Andrew Riverside - Mixed Use Development

401 8th Ave SE Minneapolis, MN 55414

UNIT MIX & SQUARE FOOTAGES

Andrew Riverside Development

Level	Use	Total GSF	Parking GSF	Apt GSF	Church	Apt RSF	Units	Beds	Parking
Minus One	Parking	16,743	16,743						43
Level 1	Res / Church	17,112	2,158	10,346	4,608	5,753	6	13	
Level 2	Residential	15,972		15,972		13,876	13	36	
Level 3	Residential	15,972		15,972		13,876	13	36	
Level 4	Residential	15,972		15,972		13,876	13	36	
Level 5	Residential	13,644		13,644		11,440	11	26	
Total		95,415	18,901	71,906	4,608	58,821	56	147	43

Additional Surface Parking located at 412 8th Ave SE	13
Total Parking	56

Bicycle Parking: University Overlay District requires 1 space per bedroom (551.1330)	147

SHEET INDEX

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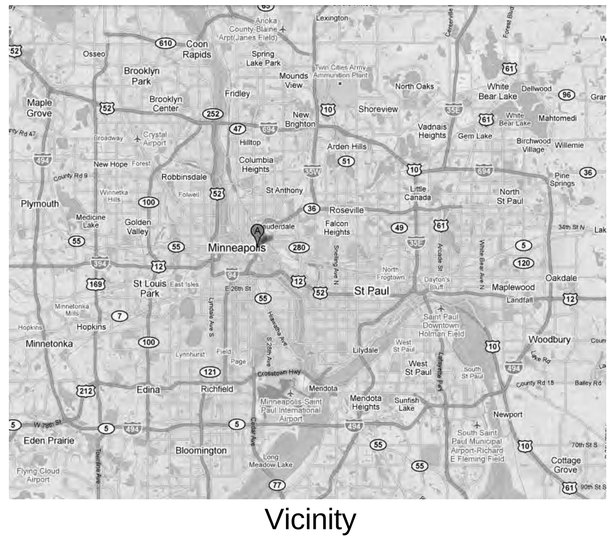
Project Location



Vicinity

Site Location

PROJECT TEAM

Owner/Developer: CPM Development
Nick Walton, President
1515 W Lake Street, 2nd Floor
Minneapolis, MN 55408

Architect: Elness Swenson Graham Architects Inc.
500 Washington Ave. South, Suite 1080
Minneapolis, MN 55415
Ph: 612-339-5508
Fx: 612-339-5382

Landscape: Damon Farber Associates
Thomas Whitlock, President
923 Nicollet Mall
Minneapolis, MN 55402

Contractor: T.B.D

Civil: Sunde Engineering, Inc.
Michaelea Whelan, PE
10830 Nesbitt Avenue South
Bloomington, MN 55437-3100

Structural Engineer: T.B.D

Mechanical, Electrical, Plumbing Engineers: T.B.D

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TITLE SHEET
T1.1

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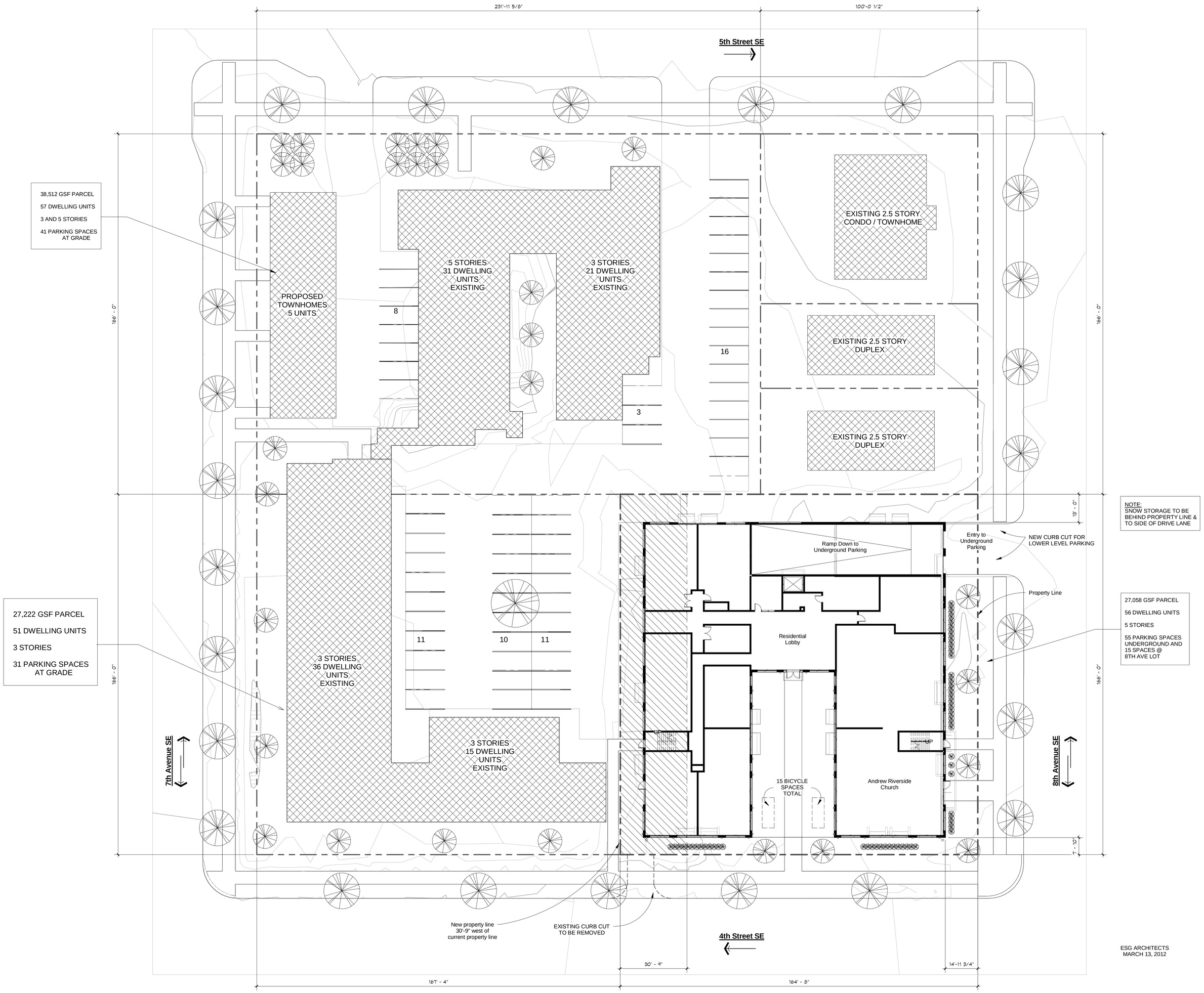

ESG ARCHITECTS
MARCH 13, 2012

1 / A0.1 **SITE PLAN**
1" = 20'-0"

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ARCHITECTURAL SITE PLAN
A0.1

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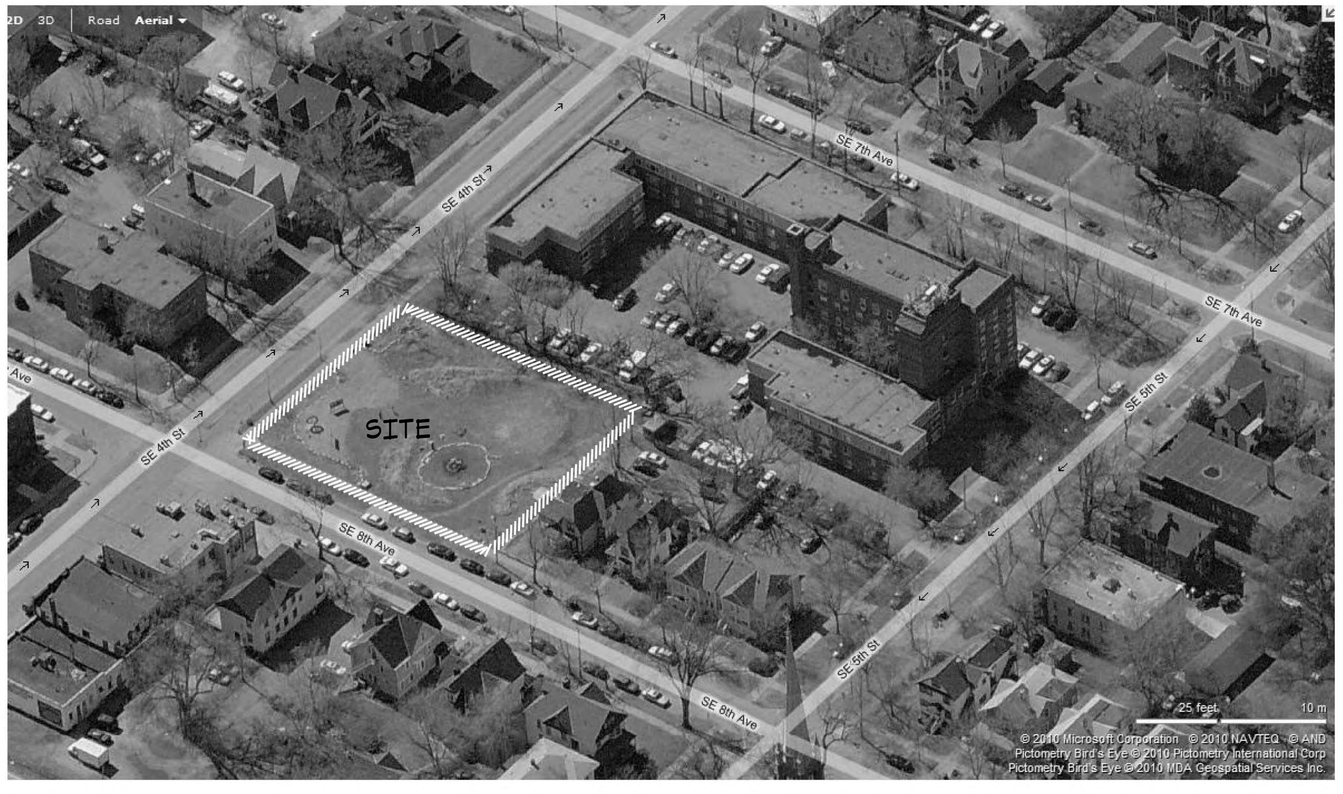
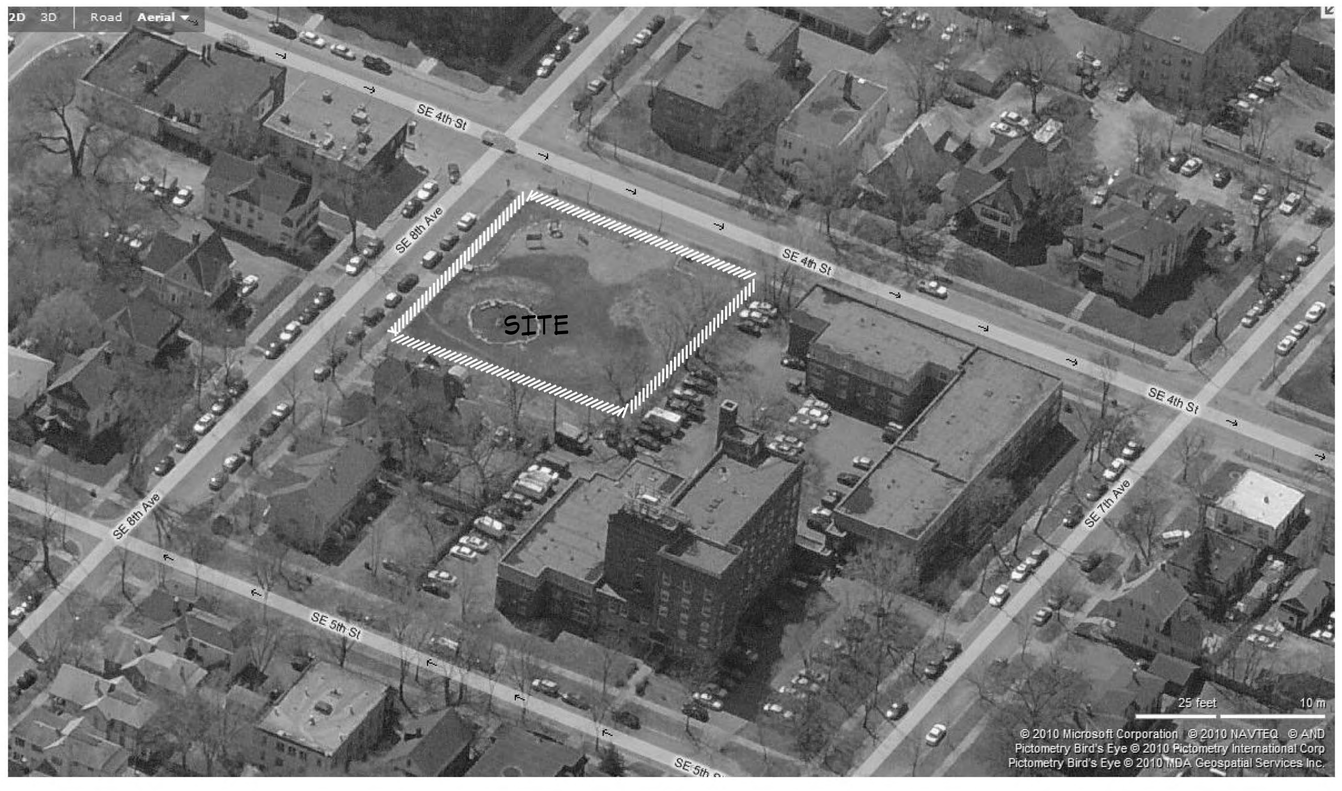
4 A0.2 **BIRDSEYE VIEW WEST**
12" = 1'-0"

3 A0.2 **BIRDSEYE VIEW SOUTH**
12" = 1'-0"



2 A0.2 **BIRDSEYE VIEW EAST**
12" = 1'-0"



1 A0.2 **BIRDSEYE VIEW NORTH**
12" = 1'-0"

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SITE AERIAL IMAGES
A0.2

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4 A0.3 **STREET VIEW 2**
12" = 1'-0"

2 A0.3 **STREET VIEW 1**
12" = 1'-0"

3 A0.3 **CAMERA VIEW**
12" = 1'-0"

1 A0.3 **PHOTO OF HISTORIC CHRUCH - NOW DEMOLISHED**
12" = 1'-0"

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REFERENCE IMAGES
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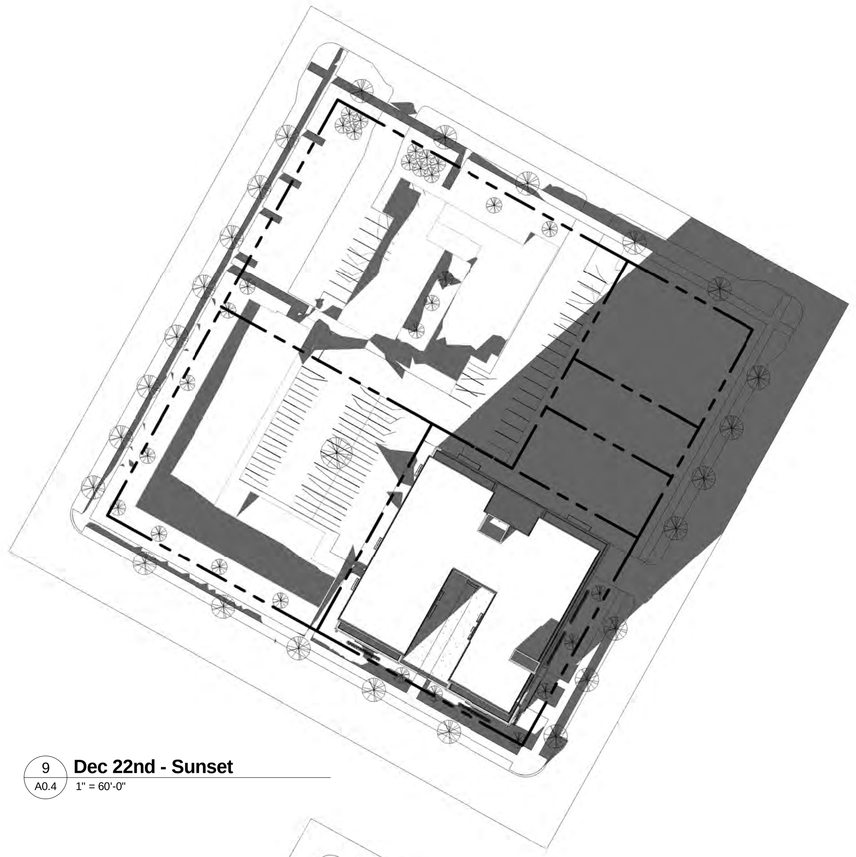
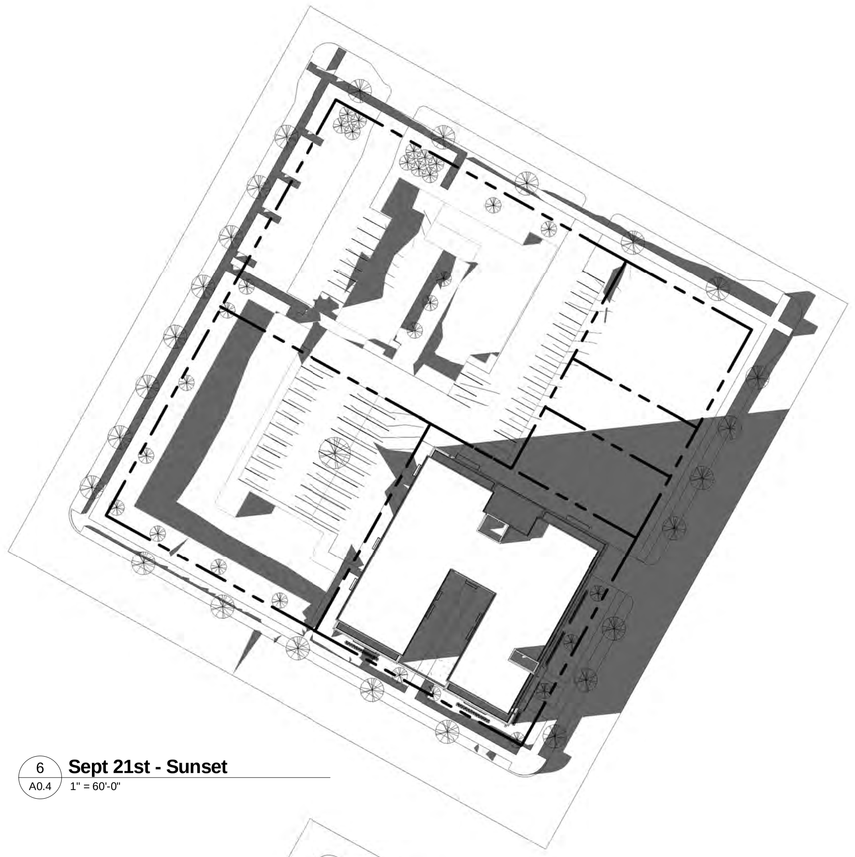
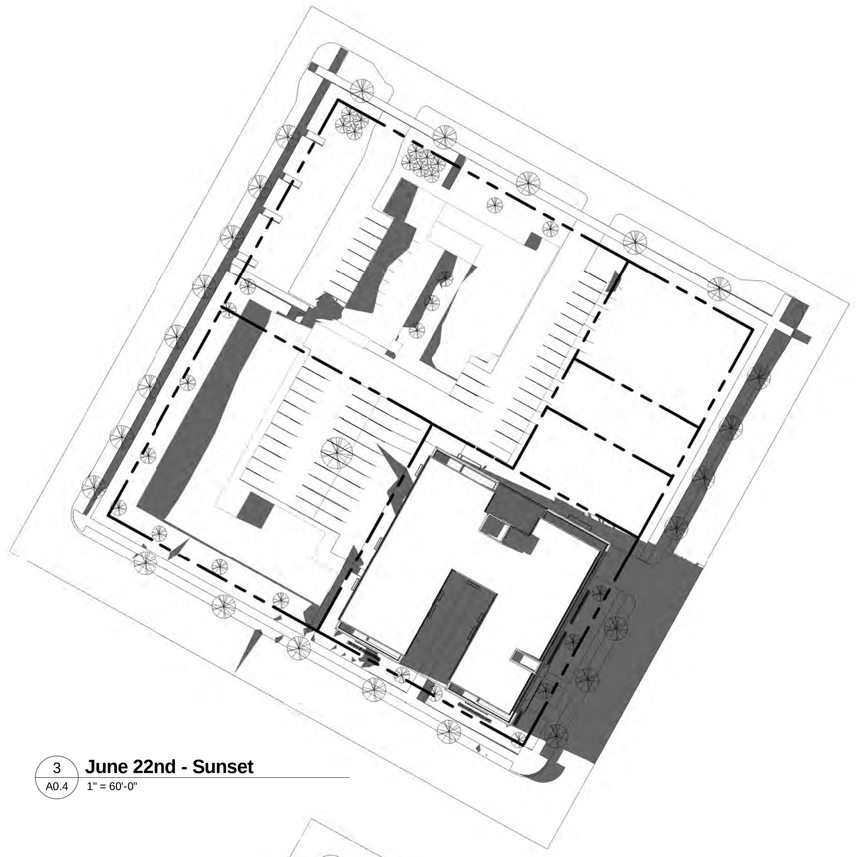


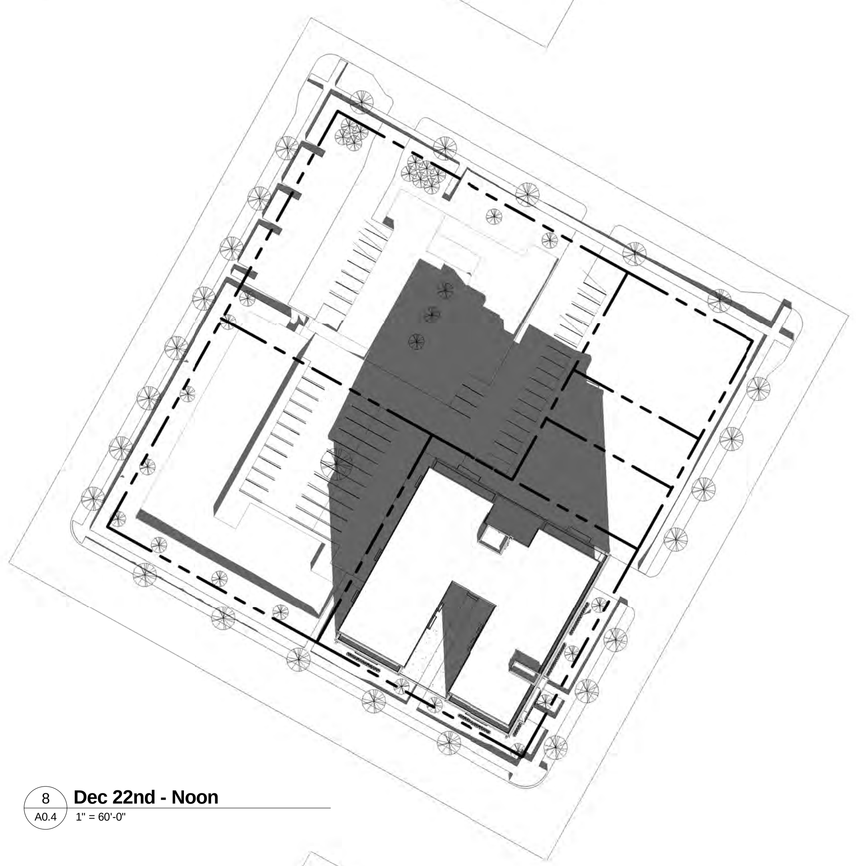
9 A0.4 **Dec 22nd - Sunset**
1" = 60'-0"



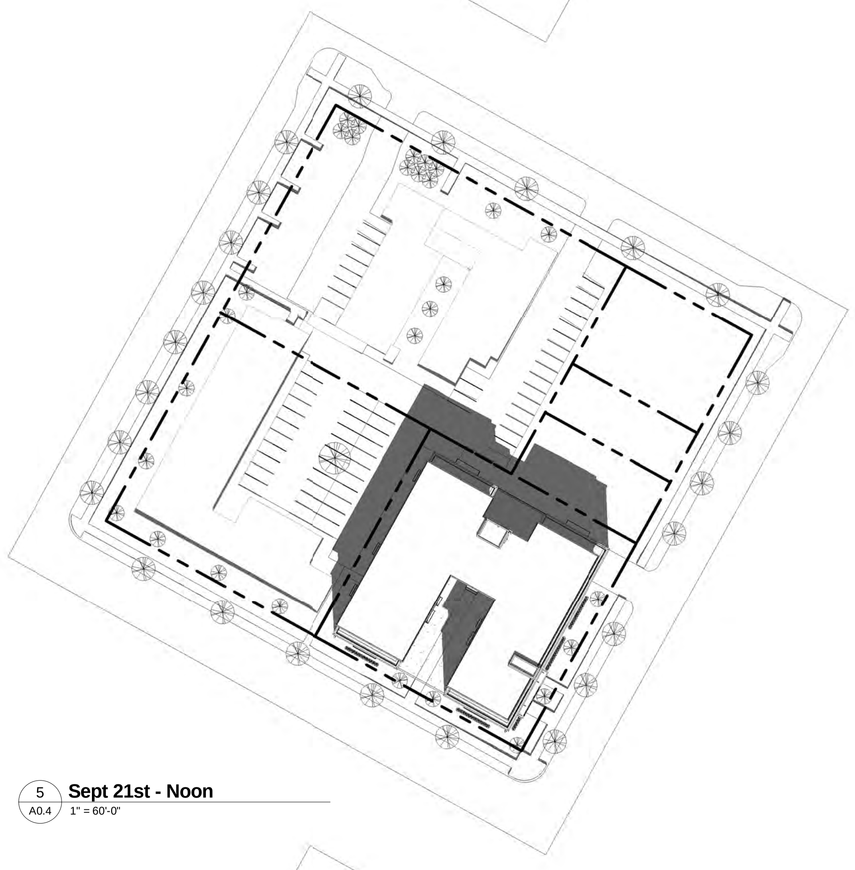
6 A0.4 **Sept 21st - Sunset**
1" = 60'-0"



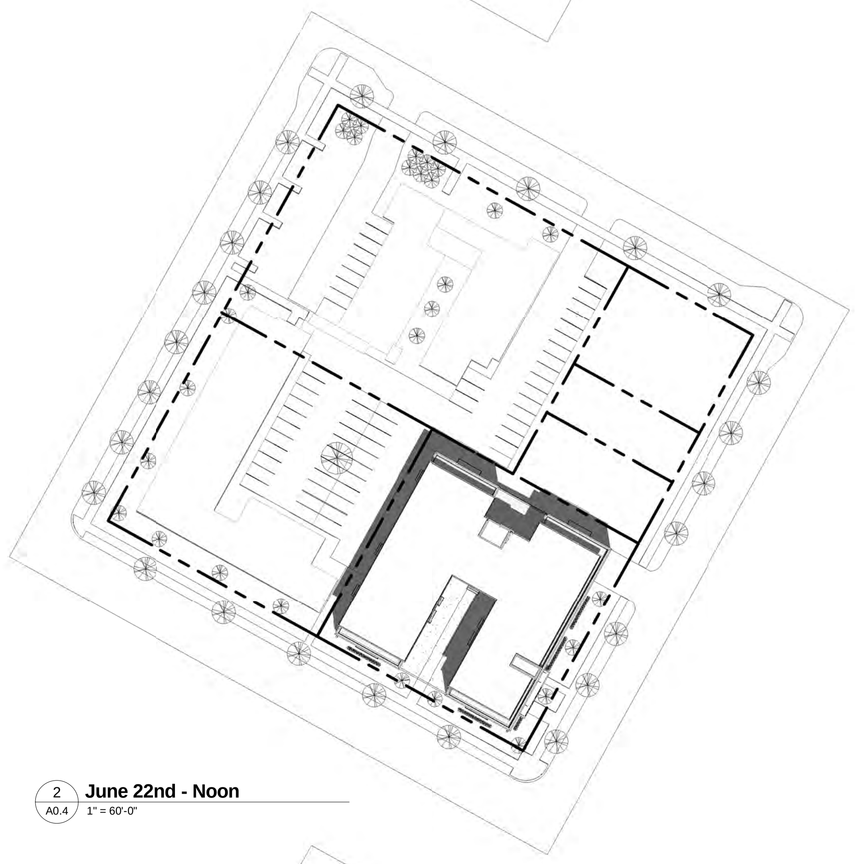
3 A0.4 **June 22nd - Sunset**
1" = 60'-0"



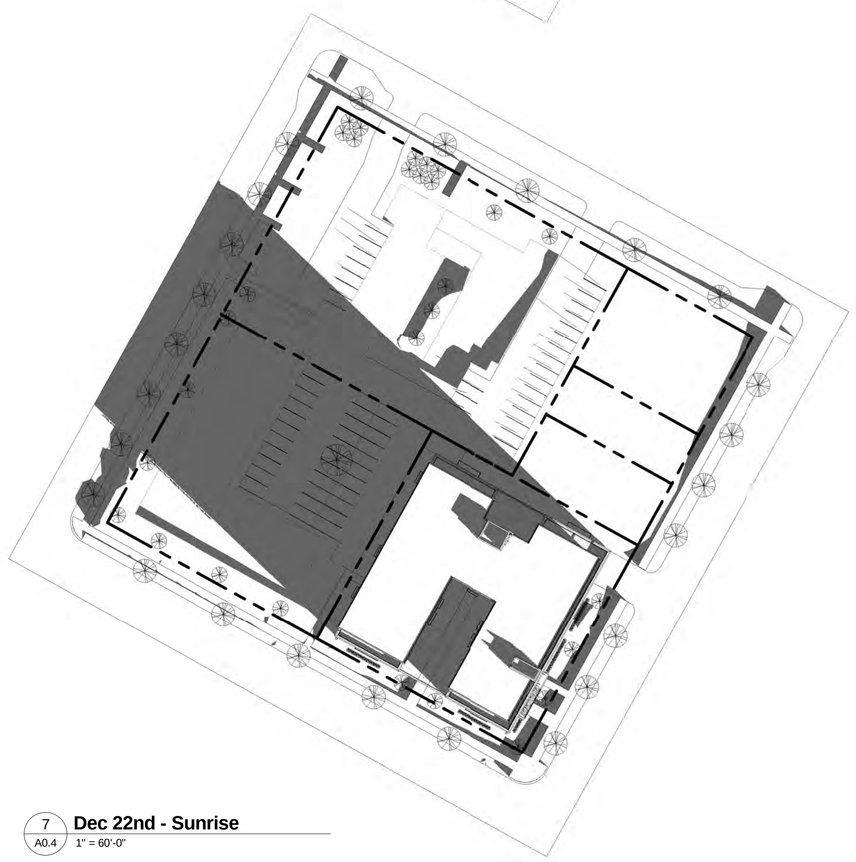
8 A0.4 **Dec 22nd - Noon**
1" = 60'-0"



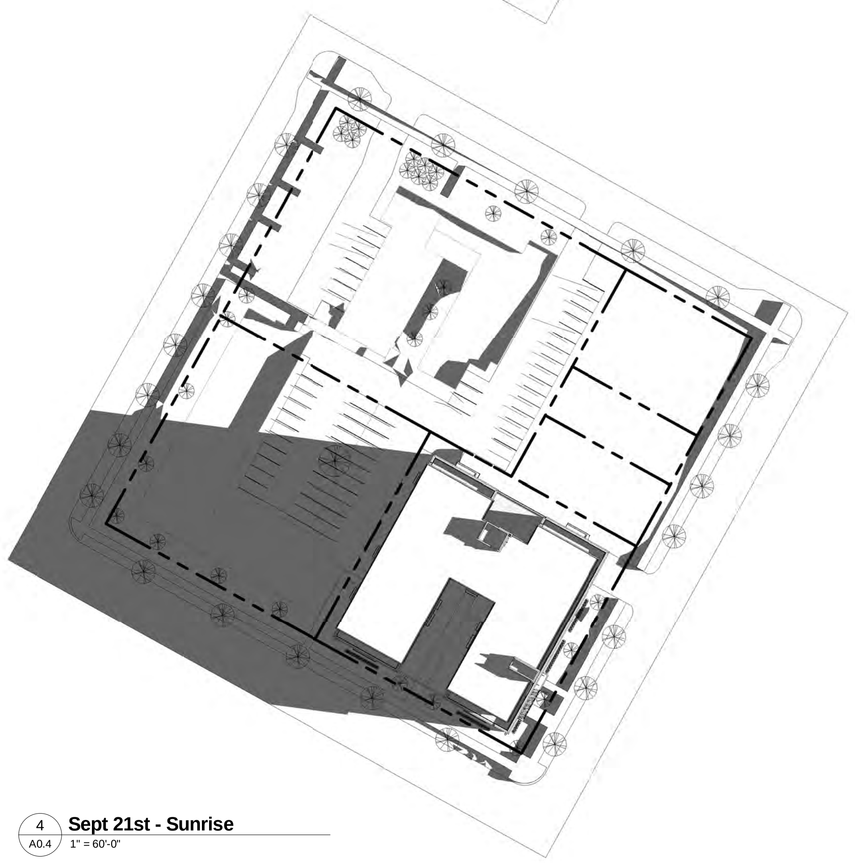
5 A0.4 **Sept 21st - Noon**
1" = 60'-0"



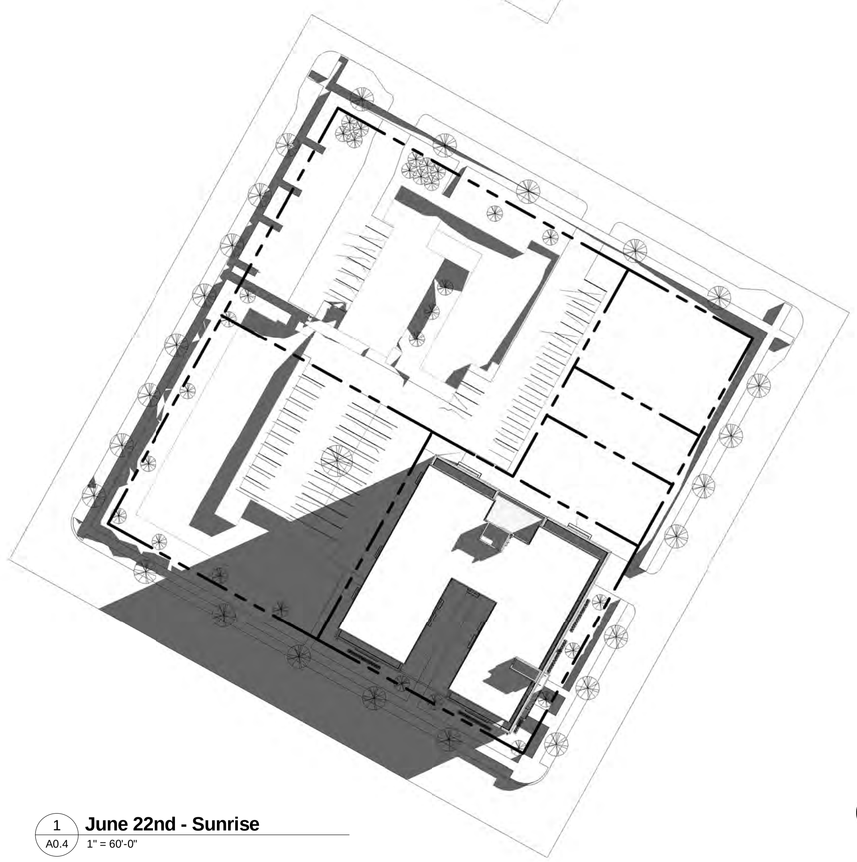
2 A0.4 **June 22nd - Noon**
1" = 60'-0"



7 A0.4 **Dec 22nd - Sunrise**
1" = 60'-0"



4 A0.4 **Sept 21st - Sunrise**
1" = 60'-0"



1 A0.4 **June 22nd - Sunrise**
1" = 60'-0"

N

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SHADOW DIAGRAMS
A0.4

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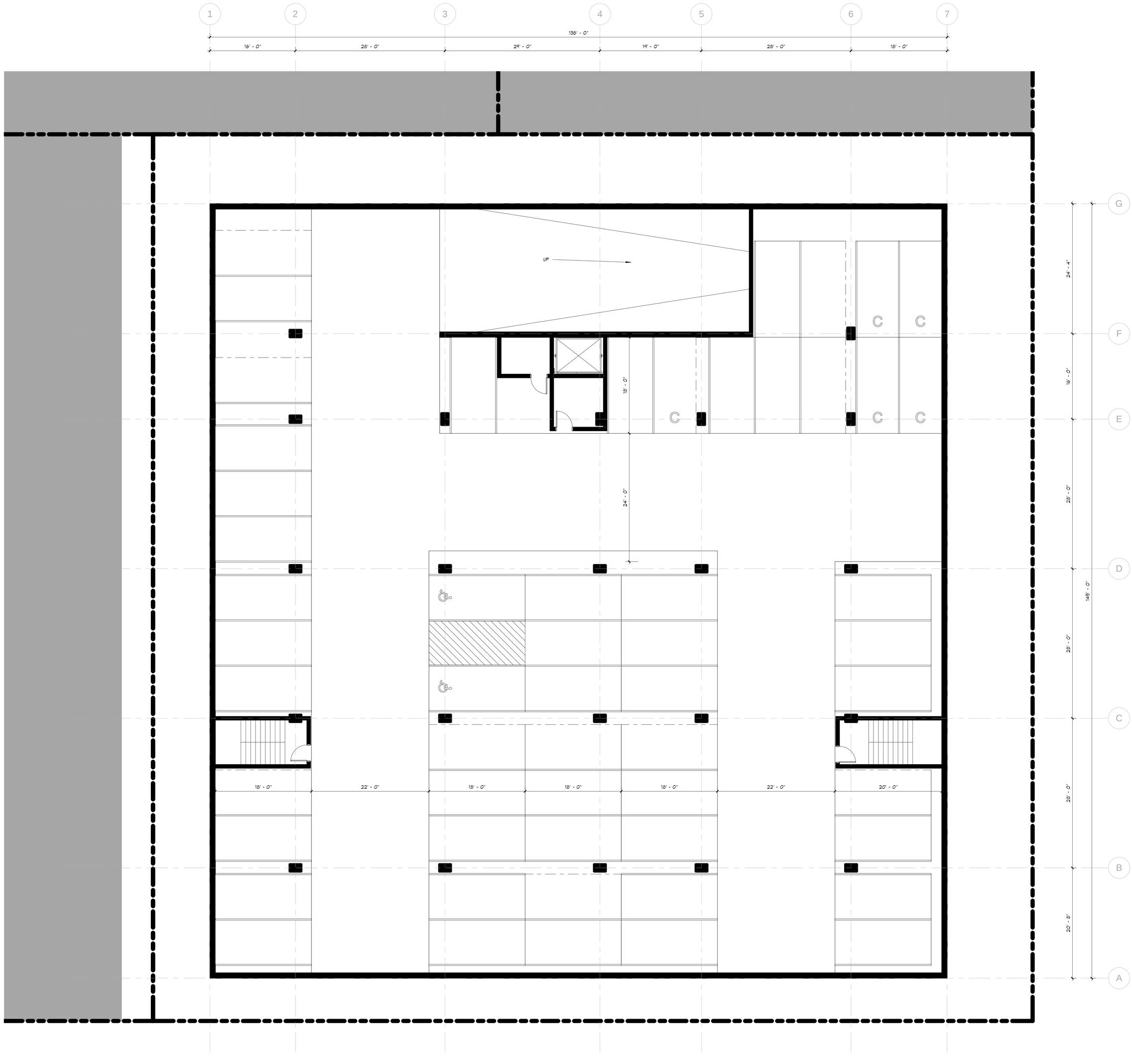

1 A1.0 **LOWER LEVEL PLAN**
1/8" = 1'-0"

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MINUS ONE - LEVEL PLAN

A1.0

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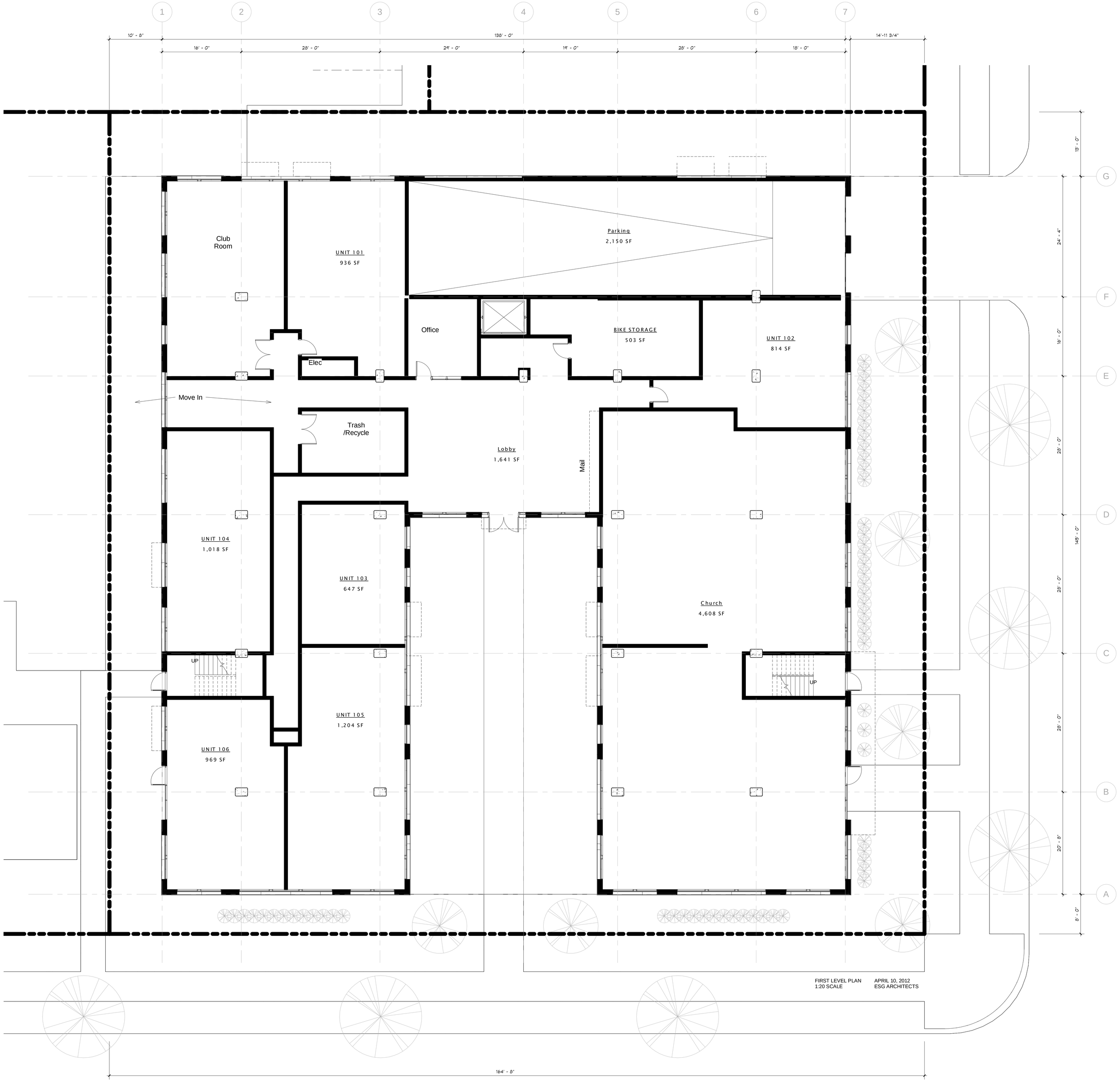

1 A1.1 **FIRST FLOOR PLAN**
1/8" = 1'-0"

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FIRST LEVEL PLAN
A1.1

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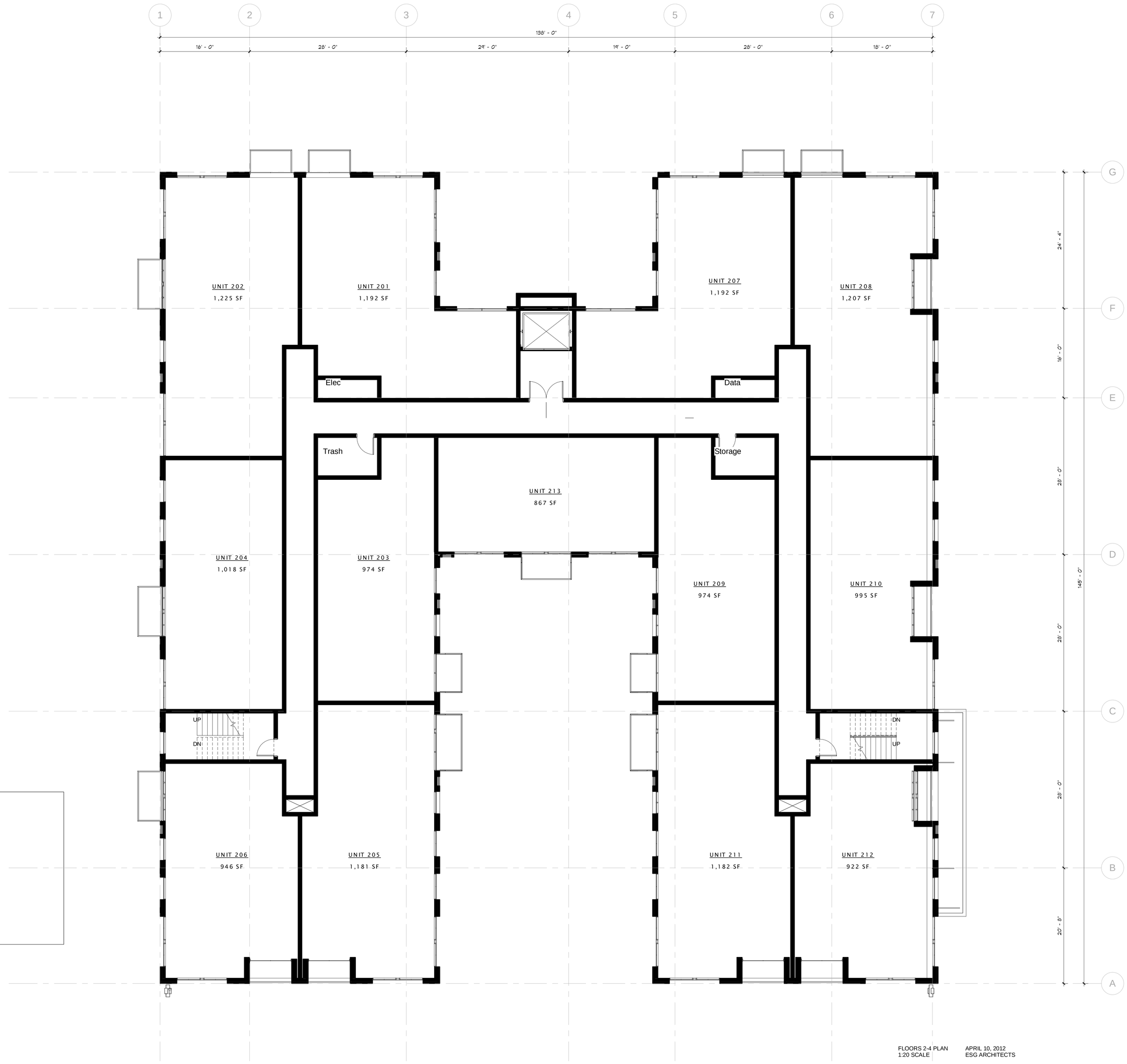

FLOORS 2-4 PLAN
1:20 SCALE

APRIL 10, 2012
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1 A1.2 **SECOND FLOOR PLAN (3RD & 4TH FLOORS SIM)**
1/8" = 1'-0"

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SECOND LEVEL PLAN (3RD & 4TH SIM)

A1.2

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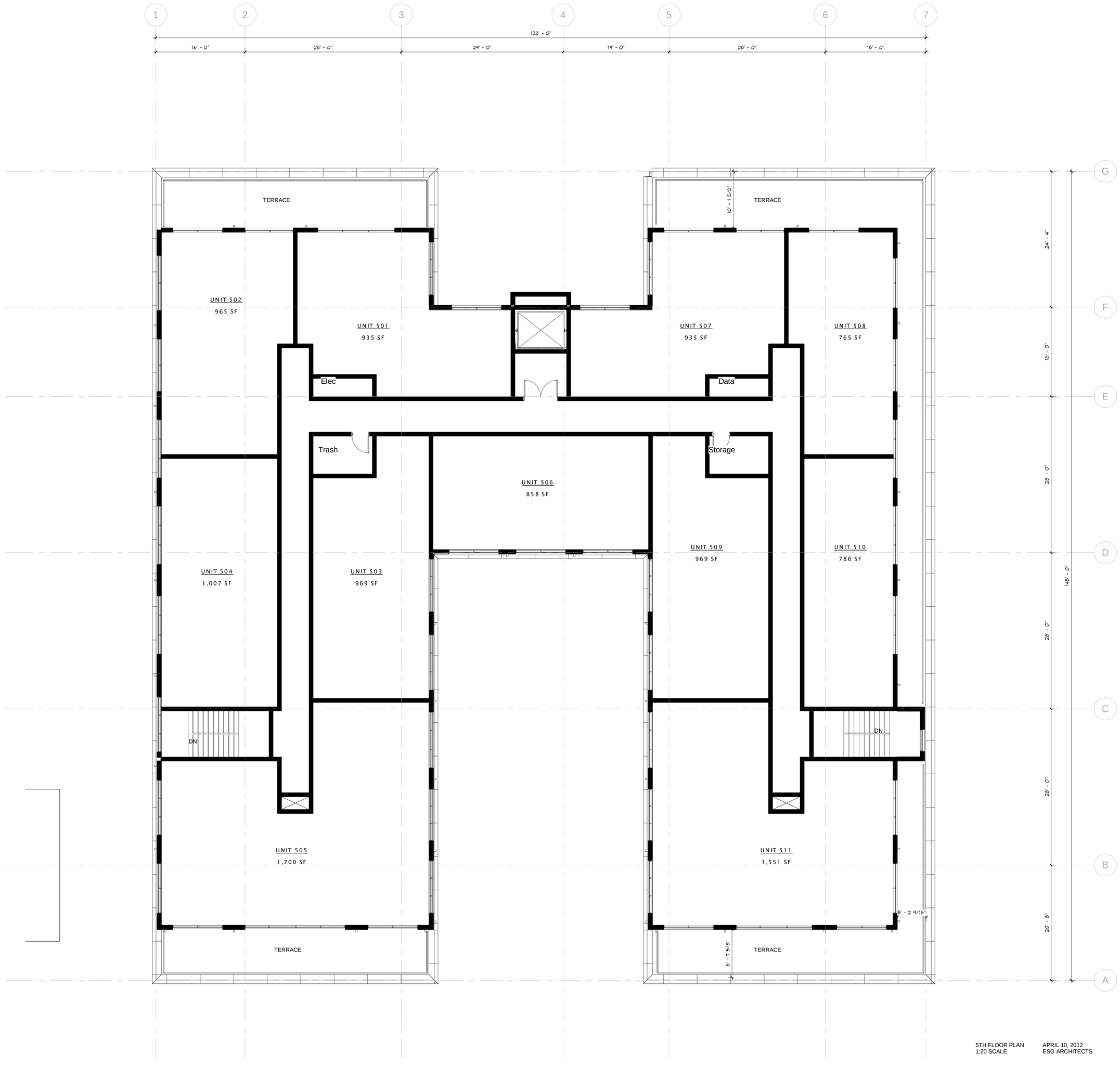

5TH FLOOR PLAN
1:20 SCALE

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1 / A1.5 **FIFTH LEVEL PLAN**
1/8" = 1'-0"

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FIFTH LEVEL PLAN

A1.5

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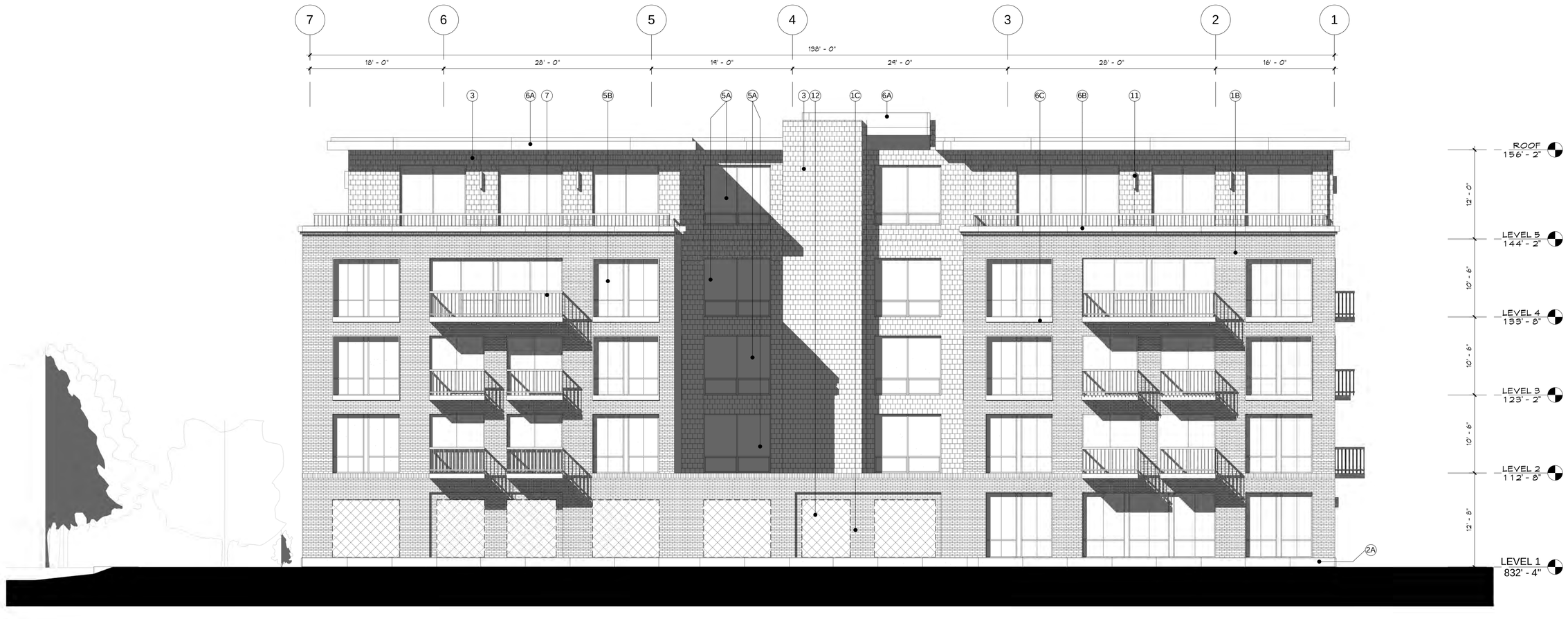
EXTERIOR MATERIAL SCHEDULE	
1A	BRICK SOLDIER COURSE
1B	BRICK COLOR #1 (RED/BROWN)
1C	RECESSED BRICK ALCOVE #2
2A	STONE (SAND)
3	METAL PANEL (GRAY)
4	PREFINISHED METAL LOUVERS (DARK BRONZE)
5A	FIBERGLASS WINDOW SYSTEM (SANDTONE)
5B	FIBERGLASS WINDOW SYSTEM (DARK BRONZE)
6A	PREFINISHED METAL CORNICE #1 (GRAY TO MATCH METAL PANEL)
6B	PREFINISHED METAL CORNICE #2 (TO MATCH BRICK)
6C	METAL SILL EXTRUSION (DARK BRONZE)
7	ALUMINUM BALCONY SYSTEM W/ METAL GAURDRAIL (PREFAB)
8	PREFINISHED METAL CANOPY SYSTEM
9	PROPOSED LOW-E WINDOW GLAZING
10	PREFINISHED METAL DOORS (DARK BRONZE)
11	LIGHT FIXTURE
12	CEDAR GREEN SCREENS
13	PREFINISHED GARAGE DOOR (DARK BRONZE)



1 A3.1 **NORTH ELEVATION**
1/8" = 1'-0"

2 A3.1 **SOUTH ELEVATION**
1/8" = 1'-0"

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EXTERIOR ELEVATIONS
A3.1

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EXTERIOR MATERIAL SCHEDULE	
1A	BRICK SOLDIER COURSE
1B	BRICK COLOR #1 (RED/BROWN)
1C	RECCESSED BRICK ALCOVE #2
2A	STONE (SAND)
3	METAL PANEL (GRAY)
4	PREFINISHED METAL LOUVERS (DARK BRONZE)
5A	FIBERGLASS WINDOW SYSTEM (SANDTONE)
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10	PREFINISHED METAL DOORS (DARK BRONZE)
11	LIGHT FIXTURE
12	CEDAR GREEN SCREENS
13	PREFINISHED GARAGE DOOR (DARK BRONZE)

1 A3.2 **EAST ELEVATION**
1/8" = 1'-0"

2 A3.2 **WEST ELEVATION**
1/8" = 1'-0"

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EXTERIOR ELEVATIONS
A3.2

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EXTERIOR MATERIAL SCHEDULE	
1A	BRICK SOLDIER COURSE
1B	BRICK COLOR #1 (RED/BROWN)
1C	RECCESSED BRICK ALCOVE #2
2A	STONE (SAND)
3	METAL PANEL (GRAY)
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11	LIGHT FIXTURE
12	CEDAR GREEN SCREENS
13	PREFINISHED GARAGE DOOR (DARK BRONZE)

1 A3.3 **COURTYARD EAST**
1/8" = 1'-0"

2 A3.3 **COURTYARD WEST**
1/8" = 1'-0"

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EXTERIOR ELEVATIONS
A3.3

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1 A3.4 **ENTRY PERSPECTIVE**

2 A3.4 **BACKSIDE PERSPECTIVE**

4/17/2012 3:43:30 PM

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EXTERIOR PERSPECTIVES

A3.4

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211504
PROJECT NUMBER

Author DRAWN BY Checker CHECKED BY

Andrew Riverside

EXTERIOR RENDERING

A3.5

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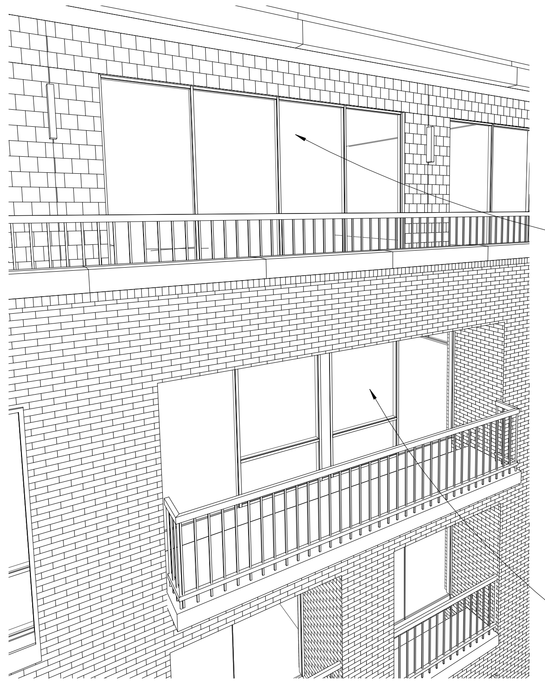
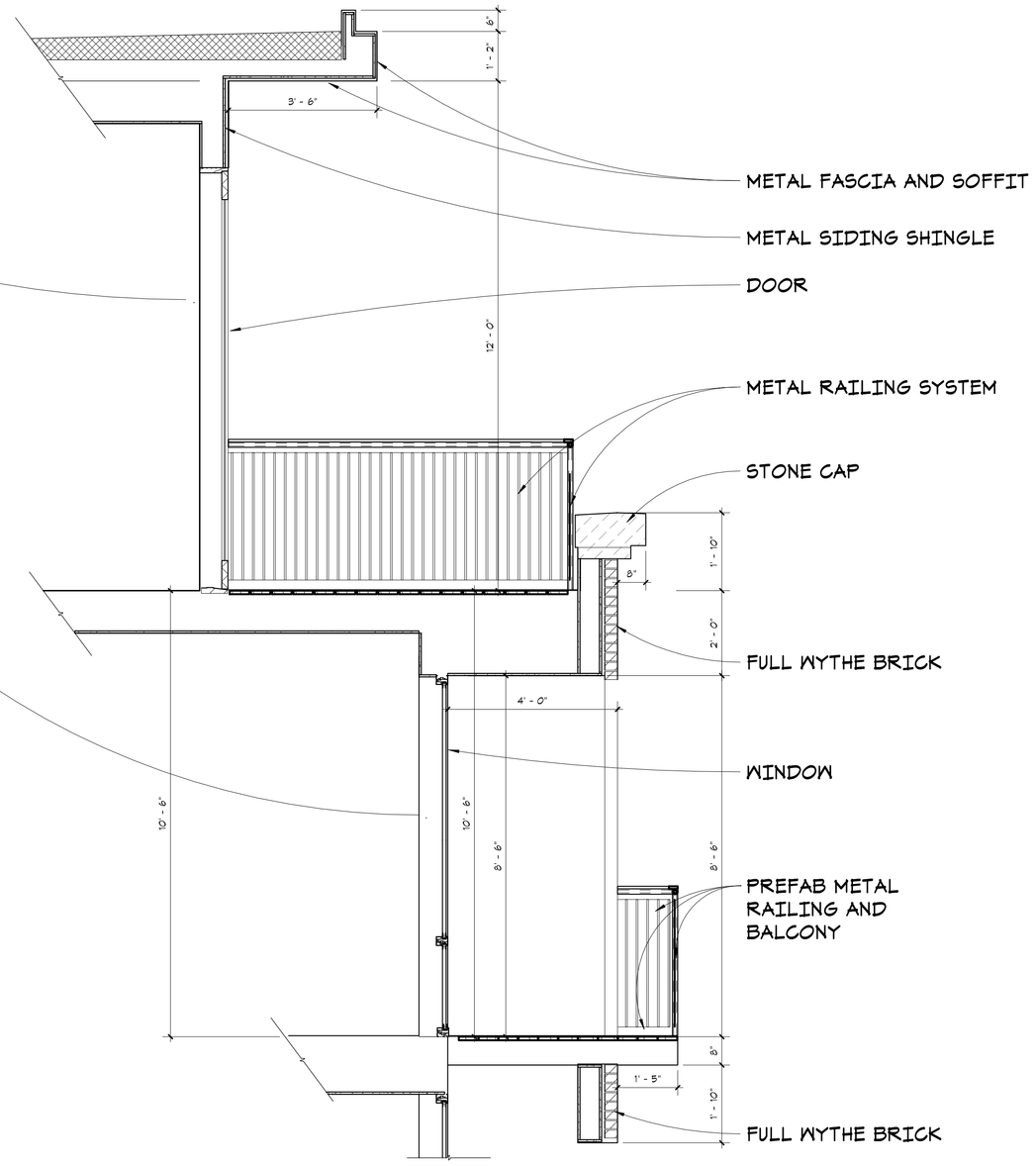
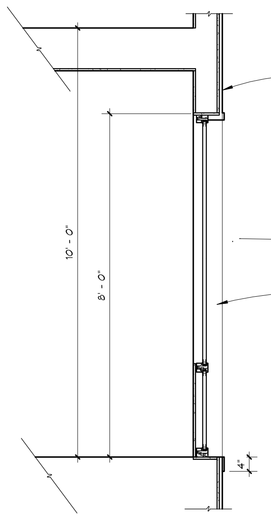
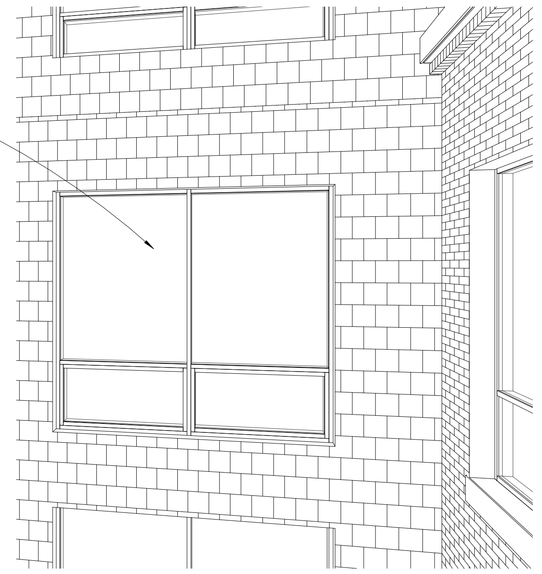


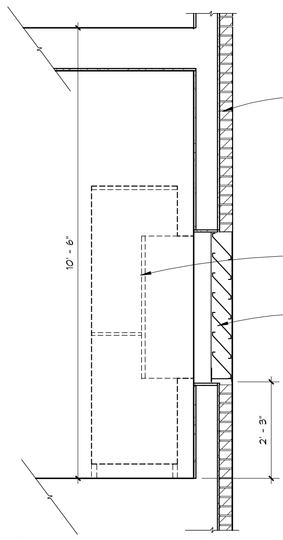




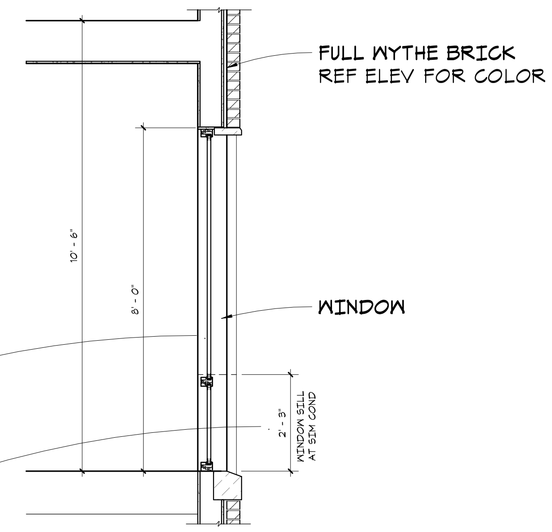
6 A5.1 **SECTION AT WINDOW - METAL SIDING**
1/2" = 1'-0"



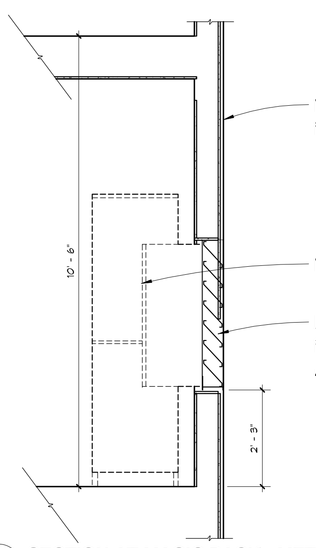
5 A5.1 **SECTION AT TERRACE AND SEMI-RECESSED BALCONY**
1/2" = 1'-0"



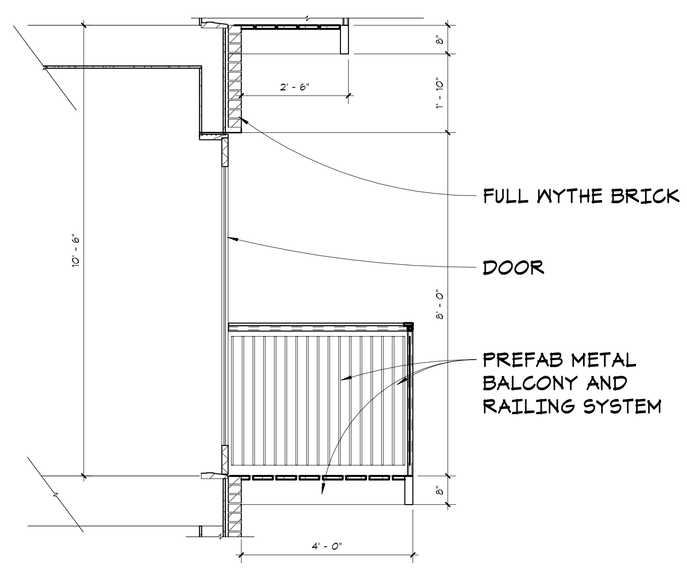
4 A5.1 **SECTION AT MAGIC PACK - BRICK**
1/2" = 1'-0"



3 A5.1 **SECTION AT WINDOW - BRICK**
1/2" = 1'-0"



2 A5.1 **SECTION AT MAGIC PACK - METAL SIDING**
1/2" = 1'-0"



1 A5.1 **SECTION AT FULLY-PROJECTED BALCONY**
1/2" = 1'-0"

Andrew Riverside

401 8th Ave SE
Minneapolis, MN 55414

esg

elness swenson graham architects

500 washington avenue south
minneapolis minnesota 55415
p. 612.339.5508
f. 612.339.5382
www.esgarch.com

I hereby certify that this document was prepared by me or under my direct supervision and that I am a duly licensed architect under the laws of the State of Minnesota

Signature

Typed or Printed Name

License # Date

HPC
CERTIFICATE OF
APPROPRIATENESS
APRIL 17, 2012

ORIGINAL ISSUE: 04.17.2012

REVISIONS

No.	Description	Date

211504
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Author — DRAWN BY
Checker — CHECKED BY

Andrew Riverside

WALL SECTIONS

A5.1

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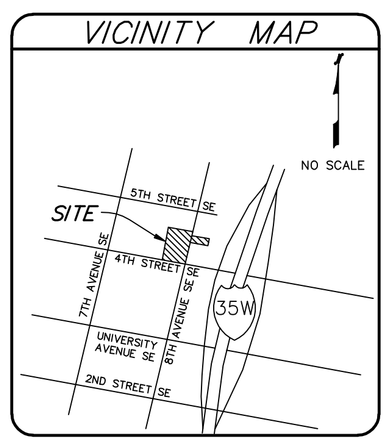
VICINITY MAP



BENCH MARKS (BM)

1.) Top of top nut of fire hydrant in the southeast quadrant of 5th Street SE and 7th Avenue SE.
Elevation = 834.41 feet (NAVD 1988)

2.) Top of top nut of fire hydrant in the southwest quadrant of 5th Street SE and 8th Avenue SE.
Elevation = 831.52 feet (NAVD 1988)

3.) Top of top nut of fire hydrant in the northwest quadrant of 4th Street SE and 7th Avenue SE.
Elevation = 833.68 feet (NAVD 1988)

4.) Top of top nut of fire hydrant in the northwest quadrant of 4th Street SE and 8th Avenue SE.
Elevation = 830.91 feet (NAVD 1988)

LIST OF POSSIBLE ENCROACHMENTS

The following list of possible encroachments is only the opinion of this surveyor; should not be interpreted as a legal opinion and should not be interpreted as a complete listing.

A Possible encroachments are indicated on survey with boxed letters as listed below.

A. Edge of bituminous and concrete curb near the north line of Lot 9.

B. Top of concrete wall near the most easterly corner of the Block 4 property leans southwesterly over the property line.

C. Chain link fence lies 0.2 feet northeasterly of the southwesterly line and 0.2 feet northwesterly of the northwesterly property line of the Block 3 property.

D. Chain link fence lies 0.6 feet northwesterly of the northwesterly line and 0.1 feet southeasterly of the northeasterly property line of the Block 3 property.

E. Wood steps lie 0.2 feet southwesterly of the northeasterly property line of the Block 3 property.

F. Chain link fences dips 0.5 feet southeasterly of the southeasterly property line of the Block 3 property near the center of the property line.

G. There appears to be a drive entrance to the property lying southwesterly of the Block 3 property that is not covered by an easement.

H. Chain link fence lies 1.1 feet northeasterly of the southwesterly property line of the Block 3 property near the power and light pole.

J. Power and light pole contains several utility line services running across the Block 3 property without the benefit of an easement.

ADDRESSES

Parcel 1 = 401 8th Avenue SE
Parcel 2 = 412 8th Avenue SE

LEGEND

AC	Denotes air conditioner
BTL	Denotes beavertail curb
CB	Denotes catch basin
CBOX	Denotes control box
CMH	Denotes communication manhole
EM	Denotes electric meter
FF	Denotes finished floor
G	Denotes gutter
GC	Denotes top of granite curb
HCR	Denotes handicap ramp
HCS	Denotes handicap parking sign
HYD	Denotes fire hydrant
INV	Denotes structure invert
LA	Denotes landscaped area
MH	Denotes manhole
OHU	Denotes overhead utility line
PKS	Denotes parking sign
PPLP	Denotes power and light pole
PPU	Denotes power pole with underground utility
PVC	Denotes polyvinylchloride pipe
RCP	Denotes reinforced concrete pipe
RD	Denotes roof drain
SAN	Denotes sanitary manhole
SAN S	Denotes sanitary sewer
SMH	Denotes storm manhole
ST S	Denotes storm sewer
TC	Denotes top of concrete curb
UGC	Denotes underground communication line
UGE	Denotes underground electric line
VCP	Denotes vitrified clay pipe
W	Denotes water line
WMH	Denotes water manhole
WW	Denotes window well
BAS	Denotes Basswood tree
BOX	Denotes Boxelder tree
COT	Denotes Cottonwood tree
HACK	Denotes Hackberry tree
LOC	Denotes Locust tree
MPL	Denotes Maple tree
SHB	Denotes shrub

ZONING NOTES

1.) Zoning information obtained from the City of Minneapolis web site, Minneapolis Zoning Plate 15, last amended November 5, 2010.

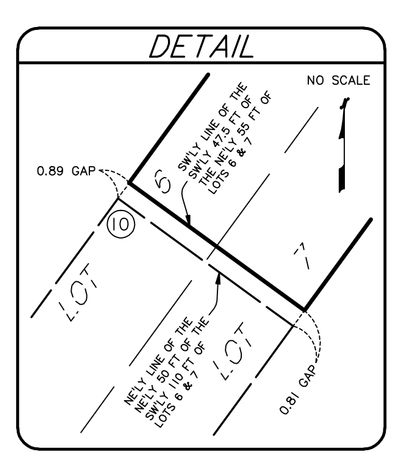
The subject property located on Block 4 is zoned R5 (High Density District)
The subject property located on Block 3 is zoned C1 (Commercial District)

2.) Parking: Parcel 1 = None
Parcel 2 = 18 Regular
0 Handicap

AREAS

Parcel 1 = 22,075 square feet or 0.507 acres
Parcel 2 = 6,318 square feet or 0.145 acres

DETAIL



DESCRIPTION OF PROPERTY SURVEYED

(Per First American Title Insurance Company Commitment No. NCS-532218-MPLS, commitment date March 5, 2012, revised April 9, 2012)

Parcel 1:

Lots 9 and 10, Block 4, St. Anthony Falls.

(Abstract Property)

Parcel 2:
The Southwesterly 47.5 feet of the Northeasterly 55 feet of Lots 6 and 7, Block 3, St. Anthony Falls.

(Abstract Property)

Property is located in Hennepin County, Minnesota.

PLAT RECORDING INFORMATION

The plat of SAINT ANTHONY FALLS was filed of record on July 17, 1891 in Ramsey County. (This area was once Ramsey County.) Then the plat was recorded on June 16, 1958 in Hennepin County.

[ ] Bearings and/or dimensions listed within brackets are per plat or record documents.

TITLE COMMITMENT

First American Title Insurance Company Commitment No. NCS-532218-MPLS, commitment date March 5, 2012, revised April 9, 2012 was relied upon as to matters of record.

Schedule B Exceptions:

(1) Exceptions are indicated on survey with circled numbers where applicable.

9.) Andrew Church took title to Parcel 2 by Probate Deed dated January 15, 1962, recorded January 16, 1962, as Document No. 3331080. The description in said deed only includes the Northeasterly 45.5 feet of Parcel 2.

10.) Possible gaps or overlaps between Parcel 2 of the Land and adjoining parcels. The descriptions assume that Lots 6 and 7 are exactly 165 feet in length. (shown on survey)

GENERAL NOTES

1.) Adjoining ownership information shown hereon was obtained from the Hennepin County Property Tax Information web site. Ownership information is subject to revision upon receipt of a title search by a title insurance company.

2.) Survey coordinate and bearing basis: Hennepin County Coordinate System NAD 83 per MnDOT.

UTILITY NOTES

1.) Utility information from plans and markings was combined with observed evidence of utilities to develop a view of the underground utilities shown hereon. However, lacking excavation, the exact location of underground features cannot be accurately, completely and reliably depicted. Where additional or more detailed information is required, excavation may be necessary.

2.) Other underground utilities of which we are unaware may exist. Verify all utilities critical to construction or design.

3.) Some underground utility locations are shown as marked onsite by those utility companies whose locators responded to our Gopher State One Call, ticket number 120831122.

4.) Contact GOPHER STATE ONE CALL at 651-454-0002 (800-252-1166) for precise onsite location of utilities prior to any excavation.

FLOOD ZONE NOTE

1.) The subject property lies within Zone X, (areas determined to be outside the 0.2% annual chance flood plain), per the National Flood Insurance Program, Flood Insurance Rate Map Community Panel No. 2701720376E, dated September 2, 2004. This information was obtained from the FEMA Map Service Center web site.

SURVEYOR'S CERTIFICATION

To Andrew riverside United Presbyterian Church, A Minnesota religious corporation, Andrew Church, a Minnesota corporation, CPM Development, LLC and First American Title Insurance Company:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 5, 6(a), 7(a), 7(b)(1), 7(c), 8, 9, 11(b) and 13 of Table A thereof. The field work was completed on April 10, 2012.

Dated this 11th day of April, 2012

SUNDE LAND SURVEYING, LLC.

By: Leonard F. Carlson
Leonard F. Carlson, P.L.S. Minn. Lic. No. 44890

N

30 0 30 60
SCALE IN FEET

1 Update and recertify	SMT	04/11/2012
Revision	By	Date
May 24, 2011	BMS	

Drawing Title:

ALTA/ACSM LAND TITLE SURVEY FOR:

LEONARD STREET & DEINARD

401 8TH AVENUE SE & 412 8TH AVENUE SE

SUNDE LAND SURVEYING
www.sunde.com
Main Office:
9001 East Bloomington Freeway (35W) • Suite 118
Bloomington, Minnesota 55420-3435
952-881-2455 (Fax: 952-888-9526)
North Office:
Brooklyn Park, Minn. 763-784-9346

Project: 2011-057-A Bk/Pg: 553/61	Date: 04/11/2012
Township: 29 Range: 24 Section: 24	
File: 2011057A002.dwg	Sheet: 1 of 1

N:\2011\2011057\2011057A\Dwg\2011057A002.dwg 4/11/2012 10:34:16 AM CDT

EROSION CONTROL SCHEDULE

ITEM	INSTALLATION	INSPECTION/MAINTENANCE	REMOVAL
SILTFENCE	PRIOR TO ANY CONSTRUCTION	INSPECT AND MAINTAIN AFTER EACH RUNOFF EVENT. REMOVE SEDIMENTS AS REQUIRED.	AFTER TRIBUTARY DRAINAGE AREA HAS BEEN RESTORED
TEMP. ROCK ENTRANCE	PRIOR TO INITIAL GRADING	INSPECT REGULARLY. MAINTAIN AS REQUIRED.	WHEN SITE PAVING OPERATIONS BEGIN
INLET PROTECTION*	PRIOR TO ANY CONSTRUCTION OR SAME DAY STRUCTURE IS CONSTRUCTED	INSPECT AND MAINTAIN AFTER EACH RUNOFF EVENT. REMOVE SEDIMENTS AS REQUIRED.	WHEN TRIBUTARY AREA IS PAVED
SEED AND MULCH	AFTER FINAL GRADING	INSPECT AND MAINTAIN AFTER HEAVY RAINS. RESTORE WASH-OUT AREAS IMMEDIATELY.	N/A

*INLET PROTECTION SHALL BE THE "SACK" TYPE AND SHALL BE INSTALLED ON ALL EXISTING AND PROPOSED CATCH BASINS EXPOSED TO CONSTRUCTION SEDIMENT.

KEYNOTES:

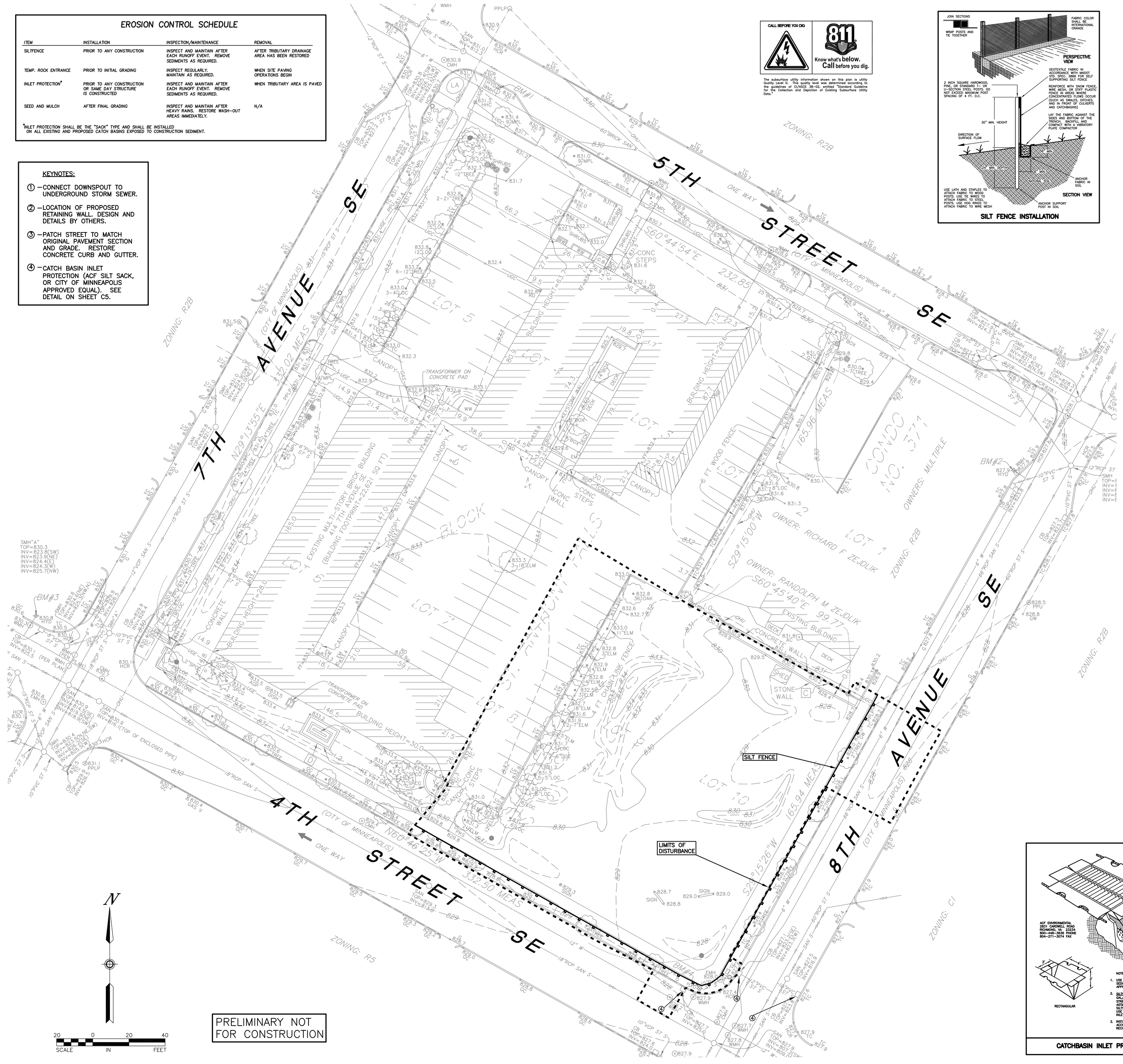
1. CONNECT DOWNSPOUT TO UNDERGROUND STORM SEWER.
2. LOCATION OF PROPOSED RETAINING WALL. DESIGN AND DETAILS BY OTHERS.
3. PATCH STREET TO MATCH ORIGINAL PAVEMENT SECTION AND GRADE. RESTORE CONCRETE CURB AND GUTTER.
4. CATCH BASIN INLET PROTECTION (ACF SILT SACK, OR CITY OF MINNEAPOLIS APPROVED EQUAL). SEE DETAIL ON SHEET C5.

CALL BEFORE YOU DIG

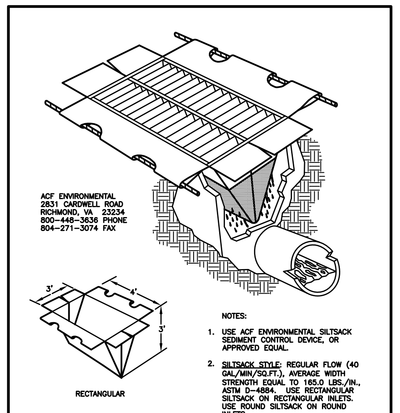
811 Know what's below. Call before you dig.

The subsurface utility information shown on this plan is utility Quality Level D. This utility level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data."

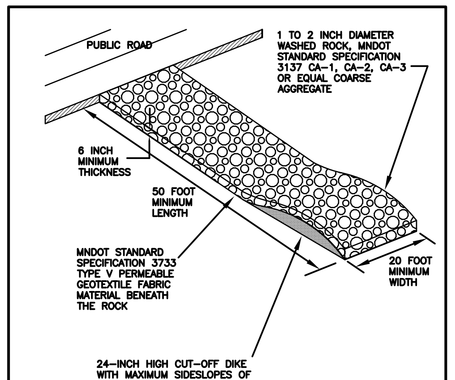
SILT FENCE INSTALLATION



PRELIMINARY NOT FOR CONSTRUCTION



CATCHBASIN INLET PROTECTION



TEMPORARY ROCK CONSTRUCTION ENTRANCE

MINNEAPOLIS STANDARD EROSION CONTROL NOTES:

City of Minneapolis Standard Erosion Control Notes
MINNEAPOLIS STANDARD EROSION CONTROL NOTES (April 1, 2010)

1. Contractor must call for a pre-construction meeting 48 hours prior to any land disturbances.
2. Call 612-673-3867. Failure to do so may result in fines, the revocation of permit and a stop work order being issued.
3. Install perimeter erosion control at the locations shown on the plans prior to the commencement of any land disturbance or construction activities.
4. Before beginning construction, install a temporary rock construction entrance at each point where vehicles exit the construction site. Use 2 inch or greater diameter rock in a layer at least 6 inches thick across the entire width of the entrance. Extend the rock entrance at least 50 feet into the construction zone using a geo-textile fabric beneath the aggregate to prevent migration of soil into the rock from below.
5. Remove all soils and sediments tracked or otherwise deposited onto public and private pavement areas. Removal shall be on a daily basis when tracking occurs and may be ordered by Minneapolis inspectors at any time if conditions warrant. Sweeping shall be maintained throughout the duration of the construction and done in a manner to prevent dust being blown to adjacent properties.
6. Install inlet protection at all public and private catch basin inlets, which receive runoff from the disturbed areas. Catch basin inserts or other approved product are required in undisturbed areas that may receive runoff from the project area. Hay bales or filter fabric wrapped grates are not allowed for inlet protection.
7. Locate soil or dirt stockpiles no less than 25 feet from any public or private roadway or drainage channel. If remaining for more than seven days, stabilize the stockpiles by mulching, vegetative cover, tarps, or other means. Control erosion from all stockpiles by placing silt barriers around the piles. Temporary stockpiles located on paved surfaces must be no less than two feet from the drainage/gutter line and shall be covered if left more than 24 hours.
8. Maintain all temporary erosion and sediment control devices in place until the contributing drainage area has been stabilized. Inspect temporary erosion and sediment control devices on a daily basis and replace deteriorated, damaged, or rotted erosion control devices immediately.
9. Temporarily or permanently stabilize all construction areas which have undergone final grading, and all areas in which grading or site building construction operations are not actively underway against erosion due to rain, wind and running water within 7-14 days. Use seed and mulch, erosion control matting, and/or sodding and staking in green space areas. An early application of gravel base on areas to be paved recommended minimizing erosion potential.
10. Remove all temporary synthetic, structural, non-biodegradable erosion and sediment control devices after the site has undergone final stabilization with permanent vegetation establishment. Final stabilization for purposes of this removal is 70% established cover over denuded area.
11. Ready mixed concrete and concrete batch plants are prohibited within the public right of way. All concrete related production, cleaning and mixing activities shall be done in the designated concrete mixing/washout locations as shown in the erosion control plan. Under no circumstance may washout water drain onto the public right of way or into any public or private storm drain conveyance.
12. Changes to approved erosion control plan must be approved by the erosion control inspector prior to implementation. Contractor to provide installation and details for all proposed alternate type devices.

SITE CLEARING:

1. Perform all clearing and grubbing work in accordance with the provisions of MNDOT Standard Specification Section 2101, and the additional requirements contained herein.
2. Clearing is defined as the complete removal and disposal of all portions of natural and artificial objectionable materials, structures, trees, shrubs, bushes, windfalls, grass, sod, and other vegetation in the designated areas that exist above ground except stumps. Grubbing is defined as the excavation, removal, and disposal of all portions of natural and artificial objectionable materials, structures, trees, shrubs, bushes, windfalls, and other vegetation that exist below ground including stumps.
3. Clear and grub the construction area in advance of the grading operation.
4. Building Areas: Completely remove all stumps, roots 40 mm (1.5 inches) in diameter or larger, buried logs, and all other objectionable material occurring within the lines of the new building and to horizontal distance of 4.5 m (15 feet) beyond the building walls.
5. Other Areas: Grub all stumps, roots 40 mm (1.5 inches) in diameter or larger, buried logs, and all other objectionable material occurring within the grading limits to a depth of not less than 1 m (3.28 feet) below the existing ground surface or subgrade excavation, whichever is deeper.
6. Backfill and compact all depressions resulting from the clearing and grubbing operation with suitable material in order to make the surface conform to the original adjacent surface of the ground.
7. After the site has been cleared and prior to any cutting or filling operations, strip all topsoil and organic soils from areas to be built upon, paved, or where grades are to be changed more than 152 mm (6 inches). Strip the existing topsoil to whatever depths encountered. Prevent intermingling with underlying subsoil, or other objectionable material. Remove heavy growths of grass from areas before stripping. Where trees are to be left standing, stop topsoil stripping a sufficient distance away from the trees in order to prevent damage to the main root system.
8. Stockpile soil to be re-used in an area clear of the new construction. Remove excess soil from the site.
9. Construct stockpiles in a manner that will freely drain surface water. Maintain soil stockpiles free from debris and trash. Do not obstruct site drainage. Do not exceed a stockpile depth of 8 feet.
10. Keep the soil stockpile damp in order to prevent drying and dust.

Andrew Riverside

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Minneapolis, MN 55414

esg

elness swenson graham architects

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p. 612.339.5508
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www.esgarch.com

I hereby certify that this document was prepared by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of the State of Minnesota

Signature

Mike R. Kettler
Typed or Printed Name

40425 License # | 04-24-12 Date

Sunde Engineering, PLLC.
CONSULTING CIVIL ENGINEERS
10830 NESBITT AVENUE SOUTH
BLOOMINGTON, MINNESOTA 55437
(952) 881-3344 TELEPHONE
(952) 881-1913 FAX
www.sundecivil.com

HPC CERTIFICATE OF APPROPRIATENESS APRIL 24, 2012

ORIGINAL ISSUE: 04/24/12

REVISIONS

No.	Description	Date

211504
PROJECT NUMBER

MW DRAWN BY | MK CHECKED BY

Andrew Riverside

DEMOLITION AND EROSION CONTROL PLAN

C1.0

DIMENSIONS			W = 12"		
			DESIGN CODE	CONCRETE	
H	A	B		CU. YDS. / LIN. FT.	LIN. FT. / CU. YD.
6"	8"	13 1/2"	B612	0.0474	21.1

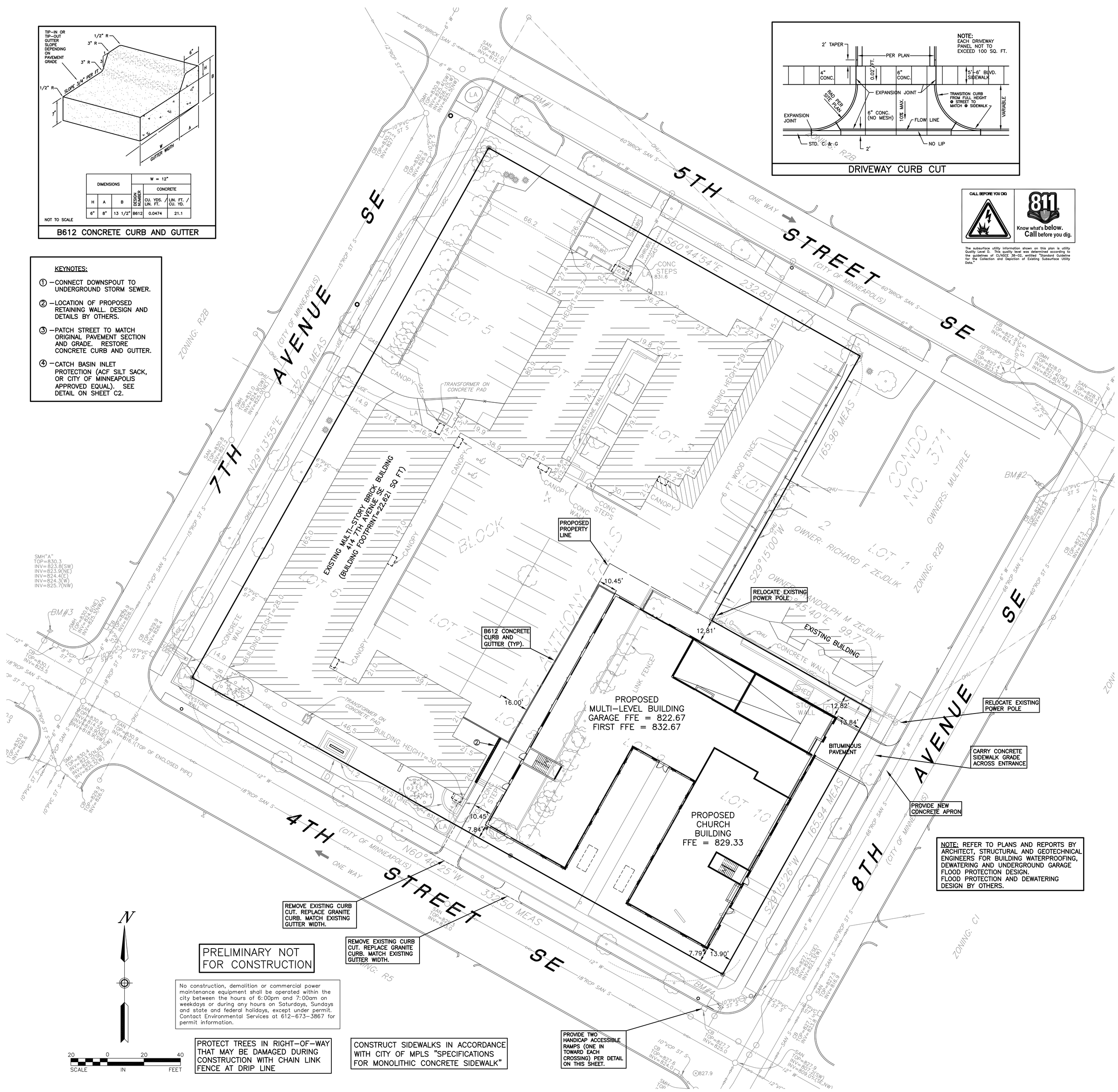
NOT TO SCALE

B612 CONCRETE CURB AND GUTTER

DRIVEWAY CURB CUT

KEYNOTES:

1. CONNECT DOWNSPOUT TO UNDERGROUND STORM SEWER.
2. LOCATION OF PROPOSED RETAINING WALL. DESIGN AND DETAILS BY OTHERS.
3. PATCH STREET TO MATCH ORIGINAL PAVEMENT SECTION AND GRADE. RESTORE CONCRETE CURB AND GUTTER.
4. CATCH BASIN INLET PROTECTION (ACF SILT SACK, OR CITY OF MINNEAPOLIS APPROVED EQUAL). SEE DETAIL ON SHEET C2.



PRELIMINARY NOT FOR CONSTRUCTION

No construction, demolition or commercial power maintenance equipment shall be operated within the city between the hours of 6:00pm and 7:00am on weekdays or during any hours on Saturdays, Sundays and state and federal holidays, except under permit. Contact Environmental Services at 612-673-3867 for permit information.

PROTECT TREES IN RIGHT-OF-WAY THAT MAY BE DAMAGED DURING CONSTRUCTION WITH CHAIN LINK FENCE AT DRIP LINE

CONSTRUCT SIDEWALKS IN ACCORDANCE WITH CITY OF MPLS "SPECIFICATIONS FOR MONOLITHIC CONCRETE SIDEWALK"

NOTE: REFER TO PLANS AND REPORTS BY ARCHITECT, STRUCTURAL AND GEOTECHNICAL ENGINEERS FOR BUILDING WATERPROOFING, DEWATERING AND UNDERGROUND GARAGE FLOOD PROTECTION DESIGN. FLOOD PROTECTION AND DEWATERING DESIGN BY OTHERS.

CALL BEFORE YOU DIG!

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

The subsurface utility information shown on this plan is utility Quality Level D. This quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data."

SITE NOTES:

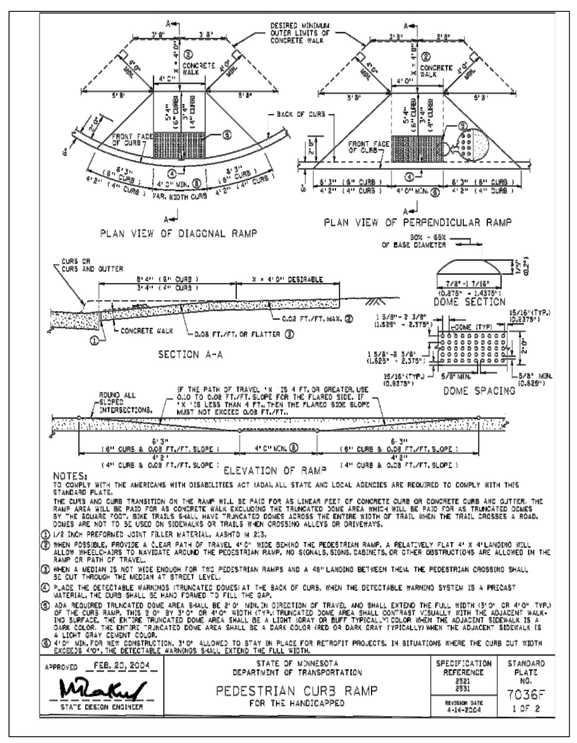
1. Existing boundary, location, topographic, and utility information shown on this plan is from a field survey by Sunde Land Surveying, LLC dated 6/24/11.
2. Detectable warnings are required on all public and private ramps. Place the detectable warnings at the back of curb. The ADA required truncated dome area shall be 24 inches minimum in the direction of travel and shall extend the full width (4' wide typ.) of the curb ramp. The only acceptable texture for "detectable warnings" is truncated domes. All detectable warning surface installations shall be at minimum at least as non skid as the surrounding pedestrian surfaces. Detectable warnings are to consist of raised truncated domes with a diameter of nominal 0.9", a height of nominal 0.2", and a center-to-center spacing of nominal 2.35". The truncated dome area shall contrast visually with the adjacent walking surface. Use dark grey when the adjacent sidewalk is a light grey cement color. Use light grey when the adjacent sidewalk is a dark color. Install truncated domes and all related surfaces according to the manufacturers specifications. **Install Armor-Tile (www.armor-tile.com) Cast In Place Truncated Dome Detectable Warning Surface Tile, or approved equal.** Refer to ADA sections 4.7.7 and 4.29.2 for additional information.
3. All materials required for this work shall be new material conforming to the requirements for class, kind, grade, size, quality, and other details specified herein or as shown on the Plans. Do not use recycled or salvaged aggregate, asphaltic pavement, crushed concrete, or scrap shingles. Unless otherwise indicated, the Contractor shall furnish all required materials.
4. All dimensions are to face of curb (where applicable), edge of pavement, or exterior face of building, unless otherwise indicated.
5. All curb radii shall be three (3) feet minimum unless otherwise noted.
6. Install and make operational all irrigation before commencing with landscaping.
7. White surface markings (letters and symbols) shall be in conformance with the Standard Alphabets for Highway Signs and Pavement Markings, FHA (HTO-20).
8. Install and maintain access roads throughout all stages of construction. Temporary access roads must be approved by the Fire Department before construction starts.
9. Fire extinguishers must be on-site and available throughout the construction site during all stages of construction.
10. Smoking is prohibited at the construction site except for approved areas designated by the Fire Department. "NO SMOKING" signs must be provided by the Contractor.
11. All cutting and welding must meet the requirements of Article 49 of the Uniform Fire Code.
12. Storage and handling of flammable liquids shall meet the requirements of Article 79 of the Uniform Fire Code.
13. Do not block access to building, fire hydrants, or other fire appliances with construction materials.
14. Provide fire lane signage as required by the Fire Department.
15. Design and maintain fire apparatus access roads throughout construction to support the imposed loads of fire apparatus in all weather driving capabilities. Minimum 7-ton road design required. Pursuant to 1997 Uniform Fire Code Section 902.2.2.2.
16. B612 CONCRETE CURB AND GUTTER IS PROPOSED FOR ALL PRIVATE PROPERTY.
17. Provide traffic control devices and signage in accordance with the Minnesota Manual on Uniform Traffic Control Devices (MMUTCD), including the Field Manual for Temporary Traffic Control Zone Layouts dated April 1995, the Minnesota Standard Signs Manuals Parts I, II, and III and the appropriate Material Specifications, and MNDOT Standard Specification Section 1710. All signs must be reflectorized.
18. Provide Advance and Construction Zone Signing including, but not limited to, signs for lane closures, low shoulder, uneven lanes, and fresh oil (other items as applicable). The number and location of these signs will be determined by the Contractors operations.
19. Portland cement concrete for curb and gutter and sidewalk shall be 3900 psi minimum 28 days compressive strength with 5.0% air entraining. Concrete aggregates shall be free of organic impurities, chert, shale, or other deleterious substances.
20. Construct all concrete sidewalks in accordance with MNDOT Specification 2521. All concrete sidewalks shall be as indicated on the plans, but not less than 4" thick with 6 inch x 6 inch - #10/#10 wire size woven wire mesh reinforcing.
21. Preformed expansion joints using 0.5" thickness shall be placed at each end of curb radius, at intersections, and approximately every 200 feet.
22. Contraction joints shall be spaced at 10 foot intervals in the curb and gutter.
23. For exterior concrete slabs, unless otherwise indicated, provide expansion joints at 30 foot intervals and at locations where the concrete surrounds or adjoins any existing fixed objects such as walks, walls, curbing, steps, driveways, building foundations and other rigid structures. Divide exterior slabs into square panels of uniform size generally containing not more than 36 square feet of area.
24. Construct 2' taper at the free end of all concrete curb and gutter sections.
25. Construct all door threshold heights to within 0.5" of finished floor elevation.
26. Provide temporary street signs and addresses during construction.
27. Unless otherwise indicated, install signage 18 inches behind the back of curb or back of walkway.

SITE AREA = 27,171 SF
BUILDING AREA = 20,252 SF
SITE AREA MINUS BLDG = 6,919 SF
GREENSPACE = 5,032 SF

PERCENT GREENSPACE COVERAGE = 72.7%

Any elements of an earth retention system in the right of way will require an encroachment permit application. All such elements shall be removed from the right-of-way following construction with the exception of tie-backs which may remain but must be uncoupled and de-tensioned.

A construction crane whose boom extends over the public right of way will require an encroachment permit application.



Andrew Riverside

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I hereby certify that this document was prepared by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of the State of Minnesota

Signature

Mike R. Kettler
Typed or Printed Name

40425 — License #
04-24-12 — Date

Sunde Engineering, PLLC.

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HPC CERTIFICATE OF APPROPRIATENESS APRIL 24, 2012

ORIGINAL ISSUE: 04/24/12

REVISIONS

No.	Description	Date

211504
PROJECT NUMBER

MW — DRAWN BY
MK — CHECKED BY

Andrew Riverside

SITE PLAN

C2.0

SADDLE TAP TO EXISTING SANITARY SEWER

KEYNOTES:

① – CONNECT DOWNSPOUT TO UNDERGROUND STORM SEWER.

② – LOCATION OF PROPOSED RETAINING WALL. DESIGN AND DETAILS BY OTHERS.

③ – PATCH STREET TO MATCH ORIGINAL PAVEMENT SECTION AND GRADE. RESTORE CURB AND GUTTER.

④ – CATCH BASIN INLET PROTECTION (ACF SILT SACK, OR CITY OF MINNEAPOLIS APPROVED EQUAL). SEE DETAIL ON SHEET C2.

CALL BEFORE YOU DIG.

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

The subsurface utility information shown on this plan is utility Quality Level D. This quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data."

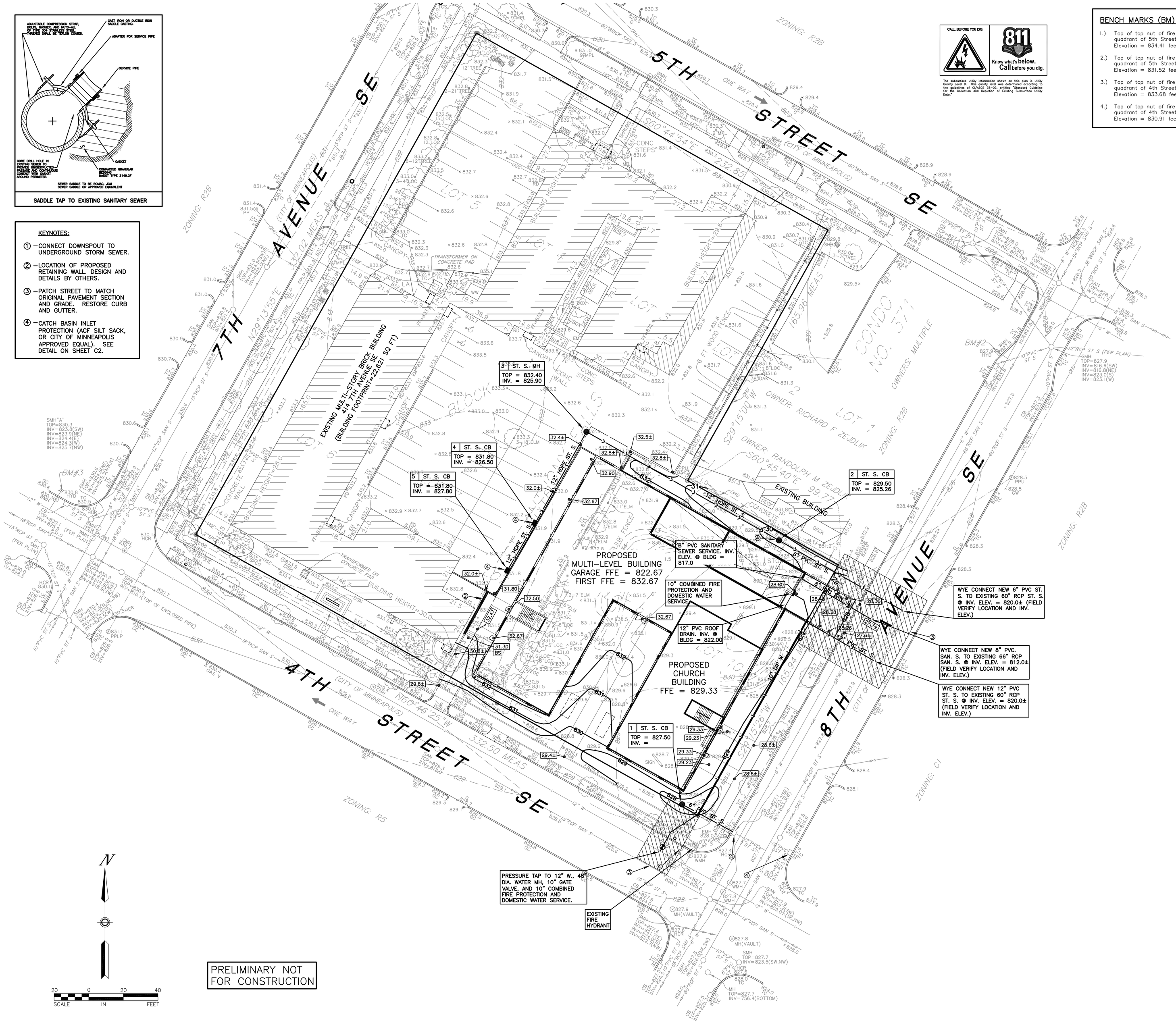
BENCH MARKS (BM)

1.) Top of top nut of fire hydrant in the southeast quadrant of 5th Street SE and 7th Avenue SE. Elevation = 834.41 feet (NAVD 1988)

2.) Top of top nut of fire hydrant in the southwest quadrant of 5th Street SE and 8th Avenue SE. Elevation = 831.52 feet (NAVD 1988)

3.) Top of top nut of fire hydrant in the northwest quadrant of 4th Street SE and 7th Avenue SE. Elevation = 833.68 feet (NAVD 1988)

4.) Top of top nut of fire hydrant in the northwest quadrant of 4th Street SE and 8th Avenue SE. Elevation = 830.91 feet (NAVD 1988)



PRELIMINARY NOT FOR CONSTRUCTION

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Signature

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No.	Description	Date

211504
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Andrew Riverside

GRADING, DRAINAGE & UTILITY PLAN

C3.0

Andrew Riverside

401 8th Ave SE
Minneapolis, MN 55414

GENERAL:

1. Comply with the work safety practices specified by the Occupational Safety and Health Administration (OSHA). Comply with all applicable local, state, and federal safety regulations. OSHA prohibits entry into "confined spaces," such as manholes and inlets (see 29 CFR Section 1910.146), without undertaking certain specific practices and procedures. Construction safety is solely the responsibility of the Contractor, who is also solely responsible for the means, methods, and sequencing of the construction operations.
2. Existing boundary, location, topographic, and utility information shown on this plan is from a field survey by Sunde Land Surveying, LLC dated 5/24/11
3. Refer to the architectural plans for building and stoop dimensions, site layout and dimensions, pavement sections and details, striping, and other site features.
4. Perform all construction work in accordance with State and Local requirements.
5. A licensed surveyor shall perform construction staking. The Contractor shall provide and be responsible for the staking. Verify all plan and detail dimensions prior to construction staking. Stake the limits of walkways and curbing prior to valvebox, maintenance hole, and catchbasin installation. Adjust valvebox and maintenance hole locations in order to avoid conflicts with curb and gutter. Adjust catchbasin locations in order to align properly with curb and gutter.
6. Provide temporary fences, barricades, coverings, and other protections in order to preserve existing items to remain, and to prevent injury or damage to person or property.
7. Connect to existing sanitary sewer and storm sewer MH's by coredrilling. Use water tight saddle encased in Type N air entrained concrete. Use saws or drills that provide water to the blade. Meet all City standards and specifications for the the connection. Reconstruct inverts after installation. Use water stop gaskets in order to provide watertight seals when penetrating a structure wall with a pipe. Take measurements before beginning construction to ensure that service connections do not cut into maintenance access structure joints or pipe barrel joints.
8. Testing and Inspections: All plumbing installations, including water and sewer services, must be tested and inspected in accordance with the requirements of the Minnesota Plumbing Code (Minnesota Rules Chapter 4715). Coordinate testing and inspection with the State Health Department and the City Public Works Department. No drainage or plumbing work may be covered prior to completing the required tests and inspections.
9. Perform trench excavations for all utilities in accordance with the requirements of O.S.H.A. 29 CFR, Part 1926, Subpart P, "Excavations and Trenches." (www.osha.gov)
10. Coordinate building utility connection locations at 5 ft. out from the proposed building with the with the interior Plumbing Contractor prior to construction. Verify water and sewer service locations, sizes, and elevations with the Mechanical Engineer prior to construction.
11. The locations of existing utilities shown on this plan are from record information. The Engineer does not guarantee that all existing utilities are shown or, if shown, exist in the locations indicated on the plan. It is the Contractor's responsibility to ascertain the final vertical and horizontal location of all existing utilities (including water and sewer lines and appurtenances). Notify the Engineer of any discrepancies.
12. Contact utility companies for locations of all public and private utilities within the work area prior to beginning construction. Contact GOPHER STATE ONE CALL at (651) 454-0002 in the Minneapolis/St. Paul metro area, or 1-800-252-1166 elsewhere in Minnesota for exact locations of existing utilities at least 48 working hours (not including weekends and holidays) before beginning any construction in accordance with Minnesota Statute 216D. Obtain ticket number and meet with representatives of the various utilities at the site. Provide the Owner with the ticket number information. Gopher State One Call is a free service that locates municipal and utility company lines, but does not locate private utility lines. Use an independent locator service or other means in order to obtain locations of private utility lines including, but not limited to, underground electric cables, telephone, TV, and lawn sprinkler lines.
13. Where existing gas, electric, cable, or telephone utilities conflict with the Work, coordinate the abandonment, relocation, offset, or support of the existing utilities with the appropriate local utility companies. Coordinate new gas meter and gas line installation, electric meter and electric service installation, cable service, and telephone service installation with the local utility companies.
14. Arrange for and secure suitable disposal areas off-site. Dispose of all excess soil, waste material, debris, and all materials not designated for salvage. Waste material and debris includes trees, stumps, pipe, concrete, asphaltic concrete, cans, or other waste material from the construction operations. Obtain the rights to any waste area for disposal of unsuitable or surplus material either shown or not shown on the plans. All work in disposing of such material shall be considered incidental to the work. All disposal must conform to applicable solid waste disposal permit regulations. Obtain all necessary permits at no cost to the OWNER.
15. All materials required for this work shall be new material conforming to the requirements for class, kind, grade, size, quality, and other details specified herein or as shown on the Plans. Do not use recycled or salvaged aggregate, asphaltic pavement, crushed concrete, or scrap shingles. Unless otherwise indicated, the Contractor shall furnish all required materials.
16. Restore the public right-of-way at temporary construction entrance locations. Replace any concrete curb and gutter, bituminous pavement, sidewalk, or vegetative cover damaged by the construction activity. Restore damaged turf with sod within the public right-of-way. The work area shown is general and may need to be adjusted in the field.
17. Provide traffic control in accordance with local authorities and the Minnesota Manual on Uniform Traffic Control Devices (MMUTCD), including the Field Manual for Temporary Traffic Control Zone Layouts dated January 2001.
18. Provide and maintain temporary drainage throughout construction until the permanent drainage system and structures are in place and operational. Install temporary ditches, piping, pumps, or other means as necessary in order to insure proper drainage at all times. Provide low points at building pads or roadways with positive outfalls.
19. Protect sub grades from damage by surface water runoff.
20. Full design strength is not available in bituminous pavement areas until the final lift of asphalt is compacted into place. Protect pavement areas from overloading by delivery trucks, construction equipment, and other vehicles.
21. When sawing or drilling concrete or masonry, use saws that provide water to the blade.
22. Adjust all curb stops, valve boxes, maintenance hole castings, catchbasin castings, cleanout covers, and similar items to finished grade.
23. 2% maximum slope in all directions in handicapped accessible parking areas.
24. Install all pipe with the ASTM identification numbers on the top for inspection. Commence pipe laying at the lowest point in the proposed sewer line. Lay the pipe with the bell end or receiving groove end of the pipe pointing upgrade. When connecting to an existing pipe, uncover the existing pipe in order to allow any adjustments in the proposed line and grade before laying any pipe. Do not lay pipes in water or when the trench conditions are unsuitable for such work.
25. Obtain and pay for all permits, tests, inspections, etc. required by agencies that have jurisdiction over the project. Execute and inspect work in accordance with all local and state codes, rules, ordinances, or regulations pertaining to the particular type of work involved.
26. Obtain permission from the City for work in the public right-of-way.
27. Construct sanitary sewer, watermain, and storm sewer utilities in accordance with the City Engineer's Association of Minnesota Standard Specifications sections 2600, 2611, and 2621 dated 1999, or the latest revised edition.
28. The Contractor shall be responsible for the design and construction of the proposed retaining walls. A Minnesota Licensed Civil Engineer must design and sign the retaining wall design. The Contractor shall be responsible for all costs associated with the retaining wall system design and construction, and shall include the costs of submitting detailed plans and specifications for the retaining wall system to the Owner for review.
29. Use City of Minneapolis standard castings on all public utilities.

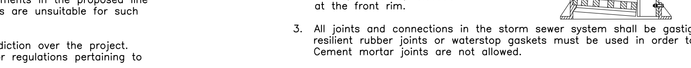
PRELIMINARY NOT FOR CONSTRUCTION

SITE GRADING:

1. Visit the site. Become familiar with the site and existing site conditions including available soil reports. Examine all local conditions at the site, and assume responsibility as to the grades, contours, and the character of the earth, existing conditions, and other items that may be encountered during excavation work above or below the existing grades. Review the drawings and specifications covering this work and become familiar with the anticipated site conditions.
2. Unless otherwise noted, all proposed grades shown are finished grades. Finished grades at points between spot elevations or contours are determined by uniform slopes between the given grades. All proposed spot elevations shown at curblines are to bottom of curb (gutterline) unless otherwise indicated.
3. At locations where new work connects to existing work, field verify existing elevations and grades prior to beginning the new work. Match existing grades at construction limits.
4. Remove all unsuitable material (organic soils, uncontrolled fill, debris, and natural or artificial obstructions) in the zone from 1 m (3.28 feet) below the finished subgrade to finished subgrade in the proposed pavement areas.
5. Compact backfill in all utility trenches to 95% Standard Proctor maximum dry density (ASTM D698-78 or AASHTO T-99) from the pipe zone to within 1 m (3.28 feet) below the finished subgrade, and 100% Standard Proctor maximum dry density in the final 1 m (3.28 feet). Provide density tests in backfills and fills placed beneath footings, slabs, and pavements. At least one compaction test is required for every 100 feet of trench at vertical intervals not exceeding one foot.
6. Compact all fill placed in pavement areas in accordance with MNDOT Standard Specification 2105.3.F1 (Specified Density Method). Compact all fill placed under buildings in accordance with the recommendations of the Geotechnical Engineer.
7. Comply with the requirements of O.S.H.A. 29 CFR, Part 1926, Subpart P, "Excavations and Trenches." (www.osha.gov)
8. Construct all proposed sideslopes with grades not exceeding 3:1 (3 horizontal to 1 vertical), unless otherwise indicated.
9. Provide positive drainage away from buildings at all times.
10. Test roll the building and pavement areas in the presence of the Geotechnical Engineer. Perform base preparation and test rolling prior to curb and gutter construction, placing of gravel base, sand/gravel sub-base, bituminous stabilized base, or plant mixed bituminous base on all street and pavement areas. Test roll the area between 300 mm (12 inches) outside of the back of the curbs on either side of the paved areas. Use a heavy pneumatic-tired roller, towed by suitable tractive equipment, with two wheels spaced not less than 1,800 mm (71 inches) apart (transversely center to center), tire size equal to 18x24 or 18x25 (18" wide) inflated to a pressure of 650 kPa (94 psi), and a gross mass of the roller not less than 13.5 metric tons (14.9 tons) and not more than 13.7 metric tons (15.1 tons). Test roll the above specified area in a manner such that each part of the area comes in contact with one of the tires at least once. Operate the heavy roller at a speed of not less than 4 km/h (2.5 mph) and not more than 8 km/h (5 mph). The subgrade shall be considered unstable if, at the time that the heavy roller passes over the subgrade, the surface shows yielding or rutting of more than 50 mm (2 inches), measured from the original surface to the bottom of the rut. Correct any soft spots or displacements which appear during the test rolling by scarifying, aerating or watering, and recompacting as required to obtain stability; or by excavating to solid material and backfilling with material suitable for base construction. Remove material such as vegetation, rubbish, large stones, peat, and wet clay. Retest the area after correction.
11. Perform soil correction procedures and compaction in accordance with the soils report.
12. Coordinate inspection and approval of all subgrades within the building and pavement areas with the Geotechnical Engineer. Coordinate inspection and approval of all fill materials prior to placement within the building and pavement areas with the Geotechnical Engineer. Use only uncontaminated fill material.
13. Conduct all grading operations in a manner that minimizes the potential for site erosion.
14. Grade the site to the finished elevations shown on the plan. Import embankment material, or remove and dispose of excess excavation material as required. Provide waste areas or disposal sites for excess material including, but not limited to, excavated material or broken concrete that is not desirable to be incorporated into the work involved on this project. Determination of material import and export quantities is solely the responsibility of the Contractor and the cost of material import and export is incidental to the contract.
15. In areas where fill is placed on slopes steeper than 5:1, horizontally bench the slopes in order to increase the bond between the slope and the proposed embankment.
16. Structurally support exterior steps, stoops, and slabs at each entry into the building on frost-depth foundations bearing on footings at least 5 feet below final grade. Securely tie the foundation walls to the footings with steel reinforcing so that any frozen soil adhering to them does not heave them off of the footings. Place insulation along all sides of the vertical foundation walls in order to prevent adfreezing of the backfill to the walls. Provide at least 4 inches of void space between the bottoms of the step, stoop, or slab and the underlying soil in order to allow for soil heave. Dowl all abutting walkways into the stoops.
17. Tolerances The completed subgrade under slabs and pavement areas shall be compacted, free from irregular surface changes, and fine-graded not more than 16 mm (0.05 feet) above or below the specified subgrade elevation. The completed subgrade in other areas shall be compacted, free from irregular surface changes, and fine-graded not more than 31 mm (0.10 feet) above or below the specified subgrade elevation. The completed top of topsoil shall be compacted, free from irregular surface changes, and fine-graded not more than 16 mm (0.05 feet) above or below the specified finished grade elevation.
18. Choose equipment and work procedures that will not disturb the subgrade soils. Route construction traffic away from foundation soils and areas of pavements and slabs in order to minimize soil disturbance. If the construction equipment causes rutting or soil pumping, then switch to other types of equipment or methods. The Contractor is solely responsible for the proper selection of construction equipment in order to avoid disturbing soils on the site.
19. It is typical to abbreviate spot elevations. Elevations shown as 86.2 or 83.1 are understood to mean 886.2 or 883.1 respectively.

STORM DRAINAGE:

1. Unless otherwise indicated, use reinforced, precast, concrete maintenance holes and catchbasins conforming to ASTM C478, furnished with water stop rubber gaskets and precast bases. Joints for all precast maintenance hole sections shall have confined, rubber "O"-ring gaskets in accordance with ASTM C923. The inside barrel diameter shall not be less than 48 inches.
2. Install catchbasin castings with specified top elevation at the front rim.



3. All joints and connections in the storm sewer system shall be gastight or watertight in accordance with Minnesota Rules part 4715.0700. Approved resilient rubber joints or waterstop gaskets must be used in order to make watertight connections to manholes, catchbasins, and other structures. Cement mortar joints are not allowed.
4. PVC Pipe: Use solid-core, SDR-35, ASTM D3034 Polyvinyl Chloride (PVC) Pipe for designated PVC storm sewer services 4 to 15-inches in diameter. Use solid-core, SDR-35, ASTM F679 Polyvinyl Chloride (PVC) pipe for designated PVC storm sewer services 18 to 27-inches in diameter. Joints for all storm sewer shall have push-on joints with elastomeric gaskets. Use of solvent cement joints is allowed for building services. Solvent cement joints in PVC pipe must include use of a primer which is of contrasting color to the pipe and cement in accordance with Minnesota Rules, part 4715.0810, subpart 2. Pipe with solvent cement joints shall be joined with PVC cement conforming to ASTM D2564. Lay all PVC pipe on a continuous granular bed. Installation must comply with ASTM D2321.
5. Testing: Test all portions of storm sewer that are within 10 feet of buildings, within 10 feet of buried water, lines, within 50 feet of water wells, or that pass through soil or water identified as being contaminated in accordance with the Minnesota Rules part 4715.2820. Test all flexible storm sewer lines for deflection after the sewer line has been installed and backfill has been in place for at least 30 days. No pipe shall exceed a deflection of 5%. If the test fails, make necessary repairs and retest.
6. Draintile: In accordance with Minnesota Rules part 4715.2820, use perforated polyvinyl chloride PVC (ASTM D3034) or corrugated polyethylene PE (ASTM F405) on all draintile 3-inches to 6-inches in diameter. Install draintile with MnDOT 3733 Type 1 geotextile filter wrap or knit sock.
7. Use a Neenah R-1733 frame with Type "C" radial grate, or approved equal, on CB #1, and #2.
8. Use Neenah R-3067-DR/DL casting with curb box, or approved equal, on CB #4 and CB #5.
9. Use Neenah Foundry Co. R-1642 casting with self-sealing, solid, type B lid, or approved equal, on all storm sewer maintenance holes. Covers shall bear the "Storm Sewer" label.
10. **Install detectable underground marking tape directly above all pvc, polyethylene, and other nonconductive underground utilities at a depth of 457 mm (18 inches) below finished grade, unless otherwise indicated. Bring the tape to the surface at various locations in order to provide connection points for locating underground utilities. Install blue Rhino TriView Flex Test Stations, or approved equal, with black caps at each surface location.**
11. Insulate roof drain leaders that have less than 4 feet of cover.
12. Corrugated metal pipe (CMP) and fittings shall be fabricated from galvanized steel. Nominal sheet thickness shall be from 0.052- to 0.168-inch for 12- to 42-inch diameter pipes, and from 0.064- to 0.168-inch for pipes 48-inches and larger. Corrugation profile shall be 2 2/3" x 1/2" for 12- to 42-inch diameter pipes, and 3" x 1" for pipes 48-inches and larger.
13. Caulked seam corrugated metal pipe shall have all circumferential and horizontal seams caulked with an asphalt compound before riveting. This shall be accomplished by applying a uniform bead (1/4" minimum diameter) of the asphalt compound to the inner lap surface before riveting such that when the rivets are in place all voids are filled and a coating of asphalt is between the lap surfaces.
14. The asphalt compound shall consist of an asphalt base combined with an inert filler material to form heavy-bodied compound that will not sag or run out of the seam. The compound shall contain 63 to 68 percent solids by weight. It shall be similar in type and equal in quality to Trumbull 5X Asphalt Mastic, knife grade, as manufactured by the Trumbull Asphalt Company of Delaware.
15. Pipe shall be joined in the field with 2 foot wide rod and lug bands. Seams at the connections shall be caulked as described above.
16. Pipe shall be installed in accordance with the manufacturer's recommendations. The pipe shall be laid with the outside laps of circumferential joints pointing upstream and with the longitudinal laps at the sides at about the vertical midheight of the pipe. Field welding of corrugated galvanized iron or steel pipe shall not be permitted.

HDPE REQUIREMENTS:

1. Install dual-wall, smooth interior, corrugated high-density polyethylene (HDPE) pipe at locations indicated on the plan.
2. Dual-wall, smooth interior, corrugated high-density polyethylene (HDPE) pipe shall conform to the requirements of AASHTO M252 for pipe sizes 4-inch to 10-inch diameter.
3. Dual-wall, smooth interior, corrugated high-density polyethylene (HDPE) pipe shall conform to the requirements of ASTM F2306 for pipe sizes 12-inch to 60-inch diameter.
4. All fittings must comply with ASTM Standard D3212.
5. Water-tight joints must be used at all connections including structures.
6. Lay all HDPE pipe on a continuous granular bed. Installation must comply with ASTM D2321. All sections of the corrugated HDPE pipe shall be coupled in order to provide water tight joints.
7. Perform deflection tests on all HDPE pipe after the sewer lines have been installed and backfill has been in place for at least 30 days. No pipe shall exceed a deflection of 5%. If the test fails, make necessary repairs and perform the test again until acceptable. Supply the mandrel for deflection testing. If the deflection test is to be run using a rigid ball or mandrel, it shall have a diameter equal to 95% of the inside diameter of the pipe. The ball or mandrel shall be clearly stamped with the diameter. Perform the tests without mechanical pulling devices.
8. **After installation, the underground stormwater storage system must pass a manometer test with one inch of water column for five minutes in accordance with Minnesota Rules, part 4715.1115.**

SANITARY SEWER:

1. Unless otherwise indicated, use reinforced, precast, concrete maintenance holes conforming to ASTM C478, furnished with precast bases. Sanitary sewer maintenance holes shall be supplied with pre-formed inverts and flexible neoprene sleeve connections for all lateral lines 375 mm (15 inches) in diameter or less, unless otherwise indicated. Joints for all precast maintenance hole sections shall have confined, rubber "O"-ring gaskets in accordance with ASTM C923. The inside barrel diameter shall not be less than 48 inches.
2. Pipe: Use solid-core, Schedule 40, ASTM D2665 Polyvinyl Chloride (PVC) Plastic Pipe for all designated PVC sanitary sewer services. Joints for all sanitary sewer shall have push-on joints with elastomeric gaskets. Use of solvent cement joints is allowed for building services. Solvent cement joints in PVC pipe must include use of a primer which is of contrasting color to the pipe and cement in accordance with Minnesota Rules, part 4715.0810, subpart 2. Pipe with solvent cement joints shall be joined with PVC cement conforming to ASTM D2564. Lay all PVC pipe on a continuous granular bed. Installation must comply with ASTM D2321.
3. Cleanouts: Install cleanouts on all sanitary sewer services in accordance with Minnesota Rules part 4715.1010. The distance between cleanouts in horizontal piping shall not exceed 100 feet for pipes 4-inch and over in size. Cleanouts shall be of the same nominal size as the pipes they serve. Include frost sleeves and concrete frame and pipe support. Install a meter box frame and solid lid (Neenah R-1914-A, or approved equal) over all cleanouts.
4. Testing: Pressure test all sanitary sewer lines in accordance with the Minnesota Rules part 4715.2820. Test all flexible sanitary sewer lines for deflection after the sewer line has been installed and backfill has been in place for at least 30 days. No pipe shall exceed a deflection of 5%. If the test fails, make necessary repairs and retest.
5. Install flexible watertight frame/chimney seals on all sanitary sewer maintenance holes. Use either Manufactured Maintenance Hole Frame/Chimney Seals or Elastomeric Waterproofing Frame/Chimney Seals.
6. Use Neenah Foundry Co. R-1642 casting with self-sealing, solid, type B lid, or approved equal, on all sanitary sewer maintenance holes. Covers shall bear the "Sanitary Sewer" label.
7. Unless otherwise indicated, use 4 ft. diameter (i.d.) pre-cast reinforced concrete structures on all sanitary sewer manholes.
8. **Install detectable underground marking tape directly above all pvc, polyethylene, and other nonconductive underground utilities at a depth of 457 mm (18 inches) below finished grade, unless otherwise indicated. Bring the tape to the surface at various locations in order to provide connection points for locating underground utilities. Install blue Rhino TriView Flex Test Stations, or approved equal, with black caps at each surface location.**

WATER DISTRIBUTION SYSTEM:

1. Separation of Water and Sewer: Construct sewer and water services in accordance with Minnesota Rules, part 4715.1710, subpart 2. Provide a minimum horizontal separation of 10 feet between all water and sewer lines. At water and sewer crossings, the bottom of the water pipe located within ten feet of the point of crossing must be at least 12-inches above the top of the sewer. When this is not feasible, the sewer pipe material must conform to the requirements of Minnesota Rules, part 4715.170, subpart 2E. No joints or connections are allowed on the water line within 10-feet of the crossing.
2. Watermain Depth: Maintain 8-feet of cover over the top of the water lines to the finished grade. Verify elevation of watermains and existing water lines at all utility crossings. Install the water lines at greater depths in order to clear storm sewers, sanitary sewers, or other utilities as required. Include costs to lower water lines in the base bid.
3. Disinfection: Disinfect all completed watermains in accordance with AWWA Standard C651. If the tablet or continuous feed methods are used, disinfect using with water that contains at least 50 ppm of available chlorine in accordance with Minnesota Rules, part 4715.2250. Retain the treated water in the pipeline for at least 24 hours. Measure the chlorine residual at the end of the 24 hour period. The free chlorine residual must be at least 10 mg/l measured at any point in the line. Measurement of the chlorine concentration at regular intervals shall be in accordance with Standard Methods, AWWA M-12, or using appropriate chlorine test kits.
4. Testing: Pressure test and perform bacteriological tests on all water lines under the supervision of the City Public Works Department. Notify the City at least 24 working hours prior to any testing. Pressurize the waterline to 1034-kPa (150-psi) gauge pressure (measured at the point of lowest elevation) by means of a pump connected to the pipe in a satisfactory manner. Maintain the test pressure for a minimum of 2 hours. Do not add water to the watermain in order to maintain the required pressure during the water main pressure testing. The test section of pipe is acceptable with a pressure drop of 14 kPa (2 psi) or less.
5. Use ANSI/AWWA C151/A21.51 Thickness Class 52 or Pressure Class 350 Ductile Iron Pipe (DIP) with push-on joints for all watermain. Use only stainless steel bolts and nuts on all watermain fittings, valves, and hydrants.
6. Polyethylene encasement is required on all ductile iron pipe.
7. Use mechanical joint restraint devices for joint restraint on all watermain bends having a vertical or horizontal deflection of 22-1/2 degrees or greater, all valves, stubs, extensions, tees, crosses, plugs, all hydrant valves, and all hydrants in accordance with City requirements. Use "Series 1100 Megalug" manufactured by EBAA Iron Inc., Eastland, Texas, or approved equal, installed in accordance with manufacturer's recommendations for restraint on Ductile Iron Pipe.
8. At all valve locations which require a 12" or smaller valve, install gate valves which are of the compression resilient seated (CRS) type. Use American Flow Control's Series 2500 Ductile Iron Resilient Wedge Gate Valve, or approved equal. Gate valves shall conform to AWWA C509. Install cast iron valve boxes conforming to ASTM A48 at each valve location. Valve boxes shall be the three-piece type with 5-1/4" shafts. Use Tyler 6860-G with No. 6 base, or equivalent. Valve boxes shall have at least 6" of adjustment above and below finished grade. Drop covers on valve boxes shall be round and bear the word "WATER" cast on the top. Use Tyler 6860-G "Stayput" covers with extended skirt, or equivalent.
9. Fire hydrants shall be in accordance with the requirements of the local municipality. Do not connect hydrant drains to sanitary sewers or storm sewers. Do not locate hydrants within 10 feet of sanitary sewers or storm sewers. When placing fire hydrants in locations where the groundwater table is less than 8 feet below the ground surface, plug the hydrant drain holes and equip the hydrants with a tag stating the need for pumping after use.
10. Do not connect new watermain to existing until the new water main is pressure tested and disinfected.
11. Bring all site utilities to 5' outside of the building line with the exception of the water service. Extend water service into the building and install flange 1" above the finished floor.
12. **Install detectable underground marking tape directly above all pvc, polyethylene, and other nonconductive underground utilities at a depth of 457 mm (18 inches) below finished grade, unless otherwise indicated. Bring the tape to the surface at various locations in order to provide connection points for locating underground utilities. Install blue Rhino TriView Flex Test Stations, or approved equal, with black caps at each surface location.**

MINNEAPOLIS STANDARD EROSION CONTROL NOTES:

City of Minneapolis Standard Erosion Control Notes
MINNEAPOLIS STANDARD EROSION CONTROL NOTES (April 1, 2010)

1. Contractor must call for a pre-construction meeting 48 hours prior to any land disturbances.
2. Call 612-673-3867. Failure to do so may result in fines, the revocation of permit and a stop work order being issued.
3. Install perimeter erosion control at the locations shown on the plans prior to the commencement of any land disturbance or construction activities.
4. Before beginning construction, install a temporary rock construction entrance at each point where vehicles exit the construction site. Use 2 inch or greater diameter rock in a layer at least 6 inches thick across the entire width of the entrance. Extend the rock entrance at least 50 feet into the construction zone using a geo-textile fabric beneath the aggregate to prevent migration of soil into the rock from below.
5. Remove all soils and sediments tracked or otherwise deposited onto public and private pavement areas. Removal shall be on a daily basis when tracking occurs and may be ordered by Minneapolis inspectors at any time if conditions warrant. Sweeping shall be maintained throughout the duration of the construction and done in a manner to prevent dust being blown to adjacent properties.
6. Install inlet protection at all public and private catch basin inlets, which receive runoff from the disturbed areas. Catch basin inserts or other approved product are required in undisturbed areas that may receive runoff from the project area. Hay bales or filter fabric wrapped grates are not allowed for inlet protection.
7. Locate soil or dirt stockpiles no less than 25 feet from any public or private roadway or drainage channel. If remaining for more than seven days, stabilize the stockpiles by mulching, vegetative cover, tarps, or other means. Control erosion from all stockpiles by placing silt barriers around the piles. Temporary stockpiles located on paved surfaces must be no less than two feet from the drainage/gutter line and shall be covered if left more than 24 hours.
8. Maintain all temporary erosion and sediment control devices in place until the contributing drainage area has been stabilized. Inspect temporary erosion and sediment control devices on a daily basis and replace deteriorated, damaged, or rotted erosion control devices immediately.
9. Temporarily or permanently stabilize all construction areas which have undergone final grading, and all areas in which grading or site building construction operations are not actively underway against erosion due to rain, wind and running water within 7-14 days.

   Use seed and mulch, erosion control matting, and/or sodding and staking in green space areas. An early application of gravel base on areas to be paved recommended minimizing erosion potential.
10. Remove all temporary synthetic, structural, non-biodegradable erosion and sediment control devices after the site has undergone final stabilization with permanent vegetation establishment. Final stabilization for purposes of this removal is 70% established cover over denuded area.
11. Ready mixed concrete and concrete batch plants are prohibited within the public right of way. All concrete related production, cleaning and mixing activities shall be done in the designated concrete mixing/washout locations as shown in the erosion control plan. Under no circumstance may washout water drain onto the public right of way or into any public or private storm drain conveyance.
12. Changes to approved erosion control plan must be approved by the erosion control inspector prior to implementation. Contractor to provide installation and details for all proposed alternate type devices.

esg

elness swenson graham architects

500 washington avenue south
minneapolis minnesota 55415
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I hereby certify that this document was prepared by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of the State of Minnesota

Signature

Mike R. Kettler
Typed or Printed Name

40425 License # | 04-24-12 Date

Sunde Engineering, PLC.
CONSULTING CIVIL ENGINEERS
10830 NESBITT AVENUE SOUTH
BLOOMINGTON, MINNESOTA 55437
(952) 881-3344 TELEPHONE
(952) 881-1913 FAX
www.sundecivil.com

HPC CERTIFICATE OF APPROPRIATENESS APRIL 24, 2012

ORIGINAL ISSUE: 04/24/12

REVISIONS

No.	Description	Date

211504
PROJECT NUMBER

MW DRAWN BY | MK CHECKED BY

Andrew Riverside
Use Development

NOTES AND DETAILS

C4.0

Andrew Riverside

401 8th Ave SE
Minneapolis, MN 55414

EROSION PREVENTION PRACTICES:

1. Delineate the location of areas not to be disturbed (e.g. with flags, stakes, signs, silt fence, etc.) on the development site before work begins.
2. Avoid removal of trees and surface vegetation wherever possible. Schedule construction in order to expose the smallest practical area of soil at any given time. Implement appropriate construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices that minimize erosion.
3. Following initial soil disturbance or redisturbance, complete permanent or temporary stabilization against erosion due to rain, wind, and running water as soon as possible, but in no case later than **7 calendar days for impaired waters**, on all disturbed or graded areas including stormwater management pond sideslopes. This requirement does not apply to those areas that are currently being used for material storage or for those areas on which grading, site building, or other construction activities are actively underway.
4. Provide temporary grass seed cover on all topsoil stockpiles and other areas of stockpiled excavated material in order to prevent soil erosion and rapid runoff during the construction period. Prolonged periods of open, bare earth without grass cover will not be permitted. Stabilize all disturbed greenspace areas with a minimum of 4" topsoil immediately after final subgrade completion. Seed and mulch, or sod and stake these areas within 48 hours after completion of final grading work (weather permitting).
5. Stabilize all disturbed areas to be paved using early application of gravel base.
6. Stabilize the normal wetted perimeter of any temporary or permanent drainage ditch or swale that conveys water from any portion of the construction site, or diverts water around the site, within 200 lineal feet from the property edge, or within 200 feet from the point of discharge to any surface water. Stabilization of this 200 feet must be completed within 24 hours of connecting to a surface water.
7. Stabilize the remaining portions of any temporary or permanent drainage ditches or swales within **7 calendar days for impaired waters** after connecting to a surface water and construction in that portion of the ditch has temporarily or permanently ceased.
8. Provide pipe outlets with temporary or permanent energy dissipation within 24 hours of connection to a surface water. Place a 450 mm (18 inch) thick layer of MNDOT 3601 Class III riprap onto a 225 mm (9 inch) thick layer of MNDOT 3601.2.B granular filter material at locations indicated on the plan in accordance with MNDOT 2511. Install two layers of MNDOT 3733 Type IV Geotextile fabric under the granular filter material. At pipe outfalls configure the installation as shown on MNDOT Standard Plate No. 3133C for the size of pipe indicated and extend the geotextile fabric under the culvert apron a minimum of 3 feet. For pipe sizes smaller than 300 mm (12 inch) diameter, the minimum quantity of riprap and filter blanket shall be no less than that required for 300 mm (12 inch) diameter pipes.
9. Apply necessary moisture to the construction area and haul roads in order to prevent the spread of dust.

SOIL STABILIZATION:

1. Water and maintain seeded or sodded areas on a timely day-to-day basis. In the event of a seeding failure, reseed and remulch the areas where the original seed has failed to grow and perform additional watering as necessary at no additional cost to the Owner. Promptly replace all sod that dries out to the point where it is presumed dead and all sod that has been damaged, displaced, weakened, or heavily infested with weeds at no additional cost to the Owner.
2. In areas to be temporarily seeded, use introduced seed mixture equivalent to MNDOT No. 250. Apply seed mixture at a rate of 78.4 kg per hectare (70 lbs per acre) in accordance with MNDOT Standard Spec. 2575. Incorporate a Type 3 fertilizer (slow release type with 10 week residual) consisting of 22-5-10 (ZN-P-K) into the soil at an application rate of 392 kg per hectare (350 lbs per acre) by disking prior to seeding.
3. In areas to be permanently seeded, use native seed mixture equivalent to MNDOT No. 350. Apply seed mixture at a rate of 94.7 kg per hectare (84.5 lbs per acre) in accordance with MNDOT Standard Spec. 2575. Incorporate a Type 3 fertilizer (slow release type with 10 week residual) consisting of 22-5-10 (ZN-P-K) into the soil at an application rate of 392 kg per hectare (350 lbs per acre) by disking prior to seeding.
4. Establish native seed mix in accordance with MNDOT Standard Spec. 2575.3. Use a Truax type, or equal interseeder drill with at least two seed boxes: a small/fine seed box and a large/fluffy seed box. Drill large/fluffy seeds to a final planting depth of 10 mm (1/2 inch) to 25 mm (1 inch) deep from the large/fluffy seed box. Split the drill rows in half and make two passes over the site in order to decrease competition in drill rows. Scatter small/fine seeds over the soil surface by drop-seeding from the small/fine seed box, or broadcast. Coordinate with the seed vendor to keep the large/fluffy seeds separate from the small/fine seeds so that they may be installed from separate seed boxes. Lightly harrow or rake the site following the seeding operation. Pack the site following harrowing in order to ensure a firm seed-bed.
5. Comply with the requirements of MNDOT Standard Spec. Table 2575-1 for season of planting native seed mixtures. The appropriate dates for spring seeding are from April 15 through July 20. Fall seeding dates are from September 20 to October 20. Dormant seeding dates are from October 20 to November 15. Dormant seeding will only be allowed if the maximum soil temperature at a depth of 25 mm (1 inch) does not exceed 10 degrees C (50 degrees F) in order to prevent germination. When the dates in the season of planting prohibit seeding of the permanent seed mixture, apply temporary seeding and mulch in order to comply with the requirements of the GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY and then apply permanent seeding at a later date.
6. Maintenance of Areas Planted With Native Seeds: To reduce weed establishment, mow 2 to 3 times (30 days apart) during the first year with the mower deck about 6" - 8" off the ground. Mow one time during the 2nd year before weeds set their seeds. Mow every 3 to 5 years following the initial 2 years of maintenance in order to remove dead plant material and stimulate new seed.
7. **In areas to be permanently stabilized, landscape with decorative rock, plantings, and sod (refer to Landscape Plan for design and details).**
8. Reinforce the pond overflow swale with Landlok TRM 450 turf reinforcement mat, or approved equal. Install the mat in accordance with the manufacturer's recommendations.
9. In seeded areas with slopes equal to or flatter than 4:1, apply MNDOT Standard Spec. 3882 Type 1 mulch uniformly over the soil surface by hand or machine within 24 hours after seeding in accordance with MNDOT Standard Spec. 2575.3. Apply mulch at a rate of 4.5 metric tons per hectare (2 tons per acre). Immediately after placement, anchor all mulch material into the soil by crimping (straight disking) in a direction perpendicular to that of the overland storm water flow. Punch the mulch into the soil to a depth of 2 to 3 inches with a disk spacing of 8" or less.
10. In seeded areas with slopes steeper than 4:1, install biodegradable erosion control blankets uniformly over the soil surface by hand within 24 hours after seeding in accordance with manufacturers recommendations. Use MNDOT Standard Spec. 3885 Straw 2S, or Wood Fiber 2S type blanket.
11. In seeded ditches, install biodegradable erosion control blankets uniformly over the soil surface by hand within 24 hours after seeding in accordance with manufacturers recommendations. Use MNDOT Standard Spec. 3885 Coconut 2S, or Wood Fiber HV 2S type blanket.
12. Erosion Control Blanket Installation: Lay the blanket parallel to the direction of water flow with the netting on the top. Spread the blankets evenly without stretching so that fibers are in direct contact with the soil. Overlap adjacent strip edges 2 - 4 inches. Overlap strip ends a minimum of 10 inches with the upgrade strip on top. Bury the upstream end of each blanket at least 6 inches in a vertical trench with the soil pressed firmly against the embedded mat. Install additional check trenches at 50' intervals. Staple strip ends and end overlaps with not more than 12 inches between staples. Staple all other joints and edges at 2 ft. intervals. Place additional staples down the center of each blanket in a diamond pattern at a maximum of 2 foot intervals. Insert all staples flush with the ground surface. Staples shall be 11 gauge or heavier "U"-shaped with a 1 - 2 inch crown. Staple length shall be 10 inches.

POLLUTION PREVENTION MANAGEMENT MEASURES:

1. Solid Waste: Dispose of collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris, and other wastes properly off-site in compliance with Minnesota Pollution Control Agency requirements.
2. Hazardous Materials: Properly store oil, gasoline, paint and any hazardous substances in order to prevent spills, leaks or other discharge. Include secondary containment. Restrict access to storage areas in order to prevent vandalism. Storage and disposal of hazardous materials must be in compliance with MPCA regulations.
3. Other Materials: Dispose of unused building materials, garbage, trash, cleaning wastes, toxic materials, and wastewater properly off-site and in compliance with Minnesota Pollution Control Agency disposal requirements.
4. Furnish suitable trash containers and regularly remove the accumulated trash from the premises.
5. Do not allow solid waste, hazardous materials, and other materials shall to be carried by runoff into a receiving water or storm sewer system.
6. Limit external washing of trucks and other construction vehicles to a defined area of the site. Wash vehicles only on an area stabilized with stone that drains into an approved sediment trapping device. Contain runoff and properly dispose of waste. Engine degreasing is prohibited.
7. Concrete Washout Operations: Contain all liquid and solid wastes generated by concrete washout operations in a leak-proof containment facility or impermeable liner. Do not allow the liquid and solid wastes to contact the ground. Prevent runoff from the concrete washout operations or areas. Dispose of liquid and solid wastes properly in compliance with Minnesota Pollution Control Agency regulations. Install a sign shall adjacent to each washout facility in order to inform concrete equipment operators to utilize the proper facilities.
8. Sanitary and Septic Waste: Furnish and install detached portable toilet facilities at the construction site. The portable toilets shall be conveniently located for the use of all workers on the project. Maintain the facilities in a clean, dry, sanitary condition in accordance with Minnesota Department of Health requirements.

SEDIMENT CONTROL PRACTICES:

1. Implement sediment control practices in order to minimize sediment from entering surface waters, including curb and gutter systems and storm drain inlets.
2. Install all temporary or permanent sediment control measures including silt fence at perimeter of construction, rock construction entrances, sediment filters, silt socks, and sedimentation basins prior to beginning site clearing, grading, or other land-disturbing activity.
3. Establish sediment control practices on all down gradient perimeters before any up gradient land disturbing activities begin. These practices must remain in place until final stabilization has been established.
4. The timing of the installation of sediment control practices may be adjusted in order to accommodate short-term activities, but sediment control practices must be installed before the next precipitation event even if the short-term activity is not complete.
5. If the down gradient treatment system becomes overloaded, install additional up gradient sediment control practices or redundant BMPs in order to eliminate the overloading.
6. Install check dams, diversion swales, or other grade control practices in order to ensure sheet flow and prevent rills (for slope lengths greater than 75 feet with a grade of 3:1 or steeper).
7. Prior to beginning site clearing and grading, protect all storm sewer inlets that receive runoff from disturbed areas. In order to prevent sediment from entering the storm sewer system, seal all storm sewer inlets that are not needed for site drainage during construction. Protect all other storm sewer inlets by installing sediment control devices, silt socks, or staked silt fence. Straw bales or fabric under the grates are not acceptable forms of inlet protection. Protect new storm sewer inlets as they are completed. Maintain storm sewer inlet protection in place until all sources with potential for discharging to the inlets are stabilized.
8. Before beginning construction, install a TEMPORARY ROCK CONSTRUCTION ENTRANCE at each point where vehicles exit the construction site. Use 25 mm (1 inch) to 50 mm (2 inch) diameter rock, MNDOT Standard Specification 3137 CA-1, CA-2, CA-3, or equal Coarse Aggregate. Place the aggregate in a layer at least 152 mm (6 inches) thick across the entire width of the entrance. Extend the rock entrance at least 15 m (50 feet) into the construction zone. Use a MNDOT Standard Specification 3733 Type V permeable geotextile fabric material beneath the aggregate in order to prevent migration of soil into the rock from below. Maintain the entrance in a condition that will prevent tracking or flowing of sediment onto paved roadways. Provide periodic top dressing with additional stone as required. Close entrances not protected by temporary rock construction entrances to all construction traffic.
9. If necessary, clean the wheels of construction vehicles in order to remove soils before the vehicles leave the construction site. Wash vehicles only on an area stabilized with stone that drains into an approved sediment trapping device.
10. Remove all soils and sediments tracked or otherwise deposited onto adjacent property, pavement areas, sidewalks, streets, and alleys. Removal shall be on a daily basis throughout the duration of the construction. Clean paved roadways by shoveling or wet-sweeping. Do not dry sweep. If necessary, scrape paved surfaces in order to loosen compacted sediment material prior to sweeping. Haul sediment material to a suitable disposal area. Street washing is allowed only after sediment has been removed by shoveling or sweeping.
11. Temporary Sedimentation Basins: Where 10 or more acres **(5 or more acres for impaired waters)** of disturbed soil drain to a common location, install temporary (or permanent) sedimentation basins prior to the runoff leaving the construction site or entering surface waters.
12. Soil Stockpiles: Install siltfence or other effective sediment controls around all temporary soil stockpiles. Locate soil or dirt stockpiles such that the downslope drainage length is no less than 8 m (25 feet) from the toe of the pile to a surface water, including stormwater conveyances such as curb and gutter systems or conduits and ditches unless there is a bypass in place for the stormwater. If remaining for more than 7 days, stabilize the stockpiles by mulching, vegetative cover, tarps, or other means. During street repair, cover construction soil or dirt stockpiles located closer than 8 m (25 feet) to a roadway or drainage channel with tarps, and protect storm sewer inlets with silt socks or staked siltfence.
13. Silt Fence: Install silt fence along the contour (on a level horizontal plane) with the ends turned up (J-hooks) in order to help pond water behind the fence. Install the silt fence on the uphill side of the support posts. Provide a post spacing of 1.2 m (4 feet) or less. Drive posts at least 0.6 m (2 feet) into the ground. Anchor the silt fence fabric in a trench at least 152 mm (6 inches) deep and 152 mm (6 inches) wide dug on the upslope side of the support posts. Lay the fabric in the trench and then backfill and compact with a vibratory plate compactor. Make any splices in the fabric at a fence post. At splices, overlap the fabric at least 152 mm (6 inches), fold it over, and securely fasten it to the fence post. Silt fence supporting posts shall be 51 mm (2 inch) square or larger hardwood, pine, or standard T- or U-section steel posts. T- or U-section steel posts shall weigh not less than 1.8602 kg per meter (1.25 lb per lineal foot). Posts shall have a minimum length of 1524 mm (5 feet). Posts shall have projections to facilitate fastening the fabric and prevent slippage. Geotextile fabric shall meet the requirements of MNDOT Standard Specification 3886 for preassembled silt fence, furnished in a continuous roll in order to avoid splices. Geotextile fabric shall be uniform in texture and appearance and have no defects, flaws, or tears. The fabric shall contain sufficient ultraviolet (UV) ray inhibitor and stabilizers to provide a minimum two-year service life outdoors. Fabric color shall be international orange.
14. Install and maintain a siltfence backed by snow fence, wire mesh, or stiff plastic mesh reinforcement directly downstream of all storm sewer outfalls.
15. Reinforce erosion control facilities in areas where concentrated flows occur (such as swales, ditches, and areas in front of culverts and catchbasins) by backing them with snow fence, wire mesh, or stiff plastic mesh reinforcement until paving and turf establishment operations have been completed. Posts for the reinforcing fence shall be 100 mm (4 inch) diameter wood posts, or standard steel fence posts weighing not less than 0.59 kg (1.3 lbs) per lineal foot, with a minimum length of 762 mm (30 inches) plus burial depth. Space posts for the reinforcing fence at intervals of 3 m (10 feet) or less. Drive posts for the reinforcing fence at least 0.6 m (2 feet) into the ground.
16. Coordinate a meeting between a representative of the grading contractor, the Owner of the project, and the City staff in order to review the erosion control plan and the requirements of the Watershed District prior to any work on the site. Notify the Watershed District staff immediately after the erosion control measures are installed. Do not begin grading work until the Watershed District staff approves the installed erosion control measures.
17. Maintain all temporary erosion and sediment control devices in place until the contributing drainage area has been stabilized (hard-surfaced areas paved and vegetation established in greenspace). Repair any rilling, gully formation, or washouts. After final establishment of permanent stabilization, remove all temporary synthetic, structural, and nonbiodegradable erosion and sediment control devices and any accumulated sediments. Dispose-of off site. Restore permanent sedimentation basins to their design condition immediately following stabilization of the site.

MATERIALS:

1. Storm Sewer Inlet Protection: The following are approved inlet sediment control devices:
   a. Road Drain Top Slab Model RD 23 (fits rough opening for 2'x3' inlet), Road Drain Top Slab Model RD 27 (fits rough opening for 27" inlet), or Road Drain Top Slab Model CG 3067 (fits Neenah Casting with 35-1/4"x17-3/4" dimensions) manufactured by WIMCO, 799 Theis Drive, Shakopee, MN, 55379, Phone (952) 233-3055.
   b. Silt Sack: Regular flow (40 gal/min/sq. ft). Average width strength equal to 165.0 lbs/in, ASTM D-4884. Rectangular siltsack on rectangular inlets. Round siltsack on round inlets. Use ACF Environmental, Inc., 2831 Cardwell Road, Richmond, VA 23234, Phone (800) 448-3636, or approved equal.
   c. InfraSafe Sediment Control Barrier. Install geotextile sock on the outside of the barrier in order to trap additional fines. Standard frames are available to fit 24" to 30" diameter and 2'x3' openings. Distributed by ROYAL ENTERPRISES AMERICA, 30622 Forest Boulevard, Stacy, MN, 55079, Phone (651) 462-2130.
   d. Ridge Bag Rock Log. Use rock logs only for curb inlets after pavement is in place. Manufactured by RED BARN RIDGE, 3135 County Road 136, Saint Cloud, MN, 35301, Phone (320) 253-3744.
2. Topsoil: Topsoil used for finish grading of areas to be turfed or planted shall meet the requirements of MNDOT Standard Specification 3877 for topsoil borrow modified to contain no more than 35% sand. Topsoil shall be reasonably free of subsoil, heavy clay, coarse sand, stones, and other objects over 51 mm (2 inches) in diameter; and without plants, roots, sticks, and other objectionable material.
3. Mulch: MNDOT Standard Specification 3882 Type 1 mulch material.
4. Geotextile Fabric for Subgrade Stabilization (if required): MNDOT Standard Specification 3733 Type V permeable geotextile material.
5. Supporting Posts for Siltfence: 51 mm (2 inch) square or larger hardwood, pine, or standard T- or U-section steel posts. T- or U-section steel posts shall weigh not less than 1.8602 kg per meter (1.25 lb per lineal foot). Posts shall have a minimum length of 1524 mm (5 feet). Posts shall have projections to facilitate fastening the fabric and prevent slippage.
6. Siltfence Fabric: MNDOT Standard Specification 3886 self supporting silt fence. Furnish in a continuous roll in order to avoid splices. Geotextile fabric shall be uniform in texture and appearance and have no defects, flaws, or tears. The fabric shall contain sufficient ultraviolet (UV) ray inhibitor and stabilizers to provide a minimum two-year service life outdoors. Fabric color shall be international orange.
7. Aggregate for Temporary Rock Construction Entrance: 25 mm (1 inch) to 50 mm (2 inch) diameter rock, MNDOT Standard Specification 3137 CA-1, CA-2, or CA-3 Coarse Aggregate, or equal.
8. Geotextile Fabric for Temporary Rock Construction Entrance: MNDOT Standard Specification 3733 Type V permeable geotextile fabric material.
9. Aggregate for Block and Rock Sediment Filter: 25 mm (1 inch) to 50 mm (2 inch) diameter rock, MNDOT Standard Specification 3137 CA-1, CA-2, or CA-3 Coarse Aggregate, or equal.
10. Block and Rock Inlet Filters: Block and Rock Inlet Filters consist of open-core concrete masonry blocks, wire screen with 12 mm (0.5 inch) openings, and washed rock. Place open-core concrete masonry blocks lengthwise on their sides around the catchbasin inlet. Place wire screen around the perimeter to the top of the block barrier before the rock is placed. The screen acts to prevent the rocks from being washed through the blocks. Place rock against the wire mesh to the top of the blocks. Use 25 mm (1 inch) to 50 mm (2 inch) diameter rock, MNDOT Standard Specification 3137 CA-1, CA-2, CA-3, or equal Coarse Aggregate. Install two courses of 8" blocks in order to form a barrier height of 16".
11. Concrete Block for Block and Rock Inlet Filter: Standard units with nominal face dimensions of 16 x 8 inches. Minimum 8 inches nominal depth.
12. Wire Screen for Block and Rock Inlet Filter: 12 mm (0.5 inch) openings
13. Bales: Tightly bound bales of unrotted hay, straw, or other grass locally available from recent cuttings.
14. Bale Anchor Posts: 12.7 mm (0.5 inch) diameter steel reinforcing rods, or 51 mm (2 inch) square hardwood or pine wooden stakes. Posts shall have a minimum length of 762 mm (30 inches) plus burial depth. Two posts per bale.
15. Supporting Posts for Culvert, Flared End Section, and Ditch Protection: 100 mm (4 inch) diameter wood posts, or standard steel fence posts weighing not less than 0.59 kg (1.3 lbs.) per lineal foot. Posts shall have a minimum length of 762 mm (30 inches) plus burial depth.
16. Temporary Seed: MNDOT Standard Spec. 3876 No. 250.
17. Fertilizer: Slow release type with 10 week residual consisting of 22-5-10 (ZN-P-K).
18. Biodegradable Erosion Control Blankets: In accordance with MNDOT Standard Specification 3885.
19. Erosion Control Matting: LandLok TRM 450 Turf Reinforcement Mat manufactured by Propex, Inc. (www.geeotextile.com), or approved equal soil erosion control matting.
20. Staples: Staples used to anchor erosion control blankets shall be U-shaped, 3 mm diameter or heavier steel wire. The span width at the crown shall be a minimum of 25 mm (1 inch). Staples shall have a length of 250 mm (10 inches) or more from top to bottom after bending.

DEWATERING AND BASIN DRAINING:

1. If dewatering is required and sump pumps are used, all pumped water must be discharged through an erosion control facility (temporary sedimentation basin, grit chamber, sand filter, upflow chamber, hydro-cyclone, swirl concentrator, dewatering bag or other appropriate facility) prior to leaving the construction site. Proper energy dissipation must be provided at the outlet of the pump system.
2. Discharge all water from dewatering or basin draining activities in a manner that does not cause nuisance conditions, erosion in receiving channels or on down gradient properties, or inundation in wetlands causing significant adverse impact to the wetlands.

FINAL STABILIZATION:

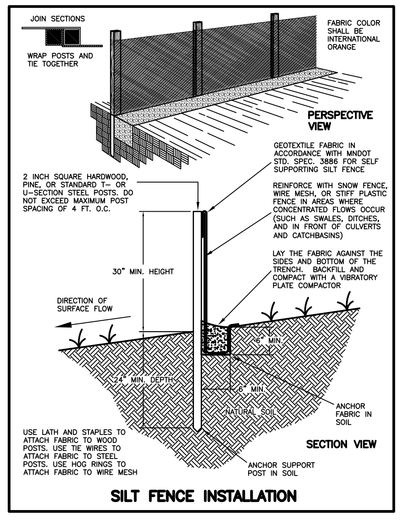
1. Complete all soil disturbing activities at the site and stabilize all soils by a uniform perennial vegetative cover with a density of 70% over the entire pervious surface area, or other equivalent means necessary in order to prevent soil failure under erosive conditions.
2. Verify that the permanent stormwater treatment system is completed in accordance with the design and specifications. The permanent stormwater treatment system must meet all of the requirements of the General Stormwater Permit for Construction Activity. This includes but is not limited to a final clean out of temporary or permanent sedimentation basins that are to be used as permanent water quality management basins and final construction or maintenance of infiltration basins. Remove all sediment from conveyance systems. Stabilize all ditches with permanent cover.
3. Remove all temporary synthetic and structural erosion prevention and sediment control BMPs (such as silt fence) prior to submission of the Notice of Termination. BMPs designed to decompose on site (such as some compost logs) may be left in place.

INSPECTIONS AND MAINTENANCE REQUIREMENTS:

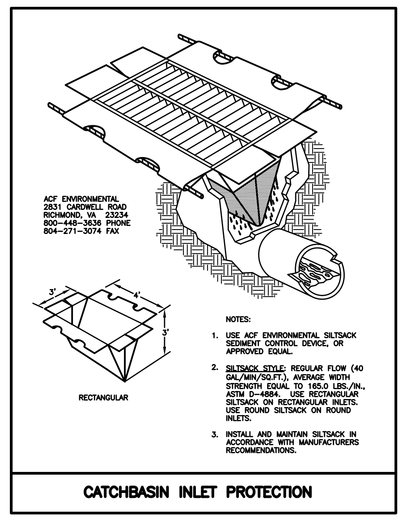
1. Inspect the entire construction site at least once every 7 days during active construction and within 24 hours after a rainfall event greater than 0.5 inches in a 24-hour period. Following an inspection that occurs within 24 hours after a rainfall event, the next inspection must be conducted within 7 days after that rainfall event.
2. Inspect all erosion prevention and sediment control BMPs, infiltration areas, and stabilized areas.
3. Record all inspections and maintenance conducted during construction in writing and keep these records with the SWPPP. The inspections and maintenance records must include date and time of inspections, date and amount of all rainfall events greater than 0.5 inches in a 24-hour period, name of person(s) conducting inspections, findings of inspections, recommendations for corrective actions, and any corrective actions taken.
4. Inspect all erosion prevention and sediment control BMPs in order to ensure integrity and effectiveness. Repair, replace, or supplement any nonfunctional BMPs with functional BMPs within 24 hours after discovery, or as soon as field conditions allow access unless another time frame is specified.
5. Remove accumulated sediment deposits from behind erosion and sediment control devices as needed. It does not allow sediment to accumulate to a depth of more than one-third of the height of the erosion and sediment control devices. Repair, replace, or supplement deteriorated, damaged, rotted, or missing erosion control devices within 24 hours of discovery, or as soon as field conditions allow access.
6. Repair, replace, or supplement all silt fences when they become nonfunctional or the sediment reaches 1/3 of the height of the fence. These repairs must be made within 24 hours of discovery, or as soon as field conditions allow access.
7. Clean sedimentation basins, storm sewer catch basins, ditches, and other drainage facilities as required in order to maintain the intended function. Temporary and permanent sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches 1/2 of the storage volume. Drainage and removal must be completed within 72 hours, or as soon as field conditions allow access.
8. Inspect surface waters (including drainage ditches and conveyance systems) evidence of erosion and sediment deposition. Remove all deltas and sediment deposited. Stabilize areas where sediment removal results in exposed soil. Removal and stabilization must be completed within 7 days of discovery unless precluded by legal, regulatory, or physical access constraints. If precluded, removal and stabilization must take place within 7 days of obtaining access.
9. Inspect construction site vehicle exit locations for evidence of off-site sediment tracking onto paved surfaces. Remove all soils and sediments tracked or otherwise deposited onto adjacent property, pavement areas, sidewalks, streets, and alleys. Removal shall be on a daily basis throughout the duration of the construction. Clean paved roadways by shoveling or wet-sweeping. Do not dry sweep. If necessary, scrape paved surfaces in order to loosen compacted sediment material prior to sweeping. Haul sediment material to a suitable disposal area. Street washing is allowed only after sediment has been removed by shoveling or sweeping.
10. Inspect all infiltration areas in order to ensure that no sediment from ongoing construction activity is reaching the infiltration areas and that these areas are protected from compaction due to construction equipment driving across the infiltration areas.
11. Perform any corrective measures ordered by the City, Watershed District, or the Minnesota Pollution Control Agency within 24 hours of notification. Install any additional erosion protection or sediment control measures deemed necessary by the City, Watershed District, or the Minnesota Pollution Control Agency within 24 hours of notification.

EROSION AND SEDIMENT CONTROL DEVICE OPERATION SCHEDULE

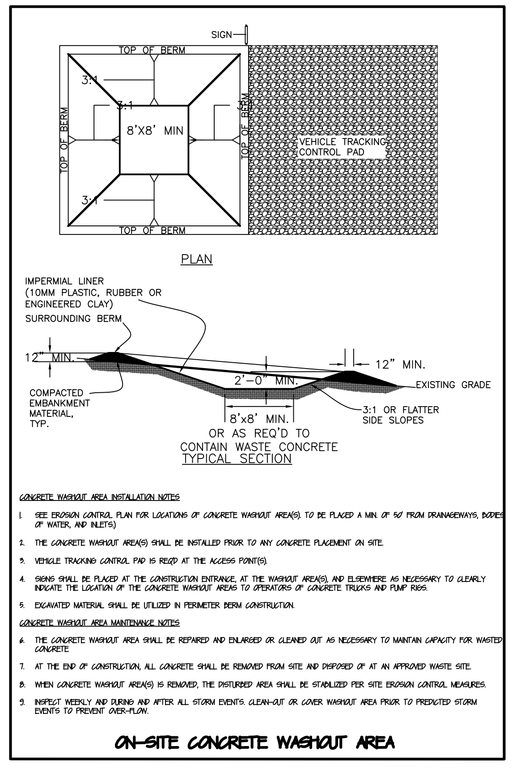
ITEM	INSTALLATION	INSPECTION/MAINTENANCE	REMOVAL
Siltfence	Install prior to any construction.	Inspect a minimum of once every 7 days or 24 hours after a rain event greater than 0.5-inches in a 24-hour period. Remove sediments as required. Repair, replace, or supplement non-functional siltfence within 24 hours of discovery.	After disturbed areas have been stabilized.
Temporary Rock Construction Entrance	Install prior to any construction.	Inspect daily. Maintain as required. Inspect for evidence of off-site sediment tracking. Remove any tracked sediment on a daily basis.	When site paving operations begin.
Storm Sewer Inlet Protection	Install prior to any construction or some day that the structure is constructed. Install on all existing and proposed catch basins exposed to construction sediment.	Inspect a minimum of once every 7 days or 24 hours after a rain event greater than 0.5-inches in a 24-hour period. Remove sediments as required. Make any necessary repairs within 24 hours of discovery.	After disturbed areas have been stabilized.
Temporary or Permanent Stormwater Pond	Install prior to rough grading. Direct surface water runoff to the pond.	Inspect a minimum of once every 7 days or 24 hours after a rain event greater than 0.5-inches in a 24-hour period. Drain pond and remove sediment when the depth of sediment collected in the basin reaches 1/2 the storage volume. Drainage and removal must be completed within 72 hours of discovery.	N/A
Temporary or Permanent Soil Stabilization	Install within 14 calendar days **(7 calendar days for impaired waters)** of the initial soil disturbance for all unworked exposed soil areas.	Inspect a minimum of once every 7 days or 24 hours after a rain event greater than 0.5-inches in a 24-hour period. Make any necessary repairs within 24 hours of discovery.	N/A
Protection of Temporary Stockpiles	Immediately install siltfence, or other effective sediment controls, around all temporary soil stockpiles.	Inspect a minimum of once every 7 days or 24 hours after a rain event greater than 0.5-inches in a 24-hour period. Remove sediments as required. Make any necessary repairs within 24 hours of discovery.	After stockpiles have been removed.
Temporary or Permanent Drainage Ditch Stabilization	Install within 24 hours: 200 lineal feet from the point of discharge. Install within 14 calendar days **(7 calendar days for impaired waters)** beyond 200 lineal feet from the point of discharge.	Inspect a minimum of once every 7 days or 24 hours after a rain event greater than 0.5-inches in a 24-hour period. Make any necessary repairs within 24 hours of discovery.	N/A
Temporary or Permanent Energy Dissipation at Pipe Outlets	Install within 24 hours.	Inspect a minimum of once every 7 days or 24 hours after a rain event greater than 0.5-inches in a 24-hour period. Make any necessary repairs within 24 hours of discovery.	N/A
Protection of Surface Waters (including drainage ditches and conveyance systems)	N/A	Inspect a minimum of once every 7 days or 24 hours after a rain event greater than 0.5-inches in a 24-hour period. Remove all deltas and sediment deposited. Restabilize the areas where sediment removal results in exposed soil. Remove and stabilize within 7 days of discovery.	N/A
Protection of Infiltration Areas	N/A	Inspect a minimum of once every 7 days or 24 hours after a rain event greater than 0.5-inches in a 24-hour period. Ensure that no sediment from ongoing construction activity is reaching the infiltration area and the area is protected from compaction due to construction traffic.	N/A



SILT FENCE INSTALLATION



CATCHBASIN INLET PROTECTION



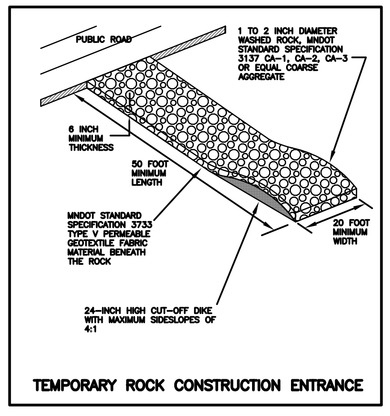
CONCRETE WASHOUT AREA INSTALLATION NOTES

1. SEE EROSION CONTROL PLAN FOR LOCATIONS OF CONCRETE WASHOUT AREA(S) TO BE PLACED A MIN. OF 50' FROM DRAINAGEWAYS, BOTTOM OF WATER, AND INLETS)
2. THE CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL PAD IS REQ'D AT THE ACCESS POINT(S).
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA(S), AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREAS TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

CONCRETE WASHOUT AREA MAINTENANCE NOTES

6. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE
7. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
8. WHEN CONCRETE WASHOUT AREA(S) IS REMOVED, THE DISTURBED AREA SHALL BE STABILIZED PER SITE EROSION CONTROL MEASURES.
9. INSPECT WEEKLY AND DURING AND AFTER ALL STORM EVENTS CLEAN-OUT OR COVER WASHOUT AREA PRIOR TO FORECASTED STORM EVENTS TO PREVENT OVER-FLOW

ON-SITE CONCRETE WASHOUT AREA



TEMPORARY ROCK CONSTRUCTION ENTRANCE

PRELIMINARY NOT FOR CONSTRUCTION

esg

elness swenson graham architects
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I hereby certify that this document was prepared by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of the State of Minnesota

Signature

Mike R. Ketter
Typed or Printed Name

40425 04-24-12
License # Date

Sunde Engineering, PLLC.
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HPC CERTIFICATE OF APPROPRIATENESS APRIL 24, 2012

ORIGINAL ISSUE: 04/24/12

REVISIONS

No.	Description	Date

211504
PROJECT NUMBER

MW DRAWN BY
MK CHECKED BY

Andrew Riverside

STORMWATER POLLUTION PREVETION PLAN NOTES AND DETAILS

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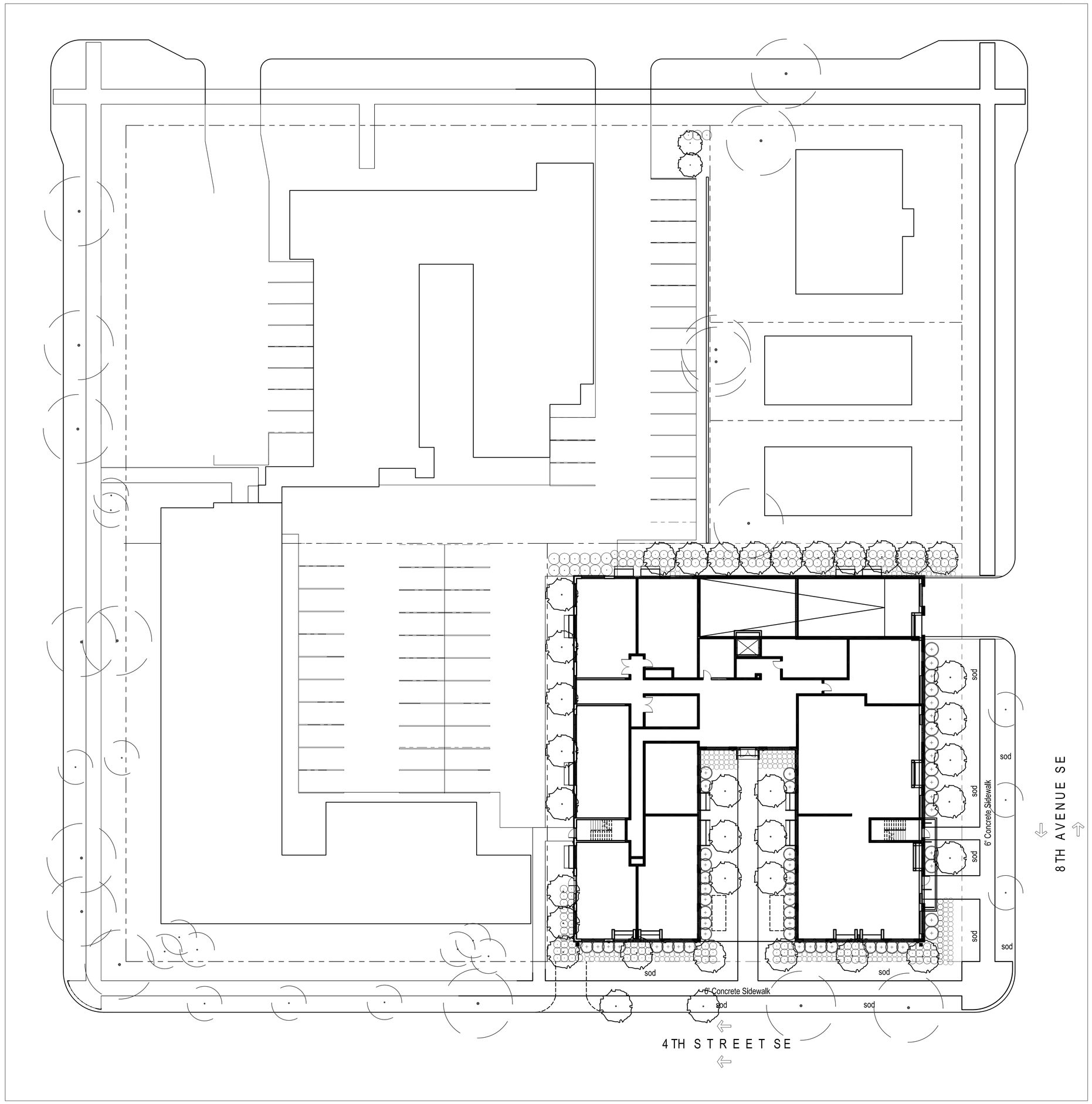

SITE LANDSCAPE PLAN

0 10' 20' 40'
SCALE 1"=20'-0"
NORTH

SYM	QTY.	VERIFY	COMMON NAME	SCIENTIFIC NAME	SIZE	CONT.	COMMENTS
DECIDUOUS TREES							
A			AUTUMN BRILLIANCE SERVICEBERRY	Amelanchier x grandiflora 'Autumn Brilliance'	3.0" CAL.	B&B	STRAIGHT LEADER
B			IVORY SILK LILAC	Syringa reticulata 'Ivory Silk'	2.0" CAL.	B&B	STRAIGHT LEADER
C			RENAISSANCE REFLECTION BIRCH	Betula papyrifera 'Renci'	2.0" CAL.	B&B	STRAIGHT LEADER
D			SWAMP WHITE OAK	Quercus bicolor	2.5" CAL.	B&B	STRAIGHT LEADER
E			PARKWAY NORWAY MAPLE	Acer platanoides 'Parkway Norway'	2.5" CAL.	B&B	STRAIGHT LEADER
F			CATHEDRAL ELM	Ulmnus x 'Cathedral'	3.0" CAL.	B&B	STRAIGHT LEADER
G			PAGODA DOGWOOD	Cornus alternifolia	8' HT.	B&B	CLUMP
SHRUBS							
H			GRO-LOW SUMAC	Rhus aromatica 'Gro-Low'	18" HGT.	#5 CONT.	PLANT 5' O.C.
J			ARTIC FIRE DOGWOOD	Cornus stolonifera 'Farrow'	18" HGT.	#5 CONT.	PLANT 4'-0" O.C.
K			RUSHMORE ARBORVITAE	Thuja occidentalis 'Techny'	60" HGT.	B&B	PLANT 6' O.C.
L			MINT JULEP JUNIPER	Juniperus chinensis 'Monlep'	18" HGT.	#7 CONT.	PLANT 4'-6" O.C.
M			GREENMOUND CURRANT	Ribes alpinum 'Greenmound'	18" HGT.	#5 CONT.	PLANT 2'-6",C.
N			ENDLESS SUMMER HYDRANGEA	Hydrangea macrophylla 'Bailmer'	18" HGT.	#5 CONT.	PLANT 3'-0" O.C.
P			EUROPEAN CRANBERRY BUSH	Viburnum opulus 'Compactum'	18" HGT.	#5 CONT.	PLANT 3' O.C.
Q			ALPINE CURRANT	Ribes alpinum	18" HGT.	#7 CONT.	PLANT 4'-6" O.C.
R			BUSH HONEYSUCKLE	Diervilla lonicera	18" HGT.	#5 CONT.	PLANT 3' O.C.
S			TAUNTON YEW	Taxus x media 'Taunton'	24" HGT.	#7 CONT.	PLANT 3' O.C.
PERENNIALS & ORNAMENTAL GRASSES							
aa			KARL FOERSTER REED GRASS	Calamagrostis x acutiflora 'Karl Foerster'	12" HT.	#1 CONT.	PLANT AS SHOWN
bb			HEAVY METAL SWITCHGRASS	Panicum virgatum 'Heavy Metal'	12" HT.	#1 CONT.	PLANT AS SHOWN
cc			LITTLE BLUESTEM	Schizachyrium scoparium	12" HT.	#1 CONT.	PLANT AS SHOWN
dd			PERENNIAL MIX	Perovskia, Sedum, Rudbeckia, Yarrow	12" HT.	#1 CONT.	PLANT AS SHOWN
ee			DAYLILLY MIX	Hemerocallis x (Baja, Happy Returns, Pardon Me)	12" HT.	#1 CONT.	PLANT AS SHOWN
ff			OEHME SEDGE	Carex muskingumensis 'Oehme'	12" HT.	#1 CONT.	PLANT AS SHOWN

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GENERAL NOTES

1. CONTRACTOR SHALL INSPECT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS RELATING TO THE NATURE AND SCOPE OF WORK.
2. CONTRACTOR SHALL VERIFY PLAN LAYOUT AND BRING TO THE ATTENTION OF THE LANDSCAPE ARCHITECT DISCREPANCIES WHICH MAY COMPROMISE THE DESIGN OR INTENT OF THE LAYOUT.
3. CONTRACTOR SHALL ASSURE COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK AND MATERIALS SUPPLIED.
4. CONTRACTOR SHALL PROTECT EXISTING BUILDINGS AND UNDERGROUND UTILITIES DURING CONSTRUCTION OPERATIONS. DAMAGE TO SAME SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
5. CONTRACTOR SHALL VERIFY ALIGNMENT AND LOCATION OF UNDERGROUND AND ABOVE GRADE UTILITIES AND PROVIDE THE NECESSARY PROTECTION FOR SAME BEFORE CONSTRUCTION BEGINS (MINIMUM 10' CLEARANCE).
6. CONTRACTOR SHALL COORDINATE THE PHASES OF CONSTRUCTION AND PLANTING INSTALLATION WITH OTHER CONTRACTORS WORKING ON SITE.
7. EXISTING BUILDING FOOTPRINTS ARE BASED UPON INFORMATION SUPPLIED TO THE LANDSCAPE ARCHITECT BY OTHERS. CONTRACTOR SHALL VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION AND NOTIFY LANDSCAPE ARCHITECT OF SAME.
8. HORIZONTAL AND VERTICAL ALIGNMENT OF PROPOSED SURFACES ARE SUBJECT TO FIELD ADJUSTMENT TO ENSURE PROPER DRAINAGE. CHANGES IN ALIGNMENT AND GRADES MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO IMPLEMENTATION.
9. CONTRACTOR SHALL REVIEW THE SITE FOR DEFICIENCIES IN SITE CONDITIONS WHICH MIGHT NEGATIVELY AFFECT PLANT ESTABLISHMENT, SURVIVAL OR WARRANTY. UNDESIRABLE SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING OF WORK.
10. CONTRACTOR IS RESPONSIBLE FOR ONGOING MAINTENANCE OF NEWLY INSTALLED MATERIALS UNTIL TIME OF SUBSTANTIAL COMPLETION. REPAIR OF ACTS OF VANDALISM OR DAMAGE WHICH MAY OCCUR PRIOR TO SUBSTANTIAL COMPLETION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
11. SYMBOLS ON PLAN DRAWING TAKE PRECEDENCE OVER SCHEDULES IF DISCREPANCIES IN QUANTITIES EXIST. SPECIFICATIONS AND DETAILS TAKE PRECEDENCE OVER NOTES.

PLANTING NOTES

1. NO PLANTS WILL BE INSTALLED UNTIL FINAL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
2. PROPOSED PLANT MATERIAL SHALL COMPLY WITH THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1. UNLESS NOTED OTHERWISE, DECIDUOUS SHRUBS SHALL HAVE AT LEAST 5 CANES AT THE SPECIFIED HEIGHT. ORNAMENTAL TREES SHALL HAVE NO 'V' CROTCHES AND SHALL BEGIN BRANCHING NO LOWER THAN 3' FEET ABOVE THE ROOT BALL. STREET AND BOULEVARD TREES SHALL BEGIN BRANCHING NO LOWER THAN 6' ABOVE PAVED SURFACE.
3. NO PLANT MATERIAL SUBSTITUTIONS WILL BE ACCEPTED UNLESS APPROVAL IS GRANTED BY THE LANDSCAPE ARCHITECT TO THE LANDSCAPE CONTRACTOR PRIOR TO THE SUBMISSION OF BID.
4. ADJUSTMENTS IN LOCATION OF PROPOSED PLANT MATERIALS MAY BE NEEDED IN FIELD. LANDSCAPE ARCHITECT MUST BE NOTIFIED PRIOR TO ADJUSTMENT OF PLANTS.
5. PLANT MATERIALS TO BE INSTALLED PER PLANTING DETAILS.
6. PLANT MATERIAL SHALL BE FERTILIZED UPON INSTALLATION WITH DRIED BONE MEAL, OTHER APPROVED FERTILIZER MIXED IN WITH THE PLANTING SOIL PER THE MANUFACTURER'S INSTRUCTIONS OR MAY BE TREATED FOR SUMMER AND FALL INSTALLATION WITH AN APPLICATION OF GRANULAR 10-0-5 OF 12 OZ. PER 2.5" CALIPER TREE AND 6 OZ. PER SHRUB WITH AN ADDITIONAL APPLICATION OF 10-0-10 THE FOLLOWING SPRING IN THE TREE SAUCER.
7. PLANTING AREAS RECEIVING GROUND COVER, PERENNIALS, ANNUALS OR VINES SHALL RECEIVE A MINIMUM OF 12" DEPTH OF PLANTING SOIL CONSISTING OF 45 PARTS TOPSOIL, 45 PARTS SCREENED COMPOST AND 10 PARTS SAND OR AS OTHERWISE SPECIFIED.
8. TREE WRAPPING MATERIAL SHALL BE TWO-WALLED PLASTIC SHEETING APPLIED FROM TRUNK FLARE TO FIRST BRANCH. WRAP SMOOTH-BARKED DECIDUOUS TREES PLANTED IN THE FALL PRIOR TO DECEMBER 1 AND REMOVE WRAPPING AFTER MAY 1.
9. ANNUAL, PERENNIAL, AND SHRUB BEDS ARE TO RECEIVE APPLICATION OF PRE-EMERGENT HERBICIDE (PREEN OR APPROVED EQUAL) FOLLOWED BY 3" DEEP SHREDDED HARDWOOD MULCH. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING USE OF HERBICIDES.
10. LANDSCAPE CONTRACTOR SHALL WARRANTY NEW PLANT MATERIAL THROUGH ONE CALENDAR YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. NO PARTIAL ACCEPTANCE WILL BE CONSIDERED.
11. UNLESS NOTED OTHERWISE, THE APPROPRIATE DATES FOR SPRING PLANT MATERIAL INSTALLATION IS FROM THE TIME GROUND HAS THAWED TO JUNE 15.
12. CONIFEROUS PLANTING IS ACCEPTABLE FROM AUGUST 15 TO OCTOBER 1. FALL DECIDUOUS PLANTING IS ACCEPTABLE FROM THE FIRST FROST UNTIL NOVEMBER 15. ADJUSTMENTS TO PLANTING DATES MUST BE APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.

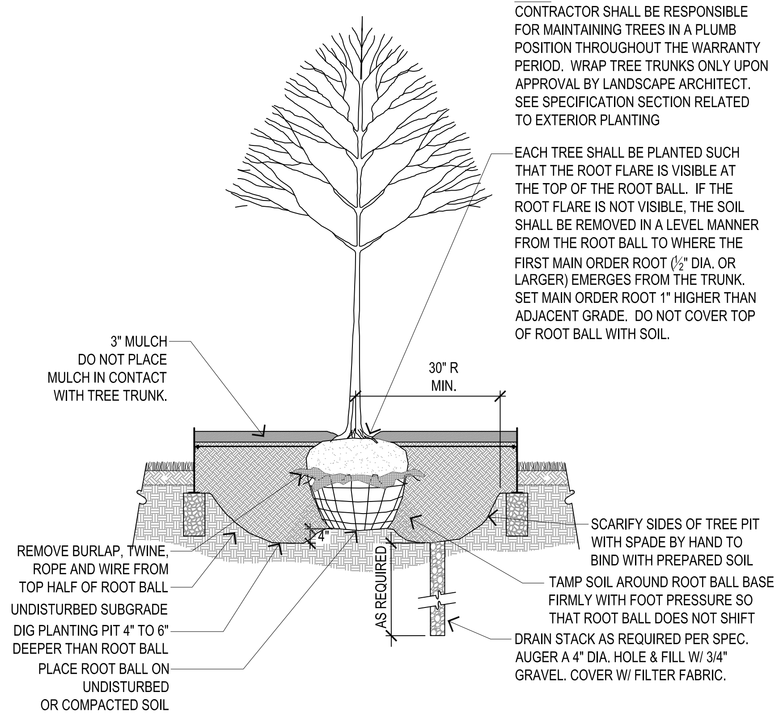
IRRIGATION NOTES

1. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN IRRIGATION LAYOUT PLAN AND SPECIFICATION AS PART OF THE SCOPE OF WORK. SUBMIT LAYOUT PLAN AND SPECIFICATIONS FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO ORDER AND/OR CONSTRUCTION. IT SHALL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL SODDED AND PLANTED AREAS ARE IRRIGATED PROPERLY, INCLUDING THOSE AREAS DIRECTLY AROUND AND ABUTTING BUILDING FOUNDATION.
2. DRIP IRRIGATION IS PREFERRED FOR PLANTING BEDS. POP-UP SPRAYS ARE PREFERRED FOR LAWN AREA.
3. IRRIGATION CONTROLLER TO BE LOCATED IN MECHANICAL ROOM, CONTRACTOR TO VERIFY WATER LINE SUPPLY, SIZE, AND LOCATION.
4. CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT FOR INSPECTION AND APPROVAL OF ALL AREAS RECEIVING DRIP IRRIGATION PRIOR TO INSTALLATION OF ANY MULCH.
5. CONTRACTOR SHALL PROVIDE THE OWNER WITH AN IRRIGATION SCHEDULE APPROPRIATE TO THE PROJECT SITE CONDITIONS AND TO PLANTED MATERIAL GROWTH REQUIREMENTS.
6. CONTRACTOR SHALL ENSURE THAT SOIL CONDITIONS AND COMPACTION ARE ADEQUATE TO ALLOW FOR PROPER DRAINAGE AROUND THE CONSTRUCTION SITE. UNDESIRABLE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING OF WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER SURFACE AND SUBSURFACE DRAINAGE IN PLANTING AREAS.

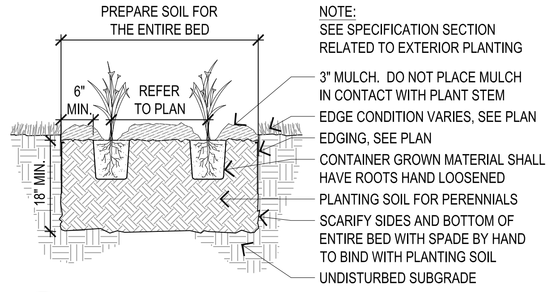
TURF NOTES

1. WHERE SOD ABUTS PAVED SURFACES, FINISHED GRADE OF SOD SHALL BE HELD 1" BELOW SURFACE ELEVATION OF SLAB.
2. SOD SHALL BE LAID PARALLEL TO THE CONTOURS AND SHALL HAVE STAGGERED JOINTS.
3. UNLESS NOTED OTHERWISE, THE APPROPRIATE DATES FOR SPRING SOD PLACEMENT IS FROM THE TIME GROUND HAS THAWED TO JUNE 15.
4. FALL SODDING IS ACCEPTABLE FROM AUGUST 15 TO NOVEMBER 1. ADJUSTMENTS TO SOD PLANTING DATES MUST BE APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE WARRANTY PERIOD. WRAP TREE TRUNKS ONLY UPON APPROVAL BY LANDSCAPE ARCHITECT. SEE SPECIFICATION SECTION RELATED TO EXTERIOR PLANTING



1 / L1.0 TREE PLANTING IN RAISED PLANTER
SCALE: 1/2" = 1'-0"
PLANTING DETAIL - TREE.DWG



2 / L1.0 PERENNIAL PLANTING DETAIL
SCALE: 3/4" = 1'-0"
PLANTING DETAIL - PERENNIAL.DWG

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I hereby certify that this document was prepared by me or under my direct supervision and that I am a duly licensed landscape architect under the laws of the State of Minnesota

Signature

Jesse Symynkywicz
Typed or Printed Name

26970 License # 04-24-12 Date

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HPC Certificate of Appropriateness
April 24, 2012

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JS DRAWN BY TW CHECKED BY

Andrew Riverside

LANDSCAPE PLAN

L1.0