

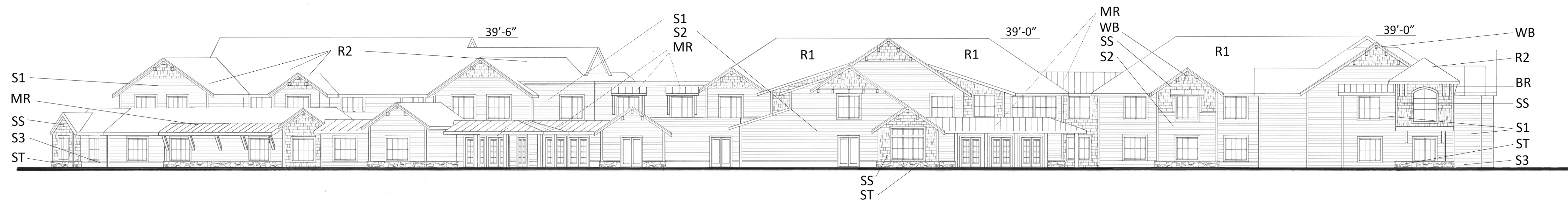
Material Legend

Label	Material	Color
S1	Siding	light tone
S2	Siding	medium tone
S3	Siding at base	medium tone
SS	Shingle Siding	medium tone
R1	Comp Shingle Roof 6:12 pitch	medium tone
R2	Comp Shingle Roof 8:12 pitch	medium tone
MR	Metal Roof 4:12 pitch	medium tone
ST	Stone	light/medium blend
BR	Wood Brackets	medium tone
WB	Wood Beams	medium tone

Note: Windows are single hung and light color



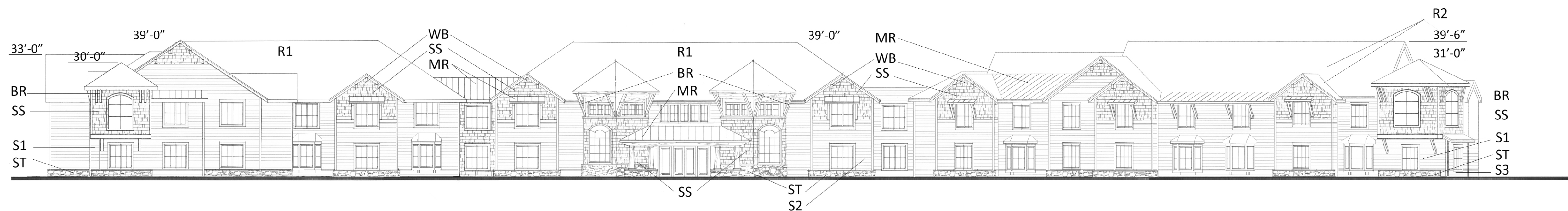
North Elevation



West Elevation



South Elevation



East Elevation



1526 Grand Boulevard
Kansas City, MO 64108-1404
p: 816.472.1448
f: 816.472.4702
e: design@rosemann.com
w: www.rosemann.com
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Certificate of Authority - Architecture / Engineering
Number: 000828 / PE-2008020992

MVG-MorningStar Assisted & Memory Care
E. Horsetooth & Lochwood
Fort Collins, Colorado

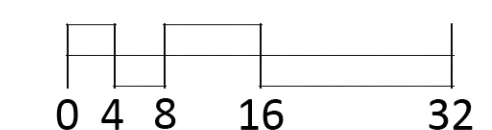
SHEET TITLE
Unnamed

PROJECT NUMBER: 13014

SHEET NUMBER:

EL-1

DRAWN BY: Author CHECKED BY: Checker

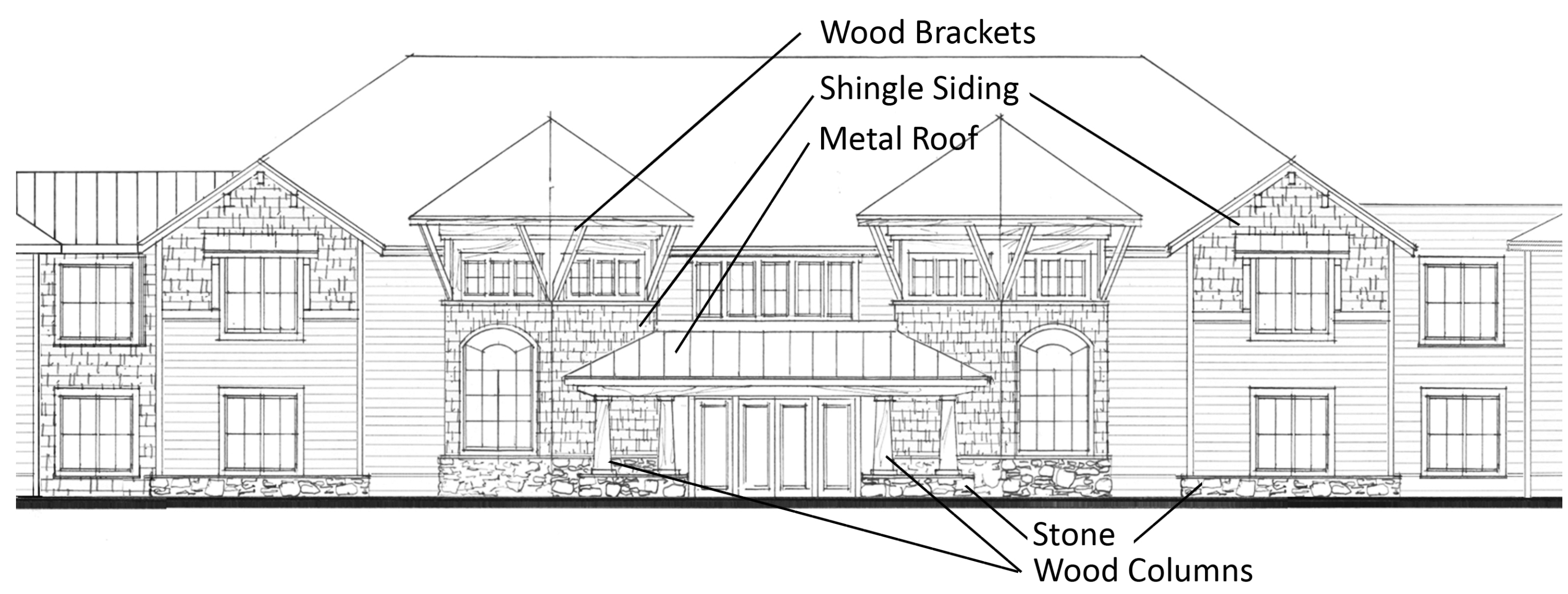




West Elevation Detail



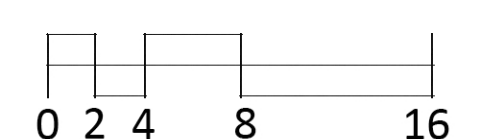
North Elevation Detail



East Elevation Detail



South Elevation Detail



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p: 816.472.1448
f: 816.472.4702
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MVG-MorningStar Assisted & Memory Care
E. Horsetooth & Lochwood
Fort Collins, Colorado

SHEET TITLE
Unnamed

PROJECT NUMBER: 13014

SHEET NUMBER:

EL-2

DRAWN BY: Author CHECKED BY: Checker

August 14, 2013

MVG-Morningstar Assisted Living & Memory Care PDP **Statement of Planning Objectives**

The MVG-Morningstar PDP is located at the northwest corner of East Horsetooth Road and Lochwood Drive. The property is currently vacant. Uses surrounding the property consist of the following:

South: Horsetooth Road and Collindale Golf Course
West: Collindale PUD 2nd and 3rd Filing Condominiums
North: Collindale II Condominiums
East: Schrader C-Store and KinderCare Learning Center

The proposed project consists of a 71,165 sq. ft., two story building for an assisted living and memory care facility. The building is designed to have a central core area with two wings for the living spaces. The core area will contain the main entrance foyer, reception, administrative offices, a lounge, a bistro and a common dining area for the assisted living residents. The dining room opens into a courtyard/patio. The kitchen and “back of house” facilities are also located here, utilizing the service drive on the west side of the building. The south wing will contain the assisted living units for the residents and the north wing will house the memory care residents. It is designed to revolve around a central courtyard. IN addition to a small dining and gathering area, there will also be an outdoor fenced-in pathway for the use of the residents.

The architectural style of the building is unique to both Fort Collins and the owner utilizing a combination of materials, elevations and building massing breaks to create both interest and maximize views and orientation. The creation of an interior courtyard with a portion of the building along the northwest containing only one story will reduce the impact of the building for the residents within the memory care wing and allow both visibility and light to enhance their daily lives. The reduction in the building scale permits the adjacent neighbors to welcome the reduced scale visually. The mix of stone, horizontal siding, and architectural elements with bay windows, brackets and mix of composition shingles and metal roofing will create a very aesthetic building for the community.

Main access to the site will utilize two entrances entrance off of Lochwood Drive. All drives will be 24'. There is a circular drive drop-off area at the main entrance to the building. 49 off-street parking spaces will be provided. 58% of the site is open space, detention and landscaping. The landscape material will provide seasonal interest and color as well as meeting the City's code for foundation planting and vehicle use screening. The service area on the west side of the building will be screened with landscape and a 6' high solid privacy fence.

Unit Mix:

1. Memory Care	
a. Studios	15
b. Singles	8
<hr/>	
Total Memory Care	23
2. Assisted Living	
a. Studios	19
b. Singles	21
c. Doubles	15
<hr/>	
Total Assisted Living	55
<hr/>	
Total All Units	78

The 4.9-acre site is in the L-M-N zoning district. According to the Purpose Statement contained within Article 4 of the Land Use Code, “The Low Density Mixed-Use Neighborhood District is intended to be a setting for a predominance of low density housing combined with complementary and supporting land uses that serve a neighborhood and are developed and operated in harmony with the residential characteristics of a neighborhood. The main purpose of the District is to meet a wide range of needs of everyday living in neighborhoods that include a variety of housing choices that invite walking to gathering places, services and conveniences, and that are fully integrated into the larger community by the pattern of streets, blocks, and other linkages. A neighborhood center provides a focal point, and attractive walking and biking paths invite residents to enjoy the center as well as the small neighborhood parks. Any new development in this District shall be arranged to form part of an individual neighborhood.”

The area surrounding the MVG-Morningstar project contains a mix of single-family homes, condominiums, a daycare care facility, convenience store, golf course, restaurant and other office uses. The site is ideal for this type of density as it provides a transition between the single-family attached neighborhoods to the north and west and the more intensely developed areas to the east. The project will provide a concrete pad for a future Transfort bus shelter on Horsetooth Road.

Assisted living facilities are defined as a “Long Term Care Facility” in the LMN Zoning District. Long term care facilities are permitted as a Type II use.

(i) Statement of appropriate City Plan Principles and Policies achieved by the proposed plan:

The MVG Morningstar PDP meets the following applicable City Plan Principles and Policies:

Economic Health

Principle EH 4: The City will encourage the redevelopment of strategic areas within the community as defined in the Community and Neighborhood Livability and Neighborhood Principles and Policies.

Policy EH 4.1 –Prioritize Targeted Redevelopment Areas
Policy EH 4.2 – Reduce Barriers to Infill Development and Redevelopment

The MVG-Morningstar PDP will provide a compact urban redevelopment project that is in an ideal location, is within walking distance to many destinations and is within an established neighborhood infill area.

Environmental Health

Principle ENV 8: Continually improve Fort Collins' air quality

Due to the nature of this type of population, the residents of MVG-Morningstar PDP are not expected to drive vehicles at all. The employees will be encouraged to utilize alternative transportation and public transportation for the majority of their daily trips.

Community and Neighborhood Livability

Principle LIV 6: Infill and redevelopment within residential areas will be compatible with the established character of the neighborhood. In areas where the desired character of the neighborhood is not established, or is not consistent with the vision of *City Plan*, infill and redevelopment projects will set an enhanced standard of quality.

Policy LIV 6.1 – Types of Infill and Redevelopment in Residential Areas

Policy LIV 6.2 – Seek Compatibility with Neighborhoods

The MVG-Morningstar PDP provides an opportunity for redevelopment of an existing underutilized site and the design of the building will be compatible with the surrounding neighborhood. The architectural design will be sensitive in shape, form and patterns of building materials.

Principle LIV 7: A variety of housing types and densities for all income levels shall be available throughout the Growth Management Area.

Policy LIV 7.5 – Address Special Needs Housing

Plan for and meet the housing needs of special populations within the community. Disperse residential care facilities, shelters, group homes, and senior housing throughout the Growth Management Area.

MVG-Morningstar PDP is a residential care facility. The central location is ideal and will be convenient for family members and employees.

Principle LIV 28: Low Density Mixed- Use Neighborhoods will provide opportunities for a mix of low density housing types in a setting that is conducive to walking and in close proximity to a range of neighborhood serving uses.

Policy LIV 28.2 – Mix of Uses

Policy LIV 28.4 –Neighborhood Center

The project is located in a well-established neighborhood containing a mix of uses such as single-family detached housing, a day care center, and offices as well as within walking distance to a neighborhood center.

Transportation

Principle T 9: Enhanced Travel Corridors will contain amenities and designs that specifically promote walking, the use of mass transit, and bicycling.

Policy T 9.1 – Locating Enhanced Travel Corridors

Principle T10: Using transit will be a safe, affordable, easy, and convenient mobility option for all ages and abilities.

Policy T 10.1 – Transit Stops

There will be a future Transfort stop adjacent to the site. Horsetooth Road is a 4-lane arterial street.

- (ii) Description of proposed open space, wetlands, natural habitats and features, landscaping, circulation, transition areas, and associated buffering on site and in the general vicinity of the project.**
There are no wetlands or significant natural habitats within the boundaries of the site.
- (iii) Statement of proposed ownership and maintenance of public and private open space areas; applicant's intentions with regard to future ownership of all or portions of the project development plan.**
Open space and landscaped areas will all be maintained by Morningstar.
- (iv) Estimate of number of employees for business, commercial, and industrial uses.**
There are estimated to be approximately 20 employees in the building at one time.
- (v) Description of rationale behind the assumptions and choices made by the applicant.**
Morningstar chose this location because there was a need in the Fort Collins area for assisted living. Morningstar provides senior living communities. Within these communities, residents can still maintain their independence, while requiring help with other daily activities. A licensed nurse is available and a 24-hour care staff. The memory care community offers secured environment to safeguard those with memory impairment (Alzheimer's and other forms of dementia). The building has exceptional architecture and meticulous attention to details and we feel will be a good fit within the established neighborhood. This building is a new design and uniquely Fort Collins.
- (vi) The applicant shall submit as evidence of successful completion of the applicable criteria, the completed documents pursuant to these regulations for each proposed use. The planning Director may require,**

or the applicant may choose to submit, evidence that is beyond what is required in that section. Any variance from the criteria shall be described.

At this time the project is not proposing any variance from the City of Fort Collins criteria.

- (vii) Narrative description of how conflicts between land uses or disturbances to wetlands, natural habitats and features and or wildlife are being avoided to the maximum extent feasible or are mitigated.**

There are no existing wetlands, natural habitats or features currently located on site.

- (viii) Written narrative addressing each concern/issue raised at the neighborhood meeting(s), if a meeting has been held.**

Questions and concerns raised at the neighborhood meeting:

Issue: Ditch backing up when it rains.

Answer: The drainage ditch will convey water to the downstream pond located at the northwest corner of the site. The pond cannot release water with any more frequency than what currently exists today. Morningstar does not plan on piping the ditch and the drainage report provided with the submittal will show that the construction of the improvements on the site will not exacerbate the problem.

Issue: Possibly move the northernmost access away from Building A of the Cherry Hills Condos.

Answer: The PDP shows the access moved south as requested, but we're not sure if the City will allow it.

Issue: Concerns with detention pond holding water/mosquito risk

Answer: The detention ponds will hold water for a very short period of time before releasing downstream.

Issue: Proximity of building to western boundary

Answer: The building has been re-designed since the neighborhood meeting. It is now longer in a north-south direction and the "west" wing is now gone. There is a service drive between the building and the retaining wall along the drainage easement. The retaining wall will have a 6' fence on top of it to provide screening to the service area. In addition, landscape is provided within the drainage easement, at the bottom of the wall.

- (ix) Name of the project as well as any previous name the project may have had during Conceptual Review.**

The project is called MVG-Morningstar Assisted Living & Memory Care PDP. The project was referred to as Horsetooth & Lochwood – Morning Star Assisted Living at Conceptual Review.

**Community Development and
Neighborhood Services**
281 North College Avenue
PO Box 580
Fort Collins, CO 80522

970.221.6750
970.224.6134 - fax
fcgov.com

January 30, 2013

Carolyn Powell
MUG-MS LLC
PO Box 18970
Denver, CO 80218

Re: Horsetooth & Lochwood – Morning Star Assisted Living

Description of project: This is a request to construct 72 assisted living and memory care residence apartments at the northwest corner of Horsetooth Road and Lochwood Drive (Parcel # 87303-00-003). The site is in the Low Density Mixed-Use Neighborhood (L-M-N) Zone District. Multifamily dwellings containing more than 8 units per building are subject to Planning & Zoning Board (Type 2) review in the L-M-N Zone District.

Please see the following summary of comments regarding the project request referenced above. The comments offered informally by staff during the Conceptual Review will assist you in preparing the detailed components of the project application. Modifications and additions to these comments may be made at the time of formal review of this project. If you have any questions regarding these comments or the next steps in the review process, you may contact the individual commenter or direct your questions through the Project Planner, Jason Holland, at 970-224-6126 or jholland@fcgov.com.

Comment Summary:

Department: Zoning

Contact: Gary Lopez, 970-416-2338, glopez@fcgov.com

1. What is the percentage breakdown between apartments and asst. living components? Min. parking is dictated by that. (LUC 3.2.2[K][1]&[2] and 5.1.2 (Long-Term care facility definition)

RESPONSE: There will be 93 beds and 20 employees, which equates to 45 parking spaces. We have 49 spaces shown on the plans.

2. Related above – What is the breakdown of apartment units bedroom numbers. x number of 1 bedroom, x number of 2 bedroom.

RESPONSE: For the memory care, there are 15 studios and 8 singles with a total of 23 units. For the assisted living, There will be 19 studios, 21 singles, 15 doubles for a total of 55 units. There is a total of 78 units in all.

Department: Water–Wastewater Engineering

Contact: Roger Buffington, rbuffington@fcgov.com

1. Existing water mains and sanitary sewers in this area include a 20–inch water main on the south side of Horsetooth, an 8–inch water main in Lochwood and an 8–inch sewer in an easement to the northwest in Collindale 3rd Filing.

RESPONSE: Acknowledged.

2. Existing water mains and sanitary sewers in this area include a 20–inch water main on the south side of Horsetooth, an 8–inch water main in Lochwood and an 8–inch sewer in an easement to the northwest in Collindale 3rd Filing.

RESPONSE: Acknowledged.

Department: Water–Wastewater Engineering

Contact: Roger Buffington, rbuffington@fcgov.com

3. The water conservation standards for landscape and irrigation will apply. Information on these requirements can be found at: <http://www.fcgov.com/standards>

RESPONSE: Acknowledged.

4. The water conservation standards for landscape and irrigation will apply. Information on these requirements can be found at: <http://www.fcgov.com/standards>

RESPONSE: Acknowledged.

5. Development fees and water rights will be due at building permit.

RESPONSE: Acknowledged.

6. Development fees and water rights will be due at building permit.

RESPONSE: Acknowledged.

7. A grease interceptor will be required.

RESPONSE: A grease interceptor is provided on the utility plans.

8. A grease interceptor will be required.

RESPONSE: A grease interceptor is provided on the utility plans.

Department: Transfort

Contact: Emma McArdle, 970–224–6197, emcardle@fcgov.com

1. Transfort's Strategic Operating Plan identifies a route on Horsetooth adjacent to this site and Section 3.6.5 of the LUC requires developments accommodate existing and future transit infrastructure as needed. For this site, a bus stop pad should be located on the southwest corner of your site near the cross walk at Lemay and Horsetooth. A bus stop pad is typically 12' deep by 18' wide, although a update to this standard is currently underway. This pad should be located adjacent to the sidewalk and curb. Please contact me if you have any questions.

RESPONSE: The PDP submittal reflects a 12' x 18' concrete pad for a future bus shelter.

Department: Stormwater Engineering

Contact: Glen Schlueter, 970-224-6065, gschlueter@fcgov.com

1. A drainage and erosion control report and construction plans are required and they must be prepared by a Professional Engineer registered in Colorado. The drainage report must address the four-step process for selecting structural BMPs. Standard operating procedures (SOPs) for all onsite drainage facilities need to be prepared by the drainage engineer and there is a final site inspection required when the project is complete and the maintenance is handed over to an HOA or another maintenance organization. The erosion control requirements are in the Stormwater Design Criteria Section 1.3.3. If you need clarification concerning this section, please contact the Erosion Control Inspector, Jesse Schlam at 224-6015 or jschlam@fcgov.com.

RESPONSE: A preliminary drainage report has been submitted. The erosion control portion of the report will be provided during final compliance as requested by Jesse S.

2. When improvements are proposed to an existing developed site and there is an increase in impervious area greater than 1000 square feet, onsite detention is required with a 2 year historic release rate for water quantity. Parking lot detention for water quantity is allowed as long as it is not deeper than one foot.

RESPONSE: Onsite detention has been provided

3. Water quality treatment is also required as described in the Urban Storm Drainage Criteria Manual, Volume 3 – Best Management Practices (BMPs).

(http://www.udcd.org/downloads/down_critmanual_volllll.htm) Extended detention is the usual method selected for water quality treatment; however the use of any of the BMPs is encouraged.

RESPONSE: There are two (2) extended detention basins proposed along with a rain garden to provide the required BMPs

Department: Stormwater Engineering

Contact: Glen Schlueter, 970-224-6065, gschlueter@fcgov.com

4. The Stormwater Utility anticipates that City Council will be approving new Low Impact Development (LID) requirements that will go into effect March 1, 2013. Please contact Basil Hamdan at 224-6035 or bhamdan@fcgov.com for more information. The present draft requires that 50% of the new impervious area must be treated by an LID method and 25% of new parking lots must be pervious.

RESPONSE: The site design incorporates a series of lid's and 25% of the new parking areas are shown to be pervious pavement.

5. The drainage outfall for the site is either Lockwood Dr. or possibly the drainage swale along the west side of the property. That swale with a low flow pan was installed in the early 1980s for Collindale 2nd and 3rd Filings. It was built before the Stormwater Department existed so there is no drainage report to refer to for information on the sizing of the swale. The design engineer would have to verify capacity of the swale. The bigger issue is that the swale appears to be on the Collindale developments and they have been responsible for the maintenance of it. If this project were to use it the maintenance would need to be shared with their HOA.

RESPONSE: The drainage outfalls for the site will be to the existing drainage swale along the western boundary. Capacity calculations are provided in the preliminary drainage report and maintenance of the swale is noted to be shared

6. The city wide Stormwater development fee (PIF) is \$6,390.00/acre (\$0.1467/sq.ft.) for new impervious area over 350 sq.-ft., and there is a \$1,045.00/acre (\$0.024/sq.ft.) review fee. No fee is charged for existing impervious area. These fees are to be paid at the time each building permit is issued. Information on fees can be found on the City's web site at <http://www.fcgov.com/utilities/business/builders-and-developers/plant-investment-development-fees> or contact Jean Pakech at 221- 6375 for questions on fees. There is also an erosion control escrow required before the Development Construction permit is issued. The amount of the escrow is determined by the design engineer, and is based on the site disturbance area, cost of the measures, or a minimum amount in accordance with the Fort Collins Stormwater Design Criteria.

RESPONSE: Acknowledged.

7. The design of this site must conform to the drainage basin design of the Foothills Basin Master Drainage Plan as well the City's Design Criteria and Construction standards.

RESPONSE: Acknowledged.

Department: Fire Authority

Contact: Jim Lynxwiler, 970-416-2869, jlynxwiler@poudre-fire.org

1. PUBLIC-SAFETY RADIO AMPLIFICATION SYSTEM

New buildings greater than 50,000 square feet will require a fire department, emergency communication system evaluation after the core/shell but prior to final build out. Where adequate radio coverage cannot be established within a building, public-safety radio amplification systems shall be designed and installed in accordance with criteria established by the Poudre Fire Authority.

Poudre Fire Authority Bureau Admin Policy #07-01

RESPONSE: Acknowledged.

2. FIRE LANES

Fire Lanes shall be provided for every facility, building or portion of a building when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet from fire apparatus access, as measured by an approved route around the exterior of the building or facility.

The fire code official is authorized to increase the dimension of 150 feet if the building is equipped

throughout with an approved, automatic fire-sprinkler system.

2006 International Fire Code 503.1.1

RESPONSE: Fire lanes are provided per conversations with PFA. The final location of the emergency access easements will be verified and shown on future submittal documents

Fire lanes shall be designated on the plat as an Emergency Access Easement.

RESPONSE: Understood, See above.

Maintain the required 20 foot minimum unobstructed width & 14 foot minimum overhead clearance.

RESPONSE: Acknowledged.

Department: Fire Authority

Contact: Jim Lynxwiler, 970-416-2869, jlynxwiler@poudre-fire.org

1. Be designed as a flat, hard, all-weather driving surface capable of supporting 40 tons.

RESPONSE: Acknowledged.

2. Be visible by painting and signage, and maintained unobstructed at all times.

RESPONSE: Acknowledged. Signage and striping will be provided at Final.

3. DEAD-END FIRE LANES

Dead-end fire access roads in excess of 150 feet in length shall be provided with an approved area for turning around fire apparatus. FCLUC 3.6.2(B)2006; International Fire Code 503.2.5 and Appendix D

RESPONSE: A modified hammerhead is provided at the end of the service drive along the west side of the building. Final geometry shall be reviewed and approved by PFA.

4. FIRE LANE TURNING RADII

The required turning radii of a fire apparatus access road shall be a minimum of 25 feet inside and 50 feet outside. International Fire Code 503.2.4 and Local Amendments

RESPONSE: Acknowledged.

5. FIRE ALARM AND DETECTION SYSTEMS (Group I)

A manual fire alarm system shall be installed in Group I occupancies. An electrically supervised, automatic smoke detection system shall be provided in accordance with Section 907.2.6.2, with exceptions. 2006 International Fire Code 907.2.6; International Building Code 407.2

RESPONSE: Acknowledged.

6. AUTOMATIC SPRINKLER SYSTEMS

An automatic sprinkler system shall be provided throughout buildings with a Group I fire area. An automatic sprinkler system installed in accordance with Section 903.3.1.2 or 903.3.1.3 shall be allowed in Group I-1 facilities.

RESPONSE: Acknowledged. A full system will be installed.

7. WATER SUPPLY

Hydrant spacing and flow must meet minimum requirements based on type of occupancy.

Commercial requirements: Hydrants to provide 1,500 gpm at 20 psi residual pressure, spaced not further than 300 feet to the building, on 600-foot centers thereafter. 2006 International Fire Code 508.1 and Appendix B

RESPONSE: Acknowledged.

8. KEY BOXES REQUIRED

Poudre Fire Authority requires at least one key box ("Knox Box") to be mounted in approved location(s) on every new building equipped with a required fire sprinkler or fire alarm system. The top shall not be higher than 6 feet above finished floor. 2006 International Fire Code 506.1 and Poudre Fire Authority Bureau Policy 88-20

RESPONSE: Acknowledged. Lock boxes for fire department access will be provided at all primary entrances as dictated By PFA.

9. COMMERCIAL KITCHEN HOODS

A Type I hood shall be installed at or above all commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease vapors. 2006 International Fire Code 609.2

RESPONSE: Kitchen hoods will be installed as required.

10. PREMISE IDENTIFICATION

New and existing buildings shall be plainly identified. Address numbers shall be visible from the street fronting the property, plainly visible, and posted with a minimum of six-inch numerals on a contrasting background. 2006 International Fire Code 505.1

RESPONSE: Building signage will be installed.

Department: Environmental Planning

Contact: Lindsay Ex, 970-224-6143, lex@fcgov.com

Department: Environmental Planning

Contact: Lindsay Ex, 970-224-6143, lex@fcgov.com

1. With respect to landscaping and design, the City of Fort Collins Land Use Code, in Article 3.2.1 (E)(2)(3), requires that you use native plants and grasses in your landscaping or re landscaping and reduce bluegrass lawns as much as possible. Reveille Bluegrass is one option for having bluegrass lawns and using less water.

RESPONSE: Acknowledged.

Department: Engineering Development Review

Contact: Marc Virata, 970-221-6567, mvirata@fcgov.com

1. Larimer County Road Impact Fees and Street Oversizing Fees are due at the time of building permit. Please contact Matt Baker at 224-6108 if you have any questions.

RESPONSE: Acknowledged.

2. The City's Transportation Development Review Fee (TDRF) is due at the time of submittal. For additional information on these fees, please see: <http://www.fcgov.com/engineering/dev-review.php>

RESPONSE: Acknowledged.

3. Any damaged curb, gutter and sidewalk existing prior to construction, as well as streets, sidewalks, curbs and gutters, destroyed, damaged or removed due to construction of this project, shall be replaced or restored to City of Fort Collins standards at the Developer's expense prior to the acceptance of completed improvements and/or prior to the issuance of the first Certificate of Occupancy.

RESPONSE: Acknowledged.

4. Please contact the City's Traffic Engineer, Joe Olson (224-6062) to schedule a scoping meeting and determine if a traffic study is needed for this project. In addition, please contact Transportation Planning for their requirements as well.

RESPONSE: A TIS is provided with the submittal.

5. Any public improvements must be designed and built in accordance with the Larimer County Urban Area Street Standards (LCUASS). They are available online at: <http://www.larimer.org/engineering/GMARdStds/UrbanSt.htm>

RESPONSE: Acknowledged.

6. The existing sidewalk along Lochwood Drive abutting the property may not be considered compliant in meeting minimum ADA widths. If the case, the sidewalk (and curb and gutter) would need to be removed and replaced with vertical curb and a 5' wide sidewalk detached 8' from the curb, in accordance with our collector standards.

RESPONSE: A new 5 foot wide detached sidewalk is shown along Lochwood

7. This project is responsible for dedicating any right-of-way and easements that are necessary for this project. If per the previous comment, sidewalk needs to be moved and replaced as detached, additional right-of-way would need to be dedicated to coincide with the back of walk. A 15' utility easement along Horsetooth Road is required behind the right-of-way and a 9' utility easement is required along Lochwood Drive is required behind the right-of-way, unless agreed to otherwise by the utility providers.

RESPONSE: Proposed utility easements and right of way along lochwood is noted on the drawings

8. Driveway access onto Lochwood Drive will be reviewed against access spacing requirements along a

collector roadway in accordance with Table 7-3 of LCUASS.

RESPONSE: Two proposed driveway locations are shown off of Lochwood

9. Construction plans will be required.

RESPONSE: Acknowledged.

10. A Development Agreement will be required and recorded once the project is finalized with recordation costs paid for by the applicant.

RESPONSE: Acknowledged.

11. A Development Construction Permit (DCP) will need to be obtained prior to starting any work on the site.

RESPONSE: Acknowledged.

Current Planning

Contact: Jason Holland, 970-224-6126, jholland@fcgov.com

1. The proposed use is designated as a Long Term Care Facility, which is subject to a neighborhood meeting and review / approval by the Planning and Zoning Board in the L-M-N zone district.

RESPONSE: Acknowledged. A neighborhood meeting was held February 25, 2013 and a follow-up meeting will be held at the end of the month.

2. The building footprint is limited to a maximum size of 20,000 square feet. This is described in Section 4.5(E)(2). A proposed larger footprint will need to function better on the site than a smaller building footprint that meets the standard, with the impacts of the larger footprint mitigated.

RESPONSE: A Modification of Standards request is included with the PDP.

3. Minimum front yard setback of all buildings shall be fifteen (15) feet in order to provide a landscaped front yard consistent with the residential character of the L-M-N zone district.

RESPONSE: Acknowledged.

4. The proposed project is subject to Building and Project Compatibility standards, Section 3.5.1, and Institutional Building standards in Section 3.5.3.

RESPONSE: Acknowledged.

5. Per Section 3.5.3(B), parking is not permitted between the street and the building. If this is requested, please provide an "equal to or better than" design justification.

RESPONSE: Acknowledged.

6. Per Section 3.5.3(D), standardized prototype design shall be modified and is required to be unique. It appears that this building design has been used in a number of other locations and needs to be modified so that it is unique to Fort Collins. It is also recommended that the eave and roof mass be lowered and integrated into the second floor living space so that the overall height of the building is lower; please refer

to section 4.5(E)(2)(d).

RESPONSE: See Planning Objectives.

7. Parking requirements for Long-Term Care Facilities are .33 spaces per bed plus one space per two employees on major shift.

RESPONSE: Acknowledged. There will be 93 beds and 20 employees, which equates to 45 parking spaces. We have 49 spaces shown on the plans.

8. Please provide a summary description of the program operations and building program including amount and type of staffing, common rooms / amenities, types of private rooms and features of the rooms provided.

RESPONSE: See Planning Objectives.

9. The proposed development project is subject to a Type 2 (Planning and Zoning Board) review and public hearing. The applicant for this development request is required to hold a neighborhood information meeting prior to formal submittal of the proposal. Neighborhood meetings offer an informal way to get feedback from your surrounding neighbors and discover any potential hiccups prior to the formal hearing. Please contact me, at 221-6750, to assist you in setting a date, time, and location. I and possibly other City staff, would be present to facilitate the meeting.

RESPONSE: Acknowledged. A neighborhood meeting was held February 25, 2013 and a follow-up meeting will be held at the end of the month.

10. Please see the Development Review Guide at www.fcgov.com/drg. This online guide features a color coded flowchart with comprehensive, easy to read information on each step in the process. This guide includes links to just about every resource you need during development review.

RESPONSE: Acknowledged.

11. This development proposal will be subject to all applicable standards of the Fort Collins Land Use Code (LUC), including Article 3 General Development Standards. The entire LUC is available for your review on the web at <http://www.colocode.com/ftcollins/landuse/begin.htm>.

RESPONSE: Acknowledged.

12. If this proposal is unable to satisfy any of the requirements set forth in the LUC, a Modification of Standard Request will need to be submitted with your formal development proposal. Please see Section 2.8.2 of the LUC for more information on criteria to apply for a Modification of Standard.

RESPONSE: Acknowledged.

13. Please see the Submittal Requirements and Checklist at:

<http://www.fcgov.com/developmentreview/applications.php>.

RESPONSE: Acknowledged.

14. The request will be subject to the Development Review Fee Schedule that is available in the Community Development and Neighborhood Services office. The fees are due at the time of submittal of the required documents for the appropriate development review process by City staff and affected outside reviewing agencies. Also, the required Transportation Development Review Fee must be paid at time of submittal.

RESPONSE: Acknowledged.

15. When you are ready to submit your formal plans, please make an appointment with Community Development and Neighborhood Services at (970)221-6750.

RESPONSE: Acknowledged.

Pre-Submittal Meetings for Building Permits

Pre-Submittal meetings are offered to assist the designer/builder by assuring, early on in the design, that the new commercial or multi-family projects are on track to complying with all of the adopted City codes and Standards listed below. The proposed project should be in the early to mid-design stage for this meeting to be effective and is typically scheduled after the Current Planning conceptual review meeting.

Applicants of new commercial or multi-family projects are advised to call 416-2341 to schedule a pre-submittal meeting. Applicants should be prepared to present site plans, floor plans, and elevations and be able to discuss code issues of occupancy, square footage and type of construction being proposed.

Construction shall comply with the following adopted codes as amended:

2009 International Building Code (IBC)

2009 International Residential Code (IRC)

2009 International Energy Conservation Code (IECC)

2009 International Mechanical Code (IMC)

2009 International Fuel Gas Code (IFGC)

2009 International Plumbing Code (IPC) as amended by the State of Colorado

2011 National Electrical Code (NEC) as amended by the State of Colorado

Accessibility: State Law CRS 9-5 & ICC/ANSI A117.1-2003.

Snow Load Live Load: 30 PSF / Ground Snow Load 30 PSF.

Frost Depth: 30 inches.

Wind Load: 100- MPH 3 Second Gust Exposure B.

Seismic Design: Category B.

Climate Zone: Zone 5

Energy Code Use

1. Single Family; Duplex; Townhomes: *2009 IRC* Chapter 11 or *2009 IECC* Chapter 4
2. Multi-family and Condominiums 3 stories max: *2009 IECC* Chapter 4.
3. Commercial and Multi-family 4 stories and taller: *2009 IECC* Chapter 5.

Fort Collins Green Code Amendments effective starting 1-1-2012. A copy of these requirements can be obtained at the Building Office or contact the above phone number.

City of Fort Collins
Building Services
Plan Review
416-2341

UTILITY PLANS FOR: MVG MORNINGSTAR APARTMENT COMPLEX PROJECT LOCATED IN THE SOUTHWEST QUARTER OF SECTION 30, TOWNSHIP 6 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO AUGUST 2013

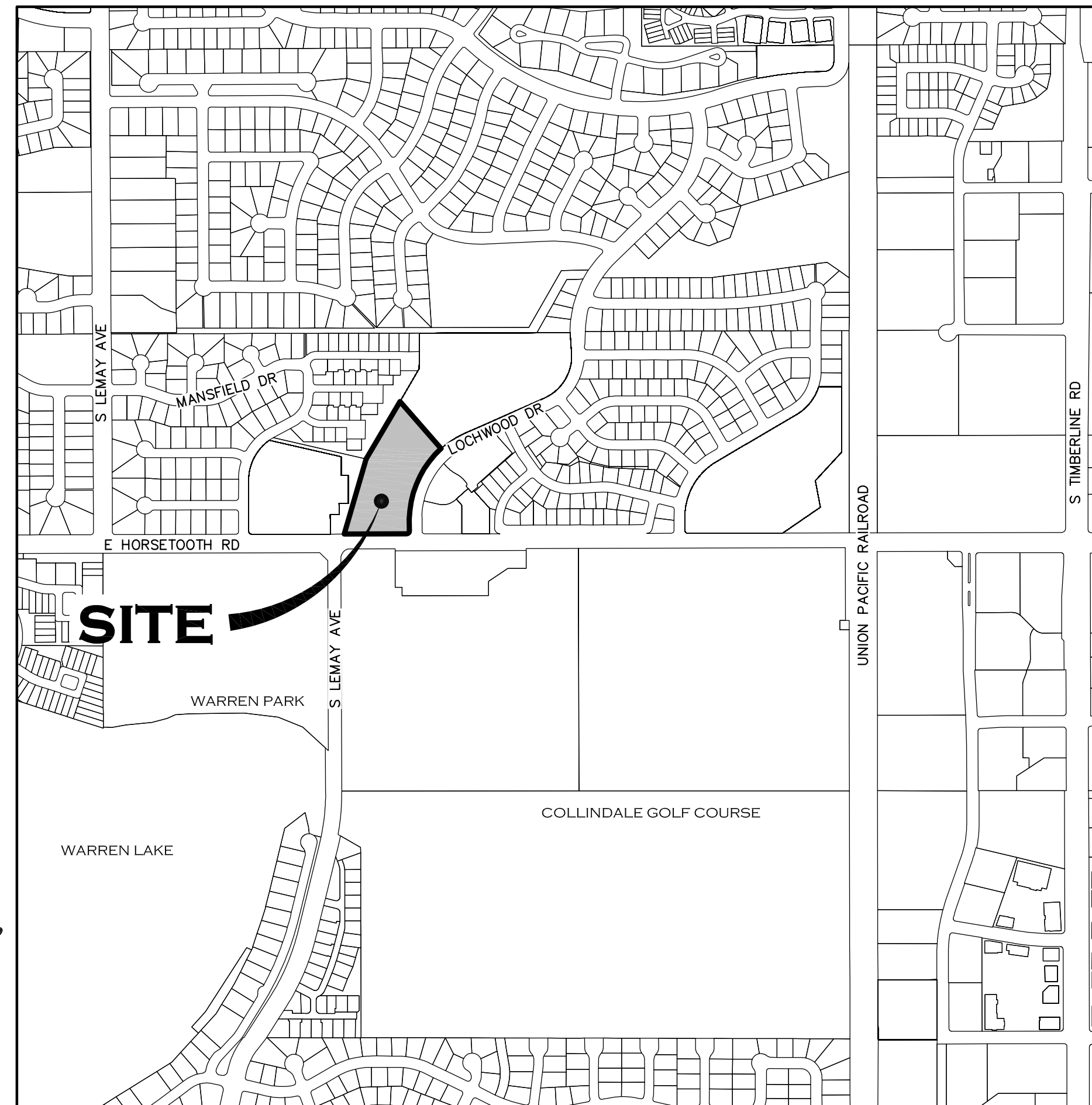
NO.	DATE	REVISIONS DESCRIPTION	BY

1218 W. ASH, SUITE C
WINDSOR, COLORADO 80550
PHONE: (970) 674-3300
FAX: (970) 674-3303

INTERWEST CONSULTING GROUP

LEGEND

	EXISTING TELEPHONE LINE		PROPOSED TELEPHONE
	EXISTING ELECTRIC LINE		PROPOSED ELECTRIC
	EXISTING GAS		PROPOSED GAS
	EXISTING SANITARY SEWER MAIN		PROPOSED SANITARY SEWER MAIN
	EXISTING SANITARY SEWER MANHOLE		PROPOSED SANITARY SEWER MANHOLE
	EXISTING WATER MAIN		PROPOSED WATER MAIN
	EXISTING WATER VALVE		PROPOSED WATER VALVE
	EXISTING FIRE HYDRANT		PROPOSED FIRE HYDRANT
	EXISTING STORM SEWER		PROPOSED STORM SEWER
	EXISTING STORM SEWER MANHOLE		PROPOSED STORM MANHOLE
	EXISTING STORM SEWER INLET		PROPOSED STORM INLET
	EXISTING FLOWLINE, CURB & GUTTER		PROPOSED FLARED END SECTION (FES)
	EXISTING EDGE OF ASPHALT		PROPOSED FLOWLINE, CURB & GUTTER
	EXISTING CONCRETE		PROPOSED CONCRETE
	EXISTING SPOT ELEVATION		PROPOSED SPOT ELEVATION
	EXISTING MINOR CONTOUR		PROPOSED MINOR CONTOUR
	EXISTING MAJOR CONTOUR		PROPOSED MAJOR CONTOUR
	EXISTING UTILITY POLE		PROPOSED UTILITY POLE
	EXISTING STREET LIGHT		PROPOSED STREET LIGHT
	EXISTING GUY WIRE		PROPOSED SANITARY SEWER CLEANOUT
	EXISTING OVERHEAD UTILITY		PROPOSED WATER CURB STOP / METER PIT
	EASEMENT LINE		PROPOSED FENCE / RAILING
	RIGHT-OF-WAY LINE		



INDEX OF SHEETS

SHEET No.	DESCRIPTION OF SHEETS
1	COVER SHEET
2	UTILITY PLAN
3	GRADING PLAN
4	DRAINAGE PLAN

UTILITY CONTACTS:

CITY OF FORT COLLINS 700 WOOD STREET FORT COLLINS, COLORADO 80522 STORMWATER Wes LAMARQUE PH. 970.416.2418 LIGHT & POWER PH. 970.224.6153 WATER/WASTEWATER ROGER BUFFINGTON PH. 970-221-6854	NATURAL GAS XCEL ENERGY 1901 E. HORSETOOTH ROAD FORT COLLINS, COLORADO 80525 CONTACT: STEPHANIE RICH PH. 970.225.7828 TELEPHONE SERVICE CENTURY LINK (QWEST) 3351 EASTBROOK DRIVE FORT COLLINS, COLORADO 80525 CONTACT: BOB RULLI PH. 970.377.6403
--	---

ABBREVIATION LIST

AD ALGEBRAIC DIFFERENCE	LT LEFT
AE ACCESS EASEMENT	MH MANHOLE
ARV AIR RELEASE VALVE	PE PEDESTRIAN EASEMENT
ASSY ASSEMBLY	PC POINT OF CURVATURE
BOV BLOW OFF VALVE	PCC POINT OF COMPOUND CURVATURE
C&G CURB AND GUTTER	PCR POINT OF CURB RETURN
CL CENTERLINE	PI POINT OF INTERSECTION
CMP CORRUGATED METAL PIPE	PRC POINT OF REVERSE CURVATURE
DE DRAINAGE EASEMENT	PT POINT OF TANGENCY
EG EXISTING GRADE	PVC POLYVINYL CHLORIDE
EL ELEVATION	RCP REINFORCED CONCRETE PIPE
ES EMERGENCY SPILLWAY	RD ROOF DRAIN
EX EXISTING	RT RIGHT
FES FLARED END SECTION	SAN SANITARY SEWER
FL FLOWLINE	STA STATION
GB GRADE BREAK	SDMH STORM DRAIN MANHOLE
GV GATE VALVE	TB THRUST BLOCK
HP HIGH POINT	TOF TOP OF FOUNDATION
FH FIRE HYDRANT	TYP TYPICAL
I.E. IRRIGATION EASEMENT	UE UTILITY EASEMENT
INV INVERT	VCP VITRIFIED CLAY PIPE
IRR IRRIGATION	VPC VERTICAL POINT OF CURVATURE
LF LINEAR FEET	VPI VERTICAL POINT OF INTERSECTION
LP LOW POINT	VPT VERTICAL POINT OF TANGENCY
	TOW TOP OF WALL
	BOW BOTTOM OF WALL

VICINITY MAP
SCALE: 1"=600'
BENCHMARK:
BM 17-92
ELEVATION=4935.51 NGVD 1929 (UNADJUSTED)
&
BM 8-94
ELEVATION=4986.64 NGVD 1929 (UNADJUSTED)
HORIZONTAL DATUM:
COLORADO STATE PLANE COORDINATES NAD83(2007) DATUM.

OWNER'S REPRESENTATIVE
MAX CONSULTING, LLC
4061 SOUTH CLERMONT STREET
ENGLEWOOD, CO 80113
PH. 970.482.7420
CONTACT: MAX MARTIN

ARCHITECT
ROSEMANN & ASSOCIATES, P.C.
1526 GRAND BOULEVARD
KANSAS CITY, MO 64108
PH. 816.472.1448
CONTACT: DON ROSEMANN

PLANNER/LANDSCAPE ARCHITECT
TB GROUP
444 MOUNTAIN AVENUE
BERTHOUD, COLORADO 80513
PH. 970.532.5891
CONTACT: CATHY MATHIS

ENGINEER
INTERWEST CONSULTING GROUP
1218 W. ASH, SUITE C
WINDSOR, COLORADO 80550
PH. 970.674.3300
CONTACT: ROBERT ALMIRALL

SURVEYOR
KING SURVEYORS, INC.
650 EAST GARDEN DRIVE
WINDSOR, COLORADO 80550
PH. 970.686.5011
CONTACT: LARRY PEPEK

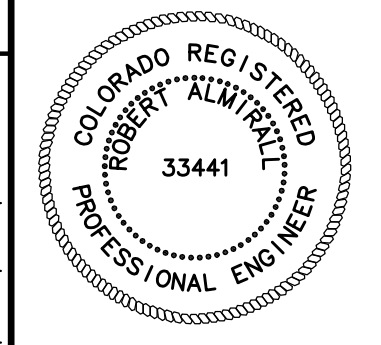
CALL UTILITY NOTIFICATION
CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES.

**PRELIMINARY
NOT FOR CONSTRUCTION**

CITY OF FORT COLLINS, COLORADO
UTILITY PLAN APPROVAL

APPROVED: _____	CITY ENGINEER	DATE _____
CHECKED BY: _____	WATER & WASTEWATER UTILITY	DATE _____
CHECKED BY: _____	STORMWATER UTILITY	DATE _____
CHECKED BY: _____	PARKS & RECREATION	DATE _____
CHECKED BY: _____	TRAFFIC ENGINEER	DATE _____
CHECKED BY: _____	ENVIRONMENTAL PLANNER	DATE _____

DATE: 08/14/13
SCALE (PH): N/A
SCALE (PI): N/A
DESIGNED BY: MM
CHECKED BY: RA

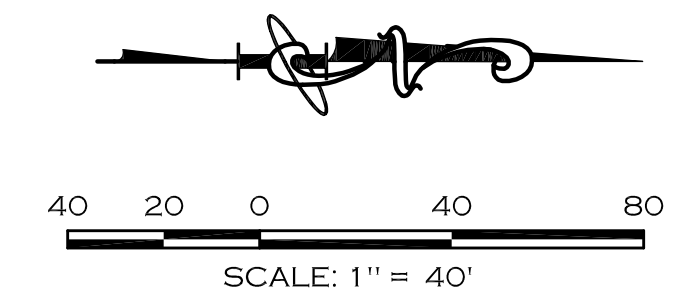


PROJ. NO. 1173-105-00

CV (1 of 4)

INDEMNIFICATION STATEMENT:

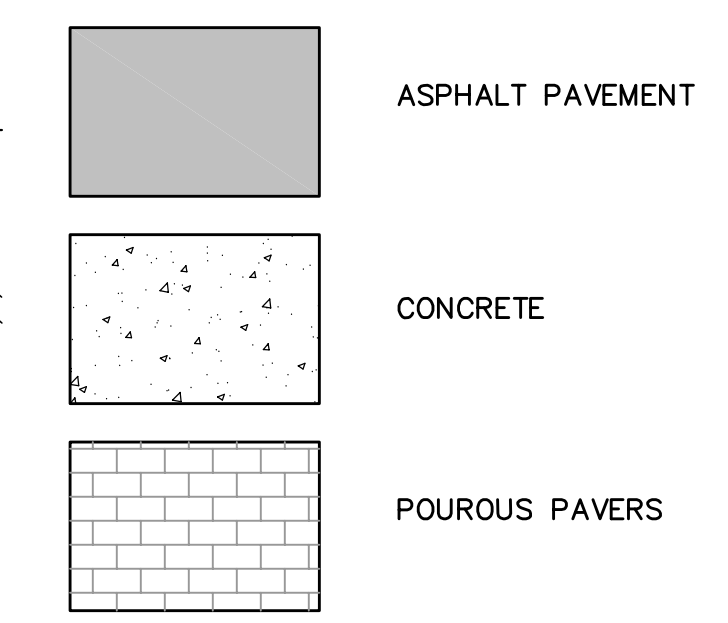
THESE PLANS HAVE BEEN REVIEWED BY THE LOCAL ENTITY FOR CONCEPT ONLY. THE REVIEW DOES NOT IMPLY RESPONSIBILITY BY THE REVIEWING DEPARTMENT, THE LOCAL ENTITY ENGINEER, OR THE LOCAL ENTITY FOR ACCURACY AND CORRECTNESS OF THE CALCULATIONS. FURTHERMORE, THE REVIEW DOES NOT IMPLY THAT QUANTITIES OF ITEMS ON THE PLANS ARE THE FINAL QUANTITIES REQUIRED. THE REVIEW SHALL NOT BE CONSTRUED IN ANY REASON AS ACCEPTANCE OF FINANCIAL RESPONSIBILITY BY THE LOCAL ENTITY FOR ADDITIONAL QUANTITIES OF ITEMS SHOWN THAT MAY BE REQUIRED DURING THE CONSTRUCTION PHASE.



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811
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FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES.

NOTES:

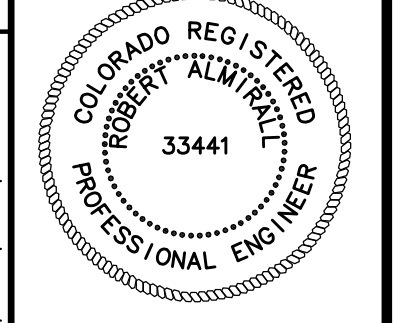
1. SITE CONTRACTOR SHALL TERMINATE UTILITY SERVICES 5 FEET FROM BUILDING UNLESS OTHERWISE NOTED. SITE CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF BUILDING UTILITIES WITH ARCHITECTURAL DRAWINGS.
2. ALL STORM SEWER, SANITARY SEWER, AND WATER CONSTRUCTION, AS WELL AS POWER AND OTHER "DIRY" UTILITY INSTALLATIONS, SHALL CONFORM TO THE CITY OF FORT COLLINS STANDARDS AND SPECIFICATIONS CURRENT AT THE DATE OF APPROVAL OF THE PLANS BY THE LOCAL ENGINEER.
3. STORM SEWER PIPE SHALL BE RCP OR HDPE WITH WATER TIGHT JOINTS AS SPECIFIED ON THE PLAN. ALL STORM SEWER SHALL BE INSPECTED BY THE CITY OF FORT COLLINS.
4. LENGTH OF PIPE IS MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND INCLUDES THE FLARED END SECTION.
5. WATER MAINS SHALL BE PVC (C-900) AS SPECIFIED BY THE CITY OF FORT COLLINS STANDARD PLANS AND SPECIFICATIONS.
6. ALL WATER SERVICES SHALL BE INSTALLED AT A MINIMUM OF 5 FEET BELOW FINISHED FLOOR ELEVATION AND SHALL BE PVC (C-900) UNLESS OTHERWISE NOTED.
7. ALL SANITARY SEWER PIPE SHALL BE PVC (SDR 35) UNLESS OTHERWISE NOTED ON THE PLAN. SEWER PIPE SHALL BE AS SPECIFIED BY THE CITY OF FORT COLLINS STANDARD PLANS AND SPECIFICATIONS.
8. SEE ARCHITECTURAL DRAWINGS FOR WALL LOCATION DETAILS OF GAS METERS, ELECTRIC METERS, AND TELEPHONE TERMINALS.
9. LIMITS OF STREET CUT SHOWN ARE APPROXIMATE. FINAL LIMITS ARE TO BE DETERMINED IN THE FIELD BY CITY ENGINEER INSPECTOR. ALL REPAIRS TO BE IN ACCORDANCE WITH CITY STREET REPAIR STANDARDS.
10. CITY OF FORT COLLINS LIGHT & POWER (L&P) SHALL INSTALL PRIMARY LINE FROM CONNECTION POINT TO ELECTRIC VAULT. SECONDARY LINES FROM VAULT TO METER, AND BUILDING METER. CONTRACTOR SHALL COORDINATE WITH FORT COLLINS METER GROUP FOR METER LOCATION. CONTACT CITY OF FORT COLLINS LIGHT & POWER FOR THEIR CURRENT REQUIREMENTS.



**PRELIMINARY
NOT FOR CONSTRUCTION**

CITY OF FORT COLLINS, COLORADO UTILITY PLAN APPROVAL	
APPROVED: _____	DATE _____
CHECKED BY: _____	DATE _____
CHECKED BY: _____	DATE _____
CHECKED BY: _____	DATE _____
CHECKED BY: _____	DATE _____
CHECKED BY: _____	DATE _____
CHECKED BY: _____	DATE _____

DATE: 08/14/13
SCALE (PH): 1"=40'
SCALE (V): N/A
DESIGNED BY: MM
CHECKED BY: RA



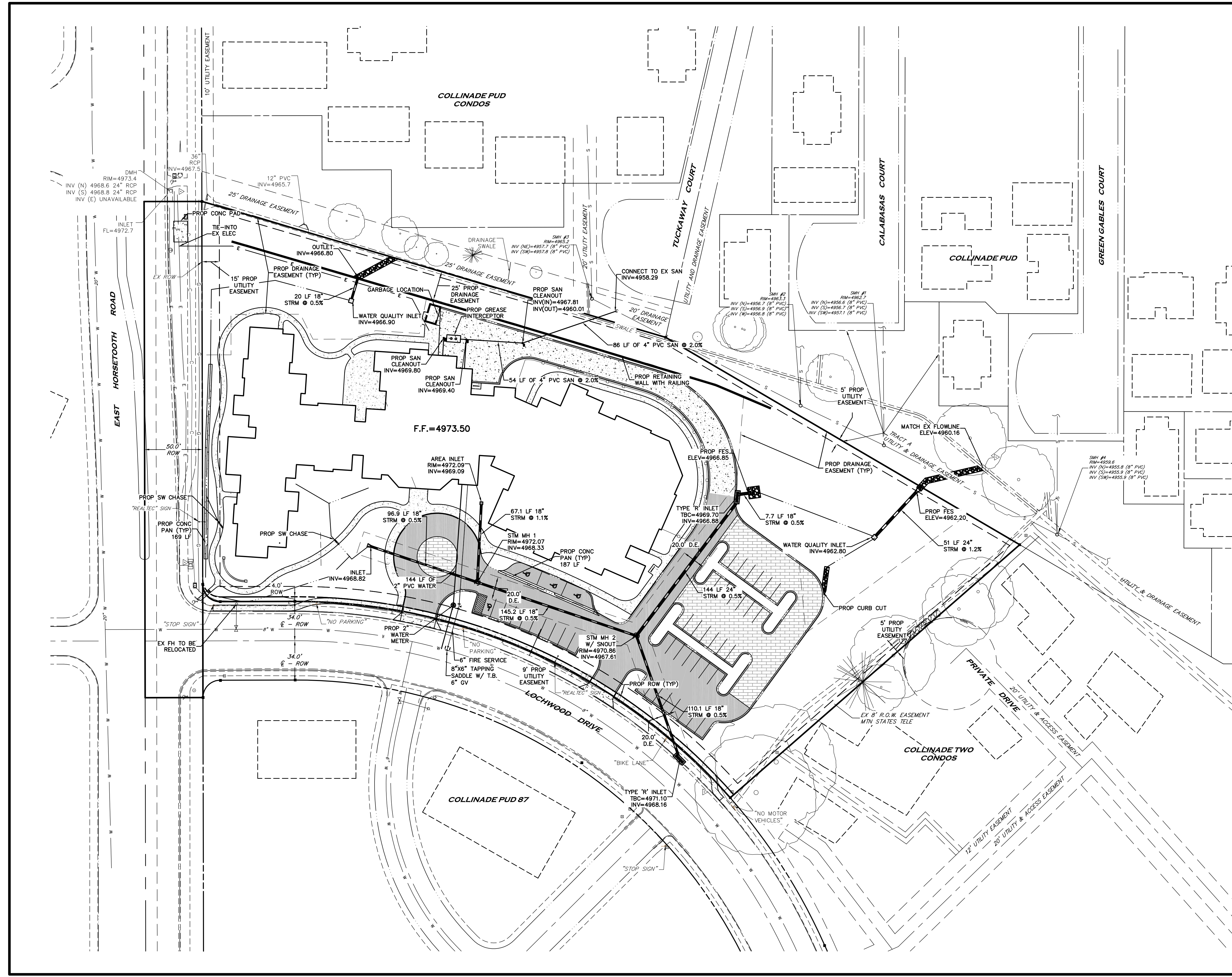
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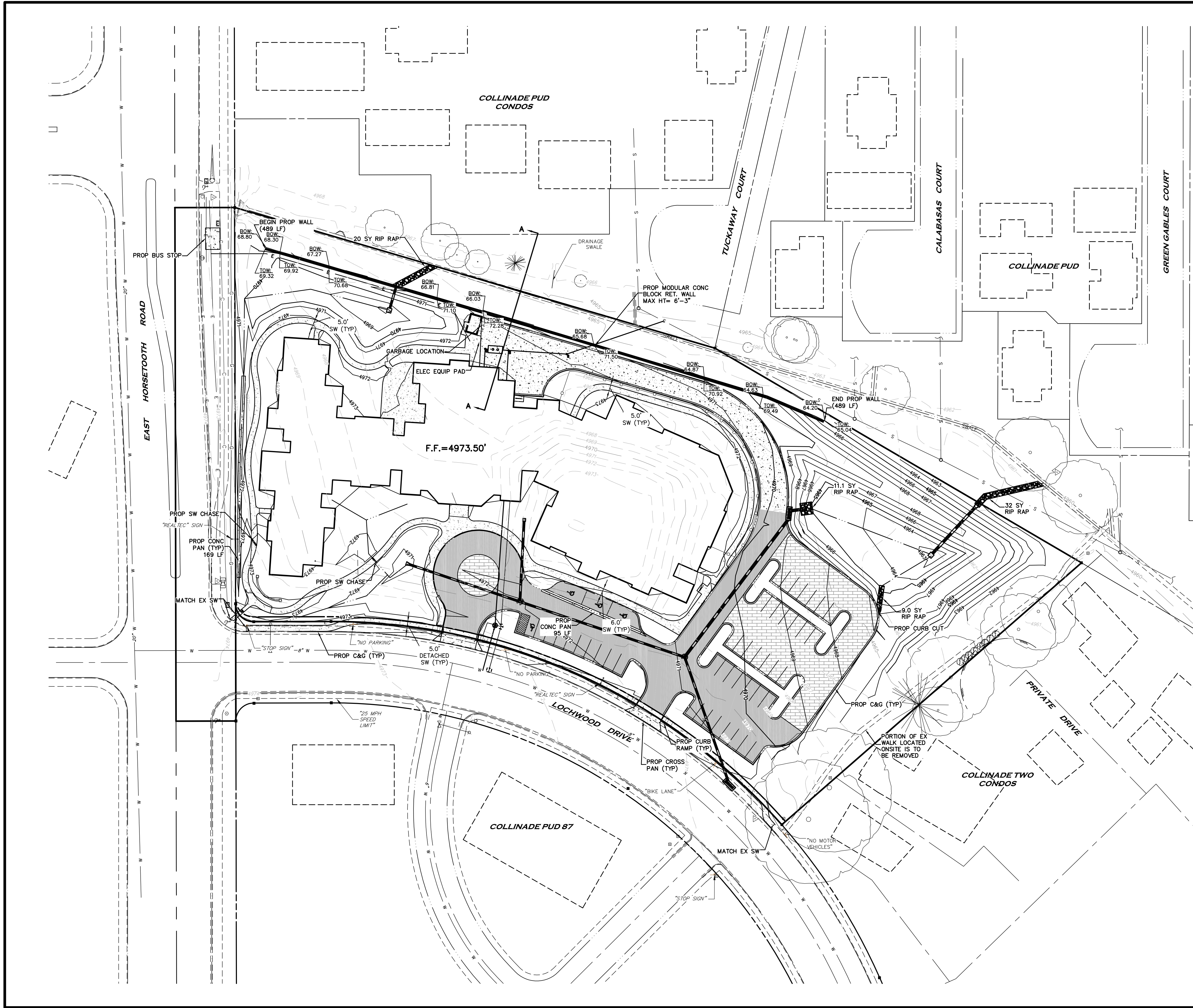
UT (2OF4)

PREPARED FOR
MAX CONSULTING, LLC
4061 S. CLERMONT ST.
ENGLEWOOD, CO 80113
PH: (970) 482-7420

**MVG-MORNINGSTAR
ASSISTED & MEMORY CARE PROJECT**
UTILITY PLAN

1515 W. Ash, Suite C
Windsor, Colorado 80550
Phone: (970) 974-3300
Fax: (970) 614-3300
INTEREST CONSULTING GROUP



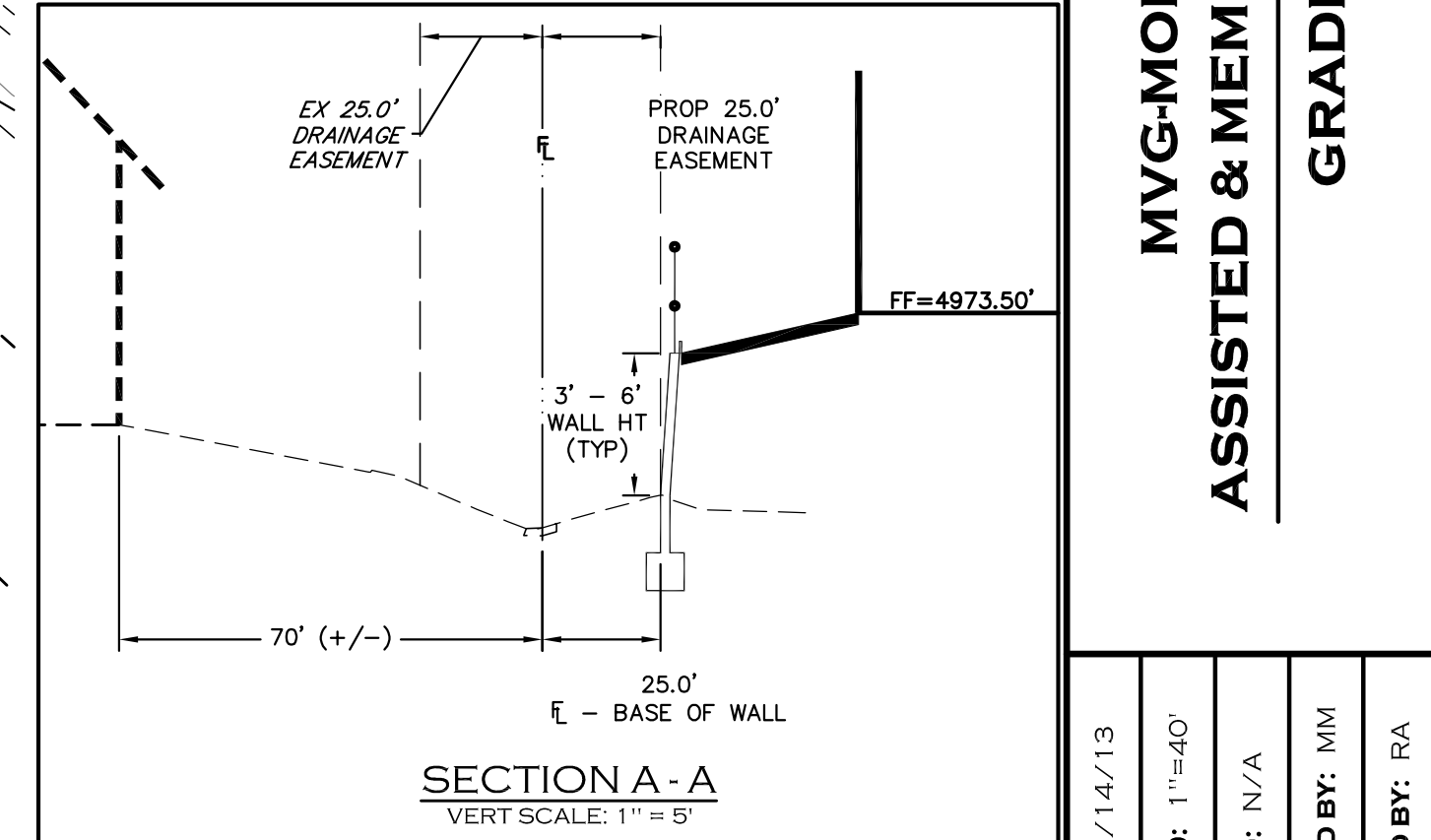


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 1515 W. Ash, Suite C
 Windsor, Colorado 80550
 Phone: (970) 674-3300
 Fax: (970) 674-3303

SCALE: 1" = 40'
 40 20 0 40 80

- NOTES:**
1. STORM SEWER PIPE SHALL BE HDPE OR RCP WITH WATER TIGHT JOINTS. ALL STORM SEWER SHALL BE INSPECTED BY THE CITY OF FORT COLLINS.
 2. ONSITE IMPROVEMENTS ARE TO BE PRIVATELY OWNED AND MAINTAINED.
 3. ALL SANITARY SEWER, STORM SEWER, AND WATER LINE CONSTRUCTION, AS WELL AS POWER AND OTHER "DRY" UTILITY INSTALLATIONS, SHALL CONFORM TO THE LOCAL ENTITY STANDARDS AND SPECIFICATIONS CURRENT AT THE DATE OF APPROVAL OF THE PLANS BY THE LOCAL ENGINEER.
 4. PROPOSED EASEMENTS ARE SHOWN AND WILL BE DEDICATED WITH THE PLAT. EASEMENTS ARE LABELED ON THE UTILITY PLAN.
 5. THE DRIVES WITHIN THE SITE WILL BE PRIVATELY OWNED AND MAINTAINED. THERE WILL BE NO PUBLIC MAINTENANCE OF THE DRIVE.
 6. OFFSITE GRADING IS LIMITED TO AREAS COVERED BY EXISTING DRAINAGE AND/OR UTILITY EASEMENTS FOR THE PURPOSE OF UTILITY OR DRAINAGE CONNECTIONS.
 7. SEE LANDSCAPE PLAN FOR REVEGETATION METHODS AND DETAILS. DURING CONSTRUCTION, ANY SOIL DISTURBED AND NOT UNDER ACTIVE CONSTRUCTION SHALL BE SEEDED AND MULCHED PER LCU/ASS STANDARDS.

	ASPHALT PAVEMENT
	CONCRETE
	POUROUS PAVERS



PRELIMINARY
 NOT FOR CONSTRUCTION

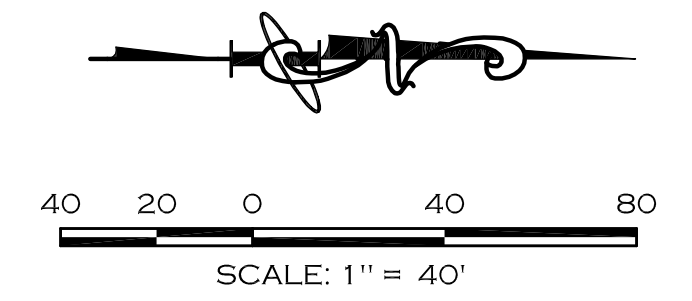
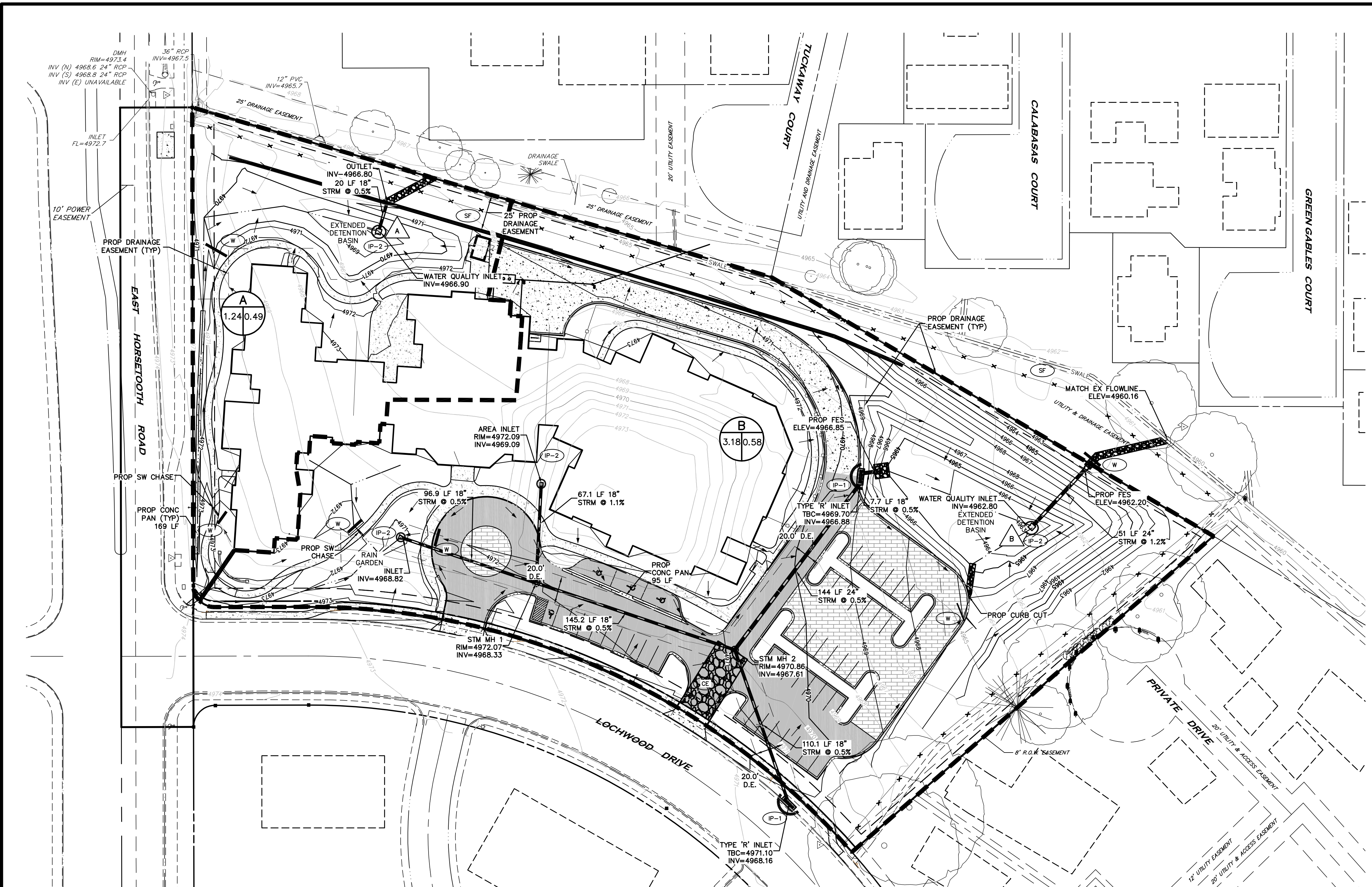
CITY OF FORT COLLINS, COLORADO UTILITY PLAN APPROVAL	
APPROVED: _____	DATE _____
CHECKED BY: WATER & WASTEWATER UTILITY	DATE _____
CHECKED BY: STORMWATER UTILITY	DATE _____
CHECKED BY: PARKS & RECREATION	DATE _____
CHECKED BY: TRAFFIC ENGINEER	DATE _____
CHECKED BY: ENVIRONMENTAL PLANNER	DATE _____

DATE: 08/14/13
 SCALE (PH): 1"=40'
 SCALE (V): N/A
 DESIGNED BY: MM
 CHECKED BY: RA

PROJ. NO. 1173-105-00
GR (30F4)

PREPARED FOR
MAX CONSULTING, LLC
 4061 S. CLERMONT ST.
 ENGLEWOOD, CO 80113
 PH: (970) 482-7420

MVG-MORNINGSTAR
ASSISTED & MEMORY CARE PROJECT
GRADING PLAN



LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED DIRECTION OF OVERLAND FLOW
- PROPOSED DRAINAGE BASIN DIVIDE LINE
- DRAINAGE BASIN ID
- MAJOR STORM RUNOFF COEFFICIENT
- DRAINAGE BASIN AREA, ACRES
- CONSTRUCTION ENTRANCE
- SILT FENCE
- STORM DRAIN INLET PROTECTION
- WATTLE (TEMPORARY VELOCITY CHECK DAM)
- SNOUT

STANDARD EROSION AND SEDIMENT CONTROL NOTES:

1. THE CITY STORMWATER DEPARTMENT EROSION CONTROL INSPECTOR MUST BE NOTIFIED AT LEAST 24 HOURS PRIOR TO ANY CONSTRUCTION ON THE SITE.
2. PRIOR TO ANY EARTHWORK ACTIVITIES PERIMETER EROSION CONTROL SHALL BE ESTABLISHED. THIS SHALL INCLUDE INSTALLATION OF THE SILT FENCE, INLET PROTECTION AT THE EXISTING INLETS ON LOCKWOOD DRIVE, AND THE VEHICLE TRACKING PAD AT THE SITE ACCESS OFF OF LOCKWOOD DRIVE. ALL OTHER EROSION CONTROL MEASURES SHOWN ON THIS PLAN SHALL BE INSTALLED AT THE APPROPRIATE TIME IN THE CONSTRUCTION SEQUENCE (I.E. INLET PROTECTION INSTALLED AT THE TIME OF INLET CONSTRUCTION, WATTLES INSTALLED AFTER ROUGH GRADING OF ALL SWALES, CONCRETE WASHOUT INSTALLED PRIOR TO ANY CONCRETE OR MASON WORK).
3. PRE-DISTURBANCE VEGETATION SHALL BE PROTECTED AND RETAINED WHEREVER POSSIBLE. REMOVAL OR DISTURBANCE OF EXISTING VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS, AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.
4. ALL SOILS EXPOSED DURING LAND DISTURBING ACTIVITY (STRIPPING, GRADING, UTILITY INSTALLATIONS, STOCKPILING, FILLING, ETC.) SHALL BE KEPT IN A ROUGHENED CONDITION BY RIPPING OR DISKING ALONG LAND CONTOURS UNTIL MULCH, VEGETATION, OR OTHER PERMANENT EROSION CONTROL IS INSTALLED. NO SOILS IN AREAS OUTSIDE PROJECT STREET RIGHTS OF WAY SHALL REMAIN EXPOSED BY LAND DISTURBING ACTIVITY FOR MORE THAN THIRTY (30) DAYS BEFORE REQUIRED TEMPORARY OR PERMANENT EROSION CONTROL (E.G. SEED/MULCH, LANDSCAPING, ETC) IS INSTALLED, UNLESS OTHERWISE APPROVED BY THE STORMWATER DEPARTMENT.
5. THE PROPERTY MUST BE WATERED AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION ACTIVITIES SO AS TO PREVENT WIND-CAUSED EROSION. ALL LAND DISTURBING ACTIVITIES SHALL BE IMMEDIATELY DISCONTINUED WHEN FUGITIVE DUST IMPACTS ADJACENT PROPERTIES, AS DETERMINED BY THE CITY ENGINEERING DEPARTMENT.
6. ALL TEMPORARY (STRUCTURAL) EROSION CONTROL MEASURES MUST BE INSPECTED AND REPAIRED OR RECONSTRUCTED AS NECESSARY AFTER EACH RUNOFF EVENT AND EVERY 14 DAYS IN ORDER TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL RETAINED SEDIMENTS, PARTICULARLY THOSE ON PAVED ROADWAY SURFACES, SHALL BE REMOVED AND DISPOSED OF IN A MANNER AND LOCATION SO AS NOT TO CAUSE THEIR RELEASE INTO ANY DRAINAGEWAY.
7. NO SOIL STOCKPILE SHALL EXCEED TEN (10) FEET IN HEIGHT. ALL SOIL STOCKPILES SHALL BE PROTECTED FROM SEDIMENT TRANSPORT BY SURFACE ROUGHENING, WATERING, AND PERIMETER SILT FENCING. ANY SOIL STOCKPILE REMAINING AFTER 30 DAYS SHALL BE SEEDED AND MULCHED. SEED MIX SPECIFIED ON THE LANDSCAPE PLAN.
8. CITY ORDINANCE PROHIBITS THE TRACKING, DROPPING, OR DEPOSITING OF SOILS OR ANY OTHER MATERIAL ONTO CITY STREETS BY OR FROM ANY VEHICLE. ANY INADVERTENT DEPOSITED MATERIAL SHALL BE CLEANED IMMEDIATELY BY THE CONTRACTOR. DURING BUILDING DEMOLITION AND UTILITY INSTALLATION, VEHICLES MAY NOT LEAVE THE SITE IF THERE IS SEDIMENT ON THE VEHICLE. A TRACKING PAD SHALL BE INSTALLED IN THE EXCAVATED AREA OR A MODULAR PAD SHALL BE USED. IF NEITHER IS POSSIBLE, TRUCKS SHALL BE HAND CLEANED PRIOR TO EXITING THE CONSTRUCTION AREA.

NOTES CONTINUED:

9. OWNER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING A STATE OF COLORADO CDPHE, GENERAL PERMIT APPLICATION-STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY PRIOR TO CONSTRUCTION (NPDES PERMIT). THE OWNER/CONTRACTOR SHALL PROVIDE THE CITY WITH A COPY OF THIS PERMIT APPLICATION TO THE STATE PRIOR TO RECEIVING A GRADING/CONSTRUCTION PERMIT. THE OWNER/CONTRACTOR IS RESPONSIBLE FOR ALL FEES ASSOCIATED WITH THIS STATE PERMIT. SEE EROSION CONTROL NOTES ON THE GENERAL NOTES PAGE FOR MORE DETAILS.
10. TRASH STORAGE, PORTABLE TOILETS AND OTHER ON SITE POLLUTANT SOURCES TO BE LOCATED BASED ON THE COLORADO DISCHARGE PERMIT SYSTEM - STORMWATER CONSTRUCTION PERMIT STORMWATER MANAGEMENT PLAN. TOILETS ARE TO BE STAKED DOWN. TOILETS AND OTHER ON SITE POLLUTANT SOURCES ARE TO BE LOCATED NO CLOSER THAN 50 FEET FROM THE NEAREST INLET OR STATE WATERS.
11. THE PERIMETER OF THE CONSTRUCTION AREA SHALL BE FENCED OFF USING ORANGE CONSTRUCTION FENCING OR OTHER CONTRACTOR FENCING.
12. NO DISTURBANCE SHALL OCCUR WITHIN ANY BUFFER ZONE AND NO PERSON SHALL ENGAGE IN ANY ACTIVITY THAT WILL DISTURB, REMOVE, FILL, DREDGE, CLEAR, DESTROY, OR ALTER ANY AREA, INCLUDING VEGETATION WITHIN NATURAL HABITATS OR FEATURES INCLUDING WITHOUT LIMITATION, LAKES, PONDS, STREAM CORRIDORS AND WETLANDS EXCEPT AS SPECIFICALLY APPROVED AND NOTED IN SECTION 3.4.1(D)2.C.

Design Point	Tributary Sub-basin	Area (ac)	C (2)	C (10)	C (100)	tc (2) (min)	tc (10) (min)	tc (100) (min)	Q(2)tot (cfs)	Q(10)tot (cfs)	Q(100)tot (cfs)
1 (SW)	1 (SW)	1.24	0.39	0.39	0.49	12.0	12.0	11.4	1.0	1.7	4.5
2 (NE)	2 (NE)	3.18	0.46	0.46	0.58	14.1	14.1	14.1	2.8	4.8	12.3

PRELIMINARY
NOT FOR CONSTRUCTION

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

1515 W. Ash, Suite C
Windsor, Colorado 80550
Phone: (970) 674-3300
Fax: (970) 674-3303
INTEREST CONSULTING GROUP

PREPARED FOR
MAX CONSULTING, LLC
4061 S. CLERMONT ST.
ENGLEWOOD, CO 80113
PH: (970) 482-7420

MVG-MORNINGSTAR
ASSISTED & MEMORY CARE PROJECT
DRAINAGE & EROSION CONTROL PLAN

DATE: 08/14/13
SCALE (PH): 1"=40'
SCALE (V): N/A
DESIGNED BY: MM
CHECKED BY: RA



PROJ. NO. 1173-105-00
DR (40f4)

PRELIMINARY DRAINAGE REPORT

**MVG-MORNINGSTAR
ASSISTED & MEMORY CARE PROJECT**

Prepared for:

Max Consulting, LLC
4061 S. Clermont St.
Englewood, CO 80113
(303) 482-7420

Prepared by:

Interwest Consulting Group
1218 West Ash, Suite C
Windsor, Colorado 80550
(970) 674-8488

August 14, 2013

Job Number 1173-105-00

August 14, 2013

Mr. Wes Lamarque
City of Fort Collins Stormwater
700 Wood Street
Fort Collins, CO 80522-0580

RE: Preliminary Drainage Report for MVG-Morningstar Assisted & Memory Care Project

Dear Wes,

I am pleased to submit for your review and approval, this Preliminary Drainage Report for the MVG-Morningstar Assisted & Memory Care Project development. I certify that this report for the drainage design was prepared in accordance with the criteria in the City of Fort Collins Storm Drainage Manual.

I appreciate your time and consideration in reviewing this submittal. Please call if you have any questions.

Sincerely,

Reviewed By:

Mark Morrison, E.I.T.

Robert Almirall, P.E.
Colorado Professional
Engineer No. 33441

TABLE OF CONTENTS

TABLE OF CONTENTS	iii
1. GENERAL LOCATION AND DESCRIPTION	1
1.1 Location.....	1
1.2 Description of Property	1
2. DRAINAGE BASINS AND SUB-BASINS.....	1
2.1 Major Basin Description.....	1
2.2 Sub-basin Description.....	2
3. DRAINAGE DESIGN CRITERIA	2
3.1 Regulations.....	2
3.2 Development Criteria Reference and Constraints	2
3.3 Hydrological Criteria	3
3.4 Hydraulic Criteria.....	3
3.5 Floodplain Regulations Compliance.....	3
4. DRAINAGE FACILITY DESIGN.....	4
4.1 General Concept.....	4
4.2 Specific Flow Routing	5
4.3 Drainage Summary	6
5. CONCLUSIONS.....	6
5.1 Compliance with Standards	6
5.2 Drainage Concept.....	6
6. REFERENCES	7
APPENDIX	
VICINITY MAP AND DRAINAGE PLAN	A
HYDROLOGIC COMPUTATIONS	B

1. GENERAL LOCATION AND DESCRIPTION

1.1 Location

The MVG-Morningstar Assisted & Memory Care Project development is located in southeast Fort Collins. It is located in the Southwest Quarter of Section 30, Township 6 North, Range 68 West of the Sixth Principal Meridian, in the City of Fort Collins, Larimer County, Colorado. See the location map in Appendix A.

The project is located west of Lochwood Drive, north of E. Horsetooth Road, and bounded on the west and north sides by existing residential lots. An existing drainage ditch with an existing 25 ft Drainage Easement runs along the west edge of the property, dividing it from the residential properties.

1.2 Description of Property

The property consists of approximately 4.41 acres of land. The existing land currently drains from southeast to northwest at approximately a 2% grade. The land is currently vacant with mild sloping terrain and covered with natural dry-land vegetation across the entire site. The only offsite flow entering the site is through an existing concrete drainage ditch originating at the SW corner of the property and conveys runoff to the northeast. There is an existing 25' drainage easement accompanying the existing concrete ditch, extending from the existing flowline 25' to the west. An additional 25' drainage easement is proposed, extending from the flowline 25' to the east, to make the entire Drainage Easement 50' wide up to the Tract A-Utility & Drainage Easement. The channel is not mapped by FEMA. The project is located in FEMA FIRM Panel 08069C1000F, Zone X.

2. DRAINAGE BASINS AND SUB-BASINS

2.1 Major Basin Description

The proposed development lies within the McClelland's Creek Master Drainage Basin. The entire site currently drains to an existing concrete drainage ditch along the west and northwest property boundary. James H. Stewart and Associates performed a drainage study on this drainage in March of 1978 and determined the 100-year storm to produce 217.0 cfs. However, the updated 2010 SWMM model for the basin shows a 2-year storm

run-off of 20.6 cfs and a 100-year storm run-off of 150.2 cfs. See Appendix B for existing site hydrologic computations.

2.2 Sub-basin Description

The existing site has a historic runoff of 1.5 cfs and 6.7 cfs for the 2-year & 100-year run-off event, respectively, with a historic 2-year release rate of 0.35 cfs/acre. The site will be divided into 2 sub-basins for proposed construction activities. Sub-basin A will consist of approximately 1.24 ac and will be collected in a small extended detention basin located southwest of the proposed building before releasing into the existing drainage ditch to the west. Sub-basin B consists of approximately 3.18 ac and drains to the northwest corner of the property where it will be collected in a second extended detention basin before releasing into the existing concrete drainage ditch bounding the property. Once the run-off enters the existing ditch, it will flow northeast eventually reaching McClelland's Channel.

3. DRAINAGE DESIGN CRITERIA

3.1 Regulations

This report was prepared to meet or exceed the "City of Fort Collins Storm Drainage Design Criteria Manual" specifications. Where applicable, the criteria established in the "Urban Storm Drainage Criteria Manual" (UDFCD), developed by the Denver Regional Council of Governments, has been used.

3.2 Development Criteria Reference and Constraints

Urban Drainage and Flood Control District (UDFCD) recommends a Four Step Process for receiving water protection that focuses on reducing runoff volumes, treating the water quality capture volume (WQCV), stabilizing drainageways and implementing long-term source controls. The Four Step Process applies to the management of smaller, frequently occurring events.

Step 1: Employ Runoff Reduction Practices

To reduce runoff peaks, volumes, and pollutant loads from urbanizing areas, implement Low Impact Development (LID) strategies, including Minimizing Directly Connected

Impervious Areas (MDCIA).

Runoff for the site will be split around the proposed building's SE corner to the west and north, respectively.

Sub-Basin A

Runoff directed to the west will be routed through vegetated bio-swales or a concrete pan to an extended detention basin, herein referred to as "Water Quality Pond A" equipped with a Water Quality Outlet Structure which will release flow into the existing concrete drainage ditch along the west edge of the property.

Sub-Basin B

Runoff directed to the north will be routed through vegetated areas, a rain garden, and a storm drain system thereby reducing runoff from impervious surfaces over permeable areas to slow runoff and increase the time of concentration and promote infiltration. Runoff from the parking lot shall drain across Pervious Pavers before entering a second extended detention basin, herein referred to as "Water Quality Pond B".

Step 2: Implement BMPs that Provide a Water Quality Capture Volume with Slow Release

Sub-Basin A

Water Quality Pond A shall be equipped with a Water Quality Outlet Structure designed to allow sediments to settle while releasing treated flows at or less than historic rates.

Sub-Basin B

A Proposed Rain Garden located SE of the main entrance shall collect a majority of the down-spout runoff before conveying the water to the second water quality treatment pond. Water Quality Pond B shall be equipped with a Water Quality Outlet Structure designed to allow sediments to settle while releasing treated flows at or less than historic rates.

Step 3: Stabilize Drainageways

Natural Drainageways are subject to bed and bank erosion due to increases in frequency, duration, rate and volume of runoff during and following development. Rip-Rap shall be used at the outlet of both Water Quality Pond's as well as the two points where a majority of water will enter Water Quality Pond B. The Rip Rap shall be stabilized in place.

Step 4: Implement Site Specific and Other Source Control BMPs

Proactively controlling pollutants at their source by preventing pollution rather than removing contaminants once they have entered the stormwater system or receiving waters is important when protecting storm systems and receiving waters. This can be accomplished through site specific needs such as construction site runoff control, post-construction runoff control and pollution prevention / good housekeeping. It will be the responsibility of the contractor to develop a procedural best management practice for the site.

3.3 Hydrologic Criteria

Runoff computations were prepared for the 2-year and 10-year minor and 100-year major storm frequency utilizing the rational method. The Modified FAA method was used to determine preliminary detention volumes for the proposed water quality ponds.

All hydrologic calculations associated with the basins are included in Appendix B of this report.

Final water quality volumes will be presented in the final drainage report and calculated using the method recommended in the “Urban Storm Drainage Criteria Manual”.

3.4 Hydraulic Criteria

All hydraulic calculations will be presented in the final drainage report and prepared in accordance with the City of Fort Collins Drainage Criteria.

3.5 Floodplain Regulations Compliance

No work is proposed within the existing floodplain.

4. DRAINAGE FACILITY DESIGN

4.1 General Concept

The proposed MVG-Morningstar site was designed to treat run-off as close to the point-source as possible, while also minimizing the length of drainage routing to the most feasible extents of the site.

The proposed site shall be divided into two sub-basins based on design points A and B. The proposed drainage design follows the existing drainage pattern of southeast to northwest. The project will consist of an Assisted & Memory Care Complex building with a footprint of approximately 42,500 SF, a parking area for patients and employees, an access lane, a retaining wall, sidewalks and landscaped areas. All proposed site run-off is directed to a water quality pond at one of the two design points before being released off-site. Each water quality pond shall be equipped with a Water Quality Outlet Structure, designed specifically for that sub-basin, to treat and release the run-off into the existing concrete ditch at or below historic run-off rates.

Both of the extended detention ponds serving as water quality ponds shall also act as on-site detention ponds for the proposed construction. The on-site detention shall hold the proposed 100-year run-off and release it at the historic 2-year storm release rate.

4.2 Specific Flow Routing

A summary of the drainage patterns within each basin is provided in the following paragraphs.

Sub-Basin 1 includes the southwest corner of the property, excluding the existing drainage ditch, and the south half of the downspouts from the proposed building, approximately 1.24 ac. From the downspouts, flow will be routed through vegetated areas carrying flow away from the building or sheet flow over-top the sidewalk. A sidewalk chase is proposed in one location to keep positive drainage through the sidewalk. Remaining Sub-basin 1 flow will be collected and routed through a concrete pan along the south edge of the property to Water Quality Pond A, which is located just southwest of the proposed building. Once the run-off is treated, the outlet structure discharges into the existing concrete channel to the west of the site, eventually reaching McClelland's Channel. Sub-Basin 1 is calculated to have a 10-year and 100-year discharge of 1.7 & 4.5 cfs, respectively.

Sub-Basin 2 includes the remaining approximately 3.18 acres located northeast of Sub-basin 1 within the site, including the north half of the proposed building downspouts. The east side building down-spout run-off as well as that immediately adjacent to the southeast side of the proposed building will be collected in a proposed rain garden before

entering the site's storm drain system. The north side building down-spout run-off as well as that immediately adjacent to the north, northeast, and northwest sides of the building shall sheet flow to the northwest to the proposed Water Quality Pond B. Parking and access road run-off will also sheet flow to the northwest or enter the site's storm drain system, which also drains into Water Quality Pond B. Run-off is then treated and released into the existing drainage ditch flowing northeast into McClelland's Channel. Sub-basin 2 is calculated to have a 10-year and 100-year discharge of 4.8 & 12.3 cfs, respectively.

4.3 Drainage Summary

The percent impervious weighted average of the entire site is 44%. All proposed site runoff follows existing drainage flow patterns while adding a level of water quality to the discharge.

Drainage facilities located outside of the right of way (including the rain garden, water quality pond, proposed storm sewer system and the pond outlets) will be maintained by the owners of the property. The property owner shall also share maintenance of the 50' Drainage Easement and existing drainage ditch to the west of the property with the Collindale PUD Homeowners Association.

5. CONCLUSIONS

5.1 Compliance with Standards

All computations that have been completed within this report are in compliance with the City of Fort Collins(COFC) Erosion Control Reference Manual for Construction Sites, the COFC Storm water Criteria Manual, the COFC Master Drainage Plans, and the COFC floodplain regulations. All floodway information is in compliance with Chapter 10 of the City of Fort Collins Municipal Code and all State and Federal regulations.

5.2 Drainage Concept

The proposed drainage concepts presented in this report and on the construction plans adequately provide for stormwater quantity and quality treatment of proposed impervious areas. Conveyance elements have been designed to pass required flows and to minimize

future maintenance.

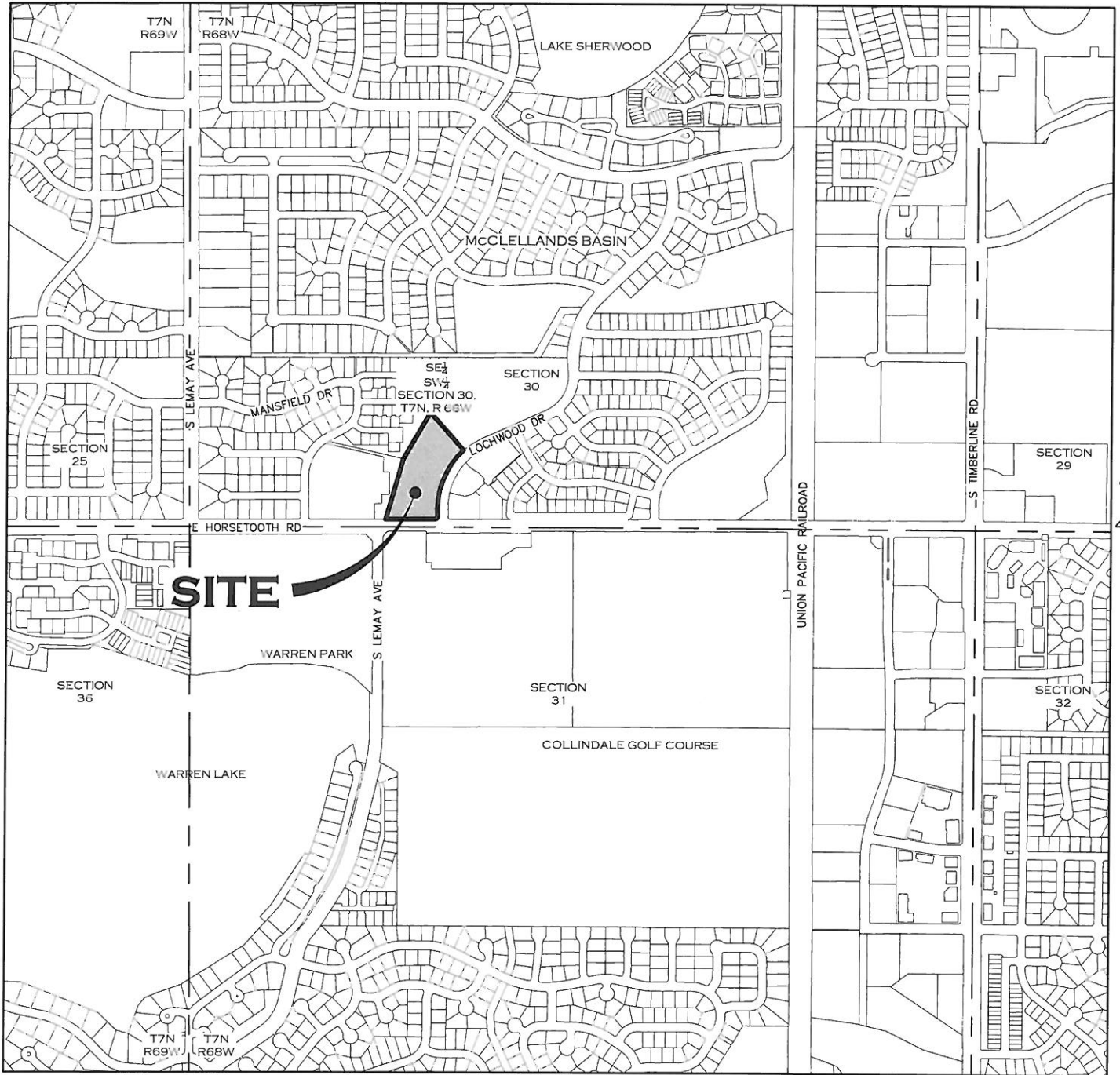
If, at the time of construction, groundwater is encountered, a Colorado Department of Health Construction Dewatering Permit will be required.

6. REFERENCES

1. City of Fort Collins, "Storm Drainage Criteria Manual", (SDCM), dated March, 1986.
2. Urban Drainage and Flood Control District, "Urban Storm Drainage Criteria Manual", Volumes 1 and 2, dated June 2001, and Volume 3 dated September 1999.
3. ICON Engineering, Inc., "McClelland's Creek Master Drainage Plan Update", dated November 20, 2000 (Revised March 2003).

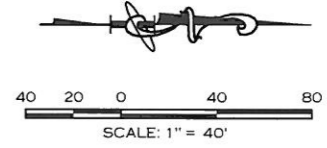
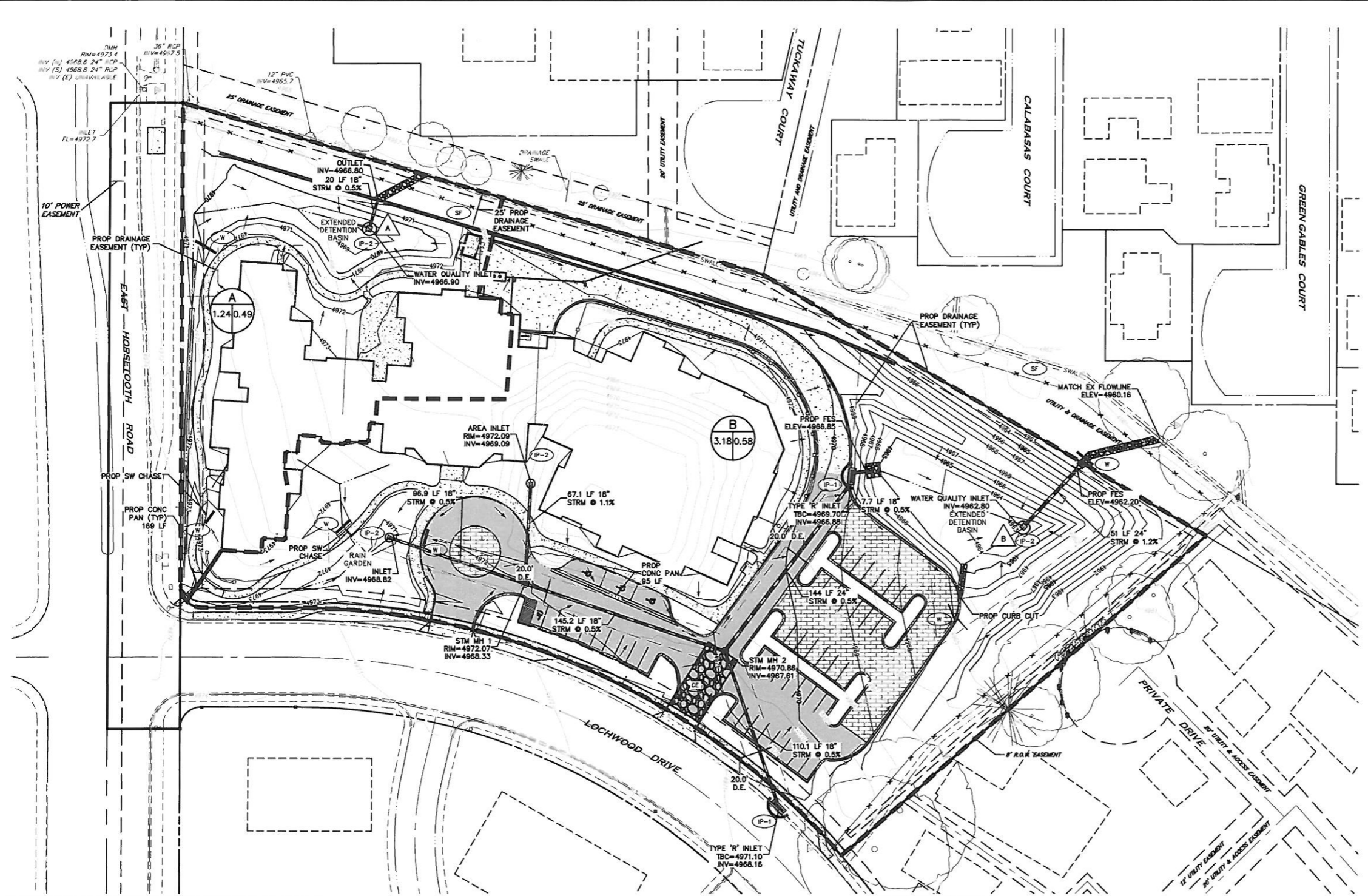
APPENDIX A

VICINITY MAP AND DRAINAGE PLAN



MVG MORNINGSTAR - VICINITY MAP

SCALE: 1" = 1000'



LEGEND

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED DIRECTION OF OVERLAND FLOW
- PROPOSED DRAINAGE BASIN DIVIDE LINE
- DRAINAGE BASIN ID
- MAJOR STORM RUNOFF COEFFICIENT
- DRAINAGE BASIN AREA, ACRES
- CONSTRUCTION ENTRANCE
- SILT FENCE
- STORM DRAIN INLET PROTECTION
- WATTLE (TEMPORARY VELOCITY CHECK DAM)
- SNOUT

STANDARD EROSION AND SEDIMENT CONTROL NOTES:

1. THE CITY STORMWATER DEPARTMENT EROSION CONTROL INSPECTOR MUST BE NOTIFIED AT LEAST 24 HOURS PRIOR TO ANY CONSTRUCTION ON THE SITE.
2. PRIOR TO ANY EARTHWORK ACTIVITIES PERIMETER EROSION CONTROL SHALL BE ESTABLISHED. THIS SHALL INCLUDE INSTALLATION OF THE SILT FENCE, INLET PROTECTION AT THE EXISTING INLETS ON LOCKWOOD DRIVE, AND THE VEHICLE TRACKING PAD AT THE SITE ACCESS OFF OF LOCKWOOD DRIVE. ALL OTHER EROSION CONTROL MEASURES SHOWN ON THIS PLAN SHALL BE INSTALLED AT THE APPROPRIATE TIME IN THE CONSTRUCTION SEQUENCE (I.E. INLET PROTECTION INSTALLED AT THE TIME OF INLET CONSTRUCTION, WATTLES INSTALLED AFTER ROUGH GRADING OF ALL SWALES, CONCRETE WASHOUT INSTALLED PRIOR TO ANY CONCRETE OR MASON WORK).
3. PRE-DISTURBANCE VEGETATION SHALL BE PROTECTED AND RETAINED WHEREVER POSSIBLE. REMOVAL OR DISTURBANCE OF EXISTING VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS, AND FOR THE SHORTEST PRACTICAL PERIOD OF TIME.
4. ALL SOILS EXPOSED DURING LAND DISTURBING ACTIVITY (STRIPPING, GRADING, UTILITY INSTALLATIONS, STOCKPILING, FILLING, ETC.) SHALL BE KEPT IN A ROUGHENED CONDITION BY RIPPING OR DISKING ALONG LAND CONTOURS UNTIL MULCH, VEGETATION, OR OTHER PERMANENT EROSION CONTROL IS INSTALLED. NO SOILS IN AREAS OUTSIDE PROJECT STREET RIGHTS OF WAY SHALL REMAIN EXPOSED BY LAND DISTURBING ACTIVITY FOR MORE THAN THIRTY (30) DAYS BEFORE REQUIRED TEMPORARY OR PERMANENT EROSION CONTROL (E.G. SEED/MULCH, LANDSCAPING, ETC) IS INSTALLED, UNLESS OTHERWISE APPROVED BY THE STORMWATER DEPARTMENT.
5. THE PROPERTY MUST BE WATERED AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION ACTIVITIES SO AS TO PREVENT WIND-CAUSED EROSION. ALL LAND DISTURBING ACTIVITIES SHALL BE IMMEDIATELY DISCONTINUED WHEN FUGITIVE DUST IMPACTS ADJACENT PROPERTIES, AS DETERMINED BY THE CITY ENGINEERING DEPARTMENT.
6. ALL TEMPORARY (STRUCTURAL) EROSION CONTROL MEASURES MUST BE INSPECTED AND REPAIRED OR RECONSTRUCTED AS NECESSARY AFTER EACH RUNOFF EVENT AND EVERY 14 DAYS IN ORDER TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL RETAINED SEDIMENTS, PARTICULARLY THOSE ON PAVED ROADWAY SURFACES, SHALL BE REMOVED AND DISPOSED OF IN A MANNER AND LOCATION SO AS NOT TO CAUSE THEIR RELEASE INTO ANY DRAINAGEWAY.
7. NO SOIL STOCKPILE SHALL EXCEED TEN (10) FEET IN HEIGHT. ALL SOIL STOCKPILES SHALL BE PROTECTED FROM SEDIMENT TRANSPORT BY SURFACE ROUGHENING, WATERING, AND PERIMETER SILT FENCING. ANY SOIL STOCKPILE REMAINING AFTER 30 DAYS SHALL BE SEEDED AND MULCHED. SEED MIX SPECIFIED ON THE LANDSCAPE PLAN.
8. CITY ORDINANCE PROHIBITS THE TRACKING, DROPPING, OR DEPOSITING OF SOILS OR ANY OTHER MATERIAL ONTO CITY STREETS BY OR FROM ANY VEHICLE. ANY INADVERTENT DEPOSITED MATERIAL SHALL BE CLEANED IMMEDIATELY BY THE CONTRACTOR. DURING BUILDING DEMOLITION AND UTILITY INSTALLATION, VEHICLES MAY NOT LEAVE THE SITE IF THERE IS SEDIMENT ON THE VEHICLE. A TRACKING PAD SHALL BE INSTALLED IN THE EXCAVATED AREA OR A MODULAR PAD SHALL BE USED. IF NEITHER IS POSSIBLE, TRUCKS SHALL BE HAND CLEANED PRIOR TO EXITING THE CONSTRUCTION AREA.

NOTES CONTINUED:

9. OWNER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING A STATE OF COLORADO CDPHE. GENERAL PERMIT APPLICATION/STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY PRIOR TO CONSTRUCTION (NPDES PERMIT). THE OWNER/CONTRACTOR SHALL PROVIDE THE CITY WITH A COPY OF THIS PERMIT APPLICATION TO THE STATE PRIOR TO RECEIVING A GRADING/CONSTRUCTION PERMIT. THE OWNER/CONTRACTOR IS RESPONSIBLE FOR ALL FEES ASSOCIATED WITH THIS STATE PERMIT. SEE EROSION CONTROL NOTES ON THE GENERAL NOTES PAGE FOR MORE DETAILS.
10. TRASH STORAGE, PORTABLE TOILETS AND OTHER ON SITE POLLUTANT SOURCES TO BE LOCATED BASED ON THE COLORADO DISCHARGE PERMIT SYSTEM - STORMWATER CONSTRUCTION PERMIT STORMWATER MANAGEMENT PLAN. TOILETS ARE TO BE STAKED DOWN. TOILETS AND OTHER ON SITE POLLUTANT SOURCES ARE TO BE LOCATED NO CLOSER THAN 50 FEET FROM THE NEAREST INLET OR STATE WATERS.
11. THE PERIMETER OF THE CONSTRUCTION AREA SHALL BE FENCED OFF USING ORANGE CONSTRUCTION FENCING OR OTHER CONTRACTOR FENCING.
12. NO DISTURBANCE SHALL OCCUR WITHIN ANY BUFFER ZONE AND NO PERSON SHALL ENGAGE IN ANY ACTIVITY THAT WILL DISTURB, REMOVE, FILL, DREDGE, CLEAR, DESTROY, OR ALTER ANY AREA, INCLUDING VEGETATION WITHIN NATURAL HABITATS OR FEATURES INCLUDING WITHOUT LIMITATION, LAKES, PONDS, STREAM CORRIDORS AND WETLANDS EXCEPT AS SPECIFICALLY APPROVED AND NOTED IN SECTION 3.4.1(D)2.C.

DRAINAGE SUMMARY TABLE

Design Point	Tributary Sub-basin	Area (ac)	C(2)	C(10)	C(100)	tc(2) (min)	tc(10) (min)	tc(100) (min)	Q(2)tot (cfs)	Q(10)tot (cfs)	Q(100)tot (cfs)
1 (SW)	1 (SW)	1.24	0.39	0.39	0.49	12.0	12.0	11.4	1.0	1.7	4.5
2 (NE)	2 (NE)	3.16	0.46	0.46	0.58	14.1	14.1	14.1	2.8	4.6	12.3

**PRELIMINARY
NOT FOR CONSTRUCTION**

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

1218 W. 14th, Suite C
Windsor, Colorado 80550
Phone: (970) 686-8000
Fax: (970) 684-5330
INTEREST CONSULTING GROUP

PREPARED FOR:
MAX CONSULTING, LLC
4061 S. CLERMONT ST.
ENGLEWOOD, CO 80113
PH. (970) 482-7420

**MVG-MORNINGSTAR
ASSISTED & MEMORY CARE PROJECT
DRAINAGE & EROSION CONTROL PLAN**

DATE: 08/14/13
SCALE (H): 1"=40'
SCALE (V): N/A
DESIGNED BY: MM
CHECKED BY: RA



PROJ. NO. 1173-105-00

DR (40F4)

APPENDIX B

HYDROLOGIC COMPUTATIONS

James H. Stewart and Associates, Inc.

Consulting Engineers

March 15, 1978

STORM DRAINAGE SWALE COLLINDALE SECOND FILING

The swale that exists at the Easterly side of Collindale, Second Filing will receive drainage from the following areas:

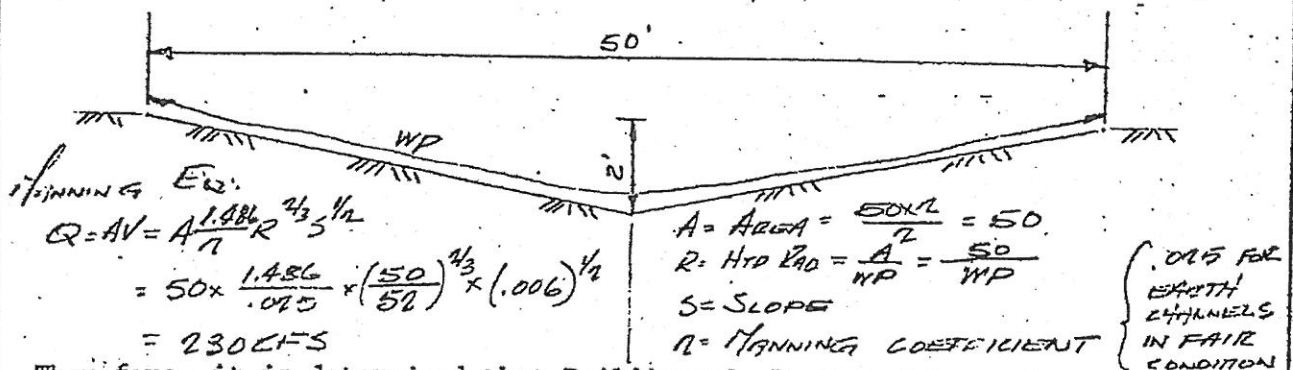
Foothills Meadow Apartments	-	16 Acres
Warren Shores	-	23 Acres
North Shore P.U.D.	-	10 Acres
Warren Lake Park	-	26 Acres
Collindale, First Filing	-	11 Acres
TOTAL		86 Acres

Of the above areas, North Shore P.U.D. does have onsite detention and the Warren Lake Park will not increase the runoff, due to development, to a great extent. The runoff for a 100 year frequency storm would be as follows:

Foothills Meadows	Q = 0.8 x 4.2 x 16 = 54 c.f.s.
Warren Shores	Q = 0.6 x 4.2 x 23 = 58 c.f.s.
North Shore P.U.D.	Q = 0.4 x 5 x 10 = 20 c.f.s.
Warren Lake Park	Q = 0.4 x 5 x 26 = 52 c.f.s.
Collindale	Q = 0.6 x 5 x 11 = 33 c.f.s.

TOTAL = 217 c.f.s

The swale would be as shown below to carry the 100 year storm.



Therefore, it is determined that Buildings C, D, E, and F as shown on the site plan would not be damaged during a 100 year frequency storm.

Richard A. Rutherford

Richard A. Rutherford, P.E. & L.S.



Worksheet for Q100 PROP Typical Section (NO PAN & NO PINCH)

Project Description

Flow Element: Irregular Section
 Friction Method: Manning Formula
 Solve For: Normal Depth

Input Data

Channel Slope: 0.00600 ft/ft
 Discharge: 150.20 ft³/s

Options

Current Roughness Weighted Meth: ImprovedLotters
 Open Channel Weighted Roughnes: ImprovedLotters
 Closed Channel Weighted Roughne: Hortons

Results

Roughness Coefficient: 0.025
 Water Surface Elevation: 1.70 ft
 Elevation Range: 0.00 to 2.15 ft
 Flow Area: 36.48 ft²
 Wetted Perimeter: 43.13 ft
 Top Width: 42.99 ft
 Normal Depth: 1.70 ft
 Critical Depth: 1.54 ft
 Critical Slope: 0.00997 ft/ft
 Velocity: 4.12 ft/s
 Velocity Head: 0.26 ft
 Specific Energy: 1.96 ft
 Froude Number: 0.79
 Flow Type: Subcritical

Segment Roughness

Start Station	End Station	Roughness Coefficient
(0+25, 1.83)	(-0+25, 2.15)	0.025

Section Geometry

Station	Elevation
0+25	1.83
0+00	0.00

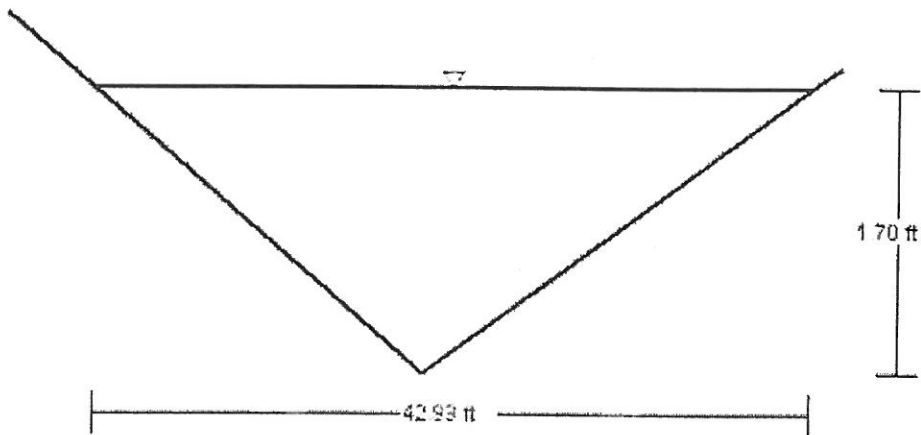
Worksheet for Q100 PROP Typical Section (NO PAN & NO PINCH)

Station	Elevation
-0+25	2.15

Cross Section for Q100 PROP Typical Section (NO PAN & NO PINCH)

Project Description	
Flow Element:	Irregular Section
Friction Method:	Manning Formula
Solve For:	Normal Depth

Section Data		
Roughness Coefficient:	0.025	
Channel Slope:	0.00600	ft/ft
Normal Depth:	1.70	ft
Elevation Range:	0.00 to 2.15 ft	
Discharge:	150.20	ft ³ /s



V. 10
H. 1

Table RO-11

Rational Method Runoff Coefficients for Composite Analysis

Character of Surface	Runoff Coefficient
Streets, Parking Lots, Drives:	
Asphalt	0.95
Concrete	0.95
Gravel	0.5
Roofs	0.95
Recycled Asphalt	0.8
Lawns, Sandy Soil:	
Flat <2%	0.1
Average 2 to 7%	0.15
Steep >7%	0.2
Lawns, Heavy Soil:	
Flat <2%	0.2
Average 2 to 7%	0.25
Steep >7%	0.35

(4) A new *Section 2.9* is added, to read as follows:

2.9 Composite Runoff Coefficient

Drainage sub-basins are frequently composed of land that has multiple surfaces or zoning classifications. In such cases a composite runoff coefficient must be calculated for any given drainage sub-basin.

The composite runoff coefficient is obtained using the following formula:

$$C = \frac{\sum_{i=1}^n (C_i * A_i)}{A_t} \tag{RO-8}$$

Where: C = Composite Runoff Coefficient

C_i = Runoff Coefficient for Specific Area (A_i)

A_i = Area of Surface with Runoff Coefficient of C_i, acres or feet²

n = Number of different surfaces to be considered

A_t = Total Area over which C is applicable, acres or feet²

(5) A new *Section 2.10* is added, to read as follows:

RAINFALL INTENSITY-DURATION-FREQUENCY CURVE

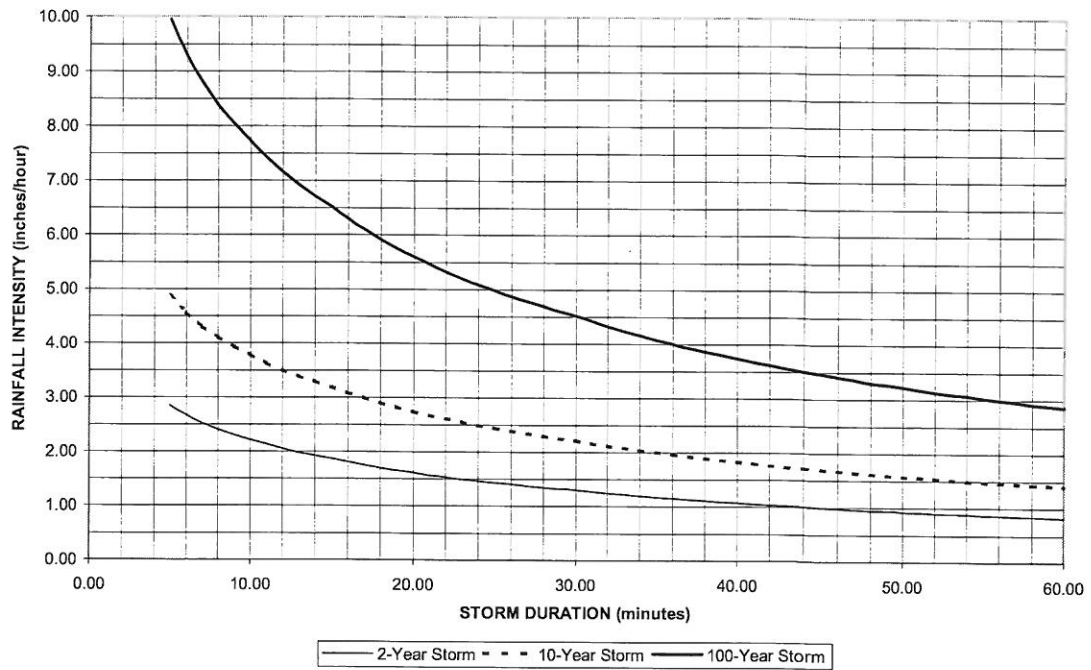


Figure RA-16 City of Fort Collins Rainfall Intensity-Duration-Frequency Curves

- (13) *Section 5.0* is deleted in its entirety.
- (14) *Section 6.0* is deleted in its entirety.
- (15) *Section 7.0* is deleted in its entirety.
- (16) *Section 7.1* is deleted in its entirety.
- (17) *Section 7.2* is deleted in its entirety.
- (18) *Section 7.3* is deleted in its entirety.
- (19) *Section 8.0* is deleted in its entirety.
- (20) *Table RA-1* is deleted in its entirety.

SUMMARY

DRAINAGE SUMMARY TABLE

Design Point	Tributary Sub-basin	Area (ac)	C (2)	C (10)	C (100)	tc (2) (min)	tc (10) (min)	tc (100) (min)	Q(2)tot (cfs)	Q(10)tot (cfs)	Q(100)tot (cfs)	DRAINAGE STRUCTURE /REMARKS
1 (SW)	1 (SW)	1.24	0.39	0.39	0.49	12.0	12.0	11.4	1.0	1.7	4.5	
2 (NE)	2 (NE)	3.18	0.46	0.46	0.58	14.1	14.1	14.1	2.8	4.8	12.3	

DELICH ASSOCIATES Traffic & Transportation Engineering

2272 Glen Haven Drive Loveland, Colorado 80538
Phone: (970) 669-2061 Fax: (970) 669-5034



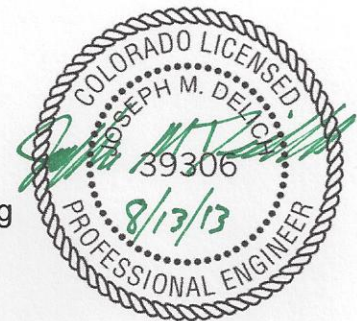
MEMORANDUM

TO: Max C. Martin, Max Consulting
Cathy Mathis, The Birdsell Group
Ward Stanford, City of Fort Collins Traffic Engineering

FROM: Joe/Matt Delich

DATE: August 13, 2013

SUBJECT: MorningStar Assisted Living/Memory Care Transportation Impact Study
(File: 1310ME02)



This memorandum addresses the transportation impacts of the proposed MorningStar Assisted Living/Memory Care development. MorningStar Assisted Living/Memory Care is located in the northwest quadrant of the Horsetooth/Lochwood-Collindale Access intersection in Fort Collins. The site location is shown in Figure 1. The site is currently vacant. MorningStar Assisted Living/Memory Care will consist of 77 beds. The scope of this study was discussed with the Fort Collins Traffic Operations Engineer. A brief memorandum was requested. The Base Assumptions form is provided in Appendix A. There are sidewalks along Horsetooth Road and Lochwood Drive. There are bicycle lanes along Horsetooth Road and Lockwood Drive. Transfort Route 5 has a stop at the Horsetooth/Lemay intersection approximately 1650 feet away from this site.

Horsetooth Road is south of (adjacent to) the proposed MorningStar Assisted Living/Memory Care site. It is an east-west street classified as a four-lane arterial street according to the Fort Collins Master Street Plan. Currently, Horsetooth Road has a four-lane cross section. At the Horsetooth/Lochwood-Collindale Access intersection, Horsetooth Road has an eastbound and westbound left-turn lane and two through lanes in each direction. There is stop sign control at the Horsetooth/Lochwood-Collindale Access intersection on Lochwood Drive and the Collindale Access. Horsetooth Road has a posted speed of 40 mph.

Lochwood Drive is east of (adjacent to) the proposed MorningStar Assisted Living/Memory Care site. It is a north-south street classified as a two-lane collector street according to the Fort Collins Master Street Plan. Currently, Lochwood Drive has a two-lane cross section. Lochwood Drive only has a public street on the north leg at the Horsetooth/Lochwood-Collindale Access intersection. The south leg is an access to the Collindale Golf Course and C.B. & Potts Restaurant. At the Horsetooth/Lochwood-Collindale Access intersection, Lochwood Drive has a southbound left-turn/through lane and a southbound right-turn lane. The Collindale Access has all movements combined into a single lane. At the Lochwood/Gas Station Access and Lochwood/Kindercare

Access intersections, Lockwood Drive has all movements combined into a single lane. There is stop sign control at the Lochwood/Gas Station Access and Lochwood/Kindercare Access intersections on the Gas Station Access and Kindercare Access, respectively. Lochwood Drive has a posted speed of 25 mph. The Gas Station Access and Kindercare Access serve more uses; however, there are the primary uses and were used for naming purposes.

Figure 2 shows recent afternoon peak hour counts at the Horsetooth/Lochwood-Collindale Access, Lochwood/Gas Station Access, and Lochwood/Kindercare Access intersections. The count data was obtained in February 2013. Raw traffic data is provided in Appendix B. Since the traffic counts were obtained on different days, they were balanced between intersections and are shown in Figure 3. Table 1 shows the current morning and afternoon peak hour operation of the Horsetooth/Lochwood-Collindale Access, Lochwood/Gas Station Access, and Lochwood/Kindercare Access intersections. Calculation forms are provided in Appendix C. A description of level of service for unsignalized intersections from the 2010 Highway Capacity Manual and a table showing the Fort Collins Motor Vehicle LOS Standards (Intersections) are also provided in Appendix C. The MorningStar Assisted Living/Memory Care site is in an area termed “low density mixed use district” on the Fort Collins Structure Plan. In areas termed “low density mixed use district,” acceptable operation at unsignalized intersections along arterial streets during the peak hours, is defined as level of service F, which is considered to be normal in an urban environment. The key intersections operate acceptably during the morning and afternoon peak hours. At the Horsetooth/Lochwood-Collindale Access intersection, the calculated delay for some movements was commensurate with level of service F during the peak hours.

Figure 4 shows the site plan for MorningStar Assisted Living/Memory Care. Trip Generation, 9th Edition, ITE was used as the reference document in calculating the trip generation. Code 254, Assisted Living with occupied beds as the trip generation variable was used. Table 2 shows the trip generation for MorningStar Assisted Living/Memory Care. This trip generation was discussed and agreed to in the scoping meeting. The trip generation for MorningStar Assisted Living/Memory Care is calculated at: 254 daily trip ends, 17 morning peak hour trip ends and 28 afternoon peak hour trip ends.

The trip distribution for this site is shown in Figure 5. The trip distribution was determined using the existing traffic counts, knowledge of the existing and planned street system, development trends, and engineering judgment. The trip distribution was discussed and agreed to in the scoping meeting. Figure 6 shows the site generated traffic assignment of MorningStar Assisted Living/Memory Care.

Figure 7 shows the short range (2018) background afternoon peak hour traffic at the Horsetooth/Lochwood-Collindale Access, Lochwood/Gas Station Access, and Lochwood/Kindercare Access intersections. Background traffic volume forecasts for the short range (2018) future were obtained by reviewing traffic studies for other developments in this area and reviewing historic counts in the area. The traffic on Horsetooth Road was increased at the rate of 1.5 percent per year. Lochwood Drive,

north of the site, is built out and therefore was not increased. Table 3 shows the short range (2018) background afternoon peak hour operation at the Horsetooth/Lochwood-Collindale Access, Lochwood/Gas Station Access, and Lochwood/Kindercare Access intersections. Calculation forms are provided in Appendix D. The key intersections operate acceptably during the morning and afternoon peak hours. At the Horsetooth/Lochwood-Collindale Access intersection calculated delay for some movements with level of service F during the peak hours.

Figure 8 shows the short range (2018) total peak hour traffic at the Horsetooth/Lochwood-Collindale Access, Lochwood/Gas Station Access, and Lochwood/Kindercare Access intersections. Table 4 shows the short range (2018) total peak hour operation at the Horsetooth/Lochwood-Collindale Access, Lochwood/Gas Station Access, and Lochwood/Kindercare Access intersections. Calculation forms are provided in Appendix E. The key intersections will operate acceptably during the morning and afternoon peak hours. At the Horsetooth/Lochwood-Collindale Access intersection calculated delay for some movements was commensurate with level of service F during the peak hours.

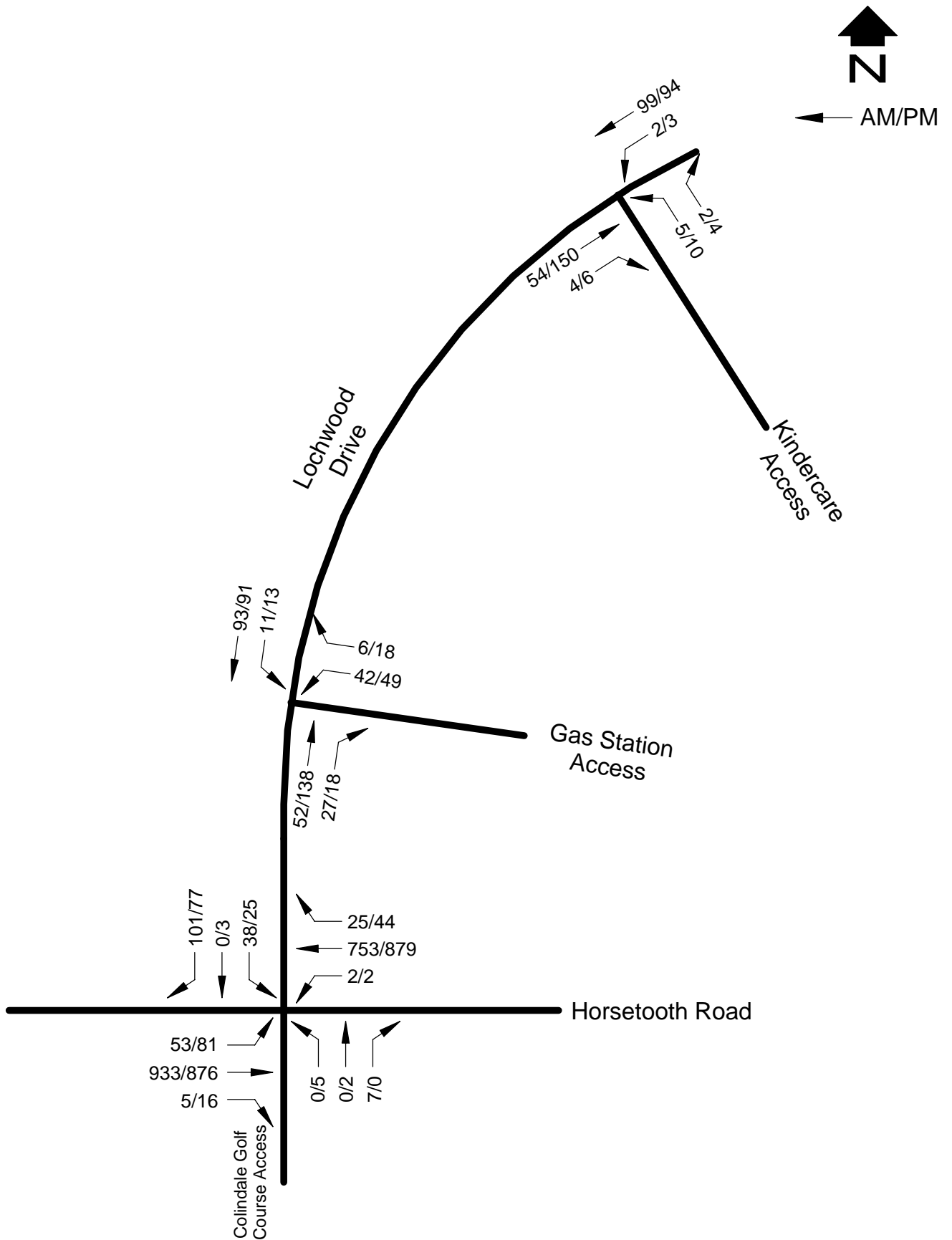
The existing westbound right-turn volume in one peak hour (pm) at the Horsetooth/Lochwood-Collindale Access intersection exceeds the threshold shown in Figure 8-4, LCUASS for a right-turn deceleration lane. This proposed development will add a small amount of traffic to this movement. Provision of this right-turn lane will not change the operational level of service at this intersection. Therefore, this right-turn lane is not recommended. Figure 9 shows the short range (2018) geometry at the Horsetooth/Lochwood-Collindale Access, Lochwood/Gas Station Access, and Lochwood/Kindercare Access intersections. This is the current geometry.

The MorningStar Assisted Living/Memory Care site is in an area within which the City requires pedestrian and bicycle level of service evaluations. As shown on the site plan (Figure 4), there is a concrete sidewalk along the north side of this property. This sidewalk was built by others and is maintained by others. This walk will remain and it is not the responsibility of this development. Appendix F shows a map of the area that is within 1320 feet of MorningStar Assisted Living/Memory Care. The MorningStar Assisted Living/Memory Care site is located within an area termed as “other,” which sets the level of service threshold at LOS C for all measured categories. There are five destination areas within 1320 feet of the proposed MorningStar Assisted Living/Memory Care: 1) the residential area to the north of the site, 2) the residential area to the east of the site, 3) the residential area to the west of the site, 4) Warren Park to the southwest of the site, and 5) Collindale Golf Course to the south of the site. Appendix F contains a Pedestrian LOS Worksheet. Acceptable pedestrian level of service will be achieved for all pedestrian destinations.

Appendix F shows a map of the area that is within 1320 feet of MorningStar Assisted Living/Memory Care. Based upon Fort Collins bicycle LOS criteria, there are two bicycle destinations: Warren Park and Collindale Golf Course to the south. The Bicycle LOS Worksheet is provided in Appendix F. This site connects directly to bike lanes on Horsetooth Road and Lochwood Drive, which achieves level of service A, as shown in Appendix F.

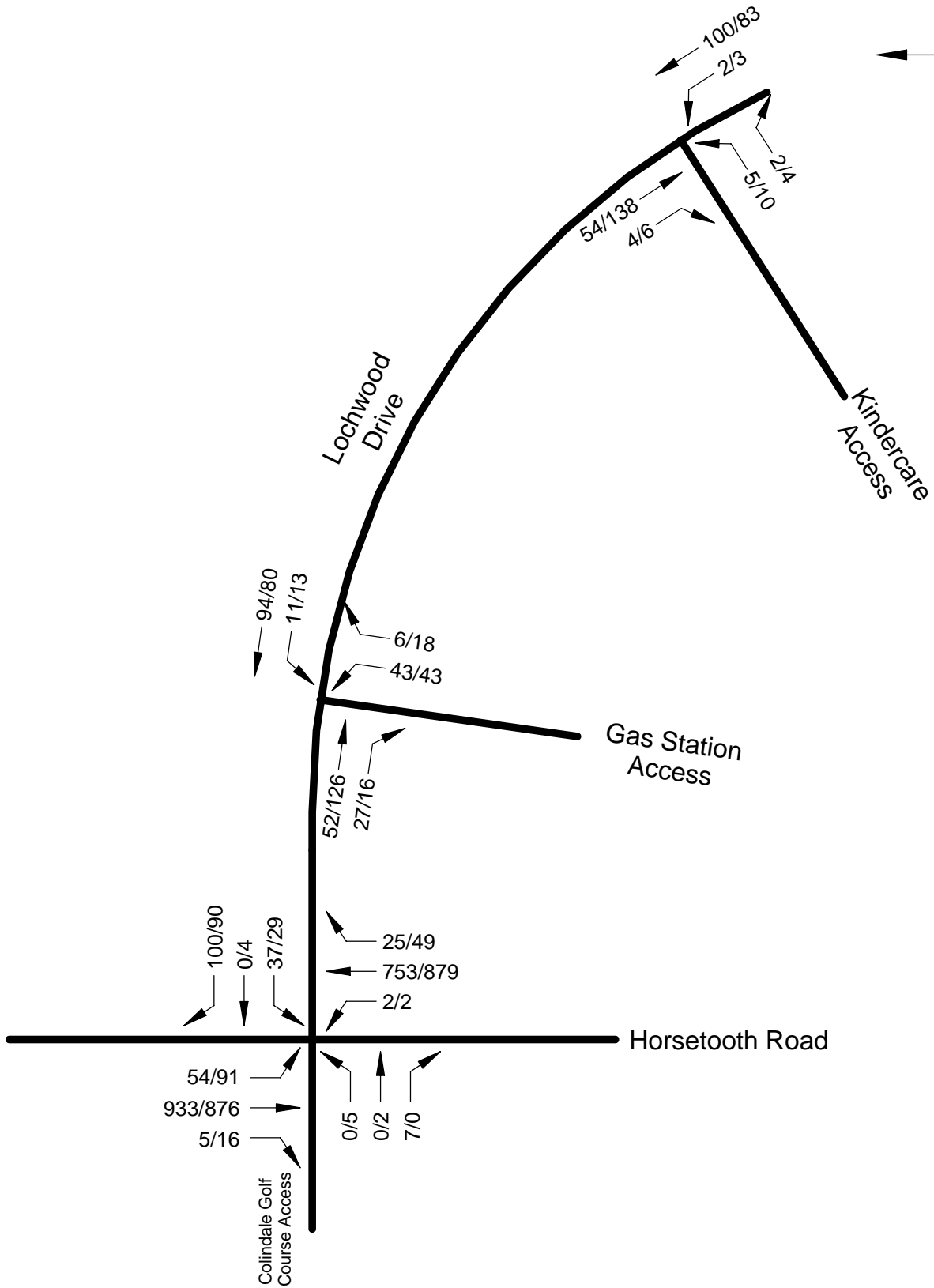
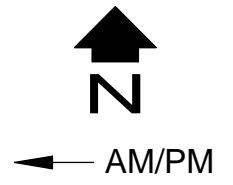
Transfort Route 5 (Horsetooth/Lemay intersection is approximately 1650 feet from this site. It is doubtful that residents of this facility would use the Transfort system, however employees could use it.

It is concluded that, with development of MorningStar Assisted Living/Memory Care, the future level of service at the Horsetooth/Lochwood-Collindale Access, Lochwood/Gas Station Access, and Lochwood/Kindercare Access intersections will be acceptable. No new auxiliary lanes are required at the key intersections. The level of service for pedestrian, bicycle, and transit modes will be acceptable.



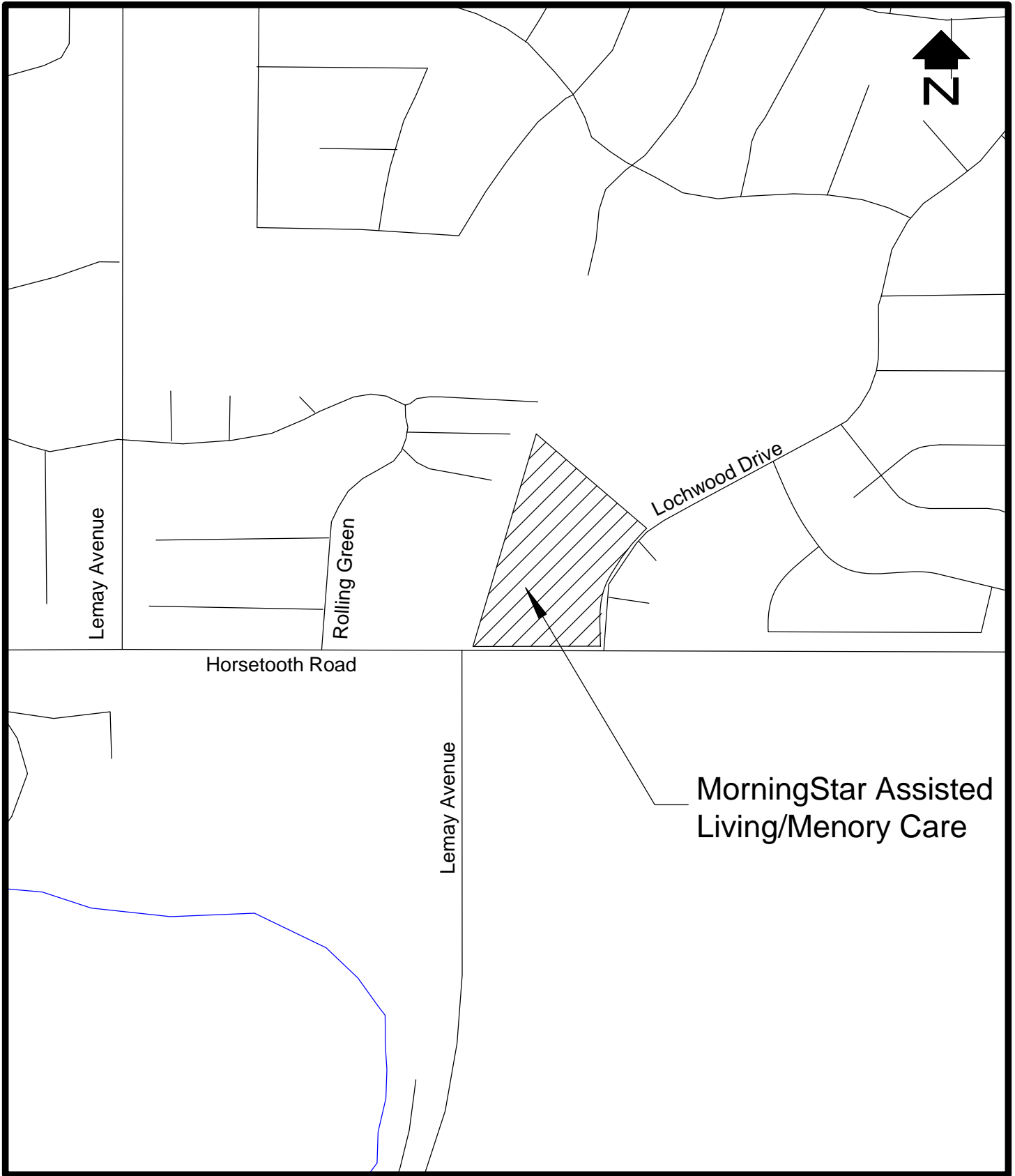
RECENT PEAK HOUR TRAFFIC

Figure 2



**BALANCED RECENT
PEAK HOUR TRAFFIC**

Figure 3



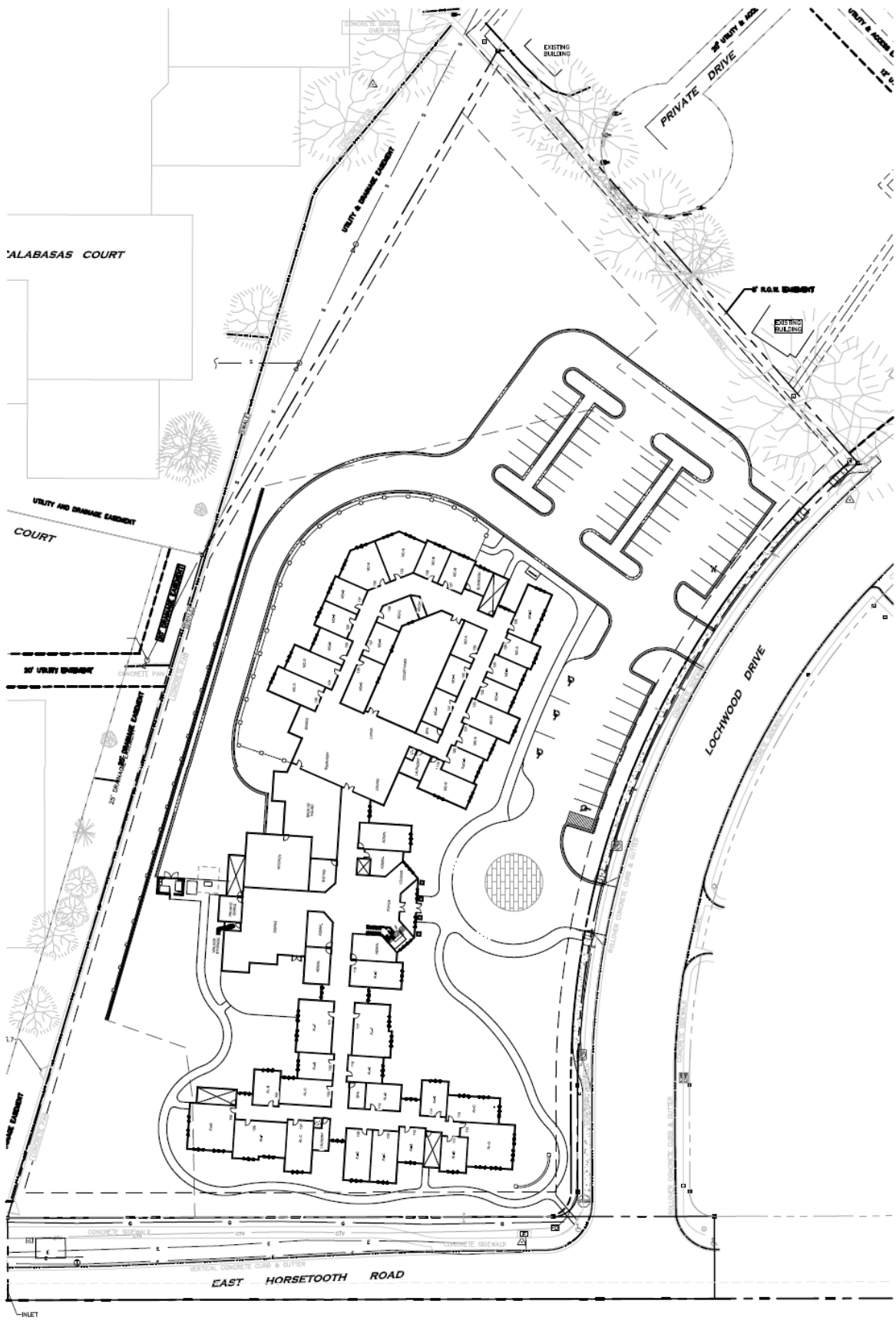
SCALE: 1"=500'

SITE LOCATION

Figure 1

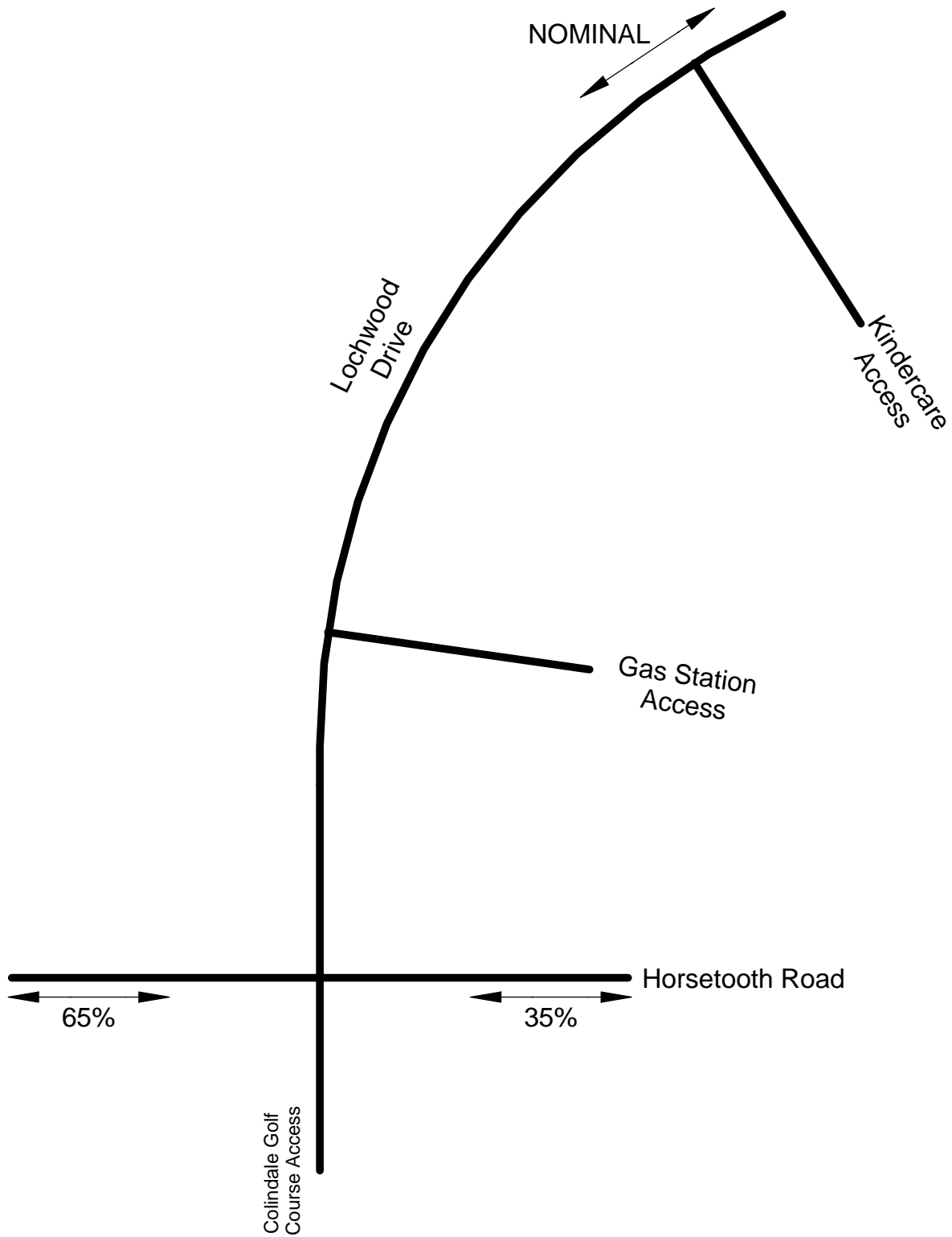
TABLE 1			
Current Peak Hour Operation			
Intersection	Movement	Level of Service	
		AM	PM
Horsetooth/Lochwood-Colindale Access (stop sign)	NB LT/T/RT	B	F
	EB LT	A	B
	WB LT	B	B
	SB LT	F	F
	SB T/RT	C	E
	SB APPROACH	D	F
Lochwood/Gas Station Access (stop sign)	WB LT/RT	A	B
	SB LT/T	A	A
Lochwood/Kindercare Access (stop sign)	WB LT/RT	A	A
	SB LT/T	A	A

TABLE 2												
Trip Generation												
Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
254	Assisted Living	93 beds	2.74	254	0.12	11	0.06	6	0.15	14	0.15	14



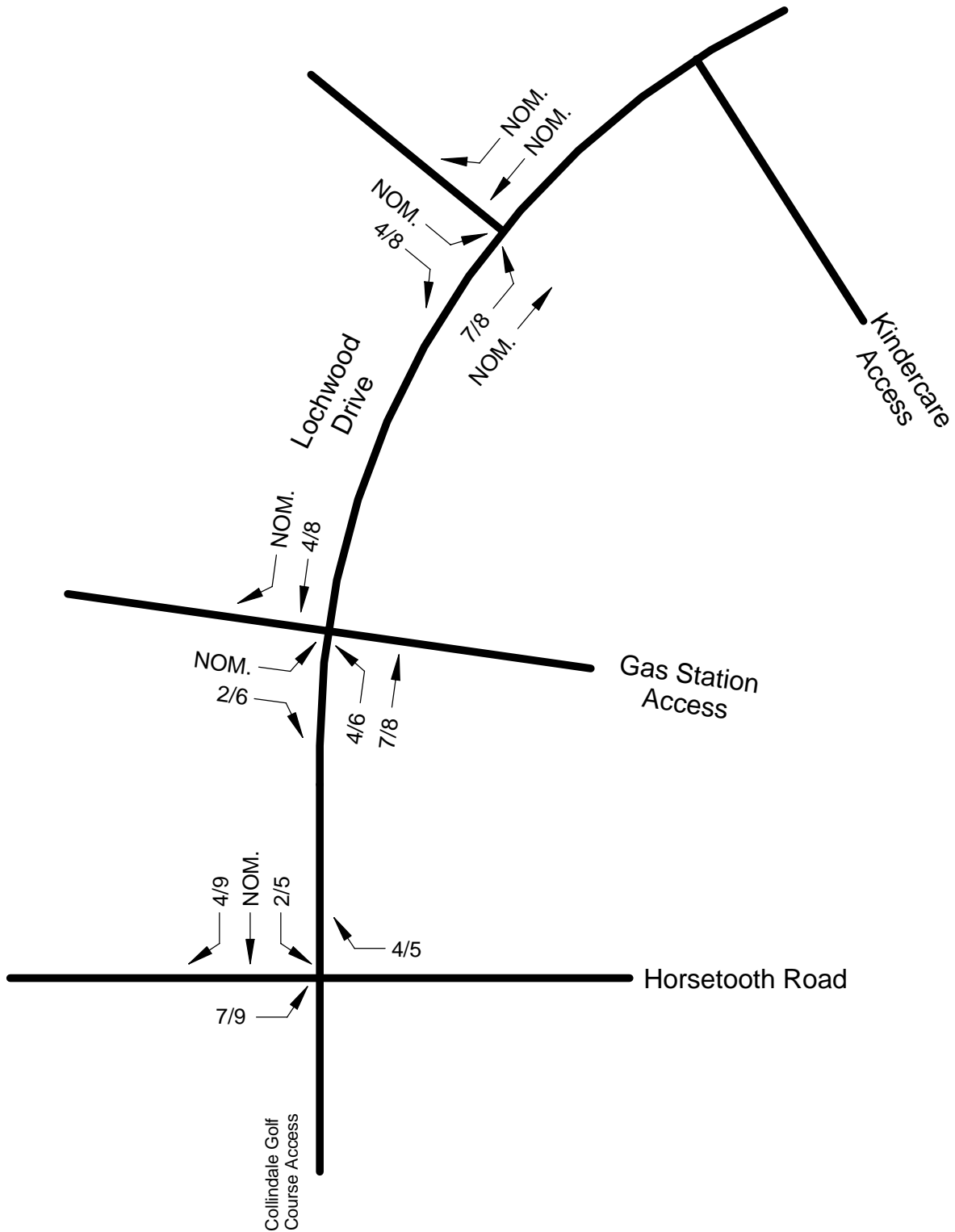
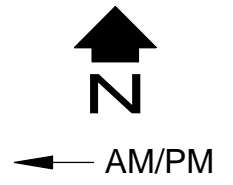
SITE PLAN

Figure 4



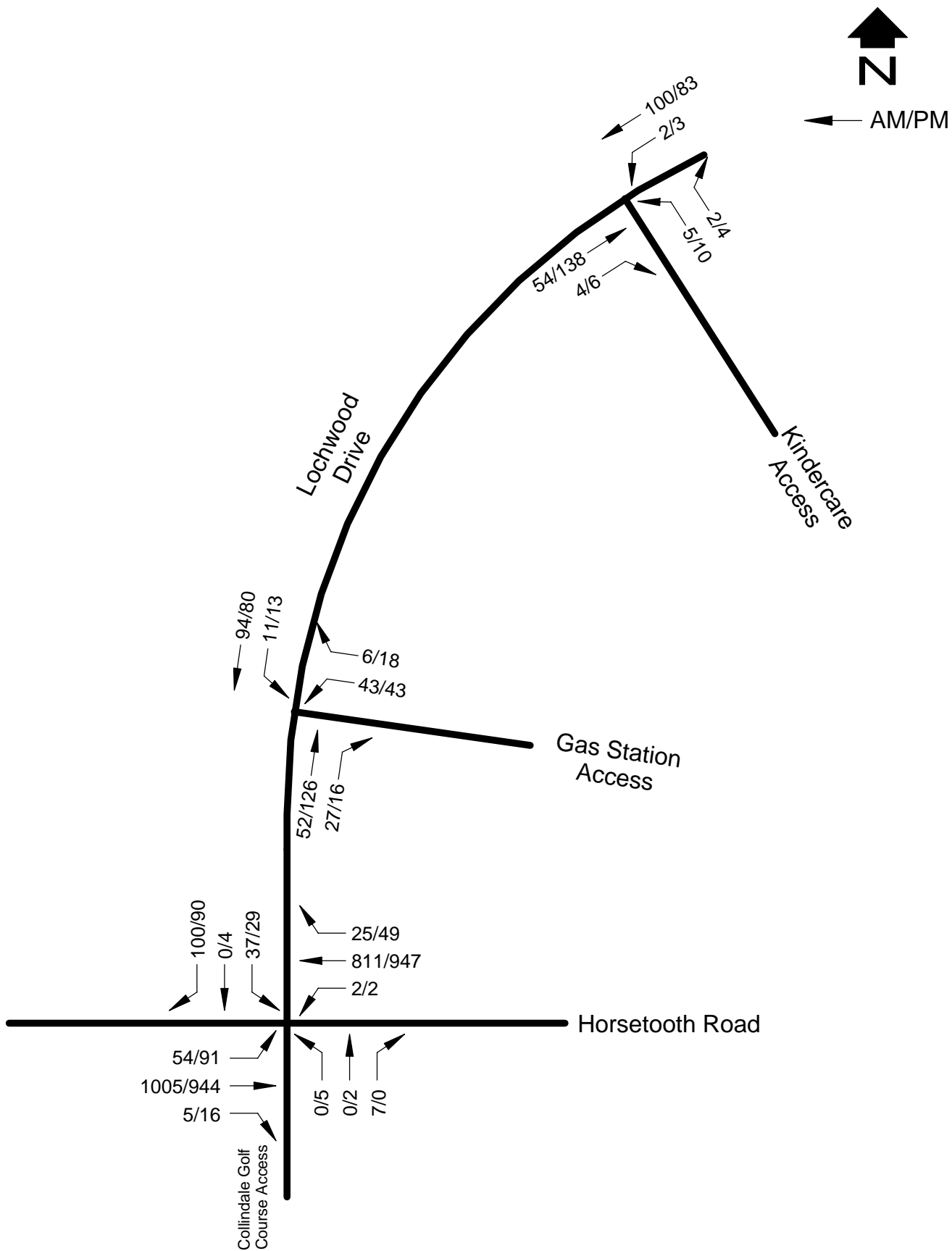
TRIP DISTRIBUTION

Figure 5



**SITE GENERATED
PEAK HOUR TRAFFIC**

Figure 6

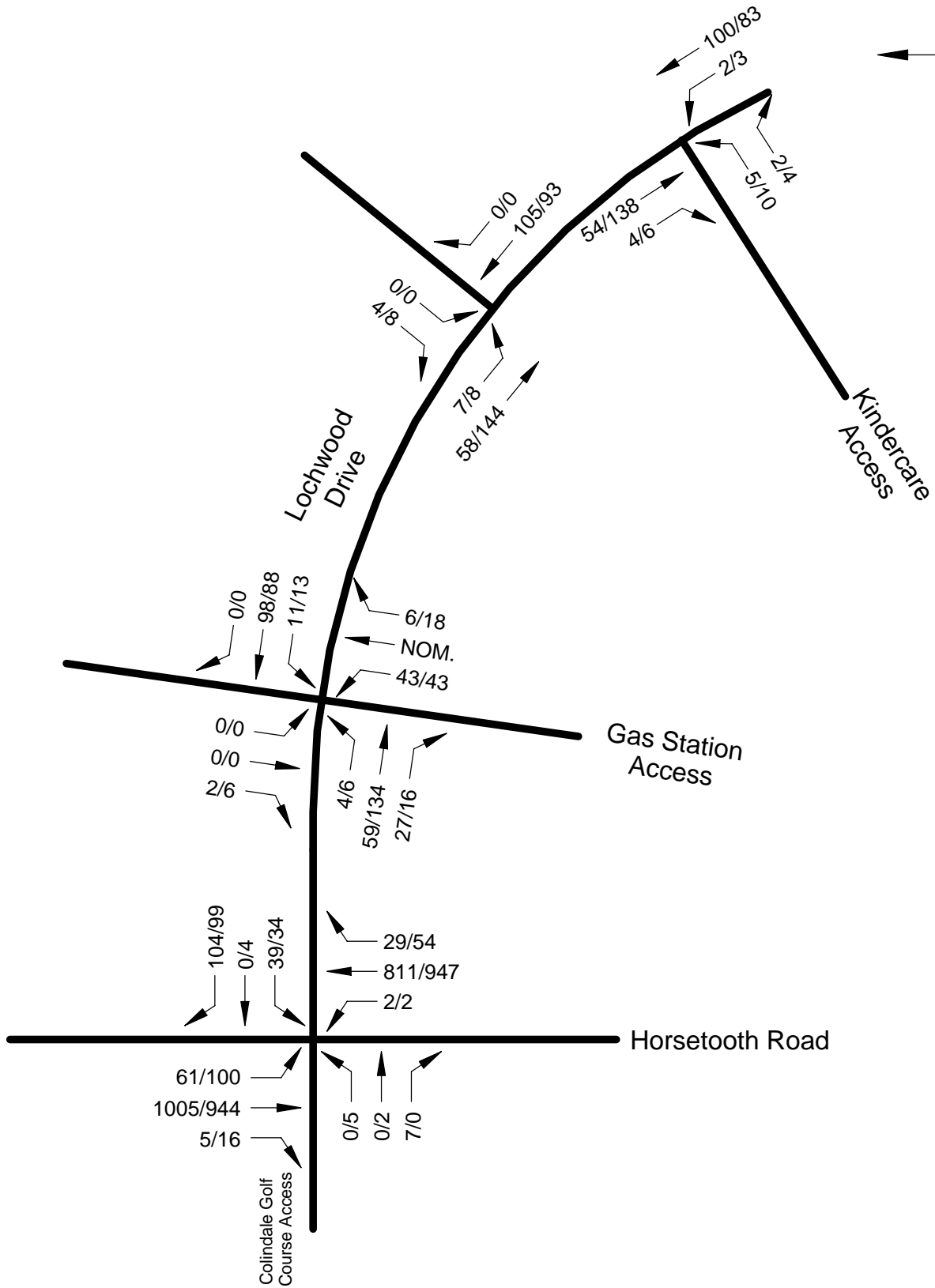
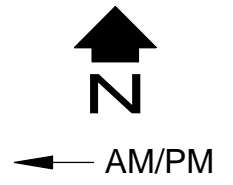


SHORT RANGE (2018) BACKGROUND PEAK HOUR TRAFFIC

Figure 7

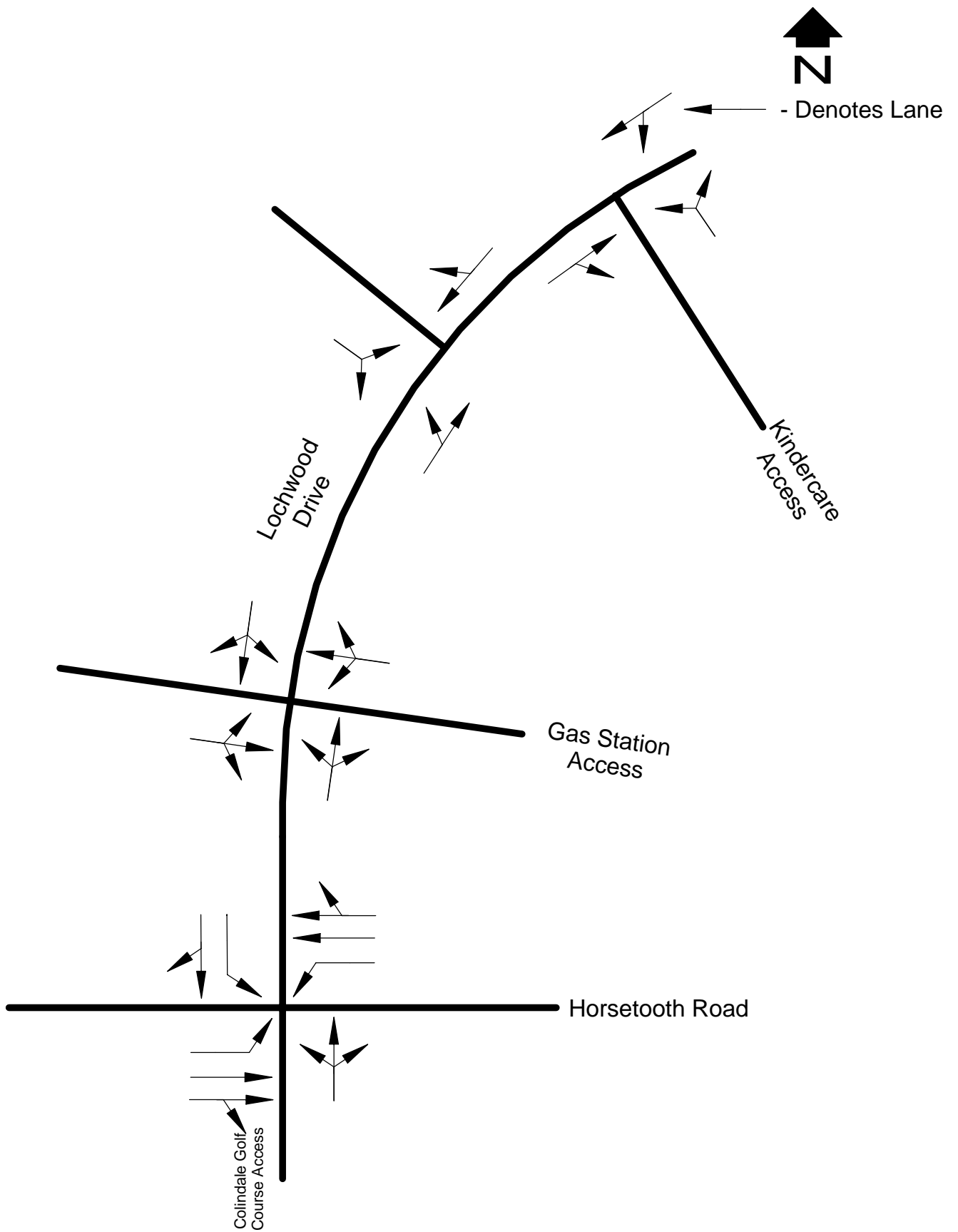
TABLE 3			
Short Range (2018) Background Peak Hour Operation			
Intersection	Movement	Level of Service	
		AM	PM
Horsetooth/Lochwood-Colindale Access (stop sign)	NB LT/T/RT	B	F
	EB LT	B	B
	WB LT	B	B
	SB LT	F	F
	SB T/RT	D	F
	SB APPROACH	E	F
Lochwood/Gas Station Access (stop sign)	WB LT/RT	A	B
	SB LT/T	A	A
Lochwood/Kindercare Access (stop sign)	WB LT/RT	A	A
	SB LT/T	A	A

TABLE 4			
Short Range (2018) Total Peak Hour Operation			
Intersection	Movement	Level of Service	
		AM	PM
Horsetooth/Lochwood-Colindale Access (stop sign)	NB LT/T/RT	B	F
	EB LT	B	B
	WB LT	B	B
	SB LT	F	F
	SB T/RT	D	F
	SB APPROACH	E	F
Lochwood/Gas Station Access- MorningStar Access (stop sign)	NB LT/T/RT	A	A
	EB LT/T/RT	A	A
	WB LT/T/RT	B	B
	SB LT/T/RT	A	A
Lochwood/MorningStar Access (stop sign)	NB LT/T	A	A
	EB LT/RT	A	A
Lochwood/Kindercare Access (stop sign)	WB LT/RT	A	A
	SB LT/T	A	A



SHORT RANGE (2018) TOTAL PEAK HOUR TRAFFIC

Figure 8



SHORT RANGE (2018) GEOMETRY

Figure 9

APPENDIX A

**Attachment A
Transportation Impact Study
Base Assumptions**

Project Information		
Project Name	MVG MORNINGSTAR	
Project Location	NW QUADRANT OF HORSETOOTH/LOCKWOOD	
TIS Assumptions		
Type of Study	Full: NO	Intermediate: MEMO ✓
Study Area Boundaries	North: SITE ACCESS	South: HORSETOOTH
	East: LOCKWOOD	West: LOCKWOOD
	Study Years	Short Range: 2018 (5 YRS) Long Range: N/A
Future Traffic Growth Rate	✓ 1.5% / YR - HORSETOOTH 0% - LOCKWOOD (BUILD)	
Study Intersections	1. All access drives (2)	5.
	✓ 2. HORSETOOTH/LOCKWOOD	6.
	3.	7.
	4.	8.
	Time Period for Study	AM: 7:00-9:00 PM: 4:00-6:00
Trip Generation Rates	PER ITE (ATTACHED)	
Trip Adjustment Factors	Passby: N/A	Captive Market: N/A
Overall Trip Distribution	SEE ATTACHED SKETCH	
Mode Split Assumptions	N/A	
Committed Roadway Improvements	NOT AWARE OF ANY	
Other Traffic Studies	NOT AWARE OF ANY	
Areas Requiring Special Study	—	

Date: FEBRUARY, 2013
 Traffic Engineer: DELICH ASSOCIATES
 Local Entity Engineer: HE [Signature] 2/19/13

1310 BAF



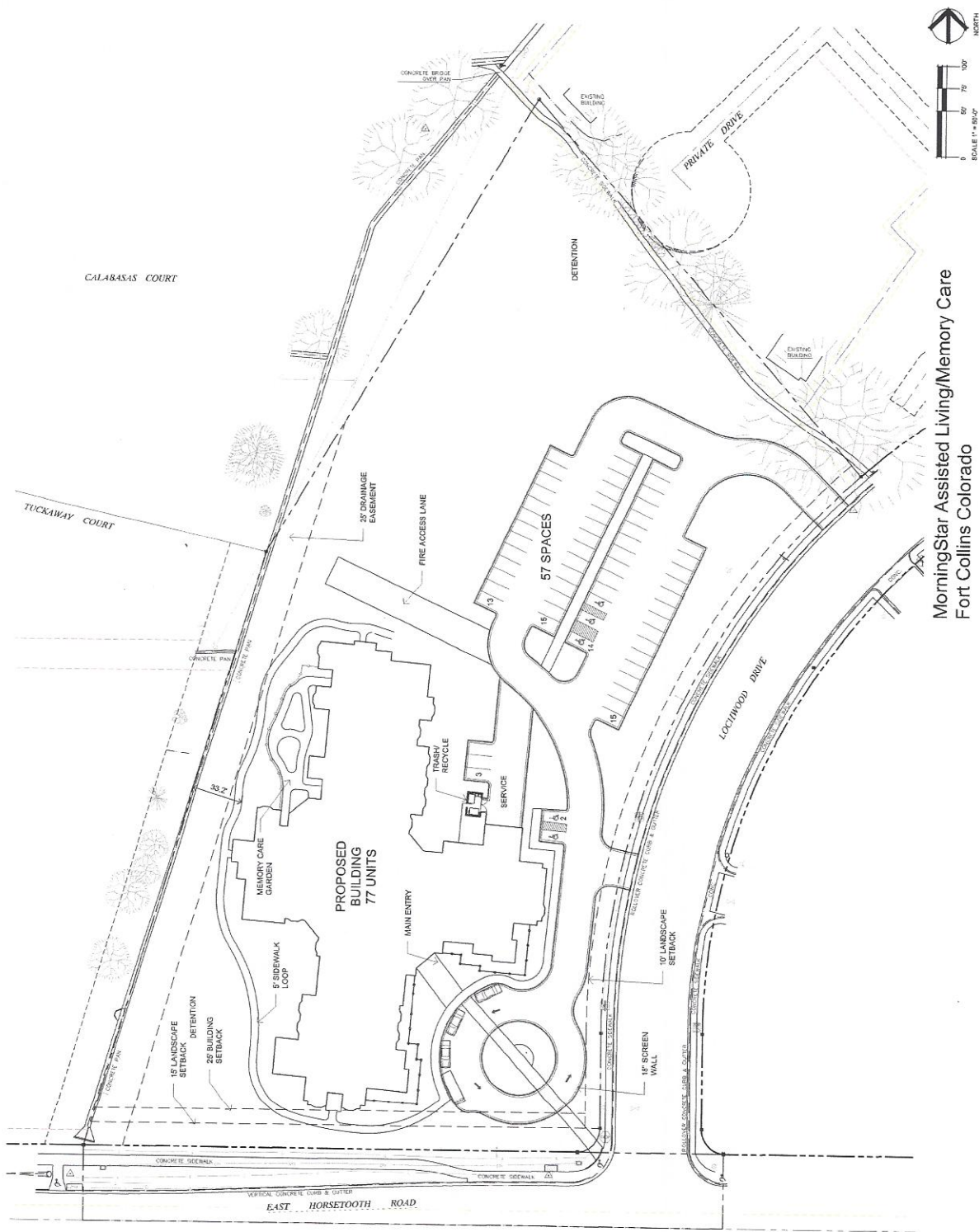
© 2013 Google

Google earth

Google earth



SITE LOCATION



MorningStar Assisted Living/Memory Care
Fort Collins Colorado

Site Plan - 3.25.13



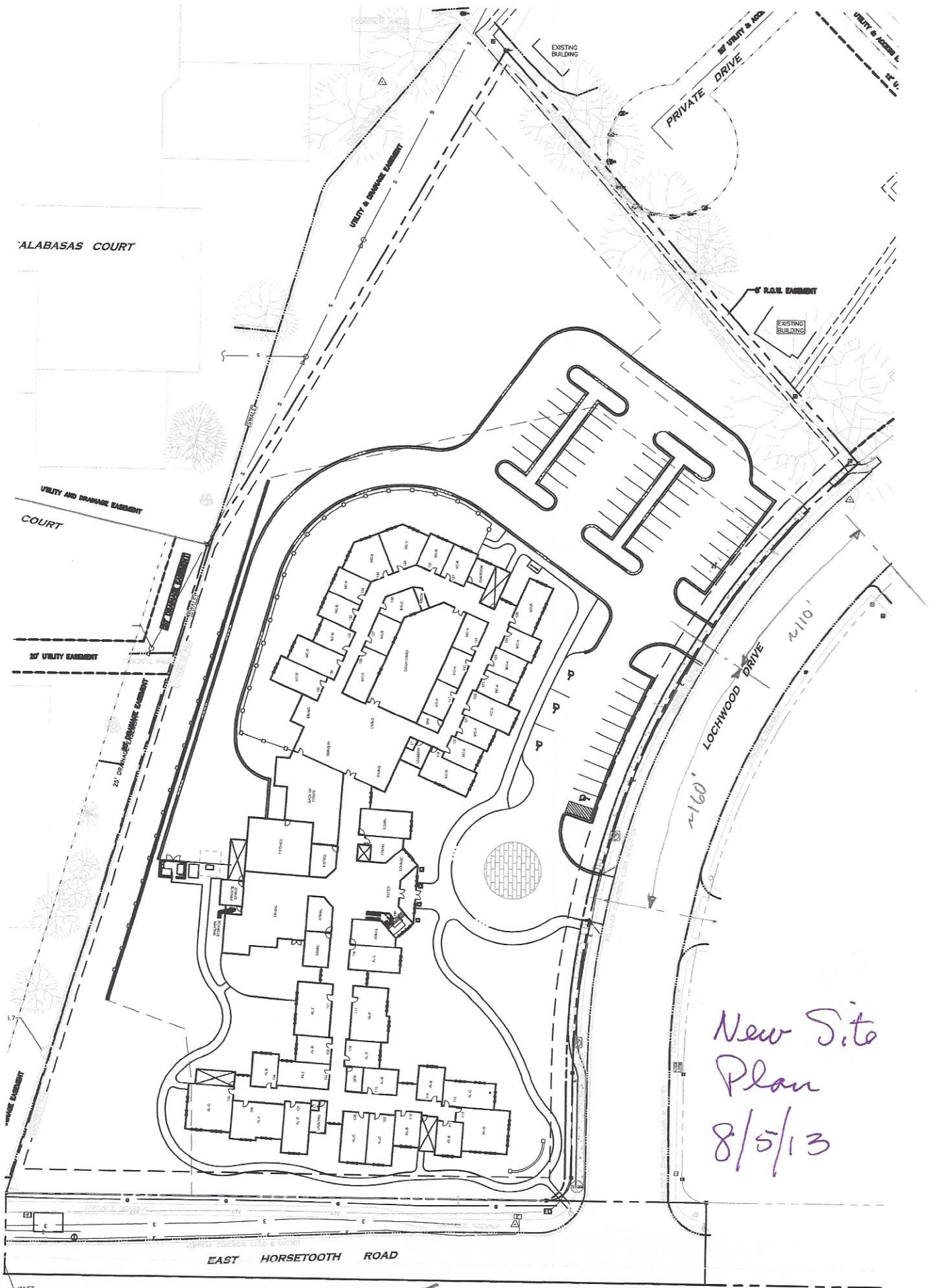
OLD SITE PLAN
3/13

SITE PLAN

Figure 4



MorningStar Assisted Living/Memory Care TIS, March 2013



New Site
Plan
8/5/13

5

1" = 50'

MVG MORNINGSTAR - ASSISTED LIVING/MEMORY CARE

93 ~~ATT~~ UNITS/BEDS

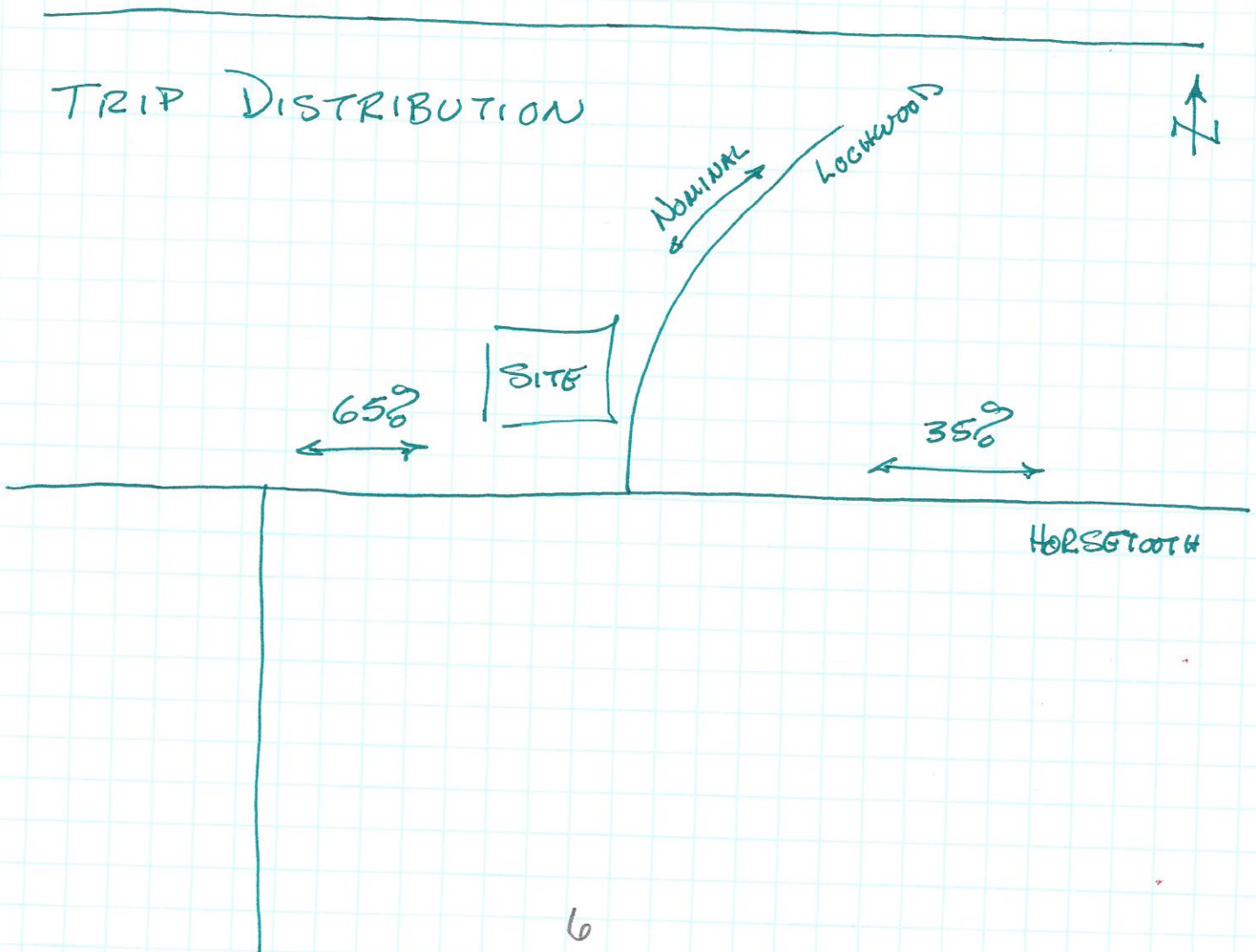
ASSISTED LIVING (CODE: 254, T.G. 9TH)
VARIABLE - OCCUPIED BEDS

DAILY (2.74) - ~~210~~ → 254

AM (0.18) IN (68%) [0.12] - ~~9~~ → 11
OUT (32%) [0.06] - ~~5~~ → 6

PM (0.29) IN (50%) [0.145] - ~~11~~ → 14
OUT (50%) [0.145] - ~~11~~ → 14

TRIP DISTRIBUTION



APPENDIX B

DELICH ASSOCIATES
 2272 GLEN HAVEN DRIVE
 LOVELAND, CO 80538
 Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 2/19/2013

Observer: Sue

Day: Tuesday

Jurisdiction: Fort Collins

Intersection: Horsetooth/Lochwood

R = right turn
 S = straight
 L = left turn

Time Begins	Northbound: Lochwood			Southbound: Lochwood			Total north/south	Eastbound: Horsetooth			Westbound: Horsetooth			Total east/west	Total All
	L	S	R	Total	L	S		R	Total	L	S	R	Total		
7:30	0	0	0	0	14	0	25	39	14	278	0	192	5	197	528
7:45	0	0	0	0	10	0	28	38	14	255	1	203	10	213	521
8:00	0	0	0	0	9	0	17	26	12	231	4	174	8	183	456
8:15	0	0	0	0	5	0	31	36	13	169	0	184	2	187	405

7:30-8:30	0	0	0	0	38	0	101	139	53	933	5	753	25	780	1771	1910
PHF	n/a							0.89	0.85							0.92

4:30	0	0	2	2	4	0	21	25	15	215	4	207	9	216	450	477
4:45	0	0	1	1	5	0	25	30	28	207	5	242	11	254	494	525
5:00	3	0	2	5	6	2	9	17	21	245	1	229	10	240	507	529
5:15	2	2	2	6	10	1	22	33	17	209	6	201	14	215	447	486

4:30-5:30	5	2	7	14	25	3	77	105	81	876	16	879	44	925	1898	2017
PHF	0.58							0.8	0.91							0.91

DELICH ASSOCIATES
 2272 GLEN HAVEN DRIVE
 LOVELAND, CO 80538
 Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 2/20/2013 Observer: Sue
 Day: Wednesday Jurisdiction: Fort Collins

Intersection: Lockwood/Gas Station Access

R = right turn
 S = straight
 L = left turn

Time Begins	Northbound: Lochwood			Southbound: Lochwood			Total north/south	Eastbound:			Westbound: Gas Station A			Total east/west	Total All	
	L	S	R	Total	L	S		R	Total	L	S	R	Total			
7:30		18	7	25	2	22		49					6	0	6	55
7:45		12	5	17	3	28		48					14	2	16	64
8:00		7	5	12	4	19		35					9	2	11	46
8:15		15	10	25	2	24		51					13	2	15	66

7:30-8:30	0	52	27	79	11	93	0	104	183	0	0	0	42	0	6	48	231
PHF				0.79				0.84					n/a			0.75	

4:30		32	7	39	6	15		60	60				13	4	17	17	77
4:45		39	3	42	1	29		72	72				14	6	20	20	92
5:00		32	5	37	4	22		63	63				12	6	18	18	81
5:15		35	3	38	2	25		65	65				10	2	12	12	77

4:30-5:30	0	138	18	156	13	91	0	104	260	0	0	0	49	0	18	67	327
PHF				0.93				0.87					n/a			0.84	

APPENDIX C

Intersection

Intersection Delay, s/veh 2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	54	933	5	2	753	25	0	0	7	37	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	175		0	150		0	0		0	120		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.92	0.92	0.92	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	1098	6	2	818	27	0	0	8	42	0	112
Number of Lanes	1	2	0	1	2	0	0	1	0	1	1	0

Major/Minor	Major 1			Major 2			Minor 1			Minor 2		
Conflicting Flow All	846	0	0	1104	0	0	1642	2078	552	1512	2067	423
Stage 1	-	-	-	-	-	-	1228	1228	-	836	836	-
Stage 2	-	-	-	-	-	-	414	850	-	676	1231	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	787	-	-	628	-	-	66	53	477	83	54	579
Stage 1	-	-	-	-	-	-	189	249	-	328	381	-
Stage 2	-	-	-	-	-	-	586	375	-	409	248	-
Time blocked-Platoon, %	0	-	-	0	-	-	0	0	0	0	0	0
Mov Capacity-1 Maneuver	787	-	-	628	-	-	50	49	477	76	49	579
Mov Capacity-2 Maneuver	-	-	-	-	-	-	50	49	-	76	49	-
Stage 1	-	-	-	-	-	-	174	229	-	301	380	-
Stage 2	-	-	-	-	-	-	471	374	-	369	228	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	12.7	32.1
HCM LOS	-	-	B	D

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Cap, veh/h	477	787	-	-	628	-	-	76	335
HCM Control Delay, s	12.7	9.976	-	-	10.752	-	-	77.4	22.1
HCM Lane V/C Ratio	0.02	0.08	-	-	0.00	-	-	0.36	0.38
HCM Lane LOS	B	A	-	-	B	-	-	F	C
HCM 95th-tile Q, veh	0.1	0.3	-	-	0.0	-	-	1.4	1.7

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	91	876	16	2	879	49	5	2	0	29	4	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	175		0	150		0	0		0	120		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	100	963	18	2	966	54	6	2	0	34	5	106
Number of Lanes	1	2	0	1	2	0	0	1	0	1	1	0

Major/Minor	Major 1			Major 2			Minor 1			Minor 2		
Conflicting Flow All	1020	0	0	980	0	0	1661	2195	490	1679	2177	510
Stage 1	-	-	-	-	-	-	1171	1171	-	997	997	-
Stage 2	-	-	-	-	-	-	490	1024	-	682	1180	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	676	-	-	700	-	-	64	45	524	62	46	509
Stage 1	-	-	-	-	-	-	205	265	-	262	320	-
Stage 2	-	-	-	-	-	-	529	311	-	406	262	-
Time blocked-Platoon, %	0	-	-	0	-	-	0	0	0	0	0	0
Mov Capacity-1 Maneuver	676	-	-	700	-	-	41	38	524	52	39	509
Mov Capacity-2 Maneuver	-	-	-	-	-	-	41	38	-	52	39	-
Stage 1	-	-	-	-	-	-	175	226	-	223	319	-
Stage 2	-	-	-	-	-	-	412	310	-	342	223	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	117	51.8
HCM LOS	-	-	F	F

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Cap, veh/h	40	676	-	-	700	-	-	52	223
HCM Control Delay, s	117	11.248	-	-	10.159	-	-	119.8	39.1
HCM Lane V/C Ratio	0.21	0.15	-	-	0.00	-	-	0.44	0.55
HCM Lane LOS	F	B	-	-	B	-	-	F	E
HCM 95th-tile Q, veh	0.7	0.5	-	-	0.0	-	-	1.6	2.9

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	43	6	52	27	11	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	7	61	32	13	111
Number of Lanes	1	0	1	0	0	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	213	77	0	0	93	0
Stage 1	77	-	-	-	-	-
Stage 2	136	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	775	984	-	-	1501	-
Stage 1	946	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	768	984	-	-	1501	-
Mov Capacity-2 Maneuver	768	-	-	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.8
HCM LOS	A	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	789	1501	-
HCM Control Delay, s	-	-	9.9	7.419	0
HCM Lane V/C Ratio	-	-	0.07	0.01	-
HCM Lane LOS	-	-	A	A	A
HCM 95th-tile Q, veh	-	-	0.2	0.0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	43	18	126	16	13	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.93	0.93	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	21	135	17	15	92
Number of Lanes	1	0	1	0	0	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	266	144	0	0	153	0
Stage 1	144	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	723	903	-	-	1428	-
Stage 1	883	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	715	903	-	-	1428	-
Mov Capacity-2 Maneuver	715	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	893	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	1.1
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	762	1428	-
HCM Control Delay, s	-	-	10.2	7.548	0
HCM Lane V/C Ratio	-	-	0.09	0.01	-
HCM Lane LOS	-	-	B	A	A
HCM 95th-tile Q, veh	-	-	0.3	0.0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	2	54	4	2	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		0			0
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	2	64	5	2	118
Number of Lanes	1	0	1	0	0	1

Major/Minor	Major 1		Major 2			
Conflicting Flow All	188	66	0	0	68	0
Stage 1	66	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	801	998	-	-	1533	-
Stage 1	957	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	800	998	-	-	1533	-
Mov Capacity-2 Maneuver	800	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	902	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.1
HCM LOS	A	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	848	1533	-
HCM Control Delay, s	-	-	9.3	7.352	0
HCM Lane V/C Ratio	-	-	0.01	0.00	-
HCM Lane LOS	-	-	A	A	A
HCM 95th-tile Q, veh	-	-	0.0	0.0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	10	4	138	6	3	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		0			0
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.87	0.87	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	5	159	7	4	98
Number of Lanes	1	0	1	0	0	1

Major/Minor	Major 1		Major 2			
Conflicting Flow All	267	162	0	0	166	0
Stage 1	162	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	722	883	-	-	1412	-
Stage 1	867	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	720	883	-	-	1412	-
Mov Capacity-2 Maneuver	720	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0.3
HCM LOS	A	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	760	1412	-
HCM Control Delay, s	-	-	9.8	7.556	0
HCM Lane V/C Ratio	-	-	0.02	0.00	-
HCM Lane LOS	-	-	A	A	A
HCM 95th-tile Q, veh	-	-	0.1	0.0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

UNSIGNALIZED INTERSECTIONS

Level-of-Service	Average Total Delay sec/veh
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

SIGNALIZED INTERSECTIONS

Level-of-Service	Average Total Delay sec/veh
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

**Table 4-3
Fort Collins (City Limits)
Motor Vehicle LOS Standards (Intersections)**

Intersection type	Land Use (from structure plan)			
	Commercial corridors	Other corridors within:		
		Mixed use districts	Low density mixed use residential	All other areas
Signalized intersections (overall)	D	E*	D	D
Any Leg	E	E	D	E
Any Movement	E	E	D	E
Stop sign control (arterial/collector or local—any approach leg)	N/A	F**	F**	E
Stop sign control (collector/local—any approach leg)	N/A	C	C	C
* mitigating measures required				
** considered normal in an urban environment				

APPENDIX D

Intersection

Intersection Delay, s/veh 2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	54	1005	5	2	811	25	0	0	7	37	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	175		0	150		0	0		0	120		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.92	0.92	0.92	0.85	0.85	0.85	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	1182	6	2	882	27	0	0	8	42	0	112
Number of Lanes	1	2	0	1	2	0	0	1	0	1	1	0

Major/Minor	Major 1			Major 2			Minor 1			Minor 2		
Conflicting Flow All	909	0	0	1188	0	0	1757	2225	594	1617	2214	454
Stage 1	-	-	-	-	-	-	1312	1312	-	899	899	-
Stage 2	-	-	-	-	-	-	445	913	-	718	1315	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	745	-	-	583	-	-	54	43	448	69	43	553
Stage 1	-	-	-	-	-	-	167	227	-	300	356	-
Stage 2	-	-	-	-	-	-	562	350	-	386	226	-
Time blocked-Platoon, %	0	-	-	0	-	-	0	0	0	0	0	0
Mov Capacity-1 Maneuver	745	-	-	583	-	-	40	39	448	63	39	553
Mov Capacity-2 Maneuver	-	-	-	-	-	-	40	39	-	63	39	-
Stage 1	-	-	-	-	-	-	153	207	-	274	355	-
Stage 2	-	-	-	-	-	-	446	349	-	346	207	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.2	39.3
HCM LOS	-	-	B	E

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Cap, veh/h	448	745	-	-	583	-	-	63	298
HCM Control Delay, s	13.2	10.282	-	-	11.198	-	-	101	25.7
HCM Lane V/C Ratio	0.02	0.09	-	-	0.00	-	-	0.44	0.42
HCM Lane LOS	B	B	-	-	B	-	-	F	D
HCM 95th-tile Q, veh	0.1	0.3	-	-	0.0	-	-	1.7	2.0

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	91	944	16	2	947	49	5	2	0	29	4	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	175		0	150		0	0		0	120		0
Median Width		12			12			12			12	
Grade, %		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	100	1037	18	2	1041	54	6	2	0	34	5	106
Number of Lanes	1	2	0	1	2	0	0	1	0	1	1	0

Major/Minor	Major 1			Major 2			Minor 1			Minor 2		
Conflicting Flow All	1095	0	0	1055	0	0	1773	2345	527	1792	2327	547
Stage 1	-	-	-	-	-	-	1246	1246	-	1072	1072	-
Stage 2	-	-	-	-	-	-	527	1099	-	720	1255	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	633	-	-	656	-	-	53	36	496	51	37	481
Stage 1	-	-	-	-	-	-	184	244	-	235	295	-
Stage 2	-	-	-	-	-	-	502	287	-	385	241	-
Time blocked-Platoon, %	0	-	-	0	-	-	0	0	0	0	0	0
Mov Capacity-1 Maneuver	633	-	-	656	-	-	32	30	496	42	31	481
Mov Capacity-2 Maneuver	-	-	-	-	-	-	32	30	-	42	31	-
Stage 1	-	-	-	-	-	-	155	205	-	198	294	-
Stage 2	-	-	-	-	-	-	384	286	-	320	203	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0	158.8	70.5
HCM LOS	-	-	F	F

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Cap, veh/h	31	633	-	-	656	-	-	42	190
HCM Control Delay, s	158.8	11.751	-	-	10.506	-	-	165.1	52.8
HCM Lane V/C Ratio	0.27	0.16	-	-	0.00	-	-	0.54	0.64
HCM Lane LOS	F	B	-	-	B	-	-	F	F
HCM 95th-tile Q, veh	0.8	0.6	-	-	0.0	-	-	2.0	3.7

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	43	6	52	27	11	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	7	61	32	13	111
Number of Lanes	1	0	1	0	0	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	213	77	0	0	93	0
Stage 1	77	-	-	-	-	-
Stage 2	136	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	775	984	-	-	1501	-
Stage 1	946	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	768	984	-	-	1501	-
Mov Capacity-2 Maneuver	768	-	-	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	882	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.8
HCM LOS	A	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	789	1501	-
HCM Control Delay, s	-	-	9.9	7.419	0
HCM Lane V/C Ratio	-	-	0.07	0.01	-
HCM Lane LOS	-	-	A	A	A
HCM 95th-tile Q, veh	-	-	0.2	0.0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	43	18	126	16	13	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		12			12
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.93	0.93	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	21	135	17	15	92
Number of Lanes	1	0	1	0	0	1

Major/Minor			Major 1		Major 2	
Conflicting Flow All	266	144	0	0	153	0
Stage 1	144	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	723	903	-	-	1428	-
Stage 1	883	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	715	903	-	-	1428	-
Mov Capacity-2 Maneuver	715	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	893	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	1.1
HCM LOS	B	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	762	1428	-
HCM Control Delay, s	-	-	10.2	7.548	0
HCM Lane V/C Ratio	-	-	0.09	0.01	-
HCM Lane LOS	-	-	B	A	A
HCM 95th-tile Q, veh	-	-	0.3	0.0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	2	54	4	2	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		0			0
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	2	64	5	2	118
Number of Lanes	1	0	1	0	0	1

Major/Minor	Major 1		Major 2			
Conflicting Flow All	188	66	0	0	68	0
Stage 1	66	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	801	998	-	-	1533	-
Stage 1	957	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	800	998	-	-	1533	-
Mov Capacity-2 Maneuver	800	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	902	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.1
HCM LOS	A	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	848	1533	-
HCM Control Delay, s	-	-	9.3	7.352	0
HCM Lane V/C Ratio	-	-	0.01	0.00	-
HCM Lane LOS	-	-	A	A	A
HCM 95th-tile Q, veh	-	-	0.0	0.0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	10	4	138	6	3	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		0			0
Grade, %	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.87	0.87	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	5	159	7	4	98
Number of Lanes	1	0	1	0	0	1

Major/Minor	Major 1		Major 2			
Conflicting Flow All	267	162	0	0	166	0
Stage 1	162	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	722	883	-	-	1412	-
Stage 1	867	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Time blocked-Platoon, %	0	0	-	-	0	-
Mov Capacity-1 Maneuver	720	883	-	-	1412	-
Mov Capacity-2 Maneuver	720	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0.3
HCM LOS	A	-	-

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Cap, veh/h	-	-	760	1412	-
HCM Control Delay, s	-	-	9.8	7.556	0
HCM Lane V/C Ratio	-	-	0.02	0.00	-
HCM Lane LOS	-	-	A	A	A
HCM 95th-tile Q, veh	-	-	0.1	0.0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

APPENDIX E

Intersection

Intersection Delay, s/veh 3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	61	1005	5	2	811	29	0	0	7	39	0	104
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	-	150	-	-	-	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	92	92	92	85	85	85	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	1182	6	2	882	32	0	0	8	44	0	117

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	913	0	0	1188	0	0	1774	2246	594	1637	2234	457
Stage 1	-	-	-	-	-	-	1329	1329	-	902	902	-
Stage 2	-	-	-	-	-	-	445	917	-	735	1332	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	742	-	-	583	-	-	52	41	448	67	42	551
Stage 1	-	-	-	-	-	-	163	222	-	299	355	-
Stage 2	-	-	-	-	-	-	562	349	-	377	222	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	742	-	-	583	-	-	38	37	448	61	38	551
Mov Capacity-2 Maneuver	-	-	-	-	-	-	38	37	-	61	38	-
Stage 1	-	-	-	-	-	-	147	200	-	270	354	-
Stage 2	-	-	-	-	-	-	441	348	-	334	200	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	13.2	42.2
HCM LOS			B	E

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	448	742	-	-	583	-	-	61	291
HCM Lane V/C Ratio	0.018	0.097	-	-	0.004	-	-	0.479	0.452
HCM Control Delay (s)	13.2	10.371	-	-	11.198	-	-	109.5	27.2
HCM Lane LOS	B	B			B			F	D
HCM 95th %tile Q(veh)	0.056	0.32	-	-	0.011	-	-	1.874	2.224

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	100	944	16	2	947	54	5	2	0	34	4	99
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	-	150	-	-	-	-	-	120	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	1037	18	2	1041	59	6	2	0	40	5	116

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1100	0	0	1055	0	0	1793	2370	527	1815	2350	550
Stage 1	-	-	-	-	-	-	1266	1266	-	1075	1075	-
Stage 2	-	-	-	-	-	-	527	1104	-	740	1275	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	630	-	-	656	-	-	51	34	496	49	35	479
Stage 1	-	-	-	-	-	-	179	238	-	234	294	-
Stage 2	-	-	-	-	-	-	502	285	-	375	236	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	630	-	-	656	-	-	29	28	496	40	29	479
Mov Capacity-2 Maneuver	-	-	-	-	-	-	29	28	-	40	29	-
Stage 1	-	-	-	-	-	-	148	196	-	193	293	-
Stage 2	-	-	-	-	-	-	373	284	-	306	195	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1	-	-	0	-	-	172.5	-	-	88.4	-	-
HCM LOS	-	-	-	-	-	-	F	-	-	F	-	-

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	29	630	-	-	656	-	-	40	182
HCM Lane V/C Ratio	0.284	0.174	-	-	0.003	-	-	0.667	0.739
HCM Control Delay (s)	172.5	11.918	-	-	10.506	-	-	200.6	66.2
HCM Lane LOS	F	B	-	-	B	-	-	F	F
HCM 95th %tile Q(veh)	0.887	0.628	-	-	0.01	-	-	2.437	4.729

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	2	43	0	6	4	59	27	11	98	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	51	0	7	5	69	32	13	115	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	239	252	115	237	236	85	115	0	0	101	0	0
Stage 1	141	141	-	95	95	-	-	-	-	-	-	-
Stage 2	98	111	-	142	141	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	715	651	937	717	665	974	1474	-	-	1491	-	-
Stage 1	862	780	-	912	816	-	-	-	-	-	-	-
Stage 2	908	804	-	861	780	-	-	-	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	703	643	937	708	656	974	1474	-	-	1491	-	-
Mov Capacity-2 Maneuver	703	643	-	708	656	-	-	-	-	-	-	-
Stage 1	859	773	-	908	813	-	-	-	-	-	-	-
Stage 2	898	801	-	851	773	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	8.9			10.3			0.3			0.8		
HCM LOS	A			B								

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1474	-	-	937	732	1491	-	-
HCM Lane V/C Ratio	0.003	-	-	0.003	0.079	0.009	-	-
HCM Control Delay (s)	7.45	0	-	8.9	10.3	7.436	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.01	-	-	0.008	0.256	0.026	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	6	43	0	18	6	134	16	13	88	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	93	93	87	87	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	7	51	0	21	7	144	17	15	101	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	308	306	101	302	298	153	101	0	0	161	0	0
Stage 1	131	131	-	167	167	-	-	-	-	-	-	-
Stage 2	177	175	-	135	131	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	644	608	954	650	614	893	1491	-	-	1418	-	-
Stage 1	873	788	-	835	760	-	-	-	-	-	-	-
Stage 2	825	754	-	868	788	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-	-	-	-
Mov Capacity-1 Maneuver	621	598	954	637	604	893	1491	-	-	1418	-	-
Mov Capacity-2 Maneuver	621	598	-	637	604	-	-	-	-	-	-	-
Stage 1	869	779	-	831	756	-	-	-	-	-	-	-
Stage 2	801	750	-	852	779	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	8.8			10.8			0.3			1		
HCM LOS	A			B								

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1491	-	-	954	696	1418	-	-
HCM Lane V/C Ratio	0.005	-	-	0.007	0.103	0.011	-	-
HCM Control Delay (s)	7.426	0	-	8.8	10.8	7.566	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.014	-	-	0.022	0.343	0.032	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	4	7	58	105	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	8	68	124	0

Major/Minor	Minor2	Major1			Major2	
Conflicting Flow All	209	124	124	0	-	0
Stage 1	124	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	779	927	1463	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	774	927	1463	-	-	-
Mov Capacity-2 Maneuver	774	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	932	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.8	0
HCM LOS	A		

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1463	-	927	-	-
HCM Lane V/C Ratio	0.006	-	0.005	-	-
HCM Control Delay (s)	7.475	0	8.9	-	-
HCM Lane LOS	A	A	A		
HCM 95th %tile Q(veh)	0.017	-	0.015	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	8	8	144	93	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	87	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	9	166	109	0

Major/Minor	Minor2	Major1			Major2	
Conflicting Flow All	293	109	109	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	698	945	1481	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	693	945	1481	-	-	-
Mov Capacity-2 Maneuver	693	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	842	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0.4	0
HCM LOS	A		

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1481	-	945	-	-
HCM Lane V/C Ratio	0.006	-	0.01	-	-
HCM Control Delay (s)	7.446	0	8.8	-	-
HCM Lane LOS	A	A	A		
HCM 95th %tile Q(veh)	0.019	-	0.03	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	2	54	4	2	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	2	64	5	2	118

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	188	66	0	0	68	0
Stage 1	66	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	801	998	-	-	1533	-
Stage 1	957	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	800	998	-	-	1533	-
Mov Capacity-2 Maneuver	800	-	-	-	-	-
Stage 1	957	-	-	-	-	-
Stage 2	902	-	-	-	-	-

Approach	WB		NB		SB
HCM Control Delay, s	9.3		0		0.1
HCM LOS	A				

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	848	1533	-
HCM Lane V/C Ratio	-	-	0.01	0.002	-
HCM Control Delay (s)	-	-	9.3	7.352	0
HCM Lane LOS			A	A	A
HCM 95th %tile Q(veh)	-	-	0.029	0.005	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	10	4	138	6	3	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	5	162	7	4	98

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	271	166	0	0	169	0
Stage 1	166	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	718	878	-	-	1409	-
Stage 1	863	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	716	878	-	-	1409	-
Mov Capacity-2 Maneuver	716	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	916	-	-	-	-	-

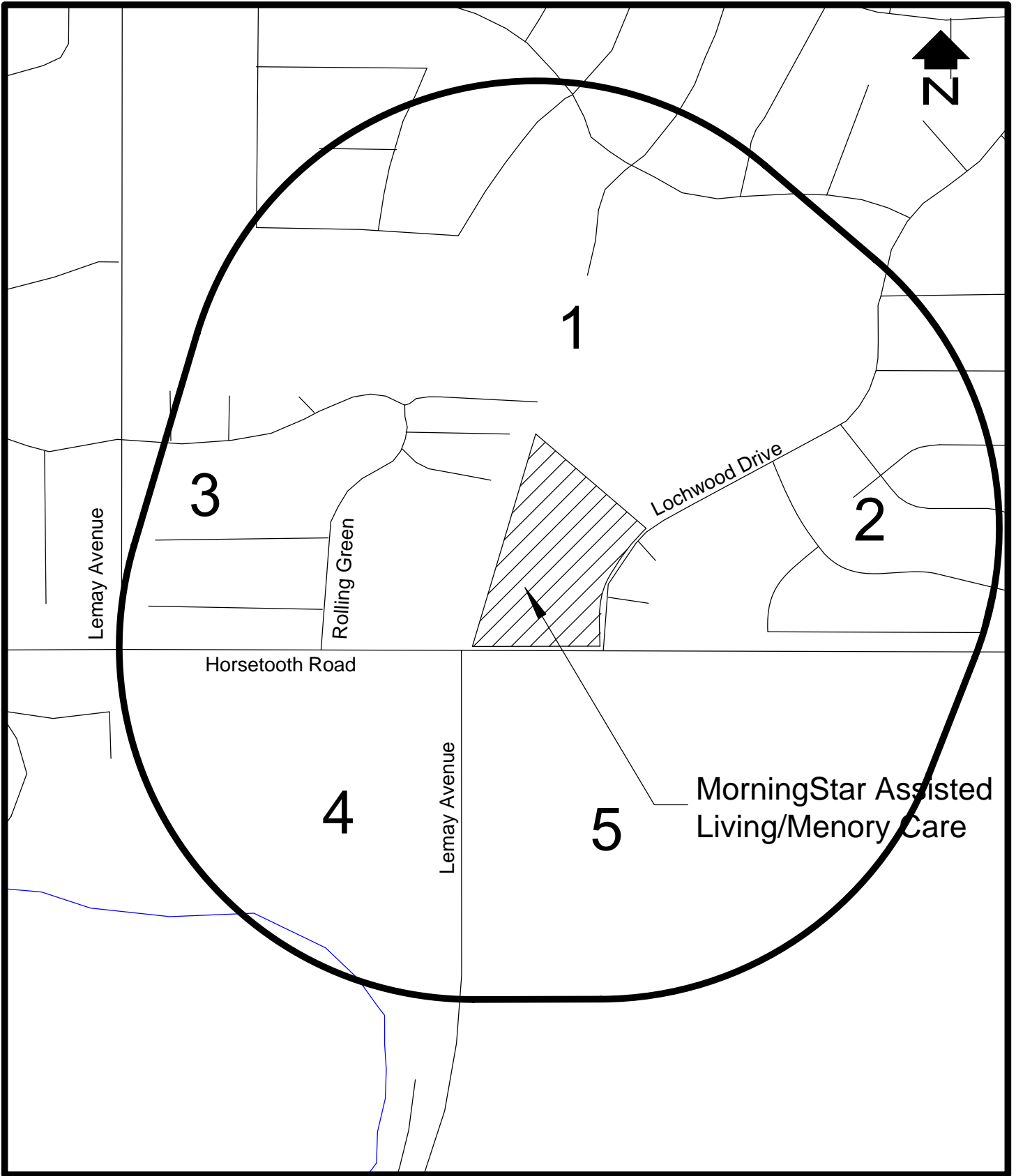
Approach	WB		NB		SB
HCM Control Delay, s	9.9		0		0.3
HCM LOS	A				

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	756	1409	-
HCM Lane V/C Ratio	-	-	0.022	0.003	-
HCM Control Delay (s)	-	-	9.9	7.561	0
HCM Lane LOS			A	A	A
HCM 95th %tile Q(veh)	-	-	0.067	0.008	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

APPENDIX F



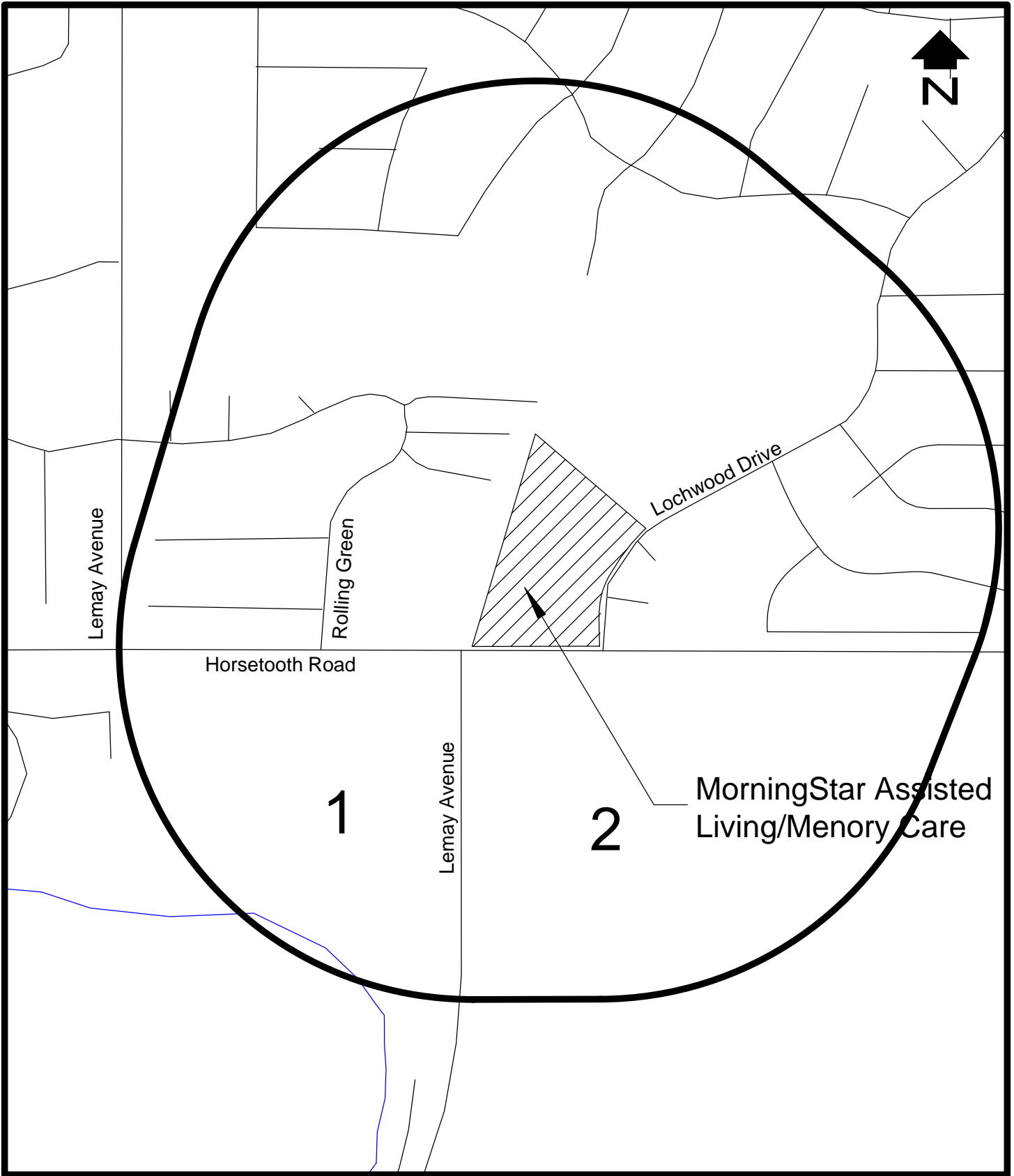
SCALE: 1"=500'

PEDESTRIAN INFLUENCE AREA

Pedestrian LOS Worksheet

Project Location Classification: **Other**

	Description of Applicable Destination Area Within 1320'	Destination Area Classification	Level of Service (minimum based on project location classification)					
			Directness	Continuity	Street Crossings	Visual Interest & Amenities	Security	
1	Neighborhood to the north	Residential	Minimum	C	C	C	C	C
			Actual	B	C	A	C	C
			Proposed	B	C	A	C	C
2	Neighborhood to the east	Residential	Minimum	C	C	C	C	C
			Actual	A	B	A	C	C
			Proposed	A	B	A	C	C
3	Neighborhood to the west	Residential	Minimum	C	C	C	C	C
			Actual	A	C	A	C	C
			Proposed	A	C	A	C	C
4	Warren Park to the southwest	Recreational	Minimum	C	C	C	C	C
			Actual	A	B	B	B	B
			Proposed	A	B	B	B	B
5	Collindale Golf Course to the south	Recreational	Minimum	C	C	C	C	C
			Actual	A	B	B	B	B
			Proposed	A	B	B	B	B
6			Minimum					
			Actual					
			Proposed					
7			Minimum					
			Actual					
			Proposed					
8			Minimum					
			Actual					
			Proposed					
9			Minimum					
			Actual					
			Proposed					
10			Minimum					
			Actual					
			Proposed					



SCALE: 1"=500'

BICYCLE INFLUENCE AREA

Bicycle LOS Worksheet

		Level of Service – Connectivity			
		Minimum	Actual	Proposed	
		Base Connectivity:	C	A	A
		Specific connections to priority sites:			
	Description of Applicable Destination Area Within 1320'	Destination Area Classification			
1	Warren Park to the south	Recreational	B	A	A
2	Collindale Golf Course to the south	Recreational	B	A	A
3					
4					