

**Zoning Board of Appeals
October 24, 2018 Regular Meeting**

STAFF REPORT

Subject: ZBA18-024; 132 Hill Street

Summary:

Miller Building LLC, property owner, is requesting a 15 foot variance from Section 5.20.4 (B) Conflicting Land Use Buffers. The property is zoned R4C Multiple Family Dwelling. The property has submitted a site plan to install a shared driveway along the eastern border with the adjacent property at 140 Hill Street. The proposed driveway will require the variance to enable the construction of the drive between the two properties.

Background:

The petitioners seek approval to demolish the existing 1,830 square foot home and construct a new 11,653-square foot five-unit apartment building. The site is 11,446 square feet. Four of the proposed units would each have six bedrooms and one unit with four bedrooms, and all are intended to be student rentals.

Description and Discussion:

A 15-foot wide conflicting land use buffer (CLUB) is required along both sides and the rear of the property as this site is adjacent to residential uses. Two of the three sides meet the CLUB requirements for width and landscaping. The petitioner is requesting a variance from the eastern side CLUB requirement as this is the location of the proposed shared driveway with 140 Hill Street.

Standards for Approval- Variance

The Zoning Board of Appeals has all the power granted by State law and by Section 5.29.12, Application of the Variance Power from the City of Ann Arbor Zoning Ordinance. The following criteria shall apply:

- (a). ***That the practical difficulties are exceptional and peculiar to the property of the person requesting the variance, and result from conditions which do not exist generally throughout the City.***

The applicant states that the 15 foot buffer requirement on each side of the lot (30 feet) results in a 36 foot wide building envelope.

- (b). ***That the practical difficulties will result from a failure to grant the variance, include substantially more than mere inconvenience, inability to attain a higher financial return, or both.***

Without the variance, the reduced building envelope makes it extremely difficult to develop the property for multiple-family.

- (c). ***That allowing the variance will result in substantial justice being done, considering the public benefits intended to be secured by this Chapter, the individual hardships that will be suffered by a failure of the Board to grant a variance, and the rights of others whose property would be affected by the allowance of the variance.***

The variance allows for a shared driveway with the adjacent property which will eliminate the need for a curb cut and minimizes impervious surface.

- (d). ***That the conditions and circumstances on which the variance request is based shall not be a self-imposed hardship or practical difficulty.***

The variance request is not self-imposed as the narrow 66 foot lot width is an existing condition.

- (e). ***A variance approved shall be the minimum variance that will make possible a reasonable use of the land or structure.***

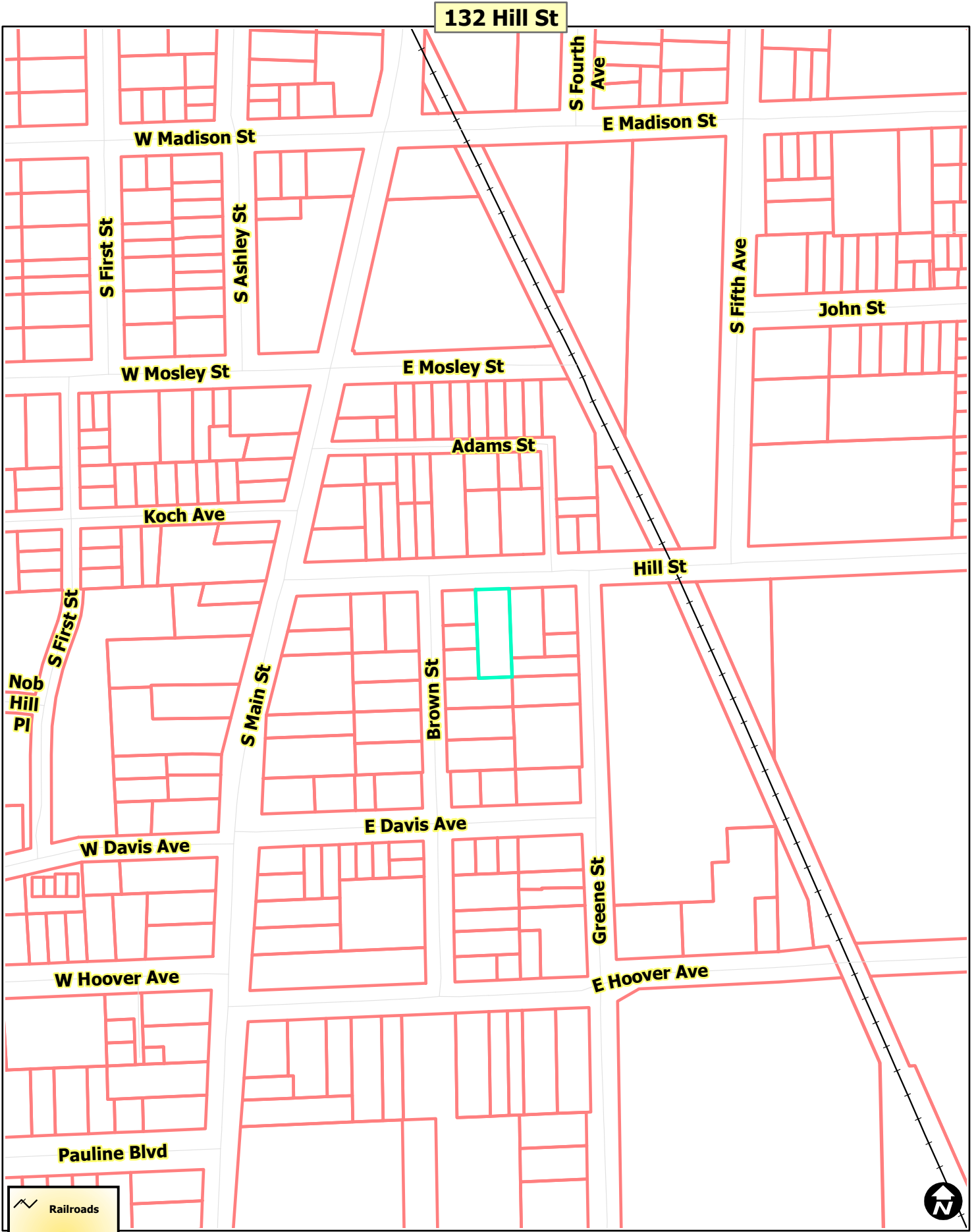
The variance being requested is the minimum necessary to allow for a shared driveway. The applicant will install the buffer along the west and south sides of the property, containing a mixture of 18 trees and numerous shrubs in the buffer. A rain garden will be installed and planted to meet the requirements of the code.

Additionally, the proposal received recommendation of approval from the City Planning Commission on October 2, 2018.




Respectfully submitted,

A handwritten signature in blue ink that reads "Jon Barrett". The signature is stylized with large, overlapping loops.

Jon Barrett
Zoning Coordinator

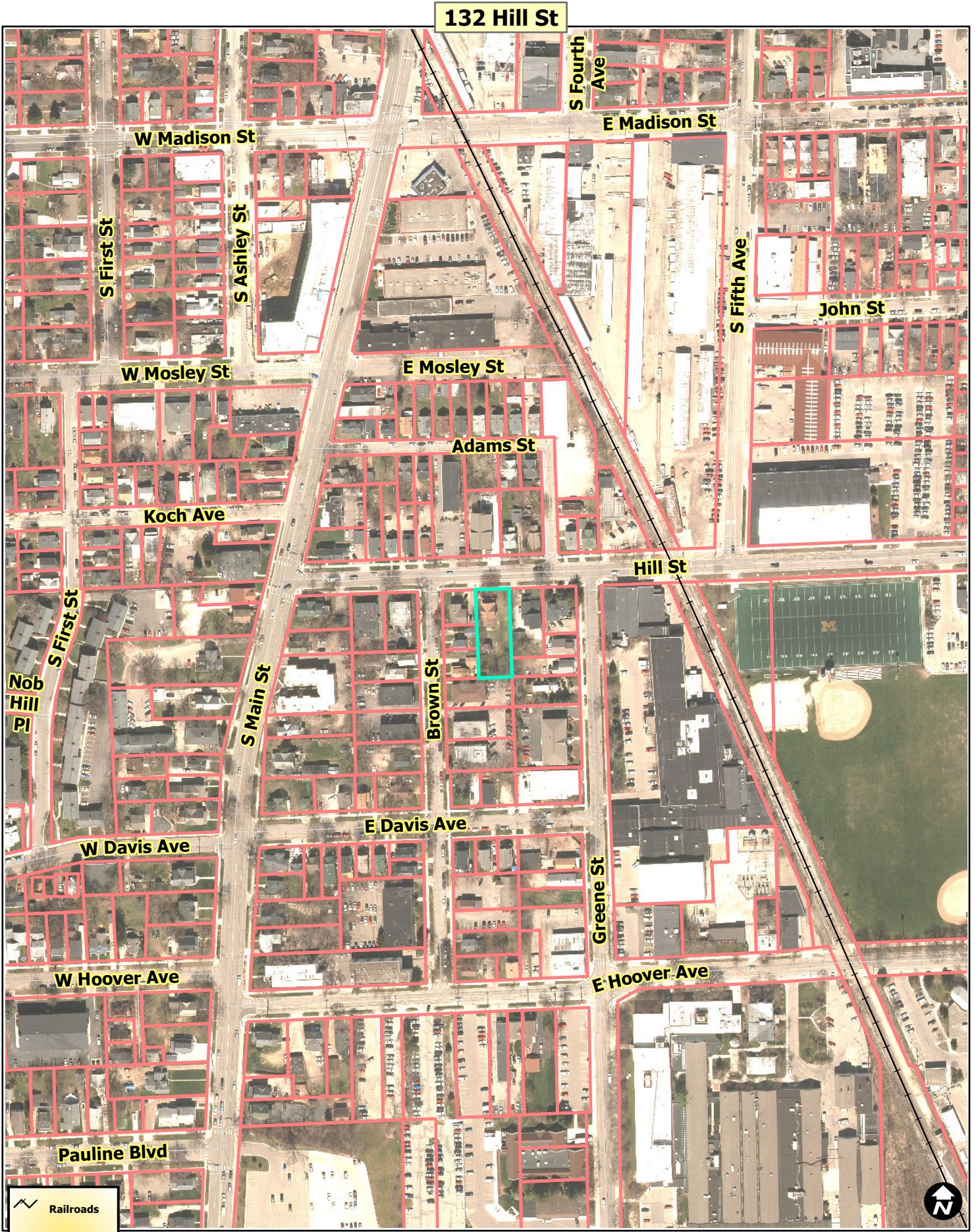


132 Hill St




-  Railroads
-  Huron River
-  Tax Parcels



Map date 3/28/2018
 Any aerial imagery is circa 2015
 unless otherwise noted
 Terms of use: www.a2gov.org/terms



132 Hill St

 Railroads
 Huron River
 Tax Parcels





Map date 3/28/2018
 Any aerial imagery is circa 2015
 unless otherwise noted
 Terms of use: www.a2gov.org/terms

132 Hill St

Adams St

Hill St

Brown St

-  Railroads
-  Huron River
-  Tax Parcels



Map date 3/28/2018
 Any aerial imagery is circa 2015
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**ZONING BOARD OF APPEALS
PLANNING DEPARTMENT**

City Hall: 301 E. Huron St. Ann Arbor, MI 48104-6120
 Mailing: P.O. Box 8647, Ann Arbor, MI 48107-8647
 Phone: 734.794.6265 planning@a2gov.org
 Fax: 734.994.8460

APPLICATION MUST BE FILLED OUT COMPLETELY

Office Use Only	
Fee Paid: \$600.00	ZBA: 18-024
DATE STAMP CITY OF ANN ARBOR RECEIVED AUG 23 2018	
PLANNING & DEVELOPMENT SERVICES	

PROPERTY INFORMATION	
ADDRESS OF PROPERTY: 132 HILL	
ZONING CLASSIFICATION: R4C	TAX ID: (if known) 09-09-32-111-012
NAME OF PROPERTY OWNER*: MILLER BUILDING LLC / BOB MILLER	

*If different than applicant, a letter of authorization from the property owner must be provided

APPLICANT INFORMATION	
NAME OF APPLICANT: MILLER BUILDING LLC / BOB MILLER	
ADDRESS OF APPLICANT: 801 W. LIBERTY, ANN ARBOR, MI 48103	
DAYTIME PHONE NUMBER: 734-730-4800	FAX NO:
EMAIL: bob@millerbuildingllc.com	
APPLICANT'S RELATIONSHIP TO PROPERTY: OWNER / DEVELOPER	

REQUEST INFORMATION	
<input checked="" type="checkbox"/> VARIANCE REQUEST (Complete the section 1 below)	<input type="checkbox"/> ALTERATION TO A NON-CONFORMING STRUCTURE (skip to Section 2)

Section 1 - VARIANCE REQUEST

CHAPTER(S) AND SECTION(S) FROM WHICH A VARIANCE IS REQUESTED: (Example: Chapter 55, Section 5:26) CHAPTER 62, SECTION 5:603 (C.L.U.B.)	
Required Dimension: (Example: 40' front setback) 15'	PROPOSED Dimension: (Example: 32') 0'

Give a detailed description of the work you are proposing and why it will require a variance (Attach additional sheets if necessary)

REQUESTING VARIANCE FOR CONFLICTING LAND USE BUFFER TO ALLOW FOR SHARED DRIVEWAY W/ ADJACENT PROPERTY. BOTH PARCELS ARE ZONED R4C AND USED AS RENTAL PROPERTY. 132 HILL IS ONLY 66' WIDE. THE REQUIRED LANDSCAPE BUFFER OF 15' ALONG BOTH SIDE LOT LINES WOULD REQUIRE 30'. A DRIVEWAY WOULD REQUIRE 18'. THIS RESULTS IN 18' WIDTH WHICH IS NOT SUFFICIENT TO ACCOMODATE A BUILDING.



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N/A

Section 2 – ALTERATION TO A NON-CONFORMING STRUCTURE

Current Use of the Property:

The proposed change is allowed in accordance with Structure Non-Conformance, Section 5:87 (1) (a) & (b), which reads as follows:

(1) A non-conforming structure may be maintained or restored, but no alteration shall be made to a non-conforming structure unless one of the following conditions is met:

a. The alteration is approved by the Zoning Board of Appeals upon finding that it complies as nearly as practicable with the requirements of this Chapter and that it will not have a detrimental effect on neighboring property.

b. The alteration conforms to all the requirements of this Chapter and is made to a building which will be a single-family dwelling on completion of the alteration and is located in an R1, R2, R3, or R4 district.

c. The structure is considered non-conforming due to the following reasons.

REQUIREMENT	EXISTING CONDITION	CODE REQUIREMENT
Lot Area		
Lot Width		
Floor Area Ratio		
Open Space Ratio		
Setbacks		
Parking		
Landscaping		
Other		

Describe the proposed alterations and state why you are requesting this approval:

The alteration complies as nearly as is practicable with the requirements of the Chapter and will not have a detrimental effect on neighboring property for the following reasons:



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Section 2 – ALTERATION TO A NON-CONFORMING STRUCTURE

Wherefore, Petitioner requests that permission be granted from the above named Chapter and Section of the Ann Arbor City Code in order to permit:

REQUIRED MATERIALS

The following materials are required for ALL variance requests. Failure to provide these materials will result in an incomplete application and will delay staff review and Zoning Board of Appeals consideration of the request. The materials listed below must accompany the application and constitute an inseparable part of the application.

All materials must be provided on 8 1/2" by 11" sheets:

- One (1) hardcopy and one (1) electronic copy shall be submitted.
- The electronic copy shall include all associated supporting documentation with application submission.

- Survey of the property including all existing and proposed structures, dimensions of property, and area of property.
- Building floor plans showing interior rooms, including dimensions.
- Photographs of the property and any existing buildings involved in the request.
- Any other graphic or written materials that support the request.

ACKNOWLEDGEMENT

I, the applicant, hereby request a variance from the above named Chapter (s) and Section (s) of the Ann Arbor City Code for the stated reasons, in accordance with the materials attached hereto.
Phone number: _____ Signature: X


Email address: bob@MILLERBUILDINGLLC.COM

Print Name: Robert Miller

I, applicant, hereby depose and say that all the aforementioned statements, and the statements contained in the materials submitted herewith, as true and correct.

 Signature

Further, I hereby give the City of Ann Arbor Planning and Development Services unit staff and members of the Zoning Board of Appeals permission to access the subject property for the purpose of reviewing my variance request.

 Signature

DEVELOPER/PETITIONER/OWNER:
MILLER BUILDING LLC
BOB MILLER
801 WEST LIBERTY
ANN ARBOR, MI 48103
PHONE: 734-730-4800

ARCHITECT:
LEWIS GREENSPOON ARCHITECTS
DAVID LEWIS
440 SOUTH MAIN SUITE 2
ANN ARBOR, MI 48104
PHONE: 734-786-3757

ENGINEER/PETITIONER'S AGENT:
MACON ENGINEERING, LLC
KATHY KEINATH, P.E.
P.O. BOX 314
CHELSEA, MICHIGAN 48118
PHONE: 734-216-9941
EMAIL: kkeinath@yahoo.com

SURVEYOR:
ARBOR LAND CONSULTANTS
KEVIN GINGRAS
2936 MADRONO
ANN ARBOR, MI 48103
PHONE: 734-669-2960

STATEMENT OF INTEREST IN LAND:

MILLER BUILDING IS ACTING AS THE OWNER, PETITIONER AND DEVELOPER OF THE SITE.

DEVELOPMENT PROGRAM

THE PROPOSED DEVELOPMENT WILL INCLUDE FIVE RESIDENTIAL UNITS. THERE WILL BE 8 PARKING SPACES PROVIDED ON THE SITE. THE PROJECT WILL MOST LIKELY PROVIDE STUDENT HOUSING. THE DEVELOPMENT HAS BEEN PLANNED TO PROVIDE ADEQUATE PARKING, INGRESS AND EGRESS, STORM WATER MANAGEMENT FACILITIES, PEDESTRIAN CONNECTIONS AND ALL OTHER REQUIRED SITE ELEMENTS. THE SITE IS TO BE DEVELOPED IN ONE PHASE. THE PROPOSED PROJECT IS SCHEDULED TO BEGIN UPON APPROVAL AND COMPLETED BY 2019. CONSTRUCTION COST ARE CURRENTLY ESTIMATED TO BE \$1,000,000.

COMMUNITY ANALYSIS

THE PROPOSED PROJECT IS LOCATED ON THE SOUTH SIDE HILL STREET BETWEEN BROWN AND ADAMS STREETS, JUST EAST OF SOUTH MAIN STREET. THE SITE CONTAINS ONE LOT THAT IS ZONED R4C. THE EXISTING USE IS SINGLE FAMILY RESIDENTIAL. THE PROPOSED USE OF THE BUILDING IS RESIDENTIAL. THE PROPERTY TO THE WEST, EAST, NORTH AND SOUTH IS CURRENTLY ZONED R4C RESIDENTIAL. THE PROPOSED DEVELOPMENT WILL NOT HAVE A NEGATIVE IMPACT ON PUBLIC SCHOOLS, AIR OR WATER QUALITY. THERE ARE NO HISTORIC FEATURES ON THE SITE. THE NATURAL FEATURES ON THE SITE INCLUDE ONE LANDMARK TREE THAT IS TO REMAIN UNDISTURBED.

THE PROPOSED DEVELOPMENT WILL BE AN IMPROVEMENT TO THE EXISTING SITE WHICH INCLUDES AN OLDER HOME THAT HAS DETERIORATED. THE INTENDED USE AS A RESIDENTIAL PROPERTY WILL BE CONSISTENT WITH OTHER RESIDENTIAL USES IN THE NEIGHBORHOOD.

THE PROJECT WILL BE HARMONIOUS WITH THE SURROUNDING PROPERTIES IN THE NEIGHBORHOOD AND SPECIFICALLY THE PROPERTIES TO THE EAST, WEST, SOUTH AND NORTH OF THE SITE. THE FRONT YARD SETBACK HAS BEEN AVERAGED AS ALLOWED BY ZONING CODE TO BE CONSISTENT WITH THE ADJACENT PROPERTIES.

GENERAL DESCRIPTION OF NATURAL FEATURES

THERE ARE NO FLOODPLAINS, WOODLAND, WETLANDS, WATERCOURSES, STEEP SLOPES OR ENDANGERED SPECIES HABITAT ON THE SITE. THERE IS ONE 16" LANDMARK MAPLE TREE LOCATED AT THE SOUTHWEST CORNER OF THE PROPERTY THAT WILL NOT BE DISTURBED.

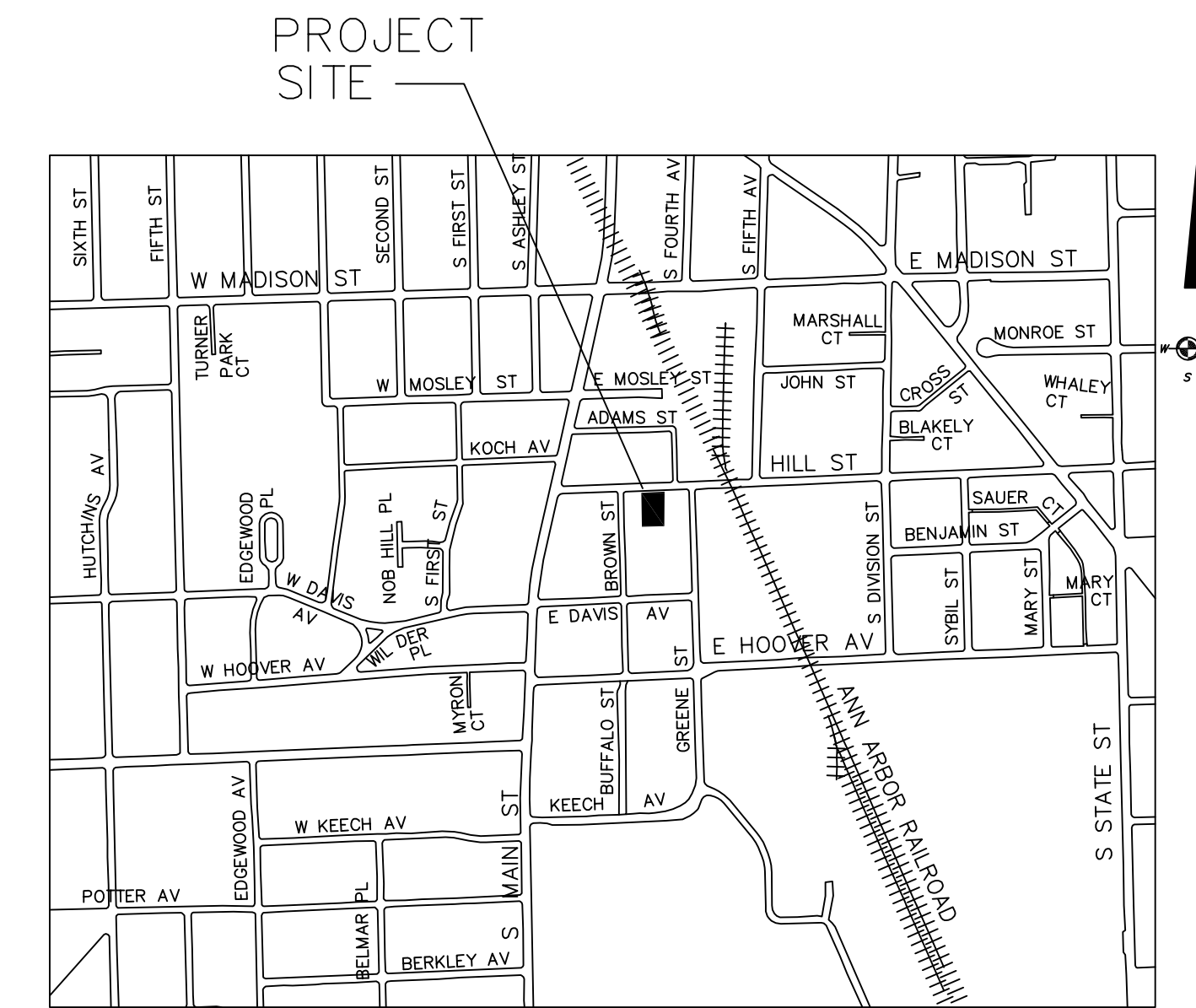
132 HILL STREET

MULTI-FAMILY RESIDENTIAL

CITY OF ANN ARBOR, WASHTENAW COUNTY

SITE PLAN

SP18-014



LOCATION MAP
N.T.S.

NATURAL FEATURES STATEMENT OF IMPACT

THE ONLY NATURAL FEATURE ON THE SITE IS A 16" LANDMARK MAPLE TREE LOCATED ALONG THE SOUTHWEST PROPERTY LINE. THE PARKING LOT HAS BEEN DESIGNED WITH A COMPACT CAR SPACE AT THE SOUTHWEST CORNER WITH PROPOSED GRADES TO MATCH EXISTING GRADES TO AVOID ANY NEGATIVE IMPACTS TO THE TREE. THE TREE WILL REMAIN ON THE SITE AND WILL BE PROTECTED WITH TREE FENCING AROUND THE CRITICAL ROOT ZONE DURING CONSTRUCTION. THERE IS ONE 16" LANDMARK MAPLE TREE THAT IS A CITY STREET TREE. THIS TREE WILL NOT BE DISTURBED EXCEPT FOR THE REPLACEMENT OF THE EXISTING SIDEWALK. EXISTING GRADES WILL BE MAINTAINED TO THE EXTENT POSSIBLE TO REDUCE ANY POSSIBLE IMPACTS TO THE TREE.

TRAFFIC IMPACT ANALYSIS

VEHICULAR, PEDESTRIAN AND BICYCLE ROUTES ARE SHOWN ON THE PLANS. NO TRUCK TRAFFIC TO THE SITE IS ANTICIPATED. ONE NEW ENTRANCE TO THE PARKING AREAS WILL BE LOCATED ON HILL STREET. THE NEW APPROACH WILL BE PART OF A SHARED DRIVEWAY EASEMENT WITH THE ADJACENT PROPERTY TO THE EST. THE EXISTING CURB CUTS ON HILL STREET WILL BE REMOVED. THE SITE IS EXPECTED TO HAVE LESS THAN 1 TRIP PER UNIT PER HOUR AND LESS THAN 32 TRIPS PER PEAK HOUR. NO TRAFFIC STUDY IS REQUIRED.

Land Use	ITE Code	Amount	Units	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Residential Units	230	5	DU	0.5	2.4	2.9	2.3	1.1	3.4

Trip Rates taken from ITE Trip Generation manual, 9th Edition

LEGAL DESCRIPTION

TAX ID 09-09-32-111-012

LOT 10 AND THE EAST 1/2 OF LOT 11, "WILLIAM A. BENEDICT'S PLAT", A SUBDIVISION OF THE NORTHEAST 1/4 OF SECTION 32, TOWN 2 SOUTH, RANGE 6 EAST, ANN ARBOR TOWNSHIP (NOW THE CITY OF ANN ARBOR), WASHTENAW COUNTY, MICHIGAN, AS RECORDED IN LIBER 44 OF DEEDS, PAGE 748, OF WASHTENAW COUNTY RECORDS CONTAINING 0.26 ACRES OF LAND, MORE OR LESS.

COMPARISON CHART

	EXISTING	REQUIRED	PROPOSED
ZONING	R4C	R4C	R4C
USES			
RESIDENTIAL	1 Unit	n/a	5 Units
BEDROOMS PER UNIT	N/A	n/a	6
TOTAL BEDROOMS	N/A	n/a	30
BUILDING			
FLOOR AREA	4,236 sf	n/a	11,653 sf
PROPERTY REGULATIONS			
LOT AREA/DWELLING UNIT	11,446 sf	2,175 sf	2,289 sf
MIN ACTIVE OPEN SPACE PER DWELLING UNIT	N/A	300 sf	333 sf
LOT AREA MIN	11,446 sf	8,500 sf	11,446 sf
MIN LOT WIDTH	65.95	60 ft	65.95 ft
MAX. BUILDING HEIGHT	25 ft	30 ft	30 ft
MIN OPEN SPACE	N/A	40%	46%
PROPERTY SETBACKS			
	FRONT	12.78 ft	25.00 ft
	REAR	103.74 ft	30.00 ft
	SIDE	9.73 ft	12.00 ft
OFF STREET PARKING			
PARKING 1.5 PER UNIT RESIDENTIAL	2	7.5	8
BICYCLE PARKING 1 PER 5 UNITS RESIDENTIAL	0	1 A	5A / 9C

* AVERAGE FRONT SETBACK PROVIDED AS ALLOWED BY CITY CODE

SHEET INDEX

- SP-01 COVER SHEET
- SP-02 EXISTING CONDITIONS
- SP-03 LAYOUT PLAN
- SP-04 UTILITIES PLAN
- SP-05 LANDSCAPE PLAN
- SP-06 GRADING AND SOIL EROSION CONTROL PLAN
- SP-07 STORM WATER MANAGEMENT PLAN
- SP-08 DETAILS
- SP-09 PHOTOMETRIC PLAN
- A2.1 LOWER LEVEL FLOOR PLAN
- A2.2 FIRST FLOOR PLAN
- A2.3 SECOND FLOOR PLAN
- A2.4 THIRD FLOOR PLAN
- A2.5 ROOF PLAN
- A3.1 ELEVATIONS AND MASSING

SOIL TYPES

THE SOILS ON THE SITE ARE FOX SERIES FoA AND FoB. THE SOILS ARE CLASSIFIED AS HYDRAULIC SOILS GROUP B WITH TYPICAL INFILTRATION RATES OF 0.6 IN/HR. THE PETITIONER HAS NOT CONDUCTED INFILTRATION TESTING FOR THIS SMALL SITE AS THE CALCULATIONS DO NOT RELY ON INFILTRATION TO MEET THE REQUIRED DETENTION VOLUMES.

SOLID WASTE DISPOSAL PLAN

THE DEVELOPMENT PROPOSES TO PROVIDE FIVE (5) 96 GAL TRASH AND FIVE (5) 96 GAL RECYCLING CONTAINERS IN THE ENCLOSED AREA AT THE REAR OF THE BUILDING AND THE EAST SIDE OF THE PARKING AREA. CONTAINERS WILL BE WHEELED CURBSIDE ON COLLECTION DAYS FOR PICK UP.



NOT FOR CONSTRUCTION

DATE 3-22-18
SCALE N.T.S.
SHEET NO. SP-01

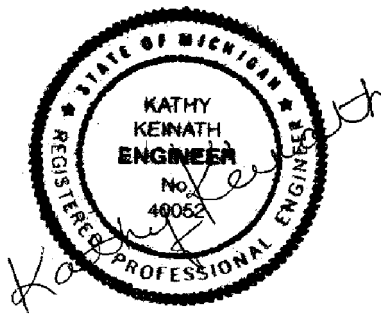


Know what's below. Call before you dig.

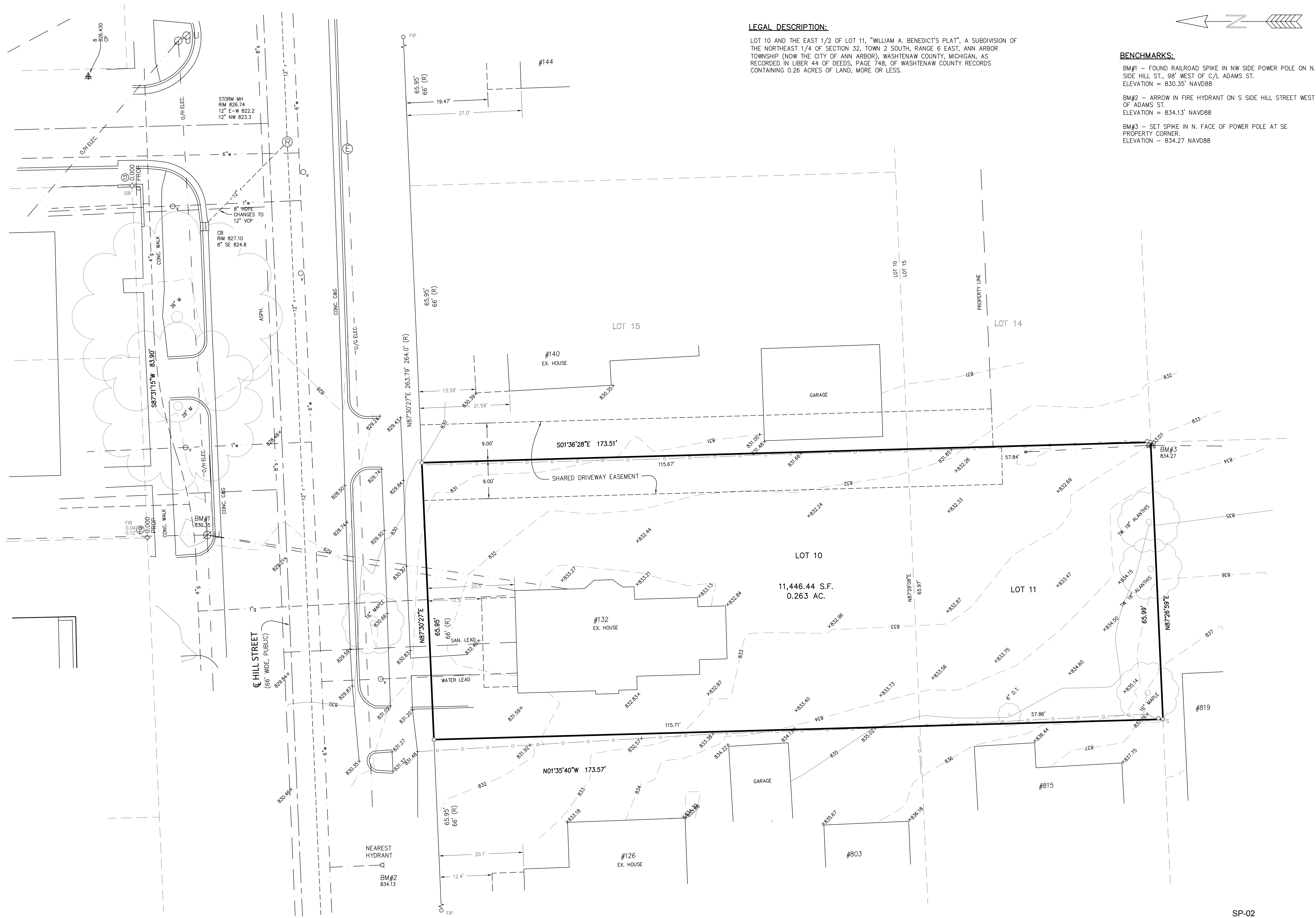
THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING RECORDS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES IN THE AREA, ESPECIALLY IN AREAS WHERE THE UNDERGROUND UTILITIES HAVE NOT BEEN RECORDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EXACT LOCATION INDICATED AS SHOWN ON THIS SHEET. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE CONTRACTOR SHALL NOT PROTECT THE STRUCTURE INVENTORY SHOWN HEREIN.

Macon Engineering, LLC.
 P.O. Box 314, Chelsea, MI 48118 734-216-9941

132 HILL
 ANN ARBOR, MI
 SITE PLAN
 COVER



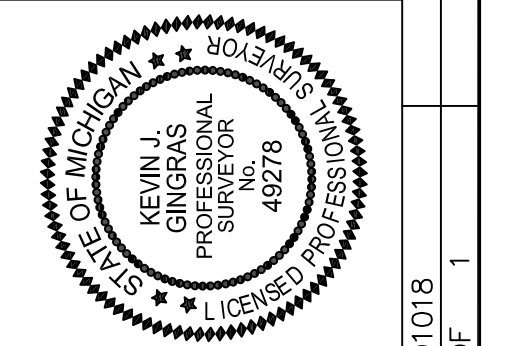
DATE 3-22-18
SCALE N.T.S.
SHEET NO. SP-01



LEGAL DESCRIPTION:
 LOT 10 AND THE EAST 1/2 OF LOT 11, "WILLIAM A. BENEDICT'S PLAT", A SUBDIVISION OF THE NORTHEAST 1/4 OF SECTION 32, TOWN 2 SOUTH, RANGE 6 EAST, ANN ARBOR TOWNSHIP (NOW THE CITY OF ANN ARBOR), WASHTENAW COUNTY, MICHIGAN, AS RECORDED IN LIBER 44 OF DEEDS, PAGE 748, OF WASHTENAW COUNTY RECORDS CONTAINING 0.26 ACRES OF LAND, MORE OR LESS.

BENCHMARKS:
 BM#1 - FOUND RAILROAD SPIKE IN NW SIDE POWER POLE ON N. SIDE HILL ST., 98' WEST OF C/L ADAMS ST.
 ELEVATION = 830.35' NAVD88
 BM#2 - ARROW IN FIRE HYDRANT ON S SIDE HILL STREET WEST OF ADAMS ST.
 ELEVATION = 834.13' NAVD88
 BM#3 - SET SPIKE IN N. FACE OF POWER POLE AT SE PROPERTY CORNER.
 ELEVATION = 834.27' NAVD88

ARBOR LAND CONSULTANTS, INC.
 Professional Land Surveyors
 2936 S. Medrons
 Ann Arbor, MI 48103
 (734) 669-2960
 Fax 669-2961
 www.arborlandinc.com



CLIENT: MILLER BUILDING, LLC
TOPOGRAPHIC SURVEY
 #132 HILL STREET
 IN THE SE 1/4 OF SECTION 29
 T3S, R6E, CITY OF ANN ARBOR,
 WASHTENAW COUNTY, MICHIGAN.

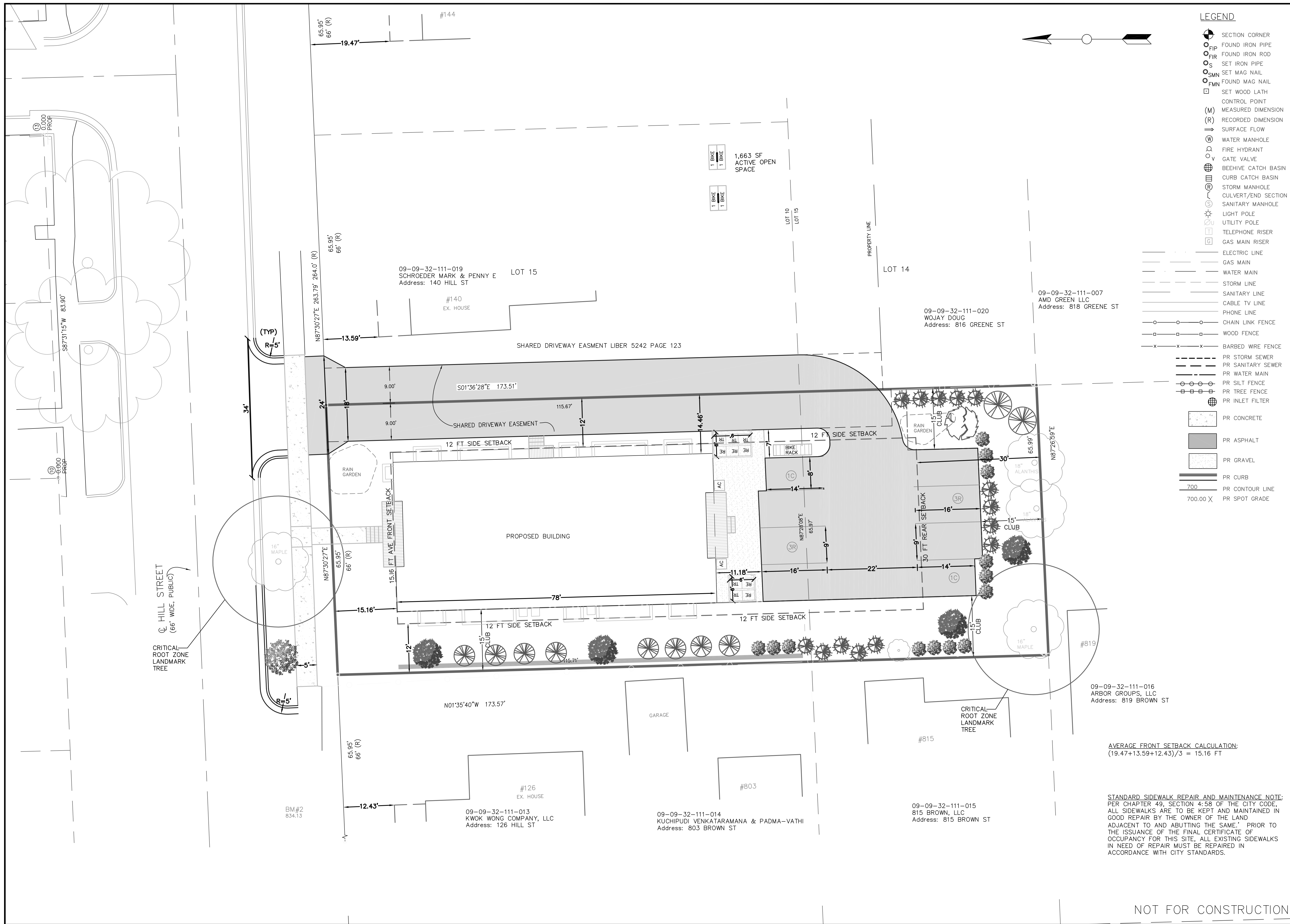
UTILITY NOTE:
 811 Know what's below. Call before you dig.

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES SHOWN EITHER IN SERVICE OR ABANDONED CONDITION. THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES SHOWN HEREON.

SECTION CORNER	WATER MANHOLE	0/H ELEC.	ELECTRIC LINE
FOUND IRON PIPE	FIRE HYDRANT	8" G	GAS MAIN
SET IRON PIPE	GATE VALVE	6" W	WATER MAIN
FOUND MAC NAIL	BEEHIVE CATCH BASIN	18" T	STORM LINE
SET WOOD LATH	CURB CATCH BASIN	6" S	SANITARY LINE
CONTROL POINT	STORM MANHOLE	0/H C&T	CABLE TV LINE
MEASURED DIMENSION	CULVERT/END SECTION	U/G COMM.	PHONE LINE
RECORDED DIMENSION	SANITARY MANHOLE	X	CHAIN LINK FENCE
SURFACE FLOW	UTILITY POLE	X	WOOD FENCE
	TELEPHONE RISER	X	BARBED WIRE FENCE
	GAS MAIN RISER	X	

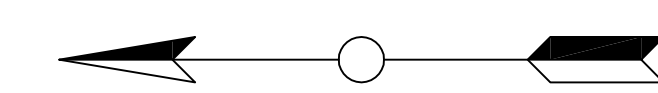
SP-02
 EXISTING CONDITIONS

JOB No. 01018
 SHEET 1 OF 1
 SCALE 1 INCH = 10 FEET
 DATE: 1-29-2018
 REVISION: 3-20-2018



LEGEND

- SECTION CORNER
- FIP FOUND IRON PIPE
- FIR FOUND IRON ROD
- S SET IRON PIPE
- SMN SET MAG NAIL
- FMN FOUND MAG NAIL
- SET WOOD LATH
- CONTROL POINT
- (M) MEASURED DIMENSION
- (R) RECORDED DIMENSION
- SURFACE FLOW
- ⊙ WATER MANHOLE
- ⊙ FIRE HYDRANT
- ⊙ GATE VALVE
- ⊙ BEEHIVE CATCH BASIN
- ⊙ CURB CATCH BASIN
- ⊙ STORM MANHOLE
- ⊙ CULVERT/END SECTION
- ⊙ SANITARY MANHOLE
- ⊙ LIGHT POLE
- ⊙ UTILITY POLE
- ⊙ TELEPHONE RISER
- ⊙ GAS MAIN RISER
- ELECTRIC LINE
- GAS MAIN
- WATER MAIN
- STORM LINE
- SANITARY LINE
- CABLE TV LINE
- PHONE LINE
- CHAIN LINK FENCE
- WOOD FENCE
- X X X BARBED WIRE FENCE
- PR STORM SEWER
- PR SANITARY SEWER
- PR WATER MAIN
- PR SILT FENCE
- PR TREE FENCE
- PR INLET FILTER
- PR CONCRETE
- PR ASPHALT
- PR GRAVEL
- PR CURB
- 700 PR CONTOUR LINE
- 700.00 X PR SPOT GRADE

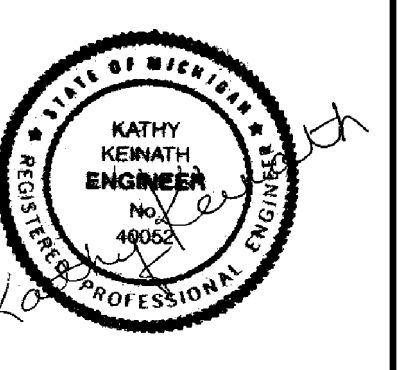


THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES IN THE AREA. EXCEPT AS SHOWN ON THIS PLAN, THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR ANY UTILITIES NOT SHOWN AND IN THE EXACT LOCATION INDICATED. AS ALWAYS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES IN THE AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES IN THE AREA.

Macon Engineering, LLC.

P.O. Box 314, Chelsea, MI 48118 734-216-9941

132 HILL ARBOR, MI
ANN ARBOR, MI
SITE PLAN
LAYOUT



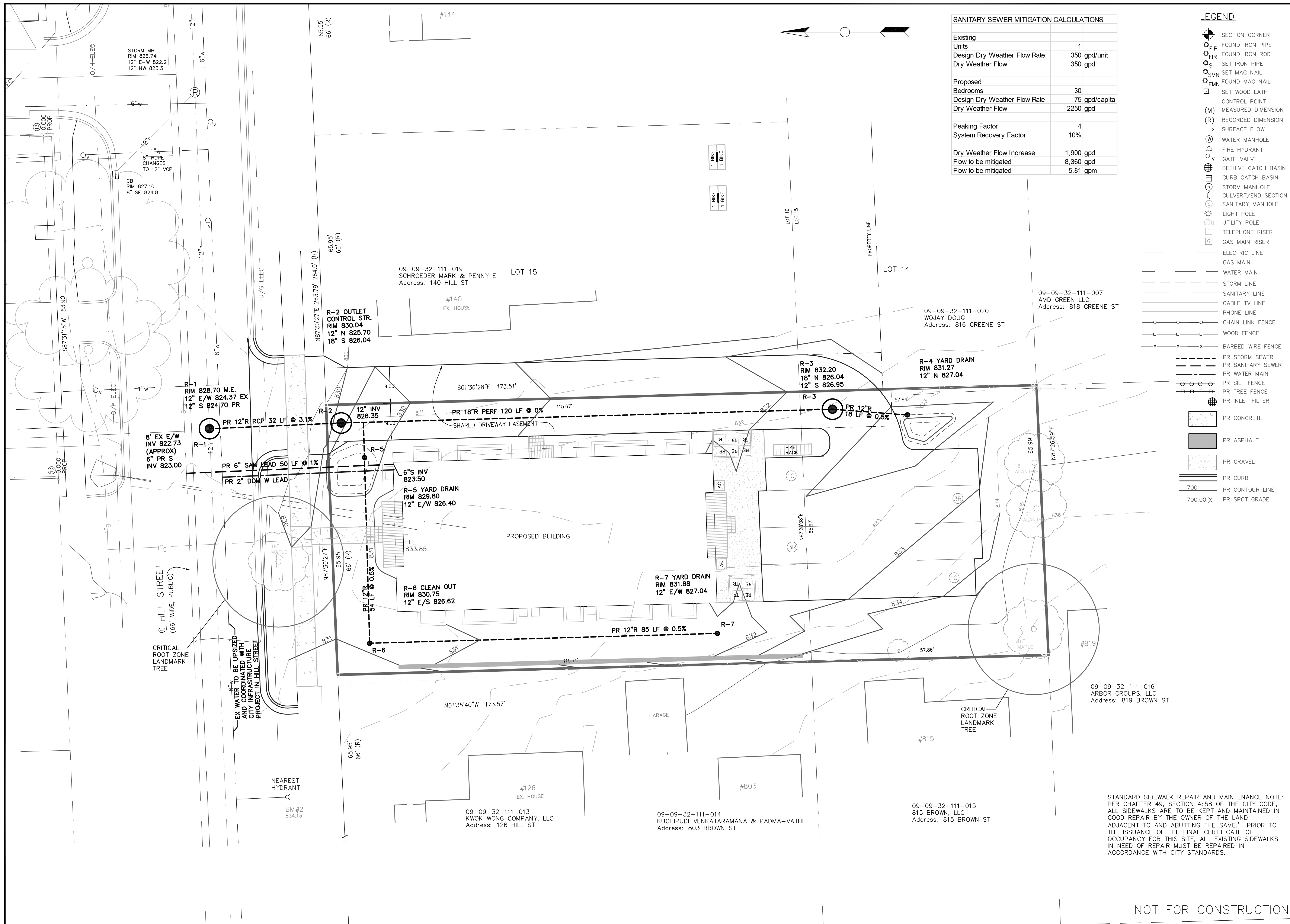
09-09-32-111-016
ARBOR GROUPS, LLC
Address: 819 BROWN ST

AVERAGE FRONT SETBACK CALCULATION:
(19.47+13.59+12.43)/3 = 15.16 FT

STANDARD SIDEWALK REPAIR AND MAINTENANCE NOTE:
PER CHAPTER 49, SECTION 4-58 OF THE CITY CODE,
ALL SIDEWALKS ARE TO BE KEPT AND MAINTAINED IN
GOOD REPAIR BY THE OWNER OF THE LAND
ADJACENT TO AND ABUTTING THE SAME. PRIOR TO
THE ISSUANCE OF THE FINAL CERTIFICATE OF
OCCUPANCY FOR THIS SITE, ALL EXISTING SIDEWALKS
IN NEED OF REPAIR MUST BE REPAIRED IN
ACCORDANCE WITH CITY STANDARDS.

NOT FOR CONSTRUCTION

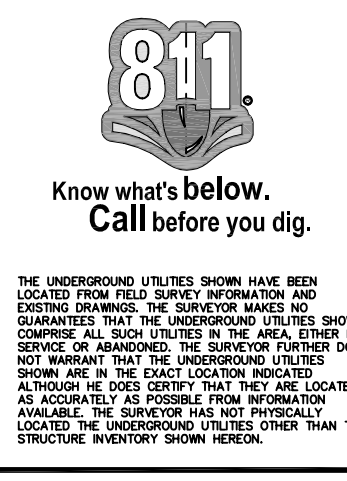
DATE	3-22-18
SCALE	1"=10'
SHEET NO.	SP-03



SANITARY SEWER MITIGATION CALCULATIONS

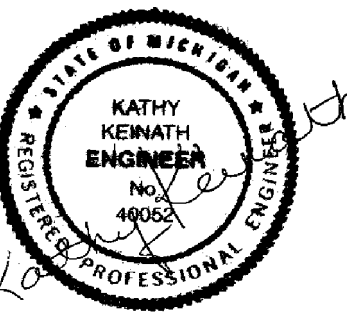
Existing	
Units	1
Design Dry Weather Flow Rate	350 gpd/unit
Dry Weather Flow	350 gpd
Proposed	
Bedrooms	30
Design Dry Weather Flow Rate	75 gpd/capita
Dry Weather Flow	2250 gpd
Peaking Factor	
System Recovery Factor	10%
Dry Weather Flow Increase	1,900 gpd
Flow to be mitigated	8,360 gpd
Flow to be mitigated	5.81 gpm

- LEGEND**
- SECTION CORNER
 - FIP FOUND IRON PIPE
 - FIR FOUND IRON ROD
 - S SET IRON PIPE
 - SMN SET MAG NAIL
 - FMN FOUND MAG NAIL
 - SET WOOD LATH
 - CONTROL POINT
 - (M) MEASURED DIMENSION
 - (R) RECORDED DIMENSION
 - SURFACE FLOW
 - WATER MANHOLE
 - FIRE HYDRANT
 - GATE VALVE
 - BEEHIVE CATCH BASIN
 - CURB CATCH BASIN
 - STORM MANHOLE
 - CULVERT/END SECTION
 - SANITARY MANHOLE
 - LIGHT POLE
 - UTILITY POLE
 - TELEPHONE RISER
 - GAS MAIN RISER
 - ELECTRIC LINE
 - GAS MAIN
 - WATER MAIN
 - STORM LINE
 - SANITARY LINE
 - CABLE TV LINE
 - PHONE LINE
 - CHAIN LINK FENCE
 - WOOD FENCE
 - BARBED WIRE FENCE
 - PR STORM SEWER
 - PR SANITARY SEWER
 - PR WATER MAIN
 - PR SILT FENCE
 - PR TREE FENCE
 - PR INLET FILTER
 - PR CONCRETE
 - PR ASPHALT
 - PR GRAVEL
 - PR CURB
 - PR CONTOUR LINE
 - PR SPOT GRADE



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132 HILL
 ANN ARBOR, MI
 SITE PLAN
 UTILITIES



STANDARD SIDEWALK REPAIR AND MAINTENANCE NOTE:
 PER CHAPTER 49, SECTION 4-58 OF THE CITY CODE, ALL SIDEWALKS ARE TO BE KEPT AND MAINTAINED IN GOOD REPAIR BY THE OWNER OF THE LAND ADJACENT TO AND ABUTTING THE SAME. PRIOR TO THE ISSUANCE OF THE FINAL CERTIFICATE OF OCCUPANCY FOR THIS SITE, ALL EXISTING SIDEWALKS IN NEED OF REPAIR MUST BE REPAIRED IN ACCORDANCE WITH CITY STANDARDS.

DATE	3-22-18
SCALE	1"=10'
SHEET NO.	SP-04

NOT FOR CONSTRUCTION

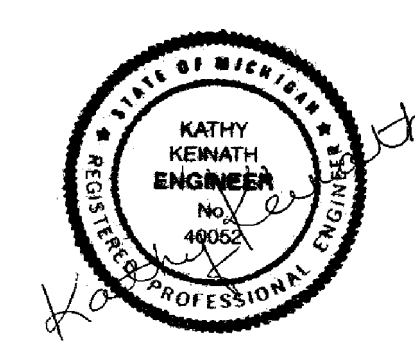


Know what's below. Call before you dig.

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES IN THE AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES IN THE AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES IN THE AREA.

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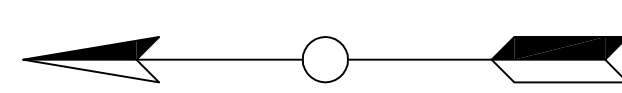
132 HILL ARBOR, MI
ANN ARBOR, MI
SITE PLAN
LANDSCAPE



DATE 3-22-18
SCALE 1"=10'
SHEET NO. SP-05

LEGEND

- SECTION CORNER
FOUND IRON PIPE
FOUND IRON ROD
SET IRON PIPE
SET MAG NAIL
FOUND MAG NAIL
SET WOOD LATH
CONTROL POINT
MEASURED DIMENSION
RECORDED DIMENSION
SURFACE FLOW
WATER MANHOLE
FIRE HYDRANT
GATE VALVE
BEEHIVE CATCH BASIN
CURB CATCH BASIN
STORM MANHOLE
CULVERT/END SECTION
SANITARY MANHOLE
LIGHT POLE
UTILITY POLE
TELEPHONE RISER
GAS MAIN RISER
ELECTRIC LINE
GAS MAIN
WATER MAIN
STORM LINE
SANITARY LINE
CABLE TV LINE
PHONE LINE
CHAIN LINK FENCE
WOOD FENCE
BARBED WIRE FENCE
PR STORM SEWER
PR SANITARY SEWER
PR WATER MAIN
PR SILT FENCE
PR TREE FENCE
PR INLET FILTER
PR CONCRETE
PR ASPHALT
PR GRAVEL
PR VEHICULAR USE AREA
PR CURB
PR CONTOUR LINE
PR SPOT GRADE



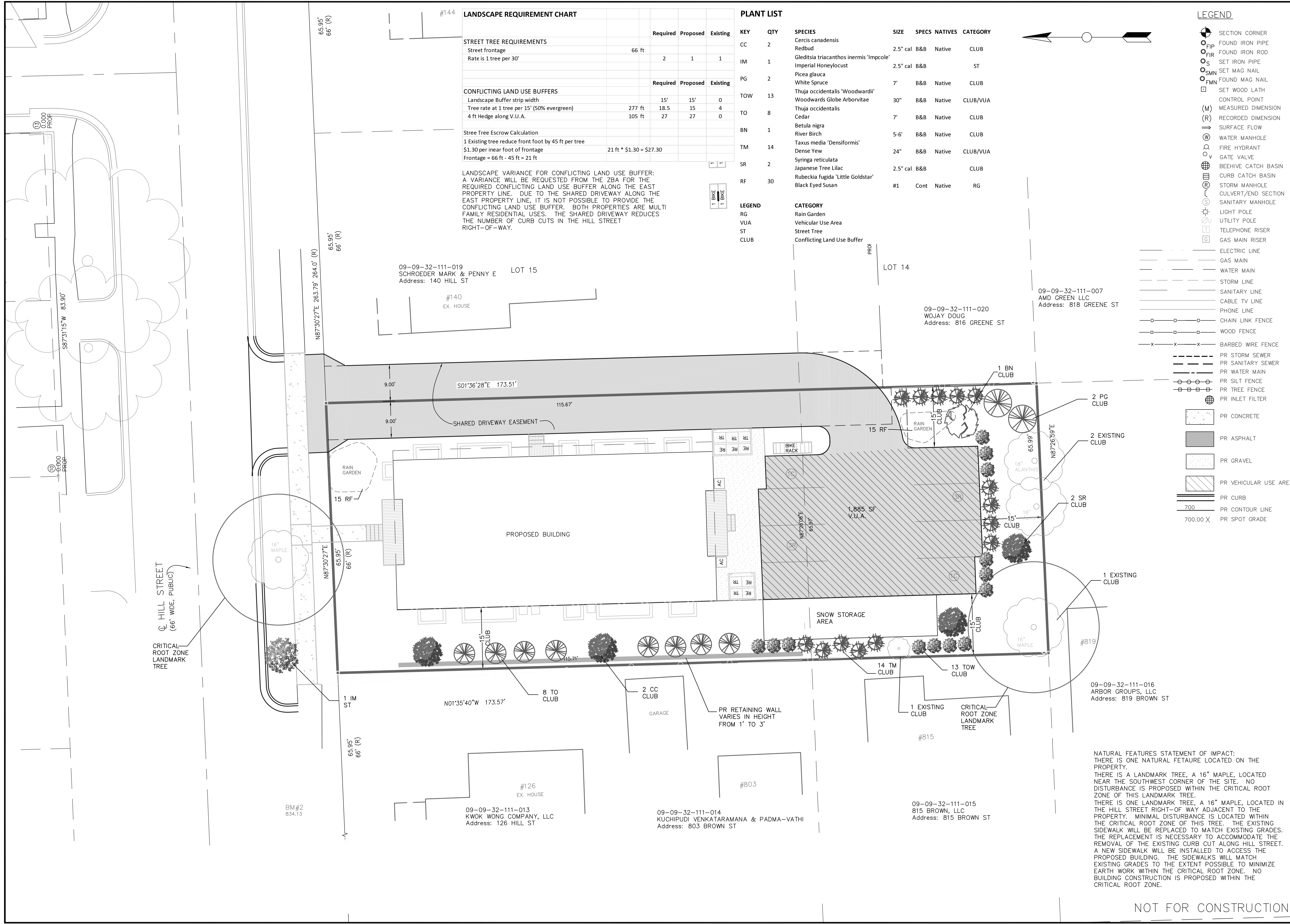
PLANT LIST

Table with columns: KEY, QTY, SPECIES, SIZE, SPECS, NATIVES, CATEGORY. Lists plants like Cercis canadensis, Gleditsia triacanthos, etc.

LANDSCAPE REQUIREMENT CHART

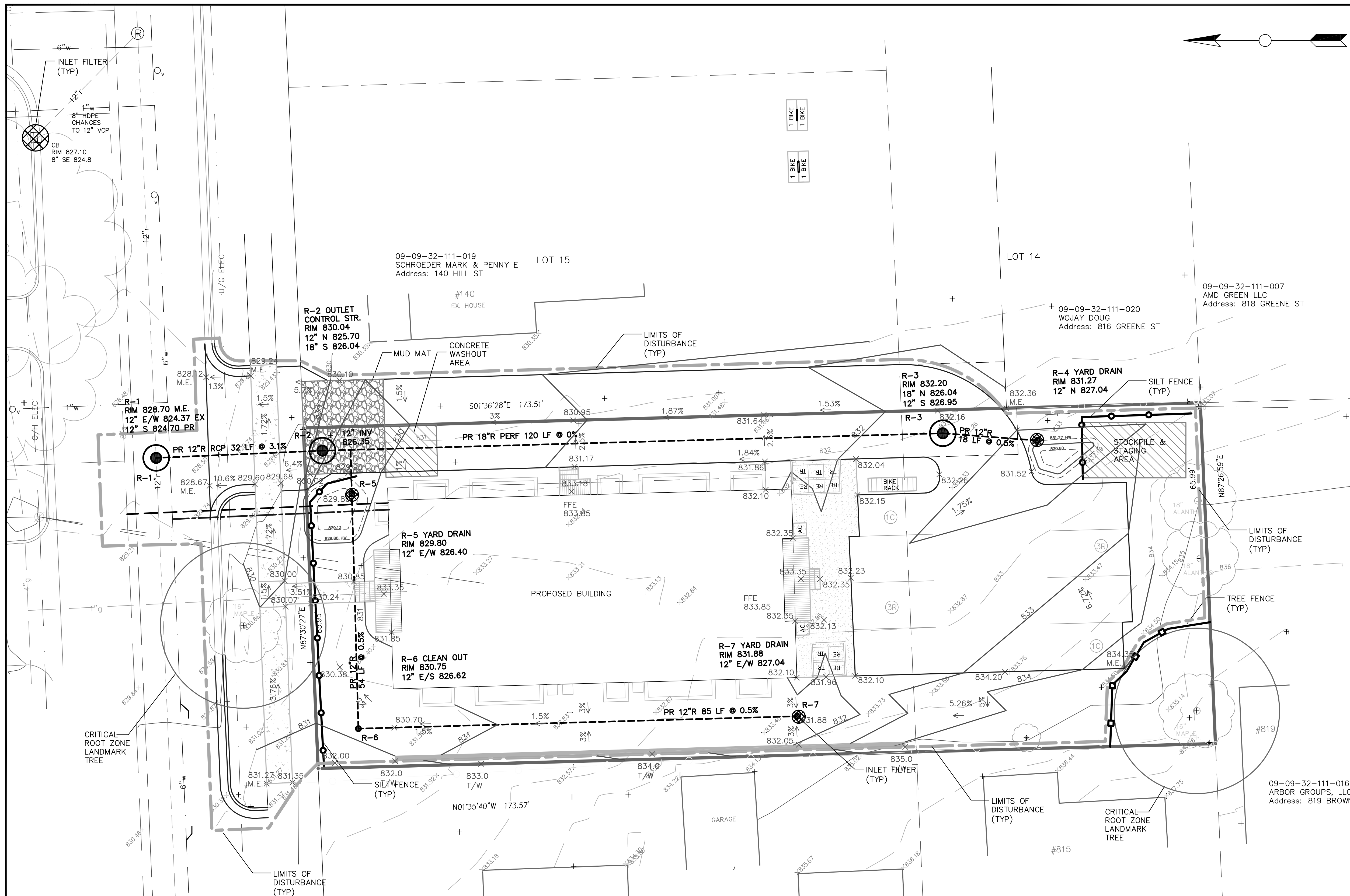
Table with columns: Required, Proposed, Existing. Rows include Street Tree Requirements and Conflicting Land Use Buffers.

LANDSCAPE VARIANCE FOR CONFLICTING LAND USE BUFFER: A VARIANCE WILL BE REQUESTED FROM THE ZBA FOR THE REQUIRED CONFLICTING LAND USE BUFFER ALONG THE EAST PROPERTY LINE...

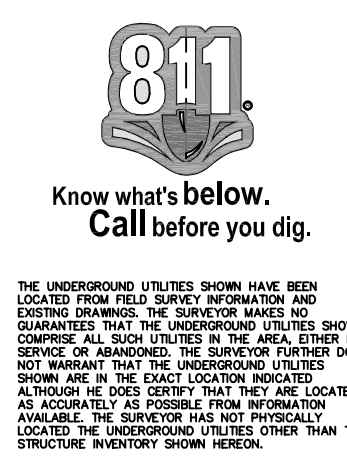


NATURAL FEATURES STATEMENT OF IMPACT: THERE IS ONE NATURAL FEATURE LOCATED ON THE PROPERTY. THERE IS A LANDMARK TREE, A 16" MAPLE, LOCATED NEAR THE SOUTHWEST CORNER OF THE SITE...

NOT FOR CONSTRUCTION

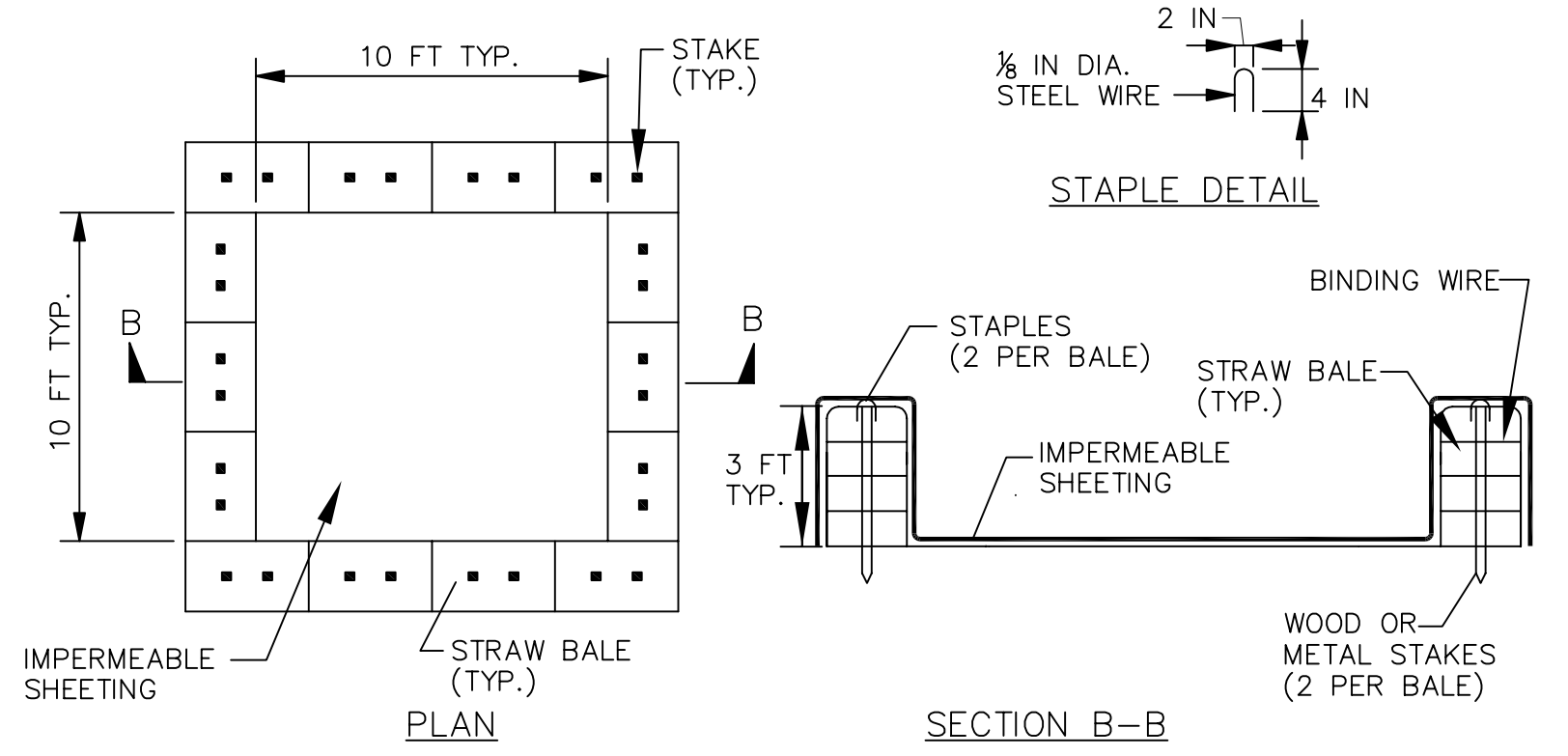
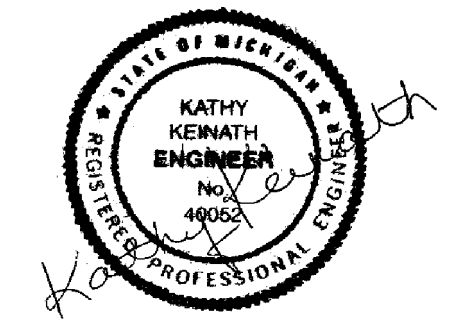


- LEGEND**
- SECTION CORNER
 - FOUND IRON PIPE
 - FOUND IRON ROD
 - SET IRON PIPE
 - SET MAG NAIL
 - FOUND MAG NAIL
 - SET WOOD LATH
 - CONTROL POINT
 - MEASURED DIMENSION
 - RECORDED DIMENSION
 - SURFACE FLOW
 - WATER MANHOLE
 - FIRE HYDRANT
 - GATE VALVE
 - BEEHIVE CATCH BASIN
 - CURB CATCH BASIN
 - STORM MANHOLE
 - CULVERT/END SECTION
 - SANITARY MANHOLE
 - LIGHT POLE
 - UTILITY POLE
 - TELEPHONE RISER
 - GAS MAIN RISER
 - ELECTRIC LINE
 - GAS MAIN
 - WATER MAIN
 - STORM LINE
 - SANITARY LINE
 - CABLE TV LINE
 - PHONE LINE
 - CHAIN LINK FENCE
 - WOOD FENCE
 - BARBED WIRE FENCE
 - PR STORM SEWER
 - PR SANITARY SEWER
 - PR WATER MAIN
 - PR SILT FENCE
 - PR TREE FENCE
 - PR INLET FILTER
 - PR CONCRETE
 - PR ASPHALT
 - PR CURB
 - 700 PR CONTOUR LINE
 - 700.00 X PR SPOT GRADE



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132 HILL
 ANN ARBOR, MI
 GRADING AND SOIL
 EROSION CONTROL



NOTE: CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH
 WASHOUT STRUCTURE WITH STRAW BALES

- SEQUENCE OF CONSTRUCTION**
1. SOIL EROSION CONTROL KICK OFF MEETING WITH CITY 1 DAY
 2. INSTALL SILT FENCE, INLET FILTERS AND TRACKING SURFACES. 1 DAY
 3. CLEAR AND GRUB SITE. 3 DAYS
 4. REMOVE TOPSOIL. 3 DAYS
 5. REMOVE EXISTING PAVEMENT AND BUILDINGS. 3 WEEKS
 6. ROUGH GRADE SITE. 2 WEEKS
 7. TEMPORARY SEED ALL AREAS OUTSIDE OF SILT FENCE. 1 DAY
 8. INSTALL UNDERGROUND UTILITIES. 4 WEEKS
 9. BUILDING CONSTRUCTION. 12 MONTHS
 10. MAINTAIN SOIL EROSION CONTROL MEASURES AS NECESSARY. ONGOING
 11. CONSTRUCT DRIVES AND SIDEWALKS. 2 WEEKS
 12. INSTALL FILTERS ON NEW INLETS & REPLACE AS REQUIRED. ONGOING
 13. COMPLETE CONSTRUCTION OF BUILDINGS.
 14. FINE GRADE SITE AND PLACE TOPSOIL. 2 WEEKS
 15. FINAL SEED AND MULCH ALL DISTURBED AREAS. 5 DAYS
 16. REMOVE TEMPORARY EROSION CONTROLS. 1 DAY

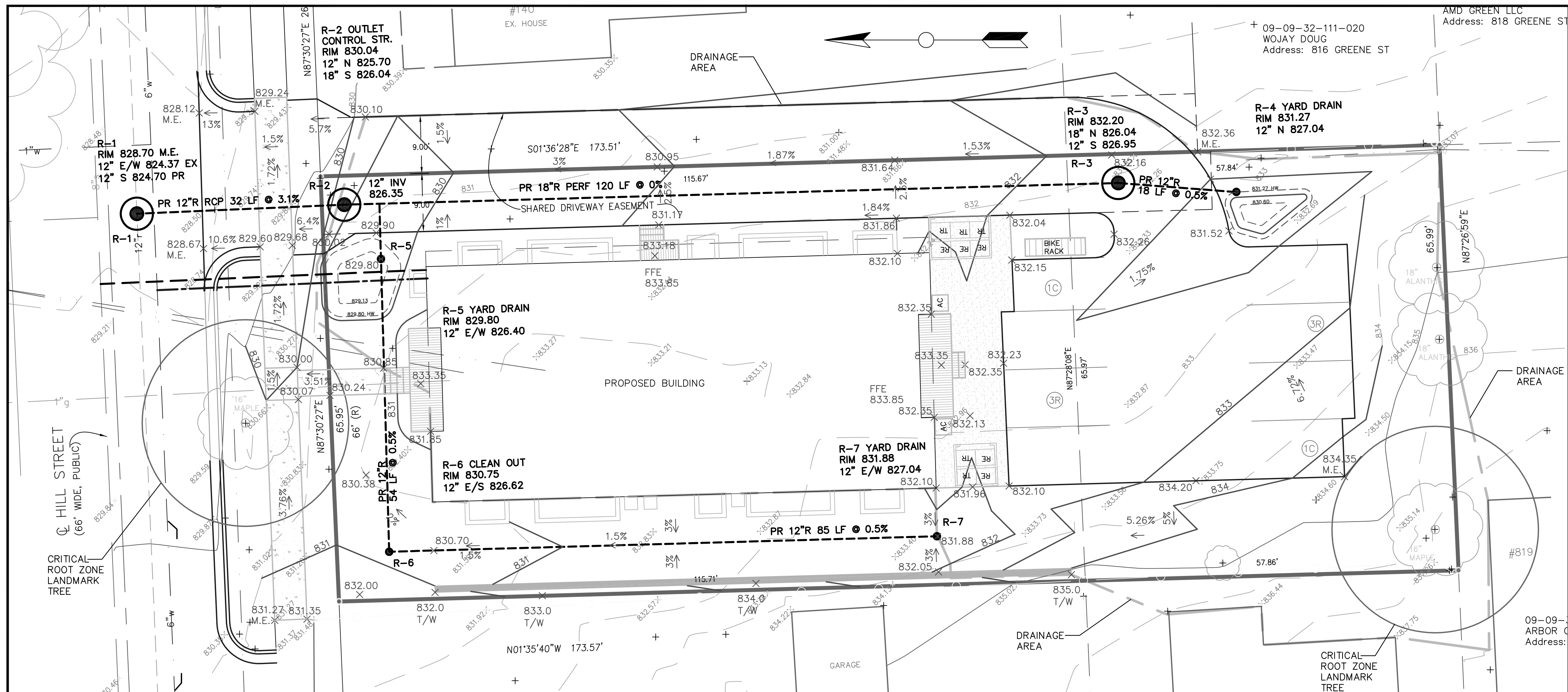
SOIL EROSION CONTROL COST ESTIMATE

	QUANTITY	UNIT	PRICE	TOTAL PRICE
SILT FENCE	400	LF	\$2.00	\$800
SILT SACS	4	EA	\$50.00	\$200
MUD TRACKING	31	SY	\$50.00	\$1,555
TEMP SEED	100	SY	\$3.00	\$300
TOTAL				\$2,855
PROTECTING EXPOSED SURFACES				\$2,000

- NOTES:**
1. INTERNAL AND EXTERNAL STREETS WILL BE CLEANED OF ANY TRACKED MUD IMMEDIATELY FOLLOWING EACH MUD-TRACKING OCCURRENCE.
 2. PERMANENT SOIL EROSION CONTROLS ARE TO BE IN PLACE FIVE (5) DAYS AFTER FINAL GRADING.

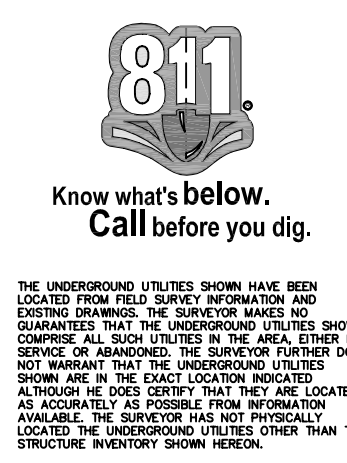
NOT FOR CONSTRUCTION

DATE 3-22-18
 SCALE 1"=10'
 SHEET NO. SP-06



LEGEND

● SECTION CORNER	— ELECTRIC LINE
○ FIP FOUND IRON PIPE	— GAS MAIN
○ FIR FOUND IRON ROD	— WATER MAIN
○ S SET IRON PIPE	— STORM LINE
○ SMN SET MAG NAIL	— SANITARY LINE
○ FMN FOUND MAG NAIL	— CABLE TV LINE
□ SET WOOD LATH	— PHONE LINE
○ CONTROL POINT	— CHAIN LINK FENCE
(M) MEASURED DIMENSION	— WOOD FENCE
(R) RECORDED DIMENSION	— BARBED WIRE FENCE
→ SURFACE FLOW	— PR STORM SEWER
⊙ WATER MANHOLE	— PR SANITARY SEWER
⊙ FIRE HYDRANT	— PR WATER MAIN
⊙ GATE VALVE	— PR SILT FENCE
⊙ BEEHIVE CATCH BASIN	— PR TREE FENCE
⊙ CURB CATCH BASIN	— PR INLET FILTER
⊙ STORM MANHOLE	— PR CONCRETE
⊙ CULVERT/END SECTION	— PR ASPHALT
⊙ SANITARY MANHOLE	— PR GRAVEL
⊙ LIGHT POLE	— PR CURB
⊙ UTILITY POLE	— PR CONTOUR LINE
⊙ TELEPHONE RISER	— PR SPOT GRADE
⊙ GAS MAIN RISER	



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PROPOSED AREA TO SOUTH RAIN GARDEN
 Total Drainage Area = 0.09 ac 3825 sf
 Total Site Area Excluding "Self-Crediting" BMPs = 0.26 ac

W1: POST DEVELOPMENT COVER TYPES, AREAS, CURVE NUMBERS AND RUNOFF COEFFICIENTS
 Rational Method Variables

Cover Type	Soil Type	Area (sf)	Area (ac)	Runoff Coefficient (c)	(C)/(Area)
Building Roof	B	0	0.000	0.95	0.00
Concrete	B	48	0.001	0.95	0.00
Pavement	B	2,092	0.048	0.85	0.04
Pervious	B	1,641	0.038	0.30	0.01
Rain Garden	B	44	0.001	0.50	0.00
Total = Sum (C)/(A)		3,825	0.085	0.85	0.05
Area Total = Sum A (ac)			0.09		
Weighted C = Sum (C)/(A)/Area Total				0.61	

NRCS Variables Pervious

Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	CN/(Area)
Lawn	B	1,641	0.038	61	2
Rain Garden	B	44	0.001	78	0
B	0	0.000	0.000	85	0
Total = Sum (CN)/(A)				2.38	
Area Total = Sum A (ac)			0.04		
Weighted CN = Sum (CN)/(A)/Area Total				61	

NRCS Variables Impervious

Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	CN/(Area)
Building Roof	B	0	0.000	98	0
Concrete	B	48	0.001	98	0
Pavement	B	2,092	0.048	98	5
Total = Sum (CN)/(A)				4.81	
Area Total = Sum A (ac)			0.05		
Weighted CN = Sum (CN)/(A)/Area Total				98	

W2: STANDARD METHOD RUNOFF VOLUME CALCULATIONS
 First Flush Runoff Calculations (Vff)

Vff = (1")^(1/12) * (43560sf/1ac) * AC = Vff = 195 cf
 Forebay Volume 5% = Vfb = 10 cf

Rain Garden South
 Area of Garden at Ponding Depth = 72 sf
 Area of Garden at Bottom = 16 sf
 Area = 44 sf

Surface Storage Volume = Area*Depth	Area = 44 sf
Depth = 0.67 ft	Volume = 29 cf
Soil Storage Volume = length*width*depth*void ratio	Length = 13 ft
Width = 7 ft	Depth = 0.67 ft
Depth = 0.3	Voids = 18 cf
Volume = 18 cf	
Infiltration Volume = Area*infiltration rate*6 hr*1/12"	Area = 44 sf
Infiltration Rate = 0.00 in/hr	Infiltration Rate w/ Safety Factor 2 = 0.00 in/hr
Infiltration Period = 6.00 hr	Infiltration Volume = 0 cf
Total Rain Garden South = 48 cf	

Storage provided in excess of forbay = 38 cf

PROPOSED AREA TO NORTH RAIN GARDEN
 Total Drainage Area = 0.07 ac 3260 sf
 Total Site Area Excluding "Self-Crediting" BMPs = 0.26 ac

W1: POST DEVELOPMENT COVER TYPES, AREAS, CURVE NUMBERS AND RUNOFF COEFFICIENTS
 Rational Method Variables

Cover Type	Soil Type	Area (sf)	Area (ac)	Runoff Coefficient (c)	(C)/(Area)
Building Roof	B	0	0.000	0.95	0.00
Concrete	B	289	0.007	0.95	0.01
Pavement	B	2,243	0.051	0.85	0.04
Pervious	B	646	0.015	0.30	0.00
Rain Garden	B	82	0.002	0.50	0.00
Total = Sum (C)/(A)		3,260	0.074	0.85	0.06
Area Total = Sum A (ac)			0.07		
Weighted C = Sum (C)/(A)/Area Total				0.74	

NRCS Variables Pervious

Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	CN/(Area)
Lawn	B	646	0.015	61	1
Rain Garden	B	82	0.002	78	0
B	0	0.000	0.000	85	0
Total = Sum (CN)/(A)				1.05	
Area Total = Sum A (ac)			0.02		
Weighted CN = Sum (CN)/(A)/Area Total				63	

NRCS Variables Impervious

Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	CN/(Area)
Building Roof	B	0	0.000	98	0
Concrete	B	289	0.007	98	1
Pavement	B	2,243	0.051	98	5.70
Total = Sum (CN)/(A)				5.70	
Area Total = Sum A (ac)			0.06		
Weighted CN = Sum (CN)/(A)/Area Total				98	

W2: STANDARD METHOD RUNOFF VOLUME CALCULATIONS
 First Flush Runoff Calculations (Vff)

Vff = (1")^(1/12) * (43560sf/1ac) * AC = Vff = 201 cf
 Forebay Volume 5% = Vfb = 10 cf

Rain Garden North Volume
 Area of Garden at Ponding Depth = 115 sf
 Area of Garden at Bottom = 49 sf
 Area = 82 sf

Surface Storage Volume = Area*Depth	Area = 82 sf
Depth = 0.67 ft	Volume = 55 cf
Soil Storage Volume = length*width*depth*void ratio	Length = 12 ft
Width = 11 ft	Depth = 0.67 ft
Depth = 0.3	Voids = 27 cf
Volume = 27 cf	
Infiltration Volume = Area*infiltration rate*6 hr*1/12"	Area = 82 sf
Infiltration Rate = 0.00 in/hr	Infiltration Rate w/ Safety Factor 2 = 0.00 in/hr
Infiltration Period = 6.00 hr	Infiltration Volume = 0 cf
Total Rain Garden North = 81 cf	

Storage provided in excess of forbay = 71 cf

PROPOSED OVERALL SITE
 Total Drainage Area = 0.26 ac 11336 sf
 Total Site Area Excluding "Self-Crediting" BMPs = 0.26 ac

W1: POST DEVELOPMENT COVER TYPES, AREAS, CURVE NUMBERS AND RUNOFF COEFFICIENTS
 Rational Method Variables

Cover Type	Soil Type	Area (sf)	Area (ac)	Runoff Coefficient (c)	(C)/(Area)
Building Roof	B	2,775	0.064	0.95	0.08
Concrete	B	549	0.013	0.95	0.01
Pavement	B	4,335	0.100	0.85	0.08
Pervious	B	3,551	0.082	0.30	0.02
Rain Garden	B	126	0.003	0.50	0.00
Total = Sum (C)/(A)		11,336	0.260	0.85	0.18
Area Total = Sum A (ac)			0.26		
Weighted C = Sum (C)/(A)/Area Total				0.70	

NRCS Variables Pervious

Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	CN/(Area)
Lawn	B	3,551	0.082	61	5
Rain Garden	B	126	0.003	78	0
B	0	0.000	0.000	85	0
Total = Sum (CN)/(A)				5.20	
Area Total = Sum A (ac)			0.08		
Weighted CN = Sum (CN)/(A)/Area Total				62	

NRCS Variables Impervious

Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	CN/(Area)
Building Roof	B	2,775	0.064	98	6
Concrete	B	549	0.013	98	1
Pavement	B	4,335	0.100	98	17.23
Total = Sum (CN)/(A)				17.23	
Area Total = Sum A (ac)			0.18		
Weighted CN = Sum (CN)/(A)/Area Total				98	

W2: STANDARD METHOD RUNOFF VOLUME CALCULATIONS
 First Flush Runoff Calculations (Vff)

Vff = (1")^(1/12) * (43560sf/1ac) * AC = Vff = 664 cf

Storage Volume from Rain Gardens = 109 cf
 Additional Storage Volume Required = 555 cf

Subsurface Storage
 Infiltration Volume = Area*infiltration rate*6 hr*1/12"

Area = 480 sf
Infiltration Rate = 0.00 in/hr
Infiltration Rate w/ Safety Factor 2 = 0.00 in/hr
Infiltration Period = 6.00 hr
Infiltration Volume = 0 cf
Storage Volume Pipe = Length * Area of Pipe
Area 18" Pipe = 1.76625 sf
Length of Pipe = 120 ft
Volume = 212 cf
Storage Volume Aggregate = Volume Storage - Volume Pipe * Voids Ratio
Volume Storage = 960 cf
Volume Pipe = 212 cf
Volume Aggregate = 748 cf
Voids Ratio = 0.30
Volume Aggregate Storage = 224 cf
Storage Volume Pipe = Length * Area of Pipe
Area 12" Pipe = 0.79 sf
Length of Pipe = 157 ft
Volume = 123 cf
Total Subsurface Storage = 560 cf

Storage Provided: 560 cf

Outlet Structure:
 Xo = 826.04 Vo = 0 cf
 Xfull = 828.04 Vfull = 560 cf

Xff = 828.02 ft

Off = 0.008 cfs
 haveff = 0.991 ft
 A = 0.0016 sf

Use: 1 0.5 in diameter holes Aff = 0.0014 sf @ 826.04

Offnew = 0.007 cfs
 Tffnew = 27.3 hr

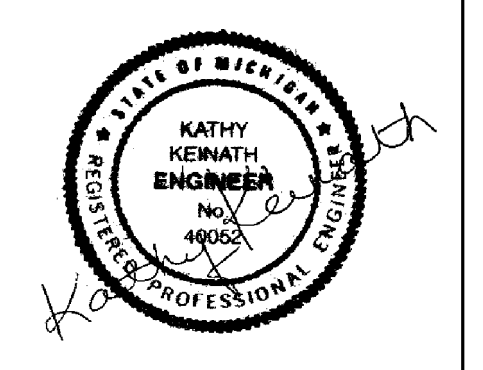
STORM WATER MANAGEMENT NARRATIVE:
 THE PROPOSED SITE LAYOUT INCLUDES MORE THAN 5,000 SF AND LESS THAN 10,000 SF OF IMPERVIOUS SURFACE. BASED ON CITY CODE, THE PROJECT IS REQUIRED TO PROVIDE STORM WATER MANAGEMENT FOR THE FIRST FLUSH VOLUME OF WATER CALCULATED USING THE WASHTENAW COUNTY WATER RESOURCES COMMISSION DESIGN GUIDELINES.

THE PROPOSED STORM WATER MANAGEMENT PLAN INCLUDES TWO RAIN GARDENS AND SUBSURFACE STORAGE. THE GRADING PLAN HAS BEEN DESIGNED TO ALLOW RUNOFF FROM THE PAVED AREAS, INCLUDING THE PORTION OF THE DRIVEWAY LOCATED ON THE ADJACENT PROPERTY, TO SHEET FLOW TO THE RAIN GARDENS. THE GARDENS ARE DESIGNED TO POND 8" OF WATER. OVERFLOW STRUCTURES ARE LOCATED IN EACH GARDEN THAT EMPTY INTO THE SUBSURFACE STORAGE PIPES. THE GARDENS ARE OF SUFFICIENT CAPACITY TO PROVIDE THE VOLUME REQUIRE TO ACT AS FORBAYS WITH EXCESS CAPACITY AVAILABLE TO PROVIDE A PORTION OF THE FIRST FLUSH DETENTION VOLUME. THE REMAINING REQUIRED FIRST FLUSH VOLUME IS PROVIDED BY THE 18" PERFORATED PIPE BEDDED IN AGGREGATE ALONG THE EAST SIDE OF THE BUILDING UNDER THE DRIVEWAY, AND BY THE 12" PIPE THAT RUNS ALONG THE WEST AND NORTH SIDES OF THE BUILDING. AS THIS SITE IS RELATIVELY SMALL, NO INFILTRATION TESTING WAS PERFORMED AND NO INFILTRATION WAS ACCOUNTED FOR IN THE VOLUME CALCULATIONS ALTHOUGH WATER IS EXPECTED TO INFILTRATE ALONG THE PERFORATED SECTION OF PIPE.

BASED ON THE EXISTING DRAINAGE PATTERNS, THERE IS OFF SITE FLOW FROM THE ADJACENT PROPERTIES THAT FLOWS ON TO THE SITE. THE DRAINAGE AREA HAS BEEN DESIGNED TO STORE A SLIGHTLY GREATER AREA THAN THE AREA WITHIN THE PROPERTY LINES OF THE SITE. THERE IS AN AREA ALONG THE WEST SIDE OF THE BUILDING THAT FLOWS UNDETAINED TO THE HILL STREET RIGHT-OF-WAY. THIS AREA RECEIVES FLOW FROM THE AREA BETWEEN THE PROPOSED RETAINING WALL AND THE PROPOSED BUILDING. THE FLOW IS FROM PERVIOUS AREAS AND HAS BEEN DIRECTED TO A VEGETATED SWALE THAT WILL PROVIDE FILTRATION OF THE RUNOFF AND SLOW THE RUNOFF RATE. THE OFFSITE FLOW FROM THE SOUTH WILL FLOW ONTO THE PROPERTY AND ACROSS THE PARKING AREA TO THE RAIN GARDEN AT THE SOUTH SIDE OF THE BUILDING. THE FLOW HAS BEEN INCLUDED IN DETERMINING THE TOTAL VOLUME OF FIRST FLUSH VOLUME FOR THE STORM WATER MANAGEMENT SYSTEM.

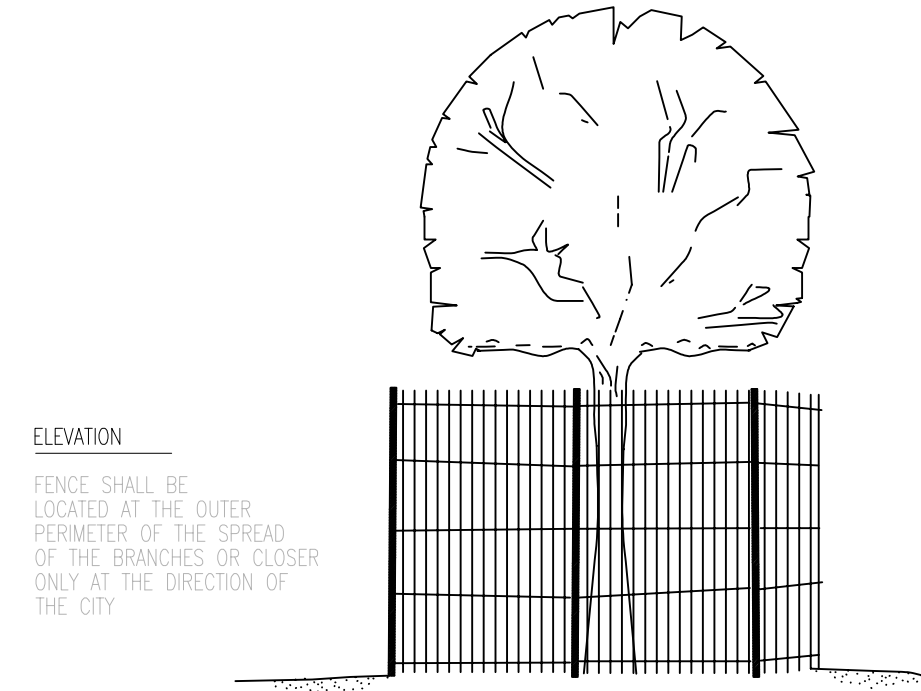
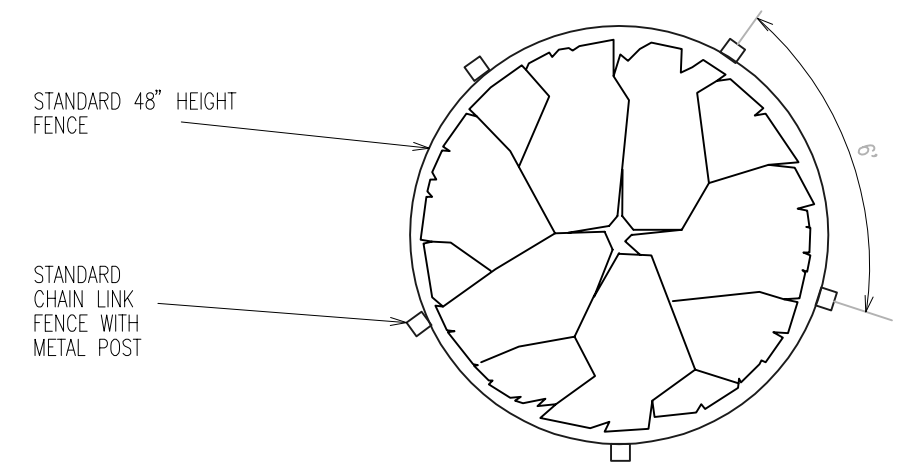
AN OUTLET CONTROL STRUCTURE IS PROPOSED TO ACHIEVE THE ALLOWABLE DISCHARGE RATE FROM THE SITE. THE OUTLET CONTROL STRUCTURE CONSIST OF A 4 FT DIAMETER STRUCTURE WITH A SUMP AND A BAFFLE WITH ORIFICES SIZED TO MAINTAIN THE APPROPRIATE FLOW RATE. THE OUTLET CONTROL STRUCTURE WILL DISCHARGE TO THE EXISTING 12" STORM SEWER IN HILL STREET. THIS STORM WATER MANAGEMENT SYSTEM WILL BE A SIGNIFICANT IMPROVEMENT TO THE SITE AS THERE IS CURRENTLY NO STORM WATER MANAGEMENT UNDER THE EXISTING CONDITIONS.

132 HILL
 ANN ARBOR, MI
 SITE PLAN
 STORM WATER
 MANAGEMENT

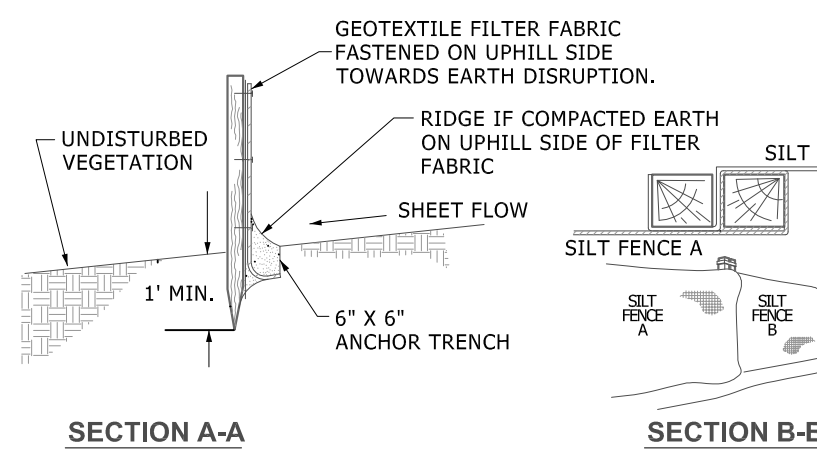
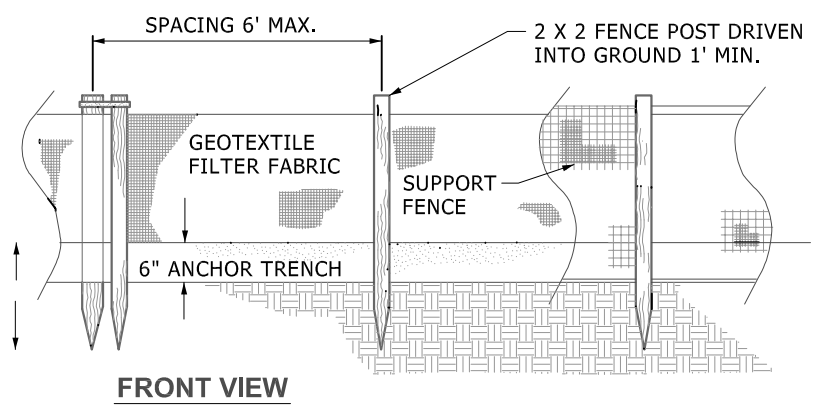
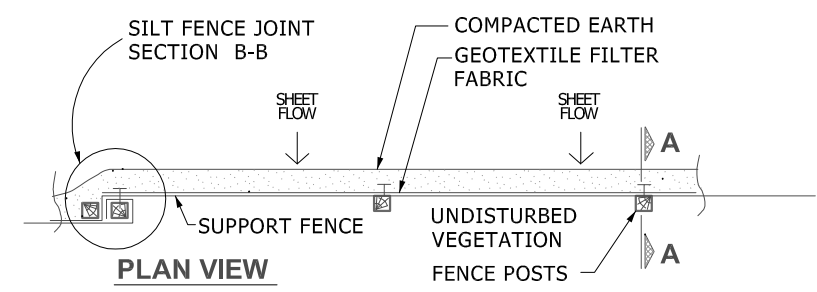


NOT FOR CONSTRUCTION

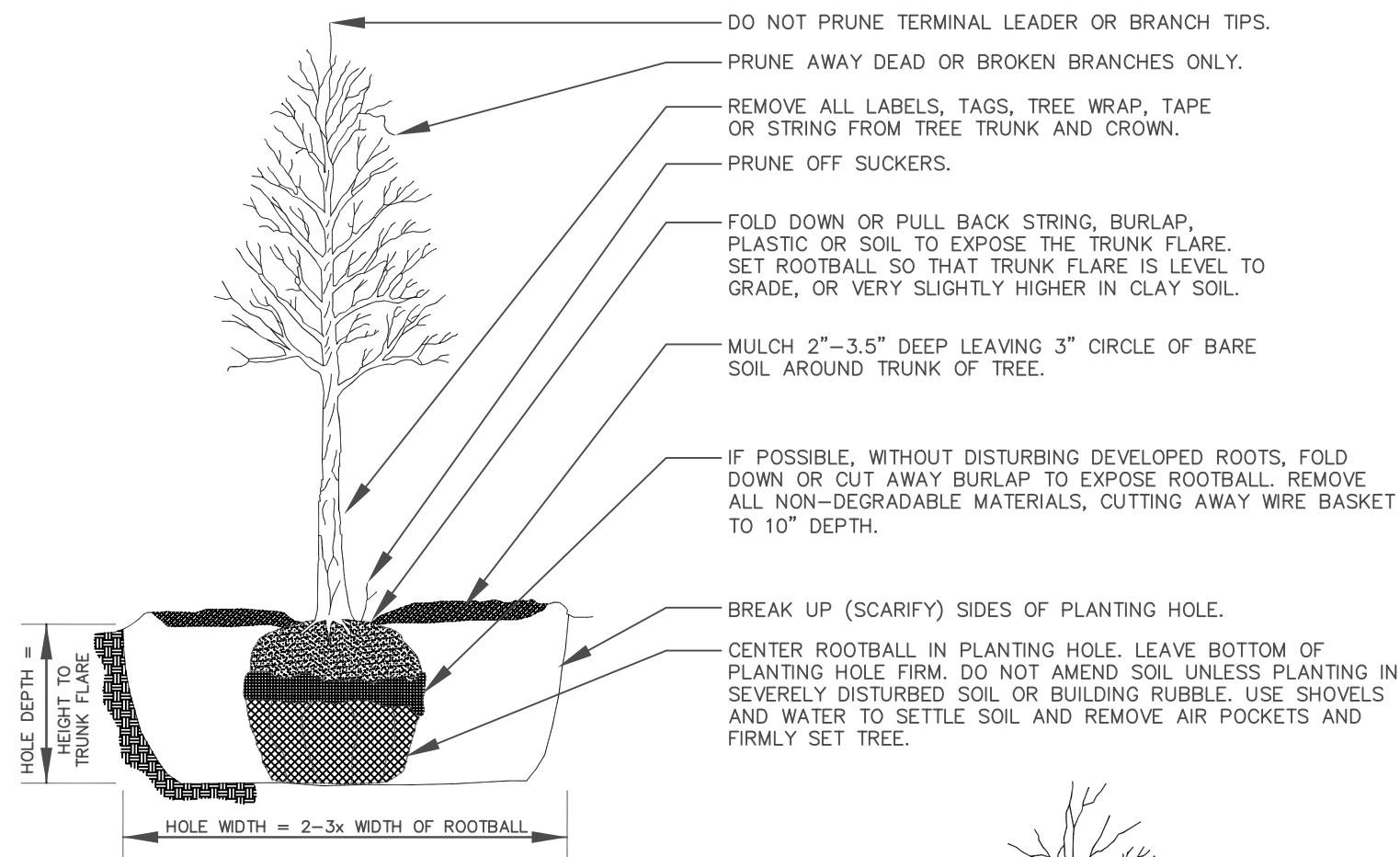
DATE	3-22-18
SCALE	1"=10'
SHEET NO.	SP-07



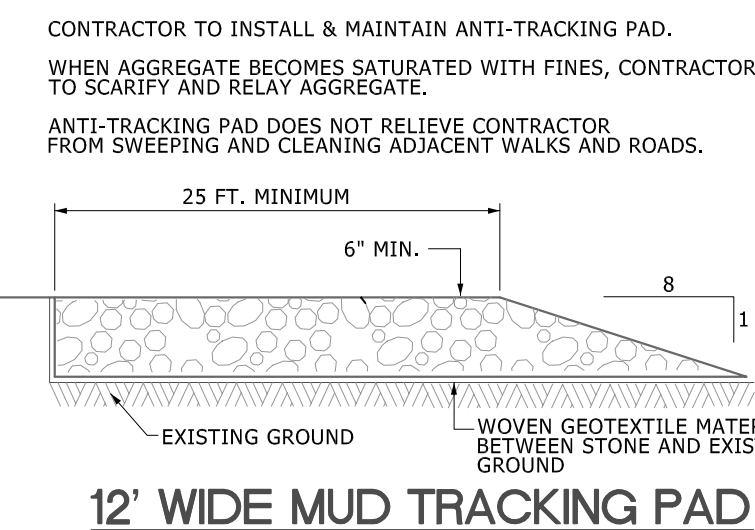
TREE PROTECTION DETAIL



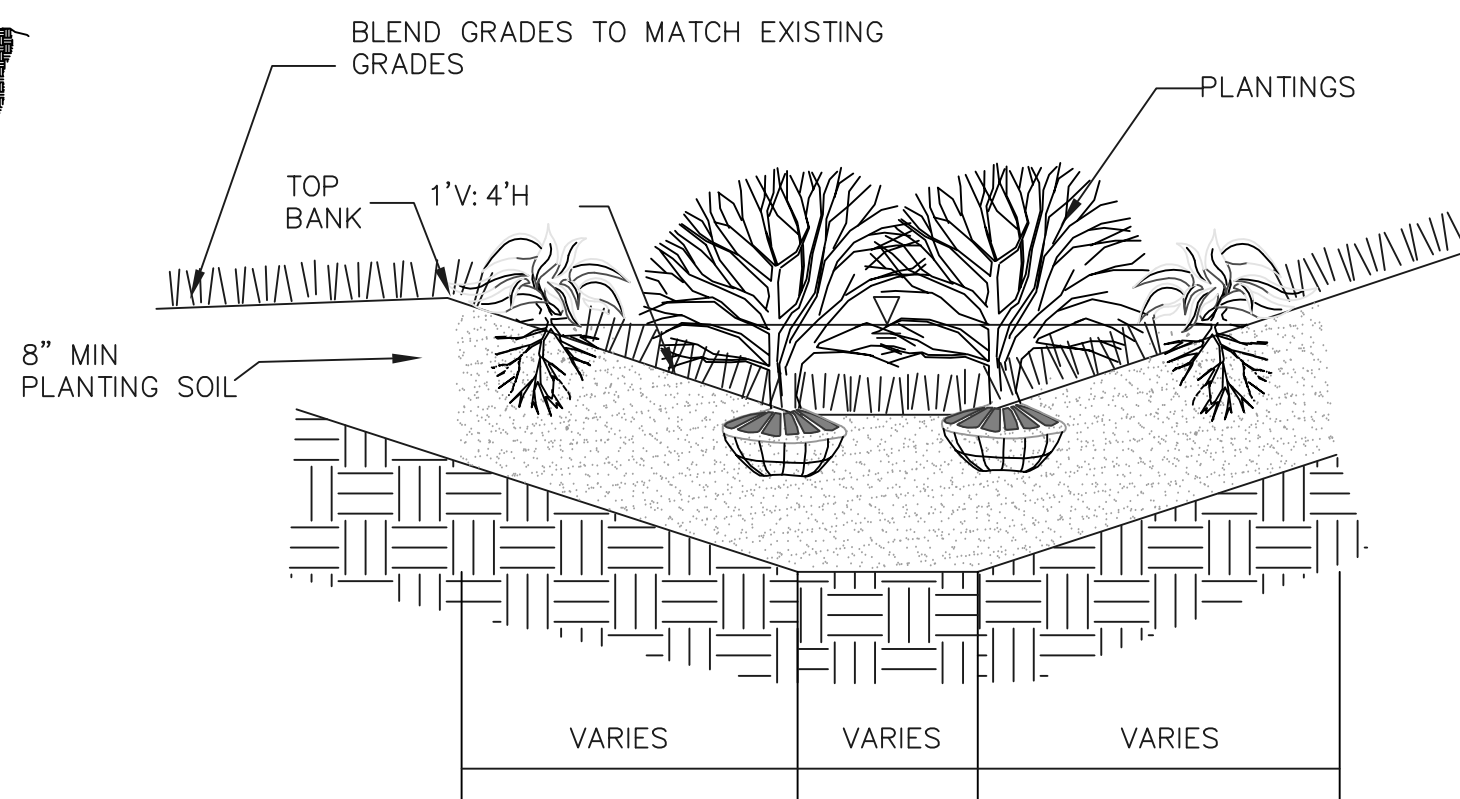
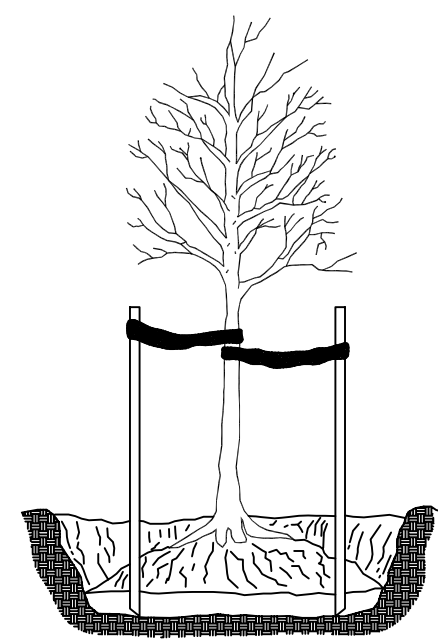
SILT FENCE DETAIL



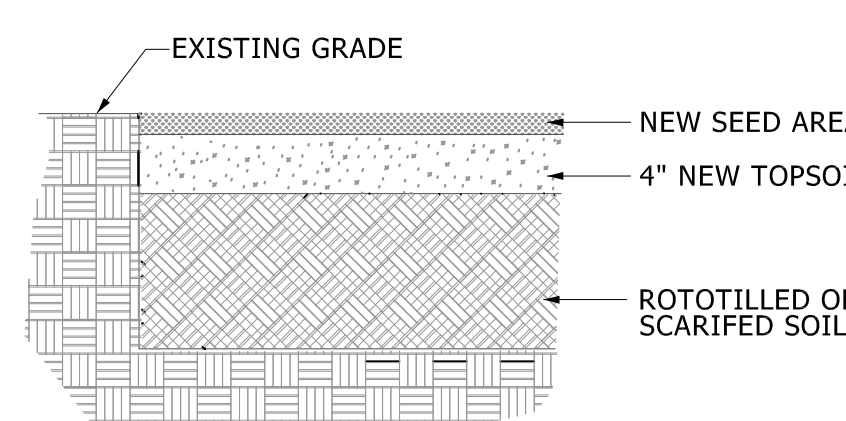
TREE PLANTING



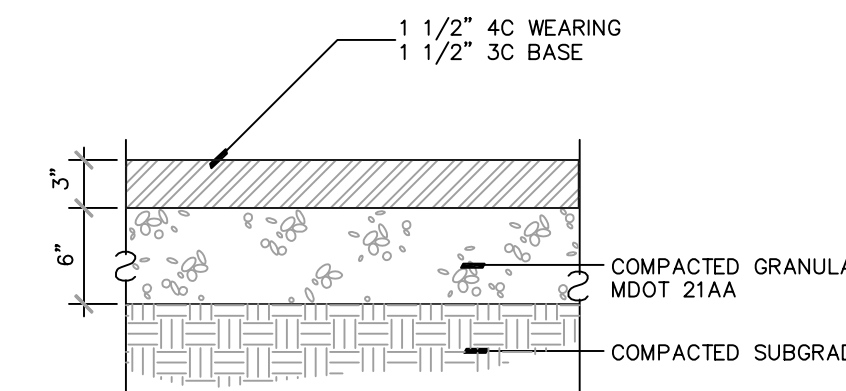
12' WIDE MUD TRACKING PAD



RAIN GARDEN CROSS-SECTION

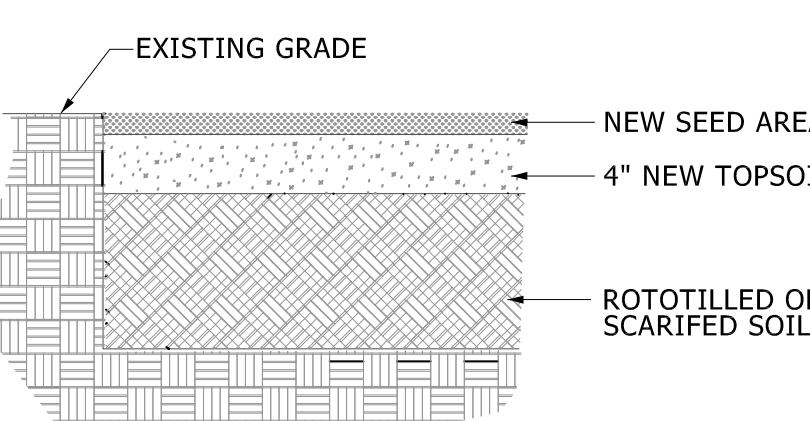


NEW SEEDED AREA



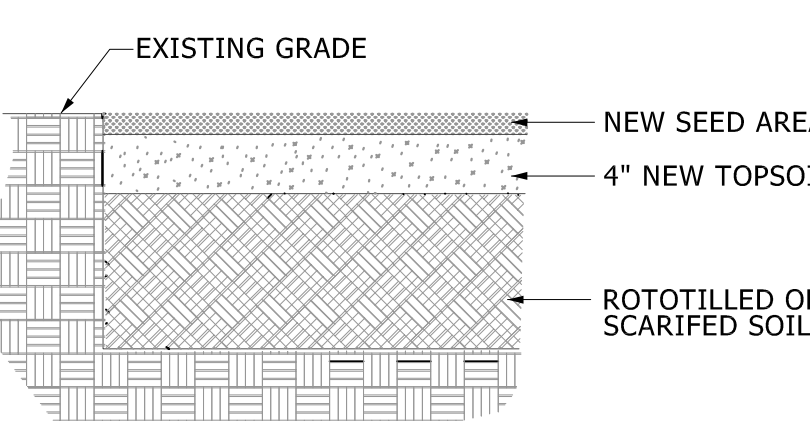
PAVEMENT

EROSION CONTROL BLANKETS SHALL BE PLACED ON ALL NEWLY SEEDED AREAS WITH SLOPES OF 1V TO 3H OR STEEPER. THE BLANKETS SHALL BE HIGH VELOCITY EXCELSIOR MULCH BLANKETS OR HIGH VELOCITY STRAW MULCH BLANKETS. NET ANCHORS SHALL BE PLACED AT MINIMUM INTERVALS OF 30 INCHES ALONG ALL JOINTS UNLESS MANUFACTURER'S RECOMMENDATIONS REQUIRE CLOSER SPACING.



SILT SACK DETAIL

NOTE: TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. INLET FILTER TO BE SIMILAR TO "STREAMGUARD" AS MANUFACTURED BY STORMWATER SERVICES CORPORATION (206-767-0441) OR "SILT SACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS, INC. (800-448-3636). CLEAN FILTER AS NEEDED.



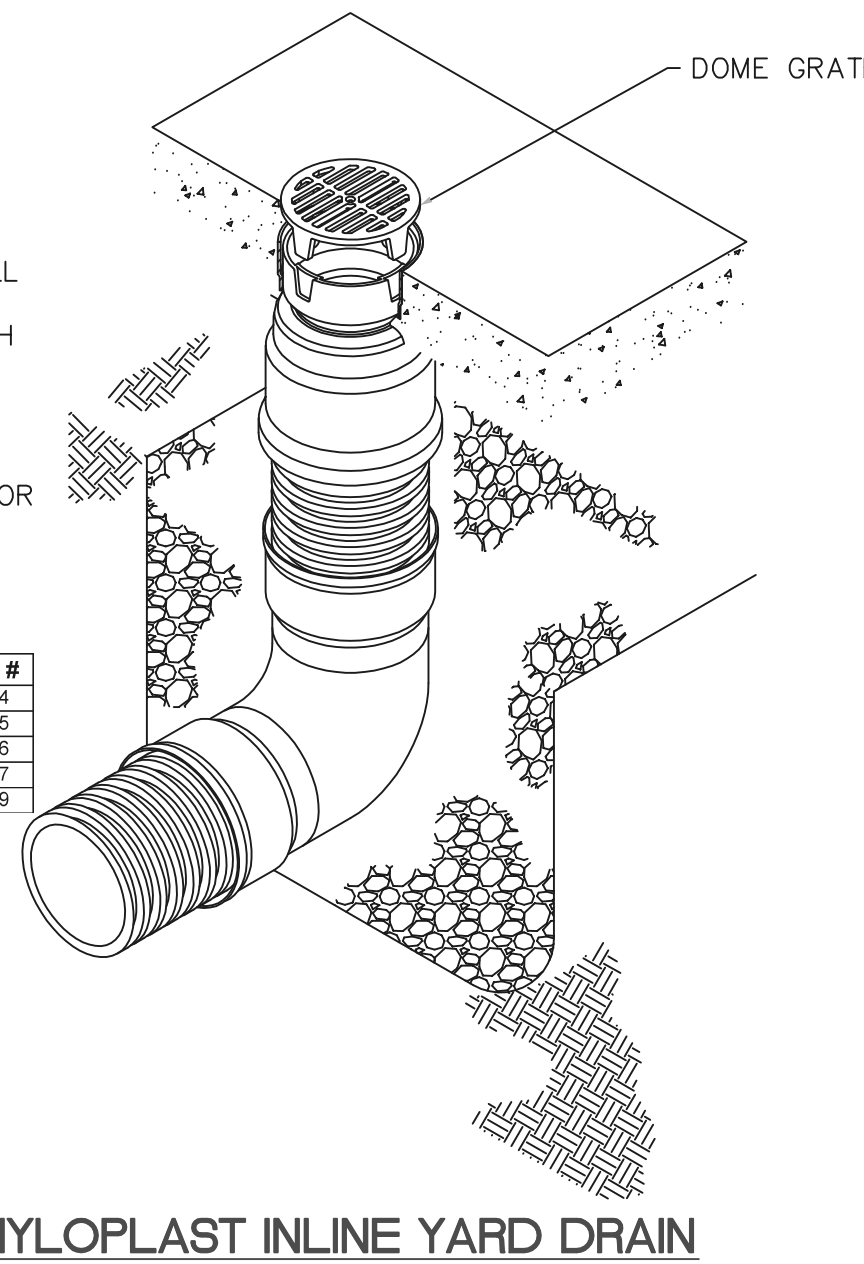
PERMANENT MAINTENANCE TASKS AND SCHEDULE

TASKS	Catch Basin Inlet Castings	Ditches & Swales	Overflow Control Structures	Rip-Rap	Filtration Basins	Storm Detention Areas	Wetlands	SCHEDULE
Inspect for sediment accumulation		X	X			X		Annually
Removal of sediment accumulation		X	X			X		Every 2 years as needed
Inspect for floatables and debris		X	X			X		Annually
Clearing of floatables and debris		X	X			X		Annually
Inspection for erosion		X				X		Annually
Re-establish permanent vegetation on eroded slopes		X				X		As needed
Inspect Storm system components during wet weather and compare to as-built plans		X				X		Annually
Make adjustments or replacements as determined by annual wet weather inspection		X				X		As needed
Keep records of inspections and maintenance activities and report to owner.						X		Annually
Keep records of costs for inspections, maintenance & repairs; report to owner.						X		Annually

LONG TERM STORM WATER MAINTENANCE PLAN BUDGET

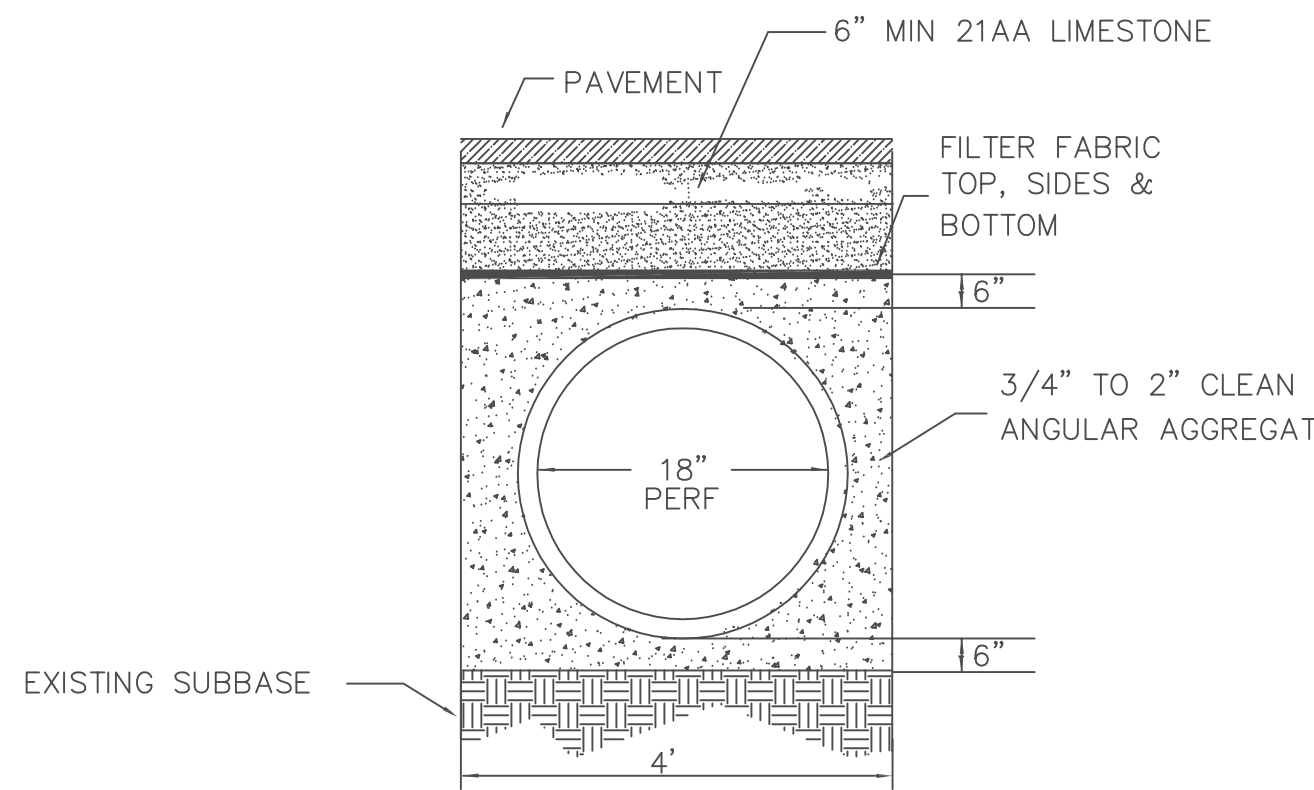
ITEM	ANNUAL COST
Inspection	\$250
Remove Sediment	\$500
Remove Debris	\$100
Repair Erosion	\$500
Record Keeping	\$100
Maintain Vegetation	\$500
Total Annual Cost	\$1,950

THE OWNER OF THE PROPERTY WILL BE RESPONSIBLE FOR STORM WATER MAINTENANCE.

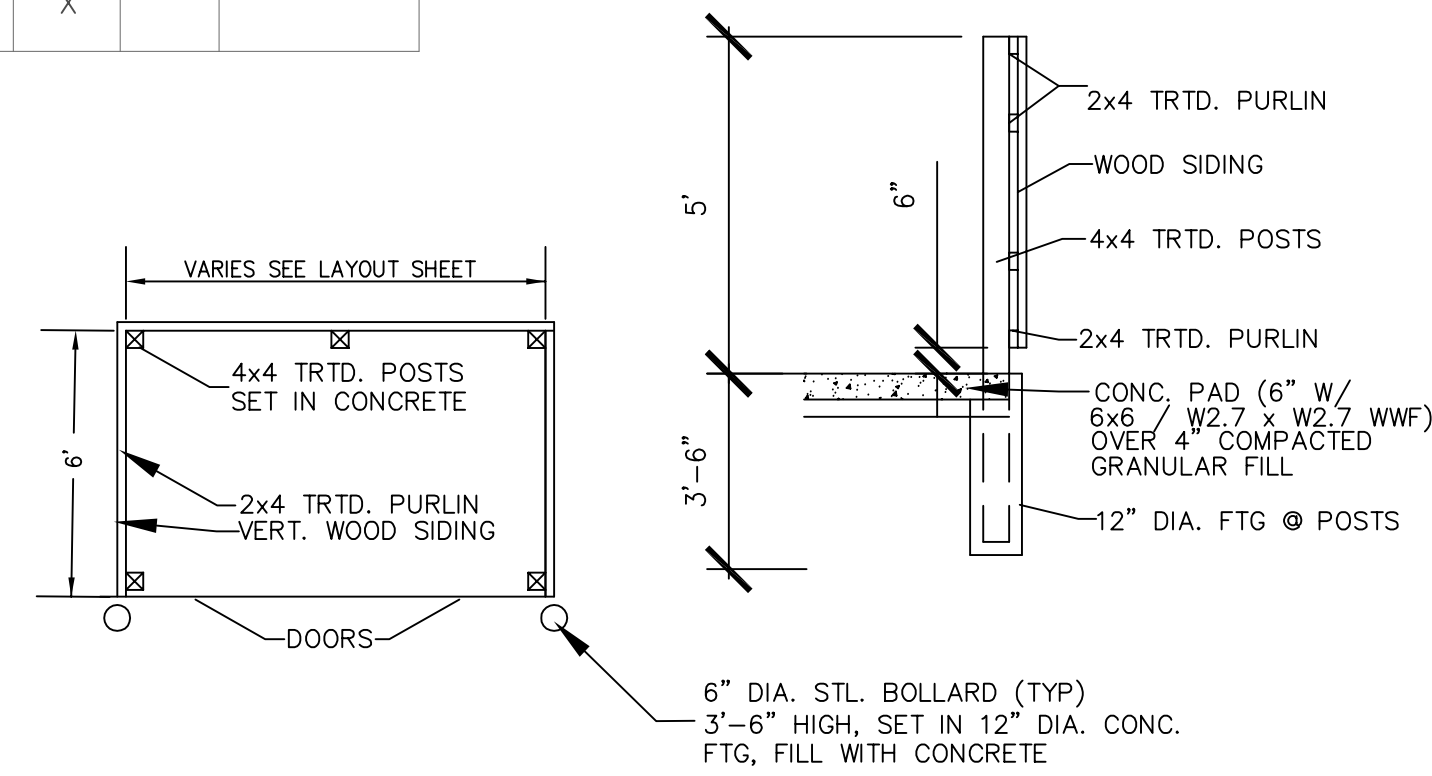


NYLOPLAST INLINE YARD DRAIN

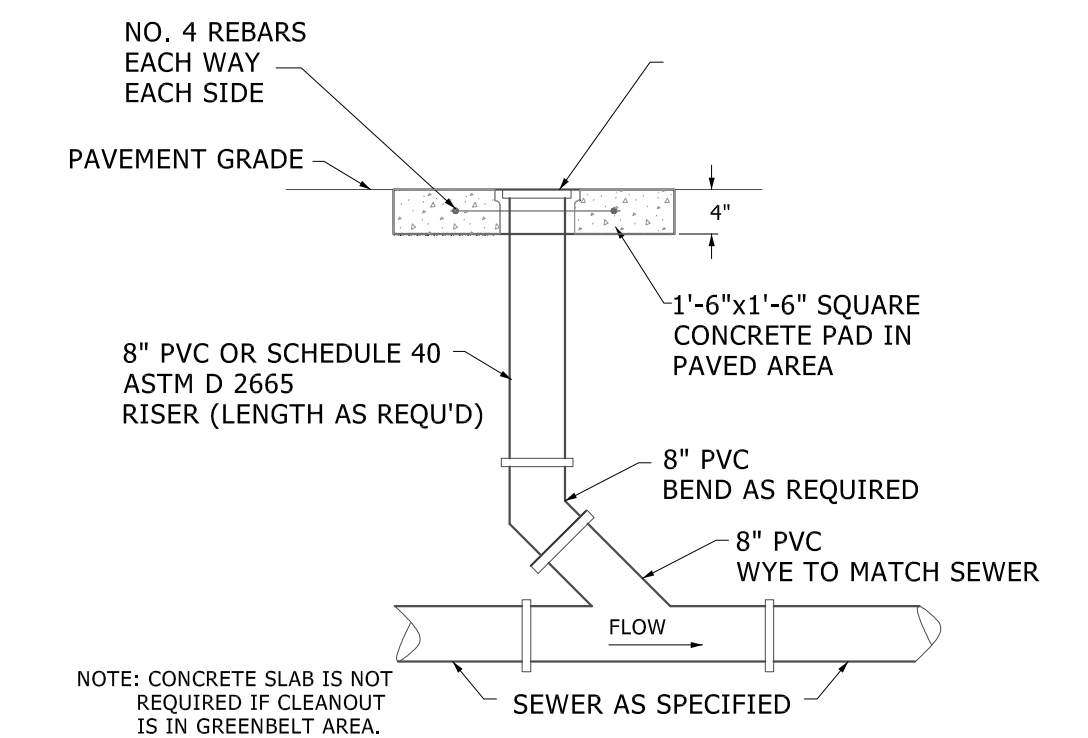
GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN STANDARD	LIGHT DUTY	0899CGS	7001-110-194
SOLID COVER	LIGHT DUTY	0899CGC	7001-110-195
BRONZE	LIGHT DUTY	0899CGB	7001-110-196
DOME	N/A	0899CGD	7001-110-197
DROP IN GRATE	LIGHT DUTY	0899CGR	7001-110-019



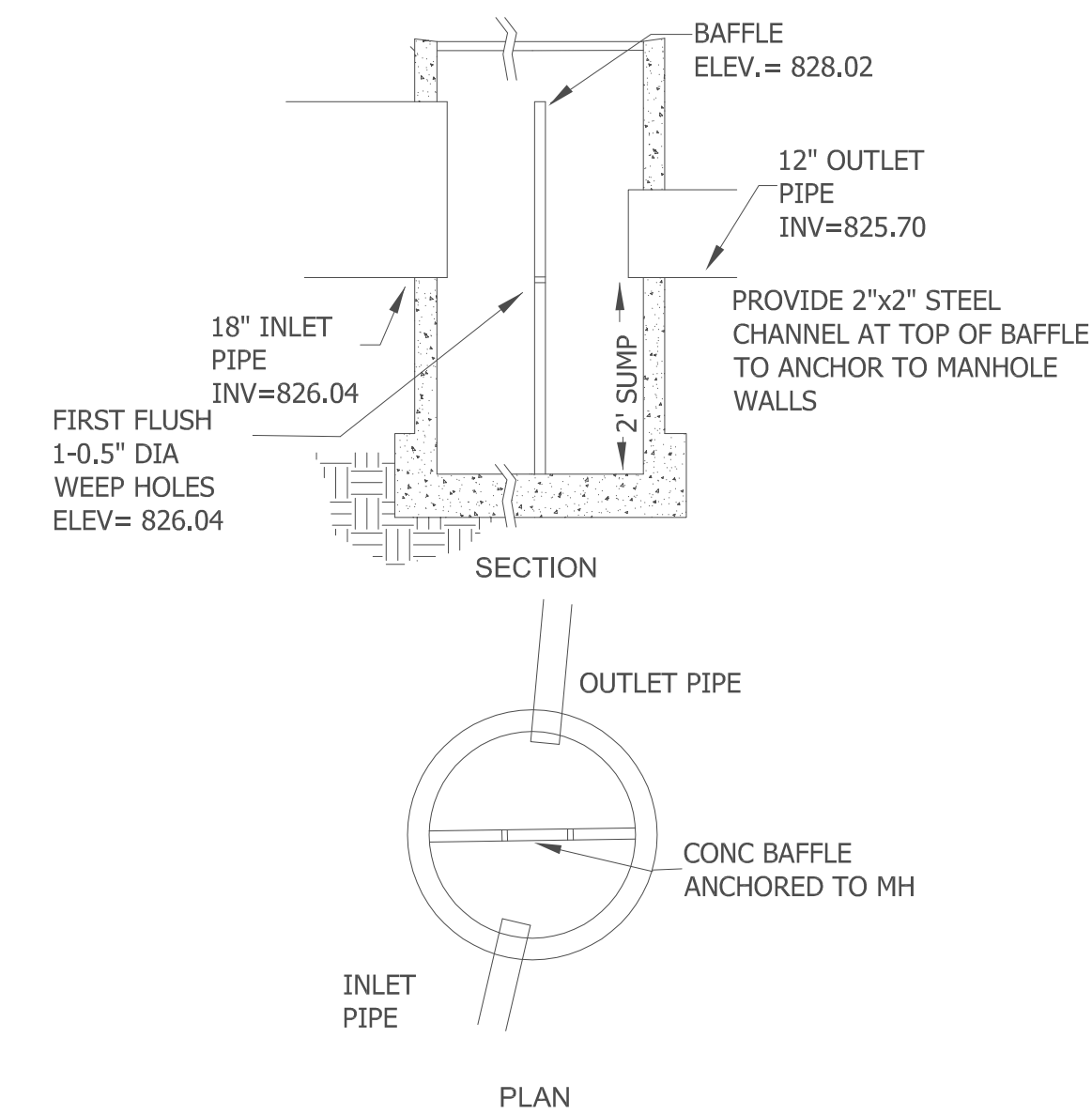
UNDERGROUND DETENTION SECTION



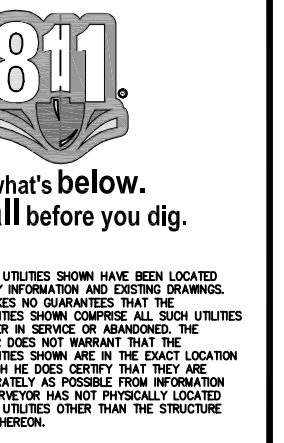
TRASH CART ENCLOSURE



SEWER CLEANOUT

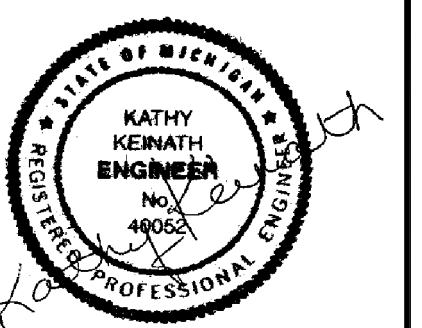


OUTLET CONTROL STRUCTURE

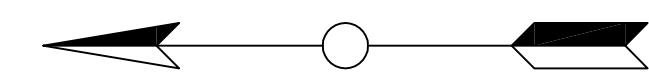
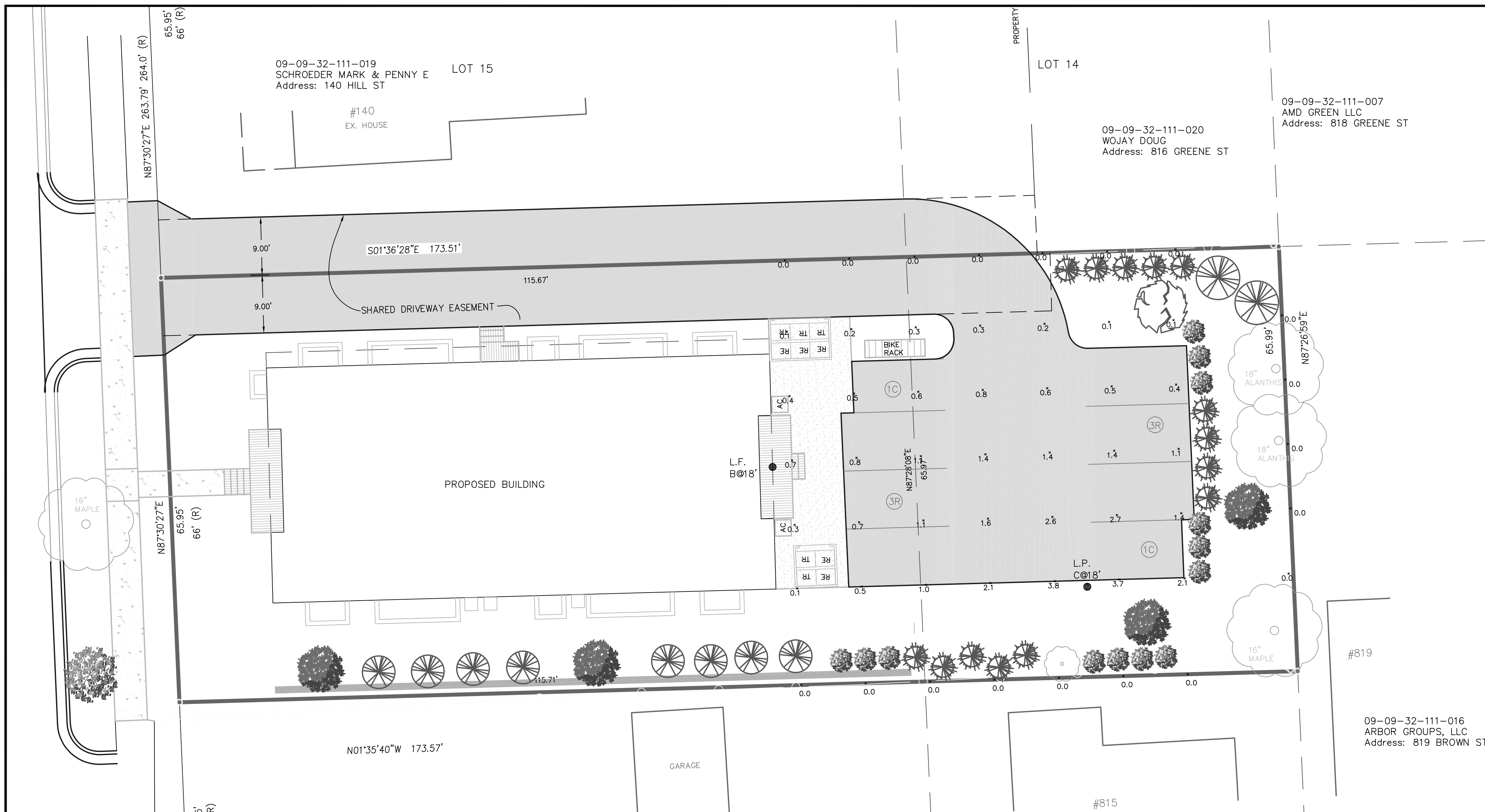


Macon Engineering, LLC.
P.O. Box 314, Chelsea, MI 48118 734-216-9941

132 HILL ANN ARBOR, MI
SITE PLAN DETAILS



DATE 3-22-18
SCALE 1"=10'
SHEET NO. SP-08



LEGEND

- SECTION CORNER
- FOUND IRON PIPE
- FOUND IRON ROD
- SET IRON PIPE
- SET MAG NAIL
- FOUND MAG NAIL
- SET WOOD LATH
- CONTROL POINT
- MEASURED DIMENSION
- RECORDED DIMENSION
- SURFACE FLOW
- WATER MANHOLE
- FIRE HYDRANT
- GATE VALVE
- BEEHIVE CATCH BASIN
- CURB CATCH BASIN
- STORM MANHOLE
- CULVERT/END SECTION
- SANITARY MANHOLE
- LIGHT POLE
- UTILITY POLE
- TELEPHONE RISER
- GAS MAIN RISER
- ELECTRIC LINE
- GAS MAIN
- WATER MAIN
- STORM LINE
- SANITARY LINE
- CABLE TV LINE
- PHONE LINE
- CHAIN LINK FENCE
- WOOD FENCE
- BARBED WIRE FENCE
- PR STORM SEWER
- PR SANITARY SEWER
- PR WATER MAIN
- PR SILT FENCE
- PR TREE FENCE
- PR INLET FILTER
- PR CONCRETE
- PR ASPHALT
- PR GRAVEL
- PR CURB
- PR CONTOUR LINE
- PR SPOT GRADE

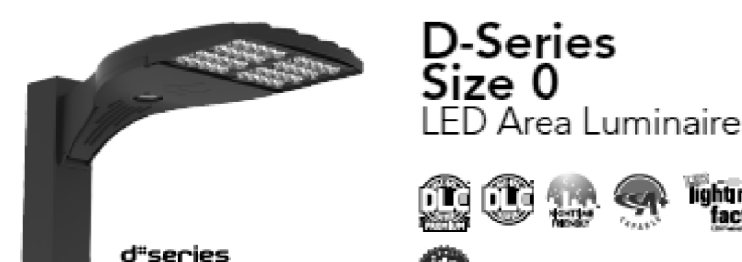
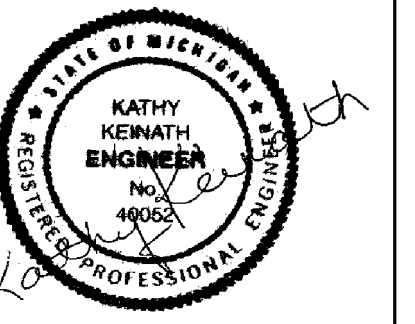


Know what's below. Call before you dig.

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES SHOWN.

Macon Engineering, LLC.
P.O. Box 314, Chelsea, MI 48118 734-216-9941

132 HILL ANN ARBOR, MI
SITE PLAN
PHOTOMETRIC



D-Series Size 0 LED Area Luminaire

Capable Luminaire

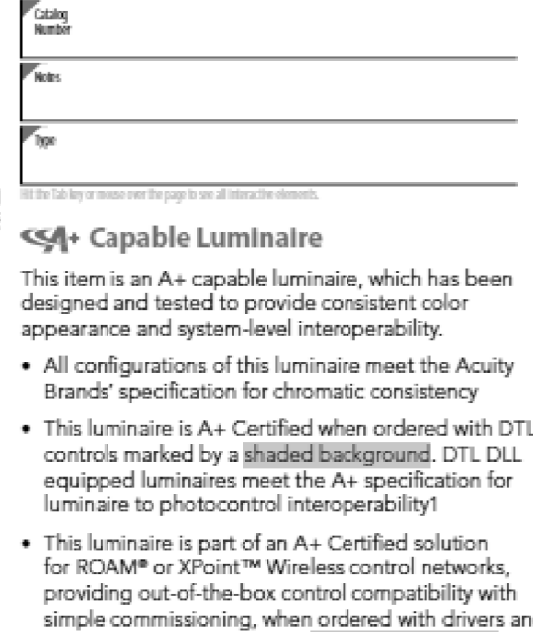
This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and system-level interoperability.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency.
- This luminaire is A+ Certified when ordered with DTL controls marked by a shaded background. DTL DLL equipped luminaires meet the A+ specification for luminaire to photocell interoperability.
- This luminaire is part of an A+ Certified solution for ROAM or XPoint™ Wireless control networks, providing out-of-the-box control compatibility with simple commissioning, when ordered with drivers and control options marked by a shaded background.

To learn more about A+, visit www.acuitybrands.com/roam.

1. See ordering tree for details.

2. A+ Certified Solutions for ROAM require the order of one ROAM node per luminaire. Sold Separately. Link to Roam/Link to DTL DLL.



D-Series Size 1 LED Wall Luminaire

Capable Luminaire

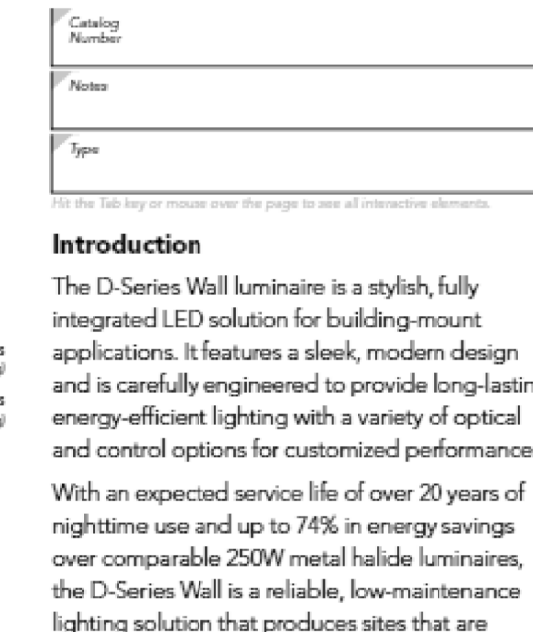
This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and system-level interoperability.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency.
- This luminaire is A+ Certified when ordered with DTL controls marked by a shaded background. DTL DLL equipped luminaires meet the A+ specification for luminaire to photocell interoperability.
- This luminaire is part of an A+ Certified solution for ROAM or XPoint™ Wireless control networks, providing out-of-the-box control compatibility with simple commissioning, when ordered with drivers and control options marked by a shaded background.

To learn more about A+, visit www.acuitybrands.com/roam.

1. See ordering tree for details.

2. A+ Certified Solutions for ROAM require the order of one ROAM node per luminaire. Sold Separately. Link to Roam/Link to DTL DLL.



Ordering Information

EXAMPLE: DSX0 LED P6 40K T3M MVOLT SPA DDBXD

Series	LEDs	Color Temperature	Beam/Baffle	Height	Mounting	Control Options
DSX0 LED	Forward optics P1 P4 P7 P3 P6 P8 P9 P10 P11 P12 P13	30K 3000K	T5 Type II short	155 Type II short	1000 1000	Shipped included
		40K 4000K	T5 Type II short	155 Type II short	1000 1000	Shipped included
		50K 5000K	T5 Type II medium	155 Type II medium	1000 1000	Shipped included
		AMBPC Amber photopic	AMBPC Amber photopic	AMBPC Amber photopic	AMBPC Amber photopic	AMBPC Amber photopic

Ordering Information

EXAMPLE: DSXW1 LED 20C 1000 40K T3M MVOLT DDBTDX

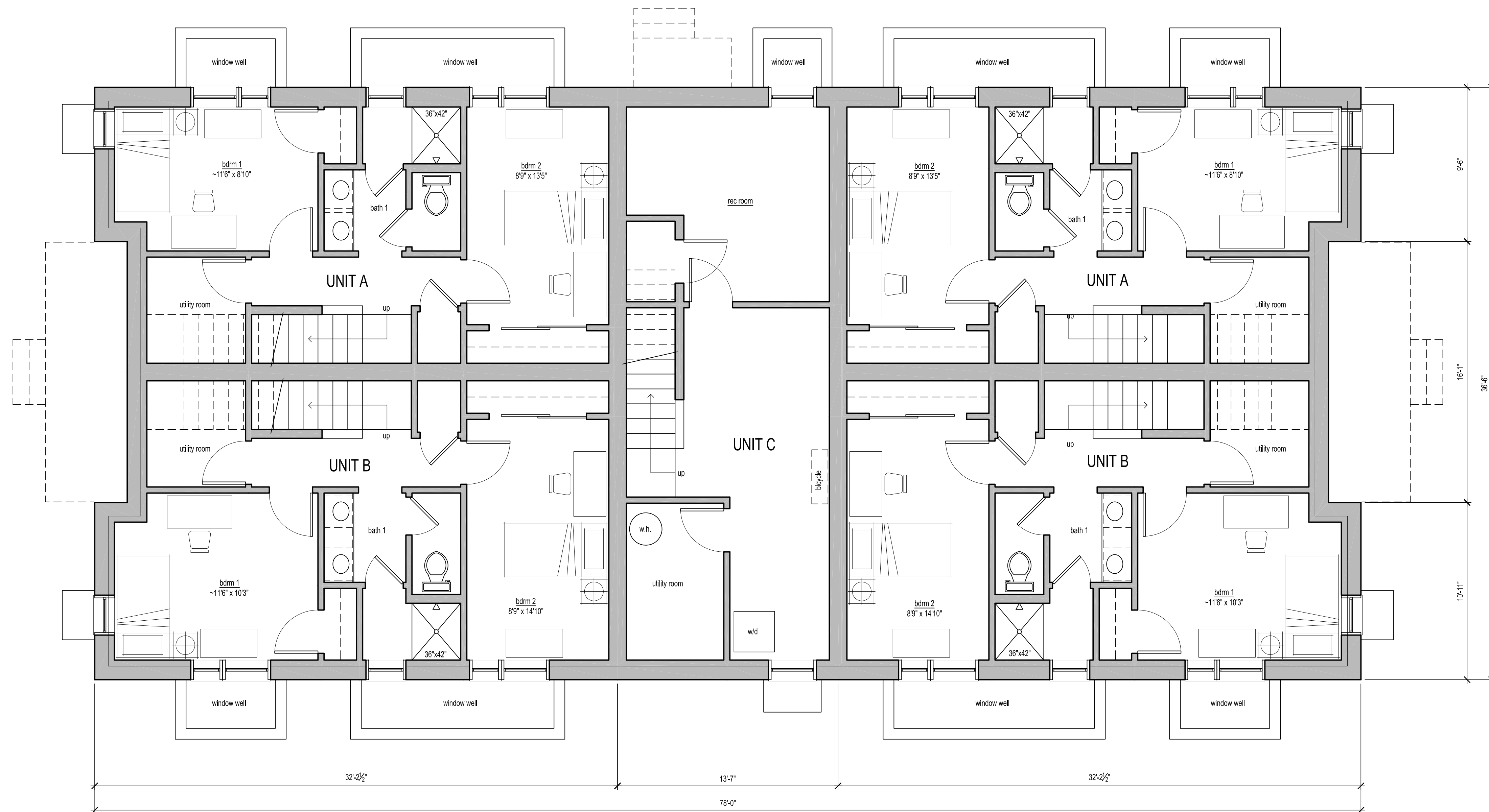
Series	LEDs	Power Current	Color Temperature	Distribution	Height	Mounting	Control Options
DSXW1 LED	10C 1000 20C 2000 30C 3000 40C 4000	300 300mA	30K 3000K	T25 Type II short	1000 1000	Shipped included	PR Photometric only, custom type ¹
		500 500mA	40K 4000K	T25 Type II medium	1000 1000	Shipped included	PR 0-10V dimming (not for custom, wire paired outside fixture)
		700 700mA	50K 5000K	T25 Type II medium	1000 1000	Shipped included	PR 180° non-adjustable light source, 15-30' height ¹¹
		1000 1000mA (1 A)	AMBPC Amber photopic	T25 Type II medium	1000 1000	Shipped included	PR 180° non-adjustable light source, 15-30' height ¹¹

LIGHTING SCHEDULE

LABEL	QUANTITY	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMP
B	1	LITHONIA LIGHTING	DSXW1 LED 10C 350 50K TFTM MVOLT HS	W/ HOUSE SHIELDS	LED
C	1	LITHONIA LIGHTING	DSX0 LED 20C 530 30K LCCO MVOLT	CORNER CUTOFF	LED

NOT FOR CONSTRUCTION

DATE 3-22-18
SCALE 1"=10'
SHEET NO. SP-09



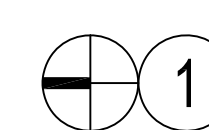
Miller Building

Hill Street Townhomes

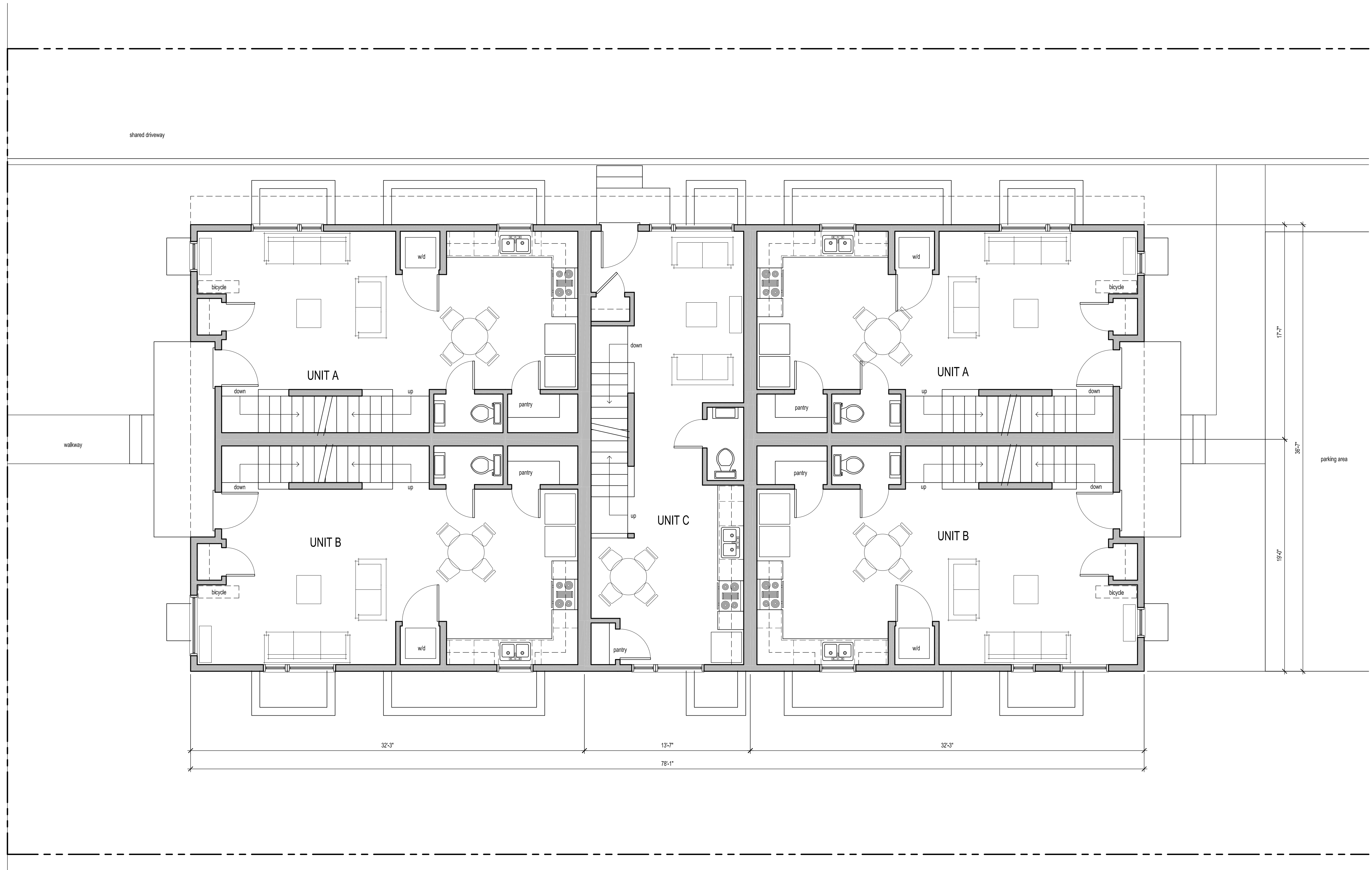
132 Hill Street
Ann Arbor MI 48104

project no: 17013

issue no:
Planning Dept. Review 22 Mar '18

 1 BASEMENT PLAN
1/4" = 1'-0"

HILL STREET



1 FIRST FLOOR PLAN
1/4" = 1'-0"

Miller Building

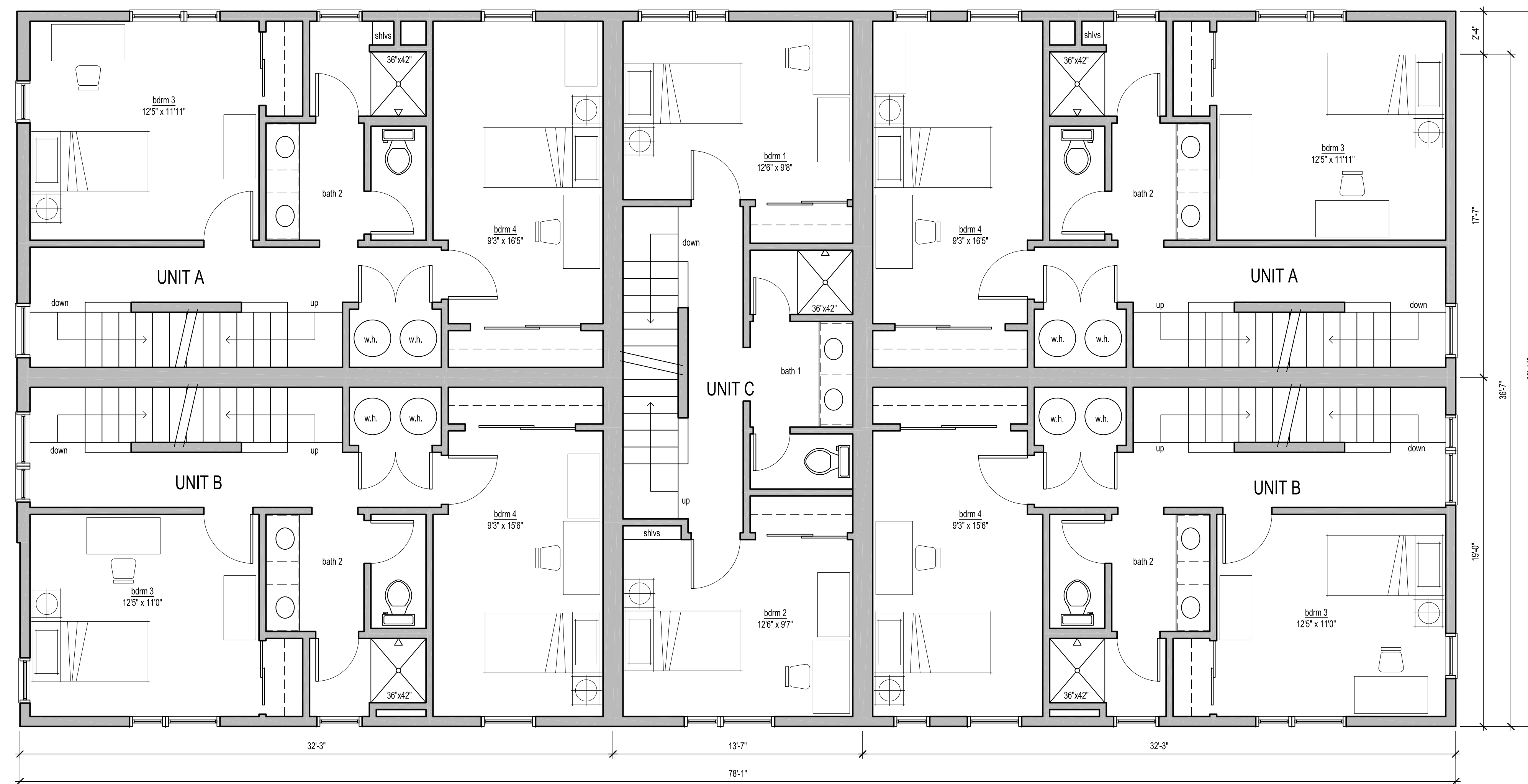
Hill Street Townhomes

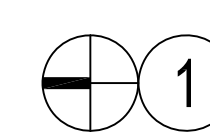
132 Hill Street
Ann Arbor MI 48104

project no: 17013

issue no:
Planning Dept. Review 22 Mar '18

A2.2



 1 SECOND FLOOR PLAN
1/4" = 1'-0"

Miller Building

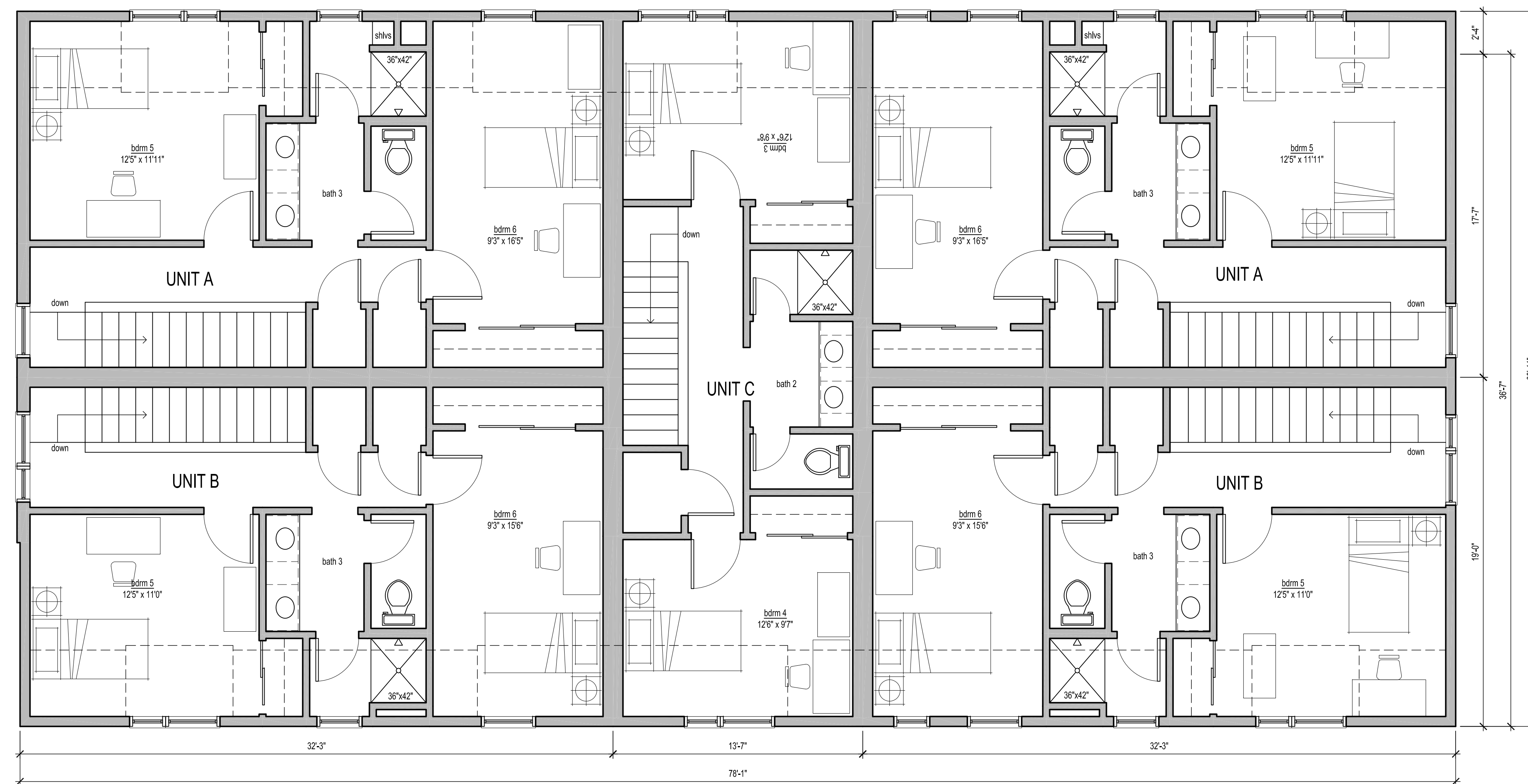
Hill Street Townhomes

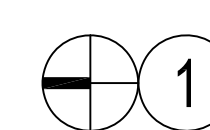
132 Hill Street
Ann Arbor MI 48104

project no: 17013

issue no:
Planning Dept. Review 22 Mar '18

A2.3



 1 THIRD FLOOR PLAN
1/4" = 1'-0"

Miller Building

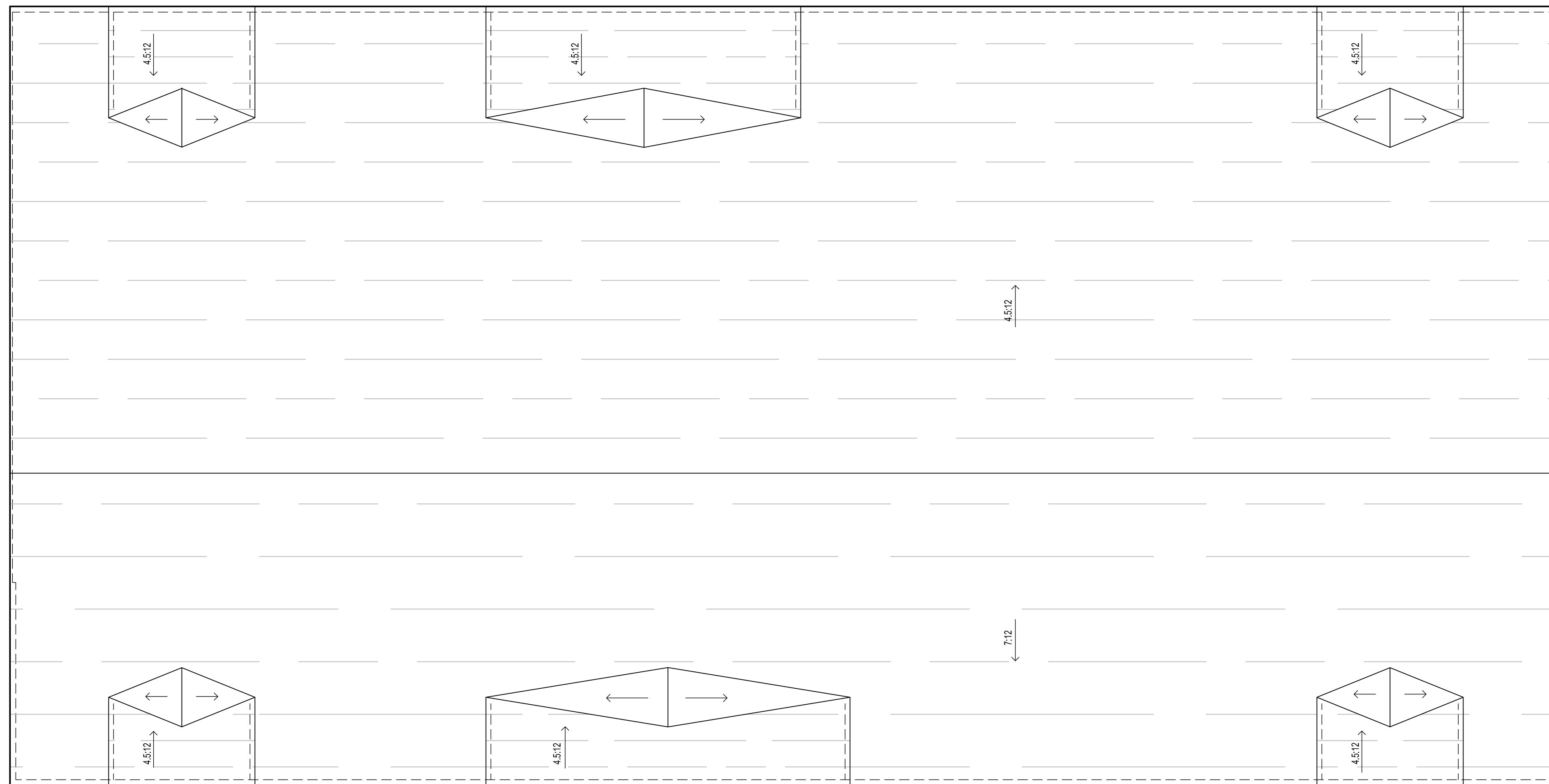
Hill Street Townhomes

132 Hill Street
Ann Arbor MI 48104

project no: 17013

issue no:
Planning Dept. Review 22 Mar '18

A2.4



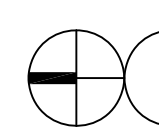
**Miller
Building**

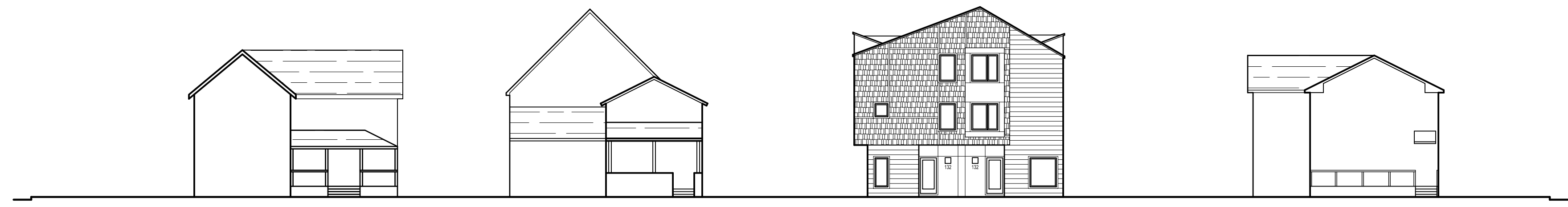
Hill Street
Townhomes

132 Hill Street
Ann Arbor MI 48104

project no: 17013

issue no:
Planning Dept. Review 22 Mar '18

 1 ROOF PLAN
1/4" = 1'-0"



5 STREET MASSING STUDY
1/16" = 1'-0"



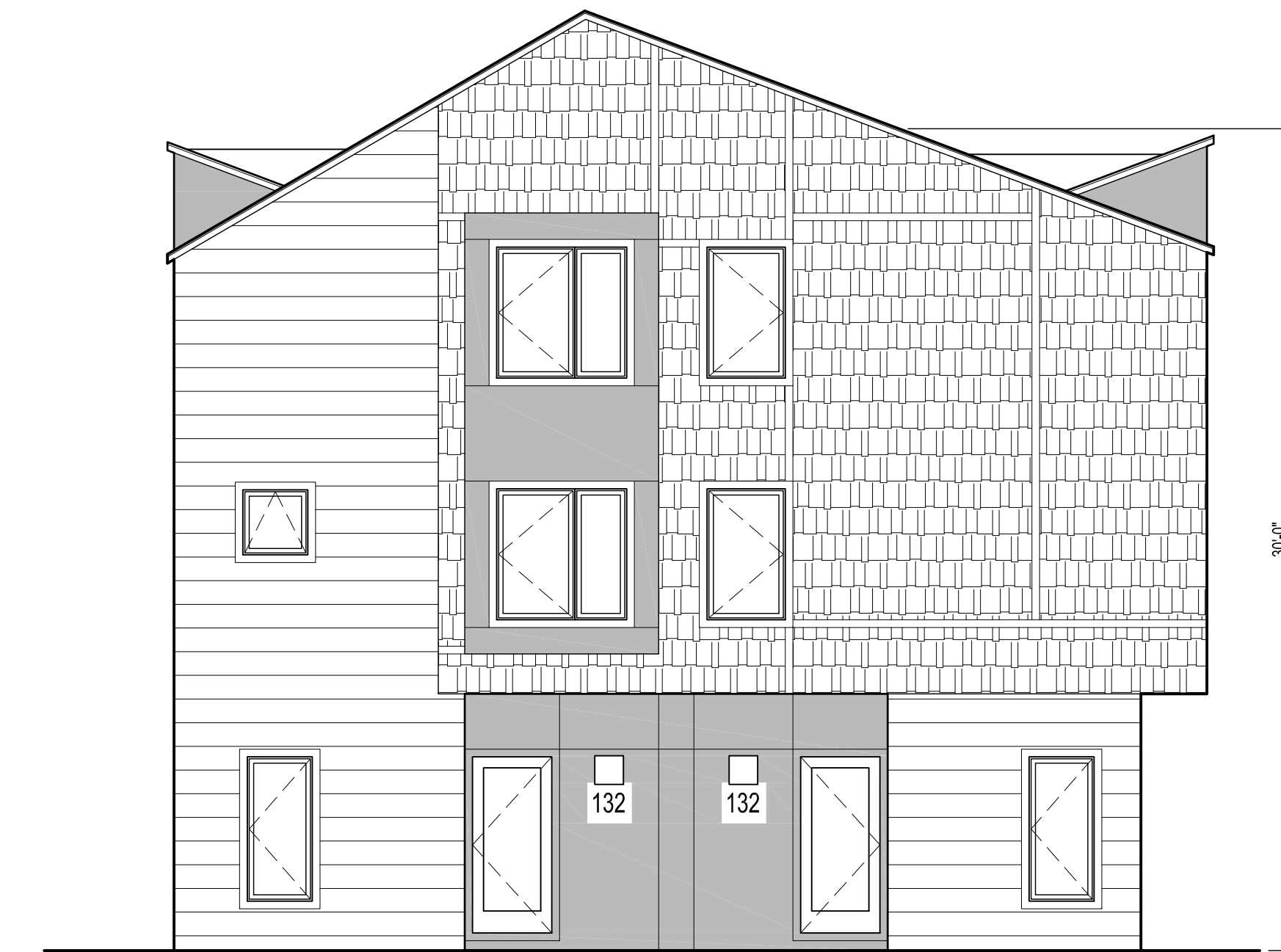
4 EAST ELEVATION (SIDE)
3/16" = 1'-0"



3 NORTH ELEVATION (FRONT)
3/16" = 1'-0"



2 WEST ELEVATION (SIDE)
3/16" = 1'-0"






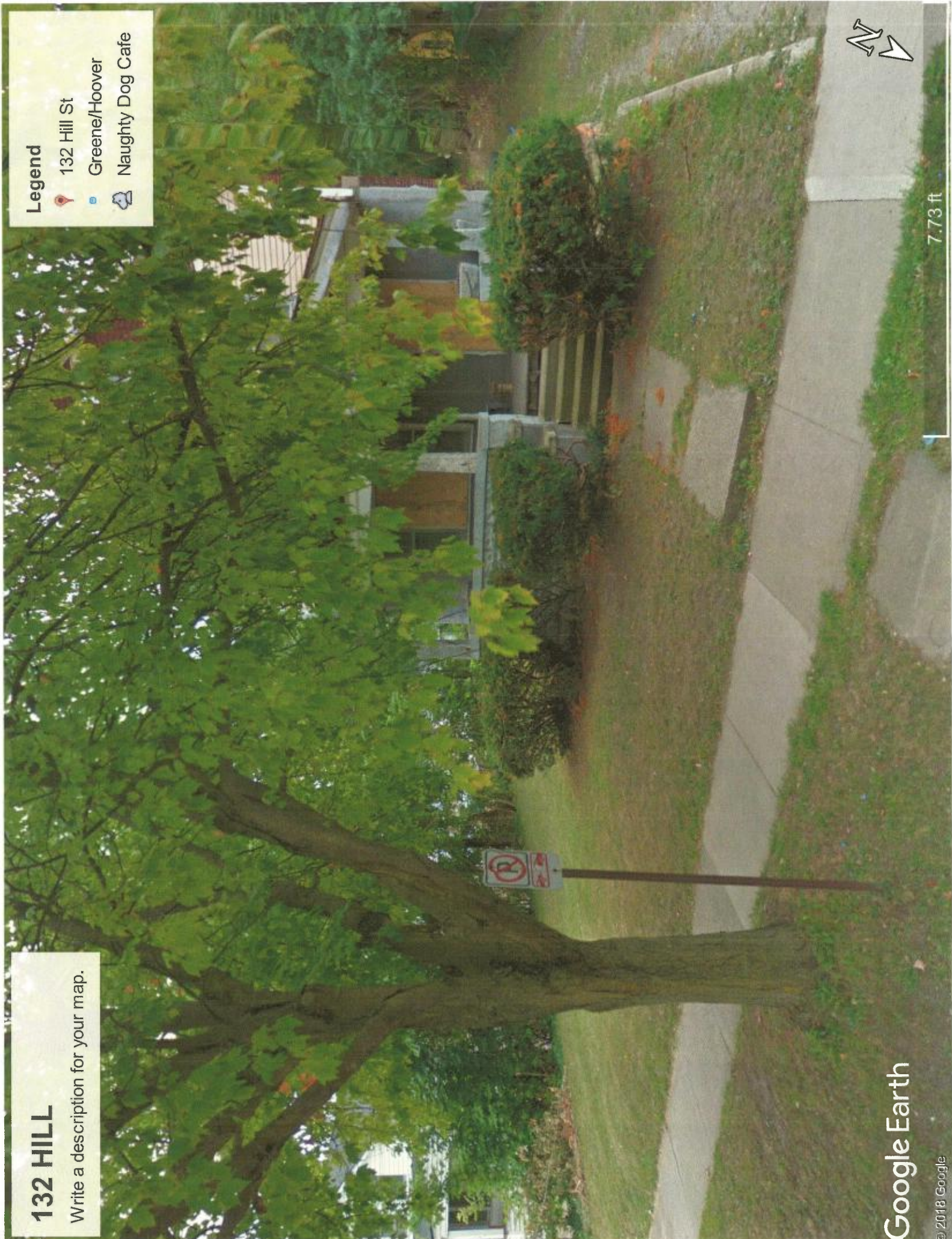
1 SOUTH ELEVATION (REAR)
3/16" = 1'-0"

132 HILL

Write a description for your map.

Legend

-  132 Hill St
-  Greene/Hoover
-  Naughty Dog Cafe



7.73 ft