.76', thence south 993.08', thence east 294', thence southeasterly 437.23' to a point 1746.76' east and 1230' north of SW corner of said section, thence south 700', thence S65°30'E 240', thence S16°22'E 448.78 to south line of said section, thence east along south section line 3223.08' to point of beginning, excluding the following areas:

1) Beginning at the southeast corner Section 3, T13S, R19E, thence north along east section line 1015'±, thence west to centerline of Quail Creek Drive, thence N72°54'W 160', thence S17°06'W 87.95', thence southerly 412.5', thence west to centerline of Quail Creek, thence southwesterly along centerline of creek to a point on south section line, thence east along south section line to the Point of Beginning.

2) Beginning at the northeast corner, Section 3, T13S, R19E, thence south along east section line 487', thence westerly along centerline of Seminole Drive 564.53', thence southerly along centerline of St. Andrew's Drive 657'±, thence west 173.27', thence S29°18'30"W 91.74'±, thence N77°45'W 117.77'±, thence N 25°36'W 200'± to northwest corner of Lot 111, thence N29°11'11"W 162.67 feet, thence N35°55'37"W 106.00 feet, thence N30°55'37"W 81.00 feet, thence N27°55'37"W 81'±, thence N56°E 164'±, thence N28°55'E 180'±, thence N17°26'43'E 205'±, thence north to north section line, thence east 813'± to Point of Beginning.

3) Commencing at the northeast corner Section 3, T13S, R19E, thence west along north section line 6340 feet, thence south 500 feet, thence S06°30'W 270 feet ± to the Point of Beginning, thence N 80°36'E 790 feet ±, thence S71°18'E 830 feet ±, thence S37°33'W 240 feet ±, thence S08°21'E 120 feet ±, thence S 73°30'E 180 feet ±, thence S08°44'E 1350 feet ± to the ¼ section line, thence west 760 feet ± along said line, thence north 1300 feet ± along west section line, thence west 1050 feet ±, thence north 515 feet ± to Point of Beginning.

4) Commencing at the southeast corner of Section 3, T13S, R19E, thence west along south section line 2640 feet ± to the Point of Beginning, thence north 1440 feet ± along ¼ section line, thence west 50 feet ±, thence N30°36'W 824.81 feet, thence N11°51'W 633.50 feet, thence N 15°49'W 587.23 feet, thence westerly 120 feet ±, thence S42°40'W 450 feet ±, thence S75°39'W 215 feet ±, thence S02°17'E 315 feet ±, thence east 65 feet ±, thence south 999.08 feet, thence east 294 feet, thence southeasterly 437.23 feet, thence south 700 feet, thence S65°30'E 240 feet, thence S16°22'E 448.78 feet to the south section line, thence east 600 feet ± along said line to the Point of Beginning.

The remaining area encompassing approximately 429 acres.

NOTE: All Park areas shown on plat will be owned and maintained by a Property owners association comprised of property owners in Alvamar.

LAND USE		ACRES
GOLF COURSE		243*
RESIDENTIAL		135*
TOTAL P.U.D.		378
COMMERCIAL	(Not In P.U.D.)	24
RESIDENTIAL-OFFICE	(Not In P.U.D.)	9
FUTURE RESIDENTIAL	(Outside City Limits-Not In P.U.D.)	104
STREET R/W	(W/I Limits of Residential P.U.D.) 51	
	(Not W/I.Limits of P.U.D.) 6	57
	Total	57
TOTAL AREA W/I PROPERTY LIMITS		572

RESIDENTIAL	UNITS
APARTMENTS	155
TOWNHOUSES	245
DUPLEXES	61
SINGLE FAMILY	251
TOTAL	712
GROSS DENSITY PER FAMILY (Includes Street R/W)	26,224 SQ. FT.
NET DENSITY PER FAMILY (Excludes Street R/W)	23,126 SQ. FT.

*40 Acres Zone RS-1 174 Living Units Permitted
86 Acres Zone RS-2 535
*70 Acres Zone RS-1 305
183 Acres Zone RS-2 1139
Living Units Shown 712 2153 Total Living Units Permitted

REVISION: (RH)
4-1-84 - REVISE WOODFIELD MEADOWS WEST AREA - REMOVE 15 TOWNHOUSES & REPLACE W/ 6 DUPLEX LOTS.
REVISION 3/20/86: 6 DUPLEX UNITS CHANGED TO 7 TOWNHOUSE UNITS ON LOTS 117, 119 & 121
REVISION 8/21/86: LOT 6 WOODFIELD MEADOWS WEST, INCREASE RESIDENTIAL BY .25 AC AND REDUCE GOLF COURSE BY .25 AC.
REVISION 8/21/86: HIDDEN VALLEY NORTH 107 TO 95 TOWNHOUSE, ROSE/DUNE MULTI-FAM. 163 TO 175 TOWNHOUSE

ALVAMAR ESTATES

LAWRENCE, KANSAS

PRELIMINARY PLANNED COMMUNITY DEVELOPMENT

ORDINANCE #3600

NORTH
SCALE 1"=200'-0"
0 200 400 600

PAYNE & BROCKWAY ENGINEERS
OLATHE, KANSAS

PETERS WILLIAMS KUBOTA

Most current copy of Rec. Devel. Plan - 9/84

REVISED 3/20/86

Prestwick Court
Removed from PUD
1989

Woodfield Meadows
PUD
1/24/84
increased
Townhouses from
24 units to 27 units

Woodfield
Meadows
PUD
4/11/84
13
townhouses
to 6 duplex

Quail Ridge East
UPR-11-11-76
Modified Townhouse
Uses (48 units) to
Detached Residence (25)

Alvamar Heights
Subdivision 1972
37.19 Ac
28 net AC
62 SFR
2.2 du/ac

Jayhawk Golf
Training Center
Subdivision Plat
2003
SP-1-4-08

Alvamar County
Club No. 2.
Clubhouse
SP-6-31-83

Alvamar Oasis
1980
14 lots
11 SFR
1 du/ac

Alvamar Country
Club No. 2 - 1984
8 units
4 du/ac

The Pinnical PUD -
1988
175 Units
15.79 Acres
13.87 Net Res. Ac.
7.9 DU/AC

Bishop seabury

TOWNHOUSES 30 UNITS
27 TOWNHOUSES
FAIRWAY ELEVEN
EL DORADO DRIVE
INDIAN MEADOW COURT
P.U.D. LIMITS
GOLF COURSE LIMITS
FUTURE RESIDENTIAL AREA
NOT PART OF P.U.D.
CITY LIMITS
DRIVING RANGE
PUTTING GREEN
LOT A
LOT B
LAKE
GOLF COURSE
ALVAMAR HEIGHTS
CULVERT
QUAIL RIDGE EAST
8 TOWNHOUSES
10 TOWNHOUSES
12 TOWNHOUSES
5 SINGLE FAMILY
0 LOT LINE HOUSES
8 TOWNHOUSES
1 SINGLE FAMILY
TAM O'SHANTER DRIVE
SCIOTO
CANEBACK
QUAIL CREEK DRIVE
QUAIL CREEK COURT
QUAIL CREEK
DUPLEX-10 UNITS
APTS.-75 UNITS
DUPLEXES-26 UNITS
23 PATIO HOMES
152 APARTMENTS
FUTURE COMMERCIAL
20.7 ACRES
NOT PART OF P.U.D.
FLOOD PLAIN
FUTURE GOLF COURSE
FUTURE RESIDENTIAL AREA
CLINTON PARKWAY
KASOLD DRIVE
CREEK
QUAIL
N 20° 36' 00" E 730'
S 11° 18' 00" E 850'
N 89° 52' 00" E 800'
S 73° 30' E 240'
S 16° 22' E 448.76'
N 89° 54' W 442.75'
N 81° 54' W 145.5'
S 89° 54' E 1050'
S 00° 06' W 1320'
N 89° 54' W 1320'
N 00° 06' E 1320'
S 89° 54' E 1320'
N 89° 52' 00" E 324.76'
S 89° 52' 00" W 324.76'
S 89° 52' 00" W 3225.08'
N 89° 52' 00" E 3324.1'
N 00° 08' 00" E 2647.4'
S 00° 08' 00" W 2647.4

Communications and request for information from:

1. Marty Smith, 1906 Crossgate Drive
2. Kay Mueller, 1908 Crossgate Drive – reported flooding
3. Jenni and Steve Koger, 2004 Crossgate Drive
4. Carolyn and Lew Phillips, 2000 Crossgate Drive
    a. 2008 and 2012 Crossgate Drive – reported flooding
5. Lori Heasty & John Patterson, 1909 Quail Run – **See Attached Letter**
6. 4011 vintage Ct.
7. 1540 Alvamar Dr.
8. 1709 Kasold Drive
9. 1431 Anthony Michael Drive (north side of BBP)
10. 3604 Hartford Ct.
11. 2101 Quail Creek
12. 4311 Quail Pointe Drive
13. 2105 Greenbriar
14. 2202 Crossgate Drive
15. Paul Davis representing multiple homeowners associations along Crossgate Drive (north leg)
16. 3522 Tam O'Shanter(Dianne Karls)
17. Gordon E. Abernathy, 1530 St. Andrews Drive – **See Attached Letter**
18. 1501 Crossgate Drive (Bill Mauch)
19. Related to the RS7 Request:
    a. 3712 Quail Creek Court, Bill and Marlene Penny
    b. 3706 Quail Creek Court, Chris and Teresa Hanna
    c. 3604 Quail Creek Court, Connie Friesen
    d. 3601 Quail Creek Court, Sandy and Mark Praeger

Issues:

1. View shed along Crossgate looking over existing golf course and no buildings in line of sight
2. What will total building height include?
3. Springs located along Fairway 1. Reported flooding along south leg of Crossgate Drive
4. Size and scope of tennis
5. Banquet use and hotel; Banquet hold up to 800 people. Hotel not characteristic of area.
6. Changes in traffic
7. Purpose and character of Alvamar PUD did not include proposed intensity.
8. What is structure of north leg of Crossgate Dive, easement agreement that includes Alvamar and Homeowner's Association for cost share 50/50. What is maintenance and improvement proposed.

Gordon E. Abernathy
1530 St. Andrews Drive
Lawrence, KS 66047
February 9, 2015

RECEIVED
FEB 12 2015
City County Planning Office
Lawrence, Kansas

City of Lawrence
Douglas County
Planning & Development Services
6 East 6th Street
P. O. Box 708
Lawrence, KS 66044

Re: Z-14-00552
Z-14-00553
PP-14-00554
PP-14-00555

Gentlemen:

I would strenuously object to the above requested rezoning requests and preliminary plat requests from Alvamar, Inc. for the following reasons:

(1) These changes would do away with open green space which is essential for the ecological balance of the area. The golf course, even though designed for a specific use, provides open green space. This should be preserved. Lawrence, a city which prides itself on being "green," certainly shouldn't allow this to happen.

(2) These requested changes would pack additional residents in an already crowded residential area. The multi-family dwellings, particularly, would detract from the beauty of the green space the golf course provides. Multiple cars, trash carts, etc., brought about by multiple family dwelling space should not be allowed in these areas.

(3) The city infrastructure, particularly the streets leading into the area, Bob Billings Parkway, Clinton Parkway, and Crossgate Drive, are not adequate to carry the additional traffic that these additional residences would generate. They are inadequate to handle the traffic that exists today; and the City's current practice of calming traffic by installing roundabouts in congested areas would only aggravate the problems.

I would ask the Planning Commission to deny these requested changes.

Respectfully submitted,

Gordon E. Abernathy

Lori L. Heasty
John B. Patterson
1909 Quail Run
Lawrence, KS 66049
(785) 691-5924

RECEIVED

FEB 11 2015

City County Planning Office
Lawrence, Kansas

February 11, 2015

Sandra Day
City of Lawrence Douglas County
Planning & Development Services
6 East 6th Street
P.O. Box 708
Lawrence, Kansas 66044

Re: Z-14-00552; Z-14-00553; PP-14-00554; PP-14-00555

Dear Ms. Day:

I am writing you on behalf of my husband and myself in regard to the proposed Application filed by Paul Werner Architects on behalf of Alvamar Inc. to re-zone and re-plat certain properties as described in the above referenced submittals. I want to thank you and the Planning Staff for your assistance in explaining the process to me and the submitted requests before the Planning Commission.

The residential area we live in is part of the Quail's Nest at Alvamar Condominium and is accessed by a private drive directly to the South of Alvamar Country Clubhouse. The private drive is owned by the Homeowner's Association with a shared access off of South Crossgate and is shared by Quail's Nest and Alvamar Country Club. My husband and I live at 1909 Quail Run, which is fronted by the private drive and #one tee box on the private side of the golf course and the back of our condo is close to #9 green on the private side of the golf course.

As I understand it, the Applicant, Paul Werner Architects on behalf of Alvamar Inc. has submitted two re-zoning requests and two corresponding preliminary plats, one of 51.85 acres from RS 7, RM12 & PUD (Alvamar) Districts to RM 24, which then will re-plat said acreage into 6 lots; and then one of 5.18 acres from PUD (Alvamar) to RS7. The area for proposed re-platting is contiguous with our neighborhood, Quail's Nest to the north, is "four doors up" from my home; it also is directly across the street to the east and runs to the south. We will be significantly impacted by any change in zoning that allows for more building, more businesses and more traffic.

The Applicant has requested that "conventional zoning" be used with no "overlay" district requirements. "Overlay" really means "oversight." Therefore, if the proposed application were approved as submitted, then any subsequent re-zoning and preliminary plats would be fairly summarily approved, with little opportunity for input from adjacent property

owners until after the formal process began and perhaps long after the informal discussions with city planners began. There would be no opportunity for input from the City's elected officials.

The carte blanche the Applicant seeks, to reconfigure this area created under a PUD, may never be appropriate in any case, given the care and commitment required to create a PUD in the first place. But the cart blanche now requested should be denied given that it has the potential to recreate an area that is so important to the City at large and to an extremely large group of Lawrence citizens who through their home purchases made lifetime investments in the Alvamar area as it exists today. This is what the Summer 2013 edition of the *Lawrence Business Magazine* wrote:

> Few businesses have as much of an impact on Lawrence as Alvamar. The club boosts 36 holes, a swimming pool and countless real estate holdings. The 36-hole facility covers most of the land from the intersection of Bob Billings Ave and Kasold to the intersection of Clinton Parkway and Wakarusa.
>
> "It's hard to argue the impact of Alvamar," says J. Taylor, Director of Memberships at Alvamar Country Club. "West Lawrence was literally built around the golf courses."

At this time, the Applicant has submitted "concept plans" only, which are admittedly attractive drawings of what could be or might be. But the drawings decidedly are not what necessarily will be; in fact, the Applicant has provided no plans for what is proposed particularly as to what is being done with the re-plat of the 51.85 acres into 6 lots that is so close to our home.

The Applicant has given the planning staff a list of intended development for the 6 lots, which said development includes over 600 dwelling units that range from two 120 unit apartment complexes, condominiums, patio homes, and "luxury" condominiums. However, based on the current Application, if re-zoning and re-platting were to occur even the list of intended development could change as long as the requirements of RM 24 (that is 24 units per acre) are not violated. This means that some 1244 dwelling units could actually be built on these 51.85 acres.

Therefore, this Applicant's requests are completely open-ended in favor of the Applicant and the future purchaser of all the realty owned by Alvamar, Inc. This request also completely eliminates the present requirement (which, as I understand it, has been in place since the creation of the golf course and its environs) to take into consideration the overall PUD of the surrounding area. As we all know this land in question is part of the Alvamar Country Club golf course under a purchase agreement at this time by a known developer's company.

At this time we oppose the Application for re-zoning and re-platting as submitted, particularly with respect to the 51.85 acres, for the following reasons.

1. This area is a mature developed area that was developed over the last four decades as a Planned Unit Development with two 18 hole golf courses and surrounding residential areas that created a blend of uses that benefit our Lawrence community as a whole. Landuse tenets that first gave the green light for the then-innovative PUD, made clear that a PUD must be created for the benefit of the whole community and not for the individual property owner alone. Otherwise the PUD would amount to an illegal spot zoning.

In this case, the original development was part of a PUD and now the proposed Application wishes to change the zoning without recognition of the original PUD and the potential negative impact on all of the other parcels that make up the original PUD, ie Alvamar golf course complex.

Even though the two steps are remote in time, the Applicant seeks to defeat the original requirements imposed upon this PUD by breaking it apart in a way that significantly changes the original Alvamar development and, we contend, does significant harm to property owners within the original development who are nearby the areas proposed for re-platting. The mere passage of time should not remove the care and oversight that the PUD overlay process requires and that the City and its citizens deserve.

2. While original Alvamar development may have contemplated greater number of residential and/or multi family structures, the final development in the proposed 51.85 acres were PUD (Alvamar-for golf course) and RM12. There is nothing that has changed within the original PUD to compel a change in zoning in any part of it. Our residential area is comprised of eight condominiums of some 4000 square feet each with covenants and restrictions that were filed by the original developer to create and maintain the control of the residential area so that it would continue to fit into and enhance the golf course complex and the other residential areas. These declarations were filed for many of the residential areas surrounding Alvamar golf course and those areas adjacent to or directly impacted by the proposed re-zoning and re-platting. Implicit within those covenants and restrictions was the commitment that the owner of the golf course and its environs would not adversely impact our residential enclave. Denying the present re-plat is the only way to guarantee that homeowners and golf course owners will continue their "win-win" relationship established by the rules and requirements of the original PUD.

3. The proposed preliminary plat of the 51.85 acres divides the acreage into 6 lots, with the following number of dwellings suggested:

Lot 1- 120 apartments and 24 patio homes/condominiums
Lot 2- 120 apartments and 24 patio homes/condominiums
Lot 3- golf course and 48 condominiums
Lot 4- 92 units
Lot 5- 48 patio homes and 48 condominiums
Lot 6- 88 "luxury" condominiums

Plus the following additions and/or changes to golf complex facilities:
Club house
15,000 sq. ft. facility
Outdoor snack bar/grill
2-3 swimming pools
Fitness center
Golf Hall of Fame
4000 sq. ft. office building with part to be rented to tenant

That is a lot of proposed "concept" development with no objective standards or requirements or other criteria that might help the Staff and the Planning Commission evaluate how it enhances or benefits the existing area. In fact, if this Application were approved, there could be even more dwellings if the land is re-zoned to RM24. Currently, there are no apartments in the area and that was by design by the original developer and controlled through the declarations of each homeowner's association created and filed at the time of development. To allow the potential for this intensive a change to the existing layout of the PUD, is essentially to embolden the Applicant to pack as much development into these locations as is in its financial best interests regardless of the impact upon other areas of the PUD and its environs. To allow the re-plat is to arm the Applicant with the argument that somehow these "concepts" tacitly were approved by this process, so there is no further need for the careful overlay/oversight built in to the regular PUD process.

Lot 6 is adjacent to land owned by the Quail's Nest Homeowner's Association. Currently, the clubhouse is an organic structure that blends into the environment. While my husband and I do not absolutely object to a new structure there with nearby "luxury" condominiums, we fear the impact that "88" condominiums, particularly if they are not owner-occupied and really are 88 apartments occupied by tenants who do not have a financial stake in their home, let alone in the PUD and its environs. In addition, there is no height limitation. Therefore, there could be a seven story structure that blocks views and does not fit within the entire look of the residential/golf complex.

It is our understanding that the majority if not all of Lot 6 is already zoned RM12. If we are truly looking at luxury condominiums, isn't the current zoning adequate and if not, what reason is given to change that zoning other than to just have the right to build more units?

4. Based on the proposed number of at least 600 dwelling units plus the golf complex buildings there is a serious problem with the access and potential increased traffic to this area. This area is the "oasis" in the middle of two 18 hole golf courses. There is one public road in from the South (Crossgate). Crossgate from the North is a private road and is too narrow at this time to accommodate the increased traffic; the private road cannot be widened because of the structures in the way. It was discussed that South Crossgate, the public road, be extended to gain greater access, however, that is still just one road with only one point of egress, which is onto Clinton Parkway. Certainly until such time as it is ascertained that the private road can be

widened to provide the kind of access to Bob Billings Parkway that any kind of good planning requires, the re-plat should be denied for this reason alone.

The proposed number of dwelling units will sharply increase traffic, congestion and change the usage of the neighborhood. In order to accommodate the proposed units in Lot 4 and Lot 5, there will be have to be streets that are accessed off of South Crossgate. The potential burden of that traffic has to be considered in the proposal and it is not at this time. There is no information at all available to the public and what the potential negative impact is.

In our particular case, our homeowner's association owns a private drive that is accessed off of South Crossgate over a mutual access drive for the benefit of our Quail's Nest Condominiums and Alvamar Country Club. Obviously, an increase in traffic will have a negative impact in our access without regard for the increased costs of maintenance we will be forced to bear.

5. The proposed Application also creates a parking issue. Currently, when Alvamar has large golf course tournaments and both courses are used, there is not enough parking. Cars are parked on Crossgate to the South and to the North to accommodate the events. It is hard to contemplate the amount of additional parking that will be required to accommodate the changes in the golf complex plus increase in dwellings.

In summary, my husband and I feel that the proposed Application is truly a redevelopment of the Alvamar Golf Complex and surrounding residential areas. While the overall future purchase of the golf courses is a benefit to Lawrence and the residents, the process that is being used by the Applicant is the incorrect process.

This development began in 1966 and was subsequently developed in stages which resulted in a comprehensive, complex and desirable area, which includes residential properties and multifamily properties of high value along with a nationally recognized golf course. This area deserves to be re-developed through a Planned Urban Development process with an "overlay" to insure that the integrity of the area and the overall integration of the area stays as it was originally intended. This is only accomplished with more defined plans, transparency by the developer and public input. Therefore, we request that the Application for re-zoning and preliminary plat known as *Z-14-00552; Z-14-00553; PP-14-00554; PP-14-00555* be denied as submitted.

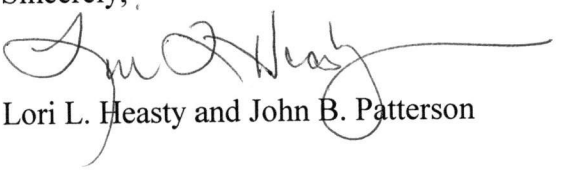
In closing, we would like to say that when Bob Billings passed away, 15th Street was renamed to honor his long-term vision and accomplishment with the Alvamar area, which includes more than just the golf courses. In addition, the Honorable Dennis Moore of Kansas placed in the House of Representatives' record a Tribute to the Late Bob Billings of Lawrence, Kansas, which in part states, "There is a quality of life around here (Alvamar) that would not exist if he had not been the active, optimistic, visionary, enthusiastic person he was." "Most notably, Bob Billings designed and developed the Alvamar development, more than 3000 acres

of residential and commercial property, a nationally recognized public golf course and country club complex."

We feel that Bob's legacy can live on through the redevelopment of Alvamar, but the care and oversight that formed this area in its creation must continue. Bob's memory deserves this; so do the citizens surrounding Alvamar, as well as the City at large.

Thank you for your time.

Sincerely,



Lori L. Heasty and John B. Patterson

City of Lawrence Kansas
Planning & Development Services

February 18, 2015

Dear Commissioners:

The planning commission should consider the overall outlook for the properties Z-14-00552 ,Z-1400553, PP-14-0054 and PP-14-00555.
It is a well documented fact the number of golfers is declining. Many golf courses across the country have closed due to a lack of funding caused by declining membership and fewer golfers. The game of golf just takes too long for today's fast passed society. Fewer and fewer people have the 6 hours available to play a round of golf.

Recently Alvamar sold part of itself to a local developer under the assumption the new owner would continue to main the golf club. To maintain an 18 hole golf course costs about 1 million dollars a year. The developer needs the zoning changes and resulting revenue stream of property sales to meet the financial obligation he has committed too since course usage will not generate all of the income needed to maintain the golf course. What we are looking at is a continued shrinkage of the golf coarse over the next decade as course revenue continues to fall. The owner will next want to rezone 9 holes of the course for development. Each rezoning is not in the public interest it is in the new owner's financial interest.
If the new owner thinks my comments are not correct than he should be willing to put up a 10 year performance bond that will contribute $500,000 per year to coarse maintence if golf fees fall short. If the owner fails to produce the other $500,000 needed to maintain the 18 hole coarse the performance bond would fulfill the owners obligation.

Since KU is involved in this whole ownership change process the University has a great deal of underutilized property on the south east corner of W 15th Street (Bob Billings) and Kasold which the university could make available for residential development. This is based on the assumption that the planning commission what's to have a higher population density west of Iowa Street and east of Wakarusa Drive.

Our Mayor has stated he thinks Lawrence will grow for the foreseeable future. It will be wonderful to have large green spaces in the middle of our growing and prosperous city. Take a look at Chicago and how wonderful the green spaces make the city feel. The planning commission should keep in mind the long term goals of our people and community. I realize you are under a great deal of pressure from developers who are in the business of making money. Let's not let the short term do ill-reputable harm to the livability of our community.

The possibility to delay a decision might be considered since the request closely follows on the heels of the property acquisition. Since the submission has already been prepared by Paul Werner it is obvious the plan was well underway before the property actually changed hands. It is my opinion if the planning commission is really interested in the public good a delay of six months or more would be a prudent course of action.

Respectfully Submitted by:

Richard Fanter
4608 Turnberry Drive
Lawrence, Ks 66047

February 19, 2015

Lawrence Metropolitan Planning Commission
c/o Sandra Day, AICP
Planner II
City of Lawrence
PO Box 708
Lawrence, KS 66044

Dear Commissioners:

This letter is written to register the comments of the undersigned concerning item Z-14-00552 scheduled to be considered at the February 23, 2015 meeting of the Planning Commission. We own homes located along the west side of #1 Fairway (Lot 5) on Alvamar's Public Course. The back of our homes look east across #1 and #9 Fairways. The zoning request's Master Plan calls for "residential transition to lower density" along #9 Fairway.

We reviewed materials mailed to us by Sandra Day and also met separately with Ms. Day and Paul Werner.

We believe the Master Plan conceptuals would benefit the Alvamar area and are generally supportive of seeing the plan accomplished. We have several questions and requests we hope the Planning Commission will consider in its discussion of the proposed zoning changes:

- Structure Height –We prefer to have a continued unobstructed view of the land east of our homes. That being said, we otherwise hope and respectfully request that houses built in the area along #9 Fairway east of our homes have a lower profile, preferably not to exceed one story above grade.

- Water Runoff – Several underground springs require year-round sump pump operation for a number of our homes. Storm runoff also produces problems. We would like to be assured that construction activities and future structures identified in the Master Plan will involve appropriate engineering solutions to eliminate the possibility of exacerbating our current drainage conditions.

- Traffic/Access – We understand the area where the public clubhouse is located may be the site of higher density residential structures that will increase traffic volumes and possibly stress Crossgate Drive particularly at its north entrance intersecting with Bob Billings Avenue. We assume these issues will be addressed and managed.

- Location of #1 Fairway – It is our understanding that the #1 tee box may be relocated somewhat to the east of its present location, but that the balance of #1 Fairway would not be moved west and closer to our property lines. We would be concerned with any change that moves #1 Fairway closer to our property lines. Doing so would be inconsistent with the original Alvamar Planned Unit Development and increase the number of errant golf balls flying onto our properties that create personal safety issues.

The Master Plan is understandably non-specific at this stage. We assume this proposal is under consideration for conventional zoning and that this might limit our opportunity to receive additional information and offer feedback once the plan is further defined. Therefore, we prefer that a Planning Development

Overlay be approved that would provide all parties an opportunity to confirm that the Master Plan concepts are consistent with final build out plans.

In closing, we wish to reiterate our support for the development concepts described within the Master Plan. We believe the concerns we have identified can be satisfactorily resolved and that the project will benefit Alvamar and its neighborhoods.

Thank you for your consideration of our thoughts.

Respectfully submitted,

Marty Smith
1906 Crossgate Dr

Lew & Carolyn Phillips
2000 Crossgate Dr

Kay Mueller
1908 Crossgate Dr

Steve & Jenni Koger
2004 Crossgate Dr

Pat Webb
1910 Crossgate Dr

February 23, 2015

Bruce Liese, Chair
Clay Britton, Vice Chair
Members of the Lawrence/Douglas County Planning Commission,

Re: PP-14-00555: consider a Preliminary Plat for Alvamar Inc. Two Addition, a one-lot subdivision containing 5.18 acres with frontage on the north side of Quail Creek Drive. The subdivision is proposed to support future low-density residential development.

Dear Commission Members:

As the neighbors in the area known as the Oasis at Alvamar, located on the south side of Quail Creek Drive and both sides of Quail Creek Court, and on Alvamar Drive we want to thank Thomas Fritzel for deferring the rezoning for the property that is currently part of the Alvamar Golf Course and adjacent to many of our homes. With the tragic loss of one of our neighbors we appreciate his sensitivity to the recent events and his willingness to postpone any action until all of our neighbors can appropriately address our concerns.

We are generally supportive of the efforts being made to enhance the overall financial stability of the Alvamar Golf and Country Club and appreciate the opportunity to continue a productive dialogue with the developers. An open and constructive dialogue with all the homeowners in the affected areas will ensure that the outcome is beneficial not only for the owners of the golf and country club but recognizes and respects the concerns of the existing homeowners. A successful project benefits not just all of us but will be a tribute to the legacy of Bob Billings whose vision for Alvamar should be enhanced and respected.

We realize that nothing will happen tonight that has a direct impact on our neighborhood,

February 23, 2015

but we want to submit some of our general observations and concerns for the record.

1. If the property is ultimately rezoned it should reflect the density of the surrounding area and be platted in such a way that minimizes the impact on existing homes.

2. The traffic that would be generated if the area under consideration would be developed to the maximum allowed under the requested zoning would affect not just our area but would have a big impact on the homes along St. Andrews, Tam O'Shanter and Quail Creek Drive(s).

3. Much of this area is currently in a flood plain designation so any future development needs to demonstrate that any additional run-off from the new buildings is adequately managed and controlled.

We recognize that this property is not on the agenda for discussion tonight but wanted to have our concerns included in the proceedings of tonight's public hearing. Our concerns are shared by other homeowners in the affected areas that are under consideration. We hope that as this process moves forward their concerns are addressed and accommodated. A successful project will result when all points of view have an opportunity to be heard. And a successful project which keeps Alvamar neighborhoods and Alvamar Golf and Country Club as a viable part of the Lawrence community is a classic win-win scenario.

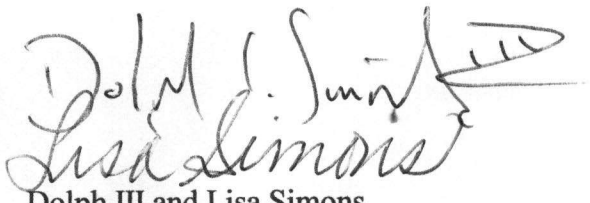
Mark and Sandy Praeger
3601 Quail Creek Court

Sandy Praeger
Mark Praeger

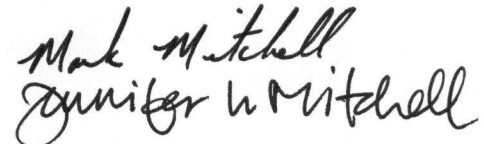
Dale and Connie Friesen
3604 Quail Creek Court

Dale Friesen
Connie Friesen

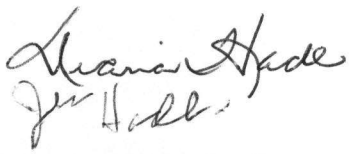
February 23, 2015



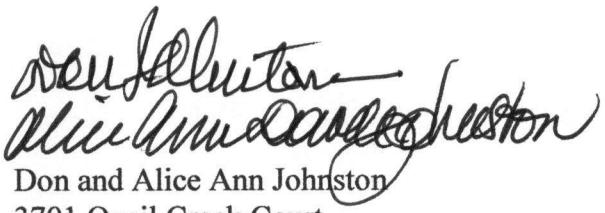
Dolph III and Lisa Simons
3608 Quail Creek Court



Mark and Jennifer Mitchell
3609 Quail Creek Court

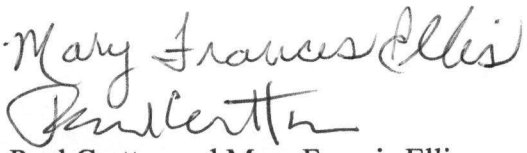


John and Diana Hadl
3700 Quail Creek Court

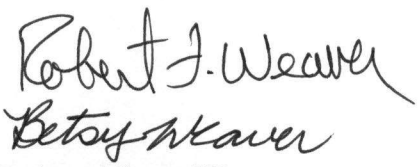


Don and Alice Ann Johnston
3701 Quail Creek Court

Teresa Hanna
3706 Quail Creek Court



Paul Carttar and Mary Francis Ellis
3709 Quail Creek Court



Rob and Betsy Weaver
1589 Alvamar Drive

February 23, 2015

Bruce Liese, Chair
Clay Britton, Vice Chair
Members of the Lawrence/Douglas County Planning Commission,

Re: PP-14-00555: consider a Preliminary Plat for Alvamar Inc. Two Addition, a one-lot subdivision containing 5.18 acres with frontage on the north side of Quail Creek Drive. The subdivision is proposed to support future low-density residential development.

Dear Commission Members:

As neighbors in the area known as Alvamar Heights, located on Alvamar Drive, bordering the Alvamar public golf course, we are concerned about the impact of the proposed development along Quail Creek Drive, just to the south of our homes. We have read the letter dated February 23, 2015, from members of the Oasis at Alvamar neighborhood and heartily agree with all the sentiments therein. We emphasize the statement from that letter:

> If the property is ultimately rezoned it should reflect the density of the surrounding area and be platted in such a way that minimizes the impact on existing homes.

In addition, we note that on several occasions we have seen the lower part of that parcel underwater after thunderstorms.

Respectfully,

Robert J. Weaver
Betsy Weaver
Rob and Betsy Weaver
1589 Alvamar Dr.

Mike and Janel Leitch
1636 Alvamar Dr.

Darcy Gerhard
Lee Gerhard
Lee and Darcy Gerhard
1628 Alvamar Dr.

Sherry Scott
Sherry Scott
1640 Alvamar Dr.

Cheryl Troxel
1504 Alvamar Drive
Lawrence, KS 66047

Ms. Sandra Day
City of Lawrence Douglas County
Planning & Development Services
6 East 6th Street
P.O. Box 708
Lawrence, Kansas 66044

Re: Z-14-00552; Z-14-00553; PP-14-00554; PP-14-00555

Dear Ms. Day:

I am writing you in regard to the proposed Application filed by Paul Werner Architects on behalf of Alvamar Inc. to re-zone and re-plat certain properties as described in the above referenced submittals.

As I understand it, the Applicant, Paul Werner Architects on behalf of Alvamar Inc. has submitted two re-zoning requests and two corresponding preliminary plats, one of 51.85 acres from RS 7, RM12 & PUD (Alvamar) Districts to RM 24, which then will re-plat said acreage into 6 lots; and then one of 5.18 acres from PUD (Alvamar) to RS7.

The Applicant has requested that "conventional zoning" be used with no "overlay" district requirements. "Overlay" really means "oversight." Therefore, if the proposed application were approved as submitted, then any subsequent re-zoning and preliminary plats would be approved, with little opportunity for input from property owners until after the formal process began and perhaps long after the informal discussions with city planners began.

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At this time, the Applicant has submitted "concept plans" only, which are admittedly attractive drawings of what could be or might be. But the drawings decidedly are not what necessarily will be; in fact, the Applicant has provided no plans for what is proposed.

The Applicant has given the planning staff a list of intended development for the 6 lots, which includes over 600 dwelling units that range from two 120 unit apartment complexes, condominiums, patio homes, and "luxury" condominiums. However, based on the current Application, if re-zoning and re-platting were to occur even the list of intended development

could change as long as the requirements of RM 24 are not violated. This means that 1244 dwelling units could actually be built on these 51.85 acres.

At this time I oppose the Application for re-zoning and re-platting as submitted, particularly with respect to the 51.85 acres, for the following reasons.

This area is a mature developed area that was developed over the last four decades as a Planned Unit Development with two 18 hole golf courses and surrounding residential areas that created a blend of uses that benefit the Lawrence community as a whole. Landuse tenets that first gave the green light for the then-innovative PUD, made clear that a PUD must be created for the benefit of the whole community and not for the individual property owner alone.
In this case, the original development was part of a PUD and now the proposed Application wishes to change the zoning without recognition of the original PUD and the potential negative impact on all of the other parcels that make up the original PUD, ie Alvamar golf course complex.
Even though the two steps are remote in time, the Applicant seeks to defeat the original requirements imposed upon this PUD by breaking it apart in a way that significantly changes the original Alvamar development and, we contend, does significant harm to property owners within the original development who are nearby the areas proposed for re-platting. The mere passage of time should not remove the care and oversight that the PUD overlay process requires and that the City and its citizens deserve.

While original Alvamar development may have contemplated greater number of residential and/or multi family structures, the final development in the proposed 51.85 acres were PUD and RM12. There is nothing that has changed within the original PUD to compel a change in zoning any part of it.

This area deserves to be re-developed through a Planned Urban Development process with an "overlay" to insure that the integrity of the area and the overall integration of the area stays as it was originally intended. This is only accomplished with more defined plans, transparency by the developer and public input. Therefore, we request that the Application for re-zoning and preliminary plat known as *Z-14-00552; Z-14-00553; PP-14-00554; PP-14-00555* be denied as submitted.

Thank you for your time.

Sincerely,

Cheryl J Troxel

PLANNING COMMISSION REPORT
REGULAR AGENDA

PC Staff Report
PP-14-00554

ITEM NO. 3C PRELIMINARY PLAT FOR ALVAMAR INC ONE ADDITION; 1800, 1809, & 2021 CROSSGATE DR (SLD)

PP-14-00554: Consider a Preliminary Plat for Alvamar Inc One Addition, a six lot subdivision containing 51.85 acres, including property located at 1800, 1809, and 2021 Crossgate Dr. The proposed subdivision is proposed to support future residential and recreational uses. Submitted by Paul Werner Architects on behalf of Alvamar Inc, property owner of record.

STAFF RECOMMENDATION:
Staff recommends deferral of the Preliminary Plat of Alvamar Inc One Addition to incorporate the remaining portion of the Jayhawk Golf Training Center Addition, show street improvements to Crossgate Drive and intersection improvements at Crossgate Drive and Bob Billings Parkway and Crossgate Drive and Clinton Parkway and show off site stormwater improvements to the golf course proposed with this development application.

KEY POINTS
- The property includes platted and unplatted land.
- This property includes extending the right-of-way for Crossgate Drive to the north to a cul-de-sac then extending an access easement north of the cul-de-sac to the existing Woodfield Meadows.
- The proposed preliminary includes 6 lots along the public and private street segments of Crossgate Drive.

SUBDIVISION CITATIONS TO CONSIDER
- This application is being reviewed under the Subdivision Regulations for Lawrence and Unincorporated Douglas County, effective Jan 10, 2012.

ASSOCIATED CASES/OTHER ACTION REQUIRED
- Z-14-00552 request for RM24 zoning.
- Submittal of final plat for administrative approval and recordation.
- City Commission acceptance of dedication of easements and rights-of-way for the Final Plat.

PLANS AND STUDIES REQUIRED
- *Traffic Study* – Received by the City. Traffic calming approved for Crossgate Drive and should be included in future development.
- *Downstream Sanitary Sewer Analysis* – Study has been reviewed and accepted.
- *Drainage Study* – Study has been reviewed and accepted. Additional information is needed regarding the off-site improvements proposed.
- *Retail Market Study* – Not applicable to request

PUBLIC COMMENT
See attachments with Z-14-00552

ATTACHMENTS
1. Preliminary Plat
2. Traffic Study

3. Applicant's Schematic Master Plan

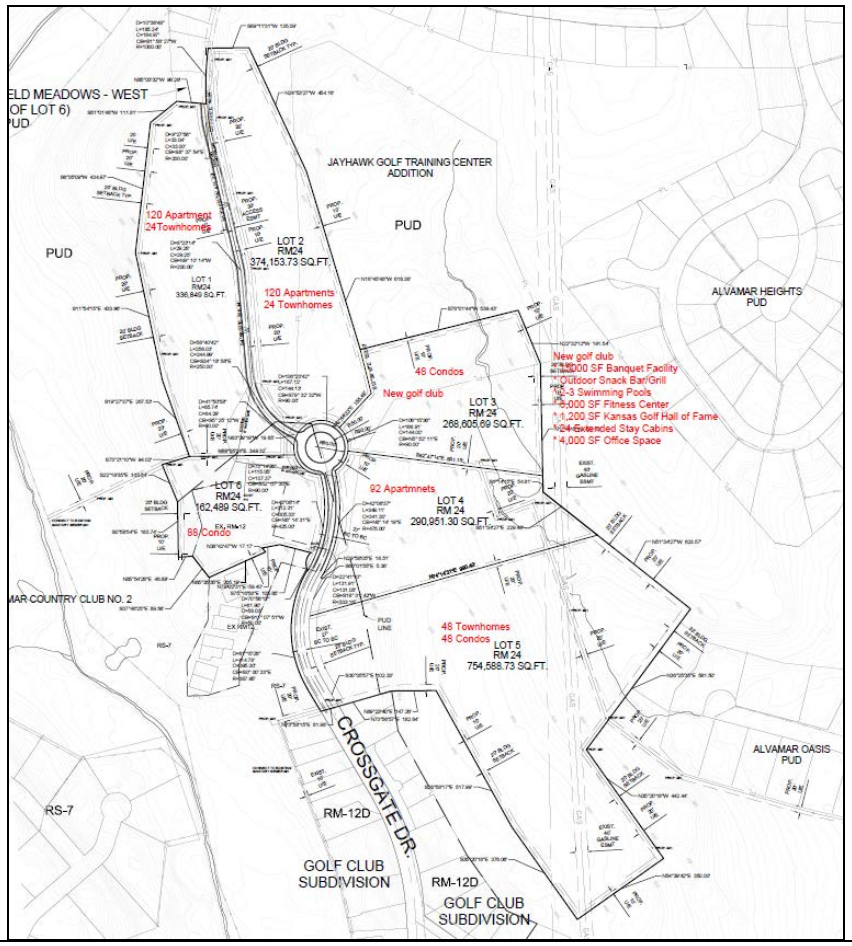
GENERAL INFORMATION

The existing zoning is summarized in the Staff Report Z-14-00554 for reference.

Proposed Alvamar One (RM24)

Site Summary
Gross Area: 51.85 Acres
Number of Proposed Lots: 6
Right-of-Way Dedicated: .98 Acres

	Lot Area		Maximum Density	Housing Type					Proposed Density
LOT	Square Feet	Acres	24 units/ Acre	Apartments	Townhomes	Condo	Luxury Condo	TOTAL	DU/AC
Lot 1	336,849	7.73	186	120	24			144	18.6
Lot 2	374,153.73	8.59	206	120	24			144	16.8
Lot 3	268,605.69	6.17	148			48		48	7.8
Lot 4	209,951.30	4.82	116	92				92	19.1
Lot 5	754,588.73	7.32	416		48	48		96	5.5
Lot 6	162,489.00	3.73	90				88	88	23.6
TOTAL	**2,106,637.45**	**48.36**	**1,160**	**332**	**96**	**96**	**88**	**612**	**12.7**



The table above summarizes the development potential of the proposed subdivision and provides a comparison of the development intent as noted in the Traffic Study submitted by the applicant.

Proposed Lot 6 includes the current location of the club house. Proposed Lot 6 fully encompasses an existing 2.93 acre platted lot (Lot A, Alvamar Country Club No 2). The new lot for the club house is larger and includes the extension of the right of way Crossgate Drive.

Portions of proposed Lots 1, 2, 3, 4 and 6 also include previously platted property, Lot 1, Jayhawk golf Training Center. Approval of this request will result in a partially platted lot. This lot will need to be replatted in the future or incorporated into this Preliminary Plat prior to development or redevelopment of that parcel.

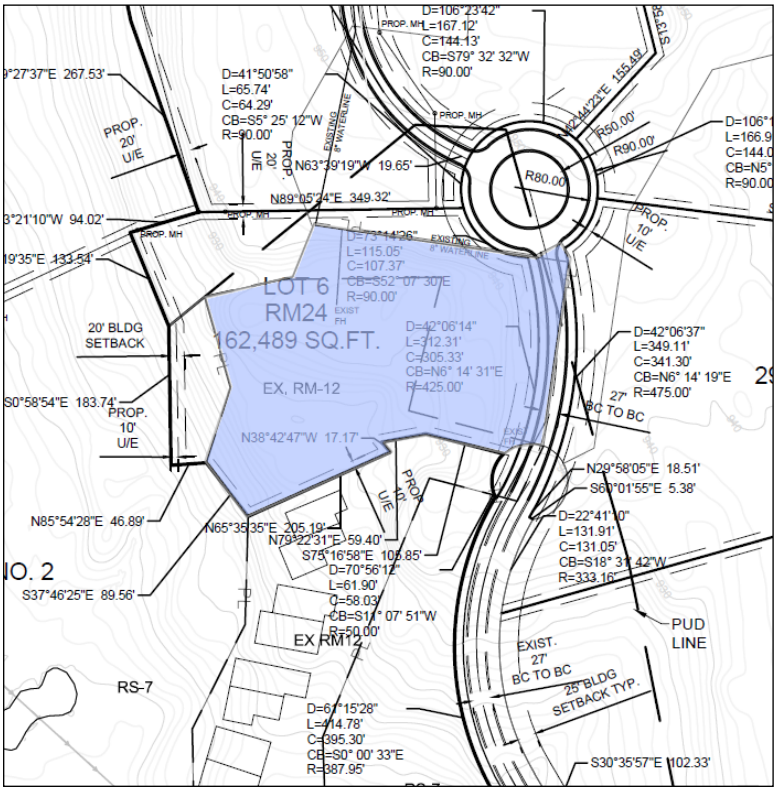


Figure 1: Alvamar Country Club No. 2

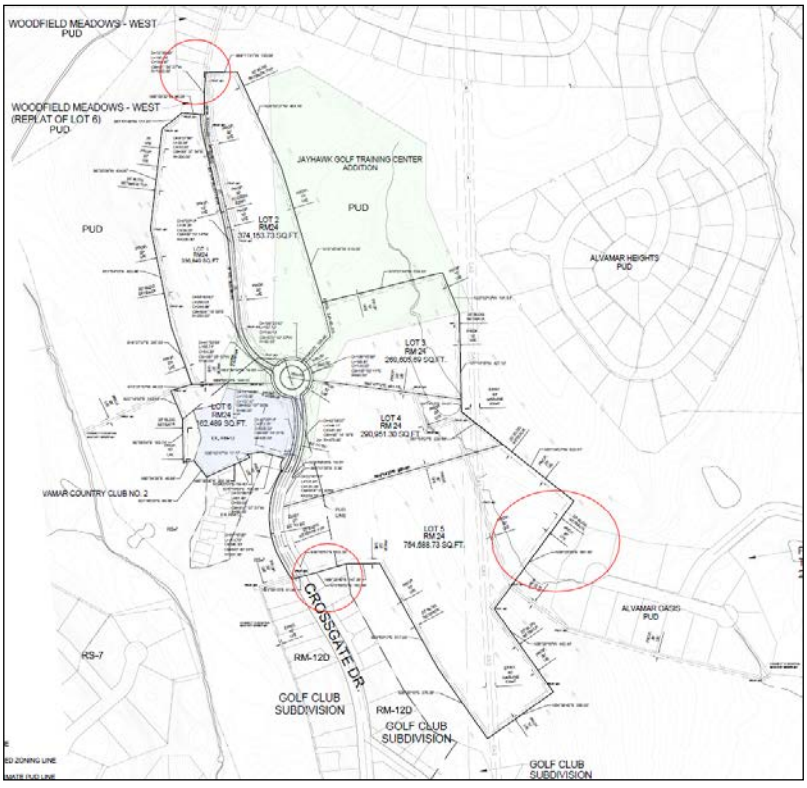


Figure 2: Existing Platted Lots

The proposed subdivision extends lot adjacent to existing platted subdivisions. Lots that have a direct view of open space are modified by this proposed application.

STAFF REVIEW

This property includes developed land including the open space used for Alvamar Golf Couse. The property includes both platted and unplatted land. Historically the golf course open space area has not been required to plat. Building improvements have required subdivision approval as a condition of issuing a building permit. The purpose of this subdivision plat is to establish developable lots for residential development and associated golf course amenities.

Compliance with Zoning Regulations

The proposed lot sizes exceed the minimum 6,000 Sf area size for the proposed RM24 district. All lots must be adjacent to a public street or require a variance. The Preliminary Plat does not note any variance associated with a variance.

Streets and Access

Access to this area is provided by Crossgate Drive. This local street includes public right-of-way and an access easement (Private Street). The proposed plat extends the public portion of the right-of-way to the north as a cul-de-sac with an extended access easement north toward Bob Billings Parkway. A note on the face of the plan states that subdivision will not have new public or private streets. This note should be corrected to show and label public right-of-way. Staff does not support any intent to vacate existing portions of public right-of-way for Crossgate Drive.

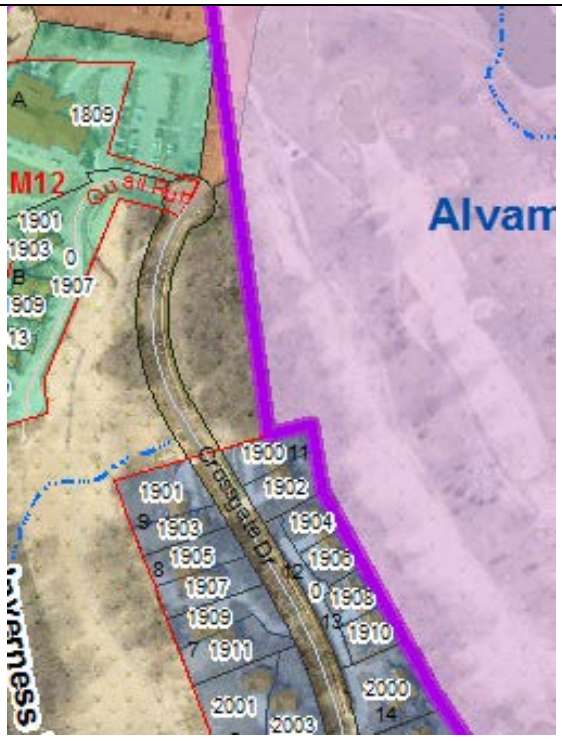


Figure 3: Existing ROW

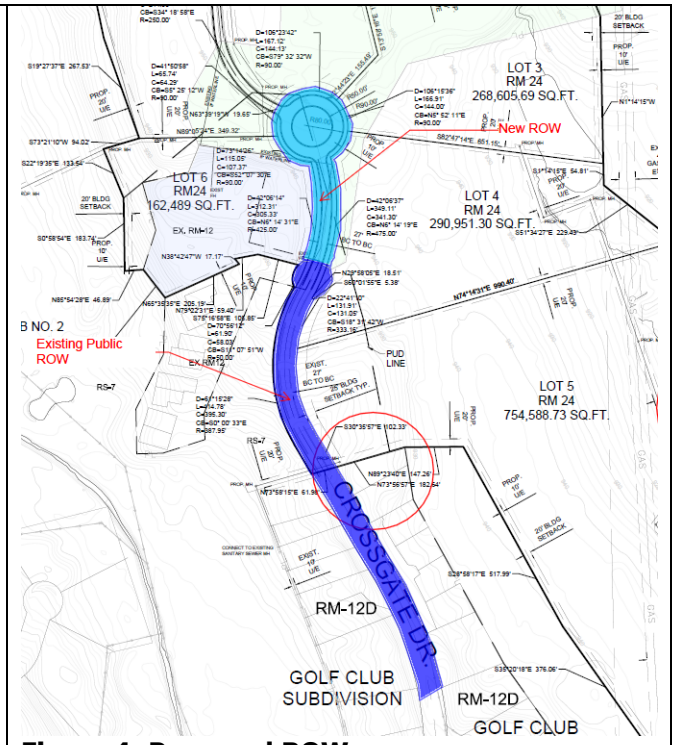


Figure 4: Proposed ROW

The private street segment of Crossgate Drive is an existing condition that arguably is not currently designed to accommodate the proposed density. It does not meet the City street standards.

The current application shows the street segment of Crossgate Drive as a 30' access easement. The benefit of the use of the easement is to provide reduced building setbacks measured from the property line (center of the access easement) and allow buildings to be set closer to the "street" than would be allowed with a public street. The applicant proposes in addition to the 30' of access easement an additional 10' of utility easement on the west side and 20' of utility easement on the east side. This combined space is equal to a public street right-of-way width for a local street.

The plat does not reflect any improvements to Crossgate Drive or the recommended improvements to Bob Billings Parkway. Staff believes the private drive should be enhanced to a city standard to the greatest extend possible, to accommodate the significant issues in traffic. Given the potential conflicts at Bob Billings Parkway and Crossgate Drive, staff believes an exhibit should accompany the plat that shows all street improvements, to assess the appropriateness of the impacts.

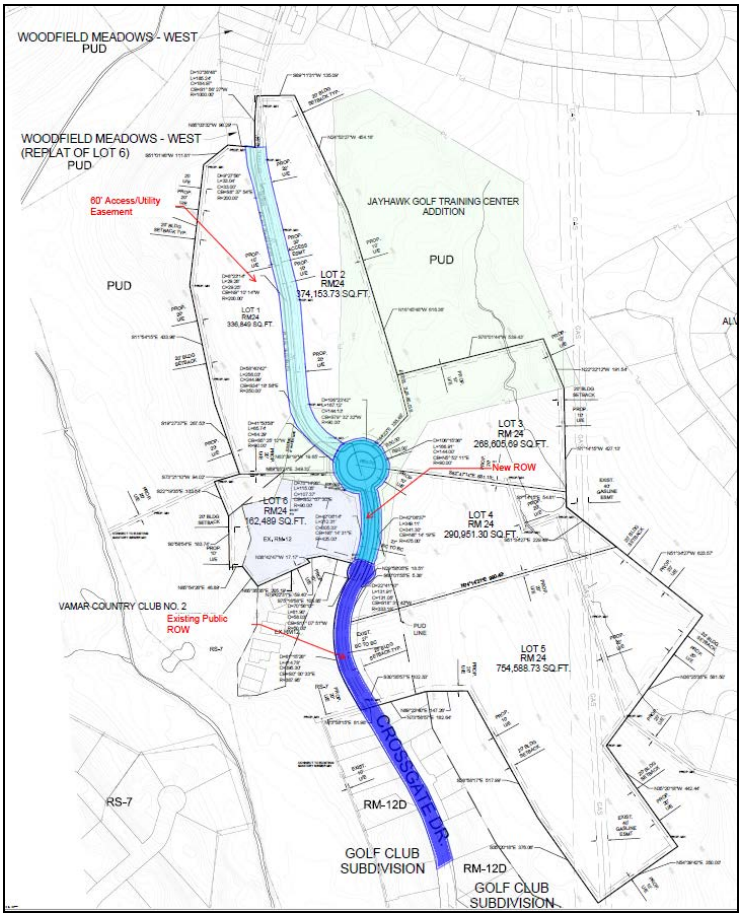


Figure 5: Crossgate Drive Public/Private Street Segments

[Existing ROW, New ROW, Private Street]

Regardless of the proposed development, an analysis of the traffic includes recommendations that should be considered for the existing development and include:

- Modification of the signal timing at Clinton Parkway and Crossgate Drive "in favorer of north/south approaches."
- Investigate the dedication of a westbound left-turn lane on Bob Billings Parkway at Crossgate Drive.
- Trim mature trees on the southwest corner of the intersection of Bob Billings Parkway and Crossgate Drive to improve sight distance for northbound traffic movement.

The traffic study states that the added trips from the development will not substantially impact the level of service for the intersection of Clinton Parkway and Crossgate (for the east and west approaches) the north and south approaches "will experience excessive delays with northbound left-turn movement" reduced to a Level of Service F and southbound left-turn movements to Level of Service E. identified specific changes and improvements to Crossgate Drive at the intersections. These improvements include:

Bob Billings Parkway and Crossgate Drive

Figure 6: Bob Billigs Parkway and Crossgate Drive

- Trimming existing trees and shrubs at Bob Billings Parkway to improve sight distance:
- Dedicate a westbound left-turn lane on Bob Billings Parkway at Crossgate Drive with a storage length of a minimum 75' for deceleration. The Desired length of 19-‵ and a 120' taper length is noted.
- Construction of left and right turn lanes on Crossgate at Bob Billings Parkway are recommended to minimize delay and separate the northbound traffic into left-turn and right-turn lanes.
    - The addition of turn lanes on Crossgate Drive directly impact the abutting lots. This segment of Crossgate Drive is constructed within an access easement. Individual lots and ownership extend to the centerline of the access easement.

Clinton Parkway and Crossgate Drive

Figure 7: Clinton Parkway and Crossgate Drive

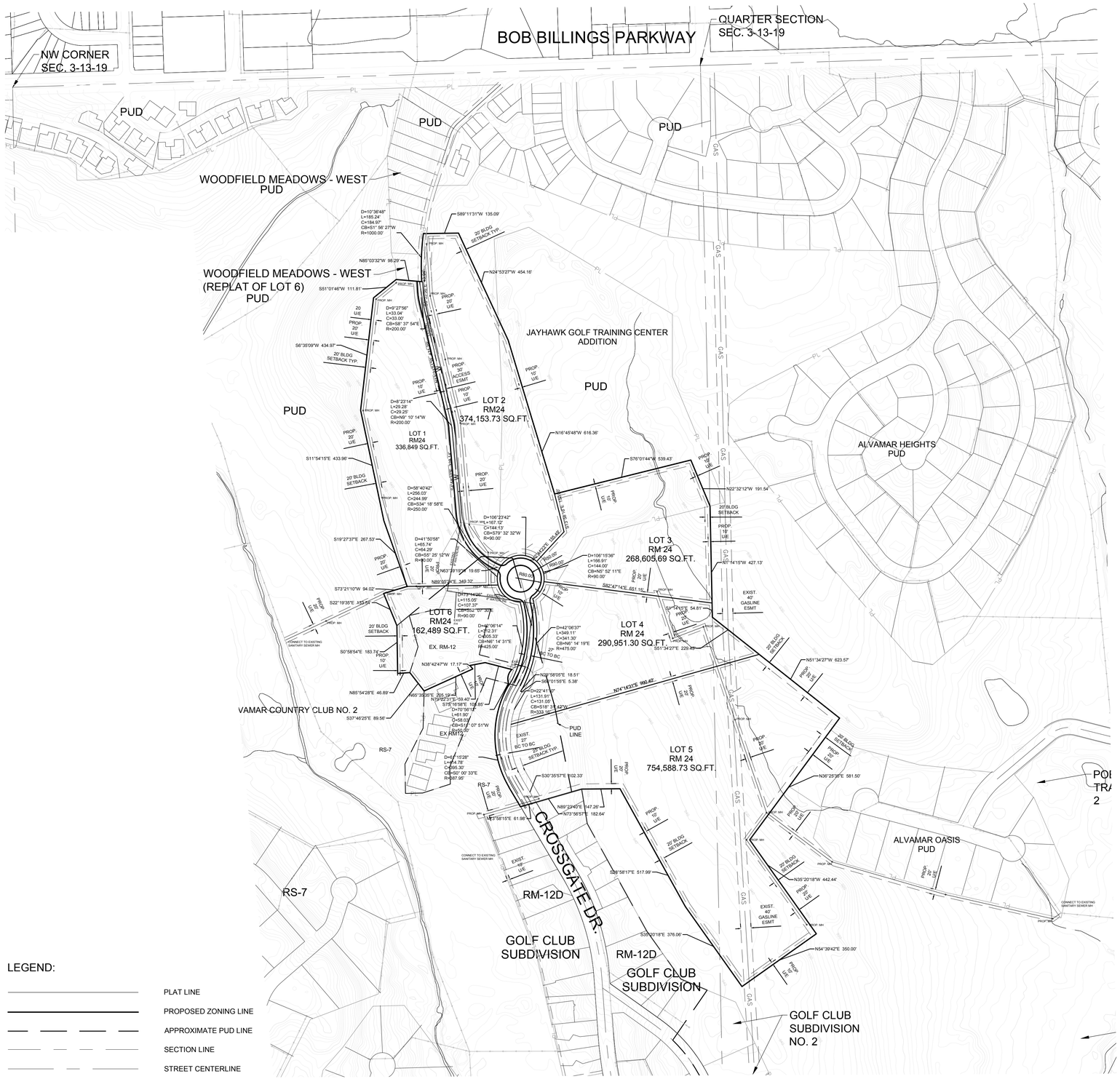
- Modification of signal timing at Clinton Parkway to reduce the excessive delay identified in the study.

The plat as proposed does not address how the intersection of Crossgate Drive and Bob Billings Parkway will be addressed.

Development of the site should include public improvement plans that address these requirements.

Utilities and Infrastructure
Development of this area can be adequately served by City sanitary sewer and water. Various plans have included changes to the existing golf course and ponds that are outside of the boundary of the proposed zoning request and this preliminary plat. Any off-site improvements related to storm runoff must be reviewed by the City Stormwater Engineer. Staff recommends the applicant provide more detail regarding plans and changes to the golf course area as part of a Planned Development that shows the proposed development in context to the existing open space areas and development.

Conformance
Additional information is needed to determine conformance with the standards and requirements of the Subdivision Regulations and the Development Code. Staff recommends deferral of this application.



LEGEND:

- PLAT LINE
- PROPOSED ZONING LINE
- APPROXIMATE PUD LINE
- SECTION LINE
- STREET CENTERLINE
- PROP. SAN & PROP. MH

SCALE: 1" = 200'

200 100 0 200 400

General Notes

DEVELOPER: ALVAMAR INC
1809 CROSSGATE DRIVE
LAWRENCE, KANSAS 66047

1. OWNER: ALVAMAR INC.
2. LAND PLANNER/ ENGINEER/LAND SURVEYOR: LANDPLAN ENGINEERING, P.A. 1310 WAKARUSA DRIVE LAWRENCE, KS 66049
3. PROPERTY ADDRESS: 2021 CROSSGATE DRIVE LAWRENCE, KS 66047
4. TYPICAL SOIL TYPES:
   PAWNEE CLAY LOAM, 1 TO 3 PERCENT SLOPES
   OSKA SILTY CLAY LOAM, 3 TO 6 PERCENT SLOPES
   SOGN VINLAND COMPLEX, 5 TO 20 PERCENT SLOPES
   STONY STEEP LAND
   VINLAND COMPLEX 3 TO 7 PERCENT SLOPES
5. TOPOGRAPHIC INFORMATION OBTAINED FROM CITY OF LAWRENCE AERIAL MAP, NOVEMBER 2013.
6. EXISTING LAND USE: GOLF COURSE
7. PROPOSED LAND USE: RESIDENTIAL DEVELOPMENT, POOL, TENNIS COURTS, BANQUET HALL
8. EXISTING ZONING: PUD, RS7, RM 12
9. PROPOSAL ZONING RM 24
10. DEVELOPER IS RESPONSIBLE FOR THE COST OF ANY RELOCATION OF EXISTING UTILITIES, TO SERVE THE PROPOSED SUBDIVISION.
11. ALL NEW TELEPHONE, CABLE TELEVISION AND ELECTRICAL LINES MUST BE LOCATED UNDERGROUND.

Site Summary

GROSS AREA:	2,258,586 SF /	51.85 AC
RIGHTS-OF-WAY AREA:	42,677.57 SF /	0.98 AC
NET AREA:	2,215,908.43 SF /	50.87 AC
AVG. LOT SIZE	359,318.07 SF /	8.48 AC
TOTAL LOTS:	6	

Provisions of Financing of Roads, Sewer, Water and other Public Services

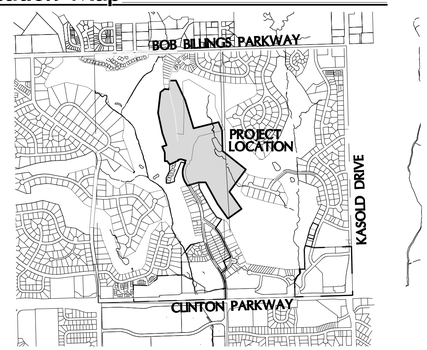
1. THE SUBDIVISION WILL NOT HAVE NEW PUBLIC OR PRIVATE STREETS.
2. THE SUBDIVISION WILL PROVIDE A CONNECTION TO THE EXISTING WATER LINE ON CROSSGATE DRIVE. THIS WATER LINE CONNECTION WILL BE PROVIDED BY PRIVATE FINANCING.
3. THE SUBDIVISION WILL PROVIDE A CONNECTION TO THE EXISTING SANITARY SEWER LINE RUNNING EAST/WEST ALONG THE EAST PLAT BOUNDARY OF ALVAMAR COUNTRY CLUB NO.2. THIS SANITARY SEWER CONNECTION WILL BE PROVIDED BY PRIVATE FINANCING. THE EAST SIDE OF THE DEVELOP WILL COME FROM A SANITARY SEWER LINE SOUTHEAST OF ALVAMAR OASIS.
4. PROPOSED WATER AND SANITARY SEWER LINE ON SITE IMPROVEMENTS ARE TO BE PROVIDED BY PRIVATE FINANCING AND WILL NOT DEPEND IN ANY WAY ON A VOTE, PETITION OR OTHER COLLECTIVE ACTION OF PROPERTY OWNERS IN THE SUBDIVISION.

Legal Description

A TRACT OF LAND LYING IN SECTION 3, TOWNSHIP 13 SOUTH, RANGE 19 EAST OF THE SIXTH PRINCIPAL MERIDIAN, IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS, AND BEING DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF LOT 1, WOODFIELD MEADOWS WEST NO. 2, A SUBDIVISION IN THE CITY OF LAWRENCE, AS RECORDED IN PLAT BOOK 15, PAGE 168 IN THE OFFICE OF THE DOUGLAS COUNTY REGISTER OF DEEDS; THENCE SOUTH 85°03'32" EAST, 98.29 FEET; THENCE ON A CURVE TO THE RIGHT WITH A RADIUS OF 1000.00 FEET, AN ARC LENGTH OF 185.24 FEET, A CHORD LENGTH OF 184.97 FEET ON A BEARING OF NORTH 01°56'27" EAST, AND A DELTA OF 10°36'48"; THENCE NORTH 89°11'31" EAST, 135.09 FEET; THENCE SOUTH 24°53'27" EAST, 454.16 FEET; THENCE SOUTH 16°45'48" EAST, 616.36 FEET; THENCE NORTH 76°01'44" EAST, 539.43 FEET; THENCE SOUTH 22°32'12" EAST, 191.54 FEET; THENCE SOUTH 01°14'15" EAST, 427.13 FEET; THENCE SOUTH 51°34'27" EAST, 623.57 FEET; THENCE SOUTH 36°25'35" WEST, 581.50 FEET; THENCE SOUTH 35°20'18" EAST, 442.44 FEET; THENCE SOUTH 54°39'42" WEST, 350.00 FEET; THENCE NORTH 35°20'18" WEST, 376.06 FEET; THENCE NORTH 28°58'17" WEST, 517.99 FEET; THENCE SOUTH 89°23'40" WEST, 147.26 FEET; THENCE SOUTH 73°56'57" WEST, 182.64 FEET; THENCE SOUTH 73°58'15" WEST, 61.98 FEET; THENCE NORTH 30°36'24" WEST, 86.73 FEET; THENCE ON A CURVE TO THE RIGHT WITH A RADIUS OF 387.95 FEET, AN ARC LENGTH OF 414.78 FEET, A CHORD LENGTH OF 395.30 FEET ON A BEARING OF NORTH 00°00'33" WEST, AND A DELTA OF 61°15'28"; THENCE ON A CURVE TO THE RIGHT WITH A RADIUS OF 50.00 FEET, AN ARC LENGTH OF 61.90 FEET, A CHORD LENGTH OF 58.03 FEET ON A BEARING OF NORTH 11°07'51" EAST, AND A DELTA OF 70°56'12"; THENCE NORTH 75°16'58" WEST, 105.85 FEET; THENCE SOUTH 79°22'31" WEST, 59.40 FEET; THENCE SOUTH 38°42'47" EAST, 17.17 FEET; THENCE SOUTH 65°35'35" WEST, 205.19 FEET; THENCE NORTH 37°46'25" WEST, 89.56 FEET; THENCE SOUTH 85°54'28" WEST, 46.89 FEET; THENCE NORTH 00°58'54" WEST, 183.74 FEET; THENCE NORTH 22°19'35" WEST, 133.54 FEET; THENCE NORTH 73°21'10" EAST, 94.02 FEET; THENCE NORTH 19°27'37" WEST, 267.53 FEET; THENCE NORTH 11°54'15" WEST, 433.96 FEET; THENCE NORTH 06°35'09" EAST, 434.97 FEET; THENCE NORTH 51°01'46" EAST, 111.81 TO THE POINT OF BEGINNING. CONTAINS 51.85 ACRES, MORE OR LESS.

Location Map



A Preliminary Plat for

THE REPLAT OF JAYHAWK GOLF TRAINING CENTER & ALVAMAR COUNTRY CLUB NO. 2, A REPLAT OF ALVAMAR COUNTRY CLUB AND A PORTION OF THE ALVAMAR GOLF COURSE, ALL IN CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS

ALVAMAR INC ONE ADDITION

Lawrence, Kansas

LANDPLAN ENGINEERING P.A.
Lawrence, KS • Kansas City, MO • The Woodlands, TX
1310 Wakarusa Drive, Suite 100
Lawrence, Kansas 66049
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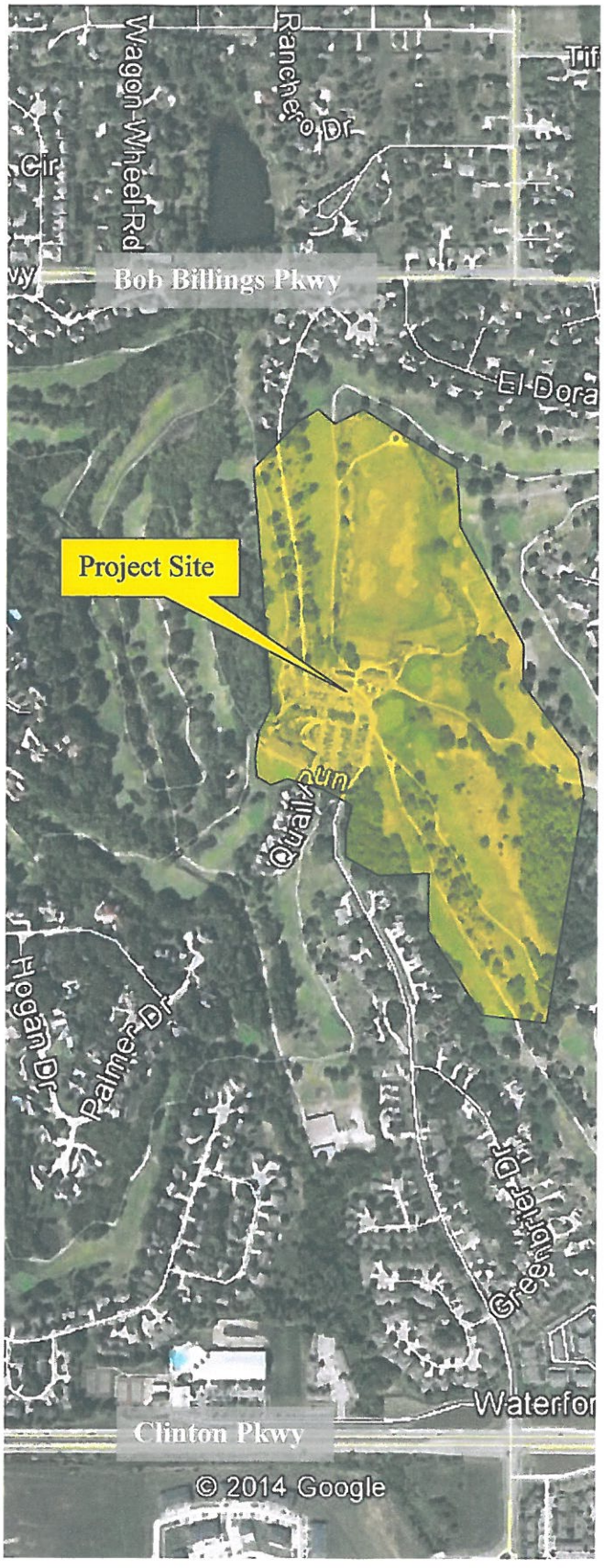
ALVAMAR INC ONE ADDITION PRELIMINARY PLAT
A PORTION OF SECTION 3, TOWNSHIP 13 SOUTH, RANGE 19 EAST
CITY OF LAWRENCE
DOUGLAS COUNTY, KANSAS

REV	DATE	DESCRIPTION
1	2.13.15	Planning Comments

DATE:	12.16.14
PROJECT NO.:	20142015
DESIGNED BY:	LPE
DRAWN BY:	CLM
CHECKED BY:	

ISSUE	SHEET NO.
A	1
	OF 1 SHEETS

FILE NAME: T:\20142015\CAD\Planning\PP\20142015 PPlat.dwg LAST SAVED BY: CL Maurer SAVED DATE: 2/13/2015 10:10 AM PLOTTED: 2/13/2015 10:11 AM



Traffic Impact Study

for

The Proposed Alvamar Inc One Addition

Crossgate Drive,Between
Bob Billings Pkwy and Clinton Pkwy

Lawrence, Kansas

Prepared
for
Paul Werner Architects

Prepared By

MGineering Solutions

Serving Communities Through Excellence
Kansas - Missouri - Michigan - California

MEHRDAD GIVECHI
LICENSED
1/5/15
14522
KANSAS
PROFESSIONAL ENGINEER

Mehrdad Givechi, PE, PTOE

January 2015

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Appendix III	Summary of Peak-Hour Traffic Counts
Appendix IV	Summary of Intersection Sight Distance Analysis Using AASHTO “Green Book”, 2011 Edition
Appendix V	Guidelines for Dedicated Turn-Lanes At Unsignalized Intersections
Appendix VI	Results of Trip Generation Analysis Using ITE Trip Generation Manual, 9th Edition

Introduction

Proposed Development

The proposed “Alvamar Inc One Addition” development site is located along Crossgate Drive between Bob Billings Parkway and Clinton Parkway, all nested in the existing Alvamar Golf Courses and clubhouse site, in Lawrence, Kansas (See Location Map, Figure 1 of Appendix I). In addition to maintaining a 36-hole golf course, the proposed plan, as illustrated in the conceptual plan in Figure 2 of Appendix I, calls for reconfiguring a few of the existing golf course holes to make room for the new development consisting of:

- 332 Apartments (ITE Land Use Code 220) – 120 units on Lot #1, 120 units on Lot #2 and 92 units on Lot #4;
- 96 Owned Patio Homes / Townhomes (ITE Land Use Code 230) – 24 units on Lot #1, 24 units on Lot #2, and 48 units on Lot #5;
- 96 Owned Condos (ITE Land Use Code 230) – 48 units on Lot #3 and 48 units on Lot #5;
- 88 Owned Luxury Condos (ITE Land Use Code 233) all on Lot #6;
- A new golf clubhouse on Lot #3 with a number of amenities for use by club members, those playing golf and participants of the special events and tournaments held in the golf course. In addition to the basic amenities (lockers, pro-shop and restaurant) the clubhouse will have additional amenities including (majority of which are designated under ITE Land Use Code 430 “Golf Course”):
    - A 15,000 square feet banquet / event facility
    - An outdoor snack bar/grill
    - 2-3 swimming pools
    - A 6,000 square feet fitness center
    - A 1,200 square feet Kansas Golf Hall of Fame (ITE Land Use Code 580)
    - 24 extended stay cabins / suites
    - A 4,000 square feet office space, half of which is for the golf course administration use and the other half for general use of an independent tenant. (ITE Land Use Code 710)

Access

Currently, Crossgate Drive runs through the site in the north/south direction providing access to Bob Billings Parkway to the north and Clinton Parkway to the south. The northern half of Crossgate Drive (north of the clubhouse parking lot) is a private street and will be maintained as a private street. In addition, the existing clubhouse parking lot will be reconfigured to provide for a circulatory roadway as depicted in Figure 2 of Appendix I.

Access points to the site will remain at their current locations – at Bob Billings Parkway to the north and Clinton Parkway to the south. No other access points will be provided as the result of this redevelopment.

Purpose

The purpose of this study is to:

1. Evaluate the existing operating conditions of traffic at the intersections of
    a. Clinton Parkway and Crossgate Drive (signalized);
    b. Bob Billings Parkway and Crossgate Drive (stop controlled); and
    c. Bob Billings Parkway and Monterey Way (signalized).
2. Identify any existing operational and/or safety deficiency(s), if any, at the above-mentioned intersections, and recommend mitigation measures as needed.
3. Assess impact of the trips generated by the proposed redevelopment on the above-mentioned intersections.
4. Recommend off-site improvements (if any) needed as the result of this redevelopment.
5. Evaluate the future operating conditions of traffic for Target Year 2030.

Data Collection and Summary

As part of data collection efforts for this study, City of Lawrence was contacted to obtain any available information on turning movement counts, traffic signal phasing scheme and timing plans, street classifications, zoning and etc. Field observations and measurements were also conducted to obtain additional needed data as necessary. The following paragraphs summarize the results of these data collection tasks and field observations.

Roadway Network Geometric & Operating Characteristics

In the vicinity of the development site, as illustrated in Figure 3 of Appendix I,

- Clinton Parkway is a four-lane divided street with raised median and posted speed limit of 45 mph. It is designated as a "Principal Arterial" on the City's *Transportation 2040 Major Thoroughfare Map*.
- Bob Billings Parkway is a four-lane street with posted speed limit of 40 mph and designated as "Principal Arterial" on the City's *Transportation 2040 Major Thoroughfare Map*. West of Crossgate Drive, it is a four-lane divided street with a raised median, changing to a four-lane undivided facility with dedicated left-turn lanes at major intersections.
- Crossgate Drive is, generally, a two-lane, two-way street with posted speed limit of 30 mph north of Clinton Parkway. According to the City's *Transportation 2040 Major Thoroughfare Map*, Crossgate Drive is designated as a "Collector" street south of Clinton Parkway and a "Local" street north of Clinton Parkway.
- Monterey Way is a two-lane, two-way street with posted speed limit of 35 mph. It is designated as a "Collector" street on the City's *Transportation 2040 Major Thoroughfare Map.*
- The intersection of Clinton Parkway and Crossgate Drive is a signalized intersection with the following geometric and operating characteristics:
    - East approach consists of one dedicated left-turn lane with approximate storage length of 325', two through lanes, and one dedicated right-turn lane with approximate storage length of 150'.

    - West approach consists of one dedicated left-turn lane with approximate storage length of 265', two through lanes, and one dedicated right-turn lane with approximate storage length of 155'.
    - South approach consists of one dedicated left-turn lane with approximate storage length of 90', one through lane, and one dedicated right-turn lane with approximate storage length of 75'.
    - North approach consists of two lanes - one dedicated left-turn lane, which is the continuation of the through lane upstream and one shared trough-right-turn lane with approximate storage length of 90'.
    - The signal is fully-actuated with video camera detection and is part of the coordination system along Clinton Parkway with 120 seconds cycle length.
    - Left-turn movements for east/west approaches (Clinton Parkway) operate as "protected/permissive" phase with north/south approaches operating as "permissive only".
- The intersection of Bob Billings and Crossgate Drive is a "T" intersection controlled by a stop sign on Crossgate Drive with no dedicated turn lanes on any approach.
- The intersection of Bob Billings and Monterey Way is a signalized intersection with the following geometric and operating characteristics:
    - East approach consists of two through lanes with the outside lane being shared by right-turn movement;
    - West approach consists of one dedicated left-turn lane with approximate storage length of 100' and two through lanes;
    - North approach consists of one shared lane;
    - The signal is isolated fully-actuated with no video camera detection; and
    - Eastbound left-turn movement operates as "protected/permissive" phase.

Zoning

According to the Horizon 2020 (Map 3-2, Lawrence Future Land Use), the designated land use for this site is "Parks, Recreation and Open Space" with adjacent sites designated as "Very Low to Low Density Residential" with an exception of the site to the northwest, which is designated as "Medium to High Density Residential".

The existing zoning for the site is a combination of RS-7, RM-12 and PUD. The proposed zoning for this site is RM-24, which removes the allowed units from the PUD and moves them into a conventional zoning. This zoning does not actually increase the overall allowed number of units for the Alvamar Development.

Manual Traffic Counts

At the time this study was conducted, the University was in winter recess (Christmas and New Year Holidays) and the existing Alvamar golf club courses were closed for the Holidays. Therefore, conducting new traffic counts at the key intersections in the study area would not have provided a representative sample of the traffic volumes for analysis. For the purpose of this study, therefore, most recent and relevant vehicular turning movement counts were obtained from the City's records.

According to these records, the only available counts were for the morning and afternoon peak-hours of typical weekdays for the intersections of Clinton Parkway and Crossgate Drive (dated April 2013) and Bob Billings Parkway and Crossgate Drive (dated February 2012), both of which were taken when University classes were in session. According to these counts, as summarized in Appendix III and illustrated in Figure 4 of Appendix I,

- On a typical weekday, the morning peak occurs between 7:30 and 8:30 with
    - Bob Billings Parkway carrying peak-hour volumes of approximately 1,150 vph (west of Monterey Way) and 1,250 vph (east of Monterey Way). The directional distribution of traffic on Bob Billings Parkway changes from approximately 65% - 35% (eastbound – westbound) west of Monterey Way to 70% - 40% (eastbound – westbound) east of Monterey Way.
    - Clinton Parkway carrying peak-hour volumes of approximately 1,350 vph (west of Crossgate Drive) and 1,700 vph (east of Crossgate Drive). The directional distribution of traffic on Clinton Parkway changes from approximately 50% - 50% (eastbound – westbound) west of Crossgate Drive to 60% - 40% (eastbound – westbound) east of Crossgate Drive.

    - Crossgate Drive, north of Clinton Parkway, carrying peak-hour volumes of less than 300 vph with directional distribution of approximately 40% - 60% (northbound – southbound).
- On a typical weekday, the afternoon peak occurs between 5:00 and 6:00 with
    - Bob Billings Parkway carrying peak-hour volumes of approximately 1,250 vph (west of Monterey Way) and 1,450 vph (east of Monterey Way) with directional distribution of approximately 45% - 55% (eastbound – westbound) on both sides of Monterey Way.
    - Clinton Parkway carrying peak-hour volumes of approximately 1,450 vph (west of Crossgate Drive) and 2,050 vph (east of Crossgate Drive) with directional distribution of approximately 45% - 55% (eastbound – westbound) on both sides of Crossgate Drive.
    - Crossgate Drive, north of Clinton Parkway, carrying peak-hour volumes of less than 150 vph with directional distribution of approximately 50% - 50% (northbound – southbound).

The City's records showed no counts for the intersection of Bob Billings Parkway and Crossgate Drive (Private Street). Turning movement counts at this location, therefore, were estimated using the ITE trip generation rates for the existing land use (a 36-hole golf course "Code 430" and 27 patio homes "Code 230). See Figure 4 of Appendix I for estimated volumes and Appendix VI for the ITE trip generation rates.

Evaluation of the Existing Operating Conditions

Volume/Capacity Analysis

A volume/capacity analysis (using Synchro 8 Software and methodologies outlined in the *2010 Highway Capacity Manual (HCM) published by the Transportation Research Board*) was conducted to determine the level-of-service (LOS) for all movements at the intersections under study during the afternoon peak-hour of a typical weekday.

Level-of-service, as defined in the HCM, describes the quality of traffic operating condition and ranges from “A” to “F”, with LOS “A” representing the best (most desirable with minimum delay) conditions and LOS “F” the worst (severely congested with excessive delays). The following chart outlines the level-of-service criteria for roundabouts, unsignalized and signalized intersections.

Level-Of-Service	**Control Delay for Unsignalized Intersections (seconds/vehicle)**	**Control Delay for Signalized Intersections (seconds/vehicle)**	**Volume/Capacity Ratio for Roundabouts (aaSIDRA Criteria)**
A	0 – 10	0 – 10	< 0.6
B	> 10 – 15	> 10 – 20	0.6 – 0.7
C	> 15 – 25	> 20 – 35	0.7 – 0.8
D	> 25 – 35	> 35 – 55	0.8 – 0.9
E	> 35 – 50	> 55 – 80	0.9 – 1.0
F	> 50	> 80	> 1.0

The results of analysis, as shown in Appendix II and summarized in Figure 5 of Appendix I, indicate that, on a typical weekday:

- ***Under current signal timing plan and phasing scheme (coordinated signal along Clinton Parkway with 120 second cycle length)***, the intersection of Clinton Parkway and Crossgate Drive operates at LOS “B” during both morning and afternoon peak-hours with:
    - LOS “A” for east approach during both morning and afternoon peak-hours;
    - LOS “A” and “B” for west approach during morning and afternoon peak-hours, respectively;
    - LOS “C” and “D” for north approach during morning and afternoon peak-hours, respectively with southbound left-turn movement operating at LOS “E” during both peak-hours.
    - LOS “D” and “C” for south approach during morning and afternoon peak-hours, respectively with northbound left-turn movement operating at LOS “E” during morning peak-hour.

- At the intersection of Bob Billings Parkway and Crossgate Drive, south approach operates at LOS “C” and “B” during morning and afternoon peak-hours, respectively.
- ***Under optimum signal timing plan and current phasing scheme (50 second cycle length)***, the intersection of Bob Billings Parkway and Monterey Way operates at LOS “B” during both morning and afternoon peak-hours with individual movements operating at LOS “B” or higher.

Intersection Sight Distance (ISD) Analysis

In order to evaluate the existing ISD at the intersection of Bob Billings Parkway and Crossgate Drive, the methodology suggested by AASHTO “Green Book” (2011Edition), in conjunction with field observations, were used to calculate required minimum values using

- Posted advisory speed limit of 40 mph on Bob Billings Parkway;
- Passenger cars as design vehicle; and
- 3% approach grade on Crossgate Drive at its intersection with Bob Billings Parkway.

The results, as summarized in Appendix IV, indicate that ISD is slightly restricted on the southwest corner of the intersection. This is because there are a couple of mature evergreen trees in the departure sight triangle (approximately 80’ west of Crossgate Drive) that block the line of sight for outbound traffic on Crossgate Drive..

Dedicated Turn Lane Analysis

In order to evaluate the need for dedicated turn lanes at the intersection of Bob Billings Parkway and Crossgate Drive, the following guidelines were reviewed and used as applicable:

- KDOT’s “KTRANS Research Report – Guidelines for Right-Turn Treatments at Unsignalized Intersections and Driveways”, May 1996;
- TRB’s “NCHRP Synthesis 225: Left-Turn Treatments at Intersections”, 1996; and
- KDOT’s Access Management Policy, January 2013.

The results of this evaluation (See Appendix V) indicate that:

- A dedicated westbound left-turn lane on Bob Billings Parkway at Crossgate Drive is marginally warranted.

Reasoning:

Westbound left-turn movement (Morning Peak-Hour)

Speed = 40 mph

Opposing Volume = 732 vph > 400 vph

Advance Volume = 426 vph > 400 vph

Left-Turn Volume = 9 vph > 7 vph (marginal)

Percent Left-Turn = 2% (meets requirements for dedicated left-turn lane at marginal level)

Westbound left-turn movement (Afternoon Peak-Hour)

Speed = 40 mph

Opposing Volume = 560 vph > 400 vph

Advance Volume = 698 vph > 400 vph

Left-Turn Volume = 10 vph > 9 vph (marginal)

Percent Left-Turn = 1.5% (meets requirements for dedicated left-turn lane at marginal level)

- The requirements for provision of a dedicated eastbound right-turn lane on Bob Billings Parkway at Crossgate Drive are not met.

Reasoning:

Eastbound right-turn movement (Morning Peak-Hour)

Speed = 40 mph

Advance Volume (DDHV) = 732 vph

Right-Turn Volume = 16 vph < 100 vph (does not meet requirements for dedicated right-turn lane)

Eastbound right-turn movement (Afternoon Peak-Hour)

Speed = 40 mph

Advance Volume (DDHV) = 560 vph

Right-Turn Volume = 13 vph (does not meet requirements for dedicated right-turn lane)

Trip Generation Analysis

The trip generation of a proposed land development project is typically estimated using trip generation rates suggested by the *Institute of Transportation Engineers (ITE), Trip Generation Manual, 9th Edition*. For this analysis, as mentioned earlier, the following ITE Land Use Codes were selected for analysis:

- 220 for "Apartments", 230 for "Patio homes/Townhomes" and "Condos", 233 for "Luxury Condos", with "number of dwelling units" as independent variable;
- 430 for "Golf Course" with "number of holes" as independent variable; and
- 580 for "Museum" (Kansas Golf Hall of Fame) and 710 for "General Office Space" with "Gross Square Foot" as independent variable.

The results, as summarized in Appendix VI, indicate that the proposed development will likely generate the following number of trips:

- On average, 379 trip-ends (120 inbound and 259 outbound) during the morning peak-hour of a typical weekday;
- On average, 462 trip-ends (286 inbound and 176 outbound) during the afternoon peak-hour of a typical weekday; and
- On average, 4,633 trip-ends during 24-hour period of a typical weekday.

Assumptions

- The trips for the entire development site are broken into two components – residential and non-residential because they have different distribution patterns during the peak-hours;
- The trips for the golf course includes all trips for the clubhouse amenities as described in the ITE Trip Generation Manual with the exception of trips for Kansas Golf Hall of Fame and the independent office space (~2,000 square feet), which will be additional trips to/from the site;
- The trips for the extended stay cabins / suites are considered "internal" to the site assuming they are intended for the use of the golf course and clubhouse amenities;

- All trips are assumed to be “primary (new)” trips with zero “pass-by” trips. In addition, it is assumed that the “internal capture” rate between the residential component and the non-residential component is zero to account for a “conservative” scenario.

Analysis Time Period

An overview of existing traffic volumes in the study area and their peak characteristics, in conjunction with estimated trips generated from the proposed development, indicate that the most critical peak period will likely occur during the *afternoon peak-hour* of a typical weekday. For this study, however, both morning and afternoon peak-hours are selected for analysis.

Trip Distribution and Assignment Analysis

The following trip distribution patterns were assumed for this analysis. These patterns, as illustrated in Figures 6 and 7 of Appendix I, are derived from the existing distribution patterns of traffic in the study area with general distribution of

- 58% to/from south to Clinton Parkway; and
- 42% to/from north to Bob Billings Parkway

Residential Component

- 29% to/from west on Clinton Parkway
- 23% to/from east on Clinton Parkway
- 6% to/from south on Crossgate Drive south of Clinton Parkway
- 27% to/from east on Bob Billings Parkway (4% to/from north on Monterey Way)
- 15% to/from west on Bob Billings Parkway

Non-Residential Component

- 23% to/from west on Clinton Parkway
- 25% to/from east on Clinton Parkway
- 10% to/from south on Crossgate Drive south of Clinton Parkway

- 15% to/from east on Bob Billings Parkway (5% to/from north on Monterey Way)
- 27% to/from west on Bob Billings Parkway

Using above trip distribution patterns, trips generated by the proposed development are assigned to individual movements within the study area as illustrated in Figure 8 of Appendix I.

Impact Assessment for "Existing + Proposed Development" Traffic Conditions

Volume/Capacity Analysis

An evaluation of the "Existing + Proposed Development" traffic conditions, as shown in Appendix II and summarized in Figures 9 and 10 of Appendix I, indicates that, on a typical weekday:

- ***Under current signal timing plan and phasing scheme (coordinated signal along Clinton Parkway with 120 second cycle length)***, the intersection of Clinton Parkway and Crossgate Drive will likely operate at:
    - LOS "C" during morning peak-hour. This is a drop from current LOS "B" for the same time period. Moreover, the LOS for the northbound left-turn movement (on Crossgate Drive) will likely drop from "E" to "F" for the same time period; and
    - LOS "B" during afternoon peak-hour. This is the same as the LOS for the current conditions during the same time period with LOS for the southbound left-turn movement (on Crossgate Drive) likely remaining at "E" for the same time period.
- At the intersection of Bob Billings Parkway and Crossgate Drive, the LOS for northbound movement will likely drop from "B" to "C" during the afternoon peak-hour.
- ***Under optimum signal timing plan and current phasing scheme (50 second cycle length)***, the intersection of Bob Billings Parkway and Monterey Way will likely operate at current LOS "B" during both morning and afternoon peak-hours

with LOS for the eastbound left-turn movement dropping from “B” to “C” during the afternoon peak-hour.

Dedicated Turn Lane Analysis

As mentioned earlier, currently the requirements for provision of a westbound left-turn lane on Bob Billings Parkway at Crossgate Drive *is met at a marginal level*. With addition of traffic generated by the proposed development, the requirements for provision of this turn lane are met. It is, therefore, recommended that a dedicated westbound left-turn lane on Bob Billings Parkway be provided at this location. Based on the projected turning movement volumes (See Figure 9 of Appendix I), the required minimum storage length for this lane should be 75’ plus appropriate deceleration and taper lengths.

The results of similar turn lane analysis indicates that, with addition of traffic generated by the proposed development, the requirements for provision of a dedicated eastbound right-turn lane on Bob Billings Parkway at Crossgate Drive *is not met* at this location.

Impact Assessment for “Future” Traffic Conditions

Based on the information provided by KDOT (See the last two Exhibits in Appendix I):

- The interchange of K-10 Highway and Bob Billings Parkway will be open to traffic sometime in 2015 (currently under construction); and
- The remaining portion of the South Lawrence Trafficway (connecting Iowa Street east to K-10 Highway) will be completed and open to traffic by the end of 2016.

Upon completion of these two major construction projects, Bob Billings Parkway will potentially carry more traffic. At the time this study was prepared, no information was available on the forecasted future traffic volumes in the proximity of the proposed development site, hence no detail analysis could be performed.

Summary and Recommendations

This study evaluates the existing operating conditions of traffic within the project study area and recommends mitigation measures for any existing operational deficiency(s), if any. It also evaluates impact of the proposed “Alvamar Inc One Addition” development on the intersections under study during the critical analysis period (morning and afternoon peak-hours of a typical weekday) and recommends mitigation measures resulted thereof. In addition, it assesses impact of the future traffic within the project study area for the critical analysis periods.

Existing Traffic Conditions (See Figures 3, 4 & 5 of Appendix I)

1. Under the existing geometric and operating conditions, individual movements at all intersections in the study area operate at LOS “C” and higher, except
    - Southbound left-turn movement at the intersection of Clinton Parkway and Crossgate Drive, which operates at LOS “E” during both peak-hours;
    - Northbound left-turn movement at the intersection of Clinton Parkway and Crossgate Drive, which operates at LOS “E” and “D” during morning and afternoon peak-hours, respectively; and
    - South approach at the intersection of Clinton Parkway and Crossgate Drive, which operates at LOS “D”.

    Recommended Improvement: Consider modifying the signal timing plan at this intersection while maintaining the existing 120 second cycle length for coordination purposes and reassigning the green time in favor of north/south approaches.

2. Further investigation indicates that a dedicated westbound left-turn lane on Bob Billings Parkway at Crossgate Drive may be needed at a marginal level.

    Recommended Improvement: Under the existing traffic conditions, Provision of this lane is not required but preferred.

3. More investigation indicates that the intersection sight distance for the northbound movement at the intersection of Bob Billings Parkway and Crossgate Drive is slightly restricted by a couple of mature evergreen trees on the southwest corner of the intersection.

   Recommended Improvement: Trim back or remove the subject trees to clear the departure sight distance (on the southwest corner) from obstruction.

Existing + Proposed Development Project (See Figures 8, 9 & 10 of Appendix I)

In order to provide for safe and efficient traffic operating conditions, the following off-site improvements are recommended as the result of the proposed development project:

1. With added trips generated by the proposed development site, LOS for the intersection of Clinton Parkway and Crossgate Drive (as a whole) will remain at acceptable LOS "C" or higher with reserve capacity for both east and west approaches. The north and south approaches, however, will experience excessive delays with northbound left-turn movement at LOS "F" and southbound left-turn movement at LOS "E".

   Recommended Improvement: Modify signal timing plan at this intersection while maintaining the existing 120 second cycle length for coordination purposes and reassigning the green time in favor of north/south approaches.

2. With the added trips generated by the proposed development site, the requirements for provision of a dedicated westbound left-turn lane on Bob Billings Parkway at Crossgate Drive are met.

   Recommended Improvement: Provide a dedicated westbound left-turn lane on Bob Billings Parkway at Crossgate Drive. This lane should have a *minimum* storage length of 75' with a desirable deceleration length of 190' and 120' taper length.

3. To minimize delay for the northbound movement at the intersection of Bob Billings Parkway and Crossgate Drive, it is desirable to separate the northbound left-turn and northbound right-turn movements from one another.

   Recommended Improvement: Provide a dedicated northbound right-turn lane (or left-turn lane) on Crossgate Drive at Bob Billings Parkway with minimum storage length of 50'.

4. Trees restricting the intersection sight distance at the intersection of Bob Billings Parkway and Crossgate Drive.

   Recommended Improvement: Trim back or remove the first two evergreen trees on the southwest corner to clear the departure sight distance from obstruction.

APPENDIX I

Figures

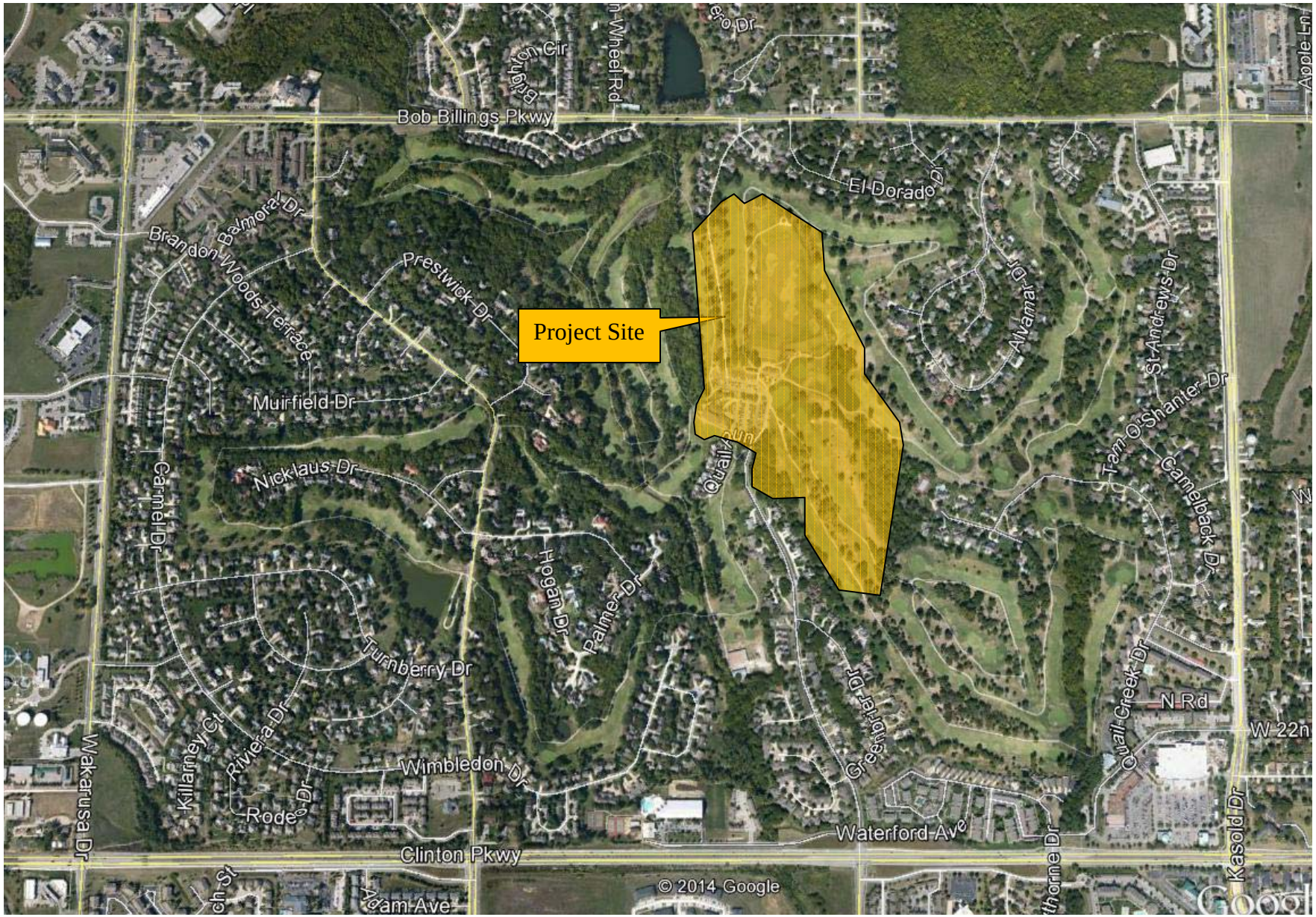
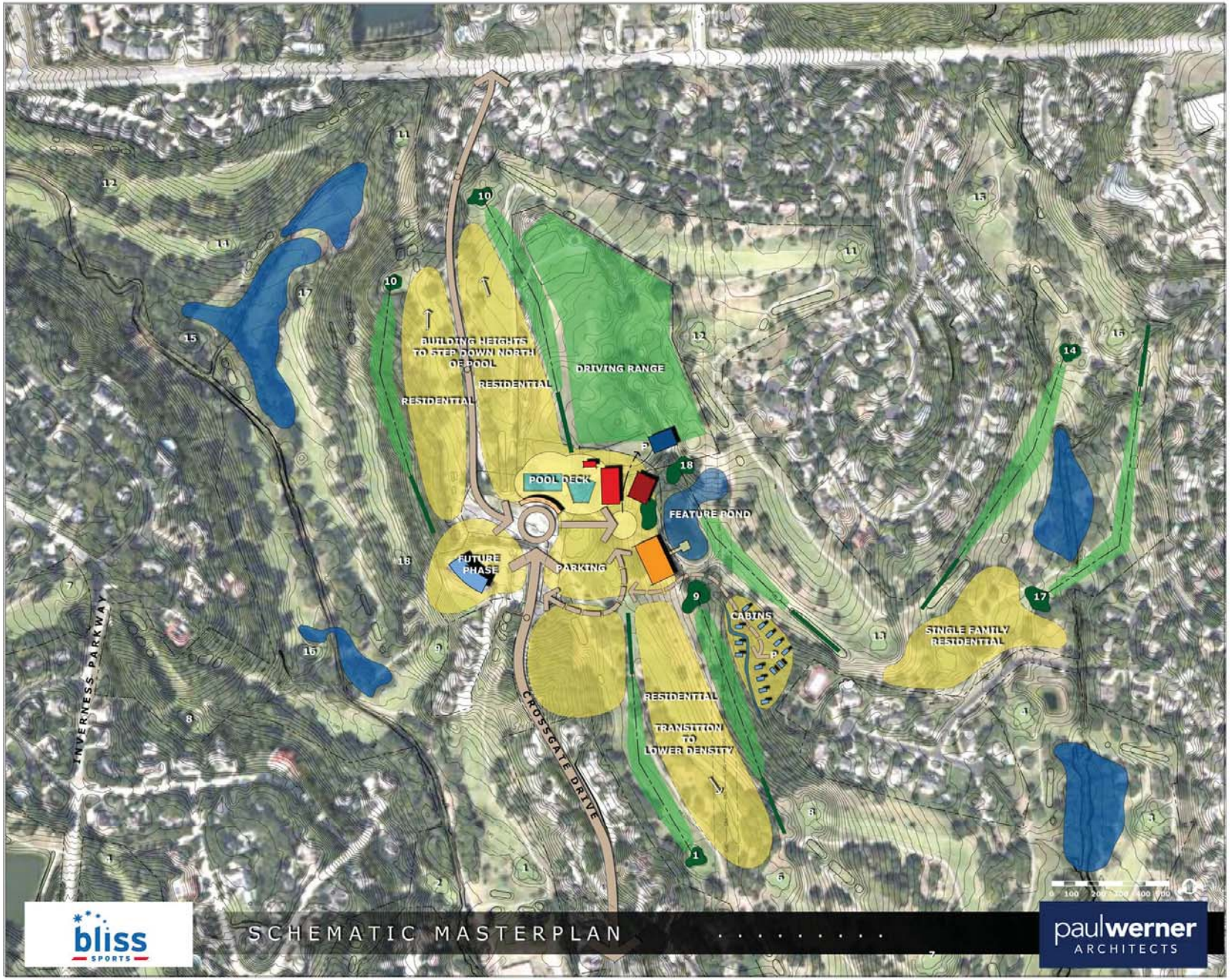


Figure 1
Location Map


BUILDING HEIGHTS TO STEP DOWN NORTH OF POOL
RESIDENTIAL
RESIDENTIAL
DRIVING RANGE
POOL DECK
FEATURE POND
FUTURE PHASE
PARKING
CABINS
SINGLE FAMILY RESIDENTIAL
RESIDENTIAL
TRANSITION TO LOWER DENSITY
INVERNESS PARKWAY
CROSSGATE DRIVE
SCHEMATIC MASTERPLAN
bliss SPORTS
paulwerner ARCHITECTS

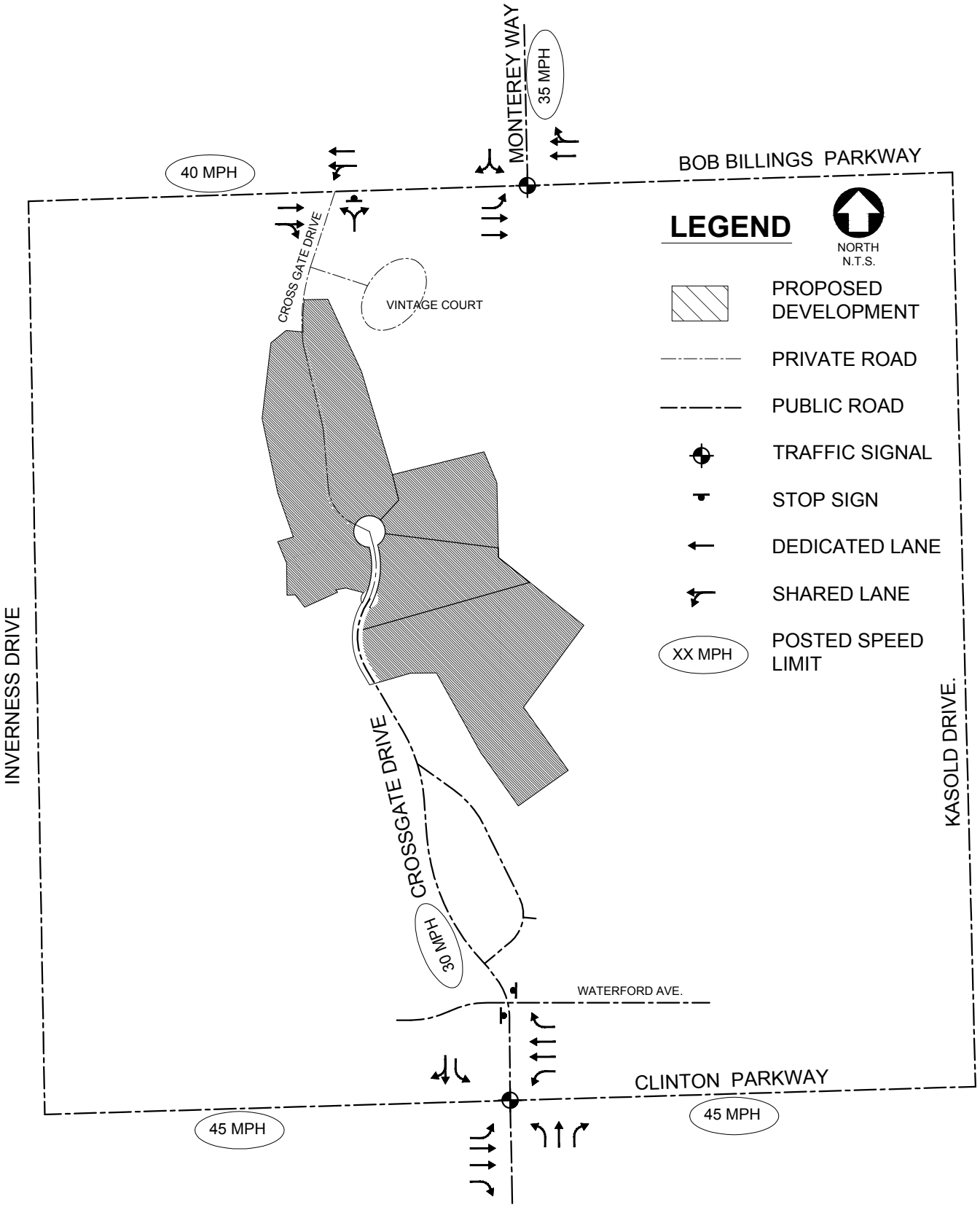


FIGURE 3
EXISTING LANE CONFIGURATIONS AND POSTED SPEED LIMITS (DECEMBER 2014)

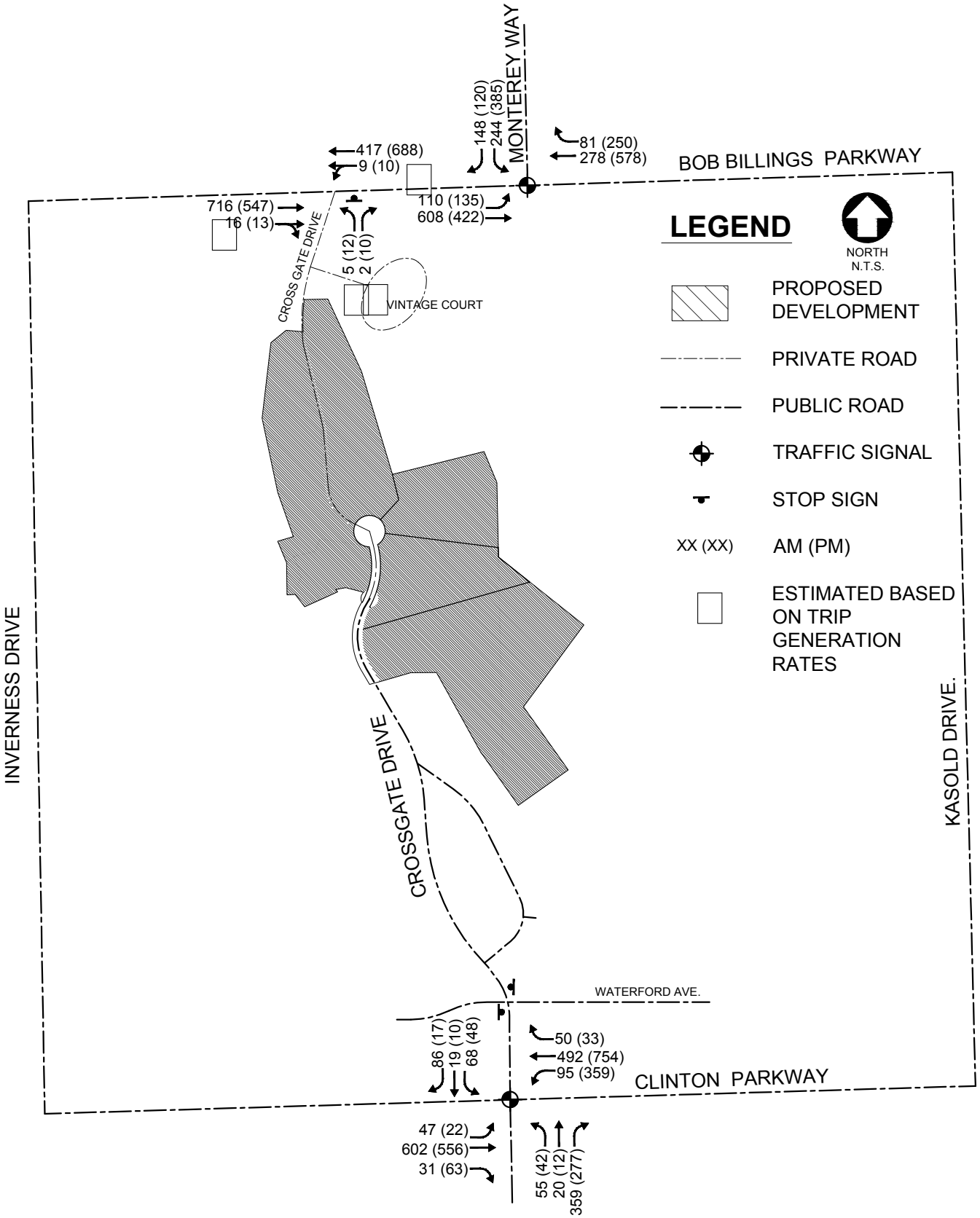


FIGURE 4
EXISTING PEAK HOUR TRAFFIC VOLUMES
(TYPICAL WEEKDAY, FEB. 2012 AND APR. 2013)

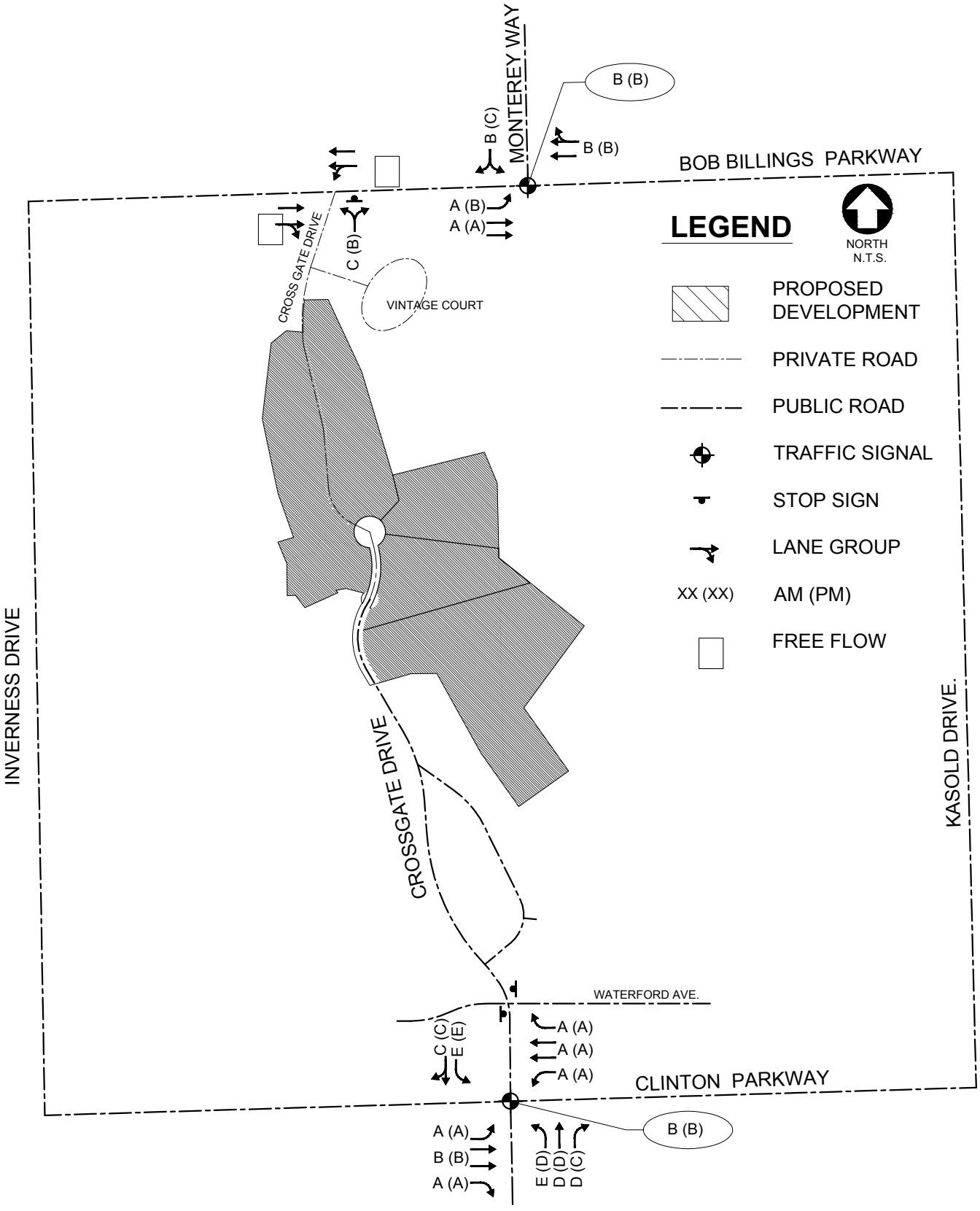


FIGURE 5
SUMMARY OF L.O.S. FOR EXISTING CONDITIONS
(PEAK HOURS OF A TYPICAL WEEKDAY)

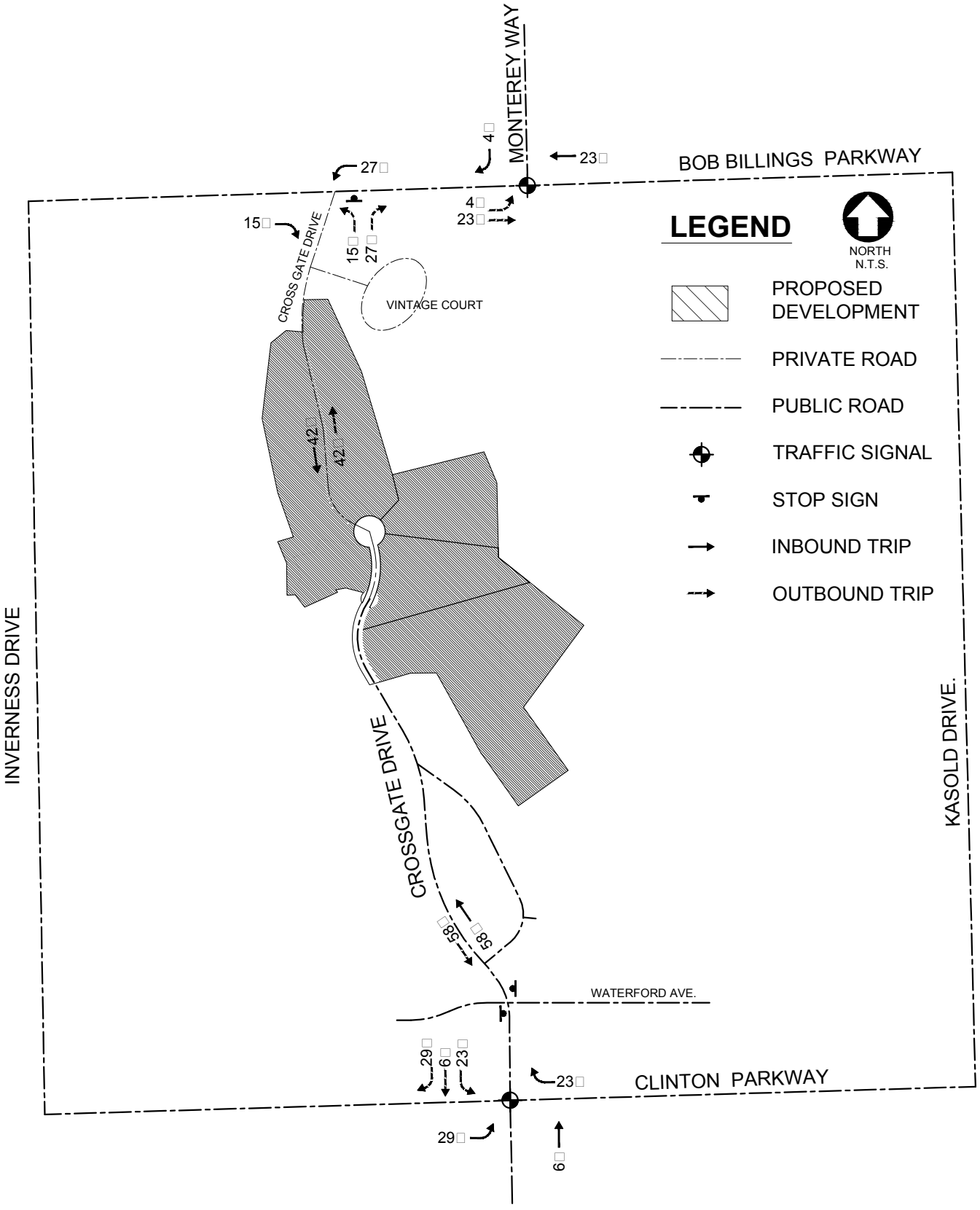


FIGURE 6
TRIP DISTRIBUTION PATTERNS FOR RESIDENTIAL
COMPONENT OF PROPOSED DEVELOPMENT
(PEAK HOURS OF A TYPICAL WEEKDAY)

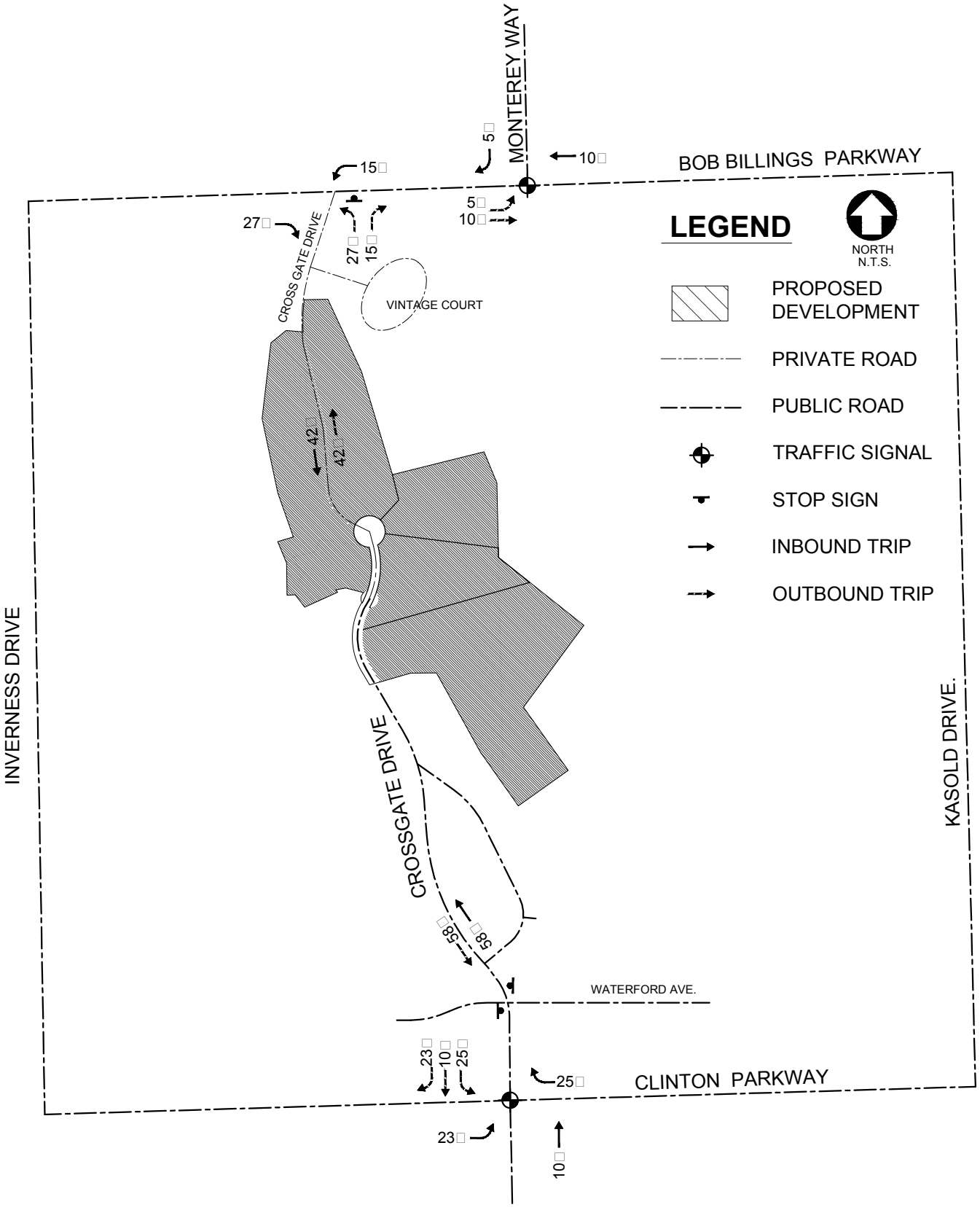


FIGURE 7
TRIP DISTRIBUTION PATTERNS FOR NON-RESIDENTIAL
COMPONENT OF PROPOSED DEVELOPMENT
(PEAK HOURS OF A TYPICAL WEEKDAY)

PEAK HOUR TRIPS	RESIDENTIAL		NON-RESIDENTIAL	
	AM	PM	AM	PM
INBOUND	59	231	61	55
OUTBOUND	243	123	16	53
2 WAY	302	354	77	108

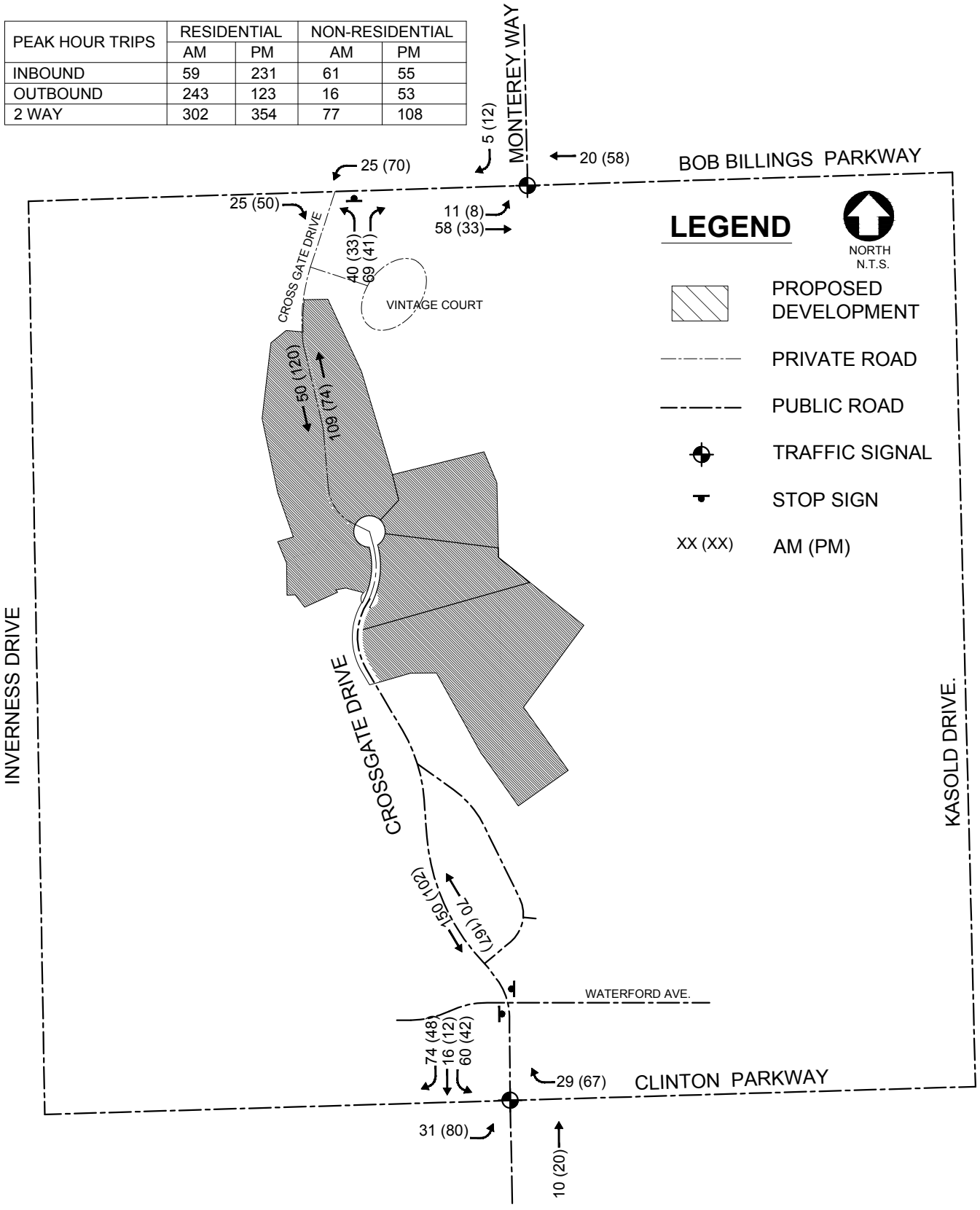


FIGURE 8
SITE-GENERATED TRIPS FOR PROPOSED DEVELOPMENT
(PEAK HOURS OF A TYPICAL WEEKDAY)

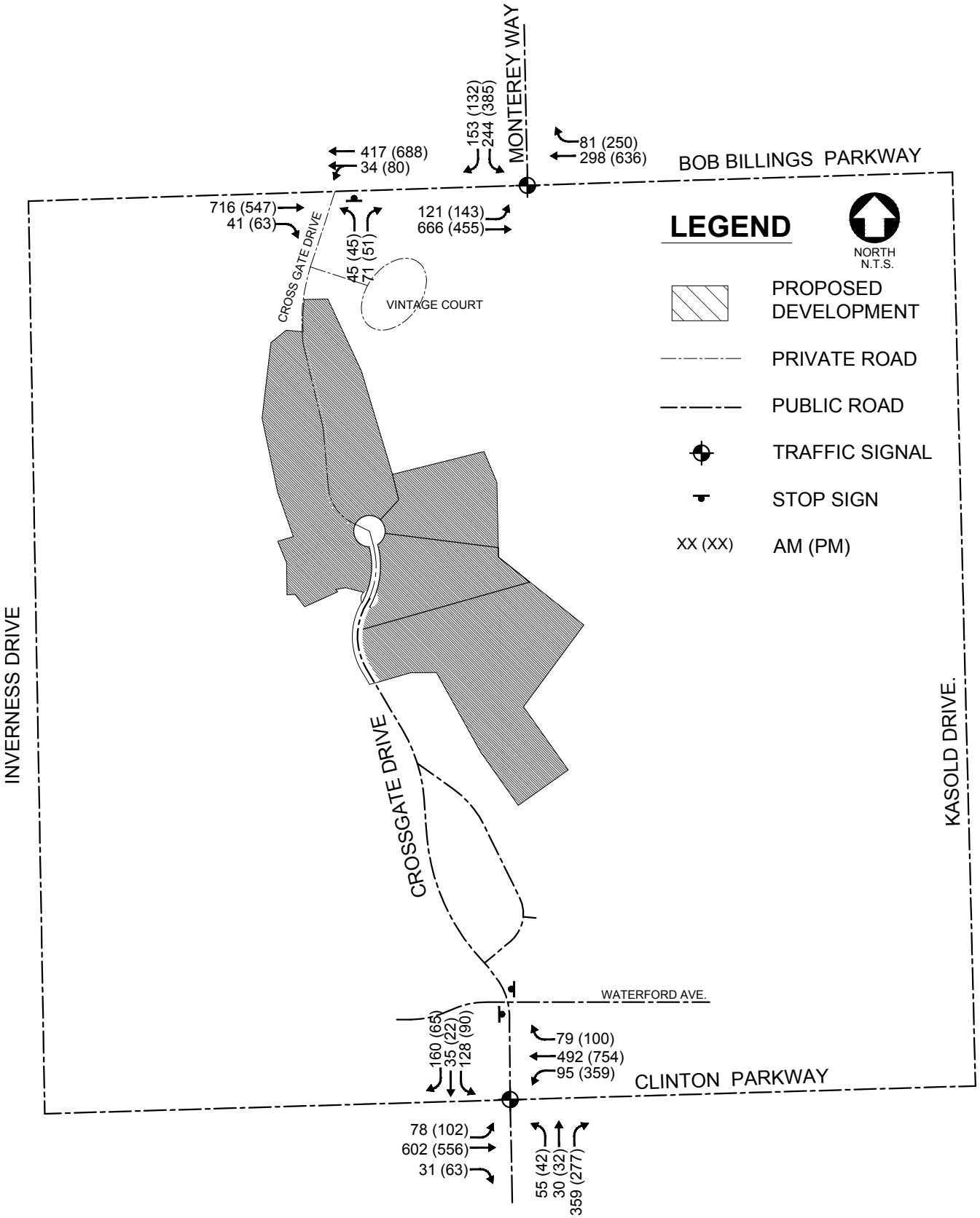


FIGURE 9
"EXISTING □ PROPOSED DEVELOPMENT"
PEAK HOUR TRAFFIC VOLUMES
(TYPICAL WEEKDAY)

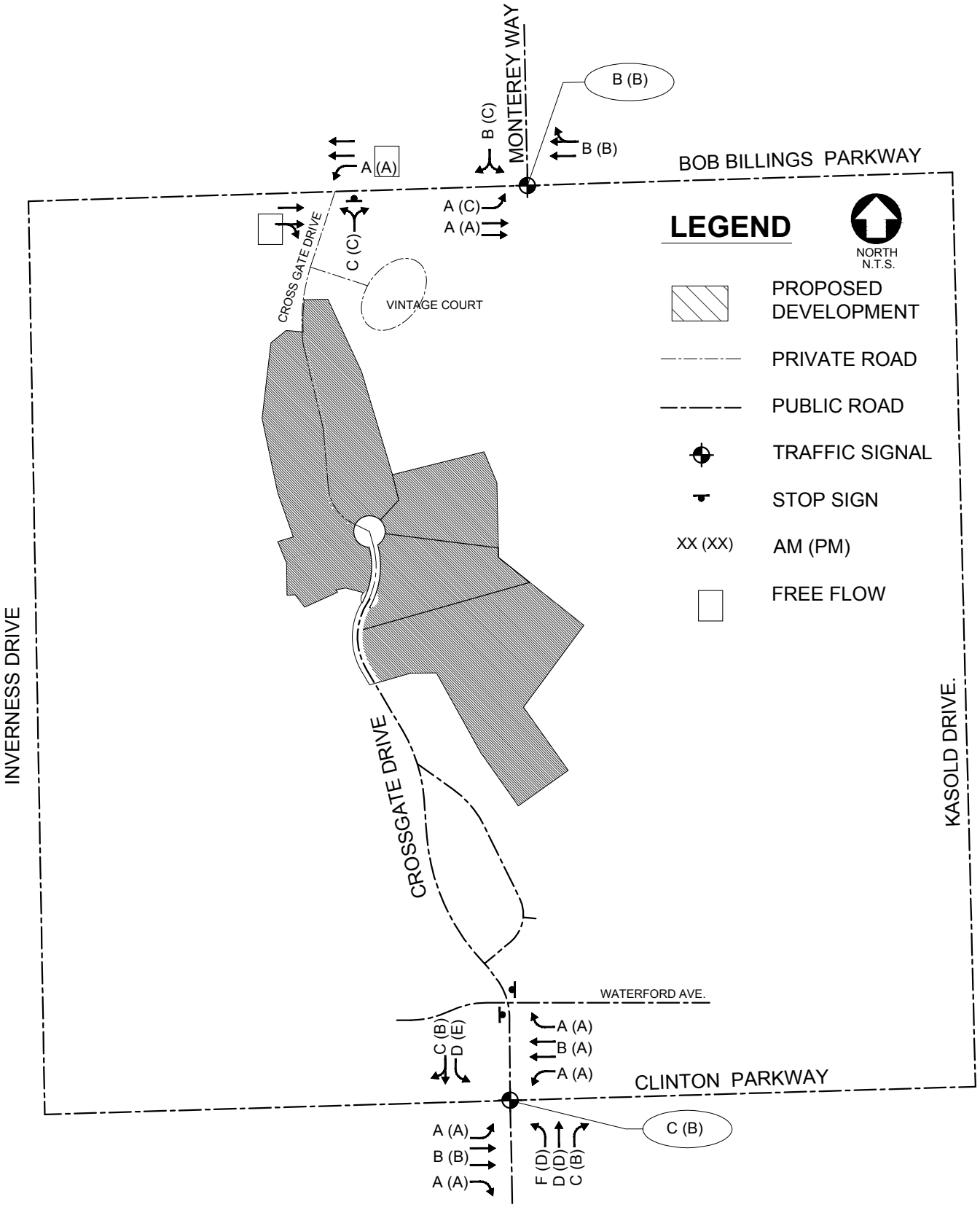
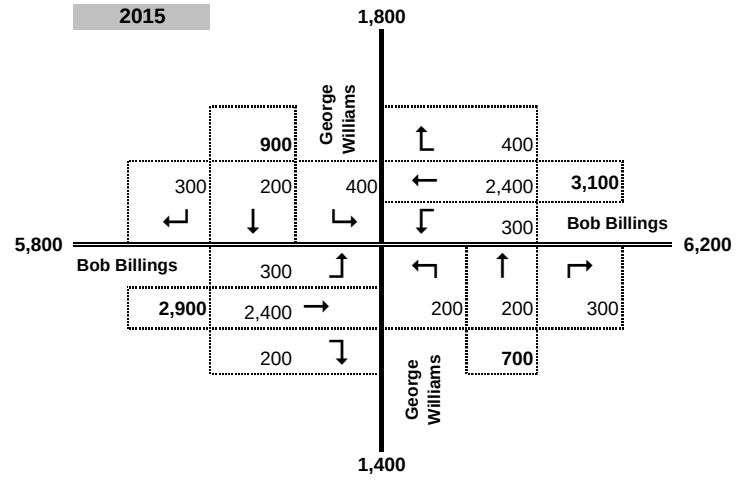
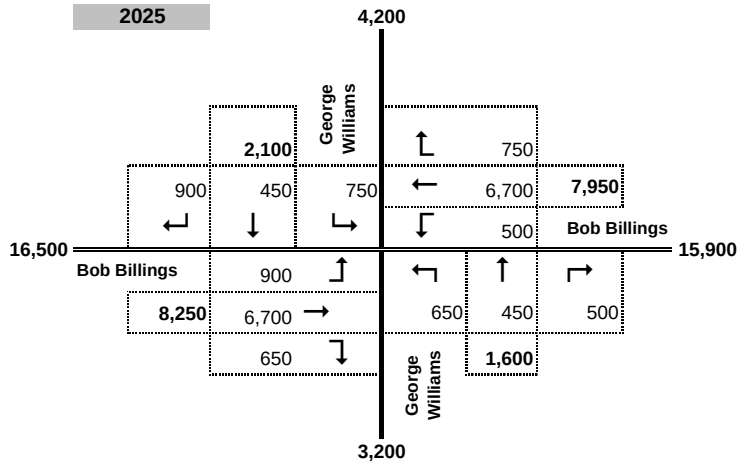
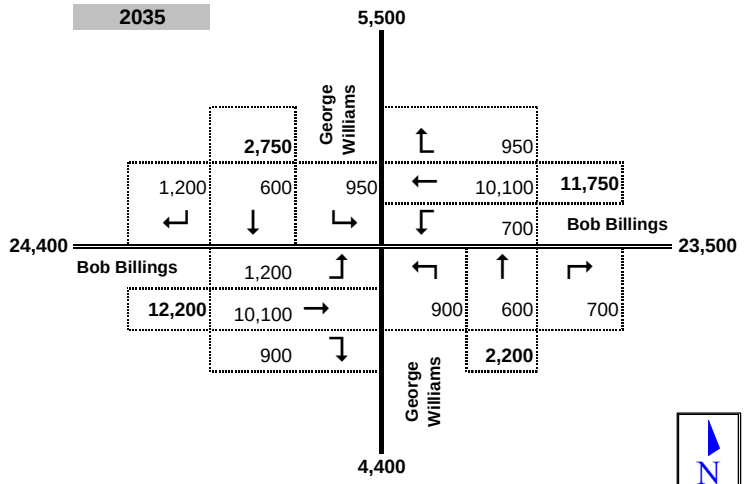


FIGURE 10
SUMMARY OF L.O.S. FOR "EXISTING □ PROPOSED DEVELOPMENT" TRAFFIC CONDITIONS
(PEAK HOURS OF A TYPICAL WEEKDAY)

10-23 KA-1826-01 Supplement
Bob Billings Parkway @ George Williams
2015/ 2025/2035 Estimated Daily Traffic
September 5, 2012



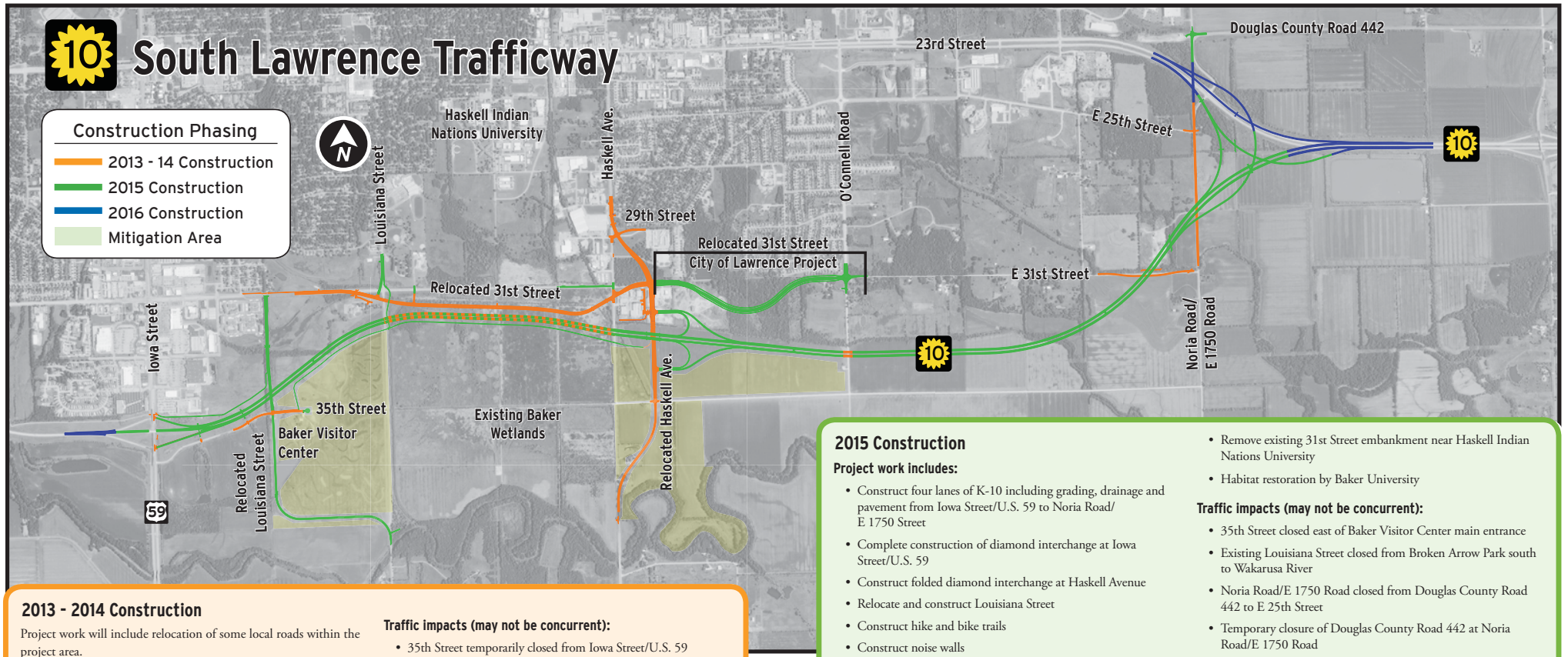




Bob Billings:

Design Hour Volume (DHV)	**10 %**
Directional Distribution (D)	**60/40**
	WB/EB in AM Peak
	EB/WB in PM Peak
%Trucks Medium/Heavy	**1.1/0.9**

South Lawrence Trafficway



2013 - 2014 Construction

Project work will include relocation of some local roads within the project area.

Project work includes:

- Construct special embankment within wetlands for both K-10 and relocated 31st Street
- Relocate and construct Haskell Avenue, Haskell Business Entrance and Horizon Frontage Road
- Relocate and reconstruct a portion of 29th Street
- Relocate and construct 31st Street west of relocated Haskell Avenue and E 31st Street near E 1750 Road
- Reconstruct a portion of 35th Street
- Reconstruct portions of Noria Road/E 1750 Road
- Construct bridge over historic berm on 31st Street
- Construct K-10 bridges over O'Connell Road

Traffic impacts (may not be concurrent):

- 35th Street temporarily closed from Iowa Street/U.S. 59 to Baker Visitor Center main entrance during 35th Street construction
- Haskell Avenue closed during north and south end tie-in construction
- Noria Road/E 1750 Road closed from relocated 31st Street to K-10 and access south of K-10 to E 1750 Road is removed
- Short term one lane reduction on northbound Iowa Street / U.S. 59 at K-10 interchange
- Relocated E 31st Street closed from E 1700 Road to E 1750 Road during relocated 31st Street construction
- 31st Street closed between R Street and Louisiana Street during construction of relocated 31st Street west tie-in
- O'Connell Road closed between 31st and 35th Streets during construction of K-10 bridges over O'Connell Road

2015 Construction

Project work includes:

- Construct four lanes of K-10 including grading, drainage and pavement from Iowa Street/U.S. 59 to Noria Road/ E 1750 Street
- Complete construction of diamond interchange at Iowa Street/U.S. 59
- Construct folded diamond interchange at Haskell Avenue
- Relocate and construct Louisiana Street
- Construct hike and bike trails
- Construct noise walls
- Relocate and construct 31st Street east of relocated Haskell Avenue to O'Connell Road (City of Lawrence Project)
- Construct Douglas County Road 442/E 1750 Road intersection
- Begin to construct fully directional interchange at Noria Road/E 1750 Road
- Remove existing 31st Street embankment near Haskell Indian Nations University
- Habitat restoration by Baker University

Traffic impacts (may not be concurrent):

- 35th Street closed east of Baker Visitor Center main entrance
- Existing Louisiana Street closed from Broken Arrow Park south to Wakarusa River
- Noria Road/E 1750 Road closed from Douglas County Road 442 to E 25th Street
- Temporary closure of Douglas County Road 442 at Noria Road/E 1750 Road
- Existing K-10 down to one lane in each direction near east interchange
- Relocated Haskell Avenue and relocated 31st Street open to traffic
- O'Connell Road closed at 31st Street

2016 Construction

Project work includes:

- Complete construction of the fully directional interchange at Noria Road/E 1750 Road and tie-in to existing K-10 and 23rd Street
- Complete construction tie-in of K-10 on west side of Iowa Street/U.S. 59, including mill and overlay

Traffic impacts (may not be concurrent):

- Two-way traffic on existing westbound 23rd Street/K-10 (Traffic Stage 1)
- Noria Road/E 1750 Road closed from Douglas County Road 442 to E 25th Street
- Two-way traffic on eastbound 23rd Street and eastbound K-10 during the tie-in of westbound K-10 lanes/ramps (Traffic Stage 2)
- Brief closures of K-10 at Iowa Street

Note: As construction progresses, actual work completed may vary from this display. KDOT will continue to provide updates over the life of the project.

KDOT Project #10-23 K-8392-04

APPENDIX II

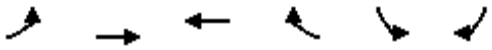
Results of Highway Capacity Analysis

Using

Synchro 8 Software

(HCM 2010 Methodology)

EXISTING CONDITIONS



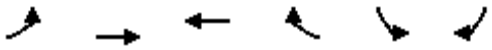
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	110	608	278	81	244	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	16	16
Grade (%)		6%	6%		0%	
Storage Length (ft)	100			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.966		0.949	
Flt Protected	0.950				0.970	
Satd. Flow (prot)	1659	3319	3206	0	1943	0
Flt Permitted	0.366				0.970	
Satd. Flow (perm)	639	3319	3206	0	1943	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			83		61	
Link Speed (mph)		40	40		35	
Link Distance (ft)		670	328		355	
Travel Time (s)		11.4	5.6		6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	661	302	88	265	161
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	661	390	0	426	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		7	
Permitted Phases	2					
Detector Phase	5	2	6		7	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	
Minimum Split (s)	8.6	20.6	20.6		8.6	
Total Split (s)	9.0	31.0	22.0		19.0	
Total Split (%)	18.0%	62.0%	44.0%		38.0%	
Yellow Time (s)	3.6	3.6	3.6		3.6	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.6	4.6	4.6		4.6	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	None	None		None	
Act Effct Green (s)	15.4	15.4	10.8		12.0	
Actuated g/C Ratio	0.42	0.42	0.29		0.32	
v/c Ratio	0.31	0.48	0.39		0.64	
Control Delay	9.0	9.1	11.0		15.5	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	9.0	9.1	11.0		15.5	
LOS	A	A	B		B	
Approach Delay		9.1	11.0		15.5	
Approach LOS		A	B		B	
Queue Length 50th (ft)	15	48	31		67	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (ft)	36	83	61		#158	
Internal Link Dist (ft)		590	248		275	
Turn Bay Length (ft)	100					
Base Capacity (vph)	393	2445	1628		831	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.31	0.27	0.24		0.51	

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 37.1			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 50.4%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 4: Bob Billings Pkwy & Monterey Way



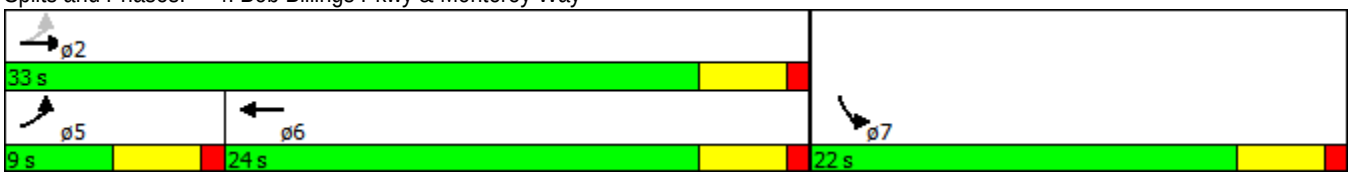
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	135	422	578	250	385	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	16	16
Grade (%)		6%	6%		0%	
Storage Length (ft)	100			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.955		0.968	
Flt Protected	0.950				0.963	
Satd. Flow (prot)	1659	3319	3169	0	1968	0
Flt Permitted	0.182				0.963	
Satd. Flow (perm)	318	3319	3169	0	1968	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			136		30	
Link Speed (mph)		40	40		35	
Link Distance (ft)		670	328		355	
Travel Time (s)		11.4	5.6		6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	459	628	272	418	130
Shared Lane Traffic (%)						
Lane Group Flow (vph)	147	459	900	0	548	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		7	
Permitted Phases	2					
Detector Phase	5	2	6		7	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	
Minimum Split (s)	8.6	20.6	20.6		8.6	
Total Split (s)	9.0	33.0	24.0		22.0	
Total Split (%)	16.4%	60.0%	43.6%		40.0%	
Yellow Time (s)	3.6	3.6	3.6		3.6	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.6	4.6	4.6		4.6	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	None	None		None	
Act Effct Green (s)	23.9	23.9	17.4		16.3	
Actuated g/C Ratio	0.48	0.48	0.35		0.33	
v/c Ratio	0.53	0.29	0.76		0.83	
Control Delay	15.0	8.1	17.6		29.6	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	15.0	8.1	17.6		29.6	
LOS	B	A	B		C	
Approach Delay		9.8	17.6		29.6	
Approach LOS		A	B		C	
Queue Length 50th (ft)	23	40	111		156	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (ft)	#50	63	172		#317	
Internal Link Dist (ft)		590	248		275	
Turn Bay Length (ft)	100					
Base Capacity (vph)	276	1982	1373		739	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.53	0.23	0.66		0.74	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 49.9			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 4: Bob Billings Pkwy & Monterey Way



Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	716	16	9	417	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	6	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	778	17	10	453	5	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	796	0	1033	398
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	246	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	822	-	228	601
Stage 1	-	-	-	-	409	-
Stage 2	-	-	-	-	772	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	822	-	224	601
Mov Cap-2 Maneuver	-	-	-	-	224	-
Stage 1	-	-	-	-	409	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	18.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	273	-	-	822	-
HCM Lane V/C Ratio	0.028	-	-	0.012	-
HCM Control Delay (s)	18.6	-	-	9.4	0.1
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

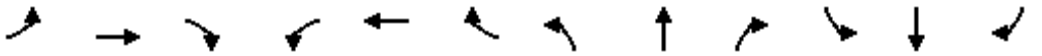
Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	547	13	10	688	12	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	6	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	595	14	11	748	13	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	609	0	998	304
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	396	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	966	-	240	692
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	649	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	966	-	235	692
Mov Cap-2 Maneuver	-	-	-	-	235	-
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	637	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	16.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	336	-	-	966	-
HCM Lane V/C Ratio	0.071	-	-	0.011	-
HCM Control Delay (s)	16.5	-	-	8.8	0.1
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

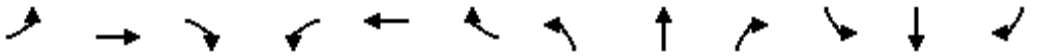


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	602	31	95	492	50	55	20	359	68	19	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	265		155	325		200	0		0	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.894	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1665	0
Flt Permitted	0.450			0.358			0.390			0.735		
Satd. Flow (perm)	838	3539	1583	667	3539	1583	726	1863	1583	1369	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			73			100		109	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		800			600			150			100	
Travel Time (s)		12.1			9.1			3.4			2.3	
Peak Hour Factor	0.56	0.93	0.79	0.94	0.91	0.78	0.92	0.58	0.90	0.75	0.42	0.79
Adj. Flow (vph)	84	647	39	101	541	64	60	34	399	91	45	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	647	39	101	541	64	60	34	399	91	154	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	11.0	35.0	35.0	11.0	35.0	35.0	36.0	36.0	11.0	37.0	37.0	
Total Split (s)	22.0	46.0	46.0	22.0	46.0	46.0	52.0	52.0	22.0	52.0	52.0	
Total Split (%)	18.3%	38.3%	38.3%	18.3%	38.3%	38.3%	43.3%	43.3%	18.3%	43.3%	43.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0	-3.0	-2.0	-3.0	-3.0	-3.0	-3.0	-2.0	-3.0	-3.0	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	87.4	78.6	78.6	97.6	88.0	88.0	16.4	16.4	35.4	16.4	16.4	
Actuated g/C Ratio	0.73	0.66	0.66	0.81	0.73	0.73	0.14	0.14	0.30	0.14	0.14	
v/c Ratio	0.12	0.28	0.04	0.15	0.21	0.05	0.61	0.13	0.74	0.49	0.48	
Control Delay	3.9	10.3	0.6	3.2	6.2	1.4	72.7	44.5	36.0	55.6	20.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.9	10.3	0.6	3.2	6.2	1.4	72.7	44.5	36.0	55.6	20.4	
LOS	A	B	A	A	A	A	E	D	D	E	C	
Approach Delay		9.1			5.3			41.1			33.5	
Approach LOS		A			A			D			C	
Queue Length 50th (ft)	10	103	0	12	65	0	44	24	212	66	31	
Queue Length 95th (ft)	15	175	1	30	107	8	89	33	285	94	2	
Internal Link Dist (ft)		720			520			70			20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	265		155	325		200						
Base Capacity (vph)	816	2319	1062	722	2595	1180	296	760	581	559	744	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.28	0.04	0.14	0.21	0.05	0.20	0.04	0.69	0.16	0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 38 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 17.7		Intersection LOS: B	
Intersection Capacity Utilization 53.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Clinton Pkwy / Clinton Pkwy & Crossgate Dr.



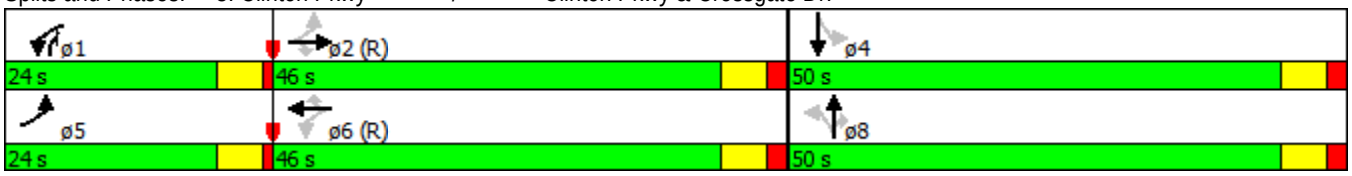
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	556	63	359	754	33	42	12	277	48	10	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	265		155	325		200	0		0	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.920	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1714	0
Flt Permitted	0.340			0.371			0.730			0.744		
Satd. Flow (perm)	633	3539	1583	691	3539	1583	1360	1863	1583	1386	1714	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			73			120		22	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		800			600			150			100	
Travel Time (s)		12.1			9.1			3.4			2.3	
Peak Hour Factor	0.91	0.93	0.58	0.84	0.91	0.73	0.85	0.57	0.81	0.68	0.54	0.79
Adj. Flow (vph)	24	598	109	427	829	45	49	21	342	71	19	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	598	109	427	829	45	49	21	342	71	41	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	11.0	35.0	35.0	11.0	36.0	36.0	36.0	36.0	11.0	38.0	38.0	
Total Split (s)	24.0	46.0	46.0	24.0	46.0	46.0	50.0	50.0	24.0	50.0	50.0	
Total Split (%)	20.0%	38.3%	38.3%	20.0%	38.3%	38.3%	41.7%	41.7%	20.0%	41.7%	41.7%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0	-3.0	-2.0	-3.0	-3.0	-3.0	-3.0	-2.0	-3.0	-3.0	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	83.3	75.2	75.2	101.9	95.9	95.9	14.5	14.5	38.8	14.6	14.6	
Actuated g/C Ratio	0.69	0.63	0.63	0.85	0.80	0.80	0.12	0.12	0.32	0.12	0.12	
v/c Ratio	0.05	0.27	0.11	0.53	0.29	0.04	0.30	0.09	0.58	0.42	0.18	
Control Delay	4.9	12.6	3.0	5.1	5.1	0.5	51.3	45.7	23.2	55.5	27.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.9	12.6	3.0	5.1	5.1	0.5	51.3	45.7	23.2	55.5	27.6	
LOS	A	B	A	A	A	A	D	D	C	E	C	
Approach Delay		10.9			4.9			27.7			45.3	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)	2	109	0	57	101	0	35	15	136	52	13	
Queue Length 95th (ft)	9	183	3	99	153	1	67	23	158	71	21	
Internal Link Dist (ft)		720			520			70			20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	265		155	325		200						
Base Capacity (vph)	703	2217	1032	812	2827	1279	532	729	609	542	684	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.27	0.11	0.53	0.29	0.04	0.09	0.03	0.56	0.13	0.06	

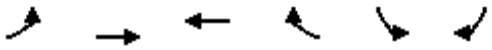
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 90 (75%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 54.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Clinton Pkwy / Clinton Pkwy & Crossgate Dr.



EXISTING + DEVELOPMENT TRAFFIC CONDITIONS



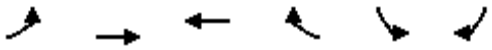
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	121	666	298	81	244	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	16	16
Grade (%)		6%	6%		0%	
Storage Length (ft)	100			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.968		0.948	
Flt Protected	0.950				0.970	
Satd. Flow (prot)	1659	3319	3212	0	1941	0
Flt Permitted	0.355				0.970	
Satd. Flow (perm)	620	3319	3212	0	1941	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			75		63	
Link Speed (mph)		40	40		35	
Link Distance (ft)		670	328		355	
Travel Time (s)		11.4	5.6		6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	724	324	88	265	166
Shared Lane Traffic (%)						
Lane Group Flow (vph)	132	724	412	0	431	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		7	
Permitted Phases	2					
Detector Phase	5	2	6		7	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	
Minimum Split (s)	8.6	20.6	20.6		8.6	
Total Split (s)	9.0	31.0	22.0		19.0	
Total Split (%)	18.0%	62.0%	44.0%		38.0%	
Yellow Time (s)	3.6	3.6	3.6		3.6	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.6	4.6	4.6		4.6	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	None	None		None	
Act Effct Green (s)	17.1	17.1	10.4		12.1	
Actuated g/C Ratio	0.44	0.44	0.27		0.31	
v/c Ratio	0.33	0.49	0.45		0.67	
Control Delay	9.1	9.1	12.3		16.9	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	9.1	9.1	12.3		16.9	
LOS	A	A	B		B	
Approach Delay		9.1	12.3		16.9	
Approach LOS		A	B		B	
Queue Length 50th (ft)	16	55	35		69	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (ft)	39	92	65		#167	
Internal Link Dist (ft)		590	248		275	
Turn Bay Length (ft)	100					
Base Capacity (vph)	396	2335	1547		792	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.33	0.31	0.27		0.54	

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 38.8	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 11.9	Intersection LOS: B
Intersection Capacity Utilization 51.9%	ICU Level of Service A
Analysis Period (min) 15	

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

Splits and Phases: 4: Bob Billings Pkwy & Monterey Way



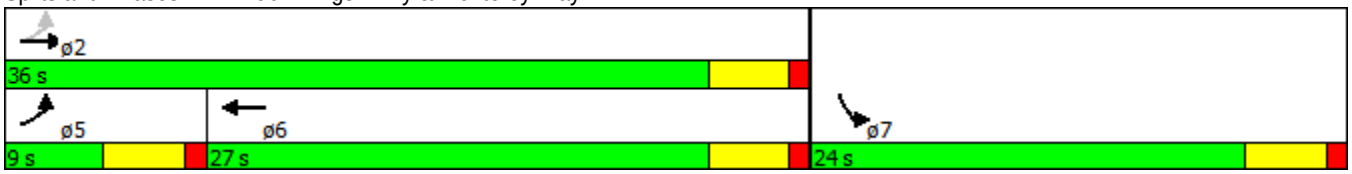
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	143	455	636	250	385	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	16	16
Grade (%)		6%	6%		0%	
Storage Length (ft)	100			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.958		0.966	
Flt Protected	0.950				0.964	
Satd. Flow (prot)	1659	3319	3179	0	1966	0
Flt Permitted	0.163				0.964	
Satd. Flow (perm)	285	3319	3179	0	1966	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			111		30	
Link Speed (mph)		40	40		35	
Link Distance (ft)		670	328		355	
Travel Time (s)		11.4	5.6		6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	495	691	272	418	143
Shared Lane Traffic (%)						
Lane Group Flow (vph)	155	495	963	0	561	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	5	2	6		7	
Permitted Phases	2					
Detector Phase	5	2	6		7	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	
Minimum Split (s)	8.6	20.6	20.6		8.6	
Total Split (s)	9.0	36.0	27.0		24.0	
Total Split (%)	15.0%	60.0%	45.0%		40.0%	
Yellow Time (s)	3.6	3.6	3.6		3.6	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.6	4.6	4.6		4.6	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	None	None		None	
Act Effct Green (s)	26.5	26.5	19.9		18.0	
Actuated g/C Ratio	0.49	0.49	0.37		0.33	
v/c Ratio	0.61	0.31	0.78		0.83	
Control Delay	20.3	8.7	19.3		30.9	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	20.3	8.7	19.3		30.9	
LOS	C	A	B		C	
Approach Delay		11.4	19.3		30.9	
Approach LOS		B	B		C	
Queue Length 50th (ft)	27	48	137		177	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (ft)	#67	73	204		#344	
Internal Link Dist (ft)		590	248		275	
Turn Bay Length (ft)	100					
Base Capacity (vph)	256	2027	1448		760	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.61	0.24	0.67		0.74	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 54.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 19.9	Intersection LOS: B
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 4: Bob Billings Pkwy & Monterey Way



Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	716	41	34	417	45	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	6	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	778	45	37	453	49	77

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	823	0	1102	411
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	301	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	803	-	206	590
Stage 1	-	-	-	-	402	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	803	-	193	590
Mov Cap-2 Maneuver	-	-	-	-	193	-
Stage 1	-	-	-	-	402	-
Stage 2	-	-	-	-	680	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	22.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	328	-	-	803	-
HCM Lane V/C Ratio	0.384	-	-	0.046	-
HCM Control Delay (s)	22.7	-	-	9.7	0.3
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.8	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	716	41	34	417	45	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	6	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	778	45	37	453	49	77

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	823	0	1102	411
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	301	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	803	-	206	590
Stage 1	-	-	-	-	402	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	803	-	197	590
Mov Cap-2 Maneuver	-	-	-	-	197	-
Stage 1	-	-	-	-	402	-
Stage 2	-	-	-	-	692	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	22.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	333	-	-	803	-
HCM Lane V/C Ratio	0.379	-	-	0.046	-
HCM Control Delay (s)	22.3	-	-	9.7	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.7	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	547	63	80	688	45	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	6	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	595	68	87	748	49	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	663	0	1177	332
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	548	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	922	-	184	664
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	543	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	922	-	154	664
Mov Cap-2 Maneuver	-	-	-	-	154	-
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	456	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	27.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	260	-	-	922	-
HCM Lane V/C Ratio	0.401	-	-	0.094	-
HCM Control Delay (s)	27.8	-	-	9.3	0.6
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.8	-	-	0.3	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	547	63	80	688	45	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	6	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	595	68	87	748	49	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	663	0	1177	332
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	548	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	922	-	184	664
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	543	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	922	-	167	664
Mov Cap-2 Maneuver	-	-	-	-	301	-
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	492	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	16.2
HCM LOS			C

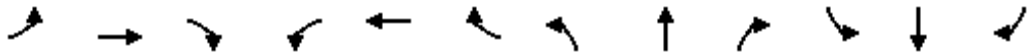
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	424	-	-	922	-
HCM Lane V/C Ratio	0.246	-	-	0.094	-
HCM Control Delay (s)	16.2	-	-	9.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1	-	-	0.3	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	602	31	95	492	79	55	30	359	128	35	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	265		155	325		200	0		0	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.894	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1665	0
Flt Permitted	0.416			0.372			0.216			0.723		
Satd. Flow (perm)	775	3539	1583	693	3539	1583	402	1863	1583	1347	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			101			100		124	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		800			600			150			100	
Travel Time (s)		12.1			9.1			3.4			2.3	
Peak Hour Factor	0.56	0.93	0.79	0.94	0.91	0.78	0.92	0.58	0.90	0.75	0.42	0.79
Adj. Flow (vph)	139	647	39	101	541	101	60	52	399	171	83	203
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	647	39	101	541	101	60	52	399	171	286	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	11.0	35.0	35.0	11.0	35.0	35.0	36.0	36.0	11.0	37.0	37.0	
Total Split (s)	22.0	46.0	46.0	22.0	46.0	46.0	52.0	52.0	22.0	52.0	52.0	
Total Split (%)	18.3%	38.3%	38.3%	18.3%	38.3%	38.3%	43.3%	43.3%	18.3%	43.3%	43.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0	-3.0	-2.0	-3.0	-3.0	-3.0	-3.0	-2.0	-3.0	-3.0	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	87.5	77.2	77.2	86.4	76.7	76.7	24.0	24.0	36.8	24.0	24.0	
Actuated g/C Ratio	0.73	0.64	0.64	0.72	0.64	0.64	0.20	0.20	0.31	0.20	0.20	
v/c Ratio	0.21	0.28	0.04	0.17	0.24	0.10	0.75	0.14	0.72	0.64	0.66	
Control Delay	5.8	10.8	0.7	5.7	10.7	2.6	92.6	37.5	34.1	53.7	31.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.8	10.8	0.7	5.7	10.7	2.6	92.6	37.5	34.1	53.7	31.3	
LOS	A	B	A	A	B	A	F	D	C	D	C	
Approach Delay		9.5			8.9			41.3			39.7	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	25	104	0	18	85	0	44	34	211	123	116	
Queue Length 95th (ft)	34	180	1	44	150	17	#99	40	278	145	35	
Internal Link Dist (ft)		720			520			70			20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	265		155	325		200						
Base Capacity (vph)	738	2277	1044	690	2262	1048	164	760	668	550	753	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.28	0.04	0.15	0.24	0.10	0.37	0.07	0.60	0.31	0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 38 (32%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 21.2		Intersection LOS: C	
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Clinton Pkwy / Clinton Pkwy & Crossgate Dr.

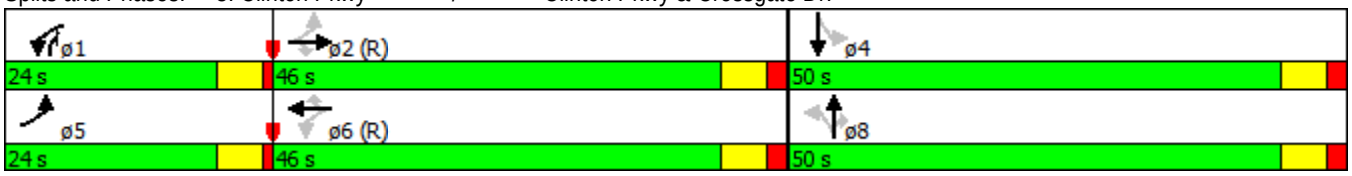


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	556	63	359	754	100	42	12	277	90	22	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	265		155	325		200	0		0	0		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	75			75			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.900	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1676	0
Flt Permitted	0.340			0.358			0.530			0.744		
Satd. Flow (perm)	633	3539	1583	667	3539	1583	987	1863	1583	1386	1676	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			132			120		82	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		800			600			150			100	
Travel Time (s)		12.1			9.1			3.4			2.3	
Peak Hour Factor	0.91	0.93	0.58	0.84	0.91	0.73	0.85	0.57	0.81	0.68	0.54	0.79
Adj. Flow (vph)	112	598	109	427	829	137	49	21	342	132	41	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	598	109	427	829	137	49	21	342	132	123	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases	2		2	6		6	8		8	4		
Detector Phase	5	2	2	1	6	6	8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	11.0	35.0	35.0	11.0	36.0	36.0	36.0	36.0	11.0	38.0	38.0	
Total Split (s)	24.0	46.0	46.0	24.0	46.0	46.0	50.0	50.0	24.0	50.0	50.0	
Total Split (%)	20.0%	38.3%	38.3%	20.0%	38.3%	38.3%	41.7%	41.7%	20.0%	41.7%	41.7%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0	-3.0	-2.0	-3.0	-3.0	-3.0	-3.0	-2.0	-3.0	-3.0	
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	76.9	67.4	67.4	94.1	81.7	81.7	19.9	19.9	46.6	19.9	19.9	
Actuated g/C Ratio	0.64	0.56	0.56	0.78	0.68	0.68	0.17	0.17	0.39	0.17	0.17	
v/c Ratio	0.23	0.30	0.12	0.58	0.34	0.12	0.30	0.07	0.50	0.57	0.36	
Control Delay	6.9	16.3	3.7	7.6	9.2	2.0	46.7	39.8	18.3	55.1	18.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.9	16.3	3.7	7.6	9.2	2.0	46.7	39.8	18.3	55.1	18.8	
LOS	A	B	A	A	A	A	D	D	B	E	B	
Approach Delay		13.3			8.0			22.8			37.6	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)	17	123	0	78	127	1	34	14	126	95	28	
Queue Length 95th (ft)	39	208	4	137	204	13	63	22	138	109	24	
Internal Link Dist (ft)		720			520			70			20	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)	265		155	325		200						
Base Capacity (vph)	661	1988	937	753	2408	1119	386	729	704	542	706	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.30	0.12	0.57	0.34	0.12	0.13	0.03	0.49	0.24	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 90 (75%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 56.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Clinton Pkwy / Clinton Pkwy & Crossgate Dr.



APPENDIX III

Summary of Peak-Hours Traffic Counts

PEAK AM Count

Signal Location		Count AM Date	**Begin Peak**	Peak Volume	South Bound			West Bound			North Bound			East Bound		
					Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
STREET1	STREET2	COUNTDATE		PEAKTOTAL	SBRT	SBTHRU	SBLT	WBRT	WBTHRU	WBLT	NBRT	NBTHRU	NBLT	EBRT	EBTHRU	EBLT
Bob Billings	MontereyWay	29-Feb-12	7:30	1469	148	0	244	81	278	0	0	0	0	0	608	110
Clinton Pkwy.	Crossgate Dr.	23-Apr-13	7:30	1924	86	19	68	50	492	95	359	20	55	31	602	47

Source: City of Lawrence, Public Works Department, Traffic Engineering Devision

PEAK PM Count

Signal Location		Count PM Date	Begin Peak	Peak Volume	South Bound			West Bound			North Bound			East Bound		
					Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
STREET1	STREET2	COUNTDATE		PEAKTOTAL	SBRT	SBTHRU	SBLT	WBRT	WBTHRU	WBLT	NBRT	NBTHRU	NBLT	EBRT	EBTHRU	EBLT
Bob Billings	MontereyWay	29-Feb-12	17:00	1699	120	0	194	250	578	0	0	0	0	0	422	135
Clinton Pkwy.	Crossgate Dr.	23-Apr-13	17:00	2193	17	10	48	33	754	359	277	12	42	63	556	22

Source: City of Lawrence, Public Works Department, Traffic Engineering Division

APPENDIX IV

Summary of Intersection Sight Distance Analysis

Using

AASHTO “Green Book”, 2011 Edition

Results of Intersection Sight Distance (ISD) Analysis

Intersection of Bob Billings Parkway and Crossgate Drive (Existing Conditions)

Lawrence, KS

Parameters

- For eastbound movement on Bob Billings Parkway
  - Approach speed = 40 mph (posted speed limit)
  - Approach grade = +6% (assumed)
- For westbound movement on Bob Billings Parkway
  - Approach speed = 40 mph (posted speed limit)
  - Approach grade = -6% (assumed)
- For northbound movement on Crossgate Drive at its intersection with Bob Billings Parkway
  - Stop controlled
  - Approach grade < 3% (assumed)
- Measured ISD (via plan and field check)
  - To the west: Approximately 369' for passenger cars
  - To the east: Unrestricted

Required Minimum ISD Calculations (Based on AASHTO "Green Book", 2011 Edition)

- Left turn from Crossgate Drive onto Bob Billings Parkway (controlled by ISD in both directions)
  - Looking right
    - For passenger cars and 40 mph speed = 475' << unrestricted OK
  - Looking left
    - For passenger cars and 40 mph speed = 385' > 369' **Marginal**
- Right turn from Crossgate Drive onto Bob Billings Parkway (controlled by ISD to the west)
    - For passenger cars and 40 mph speed = 385' > 369' **Marginal**
- Left turn from Bob Billings Parkway onto Crossgate Drive (controlled by ISD to the west)
    - For passenger cars and 40 mph speed = 278' << unrestricted OK

ISD Analysis

Bob Billings Pkwy & Crossgate Dr.

APPENDIX V

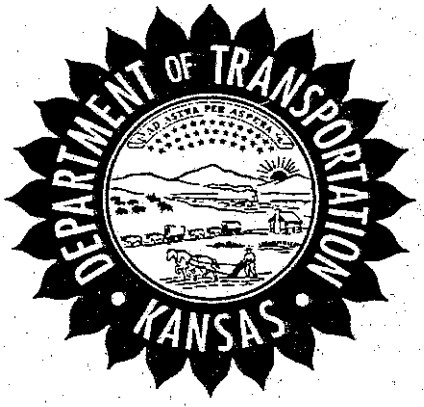
Guidelines for Dedicated Turn-Lanes

At Unsignalized Intersections

Report No. K-TRAN:KSU-95-5
Final Report

GUIDELINES FOR RIGHT-TURN TREATMENTS AT UNSIGNALIZED INTERSECTIONS AND DRIVEWAYS

Tanweer Hasan
Robert W. Stokes
Kansas State University
Manhattan, Kansas



May 1996

K-TRAN

A COOPERATIVE TRANSPORTATION RESEARCH PROGRAM BETWEEN:
KANSAS DEPARTMENT OF TRANSPORTATION
THE KANSAS STATE UNIVERSITY
THE UNIVERSITY OF KANSAS

Table 7.2 Right-turn treatment guidelines for four-lane highways.[a]

(Turning Speed = 15 mph)

Roadway DDHV (vph)	Roadway Operating Speed (mph)											
	40		45		50		55		60		65	
	Lane	Taper	Lane	Taper	Lane	Taper	Lane	Taper	Lane	Taper	Lane	Taper
300						55	75	25	19	9	19	9
400			145	65	75	30	40	17	16	8	15	8
500		140	95	50	57	25	32	14	14	7	13	7
600	160	80	65	30	42	18	26	11	12	6	12	6
800	70	40	37	18	28	12	19	8	11	5	11	5
1200	25	14	20	10	18	8	14	6	8	4	8	4
1600	15	8	14	6	13	6	10	5	7	3	7	3
2000	10	6	9	6	9	4	8	4	6	3	6	3

[a] Minimum right-turn design hour volumes (vph) required to warrant right-turn treatments.

225

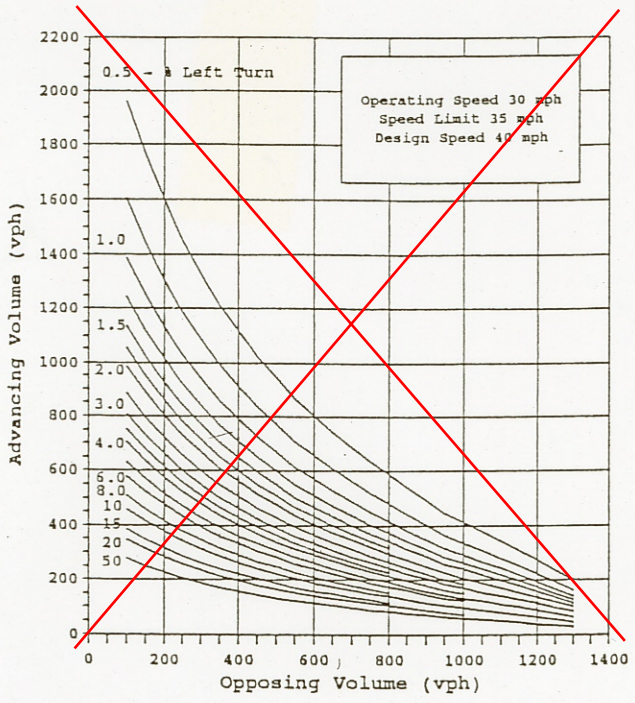
National Cooperative Highway Research Program

NCHRP Synthesis 225

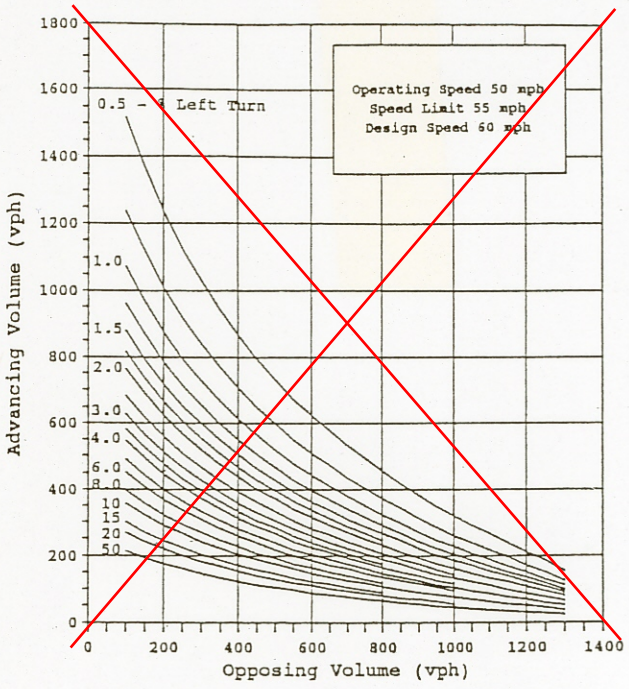
Left-Turn Treatments at Intersections

A Synthesis of Highway Practice

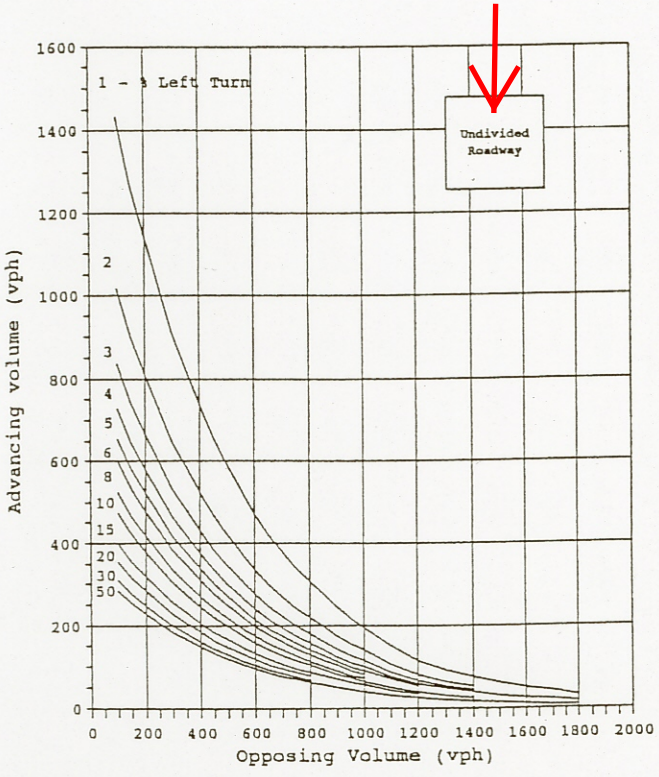
Transportation Research Board
National Research Council



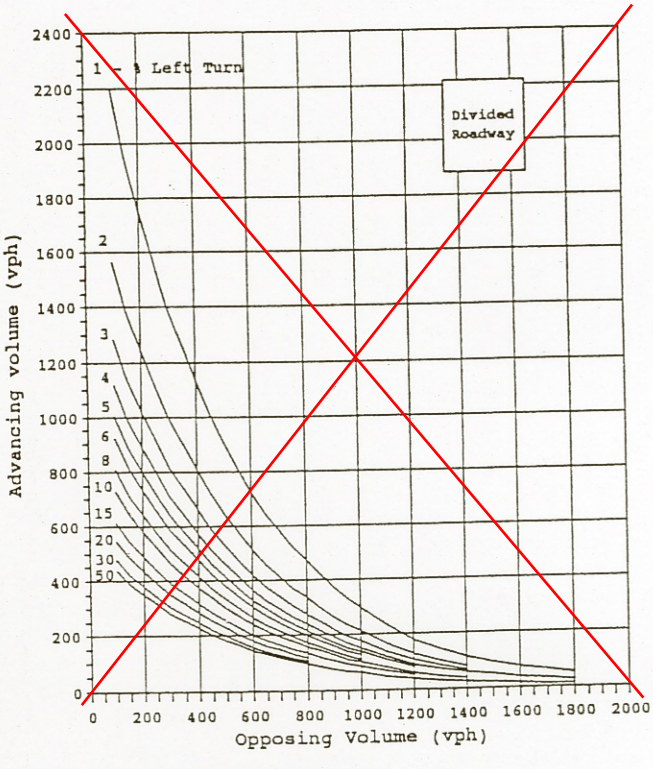
Guidelines for Left-turn Lane at Unsignalized Intersection - Two-lane Roadway



Guidelines for Left-turn Lane at Unsignalized Intersection - Two-lane Roadway



Guidelines for Left-turn Lane at Unsignalized Intersection - Four-lane, Undivided Roadway



Guidelines for Left-turn Lane at Unsignalized Intersection - Four-lane, Divided Roadway

FIGURE 5 ITE guidelines for left-turn lanes. *(18)*

Table 4-28. Recommended left-turn lane warrants for four-lane highways

Left-Turn Volume V_L (vph)	4-Lane Undivided Opposing Volume V_o (vph)	4-Lane Divided Opposing Volume V_o (vph)
≥ 29	Turn lane not warranted unless V_a > 400 vph	Turn lane not warranted unless V_a > 400 vph
28		422
26		474
24		530
22		589
20		652
18		719
16		793
14		873
12	414	962
10	542	1062
8	690	1179
6	867	1319
4	1094	1499
2	1429	1762

Source: Adapted from Harmelink, M. D. Volume Warrants for Left-Turn Storage Lanes at Unsignalized Grade Intersections, Highway Research Record, No. 211, Highway Research Board, National Research Council, Washington, D.C. (1967), pp. 1-18.

Note: Critical gap = 8.0 seconds, time to turn left = 5.3 seconds

APPENDIX VI

Results of Trip Generation Analysis

Using ITE Trip Generation Manual, 9th Edition

Trip Generation Summary - Existing Golf Course
Average Weekday Driveway Volumes

Project: Alvamar Inc One Addition
Alternative: Existing Conditions

Open Date: 12/28/2014
Analysis 12/28/2014

ITE	Land Use	Average Daily Trips			AM Peak Hour Adjacent Street Traffic			PM Peak Hour Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
430	GOLF 1 36 Golf Holes	644	643	1287	58	16	74	54	51	105
Unadjusted Driveway Volume		644	643	1287	58	16	74	54	51	105
Unadjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Adjusted Driveway Volume		644	643	1287	58	16	74	54	51	105
Adjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Adjusted Volume Added to Adjacent Streets		644	643	1287	58	16	74	54	51	105

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - Existing townhomes/patio homes just S/O BB Pkwy
Average Weekday Driveway Volumes

Project: Alvamar Inc One Addition — Open Date: 12/28/2014
Alternative: Existing Conditions — Analysis 12/28/2014

ITE	Land Use	Average Daily Trips Enter	Average Daily Trips Exit	Average Daily Trips Total	AM Peak Hour Adjacent Street Traffic Enter	AM Peak Hour Adjacent Street Traffic Exit	AM Peak Hour Adjacent Street Traffic Total	PM Peak Hour Adjacent Street Traffic Enter	PM Peak Hour Adjacent Street Traffic Exit	PM Peak Hour Adjacent Street Traffic Total
230	CONDO 1	82	81	163	2	10	12	10	5	15
	28 Dwelling Units									
Unadjusted Driveway Volume		82	81	163	2	10	12	10	5	15
Unadjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Adjusted Driveway Volume		82	81	163	2	10	12	10	5	15
Adjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Adjusted Volume Added to Adjacent Streets		82	81	163	2	10	12	10	5	15

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Detailed Land Use Data
For 36 Golf Holes of GOLF 1
(430) Golf Course

Project: Alvamar Inc One Addition
Phase: Existing Golf Course
Description: Crossgate Drive, between Bob Billings Pkwy and Clinton Pkwy

Open Date: 12/28/2014
Analysis Date: 12/28/2014

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1287	0	35.74	14.5	54.44	12.12	20	50	50	False		
Weekday AM Peak Hour of Generator	106	0	2.94	2.25	4.72	1.88	22	53	47	False		
Weekday AM Peak Hour of Adjacent Street Traffic	74	0	2.06	0.61	4.52	1.74	19	79	21	False		
Weekday PM Peak Hour of Generator	128	0	3.56	3.42	3.83	1.87	24	43	57	False		
Weekday PM Peak Hour of Adjacent Street Traffic	105	0	2.92	1.67	4.56	1.86	20	51	49	False		
Saturday Average Daily Trips	1463	0	40.63	16	70.83	17.12	19	50	50	False		
Saturday Peak Hour of Generator	165	0	4.59	1.61	7.17	2.73	19	49	51	False		
Sunday Average Daily Trips	1423	0	39.53	18.89	56.61	13.52	19	50	50	False		
Sunday Peak Hour of Generator	159	0	4.43	2.5	7	2.44	19	50	50	False		

Detailed Land Use Data
For 28 Dwelling Units of CONDO 1
(230) Residential Condominium/Townhouse

Project: Alvamar Inc One Addition
Phase: Existing townhomes/patio homes just S/O BB Pkwy
Description: Crossgate Drive, between Bob Billings Pkwy and Clinton Pkwy

Open Date: 12/28/2014
Analysis Date: 12/28/2014

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	163	0	5.81	1.53	11.79	3.11	179	50	50	False	Ln(T) = 0.87 Ln(X) + 2.46	0.8
Weekday AM Peak Hour of Generator	12	0	0.44	0.15	0.97	0.68	196	19	81	False	Ln(T) = 0.82 Ln(X) + 0.15	0.8
Weekday AM Peak Hour of Adjacent Street Traffic	12	0	0.44	0.15	1.61	0.69	213	17	83	False	Ln(T) = 0.80 Ln(X) + 0.26	0.76
Weekday PM Peak Hour of Generator	15	0	0.52	0.18	1.24	0.75	199	64	36	False	T = 0.34(X) + 35.87	0.82
Weekday PM Peak Hour of Adjacent Street Traffic	15	0	0.52	0.18	1.24	0.75	205	67	33	False	Ln(T) = 0.82 Ln(X) + 0.32	0.8
Saturday Average Daily Trips	159	0	5.67	1.17	11.4	3.1	209	50	50	False	T = 3.62(X) + 427.93	0.84
Saturday Peak Hour of Generator	13	0	0.47	0.14	0.93	0.71	228	54	46	False	T = 0.29(X) + 42.63	0.84
Sunday Average Daily Trips	136	0	4.84	1.36	8.56	2.71	209	50	50	False	T = 3.13(X) + 357.26	0.88
Sunday Peak Hour of Generator	13	0	0.45	0.16	1.07	0.7	228	49	51	False	T = 0.23(X) + 50.01	0.78

Trip Generation Summary - Proposed Conditions
Average Weekday Driveway Volumes

Project: Alvamar Inc One Addition
Alternative: Proposed Conditions

Open Date: 12/28/2014
Analysis 12/28/2014

ITE	Land Use	Average Daily Trips Enter	Average Daily Trips Exit	Average Daily Trips Total	AM Peak Hour Adjacent Street Traffic Enter	AM Peak Hour Adjacent Street Traffic Exit	AM Peak Hour Adjacent Street Traffic Total	PM Peak Hour Adjacent Street Traffic Enter	PM Peak Hour Adjacent Street Traffic Exit	PM Peak Hour Adjacent Street Traffic Total
220	APT 1	1104	1104	2208	34	135	169	134	72	206
	332 Dwelling Units									
230	CONDO 1	558	558	1116	14	70	84	67	33	100
	192 Dwelling Units									
233	LUXCONDO 1				11	38	49	30	18	48
	88 Occupied Dwelling Units									
430	GOLF 1	644	643	1287	58	16	74	54	51	105
	36 Golf Holes									
580	MUSEUM 1				0	0	0	0	0	0
	1.2 Gross Floor Area 1000 SF									
710	OFFICEGENERAL 1	11	11	22	3	0	3	1	2	3
	2 Gross Floor Area 1000 SF									
Unadjusted Driveway Volume		2317	2316	4633	120	259	379	286	176	462
Unadjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	1	3	6
Adjusted Driveway Volume		2317	2316	4633	120	259	379	285	173	456
Adjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Adjusted Volume Added to Adjacent Streets		2317	2316	4633	120	259	379	285	173	456

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 1 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - Apartments
Average Weekday Driveway Volumes

Project: Alvamar Inc One Addition
Alternative: Proposed Conditions

Open Date: 12/28/2014
Analysis 12/28/2014

ITE	Land Use	Average Daily Trips			AM Peak Hour Adjacent Street Traffic			PM Peak Hour Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
220	APT 1 332 Dwelling Units	1104	1104	2208	34	135	169	134	72	206
Unadjusted Driveway Volume		1104	1104	2208	34	135	169	134	72	206
Unadjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Adjusted Driveway Volume		1104	1104	2208	34	135	169	134	72	206
Adjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Adjusted Volume Added to Adjacent Streets		1104	1104	2208	34	135	169	134	72	206

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - Owned Condos/Patio Homes/Townhomes
Average Weekday Driveway Volumes

Project: Alvamar Inc One Addition
Alternative: Proposed Conditions

Open Date: 12/28/2014
Analysis 12/28/2014

ITE	Land Use	Average Daily Trips			AM Peak Hour Adjacent Street Traffic			PM Peak Hour Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
230	CONDO 1	558	558	1116	14	70	84	67	33	100
	192 Dwelling Units									
Unadjusted Driveway Volume		558	558	1116	14	70	84	67	33	100
Unadjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Adjusted Driveway Volume		558	558	1116	14	70	84	67	33	100
Adjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Adjusted Volume Added to Adjacent Streets		558	558	1116	14	70	84	67	33	100

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - Luxury Condos
Average Weekday Driveway Volumes

Project: Alvamar Inc One Addition
Alternative: Proposed Conditions

Open Date: 12/28/2014
Analysis 12/28/2014

ITE	Land Use	Average Daily Trips Enter	Average Daily Trips Exit	Average Daily Trips Total	AM Peak Hour Adjacent Street Traffic Enter	AM Peak Hour Adjacent Street Traffic Exit	AM Peak Hour Adjacent Street Traffic Total	PM Peak Hour Adjacent Street Traffic Enter	PM Peak Hour Adjacent Street Traffic Exit	PM Peak Hour Adjacent Street Traffic Total
233	LUXCONDO 1				11	38	49	30	18	48
	88 Occupied Dwelling Units									
Unadjusted Driveway Volume		0	0	0	11	38	49	30	18	48
Unadjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Adjusted Driveway Volume		0	0	0	11	38	49	30	18	48
Adjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Adjusted Volume Added to Adjacent Streets		0	0	0	11	38	49	30	18	48

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - Extended Stay Suites/Cabins
Average Weekday Driveway Volumes

Project: Alvamar Inc One Addition
Alternative: Proposed Conditions

Open Date: 12/28/2014
Analysis 12/28/2014

ITE	Land Use	Average Daily Trips			AM Peak Hour Adjacent Street Traffic			PM Peak Hour Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
	Unadjusted Driveway Volume	0	0	0	0	0	0	0	0	0
	Unadjusted Pass-By Trips	0	0	0	0	0	0	0	0	0
	Internal Capture Trips	0	0	0	0	0	0	0	0	0
	Adjusted Driveway Volume	0	0	0	0	0	0	0	0	0
	Adjusted Pass-By Trips	0	0	0	0	0	0	0	0	0
	Adjusted Volume Added to Adjacent Streets	0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - 36-Hole Golf Course
Average Weekday Driveway Volumes

Project: Alvamar Inc One Addition
Alternative: Proposed Conditions

Open Date: 12/28/2014
Analysis 12/28/2014

ITE	Land Use	Average Daily Trips Enter	Average Daily Trips Exit	Average Daily Trips Total	AM Peak Hour Adjacent Street Traffic Enter	AM Peak Hour Adjacent Street Traffic Exit	AM Peak Hour Adjacent Street Traffic Total	PM Peak Hour Adjacent Street Traffic Enter	PM Peak Hour Adjacent Street Traffic Exit	PM Peak Hour Adjacent Street Traffic Total
430	GOLF 1	644	643	1287	58	16	74	54	51	105
	36 Golf Holes									
Unadjusted Driveway Volume		644	643	1287	58	16	74	54	51	105
Unadjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Adjusted Driveway Volume		644	643	1287	58	16	74	54	51	105
Adjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Adjusted Volume Added to Adjacent Streets		644	643	1287	58	16	74	54	51	105

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - KS Golf Hall of Fame
Average Weekday Driveway Volumes

Project: Alvamar Inc One Addition — Open Date: 12/28/2014
Alternative: Proposed Conditions — Analysis 12/28/2014

ITE	Land Use	Average Daily Trips Enter	Average Daily Trips Exit	Average Daily Trips Total	AM Peak Hour Adjacent Street Traffic Enter	AM Peak Hour Adjacent Street Traffic Exit	AM Peak Hour Adjacent Street Traffic Total	PM Peak Hour Adjacent Street Traffic Enter	PM Peak Hour Adjacent Street Traffic Exit	PM Peak Hour Adjacent Street Traffic Total
580	MUSEUM 1				0	0	0	0	0	0
	1.2 Gross Floor Area 1000 SF									
Unadjusted Driveway Volume		0	0	0	0	0	0	0	0	0
Unadjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Adjusted Driveway Volume		0	0	0	0	0	0	0	0	0
Adjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Adjusted Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - General Independent Office
Average Weekday Driveway Volumes

Project: Alvamar Inc One Addition
Alternative: Proposed Conditions

Open Date: 12/28/2014
Analysis 12/28/2014

ITE	Land Use	Average Daily Trips Enter	Average Daily Trips Exit	Average Daily Trips Total	AM Peak Hour Adjacent Street Traffic Enter	AM Peak Hour Adjacent Street Traffic Exit	AM Peak Hour Adjacent Street Traffic Total	PM Peak Hour Adjacent Street Traffic Enter	PM Peak Hour Adjacent Street Traffic Exit	PM Peak Hour Adjacent Street Traffic Total
710	OFFICEGENERAL 1	11	11	22	3	0	3	1	2	3
	2 Gross Floor Area 1000 SF									
Unadjusted Driveway Volume		11	11	22	3	0	3	1	2	3
Unadjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Adjusted Driveway Volume		11	11	22	3	0	3	1	2	3
Adjusted Pass-By Trips		0	0	0	0	0	0	0	0	0
Adjusted Volume Added to Adjacent Streets		11	11	22	3	0	3	1	2	3

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Detailed Land Use Data
For 332 Dwelling Units of APT 1
(220) Apartment

Project: Alvamar Inc One Addition
Phase: Apartments
Description: Crossgate Drive, between Bob Billings Pkwy and Clinton Pkwy

Open Date: 12/28/2014
Analysis Date: 12/28/2014

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	2208	0	6.65	1.27	12.5	3.07	210	50	50	False	T = 6.06(X) + 123.56	0.87
Weekday AM Peak Hour of Generator	183	0	0.55	0.1	1.08	0.76	230	29	71	False	T = 0.54(X) + 2.45	0.82
Weekday AM Peak Hour of Adjacent Street Traffic	169	0	0.51	0.1	1.02	0.73	235	20	80	False	T = 0.49(X) + 3.73	0.83
Weekday PM Peak Hour of Generator	222	0	0.67	0.1	1.64	0.85	229	61	39	False	T = 0.60(X) + 14.91	0.8
Weekday PM Peak Hour of Adjacent Street Traffic	206	0	0.62	0.1	1.64	0.82	233	65	35	False	T = 0.55(X) + 17.65	0.77
Saturday Average Daily Trips	2121	0	6.39	2.84	8.4	2.99	175	50	50	False	T = 7.85(X) - 256.19	0.85
Saturday Peak Hour of Generator	173	0	0.52	0.26	1.05	0.74	178	50	50	False	T = 0.41(X) + 19.23	0.56
Sunday Average Daily Trips	1946	0	5.86	3.21	7.53	2.73	182	50	50	False	T = 6.42(X) - 101.12	0.82
Sunday Peak Hour of Generator	169	0	0.51	0.26	1.43	0.75	186	50	50	False		

Detailed Land Use Data
For 192 Dwelling Units of CONDO 1
(230) Residential Condominium/Townhouse

Project: Alvamar Inc One Addition
Phase: Owned Condos/Patio Homes/Townhomes
Description: Crossgate Drive, between Bob Billings Pkwy and Clinton Pkwy

Open Date: 12/28/2014
Analysis Date: 12/28/2014

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1116	0	5.81	1.53	11.79	3.11	179	50	50	False	Ln(T) = 0.87 Ln(X) + 2.46	0.8
Weekday AM Peak Hour of Generator	84	0	0.44	0.15	0.97	0.68	196	19	81	False	Ln(T) = 0.82 Ln(X) + 0.15	0.8
Weekday AM Peak Hour of Adjacent Street Traffic	84	0	0.44	0.15	1.61	0.69	213	17	83	False	Ln(T) = 0.80 Ln(X) + 0.26	0.76
Weekday PM Peak Hour of Generator	100	0	0.52	0.18	1.24	0.75	199	64	36	False	T = 0.34(X) + 35.87	0.82
Weekday PM Peak Hour of Adjacent Street Traffic	100	0	0.52	0.18	1.24	0.75	205	67	33	False	Ln(T) = 0.82 Ln(X) + 0.32	0.8
Saturday Average Daily Trips	1089	0	5.67	1.17	11.4	3.1	209	50	50	False	T = 3.62(X) + 427.93	0.84
Saturday Peak Hour of Generator	90	0	0.47	0.14	0.93	0.71	228	54	46	False	T = 0.29(X) + 42.63	0.84
Sunday Average Daily Trips	929	0	4.84	1.36	8.56	2.71	209	50	50	False	T = 3.13(X) + 357.26	0.88
Sunday Peak Hour of Generator	86	0	0.45	0.16	1.07	0.7	228	49	51	False	T = 0.23(X) + 50.01	0.78

Detailed Land Use Data
For 88 Occupied Dwelling Units of LUXCONDO 1
(233) Luxury Condominium/Townhouse

Project: Alvamar Inc One Addition
Phase: Luxury Condos
Description: Crossgate Drive, between Bob Billings Pkwy and Clinton Pkwy

Open Date: 12/28/2014
Analysis Date: 12/28/2014

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday AM Peak Hour of Generator	57	0	0.65	0.58	0.69	0.81	110	32	68	False	T = 0.71(X) - 6.31	0.98
Weekday AM Peak Hour of Adjacent Street Traffic	49	0	0.56	0.5	0.62	0.75	110	23	77	False	Ln(T) = 0.76 Ln(X) + 0.54	0.93
Weekday PM Peak Hour of Generator	57	0	0.65	0.6	0.72	0.81	110	60	40	False		
Weekday PM Peak Hour of Adjacent Street Traffic	48	0	0.55	0.48	0.63	0.74	110	63	37	False	T = 0.78(X) - 25.38	0.99

Detailed Land Use Data
For 36 Golf Holes of GOLF 1
(430) Golf Course

Project: Alvamar Inc One Addition
Phase: 36-Hole Golf Course
Description: Crossgate Drive, between Bob Billings Pkwy and Clinton Pkwy

Open Date: 12/28/2014
Analysis Date: 12/28/2014

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1287	0	35.74	14.5	54.44	12.12	20	50	50	False		
Weekday AM Peak Hour of Generator	106	0	2.94	2.25	4.72	1.88	22	53	47	False		
Weekday AM Peak Hour of Adjacent Street Traffic	74	0	2.06	0.61	4.52	1.74	19	79	21	False		
Weekday PM Peak Hour of Generator	128	0	3.56	3.42	3.83	1.87	24	43	57	False		
Weekday PM Peak Hour of Adjacent Street Traffic	105	0	2.92	1.67	4.56	1.86	20	51	49	False		
Saturday Average Daily Trips	1463	0	40.63	16	70.83	17.12	19	50	50	False		
Saturday Peak Hour of Generator	165	0	4.59	1.61	7.17	2.73	19	49	51	False		
Sunday Average Daily Trips	1423	0	39.53	18.89	56.61	13.52	19	50	50	False		
Sunday Peak Hour of Generator	159	0	4.43	2.5	7	2.44	19	50	50	False		

Detailed Land Use Data
For 1.2 Gross Floor Area 1000 SF of MUSEUM 1
(580) Museum

Project: Alvamar Inc One Addition
Phase: KS Golf Hall of Fame
Description: Crossgate Drive, between Bob Billings Pkwy and Clinton Pkwy

Open Date: 12/28/2014
Analysis Date: 12/28/2014

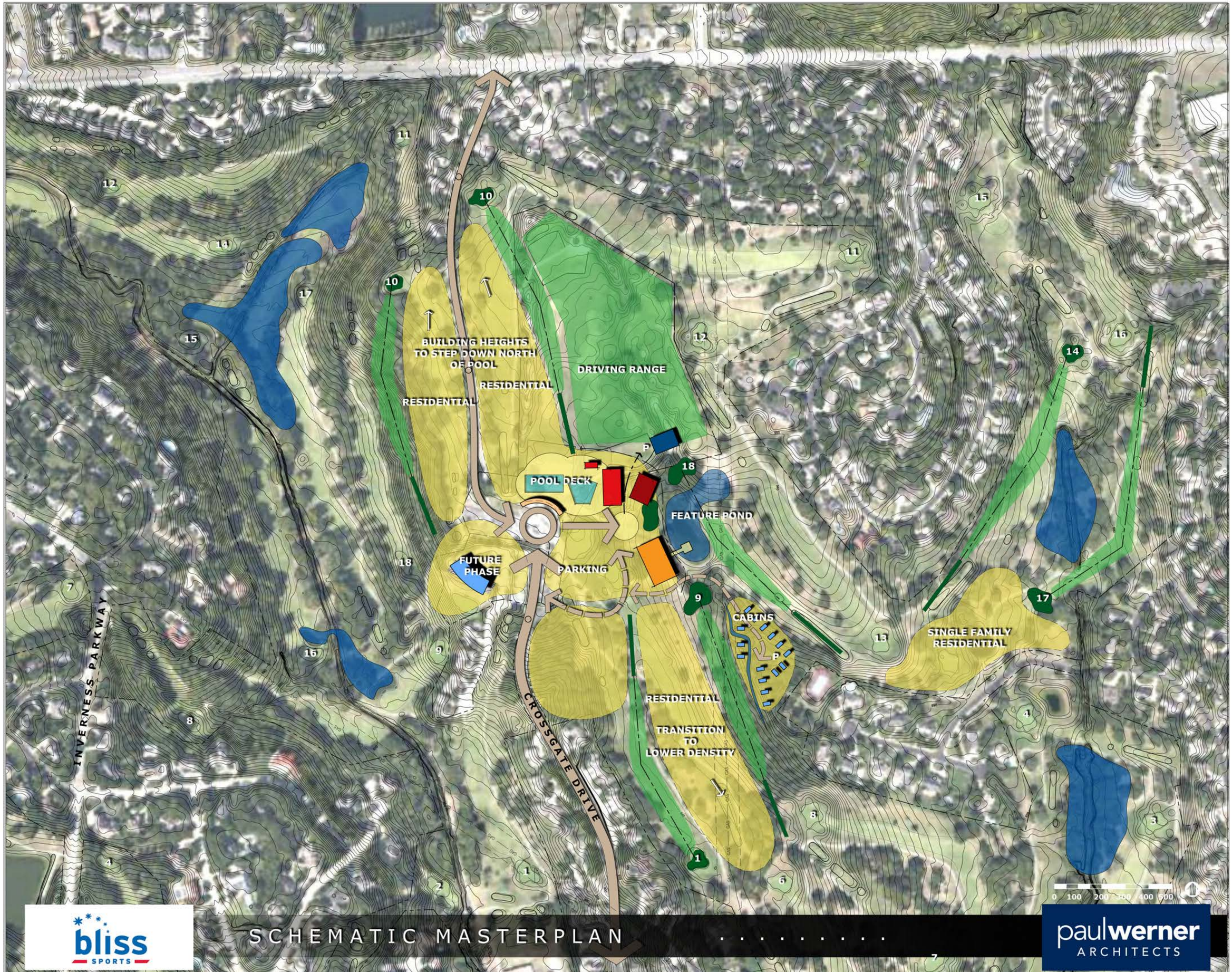
Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday AM Peak Hour of Generator	0	0	0.35				176	40	60	False		
Weekday AM Peak Hour of Adjacent Street Traffic	0	0	0.28				176	86	14	False		
Weekday PM Peak Hour of Adjacent Street Traffic	0	0	0.18				176	16	84	False		
Saturday Peak Hour of Generator	1	0	0.66				176	71	29	False		

Detailed Land Use Data
For 2 Gross Floor Area 1000 SF of OFFICEGENERAL 1
(710) General Office Building

Project: Alvamar Inc One Addition
Phase: General Independent Office
Description: Crossgate Drive, between Bob Billings Pkwy and Clinton Pkwy

Open Date: 12/28/2014
Analysis Date: 12/28/2014

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	22	0	11.03	3.58	28.8	6.15	197	50	50	False	Ln(T) = 0.76 Ln(X) + 3.68	0.81
Weekday AM Peak Hour of Adjacent Street Traffic	3	0	1.56	0.6	5.98	1.4	222	88	12	False	Ln(T) = 0.80 Ln(X) + 1.57	0.83
Weekday PM Peak Hour of Adjacent Street Traffic	3	0	1.49	0.49	6.39	1.37	215	17	83	False	T = 1.12(X) + 78.45	0.82
Saturday Average Daily Trips	5	0	2.46	0.59	14.67	2.21	75	50	50	False	T = 2.03(X) + 31.75	0.64
Saturday Peak Hour of Generator	1	0	0.43	0.16	1.77	0.72	90	54	46	False		
Sunday Average Daily Trips	2	0	1.05	0.19	7.33	1.43	75	50	50	False		
Sunday Peak Hour of Generator	0	0	0.16	0.06	1.37	0.44	90	58	42	False		



SCHEMATIC MASTERPLAN

bliss SPORTS

paulwerner ARCHITECTS

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Gordon E. Abernathy
1530 St. Andrews Drive
Lawrence, KS 66047
February 9, 2015

RECEIVED
FEB 12 2015
City County Planning Office
Lawrence, Kansas

City of Lawrence
Douglas County
Planning & Development Services
6 East 6th Street
P. O. Box 708
Lawrence, KS 66044

Re: Z-14-00552
Z-14-00553
PP-14-00554
PP-14-00555

Gentlemen:

I would strenuously object to the above requested rezoning requests and preliminary plat requests from Alvamar, Inc. for the following reasons:

(1) These changes would do away with open green space which is essential for the ecological balance of the area. The golf course, even though designed for a specific use, provides open green space. This should be preserved. Lawrence, a city which prides itself on being "green," certainly shouldn't allow this to happen.

(2) These requested changes would pack additional residents in an already crowded residential area. The multi-family dwellings, particularly, would detract from the beauty of the green space the golf course provides. Multiple cars, trash carts, etc., brought about by multiple family dwelling space should not be allowed in these areas.

(3) The city infrastructure, particularly the streets leading into the area, Bob Billings Parkway, Clinton Parkway, and Crossgate Drive, are not adequate to carry the additional traffic that these additional residences would generate. They are inadequate to handle the traffic that exists today; and the City's current practice of calming traffic by installing roundabouts in congested areas would only aggravate the problems.

I would ask the Planning Commission to deny these requested changes.

Respectfully submitted,

Gordon E. Abernathy

Lori L. Heasty
John B. Patterson
1909 Quail Run
Lawrence, KS 66049
(785) 691-5924

RECEIVED

FEB 11 2015

City County Planning Office
Lawrence, Kansas

February 11, 2015

Sandra Day
City of Lawrence Douglas County
Planning & Development Services
6 East 6th Street
P.O. Box 708
Lawrence, Kansas 66044

Re: Z-14-00552; Z-14-00553; PP-14-00554; PP-14-00555

Dear Ms. Day:

I am writing you on behalf of my husband and myself in regard to the proposed Application filed by Paul Werner Architects on behalf of Alvamar Inc. to re-zone and re-plat certain properties as described in the above referenced submittals. I want to thank you and the Planning Staff for your assistance in explaining the process to me and the submitted requests before the Planning Commission.

The residential area we live in is part of the Quail's Nest at Alvamar Condominium and is accessed by a private drive directly to the South of Alvamar Country Clubhouse. The private drive is owned by the Homeowner's Association with a shared access off of South Crossgate and is shared by Quail's Nest and Alvamar Country Club. My husband and I live at 1909 Quail Run, which is fronted by the private drive and #one tee box on the private side of the golf course and the back of our condo is close to #9 green on the private side of the golf course.

As I understand it, the Applicant, Paul Werner Architects on behalf of Alvamar Inc. has submitted two re-zoning requests and two corresponding preliminary plats, one of 51.85 acres from RS 7, RM12 & PUD (Alvamar) Districts to RM 24, which then will re-plat said acreage into 6 lots; and then one of 5.18 acres from PUD (Alvamar) to RS7. The area for proposed re-platting is contiguous with our neighborhood, Quail's Nest to the north, is "four doors up" from my home; it also is directly across the street to the east and runs to the south. We will be significantly impacted by any change in zoning that allows for more building, more businesses and more traffic.

The Applicant has requested that "conventional zoning" be used with no "overlay" district requirements. "Overlay" really means "oversight." Therefore, if the proposed application were approved as submitted, then any subsequent re-zoning and preliminary plats would be fairly summarily approved, with little opportunity for input from adjacent property

owners until after the formal process began and perhaps long after the informal discussions with city planners began. There would be no opportunity for input from the City's elected officials.

The carte blanche the Applicant seeks, to reconfigure this area created under a PUD, may never be appropriate in any case, given the care and commitment required to create a PUD in the first place. But the cart blanche now requested should be denied given that it has the potential to recreate an area that is so important to the City at large and to an extremely large group of Lawrence citizens who through their home purchases made lifetime investments in the Alvamar area as it exists today. This is what the Summer 2013 edition of the *Lawrence Business Magazine* wrote:

> Few businesses have as much of an impact on Lawrence as Alvamar. The club boosts 36 holes, a swimming pool and countless real estate holdings. The 36-hole facility covers most of the land from the intersection of Bob Billings Ave and Kasold to the intersection of Clinton Parkway and Wakarusa.
>
> "It's hard to argue the impact of Alvamar," says J. Taylor, Director of Memberships at Alvamar Country Club. "West Lawrence was literally built around the golf courses."

At this time, the Applicant has submitted "concept plans" only, which are admittedly attractive drawings of what could be or might be. But the drawings decidedly are not what necessarily will be; in fact, the Applicant has provided no plans for what is proposed particularly as to what is being done with the re-plat of the 51.85 acres into 6 lots that is so close to our home.

The Applicant has given the planning staff a list of intended development for the 6 lots, which said development includes over 600 dwelling units that range from two 120 unit apartment complexes, condominiums, patio homes, and "luxury" condominiums. However, based on the current Application, if re-zoning and re-platting were to occur even the list of intended development could change as long as the requirements of RM 24 (that is 24 units per acre) are not violated. This means that some 1244 dwelling units could actually be built on these 51.85 acres.

Therefore, this Applicant's requests are completely open-ended in favor of the Applicant and the future purchaser of all the realty owned by Alvamar, Inc. This request also completely eliminates the present requirement (which, as I understand it, has been in place since the creation of the golf course and its environs) to take into consideration the overall PUD of the surrounding area. As we all know this land in question is part of the Alvamar Country Club golf course under a purchase agreement at this time by a known developer's company.

At this time we oppose the Application for re-zoning and re-platting as submitted, particularly with respect to the 51.85 acres, for the following reasons.

1. This area is a mature developed area that was developed over the last four decades as a Planned Unit Development with two 18 hole golf courses and surrounding residential areas that created a blend of uses that benefit our Lawrence community as a whole. Landuse tenets that first gave the green light for the then-innovative PUD, made clear that a PUD must be created for the benefit of the whole community and not for the individual property owner alone. Otherwise the PUD would amount to an illegal spot zoning.

In this case, the original development was part of a PUD and now the proposed Application wishes to change the zoning without recognition of the original PUD and the potential negative impact on all of the other parcels that make up the original PUD, ie Alvamar golf course complex.

Even though the two steps are remote in time, the Applicant seeks to defeat the original requirements imposed upon this PUD by breaking it apart in a way that significantly changes the original Alvamar development and, we contend, does significant harm to property owners within the original development who are nearby the areas proposed for re-platting. The mere passage of time should not remove the care and oversight that the PUD overlay process requires and that the City and its citizens deserve.

2. While original Alvamar development may have contemplated greater number of residential and/or multi family structures, the final development in the proposed 51.85 acres were PUD (Alvamar-for golf course) and RM12. There is nothing that has changed within the original PUD to compel a change in zoning in any part of it. Our residential area is comprised of eight condominiums of some 4000 square feet each with covenants and restrictions that were filed by the original developer to create and maintain the control of the residential area so that it would continue to fit into and enhance the golf course complex and the other residential areas. These declarations were filed for many of the residential areas surrounding Alvamar golf course and those areas adjacent to or directly impacted by the proposed re-zoning and re-platting. Implicit within those covenants and restrictions was the commitment that the owner of the golf course and its environs would not adversely impact our residential enclave. Denying the present re-plat is the only way to guarantee that homeowners and golf course owners will continue their "win-win" relationship established by the rules and requirements of the original PUD.

3. The proposed preliminary plat of the 51.85 acres divides the acreage into 6 lots, with the following number of dwellings suggested:

Lot 1- 120 apartments and 24 patio homes/condominiums
Lot 2- 120 apartments and 24 patio homes/condominiums
Lot 3- golf course and 48 condominiums
Lot 4- 92 units
Lot 5- 48 patio homes and 48 condominiums
Lot 6- 88 "luxury" condominiums

Plus the following additions and/or changes to golf complex facilities:
Club house
15,000 sq. ft. facility
Outdoor snack bar/grill
2-3 swimming pools
Fitness center
Golf Hall of Fame
4000 sq. ft. office building with part to be rented to tenant

That is a lot of proposed "concept" development with no objective standards or requirements or other criteria that might help the Staff and the Planning Commission evaluate how it enhances or benefits the existing area. In fact, if this Application were approved, there could be even more dwellings if the land is re-zoned to RM24. Currently, there are no apartments in the area and that was by design by the original developer and controlled through the declarations of each homeowner's association created and filed at the time of development. To allow the potential for this intensive a change to the existing layout of the PUD, is essentially to embolden the Applicant to pack as much development into these locations as is in its financial best interests regardless of the impact upon other areas of the PUD and its environs. To allow the re-plat is to arm the Applicant with the argument that somehow these "concepts" tacitly were approved by this process, so there is no further need for the careful overlay/oversight built in to the regular PUD process.

Lot 6 is adjacent to land owned by the Quail's Nest Homeowner's Association. Currently, the clubhouse is an organic structure that blends into the environment. While my husband and I do not absolutely object to a new structure there with nearby "luxury" condominiums, we fear the impact that "88" condominiums, particularly if they are not owner-occupied and really are 88 apartments occupied by tenants who do not have a financial stake in their home, let alone in the PUD and its environs. In addition, there is no height limitation. Therefore, there could be a seven story structure that blocks views and does not fit within the entire look of the residential/golf complex.

It is our understanding that the majority if not all of Lot 6 is already zoned RM12. If we are truly looking at luxury condominiums, isn't the current zoning adequate and if not, what reason is given to change that zoning other than to just have the right to build more units?

4. Based on the proposed number of at least 600 dwelling units plus the golf complex buildings there is a serious problem with the access and potential increased traffic to this area. This area is the "oasis" in the middle of two 18 hole golf courses. There is one public road in from the South (Crossgate). Crossgate from the North is a private road and is too narrow at this time to accommodate the increased traffic; the private road cannot be widened because of the structures in the way. It was discussed that South Crossgate, the public road, be extended to gain greater access, however, that is still just one road with only one point of egress, which is onto Clinton Parkway. Certainly until such time as it is ascertained that the private road can be

widened to provide the kind of access to Bob Billings Parkway that any kind of good planning requires, the re-plat should be denied for this reason alone.

The proposed number of dwelling units will sharply increase traffic, congestion and change the usage of the neighborhood. In order to accommodate the proposed units in Lot 4 and Lot 5, there will be have to be streets that are accessed off of South Crossgate. The potential burden of that traffic has to be considered in the proposal and it is not at this time. There is no information at all available to the public and what the potential negative impact is.

In our particular case, our homeowner's association owns a private drive that is accessed off of South Crossgate over a mutual access drive for the benefit of our Quail's Nest Condominiums and Alvamar Country Club. Obviously, an increase in traffic will have a negative impact in our access without regard for the increased costs of maintenance we will be forced to bear.

5. The proposed Application also creates a parking issue. Currently, when Alvamar has large golf course tournaments and both courses are used, there is not enough parking. Cars are parked on Crossgate to the South and to the North to accommodate the events. It is hard to contemplate the amount of additional parking that will be required to accommodate the changes in the golf complex plus increase in dwellings.

In summary, my husband and I feel that the proposed Application is truly a redevelopment of the Alvamar Golf Complex and surrounding residential areas. While the overall future purchase of the golf courses is a benefit to Lawrence and the residents, the process that is being used by the Applicant is the incorrect process.

This development began in 1966 and was subsequently developed in stages which resulted in a comprehensive, complex and desirable area, which includes residential properties and multifamily properties of high value along with a nationally recognized golf course. This area deserves to be re-developed through a Planned Urban Development process with an "overlay" to insure that the integrity of the area and the overall integration of the area stays as it was originally intended. This is only accomplished with more defined plans, transparency by the developer and public input. Therefore, we request that the Application for re-zoning and preliminary plat known as *Z-14-00552; Z-14-00553; PP-14-00554; PP-14-00555* be denied as submitted.

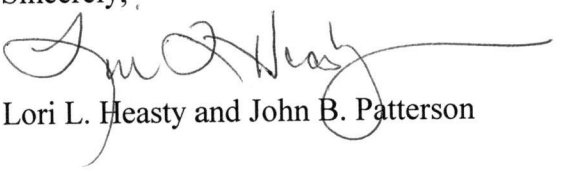
In closing, we would like to say that when Bob Billings passed away, 15th Street was renamed to honor his long-term vision and accomplishment with the Alvamar area, which includes more than just the golf courses. In addition, the Honorable Dennis Moore of Kansas placed in the House of Representatives' record a Tribute to the Late Bob Billings of Lawrence, Kansas, which in part states, "There is a quality of life around here (Alvamar) that would not exist if he had not been the active, optimistic, visionary, enthusiastic person he was." "Most notably, Bob Billings designed and developed the Alvamar development, more than 3000 acres

of residential and commercial property, a nationally recognized public golf course and country club complex."

We feel that Bob's legacy can live on through the redevelopment of Alvamar, but the care and oversight that formed this area in its creation must continue. Bob's memory deserves this; so do the citizens surrounding Alvamar, as well as the City at large.

Thank you for your time.

Sincerely,



Lori L. Heasty and John B. Patterson

City of Lawrence Kansas
Planning & Development Services

February 18, 2015

Dear Commissioners:

The planning commission should consider the overall outlook for the properties Z-14-00552 ,Z-1400553, PP-14-0054 and PP-14-00555.
It is a well documented fact the number of golfers is declining. Many golf courses across the country have closed due to a lack of funding caused by declining membership and fewer golfers. The game of golf just takes too long for today's fast passed society. Fewer and fewer people have the 6 hours available to play a round of golf.

Recently Alvamar sold part of itself to a local developer under the assumption the new owner would continue to main the golf club. To maintain an 18 hole golf course costs about 1 million dollars a year. The developer needs the zoning changes and resulting revenue stream of property sales to meet the financial obligation he has committed too since course usage will not generate all of the income needed to maintain the golf course. What we are looking at is a continued shrinkage of the golf coarse over the next decade as course revenue continues to fall. The owner will next want to rezone 9 holes of the course for development. Each rezoning is not in the public interest it is in the new owner's financial interest.
If the new owner thinks my comments are not correct than he should be willing to put up a 10 year performance bond that will contribute $500,000 per year to coarse maintence if golf fees fall short. If the owner fails to produce the other $500,000 needed to maintain the 18 hole coarse the performance bond would fulfill the owners obligation.

Since KU is involved in this whole ownership change process the University has a great deal of underutilized property on the south east corner of W 15th Street (Bob Billings) and Kasold which the university could make available for residential development. This is based on the assumption that the planning commission what's to have a higher population density west of Iowa Street and east of Wakarusa Drive.

Our Mayor has stated he thinks Lawrence will grow for the foreseeable future. It will be wonderful to have large green spaces in the middle of our growing and prosperous city. Take a look at Chicago and how wonderful the green spaces make the city feel. The planning commission should keep in mind the long term goals of our people and community. I realize you are under a great deal of pressure from developers who are in the business of making money. Let's not let the short term do ill-reputable harm to the livability of our community.

The possibility to delay a decision might be considered since the request closely follows on the heels of the property acquisition. Since the submission has already been prepared by Paul Werner it is obvious the plan was well underway before the property actually changed hands. It is my opinion if the planning commission is really interested in the public good a delay of six months or more would be a prudent course of action.

Respectfully Submitted by:

Richard Fanter
4608 Turnberry Drive
Lawrence, Ks 66047

February 19, 2015

Lawrence Metropolitan Planning Commission
c/o Sandra Day, AICP
Planner II
City of Lawrence
PO Box 708
Lawrence, KS 66044

Dear Commissioners:

This letter is written to register the comments of the undersigned concerning item Z-14-00552 scheduled to be considered at the February 23, 2015 meeting of the Planning Commission. We own homes located along the west side of #1 Fairway (Lot 5) on Alvamar's Public Course. The back of our homes look east across #1 and #9 Fairways. The zoning request's Master Plan calls for "residential transition to lower density" along #9 Fairway.

We reviewed materials mailed to us by Sandra Day and also met separately with Ms. Day and Paul Werner.

We believe the Master Plan conceptuals would benefit the Alvamar area and are generally supportive of seeing the plan accomplished. We have several questions and requests we hope the Planning Commission will consider in its discussion of the proposed zoning changes:

- Structure Height –We prefer to have a continued unobstructed view of the land east of our homes. That being said, we otherwise hope and respectfully request that houses built in the area along #9 Fairway east of our homes have a lower profile, preferably not to exceed one story above grade.

- Water Runoff – Several underground springs require year-round sump pump operation for a number of our homes. Storm runoff also produces problems. We would like to be assured that construction activities and future structures identified in the Master Plan will involve appropriate engineering solutions to eliminate the possibility of exacerbating our current drainage conditions.

- Traffic/Access – We understand the area where the public clubhouse is located may be the site of higher density residential structures that will increase traffic volumes and possibly stress Crossgate Drive particularly at its north entrance intersecting with Bob Billings Avenue. We assume these issues will be addressed and managed.

- Location of #1 Fairway – It is our understanding that the #1 tee box may be relocated somewhat to the east of its present location, but that the balance of #1 Fairway would not be moved west and closer to our property lines. We would be concerned with any change that moves #1 Fairway closer to our property lines. Doing so would be inconsistent with the original Alvamar Planned Unit Development and increase the number of errant golf balls flying onto our properties that create personal safety issues.

The Master Plan is understandably non-specific at this stage. We assume this proposal is under consideration for conventional zoning and that this might limit our opportunity to receive additional information and offer feedback once the plan is further defined. Therefore, we prefer that a Planning Development

Overlay be approved that would provide all parties an opportunity to confirm that the Master Plan concepts are consistent with final build out plans.

In closing, we wish to reiterate our support for the development concepts described within the Master Plan. We believe the concerns we have identified can be satisfactorily resolved and that the project will benefit Alvamar and its neighborhoods.

Thank you for your consideration of our thoughts.

Respectfully submitted,

Marty Smith
1906 Crossgate Dr

Lew & Carolyn Phillips
2000 Crossgate Dr

Kay Mueller
1908 Crossgate Dr

Steve & Jenni Koger
2004 Crossgate Dr

Pat Webb
1910 Crossgate Dr

February 23, 2015

Bruce Liese, Chair
Clay Britton, Vice Chair
Members of the Lawrence/Douglas County Planning Commission,

Re: PP-14-00555: consider a Preliminary Plat for Alvamar Inc. Two Addition, a one-lot subdivision containing 5.18 acres with frontage on the north side of Quail Creek Drive. The subdivision is proposed to support future low-density residential development.

Dear Commission Members:

As the neighbors in the area known as the Oasis at Alvamar, located on the south side of Quail Creek Drive and both sides of Quail Creek Court, and on Alvamar Drive we want to thank Thomas Fritzel for deferring the rezoning for the property that is currently part of the Alvamar Golf Course and adjacent to many of our homes. With the tragic loss of one of our neighbors we appreciate his sensitivity to the recent events and his willingness to postpone any action until all of our neighbors can appropriately address our concerns.

We are generally supportive of the efforts being made to enhance the overall financial stability of the Alvamar Golf and Country Club and appreciate the opportunity to continue a productive dialogue with the developers. An open and constructive dialogue with all the homeowners in the affected areas will ensure that the outcome is beneficial not only for the owners of the golf and country club but recognizes and respects the concerns of the existing homeowners. A successful project benefits not just all of us but will be a tribute to the legacy of Bob Billings whose vision for Alvamar should be enhanced and respected.

We realize that nothing will happen tonight that has a direct impact on our neighborhood,

February 23, 2015

but we want to submit some of our general observations and concerns for the record.

1. If the property is ultimately rezoned it should reflect the density of the surrounding area and be platted in such a way that minimizes the impact on existing homes.

2. The traffic that would be generated if the area under consideration would be developed to the maximum allowed under the requested zoning would affect not just our area but would have a big impact on the homes along St. Andrews, Tam O'Shanter and Quail Creek Drive(s).

3. Much of this area is currently in a flood plain designation so any future development needs to demonstrate that any additional run-off from the new buildings is adequately managed and controlled.

We recognize that this property is not on the agenda for discussion tonight but wanted to have our concerns included in the proceedings of tonight's public hearing. Our concerns are shared by other homeowners in the affected areas that are under consideration. We hope that as this process moves forward their concerns are addressed and accommodated. A successful project will result when all points of view have an opportunity to be heard. And a successful project which keeps Alvamar neighborhoods and Alvamar Golf and Country Club as a viable part of the Lawrence community is a classic win-win scenario.

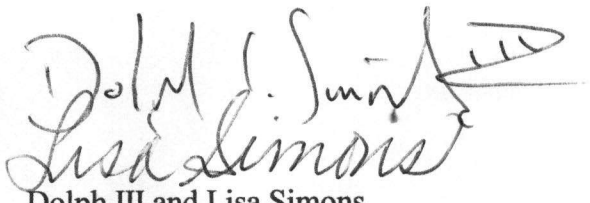
Mark and Sandy Praeger
3601 Quail Creek Court

Sandy Praeger
Mark Praeger

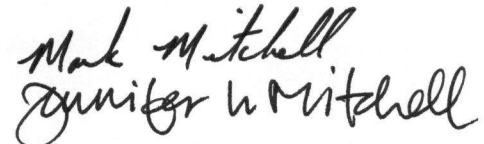
Dale and Connie Friesen
3604 Quail Creek Court

Dale Friesen
Connie Friesen

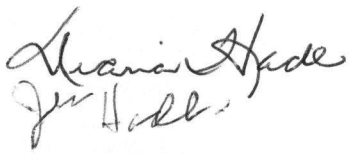
February 23, 2015



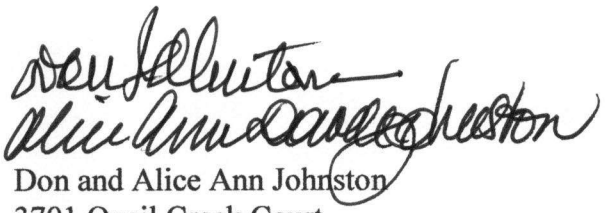
Dolph III and Lisa Simons
3608 Quail Creek Court



Mark and Jennifer Mitchell
3609 Quail Creek Court

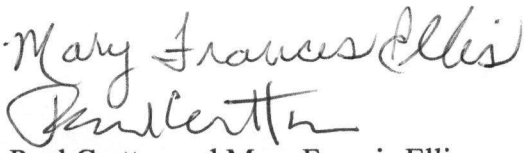


John and Diana Hadl
3700 Quail Creek Court

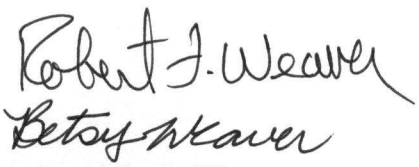


Don and Alice Ann Johnston
3701 Quail Creek Court

Teresa Hanna
3706 Quail Creek Court



Paul Carttar and Mary Francis Ellis
3709 Quail Creek Court



Rob and Betsy Weaver
1589 Alvamar Drive

February 23, 2015

Bruce Liese, Chair
Clay Britton, Vice Chair
Members of the Lawrence/Douglas County Planning Commission,

Re: PP-14-00555: consider a Preliminary Plat for Alvamar Inc. Two Addition, a one-lot subdivision containing 5.18 acres with frontage on the north side of Quail Creek Drive. The subdivision is proposed to support future low-density residential development.

Dear Commission Members:

As neighbors in the area known as Alvamar Heights, located on Alvamar Drive, bordering the Alvamar public golf course, we are concerned about the impact of the proposed development along Quail Creek Drive, just to the south of our homes. We have read the letter dated February 23, 2015, from members of the Oasis at Alvamar neighborhood and heartily agree with all the sentiments therein. We emphasize the statement from that letter:

> If the property is ultimately rezoned it should reflect the density of the surrounding area and be platted in such a way that minimizes the impact on existing homes.

In addition, we note that on several occasions we have seen the lower part of that parcel underwater after thunderstorms.

Respectfully,

Robert J. Weaver
Betsy Weaver
Rob and Betsy Weaver
1589 Alvamar Dr.

Mike and Janel Leitch
1636 Alvamar Dr.

Darcy Gerhard
Lee Gerhard
Lee and Darcy Gerhard
1628 Alvamar Dr.

Sherry Scott
Sherry Scott
1640 Alvamar Dr.

Cheryl Troxel
1504 Alvamar Drive
Lawrence, KS 66047

Ms. Sandra Day
City of Lawrence Douglas County
Planning & Development Services
6 East 6th Street
P.O. Box 708
Lawrence, Kansas 66044

Re: Z-14-00552; Z-14-00553; PP-14-00554; PP-14-00555

Dear Ms. Day:

I am writing you in regard to the proposed Application filed by Paul Werner Architects on behalf of Alvamar Inc. to re-zone and re-plat certain properties as described in the above referenced submittals.

As I understand it, the Applicant, Paul Werner Architects on behalf of Alvamar Inc. has submitted two re-zoning requests and two corresponding preliminary plats, one of 51.85 acres from RS 7, RM12 & PUD (Alvamar) Districts to RM 24, which then will re-plat said acreage into 6 lots; and then one of 5.18 acres from PUD (Alvamar) to RS7.

The Applicant has requested that "conventional zoning" be used with no "overlay" district requirements. "Overlay" really means "oversight." Therefore, if the proposed application were approved as submitted, then any subsequent re-zoning and preliminary plats would be approved, with little opportunity for input from property owners until after the formal process began and perhaps long after the informal discussions with city planners began.

The carte blanche the Applicant seeks, to reconfigure this area created under a PUD, may never be appropriate in any case, given the care and commitment required to create a PUD in the first place. But the cart blanche now requested should be denied given that it has the potential to recreate an area that is so important to the community at large and to a large group of Lawrence citizens who through their home purchases made investments in the Alvamar area as it exists today.

At this time, the Applicant has submitted "concept plans" only, which are admittedly attractive drawings of what could be or might be. But the drawings decidedly are not what necessarily will be; in fact, the Applicant has provided no plans for what is proposed.

The Applicant has given the planning staff a list of intended development for the 6 lots, which includes over 600 dwelling units that range from two 120 unit apartment complexes, condominiums, patio homes, and "luxury" condominiums. However, based on the current Application, if re-zoning and re-platting were to occur even the list of intended development

could change as long as the requirements of RM 24 are not violated. This means that 1244 dwelling units could actually be built on these 51.85 acres.

At this time I oppose the Application for re-zoning and re-platting as submitted, particularly with respect to the 51.85 acres, for the following reasons.

This area is a mature developed area that was developed over the last four decades as a Planned Unit Development with two 18 hole golf courses and surrounding residential areas that created a blend of uses that benefit the Lawrence community as a whole. Landuse tenets that first gave the green light for the then-innovative PUD, made clear that a PUD must be created for the benefit of the whole community and not for the individual property owner alone.
In this case, the original development was part of a PUD and now the proposed Application wishes to change the zoning without recognition of the original PUD and the potential negative impact on all of the other parcels that make up the original PUD, ie Alvamar golf course complex.
Even though the two steps are remote in time, the Applicant seeks to defeat the original requirements imposed upon this PUD by breaking it apart in a way that significantly changes the original Alvamar development and, we contend, does significant harm to property owners within the original development who are nearby the areas proposed for re-platting. The mere passage of time should not remove the care and oversight that the PUD overlay process requires and that the City and its citizens deserve.

While original Alvamar development may have contemplated greater number of residential and/or multi family structures, the final development in the proposed 51.85 acres were PUD and RM12. There is nothing that has changed within the original PUD to compel a change in zoning any part of it.

This area deserves to be re-developed through a Planned Urban Development process with an "overlay" to insure that the integrity of the area and the overall integration of the area stays as it was originally intended. This is only accomplished with more defined plans, transparency by the developer and public input. Therefore, we request that the Application for re-zoning and preliminary plat known as *Z-14-00552; Z-14-00553; PP-14-00554; PP-14-00555* be denied as submitted.

Thank you for your time.

Sincerely,

Cheryl J Troxel

PLANNING COMMISSION REPORT
Regular Agenda -- Public Hearing Item

PC Staff Report
02/23/15

ITEM NO. 4 TEXT AMENDMENT FOR MAKER SPACE (SLD)

TA-14-00535: Consider a Text Amendment to the City of Lawrence Land Development Code to add a *Use* that provides space for business/entrepreneurial collaboration and prototyping. *Initiated by Planning Commission on 11/17/14.*

RECOMMENDATION: Staff recommends approval of the proposed amendment, **TA-14-00535**, to establish a use that provides space for business/entrepreneurial collaboration and prototyping or similar businesses and amending Sections 20-402, 20-403, an Section 20-902, and Article 17 of the Land Development Code and that the Planning Commission forward a recommendation for approval to the City Commission.

Reason for Request: To create a specific use category providing space for business/entrepreneurial collaboration and prototyping and other similar businesses also referred to as "makerspaces, hackerlabs, and fablabs"

PUBLIC COMMENT RECEIVED PRIOR TO PRINTING
- None received.

ATTACHMENTS
Attachment A – Initiation Memo
Attachment B – Mid Month materials
Attachment C – Lawrence Center for Entrepreneurship Letter
Attachment D - Complete Code Sections

OVERVIEW OF PROPOSED AMENDMENT
1. Current Code does not define use.
2. Current requests for uses in the community include multiple primary uses that may or may not be permitted in certain base zoning districts.

Proposed Article Changes
Changes to the text are shown on the following pages and are noted in red. Additions are underlined; and deleted text is ~~struck through~~. The entire Sections 20-402, 20-403, 20-547 and 20-1700 are provided at the end of this report as Attachment D for reference.

Proposed Articles and Sections affected by proposed text amendment.
1. Amend Article 4 Use Table, to add a use in the Industrial Facility Category to Section 20-402-Residential District Use Table and 20-403 Nonresidential District Use Table.
2. Amend Article 9 Parking, Loading and Access, Section 902 to Establish Off Street Parking Requirements.
3. Amend Article 17 Definitions to add a Section 20-1771 Maker Space.

CRITERIA FOR REVIEW AND DECISION-MAKING

Section 20-1302(f) provides review and decision-making criteria on proposed text amendments. It states that review bodies shall consider at least the following factors:

1) Whether the proposed text amendment corrects an error or inconsistency in the Development Code or meets the challenge of a changing condition;

The purpose of this proposed text amendment is to provide a clear definition for an emerging use within the community that was not contemplated in earlier versions of the Development Code. The use includes space for collaboration and prototyping new products. Staff's research reflects a range of types of such spaces, many of which involve mental collaboration (art, writing, music, computing) and others that collaborate on more physical consumer products (furniture, consumer goods, etc.) The current zoning regulations must be read to include each primary activity included within the potential Makerspace, Hacklab, or business/entrepreneurial incubator center and place it in a zoning district with the best fit for the most intensive aspect of the use.

This use has a characteristic that is different from industrial uses in that it does not include "production", "manufacturing", or "fabricating" elements for producing multiple units of the same product. The use is not typically intended as a retail outlet for products though small amounts of retail may be present. These uses do fabricate or produce, reproduce, or assemble products that are prototypes or models, used for experimentation, research or as a demonstration product to "take to market". They may also include creation of original works of art. Prototype is defined as *an original or model or pattern from which manufactured, fabricated or assembled products are developed or copied*.

2) Whether the proposed text amendment is consistent with the Comprehensive Plan and the stated purpose of this Development Code (Sec. 20-104)

The proposed amendment will create a separate use classification for "Makerspaces, Hacklabs, and business/entrepreneurial incubator centers". The use as a specific classification can be addressed through a Special Use Permit to address the unique characteristics of each type of makerspace, Hacklab, or business/entrepreneurial incubator centers as needed.

The Comprehensive Plan categorizes uses very broadly. Uses generally defined are independent of one another such as residential, commercial and industrial. Some uses include elements from several groups such as a manufacturing business that produces multiple units of a single product but also include office space and warehousing as critical operational activities. However, "manufacturing" is the main focus of the business.

"Makerspaces, Hacklabs, and business/entrepreneurial incubator centers" are an emerging use in many communities. Often these uses pop up in vacant commercial spaces but can also be found as dedicated spaces in public buildings such as libraries. A common characteristic of these uses are the provision of collaboration space and resources that are easily and immediately accessible to the user, member, client, or entrepreneur. Operational models for these uses and spaces include both non-profit and for-profit examples.

Many of these spaces include equipment found in or used in construction trade shops such as cabinetry and electrical contracting while others include high end computers, printers, dimensional printers and similar electronic equipment. There does not appear to be a one size fits all classification for these types of uses.

The plans includes broad goals including those related to *diversity of employment*, *housing, cultural, economic and educational opportunities for the community* (Page 1-3). The plan *supports infill development and redevelopment which provides a range of residential, commercial, office, industrial*

and public uses within these parcels, consistent and compatible with the established land use pattern in surrounding area (Page 3-1). Commercial goals are further defined in Chapter 6- Commercial Land Use. Industrial goals are defined in Chapter 7 – Industrial and Employment-Related Land Use. These two chapters address non-residential development. They provide recommendations for location criteria, design standards, and transition recommendations for development of each typology.

Commercial uses occur in the Downtown, Neighborhood Commercial Centers, Mixed-Use Redevelopment, Community Commercial Centers, Regional Commercial Centers, Existing Strip Commercial Developments, Auto-Related Commercial Centers. Industrial uses are categorized as Warehouse and Distribution, Industrial, Work-Live campus-type Center, Industrial/Business/Research Park. Makerspaces, Hacklabs, and business/ entrepreneurial incubator centers are not clearly either one or the other but in fact have elements of many types of uses depending on the focus of the specific operating model.

The plan recommends "Consideration of good site planning and design principles that minimize unnecessary impacts to surrounding neighborhoods and promote compatible land use activities are encouraged." This use is one that is an emerging use that many communities are beginning to define and regulate appropriately to mitigate building code conflicts, use of buildings, and compatibility. Creating a specific use group for the Makerspaces, Hacklabs, and business/ entrepreneurial incubator centers use will allow standards to be developed, if needed, and would result in more compatible development.

The purpose of the Land Development Code, Section 20-104, states:

This Development Code is intended to implement the Lawrence/Douglas County Comprehensive Land Use Plan and other applicable plans adopted by the City Commission, herein after collectively referred to as the "Comprehensive Plan" – in a manner that protects, enhances and promotes the health, safety, and general welfare of the citizens of Lawrence.

Discussion
This use can have impactful externalities similar to production facilities – noise, vibration, odor, truck deliveries – that will need to be mitigated when present and potentially harmful to an adjacent use.

Staff identified two types of maker spaces – "Limited" in that they are more similar than not to office type uses with office-type equipment; and, "Intensive" that is more similar to light manufacturing/ production/technological processes that involve power tools and other aspects that may have a nuisance component. Maker spaces that are more similar to office type uses meeting the definition of a Maker Space, Limited are proposed to be permitted in most districts subject to a site plan. Maker Spaces that meet the definition of Make Space, Intensive are proposed to be permitted in commercial districts subject to a Special Use Permit and are allowed in Industrial Districts subject to site planning.

Specific design standards are not proposed given the distinction in definition and since potential negative externalities can be addressed as identified through the Special Use Permit review process.

Conclusion
The addition of this new use to the Land Development Code responds to national trends in the establishment of places where innovation, creation, learning, and prototyping come together to provide outlets that have the potential to create jobs and stimulate the economy. This use is not currently defined in the Land Development Code and Staff believes the use of a Special Use Permit process for Intensive Maker Spaces would ensure compatible land uses in certain zoning districts.

Memorandum
City of Lawrence
Planning Department

TO: Lawrence Douglas County Metropolitan Planning Commission
FROM: Planning Staff
DATE: November 10, 2014
RE: Item No. 4: Initiate text amendment for incubator space for business/entrepreneurial collaboration & prototyping

A recent and growing land use trend has been identified as a maker space or small business incubator space allowing for individuals interested in developing a small business or learning a new skill in a facility that provides access to hand tools, machine tools, specialized electronic equipment, business equipment and other devices and support services informally or formally through membership, education opportunities, open houses and similar events. These spaces often include areas for collaboration and prototyping new products. Lawrence has two recent accounts of this activity and categories the different elements of such a space according to definitions in the Development Code. The Code does not take a holistic approach to this use.

The purpose of the proposed text amendment would be to clearly define spaces/uses and to designate which zoning districts the use would be allowed. The text amendment could include allowing the use by right (Permitted) in some or all zoning districts with or without design standards or as a Special Use Permit (SUP) in some or all zoning districts with or without additional design standards.

Specific sections of the Land Development Code anticipated to be modified through this text amendment include:

- Article 4 Use Tables
- Article 5 Use Regulations
- Article 9 Parking, Loading and Access
- Article 17 Terminology.

Action Requested:
Initiate a text amendment to the Land Development Code to define and permit a new use that provides incubator space for business/entrepreneurial collaboration and prototyping, identify the appropriate zoning districts, and design standards for the use for consideration at a future public hearing at the Planning Commission.

ARTICLE 4. USE TABLE

20-401 Use Table
20-402 Residential District Use Table
20-403 Nonresidential District Use Table

20-401 USE TABLE

The Use Table of this article lists the Principal Uses allowed within all of the Base Districts except the UR District (See Section 20-223(b) for UR District use regulations). The symbols used in the Use Table are defined in the following paragraphs.

(a) [P] Permitted Uses

A "P" indicates that a use is permitted by right, subject to compliance with all other applicable local, State and Federal regulations, including the regulations of this Development Code.

(b) [S] Special Uses

An "S" indicates that a use is allowed only if reviewed and approved in accordance with the Special Use procedures of Section 20-1306.

(c) [A] Accessory Uses

An "A" indicates that a use is permitted as accessory to a Principal Use, subject to compliance with all other applicable local, State and Federal regulations, including the regulations of this Development Code.

(d) Uses Not allowed

Cells containing a dash (–) indicate that the listed use is not allowed in the respective Zoning District.

(e) Use-Specific Standards

Many allowed uses, whether permitted by-right or by Special Use, are subject to compliance with use-specific standards and conditions. An Asterisk (*) after the P, S, or A use code identifies the use is subject to use-specific standards and conditions. The sections in which these standards and conditions are located are identified in the far right column titled Use Specific Standard.

(f) Unlisted Uses

If an application is submitted for a use that is not listed in the use table of this section, the Planning Director is authorized to classify the new or unlisted use into an existing land use category that most closely fits the new or unlisted use, using the interpretation criteria of Section 20-1702(b). If no similar use determination can be made, the Planning Director shall initiate an amendment to the text of this Development Code to clarify where such uses will be allowed.

20-402 RESIDENTIAL DISTRICT USE TABLE

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*														*Use-Specific Standards (Sec. 20-)*
		RS40	*RS20*	*RS10*	*RS7*	*RS5*	*RS3*	*RSO*	*RM12*	*RM12D*	*RM15*	*RM24*	*RM32*	*RMG*	*RMO*	
RESIDENTIAL USE GROUP																
Household Living	Accessory Dwelling Unit	A*	A*	A*	A*	–	–	–	–	–	–	–	–	–	–	534
	Attached Dwelling	–	–	S*	S*	S*	S*	S*	P*	P*	P*	P*	P*	–	P*	503
	Cluster Dwelling	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	–	P*	702
	Detached Dwelling	P*	P*	P*	P*	P*	P*	P*	S*	S*	S*	S*	S*	–	S*	508
	Duplex	–	–	–	–	–	–	P*	P*	P*	P*	P*	P*	–	P*	503
	Manufactured Home	–	–	–	–	–	–	–	S	S	S	S	S	–	–	
	Manufactured Home, Residential-Design	P*	P*	P*	P*	P*	P*	P*	S*	S*	S*	S*	S*	–	S*	513
	Mobile Home	–	–	–	–	–	–	–	–	–	S	S	S	–	–	
	Mobile Home Park	–	–	–	–	–	–	–	–	–	S*	S*	S*	–	–	514
	Multi-Dwelling Structure	–	–	–	–	–	–	–	P*	–	P*	P*	P*	–	P*	517
	Non-Ground Floor Dwelling	--	--	--	--	--	--	P*	--	--	--	--	--	--	P*	517/542
	Work/Live Unit	--	--	--	--	--	--	P*	--	--	--	--	--	--	P*	517/542
	Zero Lot Line Dwelling	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	–	P*	531
	Home Occupation, Type A or B	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	–	A*	537
Group Living	Assisted Living	S	S	S	S	S	S	P	P	P	P	P	P	P	P	
	Congregate Living	–	–	–	–	–	–	–	P*	–	P*	P*	P*	–	P*	546
	Dormitory	–	–	–	–	–	–	–	–	–	–	–	–	P	–	
	Fraternity or Sorority House	–	–	–	–	–	–	–	–	–	–	–	–	P	–	
	Group Home, General [11 or more]	S	S	S	S	S	S	S	S	S	S	S	S	P	S	
	Group Home, Limited [10 or fewer]	P	P	P	P	P	P	P	P	P	P	P	P	–	P	
PUBLIC AND CIVIC USE GROUP																
Community Facilities	Adult Day Care Home	S	S	S	S	S	S	P	P	P	P	P	P	P	P	
	Cemeteries	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	–	P*	505
	College/University	S	S	S	S	S	S	S	S	S	S	S	S	P	S	
	School	S	S	S	S	S	S	S	S	S	S	S	S	P	S	
	Cultural Center/ Library	S	S	S	S	S	S	S	S	S	S	S	S	P	S	
	Day Care Center	S*/A*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	P*/A*	S*	507

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*													*Use-Specific Standards (Sec. 20-)*
		RS40	*RS20*	*RS10*	*RS7*	*RS5*	*RS3*	*RSO*	*RM12*	*RM12D*	*RM15*	*RM24*	*RM32*	*RMG*	*RMO*	
	Day Care Home, Class A	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	–	A*	507
	Day Care Home, Class B	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	–	S*	507
	Detention Facilities	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Lodge, Fraternal & Civic Assembly	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	512
	Postal Service	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Public Safety	S	S	S	S	S	S	S	S	S	S	S	S	P	S	
	Funeral and Interment	–	–	–	–	–	–	P*	–	–	–	–	–	–	P*	505
	Temporary Shelter	A*	A*	A*	A*	A*	A*	S*/A*	A*	A*	A*	A*	A*	A*	S*/A*	544/522
	Social Service Agency	--	--	--	--	--	--	P	--	--	--	--	--	--	P	
	Community Meal Program	A*	A*	A*	A*	A*	A*	S/A*	A*	A*	A*	A*	A*	A*	S/A*	522
	Utilities, Minor	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	530
	Utilities and Service, Major	S	S	S	S	S	S	S	S	S	S	S	S	–	S	
Medical Facilities	Community Mental Health Facility	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Extended Care Facility, General	–	–	–	–	–	–	S	P	P	P	P	P	P	P	
	Extended Care Facility, Limited	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Health Care Office, Health Care Clinic	–	–	–	–	–	–	P	–	–	–	–	–	–	P	
	Hospital	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Outpatient Care Facility	–	–	–	–	–	–	P*	–	–	–	–	–	P*	P*	519
Recreational Facilities	Active Recreation	S	S	S	S	S	S	S	S	S	S	S	S	–	S	
	Entertainment & Spectator Sports, Gen.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Entertainment & Spectator Sports, Ltd.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Passive Recreation	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
	Nature Preserve/Undeveloped	P	P	P	P	P	P	P	P	P	P	P	P	–	P	
	Private Recreation	P	P	P	P	P	P	P	P	P	P	P	P	–	P	
	Participant Sports & Recreation, Indoor	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Participant Sports & Recreation, Outdoor	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*														*Use-Specific Standards (Sec. 20-)*
		RS40	*RS20*	*RS10*	*RS7*	*RS5*	*RS3*	*RSO*	*RM12*	*RM12D*	*RM15*	*RM24*	*RM32*	*RMG*	*RMO*	
Religious Assembly	Campus or Community Institution	–	–	–	–	–	–	–	P*	P*	P*	P*	P*	P*	P*	522
	Neighborhood Institution	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	522
COMMERCIAL USE GROUP																
Animal Services	Kennel	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Livestock Sale	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Sales and Grooming	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Veterinary	–	–	–	–	–	–	P	–	–	–	–	–	–	P	
Eating & Drinking Establishments	Accessory Bar	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Bar or Lounge	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Brewpub	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Fast Order Food	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Fast Order Food, Drive-in	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Nightclub	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Private Dining Establishments	S*	S*	S*	S*	S*	–	S*	–	–	–	–	–	–	S*	539
	Restaurant, High-turnover	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Restaurant, Quality	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Office	Administrative and Professional	–	–	–	–	–	–	P*	–	–	–	–	–	P*	P*	518
	Financial, Insurance & Real Estate	–	–	–	–	–	–	P*	–	–	–	–	–	P*	P*	510
	Other	–	–	–	–	–	–	P*	–	–	–	–	–	P*	P*	510
Parking Facilities	Accessory	–	–	–	–	–	A*	A*	A*	A*	A*	A*	A*	A*	A*	535
	Commercial	–	–	–	–	–	–	S	–	–	–	–	–		–	
Retail Sales & Service	Building Maintenance	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Business Equipment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Business Support	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Construction Sales and Service	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Food and Beverage	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*														*Use-Specific Standards (Sec. 20-)*
		RS40	*RS20*	*RS10*	*RS7*	*RS5*	*RS3*	*RSO*	*RM12*	*RM12D*	*RM15*	*RM24*	*RM32*	*RMG*	*RMO*	
	Mixed Media Store	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Personal Convenience	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Personal Improvement	–	–	–	–	–	–	P*	–	–	–	–	–	P*	P*	521
	Repair Service, Consumer	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Retail Sales, General	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Retail Establishment, Large	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Retail Establishment, Medium	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Retail Establishment, Specialty	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Sexually Oriented Businesses	Sexually Oriented Media Store	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Physical Sexually Oriented Business	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Sex Shop	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Sexually Oriented Theater	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Transient Accommodation	Bed and Breakfast	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	P*	P*	–	P*	504
	Campground	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Elderhostel	–	–	–	–	–	–	–	–	–	–	–	–	S	–	
	Hotel, Motel, Extended Stay	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Vehicle Sales & Service	Cleaning (e.g., car wash)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Fleet Storage	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Gas and Fuel Sales	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Heavy Equipment Repair	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Heavy Equipment Sales	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Inoperable Vehicles Storage	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Light Equipment Repair	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Light Equipment Sales/Rental	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	RV and Boats Storage	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*														*Use-Specific Standards (Sec. 20-)*
		RS40	*RS20*	*RS10*	*RS7*	*RS5*	*RS3*	*RSO*	*RM12*	*RM12D*	*RM15*	*RM24*	*RM32*	*RMG*	*RMO*	
INDUSTRIAL USE GROUP																
Industrial Facilities	Explosive Storage	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Industrial, General	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Industrial, Intensive	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Laundry Service	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Maker Space, Limited	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Maker Space, Intensive	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Manufacturing & Production, Limited	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Manufacturing & Production, Technological	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Research Service	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Salvage Operation	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Wholesale, Storage & Distribution	Heavy	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Light	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Mini-Warehouse	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
OTHER USES GROUP																
Adaptive Reuse	Designated Historic Property	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	501
	Greek Housing Unit	–	–	–	–	–	–	–	–	–	–	–	–	S*	–	501
Agriculture	Agricultural Sales	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Agriculture, Animal	P*	–	–	–	–	–	–	–	–	–	–	–	–	–	502
	Agriculture, Crop	P	P	P	P	P	P	P	P	P	P	P	P	–	P	
Communications Facilities	Amateur and Receive-Only Antennas	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	–	A*	536
	Broadcasting Tower	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Communications Service Establishment	–	–	–	–	–	–	P	–	–	–	–	–	–	P	
	Telecommunications Antenna	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	529

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*														*Use-Specific Standards (Sec. 20-)*
		RS40	*RS20*	*RS10*	*RS7*	*RS5*	*RS3*	*RSO*	*RM12*	*RM12D*	*RM15*	*RM24*	*RM32*	*RMG*	*RMO*	
	Telecommunications Tower	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	529
	Satellite Dish	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	536
Mining	Mining	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Recycling Facilities	Large Collection	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Small Collection	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Processing Center	–	–	–	–	–	–	–	–	–	–	–	–	–	–	

20-403 NONRESIDENTIAL DISTRICT USE TABLE

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*															*Use-Specific Standards (Sec. 20-)*
		CN1	*CN2*	*MU*	*CO*	*CD*	*CC*	*CR*	*CS*	*IBP*	*IL*	*IM*	*IG*	*OS*	*GPI*	*H*	
RESIDENTIAL USE GROUP																	
Household Living	Accessory Dwelling	P*	–	P*	–	–	–	–	–	–	–	–	–	–	–	–	534
	Attached Dwelling	P*	–	P*	–	–	–	–	–	–	–	–	–	–	P*	–	503
	Cluster Dwelling	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	702
	Detached Dwelling	P*	–	P	–	–	–	–	–	–	–	–	–	–	P*	A*	508
	Duplex	P*	–	P*	–	–	–	–	–	–	–	–	–	–	–	–	503
	Manufactured Home	–	–	–	–	–	–	–	–	–	–	–	–	–	P	A	
	Manufactured Home, Residential-Design	P*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	513
	Mobile Home	–	–	–	–	–	–	–	–	–	P	–	P	–	P	A	
	Mobile Home Park	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Multi-Dwelling Structure	–	P*	P*	–	P*/S*	P*		P*	–	–	–	–	–	S	A	517
	Non-Ground Floor Dwelling	P*	P*	P*	–	P*	P*	–	P*	–	–	–	–	–	–	–	517/542
	Work/Live Unit	P*	P*	P*	–	P*/S*	P*	–	P*	–	P*	–	–	–	–	–	517/541
	Zero Lot Line Dwelling	P*	–	P	–	–	–	–	–	–	–	–	–	–	–	–	531
	Home Occupation, Type A or B	–	–	P*	–	–	–	–	–	–	–	–	–	–	–	–	
Group Living	Assisted Living	–	–	P	–	–	–	–	–	–	–	–	–	–	S	S	
	Congregate Living	–	–	P*	–	–	–	–	–	–	–	–	–	–	–	–	546
	Dormitory	–	–	–	–	–	–	–	–	–	–	–	–	–	–	A	
	Fraternity or Sorority House	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Group Home, General (11 or more)	S	S	S	S	S	S	S	S	–	–	–	–	–	–	A	
	Group Home, Limited (10 or less)	P	–	P	–	–	–	–	–	–	–	–	–	–	–	–	
PUBLIC AND CIVIC USE GROUP																	
Community Facilities	Cemetery	P*	P*	–	P*	–	P*	P*	P*	P*	P*	–	–	P*	P*	–	505
	College/University	S	P	P	P	P	P	P	P	P	P	–	P	–	P	A	
	Cultural Center/ Library	S	P	P	S	P	P	–	–	P	–	–	–	S	P	A	
	Day Care Center	S*	P*	S*	S*	S*	P*	P*	P*	P*	P*	A*	P*	–	–	–	507
	Day Care Home, Class A	P	P	P*	–	P	P	–	P	–	–	–	–	–	–	–	

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*														*Use-Specific Standards (Sec. 20-)*
		CN1	*CN2*	*MU*	*CO*	*CD*	*CC*	*CR*	*CS*	*IBP*	*IL*	*IM*	*IG*	*OS*	*GPI*	*H*	
	Day Care Home, Class B	S*/A*	P*	S*	–	P	P	–	P	–	–	–	–	–	–	–	507
	Detention Facilities	–	–	–	–	–	–	–	–	–	S	S	S	–	S	–	
	Lodge, Fraternal & Civic Assembly	S*	S*	S*	S*	P*	P*	P*	P*	–	P*	–	–	–	P*	–	512
	Postal & Parcel Service	–	P	P	P	P	P	P	P	P	P	P	P	–	P	–	
	Public Safety	S	P	P	P	P	P	P	P	P	P	P	P	–	P	–	
	School	P	P	P	P	P	P	P	P	–	–	–	–	–	P	–	
	Funeral and Interment	–	P*	–	P*	P*	P*	P*	P*	P*	P*	–	–	A*	–	–	505
	Temporary Shelter	S*/A*	S*/A*	S*/A*	S*/A*	S*/A*	S*/A*	S*/A*	S*/A*	S*	S*/A*	–	S*	–	S*	S*/A*	544/522
	Social Service Agency	P	P	P	P	P	P	P	P	P	P	–	P	–	P	A	
	Community Meal Program	S/A*	S/A*	S/A*	S/A*	S/A*	S/A*	S/A*	S/A*	S	S/A*	–	S	–	S	S/A*	522
	Utilities, Minor	P*/S*	P*/S*	P*/S	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	P*/S*	–	530
	Utilities and Service, Major	S	S	S	S	S	S	S	S	S	S	P	P	S	P	–	
Medical Facilities	Community Mental Health Facility	--	--	--	--	--	--	--	--	--	--	--	--	--	P	--	
	Extended Care Facility, General	–	S	–	S	–	–	–	–	S	–	–	–	–	–	A	
	Extended Care Facility, Limited	P	P	P	P	–	–	–	–	–	–	–	–	–	S	A	
	Health Care Office, Health Care Clinic	P	S	P	P	P	P	P	P	P	P	–	–	–	P	A	
	Hospital	–	–	–	–	–	–	–	–	–	–	–	–	–	–	P	
	Outpatient Care Facility	P*	P*	P*	P*	P*	P*	P*	P*	–	-	–	–	–	P*	A*	519
Recreational Facilities	Active Recreation	S	P	P	S	S	P	P	P	P	P	–	S	S	A*/S*	A	532
	Entertainment & Spectator Sports, General	–	–	–	–	P	P	P	P	–	–	–	–	–	S	–	
	Entertainment & Spectator Sports, Limited	–	P	P	–	P	P	P	P	–	–	–	–	S	P	–	
	Participant Sports & Recreation, Indoor	–	P	P	–	P	P	P	P	P	P	–	–	–	P	A	
	Participant Sports & Recreation, Outdoor	–	–	S	–	–	P	P	P	P	P	–	–	–	A*/S*	–	532

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*															*Use-Specific Standards (Sec. 20-)*
		CN1	*CN2*	*MU*	*CO*	*CD*	*CC*	*CR*	*CS*	*IBP*	*IL*	*IM*	*IG*	*OS*	*GPI*	*H*	
	Passive Recreation	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	
	Nature Preserve/ Undeveloped	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	
	Private Recreation	P	P	P	–	P	P	–	P	–	–	–	–	P	P	A	
Religious Assembly	Campus or Community Institution	P*	P*	P*	P*	P*	P*	P*	P*	–	P*	–	–	–	–	A*	522
	Neighborhood Institution	P*	P*	P*	P*	P*	P*	P*	P*	–	P*	–	–	–	–	–	522
COMMERCIAL USE GROUP																	
Animal Services	Kennel	–	–	–	–	–	P	P	P	–	P	–	P	–	–	–	
	Livestock Sale	–	–	–	–	–	S	S	S	–	P	–	P	–	–	–	
	Sales and Grooming	P	P	P	P	P	P	P	P	–	P	–	P	–	–	–	
	Veterinary	–	P	P	P	P	P	P	P	P	P	–	P	–	–	–	
Eating & Drinking Establishments	Accessory Bar	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	–	–	–	–	–	509
	Accessory Restaurant	–	–	–	–	–	–	–	–	A	–	–	–	–	–	–	
	Bar Or Lounge	–	P/S*	S*	–	P*	P*	P*	P*	–	–	–	–	–	–	–	509
	Brewpub	–	P*	S*	–	P*	P*	P*	P*	–	–	–	–	–	–	–	509
	Fast Order Food	P*	P*	P	P*	P*	P*	P*	P*	–	P*	–	–	–	–	A*	511/509
	Fast Order Food, Drive-In	–	S	–	–	–	P	P	P	–	P	–	–	–	–	–	
	Nightclub	–	–	–	–	P*	–	P*	P*	–	–	–	–	–	–	–	509
	Private Dining Establishments	P*	P*	–	P*	P*	P*	P*	P*	P*	–	–	–	–	–	–	539
	Restaurant, Quality	P*	P*	P	P*	P*	P*	P*	P*	P*	P*	–	–	–	–	–	524
Office	Administrative and Professional	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	A	P*	–	P*	A*	518
	Financial, Insurance & Real Estate	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	–	–	–	–	A*	510
	Other	P*	P*	P*	P*	P*	P*	P*	P*	P*	P*	A	P*	–	–	–	537
Parking Facilities	Accessory	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	535
	Commercial	–	S	S	S	S	P	P	P	P	P	P	P	–	P	A	

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*															*Use-Specific Standards (Sec. 20-)*
		CN1	*CN2*	*MU*	*CO*	*CD*	*CC*	*CR*	*CS*	*IBP*	*IL*	*IM*	*IG*	*OS*	*GPI*	*H*	
Retail Sales & Service	Building Maintenance	–	P	S	–	P	P	P	P	–	P	P	P	–	A	A	
	Business Equipment	–	P	P	–	P	P	P	P	P	P	P	–	–	–	–	
	Business Support	–	P	P	P	P	P	P	P	P	P	P	P	–	–	A	
	Construction Sales and Service	–	–	–	–	–	P	P	P	–	P	–	P	–	–	A	
	Food and Beverage	P*	P*	P*	P*	P*	P*	P*	P*	–	P*	–	–	–	–	A*	511
	Mixed Media Store	P*	P*	P*	P*	P*	P*	P*	P*	–	P*	–	–	–	–	–	516/528
	Personal Convenience	P*	P*	P*	–	P*	P*	P*	P*	–	P*	–	–	–	–	A*	520
	Personal Improvement	P*	P*	P*	–	P*	P*	P*	P*	–	P*	–	–	–	A*	A*	521
	Repair Service, Consumer	P*	P*	P*	–	P*	P*	P*	P*	–	P*	–	–	–	–	–	523
	Retail Sales, General	P*	P*	P*	P*	P*	P*	P*	P*	–	P*	–	–	–	–	A*	525
	Retail Establishment, Large	–	–	–	–	–	P*	P*	S*	–	–	–	–	–	–	–	526
	Retail Establishment, Medium	–	P*	P*	–	P*	P*	P*	P*	–	–	–	–	–	–	–	526
	Retail Establishment, Specialty	–	P*	P*	–	P*	P*	P*	P*	–	–	–	–	–	–	–	526
Sexually Oriented Businesses	Sexually Oriented Media Store	–	–	P*	–	–	-	-	-	–	–	–	-	–	–	–	528
	Physical Sexually Oriented Business	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	528
	Sex Shop	–	–	–	–	–	P*	P*	P*	–	–	–	–	–	–	–	528
	Sexually Oriented Theater	–	–	–	–	–	P*	P*	P*	–	–	–	–	–	–	–	528
Transient Accommodation	Bed and Breakfast	P*	–	P*	–	–	–	–	–	–	–	–	–	–	–	–	504
	Campground	–	–	–	–	–	P	P	P	–	–	–	–	S	–	–	
	Hotel, Motel, Extended Stay	–	–	P	–	P	P	P	P	–	P	–	–	–	–	A	

Key: *A = Accessory* *P = Permitted* *S = Special Use* ** = Standard Applies* *- = Use not allowed*		*Base Zoning Districts*															*Use-Specific Standards (Sec. 20-)*
		CN1	*CN2*	*MU*	*CO*	*CD*	*CC*	*CR*	*CS*	*IBP*	*IL*	*IM*	*IG*	*OS*	*GPI*	*H*	
Vehicle Sales & Service	Cleaning (Car Wash)	–	S	–	–	–	P	P	P	–	P	A	P	–	–	–	
	Fleet Storage	–	–	–	–	–	P	P	P	–	P	P	P	–	–	A	
	Gas and Fuel Sales	–	S	S	–	–	P	P	P	–	P	P	P	–	–	–	
	Truck Stop	–	–	–	–	–	–	S	–	–	–	–	S	–	–	–	
	Heavy Equipment Repair	–	–	–	–	–	P	P	P	–	P	P	P	–	–	–	
	Heavy Equipment Sales/Rental	–	–	–	–	–	P	P	P	–	P	–	P	–	–	–	
	Inoperable Vehicles Storage	–	–	–	–	–	P	P	P	–	P	P	P	–	–	–	
	Light Equipment Repair	–	S	–	–	S	P	P	P	–	P	–	P	–	–	–	
	Light Equipment Sales/Rental	–	P*	–	–	S	P	P	P	–	P	–	P	–	–	–	545
	RV and Boats Storage	–	–	–	–	–	P	P	P	–	P	–	P	–	–	–	
INDUSTRIAL USE GROUP																	
Industrial Facilities	Explosive Storage	–	–	–	–	–	–	–	–	–	–	–	P	–	–	–	
	Industrial, General	–	–	–	–	–	–	–	–	–	P	P	P	–	–	–	
	Industrial, Intensive	–	–	–	–	–	–	–	–	–	–	–	P	–	–	–	
	Laundry Service	–	–	–	–	–	P	P	P	–	P	P	P	–	–	–	
	Maker Space, Limited	P	P	P	P	P	P	P	P	P	P	P	P	–	A/S	–	
	Maker Space, Intensive	–	S	S	S	S	S	S	S	P	P	P	P	–	A/S	–	
	Manufacturing & Production, Ltd.	–	–	P	–	S	S	S	S	P	P	P	P	–	–	–	
	Manufacturing & Production, Tech.	–	–	–	–	S	P	P	P	P	P	P	P	–	–	–	
	Research Service	–	–	–	S	S	P	P	P	P	P	P	P	–	–	–	
	Scrap and Salvage Operation	–	–	–	–	–	–	–	–	–	S*	–	S*	–	–	–	527
	Exterior Storage	–	–	–	–	–	A*	A*	A*	A*	A*	A*	A*	–	A*	A*	538

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		CN1	*CN2*	*MU*	*CO*	*CD*	*CC*	*CR*	*CS*	*IBP*	*IL*	*IM*	*IG*	*OS*	*GPI*	*H*	
	Heavy	–	–	–	–	–	S	S	S	–	S	–	P	–	–	–	
	Light	–	–	–	–	–	P	P	P	P	P	P	P	–	S	–	
	Mini-Warehouse	–	–	–	–	–	P	P	P	–	P	–	P	–	–	–	
OTHER USES GROUP																	
Adaptive Reuse	Designated Historic Property	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	501
	Greek Housing Unit	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
Agriculture	Agricultural Sales	–	–	–	–	–	P	P	P	–	P	–	P	–	–	–	
	Agriculture, Animal	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
	Agriculture, Crop	P	P	P	P	–	P	P	P	P	P	P	P	–	P	–	
Communications Facilities	Amateur & Receive-Only Antennas	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	536
	Broadcasting Tower	–	–	–	–	S	–	–	–	P	P	P	P	–	–	A	
	Communications Service Establishment	P	P	P	P	P	P	P	P	P	P	–	P	–	P	A	
	Telecommunications Antenna	A*	A*	A*	A*	S*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	529
	Telecommunications Tower	S*	S*	S*	S*	S*	S*	S*	S*	S*	S*	P*	S*	S*	A*	A*	529
	Satellite Dish	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	A*	536
Mining	Mining	–	–	–	–	–	–	–	–	–	–	–	S*	–	–	–	515
Recycling Facilities	Large Collection	–	–	–	–	–	P	P	P	–	P	P	P	–	–	–	540
	Small Collection	P	P	P*	P	P	P	P	P	P	P	–	P	–	A	A	540
	Processing Center	–	–	–	–	–	–	–	–	–	S	S	S	–	–	–	

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ARTICLE 9. PARKING, LOADING AND ACCESS

20-901 General
20-902 Off-Street Parking Schedule A
20-903 Off-Street Parking Schedule B
20-904 Off-Street Parking Schedule C
20-905 Off-Street Parking Schedule D
20-906 Off-Street Loading
20-907 Rules for Calculating Requirements
20-908 Location
20-909 Shared and Off-Site Parking
20-910 Use of Off-Street Parking and Loading Areas
20-911 Vehicle Stacking Areas
20-912 Accessible Parking for Physically Disabled Persons
20-913 Parking and Loading Area Design Standards
20-914 Landscaping
20-915 Driveways and Access
20-916 Traffic Impact Study

20-901 GENERAL

(a) Purpose

The regulations of this article are intended to ensure that the off-street parking, loading, and Access demands of various land uses will be met without adversely affecting surrounding areas. The regulations are also intended to help maintain a safe and efficient transportation system and advance other planning goals related to land use and the environment. In recognition of the fact that different approaches may be appropriate in different settings, the regulations allow flexibility in addressing vehicle parking, loading, and Access demand.

(b) Applicability

(1) New Development

Unless otherwise expressly stated, the parking and loading standards of this article apply to all new structures built and all new uses established in all zoning districts.

(2) Enlargements and Expansions

(i) Unless otherwise expressly stated, the parking and loading standards of this article apply whenever an existing Building or use is enlarged or expanded to include additional dwelling units, floor area, seating capacity, employees or other units of measure used for establishing off-street parking and loading requirements.

(ii) In the case of enlargements or expansions of Buildings or uses triggering requirements for additional parking or loading, additional off-street parking and loading spaces are required only to serve the enlarged or expanded area or use, not the entire existing Building or use. There is no requirement to address lawfully created non-conforming existing parking or loading deficits.

(3) Change of Use or Occupancy
Unless otherwise expressly stated, when the use or occupancy of property changes, additional off-street parking and loading facilities must be provided to serve the new use or occupancy only when the number of parking or loading spaces required for the new use or occupancy exceeds the number of spaces required for the use that most recently occupied the Building, based on the standards of this development code.

(c) Parking in Excess of Required Standard

(i) Developments that provide parking in excess of the required standards must mitigate the impacts of the increased Impervious Surface through use of storm drainage Best Management Practices (BMPs) as provided in the City's adopted BMP manual. [Mid-America Regional Council and American Public Works Association Manual for Best Management Practices for Stormwater Quality – Sept. 2003 and subsequent updates].

(ii) Detached Dwellings, Attached Dwellings and Duplex residential uses shall be exempt from the requirements of 20-901(c)(i).

(d) Reductions Below Minimums
The number of parking and loading spaces existing on a site may not be reduced below the minimum requirements of this Section, except:

(i) When waived by the Planning Director on sites where a property owner creates a shared access point or where multiple access points on a property are consolidated consistent with adopted access management policies;

(ii) For good cause shown, when waived by the Planning Director as part of Site Plan approval in accordance with 20-1305 and based upon a parking study submitted in accordance with 20-905; or

(iii) When a variance from the parking requirements is granted by the Board of Zoning Appeals based upon the specific circumstances of the property.

(e) Issuance of Building Permits or Certificates of Occupancy
No Building permits or certificates of occupancy shall be issued unless the minimum parking standards are being complied with or those standards have been waived in accordance with 20-901(d).

(f) Exemption for CD District
Due to the unique characteristics of the Downtown Commercial District, allowed uses in the CD Zoning District are exempt from the requirement to provide off-street parking and off-street loading spaces.

(g) Parking Requirements in PRDs, PCDs and PIDs established before July 1, 2006
Parking standards for uses listed in 20-902, 20-903 or 20-904 of this Development Code shall be applied when establishing minimum requirements for New Developments, Expansions or Enlargements, or Change of Use or Occupancy in these established Planned Unit Developments.

20-902 OFF-STREET PARKING SCHEDULE A

Unless otherwise expressly stated in this article, Off-street Parking Spaces shall be provided in accordance with the minimum ratios of the following, Schedule A.

Use Category	Minimum Number of Vehicle Parking Spaces Required	Minimum Number of Bicycle Parking Spaces
RESIDENTIAL USE GROUPS		
HOUSEHOLD LIVING		
Accessory Dwelling Unit	See 20-534 for standards	None
Attached Dwelling	2 per Dwelling Unit	
Cluster Dwelling		
Detached Dwelling		
Duplex	1 per bedroom	
Manufactured Home	2 per Dwelling Unit	
Manufactured Home, Residential-Design		
Mobile Home	2 per Dwelling Unit (1 may be located in common area)	
Mobile Home Park		
Multi-Dwelling Structure	1 per bedroom, + 1 per 10 units (visitors and guests) [1]	1 per 4 auto spaces
Non-Ground Floor Dwelling	1 per bedroom	None
Work/Live Unit	1 per Dwelling Unit	
Zero Lot Line Dwelling	2 per Dwelling Unit	
Home Occupation, Type A or B	See 20-537 for standards	
GROUP LIVING		
Assisted Living	1 per independent living unit; 0.5 per Assisted Living unit	None
Congregate Living	1 per bedroom [1]	1 per 4 auto spaces
Dormitory and Scholarship Halls	0.75 per lawful occupant	
Fraternity and Sorority Houses	0.75 per lawful occupant	
Group Homes, General	1 + 1 per employee	None
Group Homes, Limited	2 per Dwelling Unit	
PUBLIC AND CIVIC USE GROUPS		
COMMUNITY FACILITIES		
Adult Day Care	1 per 1.5 employees	None
Cemetery	per Schedule D (Section 20-905)	
College / University	1 per 4 employees + 1 per 10 students [based on average annual attendance]	1 per 5 students
Cultural Center / Library	1 per 500 square feet	5 or 1 per 4 auto spaces, whichever is greater
Day Care Center	1 per 1.5 employees + 4 spaces	None

Use Category	Minimum Number of Vehicle Parking Spaces Required	Minimum Number of Bicycle Parking Spaces
Day Care Home, Class A	1 per 1.5 employees	
Day Care Home, Class B		
Detention Facilities	per Schedule D (Section 20-905)	1 per 10 auto spaces
Lodge, Fraternal and Civic Assembly	1 per 500 square feet	None
Postal Service	per Schedule D (Section 20-905)	5 or 1 per 10 auto spaces, whichever is greater
Public Safety	per Schedule D (Section 20-905)	None
School, Grades K–9 Grades 10+	1 per 1.5 teachers and employees 1 per 1.5 teachers and employees + 1 per 3 students	1 per 5 students 5 or 1 per 10 auto spaces, whichever is greater
Funeral and Interment Cremating Interring Undertaking	1 per vehicle used in the business; 1 per vehicle used in the business; 1 per 300 square feet	None
Temporary Shelter	1 per 1.5 employees	1 per 5 clients
Social Service Agency	1 per 300 square feet	1 per 10 auto spaces
Community Meal Program	1 per 1.5 employees + 1 per 5 seats	5 or 1 per 10 auto spaces, whichever is greater
Utilities, Minor	1 space	1 per 10 auto spaces
Utilities and Service, Major	1 per 1.5 employees	
MEDICAL FACILITIES		
Extended Care Facilities, General and Limited	1 per 3 beds	5 or 1 per 10 auto spaces, whichever is greater
Health Care Office; Health Care Clinic	1 per 300 square feet	1 per 10 auto spaces
Hospital	1 per 3 beds	5 or 1 per 10 auto spaces, whichever is greater
Outpatient Care Facilities	1 per 300 square feet	1 per 10 auto spaces
RECREATIONAL FACILITIES		
Active Recreation	Per Schedule D (Section 20-905)	5 or 1 per 4 auto spaces, whichever is greater
Entertainment & Spectator Sports, General	1 per 3 seats	1 per 10 auto spaces
Entertainment & Spectator Sports, Limited	1 per 4 seats	5 or 1 per 10 auto spaces
Participant Sports & Recreation, Indoor	1 per 500 square feet of customer/activity area	1 per 10 auto spaces
Participant Sports & Recreation, Outdoor	1 per 500 square feet of customer/activity area	
Nature Preserve / Undeveloped	Per Schedule D (Section 20-905)	
Passive Recreation		
Private Recreation		

Use Category	Minimum Number of Vehicle Parking Spaces Required	Minimum Number of Bicycle Parking Spaces
RELIGIOUS ASSEMBLY		
Campus or Community Institution	1 per 4 seats in sanctuary or principal worship or assembly space plus spaces required for permitted Accessory Uses	5 or 1 per 10 auto spaces, whichever is greater
Neighborhood Institution		
COMMERCIAL USE GROUPS		
ANIMAL SERVICES		
Kennel	1 per 500 square feet	None
Livestock Sales	1 per 600 square feet	None
Sales and Grooming	1 per 300 square feet	1 per 10 auto spaces
Veterinary	1 per 400 square feet	None
EATING AND DRINKING ESTABLISHMENTS		
Accessory Bar	1 per 3 persons based on maximum occupancy PLUS 1 per employee based on the largest shift	None
Accessory Restaurant	1 per 100 square feet of customer service area PLUS 1 per employee based on the largest shift	
Bar or Lounge	1 per 3 persons based on maximum occupancy PLUS 1 per employee based on the largest shift	5 or 1 per 10 auto spaces, whichever is greater
Brewpub		
Fast Order Food	1 per 100 square feet of customer service area PLUS 1 per employee based on the largest shift	
Fast Order Food, Drive-In		
Nightclub	1 per 3 persons based on maximum occupancy PLUS 1 per employee based on the largest shift	
Private Dining Establishment	Per Section 20-539	Per Section 20-539
Restaurant, Quality	1 per 100 square feet of customer service area PLUS 1 per employee based on the largest shift	5 or 1 per 10 auto spaces, whichever is greater
OFFICE		
Administrative and Professional	1 per 300 square feet	1 per 10 auto spaces
Financial, Insurance and Real Estate		
Other		
PARKING FACILITIES		
Accessory	None	None
Commercial		

Use Category	Minimum Number of Vehicle Parking Spaces Required	Minimum Number of Bicycle Parking Spaces
RETAIL SALES AND SERVICE		
Building Maintenance Service	1 per 500 square feet	1 per 10 auto spaces
Business Equipment Sales and Service	1 per 300 square feet	
Business Support Service	1 per 400 square feet	
Construction Sales and Service	1 per 500 square feet of Building area + 1 space per acre of outdoor storage or assembly	1 per 10 auto spaces
Food and Beverage Retail Sales	1 per 300 square feet	5 or 1 per 10 auto spaces
Mixed Media Store	1 per 300 square feet	5 or 1 per 10 auto spaces
Personal Convenience Service	1 per 300 square feet	1 per 10 auto spaces
Personal Improvement Service	1 per 200 square feet	1 per 10 auto spaces
Repair Service, Consumer	1 per 400 square feet	
Retail Sales, General	per Schedule B (Section 20-903)	
Retail Establishment, Large	per Schedule B (Section 20-903)	1 per 10 auto spaces
Retail Establishment, Medium		
Retail Establishment, Specialty		
SEXUALLY ORIENTED BUSINESSES		
Sexually Oriented Media Store	1 per 300 square feet	5 or 1 per 10 auto spaces
Physical Sexually Oriented Business		
Sex Shop		
Sexually Oriented Theater	1 per 4 seats	
TRANSIENT ACCOMMODATION		
Bed and Breakfast	1 per guest room + 1 per 1.5 employees	None
Campground	1 per camp space	None
Elderhostel	1 per guest room + 1 per 1.5 employees for associated uses	as required for associated uses
Hotel, Motel, Extended Stay		
VEHICLE SALES AND SERVICE		
Cleaning (Car Wash)	2 + stacking spaces per Section 20-911	None
Fleet Storage	1 per 1.5 employees	
Gas and Fuel Sales	1 per 300 square feet of retail sales area + 2 per pump island	
Heavy Equipment Repair	2 per service bay, not counting the bay or Access way to the bay	
Heavy Equipment Sales/Rental	1 per 5,000 square feet of open sales area + 1 per 500 square feet of enclosed sales area + 2 per service bay	
Inoperable Vehicles Storage	1 per 1.5 employees	
Light Equipment Repair	2 per service bay, not counting the bay or Access way to the bay	
Light Equipment Sales/Rental	1 per 5,000 square feet of open sales area + 1 per 500 square feet of enclosed sales area + 2 per service bay	
Recreational Vehicle and Boat Storage	1 per 25 storage spaces	

Use Category	Minimum Number of Vehicle Parking Spaces Required	Minimum Number of Bicycle Parking Spaces
INDUSTRIAL USE GROUPS		
INDUSTRIAL FACILITIES		
Explosive Storage	per Schedule C (Section 20-904)	None
Industrial, General		
Industrial, Intensive		
Laundry Service		
Manufacturing and Production, Limited		
Manufacturing and Production, Technological		
Research Service	per Schedule C (Section 20-904)	1 per 10 auto spaces
Maker Space, Limited	Per Schedule B (Section 20-904)	1 per 10 auto spaces
Maker Space, Intensive	Per Schedule C (Per Section 20-904)	1 per 10 auto spaces
Scrap and Salvage Operation	1 per acre	None
WHOLESALE, STORAGE AND DISTRIBUTION		
Exterior Storage	per Schedule C (Section 20-904)	None
Heavy		
Light		
Mini-Warehouse	4 + 1 per 25 rental spaces	
OTHER USE GROUPS		
ADAPTIVE REUSE		
Designated Historic Property	As established at time of Special Use approval per Section 20-501	As established at time of Special Use approval per Section 20-501
Greek Housing Unit		
AGRICULTURE		
Agricultural Sales	1 per 500 square feet of Building area + 1 space per acre of outdoor storage or assembly	1 per 10 auto spaces
Agricultural Services	1 per 1.5 employees	1 per 10 auto spaces
Agriculture, Animal	None	None
Agriculture, Crop	None	None
COMMUNICATIONS FACILITIES		
Amateur and Receive Only Antennas	None	None
Broadcasting Tower	1 space	None
Communications Service Establishment	1 per 400 square feet	1 per 10 auto spaces
Telecommunications Antenna	None	None
Telecommunications Tower	1 space	None
Satellite Dish	None	None

Use Category	Minimum Number of Vehicle Parking Spaces Required	Minimum Number of Bicycle Parking Spaces
MINING		
Mining	per Schedule D (Section 20-905)	None
RECYCLING FACILITIES		
Large Collection	per Schedule C (Section 20-904)	None
Small Collection		
Processing Center	per Schedule C (Section 20-904)	None

Footnotes:

[1] Whenever a structure 4,500 gross square feet or larger as of April 28, 2012 on a property 8,775 square feet in size or less is renovated as a Multi-Dwelling Structure or Congregate Living use, parking shall be provided at the overall rate of 0.5 spaces per one (1) bedroom. For purposes of calculating the structure's gross square feet, the following shall be considered to be included and in existence at the time of making application for use of the parking standard:

1. Finished and unfinished area that is able to comply with the building code standard for livable space ceiling height without structural alterations, including the following:
   a. Attic space when it is accessed by a permanent stairway.
   b. Basement space.
   c. Enclosed space such as enclosed porches, sunrooms, and breezeways that are seasonal in nature and that may or may not be connected to the structure's heating, ventilation, and air conditioning system.

20-903 OFF-STREET PARKING SCHEDULE B

(a) Off-street Parking Spaces for Schedule B uses shall be provided in accordance with the following standards. These standards shall be minimum standards for the provision of off-street Parking Spaces.

Gross Floor Area (Sq. Ft.)	Off-Street Parking Spaces Required
1–45,000	1 per 300 square feet
45,001–100,000	150 + 1 per 400 square feet of Gross Floor Area between 45,001 and 100,000 square feet
100,001+	288 + 1 per 500 square feet of Gross Floor Area above 100,000 square feet

(b) The maximum number of off-street Parking Spaces for a Schedule B use shall not exceed 120% of the minimum required number of Parking Spaces for such a use.

20-904 OFF-STREET PARKING SCHEDULE C

Off-street Parking Spaces for Schedule C uses shall be provided in accordance with the following standards:

Gross Floor Area (Sq. Ft.)	Off-Street Parking Required		
		Warehousing Floor Area Manufacturing or Other Floor Area	Outdoor Storage Area
1–20,000	1 per vehicle used in the business +	1 per 1,000 square feet +	1 per acre
20,001 – 120,000		1 per 5,000 square feet +	1 per acre
120,001 +		1 per 10,000 square feet +	1 per acre

Gross Floor Area (Sq. Ft.)	Off-Street Parking Required		
		Warehousing Floor Area Manufacturing or Other Floor Area	Outdoor Storage Area
If business is employee intensive, parking may be based on ratio of employees	1 per vehicle used in the business +	1 per 1.5 employees on largest shift	1 per acre

20-905 OFF-STREET PARKING SCHEDULE D

Schedule "D" uses have widely varying Parking demand characteristics, making it difficult to specify a single off-street parking standard.

(a) Standards

Upon receiving a development application for a use subject to "Schedule D" standards, the Planning Director shall apply the off-street parking standard specified for the listed use that is deemed most similar to the proposed use or shall establish minimum off-street parking requirements.

(b) Parking Study

The decision of the Planning Director shall be based upon a Parking study prepared by the applicant.

(1) The study shall include estimates of Parking demand based on recommendations of the Institute of Traffic Engineers (ITE), or other acceptable estimates as approved by the Planning Director, and include other reliable data collected from uses or combinations of uses that are the same as or comparable with the proposed use.

(2) Comparability will be determined by Density, Scale, bulk, area, type of activity, and location.

(3) The study shall document the source of data used to develop the recommendations.

20-906 OFF-STREET LOADING

(a) General

Goods may not be loaded or unloaded from the right-of-way of a Collector or Arterial Street and no part of any vehicle may extend into the right-of-way of a Collector or Arterial Street while being loaded or unloaded; provided that, routine deliveries, such as U.S. Mail, Federal Express, Parcel Post and similar services, for reasonable durations, are not hereby prohibited.

(b) Loading Schedule

Off-Street loading spaces shall be provided in accordance with the minimum ratios shown in the following table:

Use	Building Floor Area (gross sq. ft.)	Required Loading Spaces	Space Size (feet)
Public and Civic	1–9,999	None	N/A
	10,000+	1 + 1 per 50,000 sq. ft. above 50,000 sq. ft.	10 x 25
Commercial (except Retail Sales, General)	1–9,999	None	N/A
	10,000+	1 + 1 per 50,000 sq. ft. above 50,000 sq. ft.	10 x 25
Retail Sales, General	1–4,999	None	N/A

Use	Building Floor Area (gross sq. ft.)	Required Loading Spaces	Space Size (feet)
	5,000+	[1]	[1]
Industrial	1–4,999	None	N/A
	5,000+	1 up to 40,000 sq. ft. + 1 addl up to 100,000 sq. ft. + 1 per 100,000 sq. ft. above 100,000	10 × 25; 10 × 50 for bldgs. over 20,000 sq. ft.

[1] The following standards apply:

Building Floor Area (square feet)	Required Loading Spaces	Space Size (feet)
5,000 to 10,000	1	10 × 25
10,001 to 25,000	2	10 × 25
25,001 to 40,000	2	10 × 50
40,001 to 100,000	3	10 × 50
100,001 to 250,000	4	10 × 50
+250,000	1 per 200,000 above 250,000	10 × 50

20-907 RULES FOR CALCULATING REQUIREMENTS

The following rules apply when calculating off-street parking and loading requirements.

(a) Multiple Uses

Unless otherwise approved, Lots containing more than one use shall provide Parking and loading in an amount equal to the total of the requirements for all uses. (See the Shared Parking provisions of Section 20-909 for possible exceptions.)

(b) Fractions

When measurements of the number of required spaces result in a fractional number, any fractional result shall be rounded up to the next consecutive whole number. For example, if a minimum requirement of 1 space per 200 square feet is applied to a 900 square foot Building, 5 spaces are required, since the fraction of 4.25 is rounded up to 5 spaces.

(c) Area Measurements

(1) Unless otherwise specifically noted, all Parking and loading standards given in square feet shall be computed on the basis of Gross Floor Area, which is to be measured using all of the Floor Area on each floor of the Building, whether or not such area is enclosed by walls. Interior areas used for off-street parking or off-Street loading facilities are not counted in calculating the number of Parking Spaces required.

(2) For outdoor areas, calculations will be based on the portion of the Lot actually being used for the specified purpose.

(d) Occupancy- or Capacity-Based Standards

For the purpose of calculating Parking requirements based on employees, students, residents or occupants, calculations are to be based on the greatest number of persons working on any single shift, the maximum enrollment or the maximum fire-rated capacity, whichever is applicable and whichever results in the greater number of spaces.

(e) Bench Seating

When seating consists of benches, pews or other similar seating facilities, each 24 linear inches of seating space counts as 1 seat.

(f) Unlisted Uses

Upon receiving a development application for a use not specifically listed in an off-street parking schedule, the Planning Director shall apply the off-street parking standard specified for the listed use that the Planning Director deems most similar to the proposed use or the requirements of off-street parking schedule D, Section 20-905.

20-908 LOCATION

(a) General

Except as otherwise expressly provided in this section, required off-street parking and loading spaces shall be located on the same Lot as the Principal Use (See Section 20-909 for possible exceptions).

(b) Residential Districts

No part of a Parking Area, other than a Driveway, may be located within 25 feet of a Street right-of-way in any residential Zoning District.

(1) No more than 4 vehicles may be parked on Driveways or turnarounds within the required Front or Side Setback of any Lot in a residential Zoning District. Single or double Driveways and turnarounds may not be used to provide required off-street parking within the required Front or Exterior Side Setback with the exception of when they are serving a Duplex or Detached House.

(2) Driveway widths may not exceed 26 feet in residential Districts. All Driveway cuts into the Street require a permit and must be approved by the City Engineer in conformance with the standards outlined in Chapter 16, Article 3 of the City Code.

(3) In RS3 and RS5 Districts, residential Driveways may be constructed a maximum of 12' wide to reduce pavement width and maintain the character of the neighborhood.

(c) Nonresidential Districts

The location of off-street Parking Areas in Commercial and Industrial Zoning Districts shall comply with the adopted city design standards and the following standards:

<table>
<tr><th rowspan="2">District</th><th rowspan="2">Allowed Location</th><th colspan="2">Minimum Setback (feet)</th></tr>
<tr><th>From Right-of-Way</th><th>From Residential Lot Lines</th></tr>
<tr><td>CN1
CO
CN2</td><td>Not allowed between the Facade of the Building with the main entrance and the Street.</td><td rowspan="12">15</td><td rowspan="12">10</td></tr>
<tr><td>CD</td><td>Prohibited between a Building and any Street</td></tr>
<tr><td>CC
CR
CS
IBP
IL
IM
IG
H
GPI
OS</td><td>No restriction except as specified in Article 5.</td></tr>
<tr><td>MU</td><td>Prohibited in the Primary Development Zone and prohibited between a Building and any Street in a Secondary Development Zone. No restriction in a Tertiary Development Zone.</td></tr>
</table>

20-909 SHARED AND OFF SITE PARKING

(a) Purpose

The shared and off-site off-street parking provisions of this section are intended to encourage efficient use of land and resources by allowing users to share off-street parking facilities in situations where a mix of uses creates staggered peak periods of parking demand and to locate off-street parking facilities on a different site than the uses served by the Parking.

(b) Approval Procedure

Shared or off-site off-street parking arrangements require review and approval in accordance with the Site Plan Review procedures of Section 20-1305.

(c) Location

All shared or off-site off-street Parking Spaces shall be located no further than 600 feet from the main entrance of the Buildings or uses they are intended to serve, measured along the shortest legal, practical walking route. This distance limitation may be waived as part of the Site Plan Review process if sufficient assurances are offered that adequate van or shuttle service will be operated between the shared or off-site Lot and the Principal Use or uses.

(d) Zoning Classification

Shared and off-site Parking Areas require the same or a more intensive zoning classification than that required for the most intensive of the uses served by the shared or off-site Parking Area, except as permitted in Section 20-535. Shared and off-site Parking Areas are to be considered Accessory Uses to the Principal Uses that the Parking Spaces serve.

(e) Required Shared Parking Study and Analysis

For proposed Shared Parking Areas, the applicant shall submit a Shared Parking analysis to the Planning Director that clearly demonstrates the feasibility of shared or off-site Parking. The study shall be provided in a form established by the Planning Director and made available to the public. It shall address, at a minimum, the size and type of the proposed development, the composition of tenants and customers, the anticipated rate of Parking turnover and the anticipated peak Parking and traffic loads for all uses that will be sharing off-street Parking Spaces.

(f) Parking Agreement

The sharing or off-site location of required Parking shall be guaranteed by a legally binding agreement, duly executed and acknowledged, between the Owner of the Parking Area and the Owner of all uses that are located on a different Lot and served by the Parking Area.

(1) The agreement shall be properly drawn and executed by the parties concerned and approved as to form and execution by the Director of Legal Services. Approved shared or off-site Parking agreements shall be recorded with the Register of Deeds.

(2) The applicant for a Building Permit or certificate of occupancy for the use that is served by Parking Spaces on the other Lot shall submit a copy of such agreement along with the application for the permit or certificate.

(3) Any violation of the agreement required under this subsection constitutes a violation of this Development Code.

20-910 USE OF OFF-STREET PARKING AND LOADING AREAS

(a) Parking for Motor Vehicles Only

Required off-street parking and loading areas are to be used solely for loading, unloading, and the Parking of licensed motor vehicles in operating condition. Required spaces may not be used for the display of goods for sale or lease or for long-term storage of vehicles, boats, truck trailers, motor homes, campers, Mobile Homes, Manufactured Homes, or components thereof, or Building materials.

(b) Weight Limit

In residential Zoning Districts, required off-street Parking Areas may only be used by vehicles of up to one ton manufacturer's rated capacity.

20-911 VEHICLE STACKING AREAS

The vehicle stacking standards of this subsection apply unless otherwise expressly approved by the City Engineer.

(a) Minimum Number of Spaces

Off-Street stacking spaces shall be provided as follows:

Activity Type	Minimum Number of Stacking Spaces
Bank teller lane	4 per teller or window
Automated teller machine	2 per machine
Restaurant drive-through	4 at each order box and 4 at each pick-up window
Car wash stall, automatic	4 at each entrance
Car wash stall, self-service	4 at each entrance
Gasoline pump island	1 at end of each pump island
Schools	10 on each elementary and junior high school Driveway 5 on each senior high school Driveway
Other	As determined by the City Traffic Engineer based on a traffic impact analysis

(b) Design and Layout

Required stacking spaces are subject to the following design and layout standards.

(1) Size

Each stacking space shall be a minimum of 8 feet by 20 feet in size.

(2) Location

Stacking spaces may not impede on-site or off-site traffic movements or movements into or out of off-street Parking Spaces.

(3) Design

Stacking spaces shall be separated from other internal Driveways by raised medians if deemed necessary by the City Engineer for traffic movement and safety.

20-912 ACCESSIBLE PARKING FOR PHYSICALLY DISABLED PERSONS

A portion of the total number of required off-street Parking Spaces in each off-street Parking Area shall be specifically designated, located and reserved for use by persons with physical disabilities.

(a) Spaces Required

The following table shows the minimum number of accessible spaces that shall be provided. Parking Spaces designed for persons with disabilities are counted toward fulfilling off-street parking standards. These standards may not be varied or waived.

Total Parking Spaces Provided	Required Number of Accessible Spaces		
	Auto	Van	Total
1 – 25	0	1	1
26 – 50	1	1	2
51 – 75	2	1	3
76 – 100	3	1	4
101 – 150	4	1	5
151 – 200	5	1	6
201 – 300	6	1	7
301 – 400	7	1	8
401 – 500	7	2	9
501 – 1,000	7 per 8 accessible spaces	1 per 8 accessible spaces	2% of total spaces
1,001+	7 per 8 accessible spaces	1 per 8 accessible spaces	20, plus 1 per 100 spaces over 1,000

(b) Special Requirements for Medical Care Facilities

Facilities providing medical care and other services for persons with mobility impairments shall provide accessible Parking Spaces as follows:

(1) All outpatient facilities shall provide at least one accessible Parking Space, or spaces equal to ten percent (10%) of the total number of Parking Spaces provided, whichever is greater.

(2) Facilities that specialize in treatment or services for persons with mobility impairments shall provide at least one accessible Parking Space, or spaces equal to 20% of the total number of Parking Spaces provided, whichever is greater.

(c) Special Requirements for Congregate Living and Multiple-unit Residential

New construction, additions to, or alterations of Congregate Living residences containing 4 or more sleeping units shall comply with the accessibility requirements of both the Fair Housing Act and the International Building Code as adopted by the City of Lawrence. Multiple-unit residential Buildings containing 4 or more Dwelling Units shall provide accessible Parking Spaces as follows:

(1) Designated accessible Parking Spaces shall be provided for at least two percent (2%) of the Dwelling Units.

(2) Designated accessible Parking Spaces shall be provided at facilities that serve accessible Buildings, such as swimming pools and clubhouses.

(3) Additional designated accessible Parking shall be provided at the request of residents with disabilities, on the same terms and with the full range of choices that are provided for other residents of the project.

(4) Designated accessible Parking Spaces shall comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

(d) Exemptions

Detached Dwellings, Attached Dwellings and Duplexes are exempt from the requirements to provide accessible Parking Spaces. However, accessible Parking shall be provided at the request of residents with disabilities.

(e) Minimum Dimensions

All Parking Spaces reserved for persons with disabilities shall comply with the Parking Space dimension standards of this section, provided that Access aisles shall be provided immediately abutting such spaces, as follows:

(1) Car-Accessible Spaces

Car-accessible spaces shall have at least a 5-foot wide Access aisle abutting the designated Parking Space.

(2) Van-Accessible Spaces

Van-accessible spaces shall have at least an 8-foot wide Access aisle abutting the passenger Access side of the designated Parking Space.

(f) Location of Spaces

Required spaces for persons with disabilities shall be located in close proximity to Building entrances and be designed to permit occupants of vehicles to reach the Building entrance on an unobstructed path. Curb ramps shall be provided whenever an accessible route crosses a curb in the parking lot. Curb ramps may not be located within required Access aisle.

(g) Signs and Marking

Required spaces for persons with disabilities shall be identified with signs and pavement markings identifying them as reserved for persons with disabilities. Signs shall be posted directly in front of the Parking Space at heights that will be visible to the types of vehicles for which they are designed, specifically 60 to 82 inches. Signs shall comply with the Manual on Uniform Traffic Control Devices issued by the Federal Highway Administration.

20-913 PARKING AND LOADING AREA DESIGN STANDARDS

The design standards of this section apply to all Parking Areas, including commercial parking lots and "non-required" Parking Areas.

(a) General Layout Principles

There shall be safe, adequate, well-lit, and convenient arrangement of pedestrian pathways, bikeways, roads, Driveways, and off-street parking and loading spaces within off-street Parking Areas. Streets, pedestrian walks, and Parking Areas shall be designed as integral parts of an overall site design, which shall be properly related to existing and proposed Buildings, adjacent uses and landscaped areas. There shall be defined pedestrian ways connecting all public entrances of Buildings to all modules of the Parking Area, to the required Bicycle Parking Area, to any adjacent bus stop and to the nearest public sidewalks. Such pedestrian ways shall, to the maximum extent practicable, be separated from driving lanes with curbs or other devices. At locations where walkways cross Driveways or travel lanes, the crossings shall be clearly marked with both signage and pavement markings.

(b) Approval

The layout and design of all off-street Parking Areas shall be approved by the City Engineer prior to the issuance of a Building Permit. Before approving any off-street parking plan, the City Engineer shall find that the spaces provided are useable and that they comply with the City's standard design criteria.

(c) Appearance

The materials used in the design of paving, lighting fixtures, retaining walls, fences, curbs and benches shall be easily maintained and designed to be indicative of their function.

(d) Maintenance

Parking lots shall be maintained in a safe operating condition so as not to create a hazard or nuisance. All materials used in the design of paving, lighting fixtures, retaining walls, fences, curbs and benches shall be continuously maintained and kept free of debris and hazards. Striping and other pavement markings shall be maintained in an easily readable condition.

(e) Surfacing

(1) All off-street Parking Areas and Driveways, including those serving Attached Dwellings, Detached Dwellings and Duplexes, shall be surfaced with a minimum of one of the following:

(i) 4 inches of reinforced Portland cement concrete;

(ii) 5 inches of granular rock base with 2 inches of asphalt;

(iii) 7 inches of granular rock with a double asphaltic prime and seal;

(iv) 5 inches of full depth asphalt; or

(v) 4 inches of compacted gravel for residential Driveways constructed in Floodplains areas with a paved Driveway Apron constructed to city residential Driveway standards.

(2) As an alternative to the surfacing required in the preceding paragraph, all off-street parking for uses allowed by right within residential Districts or areas of low off-street parking use as determined by the City Engineer (such as fire safety lanes or overflow Parking Areas), may be surfaced with the following alternative methods of paving. The surfacing shall be installed per the manufacturer's recommendations, with the pavement and base designed by a professional engineer licensed in the State of Kansas. The pavement cross-section shall demonstrate the structural ability to support the anticipated vehicle loads for the use. The pavement design shall be reviewed and approved by the City Engineer.

(i) Grid unit pavers with grass; or

(ii) Concrete, brick, or clay interlocking paver units.

(3) Private Streets shall be built to City Street standards and maintained by the Landowner.

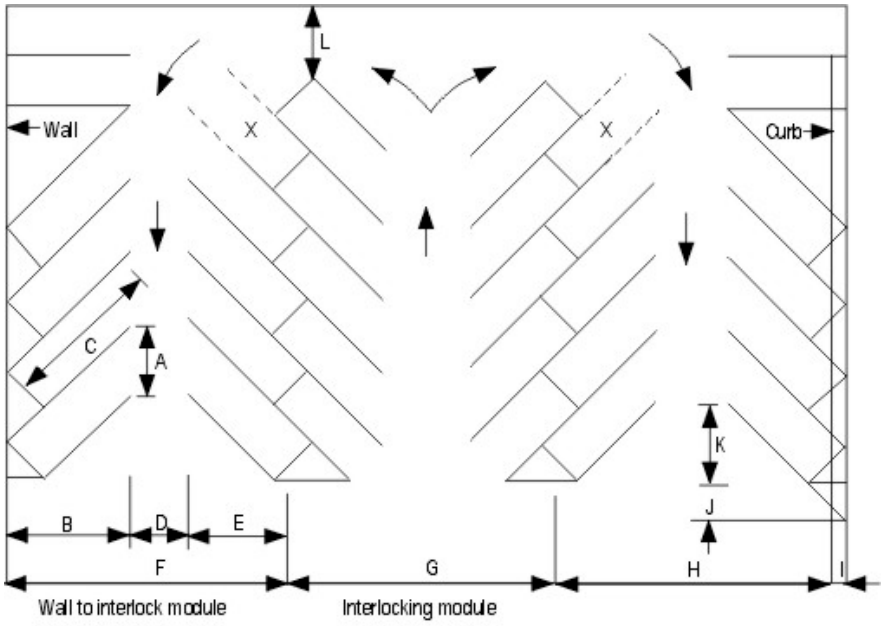
(4) Driveway approaches (aprons) shall be built to City standards, including, where applicable, the Residential Driveway Requirements adopted by the City Commission on July 10, 1996 as amended, and maintained by the Landowner.

(f) Dimensions

(1) Automobile Parking

All off-street Parking Areas shall comply with the following dimensional standards:

Dimensional Feature (all dimensions in feet)	Diagram	Parking Angle				
		0	45	60	75	90
Stall width (parallel to aisle)	A	8.5	12.2	9.9	8.8	8.5
Stall length	B	24.0	24.5	21.4	19.5	18.0
Stall length of line	C	9.0	17.0	18.5	19.0	18.0
Aisle width between stall lines	D	12.0	12.0	16.0	22.0	24.0
Stall depth, interlock	E	9.0	14.8	17.0	18.3	18.0
Module, wall to interlock	F	30.0	43.8	51.5	59.3	60.0
Module, interlocking	G	30.0	41.6	50.0	58.6	60.0
Module, interlock to curb face	H	30.0	41.8	49.4	56.9	58.0
Bumper overhang (typical)	I	0.0	1.5	1.8	2.0	2.0
Offset	J	—	6.3	2.7	0.5	0.0
Setback	K	24.0	11.0	8.3	5.0	0.0
Cross-aisle, one-way	L	18.0	18.0	18.0	18.0	18.0
Cross-aisle, two-way	—	24.0	24.0	24.0	24.0	24.0
Where natural and/or man-made obstacles, obstructions or other features such as but not limited to Landscaping, support columns or Grade difference exist, the City Engineer may approve a reduction in stall width, stall length and/or module width. In all instances where a reduction is requested, attention to emergency vehicle Access shall be considered and incorporated into the Parking lot design.						



(2) Loading

Required loading spaces shall have a minimum vertical clearance of 15.5 feet. See Section 20-906 for other dimensional standards.

(g) Bicycle Parking

Every Bicycle Parking Space, whether used publicly or privately and including a commercial Bicycle Parking Space, shall be designed, built and maintained in accordance with the following specifications:

(1) Surfacing

A Bicycle Parking Space shall be surfaced with a minimum of:

(i) 4 inches of concrete, or

(ii) 4 inches of asphalt, or

(iii) 2 inches of concrete with a 2-inch brick overlay, or similar material for overlay.

(2) Lighting

Bicycle Parking Space shall be located within a lighted area and within clear view of passersby.

(3) Barriers

If Bicycle and automobile Parking Areas or Accessways abut each other, there shall be provided a physical barrier between the Bicycle and automobile areas to prevent a Bicycle or its operator from being hit by a motor vehicle.

(4) Structure

Each Bicycle Parking Space shall provide for a secure method of locking a Bicycle and be located to accommodate Bicycle Parking in a manner that is convenient to use and does not interfere with other uses of the property.

(h) Striping
To facilitate movement and to help maintain an orderly parking arrangement, all Parking Spaces shall be clearly striped, with a minimum width of 4 inches. The width of each Parking Space shall be computed from the centers of the striping.

(i) Curbs
The perimeter of the parking lot shall have a curb and gutter in accordance with City standards for concrete curbs.

(j) Large Parking Lots

(1) Parking lots of 220 Parking Spaces or more shall be divided into smaller Parking modules containing no more than 72 spaces. Landscape strips, Peninsulas, or Grade separations shall be used to reduce the adverse visual impacts of large expanses of paving, to direct vehicular traffic through the parking lot, and to provide a location for pedestrian walks. Protected pedestrian walkways, leading to Building entrances, shall be provided within such parking lots.

(2) Parking lots of 450 Parking Spaces or more shall place Landscaping and trees on both sides of entrance drives to create tree-lined entrances, to direct vehicles into and out of the site, and to provide adequate space for vehicle stacking at exits onto perimeter roadways.

(k) Pedestrian Connections
Parking lots shall be designed to provide designated walkways for pedestrians. Walkways shall connect Building entrances with Parking Areas and with public sidewalks along adjacent streets.

20-914 LANDSCAPING

Parking lot Landscaping shall be provided in accordance with Article 10.

20-915 DRIVEWAYS AND ACCESS

The standards of this section apply to all Driveways providing Access to multi-Family or nonresidential uses.

(a) General Standards

(1) Access to property is allowed only by way of Driveways. No other portion of the Lot Frontage may be used for vehicle ingress or egress, nor may any Parking Area or Access Drive be arranged so that any vehicle may back directly onto a Street. All Driveway cuts into the Street shall require a permit from the Public Works department unless approved through site or development plan approval.

(2) Driveway designs shall allow an entering vehicle turning speed of 15 miles per hour to help reduce interference with through Street traffic. Radii of Driveway shall be sufficient to achieve this standard for the types of vehicles that the Driveway is intended to serve.

(3) There shall be sufficient on-site space to accommodate queued vehicles waiting to park or exit, without interfering with Street traffic.

(4) Provisions for circulation between adjacent Parcel should be provided through coordinated planning or Cross Access Agreements.

(5) Driveways shall be placed and designed so that loading and unloading activities will not hinder vehicle ingress or egress, and that vehicles entering the Driveway from the Street will not encroach upon the exit lane of a two-way Driveway. Also, a right-turning exiting vehicle shall be able to use only the first through-traffic lane available without encroaching into the adjacent through-lane.

(6) No Lot that is less than 51 feet in width and that was created (by subdivision or re-subdivision) after the Effective Date, shall have a Driveway Access to a Public Street. Driveway Access to such a Lot shall be from an Alley or by a Shared Driveway.

(7) Driveways shall intersect the Street at right angles.

(b) Turn Lanes and Tapers

Turn lanes and tapers are required, unless determined to be unnecessary by the City Engineer, when:

(1) Driveways intersect Arterial Streets. Turn lanes shall be a minimum of 150 feet in length plus the taper;

(2) Driveways serving non-residential uses intersect Collector Streets. Left-turn lanes shall be a minimum of 100 feet in length plus the taper. Right-turn lanes shall be required when the projected or existing right-turning volume equals or exceeds 100 vehicles per hour;

(3) The City Engineer determines, based on a traffic impact analysis, that such treatment is necessary to avoid congestion and/or unsafe conditions on the Public Street.

(c) Driveway Grade

The Grade of a two-way, one-way or divided Driveway shall not exceed four percent (4%) for a minimum distance of 25 feet from the edge of the Street pavement.

(d) Sight Distance

Direct-Access Driveways shall be located to allow the following minimum sight distance based on the intersection type (full or partial Access) and the Street type. Sight distances shall be determined by a professional engineer licensed by the State of Kansas and shall be based on the design speed of the Street or on the 85th percentile speed, whichever is higher.

Street Type	Speed		Minimum Sight Distance (in Feet)		
	miles per hour	feet per second	8 seconds	9 seconds	10 seconds
Arterial	45	66	529	594	660
	40	59	472	531	590
Collector	35	51	408	459	510
	30	44	352	396	440
Residential	25	37	296	333	370

(e) Driveway Spacing

All Direct Access to any Public Street shall be in accordance with the City's adopted Access Management Policy.

(1) Arterial Streets

Direct Access to an Arterial Street is prohibited except in redevelopment or infill situations where the subject property has no other reasonable Access to the Street system and the City Engineer determines that Access onto the Arterial Street, based on the Street's Ultimate Design, can be safely accommodated.

When direct Access to an Arterial Street is approved by the City Engineer pursuant to the requirements of this section, the following standards apply. In the event that such standards cannot be met because of an unusually narrow or shallow Lot size, the City Engineer may reduce the spacing between cuts as long as the reduction does not result in an unsafe traffic condition. A Driveway Access allowed under this section shall be used only to serve a Detached Dwelling on the property or an existing business and will be reevaluated when the use or Lot size changes.

(i) Spacing from Signalized Intersections

All Driveways providing Access to Arterial Streets shall be constructed so that the point of tangency of the curb return radius closest to a signalized or stop sign-controlled intersection is at least 300 feet from the perpendicular curb face of the intersecting Street.

(ii) Spacing from Other (Non-signalized) Access Points

All Driveways providing Access to Arterial Streets shall be constructed so that the point of tangency of the curb return radius closest to all non-signalized Street or Driveway intersections is at least 300 feet from the perpendicular curb face of the intersecting Street or Driveway.

(2) Collector Streets

Direct Access to Collector Streets shall be regulated in accordance with the following standards. In the event that such standard cannot be met because of an unusually narrow or shallow Lot size, the City Engineer may reduce the spacing so long as the reduction does not result in an unsafe traffic condition.

(i) Attached Dwelling, Detached Dwelling and Duplex Lots

Direct Access to Collector Streets from Attached Dwellings, Detached Dwellings and Duplex Lots is prohibited except when the subject property has no other reasonable Access to the Street system and the City Engineer determines that Access can be safely accommodated.

(ii) Spacing from Signalized Intersections

All Driveways providing Access to Collector Streets shall be constructed so that the point of tangency of the curb return radius closest to a signalized or stop sign-controlled intersection is at least 300 feet from the perpendicular curb face of an intersecting Arterial Street or 250 feet from the perpendicular curb face of an intersecting Collector or Local Street.

(iii) Spacing from Other (Non-signalized) Access Points

All Driveways providing Access to Collector Streets shall be constructed so that the point of tangency of the curb return radius closest to a non-signalized Street or Driveway intersection is at least 250 feet from the perpendicular curb face of the intersecting Street or Driveway.

(3) Waivers

(i) Waivers from these Access standards may be approved by the City Engineer if the City Engineer determines that the requested waiver will not create a serious detriment to the safety or operation of traffic on the Street or roadway and only for infill or redevelopment projects where no other feasible option exists.

(ii) The burden of proof that the requested waiver will not create a serious detriment to the safety or operation of traffic on the Street or roadway will be on the applicant. The City Engineer may require that the applicant for a waiver submit a traffic impact study pursuant to Section (g)(1) if it is determined that such an analysis is necessary in order to render a competent decision on the requested waiver.

(iii) A Driveway Access allowed with a waiver shall be used only to serve an existing Detached Dwelling or business on the property and for no other purpose.

(iv) The action of the City Engineer in granting or denying a waiver under this section shall be reported on the agenda of the next meeting of the Planning Commission after the action. Any party aggrieved may appeal the grant or denial of a waiver to the City Commission in writing within 14 days of the Planning Commission meeting at which the item appears on the agenda. The waiver shall not become effective until the expiration of the 14 days appeal period or, in case of an appeal, until the City Commission has acted on the appeal.

(v) A Landowner granted an Access waiver shall submit a letter to the City Engineer acknowledging the waiver and the fact that if circumstances change such that the property can meet the city's Access standards, the Access shall be immediately revised to comply with the city's Access standards.

(f) Driveways per Parcel along Local and Residential Collector Streets

(1) Unless otherwise specifically restricted, one Driveway opening shall be allowed per 200 feet of continuous Street Frontage. At least one Driveway shall be permitted for any Lot.

(2) Parcel with 200 feet of Frontage or less may apply for a second Driveway if it is to be shared with an adjoining Parcel, provided that the required minimum spacing is maintained. In such cases, only one Joint-Use Driveway will be permitted.

(3) Alleys are permitted and preferred Access alternatives.

(g) Use of Joint-Use Driveways

(1) Joint-Use Driveways shall not be used as aisles for Access to Parking Spaces.

20-916 TRAFFIC IMPACT STUDY

The City requires that a Traffic Impact Study (TIS) be prepared and submitted to the City for development or redevelopment, based on thresholds established in the adopted administrative policy. Preparation of a TIS, as part of an application for a permit or plan approval, shall be based upon adopted standards that have been established by Administrative Policy for a TIS adopted by the City Commission from time to time. A list of Engineering Consultants that are approved by the City to prepare a TIS is available from the City Engineer. Only engineers on this approved list meet the criteria established in the Administrative Policy to prepare a Traffic Impact Study.

(a) Purpose

The purpose of requiring a Traffic Impact Study is to provide the City with the information necessary to evaluate and make a determination about the impact of a proposed land use change or development project on adjacent land uses, on the existing and Ultimate Street Design, and on the entire transportation network.

(b) When Required

(1) Applicants are required to follow the Traffic Impact Study (TIS) analysis set forth in Ordinance No. 7650, unless waived with respect to the development because:

(i) the development is covered by a modified site plan, pursuant to Section 20-1305(n)(2), that has been determined not to constitute a material change; or

(ii) the development is covered by a modified final development plan, pursuant to Section 20-1304(n)(4), that has been determined not to constitute a major change; or

(iii) the development involves the reuse of existing Structures or modification of existing Structures, but does not involve a change in existing use or intensity of use;

(iv) the development is a residential development with ten (10) or fewer Lots or Dwelling Units; or

(v) the development has been determined by the City Engineer not to generate traffic impacts sufficient to justify the preparation of a TIS.

(2) The applicant for a development that generates 100 or more trips in a Peak Hour shall be responsible for the preparation and submittal of a TIS. TIS submittals shall be in accordance with the most recent version of the Traffic Impact Study Standards adopted by the City Commission.

(3) The extent of the analysis required for a TIS shall conform to the following:

(i) the study shall be confined to the Street or Streets from which Access is taken or is proposed and to the first major intersection in each direction, for developments that generate 100 to 499 vehicle trips in a Peak Hour;

(ii) the study area shall be extended to the next major Street intersection beyond the Streets onto which direct development Access is taken and may extend beyond the Streets onto which Access is taken or is proposed, for developments that generate 500 or more trips in a Peak Hour.

(4) Land use applications that deviate from the recommended land uses in the Comprehensive Land Use Plan or adopted area or neighborhood plan shall be required to provide a comparative analysis of the traffic that would be generated from the site, based on the adopted plan(s) land uses and the traffic that would be generated by the proposed development.

(c) Additional Analysis

When Access points are not defined or a site plan is not available at the time the Traffic Impact Study is prepared, additional analysis shall be conducted or required when a site plan becomes available or the Access points are defined.

(d) Expense

(1) Applications by Review or Decision-Making Bodies

The Owner or developer shall not be obligated to pay for a Traffic Impact Study where not required, pursuant to Section 20-1301(f), to pay an application filing fee;

(2) Notice if at Owner's or Developer's Expense

If the City determines that it is appropriate to engage an engineer or engineering firm to conduct a Traffic Impact Study, the City shall give the Owner or developer written notice of that determination, ten (10) Business Days before work on the TIS begins. This study shall be conducted for the City at the Owner or developer's expense.

(3) Payment as Permit Condition

In such instance, payment of a Traffic Impact Study shall be a condition of the issuance of any required permit or approval, pursuant to this Development Code, unless exempted in Section 20-916(d)(1).

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ARTICLE 17 TERMINOLOGY

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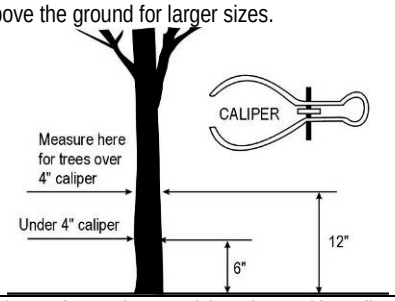
20-1701 GENERAL TERMS

Term	Definition
Access	A way or means of approach to provide vehicular or pedestrian physical entrance to a property.
Access, Cross	A service drive providing vehicular Access between two or more contiguous sites so the driver need not enter the public Street system.
Access Management	The process of managing Access to land development while preserving the regional flow of traffic in terms of safety, capacity and speed.
Accessory Dwelling Unit	A Dwelling Unit that is incidental to and located on the same Lot as the Principal Building or use, when the Principal Building or use is a Dwelling.
Accessory Structure	A subordinate Structure, the use of which is clearly incidental to, or customarily found in connection with, and located on the same Lot as the Principal Building or use.
Accessory Use	A use that is clearly incidental to, customarily found in connection with, and (except in the case of off-Street Parking Space) located on the same Lot as the Principal Use to which it is related.
Accessway , also Access Drive	Any Driveway, Street, turnout or other means of providing for the movement of vehicles to or from the public roadway system.
Adult Care Home	See Group Home
Agent (of Owner or Applicant)	Any person who can show certified written proof that he or she is acting for the Landowner or applicant.
Airport/Lawrence Municipal Airport	The location from which take-offs and landings may be made by any manned aircraft, excluding free balloons, within the corporate limits of the City of Lawrence, Kansas.
Airport Hazard	Any Structure or tree or use of land that obstructs the airspace required for the flight of aircraft in landing or taking off at any Airport or is otherwise hazardous to such landing or taking off of aircraft.
Alley	A public or private way not more than 20 feet wide primarily designed to serve as a secondary means of Access to abutting property.
Antenna	Any system of wires, poles, rods, reflecting discs or similar devices used for the reception or transmission of electromagnetic waves which system is attached to an Antenna support Structure or attached to the exterior of any Building. The term includes devices having active elements extending in any direction, and directional beam-type arrays having elements carried by and disposed from a generally horizontal boom which may be mounted upon and rotated through a vertical mast, tower or other Antenna support Structure.
Antenna, Receive-Only	An Antenna capable of receiving but not transmitting electromagnetic waves, including Satellite Dishes.
Antenna, Amateur Radio	An Antenna owned and utilized by an FCC-licensed amateur radio operator or a citizens band radio Antenna.
Arterial	A Street classified as an Arterial in the Lawrence/Douglas County MPO Transportation Plan, as amended.
Arterial Street, Minor	A Street which is anticipated to have 2-4 travel lanes designed for speeds ranging from 30-45 mph and which is defined specifically as such on the Major Thoroughfares Map of the City.
Arterial Street, Principal	A Street which is anticipated to have 4-6 travel lanes designed for speeds ranging from 30-45 mph and which is defined specifically as such on the Major Thoroughfares Map of the City.
Assisted Living	Building or group of Buildings containing Dwellings designed for occupancy by persons 55 years or older where the Dwelling Units are independent but include special support services such as central dining and limited medical or nursing care.
Basement	Any floor level below the first Story in a Building, except that a floor level in a Building having only one floor level shall be classified as a Basement unless such floor level qualifies as a first Story as defined herein.
Base Density	The number of dwelling units that can be developed on a subject property, rather than the number of dwelling units that are permitted for the zoning district. Base density is the number of dwelling units that can be developed given the size of the parcel, the area required for street rights-of-way or infrastructure, the density and dimensional standards of Section 20-601(a), the environmental protection standards, as well as topographical or other features unique to the property.
Base District	Any Zoning District delineated on the Official Zoning District Map under the terms and provisions of this Development Code, as amended, for which regulations governing the area, use of Buildings, or use of land, and other regulations relating to the development or maintenance of existing uses or Structures, are uniform; but not including Overlay Zoning Districts.

Term	Definition
Base District, Special Purpose	A District established to accommodate a narrow or special set of uses or for special purposes. The use of this term in the Development Code applies to Districts beyond the conventional residential, commercial, industrial and agricultural districts. Examples include government and public institutional uses, open space uses, hospital use, planned unit developments that pre-date the Effective Date of this Development Code or newly annexed urban reserve areas.
Berm	An earthen mound at least two feet (2') above existing Grade designed to provide visual interest, Screen undesirable views and/or decrease noise.
Bicycle	A two-wheeled vehicle for human transportation, powered only by energy transferred from the operator's feet to the drive wheel.
Bicycle- Parking Space	An area whose minimum dimensions are two feet by six feet or two feet by four feet for upright storage.
Big Box	See Retail Establishment, Large.
Block	A Parcel of land entirely surrounded by public Streets, highways, railroad rights-of-way, public walks, parks or green strips, or drainage channels or a combination thereof.
Block Face	That portion of a Block or Tract of land facing the same side of a single Street and lying between the closest intersecting Streets.
Bufferyard	A combination of physical space and vertical elements, such as plants, Berms, fences, or walls, the purpose of which is to separate and Screen changes in land uses from each other.
Build-to-Line (minimum Building setback)	An imaginary line on which the front of a Building or Structure must be located or built and which is measured as a distance from a public right-of-way.
Building	Any Structure having a roof supported by columns or walls, used or intended to be used for the shelter or enclosure of persons, animals, or property. When such a Structure is divided into separate parts by one or more walls unpierced by doors, windows, or similar openings and extending from the ground up, each part is deemed a separate Building, except as regards minimum Side Setback requirements as herein provided.
Building Envelope	The three-dimensional space on a Lot on which a Structure can be erected consistent with existing regulations, including those governing maximum Height and bulk and the Setback lines applicable to that Lot consistent with the underlying Zoning District, or as modified pursuant to a Variance, a site review, or prior City approval.
Building Frontage	That portion of a Building or Structure that is adjacent to or faces the Public Frontage.
Building, Principal	A Building in which is conducted the Principal Use of the Building site on which it is situated. In any residential District, any Dwelling shall be deemed to be the Principal Building on the site on which the same is located.
Building Type (also referred to as housing type)	A residential Structure defined by the number of Dwelling Units contained within.
Caliper	The American Association of Nurserymen standard for trunk measurement of nursery stock, as measured at six (6) inches above the ground for trees up to and including four-inch Caliper size, and as measured at 12 inches above the ground for larger sizes. 
City Regulations	Provisions of the Lawrence City Code or other provisions located in ordinances adopted by the City.
Clear Zone	An area designated within the Public Frontage of a Mixed Use Project which reserves space for a sidewalk. The Clear Zone shall be clear of any obstruction to a minimum height of eight (8) above grade.
Cross Access Agreement	A document signed and acknowledged by Owner of two or more adjoining pieces of property establishing Easements, licenses or other continuing rights for Access across one property to one or more other properties.
Collector Street	A Street which is anticipated to have two (2) travel lanes designed for speeds ranging from 25-35mph and which serves a collecting function by distributing traffic between local neighborhood Streets and Arterial Streets.
Collector Street, Minor	See Collector, Residential

Term	Definition
Collector Street, Residential	Residential collector is a special category of collector street characterized by lower speeds & the residential nature of land uses along the corridor. Bicycle & pedestrian facilities are strongly recommended for residential collectors. Various traffic-calming treatments may be used to reduce travel speeds. Residential collector streets with adjacent residential land uses should be limited to two lanes. These streets can serve as a connector street between local streets and the thoroughfare system.
Collector Street System	A system of one (1) or more Collector Streets that allow traffic to be distributed to at least two (2) Arterial Streets.
Common Open Space	Land, water, water course, or drainageway within a development that is designed and intended for the use or enjoyment of all the residents and Landowners of the Development. Common Open Space, except for Common Open Space designated as Environmentally Sensitive may contain such supplementary Structures and improvements as are necessary and appropriate for the benefit and enjoyment of all the residents and Landowners of the Development. Common open space shall not include space devoted to streets, alleys, and parking areas. While required setbacks may function as common open space, they may not be used to meet the minimum requirements.
Comprehensive Plan also Comprehensive Land Use Plan	The Lawrence/Douglas County Comprehensive Plan, also known as "Horizon 2020," and any other applicable plans adopted by the Lawrence/Douglas County Metropolitan Planning Commission, as amended or superceded by adoption of a replacement plan from time to time.
Congregate Living	A Dwelling Unit that contains sleeping units where 5 or more unrelated residents share a kitchen and communal living areas and/or bathing rooms and where lodging is provided for compensation for persons who are not transient guests. Congregate Living is commonly referred to as a lodging house, boarding house, rooming house, or cooperative but is not considered a Dormitory, fraternity or sorority house, Assisted Living, Extended Care Facility, Group Home or similar group living use.
Conservation Easement	A non-possessory interest of a holder in real property imposing limitations or affirmative obligations, the purposes of which include retaining or protecting natural, scenic or open-space values of real property, assuring its availability for agricultural, forest, recreational or open-space use, protecting natural resources, maintaining or enhancing air or water quality, or preserving the historical, architectural, archaeological or cultural aspects of real property. In case of any conflict between this definition and K.S.A. §58-3810, as it may be amended from time to time, the amended statute shall control and shall be used in the construction and interpretation of this Development Code.
Deciduous	A tree or Shrub with foliage that is shed annually.
Deferred Item	An item that has been deferred from a published agenda by the Planning Director, Planning Commission or the City Commission (City or County Commission), or by the applicant.
Density	A measure of the number of Dwelling Units contained within a given area of land, typically expressed as units per acre.
Density Bonus	An incentive-based tool that permits property owners to increase the maximum allowable development on a property in exchange for helping the community achieve public policy goals, such as protection of environmentally sensitive areas.
Density Cap	Maximum density levels set by the Comprehensive Plan. Low-density (6 dwelling units per acre); medium density (15 dwelling units per acre) and high density (24 dwelling units per acre).
Density, Gross	The numerical value obtained by dividing the total number of Dwelling Units in a development by the total area of land upon which the Dwelling Units are proposed to be located, including rights-of-way of publicly dedicated Streets.
Density, Net	The numerical value obtained by dividing the total number of Dwelling Units in a development by the area of the actual Tract of land upon which the Dwelling Units are proposed to be located, excluding rights-of-way of publicly dedicated Streets.
Designated Transit Route	Any bus route identified on the route map published by the Lawrence Transit System or KU on Wheels transit system.
Development Activity	Any human-made change to Premises, including but not limited to: (a) the erection, conversion, expansion, reconstruction, renovation, movement or Structural Alteration, or partial or total demolition of Buildings and Structures; (b) the subdivision of land; (c) changing the use of land, or Buildings or Structures on land; or (d) mining, dredging, filling, grading, paving, excavation, drilling, or Landscaping of land or bodies of water on land.

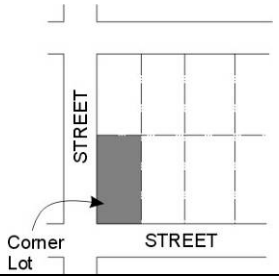
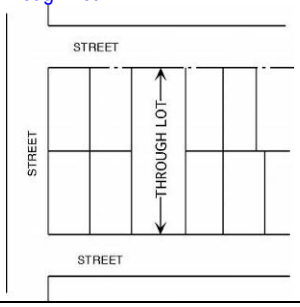
Term	Definition
Development Project, Major (Ord. 8465)	Any development proposing the following: a. Any Development Activity on a site that is vacant or otherwise undeveloped; or b. Any Significant Development Project on a site that contains existing development, defined as: 1. Any modification to a site that alters Parking Areas, drive aisles, or impacts on-site pedestrian and vehicular circulation and traffic patterns that the Planning Director determines to be significant in terms of impacting adjacent roads or adjacent properties; or 2. In the IM or IG zoning district, the construction of one or more Building(s) or building additions that contain a Gross Floor Area of fifty percent (50%) or more of the Gross Floor Area of existing Building(s); or 3. In any zoning district other than IM or IG, the construction of one or more Building(s) or building additions that contain a Gross Floor Area of twenty percent (20%) or more of the Gross Floor Area of existing Building(s); or 4. Separate incremental Building additions below 50% for IM or IG zoning and 20% for all other zoning districts of the Gross Floor Area of existing Building(s) if the aggregate effect of such Development Activity over a period of 24 consecutive months would trigger the 50% (for IG) or 20% (for all other zoning districts) threshold; or 5. The installation or addition of more than 50% for IM or IG zoning and 20% for all other zoning districts of existing Impervious Surface coverage.
Development Project, Minor (Ord. 8465)	Any development proposing the minor modification of a site, as determined by the Planning Director, which does not meet the criteria for a Standard or Major Development Project, or the proposed change in use to a less intensive use on a site which has an approved site plan on file with the Planning Office. Only sites which have an existing approved site plan on file which reflects existing site conditions are eligible for review as a Minor Development Project.

Term	Definition
Development Project, Standard (Ord. 8465)	a. For any property containing existing development which does not have an approved site plan on file with the Planning Office and which does not meet the criteria for a Major Development Project, any development proposing the following shall be considered a Standard Development Project: 1. a change in use to a less intensive use and where physical modifications to the site, excluding interior Building modifications, are proposed; or 2. A change in use to a more intensive use regardless of whether modifications to the site are proposed; or 3. the substantial modification of a site, defined as: a. The construction of any new Building(s) on the site; or b. The construction of any Building addition that contains a Gross Floor Area of ten percent (10%) or more of the Gross Floor Area of existing Building(s); or c. Separate incremental Building additions below ten percent (10%) of the Gross Floor Area of existing buildings if the aggregate effect of such Development Activity over a period of 24 months would trigger the 10% threshold; or d. The addition of Impervious Surface coverage that exceeds 10% of what exists; or e. Any modification determined by the Planning Director to be substantial. b. For property which does have an approved site plan on file with the Planning Office and which does not meet the criteria for a Major Development Project, any development proposing the following shall be considered a Standard Development Project: 1. any change in use of a site to a more intensive use regardless of whether modifications to the site are proposed; or 2. any modification of a site which meets the following criteria or proposes the following: a. A modification to a site which alters the Parking Area, drive aisles, or on-site pedestrian and vehicular circulation and traffic patterns with impacts to the interior of the site; or b. A development, redevelopment, or modifications to the exterior style, design or material type of a Structure that is subject to the Community Design Manual; or c. An outdoor dining or hospitality use in the CD and CN1 Zoning Districts and any outdoor dining use located in any other Zoning District that would result in an increase of the number of Parking Spaces required; or d. In the IM or IG zoning district, the construction of one or more new Building(s) or building additions that contain a Gross Floor Area of less than fifty percent (50%) of the Gross Floor Area of existing Building(s); or e. In any zoning district other than IM or IG, the construction of one or more new Building(s) or building additions that contain a Gross Floor Area of less than twenty percent (20%) of the Gross Floor Area of existing Building(s); or f. In the IM or IG zoning district, the installation or addition of less than fifty percent (50%) of existing Impervious Surface coverage; or g. In any zoning district other than IM or IG, the installation or addition of less than twenty percent (20%) of existing Impervious Surface coverage; or h. Any modification to an approved site plan on file with the Planning Office which proposes an adjustment to the total land area of the site plan, if determined necessary by the Planning Director.
Development Zone, Primary	Land area in a Mixed Use development designated at time of rezoning to the Mixed Use District and reserved for the most intense development proposed for the mixed use development.
Development Zone, Secondary	Land area in a Mixed Use development designated at time of rezoning to the Mixed Use District and reserved for less intense development than the Primary Development Zone, but more intense development than the Tertiary Development Zone. The Secondary Development Zone may serve as a transitional zone within a larger Mixed Use Development.
Development Zone, Tertiary	Land area in a Mixed Use development designated at time of rezoning to the Mixed Use District and reserved for the least intense development proposed for the mixed use development.
Dependent Living Facility	See Extended Care Facility

Term	Definition
Director, Planning	See Planning Director
Distance Between Structures	The shortest horizontal distance measured between the vertical walls of two Structures as herein defined perpendicular to an axis, all points along which are midway between the vertical walls.
District, Zoning	A portion of the territory of the City of Lawrence within which certain uniform regulations and requirements or various combinations thereof apply under the provisions of this Chapter.
Dormitory	A Building occupied as the more-or-less temporary abiding place of individuals who are lodged with or without meals and in which there are more than eight (8) sleeping rooms or 16 sleeping accommodations. As such the rooms are let on a weekly or monthly basis or for greater period of time and are not available to the general public on a nightly basis as distinguished from a hotel. Ingress to and egress from all rooms is made through an inside lobby or office supervised by a person in charge at all hours. General kitchen and eating facilities may be provided for the primary use of the occupants of the Building, provided that the main entrance to these facilities is from within the Building.
Drip Line	An imaginary ground line around a tree that defines the limits of the tree canopy.
Driveway	A private drive or way providing Access for vehicles to a single Lot or facility.
Driveway, Joint-Use	A privately-owned Driveway that provides Access to 2 or more Lots in a commercial or industrial Development, such as in a shopping center (with out lots) or a business or industrial park.
Driveway, Shared	A single Driveway serving two or more adjoining Lots.
Driveway Apron (or Approach)	The Driveway area or approach located between the sidewalk and the curb. When there is no sidewalk, the apron or approach shall be defined as extending a minimum of six (6) feet from the back of the curb toward the Lot Line.
Dwelling	A Building or portion thereof designed or used exclusively as the residence or sleeping place of one or more persons, but not including a tent, trailer, or Mobile Home.
Dwelling Unit	One room, or a suite of two or more rooms, designed for living and sleeping purposes and having only one kitchen or kitchenette.
Easement	A grant by a property Owner to the use of land by the public, a corporation, or persons for specific purposes such as the construction of utilities, drainageways, pedestrian Access, and roadways.
Effective Date	The date the ordinance adopting this Development Code takes effect.
Elderhostel	A Building occupied as the more-or-less temporary abiding place of individuals who are either: 1) participating in a travel-study program for senior citizens offered by a university or college; or 2) participating in a visiting faculty program at a university or college. These individuals are lodged with or without meals. These Buildings typically contain more than eight (8) sleeping rooms or 16 sleeping accommodations. The rooms are let on a weekly or monthly basis or for greater period of time, but are not available to the general public on a nightly basis, as distinguished from a hotel. Ingress to and egress from all rooms is made through an inside lobby or office supervised by a person in charge at all hours. General kitchen and eating facilities may be provided for the primary use of the occupants of the Building, provided that the main entrance to these facilities is from within the Building.
Evergreen (Coniferous) Tree	An Evergreen Tree, usually of pine, spruce or juniper genus, bearing cones and generally used for its Screening qualities. A Coniferous Tree may be considered a Shade Tree if it is at least five (5) feet in Height when planted and reaches a mature Height of at least 20 feet.
Extended Care Facility (Dependent Living or Nursing Care Facility), General	A long term facility or a distinct part of an institution occupied by nine (9) or more persons with a disability who require the provision of health care services under medical supervision for twenty-four (24) or more consecutive hours and who need not be related by blood or marriage. An Extended Care Facility must be licensed by one (1) or more of the following regulatory agencies of the State: Department of Social and Healing Arts, Behavioral Sciences Regulatory Board, State Board of Healing Arts, or Kansas Department on Aging. Disability means, with respect to a person: (a) a physical or mental impairment which substantially limits one (1) or more of such person's major life activities; (b) a record of having such impairment; or (c) being regarded as having such impairment. Such term does not include current illegal use or addiction to a controlled substance, as defined in Sec. 102 of the Controlled Substance Act (21U.S.C.802). Extended Care Facilities include facilities for the provision of skilled nursing care, hospice care and similar services.

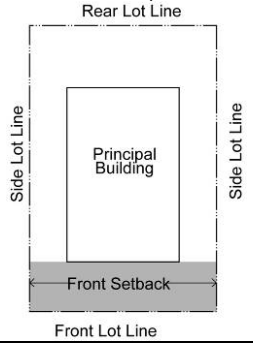
Term	Definition
Extended Care Facility (Dependent Living or Nursing Care Facility), Limited	A long term facility or a distinct part of an institution occupied by not more than ten (10) persons, including eight (8) or fewer persons with a disability who need not be related by blood or marriage, and who require the provision of health care services under medical supervision for twenty-four (24) or more consecutive hours, and also not to be occupied by more than two (2) staff residents who need not be related by blood or marriage to each other or to other residents of the home. An Extended Care Facility must be licensed by one (1) or more of the following regulatory agencies of the State: Department of Social and Healing Arts, Behavioral Sciences Regulatory Board, State Board of Healing Arts, or Kansas Department on Aging. Disability means, with respect to a person: (a) a physical or mental impairment which substantially limits one (1) or more of such person's major life activities; (b) a record of having such impairment; or (c) being regarded as having such impairment. Such term does not include current illegal use or addiction to a controlled substance, as defined in Sec. 102 of the Controlled Substance Act (21U.S.C.802). Extended Care Facilities include facilities for the provision of skilled nursing care, hospice care and similar services.
Extended Stay Lodging	A Building, including a single-Family residence, or group of Buildings providing living and sleeping accommodations for short-term occupancy, typically three (3) months or less. Bed & Breakfasts, hotels and motels are not considered extended stay facilities, although hotels and motels may provide this service. Extended stay facilities using single-Family Dwellings are not considered rental housing and are not subject to the rental licensing provisions of the City.
Exterior Storage	Outdoor storage of any and all materials related to the principal use of the Lot or site, not including areas for special events, temporary outdoor events or seasonal events, transient merchant sales areas, or any other outdoor area dedicated to the sale of retail goods, regardless of the proprietor. Outdoor storage and sales areas, open to the public and in which transactions may occur are not considered Exterior Storage areas.
Facade	Exterior face (side) of a Building which is the architectural front, sometimes distinguished by elaboration or architectural or ornamental details.
Floodplain	The land inundated by a flood of a given magnitude as determined by the Flood Insurance Study or by an approved Hydrologic & Hydraulic Study.
Floor Area	The sum of the horizontal areas of each floor of a Building, measured from the interior faces of the exterior walls or from the centerline of walls separating two Buildings.
Floor Area, Gross	The sum of the horizontal areas of the several stories of a Building, measured from the exterior faces of exterior walls, or in the case of a common wall separating two Buildings, from the centerline of such common wall.
Floor Area, Net	The horizontal area of a floor or several floors of a Building or Structure; excluding those areas not directly devoted to the principal or Accessory Use of the Building or Structure, such as storage areas or stairwells, measured from the exterior faces of exterior or interior walls.
Floor Area Ratio (F.A.R.)	The sum of the horizontal areas of the several floors inside the exterior walls *(excluding basements)* of a Building or a portion thereof divided by the Lot Area.
Foot-candle	A unit of measurement referring to the illumination incident to a single point. One (1) Foot-Candle is equal to one (1) lumen uniformly distributed over an area of one (1) square foot.
Frontage	All the property on one side of a Thoroughfare between two intersecting Thoroughfares (crossing or terminating), or if the Thoroughfare is Dead-Ended, then all of the property abutting on one side between an intersecting Thoroughfare and the Dead-End.
Frontage Road, Private	Any thoroughfare that is not publicly owned and maintained and that is parallel and adjacent to any Lot Frontage as defined above.
Grade	The lowest point of elevation of the finished surface of the ground, paving or sidewalk within the area between the Building and the Lot Line or, when the Lot Line is more than 5 feet from the Building, between the Building and a line five feet from the Building.
Greek Housing	A group living Structure occupied by a university approved fraternity or sorority, certified by the Panhellenic Association or Intrafraternity Council at KU. Residential occupancy by the majority of residences primarily follows the academic calendar for fall and spring semesters each year.
Ground Cover	Living Landscape Materials or living low-growing plants other than turf grasses, installed in such a manner so as to provide a continuous cover of the ground surface and which, upon maturity, normally reach an average maximum Height of not greater than 24 inches.
Ground Floor	A level of Building floor which is located not more than 2 feet below nor 6 feet above finished Grade.

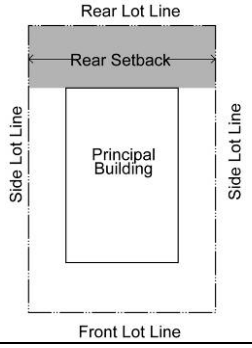
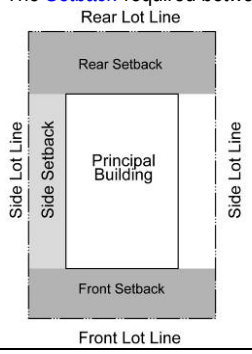
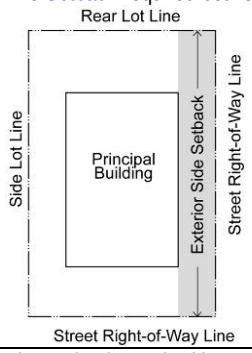
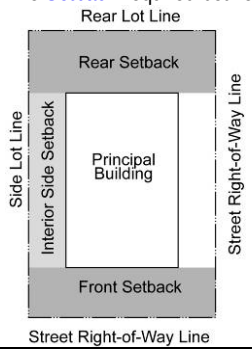
Term	Definition
Group Home (or Adult Care Home), General	Any Dwelling occupied by 11 or more persons, including eight (8) or more persons with a disability who need not be related by blood or marriage and staff residents who need not be related by blood or marriage to each other or to other residents of the home. The Dwelling is licensed by one (1) or more of the following regulatory agencies of the State: Dept. of Social and Healing Arts, Behavioral Sciences Regulatory Board, or State Board of Healing Arts. Disability means, with respect to a person: (a) a physical or mental impairment which substantially limits one (1) or more of such person's major life activities; (b) a record of having such impairment; or (c) being regarded as having such impairment. Such term does not include current illegal use or addiction to a controlled substance, as defined in Sec. 102 of the Controlled Substance Act (21U.S.C.802). A Special Use Permit is required before operation of the home can begin.
Group Home (or Adult Care Home), Limited	Any Dwelling occupied by not more than ten (10) persons, including eight (8) or fewer persons with a disability who need not be related by blood or marriage and not to exceed two (2) staff residents who need not be related by blood or marriage to each other or to other residents of the home. The Dwelling is licensed by one (1) or more of the following regulatory agencies of the State: Dept. of Social and Healing Arts, Behavioral Sciences Regulatory Board, or State Board of Healing Arts. Disability means, with respect to a person: (a) a physical or mental impairment which substantially limits one (1) or more of such person's major life activities; (b) a record of having such impairment; or (c) being regarded as having such impairment. Such term does not include current illegal use or addiction to a controlled substance, as defined in Sec. 102 of the Controlled Substance Act (21U.S.C.802).
Growing or Planting Season	From the beginning of March to the end of June and from the beginning of September to the beginning of December.
Height (Building)	Refers to the vertical distance from the finished Grade, or base flood elevation where applicable, to the highest point of the coping of: a flat roof, the deck line of a mansard roof, or the average Height of the highest gable of a pitch or hip roof.
Historic Resources Commission (HRC)	The Commission established by Sections 22-201 – 22-205, part of the Conservation of Historic Resources of the Code of the City of Lawrence
Home Occupation	An Accessory Use that complies with the provisions of Section 20-537.
Housing for the Elderly	See Assisted Living or Extended Care Facility
HRC	See Historic Resources Commission
Hydrologic and Hydraulic Study	See Hydrologic and Hydraulic Study definition in Section 20-1205
Impervious Surface	That portion of developed property which contains hard-surfaced areas (primed and sealed AB3, asphalt, concrete and Buildings) which either prevent or retard the entry of water into the soil material.
Inactive File	An application, either complete or incomplete, which has had no new information submitted within a period of twelve (12) or more months. New information within this context shall be information that responds to a request for additional information or that provides additional information essential to completing a review of the request in response to the land use review criteria, retail market information, or traffic impact analysis.
Infrastructure	Those man-made Structures which serve the common needs of the populations, such as: potable water systems, wastewater disposal systems, solid waste disposal sites or retention areas, storm drainage systems, electric, gas or other utilities, bridges, roadways, Bicycle paths or trails, pedestrian sidewalks, paths or trails and transit stops.
Jurisdictional Wetland	Wetlands which are regulated by Section 404 of the Clean Water Act and are under the regulatory jurisdiction of the Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA).
Landowner	See Owner
Landscaped Peninsula	A concrete curbed planting area typically found in Parking Lots to provide areas for trees and Shrubs between Parking Spaces and along the terminus of single and double Parking aisles.
Landscape Material	Such living material as trees, Shrubs, Ground Cover/vines, turf grasses, and non-living material such as: rocks, pebbles, sand, bark, brick pavers, earthen mounds (excluding pavement), and/or other items of a decorative or embellishing nature such as: fountains, pools, walls, fencing, sculpture, etc.
Landscaping	Any combination of living plants such as trees, Shrubs, plants, vegetative Ground Cover or turf grasses. May include structural features such as walkways, fences, benches, works of art, reflective pools, fountains or the like. Landscaping shall also include irrigation systems, Mulches, topsoil use, soil preparation, re-vegetation or the preservation, protection and replacement of trees.
Licensed Premises	A Premises where alcoholic liquor or cereal malt beverages, or both, by the individual drink as defined by K.S.A. Chapter 41, and amendments thereto, is served or provided for consumption or use on the Premises with or without charge. This term shall include drinking establishments, Class A Private Clubs, Class B Private Clubs, and cereal malt beverage retailers, all as defined by K.S.A. Chapter 41, and amendments thereto and City Regulations.

Term	Definition
Light Court	An area within the Public Frontage in a Mixed Use development adjacent to the Building Frontage which provides a means of outdoor light to reach an underground level of a Structure. It may also provide a means of emergency exit from the Structure but shall not serve as a primary entrance or exit to the Structure.
Light Truck	A truck or other motor vehicle, one ton or less in rated capacity, with a single rear axle and single pair of rear wheels.
Livestock	Any animal customarily kept for producing food or fiber.
Local Street	A Street which is anticipated to have two (2) travel lanes at desirable speeds of up to 30mph and which provides Access to abutting property and primarily serves local traffic.
Local Street System	A system of two (2) or more Local Streets that allow traffic to be distributed throughout a neighborhood.
Lot	A contiguous Parcel or Tract of land located within a single Block fronting on a dedicated public Street that is occupied or utilized, or designated to be occupied, developed, or utilized, as a unit under single Ownership or control. A Lot may or may not coincide with a Lot shown on the official tax maps or on any recorded subdivision or deed.
Lot Area	The total horizontal area within the Lot Lines of a Lot.
Lot Frontage	See Frontage
Lot, Corner	A Lot abutting upon two or more Streets at their intersection, or upon two parts of the same Street, such Streets or part of the same Street forming an angle of more than 45° and of less than 135°. The point of intersection of the Street Lines is the corner. Any portion of a Corner Lot that is more than 100 feet from the point of intersection of the two Street Lines or the two tangents of the same Street shall not be considered a Corner Lot. 
Lot, Through	A Lot abutting two Streets, not at their intersection. Any Lot meeting the definition of Corner Lot shall not be considered a Through Lot; any Lot abutting two Streets and not meeting the definition of a Corner Lot shall be considered a Through Lot. 
Lot Depth	The mean horizontal distance between the Front Lot Line and Rear Lot Line of a Lot.
Lot Line	A boundary of a Lot.
Lot Line, Exterior Side	A Side Lot Line separating a Lot from a Street other than an Alley.
Lot Line, Front	The Street Line at the front of a Lot. On Corner Lots, the Landowner may choose either Street Frontage as the Front Lot Line.
Lot Line, Rear	The Lot Line opposite and most distant from, and parallel or closest to being parallel to, the Front Lot Line. A triangular Lot has no Rear Lot Line.
Lot Line, Side	A Lot Line that is not a Front Lot Line or Rear Lot Line.
Lot Width	Lot Width is the distance between Side Lot Lines measured at the point of the required Front Setback or chord thereof.
Manufactured Home	Any Structure that is manufactured to the standards embodied in the National Manufactured Home Construction and Safety Standards (generally know as the HUD Code) established in 1976 pursuant to 42 U.S.C. Sec. 5403, but does not comply with the standards and provisions of Section 20-513.

Term	Definition
Manufactured Home, Residential-Design	Any Structure that is manufactured to the standards embodied in the National Manufactured Home Construction and Safety Standards (generally know as the HUD Code) established in 1976 pursuant to 42 U.S.C. Sec. 5403 and that also complies with the standards and provisions of Section 20-513. (Ord. 8098)
Massing	The size and shape of Structure(s) individually and their arrangements relative to other Structure(s).
Mature Trees, Stand of	An area of ½ acre (21,780 sq ft) or more located on the 'development land area', per Section 20-1101(d)(2)(ii) or on other contiguous residentially zoned properties containing trees that are 25 feet or more in height, or are greater than 8" caliper, in an amount adequate to form a continuous or nearly continuous canopy. (Canopy may be determined from resources such as, but not limited to, NAIP, National Agricultural Imaging Program; City/County GIS aerials; and field surveys.)
Minimum Elevation of Building Opening	The minimum elevation above sea level at which a Building located in the Floodplain may have a door, window, or other opening.
Mixed Use	The development of a Lot, Tract or Parcel of land, Building or Structure with two (2) or more different uses including, but not limited to: residential, office, retail, public uses, personal service or entertainment uses, designed, planned and constructed as a unit.
Mixed Use Structure, Horizontal	A Building or Structure containing both nonresidential and residential uses distributed horizontally throughout the Structure.
Mixed Use Structure, Vertical	A Building or Structure, a minimum of two stories in height, containing both nonresidential and residential uses distributed vertically throughout the Structure.
Mobile Home	Any vehicle or similar portable Structure having no foundation other than wheels or jacks or skirtings and so designed or constructed as to permit occupancy for Dwelling or sleeping purposes. Mobile Home includes any Structure that otherwise meets this description, but that was not subject to the National Manufactured Home Construction and Safety Standards (generally known as the HUD Code), established in 1976 pursuant to 42 U.S.C. Sec. 5403, at the time it was manufactured. Mobile Homes are considered to be Dwelling Units only when they are parked in a Mobile Home Park.
Moderately-Priced Dwelling Unit	A Dwelling Unit marketed and reserved for occupancy by a household whose income is equal to or less than 80% of the City of Lawrence's median household income, as defined by the most current U.S. Department of Housing and Urban Development (HUD) guidelines.
Mulch	Non-living organic material customarily used to retard soil erosion and retain moisture.
Native Prairie Remnants	Prairie areas that have remained relatively untouched on undeveloped, untilled portions of properties are 'native prairies'. Native prairie remnants will be confirmed by the Kansas Biological Survey, or a consulting firm with local expertise in these habitats, as areas that have remained primarily a mixture of native grasses interspersed with native flowering plants. (These areas have not been planted, but are original prairies). A list of approved consulting firms for prairie determination is available in the Planning Office.
Natural Drainageway	Natural rivers, streams, channels, creeks or other areas that naturally convey Stormwater runoff or portions thereof that have not been channelized and which is unaltered and retains a predominantly natural character.
Natural Open Space	Common Open Space that includes undisturbed natural resources, such as Floodplains, Wetlands, steep slopes, and Woodlands.
Nodal Development Plan	A land use plan for all four corners of an intersection that applies to the redevelopment of existing commercial center areas or new commercial development for neighborhood, community or regional commercial centers, as described in Horizon 2020, and is designed to avoid continuous lineal and shallow Lot Depth developments along Street corridors through the use of natural and man-made physical characteristics to create logical terminus points for the Node.
Node	An identifiable grouping of uses subsidiary and dependent upon a larger urban grouping of similar related uses.
Non-encroachable Area	That portion of a Lot or development set aside for enjoyment of the natural features or sensitive areas contained within it that cannot be encroached upon by Building or Development Activity, excluding encroachment for common maintenance needs of the land, its vegetation, natural stream beds, etc.
Nursing Care Facility	See Extended Care Facility
Official Zoning District Map	A map or maps outlining the various Zoning District boundaries of the City of Lawrence, Kansas.
Open Porch	A roofed space attached to a Building on one side and open on the three remaining sides.
Open Use of Land	A use that does not involve improvements other than grading, drainage, fencing, surfacing, signs, utilities, or Accessory Structures. Open uses of land include, but are not limited to, auction yards, auto wrecking yards, junk and salvage yards, dumps, sale yards, storage yards and race tracks.
Ornamental Tree	A Deciduous tree possessing qualities such as flowers, fruit, attractive foliage, bark or shape, with a mature Height generally under 40 feet.

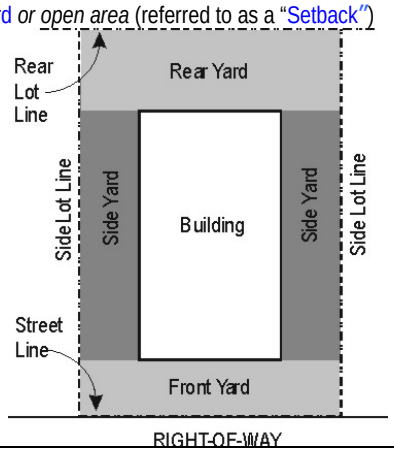
Term	Definition
Outdoor Use Zone	An area designated for outdoor use by a nonresidential or residential tenant within the Public Frontage in a Mixed Use development. At ground level, Outdoor Use Zones may include sidewalk dining, sidewalk sales, product demonstrations or any use accessory and incidental to a permitted nonresidential use in the Mixed Use District. Outdoor Use Zones may also include upper level uses such as balconies or terraces as well as Building-mounted signs.
Overlay Zoning District (or Overlay Zoning District)	Any Zoning District included in this Development Code with the word "overlay" in its title. The Overlay Zoning District regulations are found in Article 3 of this Development Code.
Owner	An individual, association, partnership or corporation having legal or equitable title to land other than legal title held only for the purpose of security. For the purpose of notice, the Owner may be determined using the latest Douglas County Appraiser's assessment roll.
Parcel	A Lot or contiguous tracts owned and recorded as the property of the same persons or controlled by a single entity.
Parking Access	Any public or private area, under or outside a Building or Structure, designed and used for parking motor vehicles including parking Lots, garages, private Driveways and legally designated areas of public Streets.
Parking Area	An area devoted to off-Street Parking of vehicles on any one Lot for public or private use.
Parking Space	A space for the parking of a motor vehicle or Bicycle within a public or private Parking Area. Typically Parking Spaces for private uses are located off the public right-of-way.
Peak Hour	The four (4) highest contiguous 15-minute traffic volume periods.
Pedestrian Scale (human scale)	Means the proportional relationship between the dimensions of a Building or Building element, Street, outdoor space or Streetscape element and the average dimensions of the human body, taking into account the perceptions and walking speed of a typical pedestrian.
Planned Development	Developments processed and considered in accordance with the procedures specified in the Planned Development Overlay Zoning District provisions of Sec. 20-701 and in the Cluster Housing Projects provisions of Sec. 20-702. Generally, an area of land controlled by the Landowner to be developed as a single entity, commonly pursuant to an Overlay Zoning District, for a number of Dwelling Units, office uses, commercial uses, or combination thereof, if any, wherein a development plan detailing the proposed development and adjacent areas directly impacted thereby is reviewed and approved by the appropriate decision maker. In approving the development plan, the decision maker may simultaneously modify specified standards of the Base District.
Planning Commission	The Lawrence-Douglas County Metropolitan Planning Commission established by City Ordinance 3951/ County Resolution 69-8 on March 24th, 1969.
Planning Director	The Director of the Lawrence-Douglas County Metropolitan Planning Commission or her or his designee.
Premises	A Lot, together with all Buildings and Structures thereon.
Principal Building	See Building, Principal
Principal Use	The primary purpose for which land or a Structure is utilized, based in part on the amount of Floor Area devoted to each identifiable use. The main use of the land or Structures as distinguished from a secondary or Accessory Use.
Public Frontage	The publicly-owned layer between the Lot line or Street Line and the edge of the vehicular lanes. The public frontage may include sidewalks, street planters, trees and other vegetated landscaping, benches, lamp posts, and other street furniture.
Public Frontage, Primary	The Public Frontage along a designated Primary Development Zone. Primary Public Frontages are commonly associated with pedestrian-oriented urban commercial and retail areas in Mixed Use settings. They are commonly served by or are accessible to public transit and may contain medium to high residential densities and Vertical Mixed Use Structures. Primary Public Frontages are designed to accommodate heavy pedestrian traffic, street vendors and sidewalk dining and typically consist of a sidewalk or clear area paved from the back of curb of the Thoroughfare to the Building Frontage or Right-of-way line, reserving space for street furniture.
Public Frontage, Secondary	The Public Frontage along a designated Secondary Development Zone. Secondary Public Frontages are commonly associated with pedestrian-oriented Thoroughfares and Mixed Use settings. They are designed to accommodate moderate amounts of pedestrian traffic and typically consist of a sidewalk or clear area adjacent to the Building Frontage or Right-of-way line, reserving space for street furniture, and a landscaped strip with street trees between the back of curb of the Thoroughfare and the sidewalk or clear area.
Public Frontage, Tertiary	The Public Frontage along a designated Tertiary Development Zone. Tertiary Public Frontages are commonly associated with pedestrian-friendly Thoroughfares in lower intensity mixed residential settings, consisting of a 5' wide sidewalk and street trees. Tertiary Public Frontages are designed to accommodate pedestrians who seek to walk to a nearby destination.
Recreational Open Space	Common Open Space that is improved and set aside, dedicated, or reserved for recreational facilities such as swimming pools, play equipment for children, ball fields, ball courts, and picnic tables.

Term	Definition
Recyclable Materials	Reusable materials including but not limited to metals, glass, plastic, paper and yard waste, which are intended for remanufacture or reconstitution for the purpose of using the altered form. Recyclable Materials do not include refuse or hazardous materials. Recyclable Materials may include used motor oil collected and transported in accordance with environmental and sanitation codes.
Registered Neighborhood Association	A neighborhood or local interest group that represents a defined area of the City and that has registered with the Planning Director in accordance with the applicable registration procedures of the Planning Director.
Regulatory Flood	See Base Flood definition in Article 12.
Regulatory Floodplain	See Floodplain definition in Article 12.
Regulatory Floodway	See Floodway definition in Article 12.
Regulatory Floodway Fringe	See Floodway Fringe definition in Article 12.
Residential Collector	See Collector, Residential
Residential-Design Manufactured Home	See Manufactured Home, Residential-Design
Retail Establishment, Large	An establishment engaged in retail sales, where the aggregate of retail uses within a Building is 100,000 or more gross square feet of Floor Area that may or may not include ancillary uses with internal Access from the Principal Use Building.
Retail Establishment, Medium	An establishment engaged in retail sales, provided the aggregate of retail uses within a Building is less than 100,000 gross square feet of Floor Area.
Retail Establishment, Specialty	An establishment engaged in retail sales where new or used goods or secondhand personal property is offered for sale to the general public by a multitude of individual vendors, usually from compartmentalized spaces within a Building. A specialty retail sales establishment shall not exceed 100,000 gross square feet of Floor Area and may have an unlimited number of individual vendors within it.
Root System Zone	A subsurface area designated within the Public Frontage in a Mixed Use development. Such zones shall reserve space for the root system of street trees and landscaping planted in the Street Tree & Furniture Zone.
Sadomasochistic Practices	Flagellation or torture by or upon a person clothed or naked, or the condition of being fettered, bound, or otherwise physically restrained on the part of one so clothed or naked.
Satellite Dish	A dish Antenna, with ancillary communications equipment, whose purpose is to receive communication or other signals from orbiting satellites and other extraterrestrial sources and carry them into the interior of a Building.
Scale	A quantitative measure of the relative Height and Massing of Structure(s) Building(s) and spaces.
Screen or Screening	A method of visually shielding, obscuring, or providing spatial separation of an abutting or nearby use or Structure from another by fencing, walls, Berms, or densely planted vegetation, or other means approved by the Planning Director.
Setback	The minimum horizontal distance by which any Building or Structure must be separated from a street right-of-way or Lot line. (See also 20-602(e))
Setback, Front	The Setback required between a Building and the Front Lot Line. 

Term	Definition
Setback, Rear	The Setback required between a Building and the Rear Lot Line. 
Setback, Side	The Setback required between a Building and the Side Lot Line. 
Setback, Side (Exterior)	The Setback required between a Building and the Exterior Side Lot Line. 
Setback, Side (Interior)	The Setback required between a Building and the Interior Side Lot Line. 
Sexually Oriented Media	Magazines, books, videotapes, movies, slides, CD-ROMs or other devices used to record computer images, or other media that are distinguished or characterized by their emphasis on matter depicting, describing or relating to Specified Sexual Activities or Specified Anatomical Areas.
Sexually Oriented Novelties	Instruments, devices or paraphernalia either designed as representations of human genital organs or female breasts, or designed or marketed primarily for use to stimulate human genital organs.
Shade Tree	Usually a Deciduous tree, rarely an Evergreen; planted primarily for its high crown of foliage or overhead Canopy.
Shared Parking	Development and use of Parking Areas on two (2) or more separate properties for joint use by the businesses or Owner of these properties.

Term	Definition
Shrub	A Deciduous, Broadleaf, or Evergreen plant, smaller than an Ornamental Tree and larger than Ground Cover, consisting of multiple stems from the ground or small branches near the ground, which attains a Height of 24 inches.
Significant Development Project	1. Any modification to a site that alters Parking Areas, drive aisles, or impacts on-site pedestrian and vehicular circulation and traffic patterns that the Planning Director determines to be significant in terms of impacting adjacent roads or adjacent properties; or 2. In the IM or IG zoning district, the construction of one or more Building(s) or building additions that contain a Gross Floor Area of fifty percent (50%) or more of the Gross Floor Area of existing Building(s); or 3. In any zoning district other than IM or IG, the construction of one or more Building(s) or building additions that contain a Gross Floor Area of twenty percent (20%) or more of the Gross Floor Area of existing Building(s); or 4. Separate incremental Building additions below 50% for IM or IG zoning and 20% for all other zoning districts of the Gross Floor Area of existing Buildings if the aggregate effect of such Development Activity over a period of 24 consecutive months would trigger the 50% (for IG) or 20% (for all other zoning districts) threshold; or 5. The installation or addition of more than 50% for IM or IG zoning and 20% for all other zoning districts of existing Impervious Surface coverage.
Slip Road	A road which provides access to and runs a course parallel to an Arterial Street or other limited access street or highway. Slip Roads are commonly used along boulevards to provide access to adjacent properties, on-street parking, and to buffer high-speed traffic lanes from pedestrian areas. Slip roads may also be known as access roads.
Special Purpose Base District	See Base District, Special Purpose
Specified Anatomical Areas	(1) Less than completely and opaquely covered: human genitals, pubic region, buttock and 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.
Specified Sexual Activities	Human genitals in a State of sexual stimulation or arousal or acts of human masturbation, sexual intercourse or sodomy or fondling or other erotic touching of human genitals, pubic region, buttock or female breast.
Story	That portion of a Building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost Story shall be that portion of a Building included between the upper surface of the topmost floor and the ceiling or roof above. If the finished floor level directly above a Basement or unused under-floor space is more than six (6) feet above Grade as defined herein for more than 50% of the total perimeter or is more than 12 feet above Grade as defined herein at any such point, or unused under-floor space shall be considered a Story.
Stream Corridor	A strip of land 100 feet wide, of which the centerline shall be the centerline of a stream that is not ephemeral stream: a stream where flow occurs for only a short time after extreme storms and does not have a well-defined channel, similar to a drainage way.
Street, Arterial	Arterial Streets are the highest level of Street classification, generally providing for longer distance trips with relatively high traffic volumes and high speeds for the context. Principal Arterials permit traffic flow through the urban area and between major destinations. Minor Arterials collect and distribute traffic from principal Arterials and expressway to Streets of lower classification, and, in some cases, allow traffic to directly Access destinations.
Street, Collector	A Collector Street provides for land Access and traffic circulation within and between residential neighborhoods and commercial and industrial areas. They distribute traffic movements from these areas to the Arterial Streets. Collectors do not typically accommodate long through trips and are not continuous for long distances.
Street, Cul-de-sac	A Street having only one outlet and being permanently terminated by a vehicle Turnaround at the other end.
Street, Dead-End	A Street having only one outlet and which does not benefit from a Turnaround at its end.
Street, Expressway	Any divided Street or highway with no Access from Abutting property and which has either separated or at-Grade Access from other public Streets and highways.
Street, Freeway	Any divided Street or highway with complete Access Control and Grade separated interchanges with all other public Streets and highways.
Street, Limited Local	A Local Street providing Access to not more than eight Abutting single-Family residential Lots.

Term	Definition
Street, Local	Local Streets provide direct Access to adjacent land uses. Direct Access from a Local Street to an Arterial Street should be discouraged.
Street, Marginal Access	A Street that is generally parallel and adjacent to an Arterial Street or other limited-Access Street and that is designated to provide direct Access to adjacent property. Marginal Access Streets are commonly known as "Frontage Roads."
Street, Private	Any tract of land or access easement set aside to provide vehicular Access within a Planned Development that is not dedicated or intended to be dedicated to the City and is not maintained by the City. Owners of a private street may choose to gate access to this type of street from the general public.
Street, Public	A way for vehicular traffic, whether designated as a local, collector, arterial, freeway or other designation, which is improved to City standards, dedicated for general public use, and maintained by the City. The term shall also include alleys.
Street, Ultimate Design	The Street design that is based on the planned carrying capacity of the roadway consistent with its functional classification on the Major Thoroughfares Maps in the Comprehensive Plan.
Street Line	The line separating the Street right-of-way from the abutting property.
Street Tree and Furniture Zone	An area designated within the Public Frontage in a Mixed Use development. Such zones shall reserve space for street trees and other landscaping as well as street furniture including, but not limited to benches, street lights and transit stops.
Streetscape	The built and planned elements of a street that define the street's character.
Structural Alteration	Any change in the supporting or structural members of a Building, including but not limited to bearing walls, columns, beams or girders, or any substantial change in the roof, exterior walls, or Building openings.
Structure	A Building or anything constructed that requires permanent location on the ground or attachment to something having a permanent location on the ground, including but not limited to fences, signs, billboards, and Mobile Homes.
Subsurface Utility Zone	A subsurface area designated within the Public Frontage in a Mixed Use development. Such zones shall reserve space for public utilities.
Thoroughfare	Any public right-of-way that provides a public means of Access to abutting property.
Tract (of land)	An area, Parcel, site, piece of land or property that is the subject of a development application or restriction.
Transitional Use	A permitted use or Structure that, by nature or level and scale of activity, acts as a transition or buffer between two (2) or more incompatible uses.
Tree Protection	Means the measures taken, such as temporary fencing and the use of tree wells, to protect existing trees from damage or loss during and after construction projects.
Trip Generation	The total number of vehicle trip ends produced by a specific land use or activity.
Unnecessary Hardship	The condition resulting from application of these regulations when viewing the property in its environment that is so unreasonable as to become an arbitrary and capricious interference with the basic right of private property ownership, or convincing proof exists that it is impossible to use the property for a conforming use, or sufficient factors exist to constitute a hardship that would in effect deprive the Owner of their property without compensation. Mere financial loss or the loss of a potential financial advantage does not constitute Unnecessary Hardship.
Vertical Mixed Use Structure	See Mixed Use Structure, Vertical
Woodlands	Natural hardwood forests, whether or not actively forested.
Working Days	Monday through Friday, 8AM to 5PM excluding city holidays

Term	Definition
Yard	Any Open Space located on the same Lot with a Building, unoccupied and unobstructed from the ground up, except for accessory Buildings, or such projections as are expressly permitted by these regulations. "Yard" refers to the actual open area that exists between a Building and a Lot Line, as opposed to the Required Yard *or open area* (referred to as a "Setback") 
Yard, Front	A space extending the full width of a Lot between any Building and the Front Lot Line and measured perpendicular to the Building at the closest point to the Front Lot Line.
Yard, Rear	A space extending the full width of a Lot between the Principal Building and the Rear Lot Line and measured perpendicular to the Building at the closest point to the Rear Lot Line.
Yard, Required	The unobstructed Open Space measured from a point on a Principal Building to the Lot Line from the ground upward, within which no Structure shall be located, except as permitted by this Development Code. It is the three-dimensional equivalent of the required Setbacks for every Lot.
Yard, Side	A space lying between the side line of the Lot and the nearest line of the Principal Building and extending from the Front Yard to the Rear Yard, or in the absence of either of such front or Rear Yards, to the front or Rear Lot Lines. Side-yard widths shall be measured perpendicular to the side Lot Lines of the Lot.
Zoning District	A portion of the territory of the City of Lawrence within which certain uniform regulations and requirements or various combinations thereof apply under the provisions of this Chapter.

20-1702 USE CATEGORIES IN GENERAL

(1) Purpose

This section classifies land uses and activities into use categories on the basis of common functional, product, or physical characteristics. Characteristics include the type and amount of activity, the type of customers or residents, how goods or services are sold or delivered, and certain other site factors. The use categories provide a systematic basis for assignment of present and future uses to Zoning Districts.

(2) Classification Considerations

(1) Uses are assigned to the use category that most closely describes the nature of the Principal Use, based on the "Characteristics" description of each use category. Developments may have more than one Principal Use (see paragraph (3), below).

(2) The following factors are considered to determine what use category the use is in, and whether the activities constitute Principal Uses or Accessory Uses:

a. The description of each activity in relationship to the characteristics of each use category;

b. The relative amount of site or floor space and equipment devoted to each activity;

c. Relative amounts of sales from each activity;

d. The customer type for each activity;

e. The relative number of employees in each activity;

f. Hours of operation;

g. Classification of the use in the North American Industry Classification System (NAICS);

h. Building and site arrangement;

i. Number and type of vehicles used with each activity;

j. The relative number of vehicle trips generated by each activity;

k. Signs;

l. How the use advertises itself; and

m. Whether each individual activity would be likely to be found independent of the other activities on the site.

(3) Developments with Multiple Principal Uses

When all Principal Uses of a development fall within one use category, then the development is assigned to that use category. When the Principal Uses of a development fall within different use categories, each Principal Use is classified in the applicable category and is subject to the regulations for that category.

20-1703 ADAPTIVE REUSE OF DESIGNATED HISTORIC PROPERTY
Conversion of a Structure listed individually or as a contributing Structure to a historic district in the National, State or local register to another specified use~~,~~ with the intent of preserving the listed Structure.

20-1704 ADAPTIVE REUSE OF GREEK HOUSING
Conversion of a Greek Housing unit to another specified use, with the intent of preserving its architectural character and protecting nearby low-Density residential districts from incompatible developments.

20-1705 AGRICULTURAL SALES
On-site sale of feed, grain, fertilizers, pesticides and similar goods. Typical uses include nurseries, hay, feed and grain stores.

20-1706 AGRICULTURAL SERVICES
Provision of agriculturally related services with incidental storage on Lots other than where the service is rendered. Typical uses include crop dusting and tree service firms.

20-1707 AGRICULTURE
Characterized by uses that create and preserve areas intended primarily for the raising of animals and crops, and the secondary industries associated with agricultural production.

20-1708 AGRICULTURE, ANIMAL
Activities that primarily involve raising, producing or keeping of animals. Examples include breeding or raising of fowl or other animals; stables; riding academies; kennels or other animal boarding places that are not otherwise specifically defined in this Development Code. The keeping of fowl in compliance with the requirements of Article 5 of Chapter III of the City Code shall not constitute an animal agriculture use.

20-1709 AGRICULTURE, CROP
Activities that primarily involve raising or producing field crops or other plants. Examples include farming, truck gardening, forestry, tree farming, and wholesale plant nurseries.

20-1710 ANIMAL SERVICES
The following are Animal Services use types:

(1) Sales and Grooming
Sales, grooming and day time care of dogs, cats, and similar small animals. Typical uses include pet stores, dog bathing and clipping salons and pet grooming shops. No overnight boarding is allowed.

(2) Kennels/Day Care
Kennel services for dogs, cats, and small animals, including day care and overnight care. Typical uses include boarding kennels and dog training centers.

(3) Veterinary
Typical uses include veterinary offices, pet clinics, and animal hospitals.

(4) Livestock Sales
Typical uses includes Livestock auction sales.

20-1711 BIG BOX
Refer to Retail Establishments.

20-1712 BUILDING MAINTENANCE SERVICES
Provision of maintenance and custodial services to commercial and industrial establishments. Typical uses include janitorial, landscape maintenance and window cleaning services. Also includes exterminator services for residential, commercial or industrial applications.

20-1713 BUSINESS EQUIPMENT SALES AND SERVICES
Sale, rental, or repair of office, professional, and service equipment and supplies to the firms themselves rather than to individuals. Excludes automotive, construction, and farm equipment. Typical uses include office equipment and supply firms, small business machine repair shops, computer repair shops and hotel equipment and supply firms.

20-1714 BUSINESS SUPPORT SERVICES
Provision of clerical, employment, protective, or minor processing services to firms rather than individuals. Storage of goods other than samples is prohibited. Typical uses include secretarial services, telephone answering services and blueprint services. Also includes business or trade schools that do not involve any outdoor storage or manufacturing processes. Business or trade schools that do involve outdoor storage or manufacturing processes are classified as “Limited Manufacturing and Production.”

20-1715 COMMERCIAL NODE
A node, which is located at the intersections of streets set forth in Chapter 6 of Horizon 2020, and which is designed to integrate commercial uses with the surrounding neighborhoods thorugh Mixed Use development.

20-1716 COMMUNICATIONS SERVICE ESTABLISHMENTS
Broadcasting and other information relay services accomplished through use of electronic and telephonic mechanisms. Excludes services classified as "Major Utilities and Services" and "Minor Utilities." Typical uses include recording studios, television and radio studios, telecommunication service centers and telegraph service offices.

20-1717 COMMUNITY FACILITIES

Community Facilities are uses of a public, publicly funded, nonprofit, or charitable nature, not including recreational uses, which provide a variety of services to the general public on a regular basis including but not limited to educational, technical or vocational training, day care, cultural, civic or social services, or utility services.

(1) Temporary Shelter

A building operated by a public, publicly funded, nonprofit, charitable organization, or religious institution that provides day and/or overnight shelter to one or more persons who lack a fixed, regular, and adequate nighttime residence. The Temporary Shelter may provide accessory food services, social services, counseling, medical services, personal hygiene, life skills training, employment training and assistance, educational assistance, mail or delivery services, telephone or computer services, storage of personal belongings, and a workplace for shelter occupants that may consist of any use permitted by the zoning district in which it is located.

(2) Social Service Agency

A service operated by a, public, publicly funded, nonprofit, or charitable organization providing services undertaken to advance the welfare of citizens in need which typically includes supporting office uses. Typical uses include employment counseling, life skills training, counseling, food banks, and blood banks. Social Service Agencies shall not include Temporary Shelters, Group Homes, commercial uses such as medical, professional, financial, real estate offices, or religious institutions providing these services as accessory to their religious assembly use.

(3) Community Meal Program

A program operated and staffed by a public, publicly funded, nonprofit, or charitable or religious organization that provides prepared meals onsite on a regularly scheduled basis for the welfare of citizens in need.

20-1718 CONSTRUCTION SALES AND SERVICES

Construction activities and incidental storage on Lots other than construction sites. Also includes landscape contractors and landscape maintenance businesses and the retail or wholesale sale, from the Premises, of materials used in the construction of Buildings or other Structures including the retail sale of paint, fixtures, and hardware, but excludes those uses classified as "Automotive" and/or "Heavy Equipment" use types. Typical uses include Home Improvement or Building materials stores, tool and equipment rental or sales, Building contracting/construction offices with shops and/or outside storage yards and landscape maintenance/contractor offices with shops and/or outside storage yards.

20-1719 CULTURAL EXHIBITS AND LIBRARIES

Museum-like preservation and exhibition of objects in one or more of the arts and sciences, gallery exhibition of works of art, live performances, art centers, or library collection of books, manuscripts, etc., for reading, studying and research.

DAY CARE
Uses providing care, protection and supervision for children or adults on a regular basis away from their primary residence for less than 24 hours per day. There are 3 types of Day Care uses:

(1) Day Care Home, Class A
The care of 12 or fewer individuals as an Accessory Use to an occupied residence in which the occupant is the primary provider of the care, not including the care of members of the provider's own Family. "Primary provider" means an individual who has the ongoing responsibility for the health, safety and well-being of individuals in care.

(2) Day Care Home, Class B
The care of 12 or fewer individuals as an Accessory Use to an occupied residence in which the occupant is not the primary provider of the care, not including the care of members of the provider's own Family. "Provider" means an individual who has the ongoing responsibility for the health, safety and well-being of individuals in care.

(3) Day Care Center
The care of 13 or more individuals. Typical uses include: Day Care Centers for children or adults, preschools, play groups, kindergartens not operated by public schools, and other establishments offering care to groups of children or adults for part or all of the day or night, with specific exclusion of temporary or seasonal religious instructional schools, including summer Bible school and church school classes.

20-1720 DETENTION FACILITIES
A detention facility is a facility for the housing of persons in the custody of a government agency awaiting trial or serving a sentence after being found guilty of a criminal offense.

20-1721 DWELLING, ATTACHED
A Dwelling that is joined to another Dwelling at one or more sides by a party wall or walls.

20-1722 DWELLING, DETACHED
A Dwelling that is entirely surrounded by open space on the same Lot.

20-1723 EATING AND DRINKING ESTABLISHMENTS

Sale of prepared food and beverages for on- and off-Premises consumption. The following are eating and drinking establishment use types:

(1) Accessory Restaurant

An accessory restaurant is not required to be separated by a permanent wall from the Principal Use to which it is accessory, and generally shares one or more entrances, as well as restrooms, coatrooms and other facilities, with the restaurant. No sales of alcoholic beverages shall be permitted. Accessory restaurants include, but are not limited to, snack bars, school cafeterias, and supermarket delicatessens.

(2) Accessory Bar

An accessory bar is a part of a quality restaurant or high turnover restaurant offering alcoholic beverages. An accessory bar is not separated by a permanent wall from the restaurant to which it is accessory, and generally shares one or more entrances, as well as restrooms, coatrooms and other facilities, with the restaurant. An establishment with an accessory bar will generally characterize itself in its signs, advertising and other promotions as a restaurant or food-service establishment rather than as a bar.

(3) Bar or Lounge

An establishment that may include food service but that emphasizes the service of alcoholic beverages for consumption on the Premises. Any establishment generating more than 45% of its gross revenues from alcoholic beverages (on a weekly average) shall be deemed to be a bar and not a restaurant.

(4) Brewpub

A bar or accessory bar in a restaurant that manufactures up to 5,000 barrels of fermented malt beverages per year on Premises for either consumption on Premises in hand-capped or sealed containers in quantities up to one-half barrel or 15 and one-half gallons sold directly to the consumer.

(5) Nightclub

An establishment that may or may not serve alcoholic beverages for on-Premises consumption and that offers live entertainment, which may be amplified, and/or music for dancing by patrons. A nightclub may also offer food service.

(6) Fast Order Food

An establishment whose primary business is the sale of food: a) primarily intended for immediate consumption; b) available within a short waiting time; and c) packaged or presented in such a manner that it can be readily eaten outside the Premises where it is sold. This use category includes both establishments that have seating areas for consumption of prepared food on the Premises and those that provide food only for consumption off the Premises; this category does not include drive-in fast order food establishments.

(7) Fast Order Food, Drive-In

Sale of food directly to patrons in motor vehicles or to patrons that intend to use the motor vehicle as an eating area. Typically, this use is either dependent on a

long Driveway that provides adequate room for vehicle stacking at a drive-up service window or on a Parking Area near a walk-up service window. This use category includes uses commonly called “drive-ins” or “drive-in restaurants,” “drive-up restaurants,” “drive-through food or beverage stands,” and restaurants with “drive-through” facilities. If a fast-food establishment has both seating areas inside the establishment and drive-up or drive-through facilities, it shall be considered Fast Order Food, Drive-In for use purposes; parking standards, however, shall consider the inside dining area.

(8) Restaurant, Quality
An eating establishment where the principal business is the dispensing and consumption of prepared foods and/or beverage at tables, not including bars, brewpubs or nightclubs. Table service by food & beverage servers is available at “quality restaurants”.

(9) Private Dining Establishment
A dining establishment where the principal business is the dispensing and consumption of prepared food and/or beverage at tables, not including Bars or Lounges, Brewpubs or Nightclubs. A Private Dining Establishment is differentiated from other eating and drinking establishments on the basis that it is open to guests by invitation only and/or to the general public by reservation only and seats no more than 30 guests at once. Typically table service is provided by food and beverage servers.

20-1724 ENTERTAINMENT AND SPECTATOR SPORTS
Provision of cultural, entertainment, athletic, and other events to spectators. Also includes events involving social or fraternal gatherings. For participant sports, see Section 20-1762. The following are spectator sports and entertainment use types:

(1) Limited
Those uses conducted within an enclosed Building with a capacity of 500 or less people. Typical uses include small theaters and meeting halls.

(2) General
Those uses generating an attendance of 501 or more people such as theaters (movie or legitimate), large exhibition halls, field houses, stadiums and sports complexes.

20-1725 EXPLOSIVE STORAGE
Storage of any quantity of explosives. Typical uses include storage in the course of manufacturing, selling, or transporting explosives, or in the course of blasting operations.

20-1726 FINANCIAL, INSURANCE AND REAL ESTATE [F.I.R.E.] SERVICES
Financial, insurance, real estate or securities brokerage services. Typical uses include banks, insurance agencies and real estate firms.

(1) Financial Institutions
Banks, savings & loan banks, credit unions, and other similar facilities open to the public and engaged in deposit banking and related functions such as making loans and fiduciary activities.

(2) Other

All Financial, Insurance, and Real Estate Services that are not a Financial Institution.

20-1727 FOOD AND BEVERAGE RETAIL SALES
Retail sale of food and beverages for home consumption. Typical uses include grocery stores, convenience stores, butcher shops, and package liquor stores.

20-1728 FUNERAL AND INTERMENT SERVICES
Provision of services involving the care, preparation or disposition of the dead. The following are funeral and interment services use types:

(1) Cemeteries
Land used for burial of the dead.

(2) Cremating
Crematory services involving the purification and reduction of the bodies by fire. Typical uses include crematories and crematoriums.

(3) Interring
Interring services involving the keeping of human bodies other than in cemeteries. Typical uses include columbariums and mausoleums.

(4) Undertaking
Undertaking services such as preparing the dead for burial and arranging and managing funerals. Typical uses include funeral homes and mortuaries.

20-1729 RESERVED

20-1730 GROUP LIVING
Residential occupancy of a Dwelling Unit by other than a "Household" and providing communal kitchen/dining facilities. Typical uses include occupancy of fraternity and sorority houses, Assisted Living, and Congregate Living.

20-1731 HEALTH CARE OFFICE; HEALTH CARE CLINIC
Medical facilities containing space for waiting rooms, patient rooms, laboratory space, or other necessary accommodations for use by physicians, dentists, therapists, and other similar health personnel in the provision of health services related to the prevention, diagnosis, treatment, rehabilitation, testing and analysis of medical conditions. Services provided in these facilities are typically rendered and completed in three (3) hours or less.

20-1732 HOSPITAL
Hospital means an institution that: (1) offers services more intensive than those required for room, board, personal services and general nursing care; (2) offers facilities and beds for use beyond 24 hours by individuals requiring diagnosis, treatment, or care of illness, injury, deformity, infirmity, abnormality, disease, or pregnancy; and (3) regularly makes available at least clinical laboratory services, diagnostic X-ray services, and treatment facilities for surgery or obstetrical care, or other definitive medical treatment of similar extent. Hospitals may include offices for medical and dental personnel, central service facilities such as pharmacies, medical laboratories and other related uses.

20-1733 HOUSEHOLD LIVING

Residential occupancy of a Dwelling Unit by a household with tenancy arranged on a month-to-month or longer basis.

(1) Attached Dwelling

A Dwelling Unit, located on its own Lot, that shares one or more common or abutting walls with one or more Dwelling Units. An Attached Dwelling does not share common floor/ceilings with other Dwelling Units. An Attached Dwelling is also called a townhouse or a row house.

(2) Detached Dwelling

A Dwelling Unit located on its own Lot that is not attached to any other Dwelling Unit.

(3) Cluster Dwelling

A subdivision or development project containing Detached Dwellings where some or all Lots are smaller than the required minimum Lot Area and width requirements but the overall project complies with the maximum Density requirements of the applicable Base and Overlay Zoning Districts.

(4) Duplex

A single Structure that contains two (2) primary Dwelling Units on one (1) Lot. The units may share common walls or common floor/ceilings.

(5) Multi-Dwelling (Structure)

A Structure that contains three (3) or more Dwelling Units that share common walls or floor/ceilings with one (1) or more units. The land underneath the Structure is not divided into separate Lots. A Multi-Dwelling includes Structures commonly called garden apartments, apartments and condominiums.

(6) Zero Lot Line Dwelling

Detached Dwellings that are located to one side of Lot on which they are located, in accordance with the standards of Section 20-531.

(7) Non-Ground Floor Dwelling

Residential Dwelling(s) permitted in any Vertical Mixed Use Structure which are located above the ground level or first level of the Structure or below the ground level or first level of a Structure and do not have direct internal access to a nonresidential use.

(8) Work/Live Unit

A space within a Building that consists of a Dwelling Unit which is accessory to a nonresidential use and has direct internal access to the nonresidential use.

20-1734 INDUSTRIAL, GENERAL

Production, processing, assembling, packaging or treatment of food and non-food products; or manufacturing and/or assembly of electronic instruments and equipment and electrical devices. General Industrial uses may require Federal air quality discharge permits, but do not have nuisance conditions that are detectable from the boundaries of the subject property. Nuisance conditions can result from any of the following:

(i) continuous, frequent, or repetitive noises or vibrations;

(ii) noxious or toxic fumes, odors, or emissions;

(iii) electrical disturbances; or

(iv) night illumination into residential areas.

(1) Exceptions

Noise and vibrations from temporary construction; noise from vehicles or trains entering or leaving the site; noise and vibrations occurring less than 15 minutes per day; an odor detected for less than 15 minutes per day; noise detectable only as part of a composite of sounds from various off-site sources.

20-1736 INDUSTRIAL, INTENSIVE

Manufacturing, processing, or assembling of materials (for uses described above in the "General Industrial" use type classification) in a manner that would create any of the commonly recognized nuisance conditions or characteristics.

20-1737 LAUNDRY SERVICE

Laundering, dry cleaning, or dyeing services other than those classified as "Personal Convenience Services." Typical uses include laundry or dry cleaning agencies, diaper services and linen supply services.

20-1738 LODGE, FRATERNAL AND CIVIC ASSEMBLY

Meetings and activities primarily conducted for members of these groups. Excludes "Group Living" and "Transient Habitation" use types. Typical uses include meeting places for civic clubs, lodges, or fraternal or veteran organizations. Lodge, Fraternal and Civic Assembly uses are small-scale, and shall not exceed a capacity of 500 people.

20-1739 MANUFACTURING AND PRODUCTION, LIMITED

Establishments generally employing fewer than 20 persons, do not involve outside storage of materials, do not require Federal air quality discharge permits, are compatible with nearby residential uses because there are few or no offensive external effects, and are primarily engaged in one of the following:

(1) On-site production of goods by hand manufacturing involving use of hand tools or light mechanical equipment. Products may be finished or semi-finished and are generally made for the wholesale market, for transfer to other plants, or to order for customers or firms. Goods are generally not displayed or sold on-site, but if so, this is a subordinate part of total sales. Typical uses include instruction studios, ceramic studios, woodworking and cabinet shops, custom jewelry manufacturing, and similar types of arts and crafts or small-scale manufacturing; or

(2) Manufacturing or assembling of electronic components, medical and dental supplies, computers, computer components, or other manufacturing establishments with similar characteristics. Goods generally are not displayed or sold on-site, but if so, this is a subordinate part of total sales.

(3) Manufacturing, processing, or packaging of small-scale food production operations with limited on-site retail sales. Typical uses include caterers, bakeries, bottling and beverage manufacturing operations.

20-1740 MANUFACTURING AND PRODUCTION, TECHNOLOGICAL

Production, processing, assembling, or packaging of products that rely upon research and technological innovation. Typical uses include manufacturing research instruments, electronic products, and surgical and medical instruments. This use type does not include uses that require Federal air quality discharge permits.

20-1741 MEDICAL FACILITIES (HEALTH CENTER, CLINIC, HOSPITAL)

Uses providing medical, physical rehabilitation or surgical care to patients. Some uses may offer overnight care.

20-1742 MINING

Mining or extraction of mineral or aggregate resources from the ground for off-site use. Examples include quarrying or dredging for sand, gravel or other aggregate materials; mining; and oil and gas drilling.

20-1743 MOBILE HOME PARK

Any Lot upon which are located one or more Manufactured Homes or Mobile Homes, occupied for Dwelling purposes, regardless of whether or not a charge is made for each accommodation.

20-1744 OFFICE, ADMINISTRATIVE AND PROFESSIONAL
Professional, governmental, executive, management or administrative offices of private organizations or government agencies. Typical uses include government offices, administrative offices, legal offices and architectural, engineering or other professional consulting firms.

(1) Administrative and Professional
Professional, governmental, executive, management or administrative offices of private organizations or government agencies. Typical uses include government offices, administrative offices, legal offices and architectural firms.

(2) Financial, Insurance and Real Estate Services
Financial, insurance, real estate or securities brokerage services. Typical uses include banks, insurance agencies and real estate firms.

(3) Other
Office uses for businesses that primarily provide administrative, consulting or other professional services that do not include construction space or equipment/storage yards.

20-1745 OUTPATIENT CARE FACILITIES
Medical facilities containing space for waiting rooms, patient rooms, operating rooms, recovery rooms, sleep clinics, laboratory space or other necessary accommodations for use by physicians, dentists, therapists, nurses, technicians and other similar health personnel in the provision of health services related to the prevention, diagnosis, treatment, rehabilitation, testing and analysis of medical conditions. Services provided in these medical facilities are typically more intense than those provided in a Health Care Office; Health Care Clinic, but are less intense than those available in a hospital. Services provided in these medical facilities are typically rendered and completed in more than three (3) hours, but in twelve (12) or less hours, and may include one (1) night of overnight care.

20-1746 PARKING FACILITIES
Commercial parking facilities that provide parking that is not accessory to a specific use. A fee may or may not be charged. A facility that provides both accessory Parking for a specific use and regular fee parking for people not connected to the use is also classified as a Commercial parking use.

20-1747 PARKING LOT
An area used for or intended to be used for the off-street parking of operable motor vehicles on a temporary basis.

20-1748 PERSONAL CONVENIENCE SERVICES
Provision of small personal items or consumer-oriented, personal services. These include various general retail sales and personal services of a small, neighborhood-scale. Typical uses include neighborhood grocery stores, drugstores, laundromats/ dry cleaners and barbershops.

20-1749 PERSONAL IMPROVEMENT SERVICE

Informational, instructional, personal improvement, and similar services of a nonprofessional nature. Excludes services classified as "Spectator Sports and Entertainment", "Sports and Recreation, Participant" or "Transient Habitation." Typical uses include fine arts studios, martial arts centers, yoga meditation or diet centers.

20-1750 POSTAL & PARCEL SERVICES

Mailing services and processing as traditionally operated or leased by postal and Parcel service companies.

20-1751 PUBLIC SAFETY

Services that provide protection to a district or entity according to Fire, Life, and Safety Code Sections, together with the incidental storage and maintenance of necessary vehicles. Typical uses include fire stations, police stations and ambulance services.

20-1752 RECYCLING FACILITIES

A facility for the collection and/or processing of Recyclable Materials. A recycling facility does not include storage containers or processing activity located on the Premises of a residential, commercial, or manufacturing use and used solely for the recycling of material generated by that residential property, business or manufacturer. Recycling facilities may include the following:

(1) Collection Facilities

A center or facility for the acceptance by donation, redemption, or purchase of Recyclable Materials from the public. A Small Collection Facility may occupy a maximum area of 500 square feet. Large Collection Facilities may occupy greater land area. Both facilities may include:

(i) Attended or unattended mobile collection units such as all weather roll-off containers, bins or boxes, which are not permanently affixed to the ground;

(ii) Reverse vending machines or kiosks that may include permanent Structures;

(iii) Indoor facilities, ancillary to the primary activity of a business or organization.

(2) Processing Center

A Building or enclosed space used for the collection and processing of Recyclable Materials. Processing means the preparation of material for efficient shipment, or to an end-user's specifications, by such means as baling, briquetting, compacting, flattening, grinding, crushing, mechanical sorting, shredding, cleaning, and remanufacturing.

20-1753 RELIGIOUS ASSEMBLY

Religious services involving public assembly such as customarily occurs in synagogues, temples, mosques and churches.

(1) Neighborhood Religious Institution

A Neighborhood Religious Institution is an institution of which the primary use is holy day worship services, with incidental educational programs, some weekday services and accessory uses identified in Section 20-522. It is a

small-scale use, seating 500 or fewer people. Accessory Uses are limited. The small scale of the institution and the limitation on extensive non-worship uses make the institutional use generally compatible with residential neighborhoods.

(2) Campus or Community Religious Institution
A Campus or Community Religious Institution is a religious institution of larger scale than a Neighborhood Religious Institution. Campus or Community Religious Institution uses shall have a minimum capacity of 501 persons, but may include a larger worship or assembly space, possibly seating several thousand people. It may include accessory uses identified in Section 20-522 including, but not limited to, extensive facilities for educational and recreational programming that is separate from or only loosely related to religious worship; on-site group living for students or for groups of religious leaders; and storage space for buses used to transport persons to and from programming at the institution.

20-1754 REPAIR SERVICES, CONSUMER
Provision of repair services to individuals and households but not to firms. Excludes "Automotive and Equipment" use types. Typical uses include appliance repair shops, locksmiths, shoe and apparel repair and musical instrument repair.

20-1755 RECREATIONAL FACILITIES
Recreational, social, or multi-purpose uses typically associated with parks, play fields, golf courses, or community recreation Buildings.

(1) Active Recreation
Areas and facilities used or designed for active or group sports and recreational activities, including spectator areas associated with such facilities. Such areas include but are not limited to:

(i) athletic fields and courts, playgrounds and play apparatus;

(ii) skating rinks and swimming pools;

(iii) boat docks and launches;

(iv) zoos;

(v) community recreation Buildings, including but not limited to meeting rooms, class or lecture rooms, band shelters or gazebos, and gymnasiums; and

(vi) Structures accessory to community recreation uses, such as public restrooms, refreshment stands, concession shops selling sporting goods, and miniature golf.

(2) Passive Recreation
Areas used or designed for passive and individual sports and recreational activities. Such areas include but are not limited to:

(i) greens and commons;

(ii) gardens, arboretums, and conservatories;

(iii) pedestrian, Bicycle, and equestrian paths, trails and walkways;

(iv) benches, plaza or seating areas, and picnic areas; and

(v) golf courses.

(3) Nature Preserve/Undeveloped
Areas generally or predominantly remaining in a natural or undeveloped state, including natural wildlife and plant habitat areas. Such areas may include:

(i) hiking, bicycling, and equestrian trails; and

(ii) sitting and picnic areas.

(4) Private Recreational Area
Areas provided or set aside as open or recreational uses as part of a residential development, including but not limited to Common Open Space.

20-1756 RESEARCH SERVICES
Research of an industrial or scientific nature generally provided as a service or conducted by a public agency or private firm. Typical uses include electronics research laboratories, environmental research and development firms, agricultural and forestry research labs, and pharmaceutical research labs.

20-1757 RETAIL SALES AND SERVICE
Companies or individuals involved in the sale, lease, or rental of new or used products, or providing personal services or entertainment to the general public.

20-1758 RETAIL SALES, GENERAL
Businesses, not exceeding 65,000 gross square feet of Floor Area, involved in the sale, lease or rent of new or used products to the general public. Excludes "Agricultural Sales," "Animal Services," "Automotive and Equipment," "Business Equipment Sales and Services," "Construction Sales and Services", "Food and Beverage Retail Sales", "Gasoline and Fuel Sales" and "Swap Meets". Typical uses include general merchandise, apparel stores and furniture stores.

20-1759 SCHOOL
A public, private or parochial educational institution offering instruction in the branches of learning and study required to be taught in the public schools at the elementary, middle and senior high school levels.

20-1760 SCRAP AND SALVAGE OPERATIONS
Storage, sale, dismantling, or other processing of used, source-separated, or waste materials not intended for reuse in their original form. Typical uses include automotive wrecking yards, junk yards, and salvage yards, but not including “Recycling Facilities.”

20-1761 SEXUALLY ORIENTED BUSINESSES
Physical Sexually Oriented Business, Sexually Oriented Theater, Sex Shop, Sexually Oriented Media Store, and Mixed Media Store.

(1) Physical Sexually Oriented Business

(i) Massage Parlor
An establishment or business with a fixed place of business having a source of income or compensation derived from the practice of any method of pressure on or friction against, or stroking, kneading, rubbing, tapping, pounding, vibrating, or stimulation of external parts of the human body with the hands or with the aid of any mechanical, electric apparatus or appliances with or without such supplementary aids as rubbing alcohol, liniments, antiseptics, oils, powders, creams, Lotion, ointment or other similar preparations commonly used in the practice of massage, under such circumstances that it is reasonably expected that the person to whom the treatment is provided or some third person on his or her behalf will pay money or give any other consideration or gratuity, provided that this term shall not include any establishment operated by a medical practitioner, professional physical therapist licensed by the State of Kansas, or a certified massage therapist.

(ii) Modeling Studio
An establishment or business that provides the services of modeling for the purposes of reproducing the human body, wholly or partially in the nude by means of photography, painting, sketching, drawing or otherwise. These uses do not include fine arts studios where models are hired to meet program goals. Any other modeling establishment is not permitted by the zoning regulations in any district.

(iii) Motion Picture Arcade
An establishment or business containing one or more booths, cubicles, stalls or compartments that are designed, constructed or used to hold or seat patrons and used for presenting Sexually Oriented Media for observation by patrons therein.

(2) Sexually Oriented Theater
An establishment or business featuring primarily:

(i) Sexually Oriented Cabaret
Dancing or other live entertainment distinguished or characterized by an emphasis on exhibiting Specific Sexual Activities or Specified Anatomical Areas for observation by patrons therein; or

(ii) Sexually Oriented Motion Picture Theater
The display to an audience of films, tapes or motion pictures that are rated X by the Motion Picture Association of America (MPAA) and depict Specific Sexual Activities or Specified Anatomical Areas.

(iii) "Primarily"
Primarily refers to the entertainment that characterizes a particular establishment or business, and may be determined from a pattern of advertising as well as from actual performances or displays.

(3) Sex Shop
An establishment or business offering goods for sale or rent where:

(i) it offers for sale items from any two of the following categories: Sexually Oriented Media, lingerie, or leather goods marketed or presented in a context to suggest their use for Sadomasochistic Practices; and the combination of such items constitute more than

10 percent (10%) of its stock in trade or occupies more than 10 percent (10%) of its gross public Floor Area;

(ii) more than five percent (5%) of its stock in trade consists of Sexually Oriented Novelties; or

(iii) more than five percent (5%) of its gross public Floor Area is devoted to the display of Sexually Oriented Novelties.

(4) Sexually Oriented Media Store
An establishment or business offering goods for sale or rent where:

(i) more than 40% of the gross public Floor Area is devoted to Sexually Oriented Media;

(ii) more than 40% of the stock in trade consists of Sexually Oriented Media; or

(iii) it advertises or holds itself out in any forum as "XXX," "sexually oriented," "sex" or otherwise as a Sexually Oriented Business.

(5) Mixed Media Store
An establishment or business offering goods for sale or rent that is not a Sex Shop or Sexually Oriented Media Store but where:

(i) more than 10 percent (10%) of the gross public Floor Area is devoted to Sexually Oriented Media; or

(ii) more than 10 percent (10%) of the stock in trade consists of Sexually Oriented Media.

20-1762 SPORTS AND RECREATION, PARTICIPANT
Provision of sports or recreation primarily by and for participants. (Spectators would be incidental and on a nonrecurring basis). The following are participant sports and recreation use types (for either general or personal use):

(1) Indoor
Those uses conducted within an enclosed Building. Typical uses include bowling alleys, billiard parlors, swimming pools and physical fitness centers.

(2) Outdoor
Those uses conducted in open facilities. Typical uses include driving ranges, miniature golf courses and swimming pools.

20-1763 TRANSIENT HABITATION
Provision of lodging services on a temporary basis with incidental food, drink, and other sales and services intended for the convenience of guests. The following are transient habitation use types:

(1) Campground
Transient habitation areas for travelers in recreational vehicles or tents. Typical uses include recreation vehicle parks.

(2) Bed and Breakfast
An establishment located within a Detached Dwelling that is the principal residence of the operator, where short-term lodging is offered for compensation and that includes the service of one or more meals to guests.

(3) Lodging
Provision of room or room and board. Typical uses include hotels and motels.

20-1764 UTILITIES AND SERVICES, MAJOR
Services and utilities that have substantial impacts. Such uses may be permitted when the public interest supersedes the usual limitations placed on land use and transcends the usual restraints of the district for reasons of necessary location and community-wide interest. Typical uses include: water and wastewater treatment facilities, major water storage facilities, airports, and power generation plants.

20-1765 UTILITIES, MINOR
Public utilities that have a local impact on surrounding properties. Typical uses include electrical and gas distribution substations, lift stations, telephone switching boxes, and water towers. Excludes "Wireless Telecommunication Facilities" use types.

VEHICLE SALES AND SERVICE
Sales of motor vehicles or services related to motor vehicles. The following are vehicle sales and service use types:

(1) Cleaning
Washing and polishing of automobiles. Typical uses include car washes.

(2) Fleet Storage
Fleet storage of vehicles used regularly in business operation and not available for sale, or long-term storage of operating vehicles. Typical uses include taxi fleets, buses, mobile-catering truck storage, and auto storage garages.

(3) Gas and Fuel Sales
Retail sale from the Premises of vehicular fuels with incidental sale of tires, batteries and replacement items, lubricating services, minor repair services and Food and Beverage Sales. Typical uses include vehicle service stations and gas stations with or without convenience stores.

(4) Truck Stop
A fuel dispensing facility designed to primarily accommodate the trucking industry. Accessory uses common to a truck stop may include a convenience store, restaurant, shower facilities, overnight parking areas for semis and other commercial vehicles and scale facilities.

(5) Heavy Equipment Repairs
Repair of trucks and other heavy equipment as well as the sale, installation, or servicing of automotive equipment and parts together with body repairs, painting, and steam cleaning. Typical uses include engine repair shops, body shops and motor freight maintenance groups.

(6) Light Equipment Repairs
Repair of automobiles and the sale, installation, and servicing of automobile equipment and parts but excluding body repairs and painting. Typical uses include tire repair and alignment, muffler shops, auto or motorcycle repair garages and auto glass shops.

(7) Heavy Equipment Sales/Rentals
Sale, retail or wholesale, and/or rental from the Premises of heavy construction equipment, trucks and aircraft, together with incidental maintenance. Typical uses include heavy construction equipment dealers and tractor trailer sales.

(8) Light Equipment Sales/Rentals (including automobiles)
Sale, retail, wholesale, or rental from the Premises of autos, noncommercial trucks, motorcycles, trailers with less than 10,000 lbs. gross cargo weight, motor homes and boat dealers, together with incidental maintenance. Typical uses include automobile and boat dealers, car rental agencies with accessory wash bays and vehicle storage and recreational vehicles sales and rental agencies.

(9) Storage of Non-operating Vehicles
Storage of non-operating motor vehicles. Typical uses include storage of private parking tow-a-ways and impound yards.

(10) Storage of Recreational Vehicles and Boats
Storage of recreational vehicles and boats. Typical uses include the collective storage of personal recreational vehicles and boats.

20-1766 WHOLESALE, STORAGE, AND DISTRIBUTION

Wholesaling, storage, distribution, and handling of materials and equipment other than live animals and plants. The following are wholesaling, storage and distribution use types:

(1) Mini-Warehouses

Storage or warehousing service within a Building for individuals to store personal effects. Incidental uses in a mini-warehouse may include the repair and maintenance of stored materials by the tenant; but in no case shall storage spaces in a mini-warehouse facility function as an independent retail, wholesale, business, or service use. Spaces shall not be used for workshops, hobby shops, manufacturing, retail sales or similar uses. Human occupancy shall be limited to that required to transport, arrange and maintain stored materials.

(2) Light

Wholesaling, storage, and warehousing services within enclosed Structures. Typical uses include wholesale distributors, storage warehouses and moving and storage firms.

(3) Heavy

Open-air storage, distribution, the handling of materials and equipment or bulk storage of fuel. Typical uses include monument or stone yards, train yards, grain elevators and large-scale fuel storage.

20-1767 TELECOMMUNICATIONS FACILITIES

The fixed or permanent site, Structures, equipment, and appurtenances used to send radio frequency transmissions. Such facilities include, but are not limited to: Antennas, poles, towers, cables, wires, conduits, ducts, pedestals, vaults, Buildings, electronics and switching equipment.

(1) Telecommunications Antenna

A Telecommunications Facility for such services as cellular telephone, personal communication services, enhanced/specialized mobile radio, and commercial paging services, that is attached to a pole, tower, or other Structure including, but not limited to, a Structure that can accommodate the future installation of two or more Antenna systems.

(2) Telecommunications Tower

A Telecommunications Facility for such services as cellular telephone, personal communication services, enhanced/specialized mobile radio, and commercial paging services, that consists of a new tower, monopole, or other unattached Structure erected to support wireless communication Antennas and connecting appurtenances.

20-1768 INSTITUTIONAL USE

A use, typically not for profit, of a governmental, educational, or cultural nature. An institution is typically operated by a government, utility, school, public agency, or tax-exempt organization.

20-1769 COMMUNITY MENTAL HEALTH FACILITY

A Community Mental Health Facility is a facility containing space for care and programs specializing in services for individuals seeking mental health services for themselves or for their families. A Community Mental Health Facility may contain space for waiting rooms, patient rooms, and accommodations for licensed health care providers providing case management services. A Community Mental Health Facility may provide care services for individuals seeking mental health services, either on an in-patient or out-patient basis, or both, and may include care services under medical supervision for more than twenty-four consecutive hours, but shall not include surgery and obstetrical care as may be found in a Hospital.

A Community Mental Health Facilities shall, as may be required by State law, be licensed by the appropriate State Agency. A Community Mental Health Facility may also include office space, outpatient medication services (limited pharmaceutical services), education, consultation, treatment and rehabilitation services, employment and housing services, medical and dental care in a coordinated manner with mental health care services, and general community wellness programs as accessory uses.

A Community Mental Health Facility shall not include Hospitals, Group Homes, Extended Care Facilities, or Temporary Shelters, as defined in the Land Development Code.

20-1770 MAKER SPACE

A use consisting of multiple primary activities that include a public assembly component, retail or fabrication activities. These uses include collaborative groups organized around one or more common interest such as arts, electronics, crafting, or design of software, hardware, furniture, and rapid prototyping of three dimensional models.

Use also includes components commonly associated with gallery and display space, instructional space, collaborative meeting space, workshops and fabrication laboratories and studios that provide access to tools and equipment including but not limited to:

> Computer Numerical Control (CNC), Computer Aided Design (CAD)- Computer Aided Manufacturing (CAM); hand tools; power tools found in cabinetry/woodworking, tools for glass work and metal work, including kilns and welding equipment.

Use provides space for development of innovative, original and prototypical products and works of art. These uses differ from manufacturing uses that produce, reproduce, fabricate or assemble multiple units of the same product other than prototypes or models, used for experimentation, research or as a demonstration product to "take to market". Prototype is defined as an original, model or pattern from which manufactured, fabricated or assembled products are developed or copied.

> **(1) Maker Space, Limited**
> An establishment within an enclosed Structure(s) that does not contain the following nuisance producing elements: frequent and heavy truck delivery, exterior storage, use of power tools found in workshops.
>
> **(2) Make Space Intensive**
> An establishment that provides space similar to a Make Space, Limited and engaged in collaborative, innovative meeting spaces but includes: one or more of the following elements: power tools,exterior storage of raw materials, exterior work spaces, and heavy truck access for deliveries.

Typical uses include Makerspaces, Hacklabs, Innovation Centers, Tech Shops, Fab Labs or Inventors Clubs and similarly named business operations. Within these uses, space is specifically provided for collaboration, access to basic tool and equipment and workshop, studio space with an emphasis on peers and mentors within the organization of the operation and creating with technology.

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City of Lawrence
Douglas County
PLANNING & DEVELOPMENT SERVICES

Meeting Agenda

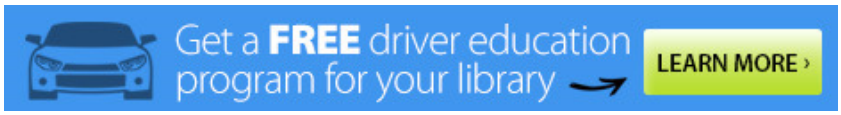
Planning Commission Mid-Month
City Hall, 6th & Massachusetts St - City Commission Meeting Room
February 11, 2015
7:30 - 9:00 a.m.

TOPIC ONE: General Discussion – January PC Recap & February PC Review
7:30-7:50am

TOPIC TWO: Entrepreneur Incubator Spaces
7:50-9:00am

Attachments provided at meeting:

1. What is a Makerspace – Article
2. These 5 spaces take coworking to a new level - Article
3. Terms, Definition, Purpose of Makerspaces
4. Current Use Definitions
5. Lexington Kentucky Case Study
6. Milwaukee Wisconsin Case Study
7. San Francisco California Case Study



What is a Makerspace? Creativity in the Library

Submitted by Caitlin A. Bagley on December 20, 2012 - 11:06am

Editor's Note: This is the first in a series of posts by Caitlin A. Bagley. Learn about the makerspace at Carnegie Public Library (Pittsburgh) in our free webinar Monday, January 7, 2013 at 2:00 p.m. Eastern. Register.

I first heard of makerspaces when, as I sat in my office, a colleague called me over to see if I wanted to join a webinar on makerspaces. Listening over her shoulder, I heard phrases like DIY, and tools kept popping up. Not the usual web-based tools talked about in webinars, physical tools... y'know, wrenches and pliers? Real tools. I've always seen libraries as community centers for people to gather and work together, but this? It stretched my imagination.

When most people think of libraries, they naturally think books. Anyone working in a library today, however, knows that we are so much more than *just* books. Libraries are places of community engagement. Recently many libraries have begun to develop spaces for design and activities that both teach and empower patrons. The learning in these spaces varies wildly--from home bicycle repair, to using 3D printers, to building model airplanes. Fittingly, they are called makerspaces.

Makerspaces have evolved from hackerspaces and Maker Faires. Defining a makerspace can be somewhat difficult due to the differences among spaces and activities, but the emphasis is on creating with technology. STEM education (science, technologly, engineering, math) has been quick to embrace these spaces and technologies, but it is important to stress that makerspaces are not for STEM activities only. Jeff Sturges of Detroit's Mt. Elliott Makerspace said in ALA TechSource's December 3 makerspace webinar, "Beyond engineering and STEM, this is about creating creative people." He's absolutely right. The maker movement in libraries is about

teaching our patrons to think for themselves, to think creatively, and to look for do-it-yourself solutions before running off to the store. In short, a makerspace is a place where people come together to create with technology.

So who uses makerspaces? Anyone! Already libraries of all types have found a way to create makerspaces. Most of these early makerspaces are in public libraries, each with a different focus, some working only with children, and others with adults. Academic libraries also are developing makerspaces, as are school libraries. Early experiences show that the potential users of makerspaces are not limited to a specific demographic. If you have patrons and you're looking for a unique method of outreach, a makerspace might be the course for you.

Odds are high that you're a maker yourself. When I think of skills I taught myself or learned growing up, they align well with what many makerspaces are doing today. Didn't my mother teach me how to knit? Didn't my father teach me to fix a flat tire? Didn't I spend hours as a teenager teaching myself HTML to build my first Web pages and blogs? Makerspaces are about encouraging our patrons to take initiative and to learn and create. When those patrons walk out our doors, they will know about a project, yes, but they will know also that they are capable of doing more and that the library will help them accomplish it.

The use of library services has blossomed during this economic downshift, and I think that makerspaces are a reflection of the times. Here we have people coming together as a community to fix things, creatively and cheaply, and to continue to maintain and create, including those who lack individual purchasing power. This is true library form: accepting and helping everyone, together, as a community.

In the next several months, I will be collecting stories about our library makerspaces for a book to to be published by ALA and LITA. As I explore and learn, I will write occasional posts to the blog. Do you have a makerspace in the works?

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Urbanful

What's happening today in the cities of tomorrow.

These 5 spaces take coworking to a new level

by **Njaimeh Njie** October 31, 2014

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The Nickel Tour: Tired of working from home? These spaces could encourage you to join a coworking space.

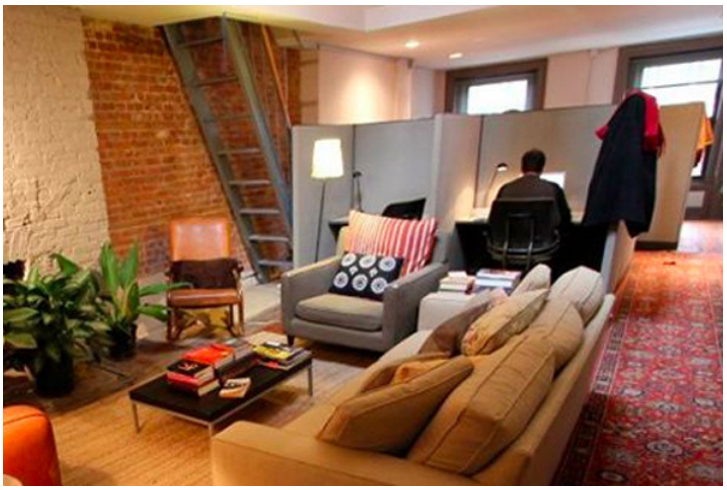
Everyone who is anyone is up on the latest coworking trends (cliff notes: they're growing by the day) knows that the spaces are a hip way to spend the 9 to 5. But not all coworking spaces are the same. Here are five places we hope push coworking spaces into the future.

The Startup Incubator: Thrill Mill-Pittsburgh, Pennsylvania

Thrill Mill is representative of the big presence startups have in the coworking world. As an incubator and accelerator, Thrill Mill accepts applications from entrepreneurs looking to grow their business. Thrill Mill provides 24/7 access to a lofty workspace, seed capital, access to networks and additional funding sources, mentorship and potentially entry to an entrepreneurship boot camp.

To wrap up their year in the incubator, companies get to showcase their work at the Thrival Innovation + Music Festival, an opportunity to present to local stakeholders and thought leaders about their work, in the context of a weekend music festival.

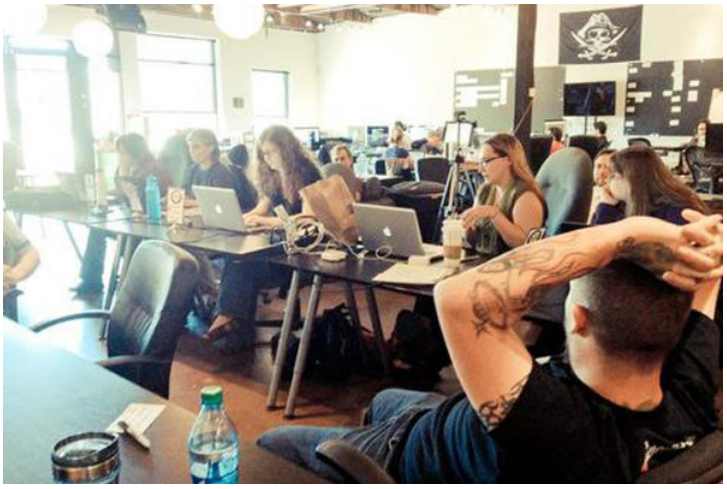
The Writers Room: Paragraph-New York, New York



This 24/7/365 Paragraph is “dedicated to providing an affordable and tranquil writing environment for writers of all genres,” founded by two writers who were hankering for a peaceful but collaborative atmosphere to create.

The 2500 sq. ft. loft space is divided into a writing room and a separate kitchen and lounge space. They have both full time and part-time memberships, and payment plans within each to satisfy different budgets and time needs. Beyond providing writing space they host readings, roundtables, and speaking engagements to enhance the creative and networking elements of the center.

The (Almost) Free Model: Gangplank-Chandler, Arizona



On the surface, Gangplank is a free workspace. Start peeling back the layers however, and you'll see it's a whole lot more. Membership at Gangplank won't cost you any money—just a bit of your time. In exchange for free workspace members can volunteer, network and cultivate relationships to earn their keep.

Gangplank is a community of entrepreneurs that promotes a number of different initiatives. It has an educational component that presents classes on topics ranging from business to music. It hosts programming specifically geared towards startups, promotes healthy living through various opportunities to get out and be active, feature a "Junior" division devoted to promoting student entrepreneurship and offers labs and studios for more hands-on work. With locations in Arizona, Virginia and Ontario, the broad scope seems to be catching on quickly.

The Workshop: Fort Houston-Nashville, Tennessee

Nashville has developed a strong crop of coworking spaces to support and further cultivate its creative class. A particularly cool space among the bunch is Fort Houston, a space dedicated to a range of art disciplines and trades. Occupying a full 10,000 sq. ft., there is plenty of room to meet, mingle and roll up your sleeves to create here.

Fort Houston has a wood shop, print shop, bike shop, photography studio and desk space. According to its site, put simply, "You pay a monthly fee, and you get to make things here." Memberships range from $125 for an individual using one type of workshop space, to $400 or more for a team of three or more people looking to use a variety of spaces.

The Socially Conscious Bunch: Hatch-Portland, Oregon

Per the Hatch website, “It’s a place where local and social entrepreneurs can imagine, launch, and scale enterprises that improve communities.” Noting the isolation that many entrepreneurs feel, they work to provide mentoring, consulting, and support to individuals and companies at various stages of their entrepreneurial journeys.

Hatch leases spaces including offices, conference rooms, classrooms and even garden space to people and groups with a demonstrated desire to have a positive social impact. Plans range from $95 to $275 per month and include access to must-haves like workspace and WiFi, but also perks like workshops and networking with in house experts.

Images courtesy of Hatch, Fort Houston, Gangplank, Paragraph, Thrill Mill

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About Njaimeh Njie

Njaimeh is a multimedia producer based in Pittsburgh, PA. After graduating from Washington University in St. Louis, Njaimeh taught high school English for three years while earning a master's degree in Secondary Education. She's since backpacked solo through Europe and Africa, and currently works as a freelance videographer, producer, photographer, and writer. Her work focuses on documenting efforts for diversity and inclusion in a rapidly evolving city.

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AMAZING JACK-O'-LANTERNS THAT WILL PUT YOURS TO SHAME ›

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Jennifer Thomas Arthurs · Works at Mogul Real Estate Partners

Check out The Reef in Los Angeles for you next post. Thx for sharing!!

Reply · Like · November 3, 2014 at 3:27pm

Debra Morgano Stine-Magrann

Oops! Found a typo: The Nickel Tour: Tired of working < form > home? These spaces could encourage you to join a coworking space.

Reply · Like · November 1, 2014 at 4:35am

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posted on January 30, 2015
- You stayed where? Incredible Airbnbs and hotels to inspire your next trip
posted on February 2, 2015
- The 6 American cities where every on-screen romance is filmed
posted on January 30, 2015
- Cities don't give you asthma: Being poor does
posted on January 28, 2015
- Cutting the cord: How to get rid of cable
posted on February 3, 2015
- Love your city? Treat yourself to these city goods
posted on February 3, 2015
- Five pop-ups to catch this winter
posted on December 16, 2014
- 11 crazy, cool, and downright weird monthly box subscriptions
posted on October 15, 2014
- How much money does the Super Bowl really bring a host city?
posted on January 26, 2015

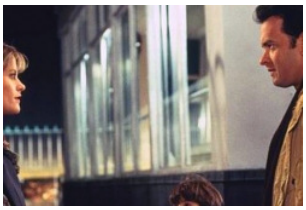
STUFF WE LOVE:

The next gold rush could be in city sewers

Introducing delicious new food prints from Marcella

This year, #win Valentine's Day with the Urbanful sale

The 6 American cities where every on-screen romance is filmed



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Names or Terms Used for Makerspace?

- Makerspace
- FabLabs
- Hackspace
- Art Centers
- Inventors Clubs
- Community Workshops
- Digital Fabrication Labs
- Creation Clubs
- TechShops
- Learning Labs
- A FAIRE
- Art Communities
- Innovation Labs
- Community Labs
- MetaLabs
- MakerMedia

Typical Uses?

Uses for Makerspaces typically include (3) or more of the following defined uses:

- Limited Mfg.
- General Retail
- Assembly Space
- Office Use
- Commercial Kitchen
- Live/Work Units
- IT (Tech, Machines, Digital Arts, Electronic Arts)
- Art Studio (Kiln, Glass Art, Furniture, Fiber Arts)
- Storage

Makerspace Definition?

- Makerspaces and maker groups are new and rapidly evolving hotbeds of innovation, which have been facilitated by the latest in prototyping technology while rooted in traditional pillars of manufacturing: engineering, design, science, and art. Coworking environments, such as innovation centers, accelerators, incubators, and hackerspaces, have begun to proliferate. Out of hackerspaces, so-called 'hardware' innovators have carved out a subgroup for makers. Making has always been a part of hackerspaces, whose walls are often stacked with racks of spare electronic parts for repurposing. In makerspaces, however, hardware innovation is primary and programming is secondary (Foertsch, April 2013).
- Makerspaces display different legal structures, different projects and tools, and different mentorship programs. The scope of a makerspace is driven by its members and their creative needs. The interests of makerspace users vary and include electronics, knitting, machining, crafts, scrapbooking, woodworking, ceramics, sewing, design, and much more. Makerspaces allow members to pursue their creative needs in a collaborative environment. Many of the makerspaces provide numerous learning opportunities through classes and demonstrations (Kalish, November 21, 2010).
- Makerspaces are places where like-minded persons gather to work on personal projects, share tools and expertise as well as learn from each other (Tweney, March 29, 2009).
- Learning environments rich with possibilities, Makerspaces serve as gathering points where communities of new and experienced makers connect to work on real and personally meaningful projects, informed by helpful mentors and expertise, using new technologies and traditional tools (Spring, 2013).

Purpose of Makerspace?

- The creative industries are grabbing the attention of policymakers as powerful engines for job creation and competitiveness (Kauffman. org, 2015).
- The driving principle of "makerspaces" is that users enjoy sharing tools, equipment, expertise and ideas rather than working by themselves in the garage or basement (Roush, May, 22, 2009).
- Economic growth requires continued entrepreneurial innovation and expansion. Places that foster innovation and creativity can adapt faster to the new economy and sustain economic growth. In order for communities to remain competitive in the global economy, technological improvements require an increased knowledge base for industrial innovation. In this regard, nurturing innovation and entrepreneurship is a central component of the strategy of any community, regardless of the existing growth patterns. Communities need to invest and foster a talented workforce in order to stay competitive in the global economy. (Kauffman Foundation, 2013; Schwab, 2012).

Where Do Makerspaces Form?

Typically Makerspaces form by location of the founder and access to membership. High populations of engineers, designers, artists or creative individuals drive the participation rate of public and private "Makerspaces".

Having a close proximity to university, colleges or technical colleges ensures continued growth of the "Maker" movement (Benton, Mullins, Shelley, Dempsey, 2013).

Trending Applications

Arts /Entrepreneurial Spaces

Lawrence Creates

9th & Penn

Pohler District

Center for Entrepreneurship

Terms & Definitions

LIBRARY MAKERSPACES

- Typically focus on the young adults and Science, Technology, Engineering and Mathematics (STEM) hands on curriculum experiences.
- World Economic Forum's Global Competitiveness 2013-2014 ranking dropped the United States to fifth place (The Global Competitiveness Index). It has been argued that the U.S. education system is in crisis due to the relative decline in science, technology, engineering and math (STEM) proficiency, fewer young people are interested in STEM fields, and decline in measured creativity (Cognizant, n.d., Institute of Museums and Library Services (IMLS), 2012).

FABLAB (fabrication laboratory):

- Fab Lab provides digital technologies and machines that allow users to develop products and move ideas to products (Gershenfeld, 12; Mott Community College).
- FabLabs are a network of spaces started by Neil Gershenfeld at the Center for Bits and Atoms in MIT's Media Lab around 2005, inspired by an MIT course called How to Make (Almost) Anything. The founding principle of a FabLab is that there is a core set of tools (including basic electronics equipment, a lasercutter, a vinyl cutter, a CNC router, a CNC milling machine, and more) that allow novice makers to make almost anything given a brief introduction to engineering and design education. FabLabs have a very specific set of space requirements (often sufficing with 1,000- to 2,000-square feet), required tools (specified exactly by model and type), supporting software for said tools and curriculum, and can be thought of as a kind of franchise (though MIT retains little to no control over the actions of local spaces). FabLabs are required to be open to the public for little or no cost for recurring periods through the Fab Charter, frequently teach children, and are most often run by local non-profit organizations, (Benton, Mullins, Shelley, Dempsey, 2013).

TECHSHOP:

TechShop (Franchises that are expanding into for profit models) a commercial venture that combines the concepts of hackerspace, Fab Lab, prototyping studio and learning center. The TechShop provides member access to a significant list of equipment and software, in general over $1 million worth of professional equipment and software, locations are in CA, MI, TX, AZ, PA, and VA (Torrone, March 10, 2011).

MAKER FAIRES

- Maker Faire is primarily designed to be forward-looking, showcasing makers who are exploring new forms and new technologies. These events are not just for the novice in technical fields; Maker Faire features innovation and experimentation across the spectrum of science, engineering, art, performance, and craft. (Kauffman.org).
- Maker Faires showcase maker projects as well as celebrate innovation and the do-it-yourself culture. Annual Maker Faire events take place across the U.S., including at the Henry Ford Museum in Dearborn, MI and San Mateo, CA (the original event). These events attract a diverse audience and present projects ranging from traditional crafts to advanced technology and robots geared to attract all ages (Makezine.com).

HACKERSPACE

- Hackerspaces largely focus on repurposing hardware, working on electronic components, and programming. While some spaces work with more media and craft, typically tools and spaces dedicated to those craft were often seen as secondary to the mission of the space. To some extent, hackerspaces have tendencies toward collectivism and/or democratic membership process operation model that can be attributed to an inheritance from European hackerspaces and early American hackerspaces like Noisebridge and NYC Resistor. "Hacking" or to "Hack" refer to the traditional act of programming or act of working with physical parts. (Makezine.com May 20, 2013).
- Hakerspace – A hackerspace or a hack space can feature workshops, tools, and people; it is a location where people with common interests, usually in computers, technology, science, digital and electronic art can meet, socialize and/or collaborate. Many hackerspaces participate in the use and development of free software and alternative media. Hackerspaces have been a self-forming organic concept. European hackerspaces are places where local programmers meet and collectively work (Borland, August 11, 2007).

Current Use Definitions

COMMUNITY FACILITY USE DEFINITIONS:

20-1719 CULTURAL EXHIBITS AND LIBRARIES
Museum-like preservation and exhibition of objects in one or more of the arts and sciences, gallery exhibition of works of art, live performances, art centers, or library collection of books, manuscripts, etc., for reading, studying and research.

Local Examples: Watkins Museum; Lawrence Public Library

COMMERCIAL USE DEFINITIONS:

20-1714 BUSINESS SUPPORT SERVICES
Provision of clerical, employment, protective, or minor processing services to firms rather than individuals. Storage of goods other than samples is prohibited. Typical uses include secretarial services, telephone answering services and blueprint services. Also includes business or trade schools that do not involve any outdoor storage or manufacturing processes. Business or trade schools that do involve outdoor storage or manufacturing processes are classified as "Limited Manufacturing and Production."

Local Examples: Texon Engineering; Minuteman Press

20-1744 OFFICE, ADMINISTRATIVE AND PROFESSIONAL
Professional, governmental, executive, management or administrative offices of private organizations or government agencies. Typical uses include government offices, administrative offices, legal offices and architectural, engineering or other professional consulting firms.

(1) Administrative and Professional
Professional, governmental, executive, management or administrative offices of private organizations or government agencies. Typical uses include government offices, administrative offices, legal offices and architectural firms.

(2) Financial, Insurance and Real Estate Services
Financial, insurance, real estate or securities brokerage services. Typical uses include banks, insurance agencies and real estate firms.

(3) Other
Office uses for businesses that primarily provide administrative, consulting or other professional services that do not include construction space or equipment/storage yards.

20-1749 PERSONAL IMPROVEMENT SERVICE
Informational, instructional, personal improvement, and similar services of a nonprofessional nature. Excludes services classified as "Spectator Sports and Entertainment", "Sports and Recreation, Participant" or "Transient Habitation." Typical uses include fine arts studios, martial arts centers, yoga meditation or diet centers.

20-1755 REPAIR SERVICES, CONSUMER
Provision of repair services to individuals and households but not to firms. Excludes "Automotive and Equipment" use types. Typical uses include appliance repair shops, locksmiths, shoe and apparel repair and musical instrument repair.

20-1756 RETAIL SALES AND SERVICE
Companies or individuals involved in the sale, lease, or rental of new or used products, or providing personal services or entertainment to the general public.

Current Use Definitions

INDUSTRIAL USE DEFINTIIONS:

20-1735 INDUSTRIAL, GENERAL

Production, processing, assembling, packaging or treatment of food and non-food products; or manufacturing and/or assembly of electronic instruments and equipment and electrical devices. General Industrial uses may require Federal air quality discharge permits, but do not have nuisance conditions that are detectable from the boundaries of the subject property. Nuisance conditions can result from any of the following:

(i) continuous, frequent, or repetitive noises or vibrations;
(ii) noxious or toxic fumes, odors, or emissions;
(iii) electrical disturbances; or
(iv) night illumination into residential areas.

(1) Exceptions

Noise and vibrations from temporary construction; noise from vehicles or trains entering or leaving the site; noise and vibrations occurring less than 15 minutes per day; an odor detected for less than 15 minutes per day; noise detectable only as part of a composite of sounds from various off-site sources.

Local Examples: Pur-o-zone, Hallmark, Allen Press

20-1739 MANUFACTURING AND PRODUCTION, LIMITED

Establishments generally employing fewer than 20 persons, do not involve outside storage of materials, do not require Federal air quality discharge permits, are compatible with nearby residential uses because there are few or no offensive external effects, and are primarily engaged in one of the following:

(1) On-site production of goods by hand manufacturing involving use of hand tools or light mechanical equipment. Products may be finished or semi-finished and are generally made for the wholesale market, for transfer to other plants, or to order for customers or firms. Goods are generally not displayed or sold on-site, but if so, this is a subordinate part of total sales. Typical uses include instruction studios, ceramic studios, woodworking and cabinet shops, custom jewelry manufacturing, and similar types of arts and crafts or small-scale manufacturing; or

(2) Manufacturing or assembling of electronic components, medical and dental supplies, computers, computer components, or other manufacturing establishments with similar characteristics. Goods generally are not displayed or sold on-site, but if so, this is a subordinate part of total sales.

(3) Manufacturing, processing, or packaging of small-scale food production operations with limited on-site retail sales. Typical uses include caterers, bakeries, bottling and beverage manufacturing operations.

Local Examples: cabinetry,

20-1740 MANUFACTURING AND PRODUCTION, TECHNOLOGICAL

Production, processing, assembling, or packaging of products that rely upon research and technological innovation. Typical uses include manufacturing research instruments, electronic products, and surgical and medical instruments. This use type does not include uses that require Federal air quality discharge permits.

Local Examples: Martin Logan, Impact, Microtech, Scanning America

Lexington, KY

PICTURE CAPTION:
The North Limestone Vibrancy Map is a guide to the business, non-profit, and cultural anchors of the North Limestone Corridor.

http://www.artplaceamerica.org/articles/luigart-makers-spaces-4/

THE PROJECT

The proposed project is the first of its kind in Lexington, Kentucky. The recently approved PUD has established an innovative, live-work zone designed to support "maker-spaces" and related businesses in the North-End of Lexington's urban core. The purposed Text Amendment to Article 22 of Lexington's Zoning Ordinance was designed to estab-lish a Planned Unit Development-2 (PUD-2) ZONE for the construction of the LuigART Maker's Spaces in downtown Lexington.

The LuigART $5 million development is a three-block area bounded by North Limestone Street, Maple Street, and R.J. Corman Rail Line, and West Seventh Street.

This Planned Unit Development zone is established to support infill and redevelopment that maintains neighborhood character, preserves housing affordability and strengthens opportunities for new applied arts and skilled crafts businesses and jobs, which are vital to the 21st century economy of Lexington-Fayette County. Live/Work districts such as this Planned Unit Development zone provide a desirable housing option to creative professionals and a benefit to the surrounding community when located to be compatible with existing uses. The new regulations were established in addition to the applicable regulations contained in Zoning Ordinance . Where there were conflicts between the regulations and those contained elsewhere in the Zoning Ordinance, the use, dimensions and other requirements were amended on December 4, 2014 with Ordinance No. 154-2014.

MAKERSPACE DEFINITION

A "maker space" is a physical location where people gather to share resources, work on projects, network, and build.

GOVERNANCE

- Pre-Application Meeting June 5, 2014
- August 4, 2014 Text Amendment Application Submitted
- October 23, 2013 - ZOTA 2014-7: AMENDMENT TO ARTICLE 22 TO ESTABLISH A PLANNED UNIT DEVELOPMENT-2 (PUD-2) ZONE – petition for a Zoning Ordinance text amendment to establish the Luigart Planned Unit Development-2 (PUD-2) zone in a new Appendix 22B. OUTCOME: Public Hearing Held and a 10-0 vote by Urban Planning Commission to recommend APPROVAL of the Revised Text to be submitted to LFUrban County Council.
- December 4, 2014 Passed Urban County Council
- December 11, 2014 Ordinance No. 154-2014

CITY OF MILWAUKEE DEFINED USES FOR LuigART Maker's Space

1. Live/Work Space - A dwelling unit that is also used for non-residential uses permitted herein such as, but not limited to, the production, showing and sale of art; both visual and performing arts; office uses; and related uses.

2. Artist Studio – A studio working in all art forms, including, but not limited to, painters; sculptors; authors; screenwriters; playwrights; filmmakers; dancers; potters; weavers; jewelers; exhibitors; printers; costumers; musicians; and photographers.

3. Artisan Food and Beverage Production - On-site production of food and beverage products, involving small batch processing. Typical uses include, but are not limited to, coffee roasting; ice cream; bakery; candy, and other foodstuffs; and alcoholic beverage manufacturing. This may include on-site sales and consumption.

4. Artisan Manufacturing - On-site production of goods by hand manufacturing, involving the use of hand tools and small scale, light mechanical equipment. Typical uses include, but are not limited to, wood working; ceramic studios; jewelry manufacturing; and uses that have no negative external impacts on surrounding properties. Welding is also permitted.

5. Digital Makerspace – A facility for digital design and fabrication utilizing hardware and software tools.

6. Urban Agriculture - The production and distribution, including on-site sales, in an urban neighborhood of agricultural or horticultural crops, including, but not limited to, poultry; poultry products; grain; hay; pastures; soybeans; timber; orchard fruits; vegetables; flowers or ornamental plants. This use does not include livestock or livestock products.

7. Visiting Artist Housing – A dwelling unit or living quarters made available for visiting artists that may be rented or occupied for less than one week at a time. A maximum of one such housing unit shall be permitted per lot.

8. Accessory Dwelling Unit (ADU) - A separate and complete dwelling unit that is contained on the same lot as the structure of a single-family dwelling or business. Such a dwelling unit shall be clearly incidental and subordinate to the principal use of the lot.

Lexington, KY

DESIGN STANDARDS

All new structures and alterations or additions to existing structures shall be constructed to a height, scale, proportion and gross volume compatible with the existing structures that are within two hundred (200) feet or are substantially related to them visually. The existing rhythm created by existing building masses and spaces between them should be preserved.

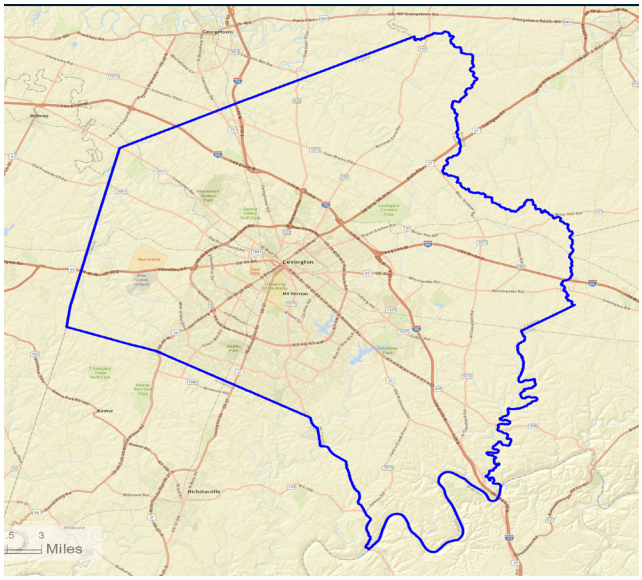
The following table shall establish what standards and what process is required for each project or parcel. If all of the standards of Column A can be met by the applicant and/or property owner, then no development plan shall be required. If any one or more of the standards in Column A can not be met by the applicant and/or property owner, then the standards established in Column B shall apply and a development plan shall be required to be filed for consideration by Planning Commission, or by the Division of Planning staff under the provisions of Article 21-7, herein.

22B-6(a) OFF-STREET PARKING – No off-street parking shall be required except for where the Planning Commission or Board of Adjustment may establish off-street parking requirements, as needed.

22B-6(b) VARIANCES – Requests for variances to the dimensional requirements of Article 22B will only be considered for the standards established above in Column B.

	Column A	Column B
	Without Development Plan Approval	**With Development Plan Approval**
Lot Coverage	50%	100%
Maximum Vehicular Use Area (VUA) Coverage	30%	50%
Building Height	Average of Principal Structures on Immediately Adjoining Lots	75 Ft.
Lot Size	Max: 7,500 Sq. Ft.	No Maximum
Floor Area Ratio (FAR)	0.5	2.0
Yards		
Front	Min: 7 Ft.	No Minimum
	Max: 20 Ft.	Max: 20 Ft.
Side	No Minimum	No Minimum
Rear	No Minimum	No Minimum
Side Street Side	1/2 the established Front Yard	
Open Space	None Required	
Signage	As Permitted in 17-7(o)	

Lexington, Kentucky Quick Demographics:



Population: 305,331 Median Age: 34.5

Education Institutions:

University of Kentucky, Sullivan University, Transylvania University, Spencerian College, Bluegrass Community College & Technical College, Med Tech, Midway College, Indiana Wesleyan University, Strayer University and Lexington Theological Seminary.

2014 - 25+ by Education Attainment:

Some College: 21.2 % Associates Degree: 6.9%
Bachelor's Degree: 22.7 % Grad/Professional: 16.8%

Total Businesses: 25,277

Average Per Capita Income:$29,236

(ESRI Community Analyst Demographic Data)

Milwaukee, Wisconsin

Milwaukee, Wisconsin is home to several entrepreneurial communities which is contributed to the State of Wisconsin's Economic Development efforts to create an "Entrepreneurial Renaissance" working to stimulate and foster innovation. Entrepreneurial incubator, accelerators and makerspaces in Milwaukee, Wisconsin include:

- VetTransfer Inc.
- Gener8tor
- Victory Spark
- BizStarts Milwaukee
- Bucketworks
- Sector 67
- Milwaukee Makerspace

MADE IN MILWAUKEE
art, music, culture, community, love

Milwaukee MakerSpace - Independent Non-Profit

PICTURE CAPTION: http://milwaukeemakerspace.org/
Milwaukee Makerspace Equipment: Hand-tools, Welder, Ceramic Kiln, Computers, Vertical Mill, Hydraulic Press, Bench Grinder, Bench Saw, Metal Finishing Area, Chop Saw, Metal Lathe, Band Saw, Induction Furnace, Bench Top Lathe, Planer, 3D Printer

THE PROJECT

Milwaukee Makerspace

Milwaukee Makerspace was founded in 2009, opened as an independent non profit and in April 2011 relocated to brick & mortar location. Milwaukee Makerspace is a member-based organization and membership include artists, engineers, designers, scientists, software developers, hardware hackers, builders, tinkerers, and the curious.

Milwaukee Makerspace prides their establishment on being a hacker/builder community where ideas are shared, innovation is fostered, and the maker experience is hands-on. They coined the term "skill collector" that is used to describe their membership and those that love to learn new skills and add another item to their list of things they can do.

DEFINITION/USES

Currently no definition exists for the City of Milwaukee in regards to Makerspaces per city or land development code. Translations are made by planning staff and the governance process is followed if an application request is considered a Special Use Permit.

The Milwaukee Makerspace was permitted as a matter of right per zoning and land development code. The Makerspace uses were defined as an Artist Studio with a Light Manufacturing space under 3,600 square feet.

MILWAUKEE MAKERSPACE'S DEFINITIONS PER CITY TRANSLATION VIA CODE

1. Artist Studio- means work space for one or more artists or artisans, including the accessory sale of art produced on the premises. This use is permitted in all zoning districts as a matter of right subject to all performance standards.

2. General Retail Establishment: The use shall not be operated between 12 a.m. and 5 a.m. if it is located within 150 feet of a residential district. This limitation shall not apply to a convenience store which is open between the hours of 12 a.m. and 5 a.m. and regulated by s. 84-7.

3. Light Manufacturing - (Met permitted use as a matter of right and have to meet the following conditions :

t-1. The gross floor area devoted to the use shall not exceed 3,600 square feet

t-2. The use shall not operate between the hours of 9 p.m. and 7 a.m.

t-3. The use shall not generate noise or odors in violation of ch. 80.

t-4. All manufacturing activities shall occur within an enclosed building.

u. Contractor's Shop. All of the contractor's activities, including those activities that are accessory to the principal use, shall be conducted entirely within a building.

Milwaukee, Wisconsin

Currently no definition exists for Makerspaces via city or land development code. Translations are made by planning staff and project applications will undergo governance process if considered a Special Use Permit.

Governance Process For Milwaukee Makerspace

1. Milwaukee Makerspace submitted application to City Planning Department and determination defined project as an Art Studio: Retail was accessory use and Limited Manufacturing permitted if under 3600 Sq. Ft.

2. Building Safety Permit was processed and Fire Inspection and Building Safety reviews were processed.

3. Defined uses were permitted in all zoning districts as a matter of right subject to all performance standards.

There was neighborhood and Alderman support for development project.

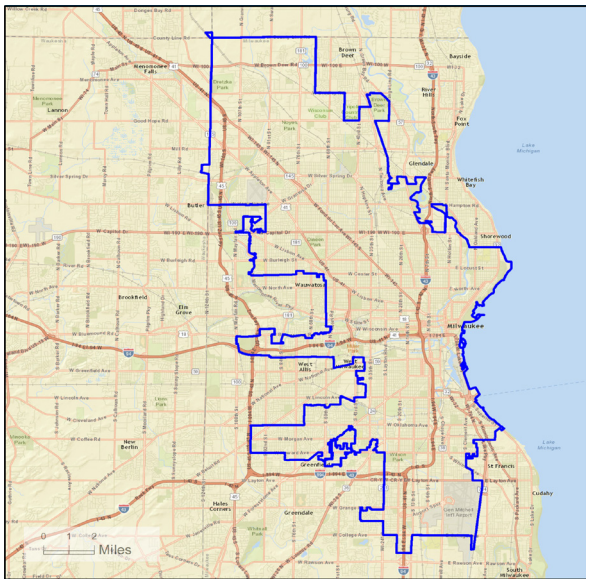
Governance Process For New Makerspaces

1. Submit Application for Plan Review: Building Permit, Fire Review.

2. If uses challenge code then considered a Special Use Permit.
   - -Special Use Permit Application Submitted.
   - -Sent to Board of Zoning Appeals
   - -Date for Public Hearing set.

3. To date no Makerspace or Entrepreneurial Incubator/Accelerator has gone through this process as defined uses were permitted in all zoning districts as a matter of right subject to all performance standards.

Milwaukee Wisconsin Quick Demographics:



Population: 590, 485 Median Age: 30.9

Education Institutions:

University of Wisconsin-Milwaukee, Marquette University and also served by- Alverno College, Cardinal Stritch University, Medical College of Wisconsin, Milwaukee Area Technical College, Milwaukee Institute of Art & Design, Milwaukee School of Engineering, Mount Mary College and Lakeland College.

2014 - 25+ by Education Attainment:

Some College:	22.1%	Associates Degree:	6.4%
Bachelor's Degree:	14.2%	Grad/Professional:	7.6%

Total Businesses: 28, 481

Average Per Capita Income: $18,100

(ESRI Community Analyst - Demographic Data)

San Francisco, CA

Fuse Project - 1401 16th Street

PICTURE CAPTION:
Vanity Fair - FuseProject

THE PROJECT

The essence of Fuseproject's business model is to develop new designs and technologies to set their customers apart in their respective industries. Fuseproject's efforts have created new technology, changed industries, and have resulted in numerous patents being granted for their products. The company's research and development areas have many similarities with an engineering or development laboratory.

The FuseProject upgraded property located at 1401 16th Street to accommodate its homegrown multi-use business. Infrastructure improvements were made to a two-story building that housed a total of 20,540 sq. ft. of space. Property was vacant prior to purchase but previous tenant was a furniture company. The FuseProject turned into a destination art and design shop (nationally and internationally) that led to a business expansion acquiring more property locations off-site. This project included the following mixed uses:

- Retail store and Gallery: It displays and sells customized goods made both on- and off-site. This dedicated space is also reserved for exhibitions by nearby California College for Art's students. The design store sells limited editions created in the Fab LAbs, as well as a curated selection of designed objects from around the world.
- Fabrication Labs ("Fab Labs"). The core activities of Fuseproject's business is conducted in the Fab Labs, which includes:
(1) space for re-tooling and personalization of commercial products by Fuseproject for sale both on- and off-site, to be displayed in museums, or distributed for promotional or charitable purposes;
(2) space for development and testing of new preproduction materials, ergonomic designs and fabrication methodologies. Noisy and messy tools are used in all functions and are sequestered within enclosed interior machine shops. Project-by-project work benches are provided areas where teams gather to develop product designs and formally apply the output of the prototyping facilities and machine shops.
- Accessory Office Space. A portion of Fuseprojects space would be devoted to administrative functions, computer stations, and other office components of Fuseproject's operation. The Accessory Office Space is where client development, marketing, industry research, and supportive computer-based activities would occur. Accessory office functions will occupy up to 1/3 of the building's total area (approximately 2,500 sq. ft. on the second floor, and roughly 4,320 sq. ft on the first floor). (2011)

GOVERNANCE

- Determination of Uses
- Neighborhood Notification
- Change of Occupancy Permit
- Building Safety and Fire Reviews

FABLAB DEFINITION

"Fab Labs" contain unique characteristics that make the application of any single use category problematic. In this case, the operation complies with elements of several use categories, specifically Light Manufacturing, Trade Shop and Laboratory, all of which are principally permitted uses within the UMU Zoning District. Therefore, the proposed "Fab Lab" was considered to be a principally permitted use at the subject property.

CITY OF SAN FRANCISCO DEFINED USES FOR THE FUSEPROJECT:

- Laboratory Use

PC § 890.52 defines Laboratory as space within any structure intended or primarily suitable for scientific research. The space requirements of uses within this category include specialized facilities and/or built accommodations that distinguish the space from office uses (as defined in Section 890.70), light manufacturing (as defined in Section 890.54(a)), or heavy manufacturing (including uses listed in 226(g) through 226(w)). Whereas, PC § 890.54 defines Light Manufacturing to include production and custom activities usually involving individual or special design, or handiwork. The proposed space for developing and testing new pre-production materials, ergonomic designs and fabrication methodologies utilizing specialized facilities that are distinct from office uses, and project-by-project work benches where teams can gather to develop product designs and formally apply the output of the prototyping facilities and machine shops, operates as a hybrid Laboratory and Light Manufacturing use.

- Light Manufacturing Use

PC § 890.54 defines Light Manufacturing as a nonretail use which provides for the fabrication or production of goods, by hand or machinery, for distribution to retailers or wholesalers for resale off the premises, primarily involving the assembly, packaging, repairing, or processing of previously prepared materials (light manufacturing) uses include production and custom activities usually involving individual or special design, or handiwork. Whereas, PC § 890.124 defines Trade Shop as a retail service use which provides custom-crafted goods and/or

(Light Manufacturing Use Cont.)
directly to the consumer, reserving some storefront space for display and retail service. The re-tooling and personalization of limited runs of commercial products for sale both on- and off-site, to be displayed in museums, or distributed for promotional or charitable purposes, operates as a hybrid Light Manufacturing and Trade Shop use.

- Office Space-Accessory Use

PC § 843.66 (Office Uses) and 803.9(h) (Commercial Uses in Mixed Use Districts) prohibit office uses on the ground floor and permit office uses of the second floor of the subject building. However, PC § 803.3(b)(1)(C) permits Accessory Uses (a related minor use which is either necessary to the operation or enjoyment of a lawful principal use or conditional use, or is appropriate, incidental and subordinate to any such use) provided the use does not exceed more than 1/3 of the total occupied floor area.

- Sales and Service, Retail and Arts Activity-
Principally Permitted Uses

PC § 890.104 defines Sales and Service, Retail as a commercial use which provides goods and/or services directly to the consumer and not for resale and is accessible to the general public" and PC § 102.2 defines Arts Activity to include exhibition and gallery spaces for arts activities. The proposed "FuseShop" with retail showroom, art gallery and potential exhibition space, complied with the definitions of Sales and Service, Retail and Arts Activity, both of which are principally permitted uses within the UMU Zoning District.

San Francisco, CA

Quick Demographics:

Population: 827,589 Median Age: 39.2

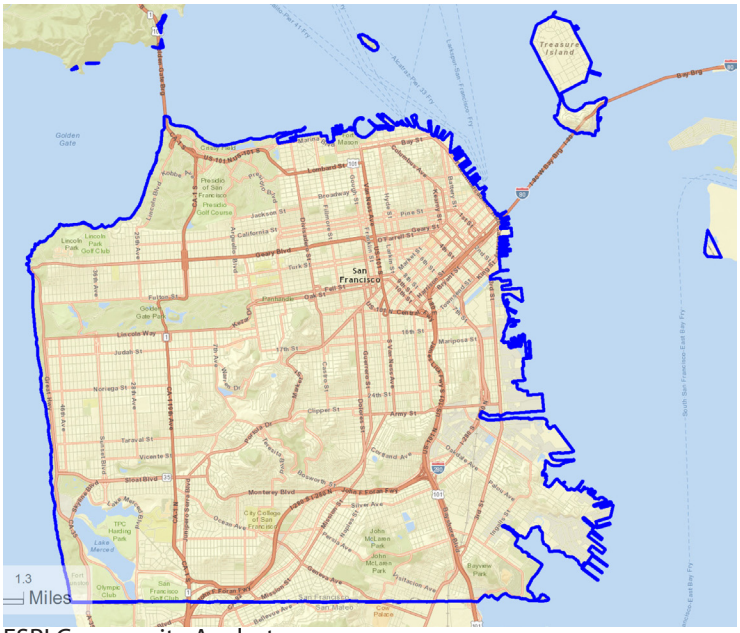
Education Institutions:

City College of San Francisco, San Francisco State University, University of California, University of California, Hastings College of the Law and 21 Private Colleges or Higher Education Institutions.

2014 - 25+ by Education Attainment:

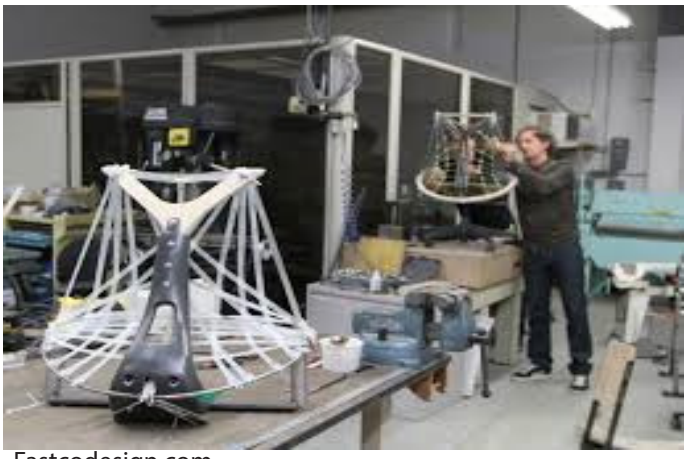
Some College:	14.9%	Associates Degree:	5.4%
Bachelor's Degree:	31.4 %	Grad/Professional:	20.2%

Average Per Capita Income: $44,555



ESRI Community Analyst

Fastcodesign.com


Fastcodesign.com

Lawrence Center for Entrepreneurship

September 2, 2014

Sandra Day, AICP
City/County Planner
Planning Division
P.O. Box 708
Lawrence, KS 66044

CC: Mary Miller, AICP

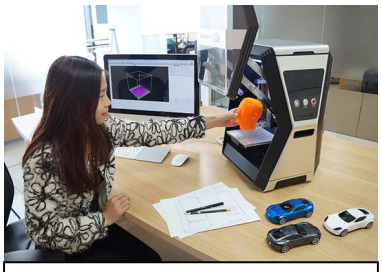
Dear Sandy,

Thank you for taking a meeting with Greg Thompson and I today. We found your input to be extremely helpful and are looking forward to working with you to make this project a success.

After reviewing the City of Lawrence land development code, we found that our new facility is best described as "Administrative and Professional" and "Business Support Service". The primary use of the space will be for offices for Wicked Broadband and budding entrepreneurs.

Their will also be limited facilities on the site for prototyping new ideas and collaborating on projects.

We are concerned that these limited prototyping facilities not be misconstrued as manufacturing. The role of the prototyping facilities is to educate members and empower them, when necessary, to create one-of objects. Manufacturing and manufacturing processes are not part of the scope of our facility.



The type of rapid prototyping facilities envisioned for the site.

Prototyping and manufacturing are distinctly different uses. Santa Barbara California, for example, clarifies the difference between manufacturing and prototyping in their city code using the following language:

"The word manufacturing as used herein shall mean the fabrication, assembly or production of articles other than prototypes or models used for experimentation or research. The word prototype is hereby defined as an original or model or pattern from which manufactured, fabricated or assembled products are developed or copied."

Examples of prototyping might be:

1. An architect creating a scale model of a building using a 3D printer and hand tools.
2. A dentist using a 5-axis CNC machine to create a custom crown.
3. An father building a pine box derby car with his girl scout.

The types of tools we will have on hand are similar to those used by appliance repair shops, locksmiths or musical instrument repair facilities.

Although our facility will also have specialty equipment for use by members, it is strictly for prototyping and instructional use and not for the production or manufacturing of goods.

Lawrence Center for Entrepreneurship

As defined by City of Lawrence code, manufacturing would include the on-site production of goods made for wholesale market, transfer to other plants or "to order" for customer firms. Our facility will do none of these things. Our facility will not be producing goods for sale.

Since our facility will not be producing or selling goods for either the retail or wholesale market, we do not feel that we fall into the category of manufacturing.

We are a business support service facility.

I've included a drawing of the space that shows what the various portions of the building will be used for. We are planning to use the 4,952 sq-ft as follows:

- Office Space: 2,350 sq-ft
- Collaboration Space: 1,622 sq-ft
- Storage: 385 sq-ft
- Prototyping Area: 345 sq-ft
- Server Closet: 250 sq-ft

As you can see, the prototyping area of the space is less than 8% of the total square footage. Though it is a minor part of the business, it is essential to giving our members access to the tools they need to experiment and prototype their ideas.

We'd like to get the lease on this facility signed in the near term. We've been working on this project for a couple months now and would like to start the process of bringing fiber-optic cable to the site and applying for the appropriate permits for the tenant re-model.

To start this process, we need a letter from the City indicating that the zoning at the site permits our business to operate there. If we could get that piece in place, the project can move forward.

Once again I'd like to thank you for your time and input today. It was very helpful and we are looking forward to working with the planning department.

Sincerely,

Kris Adair

Kris Adair
Lawrence Center for Entrepreneurship
P.O. Box 3532
Lawrence, KS 66046
Mo: (785) 840-7989
Fx: (785) 331-2086
kris.adair@middlebrow.com

Memorandum
City of Lawrence
Douglas County
Planning & Development Services

TO: Planning Commission

FROM: Scott McCullough, Sheila Stogsdill

Date: For February 23, 2015 meeting

RE: Item No. 5: TA-13-00235 –
Revisions to Development Code, Article 9 – Parking
Attachment A – Yard Diagram
Attachment B – Table with Vehicle Types

In reviewing the Planning Commission's last several discussions about Recreational Vehicles and potential parking locations, it seems that a distinction could be made between *"parking a vehicle"* and *"storing a piece of equipment"*. One of the concerns that has been expressed is that items might be located on a residential lot for long periods of time in between use and/or the condition of an item that isn't moved often may deteriorate or become a visual blight. *[A summary of previous Commission actions is provided at the end of this memo.]*

It may be reasonable to think about the issue in terms of location on a driveway that provides access to a garage (or carport) compared to a driveway/parking pad that is adjacent to the primary driveway leading to the garage. The Commission's past actions have revolved around "Motorized" RV type vehicles. If an RV is *motorized*, it can reasonably be moved to provide access to the garage. If it is a *towable* piece of equipment, it may not be moved on a regular basis.

The Commission has also approved the concept that a Motorized Vehicle should only be parked in the front yard (i.e. in front of the garage) if it is 22' or less in length and if it can be safely parked so it is at least 18' from the street curb line.

Therefore, Staff suggests that the regulations be written to address the different types of vehicles/equipment that may be located on:

- driveways in front of a garage (in the front/exterior side yard),
- driveways adjacent to the area that accesses the garage (but still in front of the building line – in the front/exterior side yard),
- driveways in the interior side yard (usually adjacent to the garage), and
- driveways or parking pads in the rear yards.

The diagram in Attachment A illustrates the different yard areas as defined in the Development Code.

Staff suggests that a matrix of location options be considered to identify the types of vehicles and/or equipment that can be parked or stored on a residential lot. This matrix could be a table such as the following or could include images and definitions of the different types of vehicles and equipment being regulated.

Attachment B provides a table with images. Staff has identified yes or no locations based on the Commission's previous discussion and suggests it be used as a working table to discuss the remaining issues.

Table 1

Type	Front/Ex Side Yards	Interior Side Yards	Rear Yards	Paved Surface	Special Conditions
Passenger Cars/Trucks	Yes	Yes	Yes	Yes	Only on improved driveways
Motorized < than 22'	Yes, if 18' from curb	Y	Y	Y	2nd allowed in rear
Motorized > than 22'	No	Y	Y	Y	
Non-motorized < 22'	Yes, if 18' from curb	Y	Y	Y in side, N in rear	2nd allowed in rear
Non-motorized > 22'	No	Y	Y	Y in side, N in rear	
Boats/Watercraft	No	Y	Y	Y	2nd allowed in rear
Utility Trailers	No	Y	Y	Y in side, N in rear	2nd allowed in rear

Background/Updates from recent Nov 17, Dec 16, 2014 and Jan 26, 2015 PC Meetings

At the November 17, 2014 PC meeting, the PC began the task of responding to the questions noted below in order to provide direction to staff on developing code language. The PC took the following actions at the previous meetings:

Motion maker and second	Location of RV equipment	Type of surface	Setback required
Nov 2014 Action: Denney, Culver *(Motion failed 3-5)*	Front & Exterior Side Yards	Improved (not gravel or grass)	All RV-type equipment 18' from curb
Liese, Von Achen (8-0)	Exterior Side Yard	Improved	Allow RV-type equipment 18' from curb
Culver, Denney *(Motion failed 3-5)*	Front Yard	Improved	All RV-type equipment 18' from curb
Liese, Struckhoff (8-0)	Rear Yard	Improved	Allow RV-type equipment 2' from rear property line and with no setback from alley
Von Achen, Struckhoff (8-0)	Interior Side Yard	Improved	Allow RV-type equipment 2' from side property line
Dec 2014 Action: Liese, Graham (9-0)	Front Yard	Improved	Allow Motorized Vehicles up to 22' in length, including motor homes, parked at least 18' from curb
Jan 2015 Action: Graham, Britton (5-4)	Front Yard	n/a	Prohibit non-motorized utility trailers of any size in front of house

These actions are only some of the decisions the PC must make on guiding the writing of the standards for the placement of RVs. Many questions related to how many pieces of equipment should be allowed, differentiating between different types and sizes of equipment, etc. are still under discussion. Staff looks forward to continuing the discussion of the items outlined below (previously presented in the November 17, 2014 staff memo) at the February PC meeting.

1. *Should RV-type items be parked (on improved surface) in the front and exterior side yards?*

   Proposed text permits with distance requirement of 18 feet (car length) from back of curb or edge of street pavement. (*See map attached illustrating street improvements, sidewalk, and property line in typical 60' right-of-way.*)

2. *Should there be a limit to the number of RV-type items parked on a lot?*

3. *Should there be a limit to the number of RV-type items parked in the front or exterior side yards?*

4. *Should there be a size limitation on RV-type items parked in the front or exterior side yards?*

   Proposed text suggests no more than 2 items, with only 1 in the front or exterior side yard.

   Alternate text suggests defining items as High Profile (over 8 feet in height) and limiting to only 1 larger item in front or exterior side yard.

   Alternative text suggests that if there are 2 items on property both need to be located in rear or interior side yards.

5. *Should there be a pavement requirement for RV-type items parked in rear yards?*

   Proposed text does not require pavement in rear yard.

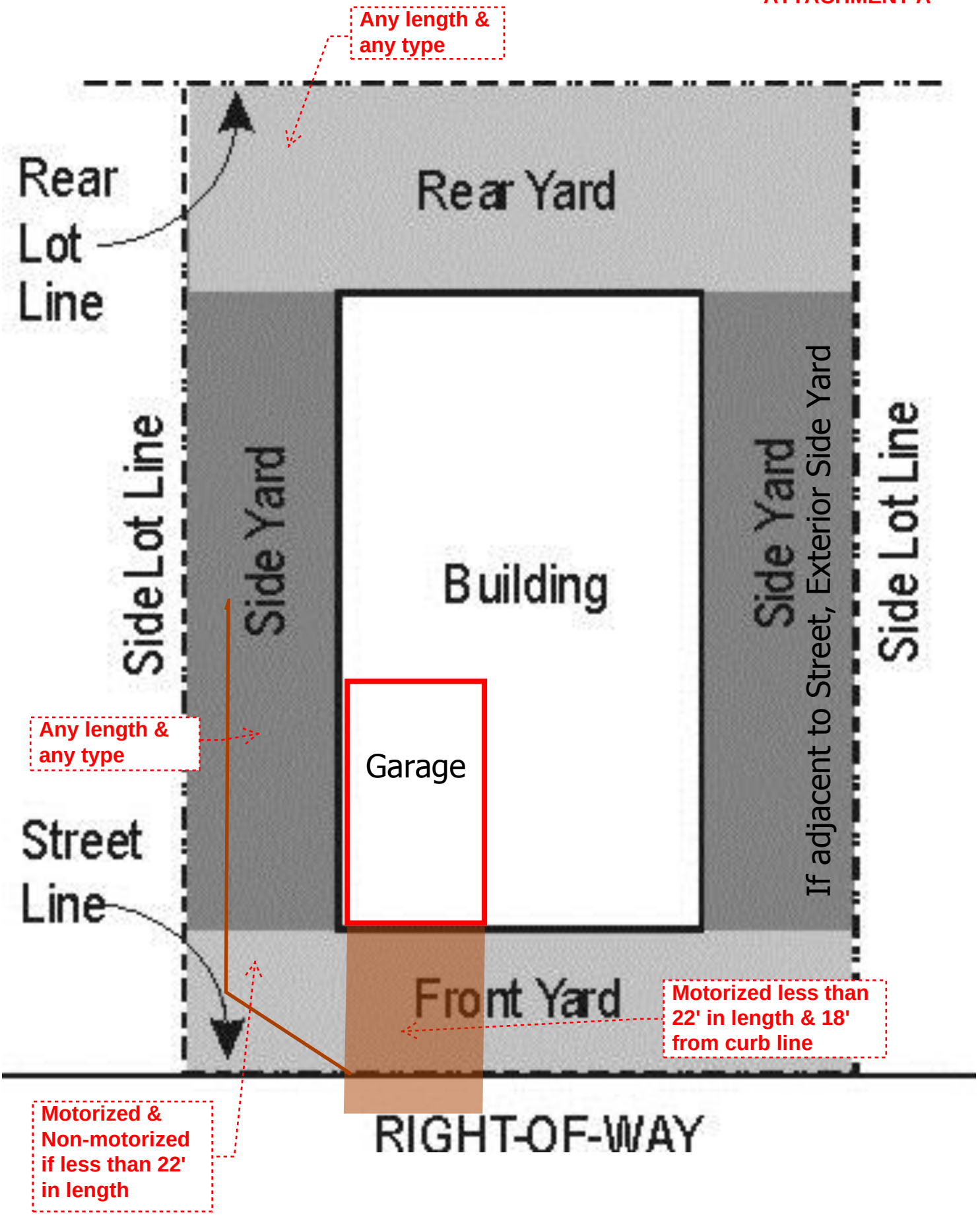
   Code Enforcement Staff prefers that pavement be required. A motor vehicle would not be permitted to be parked in a rear yard, unless on an improved driveway and RV-type items should be treated similarly.

6. *Should standards be different for Utility Trailers? Should they be permitted in front or exterior side yards?*

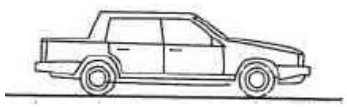
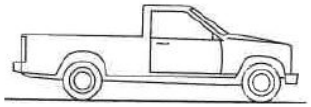
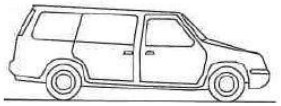
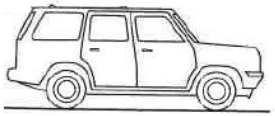
   Proposed text permits Utility Trailers on an improved driveway in front and exterior side yards.

   Proposed text provides separate standards for Utility Trailers used as part of Home Occupation. These are not allowed in front or exterior side yards.

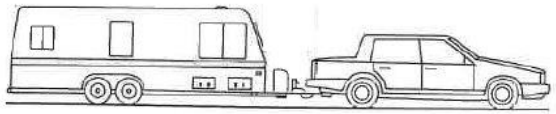
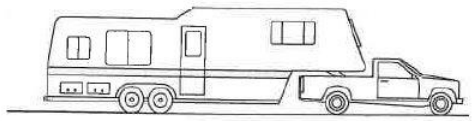
ATTACHMENT A

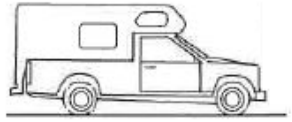


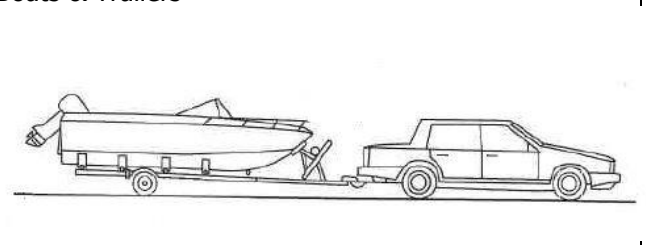
ATTACHMENT B

Type	Front or Exterior Side Yard in front of garage	Front or Exterior Side Yard adjacent to driveway / garage	Interior Side	Rear Yard	Additional Conditions	Surface
Passenger Vehicles including Light Trucks (typ 17' - 18' average length)    	YES	YES	YES	NO, unless alley access or detached garage behind house		Improved (pavement not gravel or grass)

Type	Front or Exterior Side Yard in front of garage	Front or Exterior Side Yard adjacent to driveway / garage	Interior Side	Rear Yard	Additional Conditions	Surface
Motorized Recreational Vehicles	Motorized Vehicles up to 22′ in length parked at least 18′ from curb	Motorized Vehicles up to 22′ in length parked at least 18′ from curb	2′ from side property line	No setback from alley or rear property line		Improved (not gravel or grass)
Class A The Class A motorhome, also commonly referred to as the conventional motorhome, is the largest, most luxurious of the motorized RVs. The Class A is entirely constructed on a bare, specially designed motor vehicle chassis. (typ 21′ – 40′)	YES if < 22′ NO if > 22′	YES if < 22′ NO if > 22′	YES	YES		
Class B The Class B motorhome is a panel-truck that has been customized to include temporary sleeping, eating and bathroom facilities. This class is also commonly referred to as van campers. (typ 16′ – 21′)	YES	YES	YES	YES		
Class C The Class C motorhome, sometimes referred to as a mini-motorhome, provides the conveniences of a larger motorhome in a scaled-down version. The Class C is built on an automotive manufactured van frame with an attached cab section. (typ 20′ - 28′)	YES if < 22′ NO if > 22′	YES NO if > 22′	YES	YES		

Type	Front or Exterior Side Yard in front of garage	Front or Exterior Side Yard adjacent to driveway / garage	Interior Side	Rear Yard	Additional Conditions	Surface
Towable Recreational Vehicles						
Conventional Travel Trailer Travel trailers are units designed to be towed by a car, van or pickup by means of a bumper or frame hitch, the travel trailer provides all the comforts of home. (typ 12' - 35') 	NO	YES, if 18' from curb line	YES	YES		
Fifth Wheel Travel Trailer Designed to be affixed and towed by a pickup equipped with special hitch in the truck bed, these two-level units can provide the greatest living of all towable RVs. Fifth-wheel travel trailers come equipped with all the comforts of home. (typ 21' – 40') 	NO	YES, if 18' from curb line				

Type	Front or Exterior Side Yard in front of garage	Front or Exterior Side Yard adjacent to driveway / garage	Interior Side	Rear Yard	Additional Conditions	Surface
Folding/Pop-up Camper A lightweight unit with sides that collapse for towing and storage, the folding camping trailer combines the experience of open-air tent camping with sleeping comforts, basic conveniences and weather protection found in other RVs. (typ 15′ – 23′) 	NO	YES if < 22′				
Truck Camper A unit loaded onto, or affixed to, the bed or chassis of a pickup, the truck camper is popular for backroad journeys, accessing remote locales and family recreational camping. (typ 18′ – 21′) 	YES	YES	YES	NO, unless alley access or detached garage behind house		

Type	Front or Exterior Side Yard in front of garage	Front or Exterior Side Yard adjacent to driveway / garage	Interior Side	Rear Yard	Additional Conditions	Surface
Specialty Vehicles/Equipment						
Sport Utility RVs Built-in garage for hauling cycles, ATVs, and other sports equipment. (typ 31' - 37')	NO	YES, if 18' from curb line	YES	YES		
Horse Trailer	NO	NO	NO	NO		
Boats & Trailers 	NO	YES	YES	YES	Covered with tarp	
Utility Trailers	NO	NO	YES	YES	No Material &/ or Equipment stored on trailer	

Lawrence Association of Neighborhoods

February 7, 2014

Dear Planning Commissioners,

The Lawrence Association of Neighborhoods (LAN) supports a change in the parking regulations for duplexes from "stacked parking" to **one parking space per BR**, the same as all other multi-family dwelling units. The building of duplexes has become a problem throughout the city because the lower parking standard is a financial incentive for developers to add more renters without providing adequate parking. Stacked parking allows for a 50% reduction in the normally required parking standard for most other multi-family housing. Cars now spill over into the street taking up shared public space and sometimes reducing emergency access.

Duplexes have historically been allowed to have stacked parking, which is appropriate for family use due to the shared use of cars. Duplex zoning is intended to be transitional zoning from single-family zoned areas to multi-family zoned areas. Today duplexes are no longer primarily family-oriented or modest in size. Many are being built with 4 BR's on each side and parking has become a neighborhood problem.

Oversized duplexes threaten the destruction of historic homes and degrade the livability and attractiveness to homeowners and tenants in all neighborhoods. A duplex can by-pass city code that limits the number of unrelated individuals that can live in a single-dwelling unit (house or house like), 4 in multi-family and 3 in single-family zoned areas. A duplex is considered 2 units on one property that can house as many as 8 unrelated individuals in multi-family zoned areas and 6 unrelated individuals in single-family zoned areas. When a duplex is sited on what would otherwise be a single lot, this amounts to double the number of unrelated individuals allowed by city code.

Given the high density of these units, they should have the same parking requirement as all other multi-family and congregate living units – one parking space per BR.

Thank you for your consideration,

Linda Bush, Chair
Lawrence Association of Neighborhoods

LawrenceNeighborhoods@gmail.com | lawrenceneighborhoods.wordpress.com | 785-330-3113

Dear Planning Commissioners, 1-9-15

The Oread Residents Association (ORA) is encouraged by your willingness to examine the regulations regarding duplex zoning. Duplex zoning has become a problem in our neighborhood as well as other neighborhoods in the city. It is considered to be a lower zoning area but today it is looking more like high-density zoning but without providing adequate parking as is required in high-density zoned areas. Duplexes have historically been allowed to have "stacked parking", which is appropriate for family use due to the shared use of cars.

In recent years "stacked parking" has become an incentive for developers to be able to add more renters without providing adequate parking and the size of the units has often doubled in size from 2 BR's to 4BR's on each side. **"**Stacked parking," allows for a 50% reduction in the normally required parking standard. All other multi-family units require one parking space per BR- **no** stacked parking. Cars from Duplex units are now spilling into the streets congesting and degrading the Oread Neighborhood as well as other neighborhoods in the city.

A duplex can get around the city code that limits the number of unrelated individuals that can live in a single-dwelling unit (house or house like) - 4 in multi-family and 3 in single-family zoned areas. A duplex is considered 2 units on one property that can house as many as 8 unrelated individuals. They are more like apartment complexes than single-dwelling units. Over-sized duplexes create more revenue for investors, less expense for parking, more problems for neighborhoods.

Duplex zoning is intended to be low density and are often in areas that transition from single-family zoned areas to multi-family zoned areas**. Given the numbers of adults living in today's duplexes, density and parking is a problem.** Parking is not adequate. Over-sized duplexes threaten the historic homes in the Oread Neighborhood and degrade the livability and attractiveness to homeowners and tenants in all neighborhoods.

Since duplexes are no longer family oriented or modest in size, they should have the same parking requirement as all other multi-family and congregate rental units- *one parking space per BR.*

Thank you for your consideration, Candice Davis ORA chair