AGENDA
HIGHLAND CITY COUNCIL MEETING
September 1, 2015

7:00 p.m. Regular City Council Session
Highland City Council Chambers, 5400 West Civic Center Drive, Highland Utah 84003

6:00 P.M. EXECUTIVE SESSION – NORTH COUNCIL CONFERENCE ROOM

The City Council will hold a closed executive session for the purpose of discussing:

- The purchase, exchange, or lease of real property and reasonably imminent litigation;
- The sale of real property; including any form of water right or water shares;
- The character, professional competence, or physical or mental health of an individual.

Pursuant to Section 52-4-205(1) of the Utah State Code Annotated.

7:00 P.M. REGULAR SESSION – CITY COUNCIL CHAMBERS

CALL TO ORDER – Mayor Mark Thompson
INVOCATION – Dennis LeBaron
PLEDGE OF ALLEGIANCE – Tim Irwin

APPEARANCES

Time has been set aside for the public to express their ideas, concerns, and comments.
(Please limit your comments to three minutes each.)

PRESENTATIONS

1. Highland Fling Chairs – Jessie Schoenfeld and Emily Gillingwater
2. Public Works. Park Department – Fire Chief Freeman and Justin Parduhn
3. Changes in Drug Enforcement – Police Chief Gwilliam and Tim Merrill
4. Open Meeting Law – Tim Merrill

CONSENT

5. **MOTION: Approval of Meeting Minutes for City Council Regular Session** – May 5, 2015

6. **MOTION: Approval of Meeting Minutes for City Council Regular Session** – June 16, 2015

7. **MOTION: Approval of Meeting Minutes for City Council Regular Session** – July 21, 2015

8. **MOTION: Approval of Meeting Minutes for City Council Regular Session** – August 4, 2015

PUBLIC COMMENT

9. **Urban Deer Control Program –** Requirement of DWR

PUBLIC HEARING

10. **Highland Oaks –** Annexation and Approval

ACTION ITEMS

11. **ORDINANCE: Annexation of 35.50 Acres located at the Northeast corner of Highland Blvd. and 11800 North -** Highland Oaks Annexation

12. **ORDINANCE: Establishing the Zoning of recently Annexed Property -** Highland Oaks

13. **MOTION: Conditional Use Permit for an 86 Unit Multi-Family Townhome Development in the Town Center Flex Use Zoning District -** Blackstone

14. **MOTION: Conditional Use Permit for a 19,422 Square Foot Church –** 9681 North 6900 West

15. **MOTION: Preliminary Plat Approval for an 11 lot subdivision located at 5650W. 9600 No. -** Flats at Fox Hollow

16. **MOTION: Conditional Use Permit Salt Storage Building –** Northwest corner of Park Drive and SR92

17. **MOTION: Operational Safety Report –** 11800 North and Highland Blvd.

18. **MOTION: Increase Budgeted Expense in Major Road Maintenance Fund –** Unused portion of the B&C Road Funds from Fiscal Year 2015

19. MAYOR/ CITY COUNCIL & STAFF COMMUNICATION ITEMS

- **A.** Everbridge Communications – Nathan Crane
- **B.** Saved Water Shares – Mayor Thompson

ADJOURNMENT

(These items are for information purposes only.)

Description	Requested/Owner	Due Date	Status
Road Capital Improvement Plan for FY 15-16 *Prioritize and Communicate to Residents*	City Council		Continued Discussion
Determine Park Use for Recreation	City Council Parks Staff	4th Quarter of 2015	Staff to make Recommendations
Building Use Policy Fees	Rod Emily	3rd Quarter of 2015	Staff Gathering Information

SR74 Median at Pebble Lane Subdivision	Staff	2015	Removal of Median
HW Bldg. – PW Storage Status	City Council Mayor/PW	End of 2015	In Progress
Moratorium for the Town Center Overlay	City Council	January 2016	
Historical Society Request for Storage Room and Display area in Community Center	City Council	End of 2015	

CERTIFICATE OF POSTING

The undersigned duly appointed City Recorder does hereby certify that on this **27th day of August, 2015,** the above agenda was posted in three public places within Highland City limits. Agenda also posted on State (http://pmn.utah.gov) and City websites (www.highlandcity.org).

JOD'ANN BATES, City Recorder

- In accordance with the Americans with Disabilities Act, Highland City will make reasonable accommodations to participate in the meeting. Requests for assistance can be made by contacting the City Recorder at 801-772-4505, at least 3 days in advance to the meeting.
- The order of agenda items may change to accommodate the needs of the City Council, the staff and the public.
- This meeting may be held electronically via telephone to permit one or more of the council members to participate.

THE PUBLIC IS INVITED TO PARTICIPATE IN ALL CITY COUNCIL MEETINGS.

DRAFT **Item # 5**

MINUTES
HIGHLAND CITY COUNCIL MEETING
Tuesday, May 5, 2015

Highland City Council Chambers, 5400 West Civic Center Drive, Highland, Utah 84003

PRESENT: Mayor Mark S. Thompson, conducting
Councilmember Brian Braithwaite
Councilmember Dennis LeBaron
Councilmember Tim Irwin
Councilmember Jessie Schoenfeld
Councilmember Rod Mann

STAFF PRESENT: Aaron Palmer, City Administrator
Nathan Crane, Community Development Director
Gary LeCheminant, Finance Director
JoD'Ann Bates, City Recorder
Justin Parduhn, Public Works O&M Director
Brian Gwilliam, Chief of Police
Tim Merrill, City Attorney

OTHERS: Jacob Jensen, Layne Jensen, Garrett Seely, Braden Taylor, Jonathan Myres, Michelle DeKorver, Jackson Thacker, Jim Thacker, Zack Thacker, Brian Kap, Paxton Guymon, Roger Hicks, Trista Willardson, Nate Randle.

The meeting was called to order by Mayor Mark S. Thompson as a regular session at 7:03 p.m. The meeting agenda was posted on the *Utah State Public Meeting Website* at least 24 hours prior to the meeting. The prayer was offered by Dennis LeBaron and those assembled were led in the Pledge of Allegiance by Tim Irwin.

APPEARANCES:

None.

ACTION ITEMS:

MOTION: Preliminary Plat Approval – Stoney Brook

Background: The property is 9.93 acres and is owned by SeeBee, LLC. The property is designated as Low Density Residential on the General Plan Land Use Map. The property is zoned R-1-40 (Single Family Residential). The R-1-40 District allows one home per 40,000 square feet. The minimum lot width is 130 feet. Subdivision review and approval is an administrative process.

Nathan Crane presented the staff report, and explained how potential buyers will be informed of the gravel pit, and will sign an affidavit acknowledging that they are aware of the gravel pit. This will be done with the anticipation that all gravel pit complaints will be alleviated. There is an existing irrigation ditch that will be rerouted after approval from the Lehi Irrigation District is granted. Everything complies with the requirements as outlined by staff.

Rod Mann asked if there was any input from the neighbors on the proposal.

Nathan Crane explained that a neighbor to the north had a couple of questions regarding exact locations of the boundary, and how it will affect what already exists. No other concerns have been brought forward by the public.

Rod Mann asked about the neighbors to the South. Garrett Seeley, representing CBLLC, spoke about a recent conversation that he had with Mrs. Burgress, who indicated that she does not want to be affiliated with the development. Rod stated that he was comfortable with the situation as long as the neighbors agree and are aware of the situation. Garrett Seeley confirmed that he has contacted Mrs. Burgress and her family, and has not received any response.

MOTION: Tim Irwin moved the City Council approve the preliminary plat for the 9 lot subdivision of Stoney Brooks based on the 7 stipulations recommended by the Planning Commission.

Dennis LeBaron seconded the motion.
Unanimous vote, motion carried.

<u>MOTION: Dry Creek Trail</u>

<u>Background:</u> Over the past several months the City Council has been discussing the status of the Dry Creek Bench Trail. Under the Council's, staff has prepared three alternatives for the Council's discussion: ***Dry Creek Phase 1:*** *General Plan Designation: Neighborhood Option Trail (Assuming it meets requirements of Section 12.30 of the Municipal Code, the trail can be removed without an amendment to the trail master plan). Option 1: Trail Relocation. Under this option the trail would be relocated within the existing easement and rebuilt. The cost of this option is estimated at $98,800. Option 2: Removal of the Trail. This option would remove the trail as shown. The cost to remove the trail is estimated at $7,700. This trail is designated as a Neighborhood Option Trail. Neighborhood Option Trails can be removed without a General Plan Amendment under Section 12.30 of the Municipal Code. Option 3: Expand the Existing Easement to Include the Trail. This option would require the purchase of an easement to include the existing trail. The City Engineer's estimate is $19,700. Option 4: Relocate the Trail via an Existing Deer Trail. This option would allow users to access the conservation area via the exiting dirt paths. This option has not been full analyzed by staff.* ***Dry Creek Phase 2-3:*** *General Plan Designation: Main City Trail (an amendment to the trail master plan would be required to remove the trail under Section 12.30 of the Municipal Code). Option 1: Trail Relocation. Under this option the trail would be relocated within the existing easement and rebuilt. The cost of this option is estimated at $40,577. Option 2: Removal of the Trail. This option would remove the trail as shown. The cost to remove the trail is estimated at $8,324. This trail is designated as*

Neighborhood Option Trail. Neighborhood Option Trails can be removed without a General Plan Amendment under Section 12.30 of the Municipal Code. Option 3: Expand the Existing Easement to Include the Trail. The trail is in a storm drain easement that cannot be built on so there is less value to the land. This option would require the modification of the easement to include the existing trail. The City Engineer's estimate is $44,476. Option 4: Relocate the Trail via an Existing Deer Trail. This option would allow users to access the conservation area via the exiting dirt paths. This option has not been fully analyzed by staff. The Council will need to debate the issue and provide staff with direction.

Tim Irwin asked if the relocation requires any type of a change or notification.

Nathan Crane explained that he is more concerned about the second and third options because they provide a safer school route.

Rod Mann read a letter written by a community member who expressed concerns with the trail.

Nathan Crane commented that Phases II and II are City trails, not an option trail. Phase I would be the neighborhood option trail.

Brian Braithwaite wanted clarification on the expansion of the existing easement. It was noted that the concept is to get the property owner to sell a property easement that doesn't currently exist in order to make room for the trail.

Dennis LeBaron commented that after talking with the neighbors, he feels that the initial set up was not constructed correctly. Furthermore, he believes that the trail does not need to stay where it is unless they get an easement, which he would like to expand with a gravel base.

Tim was concerned with how the community would respond to this idea, and whether or not the property could be properly maintained under these circumstances.

Brian Braithwaite suggested shutting down the trail, while determining where it will be relocated, to which Dennis agreed. Dennis remarked with regards to recruiting community volunteers that things get done quicker as long as there is an interest or energy. Overall, he likes the thought of a simple trail. Brian remarked that there is insufficient time to get anything done this year. The project will need to begin in phases, and then the Council will determine how to fund the different phases.

Mayor Thompson stated that asphalt needs to be removed, after which the project funds can be secured. There was continued discussion on the matter and Mayor Thompson invited public input.

Brian Kap stated that Ivory did not do a good job explaining the easement. He noted that Ridgeline Elementary hosted a fun run on the trail, and he was concerned that he would be liable in the event of an emergency. The landscaper did a poor job and had no regard for Mr. Kap's property.

Brain Braithwaite replied that the liability would not fall on private residents, but would rather fall on the City because it would be in an easement.

Tim Irwin added that while Ivory did put in the trail, the City did not follow through to make sure it was done correctly.

Braden Taylor recalled a conversation with a previous City Administrator, who indicated that while the trail is the City's responsibility, they would ultimately try to push it onto the residents. After this conversation, Braden stated that he immediately went out and purchased an umbrella policy. He expressed additional concerns with regards to liability.

Brian Braithwaite acknowledged Braden's concerns, and commented that it's hard to know where to draw the line because even a fence would not completely solve the problem.

Roger Hicks owns lot number 125 feels his is the worst because it sits on a very deep slope and the asphalt is in poor condition. Roger was concerned with child safety on the trail.

Paxton Guymon stated that he is the Attorney representing the Myres family, who own lot number 308. He stated that while he understands that the current Council didn't create the problem, they are still responsible for finding a solution. Paxton felt that it is necessary to block off the trail, which does not go through the easement area on his client's private property. He also expressed additional liability concerns.

Steve Huelet lives in Phase IV of the Ivory development, and stated that there are public and private easements on the lots, which are accessible to all homeowners. There is most likely less than two lots where the asphalt may be removed. Steve was worried about the intrusion of rights to property owners, and was of the opinion that the City needs to look into the personal easement as well.

Brian Braithwaite asked if the public and private easements are located in the same place, and confirmed that one of the easements in question is a public easement. Brian also stated that the City is not interfering with the private easements.

Tim Irwin assured him that it is a problem having the trail running through a resident's back yard, and stressed that removing the asphalt is a priority.

Brian Kap noted that he lives in Phase I of the development, and brought up how phase II became a neighborhood option trail over a year ago. Phase II is accessed from another path. He feels that if they get rid of Phase I, Phase II will have nothing to lead into. Brian Kap explained that the members of the community assumed responsibility of the trail, which lead the City to dropping the case. He expressed additional concerns on how the trail removal would affect the property owners if a dirt path was maintained instead.

Brian Braithwaite commented that this situation differs from the trail leading into the Country Estates.

Harold Glade noted that he lives on lot 22 of Phase I. Harold commended the Council for taking on this difficult issue, and expressed concerns with the lack of progress that has been made at this point. He challenged the Council to take action, and he feels that they have waited long enough for the situation to be resolved. Harold inquired as to what the project timeline was, and Mayor Thompson did not have the answer.

Trista Willerson, owner of lot 304 in Phase III, expressed concerns with the legalities involved should the trail not be well maintained, and noted that there are many kids who play in the area. Trista is also concerned with how the trail would impact the property value of her home when she decides to sell.

Brian Braithwaite explained that there is a sewer drain easement just off the property. The City would like to expand the easement so that the liability does not fall onto the property owners. At this point, staff and elected officials still need to talk to the other owners who have the trail on their property outside of the easement. Once this has taken place, a more firm timeline will be established. Tim Irwin stated that one way or another they are going to get the liability removed from the property owners.

Jonathan Myres stated that his home is located in Phase III. Many of his neighbors have discussed that they would not allow an expansion of the existing easement. Jonathan expressed concerns with the lack of progress that has been made on the matter.

Mayor Thompson agreed that the project should not be delayed any longer. He explained that he wants to confirm that there is a different trail definition for Phase I than for Phases II and III. He was of the opinion that Phase I should be addressed first.

Tim Irwin asked if the funds in the budget will be used to remove asphalt from all three phases. Furthermore, he inquired on the removal in Phase II where the trail is off of the easement and located on personal property.

Brian Braithwaite explained that they have talked to the homeowners in Phase II, and explained the challenges associated with removing the asphalt.

MOTION: Brian Braithwaite moved the City Council direct staff to identify funding in the 2015-2016 budget for the removal of asphalt for the Phase I Trail. At the first meeting in July staff return with a phase plan for engineering work, removal and replacement of asphalt for Phase II and III or the expansion of the easements.

Rod Mann seconded the motion.

AMENDED MOTION: Rod Mann moved the City Council amend the motion to include allocating additional budget funding for the removal of asphalt in phase III.

Brian Braithwaite seconded the motion
Vote on the Amended Motion:
Unanimous vote, motion carried.
Vote on the Motion to include Amendment
Unanimous vote, motion carried.

There was further deliberation on the previous discussion item.

MAYOR, CITY COUNCIL & STAFF COMMUNICATION ITEMS

(*These items are for information purposes only and do not require action or discussion by the City Council*)

Personnel Policy

Brian Braithwaite feels that a policy needs to be adopted allowing employees to take vacations, which has not been available to them in the past. He suggested that the policy allow an employee to have up to 200% of their vacation time accrue, until they reach a set cap amount. The employee can choose whether or not to use their vacation time, and management can work with their team to ensure coverage at all times. Brian explained that this will create a better working relationship among all City employees.

Aaron Palmer remarked that he hasn't received much feedback from his staff, and that initial concerns were related to the stoppage of accruals. Furthermore, there has been question as to whether or not to allow certain employees who have accrued more than the cap amount to cash out.

Brian Braithwaite stated that the money has already been accrued, and Gary LeCheminant added that the cash is available. He suggested giving employees 60-90 days to use it so that timing is not an issue, and commented that this is a standard business practice.

Tim Irwin commented that vacation leave is a management decision, and requested that staff look into how other cities manage their employees' leave.

Aaron Palmer agreed to further research the matter, and was of the opinion that the City needs to decide upon a cap amount.

Brian Braithwaite was concerned with the possibility of employees taking their leave all at once.

Gary LeCheminant explained that employees will be taxed for any payout of unused vacation time.

Layne Jensen stated that he works for an engineering firm, and provided an overview of their policy on paid time off.

Brian Braithwaite was supportive of an idea that Layne suggested about allowing unused time to roll over from the previous year. He agreed that 200% is too much for an employee to accrue for vacation time, and suggested that this item be revisited in a future meeting. Brian was of the opinion that staff should not have the final say on this issue, simply because City employees come and go frequently.

Gary LeCheminant noted that employees currently can accrue up to 160 hours of vacation leave.

Jessie Schoenfeld stated that staff should seek input from other cities and move forward with what Highland City can afford.

ADJOURN TO CLOSED EXECUTIVE SESSION

- The sale of real property pursuant to Section 52-4-205(1)(e) of the Utah State Code Annotated.

DRAFT

Jessie Schoenfeld moved to adjourn into a closed executive session
Rod Mann seconded the motion
Unanimous vote. Motion carried.

ADJOURN CITY COUNCIL MEETING

Brian Braithwaite moved to adjourn.
Rod Mann seconded the motion.
Unanimous vote. Motion carried.

Meeting adjourned at 10:30 p.m.

JoD'Ann Bates, City Recorder

Date Approved: September 1, 2015

MINUTES
HIGHLAND CITY COUNCIL MEETING
Tuesday, June 16, 2015
Highland City Council Chambers, 5400 West Civic Center Drive, Highland, Utah 84003

PRESENT: Mayor Mark S. Thompson, conducting
Councilmember Brian Braithwaite
Councilmember Dennis LeBaron
Councilmember Tim Irwin
Councilmember Jessie Schoenfeld
Councilmember Rod Mann

STAFF PRESENT: Aaron Palmer, City Administrator
Nathan Crane, Community Development Director
Gary LeCheminant, Finance Director
JoD'Ann Bates, City Recorder
Justin Parduhn, Public Works O&M Director
Brian Gwilliam, Chief of Police
Tim Merrill, City Attorney
Kent Slade, Library Director

OTHERS: Garrett Seely, Blythe Shupe, Kelsey Bradshaw, Travis Timothy, Carson Seegmiller, Bobby Seegmiller, Ed Barfuss, Mit Martin, Lynn Ruff, Jeff Murdoch, Austin Sorenson, Roy Bond, Van Bond, Jone Varney, Laurie Adams, Chris Weiss, Steven Mower, Gary Ellis, Ty Christensen, Gary Boren.

The meeting was called to order by Mayor Mark S. Thompson as a Regular Session at 7:02 p.m. The meeting agenda was posted on the *Utah State Public Meeting Website* at least 24 hours prior to the meeting. The prayer was offered by Jessie Schoenfeld and those assembled were led in the Pledge of Allegiance by Mit Martin, a scout.

APPEARANCES:

Carson Seegmiller stated that he is 13 years old and currently working on his Eagle Scout project. His goal is to encourage kids to be active, rather than at home playing video games. Carson requested the Council's permission to build a bike park on the City's property near Lonepeak High School. He explained that no funding will be necessary because all of the work will be done by volunteers. No set structures will be built, so they can easily be removed if needed.

Rod Mann asked if there were any plans for the design of the park, and Carson responded that at this point he is just waiting for permission.

Nathan Crane informed the Council that there is nothing formal on the property, and currently it's just an open area. He recommended that Carson set up a meeting with staff to go over details.

Justin Parduhn explained that they will need to check into the insurance policy to ensure proper coverage.

Bobby Seegmiller commented that each park has a different policy which accepts certain jumps and trails. He noted that his the team is covered by Lonepeak as they are a biking club.

Tim Irwin read a letter from another family who voiced their support for the project.

PUBLIC HEARING

Final Budget & Pressurized Irrigation Fund Transfer – Fiscal Year 2015-2016

Mayor Thompson opened the public hearing.
Hearing no comments, Mayor Thompson closed the public hearing.

CONSENT ITEMS:

RESOLUTION: Adopting Certified Tax Rate – As determined by Utah County.
Pulled by Brian Braithwaite

RESOLUTION: Supporting HB 362 (2015) – Local Option General Sales Tax Dedicated to Transportation.
Pulled by Tim Irwin

MOTION: Final Plat Approval – Stoney Brook Subdivision located at 4800 West and 11200 North

MOTION: Final Plat Amendment – Stirling Pointe located at approx. 12070 North and Highland Blvd.

MOTION: Tim Irwin moved the City Council approve the remaining consent items on the agenda.

Dennis LeBaron seconded the motion.
Unanimous vote, motion carried.

ACTION ITEMS:

MOTION: Adopting Certified Tax Rate
Pulled by Brian Braithwaite

Background: Highland City has received the certified tax rate from Utah County that determines the portion of property tax collected by the County for Highland City. The certified tax rate for Highland City has been set at 0.001568 of the assessed value of property. The rate is assigned as follows:

- *0.001362 for Highland City General operations with anticipated collections of $1,501,373.*
- *0.000206 for the Highland City Library with anticipated collections of $227,080.*
- *0.001568 is the total certified tax rate with anticipated collections of $1,728,453.*

Gary LeCheminant provided a background on the tax rates, and explained that the goal is to give Highland the same amount of tax revenue.

Brian Braithwaite remarked that the whole city could increase in value as the rate goes down to be sure that the same amount of funds is coming in. He continued to explain all of the values of the homes that are being added in, and the credit that the City will receive for new development.

Rod Mann explained that the tax system they have for property tax does not adjust for inflation. He feels that it isn't bad to ask for a higher property tax amount if it's something that changes every few years with the development.

Brian Braithwaite concluded that if there is no growth the budget will not change, regardless of the increase in value of the homes.

MOTION: Brian Braithwaite moved the City Council approve a Resolution adopting the Certified Tax Rate.

Rod Mann seconded the motion.

Those voting "Aye": Rodd Mann, Jessie Schoenfeld, Tim Irwin, Dennis LaBaron and Brian Braithwaite.
Those voting "Nay": None
Motion carried.

MOTION: Supporting HB 362 (2015)
Pulled by Tim Irwin

Background: HB 362 is a comprehensive approach to addressing part of the funding shortfall identified in Utah's Unified Transportation Plan. The bill reforms the state motor fuel tax and

authorizes local option transportation sales tax to allow for priority investments in roads, transit and active transportation facilities at the local level. It will help Utah preserve our current infrastructure and accommodate our projected population growth. There are two main provisions in the bill. 1) ***Gas Tax Reform:*** *The bill converts the current 24.5 cents-per-gallon state gas tax to a 12% sales tax on the statewide average rack price of fuel. This will take effect January 1, 2016 and local governments can expect an increase to their B&C allocation in March or April. 2)* ***Local Option Transportation Sales Tax:*** *This provision gives local governments the tools they need to address their transportation needs. Counties are authorized to enact a 0.25% general sales tax for transportation subject to voter approval. These funds will be allocated as follows:*

0.10% to the transit provider
0.10% to cities, towns and unincorporated county area
0.05% to the county in areas without transit service the funds would be allocated as follows:
0.10% to cities towns and unincorporated county area
0.15% to the county

A county must impose and voters must approve the 0.25% during a November election. (no specific year is required)

Tim Irwin was concerned about the resolution because the tax rate would be going into mass transit programs in Orem and Provo, which would not affect Highland City directly. He cannot support the motion as written.

Rod Mann explained that the City needs the road funds and this is a tax specifically dedicated to that need. This item would be voted upon and then sent to the County Commissioners to be added to the ballot.

Tim Irwin stated there would be a quarter cent tax increase that would be divided between three ways; transit, towns and county. The funding could be used for transit or road maintenance.

Brian Braithwaite concluded that tonight the Council is voting on whether or not to support the resolution which supports HB 362.

MOTION: Rod Mann moved the City Council approve a Resolution supporting HB362 (2015), Local Option General Sales Tax.

Brian Braithwaite seconded the motion.

Those voting "Aye": Dennis LeBaron, Brian Braithwaite, Rod Mann and Jessie Schoenfeld.
Those voting "Nay": Tim Irwin
Motion carried.

RESOLUTION: Approval and Adoption of Final Budget – Fiscal Year 2015-2016

Background: *On April 14, 2015 a working budget was presented to the City Council for comment in a work session meeting. Some of the major items to come out of that meeting were to ensure that Highland's new fee schedule was reflected in the budget, increase the Class "C" road revenue from the state to $560,000 and use all of that in the Capital Road Fund, and to use the estimated $60,000 to $70,000 in savings in the Streets & Road fund from the dry winter Highland experienced in Fiscal Year 2014-2015, in Fiscal Year 2015-2016, to build a required Salt Storage Building. All these changes were incorporated into the Fiscal Year 2015-2016 budget that was presented to the City Council at the May 19, 2015 tentative budget meeting that was also part of a public hearing on the proposed Fiscal Year 2015-2016 budget. At the tentative budget meeting the City Council asked that the amount in account 20-43-26 (playground maintenance in Open Space) be reduced from $65,000 to $40,000. This final budget makes that change as requested. In addition, some other changes have been made to the tentative budget to arrive at the current final budget. The library budget shaved down its expenses by $9,950. The property tax data from the county received on June 8 allowed for a better projection of next year's property tax revenue, therefore, the budget for property tax revenue has increased by $38,000 from the tentative budget amount. Also, the Finance Director, has increased the forecast from Delinquent Property Tax revenue from $20,000 to $40,000. Finally, the savings from the Streets and Roads fund in Fiscal Year 2014-2015, has been formally incorporated into the Fiscal Year 2015-2016 budget, by adding a line item of $70,000 for a Salt Storage Building in the Capital Building Fund. Along with that budget item comes the transfer into that account from the General Fund in the amount of $70,000. With all these necessary adjustments the Fiscal Year 2015-2016 budget is a balanced budget with revenues of $8,098,131 and expenses of $8,097,851 for a difference of $280.*

Rod Mann asked for clarification on the line item of $70,000 for a Salt Storage Building in the Capital Building Fund.

Nathan Crane replied that staff anticipates that the building will actually cost between $30,000 to $40,000, and that additional funds have been factored in for any possible site improvements.

Justin Parduhn explained that they shouldn't use the whole budget unless the Parks Maintenance Building ends up on the same location.

Brian Braithwaite was under the impression that they had put into the budget an overhead fund for the library, and suggested that this change be made.

Tim Irwin explained that at one point a Kent Slade made a proposal to the Council with regards to library funding.

Rod Mann stated that the library is funded by the general budget, and was opposed to having a separate category created.

There was continued discussion on the matter, and Nathan Crane suggested that the office supplies line be dismissed. A question was asked of Kent as to why he had reduced his budget significantly, and why he was now requesting more for that account.

Kent Slade answered that he had to estimate for all expenses including taxes in order to budget the balance. Furthermore, the estimated salaries were much higher than what he had anticipated.

Mayor Thompson allowed public comments:

Lynn Ruff questioned if the HB362 will affect this year's taxes. Jessie Schoenfeld confirmed that it was approved and will start January 1, 2016. Lynn questioned if there are any plans to fix the roads.

Mayor Thompson explained that the funds are tight and they currently don't have the finances to finish a comprehensive road plan.

Gary LeCheminant explained that the City uses its own services, and that if the General Fund is not used a public hearing on the matter must take place. Other options by which this transfer may take place were discussed.

MOTION: Rod Mann moved the City Council adopt a Resolution approving the Final Budget for Fiscal Year 2015-2016 with the following amendments: 1) library costs to add items as indicated by Financial Director, Gary LeCheminant, 2) removal of the allocation for office supplies. reducing $59,907 by approximately $3,000, 3) place additional $6,500 from previous cuts.

Tim Irwin seconded the motion.

Those voting "Aye": Jessie Schoenfeld, Tim Irwin, Dennis LeBaron, Brian Braithwaite and Rod Mann.
Those voting "Nay": None
Motion carried.

<u>MOTION: Request to Expand Existing Easement in Beacon Hills Subdivision – Questar Gas</u>

<u>Background:</u> The Council originally considered this request at the May 19, 2015 meeting. Questar Gas Company is in the process of replacing an existing ten inch high pressure natural gas line in Salt Lake and Utah Counties. The replacement pipeline will be a twelve inch line that is run parallel to the existing line. Upon completion the existing line will be abandoned. Part of the pipeline runs through property owned by Highland City in the northeast corner of the city in the vicinity of the upper pressurized irrigation pond. The existing pipeline is within an existing sixteen foot easement. Questar Gas Company would like to expand the easement from sixteen feet to thirty feet. The expansion does not impact any existing Highland City utilities. Questar is offering $3,250 for the easement. The proposed easement is attached. The easement limits the operation to underground facilities with the exception of mitigation facilities. Mitigation

facilities are equipment that is used to maintain corrosion mitigation facilities and that periodically monitor the operation of these facilities. These facilities consist of buried and above ground equipment which imposes a protective electronic current on the pipeline and wires and terminals that allow testing of the adequacy of the mitigation system. These facilities are located at various locations along the pipeline system and may be added or modified as conditions change. This above ground equipment is usually a tube that sticks out of the ground and looks similar to the markers we install along the right of way. The cathodic monitoring is in conjunction with the mitigation facilities, but is all done underground through anodes or wells. The agreement has been reviewed by staff and the City Attorney.

Brady Nowers with Questar Gas provided an overview of this item.

Tim Irwin asked if there are any restrictions for use in the contract.
Justin Parduhn explained that cathodic monitoring is corrosion protection, the process of which entails coating the piping, and installing an electro current to avoid rust on the pipeline. Electro current is then discharged into an above ground facility which absorbs the charges.

MOTION: Jessie Schoenfeld moved the City Council approve an agreement with Questar Gas to expand and easement in the Beacon Hills subdivision and authorize the Mayor to sign the agreement.

Brian Braithwaite seconded the motion.

Unanimous vote, motion carried.

<u>MOTION: Metropolitan Water District Agreement</u>

<u>Background:</u> In July of 2005, the City Council signed an agreement with the Metropolitan Water District of Salt Lake & Sandy (the District) to allow a small portion of Country Club Drive to encroach on their existing property. The agreement is set to expire on July 14, 2015. In advance of the expiration, the District is requesting a new agreement. The agreement allows Country Club Drive to remain in place and would expire in 25 years. The District is requesting $2,000 for the District to cover some or all of the costs to District for its initial engineering and/or other costs incurred for the review of plans and specifications, preparation of documents, inspection of work and materials, and administration of this Agreement. In addition, City agrees to reimburse District for any additional out of pocket costs which District reasonably incurs that would not have been incurred by the District but for City's use of the property. The agreement has been reviewed by staff and the City Attorney.

Brian Braithwaite asked if there is any possible negation for the price and questioned the possibility of giving them a larger rate for a longer period of time.

Nathan Crane stated that staff has negotiated this price and is confident that this is the best deal offered.

MOTION: Brian Braithwaite moved the City Council approve the agreement with the Metropolitan Water District allowing a portion of the Country Club drive to be on District property and authorize the Mayor to sign the agreement.

Tim Irwin seconded the motion.

Unanimous vote, motion carried.

MOTION: Sewer Replacement Project

Background: Staff is currently preparing maintenance plans for all of the City owned infrastructure. These maintenance plans are designed to prolong the life of existing infrastructure by ensuing proper maintenance is completed. The maintenance plans are based on manufacture recommendations as well as staff experience. Some components may have longer life spans and some may have shorter life spans. However, staff believes it is fiscally responsible to plan and fund maintenance of critical infrastructure. This will allow the City to save for these expenditures. Hansen, Allen and Luce is assisting City staff in preparation of the maintenance plans. Master plans and capital improvement plans have been completed. Once the maintenance plans are completed, rate analysis can be completed. This will ensure that the enterprise funds are properly funded to address current and long term needs. The purpose of the Sanitary Sewer Maintenance Plan (Plan) is to prolong the life of the system infrastructure and transport waste without disruption or overflows, while meeting the needs of citizens in a cost-efficient manner. This plan identifies annual maintenance required for manholes, pipe and lift stations along with estimated costs for planning purposes. Highland City established in their 2014 Sanitary Sewer Management Plan (SSMP) a sanitary sewer system operations and maintenance (O&M) program to ensure proper system operations, to minimize any basement backups, and to provide for replacement, refurbishment, or repair of damaged or deteriorated piping systems. The combined maintenance program insures that the environment and health of the public are protected at a reasonable cost for the end users.

Nathan Crane provided a summary of this motion and explained that the City is changing lines from a ten to 12 inch pipe to provide the possibility for buildout.

Brian Braithwaite asked how a curb and gutter would affect the road.

Nathan Crane replied that it shouldn't affect the new asphalt. Staff reassured the Council that all upgrades and improvements will be taken care of at one time.

MOTION: Tim Irwin moved the City Council approve the Sewer Replacement Project for 10400 North Sewer line to include road replacement.

Jessie Schoenfeld seconded the motion.

Unanimous vote, motion carried.

MAYOR, CITY COUNCIL & STAFF COMMUNICATION ITEMS

(These items are for information purposes only and do not require action or discussion by the City Council)

Sanitary Sewer Maintenance Plan: Nathan Crane stated that the Sanitary Sewer Maintenance Plan will complete the capitol planning for sanitary sewer in preparation for rate studies in the fall. The plan is not designed to be definite, but is rather supposed to make the Council aware of what typically is needed. Rod Mann asked it will be more beneficial for the City to buy or rent a truck. Nathan replied that the truck is currently not needed, but they will revisit the item at a later date.

Engineering Design Standards: Nathan Crane commented that these standards should be updated, which will be addressed in an upcoming meeting.

Personnel Policy: Brian Braithwaite discussed the vacation plan for employees, and explained that it would provide a certain amount of vacation time that employees could accrue. The time would clear and then restart yearly, and if not used would be lost. Staff suggested 175% of accrual, or 220 hours. Tim Irwin felt that any vacation time accrued should not be lost, and stated that management needs to make sure the employees use their vacation time. Jessie Schoenfeld suggested that unused vacation time be rolled over into the next year, and there was further deliberation on the matter.

Park Maintenance Building: Nathan Crane stated that he would like additional information with regards to continuation of the plan. Rod Mann stated that he'd like to outsource the maintenance so they can have more options. Justin Parduhn explained that the lawn care would be the only item that could realistically be outsourced. Another comment was made the putting out bids is not as cost or time effective as having staff do the work themselves. Mowers could be stored in a trailer in order to protect them through the winter. Brian Braithwaite concluded that the Council would like to get bids for outsourcing services in order to more effectively compare costs.

ADJOURN TO CLOSED EXECUTIVE SESSION

- The purchase, exchange, or lease of real property and reasonably imminent litigation;
- The sale of real property; including any form of water right or water shares;
- The character, professional competence, or physical or mental health of an individual.

Pursuant to Section 52-4-205(1)(c) of the Utah State Code Annotated.

MOTION: Rod Mann moved to adjourn into closed executive session.

Brian Braithwaite seconded the motion.

Unanimous vote. Motion carried.

<u>ADJOURN CITY COUNCIL MEETING</u>

MOTION: Jessie Schoenfeld moved to adjourn.

Rod Mann seconded the motion.
Unanimous vote. Motion carried.

Meeting adjourned at 11:55 p.m.

_____
JoD'Ann Bates, City Recorder

Date Approved: September 1, 2015

MINUTES
HIGHLAND CITY COUNCIL MEETING
Tuesday, July 21, 2015
Highland City Council Chambers, 5400 West Civic Center Drive, Highland, Utah 84003

PRESENT: Mayor Mark S. Thompson, conducting
Councilmember Brian Braithwaite
Councilmember Dennis LeBaron
Councilmember Tim Irwin
Councilmember Jessie Schoenfeld
Councilmember Rod Mann

STAFF PRESENT: Nathan Crane, Community Development Dir./Interim City Admin.
Gary LeCheminant, Finance Director
JoD'Ann Bates, City Recorder
Justin Parduhn, Public Works O&M Director
Brian Gwilliam, Chief of Police
Tim Merrill, City Attorney
Josh Castleberry, Park Superintendent

OTHERS: Roy Anderson, Alice Anderson, Kim Jewett, Camille Price, Dennis Likes, Dennie Butterfield, Ron Jewett, Stan Mead, Kathy Mead, Annette Tippetts, Paul Tippetts, Jeannie Spykes, Gil Wilburn, Lynn Hancock, Joel Zabriskie, Wade Miller, Natalie Ball, Tim Ball, Linda Olpin, Jay Olpin, Bryce Ashcraft, Karen Nelson, Jason Nelson, Gerald Neumann, Bruce Baird, Brian Balls, Matt Robinson, Sarah Aalders, Brandon Aalders, Alina West, Allard, Wendy Condie, Brent Oakeson, Bobbie Bates, Karene Pierson, Lynda Jamieson, Pat Holingshaus, Karen Bennett, Dwayne Vance, Andrew Harmon, Jenna Harmon, Tim Aalders, Rich Henderson, Tanner Gneiting, Austin Gifford, Maddox Ray, Dana Ray, Brett Johnson, Lydia Johnson, Tanya Colledge.

The meeting was called to order by Mayor Mark S. Thompson as a Regular Session at 7:01 p.m. The meeting agenda was posted on the *Utah State Public Meeting Website* at least 24 hours prior to the meeting. The prayer was offered by Rod Mann and those assembled were led in the Pledge of Allegiance by Maddox Ray, a scout.

APPEARANCES:

Kathy Mead requested that the Council take action tonight to enact a moratorium on all high-rise high-density projects within the Town Center. She noted that a petition with close to 100 signatures has been submitted to the Council requesting this moratorium. The signatures represent residents from nearly all of the subdivisions in central Highland, but also as far away as Bull River and Highland Estates. Kathy stated that the negative repercussions of the Toscana Subdivision demand that the present ordinances be revisited.

Rod Mann stated that the Council cannot enact any policy decision unless it is on the agenda. Therefore, tonight it will not be possible to make a formal motion to enact a moratorium.

Nathan Crane added that if the Council chooses to enact a moratorium at a future date, it will not apply to any other projects that are currently under review.

Tim Irwin stated that the item can be placed on the agenda by the Mayor at the Council's request.

Dennie Butterfield asked when the Master Plan changed to advocate for developments similar to the Toscana development, which was supposed to be used for business purposes.

Nathan Crane stated that this question would be addressed later in the meeting.

PRESENTATION

Utah Local Governments Trust – Brent Oakeson

Brent Oakeson informed those in attendance that the Utah Local Governments Trust is the insurance company for the City with various lines of insurance coverage. Highland City recently earned the Trust Accountability Program (TAP) Award, which was the presented to the Mayor and Council. The program includes initiatives to prevent losses, damages, claims and liabilities, such as having a Safety Committee. Other parts of the program include a driver's qualification program, return to work programs and a steward management program.

Utah Lake Commission – Eric Ellis

There was no representation for the Utah Lake Commission.

CONSENT ITEMS:

MOTION: Approval of Meeting Minutes for City Council Regular Session – June 2, 2015

MOTION: Ratifying the Mayor's Appointment to the Highland City Historical Committee – Kellie Johnson

MOTION: Dennis LeBaron moved the City Council approve the consent items as listed on the agenda

Tim Irwin seconded the motion.
Unanimous vote, motion carried.

ACTION ITEMS:

MOTION: Conditional Use Permit for an 86 unit Multi-Family Townhome Development in the Town Center Flex use Zoning District – Blackstone

Background: *Tim Aalders is requesting a conditional use permit for an 86-unit multi-family development located at the northeast corner of Town Square East and Parkway East. The site is 7.76 acres in size and is owned by Frank and Maria Carlone. The site is designated as Mixed Use Development on the General Plan Land Use Map. The site is zoned Town Center Flex-Use District. Multi-family residential developments are permitted in this district subject to review and approval of a conditional use permit. A maximum of 342 units are permitted in the Town Center Flex-Use District. A project cannot exceed 12 units per acre. Toscana was approved for 200 units leaving 142 units. If this project is approved, 56 units will remain. Conditional uses are tolls that are meant to give limited flexibility in the review of an application. In Highland, the Planning Commission makes a recommendation to the City Council. A conditional use is regulated by the following standards:*

Utah State Code 10-9a-507. Conditional Uses.

1) *A land use ordinance may include conditional uses and provisions for conditional uses that require compliance with standards set forth in an applicable ordinance.*
2) *A conditional use shall be approved if reasonable conditions are proposed, or can be imposed, to mitigate the reasonably anticipated detrimental effects of the proposed use in accordance with applicable standards.*
3) *If the reasonably anticipated detrimental effects of a proposed conditional use cannot be substantially mitigated by the proposal or the imposition of reasonable conditions to achieve compliance with applicable standards, the conditional use may be denied. If a use is allowed as a conditional use it is assumed that the use is desirable but that it may require an extra level of review. Denial must be based on some factor unique to the proposed location that renders the potential negative effects of the proposed use beyond mitigation. Mitigation means to temper or reduce the negative aspects, not eliminate them. The action taken in response to an application must be supported by substantial evidence in the record. Substantial evidence is evidence that is relevant and credible. To be relevant, it must relate to the standards in the ordinance. To be credible it must be objective and independent.*

Nathan Crane presented the staff report, and revisited the question that was raised earlier by Dennie Butterfield. He explained that master planning efforts for the Town Center began in 1992, and was formally adopted in 1999. Major revisions began in 2005 over the course of approximately 30 public meetings, and the changes were adopted in either 2006 or 2007. Minor amendments were also made in 2010. The intent of the Town Center is to provide an area where the City can create commercial and residential together in a walk-able community, or commonly known as mixed use development. Horizontal mixed use development consists of uses that

function together but are different, and vertical mixed used development consists of uses within the same building. There are also designated areas for higher density development, which are typically around public open spaces and gathering areas. Nathan Crane then presented an aerial map of the Town Center to identify various zoning districts, and reviewed Utah State Code 10-9a-507.

The project site plan was reviewed, and Nathan Crane explained that fire access and overall traffic flow are often concerns with these types of projects. The Planning Commission held two public meetings on this proposal, and on July 14 they voted to recommend denial of the project based on several reasons listed in the staff report. Reasons included issues with property owner affidavits, floor plan options that were not identified, and other clarifications were needed with regards to building elevations. Additionally, there are still some uncertainties pertaining to a property located to the east. A reciprocal access agreement has been provided for the service drive behind Ridley's grocery store. Parking on private roads and a traffic impact study still need to be addressed by the applicant. Staff recommended that this item be continued to the August 18 meeting to allow the applicant to clarify these items.

Brian Balls, Summit Engineering, explained that he has referred to code requirements and public considerations through the development of this project. He spoke about different amenities that will be provided, including open space for gatherings, and the ability for dog walking and cleanup. It is anticipated that this development will generate around 566 trips per day. As of the 2013 traffic count, SR-92 or Timpanogos Highway produced an average of 18,225 trips every day. Furthermore, State Route 74 produces 13,475 trips every day. The 566 trips per day generated from the development will represent between three to four percent of the total traffic scene on SR-92. Brian spoke about additional traffic safety measures that will be implemented to ensure pedestrian safety.

Dennis LeBaron pointed out that some of the units in the site plan are a little over 200 feet from an available outside parking spot, which he would like to see minimized to closer to 150 feet.

Brian Balls agreed to take a look at this possibility.

Rod Mann added that the farther away guest parking is from a unit, the more likely people are to park on the main road.

Brian Braithwaite commented that five of the units are facing the back of a tire business where their equipment and storage is located. Most of the living conditions are above that business, so those residents will be able to see and hear what takes place behind the tire store. Additionally, six units will have a similar problem with the Ace Hardware store.

Brian Balls responded that everything comes down to being able to access the units from a vehicular standpoint. There was continued discussion on the effect that these businesses would have on the proposed development.

Brian Braithwaite brought up additional discussion points regarding basement storage, and referred to some issues that have surfaced with the Toscana development. Toscana has very little storage space, and consequentially residents are using their garages for storage and parking on the street.

Brian Balls explained that many of these issues relate to the personal lifestyle decisions of buyers, which he hopes residents will consider when purchasing a unit. Furthermore, all of the model units will have basement storage options.
Brian Braithwaite asked how parking will be enforced, and Brian Balls answered that this will be monitored through the HOA, which is organized by the developer. He then used the site plan to identify where the model units will be located.

Various access issues were reviewed.

Bruce Baird stated that he is a consultant for the project, and explained that he will be using the interim between now and when the traffic study is complete to fully analyze the properties and access issues. A detailed report addressing all concerns that have been raised will then be presented to the Council at the next meeting.

Brian Braithwaite expressed concerns that the roads and infrastructure of the area were designed for businesses, and the elements have changed to residential more significantly than what was anticipated. He was of the opinion that roads have not been adjusted to handle the impact of a residential development. There was discussion regarding the importance of addressing any issues now, so that later down the road everyone can still be proud of the developments that have taken place in the City.

Mayor Mark Thompson opened the public hearing.

Mark Whitney was of the opinion that the applicant has not met their burden of proof and properly addressed the issues that have been raised. He pointed out that the Planning Commission unanimously recommended denial, and that there will not be enough significant changes to warrant postponing a decision on this item.

Kathy Mead quoted State Code 10-9A-507, which states: "*Substantial evidence must be relevant, credible, objective and independent*." She then reviewed the reasons as listed on public record why the Planning Commission denied this proposal. According to the Town Center Overlay Review Standards and Process, a proposed development must comply with all provisions of that ordinance and all other ordinances, master plans, general plans, goals, objectives and standards of Highland City. Furthermore, it explains that the City must be vigilant to ensure that the precious backdrop of mountains and ridges is preserved and protected. Other recommendations as listed in the ordinance were then listed. Kathy concluded that the Blackstone project and anything like it violates all of the design standards and objectives as set forth in the City's ordinances.

Brian Braithwaite explained that any time a developer comes forward with a project, all issues are discussed and the developer is given the opportunity to fix any problems and come forward again with an amended proposal. In this instance, the feedback of the Planning Commission is too vague to give the developer any specific direction on what to fix. Therefore, staff has put together a more focused list to which the developer is required to respond.

Ron Jewett expressed concerns with the safety of the children, and made reference to the Toscana development. He suggested possible ways to resolve the issues that have been brought forward.

MOTION: Rod Mann moved the City Council continue the approval for the Conditional Use Permit for an 86 unit Multi-Family Townhome Development to August 18, 2015, in order to give the City staff time to prepare and review information from the applicant and give the applicant time to respond.

Brian Braithwaite seconded the motion.

AMENDED MOTION: Dennis LeBaron moved the City Council require the applicant to address the possibility of moving the open space to a more centralized location, the possibility of moving the parking spaces to make them more in proximity to the home entrances, address and resolve any access issues regarding the legal rights on the property to the south of the proposed development and a traffic study to be determined by staff.

Tim Irwin seconded the amended motion.
Unanimous vote on the amended motion.
Motion carried.
Unanimous vote on the original Motion.
Motion carried.

<u>MOTION: Approval for the Reconstruction of the Dry Creek Phase 3 Trail</u>

<u>Background:</u> Over the past several months the City Council has been discussing the status of the Dry Creek Bench Trail. On May 5, 2015, the Council directed staff to return with a phase plan for engineering work, removal and replacement of asphalt for Phase II and III or the expansion of the easements. The Dry Creek Bench Trail located in Phase 3 of Dry Creek is designated as a Main City Trail on the Trail Master Plan. An amendment to the trail master plan would be required to remove the trail under Section 12.30 of the Municipal Code. Because of the street layout, there is not direct access to Ridgeline Elementary School without having to use the sidewalk on Highland Boulevard. To access the school via the street network and not using Highland Boulevard, students would need to travel east to Granite Flats Road via Ridge Road. The City Engineer has prepared a cost estimate as follows:

Trail Design: $15,846.23

Construction of a Gravel Trail: $31,339.11
Construction of an Asphalt Trail: $44,089.11
Total Cost Gravel Trail: $47,185.34
Total Cost Asphalt Trail: $59,935.34
Other options are as follows:
Removal of the Trail

This option would remove the trail as shown. The cost to remove the trail is estimated at $8,324. This trail is designated as a Neighborhood Option Trail. Neighborhood Option Trails can be removed without a General Plan Amendment under Section 12.30 of the Municipal Code. Expand the Existing Easement to Include the Trail. The trail is in a storm drain easement that cannot be built on so there is less value to the land. This option would require the modification of the easement to include the existing trail. The City Engineer's estimate is $44,476. If the bid comes in below or at the Engineer's estimate staff is requesting authorization to proceed with the project. If the bid comes in above the estimate, staff will bring the item back to the Council for consideration.

Justin Parduhn explained that initially asphalt would require less maintenance. However, over time the asphalt would break down and require surface treatments, patching or replacement, all of which could be more expensive. Alternatively, a gravel trail would require more frequent maintenance due to weather and erosion, and would occasionally need to be leveled with additional gravel. He agreed to provide the Council with a list of recent trail repairs that have been made.

Wendy Condie stated she lives south of the aforementioned trail, and noted that the asphalt on the trail has been there for ten years and has not needed any repairs. Additionally, there are roughly 100 children who ride bikes to school using this trail, and the difference between asphalt and gravel is significant. Staff and Council further deliberated the matter.

Tanya Colledge stated that there is an easement for the trail on her property, and therefore she is directly impacted by this issue. Tanya expressed that she is supportive of trail systems, provided that they are in the right location and are properly maintained. She noted that there is a child-sized pothole on her section of the trail which is hazardous to anyone. Tanya would prefer asphalt over gravel for safety reasons, and because it is more attractive.

Brian Braithwaite suggested that the City hold off for six months and pay the same amount for a paved trail as they would for a gravel day within the next 30 days. In asking Tanya which option she would prefer, Tanya answered that as a taxpayer she would rather wait six months for a paved trail. However, she also noted that her children go to a different school, and for other families whose children do attend the nearby school and travel the trail frequently it is a safety hazard.

MOTION: Dennis LeBaron moved the City Council continue the approval of the Reconstruction of the Dry Creek Phase 3 Trail until staff can review cost estimates for completing or performing some of the project tasks in-house, and any other adjustments that may be necessary.

Tim Irwin seconded the motion.
Unanimous vote.
Motion carried.

MOTION: Approval and Authorization for the Mayor to sign a contract for Transcription Services for City Council Meeting Minutes – C. Price Transcription, LLC

Background: The Highland City office and staff have recently undergone some changes and unfortunate employee events, Highland City staff is essentially down by two full-time employees. With the departure of Aaron Palmer and the recent illness of Jill Ballamis, City Treasurer, employees have taken on extra responsibilities to help with the day to day operations. Jill Ballamis serves as the City Treasurer. Prior to Jill, Jody served as the City Treasurer for two years. Fortunately between Jody and other employees we have been able to pick up the day to day responsibilities of the Treasurer for the time being. Due to the added responsibilities it is necessary to request additional help. Staff is requesting to hire a transcriber for the City Council Meeting Minutes. Transcribing of the City Council Meetings consist of approximately two hours per hour of meeting. This means for every average 4 hour council meeting it take approximately 8-10 hours to transcribe the meeting, review the minutes and complete a draft for approval. This is time that can be utilized ensuring the treasurer duties are properly executed. C. Price Transcription, LLC, is contracted with other city entities and has been in business for several years, transcribing specifically city meetings. Once a meeting is recorded, an audio file is sent to C. Price and with communications between the City Recorder and C. Price the meeting minutes are transcribed, reviewed and a draft completed is then sent back as a complete file ready for review and approval from the City Council typically within one week of the receipt of the audio recording. The contract with C. Price is for an "as needed" basis. We are not obligated to have them do all the meetings, but foresee them doing the majority of them during this time. The 2014-2015 budget for transcribing was $3,000 but was not used and therefore decreased. The 2015-2016 budget holds $1,500. If each meeting is 4 hours, it will take 8-10 hours to transcribe at $20 per hour is equal to $200 per meeting and we have 22 meetings in a year, this equals $4,400. This does not include longer more in-depth meetings, extra meetings, work sessions and off-site meetings. Staff will try to do as much of the transcribing as possible for the works sessions and off-site meetings to defer the costs, depending on time restraints and other responsibilities. The $4,400 per year may increase due to those circumstances but staff does not foresee it increasing more than approximately $6,000 per year. Mid-year and end of the fiscal year adjustments will need to be made to account for the overage.

Camille Price provided a brief overview of the aforementioned contract for transcription service, which was then discussed by staff and Council.

MOTION: Tim Irwin moved the City Council approve and authorize the Mayor to sign a contract with C. Price Transcription, LLC, for Transcription Services for City Council Meeting Minutes with a sunset of December 31, 2015, for further review.

Brian Braithwaite seconded the motion.
Unanimous vote.
Motion carried.

RESOLUTION: Amendments to the Personnel Policy and Procedures Manual for Highland City Employees

Background: The purpose of annual leave is to allow employees time away from work for rest, renewal, and time with their families. The City is better served when the employees have an opportunity to get away from their employment responsibilities and focus on other areas of their lives. Annual leave provides the employee an opportunity for more balance in their life which typically helps the individual to be a more productive and a better employee. Currently the city's Personnel Policies and Procedures allow for Highland City Employees to accrue unlimited annual leave hours. When an employee terminates (voluntary or involuntary) they will be paid for the total accumulated annual leave hours The current policy may encourage some employees to accrue annual leave instead of using it. The city benefits from employees using their annual leave for the reasons previously described. The changes proposed would allow the Highland City Employees to accrue Annual leave at the same rates as in the current policy. An employee who reaches 175% of their yearly annual leave on their anniversary date of hire would lose all leave that exceeds 175% of annual leave accrued. Currently there are 18 employees who have accrued more than 175% of their annual leave accrual rate. It is recommended that these employees be compensated for hours in excess of 175% of their annual leave accrual rate. If approved, this change would take effect with the first pay period of August 2015. Employees being compensated for hours in excess of 175% will have the following options: 1) Complete pay out; 2) Complete pay out in January 2016; 3) Payments may be split between 2015 and 2016. For all options the employee may have the option for a cash payout or the ability for the payment to be placed in a designated 457 or 401k account.

Brian Braithwaite provided an overview on this item.

Rod Mann commented that later down the road this policy may be subject to change because of different laws that may or may not be enacted in Utah.

MOTION: Brian Braithwaite moved the City Council approve a resolution amending the Personnel Policy and Procedures Manual for Highland City Employees.

Rod Mann seconded the motion.
Those voting "Aye": Brian Braithwaite, Dennis LeBaron, Tim Irwin, Jessie Schoenfeld and Rod Mann.
Motion carried.

RESOLUTION: Amending the Utility Connection Fee

Background: The current water connection fee $1,835 plus a $360.00 for a water meter. Utah Law requires that review fees only be established to cover the cost of providing the service. Staff commissioned a fee study to update this fee. The study was completed by Zion's Bank Public Finance. The proposed fee is $536.00 for a three-quarter inch meter and $652.00 for a one inch meter. For meters larger than one inch the cost will be cost of the meter plus $100.75. The proposed fee includes the cost of the meter and staff time for installation/inspection of new meters.

Nathan Crane presented the staff report, and clarified that the fee pertains to culinary water. He also noted that this would affect the Blackstone project.

MOTION: Brian Braithwaite moved the City Council approve a Resolution amending **the Utility Connection fee for Culinary Water.**

Tim Irwin seconded the motion.
Those voting "Aye": Dennis LeBaron, Tim Irwin, Jessie Schoenfeld, Rod Mann and Brian Braithwaite
Motion carried.

ORDINANCE: Adoption of an Engineering Design Criteria and Standard Drawings for Public Improvements

This item was reviewed at the June 16, 2015 City Council meeting. Over the past several months, staff has been updating and revising the cities engineering standard drawings and design criteria for public improvements. The purpose of the Design Criteria is to govern any design and engineering performed regarding public improvements. Engineers and designers working will review these requirements before designing and creating construction plan sets for public improvements. These documents contain design criteria that are in addition to normal and acceptable engineering practices including APWA, AWWA AASHTO, and ACSE standards and are to be used on designs in the City. The purpose of this item is to present these documents to the City Council. The Council should review the documents and provide staff with any comments by July 8, 2015. The Council will consider adoption of these documents at the July 21, 2015 City Council meeting.

Nathan Crane presented the staff report, and stated that this is a practice that is being adopted by other cities through Utah.

Brian Braithwaite commented that this will raise the cost of property in Highland, and requested an estimate on how much of an impact would take place.

Dennis Anderson expressed concerns with skid resistance, and requested that the City require testing on the material (HA5) to ensure that no problems are created. He mentioned that he previously lived in Las Vegas, and at one point people slipped and fell on a road that had been treated with pavement seal after it had rained because it was too slippery.

Nathan Crane stated that a skid test on the HA5 being used has been performed in the past, but staff can approach the company, Holbrook Asphalt Company, on the matter again to get a current estimate on what testing would cost. Nathan agreed that HA5 is a smoother treatment, and noted that several neighboring cities also use this same material.

Tim Irwin stated that there are a number of residents who get frustrated with the number of manholes in the City and where they are placed.
Nathan Crane replied that in a previous meeting, Justin Parduhn explained that their goal is to place manholes in the middle of a travel lane.

Rod Mann asked how visibility standards at intersections will be enforced, and staff replied that residents are typically very cooperative when approached by the City regarding landscaping concerns. Issues usually are reported by way of complaints to the City, to which staff will go and further investigate the matter.

MOTION: Tim Irwin moved City Council approve an Ordinance adopting an Engineering Design Criteria and Standard Drawings for Public Improvements with the appropriate changes.

Jessie Schoenfeld seconded the motion.
Those voting "Aye": Tim Irwin, Jessie Schoenfeld, Rod Mann, Brian Braithwaite and Dennis LeBaron
Motion carried.

MAYOR, CITY COUNCIL & STAFF COMMUNICATION ITEMS

(These items are for information purposes only and do not require action or discussion by the City Council)

Alpine School District Land Exchange
Operational Safety Report Study
Nathan Crane briefly reviewed several communication items. Staff will be meeting with the Alpine School District tomorrow regarding a land use agreement, and Nathan invited Mayor Thompson to attend. Staff is working with the Sherriff's Office to collect accurate data for the Operational Safety Report for 11800 North and Highland Boulevard. Tim Irwin thanked staff for getting the striping done at the intersection, as well as the Chief of Police for getting a temporary sign installed.

City Website

Nathan explained that with regards to the City website, the City has a dual contract for the same service. Currently they are contracted with CivicPlus to host the website, and last fall a contract was signed with GovOffice. The City is contractually obligated to pay GovOffice $7,000 per year for two years, and the first year has already been paid. The Council needs to decide which direction to take moving forward, and Nathan explained that CivicPlus requires 60 days of service cancellation notice. The cost of having CivicPlus continue to host for the next two years, in addition to what is owed to GovOffice is about $8,000 of additional expense to the City. In response to a question from Tim Irwin, Rod Mann explained that from a staff perspective, GovOffice has easier templates with which to work.

Park Maintenance Building

Josh Castleberry, Park Superintendent presented a PowerPoint presentation on the Parks Maintenance Building, and the Council deliberated on the information that was presented. Tim Aalders commented that he has consulted many landscaping companies, and when he has hired HOA teams in the past he has compared costs to what a landscaping company would charge for the same service. He also conducted a study which revealed that over 85% of the sprinklers were broken by a landscape company. He suggested that a flat fee be charged for any broken sprinkler heads that result from their negligence. Tim Aalders opined that the City could lower park maintenance expenses with the right contract, as opposed to building a City owned and operated facility. *Note: The aforementioned PowerPoint presentation is attached to the Meeting Minutes.*

Salt Storage Building

Justin Parduhn inquired as to the status of the Conditional Use Permit for the Salt Storage Building. Nathan Crane remarked that he may receive similar public feedback on the Salt Storage Building as the Parks Maintenance Building. Justin noted that during the summer months the building will be locked up and protected by a gate. The only time trucks will go in and out of the property will be in the early morning during the winter, or in the middle of a blizzard. Rod Mann agreed that the salt storage building will be a valuable asset to the City, and directed Justin to move forward. A budget will be created for the building and will protect the City from an OSHA complaint. Staff and Council discussed how much of the equipment and salt storage can be covered while in transition this year.

Rod Mann requested that staff put an open fence along the grassy areas where the splash pad is located, in order to channel foot traffic to the sidewalk entrances and exits. Staff agreed to research fence styles and pricing.

ADJOURNMENT

MOTION: Dennis LeBaron moved to adjourn.

Brian Braithwaite seconded the motion.
Unanimous vote. Motion carried.

Meeting adjourned at 10:37 p.m.

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JoD'Ann Bates, City Recorder

Date Approved: September 1, 2015

DRAFT

Item # 8

MINUTES
HIGHLAND CITY COUNCIL MEETING
Tuesday, August 4, 2015

Highland City Council Chambers, 5400 West Civic Center Drive, Highland, Utah 84003

PRESENT: Mayor Mark S. Thompson, conducting
Councilmember Brian Braithwaite
Councilmember Dennis LeBaron
Councilmember Tim Irwin
Councilmember Jessie Schoenfeld
Councilmember Rod Mann

STAFF PRESENT: Nathan Crane, Interim City Admin/Comm. Development Dir.
Gary LeCheminant, Finance Director
JoD'Ann Bates, City Recorder
Justin Parduhn, Public Works O&M Director
Tim Merrill, City Attorney
Josh Castleberry, Park Superintendent

EXCUSED: Brian Gwilliam, Chief of Police

OTHERS: George Ramjoue, Gil Wilburn, Kathy Hendricks, Cheryl Clyde, Jeff Clyde, Mike Privett, Brian Rustad, Michelle DeKorver, Mark Whitney, Garrett Sealy, Rob Gulbrandsen, Jeff Beer, Deanna Holland, Steve Holland, Stan Mead, Kathy Mead, Alice Andersen, Roy Andersen, Linda Olpin, Jay Olpin, Bruce Knorr, Tamara Knorr, Barbara Wilson, Karen Bennett, Staci Meacham, Stephanie Lewis, David Parra, Ashley Parra, Jim Olsen, Pat Pack, Bill Pack, Matthew Chamberlin, Brady Nowers, Charles Greenland, Dennis Likes, Kellie Johnson, Brett Johnson, Lygia Johnson, Carson Seegmiller, Bobby Seegmiller, Michael Asay, Wendy Asay, DeVirl Barfuss, Kathy Allred, Kyle Fielding, Robert Uzelac.

The meeting was called to order by Mayor Mark S. Thompson as a regular session at 7:04 p.m. The meeting agenda was posted on the *Utah State Public Meeting Website* at least 24 hours prior to the meeting. The prayer was offered by Brian Braithwaite and those assembled were led in the Pledge of Allegiance by Carson Seegmiller, a scout.

APPEARANCES:

Jeff Clyde expressed concerns with regards to the vision for the Town Center. He remarked that he wants to make sure that the Council acts upon what is right for the citizens and the City.

Kyle Fielding identified himself as a local attorney representing a resident who owns land surrounding the Town Center Zone. He requested that the Council keep residents involved with any changes done to the plans of the Town Center.

George Ramjoue, HOA President, agreed with Jeff Clyde that he would like the Council to reevaluate the Town Center General Plan. He stated that he wants answers as to why certain projects are not developing.

David Beck expressed concerns that the Town Center is getting overcrowded, and requested that amendments to the zone be made. He remarked that developers have been prioritized over the members of the community.

Robert Uzelac, an owner of a local tire store, would enjoy seeing more commercial buildings in the Town Center, and noted that this would improve the City's tax base.

PRESENTATION:

Highland Historical Committee – Charles Greenland

Charles Greenland stated that the mission statement of the Historical Committee is to "*Preserve and [share] the past of Highland City for a better present and future*". The goal of the Committee is to make Highland a better place where people feel at home and grounded in their heritage. Charles Greenland wants to honor the past by having a written history in addition to having a weekly article in the paper. Furthermore, he would like to use the lower level of the Community Center for a Highland Historical Museum. Mr. Greenland requested $800 from the City to help reach this goal.

CONSENT ITEMS:

MOTION: Approval of Meeting Minutes for City Council Regular Session – May 19, 2015

MOTION: Approval of Contract for City Administrator – Nathan Crane
Pulled by Brian Braithwaite

MOTION: Ratifying the Mayor's Appointment to the Highland City Historical Committee – Ray Buhler

MOTION: Ratifying the Mayor's Appointment to the Highland City Web and Social Media Committee – Dave Ventrano

ORDINANCE: Adopting a temporary Lane Use Regulations to Prohibit the Approval of New Residential Development for the next six months – Town Center Overlay
Pulled by Mayor Thompson

MOTION: Request from Questar Gas for an Extension of Existing Agreement for use of City Owned Property as a Staging Area – 4361 West 11000 North

MOTION: Tim Irwin moved the City Council approve the remaining Consent Items on the agenda.
Dennis LeBaron seconded the motion.
Unanimous vote, motion carried.

ACTION ITEMS:

MOTION: Approval of Contract for City Administrator – Nathan Crane
Pulled off the list of Consent Items by Brian Braithwaite.

Background: *City Council move to approve the Employee Contract for the City Administrator Position and Authorize the Mayor to sign the agreement.*

Tim Merrill explained that Cobra terminates when a temporary member of staff becomes re-employed with the City. Cobra insurance is allowed for 18 months, and during the first six months the City will pay the premium.

MOTION: Brian Braithwaite moved the City Council approve the Employee Contract for City Administrator with Nathan Crane and authorize the Mayor to sign the agreement with the clarification for Cobra terminating upon obtaining of additional insurance within the time frame and correcting the word in Section 6C, from "shall be the premium" to "shall pay the premium".

Second by Jessie Schoenfeld.
Unanimous vote, motion carried.

ORDINANCE: Adopting a temporary Lane Use Regulations to Prohibit the Approval of New Residential Development for the next six months – Town Center Overlay
Pulled off the list of Consent Items by Mayor Thompson.

Background: *Utah Municipal Code Section 10-9a-504 allows the City Council to enact a temporary land use regulation if the Council finds a compelling, countervailing public interest or the area is unregulated. The temporary land use regulation may prohibit any new development approvals. The maximum amount of time a temporary land use regulation can be in effect is six months. Temporary land use regulations do not apply to projects that have been submitted and are under review. Depending on the extent of the revisions and the desired public involvement process, staff will need assistance from a contract employee or consultant to complete the amendment within the six month time frame. The City Council should conduct a public meeting and determine if the proposed temporary land use regulation prohibiting new residential development in the Town Center Overlay Zoning District is in the best interest of the community.*

The Council should also authorize staff to select a contract employee or consultant to assist with the amendment.

Brian Braithwaite stressed that the City Council needs to keep the residents informed of changes pertaining to the Town Center, and Tim Irwin agreed.

Rod Mann clarified that no current projects will be affected by this motion.

MOTION: Tim Irwin moved the City Council approve an Ordinance adopting a Temporary Lane Use Regulation to prohibit the approval of new residential development for the next six months in the Town Center, and giving direction to the City staff to ensure the appropriate private land owners in the Town Center, surrounding residents and all residents of the City be given an opportunity to weigh in on and give input to the outcome of the Town Center and aid the Council in making a good decision.

Seconded by Dennis LeBaron.

Those voting "Aye": Rod Mann, Jessie Schoenfeld, Tim Irwin, Dennis LeBaron, Brian Braithwaite.
Motion carried.

<u>MOTION: Request to Expand the Parking Lot for Lone Peak High School by Acquiring City Owned Land – Alpine School District</u>

Background: *The Alpine School District (ASD) has approached City staff with a request to acquire additional land. The land will be used for additional parking for Lone Peak High School. ASD is requesting the property to the west of the baseball and football fields and to the west of the seminary building. The exact total acreage is unknown but will range between six to seven acres. The ASD has provided design alternatives for the area west of the seminary building. This was first discussed by the Council on March 17, 2015.*

Mayor Thompson stated that this action will be of significant benefit to the high school. However, he feels that they are currently not in a position to make a decision.

Brian Braithwaite commented that he doesn't feel anything is getting accomplished, and feels that the property exchange creates a problem rather than solving one. He is not interested in doing the trade unless a different amendment is made on the land.

MOTION: Tim Irwin moved the City Council continue this item until September 2015.

Brian Braithwaite seconded the motion.
Unanimous vote.
Motion carried.

MOTION: Selection of a Consultant for preparation of Construction Plans – Dry Creek Phase 3 Trail

Background: *Over the past several months the City Council has been discussing the status of the Dry Creek Bench Trail. On May 5, 2015, the Council directed staff to return with a phase plan for engineering work, removal and replacement of asphalt for Phase II and III or the expansion of the easements. At the July 21, 2015 staff presented a proposal to authorize the construction of the trail. Several concerns were expressed regarding the cost of construction and design. In response to these concerns staff solicited proposals from three engineering firms.*

Nathan Crane explained that the City has received additional bids and were able to gain a lower rate for the engineering of the trail. Staff recommends awarding the bid to Hansen Allen Luce as the consultant to prepare construction plans for the Dry Creek Phase III Trail.

MOTION: Tim Irwin moved the City Council approve Hansen Allen Luce as the consultant to prepare construction plans for the Dry Creek Phase III Trail.

Dennis LeBaron seconded the motion.

Unanimous vote.
Motion carried.

MOTION: Approval of a Mountain BMX Bike Track in the Highland Glen Park – Bobby Seegmiller

Background: *Bobby Seegmiller will construct a Mountain and BMX bike track at Highland Glenn Park as part of an Eagle Scout project. Mr. Seegmiller is requesting Highland City's participation through monetary, labor, and material donations. The park would be maintained by the City and volunteers.*

Carson Seegmiller stated that he would like to build a jump track, and asked if the City would be able to transport water and dirt to the site. He then turned the time over to his father, Bobby Seegmiller, to answer additional questions.

Bobby Seegmiller explained that project donors have also come forward who have expressed an interest having a BMX Mountain Bike Track in Highland City.

Tim Irwin stated that the task of an Eagle Scout is for the young man to learn and develop skills, and he that feels a fundraiser would be the best way of accomplishing this project. There was then discussion regarding water issues, and Bobby Seegmiller noted that the American Fork City Council has indicated that they would also be willing to help get water to the property as well.

Brian Braithwaite was concerned the amount of funds needed for this project, and would like to see some success from the park before putting City funds into the track. Nathan Crane had additional concerns with potential noise problems.

Bobby Seegmiller assured the Council that Carson has knocked on doors in the neighborhood, and so far all of the residents have voiced their support of the possibility of a bike trail. In

Nathan Crane used the map to show that the property is owned by the City.

MOTION: Tim Irwin moved the City Council approve the BMX Mountain Bike Track in the Highland Glen Park subject to the stipulations of the discussion.

Seconded by Brian Braithwaite
Unanimous Vote.
Motion carried.

<u>RESOLUTION: Amendments to the Personnel Policy and Procedures Manual for Highland City Employees – Adopting a Catastrophic Leave Policy</u>

Background: *The City Treasurer has experienced a catastrophic medical event and will be out of the office until at least October 1, 2015. Upon learning of the event, City employees inquired regarding the possibility of donating leave as a way to assist with the financial burden related to medical expenses and loss of income due to the exhaustion of all leave. Staff has contacted thirteen other cities regarding their catastrophic leave policies. A catastrophic leave policy allows employees to assist coworkers with life changing events. The majority of cities have a similar policy. The key issue appears to be what type of leave should be donated. If vacation or compensatory time is used for the donation, the donated hour is converted to dollars and use to compensate the recipient. If sick leave is used the policy, the donated hour is not converted to dollars. The hour is then used to compensate the recipient. The Council should determine what type of leave can be donated and adopt the resolution.*

Nathan Crane summarized the policy, which indicates that donated leave must apply to a medical condition. Furthermore, the policy states that time donated is purely voluntary on both sides. The person requesting the leave will have to use all of their acquired leave prior to using donated leave. Employees who choose to donate must have 160 hours of leave remaining after their donation. Staff's recommendation would be to allow employees to donate annual leave which would include vacation and comp time.

Brain Braithwaite asked for clarification on the hours deducted versus dollar amounts.

Nathan Crane explained that the payment for the donated hours is converted by what the donator makes before giving to the recipient. Furthermore, he explained that the City also offers a short term 30 day disability leave that kicks in the day of the event.

Rod Mann suggested that additional hours be included in order to cover a full work month of 168 hours as opposed to 160 hours.

MOTION: Rod Mann moved the City Council adopt a Resolution Amending the Personnel Policy and Procedures Manual for Highland City Employees to include a Catastrophic Leave Policy based on the changes as stated by staff and to include annual and compensatory time with a change of making the minimum total leave requirement be 168 hours.

Seconded by Tim Irwin.
Those voting "Aye": Tim Irwin, Dennis LeBaron, Brian Braithwaite, Rod Mann and Jessie Schoenfeld
Motion carried.

MAYOR, CITY COUNCIL & STAFF COMMUNICATION ITEMS

(These items are for information purposes only and do not require action or discussion by the City Council)

Park Maintenance Building – Justin Parduhn, Public Works O&M Director

Justin Pardhun, presented a PowerPoint Presentation with information regarding possible winter storage of the park equipment and comparable information for that storage. *Note: The PowerPoint Presentation is attached to the minutes for public review.*

Rod Mann mentioned several items. He first explained that when the website migration took place, not all items were properly transferred. He is of the opinion that someone could easily transfer the rest of the data, and that the website should be up and running by the end of September. Next, Rod recognized the City's Fire and Police personnel who helped to move and save items from the building. Rod then briefly discussed the annexation notification procedures. With regards to meeting minutes, Rod relayed that an upset resident requested that meeting minutes be made available for public review within 30 days. There was discussion regarding the time frame in which minutes are approved. Lastly, Rod asked staff how violations to home business licenses are handled.

Nathan Crane answered that anonymous complaints can be directed to staff, who will then investigate the situation and take action, if needed.

Brian recognized the Fling Committee, and voiced his appreciation for their efforts. He then thanked Jessie Schoenfeld personally for doing such a wonderful job.

ADJOURNMENT INTO A CLOSED EXECUTIVE SESSION

MOTION: Rod Mann moved to adjourn into a closed Executive Session.

Tim Irwin seconded the motion.
Unanimous vote. Motion carried.

ADJOURNMENT

MOTION: Tim Irwin moved to adjourn.

Rod Mann seconded the motion.
Unanimous vote. Motion carried.

Meeting adjourned at 9:57 p.m.

JoD'Ann Bates, City Recorder

Date Approved: September 1, 2015

CITY COUNCIL AGENDA REPORT

Item # 9

DATE: Tuesday, September 1, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Nathan Crane, AICP
City Administrator/Community Development Director

BY: JoD'Ann Bates,
City Recorder

SUBJECT: PUBLIC COMMENT REGARDING THE URBAN DEER CONTROL PLAN PROGRAM

STAFF RECOMMENDATION:

The City Council offer and accept public comments for the continuation of the Urban Deer Control Plan Program

BACKGROUND:

Human encroachment into traditional wildlife habitat by urban sprawl and housing subdivisions created a problem with mule deer within Highland City. Couple that with the ability of deer to adapt to their new neighbors and to multiply unchecked, problems like health concerns, property damage, ecological damage, and deer/vehicle accidents occur. Highland City determined that new management controls are needed.

Highland City Council in August of 2013 approved a Plan in conjunction with the Division of Wildlife Resources (DWR) for an Urban Deer Control Pilot Program. This program was for the 2013-2014 fall hunting seasons.

Highland City entered into an agreement with Brian Cook (resident of Highland) from Humphries Archery in American Fork, Utah, to serve as the Program Coordinator. As Program Coordinator, Mr. Cook selected a limited group of experienced bowhunters to participate in the program. Hunting locations were identifies by Highland City and hunting regulations followed the DWR Proclamation for opening dates and times.

Brian Cook made a report to the Council at the end of each season indicating the success of the program with 72 deer being taken in 2013 which were donated to a local food bank and local families, and 43 deer being taken in 2014, being donated to needy families in the area. Due to the success of the Pilot Program, DWR has adopted the Urban Deer Control Program as an official program for cities state wide to participate in upon fulfilling specific requirements.

During the approval of the plan in 2013 Highland City fulfilled all of DWR's requirements for the program, in order to continue the program Highland City is only required to accept "public comment" and apply for a Certificate of Registration. DWR has approved the program to run in conjunction with their Proclamation rules from 2015-2017. The plan, process and terms approved by the City Council in 2013 will remain the same for the new program. Changes in the language where it indicated it being a pilot program and dates will be the only changes.

Brian Cook has agreed to continue to be the Program Coordinator over the specialists and coordinate with City Staff, Lone Peak Police Department and those families in need of the donation of the meat.

FISCAL IMPACT:

Brian Cook, Program Coordinator is asking for a minimal amount of funding to help with the cost of bait (apples, salt) in order to place in preferred hunting areas, in order to help keep them and the deer as far away from residents as possible.
Approx. $250.00

ATTACHMENTS:

- 2015 Urban Deer Control Program

HIGHLAND CITY URBAN DEER CONTROL PLAN

Introduction

Human encroachment into natural environments traditionally reserved for wildlife continues to create human–wildlife problems with little end in sight. Urban sprawl, housing developments and new roads and highways destroy more and more acres of animal habitat each year. Wild area losses are alarming. Utah is not immune from this problem.

The adaptability of mule deer to human encroachment is surprising to many residents of new subdivisions. Deer not only accept their new human neighbors but have flourished in an environment never before believed possible. Deer feeding in backyards, flower gardens, parks, and playgrounds and along suburban byways are now a fairly common occurrence. Any little thicket or woodlot can hold mule deer year-round.

Many new suburbanites don't know how to address the backyard deer situation. They see deer, at first, as beautiful animals indicative of the wild and natural state of the region in which we live. They are correct in this assessment. But, as the number of deer increases the problems they cause increase, as well. Deer often consume expensive ornamental plants, vegetable gardens, flowers and shrubs. Small trees are killed by antler rubs made by bucks. Deer/vehicle accidents cause thousands of dollars of damage and raise the potential for serious injury to drivers and passengers. It doesn't take long for suburbanites to identify deer as "a problem."

Left to breed and populate an urban area, mule deer can quickly become a problem as many municipalities in America have found out the hard way. Since the discharge of firearms and other projectile-firing devices has been banned within most suburban communities for safety reasons, deer populations will grow, unchecked. One breeding pair of deer could lead to 40 deer in seven years!

Many forward-looking city councils have come to accept the use of trained veteran bowhunters to maintain deer herds. Bowhunting has an impeccable record of safety, is an efficient and proven method of killing big game and is quiet and unobtrusive – the perfect solution to urban deer problems.

Highland City has asked a group of certified bowhunters to remove certain problem deer from within the Highland City limits. The goal of this program is to safely, quietly and efficiently remove these deer. In doing so, all bowhunters must comply with DWR's rule for urban deer control and the Highland City COR.

Purpose of Plan

Human encroachment into traditional wildlife habitat by urban sprawl and housing subdivisions has created problems mule deer within Highland City. Couple that with the ability of deer to adapt to their new neighbors and to multiply unchecked and really big problems like health concerns, property damage, ecological damage, and deer/vehicle accidents occur. Highland City has determined that new management controls are needed.

History has shown that the bowhunting option for removal of urban deer is more effective than trapping and relocating deer, birth control of deer, special fencing, deer repellents, firearms

hunting and using sharpshooters. These other methods have been found to be impractical, prohibitively expensive, unpopular and limited in application. Properly implemented bowhunting is the key to success.

Bowhunting is a safe and efficient method of managing the growing numbers of urban deer. The long-term survival of this program, however, depends upon each urban bowhunting specialist acting responsibly. Each hunter must play by the rules and always maintain the highest level of conduct while hunting. He/she must show respect for private landowners and their property. Hunters must maintain impeccable landowner relations if the program is to work.

Goals

- Improve safety on major roads and highways
- Significantly reduce deer numbers within city limits
- Promote safe and cost effective deer removal, as a public service to the local community
- Reduce property damage caused by urban deer

Deer Removal Methods

Lethal removal using archery equipment is the only method recommended by Highland City to remove deer during the 2015-2017 program season.

Bowhunter Selection Process

Highland City has asked Brian Cook from Humphries Archery in American Fork, Utah, to serve as the Program Coordinator. Bowhunters who want to participate in the program should contact Highland City to be placed on a list. As Program Coordinator, Mr. Cook will select a limited group of experienced bowhunters to participate in the program. Prior to being certified as an "urban bowhunting specialist," each hunter selected by Mr. Cook must demonstrate that they understand the applicable rules and pass a shooting proficiency test. Once that is completed, the Program Coordinator will certify the hunter as an urban bowhunting specialist.

Bowhunter Participation Requirements

Each urban bowhunting specialist that is selected and qualified to participate in this program must:

1. Always put your best foot forward in appearance and conduct, and always be considerate of others.
2. Never drink alcohol or use drugs before or while hunting.
3. Only hunt in areas pre-approved by the Program Coordinator and Highland City.
4. Make sure no other bowhunter is already scheduled to hunt the area you are planning to hunt.
5. Respect landowners and their land. Obtain prior-written approval to hunt on private land. Assume that landowners are concerned about the deer, your bow and arrows being safe, parking problems, neighborhood relations.
6. Know state, county and city hunting regulations and abide by them. Be familiar with the requirements and obligations of the Highland Urban Deer Control Plan.
7. Before hunting, know where you can take a safe shot and where you may not.

8. Be certified as an urban bowhunting specialist and have a valid written authorization and urban deer control permit issued by Highland City.
9. Only hunt from a designated blind/stand. Always wear a certified safety harness when hunting from a stand. Only high downward angling shots are allowed for maximum effectiveness and safety, and guaranteed arrow recovery.
10. Install your stand to provide shots that will be 40 yards distance or less.
11. In order to achieve close shots, baiting is permitted.
12. Take only responsible shots at deer that are relaxed and not on alert. Don't shoot unless you're certain that your arrow will strike the vitals and produce a quick and ethical kill.
13. Razor sharp broad heads are mandatory.
14. Only hunt with arrows that have a unique fletching and crest pattern that have been pre-approved by the Program Coordinator.
15. Retrieve all arrows and arrow parts shot at deer.
16. Once the deer is struck, do not trail it until you're sure it's down for good. It is your responsibility to ensure that no animal will travel very far after being hit.
17. Do not trespass on neighboring land to retrieve a deer without permission. Contact the Program Coordinator prior to seeking permission to initiate "retrieval trespass only". The local conservation officer and/or police may be of assistance when retrieval trespass cannot be obtained.
18. Deer hit or killed but not retrieved must be reported to the Program Coordinator and Highland City.
19. Properly tag the deer immediately upon recovery. Promptly notify the Program Coordinator of all kills and submit the Deer Control Harvest Survey to Highland City for their records.
20. Avoid confrontations with neighbors and others.
21. Keep a low profile. You will be under the microscope, so be as inconspicuous as possible. When walking to and from your hunting area, try to minimize the appearance that you are hunting.
22. All evidence of the deer must be removed from the property. Field dress the deer at another permissible site.
23. Be discreet when removing a deer from the property. You may wish to cover the deer with a plastic tarp while it's being removed. Most people don't like seeing a dead animal so keep it out of sight as much as possible. You may wish to use an alternate, less conspicuous, route when removing a deer. Think about removal before your hunt.
24. Stay on your assigned property during the hunt and when accessing the hunting area. Do not take shortcuts across ground where you don't have permission to trespass.
25. Don't invite friends to hunt with you. Certification is for you and you only.
26. Avoid confrontations, no matter the circumstances. Utah has a hunter harassment law that protects you while engaged in legal hunting pursuits but it is best not to argue with an antagonist. You may wish to report harassment to local authorities if confrontations continue.
27. The object of the program is to help control deer numbers inside the Highland City limits. Bowhunters can only accomplish this goal by shooting deer. If a buck is inadvertently harvested, the antlers must be surrendered to the Highland City for temporary storage until DWR can collect them.
28. The hunter is allowed to keep the animal if desired. Donations of venison are also encouraged. If the hunter does not desire to keep or donate the animal, then the hunter will take the animal to a game processor as designated by Highland City.

Bowhunters who are selected and qualified to participate in this program play a vital role in solving the problem of managing the ever-growing urban deer population. They must, however, maintain safe, ethical hunting practices and be fully responsible for their actions if they're to be recognized as the best option for controlling urban deer. Mistakes and/or irresponsible behavior could jeopardize the program.

Hunter Identification Process

Cards will be issued by Highland City, to all certified bowhunting specialists.

Conditions and Restrictions for Baiting and Spotlighting

Bowhunters may use bait to facilitate safe and effective deer removal activities at their shooting locations. They may use a flashlight while walking to and from their stand/area in low light to distinguish themselves from intruders. The casting of a light across the landscape to detect deer is illegal. Highland City will authorize spotlighting to facilitate carcass recovery efforts.

Hunting Locations and Time Periods

Hunting locations have been identified by Highland City – See attached map

Bowhunters will be allowed to remove deer from ½-hour before sunrise to ½-hour after sunset, unless stated otherwise on the urban deer control permit.

The 2015-2017 season for the urban deer control hunt will follow the DWR Proclamation for opening dates for general archery season and continue through December 31st of each year.

Written Authorization and Permitting Process

All certified bowhunting specialists must receive a written authorization and an urban deer control permit from Highland City prior to participating in deer removal activities (see attached copies of the written authorization and permit/tag). Upon being successful, the bowhunter must notch the tag to indicate the sex, month and date of kill, detach the tag from the permit and attach it to the carcass. The tag must remain attached to the carcass for processing. Also, the bowhunter must fill out and return the Deer Control Harvest Survey portion of the permit to Highland City.

Public Comment heard by Highland City Council: September 1, 2015.

CITY COUNCIL AGENDA REPORT

Item # 10 & 11

DATE: September 1, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Nathan Crane, AICP
City Administrator/Community Development Director

SUBJECT: PUBLIC HEARING AND ORDINANCE: ANNEXATION OF 35.50 ACRES OF REAL PROPERTY LOCATED AT THE NORTHEAST CORNER OF HIGHLAND BOULEVARD AND 11800 NORTH.

STAFF RECOMMENDATION:

Review the request to annex 35.50 acres of real property located at the northeast corner of Highland Boulevard and 11800 North.

BACKGROUND:

On February 3, 2015 the City Council adopted a resolution declaring an intent to annex the above referenced property. The Council held a public hearing on March 17, 2015 regarding the proposed annexation. No one spoke in favor of or in opostion to the request.

The property owner submitted an application for a Planned Development (PD) District which has been withdrawn. A request for the property to be zoned R-1-20 (Single Family Residenital) will be considered as a separate agenda item.

An Annexation Policy Plan was approved by the City Council in June 2002. Infrastructure studies and planning were completed for the annexation area. These plans/studies identify the infrastructure needs to serve the areas identified for future annexation. The proposed annexation is within the area identified for future annexation and has been planned for low density residential.

FISCAL IMPACT:

Unknown

ATTACHMENTS:

1. Ordinance
2. Vicinity Map
3. Annexation Plat

ATTACHMENT A

ORDINANCE NO. 0-2015 -**

AN ORDINANCE OF HIGHLAND CITY, EXTENDING THE CORPORATE LIMITS OF HIGHLAND CITY TO INCLUDE THE Ronald and Karin Carling and the Kipley and Cherlyn Siggard PROPERTIES. THE PROPERTY IS 35.50 ACRES IN AREA AND IS GENERALLY LOCATED at THE NORTHEAST CORNER OF HIGHLAND BOULEVARD AND 11800 NORTH.

PREAMBLE

WHEREAS, The City Council of Highland City has received a request from Ronald and Karin Carling and the Kipley and Cherlyn Siggard (Property Owner) of property located within the annexation policy plan of Highland City; and

WHEREAS, the Property Owner desires to have their property annexed into the corporate limits of Highland City; and

WHEREAS, the petition is signed by the owners of a majority of the real property and the owners of more than one-third in value of all real property within the territory to be annexed as shown by the last assessment rolls; and

WHEREAS, the petitioner has caused an accurate plat to be made and certified by a licensed engineer, or a licensed surveyor, to be approved by the City prior to filing; and

WHEREAS, the Highland City Council, on March 3, 2013, accepted said petition for the purposes of review and hearings; and

WHEREAS, the Highland City Council, after examining said petition, having the petition reviewed by the administration staff, and having considered the circumstances thereof at a properly advertised and noticed public hearing, found said proposed annexation to be consistent and in keeping with the City's Annexation Plan projecting municipal expansion; and

WHEREAS, no objection or protest to such annexation has been filed with the Utah County Boundary Commission.

NOW THEREFORE BE IT ORDAINED, by the City Council of Highland City, Utah:

Section 1. Annexation. The Highland City limits are hereby enlarged and extended so as to include the property of Ronald and Karin Carling and the Kipley and Cherlyn Siggard, containing 35.50 acres of unincorporated territory in Utah County, State of Utah. Said parcel is more particularly described as set forth on Exhibit "A" attached hereto.

Section 2. General Jurisdiction. Be it further ordained and declared that the said tract described above in Section 1 shall henceforth be within the Highland City corporate limits and shall be zoned as provided in Section 2. All ordinances, jurisdictions, rules, and obligations of, or pertaining to, Highland City are extended over, and made applicable and pertinent to the above described tract of land.

Section 3. Filings and Notice. Upon the passage of this ordinance, the City Recorder of

Highland City is hereby directed to file with the Utah County Recorder, a copy of the annexation plat duly certified and acknowledged together with a certified copy of this ordinance. The City Recorder is further directed to provide notice under the provisions of Utah Code.

Section 4. Effective Date. This ordinance shall become effective immediately upon the date of passage.

ADOPTED by the City Council of Highland City, Utah, this 1st day of September 2015.

HIGHLAND CITY, UTAH

_____

Mark S. Thompson, Mayor

ATTEST:

_____

JoD'Ann Bates, City Recorder

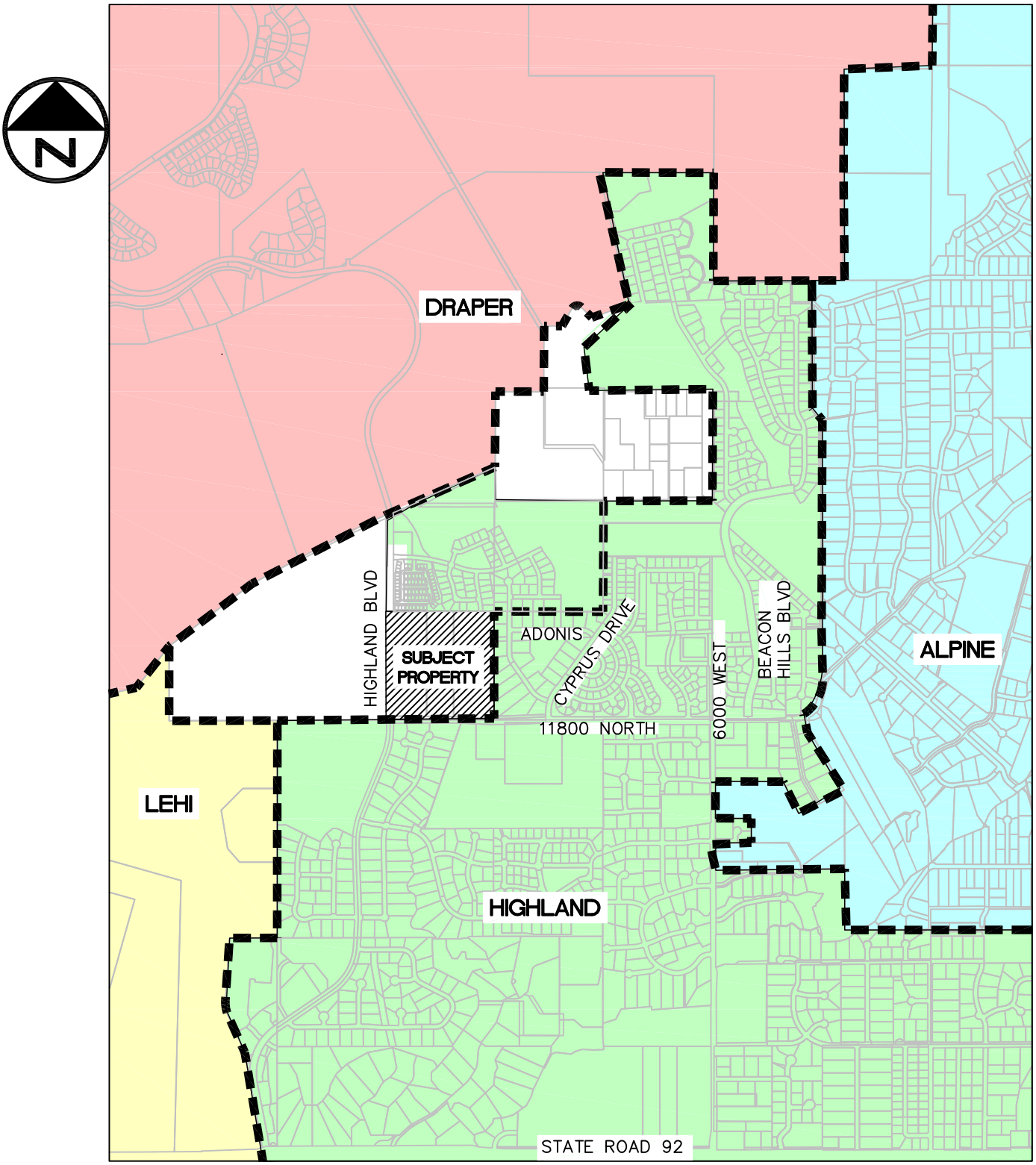
COUNCILMEMBER	YES	NO
Brian Braithwaite	☐	☐
Tim Irwin	☐	☐
Dennis LeBaron	☐	☐
Rod Mann	☐	☐
Jessie Schoenfeld	☐	☐

EXHIBIT A

BEGINNING AT THE NORTHEAST CORNER OF SECTION 27, TOWNSHIP 4 SOUTH, RANGE 1 EAST SALT LAKE BASE AND MERIDIAN AND RUNNING THENCE SOUTH 00°09'34" WEST ALONG THE SECTION LINE 1327.05 FEET TO THE SOUTH LINE OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 27; THENCE SOUTH 89°50'02" WEST ALONG SAID SOUTH LINE 1230.12 FEET TO THE EAST RIGHT OF WAY LINE OF HIGHLAND BOULEVARD; THENCE NORTH 00°07'29" EAST ALONG SAID EAST RIGHT OF WAY LINE 1328.06 FEET TO THE NORTH LINE OF SAID SECTION 27; THENCE NORTH 89°52'52" EAST ALONG SAID NORTH LINE 1230.91 FEET TO THE POINT OF BEGINNING.

CONTAINS 35.50 ACRES OR 1,633,558.12 S.F.

VICINITY MAP



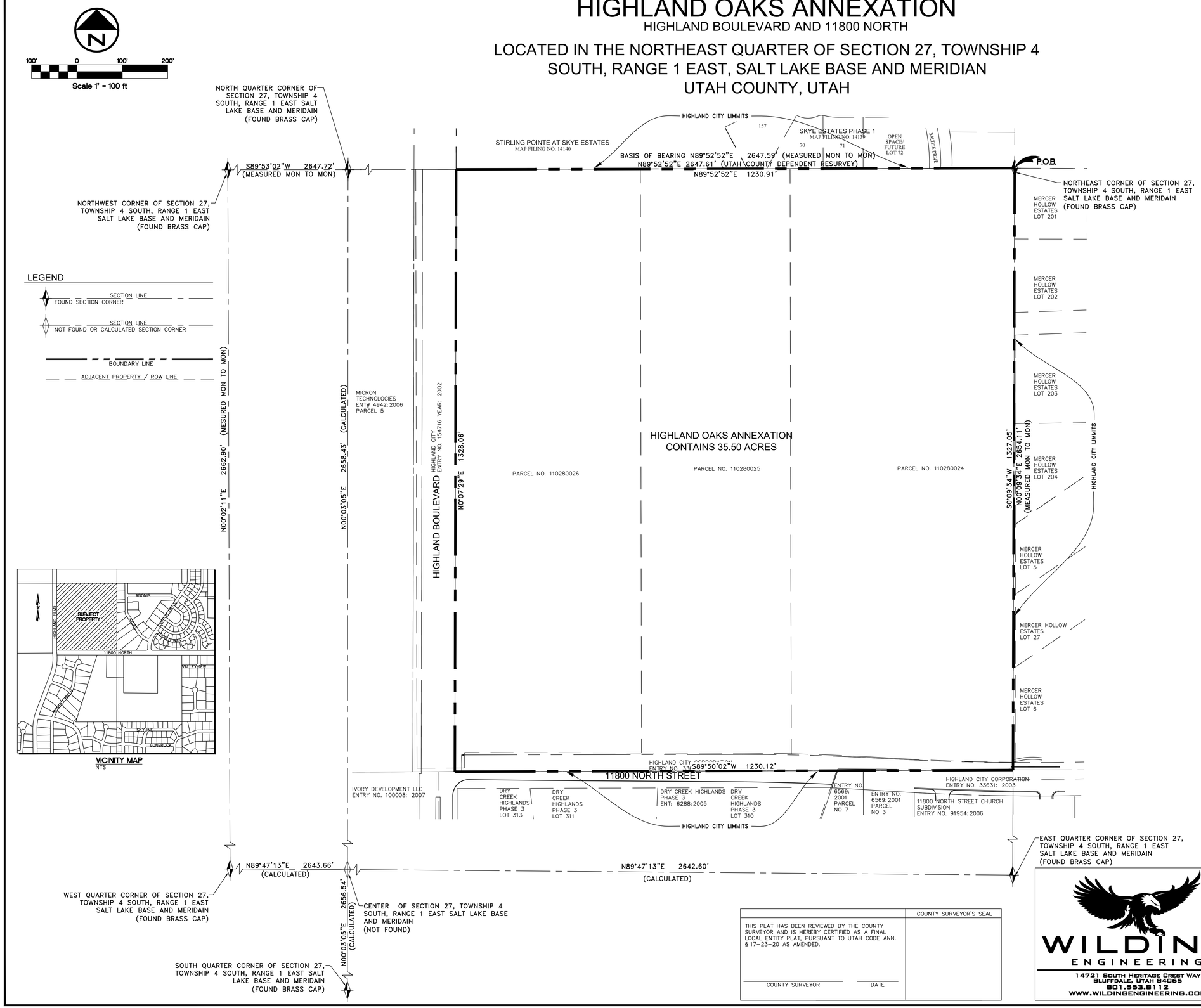
WILDING
ENGINEERING
14721 South Heritage Crest Way
Bluffdale, Utah 84065
801.553.8112
www.wildingengineering.com

G:\DATA\14124 Highland Oaks\dwg\Vicinity Map.dwg
PLOT DATE: Dec 09, 2014

HIGHLAND OAKS ANNEXATION

HIGHLAND BOULEVARD AND 11800 NORTH

LOCATED IN THE NORTHEAST QUARTER OF SECTION 27, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN
UTAH COUNTY, UTAH



SURVEYOR'S CERTIFICATE:

I, SCOTT W. DERBY, DO HEREBY CERTIFY THAT I AM A REGISTERED LAND SURVEYOR, AND THAT I HOLD CERTIFICATE NO. 186126 AS PRESCRIBED BY THE LAWS OF THE STATE OF UTAH. I FURTHER CERTIFY THAT BY THE AUTHORITY OF THE OWNERS, I HAVE MADE A SURVEY OF THE TRACT OF LAND SHOWN ON THIS MAP, AND THAT THE SAME HAS BEEN CORRECTLY SURVEYED AS SHOWN ON THIS MAP.

DATE

SURVEYOR
(SEE SEAL BELOW)

BOUNDARY DESCRIPTION

BEGINNING AT THE NORTHEAST CORNER OF SECTION 27, TOWNSHIP 4 SOUTH, RANGE 1 EAST SALT LAKE BASE AND MERIDIAN AND RUNNING THENCE SOUTH 00°09'34" WEST ALONG THE SECTION LINE 1327.05 FEET TO THE SOUTH LINE OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 27; THENCE SOUTH 89°50'02" WEST ALONG SAID SOUTH LINE 1230.12 FEET TO THE EAST RIGHT OF WAY LINE OF HIGHLAND BOULEVARD; THENCE NORTH 00°07'29" EAST ALONG SAID EAST RIGHT OF WAY LINE 1328.06 FEET TO THE NORTH LINE OF SAID SECTION 27; THENCE NORTH 89°52'52" EAST ALONG SAID NORTH LINE 1230.91 FEET TO THE POINT OF BEGINNING.

CONTAINS 35.50 ACRES OR 1,633,558.12 S.F.

BASIS OF BEARING

THE BASIS OF BEARING FOR THIS SURVEY IS NORTH 89°52'52" EAST FROM THE FOUND BRASS CAP MONUMENT MARKING THE NORTH QUARTER CORNER OF SECTION 27 TO THE FOUND BRASS CAP MARKING THE NORTHEAST CORNER OF SECTION 27, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN.

ACCEPTANCE CERTIFICATE

ACCEPTANCE BY LEGISLATIVE BODY

THIS IS TO CERTIFY THAT WE_____ HAVE RECEIVED A PETITION SIGNED BY A MAJORITY OF THE OWNERS OF THE TRACT SHOWN HEREON REQUESTING THAT SAID TRACT BE ANNEXED TO THE CITY OF HIGHLAND AND THAT A COPY OF THE ORDINANCE HAS BEEN PREPARED FOR FILING HEREWITH ALL IN ACCORDANCE WITH THE UTAH COUNTY ANNOTATED (1953) 10-2-401 TO 10-2-424 AS REVISED AND THAT WE HAVE EXAMINED AND DO HEREBY APPROVE AND ACCEPT THE ANNEXATION OF THE TRACT AS SHOWN AS PART OF SAID CITY AND THAT SAID TRACT OF LAND IS TO BE KNOW HEREAFTER AS THE _____ ANNEXATION.

DATED THIS _____ DAY OF _____, A.D. 20_____

ATTEST _____
CLERK-RECORDER

THIS PLAT HAS BEEN REVIEWED BY THE COUNTY SURVEYOR AND IS HEREBY CERTIFIED AS A FINAL LOCAL ENTITY PLAT, PURSUANT TO UTAH CODE ANN. § 17-23-20 AS AMENDED.

COUNTY SURVEYOR

DATE

COUNTY SURVEYOR'S SEAL

WILDING ENGINEERING
14721 SOUTH HERITAGE CREST WAY
BLUFFDALE, UTAH 84065
801.553.8112
WWW.WILDINGENGINEERING.COM

HIGHLAND OAKS ANNEXATION

LOCATED IN THE NORTHEAST QUARTER OF SECTION 27, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN
UTAH COUNTY, UTAH

SURVEYOR'S SEAL	CITY ENGINEER SEAL	CLERK-RECORDER SEAL
PROFESSIONAL LAND SURVEYOR No. 186126 SCOTT W. DERBY STATE OF UTAH		

CITY COUNCIL AGENDA REPORT

Item # 12

DATE: September 1, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Nathan Crane, AICP
City Administrator/Community Development Director

SUBJECT: ORDINANCE: ESTABLISHING THE ZONING ON A PARCEL OF RECENTLY ANNEXED LAND (Z-15-01).

STAFF RECOMMENDATION:

The City Council should hold a public hearing debate the issue, draft findings and do one of the following:

1. **DENY** the application.
2. **APPROVE** the application with stipulations to address the maximum number of lots and development on sensitive lands.
3. **CONTINUE** the application to study the city wide impact of using R-1-20.
4. **CONTINUE** the application to allow the applicant to draft stipulations that address the maximum number of lots and development on sensitive lands.

BACKGROUND:

The property is 35.50 acres and is owned by Cherylin and Kipley Siggard and Karin and Ronald Carling. The applicant is Rob Gulbrandsen.

The site is currently located in Utah County and the applicant has applied for annexation. The request for annexation will be considered as a separate agenda item.

The property is not included in the General Plan Land Use Map. The property is included in the Highland City Annexation Plan that was adopted in 2007.

The applicant has withdrawn his application for a Planned Development (PD) District.

Zoning and annexation are legislative processes.

SUMMARY OF REQUEST:

1. The request is to zone approximately 35.50 acres to R-1-20 (Single Family Residential) upon annexation.

2. The applicant has provided a concept plan that shows a 61 lot single family subdivision. The

proposed density is 1.61 units per acre. The concept plan shows 2 foot contours. Staff has not reviewed the concept plan. The number of lots and the lot configuration may change during the review process.

3. The minimum lot size is 20,000 square feet and the minimum lot width is 115 feet. The maximum number of lots allowed on this property in the R-1-20 District is 79.

4. Primary access to the site will be available from Highland Boulevard and 11800 North. All internal roadways will be public.

5. Utilities will need to be extended to the site to serve the property. All costs associated with these extensions will be the responsibility of the developer. There is capacity in the existing system to serve the development if the sanitary sewer connects to the TSSD line in Highland Boulevard.

CITIZEN PARTICIPATION:

Notice of the June 16, 2015 Neighborhood meeting was mailed to all property owners within 500' within 10 days of the meeting. Thirty-three residents attended the meeting. The developer has provided a summary of the meeting (Attachment 2).

Notice of the July 12, 2015 Planning Commission meeting was published in the Daily Herald on June 14, 2015. Notice of the meeting was also mailed to all property owners on July 13, 2015. Staff met with two residents who have expressed concern with the project.

Notice of the September 1, 2015 City Council meeting was published in the Daily Herald on August 16, 2015. Notice of the meeting was also mailed to all property owners on August 17, 2015. No comments have been received.

ANALYSIS:

General Plan

- There are several goals within the general plan that are applicable to the request:
    - Land Use
        - Maintain the established land use pattern of development in Highland City
        - Preserve critical open spaces and trail corridors
        - Ensure new annexations are consistent with and compliment the established land use patterns
    - Environmental and Natural Systems
        - Protect areas from development that are unsuitable for less suitable for development
        - Utilize unsuitable or less suitable lands for open space and trail corridors

R-1-40 (Single Family Residential) District

- The R-1-40 District is the density based district and not a lot size district. The number of lots permitted on property is determined by dividing the number of acres by 40,000 square feet. In other words one lot is allowed for every 40,000 square feet of land area. Subdivisions are allowed to have up to 25% of the lots between 20,000 to 30,000 square feet. All other lots are required to be greater than 30,000 square feet. As a result, there are lots in the R-1-40 District that vary from 20,000 square feet to over an acre.

- In addition, past City Councils have approved open space subdivisions. Generally, the minimum lot size is 14,000 square feet with a minimum average of 16,000 square feet for the subdivision. Thirty percent of the land area is required to be open space and densities do not exceed 1.4 units per acre. Based on a preliminary analysis done in 2013 the average density of all open space subdivisions are 1.6 units per acre. Further study would be needed to confirm these numbers.

- Because of the varying lot sizes, there is a misconception that the density in Highland is higher than what it actually is. Staff believes that justification is needed to exceed densities above the R-1-40 District.

Zoning and the R-1-20 (Single Family Residential) District

- The objective of the R-1-20 District is outlined in Section 3-4201 and summarized as follows:

    - Support medium low density residential environment within the City.
    - Create transitional areas between higher density zones in adjacent cities and development in Highland.
    - Establish transition between higher densities in Highland and lower densities where practical.
    - Better manage land use on properties not suited to lower density zones.
    - Create areas for people who do not want large animals or large lots.

- The R-1-20 District has not been used extensively within Highland. The primary areas it has been used is the south side of 9600 North, the Alpine Country Club and other non-conforming areas. Non-conforming areas are lots that do not meet the minimum lot size. Many of these lots were approved in the County prior to incorporation of the City.

- To staffs knowledge, the R-1-20 District has not been used for newly annexed areas.

- The maximum density in the R-1-40 District, excluding overlay districts, is one unit per 40,000 square feet. The maximum number of lots currently permitted is 39 lots or 1.06 units per acre. The maximum density in the R-1-20 District is one unit per 20,000 square feet. A maximum of 79 lots or 2.15 units per acre would be permitted by the R-1-20 District.

- The concept plan shows a 61 lot subdivision for a density of 1.66 units per acre. Staff has not reviewed the concept plan. The number of lots and the lot configuration may change during the review process.

Existing Standards Relating to Development on Sensitive Lands

- The site is relatively hilly with a natural drainage and scrub oak. A concept plan has been provided that shows two foot contours. The slope in some areas is as much it appears that a significant amount of grading will be needed to install the infrastructure and build homes. In addition, it appears that several lots have limited building pads.

- Unfortunately, there are relatively few development standards in the Development Code and Public Improvement Standards that relate to the development of land on slopes, adjacent to natural drainages and natural vegetation. However, when an applicant applies for annexation and zoning it provides an opportunity for the Planning Commission and City Council to address these issues. The Planning Commission should determine whether or not this is needed before making a recommendation to the City Council.

Surrounding Land Uses

- Sky Estates and Sterling Pointe abut the project on the north side. The site is zoned PD-1. Sterling Pointe is an age restricted community for seniors. The density of the Sky Estates single family development is 2.3. The property to the south is zoned R-1-40 and is the Dry Creek Highlands. This subdivision is an R-1-40 subdivision. The property to the east is in Utah County. The property to the west is the Mercer Hollow subdivision and is zoned R-1-40. This area was originally part of the Highland Hills Development. However, the plat was revised and includes lots between 0.5 acres and 1.18 acres.

CONCLUSION:

Based upon the public input received during the public hearing for the proposed PD District, surrounding property owners would like to see larger lots at this location. The R-1-20 District provides for a minimum lot size of 20,000 square feet. However, R-1-20 District has been restricted to limited areas in the City. Further, the R-1-20 District was not intended to apply to new large developments or newly annexed areas. The decision to allow R-1-20 in this instance should be deliberated carefully as there may be unintended consequences in the future. In addition, the R-1-20 District does not allow the City to adequately address development on sensitive lands.

Staff has completed two analyses regarding the impact on infrastructure using the R-1-20 District. The following is a summary of the analysis:

- Staff estimates that there would be an additional 1,112 lots in the City if the vacant land was developed as R-1-20 rather than R-1-20.
- Storm drain as handled by each developer wouldn't be a problem. However, the increase to impervious areas would be more Sumps/Detention facilities for the City to maintain.
- Limited impact on the culinary water system, the system is robust with looping to take more development.
- There would be limited impact on the pressurized irrigation as the demand would likely decrease with less irrigated acreage overall.

- Additional upgrades to the sewer lines and capacity may be required sooner in the northwest portion of the City than originally planned. In other areas of the City there likely wouldn't be a large impact as development is spread out into different basins that ultimately fall to the TSSD Trunk Lines.

Annexation and zoning are legislative processes. Each application needs to be evaluated on its own merits. The decision is not a choice between a PD Zone and an R-1-20 Zone or whether or not a concept plan "looks good". Rather the decision should be based on the following:

1. Is the R-1-20 District consistent with the goals and objectives of the General Plan?
2. Is the proposed zoning the best short and long term interest of the City?
3. Is the R-1-20 District the appropriate district or should the site have a different district?
4. What impact will there be on future development if R-1-20 is approved at this location?
5. How should the steep slopes, vegetation, and drainage ways be addressed?
6. Are additional standards needed to address steep slopes, vegetation, and drainage ways?

PLANNING COMMISSION ACTION:

The Planning Commission held a public hearing on July 28, 2015 and voted 5-0 to recommend approval of the request with the following stipulations (Attachment 7):

1. The development would have 61 lots or fewer in the R-1-20 District
2. A portion of Lot 8 will be dedicated to the city for the purpose of continuing the trail to connect the streets
3. Include a minimum 30-foot rear lot setback for Lots 13-32 for purposes of existing drainage, or for the lots to the south where the drainage must be relocated, and accept the offer to maintain existing shrubbery and plant life in the sensitive lands, and that the relocation would be sensitive to not disturb any more scrub oak than is necessary for the construction of the flow line in order to retain the natural beauty of the area.

RECOMMENDATION:

The City Council should hold a public hearing debate the issue, draft findings, and do one of the following:

1. **DENY** the application.
2. **APPROVE** the application with stipulations to address the maximum number of lots and development on sensitive lands.
3. **CONTINUE** the application to study the impact of using R-1-20.
4. **CONTINUE** the application to allow the applicant to draft stipulations that address the maximum number of lots and development on sensitive lands.

ATTACHMENTS:

Attachment 1 – Draft Ordinance
Attachment 2 – Proposed Development
Attachment 3 – Neighborhood Meeting Summary

Attachment 4 – Zoning Map
Attachment 5 – General Plan Land Use Map
Attachment 6 – Potential R-1-20 Locations
Attachment 7 – Draft Minutes of the July 28, 2015 Planning Commission Meeting

ATTACHMENT A

ORDINANCE NO. 2015-**

AN ORDINANCE OF THE HIGHLAND CITY COUNCIL AMENDING THE OFFICIAL ZONE MAP OF HIGHLAND CITY FOR APPROXIMATELY 35.50 ACRES OF LAND GENERALLY LOCATED AT THE NORTHEAST CORNER OF HIGHLAND BOULEVARD AND 11800 NORTH AS SHOWN IN FILENAME (Z-15-01), ZONING SUCH PROPERTY TO R-1-20 RESIDENTIAL AND IMPOSING CONDITIONS UPON SUCH CHANGE.

WHEREAS, the Highland City Council desires to amend the Official Zone Map of Highland City; and

WHEREAS, all due and proper notices of public hearings and public meetings on this Ordinance held before the Highland City Planning Commission (the "Commission") and the Highland City Council (the "City Council") were given in the time, form, substance and manner provided by Utah Code Section 10-9a-205; and

WHEREAS, the Commission held public hearing on this Ordinance on July 28, 2015; and

WHEREAS, the City Council held a public hearing on this Ordinance on September 1, 2015.

NOW, THEREFORE, BE IT ORDAINED BY THE Highland City Council as follows:

SECTION 1. That ± 35.50 acres of certain real property generally located at Highland Boulevard and 11800 North more particularly described and depicted on "Exhibit A", attached and incorporated herein by reference is hereby zoned R-1-20 Residential subject to the following conditions:

1. The maximum number of lots shall not exceed sixty-one.
2. A portion of Lot 8 will be dedicated to the city for the purpose of continuing the trail to connect the streets.
3. Include a minimum 30-foot rear lot line setback for Lots 13-32 for purposes of existing drainage, or for the lots to the south where the drainage must be relocated, and accept the offer to maintain existing shrubbery and plant life in the sensitive lands, and that the relocation would be sensitive to not disturb any more scrub oak than is necessary for the construction of the flow line in order to retain the natural beauty of the area.

These conditions shall run with the land, and shall apply until such time, if any, that the property is re-zoned either by failure to comply with the conditions or further zoning action by the City Council.

SECTION 2. This zone map amendment is predicated upon compliance with the conditions in Section 1. In the event any condition is violated or unfulfilled, this Ordinance shall become null and void and the zone designation for all of the subject properties shall revert to the R-1-40 Zone.

SECTION 3. That the Mayor, the City Administrator, the City Recorder and the City Attorney are hereby authorized and directed to execute all documents and take all steps necessary to carry out the purpose of this Ordinance.

SECTION 4. This Ordinance shall take effect immediately upon its first posting or publication.

SECTION 5. If any provision of this Ordinance is for any reason held by any court of competent jurisdiction to be unenforceable, such provision or portion hereof shall be deemed separate, distinct, and independent of all other provision and such holding shall not affect the validity of the remaining portions of this Ordinance.

PASSED AND ADOPTED by the Highland City Council, September 1, 2015.

HIGHLAND CITY, UTAH

_____
Mark S. Thompson, Mayor

ATTEST:

_____
JoD'Ann Bates, City Recorder

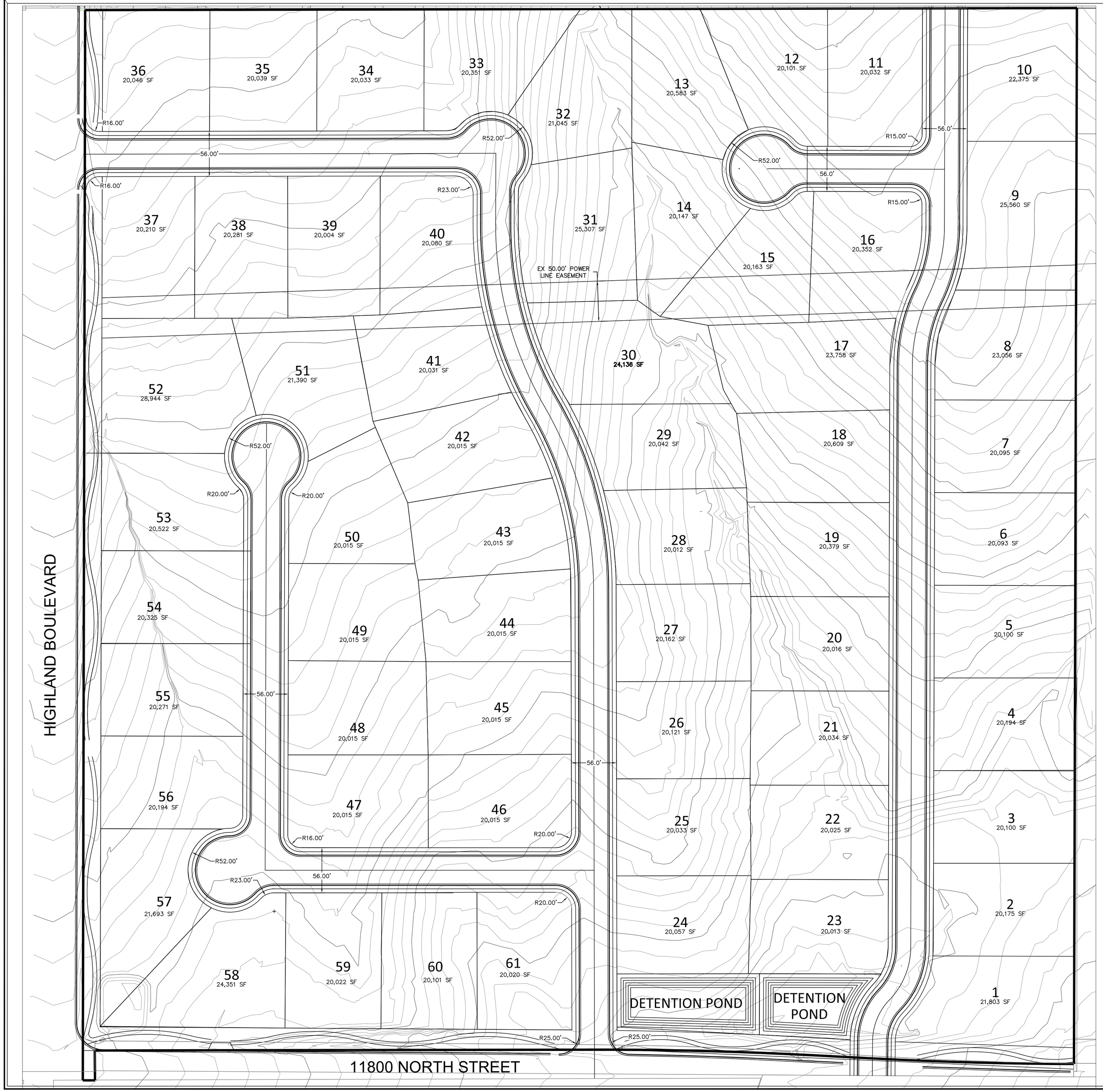
COUNCILMEMBER	YES	NO
Brian Braithwaite	☐	☐
Tim Irwin	☐	☐
Dennis LeBaron	☐	☐
Rod Mann	☐	☐
Jessie Schoenfeld	☐	☐

Exhibit A

BEGINNING AT THE NORTHEAST CORNER OF SECTION 27, TOWNSHIP 4 SOUTH, RANGE 1 EAST SALT LAKE BASE AND MERIDIAN AND RUNNING THENCE SOUTH 00°09'34" WEST ALONG THE SECTION LINE 1327.05 FEET TO THE SOUTH LINE OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 27; THENCE SOUTH 89°50'02" WEST ALONG SAID SOUTH LINE 1230.12 FEET TO THE EAST RIGHT OF WAY LINE OF HIGHLAND BOULEVARD; THENCE NORTH 00°07'29" EAST ALONG SAID EAST RIGHT OF WAY LINE 1328.06 FEET TO THE NORTH LINE OF SAID SECTION 27; THENCE NORTH 89°52'52" EAST ALONG SAID NORTH LINE 1230.91 FEET TO THE POINT OF BEGINNING.

CONTAINS 35.50 ACRES OR 1,633,558.12 S.F.

Attachment 2



HIGHLAND OAKS

CONCEPT PLAN

N

60' 0 60' 120'

Scale 1" = 60 ft

WILDING ENGINEERING

14721 South Heritage Crest Way
Bluffdale, Utah 84065
801.553.8112
www.wildingengineering.com

DRAWING NOTES:
GENERAL NOTES:
1. THIS SITE IS ZONED AS R-1-20
2. THIS CONCEPT CONTAINS 61 HALF ACRE LOTS

G:\DATA\14124 Highland Oaks\dwg\XR-SITE-CDC-26 HALF ACRES 61 LOTS PRINT.dwg
PLOT DATE: Jul 02, 2015

NO.	REVISION	DATE

PROJECT INFORMATION

HIGHLAND OAKS

CONCEPT PLAN

11800 NORTH & HIGHLAND BLVD
HIGHLAND, UTAH

DRAWN	CHECKED	PROJECT #
DCC	MEC	14124

DATE 07/02/2015

SCALE 1" = 60'

SHEET C101

ENGINEER'S STAMP

HIGHLAND OAKS

CONCEPT PLAN

WILDING
ENGINEERING

14721 South Heritage Crest Way
Bluffdale, Utah 84065
801.553.8112
www.wildingengineering.com

G:\DATA\14124 Highland Oaks\dwg\Overall Concept Plan.dwg
PLOT DATE: Jul 23, 2015

Attachment 3

HIGHLAND OAKS SUBDIVISION R-1-20 NEIGHBORHOOD MEETING

July 16, 2015

SUMMARY:

The neighborhood meeting for Highland Oaks Subdivision was held at the Highland City Multipurpose room on July 16, 2015 at 7:00 pm. In addition to the developer and the developer staff, there were 33 residents that are reflected on the sign-in sheet.

NEIGHBOR COMMENT SECTION

Eight Neighbors made comments:

1. Brandon Newman - Developer has been helpful. Asked neighbors what they wanted for this project. Over 100 responded by email wanting R-1-20. Would be outraged if it was reconsidered as a PD.
2. Bart Bracken – Backs up to the north project boundary line. Asked about drainage and grading along his lot. Hoped to keep a view.
3. LeNise Zylstra – What is the different density between the PD plan submitted and the R-1-20 being considered. She read the emails on the previous submittal and they were misinformed. Those who emailed would have had more of what they wanted in the PD plan rather than the R-1-20 plan. In the PD all the yards would have been maintained by an association and not Highland City to maintain. You don't have to wonder about the neighbor's yard and what they may do that effects everyone. Everything people came to Highland for there was more of that like open space.
4. Henry Bogart – Why is there not open space for the children. Believes the oaks will be gone. Not enough open space for the families and children. Wants to preserve the oaks. Not enough parks.
5. Joseph Hunt – Moved to Highland for the larger lots for families. Does support the R-1-20 larger lots. Wanted to clarify the size of half acre lots in Highland. Would like large lots, trails, and parks.
6. Teagan Clark – R-1-20 is a good compromise. Liked both proposals but supports the R-1-20 proposal. His mom has moved to Skye Estates. He lives in the R-1-40 Ivory neighborhood.
7. Wade Miller – Like this proposal better than the previous PD proposal. Grateful for the larger size lots. Concerned about schools and water usage.
8. Natalie Ball –Was opposed the previous PD proposal. Half acre lots are much better. Was concerned about the school crowding with the previous PD proposal.

9. Gail Brackin –Can there be CC&R's to control landscape quality and finish timing.

Rob Gulbrandsen responded to the comments with the following points:

1. Lots behind Bart Bracken are wider than most in the plan and will allow views between the homes. Grading will work with the existing grading at Skye Estates.
2. R-1-20 lots provide for the open space on each lot for family and guest use.
3. Water is bought for the project by the developer in accordance with the requirements of Highland City.
4. The school district is projecting a level to decline enrollment in Ridgeline. It is the responsibility of the school district to balance the enrollment size by adjusting the boundaries within the entire district.
5. The lot layout for the R-1-20 has taken the oaks and drainage into account and will preserve much of the oaks areas in the rear of yards.
6. The developer will consider CC&R's for landscape design and controls.

The neighbor comments were in support in the R-1-20 proposal. Some liked the PD proposal but all liked the R-1-20 as a compromise. A poll was taken at the end of the discussion and other than a couple of neighbors who still liked the previous PD proposal but they still are accepting of the R-1-20 proposal.

Attendance Sign-in Neighborhood Mtg 7-16-2015
Highland Oaks R-1-20 (11800 N. Highland Blvd.)

Name	Address	Phone	Email
Janet Bennett	11769 Sunset Hills Dr	425-890-2737	janet.bennett@comcast.net
Rollin Johnson	15758 Nebel Cv		rollinjohnson@outlook.com
BRAD BARKER	11856 N. 5850 W.	801-310-3035	BRADRBARKER@GMAIL.COM
BRANDON NEWMAN	6354 W SKYLINE DR	801-201-6889	NEWMAN_BRANDON@YAHOO.COM
Teegan Clark	11584 N Long Leaf circle	801-712-3400	teegan.clark@yahoo.com
Korby Siggard	11482 SUNBURN LANE, Sandy	801-571-8914	ksiggard@gmail.com
Cherylin Siggard	" "	" "	
WADE E. MILLER	11493 FLOWERING PLUM	801-756-5090	
WILLIAM A. HAINES	11572 N. MAPLE HOLLOW	801-872-3902	BILL_HAINES2002@YAHOO
Linda M. Haines	11572 N. Maple Hollow Ct		lmhaines9@yahoo.com
Bob & Annie Emmett	11895 N. Atlas Drive	801-616-0898	emetski@gmail
BEN RITCHIE	11516 N. MAPLE HOLLOW	801.362.6081	benritchie@yahoo.com
Vace Ritchie	11516 n. Maple hollow ct	801-562-2353	
Jan Ritchie	11516 N Maple Hollow Ct	801 362-6088	
Jeff Hunt	1692 S. Country Ln.	801 616 0026	
Jacquie Hunt	61 W. 800 N. Blanding Ut	808-253-9931	
Mark Hugo	4762 SUNSET COVE	801 577 3755	
MIKE BURNS	6205 W 10050 N.	801-836-6683	

Attendance Sign-in Neighborhood Mtg 7-16-2015
Highland Oaks R-1-20 (11800 N. Highland Blvd.)

Name	Address	Phone	Email
Jeff Beer			
Ryan Lilgenquist	11965 N. Atlas Dr.	801-301-2105	
GAIL BRACKIN	6539 W BRUNSWICK DR	209 401-4841	
BART BRACKIN	"		
Al Zylstra	12012 Brunswick Dr.	801-699-4431	
LeVise Zylstra	"	"	"
Henry Boogaard	12018 N Brunswick Dr	801-266-2474	
Shirley Boogaard	12018 N Brunswick Dr.	801-266-2474	
Per Anderson	11934 N Atlas Dr	615-947-7417	per.anderson@comcast.net
Zandra Anderson	11936 N Atlas Dr	615-947-5123	zandra.anderson@comcast.net
JASON NIX	10988 SOUTH 300 WEST	808 348 7801	nosaj1213@gmail.com
Joseph Hunt	11933 N. Atlas Dr.	808 722-2062	jochunt@eagleair Med.com
Sara Hunt	11933 N. Atlas Dr.	808-228-9202	sylyman@hotmail.com
Kenny Anderson	9881 Cambridge Ct	801-787-5401	Kennyjanderson@hotmail
Jon L. Hunt	61 W. 800 N. Blanding UT	808-253-9971	moving to Highland in future
Laura Harding	6274 Bull River Rd	801-369-3644	laurabharding@gmail.com

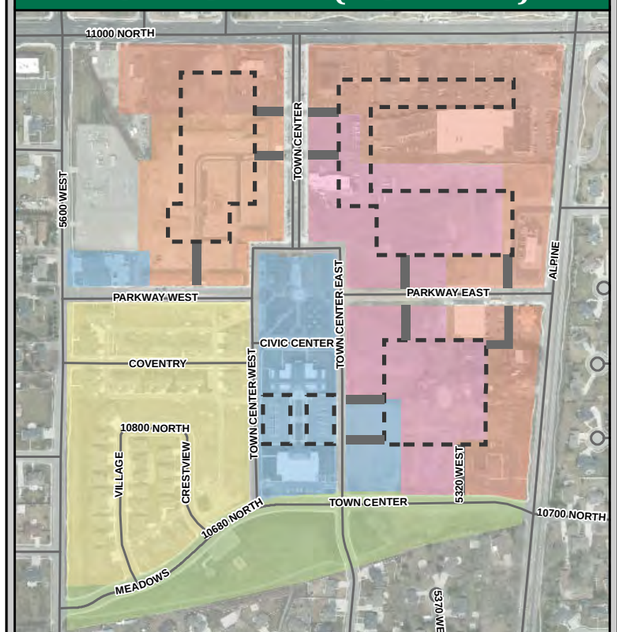
CITY OF HIGHLAND

Zoning

LEGEND

- Professional Office
- C-1
- CR
- Town Center Overlay
- R-1-20 (Non Conforming)
- R-1-40 (Conditional Use)
- Residential Professional
- PD
- Public Utility
- R-1-20
- R-1-40
- Agriculture

TOWN CENTER (INSET MAP)



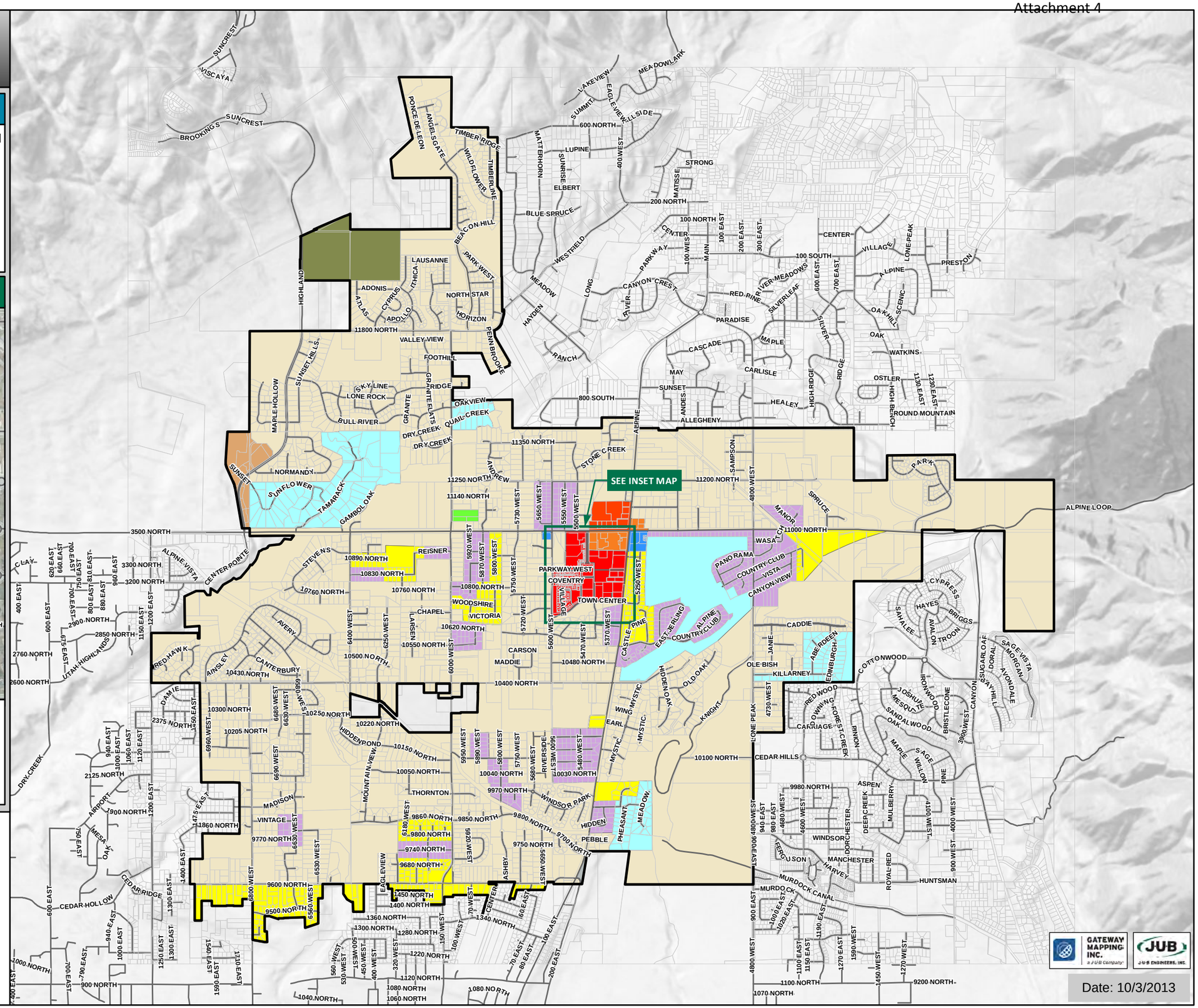
- Flex-Use
- Commercial Retail
- Residential
- Parking Lot
- Mixed Use Residential
- Civic
- Open Space
- Parking Access

N

0 2,500 5,000

FEET

HIGHLAND CITY



GATEWAY MAPPING INC. a JUB Company

JUB J-U-B ENGINEERS, INC.

Date: 10/3/2013

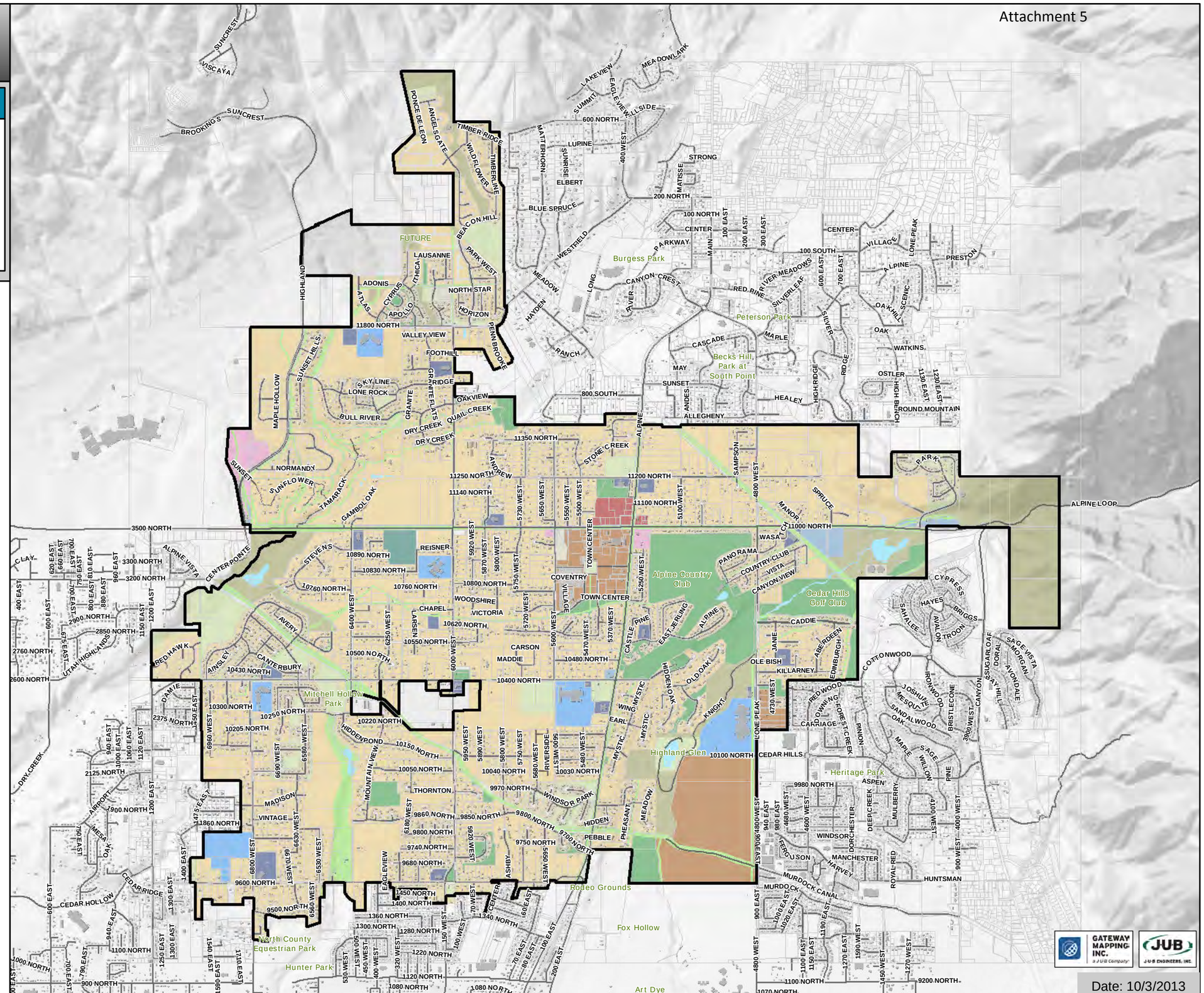
CITY OF HIGHLAND

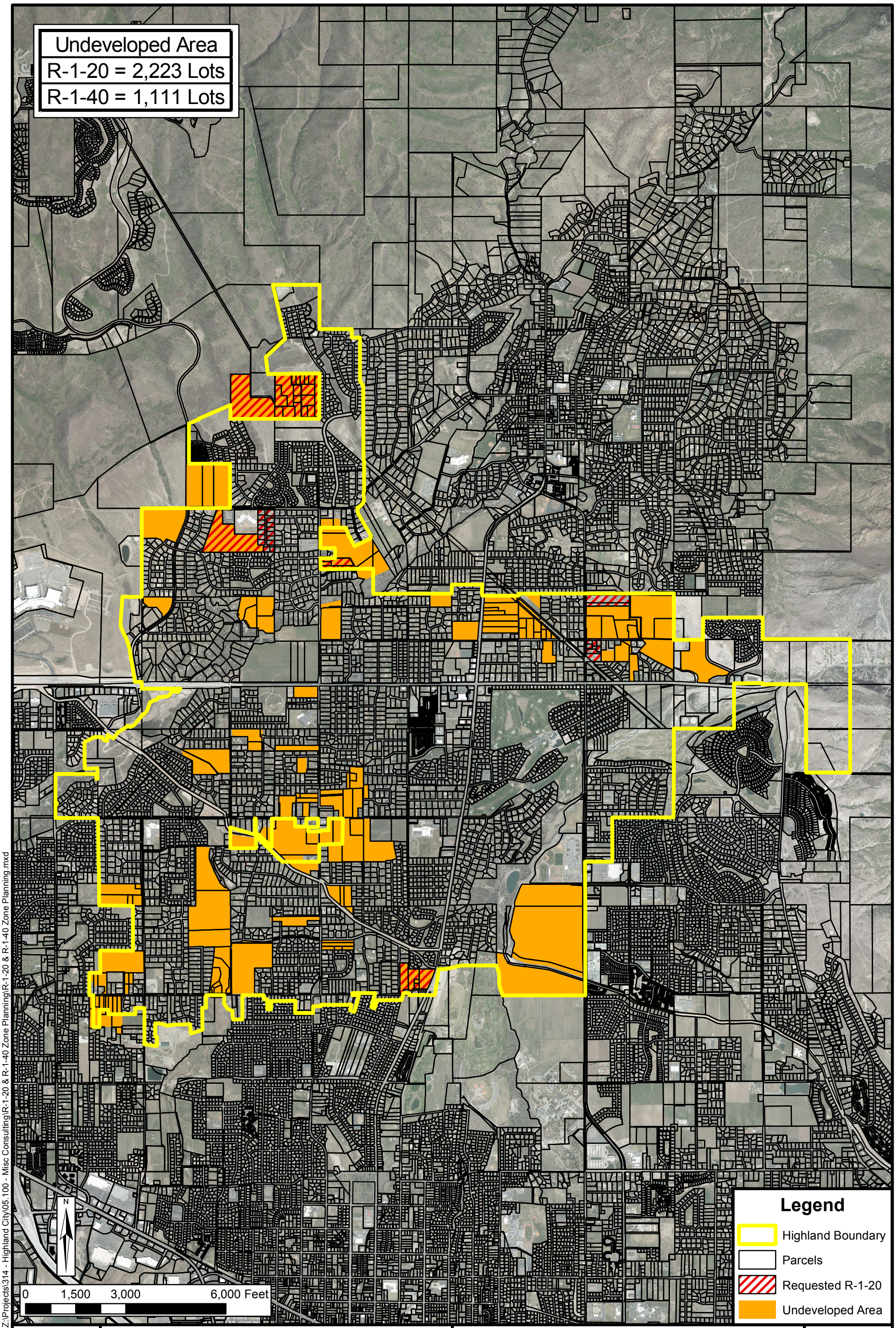
General Plan Land Use

Attachment 5

FUTURE LAND USE DESIGNATIONS

- Low-Density Residential
- Mixed Use Development
- Commercial
- Office
- Institutional
- School
- Religious
- Open Space
- Highland City Public Park
- Trail Corridor & Greenway
- Private Recreation and Mini Park
- Cemetery
- Utility
- Waterbody





Date: 8/5/2015
Document Path: Z:\Projects\314 - Highland City\05.100 - Misc Consulting\R-1-20 & R-1-40 Zone Planning\R-1-20 & R-1-40 Zone Planning.mxd

HANSEN ALLEN & LUCE INC ENGINEERS

HIGHLAND CITY

R-1-20 & R-1-40 ZONE PLANNING

FIGURE 1

Draft Minutes of the July 28, 2015 Planning Commission Meeting

PRESENT: Commissioner: Tim Heyrend
Commissioner: Sherry Carruth
Commissioner: Abe Day (arrived at 7:12 PM)
Commissioner: Steve Rock
Commissioner: Scott Temby

Z-15-01

A request by Rob Gulbrandsen for the approval of a rezone application for a 61 single family home project called Highland Oaks. The property is approximately 36.61 acres in size and is located at the northeast corner of Highland Blvd. and 11800 North. The applicant is requesting the property to be zoned to R-1-20 zoning upon annexation.

Mr. Crane reviewed the details of the application and the recent history of the property. He said the annexation had been processed and was waiting action by the city council. He said the Annexation Policy Plan designated the property as low density residential. Based on the General Plan, Mr. Crane thought the R-1-40 district should be the baseline zone for evaluating the property for development. Mr. Crane said the concept plan was received late on Thursday and therefore had not been reviewed by staff. He said the concept plan may or may not be able to be built as proposed.

Commissioner Day arrived at 7:12 PM.

Mr. Crane explained that the applicant initially applied for a PD (Planned Development) district, but then the applicant chose to apply for an R-1-20 district. He talked about the Highland land use goals and discussed the requirements for the R-1-20 district. He explained that the R-1-20 district had not been used in Highland for large developments or newly annexed areas and its primary use was for older subdivisions that were approved as part of the county before Highland was incorporated. He showed a zoning map, talked about current R-1-20 districts, and reviewed the surrounding property. Mr. Crane discussed slope and drainage issues. Mr. Crane advised that if the Commission chose to use the R-1-20 district, they needed to review it thoroughly and understand what the unintended, or intended, consequences would be. He explained that the city offices received monthly inquiries about the R-1-20 district and where it could be used. Mr. Crane asked the Commissioners to consider questions pertaining to the goals and objectives of the General Plan, the best interest of the city, the most appropriate district for the area, the R-1-20 designation's impact on future development, and the slope and drainage issues.

The Planning Commission discussed the circumstances for some of the most recent annexations, how the R-1-20 district differed from the PD district, and if there were areas in the General Plan that were projected to be zoned for the R-1-20 district. When asked if the PD district fit with the goals and objectives of the General Plan, Mr. Crane explained that each project was evaluated on its own merits. He explained that staff thought Mr. Gulbrandsen's application for the PD district did not have enough standards written in it to ensure a quality development.

Upon request, Mr. Gulbrandsen addressed the Planning Commission. He talked about his analysis of the General Plan and said that it talked about the R-1-20 district on the fringe areas. He thought the property was considered a fringe area. He said he was also looking for a transition from the other developments in the area. He said there was strong support for the R-1-20 District in the neighborhood meeting. Mr. Gulbrandsen talked about the slope on the property and said the only 25% or more slopes were in the drainage channel. He said the overall site was a gentle slope with hills and valleys. They did not see the site to be complicated as it related to drainage and preserving some of the scrub oak. Mr. Gulbrandsen talked about the slope within other developments in the area. He thought they had well accommodated for any sensitive lands or other issues. He did not think there was an identified concept of sensitive lands that could not be addressed in preliminary and final plat.

Vice Chair Heyrend asked how they proposed to fit houses on lots with heavy slopes. Referring specifically to Lot 17 as an example, Mr. Gulbrandsen explained how they would handle the slope, including bringing the road in at a four to five foot cut, and having a 10 foot walkout basement with a contoured yard. He thought there was an opportunity for a non-disturbance agreement on some of the lots. He mentioned that they would have to rework the channeling in a couple of areas. He said backyards might have a 2% to 5% slope with a steep slope into the channel. He talked about the possibility of retaining walls. He believed there was adequate depth on the lots.

Vice Chair Heyrend asked if they would protect the scrub oak throughout the channel. Mr. Gulbrandsen said they would likely consider an HOA with CC&Rs that would ensure a quality home, landscaping and protection of the areas.

Vice Chair Heyrend asked about the power corridor. Mr. Gulbrandsen explained that it would be an easement on the lots. He talked about the setbacks and home placements on the lots. He said they would have a strict requirement, assuming that they had an association, that the area was maintained and landscaped. He said they accepted the easement restrictions on the lots which would be recorded against those lots as part of the plat. He said anyone purchasing the lots would understand the restrictions.

Commissioner Rock asked about the fencing for the project. Mr. Gulbrandsen said they had not addressed a fence requirement. He understood that Pacific Power did not have restrictions on fencing as long as there was access.

Commissioner Temby thought the PD District was an appropriate plan for the area. He wondered if they had considered dedicating open space for parks or play areas. He said he was struggling with the R-1-20 District for the annexation area because of the consequences. Mr. Gulbrandsen talked about the considerations for the area. He said the response from neighbors was that they preferred the R-1-20 District over the PD District. He talked about the surrounding areas and thought the R-1-20 District was appropriate.

The public hearing was open at 7:54 PM.

Resident Brandon Newman said since the last Planning Commission meeting he had over 100 people ask him to support them. He said they were in favor of the R-1-20 District. He thought a full acre was hard to take care of.

Resident Joseph Hunt voiced concern with the lack of open space planned for the project. He said 61 additional families going to the existing park would be too much. He talked about a walking trail adjacent to his house and said the current plan had the trail terminating at the proposed development. He would like to see it continue through the property.

Resident Ryan Lilyenquest said Atlas Drive had become a speed way since Sky Estates was built. He said they were promised that things would be done to slow people down on the grades and nothing had been done yet. He was in favor of the R-1-20 District. He thought open space would be great, but not necessary. He said it seemed that the city was struggling to maintain existing open space. He talked about landscaping for lots in R-1-40 Districts versus landscaping in R-1-20 Districts. He said landscaping in R-1-20 Districts were generally nicely done and affordable.

Land Owner Korby Siggard talked about the history of the property. He said they had been Highland's advocates and waited for the right person to development the land. He didn't know why there were roadblocks with the plan. Mr. Siggard talked about his profession and that he trained public officials how not to get sued. He said he did not want to sue Highland, but there had been red flags with someone in the city office. He thought the development should have been on the City Council meeting agenda next week, but they were not. He would like to see some due process going forward. He thought the development would be a great product.

Resident Wade Miller was in favor of the R-1-20 District. He voiced concern with the width of the streets in the development.

Resident Natalie Ball said she attended the neighborhood meeting and thought Mr. Gulbrandsen was slightly exaggerating the enthusiasm for the R-1-20 District. She clarified saying that most residents at the meeting preferred the R-1-20 District over the PD District. She said a lot of them were suffering because of the things they were told about the Sky Estates development. Ms. Ball suggested that notices be sent to property owners more than 500 feet from proposed developments. She pointed out that half acre lots could still exist in an R-1-40 District.

Resident Tim Ball said it was not clamor, it was subjective and relevant to discuss his concern about the impact on the elementary school. He talked about his concerns with the already overburdened elementary infrastructure. He talked about the programs within the school that had been eliminated due to overcrowding. He said he contacted the school district and there were no plans for another elementary school in the area. He talked about his concerns with increased traffic and safety issues. He said it had become a hazardous areas. He highly resented the implication that someone on the Planning Commission had been going against the development. He said it was offensive and thought the Planning Commission had been honorable and accommodating to both the residents and the developer. He thought there should be an apology for the implication.

Vice Chair Heyrend closed the public hearing by consent at 8:16 PM. He asked for additional discussion from the Planning Commission.

Commissioner Day asked what the worries were when there were already R-1-20 Districts. Mr. Crane explained the two options within the R-1-40 District; straight R-1-40 or a mixture of lot sizes. He said there also was an open space option with density credit within the R-1-40 District. He explained that staff did not state that the R-1-20 District nor the development was or was not appropriate. He said it was a policy issue and that the city needed to decide if it was in conformance with the General Plan. He said there were arguments to support both sides. He said the city followed due process laws and could not meet the notification requirements for the next Council meeting. He talked about working with other developments with conservation and storm drain easements.

Commissioner Temby said he considered the recommendations of the General Plan, but he also considered the efforts of the developer in addressing the concerns of the community. He was concerned with the unintended consequences and being able to enforce the impacts to the sensitive lands and road widths. He thought an R-1-20 District would help the land owner fully landscape and would encourage the landscaping aspects without creating additional burden on the city.

Commissioner Heyrend said he generally liked the R-1-20 District. He wanted to see that part of the city have the R-1-20 as an option, but would not recommend it everywhere. He was concerned that it would spread throughout the city. He talked about the reaction of R-1-20's coming to the city in the past. He thought it fit well in the area, although he did not want to see Highland turn into R-1-20 lots. He would like to review a zoning map and zoning ordinance amendment to consider areas where the R-1-20 District might fit.

Discussion ensued regarding the possible impact of approving the request. The Planning Commission discussed the slopes and preserving the vegetation in the drainage. They discussed the trail and the possibility of continuing it into the proposed development between Lots 8 and 9. Mr. Gulbrandsen said that if his plan was approved tonight he would provide a minimum of 30 feet on all of the rear lot lines that were against the drainage channel, with the exception of

Lot 14, with a non-buildable preservation of scrub oak and the drainage. He reminded the Commission that part of the drainage needed to be realigned. He also said they would integrate and build the trail without landscaping then dedicate it to the city.

Commissioner Temby wondered if staff could suggest development code requirements for the R-1-20 District. He thought establishing parameters with respect to what would be appropriate for the R-1-20 for annexation in the future. Mr. Crane explained that the purpose statement of the R-1-20 District could be revised.

MOTION: Commissioner Day moved to recommend approval of Business Item Z-15-01 with the following stipulations:

1. The development will have 61 units in the R-1-20 District
2. A portion of Lot 8 will be dedicated to the city for the purpose of continuing the trail to connect the streets

Commissioner Rock seconded the motion.

AMENDMENT TO THE MOTION: Commissioner Temby moved to amend the motion to include the following:

1. the development would have 61 lots or fewer in the R-1-20 District
2. Include a minimum 30-foot lot line setback for Lots 13-32 for purposes of existing drainage, or for the lots to the south where the drainage must be relocated, and accept the offer to maintain existing shrubbery and plant life in the sensitive lands, and that the relocation would be sensitive to not disturb any more scrub oak than is necessary for the construction of the flow line in order to retain the natural beauty of the area.

All present were in favor. The motion carried with two absent.

MOTION: All present were in favor. The motion carried with two absent.

CITY COUNCIL AGENDA REPORT

ITEM # 13

DATE: September 1, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Nathan Crane, Interim City Administrator/Community Development Director

SUBJECT: MOTION – CONDITIONAL USE PERMIT FOR A 86 UNIT MULTI-FAMILY TOWNHOME DEVELOPMENT IN THE TOWN CENTER FLEX USE ZONING DISTRICT (CU-15-02 – BLACKSTONE)

STAFF RECOMMENDATION:

Staff recommends that the Council **CONTINUE** the request to the August 18, 2015 City Council meeting to allow a traffic study to be completed by the City and the applicant to address the issues outlined by the Council in accordance with Section 3-4732. Approval of the conditional use permit will also constitute approval of the site plan and architecture.

PRIOR REVIEW:

The Council considered this item at their July 21, 2015 meeting and voted to continue the request to a future Council meeting.

BACKGROUND:

Tim Alders is requesting a conditional use permit for an 86 unit multi-family development located at the northeast corner of Town Square East and Parkway East. The site is 7.76 acres in size and is owned by Frank and Maria Carlone.

The site is designated as Mixed Use Development on the General Plan Land Use Map. The site is zoned Town Center Flex-Use District. Multi-family residential developments are permitted in this district subject to review and approval of a conditional use permit.

A maximum of 342 units are permitted in the Town Center Flex-Use District. A project cannot exceed 12 units per acre. Toscana was approved for 200 units leaving 142 units. If this project is approved 56 units will remain.

CONDITIONAL USES:

Conditional uses are tolls that are meant to give limited flexibility in the review of an application. In Highland, the Planning Commission makes a recommendation to the City Council. A conditional use is regulated by the following standards:

Utah State Code 10-9a-507. Conditional Uses.

(1) A land use ordinance may include conditional uses and provisions for conditional uses that require compliance with standards set forth in an applicable ordinance.

(2)

(a) A conditional use shall be approved if reasonable conditions are proposed, or can be imposed, to mitigate the reasonably anticipated detrimental effects of the proposed use in accordance with applicable standards.

(b) If the reasonably anticipated detrimental effects of a proposed conditional use cannot be substantially mitigated by the proposal or the imposition of reasonable conditions to achieve compliance with applicable standards, the conditional use may be denied.

If a use is allowed as a conditional use it is assumed that the use is desirable but that it may require an extra level of review. Denial must be based on some factor unique to the proposed location that renders the potential negative effects of the proposed use beyond mitigation. Mitigation means to temper or reduce the negative aspects, not eliminate them.

The action taken in response to an application must be supported by substantial evidence in the record. Substantial evidence is evidence that is relevant and credible. To be relevant, it must relate to the standards in the ordinance. To be credible it must be objective and independent.

TOWN CENTER OVERLAY REVIEW STANDARDS/PROCESS:

Architectural

For development in the Town Center, the Planning Commission is the land use authority for the Architectural Review. The review is based on the following findings:

- The proposed development complies with all provisions of this ordinance, Commercial Design Standards, and all other ordinances, master plans, general plans, goals, objectives and standards of Highland City.
- The height, location, materials, color, texture, area, setbacks, and mass, as well as parts of any structure (buildings, walls, signs, lighting, etc.) and landscaping, is appropriate to the development, the community and the Transit Center Overlay.
- The architectural character of the proposed structures is in harmony with, and compatible to, structures in the neighboring environment and the architectural character desired for the Transit Center Overlay; avoiding excessive variety or monotonous repetition.

Site Plans

For site plans, the Planning Commission makes a recommendation to the City Council. The review is based on the following findings:

- The proposed development complies with all provisions of this ordinance, Commercial Design Standards, and all other ordinances, master plans, general plans, goals, objectives and standards of Highland City.
- The proposed site development plan's building heights, building locations, access points, and parking areas will not negatively impact adjacent properties or the surrounding neighborhood.

- The proposed development promotes a functional relationship of structures to one another, to open spaces, and to topography both on the site and in the surrounding neighborhood.
- Ingress, egress, internal and external traffic circulation, off-street parking facilities, loading and service areas, and pedestrian ways, is so designed as to promote safety and convenience.
- All mechanical equipment, appurtenances and utility lines are concealed from view and integral to the building and site design.

SUMMARY OF REQUEST:

1. The applicant is requesting approval of a conditional use permit for an 86 unit multi-family development. All units are three bedroom units that are 3,667 square feet (3,139 square foot of living area and 528 square foot garage). The number of units per building will range from three to six. Owners will own each unit.

2. The primary ingress/egress to the project will be from Parkway East and Town Square East/ Parkway East will be completed as part of this project.

3. The project will be built in two phases. The first phase will be north of Parkway East and the second phase will be south of Parkway East.

4. The maximum setback is provided along Parkway East and Town Square East.

5. Approximately 1.71 acres (22%) of the site will be landscaping (15.6%) and hardscape (6.4%) meeting the requirement for 15% landscape and 5% hardscape areas. Amenities include a pool, play structure, and gazebos.

6. All roads within the development are private and will be owned and maintained by a Home Owners Association (HOA). The roads include 26 feet of asphalt with two feet of flat curbing.

7. The site provides 265 parking spaces. Each unit will have a two car garage (24'X 22') and there are 86 guest parking spaces. The Development Code requires 3 spaces per unit. The standard two car garage is typically 24' X 24'

8. Each unit will have their own garbage and recycling containers. The containers will be stored in the garage.

9. A wrought iron fence will be on the perimeter of the property expect adjacent to street right of ways. The applicant has indicated he is willing to install a six foot concrete wall.

10. The buildings are three stories and 36' 11" high to the top of the roof. The maximum height permitted is 50 feet. The maximum number of stories is three. The applicant has chosen a Tuscan architectural theme. Colors include different shades of brown.

CITIZEN PARTICIPATION:

Notice of the June 18, 2015 Neighborhood meeting was mailed to all property owners within 500' of the proposed plat on June 3, 2015. Four residents attended the meeting. The developer presented and overview of the project. One gentleman came to the meeting asking if they could be rentals, developer

said they were not intended to be. One person was concerned with the density and building height, the developer assured her that they were in compliance with the code. One couple was concerned with the rod iron fence and children feeding their horses through it and her flood irrigation.

Notice of the June 30, 2015 Planning Commission meeting was published in the Daily Herald on June 14, 2015. Notice of the meeting was also mailed to all property owners on June 10, 2015. Several residents spoke in opposition of the project.

Notice of the July 21, 2015 Planning Commission meeting was published in the Daily Herald on July 5, 2015. Notice of the meeting was also mailed to all property owners on July 9, 2015. One comment in opposition of the project has been received.

Public notification of the City Council meeting is not required.

REQUIRED FINDINGS:

The City Council must determine that the proposed use meets three findings prior to granting a Conditional Use Permit. The burden of proof rests with the applicant. Each finding is presented below along with staff's analysis.

1. **The use will not be detrimental to the health, safety, or general welfare of persons residing or working in the vicinity or injurious to property or improvements in the vicinity.**

The property to the north and east is zoned Town Center Commercial Retail and is the Ridley's shopping center, Tim Tire, Arctic Circle, Ace Hardware, and an existing home. The property to the south is zoned Town Flex-Use and is planned for a City library. The property to the west is zoned Town Center Civic. The proposed use is compatible with the surrounding properties.

2. **The use complies with all applicable regulations in the Development Code.**

The proposed density is 11.27 which is less than the maximum of 12 units per acre permitted.

The number of units will not exceed what is allowed in the district.

There does not appear to be enough room in the garage for these containers and two vehicles. In addition, some of the garage space may be used for personal storage. This could result in the loss of a parking spaces and/or the storage of garbage and recycling containers in the private drive. Staff recommends that trash enclosures be used.

The Fire Marshall has reviewed the site plan for fire access requirements. The proposed project meets the requirements of the Fire Code.

An irrevocable maintenance fund will need to be established by the CC+R's to ensure maintenance of the private roads. Staff is recommending that a note be placed on the final plat to inform potential home buyers of this issue.

Public water, sewer, and storm drain lines are proposed in the private roads. The City Engineer and Public Works Department will need to approve the location of all utilities prior to final plat approval. In

addition, an easement to allow access to these lines will need to be included.

The location of water, sewer, and pressurized irrigation lines in relation to lot lines and building foundations will need to be reviewed with the civil improvement plans to ensure adequate spacing.

The City Engineer is concerned about the location of the balconies in relation to the right-of-way line. As such a stipulation requiring a minimum of five feet from the balcony to the right-of-way has been included.

The character and long term success of this type of development requires an effective homeowners association and involved property owners. These types of units may be very attractive to investors and could become rental units over time. The developer will be able to limit the number of initial investors, but has no control over subsequent buyers. Staff has no way of knowing if rental units will be more of a problem here than in any other single family neighborhood.

3. **Conditions are imposed to mitigate any detrimental effects.**

Draft stipulations have been included to ensure compliance with the Development Code.

PLANNING COMMISSION ACTION:

The Planning Commission held two public hearings on this item on June 30, 2015 and July 14, 2015. At the July 14, 2105 meeting, the Commission voted 5-0 to recommend denial of the project for the following reasons:

- It does not meet the goals, objectives and standards of Highland City
- It does not meet the purposes set forth for the area around the Town Center as set forth in the Highland City Development Code in Section 3-4701
- It has access problems particularly in the northern area
- It has negative impact on the southern property which will become landlocked
- It does not promote a functional relationship within the development and within the surrounding areas particularly as it relates to open space functionality as it relates to its similarities to Toscana and the negative functional relationship that has been developed there
- It impacts the safety of the area in that the sidewalks are not functional and leading to the open spaces
- The open spaces are inconvenient
- Guest parking is sporadic
- There is no traffic impact study
- The entrance, exit and parking locations for service vehicles and signage for those service vehicles is currently undefined and appears to be unacceptable

APPLICANT RESPONSE:

During the Commission public hearings there were a number of issues that were brought forward that need clarification. It is important to note that Section 3-4732 Application Procedures allows, staff, the Planning Commission, and the City Council to request any additional information to evaluate the character and impact of the proposed project. The applicant submitted a response to each of these

items (Attachment XXX). Staff has summarized the response below.

1. The applicant submitted two signed affidavits that they were the owners of the property. However, at the July 15, 2015 meeting the owners were stated as Frank and Maria Carlone. The City cannot process an application for development without authorization from the property owner. ***SUMMARIZED RESPONSE: The applicant provided the necessary documentation.***

2. According to the information submitted by the applicant the basement and storage areas were not listed as options. At the June 30, 2015 meeting the applicant stated that these areas are options. Approximately 924 square feet of the living space is in the basement and storage which is a buyer option. Excluding the garage and the basement, the living area is 2,215 square feet. Additionally, it is unclear how the buildings will be constructed to accommodate this option. Further the applicant stated that a place in the garage will be created to store garbage and recycling containers. However, a revised floor plan showing this area has not been submitted. ***SUMMARIZED RESPONSE: A 449 square feet of underground room will be provided. Each owner will have the option to expand this area underneath the garage. A revised floor plan has been submitted addressing this issue and the garbage can issue.***

3. The elevations submitted do not list any options; however, at the June 30, 2015 meeting the applicant stated that the elevations included options. The elevations should be revised so that it is clear what approval the applicant requesting. ***SUMAMRIZED RESPONSE: The elevations have been revised.***

4. Parcel #11:0039:0135 is a 0.022 acre piece of property owned by Frank and Maria Carlone. According to the applicant this parcel is included as part of the project. However, this is not consistent with the submittal materials. If this parcel is not included in the development it leaves a small triangular piece of property with no street frontage or access. ***SUMMARIZED RESPONSE: The real estate purchase agreement has been revised to include this property.***

5. The applicant mentioned that there is a reciprocal access easement for all land owners adjoining the access drive for the shopping center to the north. Staff has not received or reviewed the easement. ***SUMMARIZED RESPONSE: Staff has reviewed the agreement and believes that this agreement does not apply to this property. This position has been communicated with the applicant.***

6. The applicant stated that parking on the private roads will be prohibited. It is unclear how this restriction will be enforced. Since they are private streets, this restriction cannot be enforced by the Lone Peak Police Department. In addition, some of guest parking units are up to 220 feet away from a unit. This could lead to onsite circulation and parking issues for guest, delivery and service vehicles as users are more likely to park on the private roads. ***SUMMARIZED RESPONSE: Parking will be prohibited on private roads. Enforcement will be done by the HOA. Seven parking spaces have been relocated near the pool area.***

7. The proposed driveway throat adjacent to unit 86 will create a conflict with users entering/exiting the garage and users entering/exiting the property. ***SUMMARIZED RESPONSE: The applicant's traffic engineer disagrees that this is an issue.***

8. The units are three bedroom units which will attract young families. There is a lack of active play areas south of Parkway East. ***SUMMARIZED RESPONSE: A tot lot has been added to the southeast corner of the site.***

9. The applicant stated that the pool will be 60' X 24'. It is unknown what the public health requirements are. Specifically, whether or not showers and restrooms are required. ***SUMAMRIZED RESPONSE: The project will comply with the public health requirements. Requirements were not identified.***

10. The traffic impact on the surrounding streets is unknown. Section 3-4732 Application Procedures allows the City to request a traffic impact analysis. Staff suggests the City hire a traffic engineer to do a full traffic study. ***SUMMARIZED RESPONSE: The applicant has submitted a traffic study that shows minimal impact on adjacent streets.***

TRAFFIC AND INFRASTRUCTURE STUDIES:

Subsequent to the City Council meeting, staff commissioned a traffic study and an engineer's analysis of the infrastructure demands created by the proposed development. The studies are summarized as follows:

Traffic Study

- The proposed development will not have a deferential impact to intersection level of service, vehicle delay, or the surrounding traffic network.
- A second public access is recommended for the units north of Parkway East for circulation and emergency access.
- The parking is sufficient for the proposed use.
- The traffic generated during the Midday peak hour is minimal and will not provide a safety hazard to the individuals that use the splash pad and Town Center Plaza during the summer months.

Infrastructure Study

- Storm Drainage is addressed by using sumps.
- The existing pressurized irrigation system has sufficient pressures and volume to supply the needs of the development.
- The project will connect to the sewer line in 10400 North. This line is nearing capacity. The Sewer Master Plan has identified a need to upsize the line. The project is currently under design and is planned for construction in the spring of 2016. It is recommended that the new sewer line be built before adding the additional connections that would exceed the capacity of the sewer. Adding all of the units proposed by the development would exceed the existing capacity.
- The existing culinary water system has sufficient pressures and flows to supply the needs of the development.

The applicant has provided a revised site plan that shows an access onto Town Center Boulevard. This will result in the elimination of parking spaces and require an alternative design on Town Center Boulevard. This proposal is still being evaluated by staff and needs approval from the City Council.

SURROUNDING PROPERTIES:

One of the concerns raised was access to the properties to the south and east. These issues are being resolved as follows:

South Property – This property has frontage on Town Center East and is owned by AF Consulting. A road and utilites will be stubbed from the subject property for future potential future use.

East Property – This property has frontage on SR74 and is owned by the Spykes. The City Engineer contacted UDOT regarding an access onto SR74. UDOT stated that the current access can be used in perpetuity as long as the property is being used as residential. If the use of the property changes to commercial then any access will need to meet commercial standards. Ace Hardware and the Alpine Credit Union are part of the Highland Square Subdivision. With this subdivision two joint access easements were recorded. The first one runs east/west and is located over the exit to the Alpine Credit Union. The second one runs north/south and aligns with the first driveway into the center. This easement also includes public utility and sewer easement. There is a sewer line and a man whole within easement that will serve the Spykes property. In addition, road and utilities will be stubbed from the subject property to the rear of the Spykes property for future use.

RECOMMENDATION:

The City Council should hold a public meeting and:

1) Approve the conditional use permit with appropriate stipulations. Staff has prepared draft stipulations that could be used. Additional stipulations may also be needed. The Council may include any conditions which are deemed necessary to mitigate potential impacts and insure compatibility of the use with surrounding development, insure compliance with this ordinance, and which are required to preserve the public health, safety, and general welfare.
2) Deny the conditional use permit. If the Council denies the conditional use permit, appropriate and specific findings will need to be drafted.
3) Continue the conditional use permit to allow a traffic study to be completed by the City and the applicant to address the issues outlined by the Council in accordance with Section 3-4732.

DRAFT STIPUALTIONS:

The following are the draft stipulations:

1. The site plan shall conform to the site plan and elevations dated August 10, 2015, except as modified by these stipulations.

2. The location of water and sewer lines in relation to lot lines and building foundations shall be reviewed by the Engineering Department and Building Division with the civil improvement plans to ensure adequate spacing and appropriate locations.

3. Potential homebuyers shall be informed by CC&R's, affidavit, and posted notice in the model home sales office of the following:
   a. Ownership and maintenance of private streets.
   b. Responsibility for repairing private streets after utility maintenance.

c. Parking restrictions for residents and visitors.
d. Ownership and maintenance responsibility for all common areas.
e. No more than four unrelated persons my live in a unit.

4. The property owner shall establish an irrevocable maintenance fund by the CC+R's to ensure maintenance of the private streets. In addition, all private streets shall be constructed to meet Town design standards.

5. A note shall be added to the Final Plat and the Covenants, Conditions, and Restrictions stating the Homeowner's Association shall be responsible for the maintenance of all private streets.

6. The civil construction drawings shall meet all requirements as determined by the Town Engineer.

7. The final landscape plans shall be reviewed and approved prior to issuance of a building permit.

8. A comprehensive sign plan addressing private drive signage, building addressing and permanent directional signage shall be submitted and approved prior to preliminary plat approval. All signs shall be uniform in theme and appearance.

9. The Fire Marshall shall approve the location of all fire hydrants prior to approval of the civil construction plans.

10. Parking shall be prohibited on all private roads and enforced by the Home Owners Association.

11. A six foot concrete wall shall be installed along the property perimeter.

12. No building permits shall be issued until the 10400 North sewer line has been completed.

13. The access to the shopping center service drive shall be removed and the area redesigned to meet all emergency access and subdivision requirements.

14. Utilities and a road stub shall be provided to the property to parcel #11:039:0010 and parcel #41:617:0007.

15. A minimum 449 square foot basement shall be provided for each unit.

16. All garbage cans shall be stored inside the garage. This shall be enforced by the HOA.

17. A second access to a public street shall be provided for the north phase. The proposed access onto Town Center Boulevard shall be revised as determined by the City Engineer. The City Engineer may require the relocation of the access based on design concerns. The applicant shall be responsible all costs associated with the design and construction of the proposed access.

18. The north parcel shall be the first phase.

19. All perimeter walls, open space, and guest parking shall be completed in the first phase of development on each site.

20. A minimum driveway throat distance of twenty feet shall be provided for all entrances.

21. A revised landscape plan shall be submitted with the the preliminary plat application.

FISCAL IMPACT:

Unknown

ATTACHMENTS:

1. Orginal Site Plan, Landscape Plan, Elevations
2. Neighborhood Meeting Summary
3. Modified Site Plan
4. Applicants Response with the revised Site Plan and Architectural Elevations
5. Applicants Traffic Study
6. InterPlan Traffic Study
7. Infrastructure Analysis Memo

LEGEND

1. LANDSCAPED STREET MEDIAN
2. ADA RAMP
3. ACCESS GATE IN EXTERIOR FENCING
4. NEW SIDEWALK
5. PASEO/ PLAZA AREAS-SEE SITE PLAN DETAIL SHEET
6. GAZEBO/ GRILL AREA
7. STOP/ STREET SIGN
8. EXISTING 5' WIDE SIDEWALK TO BE UPGRADED TO A 15' WIDE SIDEWALK
9. WROUGHT IRON FENCING-SEE DETAIL SHEETS
10. FIRE ACCESS
11. LANDSCAPE PLANTER
12. CROSSWALK
13. POLE LIGHT-SEE LIGHTING SITE PLAN
14. STREET LIGHT-SEE LIGHTING SITE PLAN
15. STREET TREE AND GRATE-SEE DETAIL SHEETS
16. BIKE RACK-SEE DETAIL SHEETS
17. HIGH BACK CURB AND GUTTER
18. ROLLED GUTTER (All private roads)
19. CONCRETE DRIVEWAY
20. COMMUNITY FACILITY AREA
21. CHILDREN'S PLAY AREA
22. RECONSTRUCT MEDIAN FOR NEW INTERSECTION

JURISDICTION

LEGAL JURISDICTION:	HIGHLAND CITY
DISTRICT/ PLANING ZONE:	TOWN CENTER FLEX USE

AREA TABULATIONS

	AREA	% of total
TOTAL AREA:	7.8 acres	100%
BUILDING(s) AREA:	2.45 acres (107,136 sf)	32%
LANDSCAPE:	1.87 acres (81,293 sf)	24%
HARDSCAPE:	0.4 acres (18,955 sf)	5%
ROADS:	1.8 acres (79,436 sf)	23%

PARKING TABULATIONS

TOTAL UNITS:	86
ON SITE PARKING PROVIDED:	872 GARAGE
	86 STALLS
	258 TOTAL ON SITE
	(3.0 SPACES/ UNIT)

ACCESSIBILITY

ALL UNITS TO OFFER ELEVATORS FOR HANDICAPPED ACCESS

Project access point-full access

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REVISIONS	DATE	BY
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CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: BMB
PROJECT MANAGER: BMB
DRAWN BY: SCS
SCALE: AS SHOWN
ISSUE DATE: 4-1-15

PROJECT
BLACKSTONE PROJECT

SHEET TITLE
SITE PLAN

PROJECT
C15-006

SHEET
C-1

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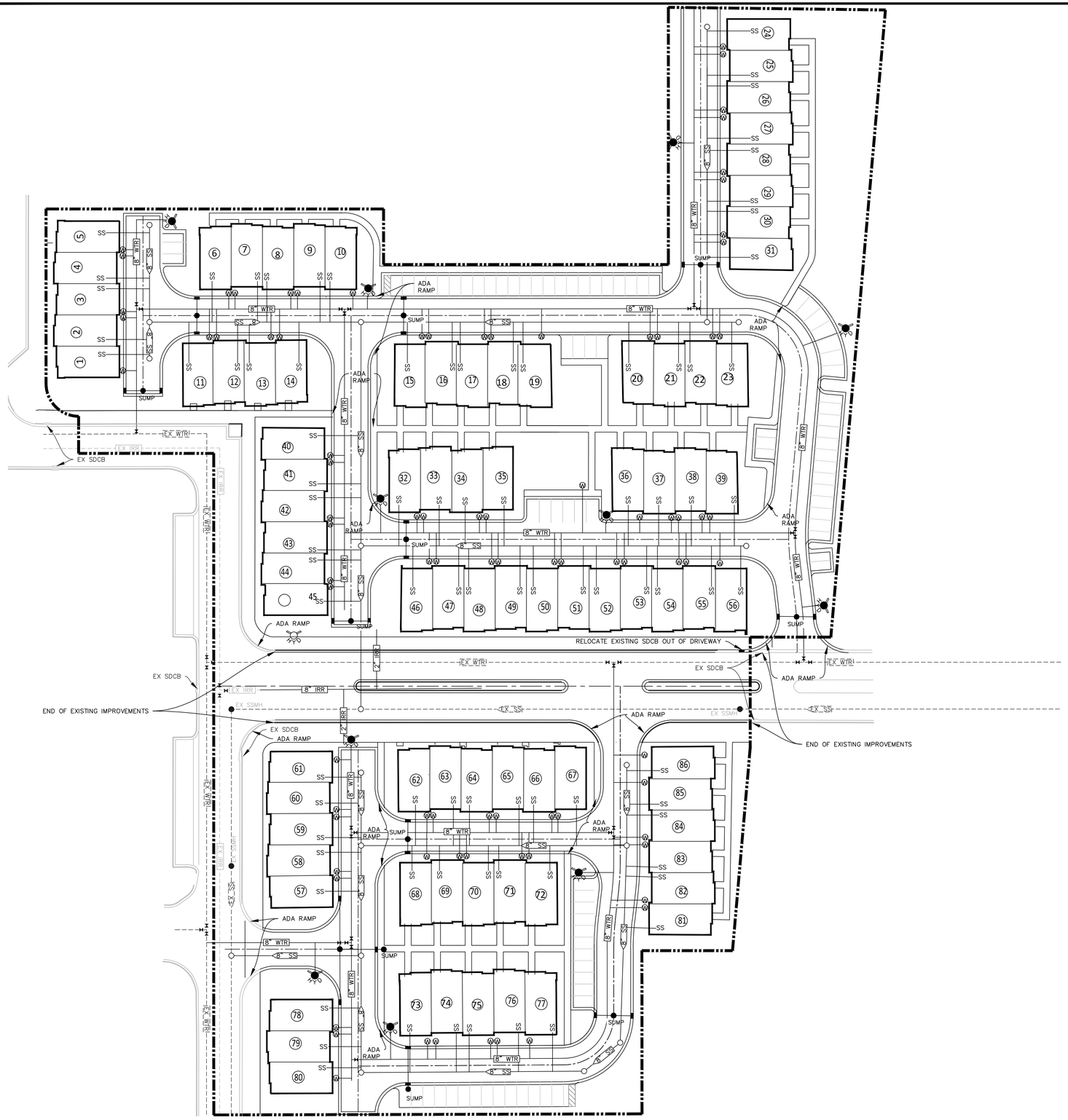

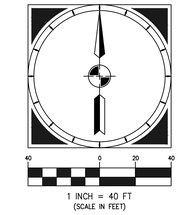

LEGEND

- WATER METER
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED VALVE
- EXISTING VALVE
- STORM DRAIN SUMP
- PROPOSED STORM DRAIN CATCH BASIN
- PROPOSED STREET LIGHT
- SANITARY SEWER MANHOLE

UTILITY NOTES

1. ALL CONSTRUCTION TO BE DONE ACCORDING TO HIGHLAND CITY STANDARDS ADN SPECIFICATIONS.
2. CULINARY WATER–48" MIN. DEPTH TO TOP OF 8" DUCTILE IRON PIPE, POLY–WRAPPED.
3. SEWER–8" SDR–35 PVC PIPE WITH 5' DIAMETER MANHOLES.
4. WATER TEES, ELBOWS, PIPE BEDDING AND TRENCHES SHALL BE INSTALLED PER HIGHLAND CITY STANDARDS.
5. ALL VALVES TO BE FLANGED TO THE TEE.

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CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: BMB
PROJECT MANAGER: BMB
DRAWN BY: DJN
SCALE: 1"=40'
ISSUE DATE: 06/02/2015

PROJECT
BLACKSTONE TOWNHOMES
A RESIDENTIAL SUBDIVISION

SHEET TITLE
UTILITY PLAN

PROJECT
C15–006

SHEET
C–2.1

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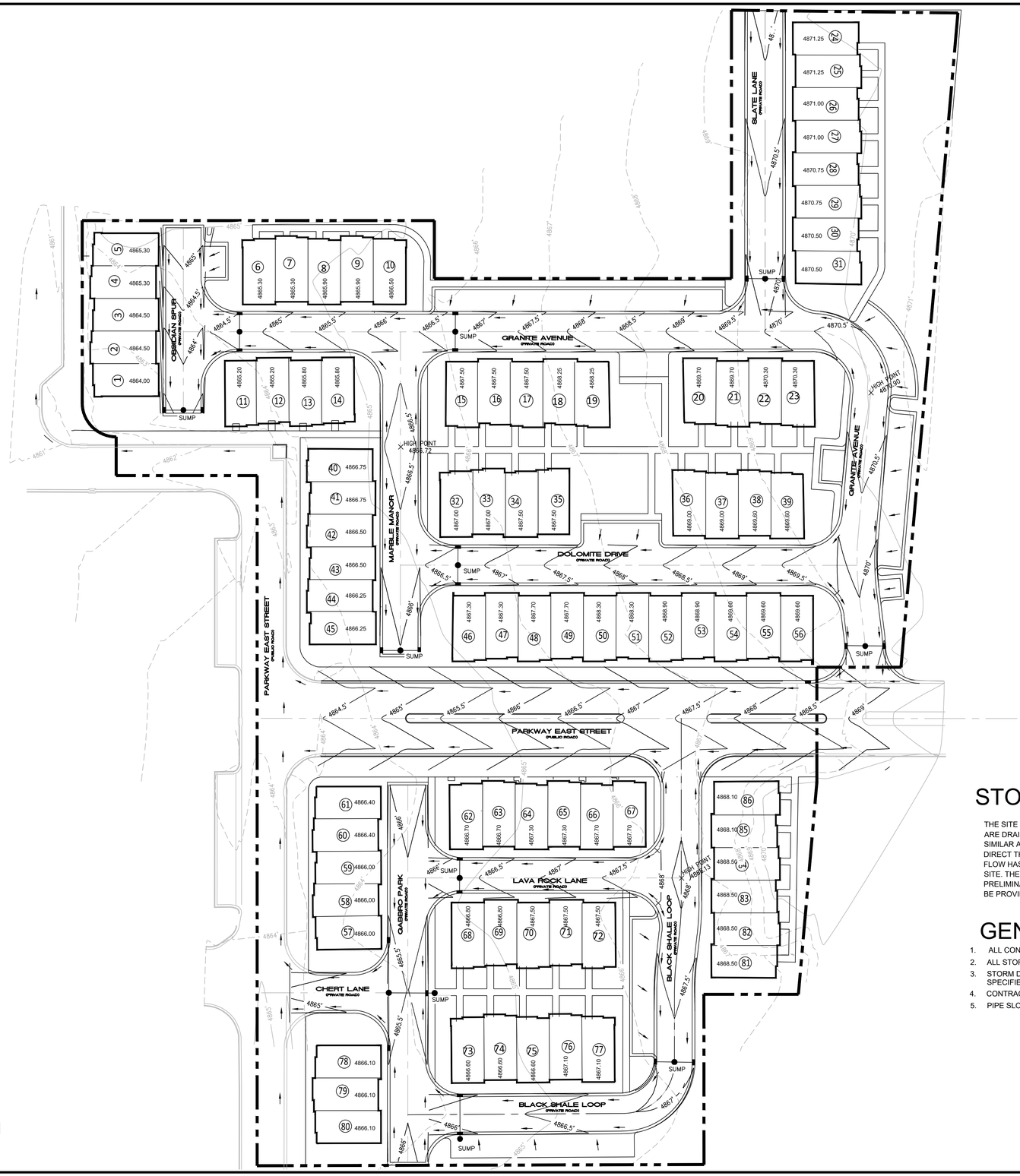

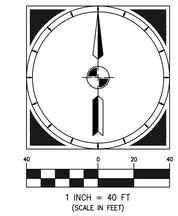

STORM DRAINAGE NARRATIVE

THE SITE IS RELATIVELY FLAT, SLOPING TOWARDS THE WEST. THE EXISTING ROADS ARE DRAINED TO INLET BOXES AND CONTROLLED BY SUMPS. THE SITE WILL FOLLOW A SIMILAR APPROACH AND COLLECT THE STORM WATER THROUGHOUT THE SITE AND DIRECT THE FLOW TO SUMPS TO PERCOLATE INTO THE GROUND. HISTORICALLY THE FLOW HAS FOLLOWED THIS SAME PATTERN OF PERCOLATING INTO THE GROUND AT THE SITE. THE NUMBER OF SUMPS SHOWN AND THE LOCATIONS FOR THE SUMPS ARE PRELIMINARY. STORM DRAIN CALCULATIONS, SUPPORTING THE SUMP LOCATIONS, WILL BE PROVIDED IN THE FINAL STORM DRAINAGE REPORT.

GENERAL NOTES:

1. ALL CONSTRUCTION TO BE DONE ACCORDING TO HIGHLAND CITY STANDARDS AND SPECIFICATIONS.
2. ALL STORM DRAIN BOXES TO BE 3'X3' INSIDE DIMENSION UNLESS OTHERWISE SPECIFIED.
3. STORM DRAIN PIPE IS 15" RPC. SLOPE FROM BOX TO BOX IS 0.2□ MIN. AND SPECIFIED.
4. CONTRACTOR TO MEET ALL ADA REQUIREMENTS FOR THE SITE.
5. PIPE SLOPE FROM BOX TO SUMP IS 1.0□ MIN.

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CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: BMB
PROJECT MANAGER: BMB
DRAWN BY: DJN
SCALE: 1"=40'
ISSUE DATE: 06/02/2015

PROJECT
BLACKSTONE TOWNHOMES
A RESIDENTIAL SUBDIVISION

SHEET TITLE
GRADING PLAN

PROJECT
C15-006

SHEET
C-2.2

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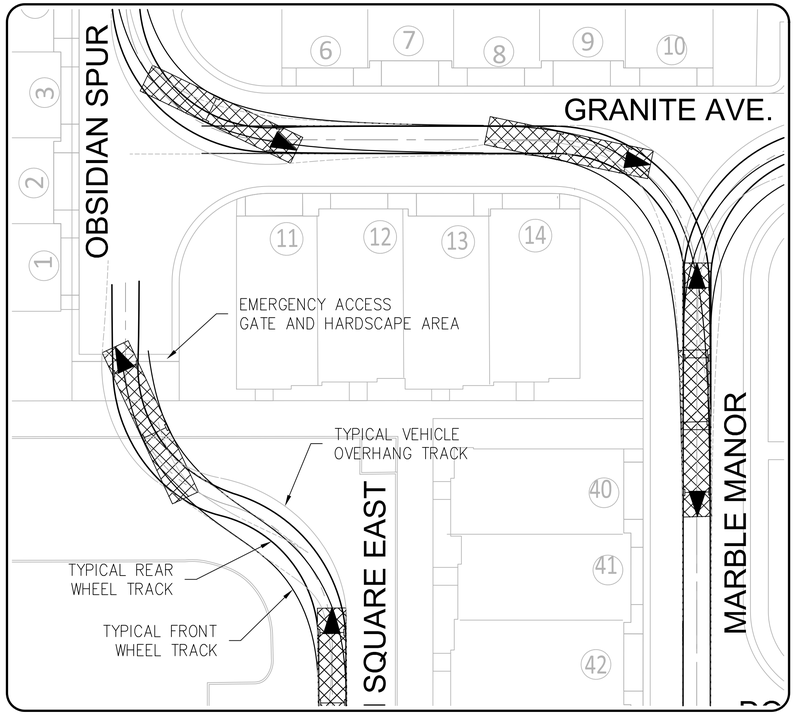

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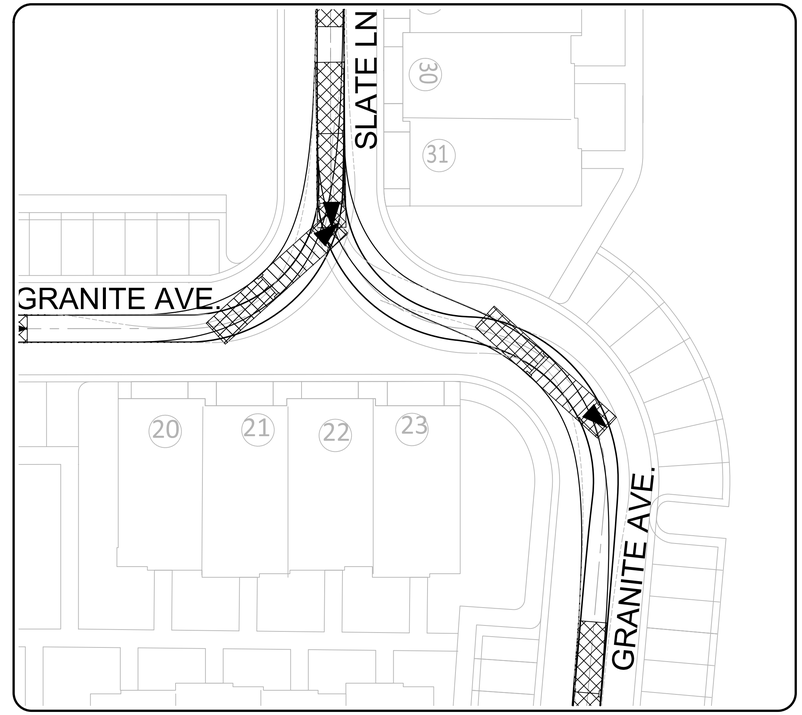

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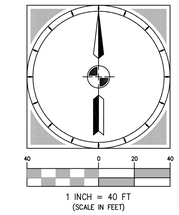

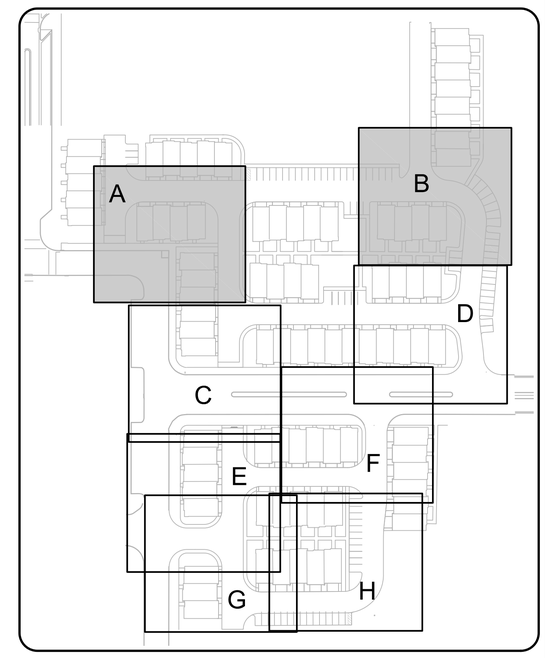

DETAIL KEY PLAN
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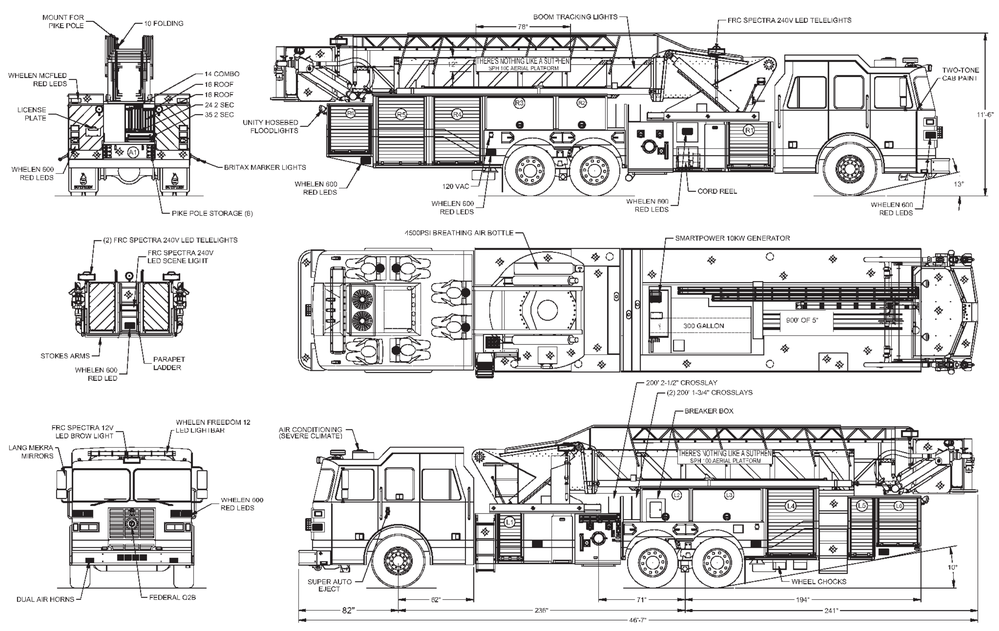

- ASSUMED FIRE TRUCK DETAILS
N.T.S.

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CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: EMB
PROJECT MANAGER: EMB
DRAWN BY: DLP
SCALE: AS SHOWN
ISSUE DATE: 6-2-2015

PROJECT
BLACKSTONE TOWNHOMES
A RESIDENTIAL SUBDIVISION

SHEET TITLE
FIRE TRUCK INGRESS AND EGRESS

PROJECT
C15-006

SHEET
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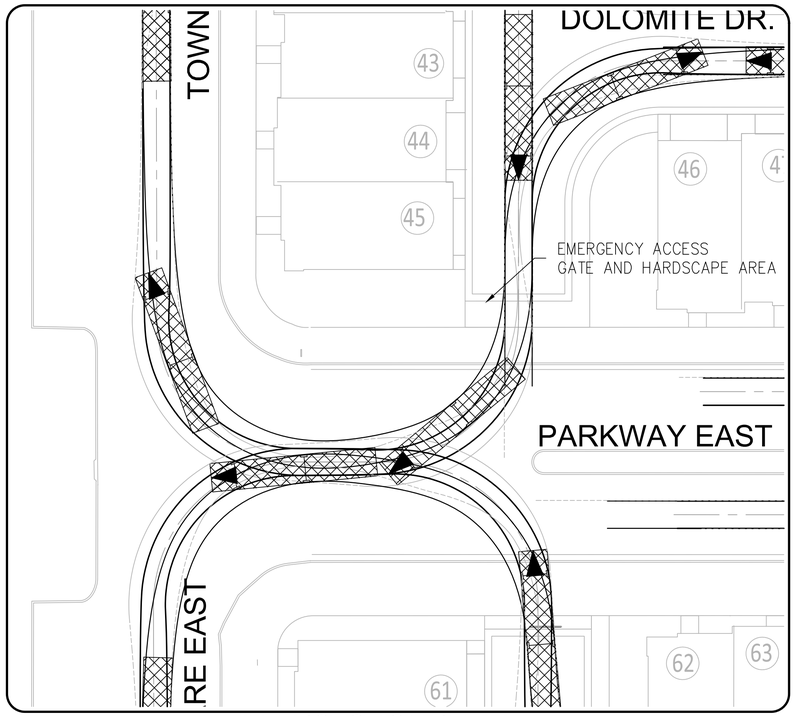

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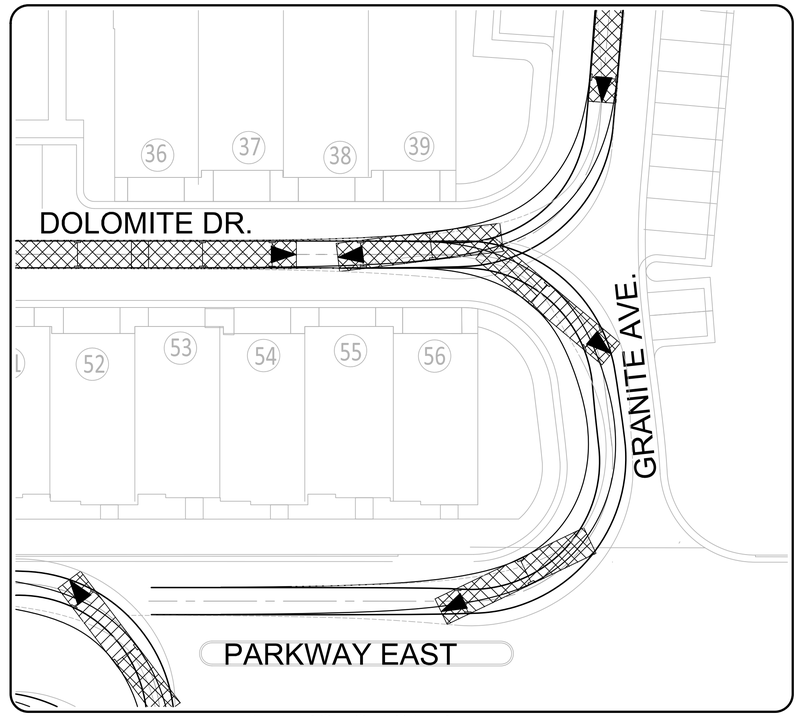

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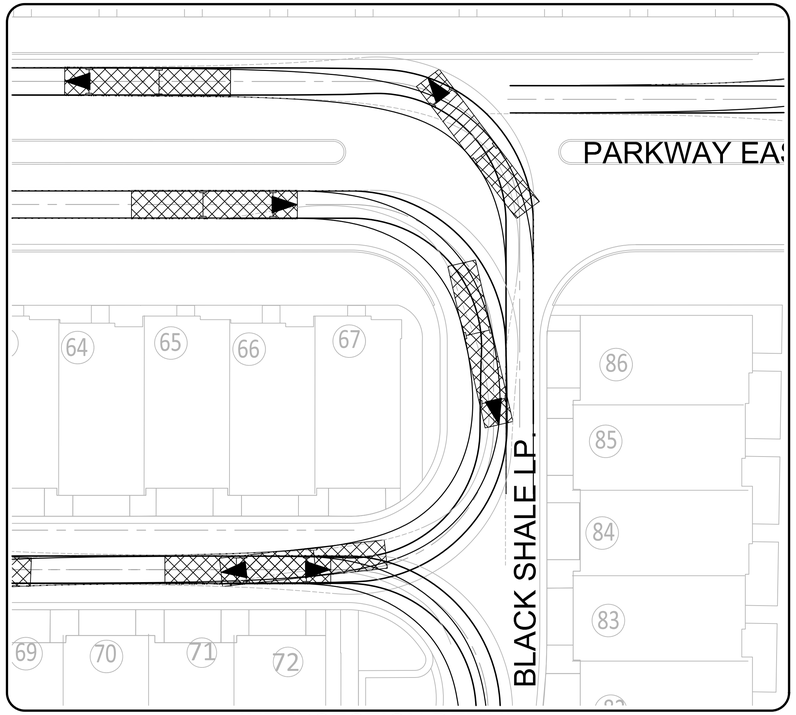

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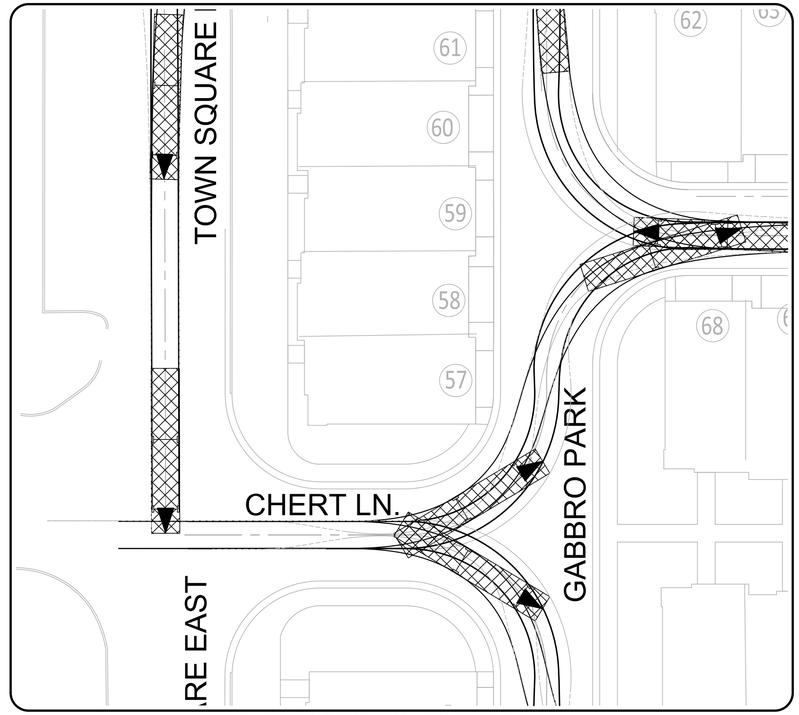

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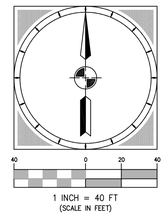

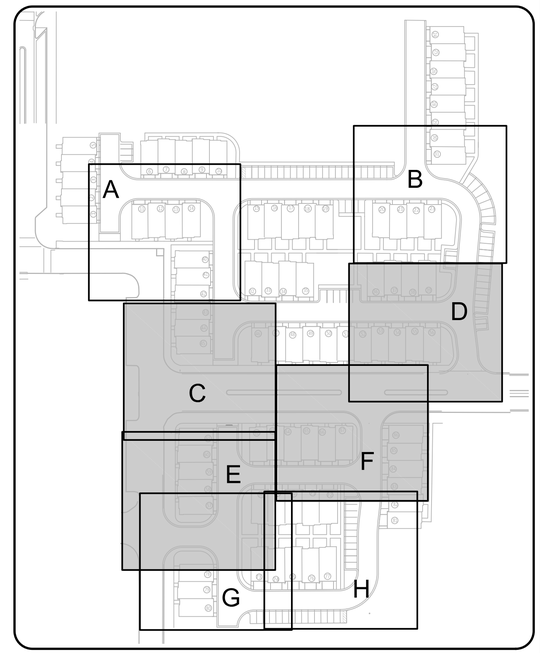

DETAIL KEY PLAN
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CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: BMB
PROJECT MANAGER: BMB
DRAWN BY: DLP
SCALE: AS SHOWN
ISSUE DATE 6-2-2015

PROJECT
BLACKSTONE TOWNHOMES
A RESIDENTIAL SUBDIVISION

SHEET TITLE
FIRE TRUCK INGRESS AND EGRESS

PROJECT
C15-006

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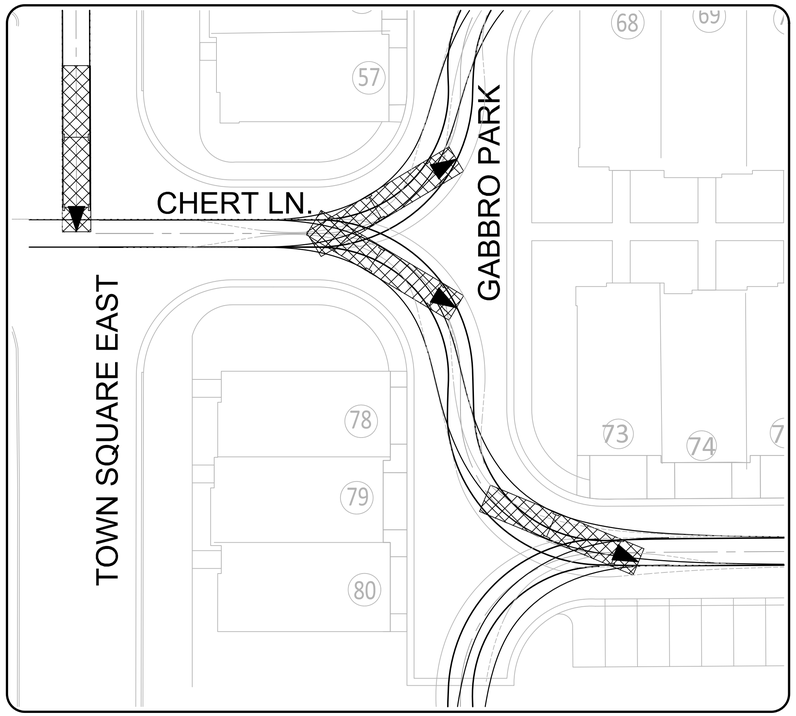

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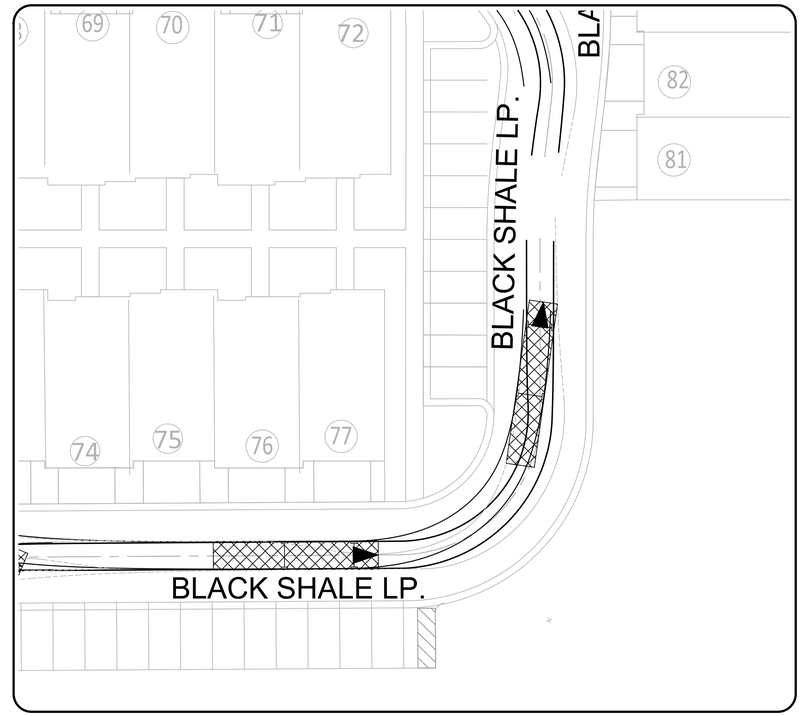

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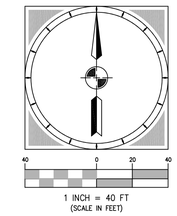

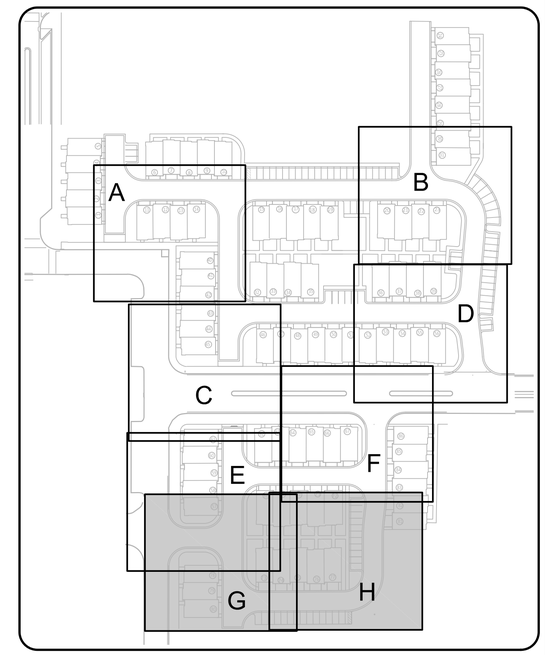

DETAIL KEY PLAN
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CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: BMB
PROJECT MANAGER: BMB

DRAWN BY: DLP
SCALE: AS SHOWN
ISSUE DATE: 9-2-2015

PROJECT
BLACKSTONE TOWNHOMES
A RESIDENTIAL SUBDIVISION

SHEET TITLE
FIRE TRUCK INGRESS AND EGRESS

PROJECT
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SHEET
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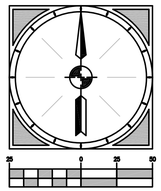

LEGEND

- Landscape Area
  81,294 SF-24% of project area
- Hardcape Area
  17,984 SF-5.3% of project area
- Driveway
- Other Hardscape Areas
- Other Sidewalks

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CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: BMB
PROJECT MANAGER: BMB
DRAWN BY: SCS
SCALE: AS SHOWN
ISSUE DATE: 6-2-15

PROJECT
BLACKSTONE PROJECT

SHEET TITLE
LANDSCAPE CALCULATIONS

PROJECT
C15-006

SHEET
C-4

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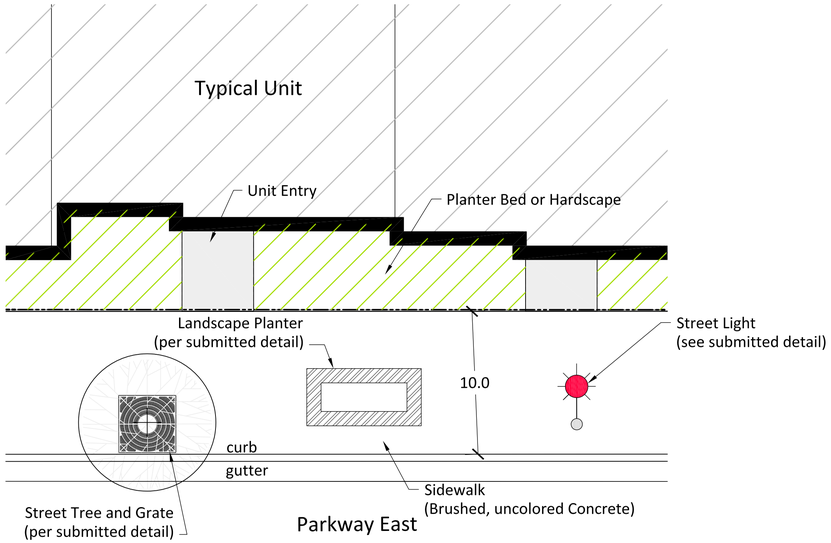
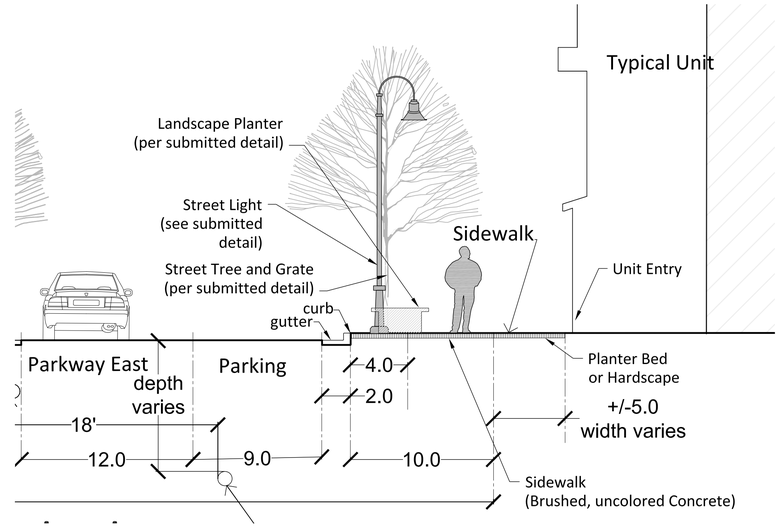


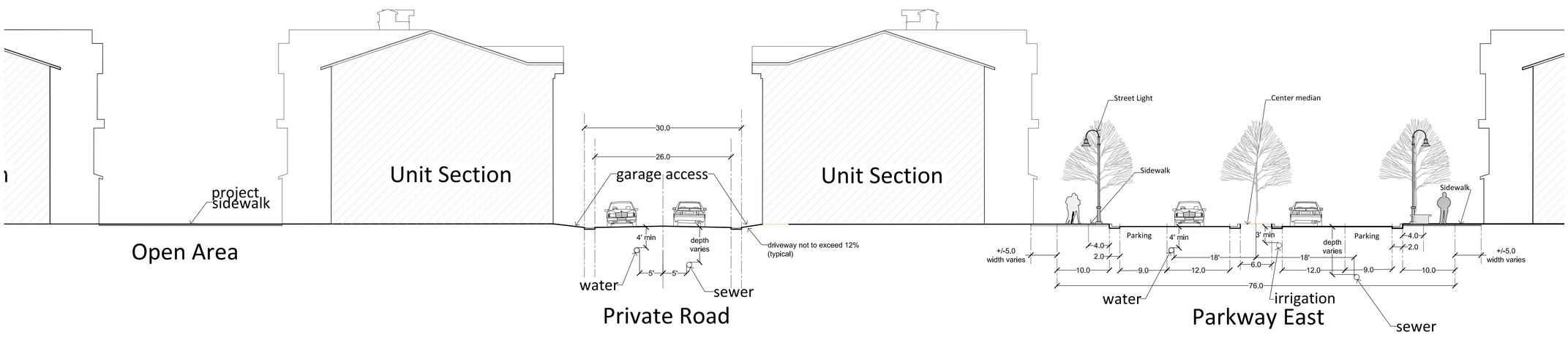
Sidewalk Plan View

1"=5'



Sidewalk Section

1"=5'



Section A-A'

1"=10'

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CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: EMB
PROJECT MANAGER: EMB
DRAWN BY: SCS
SCALE: AS SHOWN
ISSUE DATE: 6-2-15

PROJECT: BLACKSTONE PROJECT

SHEET TITLE: ROAD SECTIONS

PROJECT: C15-006

SHEET: C-5

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Window Schedule							
NUMBER	WIDTH	HEIGHT	FRAME	GLAZING	DESCRIPTION	COUNT
A	3' - 0"	6' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	11
B	3' - 0"	4' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	6
C	3' - 0"	3' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	6
D	2' - 0"	4' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	5
E	3' - 0"	6' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	10
F	4' - 0"	5' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	16
G	4' - 0"	6' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	2
H	1' - 0"	3' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	6
I	5' - 0"	5' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	1
J	4' - 0"	4' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	4
K	3' - 0"	5' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	2
L	3' - 0"	5' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	1
M	2' - 0"	2' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	1
Grand total						71

Door Schedule								
NUMBER	WIDTH	HEIGHT	THICKNESS	JAMB	MATERIAL	HARDWARE	DESCRIPTION	COUNT
01	3' - 6"	8' - 0"	0' - 2"	FIR	WOOD	LOCK & DEAD BOLT	INSULATED COLONIAL	1
02	2' - 8"	6' - 8"	0' - 1 1/2"	FIR	WOOD	LOCK & DEAD BOLT	INSULATED COLONIAL	1
03	3' - 0"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	COLONIAL	2
03	6' - 0"	7' - 8"	0' - 1 1/2"	FIR	GLASS	LOCK & DEAD BOLT	INSULATED GLASS	1
04	2' - 8"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	COLONIAL	3
05	2' - 6"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	COLONIAL	4
06	2' - 4"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	COLONIAL	7
07	1' - 4"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	COLONIAL	1
08	4' - 0"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	DOUBLE PANEL	1
09	5' - 0"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	DOUBLE PANEL	5
10	2' - 8"	6' - 8"	0' - 1 1/2"	FIR	WOOD	LOCK & DEAD BOLT	GARAGE DOOR	1
11	16' - 0"	8' - 0"	0' - 1 1/2"	FIR	METAL	LOCK	GARAGE ROLL UP	1
Grand total								28

NOTE:
A BACK WATER VALVE IS REQUIRED TO PROTECT PLUMBING FIXTURES THAT ARE LOCATED BELOW THE ELEVATION LEVEL OF THE NEAREST UPSTREAM MAN HOLE COVER. FIXTURES THAT ARE ABOVE THE ELEVATION OF THE MAN HOLE COVER SHALL NOT DISCHARGE THROUGH THE BACK WATER VALVE

NOTE:
FLOOR DRAINS MUST HAVE TRAP PRIMERS OR DEEP SEAL TRAPS

NOTE:
MAIN LEVEL WINDOW'S HEAD HEIGHT @ 7'-8" UNO

NOTE:
UPPER LEVEL WINDOW SILLS TO BE A MIN. OF 24" ABOVE FLOOR

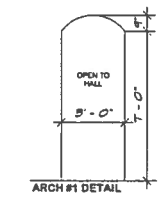
NOTE:
HOMEOWNER TO MEET WITH BUILDER & TRUSS COMPANY TO DISCUSS VAULTED/TREY/COFFERED CEILING OPTIONS

NOTE:
8' TALL WALLS FRAMED WITH STUDS @ 16" O.C.
10' AND TALLER WALLS SEE ENGINEERING.

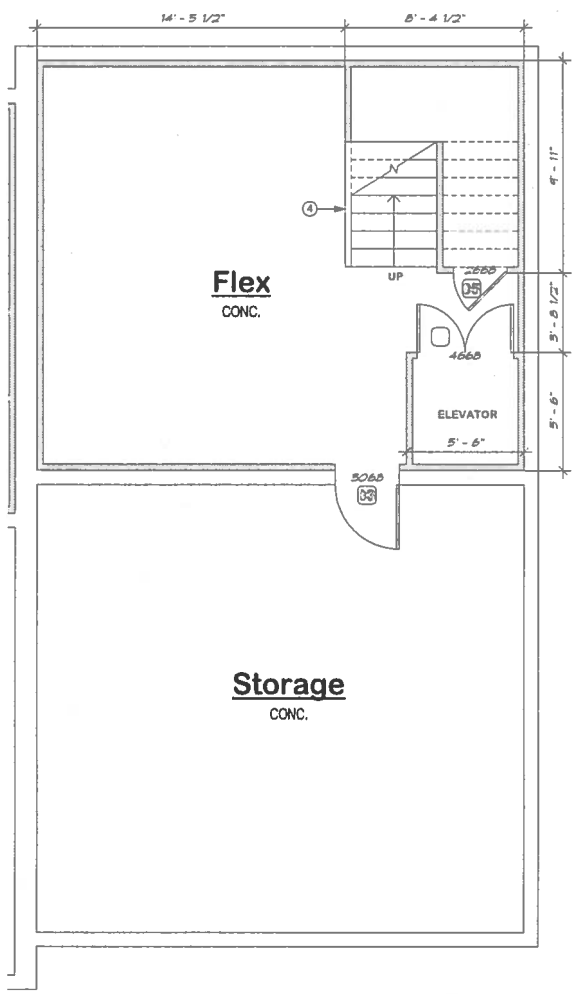
DIMENSIONS ON FLOOR PLANS ARE TO ROUGH FRAMING UNLESS OTHERWISE NOTED.

2 X 4 STUD WALLS ASSUMED TO BE 3 1/2" WIDE.

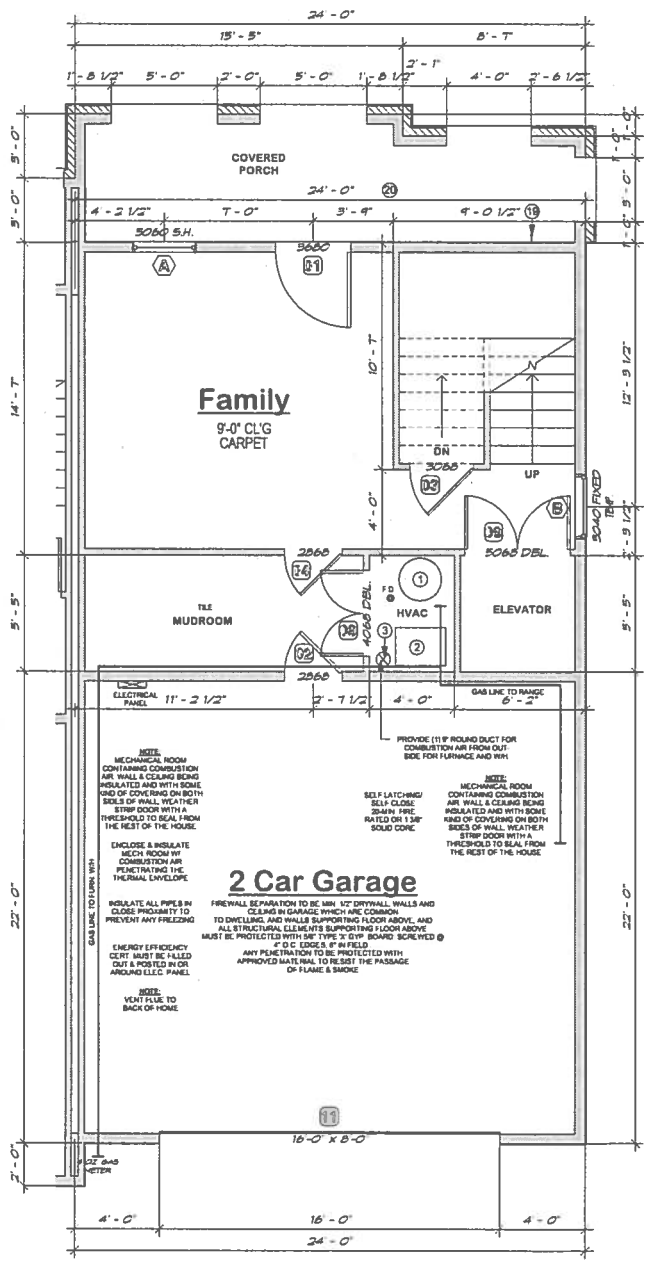
2 X 6 STUD WALLS ASSUMED TO BE 5 1/2" WIDE.



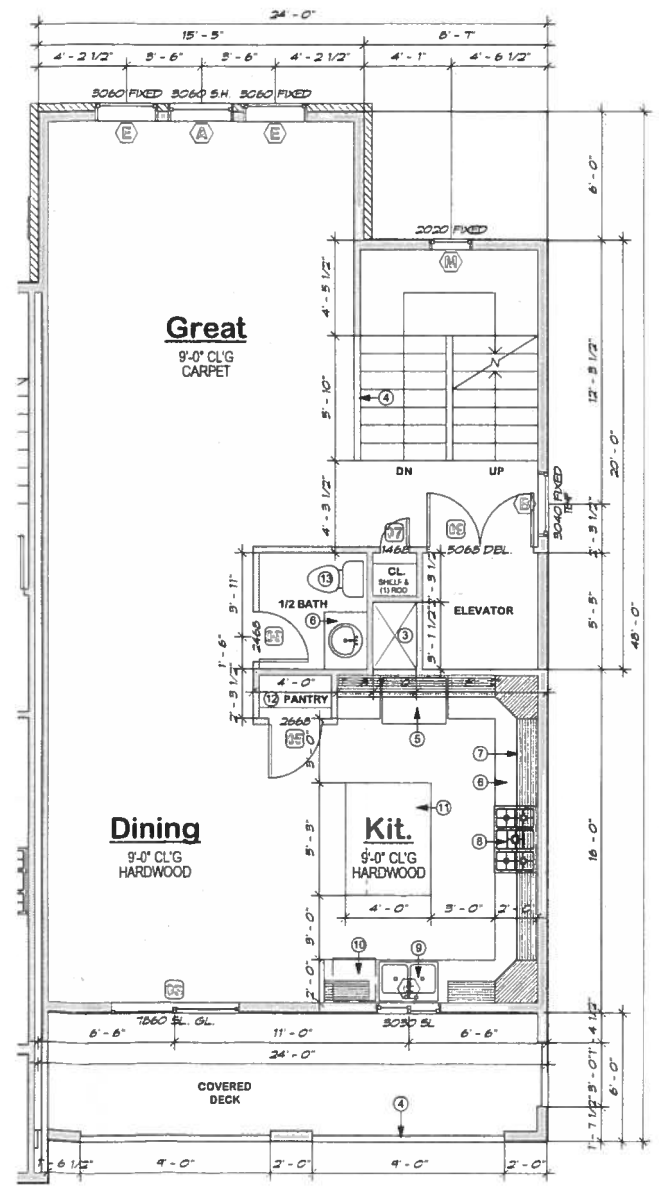
ARCH #1 DETAIL



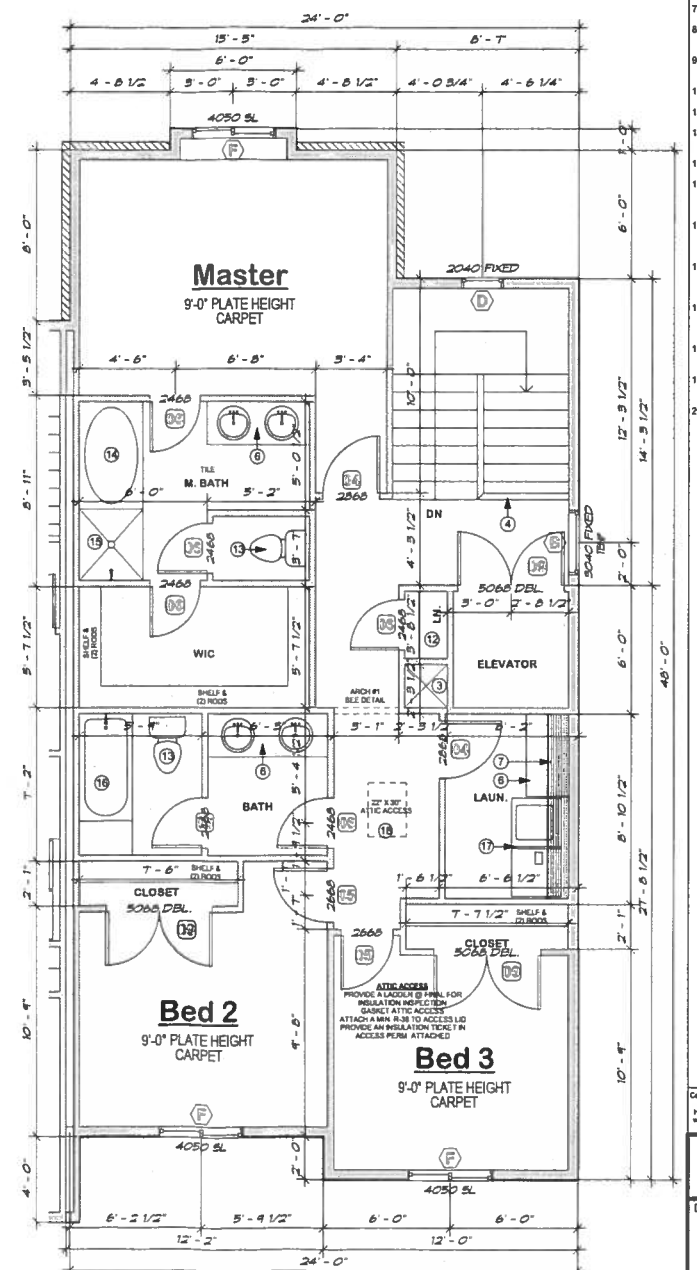
PRE-CAST LEVEL



GROUND LEVEL



MAIN LEVEL



UPPER LEVEL

FLOOR PLANS

WALKER HOME DESIGN
801-930-9499 office
www.walkerhomedesign.com

KEYNOTES

1. (1) 50 GALLON GAS WATER HEATERS W/ EXPANSION TANK, 40,000 BTUS (WITH SESSMIC HOLDOWNS PLACED A 3RD WAY UP & A 3RD DOWN) (WITH ONE WAY CHECK HEAT VALVES) (1/2" FOAM INS. AT HOT WATER LINES)
2. (1)90% EFFICIENCY CLASS FURNACES 100,000 BTUS (i.e. TEMPSTAR NUG5100 DFA)
3. FLUE CHASE
4. GUARD RAILING
5. 36" WIDE REFRIGERATOR SPACE (WITH INSTALLED WATER LINE)
6. GRANITE COUNTERTOP ON BASE CABINET
7. UPPER CABINETS (TOP @ 7'-0")
8. 36" WIDE RANGE COOK-TOP W/ RANGE HOOD ABOVE
9. DOUBLE SINK W/ DISPOSAL AND SPRAYER
10. DISHWASHER
11. ISLAND SNACK BAR
12. (5) 16" SHELVES STARTING @ 24" ABOVE FINISHED FLOOR
13. 1.6 GALLON PER FLUSH TOILET
14. 44" X 60" JETTED TUB W/ DURA-CRETE BACKER BOARD W/ MIN. 18" X 18" ACCESS@FRONT
15. 36" X 48" WALK-IN TILE SHOWER W/ (2) 2.5 GPM SHOWER HEADS W/ DURA-CRETE BACKER BOARD
16. 30" X 60" TUB/SHOWER W/ 2.5 GPM SHOWER HEAD W/ DURA-CRETE BACKER BOARD
17. WASHER/DRYER SPACE (VENT DRYER TO EXTERIOR W/ 4" VENT)
18. 22" X 30" ATTIC ACCESS w/LOCKING LATCH
19. HOSE B/B W/ SHUT-OFF BALL VALVE (FREEZE PROTECTED)
20. CONC. LANDING @ MIN. 36" X 36"

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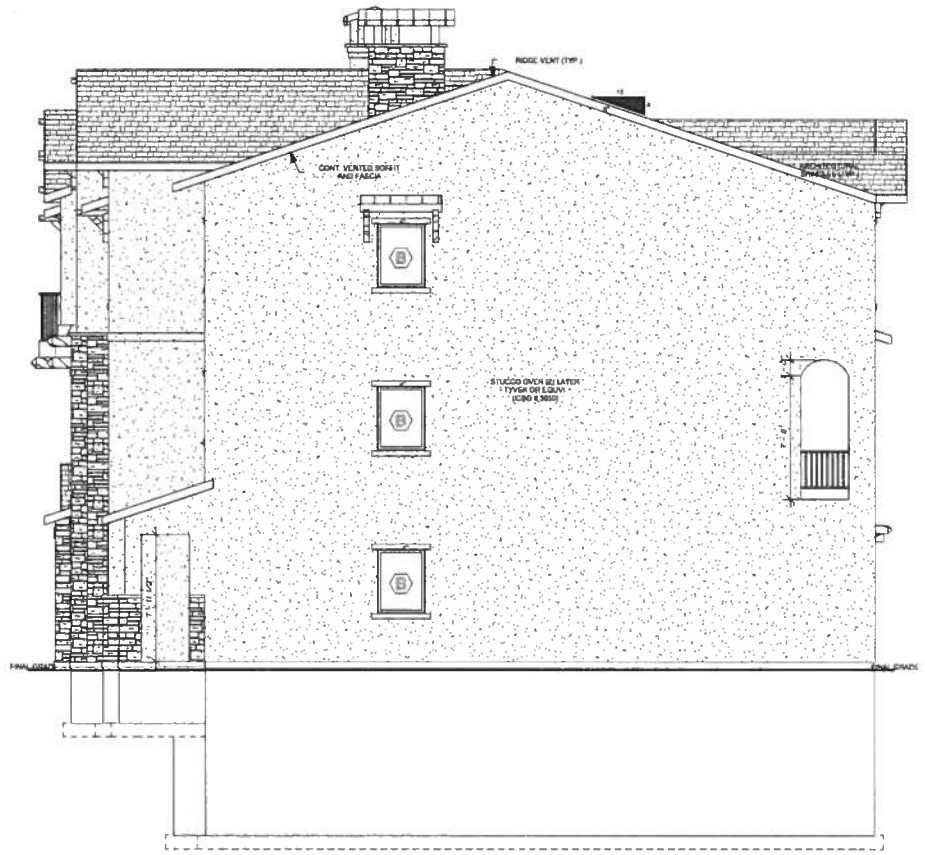
Blackstone
6 Unit Townhomes

Designed for
Blackstone Group

Finished Footage	2,285
Date	OCT. 2014
Drawn by	DSW
PRINTED 5/28/2015 12:27:18 PM	PRE-CAST 473 FLEX. 449 GROUND LEVEL 491 MAIN LEVEL 867 UPPER LEVEL 927 TOTAL 3,207
Sheet 4 of 12	
SCALE:	1/4" = 1'-0"

6 UNIT RIGHT ELEVATION



NOTE:
GROUND LEVEL WINDOW'S HEAD HEIGHT @ 7'-8" UNO

NOTE:
MAIN LEVEL WINDOW'S HEAD HEIGHT @ 7'-8" UNO

NOTE:
UPPER LEVEL WINDOW SILLS TO BE A MIN. OF 24" ABOVE FLOOR

NOTE:
INSPECTIONS ARE REQUIRED FOR ALL STUCCO & EIFS SYSTEMS

NOTE:
NO MECHANICAL VENTS ON FRONT OF HOME

6 UNIT FRONT ELEVATION

WALKER HOME DESIGN
801-930-9499 office
www.walkerhomedesign.com

KEYNOTES

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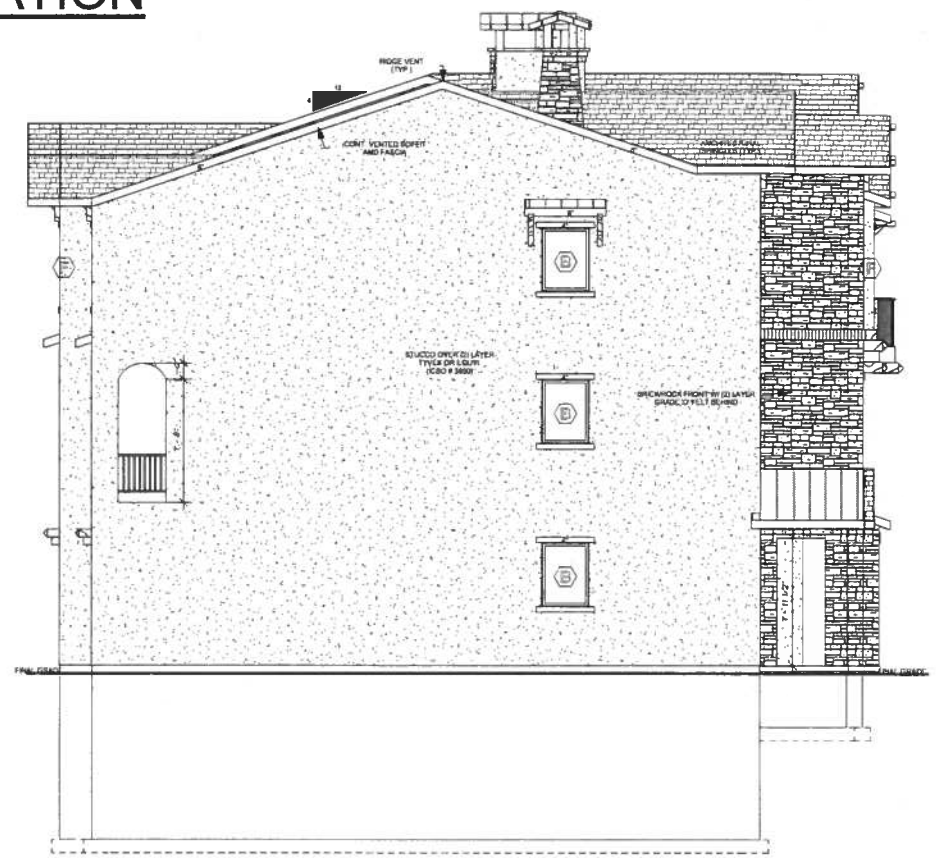
Blackstone
6 Unit Townhomes

Designed for
Blackstone Group

Finished Footage	2,285
Date	OCT. 2014
Drawn by	DSW
PRINTED 5/29/2015 12:27:12 PM	PRE-CAST: 473
Sheet 5 of 12	FLEX: 449
	GROUND LEVEL: 491
	MAIN LEVEL: 867
	UPPER LEVEL: 927
	TOTAL: 3,207

SCALE: 3/16" = 1'-0"

6 UNIT LEFT ELEVATION



NOTE:
GROUND LEVEL WINDOW'S HEAD HEIGHT @ 7'-8" UNO

NOTE:
MAIN LEVEL WINDOW'S HEAD HEIGHT @ 7'-8" UNO

NOTE:
UPPER LEVEL WINDOW SILLS TO BE A MIN. OF 24" ABOVE FLOOR

NOTE:
INSPECTIONS ARE REQUIRED FOR ALL STUCCO & EIFS SYSTEMS

NOTE:
NO MECHANICAL VENTS ON FRONT OF HOME

6 UNIT REAR ELEVATION

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KEYNOTES

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Blackstone
6 Unit Townhomes

Designed for
Blackstone Group

Finished Footage	2,285
Date	OCT. 2014
Drawn by	DSW
PRINTED 5/28/2015 12:27:14 PM	PRE-CAST: 473
	FLEX: 449
Sheet 6 of 12	GROUND LEVEL: 491
	MAIN LEVEL: 867
	UPPER LEVEL: 927
	TOTAL: 3,207
SCALE:	3/16" = 1'-0"

SHADE TREES

SYMBOL	BOT. NAME/COMMON NAME	QTY.	SIZE
	ACER X FREEMANII 'Jeffers Red' AUTUMN BLAZE MAPLE		2" CALIPER
	PYRUS CALLERYANA 'Chanticleer' Chanticleer Pear Tree		2" CALIPER

ORNAMENTAL TREES

SYMBOL	BOT. NAME/COMMON NAME	QTY.	SIZE
	MALUS 'Spring Snow' SPRING SNOW CRABAPPLE		2" CALIPER
	TILIA AMERICANA 'Redmond' REDMOND LINDEN		2" CALIPER

EVERGREEN TREES

SYMBOL	BOT. NAME/COMMON NAME	QTY.	SIZE
	PINUS LEUCODERMIS BOSNIAN PINE		5'-6'

LARGE SHRUBS

FORSYTHIA X NORTHERN GOLD - NORTHERN GOLD FORSYTHIA
EUONYMUS ALATUS COMPACTA - DWARF BURNING BUSH
PRUNUS CISTENA - PURPLE SANDCHERRY
CORNUS ALBA ELEGANTISSIMA - VARIEGATED DOGWOOD

MEDIUM SHRUBS

BERBERIS THUNBERGII 'Crimson Pygmy' - CRIMSON PYGMY BARBERRY
CALAMAGROSTIS ACUTIFOILA 'Karl Foester' - FEATHER KARL FOESTER

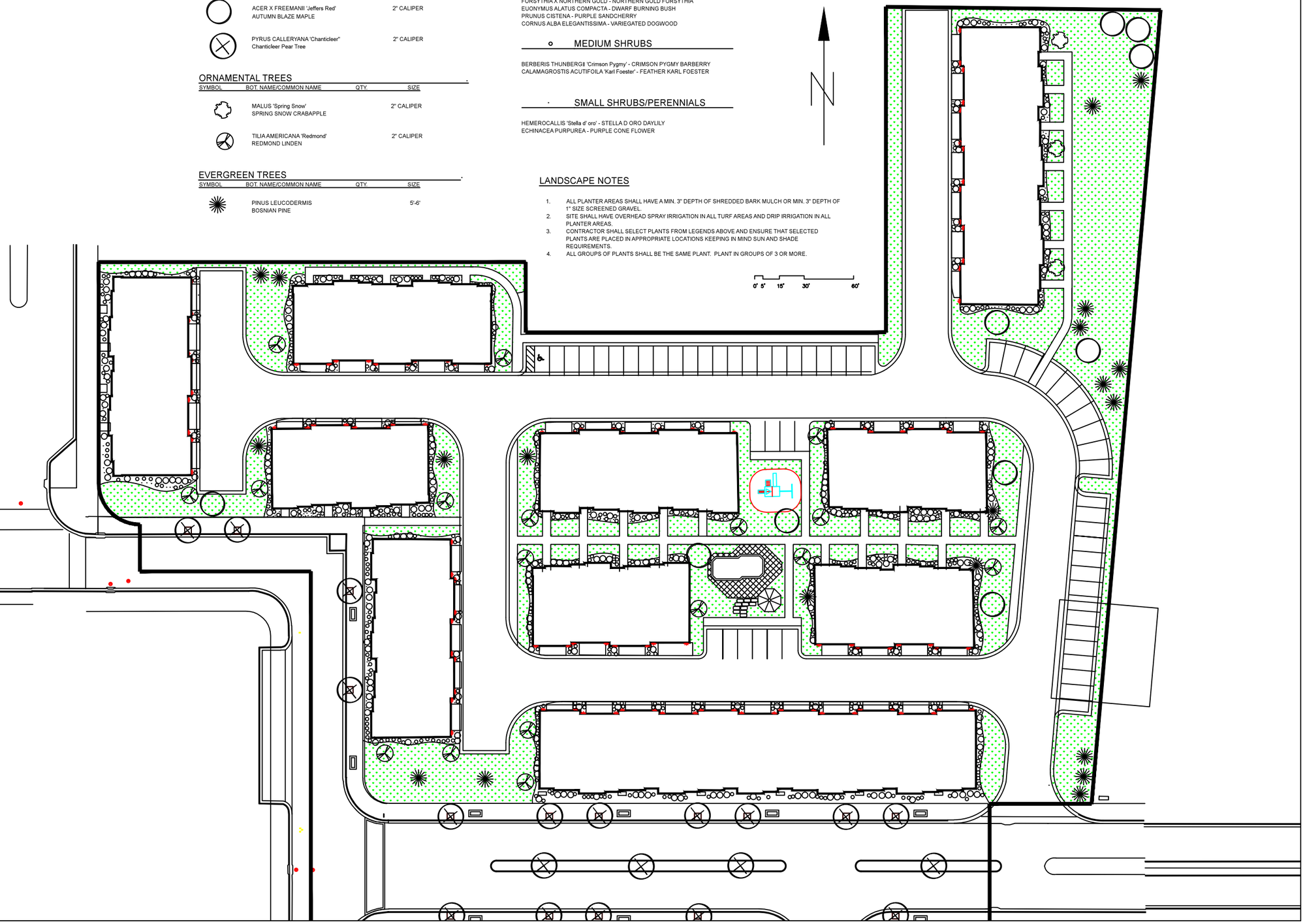
SMALL SHRUBS/PERENNIALS

HEMEROCALLIS 'Stella d' oro' - STELLA D ORO DAYLILY
ECHINACEA PURPUREA - PURPLE CONE FLOWER

LANDSCAPE NOTES

1. ALL PLANTER AREAS SHALL HAVE A MIN. 3" DEPTH OF SHREDDED BARK MULCH OR MIN. 3" DEPTH OF 1" SIZE SCREENED GRAVEL.
2. SITE SHALL HAVE OVERHEAD SPRAY IRRIGATION IN ALL TURF AREAS AND DRIP IRRIGATION IN ALL PLANTER AREAS.
3. CONTRACTOR SHALL SELECT PLANTS FROM LEGENDS ABOVE AND ENSURE THAT SELECTED PLANTS ARE PLACED IN APPROPRIATE LOCATIONS KEEPING IN MIND SUN AND SHADE REQUIREMENTS.
4. ALL GROUPS OF PLANTS SHALL BE THE SAME PLANT. PLANT IN GROUPS OF 3 OR MORE.

0' 5' 15' 30' 60'



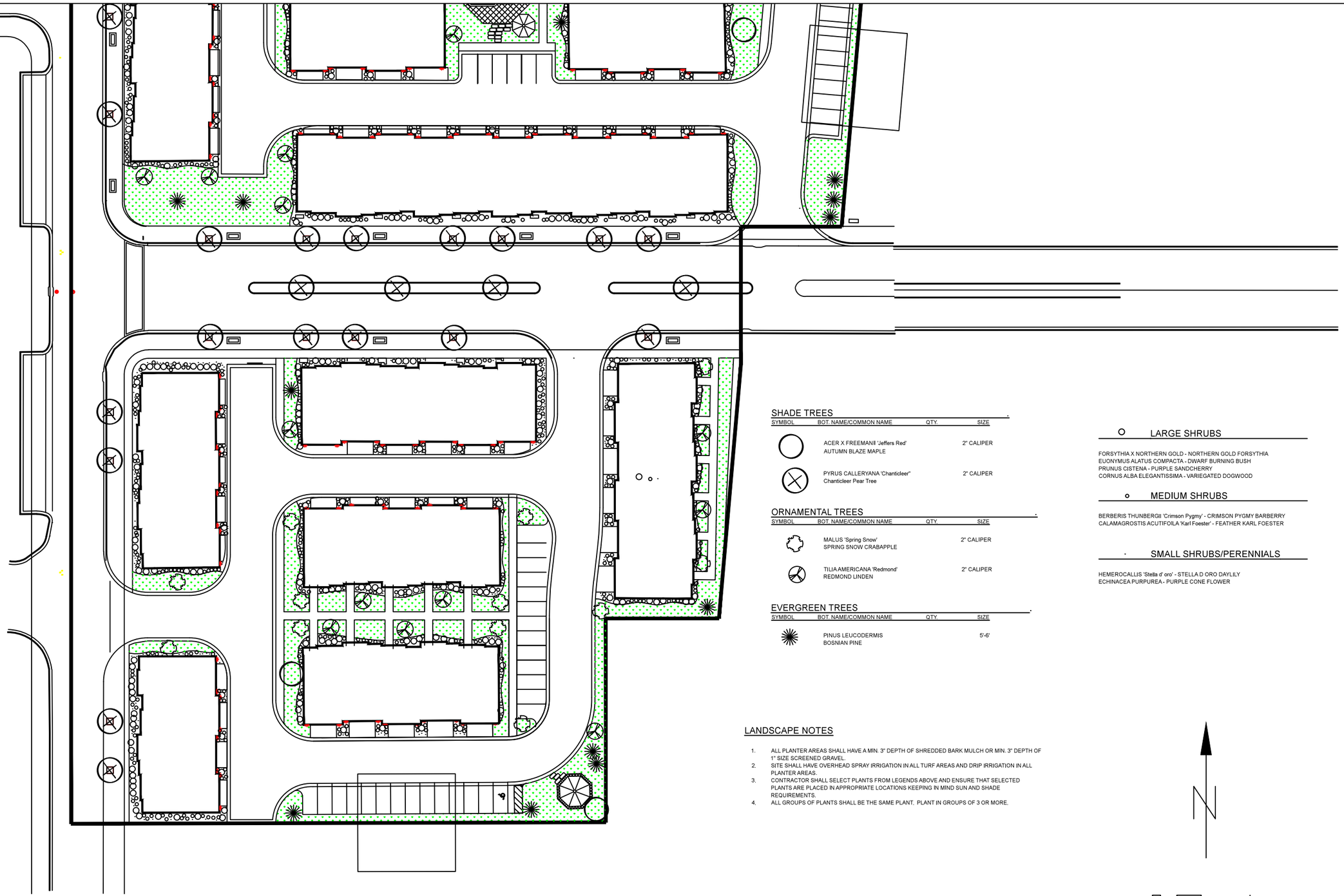
CLS - Community Landscape Services

Danny Knighton
Landscape Designer
May 29, 2015

Blackstone
Highland, Utah

Landscape Plan
Scale = 1":60'-0"

Page:
LP-01



SHADE TREES

SYMBOL	BOT. NAME/COMMON NAME	QTY.	SIZE
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ORNAMENTAL TREES

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EVERGREEN TREES

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0' 5' 15' 30' 60'

CLS - Community Landscape Services
Danny Knighton
Landscape Designer
May 29, 2015

Blackstone
Highland, Utah

Landscape Plan
Scale = 1":60'-0"

Page:
LP-02

6/18/15

Summary of Neighborhood Meeting held at the Community Center on 6/18/15 at 6:30 PM.

Tim Aalders, Matt Robinson, Aise Allart, and Al Rafati from Holt Development Group were at the community center at 6:15 P.M.

At 6:35 the first neighbors started showing up to the meeting. Tim started the meeting by handing out architectural drawings and site plans to the neighbors. Tim explained that that we are building 86 townhomes in the Highland Town Center. We walked the neighbors through the site plan pointing out amenities, parking, access points, etc. We went through the architectural drawings showing the quality of the townhomes. Tim invited everyone there to come see our parade homes in Lehi, so they can see the quality of our homes.

One gentleman came to the meeting because he owned multiple rentals in Toscana. He asked us if we were going to compete with Toscana and have rentals. Matt Robinson explained to him that our townhomes are not going to be rentals. We designed the units to be larger and nicer than Toscana. At the $290,000 – $340,000 price range, rentals don't make a lot of sense. He left after we answered his question.

There were only two neighbors who had concerns at the meeting Kathy and Willard and Lujeanne Spykes.

Kathy over the course of an hour asked multiple questions.

She was concerned that these units are 3 stories and block views.

Tim responded that the townhomes are designed within the Town Center Code.

She raised concerns about the parking situation.

Tim responded that Toscana's parking ratio was 2.2 parking spots per unit. Tim explained that we raised our parking ratio to 3 to help alleviate the parking situation. Tim explained that we are in compliance with the code. We explained that the city does not want driveways, or people parking in the driveways.

She raised concerns that no one would want to buy these townhomes.

Tim respectfully disagreed. Tim stated that if they don't sell, then Kathy will get to enjoy the open field for longer than expected. Even if they don't sell fast, everyone is better off because we are paving the dirt road.

She raised concerns about these townhomes being rentals.

We explained that we are not planning on using the townhomes as rentals.

She raised concerns about the amount of open space

Kathy wanted us to build cottages like the ones she lives in. We explained that the cost of land is so expensive that it is not financially feasible to build cottages. Tim explained that he has lived in Highland of 19 years. It is very important to him to design a project that makes Highland a better place to live and makes him proud. He explained that we didn't push for max density. We could have tried to squeeze 10-20 more townhomes on the property. He explained that the townhomes will be very high quality with elevators, media rooms, granite, 3 tone paint, custom cabinets, etc.

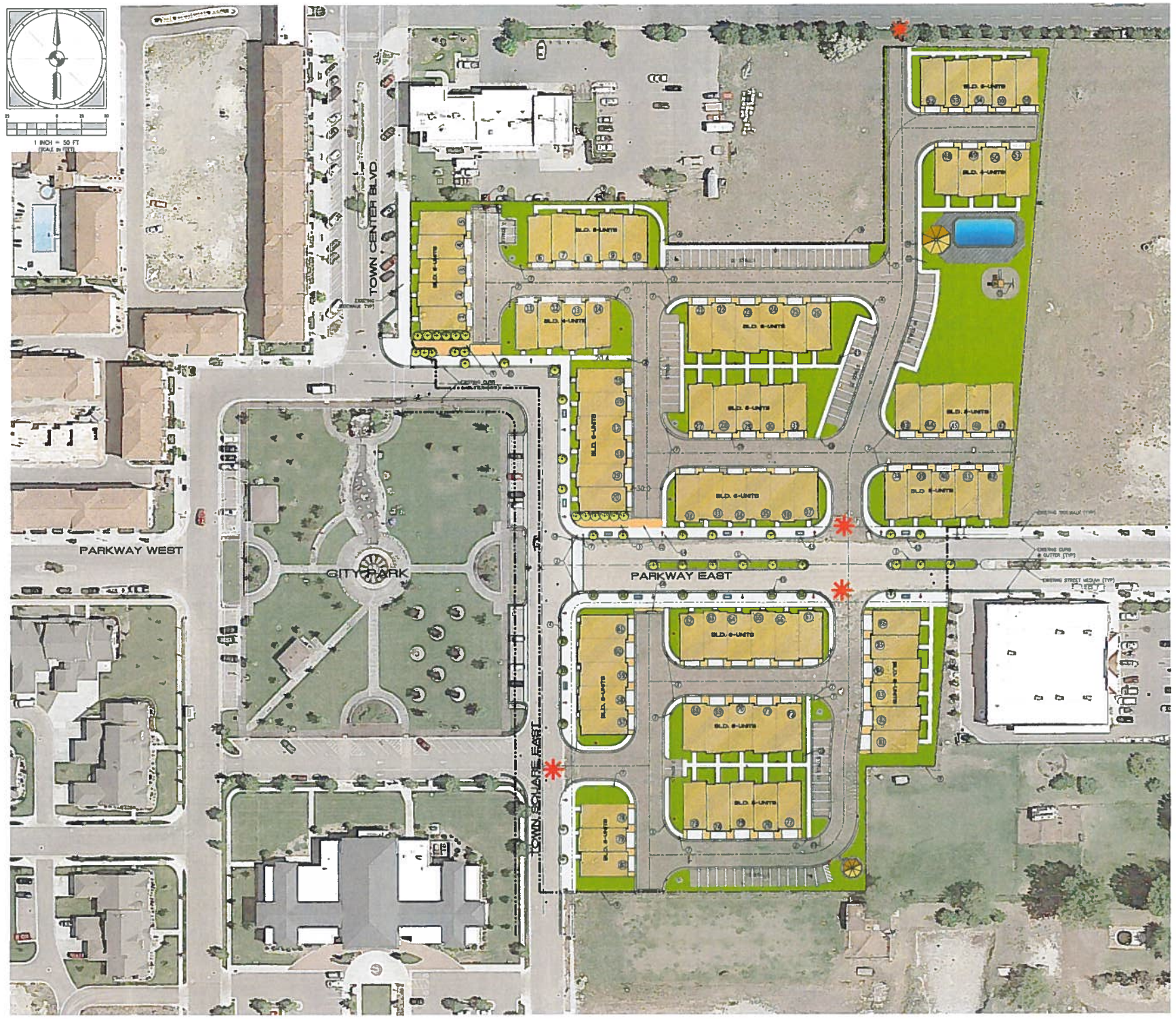
Tim also explained that Holt Development Group is designing a community for some of the older members of Highland where they can sell their large house on a large lot and still live in Highland. It's a place where they can live in a nice 3,200 sq. foot town home in Highland for around $300,000. They will no longer have to take care of a large yard.

She raised the concern about townhomes being built in the town center

We explained that we in compliance with all the zoning codes. We are not asking for any exceptions to the code. She then went on to explain that there is another developer who is looking into building a 4 story assisted living community in the town center. She said the developer is looking to get permission to build 4 stories by building the city a library. She explained how angry this made her and that she would fight it.

Willard and Lujeanne Willard were the other neighbors to raise a concern. Their first concern was a rod iron fence. They were nervous that kids could reach through the rod iron fence to feed her horses. She was also concerned by the fact that they still flood irrigate their land and want to make sure that they don't flood the townhomes. They were angry at the city because the city forced them to do a bunch of work on their property that was not necessary.

We finished around 7:30 and thanked everyone for coming.



LEGEND

1. LANDSCAPED STREET MEDIAN
2. ADA RAMP
3. ACCESS GATE IN EXTERIOR FENCING
4. NEW SIDEWALK
5. PASEO/ PLAZA AREAS-SEE SITE PLAN DETAIL SHEET
6. GAZEBO/ GRILL AREA
7. STOP/ STREET SIGN
8. EXISTING 5' WIDE SIDEWALK TO BE UPGRADED TO A 15' WIDE SIDEWALK
9. WROUGHT IRON FENCING-SEE DETAIL SHEETS
10. FIRE ACCESS
11. LANDSCAPE PLANTER
12. CROSSWALK
13. POLE LIGHT-SEE LIGHTING SITE PLAN
14. STREET LIGHT-SEE LIGHTING SITE PLAN
15. STREET TREE AND GRATE-SEE DETAIL SHEETS
16. BIKE RACK-SEE DETAIL SHEETS
17. HIGH BACK CURB AND GUTTER
18. ROLLED GUTTER (All private roads)
19. CONCRETE DRIVEWAY
20. COMMUNITY FACILITY AREA
21. CHILDREN'S PLAY AREA
22. DOG WASTE STATION
23. MAIL BOXES

JURISDICTION

LEGAL JURISDICTION:	HIGHLAND CITY
DISTRICT/ PLANING ZONE:	TOWN CENTER FLEX USE

AREA TABULATIONS

	AREA	% of total
TOTAL AREA:	7.76 acres	100%
BUILDING(S) AREA:	2.45 acres (107,136 sf)	32%
LANDSCAPE:	1.21 acres (52,793 sf)	15.6%
HARDSCAPE:	0.4 acres (18,955 sf)	5%
ROADS:	1.9 acres (82,764 sf)	23%

PARKING TABULATIONS

TOTAL UNITS:	86
ON SITE PARKING PROVIDED:	172 GARAGE
	86 STALLS
	258 TOTAL ON SITE
	(3.0 SPACES/ UNIT)

ACCESSIBILITY

ALL UNITS TO OFFER ELEVATORS FOR HANDICAPPED ACCESS

* Project access point-full access

Summit Engineering Group Inc.
Structural • Civil • Surveying

REVISIONS	DATE	BY
1		
2		
3		
4		
5		
6		
7		
8		

CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: BWB
PROJECT MANAGER: BWB
DRAWN BY: SCS
ISSUE DATE: 7-06-15
SCALE: AS SHOWN

PROJECT
BLACKSTONE PROJECT

SHEET TITLE
SITE PLAN

PROJECT
C15-006

SHEET
C-1

Blackstone Project

Submitted By:
Summit Engineering
55 W. Center St.
Heber City, Utah 84032
July 9, 2015
brian@summiteg.com

Submitted To:
Highland City Planning Dept.
5400 W. Civic Center Dr.
Highland City, Utah 84003

Contents

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Consistency with the General Plan 2

Compliance with the Development Code 2

Compatibility with adjacent property 2

Site and Building Design 3

Site Plan 3

Architecture 4

Vehicle Circulation and Impacts 5

Fire Protection 6

Impact on Public Services 6

Project Impacts 7

Consistency with the General Plan

The Highland City General Plan was completed and adopted in February 2008. This comprehensive land use document highlighted the future growth patterns and the desired future condition of the community, of which, the Town Center zone was a key element. The General Plan states that, the Town Center is proposed to be a mixed use, walkable community. Since adoption of the General Plan, the Town Center zone has been partially built-out with the establishment of a park in the town square, civic functions, such as the municipal offices, library, and courts, commercial/ retail, and housing. This project provides high-density housing as a use which is compatible with the other, existing uses in the zone and meets the goals and objectives of the Town Center component of the General Plan.

Figure 1 Current Site Conditions

Compliance with the Development Code

The Blackstone project is located within the Town Center Overlay zone. The purpose of this zone is provide a central area where retail and residential land uses can be blended an attractive and walkable environment. The zone allows for high-density development with well-planned open space gathering areas. The zone also allows commercial, retail and civic functions within the overall zoning classification and provides direction to developers with respect to long term planning within the zone to promote successful development in the Town Center.

The project meets the objectives on the Town Center zone by providing an attractive and well-planned high-density residential component to the Town Center Overlay, immediately adjacent to the public park in the Town Square and nearby the Highland civic functions to the south of the park.

According the Town Center Land Use map, the project is also located within a "Flex Use" land use category which allows for attached high density residential uses, live-work uses, office uses, retail uses, or any combination of the four.

The proposed Blackstone project consists of 86 attached multi-family units in the Town Center zone, is compliant, as a Conditional Use, with the Highland Center Development Code (2013).

Compatibility with adjacent property

The Town Center consists of a mix of civic, park, commercial/ retail, and residential uses all within a walkable traditional town environment. Mixed uses in close proximity to one another is an important component of the Town Center zone. This project will in-fill an undeveloped parcel within the Town Center zone, bounded by existing uses including the town square park, the municipal offices, commercial uses, and other residential uses.

Site and Building Design

Site Plan

The property consists of 7.76 acres of land. The parcel is currently undeveloped as shown on the image below.

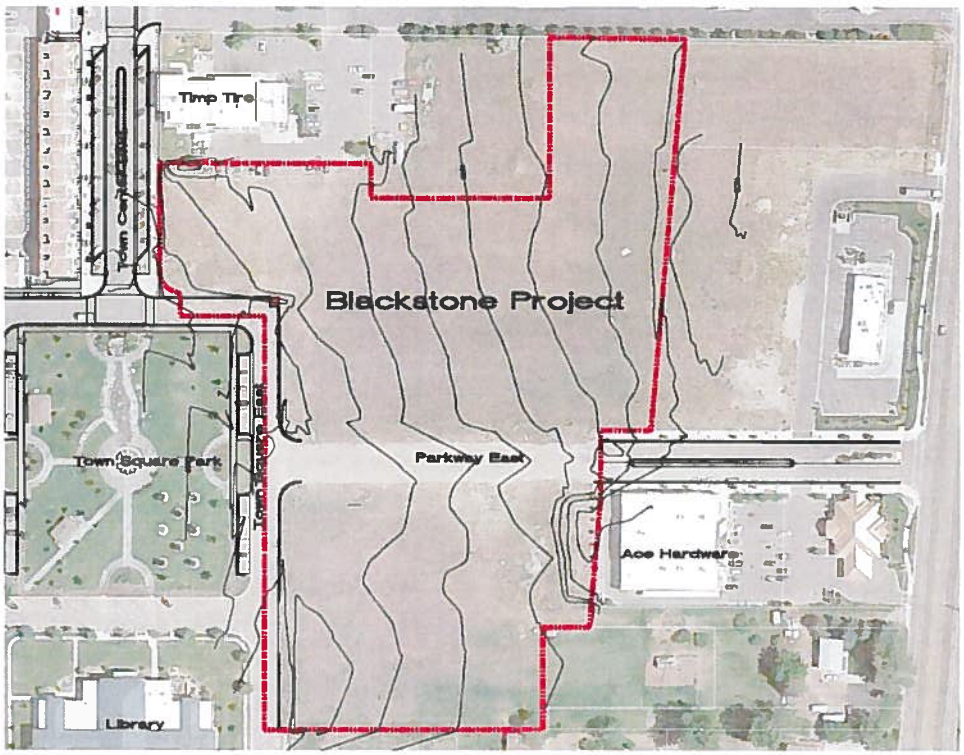

Figure 2 Property Boundary

The project area is located along the east and northeast of the town square park and on both sides of Parkway East Blvd, roughly to the existing Ace Hardware building along the eastern boundary and Timp Tire to the north. Access to the project is afforded via Parkway East and Town Square East.

The Blackstone project consists of 86 attached, townhouse units, for a density of 11 units per acre as shown on the site plan below. Allowed density is 12 units per acre. All of the units will have two-car garages, plus parking stalls for guests, open space, patios, plazas and other urban amenities. Sidewalks, throughout the project, will provide connectivity within the development and to other land uses in the Town Center zone. Two seating area/ plazas are proposed for the project as shown on the site plan. Both will be paved, benches/ seating and bike racks are to be provided, and be landscaped in a manner which provided some screening and is visually appealing. Beyond the sidewalks and plazas, hardscape areas for the project shall consist of the project parking areas, which will be asphalt, similar to the streets. The areas between the townhouse driveways, about 40 square feet each, will consist of smooth-finished concrete.

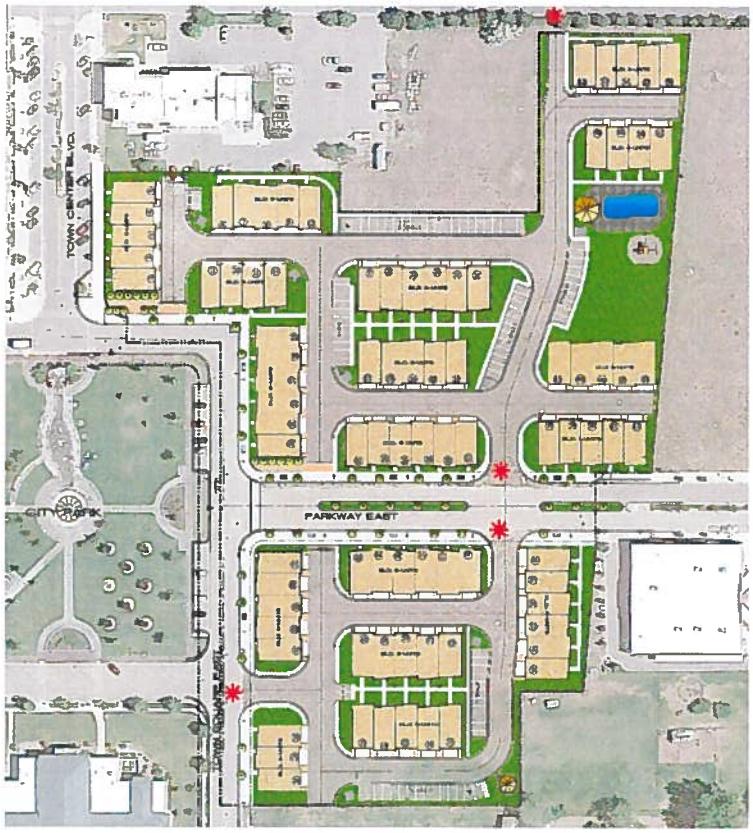

Figure 3 Proposed Site Plan

Architecture

Architecture consists of a mix of attached multi-family units in a variety of configurations ranging from a 3-plex up to a 6-plex. The basic footprint is a 6-plex product as shown on the attached image.

Figure 4 Proposed Architecture Rendering

The attached units are a townhouse configuration with three above-ground levels along with one below grade level. The architectural style is neo-craftsmen style with a variety of façade treatments including stone veneer, stucco, and timber.

A single unit footprint is 24' x 48' for a footprint square footage of 1,152 SF. The total unit square footage is about 3,207 SF and 528 SF for the garage. At 86 units the project total would be about 107,136 SF or about 32% coverage of the site. Each unit would have three bedrooms.

Building massing is to be varied by the fact that in addition to the basic 6-plex unit type, the units shall also include a 3-plex, 4-plex, and 5-plex. This unit mix is required to adequately respond to the dimensions of the overall lot layout and provide suitable pedestrian spaces.

Landscape Design

The project will be landscaped consistent with requirements set forth in the Town Center overlay zone. Lawn areas will be sodded. Planter beds shall consist of a mix of trees, large and small shrubs and perennials. All planter beds shall be wood-mulched. Most of the detailed design will focus on the unit entrances and streetscape frontages in order to provide a visually-appealing project. Parking areas, the project boundary, and utility boxes will all be screened with plant materials.

Vehicle Circulation and Impacts

This proposed subdivision is bounded on the south by Parkway East, to the west is Town Square East and to the north is Town Center Blvd. Following is an assessment of the traffic impacts.

Ingress and Egress

The project will be accessed from two points within the Town Center streetscape, the first is on Town Square East, at the Civic Drive intersection, and the second is off of Parkway East. The Parkway East ingress is about 425 feet from the intersection with Town Square East.

Internal Vehicular Circulation

Internal vehicular circulation is comprised of a series of 26' wide asphalt roads, with 2' rolled gutters on each side, accessing all of the units. All of the units have garages within the building footprints and parking stalls are provided within the internal road network for guests. All of the intersections are at 90 degrees and flat, providing ease of access for delivery or emergency vehicles.

Pedestrian and Alternative Vehicle Considerations

Sidewalks are provided to all of the units and access all of the open space and landscape amenities of the project and to the amenities offered in the Town Center area. In addition to sidewalks internal to the project, along Parkway East and Town Square East will be a public sidewalk with a width of 15 feet. All intersections and curb cuts will be handicapped-compliant.

Volume and Character of Traffic

Due to the number of homes (86 homes in this proposed subdivision) the traffic impact will be relatively small. Multi-family residences generate, on average, 6.72 vehicle trips per day. This equates to an additional traffic load of about 578 vehicle-trips from this subdivision each day. Traffic patterns are anticipated to be similar to other residential developments in that there will be morning and evening peaks associated with typical commuting patterns and a limited number of vehicle trips

during the course of the day.

Parking and Loading

All of the units in Blackstone will have a two-car garage for the residents. Additionally, 86 stalls of parking will be provided for guests, as noted on the site plan.

No loading or unloading activities associated with commercial/ retail operations are anticipated.

Fire Protection

Fire protection for the Blackstone project will consist of a series of measures as outlined below. There are two existing fire hydrant along Parkway East as noted on the site plan. These along with four additional fire hydrants are proposed to provide municipal fire protection. All will provide full access to the project infrastructure within a 300 foot radius of each hydrant. Road widths are proposed to be 30 feet in width (curb to curb) and all of the road intersections and road curves will accommodate fire vehicle turning radii. No on-street parking is anticipated within the project area.

Street addresses are to be located at the front and rear facades of the project units and to be readable from the Blackstone roads.

All units within the project will have installed fire/ smoke alarms and marked fire exit locations.

Impact on Public Services

Utilities

Existing water, sanitary sewer and irrigation lines exist in the Parkway East and Town Square Rights-Of-Way. This project would tap into the respective lines to provide utility services for all of the proposed units. These existing main lines have been sized to accommodate utility demand for this project.

Storm Drainage-Storm drainage in this area consists of storm drain grates located in low points or other drainage areas, which lead to sub-surface sumps. Please see the attached Drainage Control document for further details. A soils report has been prepared and submitted for the project as well.

Schools

The Blackstone project will provide 86 units to the Highland City. While it is difficult to estimate the student population and the impact on the school district, Highland City demographics indicate that the average household size is 4.53 people, with about 48% having children under the age of 18. Approximately 12% of Utah County households are made up on individuals. Should this project reflect the average demographics of Utah County, it would contribute about 260 school-aged children to the school district. It should be noted that families which occupy townhouses typically have smaller family sizes then the families occupying a single family residence.

Recreation

The Blackstone project envisions an outdoor pool, hot tub and community center on a large open space parcel within the project. Additionally a children's play structure is also anticipated. These amenities would be for the use of residents and guests and are portrayed on the site plan in a large open space parcel to along the northeast side of the project. Recreation resources in Highland City would be impacted by the overall population increase associated with the project. Assuming the average household size of 4.53 and with 86 units, the number of people contributed by the project would be about 390. Highland City has a population of 15,523 (2010 Census) with this project contributing 2.5% to the population at build-out and full occupancy. This is a minimal increase in the overall population and the current recreation resources of Highland City would seem to be able to accommodate his increase.

Project Impacts

This project is anticipated to have minimal impacts to the Town Center area because of the residential nature of the proposed project.

Screening and Buffers

Screening of the project is provided by the landscape plan for the project. Refer to the landscape plan for details.

Proposed Outdoor Activities and Storage

There are no Outdoor activities or storage functions associated with this project.

Hours of Operation

There are no commercial activities proposed and so, no hours of operation.

Noise, smoke, odors, etc...

With the exception of construction of the project, there would be no noise, odors, or smoke associated with the project, other than what would be expected from typical residential uses.

Item # 13

ADMINISTRATION

MEMORANDUM

DATE: September 1, 2015

TO: Mayor and City Council

FROM: Nathan Crane, AICP
City Administrator/Community Development Director

SUBJECT: MOTION: CONDITIONAL USE PERMIT FOR AN 86 UNIT MULTI-FAMILYTOWNHOMJE DEVELOPMENT IN THE TOWN CENTER FLEX USE ZOINING DISTRICT

Due to extenuating circumstances, information for the above stated item was not available at the time of agenda posting. Complete information on this item will be available Monday, August 31, 2015, at which time the complete agenda will be re-posted and will include the information for this item.

Blackstone Project

Submitted By:
Summit Engineering
55 W. Center St.
Heber City, Utah 84032
April 16, 2015
brian@summiteg.com

Submitted To:
Highland City Planning Dept.
5400 W. Civic Center Dr.
Highland City, Utah 84003

August 10, 2015

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Purpose of this Submittal

At the July 28 Highland City Council meeting, the owners of the project known as Blackstone were seeking a conditional use approval for their proposed 86 unit townhome development. At that meeting a motion was made to continue the item in order for the applicant to prepare additionally requested information and supply it to the City Council for their review in moving forward with a decision. The following letter provides an outline of the additional information requested by the city and a response from the applicant.

City Concern 1 - Property Affidavits

The applicant submitted two signed affidavits that they were the owners of the property. However, at the July 15, 2015 meeting the owners were stated as Frank and Maria Carlone. The City cannot process an application for development without authorization from the property owner.

Applicant Response 1

Please see the attached letter from Jim Haslam at Eagle Point Title. Mr. Haslam is an attorney/ title officer. His letter confirms that the owner of the property and the signers of the affidavit are in fact the same person.

City Concern 2 – Basement and Storage Areas

According to the information submitted by the applicant the basement and storage areas were not listed as options. At the June 30, 2015 meeting the applicant stated that these areas are options. Approximately 924 square feet of the living space is in the basement and storage which is a buyer option. Excluding the garage and the basement, the living area is 2,215 square feet. Additionally, it is unclear how the buildings will be constructed to accommodate this option. Further the applicant stated that a place in the garage will be created to store garbage and recycling containers. However, a revised floor plan showing this area has not been submitted.

Applicant Response 2

This information is not relevant to a conditional use permit as it implicates no “applicable [City] standards” (10-9a-507(2)(a)). However, please see the attached architectural plans. Here is a breakdown of the square footage of the units:

Ground Level: 491 Square feet of living space. 528 square feet of garage space

Main Level: 827 Square feet

Upper level: 927 square feet

Basement: 449 square feet under the living area of the ground floor. 473 square feet of precast concrete under the garage.

All units will have the same 2,285 square feet of above ground living space. All units will have a 527 square foot garage. All units will have 449 square feet of basement space. This 449 square feet can be used as storage.

In addition, each townhome buyer has the option to include the precast 473 square feet in their unit. We will start each building when the units are presold. Each townhome owner will chose if they want to pay for the additional precast square footage.

A garbage can is 3x3 feet. The garage is 24 feet wide with a 16 foot garage door. This leaves 4 feet on each side of the garage door. Owners will store their garbage cans on each side of the garage door. This leaves them tucked in a place that has no effect on the ability of two cars to park in the garage.

City Concern 3 – Building Elevations

The elevations submitted do not list any options; however, at the June 30, 2015 meeting the applicant stated that the elevations included options. The elevations should be revised so that it is clear what approval the applicant requesting.

Applicant Response 3

This information is not relevant to a conditional use permit as it implicates no "applicable [City] standards" (10-9a-507(2)(a)). However, please see Appendix C for the attached architectural plans and color rendering.

The architectural plans show exactly what materials we will use on the exterior of our townhomes. We will be using asphalt shingles, stone, and stucco. We are in complete compliance with the architectural requirements of the development code. We have also included a color board of materials to the city staff.

City Concern 4 – 0.22 acre parcel

Parcel #11:0039:0135 is a 0.022 acre piece of property owned by Frank and Maria Carlone. According to the applicant this parcel is included as part of the project. However, this is not consistent with the submittal materials. If this parcel is not included in the development it leaves a small triangular piece of property with no street frontage or access.

Applicant Response 4

Please see the attached addendum #5 of the Real Estate Purchase Contract and letter from Jim Haslam at Eagle Point Title. Mr. Haslam states that the small .022 parcel is included in the real estate contract. It will be included in the Blackstone Development. Please see the revised site plan and project survey shown in Appendix A

City Concern 5 – Access Easement

The applicant mentioned that there is a reciprocal access easement for all land owners adjoining the access drive for the shopping center to the north. Staff has not received or reviewed the easement.

Applicant Response 5

We have included a copy of the reciprocal access agreement with our response.

City Concern 6 – Project Parking

The applicant stated that parking on the private roads will be prohibited. It is unclear how this restriction will be enforced. Since they are private streets, this restriction cannot be enforced by the Lone Peak Police Department. In addition, some of guest parking units are up to 220 feet away from a unit. This could lead to onsite circulation and parking issues for guest, delivery and service vehicles as users are more likely to park on the private roads.

Applicant Response 6

This information is not relevant to a conditional use permit as it implicates no "applicable [City] standards" (10-9a-507(2)(a)). However, parking will be prohibited on the private roads. The parking restrictions will be enforced by the HOA (the same way they are in every other context involving HOA regulations). The HOA will have the power and authority to determine the best parking situation of the development. Possible options include hiring a tow truck service, issuing fines, giving warnings, etc.

An Additional 7 guest / residence parking stalls have been added near the project pool area. With the addition of these parking stalls, there is no unit that is farther than 150 feet from a parking stall. Please see Appendix E for the attached letter from Hales Engineering concerning the 220 foot distance of the guest parking.

City Concern 7 – Unit 86 Driveway

The proposed driveway throat adjacent to unit 86 will create a conflict with users entering/exiting the garage and users entering/exiting the property.

Applicant Response 7

This information is not relevant to a conditional use permit as it implicates no "applicable [City] standards" (10-9a-507(2)(a)). However we have slid the bank of units where 86 is located 5 feet further south to increase as much as possible the distance the driveway is from Parkway East. Please see Appendix E for the attached letter from Hales Engineering. Hales states that lot 86's driveway situation is common and not a concern.

City Concern 8 – Play Areas

The units are three bedroom units which will attract young families. There is a lack of active play areas south of Parkway East.

Applicant Response 8

This is not a conditional use permit issue as it implicates no "applicable [City] standards" (10-9a-507(2)(a)). This does not have a detrimental effect on the property.

However, please see the revised site plan. We have included a tot lot in the south east corner of the property to give a play area for young kids in this area. We have also included a cross walk across the street for increased safety.

City Concern 9 – Project Pool Area

The applicant stated that the pool will be 60' X 24'. It is unknown what the public health requirements are. Specifically, whether or not showers and restrooms are required.

Applicant Response 9

This information is not relevant to a conditional use permit as it implicates no "applicable [City] standards" (10-9a-507(2)(a)).

We will be in compliance with the public health requirements of the public health department requirements for pools of this type. We will provide showers and restrooms that meet any such requirements.

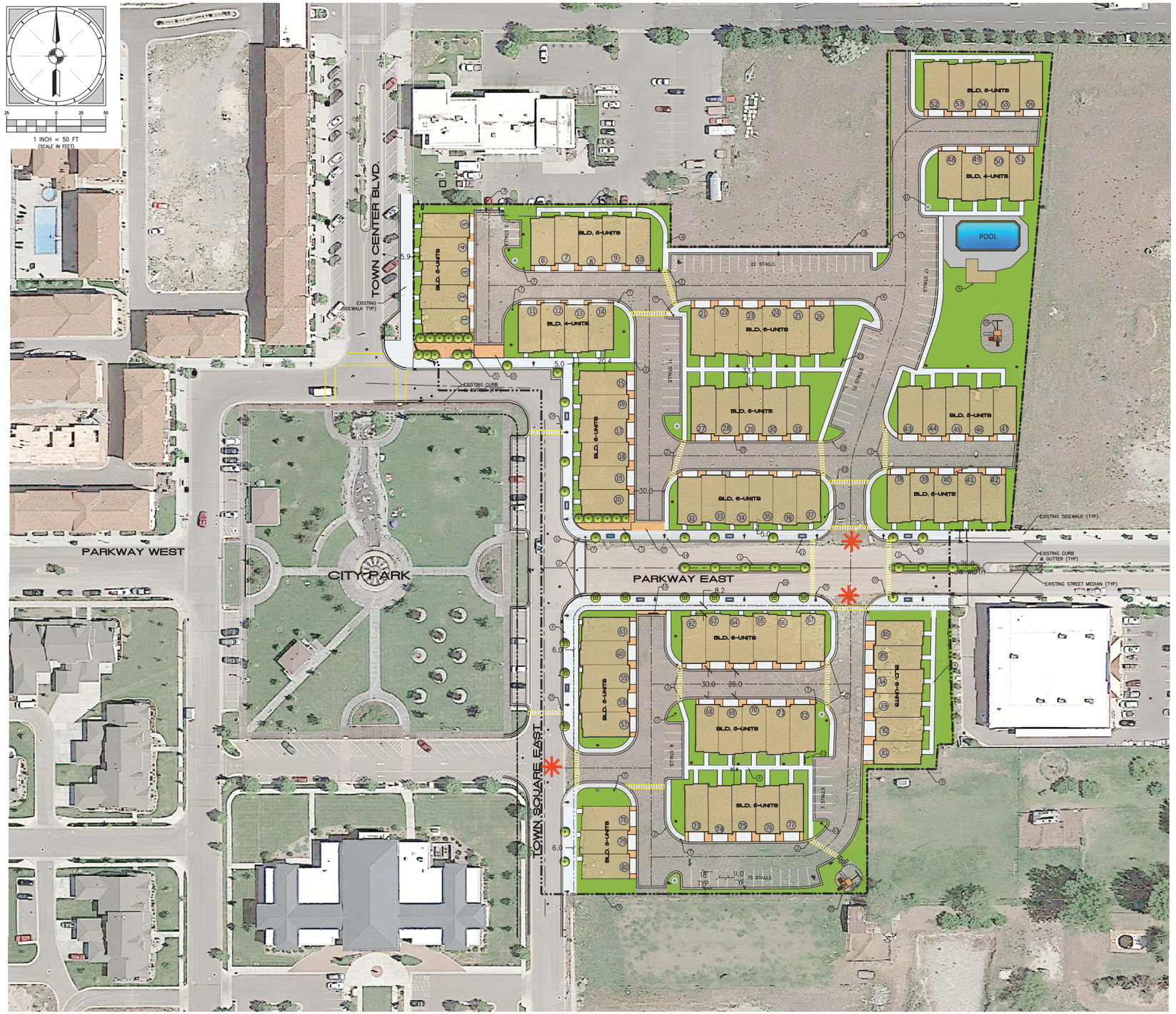
City Concern 10 – Project Traffic

The traffic impact on the surrounding streets is unknown. Section 3-4732 Application Procedures allows the City to request a traffic impact analysis. Staff suggests the City hire a traffic engineer to do a full traffic study

Applicant Response 10

Please see Appendix E for the attached traffic study completed by Hales Engineering. We await the City's similar study.

Appendix A – Updated Site Plan and Record of Survey



LEGEND

1. LANDSCAPED STREET MEDIAN
2. ADA RAMP
3. ACCESS GATE IN EXTERIOR FENCING
4. NEW SIDEWALK
5. PASEO/ PLAZA AREAS-SEE SITE PLAN DETAIL SHEET
6. COMMUNITY FACILITY AREA
7. STOP/ STREET SIGN
8. EXISTING 5' WIDE SIDEWALK TO BE UPGRADED TO A 15' WIDE SIDEWALK
9. WROUGHT IRON FENCING-SEE DETAIL SHEETS
10. FIRE ACCESS
11. LANDSCAPE PLANTER
12. CROSSWALK
13. POLE LIGHT-SEE LIGHTING SITE PLAN
14. STREET LIGHT-SEE LIGHTING SITE PLAN
15. STREET TREE AND GRATE-SEE DETAIL SHEETS
16. BIKE RACK-SEE DETAIL SHEETS
17. HIGH BACK CURB AND GUTTER
18. ROLLED GUTTER (All private roads)
19. CONCRETE DRIVEWAY
20. CHILDREN'S PLAY AREA
21. DOG WASTE STATION
22. MAIL BOXES
23. PAINTED CROSSWALKS
24. PEDESTRIAN-ACTUATED CROSSING LIGHT

JURISDICTION

LEGAL JURISDICTION:	HIGHLAND CITY
DISTRICT/ PLANING ZONE:	TOWN CENTER FLEX USE

AREA TABULATIONS

	AREA	% of total
TOTAL AREA:	7.76 acres	100%
BUILDING(s) AREA:	2.45 acres (107,136 sf)	32%
LANDSCAPE:	1.21 acres (52,793 sf)	15.6%
HARDSCAPE:	0.5 acres (21,780 sf)	6.4%
ROADS:	1.9 acres (82,764 sf)	23%

PARKING TABULATIONS

TOTAL UNITS:	86
ON SITE PARKING PROVIDED:	172 GARAGE
	93 STALLS
	265 TOTAL ON SITE
	(3.0 SPACES/ UNIT)

ACCESSIBILITY

ALL UNITS TO OFFER ELEVATORS FOR HANDICAPPED ACCESS

* Project access point-full access

Summit Engineering Group Inc.
Structural • Civil • Surveying

8/10/2015 2:38:16 PM

REVISIONS	DATE	BY
1		
2		
3		
4		
5		
6		
7		
8		

CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: BMB
PROJECT MANAGER: BMB
DRAWN BY: SCS
SCALE: AS SHOWN
ISSUE DATE 8-10-15

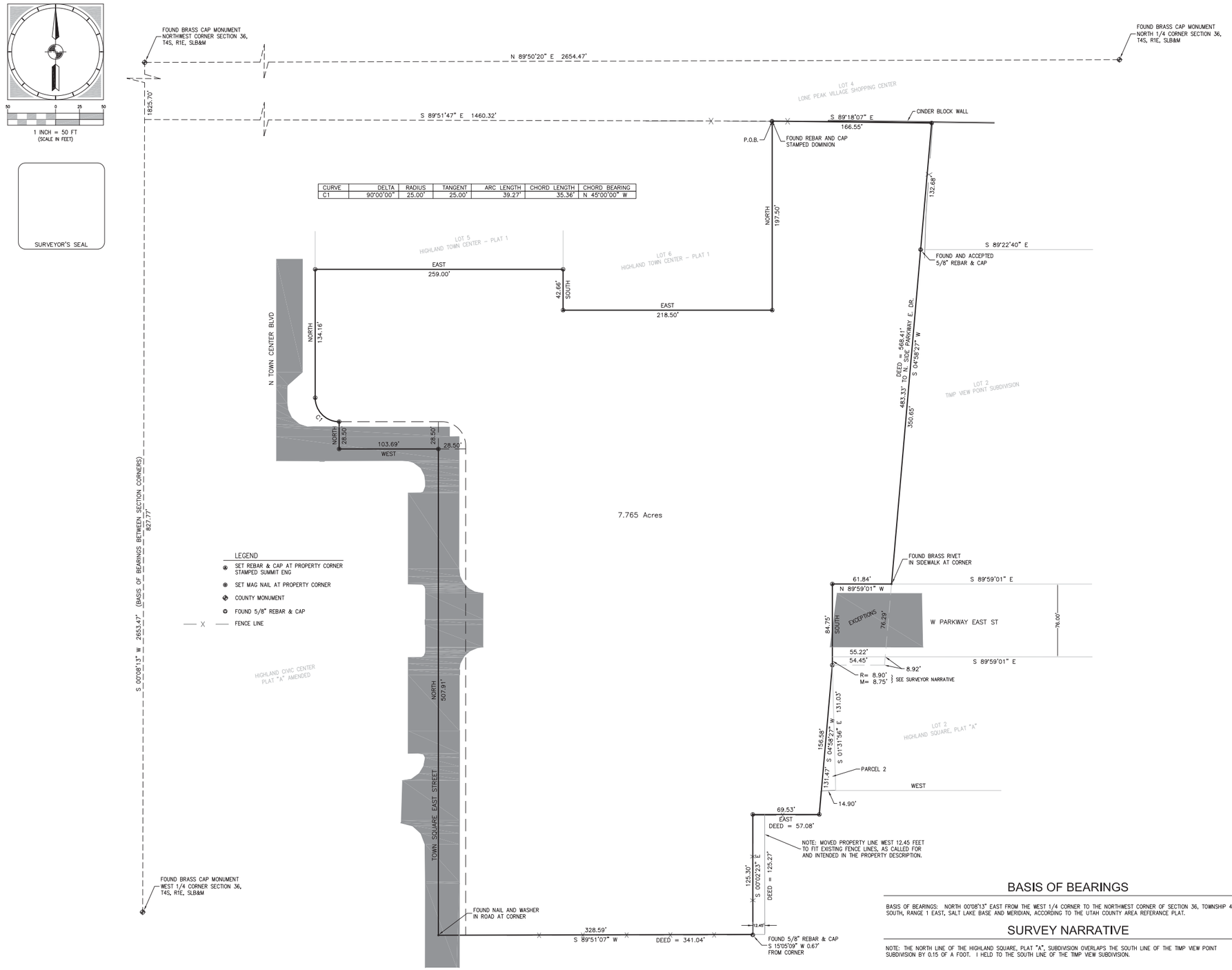
PROJECT
BLACKSTONE PROJECT

SHEET TITLE
SITE PLAN

PROJECT
C15-006

SHEET
C-1

\\Eng-server\data\SEG Projects\CURRENT PROJECTS\C15-006 Highland\Working Files\Planning\dwg\C15-006 Base Map alt design Aug10.dwg



CURVE	DELTA	RADIUS	TANGENT	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	90°00'00"	25.00'	25.00'	39.27'	35.36'	N 45°00'00" W

BASIS OF BEARINGS

BASIS OF BEARINGS: NORTH 00°08'13" EAST FROM THE WEST 1/4 CORNER TO THE NORTHWEST CORNER OF SECTION 36, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN, ACCORDING TO THE UTAH COUNTY AREA REFERANCE PLAT.

SURVEY NARRATIVE

NOTE: THE NORTH LINE OF THE HIGHLAND SQUARE, PLAT "A", SUBDIVISION OVERLAPS THE SOUTH LINE OF THE TIMP VIEW POINT SUBDIVISION BY 0.15 OF A FOOT. I HELD TO THE SOUTH LINE OF THE TIMP VIEW SUBDIVISION.

SURVEYOR'S CERTIFICATE

I, CLINTON S. PEATROSS, CERTIFY THAT I AM LICENSED AS A PROFESSIONAL LAND SURVEYOR IN THE STATE OF UTAH (REF. NO. 155666) IN ACCORDANCE WITH TITLE 58, CHAPTER 22, PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS LICENSING ACT. I FURTHER CERTIFY THAT:

1. THIS PLAT REPRESENTS THE RESULTS OF A BOUNDARY SURVEY CONDUCTED UNDER MY SUPERVISION AT THE REQUEST OF HANDCRAFTED HOMES.

2. THE LAND SURVEYED LIES WITHIN SECTION 36, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN, UTAH COUNTY, UTAH, AND THE SURVEY WAS COMPLETED DURING APRIL 2015.

3. THIS PLAT COMPLIES WITH APPLICABLE STATUTES OF THIS STATE AND ANY LOCAL ORDINANCES IN EFFECT ON THE DATE THAT THE SURVEY WAS COMPLETED, AND THE SURVEY WAS CONDUCTED IN ACCORDANCE WITH TITLE 17, CHAPTER 23, PARAGRAPH 17, OF THE UTAH CODE.

4. THE MONUMENTS DEPICTED AS FOUND AND/OR SET ON THE PLAT ARE OF THE CHARACTER SHOWN, OCCUPY THE POSITIONS INDICATED, AND ARE OF SUFFICIENT DURABILITY.

PROPERTY DESCRIPTION

ACCORDING TO THAT CERTAIN TITLE REPORT PREPARED BY
FIRST AMERICAN TITLE INSURANCE, LLC FOR KEYSTONE LAND DEVELOPMENT, LLC
FILE NUMBER 0714-11383, EFFECTIVE DATE JANUARY, 2015

PART OF THE NORTHWEST QUARTER OF SECTION 36, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:
BEGINNING AT THE NORTHEAST CORNER OF LOT 6 OF HIGHLAND TOWN CENTER -PLAT 1, AS RECORDED IN THE OFFICE OF THE UTAH COUNTY RECORDER, WHICH POINT LIES 827.77 FEET NORTH 00°08'13"EAST ALONG THE SECTION LINE AND 1460.32 FEET SOUTH 89°51'47"EAST FROM THE LOCATION REFERENCED BY THE UTAH COUNTY SURVEYOR AS THE WEST QUARTER CORNER OF SAID SECTION 36, AND RUNNING THENCE SOUTH 89°18'07"EAST 166.55 FEET ALONG THE SOUTH LINE OF THE LONE PEAK VILLAGE SHOPPING CENTER SUBDIVISION, AS RECORDED IN THE OFFICE OF THE UTAH COUNTY RECORDER; THENCE ALONG THE EASTERLY LINE OF THAT PARCEL RECORDED AS ENTRY NO. 35101:2000 IN THE OFFICE OF THE UTAH COUNTY RECORDER THE FOLLOWING FIVE (5) COURSES: (1) SOUTH 04°58'27"WEST 568.41 FEET; (2) NORTH 89°59'43"WEST 54.45 FEET; (3) SOUTH 04°58'27"WEST 156.58 FEET TO AN EXISTING FENCE LINE; (4) WEST 57.08 FEET ALONG SAID FENCE LINE; (5) SOUTH 00°02'23"EAST 125.27 FEET ALONG AN EXISTING FENCE LINE; THENCE SOUTH 89°51'07"WEST 341.04 FEET ALONG THE NORTH LINE OF THAT CERTAIN PARCEL RECORDED IN BOOK 2882 AT PAGE 216 IN THE OFFICE OF THE UTAH COUNTY RECORDER TO THE CENTER LINE OF PROPOSED TOWNE SQUARE STREET -EAST, AS SHOWN ON THAT CERTAIN "HIGHLAND CITY TOWNE CENTER IMPROVEMENTS", APPROVED FOR CONSTRUCTION 4-1-03, PREPARED BY CIVIL SCIENCE; THENCE NORTH 507.91 FEET ALONG SAID CENTER LINE; THENCE WEST 103.69 FEET ALONG SAID LINE; THENCE NORTH 28.50 FEET TO THE NORTHERLY RIGHT OF WAY LINE OF SAID TOWN SQUARE STREET -EAST AND A POINT OF NON-TANGENCY WITH A 25.00 FOOT RADIUS CURVE TO THE RIGHT (RADIUS POINT BEARS NORTH); THENCE NORTHWESTERLY 39.27 FEET ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 90°00'00"(CHORD BEARS NORTH 45°00'00"WEST 35.36 FEET) TO A TANGENT LINE AND THE EASTERLY RIGHT OF WAY LINE OF TOWNE CENTER BOULEVARD; THENCE NORTH 134.16 FEET ALONG SAID LINE TO THE SOUTHWEST CORNER OF LOT 5 OF SAID HIGHLAND TOWNE CENTER -PLAT 1; THENCE EAST 259.00 FEET ALONG THE SOUTH LINE OF SAID LOT 5 TO THE WEST LINE OF SAID LOT 6; THENCE SOUTH 42.66 FEET ALONG SAID LINE TO THE SOUTHWEST CORNER OF SAID LOT 6; THENCE EAST 218.50 FEET ALONG THE SOUTH LINE OF SAID LOT 6 TO THE SOUTHEAST CORNER OF SAID LOT 6; THENCE NORTH 197.50 FEET ALONG THE EAST LINE OF SAID LOT 6 TO THE POINT OF BEGINNING.

LESS AND EXCEPTING:
COMMENCING AT A POINT LOCATED NORTH 00°08'13"EAST ALONG THE SECTION LINE 264.88 FEET AND EAST 1524.66 FEET FROM THE WEST QUARTER CORNER OF SECTION 36, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN; THENCE NORTH 76.00 FEET; THENCE SOUTH 89°59'01"EAST 61.84 FEET; THENCE SOUTH 04°58'27"WEST 76.29 FEET; THENCE NORTH 89°59'01"WEST 55.22 FEET TO THE POINT OF BEGINNING.

ALSO LESS AND EXCEPTING:
COMMENCING AT A POINT LOCATED NORTH 00°08'13"EAST ALONG THE SECTION LINE 255.98 FEET AND EAST 1524.49 FEET FROM THE WEST QUARTER CORNER OF SECTION 36, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN; THENCE NORTH 8.90 FEET; THENCE SOUTH 89°59'01"EAST 55.22 FEET; THENCE SOUTH 04°58'27"WEST 8.92 FEET; THENCE NORTH 89°59'43"WEST 54.45 FEET TO THE POINT OF BEGINNING.

PARCEL 2:
COMMENCING AT A POINT LOCATED NORTH 00°08'13"EAST ALONG THE SECTION LINE 255.98 FEET AND EAST 1524.49 FEET FROM THE WEST QUARTER CORNER OF SECTION 36, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN; THENCE SOUTH 01°31'56"EAST 131.03 FEET; THENCE WEST 14.90 FEET; THENCE NORTH 04°58'27"EAST 131.47 FEET TO THE POINT OF BEGINNING.

AS SURVEYED DESCRIPTION

TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN. SECTION 36: BEGINNING AT THE NORTHEAST CORNER OF LOT 6 OF HIGHLAND TOWNE CENTER -PLAT 1, WHICH LIES NORTH 0°0813"EAST 827.77 FEET ALONG THE SECTION LINE AND SOUTH 89°51'47"EAST 1460.32 FEET FROM THE WEST QUARTER CORNER OF SAID SECTION 36; AND RUNNING THENCE SOUTH 89°18'07"EAST 166.55 FEET ALONG THE SOUTH LINE OF THE LONE PEAK VILLAGE SHOPPING CENTER SUBDIVISION, THENCE SOUTH 4°58'27"WEST 132.68 FEET TO THE NORTHWEST CORNER OF LOT 2, TIMP VIEW POINT SUBDIVISION; THENCE CONTINUING SOUTH 4°58'27"WEST 350.65 FEET TO THE SOUTHWEST CORNER OF SAID LOT 2 OF SAID TIMP VIEW POINT SUBDIVISION, SAID POINT BEING ON THE NORTH LINE OF PARKWAY EAST DRIVE; THENCE NORTH 89°59'01"WEST 61.84 FEET ALONG SAID NORTH LINE OF SAID PARKWAY EAST DRIVE TO THE NORTHWEST CORNER OF HIGHLAND SQUARE, PLAT 'A'SUBDIVISION; THENCE SOUTH 84.75 FEET; THENCE SOUTH 4°58'27"WEST 156.58 FEET TO AN EXISTING FENCE LINE; THENCE WEST 69.53 FEET ALONG SAID FENCE LINE TO A FENCE CORNER; THENCE SOUTH 0°02'23"EAST 125.30 FEET ALONG SAID FENCE LINE TO A FENCE CORNER; THENCE SOUTH 89°51'07"WEST 328.59 FEET TO THE CENTER LINE OF TOWNE SQUARE EAST STREET; THENCE NORTH 507.91 FEET ALONG SAID CENTER LINE; THENCE WEST 103.69 FEET ALONG SAID CENTER LINE; THENCE NORTH 28.50 FEET TO THE NORTHERLY RIGHT OF WAY LINE OF SAID TOWNE SQUARE EAST STREET AND A POINT OF NON-TANGENCY WITH A 25.00 FOOT RADIUS CURVE TO THE RIGHT (RADIUS POINT BEARS NORTH); THENCE NORTHWESTERLY 39.27 FEET ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 90°00'00"(CHORD BEARS NORTH 45°00'00"WEST 35.36 FEET) TO A TANGENT LINE AND THE EASTERLY RIGHT OF WAY LINE OF TOWNE CENTER BOULEVARD; THENCE NORTH 134.16 FEET ALONG SAID LINE TO THE SOUTHWEST CORNER OF LOT 5 OF SAID HIGHLAND TOWNE CENTER -PLAT 1; THENCE EAST 259.00 FEET ALONG THE SOUTH LINE OF SAID LOT 5 TO THE WEST LINE OF SAID LOT 6; THENCE SOUTH 42.66 FEET ALONG SAID LINE TO THE SOUTHWEST CORNER OF SAID LOT 6; THENCE EAST 218.50 FEET ALONG THE SOUTH LINE OF SAID LOT 6 TO THE SOUTHEAST CORNER OF SAID LOT 6; THENCE NORTH 197.50 FEET ALONG THE EAST LINE OF SAID LOT 6 TO THE POINT OF BEGINNING.

DESCRIPTION OF CROSS ACCESS EASEMENTS

ACCORDING TO THAT CERTAIN RECIPROCAL EASEMENT AGREEMENT
BETWEEN THE LONE PEAK VILLAGE SHOPPING CENTER AND WESTFIELD PROPERTIES
RECORDED 6 FEBRUARY 2003 AS FOUND BY ENTRY 18975:2003 PAGES 1 THROUGH 10

THREE ACCESS OPENINGS FOR PEDESTRIAN AND VEHICULAR TRAFFIC ALONG THE SOUTH LINE OF THE LONE PEAK VILLAGE SHOPPING CENTER -A COMMERCIAL SUBDIVISION IN THE CITY OF HIGHLAND, UTAH COUNTY, UTAH WITHIN THE NORTHWEST QUARTER OF SECTION 36, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN, U.S. SURVEY, AND BEING DEFINED BY REFERENCE POINTS AS FOLLOWS:

A 42.16 FOOT WIDE OPENING FROM POINT A TO POINT B;
A 49.00 FOOT WIDE OPENING FROM POINT C TO POINT D;
A 36.00 FOOT WIDE OPENING FROM POINT E TO POINT F;

MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID LONE PEAK VILLAGE SHOPPING CENTER BEING 666.20 FEET SOUTH 89°49'50"WEST ALONG THE SECTION LINE, 1367.05 FEET SOUTH TO THE NORTHEAST CORNER OF SAID SUBDIVISION, 255.16 FEET SOUTH 4°28'25"WEST, AND 219.80 FEET SOUTH 4°58'22"WEST TO SAID SOUTHEAST CORNER OF SAID SUBDIVISION FROM THE NORTH QUARTER CORNER OF SAID SECTION 36; AND RUNNING THENCE WESTERLY ALONG THE SOUTH LINE OF SAID SUBDIVISION THE FOLLOWING SEVEN COURSES: NORTH 89°18'07"WEST 656.86 FEET TO REFERENCE POINT A; THENCE CONTINUING NORTH 89°18'07"WEST 42.16 FEET TO REFERENCE POINT B; THENCE CONTINUING NORTH 89°18'07"WEST 26.00 FEET TO REFERENCE POINT C; THENCE CONTINUING NORTH 89°18'07"WEST 49.00 FEET TO REFERENCE POINT D; THENCE CONTINUING NORTH 89°18'07"WEST 95.00 FEET TO REFERENCE POINT E; THENCE CONTINUING NORTH 89°18'07"WEST 36.00 FEET TO REFERENCE POINT F; AND THENCE CONTINUING NORTH 89°18'07"WEST 73.09 FEET TO THE SOUTHWEST CORNER OF SAID SUBDIVISION.

ERROR OF CLOSURE

IN CONSIDERATION OF THE INFORMATION TAKEN FROM THE UTAH COUNTY AREA REFERENCE PLATS, RECORDED SUBDIVISION PLATS, AND FILED RECORD OF SURVEYS, THE "AVERAGE POSITIONAL TOLERANCE"OR "THEORETICAL UNCERTAINTY"FOR THE PROPERTY CORNERS SET FOR THIS SURVEY ARE PLUS OR MINUS 0.10 FEET. THIS FOLLOWS THE CLASS A SPECIFICATIONS FOR SURVEYS CONDUCTED IN A DOWNTOWN COMMERCIAL AREA.

GENERAL NOTES

1. THIS SURVEY DOES NOT GUARANTEE TITLE TO LINE, NOR IS IT PROOF OF OWNERSHIP, NOR IS IT A LEGAL INSTRUMENT OF CONVEYANCE. FURTHERMORE, ANY SURVEY MARKERS SET IN CONJUNCTION WITH THIS SURVEY ARE NOT INTENDED TO REPRESENT EVIDENCE OF OWNERSHIP OF THE SUBJECT PROPERTY OR ITS ADJOINERS. THE GENERAL INTENT OF THIS SURVEY IS TO PORTRAY WHERE POSSIBLE THE RECORD TITLE LINES OF THE SUBJECT PROPERTY AND TO SHOW THEIR RELATIONSHIP TO ANY EVIDENCE OF USE AND/OR POSSESSION.

2. IN THE EVENT THAT THIS SURVEY DETERMINES THAT THE CREATION OF A NEW/IMPROVED LEGAL DESCRIPTION IS ADVISABLE AND NECESSARY TO AID THE RESOLUTION OF KNOWN BOUNDARY CONFLICTS, IT SHOULD BE UNDERSTOOD THAT SUCH A LEGAL DESCRIPTION, AS MIGHT BE SHOWN AND PROVIDED HEREON, DOES NOT AUTOMATICALLY REPLACE OR EXTINGUISH RECORD TITLE LINES AND SHOULD NOT BE USED IN INSTRUMENTS OF CONVEYANCE BY WARRANTY OR FOR THE BOUNDARY LINES OF FUTURE DEVELOPMENTS UNLESS THE BOUNDARY LINES OF SUCH A LEGAL DESCRIPTION, AS MIGHT BE PROVIDED HEREON, HAVE BEEN ESTABLISHED AND AGREED UPON BY APPROPRIATE AND LEGAL MEANS BETWEEN RELEVANT PARTIES. TO HELP PREPARE SUCH AGREEMENTS, SOLICITATION OF COMPETENT LEGAL COUNSEL IS STRONGLY RECOMMENDED.

3. IN THE EVENT THAT THIS SURVEY WAS PERFORMED FOR THE PURPOSE OF PARCELING PROPERTY ACCORDING TO DIRECTIONS FROM THE CLIENT, UNDER NO CIRCUMSTANCE SHOULD THE PARCELING OF PROPERTY AS MIGHT BE SHOWN HEREON AND DESCRIBED BY LEGAL DESCRIPTION ABOVE BE INTERPRETED AS REPRESENTING A LEGAL SUBDIVISION OF LOTS OF RECORD SANCTIONED OR APPROVED BY CITY OR COUNTY GOVERNMENT OFFICES. INDEED, THIS SURVEY AND ANY INFORMATION PROVIDED HEREON ARE INTENDED NEITHER TO CREATE NOR DESTROY LOT OF RECORD STATUS AND ASSOCIATIVE ENTITLEMENTS AND MAKES NO CLAIM AS TO LOT CONFORMANCE BY STATUTE. PROPERTY OWNERS AND PROSPECTIVE BUYERS ARE ADVISED TO CONTACT CITY AND COUNTY PLANNING OFFICES FOR INFORMATION AND DIRECTION PERTAINING TO ISSUES OF LOT CONFORMANCE AND REQUIREMENTS FOR DEVELOPMENT.

4. THIS SURVEY REPRESENTS OPINIONS BASED ON FACTS AND EVIDENCE. AS THE EVIDENCE CHANGES OR IF NEW EVIDENCE IS DISCOVERED OR RECOVERED, THEN THE SURVEYOR RESERVES THE RIGHT TO MODIFY OR ALTER HIS OPINIONS PERTAINING TO THIS SURVEY ACCORDING TO THIS NEW EVIDENCE.

5. THIS SURVEY DOES NOT PURPORT TO DETAIL THE LOCATIONS OF ANY OR ALL EASEMENTS OR RIGHTS-OF-WAY OF RECORD AND USE.

6. THIS PLAT MAP DOES NOT PURPORT TO SHOW, EITHER IN FACT OR BY CIRCUMSTANCE, ANY OR ALL UTILITY COMPANY PIPES, WIRES, ETC., EITHER IN SERVICE OR ABANDONED, THAT MAY EXIST ON OR NEAR THE SUBJECT PROPERTY. FURTHERMORE, ANY INDICATION AS TO THE LOCATION OF UNDERGROUND UTILITIES THAT MAY BE SHOWN ON THIS PLAT MAP IS BASED STRICTLY ON OBSERVABLE SURFACE EVIDENCE AND/OR VERBAL EXPLANATIONS. ALSO, FOR THIS SURVEY NO UTILITY MAPS OF RECORD WERE AVAILABLE TO THE SURVEYOR TO HELP DETERMINE THE PROPER LOCATION OF UNDERGROUND UTILITIES. INDEED, ONLY BY EXCAVATION CAN THE EXACT LOCATION OF UNDERGROUND UTILITIES BE DETERMINED. CONTRACTORS, BUILDERS, AND EXCAVATORS ARE ADVISED TO VERIFY THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR EXCAVATION BY CONTACTING CORRESPONDING UTILITY COMPANIES (FOR BLUE STAKES OF UTAH CALL 1-800-662-4111).

PROJECT C15-006	PREPARED FOR HANDCRAFTED HOMES	RECORD OF SURVEY	LOCATED IN THE NORTHWEST 1/4 OF SECTION 36, TOWNSHIP 4 SOUTH, RANGE 1 EAST, SALT LAKE BASE & MERIDIAN	DRAWN BY: KMB	Summit Engineering Group Inc.
SHEET 1 OF 1	PROJECT BLACKSTONE		UTAH COUNTY, UTAH	REVIEWED BY: CSP	Structural • Civil • Surveying
				SCALE: 1" = 50' / ISSUE DATE 04/13/2015	55 WEST CENTER • P.O. BOX 176 HEBER CITY, UTAH 84032 P: 435-654-9229 • F: 435-654-9231

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SUMMIT ENGINEERING GROUP, INC.

DRAWING ALTERATION
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF THE PROFESSIONAL LAND SURVEYOR TO ALTER ANY ITEM ON THIS DOCUMENT IN ANY WAY. ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX THEIR SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE AND SPECIFIC DESCRIPTION OF THE ALTERATION.

EAGLE POINTE
Title Insurance Agency, Inc.
Phone Number: (801) 766-9401
FAX: (801) 766-9404
3315 West Mayflower Ave. Ste. #3
Lehi, Utah 84043

Attention: Matt Robinson

Re: *Blackstone Project in Highland City*

To Whom It May Concern:

Please be advised that Tax Parcel No. 11-039-0135 came into existence November 28, 2007, when Knight West Construction, Inc. deeded the small parcel of land to the Carlones. At that same time, the Carlones, who already owned their larger parcel (having acquired it in May of 2005), deeded a portion of their larger parcel to Knight West Construction, Inc.

Prior to that time, 11-039-0135 was part of a larger parcel to the east of the Carlone land that was owned by Knight West Construction, Inc. (11-039-0120). The remainder of 11-039-0120 (along with the small parcel deeded from the Carlones to Knight West and land owned by Alpine Credit Union) was included in, and became part of, Plat A of the Highland Square Subdivision just a few months later. That subdivision currently consists of two lots (Alpine Credit Union and ACE Hardware) and land dedicated to the City for the road.

It appears the two deeds in November 2007 allowed Knight West to essentially "square off" its land for purposes of the Highland Square Subdivision. Because the Carlones and Knight West already owned the adjoining lands being traded, what they accomplished was really just a boundary line adjustment between their two existing lands (and perhaps a boundary line agreement would have been the preferred method to accomplish their purposes). In any event, the creation of 11-039-0135 should be of no concern; indeed, the new parcel deeded to Knight West has already been included in the above-mentioned Highland Square Subdivision.

Including 11-039-0135 in the Blackstone Project would seem the appropriate action.

Sincerely yours,

EAGLE POINTE TITLE INSURANCE AGENCY, INC.

James K. Haslam
President & Chief Title Officer

JKH/da

Appendix B – Property Affidavit and Letter from Title Company

EAGLE POINTE
Title Insurance Agency, Inc.
Phone Number: (801) 766-9401
FAX: (801) 766-9404
3315 West Mayflower Ave. Ste. #3
Lehi, Utah 84043

Attention: Matt Robinson

Re: *Blackstone Project in Highland City*

To Whom It May Concern:

Please be advised that a search of the public records has revealed that Frank A. Carlone and Maria-Laura Carlone are the owners of record of the real property parcels identified as Tax Parcel Nos. 11-039-0140 and 11-039-0135, in their capacities as Trustees of The 2001 Frank and Maria-Laura Carlone Family Trust. The attached Property Owners Affidavit was in fact signed by Frank A. and Maria Laura Carlone, as was the Agent Authorization Affidavit whereby the Carlones appointed Tim Aalders as their agent to represent them with regard to the application.

Sincerely yours,

EAGLE POINTE TITLE INSURANCE AGENCY, INC.

James K. Haslam
President & Chief Title Officer

JKH/da

HIGHLAND CITY

PROPERTY OWNERS AFFIDAVIT

I (we) Frank & Maria Laura Carlone being first duly sworn, depose and say that I (we) am (are) the current owner of the property involved in this application; that I (we) have read the application and attached plans and other exhibits and are familiar with its contents; and that said contents are in all respects true and correct based upon personal knowledge.

Owner's Signature

Owner's Signature (co-owner, if any)

State of California

County of Orange

Subscribed and sworn to (affirmed) before me this 19 day of Dec., 2014.

ABBA KO-KIM
COMM. # 2007180
NOTARY PUBLIC - CALIFORNIA
ORANGE COUNTY
COMM. EXPIRES FEB. 12, 2017

Notary Public

AGENT AUTHORIZATION AFFIDAVIT

I (we) Frank & Maria Carlone, owner(s) of the real property located at 10820 Town Center Parkway in Highland City, Utah, do hereby appoint Tim Aalders, as my (our) agent to represent me (us) with regard to this application affecting the able described real property.

Owner's Signature

Owner's Signature (co-owner, if any)

State of Calif.

County of Orange

Subscribed and sworn to (affirmed) before me this 19 day of Dec, 2014.

ABBA KO-KIM
COMM. # 2007180
NOTARY PUBLIC - CALIFORNIA
ORANGE COUNTY
COMM. EXPIRES FEB. 12, 2017

Notary Public

Appendix C – Architectural Plans, Elevations and Color Renderings

IMPORTANT NOTE!

Modifications may be made on these plans according to the city and lot requirements where the plan is built.

3D VIEWS ARE CONCEPT ONLY

WALKER HOME DESIGN
801-930-9499 office
www.walkerhomedesign.com

GENERAL NOTES

A. EXCAVATION, BACKFILL, AND GRADING
1. All excavations for footings shall be placed on natural, undisturbed soil.
2. All footings shall be placed on undisturbed soil and below Frost depth as per local codes. where plan is being built. Tops of foundation shall be placed a minimum of 6" above finished grade.
3. Finish grading shall be done so as to provide positive drainage away from all building foundations. Grade shall slope away 6" minimum for the first 10' of building. No negative slope driveways.

B. WEATHER PROTECTION
1. Install (1) layer of grade 'D' (15 lb.) felt under asphalt roof shingles.
2. Install (1) layer of grade 'D' (15 lb.) Tyvek Housewrap under aluminum/vinyl siding.
3. Install (1) layer of grade 'D' (15 lb.) felt under brick/rock veneer.
4. Install (2) layers of grade 'D' (15 lb.) felt under synthetic stucco system.
5. Install (1) layer No. 40 coated roofing or coated glass base from the roof eaves to a line 24" inside the exterior wall line with all laps cemented together.
6. All exposed beams to be flashed and caulked or must be Pressured Treated. Or treated with a waterproof product i.e. DeckScapes Exterior Waterborne Stain or WoodScapes Exterior Polyurethane Semi-Transparent Stain

C. CONCRETE
1. All materials, mixing, forming and reinforcement shall comply with ACI 318, ACI 347 publication applicable ASTM publications and local codes.
2. Install foundation and footing reinforcement as follows
3. Reinforcement schedule as noted on foundation plan and per state amendment
4. Install minimum (2) #4 rebar grade 60 see footing schedule on foundation plan for rebar placement

D. WINDOWS
1. All windows shall be U-35 or better, aluminum or vinyl, thermal break type.
2. All window tops shall be at door header height, i.e. 6'-8" (unless otherwise noted).
3. Windows located 24" or closer to any exterior door must be tempered.
4. Habitable rooms require 10% light(window space), and 5% ventilation (operable window).
5. All windows in sleeping rooms shall have sills located no more than 44" above floor with an operable opening not less than 5.7 sq. ft. The window height shall not be less than 24", with a net clear width of no less than 20".
6. Upper level window sills shall not be less than 24" above the finished floor.
7. Use 9" Flashing & Caulk. Install as per Manufacturer's Instructions

E. WINDOW WELLS
1. Window wells serving required egress windows shall have dimensions in keeping with the minimums required for the windows:
   a. Window wells shall have a net clear opening of 9 sq. ft. min.
   b. Guardrails or grates protecting window wells shall be easily removable or be designed not to hinder egress.
   c. 44" max. depth or provide steps or ladder rungs. Ladder must be Min. 12" wide, 3" from Well with rungs no more than 18" apart.
   e. 36" vertical clearance required from any projection in horizontal clearance started above (i.e. bay windows and cantilevers).

F. VENTILATION
1. Ventilation shall be provided in all crawl spaces by means of screened vents placed to provide cross ventilation per I.R.C 408.1, 408.2 or section 408 IRC.
2. Attics will have one square foot of ventilation for every 150 sq. ft. of living space for gable vents, 1/300 for gable/eave combo's.
3. Enclosed attics and spaces between rafters shall have clear ventilation to outside.
4. There shall be no gas connections allowed in any rooms used for sleeping or in any corridors leading to or through any sleeping room.
5. All ducts in unconditioned spaces i.e.(attic, crawlspace) will be insulated to an R8 minimum.
6. Dryer vent to terminate at a location more than 3' from any openings back into the home.
7. Allow for .35 Air Changes Per Hour in all Theater/Sport Court spaces
8. Bathroom exhaust fan ducts must continue and discharge directly outside the Structure. Close proximity to attic vents or to soffit areas are specifically prohibited. All exhaust ducts must connect to an opening with proper screen for terminations in soffit and wall areas and to an approved thru the roof discharge fitting installed as not to be blocked or stopped by snow or ice.
9. Ducts used for kitchen range, dryer, bathroom & laundry room ventilation shall have a smooth, noncombustible, non-absorbent surface. Ducts shall terminate outside the building and shall be equipped with back draft dampers. Flexible ducts are allowed for bathroom exhaust fans, but must be tested to UL 181 and installed in accordance with the listing. IRC ch 16 also cannot terminate in Soffit, attic crawl space or ridge vents.
10. The minimum diameter of a dryer exhaust duct shall be per manufacturers recommendation, but at least the diameter of the outlet. Maximum length is 25' to be reduced 2 1/2' for each 45 degree bend and 5' for each 90 degree bend

G. FIRE PROTECTION AND WARNING
1. Fireplace chimneys shall extend 24" min. above any roof within a 10' radius.
2. Smoke detectors are required to meet local codes. Wire all smoke detectors in series with battery backup.
3. Provide 5/8" type. 'x' gyp. board on all walls and ceilings of the garage common to living areas, walls supporting upper floors, and any exposed beams and posts.
4. Provide 5/8" type 'x' gyp. board on walls and underside of all stairs. Fireblock walls at all stair stringers.

H. STAIRWAYS
1. Max. rise = 7 3/4" and min. tread = 10".
2. Min. headroom = 6'-8" and min. width = 36".
3. Every stairway landing shall be as long as its width. (unless otherwise noted).
4. Any door opening at the top of any interior flight of stairs must swing away from the stairs.
5. Enclosed space under stairs shall be protected on the enclosed side with 1/2" sheet rock.
6. Exterior steps shall have a minimum tread of 10"
7. Winder Stairs to be built as follows: 10" width at 12" from narrowest point, 6" minimum width at any point, 3/8" max variance.

I. RAILINGS
1. Handrails are required at all stairways that have more than 2 risers.
2. Handrails shall be placed between 34" and 38" above stair nosing.
3. Guardrails shall be at a minimum of 36" above floor.
4. Handrails deeper than 2 1/4" shall have finger grooves 3/4" x 1/4" deep, the full length of one side of the rail.
5. Balusters for handrails and guardrails shall be spaced so that a 4" sphere cannot pass through.
6. Handrails shall return to wall or post.
7. Handrails shall not project more than 4.5" on either side & Shall have a space of not less than 1.5" between the wall & Handrail

J. PLUMBING
1. All work performed shall comply with current national and local building codes.
2. Toilets shall be 1.6 gallon flush type. Shower heads shall be 2.5 GPM type.
3. All work shall be performed by a licensed contractor.
4. Provide C.P. escutcheons at pipe sleeves for exposed bare pipe. Pack annulus at one-hour fire walls.
5. Provide pressure regulator and shut-off valve.
6. Interior waste and vent lines shall be A.B.S.
7. All Baths and showers shall have Temp. limiting device to limit hot water to 120 degrees F. Provide anti-scald faucets on all Bath/Shower combinations.
8. Plumbing penetrations through garage firewall must be with metal piping. This includes waste lines, water lines vacuum lines, etc. All plumbing vent lines through the Roof shall be a MIN. of 3"
9. Vented Floor Drain at all Washing Machines. Washer valves require water Hammer arrestors.
10. Water meter cannot be located in the driveway, sidewalk or similar area. Meter must be placed in landscaping area. Sewer line cannot be located under the driveway.
11. Insulate Ducts, Water lines & Plumbing P-traps in crawl space
12. Shower Pans must have approved liner extending 3" past the Threshold. Solid blocking is required behind the liner. Slope must be built up under the liner

FRAMING

1. All dimensions on floor plans are to rough framing. Walls calculated to be 3 1/2" wide and 5 1/2" wide.
2. Solid blocking is to be at least 1 1/2" thick and full depth of joist at ends and at each support of joist. Provide solid blocking at bearing points of trusses.
3. All structural sheathing shall be APA rated and shall not exceed maximum span rating. Floor sheathing shall be tongue and groove. H-clips shall be installed on roof sheathing. Gap all waferboard sheathing.
4. Spike together all 2 x laminated built up beams using at least 16d nails at no less than 12" O.C., staggered.
5. Trusses are to be engineered, designed and constructed by manufacturer to meet all local loads and codes.
6. All exterior walls and cross-stud partitions are to be braced at each end of building and at least every 25' of length.
7. Truss anchors shall be provided at each end of all trusses. (Install as per local code requirements.)
8. Bi-pass doors shall be framed one inch smaller in width than the door. Example: a 5'-0" slider shall have a 59" rough opening. Also, bi-fold doors shall be framed one inch wider than door and 82" in height. Bi-pass doors shall be 83" in height.
9. Cross-bridging shall be required in spans exceeding 8'-0".
10. Gable-ended trusses shall be provided where required.
11. Interior framing that is non-bearing shall be 16" O.C. unless otherwise noted.
12. Framing will include all furr downs, ceiling joists, and plant shelves as per architectural drawings.
13. Interior Bearing walls shall be blocked at mid-height.
14. Triple studs shall be installed at all corners.
15. All hangers (joist, rafter, and beam)shall be installed as per manufacturers specs.
16. Multiple plates and ledgers shall be Lag Bolted into Rim Joists @ 16' O.C.
17. Block all horizontal edges of plywood wall sheathing with 2" nominal blocking. Edges of plywood on floors and roofs shall be blocked as directed on drawings.
18. All ledger bolts shall have standard washers with a minimum diameter equal to three times the bolt diameter unless shown otherwise in details.
19. Minimum nailing shall be as per I.R.C.
20. Fasteners such as staples can only be substituted for nails at a rate equal to load values provided by I.C.B.O & I.R.C approval. But, all floor sheathing shall be fastened with continuous glue bead and deformed shank nails.
21. Shear wall location shall be indicated on the floor plans.
22. Install blocking between joists that are over all bearing points.
23. Wood beams made of two or more pieces shall have the pieces securely bolted or nailed together to prevent separation and to insure mutual load sharing. Each interconnected piece shall be continuous between supports, and supports shall have the same width as the composite beam.
24. Extend 7/16" sheathing over rim joist. Nail to rim and upper and lower wall plates using 8d nail at 6" O.C. or as called out on shear wall schedule.
25. All framing studs shall be 16" O.C. max. All floor sheathing shall be 3/4" T&G APA rated 40/20 CDX sheathing nailed with 8d nails at all panel edges, supported edges, and all blocking. Use 8d nails 12" O.C. in field. Nails shall be min. 3/8" from edge of panel. Lay sheathing with face grain at right angles to framing and glue with glue conforming to APA specs. Floor joists shall be blocked at all bearing points. Block all horizontal edges of wall sheathing with 2 x 4 blocking. Use 8d nails 6" O.C. edges + 12" O.C. field.
26. All roof sheathing shall be 15/32" (typ.) (5/8" w/ balanced snow of 45psf or greater) rated sheathing nailed with 8d nails @ 6" O.C. at panel edges, supported edges, and all blocking with 8d nails, 12" O.C. along intermediate framing members.
27. All wood that is connected to concrete, steel, and wood to wood (except stud to plate) shall be connected with Simpson (or equivalent) connectors. Solid 2" nominal blocking shall be provided at ends or points of support of all wood joists and trusses.
28. All exterior wall and vertical surfaces at steps in roof shall be sheathed with 7/16" APA rated 24/O or better structural wood panel or grades covered in the I.R.C., block all horizontal edges with 2" nominal or wider. 3" or wider framing at adjoining panel edges and nails shall be staggered where 10d nails are spaced 3" or less. Sheathing shall be placed not less than 1/2" from edge of panel and driven flush but shall not fracture the surface of the sheathing.
29. All Lumber in contact w/ concrete or masonry including ledgers & furring walls must be preservative treated or foundation-grade redwood
30. These shall be the member grades used on this structure:

Glu-lam beams	(simple span)	24F-V4 DF/DF
	(cantilevered)	24F-V8 DF/DF
Joists		DF #2 (or better)
Headers		DF #2 (or better)
Posts DF	#1 (or better)	
Studs	(non-bearing walls)	DF stud grade (or better)
	(bearing walls)	DF #2 (or better)
Sill plates in contact w/ concrete		DF #2 (pressure treated)
Pre-Fab trusses or joists		As per manufacturers specifications

31. Steel Beams to be 50ksi, Steel Columns to be 46ksi, Steel Base Plates to be 36ksi
32. Special Instructions: Steel Construction, Welding, Use an approved Steel Fabricator and Field inspections are not required. See chapter 17 of IBC

STRUCTURAL CONDITIONS
1. GENERAL CONTRACTORS SHALL COMPARE ALL DIMENSIONS AND CONDITIONS AT SITE AND IN CONTRACT DOCUMENTS. ANY CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND DESIGNER IMMEDIATELY.
2. CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING FOR UNCOMPLETED PORTIONS OF THE BUILDING DURING CONSTRUCTION
3. OBSERVATION VISITS TO THE SITE BY ENGINEER'S FIELD REPRESENTATIVE SHALL NOT BE CONSTRUED AS INSPECTION OR APPROVAL OF CONSTRUCTION.
4. BUILDING CODE: INTERNATIONAL BUILDING CODE (IBC) 2012 AND 2012 INTERNATIONAL RESIDENTIAL BUILDING CODE (IRC) .

DEFERRED SUBMITTAL ITEMS: Trusses, Floor Trusses, Gas Line Schematic, Fireplace Manufacture, Stucco Installation, Res Check, Fire Sprinkler Submittal, Precast Concrete Floors

SHOWERS:
Showers shall have doors sized to provide a minimum of 22" Net clear opening
FLASHING:
Shall be installed in such a manner so as to prevent moister from entering a wall, roof or floor and redirect it to the exterior. Flashing shall be installed at the perimeters of exterior door and window assemblies, penetrations and terminations of exterior wall assemblies, exterior wall intersections with roofs, chimneys, porches, decks, balconies and similar projections and at built-in gutters and similar location where moisture could enter the wall. Flashing with projected flanges shall be installed on both sides and the ends of coping, under sills and continuously above projected trim. A flashing shall be installed at the intersection of foundation to stucco, masonry, siding or brick veneer. The flashing shall be an approved corrosion-resistant flashing.
WINDOWS:
Sills of Windows which are located more than 6' above grade, and less than 24" above the interior floor surface must be fixed or have an opening of a guard which does not allow the passage of a 4" sphere
ROOF SLOPE:
Composition Shingles shall not be installed on roofs having a slope less than 4 to 12 unless double underlayment is installed
TEMPERED GLASS:
Glazing used in Doors and Panels of Showers & Bathtub Enclosures & Walls enclosing these compartments shall be Tempered Tempered Glass shall be provided in: Frameless glass doors, glass in doors, glass within 24" arch of doors, glazing less then 60" above a walking Surface that is within 5ft. of stairs or glazing within 5ft of spas or pods, certain fixed glass panels, and similar glazed openings subject to human impact.
GAS LINE INSTALLATION:
Gas piping installed underground beneath buildings is prohibited except where the piping is encased in a conduit. such conduit shall extend not less than 4" outside the building, shall be vented above grade to the outdoors and shall be installed so as to prevent the entrance of water or insects. Gas piping shall not penetrate building foundation walls at any point below grade. Gas piping shall not penetrate building foundation walls at any point below grade.
PROHIBITED LOCATIONS:
Gas piping shall not be installed in or through a ducted supply, return, exhaust, clothes chute, chimney, dumbwaiter, or elevator shaft. Gas piping installed downstream of the point of delivery shall not extend through any townhouse unit other than the unit served by such piping

KEYNOTES

10820 Town Center Parkway
Highland, Utah

Engineered By:
Wayne Staker, P.E., S.E.
Compass Engineering
801-664-2197

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Blackstone
6 Unit Townhomes

Designed for
Blackstone Group

Finished Footage	2,285
Date	OCT. 2014
Drawn by	DSW

PRINTED: 12/1/2014 2:04:40 PM

Sheet 1 of 12

PRE-CAST: 473
FLEX: 449
GROUND LEVEL: 491
MAIN LEVEL: 867
UPPER LEVEL: 927
TOTAL: 3,207

CONCRETE NOTES:

1 - CONCRETE MATERIAL PROPERTIES FOR FOOTING, GRADE BEAMS AND WALLS: 28 DAY COMPRESSIVE STRENGTH ARE TO BE 3000 PSI. STRUCTURAL DESIGN IS BASED ON 2500 PSI.

2 - CONCRETE MATERIAL PROPERTIES FOR ALL EXTERIOR FLATWORK INCLUDING GARAGE FLOORS TO BE 4000 PSI.

3 - CONCRETE MATERIAL PROPERTIES FOR SUSPENDED SLABS AND CANTILEVER SLABS 28 DAY COMPRESSIVE STRENGTH TO BE 4000 PSI.

4 - PROVIDE ISOLATION JOINTS AROUND ALL COLUMNS AT ALL EXPOSED SLAB ON GRADE AREAS.

5 - ALL HOLDOWNS ARE PER SIMPSON STRONGTIE OR APPROVED IRC EQUAL.

6 - ALL STHD STRAP HOLDOWNS SHALL HAVE (1) #4 X 30" LONG PER MFR'S. DESIGN RECOMMENDATIONS.

7 - SHEARWALL EDGE NAILING SHALL BE INSTALLED TO THE SAME POSTS ON WHICH THE HOLDOWNS ARE ATTACHED.

8 - HOLDOWNS W/ "RJ" DESIGNATION TO BE USED AT ALL RIM JOIST APPLICATIONS.

9- HOLDOWN LOCATIONS ARE APPROXIMATE. REFER TO FLOOR PLANS FOR ADDITIONAL INFORMATION FOR ACCURATE PLACEMENT.

10 - FOOTING STEP LOCATIONS AND ELEVATIONS ARE ASSUMED. ADJUST AS REQUIRED ON SITE TO BRING FOOTING TO BEAR ON NATURAL UNDISTURBED SOIL.

11 - BEFORE CONCRETE IS POURED VERIFY WITH ALL TRADES TO INSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, BOLTS, INSERTS, HOLD DOWNS, ETC., RELATIVE TO WORK.

12 - CONTRACTOR IS RESPONSIBLE FOR ALL SHORING & FORM WORK.

13 - ALL REINFORCEMENT SHALL BE ASTM A-615 GRADE-60 OR BETTER.

14 - REINFORCEMENT SHALL BE FREE FROM MUD, OIL, OR OTHER NONMETALLIC COATINGS THAT ADVERSELY EFFECT BONDING CAPACITY.

15 - ALL EXTERIOR FOOTINGS SHALL BE CONTINUOUS & POURED MONOLITHICALLY.

16 - ALL CHANGES IN VERTICAL FOOTING ELEVATION SHALL BE STEPPED. THE MINIMUM DISTANCE OF THE VERTICAL STEP SHALL BE NO LESS THAN 6'

17 - MINIMUM FOOTING THICKNESS SHALL BE NOT LESS THAN 10"

18 - USE 5/8" DIA. ANCHOR BOLTS @ 32" O.C. W/ 3"X3"X1/4" PLATE WASHERS, & STANDARD CUT WASHER 7" MIN. EMBED (U.N.O.). PROVIDE PRESSURE TREATED PLATE @ ALL SILL PLATES (U.N.O. PER SHEAR WALL REQ.) SEE SHEAR WALL SCHEDULE FOR SIZE & SPACING @ SHEARWALL LOCATIONS

19 - SOIL BEARING PRESSURE = 1,200 P.S.F. CONTRACTOR SHALL BE RESPONSIBLE FOR EVALUATING SOIL CONDITIONS & SUITABILITY AFTER EXCAVATION.

20 - PROVIDE (2) COATS OF ASPHALT EMULSION DAMP-PROOFING CONTINUOUS OVER TOP OF FOOTING AND EXTERIOR OF FOUNDATION WALLS TO FINISHED GRADE. PLASTER (PARGE) EXPOSED FOUNDATION WALLS ABOVE FINISHED GRADE.

21 - CONTRACTOR SHALL BE RESPONSIBLE FOR LATERALLY SUPPORTING FOUNDATION WALLS WHILE BACK- FILLING AND UNTIL ALL SUPPORTING MEMBERS HAVE BEEN PLACED.(SUCH AS FLOORS)

22 - BACK FILL FOUNDATIONS IN 8" LIFTS TO 98% MAX. DENSITY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF CONCRETE SLAB PLACEMENT FOR GARAGE AND DRIVEWAYS OVER ADEQUATE COMPACTED BACK FILL MATERIAL (4" FREE DRAINING GRAVEL OVER EXISTING GRADE OR APPROVED FILL)

23 - ALL FOOTING SHALL BE PLACED 12" BELOW EXISTING GRADE AND MINIMUM OF 30" BELOW FINISHED GRADE OR PER LOCAL CODE FOR FROST DEPTH.

24 - FOUNDATION WALLS SHALL HAVE A MINIMUM EXPOSURE OF 6" ABOVE FINISHED GRADE.

25 - THE LOCAL BUILDING OFFICIAL IS TO ASSURE COMPLIANCE WITH CODE AND CONSTRUCTION REQUIREMENTS.

26 - CONCRETE FLOOR SLABS, EXCEPT FOR THOSE IN UNHEATED ACCESSORY STRUCTURES, SHALL HAVE A VAPOR RETARDER CONSISTING OF A 6 ML (.006 INCH) POLYETHYLENE OR APPROVED VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6" PLACED BETWEEN THE CONCRETE FLOOR SLAB AND THE BASE COURSE OR THE PREPARED SUB-GRADE WHERE NO BASE COURSE EXISTS

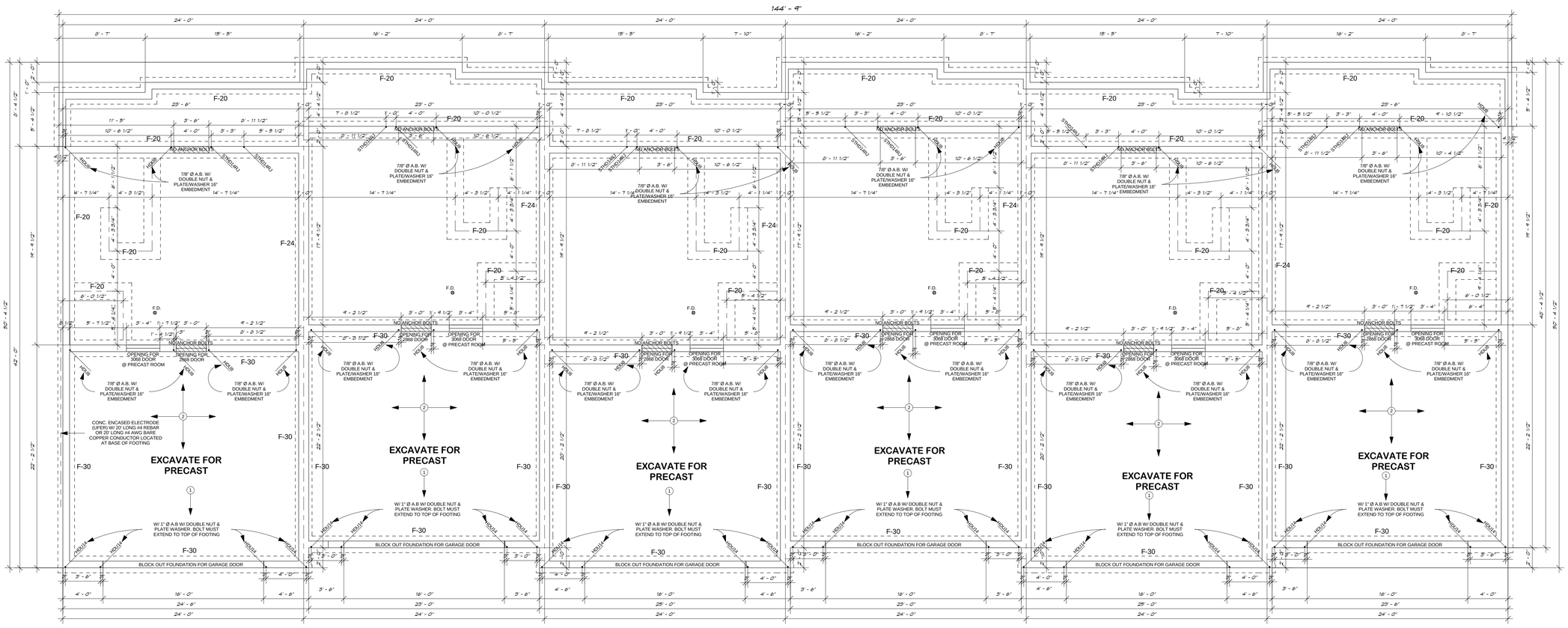
NOTE:
FOUNDATION CREW, PLEASE MARK LOCATION OF UFER GROUND WITH HIGHLY VISIBLE SPRAY PAINT ON INTERIOR OF FOUNDATION WALL

SCHEDULES ARE ON DETAIL SHEET 11

NOTE:
SPACE ANCHOR BOLTS BETWEEN FLOOR JOISTS

ALL FOUNDATION STRAPS MUST BE NAILED WITH A 0.148 MINIMUM DIAMETER NAIL

NOTE:
ALL CONCRETE OPENINGS TO HAVE (2)#5 HORIZONTAL IN BOTTOM OF LINTEL ABOVE OPENING EXTENDING 2'-0" PAST OPENING (1)#4 BAR ON EACH SIDE OF OPENING TERMINATING 3" FROM TOP OF CONCRETE (1)#4 HORZIONTAL BAR BELOW OPENING EXTENDING 2'-0" PAST



FOUNDATION PLAN

WALKER HOME DESIGN
801-930-9499 office
www.walkerhomedesign.com

KEYNOTES

1. SLOPE OF FLOOR AT GARAGE SLAB (3" TOTAL)
2. 4" CONCRETE SLAB ON GRADE

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Blackstone
6 Unit Townhomes

Designed for
Blackstone Group

Finished Footage	2,285
Date	OCT. 2014
Drawn by	DSW

PRINTED: 12/1/2014 2:04:41 PM
Sheet 2 of 12

PRE-CAST: 473
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MAIN LEVEL: 867
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TOTAL: 3,207

SCALE: 3/16" = 1'-0"

NOTE:
A BACK WATER VALVE IS REQUIRED TO PROTECT PLUMBING FIXTURES THAT ARE LOCATED BELOW THE ELEVATION LEVEL OF THE NEAREST UPSTREAM MAN HOLE COVER. FIXTURES THAT ARE ABOVE THE ELEVATION OF THE MAN HOLE COVER SHALL NOT DISCHARGE THROUGH THE BACK WATER VALVE

NOTE:
FLOOR DRAINS MUST HAVE TRAP PRIMERS OR DEEP SEAL TRAPS

NOTE:
MAIN LEVEL WINDOW'S HEAD HEIGHT @ 7'-8" UNO

NOTE:
UPPER LEVEL WINDOW SILLS TO BE A MIN. OF 24" ABOVE FLOOR

NOTE:
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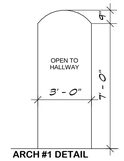
NOTE:

8' TALL WALLS FRAMED WITH STUDS @ 16" O.C.
10' AND TALLER WALLS SEE ENGINEERING.

DIMENSIONS ON FLOOR PLANS ARE TO ROUGH FRAMING UNLESS OTHERWISE NOTED.

2 X 4 STUD WALLS ASSUMED TO BE 3 1/2" WIDE.

2 X 6 STUD WALLS ASSUMED TO BE 5 1/2" WIDE.



ARCH #1 DETAIL

WALKER HOME DESIGN
801-930-9499 office
www.walkerhomedesign.com

KEYNOTES

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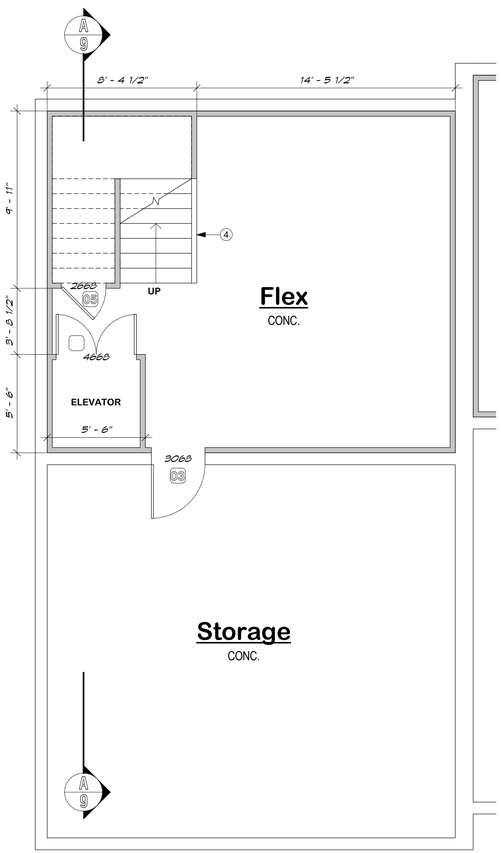
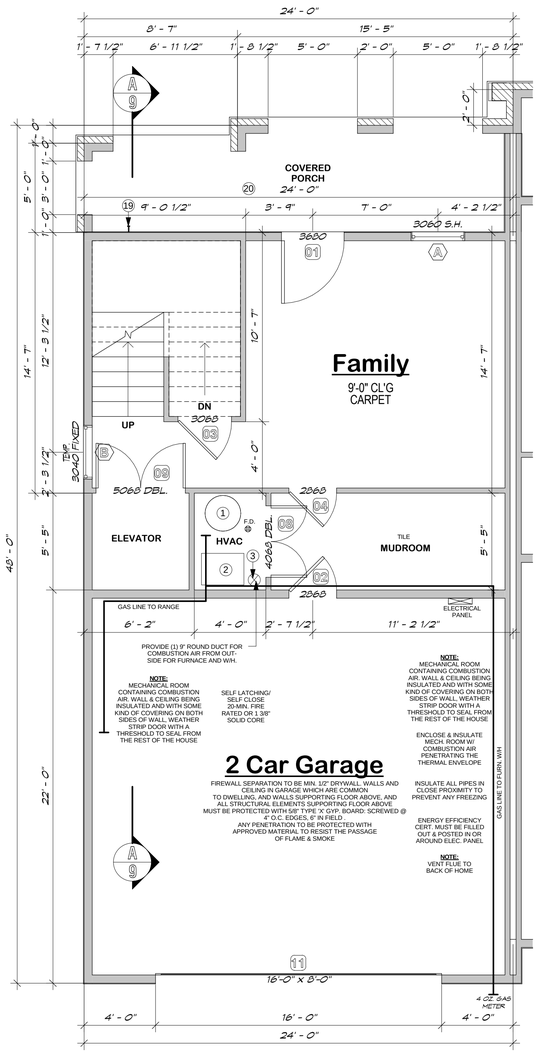
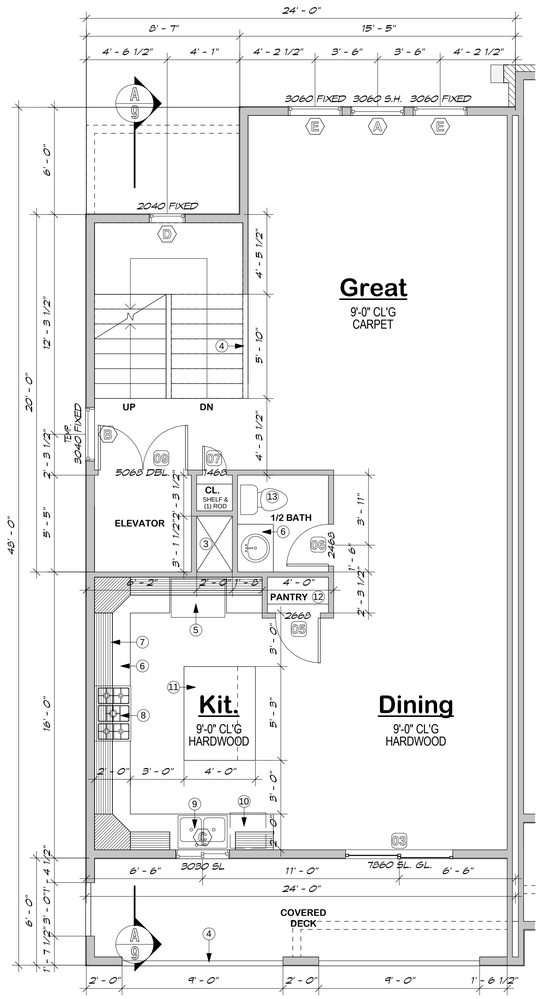
20. CONC. LANDING @ MIN. 36" X 36"



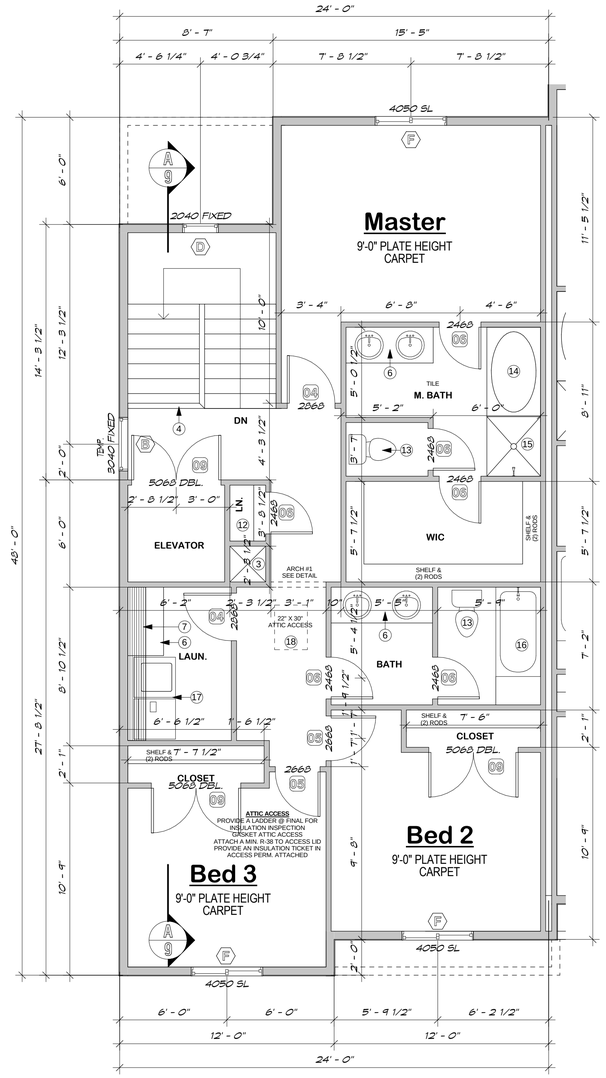
PRE-CAST LEVEL



GROUND LEVEL



MAIN LEVEL



UPPER LEVEL

FLOOR PLANS

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Blackstone
6 Unit Townhomes

Designed for
Blackstone Group

Finished Footage	2,285
Date	OCT. 2014
Drawn by	DSW
PRINTED: 12/1/2014 2:04:41 PM	PRE-CAST: 473 FLEX: 449 GROUND LEVEL: 491 MAIN LEVEL: 867 UPPER LEVEL: 927 TOTAL: 3,207
Sheet 3 of 12	
SCALE:	1/4" = 1'-0"

Window Schedule

NUMBER	WIDTH	HEIGHT	FRAME	GLAZING	DESCRIPTION	COUNT
A	3' - 0"	6' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	11
B	3' - 0"	4' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	6
C	3' - 0"	3' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	6
D	2' - 0"	4' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	5
E	3' - 0"	6' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	10
F	4' - 0"	5' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	16
G	4' - 0"	6' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	2
H	1' - 0"	3' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	6
I	5' - 0"	5' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	1
J	4' - 0"	4' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	4
K	3' - 0"	5' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	2
L	3' - 0"	5' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	1
M	2' - 0"	2' - 0"	VINYL	LOW-E	INSULATED, WHITE, CLEAR	1
Grand total						71

Door Schedule

NUMBER	WIDTH	HEIGHT	THICKNESS	JAMB	MATERIAL	HARDWARE	DESCRIPTION	COUNT
01	3' - 6"	8' - 0"	0' - 2"	FIR	WOOD	LOCK & DEAD BOLT	INSULATED COLONIAL	1
02	2' - 8"	6' - 8"	0' - 1 1/2"	FIR	WOOD	LOCK & DEAD BOLT	INSULATED COLONIAL	1
03	3' - 0"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	COLONIAL	2
03	6' - 0"	7' - 8"	0' - 1 1/2"	FIR	GLASS	LOCK & DEAD BOLT	INSULATED GLASS	1
04	2' - 8"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	COLONIAL	3
05	2' - 6"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	COLONIAL	4
06	2' - 4"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	COLONIAL	7
07	1' - 4"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	COLONIAL	1
08	4' - 0"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	DOUBLE PANEL	1
09	5' - 0"	6' - 8"	0' - 1 1/2"	FIR	WOOD	KNOB	DOUBLE PANEL	5
10	2' - 8"	6' - 8"	0' - 1 1/2"	FIR	WOOD	LOCK & DEAD BOLT	GARAGE DOOR	1
11	16' - 0"	8' - 0"	0' - 1 1/2"	FIR	METAL	LOCK	GARAGE ROLL UP	1
Grand total								28

NOTE:
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NOTE:
FLOOR DRAINS MUST HAVE TRAP PRIMERS OR DEEP SEAL TRAPS

NOTE:
MAIN LEVEL WINDOW'S HEAD HEIGHT @ 7'-8" UNO

NOTE:
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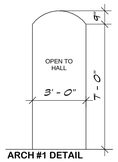

ARCH #1 DETAIL

KEYNOTES

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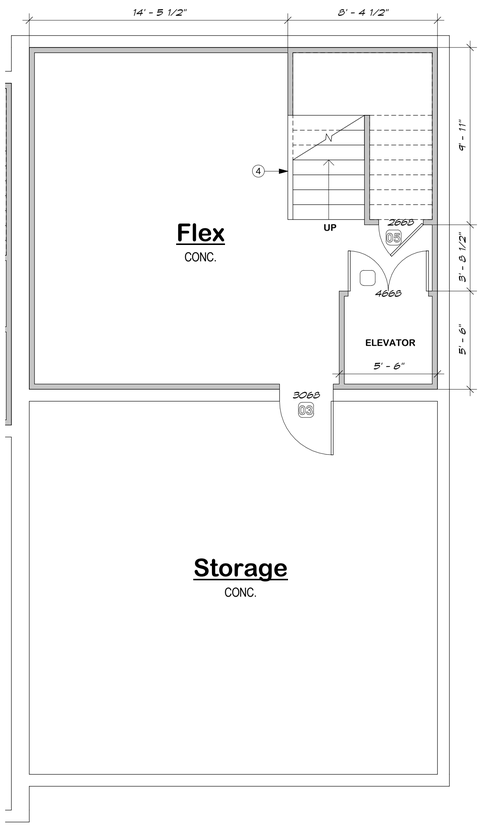
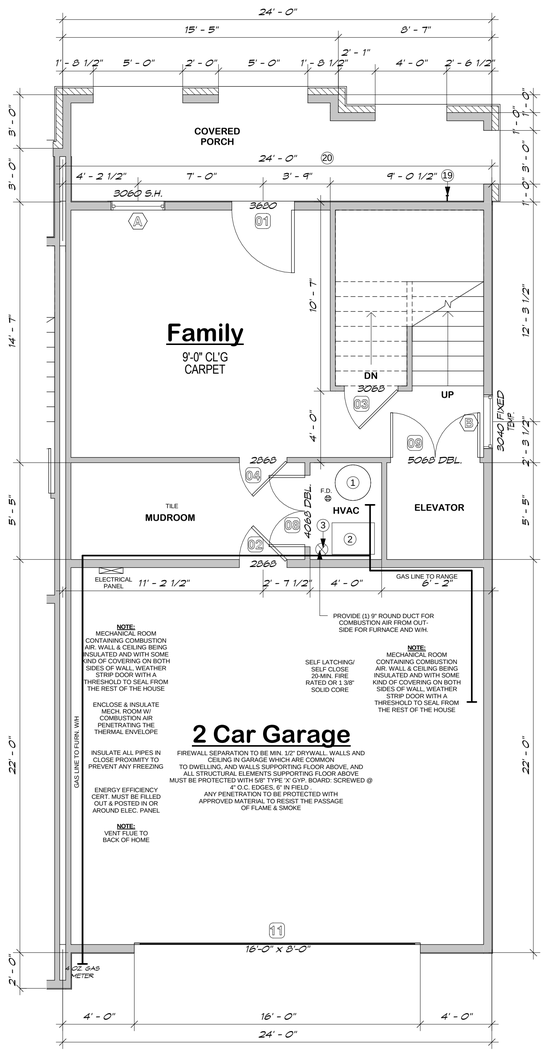
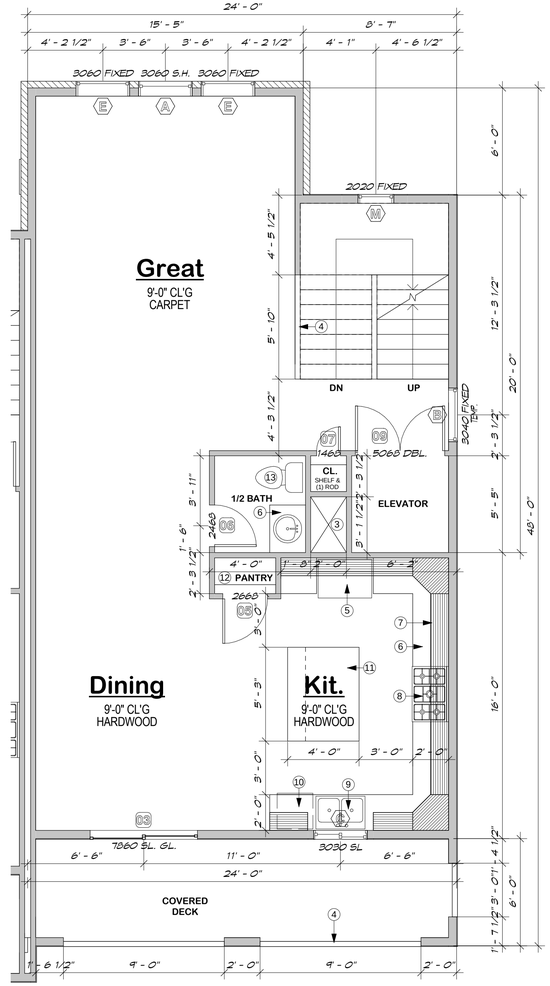


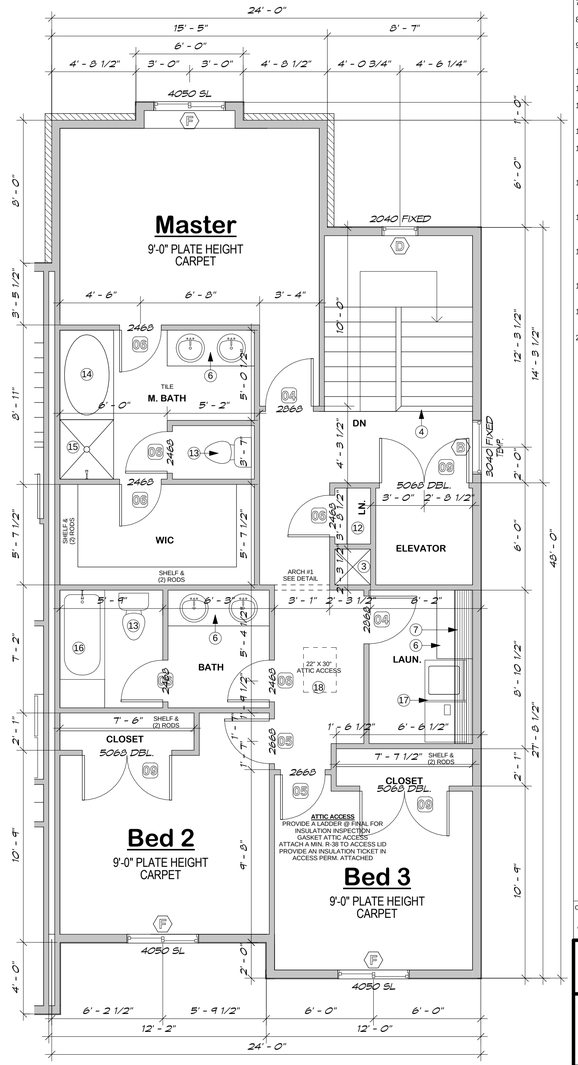
PRE-CAST LEVEL



GROUND LEVEL



MAIN LEVEL



UPPER LEVEL

FLOOR PLANS

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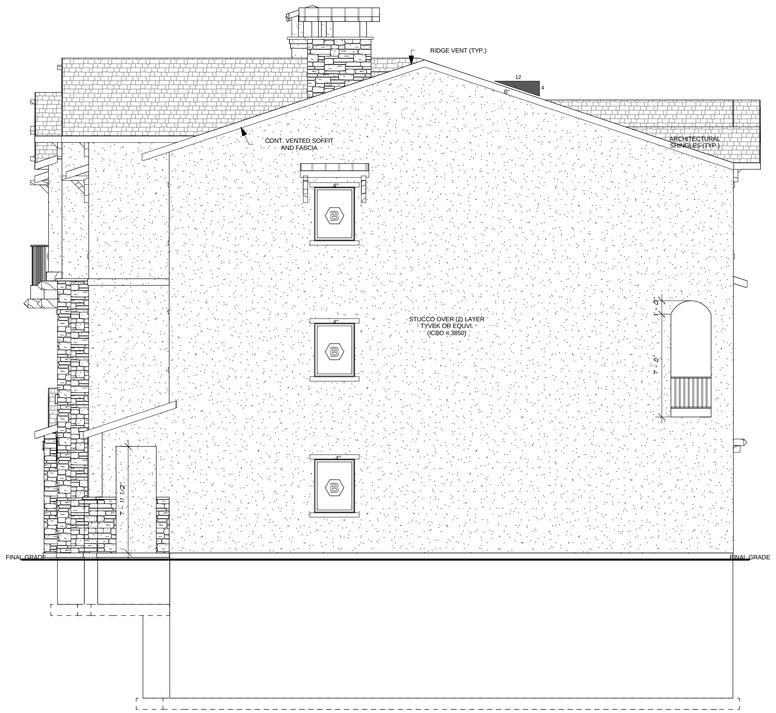
Sheet 4 of 12	
SCALE:	1/4" = 1'-0"

6 UNIT RIGHT ELEVATION



NOTE:
GROUND LEVEL WINDOW'S HEAD HEIGHT @ 7'-8" UNO

NOTE:
MAIN LEVEL WINDOW'S HEAD HEIGHT @ 7'-8" UNO

NOTE:
UPPER LEVEL WINDOW SILLS TO BE A MIN. OF 24" ABOVE FLOOR

NOTE:
INSPECTIONS ARE REQUIRED FOR ALL STUCCO & EIFS SYSTEMS

NOTE:
NO MECHANICAL VENTS ON FRONT OF HOME

6 UNIT FRONT ELEVATION

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6 Unit Townhomes

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Sheet 5 of 12

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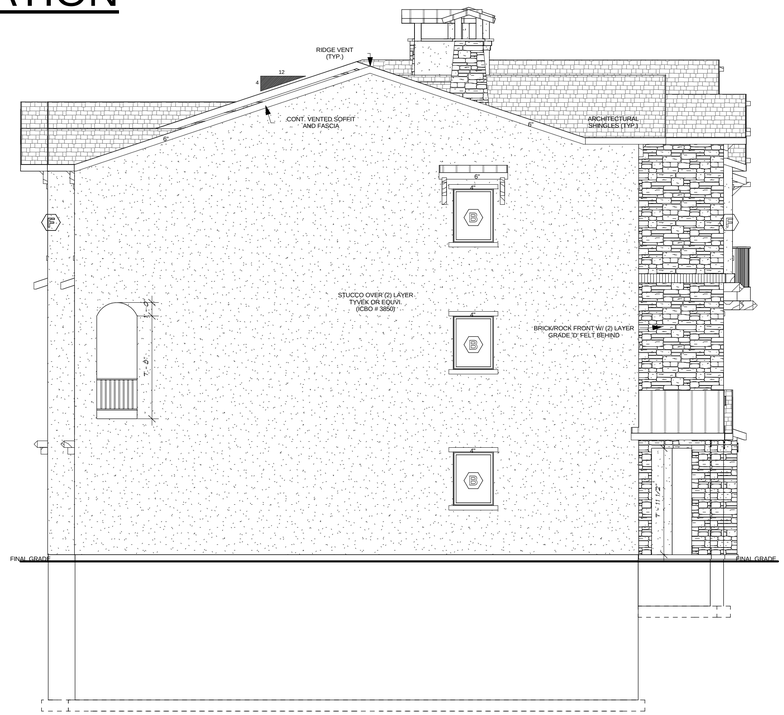
6 UNIT LEFT ELEVATION



NOTE:
GROUND LEVEL WINDOW'S
HEAD HEIGHT @ 7'-8" UNO

NOTE:
MAIN LEVEL WINDOW'S
HEAD HEIGHT @ 7'-8" UNO

NOTE:
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NOTE:
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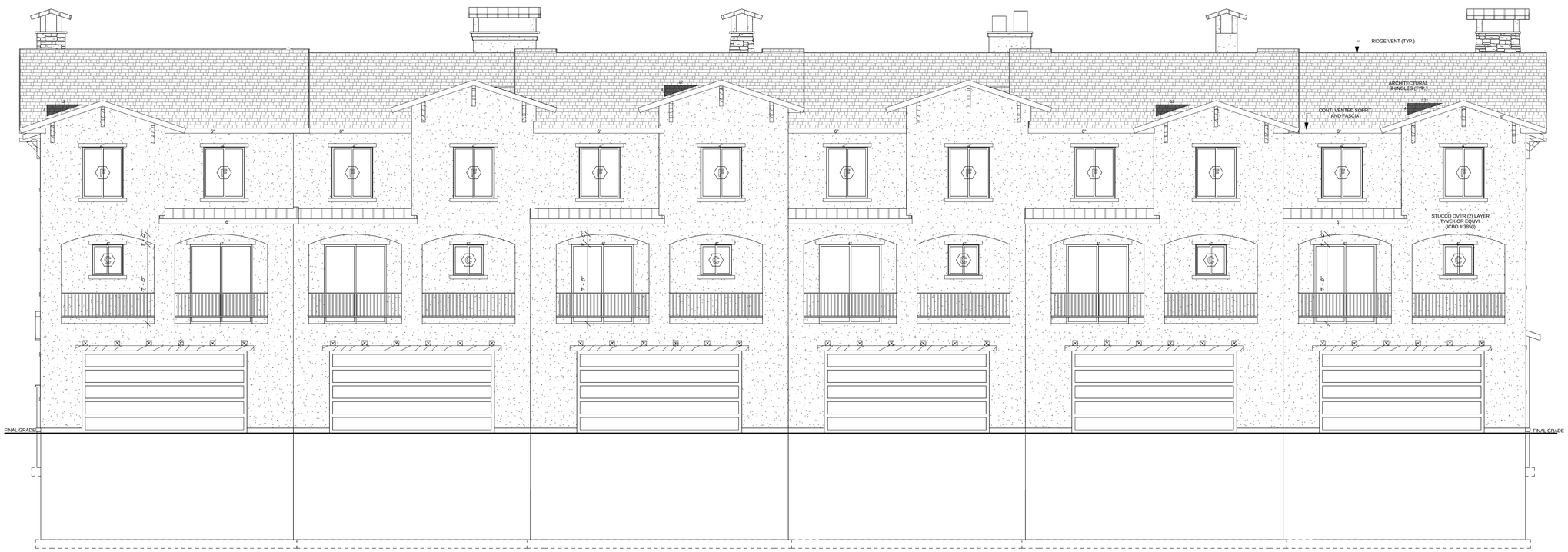
ON FRONT OF HOME



6 UNIT REAR ELEVATION

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Blackstone

6 Unit Townhomes

Designed for

Blackstone Group

Finished Footage	2,285
Date	OCT. 2014
Drawn by	DSW
PRINTED: 12/1/2014 2:04:48 PM	PRE-CAST: 473
Sheet 6 of 12	FLEX: 449
	GROUND LEVEL: 491
	MAIN LEVEL: 867
	UPPER LEVEL: 927
	TOTAL: 3,207
SCALE:	3/16" = 1'-0"

FRAMING NOTES:

1- INSTALL JOIST HANGERS AS PER MANUFACTURE SPECIFICATIONS.

2- INSTALL WEB STIFFENERS AS PER MANUF. SPECS.

3- EXTERIOR HEADERS NOT CALLED OUT SHALL BE (2)-2x10. ALL TRIMMERS FOR THESE HEADERS ARE (1)-2x UNLESS NOTED OTHERWISE.

4- ALL HOLDOWNS ARE SHOWN ON FOUNDATION DRAWING. SHEAR WALL NOTES FOR MAIN FLOOR SHOWN ON UPPER FLOOR.

5- SUB FLOORING SHALL BE 3/4" APA RATE OSB T & G SHEATHING, NAILED & GLUED W/ 8d NAILS @ 6" O.C.@ DIAPHRAGM BOUNDARIES & PANEL SUPPORTED EDGES. FIELD NAIL W/ 8d NAILS @ 12" O.C., NAILING SHALL BE SPACED 3/8" (MIN.) FROM EDGE OF PANEL.

7- LAY SHEATHING WITH FACE GRAIN AT RIGHT ANGLES TO FRAMING WITH END JOINTS STAGGERED. GAP ALL OSB BOARD 1/8". (SEE SHEATHING DETAIL).

8- ALL GLU-LAM BEAMS SHALL BE COMB. 24F-V4 DF/DF (UNLESS OTHERWISE NOTED).

9- PLACE (2)-STUDS MINIMUM UNDER ALL BEARING POINTS FOR BEAMS AND HEADERS (UNLESS OTHERWISE NOTED).

10- USE SIMPSON H5 CLIPS @ 32" O.C. FOR ALL CANT. JOISTS TO SILL PLATE CONNECTIONS.

11- EXTERIOR 8' TALL WALLS FRAMED WITH 2X6 STUDS @ 16" O.C. 10' AND 14' WALLS TO BE 2x6 DFL#2 STUDS @ 16" O.C.

12- DIMENSIONS ON FLOOR PLANS ARE TO ROUGH FRAMING UNLESS OTHERWISE NOTED.

13- DROP SHEATHING DOWN OVER RIM JOIST AND NAIL TO LOWER PLATE AS PER SCHEDULE. BLOCK ALL EDGES. WALL SHEATHING MUST BREAK ON & NAIL INTO SAME FRAMING MEMBER. NAIL ALL WALL SHEATHING W/8d NAILS @ 12" O.C. IN PANEL FIELD & 6" O.C. @ PANEL EDGES U.N.O ON SHEARWALL SCHEDULE.

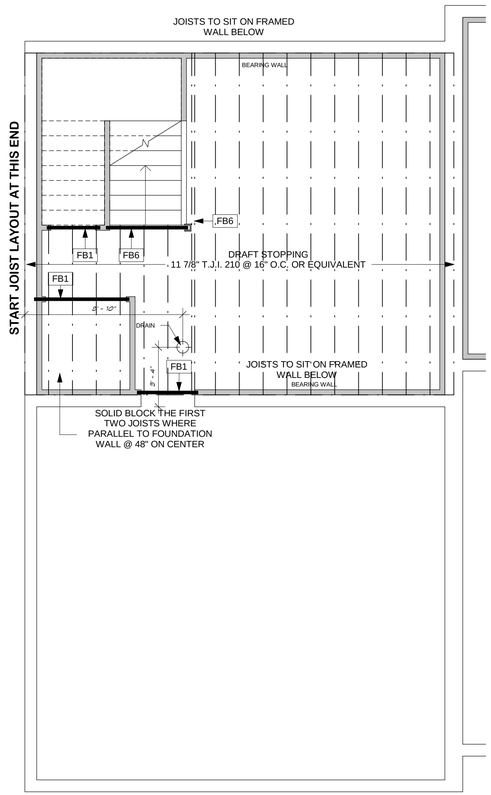
14- ROOF FRAMING TO BE ROOF TRUSSES @ 24" O.C. MAX SPACING PER MFR. UNLESS NOTED OTHERWISE.

15- PROVIDE BLOCKING AT JOIST BEARING.

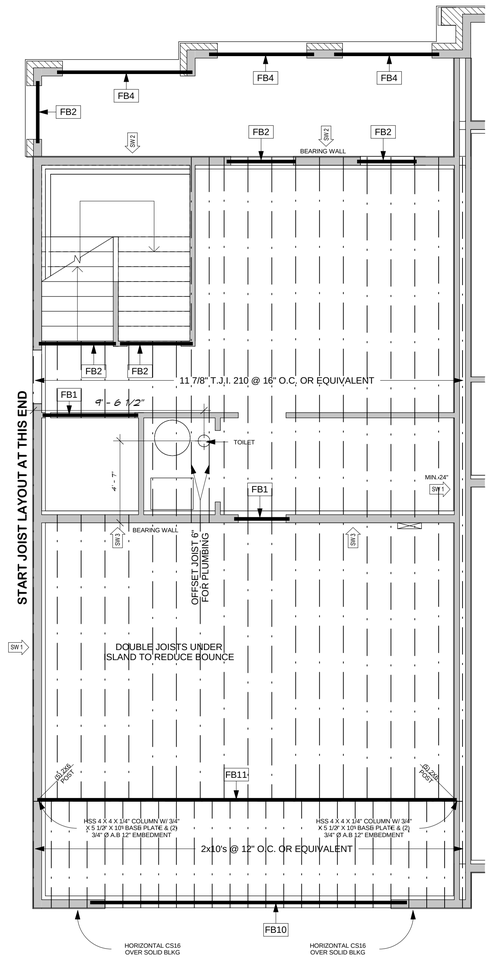
16- ALL EXTERIOR EXPOSED STRUCTURAL FRAMING MEMBERS TO BE OF PRESSURE TREATED WOOD OR WOOD NATURALLY RESISTANT TO DECAY.

17- FLOOR FRAMING TO BE INSPECTED PRIOR TO SHEATHING THE FLOOR

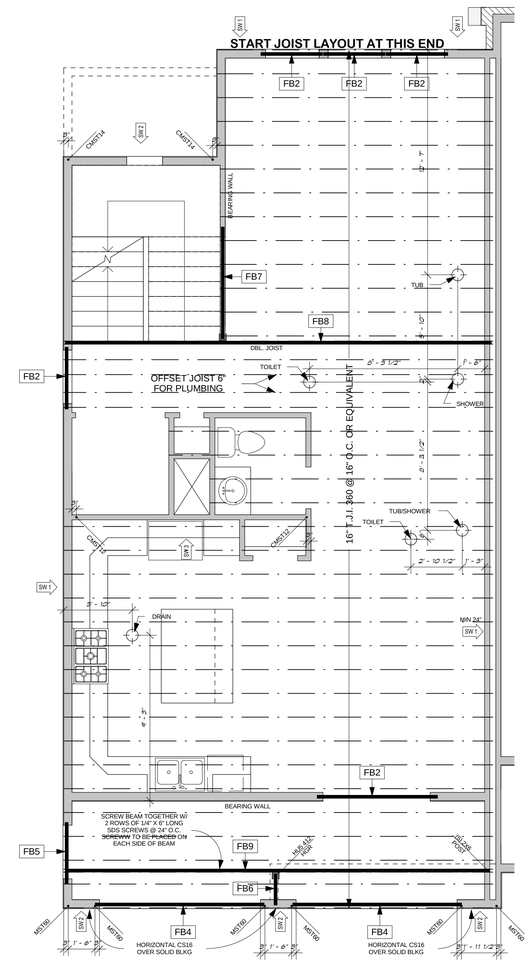
18- STEEL BEAMS TO BE 50 KSI, COLUMNS TO BE 46 KSI, PLATES TO BE 36 KSI



LOWER LEVEL



MAIN LEVEL



UPPER LEVEL

FRAMING PLANS

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www.walkerhomedesign.com

KEYNOTES

BEAM SCHEDULE

FB-1	(2) 2X8
FB-2	(2) 2X10
FB-3	(3) 2X10
FB-4	(2) 1 3/4 X 9 1/2 LVL
FB-5	(3) 1 3/4 X 9 1/2 LVL
FB-6	(2) 1 3/4 X 11 7/8 LVL
FB-7	(1) 1 3/4 X 16 LVL
FB-8	(2) 1 3/4 X 16 LVL
FB-9	(4) 1 3/4 X 16 LVL
FB-10	5 1/8 X 16 1/2 GLB
FB-11	5 1/8 X 21 GLB OR W 12 X 35

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Blackstone

6 Unit Townhomes

Designed for

Blackstone Group

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Drawn by	DSW
PRINTED: 12/1/2014 2:04:49 PM	
Sheet 7 of 12	PRE-CAST: 473 FLEX: 449 GROUND LEVEL: 491 MAIN LEVEL: 867 UPPER LEVEL: 927 TOTAL: 3,207
SCALE:	1/4" = 1'-0"

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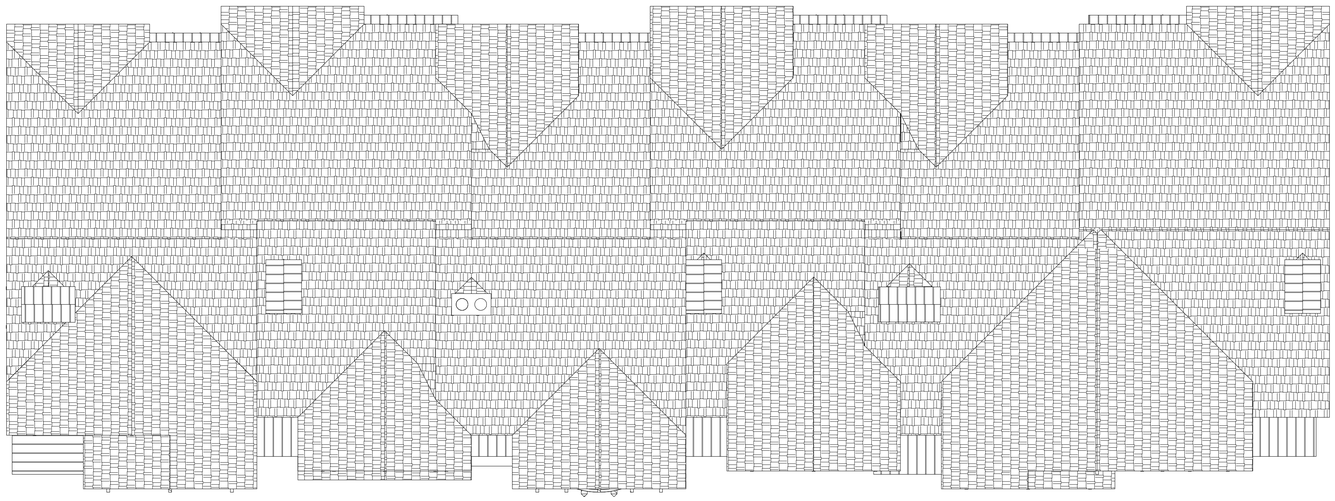
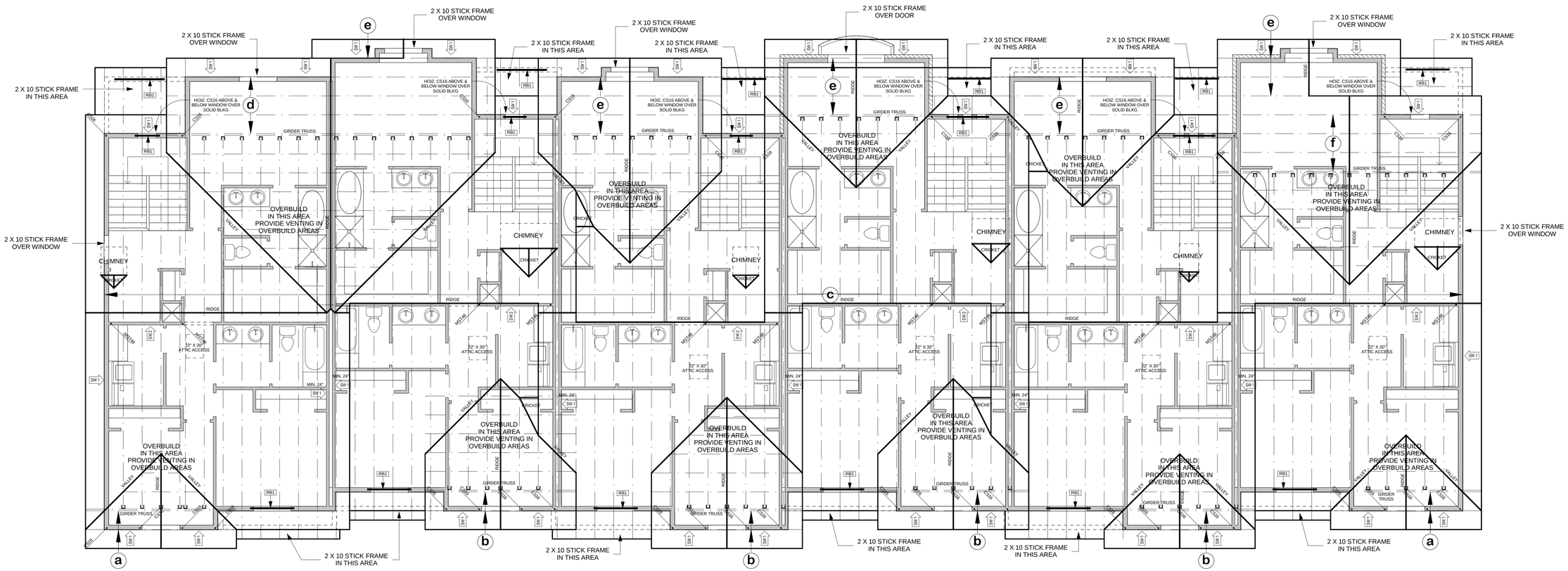
ROOF VIEW





ROOF FRAMING PLAN

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KEYNOTES

BEAM SCHEDULE

RB-1 (2) 2X10

LOADS

A. ROOF SNOW LOAD = 35 psf + SNOW DRIFT PER IBC

B. ROOF DEAD LOAD = 15 psf

C. FLOOR LIVE LOAD = 40 psf

D. FLOOR DEAD LOAD = 10 psf

E. DECK DEAD LOADS = 15 psf

F. DECK LIVE LOAD = 60 psf

G. WIND LOAD = 115 MPH ZONE-EXPOSURE B

H. SEISMIC ZONE D2 (IBC)

I. SOIL BEARING PRESSURE = 1500 psi (ASSUMED)

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Blackstone
6 Unit Townhomes

Designed for
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Finished Footage	2,285
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Drawn by	DSW

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Sheet 8 of 12

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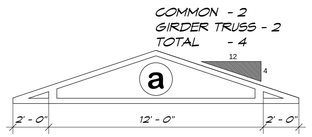
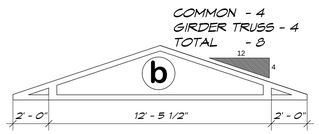
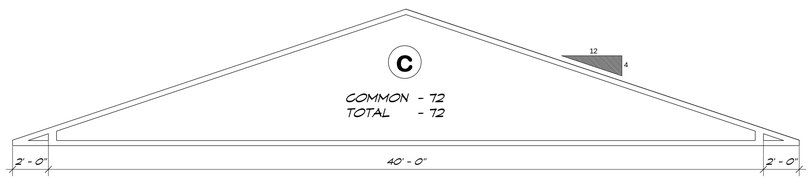
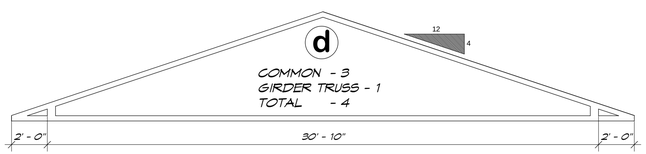
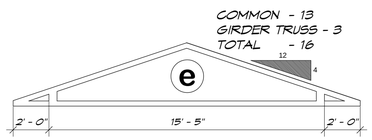
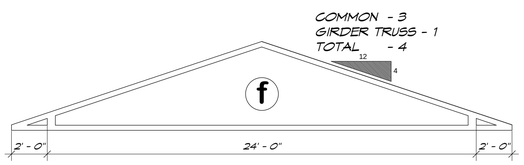


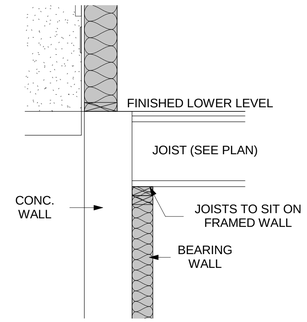












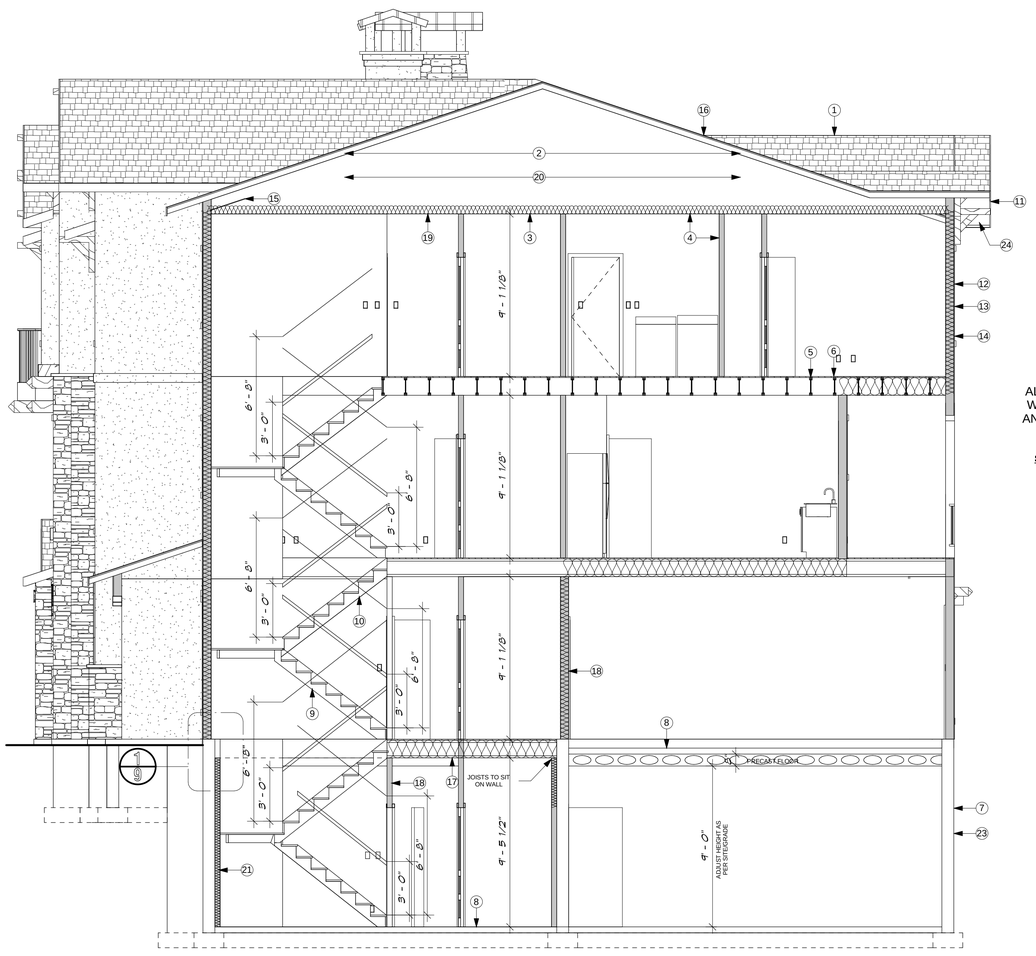
1. JOISTS @ LOWER LEVEL

NOTE:
TRUSS COMPANY TO MEET
WITH BUILDER & HOME OWNER
BEFORE TRUSSES ARE BUILT

TRUSS DIAGRAMS

(TRUSSES SHALL BE ENGINEERED, DESIGNED AND MANUFACTURED BY TRUSS SUPPLIER)
TRUSS MANUF. TO MEET W/ HOMEOWNER TO CONFIRM ALL CEILING DESIGNS, VAULTS & ATTIC SPACES, ETC. SO THAT ROOF IS DESIGNED AS PER THEIR NEEDS
AND DISCUSS COST OF USING 12" HEEL HEIGHT AND HOMEOWNER SHOULD MEET W/ INSULATION COMPANY TO DISCUSS ADVANTAGES OF INCREASED INSULATION AT TRUSS ENDS

NOTE!
ALL TAILS SHALL
BE PLUMB CUT
NOTE!
TRUSS DIAGRAMS ARE FOR
REFERENCE ONLY. TRUSS COMPANY
TO DESIGN TRUSS



ALL BSMT. BEARING WALLS REQ. MECH. ANCHORS @ 32" O.C.

STAIR NOTE
7 3/4" MAX RISE
10" MIN TREAD
36" MIN WIDTH
80" MIN HEADROOM
SEE SHEET 1 FOR TYPICAL STAIR & RAILING NOTES
(ALL NOTES SHALL BE AS PER LOCAL CODE)

CROSS SECTION 'A'

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KEYNOTES

1. ROOF SHEATHING W/30 YR. ARCH GRADE SHINGLES W/6 NAILS PER SHINGLE
2. PREMANUFACTURED TRUSSES @ 24" O.C. AND 2 X MTL.
3. R-38 INSULATION (TYP. @ CEILING)
4. 1/2" GYP. BOARD @ WALLS AND CEILING
5. FLOOR JOISTS (REFER TO FRAMING PLAN FOR SIZE AND SPACING)
6. SUBFLOOR (REFER TO FRAMING PLAN FOR SPECIFICATIONS)
7. INSULATION TO 24" BELOW GRADE IF REQUIRED
8. 4" CONCRETE SLAB
9. (3) 2 X 12 (OR EQUIV.) STAIR STRINGERS (TYP.)
10. 1/2" SHEET ROCK ON ENCLOSED SIDE OF STAIRS
11. 2 X 6 FASCIA W/ ALUMINUM WRAP AND CONTINUOUS VENTED ALUM. SOFFIT
12. SIDING W/ (1) LAYER OF GRADE 'D' FELT & STUCCO W/ (2) LAYERS GRADE 'D' FELT
13. R-19 INSULATION (TYPICAL @ ALL EXTERIOR WALLS)
14. 2 X X STUDS @ 16" O.C. (TYP. @ ALL EXT. WALLS UNLESS NOTED) TYVEK OR EQUVI.
15. INSULATION BAFFLES @ EXTERIOR PERIMETER (TYP.)
16. ICE DAM PROTECTION @ VALLEYS & @ EAVES (TYP.)
17. R-38 INSULATION (TYPICAL @ MAIN LEVEL FLOORS (w/ unfin. bsmt.)
18. MID-HEIGHT BLOCKING AT ALL BASEMENT BEARING WALLS (TYP.)
19. INS. DEPTH SHALL BE MARKED @ 300' INTERVALS
20. CROSS VENTILATION FOR ENCLOSED ATTICS AND SPACES BETWEEN RAFTERS
21. R-13 INSULATION
22. WATERPROOFING AS PER IRC R 406.2 MEMBRANE SHALL CONSIST OF 2-PLY HOT-MOPPED FELTS, 55 POUND (25 kg) ROLL ROOFING, 6-MIL. (.15mm) POLY. OR 40-MIL (1mm) POLYMER- MODIFIED ASPHALT
23. 4" FRENCH DRAIN
24. CONT. SOFFIT VENT (TYP.)

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Sheet 9 of 12

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LEGEND AND NOTES ARE ON DETAIL SHEET XX

NOTE:
FLASH BEHIND METER
PROVIDE (2) UNI-STRUTS ON SERVICE RISER
CORROSION RESISTANT TAPE @ SERVICE RISER
PROVIDE A INTERSYSTEM BONDING TERMINATION @ SERVICE PANEL
ALL EXTERIOR APPLIANCES MUST BE 3" MIN. ABOVE FINISH GRADE & ON A CONCRETE PAD

NOTE TO ELECTRICIAN
INCANDESCENT FIXTURES IN CLOSETS SHALL BE A MIN. OF 12" FROM ANY SHELF EDGE MEASURED HORIZONTALLY (6" FOR FLUORESCENT FIXTURES). THE DIMENSION FOR SHELVES LESS THAN 12" WIDE WILL BE 24" FROM THE WALL

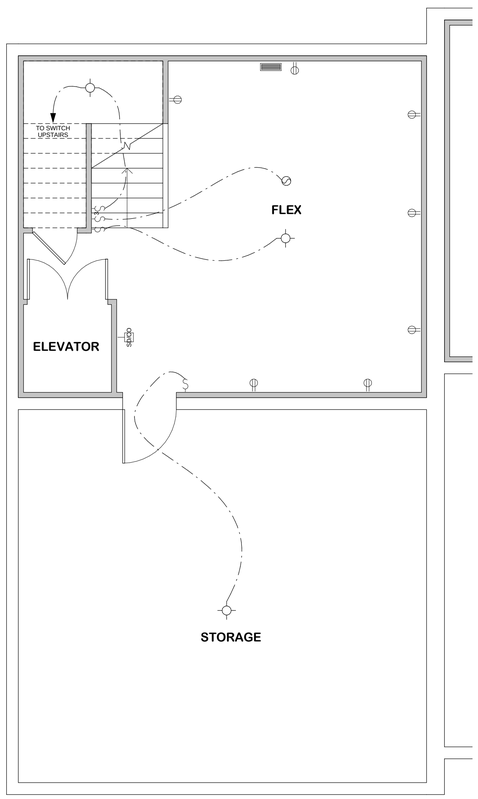
NOTE:
A MIN. OF (2) 20-AMPERE SMALL-APPLIANCE BRANCH CIRCUITS SHALL SERVE ALL WALL & FLOOR RECEPTACLE OUTLETS

NOTE:
ALL JETTED TUBS TO BE GFCI PROTECTED AND CIRCUITS SIZED AS PER TUB MANUF. SPECS.

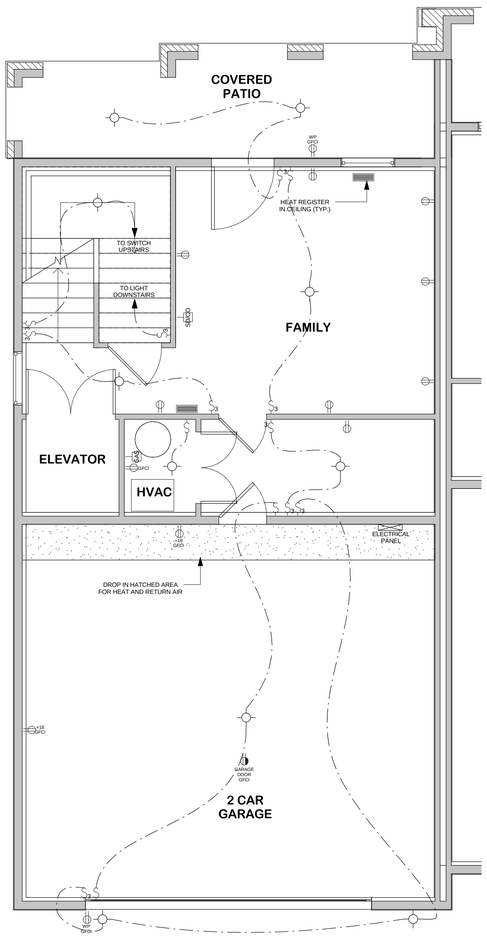
NOTE:
FIXTURES LOCATED WITHIN 3' HORIZONTALLY OR 8' VERTICALLY OF TUBS OR SHOWERS MUST BE RATED FOR WET OR DAMP LOCATIONS

NOTE:
ADD 3 LUG BONDING TERMINAL AT SERVICE FOR COMMUNICATIONS SYSTEMS

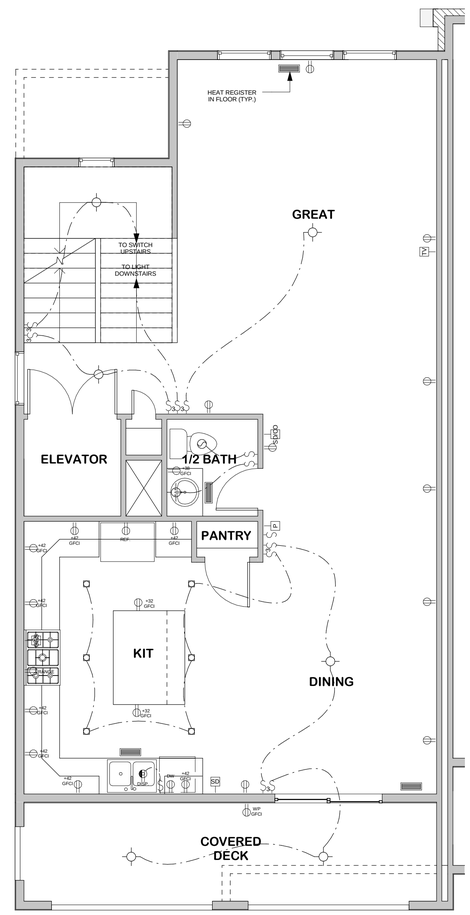
NOTE:
A 125-VOLT SINGLE-PHASE, 15 OR 20 AMPERE RATED GFCI RECEPTACLE OUTLET SHALL BE INSTALLED WITHIN 25' OF MECHANICAL EQUIPMENT AND NOT BE CONNECTED TO THE LOAD SIDE OF THE DISCONNECTING MEANS



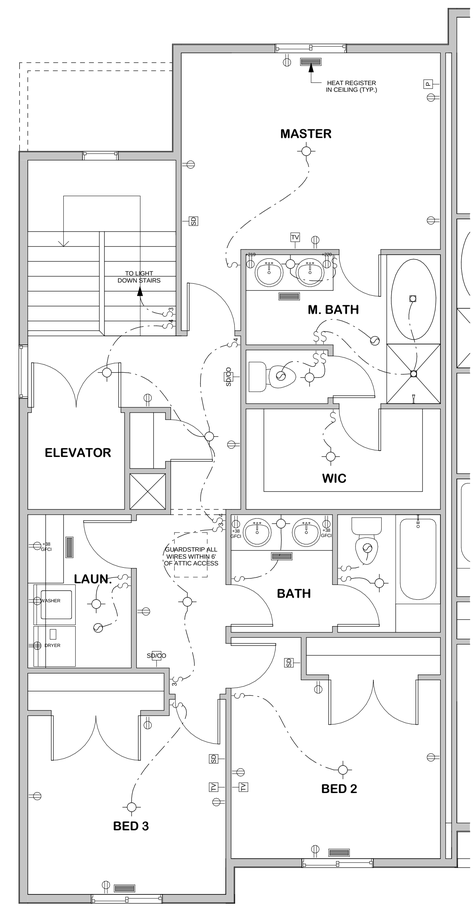
PRE-CAST LEVEL



GROUND LEVEL



MAIN LEVEL



UPPER LEVEL

ELECTRICAL PLANS

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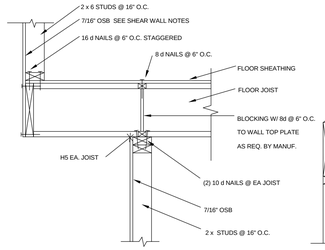
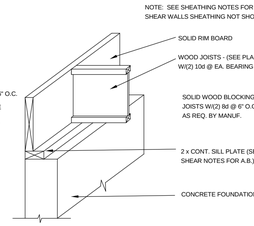
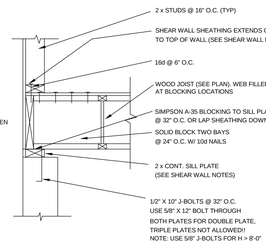


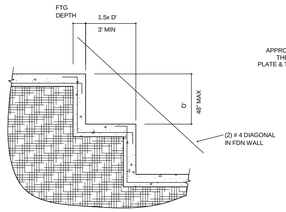
1 CANT FLOOR FRAMING1



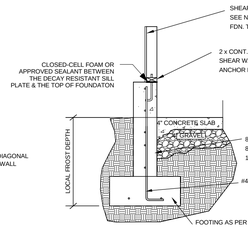
2 WOOD JOIST FRAMING1



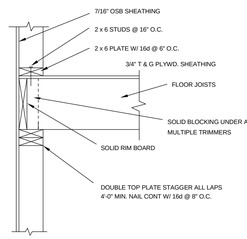
3 WOOD JOIST FRAMING 1



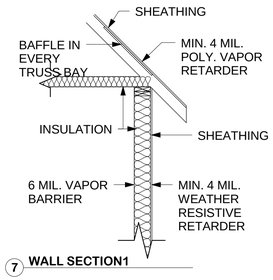
4 FOOTING STEP DETAIL1



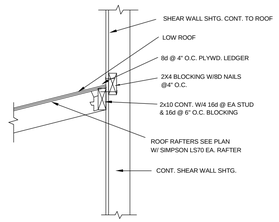
5 FOUNDATION WALL1



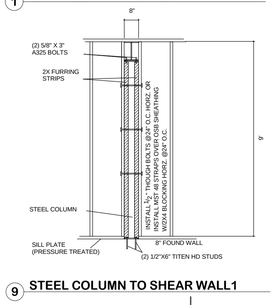
6 WOOD JOIST FRAMING 4



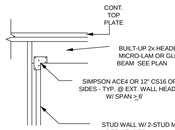
7 WALL SECTION1



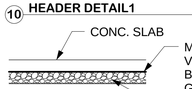
8 LOW ROOF/SHEAR WALL1



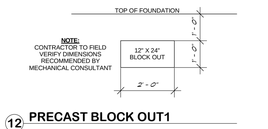
9 STEEL COLUMN TO SHEAR WALL1



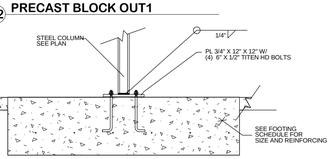
10 HEADER DETAIL1



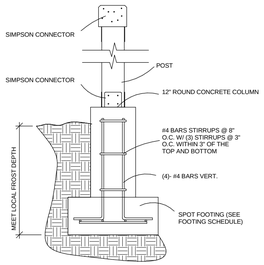
11 SLAB DETAIL1



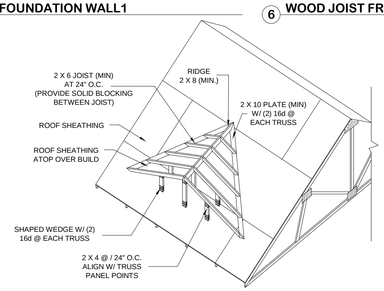
12 PRECAST BLOCK OUT1



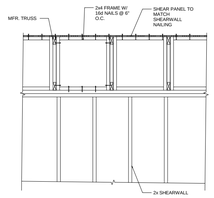
13 COLUMN TO FOOTING1



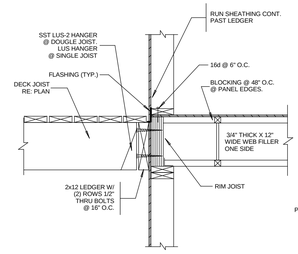
14 PATIO POST FTG. DETAIL1



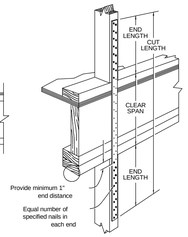
15 OVERBUILD DETAIL1



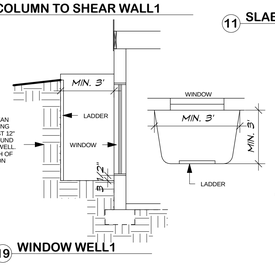
16 Roof Detail1



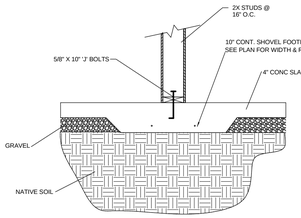
17 DECK LEDGER DETAIL1



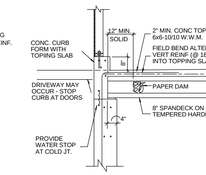
18 TYPICAL CS16 DETAIL1



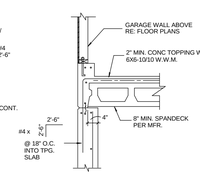
19 WINDOW WELL1



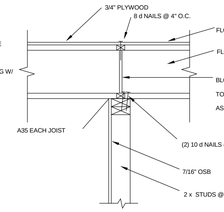
21 BEARING WALL1



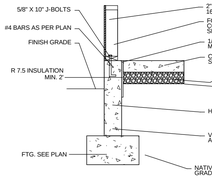
22 Span Deck. (PERP.)1



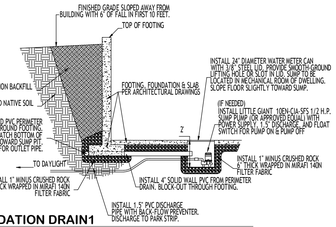
23 Spandeck (PARALLEL)1



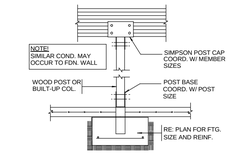
24 INTERIOR SHEAR WALL DETAIL1



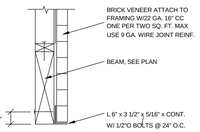
25 STUD WALL/STEM WALL1



26 FOUNDATION DRAIN1

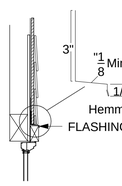


27 BEAM / POST DTL.1

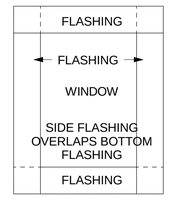


20 BRICK VENEER CONNECTION1

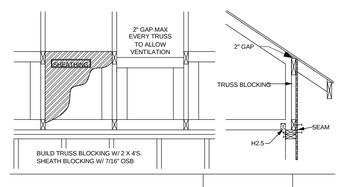
CONCRETE FOUNDATION WALL SCHEDULE			
MAX. HEIGHT	MIN. THICK	VERT. STEEL	HORZ. STEEL
4'-0"	8"	#4 @ 32" O.C.	#4 @ 12" O.C.
6'-0"	8"	#4 @ 24" O.C.	#4 @ 12" O.C.
8'-0"	8"	#4 @ 24" O.C.	#4 @ 12" O.C.
9'-0"	8"	#4 @ 16" O.C.	#4 @ 12" O.C.
10'-0"	8"	#4 @ 10" O.C.	#4 @ 12" O.C.



28 FLASHING DETAIL1

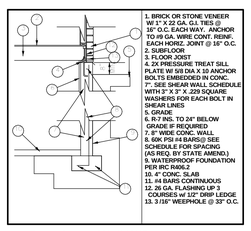


OVERBUILD SPAN CHART		
RAFTER SIZE	SPACING (IN.)	MAX. SPAN 40 PSF (L/240)
2x8	12" O.C.	13'-8"
	16" O.C.	11'-10"
	24" O.C.	9'-8"
2x10	12" O.C.	16'-9"
	16" O.C.	14'-6"
	24" O.C.	11'-10"
2x12	12" O.C.	19'-9"
	16" O.C.	16'-10"
	24" O.C.	13'-9"
WESTERN WOODS REF WWPA TABLE RR-10 GRADE NO.2		

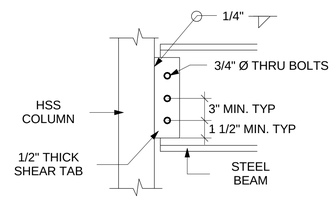


29 Attic Truss Blocking w/ Raised Heel1

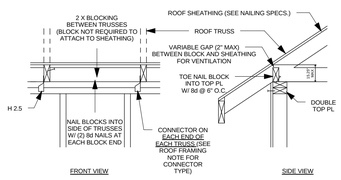
31 GARAGE SLAB TO FOUNDATION CONNECTION1



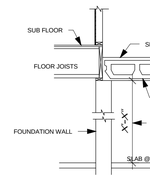
34 Foundation Wall W/Brick1



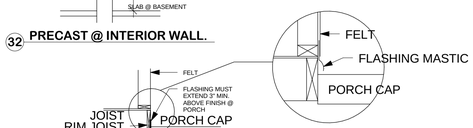
36 STEEL BEAM TO COLUMN 2



30 Truss Blocking 3

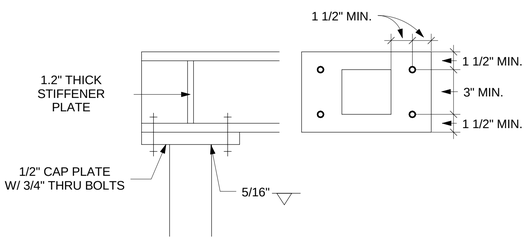


32 PRECAST @ INTERIOR WALL.



6" PORCH CAP WITH #4 BARS @ 12" O.C. EACH WAY. EXTEND #4 BARS @ 12" O.C. 30" OUT OF FOUNDATION WALL & BEND OVER INTO SLAB

33 PORCH CAP DETAIL1



35 STEEL CONNECTION 2

LEGEND

- 110 DUPLEX OUTLET
- 110 SWITCHED OUTLET
- 110 4-PLEX OUTLET
- 220 OUTLET
- LIGHT FIXTURE
- RECESSED LIGHT
- SWITCH
- DIMMER SWITCH
- PHONE JACK
- TV OUTLET
- SMOKE ALARM
- EXHAUST FAN W/ 50 CFM VENTILATION
- FLOOR OUTLET
- GAS OUTLET
- DOOR BELL
- THERMOSTAT
- CARBON MONOXIDE DET.
- INTERNET CONNECTION
- SOUND SYSTEM SPEAKER
- WALL SCONCE
- HEAT REGISTER

ELECTRICAL NOTES

A. PERMANENTLY WIRED SMOKE DETECTORS ARE REQUIRED AND MUST BE INSTALLED IN EACH SLEEPING ROOM AND AT A POINT CENTRALLY LOCATED IN THE CORRIDOR OR AREA GIVING ACCESS TO EACH SEPARATE SLEEPING AREA. WHEN THE DWELLING UNIT HAS MORE THAN ONE STORY AND IN DWELLINGS WITH BASEMENTS. A DETECTOR SHALL BE INSTALLED ON EACH STORY AND IN BASEMENTS. WHEN A DWELLING HAS A BEDROOM ON A STORY WITH A BATH OR HALF-BATH ROOM, IT SHALL ALSO BE HAVE THE DETECTOR SHALL BE INSTALLED ON THE UPPER LEVEL, EXCEPT THAT WHEN THE LOWER LEVEL CONTAINS A SLEEPING AREA, A DETECTOR SHALL BE INSTALLED ON EACH LEVEL. WHEN SLEEPING ROOMS ARE ON AN UPPER LEVEL THE DETECTOR SHALL BE PLACED AT THE CEILING OF THE UPPER LEVEL IN CLOSE PROXIMITY TO THE STAIRWAY. IN DWELLING UNITS WHERE THE CEILING HEIGHT OF A ROOM OPEN TO THE HALLWAY SERVING THE BEDROOMS EXCEEDS THAT OF THE ADJACENT ROOM BY ONE (1) STORY OR MORE, DETECTORS SHALL BE PLACED ON THE HALLWAY AND IN THE ADJACENT ROOM. DETECTORS SHALL SOUND AN ALARM AUDIBLE IN ALL SLEEPING AREAS OF THE DWELLING UNIT IN WHICH THEY ARE LOCATED. DETECTORS MUST HAVE BATTERY BACKUP AND MUST EMIT A SIGNAL WHEN THE BATTERIES ARE LOW. DETECTORS MUST BE WIRED IN SERIES.

B. BATHROOM AND UTILITY ROOM FANS SHALL BE CAPABLE OF FIVE AIR CHANGES PER HOUR.

C. INCANDESCENT CLOSET LIGHTING SHALL BE 18" MINIMUM FROM COMBUST-IBLE STORAGE. RECESSED HORIZONTALLY. 9" MINIMUM. ALL IS PERMITTED FOR FLUSH FIXTURES AND FLUORESCENT FIXTURES.

D. GROUND FAULT CIRCUIT PROTECTION REQUIRED FOR ALL 110 VOLT, SINGLE PHASE 15 AND 20 AMPERE RECEPTACLES INSTALLED IN BATHROOMS, LAUNDRY ROOMS, UTILITY ROOM, GARAGES, AND OUTDOORS WHERE THERE IS DIRECT GRADE-LEVEL ACCESS TO DWELLINGS AND POWER POLES. GFCI ALSO REQUIRED WITHIN 6'-0" OF ANY SINK OR TUB. RECEPTACLES IN UNFINISHED BASEMENTS MUST BE A MINIMUM OF 18" ABOVE FLOOR & BE GFCI-NO EXCEPTIONS.

E. GAS VENTS AND NONCOMBUSTIBLE PIPING IN WALLS PASSING THROUGH THREE FLOORS OR LESS SHALL BE EFFECTIVELY DRAFT-STOPPED AT EACH FLOOR OR CEILING.

F. ALL INCANDESCENT LIGHTING FIXTURES RECESSED INTO INSULATED AREAS SHALL BE APPROVED FOR ZERO-CLEARANCE INSULATION COVER (I.C.) PER THE 1992 MANDATORY ENERGY REQUIREMENTS.

G. CONDUIT FOR METER BASE SERVICE ENTRANCE SHALL BE ANCHORED TO FOUNDATION WITH UNI-STRUT AND CONDUIT CLAMPS. (POWER ACTUATED FASTENERS ARE NOT ACCEPTABLE).

H. PLASTIC ELECTRICAL BOXES IN GARAGE FIRE WALLS SHALL BE A MINIMUM 2 HOUR LISTING

I. ALL LIGHTS, SMOKE DETECTORS, BEDROOM OUTLETS & SWITCHES SHALL BE ARC FAULT PROTECTED AND OUTDOOR RECEPTACLES TO HAVE BUBBLE COVER.

J. PERMANENTLY WIRED CARBON MONOXIDE DETECTORS ARE REQUIRED ON EACH FLOOR WIRED IN SERIES WITH SMOKE DETECTORS AND BATTERY BACK UP (PER CITY)

K. ARC-FAULT INTERRUPTERS ON ALL BEDROOM CIRCUITS

L. ALL 15A, 20A & 125V RECEPTACLES TO BE TAMPER RESISTANT

M. A MINIMUM OF 50% OF THE LAMPS IN PERMENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH EFFICIENCY LAMPS

N. LIGHTING TO MEET 2012 IECC CODES. AT LEAST 75% OF LAMPS IN PERMANENT LIGHT FIXTURES MUST BE HIGH-EFFICIENCY.

FOOTING SCHEDULE				REINF. STEEL Fy = 60,000 psi
CONCRETE fc = 3,000 psi		REINFORCEMENT		
MARK	SIZE WIDTH x THICK x LENGTH	LONG.	TRANSVERSE	REMARKS
F-16	16" x 8" x CONT.	(2)-#4	CONT.	EQUAL SPACING
F-18	18" x 8" x CONT.	(2)-#4	CONT.	EQUAL SPACING
F-20	20" x 10" x CONT.	(2)-#4	CONT.	EQUAL SPACING
F-24	24" x 10" x CONT.	(3)-#4	CONT.	EQUAL SPACING
F-30	30" x 10" x CONT.	(3)-#4	CONT.	EQUAL SPACING
F-36	36" x 10" x CONT.	(4)-#4	CONT.	EQUAL SPACING
F-48	48" x 10" x CONT.	(5)-#4	CONT.	EQUAL SPACING
F-54	54" x 10" x CONT.	(5)-#4	CONT.	EQUAL SPACING
S-24	24" x 10" x 24"	(2)-#4	EACH WAY	EQUAL SPACING
S-30	30" x 10" x 30"	(3)-#4	EACH WAY	EQUAL SPACING
S-36	36" x 10" x 36"	(4)-#4	EACH WAY	EQUAL SPACING
S-40	40" x 12" x 40"	(5)-#4	EACH WAY	EQUAL SPACING
S-48	48" x 12" x 48"	(6)-#4	EACH WAY	EQUAL SPACING
S-60	60" x 12" x 60"	(7)-#4	EACH WAY	EQUAL SPACING

NOTE:
1. WHERE CONTINUOUS FOOTING REINFORCING INTERSECTS W/ SPREAD FOOTING, EXTEND LENGTHWISE REINFORCING THRU.
2. PLACE ALL FOOTING REINFORCING IN BOTTOM OF FOOTING W/ 3" CLEAR CONCRETE. UNLESS NOTED OTHERWISE.
3. TOP REINFORCING, WHERE SPECIFIED, SHALL BE PLACED IN THE TOP OF THE FOOTING W/ 2" MINIMUM CONCRETE COVER.
4. IF FOOTING ARE EARTH FORMED, FOOTING WIDTH & LENGTH SHALL BE 6" LONGER & WIDER THAN SCHEDULED.
5. SEE GENERAL NOTES FOR ALL OTHER REQUIREMENTS.
6. NOT ALL FOOTING ARE USED. SEE FOUNDATION PLAN FOR FOOTING MARKS.

NOTE:
WHERE THERE IS A CONFLICT BETWEEN NOTES, DETAILS, & PLANS THE MOST STRINGENT CONDITION WILL APPLY.

SHEAR WALL SCHEDULE

MARK	SHEATHING TYPE	EDGE NAILING	FIELD NAILING	ANCHOR BOLTING	HOLDOWN REQUIRED
SW-1	7/16" O.S.B. NAIL ONE SIDE OF WALL	8d @ 6"	8d @ 10"	5/8" @ 32" O.C.	SEE DRAWING
SW-2	7/16" O.S.B. NAIL ONE SIDE OF WALL	8d @ 4"	8d @ 10"	5/8" @ 32" O.C.	SEE DRAWING
SW-3	7/16" O.S.B. NAIL ONE SIDE	8d @ 3"	8d @ 10"	5/8" @ 24" O.C.	SEE DRAWING
SW-4	7/16" O.S.B. NAIL ONE SIDE,	8d @ 2"	8d @ 10"	5/8" @ 12" O.C.	SEE DRAWING

BRACED WALL; GLUE AND NAIL/SCREW SHEETROCK 7" O.C. BOTH SIDES
USE SIMPSON CWB BRACING OR EQUIVALENT
NAILING; 16 GAUGE 1 1/2" STAPLES SPACED @ 1/2 THE SPACING MAY BE SUBSTITUTED FOR 8d NAILS
DRYWALL SCREWS; 1 1/2" MAY BE USED IN PLACE OF NAILS AT SHEET ROCK LOCATIONS

STRUCTURAL DETAILS

WALKER HOME DESIGN
801-930-9499 office
www.walkerhomedesign.com

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Blackstone
6 Unit Townhomes

Designed for
Blackstone Group

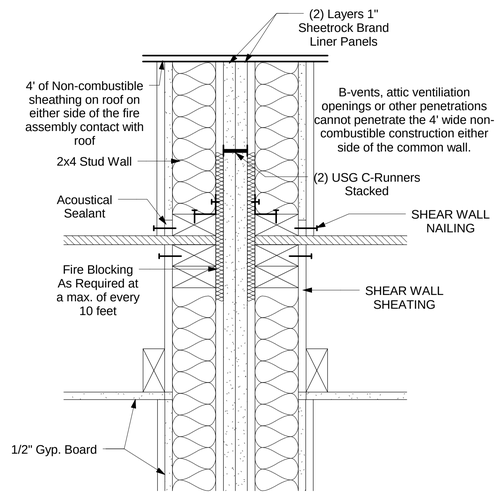
Finished Footage	2,285
Date	OCT. 2014
Drawn by	DSW

PRINTED: 12/1/2014 2:04:56 PM

Sheet 11 of 12

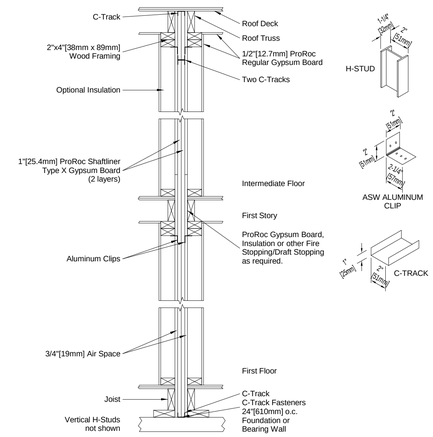
PRE-CAST: 473
FLEX: 449
GROUND LEVEL: 491
MAIN LEVEL: 867
UPPER LEVEL: 927
TOTAL: 3,207

SCALE: NO SCALE

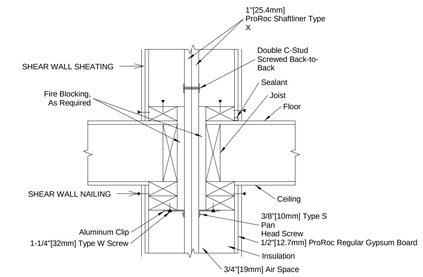


PARTY WALL DETAIL

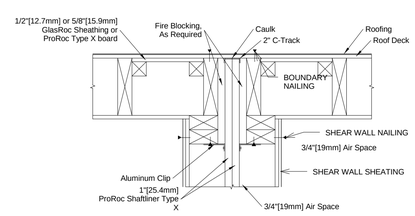
TYPICAL INSTALLATION



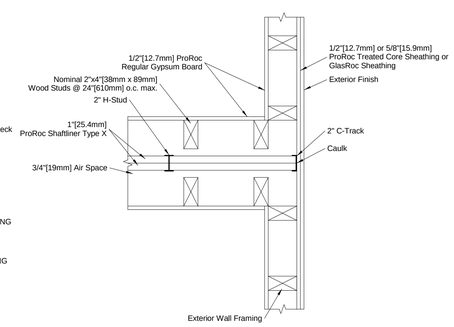
INTERMEDIATE FLOOR INTERSECTION LOCATION OF ASW CLIPS



TYPICAL ROOF JUNCTION DETAIL



EXTERIOR WALL INTERSECTION



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Blackstone
6 Unit Townhomes

Designed for
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Finished Footage	2,285
Date	OCT. 2014
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Sheet 12 of 12

PRE-CAST: 473
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TOTAL: 3,207

SCALE: NO SCALE

PARTY WALL DETAILS

Appendix D - Reciprocal Easement Agreement

ADDENDUM NO. 5
TO
REAL ESTATE PURCHASE CONTRACT

THIS IS AN ADDENDUM to that REAL ESTATE PURCHASE CONTRACT (the "REPC") with an Offer Reference Date of JUNE 11, 2014, including all prior addenda and counteroffers, between KEYSTONE LAND DEVELOPMENT LLC as Buyer, and FRANK A & MARIA LAURA CARLONE as Seller, regarding the Property located at 10820 TOWN CENTER PARKWAY [1020 N 5800 W], HIGHLAND, UT 84003, TAX ID: 11-039-0140. The following terms are hereby incorporated as part of the REPC.

1. The "Property" which is subject to the REPC consists of two parcels, as set forth in the commitment for title insurance prepared on behalf of Seller and provided to Buyer as part of the Seller Disclosures in this matter, and expressly includes a parcel identified as Tax ID No. 11-039-0135, which is more particularly described as follows: Commencing at a point located North 00°08'13" East along the Section line 255.98 feet and East 1524.49 feet from the West quarter corner of Section 36, Township 4 South, Range 1 East, Salt Lake Base and Meridian; thence South 01°31'56" East 131.03 feet; thence West 14.90 feet; thence North 04°58'27" East 131.47 feet to the point of beginning (in the event of any discrepancy between the foregoing legal description and the legal description set forth in the commitment for title insurance provided as part of the Seller Disclosures, the legal description set forth in such commitment for title insurance shall control).

To the extent the terms of this Addendum modify or conflict with any provisions of the REPC, including all prior addenda and counteroffers, these terms shall control. All other terms of the REPC, including all prior addenda and counteroffers, not modified by this Addendum shall remain the same.

Buyer: KEYSTONE LAND DEVELOPMENT LLC

Dated: February 13, 2015. By: _____
Tim Aalders, Manager

ACCEPTANCE

Seller hereby accepts the terms of this Addendum No. 5.

DocuSigned by:
Frank A. Carlone
69AD27509D5147B...
2/16/2015 | 16:19 MT

FRANK A. CARLONE (Date)

DocuSigned by:
Maria Laura Carlone
7E136EDB21A1449...
2/16/2015 | 18:29 MT

MARIA-LAURA CARLONE (Date)

 Seller's Initials: DS FAC DS MLC 2/16/2015 | 18:29 MT Date:_____ Buyer's Initials: TA Date: 02/13/2015

30/10

After Recording, Return To:

Wm. Shane Topham
PARSONS, DAVIES, KINGHORN & PETERS
185 South State Street, Suite 700
Salt Lake City, Utah 84111
File No. 33016.06

ENT 18975:2003 PG 1 of 10
RANDALL A. COVINGTON
UTAH COUNTY RECORDER
2003 Feb 06 4:20 pm FEE 30.00 BY SS
RECORDED FOR TITLE WEST TITLE CO

Reciprocal Easement Agreement

THIS RECIPROCAL EASEMENT AGREEMENT (this "*Agreement*") is made effective 29 January 2003 by **HIGHLAND TOWN PLAZA, L.C.**, a Utah limited liability company whose address is 2749 East Parley's Way, #310, Salt Lake City, UT 84109 ("*HTP*"); by **DOYLE E. KOHLER** and **LILLIE I. KOHLER**, individuals whose address is 855 Whipple Drive, Lehi, UT 84043 (collectively, "*Kohler*"); by **BANK OF AMERICAN FORK**, whose address is 33 East Main Street, American Fork, UT 84003 ("*Bank*"); and by **LONE PEAK VILLAGE, L.C.**, 2749 East Parley's Way, #310, Salt Lake City, UT 84109 ("*LPV*").

RECITALS:

A. Kohler, Bank and LPV (the "*LPV Owners*") each owns one or more parcels of real property which collectively constitute the Lone Peak Village Shopping Center ("*Lone Peak Village*") in Highland, Utah County, Utah. The legal description of Lone Peak Village is shown on exhibit "A" annexed hereto.

B. HTP owns a parcel of real property (the "*HTP Parcel*") as shown on exhibit "A" annexed hereto.

C. HTP and the LPV Owners desire to consent to, create and reciprocally grant an easement (the "*Easement*") across the Common Areas Roadways (described below) of Lone Peak Village and the HTP Parcel in order to provide free and unimpeded cross access to and from adjoining public roads (including Parkway East and Town Center Boulevard), and from and between Lone Peak Village and the HTP Parcel, on the terms and conditions specified below.

D. The parties that have executed this Agreement intend to set forth herein their entire agreement concerning the Easement, and to consolidate herein and to supersede hereby all other negotiations and/or agreements, oral and/or written, concerning the Easement.

AGREEMENT:

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and legal sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

Section 1 **Reciprocal Grant of Easement**. Subject to the terms and conditions specified in this Agreement, the LPV Owners and HTP hereby consent to, convey and grant to each other reciprocal, non-exclusive right-of-ways and easements across the Common Area Roadways located on Lone Peak Village and the HTP Parcel for the purpose of providing free and

unimpeded cross access to and from adjoining public roads whether now or hereafter existing (and specifically including, without limitation, Parkway East and Town Center Boulevard), and from and between Lone Peak Village and the HTP Parcel. As used in this Agreement, the term "*Common Area Roadways*" shall mean and include all surface roadways, sidewalks and other vehicular or pedestrian roadways, aisles, passageways or walkways, now or from time to time hereafter located on the exterior public/common areas ("*Common Areas*") of the parcels (the "*Parcels*") constituting Lone Peak Village and the HTP Parcel.

Section 2. **Nature of Easement**. The Easement shall be exist for the sole purpose of allowing free and unimpeded passage, ingress and egress of vehicles (including, without limitation, delivery vehicles) and pedestrians among and between the Parcels and the public or private roadway(s), sidewalks or the like now or hereafter adjoining or accessible from any of the Parcels. The LPV Owners freely may reconfigure Lone Peak Village's Common Area Roadways as provided in the "Declaration of Restrictions and Grant of Easements" dated 1 November 1993, as amended (the "*Declaration*"), covering Lone Peak Village, so long as reasonably equivalent cross access between the Parcels remains in place as provided in this Agreement.

Section 3. **Access Points**. The access points between Lone Peak Village and the HTP Parcel shall be limited and restricted to those shown on attached exhibit "B" (the "*Access Points*"). Those Access Points shall be improved by or on behalf of HTP at its sole cost in connection with the development of the HTP Parcel. Any current improvements (such as curbing, landscaping, etc.) on Lone Peak Village which would interfere with the free and unimpeded cross-access intended by this Agreement may be removed or reconfigured in a good, workmanlike and attractive manner by or on behalf of HTP at its sole cost.

Section 4. **Limitations on Use; No Cross Parking Rights**. Use of the Easement granted herein shall be limited to corresponding use of the Parcels for permitted commercial purposes in accordance with all applicable zoning and use laws, ordinances and requirements. No cross-parking rights between Lone Peak Village and the HTP Parcel are intended or created by this Agreement.

Section 5. **No Interference**. Except to the extent necessary (on a temporary basis) for construction, for repair and maintenance, or to prevent a public dedication thereof or the accrual of any rights to the public therein, no fence, wall, barricade or other obstruction, whether temporary or permanent in nature, which materially limits or impairs the free and unimpeded use of the Easement by the owners or occupants of any of the Parcels, or their respective employees, agents, customers, licensees or invitees, shall be constructed or erected on any of the Parcels, nor shall any party in any other manner obstruct or interfere with the free flow of vehicular or pedestrian traffic on any portion of the Easement; provided, however, that the LPV Owners freely may reconfigure Lone Peak Village's Common Area Roadways as provided in the Declaration, so long as reasonably equivalent cross access between the Parcels remains in place as provided in this Agreement.

Section 6. **Maintenance**. Each party shall, at its sole cost and expense, maintain those portions of the Easement located on that party's respective Parcel in reasonably good condition and repair, reasonably free from snow, ice, rubbish and other debris, and shall take such other actions

in connection therewith as are commercially reasonable under the circumstances; provided, however, that HTP shall maintain at its sole cost any of HTP's improvements to the Access Points that are located on the Kohler Parcel.

Section 7. **Duration**. The Easement granted herein shall be perpetual in duration.

Section 8. **Not a Public Dedication**. Nothing contained in this Agreement shall be deemed to be a gift or dedication of any portion of any of the Parcels or the Easement to or for the general public or for any public purposes whatsoever, it being the parties' intention that this Agreement be strictly limited to and for the purposes expressed herein.

Section 9. **Appurtenance to Parcels.** The Easement created hereby is appurtenant to each of the Parcels and may not be transferred, assigned or encumbered except as an appurtenance to such realty.

Section 10. **Covenants Run With Land**. The Easement shall (a) create an equitable servitude on the HTP Parcel and Lone Peak Village, as appropriate, in favor of Lone Peak Village and the HTP Parcel, as appropriate; (b) constitute a covenant running with the land; (c) bind every person having any fee, leasehold or other interest in any portion of any of the Parcels at any time or from time to time; and (d) inure to the benefit of and be binding upon HTP and the LPV Owners, and their respective successors and assigns as to their respective Parcels.

Section 11. **Relocation of Easement**. The parties acknowledge that the location of the Easement on a Parcel shall be deemed relocated as reasonably necessary from time to time in connection with any permitted reconfiguration of the Common Area Roadways on that Parcel.

Section 12. **No Partnership**. The parties do not by this Agreement in any way or for any purpose become partners or joint venturers with each other.

Section 13. **General Provisions**. The following provisions are also an integral part of this Agreement:

(a) *Binding Agreement*. This Agreement shall be binding upon and shall inure to the benefit of the successors and assigns of the respective parties hereto.

(b) *Captions*. The headings used in this Agreement are inserted for reference purposes only and shall not be deemed to define, limit, extend, describe, or affect in any way the meaning, scope or interpretation of any of the terms or provisions of this Agreement or the intent hereof.

(c) *Counterparts*. This Agreement may be signed in any number of counterparts with the same effect as if the signatures upon any counterpart were upon the same instrument. All signed counterparts shall be deemed to be one original.

(d) *Severability*. The provisions of this Agreement are severable, and should any provision hereof be void, voidable, unenforceable or invalid, such void, voidable, unenforceable or invalid provision shall not affect the other provisions of this Agreement.

(e) *Waiver of Breach*. Any waiver by either party of any breach of any kind or character whatsoever by the other, whether such be direct or implied, shall not be construed as a continuing waiver of, or consent to any subsequent breach of this Agreement.

(f) *Remedies*. If a party defaults hereunder, the non-defaulting party may pursue any and all remedies available to it in law or equity, including, without limitation, the remedy of specific performance.

(g) *Amendment*. This Agreement may not be modified except by an instrument in writing signed by the parties hereto.

(h) *Interpretation*. This Agreement shall be interpreted, construed and enforced according to the substantive laws of the state of Utah.

(i) *Attorneys' Fees*. In the event any action or proceeding is brought by either party regarding this Agreement, the prevailing party shall be entitled to recover its costs and reasonable attorneys' fees, whether such sums are expended with or without suit, at trial, on appeal, or in any bankruptcy or insolvency proceeding.

(j) *Notice*. Any notice or other communication required or permitted to be given hereunder shall be deemed to have been received (a) upon personal delivery or actual receipt thereof or (b) within three (3) days after such notice is deposited in the United States mail, postage prepaid and certified and addressed to the respective addresses set forth above or to such other address(es) as may be supplied by a party to the other from time to time in writing.

(k) *Time of Essence*. Time is the essence of this Agreement.

(l) *No Assignment*. A party may assign or otherwise convey its rights or delegate its duties under this Agreement only in connection with the conveyance of fee title to such party's Parcel.

DATED effective the date first above written.

HTP:

HIGHLAND TOWN PLAZA, L.C.,
a Utah limited liability company

By _____
RICHARD L.K. MENDENHALL,
Member/Manager

LPV OWNERS:

DOYLE E. KOHLER

LILLIE I. KOHLER

BANK OF AMERICAN FORK

By
DALE O. GUNTHER, President

LONE PEAK VILLAGE, L.C.,
a Utah limited liability company

By
RICHARD L.K. MENDENHALL,
Member/Manager

STATE OF UTAH)
ss.
COUNTY OF SALT LAKE)

NOTARY PUBLIC
STATE OF UTAH
My Commission Expires
December 3, 2005
JANET L. ROSA
2749 East Parleys Way Ste 310
Salt Lake City, Utah 84109

The foregoing instrument was acknowledged before me this 30th day of January 2003 by **RICHARD L.K. MENDENHALL** as a member/manager of **HIGHLAND TOWN PLAZA, L.C.**, a Utah limited liability company, and as a member/manager of **LONE PEAK VILLAGE, L.C.**, a Utah limited liability company.

My Commission Expires:
12/3/05

NOTARY PUBLIC
Residing in: Salt Lake

STATE OF UTAH)
ss.
COUNTY OF UTAH)

The foregoing instrument was acknowledged before me this 4th day of ~~January~~ February 2003 by **DOYLE E. KOHLER** and **LILLIE I. KOHLER**.

My Commission Expires:
Aug. 21, 2004

NOTARY PUBLIC
Residing in: Cedar Hills, Utah

NOTARY PUBLIC
STATE OF UTAH
My Commission Expires
August 21, 2004
ROBERT V. CARTER
9863 North Meadow Drive
Pleasant Grove, Utah 84062

STATE OF UTAH)
ss.
COUNTY OF UTAH)

The foregoing instrument was acknowledged before me this 4th day of ~~January~~ February 2003 by **DALE O. GUNTHER** as the president of **BANK OF AMERICAN FORK.**

My Commission Expires:
Feb 19, 2005

NOTARY PUBLIC
Residing in: Am. Fork, Utah

WST\D\6294.5

NOTARY PUBLIC
STATE OF UTAH
My Commission Expires
February 19, 2005
MARALEE MORTENSEN
33 East Main
American Fork, Utah 84003

Exhibit "A" to
Reciprocal Easement Agreement

HTP PARCEL:

The following-described real property located in Utah County, Utah:

Legal Description for That Portion of Commercial Area 2
Highland Town Plaza Lying within Utah County Parcel No. 11-039-73

Part of the Northwest Quarter of Section 36, Township 4 South, Range 1 East, Salt Lake Base and Meridian, more particularly described as follows:

Beginning at the intersection of the South line of the Lone Peak Village Shopping Center subdivision, as recorded in the Office of the Utah County Recorder and the Easterly line of that certain parcel of land described as Entry No. 35101:2000 in the Office of the Utah County Recorder, which point lies 666.20 feet South 89°49'50" West along the Section line and 1367.05 feet South to the Northeast corner of said subdivision and 255.16 feet South 04°28'25" West along the East line of said subdivision and 219.80 feet South 04°58'22" West along said line to the Southeast corner of said subdivision and 326.76 feet North 89°18'07" West along the South line of said subdivision from the North Quarter corner of said Section 36, and running thence South 04°58'27" West 485.80 feet along the Easterly line of said parcel described as Entry No. 35101:2000 to the Northerly right-of-way line of proposed Parkway East; thence West 422.89 feet along said line to the point of curvature with a 15.00 foot radius curve to the right; thence Northwesterly 23.62 feet along the arc of said curve through a central angle of 90°12'17" (chord bears North 44°53'52" West 21.25 feet to the Easterly right-of-way line of proposed Town Square Street East; thence North 00°12'17" East 156.95 feet along said line to the Northerly right-of-way line of said proposed Town Square Street East; thence West 139.59 feet along said line to the point of curvature with a 25.00 foot radius curve to the right; thence Northwesterly 39.27 feet along the arc of said curve through a central angle of 90°00'00" (chord bears North 45°00'00" West 35.36 feet) to the East right of way line of Town Center Boulevard; thence North 294.82 feet to the South line of said Lone Peak Village Shopping Center subdivision; thence South 89°18'07" East 644.09 feet to the point of beginning. Contains 6.33 acres, more or less.

LONE PEAK VILLAGE:

The following-described real property located in Utah County, Utah:

Lone Peak Village, a commercial subdivision, according to the official plat thereof on file and of record in the office of the Recorder of Utah County, Utah.

Exhibit "B" to
Reciprocal Easement Agreement

(Attach Description or Drawing of Access Points)

Westfield Properties
Lone Peak Village Shopping Center

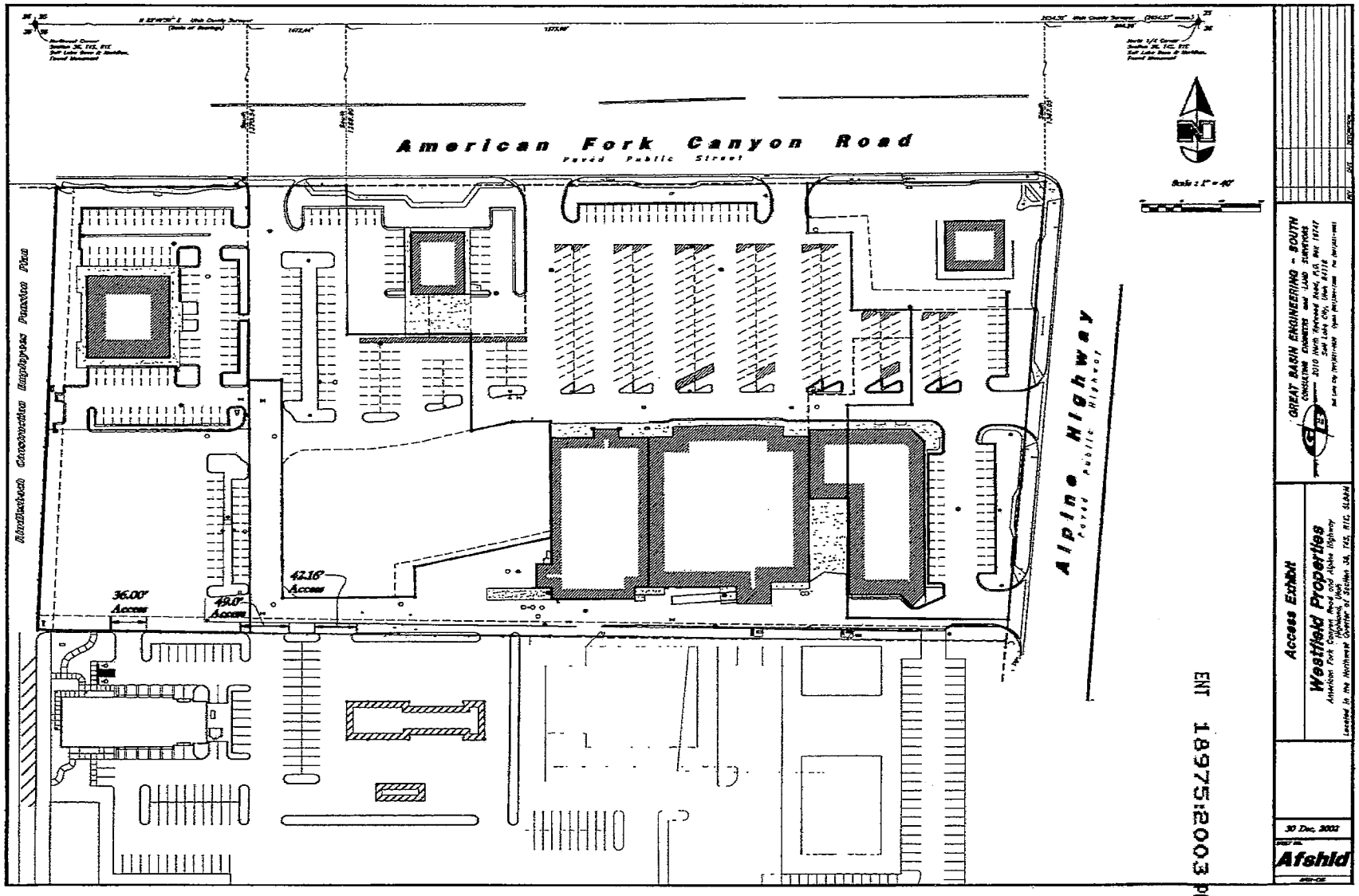
November 1, 2002
Revised November 4, 2002
Revised November 6, 2002
Revised December 30, 2002

Three Access Openings for pedestrian and vehicular traffic along the South Line of the Lone Peak Village Shopping Center – a Commercial Subdivision in the City of Highland, Utah County, Utah within the Northwest Quarter of Section 36, Township 4 South, Range 1 East, Salt Lake Base and Meridian, U.S. Survey, and being defined by reference points as follows:

A 42.16 foot wide opening from point A to point B;
A 49.0 foot wide opening from point C to point D;
A 36.0 foot wide opening from point E to point F;

more particularly described as follows:

Beginning at the Southeast Corner of said Lone Peak Village Center being 666.20 feet South 89°49'50" West along the Section Line, 1367.05 feet South to the Northeast Corner of said Subdivision, 255.16 feet South 4°28'25" West, and 219.80 feet South 4°58'22" West to said Southeast Corner of said Subdivision from the North Quarter Corner of said Section 36; and running thence Westerly along the South Line of said Subdivision the following Seven courses: North 89°18'07" West 656.86 feet to reference point A; thence continuing North 89°18'07" West 42.16 feet to reference point B; thence continuing North 89°18'07" West 26.00 feet to reference point C; thence continuing North 89°18'07" West 49.00 feet to reference point D; thence continuing North 89°18'07" West 95.00 feet to reference point E; thence continuing North 89°18'07" West 36.00 feet to reference point F; and thence continuing North 89°18'07" West 73.09 feet to the Southwest Corner of said Subdivision.



ENT 18975:2003 PG 10 of 10

Appendix E – Traffic Report from Hales Engineering

MEMORANDUM

Date: August 7, 2015

To: Matt Robinson
Handcrafted Homes

From: Hales Engineering

Subject: Highland Blackstone Traffic Concerns

UT15-763

PURPOSE

The purpose of this memorandum is to address several concerns expressed by Highland City regarding the proposed Highland Blackstone development. Blackstone is a proposed residential development located on Alpine Highway (SR-74) between 10700 North on the south and Highland Highway (SR-92) on the north. Figure 1 shows a vicinity map of the project. The project will include a total of 86 units of townhouses, planned to be built on a total of 7.8 acres.

Figure 1 Vicinity map of the proposed project location in Highland, UT.

LAND USE / TRIP GENERATION

As mentioned previously, the proposed land use for this project are residential townhouses. There have been some concerns regarding the number of trips that would be generated by the residential townhome development. Several commercial alternative land uses have been mentioned as possibilities. In recognition of this concern, Hales Engineering has performed a trip generation comparison analysis to evaluate the impact different land uses may have on the City's existing roadway system. The different land uses that were compared include:

- residential townhouse
- shopping center,
- high-turnover sit-down restaurant,
- pharmacy/drugstore without drive-through window,
- medical/dental office building, and
- general office building.

Using the Institute of Transportation Engineers (ITE) *Trip Generation Manual (9th Edition, 2012)*, the trip generation for the proposed development was calculated. An approximate building square footage was calculated using a floor to area ratio (FAR) of 0.25. This equates to approximately 85,000 square feet of retail floor space. This provides a conservative analysis of the number of trips generated by the development. Total trip generation for the site for each land use is summarized in Table 1.

Table 1
Highland Blackstone
Trip Generation

Weekday Daily Land Use[1]	Number of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	**Total Daily Trips**
Residential Condominium/Townhouse (230)	86	Dwelling Units	566	50%	50%	283	283	**566**
Shopping Center (820) [average rate]	85	1,000 Sq. Ft. GLA	3,630	50%	50%	1,815	1,815	**3,630**
High-Turnover (Sit-Down) Restaurant (932)	85	1,000 Sq. Ft. GFA	10,808	50%	50%	5,404	5,404	**10,808**
Pharmacy/Drugstore without Drive-Through Window (880)	85	1,000 Sq. Ft. GFA	7,656	50%	50%	3,828	3,828	**7,656**
Medical/Dental Office Building (720)	85	1,000 Sq. Ft. GFA	3,262	50%	50%	1,631	1,631	**3,262**
General Office Building (710) [average rate]	85	1,000 Sq. Ft. GFA	938	50%	50%	469	469	**938**
A.M. Peak Hour Land Use[1]	Number of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	**Total a.m. Trips**
Residential Condominium/Townhouse (230)	86	Dwelling Units	46	17%	83%	8	38	**46**
Shopping Center (820) [average rate]	85	1,000 Sq. Ft. GLA	82	62%	38%	51	31	**82**
High-Turnover (Sit-Down) Restaurant (932)	85	1,000 Sq. Ft. GFA	920	55%	45%	506	414	**920**
Pharmacy/Drugstore without Drive-Through Window (880)	85	1,000 Sq. Ft. GFA	794	65%	35%	516	278	**794**
Medical/Dental Office Building (720)	85	1,000 Sq. Ft. GFA	204	79%	21%	161	43	**204**
General Office Building (710) [average rate]	85	1,000 Sq. Ft. GFA	134	88%	12%	118	16	**134**
P.M. Peak Hour Land Use[1]	Number of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	**Total p.m. Trips**
Residential Condominium/Townhouse (230)	86	Dwelling Units	54	67%	33%	36	18	**54**
Shopping Center (820) [average rate]	85	1,000 Sq. Ft. GLA	316	48%	52%	152	164	**316**
High-Turnover (Sit-Down) Restaurant (932)	85	1,000 Sq. Ft. GFA	838	60%	40%	503	335	**838**
Pharmacy/Drugstore without Drive-Through Window (880)	85	1,000 Sq. Ft. GFA	714	49%	51%	350	364	**714**
Medical/Dental Office Building (720)	85	1,000 Sq. Ft. GFA	252	28%	72%	71	181	**252**
General Office Building (710) [average rate]	85	1,000 Sq. Ft. GFA	128	17%	83%	22	106	**128**

1. Land Use Code from the Institute of Transportation Engineers Trip Generation Manual (9th Edition - 2012)

SOURCE: Hales Engineering, 2015

As shown in Table 1, the residential townhomes are anticipated to generate far less traffic than the other land uses. The office building is the next lowest trip generator, and it is anticipated to generate approximately 40 percent more trips than the townhomes on a typical weekday. During the p.m. peak hour period, it is anticipated that the office building will generate approximately 128 trips, which is more than double the number of trips generated by the townhomes.

Based on the trip generation comparison analysis, residential townhomes are anticipated to generate the lowest amount of traffic when compared to any of the aforementioned commercial land uses.

GUEST PARKING

Additionally, the City has expressed concerns regarding the distance to guest parking from some of the units. In multi-family residential areas, it is not uncommon for guest parking to be located further away from the building and does not pose a significant safety concern to the end users. As shown in Figure 2, and Figure 3 the guest parking in similar developments is located more than 350 feet from some of the buildings.

Figure 2 Townhomes in Spanish Fork, UT.

Figure 3 Townhomes in Herriman, UT.

DRIVEWAY LOCATION

The City has expressed concern regarding the proximity of the proposed driveway for Unit 86 to Parkway Drive East. Parkway Drive East is classified as a local roadway with a posted speed limit of 25 mph. Although the access location is not ideal, it is not uncommon to have a driveway within close proximity to the proposed project access. As shown in Figure 4, there are several examples where the access driveway is located within 20 feet of an intersection.

It is recommended that the proposed project access that the driveway fronts onto is constructed to a minimum width of 24 feet. This will provide adequate space to back out the driveway without impeding incoming vehicles. Parkway Drive East is a low speed / volume road and the proposed driveway location is not anticipated to be a significant safety concern.

Figure 4 Access driveway within close proximity of intersection, in Highland, UT.

CONCLUSIONS

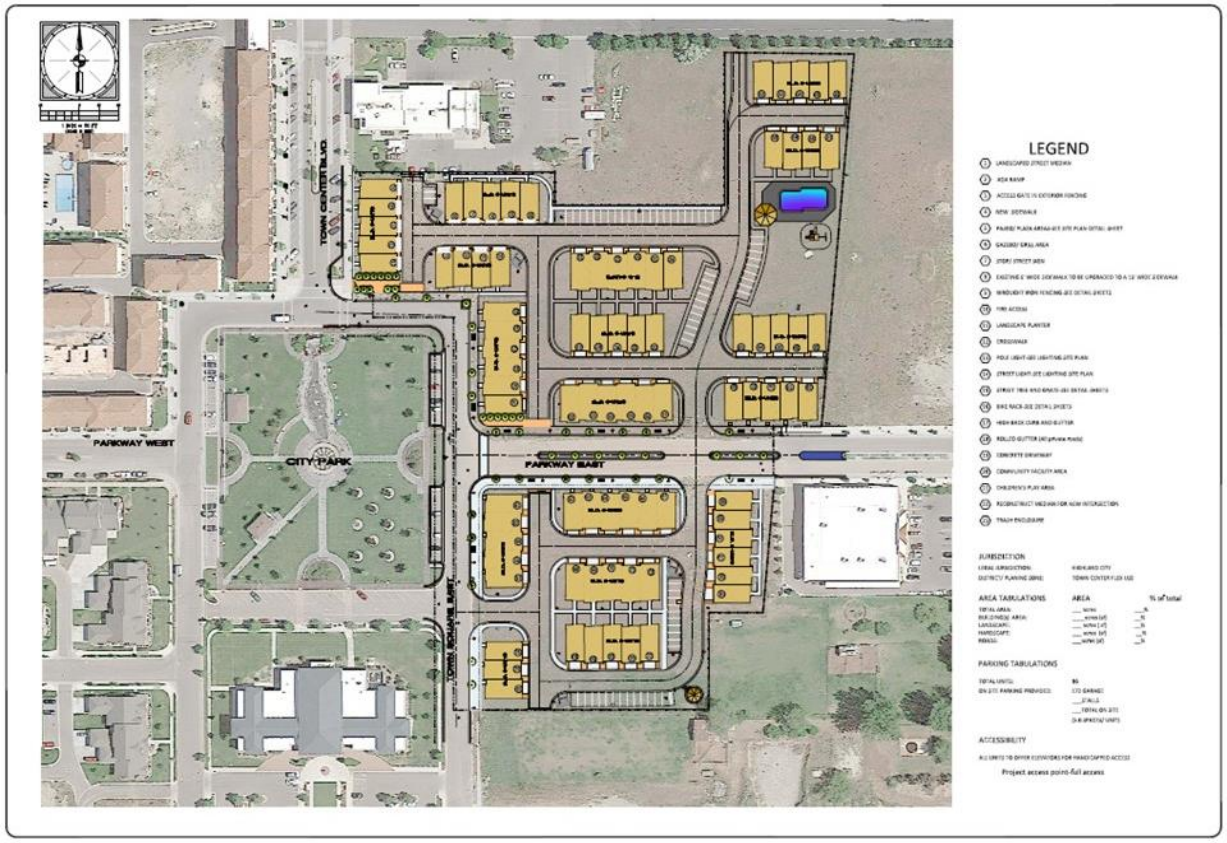
Hales Engineering makes the following conclusions:

- Residential townhomes are anticipated to generate the lowest amount of traffic when compared to other commercial land uses.
- In multi-family residential areas, it is not uncommon for guest parking to be located further away from the building and does not pose a significant safety concern to the end users.
- It is recommended that the proposed project access that the driveway fronts onto is constructed to a minimum width of 24 feet. This will provide adequate space to back out the driveway without impeding with incoming vehicles.

HALES ENGINEERING
innovative transportation solutions

Blackstone

Traffic Impact Study



Highland, Utah

August 2015

UT15-763

1220 North 500 West, Ste. 202 Lehi, Utah 84043 p. 801.766.4343
www.halesengineering.com

EXECUTIVE SUMMARY

This study addresses the traffic impacts associated with the proposed Blackstone residential development in Highland City, Utah. The proposed development is bordered by Highland Highway (SR-692) on the north and 5300 West on the east.

Included within the analyses for this study are the traffic operations and recommended mitigation measures for existing conditions and plus project conditions (conditions after development of the proposed project) at the key intersection and roadway in the vicinity of the site.

TRAFFIC ANALYSIS

The following is an outline of the traffic analysis performed by Hales Engineering for the traffic conditions of this project.

Existing (2015) Background Conditions Analysis

Hales Engineering performed weekday morning (7:00 to 9:00 a.m.) and afternoon (4:00 to 6:00 p.m.) peak period traffic counts at the following intersection:

- Town Center Boulevard / Highland Highway (SR-92)
- Toscana & Tim Tire Access / Town Center Boulevard
- Parkway Drive / 5400 West
- Parkway Drive / Alpine Highway (SR-74)
- Park Access Road / 5400 West

These counts were performed on Tuesday, July 21, Wednesday, July 22, and Wednesday, August 5, 2015. The afternoon volumes were approximately 36 percent higher than the morning volumes and will be used for this analysis. The p.m. peak hour was determined to be between the hours of 5:00 and 6:00 p.m.

As shown in Table ES-1, all study intersections are currently operating at acceptable levels of service during the p.m. peak hour, with the exception with of the Town Center Boulevard / Highland Highway (SR-92) intersection, which is operating at LOS E. During the p.m. peak hour, the 95th percentile queue is approximately 100 feet on the northbound approach to the Town Center Boulevard / Alpine Highway (SR-92) intersection. No other significant queueing is observed during the p.m. peak hour.

TABLE ES-1 P.M. Peak Hour South Salt Lake - WinCo Foods TIS		
Intersection	Existing 2015 Background	Existing 2015 Plus Project
Description	LOS (Sec/Veh[1])	LOS (Sec/Veh[1])
Town Center Blvd / Highland Highway (SR-92)	**E (49.0) / NB**	**F (>50.0) / NB**
Town Center Blvd / Toscana / Timp Tire Access	**A (5.0) / EB**	**A (5.0) / EB**
10890 North / Town Center Blvd	**A (4.0) / EB**	**A (4.0) / EB**
5400 West / Parkway Drive	**A (1.0) / WB**	**A (3.0) / WB**
5400 West / Park Access	**A (1.0) / EB**	**A (3.0) / EB**
Southwest Access / Parkway Drive / 5400 West [2]	**-**	**A (3.0) / NB**
Parkway Drive / Alpine Highway (SR-74)	**C (17.0) / EB**	**C (22.0) / EB**
Town Square Access / Alpine Highway (SR-74)	**B (10.0) / EB**	**B (11.0) / WB**
Northeast Access / Town Square Access [2]	**-**	**A (3.0) / NB**

1. Intersection LOS and delay (seconds/vehicle) values represent the overall intersection average for signalized and all-way stop controlled intersections and the worst approach for all other unsignalized intersections.

2. This is a project intersection and is only analyzed in the plus project scenarios.

Source: Hales Engineering, August 2015

Project Conditions Analysis

The proposed land use for the development has been identified as follows:

- Residential Condominium/Townhouse: 86 Dwelling Units

The total trip generation for the development is as follows:

- Daily Trips: 556
- a.m. Peak Hour Trips: 46
- p.m. Peak Hour Trips: 54

Existing (2015) Plus Project Conditions Analysis

As shown in Table ES-1, all study intersections are anticipated to operate at acceptable levels of service during the p.m. peak hour, with the exception of the Town Center Boulevard / Highland Highway (SR-92) intersection, which is anticipated to operate at LOS F. During the

p.m. peak hour, the 95th percentile queue is anticipated to be approximately 200 feet on the northbound approach to the Town Center Boulevard / Highland Highway (SR-92) intersection. No other significant queueing is anticipated during the p.m. peak hour.

RECOMMENDATIONS

The following mitigation measures are recommended:

Existing (2015) Background Conditions Analysis

The Town Center Boulevard / Highland Highway (SR-92) intersection is currently operating at level of service E. It is recommended that a northbound right-turn pocket be added at the Town Center Boulevard / Highland Highway (SR-92) to help improve flow and minimize delay at the intersection. No other mitigation measures are recommended at this time.

Existing (2015) Plus Project Conditions Analysis

No mitigation measures are recommended.

SUMMARY OF KEY FINDINGS/RECOMMENDATIONS

The following is a summary of key findings and recommendations:

- All study intersections are currently operating at acceptable levels of service during the p.m. peak hour, with the exception with of the Town Center Boulevard / Highland Highway (SR-92) intersection, which is operating at LOS E.
- During the p.m. peak hour, the 95th percentile queue is approximately 100 feet on the northbound approach to the Town Center Boulevard / Alpine Highway (SR-92) intersection. No other significant queueing is observed during the p.m. peak hour.
- The Town Center Boulevard / Highland Highway (SR-92) intersection is currently operating at level of service E. It is recommended that a northbound right-turn pocket be added at the Town Center Boulevard / Highland Highway (SR-92) to help improve flow and minimize delay at the intersection.
- With the addition of the proposed project, all study intersections are currently operating at acceptable levels of service during the p.m. peak hour, with the exception of the Town Center Boulevard / Highland Highway (SR-92) intersection, which is anticipated to operate at LOS F.
- During the p.m. peak hour, the 95th percentile queue is anticipated to be approximately 200 feet on the northbound approach to the Town Center Boulevard / Highland Highway (SR-92) intersection. No other significant queueing is anticipated during the p.m. peak hour.
- No additional mitigation measures are recommended with the addition of the project.

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I. INTRODUCTION

A. Purpose

This study addresses the traffic impacts associated with the proposed Blackstone residential development in Highland City, Utah. The proposed development is bordered by Highland Highway (SR-92) on the north and 5300 West on the east. Figure 1 shows a vicinity map of the proposed development.

Included within the analyses for this study are the traffic operations and recommended mitigation measures for existing conditions and plus project conditions (conditions after development of the proposed project) at the key intersection and roadway in the vicinity of the site.

Figure 1 Vicinity map showing the project location in Highland City, Utah

B. Scope

The study area was defined based on conversations with the development team. This study was scoped to evaluate the traffic operational performance impacts of the project on the following intersection:

- Town Center Boulevard / Highland Highway (SR-92)

- Toscana & Timp Tire Access / Town Center Boulevard
- Parkway Drive / 5400 West
- Parkway Drive / Alpine Highway (SR-74)
- Park Access Road / 5400 West

C. Analysis Methodology

Level of service (LOS) is a term that describes the operating performance of an intersection or roadway. LOS is measured quantitatively and reported on a scale from A to F, with A representing the best performance and F the worst. Table 1 provides a brief description of each LOS letter designation and an accompanying average delay per vehicle for both signalized and unsignalized intersections.

The Highway Capacity Manual 2010 (HCM 2010) methodology was used in this study to remain consistent with “state-of-the-practice” professional standards. This methodology has different quantitative evaluations for signalized and unsignalized intersections. For signalized and all-way stop intersections, the LOS is provided for the overall intersection (weighted average of all approach delays). For all other unsignalized intersections LOS is reported based on the worst approach.

D. Level of Service Standards

For the purposes of this study, a minimum overall intersection performance for each of the study intersections was set at LOS D. However, if LOS E or F conditions exist, an explanation and/or mitigation measures will be presented. An LOS D threshold is consistent with “state-of-the-practice” traffic engineering principles for urbanized areas.

Table 1 Level of Service Descriptions

Level of Service	Description of Traffic Conditions	Average Delay (seconds/vehicle)
	Signalized Intersections	**Overall Intersection**
A	Extremely favorable progression and a very low level of control delay. Individual users are virtually unaffected by others in the traffic stream.	0 ≤ 10.0
B	Good progression and a low level of control delay. The presence of other users in the traffic stream becomes noticeable.	> 10.0 and ≤ 20.0
C	Fair progression and a moderate level of control delay. The operation of individual users becomes somewhat affected by interactions with others in the traffic stream.	>20.0 and ≤ 35.0
D	Marginal progression with relatively high levels of control delay. Operating conditions are noticeably more constrained.	> 35.0 and ≤ 55.0
E	Poor progression with unacceptably high levels of control delay. Operating conditions are at or near capacity.	> 55.0 and ≤ 80.0
F	Unacceptable progression with forced or breakdown operating conditions.	> 80.0
	Unsignalized Intersections	**Worst Approach**
A	Free Flow / Insignificant Delay	0 ≤ 10.0
B	Stable Operations / Minimum Delays	>10.0 and ≤ 15.0
C	Stable Operations / Acceptable Delays	>15.0 and ≤ 25.0
D	Approaching Unstable Flows / Tolerable Delays	>25.0 and ≤ 35.0
E	Unstable Operations / Significant Delays Can Occur	>35.0 and ≤ 50.0
F	Forced Flows / Unpredictable Flows / Excessive Delays Occur	> 50.0

Source: Hales Engineering Descriptions, based on Highway Capacity Manual, 2010 Methodology (Transportation Research Board, 2010)

II. EXISTING (2015) BACKGROUND CONDITIONS

A. Purpose

The purpose of the existing (2015) background analysis is to study the intersections and roadways during the peak travel periods of the day with background traffic and geometric conditions. Through this analysis, background traffic operational deficiencies can be identified and potential mitigation measures recommended. This analysis will provide a baseline condition that may be compared to the build conditions to identify the impacts of the development.

B. Roadway System

The primary roadways that will provide access to the project site are described below:

Highland Highway (SR-92) - is a state-maintained roadway that is classified by UDOT as a "principal arterial." Highland Highway (SR-92) is an east/west route that provides direct connectivity between northeastern Lehi on the west and Highland City on the east. This road is classified by UDOT as an Access Category 5 (Regional priority-urban importance) and therefore has minimum signal spacing of 2,640 feet, minimum street spacing of 660 feet, and minimum access spacing of 350 feet. Adjacent to the proposed project, Highland Highway (SR-92) has two travel lanes in each direction with a two-way left-turn lane (TWLTL) and the posted speed limit is 45 mph.

Alpine Highway (SR-74) - is a state-maintained roadway that is classified by UDOT as a "principal arterial." Alpine Highway (SR-74) is a north/south route that provides connectivity between Highland on the north and American Fork on the south. This road is classified by UDOT as an Access Category 6 (Regional-urban importance) and therefore has minimum signal spacing of 1,320 feet, minimum street spacing of 350 feet, and minimum access spacing of 200 feet. Adjacent to the proposed project, Alpine Highway (SR-74) has one travel lane in each direction with a two-way left-turn lane (TWLTL) and the posted speed limit is 45 mph.

Town Center Boulevard - is a city-maintained roadway that is classified by the City of Highland as a "minor collector." Town Center Boulevard is a north/south route that goes from Highland Highway (SR-92) on the north to its terminus at 10890 north on the south. Across from the proposed project, Town Center Boulevard has one travel lane in each direction with residential parking stalls on both sides and the posted speed limit is assumed to 25 mph.

C. Traffic Volumes

Hales Engineering performed weekday morning (7:00 to 9:00 a.m.) and afternoon (4:00 to 6:00 p.m.) peak period traffic counts at the following intersection:

- Town Center Boulevard / Highland Highway (SR-92)

- Toscana & Timp Tire Access / Town Center Boulevard
- Parkway Drive / 5400 West
- Parkway Drive / Alpine Highway (SR-74)
- Park Access Road / 5400 West

These counts were performed on Tuesday, July 21, Wednesday, July 22, and Wednesday, August 5, 2015. The August 5 counts were performed while the splash pad west of the proposed project was in operation. The p.m. peak hour volumes were approximately 36 percent higher than the morning volumes and will be used for this analysis. The p.m. peak hour was determined to be between the hours of 5:00 and 6:00 p.m. Detailed count data are included in Appendix A.

Figure 2 shows the existing p.m. peak hour volume as well as intersection geometry at the study intersection.

D. Level of Service Analysis

Using Synchro/SimTraffic, which follow the Highway Capacity Manual (HCM) 2010 methodology introduced in Chapter I, the p.m. peak hour LOS was computed for the study intersection. The results of this analysis are reported in Table 2 (see Appendix B for the detailed LOS reports). Multiple runs of SimTraffic were used to provide a statistical evaluation of the interaction at the intersection. These results serve as a baseline condition for the impact analysis of the proposed development during existing (2015) conditions. As shown in Table 2, all study intersections are currently operating at acceptable levels of service during the p.m. peak hour, with the exception of the Town Center Boulevard / Highland Highway (SR-92) intersection, which is operating at LOS E.

E. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for the study intersection. The queue reports can be found in Appendix D. During the p.m. peak hour, the 95th percentile queue is approximately 100 feet on the northbound approach to the Town Center Boulevard / Alpine Highway (SR-92) intersection. No other significant queueing is observed during the p.m. peak hour.

F. Mitigation Measures

The Town Center Boulevard / Highland Highway (SR-92) intersection is currently operating at level of service E. It is recommended that a northbound right-turn pocket be added at the Town Center Boulevard / Highland Highway (SR-92) to help improve flow and minimize delay at the intersection. No other mitigation measures are recommended at this time.

Table 2 Existing (2015) Background p.m. Peak Hour Level of Service

Intersection		Worst Approach			Overall Intersection	
Description	Control	Approach[1,3]	Aver. Delay (Sec/Veh)[1]	LOS[1]	Aver. Delay (Sec/Veh)[2]	LOS[2]
Town Center Boulevard / Highland Highway (SR-92)	NB Stop	NB	49.0	E	-	-
Town Center Boulevard / Toscana / Timp Tire Accesses	EB & WB Stop	EB	5.0	A	-	-
10890 North / Town Center Boulevard	EB & WB Stop	EB	4.0	A	-	-
5400 West / Parkway Drive	WB Stop	WB	1.0	A	-	-
5400 West / Park Access	EB Stop	EB	1.0	A	-	-
Parkway Drive / Alpine Highway (SR-74)	EB Stop	EB	17.0	C	-	-
Town Square Access / Alpine Highway (SR-74)	EB & WB Stop	EB	10.0	B	-	-

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way stop unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds / vehicle) and is reported for all-way stop and signal controlled intersections.
3. SB = Southbound approach, etc.

Source: Hales Engineering, August 2015

Highland Highway (SR-92)
Highland Highway (SR-92)
Town Center Boulevard
Toscana Access
Town Square Access
Wells Fargo Access
10890 North
10890 North
Parkway Drive
Park Access
5400 West
Alpine Highway (SR-74)
Alpine Highway (SR-74)
1210
33
1832
24
27
38
13
2
4
7
43
7
3
699
13
34
0
18
14
3
3
3
53
8
11
0
21
16
605
7
56
9
20
4
34
4
12
1
6
1
35
703
18
3
33
5
22
635
1
12
6
21

III. PROJECT CONDITIONS

A. Purpose

The project conditions analysis explains the type and intensity of development. This provides the basis for trip generation, distribution, and assignment of project trips to the surrounding study intersections defined in the Introduction.

B. Project Description

This study addresses the traffic impacts associated with the proposed Blackstone residential development in Highland City, Utah. The proposed development is bordered by Highland Highway (SR-692) on the north and 5300 West on the east. A site plan for the proposed development has been included in Appendix C.

The proposed land use for the development has been identified as follows:

- Residential Condominium/Townhouse: 86 Dwelling Units

The total trip generation for the development is as follows:

- Daily Trips: 556
- a.m. Peak Hour Trips: 46
- p.m. Peak Hour Trips: 54

C. Trip Generation

Trip generation for the development was calculated using rates published in the ITE *Trip Generation Manual (9th Edition, 2012)*. Trip Generation for the proposed project is included in Table 3.

D. Trip Distribution and Assignment

Project traffic is assigned to the roadway network based on the type of trip and the proximity of project access points to major streets, high population densities, and regional trip attractions. Existing travel patterns observed during data collection also provide helpful guidance to establishing these distribution percentages, especially in close proximity to the site. The resulting distribution of project generated trips is as follows:

<u>P.M. Peak Period To/From Project:</u>

- 15% North (via Alpine Highway (SR-74))
- 30% South (via Alpine Highway (SR-74))
- 40% West (via Highland Highway (SR-92))

- 15% East (via Alpine Highway (SR-92))

These trip distribution assumptions were used to assign the p.m. peak hour generated traffic at the study intersections to create trip assignment for the proposed development. Trip assignment for the development is shown in Figure 3.

Table 1
Highland Blackstone
Trip Generation

Weekday Daily Land Use[1]	Number of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total Daily Trips
Residential Condominium/Townhouse (230)	86	Dwelling Units	566	50%	50%	283	283	**566**
Project Total Daily Trips						**283**	**283**	**566**
A.M. Peak Hour Land Use[1]	Number of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total a.m. Trips
Residential Condominium/Townhouse (230)	86	Dwelling Units	46	17%	83%	8	38	**46**
Project Total a.m. Peak Hour Trips						**8**	**38**	**46**
P.M. Peak Hour Land Use[1]	Number of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total p.m. Trips
Residential Condominium/Townhouse (230)	86	Dwelling Units	54	67%	33%	36	18	**54**
Project Total p.m. Peak Hour Trips						**36**	**18**	**54**
Saturday Daily Land Use[1]	Number of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total Sat. Daily Trips
Residential Condominium/Townhouse (230)	86	Dwelling Units	740	50%	50%	370	370	**740**
Project Total Saturday Trips						**370**	**370**	**740**
Saturday Peak Hour Land Use[1]	Number of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total Sat Pk Hr Trips
Residential Condominium/Townhouse (230)	86	Dwelling Units	68	54%	46%	37	31	**68**
Project Total Saturday Peak Hour Trips						**37**	**31**	**68**

1. Land Use Code from the Institute of Transportation Engineers Trip Generation Manual (9th Edition - 2012)

SOURCE: Hales Engineering, 2015

E. Access

The proposed accesses for the site will be gained at the following location (see also site plan in Appendix C):

<u>Parkway Drive:</u>

- Southwest Access: A proposed full movement access for this development will be located on Parkway Drive, approximately 250 feet east of the 5400 West / Parkway Drive intersection.

<u>5400 West:</u>

- West Access: A proposed access for this development will be located on 5400 West, approximately 130 feet north of the 5400 West / Parkway Drive intersection. This is

proposed to be a full movement access that will be aligned with the Park Access directly across from the proposed development.

Town Square Access:

- Northeast Access: A proposed full movement access for this development will be located on the existing access to the Town Square and Tim Tire, north of the proposed development. The proposed Northeast Access will be located approximately 450 feet east of the Town Center Drive / Tim Tire Access intersection.

Highland - Blackstone TIS
Trip Assignment

p.m. Peak Hour
Figure 3

Hales Engineering
1220 North 500 West, Ste. 202 Lehi, Utah 84043

801.766.4343
8/3/2015

IV. EXISTING (2015) PLUS PROJECT CONDITIONS

A. Purpose

This section of the report examines the traffic impacts of the proposed project at the study intersections. The net trips generated by the proposed development were combined with the existing background traffic volumes to create the existing plus project conditions. This scenario provides valuable insight into the potential impacts of the proposed project on background traffic conditions.

B. Traffic Volumes

Project trips were assigned to the study intersections based on the trip distribution percentages discussed in Chapter III and permitted intersection turning movements. The existing (2015) plus project p.m. peak hour volumes were generated for the study intersections and are shown in Figure 4.

C. Level of Service Analysis

Using Synchro/SimTraffic, which follow the Highway Capacity Manual (HCM) 2010 methodology introduced in Chapter I, the p.m. peak hour LOS was computed for the study intersections. The results of this analysis are reported in Table 3 (see Appendix B for the detailed LOS reports). Multiple runs of SimTraffic were used to provide a statistical evaluation of the interaction at the intersections. As shown in Table 3, all study intersections are anticipated to operate at acceptable levels of service during the p.m. peak hour, with the exception of the Town Center Boulevard / Highland Highway (SR-92) intersection, which is anticipated to operate at LOS F.

D. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. The queue reports can be found in Appendix D. During the p.m. peak hour, the 95th percentile queue is anticipated to be approximately 200 feet on the northbound approach to the Town Center Boulevard / Highland Highway (SR-92) intersection. No other significant queueing is anticipated during the p.m. peak hour.

E. Mitigation Measures

No mitigation measures are recommended

Table 4 Existing (2015) Plus Project p.m. Peak Hour Level of Service

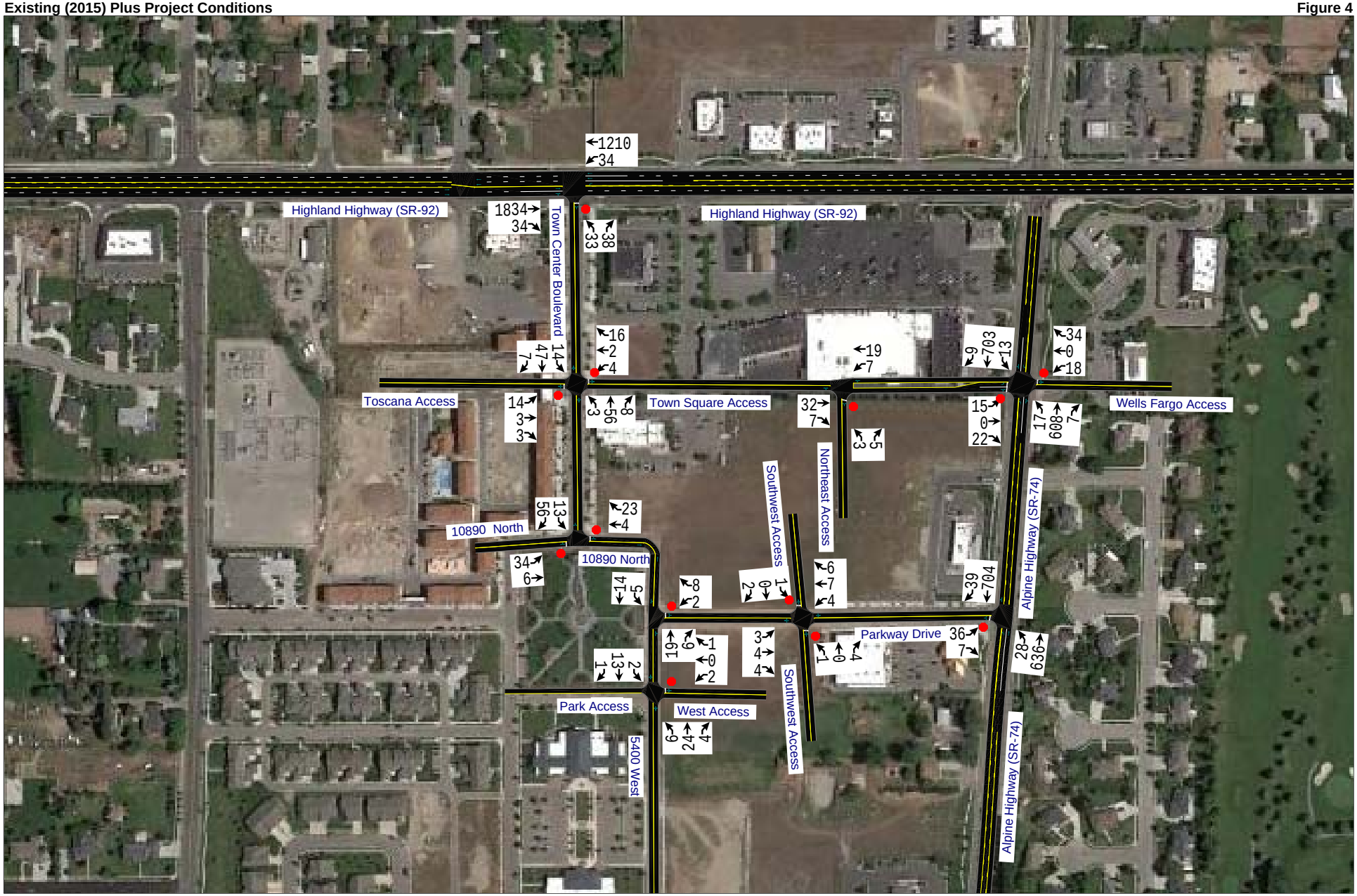
Intersection		Worst Approach			Overall Intersection	
Description	Control	Approach[1,3]	Aver. Delay (Sec/Veh)[1]	LOS[1]	Aver. Delay (Sec/Veh)[2]	LOS[2]
Town Center Blvd / Highland Highway (SR-92)	NB Stop	NB	> 50	F	-	-
Town Center Boulevard / Toscana / Tim Tire Accesses	EB & WB Stop	EB	5.0	A	-	-
10890 North / Town Center Boulevard	EB & WB Stop	EB	4.0	A	-	-
5400 West / Parkway Drive	WB Stop	WB	3.0	A	-	-
5400 West / Park Access / West Access	EB & WB Stop	EB	3.0	A	-	-
Southwest Access / Parkway Drive	NB & SB Stop	NB	3.0	A	-	-
Parkway Drive / Alpine Highway (SR-74)	EB Stop	EB	22.0	C	-	-
Town Square Access / Alpine Highway (SR-74)	EB & WB Stop	WB	11.0	B	-	-
Northeast Access / Tim Tire / Town Square Access	NB Stop	NB	3.0	A	-	-

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for non-all-way stop unsignalized intersections.
2. This represents the overall intersection LOS and delay (seconds / vehicle) and is reported for all-way stop and signal controlled intersections.
3. SB = Southbound approach, etc.

Source: Hales Engineering, August 2015

Highland - Blackstone TIS
Existing (2015) Plus Project Conditions

p.m. Peak Hour
Figure 4



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8/6/2015

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APPENDIX A

Turning Movement Counts

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

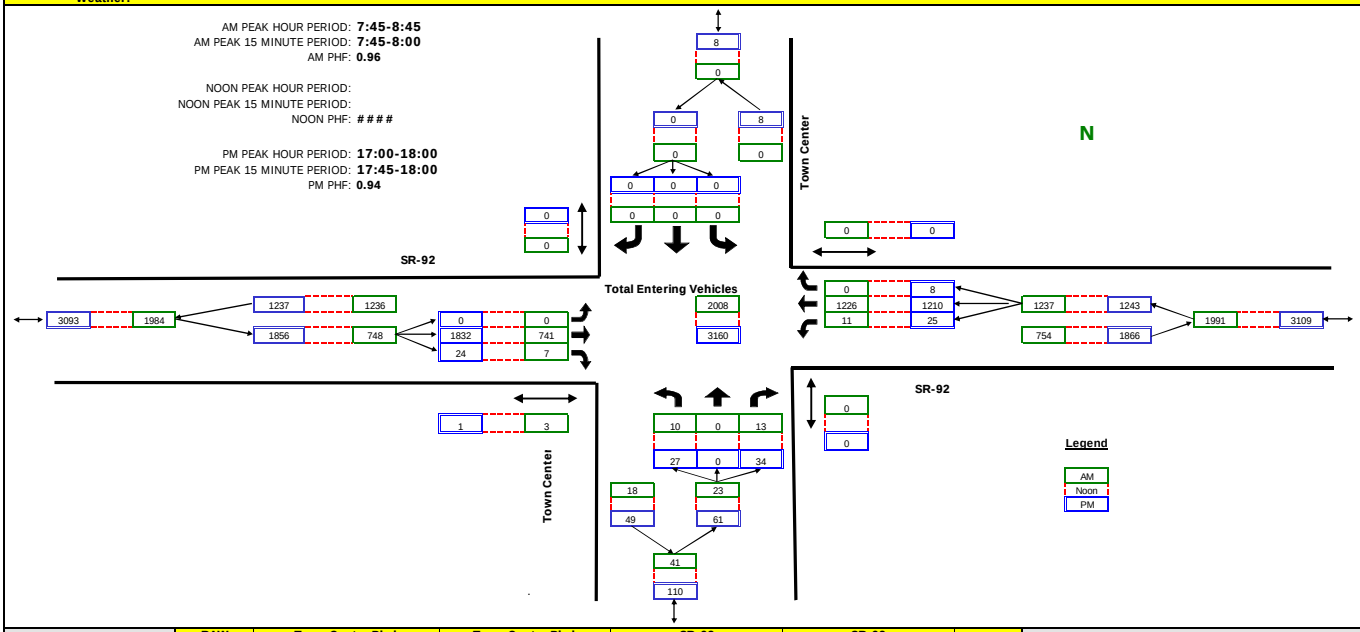
Intersection: Town Center Blvd / SR-92
North/South: Town Center Blvd
East/West: SR-92
Jurisdiction: Highland
Project Title: Highland Blackstone
Project No: UT15-763
Weather:

Date: 7-21-15, Tue
Day of Week Adjustment: 100.0%
Month of Year Adjustment: 100.0%
Adjustment Station #: 0
Growth Rate: 0.0%
Number of Years: 0

AM PEAK HOUR PERIOD: **7:45-8:45**
AM PEAK 15 MINUTE PERIOD: **7:45-8:00**
AM PHF: **0.96**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: **####**

PM PEAK HOUR PERIOD: **17:00-18:00**
PM PEAK 15 MINUTE PERIOD: **17:45-18:00**
PM PHF: **0.94**



RAW COUNT SUMMARIES	Town Center Blvd Northbound Left	Thru	Right	Peds	Town Center Blvd Southbound Left	Thru	Right	Peds	SR-92 Eastbound Left	Thru	Right	Peds	SR-92 Westbound Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00-7:15	1	0	2	0	0	0	0	0	0	124	0	0	1	225	0	1	353
7:15-7:30	1	0	3	0	0	0	0	0	0	127	1	0	0	251	0	0	383
7:30-7:45	1	0	2	0	0	0	0	0	0	132	5	0	1	290	0	0	431
7:45-8:00	2	0	4	0	0	0	0	0	0	214	2	0	2	301	0	0	525
8:00-8:15	1	0	3	0	0	0	0	0	0	157	3	1	4	312	0	0	480
8:15-8:30	4	0	4	0	0	0	0	0	0	201	1	2	2	277	0	0	489
8:30-8:45	3	0	2	0	0	0	0	0	0	169	1	0	3	336	0	0	514
8:45-9:00	2	0	2	0	0	0	0	0	0	227	2	4	3	280	0	0	516
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
11:30-11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45-12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00-12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15-12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30-12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45-13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00-13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15-13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00-16:15	9	0	11	0	0	0	0	1	0	377	6	0	3	248	3	0	657
16:15-16:30	4	0	10	0	0	0	0	0	0	318	5	0	6	284	7	0	634
16:30-16:45	1	0	6	0	0	0	0	0	0	394	8	0	10	246	1	0	666
16:45-17:00	8	0	3	0	0	0	0	0	0	382	7	0	0	234	11	0	645
17:00-17:15	6	0	10	0	0	0	0	0	0	396	10	0	5	304	7	0	738
17:15-17:30	7	0	7	0	0	0	0	0	0	509	4	0	6	299	1	0	833
17:30-17:45	7	0	6	0	0	0	0	0	0	428	4	1	3	302	0	0	750
17:45-18:00	7	0	11	0	0	0	0	0	0	499	6	0	11	305	0	0	839

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

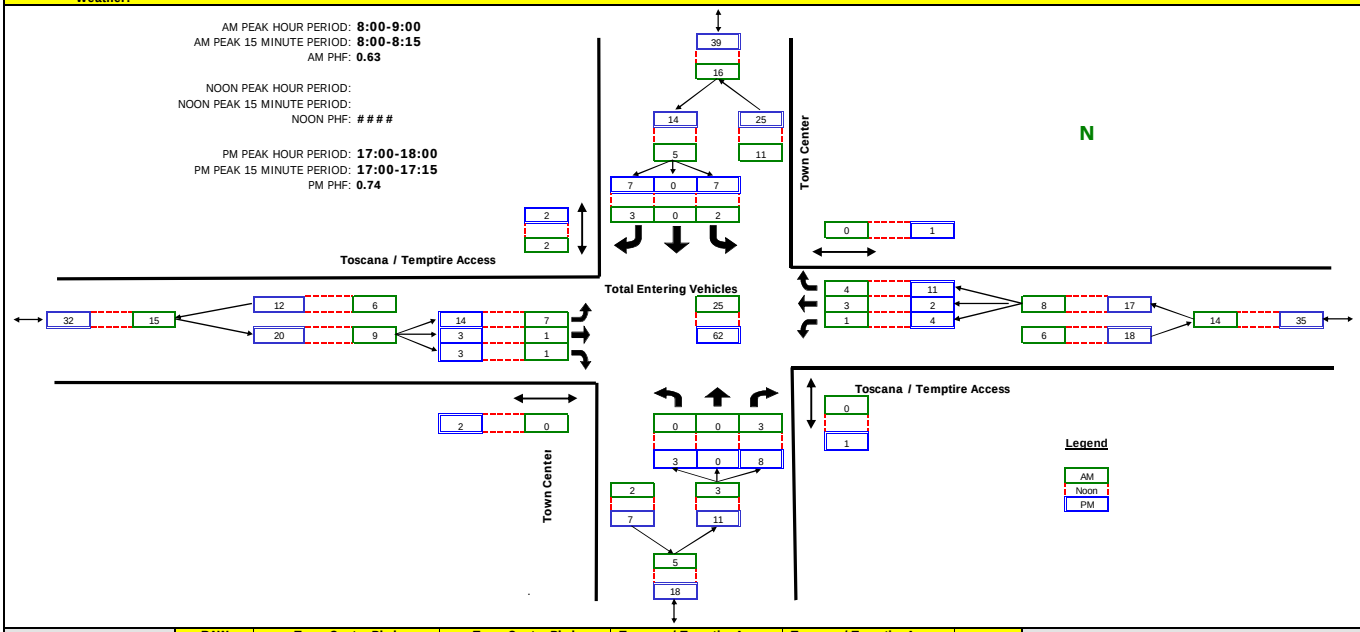
Intersection: Town Center Blvd / Toscana / Temptire Access
North/South: Town Center Blvd
East/West: Toscana / Temptire Access
Jurisdiction: Highland
Project Title: Highland Blackstone
Project No: UT15-763
Weather:

Date: 7-22-15, Wed
Day of Week Adjustment: 100.0%
Month of Year Adjustment: 100.0%
Adjustment Station #: 0
Growth Rate: 0.0%
Number of Years: 0

AM PEAK HOUR PERIOD: **8:00-9:00**
AM PEAK 15 MINUTE PERIOD: **8:00-8:15**
AM PHF: **0.63**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: **####**

PM PEAK HOUR PERIOD: **17:00-18:00**
PM PEAK 15 MINUTE PERIOD: **17:00-17:15**
PM PHF: **0.74**



RAW COUNT SUMMARIES	Town Center Blvd Northbound Left	Thru	Right	Peds	Town Center Blvd Southbound Left	Thru	Right	Peds	Toscana / Temptire Access Eastbound Left	Thru	Right	Peds	Toscana / Temptire Access Westbound Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00-7:15	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
7:15-7:30	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
7:30-7:45	0	0	0	0	0	0	3	1	1	2	0	0	0	0	1	0	7
7:45-8:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	3
8:00-8:15	0	0	1	0	0	0	3	0	2	0	0	0	0	3	1	0	10
8:15-8:30	0	0	0	0	0	0	0	1	3	0	0	0	0	0	1	0	4
8:30-8:45	0	0	2	0	1	0	0	0	0	0	1	0	0	0	2	0	6
8:45-9:00	0	0	0	0	1	0	0	1	2	1	0	0	1	0	0	0	5
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
11:30-11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45-12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00-12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15-12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30-12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45-13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00-13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15-13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00-16:15	0	0	1	0	1	0	2	3	2	2	0	0	3	0	1	0	12
16:15-16:30	1	0	0	0	1	0	2	10	1	0	0	0	3	2	2	0	12
16:30-16:45	0	0	3	1	1	0	2	2	1	0	0	0	1	0	0	1	8
16:45-17:00	0	0	3	2	1	0	1	3	1	2	1	0	0	0	1	0	10
17:00-17:15	0	0	2	0	5	0	3	2	6	1	1	0	1	0	2	0	21
17:15-17:30	0	0	1	1	0	0	0	0	2	1	1	1	2	2	3	0	12
17:30-17:45	2	0	1	0	1	0	3	0	4	1	0	0	1	0	4	1	17
17:45-18:00	1	0	4	0	1	0	1	0	2	0	1	1	0	0	2	0	12

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

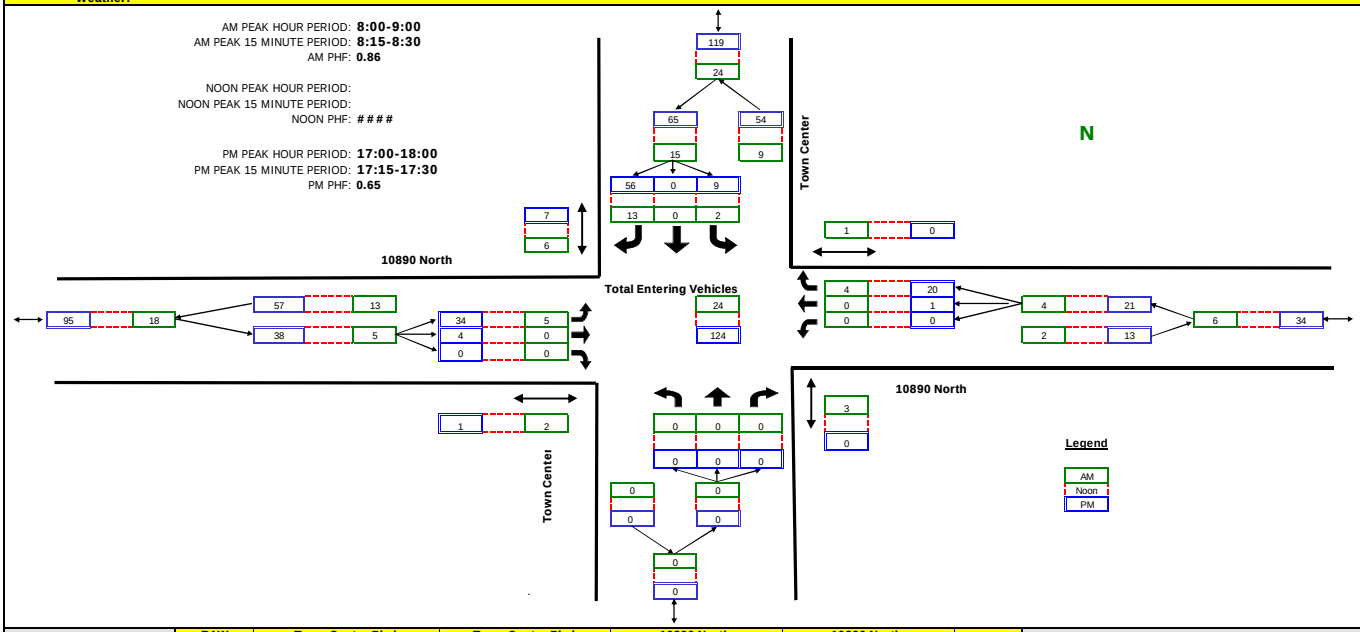
Intersection: Town Center Blvd / 10890 North
North/South: Town Center Blvd
East/West: 10890 North
Jurisdiction: Highland
Project Title: Highland Blackstone
Project No: UT15-763
Weather:

Date: 7-21-15, Tue
Day of Week Adjustment: 100.0%
Month of Year Adjustment: 100.0%
Adjustment Station #: 0
Growth Rate: 0.0%
Number of Years: 0

AM PEAK HOUR PERIOD: **8:00-9:00**
AM PEAK 15 MINUTE PERIOD: **8:15-8:30**
AM PHF: **0.86**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: **####**

PM PEAK HOUR PERIOD: **17:00-18:00**
PM PEAK 15 MINUTE PERIOD: **17:15-17:30**
PM PHF: **0.65**



RAW COUNT SUMMARIES	Town Center Blvd Northbound Left	Thru	Right	Peds	Town Center Blvd Southbound Left	Thru	Right	Peds	10890 North Eastbound Left	Thru	Right	Peds	10890 North Westbound Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00-7:15	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	3
7:15-7:30	0	0	0	4	1	0	0	0	0	0	0	0	0	0	1	0	2
7:30-7:45	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	2
7:45-8:00	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
8:00-8:15	0	0	0	0	0	0	4	3	0	0	0	0	0	0	1	0	5
8:15-8:30	0	0	0	3	2	0	1	1	3	0	0	0	0	0	1	0	7
8:30-8:45	0	0	0	0	0	0	4	2	1	0	0	2	0	0	1	1	6
8:45-9:00	0	0	0	0	0	0	4	0	1	0	0	0	0	0	1	0	6
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
11:30-11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45-12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00-12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15-12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30-12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45-13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00-13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15-13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00-16:15	0	0	0	0	1	0	10	0	12	0	0	0	0	0	3	0	26
16:15-16:30	0	0	0	0	4	0	12	3	4	0	0	8	0	0	2	0	22
16:30-16:45	0	0	0	0	1	0	10	0	6	0	0	2	0	1	1	0	19
16:45-17:00	0	0	0	0	3	0	6	1	9	0	0	9	0	1	2	0	21
17:00-17:15	0	0	0	0	2	0	9	1	7	1	0	0	0	0	4	0	23
17:15-17:30	0	0	0	0	4	0	22	3	13	1	0	0	0	1	7	0	48
17:30-17:45	0	0	0	0	1	0	13	2	7	1	0	0	0	0	5	0	27
17:45-18:00	0	0	0	0	2	0	12	1	7	1	0	1	0	0	4	0	26

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

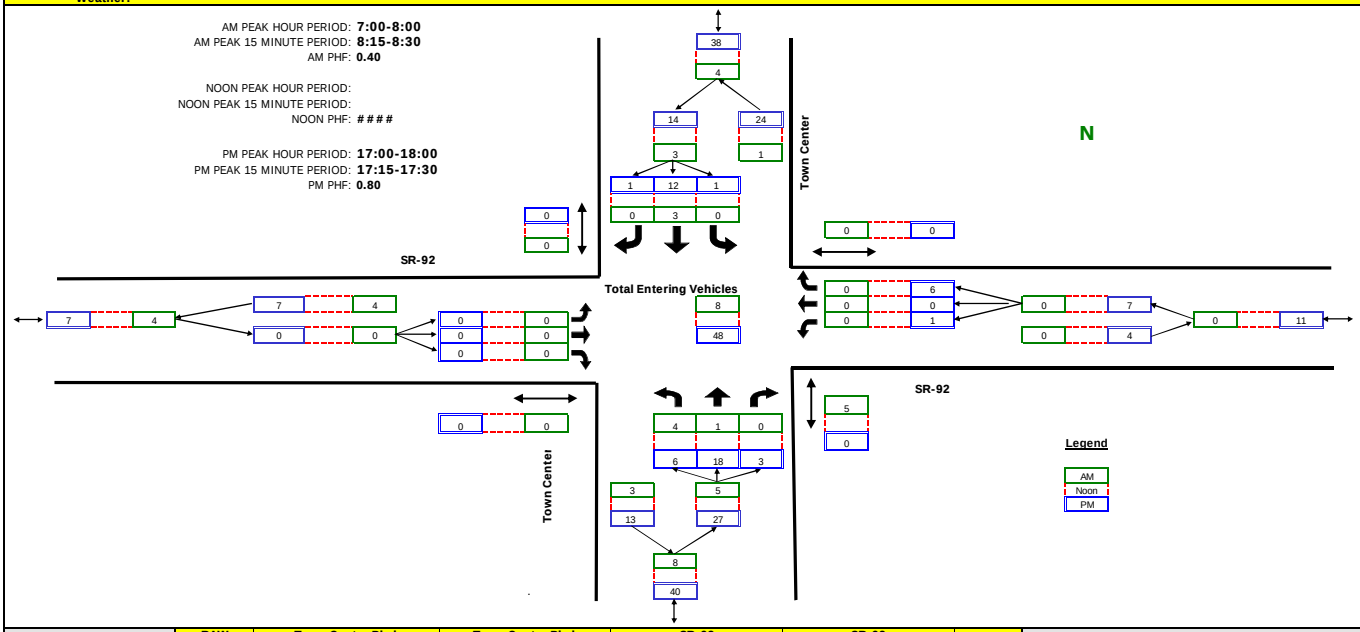
Intersection: Town Center Blvd / SR-92
North/South: Town Center Blvd
East/West: SR-92
Jurisdiction: Highland
Project Title: Highland Blackstone
Project No: UT15-763
Weather:

Date: 7-21-15, Tue
Day of Week Adjustment: 100.0%
Month of Year Adjustment: 100.0%
Adjustment Station #: 0
Growth Rate: 0.0%
Number of Years: 0

AM PEAK HOUR PERIOD: **7:00-8:00**
AM PEAK 15 MINUTE PERIOD: **8:15-8:30**
AM PHF: **0.40**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: **####**

PM PEAK HOUR PERIOD: **17:00-18:00**
PM PEAK 15 MINUTE PERIOD: **17:15-17:30**
PM PHF: **0.80**



RAW COUNT SUMMARIES	Town Center Blvd Northbound Left	Thru	Right	Peds	Town Center Blvd Southbound Left	Thru	Right	Peds	SR-92 Eastbound Left	Thru	Right	Peds	SR-92 Westbound Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00-7:15	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
7:15-7:30	3	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4
7:30-7:45	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45-8:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00-8:15	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15-8:30	1	3	0	1	0	1	0	3	0	0	0	0	0	0	0	0	5
8:30-8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45-9:00	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
11:30-11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45-12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00-12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15-12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30-12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45-13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00-13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15-13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00-16:15	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
16:15-16:30	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	6
16:30-16:45	0	2	1	0	1	3	0	0	0	0	0	0	1	0	0	0	8
16:45-17:00	1	2	0	0	1	1	1	0	0	0	0	0	0	0	1	0	7
17:00-17:15	2	2	0	0	1	1	1	0	0	0	0	0	0	0	1	0	8
17:15-17:30	2	5	2	0	0	3	0	0	0	0	0	0	1	0	2	0	15
17:30-17:45	1	4	0	0	0	5	0	0	0	0	0	0	0	0	2	0	12
17:45-18:00	1	7	1	0	0	3	0	0	0	0	0	0	0	0	1	0	13

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

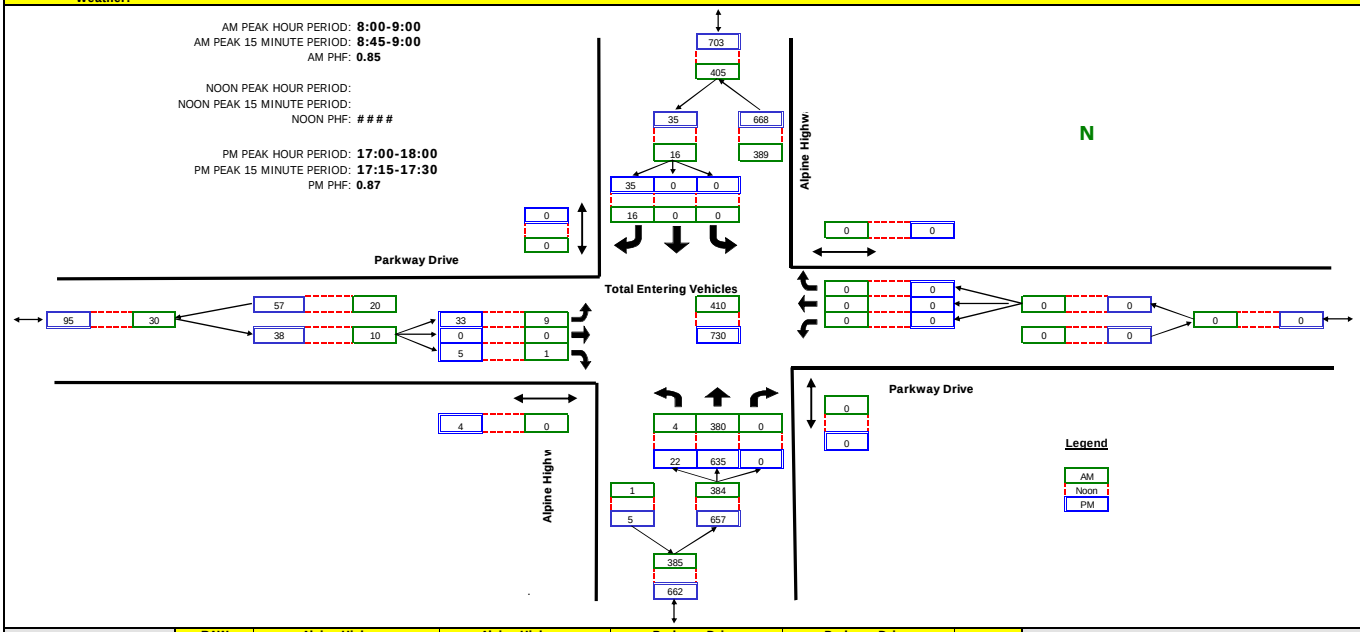
Intersection: Alpine Highway / Parkway Drive
North/South: Alpine Highway
East/West: Parkway Drive
Jurisdiction: Highland
Project Title: Highland Blackstone
Project No: UT15-763
Weather:

Date: 7-21-15, Tue
Day of Week Adjustment: 100.0%
Month of Year Adjustment: 100.0%
Adjustment Station #: 0
Growth Rate: 0.0%
Number of Years: 0

AM PEAK HOUR PERIOD: **8:00-9:00**
AM PEAK 15 MINUTE PERIOD: **8:45-9:00**
AM PHF: **0.85**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: **####**

PM PEAK HOUR PERIOD: **17:00-18:00**
PM PEAK 15 MINUTE PERIOD: **17:15-17:30**
PM PHF: **0.87**



RAW COUNT SUMMARIES	Alpine Highway Northbound Left	Thru	Right	Peds	Alpine Highway Southbound Left	Thru	Right	Peds	Parkway Drive Eastbound Left	Thru	Right	Peds	Parkway Drive Westbound Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00-7:15	0	63	0	0	0	0	1	0	1	0	0	0	0	0	0	0	65
7:15-7:30	0	56	0	0	0	0	1	0	0	0	0	0	0	0	0	0	57
7:30-7:45	0	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71
7:45-8:00	2	102	0	0	0	0	2	0	0	0	0	0	0	0	0	0	106
8:00-8:15	0	76	0	0	0	0	3	0	2	0	0	0	0	0	0	0	81
8:15-8:30	1	95	0	0	0	0	3	0	2	0	1	0	0	0	0	0	102
8:30-8:45	1	102	0	0	0	0	3	0	1	0	0	0	0	0	0	0	107
8:45-9:00	2	107	0	0	0	0	7	0	4	0	0	0	0	0	0	0	120
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
11:30-11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45-12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00-12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15-12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30-12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45-13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00-13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15-13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00-16:15	4	120	0	0	0	0	6	0	10	0	4	0	0	0	0	0	144
16:15-16:30	2	157	0	0	0	0	12	0	6	0	3	0	0	0	0	0	180
16:30-16:45	7	99	0	0	0	0	5	0	6	0	4	0	0	0	0	0	121
16:45-17:00	6	103	0	0	0	0	11	0	2	0	6	0	0	0	0	0	128
17:00-17:15	7	146	0	0	0	0	6	0	8	0	2	0	0	0	0	0	169
17:15-17:30	5	185	0	0	0	0	8	0	8	0	3	0	0	0	0	0	209
17:30-17:45	8	151	0	0	0	0	13	0	7	0	0	3	0	0	0	0	179
17:45-18:00	2	153	0	0	0	0	8	0	10	0	0	1	0	0	0	0	173

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

Intersection Turning Movement Summary

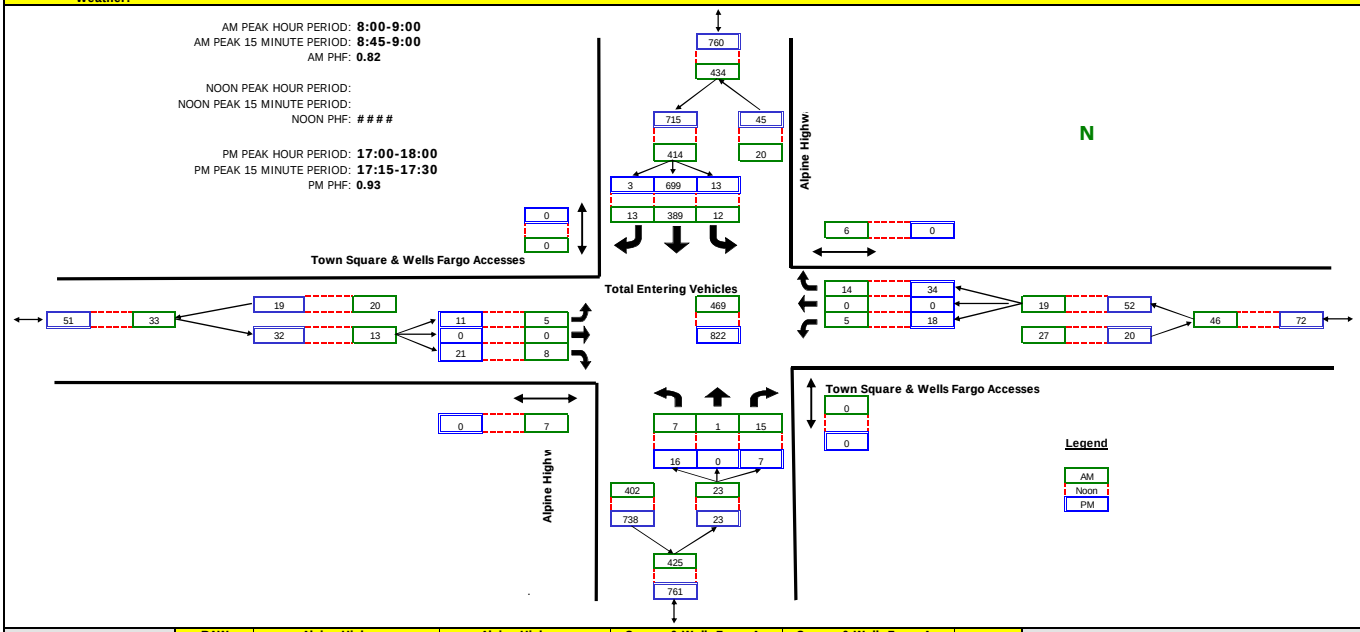
Intersection: Alpine Highway / Town Square & Wells Fargo Accesses
North/South: Alpine Highway
East/West: Town Square & Wells Fargo Accesses
Jurisdiction: Highland
Project Title: Highland Blackstone
Project No: UT15-763
Weather:

Date: 7-22-15, Wed
Day of Week Adjustment: 100.0%
Month of Year Adjustment: 100.0%
Adjustment Station #: 0
Growth Rate: 0.0%
Number of Years: 0

AM PEAK HOUR PERIOD: **8:00-9:00**
AM PEAK 15 MINUTE PERIOD: **8:45-9:00**
AM PHF: **0.82**

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: **####**

PM PEAK HOUR PERIOD: **17:00-18:00**
PM PEAK 15 MINUTE PERIOD: **17:15-17:30**
PM PHF: **0.93**



RAW COUNT SUMMARIES	Alpine Highway Northbound Left	Thru	Right	Peds	Alpine Highway Southbound Left	Thru	Right	Peds	Town Square & Wells Fargo Acces Eastbound Left	Thru	Right	Peds	Town Square & Wells Fargo Acces Westbound Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00-7:15	2	0	0	0	2	57	2	0	0	0	3	3	1	0	2	4	69
7:15-7:30	0	0	1	0	1	67	0	0	1	0	0	3	0	0	2	0	72
7:30-7:45	0	0	1	0	4	85	1	0	3	0	3	0	1	0	2	0	100
7:45-8:00	0	0	2	0	3	119	0	0	1	0	0	9	0	0	0	2	125
8:00-8:15	3	0	3	0	0	92	4	0	3	0	1	1	0	0	1	1	107
8:15-8:30	2	0	3	0	6	88	5	0	2	0	1	0	1	0	1	3	109
8:30-8:45	1	0	7	0	3	88	2	0	0	0	2	2	2	0	5	2	110
8:45-9:00	1	1	2	0	3	121	2	0	0	0	4	4	2	0	7	0	143
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
11:30-11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45-12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00-12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15-12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30-12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45-13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00-13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15-13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00-16:15	1	0	0	0	5	155	2	0	3	0	5	0	6	2	14	0	193
16:15-16:30	8	0	3	0	0	140	5	0	1	0	6	0	1	2	5	0	171
16:30-16:45	5	0	1	0	5	162	0	0	6	0	5	0	2	0	1	0	187
16:45-17:00	2	0	1	0	3	191	0	0	2	1	9	0	4	1	4	0	218
17:00-17:15	2	0	0	0	4	156	2	0	4	0	6	0	3	0	11	0	188
17:15-17:30	7	0	4	0	5	180	1	0	4	0	4	0	5	0	10	0	220
17:30-17:45	4	0	1	0	1	171	0	0	1	0	6	0	4	0	6	0	194
17:45-18:00	3	0	2	0	3	192	0	0	2	0	5	0	6	0	7	0	220

APPENDIX B

LOS Results

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: **Highland - Blackstone TIS**
Analysis Period: ***Existing (2015) Background***
Time Period: ***p.m. Peak Hour*** **Project #:** ***UT15-763***

Intersection: **Town Center Boulevard & Highland Highway (SR-92)**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	27	26	97	70.4	*F*
	T	17	16	94	0.3	*A*
	R	38	38	101	53.8	*F*
	Subtotal	***82***	***80***	***98***	***48.5***	***E***
EB	T	1,870	1,682	90	2.3	*A*
	R	24	23	97	0.3	*A*
	Subtotal	1,894	1,705	90	2.3	*A*
WB	L	33	29	89	43.2	*E*
	T	1,234	1,217	99	8.7	*A*
	Subtotal	1,267	1,246	98	9.5	*A*
Total		3,242	3,031	93	6.5	*A*

Intersection: **Town Center Boulevard & Toscana Access/Town Square Access**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	3	3	100	2.1	*A*
	T	53	52	98	0.5	*A*
	R	8	9	109	0.4	*A*
	Subtotal	64	64	100	0.6	*A*
SB	L	7	7	100	2.3	*A*
	T	44	41	93	0.6	*A*
	R	7	6	86	0.6	*A*
	Subtotal	58	54	93	0.8	*A*
EB	L	14	14	98	4.3	*A*
	T	3	3	100	6.5	*A*
	R	3	3	100	2.8	*A*
	Subtotal	***20***	***20***	***100***	***4.4***	***A***
WB	L	4	5	125	4.8	*A*
	T	2	1	50	5.3	*A*
	R	13	12	91	3.5	*A*
	Subtotal	19	18	95	4.0	*A*
Total		162	156	96	1.5	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: **Highland - Blackstone TIS**
Analysis Period: ***Existing (2015) Background***
Time Period: ***p.m. Peak Hour*** **Project #:** ***UT15-763***

Intersection: **10890 North/10890 North & Town Center Boulevard**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
SB	L	9	7	76	0.5	*A*
	R	56	55	98	0.2	*A*
	Subtotal	65	62	95	0.2	*A*
EB	L	34	32	95	4.0	*A*
	T	4	4	100	4.6	*A*
	Subtotal	***38***	***36***	***95***	***4.1***	***A***
WB	T	4	4	100	4.6	*A*
	R	20	22	109	2.8	*A*
	Subtotal	24	26	108	3.1	*A*
Total		128	124	97	2.0	*A*

Intersection: **5400 West/5400 West & Parkway Drive**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	18	19	104	0.0	*A*
	R	3	4	133	0.0	*A*
	Subtotal	21	23	110	0.0	*A*
SB	L	1	0	0		
	T	12	10	82	0.0	*A*
	Subtotal	13	10	77	0.0	*A*
WB	L	1	0	0		
	T	50	54	108	0.3	*A*
	R	6	7	117	2.6	*A*
	Subtotal	***57***	***61***	***107***	***0.6***	***A***
Total		92	94	103	0.4	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: **Highland - Blackstone TIS**
Analysis Period: ***Existing (2015) Background***
Time Period: ***p.m. Peak Hour*** **Project #:** ***UT15-763***

Intersection: **5400 West & Park Access**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	L	6	5	83	1.6	*A*
	T	21	23	108	0.0	*A*
	Subtotal	***27***	***28***	***104***	***0.3***	***A***
SB	T	12	10	82	0.0	*A*
	R	1	1	100	0.0	*A*
	Subtotal	13	11	85	0.0	*A*
Total		40	39	96	0.2	*A*

Intersection: **Alpine Highway (SR-74) & Parkway Drive**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	L	22	23	103	4.8	*A*
	T	635	638	101	0.8	*A*
	Subtotal	657	661	101	0.9	*A*
SB	T	705	702	100	1.5	*A*
	R	35	38	109	0.6	*A*
	Subtotal	740	740	100	1.5	*A*
EB	L	33	32	98	19.4	*C*
	R	5	8	160	9.4	*A*
	Subtotal	***38***	***40***	***105***	***17.4***	***C***
Total		1,434	1,441	100	1.7	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: **Highland - Blackstone TIS**
Analysis Period: ***Existing (2015) Background***
Time Period: ***p.m. Peak Hour*** **Project #:** ***UT15-763***

Intersection: **Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	16	15	92	3.7	*A*
	T	644	649	101	0.9	*A*
	R	7	7	100	0.1	*A*
	Subtotal	667	671	101	1.0	*A*
SB	L	13	15	113	4.4	*A*
	T	699	700	100	1.4	*A*
	R	3	3	100	0.1	*A*
	Subtotal	715	718	100	1.5	*A*
EB	L	11	10	89	16.7	*C*
	R	21	22	104	7.2	*A*
	Subtotal	***32***	***32***	***100***	***10.2***	***B***
WB	L	18	16	88	16.0	*C*
	R	34	36	107	7.2	*A*
	Subtotal	52	52	100	9.9	*A*
Total		1,467	1,473	100	1.7	*A*

Intersection:
Type:

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
Total						

1: Town Center Boulevard & Highland Highway (SR-92) Performance by movement Interval #1 5:00

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.1	0.6	0.1	0.0	0.2	1.3
Total Del/Veh (s)	2.3	0.4	46.6	7.5	73.8	0.3	62.4	6.4
Vehicles Entered	418	5	8	292	6	4	10	743
Vehicles Exited	421	5	8	294	6	4	9	747
Hourly Exit Rate	1684	20	32	1176	24	16	36	2988
Input Volume	1830	23	32	1208	26	17	37	3173
% of Volume	92	87	100	97	92	94	97	94

1: Town Center Boulevard & Highland Highway (SR-92) Performance by movement Interval #2 5:15

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.1	0.8	0.1	0.0	0.1	1.4
Total Del/Veh (s)	2.3	0.3	44.1	9.1	58.7	0.2	49.5	6.5
Vehicles Entered	433	7	6	323	6	4	9	788
Vehicles Exited	430	6	6	320	6	4	10	782
Hourly Exit Rate	1720	24	24	1280	24	16	40	3128
Input Volume	1988	26	35	1313	29	17	40	3448
% of Volume	87	92	69	97	83	94	100	91

1: Town Center Boulevard & Highland Highway (SR-92) Performance by movement Interval #3 5:30

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.1	0.8	0.1	0.0	0.1	1.4
Total Del/Veh (s)	2.3	0.3	37.6	8.8	57.2	0.2	44.1	6.4
Vehicles Entered	416	6	8	300	7	4	10	751
Vehicles Exited	417	6	8	305	7	4	10	757
Hourly Exit Rate	1668	24	32	1220	28	16	40	3028
Input Volume	1830	23	32	1208	26	17	37	3173
% of Volume	91	104	100	101	108	94	108	95

1: Town Center Boulevard & Highland Highway (SR-92) Performance by movement Interval #4 5:45

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.1	0.7	0.1	0.0	0.1	1.3
Total Del/Veh (s)	2.2	0.4	38.5	8.8	63.5	0.6	44.3	6.4
Vehicles Entered	413	5	6	297	7	4	10	742
Vehicles Exited	413	5	7	298	6	4	9	742
Hourly Exit Rate	1652	20	28	1192	24	16	36	2968
Input Volume	1830	23	32	1208	26	17	37	3173
% of Volume	90	87	88	99	92	94	97	94

1: Town Center Boulevard & Highland Highway (SR-92) Performance by movement Entire Run

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.1	0.0	0.3	3.0	0.5	0.0	0.6	5.5
Total Del/Veh (s)	2.3	0.3	43.2	8.7	70.4	0.3	53.8	6.5
Vehicles Entered	1680	23	28	1213	26	15	39	3024
Vehicles Exited	1682	23	29	1217	26	16	38	3031
Hourly Exit Rate	1682	23	29	1217	26	16	38	3031
Input Volume	1870	24	33	1234	27	17	38	3242
% of Volume	90	97	89	99	97	94	101	93

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.2	0.0		0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.1	5.7	2.9	6.6		2.6	1.6	0.6	0.4	2.1	0.6	0.3
Vehicles Entered	4	1	1	1	0	2	1	14	2	2	11	2
Vehicles Exited	4	1	1	1	0	2	1	14	2	2	10	2
Hourly Exit Rate	16	4	4	4	0	8	4	56	8	8	40	8
Input Volume	14	3	3	4	2	13	3	52	8	7	43	7
% of Volume	114	133	133	100	0	62	133	108	100	114	93	114

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.0
Total Del/Veh (s)	1.5
Vehicles Entered	41
Vehicles Exited	40
Hourly Exit Rate	160
Input Volume	159
% of Volume	101

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.0	3.3	3.2	7.5		3.0	1.0	0.5	0.4	1.8	0.6	0.5
Vehicles Entered	3	1	1	1	0	3	1	13	3	2	10	2
Vehicles Exited	3	1	1	1	0	3	1	13	3	2	10	2
Hourly Exit Rate	12	4	4	4	0	12	4	52	12	8	40	8
Input Volume	15	3	3	4	2	14	3	56	9	7	47	7
% of Volume	80	133	133	100	0	86	133	93	133	114	85	114

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.0
Total Del/Veh (s)	1.4
Vehicles Entered	40
Vehicles Exited	40
Hourly Exit Rate	160
Input Volume	170
% of Volume	94

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.4	6.3		6.6		3.8	1.6	0.4	0.5	2.3	0.6	0.4
Vehicles Entered	3	1	0	1	0	3	1	14	2	2	11	2
Vehicles Exited	3	1	0	1	0	3	1	14	2	2	11	1
Hourly Exit Rate	12	4	0	4	0	12	4	56	8	8	44	4
Input Volume	14	3	3	4	2	13	3	52	8	7	43	7
% of Volume	86	133	0	100	0	92	133	108	100	114	102	57

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.0
Total Del/Veh (s)	1.5
Vehicles Entered	40
Vehicles Exited	39
Hourly Exit Rate	156
Input Volume	159
% of Volume	98

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.7	4.1	1.3	3.5		3.4	2.2	0.4	0.4	1.6	0.5	0.9
Vehicles Entered	4	1	1	1	0	4	1	11	2	2	10	1
Vehicles Exited	4	1	0	1	0	4	1	11	2	2	10	1
Hourly Exit Rate	16	4	0	4	0	16	4	44	8	8	40	4
Input Volume	14	3	3	4	2	13	3	52	8	7	43	7
% of Volume	114	133	0	100	0	123	133	85	100	114	93	57

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.0
Total Del/Veh (s)	1.6
Vehicles Entered	38
Vehicles Exited	37
Hourly Exit Rate	148
Input Volume	159
% of Volume	93

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Entire Ru

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.3	6.5	2.8	4.8	5.3	3.5	2.1	0.5	0.4	2.3	0.6	0.6
Vehicles Entered	14	3	3	5	1	12	3	52	9	7	41	6
Vehicles Exited	14	3	3	5	1	12	3	52	9	7	41	6
Hourly Exit Rate	14	3	3	5	1	12	3	52	9	7	41	6
Input Volume	14	3	3	4	2	13	3	53	8	7	44	7
% of Volume	98	100	100	125	50	91	100	98	109	100	93	86

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Entire Ru

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.1
Total Del/Veh (s)	1.5
Vehicles Entered	156
Vehicles Exited	156
Hourly Exit Rate	156
Input Volume	162
% of Volume	96

3: 10890 North/10890 North & Town Center Boulevard Performance by movement Interval #1 5:00

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.3	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.7	5.6	4.4	2.6	0.4	0.2	1.9
Vehicles Entered	9	1	1	5	2	14	32
Vehicles Exited	9	1	1	5	2	14	32
Hourly Exit Rate	36	4	4	20	8	56	128
Input Volume	33	4	4	20	9	55	125
% of Volume	109	100	100	100	89	102	102

3: 10890 North/10890 North & Town Center Boulevard Performance by movement Interval #2 5:15

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.9	5.6	5.7	2.7	0.6	0.3	2.0
Vehicles Entered	9	1	1	6	2	15	34
Vehicles Exited	9	1	1	6	2	15	34
Hourly Exit Rate	36	4	4	24	8	60	136
Input Volume	36	4	4	21	10	60	135
% of Volume	100	100	100	114	80	100	101

3: 10890 North/10890 North & Town Center Boulevard Performance by movement Interval #3 5:30

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.8	2.8	4.3	2.7	0.4	0.2	1.8
Vehicles Entered	8	1	1	7	2	14	33
Vehicles Exited	8	1	1	7	2	14	33
Hourly Exit Rate	32	4	4	28	8	56	132
Input Volume	33	4	4	20	9	55	125
% of Volume	97	100	100	140	89	102	106

3: 10890 North/10890 North & Town Center Boulevard Performance by movement Interval #4 5:45

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.8	4.3	3.9	2.7	0.4	0.1	1.9
Vehicles Entered	7	1	1	5	2	12	28
Vehicles Exited	7	1	1	5	2	11	27
Hourly Exit Rate	28	4	4	20	8	44	108
Input Volume	33	4	4	20	9	55	125
% of Volume	85	100	100	100	89	80	86

3: 10890 North/10890 North & Town Center Boulevard Performance by movement Entire Run

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.0	4.6	4.6	2.8	0.5	0.2	2.0
Vehicles Entered	32	4	4	22	7	55	124
Vehicles Exited	32	4	4	22	7	55	124
Hourly Exit Rate	32	4	4	22	7	55	124
Input Volume	34	4	4	20	9	56	128
% of Volume	95	100	100	109	76	98	97

4: 5400 West/5400 West & Parkway Drive Performance by movement Interval #1 5:00

Movement	WBL	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		0.2	2.8	0.1	0.0		0.0	0.5
Vehicles Entered	0	13	2	3	1	0	3	22
Vehicles Exited	0	13	2	3	1	0	3	22
Hourly Exit Rate	0	52	8	12	4	0	12	88
Input Volume	1	49	6	18	3	1	12	90
% of Volume	0	106	133	67	133	0	100	98

4: 5400 West/5400 West & Parkway Drive Performance by movement Interval #2 5:15

Movement	WBL	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		0.3	2.2	0.0	0.0		0.0	0.4
Vehicles Entered	0	13	2	6	1	0	3	25
Vehicles Exited	0	13	2	6	0	0	3	24
Hourly Exit Rate	0	52	8	24	0	0	12	96
Input Volume	1	53	6	19	3	1	13	96
% of Volume	0	98	133	126	0	0	92	100

4: 5400 West/5400 West & Parkway Drive Performance by movement Interval #3 5:30

Movement	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.3	2.4	0.0	0.0		0.0	0.3
Vehicles Entered	14	2	6	2	0	2	26
Vehicles Exited	14	2	6	2	0	2	26
Hourly Exit Rate	56	8	24	8	0	8	104
Input Volume	49	6	18	3	1	12	90
% of Volume	114	133	133	267	0	67	116

4: 5400 West/5400 West & Parkway Drive Performance by movement Interval #4 5:45

Movement	WBL	WBT	WBR	NBT	NBR	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0		0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		0.3	3.5	0.0		0.0	0.3
Vehicles Entered	0	15	1	5	0	2	23
Vehicles Exited	0	15	1	5	0	2	23
Hourly Exit Rate	0	60	4	20	0	8	92
Input Volume	1	49	6	18	3	12	90
% of Volume	0	122	67	111	0	67	102

4: 5400 West/5400 West & Parkway Drive Performance by movement Entire Run

Movement	WBL	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		0.3	2.6	0.0	0.0		0.0	0.4
Vehicles Entered	0	54	7	19	4	0	10	94
Vehicles Exited	0	54	7	19	4	0	10	94
Hourly Exit Rate	0	54	7	19	4	0	10	94
Input Volume	1	50	6	18	3	1	12	92
% of Volume	0	108	117	104	133	0	82	103

5: 5400 West & Park Access Performance by movement Interval #1 5:00

Movement	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0		0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.3	0.1	0.0		0.2
Vehicles Entered	1	5	3	0	9
Vehicles Exited	1	4	3	0	8
Hourly Exit Rate	4	16	12	0	32
Input Volume	6	21	12	1	40
% of Volume	67	76	100	0	80

5: 5400 West & Park Access Performance by movement Interval #2 5:15

Movement	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0		0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.8	0.0	0.0		0.2
Vehicles Entered	1	6	3	0	10
Vehicles Exited	1	6	3	0	10
Hourly Exit Rate	4	24	12	0	40
Input Volume	6	22	13	1	42
% of Volume	67	109	92	0	95

5: 5400 West & Park Access Performance by movement Interval #3 5:30

Movement	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0		0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.3	0.1	0.0		0.3
Vehicles Entered	2	7	2	0	11
Vehicles Exited	2	7	2	0	11
Hourly Exit Rate	8	28	8	0	44
Input Volume	6	21	12	1	40
% of Volume	133	133	67	0	110

5: 5400 West & Park Access Performance by movement Interval #4 5:45

Movement	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0		0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.1	0.0	0.0		0.3
Vehicles Entered	2	5	2	0	9
Vehicles Exited	2	5	2	0	9
Hourly Exit Rate	8	20	8	0	36
Input Volume	6	21	12	1	40
% of Volume	133	95	67	0	90

5: 5400 West & Park Access Performance by movement Entire Run

Movement	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.6	0.0	0.0	0.0	0.2
Vehicles Entered	5	23	10	1	39
Vehicles Exited	5	23	10	1	39
Hourly Exit Rate	5	23	10	1	39
Input Volume	6	21	12	1	40
% of Volume	83	108	82	100	96

6: Alpine Highway (SR-74) & Parkway Drive Performance by movement Interval #1 5:00

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	3.4	0.5	0.0	0.0	0.3
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	13.9	6.8	4.0	0.8	1.5	0.6	1.5
Vehicles Entered	8	2	5	151	172	9	347
Vehicles Exited	8	2	5	152	172	9	348
Hourly Exit Rate	32	8	20	608	688	36	1392
Input Volume	32	5	22	621	690	34	1404
% of Volume	100	160	91	98	100	106	99

6: Alpine Highway (SR-74) & Parkway Drive Performance by movement Interval #2 5:15

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	3.4	0.6	0.0	0.0	0.3
Total Delay (hr)	0.1	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	25.7	15.0	7.5	0.9	1.7	0.6	2.1
Vehicles Entered	10	2	5	166	192	10	385
Vehicles Exited	10	2	5	166	192	9	384
Hourly Exit Rate	40	8	20	664	768	36	1536
Input Volume	35	5	23	676	749	37	1525
% of Volume	114	160	87	98	103	97	101

6: Alpine Highway (SR-74) & Parkway Drive Performance by movement Interval #3 5:30

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	2.7	0.5	0.0	0.0	0.3
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	20.0	6.5	4.1	0.8	1.5	0.6	1.7
Vehicles Entered	8	3	6	161	176	9	363
Vehicles Exited	8	2	6	160	176	10	362
Hourly Exit Rate	32	8	24	640	704	40	1448
Input Volume	32	5	22	621	690	34	1404
% of Volume	100	160	109	103	102	118	103

6: Alpine Highway (SR-74) & Parkway Drive Performance by movement Interval #4 5:45

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	3.1	0.6	0.0	0.0	0.3
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	14.2	5.8	3.9	0.8	1.4	0.7	1.5
Vehicles Entered	7	2	7	160	162	9	347
Vehicles Exited	7	2	7	160	163	9	348
Hourly Exit Rate	28	8	28	640	652	36	1392
Input Volume	32	5	22	621	690	34	1404
% of Volume	88	160	127	103	94	106	99

6: Alpine Highway (SR-74) & Parkway Drive Performance by movement Entire Run

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Denied Del/Veh (s)	0.1	0.1	3.1	0.6	0.0	0.0	0.3
Total Delay (hr)	0.2	0.0	0.0	0.1	0.3	0.0	0.7
Total Del/Veh (s)	19.4	9.4	4.8	0.8	1.5	0.6	1.7
Vehicles Entered	32	8	23	637	702	38	1440
Vehicles Exited	32	8	23	638	702	38	1441
Hourly Exit Rate	32	8	23	638	702	38	1441
Input Volume	33	5	22	635	705	35	1434
% of Volume	98	160	103	101	100	109	100

7: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access Performance by movement Interv

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.1	0.0	0.1	0.2	0.0	0.0	0.0	3.4	0.6	0.2	0.3
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	11.8	7.7	11.1	5.9	4.4	0.9	0.2	3.4	1.4	0.1	1.6
Vehicles Entered	2	5	5	9	3	155	2	3	172	1	357
Vehicles Exited	3	5	5	9	3	156	2	3	172	1	359
Hourly Exit Rate	12	20	20	36	12	624	8	12	688	4	1436
Input Volume	11	21	18	33	16	630	7	13	684	3	1436
% of Volume	109	95	111	109	75	99	114	92	101	133	100

7: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access Performance by movement Interv

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.3	0.1	0.2	0.1	0.0	0.0	0.0	2.7	0.8		0.4
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	18.3	8.4	14.3	7.2	3.9	1.0	0.1	4.4	1.5	0.0	1.8
Vehicles Entered	3	6	4	9	4	171	1	5	192	0	395
Vehicles Exited	3	6	4	9	4	170	1	5	192	1	395
Hourly Exit Rate	12	24	16	36	16	680	4	20	768	4	1580
Input Volume	12	22	19	36	17	687	7	14	744	3	1561
% of Volume	100	109	84	100	94	99	57	143	103	133	101

7: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access Performance by movement Interv

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.7	0.0	0.2	0.1	0.0	0.0	0.0	2.9	0.6	0.6	0.3
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	19.6	7.0	23.8	8.7	3.7	0.9	0.1	4.6	1.4	0.1	1.9
Vehicles Entered	2	7	4	10	4	162	2	4	173	1	369
Vehicles Exited	2	7	4	10	4	162	2	4	174	1	370
Hourly Exit Rate	8	28	16	40	16	648	8	16	696	4	1480
Input Volume	11	21	18	33	16	630	7	13	684	3	1436
% of Volume	73	133	89	121	100	103	114	123	102	133	103

7: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access Performance by movement Interv

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	1.9	0.0	0.1	0.1	0.0	0.0	0.0	3.5	0.5	0.4	0.3
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	19.0	5.3	16.1	5.9	3.0	0.9	0.1	7.4	1.3	0.0	1.6
Vehicles Entered	2	4	4	8	4	161	2	2	163	1	351
Vehicles Exited	2	4	4	8	4	161	2	2	163	1	351
Hourly Exit Rate	8	16	16	32	16	644	8	8	652	4	1404
Input Volume	11	21	18	33	16	630	7	13	684	3	1436
% of Volume	73	76	89	97	100	102	114	62	95	133	98

7: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access Performance by movement Entire

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	1.5	0.0	0.1	0.1	0.0	0.0	0.0	2.8	0.6	0.5	0.3
Total Delay (hr)	0.0	0.0	0.1	0.1	0.0	0.2	0.0	0.0	0.3	0.0	0.7
Total Del/Veh (s)	16.7	7.2	16.0	7.2	3.7	0.9	0.1	4.4	1.4	0.1	1.7
Vehicles Entered	10	23	17	36	15	649	7	15	700	3	1475
Vehicles Exited	10	22	16	36	15	649	7	15	700	3	1473
Hourly Exit Rate	10	22	16	36	15	649	7	15	700	3	1473
Input Volume	11	21	18	34	16	644	7	13	699	3	1467
% of Volume	89	104	88	107	92	101	100	113	100	100	100

17: Highland Highway (SR-92) Performance by movement Interval #1 5:00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.8	1.7	2.5	2.8	5.6	1.5
Denied Del/Veh (s)	2.9	1.1	2.8	0.1	0.0	0.1	109.8	111.5	117.0	189.5	188.1	198.9
Total Delay (hr)	0.2	1.5	0.1	0.6	1.3	0.1	0.9	1.1	1.3	0.7	0.8	0.2
Total Del/Veh (s)	34.3	16.0	8.0	79.7	17.0	10.3	151.2	89.8	72.4	78.9	44.3	32.9
Vehicles Entered	24	322	47	23	246	34	19	40	59	32	66	18
Vehicles Exited	23	326	48	23	251	34	15	38	56	31	65	17
Hourly Exit Rate	92	1304	192	92	1004	136	60	152	224	124	260	68
Input Volume	98	1306	196	98	1002	134	98	196	300	210	391	98
% of Volume	94	100	98	94	100	101	61	78	75	59	66	69

17: Highland Highway (SR-92) Performance by movement Interval #1 5:00

Movement	All
Denied Delay (hr)	15.0
Denied Del/Veh (s)	52.0
Total Delay (hr)	8.8
Total Del/Veh (s)	31.9
Vehicles Entered	930
Vehicles Exited	927
Hourly Exit Rate	3708
Input Volume	4127
% of Volume	90

17: Highland Highway (SR-92) Performance by movement Interval #2 5:15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.2	0.1	0.0	0.0	0.0	2.8	6.0	9.1	8.9	16.3	4.0
Denied Del/Veh (s)	4.2	2.3	4.1	0.0	0.0	0.1	325.7	322.9	323.6	405.9	403.7	404.5
Total Delay (hr)	0.3	1.6	0.1	0.5	1.3	0.1	1.5	0.9	1.3	1.0	0.8	0.1
Total Del/Veh (s)	47.1	15.7	6.5	69.5	16.2	11.1	254.1	94.0	88.9	101.0	47.6	40.2
Vehicles Entered	24	360	55	24	269	33	15	32	46	30	58	12
Vehicles Exited	25	362	53	20	266	32	15	32	47	30	58	12
Hourly Exit Rate	100	1448	212	80	1064	128	60	128	188	120	232	48
Input Volume	106	1419	213	106	1090	146	106	213	327	229	426	106
% of Volume	94	102	100	75	98	88	57	60	57	52	54	45

17: Highland Highway (SR-92) Performance by movement Interval #2 5:15

Movement	All
Denied Delay (hr)	47.4
Denied Del/Veh (s)	139.1
Total Delay (hr)	9.7
Total Del/Veh (s)	33.9
Vehicles Entered	958
Vehicles Exited	952
Hourly Exit Rate	3808
Input Volume	4487
% of Volume	85

17: Highland Highway (SR-92) Performance by movement Interval #3 5:30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	5.6	11.7	17.2	15.6	26.5	7.6
Denied Del/Veh (s)	2.9	1.2	2.8	0.1	0.0	0.1	475.9	493.7	476.1	541.1	535.4	560.1
Total Delay (hr)	0.3	1.3	0.1	0.8	1.2	0.1	1.7	1.0	1.3	0.8	0.9	0.2
Total Del/Veh (s)	44.1	13.3	7.2	85.6	15.6	11.3	290.9	103.2	90.8	87.9	52.4	42.4
Vehicles Entered	21	333	52	25	255	34	14	30	46	30	57	14
Vehicles Exited	21	324	53	28	255	35	13	30	46	31	58	14
Hourly Exit Rate	84	1296	212	112	1020	140	52	120	184	124	232	56
Input Volume	98	1306	196	98	1002	134	98	196	300	210	391	98
% of Volume	86	99	108	114	102	104	53	61	61	59	59	57

17: Highland Highway (SR-92) Performance by movement Interval #3 5:30

Movement	All
Denied Delay (hr)	84.3
Denied Del/Veh (s)	232.0
Total Delay (hr)	9.6
Total Del/Veh (s)	35.2
Vehicles Entered	911
Vehicles Exited	908
Hourly Exit Rate	3632
Input Volume	4127
% of Volume	88

17: Highland Highway (SR-92) Performance by movement Interval #4 5:45

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	7.7	15.3	24.1	21.0	35.3	10.0
Denied Del/Veh (s)	3.4	1.5	3.2	0.0	0.0	0.1	531.8	519.0	545.3	591.1	590.9	577.8
Total Delay (hr)	0.3	1.7	0.1	0.5	1.4	0.1	1.2	1.0	1.3	1.0	0.7	0.2
Total Del/Veh (s)	39.8	17.5	6.1	72.9	18.7	12.4	160.3	86.7	75.7	96.9	43.0	30.6
Vehicles Entered	23	327	48	23	248	31	19	40	57	35	57	18
Vehicles Exited	22	331	48	21	249	31	23	39	55	34	56	18
Hourly Exit Rate	88	1324	192	84	996	124	92	156	220	136	224	72
Input Volume	98	1306	196	98	1002	134	98	196	300	210	391	98
% of Volume	90	101	98	86	99	93	94	80	73	65	57	73

17: Highland Highway (SR-92) Performance by movement Interval #4 5:45

Movement	All
Denied Delay (hr)	113.5
Denied Del/Veh (s)	287.0
Total Delay (hr)	9.6
Total Del/Veh (s)	34.3
Vehicles Entered	926
Vehicles Exited	927
Hourly Exit Rate	3708
Input Volume	4127
% of Volume	90

17: Highland Highway (SR-92) Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.6	0.2	0.0	0.0	0.0	16.8	34.6	52.9	48.4	83.6	23.1
Denied Del/Veh (s)	3.3	1.6	3.3	0.0	0.0	0.1	604.8	602.1	613.9	788.4	760.1	784.9
Total Delay (hr)	1.1	6.0	0.4	2.4	5.3	0.5	5.3	4.0	5.2	3.6	3.3	0.6
Total Del/Veh (s)	42.6	16.0	7.1	88.3	18.2	12.2	272.8	100.6	87.7	98.3	48.9	37.6
Vehicles Entered	93	1341	202	95	1018	133	67	141	208	128	238	62
Vehicles Exited	92	1343	203	92	1022	132	66	140	204	125	237	62
Hourly Exit Rate	92	1343	203	92	1022	132	66	140	204	125	237	62
Input Volume	100	1334	200	100	1024	137	100	200	307	215	400	100
% of Volume	92	101	101	92	100	96	66	70	67	58	59	62

17: Highland Highway (SR-92) Performance by movement Entire Run

Movement	All
Denied Delay (hr)	260.3
Denied Del/Veh (s)	221.8
Total Delay (hr)	37.6
Total Del/Veh (s)	35.7
Vehicles Entered	3726
Vehicles Exited	3718
Hourly Exit Rate	3718
Input Volume	4217
% of Volume	88

22: Highland Highway (SR-92) Performance by movement Interval #1 5:00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.1
Denied Del/Veh (s)	0.1	0.0	0.1	2.4	0.2	2.3	8.6	6.6	9.1	3.5	1.6	3.4
Total Delay (hr)	0.8	2.5	0.4	3.0	1.5	0.1	0.6	0.5	0.1	0.5	0.1	0.2
Total Del/Veh (s)	67.5	30.4	13.9	261.1	34.2	9.1	34.1	20.6	12.0	37.7	17.8	7.5
Vehicles Entered	41	282	106	38	147	23	64	72	36	47	26	93
Vehicles Exited	38	272	106	21	133	23	67	78	36	50	27	94
Hourly Exit Rate	152	1088	424	84	532	92	268	312	144	200	108	376
Input Volume	181	1210	475	147	585	98	245	294	147	196	98	387
% of Volume	84	90	89	57	91	94	109	106	98	102	110	97

22: Highland Highway (SR-92) Performance by movement Interval #1 5:00

Movement	All
Denied Delay (hr)	0.6
Denied Del/Veh (s)	2.1
Total Delay (hr)	10.4
Total Del/Veh (s)	36.4
Vehicles Entered	975
Vehicles Exited	945
Hourly Exit Rate	3780
Input Volume	4063
% of Volume	93

22: Highland Highway (SR-92) Performance by movement Interval #2 5:15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.0	0.1	2.4	0.6	2.2	3.9	2.3	4.0	3.4	1.6	3.4
Total Delay (hr)	0.8	2.2	0.4	7.6	3.6	0.3	0.5	0.6	0.2	0.8	0.1	0.3
Total Del/Veh (s)	60.1	25.3	12.0	457.7	71.5	40.4	29.5	25.7	14.0	51.6	20.8	11.3
Vehicles Entered	42	288	108	40	161	27	64	82	40	54	21	105
Vehicles Exited	44	306	109	21	160	26	60	78	39	48	20	103
Hourly Exit Rate	176	1224	436	84	640	104	240	312	156	192	80	412
Input Volume	197	1316	516	160	636	106	266	319	160	213	106	420
% of Volume	89	93	84	52	101	98	90	98	98	90	75	98

22: Highland Highway (SR-92) Performance by movement Interval #2 5:15

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	1.4
Total Delay (hr)	17.5
Total Del/Veh (s)	56.2
Vehicles Entered	1032
Vehicles Exited	1014
Hourly Exit Rate	4056
Input Volume	4415
% of Volume	92

22: Highland Highway (SR-92) Performance by movement Interval #3 5:30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.2	7.1	6.7	6.9	4.9	2.6	5.6	4.6	2.5	4.4
Total Delay (hr)	1.0	2.3	0.4	12.0	4.3	0.3	0.5	0.5	0.1	0.7	0.1	0.3
Total Del/Veh (s)	82.7	28.4	11.9	570.4	89.0	40.1	30.0	22.3	11.4	46.7	19.7	10.4
Vehicles Entered	41	275	112	37	152	27	61	74	37	49	24	93
Vehicles Exited	40	257	112	20	142	26	64	78	38	55	25	95
Hourly Exit Rate	160	1028	448	80	568	104	256	312	152	220	100	380
Input Volume	181	1210	475	147	585	98	245	294	147	196	98	387
% of Volume	88	85	94	54	97	106	104	106	103	112	102	98

22: Highland Highway (SR-92) Performance by movement Interval #3 5:30

Movement	All
Denied Delay (hr)	0.8
Denied Del/Veh (s)	2.9
Total Delay (hr)	22.7
Total Del/Veh (s)	74.9
Vehicles Entered	982
Vehicles Exited	952
Hourly Exit Rate	3808
Input Volume	4063
% of Volume	94

22: Highland Highway (SR-92) Performance by movement Interval #4 5:45

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.7	2.7	0.5	0.1	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.0	0.1	62.0	64.7	67.0	3.5	1.7	3.6	3.8	2.0	3.8
Total Delay (hr)	0.7	2.0	0.4	15.4	3.8	0.3	0.6	0.5	0.1	0.7	0.2	0.3
Total Del/Veh (s)	58.3	23.3	11.1	621.6	87.7	36.5	33.3	23.3	12.3	47.1	23.9	10.9
Vehicles Entered	39	277	109	33	124	23	61	74	37	51	26	100
Vehicles Exited	42	293	111	23	141	25	56	69	37	48	24	99
Hourly Exit Rate	168	1172	444	92	564	100	224	276	148	192	96	396
Input Volume	181	1210	475	147	585	98	245	294	147	196	98	387
% of Volume	93	97	93	63	96	102	91	94	101	98	98	102

22: Highland Highway (SR-92) Performance by movement Interval #4 5:45

Movement	All
Denied Delay (hr)	4.2
Denied Del/Veh (s)	15.2
Total Delay (hr)	24.8
Total Del/Veh (s)	81.8
Vehicles Entered	954
Vehicles Exited	968
Hourly Exit Rate	3872
Input Volume	4063
% of Volume	95

22: Highland Highway (SR-92) Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.8	3.0	0.6	0.4	0.3	0.2	0.2	0.1	0.4
Denied Del/Veh (s)	0.1	0.0	0.1	18.7	17.7	20.5	5.3	3.2	5.5	3.8	1.9	3.8
Total Delay (hr)	3.4	9.0	1.6	38.1	13.1	1.0	2.3	2.0	0.5	2.7	0.6	1.1
Total Del/Veh (s)	73.2	28.4	12.7	908.0	80.1	34.7	32.7	23.5	12.5	48.0	20.9	10.3
Vehicles Entered	163	1122	435	147	584	101	250	302	151	201	97	391
Vehicles Exited	164	1127	437	85	576	101	248	303	150	200	97	392
Hourly Exit Rate	164	1127	437	85	576	101	248	303	150	200	97	392
Input Volume	185	1236	485	150	598	100	250	300	150	200	100	395
% of Volume	89	91	90	57	96	101	99	101	100	100	97	99

22: Highland Highway (SR-92) Performance by movement Entire Run

Movement	All
Denied Delay (hr)	6.0
Denied Del/Veh (s)	5.4
Total Delay (hr)	75.4
Total Del/Veh (s)	67.8
Vehicles Entered	3944
Vehicles Exited	3880
Hourly Exit Rate	3880
Input Volume	4151
% of Volume	93

Total Network Performance By Interval

Interval Start	5:00	5:15	5:30	5:45	All
Denied Delay (hr)	15.7	47.9	85.2	117.8	266.5
Denied Del/Veh (s)	33.2	88.3	155.1	201.9	138.0
Total Delay (hr)	22.9	31.3	35.9	38.0	128.1
Total Del/Veh (s)	45.6	59.1	68.9	74.4	69.5
Vehicles Entered	1589	1681	1579	1566	6419
Vehicles Exited	1577	1610	1605	1538	6336
Hourly Exit Rate	6308	6440	6420	6152	6336
Input Volume	24217	26311	24217	24217	24740
% of Volume	26	24	27	25	26

Intersection: 1: Town Center Boulevard & Highland Highway (SR-92), Interval #1

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	L	T	LR
Maximum Queue (ft)	3	4	58	2	124
Average Queue (ft)	0	1	27	0	66
95th Queue (ft)	7	8	70	4	131
Link Distance (ft)	211	211		1044	409
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			185		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 1: Town Center Boulevard & Highland Highway (SR-92), Interval #2

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	L	T	LR
Maximum Queue (ft)	6	4	50	6	114
Average Queue (ft)	1	0	22	1	58
95th Queue (ft)	12	0	55	11	120
Link Distance (ft)	211	211		1044	409
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			185		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 1: Town Center Boulevard & Highland Highway (SR-92), Interval #3

Movement	EB	B20	WB	WB	NB
Directions Served	T	T	L	T	LR
Maximum Queue (ft)	6	3	59	11	104
Average Queue (ft)	1	0	25	2	60
95th Queue (ft)	12	7	63	17	114
Link Distance (ft)	211	2870		1044	409
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			185		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 1: Town Center Boulevard & Highland Highway (SR-92), Interval #4

Movement	EB	WB	WB	NB
Directions Served	T	L	T	LR
Maximum Queue (ft)	2	53	18	120
Average Queue (ft)	0	23	3	60
95th Queue (ft)	5	58	37	138
Link Distance (ft)	211		1044	409
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		185		
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

Intersection: 1: Town Center Boulevard & Highland Highway (SR-92), All Intervals

Movement	EB	EB	B20	WB	WB	NB
Directions Served	T	TR	T	L	T	LR
Maximum Queue (ft)	17	4	3	82	30	161
Average Queue (ft)	1	0	0	24	1	61
95th Queue (ft)	9	4	3	62	21	127
Link Distance (ft)	211	211	2870		1044	409
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				185		
Storage Blk Time (%)					0	
Queuing Penalty (veh)					0	

Intersection: 2: Town Center Boulevard & Toscana Access/Town Square Access, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	33	3	3
Average Queue (ft)	16	13	0	1
95th Queue (ft)	41	38	6	9
Link Distance (ft)	445	1009	322	409
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Town Center Boulevard & Toscana Access/Town Square Access, Interval #2

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	30	3
Average Queue (ft)	11	13	0
95th Queue (ft)	35	38	6
Link Distance (ft)	445	1009	409
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Town Center Boulevard & Toscana Access/Town Square Access, Interval #3

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	30	33	9
Average Queue (ft)	15	17	1
95th Queue (ft)	40	43	12
Link Distance (ft)	445	1009	409
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Town Center Boulevard & Toscana Access/Town Square Access, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	28	37	3	3
Average Queue (ft)	15	13	0	0
95th Queue (ft)	40	39	6	7
Link Distance (ft)	445	1009	322	409
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Town Center Boulevard & Toscana Access/Town Square Access, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	42	6	12
Average Queue (ft)	14	14	0	1
95th Queue (ft)	39	40	4	9
Link Distance (ft)	445	1009	322	409
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: 10890 North/10890 North & Town Center Boulevard, Interval #1

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	38	31
Average Queue (ft)	25	17
95th Queue (ft)	50	42
Link Distance (ft)	221	130
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 10890 North/10890 North & Town Center Boulevard, Interval #2

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	43	31
Average Queue (ft)	23	20
95th Queue (ft)	50	44
Link Distance (ft)	221	130
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 10890 North/10890 North & Town Center Boulevard, Interval #3

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	36	36
Average Queue (ft)	22	21
95th Queue (ft)	47	45
Link Distance (ft)	221	130
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 10890 North/10890 North & Town Center Boulevard, Interval #4

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	39	33
Average Queue (ft)	22	18
95th Queue (ft)	48	43
Link Distance (ft)	221	130
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 10890 North/10890 North & Town Center Boulevard, All Intervals

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	46	38
Average Queue (ft)	23	19
95th Queue (ft)	49	44
Link Distance (ft)	221	130
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: 5400 West/5400 West & Parkway Drive , Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	28
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 5400 West/5400 West & Parkway Drive , Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	25
Average Queue (ft)	7
95th Queue (ft)	29
Link Distance (ft)	783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 5400 West/5400 West & Parkway Drive , Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	27
Average Queue (ft)	7
95th Queue (ft)	27
Link Distance (ft)	783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 5400 West/5400 West & Parkway Drive , Interval #4

Movement	WB
Directions Served	LR
Maximum Queue (ft)	28
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 5400 West/5400 West & Parkway Drive , All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	783
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: 5400 West & Park Access, Interval #1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: 5400 West & Park Access, Interval #2

Movement	NB
Directions Served	LT
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	7
Link Distance (ft)	667
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: 5400 West & Park Access, Interval #3

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: 5400 West & Park Access, Interval #4

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: 5400 West & Park Access, All Intervals

Movement	NB
Directions Served	LT
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	3
Link Distance (ft)	667
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Alpine Highway (SR-74) & Parkway Drive , Interval #1

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	43	26
Average Queue (ft)	25	9
95th Queue (ft)	50	29
Link Distance (ft)	783	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Alpine Highway (SR-74) & Parkway Drive , Interval #2

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	69	30
Average Queue (ft)	35	11
95th Queue (ft)	71	33
Link Distance (ft)	783	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Alpine Highway (SR-74) & Parkway Drive , Interval #3

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	57	27
Average Queue (ft)	26	11
95th Queue (ft)	59	32
Link Distance (ft)	783	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Alpine Highway (SR-74) & Parkway Drive , Interval #4

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	47	30
Average Queue (ft)	25	11
95th Queue (ft)	53	33
Link Distance (ft)	783	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Alpine Highway (SR-74) & Parkway Drive , All Intervals

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	73	34
Average Queue (ft)	28	10
95th Queue (ft)	59	32
Link Distance (ft)	783	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access, Interval #1

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	L	L
Maximum Queue (ft)	24	35	51	22	19
Average Queue (ft)	10	16	32	4	4
95th Queue (ft)	33	42	55	19	19
Link Distance (ft)		1009	326		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	65			80	80
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 7: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access, Interval #2

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	L	L
Maximum Queue (ft)	31	39	50	23	28
Average Queue (ft)	10	17	31	6	8
95th Queue (ft)	35	45	56	23	30
Link Distance (ft)		1009	326		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	65			80	80
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			

Intersection: 7: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access, Interval #3

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	L	L
Maximum Queue (ft)	32	40	62	23	27
Average Queue (ft)	9	20	35	5	7
95th Queue (ft)	33	48	68	21	27
Link Distance (ft)		1009	326		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	65			80	80
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 7: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access, Interval #4

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	L	L
Maximum Queue (ft)	32	31	49	20	28
Average Queue (ft)	9	14	28	5	6
95th Queue (ft)	32	39	57	22	26
Link Distance (ft)		1009	326		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	65			80	80
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

Intersection: 7: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access, All Intervals

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	L	L
Maximum Queue (ft)	40	49	68	31	33
Average Queue (ft)	9	17	31	5	6
95th Queue (ft)	33	44	60	21	26
Link Distance (ft)		1009	326		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	65			80	80
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			

Intersection: 17: Highland Highway (SR-92), Interval #1

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	193	389	379	206	159	317	327	204	200	286	139	130
Average Queue (ft)	72	239	182	62	87	173	181	54	111	267	94	120
95th Queue (ft)	174	441	402	182	177	346	350	174	226	301	166	171
Link Distance (ft)		385	385			2870	2870		254	254	115	115
Upstream Blk Time (%)		6	2						1	74	38	62
Queuing Penalty (veh)		0	0						0	0	0	0
Storage Bay Dist (ft)	150			150	120			120				
Storage Blk Time (%)	0	16	11	0	9	13	16					
Queuing Penalty (veh)	0	16	22	2	45	13	22					

Intersection: 17: Highland Highway (SR-92), Interval #2

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	176	402	387	196	171	370	389	165	209	281	140	132
Average Queue (ft)	80	250	197	67	88	164	170	44	154	253	109	114
95th Queue (ft)	186	446	412	201	174	347	354	150	312	343	168	177
Link Distance (ft)		385	385			2870	2870		254	254	115	115
Upstream Blk Time (%)		8	5						20	74	53	58
Queuing Penalty (veh)		0	0						0	0	0	0
Storage Bay Dist (ft)	150			150	120			120				
Storage Blk Time (%)	3	16	10		10	11	13					
Queuing Penalty (veh)	23	17	21		51	12	19					

Intersection: 17: Highland Highway (SR-92), Interval #3

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	163	362	337	166	193	324	331	154	229	290	134	136
Average Queue (ft)	67	205	165	57	116	164	164	47	170	254	100	123
95th Queue (ft)	153	375	344	166	216	349	348	159	323	349	164	158
Link Distance (ft)		385	385			2870	2870		254	254	115	115
Upstream Blk Time (%)		3	2						29	72	40	64
Queuing Penalty (veh)		0	0						0	0	0	0
Storage Bay Dist (ft)	150			150	120			120				
Storage Blk Time (%)	2	13	8		22	10	11					
Queuing Penalty (veh)	12	12	16		105	10	15					

Intersection: 17: Highland Highway (SR-92), Interval #4

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	212	391	383	215	185	366	377	174	203	285	146	138
Average Queue (ft)	78	248	192	70	94	167	178	58	143	265	122	107
95th Queue (ft)	195	447	408	202	190	361	369	183	289	326	165	181
Link Distance (ft)		385	385			2870	2870		254	254	115	115
Upstream Blk Time (%)		7	4						14	78	64	49
Queuing Penalty (veh)		0	0						0	0	0	0
Storage Bay Dist (ft)	150			150	120			120				
Storage Blk Time (%)	0	18	12		12	13	16	0				
Queuing Penalty (veh)	2	18	23		58	13	21	0				

Intersection: 17: Highland Highway (SR-92), All Intervals

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	249	408	406	250	214	471	487	220	257	302	160	141
Average Queue (ft)	74	236	184	64	96	167	174	51	144	260	106	116
95th Queue (ft)	178	430	393	188	191	351	356	167	293	335	169	175
Link Distance (ft)		385	385			2870	2870		254	254	115	115
Upstream Blk Time (%)		6	3						16	74	49	58
Queuing Penalty (veh)		0	0						0	0	0	0
Storage Bay Dist (ft)	150			150	120			120				
Storage Blk Time (%)	1	16	10	0	13	12	14	0				
Queuing Penalty (veh)	9	16	20	0	65	12	19	0				

Intersection: 22: Highland Highway (SR-92), Interval #1

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	288	504	543	290	239	555	536	53	204	237	130	188
Average Queue (ft)	155	288	308	176	202	343	303	22	155	167	60	120
95th Queue (ft)	311	514	557	364	287	671	649	52	237	265	151	193
Link Distance (ft)		1044	1044			1817	1817			232		
Upstream Blk Time (%)									1	5	0	
Queuing Penalty (veh)									0	0	0	
Storage Bay Dist (ft)	140			140	140			140	120		120	120
Storage Blk Time (%)	15	29	32	2	74	7	2		20	11	1	8
Queuing Penalty (veh)	89	52	153	14	217	10	2		89	44	5	39

Intersection: 22: Highland Highway (SR-92), Interval #1

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	166	127
Average Queue (ft)	74	79
95th Queue (ft)	181	146
Link Distance (ft)	354	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)	0	2
Queuing Penalty (veh)	2	5

Intersection: 22: Highland Highway (SR-92), Interval #2

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	274	491	545	290	240	1187	1143	111	215	242	198	199
Average Queue (ft)	161	311	334	169	235	867	824	36	146	166	80	132
95th Queue (ft)	302	492	533	349	251	1508	1442	117	233	271	199	215
Link Distance (ft)		1044	1044			1817	1817			232		
Upstream Blk Time (%)						2	1		0	3	0	
Queuing Penalty (veh)						0	0		0	0	0	
Storage Bay Dist (ft)	140			140	140			140	120		120	120
Storage Blk Time (%)	15	25	29	2	99	8	5	0	12	16	1	21
Queuing Penalty (veh)	93	49	150	11	316	13	5	0	59	68	6	112

Intersection: 22: Highland Highway (SR-92), Interval #2

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	235	143
Average Queue (ft)	82	96
95th Queue (ft)	224	159
Link Distance (ft)	354	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		120
Storage Blk Time (%)	0	6
Queuing Penalty (veh)	1	20

Intersection: 22: Highland Highway (SR-92), Interval #3

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	264	418	453	289	240	1493	1459	114	188	220	157	186
Average Queue (ft)	161	274	288	165	238	1288	1249	34	141	164	70	130
95th Queue (ft)	308	469	504	349	244	1894	1874	101	213	249	165	214
Link Distance (ft)		1044	1044			1817	1817			232		
Upstream Blk Time (%)						11	6		1	4	0	
Queuing Penalty (veh)						0	0		0	0	0	
Storage Bay Dist (ft)	140			140	140			140	120		120	120
Storage Blk Time (%)	26	26	29	1	100	9	6		14	13	0	19
Queuing Penalty (veh)	152	47	139	7	291	13	6		61	51	2	90

Intersection: 22: Highland Highway (SR-92), Interval #3

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	242	130
Average Queue (ft)	113	80
95th Queue (ft)	297	146
Link Distance (ft)	354	
Upstream Blk Time (%)	2	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		120
Storage Blk Time (%)	1	3
Queuing Penalty (veh)	3	9

Intersection: 22: Highland Highway (SR-92), Interval #4

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	264	393	413	288	240	1667	1629	70	198	219	155	198
Average Queue (ft)	145	280	302	185	238	1542	1507	27	128	138	63	121
95th Queue (ft)	274	429	460	361	244	2028	2010	79	213	243	158	214
Link Distance (ft)		1044	1044			1817	1817			232		
Upstream Blk Time (%)						32	20		0	2	0	
Queuing Penalty (veh)						0	0		0	0	0	
Storage Bay Dist (ft)	140			140	140			140	120		120	120
Storage Blk Time (%)	13	21	26	2	100	7	5		14	11	0	19
Queuing Penalty (veh)	78	38	121	9	291	10	5		62	45	1	92

Intersection: 22: Highland Highway (SR-92), Interval #4

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	234	140
Average Queue (ft)	95	85
95th Queue (ft)	253	152
Link Distance (ft)	354	
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		120
Storage Blk Time (%)	0	6
Queuing Penalty (veh)	3	17

Intersection: 22: Highland Highway (SR-92), All Intervals

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	290	578	622	290	240	1674	1631	171	215	252	220	218
Average Queue (ft)	155	288	308	174	228	1010	971	30	142	159	68	126
95th Queue (ft)	299	480	518	356	279	1928	1894	91	226	259	170	210
Link Distance (ft)		1044	1044			1817	1817			232		
Upstream Blk Time (%)						11	7		0	3	0	
Queuing Penalty (veh)						0	0		0	0	0	
Storage Bay Dist (ft)	140			140	140			140	120		120	120
Storage Blk Time (%)	17	25	29	2	93	8	4	0	15	13	1	17
Queuing Penalty (veh)	103	47	141	10	279	12	4	0	68	52	3	84

Intersection: 22: Highland Highway (SR-92), All Intervals

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	316	144
Average Queue (ft)	91	85
95th Queue (ft)	243	152
Link Distance (ft)	354	
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		120
Storage Blk Time (%)	0	4
Queuing Penalty (veh)	2	13

Network Summary

Network wide Queuing Penalty, Interval #1: 841
Network wide Queuing Penalty, Interval #2: 1047
Network wide Queuing Penalty, Interval #3: 1042
Network wide Queuing Penalty, Interval #4: 906
Network wide Queuing Penalty, All Intervals: 959

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SimTraffic LOS Report

Project: **Highland - Blackstone TIS**
Analysis Period: ***Existing (2015) Plus Project Conditions***
Time Period: ***p.m. Peak Hour*** **Project #:** ***UT15-763***

Intersection: **Town Center Boulevard & Highland Highway (SR-92)**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	L	33	32	98	114.8	*F*
	T	17	17	99	0.6	*A*
	R	38	38	101	84.9	*F*
	Subtotal	***88***	***87***	***99***	***79.4***	***F***
EB	T	1,860	1,672	90	2.4	*A*
	R	34	32	95	0.4	*A*
	Subtotal	1,894	1,704	90	2.4	*A*
WB	L	34	30	89	42.5	*E*
	T	1,233	1,196	97	8.3	*A*
	Subtotal	1,267	1,226	97	9.1	*A*
Total		3,248	3,017	93	7.4	*A*

Intersection: **Town Center Boulevard & Toscana Access/Town Square Access**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	L	3	3	100	2.0	*A*
	T	56	59	105	0.5	*A*
	R	8	10	121	0.4	*A*
	Subtotal	67	72	107	0.5	*A*
SB	L	14	13	91	2.1	*A*
	T	48	44	92	0.7	*A*
	R	7	6	86	0.5	*A*
	Subtotal	69	63	91	1.0	*A*
EB	L	14	13	91	4.5	*A*
	T	3	2	67	5.3	*A*
	R	3	4	133	2.8	*A*
	Subtotal	***20***	***19***	***95***	***4.2***	***A***
WB	L	4	3	75	5.1	*A*
	T	2	2	100	6.0	*A*
	R	16	15	92	3.1	*A*
	Subtotal	22	20	91	3.7	*A*
Total		179	174	97	1.5	*A*

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SimTraffic LOS Report

Project: **Highland - Blackstone TIS**
Analysis Period: ***Existing (2015) Plus Project Conditions***
Time Period: ***p.m. Peak Hour*** **Project #:** ***UT15-763***

Intersection: **10890 North/10890 North & Town Center Boulevard**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
SB	L	13	11	83	0.4	*A*
	R	56	53	94	0.3	*A*
	Subtotal	69	64	93	0.3	*A*
EB	L	34	36	107	4.0	*A*
	T	6	6	100	4.5	*A*
	Subtotal	***40***	***42***	***105***	***4.1***	***A***
WB	T	4	4	94	4.8	*A*
	R	23	23	99	2.9	*A*
	Subtotal	27	27	100	3.2	*A*
Total		137	133	97	2.1	*A*

Intersection: **5400 West/5400 West & Parkway Drive**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	20	19	97	0.1	*A*
	R	6	6	100	0.0	*A*
	Subtotal	26	25	96	0.1	*A*
SB	L	5	4	80	1.2	*A*
	T	14	13	91	0.0	*A*
	Subtotal	19	17	89	0.3	*A*
WB	L	2	2	100	3.7	*A*
	R	8	8	97	2.9	*A*
	Subtotal	***10***	***10***	***100***	***3.1***	***A***
Total		55	52	95	0.7	*A*

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SimTraffic LOS Report

Project: **Highland - Blackstone TIS**
Analysis Period: ***Existing (2015) Plus Project Conditions***
Time Period: ***p.m. Peak Hour*** **Project #:** ***UT15-763***

Intersection: **5400 West & Park Access/West Access**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	6	6	100	1.4	*A*
	T	24	22	93	0.1	*A*
	R	4	4	100	0.0	*A*
	Subtotal	34	32	94	0.3	*A*
SB	L	2	2	100	1.2	*A*
	T	13	12	91	0.1	*A*
	R	1	1	100	0.0	*A*
	Subtotal	16	15	94	0.2	*A*
WB	L	2	1	50	4.2	*A*
	R	1	2	200	2.3	*A*
	Subtotal	***3***	***3***	***100***	***2.9***	***A***
Total		53	50	94	0.4	*A*

Intersection: **Southwest Access & Parkway Drive**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	1	1	100	3.0	*A*
	R	4	4	100	3.2	*A*
	Subtotal	***5***	***5***	***100***	***3.2***	***A***
SB	L	1	0	0		
	R	2	3	150	2.7	*A*
	Subtotal	3	3	100	2.7	*A*
EB	L	3	2	67	1.8	*A*
	T	4	4	100	0.1	*A*
	R	4	4	100	0.1	*A*
	Subtotal	11	10	91	0.4	*A*
WB	L	4	2	50	1.7	*A*
	T	56	58	103	0.3	*A*
	R	6	7	117	0.3	*A*
	Subtotal	66	67	102	0.3	*A*
Total		86	85	99	0.6	*A*

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SimTraffic LOS Report

Project: **Highland - Blackstone TIS**
Analysis Period: ***Existing (2015) Plus Project Conditions***
Time Period: ***p.m. Peak Hour*** **Project #:** ***UT15-763***

Intersection: **Alpine Highway (SR-74) & Parkway Drive**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	28	28	101	4.2	*A*
	T	636	633	100	0.9	*A*
	Subtotal	664	661	100	1.0	*A*
SB	T	706	712	101	2.0	*A*
	R	39	39	101	0.9	*A*
	Subtotal	745	751	101	1.9	*A*
EB	L	36	36	101	25.4	*D*
	R	7	9	129	9.2	*A*
	Subtotal	***43***	***45***	***105***	***22.2***	***C***
Total		1,451	1,457	100	2.1	*A*

Intersection: **Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	17	16	93	4.2	*A*
	T	647	649	100	0.9	*A*
	R	7	6	86	0.2	*A*
	Subtotal	671	671	100	1.0	*A*
SB	L	13	12	91	3.6	*A*
	T	703	712	101	1.6	*A*
	R	9	9	97	0.1	*A*
	Subtotal	725	733	101	1.6	*A*
EB	L	15	14	92	15.3	*C*
	T	1	1	100	0.0	*A*
	R	22	23	103	7.2	*A*
	Subtotal	38	38	100	10.0	*A*
WB	L	18	15	82	17.9	*C*
	R	34	34	101	7.3	*A*
	Subtotal	***52***	***49***	***94***	***10.5***	***B***
Total		1,488	1,491	100	1.8	*A*

HALES ENGINEERING
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SimTraffic LOS Report

Project: **Highland - Blackstone TIS**
Analysis Period: ***Existing (2015) Plus Project Conditions***
Time Period: ***p.m. Peak Hour*** **Project #:** ***UT15-763***

Intersection: **Northeast Access & Town Square Access**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	3	2	67	4.1	*A*
	R	5	5	100	2.8	*A*
	Subtotal	***8***	***7***	***88***	***3.2***	***A***
EB	T	32	30	94	0.2	*A*
	R	7	7	100	0.1	*A*
	Subtotal	39	37	95	0.2	*A*
WB	L	7	6	86	1.9	*A*
	T	20	19	97	0.3	*A*
	Subtotal	27	25	93	0.7	*A*
Total		73	69	94	0.7	*A*

Intersection:
Type:

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
Total						

1: Town Center Boulevard & Highland Highway (SR-92) Performance by movement Interval #1 5:00

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.1	0.6	0.2	0.0	0.2	1.4
Total Del/Veh (s)	2.3	0.4	45.1	7.4	85.8	0.3	70.1	6.8
Vehicles Entered	407	8	8	296	9	4	9	741
Vehicles Exited	410	8	8	298	9	4	9	746
Hourly Exit Rate	1640	32	32	1192	36	16	36	2984
Input Volume	1820	33	33	1207	32	17	37	3179
% of Volume	90	97	97	99	112	94	97	94

1: Town Center Boulevard & Highland Highway (SR-92) Performance by movement Interval #2 5:15

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.1	0.8	0.4	0.0	0.3	1.8
Total Del/Veh (s)	2.4	0.4	35.9	8.4	128.6	0.4	111.7	8.3
Vehicles Entered	431	8	8	321	9	4	11	792
Vehicles Exited	429	8	8	317	8	5	10	785
Hourly Exit Rate	1716	32	32	1268	32	20	40	3140
Input Volume	1978	36	36	1312	35	18	40	3455
% of Volume	87	89	89	97	91	111	100	91

1: Town Center Boulevard & Highland Highway (SR-92) Performance by movement Interval #3 5:30

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.1	0.7	0.2	0.0	0.2	1.6
Total Del/Veh (s)	2.3	0.4	34.6	8.6	112.5	1.7	80.1	7.3
Vehicles Entered	416	8	7	299	6	4	9	749
Vehicles Exited	418	7	7	304	7	4	10	757
Hourly Exit Rate	1672	28	28	1216	28	16	40	3028
Input Volume	1820	33	33	1207	32	17	37	3179
% of Volume	92	85	85	101	88	94	108	95

1: Town Center Boulevard & Highland Highway (SR-92) Performance by movement Interval #4 5:45

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.3	0.0	0.1	0.7	0.2	0.0	0.2	1.4
Total Del/Veh (s)	2.4	0.6	45.0	8.3	82.8	0.3	57.9	6.8
Vehicles Entered	414	8	7	278	8	4	10	729
Vehicles Exited	415	8	7	276	8	4	9	727
Hourly Exit Rate	1660	32	28	1104	32	16	36	2908
Input Volume	1820	33	33	1207	32	17	37	3179
% of Volume	91	97	85	91	100	94	97	91

1: Town Center Boulevard & Highland Highway (SR-92) Performance by movement Entire Run

Movement	EBT	EBR	WBL	WBT	NBL	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.1	0.0	0.4	2.8	1.1	0.0	0.9	6.2
Total Del/Veh (s)	2.4	0.4	42.5	8.3	114.8	0.6	84.9	7.4
Vehicles Entered	1668	32	30	1195	32	17	38	3012
Vehicles Exited	1672	32	30	1196	32	17	38	3017
Hourly Exit Rate	1672	32	30	1196	32	17	38	3017
Input Volume	1860	34	34	1233	33	17	38	3248
% of Volume	90	95	89	97	98	99	101	93

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1			0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.9			5.7	5.6	2.7		0.5	0.3	2.0	0.7	0.5
Vehicles Entered	4	0	0	1	1	5	0	14	3	4	11	1
Vehicles Exited	4	0	0	1	1	4	0	14	3	4	11	1
Hourly Exit Rate	16	0	0	4	4	16	0	56	12	16	44	4
Input Volume	14	3	3	4	2	16	3	55	8	14	47	7
% of Volume	114	0	0	100	200	100	0	102	150	114	94	57

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.0
Total Del/Veh (s)	1.7
Vehicles Entered	44
Vehicles Exited	43
Hourly Exit Rate	172
Input Volume	176
% of Volume	98

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.8	3.0	2.7	2.9	3.2	3.2	1.2	0.4	0.4	1.5	0.7	0.5
Vehicles Entered	3	1	1	1	1	4	1	16	4	2	12	2
Vehicles Exited	3	1	1	1	1	4	1	17	4	2	12	2
Hourly Exit Rate	12	4	4	4	4	16	4	68	16	8	48	8
Input Volume	15	3	3	4	2	17	3	60	9	15	51	7
% of Volume	80	133	133	100	200	94	133	113	178	53	94	114

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.0
Total Del/Veh (s)	1.3
Vehicles Entered	48
Vehicles Exited	49
Hourly Exit Rate	196
Input Volume	189
% of Volume	104

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.0		0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.3	3.3	3.1	2.6		2.9	2.1	0.4	0.4	1.7	0.5	0.7
Vehicles Entered	3	1	1	1	0	3	1	13	2	3	11	1
Vehicles Exited	3	1	1	1	0	3	1	13	2	3	11	1
Hourly Exit Rate	12	4	4	4	0	12	4	52	8	12	44	4
Input Volume	14	3	3	4	2	16	3	55	8	14	47	7
% of Volume	86	133	133	100	0	75	133	95	100	86	94	57

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.0
Total Del/Veh (s)	1.3
Vehicles Entered	40
Vehicles Exited	40
Hourly Exit Rate	160
Input Volume	176
% of Volume	91

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1		0.1	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.3		3.3	4.1		2.8	1.9	0.5	0.4	2.3	0.8	0.4
Vehicles Entered	3	0	1	1	0	3	1	15	2	4	10	2
Vehicles Exited	3	0	1	1	0	4	1	15	2	4	10	2
Hourly Exit Rate	12	0	4	4	0	16	4	60	8	16	40	8
Input Volume	14	3	3	4	2	16	3	55	8	14	47	7
% of Volume	86	0	133	100	0	100	133	109	100	114	85	114

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Interval

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.0
Total Del/Veh (s)	1.5
Vehicles Entered	42
Vehicles Exited	43
Hourly Exit Rate	172
Input Volume	176
% of Volume	98

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Entire Ru

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.5	5.3	2.8	5.1	6.0	3.1	2.0	0.5	0.4	2.1	0.7	0.5
Vehicles Entered	13	2	4	3	2	15	3	58	10	13	44	6
Vehicles Exited	13	2	4	3	2	15	3	59	10	13	44	6
Hourly Exit Rate	13	2	4	3	2	15	3	59	10	13	44	6
Input Volume	14	3	3	4	2	16	3	56	8	14	48	7
% of Volume	91	67	133	75	100	92	100	105	121	91	92	86

2: Town Center Boulevard & Toscana Access/Town Square Access Performance by movement Entire Ru

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	0.1
Total Del/Veh (s)	1.5
Vehicles Entered	173
Vehicles Exited	174
Hourly Exit Rate	174
Input Volume	179
% of Volume	97

3: 10890 North/10890 North & Town Center Boulevard Performance by movement Interval #1 5:00

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.1	6.5	4.8	2.7	0.4	0.2	2.1
Vehicles Entered	8	1	1	6	2	12	30
Vehicles Exited	8	1	1	6	2	12	30
Hourly Exit Rate	32	4	4	24	8	48	120
Input Volume	33	6	4	23	13	55	134
% of Volume	97	67	100	104	62	87	90

3: 10890 North/10890 North & Town Center Boulevard Performance by movement Interval #2 5:15

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.0	4.9	3.5	2.8	0.2	0.3	2.0
Vehicles Entered	10	1	1	7	4	16	39
Vehicles Exited	10	1	1	7	3	16	38
Hourly Exit Rate	40	4	4	28	12	64	152
Input Volume	36	6	5	24	14	60	145
% of Volume	111	67	80	117	86	107	105

3: 10890 North/10890 North & Town Center Boulevard Performance by movement Interval #3 5:30

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.2	3.9	5.5	2.7	0.4	0.3	2.0
Vehicles Entered	8	2	1	5	3	13	32
Vehicles Exited	8	2	1	5	3	13	32
Hourly Exit Rate	32	8	4	20	12	52	128
Input Volume	33	6	4	23	13	55	134
% of Volume	97	133	100	87	92	95	96

3: 10890 North/10890 North & Town Center Boulevard Performance by movement Interval #4 5:45

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.9	4.0	5.4	2.7	0.6	0.2	2.2
Vehicles Entered	10	2	1	6	2	12	33
Vehicles Exited	10	2	1	6	2	12	33
Hourly Exit Rate	40	8	4	24	8	48	132
Input Volume	33	6	4	23	13	55	134
% of Volume	121	133	100	104	62	87	99

3: 10890 North/10890 North & Town Center Boulevard Performance by movement Entire Run

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.0	4.5	4.8	2.9	0.4	0.3	2.1
Vehicles Entered	36	6	4	23	11	54	134
Vehicles Exited	36	6	4	23	11	53	133
Hourly Exit Rate	36	6	4	23	11	53	133
Input Volume	34	6	4	23	13	56	137
% of Volume	107	100	94	99	83	94	97

4: 5400 West/5400 West & Parkway Drive Performance by movement Interval #1 5:00

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.6	3.4	0.1	0.0	1.2	0.0	1.0
Vehicles Entered	1	2	5	1	1	3	13
Vehicles Exited	1	2	4	1	1	3	12
Hourly Exit Rate	4	8	16	4	4	12	48
Input Volume	2	8	19	6	5	14	54
% of Volume	200	100	84	67	80	86	89

4: 5400 West/5400 West & Parkway Drive Performance by movement Interval #2 5:15

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0		0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		2.8	0.0	0.0		0.0	0.5
Vehicles Entered	0	2	6	2	0	4	14
Vehicles Exited	0	2	6	2	0	4	14
Hourly Exit Rate	0	8	24	8	0	16	56
Input Volume	2	9	21	6	5	15	58
% of Volume	0	89	114	133	0	107	97

4: 5400 West/5400 West & Parkway Drive Performance by movement Interval #3 5:30

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		2.2	0.1	0.0	2.0	0.0	0.7
Vehicles Entered	0	2	4	2	1	3	12
Vehicles Exited	0	2	4	2	1	3	12
Hourly Exit Rate	0	8	16	8	4	12	48
Input Volume	2	8	19	6	5	14	54
% of Volume	0	100	84	133	80	86	89

4: 5400 West/5400 West & Parkway Drive Performance by movement Interval #4 5:45

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		3.3	0.2	0.0	1.4	0.0	0.9
Vehicles Entered	0	2	4	2	1	3	12
Vehicles Exited	0	2	4	2	1	3	12
Hourly Exit Rate	0	8	16	8	4	12	48
Input Volume	2	8	19	6	5	14	54
% of Volume	0	100	84	133	80	86	89

4: 5400 West/5400 West & Parkway Drive Performance by movement Entire Run

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.7	2.9	0.1	0.0	1.2	0.0	0.7
Vehicles Entered	2	8	19	6	4	13	52
Vehicles Exited	2	8	19	6	4	13	52
Hourly Exit Rate	2	8	19	6	4	13	52
Input Volume	2	8	20	6	5	14	55
% of Volume	100	97	97	100	80	91	95

5: 5400 West & Park Access/West Access Performance by movement Interval #1 5:00

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.1	0.1	0.1	0.1		0.0		0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		1.6	1.5	0.2	0.0	0.9	0.1		0.5
Vehicles Entered	0	1	2	5	1	0	3	0	12
Vehicles Exited	0	1	2	5	1	1	3	0	13
Hourly Exit Rate	0	4	8	20	4	4	12	0	52
Input Volume	2	1	6	23	4	2	13	1	52
% of Volume	0	400	133	87	100	200	92	0	100

5: 5400 West & Park Access/West Access Performance by movement Interval #2 5:15

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)			0.1	0.1	0.1		0.0		0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)			0.9	0.0	0.0		0.1		0.3
Vehicles Entered	0	0	1	7	2	0	4	0	14
Vehicles Exited	0	0	1	7	2	0	4	0	14
Hourly Exit Rate	0	0	4	28	8	0	16	0	56
Input Volume	2	1	6	26	4	2	14	1	56
% of Volume	0	0	67	108	200	0	114	0	100

5: 5400 West & Park Access/West Access Performance by movement Interval #3 5:30

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.1	0.1	0.1	0.1		0.0		0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		1.6	2.0	0.1	0.0		0.1		0.6
Vehicles Entered	0	1	1	5	1	0	3	0	11
Vehicles Exited	0	1	1	5	1	0	3	0	11
Hourly Exit Rate	0	4	4	20	4	0	12	0	44
Input Volume	2	1	6	23	4	2	13	1	52
% of Volume	0	400	67	87	100	0	92	0	85

5: 5400 West & Park Access/West Access Performance by movement Interval #4 5:45

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)			0.1	0.1	0.1		0.0		0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)			1.1	0.1	0.0		0.1		0.5
Vehicles Entered	0	0	2	5	1	0	3	0	11
Vehicles Exited	0	0	1	5	0	0	3	0	9
Hourly Exit Rate	0	0	4	20	0	0	12	0	36
Input Volume	2	1	6	23	4	2	13	1	52
% of Volume	0	0	67	87	0	0	92	0	69

5: 5400 West & Park Access/West Access Performance by movement Entire Run

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.2	2.3	1.4	0.1	0.0	1.2	0.1	0.0	0.4
Vehicles Entered	1	2	6	22	4	2	12	1	50
Vehicles Exited	1	2	6	22	4	2	12	1	50
Hourly Exit Rate	1	2	6	22	4	2	12	1	50
Input Volume	2	1	6	24	4	2	13	1	53
% of Volume	50	200	100	93	100	100	91	100	94

6: Southwest Access & Parkway Drive Performance by movement Interval #1 5:00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0		0.0	0.0		0.1		0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		0.1	0.1		0.3	0.2		3.7		3.9	0.8
Vehicles Entered	0	1	1	0	14	2	0	1	0	1	20
Vehicles Exited	0	1	1	0	14	2	0	1	0	1	20
Hourly Exit Rate	0	4	4	0	56	8	0	4	0	4	80
Input Volume	3	4	4	4	55	6	1	4	1	2	84
% of Volume	0	100	100	0	102	133	0	100	0	200	95

6: Southwest Access & Parkway Drive Performance by movement Interval #2 5:15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0		0.0	0.0	0.0		0.1		0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.0	0.1		0.9	0.3	0.3		2.8		0.5
Vehicles Entered	1	1	0	1	16	2	0	1	0	22
Vehicles Exited	1	1	0	1	16	2	0	1	0	22
Hourly Exit Rate	4	4	0	4	64	8	0	4	0	88
Input Volume	3	4	4	4	61	6	1	4	2	90
% of Volume	133	100	0	100	105	133	0	100	0	98

6: Southwest Access & Parkway Drive Performance by movement Interval #3 5:30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)		0.0	0.0	0.0	0.0	0.0	0.1			0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		0.1	0.1	1.4	0.3	0.5	2.5			0.5
Vehicles Entered	0	1	2	1	13	1	1	0	0	19
Vehicles Exited	0	1	2	1	14	1	1	0	0	20
Hourly Exit Rate	0	4	8	4	56	4	4	0	0	80
Input Volume	3	4	4	4	55	6	4	1	2	84
% of Volume	0	100	200	100	102	67	100	0	0	95

6: Southwest Access & Parkway Drive Performance by movement Interval #4 5:45

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.1		0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.5	0.1	0.1	1.0	0.3	0.4		3.6		2.4	0.6
Vehicles Entered	1	1	1	1	14	2	0	1	0	1	22
Vehicles Exited	1	1	1	1	14	2	0	1	0	1	22
Hourly Exit Rate	4	4	4	4	56	8	0	4	0	4	88
Input Volume	3	4	4	4	55	6	1	4	1	2	84
% of Volume	133	100	100	100	102	133	0	100	0	200	105

6: Southwest Access & Parkway Drive Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1		0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.8	0.1	0.1	1.7	0.3	0.3	3.0	3.2		2.7	0.6
Vehicles Entered	2	4	4	2	58	7	1	4	0	3	85
Vehicles Exited	2	4	4	2	58	7	1	4	0	3	85
Hourly Exit Rate	2	4	4	2	58	7	1	4	0	3	85
Input Volume	3	4	4	4	56	6	1	4	1	2	86
% of Volume	67	100	100	50	103	117	100	100	0	150	99

7: Alpine Highway (SR-74) & Parkway Drive Performance by movement Interval #1 5:00

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	3.2	0.6	0.0	0.0	0.3
Total Delay (hr)	0.1	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	22.3	7.9	4.0	0.8	2.0	0.9	2.2
Vehicles Entered	11	2	7	151	174	10	355
Vehicles Exited	11	2	6	152	174	10	355
Hourly Exit Rate	44	8	24	608	696	40	1420
Input Volume	35	7	27	622	691	38	1420
% of Volume	126	114	89	98	101	105	100

7: Alpine Highway (SR-74) & Parkway Drive Performance by movement Interval #2 5:15

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	3.1	0.6	0.0	0.0	0.3
Total Delay (hr)	0.1	0.0	0.0	0.0	0.1	0.0	0.3
Total Del/Veh (s)	30.0	14.9	4.1	0.9	2.1	0.9	2.4
Vehicles Entered	10	2	7	172	184	10	385
Vehicles Exited	10	2	8	172	184	11	387
Hourly Exit Rate	40	8	32	688	736	44	1548
Input Volume	38	7	30	677	750	41	1543
% of Volume	105	114	107	102	98	107	100

7: Alpine Highway (SR-74) & Parkway Drive Performance by movement Interval #3 5:30

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	2.7	0.6	0.0	0.0	0.3
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	21.6	7.9	4.0	0.8	1.8	0.7	1.9
Vehicles Entered	7	2	7	154	177	9	356
Vehicles Exited	7	2	6	154	176	9	354
Hourly Exit Rate	28	8	24	616	704	36	1416
Input Volume	35	7	27	622	691	38	1420
% of Volume	80	114	89	99	102	95	100

7: Alpine Highway (SR-74) & Parkway Drive Performance by movement Interval #4 5:45

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	2.8	0.5	0.0	0.0	0.3
Total Delay (hr)	0.1	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	21.7	10.7	3.7	0.8	1.9	1.0	2.0
Vehicles Entered	8	2	8	156	178	9	361
Vehicles Exited	9	2	7	155	178	9	360
Hourly Exit Rate	36	8	28	620	712	36	1440
Input Volume	35	7	27	622	691	38	1420
% of Volume	103	114	104	100	103	95	101

7: Alpine Highway (SR-74) & Parkway Drive Performance by movement Entire Run

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Denied Del/Veh (s)	0.1	0.1	3.1	0.6	0.0	0.0	0.3
Total Delay (hr)	0.3	0.0	0.0	0.2	0.4	0.0	0.9
Total Del/Veh (s)	25.4	9.2	4.2	0.9	2.0	0.9	2.1
Vehicles Entered	36	9	28	632	712	39	1456
Vehicles Exited	36	9	28	633	712	39	1457
Hourly Exit Rate	36	9	28	633	712	39	1457
Input Volume	36	7	28	636	706	39	1451
% of Volume	101	129	101	100	101	101	100

8: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access Performance by movement Interv

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.4		0.0	0.1	0.1	0.0	0.0	0.0	2.6	0.7	0.7	0.4
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	16.7		7.0	15.4	7.9	3.9	0.8	0.2	3.3	1.6	0.1	1.7
Vehicles Entered	2	0	6	4	7	3	158	1	4	174	4	363
Vehicles Exited	2	0	6	4	6	4	158	1	4	174	4	363
Hourly Exit Rate	8	0	24	16	24	16	632	4	16	696	16	1452
Input Volume	15	1	22	18	33	17	633	7	13	688	9	1456
% of Volume	53	0	109	89	73	94	100	57	123	101	178	100

8: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access Performance by movement Interv

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0		0.0	0.1	0.1	0.0	0.0	0.0	4.1	0.7	0.6	0.4
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	21.0		8.4	21.4	6.0	3.7	0.9	0.5	5.1	1.7	0.1	2.0
Vehicles Entered	4	0	5	4	9	5	176	1	3	185	3	395
Vehicles Exited	4	0	5	4	10	5	175	1	3	184	3	394
Hourly Exit Rate	16	0	20	16	40	20	700	4	12	736	12	1576
Input Volume	16	1	23	19	36	18	690	7	14	748	10	1582
% of Volume	100	0	87	84	111	111	101	57	86	98	120	100

8: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access Performance by movement Interv

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.3		0.0	0.2	0.1	0.0	0.0	0.0	4.3	0.6	0.8	0.3
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	13.5		7.3	15.4	7.2	4.1	0.9	0.1	3.7	1.6	0.1	1.9
Vehicles Entered	3	0	6	5	10	4	156	2	2	175	1	364
Vehicles Exited	3	0	6	5	10	4	156	2	2	175	1	364
Hourly Exit Rate	12	0	24	20	40	16	624	8	8	700	4	1456
Input Volume	15	1	22	18	33	17	633	7	13	688	9	1456
% of Volume	80	0	109	111	121	94	99	114	62	102	44	100

8: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access Performance by movement Interv

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.3		0.0	0.1	0.1	0.0	0.0	0.0	3.0	0.7	1.2	0.4
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	13.9		6.2	14.9	6.9	4.0	0.9	0.2	2.5	1.6	0.1	1.8
Vehicles Entered	4	0	5	3	8	4	158	1	3	178	1	365
Vehicles Exited	4	0	6	3	8	4	159	1	3	178	1	367
Hourly Exit Rate	16	0	24	12	32	16	636	4	12	712	4	1468
Input Volume	15	1	22	18	33	17	633	7	13	688	9	1456
% of Volume	107	0	109	67	97	94	100	57	92	103	44	101

8: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access Performance by movement Entire

Movement	EBL	EBT	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Denied Del/Veh (s)	0.2	0.0	0.0	0.2	0.1	0.0	0.0	0.0	3.4	0.7	0.7	0.4
Total Delay (hr)	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.0	0.0	0.3	0.0	0.8
Total Del/Veh (s)	15.3	0.0	7.2	17.9	7.3	4.2	0.9	0.2	3.6	1.6	0.1	1.8
Vehicles Entered	14	1	22	15	34	15	648	6	12	712	9	1488
Vehicles Exited	14	1	23	15	34	16	649	6	12	712	9	1491
Hourly Exit Rate	14	1	23	15	34	16	649	6	12	712	9	1491
Input Volume	15	1	22	18	34	17	647	7	13	703	9	1488
% of Volume	92	100	103	82	101	93	100	86	91	101	97	100

9: Northeast Access & Town Square Access Performance by movement Interval #1 5:00

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.2	0.2	2.3	0.3	3.1	2.4	0.6
Vehicles Entered	8	2	1	6	1	1	19
Vehicles Exited	8	2	1	6	1	1	19
Hourly Exit Rate	32	8	4	24	4	4	76
Input Volume	31	7	7	19	3	5	72
% of Volume	103	114	57	126	133	80	106

9: Northeast Access & Town Square Access Performance by movement Interval #2 5:15

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0		0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.4	1.8	0.3		3.5	0.7
Vehicles Entered	8	1	2	6	0	1	18
Vehicles Exited	8	1	2	6	0	1	18
Hourly Exit Rate	32	4	8	24	0	4	72
Input Volume	34	7	7	21	3	5	77
% of Volume	94	57	114	114	0	80	94

9: Northeast Access & Town Square Access Performance by movement Interval #3 5:30

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0		0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.2	0.1	1.5	0.2		2.4	0.7
Vehicles Entered	6	2	2	3	0	2	15
Vehicles Exited	7	1	2	4	0	2	16
Hourly Exit Rate	28	4	8	16	0	8	64
Input Volume	31	7	7	19	3	5	72
% of Volume	90	57	114	84	0	160	89

9: Northeast Access & Town Square Access Performance by movement Interval #4 5:45

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0		0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.2	0.0	1.1	0.3	3.1	3.4	0.6
Vehicles Entered	8	2	1	4	0	1	16
Vehicles Exited	8	2	2	4	1	1	18
Hourly Exit Rate	32	8	8	16	4	4	72
Input Volume	31	7	7	19	3	5	72
% of Volume	103	114	114	84	133	80	100

9: Northeast Access & Town Square Access Performance by movement Entire Run

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.2	0.1	1.9	0.3	4.1	2.8	0.7
Vehicles Entered	30	6	6	19	2	5	68
Vehicles Exited	30	7	6	19	2	5	69
Hourly Exit Rate	30	7	6	19	2	5	69
Input Volume	32	7	7	20	3	5	73
% of Volume	94	100	86	97	67	100	94

17: Highland Highway (SR-92) Performance by movement Interval #1 5:00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	1.0	2.2	3.0	3.4	6.5	1.5
Denied Del/Veh (s)	3.0	1.4	3.1	0.0	0.0	0.1	137.8	144.3	142.9	219.3	218.0	231.1
Total Delay (hr)	0.2	1.5	0.1	0.6	1.4	0.1	0.7	1.1	1.3	1.0	0.7	0.2
Total Del/Veh (s)	31.5	17.3	7.0	76.3	18.9	11.8	119.1	89.3	76.0	93.7	37.5	39.0
Vehicles Entered	24	319	46	25	247	34	19	40	55	34	64	15
Vehicles Exited	23	312	47	24	248	33	17	40	54	32	64	15
Hourly Exit Rate	92	1248	188	96	992	132	68	160	216	128	256	60
Input Volume	98	1306	196	98	1002	134	98	196	300	210	391	98
% of Volume	94	96	96	98	99	99	69	82	72	61	65	61

17: Highland Highway (SR-92) Performance by movement Interval #1 5:00

Movement	All
Denied Delay (hr)	17.7
Denied Del/Veh (s)	61.4
Total Delay (hr)	9.0
Total Del/Veh (s)	32.8
Vehicles Entered	922
Vehicles Exited	909
Hourly Exit Rate	3636
Input Volume	4127
% of Volume	88

17: Highland Highway (SR-92) Performance by movement Interval #2 5:15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.2	0.0	0.0	0.0	0.0	3.3	6.9	10.9	9.3	17.5	4.4
Denied Del/Veh (s)	2.9	1.9	3.1	0.0	0.0	0.0	360.0	363.0	358.0	440.6	435.6	440.0
Total Delay (hr)	0.3	1.4	0.1	0.6	1.2	0.1	1.2	1.1	1.5	0.9	0.9	0.2
Total Del/Veh (s)	40.5	13.6	6.5	75.5	15.0	10.7	242.3	113.8	99.6	108.4	59.4	56.1
Vehicles Entered	27	360	52	25	260	38	14	29	48	25	51	10
Vehicles Exited	27	365	52	23	262	38	13	29	48	26	51	10
Hourly Exit Rate	108	1460	208	92	1048	152	52	116	192	104	204	40
Input Volume	106	1419	213	106	1090	146	106	213	327	229	426	106
% of Volume	102	103	98	87	96	104	49	54	59	45	48	38

17: Highland Highway (SR-92) Performance by movement Interval #2 5:15

Movement	All
Denied Delay (hr)	52.6
Denied Del/Veh (s)	153.9
Total Delay (hr)	9.6
Total Del/Veh (s)	34.1
Vehicles Entered	939
Vehicles Exited	944
Hourly Exit Rate	3776
Input Volume	4487
% of Volume	84

17: Highland Highway (SR-92) Performance by movement Interval #3 5:30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	6.1	12.5	18.8	13.7	27.0	7.5
Denied Del/Veh (s)	2.8	1.0	2.6	0.0	0.0	0.1	487.0	504.7	495.1	498.5	504.4	531.9
Total Delay (hr)	0.3	1.5	0.1	0.5	1.5	0.1	1.3	0.9	1.2	0.8	0.8	0.2
Total Del/Veh (s)	36.2	16.5	8.7	60.9	18.9	11.8	235.6	91.8	75.4	69.3	40.5	36.5
Vehicles Entered	24	318	51	21	261	33	15	31	51	38	70	19
Vehicles Exited	24	308	51	23	253	34	15	32	53	39	72	19
Hourly Exit Rate	96	1232	204	92	1012	136	60	128	212	156	288	76
Input Volume	98	1306	196	98	1002	134	98	196	300	210	391	98
% of Volume	98	94	104	94	101	101	61	65	71	74	74	78

17: Highland Highway (SR-92) Performance by movement Interval #3 5:30

Movement	All
Denied Delay (hr)	85.8
Denied Del/Veh (s)	233.7
Total Delay (hr)	9.2
Total Del/Veh (s)	33.1
Vehicles Entered	932
Vehicles Exited	923
Hourly Exit Rate	3692
Input Volume	4127
% of Volume	89

17: Highland Highway (SR-92) Performance by movement Interval #4 5:45

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.3	0.1	0.0	0.0	0.0	8.1	15.2	23.4	17.1	33.0	8.3
Denied Del/Veh (s)	4.6	3.4	4.6	0.1	0.0	0.0	540.7	516.0	522.7	554.4	550.1	525.4
Total Delay (hr)	0.3	1.8	0.1	0.5	1.5	0.1	1.5	0.9	1.2	0.8	0.8	0.2
Total Del/Veh (s)	36.7	19.4	8.2	77.9	20.6	12.7	223.7	84.7	69.5	75.5	40.0	35.6
Vehicles Entered	26	324	48	21	230	30	18	37	58	35	69	20
Vehicles Exited	26	330	48	21	241	31	18	37	56	33	69	20
Hourly Exit Rate	104	1320	192	84	964	124	72	148	224	132	276	80
Input Volume	98	1306	196	98	1002	134	98	196	300	210	391	98
% of Volume	106	101	98	86	96	93	73	76	75	63	71	82

17: Highland Highway (SR-92) Performance by movement Interval #4 5:45

Movement	All
Denied Delay (hr)	105.5
Denied Del/Veh (s)	274.2
Total Delay (hr)	9.8
Total Del/Veh (s)	35.5
Vehicles Entered	916
Vehicles Exited	930
Hourly Exit Rate	3720
Input Volume	4127
% of Volume	90

17: Highland Highway (SR-92) Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.7	0.2	0.0	0.0	0.0	18.5	36.7	56.2	43.5	84.1	21.7
Denied Del/Veh (s)	3.3	1.9	3.3	0.0	0.0	0.1	651.4	641.2	642.0	755.7	755.3	766.9
Total Delay (hr)	1.1	6.3	0.4	2.2	5.6	0.5	4.7	4.1	5.2	3.4	3.3	0.8
Total Del/Veh (s)	37.8	17.0	7.7	82.5	19.8	12.7	249.2	102.7	86.5	92.2	45.8	41.2
Vehicles Entered	101	1320	198	91	998	136	66	137	212	131	254	65
Vehicles Exited	100	1315	198	92	1004	135	63	139	211	130	255	65
Hourly Exit Rate	100	1315	198	92	1004	135	63	139	211	130	255	65
Input Volume	100	1334	200	100	1024	137	100	200	307	215	400	100
% of Volume	100	99	99	92	98	99	63	69	69	61	64	65

17: Highland Highway (SR-92) Performance by movement Entire Run

Movement	All
Denied Delay (hr)	261.6
Denied Del/Veh (s)	225.4
Total Delay (hr)	37.5
Total Del/Veh (s)	35.8
Vehicles Entered	3709
Vehicles Exited	3707
Hourly Exit Rate	3707
Input Volume	4217
% of Volume	88

22: Highland Highway (SR-92) Performance by movement Interval #1 5:00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.0	0.1	2.3	0.2	2.3	3.6	1.7	3.5	3.7	1.9	3.9
Total Delay (hr)	0.9	2.1	0.4	3.3	1.6	0.1	0.5	0.4	0.1	0.7	0.1	0.2
Total Del/Veh (s)	73.6	27.3	11.4	284.0	36.3	9.6	27.5	18.5	11.7	48.1	19.8	8.8
Vehicles Entered	42	269	110	37	148	22	63	74	39	50	22	97
Vehicles Exited	39	255	109	19	133	21	67	78	39	52	24	98
Hourly Exit Rate	156	1020	436	76	532	84	268	312	156	208	96	392
Input Volume	181	1210	475	147	585	98	245	294	147	196	98	387
% of Volume	86	84	92	52	91	86	109	106	106	106	98	101

22: Highland Highway (SR-92) Performance by movement Interval #1 5:00

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	1.3
Total Delay (hr)	10.5
Total Del/Veh (s)	36.8
Vehicles Entered	973
Vehicles Exited	934
Hourly Exit Rate	3736
Input Volume	4063
% of Volume	92

22: Highland Highway (SR-92) Performance by movement Interval #2 5:15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.2
Denied Del/Veh (s)	0.3	0.3	0.2	2.3	0.2	2.3	4.3	2.7	4.1	7.6	5.9	7.4
Total Delay (hr)	1.3	2.5	0.5	7.6	2.8	0.2	0.6	0.6	0.2	0.8	0.2	0.4
Total Del/Veh (s)	90.9	28.3	14.5	453.1	56.8	23.0	32.3	26.5	15.5	56.1	27.2	13.5
Vehicles Entered	44	286	116	37	156	30	69	83	42	50	28	101
Vehicles Exited	45	303	118	20	159	30	65	77	42	44	26	99
Hourly Exit Rate	180	1212	472	80	636	120	260	308	168	176	104	396
Input Volume	197	1316	516	160	636	106	266	319	160	213	106	420
% of Volume	91	92	91	50	100	113	98	97	105	83	98	94

22: Highland Highway (SR-92) Performance by movement Interval #2 5:15

Movement	All
Denied Delay (hr)	0.6
Denied Del/Veh (s)	2.2
Total Delay (hr)	17.6
Total Del/Veh (s)	55.8
Vehicles Entered	1042
Vehicles Exited	1028
Hourly Exit Rate	4112
Input Volume	4415
% of Volume	93

22: Highland Highway (SR-92) Performance by movement Interval #3 5:30

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.2
Denied Del/Veh (s)	0.1	0.2	0.1	2.7	0.5	2.4	4.2	2.7	4.4	6.6	4.9	7.1
Total Delay (hr)	1.4	2.3	0.5	12.1	3.8	0.3	0.6	0.5	0.1	0.9	0.2	0.4
Total Del/Veh (s)	98.5	29.3	14.1	581.9	84.6	39.7	30.3	22.9	11.5	55.3	19.9	13.1
Vehicles Entered	44	277	109	35	143	25	63	77	36	54	25	94
Vehicles Exited	44	259	108	19	138	25	67	83	37	58	27	97
Hourly Exit Rate	176	1036	432	76	552	100	268	332	148	232	108	388
Input Volume	181	1210	475	147	585	98	245	294	147	196	98	387
% of Volume	97	86	91	52	94	102	109	113	101	118	110	100

22: Highland Highway (SR-92) Performance by movement Interval #3 5:30

Movement	All
Denied Delay (hr)	0.6
Denied Del/Veh (s)	2.1
Total Delay (hr)	23.0
Total Del/Veh (s)	76.0
Vehicles Entered	982
Vehicles Exited	962
Hourly Exit Rate	3848
Input Volume	4063
% of Volume	95

22: Highland Highway (SR-92) Performance by movement Interval #4 5:45

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.3	1.0	0.2	0.1	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.0	0.1	25.6	23.9	24.6	3.8	1.8	3.7	4.3	2.6	5.5
Total Delay (hr)	0.7	1.9	0.4	15.3	4.2	0.3	0.4	0.5	0.1	0.6	0.2	0.3
Total Del/Veh (s)	48.5	22.6	12.1	610.8	95.0	47.5	29.5	22.5	12.9	49.6	21.2	9.4
Vehicles Entered	42	270	113	34	135	24	53	72	39	45	26	97
Vehicles Exited	47	290	115	24	135	22	49	67	38	43	24	95
Hourly Exit Rate	188	1160	460	96	540	88	196	268	152	172	96	380
Input Volume	181	1210	475	147	585	98	245	294	147	196	98	387
% of Volume	104	96	97	65	92	90	80	91	103	88	98	98

22: Highland Highway (SR-92) Performance by movement Interval #4 5:45

Movement	All
Denied Delay (hr)	1.7
Denied Del/Veh (s)	6.5
Total Delay (hr)	24.8
Total Del/Veh (s)	82.7
Vehicles Entered	950
Vehicles Exited	949
Hourly Exit Rate	3796
Input Volume	4063
% of Volume	93

22: Highland Highway (SR-92) Performance by movement Entire Run

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.3	1.0	0.2	0.3	0.2	0.2	0.3	0.1	0.6
Denied Del/Veh (s)	0.1	0.1	0.1	8.1	6.1	7.8	4.0	2.2	3.9	5.7	3.9	6.0
Total Delay (hr)	4.2	8.8	1.7	38.3	12.3	0.9	2.2	2.0	0.6	3.1	0.7	1.2
Total Del/Veh (s)	86.2	28.5	13.6	930.6	75.5	31.1	30.8	23.3	13.0	55.0	23.0	11.4
Vehicles Entered	174	1101	448	144	581	101	248	306	156	198	102	389
Vehicles Exited	174	1106	450	82	565	98	248	305	156	197	101	388
Hourly Exit Rate	174	1106	450	82	565	98	248	305	156	197	101	388
Input Volume	185	1236	485	150	598	100	250	300	150	200	100	395
% of Volume	94	89	93	55	95	98	99	102	104	98	101	98

22: Highland Highway (SR-92) Performance by movement Entire Run

Movement	All
Denied Delay (hr)	3.3
Denied Del/Veh (s)	3.0
Total Delay (hr)	76.0
Total Del/Veh (s)	68.3
Vehicles Entered	3948
Vehicles Exited	3870
Hourly Exit Rate	3870
Input Volume	4151
% of Volume	93

Total Network Performance By Interval

Interval Start	5:00	5:15	5:30	5:45	All
Denied Delay (hr)	18.1	53.3	86.5	107.3	265.2
Denied Del/Veh (s)	38.2	97.5	156.9	186.6	137.5
Total Delay (hr)	23.1	31.7	36.2	38.5	129.5
Total Del/Veh (s)	46.2	59.5	68.9	74.5	69.9
Vehicles Entered	1591	1676	1595	1589	6460
Vehicles Exited	1564	1624	1618	1567	6380
Hourly Exit Rate	6256	6496	6472	6268	6380
Input Volume	24482	26595	24482	24482	25010
% of Volume	26	24	26	26	26

Intersection: 1: Town Center Boulevard & Highland Highway (SR-92), Interval #1

Movement	EB	EB	WB	WB	NB
Directions Served	T	TR	L	T	LR
Maximum Queue (ft)	8	4	70	2	120
Average Queue (ft)	2	1	27	0	76
95th Queue (ft)	20	9	73	5	144
Link Distance (ft)	211	211		1041	408
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			185		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 1: Town Center Boulevard & Highland Highway (SR-92), Interval #2

Movement	EB	WB	NB
Directions Served	TR	L	LR
Maximum Queue (ft)	5	56	181
Average Queue (ft)	1	26	101
95th Queue (ft)	8	67	203
Link Distance (ft)	211		408
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		185	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 1: Town Center Boulevard & Highland Highway (SR-92), Interval #3

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	6	10	62	21	17	146
Average Queue (ft)	1	1	22	3	2	79
95th Queue (ft)	11	14	62	44	35	176
Link Distance (ft)	211	211		1041	1041	408
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			185			
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 1: Town Center Boulevard & Highland Highway (SR-92), Interval #4

Movement	EB	WB	WB	NB
Directions Served	TR	L	T	LR
Maximum Queue (ft)	4	56	4	122
Average Queue (ft)	1	22	1	67
95th Queue (ft)	8	59	9	132
Link Distance (ft)	211		1041	408
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		185		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 1: Town Center Boulevard & Highland Highway (SR-92), All Intervals

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	8	20	89	23	21	212
Average Queue (ft)	1	1	25	1	1	81
95th Queue (ft)	11	10	66	22	18	168
Link Distance (ft)	211	211		1041	1041	408
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			185			
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 2: Town Center Boulevard & Toscana Access/Town Square Access, Interval #1

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	33	31	6
Average Queue (ft)	17	18	1
95th Queue (ft)	42	43	9
Link Distance (ft)	445	583	408
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Town Center Boulevard & Toscana Access/Town Square Access, Interval #2

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	30	31	6
Average Queue (ft)	12	15	1
95th Queue (ft)	36	40	9
Link Distance (ft)	445	583	408
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Town Center Boulevard & Toscana Access/Town Square Access, Interval #3

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	33
Average Queue (ft)	13	10
95th Queue (ft)	37	34
Link Distance (ft)	445	583
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Town Center Boulevard & Toscana Access/Town Square Access, Interval #4

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	35	14
Average Queue (ft)	15	16	2
95th Queue (ft)	40	42	19
Link Distance (ft)	445	583	408
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Town Center Boulevard & Toscana Access/Town Square Access, All Intervals

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	36	38	23
Average Queue (ft)	14	15	1
95th Queue (ft)	39	40	11
Link Distance (ft)	445	583	408
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 10890 North/10890 North & Town Center Boulevard, Interval #1

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	33	33
Average Queue (ft)	23	17
95th Queue (ft)	46	43
Link Distance (ft)	221	130
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 10890 North/10890 North & Town Center Boulevard, Interval #2

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	36	35	6
Average Queue (ft)	26	21	1
95th Queue (ft)	47	46	9
Link Distance (ft)	221	130	322
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 10890 North/10890 North & Town Center Boulevard, Interval #3

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	36	31	5
Average Queue (ft)	25	17	1
95th Queue (ft)	48	42	10
Link Distance (ft)	221	130	322
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: 10890 North/10890 North & Town Center Boulevard, Interval #4

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	38	36
Average Queue (ft)	26	19
95th Queue (ft)	50	46
Link Distance (ft)	221	130
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: 10890 North/10890 North & Town Center Boulevard, All Intervals

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	43	43	8
Average Queue (ft)	25	18	0
95th Queue (ft)	48	44	7
Link Distance (ft)	221	130	322
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: 5400 West/5400 West & Parkway Drive , Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	9
95th Queue (ft)	33
Link Distance (ft)	300
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 5400 West/5400 West & Parkway Drive , Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	31
Link Distance (ft)	300
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 5400 West/5400 West & Parkway Drive , Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	28
Average Queue (ft)	7
95th Queue (ft)	29
Link Distance (ft)	300
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 5400 West/5400 West & Parkway Drive , Interval #4

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	9
95th Queue (ft)	32
Link Distance (ft)	300
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: 5400 West/5400 West & Parkway Drive , All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	9
95th Queue (ft)	31
Link Distance (ft)	300
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: 5400 West & Park Access/West Access , Interval #1

Movement	WB
Directions Served	LTR
Maximum Queue (ft)	18
Average Queue (ft)	3
95th Queue (ft)	17
Link Distance (ft)	244
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: 5400 West & Park Access/West Access , Interval #2

Movement	WB
Directions Served	LTR
Maximum Queue (ft)	15
Average Queue (ft)	3
95th Queue (ft)	16
Link Distance (ft)	244
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: 5400 West & Park Access/West Access , Interval #3

Movement	WB
Directions Served	LTR
Maximum Queue (ft)	9
Average Queue (ft)	3
95th Queue (ft)	16
Link Distance (ft)	244
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: 5400 West & Park Access/West Access , Interval #4

Movement	WB	NB
Directions Served	LTR	LTR
Maximum Queue (ft)	9	3
Average Queue (ft)	2	0
95th Queue (ft)	13	0
Link Distance (ft)	244	652
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: 5400 West & Park Access/West Access , All Intervals

Movement	WB	NB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	3
Average Queue (ft)	2	0
95th Queue (ft)	16	0
Link Distance (ft)	244	652
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Southwest Access & Parkway Drive , Interval #1

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	25	30
Average Queue (ft)	6	5
95th Queue (ft)	26	23
Link Distance (ft)	268	222
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Southwest Access & Parkway Drive , Interval #2

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	20	12
Average Queue (ft)	5	2
95th Queue (ft)	22	13
Link Distance (ft)	268	222
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Southwest Access & Parkway Drive , Interval #3

Movement	NB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	18	12
Average Queue (ft)	3	2
95th Queue (ft)	19	13
Link Distance (ft)	268	222
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Southwest Access & Parkway Drive , Interval #4

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	3	22	24
Average Queue (ft)	0	6	3
95th Queue (ft)	6	26	19
Link Distance (ft)	300	268	222
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Southwest Access & Parkway Drive , All Intervals

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	3	31	30
Average Queue (ft)	0	5	3
95th Queue (ft)	3	23	18
Link Distance (ft)	300	268	222
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Alpine Highway (SR-74) & Parkway Drive , Interval #1

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	56	33
Average Queue (ft)	33	14
95th Queue (ft)	63	37
Link Distance (ft)	421	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Alpine Highway (SR-74) & Parkway Drive , Interval #2

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	72	31
Average Queue (ft)	36	14
95th Queue (ft)	76	38
Link Distance (ft)	421	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Alpine Highway (SR-74) & Parkway Drive , Interval #3

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	55	30
Average Queue (ft)	28	13
95th Queue (ft)	58	36
Link Distance (ft)	421	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Alpine Highway (SR-74) & Parkway Drive , Interval #4

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	67	30
Average Queue (ft)	30	12
95th Queue (ft)	65	35
Link Distance (ft)	421	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Alpine Highway (SR-74) & Parkway Drive , All Intervals

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	85	39
Average Queue (ft)	32	13
95th Queue (ft)	66	36
Link Distance (ft)	421	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access, Interval #1

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	L	L
Maximum Queue (ft)	27	33	58	22	26
Average Queue (ft)	9	19	27	5	6
95th Queue (ft)	32	44	58	22	26
Link Distance (ft)		370	326		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	65			80	80
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 8: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access, Interval #2

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	L	L
Maximum Queue (ft)	37	35	57	23	27
Average Queue (ft)	16	15	33	6	8
95th Queue (ft)	42	41	59	24	28
Link Distance (ft)		370	326		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	65			80	80
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			

Intersection: 8: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access, Interval #3

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	L	L	TR
Maximum Queue (ft)	33	37	59	24	22	2
Average Queue (ft)	11	18	34	5	3	0
95th Queue (ft)	35	45	64	21	18	0
Link Distance (ft)		370	326			148
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	65			80	80	
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				

Intersection: 8: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access, Interval #4

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	LTR	L	L
Maximum Queue (ft)	30	33	48	21	22
Average Queue (ft)	14	18	28	5	4
95th Queue (ft)	38	43	56	20	19
Link Distance (ft)		370	326		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	65			80	80
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 8: Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access, All Intervals

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	L	L	TR
Maximum Queue (ft)	40	42	73	28	30	2
Average Queue (ft)	13	17	31	5	5	0
95th Queue (ft)	37	43	60	22	23	0
Link Distance (ft)		370	326			148
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	65			80	80	
Storage Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				

Intersection: 9: Northeast Access & Town Square Access, Interval #1

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	3	24
Average Queue (ft)	0	6
95th Queue (ft)	6	25
Link Distance (ft)	370	284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Northeast Access & Town Square Access, Interval #2

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	3	20
Average Queue (ft)	0	5
95th Queue (ft)	7	24
Link Distance (ft)	370	284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Northeast Access & Town Square Access, Interval #3

Movement	NB
Directions Served	LR
Maximum Queue (ft)	24
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	284
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: Northeast Access & Town Square Access, Interval #4

Movement	NB
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	284
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: Northeast Access & Town Square Access, All Intervals

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	6	30
Average Queue (ft)	0	6
95th Queue (ft)	5	26
Link Distance (ft)	370	284
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 17: Highland Highway (SR-92), Interval #1

Movement	EB	EB	EB	EB	WB	WB	WB	WB	B20	B20	NB	NB
Directions Served	L	T	T	R	L	T	T	R	T	T	L	TR
Maximum Queue (ft)	175	396	382	202	189	362	364	219	2	2	166	285
Average Queue (ft)	66	234	185	67	106	174	189	70	0	0	88	267
95th Queue (ft)	161	434	397	196	201	358	363	208	4	5	195	324
Link Distance (ft)		385	385			2870	2870		211	211	254	254
Upstream Blk Time (%)		7	3								2	80
Queuing Penalty (veh)		0	0								0	0
Storage Bay Dist (ft)	150			150	120			120				
Storage Blk Time (%)	0	17	11		12	14	17					
Queuing Penalty (veh)	0	17	21		59	14	22					

Intersection: 17: Highland Highway (SR-92), Interval #1

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (ft)	139	138
Average Queue (ft)	110	114
95th Queue (ft)	168	180
Link Distance (ft)	115	115
Upstream Blk Time (%)	50	53
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 17: Highland Highway (SR-92), Interval #2

Movement	EB	EB	EB	EB	WB	WB	WB	WB	B20	B20	NB	NB
Directions Served	L	T	T	R	L	T	T	R	T		L	TR
Maximum Queue (ft)	170	384	390	220	173	335	352	138	9	9	187	289
Average Queue (ft)	75	221	171	66	94	149	154	42	1	1	126	271
95th Queue (ft)	173	386	374	204	188	323	333	144	19	20	257	294
Link Distance (ft)		385	385			2870	2870		211	211	254	254
Upstream Blk Time (%)		5	4								5	87
Queuing Penalty (veh)		0	0								0	0
Storage Bay Dist (ft)	150			150	120			120				
Storage Blk Time (%)	2	13	9		16	9	11					
Queuing Penalty (veh)	17	14	19		84	10	16					

Intersection: 17: Highland Highway (SR-92), Interval #2

Movement	SB	SB
Directions Served	L	TR
Maximum Queue (ft)	130	144
Average Queue (ft)	104	122
95th Queue (ft)	164	177
Link Distance (ft)	115	115
Upstream Blk Time (%)	46	70
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 17: Highland Highway (SR-92), Interval #3

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	193	386	374	188	175	358	379	181	200	290	132	140
Average Queue (ft)	81	247	196	70	84	194	205	67	141	235	98	124
95th Queue (ft)	191	447	403	198	180	409	417	204	293	378	161	167
Link Distance (ft)		385	385			2870	2870		254	254	115	115
Upstream Blk Time (%)		5	2						21	72	34	63
Queuing Penalty (veh)		0	0						0	0	0	0
Storage Bay Dist (ft)	150			150	120			120				
Storage Blk Time (%)	0	16	10	1	9	14	16					
Queuing Penalty (veh)	1	16	19	3	42	13	22					

Intersection: 17: Highland Highway (SR-92), Interval #4

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	220	402	409	200	146	408	425	172	212	276	139	135
Average Queue (ft)	94	250	212	64	85	180	194	52	161	250	98	121
95th Queue (ft)	221	459	439	195	171	406	420	180	317	338	173	167
Link Distance (ft)		385	385			2870	2870		254	254	115	115
Upstream Blk Time (%)		9	6						28	65	41	61
Queuing Penalty (veh)		0	0						0	0	0	0
Storage Bay Dist (ft)	150			150	120			120				
Storage Blk Time (%)	0	19	13		9	15	18					
Queuing Penalty (veh)	1	19	26		44	15	24					

Intersection: 17: Highland Highway (SR-92), All Intervals

Movement	EB	EB	EB	EB	WB	WB	WB	WB	B20	B20	B20	NB
Directions Served	L	T	T	R	L	T	T	R	T	T		L
Maximum Queue (ft)	249	406	413	250	215	488	502	220	2	11	9	243
Average Queue (ft)	79	238	191	67	92	174	185	58	0	0	0	129
95th Queue (ft)	189	433	405	198	186	377	387	186	2	9	10	274
Link Distance (ft)		385	385			2870	2870		211	211	211	254
Upstream Blk Time (%)		7	4									14
Queuing Penalty (veh)		0	0									0
Storage Bay Dist (ft)	150			150	120			120				
Storage Blk Time (%)	1	16	11	0	11	13	15					
Queuing Penalty (veh)	5	16	21	1	57	13	21					

Intersection: 17: Highland Highway (SR-92), All Intervals

Movement	NB	SB	SB
Directions Served	TR	L	TR
Maximum Queue (ft)	303	148	151
Average Queue (ft)	256	103	120
95th Queue (ft)	348	167	174
Link Distance (ft)	254	115	115
Upstream Blk Time (%)	76	43	62
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 22: Highland Highway (SR-92), Interval #1

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	289	465	483	290	240	613	570	46	200	223	140	202
Average Queue (ft)	165	271	279	141	211	369	316	22	148	156	61	134
95th Queue (ft)	318	454	484	322	293	689	655	52	216	236	139	214
Link Distance (ft)		1041	1041			1817	1817			232		
Upstream Blk Time (%)									0	1	0	
Queuing Penalty (veh)									0	0	0	
Storage Bay Dist (ft)	140			140	140			140	120		120	120
Storage Blk Time (%)	23	24	28	2	84	6	3		15	10	1	19
Queuing Penalty (veh)	133	43	131	10	244	9	3		64	38	4	91

Intersection: 22: Highland Highway (SR-92), Interval #1

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	243	123
Average Queue (ft)	81	76
95th Queue (ft)	215	133
Link Distance (ft)	354	
Upstream Blk Time (%)	1	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		120
Storage Blk Time (%)	0	2
Queuing Penalty (veh)	1	5

Intersection: 22: Highland Highway (SR-92), Interval #2

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	289	560	589	290	240	1071	1025	73	213	244	194	190
Average Queue (ft)	173	368	389	209	238	826	783	36	153	169	84	126
95th Queue (ft)	320	666	702	378	244	1279	1232	76	243	271	191	223
Link Distance (ft)		1041	1041			1817	1817			232		
Upstream Blk Time (%)									0	4	0	
Queuing Penalty (veh)									0	0	0	
Storage Bay Dist (ft)	140			140	140			140	120		120	120
Storage Blk Time (%)	26	24	28	2	100	6	4		18	16	1	23
Queuing Penalty (veh)	166	48	146	14	318	10	4		85	69	4	122

Intersection: 22: Highland Highway (SR-92), Interval #2

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	259	136
Average Queue (ft)	130	89
95th Queue (ft)	332	157
Link Distance (ft)	354	
Upstream Blk Time (%)	4	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		120
Storage Blk Time (%)	1	7
Queuing Penalty (veh)	5	23

Intersection: 22: Highland Highway (SR-92), Interval #3

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	278	487	496	284	240	1446	1422	108	215	242	207	210
Average Queue (ft)	192	320	324	162	238	1277	1229	35	165	187	76	152
95th Queue (ft)	341	628	634	344	243	1769	1721	113	243	289	186	235
Link Distance (ft)		1041	1041			1817	1817			232		
Upstream Blk Time (%)			0			4	1		0	5	0	
Queuing Penalty (veh)			0			0	0		0	0	0	
Storage Bay Dist (ft)	140			140	140			140	120		120	120
Storage Blk Time (%)	36	23	27	3	100	11	6		16	14	0	28
Queuing Penalty (veh)	212	42	130	16	291	16	6		70	54	3	136

Intersection: 22: Highland Highway (SR-92), Interval #3

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	289	141
Average Queue (ft)	148	96
95th Queue (ft)	351	166
Link Distance (ft)	354	
Upstream Blk Time (%)	5	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		120
Storage Blk Time (%)	0	7
Queuing Penalty (veh)	2	20

Intersection: 22: Highland Highway (SR-92), Interval #4

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	271	406	456	289	240	1688	1656	69	203	212	134	178
Average Queue (ft)	156	288	306	181	237	1564	1522	27	112	127	56	110
95th Queue (ft)	293	433	478	361	246	2017	1985	80	201	233	136	200
Link Distance (ft)		1041	1041			1817	1817			232		
Upstream Blk Time (%)						22	9		0	2	0	
Queuing Penalty (veh)						0	0		0	0	0	
Storage Bay Dist (ft)	140			140	140			140	120		120	120
Storage Blk Time (%)	12	20	23	4	99	6	4	0	9	10	1	15
Queuing Penalty (veh)	69	36	112	21	290	9	4	1	38	40	5	73

Intersection: 22: Highland Highway (SR-92), Interval #4

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	204	135
Average Queue (ft)	75	71
95th Queue (ft)	227	140
Link Distance (ft)	354	
Upstream Blk Time (%)	2	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		120
Storage Blk Time (%)	1	3
Queuing Penalty (veh)	4	9

Intersection: 22: Highland Highway (SR-92), All Intervals

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	T	R	L
Maximum Queue (ft)	290	605	629	290	240	1688	1657	141	220	249	220	218
Average Queue (ft)	171	312	324	173	231	1009	963	30	144	160	69	131
95th Queue (ft)	320	563	591	356	277	1874	1835	84	233	264	166	222
Link Distance (ft)		1041	1041			1817	1817			232		
Upstream Blk Time (%)			0			6	2		0	3	0	
Queuing Penalty (veh)			0			0	0		0	0	0	
Storage Bay Dist (ft)	140			140	140			140	120		120	120
Storage Blk Time (%)	24	23	27	3	96	7	4	0	14	12	1	21
Queuing Penalty (veh)	145	42	130	15	286	11	4	0	64	50	4	105

Intersection: 22: Highland Highway (SR-92), All Intervals

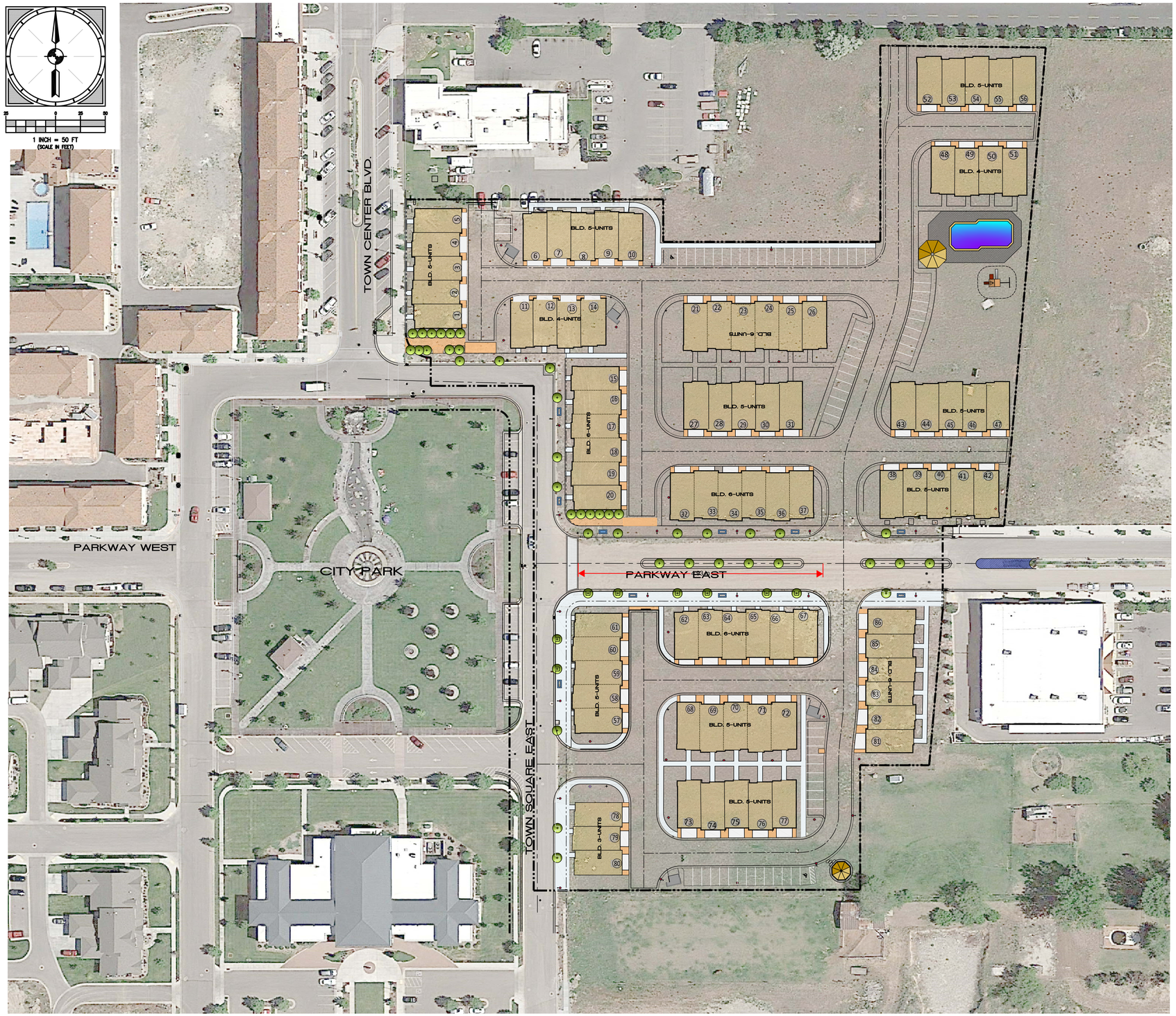
Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	319	145
Average Queue (ft)	108	83
95th Queue (ft)	291	151
Link Distance (ft)	354	
Upstream Blk Time (%)	3	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		120
Storage Blk Time (%)	0	5
Queuing Penalty (veh)	3	14

Network Summary

Network wide Queuing Penalty, Interval #1: 909
Network wide Queuing Penalty, Interval #2: 1171
Network wide Queuing Penalty, Interval #3: 1114
Network wide Queuing Penalty, Interval #4: 839
Network wide Queuing Penalty, All Intervals: 1008

APPENDIX C

Site Plan



LEGEND

1. LANDSCAPED STREET MEDIAN
2. ADA RAMP
3. ACCESS GATE IN EXTERIOR FENCING
4. NEW SIDEWALK
5. PASEO/ PLAZA AREAS-SEE SITE PLAN DETAIL SHEET
6. GAZEBO/ GRILL AREA
7. STOP/ STREET SIGN
8. EXISTING 5' WIDE SIDEWALK TO BE UPGRADED TO A 15' WIDE SIDEWALK
9. WROUGHT IRON FENCING-SEE DETAIL SHEETS
10. FIRE ACCESS
11. LANDSCAPE PLANTER
12. CROSSWALK
13. POLE LIGHT-SEE LIGHTING SITE PLAN
14. STREET LIGHT-SEE LIGHTING SITE PLAN
15. STREET TREE AND GRATE-SEE DETAIL SHEETS
16. BIKE RACK-SEE DETAIL SHEETS
17. HIGH BACK CURB AND GUTTER
18. ROLLED GUTTER (All private roads)
19. CONCRETE DRIVEWAY
20. COMMUNITY FACILITY AREA
21. CHILDREN'S PLAY AREA
22. RECONSTRUCT MEDIAN FOR NEW INTERSECTION
23. TRASH ENCLOSURE

JURISDICTION

LEGAL JURISDICTION:	HIGHLAND CITY
DISTRICT/ PLANING ZONE:	TOWN CENTER FLEX USE

AREA TABULATIONS

	AREA	% of total
TOTAL AREA:	___ acres	___%
BUILDING(s) AREA:	____acres (sf)	__%
LANDSCAPE:	___ acres (sf)	__%
HARDSCAPE:	___ acres (sf)	__%
ROADS:	___acres (sf)	__%

PARKING TABULATIONS

TOTAL UNITS:	86
ON SITE PARKING PROVIDED:	172 GARAGE
	___STALLS
	___TOTAL ON SITE
	(3.0 SPACES/ UNIT)

ACCESSIBILITY

ALL UNITS TO OFFER ELEVATORS FOR HANDICAPPED ACCESS

Project access point-full access

Summit Engineering Group Inc.
Structural • Civil • Surveying

REVISIONS

		DATE	BY
1			
2			
3			
4			
5			
6			
7			
8			

CITY ENGINEER

DESIGN ENGINEER'S SEAL

PROJECT ENGINEER: BMB
PROJECT MANAGER: BMB
DRAWN BY: SCS
SCALE: AS SHOWN
ISSUE DATE 7-06-15

PROJECT
BLACKSTONE PROJECT

SHEET TITLE
SITE PLAN

PROJECT
C15-006

SHEET
C-1

7/6/2015 12:07:06 PM

\\Sdg-server\data\SDG Projects\CURRENT PROJECTS\C15-006 Highland\Working Files\Planning\dwg\C15-006 Base Map at design July 2.dwg

HALES ENGINEERING
innovative transportation solutions

APPENDIX D

95th Percentile Queue Length Reports

SimTraffic Queueing Report

Project: Highland - Blackstone TIS

Time Period: p.m. Peak Hour

95th Percentile Queue Length (feet)

HALES ENGINEERING
innovative transportation solutions

Project #: UT15-763

Intersection	Time Period	EB						NB				SB		WB				
		L	LR	LT	LTR	T	TR	L	LR	LT	LTR	L	LTR	L	LR	LTR	T	TR
10890 North/10890 North & Town Center Boulevard	Existing (2015) Background	--	--	49	--	--	--	--	--	--	--	--	--	--	--	--	--	44
5400 West & Park Access	Existing (2015) Background	--	--	--	--	--	--	--	--	3	--	--	--	--	--	--	--	--
5400 West/5400 West & Parkway Drive	Existing (2015) Background	--	--	--	--	--	--	--	--	--	--	--	--	--	28	--	--	--
Alpine Highway (SR-74) & Parkway Drive	Existing (2015) Background	--	59	--	--	--	--	32	--	--	--	--	--	--	--	--	--	--
Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access	Existing (2015) Background	33	--	--	--	--	44	21	--	--	--	26	--	--	--	60	--	--
Town Center Boulevard & Highland Highway (SR-92)	Existing (2015) Background	--	--	--	--	9	4	--	127	--	--	--	--	62	--	--	21	--
Town Center Boulevard & Toscana Access/Town Square Access	Existing (2015) Background	--	--	--	39	--	--	--	--	--	4	--	9	--	--	40	--	--

SimTraffic Queueing Report

Project: Highland - Blackstone TIS

Time Period: p.m. Peak Hour

95th Percentile Queue Length (feet)

HALES ENGINEERING
Innovative transportation solutions

Project #: UT15-763

Intersection	Time Period	EB						NB			SB				WB					
		L	LR	LT	LTR	T	TR	L	LR	LTR	L	LR	LTR	TR	L	LR	LT	LTR	T	TR
10890 North/10890 North & Town Center Boulevard	Existing (2015) Plus Project Conditions	--	--	48	--	--	--	--	--	--	--	7	--	--	--	--	--	--	--	44
5400 West & Park Access/West Access	Existing (2015) Plus Project Conditions	--	--	--	--	--	--	--	--	0	--	--	--	--	--	--	--	16	--	--
5400 West/5400 West & Parkway Drive	Existing (2015) Plus Project Conditions	--	--	--	--	--	--	--	--	--	--	--	--	--	--	31	--	--	--	--
Alpine Highway (SR-74) & Parkway Drive	Existing (2015) Plus Project Conditions	--	66	--	--	--	--	36	--	--	--	--	--	--	--	--	--	--	--	--
Alpine Highway (SR-74) & Town Square Access/Wells Fargo Access	Existing (2015) Plus Project Conditions	37	--	--	--	--	43	22	--	--	23	--	--	0	--	--	--	60	--	--
Northeast Access & Town Square Access	Existing (2015) Plus Project Conditions	--	--	--	--	--	--	--	26	--	--	--	--	--	--	--	5	--	--	--
Southwest Access & Parkway Drive	Existing (2015) Plus Project Conditions	--	--	--	3	--	--	--	--	23	--	--	18	--	--	--	--	--	--	--
Town Center Boulevard & Highland Highway (SR-92)	Existing (2015) Plus Project Conditions	--	--	--	--	11	10	--	168	--	--	--	--	--	66	--	--	--	20	--
Town Center Boulevard & Toscana Access/Town Square Access	Existing (2015) Plus Project Conditions	--	--	--	39	--	--	--	--	--	--	--	11	--	--	--	--	40	--	--

HIGHLAND CITY BLACKSTONE TOWNHOMES TRAFFIC IMPACT STUDY

DRAFT August 2015
Project Number 150419

InterPlan
Transportation Planning
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Introduction

InterPlan was hired by Highland City to evaluate the general traffic operations of the proposed Blackstone development in Highland, Utah. The overall purpose of this traffic study is to identify planning related issues associated with the design plans and concepts in order to mitigate any transportation related concerns and identify site specific design issues that may be addressed at a later stage in project development and design. This report summarizes the traffic analysis and recommendations for the proposed development.

The proposed development is a 7.76 acre site located in Highland, Utah at the intersection of Town Square East and Parkway East, adjacent to the town center. The site is located east of Town Square East and on both sides of Parkway East. The site is for a proposed townhouse development. Figure 1 shows the development site plan.

Summary of Issues and Recommendations

Through analysis of the traffic operations, current and planned land uses and local concerns, InterPlan has determined the major issues to be:

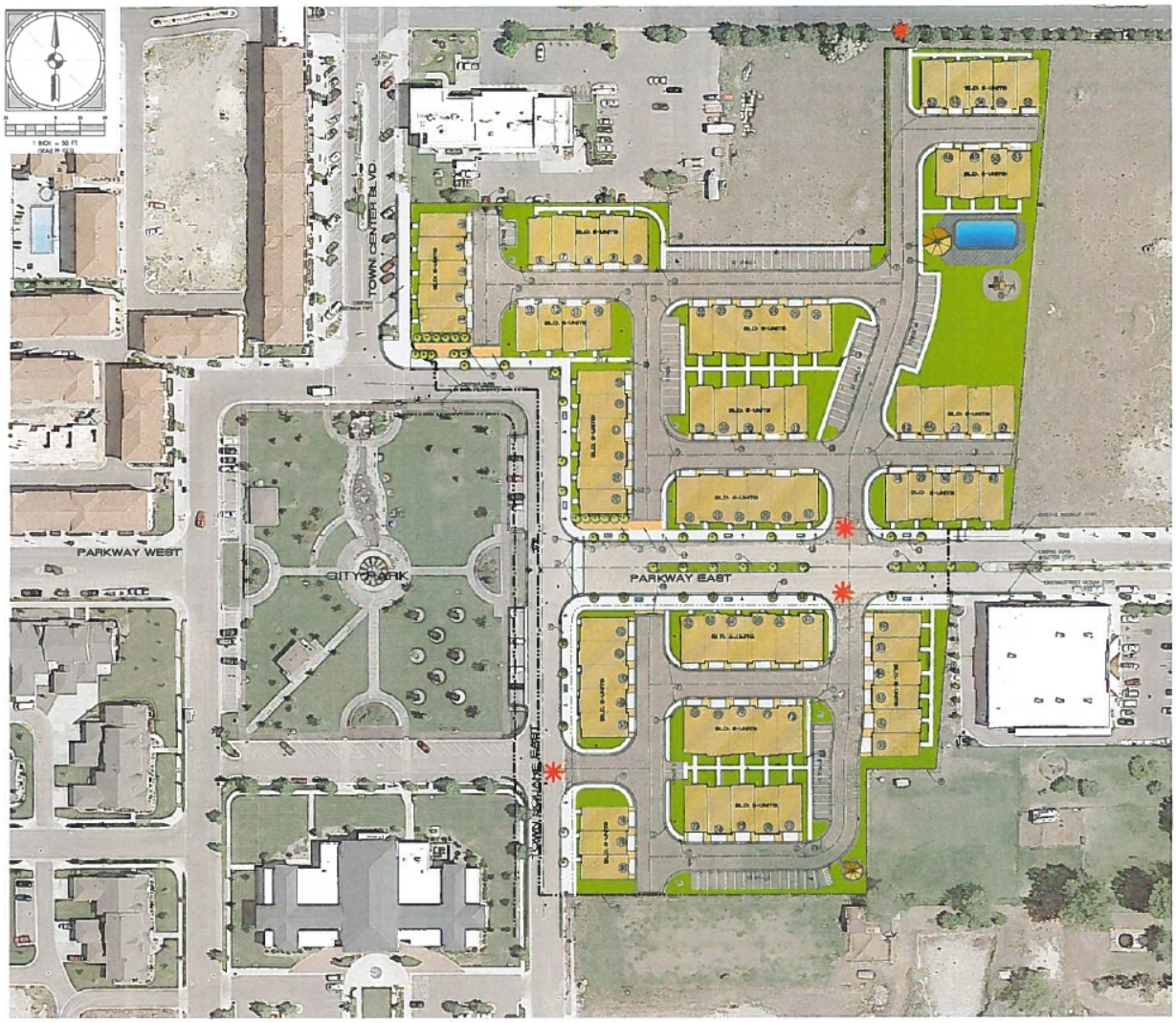
1. The impact of development trips to adjacent intersection operation and the surrounding traffic network
2. Driveway access and site circulation
3. Pedestrian safety

The traffic volumes generated by the proposed development will not have a significant impact on the surrounding road network for opening day conditions.

The north section of the development only provides one full access for 56 townhouse units. InterPlan recommends an additional public access driveway for the north section of the development for traffic circulation and emergency access.

The traffic generated during the Midday peak hour is minimal and will not provide a safety hazard to the individuals that use the splash pad and Town Center Plaza during the summer months.

Figure 1 – Development Site Plan



Description of Existing Conditions and Proposal

The proposed development is located in the town center of Highland, Utah at the intersection of Town Square East and Parkway East. The 7.76 acre site is a proposed residential development for 86 attached multi-family unit townhouses. The proposed development is adjacent to Highland City Hall and the Highland Town Center Plaza. The development site will lie on both sides of Parkway East, which runs east-west and will connect Town Square East on the west with Alpine Highway (SR-74) on the east. Parkway East is approximately 52 feet wide with one lane in each direction and a center median. The section of Parkway East immediately adjacent to the development site is not fully improved, but is anticipated for completion as part of the development project.

Town Square East is a north-south minor street that runs along the east side of the Highland City civic area and connects Town Center Boulevard on the north to Town

Center Parkway on the south. Town Square East is approximately 32 feet wide adjacent to the development site with one lane in each direction and no center turn lane.

The Blackstone townhouse development is proposed to have one access driveway onto Town Square East that will align with Civic Center Drive. Access driveways are also proposed onto Parkway East that will align and provide access to the north and south sections of the development. The proposed development will provide on-site parking for three spaces per townhouse (172 garage spaces and 86 parking stalls).

The proposed development is zoned Town Center Flex Use District and is part of the town center special overlay district. The surrounding land use is a mix of residential, commercial, and civic land uses, including Toscana, another high density townhouse development to the west. The Town Center Plaza which lies directly west of the proposed development site contains a splash pad that is open from Memorial Day to Labor Day from 10:00 a.m. to 8:00 p.m. and can attract crowds during the summer season. There is commercial retail development to the north and east of the proposed development including a grocery store, hardware store, bank, and several fast food restaurants.

Trip Generation

For purposes of evaluation and planning, transportation engineers have defined a unit of measure as a vehicle trip. A trip is a one-direction vehicle movement with either the origin or the destination (exiting or entering) inside the study site. (Source: Institute of Transportation Engineers (ITE), Trip Generation User's Guide 2003) In general terms, any time a vehicle passes through a driveway, a trip is registered. The ITE has performed studies on various types of land uses and the trips generated by those individual land uses. The ITE has published detailed average trip counts by type of development. ITE trip generation rates are available for various periods of the day including AM and PM peaks on weekdays and on weekends. InterPlan typically uses these industry-accepted standards when evaluating traffic impacts unless local variations to the standards are readily apparent or are an area of concern.

Trip generation for the proposed development was calculated using the ITE's trip rate for Residential Townhouse (ITE Land Use Code 230). Table 1 summarizes the trip generation for the AM and PM peak hour. The development is anticipated to generate approximately 500 total daily trips, with 38 AM peak hour trips and 45 PM peak hour trips.

Table 1 – Trip Generation

Land Use	ITE Code	Units	# of Units	Time Period	Trip Rate	In/Out Split	Trips		
							In	Out	Total
Residential Townhomes/ Condos	230	# of Dwelling Units	86	Weekday Daily	5.81	50/50	250	250	500
				AM Peak Hour	0.44	17/83	7	31	38
				Midday Peak Hour*	5% of Daily Total*	40/60*	10*	15*	25*
				PM Peak Hour	0.52	67/33	30	15	45

Source: Trip Generation Manual, 9th Edition, 2012
*Based on engineering judgment and field observation of residential trip generation characteristics

The Trip Generation Manual does not contain trip generation rates for the Midday hour for residential land uses. Engineering judgment and field observation suggest that trips generated by the proposed development during the Midday hour are expected to be less than the both the AM and PM peak hours. The AM and PM peak hours generate trips equal to 7.6 percent and 9 percent of the weekday daily trip total, respectively. Thus, it was determined to assume the Midday peak hour would generate approximately 5 percent of the daily trips.

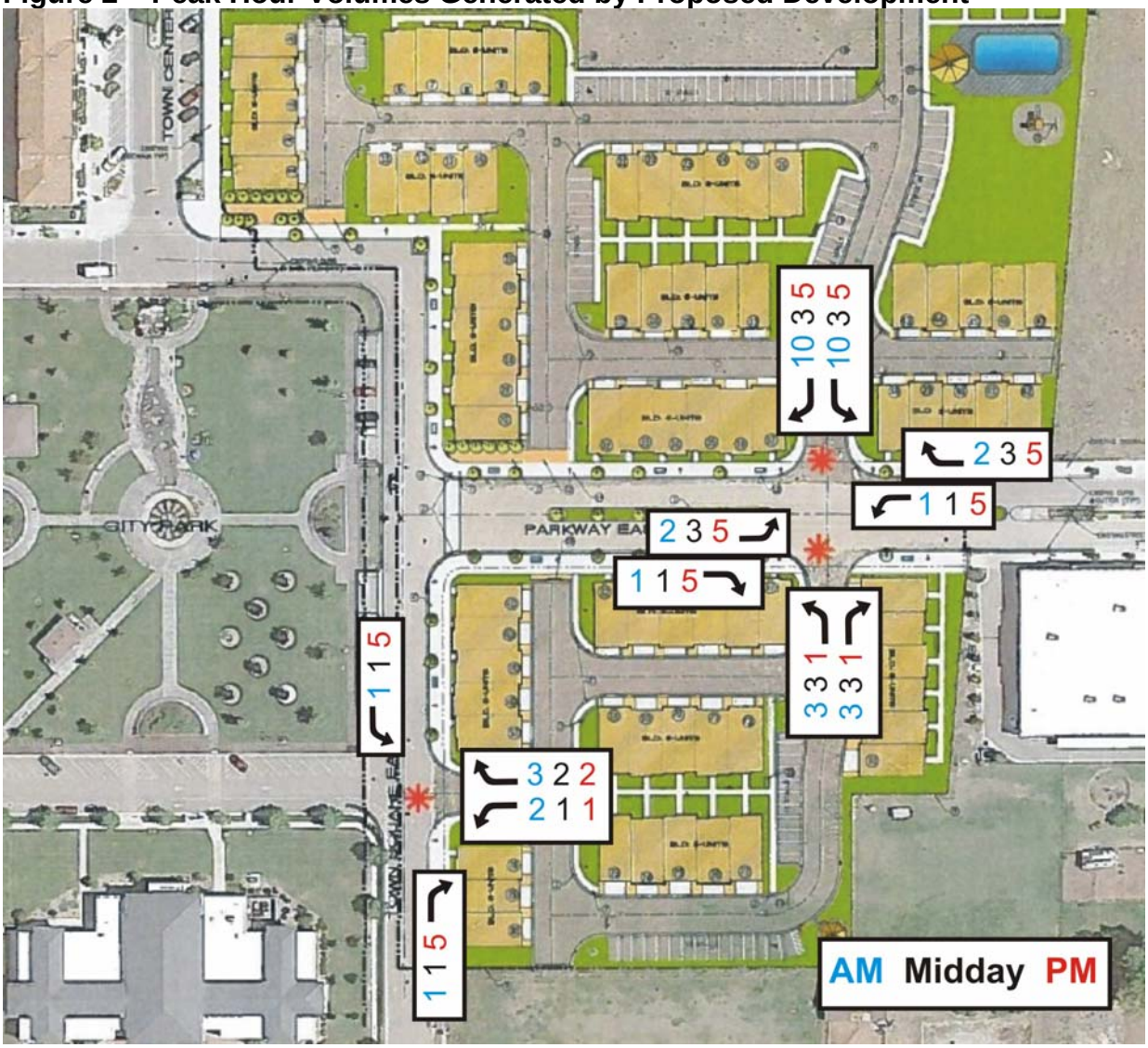
Trip Distribution

With the calculated trip generation, InterPlan estimates how the trips impact adjacent roads and intersections. To do this, engineers look at the existing trip distribution obtained during data collection, specifically the traffic counts. Traffic counts and observations were conducted on Tuesday August 4, 2015 during the AM peak hour (7:00 a.m. to 8:00 a.m.), at Midday (1:00 p.m. to 2:00 p.m.), and during the PM peak hour (5:00 p.m. to 6:00 p.m.). Based on existing traffic patterns, including the distribution of current traffic, and consideration of the location of major urban centers, the following trip distribution will be used for development-generated trips:

- 40 percent to/from west on Parkway East Drive
- 40 percent to/from east on Parkway East Drive
- 10 percent to/from north on Town Square East
- 10 percent to/from south on Town Square East

Figure 2 details the traffic volumes at each access driveway that are expected to be generated during the AM and PM peak hour by the proposed townhouse development.

Figure 2 – Peak Hour Volumes Generated by Proposed Development



Level of Service (LOS)

In analyzing how well an intersection operates, the capacity and/or operational Level of Service (LOS) for the intersection is determined. LOS is defined as how well an intersection or road operates based on levels A through F. Level A represents the best operating conditions and level F the worst. Typically, LOS C or D service flow rates are used as minimally acceptable standards in order to ensure acceptable traffic operations.

- A – free flow operation
- B – reasonably unimpeded operation
- C – stable operation
- D – small increases in flow may cause substantial delay
- E – operates with significant delays
- F – operates with extremely slow speeds and/or intersection failures

InterPlan calculates LOS using *Synchro*, a traffic engineering software program published by Trafficware. Synchro methods are consistent with the methods and procedures of the *Highway Capacity Manual 2010* to calculate vehicle delay on the roadway network. Built-in default parameters of Synchro, such as the use of a peak hour factor of 0.92, are generally used in our analysis. Field observations validate the appropriateness of default parameters. Table 2 illustrates the LOS definitions for stop sign controlled (unsignalized) intersections. It should be noted that Highway Capacity Manual definitions for LOS do not apply to uncontrolled movements.

Table 2 – LOS Criteria for Unsignalized Intersections

Level of Service	**Stop-Controlled Intersection Approaches** Average Control delay (seconds/vehicle)
A	0 – 10
B	> 10 – 15
C	> 15 – 25
D	> 25- 35
E	> 35 – 50
F	> 50

Source: Highway Capacity Manual (HCM) 2000, Transportation Research Board National Research Council, Washington D.C., 2000.

Analysis

Existing Performance

Existing LOS was analyzed for the AM, Midday, and PM peak hours for the following stop-controlled intersections:

1. Town Center Boulevard/Timpanogos Highway (SR-92)
2. Town Center Boulevard/10890 North
3. Parkway East/Alpine Highway (SR-74)

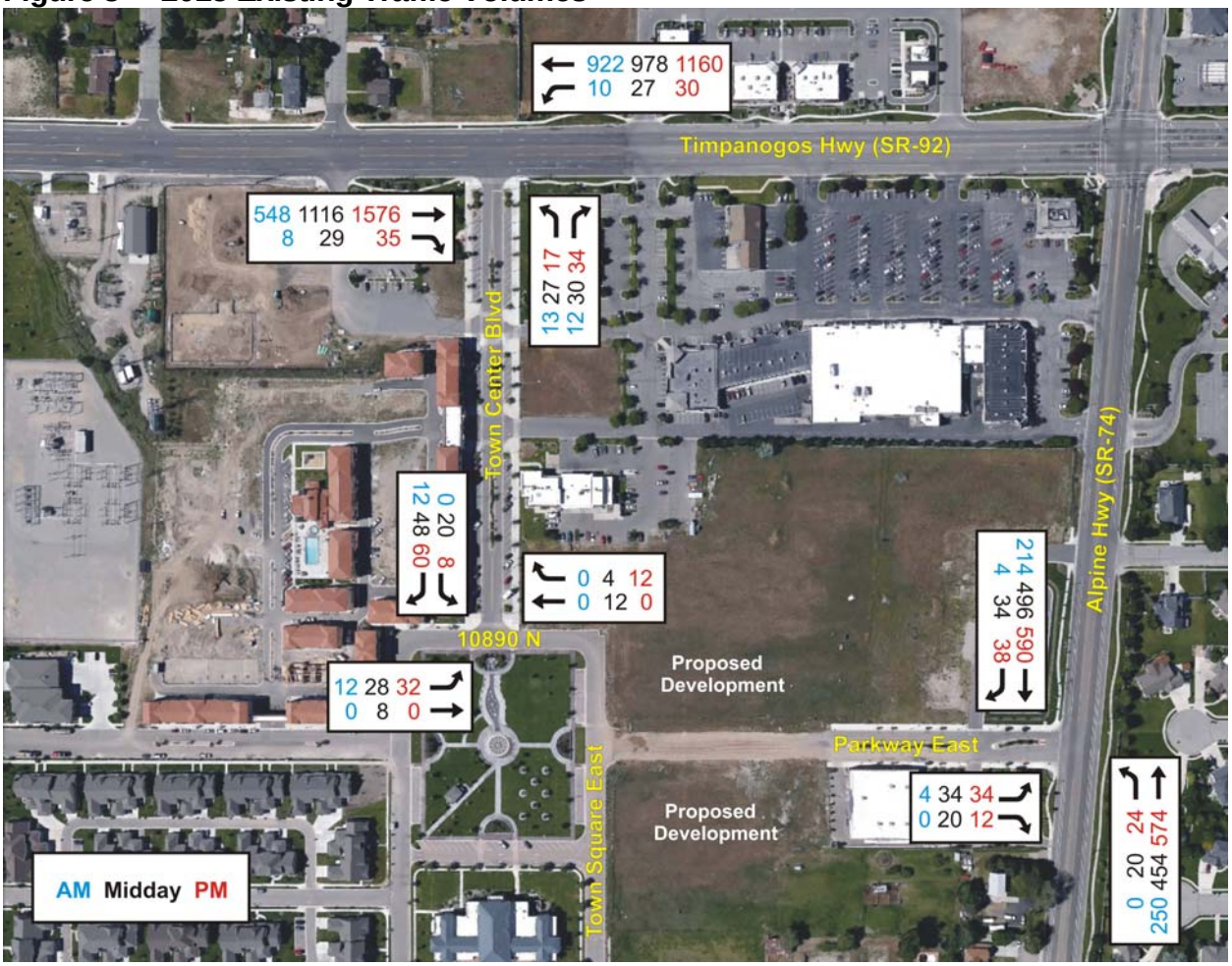
Existing 2015 traffic volumes for each movement are shown in Figure 3. The AM volumes are represented in blue, Midday volumes in black, and PM volumes in red. Volumes include existing and anticipated traffic volumes from the nearby Toscana townhome development which is currently approaching completion. According to Highland City, approximately 124 of the planned 200 units at Toscana were competed at the time of the data collection. Thus, traffic volumes from the 124 completed units were captured in the traffic counts. For the remaining 76 units, InterPlan applied the same trip generation rates for the proposed Blackstone development to estimate the number of additional trips the Toscana development is expected to add to the roadway system in the immediate future. Because the unfinished units are at the back (west) end of the Toscana development, it is anticipated that most of these new trips would access the roadway network via the driveway on Parkway West and proceed to 5600 West. The remaining trips are expected to primarily use the main Toscana driveway on Town Center Boulevard and proceed to SR-92. Thus, the only study intersection likely to be significantly affected by future Toscana development is the Town Center Boulevard/ Timpanogos Highway (SR-92) intersection. These trips (which are less than 10 total trips for each peak hour) were added to the existing conditions analysis

Under existing conditions, the intersection at Town Center Boulevard and Timpanogos Highway operates at an LOS F during the Midday and PM peak hours. The heavy east-west traffic flow on Timpanogos Highway does not provide many gaps for northbound left-turn vehicles, resulting in high vehicle delay for the NB left-turn movement at the intersection. All other intersections operate at acceptable LOS under existing conditions for the AM, Midday, and PM peak hours. It should be noted that drivers have alternate, signalized access to Timpanogos Highway at the intersection with Alpine Highway (SR-74).

Table 3 – Existing Level of Service

Stop-Controlled Intersection	Approach	Level of Service (average delay) [seconds/vehicle]		
		AM	Midday	PM
Town Center Boulevard/SR-92	NB	C (17)	F (> 50)	F (> 50)
Town Center Boulevard/10890 North	SB	A (8)	A (9)	A (9)
Parkway East/Alpine Highway	EB	B (15)	C (19)	D (27)
Parkway East/Town Square East	N/A			

Figure 3 – 2015 Existing Traffic Volumes



Existing Plus Development Level of Service

Existing Plus Development LOS was analyzed for the AM, Midday, and PM peak hours for four intersections:

1. Town Center Boulevard/Timpanogos Highway (SR-92)
2. Town Center Boulevard/10890 North
3. Parkway East/Alpine Highway (SR-74)
4. Parkway East/Town Square East

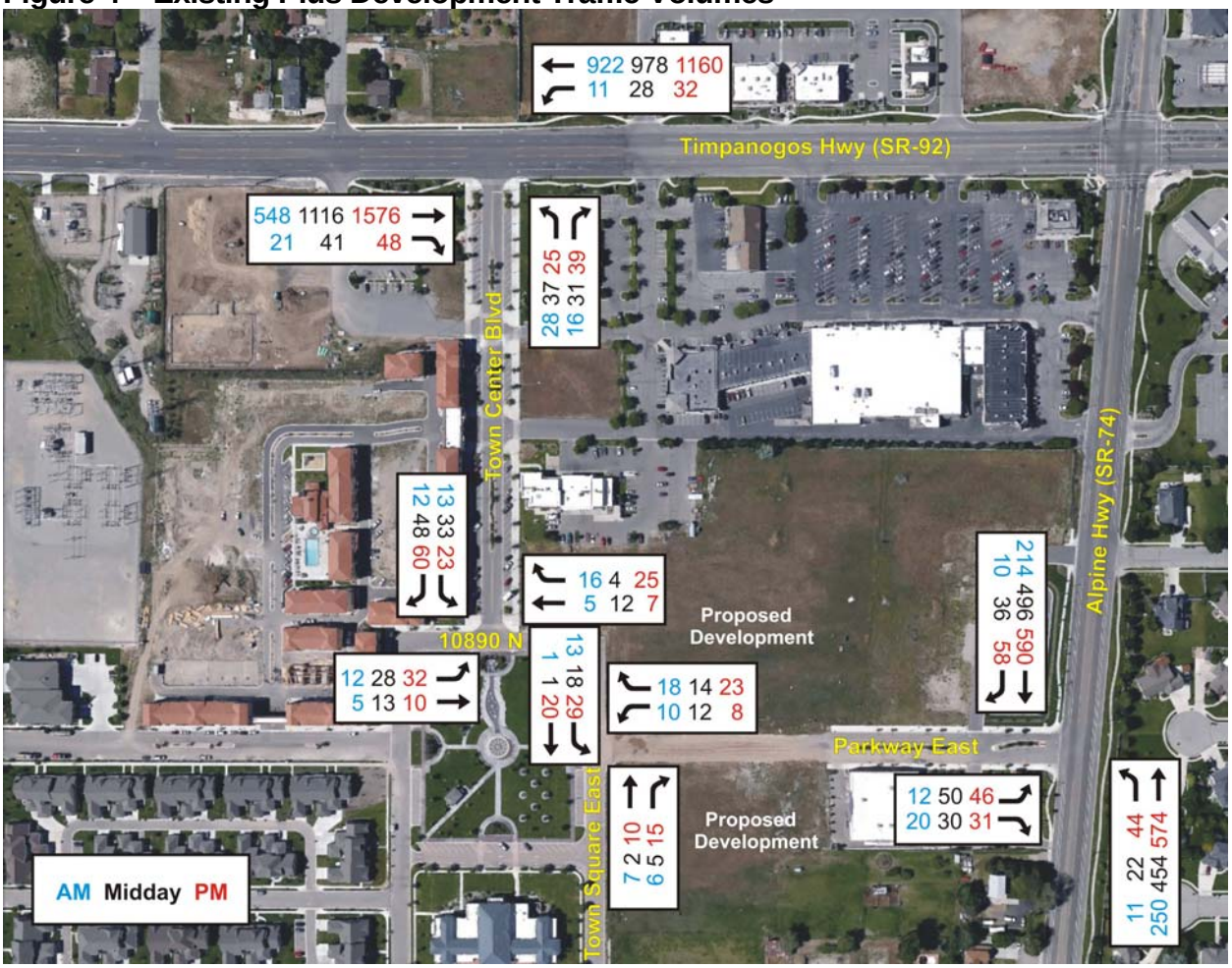
In addition to the three intersections analyzed under existing conditions, the Parkway East/Town Square East intersection was also analyzed under the Existing Plus Development scenario. The Existing Plus Development analysis assumes that Parkway East will be a completed roadway adjacent to the development. In addition to the trips generated by the development, additional traffic volumes were added to Parkway East. Based on background traffic counts and surrounding land uses, it was assumed that Parkway East will carry an additional 30 through vehicles during the AM peak hour, 40 vehicles during the Midday hour and 50 vehicles during the PM peak hour as a completed through street. These adjustments have been included in the Existing Plus Development traffic volumes.

Figure 4 shows traffic volumes with the added development traffic, and Table 4 details the resulting intersection LOS and vehicle delay. The addition of the vehicle trips generated by the proposed development does not significantly affect the surrounding traffic network. The intersection at Town Center Boulevard/Timpanogos Highway only worsens by four seconds of delay during the AM peak hour and remains at an acceptable LOS C with the addition of development traffic. This intersection is already LOS F under existing conditions during the Midday and PM peak hour, and does not increase significantly in vehicle delay with development traffic. The other intersections remain nearly unchanged in LOS and delay with the addition of the development vehicle trips to the traffic network. The intersection nearest the development at Parkway East/Town Square East operates at an acceptable LOS A.

Table 4 – Existing Plus Development LOS

Stop-Controlled Intersection	Approach	Level of Service (average delay) [seconds/vehicle]		
		AM	Midday	PM
Town Center Boulevard/SR-92	NB	C (21)	F (> 50)	F (> 50)
Town Center Boulevard/10890 North	SB	A (9)	A (9)	A (9)
Parkway East/Alpine Highway	EB	B (11)	C (20)	D (29)
Parkway East/Town Square East	WB	A (9)	A (9)	A (9)

Figure 4 – Existing Plus Development Traffic Volumes



Site Circulation

The proposed Blackstone development is divided into two sections, the northern section lies north of Parkway East and has 56 units, and the southern section lies south of Parkway East and has 30 units. The south section has two accesses, one from Town Square East and one from Parkway East. With 30 units and two access points, the south section provides good site circulation. The northern section only has one access from Parkway East for 56 units, although there may also be a one lane access on the north end of the development to the Ridley's grocery store service drive. InterPlan did not consider this north access in its analysis as there is uncertainty whether this access will be open to public use. Additionally this north access would exit onto private property and will not be wide enough to allow for emergency vehicles to access the development. To provide better site circulation, InterPlan recommends that another access be added to the north section of the development from Parkway East.

Parking Requirements

The Blackstone development will provide three parking spaces per townhouse unit which includes two garage spaces and one parking stall per unit. There is also limited on-street parking available adjacent to the development site along 10890 North and Town Square East. The parking space allotment proposed by the developer will provide a sufficient amount of parking for the development. Based on the current site plan, InterPlan has observed that the outside parking stalls are located on the edges of the development and they do not allow close access for several of the townhouse units.

Pedestrian Safety

The Town Center Plaza and park lies directly west of the proposed development site and contains a splash pad that can attract large crowds during the summer. The splash pad is open from Memorial Day to Labor Day from 10:00 a.m. to 8:00 p.m. Concerns have been expressed that traffic from the proposed development will negatively affect pedestrian safety for those using Town Center Plaza and the splash pad. As mentioned earlier in this report, traffic generated during the midday hours from the proposed development will be minimal (less than 25 vehicles per hour), and will not significantly affect pedestrian activity for those using the Town Center Plaza and splash pad.

Conclusions

The proposed Blackstone development will not have a detrimental impact to intersection LOS, vehicle delay, or the surrounding traffic network. InterPlan recommends an additional public access driveway for the north section of the development for traffic circulation and emergency access. The parking requirements are sufficient for the development with three spaces per unit. Often, the outside parking stalls are located on the edges of the development and do not allow close access for several of the townhouse units, although each unit will have two dedicated parking spaces within its garage. The traffic generated during the Midday peak hour is minimal and will not provide a safety hazard to the individuals that use the splash pad and Town Center Plaza during the summer months.

About InterPlan

InterPlan is a Utah-owned and operated firm founded in 2001 and dedicated to offering creative and client-focused solutions to transportation planning issues. This report has been performed by InterPlan and its staff and is not intended to advocate a position on behalf of any client. Further information and assistance about the contents of this report may be obtained from any of those who worked on this project including Vern Keeslar, AICP, Charles Allen, P.E., PTOE, and Tim Peterson.

InterPlan Co.
7719 South Main Street
Midvale, UT 84047
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Appendix

MEMORANDUM

DATE:	August 28, 2015
TO:	Highland City
FROM:	Tavis Timothy, P.E.
SUBJECT:	Blackstone Infrastructure Requirements
PROJECT NO:	314.05.115

INTRODUCTION

The purpose of this memo is to provide master planned infrastructure information for Storm Drain, Pressurized Irrigation, Sanitary Sewer and Drinking Water necessary for the proposed new Blackstone development. The development is located in the Town Center to the northeast of City Hall. Information has been compiled from previous Master Planning and modeling efforts.

STORM DRAIN

All new development in the Town Center must comply with a zero discharge rate. Each developer will need to plan on a retention/sump facility. The most recent proposed development plans provided sumps as the means of retaining storm water runoff.

PRESSURIZED IRRIGATION

Existing pressurized irrigation lines are within the existing streets that bound the proposed development. Connections to the new lines will be required. The existing system has sufficient pressures and volume of water to supply the needs of the development. No system upgrades are anticipated to provide secondary water to the Blackstone Development.

SANITARY SEWER

A sewer line, in anticipation of development in the Town Center, is located near the Blackstone development at the corner of 5400 W. and Town Center Parkway. The developer will be required to extend the line approximately 800-feet in 5400 W. The 10400 N. sewer replacement project is required for new development in the Town Center. The project was identified in the Sewer Master Plan, due to the existing 10-inch line not having sufficient capacity for new growth. The line is nearing 100% capacity for peak flows with existing and approved development.

City Council approved the replacement project earlier in the year after a study of the 10400 N. trunk line verified the existing and future sewer flows. It is recommended that the new sewer line be built before adding connections that would exceed the capacity of the sewer. Adding all

of the residences proposed by the Blackstone Development would exceed the capacity of the sewer system. The current schedule is that the new sewer line would be completed by early summer of 2016.

DRINKING WATER

Existing drinking water lines are found within the streets around the proposed development. Hydraulic modeling provided sufficient flows and pressures during peak demands. The new development will need to connect into the existing lines at a number of locations to get sufficient looping. No system upgrades are anticipated to provide secondary water to the Blackstone Development.

CITY COUNCIL AGENDA REPORT

Item # 14

DATE: September 1, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Nathan Crane, AICP
City Administrator/Community Development Director

SUBJECT: MOTION: CONDITIONAL USE PERMIT for a 19,422 square foot church located at 9681 North 6900 West – (CU-15-03).

STAFF RECOMMENDATION:

The City Council review a request for a conditional use permit for a 1,600 square foot salt storage building located at 9681 North 6900 West.

BACKGROUND:

The property is 3.6 acres in size and is owned by The Church of Jesus Christ of Latter-day Saints.

The site is designated as Low Density Residential on the General Plan Land Use Map. The site is zoned R-1-40 (Residential Zone). Churches are permitted in the R-1-40 District subject to a conditional use permit.

The church will be located on Lot 3 of the 9600 North Subdivision. This subdivision was approved by the City Council in December of 2009 and recorded in September of 2010.

A Conditional Use Permit is an administrative action.

SUMMARY OF REQUEST:

1. The applicant is requesting approval of a 19,422 square foot church. The site includes a 205 square foot storage building and a 2,295 square foot pavilion.

2. Access to the site will be from two driveways on 9600 North.

3. The minimum 30 foot setback is provided along 9600 North.

4. Approximately 55,186 square feet (35.26%) of the site is landscaped. Ten foot landscape buffer are included on the north and south sides and a 76 foot landscape buffer is provided on the west side. A six foot concrete wall will also surround the site.

5. The site plan shows 212 parking spaces. There are 7 ADA accessible stalls.

CITIZEN PARTICIPATION:

Notice of the Neighborhood Meeting was mailed to all property owners within 500' of the proposed conditional use permit on July 1, 2015 Nine people attended the meeting. Based on the information submitted by the applicant no one in attendance opposed the proposed conditional use permit (Attachment 2).

Notice of the Planning Commission meeting was published in the Daily Herald on August 9, 2015. Notice of the meeting was also mailed to all property owners within 500' on August 10, 2015. No comments have been received.

Notice is not required for the City Council meeting.

REQUIRED FINDINGS:

The City Council must determine that the proposed use meets three findings prior to granting a Conditional Use Permit. The burden of proof rests with the applicant. Each finding is presented below along with staff's analysis.

1. **The use will not be detrimental to the health, safety, or general welfare of persons residing or working in the vicinity or injurious to property or improvements in the vicinity.**

The property to the north, south, east, and west is zoned R-1-40. The property to the north is vacant and is owned by the Alpine School District. The property to the west, east, and south is existing single family residential. The proposed use is compatible with the existing and planned land uses.

2. **The use complies with all applicable regulations in the Development Code.**

The proposed buildings meet or exceed all required setbacks. The site meets the minimum 35% landscaping. A six foot wall is also proposed along the rear property line.

There will be no parking lot lighting. If lighting is needed it will be mounted to the building and will be fully shielded and directed downward. Lighting on the site will be limited to one foot candle at the property line.

The proposed building will meet all requirements of the Development Code.

3. **Conditions are imposed to mitigate any detrimental effects.**

Four stipulations have been included to ensure compliance with the Development Code.

CONCLUSION:

With the proposed stipulations, the proposed use appears to meet the required findings.

PLANNING COMMISSION ACTION:

The Planning Commission held a public hearing on August 25, 2015. Adjacent owners were concerned about parking and the existing utilities. The City Engineer visited the site on August 26, 2015 and found that the existing utilities are adequate to serve this and the adjacent property. He found that 6900 West was wide enough to accommodate parking on the west side of the street and two way traffic. He recommended that no parking signs be installed along the east side of 6900 West.

The Commission voted 6-1 to recommend approval of the conditional use permit subject to the following stipulations:

1. The final site plan shall be in substantial conformance with the site plan dated July 13, 2015.

2. Final civil engineering plan to be reviewed and approved by the City Engineer.

3. Final landscape plans to be approved prior to issuance of a building permit.

4. All required public improvements shall be installed as per City Engineer's approval.

5. No parking signs be installed along the east side of 6900 West.

PROPOSED MOTION:

I move that the City Council accept the findings and **APPROVE** the request for a conditional use permit for a 19,422 square foot church subject to the five stipulations recommended by the Planning Commission.

ATTACHMENTS:

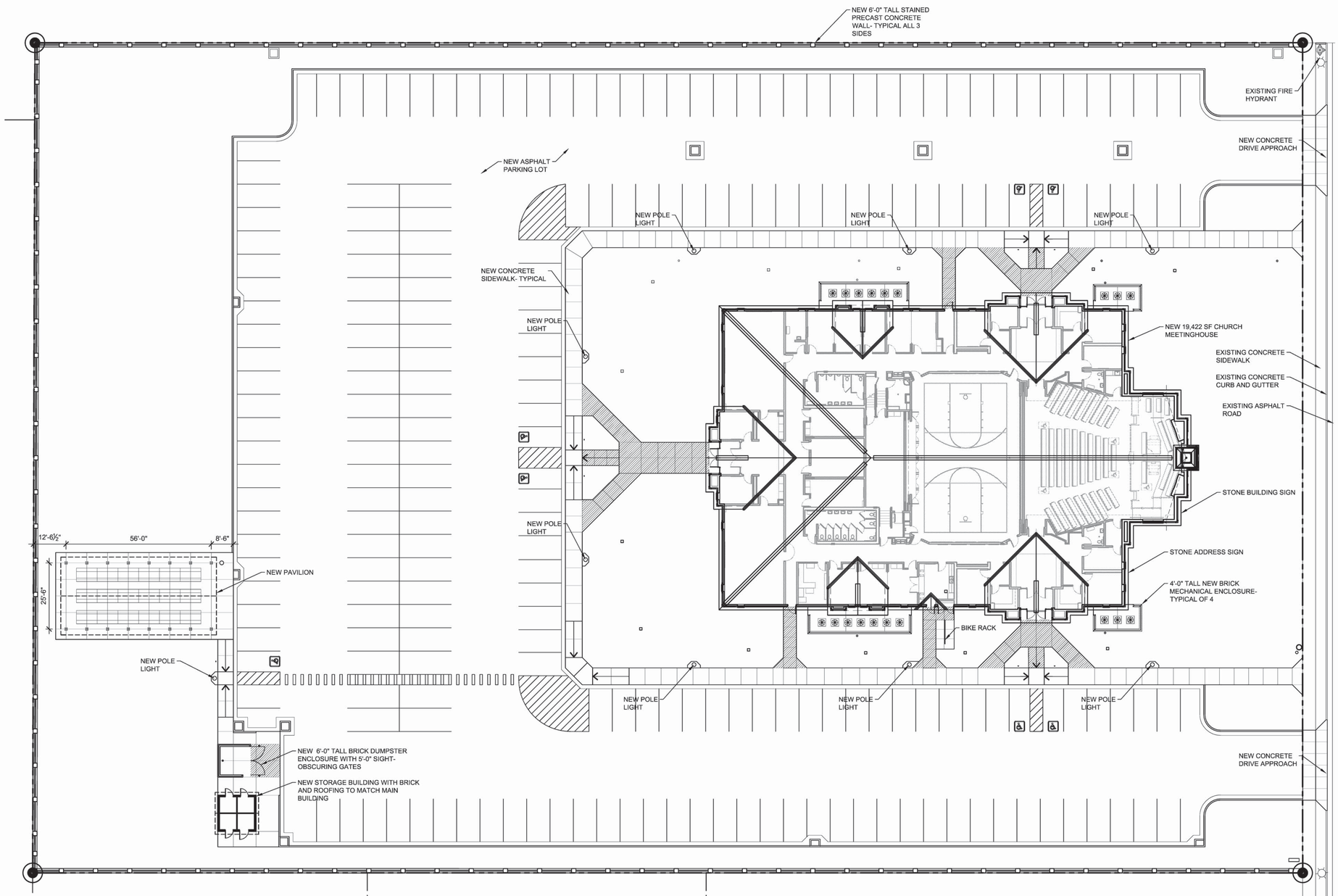
Attachment 1 – Proposed Site Plan
Attachment 2 – Proposed Building Elevations

GENERAL NOTES

A. FOR OVEREXCAVATION REQUIREMENTS, SEE GRADING SITE PLAN C103.
B. CONCRETE RADII ARE 6'-0" UNLESS NOTED OTHERWISE.
C. PARKING STALLS ARE 9'-0" x 18'-0" UNLESS NOTED OTHERWISE.
D. ALL NOTED ITEMS ARE NEW UNLESS NOTED OTHERWISE.
E. DIMENSIONS OF BUILDINGS AND ENCLOSURES ARE TO FOUNDATION - TYPICAL.
F. COORDINATE ALL WORK AFFECTING ADJACENT PROPERTIES WITH RESPECTIVE PROPERTY OWNERS PRIOR TO ANY DEMOLITION OR CONSTRUCTION WORK. REPAIR AND REPLACE ALL EXISTING ITEMS ON ADJACENT PROPERTIES DAMAGED OR AFFECTED DURING CONSTRUCTION TO THE SATISFACTION OF THE PROPERTY OWNER.
G. COORDINATE ALL SITE WORK WITH ALL OTHER CONTRACT DOCUMENTS.
H. THIS AND ANY OTHER DEMOLITION DRAWINGS ARE NOT INTENDED TO BE ALL-INCLUSIVE, NOR TO DEFINE THE SCOPE OF ALL DEMOLITION WORK REQUIRED FOR THIS PROJECT. DEMOLITION DRAWINGS ARE SHOWN ONLY TO AID THE CONTRACTOR IN PREPARING HIS BID AND PERFORMING THE WORK. CONTRACTOR SHALL EXAMINE ALL CONTRACT DOCUMENTS AND VISIT THE SITE DURING BIDDING AS REQUIRED TO DETERMINE THE TOTAL EXTENT AND SCOPE OF THE DEMOLITION PORTION OF THIS WORK. ALL ITEMS THAT ARE NOT REQUIRED TO REMAIN SHALL BE OF THE DEMOLITION WORK WHETHER SHOWN SPECIFICALLY OR NOT. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEMOLITION WORK REQUIRED TO CARRY OUT THE WORK AS SHOWN IN THE CONTRACT DOCUMENTS.
I. THE BUILDINGS AND PARKING LOT ARE PARALLEL OR PERPENDICULAR TO THE EAST PROPERTY LINE.
J. FOR MOWSTRIPS IN LANDSCAPED AREAS/LANDSCAPE EDGING, SEE LANDSCAPING SHEETS.
K. SEE E/C501 FOR DETAIL AT EXTERIOR DOOR LANDINGS.

KEYED NOTES

1. EXISTING FENCE TO REMAIN.
2. NEW CONCRETE MOW STRIP AT EXISTING FENCE. SEE ?/??
3. NEW CONCRETE CURB RAMP - 6" RISE MAX. (1:12 SLOPE)
4. 18'-0" POLE LIGHT. PROVIDE HOUSE-SIDE SHIELDS AT POLE LIGHTS ADJACENT TO THE PROPERTY LINE. SEE D & E/C503 & ELECTRICAL SITE PLAN.
5. CONCRETE CURB & GUTTER - TYPICAL. SEE TYPICAL DETAILS C501 & INFALL/OUTFALL NOTATION ON THE GRADING & DRAINAGE SITE PLAN.
6. EXISTING POWER POLE TO REMAIN.
7. NEW 6'-0" VINYL-COATED CHAIN LINK FENCE WITH MOW STRIP. SEE ?/??
8. NEW " "
9. ACCESSIBLE PARKING SIGN. SEE A/C502.
10. MECHANICAL ENCLOSURE. SEE B/C503 & STRUCTURAL SHEETS.
11. ASPHALT PAVING - TYPICAL. SEE F/C501.
12. 12" NYLOPLAST ROOF DRAIN BASIN. SEE K/C502 & GRADING & DRAINAGE SITE PLAN.
13. NEW ASPHALT STREET PAVING PER CITY STANDARDS. SEE C107.
14. NEW NYLOPLAST YARD DRAIN OR CLEAN OUT BOX. SEE GRADING & DRAINAGE SITE PLAN.
15. ALIGN EDGE OF SIDEWALK WITH EDGE OF FOUNDATION.
16. CONCRETE TRANSFORMER PAD PER LEHI POWER REQUIREMENTS. SEE ELECTRICAL SHEETS.
17. ACCESSIBLE ACCESS AISLE.
18. 4" WIDE PAINTED PARKING LINES - TYPICAL.
19. BLUE & WHITE PAINTED ACCESSIBLE PARKING SYMBOL - TYPICAL.
20. 6'-0" TALL MASONRY DUMPSTER ENCLOSURE WITH SOLID VINYL GATES. SEE A/C503.
21. STORAGE BUILDING. SEE C801. A SEPARATE BUILDING PERMIT IS REQUIRED FOR THE STORAGE BUILDING.
22. CONCRETE SIDEWALK. SEE A & K/C501.
23. 6" THICK CONCRETE OVER 10" BASE AT DUMPSTER ENCLOSURE PAD AND AS INDICATED BY HATCH PATTERN.
24. LOCK BOX LOCATION. SEE A101.
25. 6" MOW STRIP. SEE LANDSCAPE SHEETS.
26. SEWER CLEAN OUT. SEE SITE UTILITY PLAN.
27. CURB INLET CATCH BASIN. SEE SITE GRADING AND DRAINAGE PLAN. INSTALL 18" x 6" CONCRETE APRON AROUND BASIN.
28. CATCH BASIN OR CLEAN OUT BASIN. SEE GRADING AND DRAINAGE PLAN. INSTALL 18" x 6" CONCRETE APRON AROUND BASINS LOCATED IN PAVING.
29. BOULDER RETAINING WALL. SEE LANDSCAPE SHEETS.
30. 4'-0" MIN. LANDING AT 2.0% GRADE. SEE SITE GRADING PLAN.
31. CONCRETE STEPS: 11 TREADS @ 4'-0" WITH 12 RISERS @ 6". SEE G/C501 AND SITE GRADING PLAN.
32. TRANSITION HEIGHT OF CURB FROM FULL HEIGHT TO EVEN WITH SIDEWALK AND GUTTER IN 5'-0".
33. CONCRETE STAIRS. SEE G/C502.
34. BIKE RACK. SEE F/C503.
35. NEW CONCRETE DRIVE APPROACH PER CITY STANDARDS.
36. EXISTING STREET PAVING TO REMAIN. SEE SITE SURVEY.
37. NEW CONCRETE SIDEWALK PER CITY STANDARDS. SEE C107.
38. NEW CONCRETE CURB AND GUTTER PER CITY STANDARDS. SEE C107.
39. EDGE OF NEW ASPHALT.
40. EDGE OF EXISTING ASPHALT. SAWCUT EDGE AS NOTED ON C106 & C107.
41. NEW BOLLARD. SEE B/C502.
42. EXISTING FIRE HYDRANT TO REMAIN.
43. HATCHED AREA INDICATES AREA OF 18" DEEP AGGREGATE BASE TYPICAL. SEE E/C501.
44. NEW STORM DRAIN MANHOLE. SEE C103 & C107.
45. EXISTING MANHOLE TO REMAIN. SEE SITE SURVEY.
46. NEW STORM DRAIN MANHOLE. SEE C104 & C110.
47. NEW STORM DRAIN MANHOLE. SEE C103, C109, & C110.
48. TRUNCATED DOME DETECTABLE WARNING SURFACE AT THE BOTTOM OF CURB RAMP OR SLOPED SECTION OF SIDEWALK.
49. END OF FENCE. CONTINUE CONCRETE MOWSTRIP TO SIDEWALK.
50. BLOCK RETAINING WALL. SEE H & J/C501, AND GRADING AND DRAINAGE PLAN.
51. FACP LOCATION. SEE A101 AND ELECTRICAL SHEETS.
52. SLOPED SECTION OF SIDEWALK. SEE GRADING PLAN.
53. PAINTED CROSSWALK, 1'-0" WIDE STRIPES.



1 SITE ARCHITECTURAL PLAN
SCALE: 1" = 20'-0"

20'-0" 0'-0" 10'-0" 20'-0" 40'-0" 80'-0"
GRAPHIC SCALE

SITE DATA

TOTAL PARKING PROVIDED:		220
SITE AREAS		
MAIN BUILDING	19,422 SF	12.41%
STORAGE BUILDING	205 SF	0.13%
PAVILION	2,295 SF	1.47%
ASPHALT	66,620 SF	42.56%
CONCRETE	15,099 SF	8.18%
LANDSCAPING	55,186 SF	35.26%
TOTAL SITE:	156,532 SF	3.59 ACRES

PLOTTED: 7/9/2015 3:04 PM

#	DATE	DESCRIPTION

DRAWING ISSUE SCHEDULE

STAMP:

ARCHITECTS
65 E Wadsworth Park Dr. Ste.205 Phone: 801.571.0010
Draper, Utah 84020 Fax: 801.571.0303
bhdarchitects.com Toll Free: 888.571.0010

PROJECT FOR:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

PROJECT NAME:
Cedar Hollow 6, 8
Lehi UT Cedar Hollow Stake
Approximately 9650 North 6900 West
Highland, Utah

PROPERTY #: 592-7091
PLAN SERIES: HET-MAS-09-05
BHDA PROJECT #: 1531
DATE: 30 Jun 2015

SHEET TITLE:
SITE ARCHITECTURAL PLAN

SHEET:
C111

GENERAL NOTES

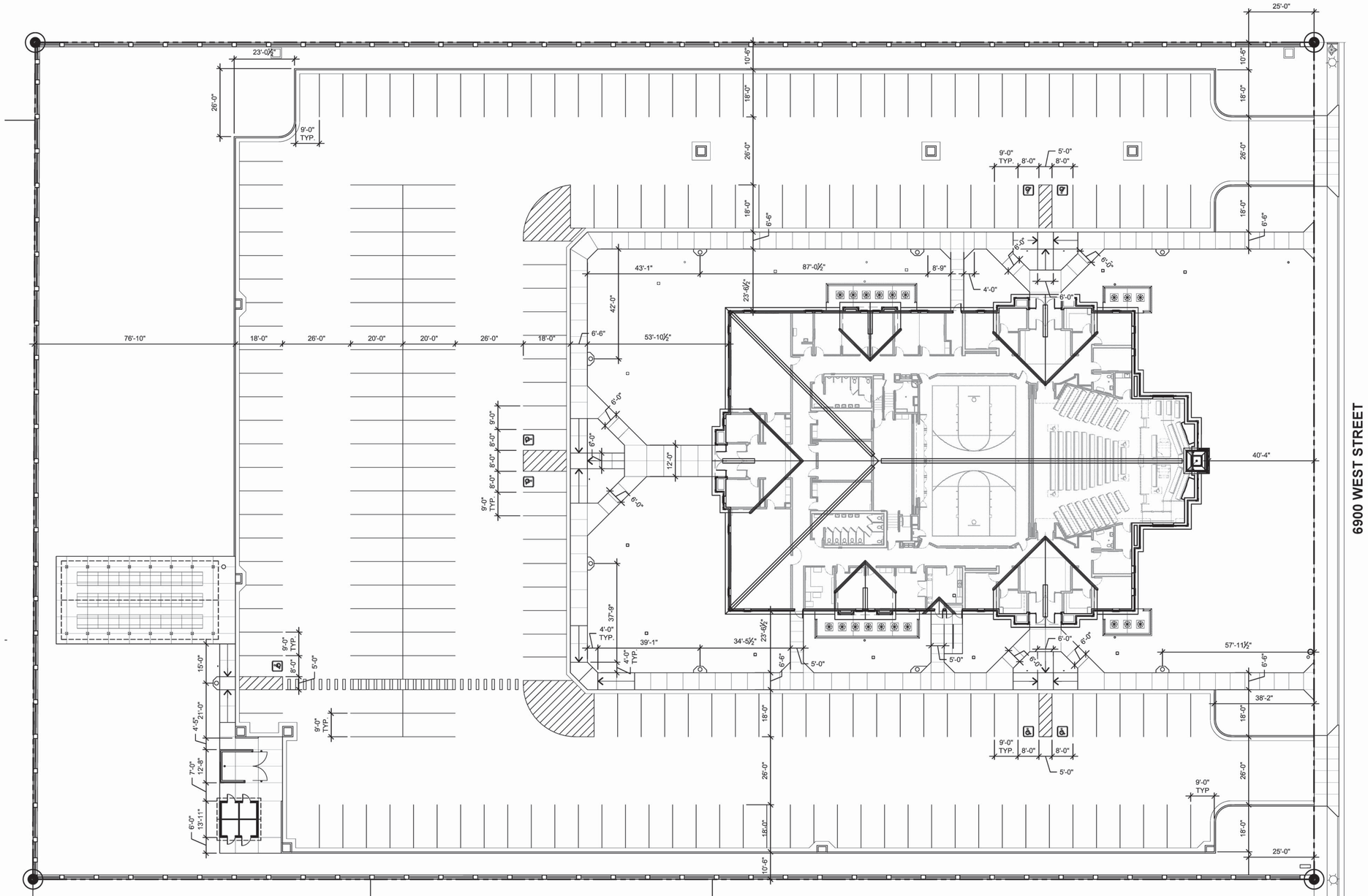
A. THE ZONING OF THIS PARCEL AND ALL ADJACENT PARCELS IS R-1-40.

B. ALL GROUND-MOUNTED EQUIPMENT SHALL BE SCREENED/CONCEALED FROM STREET VIEW.

C. PLANTS LOCATED WITHIN REQUIRED SIGHT VISIBILITY TRIANGLES SHALL BE PRUNED REGULARLY TO PERMIT UNOBSTRUCTED VISION. PLANT MATERIAL SHALL BE MAINTAINED TO BE LOWER THAN 3' (SHRUBS) OR TALLER THAN 7' (BOTTOM OF TREE CANOPY).

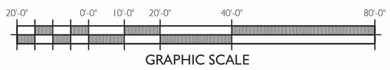
D. ALL DEVELOPMENTS SHALL BE MAINTAINED IN CONFORMANCE WITH THE APPROVED SITE PLAN AND LANDSCAPE PLAN. ANY CHANGES THERETO SHALL REQUIRE APPROVAL OF HIGHLAND CITY.

E. THIS PROJECT IS SUBJECT TO THE CURRENT HIGHLAND CITY ENGINEERING REQUIREMENTS (MAG SUPPLEMENTAL REGULATIONS), GENERAL PLAN, DEVELOPMENT CODE, AND ANY APPLICABLE SPECIFIC PLANS.



1 SITE PLAN

SCALE: 1" = 20'-0"



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STAMP:

bhda ARCHITECTS
65 E Wadsworth Park Dr. Ste.205 Phone: 801.571.0010
Draper, Utah 84020 Fax: 801.571.0303
bhdarchitects.com Toll Free: 888.571.0010

PROJECT FOR:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

PROJECT NAME:
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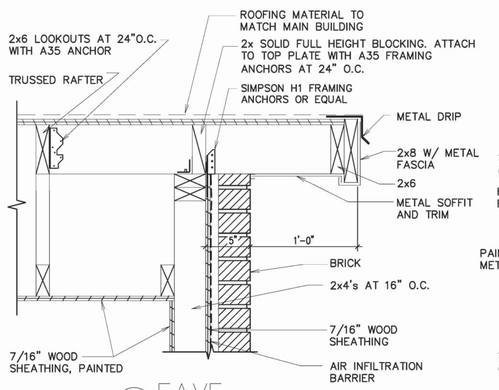
Lehi UT Cedar Hollow Stake

Approximately 9650 North 6900 West
Highland, Utah

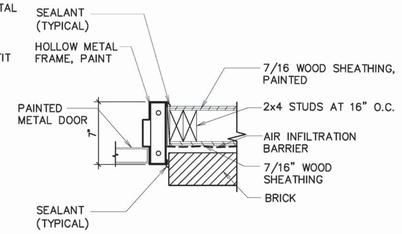
PROPERTY #: 592-7091
PLAN SERIES: HET-MAS-09-05
BHDA PROJECT #: 1531
DATE: 30 Jun 2015

SHEET TITLE:
SITE PLAN

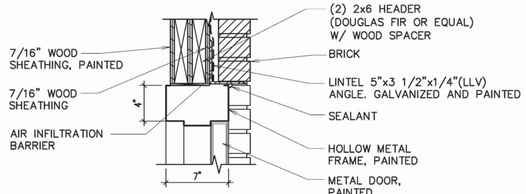
SHEET:
C112



A EAVE
1 1/2" = 1'-0"



B JAMB
1 1/2" = 1'-0"



C HEAD
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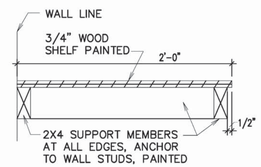

D SHELF SECTION
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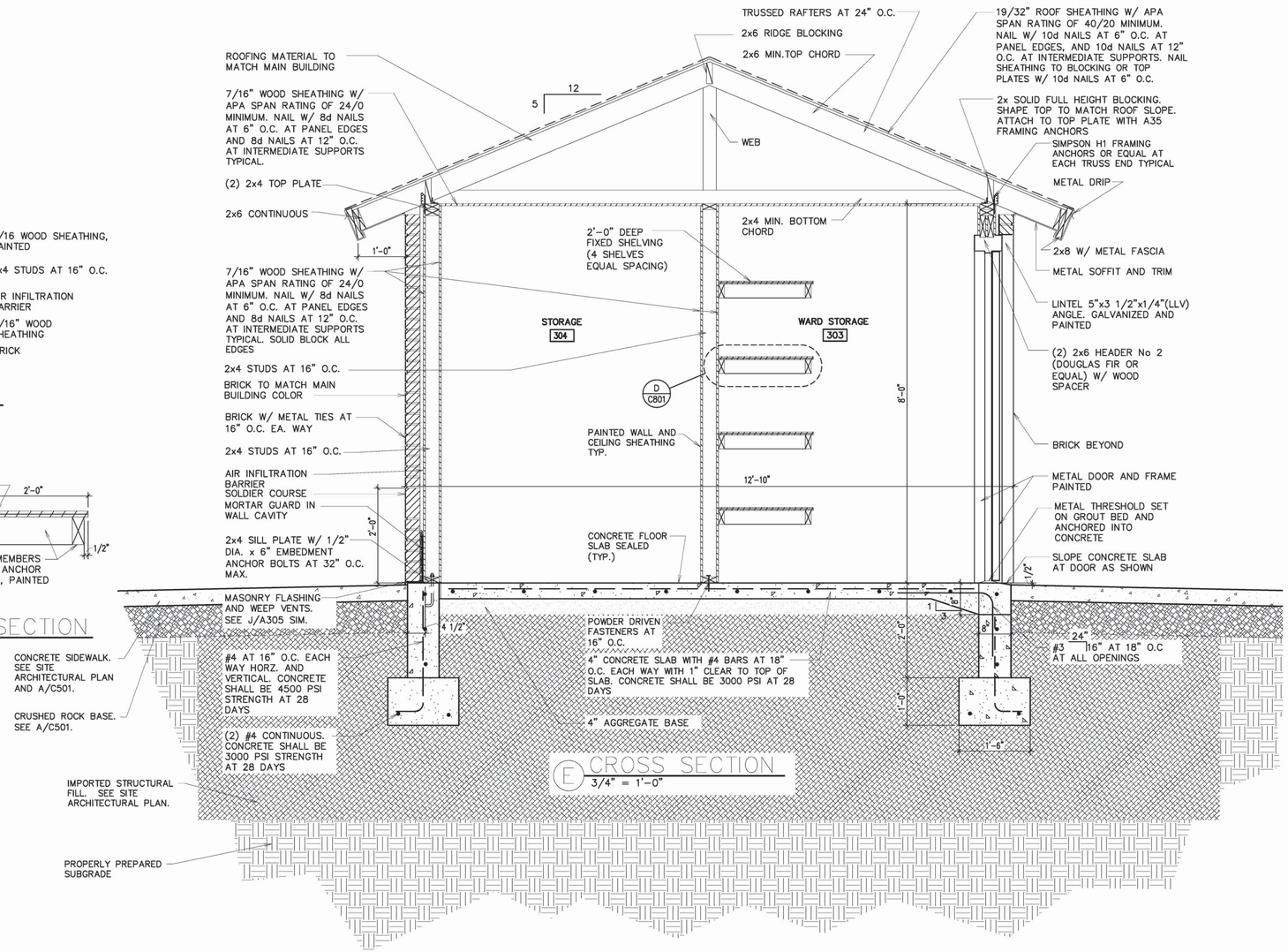

E CROSS SECTION
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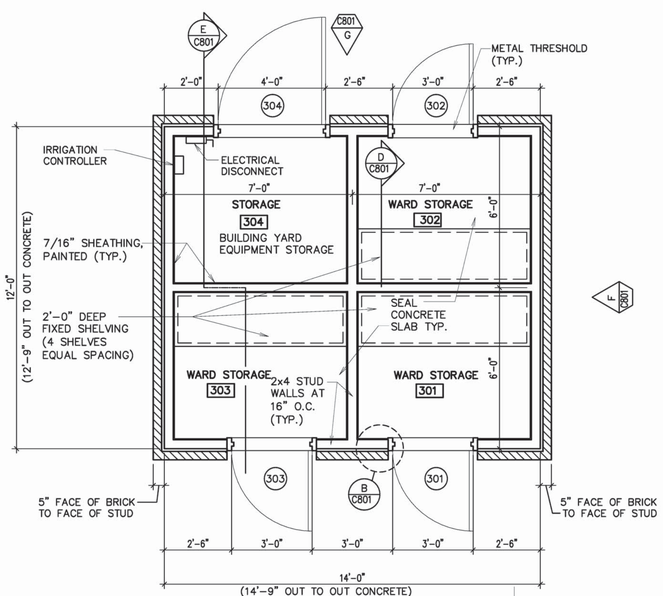
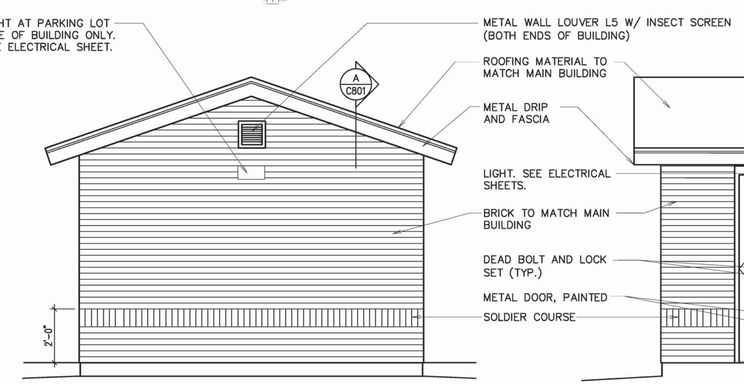
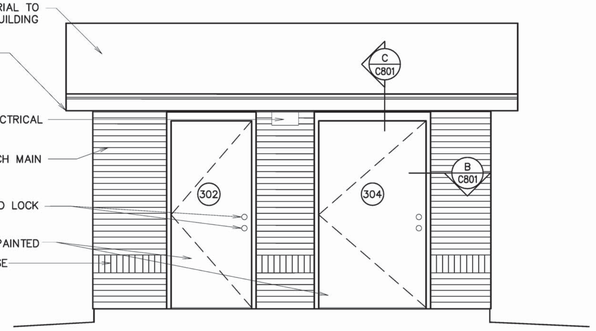


1 FLOOR PLAN
3/8" = 1'-0"



F EAST ELEVATION
3/8" = 1'-0"
(WEST END SIMILAR)



G SOUTH ELEVATION
3/8" = 1'-0"
(NORTH SIDE SIMILAR)

PLOTTED: 7/9/2015 3:19 PM

#	DATE	DESCRIPTION

DRAWING ISSUE SCHEDULE

STAMP:

bhd ARCHITECTS
65 E Wadsworth Park Dr. Ste.205 Phone: 801.571.0010
Draper, Utah 84020 Fax: 801.571.0303
bhdarchitects.com Toll Free: 888.571.0010

PROJECT FOR:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

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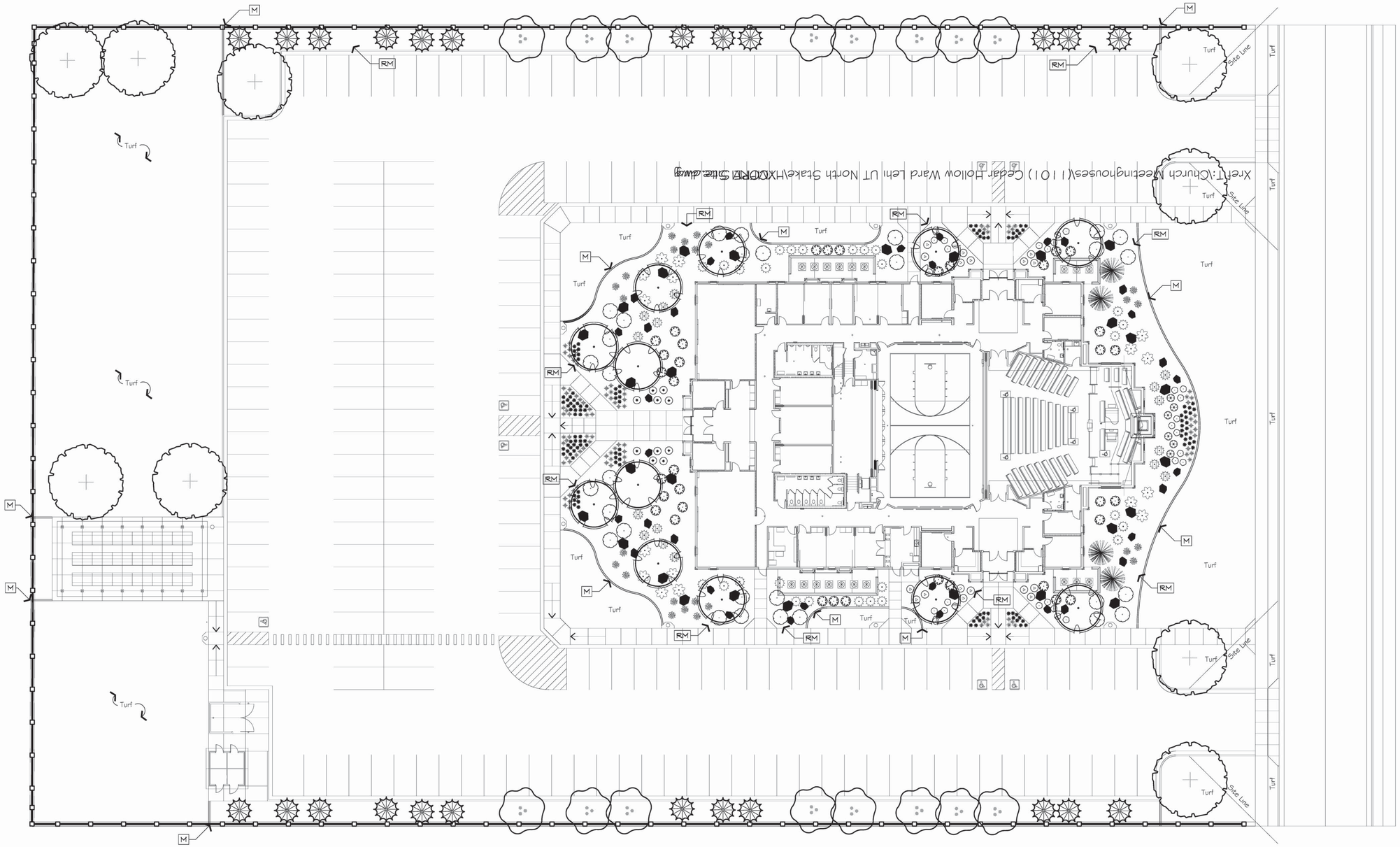
Approximately 9650 North 6900 West
Highland, Utah

PROPERTY #: 592-7091
PLAN SERIES: HET-MAS-09-05
BHDA PROJECT #: 1531
DATE: 30 Jun 2015

SHEET TITLE:
STORAGE BUILDING

SHEET:
C801



NORTH

REFER TO SHEET L102 FOR PLANT SCHEDULE

SCALE: 1" = 20'

0 20 40 60 100

PLOTTED: 7/1/2015 7:30 AM

DRAWING ISSUE SCHEDULE

#	DATE:	DESCRIPTION:
1	11 June 2015	Site Plan Submittal

E. A. Lyman
Landscape Architecture
8188 South Highland Dr. D7
Sandy, Utah 84093
Telephone: 801.943.6564

STAMP:

bhd
65 E Wadsworth Park Dr, Ste 205
Draper, Utah 84020
bhdarchitects.com
801.571.0010
Fax: 801.571.0203
Toll Free: 888.571.0010

PROJECT FOR:

THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

PROJECT NAME:

Cedar Hollow 6, 8
Lehi UT Cedar Hollow Stake

Approximately 9650 North 6900 West
Highland, Utah

DATE: 30 Jun 2015
BHDA PROJECT #: 1531
PLAN SERIES: HET-MAS-09-05
PROPERTY #: 592-7091

SHEET TITLE:

PLANTING PLAN

SHEET:

L101

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONDITION	SIZE	EMITTER TYPE - SHRUB BEDS ONLY
	9	Gleditsia tnacanthos `Impenal`	Impenal Honeylocust	B & B	2"Cal	
	24	Juniperus scopulorum `Gray Gleam`	Gray Gleam Juniper	15 gal		
	12	Malus x `Spring Snow`	Spring Snow Crab Apple	B & B	2"Cal	2 Ring 0.6 gph emitter @18" OC
	16	Prunus virginiana `Canada Red`	Canada Red Chokecherry	B & B	2"Cal	2 Ring 0.4 gph emitter @18" OC
EVERGREEN TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONDITION**	**SIZE**	**EMITTER TYPE - SHRUB BEDS ONLY**
	4	Picea pungens glauca `Baby Blue Eyes` TM	Baby Blue Eyes Colorado Blue Spruce	B & B	6` HT MIN	2 Ring 0.4 gph emitter @18" OC
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONDITION**	**SIZE**	**EMITTER TYPE**
	29	Berberis thunbergii `Crimson Pygmy`	Crimson Pygmy Barberry	Container	5 gal	1 GPH Emitter
	36	Cornus alba `Bailhalo` TM	Ivory Halo Dogwood	Container	5 gal	
	18	Cornus sericea `Kelseyi`	Kelseyi Dogwood	Container	5 gal	2 GPH Emitter
	16	Lonicera xylosteum `Emerald Mound`	Emerald Mound Honeysuckle	Container	5 gal	2 GPH Emitter
	27	Physocarpus opulifolius `Little Devil` TM	Dwarf Ninebark	5 gal		2 GPH Emitter
	30	Rhus aromatica `Gro-Low`	Gro-Low Fragrant Sumac	Container	5 gal	2 GPH Emitter
	10	Spiraea x bumalda `Goldmound`	Gold Mound Spirea	Container	5 gal	2 GPH Emitter
	24	Yucca filamentosa `Color Guard`	Color Guard Adam`s Needle	Container	2 gal	1 GPH Emitter
ANNUALS/PERENNIALS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONDITION**	**SIZE**	**EMITTER TYPE**
	93	Hemerocallis x `Little Jazz`	Red Daylily	Container	1 gal	
	121	Hemerocallis x `Stella de Oro`	Stella de Oro Daylily	Container	1 gal	
GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONDITION**	**SIZE**	**EMITTER TYPE**
	6	Calamagrostis x acutiflora `Karl Foerster`	Feather Reed Grass	Container	1 gal	1 GPH Emitter
ROSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONDITION**	**SIZE**	**EMITTER TYPE**
	16	Rosa Meidiland series `Fairy`	Fairy Meidiland Rose	5 gal		

MISC		
		Snow Storage
Turf		Kentucky Bluegrass Sod
M		Concrete Mowstrip - Refer to L101 Mowstrip Dimension Plan
RM		Install 3" depth 3/4" - 1 1/4" washed Southtown Cobble (Utah Landscape Products) OR 3" depth 1/2" - 1" washed Weber River Cobble (Staker Parson). Install over DeWitt Pro-5 Weed Barrier.
RM2		Install 3" depth 1 1/2" washed Palomino (Staker Parson). Install over DeWitt Pro-5 Weed Barrier.
RM3		Install 4" depth 4" - 6" washed Weber River Cobble (Staker Parson). Install over DeWitt Pro-5 Weed Barrier.
		2'-6" to 5' boulders from Brown's Canyon Quarry. Submit Sample To Landscape Architect For Approval. 20% 2'-6" Boulders 30% 3' Boulders 30% 3'-6" Boulders 10% 4' Boulders 10% 5' Boulders Percentages are by quantity not weight
NOTES:		1. See details and specifications for additional information. 2. Rain sensor will be installed as part of the irrigation system.

CITY REQUIRED INFORMATION:

1. Irrigation system will be using secondary water with an automatic filter. The lawn areas will be irrigated with overhead spray or rotor heads. the shrub beds will be watered with point source drip. The controller will be a Smart controller using local weather information to determine watering times.

2. The square footage of the landscaped area inside of the ROW is 1034 s.f.

PLOTTED: 6/30/2015 12:21 PM

DRAWING ISSUE SCHEDULE

#	DATE:	DESCRIPTION:
1	11 June 2015	Site Plan Submittal

E. A. Lyman
Landscape Architecture
8188 South Highland Dr. D7
Sandy, Utah 84093
Telephone: 801.943.6564

STAMP:

bhd
65 E Wadsworth Park Dr, Ste 205
Draper, Utah 84020
bhdarchitects.com
801.571.0010
Fax: 801.571.0203
Toll Free: 888.571.0010

PROJECT FOR:

THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

PROJECT NAME:

Cedar Hollow 6, 8
Lehi UT Cedar Hollow Stake

Approximately 9650 North 6900 West
Highland, Utah

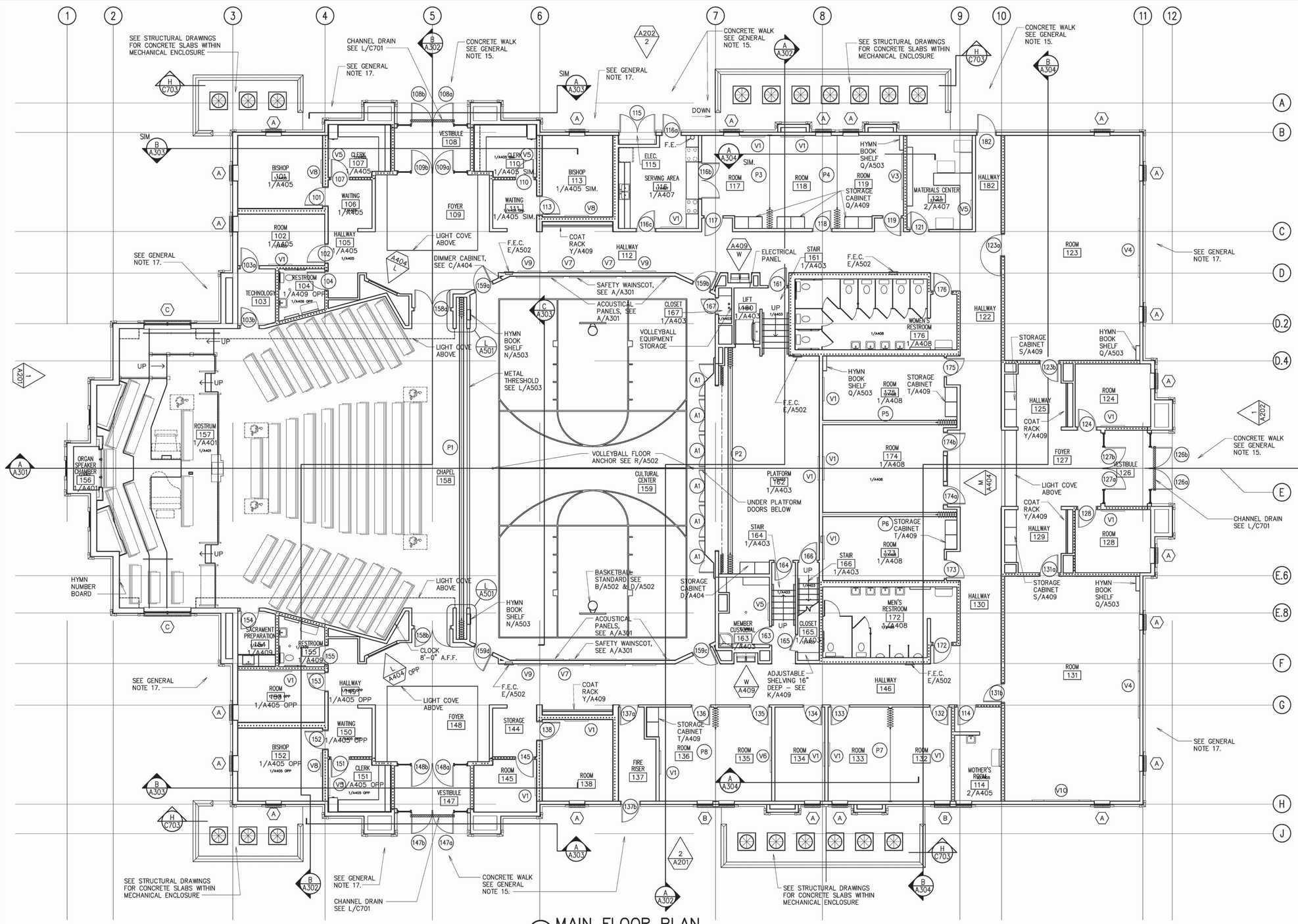
DATE: 30 Jun 2015
BHDA PROJECT #: 1531
PLAN SERIES: HET-MAS-09-05
PROPERTY #: 592-7091

SHEET TITLE:

PLANTING PLAN

SHEET:

L102



1 MAIN FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. SEE SHEET A102 FOR DIMENSIONS.
2. SEE SHEETS A103 & A104 FOR WALL TYPES.
3. INSULATE ATTIC SPACE ABOVE AND INTERIOR WALLS AROUND VESTIBULE 108, 126, AND 147.
4. PROVIDE SOLID BLOCKING IN THE WALLS AT ALL DOOR STOPS, VISUAL DISPLAY BOARDS, TOILET COMPARTMENTS, LAVATORY SUPPORTS, AND AT ALL OTHER EQUIPMENT AND ACCESSORY LOCATIONS – A/A601. (TYPICAL)
5. FOR ELEVATIONS OF VISUAL DISPLAY BOARDS. SEE SHEET A601.
6. INSULATE CEILING ABOVE ROOMS 101, 107, 110, 113, 128, 138, 145, 151, 152, 172, 173, 174, 175 AND 176 FOR SOUND CONTROL.
7. VAPOR RETARDER UNDER CONCRETE SLAB. SEE F/A502.
8. FOR LOCATION OF RETURN AIR DUCTS IN STUD WALLS SEE MECHANICAL DRAWINGS.
9. FIRE BLOCKING AT SHAFT WALLS. SEE DETAILS G/A502 AND H/A502.
10. PROVIDE 2x FIRE BLOCKING IN ALL WALLS AT CEILING AND FLOOR LEVELS.
11. ALL WALLS EXCEEDING 10 FEET IN HEIGHT. PROVIDE 2x FIRE BLOCKING NOT TO EXCEED 10'–0" O.C. VERTICALLY. ALSO INCLUDE 2x FIRE BLOCKING AT FLOOR AND CEILING LEVELS.
12. FOR DOOR SCHEDULES. SEE SHEET A602.
13. FOR WINDOW SCHEDULES. SEE SHEET A603.
14. FOR DIMENSIONS TO FACE OF FOUNDATION AND MECHANICAL ENCLOSURES – SEE STRUCTURAL.
15. SEE CIVIL SHEETS FOR CONTINUATION OF CONCRETE SIDEWALK AT ENTRIES AND ALL OTHER SITE CONCRETE.
16. GRID LINES ARE TO BE TO FACE OF STUD UNLESS NOTED OTHERWISE.
17. LINE OF OPTIONAL CONCRETE APRON. SEE CIVIL DRAWINGS
18. IF AHJ REQUIRES A "KNOX" BOX, ARCHITECT WILL INDICATE THE LOCATION PER THE AHJ's REQUIREMENT. IF NOT REQUIRED, REMOVE REFERENCES TO A "KNOX" BOX AND DO NOT PROVIDE ONE.
19. FIRE ALARM PANEL LOCATION IS INDICATED ON SHEET FA101. CONFIRM WITH AHJ THAT THE PROPOSED LOCATION IS ACCEPTABLE. IF NOT, REVISE LOCATION ON FA101.

WALL TYPES LEGEND:

..... ACOUSTICAL BATT INSULATION IN WALL.

PLOTTED: 7/9/2015 3:44 PM

DRAWING ISSUE SCHEDULE

#	DATE	DESCRIPTION

STAMP:

bhd ARCHITECTS
65 E Wadsworth Park Dr. Ste.205 Phone: 801.571.0010
Draper, Utah 84020 Fax: 801.571.0303
bhdarchitects.com Toll Free: 888.571.0010

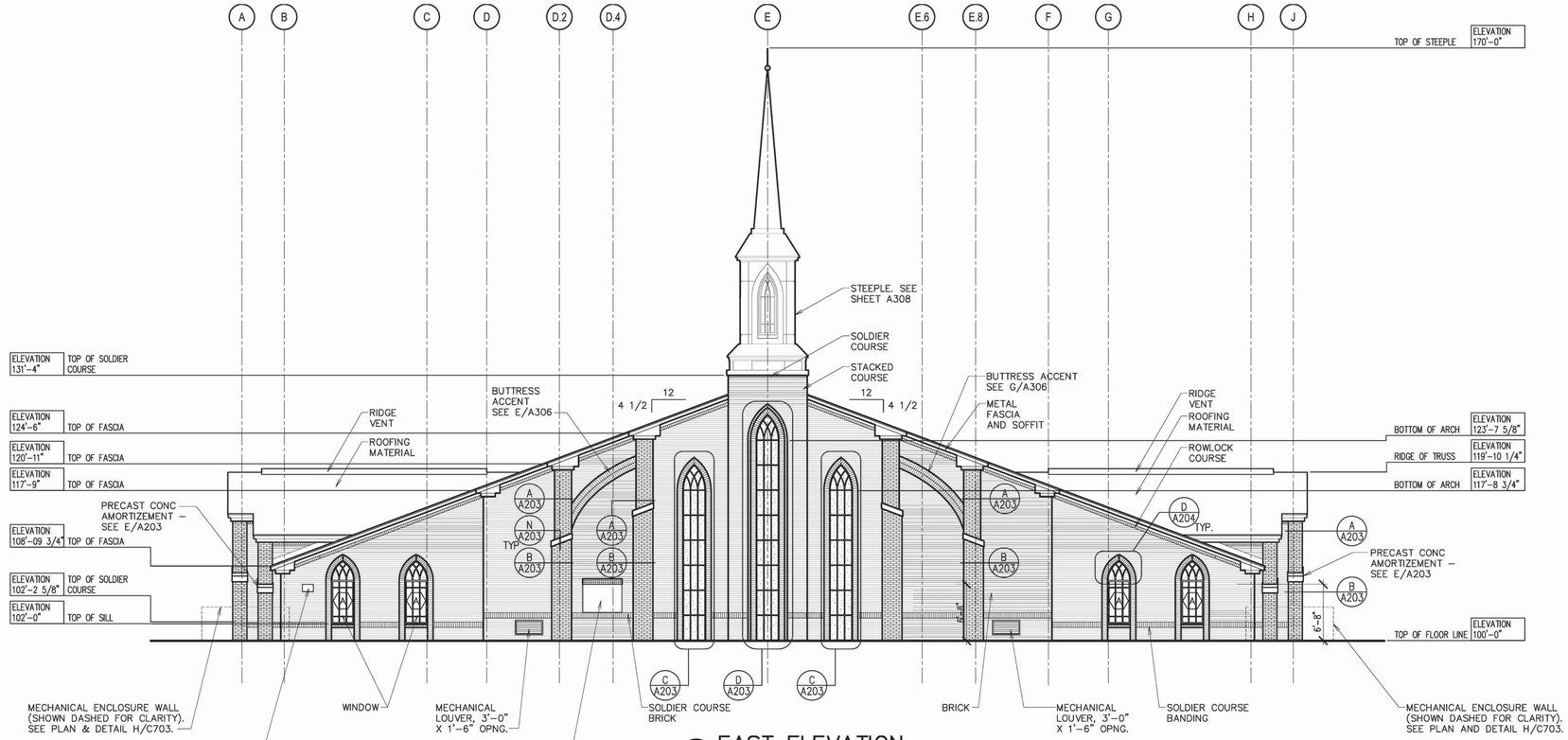
PROJECT FOR:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

PROJECT NAME:
Cedar Hollow 6, 8
Lehi UT Cedar Hollow Stake
Approximately 9650 North 6900 West
Highland, Utah

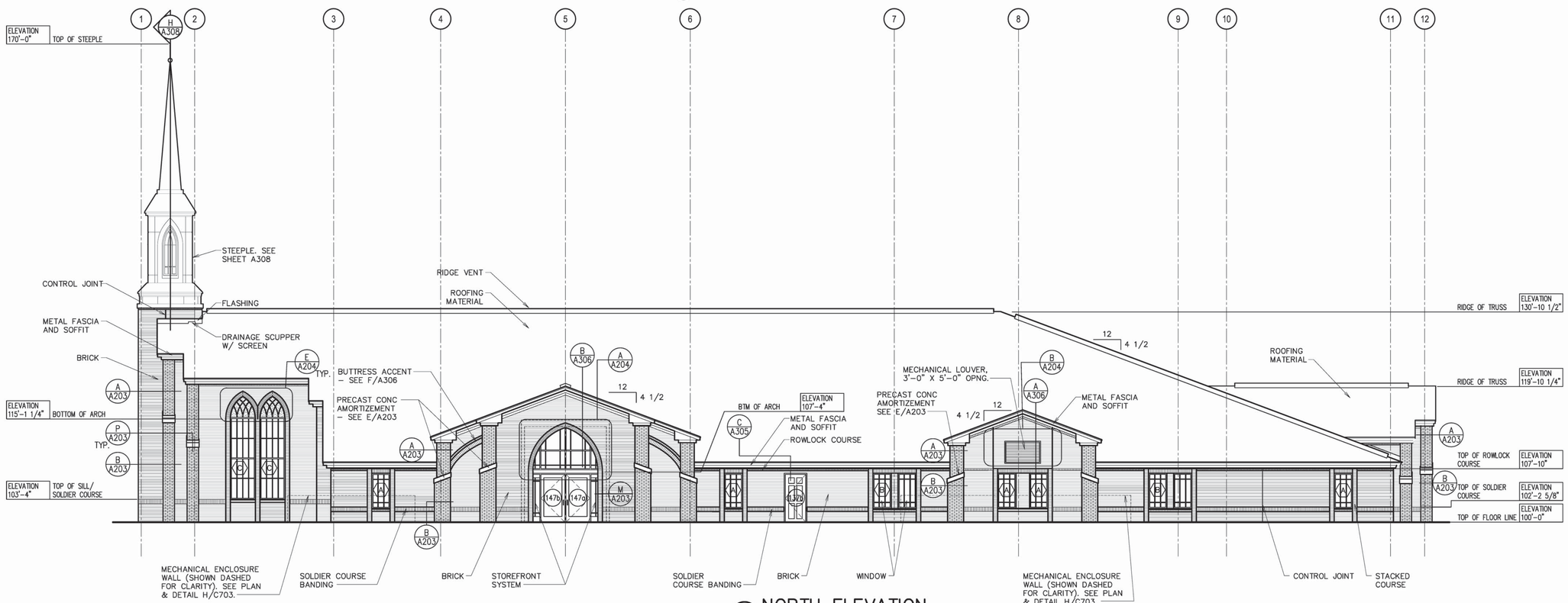
PROPERTY #	592-7091
PLAN SERIES	HET-MAS-09-05
BHDA PROJECT #	1531
DATE	30 Jun 2015

SHEET TITLE:
MAIN FLOOR PLAN

SHEET:
A101



1 EAST ELEVATION
1/8" = 1'-0"



2 NORTH ELEVATION
1/8" = 1'-0"

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DRAWING ISSUE SCHEDULE

#	DATE	DESCRIPTION

STAMP:

bhd ARCHITECTS
65 E Wadsworth Park Dr. Ste 205 Phone: 801.571.0010
Draper, Utah 84020 Fax: 801.571.0303
bhdarchitects.com Toll Free: 888.571.0010

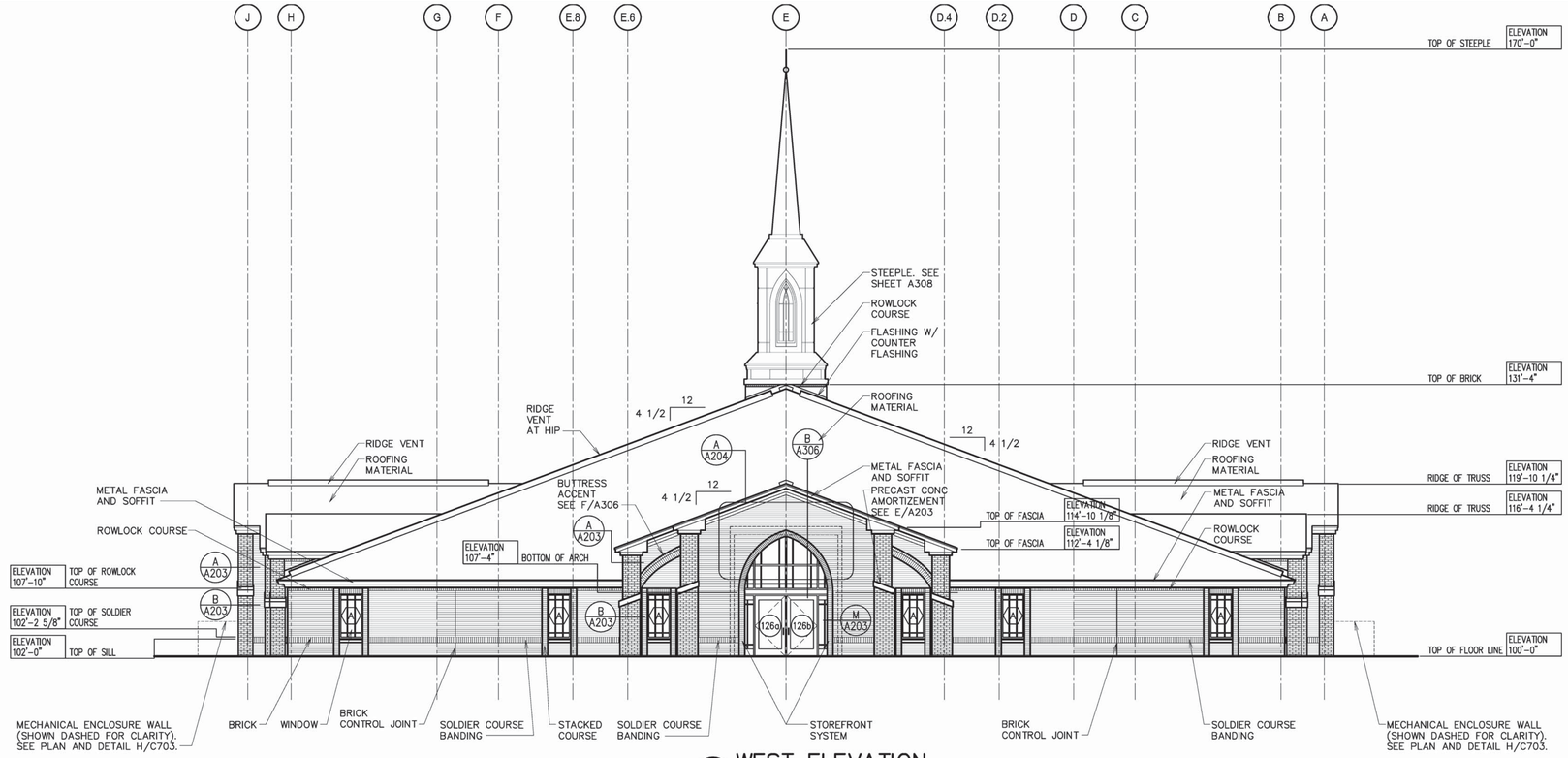
PROJECT FOR:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

PROJECT NAME:
Cedar Hollow 6, 8
Lehi UT Cedar Hollow Stake
Approximately 9650 North 6900 West
Highland, Utah

DATE: 30 Jun 2015
BHDA PROJECT #: 1531
PLAN SERIES: HET-MAS-09-05
PROPERTY #: 592-7091

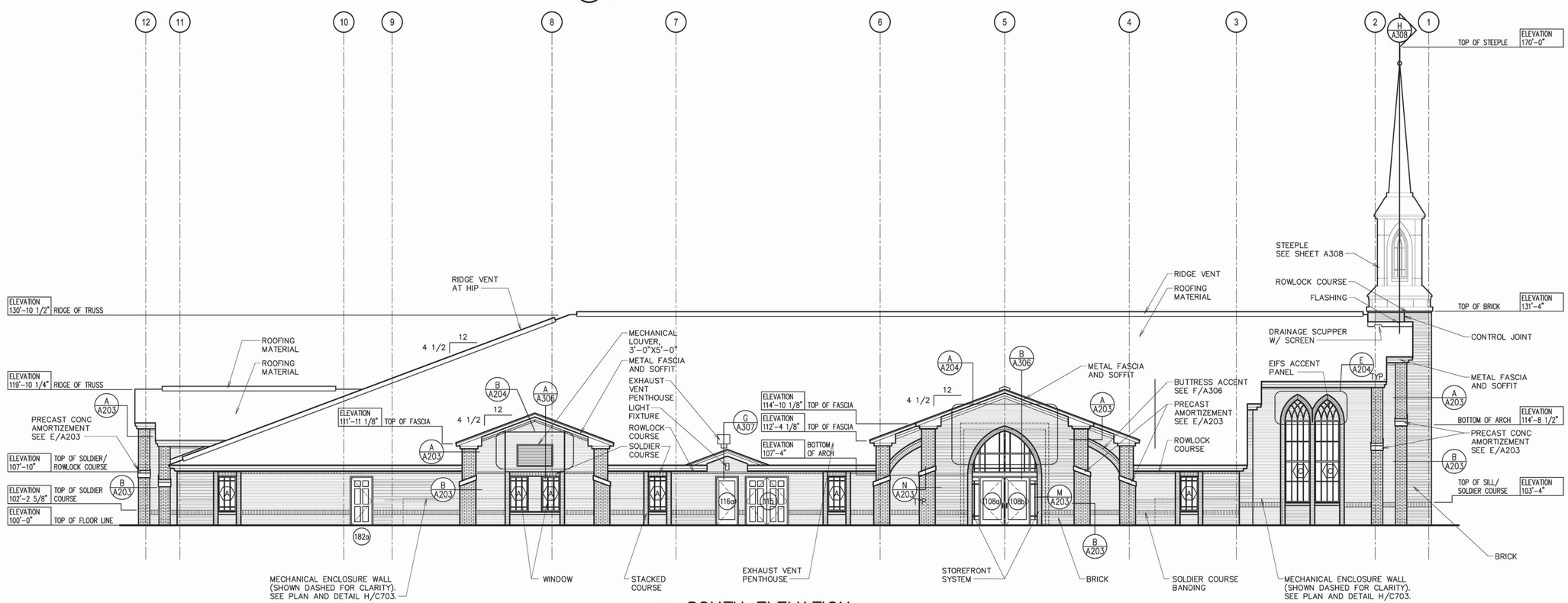
SHEET TITLE:
BUILDING ELEVATIONS

SHEET:
A201



1 WEST ELEVATION

1/8" = 1'-0"



2 SOUTH ELEVATION

1/8" = 1'-0"

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DRAWING ISSUE SCHEDULE

#	DATE	DESCRIPTION

STAMP:

bhd ARCHITECTS
65 E Wadsworth Park Dr, Ste 205 Phone: 801.571.0010
Draper, Utah 84020 Fax: 801.571.0303
bhdarchitects.com Toll Free: 888.571.0010

PROJECT FOR:

THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

PROJECT NAME:

Cedar Hollow 6, 8
Lehi UT Cedar Hollow Stake

Approximately 9650 North 6900 West
Highland, Utah

PROPERTY #: 592-7091
PLAN SERIES: HET-MAS-09-05
BHDA PROJECT #: 1531
DATE: 30 Jun 2015

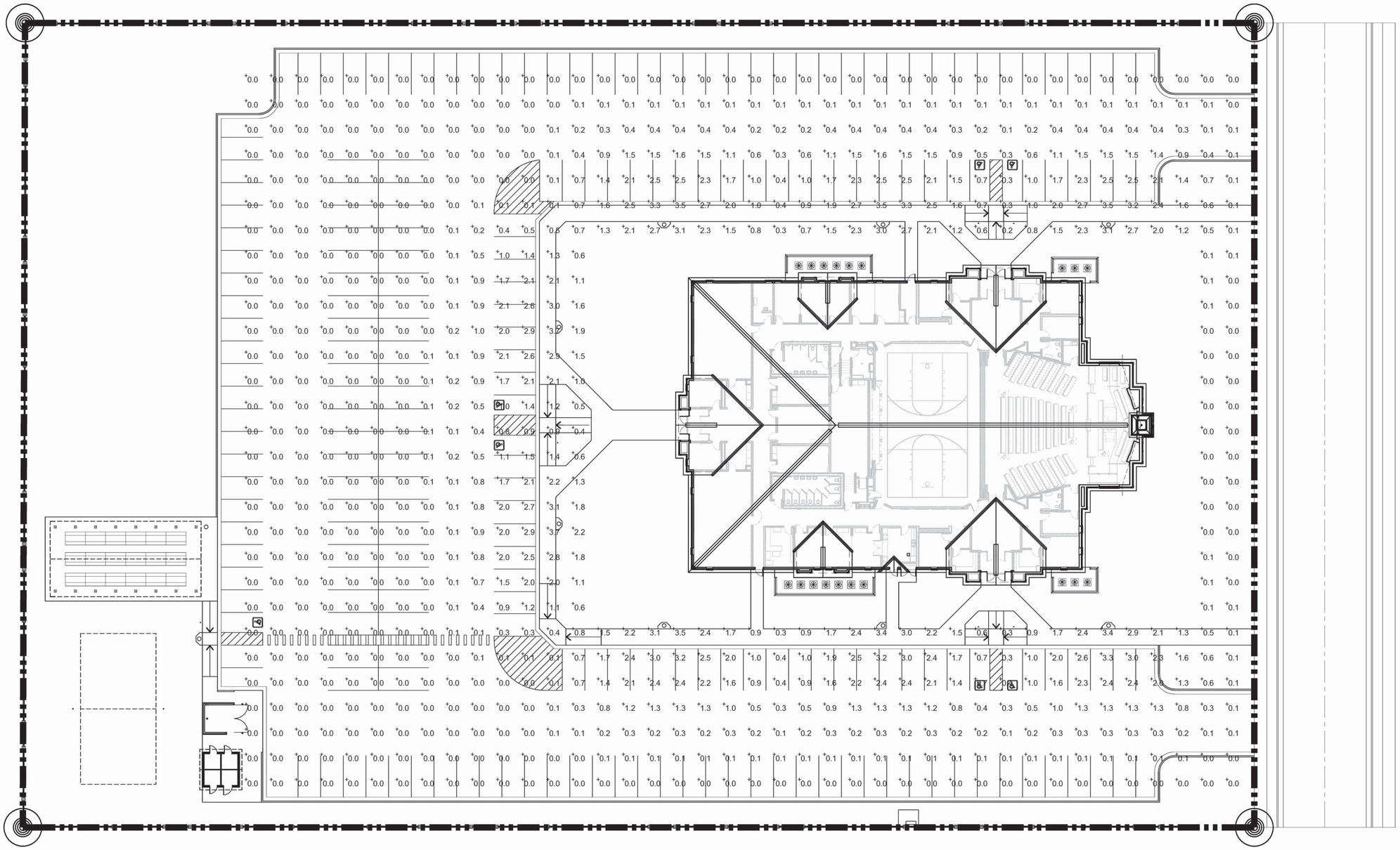
SHEET TITLE:

BUILDING ELEVATIONS

SHEET:

A202

F26	OUTDOOR POLEMOUNTED FIXTURE *PARKING AREA LIGHTING 208 VOLTS, SEE FIXTURE SCHEDULE NOTE. TYPE III DISTRIBUTION	LED 8000 LM	4000 K	Power 0 V/1-140 VA	Hadco	RX140SCBA3NAMNNSN 180040404YHFPHHAB	Hubbell	CL1SA32LU4K3BLCD	Cree	ARE-EDG-3M-DA-06-UL-SCBA -525MA	Cooper	LDRV-T30B04-E-8030-CB A/SSA18B4-H-CBA	Lithonia	KADLED63B530/30KSR3 SPD04 L/LP/PHA-5-4012-18	LSI	XASU-FT-LED64-HO-CW-UE-CBA/ 705-4012-18	1		F26
F27	OUTDOOR SCONCE WET LOCATION FINISH TO MATCH PARKING LOT FIXTURES. PROVIDE INTEGRAL PHOTOCELL FOR STORAGE SHED FIXTURE. SEE SHEET E501	LED 4000 LM	4000 K	120 V/1-50 VA	Phillips	LP-32-W	McGraw-Edison	ISS-B02LED-E1-BL3-CBA-P	Tracelite	TLED112-45-DT-SZ277	Lithonia	WSQ LED-2-3000K-SR3 MD 120 SCBA L/LP	Hubbell	LNC2-12LU-4K-TYPE III-4	Acculite	DS-A017-4K-UN-CBA	2		F27



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DRAWING ISSUE SCHEDULE

#	DATE	DESCRIPTION

STAMP:

bhd ARCHITECTS
65 E Wadsworth Park Dr. Ste.205 Phone: 801.571.0010
Draper, Utah 84020 Fax: 801.571.0303
bhdarchitects.com Toll Free: 888.571.0010

PROJECT FOR:

THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

PROJECT NAME:

Cedar Hollow 6, 8
Lehi UT Cedar Hollow Stake

Approximately 9650 North 6900 West
Highland, Utah

DATE:	BHDA PROJECT #:	PLAN SERIES:	PROPERTY #:
30 Jun 2015	1531	HET-MAS-09-05	592-7091

SHEET TITLE:

PHOTOMETRIC SITE PLAN

SHEET:

E101

CITY COUNCIL AGENDA REPORT

Item # 15

DATE: September 1, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Nathan Crane, AICP
City Administrator/Community Development Director

SUBJECT: Jeremy Ackley for Millhaven Construntion IS REQUESTING PRELIMINARY PLAT APPROVAL for a 11 lot single family residential subdivision – Flats at Fox Hollow (PP-15-03).

STAFF RECOMMENDATION:

The City Council review a request for preliminary plat approval for the Flats at Fox Hollow, a 11 lot single family residential subdivision located at 5650 West and 9600 North.

BACKGROUND:

The property is 9.8 acres and is owned by Millhaven Construction, LLC.

The property is designated as Low Density Residential on the General Plan Land Use Map. The property is zoned R-1-40 (Single Family Residential). The R-1-40 District allows one home per 40,000 square feet. The minimum lot width is 130 feet.

Subdivision review and approval is an administrative process.

SUMMARY OF REQUEST:

1. The applicant is requesting approval of an 11 lot single family residential subdivision. The proposed density is approximately .90 units per acre.

Lot	Square Footage		Lot	Square Footage
1	35,926		7	35,471
2	35,783		8	35,409
3	35,555		9	37,850
4	44,304		10	34,523
5	41,717		11	27,253
6	26,982			

2. Access to the site will be from 5650 West and 9600 North.

CITIZEN PARTICIPATION:

Notice of the August 18, 2015 Development Review Committee Meeting was mailed to all property owners within 500' of the proposed plat on August 6, 2015. Four citizens attended the meeting. Issues discussed at this meeting include the existing irrigation ditch and road improvements along 9600 North.

Notice of the Planning Commission meeting was published in the Daily Herald on August 9, 2015. Notice of the meeting was also mailed to all property owners within 500' on August 10, 2015. No comments have been received.

Notification is not required for the City Council meeting.

ANALYSIS:

- The property is designated as low density residential in the General Plan Land Use Map. The proposed subdivision meets the intent of the General Plan.

- The property to the north and west is existing single family residential. To the south and east are agricultural uses. The proposed subdivision is compatible with surrounding uses, but an agricultural area notification on the plat would be a reasonable requirement to assure future buyers are aware of potential conditions resulting from adjacent agricultural operations.

- The proposed development includes one existing home, located on lot 11, which fronts on 9600 North. By including this home in the subdivision the improvements along 9600 North adjacent to the lot will be completed. In addition, the applicant has agreed to install the curb and asphalt along 9600 North to complete the improvements. The City will reimburse the applicant for this cost.

- There is an existing ditch on the property. This ditch will need to be piped and relocated. Approval from the American Fork Irrigation District will be required prior to final approval of the civil construction plans.

- Utilities will be extended from 9600 North to serve the site.

- Water will be dedicated as required by the Development Code prior to final plat recordation.

FINDINGS:

The proposed subdivision plat meets the following findings with stipulations:

- It is in conformance with the General Plan, the R-1-40 District and the Highland city Development Code

PLANNING COMMISSION ACTION:

The Planning Commission held a public hearing on August 26, 2015. No one spoke in favor or opposition of the project. The Commission voted 7-0 to recommend approval of the preliminary plat

subject to the following stipulations:

1. The final plat shall be in substantial conformance with the preliminary plat dated July 20, 2015.

2. Final civil engineering plans to be reviewed and approved by the City Engineer.

3. Prospective homebuyers shall be informed by an affidavit of the proximity of agricultural uses.

4. Written approval from the American Fork Irrigation District regarding the piping and relocation of the ditch shall be provided prior to approval of the final civil construction plans.

5. All required public improvements shall be installed as per City Engineer's approval.

PROPOSED MOTION:

I move that the City Council accept the findings and **APPROVE** case PP-15-03 a request for preliminary plat approval subject to the five stipulations recommended by the Planning Commission.

ALTERNATIVE MOTION:

I move that the City Council deny the proposed preliminary plat subject to the following findings: (The Council should draft appropriate findings).

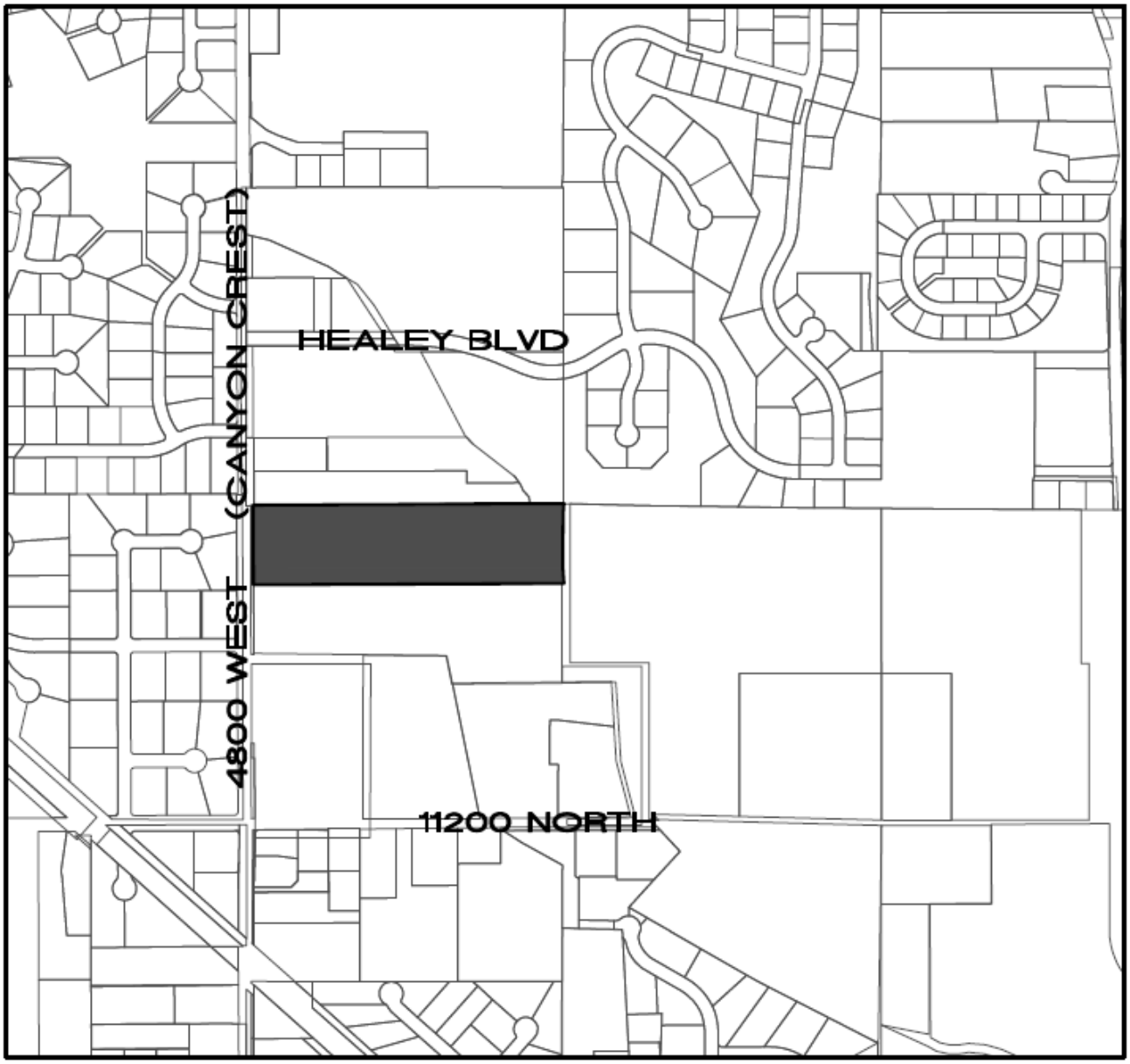
FISCAL IMPACT:

Unknown

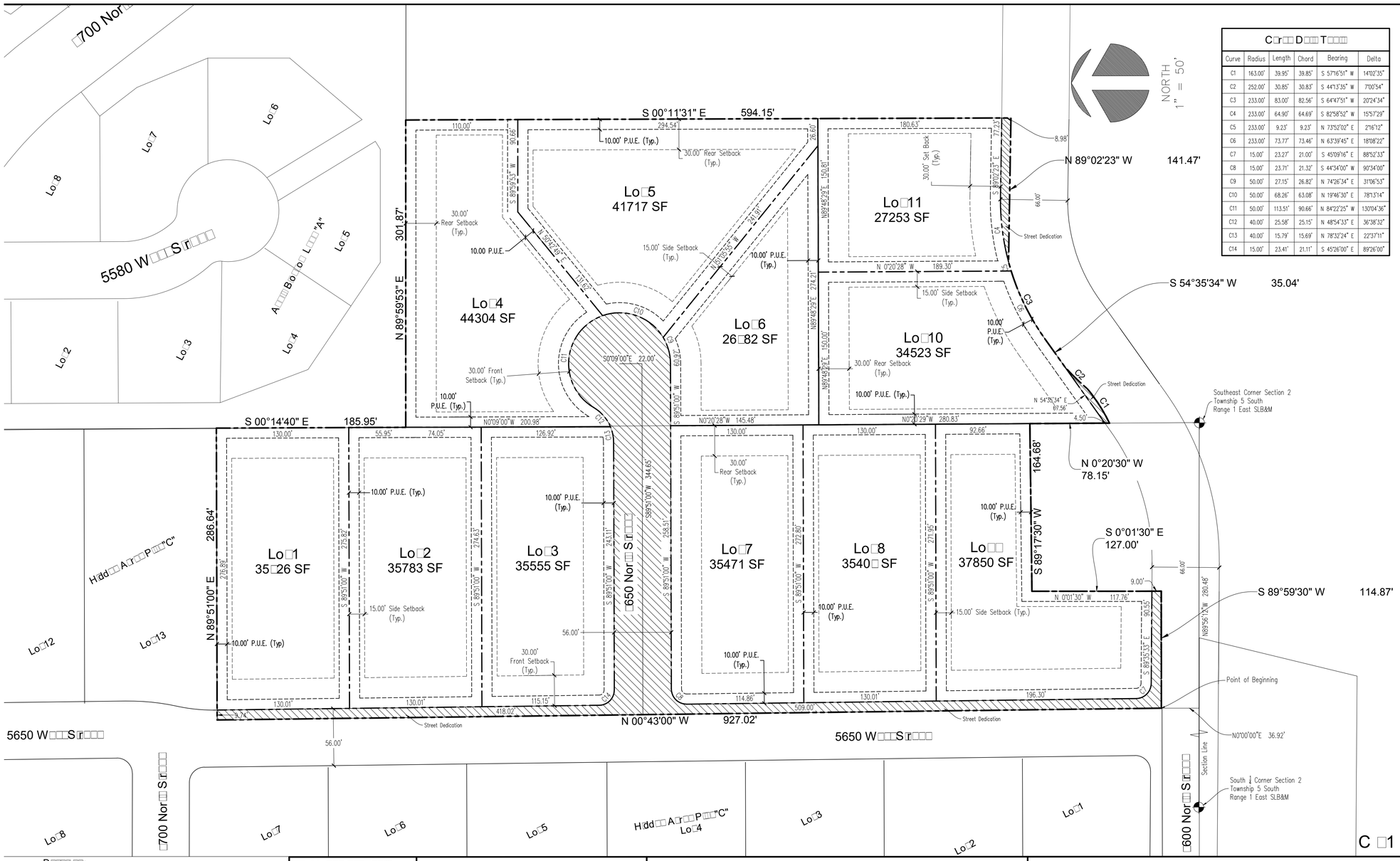
ATTACHMENTS:

1. Vicinity Map
2. Proposed Plat date stamped July 20, 2015

Attachment 1



VICINITY MAP



Curve	Radius	Length	Chord	Bearing	Delta
C1	163.00'	39.95'	39.85'	S 57°16'51" W	14°02'35"
C2	252.00'	30.85'	30.83'	S 44°13'35" W	7°00'54"
C3	233.00'	83.00'	82.56'	S 64°47'51" W	20°24'34"
C4	233.00'	64.90'	64.69'	S 82°58'52" W	15°57'29"
C5	233.00'	9.23'	9.23'	N 73°52'02" E	2°16'12"
C6	233.00'	73.77'	73.46'	N 63°39'45" E	18°08'22"
C7	15.00'	23.27'	21.00'	S 45°09'16" E	88°52'33"
C8	15.00'	23.71'	21.32'	S 44°34'00" W	90°34'00"
C9	50.00'	27.15'	26.82'	N 74°26'34" E	31°06'53"
C10	50.00'	68.26'	63.08'	N 19°46'30" E	78°13'14"
C11	50.00'	113.51'	90.66'	N 84°22'25" W	130°04'36"
C12	40.00'	25.58'	25.15'	N 48°54'33" E	36°38'32"
C13	40.00'	15.79'	15.69'	N 78°32'24" E	22°37'11"
C14	15.00'	23.41'	21.11'	S 45°26'00" E	89°26'00"

S[illegible]or' C[illegible]

I, Roger D. Dudley , do hereby Certify that I am a Registered Land Surveyor, and that I hold Certificate No. 147809 as prescribed under the laws of the State of Utah. I further certify by authority of the owners, I have made a survey of the tract of land shown on this plat and described below, and have subdivided said tract of land into Lots, Blocks, Streets, and Easements and the same has been correctly surveyed and staked on the ground as shown on this plat and that this plat is true and correct.

Bo[illegible]d[illegible] D[illegible]

Commencing at a point located North 89°56'12" West along the Section line 280.48 feet and North 36.92 feet from the Southeast corner of Section 2, Township 5 South, Range 1 East, Salt Lake Base and Meridian; thence North 00°43'00" West 927.02 feet; thence North 89°51'00" East 286.64 feet; thence South 00°14'40" East 185.95 feet; thence North 89°59'53" East 301.87 feet; thence South 00°11'31" East 594.15 feet; thence North 89°02'23" West 141.47 feet; thence along the arc of a 233.00 foot radius curve to the left 83.00 feet (chord bears South 64°47'51" West 82.56 feet); thence South 54°35'34" West 35.04 feet; thence along the arc of a 252.00 foot radius curve to the left 30.85 feet (chord bears South 44°13'35" West 30.83 feet); thence along the arc of a 163.00 foot radius curve to the right 39.95 feet (chord bears South 57°16'51" West 39.95 feet); thence North 00°20'30" West 78.15 feet; thence South 89°17'30" West 164.68 feet; thence South 00°01'30" East 127.00 feet; thence South 89°59'30" West 114.87 feet to the point of beginning.

AREA=426,795 sq. ft. or 9.80 acres

Basis of Bearing=North 89°56'12" West along the Section line.

Date _____ Surveyor _____
(See Seal Below)

O[illegible]r D[illegible]d[illegible]o

We, all of the undersigned owners of all the property described in the Surveyor's Certificate hereon and shown on this map, have caused the same to be subdivided into lots, blocks, streets and easements and do hereby dedicate the streets and other public areas as indicated hereon for perpetual use of the public, the public utility easements to all providers, public or private and the irrigation easements to all lot owners, and their successors and assigns in perpetuity.

In witness hereof we have set out hands this _____day of _____, A.D. 20___ .

A[illegible]o[illegible]d[illegible]

STATE OF UTAH } S.S.
COUNTY OF UTAH

On the ____ day of _____, A.D. 20___, personally appeared before me the signers of the foregoing Owner's Dedication who duly acknowledged to me that they did execute the same.

My Commission Expires _____ NOTARY PUBLIC
(See Seal Below)

A[illegible] L[illegible] Bod

The Department of Public Works and Engineering of Highland City, County of Utah, approves this subdivision and hereby accepts the dedication of all streets, easements and other parcels of land intended for public purposes for the perpetual use of the public the _____ day of _____, A.D. 20___.

Approved by Mayor_____

Approved _____ Attest _____

L[illegible] Ho[illegible]r Co[illegible]

The undersigned beneficiary hereby consents to the recording of this plat for the herein described property and the dedications provided herein.

H[illegible]d C[illegible]A[illegible]or

Approved as to form this_____day of_____, 20____ _____
Highland City Attorney

P[illegible] Co[illegible] [illegible]o A[illegible]ro

Approved this ____ day of _____ , 20___, by the Orem City Planning Commission.

Community Development Director _____ Planning Commission Chair _____

Co[illegible]o[illegible]o A[illegible]ro

There are conditions of approval attached to this subdivision which are indicated on this plat. These conditions have also been recorded with this subdivision. Potential buyers are requested to read these conditions carefully and obtain a copy of these conditions and restrictions prior to purchasing or contracting to purchase any lots within this subdivision. These conditions are binding and have been obtained through the Utah County Recorder's office or the Highland City Recorder's office. In addition, Highland City has approved binding zoning laws through a legally binding Development Code. It is the responsibility of the buyer to do their due diligence in obtaining all accurate information and/or regulations that may directly or indirectly affect the use of property prior to purchasing or contracting to purchase any property anywhere. Conditions of approval conveyed on this property by the legislative body of Highland City, which are I addition to the Development Code, are as follows:

1) 70% of the front yard landscaping shall be installed by the homeowner within one year after receiving a certification of occupancy.
2) Landscaping and construction materials of any type are not permitted upon or within the street curb & gutter, park strip or sidewalk (street right-of-way) with the exception of the park strip which requires 75% to be landscaped.
3) A fence that abuts open space or has a trail has additional restrictions of size and opacity. Fences along open space or a trail must comply with Highland City Ordinance. A fence permit is required for all fences.
4) Highland City Ordinances restrict height of foundation above curb. It is the responsibility of the buyer to contact the city prior to purchasing any lot. This restriction applies to all lots in this subdivision.

D[illegible]o[illegible]r:

M[illegible] Ho[illegible]
150 W[illegible]1450 Nor[illegible]
Pro[illegible]o U[illegible]
O[illegible] [illegible]801[illegible]443[illegible]6540
C[illegible]801[illegible]787[illegible]12

E[illegible]r:

D[illegible]d[illegible] [illegible]d A[illegible]o[illegible], I[illegible]
353 E[illegible]1200 So[illegible]
Or[illegible], U[illegible] 84058
801[illegible]224[illegible]1252

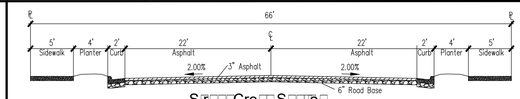
S[illegible] D[illegible]:

[illegible]o[illegible] [illegible]R[illegible]1[illegible]20
To[illegible]Ar[illegible] [illegible]426,7[illegible]5 SF or [illegible]80 A[illegible]r[illegible]
To[illegible] [illegible]r o[illegible]U[illegible] [illegible] 11 Lo[illegible]

Mo[illegible] [illegible]T[illegible]

V[illegible]M[illegible]

V[illegible]M[illegible]



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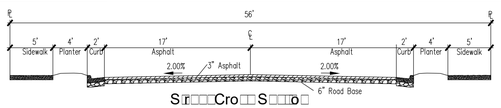
(NTS)



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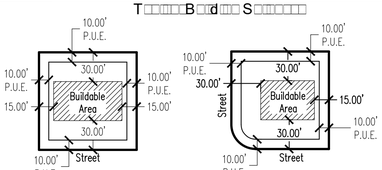
(NTS)

T[illegible]B[illegible]d[illegible]S[illegible]



I[illegible]r[illegible]or Lo[illegible]
(NTS)

Cor[illegible]r Lo[illegible]
(NTS)

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.

Q[illegible]r G[illegible]Co[illegible]

Questar approves this plat solely for the purpose of confirming that the plat contains public utility easements. Questar may require other easements in order to serve this development. This approval does not constitute abrogation or waiver of any other existing rights, obligations or liabilities provided by law or equity. This approval does not constitute acceptance, approval or acknowledgement of any terms contained in the plat, including those set forth in the Owners Dedication and the Notes and Questar's right-of-way department.

Approved this _____ day of _____ 20___ Questar Gas Company

By: _____ Title: _____

U[illegible]A[illegible]ro[illegible]

Utilities shall have the right to install, maintain, and operate their equipment above and below ground and all other related facilities within the Public Utilities Easements identified on this plat map as may be necessary or desirable in providing utility services within and without the lots identified herein, including the right of access to such facilities and the right to require removal of any obstructions including structures, trees and vegetation that may be placed within the PUE. The utility may require the lot owner to remove such structures at the owner's expense, or the utility may remove such structures at the owner's expense. At no time any permanent structures be placed within the PUE or any other obstructions with interferes with the use of the PUE with out the prior written approval of the utilities with facilities in the PUE.

Rocky Mtn. Power _____ Date _____

Qwest _____ Date _____

Comcast _____ Date _____

P[illegible]" A "

T[illegible] F[illegible] [illegible]Fo[illegible]Ho[illegible]o[illegible]

S[illegible]d[illegible]o[illegible]

HIGHLAND CITY, _____ UTAH COUNTY, UTAH

SCALE: 1" [illegible] 50 FEET

SURVEYOR'S SEAL	NOTARY PUBLIC SEAL	CITY-COUNTY ENGINEER SEAL	CLERK-RECORDER SEAL

D[illegible]d[illegible] [illegible]d A[illegible]o[illegible], I[illegible]
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CITY COUNCIL AGENDA REPORT

Item # 16

DATE: September 1, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Nathan Crane, AICP
City Administrator/Community Development Director
Justin Parduhn
Operations Manager

SUBJECT: MOTION: CONDITIONAL USE PERMIT SALT STORAGE BUILDING – (CU-15-04).

STAFF RECOMMENDATION:

The City Council review a request for a conditional use permit for a 1,600 square foot salt storage building located at the northwest corner of Park Drive and SR92.

BACKGROUND:

The property is 2.46 acres in size and is owned by Highland City. A subdivision is not required.

The site is designated as Low Density Residential on the General Plan Land Use Map. The site is zoned R-1-40 (Residential Zone). Public buildings and grounds are permitted in the R-1-40 District subject to a conditional use permit.

One of the requirements of the Environmental Protection Agency (EPA) requires that all salt storage be contained and covered to prevent ground water discharge during storms. The EPA has been active in auditing this requirement on surrounding cities. The purpose of this facility is to address these requirements before an audit.

With the light snow fall last year monies where left over from the salt budget and carried over to this fiscal year. The project budget is $70,000. Staff believes this will cover the building and the concrete pad. The building may not cost this much but this will not be known until the project is bid.

The property is currently being used as a bus stop for the View Point subdivision. The property is also being used for loading and unloading of materials related to the operation of the Public Works. Park Maintenance Seasonal employees also use the area for parking.

Staff observed school bus activities on August 26, 2015 from 7:00 am to 8:15 am and found the following:

Bus	Time	Cars	Approximate # of Children
1	7:15 am	4	4
2	7:45 am	0	1
3	8:00 am	4	15

A Conditional Use Permit is an administrative action.

SUMMARY OF REQUEST:

1. The Highland City Council is requesting approval of a 1,600 square covered salt storage facility with a 1,600 square foot concrete pad. The facility will be used to store salt for use during the winter. The facility has been sized to meet current and future needs.

2. The facility is enclosed on three sides with a cover. The fourth side will have metal gate that will be locked. Salt will be delivered to the site and placed on the concrete pad. It will then be pushed with a front end loader into the storage facility. When needed a front end loader will be used to remove the salt and load it into the plow trucks.

3. Hours of operation will be dependent on weather. Deliveries will occur early to the middle of fall. There will be no staff stationed at this site. The only use will be during winter storms.

4. Depending on the storm, plowing begins at 4:00 am. Trucks need to be filled twice from 4:00 am to 9:00 am. In the afternoon/evenings, plowing begins at approximately 4:00 pm in preparation for the evening commute. Staff will alter the loading schedule to have the trucks top off at 6:30 am. For storms that last throughout the day, staff will try to minimize trips during school bus pick-up and drop-off hours.

5. Access to the site is provided from Park Drive which has been constructed.

6. There will be no staff parking associated with the salt storage building.

7. The proposed building is a maximum of 16' feet in height.

8. The site includes over 35% of existing natural vegetation. The road improvements adjacent to SR92 will be constructed in conjunction with a road widening project in the future.

CITIZEN PARTICIPATION:

Since this is a City application, the Planning Commission meeting serves as the neighborhood meeting.

Notice of the August 25, 2015 Planning Commission meeting was published in the Daily Herald on August 9, 2015. Notification letters were mailed out to surrounding property owners on August 10, 2015. No comments have been received.

Notification of the City Council meeting is not required. However, the meeting date and time was announced at the August 25, 2015 Planning Commission meeting.

REQUIRED FINDINGS:

The City Council must determine that the proposed use meets three findings prior to granting a Conditional Use Permit. The burden of proof rests with the applicant. Each finding is presented below along with staff's analysis.

1. **The use will not be detrimental to the health, safety, or general welfare of persons residing or working in the vicinity or injurious to property or improvements in the vicinity.**

The surrounding property is zoned R-1-40. The property to the north and west is an active gravel pit. The property to the east is the existing public works facility. The property to the south is the debris basin. There are no existing homes adjacent to the property. The proposed use is compatible with the existing land uses.

2. **The use complies with all applicable regulations in the Development Code.**

The building is setback in excess of 30 feet from both streets. The site meets the minimum 35% landscaping. There will be no lighting. There will be a two foot berm on the north side of the site that will protect the American Fork River from potential runoff. The proposed building will meet all requirements of the Development Code.

3. **Conditions are imposed to mitigate any detrimental effects.**

Three stipulations have been included to ensure compliance with the Development Code.

CONCLUSION:

The City Council will need to determine if the proposed site plan meets the required findings for approval.

PLANNING COMMISSION ACTION:

The Planning Commission held a public hearing on August 25, 2015. There was opposition from residents in the View Point Subdivision. The Commission made the following motion:

Commissioner Brammer moved to recommend that the Storage Building identified as CU-15-04 be modified to incorporate additional safety procedures relative to the school bus situation in the area, as well as the public improvements required by Chapters 5-9 of the Highland Development Code, to address the aesthetics to match the public works building directly to the East, and to study if there can be an access off of SR-92. Commissioner Rock seconded the motion.

The motion passed 7-0.

CONCLUSION:

The City Council will need to determine if the proposed site plan meets the required findings for

approval.

RECCOMENDATION:

The City Council should hold a public meeting and determine if the proposed site plan meets the required findings for approval. The Council should draft appropriate findings.

ATTACHMENTS:

Attachment 1 – Proposed Site Plan
Attachment 2 – Proposed Building Elevations

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BID SET

REGISTERED PROFESSIONAL ENGINEER
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TODD M. TRANE
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NO.	DESCRIPTION	BY	APR.	DATE
	REVISION			

HIGHLAND CITY SALT STORAGE BUILDING
HIGHLAND CITY

SITE PLAN

FILE: 50-14-031_C-101_SITEPLAN
JUB PROJ.#: 50-14-031
DRAWN BY: CRW
DESIGN BY: CRW
CHECKED BY: TMT
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 8/20/2015

SHEET NUMBER:
C-101

Plot Date: 8/20/2015 5:05 PM Plotted By: Shaun Hilton
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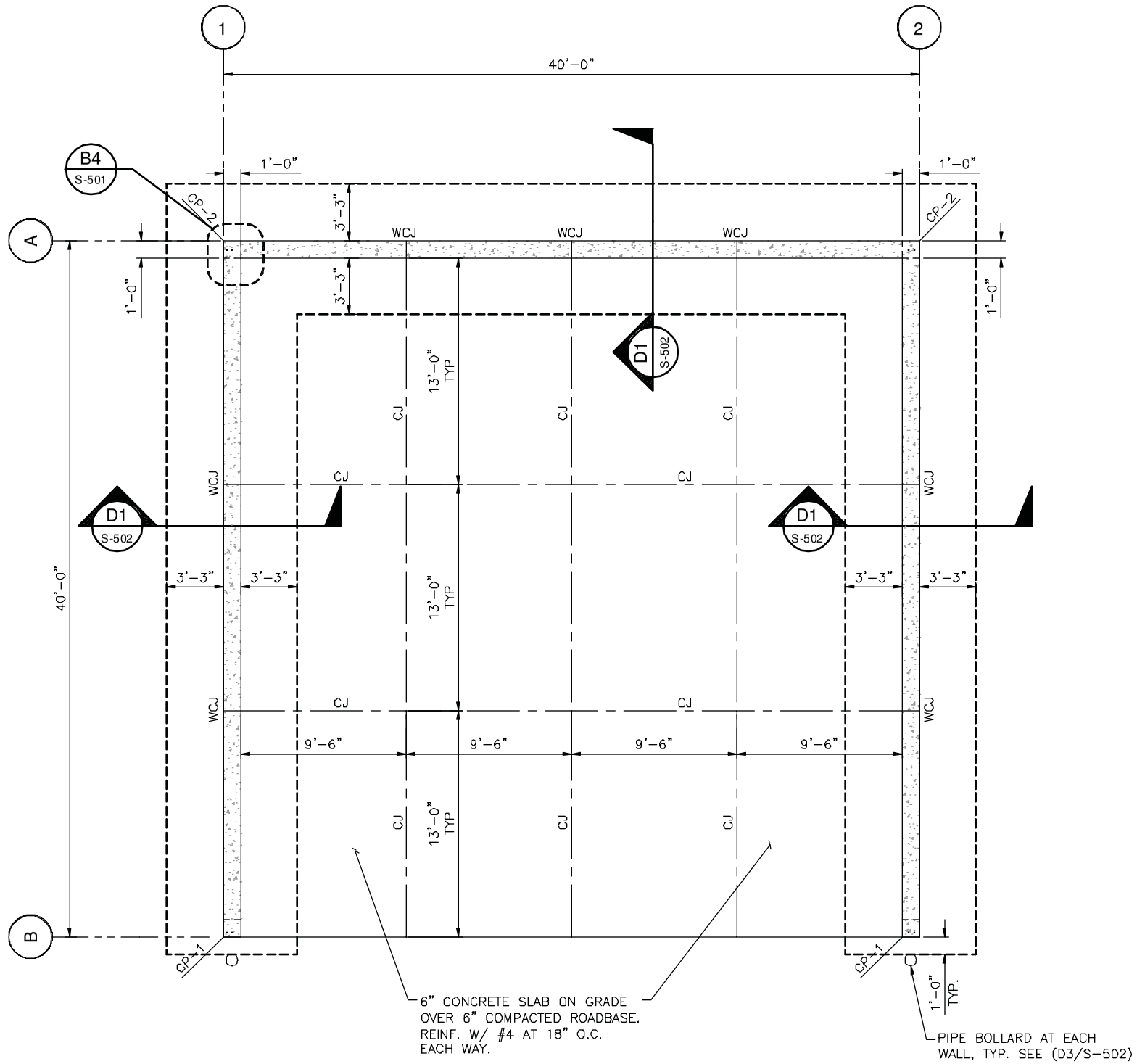

D1 FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

MARKS & SYMBOLS LEGEND:

MARK	DESCRIPTION
	SECTION MARK SHEET NUMBER
	CONCRETE WALL, SEE FOOTING & FOUNDATION DETAILS ON (S-502)
CJ	SLAB ON GRADE CONTROL JOINT, SEE FOOTING & FOUNDATION DETAILS ON (S-502)
WCJ	WALL CONSTRUCTION/CONTROL JOINT, SEE FOOTING & FOUNDATION DETAILS ON (S-502)
CP-x	CONCRETE PIER, SEE SCHEDULE ON (S-102)

FOUNDATION PLAN NOTES:

1. SEE FOOTING & FOUNDATION DETAILS ON SHEET (S-501) FOR STRUCTURAL FILL BENEATH FOOTINGS, IF REQUIRED BY SITE SOIL CONDITIONS.
2. SEE FOOTING & FOUNDATION DETAILS ON SHEET (S-501) FOR REINFORCING AROUND MISCELLANEOUS OPENINGS IN CONCRETE WALLS.
3. SEE FOOTING & FOUNDATION DETAILS ON SHEET (S-501) FOR BURIED PIPES RUNNING PARALLEL AND PERPENDICULAR TO FOOTINGS.
4. SEE FOOTING & FOUNDATION DETAILS ON SHEET (S-502) FOR TYPICAL CONSTRUCTION AND CONTROL JOINTS IN FLOOR SLABS.
5. SEE FOOTING & FOUNDATION DETAILS ON SHEET (S-501) FOR CONCRETE REINFORCING STEEL LAP SCHEDULE.

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BID SET

LICENSED CERTIFIED STRUCTURAL ENGINEER No. 282710 STEPHEN E. ROBERTS STATE OF UTAH

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	REVISION			

HIGHLAND CITY SALT STORAGE BUILDING
HIGHLAND CITY

FOOTING AND FOUNDATION PLAN

FILE: 50-14-031_S-101X_STRUCTURAL
JUB PROJ.#: 50-14-031
DRAWN BY: CRW
DESIGN BY: CRW
CHECKED BY: TMR
ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
LAST UPDATED: 7/8/2015

SHEET NUMBER:
S-101

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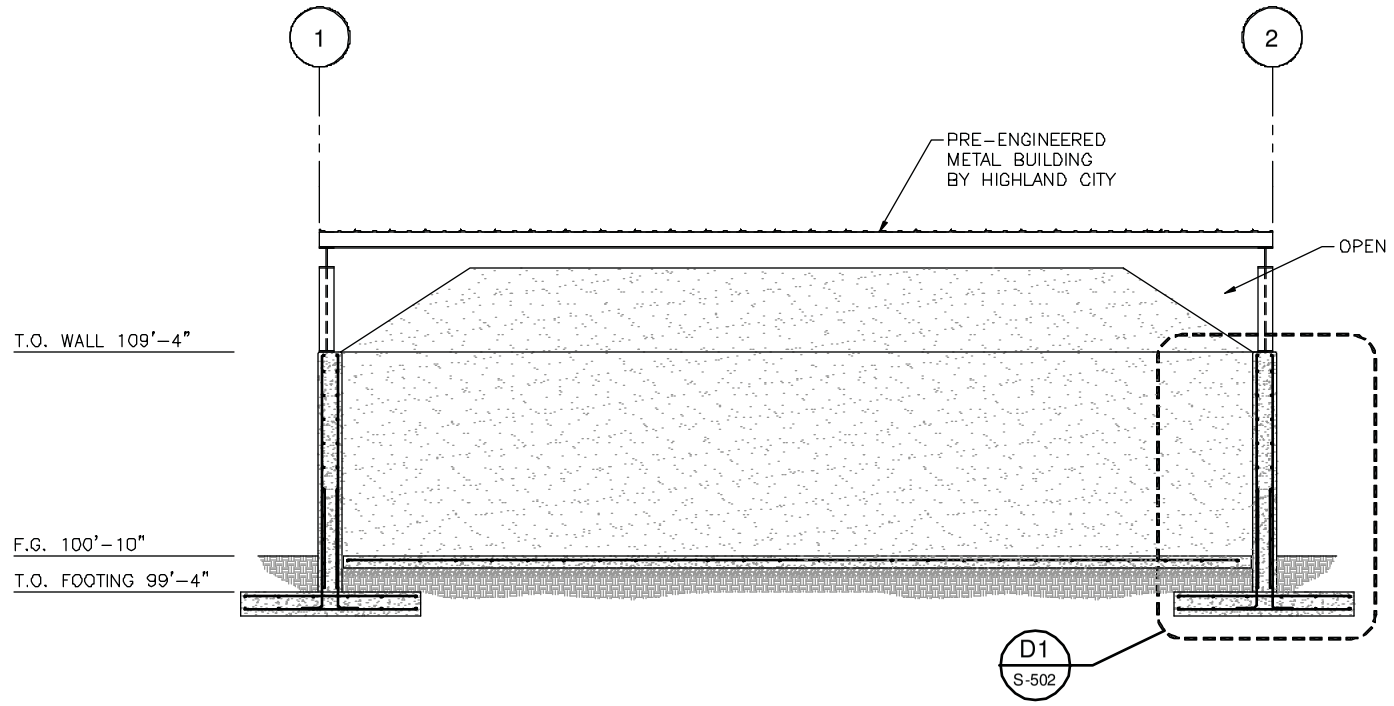
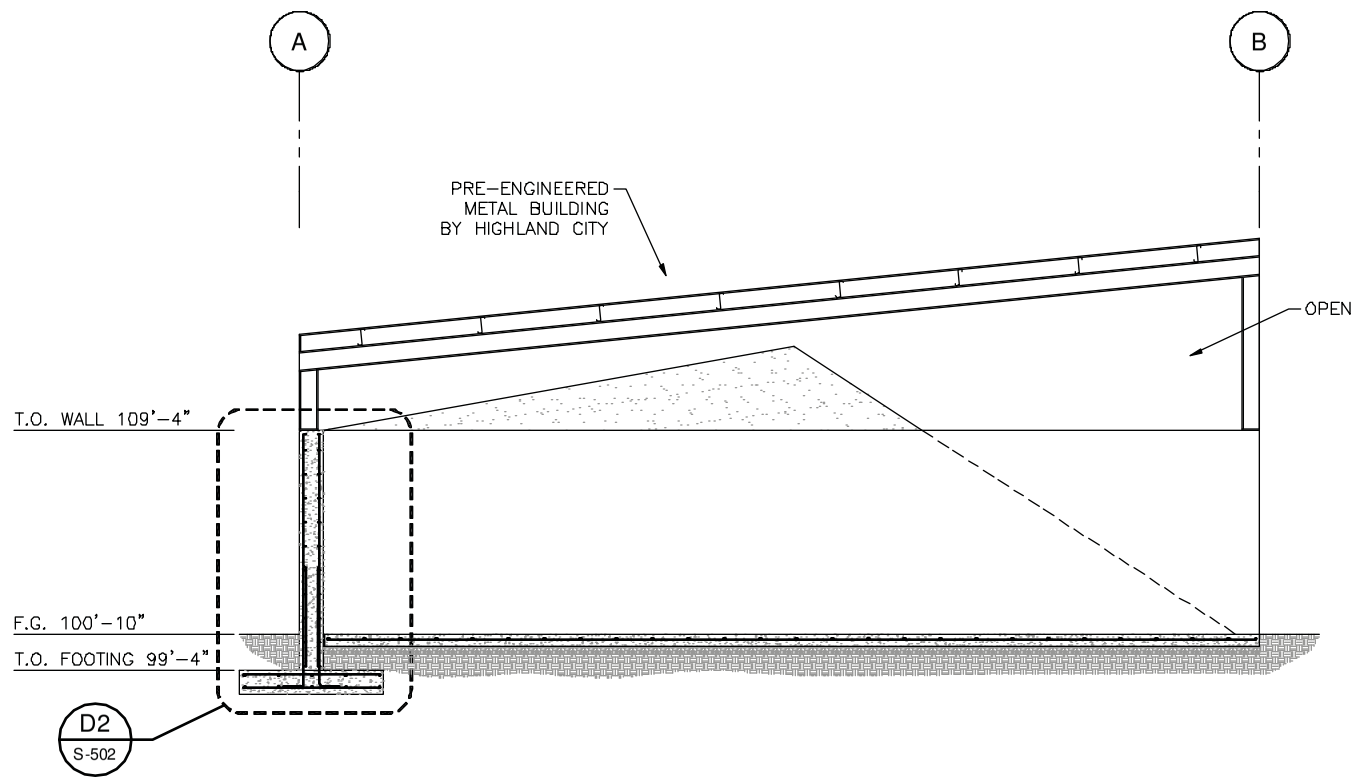


B1 BUILDING SECTION
SCALE: 1/4" = 1'-0"



D1 BUILDING SECTION
SCALE: 1/4" = 1'-0"

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HIGHLAND CITY SALT STORAGE BUILDING
HIGHLAND CITY

BUILDING SECTIONS

FILE: 50-14-031_S-101X_STRUCTURAL
JUB PROJ.#: 50-14-031
DRAWN BY: CRW
DESIGN BY: CRW
CHECKED BY: TMT

ONE INCH
AT FULL SIZE, IFNOTONE INCH SCALE ACCORDINGLY

LAST UPDATED: 7/8/2015

SHEET NUMBER:
S-301

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CITY COUNCIL AGENDA REPORT

Item # 17

DATE: Tuesday, September 1, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Nathan Crane, City Administrator/Community Development Director.

SUBJECT: OPERATION SAFETY REPORTS FOR HIGHLAND BOULEVARD AND 11800 NORTH

STAFF RECOMMENDATION:

Discussion regarding the Operational Safety Reports for the intersection of Highland Boulevard and 11800 North. This item is being presented for discussion only.

BACKGROUND:

With the recent accident at the intersection of Highland Boulevard and 11800 North, a concern has be raised relation to the safety and operation of this intersection. In June 2015, the Council authorized the hiring of two firms to complete an Operation Safety Report (OSR). An OSR report reviews the intersection design, traffic speeds, sight issues, crash history, etc. and provides a report with recommendations. Two firms were hired to complete this work; Project Engineering Consultants (PEC) and InterPlan. Both studies were also reviewed by the City Engineer. A summary of the findings of the reports are as follows:

Project Engineering Consultants

Summary

Analyzing the historical crash data (2009 to 2015) indicates that four of the 12 crashes (33%) that occurred at the intersection involved a westbound left-turn vehicle (including two severe crashes) which represents a crash pattern that is a safety issue.

PEC Recommendations

- Increase the size of the existing 30-inch stop sign to 36 inches and add flashing light emitting diode (LED) units within the border of the stop sign.
- Restripe the northbound Highland Boulevard approach to provide a through lane and a right turn lane.
- Replace the painted stop line with thermoplastic for better visibility and longevity.
- Install side road warning signs on Highland Boulevard for both the northbound and southbound approaches.
- Install a two-direction large arrow warning sign on the far side of the T-intersection in line with 11800 North to bring the intersection into compliance with MUTCD standards for T-

intersections.
- Re-stripe existing double yellow striping on 11800 North.
- Install the pavement message marking STOP prior to the stop line.
- Remove the trees from the center median in the south leg of the intersection and replace with shrubs or bushes less than 2-feet tall.
- Install a stop ahead warning sign on 11800 North.
- Consider rebuilding the intersection as a roundabout.

InterPlan

Summary

The crash history for this intersection does not suggest a major concern when compared to other Highland City intersections with similar function and size. Likewise the trend does not suggest a sudden increase or decrease in crash frequency over time. Several of the crashes at the intersection have extenuating circumstances, such as vehicle brake problems, driver inattention, or the presence of wildlife. However, the most common crash type - a northbound vehicle on Highland Boulevard striking a left-turning vehicle from 11800 North - occurred three times in seven years, not including the recent fatality.

Reccomendations:

- Consider installing a pedestrian facility opposite the southeast corner pedestrian ramp or consider removing the pedestrian ramp altogether. Visually impaired people could mistakenly assume a crosswalk and pedestrian facilities continue across the street due to the existing pedestrian ramp when in fact no such facilities exist. The benefit of such treatments should be considered in the context of future development and the demand for pedestrian treatments.
- Consider adding paved shoulders or restriping lanes to create shoulders on Highland Boulevard north of 11800 North to accommodate bicycle traffic. This action would require coordination with other agencies since Highland Boulevard north of 11800 North is outside Highland City boundaries.
- Consider alterations to median landscaping south of the intersection to improve driver visibility.
- Consider restriping northbound Highland Boulevard to feature one through lane and one right-turn lane at 11800 North. This action would not eliminate concerns about visibility of trailing vehicles being blocked by right-turning vehicles on Highland Boulevard, but could help clarify to drivers on 11800 North which movements vehicles on Highland Boulevard are conducting. The effects of eliminating the shoulder through restriping need to be considered in tandem with any potential bicycle treatments, as discussed above.

FISCAL IMPACT:

Unkown

ATTACHMENTS:

1. PEC Report
2. InterPlan Report

Crash Analyses

Highland Boulevard and 11800 North

Submitted To:
Highland City
5400 West Civic Center Drive
Suite 1
Highland, Utah 84003
(801) 756-5751

Submitted By:
Project Engineering Consultants Ltd.
986 West 9000 South
West Jordan, Utah 84088
(801) 495-4240

July 31, 2015

Executive Summary

The scope of this report is to analyze the crashes at the intersection of Highland Boulevard and 11800 North and recommend countermeasures to reduce the crash frequency and severity.

Analyzing the historical crash data (2009 to 2015) indicates that four of the 12 crashes (33%) that occurred at the intersection involved a westbound left-turn vehicle (including two severe crashes) which represents a crash pattern that is a safety issue.

The recommended improvements to the Highland Boulevard and 11800 North intersection to reduce the number of left-turn crashes are:

- Increase the size of the existing 30-inch stop sign to 36 inches and add flashing light emitting diode (LED) units within the border of the stop sign.
- Restripe the northbound Highland Boulevard approach to provide a through lane and a right turn lane.
- Replace the painted stop line with thermoplastic for better visibility and longevity.
- Install side road warning signs on Highland Boulevard for both the northbound and southbound approaches.

The engineer's preliminary estimate to install the flashing LED stop sign and restripe the northbound right turn lane is approximately $10,000. These two recommended improvements will reduce the number of severe left-turn crashes by 0.17 crashes annually over the 10-year life of the project and will provide a 293.22 benefit to cost ratio.

Other suggested intersection improvements to enhance intersection safety are:

- Install a two-direction large arrow warning sign on the far side of the T-intersection in line with 11800 North to bring the intersection into compliance with MUTCD standards for T-intersections.
- Re-stripe existing double yellow striping on 11800 North.
- Install the pavement message marking STOP prior to the stop line.
- Remove the trees from the center median in the south leg of the intersection and replace with shrubs or bushes less than 2-feet tall.
- Install a stop ahead warning sign on 11800 North.
- Consider rebuilding the intersection as a roundabout.

The recommended countermeasures listed above are proposed to reduce crash frequency and severity of the most significant crash pattern at the intersection (crashes involving westbound left-turn vehicles). The suggestions are provided based on all reported crashes and are designed to increase the overall safety of the intersection. The recommendations and suggestions provided in this report should be considered as future funding becomes available.

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Appendix B: Crash Data
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I. Introduction

On June 1, 2015, Project Engineering Consultants Ltd. (PEC) received a notice to proceed to provide an operational safety report (OSR) for the Highland Boulevard and 11800 North intersection (see Figure 1). This OSR was requested by Highland City. This report discusses the results of the historical crash data pertaining to the study intersection.

On July 27, 2015, PEC investigated the project site in accordance with the Operational Safety Report Manual (UDOT, 2014). The principal OSR investigator was Kelly D. Harris, PE, PTOE. Filed notes and photographs are included as an appendix to this report (see Appendix A).

II. Roadway Physical Conditions

Preliminary investigations indicate that current pavement and roadway conditions do not significantly contribute to the overall crash frequency. Intersection sight distance from westbound 11800 North looking south is adequate but appears narrower because of the trees lining both sides of Highland Boulevard (see Figure 2). The south leg of Highland Boulevard consists of a 1-foot paved shoulder, a 16-foot southbound lane, a 14-foot planted median, and a 17-foot northbound lane with an 8-foot shoulder. The north leg of Highland Boulevard contains a 0- to 1-foot paved shoulder, two 12-foot northbound through lanes, one 12-foot southbound left-turn lane, and an 11-foot through lane with a 0- to 1-foot paved shoulder. The east leg of the T-intersection on 11800 North, consists of an eastbound 10-foot paved shoulder, a 15-foot eastbound lane, and a 16-foot westbound lane with a 4-foot paved shoulder. The westbound approach is a shared left-right turn lane.

Figure 2. Intersection sight distance facing south from 11800 North.

Figure 1:
Highland Boulevard and 11800 North intersection

2015 Google Earth Imagery

III. Principal Manners of Collision

Principal manners of collision and crash severity (see Table 1) were based on analysis of the historical crash data from January 1, 2009 through May 31, 2015 (see Appendix B: Crash Data).

Table 1. Principal manner of collision and crash severity.

Crash Severity	Angle Westbound	Angle Northbound	Front-to-rear Westbound	Run-off-road Westbound	Other
Fatal	1	0	0	0	0
Incapacitating	1	0	0	0	0
Non-Incapacitating	0	0	0	0	0
Possible Injury	1	1	0	0	0
Property Damage Only	1	1	2	3	2
Total	4	1	2	3	2

The investigating officer's report for each crash was reviewed to determine whether the crash could have been mitigated with suggested improvements. This information, along with any supporting pattern with less severe crashes, was then used to determine the most appropriate improvements for each respective crash type. A collision diagram illustrates the types of crashes that have occurred at the intersection over the past six years (see Figure 3).

Two severe angle crashes involved a westbound vehicle on 11800 North turning southbound onto Highland Boulevard that failed to yield the right-of-way to the northbound vehicle, resulting in the northbound vehicle striking the left-turning vehicle. Neither the weather nor the roadway surface was a contributing factor of either crash.

Another angle crash involved the westbound vehicle on 11800 North turning southbound onto Highland Boulevard and failing to yield the right-of-way to the southbound vehicle, resulting in the westbound vehicle turning left into the southbound vehicle.

An angle crash involving a westbound vehicle on 11800 North turning southbound on to Highland Boulevard failed to yield the right-of-way to the southbound bicyclist turning left on to 11800 North, resulting in the left-turning westbound vehicle striking the bicyclist. The bicyclist was treated for minor injuries on-site and released.

The westbound left-turn angle crashes may be classified as a prevalent crash pattern that will be analyzed further to determine whether the crashes could have been mitigated with countermeasures.

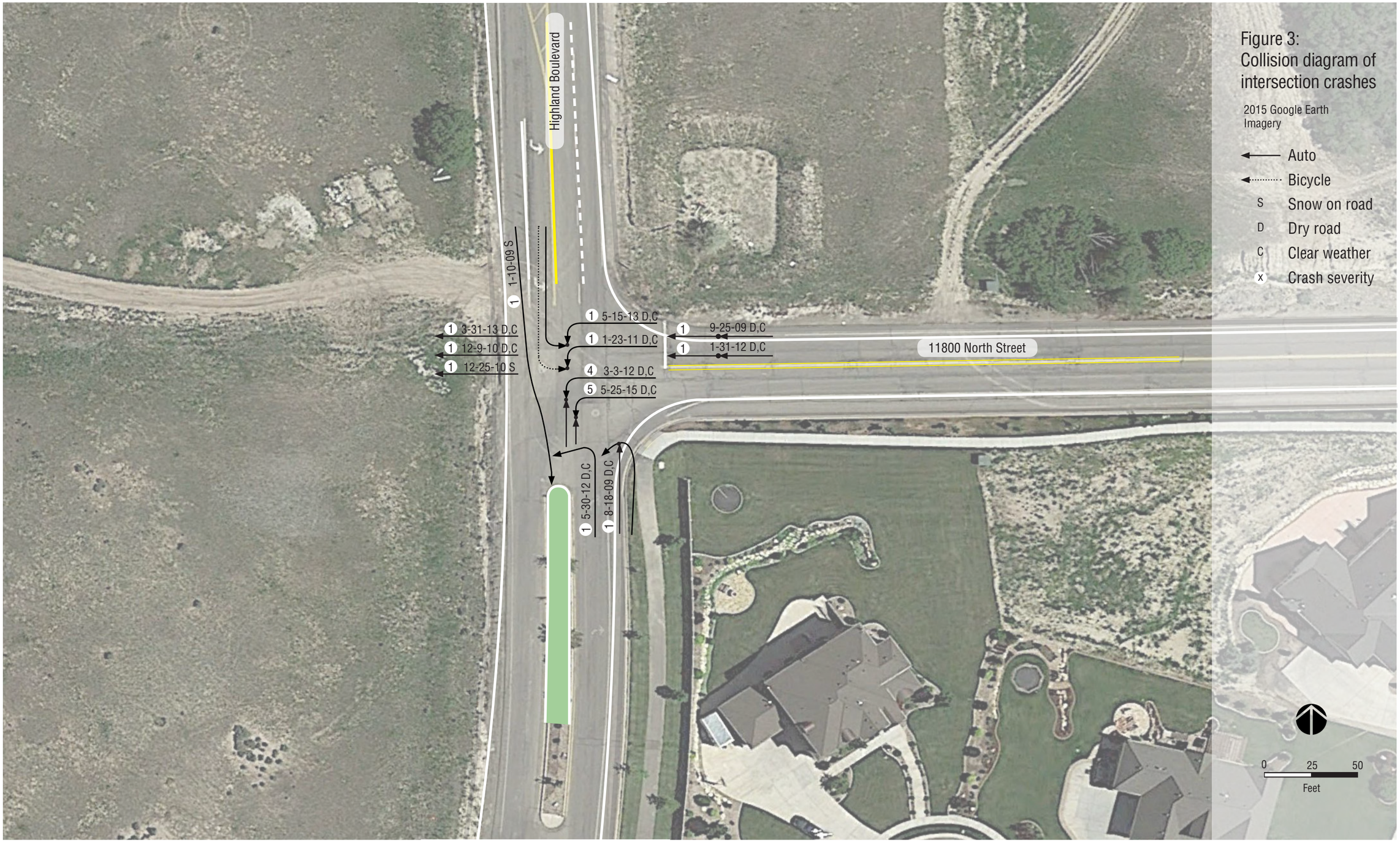

Figure 3:
Collision diagram of intersection crashes

2015 Google Earth Imagery

While analyzing the crash data for severe crashes, PEC discovered three crashes involved vehicles traveling westbound on 11800 North that passed straight through the intersection and ran off the west side of Highland Boulevard. One of these crashes was a result of the roadway surface condition. The others do not establish a crash pattern where countermeasures can be applied. Therefore, crashes involving run-off-the road vehicles were not further analyzed.

The condition of the roadway surface was cited as a contributing factor for two of the crashes. Temporary conditions of the roadway surface (as caused by weather conditions) contributed to two single events at the intersection and do not create a crash pattern. Therefore, crashes with roadway surface contributors were not further analyzed.

IV. Recommended Countermeasures

Implementing specific countermeasures for the manners of collisions investigated provides a benefit savings. The countermeasures are recommended based on the results of the site evaluation and crash analysis data. The benefits are amortized over the service life of the proposed countermeasure (see Table 2).

Table 2. Recommended countermeasures to reduce severe crashes and benefits.

Location	Countermeasure	Benefit	Project Service Life (years)	Estimated Annual Cost Saving	Estimated Annual Reduction of Severe Crashes
Highland Boulevard and 11800 North	Flashing LED stop sign	$2,183,322	10	$255,952	0.13
	Right-turn lane northbound	$748,849	10	$87,788	0.04

Implementation of these two countermeasures will result in a reduction of 0.17 crashes per year. A copy of the benefit calculations is provided in Appendix C: UDOT Benefit/Cost Worksheets.

Recommendations three and four are not included in Table 2 because "completed research had not developed statistically reliable and/or stable crash modification factors that passed the screening test for inclusion in the *Highway Safety Manual*" (AASHTO, 2010, 14-45). However, the costs of installing recommendations three and four were included in the cost of the first two countermeasures.

The following recommendations are ranked in order of suggested implementation.

1. To improve the conspicuity of the standard stop sign on 11800 North, Section 2A.15. A. and J. of the Manual of Uniform Traffic Control (MUTCD) suggests "increasing the size of a standard regulatory sign" and "adding light emitting diode (LED) units within the border of a standard regulatory sign" (FHWA, 2010, 36) (see Appendix D: MUTCD

References). PEC recommends increasing the size of the stop sign (R1-1) to 36 inches and adding LED units (see Figure 4) within the border of the standard stop sign. The LED units are solar powered, providing a sustainable power source where no other power source is required. The flashing LED units will increase driver awareness of the stop sign during daylight hours and is even more effective during nighttime hours.

Figure 4. Flashing LED stop sign (R1-1) with solar panel.

2. Separating the northbound right-turning vehicles from the through vehicles by creating a separated right-turn lane will help the westbound left-turning drivers on 11800 North distinguish which northbound vehicles are turning right or continuing straight. PEC recommends restriping the Highland Boulevard northbound approach to provide a through lane and a right-turn lane. The existing 25 feet of pavement easily allows provision for a 12-foot through lane and an 11-foot right-turn lane.

3. Installing a 12-inch retro-reflective thermoplastic stop line will better define the designated stopping point for the vehicle operator and will be more visible. The thermoplastic will also wear better and last longer than paint.

4. "A side road (W2-2) symbol sign (see Figure 5) may be used in advance of an intersection to indicate the presence of an intersection and the possibility of turning or entering traffic" (FHWA, 2010, 127) (see Appendix D: MUTCD References). Install the side road warning signs (W2-2) 125 feet prior to the intersection on the northbound and southbound approaches of Highland Boulevard.

Figure 5. Side road warning sign (W2-2)

Other Suggestions

Following are other suggestions, in no particular order, that could improve the safety at the intersection by increasing driver awareness:

1. While conducting the site visit, PEC observed that the T-intersection is not properly signed with a two-direction large arrow sign (W1-7) (see Figure 6). PEC recommends installing this sign per UDOT Standard Drawing SN 4 (UDOT, 2012) "on the far side of the T-intersection in line with, and at approximately a right angle to, traffic approaching from [11800 North]. The two-direction large arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the intersection configuration" (FHWA, 2010, 128) (see Appendix D: MUTCD References).

Figure 6. Two-direction large arrow sign (W1-7).

2. PEC suggests re-striping the existing double yellow striping on 11800 North from the stop line at the intersection easterly 100 feet minimum. This will increase visibility and add definition to the intersection approach. The striping on Highland Boulevard was restriped recently and is still in good condition.

3. PEC suggests placing a thermoplastic pavement marking message STOP prior to the stop line on 11800 North. Section 3B.20 of the MUTCD suggests that "pavement markings can be helpful to road users in some locations by supplementing signs and providing additional emphasis for important regulatory messages, because the markings do not require diversion of the road user's attention from the roadway surface" (FHWA, 2010, 387) (see Appendix D: MUTCD References). PEC recommends using lettering that is at least 6 feet in height and centered in the travel lane approximately 4 feet prior to the stop line.

4. PEC suggests removing the trees from the center median to improve the sight distance (see Figure 1) to the south and only allow vegetation in the median with a 2-foot height restriction. Removing the trees will provide the drivers on 11800 North more distance to spot on-coming northbound traffic that is approaching the intersection.

5. There is ample sight distance when approaching the intersection on westbound 11800 North. However, MUTCD suggests "an advance traffic control sign may be used for additional emphasis of the primary traffic control device even when the visibility distance to the device is satisfactory" (FHWA, 2010, 123-124) (See Appendix D: MUTCD

References). PEC suggests installing an advance traffic control symbol sign stop ahead (W3-1) (see Figure 4) on the approach 100 feet prior to the stop sign.

Figure 7. Stop ahead warning sign (W3-1).

6. PEC suggests reconstructing the intersection as a roundabout. The nature of a roundabout slows down the approaching vehicles by redirecting the vehicle travel path and reduces severe crashes because of the lower speeds. Studies have shown that roundabouts are safer than traditional stop sign controlled intersections. Compared to other types of intersections, roundabouts improve safety. The following are some statistics on roundabouts from the Transportation Research Board:

    - Reduce fatalities by more than 90%
    - Reduce injuries by 75%
    - Reduce all crashes by 35% (TRB, 2001, 2007)

The low cost recommendations and suggestions are illustrated in Figure 8 to show the improvements at the existing intersection. The roundabout is excluded from the figure as it is not a low cost improvement.

V. Conclusion

The findings show that over the last six years 33% of the crashes at the intersection were left-turn angle crashes involving westbound vehicles on 11800 North; two of which were identified as severe crashes. Improving the conspicuity of the stop sign by increasing the size of the sign with LED units, restriping the Highland Boulevard northbound approach to provide a separate right-turn lane, installing a thermoplastic stop line, and installing T-intersection warning signs shows an annual 0.17 reduction of severe left-turn crashes over the 10-year service life of the recommendations. The other suggestions will enhance the safety of the intersection as well.

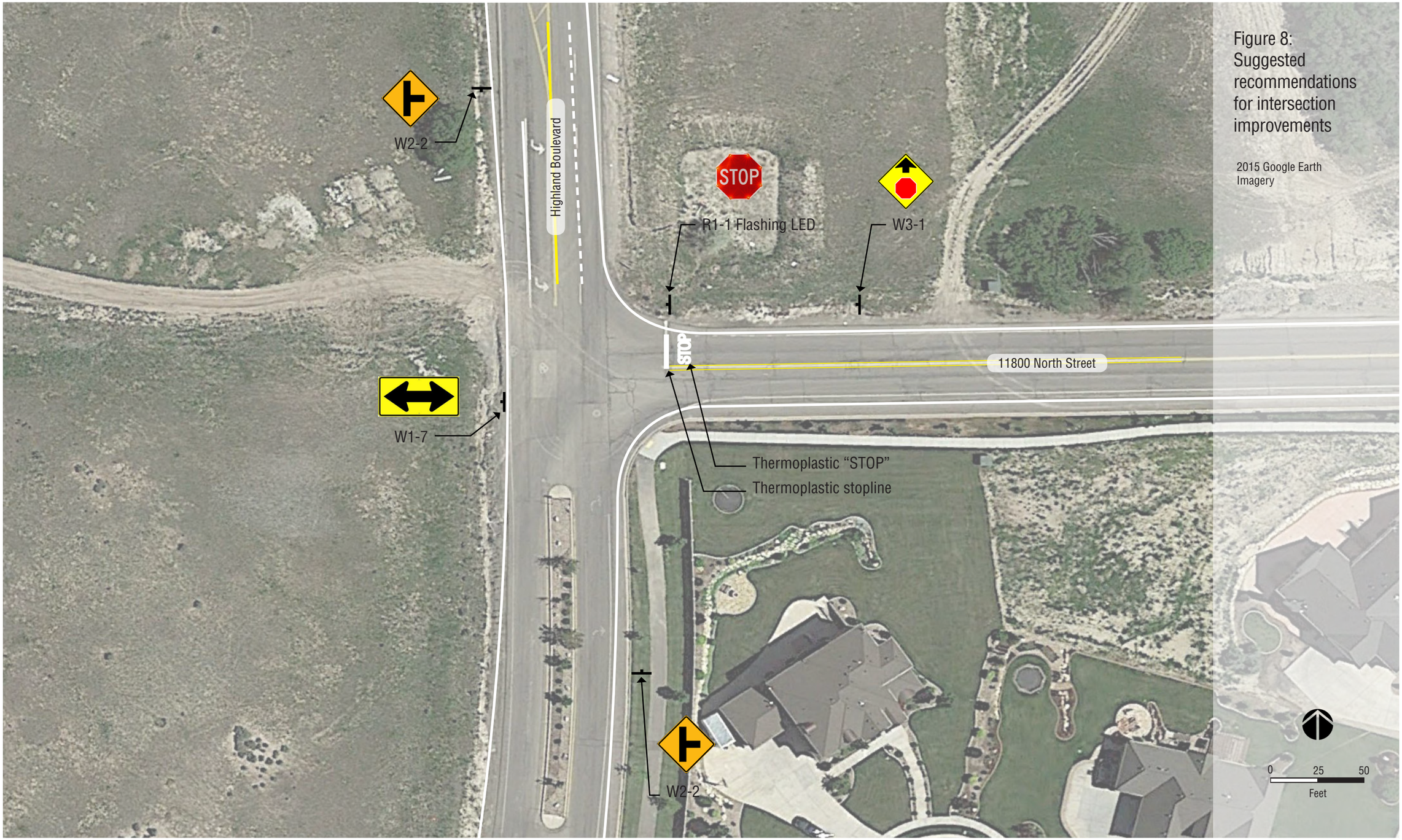

Figure 8: Suggested recommendations for intersection improvements

2015 Google Earth Imagery

References

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Appendix A

Site Investigation Notes /Photos

Figure 1. Highland Blvd/11800 N - facing north.

Figure 2. Highland Blvd./11800 N. – facing south.

Figure 3. Highland Blvd./11800 N. - facing north.

Figure 4. Highland Blvd/11800 N - facing north.

Figure 5. Median - south leg of Highland Blvd.

Figure 6. Highland Blvd./11800 N. - facing south.

Figure 7. Highland Blvd./11800 N. - facing south.

Figure 8. Highland Blvd./11800 N. – facing south.

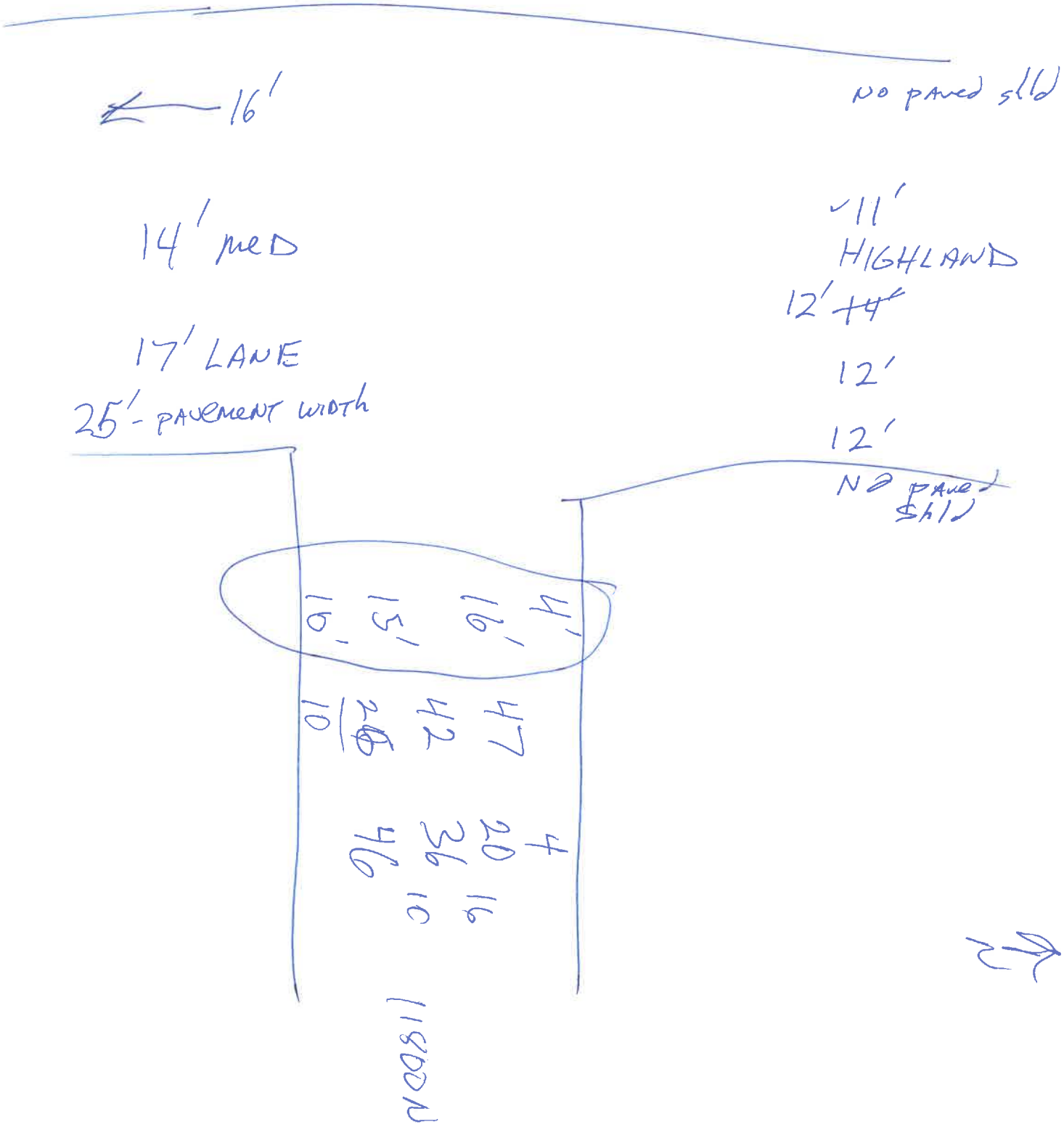
Figure 9. Highland Blvd./11800 N. – facing north.

Figure 10. Highland Blvd./11800 N. – facing south.

Figure 11. Highland Blvd./11800 N. – facing south.

Figure 12. Highland Blvd./11800 N. – facing north.

7/27/15
KDH
SUNNY & WARM



Appendix B

Crash Data

CRASH DATA
Highland Boulevard and 11800 North
January 1, 2009 to May 31, 2015

CRASH ID	CRASH DATETIME	CRASH SEVERITY	BICYCLIST INVOLVED	LIGHT CONDITION	WEATHER CONDITION	MANNER COLLISION	ROADWAY SURF CONDITION	NUMBER VEHICLES INVOLVED	FIRST HARMFUL EVENT	VEHICLE NUM	EVENT SEQ 1	MOST HARMFUL EVENT	VEHICLE 1 MANEUVER	TRAVEL DIRECTION	VEHICLE 2	TRAVEL DIRECTION
09AH00142	Jan 10, 2009 8:49:00 AM	1	N	Daylight	Cloudy	Sideswipe Opposite Direction	Snow	1	Other Motor Vehicle in Transport	1	No Damage or Injury, This Vehicle	No Damage or Injury, This Vehicle				
09AH03661	Aug 18, 2009 11:53:00 AM	1	N	Daylight	Clear	Angle	Dry	2	Other Motor Vehicle in Transport	2	No Damage or Injury, This Vehicle	No Damage or Injury, This Vehicle				
09UC10944	Sep 25, 2009 6:26:00 PM	1	N	Daylight	Clear	Front to Rear	Dry	2	Other Motor Vehicle in Transport	1	No Damage or Injury, This Vehicle	No Damage or Injury, This Vehicle				
10UC12789	Dec 9, 2010 4:20:00 PM	1	N	Daylight	Clear	Not Applicable / Single Vehicle	Dry	1	Ditch	1	No Damage or Injury, This Vehicle	No Damage or Injury, This Vehicle				
10AH05014	Dec 25, 2010 5:51:00 PM	1	N	Dark - Not Lighted	Fog, Smog	Not Applicable / Single Vehicle	Ice	1	Ran Off Road Right	1	No Damage or Injury, This Vehicle	No Damage or Injury, This Vehicle				
11AH00286	Jan 23, 2011 8:57:00 AM	1	N	Daylight	Clear	Not Applicable / Single Vehicle	Dry	2	Other Motor Vehicle in Transport	2	No Damage or Injury, This Vehicle	No Damage or Injury, This Vehicle				
12AH00401	Jan 31, 2012 8:45:00 AM	1	N	Daylight	Clear	Front to Rear	Dry	2	Other Motor Vehicle in Transport	2	No Damage or Injury, This Vehicle	No Damage or Injury, This Vehicle				
10499511	Mar 3, 2012 10:53:00 AM	4	N	Daylight	Clear	Angle	Dry	2	Other Motor Vehicle in Transport	1	Other Motor Vehicle in Transport	Other Motor Vehicle in Transport	Turning Left	WB	Straight Ahead	NB
12UC05093	May 30, 2012 12:29:00 PM	1	N	Daylight	Clear	Not Applicable / Single Vehicle	Dry	1	Other Motor Vehicle in Transport	1	Ran Off Road Right	No Damage or Injury, This Vehicle				
10586440	Mar 31, 2013 9:27:00 AM	1	N	Daylight	Clear	Not Applicable / Single Vehicle	Dry	1	Ditch	1	Ditch	Ditch	Straight Ahead	EB		
13UC04352	May 15, 2013 9:53:00 AM	2	Y	Daylight	Clear	Angle	Dry	1	Pedalcycle	1	Pedalcycle	No Damage or Injury, This Vehicle				
15AH01403	May 25, 2015 6:53:00 PM	5	N	Daylight	Clear	Angle	Dry	2	Other Motor Vehicle in Transport	2	No Damage or Injury, This Vehicle	No Damage or Injury, This Vehicle				

Appendix C

UDOT Benefit/Cost Worksheets

UDOT Safety Programs Benefit/Cost Worksheet

State Route/ FAU Route/ FAS Route/ Local Route	Location	Beginning Accum. MP	Ending Accum. MP	Jurisdiction	Study Period Begins	Study Period Ends
FA 2920	Highland Boulevard and 11800 North	1.12	1.12	Highland City	1/1/2009	5/31/2015

Description of Proposed Work: Flashing LED Stop Sign

Crash Severity Distribution / Collision Description			Angle Westbound	All Westbound								Totals
Study Period: Number of Crashes	Fatal	5	1									1
	Injury	4	1									1
		3										
		2	1									1
	PDO	1	1	5								6
Total			**4**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**
Crash Modification Factors (CMF)	Fatal	5	0.59	0.59								1.18
	Injury	4	0.59	0.59								1.18
		3	0.59	0.59								1.18
		2	0.59	0.59								1.18
	PDO	1	0.59	0.59								1.18
Estimated Reduction in Crashes	Fatal	5	0.41									0.41
	Injury	4	0.41									0.41
		3										
		2	0.41									0.41
	PDO	1	0.41	2.05								2.46
Total			**1.64**	**2.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.69**

		Crash Severity	Est. Red. of Crashes (Total)	Est. Annual Red. of Crashes	Average Cost per Crash (FHWA)*	Estimated Annual Cost Saving (Benefit)
Year (Project Construction)	**2016**					
Project Cost (exclude Right of Way)	**$5,000.00**	5	0.41	0.06	$ 1,961,100	$ 125,365
Right of Way Cost		4	0.41	0.06	$ 1,961,100	$ 125,365
		3			$ 122,400	
CAPITAL RECOVERY		2	0.41	0.06	$ 62,500	$ 3,995
Discount Rate	3.0%	1	2.46	0.38	$ 3,200	$ 1,227
Project Service Life (yrs)	10	Total	3.69	0.58		$ 255,952

B/C= 436.66

Using present worth values:

Benefit = $ 2,183,322

Cost = $ 5,000

Severe Crashes Reduced (Ann.)

0.13

Change only yellow-shaded boxes. Crash Modification Factors and Service Life values are from Utah Crash Modification Factors spreadsheet. Contact W. Scott Jones if you have questions.

UDOT Traffic and Safety

*Note: To keep results from updated yearly, break the link between this sheet and the KABCO sheet attached. OR change B6 on the AIS sheet to the current year.

UDOT Safety Programs Benefit/Cost Worksheet

State Route/ FAU Route/ FAS Route/ Local Route	Location	Beginning Accum. MP	Ending Accum. MP	Jurisdiction	Study Period Begins	Study Period Ends
FA 2920	Highland Boulevard and 11800 North	1.12	1.12	Highland City	1/1/2009	5/31/2015

Description of Proposed Work: Install right turn lane on Highland Boulevard - northbound

Crash Severity Distribution / Collision Description			Angle Westbound									Totals
Study Period: Number of Crashes	Fatal	5	1									1
	Injury	4	1									1
		3										
		2	1									1
	PDO	1	6									6
Total			9	0	0	0	0	0	0	0	0	9
Crash Modification Factors (CMF)	Fatal	5	0.86									0.86
	Injury	4	0.86									0.86
		3	0.77									0.77
		2	0.78									0.777
	PDO	1										
Estimated Reduction in Crashes	Fatal	5	0.14									0.14
	Injury	4	0.14									0.14
		3										
		2	0.22									0.22
	PDO	1										
Total			0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50

		Crash Severity	Est. Red. of Crashes (Total)	Est. Annual Red. of Crashes	Average Cost per Crash (FHWA)*	Estimated Annual Cost Saving (Benefit)
Year (Project Construction)	2016					
Project Cost (exclude Right of Way)	$5,000.00	5	0.14	0.02	$ 1,961,100	$ 42,807
Right of Way Cost		4	0.14	0.02	$ 1,961,100	$ 42,807
		3			$ 122,400	
CAPITAL RECOVERY		2	0.22	0.03	$ 62,500	$ 2,173
Discount Rate	3.0%	1			$ 3,200	
Project Service Life (yrs)	10	Total	0.50	0.08		$ 87,788

B/C= 149.77

Using present worth values:

Benefit = $ 748,849

Cost = $ 5,000

Change only yellow-shaded boxes. Crash Modification Factors and Service Life values are from Utah Crash Modification Factors spreadsheet. Contact W. Scott Jones if you have questions.

UDOT Traffic and Safety

Severe Crashes Reduced (Ann.)

0.04

*Note: To keep results from updated yearly, break the link between this sheet and the KABCO sheet attached. OR change B6 on the AIS sheet to the current year.

Appendix D

MUTCD References

Section 2C.33 Warning Signs and Plaques for Motorcyclists (W8-15, W8-15P, and W8-16)

Support:

01 The signs and plaques described in this Section are intended to give motorcyclists advance notice of surface conditions that might adversely affect their ability to maintain control of their motorcycle under wet or dry conditions. The use of some of the advance surface condition warning signs described in Section 2C.32, such as Slippery When Wet, LOOSE GRAVEL, or ROUGH ROAD, can also be helpful to motorcyclists if those conditions exist.

Option:

02 If a portion of a street or highway features a roadway pavement surface that is grooved or textured instead of smooth, such as a grooved skid resistance treatment for a horizontal curve or a brick pavement surface, a GROOVED PAVEMENT (W8-15) sign (see Figure 2C-6) may be used to provide advance warning of this condition to motorcyclists, bicyclists, and other road users. Alternate legends such as TEXTURED PAVEMENT or BRICK PAVEMENT may also be used on the W8-15 sign.

03 If a bridge or a portion of a bridge includes a metal or grated surface, a METAL BRIDGE DECK (W8-16) sign (see Figure 2C-6) may be used to provide advance warning of this condition to motorcyclists, bicyclists, and other road users.

04 A Motorcycle (W8-15P) plaque (see Figure 2C-6) may be mounted below or above a W8-15 or W8-16 sign if the warning is intended to be directed primarily to motorcyclists.

Section 2C.34 NO CENTER LINE Sign (W8-12)

Option:

01 The NO CENTER LINE (W8-12) sign (see Figure 2C-6) may be used to warn of a roadway without center line pavement markings.

Section 2C.35 Weather Condition Signs (W8-18, W8-19, W8-21, and W8-22)

Option:

01 The ROAD MAY FLOOD (W8-18) sign (see Figure 2C-6) may be used to warn road users that a section of roadway is subject to frequent flooding. A Depth Gauge (W8-19) sign (see Figure 2C-6) may also be installed within a roadway section that frequently floods.

Standard:

02 **If used, the Depth Gauge sign shall be in addition to the ROAD MAY FLOOD sign and shall indicate the depth of the water at the deepest point on the roadway.**

Option:

03 The GUSTY WINDS AREA (W8-21) sign (see Figure 2C-6) may be used to warn road users that wind gusts frequently occur along a section of highway that are strong enough to impact the stability of trucks, recreational vehicles, and other vehicles with high centers of gravity. A NEXT XX MILES (W7-3a) supplemental plaque may be mounted below the W8-21 sign to inform road users of the length of roadway that frequently experiences strong wind gusts.

04 The FOG AREA (W8-22) sign (see Figure 2C-6) may be used to warn road users that foggy conditions frequently reduce visibility along a section of highway. A NEXT XX MILES (W7-3a) supplemental plaque may be mounted below the W8-22 sign to inform road users of the length of roadway that frequently experiences foggy conditions.

Section 2C.36 Advance Traffic Control Signs (W3-1, W3-2, W3-3, W3-4)

Standard:

01 **The Advance Traffic Control symbol signs (see Figure 2C-6) include the Stop Ahead (W3-1), Yield Ahead (W3-2), and Signal Ahead (W3-3) signs. These signs shall be installed on an approach to a primary traffic control device that is not visible for a sufficient distance to permit the road user to respond to the device (see Table 2C-4). The visibility criteria for a traffic control signal shall be based on having a continuous view of at least two signal faces for the distance specified in Table 4D-2.**

Support:

02 Figure 2A-4 shows the typical placement of an Advance Traffic Control sign.

03 Permanent obstructions causing the limited visibility might include roadway alignment or structures. Intermittent obstructions might include foliage or parked vehicles.

Guidance:

04 *Where intermittent obstructions occur, engineering judgment should determine the treatment to be implemented.*

Option:

05 An Advance Traffic Control sign may be used for additional emphasis of the primary traffic control device, even when the visibility distance to the device is satisfactory.

06 An advance street name plaque (see Section 2C.58) may be installed above or below an Advance Traffic Control sign.

07 A warning beacon may be used with an Advance Traffic Control sign.

08 A BE PREPARED TO STOP (W3-4) sign (see Figure 2C-6) may be used to warn of stopped traffic caused by a traffic control signal or in advance of a section of roadway that regularly experiences traffic congestion.

Standard:

09 **When a BE PREPARED TO STOP sign is used in advance of a traffic control signal, it shall be used in addition to a Signal Ahead sign and shall be placed downstream from the Signal Ahead (W3-3) sign.**

Option:

10 The BE PREPARED TO STOP sign may be supplemented with a warning beacon (see Section 4L.03).

Guidance:

11 *When the warning beacon is interconnected with a traffic control signal or queue detection system, the BE PREPARED TO STOP sign should be supplemented with a WHEN FLASHING (W16-13P) plaque (see Figure 2C-12).*

Support:

12 Section 2C.40 contains information regarding the use of a NO MERGE AREA (W4-5P) supplemental plaque in conjunction with a Yield Ahead sign.

Section 2C.37 Advance Ramp Control Signal Signs (W3-7 and W3-8)

Option:

01 A RAMP METER AHEAD (W3-7) sign (see Figure 2C-6) may be used to warn road users that a freeway entrance ramp is metered and that they will encounter a ramp control signal (see Chapter 4I).

Guidance:

02 *When the ramp control signals are operated only during certain periods of the day, a RAMP METERED WHEN FLASHING (W3-8) sign (see Figure 2C-6) should be installed in advance of the ramp control signal near the entrance to the ramp, or on the arterial on the approach to the ramp, to alert road users to the presence and operation of ramp meters.*

Standard:

03 **The RAMP METERED WHEN FLASHING sign shall be supplemented with a warning beacon (see Section 4L.03) that flashes when the ramp control signal is in operation.**

Section 2C.38 Reduced Speed Limit Ahead Signs (W3-5, W3-5a)

Guidance:

01 *A Reduced Speed Limit Ahead (W3-5 or W3-5a) sign (see Figure 2C-7) should be used to inform road users of a reduced speed zone where the speed limit is being reduced by more than 10 mph, or where engineering judgment indicates the need for advance notice to comply with the posted speed limit ahead.*

Standard:

02 **If used, Reduced Speed Limit Ahead signs shall be followed by a Speed Limit (R2-1) sign installed at the beginning of the zone where the speed limit applies.**

03 **The speed limit displayed on the Reduced Speed Limit Ahead sign shall be identical to the speed limit displayed on the subsequent Speed Limit sign.**

Figure 2C-7. Reduced Speed Limit Ahead Signs

W3-5 W3-5a

14 **The unique letter forms for each of the Standard Alphabet series shall not be stretched, compressed, warped, or otherwise manipulated.**

Support:

15 Section 2D.04 contains information regarding the acceptable methods of modifying the length of a word for a given letter height and series.

Section 2A.14 Sign Borders

Standard:

01 **Unless otherwise provided, each sign illustrated in this Manual shall have a border of the same color as the legend, at or just inside the edge.**

02 **The corners of all sign borders shall be rounded, except for STOP signs.**

Guidance:

03 *A dark border on a light background should be set in from the edge, while a light border on a dark background should extend to the edge of the sign. A border for 30-inch signs with a light background should be from 1/2 to 3/4 inch in width, 1/2 inch from the edge. For similar signs with a light border, a width of 1 inch should be used. For other sizes, the border width should be of similar proportions, but should not exceed the stroke-width of the major lettering of the sign. On signs exceeding 72 x 120 inches in size, the border should be 2 inches wide, or on larger signs, 3 inches wide. Except for STOP signs and as otherwise provided in Section 2E.16, the corners of the sign should be rounded to a radius that is concentric with that of the border.*

Section 2A.15 Enhanced Conspicuity for Standard Signs

Option:

01 Based upon engineering judgment, where the improvement of the conspicuity of a standard regulatory, warning, or guide sign is desired, any of the following methods may be used, as appropriate, to enhance the sign's conspicuity (see Figure 2A-1):

A. Increasing the size of a standard regulatory, warning, or guide sign.
B. Doubling-up of a standard regulatory, warning, or guide sign by adding a second identical sign on the left-hand side of the roadway.
C. Adding a solid yellow or fluorescent yellow rectangular "header panel" above a standard regulatory sign, with the width of the panel corresponding to the width of the standard regulatory sign. A legend of "NOTICE," "STATE LAW," or other appropriate text may be added in black letters within the header panel for a period of time determined by engineering judgment.
D. Adding a NEW plaque (see Section 2C.62) above a new standard regulatory or warning sign, for a period of time determined by engineering judgment, to call attention to the new sign.
E. Adding one or more red or orange flags (cloth or retroreflective sheeting) above a standard regulatory or warning sign, with the flags oriented so as to be at 45 degrees to the vertical.
F. Adding a solid yellow, a solid fluorescent yellow, or a diagonally striped black and yellow (or black and fluorescent yellow) strip of retroreflective sheeting at least 3 inches wide around the perimeter of a standard warning sign. This may be accomplished by affixing the standard warning sign on a background that is 6 inches larger than the size of the standard warning sign.
G. Adding a warning beacon (see Section 4L.03) to a standard regulatory (other than a STOP or a Speed Limit sign), warning, or guide sign.
H. Adding a speed limit sign beacon (see Section 4L.04) to a standard Speed Limit sign.
I. Adding a stop beacon (see Section 4L.05) to a STOP sign.
J. Adding light emitting diode (LED) units within the symbol or legend of a sign or border of a standard regulatory, warning, or guide sign, as provided in Section 2A.07.
K. Adding a strip of retroreflective material to the sign support in compliance with the provisions of Section 2A.21.
L. Using other methods that are specifically allowed for certain signs as described elsewhere in this Manual.

Support:

02 Sign conspicuity improvements can also be achieved by removing non-essential and illegal signs from the right-of-way (see Section 1A.08), and by relocating signs to provide better spacing.

Standard:

03 **The NEW plaque (see Section 2C.62) shall not be used alone.**

04 **Strobe lights shall not be used to enhance the conspicuity of highway signs.**

Support:

04 Section 2B.23 contains information regarding a regulatory sign that can also be used for lane drops at grade-separated interchanges.

Section 2C.44 Two-Way Traffic Sign (W6-3)

Guidance:

01 *A Two-Way Traffic (W6-3) sign (see Figure 2C-8) should be used to warn road users of a transition from a multi-lane divided section of roadway to a two-lane, two-way section of roadway.*

02 *A Two-Way Traffic (W6-3) sign with an AHEAD (W16-9P) plaque (see Figure 2C-12) should be used to warn road users of a transition from a one-way street to a two-lane, two-way section of roadway (see Figure 2B-14).*

Option:

03 The Two-Way Traffic sign may be used at intervals along a two-lane, two-way roadway and may be used to supplement the Divided Highway (Road) Ends (W6-2) sign discussed in Section 2C.23.

Section 2C.45 NO PASSING ZONE Sign (W14-3)

Standard:

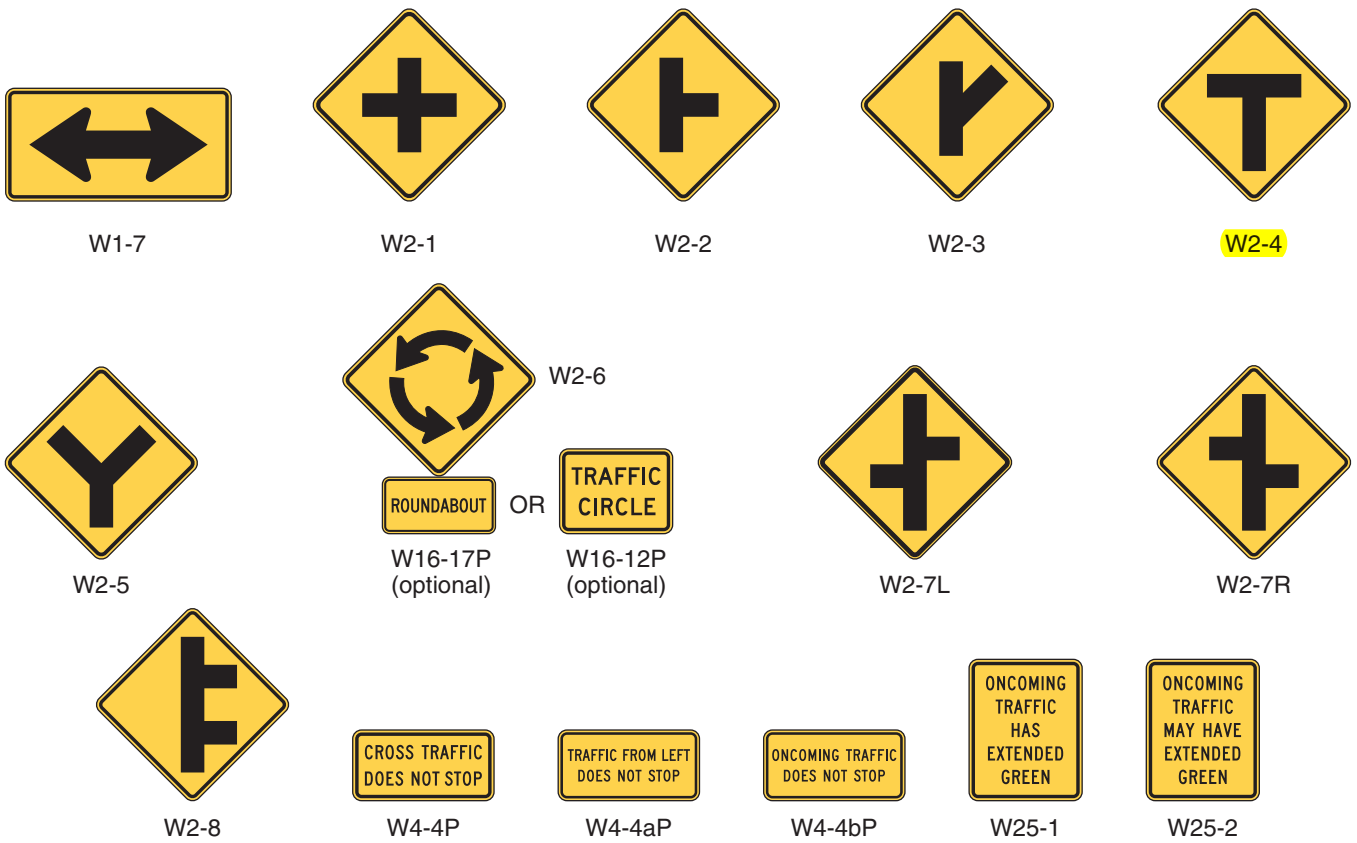
01 **The NO PASSING ZONE (W14-3) sign (see Figure 2C-8) shall be a pennant-shaped isosceles triangle with its longer axis horizontal and pointing to the right. When used, the NO PASSING ZONE sign shall be installed on the left side of the roadway at the beginning of no-passing zones identified by pavement markings or DO NOT PASS signs or both (see Sections 2B.28 and 3B.02).**

Section 2C.46 Intersection Warning Signs (W2-1 through W2-8)

Option:

01 A Cross Road (W2-1) symbol, Side Road (W2-2 or W2-3) symbol, T-Symbol (W2-4), or Y-Symbol (W2-5) sign (see Figure 2C-9) may be used in advance of an intersection to indicate the presence of an intersection and the possibility of turning or entering traffic.

Figure 2C-9. Intersection Warning Signs and Plaques



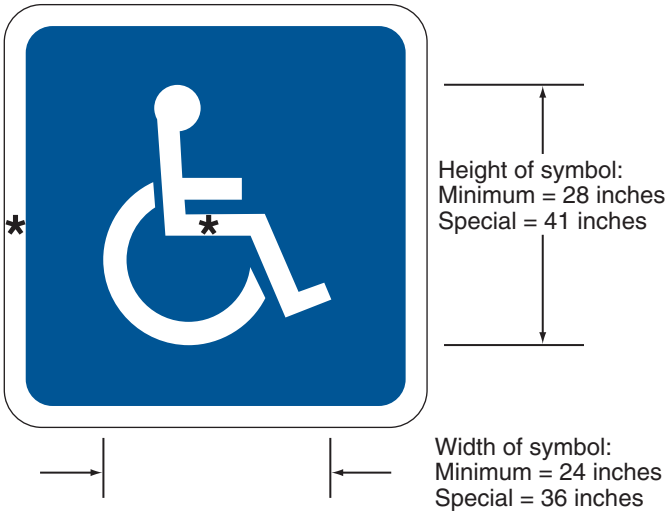
Option:

03 Blue lines may supplement white parking space markings of each parking space designated for use only by persons with disabilities.

Support:

04 Additional parking space markings for the purpose of designating spaces for use only by persons with disabilities are discussed in Section 3B.20 and illustrated in Figure 3B-22. The design and layout of accessible parking spaces for persons with disabilities is provided in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" (see Section 1A.11).

Figure 3B-22. International Symbol of Accessibility Parking Space Marking



*Stroke width:
Minimum = 3 inches
Special = 4 inches

Note: Blue background and white border are optional

Section 3B.20 Pavement Word, Symbol, and Arrow Markings

Support:

01 Word, symbol, and arrow markings on the pavement are used for the purpose of guiding, warning, or regulating traffic. These pavement markings can be helpful to road users in some locations by supplementing signs and providing additional emphasis for important regulatory, warning, or guidance messages, because the markings do not require diversion of the road user's attention from the roadway surface. Symbol messages are preferable to word messages. Examples of standard word and arrow pavement markings are shown in Figures 3B-23 and 3B-24.

Figure 3B-23. Example of Elongated Letters for Word Pavement Markings

02 The Circular Intersection (W2-6) symbol sign (see Figure 2C-9) may be installed in advance of a circular intersection (see Figures 2B-21 through 2B-23).

Guidance:

03 *If an approach to a roundabout has a statutory or posted speed limit of 40 mph or higher, the Circular Intersection (W2-6) symbol sign should be installed in advance of the circular intersection.*

Option:

04 An educational plaque (see Figure 2C-9) with a legend such as ROUNDABOUT (W16-17P) or TRAFFIC CIRCLE (W16-12P) may be mounted below a Circular Intersection symbol sign.

05 The relative importance of the intersecting roadways may be shown by different widths of lines in the symbol.

06 An advance street name plaque (see Section 2C.58) may be installed above or below an Intersection Warning sign.

Guidance:

07 *The Intersection Warning sign should illustrate and depict the general configuration of the intersecting roadway, such as cross road, side road, T-intersection, or Y-intersection.*

08 *Intersection Warning signs, other than the Circular Intersection (W2-6) symbol sign and the T-intersection (W2-4) symbol sign should not be used on approaches controlled by STOP signs, YIELD signs, or signals.*

09 *If an Intersection Warning sign is used where the side roads are not opposite of each other, the Offset Side Roads (W2-7) symbol sign (see Figure 2C-9) should be used instead of the Cross Road symbol sign.*

10 *If an Intersection Warning sign is used where two closely-spaced side roads are on the same side of the highway, the Double Side Roads (W2-8) symbol sign (see Figure 2C-9) should be used instead of the Side Road symbol sign.*

11 *No more than two side road symbols should be displayed on the same side of the highway on a W2-7 or W2-8 symbol sign, and no more than three side road symbols should be displayed on a W2-7 or W2-8 symbol sign.*

Support:

12 Figure 2A-4 shows the typical placement of an Intersection Warning sign.

Section 2C.47 Two-Direction Large Arrow Sign (W1-7)

Standard:

01 **The Two-Direction Large Arrow (W1-7) sign (see Figure 2C-9) shall be a horizontal rectangle.**

02 **If used, it shall be installed on the far side of a T-intersection in line with, and at approximately a right angle to, traffic approaching from the stem of the T-intersection.**

03 **The Two-Direction Large Arrow sign shall not be used where there is no change in the direction of travel such as at the beginnings and ends of medians or at center piers.**

04 **The Two-Direction Large Arrow sign directing traffic to the left and right shall not be used in the central island of a roundabout.**

Guidance:

05 *The Two-Direction Large Arrow sign should be visible for a sufficient distance to provide the road user with adequate time to react to the intersection configuration.*

Section 2C.48 Traffic Signal Signs (W25-1, W25-2)

Standard:

01 **At locations where either a W25-1 or a W25-2 sign is required based on the provisions in Section 4D.05, the W25-1 or W25-2 sign (see Figure 2C-9) shall be installed near the left-most signal head. The W25-1 and W25-2 signs shall be vertical rectangles.**

Section 2C.49 Vehicular Traffic Warning Signs (W8-6, W11-1, W11-5, W11-5a, W11-8, W11-10, W11-11, W11-12P, W11-14, W11-15, and W11-15a)

Option:

01 Vehicular Traffic Warning (W8-6, W11-1, W11-5, W11-5a, W11-8, W11-10, W11-11, W11-12P, W11-14, W11-15, and W11-15a) signs (see Figure 2C-10) may be used to alert road users to locations where unexpected entries into the roadway by trucks, bicyclists, farm vehicles, emergency vehicles, golf carts, horse-drawn vehicles, or other vehicles might occur. The TRUCK CROSSING (W8-6) word message sign may be used as an alternate to the Truck Crossing (W11-10) symbol sign.

HIGHLAND BOULEVARD/11800 NORTH INTERSECTION SAFETY ANALYSIS

DRAFT July 2015
Project Number 150409

InterPlan
Transportation Planning

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Introduction

InterPlan was hired by Highland City to conduct a safety analysis of the Highland Boulevard/11800 North intersection. A recent crash resulting in a fatality has resulted in increased concern of safety conditions at this intersection. This report includes an analysis of crash history and roadway geometric conditions and provides recommendations for safety improvements.

Summary of Results

The crash history for this intersection does not suggest a major concern when compared to other Highland City intersections with similar function and size. Likewise the trend does not suggest a sudden increase or decrease in crash frequency over time. Several of the crashes at the intersection have extenuating circumstances, such as vehicle brake problems, driver inattention, or the presence of wildlife. However, the most common crash type - a northbound vehicle on Highland Boulevard striking a left-turning vehicle from 11800 North - occurred three times in seven years, not including the recent fatality.

Based on the review of site conditions and crash data analysis, InterPlan offers the following recommendations organized according to whether the safety concern has a correlating crash history:

1. **Safety Recommendations without a Correlating Crash History**
   a. Consider installing a pedestrian facility opposite the southeast corner pedestrian ramp or consider removing the pedestrian ramp altogether. Visually impaired people could mistakenly assume a crosswalk and pedestrian facilities continue across the street due to the existing pedestrian ramp when in fact no such facilities exist. The benefit of such treatments should be considered in the context of future development and the demand for pedestrian treatments.
   b. Consider adding paved shoulders or restriping lanes to create shoulders on Highland Boulevard north of 11800 North to accommodate bicycle traffic. This action would require coordination with other agencies since Highland Boulevard north of 11800 North is outside Highland City boundaries.

2. **Safety Recommendation with a Potential Correlating Crash History**
   a. Consider alterations to median landscaping south of the intersection to improve driver visibility.
   b. Consider restriping northbound Highland Boulevard to feature one through lane and one right-turn lane at 11800 North. This action would not eliminate concerns about visibility of trailing vehicles being blocked by right-turning vehicles on Highland Boulevard, but could help clarify to drivers on 11800 North which movements vehicles on Highland Boulevard are conducting. The effects of eliminating the shoulder through restriping need to be considered in tandem with any potential bicycle treatments, as discussed above.

Figure 1 – Study Area

Existing Conditions

The Highland Boulevard/11800 North intersection is a three-leg, stop-controlled intersection located in the northeastern section of Highland City. The surrounding land use at the intersection is mostly undeveloped, though there is some new residential development in the southeast quadrant.

Study Roadways

Highland Boulevard is a primarily north-south road connecting Timpanogos Highway (SR-92) in Highland City with the Suncrest Development and Traverse Ridge in Draper City. Though it maintains a meandering and mountainous alignment, Highland Boulevard offers one of the few roadway links between Utah County and Salt Lake County and serves a significant amount of inter-county traffic.

The cross-section on Highland Drive transitions at 11800 North. South of 11800 North, Highland Boulevard features one travel lane in each direction with a landscaped median which breaks for left-turn lanes at key intersections. North of 11800 North, Highland Boulevard expands to two travel lanes in each direction and no center turn lane. The shoulders on Highland are approximately ten feet wide south of 11800 North, though they taper considerably at the intersection. North of the intersection, the shoulders are essentially non-existent. Within the study area, the speed limit on Highland Drive is 40 miles per hour (mph).

11800 North is an east-west roadway providing a connection between Highland Boulevard and neighborhoods in northern Highland City. The roadway also offers a connection to Alpine City via Westfield Road. 11800 North features two lanes in each direction and no left turn lanes, though the travel lanes are exceptionally wide - approximately 15 feet near the study intersection. The paved shoulder on the south side of the 11800 North is approximately ten feet wide with the shoulder on the north side is approximately four feet wide. The speed limit on 11800 North in the study area is 35 mph.

Intersection Configuration

The north and south legs (Highland Boulevard) of the study intersection feature free-flow movements while the east leg (11800 North) is a stop-controlled approach. There is an unpaved access on the west side of the intersection, but the access is not accommodated by traffic control devices, nor does the access line up across from 11800 North. The access does not appear to serve any existing developed land and, thus, is not considered to have a significant impact to the intersection.

The transition on Highland Boulevard from a two-lane cross-section to a four-lane cross-section results in some unusual lane alignments. In the northbound direction, the single 17 foot northbound lane on Highland Boulevard does not directly line up with either of the two 11 foot northbound lanes on the opposite side of the intersection. In the southbound direction, the two lanes on Highland Boulevard merge to a single lane in advance of the intersection and then the roadway develops a left-turn lane for 11800 North.

11800 North features a single, shared lane for right and left turns at the intersection with Highland Boulevard, though the single lane is wide enough that right and left-turning vehicles can often fit side-by-side. The 11800 North approach also features a slight incline up to Highland Boulevard.

Pedestrian and Bicycle Facilities

Pedestrian facilities only exist for the developed areas around the intersection, specifically the southeast quadrant of the intersection. In this quadrant, the south side of 11800 North has a five foot concrete sidewalk and the east side of Highland Boulevard features an eight foot asphalt path. These two facilities converge at the corner of the intersection with a textured ramp leading into the intersection. There are no pedestrian facilities on the opposite side of either street, essentially creating a "sidewalk to nowhere". However, it is anticipated that pedestrian facilities would be constructed on other legs of the intersection in tandem with future development.

The wide shoulders on both sides of the south leg of Highland Boulevard and the south side of 11800 North offer an attractive area for cycling activity. However, the transition from the south leg of Highland Boulevard to the north leg is abrupt. Cyclists continuing north on Highland Boulevard are dumped into the outside travel lane with no shoulders immediately after they cross 11800 North. Likewise, heading south on Highland Boulevard, there are no bicycle facilities until the shoulder develops south of 11800 North.

Figure 2 – Sidewalk Ramp without Connection on Opposite Side of Street

Figure 3 – Transition from Wide Shoulder to No Shoulder North of 11800 North

Sight Distance

The American Association of State Highway and Transportation Officials (AASHTO) provides recommendations for the minimum sight distance necessary for various intersections types and configurations. Sight distance at stop-controlled intersections is a function of the speed of vehicles on the major street and the time required to safely complete a right turn, left turn, or crossing maneuver from the minor street. The time required to conduct a specific maneuver is a function of the type of maneuver and the width of the lanes or median being crossed. At the study intersection, the possible site distance situations include:

- Left turns from 11800 North onto Highland Boulevard.
- Right turns from 11800 North onto Highland Boulevard.

Table 1 summarizes the recommended sight distance at the Highland Boulevard/11800 North intersection for left turns and right turns from 11800 North. The recommended sight distance is presented for operating speeds of 40 mph and 45 mph on Highland Boulevard. As mentioned previously, the posted speed limit on Highland Boulevard is 40 mph.

Table 1 – AASHTO Sight Distance Recommendations

Vehicle Speed on Highland Boulevard	Left Turn from 11800 North		Right Turn from 11800 North	
	Left View (To the South)	Right View (To the North)	Left View (To the South)	Right View (To the North)
40 mph	500 ft	500 ft	385 ft	n/a
45 mph	565 ft	565 ft	430 ft	

Available sight distance for turns from 11800 North is unimpeded to the right (north) as drivers have a clear view of oncoming traffic for over 1,000 feet on Highland Boulevard. To the left (south) however, sight distance is partially obscured by signage, vegetation in the landscaped median, and the curvature on Highland Boulevard. For a driver inside a vehicle behind the stop bar at 11800 South, oncoming northbound vehicles on Highland Boulevard do not fully clear obstructions until they are approximately 550 feet away. Prior to this, oncoming vehicles are only partially visible between trees and signs.

If a vehicle pulls forward past the stop bar, as many drivers do, available sight distance decreases. From this position, oncoming vehicles fully clear obstructions only approximately 490 feet upstream. Thus, depending on vehicle position, vehicle speeds on Highland Boulevard, and whether partial visibility or full visibility is desired, available sight distance may not meet AASHTO recommendations.

To restate, drivers turning left from 11800 North are recommended to have 500 to 565 feet of sight distance to the left (south) depending on the speed of oncoming vehicles. At the time of this study, full visibility of oncoming vehicles is not achieved until oncoming vehicles are

approximately 490 feet to 550 feet from the intersection (depending on whether the left-turning driver is behind the stop bar or has pulled slightly forward). Table 2 summarizes available sight distances. Figures 4 and 5 show photos taken from driver viewpoints at various positions and illustrate driver line of sight.

Table 2 – Available Sight Distance

Vehicle Position	To the Left (south)		To the Right (north)
	Partial Visibility	Full Visibility	Full Visibility
Behind Stop Bar	> 1,000 ft	approximately 550 ft	> 1,000 ft
Pulled Forward	> 1,000 ft	approximately 490 ft	> 1,000 ft

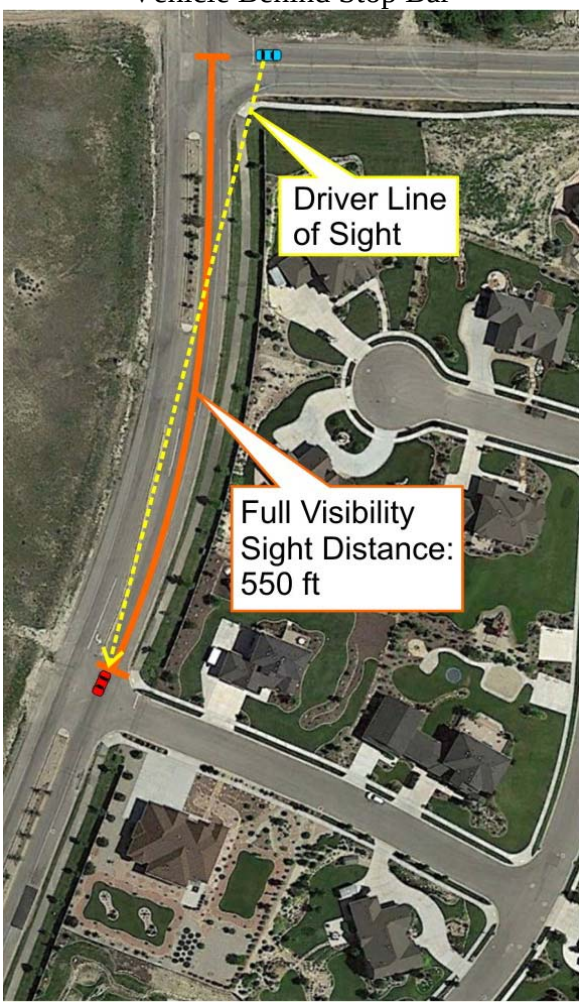
Figure 4 – Driver View Points at 11800 North - Looking Left (South)

Driver View with Vehicle Behind Stop Bar

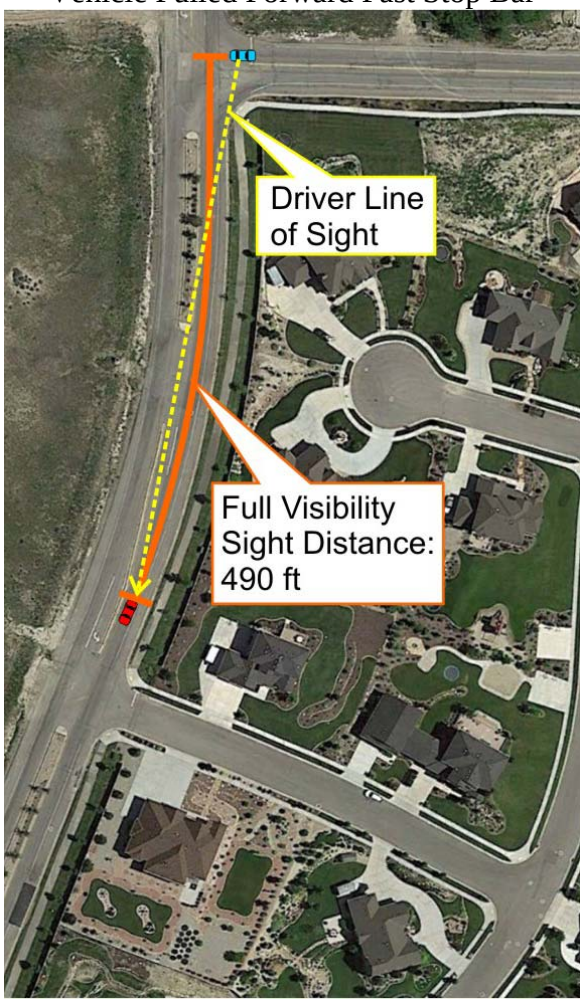
Driver View with Vehicle Pulled Forward Past Stop Bar

Figure 5 – Driver View Sight Distance at 11800 North - Looking Left (South)

Vehicle Behind Stop Bar



Vehicle Pulled Forward Past Stop Bar



An investigation of historical street view imagery shows that sight distance conditions have evolved over time. Images from Google Earth street view suggests that the landscaped median was first installed in 2007. At that time, the trees and shrubs were new and did not significantly obstruct sight distance. Since then, vegetation has matured and become more obstructive. Figure 6 compares images of the landscaped median from 2007, 2012, and 2015.

Figure 6 – Street View Images at 11800 North - Looking Left (South)

2007 Conditions (source: Google Street View)

2012 Conditions (source: Google Street View)

2015 Conditions (source: InterPlan)

A further potential impedance to sight distance is the effect of turning vehicles onto 11800 North. As shown in Figures 7 and 8, vehicles turning right onto 11800 North have the potential to partially or completely block the view of a trailing through vehicle. The failure to detect a trailing through vehicle might influence a driver to proceed into the intersection before it is clear. Alternatively, due to the high volumes of right turns onto Highland Boulevard and the fact that all movements share a single lane, some left-turning drivers from 11800 North, though they understand there is a hidden or partially visible trailing vehicle, may mistakenly assume the trailing vehicle is also turning right and proceed into the intersection before it is clear.

Figure 7 – Turning Vehicle Blocking Field of Vision

Figure 8 – Hidden Through Vehicle Behind a Right-Turning Vehicle

Crash History

InterPlan compiled historic crash data for the study intersection to investigate common crash patterns or contributing factors. Data was gathered for crashes occurring within 250 feet of the center of the intersection and resulting in at least $1,000 of damage. The $1,000 of damage threshold is the value for which crashes are considered serious enough to require reporting to the Utah Department of Public Safety. Excluding crashes with less than $1,000 of damage provides a consistent data set with crashes at comparable locations.

Crash records were gathered for as recent as 2014 and as far back as 2006. Although the recent fatal crash occurred in May 2015, crashes in 2015 cannot be included in statistical comparisons since the year is not complete and a full set of 2015 crash data is not yet available. In this context, the recent fatal crash can only be discussed generally in relation to overall crash pattern observations and conclusions from previous years of data.

Though crashes were investigated back to 2006, caution should used in drawing conclusions from such an extended length of time. Typical crash analysis is conducted for a three to five year time frame. The intent of this time frame is to provide enough data to help account for the randomness inherent in crash occurrences, but also reduce the influence of changing conditions. For example, a single year may manifest an unusually high number of crashes compared to the surrounding years so aggregating multiple years help smooth out the randomness. On the other hand, investigating too far back in time increases the chances that conditions have fundamentally changed. In other words, the crash patterns occurring in the distant past may reflect roadway conditions that no longer exist.

Table 3 summarizes the crashes occurring at the Highland Boulevard/11800 North intersection from 2006 through 2014. Overall there were records for nine crashes. Five of the nine crashes involved multiple vehicles while the other four crashes involved single vehicles running off the

road, striking a wild animal, or striking a bicyclist. Only one crash resulted in a severe injury and in this instance the driver ran the stop sign and the seatbelt was not used properly. There were no fatal crashes during this time frame.

Figures 9 and 10 summarize crash totals by year and time of day. There has been zero to two crashes per year at this intersection. Most crashes occurred in the morning (four crashes) or afternoon (three crashes) hours. One crash occurred in the evening and night hours each.

Figure 11 illustrates a crash diagram for the intersection. Individual crashes are depicted on the graphic based on their relative location, the travel directions and maneuvers of the vehicles involved, and other relevant crash factors. As can be seen from the diagram, the most common crash type involves a northbound vehicle on Highland Boulevard striking a vehicle turning left from 11800 North. This type of crash occurred twice in 2008 and once in 2012. Two of the three instances of this crash type involved a teen driver. (It should be noted that the fatal crash in May 2015 was of the same crash type and included a teen driver.) The only other repeated crash type is a single vehicle running off the road on 11800 North which happened in 2010 and 2013. These run-off-road crashes involved a drowsy driver and a vehicle with a brake problem, respectively.

Table 3 – Crash Summary 2006-2014

Date	Manner of Collision	Comment
10/30/2006	Rear-end	Vehicle collided with construction vehicle in a work zone.
2/5/2008	Angle	Left-turning vehicle struck by northbound vehicle.
6/10/2008	Angle	Left-turning vehicle struck by northbound vehicle. Teen driver involved.
8/18/2009	Angle	Construction vehicle making a U-turn turned in front of a northbound vehicle
12/9/2010	Single Vehicle	Drowsy driver traveled westbound through intersection into ditch.
3/3/2012	Angle	Left-turning vehicle ran stop sign and struck by northbound vehicle. Teen driver involved. Seatbelt not used properly. **Severe injury crash.**
10/18/2012	Wild Animal Hit	Southbound vehicle hit a wild animal.
3/31/2013	Single Vehicle	Westbound vehicle slid through intersection into ditch. Vehicle brake problem.
5/15/2013	Vehicle-Bicycle	Southbound left-turning bicycle struck by a left-turning vehicle from 11800 North.

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Figure 9 – Crashes by Year 2006-2014

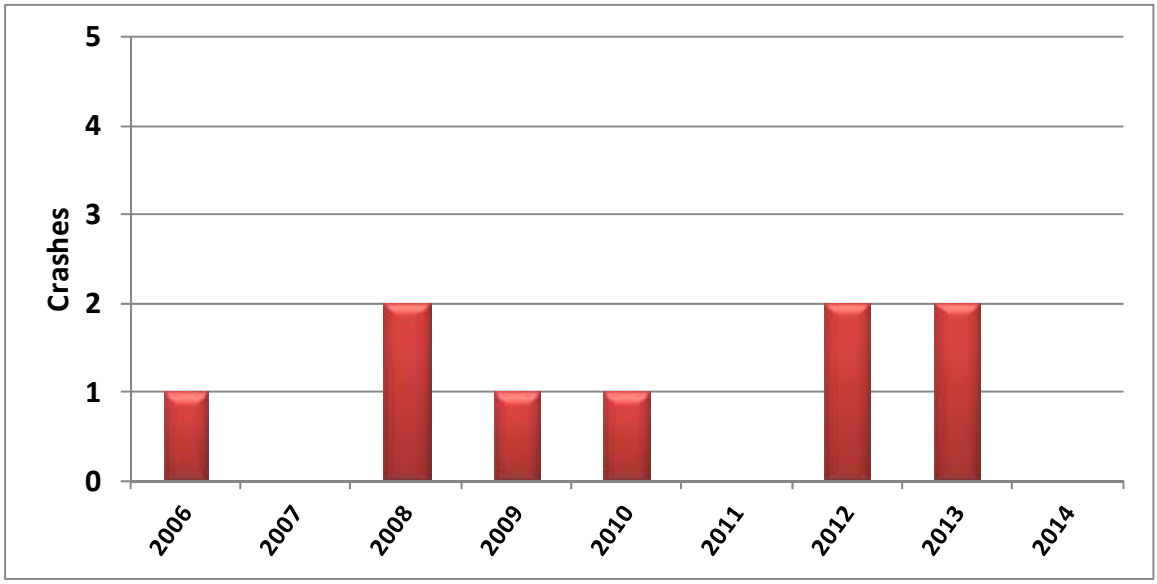

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Figure 10 – Crashes by Time of Day 2006-2014

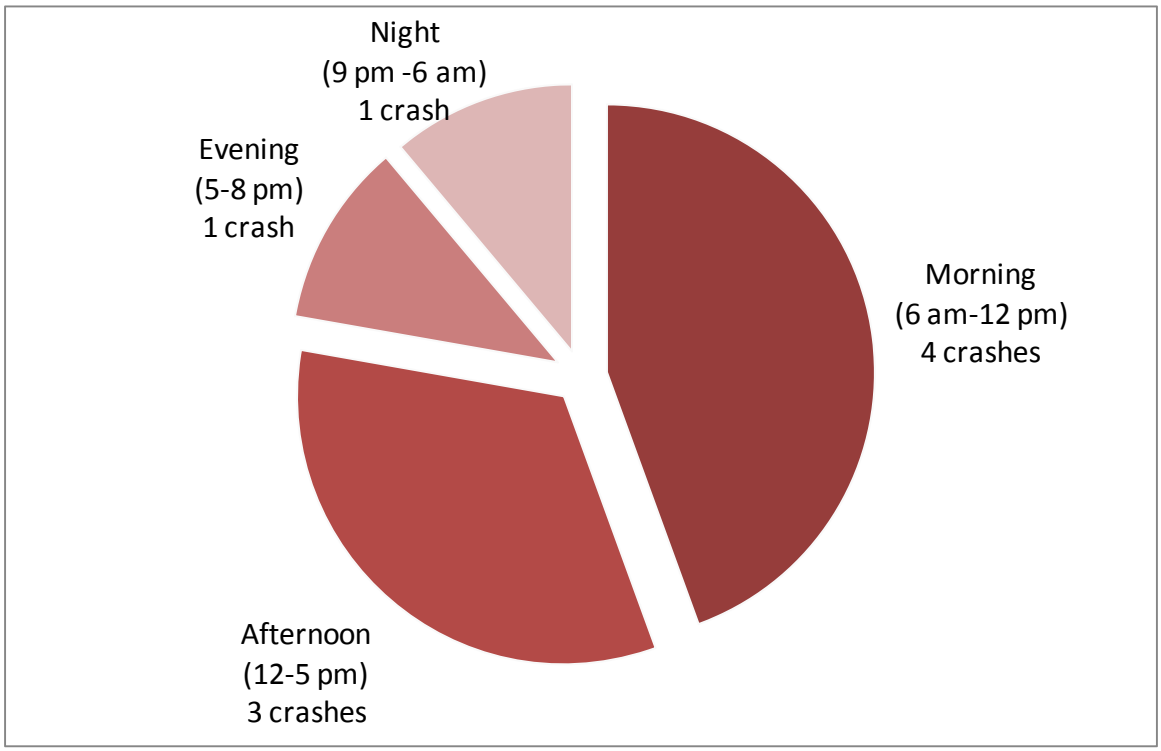

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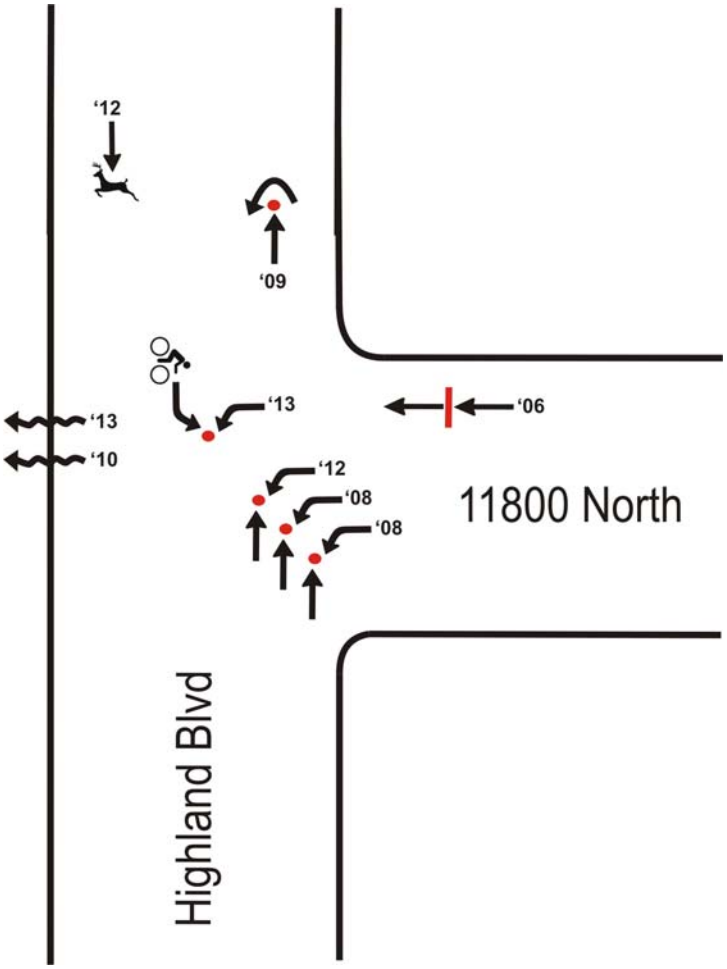
Figure 11 – Highland Boulevard/11800 North Crash Diagram 2006-2014



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Comparison to Peer Sites

Comparing crash data from similar locations helps establish the relative need for safety improvements at a particular site. The most common method of comparing locations is to normalize crashes by roadway volume. For example, a high-volume roadway can be expected to have more crashes than a low-volume roadway because there are more frequent vehicle encounters. But when crash frequency is converted into a per-vehicle crash rate, the low-volume roadway may exhibit a higher crash rate, and thus, present a greater safety need.

Unfortunately, daily traffic volumes are typically unavailable for small intersections such as the one in this analysis. Hence, in order to develop a basic assessment of relative crash frequency, InterPlan selected a set of nine intersections from within Highland City to compare basic crash totals against the study intersection. Each of these nine intersections is stop controlled and features either three or four legs. The intersecting roadways are mostly local in nature, though there are two intersections on SR-74, a roadway that provides a regional connection, similar to Highland Boulevard.

Table 4 lists five year crash totals (2009-2013) of the comparison intersections from highest to lowest with the study intersection inserted in order in bold type. Since 2014 crash data is not available statewide, the comparison analysis was limited to 2009-2013. As can be seen from Table 4, the study intersection has higher crash frequencies than most other intersections but exhibits fewer or equal crashes to the two other intersections with roadways providing regional connections (SR-74). This comparison suggests the Highland Boulevard/11800 North intersection exhibits crash frequencies within the range experienced by intersections in the area of similar size and functional class. It should be noted that this comparison only examines basic crash totals and does not consider crash type, or severity.

Table 4 – Comparison with Select Intersections in Highland City

Intersection	Type	Total Crashes (2009-2013)
Alpine Highway (SR-74) and 9600 North	4-legs, 2-way Stop	11
5300 West (SR-74) and 11200 North	4-legs, 2-way Stop	6
Highland Boulevard and 11800 North	**3-legs, 1-leg Stop**	**6**
6800 West and 10400 North	3-legs, 1-leg Stop	5
6400 West and 10400 North	4-legs, 2-way Stop	3
6800 West and 9600 North	4-legs, 4-way Stop	3
6000 West and 10400 North	4-legs, 4-way Stop	2
6000 West and 9600 North	4-legs, 4-way Stop	2
6000 West and 11800 North	3-legs, 3-leg Stop	1
5600 West and 10400 North	4-legs, 2-way Stop	0

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Conclusions and Recommendations

Crash Frequency and Type

The Highland Boulevard/11800 North intersection has consistently exhibited zero to two crashes per year for the past several years. This crash frequency does not suggest a major concern when compared to other Highland City intersections with similar function and size. Likewise the trend does not suggest a sudden increase or decrease in crash frequency over time.

An examination of crash types and crash attributes reveals that several of these crashes have extenuating circumstances, such as vehicle brake problems, driver inattention, or the presence of wildlife. However, the most common crash type - a northbound vehicle on Highland Boulevard striking a left-turning vehicle from 11800 North - occurred three times in seven years, not including the May 2015 fatality. This crash type, though not numerous, may have a correlation with roadway conditions, as discussed later.

Site Conditions

A review of site conditions resulted in the identification of three safety items worth noting. Two of these items do not have a correlating crash history. This includes the sidewalk ramp leading

into the intersection without corresponding pedestrian facilities on either side of the street and the abrupt termination of shoulders on Highland Boulevard north of 11800 North. Though there is no correlating crash history at this time, these items still present a safety concern and merit consideration for safety mitigations. Possible mitigations may include adding crosswalks and sidewalks across the street from the existing sidewalk ramp, removing the sidewalk ramp, and/or restriping or adding paved shoulders on Highland Boulevard north of 11800 North. Each of these actions requires governing agencies to balance the benefit/cost of adding infrastructure while there is relatively low accompanying demand versus waiting for improvements to be implemented in tandem with future development.

The remaining safety item - intersection sight distance - may have a correlation with crash history. According to AASHTO recommendations, drivers turning left from 11800 North require 500 to 565 feet of sight distance to the left (south) depending on the speed of oncoming vehicles. Whether left-turning vehicles have sufficient sight distance is difficult to conclude. Partial visibility to the left is available for over 1,000 feet. But due to the presence of signs, vegetation in the median, and the curvature on Highland Boulevard, full visibility of oncoming vehicles is not achieved until oncoming vehicles are approximately 490 feet to 550 feet from the intersection (depending on whether the left-turning driver is behind the stop bar or has pulled slightly forward).

As mentioned previously, the most common crash type is left-turning vehicles from 11800 North colliding with northbound vehicles on Highland Boulevard. It is impossible to know all the factors contributing to these crashes, but a lack of sight distance could lead to drivers on 11800 North making incorrect decisions about when it is clear to turn. As mentioned in this report, the impact of sight distance by median landscaping has changed over time. Other possibilities include driver error or inexperience given the propensity for these crashes to include teen drivers. Additionally, a left-turning driver may have difficulty detecting or predicting the movements of northbound through vehicles on Highland Boulevard that are trailing a vehicle turning right onto 11800 North. (It should be noted that this is a situation that could occur at nearly any intersection.)

Recommendations

Based on the review of site conditions and crash data analysis, InterPlan offers the following recommendations organized according to whether the safety concern has a correlating crash history:

1. **Safety Recommendations without a Correlating Crash History**
   a. Consider installing a pedestrian facility opposite the southeast corner pedestrian ramp or consider removing the pedestrian ramp altogether. Visually impaired people could mistakenly assume a crosswalk and pedestrian facilities continue across the street due to the existing pedestrian ramp when in fact no such facilities exist. The benefit of such treatments should be considered in the context of future development and the demand for pedestrian treatments.
   b. Consider adding paved shoulders or restriping lanes to create shoulders on Highland Boulevard north of 11800 North to accommodate bicycle traffic. This action would require coordination with other agencies since Highland Boulevard north of 11800 North is outside Highland City boundaries.

2. **Safety Recommendation with a Potential Correlating Crash History**
   a. Consider alterations to median landscaping south of the intersection to improve driver visibility.
   b. Consider restriping northbound Highland Boulevard to feature one through lane and one right-turn lane at 11800 North. This action would not eliminate concerns about visibility of trailing vehicles being blocked by right-turning vehicles on Highland Boulevard, but could help clarify to drivers on 11800 North which movements vehicles on Highland Boulevard are conducting. The effects of eliminating the shoulder through restriping need to be considered in tandem with any potential bicycle treatments, as discussed above.

About InterPlan

InterPlan is a Utah-owned and operated firm founded in 2001 and dedicated to offering creative and client-focused solutions to transportation planning issues. This report has been performed by InterPlan and its staff and is not intended to advocate a position on behalf of any client. Further information and assistance about the contents of this report may be obtained from any of those who worked on this project including Vern Keeslar, AICP and Charles Allen, PE, PTOE of InterPlan.

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CITY COUNCIL AGENDA REPORT

Item # 18

DATE: Tuesday, September 1, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Gary LeCheminant, Finance Director and Justin Parduhn, Operations Manager

SUBJECT: INCREASE THE BUDGETED EXPENSE AMOUNT IN ACCOUNT 41-40-71, MAJOR ROAD MAINTENANCE, IN THE CAPITAL ROADS FUND FOR FISCAL YEAR 2016 FROM $560,000 TO $730,492.07 TO USE THE UNUSED PORTION OF B&C ROAD FUNDS FROM FISCAL YEAR 2015

STAFF RECOMMENDATION:

It is recommended that the budgeted amount of expense for Fiscal Year 2016 in account 41-40-71, Major Road Maintenance, in the Capital Roads Fund, be increased from $560,000 to $730,492.07, to use the unused portion of B&C Road Funds from Fiscal Year 2015.

BACKGROUND:

Highland City believed that most of the expenses from the 10150 North road project would have been incurred in Fiscal Year 2015. However, these expenses were incurred in July 2015 and amounted to almost $170,000. The work was delayed by two factors. The city council took some extra time in making a decision to use John King, and once the bidding process was won by Geneva Rock, their first available time to work on the project was in Fiscal Year 2016.

In FY 2015 Highland City received $566,560.27 in B&C road funds. The city spent $273,959 in the Major Road Maintenance account in the Capital Roads Fund and another $122,197.64 in the General Fund, Streets and Roads accounts. The total expenditures of B&C road funds for Fiscal Year 2015 were therefore, $396,157.30. This leaves $170,492.07 in B&C road funds as a carryover amount for future years that can only be spent on B&C roads. Therefore, it is recommended that Highland City use all of the $170,492.07 B&C carryover funds to pay for this expense.

FISCAL IMPACT:

The fiscal impact of this recommendation is that B&C carryover funds from Fiscal Year 2015 will be used in Fiscal Year 2016. Dollars will be transferred from the General Fund where they now reside, to the Capital

Roads Fund. The budgeted amount of expenses for Fiscal Year 2016 in account 41-40-71, Major Road Maintenance, will increase from $560,000 to $730,492.07.

ATTACHMENTS:

Item # 19 A

ADMINISTRATION

MEMORANDUM

DATE: September 1, 2015

TO: Mayor and City Council

FROM: Nathan Crane, AICP
City Administrator/Community Development Director

SUBJECT: Everbridge Mass Notification System

Attached is a report prepared by Devril Barfuss regarding a mass notification system that is being proposed by the County. The purpose of this report is to familiarize the Council with the proposed system. The system can be used for emergencies or any other mass notification needs. This item is being presented as discussion. If the Council would like to participate in the project it will be considered on a future agenda. Mr. Barfuss will be attending the Council meeting.

ATTACHMENTS:
Everbridge Mass Notification System Report

Everbridge Mass Notification System

20 August 2015

by

E. D. Barfuss

Everbridge Emergency Notification System Update
Addendum to the 14 August Trip Report

What is Everbridge? It is a software program for mass notification.

Everbridge is a software program that enables users to send a Wireless Emergency Alert (WEA) to a "geographically targeted" area using **FEMA's** Integrated Public Alert & Warning System (IPAWS). Alerts are sent to mobile devices (cell phones, Ipads, etc.) without the individual having to download or open an application. This "geographic targeting" is called Specific Area Message Encoding (SAME).

The message can only be sent to people for whom the contact information is in the city/LPPS/county database. Privacy laws will probably require the "recipients" to opt into the system. The database is typically maintained and utilized by Emergency Management personnel.

The Emergency Management personnel are generally associated with the fire and/or police organizations and the system is traditionally used for emergency notification. Spanish Fork, on the other hand, will be using Everbridge daily for mass messaging like reminding employees of staff meetings, etc. The reasoning is, the more the system is used and the more people know how to use it, the more useful it will be in the time of an emergency.

Does Highland need Everbridge or something like it?

Highland City currently depends on the Utah County dispatch service for mass notification in the event of an emergency. The service is called Citywatch and is owned by the county. Citywatch, however, is an old hardware-based system that is dependent on phone lines and is no longer reliable. In addition, it does not provide the service we want today. It will no longer be supported as the county stopped paying for its maintenance. The county is replacing it with Everbridge because Everbridge uses a cloud-based infrastructure and can be operated from any computer or smart phone with an Internet connection.

Integrating Everbridge Into An Area Preparedness Plan

Sheldon Wimmer in Alpine has been hired in April/May by the LPPS district to develop and implement an integrated emergency preparedness plan for the district. The intent is to integrate the municipal assets with the LDS Church's local assessment and assistance system. The notification capability of Everbridge or something like it would greatly enhance the effectiveness of both.

Facts About Everbridge

1. There are 24 cities in Utah County of which 9 are implementing or have implemented the Everbridge software. The biggest hurtle appears to be building the database. Spanish Fork has an aggressive plan and should be emulated if they are successful.
2. Two cities, Springville and Mapleton already have contracts with Everbridge but will probably switch to the Utah County umbrella agreement.
3. American Fork will not (at this time) adopt the county system.
4. Cedar Hills and Alpine are using Parlett. Larry Ellertson will personally work with Cedar Hills to encourage them to adopt Everbridge.

5. It is reported that Everbridge is significantly less expensive than the competing systems.
6. The agreement with Everbridge is for 5 years.
7. The recurring software cost to Highland will be $3,744.59 the first year. It appears the second and subsequent years may be about 5% higher. This has to be verified.
8. The city will have to pay for the "API" connection, furnish its own computer(s), pay for training not provided by the county, and pay for additional "ORGS" and their implementation fee. Most cities have 2 ORGs.
9. The city can choose to be independent or can tie into the countywide system.
10. The more creative cities intend to use the system for things other than emergency notification.
11. The Everbridge system is quite versatile. You can notify people by geographical area or by predetermined groups like "park employees".
12. The first formal training class was 13 & 14 August. The County is planning monthly user group training. The system is Excel based and appears to be straightforward.
13. Everbridge is a wireless system that utilizes the Internet.

Issues

1. Turf. The county has an interest in and jurisdiction over county land, much of which is undeveloped. Wild fires and mudslides are generally a county issue. An earthquake, on the other hand, will impact the cities over which the local fire and police departments have the greater interest and jurisdiction. When the County Commissioner signed the agreement with Everbridge and empowered the County Sheriff's department to implement it, it was assumed the Sheriff's Department would still be the communications center and thus it would also be the command center. This notion is resisted locally.
2. When communications were routed through a central switching station, it made sense for that central location to also be the "command center". Utilizing the omnipresent "cloud" will also necessitate an adjustment in the command center concept. The concept of a universal policy but local administration comes to mind.
3. Utah County imposed the FATPOT computerized reporting system a few years ago and it was a total failure. Some folks are wary of another county sponsored software system.
4. Alpine and Cedar Hills are both using the Parlett notification system and are satisfied with it.
5. Highland currently does not have a mass notification system and the county dispatch/emergency notification system (Citywatch) is going away.
6. There is no standardization among the LPPS cities. Highland is using the defunct county dispatch system. Alpine and Cedar Hills have implemented Parlett but because Cedar Hills is tied to Pleasant Grove for police protection, they are also associated with Everbridge via PG.

Recommendation

Encourage all three cities in the LPPS to adopt Everbridge. If unity cannot be achieved within the LPPS community, Highland should consider implementing Everbridge as the less expensive mass notification option and to be able to integrate with the county system.

Chronology

Chronology

31 March 2015

Larry Ellertson (County Commissioner) signed an interlocal agreement between Utah County and Everbridge for a mass notification system.

5 May 2015

The interlocal agreement was sent to cities for signature. Requested return by 26 May 2015.

5 June 2015

Revised/updated IA sent to cities. Provo edits and Spanish Fork included.

16 June 2015

Updated IA resent plus a "City Implementation Sheet" requesting the names and contact information for those who will be using the system. The purpose of the CI Sheet is to make a "Users Group" and an "Implementation Group".

13-14 July 2015

On site (County?) implementation scheduled with Everbridge.

27 July 2015

Cities notified of implementation meeting on 30 July. Mayors <u>and</u> Emergency Management Group members were notified.

28 July 2015

Mayor Thompson forwarded notification to Nathan Crane.

30 July 2015

Everbridge implementation meeting at 10:00 a.m.

11 **August 2015**

Ed Barfuss was given assignment to research Everbridge.

12 August 2015

EDB contacted Mayor Thompson for his information.

13 August 2015

Mayor Thompson provided contact info. for Sheldon Wimmer, LPPS Emergency Manager.

14 August 2015

EDB Contacted Mr. Wimmer. He had little information about Everbridge but was scheduled to talk with Sargent Peter Quittner (Utah County Sheriff's Office) next week.

14 August 2015

EDB called Sargent Quittner and learned about a two-day training class that was finishing that afternoon. He attended the last 4 hours of the training class and got contact information for people from five cities who are implementing or using Everbridge.

17 August 2015

Sargent Quittner sent EDB the interlogcal agreement, the WEA/IPAWS Addendum and the user information sheet.

18 August 2015

EDB reviewed the documents, finally understood the Everbridge connection to FEMA and wrote the addendum to the trip report.

18 August 2015

EDB interviewed Chief Gwilliam, Chief Freeman and Sheldon Wimmer. Interesting interviews. Selecting a mass notification system appears to be more about personalities than it is about technology.

19 August 2015

Sargent Quittner informed me that the county dispatch service will is no longer maintain the Citywatch system. It appears that means Highland has no mass notification system. Sargent Quittner also clarified that Everbridge is Internet based thus enabling users unlimited access.

20 August 2015

The Everbridge report was published and submitted.

Cost

and

Status by City

Exhibit "B"

Initial Pro Rata Calculation

Population Calculated using 2013 US Census

City	Population	Total Households (Including Business)	% of Utah County households	Share of $115,000/Annually by households
Alpine	10024	4,594	0.019	2,206.56
American Fork	0	0	0.000	0.00
Cedar Fort	368	169	0.001	81.01
Cedar Hills	10179	4,665	0.019	2,240.68
Eagle Mountain	24217	11,099	0.046	5,330.83
Elk Ridge	2435	1,116	0.005	536.01
Fairfield	119	55	0.000	26.20
Genola	1370	628	0.003	330.51
Goshen	921	422	0.002	202.74
Highland	17011	7,797	0.033	3,744.59
Lehi	54382	24,925	0.104	11,970.99
Lindon	10611	4,863	0.020	2,335.78
Mapleton	8784	4,026	0.017	1,933.60
Orem	91648	42,005	0.175	20,174.26
Payson	19154	8,779	0.037	4,216.33
Pleasant Grove	34988	16,036	0.067	7,701.83
Provo	116288	53,299	0.223	25,598.21
Salem	6928	3,175	0.013	1,525.04
Santaquin	9843	4,511	0.019	2,166.72
Saratoga Springs	22749	10,427	0.044	5,007.69
Spanish Fork	36956	16,938	0.071	8,135.04
Springville	31205	14,302	0.060	6,869.09
Vineyard	900	413	0.002	198.11
Woodland Hills	1344	616	0.003	295.85
Utah County Uninc.	10000	4,583	0.019	2,201.28
	522424	239,444		

LPPS Members
Recently Signed up
Already Using The System
Not Interested

Total Calculated Households 239,444

Everbridge Formula = (Population) divided by (2.4) Multiplied by (1.1) = Households including businesses..... Multiplied by .46 = Annual Cost

Total Utah County Households (Including Business Factor) = 252,950 - American Fork & Draper = 239,444

Interlocal Agreement

MASS NOTIFICATION INTERLOCAL COOPERATION AGREEMENT

THIS MASS NOTIFICATION INTERLOCAL COOPERATION AGREEMENT (hereinafter "Agreement"), is executed in duplicate this ____ day of _____, 2015, by and among **UTAH COUNTY**, a political subdivision of the State of Utah (hereinafter referred to as "County"), and **ALPINE CITY, AMERICAN FORK CITY, CEDAR FORT TOWN, CITY OF CEDAR HILLS, EAGLE MOUNTAIN CITY, ELK RIDGE CITY, FAIRFIELD TOWN, GENOLA CITY, GOSHEN CITY, HIGHLAND CITY, LEHI CITY, LINDON CITY, MAPLETON CITY, the CITY OF OREM, PAYSON CITY, PLEASANT GROVE CITY, PROVO CITY, SALEM CITY, SANTAQUIN CITY, SARATOGA SPRINGS CITY, SPANISH FORK CITY, SPRINGVILLE CITY, VINEYARD CITY, and WOODLAND HILLS CITY**, all municipal corporations and political subdivisions of the State of Utah, (the combined group of cities to be hereinafter collectively referred to as the "Cities" or "City" when used in the singular).

RECITALS

WHEREAS, mass notification services provide an important means to notify the citizens residing in the boundaries of Utah County of disasters, emergencies and other important matters, thereby promoting the health, safety and welfare of the citizens residing in Utah County; and

WHEREAS, the parties to this Agreement will benefit by reduced fees for mass notification services to the citizens of their respective jurisdictions by entering into this Agreement while maintaining autonomy of notifications in their respective jurisdictions; and

WHEREAS, the parties to this Agreement desire to benefit from the mass notification services provided in accordance with the Agreement and the cost savings associated therewith; and

WHEREAS, County has entered into an agreement more particularly described below for countywide mass notification services to promote the health safety and welfare of citizens residing in Utah County; and

WHEREAS, the parties to this Agreement desire to enter into this Agreement to provide for the funding and use of the mass notification system; and

WHEREAS, the parties desire to set forth the terms of their agreement and the parties' respective rights and obligations in this Agreement; and

WHEREAS, the parties and each of the Cities have approved this Agreement by resolutions adopted by their respective governing bodies;

NOW THEREFORE, in consideration of the covenants and promises contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. **Agreement with Everbridge**. County has entered into a Quote, Service Agreement and IPAWS Addendum to Service Agreement with Everbridge, Inc., (the "Mass Notification Agreement"), in the form attached hereto as Exhibit A, allowing Cities to utilize the mass notification services provided by Everbridge. Upon entering into this interlocal agreement and payment of fees to County as provided herein, each city may participate in the Everbridge mass notification services as provided in the Mass Notification Agreement.

All Cities who are contracting with Everbridge prior to entering into this Agreement have the option to remain separate organizations within the Everbridge system as currently established and may continue to contact Everbridge directly with support needs for their organizations.

2. **Funding and Apportionment of Mass Notification Expenses**.

2.1 For the first year of the Mass Notification Agreement, each City without an existing mass notification provider will pay County their share of the Mass Notification Agreement contract price as stated in the last column of the attached Exhibit B.

In the first year of the Mass Notification Agreement, Cities with an existing mass notification provider, commencing upon the termination of their respective existing mass notification contracts will pay County their pro rata share of the Mass Notification Agreement price determined as follows: (number of days remaining in the first year of the Mass Notification Agreement/365) times the city's yearly contract price with the previous provider, or as otherwise determined and confirmed in writing between the City and County.

2.2 In the second and subsequent years of the Mass Notification Agreement, each City's pro rata share of the contract price of the Mass Notification Agreement will be based on the number of households in their respective jurisdictions divided by the total number of households in the jurisdictions of all parties to this Agreement, times the Mass Notification Agreement contract price. The number of households in a respective jurisdiction is determined as follows: Population divided by 2.4, multiplied by 1.1, equals total households. The population used in the formula will be determined by the most recent United States Census figures. All parties shall promptly pay County in advance for the next succeeding year for their respective shares of the Mass Notification Agreement contract price as provided in section 3.1. The percentage of the expenses due from each party will be recalculated in the event updated US Census figures are released during the term of this Agreement and will be effective for the next payment period. In the second year only, a city's pro rata share shall not exceed the amount stated in the last column of Exhibit B.

2.3 A credit against the Quote price (Special Incentive Discount) has been applied by Everbridge for the renewal price paid by Springville and Mapleton for the renewal of the Springville/Mapleton Everbridge agreement. All amounts due County from Springville and Mapleton under this Agreement will first be

applied to the credit which will be apportioned equitably between Springville and Mapleton until the amount of the credit has been satisfied. Thereafter, Springville and Mapleton shall pay County their respective shares of the Mass Notification Agreement contract price as provided above.

2.4 If American Fork enters into this Agreement, the totals in Exhibit B shall be recalculated for the applicable contract year and any refunds applied to the next contract year payments, to the extent that the recalculated amounts result in a reduction of a City's share of the Mass Notification Agreement contract price.

2.5 Any additional fees incurred by County or a Participating City, including fees listed in the Quote Supplemental Notes, will be paid by the County or Participating City incurring the fee or service, including but not limited to API connections, additional ORGS and training not listed in the quote, and new ORG implementation fees.

3. **Payment.**

3.1 The County shall send an invoice to each of the Cities for the amount of each City's payment to County for their respective share of the Mass Notification Agreement contract price. The County shall include a detail calculating each party's contract price share. A City's contract price share will be allocated as provided in the preceding section. Each party shall pay the County not less than thirty (30) days prior to commencement of the next contract year or within 30 days of receipt of an invoice from the County, whichever is later.

4. **Coordination.**

4.1 The parties shall meet at least annually to coordinate use of the mass notification services and to discuss issues regarding the services.

5. **Indemnification, Insurance, and Mass Notification Agreement Compliance**.

5.1 The parties shall maintain such liability insurance as they deem prudent and appropriate. The parties anticipate that the protections of the Utah Governmental Immunity Act, 63G-7-101 *et. seq*. will apply to any claims which may be made against any or all of the parties arising out of the use of the Mass Notification System. However, notwithstanding these protections, and without in any way waiving the defenses afforded by the Utah Governmental Immunity Act, 63G-7-101 *et.* seq., each party to this Agreement agrees to indemnify and hold harmless each and every other party from all claims for personal injuries or damage to property to the extent that such injuries or damages directly or indirectly arise out of that party's own acts or omissions. Nothing in this Agreement shall be construed as releasing, indemnifying or holding harmless any party to this agreement from liability for that party's own acts or omissions. The indemnification obligations hereunder, or as provided in any section of this Agreement, shall not be

considered a waiver of the protections and immunities afforded by the Utah Governmental Immunity Act (Utah Code Section 63G-7-101, *et. seq.*) The obligation of the parties to indemnify under this section, or as provided in any section of this Agreement, is limited to the limits of liability specified in the Governmental Immunity Act (Utah Code Section 63G-7-604), or as amended by statute or the state risk manager as provided by statute.

5.2 All parties to this Agreement shall comply with all terms and conditions of the Mass Notification Agreement and will indicate their willingness to do so by signing the Mass Notification Agreement as a Participating City. By such signature as a Participating City, the city agrees to be bound by the terms and conditions of the Mass Notification Agreement only, and does not make the City a party to the Mass Notification Agreement.

In the event any party to this Agreement breaches any term or condition of the Mass Notification Agreement, and fails to timely cure any such breach, the breaching party to this Agreement shall indemnify and hold harmless all non breaching parties to this Agreement for all claims, injuries or damages resulting from the breaching party to this Agreement's acts or omissions, including but not limited to court costs and attorney's fees incurred as a result of the breaching party to this Agreement's acts or omissions. The indemnification obligations hereunder, or as provided in any section of this Agreement, shall not be considered a waiver of the protections and immunities afforded by the Utah Governmental Immunity Act (Utah Code Section 63G-7-101, *et. seq.*) The obligation of the parties to indemnify under this section, or as provided in any section of this Agreement, is limited to the limits of liability specified in the Governmental Immunity Act (Utah Code Section 63G-7-604), or as amended by statute or the state risk manager as provided by statute.

6. **Duration**. This Agreement shall be effective immediately upon the signature hereof by at least two named parties to this Agreement and shall remain in full force and effect as to all signatories to this Agreement for a period of five (5) years including any subsequent renewal of the Mass Notification Agreement on the same terms and conditions as the original agreement, or until such time as the Mass Notification Agreement is terminated, whichever is sooner.

7. **Interlocal Cooperation Act.** The following terms are included in the Agreement to comply with the requirements of the Interlocal Cooperation Act:

7.1 **Resolution.** This Agreement shall be authorized by resolution of the legislative bodies of the signatories hereto as required by Section 11-13-202.5 of the Interlocal Act.

7.2 **Purpose.** This Interlocal Cooperation Agreement has been established and entered into by the parties to provide mass notification services within Utah County.

7.3 **No Separate Entity, Administration.** The parties to this Agreement do not contemplate nor intend to establish a separate legal entity under the terms of this Agreement. The parties hereto agree that, pursuant to Section 11-13-207, Utah Code Annotated, 1953 as amended, COUNTY shall act as the administrator responsible for the administration of this Interlocal Cooperation Agreement. The parties further agree that this Interlocal Cooperation Agreement does not anticipate nor provide for any organizational changes in the parties. The administrator agrees to keep all books and records in such form and manner as the Utah County Clerk/Auditor shall specify and further agrees that said books shall be open for examination by the signatories hereto at all reasonable times. The parties agree that they will not acquire, hold nor dispose of any real property pursuant to this Agreement. The parties further agree that they will not acquire, hold, or dispose of any personal property pursuant to this Agreement.

7.4 **Financing.** There shall not be a separate budget to carry out the terms of this Agreement, but each party shall fund and pay for its respective responsibilities pursuant to this Agreement. Except as otherwise specifically provided herein, each party shall be responsible for its own costs of any action done pursuant to this Agreement, and for any financing of such costs.

7.5 **Filing.** A duly executed original counterpart of this Agreement shall be filed with the keeper of records of each party, pursuant to Section 11-13-209 of the Interlocal Act.

7.6 **Legal Review.** This Agreement shall be reviewed as to proper form and compliance with applicable law by a duly authorized attorney on behalf of each party, pursuant to Section 11-13-202.5 of the Interlocal Act.

7.7 **Termination.** Upon the termination of the Mass Notification Agreement, the parties will each pay County their pro rata share for the cost of any services due under the Mass Notification Agreement as determined in section 2.2.

7.8 **Equipment.** The parties will provide and maintain such equipment as they determine necessary for their own use of the mass notification services. Any equipment provided by a party shall remain the property of the party providing the equipment. No real or personal property shall be acquired jointly by the parties as a result of this Agreement. To the extent that a party acquires, holds, or disposes of any real or personal property for use in the joint or cooperative undertaking contemplated by this Agreement, such party shall do so in the same manner that it deals with other property of such party.

8. **Interpretation of Agreement.** Whenever the context of any provision shall require it, the singular number shall be held to include the plural number, and vice versa, and the use of any gender shall include the other gender. The paragraph and section headings in this Agreement are for convenience only and do not constitute a part of the provisions hereof.

9. **Amendments.** This Agreement may be amended, changed, modified or altered only by an instrument in writing which shall be (a) approved by Resolution of the governing or legislative body of each of the parties, (b) executed by a duly authorized official of each of the Parties, (c) submitted to an attorney for each party that is authorized to represent said party for review as to proper form and compliance with applicable law, pursuant to Section 11-13-202.5 of the Interlocal Act, and (d) filed in the official records of each party.

10. **No Presumption.** Should any provision of this Agreement require judicial interpretation, the Court interpreting or construing the same shall not apply a presumption that the terms hereof shall be more strictly construed against one party, by reason of the rule of construction that a document is to be construed more strictly against the person who himself or through his agents prepared the same, it being acknowledged that all parties have participated in the preparation hereof.

11. **Notices.** All notices, demands and other communications required or permitted to be given hereunder shall be in writing and shall be deemed to have been properly given if delivered by hand or by certified mail, return receipt requested, postage paid, to the parties directed to their respective County Commission Chairman or City Mayors at their respective County and City Offices, or at such other addresses as may be designated by notice given hereunder.

12. **Assignment.** The parties to this Agreement shall not assign this Agreement, or any part hereof, without the prior written consent of all other parties to this Agreement. No assignment shall relieve the original parties from any liability hereunder.

13. **Utah Law.** This Agreement shall be interpreted pursuant to the laws of the State of Utah.

14. **Time of Essence.** Time shall be of the essence of this Agreement.

15. **Lawful Agreement.** The parties represent that each of them has lawfully entered into this Agreement, having complied with all relevant statutes, ordinances, resolutions, by-laws, and other legal requirements applicable to their operation.

16. **Breach**. In the event that any party breaches this Agreement, a non-breaching party may serve the breaching party with a notice to cure the breach by certified mail, return receipt requested or personal delivery to the breaching party. The breaching party shall cure the breach within thirty days of receiving notice to cure, or if the breach is not capable of curing within thirty days, commence corrective action within thirty days and diligently pursue correction of the breach until the breach is cured. Failure to cure or diligently pursue corrective action constitutes a breach.

17. **Incorporation of Recitals**. The Recitals to this Agreement are hereby incorporated into the Covenants section of this Agreement as if fully set forth herein.

18. **Binding Agreement.** This Agreement shall be binding upon the heirs, successors, administrators, and assigns of each of the parties hereto.

19. **Mass Notification Agreement**. The parties to this Agreement shall not violate, breach or cause the violation or breach of any term, condition or provision of the Mass Notification Agreement.

20. **Conflict.** This Agreement is subject to the terms, provisions and conditions of the Mass Notification Agreement and all applicable state and federal laws, rules, and regulations. In the event of any conflict between any term of this Agreement and the Mass Notification Agreement, the Mass Notification Agreement shall govern. The parties to this Agreement shall comply with all applicable state and federal laws, rules, and regulations.

21. **Entire Agreement**. This Agreement shall constitute the entire agreement between the parties and any prior understanding or representation of any kind proceeding the date of this Agreement shall not be binding upon either party except to the extent incorporated in this Agreement.

22. **Force of Nature**. The parties to this Agreement shall not hold any other parties liable for damages or otherwise responsible in any way if any party is prevented from the performance of this Agreement by reason of acts of God, riot, strike, fire, weather, illness, war, lock-up, energy shortages, or illegality.

23. **Severability**. If any term or provision of this Agreement or the application thereof shall to any extent be invalid or unenforceable, the remainder of this Agreement, or the application of such term or provision to circumstances other than those with respect to which it is invalid or unenforceable, shall not be affected thereby, and shall be enforced to the extent permitted by law. To the extent permitted by applicable law, the parties hereby waive any provision of law which would render any of the terms of this Agreement unenforceable.

24. **Counterparts**. This Agreement may be executed in one or more counterparts, all of which together shall be considered as one agreement.

25. **Third Party Beneficiaries**. This Agreement governs the rights and liabilities of the signatories to this Agreement only. No third party beneficiaries are created, or intended to be created by this Agreement for any person or entity not a signatory to this Agreement.

SIGNED and ENTERED INTO this _____ day of _____, 2015.

UTAH COUNTY

By: _____
Larry Ellertson
Chairman, Board of Utah County
Commissioners

ATTEST:

By: _____
Bryan Thompson
Utah County Clerk Auditor

Reviewed as to proper form and
compliance with applicable law:
Jeffrey R. Buhman, Utah County Attorney

By: _____
Deputy

SIGNED and ENTERED INTO this _____ day of _____, 2015.

HIGHLAND CITY

By: _____
Mayor

ATTEST AND COUNTERSIGN:

_____
City Recorder

Reviewed as to proper form and
Compliance with applicable law:

_____
City Attorney

WEA/IPAWS Addendum

To

Everbridge, Inc. Service Agreement

WEA/IPAWS Addendum
to
Everbridge, Inc. Service Agreement

This WEA/IPAWS Addendum to the Everbridge Service Agreement ("Addendum") is entered into this 31st day of March, 2015 by and between Everbridge, Inc., a Delaware corporation ("Everbridge"), and Utah County ("Customer"). Everbridge and Customer entered into an Everbridge Service Agreement effective April 1st, 2015 ("Agreement"). All capitalized terms used herein without definition shall have their respective meanings set forth in the Agreement.

WHEREAS, Customer desires to access the Integrated Public Alert Warning System ("IPAWS") Open Platform for Emergency Networks through the Everbridge mass notification services;

WHEREAS, the Parties desire to reflect the additional terms and conditions on which Customer will have such access;

NOW, THEREFORE, in consideration of the mutual covenants and promises set forth below, and other good and valuable consideration, the Parties agree to amend the Agreement as follows:

1. IPAWS Authorization: Customer represents and warrants to Everbridge that any employee, agents, or representatives of Customer who access IPAWS-OPEN using Customer's credentials provided by FEMA (each, an "IPAWS User"), are authorized by FEMA to use IPAWS-OPEN, have completed all required training, and Customer has executed an IPAWS Memorandum of Agreement ("MOA") with FEMA. Customer shall contact Everbridge immediately upon any change in Customer or any IPAWS User's right to access IPAWS-OPEN. Customer shall only access IPAWS-OPEN using its designated credentials and FEMA issued digital certificate ("Digital Certificate"). Customer acknowledges and agrees that Everbridge shall not have access to its credentials and that Customer assumes full responsibility for maintaining the confidentiality of any credentials issued to it. Customer shall be solely responsible for any and all claims, damages, expenses (including attorneys' fees and costs) that arise from any unauthorized use or access to IPAWS-OPEN.

2. Credentials: Customer shall load and maintain within its Everbridge account Organization, its Digital Certificate, COG ID, and Common Name. Customer authorizes and requests Everbridge to use the foregoing stored information to connect Customer to IPAWS-OPEN.

3. Messaging: Customer acknowledges and agrees that: (i) upon submission of messages to IPAWS-OPEN, Everbridge shall have no further liability for the distribution of such message, and that the distribution through IPAWS-OPEN, including, but not limited to, delivery through the Emergency Alert System or the Commercial Mobile Alert System, is in no way guaranteed or controlled by Everbridge; (ii) Everbridge shall not be liable as a result of any failure to receive messages distributed through IPAWS-OPEN; (iii) IPAWS may include additional features not supported through the Everbridge system, and Everbridge shall not be required to provide such additional features to Customer; and (iv) Customer shall be solely responsible and liable for the content of any and all messages sent through IPAWS-OPEN utilizing its access codes.

4. Term: Customer acknowledges and agrees that access to IPAWS-OPEN shall be available once Customer has provided Everbridge with the Digital Certificate and any other reasonably requested information to verify access to the system. Upon termination of the Agreement access to IPAWS-OPEN shall immediately terminate. In addition, Everbridge may immediately terminate, without liability, access to IPAWS-OPEN, if Customer breaches this Addendum, the MOA, or FEMA changes the IPAWS-OPEN system so that it materially change the business terms and/or feasibility for Everbridge to provide such access.

5. Remaining Terms. All other terms and conditions of the Agreement remain in full force and effect as amended by this Amendment.

6. Authority. Customer represents and warrants that it has all necessary legal authority to enter into this Addendum for itself and on behalf of any of its affiliates that are parties to the Agreement or that have been using the Services under the Agreement.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized representatives as of the day and year first above written.

EVERBRIDGE, INC.	**CUSTOMER:** UTAH COUNTY
By _____	**By** [signature]
Title _____	**Title** Chair, Board of County Commissioners of Utah County, State of Utah