CITY OF FORT COLLINS
TYPE 1 ADMINISTRATIVE HEARING
FINDINGS AND DECISION

HEARING DATE:	January 6, 2014
PROJECT NAME:	Sunshine House Early Learning Academy
CASE NUMBER:	FDP130041
APPLICANT:	Cathy Mathis The Birdsall Group 444 Mountain Avenue Berthoud, CO 80513
OWNER:	Colorado State University Research Foundation (CSURF) PO Box 483 Fort Collins, CO 80522
HEARING OFFICER:	Kendra L. Carberry
PROJECT DESCRIPTION:	This is a consolidated Project Development Plan and Final Plan (PDP/FP) request to subdivide Tract A of the Grove at Fort Collins into 2 lots, with a 10,250 square foot child care facility on Lot 1, including 41 parking spaces and 4 outdoor play areas.
SUMMARY OF DECISION:	Approved
ZONE DISTRICT:	Employment (E)

HEARING: The Hearing Officer opened the hearing at approximately 5:15 p.m. on January 6, 2014, in Conference Room A, 281 North College Avenue, Fort Collins, Colorado.

EVIDENCE: During the hearing, the Hearing Officer accepted the following evidence: (1) Planning Department Staff Report; (2) application, plans, maps and other supporting documents submitted by the applicant; and (3) an email submitted by Beth Boddiger dated October 24, 2013 in opposition to the PDP/FP (the Land Use Code, the Comprehensive Plan and the formally promulgated polices of the City are all considered part of the record considered by the Hearing Officer).

TESTIMONY: The following persons testified at the hearing:

From the City: Courtney Levingston

From the Applicant: Cathy Mathis, Ian Shuck, Nick Haws

From the Public: Michael "Bo" Brown, Mary Hamilton

FINDINGS

1. Evidence presented to the Hearing Officer established the fact that the hearing was properly posted, legal notices mailed and notice published.

2. Though not required by the Land Use Code, the applicant held a neighborhood meeting on September 26, 2013. No public attended that meeting.

3. The PDP/FP complies with the applicable General Development Standards contained in Article 3 of the Code.

a. The PDP/FP complies with Section 3.2.1, Landscaping and Tree Protection, because the landscape plan provides full tree stocking, no one species of the proposed 75 trees exceeds 15% of the total trees on site; the water budget is 7.2 gallons per square foot; and the City Forester approved two mitigation trees in exchange for removal of the existing Cottonwood tree.

b. The PDP/FP complies with Section 3.2.2, Access, Circulation and Parking, because: the PDP/FP proposed 41 parking spaces, far in excess of the minimum; and the PDP/FP proposes 4 bicycle parking spaces, which meets the minimum requirement.

c. The PDP/FP complies with Section 3.2.4, Site Lighting, because: the parking lot lighting meets functional and safety needs; and the exterior light fixtures will be down-directional with sharp cut-off luminaries.

d. The PDP/FP complies with Section 3.4.1, Natural Habitats and Features, because: it mitigates for the loss of a small wetland by providing a fee in-lieu payment to the Gardens on Spring Creek, which will enhance its existing wetland.

e. The PDP/FP complies with Section 3.5.1, Building and Project Compatibility, because: the building is 10,250 square feet in size with a maximum height of 30', with a mass smaller than the Federal buildings to the east; articulation of accent details, recesses and projections are used consistently on all faces of the building to subdivide the massing and create appropriate forms and proportions in relation to the surrounding context; the building materials include brick, corrugated metal siding, fiber cement siding, stucco and steel accents, which is consistent with the surrounding neighborhood; and the colors are sufficiently muted.

f. The PDP/FP complies with Division 3.6, Transportation and Circulation, because: the City's Traffic Operations department reviewed the Transportation Impact Study and determined that the vehicular, pedestrian and bicycle facilities are acceptable; the applicant submitted a Larimer County Urban Area Street Standards variance request regarding the level of service failure of the eastbound approach at the Botanical Lane and Centre Avenue, and the City's Traffic Operations department found that the intersection does not meet warrants for a traffic signal and that requiring a roundabout would be an out-of-scale improvement, so the variance was approved by the City's Traffic Operations department and Engineering staff; and the PDP/FP includes Transfort concrete bus pad on the east side adjacent to Centre Avenue, with an associated transit easement.

g. The PDP/FP complies with Section 3.8.4, Child Care Center Regulations, because: enrollment will be 125-150 children, the outdoor play area will be 10,960 square feet and the indoor floor space will be 6,000 square feet, meeting the minimum requirements; the PDP/FP includes a 6' black powder-coated chain link fence with a black mesh screen; and landscaping is provided around the perimeter of the fenced play areas.

4. The PDP/FP complies with the applicable standards contained in Article 4 of the Code for the E zone district.

a. The PDP/FP complies with Section 4.27(B)(2)(c)(6), Permitted Uses, because a child care center is a permitted use in the E District subject to Administrative Review.

b. The PDP/FP complies with Section 4.27(D)(2), Land Use Standards, because the PDP/FP will occupy 1.95 acres of the CSURF amended ODP Employment District, which, together with other secondary uses, totals less than the 25% maximum.

c. The PDP/FP complies with Section 4.27(E), Development Standards, because the plan includes a note evidencing the intent to enter into cooperative agreements with adjacent property owners to create a comprehensive development plan.

DECISION

Based on the foregoing findings, the Hearing Officer hereby enters the following rulings:

1. The PDP/FP is approved as submitted.

DATED this 22nd day of January, 2014.

Kendra L. Carberry
Hearing Officer

ITEM NO _____

HEARING DATE January 6, 2014

STAFF C. Levingston

ADMINISTRATIVE HEARING

PROJECT: Sunshine House Early Learning Academy – #FDP130041

(Centre For Advanced Technology 23rd Filing Sunshine House - FC 139)

APPLICANT: Cathy Mathis
The Birdsall Group
444 Mountain Avenue
Berthoud, CO 80513

OWNER: Colorado State University Research Foundation (CSURF)
PO Box 483
Fort Collins, CO 80522

PROJECT DESCRIPTION:

This is a consolidated Project Development Plan (PDP) and Final Plan (FP) request to subdivide Tract A of the Grove at Fort Collins into two 1.9 acre lots and construct a 10,250 square foot child care facility on Lot 1. In addition, the project is proposing 41 parking spaces and four outdoor play areas. The site is located in the Employment (E) District and child care centers are a permitted use subject to administrative review and public hearing.

RECOMMENDATION:

Approval of Sunshine House Early Learning Academy consolidated Project Development Plan and Final Plan - #FDP130041.

EXECUTIVE SUMMARY:

The proposed project is located southwest of the intersection of Centre Avenue and the soon to be former Rolland Moore Drive (Botanical Lane). The renaming of Rolland Moore Drive to Botanical Lane is a separate resolution from this project which City Council will consider on January 21, 2014. As proposed, the project will take access from Perennial Lane.

Staff finds that the approval of the Sunshine House Early Learning Academy Project Development Plan complies with the applicable requirements of the City of Fort Collins Land Use Code (LUC), more specifically:

- The PDP/FP complies with the process located in Division 2.2 – Common Development Review Procedures for Development Applications of Article 2 – Administration.

- The PDP/FP complies with relevant standards located in Article 3 – General Development Standards.

- The PDP/FP complies with relevant standards located in Division 4.27, Employment (E) of Article 4 – Districts.

COMMENTS:

1. Background:

The subject property was part of the Fourth College Annexation in August, 1965. In 2011, the property was plated as Tract A of the Grove at Fort Collins.

Prior to 1997, the property was zoned "IP, Industrial Park", with a Planned Unit Development designation. With the adoption of City Plan and the Land Use Code in 1997, the property was placed into the Employment (E) District.

The subject property is located on Parcel C of the Amended CSURF Centre for Advanced Technology Overall Development Plan (CSURF ODP). The original Centre for Advanced Technology, Master Plan (Overall Development Plan) was approved by the Planning & Zoning Board, on September 23, 1985. Since then, the Board has approved four amendments to the plan on: January 25, 1988; June 27, 1994; February 20, 2003; and June, 2011. The purpose of the June 2011 amendment to the Overall Development Plan was to realign the Rolland Moore future street connection through Parcel C between Centre Avenue and South Shields Street. The Gardens on Spring Creek is not part of the CSURF ODP.

The surrounding zoning and land uses are as follows:

Direction	Zone District	Existing Land Uses
North	Employment (E)	Gardens on Spring Creek

South	CSU	Colorado State University
East	Employment (E)	Natural Resources Research Center (Federal government offices)
West	Employment (E) with Medium Density Mixed Use Neighborhood (MMN) beyond	The Grove student apartments

2. West Central Neighborhoods Plan

The site is located within the West Central Neighborhoods Plan (adopted, 1999) area boundaries. The Plan highlights the area's broad mix of building ages, neighborhoods and uses and notes that there is not an overarching character for the area. At time of the Plan, this area had the highest population density of any area in Fort Collins. As noted, support services for that population (such as daycare) will be increasingly necessary over time.

3. Compliance with Applicable Employment (E) Land Use and Development Standards:

The Sunshine House FC Early Learning Academy consolidated PDP/FP is in compliance with the applicable land use and development standards of the Employment (E) District, including the following:

A. Section 4.27 (A) - Purpose

The purpose of the Employment District is as follows:

The Employment District is intended to provide locations for a variety of workplaces including light industrial uses, research and development activities, offices and institutions. This District also is intended to accommodate secondary uses that complement or support the primary workplace uses, such as hotels, restaurants, convenience shopping, child care and housing.

Additionally, the Employment District is intended to encourage the development of planned office and business parks; to promote excellence in the design and construction of buildings, outdoor spaces, transportation facilities and streetscapes; to direct the development of workplaces consistent with the availability of public facilities and services; and to

continue the vitality and quality of life in adjacent residential neighborhoods.

The proposed daycare use supports the surrounding primary employment uses and meets the purpose statement of the Employment District.

B. Section 4.27(B)(2)(c)(6) – Permitted Uses

The proposed PDP/FP is for a child care center. Child care centers are permitted in the Employment District subject to an Administrative (Type 1) review.

C. Section 4.27(D)(2) – Land Use Standards

This Section states that secondary uses in the Employment District together shall occupy no more than 25% of the total gross area of the development plan. Child care centers are considered a secondary use in the Employment District.

- The CSURF amended ODP is a total of 116.7 acres, of which 96.5 acres is zoned Employment.
- The Grove multi-family development occupies 3 acres of residential secondary use in the CSURF amended ODP Employment District.
- As proposed, the Sunshine House FC Early Learning Academy will occupy 1.95 acres of the CSURF amended ODP Employment District area.

Together, the secondary uses total 4.95 acres, which is under the 24.125 acre maximum for secondary uses in the CSURF amended ODP Employment District.

D. Section 4.27(E) – Development Standards

- In order to meet the intent of Section 4.27(E)(1)(a), a note is included on the plan that states, "to the extent feasible, cooperative agreements with adjacent property owners to create a comprehensive development plan that establishes an integrated pattern of cross access, parking areas, outdoor spaces, building styles and land uses."

4. Compliance with Applicable General Development Standards:

The project complies with all applicable General Development Standards, with the following relevant comments provided:

A. Division 3.2 – Site Planning and Design Standards

1) 3.2.1 Landscaping and Tree Protection:

- The project provides full tree stocking with the inclusion of honeylocust, crabapple and serviceberry trees in the landscaped areas around the building.

- The proposal complies with Section 3.2.1(D)(3) in that no one species of the proposed 75 trees on the development plan exceeds 15% of the total trees on-site, or more than 11 trees. The most of any one species are the Western Hackberry and the Honeylocust, both at 11 trees.

- Section 3.2.1(E)(3) is complied with as the overall water budget of 7.2 gallons per square foot, which is less than the 15 gallons per square feet allowed by the Land Use Code.

- The City Forester met with the Applicant's consultant on site in September, 2013. The existing tree on site is a Plains Cottonwood, 28" in diameter with multi-stems. The City Forster determined the condition of the Cottonwood to be "fair/minus". Two mitigation trees are required and have been provided for the removal of this tree.

2) 3.2.2 Access, Circulation and Parking:

- Child care centers are required to provide 1 parking space per 3 employees or 1 parking space per 1,000 square feet of building floor area (whichever requires the greatest number of parking spaces). The project is required to provide a minimum of 10 parking spaces, and it provides 41, meeting the standard.

- For child care centers, a minimum of 1 bicycle parking space per 3,000 square feet of floor area via a fixed rack is required. The project is required and provides 4 bicycle parking spaces via a fixed rack, meeting the standard.

3) 3.2.4 Site Lighting

- The parking lot is proposed to be unobtrusively lit while still meeting the functional needs and safety considerations. The exterior parking lot light fixtures will be down directional with sharp cutoff luminaries.

B. Division 3.4 – Environmental, natural Area, Recreation and Cultural Resource Protection Standards

1) 3.4.1 Natural Habitats and Features.

- The applicant submitted an Environmental Characterization Study (ECS) which was reviewed by the City's Environmental Planner. As noted in the ECS, the Sunshine House site contained an approximately 200 square foot isolated wetland drainage in the southeast corner of the parcel. The Applicant has committed to mitigating for this wetland by providing a fee in-lieu payment to the Gardens on Spring Creek. The Gardens on Spring Creek will add the additional square footage to their wetland enhancement adjacent to Spring Creek. As this project proposes to mitigate for the isolated wetland in close proximity to Spring Creek, the overall value of this small wetland will be enhanced due to the proximity with the creek's corridor. Through this mitigation, the project complies with Section 3.4.1 of the Land Use Code.

C. Division 3.5 – Building Standards

1) 3.5.1 Building and Project Compatibility

- The proposed building is 10,250 square feet in size with a maximum height of 30 feet. The buildings' mass is smaller than the much larger Federal buildings to the east. Articulation of accent details, recesses and projections are used consistently throughout all faces of the building to subdivide the massing and create appropriate forms and proportions in relation to the adjacent building context surrounding the site.

- Within the neighborhood context surrounding the site, the existing building materials colors and textures are varied. The proposed materials include brick, corrugated metal siding, fiber cement siding, stucco and steel accents. Colors are sufficiently muted primarily featuring gray and beige tones. The materials and colors have sufficient similarity with the materials used in the surrounding area

while also reinforcing a high standard of detail and quality consistent with the standards set for the area.

D. Division 3.6 – Transportation and Circulation

- The City's Traffic Operations department reviewed the submitted Transportation Impact Study and determined that the vehicular, pedestrian and bicycle facilities proposed with this project are acceptable as it relates to the standards contained in Part II of the City of Fort Collins Multi-Modal Transportation Level of Service Manual.

- The Applicant submitted a Larimer County Urban Area Street Standards (LCUASS) variance request regarding the Level of Service failure of the eastbound approach at the Botanical Lane (old Rolland Moore Drive) and Centre 2-way stop sign controlled intersection. City Traffic Operations found that the intersection does not meet warrants for a traffic signal and that requiring the construction of a roundabout at the location would be an out-of-scale improvement as it relates to the relative impact and mitigation. City Traffic Operations' analysis also contends that the addition of north or south bound right turn lanes on Centre Avenue do not improve the eastbound Level of Service failure.

  The Traffic Operations staff asserts that there is not a reasonable solution to the Level of Service failure that is proportionate with the scale of the failure. The variance request was accepted by City Traffic Operations and Engineering staff as it was found not to be detrimental to public health, safety and welfare.

- The project meets the Transit Facility Standard requirements of Section 3.6.5 as the project is providing a Transfort concrete bus pad on the east side of the site adjacent to Centre Avenue. As the proposed Transfort bus pad is not located within the right-of-way, a transit easement is also provided on the plat.

E. Division 3.8 – Supplementary Regulations

1) 3.8.4 Child Care Center Regulations

- In the submitted planning objectives, Sunshine House Early Learning Center states that enrollment will be approximately 125 - 150 children. For a 150 child enrollment, the code requires a minimum of 7,000 square feet of outdoor play area and 6,000 square feet of indoor floor space. The project provides a total of 10,960 square feet of outdoor play area and 6,043 square feet of dedicated indoor classroom area, meeting the requirements.
- The project proposes a 6-foot black powder coated chain link fence around the play areas with a black mesh screen. Generous landscaping is provided around the exterior perimeter of these fenced play areas.

5. Neighborhood Meeting:

The Land Use Code does not require a neighborhood meeting for project subject to Administrative (Type 1) review. However, the Applicant elected to hold a neighborhood meeting on September 26, 2013. No members from the public attended; therefore, there are no notes from the meeting to include in this packet.

6. Findings of Fact and Conclusion:

In evaluating the request for the Sunshine House Early Learning Academy consolidated Project Development Plan and Final Plan, staff makes the following findings of fact:

A. The PDP/FP complies with process located in Division 2.2 – Common Development Review Procedures for Development Applications of Article 2 – Administration.

B. The PDP/FP complies with relevant standards located in Article 3 – General Development Standards.

C. The PDP/FP complies with relevant standards located in Division 4.27, Employment (E) of Article 4 – Districts.

RECOMMENDATION

Approval of Sunshine House Early Learning Academy consolidated Project Development Plan and Final Plan.

ATTACHMENTS

1. Statement of Planning Objectives

2. Site Plan
3. Landscape Plans
4. Architectural Elevations
5. Utility Plans
6. Centre for Advanced Technology 23rd Filing Sunshine House - FC 139 Plat
7. Photometric Plan
8. Traffic Impact Study
9. Environmental Characterization Study (ECS) Checklist
10. Environmental Characterization Study
11. CSURF Amended Overall Development Plan (approved, 2012)
12. Citizen Input

October 9, 2013

Sunshine House FC - #139 Early Learning Academy

Statement of Planning Objectives

The proposed Sunshine House Early Learning Academy is to be located in Tract A of the Grove at Fort Collins, at the southwest corner of Centre Avenue and Botanical Lane. The intent of the project is to construct a new child care facility on the northern half of the parcel. The surrounding infrastructure, utilities, street paving, and parking are all in place from the construction of the Grove.

The new building is intended to replace an existing facility leased for 15 years by Sunshine House which is currently located on the CSU campus. That facility will be closed in order for the university to facilitate new student housing construction. Although priority is given to CSU faculty, students and staff, this facility will be open to the Fort Collins community. Sunshine House operates several locations in Colorado, including Colorado Springs, Loveland and Greeley. The Sunshine House also has outgrown its existing facility and will operate the new facility designed and built for an enrollment of 125-150 FTE children. The new center will provide a program of play and learning activities for children ages six weeks to 12 years. Hours of operation will be from 6:30 am to 6 pm, M-F.

The 1.95-acre site is in the E zoning district. According to the Purpose Statement contained within Article 4 of the Land Use Code, "The Employment District is intended to provide locations for a variety of workplaces including light industrial uses, research and development activities, offices and institutions. This District also is intended to accommodate secondary uses that complement or support the primary workplace uses, such as hotels, restaurants, convenience shopping, child care and housing."

The areas adjacent the project contain student housing (The Grove), government offices (NRRC Campus), and The Gardens on Spring Creek. The site is ideal for this type of use as it provides a service that is in a convenient and centrally-located location. There is an existing transit stop on directly across Centre Avenue and the project is providing a pad for a stop on the west side of Centre. There are bike lanes in Centre Avenue and the Spring Creek Bike Trail is close to the site. In addition, there are ample resources for the Sunshine House to tap into, such as the Gardens on Spring Creek, the bike trails, and Rolland Moore Park.

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

This proposal meets the applicable City Plan Principles and Policies:

Employment Districts

Principle LIV 38: Employment Districts will be the major employment centers in the community, and will also include a variety of complementary uses to meet the needs of employees. By design, they

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will be accessible to the City's multimodal transportation system and encourage walking, bicycling, car and van pooling, and transit use.
Policy LIV 38.1 - Mix of Uses
Policy LIV 38.5 – Coordinate District Design
Policy LIV 38.10 – Link to Transit

Centre Avenue, the Spring Creek trail and the nearby MAX BRT all will help promote and encourage the use of multi-modal transportation. Child care centers are identified several times in City Plan to be an ideal supporting use for employment districts.

Transportation
Principle T 8: Transportation that provides opportunities for residents to lead healthy and active lifestyles will be promoted.
Policy T 8.1 – Support Active Transportation
Policy T 8.2 – Design for Active Living

The location of the new facility will support active lifestyles by providing on-street sidewalks, designated bike lanes, bike and walking trails.

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

The project is located within walking distance to the MAX Bus Rapid Transit.

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 is an existing transit stop on Centre Avenue, as well as the project providing a transit stop on-site.

Principle T11: Bicycling will be a safe, easy, and convenient mobility option for all ages and abilities

The location of Sunshine House Early Learning Academy will promote and support the idea of the employees and clients to utilize alternative modes of transportation (walking/biking) or public transportation. There are bike lanes and sidewalks on all of the public streets.

(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. However, a small wetland has occurred historically. The wetland will be replaced in-kind in an off-site location due to a financial donation from the developer.

(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.
The facility will be constructed and owned by CSURF and will be leased to the Sunshine House.

(iv) Estimate of number of employees for business, commercial, and industrial uses.
25-30

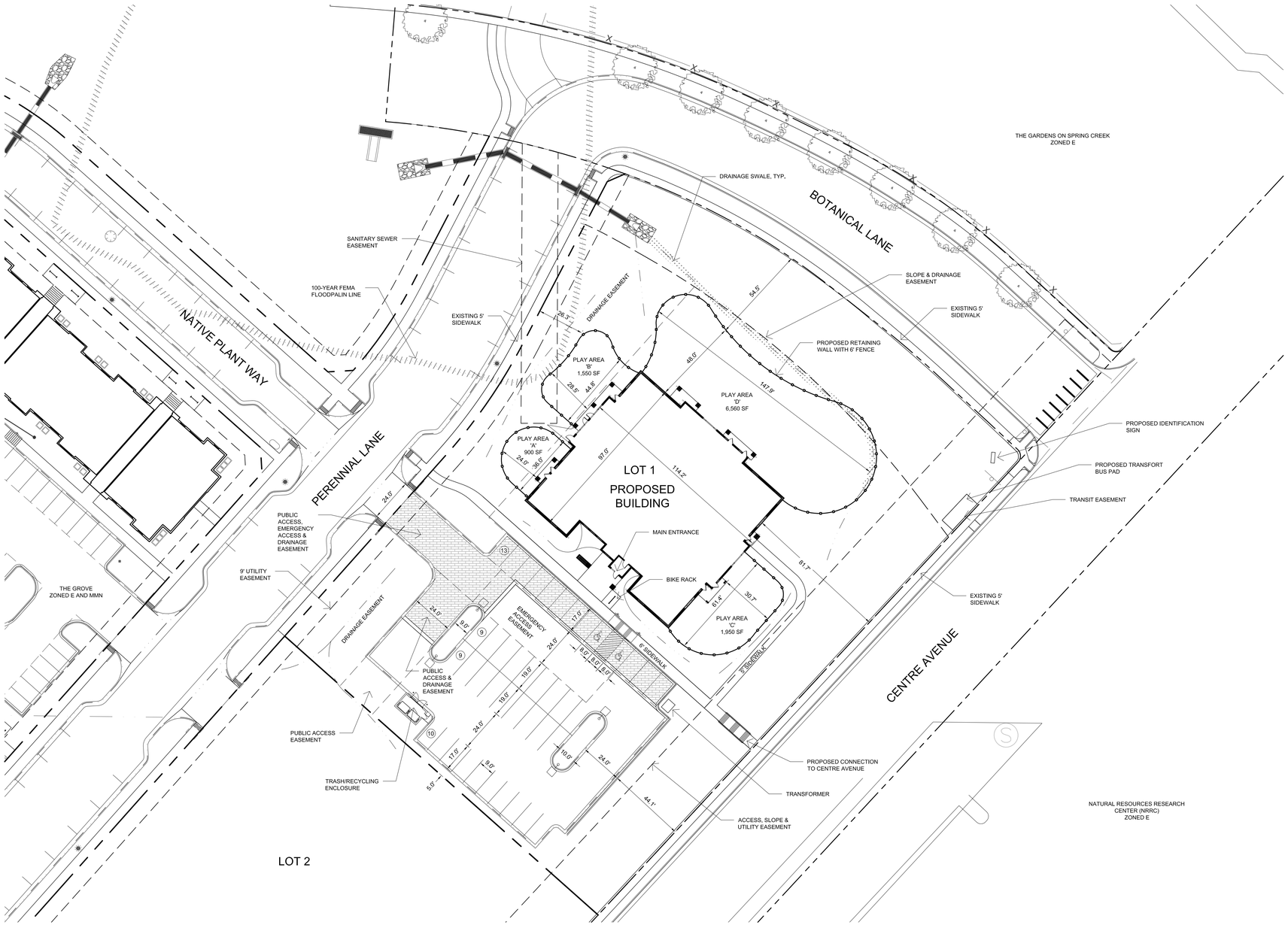
(v) Description of rationale behind the assumptions and choices made by the applicant.
At this time the project is not proposing any variance from the City of Fort Collins criteria.

(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 not existing wetlands, natural habitats or features currently located on site. See above.

(viii) Written narrative addressing each concern/issue raised at the neighborhood meeting(s), if a meeting has been held.
There was a neighborhood meeting held on 9.26.13 and no neighbors were in attendance.

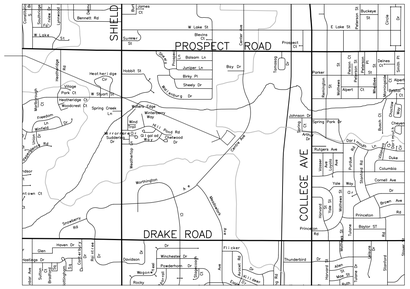
(ix) Name of the project as well as any previous name the project may have had during Conceptual Review.
The project is called Sunshine House FC - #138 Early Learning Academy. The project was called 2060 Perennial Ln – Child Care Center at Conceptual Review.



Vicinity Map:

NOT TO SCALE NORTH

PROJECT LOCATION



Land-Use Statistics

EXISTING ZONING:	E - EMPLOYMENT	
GROSS LAND AREA:	84,982 SF	1.951 AC
NUMBER OF BUILDINGS:	1	
LAND USE:	CHILD CARE FACILITY	
TOTAL BUILDING GROSS S.F.:	10,250 SF	
MAXIMUM BUILDING HEIGHT:	30'-0"	
TOTAL STORIES:	1	
FLOOR AREA RATIO:	8.3:1 F.A.R.	

GROSS AREA COVERAGE

	SQUARE FEET	ACRES	% OF
BUILDING FOOTPRINT	10,250	0,235	12.0%
LANDSCAPE AREA	44,586	1,024	52.5%
PAVED DRIVE AND PARKING	16,792	0,385	19.7%
SIDEWALKS	2,394	0,055	2.8%
PLAY YARDS	10,960	0.252	13.0%
TOTAL AREA:	84,982	1,951	100%

OFF-STREET PARKING:

PER LUC SECTION 3.2.2(K)(1)(h):
CHILD CARE CENTERS REQUIRE 2 PARKING SPACES PER 3 EMPLOYEES

OFF-STREET PARKING:	REQUIRED	PROVIDED
STANDARD SPACES (30 EMPLOYEES)	= 10	10
ACCESSIBLE SPACES	= 2	2
PARENT/VISITOR	=	29
TOTAL SPACES	10	41

BICYCLE PARKING :

REQUIRED:
1 SPACE PER 3,000 SQ. FT. 3,33 SPACES

PROVIDED:
FIXED RACKS 4 SPACES

PLAY YARD CALCULATIONS :

PLAY AREA A - INFANT	900 S.F.
PLAY AREA B - TODDLER	1,550 S.F.
PLAY AREA C - PRE-SCHOOL/PRE-K	1,950 S.F.
PLAY AREA D - KINDERGARTEN/SCHOOL AGE	6,560 S.F.

CLASSROOM CALCULATIONS :

INFANT	979 S.F.
TODDLER	920 S.F.
PRE-SCHOOL/PRE-K	1,528 S.F.
KINDERGARTEN/SCHOOL AGE	2,616 S.F.
TOTAL	6,043 S.F.

SECONDARY USE CALCULATION :

TOTAL E ZONE AREA	96,5 ACRES (100%)
AVAILABLE E ZONE AREA FOR SECONDARY USES	24,1 ACRES (25%)
GARDENS ON SPRING CREEK	15,2 ACRES
THE GROVE	7,5 ACRES
SUNSHINE HOUSE	1,9 ACRES
TOTAL	24,6 ACRES

Legend

- HANDICAP PARKING STALL
- TRANSFORMER
- EASEMENT LINE
- PROPERTY LINE
- FENCE LINE
- BIKE RACK
- PERVIOUS PAVERS
- PARKING LOT LIGHT POLE

0 30' 45' 60'
SCALE 1" = 30'-0"

NORTH

General Notes:

1. ALL SIGNS SHALL BE REQUIRED TO APPLY FOR SIGN PERMIT.
2. PROPOSED GRADES SHALL MATCH OR IMPROVE EXISTING GRADES TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING WHILE PROVIDING A SMOOTH TRANSITION BETWEEN ALL ADJACENT UNDISTURBED GRADES AND PROPOSED GRADES.
3. JOB SITE TO BE KEPT CLEAN AT ALL TIMES AND CONSTRUCTION AREAS ARE TO BE MAINTAINED FOR SAFETY.
4. SOILS DISTURBED ADJACENT TO WORK AREA, INCLUDING AREAS OUTSIDE OF CONSTRUCTION LIMITS, DUE TO NEW CONSTRUCTION ARE TO BE REGRADED AND SURFACE CONDITIONS REPAIRED AND SEEDED EQUIVALENT TO THAT CONDITION PRIOR TO START OF WORK.
5. PROTECT EXISTING SURFACES BOTH INSIDE AND OUTSIDE OF CONSTRUCTION LIMITS, DURING CONSTRUCTION. IF GRADES, CONCRETE OR ASPHALT ARE DAMAGED DUE TO CONSTRUCTION OPERATIONS OR WEATHER THE CONTRACTOR IS RESPONSIBLE FOR REPAIR TO THAT EQUIVALENT TO EXISTING CONDITIONS AT NO EXPENSE TO THE OWNER / CITY.
6. CONTRACTOR IS RESPONSIBLE FOR SETUP OF BARRICADES, WARNING SIGNAGE, OR OTHER PROTECTIVE DEVICES IF ANY EXCAVATIONS ARE LEFT EXPOSED AFTER ON-SITE WORK HOURS.
7. THE CONTRACTOR SHALL NOT PURPOSEFULLY PROCEED WITH ANY CONSTRUCTION PER PLANS PROVIDED WHEN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT WERE NOT CONSIDERED OR CHANGED AFTER PLANS WERE SUBMITTED. CONTRACTOR SHALL NOTIFY OWNER OR OWNER'S REPRESENTATIVE AND THE CITY OF FORT COLLINS IF SITUATION ARISES AND REVISIONS ARE NECESSARY.
8. THE CONTRACTOR SHALL PREVENT SEDIMENT, DEBRIS AND OTHER POLLUTANTS FROM ENTERING ANY STORM WATER SEWER SYSTEM OR, ADJACENT WATER WAYS, ETC., DURING THE DEMOLITION OR CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT. THE CONTRACTOR SHALL BE HELD RESPONSIBLE AND EXPENSE FOR THE CORRECTION OF ANY ADVERSE IMPACTS TO THE STORM WATER SEWER SYSTEM OR, ADJACENT WATER WAYS, WETLANDS ETC., RESULTING FROM THE WORK DONE AS PART OF THIS PROJECT/CONTRACT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE PRIOR TO BIDDING AND CONSTRUCTION, OF BECOMING AWARE OF ALL EXISTING AND PROPOSED UTILITIES, PIPES, STRUCTURES, ETC. CALL UNCC THREE DAYS BEFORE SCHEDULED WORK AT 811 OR 1-800-922-1987.
10. TO THE EXTENT FEASIBLE, COOPERATIVE AGREEMENTS WITH ADJACENT PROPERTY OWNERS TO CREATE A COMPREHENSIVE DEVELOPMENT PLAN THAT ESTABLISHES AN INTEGRATED PATTERN OF CROSS ACCESS, PARKING AREAS, OUTDOOR SPACES, BUILDING STYLES AND LAND USE.
11. ALL ROOFTOP MECHANICAL EQUIPMENT WILL BE FULLY SCREENED FROM PUBLIC VIEW AND PAINTED TO MATCH THE ROOF.
12. CRITICAL CARE FACILITIES ARE NOT ALLOWED IN A FEMA-REGULATORY FLOODPLAIN (100-YR & 500-YR). THOUGH THIS BUILDING IS NOT IN A FLOODPLAIN AT THIS TIME, THE APPLICANT IS AWARE THAT IF THE LIMITS OF THE EXISTING FLOODPLAIN CHANGE, OR A 500-YEAR FLOODPLAIN IS DEFINED, THE BUILDING MAY BE IN A FLOODPLAIN IN THE FUTURE; AND THE DAYCARE WOULD BECOME A NON-CONFORMING USE.

Owner's Certification of Approval:

THE UNDERSIGNED DOES/DO HEREBY CERTIFY THAT I/WE ARE THE LAWFUL OWNERS OF REAL PROPERTY DESCRIBED ON THIS SITE PLAN AND DO HEREBY CERTIFY THAT I/WE ACCEPT THE CONDITIONS AND RESTRICTIONS SET FORTH ON SAID SITE PLAN.

IN WITNESS WHEREOF, WE HAVE HEREUNTO SET OUR HANDS AND SEALS THIS THE _____ DAY OF _____, 20_____.

_____
(Printed Name)

NOTARIAL CERTIFICATE

STATE OF COLORADO)

COUNTY OF _____)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY (PRINTED NAME) THIS _____ DAY OF _____, 20_____.

MY COMMISSION EXPIRES:_____ _____
NOTARY PUBLIC

(SEAL)

Legal Description:

TRACT A, THE GROVE AT FORT COLLINS
THE ABOVE DESCRIBED AREA CONTAINS 84,982 SQUARE FEET OR 1,951 ACRES MORE OR LESS AND IS SUBJECT TO ALL EASEMENTS AND RIGHTS-OF-WAY NOW ON RECORD OR EXISTING.

Planning Approval:

BY THE DIRECTOR OF COMMUNITY DEVELOPMENT AND NEIGHBORHOOD SERVICES OF THE CITY OF FORT COLLINS, COLORADO THIS_____DAY OF _____ A.D., 20_____.

_____
DIRECTOR OF COMMUNITY DEVELOPMENT AND NEIGHBORHOOD SERVICES

TB GROUP
landscape architecture | planning | illustration
444 Mountain Ave, Berthoud,CO 80513 | TEL 970.532.5891 WEB TBGroup.us

SEAL

PROJECT TITLE

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139

2060 Perennial Lane
Fort Collins, Colorado

PREPARED FOR

Colorado State University
Research Foundation
PO Box 483
Fort Collins CO 80522
Contact: Bo Brown
Phone: 970.492.4503

REVISIONS	DATE
STAFF COMMENTS	11.20.13

DATE

10.09.13

SHEET TITLE

Site Plan

SHEET INFORMATION

SHEET 1 OF 1

Landscape Notes

1. STREET AND ORNAMENTAL TREES SHALL BE PLANTED TO MEET STANDARDS IN LUC 3.2.1.G. THEY SHALL BE PLANTED NO CLOSER THAN FORTY (40) FEET AND FIFTEEN (15) FEET RESPECTIVELY FROM STREET LIGHTS. NO TREES SHALL BE PLANTED WITHIN TEN (10) FEET FROM WATER AND SEWER MAINS, SIX (6) FEET FROM WATER AND SEWER SERVICE LINES, FOUR (4) FEET FROM GAS, TELEPHONE AND ELECTRIC UTILITIES, EIGHT (8) FEET FROM ANY DRIVEWAY AND TWENTY (20) FEET FROM SIGNS AND TRAFFIC CONTROL DEVICES.

2. MINIMUM CLEARANCE OF THREE (3) FEET ON EACH SIDE OF FIRE DEPARTMENT CONNECTION (FDC). NO VEGETATION OTHER THAN TURF OR GROUND COVERS PLANTED IN FRONT OF FDC.

3. IF TREES OR SHRUBS ARE LOCATED ON TOP OF FIELD VERIFIED UTILITIES, CONTRACTOR SHALL NOTIFY OWNER BEFORE ANY DIGGING HAS COMMENCED. VERIFY WITH OWNER IF AND WHICH SHRUBS/TREES SHALL BE TAKEN OUT OF PROJECT/CONTRACT.

4. ALL LANDSCAPE AREAS SHALL BE MAINTAINED, INCLUDING MOWING, WATERING AND FERTILIZING BY CONTRACTOR, UP TO FINAL ACCEPTANCE. AT SUCH TIME OWNER WILL BE RESPONSIBLE FOR ALL MAINTENANCE. LANDSCAPE AND IRRIGATION WILL BE WARRANTED FOR ONE (1) FULL YEAR AFTER FINAL ACCEPTANCE. TREES AND VEGETATION, IRRIGATION SYSTEMS, FENCES, WALLS AND OTHER LANDSCAPE ELEMENTS SHALL BE CONSIDERED AS ELEMENTS OF THE PROJECT IN THE SAME MANNER AS PARKING, BUILDING MATERIALS AND OTHER SITE DETAILS. THE APPLICANT, LANDOWNER OR SUCCESSORS IN INTEREST SHALL BE JOINTLY AND SEVERALLY RESPONSIBLE FOR THE REGULAR MAINTENANCE OF ALL LANDSCAPING ELEMENTS IN GOOD CONDITION. ALL LANDSCAPING SHALL BE MAINTAINED FREE FROM DISEASE, PESTS, WEEDS AND LITTER, AND ALL LANDSCAPE STRUCTURES SUCH AS FENCES AND WALLS SHALL BE REPAIRED AND REPLACED PERIODICALLY TO MAINTAIN A STRUCTURALLY SOUND CONDITION.

5. TO THE MAXIMUM EXTENT FEASIBLE, TOPSOIL THAT IS REMOVED DURING CONSTRUCTION ACTIVITY SHALL BE CONSERVED FOR LATER USE ON AREAS REQUIRING REVEGETATION AND LANDSCAPING.

6. EXCAVATED MATERIAL TO BE USED AS FILL WILL HAVE ALL ROCKS, DEBRIS, WASTE MATERIAL, FROZEN MATERIAL, VEGETATION LARGER THAN 3" IN ANY DIMENSION REMOVED BEFORE PLACEMENT AND COMPACTION OF SOIL.

7. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING AND WALL FOUNDATIONS AND A SMOOTH TRANSITION BETWEEN ALL ADJACENT EXISTING GRADES AND PROPOSED GRADES

8. PRIOR TO FINE GRADING, SOD AREAS AND PLANTING BEDS, SHALL BE THOROUGHLY LOOSENED AND TILLE. REMOVE ALL UNSUITABLE TOPSOIL, INCLUDING ALL ROCKS LARGER THAN 3 INCHES IN ANY DIRECTION, ALL CONCRETE, TRASH, DEBRIS, WEEDS, ROOTS AND OTHER WASTE MATERIALS. THE SOIL IN ALL LANDSCAPE AREAS, INCLUDING PARKWAYS AND MEDIANS, SHALL BE THOROUGHLY LOOSENED TO A DEPTH OF NOT LESS THAN EIGHT (8) INCHES AND SOIL AMENDMENT SHALL BE THOROUGHLY INCORPORATED INTO THE SOIL OF ALL LANDSCAPE AREAS TO A DEPTH OF AT LEAST SIX (6) INCHES BY TILLING, DISCING OR OTHER SUITABLE METHOD, AT A RATE OF AT LEAST THREE (3) CUBIC YARDS OF SOIL AMENDMENT PER ONE THOUSAND (1,000) SQUARE FEET OF LANDSCAPE AREA. DO NOT CULTIVATE SOIL WITHIN THE DRIP LINE OF EXISTING TREES TO RETAIN.

9. UNIFORMLY COMPACT AND FINE GRADE THESE SOD / GRASS AREAS AND PLANTING BEDS TO A SMOOTH SURFACE, FREE FROM IRREGULAR SURFACE CHANGES. CUT OUT SOFT SPOTS, FILL IN LOW SPOTS AND TRIM HIGH SPOTS TO COMPLY WITH REQUIRED GRADE TOLERANCES.

10. ONCE COMPACTED AND FINE GRADED ALL ROCKS, DEBRIS, WASTE MATERIAL AND VEGETATION MATERIAL LARGER THAN 1/2" WILL BE RAKED FROM THE SURFACE AND REMOVED FROM SITE.

11. SOD TO BE 100% COLORADO GROWN BLUEGRASS BLEND SPECIFICALLY GROWN FOR LOW WATER AND HIGH TRAFFIC LAWN APPLICATIONS WITH MINIMUM THREE (3) IMPROVED VARIETIES, HAVING A HEALTHY VIGOROUS ROOT SYSTEM. ONCE TURF IS LAID IT SHALL BE PROPERLY ROLLED, COMPACTED AND PUSHED TOGETHER TO ELIMINATE ANY GAPS BETWEEN ROLL EDGES. APPLY FERTILIZER IN THESE AREAS PER SOD FARM'S RECOMMENDATIONS.

12. ALL TREES SHRUBS AND PERENNIAL SHRUB BEDS OUTSIDE OF IRRIGATED AREAS ARE TO BE IRRIGATED WITH A DRIP IRRIGATION SYSTEM. PERENNIAL SHRUB BEDS SHALL BE IRRIGATED BY 6" POP-UP SPRAY HEADS. IRRIGATION SYSTEM TO BE DESIGNED AND BUILT BY CONTRACTOR.

13. A PERMIT MUST BE OBTAINED FROM THE CITY FORESTER BEFORE ANY TREES OR SHRUBS AS NOTED ON THIS PLAN ARE PLANTED, PRUNED OR REMOVED ON THE PUBLIC RIGHT-OF-WAY, THIS INCLUDES ZONES BETWEEN THE SIDEWALK AND CURB, MEDIANS AND OTHER CITY PROPERTY. THIS PERMIT SHALL APPROVE THE LOCATION AND SPECIES TO BE PLANTED. FAILURE TO OBTAIN THIS PERMIT MAY RESULT IN REPLACING OR RELOCATING TREES AND A HOLD ON CERTIFICATE OF OCCUPANCY.

14. THE DEVELOPER SHALL CONTACT THE CITY FORESTER TO INSPECT ALL STREET TREE PLANTINGS AT THE COMPLETION OF EACH PHASE OF THE DEVELOPMENT. ALL TREES NEED TO HAVE BEEN INSTALLED AS SHOWN ON THE LANDSCAPE PLAN. APPROVAL OF STREET TREE PLANTING IS REQUIRED BEFORE FINAL APPROVAL OF EACH PHASE. FAILURE TO OBTAIN APPROVAL BY THE CITY FORESTER FOR STREET TREES IN A PHASE SHALL RESULT IN A HOLD ON CERTIFICATE OF OCCUPANCY FOR FUTURE PHASES OF THE DEVELOPMENT.

15. ALL PLANT MATERIALS ARE SIZED AND OUTLINED IN PLANT LIST. ALL PLANTS TO BE PLANTED IN AMENDED SOIL AND STAKED AS SHOWN IN DETAILS. ALL PLANTS SHALL BE A-GRADE OR NO. 1 GRADE, FREE OF ANY DEFECTS, OF NORMAL HEALTH, HEIGHT, LEAF DENSITY AND SPREAD APPROPRIATE TO THE SPECIES AS DEFINED BY AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS.

16. IF PLANTS ARE IN NEED OF REPLACEMENT DUE TO DECLINING HEALTH, DISEASE, OR DEATH, THE PLANTS SHALL BE PROMPTLY REPLACED BASED ON THE REQUIREMENTS OF THE FORT COLLINS LAND USE CODES AND REPLACED WITH THE ORIGINAL SPECIES UNLESS APPROVED BY THE CITY.

17. CHANGES IN PLANT SPECIES OF PLANT LOCATIONS FROM WHAT IS LISTED ON THE LANDSCAPE PLAN WILL REQUIRE THE APPROVAL OF THE CITY PRIOR TO INSTALLATION OF REPLACEMENT. OVERALL QUANTITY AND QUALITY TO BE CONSISTENT WITH THE APPROVED PLANS. IN THE EVENT OF CONFLICT WITH THE QUANTITIES INCLUDED IN THE PLANT LIST, SPECIES AND QUANTITIES SHALL BE PROVIDED.

18. ALL TREES AND SHRUBS TO BE BALLED AND BURLAPPED, OR CONTAINERIZED.

19. ALL PLANT MATERIAL SHALL HAVE ALL WIRE, TWINE, BASKETS, BURLAP, AND ALL OTHER NON-BIODEGRADABLE CONTAINMENT MATERIAL REMOVED FROM THE TRUNK AND/OR ROOT BALL OF THE PLANT, PRIOR TO PLANTING.

20. ALL SHRUB BEDS SHALL HAVE MINIMUM 5" DEPTH SHREDDED CEDAR MULCH - NATURAL COLOR AND/OR WASHED SMOOTH COBBLE. A CONTINUOUS LAYER OF TYPAR LANDSCAPE FABRIC OR APPROVED EQUAL SHALL BE INSTALLED IN ALL SHRUB BEDS WITH 6" OVERLAP AT SEAMS WITH 4" STAPLES 4' O.C. IN ALL DIRECTIONS.

21. EDGING BETWEEN GRASS TYPES AND SHRUB BEDS / ROCK COBBLE SHALL BE DURA-EDGE HEAVY DUTY STEEL EDGER MIN. 14 GA x 4" WITH ROLLED TOP AND SHALL BE SET LEVEL WITH THE TOP OF THE ADJACENT SOD. NO EDGING SHALL BE USED BETWEEN CEDAR MULCH / COBBLE TRANSITIONS.

22. ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND HORTICULTURAL PRACTICES IN A MANNER DESIGNED TO ENCOURAGE QUICK ESTABLISHMENT AND HEALTHY GROWTH. ALL LANDSCAPING IN EACH PHASE SHALL EITHER BE INSTALLED OR THE INSTALLATION SHALL BE SECURED WITH A LETTER OF CREDIT, ESCROW OR PERFORMANCE BOND FOR ONE HUNDRED TWENTY-FIVE (125) PERCENT OF THE VALUE OF THE LANDSCAPING PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY FOR ANY BUILDING IN SUCH PHASE.

23. HEALTHY, MATURE TREES THAT ARE REMOVED BY THE APPLICANT OR BY ANYONE ACTING ON BEHALF OF OR WITH THE APPROVAL OF THE APPLICANT SHALL BE REPLACED WITH NOT LESS THAN ONE (1) OR MORE THAN SIX (6) REPLACEMENT TREES SUFFICIENT TO MITIGATE THE LOSS OF VALUE OF THE REMOVED TREE, THE APPLICANT SHALL SELECT EITHER THE CITY FORESTER OR A QUALIFIED LANDSCAPE APPRAISER TO DETERMINE SUCH LOSS BASED UPON AN APPRAISAL OF THE REMOVED TREE.

24. LANDSCAPING WITHIN THE R.O.W. IS RESTRICTED TO PLANTS THAT DO NOT EXCEED 24 INCHES IN HEIGHT MEASURED FROM THE STREET FLOWLINE (TREES EXCEPTED). IF THE LANDSCAPING WITHIN THE R.O.W. EXCEEDS THIS HEIGHT OR CREATES A SIGHT DISTANCE CONCERN THE PROPERTY OWNER SHALL BE REQUIRED TO TRIM THE LANDSCAPE MATERIAL.

25. DEVELOPER SHALL ENSURE THAT SITE PLAN AND LANDSCAPE PLAN AND UTILITY PLANS ARE COORDINATED SO THAT THE GRADING, STORM DRAINAGE, OR OTHER CONSTRUCTION DOES NOT CONFLICT WITH NOR PRECLUDE INSTALLATION AND MAINTENANCE OF LANDSCAPING ELEMENTS AS SHOWN ON THE APPROVED PLANS.

26. ALL LANDSCAPE PLANTINGS INSTALLED WITHIN THE PUBLIC STREET RIGHT-OF-WAY SHALL CONFORM TO THE CURRENT SIGHT DISTANCE AND INTERSECTION SIGHT TRIANGLE STANDARDS IN CHAPTERS 7 THROUGH 9 OF THE LARIMER COUNTY URBAN AREA STREET STANDARDS. TREE CANOPIES SHOULD NOT OBSTRUCT VISIBILITY OF TRAFFIC RELATED REGULATORY SIGNAGE.

Plant List

KEY	QTY	RATIO	COMMON NAME	BOTANICAL NAME	HEIGHT	WIDTH	SIZE	INSTALLATION NOTES
SHADE / CANOPY TREES -		**16**						
	10	18.5%	HACKBERRY, WESTERN	Celtis occidentalis	60'	50'	2" cal. BB	BALANCED, WELL BRANCHED W/ STRAIGHT TRUNK & CENTRAL LEADER
	8 2	20.4%	HONEYLOCUST, IMPERIAL	Gleditsia triacanthos inermis 'Imperial'	40'	40'	2" cal. BB 3" cal. BB	BALANCED, WELL BRANCHED W/ STRAIGHT TRUNK & CENTRAL LEADER
	6	11.1%	OAK, SHUMARD	Quercus shumardii	50'	40'	2" cal. BB	BALANCED, WELL BRANCHED W/ STRAIGHT TRUNK & CENTRAL LEADER
EVERGREEN TREES -		**9**						
	4	7.4%	PINE,AUSTRIAN	Pinus nigra	40'	40'	6'-8' BB	FULL SPECIMEN, EVENLY AND WELL BRANCHED W/ STRAIGHT TRUNK & TOP LEADER
	5	9.3%	SPRUCE, BAKERI	Picea pungens 'Bakerii'	35'	15'	6' BB	FULL SPECIMEN, EVENLY AND WELL BRANCHED W/ STRAIGHT TRUNK & TOP LEADER
ORNAMENTAL TREES -		**29**						
	8	14.8%	CRABAPPLE, SPRING SNOW	Malus spp. 'Spring Snow'	20'	20'	1.5" cal. BB	BALANCED, WELL BRANCHED W/ STRAIGHT TRUNK & CENTRAL LEADER
	5	9.3%	MAPLE, AMUR	Acer ginnala 'Flame'	20'	20'	1.5" cal. BB	BALANCED, WELL BRANCHED W/ STRAIGHT TRUNK & CENTRAL LEADER
	7	13.0%	PEAR, CHANTICLEER	Pyrus calleryana 'Chanticleer'	25'	20'	1.5" cal. BB	BALANCED, WELL BRANCHED W/ STRAIGHT TRUNK & CENTRAL LEADER
	9	16.7%	SERVICEBERRY, AUTUMN BRILLANCE	Amelanchier grandiflora 'Autumn Brillance'	20'	20'	1.5" cal. BB	BALANCED, WELL BRANCHED W/ STRAIGHT TRUNK & CENTRAL LEADER
EVERGREEN SHRUBS -		**20**						
	20	-	PINE, MUGO SLOWMOUND	Pinus mugo 'slowmound'	3'	5'	5 Gallon	18" (h) FULL SPECIMEN, EVENLY AND WELL BRANCHED
DECIDUOUS SHRUBS -		**292**						
	12	-	BUTTERFLY BUSH, COMPACT PURPLE	Buddleja davidii nanhoensis 'Petite Plum'	5'	5'	5 Gallon	24" (h) FULL SPECIMEN, EVENLY AND WELL BRANCHED
	37	-	CHOKEBERRY, BRILLIANT RED	Aronia arbutifolia 'Brilliantissima'	6'	6'	5 Gallon	24" (h) FULL SPECIMEN, EVENLY AND WELL BRANCHED
	24	-	EUONYMUS, COMPACT BURNING BUSH	Euonymus alatus compacta	7'	7'	5 Gallon	12" (h) FULL SPECIMEN, EVENLY AND WELL BRANCHED
	41	-	LILAC, DWARF KOREAN	Syringa meyeri 'Palibin'	4'	4'	5 Gallon	24" (h) FULL SPECIMEN, EVENLY AND WELL BRANCHED
	95	-	POTENTILLA, MCKAY'S WHITE	Potentilla fruticosa 'McKay's White'	2'	3'	5 Gallon	18" (h) FULL SPECIMEN, EVENLY AND WELL BRANCHED
	4	-	SAND CHERRY, WESTERN PAWNEE BUTTES	Prunus besseyi 'Pawnee Buttes'	30"	6'	5 Gallon	24" (h) FULL SPECIMEN, EVENLY AND WELL BRANCHED
	33	-	SPIREA, BLUE MIST	Caryopteris x clandonensis 'Blue Mist'	4'	3'	5 Gallon	24" (h) FULL SPECIMEN, EVENLY AND WELL BRANCHED
	46	-	SUMAC, THREE LEAF	Rhus trilobata	5'	5'	5 Gallon	24" (h) FULL SPECIMEN, EVENLY AND WELL BRANCHED
PERENNIALS / GRASSES -		**590**						
	28	-	GRASS, AVENA	Helichtotrichon sempervirens	2'	2'	1 Gallon	WELL ROOTED AND ESTABLISHED
	269	-	GRASS, GRAMA BLONDE AMBITION GRAMA	Bouteloua gracilis 'Blonde Ambition'	2'	2'	1 Gallon	WELL ROOTED AND ESTABLISHED
	187	-	GRASS, FEATHER REED	Calamagrostis acutiflora 'Karl Foerster'	4'	2'	1 Gallon	WELL ROOTED AND ESTABLISHED
	50	-	GRASS, FOUNTAIN	Pennisetum alopecuroides	4'	2.5'	1 Gallon	WELL ROOTED AND ESTABLISHED
	56	-	GRASS, HEAVY METAL BLUE SWITCH	Panicum virgatum 'Heavy Metal'	3'	18"	1 Gallon	WELL ROOTED AND ESTABLISHED

Tree Protection Notes

1. SEE APPROVED LANDSCAPE PLAN FOR SPECIFIC LOCATIONS OF TREES TO BE REMOVED, AND TREES TO BE PROTECTED.
2. EXISTING TREES MARKED FOR PROTECTION AND PRESERVATION SHALL NOT BE REMOVED OR MITIGATED.
3. HEAVY EQUIPMENT SHOULD NOT BE ALLOWED TO COMPACT OVER THE SOIL OVER THE ROOT ZONE OF EXISTING TREES.
4. AVOID CUTTING SURFACE ROOTS WHEREVER POSSIBLE, SIDEWALKS AND PAVING LEVELS SHOULD BE CONTOURED SUFFICIENTLY TO AVOID DAMAGE.
5. ROOT CUTS FROM EXCAVATION SHOULD BE DONE RAPIDLY, SMOOTH FLUSH CUTS SHOULD BE MADE. BACKFILL BEFORE THE ROOTS HAVE A CHANCE TO DRY OUT AND WATER THE TREE IMMEDIATELY.
6. PRIOR TO CONSTRUCTION, ALL PROTECTED TREES SHALL HAVE ORANGE PROTECTION BARRIER FENCING ERECTED, WHICH AS A MINIMUM ARE SUPPORTED BY 2" X 1" OR SIMILAR STURDY STOCK, FOR SHIELDING OF PROTECTED TREES, NO CLOSER THAN SIX (6) FEET FROM THE TRUNK OR ONE HALF (1/2) OF THE DRIP LINE, WHICH EVER IS GREATER, WITHIN THIS PROTECTION ZONE THERE SHALL BE NO MOVEMENT OF EQUIPMENT OR STORAGE OF EQUIPMENT, MATERIALS, DEBRIS, FILL OR CUT UNLESS APPROVED BY THE CITY FORESTER.
7. ALL EXISTING TREES OR OFF-SITE TREES THAT OVER HANG ONTO PROPERTY SHALL BE PRUNED TO THE CITY FORESTER'S "MEDIUM PRUNE STANDARDS."
8. WITHIN THE DRIP LINE OF ANY PROTECTED EXISTING TREE, THERE SHALL BE NO CUT OR FILL OVER A FOUR INCH DEPTH UNLESS A QUALIFIED ARBORIST OR FORESTER HAS EVALUATED AND APPROVED THE DISTURBANCE.
9. DURING THE CONSTRUCTION STAGE OF DEVELOPMENT, THE APPLICANT SHALL PREVENT THE CLEANING OF EQUIPMENT OR MATERIAL OR THE STORAGE OR DISPOSAL OF WASTE MATERIAL SUCH AS PAINTS, OILS, SOLVENTS, ASPHALT, CONCRETE, MOTOR OIL OR ANY OTHER MATERIAL HARMFUL TO THE LIFE OF A TREE, WITHIN THE DRIP LINE OF ANY PROTECTED TREE OR GROUP OF TREES.
10. NO DAMAGING ATTACHMENT, WIRES, SIGNS OR PERMITS MAY BE FASTENED TO ANY PROTECTED TREE.

Irrigation Notes

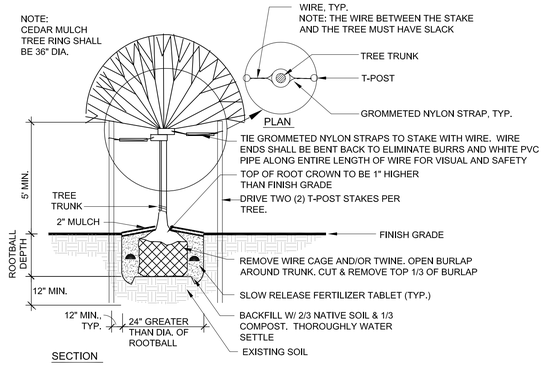
1. ENTIRE IRRIGATION SYSTEM WITH RAIN SENSOR TO BE DESIGNED FOR LANDSCAPE SHOWN ON PLAN AND BUILT BY CONTRACTOR UTILIZING EXISTING IRRIGATION SYSTEM. IRRIGATION CONTRACTOR SHALL VERIFY P.S.I. AND GPM AVAILABLE. SYSTEM SHALL BE DESIGNED TO MEET THE AVAILABLE P.S.I. AND GPM.
2. ALL INDICATED SOD GRASS AREAS ARE TO BE IRRIGATED BY A PERMANENT UNDERGROUND AUTOMATIC IRRIGATION SYSTEM. TURF AREAS LESS THAN 25 FEET IN WIDTH ARE TO BE IRRIGATED WITH POP-UP SPRAY HEADS AND AREAS GREATER THAN 25FEET SHALL USE A ROTOR POP-UP SPRAY SYSTEM.
3. ALL TREES, SHRUBS AND PERENNIALS OUTSIDE OF POP-UP IRRIGATED AREAS, ARE TO BE IRRIGATED WITH A PERMANENT DRIP IRRIGATION SYSTEM WITH RAIN SENSOR. IRRIGATION SYSTEM AND NECESSARY SLEEVING WILL BE DESIGNED AND BUILT BY CONTRACTOR AND ADJUSTED TO A LOW WATER REQUIREMENT, BASED ON THE NEEDS OF SELECTED PLANT MATERIAL.
4. QUICK COUPLERS SHALL BE PROVIDED AT EACH POINT OF CONNECTION AND AT REGULAR SPACING ALONG THE IRRIGATION MAINLINE. SPACING OF QUICK COUPLES SHALL NOT EXCEED 200 FEET. LOCATE QUICK COUPLING VALVE AT A POINT OF EASY ACCESS.
5. ALL IRRIGATION TRENCHES SHALL BE PROPERLY WATERED AND COMPACTED TO AVOID FUTURE SETTLING. ANY SETTLING DURING WARRANTY PERIOD WILL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
6. COORDINATE ALL IRRIGATION WORK WITH EXISTING UTILITIES AND RESPECTIVE TRADES.
7. ALL IRRIGATION SLEEVING SHALL BE PROVIDED AND INSTALLED BY GENERAL CONTRACTOR. IRRIGATION CONTRACTOR SHALL COORDINATE SLEEVING LOCATIONS WITH GENERAL CONTRACTOR. ALL IRRIGATION SLEEVING TO BE STAKED IN THE FIELD OR LOCATED ON DIMENSIONED "AS-BUILT" DRAWING BY THE GENERAL CONTRACTOR TO ALLOW FUTURE USE AND LOCATION.

Hydrozone Table

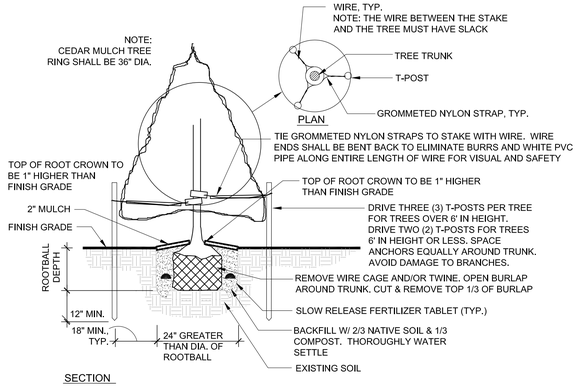
ZONE	AREA		WATER USE	GALLONS
HIGH	8,717	SF	18 GAL/SF	156,906 GAL
MODERATE	10,814	SF	10 GAL/SF	108,140 GAL.
VERY LOW	28,829	SF	3 GAL/SF	86,487 GAL
TOTAL / AVERAGE	48,360	SF	351,533 GAL	7.2 GAL/SF

Landscape Legend

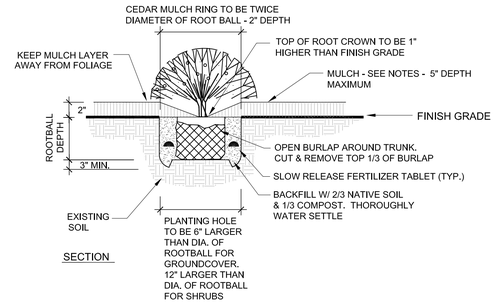
8,717 S.F.	IRRIGATED TURF BLUE GRASS BLEND SOD	444 S.F.	COBBLE ROCK AREAS TO RECEIVE 4"-6" COBBLE OVER WEED BARRIER FABRIC
10,626 S.F.	SHREDDED CEDAR WOOD MULCH ALL SHRUB BED AREAS TO RECEIVE MINIMUM 4"-6" SHREDDED CEDAR WOOD MULCH	188 S.F.	PERENNIAL PLANTING AGASTACHE RUPESTRIS (SUNSET HYSSOP)
28,829 S.F.	NON-IRRIGATED NATIVE PRARIES MEADOW GRASS MIX ARKANSAS VALLEY SEED MIX (OR APPROVED EQUAL)		STEEL EDGER, ROUNDED TOP
			EXISTING TREES



DECIDUOUS TREE PLANTING DETAIL



CONIFER TREE PLANTING DETAIL



GROUND COVER & SHRUB PLANTING DETAIL

Native Grass Seed Mix

NATIVE GRASS - NATIVE PRAIRIE MEADOW GRASS MIX:

1. SEED SHALL BE AS MANUFACTURED BY PAWNEE BUTTE SEED, INC OR ARKANSAS VALLEY SEEDS.
2. SEED SHALL BE A MIXTURE THAT MATCHES THE FOLLOWING:

COMMON NAME	%	LBS.P.L.S./ACRE
SIDEOATS GRAMA	17.5%	2.8
BUFFALOGRASS	38.8%	6.2
BLUE GRAMA	3.7%	0.6
INLAND SALTGRASS	5.6%	0.9
BOTTLEBRUSH SQUIRRELTAIL	11.3%	1.8
PRAIRIE JUNEGRASS	1.2%	0.2
WESTERN WHEATGRASS	20.0%	3.2
ALKALI SACATON	1.9%	0.3

3. DRILLED APPLICATION RATE: 16.0 LBS (PLS) PER ACRE (0.37 LBS / 1000 SF) IN TWO PERPENDICULAR DIRECTIONS.
4. NATIVE SEED AREAS: ADEQUATE TEMPORARY IRRIGATION OR BY WATER TRUCK WILL BE PROVIDED FOR THE ESTABLISHMENT AND MAINTENANCE FOR THESE SEEDED AREAS, AND THAT NATIVE GRASSES SHALL BE MAINTAINED IN A CONDITION OF ACCEPTABLE HEIGHT, FREE OF WEEDS, TRASH AND DEBRIS, AND SHALL NOT REPRESENT A FIRE HAZARD NOR BECOME A NUISANCE SITE FOR WATER OR WIND EROSION.

MULCH IN ALL NATIVE SEED AREAS:

1. IMMEDIATELY FOLLOWING THE RAKING OPERATION, ADD STRAW MULCH TO THE SEEDED AREAS.
2. APPLY STRAW MULCH AT A MINIMUM OF 1.5 TONS PER ACRE OF AIR DRY MATERIAL. SPREAD STRAW MULCH UNIFORMLY OVER THE AREA WITH MECHANICAL MULCH SPREADER / CRIMPER, DO NOT MULCH WHEN WIND VELOCITY EXCEEDS 10 MPH.
3. WHEREVER THE USE OF CRIMPING EQUIPMENT IS PRACTICAL, PLACE MULCH IN THE MANNER NOTED ABOVE AND ANCHOR IT INTO THE SOIL. USE A DISC SUCH AS A MULCH TILLER, WITH A FLAT SERRATED DISC AT LEAS ½ INCH IN THICKNESS, HAVING DULL EDGES, AND SPACE NO MORE THAN 9 INCHES APART, WITH DISCS OF SUFFICIENT DIAMETER TO PREVENT THE FRAME OF THE EQUIPMENT FROM DRAGGING THE MULCH. ANCHOR MULCH A MINIMUM DEPTH OF 2 INCHES AND ACROSS THE SLOPE WHERE PRACTICAL WITH NO MORE THAN TWO PASSES OF THE ANCHORING EQUIPMENT.
4. IMMEDIATELY UPON COMPLETION OF THE MULCHING AND BINDING OPERATION, THE SEEDED AREAS SHALL BE IRRIGATED, KEEPING THE TOP 2 INCHES OF SOIL EVENLY MOIST UNTIL SEED HAS UNIFORMLY GERMINATED AND GROWN TO A HEIGHT OF 2-INCHES.
5. WATERING APPLICATION SHALL BE DONE IN A MANNER WHICH WILL PROVIDE UNIFORM COVERAGE BUT WHICH WILL NOT CAUSE EROSION, MOVEMENT, OR DAMAGE TO THE FINISHED SURFACE.

TB GROUP
landscape architecture | planning | illustration
444 Mountain Ave.
Berthoud,CO 80513
TEL 970.532.5891
WEB TBGroup.us

SEAL

PROJECT TITLE

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139

2060 Perennial Lane
Fort Collins, Colorado

PREPARED FOR

Colorado State University
Research Foundation
PO Box 483
Fort Collins CO 80522
Contact: Bo Brown
Phone: 970.492.4503

REVISIONS DATE

DATE

10.09.13

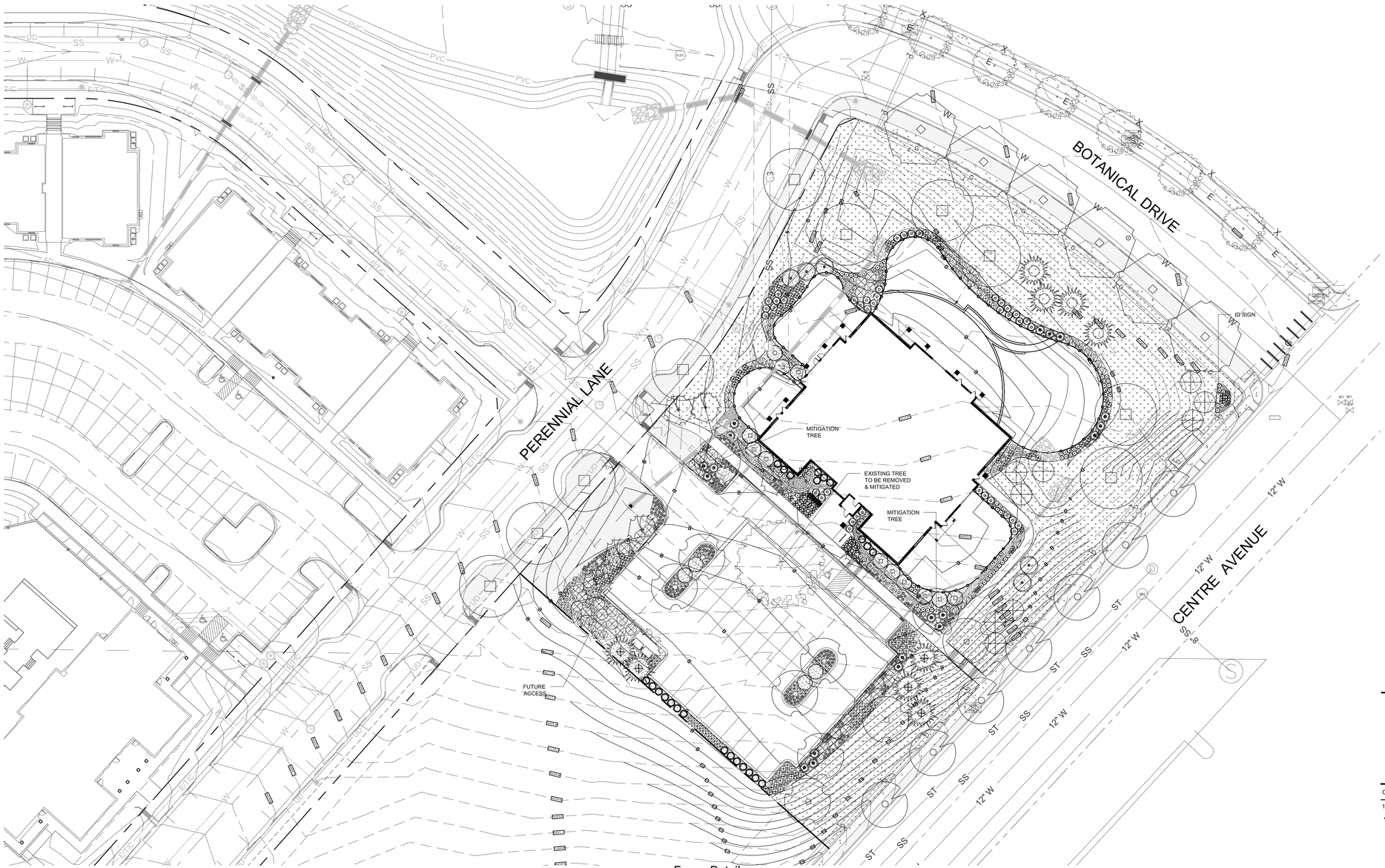
SHEET TITLE

Landscape Notes, Details & Schedules

SHEET INFORMATION

SHEET 1 OF 2

Landscape Plan



0 30' 45' 60'

SCALE 1" = 30'-0"

NORTH

Landscape Notes

KEY	QTY	RATIO	COMMON NAME
SHADE / CANOPY TREES -		**16**	
	10	18.5%	HACKBERRY, WESTERN
	8 2	20.4%	HONEYLOCUST, IMPERIAL
	6	11.1%	OAK, SHUMARD
EVERGREEN TREES -		**9**	
	4	7.4%	PINE,AUSTRIAN
	5	9.3%	SPRUCE, BAKERI
ORNAMENTAL TREES -		**29**	
	8	14.8%	CRABAPPLE, SPRING SNOW
	5	9.3%	MAPLE, AMUR
	7	13.0%	PEAR, CHANTICLEER
	9	16.7%	SERVICEBERRY, AUTUMN BRILLANCE
EVERGREEN SHRUBS -		**20**	
	20	-	PINE, MUGO SLOWMOUND
DECIDUOUS SHRUBS -		**292**	
	12	-	BUTTERFLY BUSH, COMPACT PURPLE
	37	-	CHOKEBERRY, BRILLIANT RED
	24	-	EUONYMUS, COMPACT BURNING BUSH
	41	-	LILAC, DWARF KOREAN
	95	-	POTENTILLA, MCKAY'S WHITE
	4	-	SAND CHERRY, WESTERN PAWNEE BUTTES
	33	-	SPIREA, BLUE MIST
	46	-	SUMAC, THREE LEAF
PERENNIALS / GRASSES -		**590**	
	28	-	GRASS, AVENA
	269	-	GRASS, GRAMA BLONDE AMBITION GRAMA
	187	-	GRASS, FEATHER REED
	50	-	GRASS, FOUNTAIN
	56	-	GRASS, HEAVY METAL BLUE SWITCH

Parking Lot Area Landscape

PER LUC 3.2.1 (E)(5):

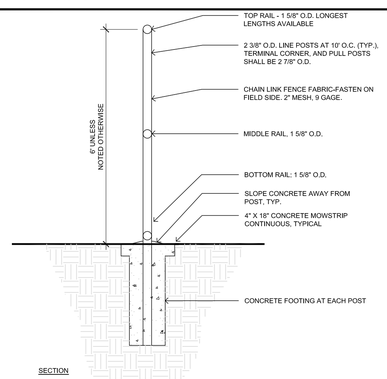
TOTAL PARKING AREA = 23,088 SF X 6% = 1,385 SF REQUIRED

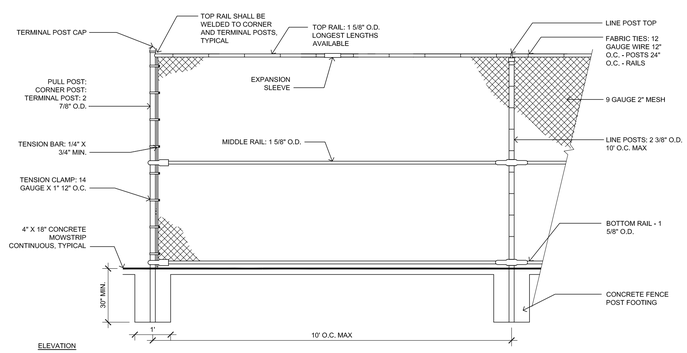
PARKING LOT AREA LANDSCAPE = 5,986 SF PROVIDED

Existing Tree Schedule

	COMMON NAME	SIZE	CONDITION	TO BE REMOVED	MITIGATION REQUIRED
1,	COTTONWOOD	28"MULTI-STEM	FAIR	YES	YES - 2
				TOTAL MITIGATION	2 TREES

Fence Details





NOTES:

1. ATTACH CHAIN LINK FABRIC TO OUTSIDE OF FENCE
2. BOLTS SHALL BE INSTALLED BOLT HEADS ON OUTSIDE OF FENCE
3. HANG WIRE MESH SO THAT THE BOTTOM OF THE MESH IS NO MORE THAN 1" ABOVE FINISH GRADE / MOW STRIP
4. FENCE MESH AND HARDWARE SHALL BE CLASS 2-B BLACK VINYL COATED.
4. FENCE POSTS AND RAILS SHALL BE BLACK POWDER COATED.

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SEAL

PROJECT TITLE

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139

2060 Perennial Lane
Fort Collins, Colorado

PREPARED FOR

Colorado State University Research Foundation
PO Box 483
Fort Collins CO 80522
Contact: Bo Brown
Phone: 970.492.4503

REVISIONS DATE

DATE

10.09.13

SHEET TITLE

Landscape Plan

SHEET INFORMATION

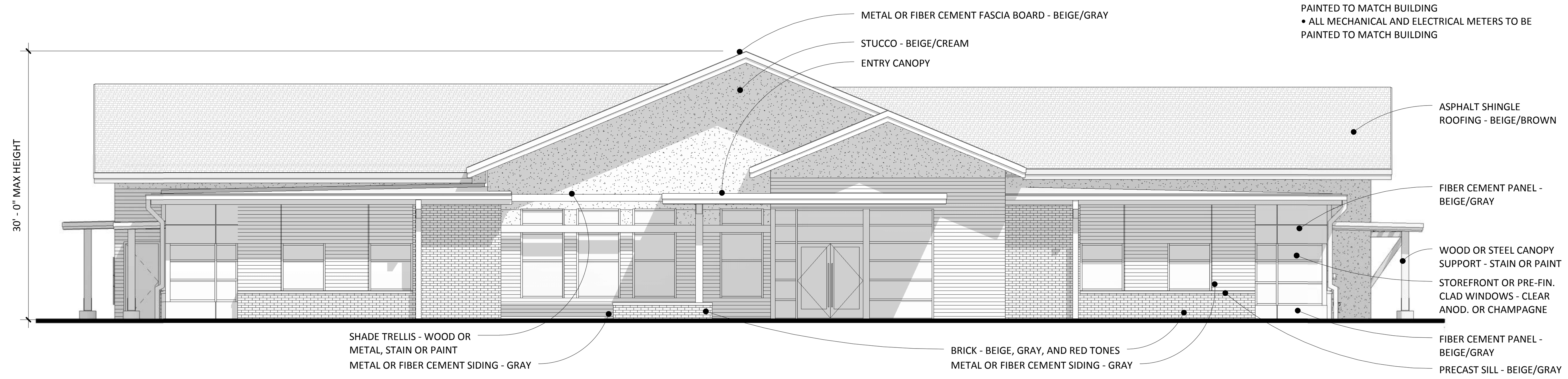
SHEET 2 OF 2

NOTES

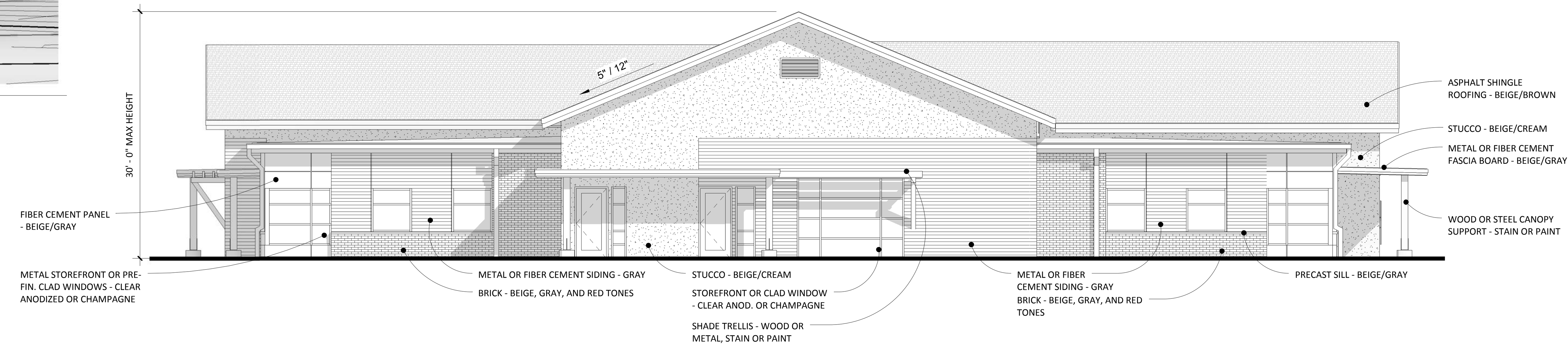
- ALL MECHANICAL AND ELECTRICAL EQUIPMENT TO BE PAINTED TO MATCH BUILDING
- ALL MECHANICAL AND ELECTRICAL METERS TO BE PAINTED TO MATCH BUILDING

7 EL 1 **View from SW**
SCALE:

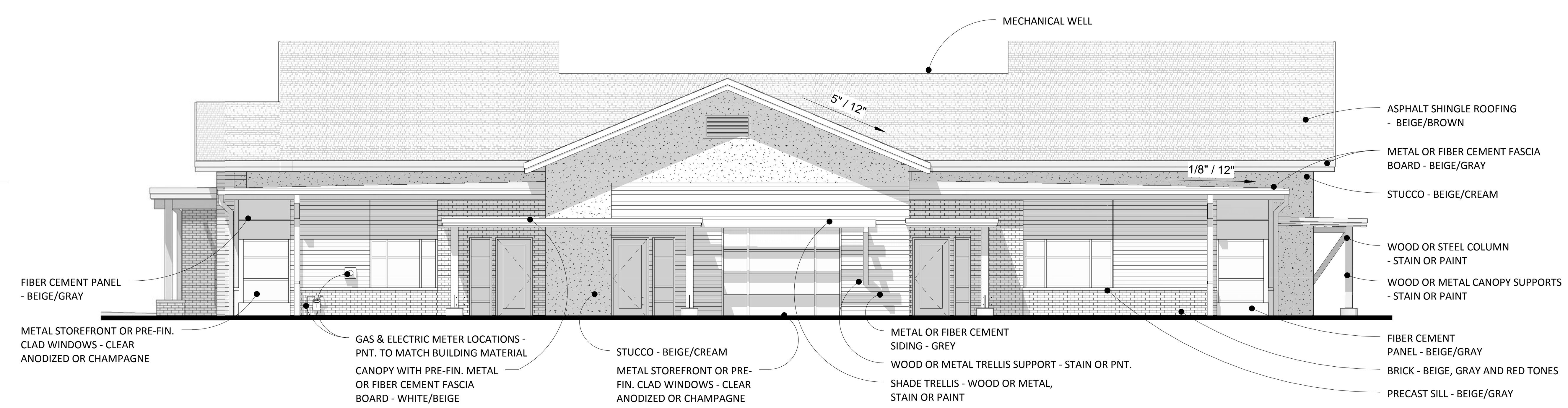
8 EL 1 **View from NE**
SCALE:



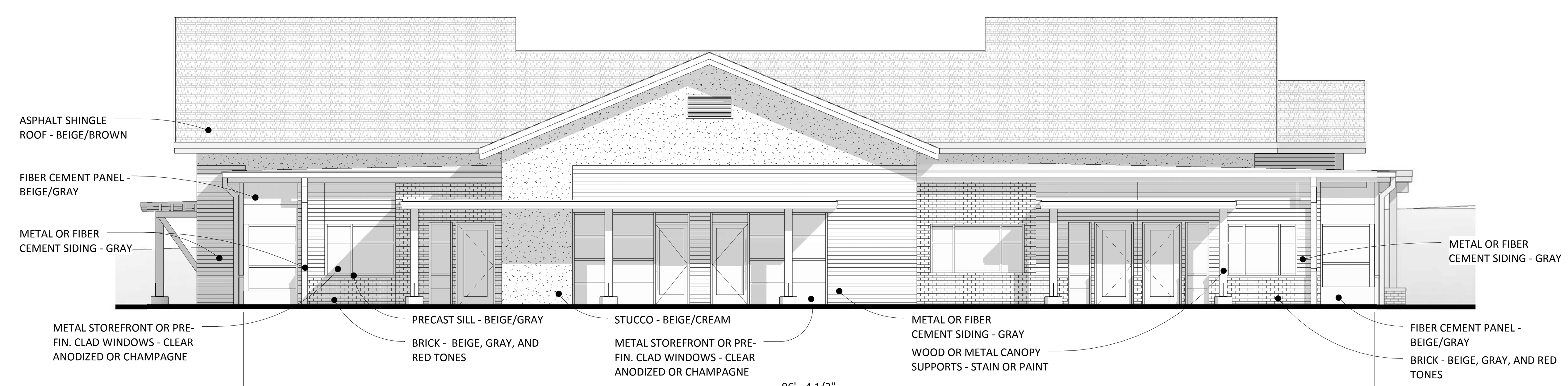
2 EL 1 **SOUTH ELEVATION**
SCALE: 1/8" = 1'-0"



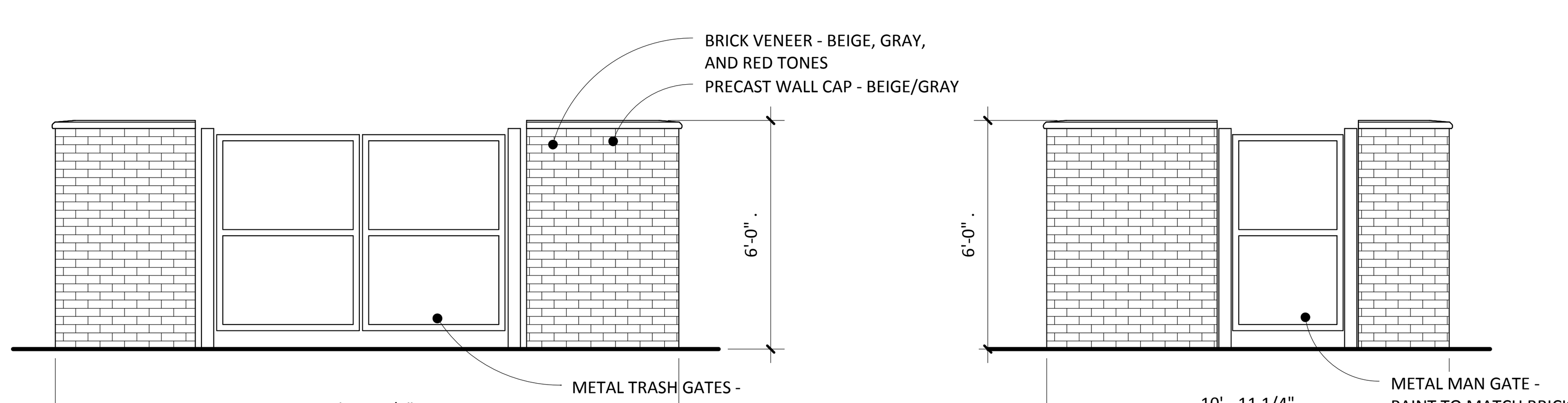
4 EL 1 **NORTH ELEVATION**
SCALE: 1/8" = 1'-0"



3 EL 1 **EAST ELEVATION**
SCALE: 1/8" = 1'-0"



1 EL 1 **WEST ELEVATION**
SCALE: 1/8" = 1'-0"



5 EL 1 **TRASH ENCLOSURE ELEVATIONS**
SCALE: 1/4" = 1'-0"

SUNSHINE HOUSE - FC #139
EARLY LEARNING ACADEMY
FORT COLLINS, CO

NOT FOR CONSTRUCTION

ALLER • LINGLE • MASSEY
ARCHITECTS
P.C.
712 WHALERS WAY SUITE, B-100
FORT COLLINS, CO 80525
(970) 223-1820
www.aller-lingle-massey.com

NO	ISSUE	DATE

PROJECT 1325
DATE 11.20.13
DRAWN ksj

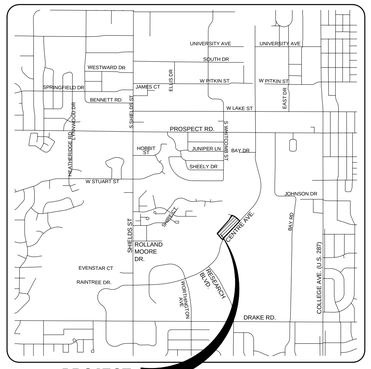
PDP BUILDING ELEVATIONS

EL 1

UTILITY PLANS FOR
CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139

A REPLAT OF TRACT A, THE GROVE FORT COLLINS, LOCATED IN SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE 6th P.M., CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO

NOVEMBER, 2013



PROJECT LOCATION

NORTH

VICINITY MAP

1"=2000'

CONTACT INFORMATION

PROJECT TEAM:

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Research Foundation (CSURF)
Michael 'Bo' Brown
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ARCHITECT
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SITE ENGINEER
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Fort Collins, Colorado 80524
(970) 221-4158

SURVEYOR
Northern Engineering Services, Inc.
Gary Gilliland, PLS
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
(970) 221-4158

TRAFFIC ENGINEER
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Delich Associates
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Loveland, Colorado 80538
(970) 669-2061

GEOTECHNICAL ENGINEER
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Lester Litton, PE
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Windsor, Colorado 80550
(970) 545-3908

MECHANICAL ENGINEER
Integrated Mechanical
Thomas Segelhorst, PE
223 Linden St., Suite 204
Fort Collins, Colorado 80524
(970) 556-0570

UTILITY CONTACT LIST: *

UTILITY COMPANY		PHONE NUMBER
GAS---------- Xcel Energy----------	Stephanie Rich	(970) 225-7857
ELECTRIC------- City of Fort Collins Light & Power--	Doug Martine	(970) 224-6152
CABLE---------- Comcast----------	Don Kapperman	(970) 567-0425
TELECOM.-------CenturyLink----------	William Johnson	(970) 377-6401
WATER---------- City of Fort Collins Utilities----------	Roger Buffington	(970) 221-6700
WASTEWATER--City of Fort Collins Utilities----------	Roger Buffington	(970) 221-6700
STORMWATER- City of Fort Collins Utilities----------	Glen Schlueter	(970) 221-6700

* This list is provided as a courtesy reference only. Northern Engineering Services assumes no responsibility for the accuracy or completeness of this list. In no way shall this list relinquish the Contractor's responsibility for locating all utilities prior to commencing any construction activity. Please contact the Utility Notification Center of Colorado (UNCC) at 811 for additional information.

SHEET INDEX

PROJECT BENCHMARKS:

BENCHMARK #1:
City of Fort Collins Benchmark 14-97
Elevation= 5048.58

BENCHMARK #2:
City of Fort Collins Benchmark 1-93
Elevation= 5023.27

Basis of Bearings
Basis of Bearings is the Southeastern lot line of Tract A as N42°49'17"E (assumed bearing).

ORIGINAL FIELD SURVEY BY:

Northern Engineering Services, Inc
NE Project No. 502-001
Date: October 20, 2008

ADDITIONAL FIELD SURVEYS:
Northern Engineering Services, Inc
Date(s): March 24, 2009, March 22, 2010, & October 04, 2013

SUBSURFACE EXPLORATION BY:

Earth Engineering, Inc.
"SUBSURFACE EXPLORATION REPORT PROPOSED OFFICE BUILDING DEVELOPMENT CSURF TRACT A AT THE GROVE"
EEC Project No. 1132061
Date: September 17, 2013

DISCLAIMER STATEMENT:

These plans have been reviewed by the City of Fort Collins for concept only. The review does not imply responsibility by the reviewing department, the City of Fort Collins Engineer, or the City of Fort Collins 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 for any reason as acceptance of financial responsibility by the City of Fort Collins for additional quantities of items shown that may be required during the construction phase.

CERTIFICATION STATEMENT:

I hereby affirm that these final construction plans were prepared under my direct supervision, in accordance with all applicable City of Fort Collins and State of Colorado standards and statutes, respectively; and that I am fully responsible for the accuracy of all design, revisions, and record conditions that I have noted on these plans.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
Know what's below. Call before you dig.
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

Revisions: No. — Date:
FOR REVIEW SET NOT FOR CONSTRUCTION 11/20/13

NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

DATE: 11/20/13
SCALE: N.A.
REVIEWED BY: N. Haws
PROJECT: 232-023
DESIGNED BY: C. Snowdon
DRAWN BY: C. Bowen

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
COVER SHEET

Sheet C0.00
Of 17 Sheets

DRAWING FILENAME: D:\Projects\232-023\Dwg\232-023_COVER.dwg LAYOUT NAME: C0.00 DATE: Nov 20, 2013 - 10:40am CAD OPERATOR: cody
LIST OF XREFS: [NES-border]

A. GENERAL NOTES

1. All materials, workmanship, and construction of ppublic improvements shall meet or exceed the standards and specifications set forth in the Larimer County Urban Area Street Standards and applicable state and federal regulations. Where there is conflict between these plans and the specifications, or any applicable standards, the most restrictive standard shall apply. All work shall be inspected and approved by the City of Fort Collins.

2. All references to any published standards shall refer to the latest revision of said standard, unless specifically stated otherwise.

3. These public improvement construction plans shall be valid for a period of three years from the date of approval by the City of Fort Collins Engineer. Use of these plans after the expiration date will require a new review and approval process by the City of Fort Collins prior to commencement of any work shown in these plans.

4. The engineer who has prepared these plans, by execution and/or seal hereof, does hereby affirm responsibility to the City of Fort Collins, as beneficiary of said engineer's work, for any errors and omissions contained in these plans, and approval of these plans by the City of Fort Collins Engineer shall not relieve the engineer who has prepared these plans of all such responsibility. Further, to the extent permitted by law, the engineer hereby agrees to hold harmless and indemnify the City of Fort Collins, and its officers and employees, from and against all liabilities, claims, and demands which may arise from any errors and omissions contained in these plans.

5. All storm sewer construction, as well as power and other "dry" utility installations, shall conform to the City of Fort Collins standards and specifications current at the date of approval of the plans by the City of Fort Collins Engineer.

6. The type, size, location and number of all known underground utilities are approximate when shown on the drawings. It shall be the responsibility of the Developer to verify the existence and location of all underground utilities along the route of the work before commencing new construction. The Developer shall be responsible for unknown underground utilities.

7. The Developer shall contact the Utility Notification Center of Colorado (UNCC) at 1-800-922-1987, at least 2 working days prior to beginning excavation or grading, to have all registered utility locations marked. Other unregistered utility entities (i.e. ditch / irrigation company) are to be located by contacting the respective representative. Utility service laterals are also to be located prior to beginning excavation or grading. It shall be the responsibility of the Developer to relocate all existing utilities that conflict with the proposed improvements shown on these plans.

8. The Developer shall be responsible for protecting all utilities during construction and for coordinating with the appropriate utility company for any utility crossings required.

9. If a conflict exists between existing and proposed utilities and/or a design modification is required, the Developer shall coordinate with the engineer to modify the design. Design modification(s) must be approved by the City of Fort Collins prior to beginning construction.

10. The Developer shall coordinate and cooperate with the City of Fort Collins, and all utility companies involved, to assure that the work is accomplished in a timely fashion and with a minimum disruption of service. The Developer shall be responsible for contacting, in advance, all parties affected by any disruption of any utility service as well as the utility companies.

11. No work may commence within any public storm water, sanitary sewer or potable water system until the Developer notifies the utility provider. Notification shall be a minimum of 2 working days prior to commencement of any work. At the discretion of the water utility provider, a pre-construction meeting may be required prior to commencement of any work.

12. The Developer shall sequence installation of utilities in such a manner as to minimize potential utility conflicts. In general, storm sewer and sanitary sewer should be constructed prior to installation of the water lines and dry utilities.

13. The minimum cover over water lines is 4.5 feet and the maximum cover is 5.5 feet unless otherwise noted in the plans and approved by the Water Utility.

14. A State Construction Dewatering Wastewater Discharge Permit is required if dewatering is required in order to install utilities or if water is discharged into a storm sewer, channel, irrigation ditch or any waters of the United States.

15. The Developer shall comply with all terms and conditions of the Colorado Permit for Storm Water Discharge (Contact Colorado Department of Health, Water Quality Control Division, (303) 692-3590), the Storm Water Management Plan, and the Erosion Control Plan.

16. The City of Fort Collins shall not be responsible for the maintenance of storm drainage facilities located on private property. Maintenance of onsite drainage facilities shall be the responsibility of the property owner(s).

17. Prior to final inspection and acceptance by the City of Fort Collins, certification of the drainage facilities, by a registered engineer, must be submitted to and approved by the Stormwater Utility Department. Certification shall be submitted to the Stormwater Utility Department at least two weeks prior to the release of a certificate of occupancy for single family units. For commercial properties, certification shall be submitted to the Stormwater Utility Department at least two weeks prior to the release of any building permits in excess of those allowed prior to certification per the Development Agreement.

18. The City of Fort Collins shall not be responsible for any damages or injuries sustained in this Development as a result of groundwater seepage, whether resulting from groundwater flooding, structural damage or other damage unless such damage or injuries are sustained as a result of the City of Fort Collins failure to properly maintain its water, wastewater, and/or storm drainage facilities in the development.

19. All recommendations of the Final Drainage and Erosion Control Report for Sunshine House - FC 139 dated October 9, 2013by Northern Engineering Services, Inc., shall be followed and implemented.

20. Temporary erosion control during construction shall be provided as shown on the Erosion Control Plan. All erosion control measures shall be maintained in good repair by the Developer, until such time as the entire disturbed areas is stabilized with hard surface or landscaping.

21. The Developer shall be responsible for insuring that no mud or debris shall be tracked onto the existing public street system. Mud and debris must be removed within 24 hours by an appropriate mechanical method (i.e. machine broom sweep, light duty front-end loader, etc.) or as approved by the the City of Fort Collins street inspector.

22. No work may commence within any improved or unimproved public Right-of-Way until a Right-of-Way Permit or Development Construction Permit is obtained, if applicable.

23. The Developer shall be responsible for obtaining all necessary permits for all applicable agencies prior to commencement of construction. The Developer shall notify the the City of Fort Collins Inspector (Fort Collins - 221-6605) and the City of Fort Collins Erosion Control Inspector (Fort Collins - 221-6700) at least 2 working days prior to the start of any earth disturbing activity, or construction on any and all public improvements. If the City of Fort Collins Engineer is not available after proper notice of construction activity has been provided, the Developer may commence work in the Engineer's absence. However, the City of Fort Collins reserves the right not to accept the improvement if subsequent testing reveals an improper installation.

24. The Developer shall be responsible for obtaining soils tests within the Public Right-of-Way after right of way grading and all utility trench work is complete and prior to the placement of curb, gutter, sidewalk and pavement. If the final soils/pavement design report does not correspond with the results of the original geotechnical report, the Developer shall be responsible for a re-design of the subject pavement section or, the Developer may use the City of Fort Collins' default pavement thickness section(s). Regardless of the option used, all final soils/pavement design reports shall be prepared by a licensed Professional Engineer. The final report shall be submitted to the Inspector a minimum of 10 working days prior to placement of base and asphalt. Placement of curb, gutter, sidewalk, base and asphalt shall not occur until the City of Fort Collins Engineer approves the final report.

25. The contractor shall hire a licensed engineer or land surveyor to survey the constructed elevations of the street subgrade and the gutter flowline at all intersections, inlets, and other locations requested by the the City of Fort Collins inspector. The engineer or surveyor must certify in a letter to the City of Fort Collins that these elevations conform to the approved plans and specifications. Any deviations shall be noted in the letter and then resolved with the City of Fort Collins before installation of base course or asphalt will be allowed on the streets.

26. All utility installations within or across the roadbed of new residential roads must be completed prior to the final stages of road construction. For the purposes of these standards, any work except c/g above the subgrade is considered final stage work. All service lines must be stubbed to the property lines and marked so as to reduce the excavation necessary for building connections.

27. Portions of Larimer County are within overlay districts. The Larimer County Flood Plain Resolution should be referred to for additional criteria for roads within these districts.

28. All road construction in areas designated as Wild Fire Hazard Areas shall be done in accordance with the construction criteria as established in the Wild Fire Hazard Area Mitigation Regulations in force at the time of final plat approval.

29. Prior to the commencement of any construction, the contractor shall contact the Local Entity Forester to schedule a site inspection for any tree removal requiring a permit.

30. The Developer shall be responsible for all aspects of safety including, but not limited to, excavation, trenching, shoring, traffic control, and security. Refer to OSHA Publication 2226, Excavating and Trenching.

31. The Developer shall submit a Construction Traffic Control Plan, in accordance with MUTCD, to the appropriate Right-of-Way authority. (The the City of Fort Collins, Larimer County, Colorado), for approval, prior to any construction activities within, or affecting, the Right-of-Way. The Developer shall be responsible for providing any and all traffic control devices as may be required by the construction activities.

32. Prior to the commencement of any construction that will affect traffic signs of any type, the contractor shall contact the City of Fort Collins Traffic Operations Department, who will temporarily remove or relocate the sign at no cost to the contractor, however, if the contractor moves the traffic sign then the contractor will be charged for the labor, materials and equipment to reinstall the sign as needed.

33. The Developer is responsible for all costs for the initial installation of traffic signing and striping for the Development related to the Development's local street operations. In addition, the Developer is responsible for all costs for traffic signing and striping related to directing traffic access to and from the Development.

34. There shall be no site construction activities on Saturdays, unless specifically approved by the City of Fort Collins Engineer, and no site construction activities on Sundays or holidays, unless there is prior written approval by Larimer County.

35. The Developer is responsible for providing all labor and materials necessary for the completion of the intended improvements, shown on these drawings, or designated to be provided, installed, or constructed, unless specifically noted otherwise.

36. Dimensions for layout and construction are not to be scaled from any drawing. If pertinent dimensions are not shown, contact the Designer for clarification, and annotate the dimension on the as-built record drawings.

37. The Developer shall have, onsite at all times, one (1) signed copy of the approved plans, one (1) copy of the appropriate standards and specifications, and a copy of any permits and extension agreements needed for the job.

38. If, during the construction process, conditions are encountered which could indicate a situation that is not identified in the plans or specifications, the Developer shall contact the Designer and the City of Fort Collins Engineer immediately.

39. The Developer shall be responsible for recording as-built information on a set of record drawings kept on the construction site, and available to the Larimer County's Inspector at all times. Upon completion of the work, the contractor(s) shall submit record drawings to the City of Fort Collins Engineer.

40. The Designer shall provide, in this location on the plan, the location and description of the nearest survey benchmarks (2) for the project as well as the basis of bearings. The information shall be as follows:

    City of Fort Collins benchmark 14-97
    Approximately 100 feet west of the intersection of Centre Ave. and Research Blvd., on the west end of the south headwall on Centre Ave.
    Elevation=5048.58

    City of Fort Collins benchmark 1-93
    South Shields St. at the entrance to Rolland Moore Park, on east end of planter on top of curb
    Elevation=5023.27

41. All stationing is based on centerline of roadways unless otherwise noted.

42. Damaged curb, gutter and sidewalk existing prior to construction, as well as existing fences, trees, streets, sidewalks, curbs and gutters, landscaping, structures, and improvements destroyed, damaged or removed due to construction of this project, shall be replaced or restored in like kind at the Developer's expense, unless otherwise indicated on these plans, prior to the acceptance of completed improvements and/or prior to the issuance of the first Certificate of Occupancy.

43. When an existing asphalt street must be cut, the street must be restored to a condition equal to or better than its original condition. The existing street condition shall be documented by the City of Fort Collins Construction Inspector before any cuts are made. Patching shall be done in accordance with the City of Fort Collins Street Repair Standards. The finished patch shall blend in smoothly into the existing surface. All large patches shall be paved with an asphalt lay-down machine. In streets where more than one cut is made, an overlay of the entire street width, including the patched area, may be required. The determination of need for a complete overlay shall be made by the Larimer County Engineer and/or the City of Fort Collins Inspector at the time the cuts are made.

44. Upon completion of construction, the site shall be cleaned and restored to a condition equal to, or better than, that which existed before construction, or to the grades and condition as required by these plans.

45. Standard Handicap ramps are to be constructed at all curb returns and at all "T" intersections.

46. After acceptance by the City of Fort Collins, public improvements depicted in these plans shall be guaranteed to be free from material and workmanship defects for a minimum period of two years from the date of acceptance.

47. The City of Fort Collins shall not be responsible for the maintenance of roadway and appurtenant improvements, including storm drainage structures and pipes, for the following private streets: N.A.

48. Approved Variances are listed as follows: N.A.

CONSTRUCTION NOTES

A. Grading and Erosion Control Notes

1. The erosion control inspector must be notified at least twenty-four (24) hours prior to any construction on this site.

2. There shall be no earth-disturbing activity outside the limits designated on the accepted plans.

3. All required perimeter silt and construction fencing shall be installed priorto any land disturbing activity (stockpiling, stripping, grading, etc). All other required erosion control measures shall be installed at the appropriate time in the construction sequence as indicated in the approved project schedule, construction plans, and erosion control report.

4. At all times during construction, the Developer shall be responsible for preventing and controlling on-site erosion including keeping the property sufficiently watered so as to minimize wind blown sediment. The Developer shall also be responsible for installing and maintaining all erosion control facilities shown herein.

5. Pre-disturbance vegetation shall be protected and retained wherever possible. Removal or disturbance of existing vegetation shall be limited to the area(s) required for immediate construction operations, and for the shortest practical period of time.

6. 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 BMPs are 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 City/County.

7. In order to minimize erosion potential, all temporary (structural) erosion control measures shall:

    a. Be inspected at a minimum of once every two (2) weeks and after each significant storm event and repaired or reconstructed as necessary in order to ensure the continued performance of their intended function.
    b. Remain in place until such time as all the surrounding disturbed areas are sufficiently stabilized as determined by the erosion control inspector.
    c. Be removed after the site has been sufficiently stabilized as determined by the erosion control inspector.

8. When temporary erosion control measures are removed, the Developer shall be responsible for the clean up and removal of all sediment and debris from all drainage infrastructure and other public facilities.

9. The contractor shall immediately clean up any construction materials inadvertently deposited on existing streets, sidewalks, or other public rights of way, and make sure streets and walkways are cleaned at the end of each working day.

10. 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 waters of the United States.

11. 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 thirty (30) days shall be seeded and mulched.

12. The stormwater volume capacity of detention ponds will be restored and storm sewer lines will be cleaned upon completion of the project and before turning the maintenance over to the City/County or Homeowners Association (HOA).

13. City Ordinance and Colorado Discharge Permit System (CDPS) requirements make it unlawful to discharge or allow the discharge of any pollutant or contaminated water from construction sites. Pollutants include, but are not limited to discarded building materials, concrete truck washout, chemicals, oil and gas products, litter, and sanitary waste. The developer shall at all times take whatever measures are necessary to assure the proper containment and disposal of pollutants on the site in accordance with any and all applicable local, state, and federal regulations.

14. A designated area shall be provided on site for concrete truck chute washout. The area shall be constructed so as to contain washout material and located at least fifty (50) feet away from any waterway during construction. Upon completion of construction activities the concrete washout material will be removed and properly disposed of prior to the area being restored.

15. Conditions in the field may warrant erosion control measures in addition to what is shown on these plans. The Developer shall implement whatever measures are determined necessary, as directed by the City.

16. See separate Stormwater Management Plan / Erosion Control Report for Sunshine House - FC 139 for additional information.

B. Street Improvement Notes

1. All street construction is subject to the General Notes on the cover sheet of these plans as well as the Street Improvements Notes listed here.

2. A paving section design, signed and stamped by a Colorado licensed Engineer, must be submitted to the City of Fort Collins Engineer for approval, prior to any street construction activity, (full depth asphalt sections are not permitted at a depth greater than 8 inches of asphalt). The job mix shall be submitted for approval prior to placement of any asphalt.

3. Where proposed paving adjoins existing asphalt, the existing asphalt shall be saw cut, a minimum distance of 12 inches from the existing edge, to create a clean construction joint. The Developer shall be required to remove existing pavement to a distance where a clean construction joint can be made. Wheel cuts shall not be allowed unless approved by the City of Fort Collins Engineer in Fort Collins.

4. Street subgrades shall be scarified the top 12 inches and re-compacted prior to subbase installation. No base material shall be laid until the subgrade has been inspected and approved by the City of Fort Collins Engineer.

5. Ft. Collins only. Valve boxes and manholes are to be brought up to grade at the time of pavement placement or overlay. Valve box adjusting rings are not allowed.

6. When an existing asphalt street must be cut, the street must be restored to a condition equal to or better than its original condition. The existing street condition shall be documented by the Inspector before any cuts are made. Cutting and patching shall be done in conformance with Chapter 25, Reconstruction and Repair. The finished patch shall blend smoothly into the existing surface. The determination of need for a complete overlay shall be made by the City of Fort Collins Engineer. All overlay work shall be coordinated with adjacent landowners such that future projects do not cut the new asphalt overlay work.

7. All traffic control devices shall be in conformance with these plans or as otherwise specified in M.U.T.C.D. (including Colorado supplement) and as per the Right-of-Way Work Permit traffic control plan.

8. The Developer is required to perform a gutter water flow test in the presence of the City of Fort Collins Inspector and prior to installation of asphalt. Gutters that hold more than 1/4 inch deep or 5 feet longitudinally, of water, shall be completely removed and reconstructed to drain properly.

9. Prior to placement of H.B.P. or concrete within the street and after moisture/density tests have been taken on the subgrade material (when a full depth section is proposed) or on the subgrade and base material (when a composite section is proposed), a mechanical "proof roll" will be required. The entire subgrade and/or base material shall be rolled with a heavily loaded vehicle having a total GVW of not less than 50,000 lbs. and a single axle weight of at least 18,000 lbs. with pneumatic tires inflated to not less that 90 p.s.i.g. "Proof roll" vehicles shall not travel at speeds greater than 3 m.p.h. Any portion of the subgrade or base material which exhibits excessive pumping or deformation, as determined by the City of Fort Collins Engineer, shall be reworked, replaced or otherwise modified to form a smooth, non-yielding surface. The City of Fort Collins Engineer shall be notified at least 24 hours prior to the "proof roll." All "proof rolls" shall be preformed in the presence of an Inspector.

C. Traffic Signing and Pavement Marking Construction Notes

1. All signage and marking is subject to the General Notes on the cover sheet of these plans, as well as the Traffic Signing and Marking Construction Notes listed here.

2. All symbols, including arrows, ONLYS, crosswalks, stop bars, etc. shall be pre-formed thermo-plastic.

3. All signage shall be per the City of Fort Collins Standards and these plans or as otherwise specified in MUTCD.

4. All lane lines for asphalt pavement shall receive two coats of latex paint with glass beads.

5. All lane lines for concrete pavement should be epoxy paint.

6. Prior to permanent installation of traffic striping and symbols, the Developer shall place temporary tabs or tape depicting alignment and placement of the same. Their placement shall be approved by the City of Fort Collins Traffic Engineer prior to permanent installation of striping and symbols.

7. Pre-formed thermo-plastic applications shall be as specified in these Plans and/or these Standards.

8. Epoxy applications shall be applied as specified in CDOT Standard Specifications for Road and Bridge Construction.

9. All surfaces shall be thoroughly cleaned prior to installation of striping or markings.

10. All sign posts shall utilize break-away assemblies and fasteners per the Standards.

11. A field inspection of location and installation of all signs shall be performed by the City of Fort Collins Traffic Engineer. All discrepancies identified during the field inspection must be corrected before the 2-year warranty period will begin.

12. The Developer installing signs shall be responsible for locating and protecting all underground utilities.

13. Special care shall be taken in sign location to ensure an unobstructed view of each sign.

14. Signage and striping has been determined by information available at the time of review. Prior to initiation of the warranty period,the City of Fort Collins Traffic Engineer reserves the right to require additional signage and/or striping if the City of Fort Collins Traffic Engineer determines that an unforeseen condition warrants such signage according to the MUTCD or the CDOT M and S Standards. All signage and striping shall fall under the requirements of the 2-year warranty period for new construction (except fair wear on traffic markings).

15. Sleeves for sign posts shall be required for use in islands/medians. Refer to Chapter 14, Traffic Control Devices, for additional detail.

D. Storm Drainage Notes

1. The City of Fort Collins shall not be responsible for the maintenance of storm drainage facilities located on private property. Maintenance of onsite drainage facilities shall be the responsibility of the property owner(s).

2. All recommendations of the Final Drainage and Erosion Control Report for Sunshine House - FC 139 dated October 9, 2013by Northern Engineering Services, Inc., shall be followed and implemented.

3. Prior to final inspection and acceptance by the City of Fort Collins, certification of the drainage facilities, by a registered engineer, must by submitted to and approved by the Stormwater Utility Department. Certification shall be submitted to the Stormwater Utility Department at least two weeks prior to the release of a certificate of occupancy for single family units. For commercial properties, certification shall by submitted to the Stormwater Utility Department at least two weeks prior to the release of any building permits in excess of those allowed prior to certification per the Development Agreement.

E. Utility Notes

1. All waterline and sanitary sewer construction shall conform to the Fort Utility standards and specifications current to date of construction.

2. The minimum cover over water lines is 4.5 feet and the maximum cover is 5.5 feet unless otherwise noted in the plans and approved by the water utility.

3. Water mains shall be poly-wrapped D.I.P, or PVC with tracer wire.

4. HDPE pipe may be used for 1-1/2 and 2 inch water services. The pipe shall meet the standards of AWWA 901, NSF Standard 61 and ASTM. The HDPE pipe shall be SDR 9 having a pressure rating of 200 psi. Stiffeners shall be used at all fittings and connections. Tracer wire shall be installed with the HDPE service, and shall extend up the curb stop. The curb stop shall be covered with a metal box and tracer wire test lid per City Water Detail 25.

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811

Know what's **below.**
Call before you dig.

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	Revisions:	Date:
	REVIEW SET NOT FOR CONSTRUCTION	11/20/13

NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

PROJECT: 232-023
DESIGNED BY: C. Snowdon
DRAWN BY: C. Bowen
DATE: 11/20/13
SCALE: N.A.
REVIEWED BY: N. Haws

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
GENERAL & CONSTRUCTION NOTES

Sheet
C0.01
Of 17 Sheets

DRAWING FILENAME: D:\Projects\232-023\Dwg\232-023_CON0.dwg LAYOUT NAME: C0.01 DATE: Nov 20, 2013 - 10:42am CAD OPERATOR: cody
LIST OF XREFS: [NES-sbcover]

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139

A REPLAT OF TRACT A, THE GROVE AT FORT COLLINS, LOCATED IN SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO

STATEMENT OF OWNERSHIP AND SUBDIVISION:

Know all persons by these presents, that the undersigned owner(s) of the following described land: A tract of land being a portion of Section 23, Township 7 North, Range 69 West of the 6th P.M., City of Fort Collins, County of Larimer, State of Colorado being more particularly described as follows:

Tract A, The Grove at Fort Collins

The above described area contains 167,245 square feet or 3.839 acres more or less and is subject to all easements and rights-of-way now on record or existing.

For themselves and their successors in interest (collectively "Owner") have caused the above described land to be surveyed and subdivided into lots, tracts and streets as shown on this Plat to be known CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING (the "Development"), subject to all easements and rights-of-way now of record or existing or indicated on this Plat. The rights and obligations of this Plat shall run with the land.

CERTIFICATE OF DEDICATION:

The Owner does hereby dedicate and convey to the City of Fort Collins, Colorado (hereafter "City"), for public use, forever, a permanent right-of-way for street purposes and the "Easements" as laid out and designated on this Plat; provided, however, that (1) acceptance by the City of this dedication of Easements does not impose upon the City a duty to maintain the Easements so dedicated, and (2) acceptance by the City of this dedication of streets does not impose upon the City a duty to maintain streets so dedicated until such time as the provisions of the Maintenance Guarantee have been fully satisfied. The streets dedicated on this Plat are the fee property of the City as provided in Section 31-23-107 C.R.S. The City's rights under the Easements include the right to install, operate, access, maintain, repair, reconstruct, remove and replace within the Easements public improvements consistent with the intended purpose of the Easements; the right to install, maintain and use gates in any fences that cross the Easements; the right to mark the location of the Easements with suitable markers; and the right to permit other public utilities to exercise these same rights. Owner reserves the right to use the Easements for purposes that do not interfere with the full enjoyment of the rights hereby granted. The City is responsible for maintenance of its own improvements and for repairing any damage caused by its activities in the Easements, but by acceptance of this dedication, the City does not accept the duty of maintenance of the Easements, or of improvements in the Easements that are not owned by the City. Owner will maintain the surface of the Easements in a sanitary condition in compliance with any applicable weed, nuisance or other legal requirements.

Except as expressly permitted in an approved plan of development or other written agreement with the City, Owner will not install on the Easements, or permit the installation on the Easements, of any building, structure, improvement, fence, retaining wall, sidewalk, tree or other landscaping (other than usual and customary grasses and other ground cover). In the event such obstacles are installed in the Easements, the City has the right to require the Owner to remove such obstacles from the Easements. If Owner does not remove such obstacles, the City may remove such obstacles without any liability or obligation for repair and replacement thereof, and charge the Owner the City's costs for such removal. If the City chooses not to remove the obstacles, the City will not be liable for any damage to the obstacles or any other property to which they are attached.

The rights granted to the City by this Plat inure to the benefit of the City's agents, licensees, permittees and assigns.

OWNER:Colorado State University Research Foundation, a Colorado non-profit corporation

By: _____

STATE OF COLORADO)
)SS
COUNTY OF LARIMER)

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by

_____ as _____ of Colorado State University Research Foundation, a Colorado non-profit corporation

Witness my hand and official seal

My commission expires: _____

_____
Notary Public

MAINTENANCE GUARANTEE:

The Owner hereby warrants and guarantees to the City, for a period of two (2) years from the date of completion and first acceptance by the City of the improvements warranted hereunder, the full and complete maintenance and repair of the improvements to be constructed in connection with the Development which is the subject of this Plat. This warranty and guarantee is made in accordance with the City Land Use Code and/or the Transitional Land Use Regulations, as applicable. This guarantee applies to the streets and all other appurtenant structures and amenities lying within the rights-of-way, Easements and other public properties, including, without limitation, all curbing, sidewalks, bike paths, drainage pipes, culverts, catch basins, drainage ditches and landscaping. Any maintenance and/or repair required on utilities shall be coordinated with the owning utility company or department.

The Owner shall maintain said improvements in a manner that will assure compliance on a consistent basis with all construction standards, safety requirements and environmental protection requirements of the City. The Owner shall also correct and repair, or cause to be corrected and repaired, all damages to said improvements resulting from development-related or building-related activities. In the event the Owner fails to correct any damages within thirty (30) days after written notice thereof, then said damages may be corrected by the City and all costs and charges billed to and paid by the Owner. The City shall also have any other remedies available to it as authorized by law. Any damages which occurred prior to the end of said two (2) year period and which are unrepaired at the termination of said period shall remain the responsibility of the Owner.

REPAIR GUARANTEE:

In consideration of the approval of this final Plat and other valuable consideration, the Owner does hereby agree to hold the City harmless for a five (5) year period, commencing upon the date of completion and first acceptance by the City of the improvements to be constructed in connection with the development which is the subject of this Plat, from any and all claims, damages, or demands arising on account of the design and construction of public improvements of the property shown herein; and the Owner furthermore commits to make necessary repairs to said public improvements, to include, without limitation, the roads, streets, fills, embankments, ditches, cross pans, sub-drains, culverts, walls and bridges within the right-of-way, Easements and other public properties, resulting from failures caused by design and/or construction defects. This agreement to hold the City harmless includes defects in materials and workmanship, as well as defects caused by or consisting of settling trenches, fills or excavations.

Further, the Owner warrants that he/she owns fee simple title to the property shown hereon and agrees that the City shall not be liable to the Owner or his/her successors in interest during the warranty period, for any claim of damages resulting from negligence in exercising engineering techniques and due caution in the construction of cross drains, drives, structures or buildings, the changing of courses of streams and rivers, flooding from natural creeks and rivers, and any other matter whatsoever on private property. Any and all monetary liability occurring under this paragraph shall be the liability of the Owner. I further warrant that I have the right to convey said land according to this Plat.

NOTICE OF OTHER DOCUMENTS:

All persons take notice that the Owner has executed certain documents pertaining to this Development which create certain rights and obligations of the Development, the Owner and/or subsequent Owners of all or portions of the Development site, many of which obligations constitute promises and covenants that, along with the obligations under this Plat, run with the land. The said documents may also be amended from time to time and may include, without limitation, the Development Agreement, Site And Landscape Covenants, Final Site Plan, Final Landscape Plan, and Architectural Elevations, which documents are on file in the office of the clerk of the City and should be closely examined by all persons interested in purchasing any portion of the Development site.

ATTORNEY'S CERTIFICATION

I hereby certify that this Subdivision Plat has been duly executed as required pursuant to Section 2.2.3(C)(3)(a) through (e) inclusive of the Land Use Code of the City of Fort Collins and that all persons signing this Subdivision Plat on behalf of a corporation or other entity are duly authorized signatories under the laws of the State of Colorado. This Certification is based upon the records of the Clerk and Recorder of Larimer County, Colorado as of the date of execution of the Plat and other information discovered by me through reasonable inquiry and is limited as authorized by Section 2.2.3(C)(3)(f) of the Land Use Code.

Attorney:_____

Address: _____

_____

Registration No.:_____

APPROVED AS TO FORM, CITY ENGINEER

By the City Engineer of the City of Fort Collins, Colorado this _____day of _____ A.D., 20_____.

_____
City Engineer

PLANNING APPROVAL

By the Director of Planning the City of Fort Collins, Colorado this _____ day of _____ A.D., 20_____.

_____
Director of Planning

NOTES:

1) The Basis of Bearings is the southeasterly line of Tract A, The Grove at Fort Collins as bearing North 42°49'17" East (assumed bearing).

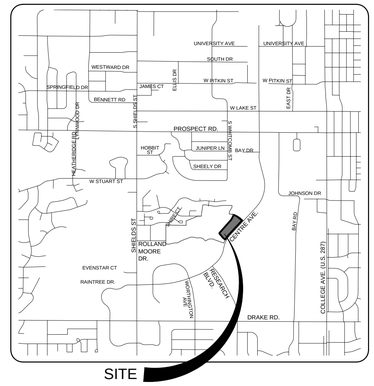
2) All information regarding easements, right-of-way or title of record, Northern Engineering relied upon Title Commitment No. _____ prepared by _____ dated _____.

3) Benchmark: City of Fort Collins Benchmark number 14-97, NGVD 1929, (unadjusted) elevation = 5048.58

4) The lineal unit of measurement for this plat is U. S. Survey Feet.

5) Transit Easement - Easement for public transportation, equipment, infrastructure and/or use, including public access.

6) There are no lienholders for this property.



NORTH VICINITY MAP 1"=2000'

NOTICE

ALL RESPONSIBILITIES AND COSTS OF OPERATION, MAINTENANCE AND RECONSTRUCTION OF THE PRIVATE STREETS AND/OR DRIVES LOCATED ON THE PRIVATE PROPERTY THAT IS THE SUBJECT OF THIS PLAT SHALL BE BORNE BY THE OWNERS OF SAID PROPERTY, EITHER INDIVIDUALLY, OR COLLECTIVELY, THROUGH A PROPERTY OWNERS' ASSOCIATION, IF APPLICABLE. THE CITY OF FORT COLLINS SHALL HAVE NO OBLIGATION OF OPERATION, MAINTENANCE OR RECONSTRUCTION OF SUCH PRIVATE STREETS AND/OR DRIVES NOR SHALL THE CITY HAVE ANY OBLIGATION TO ACCEPT SUCH STREETS AND/OR DRIVES AS PUBLIC STREETS OR DRIVES.

SURVEYOR'S STATEMENT

I, Gerald D. Gilliland, a Colorado Registered Professional Land Surveyor do hereby state that this Subdivision Plat was prepared from an actual survey under my personal supervision, that the monumentation as indicated hereon were found or set as shown, and that the foregoing plat is an accurate representation thereof, all this to the best of my knowledge, information and belief.

_____

Gerald D. Gilliland
Colorado Registered Professional
Land Surveyor No. 14823

NOTICE:
According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years after the date of the certificate shown hereon.

SECTION: 23
TOWNSHIP: 7N
RANGE: 69 W of the 6th PM

NORTHERN ENGINEERING
200 South College Avenue, Suite 10
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

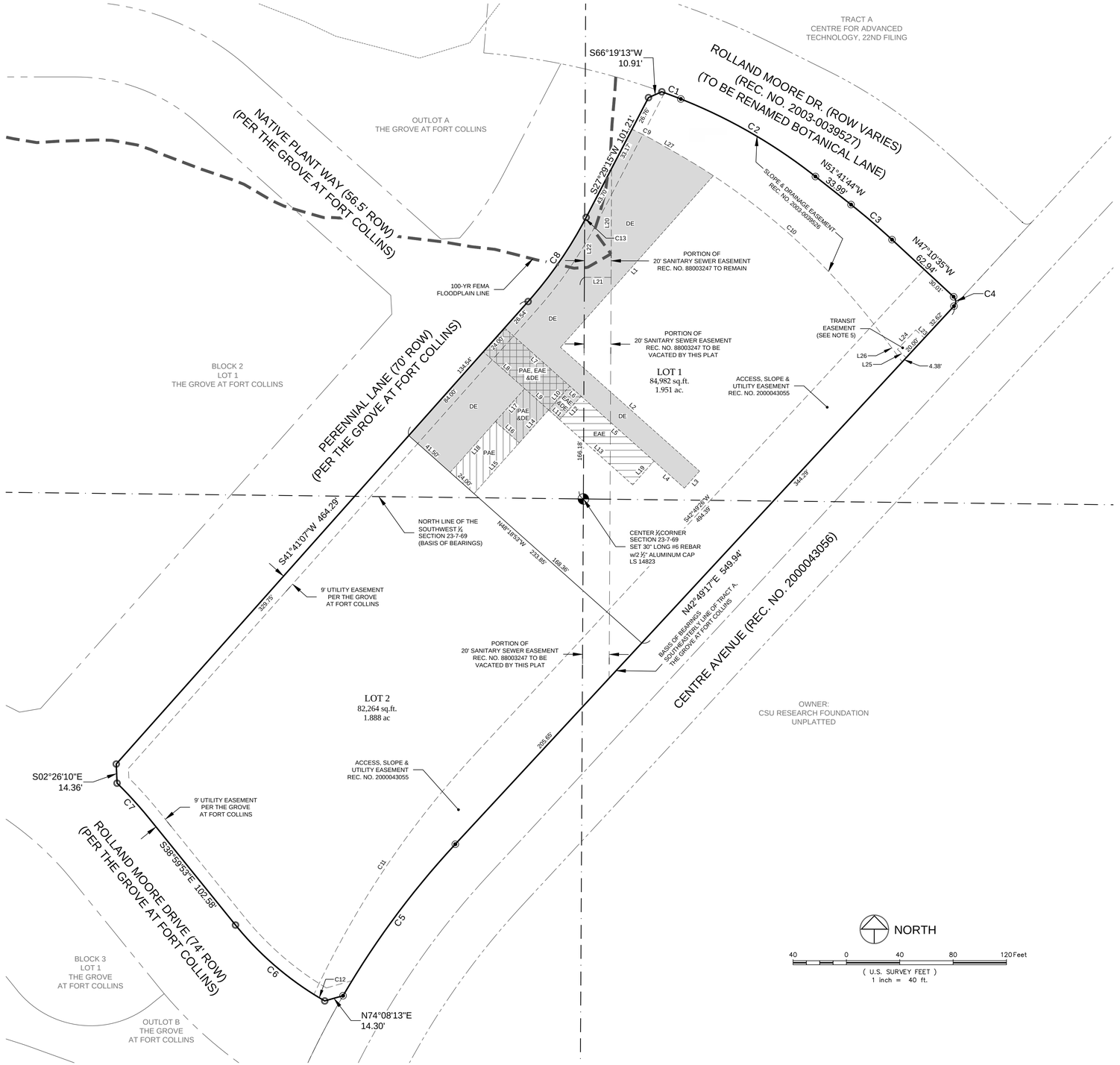
DATE: 11/20/13
SCALE: N.A.
REVIEWED BY: G. Gilliland
PROJECT: 232-023
CLIENT: CSURF
DRAWN BY: L. Smith

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
CITY OF FORT COLLINS
STATE OF COLORADO

Sheet 1
Of 2 Sheets

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139

A REPLAT OF TRACT A, THE GROVE AT FORT COLLINS, LOCATED IN SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO



CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	BEARING	CHORD
C1	1°41'06"	518.00'	15.23'	N69°16'37"W	15.23'
C2	16°44'18"	400.00'	116.86'	N60°03'54"W	116.44'
C3	4°31'08"	513.00'	40.46'	N49°26'10"W	40.45'
C4	89°59'52"	5.00'	7.85'	N02°10'39"W	7.07'
C5	12°35'55"	644.00'	141.61'	N36°31'21"E	141.32'
C6	21°15'14"	238.00'	88.29'	S49°37'30"E	87.78'
C7	6°37'12"	312.00'	36.05'	S42°18'29"E	36.03'
C8	14°11'52"	310.00'	76.82'	S34°35'11"W	76.62'
C9	4°55'02"	250.00'	21.46'	N62°48'13"W	21.45'
C10	23°35'03"	500.00'	205.81'	N48°33'10"W	204.36'
C11	17°54'12"	700.00'	218.73'	S33°52'21"W	217.84'
C12	2°16'02"	238.00'	9.42'	S59°07'06"E	9.42'
C13	0°26'46"	310.00'	2.41'	N27°42'39"E	2.41'

LINE TABLE		
LINE	LENGTH	BEARING
L1	172.28'	N41°41'07"E
L2	139.55'	N48°18'53"W
L3	17.00'	N41°41'07"E
L4	30.50'	S48°18'53"E
L5	73.09'	N48°18'53"W
L6	11.41'	N48°18'53"W
L7	65.50'	S48°18'53"E
L8	41.50'	N48°18'53"W
L9	24.00'	S48°18'53"E
L10	24.00'	S41°41'07"W
L11	11.07'	S48°18'53"E
L12	24.00'	N42°29'50"E
L13	73.43'	S48°18'53"E
L14	33.00'	N41°41'07"E
L15	51.00'	S41°41'07"W
L16	24.00'	S48°18'53"E
L17	33.00'	N41°41'07"E
L18	51.00'	N41°41'07"E
L19	24.00'	N41°41'07"E
L20	81.63'	S00°15'48"W
L21	20.00'	N89°44'12"W
L22	42.78'	S00°15'48"W
L23	8.87'	S46°43'42"E
L24	20.00'	N43°16'18"E
L25	9.02'	N46°43'42"W
L26	26.20'	N36°45'40"W
L27	16.85'	N60°20'41"W

LEGEND

- EASEMENT LINE
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- BOUNDARY LINE
- LOT LINE
- SECTION LINE
- SET #4 REBAR w/1" PLASTIC CAP, LS 14823
- FOUND #4 REBAR w/1" PLASTIC CAP, LS 14823
- DRAINAGE EASEMENT (DE)
- EMERGENCY ACCESS EASEMENT (EAE)
- PUBLIC ACCESS EASEMENT (PAE)
- EMERGENCY ACCESS & PUBLIC EASEMENT (EAE & PAE))

NOTICE:
According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years after the date of the certificate shown hereon.

SECTION: 23
TOWNSHIP: 7N
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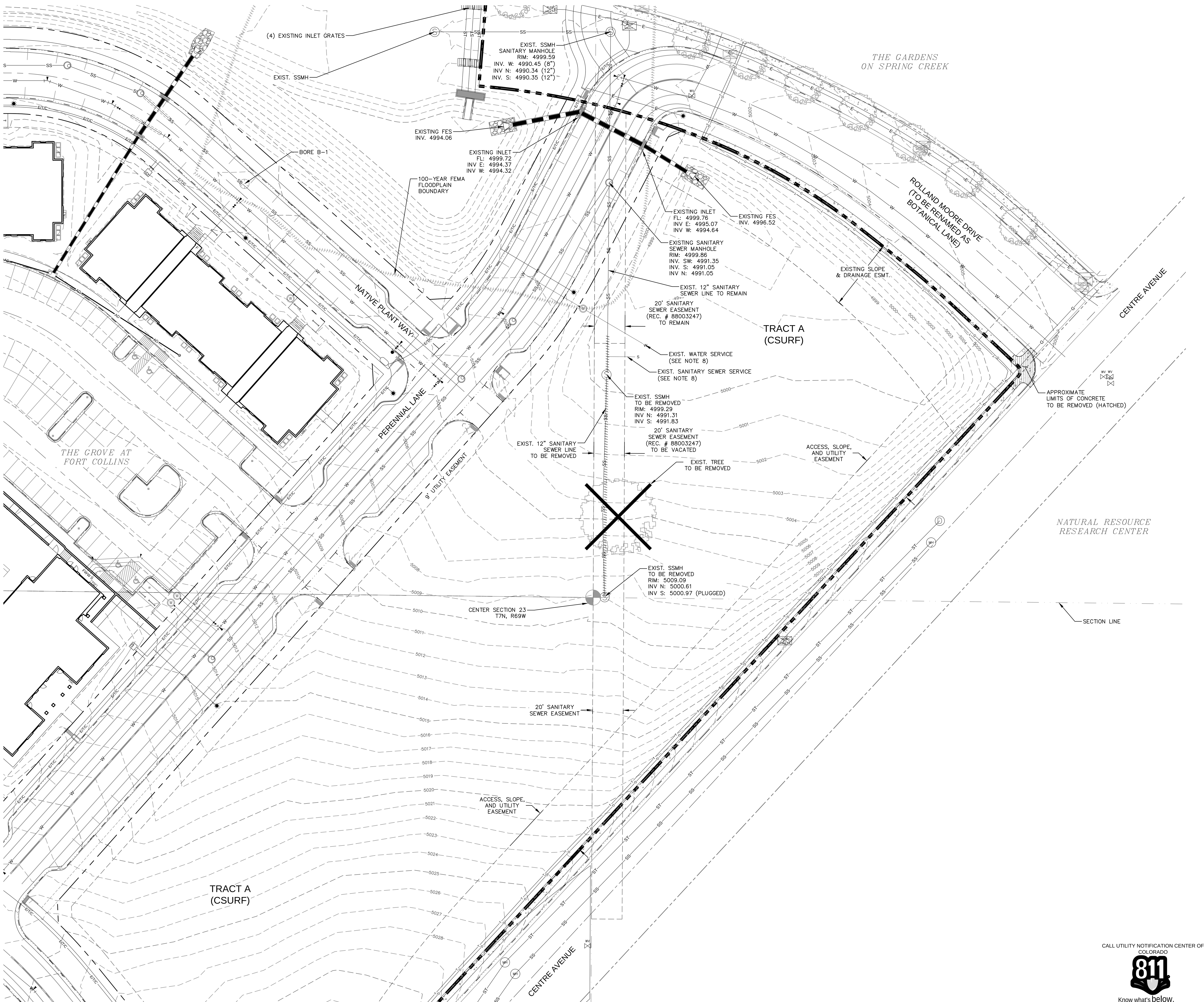
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

PROJECT: 232-023
DATE: 11/20/13
CLIENT: CSURF
SCALE: 1"=40'
DRAWN BY: L. Smith
REVIEWED BY: G. Gilliland

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
CITY OF FORT COLLINS
STATE OF COLORADO

Sheet
2
Of 2 Sheets



NORTH

30 0 30 60 90 Feet

(IN FEET)
1 inch = 30 ft.

LEGEND:

PROPERTY BOUNDARY
EXISTING RIGHT-OF-WAY
PROPOSED LIMITS OF DEVELOPMENT
EXISTING MAJOR CONTOUR — 5015
EXISTING MINOR CONTOUR — 5013
EXISTING STORM SEWER — ST
EXISTING TELEPHONE — T
EXISTING GAS — G
EXISTING SANITARY SEWER — SS
EXISTING WATER — W
EXISTING ELECTRIC — E
EXISTING FENCE — X
EXISTING ELECTRIC VAULT
EXISTING FIRE HYDRANT
EXISTING IRRIGATION BOX
EXISTING WATER METER
EXISTING GAS METER
EXISTING TELEPHONE PEDESTAL — T
EXISTING MONITORING WELL
EXISTING TREES
EXISTING 100-YR FEMA FLOODPLAIN BOUNDARY
EXISTING 100-YR FEMA FLOODWAY
EXISTING WETLANDS
CONCRETE TO BE REMOVED
EXISTING TREE TO BE REMOVED
EXISTING UTILITIES TO BE REMOVED

FIELD SURVEY BY:

ORIGINAL FIELD SURVEY
Northern Engineering Services, Inc.
Date: October 20, 2008

ADDITIONAL FIELD SURVEYS:
Northern Engineering Services, Inc.
Date(s): March 24, 2009, March 22, 2010, & October 04, 2013

SUBSURFACE EXPLORATION BY:

Earth Engineering, Inc.
"SUBSURFACE EXPLORATION REPORT PROPOSED OFFICE BUILDING DEVELOPMENT CSURF TRACT A AT THE GROVE"
EEC Project No. 1132061
Date: September 17, 2013

NOTES:

1. THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK. BEFORE COMMENCING NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UNKNOWN UNDERGROUND UTILITIES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING DEMOLITION, REMOVAL, REPLACEMENT, AND DISPOSAL OF ALL FACILITIES AND MATERIAL.
3. CONTRACTOR IS ENCOURAGED TO PERFORM DEMOLITION IN A MANNER THAT MAXIMIZES SALVAGE, RE-USE, AND RECYCLING OF MATERIALS. THIS INCLUDES APPROPRIATE SORTING AND STORING. IN PARTICULAR, DEMOLISHED CONCRETE, ASPHALT, AND BASE COURSE SHOULD BE RECYCLED IF POSSIBLE. THE CITY OF FORT COLLINS STREET DEPARTMENT OPERATES A CRUSHING OPERATION THAT WILL ACCEPT CONCRETE MATERIAL AT NO COST FOR CRUSHING AND RE-USE AS RECYCLED AGGREGATE. THIS OPERATION IS LOCATED AT 1380 HOFFMAN MILL ROAD AND CAN BE REACHED AT (970) 482-1249.
4. ALL SYMBOLS ARE ONLY GRAPHICALLY REPRESENTED AND ARE NOT TO SCALE.
5. CONTACT THE PROJECT SURVEYOR FOR ANY INQUIRIES RELATED TO THE EXISTING SITE SURVEY.
6. LIMITS OF STREET CUT ARE APPROXIMATE. FINAL LIMITS ARE TO BE DETERMINED IN THE FIELD BY THE CITY ENGINEERING INSPECTOR. ALL REPAIRS TO BE IN ACCORDANCE WITH CITY STREET REPAIR STANDARDS.
7. REFER TO THE LANDSCAPE PLAN FOR TREE REMOVAL AND MITIGATION.
8. EXISTING WATER AND SEWER SERVICES TO BE REMOVED BY CAMPUS CREST PURSUANT TO THE AMENDED DEVELOPMENT AGREEMENT FOR THE GROVE AT FORT COLLINS.

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
Know what's below. Call before you dig.
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

Revisions:
No. | By: | Date:

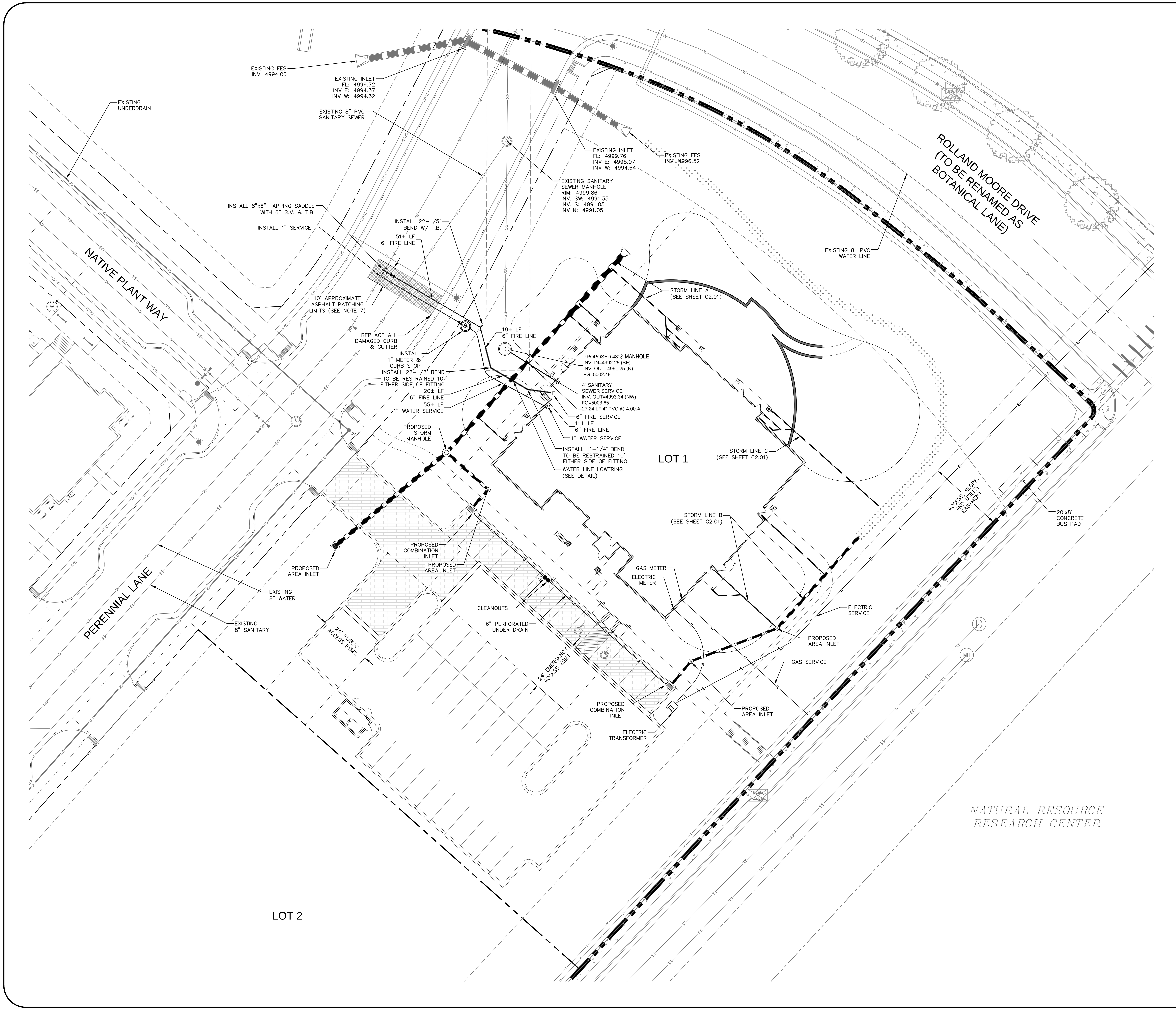
REVIEW SET
NOT FOR CONSTRUCTION
11/20/13

NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

PROJECT: 232-023
DATE: 11/20/13
DESIGNED BY: N.A.
SCALE: 1"=30'
DRAWN BY: C. Bowen
REVIEWED BY: N. Haws

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
EXISTING CONDITIONS & DEMOLITION PLAN

Sheet
C1.00
Of 17 Sheets



NORTH

20 0 20 40 60 Feet

(IN FEET)
1 inch = 20 ft.

LEGEND:

- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED SEWER SERVICE
- PROPOSED CURB STOP & METER PIT
- PROPOSED IRRIGATION CURB STOP & METER PIT
- PROPOSED FIRE SERVICE
- PROPOSED FIRE DEPT. CONNECTION (FDC)
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- EXISTING ELECTRIC, CABLE & TELEPHONE IN JOINT TRENCH
- EXISTING TELEPHONE
- EXISTING GAS
- PROPOSED CURB & GUTTER
- PROPERTY BOUNDARY
- PROPOSED RIGHT OF WAY
- PROPOSED LOT LINE
- EXISTING SLOTTED PVC SUB-DRAIN
- EXISTING SOLID PVC DRAIN
- EXISTING AREA DRAIN
- EASEMENT LINE
- PROPOSED ELECTRIC TRANSFORMER
- PROPOSED STORM INLET
- PROPOSED LIGHT POLE
- EXISTING LIGHT POLE
- EXISTING ELECTRIC METER
- EXISTING WATER METER
- EXISTING IRRIGATION BOX
- EXISTING POWER POLE
- EXISTING GAS METER
- EXISTING TELEPHONE PEDESTAL
- EXISTING TREES
- PROPOSED CONDENSER UNITS
- PROPOSED ELECTRIC METERS
- PROPOSED GAS METERS
- EXISTING FEMA FLOODWAY
- EXISTING 100-YR FEMA FLOODPLAIN
- PROPOSED PERMEABLE PAVERS

NOTES:

1. THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK. BEFORE COMMENCING NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UNKNOWN UNDERGROUND UTILITIES.
2. ALL WATER AND SEWER CONSTRUCTION SHALL BE PER THE CITY OF FORT COLLINS STANDARD CONSTRUCTION SPECIFICATIONS, LATEST EDITION.
3. ALL WATER FITTINGS AND VALVES ARE ONLY GRAPHICALLY REPRESENTED AND ARE NOT TO SCALE.
4. MAINTAIN 10' HORIZONTAL AND 18" VERTICAL MINIMUM SEPARATION BETWEEN ALL SANITARY SEWER MAINS, WATER MAINS & SERVICES.
5. REFER TO THE PLAT FOR LOT AREAS, TRACT SIZES, EASEMENTS, LOT DIMENSIONS, UTILITY EASEMENTS, OTHER EASEMENTS, AND OTHER SURVEY INFORMATION.
6. FIRE LINE SHALL BE STUBBED INSIDE THE RISER ROOM AND CAPPED 1' ABOVE THE FINISHED FLOOR ELEVATION.
7. LIMITS OF STREET CUT ARE APPROXIMATE. FINAL LIMITS TO BE DETERMINED IN THE FIELD BY THE CITY ENGINEERING INSPECTOR. ALL REPAIRS TO BE IN ACCORDANCE WITH CITY STREET REPAIR STANDARDS.
8. ALL OF THE PROPOSED STORM SEWER IS TO BE PRIVATE AND OWNED/MAINTAINED BY THE OWNER OF THE PROPERTY.

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811

Know what's below. Call before you dig.

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No.	Revisions:	By:	Date:

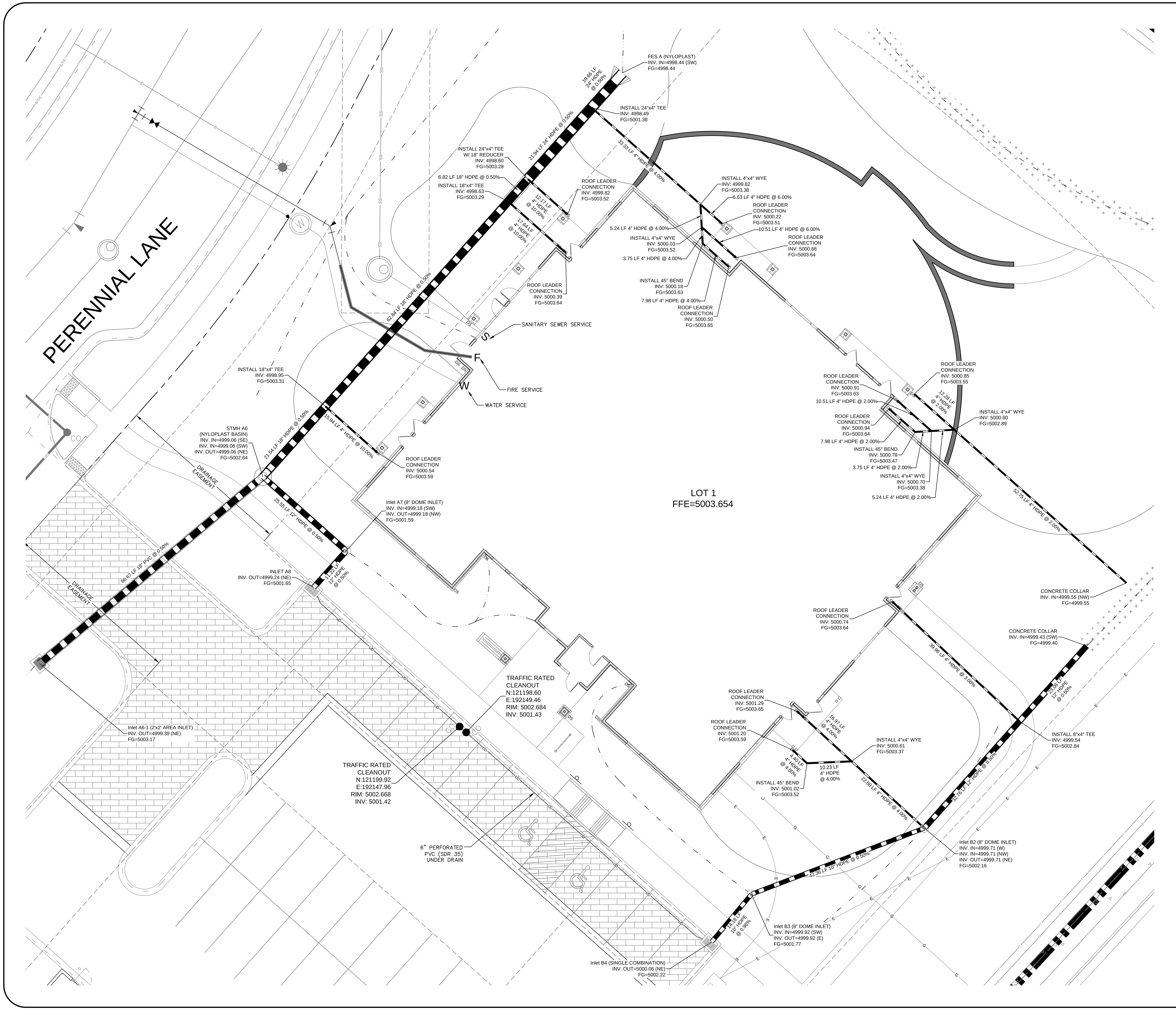
REVIEW SET
NOT FOR CONSTRUCTION
11/20/13

NE NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

PROJECT: 232-023	DESIGNED BY: C. Snowdon	DRAWN BY: C. Snowdon
DATE: 11/20/13	SCALE: 1" = 20'	REVIEWED BY: N. Haws

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
UTILITY PLAN

Sheet
C2.00
Of 17 Sheets



LEGEND:

- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- PROPOSED SEWER SERVICE
- PROPOSED CURB STOP & METER PIT
- PROPOSED IRRIGATION CURB STOP & METER PIT
- PROPOSED FIRE SERVICE
- PROPOSED FIRE DEPT. CONNECTION
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED STORM SEWER
- EXISTING STORM SEWER
- EXISTING ELECTRIC, CABLE & TELEPHONE IN JOINT TRENCH
- EXISTING TELEPHONE
- EXISTING GAS
- PROPOSED CURB & GUTTER
- PROPERTY BOUNDARY
- PROPOSED RIGHT OF WAY
- PROPOSED LOT LINE
- EXISTING SLOTTED PVC SUB-DRAIN
- EXISTING SOLID PVC DRAIN
- EXISTING AREA DRAIN
- EASEMENT LINE
- PROPOSED ELECTRIC TRANSFORMER
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- PROPOSED LIGHT POLE
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- EXISTING ELECTRIC METER
- EXISTING WATER METER
- EXISTING IRRIGATION BOX
- EXISTING POWER POLE
- EXISTING GAS METER
- EXISTING TELEPHONE PEDESTAL
- EXISTING TREES
- PROPOSED CONDENSER UNITS
- PROPOSED ELECTRIC METERS
- PROPOSED GAS METERS
- EXISTING FEMA FLOODWAY
- EXISTING 100-YR FEMA FLOODPLAIN
- PROPOSED PERMEABLE PAVERS

NOTES:

1. THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK. BEFORE COMMENCING NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UNKNOWN UNDERGROUND UTILITIES.
2. ALL FITTINGS AND VALVES ARE ONLY GRAPHICALLY REPRESENTED AND ARE NOT TO SCALE.
3. MAINTAIN 10' HORIZONTAL AND 18" VERTICAL MINIMUM SEPARATION BETWEEN ALL SANITARY SEWER MAINS, WATER MAINS & SERVICES.
4. PIPE LENGTHS ARE CALCULATED FROM THE CENTER OF MANHOLES AND INLET BOX STRUCTURES. SPECIFIED LENGTH OF PIPE INCLUDES THE LAYING LENGTH OF FLARED END SECTIONS.
5. ALL RCP SHALL BE CLASS III OR GREATER. PIPE MATERIAL, BEDDING, AND INSTALLATION WITHIN PUBLIC RIGHTS-OF-WAY SHALL BE GOVERNED BY THE LOCAL JURISDICTION. ALTERNATES (SUCH AS ADS N-12 OR HP SANITITE) OUTSIDE OF THE R.O.W. SHALL BE APPROVED IN ADVANCE BY THE ENGINEER. ALL JOINTS SHALL BE "WATERTIGHT" USING APPROPRIATE GASKETS OR JOINT WRAPS (PER ASTM C443 FOR RCP AND PER ASTM F477 / D3212 FOR PLASTIC PIPE).
6. ALL OF THE PROPOSED STORM SEWER IS TO BE PRIVATE AND OWNED/ MAINTAINED BY THE OWNER OF THE PROPERTY.

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811 Know what's below. Call before you dig.

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

REVIEW SET
NOT FOR CONSTRUCTION
11/20/13

No. Revisions: By: Date:

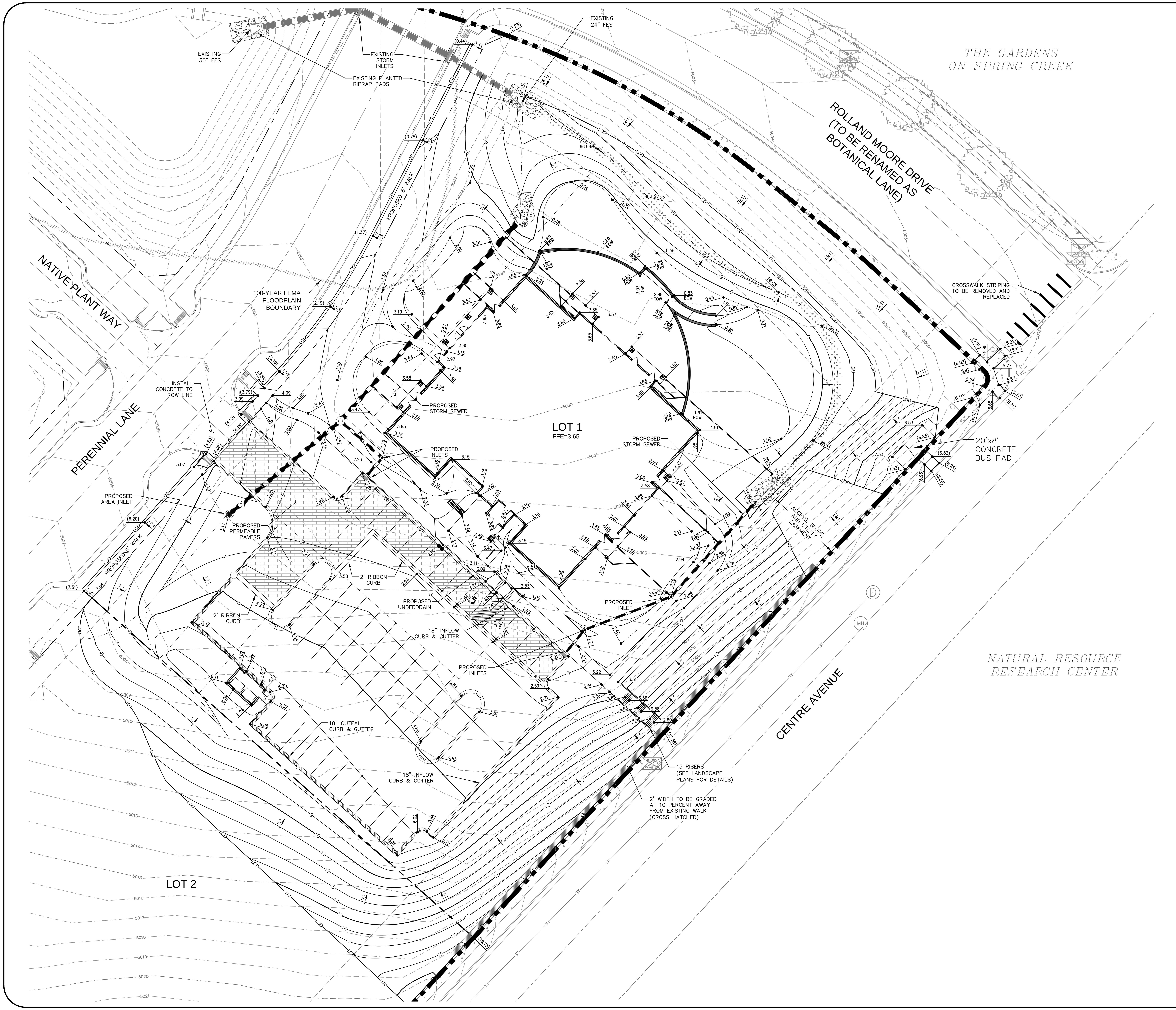
These drawings are instruments of service provided by Northern Engineering Services, Inc. and are not to be used for any type of construction unless signed and sealed by a Professional Engineer in the employ of Northern Engineering Services, Inc.

NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

DATE: 11/20/13
SCALE: 1" = 10'
REVIEWED BY: N. Haws
PROJECT: 232-023
DESIGNED BY: C. Snowdon
DRAWN BY: C. Snowdon

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
STORM SEWER PLAN

Sheet C2.01
Of 17 Sheets



NORTH

30 0 30 60 90 Feet

(IN FEET)
1 inch = 30 ft.

LEGEND:

- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED SWALE
- PROPOSED 18" VERTICAL OUTFALL CURB & GUTTER
- PROPOSED 18" VERTICAL IN-FLOW CURB & GUTTER
- PROPERTY BOUNDARY
- PROPOSED LOT LINE
- PROPOSED GUTTER TRANSITION
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- PROPOSED SLOPES
- PEDESTRIAN ACCESS RAMPS
- SIDEWALK CHASE
- PROPOSED CONCRETE CROSS PAN (TYP.)
- APPROXIMATE LIMITS OF DEVELOPMENT
- EXISTING 100-YR FEMA FLOODPLAIN BOUNDARY
- PROPOSED PAVERS
- PROPOSED SOFT PAN

NOTES:

1. THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK. BEFORE COMMENCING NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR FOR ALL UNKNOWN UNDERGROUND UTILITIES.
2. REFER TO THE PLAT FOR LOT AREAS, TRACT SIZES, EASEMENTS, LOT DIMENSIONS, UTILITY EASEMENTS, OTHER EASEMENTS, AND OTHER SURVEY INFORMATION.
3. ALL PROJECT ELEVATIONS ARE ON THE CITY OF FORT COLLINS VERTICAL DATUM, NGVD 1929 (UNADJUSTED). SEE COVER SHEET FOR BENCHMARK REFERENCES.
4. ALL CURB SPOTS SHOWN ARE FLOWLINE ELEVATIONS. ALL OTHER SPOTS ARE FINISHED GRADE ELEVATIONS.
5. A PORTION OF THIS PROPERTY IS LOCATED IN THE SPRING CREEK FEMA-REGULATORY 100-YEAR FLOOD FRINGE AND MUST CONFORM TO THE SAFETY STANDARDS OF CHAPTER 10 OF THE CITY MUNICIPAL CODE.
6. A FLOODPLAIN USE PERMIT SHALL BE OBTAINED PRIOR TO CONSTRUCTION OF ANY STRUCTURE OR SITE CONSTRUCTION ELEMENT (DETENTION PONDS, BIKE PATHS, PARKING LOT, UTILITIES, ETC. IN THE HIGH RISK FLOOD FRINGE.

FIELD SURVEY BY:

ORIGINAL FIELD SURVEY
Northern Engineering Services, Inc.
Date: October 20, 2008

ADDITIONAL FIELD SURVEYS:
Northern Engineering Services, Inc.
Date(s): March 24, 2009, March 22, 2010, & October 04, 2013

CALL UTILITY NOTIFICATION CENTER OF COLORADO

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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

No. Revisions: By: Date:

REVIEW SET
NOT FOR CONSTRUCTION
11/20/13

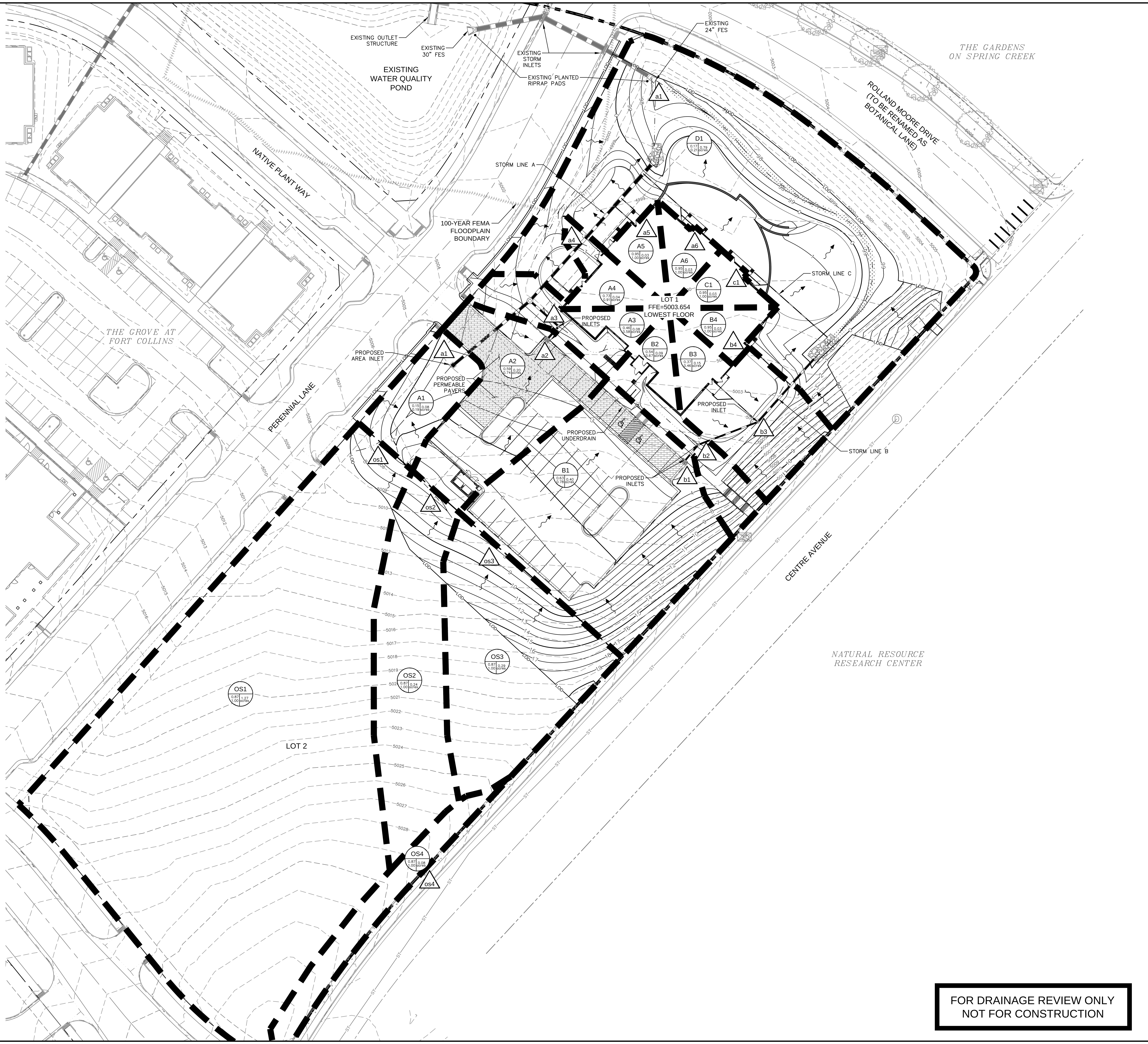
NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

PROJECT: 232-023
DATE: 11/20/13
DESIGNED BY: C. Snowdon
SCALE: 1"=30'
DRAWN BY: C. Bowen
REVIEWED BY: N. Haws

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139

GRADING PLAN

Sheet
C3.00
Of 17 Sheets



FOR DRAINAGE REVIEW ONLY
NOT FOR CONSTRUCTION

NORTH

30 0 30 60 90 Feet
(IN FEET)
1 inch = 30 ft.

LEGEND:

PROPERTY BOUNDARY
LIMITS OF 100-YR FLOODPLAIN
PROPOSED BASIN LINES
EXISTING STORM SEWER LINE W/ MH
PROPOSED UNDERDRAIN
PROPOSED STORM DRAIN
EXISTING INLET GRATE
PROPOSED CONTOUR
EXISTING CONTOUR
PROPOSED SWALE
APPROXIMATE LIMITS OF DEVELOPMENT
PROPOSED VERTICAL CURB & GUTTER
PROPOSED RIBBON CURB
PROPOSED OVERLAND FLOW DIRECTION
PROPOSED PERMEABLE PAVERS
PROPOSED SOFT PAN
BASIN DELINEATION
MINOR RUNOFF COEFFICIENT
MAJOR RUNOFF COEFFICIENT
BASIN ACREAGE
DESIGN POINT

NOTES:

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2. REFER TO THE "FINAL DRAINAGE LETTER FOR THE SUNSHINE HOUSE – FC 139 BY NORTHERN ENGINEERING, DATED OCTOBER 9, 2013 FOR ADDITIONAL INFORMATION.

BENCHMARK

CITY OF FORT COLLINS BENCHMARK 14–97
APPROXIMATELY 100 FEET WEST OF THE INTERSECTION OF CENTRE AVE. AND RESEARCH BLVD., ON THE WEST END OF THE SOUTH HEADWALL ON CENTRE AVE.
ELEVATION=5048.58 (NGVD 29 UNADJUSTED)

CITY OF FORT COLLINS BENCHMARK 1–93
SOUTH SHIELDS ST. AT THE ENTRANCE TO ROLLAND MOORE PARK, ON EAST END OF PLANTER ON TOP OF CURB
ELEVATION=5023.27 (NGVD 29 UNADJUSTED)

FIELD SURVEY BY:

ORIGINAL FIELD SURVEY
Northern Engineering Services, Inc.
Date: October 20, 2008

ADDITIONAL FIELD SURVEYS:
Northern Engineering Services, Inc.
Date(s): March 24, 2009, March 22, 2010, & October 04, 2013

FEMA REFERENCE:

FIRM (FLOOD INSURANCE RATE MAP): PANEL 0987G
MAP NUMBER: 08069C0987G
EFFECTIVE DATE: MAY 2, 2012

PROJECTION: STATE PLANE COLORADO NORTH (FEET)
HORIZONTAL DATUM: NAD 83, GRS80 SPHEROID
VERTICAL DATUM: NAVD 88 (SEE NOTES 3 AND 4, BELOW)

NATIONAL GEODETIC SURVEY: (301) 713–3242
FEMA MAP SERVICE CENTER: (800) 358–9616
NATIONAL FLOOD INSURANCE PROGRAM INFORMATION: (877) FEMA MAP
(877) 336–2627

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
Know what's below. Call before you dig.
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

REVIEW SET
NOT FOR CONSTRUCTION
11/20/13

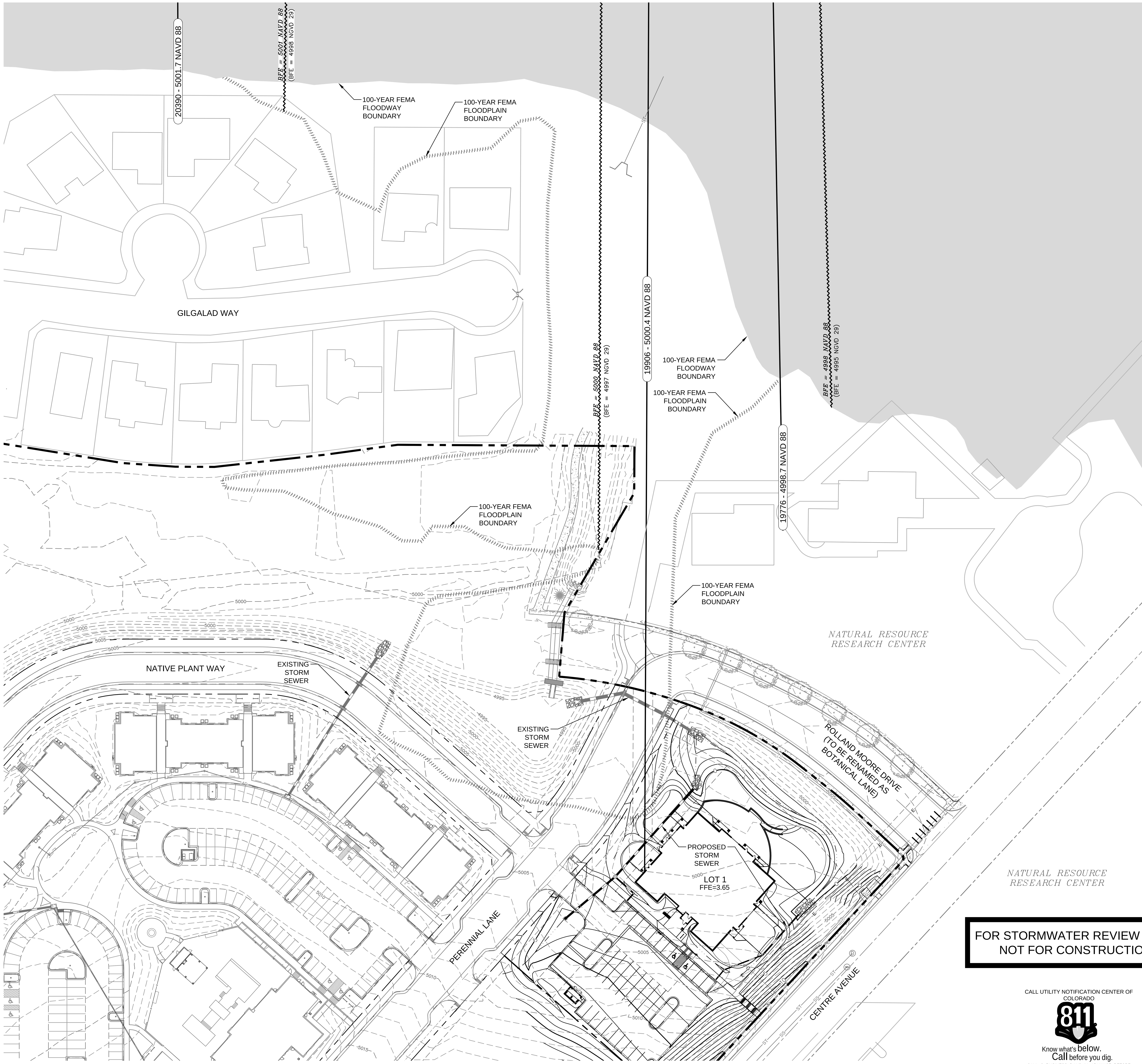
Revisions: No. By: Date:

NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

PROJECT: 232-023
DATE: 11/20/13
DESIGNED BY: C. Snowdon
SCALE: 1" = 30'
DRAWN BY: C. Snowdon
REVIEWED BY: N. Haws

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
DRINAGE EXHIBIT

Sheet
C4.00
Of 17 Sheets



FOR STORMWATER REVIEW ONLY
NOT FOR CONSTRUCTION

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811

Know what's below. Call before you dig.

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

GRAPHIC SCALE:

NORTH

20 0 20 40 60 Feet

(IN FEET)
1 inch = 20 ft.

LEGEND:

- EXISTING ROW LINE
- EXISTING STORM SEWER LINE W/ MH — ST
- PROPOSED UNDERDRAIN — UD
- PROPOSED STORM DRAIN
- EXISTING INLET GRATE
- PROPOSED CONTOUR — 93
- EXISTING CONTOUR — 5013
- PROPOSED CURB & GUTTER
- EXISTING CURB & GUTTER
- CROSS-SECTION (CSL) — 20554
- ELEVATION NAVD 88 (UNADJUSTED) — *5000*
- ELEVATION NGVD 29 (UNADJUSTED) — (5000)
- LIMITS OF 100-YR FLOOD FRINGE
- BASE FLOOD ELEVATION (BFE)
- EXISTING CITY FLOODWAY

FIELD SURVEY BY:

Northern Engineering Services, Inc
NE Project No. 502-001
Date: October 20, 2008

ADDITIONAL FIELD SURVEYS:
Northern Engineering Services, Inc
Date(s): March 24, 2009, March 22, 2010, & October 04, 2013

BENCHMARKS:

BENCHMARK #1:
City of Fort Collins Benchmark 14-97
Elevation= 5048.58 (NGVD 29 - Unadjusted)

BENCHMARK #2:
City of Fort Collins Benchmark 1-93
Elevation= 5023.27 (NGVD 29 - Unadjusted)

FEMA REFERENCE:

FIRM (FLOOD INSURANCE RATE MAP): PANEL 0987G
MAP NUMBER: 08069C0987G
REVISED DATE: MAY 2, 2012

PROJECTION: STATE PLAIN COLORADO NORTH (FEET)
HORIZONTAL DATUM: NAD 83, GRS80 SPHEROID
VERTICAL DATUM: NAVD 88 (SEE NOTES 3 AND 4, BELOW)

NATION GEODETIC SURVEY: (301) 713-3242
FEMA MAP SERVICE CENTER: (800) 358-9616
NATIONAL FLOOD INSURANCE PROGRAM INFORMATION: (877) FEMA-MAP
(877) 336-2627

NOTES:

1. REFER TO THE PLAT FOR LOT AREAS, TRACT SIZES, EASEMENTS, LOT DIMENSIONS, UTILITY EASEMENTS, OTHER EASEMENTS, AND OTHER SURVEY INFORMATION.
2. ALL ELEVATIONS DEPICTED IN PLAN VIEW AND BENCHMARKS LISTED HEREON ARE PER THE CITY OF FORT COLLINS VERTICAL CONTROL DATUM (NGVD 29 - UNADJUSTED). ADD 3.0 FEET TO CONVERT TO THE NAVD 88 DATUM. SEE NOTE #4 FOR ADDITIONAL INFORMATION
3. REFER TO THE FLOOD INSURANCE STUDY FOR LARIMER COUNTY, COLORADO AND INCORPORATED AREAS, VOLUME 1 OF 4, REVISED JUNE 17, 2008 FOR LARIMER COUNTY VERTICAL DATUM OFFSET (TABLE 3) TO CONVERT BETWEEN NAVD 88 AND NGVD 29.
4. A FLOODPLAIN USE PERMIT SHALL BE OBTAINED PRIOR TO CONSTRUCTION OF ANY STRUCTURE OR SITE CONSTRUCTION ELEMENT (DETENTION PONDS, BIKE PATHS, PARKING LOT, UTILITIES, ETC. IN THE HIGH RISK FLOOD FRINGE.
5. REFER TO THE "DRAINAGE LETTER FOR SUNSHINE HOUSE - FC 139" BY NORTHERN ENGINEERING, DATED NOVEMBER 20, 2013 FOR ADDITIONAL INFORMATION.
6. A PORTION OF THIS PROPERTY IS LOCATED IN THE SPRING CREEK FEMA-REGLATORY 100-YEAR FLOOD FRINDGE AND MUST CONFORM TO THE SAFETY STANDARDS OF CHAPTER 10 OF THE CITY MUNICIPAL CODE.
7. NO CRITICAL FACILITIES OR USES MAY BE CREATED IN ANY FLOOD ZONE.

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:		Date

No.	Revisions:	By:	Date:
1	GRADING REVISION		01/17/13

REVIEW SET
NOT FOR CONSTRUCTION
11/20/13

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PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

PROJECT: 232-023	DATE: 11/20/13	
DESIGNED BY: C. Snowdon	SCALE: 1" = 20'	
DRAWN BY: C. Snowdon	REVIEWED BY: N. Haws	

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
FLOODPLAIN EXHIBIT

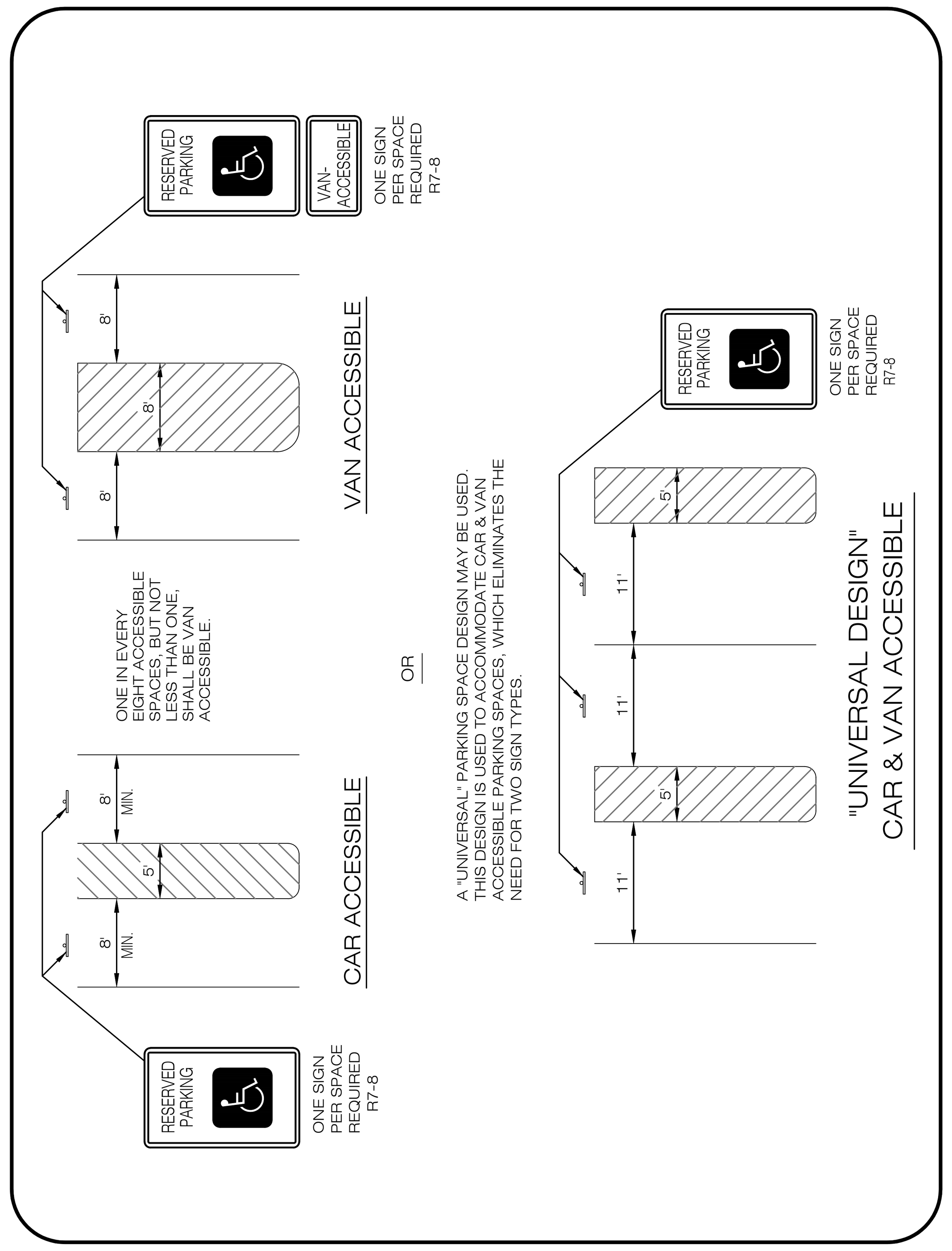
Sheet
C4.01
Of 17 Sheets

STANDARD CONCRETE NOTES

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF ACI 318, ACI 304, AND ACI 315.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS WITH 4%–6% ENTRAINED AIR AND TYPE II CEMENT UNLESS NOTED OTHERWISE.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B". ALL HOOKS SHALL BE STANDARD UNLESS NOTED OTHERWISE.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   - CONCRETE CAST AGAINST EARTH = 3"
   - CONCRETE EXPOSED TO EARTH OR WEATHER:
     - #6 AND LARGER = 2"
     - #5 AND SMALLER AND WWF = 1 1/2"
   - CONCRETE NOT EXPOSED TO WEATHER NOR CAST AGAINST EARTH:
     - SLAB AND WALL = 3/4"
     - BEAMS AND COLUMNS = 1 1/2"
5. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE UNLESS NOTED OTHERWISE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL BE 1/8" LARGER IN DIAMETER THAT THE ANCHOR BOLT, DOWEL OR ROD AND SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. LOCATE AND AVOID CUTTING EXISTING REBAR WHEN DRILLING HOLES IN ELEVATED CONCRETE SLABS.
7. USE AND INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER ICBO AND MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES.

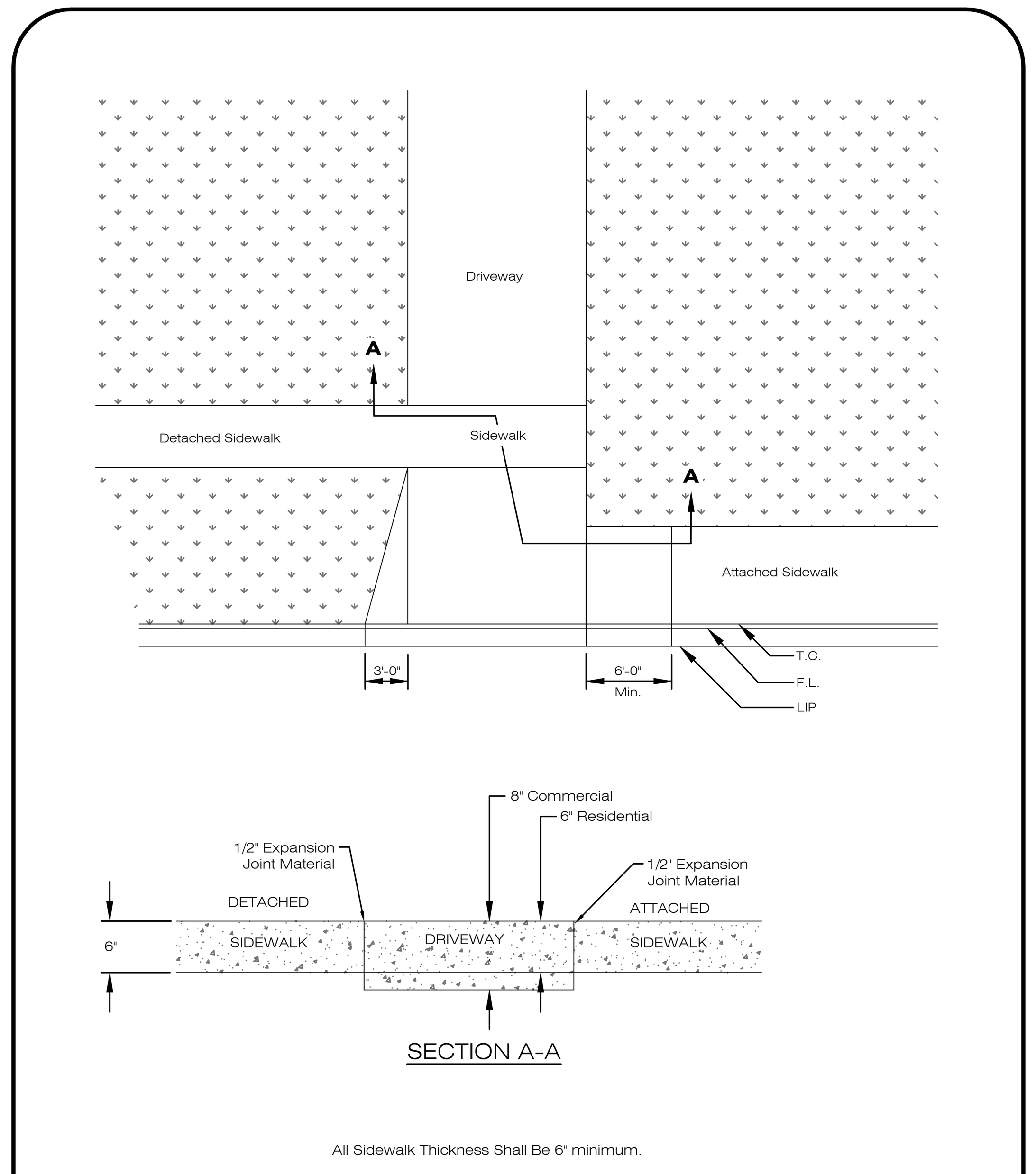
STANDARD CONCRETE NOTES

City of Fort Collins	CITY OF FORT COLLINS UTILITIES FORT COLLINS, CO. (970) 221-6700	STORMWATER CONSTRUCTION DETAILS	APPROVED: DATE: 2/22/05 DRAWN BY: TDC	DETAIL D-41



HANDICAP PARKING REQUIREMENTS (AS PER "ADA")

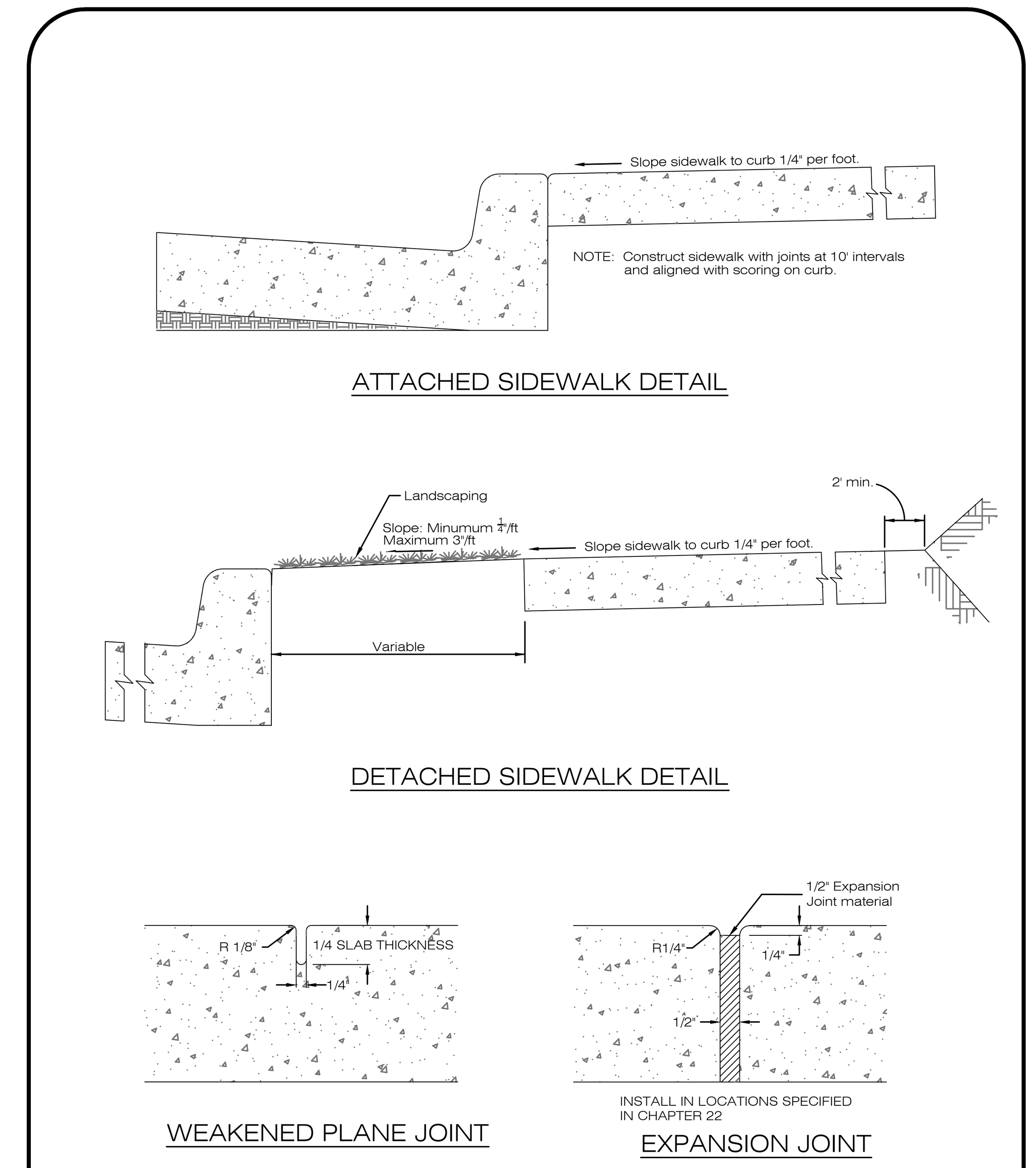
LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO: 1 DATE: 03/01/02	DRAWING 1407



NOTE:
1. Sidewalk grade shall remain consistent across driveway
2. For driveway design requirements, see **CONST. DWG. 706 & 707.**
3. This detail applies to Residential & Commercial driveways.

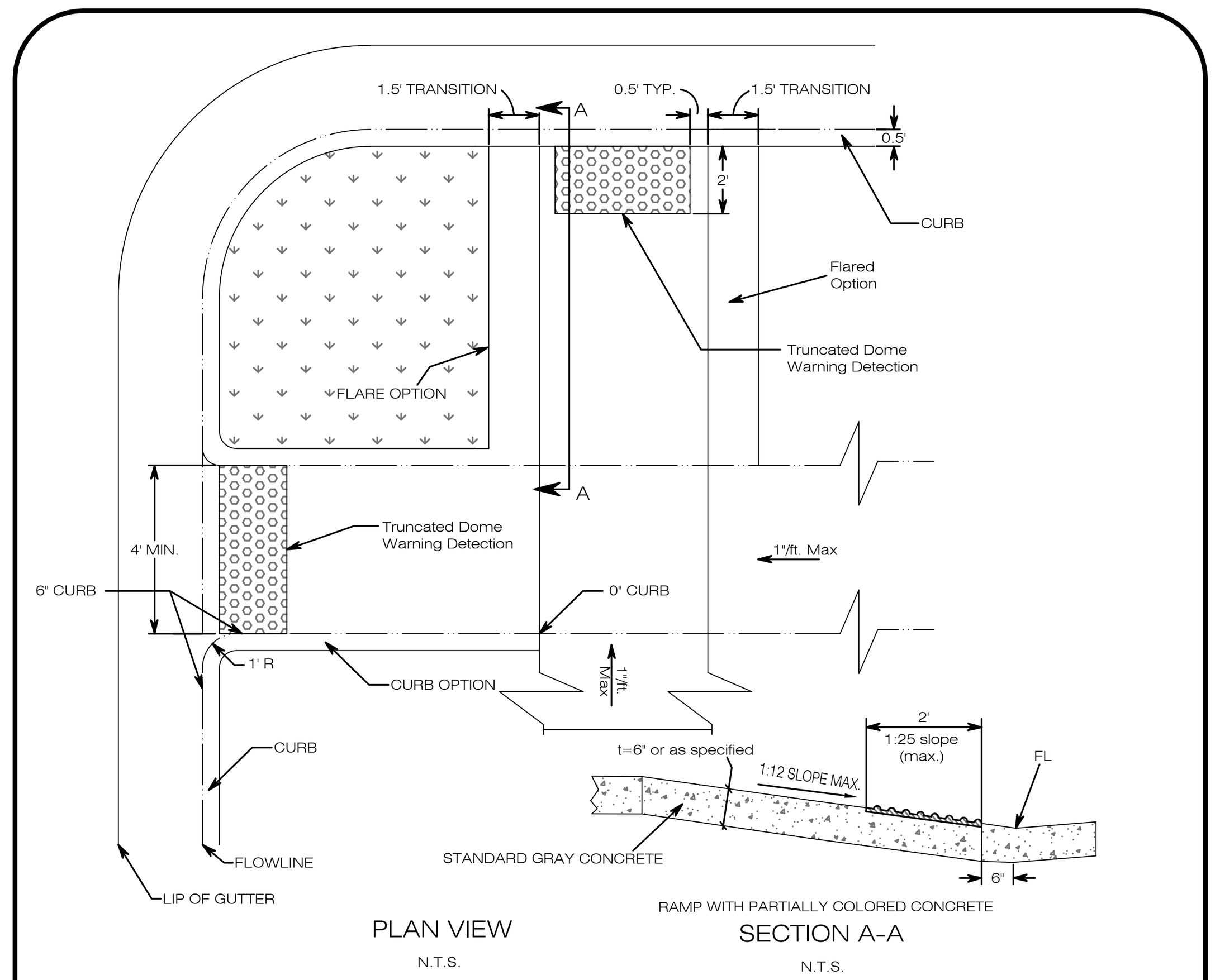
STANDARD SIDEWALK

LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO: 1 DATE: 04/01/07	DRAWING 1601



SIDEWALK DETAIL

LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO: 2 DATE: 04/01/07	DRAWING 1602



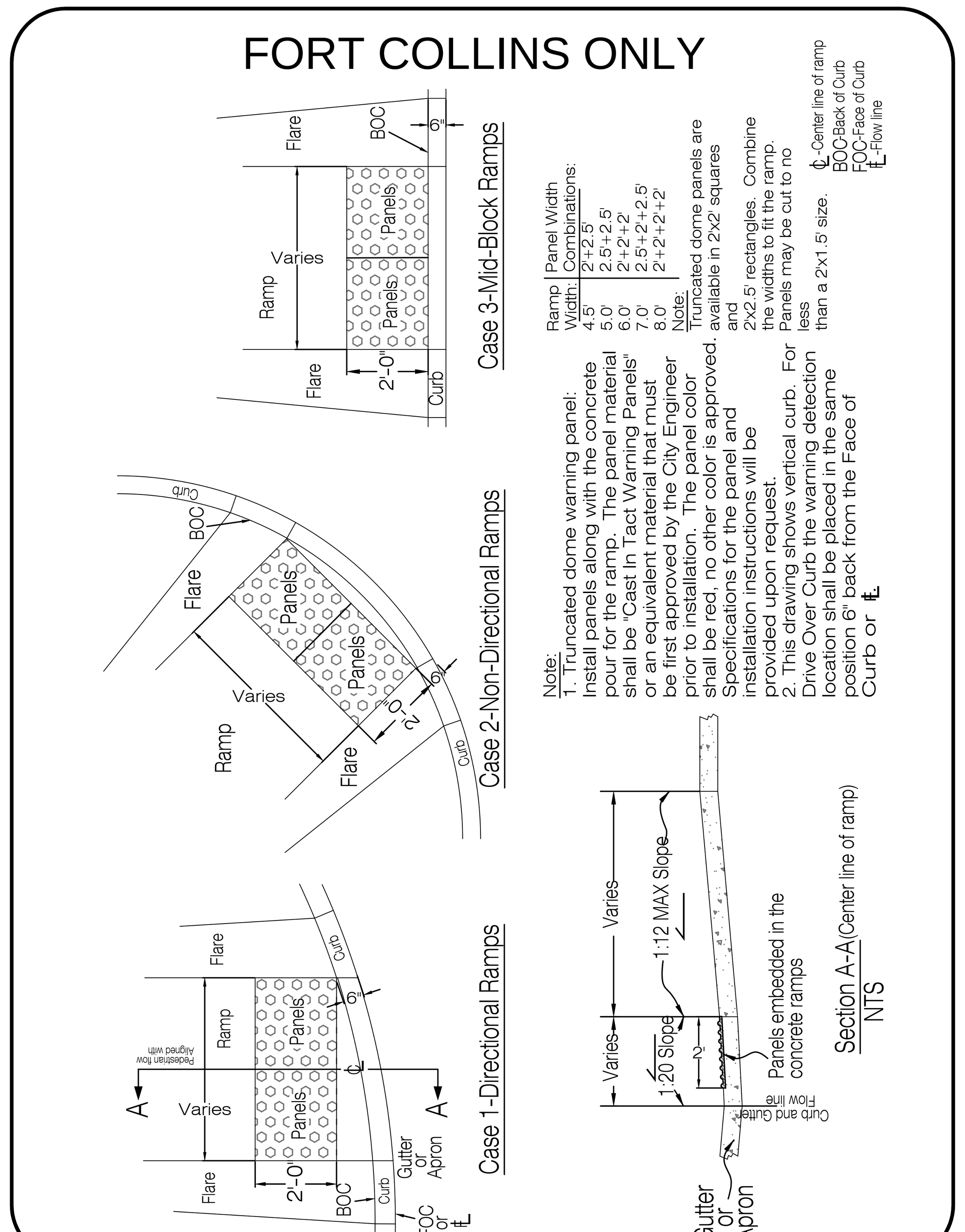
NOTES:

1. NO JOINTS ARE ALLOWED IN THE FLOWLINE. SIX INCH WIDE CURB OR "DUMMY JOINT" MAY BE TOOLED NO CLOSER THAN 6 INCHES FROM FLOW LINE AS SHOWN.
2. MINIMUM CONCRETE THICKNESS IS 6 INCHES.
3. JOINT PATTERN TO BE ACCORDING TO 'INTERSECTION GUTTER DETAIL' OR AS DETERMINED BY THE LOCAL ENTITY.
4. WOOD FLOAT FINISH IS REQUIRED OVER THE SLOPED SURFACE OF RAMP AND FLARES.
5. A 6 INCH WIDE CURB MAY BE POURED AT THE BACK OF THE RAMP AS SHOWN IF REQUIRED. IF CURB IS USED IT SHALL MATCH THE CURB AND GUTTER STYLE OF ADJACENT CURB AND GUTTER.
6. MINIMUM RAMP WIDTH SHALL BE FOUR FEET, OR THE SAME AS THE WIDEST ADJACENT SIDEWALK, WHICHEVER IS GREATER, UP TO A MAXIMUM WIDTH OF 8 FEET.
7. THE RAMP LANDING MAY BE POURED MONOLITHIC WITH THE ADJACENT TRANSITIONS PROVIDED THAT AN APPROVED "SHAKE-ON" PIGMENT BE USED TO COLOR THE LANDING AREA.
8. T= THICKNESS (AS SPECIFIED ON PLANS OR LOCAL ENTITY ENGINEER).

PEDESTRIAN RAMP DETAIL (For New Const. & Alterations)

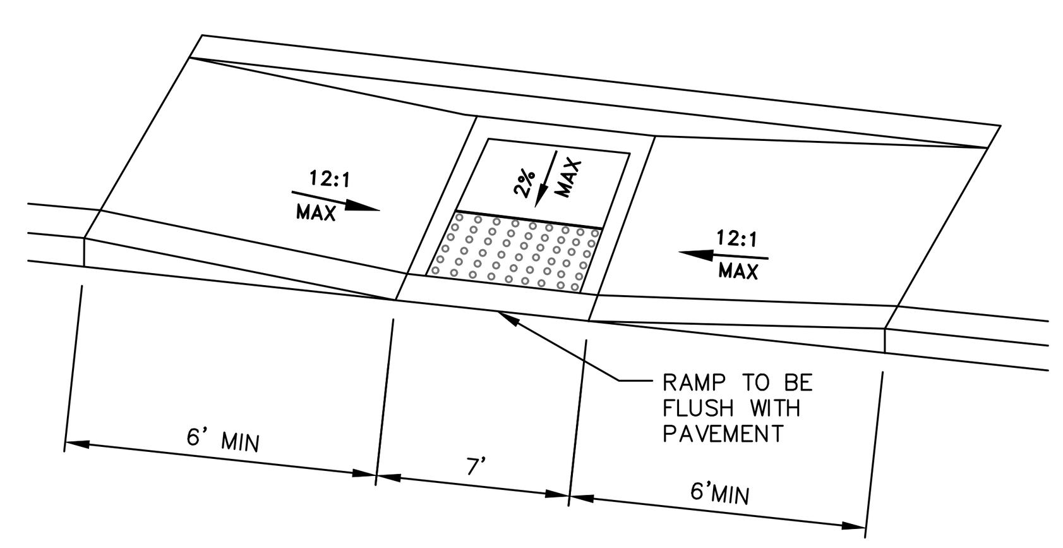
LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO: 1 DATE: 04/01/07	DRAWING 1606

FORT COLLINS ONLY

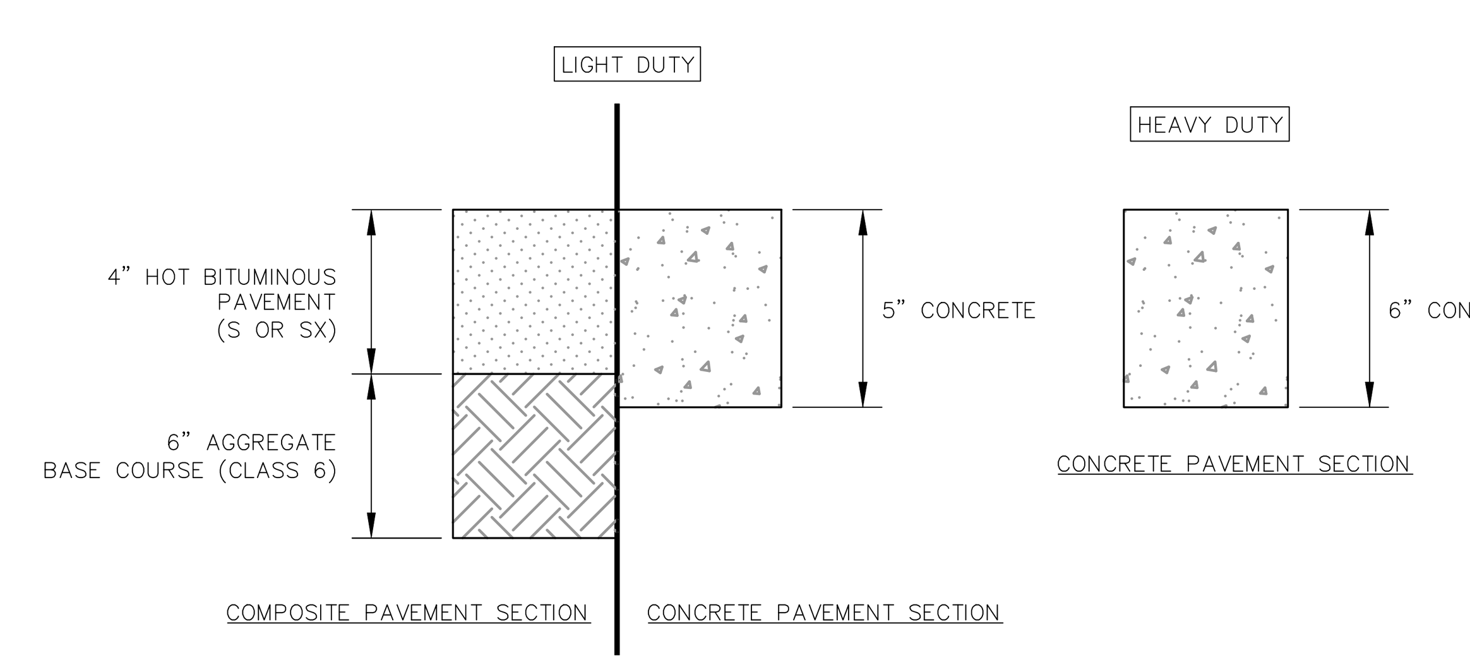


TRUNCATED DOME WARNING FOR ACCESS RAMPS

LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO: DATE: 04/01/07	DRAWING 1607



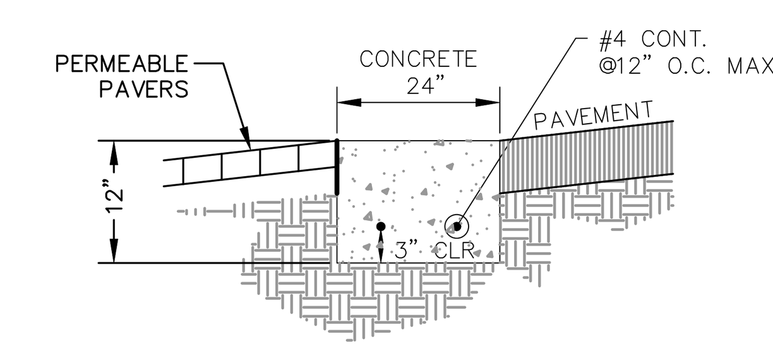
2 C5.00 MID BLOCK RAMP NOT TO SCALE



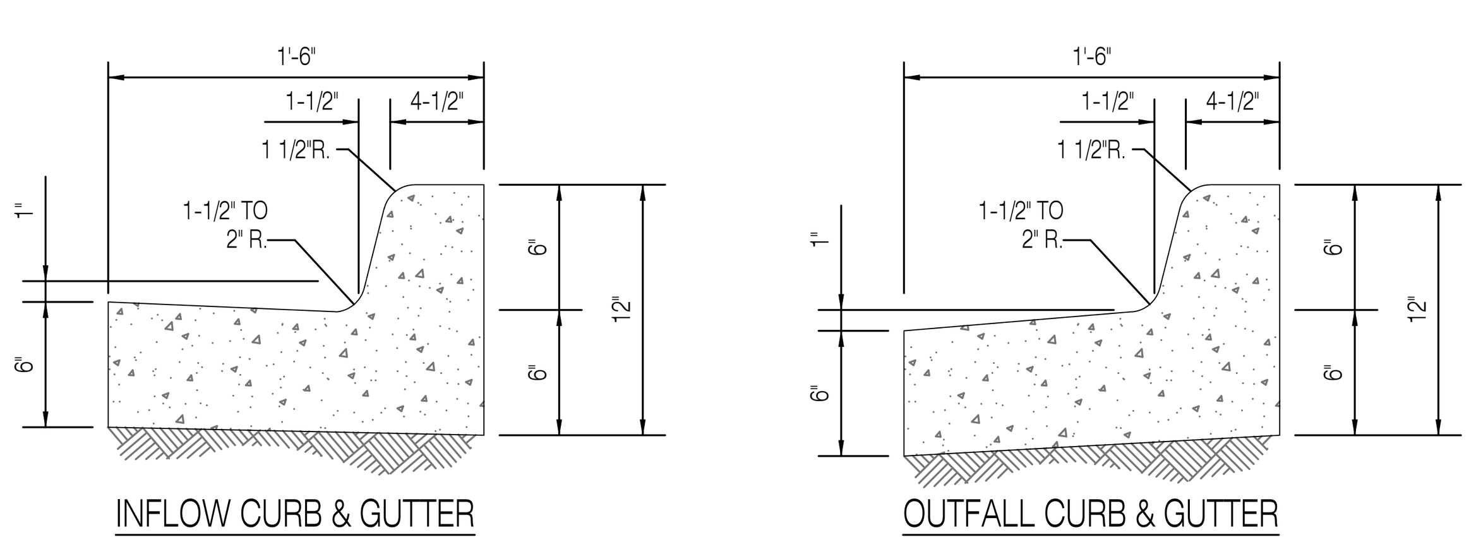
NOTES:

1. ALL SITE GRADING, SUBGRADE PREPARATION AND PAVING SHALL FOLLOW THE GEOTECHNICAL RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL ENGINEERING REPORT "PROPOSED OFFICE BUILDING DEVELOPOMENT CSURF TRACT A AT THE GROVE". BY EARTH ENGINEERING CONSULTANTS, INC. DATED JUNE 14, 2011 (PROJ. NO. 1112015), AND ANY SUBSEQUENT ADDENDA.
2. REFER TO PLANS BY THE BIRDSALL GROUP FOR PAVER COLOR, TYPE, PATTERN, AND LOCATION.
3. SEE CDOT STANDARD M–412–1 FOR TYPICAL CONCRETE PAVING JOINT LAYOUT.

1 C5.00 PAVEMENT DETAIL ON-SITE/PRIVATE PAVING ONLY NOT TO SCALE



3 C5.00 RIBBON CURB NOT TO SCALE



4 C5.00 PRIVATE CURB & GUTTER NOT TO SCALE

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811 Know what's below. Call before you dig.

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

Revisions: No. By: Date:

REVIEW SET NOT FOR CONSTRUCTION 11/20/13

These drawings are instruments of service provided by Northern Engineering Services, Inc. and are not to be used for any type of construction unless signed and sealed by a Professional Engineer in the employ of Northern Engineering Services, Inc.

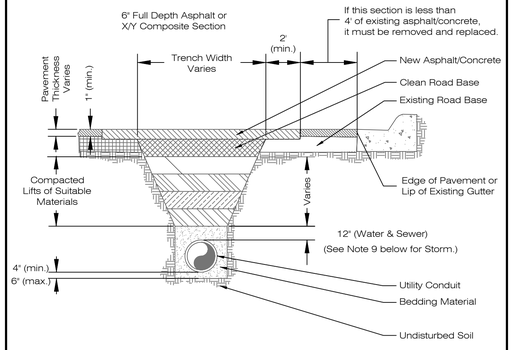
NORTHERN ENGINEERING
200 South College Avenue, Suite 010 Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159 www.northernengineering.com

DATE: 11/20/13	SCALE: N.A.	REVIEWED BY: N. Haws
PROJECT: 232-023	DESIGNED BY: N.A.	DRAWN BY: N.A.

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
CONSTRUCTION DETAILS

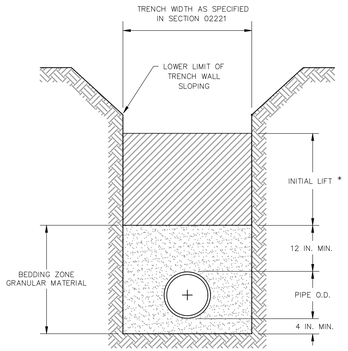
Sheet C5.00 Of 17 Sheets

DRAWING FILENAME: S:\Projects\232-023\Dwg\Details\232-023_DETS.dwg LAYOUT NAME: C5.00 DATE: Nov 20, 2013 - 10:42am CAD OPERATOR: cody LIST OF XREFS: [NES-xborder]



NOTES:
1. All trenches shall be backfilled in accordance with the above detail unless otherwise specified by the Local Entity Engineer.
2. Prior to placement of asphalt/concrete, pavement edge shall be saw cut to a clean, vertical, and straight edge.
3. Where the surrounding soils are non-expansive, a sand/cement slurry (1 sack mix) may be substituted for backfill material.
4. Trench width shall not be more than 16" nor less than 12" wider than the outside diameter of the pipe.
5. Use a #4 rebar at centers along the perimeter of concrete replacement sections.
6. Refer to Chapter 22, Materials & Construction Specifications for compaction and testing requirements.
7. In unimproved areas, all disturbed areas shall be regraded, seeded & mulched.
8. In concrete roadways, a minimum of one entire concrete panel must be replaced.
9. Bedding material depth when installing storm sewer shall be up to spring line, except in areas of unsuitable backfill; then, bedding material shall be placed to a level 12" above pipe.

TRENCH DETAIL			
LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO: 1	DRAWING
		DATE: 08/07/00	2201

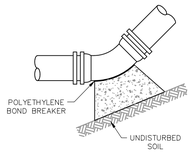


* INITIAL LIFT SHALL NOT EXCEED 2 FEET IN DEPTH.

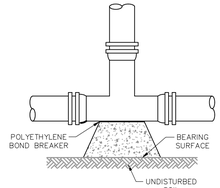
NOTE:

GRANULAR BEDDING MATERIAL SHALL BE A MINIMUM OF 4 INCHES BELOW BOTTOM OF PIPE AND A MINIMUM OF 12 INCHES ABOVE TOP OF PIPE.

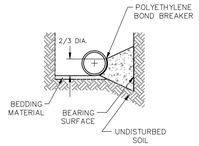
City of Fort Collins	CITY OF FORT COLLINS UTILITIES – WATER FIELD OPERATIONS P.O. BOX 580 FORT COLLINS, CO. 80550 (970) 221-6700	TITLE OF DRAWING: WATER MAIN BEDDING REQUIREMENTS (DIP & PVC)	REVISED DATE: 4/8/11 DETAIL 1



TYPICAL BEND



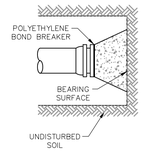
TEE



TYPICAL CROSS-SECTION

MINIMUM BEARING SURFACE AREA (SQ. FT.)					
PIPE SIZE	BENDS				TEE OR DEAD END
	11 1/4°	22 1/2°	45°	90°	
6"	1.0	1.5	2.5	4.5	3.5
8"	1.5	2.5	4.5	8.0	5.5
12"	3.0	4.5	9.0	16.5	12.0
16"	4.8	9.6	18.9	34.7	24.5

BEARING SURFACES ARE A MINIMUM REQUIREMENT AND DO NOT RELIEVE DESIGN ENGINEER OF RESPONSIBILITY TO DESIGN EACH THRUST BLOCK.

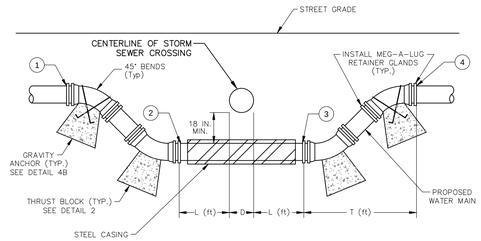


DEAD END

GENERAL NOTES:

1. Bearing surface areas shown in chart are minimum.
2. All fittings to be wrapped with polyethylene.
3. Pipe installed under conditions different from those normally encountered shall require thrust blocks designed for those particular conditions.
4. Thrust blocks on pipe larger than 16 inches diameter shall be designed for conditions existing at the installation site.
5. Refer to Section 03300 for concrete requirements.

City of Fort Collins	CITY OF FORT COLLINS UTILITIES – WATER FIELD OPERATIONS P.O. BOX 580 FORT COLLINS, CO. 80550 (970) 221-6700	TITLE OF DRAWING: STANDARD CONCRETE THRUST BLOCKS	REVISED DATE: 4/8/11 DETAIL 2



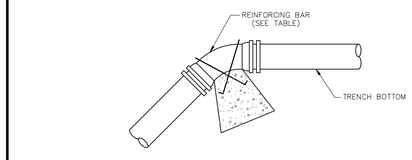
GENERAL NOTES:

1. SEE DETAIL 2 FOR THRUST BLOCK SIZING.
2. SEE DETAIL 4B FOR GRAVITY BLOCK SIZING.
3. ALL FITTINGS AND JOINTS IN LOWERING AREA TO BE RESTRAINED IN ACCORDANCE WITH SECTION 02615-2.6A OR SECTION 02622-2.2A AS APPLICABLE.
4. ALL D.I.P. PIP AND FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE ENCASEMENT.

D	L(ft)
4"–24"	3'
25"–48"	5'
49"–66"	7'
>66"	10'

WATER LOWERING ELEVATIONS							
CROSSING	1	2	3	4	D	L	T
STORM SEWER CROSSING	98.57	97.16	97.16	98.35	24"	3'	2'

City of Fort Collins	CITY OF FORT COLLINS UTILITIES – WATER FIELD OPERATIONS P.O. BOX 580 FORT COLLINS, CO. 80550 (970) 221-6700	TITLE OF DRAWING: WATER MAIN LOWERING	REVISED DATE: 4/11/11 DETAIL 4A



BAR SIZES FOR 150 P.S.I.		
LESS THAN	NO. OF BARS & SIZE	
60CF	2	1/2 IN.
90CF	2	5/8 IN.
133CF	2	3/4 IN.
200CF	2	1 IN.
400CF	2	1 IN.
600CF	3	1 IN.

NOTE:

RESTRAIN ALL FITTINGS AND JOINTS.

VOLUMES SHOWN IN TABLE ARE BASED ON 150 P.S.I. INTERNAL STATIC PRESSURE. VALUES FOR ANY PRESSURE MAY BE OBTAINED BY MULTIPLYING TABULATED VALUES BY A CORRECTION FACTOR "F".

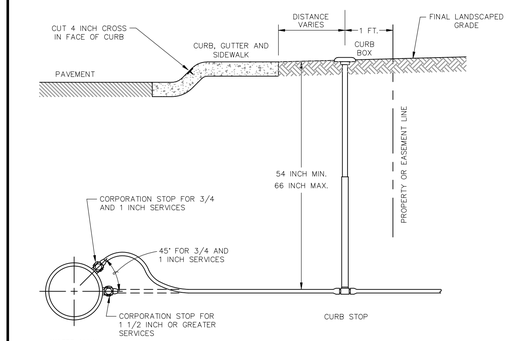
"F" = ACTUAL PRESSURE / 150

(REQUIRED FOR VERTICAL BEND GRAVITY ANCHORS FOR 150 P.S.I. PRESSURE).

CONCRETE GRAVITY BLOCK VOLUME			
WATER MAIN SIZE (INCHES)	BENDS		
	45° (FT.^{3})	22 1/2° (FT.^{3})	11 1/4° (FT.^{3})
4	15.9	8.6	4.4
6	35.3	19.1	9.7
8	62.4	33.8	17.2
10	95.4	51.6	26.3
12	136.4	73.8	37.6
14	184.7	100.0	51.0
16	240.9	130.4	66.5

GRAVITY ANCHOR DETAIL

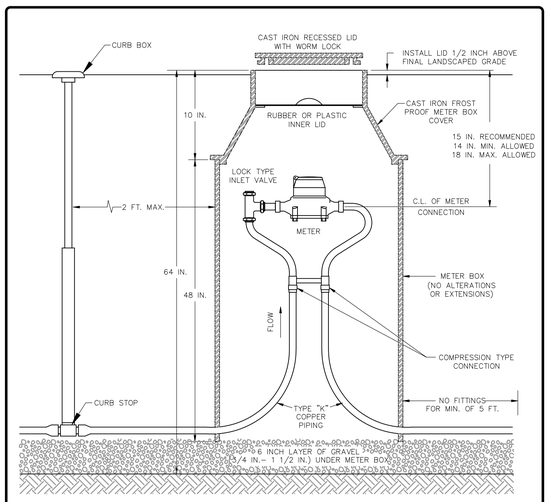
City of Fort Collins	CITY OF FORT COLLINS UTILITIES – WATER FIELD OPERATIONS P.O. BOX 580 FORT COLLINS, CO. 80550 (970) 221-6700	TITLE OF DRAWING: WATER MAIN LOWERING GRAVITY BLOCKS	REVISED DATE: 4/11/11 DETAIL 4B



GENERAL NOTES

1. Use direct tap (as shown) for 3/4 inch and 1 inch services unless water main is PVC, in which case, use a tapping saddle.
2. Install 1 1/2 inch and 2 inch services with tapped tee and corporation stop at time of construction or use a tapping saddle.
3. Locate curb box and meter pit according to the approved utility drawings.
4. The City is responsible for maintaining the water main, corporation stop, and service piping up to and including the curb stop. The owner is responsible for service from the curb stop, including the outlet coupling to the building.
5. No couplings allowed between curb stop and meter setting.
6. Use type K copper for the service from the corporation stop to a minimum of 5 feet past the meter pit.
7. No landscaping (shrubs, boulders, etc.), retaining walls or fences allowed within 4 feet of the curb stop and meter pit, and no trees within 10 feet of curb and meter pit.
8. All residential water service shall be installed in the center of the lot unless otherwise approved by the Utility.
9. All water and sanitary sewer service shall have a minimum horizontal separation of ten feet.

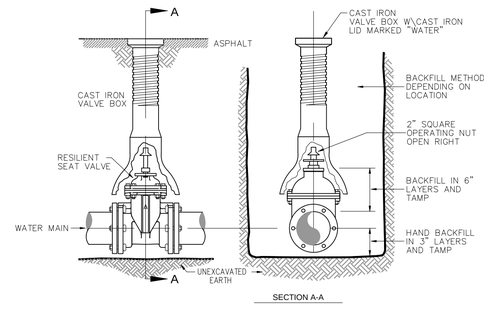
City of Fort Collins	CITY OF FORT COLLINS UTILITIES – WATER FIELD OPERATIONS P.O. BOX 580 FORT COLLINS, CO. 80550 (970) 221-6700	TITLE OF DRAWING: TYPICAL WATER SERVICE	REVISED DATE: 4/12/11 DETAIL 11



GENERAL NOTES

1. DO NOT INSTALL IN ANY STREET, ALLEY, PARKING AREA, DRIVEWAY, SIDEWALK, DRAINAGE DITCH OR DETENTION BASIN.
2. NO LANDSCAPING (SHRUBS, BOULDERS, ETC.) OR STRUCTURES TO BE WITHIN 4 FEET OF METER BOX, OR NO TREES WITHIN 10 FEET OF METER BOX.
3. SLOPE GROUND SURROUNDING METER BOX AWAY FROM LID AT 2% MINIMUM GRADE.
4. MAKE NO PLUMBING CONNECTIONS (TEES, COUPLINGS, ETC.) IN METER BOX.
5. ALL TEES AND CONNECTION FITTINGS TO BE A MINIMUM OF 5 FEET FROM METER BOX WALL ON OUTLET SIDE.
6. GRADE ACCEPTANCE AFTER METER BOX INSTALLATION REQUIRES THAT THE OWNER ADJUST METER BOX COVER TO 1/2 INCH ABOVE FINAL GRADE.
7. IF A PRESSURE REDUCING VALVE IS REQUIRED BY PLUMBING CODE, INSTALL VALVE INSIDE THE BUILDING, IMMEDIATELY FOLLOWING THE MAIN SHUT-OFF VALVE.

City of Fort Collins	CITY OF FORT COLLINS UTILITIES – WATER FIELD OPERATIONS P.O. BOX 580 FORT COLLINS, CO. 80550 (970) 221-6700	TITLE OF DRAWING: STANDARD EXTERIOR SETTING FOR 3/4 IN. AND 1 IN. WATER METERS	REVISED DATE: 4/11/11 DETAIL 15



ALL VALVES TO BE RESILIENT SEAT, EPOXY COATED INSIDE AND OUT PER CITY OF FORT COLLINS AND AWWA SPECS.

ALL VALVE BOXES TO BE OF CAST IRON CONSTRUCTION, TWO PIECE THREADED ADJUSTABLE DESIGN PER CITY OF FORT COLLINS SPECS.

ALL VALVES TO BE 8 MIL POLY WRAPPED. T-BOLTS, NUTS AND RODS TO BE TAR COATED BEFORE WRAPPED.

1 / C5.01 VALVE ASSEMBLY BOX — NOT TO SCALE

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
Know what's below. Call before you dig.
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

No. / Revisions: / Date:
REVIEW SET NOT FOR CONSTRUCTION 11/20/13

NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

DATE: 11/20/13 | SCALE: N.A. | REVIEWED BY: N. Haws
PROJECT: 232-023 | DESIGNED BY: N.A. | DRAWN BY: N.A.

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
CONSTRUCTION DETAILS

Sheet C5.01
Of 17 Sheets

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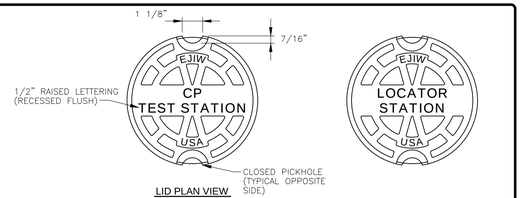
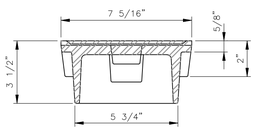
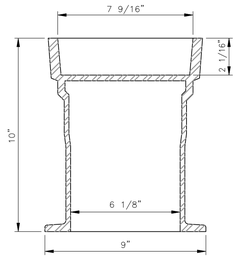


LID PLAN VIEW



LID SECTION VIEW

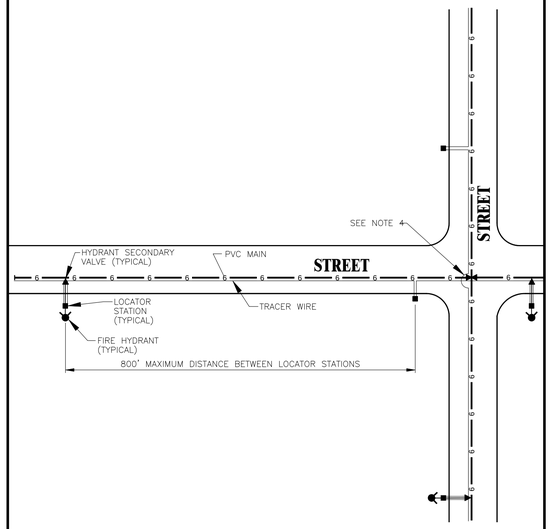


VALVE BOX SECTION VIEW

REFERENCE SPECIFICATIONS 16640-5 FOR CP TEST STATION INFORMATION.

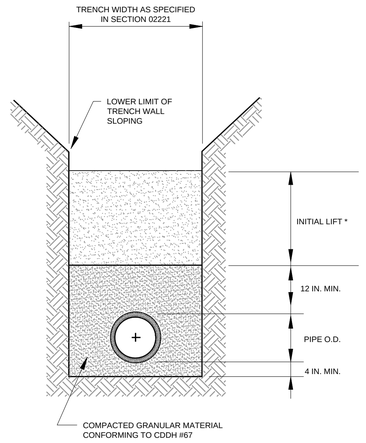
REFERENCE SPECIFICATIONS 02622-2 THROUGH 02622-4 FOR LOCATOR STATION BOX INFORMATION.

City of Fort Collins	CITY OF FORT COLLINS UTILITIES – WATER FIELD OPERATIONS P.O. BOX 580 FORT COLLINS, CO. 80550 (970) 221-6700	TITLE OF DRAWING: CP TEST AND LOCATOR STATION BOX	REVISED DATE: 4/11/11 DETAIL 25



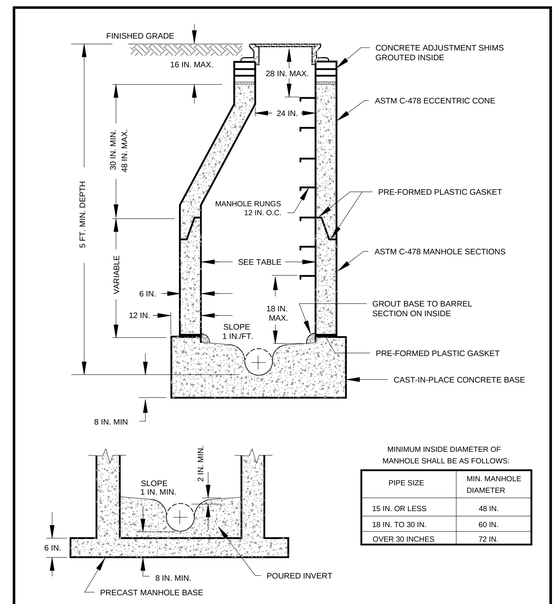
NOTES:
1. TRACER WIRE TO BE PLACED ALONG TOP CENTERLINE OF MAIN AND SECURED AS NECESSARY TO PREVENT MOVEMENT OF WIRE.
2. TRACER WIRE SHALL BE SINGLE CONDUCTOR #12 STRANDED COPPER WITH TYPE THNN OR THWN INSULATION DESIGNATED FOR DIRECT BURY. TRACER WIRE SHALL BE CONTINUOUS (WITHOUT SPLICES) WHENEVER POSSIBLE. WHEN SPLICES ARE REQUIRED, ALL SPLICES OF TRACER WIRE SHALL BE MADE USING BRASS SPLIT-BOLT CONNECTORS AND ROYSTON "MINI SPLICE-RIGHT" SPLICE KITS.
3. FOR LOCATOR STATION DETAILS SEE DETAIL 25
4. TRACER WIRES FOR PERPENDICULAR MAINS AT STREET INTERSECTIONS ARE NOT TO BE SPLICED TOGETHER.

City of Fort Collins	CITY OF FORT COLLINS UTILITIES – WATER FIELD OPERATIONS P.O. BOX 580 FORT COLLINS, CO. 80550 (970) 221-6700	TITLE OF DRAWING: PVC WATER MAIN TRACER WIRE DETAIL	REVISED DATE: 4/11/11 DETAIL 30



* COMPACTED GRANULAR MATERIAL CONFORMING TO CDDH #67

BEDDING REQUIRMENTS			
City of Fort Collins	SEWER CONSTRUCTION DETAILS	APPROVED: / DATE REVISED: 4/11/11 / DRAWN BY: NBJ	DETAIL WW-1

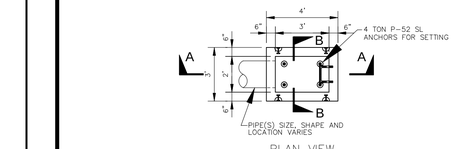


ALTERNATE BASE

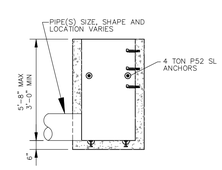
MINIMUM INSIDE DIAMETER OF MANHOLE SHALL BE AS FOLLOWS:

PIPE SIZE	MIN. MANHOLE DIAMETER
15 IN. OR LESS	48 IN.
18 IN. TO 30 IN.	60 IN.
OVER 30 INCHES	72 IN.

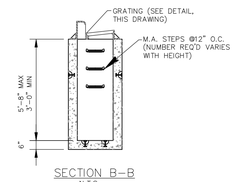
STANDARD MANHOLE			
City of Fort Collins	SEWER CONSTRUCTION DETAILS	APPROVED: / DATE REVISED: 4/11/11 / DRAWN BY: NBJ	DETAIL WW-3



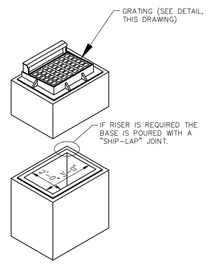
PLAN VIEW
N.T.S.
FRAME & GRATING NOT SHOWN



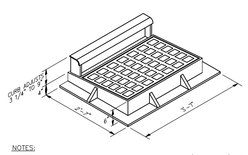
SECTION A-A
N.T.S.



SECTION B-B
N.T.S.



ISOMETRIC VIEW
N.T.S.



NOTES:
1. EAST JORDON IRON WORKS CURB INLET 7030 (OR EQUAL) TYPE M2 GRATE AND T1 BACK COMBINATION.
   OPEN AREA: 260 SQ. IN.
   WEIGHT: 560 LBS
2. DESIGNED FOR AASHTO HS-20 LOADING
3. DESIGNED ACCORDING TO ASTM C857-87 AND ASTM C858-83

GRATING DETAIL
N.T.S.

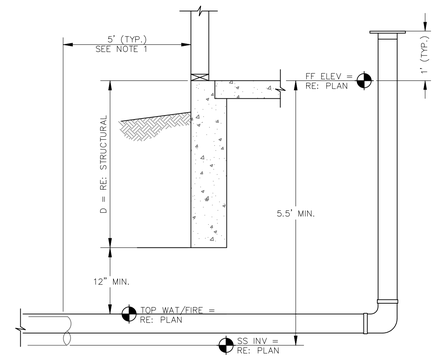
LIFTING NOTES:
1) 4 TON P-52 SL ANCHORS (8 REQ'D)

DESIGN NOTES:
1) DESIGN LOADINGS:
   A. AASHTO HS-20-44, W/ IMPACT
   B. SOIL WEIGHT = 120 PSF
   C. EQUIVALENT FLUID PRESSURE = 45 PCF
   D. 80 PSF LATERAL LIVE LOAD SURCHARGE
2) CONCRETE 28 DAY COMPRESSIVE STRENGTH SHALL BE 4500 PSI (MIN.)
3) STEEL REINFORCEMENT:
   A. REBAR, ASTM A-615 GRADE 60, MIN. OF 2" CLR.
   B. MESH, ASTM A-497 GRADE 80
4) CEMENT: ASTM C-150 SPECIFICATIONS

LEGEND

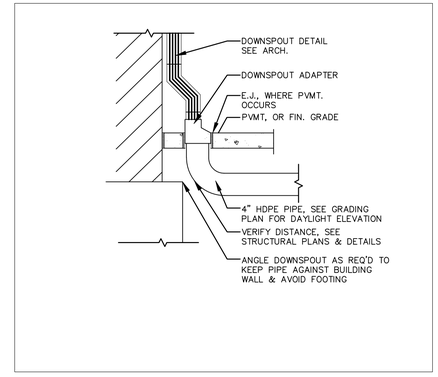
A A — SECTION LINE A-A (ARROWS POINT IN DIRECTION SECTION IS VIEWED)

City of Fort Collins	CITY OF FORT COLLINS UTILITIES STORMWATER CONSTRUCTION DETAILS P.O. BOX 580, FORT COLLINS, CO. 80522	SINGLE CURB INLET	DRAWN BY: T. COX / DATE DRAWN: 3/3/05 / CAD FILE NAME: D43.dwg	DETAIL D-43



NOTES:
1. SITE CONTRACTOR TO END SEWER AND WATER SERVICES 5' AWAY FROM ALL BUILDINGS (TYP.). BUILDING PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR EXTENDING UTILITIES FROM THIS POINT OF CONNECTION TO RISERS UNDER SLAB.
2. SITE CONTRACTOR TO END FIRE LINE 1' ABOVE FFE INSIDE RISER ROOM AND CAP.

1 / C5.02 — TYPICAL POINT OF CONNECTION — NOT TO SCALE



2 / C5.02 — TYPICAL ROOF DRAIN CONNECTION — NOT TO SCALE

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
Know what's below. Call before you dig.
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

Revisions: No. — Date:
REVIEW SET
NOT FOR CONSTRUCTION
11/20/13

NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

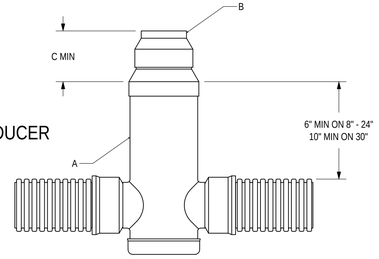
PROJECT: 232-023 | DATE: 11/20/13
DESIGNED BY: N.A. | SCALE: N.A.
DRAWN BY: N.A. | REVIEWED BY: N. Haws

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
CONSTRUCTION DETAILS

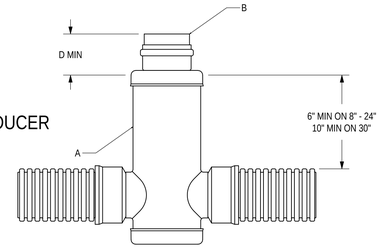
Sheet C5.02
Of 17 Sheets

A	B	C	D
10"	8"	6.00	9.00
12"	8"	12.00	9.00
12"	10"	6.00	10.00
15"	8"	18.50	9.00
15"	10"	12.50	10.00
15"	12"	6.50	
18"	8"	25.50	9.00
18"	10"	19.50	10.00
18"	12"	13.50	11.50
18"	15"	7.00	
24"	8"	36.50	9.00
24"	10"	30.50	10.00
24"	12"	24.50	11.00
24"	15"	18.00	12.00
24"	18"	11.00	
30"	8"	46.50	9.00
30"	10"	40.50	10.00
30"	12"	34.50	11.50
30"	15"	28.00	12.00
30"	18"	21.00	14.50
30"	24"	13.50	

CONE STYLE REDUCER

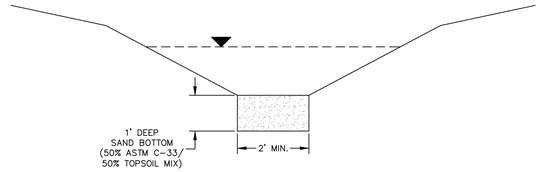


CAP STYLE REDUCER



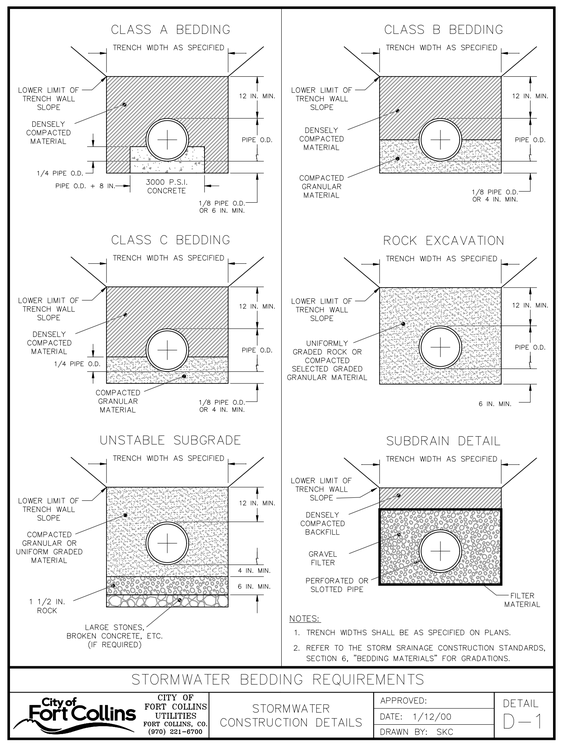
NOTE: DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY

DRAWN BY CJA	MATERIAL	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com
DATE 2-6-03			
REVISED BY EBC	PROJECT NO./NAME	TITLE	DRAIN BASIN WITH REDUCER OPTIONS
DATE 3-11-10			
DWG SIZE A	SCALE 1:25 SHEET 1 OF 1	DWG NO. 7001-110-104	REV D



1 / C5.03 SOFT PAN DETAIL

NOT TO SCALE

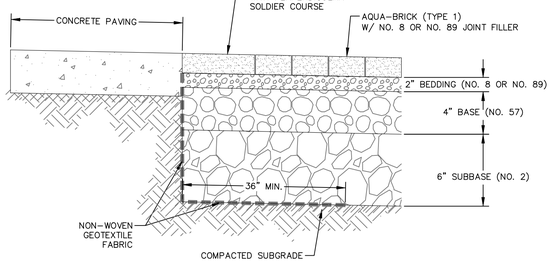


NOTES:

1. TRENCH WIDTHS SHALL BE AS SPECIFIED ON PLANS.
2. REFER TO THE STORM SRAINAGE CONSTRUCTION STANDARDS, SECTION 6, "BEDDING MATERIALS" FOR GRADATIONS.

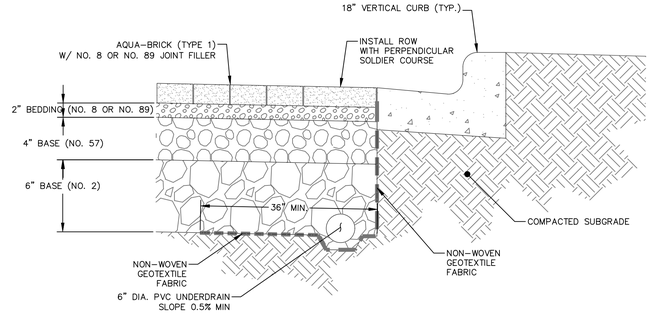
STORMWATER BEDDING REQUIREMENTS

City of Fort Collins	CITY OF FORT COLLINS UTILITIES FORT COLLINS, CO. (970) 221-6700	STORMWATER CONSTRUCTION DETAILS	APPROVED: DATE: 1/12/00 DRAWN BY: SKC
			DETAIL D-1



NOTES:

1. CONFIRM PAVER COLOR, TYPE, AND PATTERN WITH OWNER AND LANDSCAPE ARCHITECT PRIOR TO PURCHASING. DEFAULT BASE BID SHALL BE AQUA-BRIC AUTUMN BLEND BY BORGERT PRODUCTS LAID IN A HERRINGBONE PATTERN.
2. THE ENTIRE PERIMETER OF THE PERMEABLE PAVER AREA SHALL RECEIVE SOME FORM OF CONCRETE EDGE RESTRAINT.
3. INSTALLATION OF PERMEABLE INTERLOCKING CONCRETE PAVEMENT (PICP) SYSTEM SHALL FOLLOW THE GUIDELINES OF ICPI TECH SPEC NO. 18. WORK SHALL BE PERFORMED BY A QUALIFIED CONTRACTOR. QUALIFIED CONTACTOR SHALL MEAN AN ICPI 'CERTIFIED PAVER INSTALLER' HOLDING A CURRENT PICP SPECIALIST DESIGNATION.

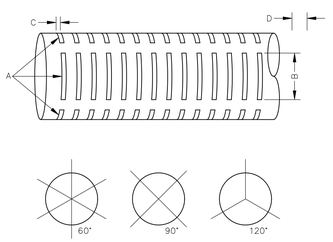


2 / C5.03 PAVER SECTION WITH UNDERDRAIN

NOT TO SCALE

SCREEN SLOT TABLE					
	A	B	C	D	E
PIPE SIZE	ROWS OF SLOTS	MAXIMUM SLOT LENGTH	MAXIMUM SLOT WIDTH	APPROX. SLOT SPACING O.C.	MINIMUM OPEN AREA PER FOOT
6"	3 (MIN.) - 6 (MAX.)	1-3/8"	0.032"	0.516"	1.98 SQ. IN.

NOTE:
"SLOTTED PVC" AND "PERFORATED PVC" SHALL MEAN THE SAME THING WHEN REFERRING TO UNDERDRAINS IN THIS PLAN SET.



3 / C5.03 DIMENSIONS FOR SLOTTED PVC PIPE

NOT TO SCALE

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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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

Revisions:

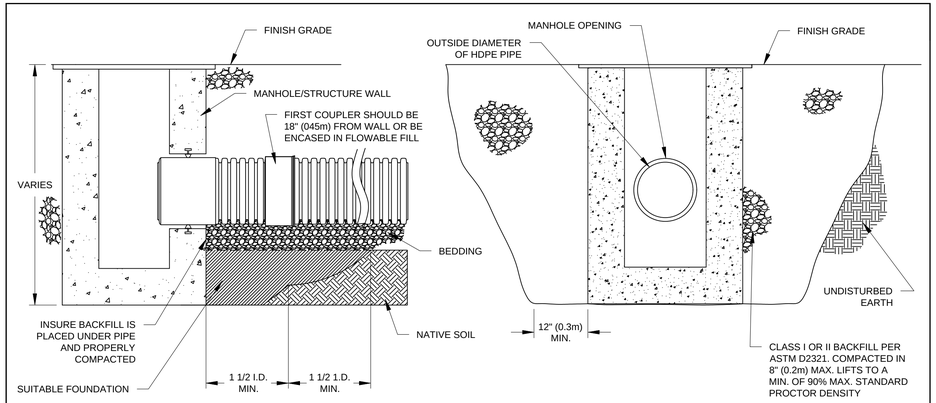
No.	Date:
	REVIEW SET NOT FOR CONSTRUCTION 11/20/13

NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: (970) 221-4158 FAX: (970) 221-4159
www.northernengineering.com

PROJECT: 232-023	DATE: 11/20/13
DESIGNED BY: N.A.	SCALE: N.A.
DRAWN BY: N.A.	REVIEWED BY: N. Haws

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
CONSTRUCTION DETAILS

Sheet C5.03
Of 17 Sheets



NOTES:

1. MAXIMUM INSERTION ANGLE SHALL NOT EXCEED REQUIREMENTS AS SPECIFIED BY THE MANUFACTURER.

2. SEE STANDARD DETAILS STD-202 (A-B) THROUGH STD-204 (A-E) FOR STRUCTURE CONNECTIONS, PRODUCT INFORMATION AND DIMENSIONAL PIPE DATA. INSTALLATION RECOMMENDATIONS ARE ALSO SPECIFIED IN TECHNICAL NOTE 5.04: HDPE CONNECTIONS TO MANHOLES AND STRUCTURES.

3. PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST INSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
1	UPDATED DRAWING	TJR	02/20/07	CKS

STRUCTURE CONNECTION INSTALLATION DETAIL

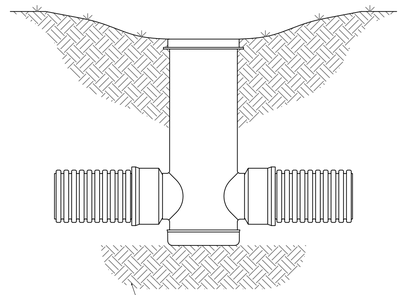
DRAWING NUMBER: STD-201

ADS — ADVANCED DRAINAGE SYSTEMS, INC. — 4640 TRUEMAN BLVD HILLIARD, OHIO 43026

DRAWN BY: CKS | DATE: 10/10/06 | SCALE: NTS | SHEET: 1 OF 1

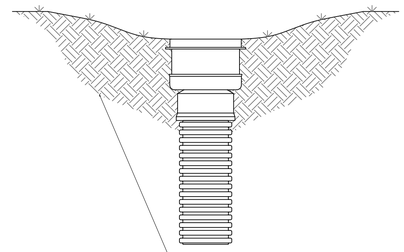
NON TRAFFIC INSTALLATION

12" - 30" DRAIN BASIN



BACKFILL MATERIAL BELOW AND TO SIDES OF STRUCTURE SHALL BE NATIVE SOIL AND BE PLACED UNIFORMLY IN 12" LIFTS AND COMPACTED TO A MIN OF 90%

12" - 30" INLINE DRAIN



BACKFILL MATERIAL BELOW AND TO SIDES OF STRUCTURE SHALL BE NATIVE SOIL AND BE PLACED UNIFORMLY IN 12" LIFTS AND COMPACTED TO A MIN OF 90%

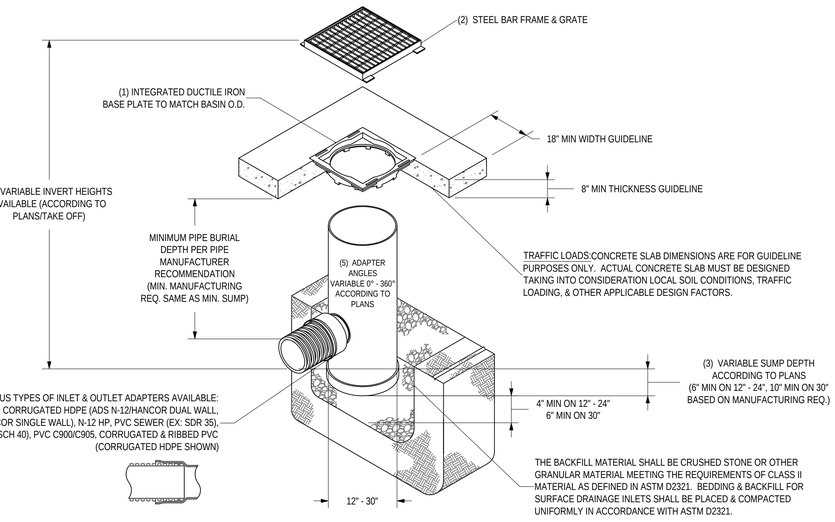
DRAWN BY	CJA	MATERIAL	
DATE	9-30-99		
APPD BY	CJA	PROJECT NO./NAME	
DATE	9-30-99		
DWG SIZE	A	SCALE 1:25 SHEET 1 OF 1	

Nyloplast — 3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com

TITLE: 12 IN - 30 IN DB & ID NON TRAFFIC INSTALLATION

DWG NO. 7001-110-111 REV B

NYLOPLAST DRAIN BASIN WITH 2 FT X 2FT STEEL BAR GRATE



1 - 12" - 30" BASE PLATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - FRAME & GRATE SHALL BE STEEL PER ASTM A36.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 24").
5 - ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
6 - STEEL BAR GRATE SHALL MEET H-20 LOAD RATING.

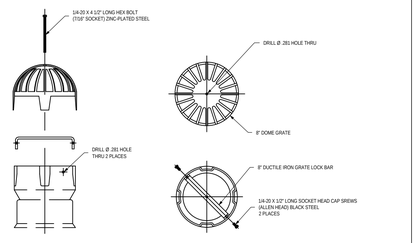
DRAWN BY	EBC	MATERIAL	
DATE	3-22-10		
REVISED BY	EBC	PROJECT NO./NAME	
DATE	6-24-11		
DWG SIZE	A	SCALE 1:40 SHEET 1 OF 1	

Nyloplast — 3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com

TITLE: DRAIN BASIN WITH 2 FT X 2 FT STEEL BAR GRATE QUICK SPEC INSTALLATION DETAIL

DWG NO. 7001-110-394 REV B

0899CGDL



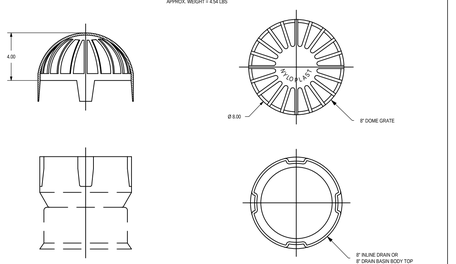
DRAWN BY	EBC	MATERIAL	
DATE	2-20-06		
REVISED BY	EBC	PROJECT NO./NAME	
DATE	3-14-10		
DWG SIZE	A	SCALE 1:6 SHEET 1 OF 1	

Nyloplast — 3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com

TITLE: 8 IN DOME LOCKING GRATE ASSEMBLY

DWG NO. 7001-110-228 REV B

0899CGD



DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-228

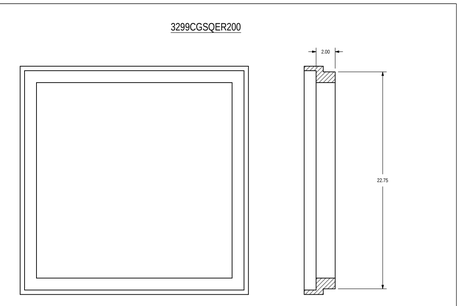
DRAWN BY	EBC	MATERIAL	
DATE	3-3-06	DUCTILE IRON	
REVISED BY	EBC	PROJECT NO./NAME	
DATE	3-13-10		
DWG SIZE	A	SCALE 1:4 SHEET 1 OF 1	

Nyloplast — 3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com

TITLE: 8 IN DOME GRATE ASSEMBLY

DWG NO. 7001-110-227 REV B

3299CGSQER200



QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES

DRAWN BY	JJC	MATERIAL	
DATE	8-1-08	DUCTILE IRON	
REVISED BY	EBC	PROJECT NO./NAME	
DATE	3-15-10		
DWG SIZE	A	SCALE 1:5 SHEET 1 OF 1	

Nyloplast — 3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com

TITLE: 2 FT X 2 FT ROAD AND HIGHWAY GRATE EXTENSION DETAIL

DWG NO. 7001-110-324 REV B

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

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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Revisions: No. — Date:
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NORTHERN ENGINEERING
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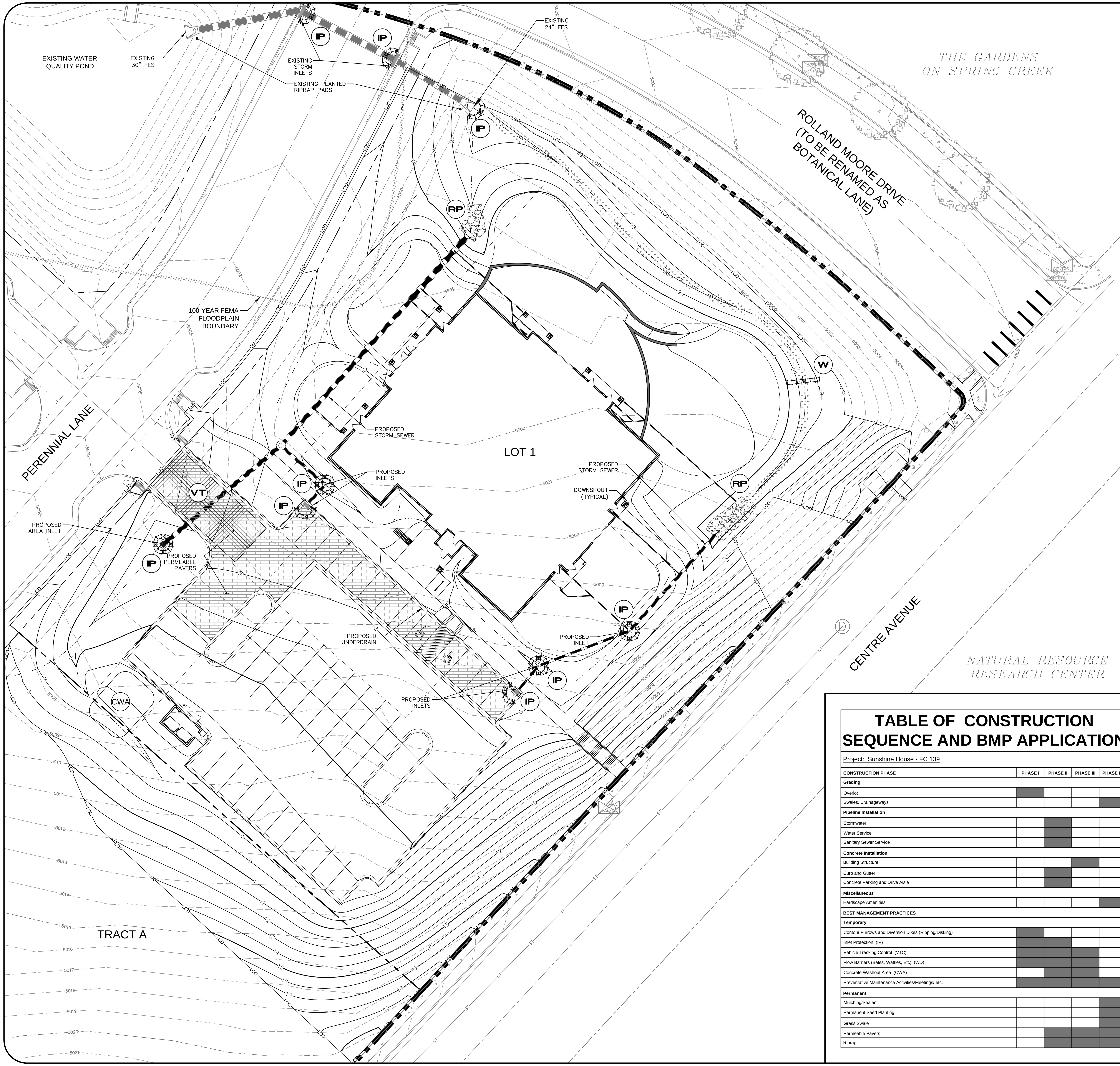
www.northernengineering.com
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524

PROJECT: 232-023 | DESIGNED BY: N.A. | DRAWN BY: N.A. | DATE: 11/20/13 | SCALE: N.A. | REVIEWED BY: N. Haws

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
CONSTRUCTION DETAILS

Sheet C5.04
Of 17 Sheets

DRAWING FILENAME: D:\Projects\232-023\Dwg\Details\232-023_DET5.dwg LAYOUT NAME: C5.04 DATE: Nov 20, 2013 - 10:42am CAD OPERATOR: cody
LIST OF XREFS: [NO]<-None>



GRAPHIC SCALE:

NORTH

20 0 20 40 60 Feet

(IN FEET)
1 inch = 20 ft.

LEGEND:

- PROPERTY BOUNDARY
- EXISTING STORM SEWER LINE W/ MH
- EXISTING INLET GRATE
- PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED INFLOW CURB & GUTTER
- PROPOSED RIBBON CURB
- APPROXIMATE LIMITS OF DISTURBANCE
- WATTLE INLET PROTECTION (IP)
- WATTLE (W)
- CONCRETE WASHOUT AREA (CWA)
- VEHICLE TRACKING PAD (VT)
- RIPRAP (RP)

NOTES:

1. THE SIZE, TYPE AND LOCATION OF ALL KNOWN UNDERGROUND UTILITIES ARE APPROXIMATE WHEN SHOWN ON THESE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE OF ALL UNDERGROUND UTILITIES IN THE AREA OF THE WORK. BEFORE COMMENCING NEW CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL BE RESPONSIBLE FOR ALL UNKNOWN UNDERGROUND UTILITIES.
2. EROSION CONTROL PRACTICES, SITE PROTECTION, AND REVEGETATION METHODS SHALL FOLLOW CITY REGULATIONS.
3. IT SHOULD BE NOTED THAT ANY EROSION CONTROL PLAN SERVES ONLY AS A GUIDELINE TO THE CONTRACTOR. STAGING AND/OR PHASING OF BEST MANAGEMENT PRACTICES (BMPs) IS EXPECTED. ADDITIONAL AND/OR DIFFERENT BMPs FROM THOSE ORIGINALLY DEPICTED MAY BE NECESSARY DURING CONSTRUCTION DUE TO CHANGING SITE CONDITIONS OR AS REQUIRED BY LOCAL AUTHORITIES.
4. THIS EROSION CONTROL PLAN IS SCHEMATIC IN NATURE. AS SUCH, GRAPHICAL SYMBOLS MAY NOT BE TO SCALE, NOR ARE THEY NECESSARILY SHOWN IN THEIR EXACT LOCATION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING (CITY, STATE DISCHARGE PERMIT, ETC.) AND COMPLIANCE WITH GOVERNING AUTHORITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR (OR PERMIT HOLDER) TO ENSURE EROSION CONTROL MEASURES ARE PROPERLY MAINTAINED AND FOLLOWED.
6. CONTRACTOR SHALL IMPLEMENT THE APPROPRIATE EROSION CONTROL MEASURES ACCORDING THE THE CONSTRUCTION SEQUENCING AND LEVEL OF SITE STABILIZATION.
7. CONTRACTOR SHALL IMPLEMENT APPROPRIATE INLET PROTECTION FOR ALL STORM DRAINS UNTIL SITE IS FULLY STABILIZED. INLET PROTECTION SHALL BE ADAPTED, AS NECESSARY, TO THE SURROUNDING SURFACE TYPE AND CONDITION (i.e., STAKE–DRIVEN WATTLES FOR BARE SOIL, SAND BAGS OR GRAVEL SOCKS FOR PAVEMENT, ETC.)
8. CONTRACTOR IS RESPONSIBLE FOR STABILIZING ALL SLOPES, PARTICULARLY THOSE STEEPER THAN 6:1. CRIMP MULCHING, HYDRO MULCHING, EROSION MATS, TEMPORARY IRRIGATION, AND ADDITIONAL WATTLES OR SILT FENCING MAY BE NECESSARY TO ESTABLISH VEGETATIVE COVER AND STABILIZE THE SLOPE.
9. SEE LANDSCAPE PLANS FOR ADDITIONAL INFORMATION ON PLANTING, REVEGETATION, HARDSCAPE AND OTHER PERMANENT SITE STABILIZATION METHODS.
10. SEE "GRADING & EROSION CONTROL NOTES" ON SHEET C0.02 OF FINAL UTILITY PLANS FOR SUNSHINE HOUSE – FC 139 PREPARED BY NORTHERN ENGINEERING DATED OCTOBER 9TH, 2013 FOR ADDITIONAL INFORMATION.
11. CONTRACTOR TO ENSURE PERMEABLE PAVERS ARE PROTECTED FROM CONSTRUCTION ACTIVITIES FOLLOWING PAVEMENT CONSTRUCTION (E.G. LANDSCAPING OPERATIONS). THIS COULD INCLUDE COVERING AREAS OF THE PAVEMENT, PROVIDING ALTERNATIVE CONSTRUCTION VEHICLE ACCESS, AND PROVIDING EDUCATION TO ALL PARTIES WORKING ON SITE.
12. CONTRACTOR SHALL AVOID STORING DIRT, SAND OR GRAVEL ON THE SURFACE OF THE PERMEABLE PAVERS AFTER THE PERMEABLE PAVERS HAVE BEEN INSTALLED.

TABLE OF CONSTRUCTION SEQUENCE AND BMP APPLICATION

Project: Sunshine House - FC 139

CONSTRUCTION PHASE	PHASE I	PHASE II	PHASE III	PHASE IV
Grading				
Overlot	■			
Swales, Drainageways				■
Pipeline Installation				
Stormwater		■		
Water Service		■		
Sanitary Sewer Service		■		
Concrete Installation				
Building Structure			■	
Curb and Gutter		■		
Concrete Parking and Drive Aisle		■		
Miscellaneous				
Hardscape Amenities				■
BEST MANAGEMENT PRACTICES				
Temporary				
Contour Furrows and Diversion Dikes (Ripping/Disking)	■			
Inlet Protection (IP)	■	■		
Vehicle Tracking Control (VTC)	■	■	■	
Flow Barriers (Bales, Wattles, Etc) (WD)	■	■	■	
Concrete Washout Area (CWA)		■	■	
Preventative Maintenance Activities/Meetings/ etc.	■	■	■	■
Permanent				
Mulching/Sealant				■
Permanent Seed Planting				■
Grass Swale				■
Permeable Pavers		■	■	■
Riprap		■	■	■

CALL UTILITY NOTIFICATION CENTER OF COLORADO

811 Know what's below. Call before you dig.

CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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

REVIEW SET
NOT FOR CONSTRUCTION
11/20/13

No. Revisions: By: Date:

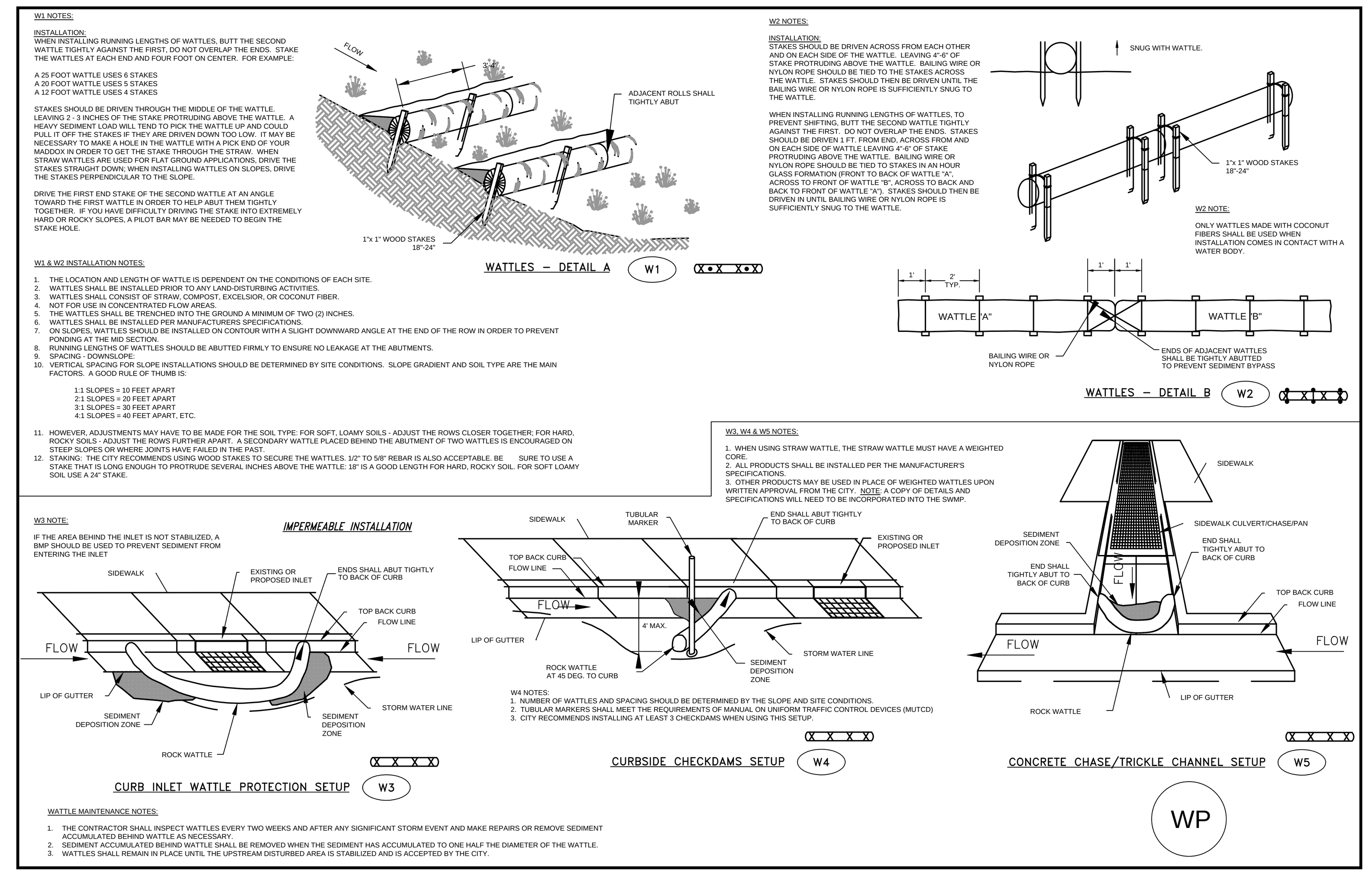
These drawings are instruments of service provided by Northern Engineering Services, Inc. and are not to be used for any type of construction unless signed and sealed by a Professional Engineer in the employ of Northern Engineering Services, Inc.

NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

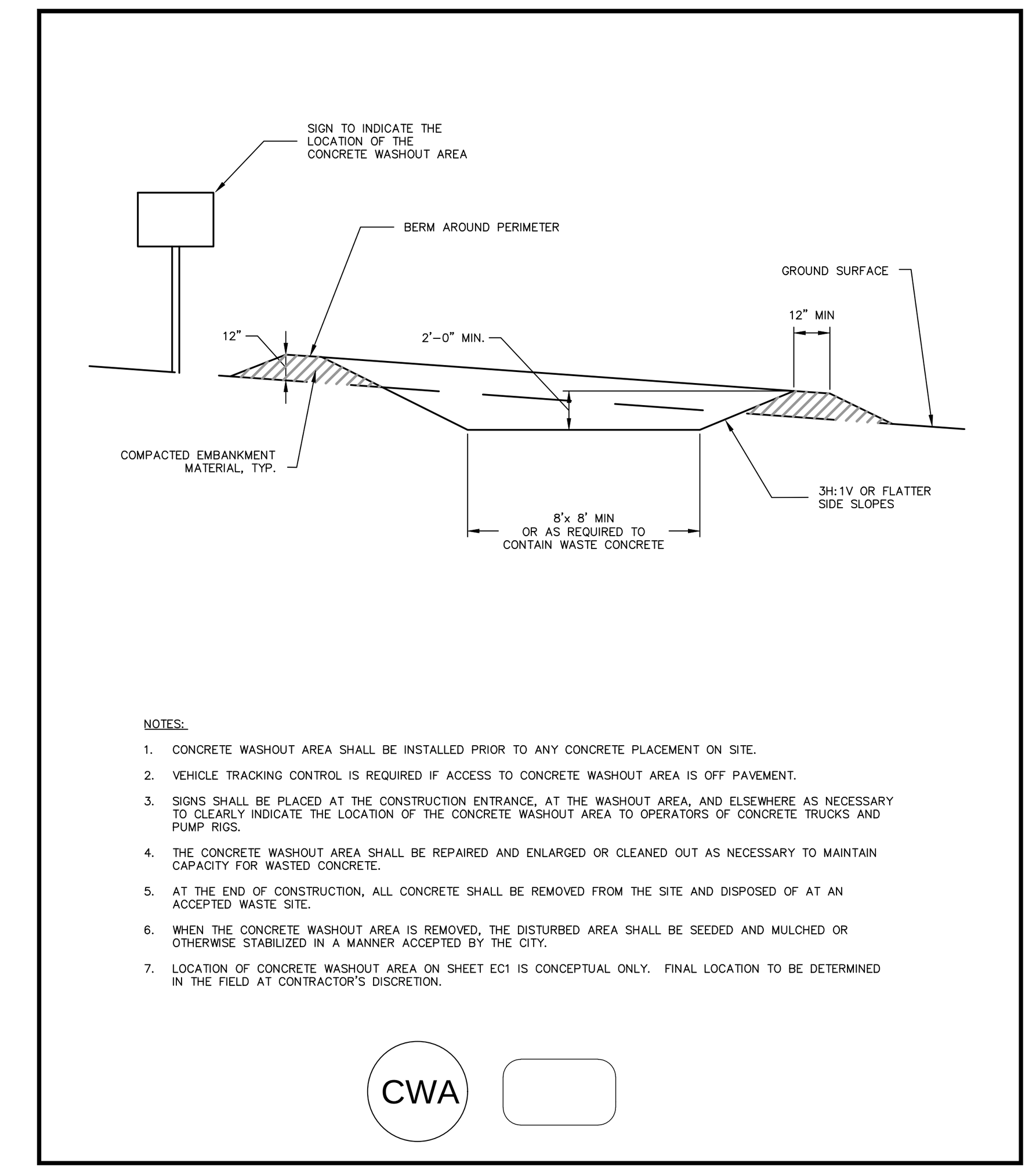
PROJECT: 232-023
DATE: 11/20/13
DESIGNED BY: C. Snowdon
SCALE: 1" = 20'
DRAWN BY: C. Snowdon
REVIEWED BY: N. Haws

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
EROSION CONTROL STATIC SITE PLAN

Sheet C6.00
Of 17 Sheets



1 C6.02 WATTLE INSTALLATION
NOT TO SCALE

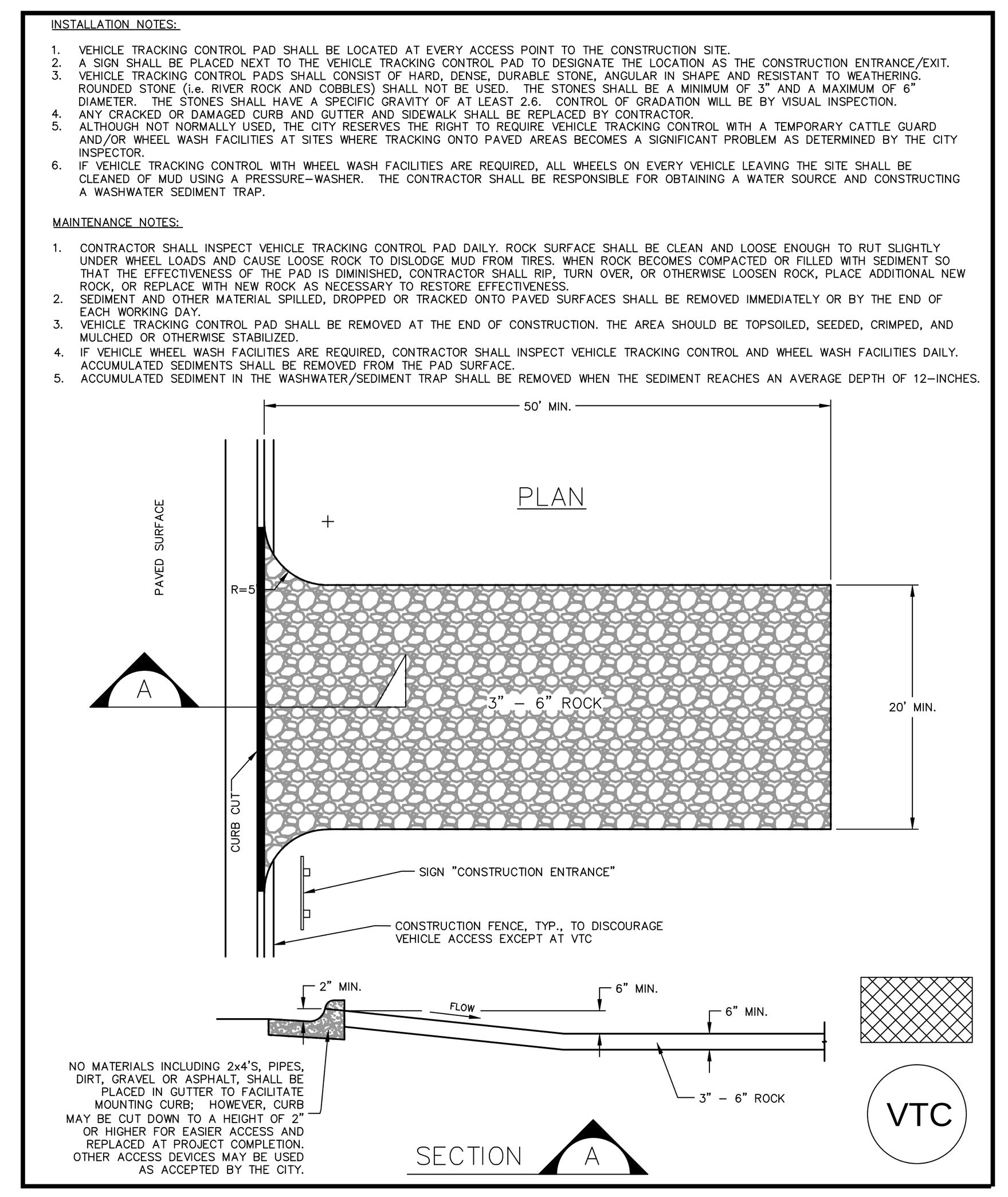


2 C6.02 CONCRETE WASHOUT AREA
NOT TO SCALE

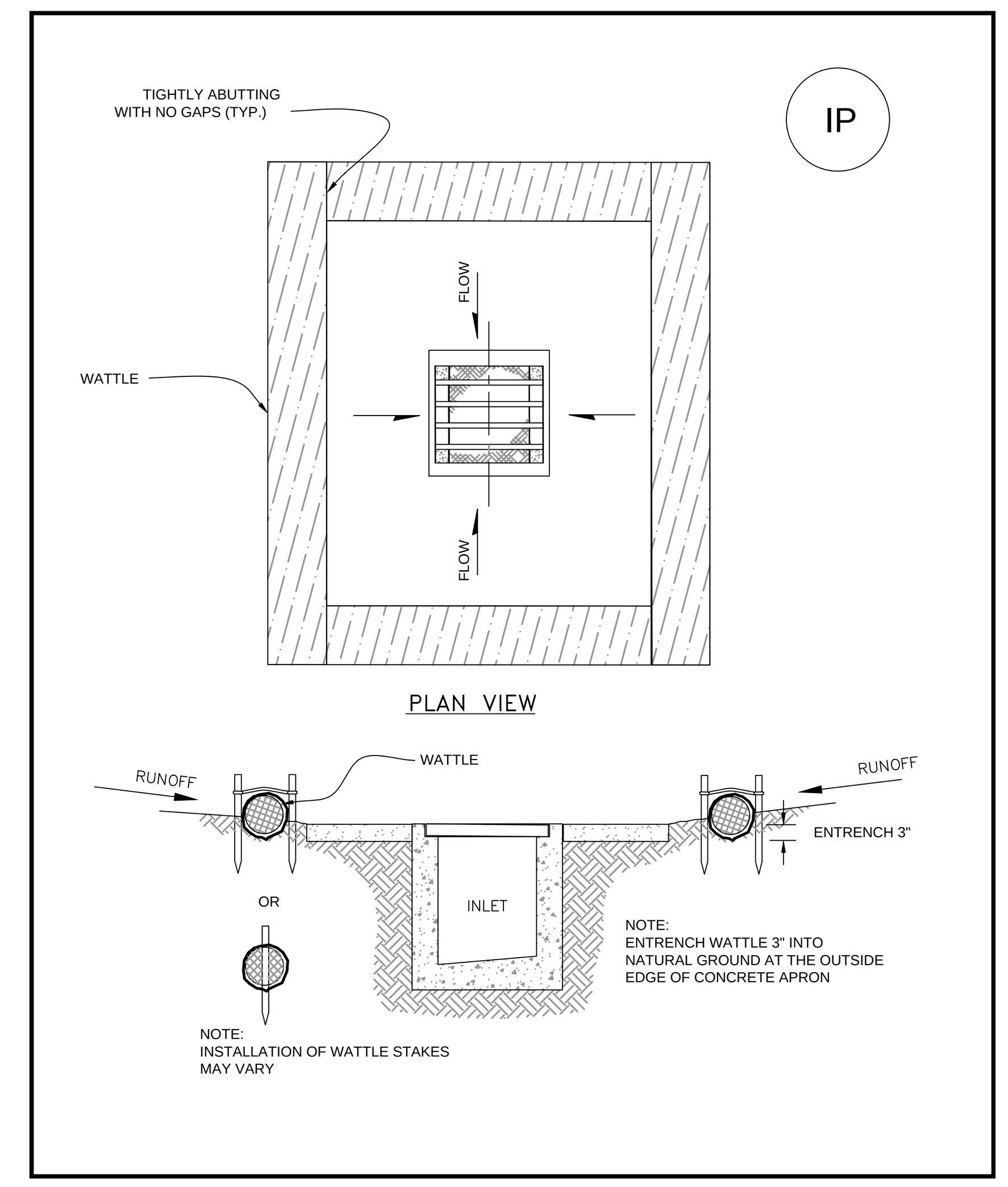
Location	Pipe Diameter (Inches)	Riprap Type	Riprap Length (ft)	Riprap Width (ft)	Riprap Depth (ft)
Storm Line A	24	Type L	10.0	6.0	1.5
Storm Line B	12	Type L	5.0	5.0	1.5
Storm Line C	4	Type L	3.0	2.0	1.5

NOTE: ALL RIPRAP SHALL BE PLANTED, PER DETAIL 007, THIS SHEET.

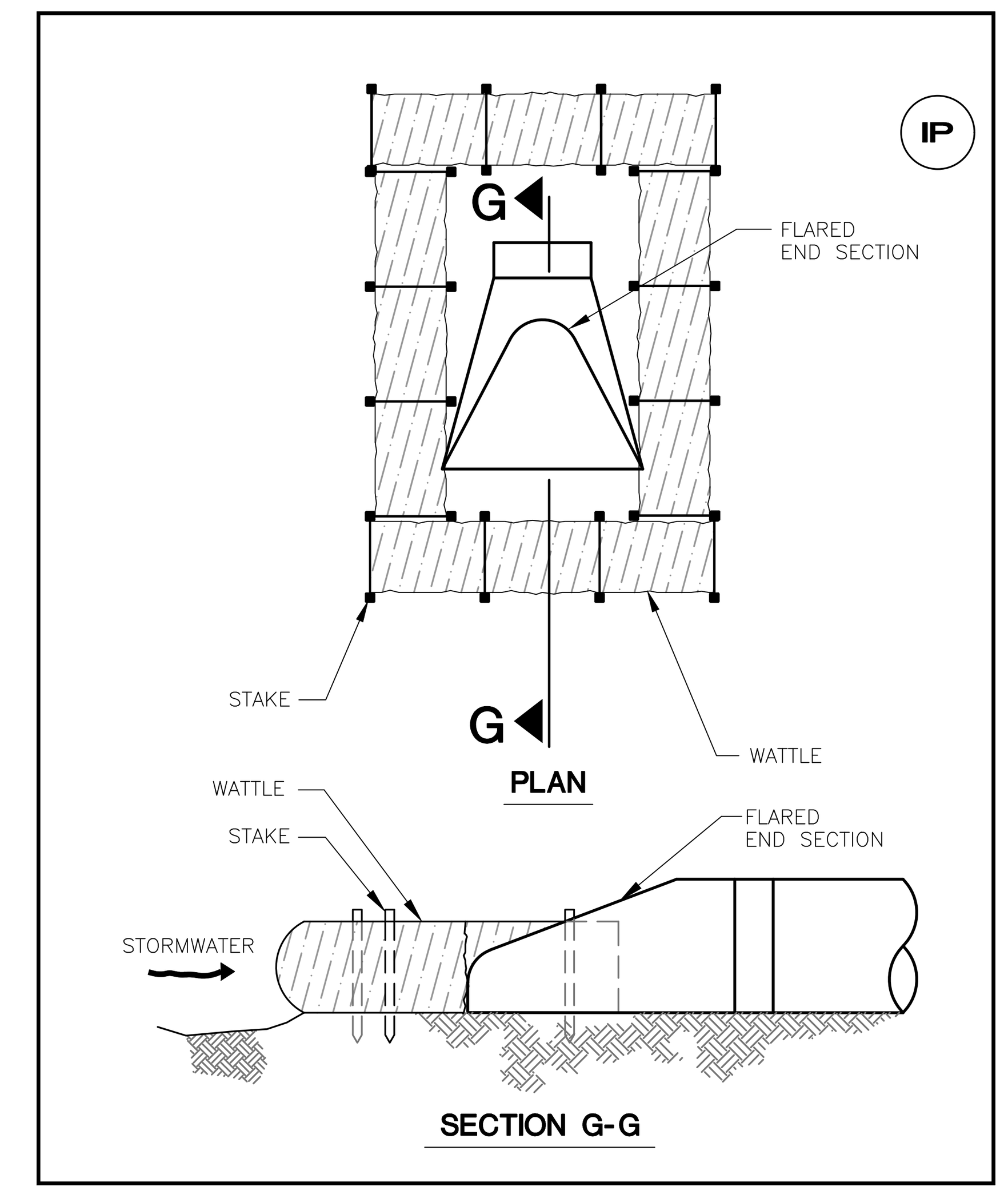
010 EC2 RIPRAP SCHEDULE
NOT TO SCALE



3 C6.02 VEHICLE CONTROL TRACKING PAD
NOT TO SCALE



4 C6.02 DROP INLET PROTECTION
NOT TO SCALE



5 C6.02 FES INLET PROTECTION
NOT TO SCALE

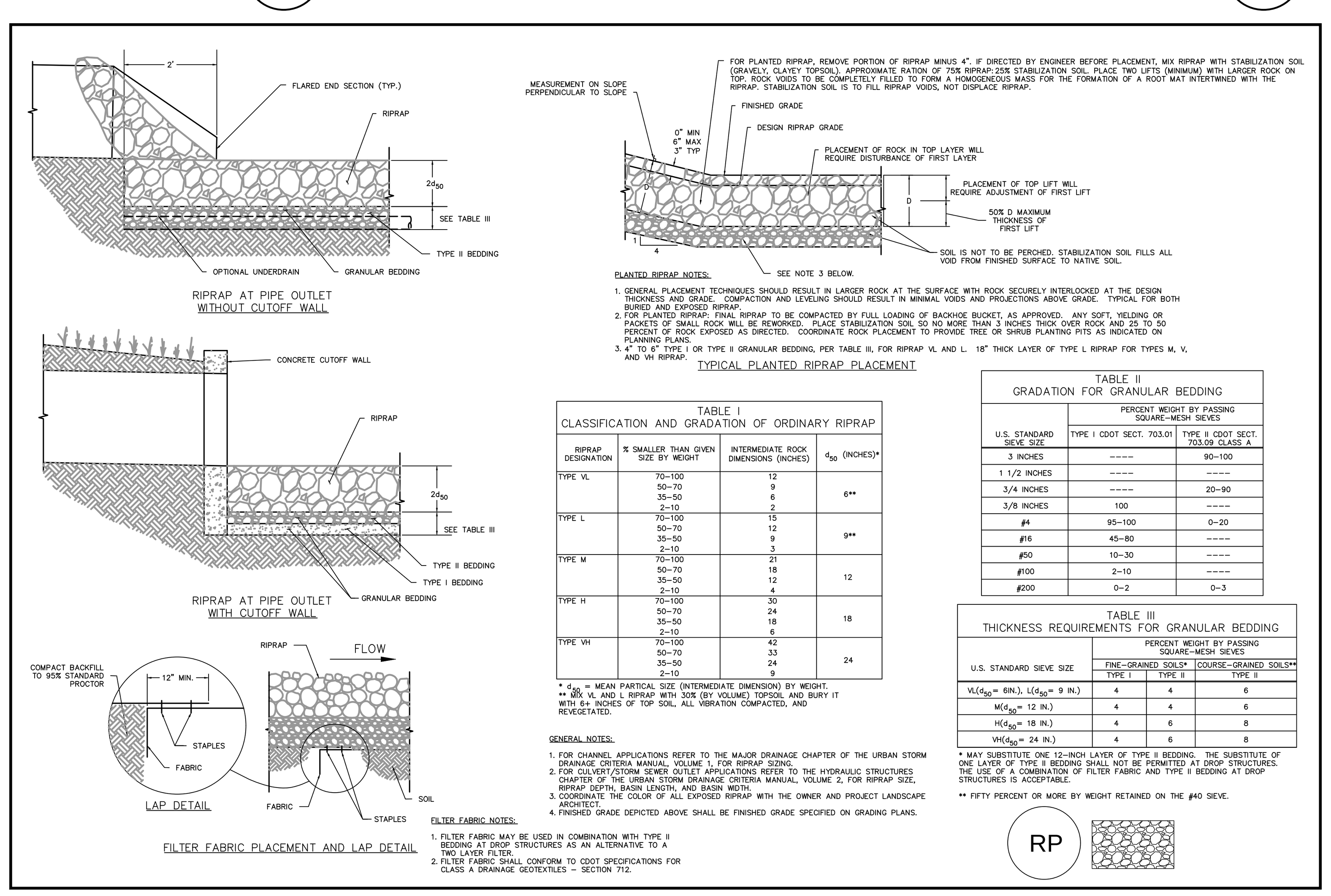


TABLE I
CLASSIFICATION AND GRADATION OF ORDINARY RIPRAP

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSIONS (INCHES)	d_{50} (INCHES)*
TYPE VL	70–100 50–70 35–50 2–10	12 9 6 2	6**
TYPE L	70–100 50–70 35–50 2–10	15 12 9 3	9**
TYPE M	70–100 50–70 35–50 2–10	21 18 12 4	12
TYPE H	70–100 50–70 35–50 2–10	30 24 18 6	18
TYPE VH	70–100 50–70 35–50 2–10	42 33 24 9	24

* d_{50} = MEAN PARTICAL SIZE (INTERMEDIATE DIMENSION) BY WEIGHT.
** MIX VL AND L RIPRAP WITH 30% (BY VOLUME) TOPSOIL AND BURY IT WITH 6+ INCHES OF TOP SOIL, ALL VIBRATION COMPACTED, AND REVEGETATED.

TABLE II
GRADATION FOR GRANULAR BEDDING

U.S. STANDARD SIEVE SIZE	PERCENT WEIGHT BY PASSING SQUARE-MESH SIEVES: TYPE I CDOT SECT. 703.01	TYPE II CDOT SECT. 703.09 CLASS A
3 INCHES	----	90–100
1 1/2 INCHES	----	----
3/4 INCHES	----	20–90
3/8 INCHES	100	----
#4	95–100	0–20
#16	45–80	----
#50	10–30	----
#100	2–10	----
#200	0–2	0–3

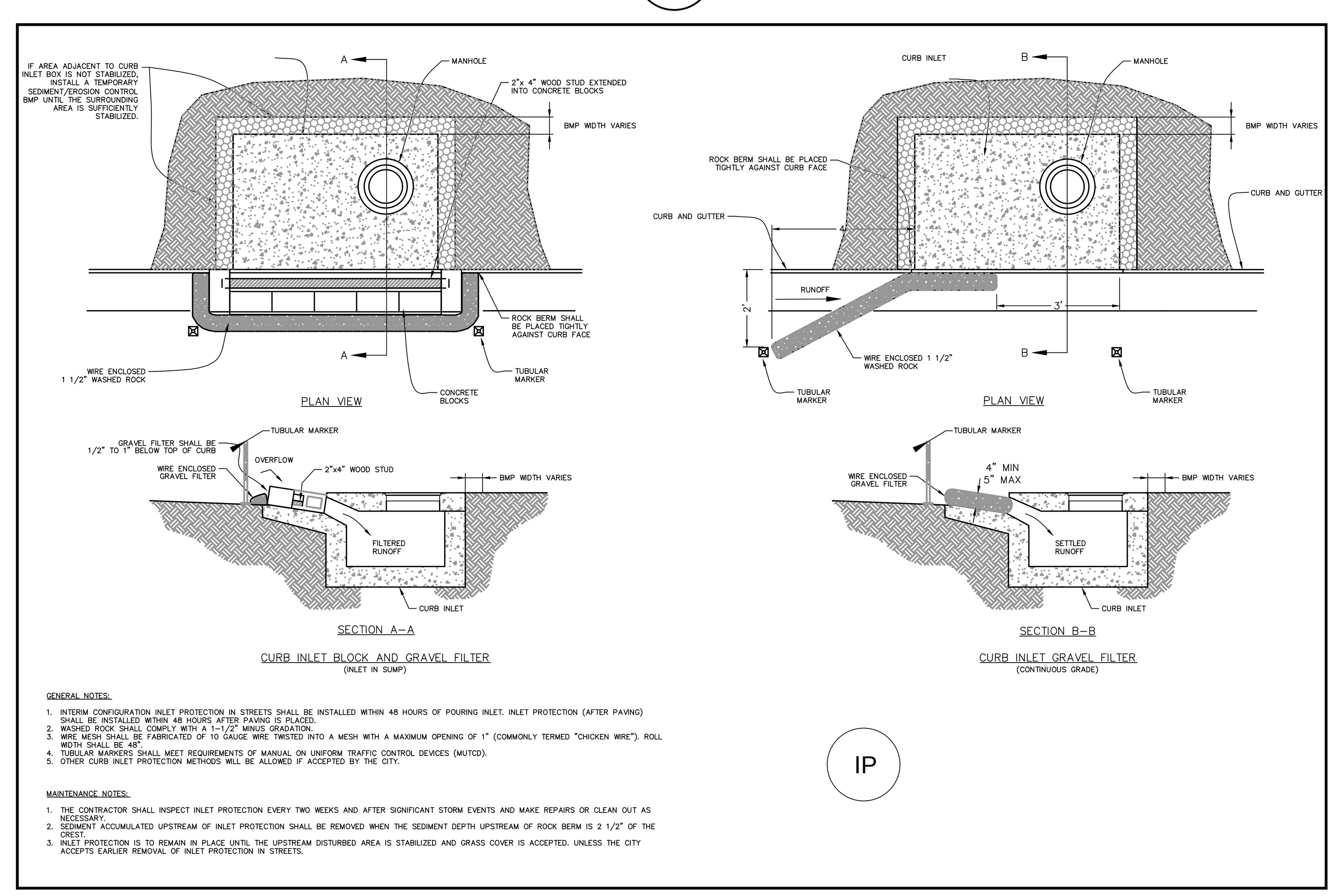
TABLE III
THICKNESS REQUIREMENTS FOR GRANULAR BEDDING

U.S. STANDARD SIEVE SIZE	FINE-GRAINED SOILS* TYPE I	FINE-GRAINED SOILS* TYPE II	COURSE-GRAINED SOILS** TYPE II
VL(d_{50}= 6IN.), L(d_{50}= 9 IN.)	4	4	6
M(d_{50}= 12 IN.)	4	4	6
H(d_{50}= 18 IN.)	4	6	8
VH(d_{50}= 24 IN.)	4	6	8

* MAY SUBSTITUTE ONE 12-INCH LAYER OF TYPE II BEDDING. THE SUBSTITUTE OF ONE LAYER OF TYPE II BEDDING SHALL NOT BE PERMITTED AT DROP STRUCTURES. THE USE OF A COMBINATION OF FILTER FABRIC AND TYPE II BEDDING AT DROP STRUCTURES IS ACCEPTABLE.
** FIFTY PERCENT OR MORE BY WEIGHT RETAINED ON THE #40 SIEVE.

GENERAL NOTES:
1. FOR CHANNEL APPLICATIONS REFER TO THE MAJOR DRAINAGE CHAPTER OF THE URBAN STORM DRAINAGE CRITERIA MANUAL, VOLUME 1, FOR RIPRAP SIZING.
2. FOR CULVERT/STORM SEWER OUTLET APPLICATIONS REFER TO THE HYDRAULIC STRUCTURES CHAPTER OF THE URBAN STORM DRAINAGE CRITERIA MANUAL, VOLUME 2, FOR RIPRAP SIZE, RIPRAP DEPTH, BASIN LENGTH, AND BASIN WIDTH.
3. COORDINATE THE COLOR OF ALL EXPOSED RIPRAP WITH THE OWNER AND PROJECT LANDSCAPE ARCHITECT.
4. FINISHED GRADE DEPICTED ABOVE SHALL BE FINISHED GRADE SPECIFIED ON GRADING PLANS.

6 C6.02 PLANTED RIPRAP INSTALLATION
NOT TO SCALE



7 C6.02 CURB INLET PROTECTION
NOT TO SCALE

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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

No. | Revisions: | By: | Date:

REVIEW SET
NOT FOR CONSTRUCTION
11/20/13

NORTHERN ENGINEERING
200 South College Avenue, Suite 010
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

DATE: 11/20/13
SCALE: N.A.
REVIEWED BY: N. Haws
PROJECT: 232-023
DESIGNED BY: C. Snowdon
DRAWN BY: C. Snowdon

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139
EROSION CONTROL CONSTRUCTION DETAILS

Sheet C6.10
Of 17 Sheets

DRAWING FILENAME: D:\Projects\232-023\Dwg\Drng\232-023_EROS.dwg LAYOUT NAME: C6.10 DATE: Nov 20, 2013 - 10:43am CAD OPERATOR: cody
LIST OF XREFS: [502-001_xSite] [232-023_xPgrad] [232-023_xPutil] [232-023_xSite] [232-023_xTopo] [502-001_xExist] [502-001_xPutil] [xborder]

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139

A REPLAT OF TRACT A, THE GROVE AT FORT COLLINS, LOCATED IN SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO

STATEMENT OF OWNERSHIP AND SUBDIVISION:

Know all persons by these presents, that the undersigned owner(s) of the following described land: A tract of land being a portion of Section 23, Township 7 North, Range 69 West of the 6th P.M., City of Fort Collins, County of Larimer, State of Colorado being more particularly described as follows:

Tract A, The Grove at Fort Collins

The above described area contains 167,245 square feet or 3.839 acres more or less and is subject to all easements and rights-of-way now on record or existing.

For themselves and their successors in interest (collectively "Owner") have caused the above described land to be surveyed and subdivided into lots, tracts and streets as shown on this Plat to be known CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING (the "Development"), subject to all easements and rights-of-way now of record or existing or indicated on this Plat. The rights and obligations of this Plat shall run with the land.

CERTIFICATE OF DEDICATION:

The Owner does hereby dedicate and convey to the City of Fort Collins, Colorado (hereafter "City"), for public use, forever, a permanent right-of-way for street purposes and the "Easements" as laid out and designated on this Plat; provided, however, that (1) acceptance by the City of this dedication of Easements does not impose upon the City a duty to maintain the Easements so dedicated, and (2) acceptance by the City of this dedication of streets does not impose upon the City a duty to maintain streets so dedicated until such time as the provisions of the Maintenance Guarantee have been fully satisfied. The streets dedicated on this Plat are the fee property of the City as provided in Section 31-23-107 C.R.S. The City's rights under the Easements include the right to install, operate, access, maintain, repair, reconstruct, remove and replace within the Easements public improvements consistent with the intended purpose of the Easements; the right to install, maintain and use gates in any fences that cross the Easements; the right to mark the location of the Easements with suitable markers; and the right to permit other public utilities to exercise these same rights. Owner reserves the right to use the Easements for purposes that do not interfere with the full enjoyment of the rights hereby granted. The City is responsible for maintenance of its own improvements and for repairing any damage caused by its activities in the Easements, but by acceptance of this dedication, the City does not accept the duty of maintenance of the Easements, or of improvements in the Easements that are not owned by the City. Owner will maintain the surface of the Easements in a sanitary condition in compliance with any applicable weed, nuisance or other legal requirements.

Except as expressly permitted in an approved plan of development or other written agreement with the City, Owner will not install on the Easements, or permit the installation on the Easements, of any building, structure, improvement, fence, retaining wall, sidewalk, tree or other landscaping (other than usual and customary grasses and other ground cover). In the event such obstacles are installed in the Easements, the City has the right to require the Owner to remove such obstacles from the Easements. If Owner does not remove such obstacles, the City may remove such obstacles without any liability or obligation for repair and replacement thereof, and charge the Owner the City's costs for such removal. If the City chooses not to remove the obstacles, the City will not be liable for any damage to the obstacles or any other property to which they are attached.

The rights granted to the City by this Plat inure to the benefit of the City's agents, licensees, permittees and assigns.

OWNER:Colorado State University Research Foundation, a Colorado non-profit corporation

By: _____

STATE OF COLORADO)
)SS
COUNTY OF LARIMER)

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by

_____ as _____ of Colorado State University Research Foundation, a Colorado non-profit corporation

Witness my hand and official seal

My commission expires: _____

_____
Notary Public

MAINTENANCE GUARANTEE:

The Owner hereby warrants and guarantees to the City, for a period of two (2) years from the date of completion and first acceptance by the City of the improvements warranted hereunder, the full and complete maintenance and repair of the improvements to be constructed in connection with the Development which is the subject of this Plat. This warranty and guarantee is made in accordance with the City Land Use Code and/or the Transitional Land Use Regulations, as applicable. This guarantee applies to the streets and all other appurtenant structures and amenities lying within the rights-of-way, Easements and other public properties, including, without limitation, all curbing, sidewalks, bike paths, drainage pipes, culverts, catch basins, drainage ditches and landscaping. Any maintenance and/or repair required on utilities shall be coordinated with the owning utility company or department.

The Owner shall maintain said improvements in a manner that will assure compliance on a consistent basis with all construction standards, safety requirements and environmental protection requirements of the City. The Owner shall also correct and repair, or cause to be corrected and repaired, all damages to said improvements resulting from development-related or building-related activities. In the event the Owner fails to correct any damages within thirty (30) days after written notice thereof, then said damages may be corrected by the City and all costs and charges billed to and paid by the Owner. The City shall also have any other remedies available to it as authorized by law. Any damages which occurred prior to the end of said two (2) year period and which are unrepaired at the termination of said period shall remain the responsibility of the Owner.

REPAIR GUARANTEE:

In consideration of the approval of this final Plat and other valuable consideration, the Owner does hereby agree to hold the City harmless for a five (5) year period, commencing upon the date of completion and first acceptance by the City of the improvements to be constructed in connection with the development which is the subject of this Plat, from any and all claims, damages, or demands arising on account of the design and construction of public improvements of the property shown herein; and the Owner furthermore commits to make necessary repairs to said public improvements, to include, without limitation, the roads, streets, fills, embankments, ditches, cross pans, sub-drains, culverts, walls and bridges within the right-of-way, Easements and other public properties, resulting from failures caused by design and/or construction defects. This agreement to hold the City harmless includes defects in materials and workmanship, as well as defects caused by or consisting of settling trenches, fills or excavations.

Further, the Owner warrants that he/she owns fee simple title to the property shown hereon and agrees that the City shall not be liable to the Owner or his/her successors in interest during the warranty period, for any claim of damages resulting from negligence in exercising engineering techniques and due caution in the construction of cross drains, drives, structures or buildings, the changing of courses of streams and rivers, flooding from natural creeks and rivers, and any other matter whatsoever on private property. Any and all monetary liability occurring under this paragraph shall be the liability of the Owner. I further warrant that I have the right to convey said land according to this Plat.

NOTICE OF OTHER DOCUMENTS:

All persons take notice that the Owner has executed certain documents pertaining to this Development which create certain rights and obligations of the Development, the Owner and/or subsequent Owners of all or portions of the Development site, many of which obligations constitute promises and covenants that, along with the obligations under this Plat, run with the land. The said documents may also be amended from time to time and may include, without limitation, the Development Agreement, Site And Landscape Covenants, Final Site Plan, Final Landscape Plan, and Architectural Elevations, which documents are on file in the office of the clerk of the City and should be closely examined by all persons interested in purchasing any portion of the Development site.

ATTORNEY'S CERTIFICATION

I hereby certify that this Subdivision Plat has been duly executed as required pursuant to Section 2.2.3(C)(3)(a) through (e) inclusive of the Land Use Code of the City of Fort Collins and that all persons signing this Subdivision Plat on behalf of a corporation or other entity are duly authorized signatories under the laws of the State of Colorado. This Certification is based upon the records of the Clerk and Recorder of Larimer County, Colorado as of the date of execution of the Plat and other information discovered by me through reasonable inquiry and is limited as authorized by Section 2.2.3(C)(3)(f) of the Land Use Code.

Attorney:_____

Address: _____

_____

Registration No.:_____

APPROVED AS TO FORM, CITY ENGINEER

By the City Engineer of the City of Fort Collins, Colorado this _____day of _____ A.D., 20_____.

_____
City Engineer

PLANNING APPROVAL

By the Director of Planning the City of Fort Collins, Colorado this _____ day of _____ A.D., 20_____.

_____
Director of Planning

NOTES:

1) The Basis of Bearings is the southeasterly line of Tract A, The Grove at Fort Collins as bearing North 42°49'17" East (assumed bearing).

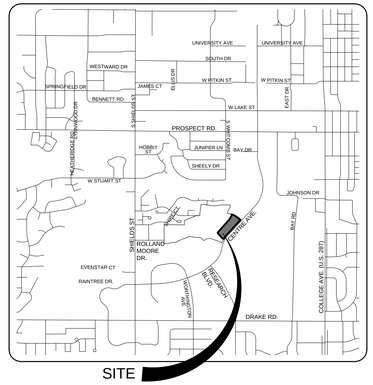
2) All information regarding easements, right-of-way or title of record, Northern Engineering relied upon Title Commitment No. _____ prepared by _____ dated _____.

3) Benchmark: City of Fort Collins Benchmark number 14-97, NGVD 1929, (unadjusted) elevation = 5048.58

4) The lineal unit of measurement for this plat is U. S. Survey Feet.

5) Transit Easement - Easement for public transportation, equipment, infrastructure and/or use, including public access.

6) There are no lienholders for this property.



NORTH VICINITY MAP
1"=2000'

NOTICE

ALL RESPONSIBILITIES AND COSTS OF OPERATION, MAINTENANCE AND RECONSTRUCTION OF THE PRIVATE STREETS AND/OR DRIVES LOCATED ON THE PRIVATE PROPERTY THAT IS THE SUBJECT OF THIS PLAT SHALL BE BORNE BY THE OWNERS OF SAID PROPERTY, EITHER INDIVIDUALLY, OR COLLECTIVELY, THROUGH A PROPERTY OWNERS' ASSOCIATION, IF APPLICABLE. THE CITY OF FORT COLLINS SHALL HAVE NO OBLIGATION OF OPERATION, MAINTENANCE OR RECONSTRUCTION OF SUCH PRIVATE STREETS AND/OR DRIVES NOR SHALL THE CITY HAVE ANY OBLIGATION TO ACCEPT SUCH STREETS AND/OR DRIVES AS PUBLIC STREETS OR DRIVES.

SURVEYOR'S STATEMENT

I, Gerald D. Gilliland, a Colorado Registered Professional Land Surveyor do hereby state that this Subdivision Plat was prepared from an actual survey under my personal supervision, that the monumentation as indicated hereon were found or set as shown, and that the foregoing plat is an accurate representation thereof, all this to the best of my knowledge, information and belief.

_____

Gerald D. Gilliland
Colorado Registered Professional
Land Surveyor No. 14823

NOTICE:
According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years after the date of the certificate shown hereon.

SECTION: 23
TOWNSHIP: 7N
RANGE: 69 W of the 6th PM

NORTHERN ENGINEERING
200 South College Avenue, Suite 10
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

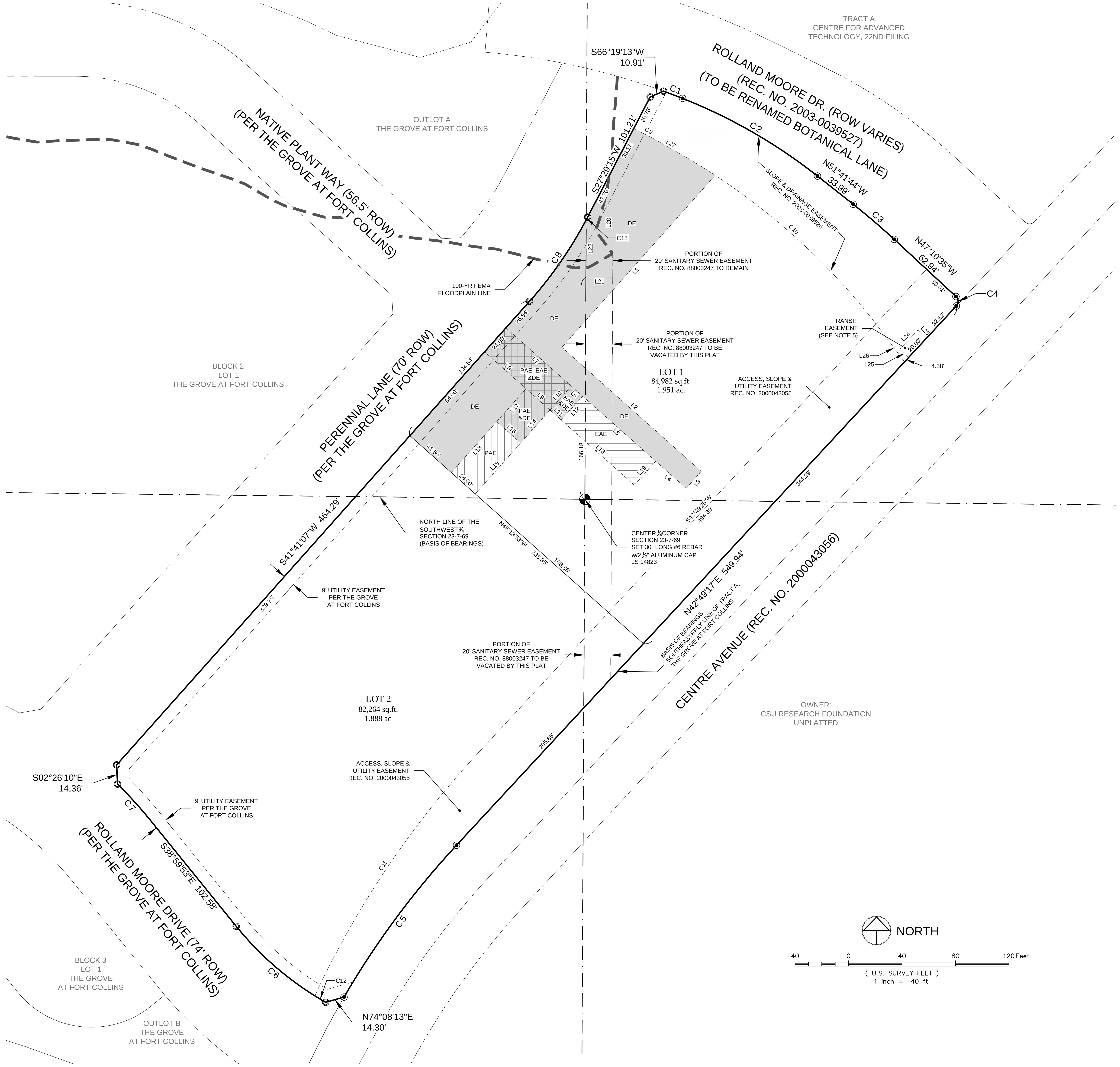
DATE: 11/20/13
SCALE: N.A.
REVIEWED BY: G. Gilliland
PROJECT: 232-023
CLIENT: CSURF
DRAWN BY: L. Smith

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
CITY OF FORT COLLINS
STATE OF COLORADO

Sheet 1 Of 2 Sheets

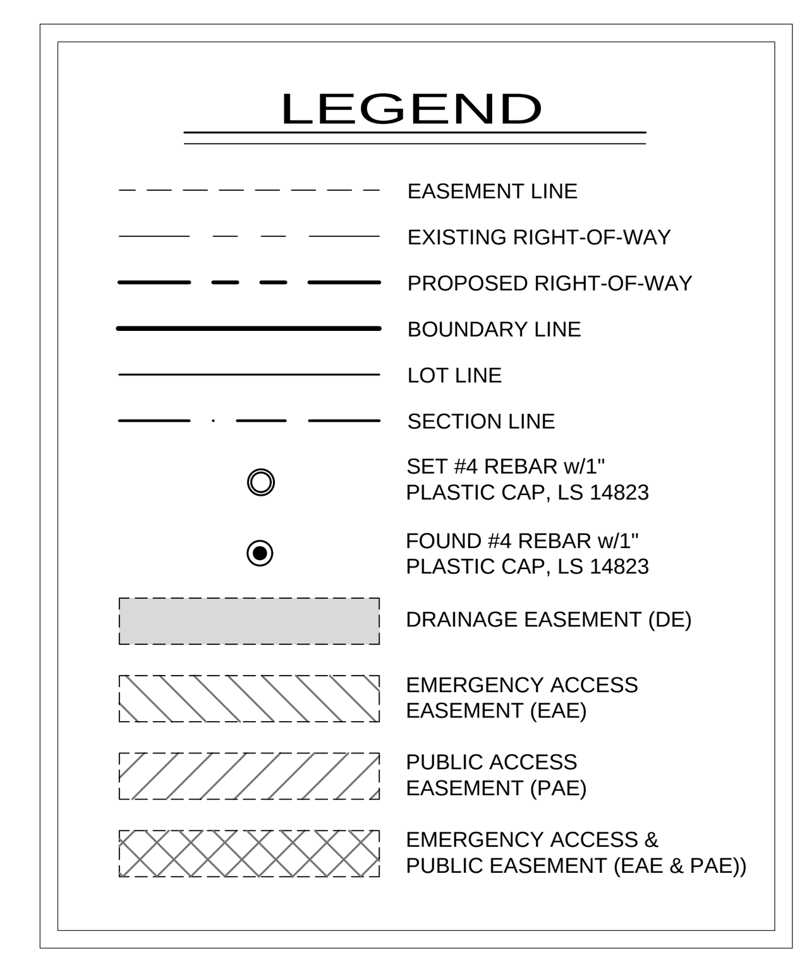
CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
SUNSHINE HOUSE - FC 139

A REPLAT OF TRACT A, THE GROVE AT FORT COLLINS, LOCATED IN SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO



CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	BEARING	CHORD
C1	1°41'06"	518.00'	15.23'	N69°16'37"W	15.23'
C2	16°44'18"	400.00'	116.86'	N60°03'54"W	116.44'
C3	4°31'08"	513.00'	40.46'	N49°26'10"W	40.45'
C4	89°59'52"	5.00'	7.85'	N02°10'39"W	7.07'
C5	12°35'55"	644.00'	141.61'	N36°31'21"E	141.32'
C6	21°15'14"	238.00'	88.29'	S49°37'30"E	87.78'
C7	6°37'12"	312.00'	36.05'	S42°18'29"E	36.03'
C8	14°11'52"	310.00'	76.82'	S34°35'11"W	76.62'
C9	4°55'02"	250.00'	21.46'	N62°48'13"W	21.45'
C10	23°35'03"	500.00'	205.81'	N48°33'10"W	204.36'
C11	17°54'12"	700.00'	218.73'	S33°52'21"W	217.84'
C12	2°16'02"	238.00'	9.42'	S59°07'06"E	9.42'
C13	0°26'46"	310.00'	2.41'	N27°42'39"E	2.41'

LINE TABLE		
LINE	LENGTH	BEARING
L1	172.28'	N41°41'07"E
L2	139.55'	N48°18'53"W
L3	17.00'	N41°41'07"E
L4	30.50'	S48°18'53"E
L5	73.09'	N48°18'53"W
L6	11.41'	N48°18'53"W
L7	65.50'	S48°18'53"E
L8	41.50'	N48°18'53"W
L9	24.00'	S48°18'53"E
L10	24.00'	S41°41'07"W
L11	11.07'	S48°18'53"E
L12	24.00'	N42°29'50"E
L13	73.43'	S48°18'53"E
L14	33.00'	N41°41'07"E
L15	51.00'	S41°41'07"W
L16	24.00'	S48°18'53"E
L17	33.00'	N41°41'07"E
L18	51.00'	N41°41'07"E
L19	24.00'	N41°41'07"E
L20	81.63'	S00°15'48"W
L21	20.00'	N89°44'12"W
L22	42.78'	S00°15'48"W
L23	8.87'	S46°43'42"E
L24	20.00'	N43°16'18"E
L25	9.02'	N46°43'42"W
L26	26.20'	N36°45'40"W
L27	16.85'	N60°20'41"W



NOTICE: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years after the date of the certificate shown hereon.

SECTION: 23 TOWNSHIP: 7N RANGE: 69 W of the 6th PM

NORTHERN ENGINEERING
200 South College Avenue, Suite 10
Fort Collins, Colorado 80524
PHONE: 970.221.4158 FAX: 970.221.4159
www.northernengineering.com

DATE: 11/20/13 SCALE: 1"=40' REVIEWED BY: G. Gilliland

PROJECT: 232-023 CLIENT: CSURF DRAWN BY: L. Smith

CENTRE FOR ADVANCED TECHNOLOGY 23RD FILING
CITY OF FORT COLLINS
STATE OF COLORADO

SUNSHINE HOUSE DAYCARE
TRANSPORTATION IMPACT STUDY

FORT COLLINS, COLORADO

NOVEMBER 2013

Prepared for:

CSU/CSURF Real Estate Office
P.O. Box 483
Fort Collins, CO 80522

Prepared by:

DELICH ASSOCIATES
2272 Glen Haven Drive
Loveland, CO 80538
Phone: 970-669-2061
FAX: 970-669-5034

Project #1384

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APPENDICES

I. INTRODUCTION

This intermediate transportation impact study (ITIS) addresses the capacity, geometric, and control requirements at and near the proposed Sunshine House Daycare. The proposed Sunshine House Daycare site is located in the southwest quadrant of the Centre/Perennial intersection in Fort Collins, Colorado.

During the course of the analysis, numerous contacts were made with the project developer (CSU/CSURF), the project planning consultant (TB - Group), the Fort Collins Traffic Engineering staff, and the Fort Collins Transportation Planning staff. This study generally conforms to the format set forth in the Fort Collins transportation impact study guidelines contained in the "Larimer County Urban Area Street Standards" (LCUASS). A Base Assumptions Form and related information are provided in Appendix A. The study involved the following steps:

- Collect physical, traffic, and development data;
- Perform trip generation, trip distribution, and trip assignment;
- Determine peak hour traffic volumes;
- Conduct capacity and operational level of service analyses on key intersections;
- Analyze signal warrants;
- Conduct level of service evaluation of pedestrian, bicycle, and transit modes of transportation.

This TIS is a revision to the "Sunshine House Daycare Transportation Impact Study" dated October 2013. The revision was requested by the City of Fort Collins because some data collection occurred during the Federal Government shutdown in early October 2013.

II. EXISTING CONDITIONS

The location of the Sunshine House Daycare site is shown in Figure 1. It is important that a thorough understanding of the existing conditions be presented.

Land Use

Land uses in the area are primarily commercial, institutional (CSU/CSURF), or residential. Land adjacent to the site is flat (<2% grade) from a traffic operations perspective. This site is near the center of Fort Collins. Colorado State University and the Fort Collins CBD are north of the proposed Sunshine House Daycare site.

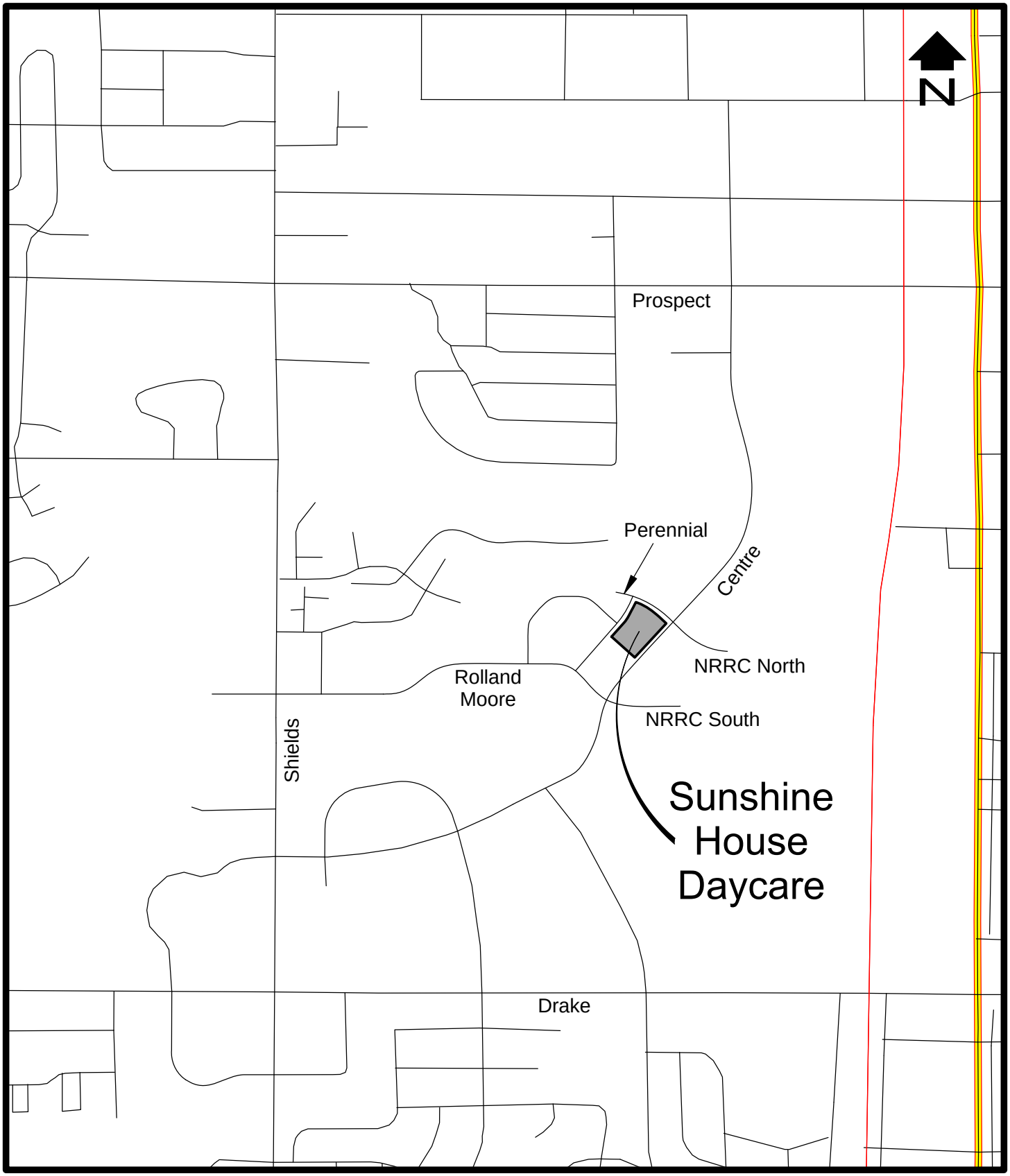
Roads

The primary streets near the Sunshine House Daycare site are Prospect Road, Centre Avenue, Rolland Moore Drive, and Perennial Lane. The existing geometry at the key intersections is shown in Figure 2.

Prospect Road is to the north of the Sunshine House Daycare site. It is classified as a four-lane arterial street on the Fort Collins Master Street Plan. Currently, Prospect Road has a four-lane cross section near the Prospect/Centre intersection. At the Prospect/Centre intersection, Prospect Road has eastbound and westbound left-turn lanes and two travel lanes in each direction. According to LCUASS, eastbound and westbound right-turn lanes are required with the existing traffic volumes. The Prospect/Centre intersection has signal control. The existing speed limit in this are is 35 mph.

Centre Avenue is to the east of (adjacent to) the Sunshine House Daycare site. In this area, it is generally a north-south street designated as a collector street on the Fort Collins Master Street Plan. Currently, it has a two-lane cross section with a center two-way continuous left-turn lane. At the Prospect/Centre intersection, Centre Avenue has northbound and southbound left-turn lanes, one through lane in each direction, and northbound and southbound right-turn lanes. At the Centre/Rolland Moore-NRRC South and Centre/Perennial-NRRC North intersections, Centre Avenue has the center two-way continuous left-turn lane and one through lane in each direction. The existing posted speed in this area is 35 mph. During the morning peak hour, the northbound right-turn volumes at both the Centre/Perennial-NRRC North and Centre/Rolland Moore-NRRC South intersections exceed the threshold volume requiring a right-turn lane. However, the NRRC land uses have been in existence for a number of years with no accident history that would be mitigated by these right-turn lanes. Current traffic volumes on Centre Avenue indicate that it should be classified as a two-lane arterial street, since the current traffic volumes exceed 5,000 vehicles per day.

Rolland Moore Drive is an east-west street designated as a collector street on the Fort Collins Master Street Plan. Currently, Rolland Moore Drive has a two-lane cross section. The east leg of the Centre/Rolland Moore-NRRC South intersection

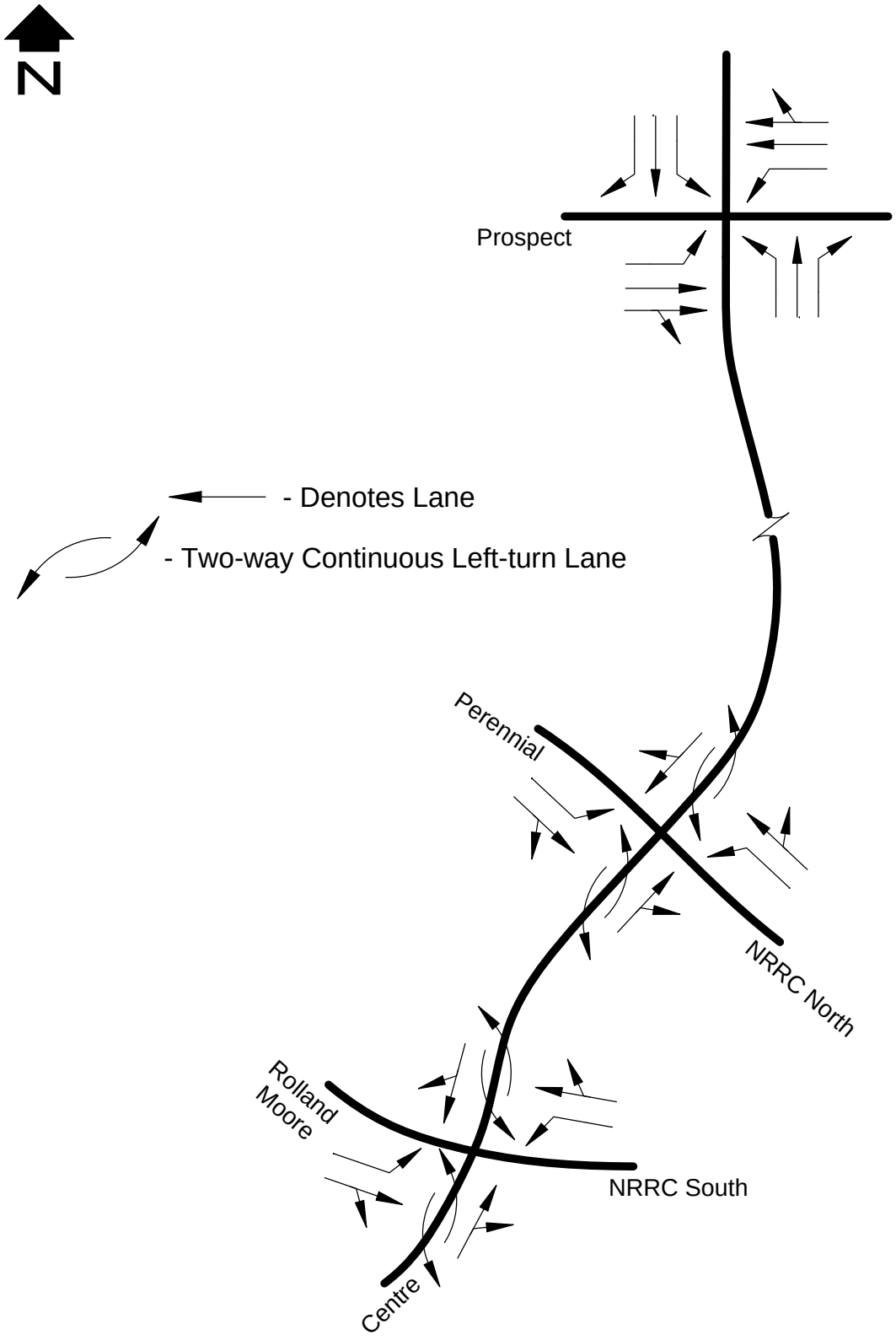


SCALE: 1"=1000'

SITE LOCATION

Figure 1

DELICH ASSOCIATES



EXISTING INTERSECTION GEOMETRY Figure 2

serves the NRRC campus. At the Centre/Rolland Moore-NRRC South intersection, Rolland Moore Drive has an eastbound left-turn lane and a combined eastbound right-turn/through lane. The NRRC South Access has a westbound left-turn lane and a combined westbound right-turn/through lane. The Centre/Rolland Moore-NRRC South intersection has stop control on Rolland Moore Drive and the NRRC South Access.

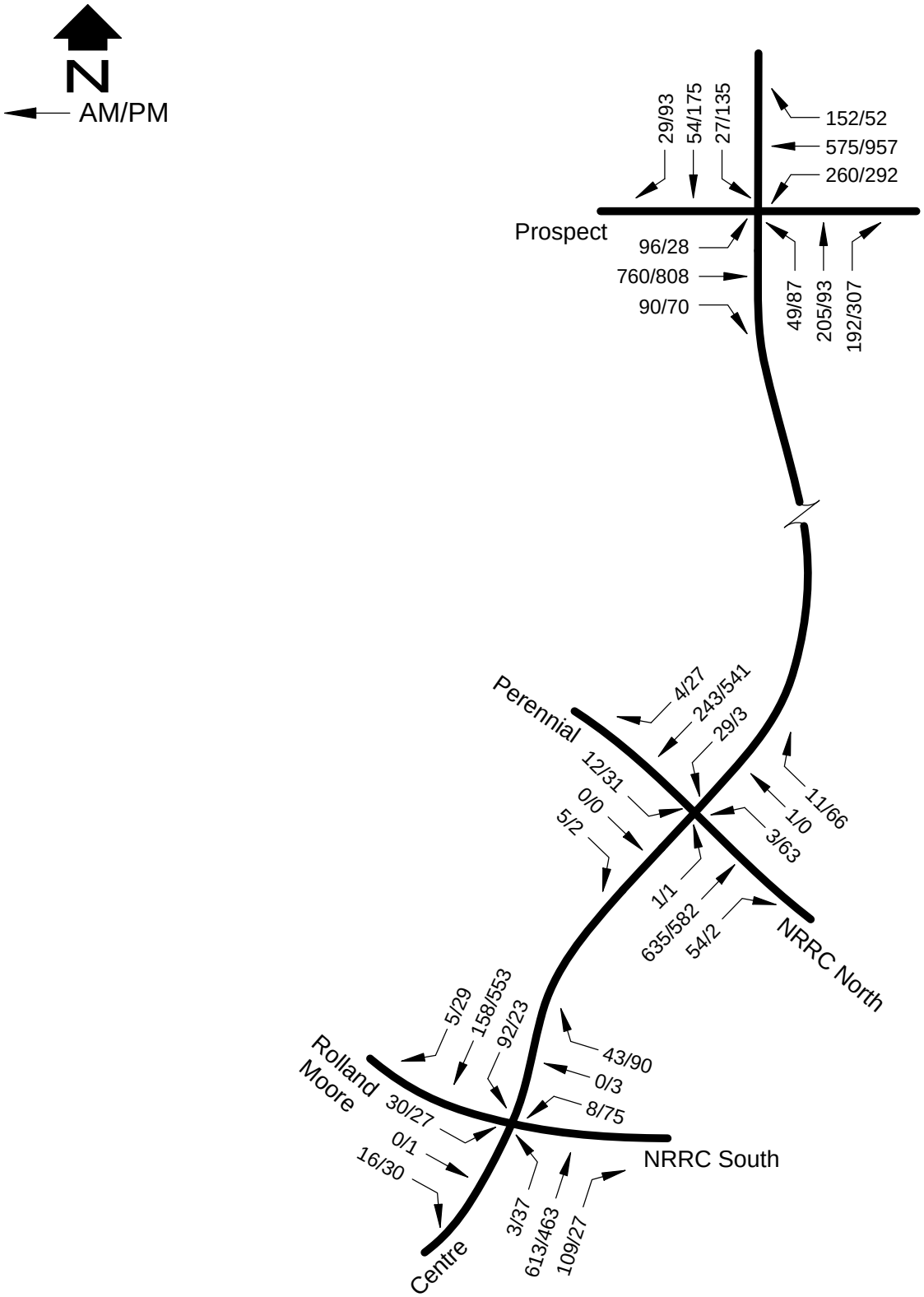
Perennial Lane is an east-west street designated as a local street on the Fort Collins Master Street Plan. Currently, Perennial Lane has a two-lane cross section. The east leg of the Centre/Perennial-NRRC North intersection serves the NRRC campus. At the Centre/Perennial-NRRC North intersection, Perennial Lane has an eastbound left-turn lane and a combined eastbound through/right-turn lane. The NRRC North Access has a westbound left-turn lane and a combined westbound through/right-turn lane. The Centre/Perennial-NRRC North intersection has stop control on Perennial Lane and the NRRC North Access.

Existing Traffic

Recent peak hour traffic volumes at the Prospect/Centre, Centre/Perennial-NRRC North, and Centre/Rolland Moore-NRRC South intersections are shown in Figure 3. The traffic data at the Centre/Perennial-NRRC North and Centre/Rolland Moore-NRRC South intersections was collected in November 2013. The peak hour traffic at the Prospect/Centre intersection was obtained in September 2013. Raw traffic count data is provided in Appendix B. Since the reason for this revised TIS was due to the Federal Government shutdown and its impact on the two accesses to the NRRC Campus, the peak hour traffic counts from the different days were compared. While there are differences in the volumes using the respective accesses, the composite differences were not significant. There were forty more vehicles using the NRRC driveways during the Federal Government shutdown in the morning peak hour, and thirteen less vehicles using the NRRC driveways during the Federal Government shutdown in the afternoon peak hour.

Existing Operation

The Prospect/Centre, Centre/Perennial-NRRC North, and Centre/Rolland Moore-NRRC South intersections were evaluated and the peak hour operation is displayed in Table 1. Calculation forms are provided in Appendix C. The Prospect/Centre intersection is currently operating acceptably with existing control, geometry, and signal timing in the morning and afternoon peak hours. The Centre/Perennial-NRRC North and Centre/Rolland Moore-NRRC South intersections do not meet acceptable levels of service with the existing traffic. The intersections were evaluated using techniques provided in the 2010 Highway Capacity Manual. A description of level of service for signalized and 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 Prospect/Centre intersection is in an area termed “mixed-use district.” In areas termed “mixed-use districts,” acceptable operation at signalized



RECENT PEAK HOUR TRAFFIC

Figure 3

TABLE 1 Current Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
Prospect/Centre (signal)	EB LT	A	A
	EB T	B	B
	EB RT	B	B
	EB APPROACH	B	B
	WB LT	A	A
	WB T	A	B
	WB RT	A	B
	WB APPROACH	A	B
	NB LT	D	D
	NB T	D	C
	NB RT	C	C
	NB APPROACH	D	D
	SB LT	D	D
	SB T	C	D
	SB RT	A	C
	SB APPROACH	D	D
	OVERALL	B	B
Centre/Perennial-NRRC North (stop sign)	EB LT	D	F
	EB T/RT	C	E
	EB APPROACH	C	E
	WB LT	D	F
	WB T/RT	C	D
	WB APPROACH	C	D
	NB LT	A	A
	SB LT	A	A
Centre/Rolland Moore-NRRC South (stop sign)	EB LT	E	F
	EB T/RT	C	D
	EB APPROACH	D	E
	WB LT	C	F
	WB T/RT	B	D
	WB APPROACH	C	E
	NB LT	B	A
	SB LT	A	A

intersections during the peak hours is defined as level of service E or better for the overall intersection, and level of service E or better for any leg or movement. The Sunshine House Daycare site is in an area termed “all other areas.” Acceptable operation at unsignalized intersections during the peak hours is defined as level of service E or better for any approach leg for an arterial/collector and level of service C or better for any approach leg for a local and collector/local intersection.

Pedestrian Facilities

There are sidewalks along Prospect Road, Centre Avenue, Rolland Moore Drive, and Perennial Lane.

Bicycle Facilities

Bicycle lanes exist on Centre Avenue. Prospect Road has no bicycle lanes. Bike lanes are not required on local or connector streets.

Transit Facilities

Currently, Transfort serves this area of Fort Collins with Route 7. Route 7 runs from the Mall Transfer Point, along Drake Road, Centre Avenue, through the CSU Campus, and to the CSU Transit Center. There are transit stops very close to this site.

III. PROPOSED DEVELOPMENT

Sunshine House Daycare is a proposed daycare with approximately 152 students. Figure 4 shows a site plan of the Sunshine House Daycare site. The site plan shows access to/from Perennial Lane. The short range analysis (Year 2018) includes development of the Sunshine House Daycare site and an appropriate increase in background traffic, due to normal growth, and other approved developments in the area.

Trip Generation

Trip generation is important in considering the impact of a development such as this upon the existing and proposed street system. A compilation of trip generation information contained in Trip Generation, 9th Edition, ITE was used to estimate trips that would be generated by the proposed/expected use at this site. Table 2 shows the expected trip generation on a daily and peak hour basis.

TABLE 2
Trip Generation

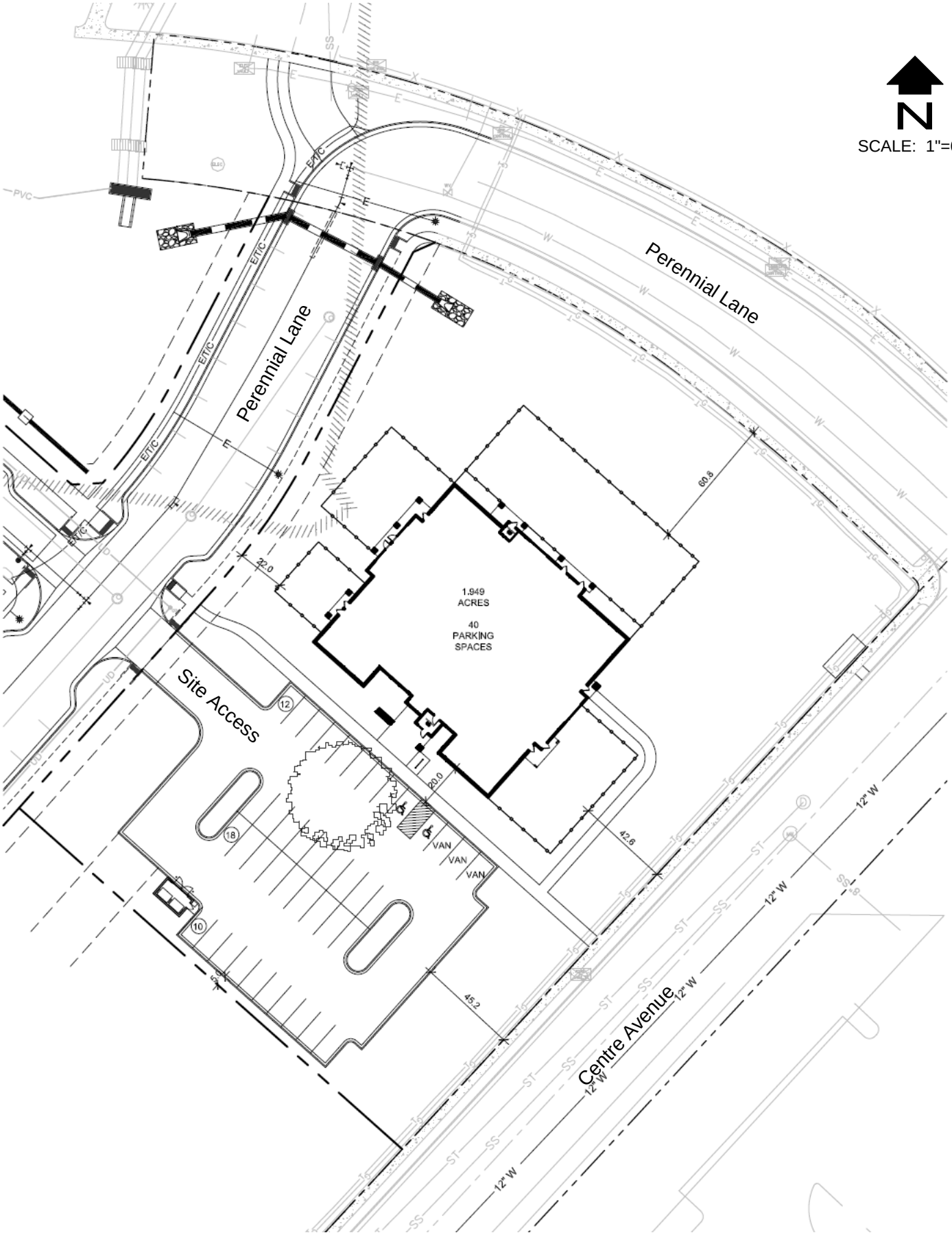
Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
565	Daycare	152 Students	4.48	680	0.42	64	0.38	58	0.39	59	0.43	65

Trip Distribution

Directional distribution of the generated trips was determined for the Sunshine House Daycare site. Future year data was obtained from the NFRRTP and other traffic studies. Figure 5 shows the trip distribution used for the Sunshine House Daycare site. The trip distribution was discussed and agreed to in the scoping discussions.

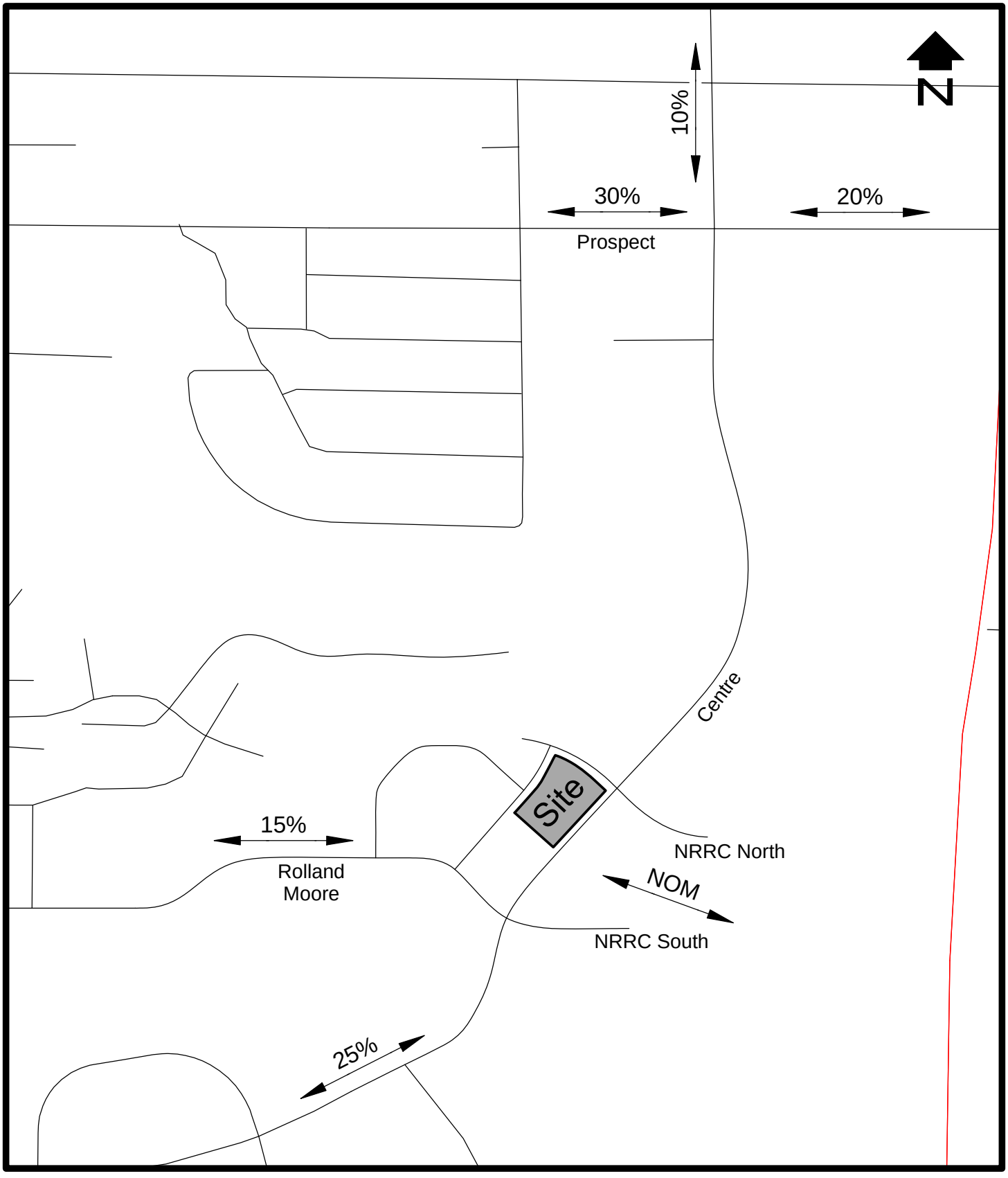
Background Traffic Projections

Figure 6 shows the short range (2018) background traffic projections. Background traffic projections for the short range future horizon were obtained by reviewing the NFRRTP, reviewing traffic studies for other developments, and reviewing historic count data for this area of Fort Collins. Traffic at the key intersections was increased at a rate of one percent per year for the short range (2018) background traffic forecasts.



SITE PLAN

Figure 4

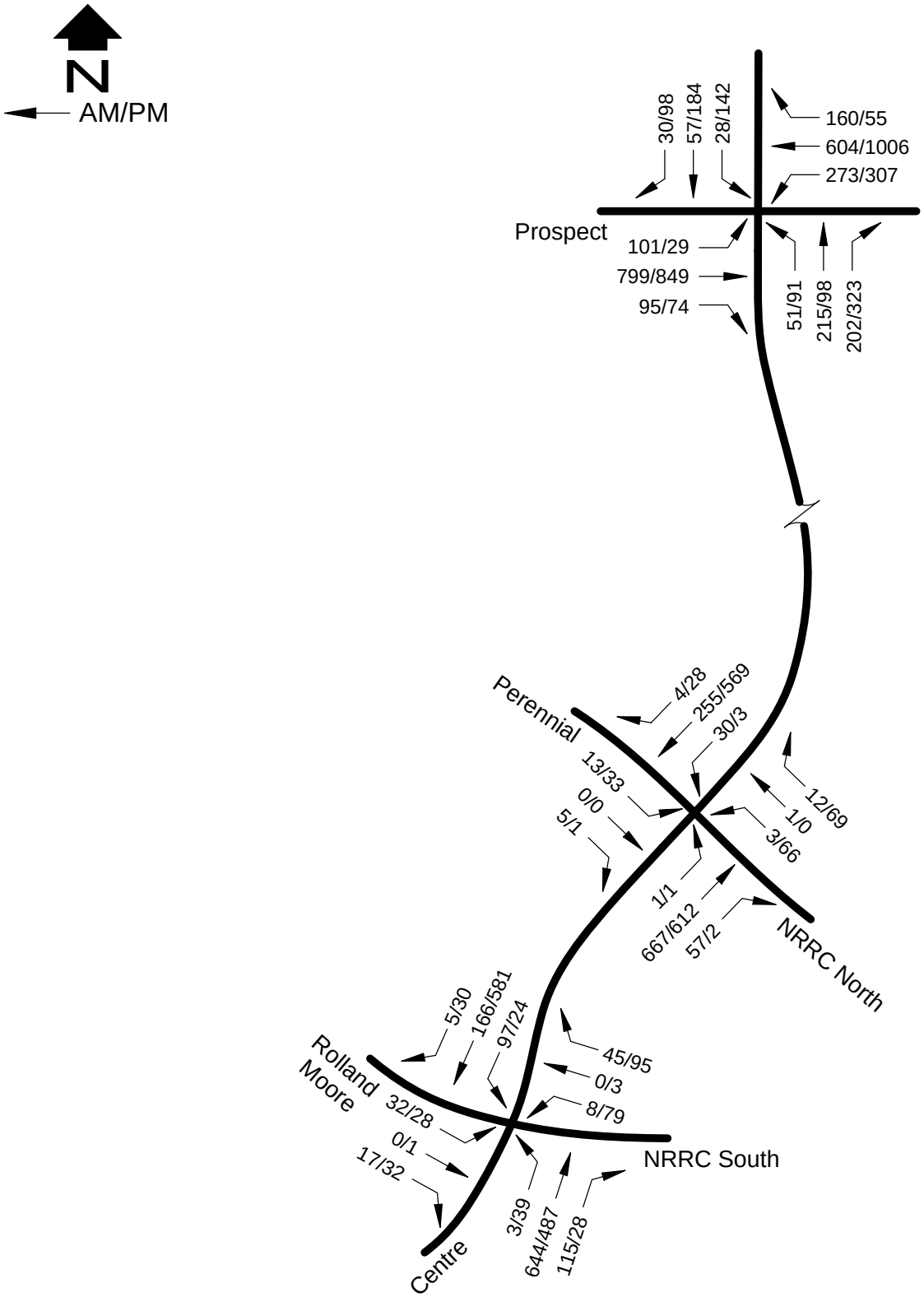


SCALE: 1"=600'

TRIP DISTRIBUTION

Figure 5

DELICH ASSOCIATES



SHORT RANGE (2018) BACKGROUND PEAK HOUR TRAFFIC

Figure 6

Trip Assignment

Trip assignment is how the generated and distributed trips are expected to be loaded on the street system. The assigned trips are the resultant of the trip distribution process. The site generated trip assignment for the Sunshine House Daycare site is shown in Figure 7. The site generated traffic was combined with the background traffic to determine the total forecasted traffic at the key intersections. Figure 8 shows the short range (2018) total peak hour traffic at the key intersections.

Signal Warrants

As a matter of policy, traffic signals are not installed at any location unless warrants are met according to the Manual on Uniform Traffic Control Devices (MUTCD). None of the stop sign controlled intersections are expected to meet peak hour signal warrants.

Operation Analysis

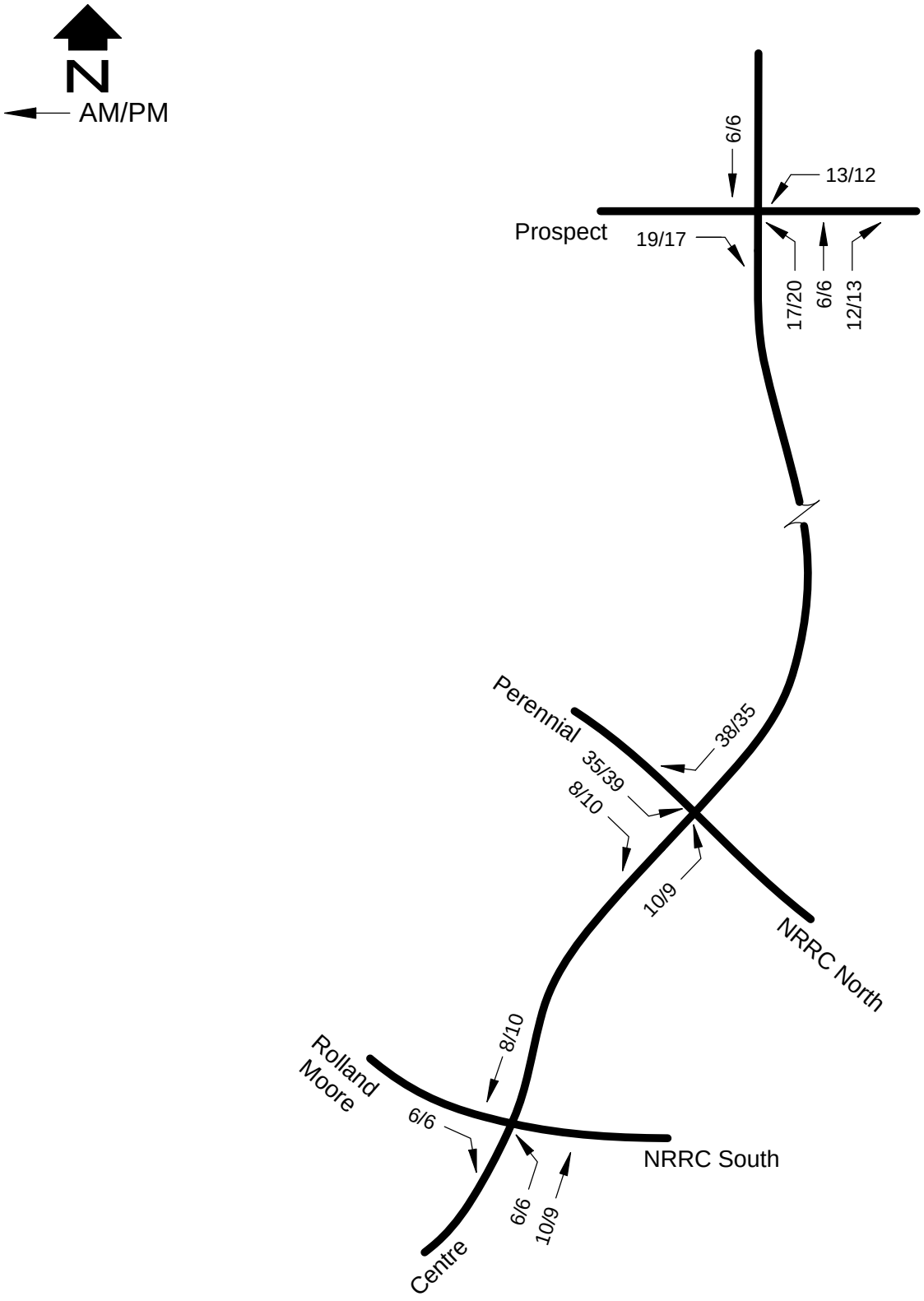
Operation analyses were performed at the key intersections. The operation analyses were conducted for the short range analysis, reflecting a year 2018 condition.

Using the short range (2018) background peak hour traffic volumes, the key intersections operate as indicated in Table 3. Calculation forms for these analyses are provided in Appendix D. The Prospect/Centre intersection operates acceptably with existing control, geometry, and signal timing in the morning and afternoon peak hours. The Centre/Perennial-NRRC North and Centre/Rolland Moore-NRRC South intersections do not meet acceptable levels of service, since Centre Avenue is classified as a collector street.

Using the traffic volumes shown in Figure 8, the key intersections operate in the short range (2018) total condition as indicated in Table 4. Calculation forms for these analyses are provided in Appendix E. As with the background traffic, the Prospect/Centre intersection operates acceptably with existing control, geometry, and signal timing in the morning and afternoon peak hours. The Centre/Perennial-NRRC North and Centre/Rolland Moore-NRRC South intersections do not meet acceptable levels of service, since Centre Avenue is classified as a collector street. A variance with regard to the operation at the Centre/Perennial-NRRC North and Centre/Rolland Moore-NRRC South intersections will be submitted with this TIS.

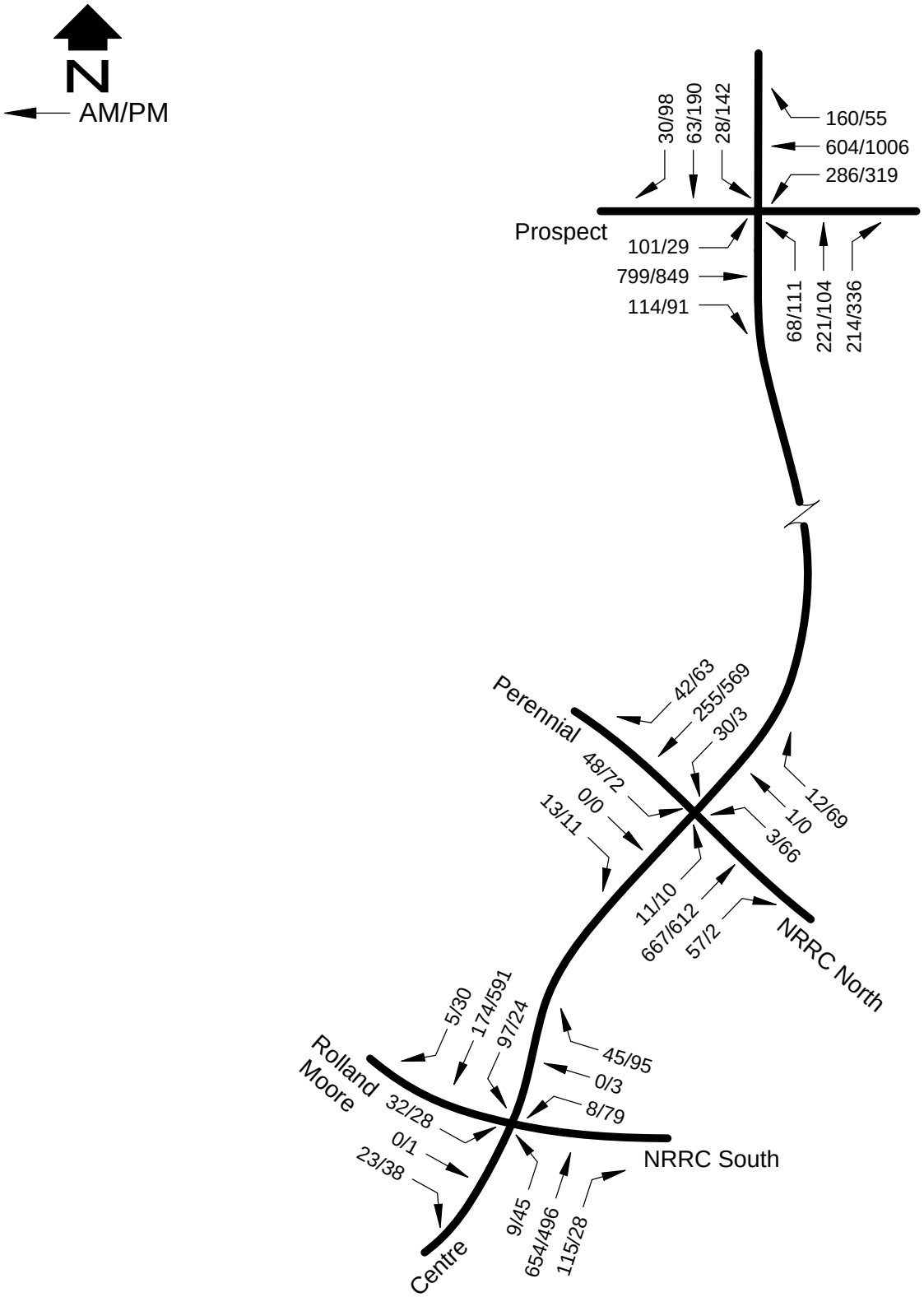
Geometry

The short range (2018) geometry is shown in Figure 9. The geometry at the analyzed intersections is the existing geometry. As mentioned earlier, according to LCUASS, eastbound and westbound right-turn lanes are required with the existing traffic volumes at the Prospect/Centre intersection.



SITE GENERATED
PEAK HOUR TRAFFIC

Figure 7

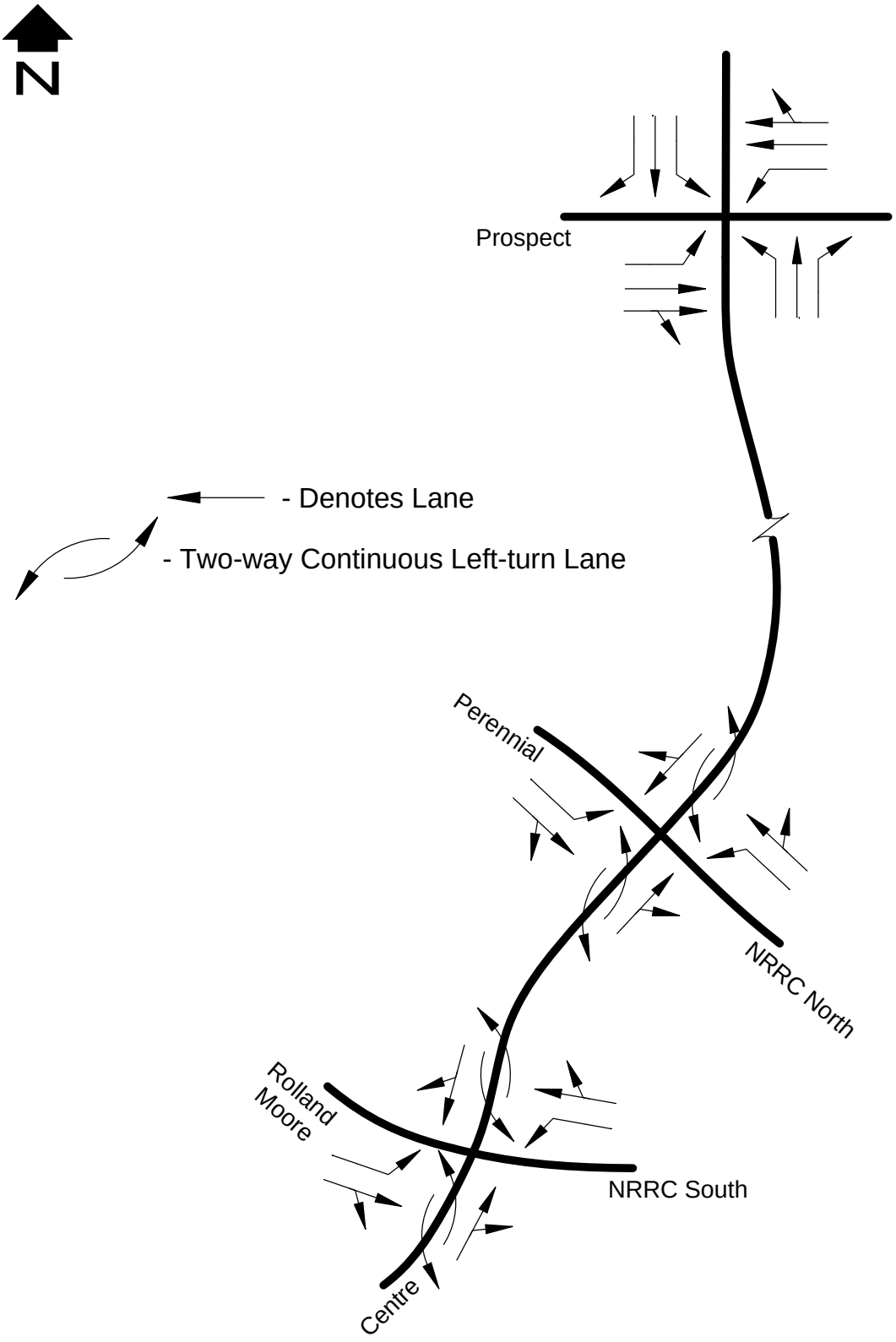


SHORT RANGE (2018) TOTAL
PEAK HOUR TRAFFIC

Figure 8

TABLE 3 Short Range (2018) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
Prospect/Centre (signal)	EB LT	A	A
	EB T	B	B
	EB RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T	A	B
	WB RT	B	B
	WB APPROACH	B	B
	NB LT	D	D
	NB T	D	C
	NB RT	C	C
	NB APPROACH	D	D
	SB LT	D	D
	SB T	C	D
	SB RT	A	C
	SB APPROACH	D	D
	OVERALL	B	B
Centre/Perennial-NRRC North (stop sign)	EB LT	D	F
	EB T/RT	C	F
	EB APPROACH	D	F
	WB LT	D	F
	WB T/RT	C	D
	WB APPROACH	C	E
	NB LT	A	A
	SB LT	A	A
Centre/Rolland Moore-NRRC South (stop sign)	EB LT	E	F
	EB T/RT	C	D
	EB APPROACH	D	E
	WB LT	E	F
	WB T/RT	C	E
	WB APPROACH	C	F
	NB LT	B	A
	SB LT	A	A

TABLE 4 Short Range (2018) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
Prospect/Centre (signal)	EB LT	A	A
	EB T	B	B
	EB RT	B	B
	EB APPROACH	B	B
	WB LT	B	B
	WB T	B	B
	EB RT	B	B
	WB APPROACH	B	B
	NB LT	D	D
	NB T	D	C
	NB RT	D	C
	NB APPROACH	D	D
	SB LT	D	D
	SB T	C	C
	SB RT	A	C
	SB APPROACH	D	D
	OVERALL	B	B
Centre/Perennial-NRRC North (stop sign)	EB LT	E	F
	EB T/RT	D	F
	EB APPROACH	D	F
	WB LT	D	F
	WB T/RT	C	D
	WB APPROACH	C	E
	NB LT	A	A
	SB LT	A	A
Centre/Rolland Moore-NRRC South (stop sign)	EB LT	F	F
	EB T/RT	C	D
	EB APPROACH	D	E
	WB LT	E	F
	WB T/RT	C	E
	WB APPROACH	C	F
	NB LT	B	A
	SB LT	A	A



SHORT RANGE (2018) GEOMETRY Figure 9

Pedestrian Level of Service

Appendix F shows a map of the area that is within 1320 feet of the Sunshine House Daycare. The Sunshine House Daycare site is located within an area termed as a "other," which sets the level of service threshold at LOS C for all measured factors. There are six destination areas within 1320 feet of the proposed Sunshine House Daycare: 1) NRRC Campus; 2) The Grove residential neighborhood; 3) the residential neighborhood to the northwest of the site; 4) the residential neighborhood to the north of the site; 5) Spring Creek Trail; and 6) The Gardens on Spring Creek. In most cases, sidewalks exist within the pedestrian influence area. It is assumed that sidewalks will be completed as properties develop. Appendix F contains a Pedestrian LOS Worksheet. This site will have sidewalk access to the Spring Creek Trail. Level of service B cannot be achieved for the Directness category to the neighborhood to the north of the site (destination #4). There is a body of water between this neighborhood and the Spring Creek Trail. Therefore, this neighborhood accesses the Spring Creek Trail on the far west side of the neighborhood. This causes the Directness ratio to be approximately 1.77.

Bicycle Level of Service

Based upon Fort Collins bicycle LOS criteria, there is one destination area (Spring Creek Trail) within 1320 feet of the Sunshine House Daycare. The bicycle level of service is acceptable. The Mason Trail is greater than 1320 feet from the Sunshine House Daycare. The bicycle LOS Worksheet is provided in Appendix F.

Transit Level of Service

Currently, Transfort serves this area of Fort Collins with Route 7. Route 7 runs from the Mall Transfer Point, along Drake Road, Centre Avenue, through the CSU Campus, and to the CSU Transit Center. There are transit stops very close to this site.

IV. CONCLUSIONS/RECOMMENDATIONS

This study assessed the impacts of the Sunshine House Daycare site development on the short range (2018) street system in the vicinity of the proposed development. As a result of this analysis, the following is concluded:

- The development of the Sunshine House Daycare site is feasible from a traffic engineering standpoint. At full development, the Sunshine House Daycare site will generate approximately 680 daily trip ends, 122 morning peak hour trip ends, and 124 afternoon peak hour trip ends.

- Current operation at the key intersections is acceptable.

- In the short range (2018) future, given development of the Sunshine House Daycare site and an increase in background traffic, the Prospect/Centre intersection operates acceptably with existing control, geometry, and signal timing in the morning and afternoon peak hours. The Centre/Perennial-NRRC North and Centre/Rolland Moore-NRRC South intersections do not meet acceptable levels of service, since Centre Avenue is classified as a collector street. A variance with regard to the operation at the Centre/Perennial-NRRC North and Centre/Rolland Moore-NRRC South intersections will be submitted with this TIS.

- Acceptable level of service is achieved for bicycle and transit modes based upon the measures in the multi-modal transportation guidelines. Acceptable level of service is achieved for pedestrians, except for one category to one destination.

APPENDIX A

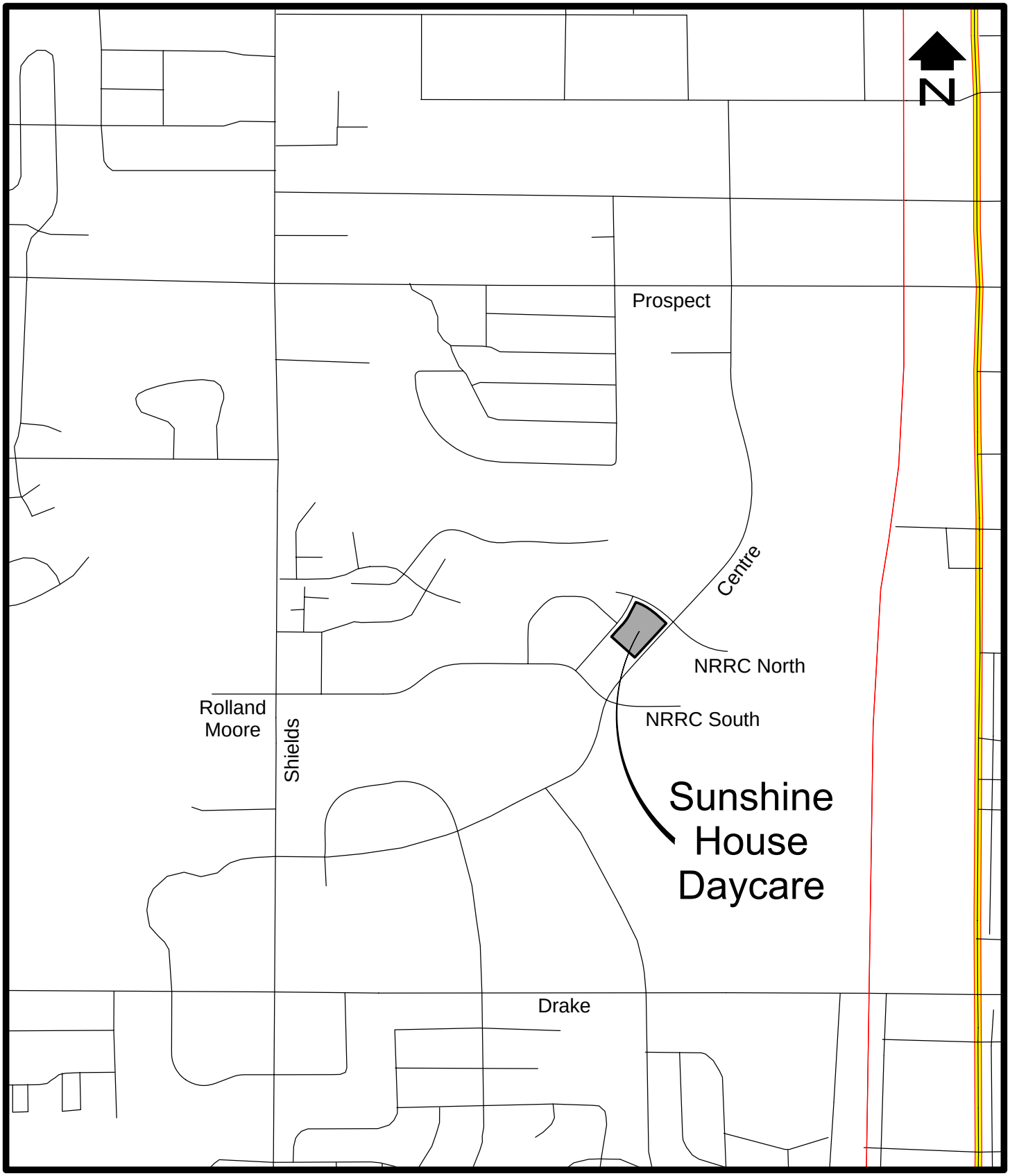
Attachment "A"
Transportation Impact Study
Base Assumptions

Project Information			
Project Name **Sunshine House Daycare**			
Project Location Southwest quadrant of the Centre/Old Rolland Moore-NRRC North Access			
TIS Assumptions			
Type of Study	Full:	Intermediate: Yes	
Study Area Boundaries	North: Prospect	South: Rolland Moore	
	East: Centre	West: Centre	
Study Years	Short Range: 2018	Long Range:	
Future Traffic Growth Rate	1% per year		
Study Intersections	1. Centre/Prospect	5.	
	2. Centre/Old Rolland Moore-NRRC North Access	6.	
	3. Centre/New Rolland Moore-NRRC ~~North~~ South Access	7.	
	4.	8.	
Time Period for Study	AM: 7:00-9:00	PM: 4:00-6:00	Sat Noon:
Trip Generation Rates	Per ITE Attached		
Trip Adjustment Factors	Passby: N/A	Captive Market: N/A	
Overall Trip Distribution	See Attached		
Mode Split Assumptions	N/A		
Committed Roadway Improvements	NONE		
Other Traffic Studies			
Areas Requiring Special Study	Include Ped/bike Volumes in Prospect & Center Analysis.		

Date: September 30, 2013

Traffic Engineer: Delich Associates

Local Entity Engineer: [signature] 10/8/13

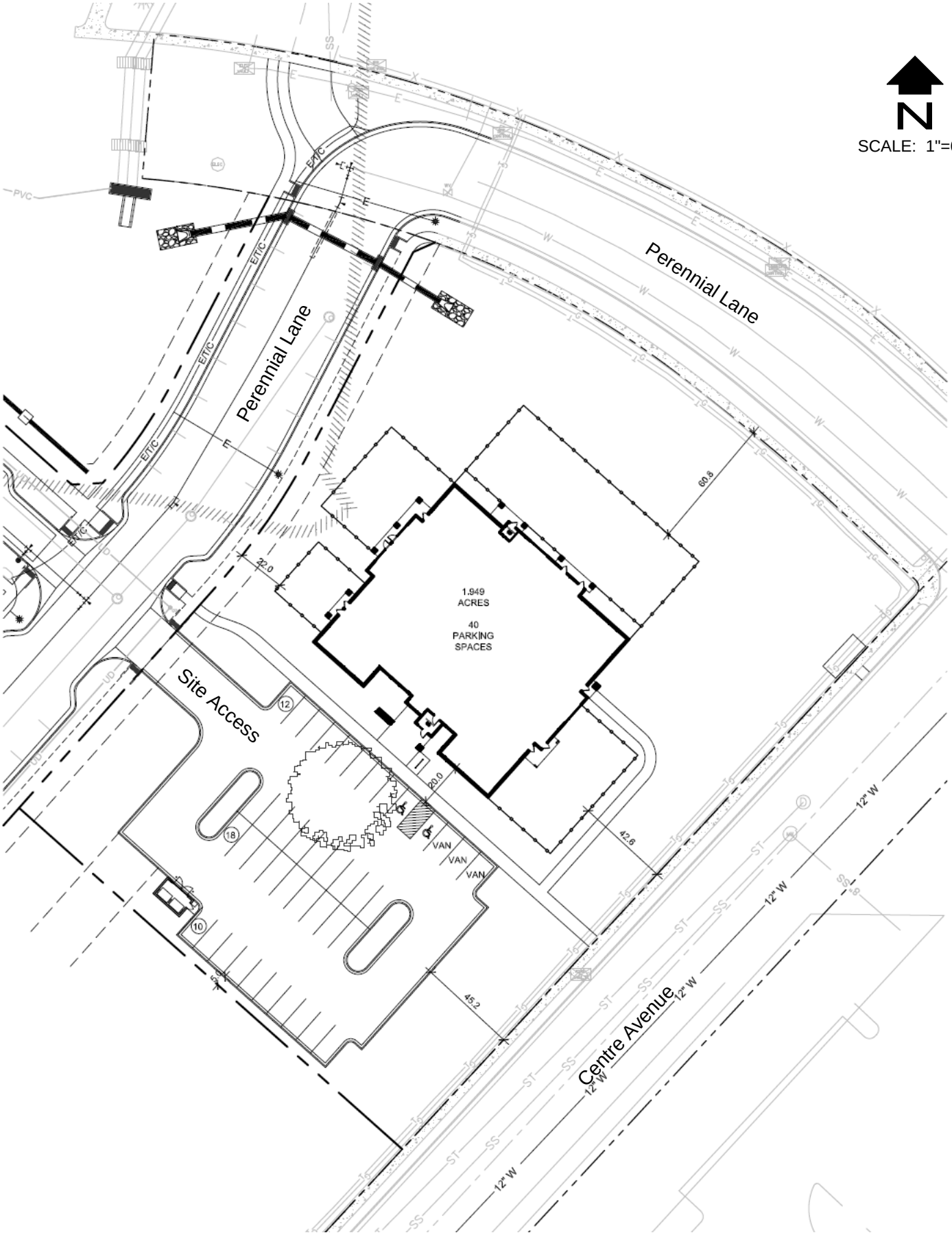


SCALE: 1"=1000'

SITE LOCATION

Figure 1

DELICH ASSOCIATES

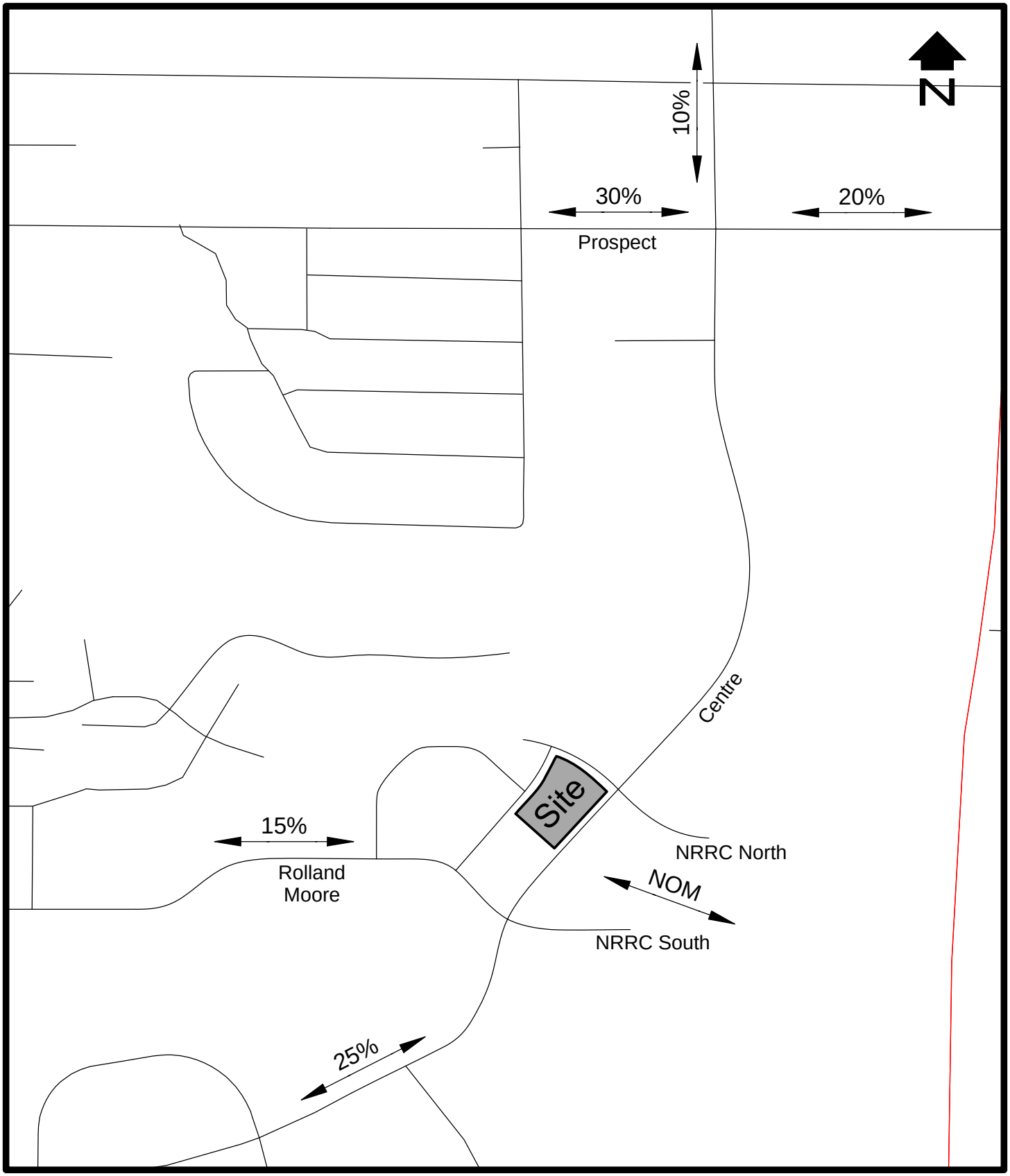


SITE PLAN

Figure 4

TABLE 2
Trip Generation

Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
565	Daycare	152 Students	4.48	680	0.42	64	0.38	58	0.39	59	0.43	65



SCALE: 1"=600'

TRIP DISTRIBUTION

Figure 5

DELICH ASSOCIATES

Ward Stanford

From: Aaron Iverson
Sent: Tuesday, October 08, 2013 2:13 PM
To: Ward Stanford; Amy Lewin
Cc: Michael Delich (michael@delichassoc.com)
Subject: RE: Sunshine House Daycare scoping

Ward,
A couple of comments.
Aaron

1) Can they annotate what all of the numbers represent? The map is really not as valuable, without knowing what those destinations are. . .

2) Include trails in these analyses. For example, access to the Mason Trail. . .

-----Original Message-----
From: Ward Stanford
Sent: Tuesday, October 08, 2013 12:54 PM
To: Amy Lewin; Aaron Iverson
Cc: Michael Delich (michael@delichassoc.com)
Subject: FW: Sunshine House Daycare scoping

Aaron, Amy,
Attached is a base assumption packet with the ped influence area as the last sheet. Please let Michael and myself know if the ped influence area is acceptable and if you have anything to add to the scoping packet.

Best regards,

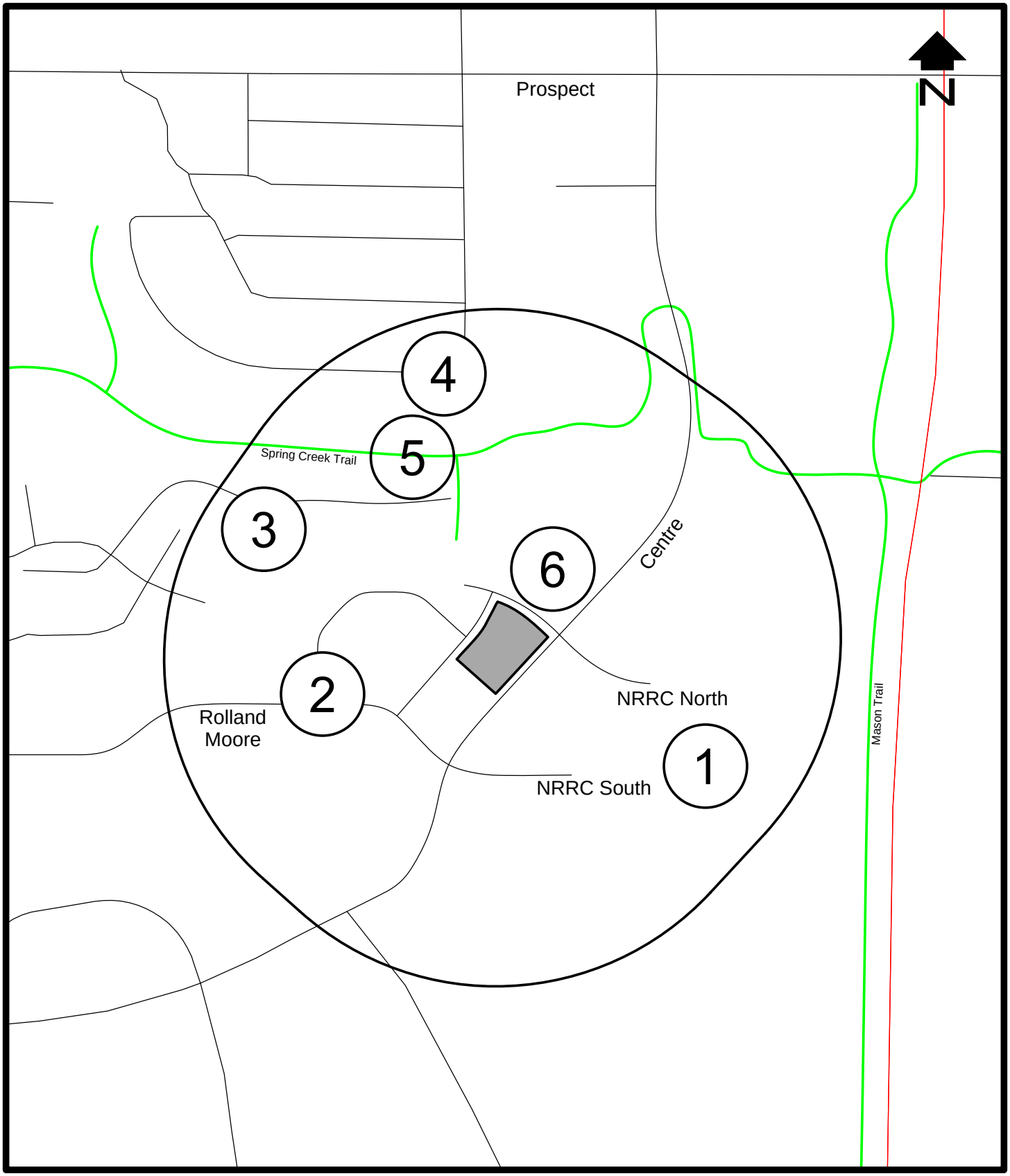
Ward Stanford
Traffic Systems Engineer
City of Fort Collins
970-221-6630
wstanford@fcgov.com

-----Original Message-----
From: Michael P. Delich [mailto:michael@delichassoc.com]
Sent: Monday, October 07, 2013 3:23 PM
To: Ward Stanford
Subject: Sunshine House Daycare scoping

Ward-

I think Joe sent you a base assumptions form and other information regarding the Sunshine House Daycare project. This project is located just south of the Gardens at Spring Creek in the southwest quadrant of the Centre/Old Rolland Moore intersection. (I believe old Rolland Moore will now be called Perennial Lane?) I am attaching a larger scoping packet with more information. Please review and let me know if you need to discuss. Thanks

Michael

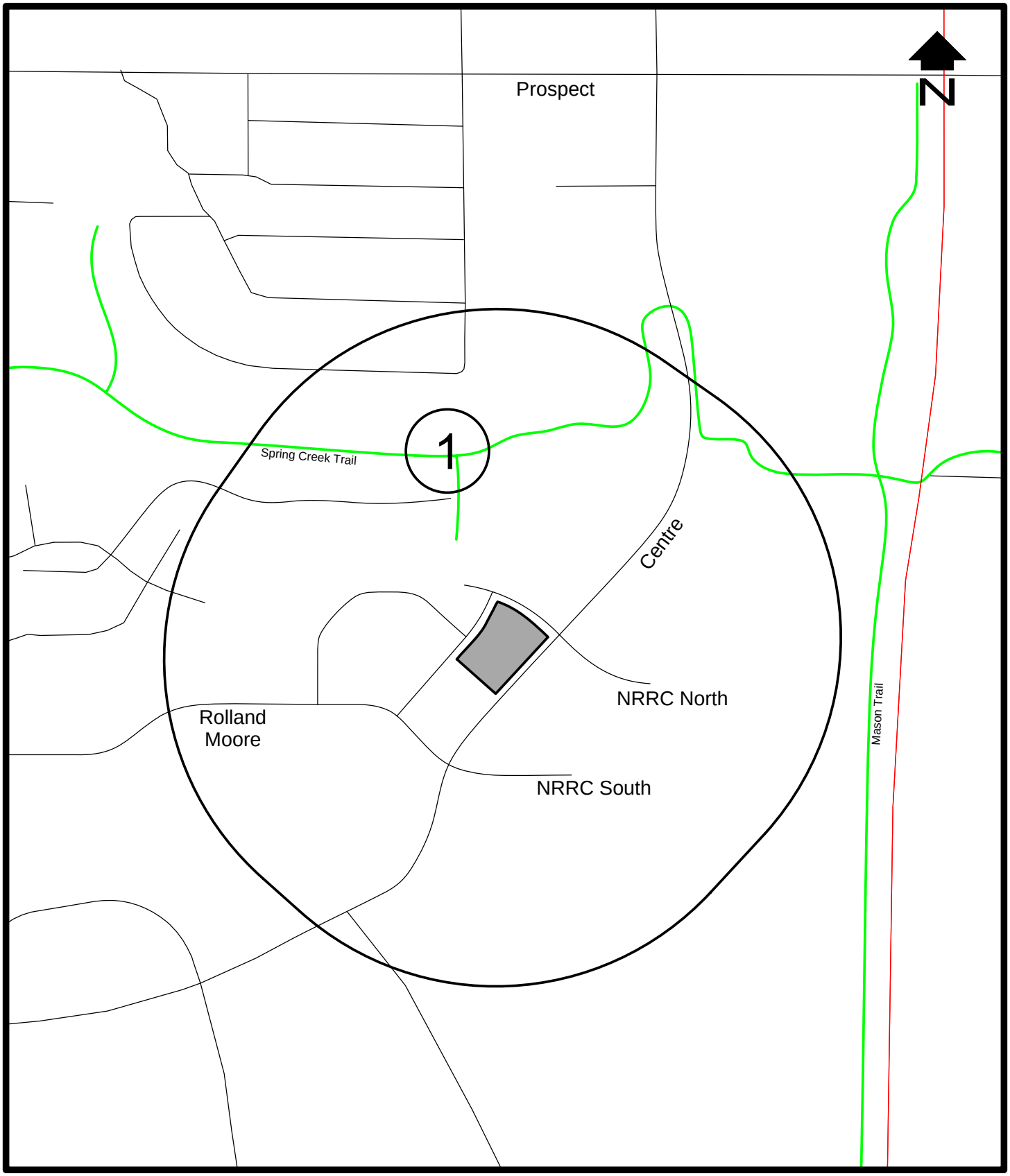


SCALE: 1"=600'

PEDESTRIAN INFLUENCE AREA

DELICH ASSOCIATES

The map is of the area that is within 1320 feet of the Sunshine House Daycare. The Sunshine House Daycare site is located within an area termed as a “other,” which sets the level of service threshold at LOS C for all measured factors. There are six destinationareas within 1320 feet of the proposed Sunshine House Daycare: 1) NRRC Campus; 2) The Grove residential neighborhood; 3) the residential neighborhood to the northwest of the site; 4) the residential neighborhood to the north of the site; 5) Spring Creek Trail; and 6) The Gardens on Spring Creek.



SCALE: 1"=600'

BICYCLE INFLUENCE AREA

DELICH ASSOCIATES

APPENDIX B

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

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 9/18/2013 Observer: City of Fort Collins

Day: Wednesday Jurisdiction: Fort Collins

Intersection: Prospect/Centre

R = right turn
S = straight
L = left turn

Time	Northbound: Centre				Southbound: Centre				Total	Eastbound: Prospect				Westbound: Prospect				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:30	14	54	45	113	7	10	4	21	134	31	199	22	252	72	152	56	280	532	666
7:45	16	74	61	151	2	18	9	29	180	33	205	21	259	82	185	42	309	568	748
8:00	13	39	49	101	12	16	8	36	137	12	170	20	202	60	116	27	203	405	542
8:15	6	38	37	81	6	10	8	24	105	20	186	27	233	46	122	27	195	428	533
7:30-8:30	49	205	192	446	27	54	29	110	556	96	760	90	946	260	575	152	987	1933	2489
PHF	0.77	0.69	0.79	0.74	0.56	0.75	0.81	0.76		0.73	0.93	0.83	0.91	0.79	0.78	0.68	0.8		0.83
4:30	18	14	63	95	32	45	21	98	193	10	184	21	215	62	220	16	298	513	706
4:45	13	43	61	117	31	40	17	88	205	10	211	21	242	64	257	12	333	575	780
5:00	35	27	93	155	35	46	30	111	266	4	206	13	223	77	245	7	329	552	818
5:15	21	9	90	120	37	44	25	106	226	4	207	15	226	89	235	17	341	567	793
4:30-5:30	87	93	307	487	135	175	93	403	890	28	808	70	906	292	957	52	1301	2207	3097
PHF	0.62	0.54	0.83	0.79	0.91	0.95	0.78	0.91		0.7	0.96	0.83	0.94	0.82	0.93	0.76	0.95		0.95

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

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 11/6/2013 Observer: Sue

Day: Wednesday Jurisdiction: Fort Collins

Intersection: Centre/Perennial-NRRC North Access

R = right turn
S = straight
L = left turn

Time	Northbound: Centre				Southbound: Centre				Total	Eastbound: Perennial				Westbound: NRRC North				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:30	0	194	24	218	3	62	1	66	284	1	0	0	1	0	0	1	1	2	286
7:45	1	211	13	225	12	72	0	84	309	6	0	1	7	2	0	2	4	11	320
8:00	0	117	1	118	13	62	1	76	194	4	0	4	8	0	0	3	3	11	205
8:15	0	113	16	129	1	47	2	50	179	1	0	0	1	1	1	5	7	8	187
7:30-8:30	1	635	54	690	29	243	4	276	966	12	0	5	17	3	1	11	15	32	998
PHF	0.25	0.75	0.56	0.77	0.56	0.84	0.5	0.82		0.5	n/a	0.31	0.53	0.38	0.25	0.55	0.54		0.78
4:30	0	124	1	125	1	104	14	119	244	11	0	1	12	14	0	20	34	46	290
4:45	0	138	0	138	0	119	2	121	259	11	0	0	11	17	0	15	32	43	302
5:00	1	158	1	160	1	187	5	193	353	7	0	0	7	21	0	21	42	49	402
5:15	0	162	0	162	1	131	6	138	300	2	0	1	3	11	0	10	21	24	324
4:30-5:30	1	582	2	585	3	541	27	571	1156	31	0	2	33	63	0	66	129	162	1318
PHF	0.25	0.9	0.5	0.9	0.75	0.72	0.48	0.74		0.7	n/a	0.5	0.69	0.75	n/a	0.79	0.77		0.82

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

TABULAR SUMMARY OF VEHICLE COUNTS

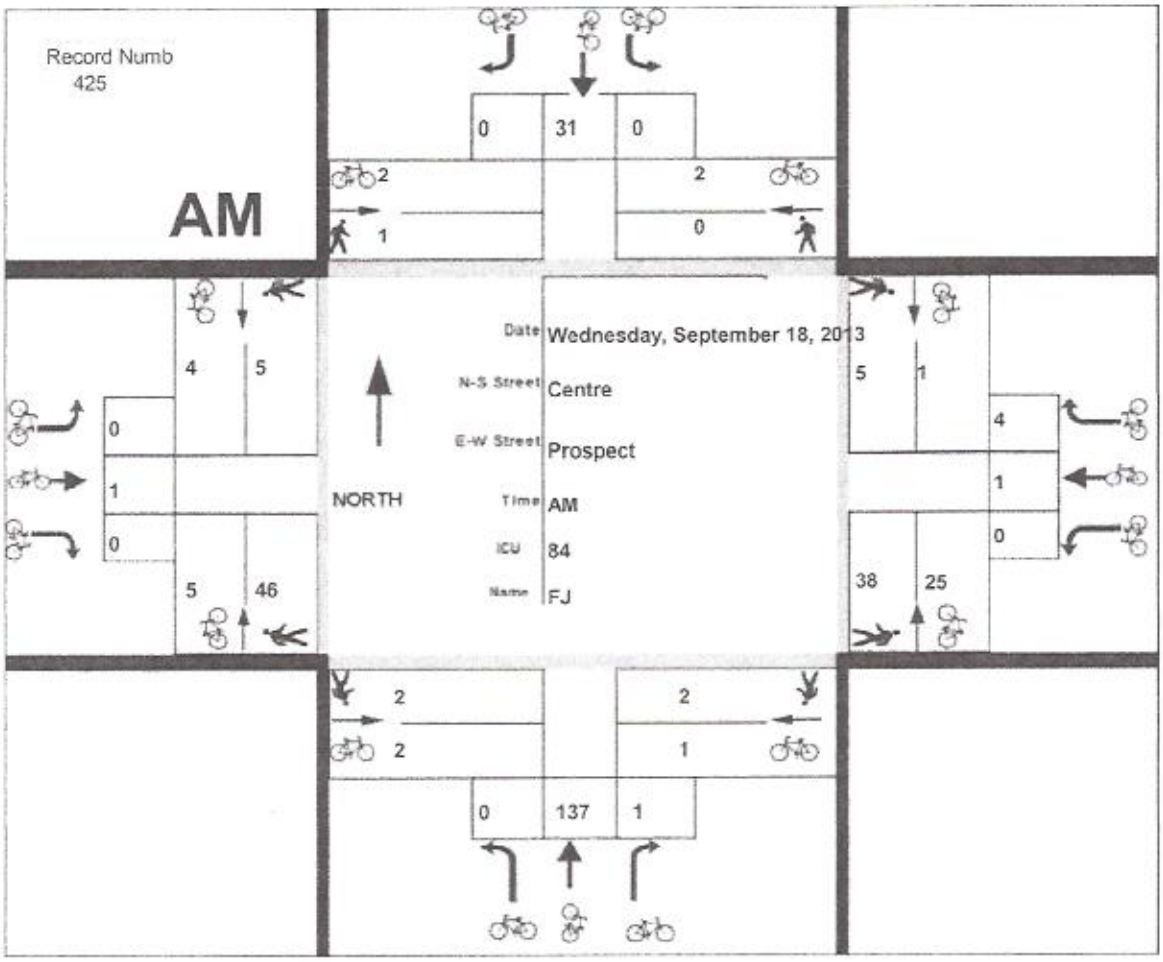
Date: 11/6/2013 Observer: Michael

Day: Wednesday Jurisdiction: Fort Collins

Intersection: Centre/New Rolland Moore-NRRC South Access

R = right turn
S = straight
L = left turn

Time	Northbound: Centre				Southbound: Centre				Total	Eastbound: New Rol. M.				Westbound: NRRC South				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:30	1	201	25	227	20	38	0	58	285	10	0	4	14	1	0	3	4	18	303
7:45	1	200	35	236	36	39	4	79	315	10	0	3	13	6	0	10	16	29	344
8:00	0	101	32	133	20	48	0	68	201	6	0	4	10	0	0	16	16	26	227
8:15	1	111	17	129	16	33	1	50	179	4	0	5	9	1	0	14	15	24	203
7:30-8:30	3	613	109	725	92	158	5	255	980	30	0	16	46	8	0	43	51	97	1077
PHF	0.75	0.76	0.78	0.77	0.64	0.82	0.31	0.81		0.75	n/a	0.8	0.82	0.33	n/a	0.67	0.8		0.78
4:30	11	100	7	118	4	111	5	120	238	9	0	7	16	24	0	18	42	58	296
4:45	8	111	9	128	13	115	9	137	265	9	0	4	13	18	1	16	35	48	313
5:00	4	128	8	140	1	183	10	194	334	4	0	9	13	20	1	30	51	64	398
5:15	14	124	3	141	5	144	5	154	295	5	1	10	16	13	1	26	40	56	351
4:30-5:30	37	463	27	527	23	553	29	605	1132	27	1	30	58	75	3	90	168	226	1358
PHF	0.66	0.9	0.75	0.93	0.44	0.76	0.73	0.78		0.75	0.25	0.75	0.91	0.78	0.75	0.75	0.82		0.85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Centre
E-W Street
Prospect
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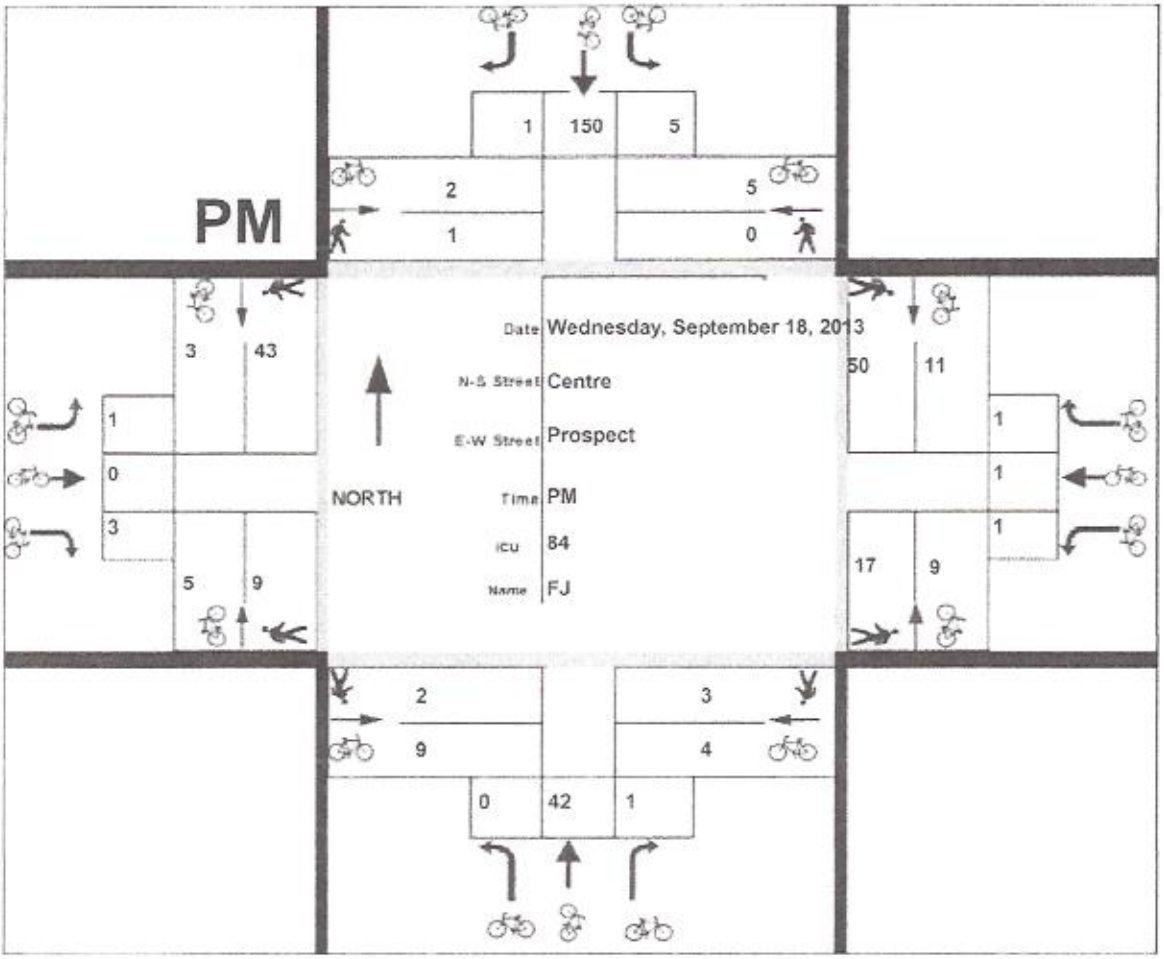
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Centre
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APPENDIX C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	96	760	90	260	575	152	49	205	192	27	54	29
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.93		0.75	0.97		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	193.7	186.3
Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Cap, veh/h	527	1957	217	482	1800	452	286	367	235	153	382	312
Arrive On Green	0.05	0.59	0.58	0.09	0.63	0.62	0.20	0.20	0.20	0.20	0.20	0.00
Sat Flow, veh/h	1774	3290	364	1774	2858	718	1244	1863	1192	1008	1937	1583
Grp Volume(v), veh/h	113	506	487	292	411	380	58	241	91	32	64	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1792	1774	1863	1713	1244	1863	1192	1008	1937	1583
Q Serve(g_s), s	2.3	14.5	14.6	4.9	10.1	10.2	3.9	11.5	6.4	2.9	2.6	0.0
Cycle Q Clear(g_c), s	2.3	14.5	14.6	4.9	10.1	10.2	6.5	11.5	6.4	14.4	2.6	0.0
Prop In Lane	1.00		0.20	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	527	1108	1066	482	1173	1079	286	367	235	153	382	312
V/C Ratio(X)	0.21	0.46	0.46	0.61	0.35	0.35	0.20	0.66	0.39	0.21	0.17	0.00
Avail Cap(c_a), veh/h	579	1108	1066	602	1173	1079	429	582	372	269	605	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.6	10.8	10.9	8.2	8.5	8.6	34.7	35.6	33.5	42.2	32.0	0.0
Incr Delay (d2), s/veh	0.2	1.4	1.4	1.2	0.8	0.9	0.3	2.0	1.0	0.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.8	6.2	6.0	1.9	4.2	3.9	1.2	5.5	1.9	0.8	1.3	0.0
Lane Grp Delay (d), s/veh	6.8	12.2	12.3	9.4	9.3	9.5	35.1	37.6	34.6	42.9	32.2	0.0
Lane Grp LOS	A	B	B	A	A	A	D	D	C	D	C	
Approach Vol, veh/h		1106			1083			390			96	
Approach Delay, s/veh		11.7			9.4			36.5			35.8	
Approach LOS		B			A			D			D	
Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	8.1	61.7		11.5	65.0			22.9			22.9	
Change Period (Y+Rc), s	4.0	5.5		4.0	5.5			5.0			5.0	
Max Green Setting (Gmax), s	7.0	52.5		14.0	59.5			29.0			29.0	
Max Q Clear Time (g_c+I1), s	4.3	16.6		6.9	12.2			13.5			16.4	
Green Ext Time (p_c), s	0.1	7.8		0.5	7.9			1.5			1.4	
Intersection Summary												
HCM 2010 Ctrl Delay			15.2									
HCM 2010 LOS			B									
Notes												

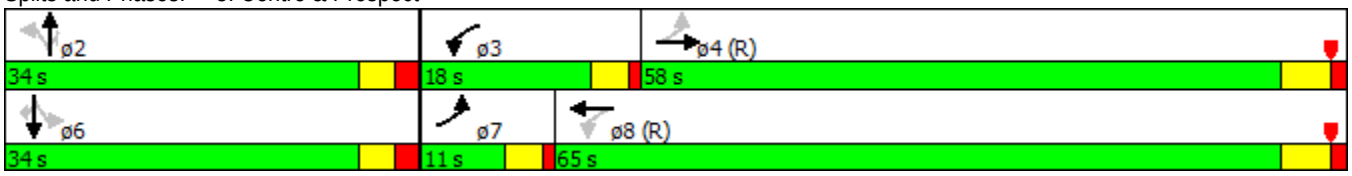
Phase Number	2	3	4	6	7	8
Movement	NBTL	WBL	EBTL	SBTL	EBL	WBTL
Lead/Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize		Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max
Maximum Split (s)	34	18	58	34	11	65
Maximum Split (%)	30.9%	16.4%	52.7%	30.9%	10.0%	59.1%
Minimum Split (s)	23	11	23.5	23	11	24.5
Yellow Time (s)	3	3	4	3	3	4
All-Red Time (s)	2	1	1.5	2	1	1.5
Minimum Initial (s)	7	4	10	7	4	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)	7		7	7		7
Flash Dont Walk (s)	11		11	11		12
Dual Entry	Yes	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	79	3	21	79	3	14
End Time (s)	3	21	79	3	14	79
Yield/Force Off (s)	108	17	73.5	108	10	73.5
Yield/Force Off 170(s)	97	17	62.5	97	10	61.5
Local Start Time (s)	0	34	52	0	34	45
Local Yield (s)	29	48	104.5	29	41	104.5
Local Yield 170(s)	18	48	93.5	18	41	92.5

Intersection Summary

Cycle Length	110	
Control Type	Actuated-Coordinated	
Natural Cycle	60	

Offset: 79 (72%), Referenced to phase 4:EBTL and 8:WBTL, Start of Red

Splits and Phases: 3: Centre & Prospect



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	808	70	292	957	52	87	93	307	135	175	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.94		0.85	0.93		0.76
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	193.7	186.3
Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Cap, veh/h	392	1980	163	501	2250	118	214	393	284	262	409	254
Arrive On Green	0.03	0.58	0.57	0.09	0.64	0.63	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1774	3391	279	1774	3503	184	1107	1863	1345	1139	1937	1202
Grp Volume(v), veh/h	29	467	454	307	536	524	92	98	61	142	184	19
Grp Sat Flow(s),veh/h/ln	1774	1863	1807	1774	1863	1824	1107	1863	1345	1139	1937	1202
Q Serve(g_s), s	0.6	14.0	14.0	5.2	14.5	14.5	7.9	4.4	3.8	11.9	8.3	1.3
Cycle Q Clear(g_c), s	0.6	14.0	14.0	5.2	14.5	14.5	16.3	4.4	3.8	16.3	8.3	1.3
Prop In Lane	1.00		0.15	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	392	1087	1055	501	1196	1172	214	393	284	262	409	254
V/C Ratio(X)	0.07	0.43	0.43	0.61	0.45	0.45	0.43	0.25	0.21	0.54	0.45	0.07
Avail Cap(c_a), veh/h	477	1087	1055	782	1196	1172	377	668	482	430	694	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.9	11.6	11.7	8.6	9.0	9.0	41.6	33.0	32.7	39.8	34.5	31.7
Incr Delay (d2), s/veh	0.1	1.2	1.3	1.2	1.2	1.2	1.4	0.3	0.4	1.7	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.3	6.1	5.9	2.4	5.9	5.8	2.3	2.1	0.0	3.6	4.2	0.4
Lane Grp Delay (d), s/veh	8.0	12.9	12.9	9.8	10.2	10.3	43.0	33.3	33.1	41.5	35.3	31.9
Lane Grp LOS	A	B	B	A	B	B	D	C	C	D	D	C
Approach Vol, veh/h		950			1367			251			345	
Approach Delay, s/veh		12.7			10.2			36.8			37.7	
Approach LOS		B			B			D			D	
Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	6.2	63.1		12.1	69.0			25.2			25.2	
Change Period (Y+Rc), s	4.0	5.5		4.0	5.5			5.0			5.0	
Max Green Setting (Gmax), s	7.0	46.5		24.0	63.5			35.0			35.0	
Max Q Clear Time (g_c+I1), s	2.6	16.0		7.2	16.5			18.3			18.3	
Green Ext Time (p_c), s	0.0	8.7		0.9	9.3			1.9			1.9	
Intersection Summary												
HCM 2010 Ctrl Delay			16.6									
HCM 2010 LOS			B									
Notes												

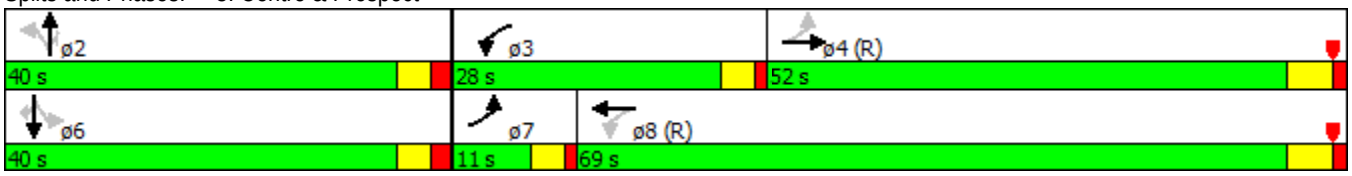
Phase Number	2	3	4	6	7	8
Movement	NBTL	WBL	EBTL	SBTL	EBL	WBTL
Lead/Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize		Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max
Maximum Split (s)	40	28	52	40	11	69
Maximum Split (%)	33.3%	23.3%	43.3%	33.3%	9.2%	57.5%
Minimum Split (s)	23	11	23.5	23	11	24.5
Yellow Time (s)	3	3	4	3	3	4
All-Red Time (s)	2	1	1.5	2	1	1.5
Minimum Initial (s)	7	4	10	7	4	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)	7		7	7		7
Flash Dont Walk (s)	11		11	11		12
Dual Entry	Yes	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	16	56	84	16	56	67
End Time (s)	56	84	16	56	67	16
Yield/Force Off (s)	51	80	10.5	51	63	10.5
Yield/Force Off 170(s)	40	80	119.5	40	63	118.5
Local Start Time (s)	0	40	68	0	40	51
Local Yield (s)	35	64	114.5	35	47	114.5
Local Yield 170(s)	24	64	103.5	24	47	102.5

Intersection Summary

Cycle Length	120	
Control Type	Actuated-Coordinated	
Natural Cycle	60	

Offset: 16 (13%), Referenced to phase 4:EBTL and 8:WBTL, Start of Red

Splits and Phases: 3: Centre & Prospect



Intersection	
Intersection Delay, s/veh	0.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	12	0	5	3	1	11	1	635	54	29	243	4
Conflicting Peds, #/hr	8	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	75	-	-	75	-	-	0	-	-	0	-	-
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	14	0	6	4	1	13	1	747	64	34	286	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1152	1177	296	1148	1148	779	299	0	0	811	0	0
Stage 1	364	364	-	781	781	-	-	-	-	-	-	-
Stage 2	788	813	-	367	367	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	175	191	743	176	199	396	1262	-	-	815	-	-
Stage 1	655	624	-	388	405	-	-	-	-	-	-	-
Stage 2	384	392	-	653	622	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	162	182	739	169	189	396	1262	-	-	815	-	-
Mov Capacity-2 Maneuver	162	182	-	169	189	-	-	-	-	-	-	-
Stage 1	651	595	-	388	405	-	-	-	-	-	-	-
Stage 2	370	392	-	621	593	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	23	17.7	0	1
HCM LOS	C	C		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	1262	-	-	169	333	162	286	815	-	-
HCM Lane V/C Ratio	0.001	-	-	0.014	0.046	0.058	0.037	0.042	-	-
HCM Control Delay (s)	7.855	-	-	26.6	16.3	28.6	18.1	9.61	-	-
HCM Lane LOS	A			D	C	D	C	A		
HCM 95th %tile Q(veh)	0.003	-	-	0.042	0.144	0.183	0.115	0.131	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.850			0.861			0.988			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1478	0	1652	1497	0	2006	1840	0	2006	1857	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1478	0	1652	1497	0	2006	1840	0	2006	1857	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		315			317			771			2032	
Travel Time (s)		8.6			8.6			15.0			39.6	

Intersection Summary

Area Type: Other

Intersection	
Intersection Delay, s/veh	4.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	31	0	2	63	0	66	1	582	2	3	541	27
Conflicting Peds, #/hr	0	0	1	1	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	75	-	-	75	-	-	0	-	-	0	-	-
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	0	2	74	0	78	1	685	2	4	636	29

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1387	1349	652	1349	1363	687	667	0	0	688	0	0
Stage 1	659	659	-	689	689	-	-	-	-	-	-	-
Stage 2	728	690	-	660	674	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	120	151	468	128	148	447	923	-	-	906	-	-
Stage 1	453	461	-	436	446	-	-	-	-	-	-	-
Stage 2	415	446	-	452	454	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	99	150	468	127	147	447	923	-	-	906	-	-
Mov Capacity-2 Maneuver	99	150	-	127	147	-	-	-	-	-	-	-
Stage 1	452	459	-	435	445	-	-	-	-	-	-	-
Stage 2	343	445	-	448	452	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	48.4	33.4	0	0
HCM LOS	E	D		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	923	-	-	127	278	99	114	906	-	-
HCM Lane V/C Ratio	0.001	-	-	0.389	0.368	0.246	0.127	0.004	-	-
HCM Control Delay (s)	8.905	-	-	50.3	25.3	52.8	41.1	8.989	-	-
HCM Lane LOS	A			F	D	F	E	A		
HCM 95th %tile Q(veh)	0.004	-	-	1.635	1.628	0.892	0.423	0.012	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.850			0.850						0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1478	0	1652	1478	0	2006	1863	0	2006	1850	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1478	0	1652	1478	0	2006	1863	0	2006	1850	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		315			317			771			2032	
Travel Time (s)		8.6			8.6			15.0			39.6	

Intersection Summary

Area Type: Other

Intersection	
Intersection Delay, s/veh	3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	30	0	16	8	0	43	3	613	109	92	158	5
Conflicting Peds, #/hr	4	0	2	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	0	-	-	0	-	-	0	-	-	0	-	-
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	35	0	19	9	0	51	4	721	128	108	186	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1227	1265	193	1211	1204	785	196	0	0	849	0	0
Stage 1	409	409	-	792	792	-	-	-	-	-	-	-
Stage 2	818	856	-	419	412	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	155	169	849	159	184	393	1377	-	-	789	-	-
Stage 1	619	596	-	382	401	-	-	-	-	-	-	-
Stage 2	370	374	-	612	594	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	120	145	847	139	158	393	1377	-	-	789	-	-
Mov Capacity-2 Maneuver	120	145	-	139	158	-	-	-	-	-	-	-
Stage 1	615	513	-	381	400	-	-	-	-	-	-	-
Stage 2	321	373	-	516	511	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	30.3	18.5	0	3.7
HCM LOS	D	C		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	1377	-	-	139	355	120	254	789	-	-
HCM Lane V/C Ratio	0.003	-	-	0.045	0.151	0.196	0.12	0.137	-	-
HCM Control Delay (s)	7.621	-	-	32.1	16.9	42.2	21.1	10.287	-	-
HCM Lane LOS	A			D	C	E	C	B		
HCM 95th %tile Q(veh)	0.008	-	-	0.141	0.528	0.692	0.405	0.474	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		75	0		75	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.850			0.850			0.977			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1478	0	1652	1478	0	2006	1820	0	2006	1853	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1478	0	1652	1478	0	2006	1820	0	2006	1853	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		302			263			348			771	
Travel Time (s)		8.2			7.2			6.8			15.0	

Intersection Summary

Area Type: Other

Intersection	
Intersection Delay, s/veh	7.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	27	1	30	75	3	90	37	463	27	23	553	29
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	0	-	-	0	-	-	0	-	-	0	-	-
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	32	1	35	88	4	106	44	545	32	27	651	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1424	1386	668	1388	1387	561	685	0	0	576	0	0
Stage 1	722	722	-	648	648	-	-	-	-	-	-	-
Stage 2	702	664	-	740	739	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	113	143	458	120	143	527	908	-	-	997	-	-
Stage 1	418	431	-	459	466	-	-	-	-	-	-	-
Stage 2	429	458	-	409	424	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	83	132	458	104	132	527	908	-	-	997	-	-
Mov Capacity-2 Maneuver	83	132	-	104	132	-	-	-	-	-	-	-
Stage 1	398	419	-	437	443	-	-	-	-	-	-	-
Stage 2	324	436	-	366	413	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	37.2	45	0.6	0.3
HCM LOS	E	E		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	908	-	-	104	272	83	220	997	-	-
HCM Lane V/C Ratio	0.048	-	-	0.566	0.51	0.255	0.214	0.027	-	-
HCM Control Delay (s)	9.164	-	-	77.4	31.3	62.6	25.8	8.712	-	-
HCM Lane LOS	A			F	D	F	D	A		
HCM 95th %tile Q(veh)	0.151	-	-	2.657	2.692	0.918	0.788	0.084	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		75	0		30	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.854			0.855			0.992			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1485	0	1652	1486	0	2006	1848	0	2006	1850	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1485	0	1652	1486	0	2006	1848	0	2006	1850	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		302			263			348			771	
Travel Time (s)		8.2			7.2			6.8			15.0	

Intersection Summary

Area Type: Other

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)			
		Other corridors within:		
	Commercial corridors	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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	101	799	95	273	604	160	51	215	202	28	57	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.94		0.76	0.97		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	193.7	186.3
Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Cap, veh/h	506	1928	215	463	1778	449	291	378	244	151	394	322
Arrive On Green	0.06	0.59	0.58	0.09	0.62	0.61	0.20	0.20	0.20	0.20	0.20	0.00
Sat Flow, veh/h	1774	3287	367	1774	2854	721	1244	1863	1202	989	1937	1583
Grp Volume(v), veh/h	119	533	512	307	433	399	60	253	103	33	67	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1791	1774	1863	1713	1244	1863	1202	989	1937	1583
Q Serve(g_s), s	2.5	16.1	16.1	5.4	11.1	11.2	4.1	12.2	7.3	3.1	2.8	0.0
Cycle Q Clear(g_c), s	2.5	16.1	16.1	5.4	11.1	11.2	6.8	12.2	7.3	15.3	2.8	0.0
Prop In Lane	1.00		0.20	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	506	1092	1050	463	1161	1067	291	378	244	151	394	322
V/C Ratio(X)	0.24	0.49	0.49	0.66	0.37	0.37	0.21	0.67	0.42	0.22	0.17	0.00
Avail Cap(c_a), veh/h	553	1092	1050	574	1161	1067	423	575	371	256	598	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.0	11.6	11.7	9.8	9.0	9.1	34.8	35.7	33.7	42.7	31.9	0.0
Incr Delay (d2), s/veh	0.2	1.6	1.6	2.0	0.9	1.0	0.3	2.0	1.2	0.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.9	7.0	6.8	2.8	4.6	4.3	1.3	5.8	2.2	0.8	1.4	0.0
Lane Grp Delay (d), s/veh	7.3	13.2	13.3	11.8	9.9	10.1	35.1	37.7	34.9	43.4	32.1	0.0
Lane Grp LOS	A	B	B	B	A	B	D	D	C	D	C	
Approach Vol, veh/h		1164			1139			416			100	
Approach Delay, s/veh		12.6			10.5			36.6			35.9	
Approach LOS		B			B			D			D	

Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	8.4	61.4		11.9	65.0			23.7			23.7	
Change Period (Y+Rc), s	4.0	5.5		4.0	5.5			5.0			5.0	
Max Green Setting (Gmax), s	7.0	52.5		14.0	59.5			29.0			29.0	
Max Q Clear Time (g_c+I1), s	4.5	18.1		7.4	13.2			14.2			17.3	
Green Ext Time (p_c), s	0.1	8.4		0.6	8.6			1.6			1.5	

Intersection Summary												
HCM 2010 Ctrl Delay			16.1									
HCM 2010 LOS			B									

Notes

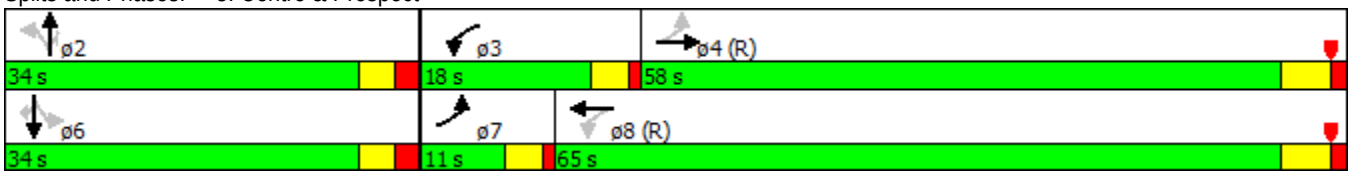
Phase Number	2	3	4	6	7	8
Movement	NBTL	WBL	EBTL	SBTL	EBL	WBTL
Lead/Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize		Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max
Maximum Split (s)	34	18	58	34	11	65
Maximum Split (%)	30.9%	16.4%	52.7%	30.9%	10.0%	59.1%
Minimum Split (s)	23	11	23.5	23	11	24.5
Yellow Time (s)	3	3	4	3	3	4
All-Red Time (s)	2	1	1.5	2	1	1.5
Minimum Initial (s)	7	4	10	7	4	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)	7		7	7		7
Flash Dont Walk (s)	11		11	11		12
Dual Entry	Yes	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	79	3	21	79	3	14
End Time (s)	3	21	79	3	14	79
Yield/Force Off (s)	108	17	73.5	108	10	73.5
Yield/Force Off 170(s)	97	17	62.5	97	10	61.5
Local Start Time (s)	0	34	52	0	34	45
Local Yield (s)	29	48	104.5	29	41	104.5
Local Yield 170(s)	18	48	93.5	18	41	92.5

Intersection Summary

Cycle Length	110	
Control Type	Actuated-Coordinated	
Natural Cycle	65	

Offset: 79 (72%), Referenced to phase 4:EBTL and 8:WBTL, Start of Red

Splits and Phases: 3: Centre & Prospect



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	29	849	74	307	1006	55	91	98	323	142	184	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.95		0.85	0.94		0.77
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	193.7	186.3
Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Cap, veh/h	368	1941	161	481	2222	117	217	409	297	268	425	267
Arrive On Green	0.03	0.57	0.56	0.09	0.63	0.62	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1774	3389	281	1774	3502	185	1099	1863	1353	1134	1937	1214
Grp Volume(v), veh/h	31	491	477	323	563	552	96	103	65	149	194	20
Grp Sat Flow(s),veh/h/ln	1774	1863	1807	1774	1863	1824	1099	1863	1353	1134	1937	1214
Q Serve(g_s), s	0.7	15.6	15.6	5.7	16.1	16.1	8.4	4.6	4.0	12.7	8.8	1.3
Cycle Q Clear(g_c), s	0.7	15.6	15.6	5.7	16.1	16.1	17.3	4.6	4.0	17.4	8.8	1.3
Prop In Lane	1.00		0.16	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	368	1067	1035	481	1182	1157	217	409	297	268	425	267
V/C Ratio(X)	0.08	0.46	0.46	0.67	0.48	0.48	0.44	0.25	0.22	0.56	0.46	0.08
Avail Cap(c_a), veh/h	450	1067	1035	749	1182	1157	365	660	479	421	686	430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	12.6	12.7	10.3	9.7	9.8	41.9	32.8	32.5	39.9	34.4	31.5
Incr Delay (d2), s/veh	0.1	1.4	1.5	1.6	1.4	1.4	1.4	0.3	0.4	1.8	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.3	6.8	6.7	3.3	6.9	6.8	2.4	2.2	0.0	3.8	4.5	0.4
Lane Grp Delay (d), s/veh	8.7	14.0	14.1	11.9	11.1	11.2	43.3	33.1	32.9	41.7	35.2	31.6
Lane Grp LOS	A	B	B	B	B	B	D	C	C	D	D	C
Approach Vol, veh/h		999			1438			264			363	
Approach Delay, s/veh		13.9			11.3			36.8			37.7	
Approach LOS		B			B			D			D	
Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	6.3	62.7		12.6	69.0			26.3			26.3	
Change Period (Y+Rc), s	4.0	5.5		4.0	5.5			5.0			5.0	
Max Green Setting (Gmax), s	7.0	46.5		24.0	63.5			35.0			35.0	
Max Q Clear Time (g_c+I1), s	2.7	17.6		7.7	18.1			19.3			19.4	
Green Ext Time (p_c), s	0.0	9.3		1.0	10.1			2.0			2.0	
Intersection Summary												
HCM 2010 Ctrl Delay			17.5									
HCM 2010 LOS			B									
Notes												

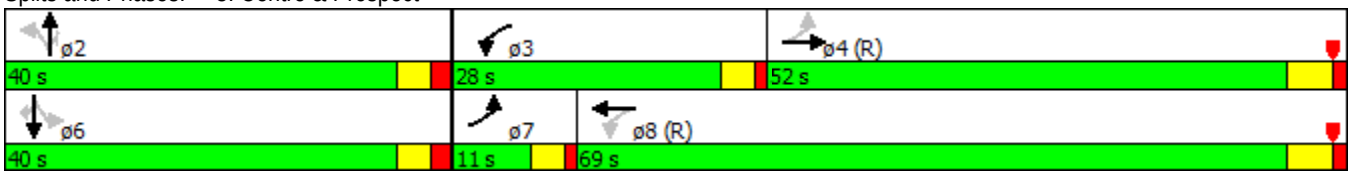
Phase Number	2	3	4	6	7	8
Movement	NBTL	WBL	EBTL	SBTL	EBL	WBTL
Lead/Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize		Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max
Maximum Split (s)	40	28	52	40	11	69
Maximum Split (%)	33.3%	23.3%	43.3%	33.3%	9.2%	57.5%
Minimum Split (s)	23	11	23.5	23	11	24.5
Yellow Time (s)	3	3	4	3	3	4
All-Red Time (s)	2	1	1.5	2	1	1.5
Minimum Initial (s)	7	4	10	7	4	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)	7		7	7		7
Flash Dont Walk (s)	11		11	11		12
Dual Entry	Yes	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	16	56	84	16	56	67
End Time (s)	56	84	16	56	67	16
Yield/Force Off (s)	51	80	10.5	51	63	10.5
Yield/Force Off 170(s)	40	80	119.5	40	63	118.5
Local Start Time (s)	0	40	68	0	40	51
Local Yield (s)	35	64	114.5	35	47	114.5
Local Yield 170(s)	24	64	103.5	24	47	102.5

Intersection Summary

Cycle Length	120	
Control Type	Actuated-Coordinated	
Natural Cycle	60	

Offset: 16 (13%), Referenced to phase 4:EBTL and 8:WBTL, Start of Red

Splits and Phases: 3: Centre & Prospect



Intersection	
Intersection Delay, s/veh	1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	13	0	5	3	1	12	1	667	57	30	255	4
Conflicting Peds, #/hr	8	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	75	-	-	75	-	-	0	-	-	0	-	-
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	15	0	6	4	1	14	1	785	67	35	300	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1209	1235	310	1205	1204	818	313	0	0	852	0	0
Stage 1	381	381	-	821	821	-	-	-	-	-	-	-
Stage 2	828	854	-	384	383	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	160	176	730	161	184	376	1247	-	-	787	-	-
Stage 1	641	613	-	369	389	-	-	-	-	-	-	-
Stage 2	365	375	-	639	612	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	147	167	726	154	175	376	1247	-	-	787	-	-
Mov Capacity-2 Maneuver	147	167	-	154	175	-	-	-	-	-	-	-
Stage 1	637	582	-	369	389	-	-	-	-	-	-	-
Stage 2	350	375	-	606	582	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	25.2	18.5	0	1
HCM LOS	D	C		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	1247	-	-	154	317	147	257	787	-	-
HCM Lane V/C Ratio	0.001	-	-	0.015	0.052	0.069	0.043	0.045	-	-
HCM Control Delay (s)	7.89	-	-	28.7	17	31.3	19.6	9.789	-	-
HCM Lane LOS	A			D	C	D	C	A		
HCM 95th %tile Q(veh)	0.003	-	-	0.046	0.164	0.221	0.133	0.141	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.850			0.860			0.988			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1478	0	1652	1495	0	2006	1840	0	2006	1859	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1478	0	1652	1495	0	2006	1840	0	2006	1859	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		315			317			771			2032	
Travel Time (s)		8.6			8.6			15.0			39.6	

Intersection Summary

Area Type: Other

Intersection	
Intersection Delay, s/veh	5.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	33	0	1	66	0	69	1	612	2	3	569	28
Conflicting Peds, #/hr	0	0	1	1	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	75	-	-	75	-	-	0	-	-	0	-	-
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	0	1	78	0	81	1	720	2	4	669	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1458	1419	686	1418	1433	722	701	0	0	723	0	0
Stage 1	693	693	-	725	725	-	-	-	-	-	-	-
Stage 2	765	726	-	693	708	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	107	137	447	114	134	427	896	-	-	879	-	-
Stage 1	434	445	-	416	430	-	-	-	-	-	-	-
Stage 2	396	430	-	434	438	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	86	136	447	113	133	427	896	-	-	879	-	-
Mov Capacity-2 Maneuver	86	136	-	113	133	-	-	-	-	-	-	-
Stage 1	433	443	-	415	429	-	-	-	-	-	-	-
Stage 2	320	429	-	431	436	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	59.4	39.5	0	0
HCM LOS	F	E		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	896	-	-	113	255	86	92	879	-	-
HCM Lane V/C Ratio	0.001	-	-	0.458	0.42	0.301	0.153	0.004	-	-
HCM Control Delay (s)	9.023	-	-	61.3	29	64	51.1	9.112	-	-
HCM Lane LOS	A			F	D	F	F	A		
HCM 95th %tile Q(veh)	0.004	-	-	2.009	1.963	1.124	0.516	0.012	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.850			0.850						0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1478	0	1652	1478	0	2006	1863	0	2006	1852	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1478	0	1652	1478	0	2006	1863	0	2006	1852	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		315			317			771			2032	
Travel Time (s)		8.6			8.6			15.0			39.6	

Intersection Summary

Area Type: Other

Intersection	
Intersection Delay, s/veh	3.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	32	0	17	8	0	45	3	644	115	97	166	5
Conflicting Peds, #/hr	4	0	2	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	0	-	-	0	-	-	0	-	-	0	-	-
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	38	0	20	9	0	53	4	758	135	114	195	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1289	1330	202	1272	1265	825	205	0	0	893	0	0
Stage 1	430	430	-	832	832	-	-	-	-	-	-	-
Stage 2	859	900	-	440	433	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	141	155	839	144	169	372	1366	-	-	759	-	-
Stage 1	603	583	-	363	384	-	-	-	-	-	-	-
Stage 2	351	357	-	596	582	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	106	131	837	124	143	372	1366	-	-	759	-	-
Mov Capacity-2 Maneuver	106	131	-	124	143	-	-	-	-	-	-	-
Stage 1	600	494	-	362	383	-	-	-	-	-	-	-
Stage 2	300	356	-	494	493	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	34.6	19.7	0	3.8
HCM LOS	D	C		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	1366	-	-	124	335	106	229	759	-	-
HCM Lane V/C Ratio	0.003	-	-	0.051	0.167	0.237	0.142	0.15	-	-
HCM Control Delay (s)	7.642	-	-	35.6	17.9	49.2	23.3	10.581	-	-
HCM Lane LOS	A			E	C	E	C	B		
HCM 95th %tile Q(veh)	0.008	-	-	0.158	0.593	0.858	0.487	0.527	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		75	0		75	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.850			0.850			0.977			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1478	0	1652	1478	0	2006	1820	0	2006	1855	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1478	0	1652	1478	0	2006	1820	0	2006	1855	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		302			263			348			771	
Travel Time (s)		8.2			7.2			6.8			15.0	

Intersection Summary

Area Type: Other

Intersection

Intersection Delay, s/veh	9.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	28	1	32	79	3	95	39	487	28	24	581	30
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	0	-	-	0	-	-	0	-	-	0	-	-
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	33	1	38	93	4	112	46	573	33	28	684	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1497	1456	701	1458	1456	589	719	0	0	606	0	0
Stage 1	758	758	-	681	681	-	-	-	-	-	-	-
Stage 2	739	698	-	777	775	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	101	130	439	107	130	508	882	-	-	972	-	-
Stage 1	399	415	-	440	450	-	-	-	-	-	-	-
Stage 2	409	442	-	390	408	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	72	120	439	# 91	120	508	882	-	-	972	-	-
Mov Capacity-2 Maneuver	72	120	-	# 91	120	-	-	-	-	-	-	-
Stage 1	378	403	-	417	427	-	-	-	-	-	-	-
Stage 2	300	419	-	345	396	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	43.1	58	0.7	0.3
HCM LOS	E	F		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	882	-	-	91	248	72	201	972	-	-
HCM Lane V/C Ratio	0.052	-	-	0.681	0.59	0.305	0.248	0.029	-	-
HCM Control Delay (s)	9.305	-	-	104.2	38.4	75.6	28.7	8.814	-	-
HCM Lane LOS	A			F	E	F	D	A		
HCM 95th %tile Q(veh)	0.164	-	-	3.336	3.403	1.117	0.941	0.09	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		75	0		30	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.854			0.855			0.992			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1485	0	1652	1486	0	2006	1848	0	2006	1850	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1485	0	1652	1486	0	2006	1848	0	2006	1850	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		302			263			348			771	
Travel Time (s)		8.2			7.2			6.8			15.0	

Intersection Summary

Area Type: Other

APPENDIX E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	101	799	114	286	604	160	68	221	214	28	63	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.94		0.76	0.97		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	193.7	186.3
Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Cap, veh/h	502	1863	248	456	1769	444	292	387	251	151	403	329
Arrive On Green	0.06	0.58	0.57	0.10	0.62	0.61	0.21	0.21	0.21	0.21	0.21	0.00
Sat Flow, veh/h	1774	3215	427	1774	2858	718	1239	1863	1209	973	1937	1583
Grp Volume(v), veh/h	119	545	520	321	433	398	80	260	115	33	74	0
Grp Sat Flow(s),veh/h/ln	1774	1863	1780	1774	1863	1713	1239	1863	1209	973	1937	1583
Q Serve(g_s), s	2.6	17.0	17.1	5.7	11.3	11.4	5.6	12.6	8.1	3.2	3.1	0.0
Cycle Q Clear(g_c), s	2.6	17.0	17.1	5.7	11.3	11.4	8.6	12.6	8.1	15.7	3.1	0.0
Prop In Lane	1.00		0.24	1.00		0.42	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	502	1079	1031	456	1153	1060	292	387	251	151	403	329
V/C Ratio(X)	0.24	0.50	0.50	0.70	0.38	0.38	0.27	0.67	0.46	0.22	0.18	0.00
Avail Cap(c_a), veh/h	549	1079	1031	559	1153	1060	415	572	371	247	594	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.3	12.2	12.3	11.1	9.2	9.4	35.4	35.7	33.9	42.9	31.9	0.0
Incr Delay (d2), s/veh	0.2	1.7	1.8	3.0	0.9	1.0	0.5	2.0	1.3	0.7	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.0	7.5	7.2	3.5	4.7	4.4	1.7	6.0	2.5	0.8	1.5	0.0
Lane Grp Delay (d), s/veh	7.6	13.9	14.1	14.1	10.2	10.4	35.9	37.7	35.2	43.6	32.1	0.0
Lane Grp LOS	A	B	B	B	B	B	D	D	D	D	C	
Approach Vol, veh/h		1184			1152			455			107	
Approach Delay, s/veh		13.3			11.4			36.7			35.7	
Approach LOS		B			B			D			D	
Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	8.4	61.1		12.3	65.0			24.3			24.3	
Change Period (Y+Rc), s	4.0	5.5		4.0	5.5			5.0			5.0	
Max Green Setting (Gmax), s	7.0	52.5		14.0	59.5			29.0			29.0	
Max Q Clear Time (g_c+I1), s	4.6	19.1		7.7	13.4			14.6			17.7	
Green Ext Time (p_c), s	0.1	8.5		0.6	8.8			1.8			1.6	
Intersection Summary												
HCM 2010 Ctrl Delay			17.1									
HCM 2010 LOS			B									
Notes												

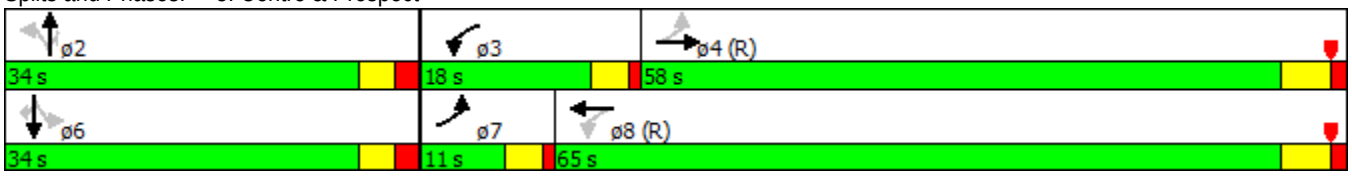
Phase Number	2	3	4	6	7	8
Movement	NBTL	WBL	EBTL	SBTL	EBL	WBTL
Lead/Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize		Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max
Maximum Split (s)	34	18	58	34	11	65
Maximum Split (%)	30.9%	16.4%	52.7%	30.9%	10.0%	59.1%
Minimum Split (s)	23	11	23.5	23	11	24.5
Yellow Time (s)	3	3	4	3	3	4
All-Red Time (s)	2	1	1.5	2	1	1.5
Minimum Initial (s)	7	4	10	7	4	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)	7		7	7		7
Flash Dont Walk (s)	11		11	11		12
Dual Entry	Yes	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	79	3	21	79	3	14
End Time (s)	3	21	79	3	14	79
Yield/Force Off (s)	108	17	73.5	108	10	73.5
Yield/Force Off 170(s)	97	17	62.5	97	10	61.5
Local Start Time (s)	0	34	52	0	34	45
Local Yield (s)	29	48	104.5	29	41	104.5
Local Yield 170(s)	18	48	93.5	18	41	92.5

Intersection Summary

Cycle Length	110	
Control Type	Actuated-Coordinated	
Natural Cycle	65	

Offset: 79 (72%), Referenced to phase 4:EBTL and 8:WBTL, Start of Red

Splits and Phases: 3: Centre & Prospect



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	29	849	91	319	1006	55	111	104	336	142	190	98
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.95		0.86	0.94		0.78
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	186.3	186.3	190.0	186.3	186.3	190.0	186.3	186.3	186.3	186.3	193.7	186.3
Lanes	1	2	0	1	2	0	1	1	1	1	1	1
Cap, veh/h	355	1835	187	466	2170	115	233	442	325	283	460	294
Arrive On Green	0.03	0.55	0.54	0.10	0.62	0.61	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	3320	338	1774	3502	185	1097	1863	1368	1128	1937	1238
Grp Volume(v), veh/h	31	502	483	336	563	552	117	109	71	149	200	21
Grp Sat Flow(s),veh/h/ln	1774	1863	1796	1774	1863	1824	1097	1863	1368	1128	1937	1238
Q Serve(g_s), s	0.8	17.1	17.2	6.4	17.1	17.2	10.6	4.9	4.3	12.8	9.1	1.4
Cycle Q Clear(g_c), s	0.8	17.1	17.2	6.4	17.1	17.2	19.7	4.9	4.3	17.8	9.1	1.4
Prop In Lane	1.00		0.19	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	1030	993	466	1155	1130	233	442	325	283	460	294
V/C Ratio(X)	0.09	0.49	0.49	0.72	0.49	0.49	0.50	0.25	0.22	0.53	0.44	0.07
Avail Cap(c_a), veh/h	434	1030	993	716	1155	1130	352	644	473	406	670	428
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	14.2	14.3	12.4	10.8	10.8	42.1	32.1	31.9	39.3	33.8	30.8
Incr Delay (d2), s/veh	0.1	1.6	1.7	2.1	1.5	1.5	1.7	0.3	0.3	1.5	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.3	7.7	7.5	4.3	7.4	7.2	3.0	2.3	1.5	3.8	4.6	0.4
Lane Grp Delay (d), s/veh	9.8	15.9	16.0	14.6	12.3	12.3	43.8	32.4	32.3	40.9	34.4	30.9
Lane Grp LOS	A	B	B	B	B	B	D	C	C	D	C	C
Approach Vol, veh/h		1016			1451			297			370	
Approach Delay, s/veh		15.8			12.8			36.9			36.8	
Approach LOS		B			B			D			D	
Timer												
Assigned Phs	7	4		3	8			2			6	
Phs Duration (G+Y+Rc), s	6.4	62.0		13.3	69.0			28.7			28.7	
Change Period (Y+Rc), s	4.0	5.5		4.0	5.5			5.0			5.0	
Max Green Setting (Gmax), s	7.0	46.5		24.0	63.5			35.0			35.0	
Max Q Clear Time (g_c+I1), s	2.8	19.2		8.4	19.2			21.7			19.8	
Green Ext Time (p_c), s	0.0	9.3		1.0	10.2			2.0			2.1	
Intersection Summary												
HCM 2010 Ctrl Delay			18.9									
HCM 2010 LOS			B									
Notes												

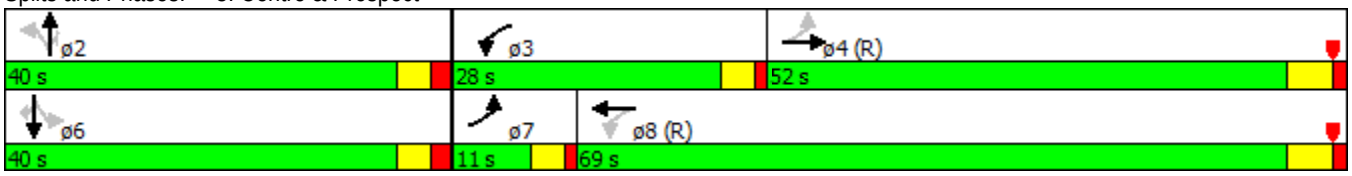
Phase Number	2	3	4	6	7	8
Movement	NBTL	WBL	EBTL	SBTL	EBL	WBTL
Lead/Lag		Lead	Lag		Lead	Lag
Lead-Lag Optimize		Yes	Yes		Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max
Maximum Split (s)	40	28	52	40	11	69
Maximum Split (%)	33.3%	23.3%	43.3%	33.3%	9.2%	57.5%
Minimum Split (s)	23	11	23.5	23	11	24.5
Yellow Time (s)	3	3	4	3	3	4
All-Red Time (s)	2	1	1.5	2	1	1.5
Minimum Initial (s)	7	4	10	7	4	10
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)	7		7	7		7
Flash Dont Walk (s)	11		11	11		12
Dual Entry	Yes	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	16	56	84	16	56	67
End Time (s)	56	84	16	56	67	16
Yield/Force Off (s)	51	80	10.5	51	63	10.5
Yield/Force Off 170(s)	40	80	119.5	40	63	118.5
Local Start Time (s)	0	40	68	0	40	51
Local Yield (s)	35	64	114.5	35	47	114.5
Local Yield 170(s)	24	64	103.5	24	47	102.5

Intersection Summary

Cycle Length	120	
Control Type	Actuated-Coordinated	
Natural Cycle	65	

Offset: 16 (13%), Referenced to phase 4:EBTL and 8:WBTL, Start of Red

Splits and Phases: 3: Centre & Prospect



Intersection

Intersection Delay, s/veh	2.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	48	0	13	3	1	12	11	667	57	30	255	42
Conflicting Peds, #/hr	8	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	75	-	-	75	-	-	0	-	-	0	-	-
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	56	0	15	4	1	14	13	785	67	35	300	49

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1255	1281	333	1255	1272	818	357	0	0	852	0	0
Stage 1	403	403	-	844	844	-	-	-	-	-	-	-
Stage 2	852	878	-	411	428	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	148	166	709	148	168	376	1202	-	-	787	-	-
Stage 1	624	600	-	358	379	-	-	-	-	-	-	-
Stage 2	354	366	-	618	585	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	135	156	705	139	158	376	1202	-	-	787	-	-
Mov Capacity-2 Maneuver	135	156	-	139	158	-	-	-	-	-	-	-
Stage 1	614	570	-	354	375	-	-	-	-	-	-	-
Stage 2	336	362	-	578	556	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	33.9	19.1	0.1	0.9
HCM LOS	D	C		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	1202	-	-	139	308	135	212	787	-	-
HCM Lane V/C Ratio	0.011	-	-	0.017	0.053	0.279	0.161	0.045	-	-
HCM Control Delay (s)	8.028	-	-	31.3	17.3	41.7	25.2	9.789	-	-
HCM Lane LOS	A			D	C	E	D	A		
HCM 95th %tile Q(veh)	0.033	-	-	0.052	0.169	1.067	0.561	0.141	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.850			0.860			0.988			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1478	0	1652	1495	0	2006	1840	0	2006	1824	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1478	0	1652	1495	0	2006	1840	0	2006	1824	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		315			317			771			2032	
Travel Time (s)		8.6			8.6			15.0			39.6	

Intersection Summary

Area Type: Other

Intersection

Intersection Delay, s/veh	9.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	72	0	11	66	0	69	10	612	2	3	569	63
Conflicting Peds, #/hr	0	0	1	1	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	75	-	-	75	-	-	0	-	-	0	-	-
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	0	13	78	0	81	12	720	2	4	669	68

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1498	1459	705	1464	1492	722	739	0	0	723	0	0
Stage 1	712	712	-	746	746	-	-	-	-	-	-	-
Stage 2	786	747	-	718	746	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	101	129	436	106	123	427	867	-	-	879	-	-
Stage 1	423	436	-	405	421	-	-	-	-	-	-	-
Stage 2	385	420	-	420	421	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	# 81	126	436	101	121	427	867	-	-	879	-	-
Mov Capacity-2 Maneuver	# 81	126	-	101	121	-	-	-	-	-	-	-
Stage 1	417	434	-	399	415	-	-	-	-	-	-	-
Stage 2	307	414	-	406	419	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	92	45.1	0.1	0
HCM LOS	F	E		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	867	-	-	101	240	81	109	879	-	-
HCM Lane V/C Ratio	0.014	-	-	0.513	0.446	0.697	0.378	0.004	-	-
HCM Control Delay (s)	9.209	-	-	73.3	31.5	117.6	56.8	9.112	-	-
HCM Lane LOS	A			F	D	F	F	A		
HCM 95th %tile Q(veh)	0.041	-	-	2.297	2.14	3.317	1.541	0.012	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.850			0.850						0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1478	0	1652	1478	0	2006	1863	0	2006	1837	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1478	0	1652	1478	0	2006	1863	0	2006	1837	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		315			317			771			2032	
Travel Time (s)		8.6			8.6			15.0			39.6	

Intersection Summary

Area Type: Other

Intersection	
Intersection Delay, s/veh	3.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	32	0	23	8	0	45	9	654	115	97	174	5
Conflicting Peds, #/hr	4	0	2	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	0	-	-	0	-	-	0	-	-	0	-	-
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	38	0	27	9	0	53	11	769	135	114	205	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1325	1366	212	1311	1301	837	215	0	0	905	0	0
Stage 1	440	440	-	858	858	-	-	-	-	-	-	-
Stage 2	885	926	-	453	443	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	133	147	828	136	161	367	1355	-	-	752	-	-
Stage 1	596	578	-	352	374	-	-	-	-	-	-	-
Stage 2	340	347	-	586	576	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	100	123	826	116	135	367	1355	-	-	752	-	-
Mov Capacity-2 Maneuver	100	123	-	116	135	-	-	-	-	-	-	-
Stage 1	590	489	-	349	371	-	-	-	-	-	-	-
Stage 2	289	344	-	481	487	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	34	20.3	0.1	3.7
HCM LOS	D	C		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	1355	-	-	116	327	100	250	752	-	-
HCM Lane V/C Ratio	0.008	-	-	0.054	0.171	0.251	0.158	0.152	-	-
HCM Control Delay (s)	7.678	-	-	37.8	18.3	52.7	22.1	10.642	-	-
HCM Lane LOS	A			E	C	F	C	B		
HCM 95th %tile Q(veh)	0.024	-	-	0.169	0.61	0.916	0.553	0.533	-	-

Notes

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

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		75	0		75	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.850			0.850			0.978			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1478	0	1652	1478	0	2006	1822	0	2006	1855	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1478	0	1652	1478	0	2006	1822	0	2006	1855	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		302			263			348			771	
Travel Time (s)		8.2			7.2			6.8			15.0	

Intersection Summary

Area Type: Other

Intersection

Intersection Delay, s/veh	10.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	28	1	38	79	3	95	45	496	28	24	591	30
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	0	-	-	0	-	-	0	-	-	0	-	-
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	33	1	45	93	4	112	53	584	33	28	695	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1533	1491	713	1498	1493	600	731	0	0	616	0	0
Stage 1	769	769	-	706	706	-	-	-	-	-	-	-
Stage 2	764	722	-	792	787	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	95	124	432	101	123	501	873	-	-	964	-	-
Stage 1	394	411	-	427	439	-	-	-	-	-	-	-
Stage 2	396	431	-	382	403	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	67	113	432	# 84	112	501	873	-	-	964	-	-
Mov Capacity-2 Maneuver	67	113	-	# 84	112	-	-	-	-	-	-	-
Stage 1	370	399	-	401	412	-	-	-	-	-	-	-
Stage 2	287	405	-	332	391	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	44.2	66.2	0.7	0.3
HCM LOS	E	F		

Minor Lane / Major Mvmt	NEL	NET	NER	NWLn1	NWLn2	SELn1	SELn2	SWL	SWT	SWR
Capacity (veh/h)	873	-	-	84	235	67	205	964	-	-
HCM Lane V/C Ratio	0.061	-	-	0.738	0.622	0.328	0.277	0.029	-	-
HCM Control Delay (s)	9.39	-	-	121.9	42.6	83	29.2	8.847	-	-
HCM Lane LOS	A			F	E	F	D	A		
HCM 95th %tile Q(veh)	0.193	-	-	3.636	3.707	1.205	1.088	0.09	-	-

Notes

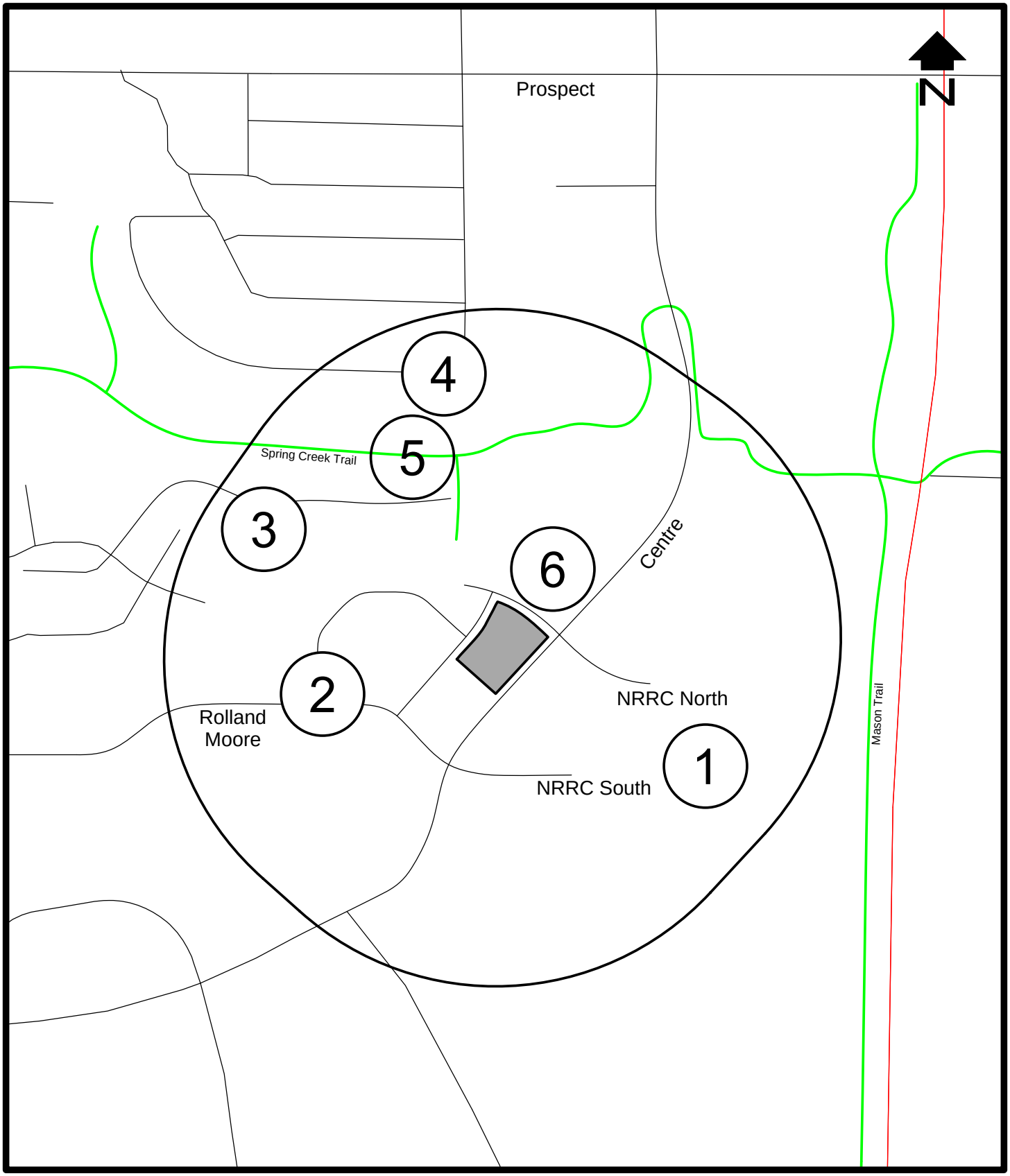
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	16	12	12	16	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		75	0		30	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.853			0.855			0.992			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1652	1483	0	1652	1486	0	2006	1848	0	2006	1850	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1652	1483	0	1652	1486	0	2006	1848	0	2006	1850	0
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		302			263			348			771	
Travel Time (s)		8.2			7.2			6.8			15.0	

Intersection Summary

Area Type: Other

APPENDIX F



SCALE: 1"=600'

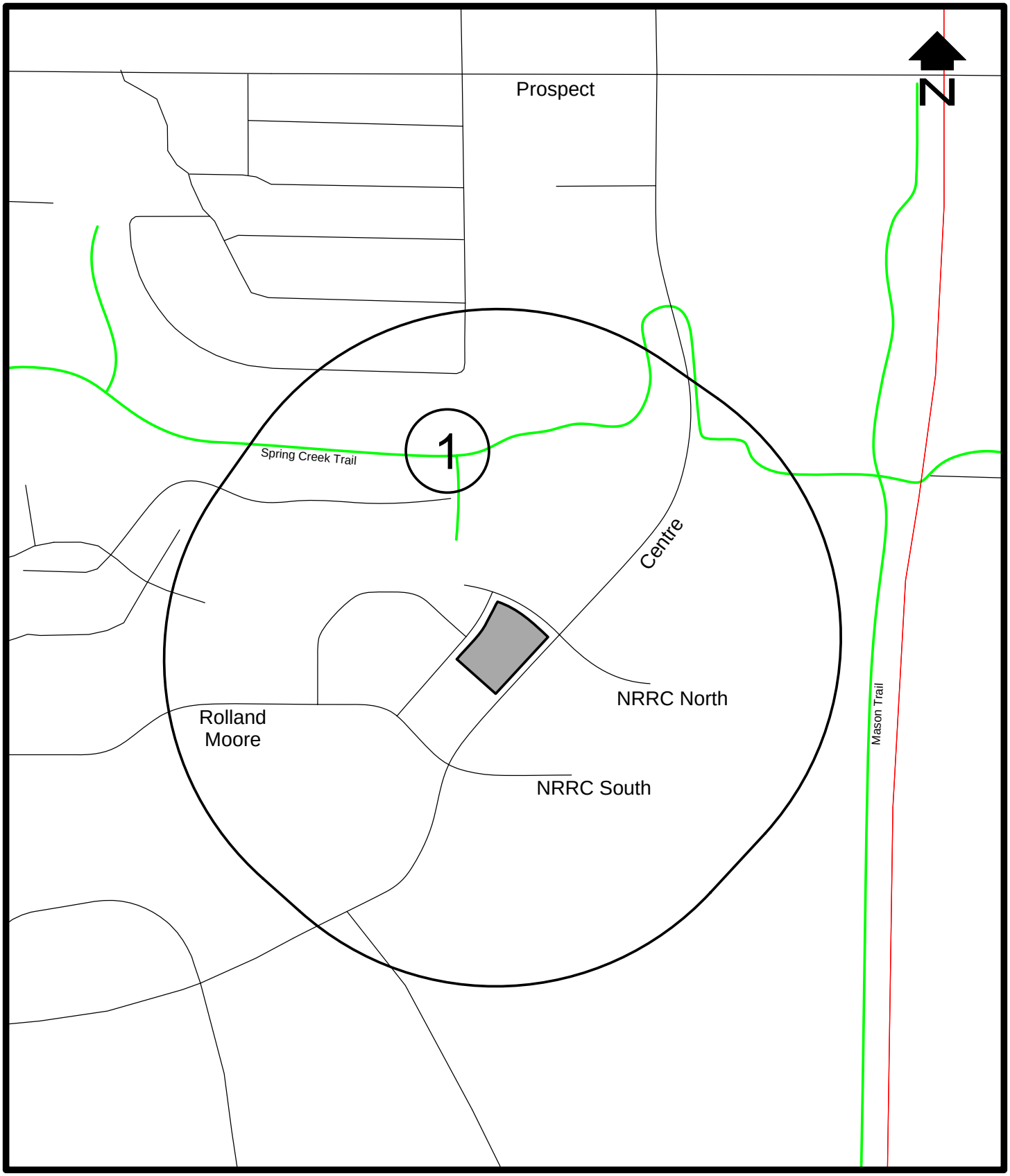
PEDESTRIAN INFLUENCE AREA

DELICH ASSOCIATES

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	NRRC Campus	Commercial	Minimum	C	C	C	C	C
			Actual	A	A	A	B	A
			Proposed	A	A	A	B	A
2	The Grove	Residential	Minimum	C	C	C	C	C
			Actual	A	A	A	B	A
			Proposed	A	A	A	B	A
3	Neighborhood to the northwest	Residential	Minimum	C	C	C	C	C
			Actual	B	B	A	B	B
			Proposed	B	B	A	B	B
4	Neighborhood to the north	Residential	Minimum	C	C	C	C	C
			Actual	D	C	A	C	B
			Proposed	D	C	A	C	B
5	The Gardens at Spring Creek	Commercial	Minimum	C	C	C	C	C
			Actual	A	A	A	A	A
			Proposed	A	A	A	A	A
6			Minimum					
			Actual					
			Proposed					
7			Minimum					
			Actual					
			Proposed					
8			Minimum					
			Actual					
			Proposed					
9			Minimum					
			Actual					
			Proposed					
10			Minimum					
			Actual					
			Proposed					



SCALE: 1"=600'

BICYCLE INFLUENCE AREA

DELICH ASSOCIATES

Bicycle LOS Worksheet

				Level of Service – Connectivity		
				Minimum	Actual	Proposed
		Base Connectivity:		C	B	B
	Specific connections to priority sites:					
	Description of Applicable Destination Area Within 1320'	Destination Area Classification				
1	Spring Creek Trail	Recreation		C	A	A
2						
3						
4						

Ecological Characterization Study Review

Project Name: Sunshine House **Project Planner:** Courtney Levingston

ECS Consultant: Cedar Creek Associates

Review Date: December 18, 2013

Project Description: This is a request for a consolidated Project Development Plan / Final Development Plan for the proposed development to construct a child care facility on 1.95 acres on the site located in Tract A of the Grove at Fort Collins, at the southwest corner of Centre Avenue and Botanical Lane. The new center will provide a program of play and learning activities for children ages six weeks to 12 years. The site is in the E zoning district.

Environmental Planner Summary. The Sunshine House site contained approximately 200 square foot isolated, wetland drainage in the southeast corner of the parcel. The applicants have committed to mitigating for this wetland by providing a fee in-lieu payment to the Gardens on Spring Creek. The Gardens on Spring Creek will add the additional square footage to their wetland enhancement adjacent to Spring Creek.

As this project proposes to mitigate for the isolated wetland in close proximity to Spring Creek, and the overall value of this small wetland will be enhanced due to the proximity with the creek's corridor, staff finds this project complies with Section 3.4.1 of the Land Use Code.

Ecological Characterization Study (ECS) Requirements and Evaluation – Section 3.4.1(D) of the Land Use Code				
	Yes	**No**	**N/A**	**Comments**
Is the project within 500' of a Natural Habitat or Feature[i]? If yes, which features?	þ	¨	¨	Yes, Spring Creek and the site contained an undelineated wetland drainage that was filled with the development of the Grove student housing project (see page 1 of the ECS). The wetland is less than 1/3 of an acre in size.
Is the wildlife use and value of the area described?	þ	¨	¨	Yes, due to prior site disturbance, the wildlife use of the property has largely been eliminated. Wildlife use in the area is to the northwest in the wetlands associated with the Grove and in the Spring Creek Corridor. According to the ECS (page 1), "Urban-adapted birds such as mourning dove and house finch may occasionally use the site for foraging for seeds. The single cottonwood tree on the project area may also be used for perching and foraging by urban-adapted songbirds. Bird nesting use of the tree is not likely because of its isolated location and lack of any surrounding natural habitats. No bird nests were located in the cottonwood tree during the October 4, 2013 field survey. Prior to clearing and regarding of the development site, Canada geese likely grazed the area occasionally and small mammals such as deer mouse and prairie vole probably foraged in the area."

Ecological Characterization Study (ECS) Requirements and Evaluation – Section 3.4.1(D) of the Land Use Code				
	Yes	**No**	**N/A**	**Comments**
Are there wetlands present? If yes, have the boundaries and functions been described?	þ	¨	¨	There was a small 200 sq. ft. drainage area that was not delineated as a part of the Grove project. According to the ECS, "The wetland vegetation community was dominated by herbaceous species including Baltic rush (*Juncus balticus*[1]), threesquare (*Schoenoplectus pungens*), and reed canarygrass (*Phalaris arundinacea*). A few coyote willows (*Salex exigua*) were also present. Open water within the channel, when present, was typically shallow and occurred as a result of precipitation and runoff from the area upslope to the south. Wildlife habitat value was limited to foraging and cover for small mammals such as deer mouse and prairie vole" (see page 2).
Are there any prominent views from or across the site?	¨	þ	¨	The ECS indicates there are no prominent views of natural features or other areas of scenic values (see page 2).
Are the pattern, species, and location of significant native trees and vegetation[ii] described?	þ	¨	¨	Yes, there is a single cottonwood tree on the site, which will be mitigated for as a part of the project (see pages 1-2).
Are the pattern, species, and location of significant non-native trees and vegetation described?	¨	¨	þ	There are no non-native trees or vegetation on the site.
Is a stream or perennial body of water present? If yes, is top of bank[iii] located?	¨	þ	¨	No, the only drainage was the wetland area described above.
Are Sensitive or Specially Valued Species[iv] present? If yes, are the areas of use identified?	¨	þ	¨	No, the ECS reports there is not suitable habitat for threatened, endangered, or sensitive species (see page 2).
Are other special habitat features[v] located on the site?	¨	þ	¨	The ECS indicates that past removal of any native habitat on the immediate site eliminated the potential for other special habitat features besides the cottonwood tree (see page 2).
Does the site contain wildlife movement corridors?	¨	þ	¨	No, although the ECS notes the corridor along the north boundary of the Grove development where a band of wetlands exists (see page 2).
Are the general ecological functions of the site described?	þ	¨	¨	Yes (covered throughout the report).

Ecological Characterization Study (ECS) Requirements and Evaluation – Section 3.4.1(D) of the Land Use Code				
	Yes	**No**	**N/A**	**Comments**
Are there any issues regarding development related timing that should be addressed?	þ	¨	¨	Yes. The timing of the removal of the site's tree should be conducted outside of the raptor and songbird nesting season (April 1 – July 31) or a survey should be conducted during that time to ensure no nesting activity is occurring (see page 2).
Are any measures needed to mitigate adverse impacts projected by the development?	þ	¨	¨	The wetland mitigation that will take place on the Gardens on Spring Creek will mitigate the adverse impacts of the project.

Glossary of Terms

[i] *Natural features* shall mean (a) natural springs, (b) areas of topography which, because of their steepness, erosion characteristics/geologic formations, high visibility from off-site locations and/or presence of rock outcroppings, and (c) view corridors which present vistas to mountains and foothills, water bodies, open spaces and other regions of principal environmental importance, provided that such natural features are either identified on the city's *Natural Habitats and Features Inventory Map*, or otherwise meet the definition of natural area as contained in this Article.

[ii] *Native vegetation* shall mean any plant identified in Fort Collins Native Plants: Plant Characteristics and Wildlife Value of Commercial Species, prepared by the City's Natural Resources Department, updated February 2003.

[iii] *Top of bank* shall mean the topographical break in slope between the bank and the surrounding terrain. When a break in slope cannot be found, the outer limits of riparian vegetation shall demark the top of bank.

[iv] *Sensitive or Specially Valued Species* are defined as the following species: Federally Threatened and Endangered Species; State of Colorado Threatened and Endangered Species; State of Colorado Species of Concern as identified in the document, Colorado's Natural Heritage: Rare and Imperiled Animals, Plants and Natural Communities, April 1996, Volume 2, No. 1, Animals and Plants of Special Concern and/or any other species identified as in need of protection in the City of Fort Collins Natural Areas Policy Plan (see Division 5 of the Land Use Code).

[v] *Special habitat features* shall mean specially valued and sensitive habitat features including key raptor habitat features, such as nest sites, night roosts and key feeding areas as identified by the Colorado Division of Wildlife or in the Fort Collins Natural Areas Policy Plan (NAPP); key production areas, wintering areas and migratory feeding areas for waterfowl; key use areas for wading birds and shorebirds; heron rookeries; key use areas for migrant songbirds; key nesting areas for grassland birds; fox and coyote dens; mule deer winter concentration areas as identified by the Colorado Division of Wildlife or NAPP; prairie dog colonies over fifty (50) acres in size as included on the Natural Areas Inventory Map; key areas for rare, migrant or resident butterflies as identified in the NAPP; areas of high terrestrial or aquatic insect diversity as identified in the NAPP; remnant native prairie habitat; mixed foothill shrubland; foothills ponderosa pine forest; plains cottonwood riparian woodlands; and any wetland greater than one-fourth (¼) acre in size.

CEDAR CREEK ASSOCIATES, INC.
916 Willshire Ave., Fort Collins, CO 80521 • (970) 493-4394

November 7, 2013

Michael “Bo” Brown
CSU/CSURF Real Estate Office
P.O. Box 483
Fort Collins, CO 80522

RE: Second Revision Ecological Characterization Study (ECS) Letter Report for the proposed Sunshine House Daycare development at the southwest corner of the old Rolland Moore Drive (to be renamed) and Centre Avenue (Tract A).

Bo:

This revised letter ECS Report is submitted in response to the City’s request for an ECS report for the proposed Sunshine House Daycare development on CSURF’s Tract A. This report supersedes and replaces the previous ECS Report submitted on September 30, 2013. The 1.9-acre development site is located between Centre Avenue and recently constructed Perennial Lane, immediately south of the old Rolland Moore Road (partial spur), which was renamed Perennial Lane. The current development proposal calls for the construction of a daycare building and associated facilities. The proposed development would provide daycare facilities for 152 children from infants to kindergarten age. Construction is proposed to begin in January 2014 and be completed by August 2014. The total area of development would include the entire 1.9-acre parcel. Ecological characteristics of the property were evaluated during a field review of the property on October 4, 2013.

The following provides a summary of ECS information required by Fort Collins Land Use Code under 3.4.1 (D) (1) items (a) through (k).

ECOLOGICAL STUDY CHARACTERIZATION CHECKLIST

(a & i) The proposed Sunshine House Daycare development site currently has very low ecological value and supports no natural habitat features. The majority of the property was previously disturbed for a sales office and associated parking for the Grove student housing project to the west. Previously the site supported non-native grassland used for hay production and a wetland drainage that carried surface runoff under Rolland Moore Drive and eventually into the Spring Creek drainage. The previous Grove associated developments on the parcel filled a small (200 square-foot) wetland drainage, immediately south of the former Rolland Moore Drive (now Perennial Lane), that was not included in the wetland mitigation area associated with the Grove development.

Currently, the Grove sales buildings and associated facilities have been removed, and the site has been graded to approximate original contours and straw mulched (see attached Photo 1). As a result the parcel currently provides minimal wildlife habitat value except for a single, multi-trunked (6 to 14 inches in diameter) eastern cottonwood (*Populus deltoides*) tree growing near the center of the property.

Wildlife habitat value on the property has basically been eliminated by past development, clearing of structures, and adjacent developments and roadways. Urban-adapted birds such as mourning dove and house finch may occasionally use the site for foraging for seeds. The single cottonwood tree on the project area may also be used for perching and foraging by urban-adapted songbirds. Bird nesting use of the tree is not likely because of its isolated location and lack of any surrounding natural habitats. No bird nests were located in the cottonwood tree during the October 4, 2013 field survey. Prior to clearing and regarding of the development site, Canada geese likely grazed the area occasionally and small mammals such as deer mouse and prairie vole probably foraged in the area.

(b) There are currently no wetlands on the property, but as indicated in the previous section, a small wetland drainage was filled by construction of the Grove sales office facilities. Based on Cedar Creek Associates, Inc. staff's previous knowledge of the project area, this wetland drainage consisted of a narrow, intermittent, and incised channel with adjacent wetland side slopes. This wetland/channel feature was approximately 20 feet long and was estimated to have an average width of approximately 10 feet (200 square feet total size). The wetland vegetation community was dominated by herbaceous species including Baltic rush (*Juncus balticus*[1]), threesquare (*Schoenoplectus pungens*), and reed canarygrass (*Phalaris arundinacea*). A few coyote willows (*Salex exigua*) were also present. Open water within the channel, when present, was typically shallow and occurred as a result of precipitation and runoff from the area upslope to the south. Wildlife habitat value was limited to foraging and cover for small mammals such as deer mouse and prairie vole.

The City of Fort Collins will require mitigation for the filled wetland channel as a requirement for development of the Sunshine House Daycare development (see the following Section k).

(c) The project area does not provide any prominent views of natural features or other areas of scenic value.

(d) As indicated under (a & i), native vegetation supported on the project area consists of a single eastern cottonwood tree that may be classified as significant by the City Forester. This isolated tree does provide some wildlife habitat value as a possible perching and foraging site for urban-adapted songbirds. If removal of the tree is required for project development, loss of the tree will need to be mitigated (see the following Section k).

(e) The one natural drainage that existed previously in the project area was removed by the previous sales office facilities associated with the Grove project.

(f) There is no suitable habitat for any threatened, endangered, or other sensitive species on or adjacent to the project area. No other sensitive or ecologically important species are likely to use the property since its surface has been disturbed and cleared and supports no native habitats.

(g) Past removal of native habitat has eliminated the potential for any special habitat features on the property other than the single eastern cottonwood.

(h) There are no wildlife movement corridors on the property, but the wetland drainage along the north boundary of the Grove development serves as a wildlife movement corridor to and from the Spring Creek drainage. Portions of this wetland drainage are within 500 feet of the Sunshine House development parcel.

(j) There is only one issue regarding the timing of property development and ecological features or wildlife use of the project area. If the development proposal includes removal of the eastern cottonwood on the property or if construction occurs near an occupied bird nest in this tree during the songbird nesting season (April through July), these activities could result in the loss or abandonment of a nest and would be in violation of the federal Migratory Bird Treaty Act. Bird nesting use of the tree is unlikely because of its isolated location and lack of any surrounding natural habitats, but the tree should be checked prior to removal during the nesting season to ensure lack of nesting activity.

(k) The primary mitigation measure associated with the current development proposal would be CSURF's commitment to provide mitigation for the previous loss of the small wetland drainage on the property. Wetland mitigation within the current Sunshine House development parcel is not feasible so the City of Fort Collins has agreed to permit CSURF to meet the wetland mitigation obligation for the Sunshine House parcel by assisting the nearby Gardens on Spring Creek facility in their planned expansion of an existing wetland area. The City of Fort Collins, Gardens on Spring Creek, and CSURF have agreed that CSURF will commit $5,000 in mitigation funds to the City of Fort Collins. These funds will be used for the design and construction of an additional 200

[1] Scientific nomenclature follows USDA, NRCS Plants Database. Available online at: http://plants.usda.gov/java/

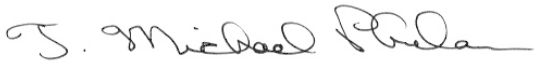
square-foot expansion of the Gardens on Spring Creek's planned enlargement of its existing wetland, thereby mitigating the previous loss of wetlands on the Sunshine House Daycare development parcel.

Since the entire project area has been previously developed and has now been cleared, project development would have no impact on natural habitats or important habitat features, other than the one existing cottonwood tree on the property. The City Forester may classify this tree as significant. The tree may also provide some perching, foraging, and possible nesting habitat for urban-adapted songbird species. If removal of this tree is required for project development, appropriate plantings of landscape trees should be included with project development to mitigate the loss of a possible significant tree and its habitat value for urban-adapted songbirds.

Because tree removal or construction near trees during the nesting season could result in the loss or abandonment of a nest, it is recommended that tree removal or construction near the tree occur outside of the nesting season (April 1 – July 31), or the tree be surveyed to ensure lack of nesting prior to removal or construction activities during the nesting season. This mitigation recommendation would preclude the possible incidental take or disturbance of an active songbird nest.

Bo, if you have any questions or require additional information regarding my evaluation, please give me a call.

Sincerely,
CEDAR CREEK ASSOCIATES, INC.



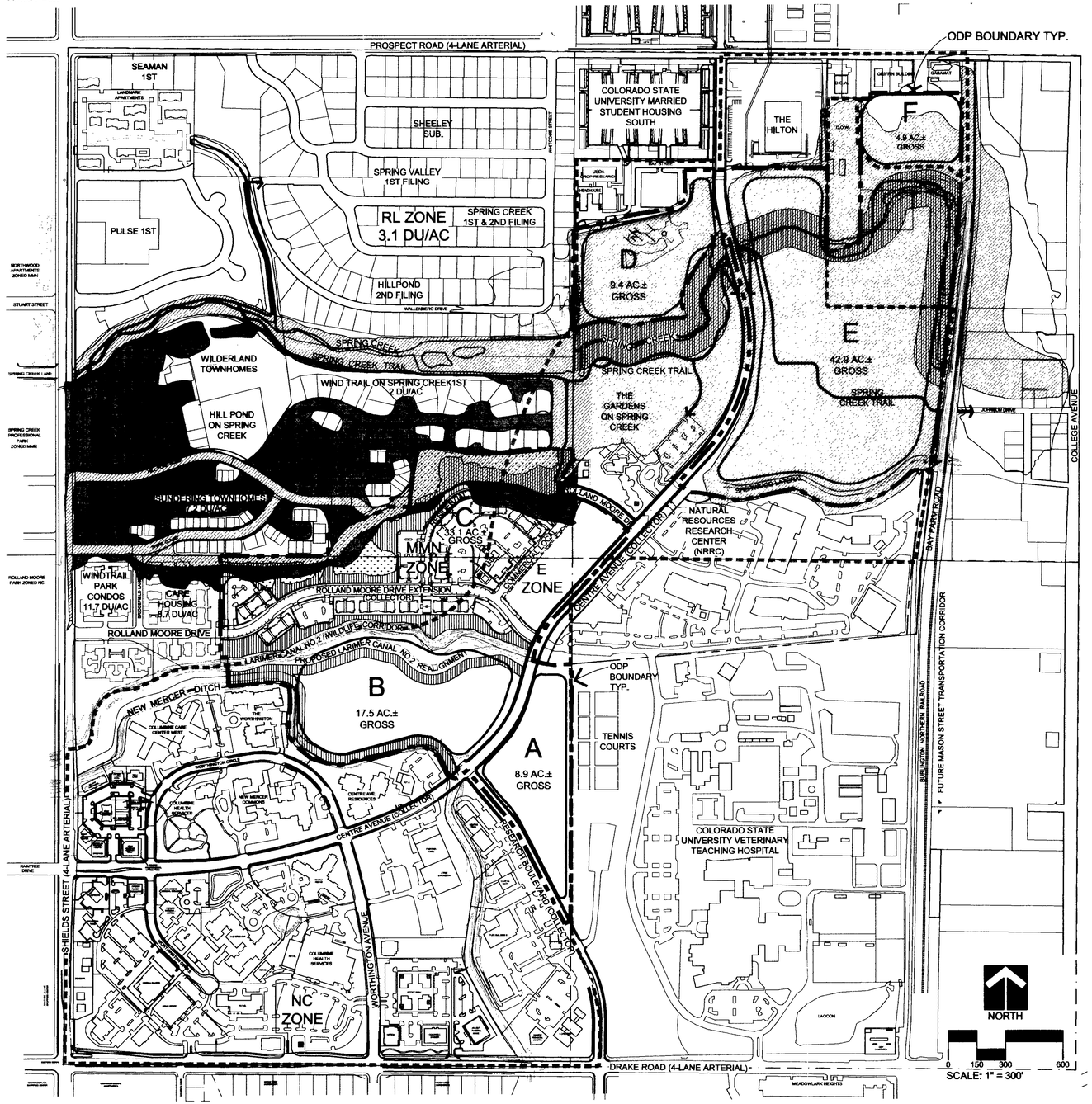
T. Michael Phelan
Principal
Senior Wildlife Biologist

Photo 1. View of Sunshine House Daycare Development Parcel. (View is from northwest property corner looking southeast. Single cottonwood tree on site is in center of photo.)

25-M

OFFICIAL DEVELOPMENT PLAN MAP

SCALE: 1" = 300'



LEGEND

- FEMA–REGULATORY SPRING CREEK FLOODWAY
- FEMA–REGULATORY 100–YEAR SPRING CREEK FLOODPLAIN
- DELINEATED WETLAND
- NATURAL HABITATS BUFFER ZONE (GENERAL AREA)
- ZONING DISTRICT BOUNDARY
- OVERALL DEVELOPMENT PLAN BOUNDARY

LAND USE BREAKDOWN

PARCEL	ZONE DISTRICT	APPROXIMATE GROSS AREA
A	E	8.9 AC +/-
B	E	17.5 AC +/-
C	MMN	20.2 AC +/-
C	E	12.9 AC +/-
D	E	9.4 AC +/-
E	E	42.9 AC +/-
F	E	4.9 AC +/-
	TOTAL:	116.7 AC +/-

LEGAL DESCRIPTION

A PARCEL DESCRIBED AS PARCEL A COMPRISED OF 8.9 ACRES, LOCATED ALONG THE EAST SIDE OF CENTRE AVENUE IN THE SOUTHWEST 1/4 OF SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO.

A PARCEL DESCRIBED AS PARCEL B COMPRISED OF 17.5 ACRES, LOCATED ALONG THE WEST SIDE OF CENTRE AVENUE IN THE SOUTHWEST 1/4 OF SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO.

A PARCEL DESCRIBED AS PARCEL C COMPRISED OF 33.1 ACRES, LOCATED ALONG THE WEST SIDE OF CENTRE AVENUE, IN PRINCIPALLY THE WEST 1/2 OF SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO.

A PARCEL DESCRIBED AS PARCEL D COMPRISED OF 9.4 ACRES, LOCATED ALONG THE WEST SIDE OF CENTRE AVENUE IN THE NORTHEAST 1/4 OF SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO.

A PARCEL DESCRIBED AS PARCEL E COMPRISED OF 42.9 ACRES, LOCATED ALONG THE EAST SIDE OF CENTRE AVENUE IN THE NORTHEAST 1/4 OF SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO.

A PARCEL DESCRIBED AS PARCEL F COMPRISED OF 4.9 ACRES, LOCATED ALONG THE WEST SIDE OF THE BURLINGTON NORTHERN RAILROAD RIGHT-OF-WAY IN THE NORTHEAST 1/4 OF SECTION 23, TOWNSHIP 7 NORTH, RANGE 69 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO.

GENERAL NOTES

1. THE FOLLOWING NOTES APPLY TO THOSE ODP PARCELS WITHIN THE FLOODWAY:
   - A. ANY PARKING PROPOSED FOR AREAS IN THE FLOODWAY MUST BE CERTIFIED TO CAUSE NO-RISE IN THE BASE FLOOD ELEVATION AND OBTAIN A FLOOD PLAIN USE PERMIT.
   - B. TEMPORARY OR PERMANENT STORAGE OF MATERIALS IS NOT ALLOWED IN THE FLOODWAY. THIS INCLUDES CONSTRUCTION MATERIALS, FLEET VEHICLES, STORAGE RELATED TO A BUSINESS, ETC.
   - C. ANY ITEMS SUCH AS PICNIC TABLES, BLEACHERS, ETC. MUST BE ANCHORED SO AS NOT TO BE MOVED DURING A FLOOD AND CERTIFIED TO CAUSE NO-RISE ON THE BASE FLOOD ELEVATION.
   - D. ANY CHANGE TO THE FEMA FLOODWAY WILL REQUIRE A CONDITIONAL LETTER OF MAP REVISION (CLOMR) AND A LETTER OF MAP REVISION (LOMR).
   - E. ALL DEVELOPMENT WITHIN THE FEMA DESIGNATED FLOODPLAIN OR FLOODWAY MUST COMPLY WITH ALL FLOODPLAIN REGULATIONS IN CHAPTER 10 OF CITY CODE.
2. ALL DEVELOPMENT MUST COMPLY WITH THE APPLICABLE STANDARDS IN ARTICLE 4 OF THE LAND USE CODE. ALLOWED LAND USES IN EACH PARCEL ARE PER THE E ZONE DISTRICT AND THE MMN ZONE DISTRICT AS APPLICABLE.
3. THE LAND USE BREAKDOWN FOR LAND IN THE E ZONE WITHIN THIS OVERALL DEVELOPMENT PLAN SHALL BE 75% PRIMARY AND 25% SECONDARY AS ESTABLISHED IN THE LAND USE CODE; HOWEVER, LAND USES PROPOSED WITHIN THE SPRING CREEK 100-YEAR FLOODPLAIN SHALL NOT BE CONSIDERED SECONDARY LAND USES. THE LAND USE BREAKDOWN SHALL BE AS FOLLOWS UNLESS A MODIFICATION IS REQUESTED:

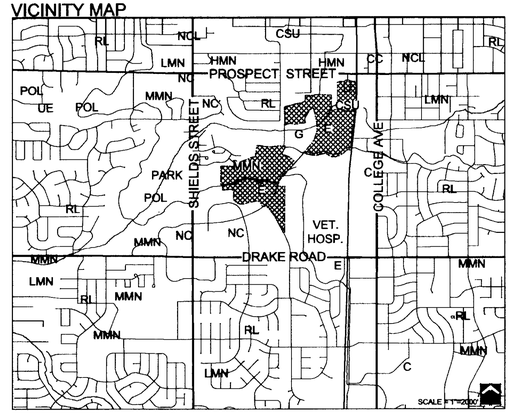
PRIMARY LAND USES (E ZONE)	75% OR APPROXIMATELY 72.4 ACRES
SECONDARY LAND USES (E ZONE)	25% OR APPROXIMATELY 24.1 ACRES
TOTAL LAND AREA (E ZONE)	100 % OR APPROXIMATELY 96.5 ACRES

4. THE CSURF CENTRE FOR ADVANCED TECHNOLOGY OVERALL DEVELOPMENT PLAN IS PLANNED TO BE MIXED USE DEVELOPMENT, THAT MAY INCLUDE STUDENT HOUSING, OFFICES, PARKS, OPEN SPACE AND TRAILS. THE LAND USE DESIGNATIONS DEPICTED ON THIS PLAN ARE BASED UPON THE BEST ESTIMATE OF THE DEVELOPMENT AT THIS TIME. AS CHANGES OCCUR IN THE REQUIREMENTS OF THE OVERALL DEVELOPMENT, IT MAY BE NECESSARY TO MODIFY THE OVERALL DEVELOPMENT PLAN.
5. MAXIMUM FLOOR AREA RATIO (BUILDING SQUARE FOOTAGE DIVIDED BY LAND AREA SQUARE FOOTAGE) FOR ALL PARCELS NOT TO EXCEED 0.37.
6. COMMON OPEN SPACE AREAS AND STREETSCAPES WILL BE MAINTAINED BY THE OWNER/DEVELOPER OR A HOMEOWNERS' ASSOCIATION (HOA) UNLESS OTHERWISE ACCEPTED BY THE CITY OF FORT COLLINS FOR MAINTENANCE. HOMEOWNERS' ASSOCIATION IS RESPONSIBLE FOR SNOW REMOVAL ON THE SIDEWALKS AND ALL BICYCLE/PEDESTRIAN TRAILS. CITY WILL NOT TAKE ON MAINTENANCE OF STREETSCAPE OR SIDEWALK PER CITY CODE. THE DEVELOPER/OWNER OR HOA WILL MAINTAIN ALL STREETSCAPES AND SIDEWALKS.
7. ALL PUBLIC STREETS WILL BE DESIGNED TO MEET OR EXCEED CITY STANDARDS IN EFFECT AT THE TIME OF APPLICATION FOR A PROJECT DEVELOPMENT PLAN PER THE CITY LAND USE CODE AND THE LARIMER COUNTY URBAN AREA STREET STANDARDS.
8. THE PURPOSE OF THE OVERALL DEVELOPMENT PLAN IS TO ESTABLISH GENERAL PLANNING AND DEVELOPMENT CONTROL PARAMETERS FOR PROJECTS THAT WILL BE DEVELOPED IN PHASES WITH MULTIPLE SUBMITTALS WHILE ALLOWING SUFFICIENT FLEXIBILITY TO PERMIT DETAILED PLANNING IN SUBSEQUENT SUBMITTALS. APPROVAL OF AN OVERALL DEVELOPMENT PLAN DOES NOT ESTABLISH ANY VESTED RIGHT TO DEVELOP PROPERTY IN ACCORDANCE WITH THE PLAN.
9. FIRE HYDRANTS WILL BE PROVIDED AS REQUIRED BY THE POUDRE FIRE AUTHORITY STANDARDS.
10. RESIDENTIAL DEVELOPMENT IN THE MMN ZONE DISTRICT SHALL HAVE AN OVERALL MINIMUM AVERAGE DENSITY OF TWELVE(12) DWELLING UNITS PER NET ACRE OF RESIDENTIAL LAND OR SEVEN (7) DWELLING UNITS PER NET ACRE IF THE SUBJECT DEVELOPMENT PLAN IS TWENTY (20) ACRES OR LESS IN SIZE.
11. BOUNDARY CONNECTIONS SHALL BE IN COMPLIANCE WITH APPLICABLE LAND USE CODE AND LARIMER COUNTY URBAN AREA STREET STANDARDS IN PLACE AT THE TIME OF DEVELOPMENT APPLICATION SUBMITTAL UNLESS MODIFICATIONS AND/OR ENGINEERING VARIANCES ARE APPROVED.
12. ALL DEVELOPMENT MUST COMPLY WITH APPLICABLE STANDARDS CONTAINED IN THE LAND USE CODE ARTICLE 3, CITY CODE CHAPTER 10, FEDERAL REGULATIONS 44 CFR, AT THE TIME OF APPLICATION FOR A PROJECT DEVELOPMENT PLAN.
13. DEVELOPMENT WITHIN THE AREA OF THE MMN ZONE DISTRICT SHALL BE CONSISTENT WITH THE BLOCK SIZE REQUIREMENTS OF SECTION 4.6 OF THE LAND USE CODE UNLESS A MODIFICATION OR VARIANCE IS GRANTED.
14. GENERAL BUFFER ZONES SHOWN ON THIS ODP MAY BE REDUCED OR ENLARGED BY THE DECISION MAKER DURING THE PDP PROCESS.
15. THIS OVERALL DEVELOPMENT PLAN SHOWS THE GENERAL LOCATION AND APPROXIMATE SIZE OF ALL NATURAL AREAS, HABITATS AND FEATURES WITHIN ITS BOUNDARIES AND THE PROPOSED ROUGH ESTIMATE OF THE NATURAL AREA BUFFER ZONES AS REQUIRED BY LAND USE CODE SEC. 3.4.1(E). DETAILED MAPPING OF A SITE'S NATURAL AREAS, HABITATS AND FEATURES WILL BE PROVIDED AT THE TIME INDIVIDUAL PROJECT DEVELOPMENT PLANS (PDP) ARE SUBMITTED FOR REVIEW. ALL DEVELOPMENT WITHIN THIS OVERALL DEVELOPMENT PLAN SHALL CONFORM TO APPLICABLE STANDARDS CONTAINED IN DIVISION 3.4, ENVIRONMENTAL, NATURAL AREA, RECREATIONAL AND CULTURAL RESOURCE, OF THE LAND USE CODE.
16. THE LARIMER CANAL NO. 2 IS PROPOSED TO BE REALIGNED AS AN INDEPENDENT PROJECT AND NOT AS PART OF THIS ODP.

NATURAL FEATURES GENERAL BUFFER ZONES

1. SPRING CREEK: 100' AVERAGE EACH SIDE
2. LARIMER NO. 2 CANAL: 50' AVERAGE EACH SIDE
3. NEW MERCER DITCH: 50' AVERAGE EACH SIDE

VICINITY MAP



PLANNING & ZONING CERTIFICATE

APPROVED BY THE PLANNING AND ZONING BOARD OF THE CITY OF FORT COLLINS, COLORADO

ON THIS 15 DAY OF February 2012

SECRETARY OF THE PLANNING AND ZONING BOARD.

CITY OF FORT COLLINS SEAL COLORADO

OWNER'S CERTIFICATION

THE UNDERSIGNED DOES/DO HEREBY CERTIFY THAT I/WE ARE THE LAWFUL OWNERS OF THE REAL PROPERTY DESCRIBED ON THIS SITE PLAN AND DO HEREBY CERTIFY THAT I/WE ACCEPT THE CONDITIONS AND RESTRICTIONS SET FORTH ON SAID SITE PLAN.

OWNER:

COLORADO STATE UNIVERSITY RESEARCH FOUNDATION, A COLORADO NON-PROFIT CORPORATION

BY: [signature]

DATE: 2-7-2012

STATE OF COLORADO)
) SS.
COUNTY OF LARIMER)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS 7 DAY OF FEB., 2012, BY Kathleen Henry President/CEO OF COLORADO STATE UNIVERSITY RESEARCH FOUNDATION, A COLORADO NON-PROFIT CORPORATION.

NOTARY PUBLIC

MY COMMISSION EXPIRES: 2-20-2013

NOTARY PUBLIC JULIE H. BIRDSALL STATE OF COLORADO

AMENDED CSURF CENTRE FOR ADVANCED TECHNOLOGY

OVERALL DEVELOPMENT PLAN

FORT COLLINS, COLORADO

RIPLEY DESIGN INC.
land planning ▪ landscape architecture ▪ urban design ▪ entitlement ▪
401 West Mountain Avenue, Suite 200
Fort Collins, CO 80521
fax 970.224.1662 phone 970.224.5828
www.ripleydesign.com

OVERALL DEVELOPMENT PLAN

DATE	06/18/02
JOB NO.	R00-041
DRAWN	DH
CHECKED	LR
REVISED	11/27/02
	02/10/03
	07/13/10
	09/23/10
	12/28/10
	03/30/2011
	06/01/2011
	01/20/2012

THIS IS A LAND USE PLANNING DOCUMENT, NOT A CONSTRUCTION DOCUMENT. REFER TO CIVIL ENGINEERING PLANS.

1 OF 1

25-M

Courtney Levingston

From: beth boddiger <bboddiger@gmail.com>
Sent: Thursday, October 24, 2013 7:49 PM
To: Courtney Levingston
Subject: Development Proposal #FDP130041

Follow Up Flag: Follow up
Flag Status: Flagged

Hi, my name is Beth Boddiger. I would like to comment on the proposed project at Centre Ave/Perennial Ln.

I have many concerns with overdeveloping this particular piece of ground. One concern is aesthetics and the urbanization of this plat of land to the detriment of surrounding neighborhoods. Another concern is safety--more traffic to the Spring Creek Trail in this area could be dangerous. It is not large enough to accommodate much extra traffic during certain times of the day.

The major concern at this point, however, is traffic at the intersections of Centre/Prospect and Centre/Rolland Moore and Centre/Perennial. Traffic is congested at certain times of the day, specifically morning/lunch/early evening. The student housing complex combined with the NRRC complex and the Spring Creek Gardens all have access from Centre Ave. My concern is that from what I understand from the report the traffic study was completed in October 2013. From October 1-16, federal employees were on furlough meaning there was next to no traffic entering/exiting the NRRC complex. To represent a traffic study undertaken during that time as normal conditions would be irresponsible and flat out wrong. I urge you to take a closer look at traffic conditions in that area and require a more thorough study.

I think encouraging more development at this address, especially the type with concentrated traffic hours that mimic that of already-existing traffic, would be a mistake. The street is not set up to be safe for more traffic.

Thank you,
Beth Boddiger
1907 Ross Ct, D
Fort Collins