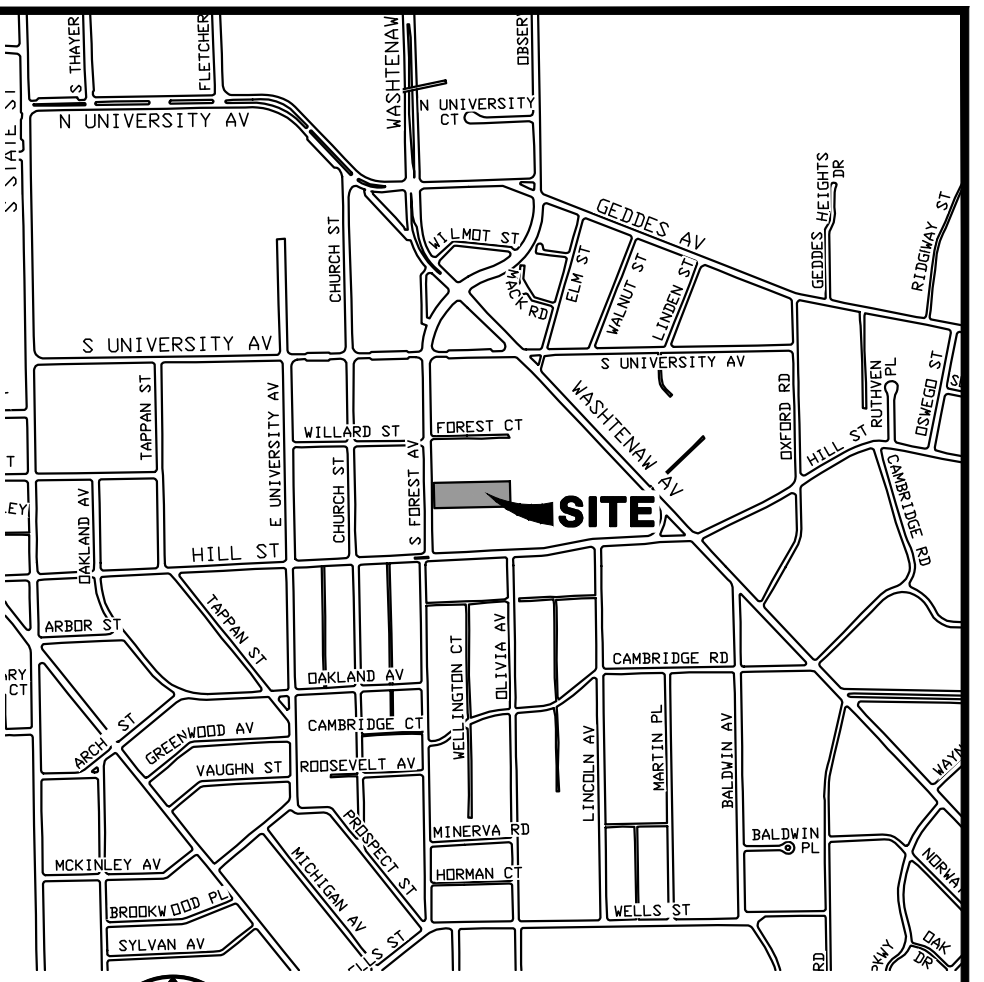


CITY OF ANN ARBOR, MICHIGAN

CITY OF ANN ARBOR, WASHTENAW COUNTY, MICHIGAN

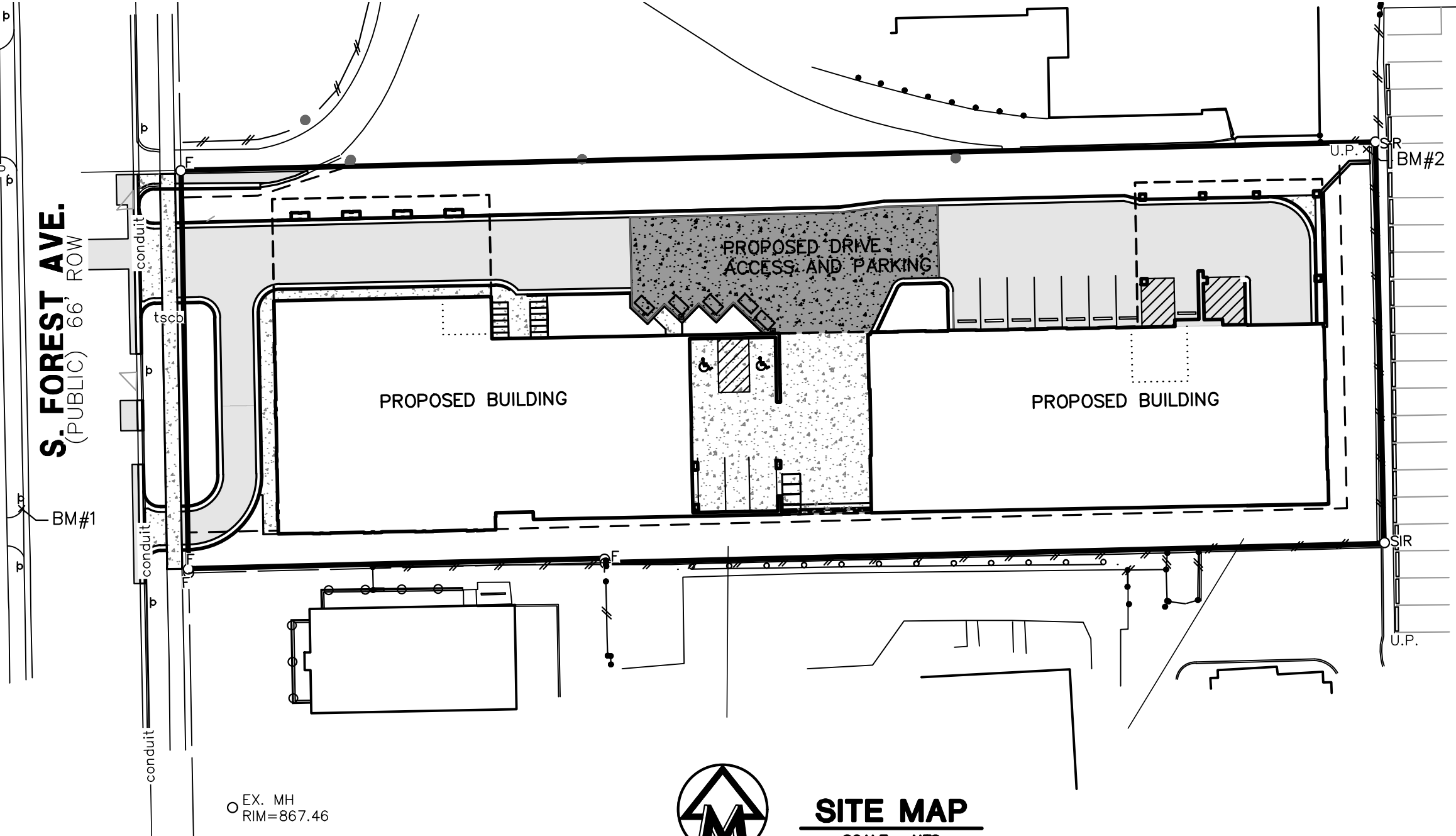
SITE PLAN AND PUD REZONING FOR CITY COUNCIL



VICINITY MAP
SCALE : NTS

Sheet List Table

NUMBER	SHEET TITLE
1	COVER SHEET
2	ALTA SITE PLAN
3	DEMOLITION PLAN
4	DIMENSIONAL SITE PLAN
5	UTILITY PLAN
6	GRADING AND SOIL EROSION CONTROL PLAN
7	STORM WATER MANAGEMENT PLAN
8	LANDSCAPE PLAN
9	LANDSCAPE NOTES AND DETAILS
10	FIRE PROTECTION PLAN
11	SOLID WASTE PLAN
12	ALTERNATIVES ANALYSIS
13	SITE ANALYSIS, NATURAL FEATURES AND OVERLAY PLAN
14	MISCELLANEOUS DETAILS
P1	PHOTOMETRIC PLAN
A200	LEVEL P1 AND LEVEL 1 FLOOR PLANS
A201	LEVEL 1A AND LEVELS 2-5 FLOOR PLANS
A202	LEVEL 6 AND LEVELS 7-12 FLOOR PLANS
A203	PENTHOUSE LEVEL FLOOR PLAN
A300	ELEVATIONS
A301	ELEVATIONS
A400	SITE SECTIONS



SITE MAP
SCALE : NTS

OWNER/APPLICANT

VERVE ANN ARBOR FOREST, LLC
3000 LOCUST STREET
ST. LOUIS, MO 63103
CONTACT: RYAN BUMB
314-396-2835

ENGINEER/SURVEYOR/LANDSCAPE ARCH.

MIDWESTERN CONSULTING, LLC
3815 PLAZA DR.
ANN ARBOR, MI 48108
CONTACT: SCOTT BETZOLDT
734-995-0200

ARCHITECTS

J. BRADLEY MOORE & ASSOCIATES ARCHITECTS
1844 JACKSON ROAD, SUITE 150
ANN ARBOR, MI 48103
CONTACT: BRAD MOORE
734-930-1500

PROJECT NARRATIVE

**VERVE ANN ARBOR
CITY OF ANN ARBOR REQUIRED SITE PLAN INFORMATION**

A. Required Site Plan Information
1. **Cover Sheet** - The following general project information should be provided on the cover sheet of the plan set and all subsequent sheets as appropriate:
a. Project name, address or location, and type of site plan
b. Verve Ann Arbor, 721 South Forest Avenue, Ann Arbor, MI 48104; Site Plan for PUD Rezoning for City Council Approval.
c. Petitioner name and contact information. Petitioner: Verve Ann Arbor Forest, 3000 Locust Street, St. Louis, MO 63103, (314) 396-2835; Attn: Ryan Bumb
d. Agent: Midwestern Consulting LLC, 3815 Plaza Drive, Ann Arbor, MI 48108; Ph: (734) 995-0200; Attn: Scott W. Betzoldt
2. **Conditions and Survey Plan, and Grading Plan** - Drawings and written descriptions of the proposed development must be provided on the plans, demonstrating compliance with applicable development standards such as building area, height and placement, off-street parking, streets and access, including the following: See Dimensional Site Plan.
a. Existing and proposed Lot Lines. **Shown.**
b. Minimum and maximum Required Setback Lines, including Established Front Building Line and required increases to the normal minimum side and rear setbacks, if applicable, existing and proposed Front, Side and Rear Yards. **Shown.**
c. Existing and proposed Buildings. See Existing Conditions and Survey Plan for existing buildings. See Dimensional Site Plan for proposed building.
d. Vehicle Parking Spaces, Drives and Driveways: Identify any "no parking" areas or fire lanes and indicate any proposed signage. See Dimensional Site Plan.
e. Bicycle Parking, including details of facilities. See Dimensional Site Plan and Architectural Plans, and Miscellaneous Notes and Details sheet.
f. Curb Cuts, Drive Approaches and Curb Radii Dimensions, including all Curb Cuts on the opposite side of the street from the site. Dimensional of Fire Department access roads or lanes, if applicable, including width at hydrant, dead end lengths, turn-around location, turning radii. See Dimensional Site Plan, Utility Plan, and Fire Protection Plan.
g. Open Space and Active Open Space: 42.1%±/21.8% provided.
h. Natural features buffer: N/A.
i. Conflicting land use buffer: N/A.
j. Solid waste enclosures, including dimensioned detail. See Architectural Plans.
k. Perspective sketch of building showing Streetwall Height and Offset, if applicable. See Architectural Plans.
l. Natural Features Plan - Drawings and written descriptions identifying all Natural Features on the Site, proposed protection measures for avoiding disturbance to existing Natural Features, alternatives analysis, and proposed mitigation for any disturbed or removed Natural Features to determine compliance with applicable development standards must be included on the plan, including the following: See Natural Features Impact Statement on Existing Conditions and Survey Plan.
m. Accurate location and description of all Natural Features within the Limits of Soil Disturbance and in an area extending 50 feet beyond the Limits of Soil Disturbance, including:
i. Limits of Soil Disturbance. See Grading Plan.
ii. Boundary and description of any Endangered Species Habitat. N/A.
iii. Boundary and elevation of any 100-year floodplain. N/A.
iv. Location, species and Critical Root Zone and condition of Landmark Trees. **Shown.**
v. Location of all Steep Slopes and a cross section through the Site showing the proposed activity in relation to the topography. N/A.
vi. Existing and proposed Watercourses showing depths, normal water levels, shore gradients, type of bank retention and shore vegetation. N/A.
vii. Boundary and character of all Wetlands. N/A.
viii. Boundary and basal area of any Woodland, with location, species and DBH of all trees six inches DBH or greater within the Woodland area. N/A.
ix. Location and extent of required Natural Features buffer. Identification of any temporary or permanent activity (i.e. erosion control) within the Natural Features buffer. N/A.
x. When any activity within the Natural Features buffer is proposed, a written justification responding to each general criteria for determining a proposed activity in the Natural Features buffer is in the public interest. N/A.
xi. Protection measures for those existing Natural Features proposed to be protected as part of the Development, including protection from the construction of the Development. N/A.
xii. Identification of all Natural Features proposed to be impacted, disturbed or removed by the Development, including the construction of the Development. N/A.
xiii. Alternative Analysis: When any Natural Features are proposed to be removed or disturbed, drawings and descriptions of at least two alternative plans that were prepared and considered but not proposed with justification and justify that the proposed Development limits the disturbance or removal of Natural Features on the property to the Site to the minimum necessary to reasonably accomplish the permitted use. See Alternative Analysis sheet

plans, including the following:
1. **ALTA Land Survey**: See Existing Conditions and Survey Plan.
i. Exception: Where there are no existing public utilities on the Site, the Planning Manager may waive the requirement to provide an ALTA Land Survey for Site Plans for Administrative Approval or when the combination of existing conditions and proposed development are so minor that preparing an ALTA Land Survey would be a significant financial burden to the Applicant. In those cases, an existing conditions plan illustrating the boundaries of the Site, location of all structures and improvements, and any easements, easements by a professional land survey must be provided. N/A.
2. **Existing and proposed contours** extending 50 feet beyond the Site at a minimum interval of two feet. See Existing Conditions and Survey Plan, and Grading Plan.
3. **In-situ City Public Utility**: Storm Water Management System, or streets are proposed in conjunction with a site plan, the plans must be referenced to the Ann Arbor Geographic Reference System. The survey is referenced to the AAGRS (State Plane Coordinates, Michigan South Zone 2113).
4. **Dimensional Layout Plan** - Drawings and written descriptions of the proposed Development must be provided on the plans, demonstrating compliance with applicable development standards such as building area, height and placement, off-street parking, streets and access, including the following:
a. Existing and proposed Lot Lines. **Shown.**
b. Minimum and maximum Required Setback Lines, including Established Front Building Line and required increases to the normal minimum side and rear setbacks, if applicable, existing and proposed Front, Side and Rear Yards. **Shown.**
c. Existing and proposed Buildings. See Existing Conditions and Survey Plan for existing buildings. See Dimensional Site Plan for proposed building.
d. Vehicle Parking Spaces, Drives and Driveways: Identify any "no parking" areas or fire lanes and indicate any proposed signage. See Dimensional Site Plan.
e. Bicycle Parking, including details of facilities. See Dimensional Site Plan and Architectural Plans, and Miscellaneous Notes and Details sheet.
f. Curb Cuts, Drive Approaches and Curb Radii Dimensions, including all Curb Cuts on the opposite side of the street from the site. Dimensional of Fire Department access roads or lanes, if applicable, including width at hydrant, dead end lengths, turn-around location, turning radii. See Dimensional Site Plan, Utility Plan, and Fire Protection Plan.
g. Open Space and Active Open Space: 42.1%±/21.8% provided.
h. Natural features buffer: N/A.
i. Conflicting land use buffer: N/A.
j. Solid waste enclosures, including dimensioned detail. See Architectural Plans.
k. Perspective sketch of building showing Streetwall Height and Offset, if applicable. See Architectural Plans.
l. Natural Features Plan - Drawings and written descriptions identifying all Natural Features on the Site, proposed protection measures for avoiding disturbance to existing Natural Features, alternatives analysis, and proposed mitigation for any disturbed or removed Natural Features to determine compliance with applicable development standards must be included on the plan, including the following: See Natural Features Impact Statement on Existing Conditions and Survey Plan.
m. Accurate location and description of all Natural Features within the Limits of Soil Disturbance and in an area extending 50 feet beyond the Limits of Soil Disturbance, including:
i. Limits of Soil Disturbance. See Grading Plan.
ii. Boundary and description of any Endangered Species Habitat. N/A.
iii. Boundary and elevation of any 100-year floodplain. N/A.
iv. Location, species and Critical Root Zone and condition of Landmark Trees. **Shown.**
v. Location of all Steep Slopes and a cross section through the Site showing the proposed activity in relation to the topography. N/A.
vi. Existing and proposed Watercourses showing depths, normal water levels, shore gradients, type of bank retention and shore vegetation. N/A.
vii. Boundary and character of all Wetlands. N/A.
viii. Boundary and basal area of any Woodland, with location, species and DBH of all trees six inches DBH or greater within the Woodland area. N/A.
ix. Location and extent of required Natural Features buffer. Identification of any temporary or permanent activity (i.e. erosion control) within the Natural Features buffer. N/A.
x. When any activity within the Natural Features buffer is proposed, a written justification responding to each general criteria for determining a proposed activity in the Natural Features buffer is in the public interest. N/A.
xi. Protection measures for those existing Natural Features proposed to be protected as part of the Development, including protection from the construction of the Development. N/A.
xii. Identification of all Natural Features proposed to be impacted, disturbed or removed by the Development, including the construction of the Development. N/A.
xiii. Alternative Analysis: When any Natural Features are proposed to be removed or disturbed, drawings and descriptions of at least two alternative plans that were prepared and considered but not proposed with justification and justify that the proposed Development limits the disturbance or removal of Natural Features on the property to the Site to the minimum necessary to reasonably accomplish the permitted use. See Alternative Analysis sheet

Proposed PUD aligns with the City's desire to increase density in areas near to transit corridors and walkable to commercial areas. The proposed structure will be 12 stories. The project will include one level of underground parking providing 98 spaces including 8 surface, 25 EF spaces, two barrier free spaces one of which is a van space. A potential public EV charging station is being evaluated for location on Forest Street. Bike parking is provided in lockable spaces within the parking level and first floor of the building and includes 198 spaces. Also, 12 Class C spaces are provided.

Proposed Development Summary:
One building, residential
228 dwelling units/732 bedrooms
Building height: 166.42'
Storm water management: Underground chambers infiltrating all stormwater generated on site. Stormwater will be collected primarily through roof drains with limited surface collection. The roof conductors and surface drains will be routed to a detention chamber located in the access drive and parking area north of the building. The chamber will be precast concrete chambers. The chamber will be fully enclosed and incorporate infiltration through open bottom structures. No stormwater will be discharged to City storm sewer in Forest Ave.
Proposed Phasing and Probable Construction Cost: The development will be constructed in one phase, beginning on or before 8/5/2023, with completion on or before 6/7/2025. The estimated construction cost is \$46,000,000.
i) Community Analysis:
(i) Impact of proposed Development on public schools: The units are apartments ranging from studio to 5 bedrooms. The units are designed primarily for young professionals, faculty, visiting professors, and college students. The number of children living in the building is expected to be minimal so there will be virtually no impact on public elementary and high schools.
(ii) Relationship of intended use to neighboring uses: The residential units will provide additional housing very close to the downtown core and University of Michigan Central Campus. The residents are likely to patronize existing restaurants, proposed retail, and other businesses in the nearby buildings. Adjacent buildings include a mix of commercial and residential uses.
(iii) Impact of adjacent uses on proposed development: Residents will likely patronize the business and institutions in the surrounding area.
(iv) Impact of proposed Development on the air and water quality, and on existing Natural Features of the Site and neighboring Sites: There will be no significant impact on air and water quality is expected. There are no regulated Natural Features on the site.
(v) Impact of the proposed use on historic Sites or structures which are located within an historic district or listed on the National Register of Historic Places: The site is not within a historic district and the existing building is not a historic structure.
(vi) Natural Features General Descriptions and Impacts: A brief summary of the Natural Features (Woodlands, Wetlands, Landmark Trees, Steep Slopes and Endangered Species Habitat) found on the Site. A detailed report of the quality, character and health of all existing Natural Features and impacts to them is provided in the Alternative Analysis sheet. Endangered Species Habitat: There are no regulated Natural Features on the site. Landmark trees are present on the property to the north and have critical root zones extending onto the site.
100-Year Floodplain: none on the site.
Landmark Trees: none on site.
Steep Slopes: none.
Existing Watercourses: none.
Wetlands: none.
Woodlands: none.
j) Traffic: Statement: The number of vehicle trips per unit per peak hour and supporting documentation from the ITE Manual. A Draft Traffic Impact Assessment report has been submitted under separate cover.
k) Public Sidewalk Maintenance Statement See Cover Sheet, General Notes number 1.
l. Comparison Chart of Requirements and Existing and Proposed Conditions

1. **Vertical sections** through the Site showing existing and proposed elevations. See Architectural Plans.
a. Dimensioned floor plans of each building floor identifying areas excluded from Floor Area and excluded from FAR calculations. See Architectural Plans.
b. Dimensioned architectural design and details with material materials. See Architectural Plans.
2. **Photometric Plan** - Drawings and written descriptions of proposed lighting demonstrating compliance with the applicable development standards, including:
a. Location of proposed lighting fixtures.
b. Photometric diagram showing predicted maintained lighting levels of the proposed lighting fixtures. N/A.
c. A pedestrian circulation plan showing all possible points of conflict between motorized traffic and pedestrian/bicycle traffic on public streets and sidewalks within 200 feet of the proposed development, or those intersections that may be impacted by the proposed development, or those intersections that may be impacted by the proposed development, or those intersections that may be impacted by the proposed development.
d. A projected peak hour traffic count as a result of the establishment of the proposed facility.
e. A capacity analysis for impacted intersections.
f. A project for pedestrian or wheelchair access may be required if a self-sum by peak hour is necessary based on a warrant analysis, and a sight distance study at the Site access Driveway.
g. A pedestrian circulation plan showing all possible points of conflict between motorized traffic and pedestrian/bicycle traffic on public streets and sidewalks within 200 feet of the proposed development, or those intersections that may be impacted by the proposed development, or those intersections that may be impacted by the proposed development.
h. A project for pedestrian or wheelchair access may be required if a self-sum by peak hour is necessary based on a warrant analysis, and a sight distance study at the Site access Driveway.
i. A project for pedestrian or wheelchair access may be required if a self-sum by peak hour is necessary based on a warrant analysis, and a sight distance study at the Site access Driveway.
j. A project for pedestrian or wheelchair access may be required if a self-sum by peak hour is necessary based on a warrant analysis, and a sight distance study at the Site access Driveway.

Development Summary and Comparison Chart

Site Area:	R4C Permitted/Required	Existing Site	Comparison	Proposed
Site Area:	6,500 Min.	1.21 ac/ 52,529 sf	1.21 ac/ 52,529 sf	1.21 ac/ 52,529 sf
Lot Width:	60 ft Min.	131.92 ft.	131.92 ft.	131.92 ft.
Zoning:	R4C	R4C	D1	PUD
Land Use:	Multifamily	Apartments/Parking	Apartments/Parking	Apartments/Parking
Building Area:	N/A	10,822 sf	Up to 46,589 sf	27,463 sf
Floor Area:	N/A	53,100 sq (gross)	Up to 419,301 sf	340,395 sf
Basement Parking:	N/A	N/A	N/A	19,977 sf
Floor Area Ratio:	N/A	101%	400%, 900k w/premiums	649%
Building Units:	24	50	N/A	228
Max Density (Units/Acre):	20	24 Units (1.21 Acre Site)	N/A	186.8
Bedrooms:	N/A	95	N/A	733
Min. Lot Area (\$f per Unit)	2,175	1,051 \$f	N/A	230 \$f
Min. Open Space %	40%	24.4%, 12,815 \$f	N/A	22,131 \$f (41.7%)
Min. Active Open Space/Unit	300 \$f	N/A	N/A	11,441 \$f (21.8%)
Building Height:	30 ft. Max.	50 ft.	150'	165.72'
Unit Types/No.s:		1 & 2 bedroom apartments	See architectural plans	See architectural plans
Vehicle/Parking**:	None Req'd	76	None	99 spaces incl. 2 BF
Total Vehicular Parking				including 12-Class C
Total Required				
Setbacks:				
	Front 25' Min	41'	Front Min. 0', Max. 1'	30'
	Side 12' Min.	33/51'	30' Abutting Res. zoning	10.4'
	Rear 30' Min.	135'	30' Abutting Res. zoning	17.89'
Impervious Surface		40,756 sf, 77.6%	N/A	39,403 sf, 75.0%

Notes:
1. All sidewalks within the City shall be kept and maintained in good repair by the owner of the land adjacent to and abutting upon 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.
2. All work within the City of Ann Arbor covered by these plans shall be performed in complete conformance with the current City of Ann Arbor Public Services Department Standard Specifications and Details.
3. The omission of any current standard detail does not relieve the contractor from this requirement. The work shall be performed in complete conformance with the current public services standard specifications and details.
4. Sidewalks constructed in the public right-of-way shall meet all requirements and guidelines as set forth in the ADA standards for accessible design. Sidewalk and curb ramp grades will be reviewed during construction plan submittals.
5. The owner agrees to use only landscape care products that have no phosphates.
6. There is a trash room within the building that will utilize 4 cubic-yard self-contained/compacting containers for trash and A-frame containers for recycling. Both trash and recycling will be compacted within the building and wheeled outside to a staging area for pickup. The initial plan is for garbage and recycling pickup to occur 3 times per week. The schedule and frequency of pickup will be adjusted to provide the required service.
7. Trash/recycling pickup is to be public. The City of Ann Arbor has a single hauler for all commercial refuse collection in the City, which began July 1, 2008. The City's single hauler commercial refuse collection program has the following features: A commercial refuse collection contract has been signed with Waste Management of Michigan, Inc. (WMM). WMM will be providing collection and container rental services for all commercial refuse collection service orders requested by the City. WMM was selected to provide these services through a competitive procurement. The service contract extends until June 30, 2023.

The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

VERVE ANN ARBOR

JOB No. **22170**

REVISIONS:	REV. DATE	SHEET 1 OF 22
PER CITY REVIEW	11/18/22	
PER CITY REVIEW	12/30/22	DATE: 9/21/22
PER CITY REVIEW	2/14/23	CADD: ENG: JCA PM: SWB
		TECH: 2/21/20CV1

MIDWESTERN CONSULTING

3815 Plaza Drive Ann Arbor, Michigan 48108
(734) 995-0200 • www.midwesternconsulting.com
Land Development • Land Survey • Institutional • Municipal
Wireless Communications • Transportation • Landfill Services

RELEASED FOR DATE

JAMES C. AHNERT
REGISTERED PROFESSIONAL ENGINEER
No. 43208
State of Michigan
JAMES C. AHNERT
P.E. #43280

M:\Civil\136_Pe\0123707\Site Plan\22170\01_Site Plan\22170\01_Cover Sheet - MCLC.pdf.ppt3
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LEGEND

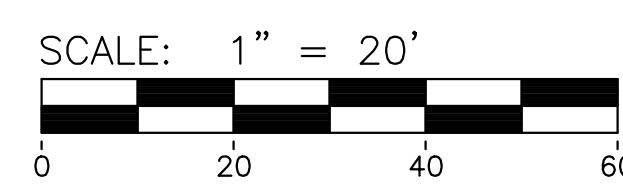
- 8.38 EXIST. CONTOUR
- x836.2 EXIST. SPOT ELEVATION
- o-U.P. EXIST. UTILITY POLE
- GUY WIRE
- EXIST. AC UNIT
- OH EXIST. OVERHEAD UTILITY LINE
- EXIST. LIGHT POLE
- EXIST. GAS LINE
- EXIST. WATER MAIN
- EXIST. HYDRANT
- EXIST. GATE VALVE IN BOX
- EXIST. GATE VALVE IN WELL
- EXIST. FIRE DEPARTMENT CONNECTION
- EXIST. STORM SEWER
- EXIST. CATCH BASIN OR INLET
- EXIST. DOWNSPOUT
- EXIST. SANITARY SEWER
- EXIST. CLEANOUT

- ug UNDERGROUND
- p SIGN
- catv CABLE TELEVISION RISER
- g GAS METER
- POST POST
- o FOUND IRON PIPE
- o SET IRON ROD
- o CONTROL PT.
- o FENCE
- o GUARDRAIL
- o SINGLE TREE
- o TREE OR BRUSH LIMIT
- o SECTION CORNER

BENCHMARKS:

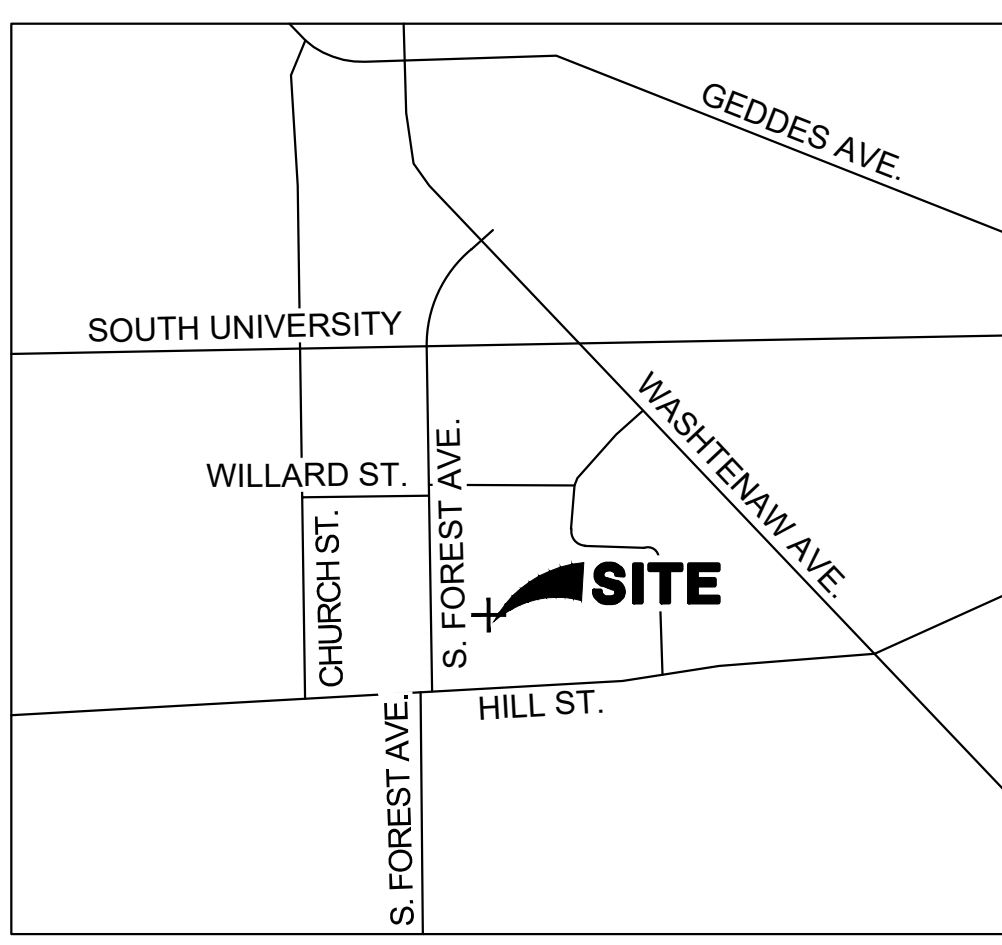
- #1: SET SPIKE SE SIDE OF UTILITY POLE, 1'± WEST OF B/CURB, WEST SIDE OF S. FOREST AVE., & 50'± WEST OF SW PROPERTY CORNER. ELEVATION=867.33 NAVD 88.
- #2: SET SPIKE SW SIDE OF UTILITY POLE AT NE PROPERTY CORNER. ELEVATION=872.66 NAVD 88.

TAG#	DBH	COMMON NAME	GENUS/SPECIES	STEMS	SCORE	LM	INV	REM
719	10"	Linden	Tilia americana					
720	2"	Ginkgo	Ginkgo biloba					
721	2"	Rugged Ridge Maple	Acer myriadei				X	
722	3"	Sweetgum	Liquidambar styraciflua				X	
723	31"	Red Oak	Quercus rubra		18	X		
724	16"	White Mulberry	Morus alba				X	
725	18"	American Elm	Ulmus americana		19	X		
726	6"	Norway Maple	Acer platanoides	twin			X	
727	8"	White Mulberry	Morus alba				X	
728	6"	Black Cherry	Prunus serotina				X	
729	13"	American Elm	Ulmus americana		18	X		
730	6"	American Elm	Ulmus americana				X	
731	7"	Black Cherry	Prunus serotina				X	
732	9"	White Mulberry	Morus alba	twin			X	
733	37"	White Oak	Quercus alba		21	X		
734	6"	White Mulberry	Morus alba				X	
735	10"	White Mulberry	Morus alba				X	
736	7"	White Mulberry	Morus alba				X	
737	23"	Black Cherry	Prunus serotina		18	X		
738	8"	American Elm	Ulmus americana				X	
739	14"	American Elm	Ulmus americana				X	
740	11"	American Elm	Ulmus americana				X	
741	19"	American Elm	Ulmus americana	dead				



NOTES:

- 1) This survey was prepared using First American Title Insurance Company title commitment No. NCS-1131415-STLO with an effective date of May 17, 2022.
- 2) The parcel herein described is in Zone X (unshaded); the area determined to be outside of the 0.2% annual chance floodplain per Federal Emergency Management Agency flood insurance rate map # 26161C0263E, effective date; April 3, 2012.
- 3) The parcel herein described has 78 regular parking spaces.
- 4) There is no evidence of current earth moving work, building construction or building additions.
- 5) There is no evidence of changes that will be made to the existing right-of-way lines or sidewalks in the near future.
- 6) No wetlands currently exist on the property.
- 7) Access via Forest Avenue Public.
- 8) Legal Description in Title Commitment is the same as shown on the Survey.



VICINITY SKETCH
NOT TO SCALE

LEGAL DESCRIPTION

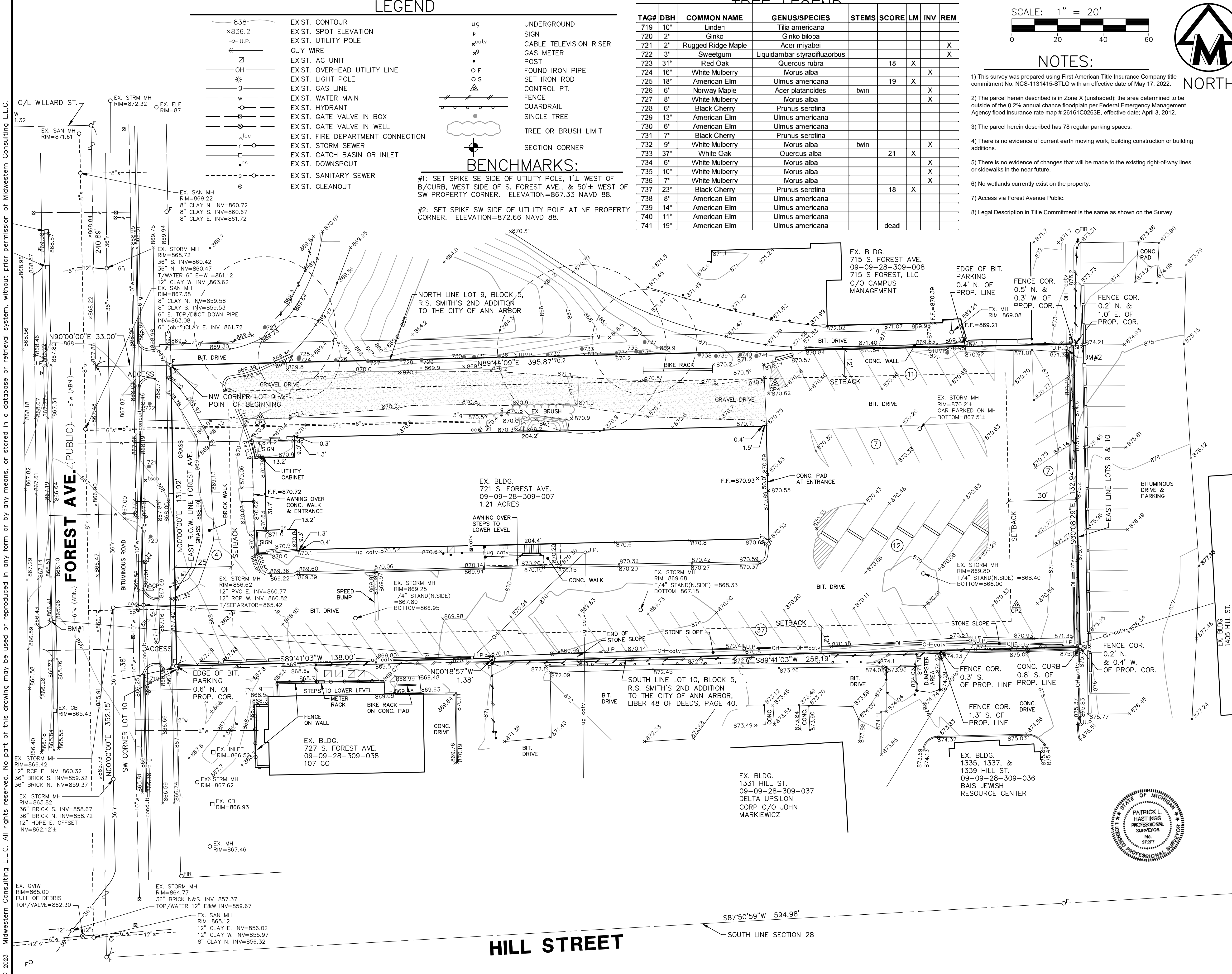
Land in the City of Ann Arbor, Washtenaw County, MI, described as follows:
Beginning on the East line of Forest Avenue, 16.53 inches North of the Southwest corner of Lot 10 of Block 5 of R.S. Smith's Second Addition To The City of Ann Arbor, Washtenaw County, Michigan; thence East 138 feet; thence South 16.53 inches to said South line of Lot 10; thence East to the Southeast corner of said Lot 10; thence North 8 rods (132 feet) and 16.53 inches to the Northeast corner of Lot 9 in said Subdivision; thence West along the North line of Lot 9 to the Northwest corner thereof; thence South 8 rods (132 feet) to the place of beginning, being Lot 9 and part of Lot 10 in Block 5 of R.S. Smith's Second Addition To The City of Ann Arbor, as recorded in Liber 48 of Deeds, Page 40, Washtenaw County Records.

Being more particularly described as:
Commencing at the South 1/4 corner of Section 28, Town 2 South, Range 6 East, City of Ann Arbor, Ann Arbor Township, Washtenaw County, Michigan; thence South 87 degrees 50 seconds 59 minutes West 594.98 feet along the centerline of Hill Street, as monumented; thence North 00 degrees 00 seconds 00 minutes East 352.15 feet along the centerline of South Forest Avenue, as monumented; thence North 90 degrees 00 seconds 00 minutes East 330.00 feet to the North West corner of Lot 9, Block 5, of R.S. Smith's Second Addition To The City of Ann Arbor, as recorded in Liber 48 of Deeds, Page 40, Washtenaw County, Michigan and Point of Beginning; thence North 89 degrees 44 minutes 09 seconds East 395.87 feet along the North line of said Lot 9; thence South 00 degrees 08 minutes 29 seconds East 132.94 feet along the East line of Lots 9 & 10 of said Block 5; thence South 89 degrees 41 minutes 03 seconds West 258.19 feet along the South line of Lot 10 of said Block 5; thence North 00 degrees 18 minutes 57 seconds West 1.38 feet; thence South 89 degrees 41 minutes 03 seconds West 138.00 feet to a point which is 1.38 feet North of the Southwest corner of said Lot 10; thence North 00 degrees 00 minutes 00 seconds East 131.92 feet along the East right-of-way line of said South Forest Avenue to the Point of Beginning.

BEING SUBJECT TO:
7) Interest of others in oil, gas and mineral rights, if any, whether or not recorded in the Public Records.
8) Interest, if any, of the United States, State of Michigan, or any political subdivision thereof, in the oil, gas and minerals in and under and that may be produced from the captioned land.

CERTIFICATION

To: Subtext Acquisitions, LLC, a Missouri limited liability company 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 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4, 6(a), 6(b), 7(a), 8, 9, 10, 11, 13, 14, 16, 18, 19 and 20 of Table A thereof.
The field work was completed on June 6, 2022.
MIDWESTERN CONSULTING, LLC
By: Patrick L. Hastings, P.S. No. 4001037277
Date: July 20, 2022



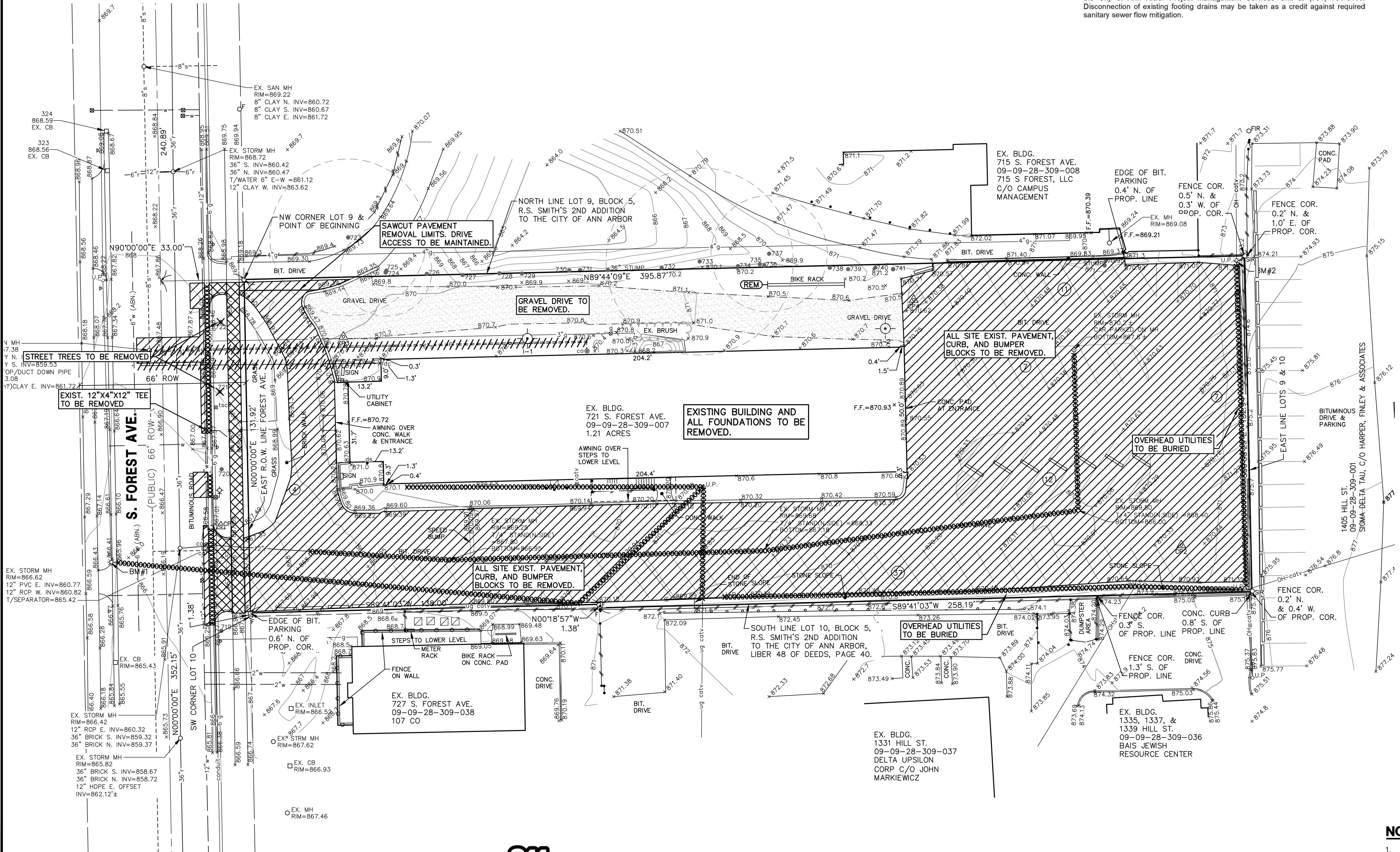
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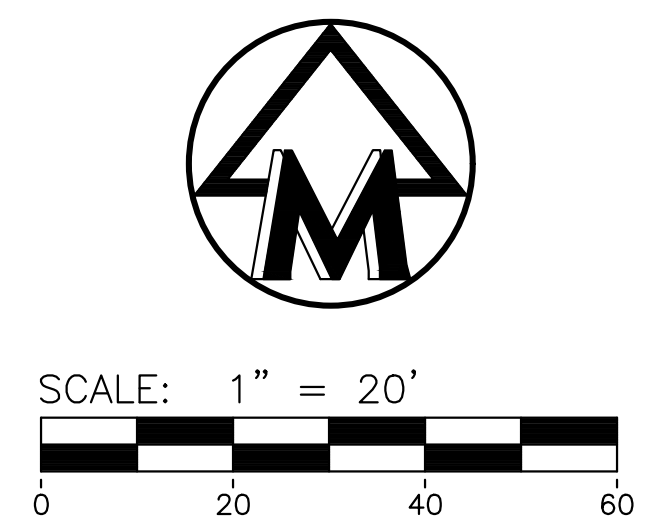
CLIENT
VERVE ANN ARBOR FOREST, LLC
3000 LOCUST STREET
ST. LOUIS, MO 63103
RYAN BUMB
314-396-2835

VERVE ANN ARBOR
SITE PLAN AND PUD REZONING FOR CITY COUNCIL
ALTA SITE PLAN

JOB No. **22170**
DATE: SHEET 2 OF 22
REV. DATE: 7/14/23
ENG. JCA
CAD: JCA
P.L. SWB
TECH: SWB
F.P. SWB



- REMOVAL PLAN NOTES:**
- ASCE 38-02 quality level survey involves surveying visible above ground utility facilities such as manholes, valve boxes, posts, etc., and correlating this information with existing utility records. When using this information, it is not unusual to find that many underground utilities have been either omitted or erroneously plotted.
 - Existing easements, if any, are to be relocated or vacated as required.
 - Forest Ave. is under the jurisdiction of the City of Ann Arbor. All work within the right-of-way is subject to a permit from the City.
 - All existing on-site easements, if any, are to be vacated or relocated as necessary per the proposed development plans.
 - The existing water service lead in Forest Ave. has been noted in records as a 12"x6" tee reduced to a 4" lead. The 4" reducer is to be removed and the 6" lead extended as the proposed domestic service lead.
 - All franchise utilities are to be removed by or per the party having jurisdiction.
 - Two street trees are to be removed on S. Forest Ave.
 - All site work is to comply with the City of Ann Arbor Standard Specifications available on line. [www.a2gov.org/departments/engineering/Documents/Table of Contents.pdf](http://www.a2gov.org/departments/engineering/Documents/Table%20of%20Contents.pdf)
 - All existing on-site improvements are to be removed unless otherwise noted.
 - During demolition of the existing structures, the contractor will be responsible for identifying any existing footing drains that are connected to the sanitary sewer. These are to be verified on site by the City prior to removal. If footing drains for the existing buildings are connected to the sanitary sewer system, disconnection will be required in accordance with current City specifications. To schedule inspection, call the City of Ann Arbor Project Management Services Unit at (734) 794-6410. Disconnection of existing footing drains may be taken as a credit against required sanitary sewer flow mitigation.



LEGEND

838	EXIST. CONTOUR
×836.2	EXIST. SPOT ELEVATION
○-○ U.P.	EXIST. UTILITY POLE
○-○ GP	EXIST. GUY POLE
⊖	GUY WIRE
⊠	ELEC. TRANSFORMER
— OH —	EXIST. OVERHEAD UTILITY LINE
*	EXIST. LIGHT POLE
— t —	EXIST. TELEPHONE LINE
— e —	EXIST. ELECTRIC LINE
— g —	EXIST. GAS LINE
— g —	EXIST. GAS VALVE
f.o.	EXIST. FIBER OPTIC LINE
— w —	EXIST. WATER MAIN
⊕	EXIST. HYDRANT
⊕	EXIST. GATE VALVE IN BOX
⊕	EXIST. GATE VALVE IN WELL
⊕	EXIST. CURB STOP & BOX
⊕	FIRE DEPARTMENT CONNECTION
⊕	EXIST. STORM SEWER
⊕	EXIST. CATCH BASIN OR INLET
⊕	EXIST. BEEHIVE INLET
⊕	EXIST. DOWNSPOUT
⊕	EXIST. SANITARY SEWER
⊕	EXIST. CLEANOUT
⊕	SIGN
⊕	TELEPHONE RISER
⊕	CABLE TELEVISION RISER
⊕	ELECTRIC METER
⊕	WATER METER
⊕	POST
⊕	EXIST. BOLLARD
⊕	FENCE
⊕	GUARDRAIL
⊕	SINGLE TREE
⊕	TREE OR BRUSH LIMIT
⊕	SECTION CORNER
⊕	SOIL BORING LOCATION
⊕	EXIST. TEST PIT LOCATION
○ S	SET IRON PIPE
○ F	FOUND IRON PIPE
○ S	SET MONUMENT
○ S	FOUND MONUMENT
⊕ FPK	SET P.K.
⊕ FPK	FOUND P.K.
○ S	SET IRON ROD
○ S	FOUND IRON ROD
⊕	CONTROL PT.
⊕	CENTERLINE
⊕	PROPERTY LINE
⊕	CONCRETE TO BE REMOVED
⊕	BITUMINOUS TO BE REMOVED
⊕	UTILITY TO BE ABANDONED
⊕	CURB OR UTILITY TO BE REMOVED
⊕	TREE TO BE REMOVED
⊕	ITEM TO BE RELOCATED
⊕	ITEM TO BE REMOVED

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VERVE ANN ARBOR
 SITE PLAN AND PUD REZONING FOR CITY COUNCIL
 DEMOLITION PLAN

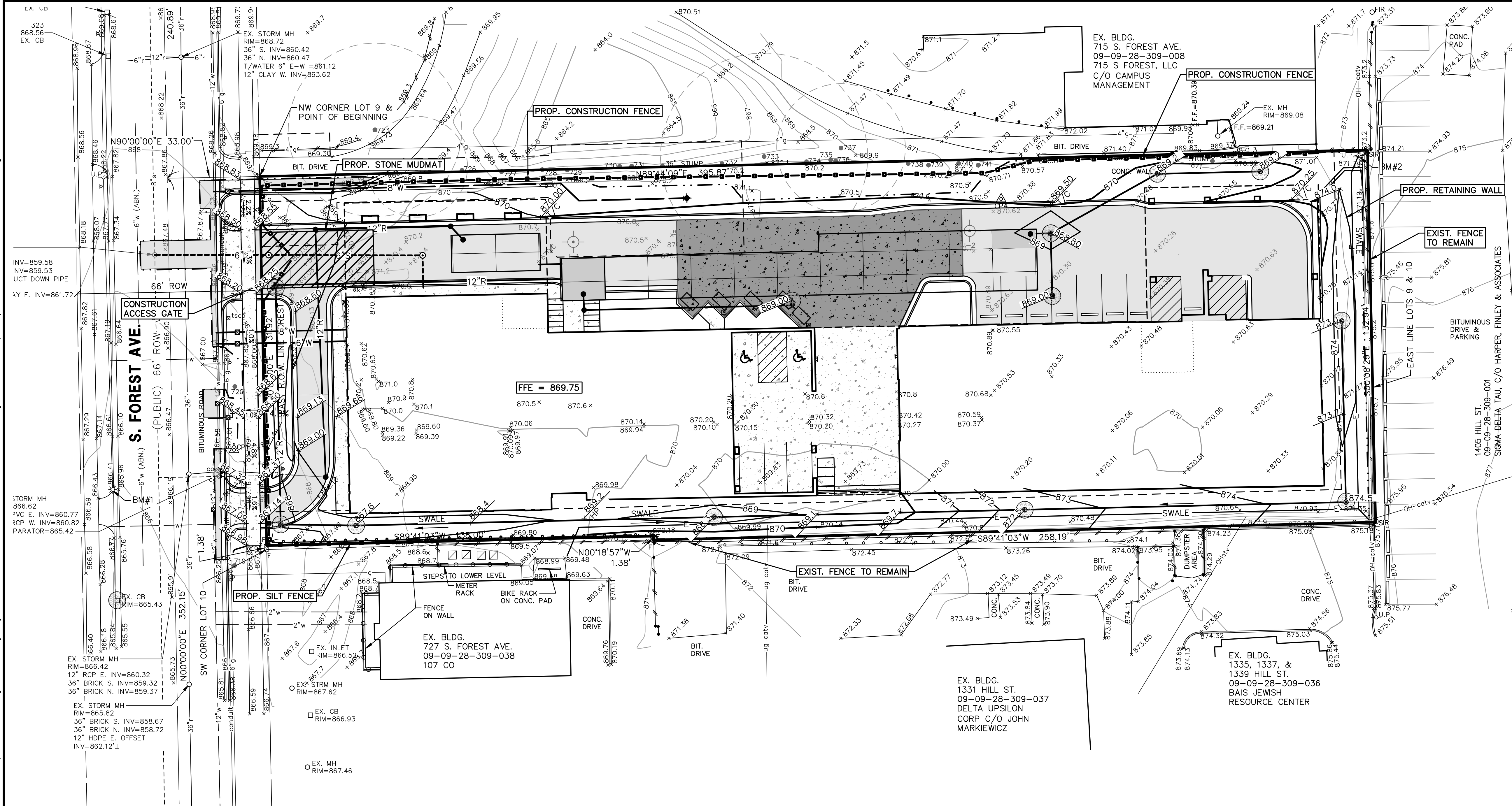
22170
 JOB No. 22170
 REV. DATE 11/18/22
 PER CITY REVIEW 12/30/22
 DATE: 9/21/22
 SHEET 3 OF 22
 CADD: JCA
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 2/22/2021

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NOTES

- THE BASE SURVEY WAS PREPARED BY MIDWESTERN CONSULTING IN MONTH YEAR. ALL UNDERGROUND UTILITIES AND STRUCTURES HAVE BEEN SHOWN TO A REASONABLE DEGREE OF ACCURACY AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND TO AVOID DAMAGE THERE TO. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.



Scale: 1" = 20'. Midwestern Consulting logo with tagline 'Know what's below. Call before you dig.'

Legend table listing symbols for existing and proposed contours, spot elevations, utility poles, guy wires, transformers, AC units, generators, overhead utility lines, light poles, telephone lines, electric lines, gas lines, fiber optic lines, water mains, hydrants, gate valves, curbs, thrust blocks, fire department connections, storm sewers, catch basins, inlets, beehive inlets, roof drains, downspouts, sanitary sewers, cleanouts, signs, tree limits, fences, siltfence, and limits of disturbance.

Client information: Verve Ann Arbor Forest, LLC, 3000 Locust Street, St. Louis, MO 63103. Project title: Verve Ann Arbor Site Plan and PUD Rezoning for City Council Grading and Soil Erosion Control Plan. Includes a large number '6' and job number 22170.

STORM WATER MANAGEMENT SYSTEM PERMANENT MAINTENANCE PLAN, SCHEDULE, AND COST ESTIMATE

Maintenance Plan Budget table with columns for item, description, and cost. Total Annual Budget is \$2,600.00.

PERMANENT MAINTENANCE TASKS AND SCHEDULE

Table with columns for Components (Drives and Walks, Storm Sewer System, Catch Basin Sumps, Catch Basin Inlet Castings, Detention Chambers) and Schedule (annually, every 2 years, semi-annually).

SOIL EROSION CONTROL NOTES

- List of 16 notes detailing soil erosion control measures, including sedimentation control, temporary catch basin filters, and maintenance of erosion control devices.

MAINTENANCE PROGRAM FOR SOIL EROSION CONTROLS

- Note 1: The Owner shall be responsible for maintaining the permanent soil erosion control measures. Maintenance responsibilities shall become part of any sales or exchange agreement for the land on which the permanent SESC measures are located.

Operation Time Schedule table showing construction sequence from August 2023 to August 2025. Activities include SESC pre-grading meeting, building demolition, foundation construction, building construction, final grade site, and final clean-up.

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W1 - Determining Post-Development Cover Types, Areas, Curve Numbers, and Runoff Coefficients

Cover Type	Soil Type	Area (sq ft)	Area (ac)	Runoff Coeff (C)	(C) x (Area)
Building		27,700	0.64	0.95	0.60
Pavement		12,500	0.29	0.95	0.27
Grass A		0	0.00	0.15	0.00
Grass B		12,329	0.28	0.25	0.07
Grass C		0	0.00	0.30	0.00
Grass D		0	0.00	0.45	0.00
Water Surface		0	0.00	1.00	0.00
Total		52,529	1.21		0.95
Weighted C = (Sum(Cx(Area)) / (Area Total)) = 0.79					

NRCS Variables (Previous)	Soil Type	Area (sq ft)	Area (ac)	Curve Number	(CN) x (Area)
Grass		12,329	0.28	69	0.02
Grass		0	0.00	79	0.00
Grass		0	0.00	84	0.00
Total		12,329	0.28		0.20
Weighted CN = (Sum(CNx(Area)) / (Area Total)) = 69					

NRCS Variables (Impervious)	Soil Type	Area (sq ft)	Area (ac)	Curve Number	(CN) x (Area)
Building		27,700	0.64	98	0.62
Pavement		12,500	0.29	98	0.28
Water Surface		0	0.00	98	0.00
Total		40,200	0.92		0.90
Weighted CN = (Sum(CNx(Area)) / (Area Total)) = 98					

W2 - First Flush Runoff Calculations (Vff)

A. $V_{ff} = 1" \times 11/12" \times 43560 \text{ sq ft/ac} \times A \times C$ where A= 1.21 and where C= 0.79

$V_{ff} = 1" \times 11/12" \times 43560 \text{ sq ft/ac} \times 1.21 \times 0.79 = 3,458 \text{ cft}$

W3 - Pre-Development Bankfull Runoff Calculations (Vbf-pr)

A. 2 year / 24 hour storm event: $P_r = 2.35 \text{ in}$

B. Pre-Development CN: $CN_p = 58$

C. $S = (1000 / CN) - 10 = 7,241 \text{ in}$

D. $Q = [(P-0.25)/2] / [1-(P/10.8S)] = 0.100 \text{ in}$

E. Total Site Area excluding "Self-Crediting" BMPs: $Q_r = 52,529 \text{ sq ft}$

F. $V_{bf-pr} = Q \times (1/12) \times \text{Area} = 437 \text{ cft}$

W4 - PerVIOUS Cover Post-Development Bankfull Runoff Calculations (Vbf-per-post)

A. 2 year / 24 hour storm event: $P_r = 2.35 \text{ in}$

B. PerVIOUS Cover CN From Worksheet 1: $CN_p = 69$

C. $S = (1000 / CN) - 10 = 4,493 \text{ in}$

D. $Q = [(P-0.25)/2] / [1-(P/10.8S)] = 0.354 \text{ in}$

E. PerVIOUS Cover Area from Worksheet 1: $Q_r = 12,329 \text{ sq ft}$

F. $V_{bf-per-post} = Q \times (1/12) \times \text{Area} = 364 \text{ cft}$

W5 - Impervious Cover Post-Development Bankfull Runoff Calculations (Vbf-imp-post)

A. 2 year / 24 hour storm event: $P_r = 2.35 \text{ in}$

B. Impervious Cover CN From Worksheet 1: $CN_p = 98$

C. $S = (1000 / CN) - 10 = 0,204 \text{ in}$

D. $Q = [(P-0.25)/2] / [1-(P/10.8S)] = 2.122 \text{ in}$

E. Impervious Cover Area from Worksheet 1: $Q_r = 40,200 \text{ sq ft}$

F. $V_{bf-imp-post} = Q \times (1/12) \times \text{Area} = 7,108 \text{ cft}$

W6 - PerVIOUS Cover Post-Development 100-Year Runoff Calculations (V100-per-post)

A. 100 year / 24 hour storm event: $P_r = 5.11 \text{ in}$

B. PerVIOUS Cover CN From Worksheet 1: $CN_p = 69$

C. $S = (1000 / CN) - 10 = 4,493 \text{ in}$

D. $Q = [(P-0.25)/2] / [1-(P/10.8S)] = 0.208 \text{ in}$

E. PerVIOUS Cover Area from Worksheet 1: $Q_r = 12,329 \text{ sq ft}$

F. $V_{100-per-post} = Q \times (1/12) \times \text{Area} = 2,094 \text{ cft}$

W7 - Impervious Cover Post-Development 100-Year Runoff Calculations (V100-imp-post)

A. 2 year / 24 hour storm event: $P_r = 5.11 \text{ in}$

B. Impervious Cover CN From Worksheet 1: $CN_p = 98$

C. $S = (1000 / CN) - 10 = 0,204 \text{ in}$

D. $Q = [(P-0.25)/2] / [1-(P/10.8S)] = 4.873 \text{ in}$

E. Impervious Cover Area from Worksheet 1: $Q_r = 40,200 \text{ sq ft}$

F. $V_{100-imp-post} = Q \times (1/12) \times \text{Area} = 16,325 \text{ cft}$

W8 - Time of Concentration (Tc-hrs)

A. Assume 15-minute minimum time of concentration: $T_c = 0.25 \text{ hr}$

W9 - Runoff Summary & On-Site Infiltration Requirement

A. Summary from Previous Worksheets

First Flush Volume (Vff): 3,458 cft

Pre-Development Bankfull Runoff Volume (Vbf-pr): 437 cft

PerVIOUS Cover Post-Development Bankfull Runoff Volume (Vbf-per-post): 364 cft

Impervious Cover Post-Development Bankfull Runoff Volume (Vbf-imp-post): 7,108 cft

Total BF Volume (Vbf-total): 7,472 cft

PerVIOUS Cover Post-Development 100-Year Runoff Volume (V100-per-post): 2,094 cft

Impervious Cover Post-Development 100-Year Runoff Volume (V100-imp-post): 16,325 cft

Total 100-Year Volume (V100): 18,419 cft

B. Determine Onsite Infiltration Requirement

Subtract the Pre-Development Bankfull from the Post-Development Bankfull Volume

Total Post-Development Bankfull Volume (Vbf-post): 7,472 cft

Pre-Development Bankfull Runoff Volume (Vbf-pr): 437 cft

Bankfull Volume Difference: 7,035 cft

Infiltration Requirement (Vinf): 7,035 cft

W10 - Detention/Retention Requirement

A. $Q_p = 238.6 \text{ cfs}$, $T_c = 0.82$

B. Total Site Area excluding "Self-Crediting" BMPs: 1.21 ac

C. $Q_{100} = Q_{100-per} + Q_{100-imp} = 6,911 \text{ cfs}$

(from W6 and W7, respectively)

D. Peak Flow (PF) = $Q_p \times Q_{100} \times \text{Area} / 640 = 9.68 \text{ cfs}$

E. Delta = $PF - 0.15 \times \text{Area (ac)} = 9.50 \text{ cfs}$

F. $V_{det} = \text{Delta} \times \text{PF} \times V_{100} = 18,074 \text{ cft}$

Required Detention not including infiltration credit or penalty: 18,074 cft

Sediment Forebay Volume Required (5% of V100): 921 cft

W11 - Determine Applicable BMPs and Associated Volume Credits

Proposed BMP	Area (sq ft)	Surface	In Soil	Design Infiltr. Rate (in/hr)	Infiltr. Volume in 6-hr Drawdown (cft)	Total Volume Reduction (cft)
PerVIOUS Pavement					0	0
Infiltration Bed					0	0
Subsurface Infiltration Bed					0	0
Infiltration Trench					0	0
BioRetention Systems	3,349	13,396		3.60	6,028	19,424
Rain Gardens					0	0
Dry Well					0	0
Bioswale					0	0
Vegetated Filter Strip					0	0
Green Roof					0	0
Total Volume Reduction Credit by Proposed Structural BMPs (cft): 19,424						
Runoff Volume Infiltration Requirement (Vinf) from W9 (cft): 7,035						
Runoff Volume Credit (cft): 12,390						

W13 - Site Summary of Infiltration & Detention

A. Stormwater Management Summary

Min Infiltration Requirement (Vinf): 7,035 cft

Designed/Provided Infiltration Volume: 19,424 cft

% Minimum Required Infiltration Provided: 276 %

Total Calculated Detention Volume: 18,074 cft

Net Required Detention Volume: -1,350 cft

(Vdet - Designed/Provided Infiltration Volume)

B. Detention Volume Increase for sites where the required infiltration volume cannot be achieved.

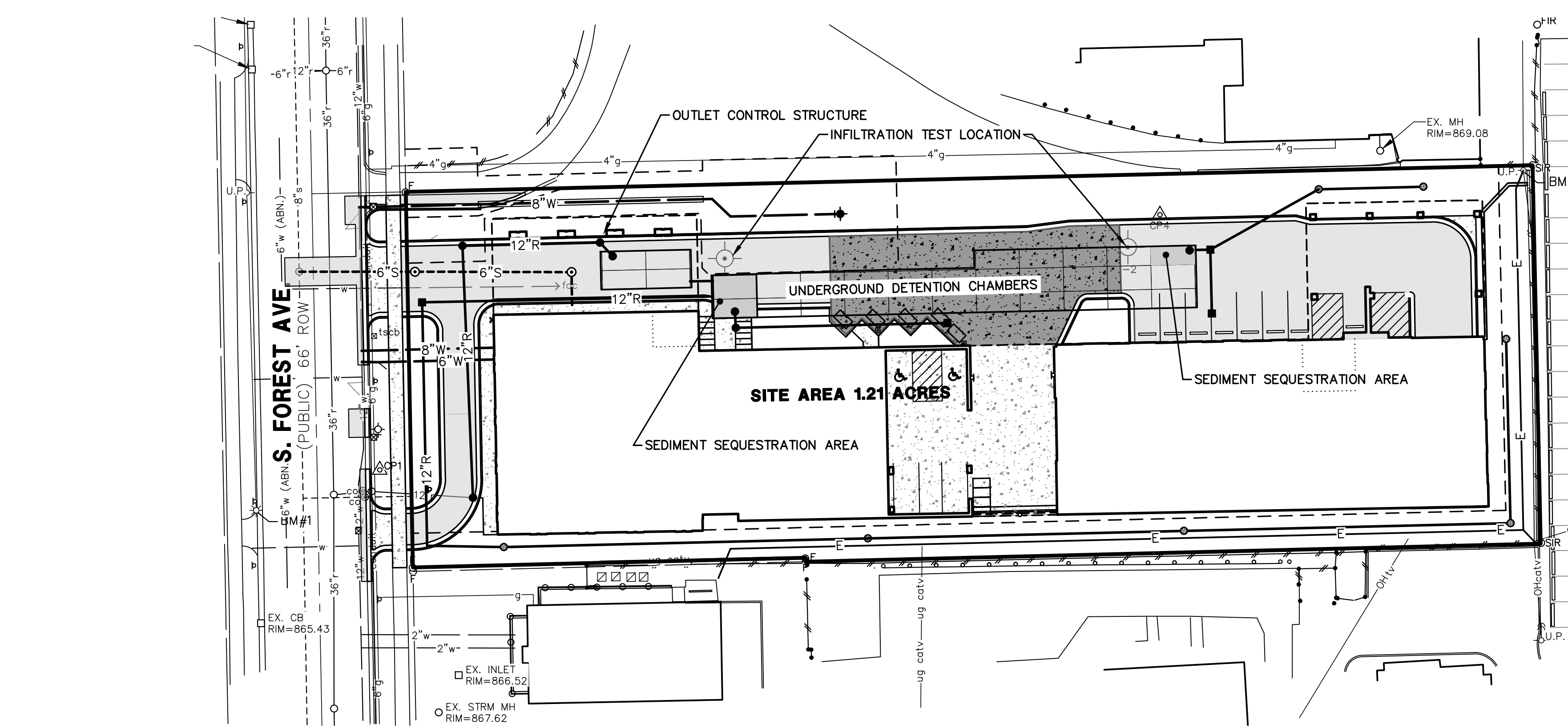
% Required Infiltration NOT Provided: 0.0 %

(100% - % Minimum Required Infiltration Provided)

Net % Penalty (20% x % Required Infiltration NOT Provided): 0.0 %

Total Required Detention Volume, including penalty: 18,074 cft

([100% + Net % Penalty] x Net Required Detention Volume)



SCALE: 1" = 30'

LEGEND

- o- U.P.
- ELEC. TRANSFORMER
- EXIST. AC UNIT
- EXIST. GENERATOR
- OH --- EXIST. OVERHEAD UTILITY LINE
- EXIST. LIGHT POLE
- EXIST. LIGHT POLE
- EXIST. TELEPHONE LINE
- EXIST. ELECTRIC LINE
- EXIST. GAS LINE
- EXIST. FIBER OPTIC LINE
- W --- EXIST. WATER MAIN
- W --- PROP. WATER MAIN
- EXIST. HYDRANT
- PROP. HYDRANT
- EXIST. GATE VALVE IN BOX
- PROP. GATE VALVE IN BOX
- EXIST. GATE VALVE IN WELL
- PROP. GATE VALVE IN WELL
- EXIST. CURB STOP & BOX
- PROP. CURB STOP & BOX
- EXIST. FIRE DEPARTMENT CONNECTION
- PROP. FIRE DEPARTMENT CONNECTION
- EXIST. STORM SEWER
- PROP. STORM SEWER
- EXIST. CATCH BASIN OR INLET
- PROP. CATCH BASIN OR INLET
- EXIST. BEEHIVE INLET
- EXIST. SANITARY SEWER
- PROP. SANITARY SEWER
- EXIST. CLEANOUT
- PROP. CLEANOUT
- SIGN
- FENCE
- INFILTRATION TEST LOCATION

Detention Outlet Calculations

A. Required Detention Volumes (Reduced by 6-hour infiltration)

Storm Event	Req'd Volume	less Infil. Credit	= Final Volume
First Flush	3,458 cft	6,028 cft	(2,570) cft
Bankfull	7,472 cft	6,028 cft	1,444 cft
100-year	18,074 cft	6,028 cft	12,046 cft
Forebay Volume Required (5% of 100-yr) = 602 cft			

B. Detention Volumes Provided

Elevation	Area (sq ft)	Depth (ft)	Volume (cft)	Cum. Volume (cft)
862.5	3,349	0	0	0
863.0	3,349	1	1,675	1,675
864.0	3,349	1	3,349	5,024
865.0	3,349	1	3,349	8,373
866.0	3,349	1	3,349	11,722
866.5	3,349	1	1,675	13,396
Total Volume = 13,396				

Storage Elevation Calculation

Bankfull Elevation (Xbf) = 863.0 - 862.5 = Xbf = 862.93 ft

100-Year Elevation (X100) = 866.5 - 866.0 = X100 = 866.10 ft

C. Full Infiltration Design

Total Storage Volume: 18,074 cft

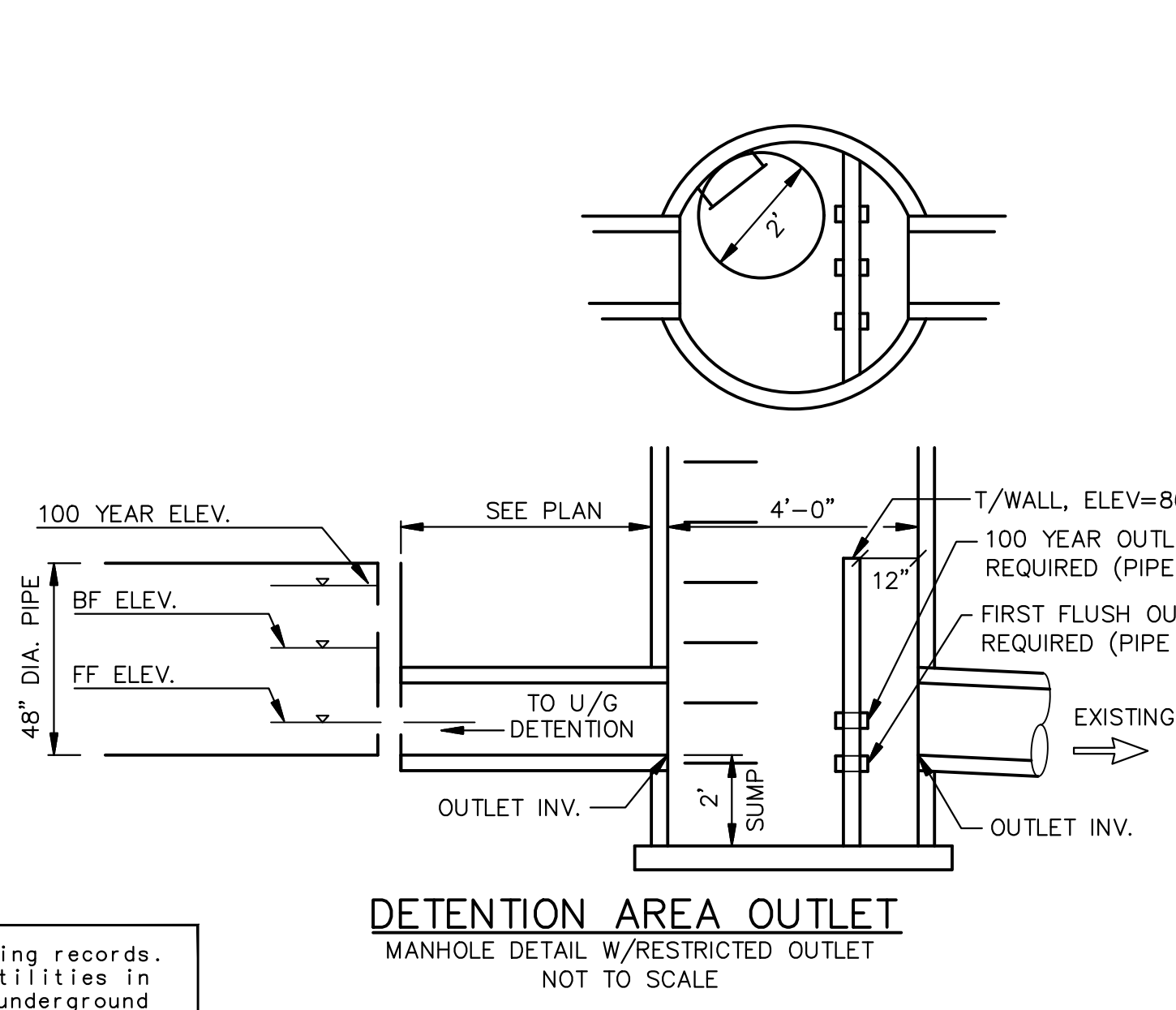
Infiltration Area: 3349 sq ft

Infiltration Rate, Average: 3.60 in/hr

Infiltration Flow Rate: 1004.70 cft/hr

Time to Fully Drain: 18.0 hr

This is less than 48 hours max, so the basin complies with the drawdown requirement.



UNDERGROUND DETENTION NOTES:
 STORMWTR DETENTION/INFILTRATION IS PROPOSED UTILIZING STORMTRAP PRECAST CONCRETE CHAMBERS PLACED ON STONE BEDDING.
 BOTTOM OF STONE = 861.50
 TOP OF STONE = 862.50
 TOP OF CHAMBERS = 876.75

Soil Boring No. 1-01

Project Name: Forest Avenue Development
 Project Location: 721 South Forest Avenue, Ann Arbor, Michigan
 G2 Project No. 223427
 Latitude: 42.27308° Longitude: -83.73256°

ELEV. (ft)	PROF. FILE	SUBSURFACE PROFILE		SOIL SAMPLE DATA							
		DEPTH (ft)	GROUND SURFACE ELEVATION: 870.8 ft ±	SAMPLE TYPE NO.	BLOBS/BLANCHES	STD. WTL. RESISTANCE (lb)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONF. COMP. STR. (psf)		
865.8		0.0	Road Gravel: Light Gray Sandy Gravel with trace silt	S-01	3	3	6	5	12		
		1.0	Fill: Loose Dark Brown Silty Sand with trace gravel and clay	S-01	3	3	6	5	12		
		3.0	Fill: Loose Yellowish Brown Sand with trace gravel	S-02	5	5	8	5	12		
		5.0	Fill: Loose Dark Brown Silty Sand with trace gravel (Buried Topsoil) (Organic Matter Content = 3.44%)	S-03	5	5	9	5	12		
		7.0	Loose Brown Silty Sand with trace gravel; occasional silt seams	S-04	10	5	6	5	12		
860.8		10.0	Loose to Medium Compact Brown Sand with trace silt and gravel	S-05	12	12	6	5	12		
855.8		15.0	End of Boring @ 15 ft	S-06	15	6	6	5	12		

Total Depth: 15 ft
 Drilling Date: August 17, 2022
 Inspector: M. Majed
 Contractor: DLZ American Drilling, Inc.
 Driller: Devin

Water Level Observation: Dry during drilling and upon completion
 Excavation Backfilling Procedure: Auger cuttings and bentonite chips

Drilling Method: 3-1/4 inch inside-diameter hollow-stem augers

Figure No. 5

Soil Boring No. 1-02

Project Name: Forest Avenue Development
 Project Location: 721 South Forest Avenue, Ann Arbor, Michigan
 G2 Project No. 223427
 Latitude: 42.27308° Longitude: -83.73211°

ELEV. (ft)	PROF. FILE	SUBSURFACE PROFILE		SOIL SAMPLE DATA						
		DEPTH (ft)	GROUND SURFACE ELEVATION: 870.7 ft ±	SAMPLE TYPE NO.	BLOBS/BLANCHES	STD. WTL. RESISTANCE (lb)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	UNCONF. COMP. STR. (psf)	
865.8		0.0	Road Gravel: Light Gray Sandy Gravel with trace silt	S-01	7	7	9	26		
		1.0	Fill: Medium Compact Brown Sandy Gravel with trace silt; occasional brick debris (Auger Refusal - Offset Boring)	S-02	3	3	6	12		
		3.0	Medium Compact Brown Silty Sand with trace gravel; occasional silt seams	S-03	3	3	6	6		
		5.0	(Infiltration Rate = 3.6 iph)	S-04	3	3	6	12		
		7.0	Loose to Medium Compact Brown Sand with trace gravel; occasional clay seams	S-05	11	11	13	13		
855.8		10.0	End of Boring @ 15 ft	S-06	11	11	22			

Total Depth: 15 ft
 Drilling Date: August 17, 2022
 Inspector: M. Majed
 Contractor: DLZ American Drilling, Inc.
 Driller: Devin

Water Level Observation: Dry during drilling and upon completion
 Excavation Backfilling Procedure: Auger cuttings and bentonite chips

Drilling Method: 3-1/4 inch inside-diameter hollow-stem augers

Figure No. 6

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M:\Civil\136_P\0\12170\0\Site Plan\22170BSP.dwg, 3/1/2023 7:41 AM, Jim Ahern, 7 STORM WATER MANAGEMENT PLAN, MCLC PDF, ps3
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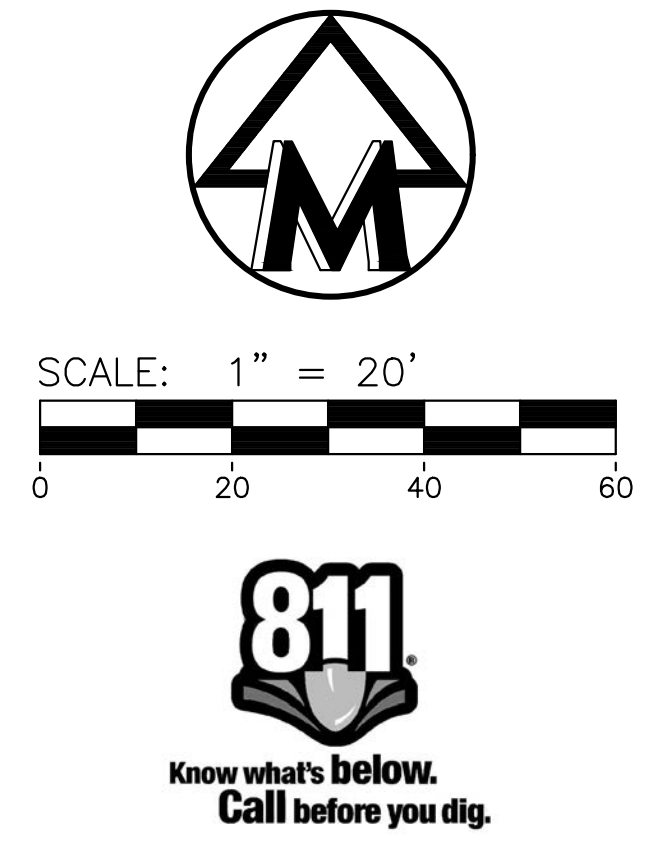
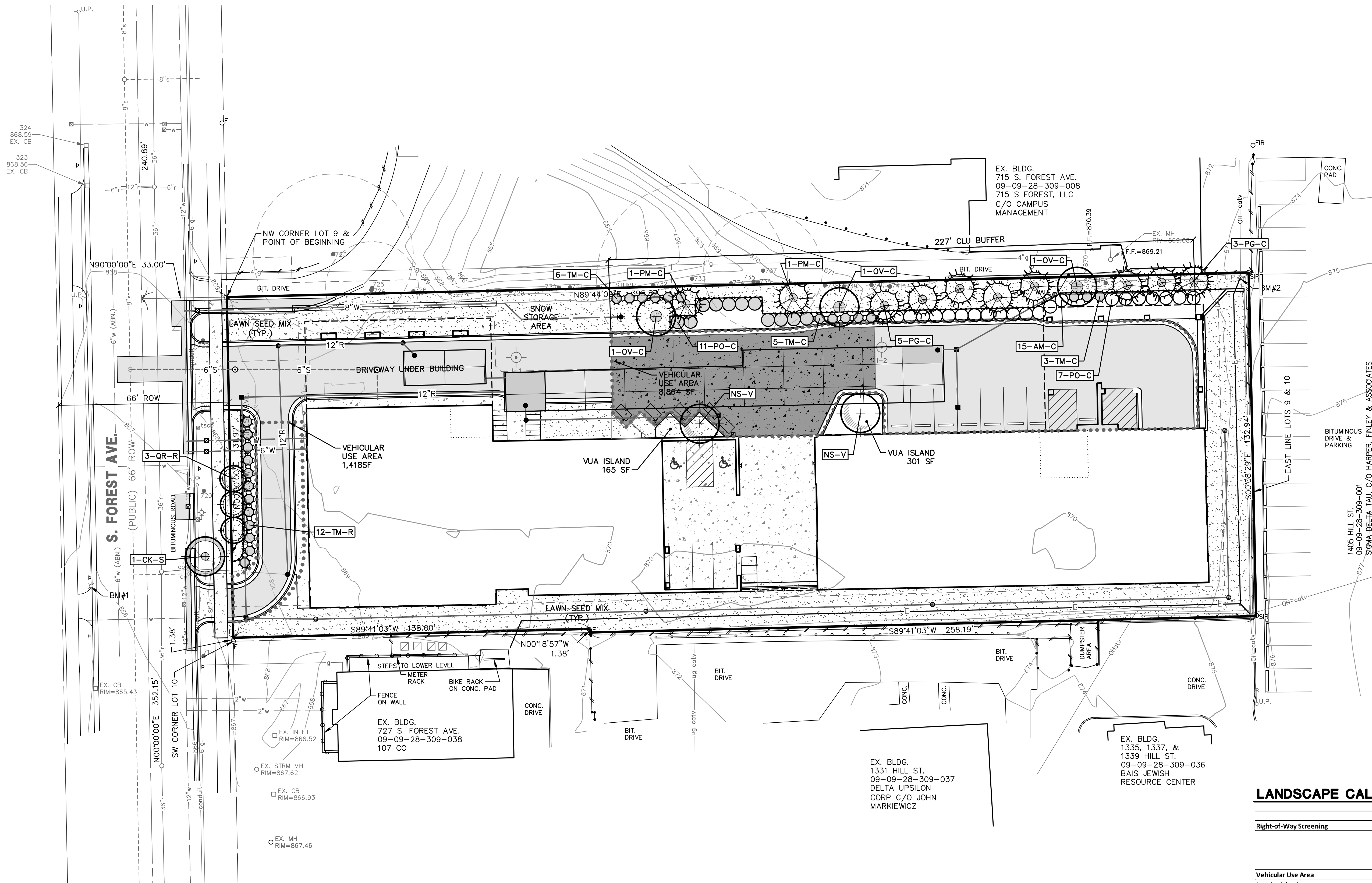
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VERVE ANN ARBOR
 SITE PLAN AND PUD REZONING FOR CITY COUNCIL
 STORM WATER MANAGEMENT PLAN

JOB No. 22170
 REV. DATE 11/18/22
 PER. CITY REVIEW

DATE: 9/21/22
 SHEET 7 OF 22
 ENGR. JCA
 CADD: JCA
 PLOT: SWB
 TECH: /Z2170BSP

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



LANDSCAPE LEGEND

- PROPOSED CANOPY TREE (VEHICULAR USE AREA)
- PROPOSED CANOPY TREE (RIGHT-OF-WAY SCREEN)
- PROPOSED CANOPY TREE (CONFLICTING LAND USE BUFFER)
- PROPOSED EVERGREEN TREE (CONFLICTING LAND USE BUFFER)
- PROPOSED CANOPY TREE (STREET)
- PROPOSED DECIDUOUS SHRUBS
- PROPOSED EVERGREEN SHRUBS
- EXISTING TREE TO REMAIN
- PROPOSED LAWN AREA
- PROPOSED EDGING
- VEHICULAR USE AREA LIMITS

PLANT SCHEDULE

Total	Street (-S)	VUA (-V)	ROW (-R)	CLU (-C)	Symbol	Botanical Name	Common Name	Size	Spacing	Root	Remarks
Trees											
1	1				CK	Cornus kousa	Kousa Dogwood	2" cal.	15' o.c.	B&B	single stem
2		2			NS	Nyssa sylvatica	Black Gum	2.5" cal.	15' o.c.	B&B	Single Stem
3			3		OV	Ostrya virginiana	Hop Hornbeam	2.5" cal.	15' o.c.	B&B	
8			8		PG	Picea glauca	White Spruce	8" ht.	15' o.c.	B&B	Full
2			2		PM	Picea mariana	Black Spruce	8" ht.	15' o.c.	B&B	Full
3			3		QR	Quercus robur x alba 'Crème de la Crème'	Crimson Spire Oak	2.5" cal.	10' o.c.	B&B	fastigiate
19	1	2	3	13	Total						
Shrubs											
15			15		AM	Aronia melanocarp 'autumn magic'	Autumn Magic chokeberry	24" ht	5' o.c.	#5 cont.	
18			18		PD	Physocarpus opulifolius 'Little Devil'	Little Devil Ninebark	3-4' ht	5' o.c.	#5 cont.	
20			12	8	TM	Taxus x media 'Densiformis'	Densiformis yew	18-24" ht	5' o.c.	#5 cont.	

LANDSCAPE CALCULATIONS

	Required	Proposed
Right-of-Way Screening		
	10ft when VUA viewed from ROW 1 tree per 30ft; continuous hedge/screen 30inches in ht 87ft = 3 trees and screening	3 trees and 12 shrubs proposed
Vehicular Use Area		
Interior islands	1:20f ratio for islands 8,864 sf / 20 = 443 sf islands	466 sf proposed
Bio-retention Island	if >750sf islands; 50% bioretention	Not applicable - required interior landscape area less than 750sf
Interior island trees	1 tree per island; 1 tree per 250sf island	2 trees proposed
Snow pile storage	identify locations on plan	identified on landscape plan
Conflicting Land Use Buffer		
when adjacent to public park and R4 adjacent to residential purposes	15ft wide; 1 tree per 15ft, 50% evergreen; continuous screening 4ft high	13 proposed trees, 3 existing trees, 41 proposed shrubs *
Street Trees		
Street trees	1 tree per 45ft minus curb cuts 87ft / 45ft = 2 trees	1 proposed tree, 1 existing tree (720)
Street tree canopy loss fee	total dbh removed - caliper replacement trees x \$244 per inch (5in - 2in) x \$244 = \$732	\$732 to City Tree Fund prior to issuing building permits **
Tree Mitigation		
	50% dbh of LM tree removed	Not applicable - no landmark trees proposed to be removed

* A CLUB is provided along the vehicular use area however as part of the PUD approval relief from providing a CLUB around the perimeter of the parcel is requested.
** When applying for a grading permit, a ROW Street Tree Permit will also be required. There is no cost for this permit. Include the project number (SP22-2013) on the application. The Canopy Loss Fee will be invoiced through that permit.

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RYAN BLUMB
314-396-2835

DATE: 9/21/22
SHEET 8 OF 22

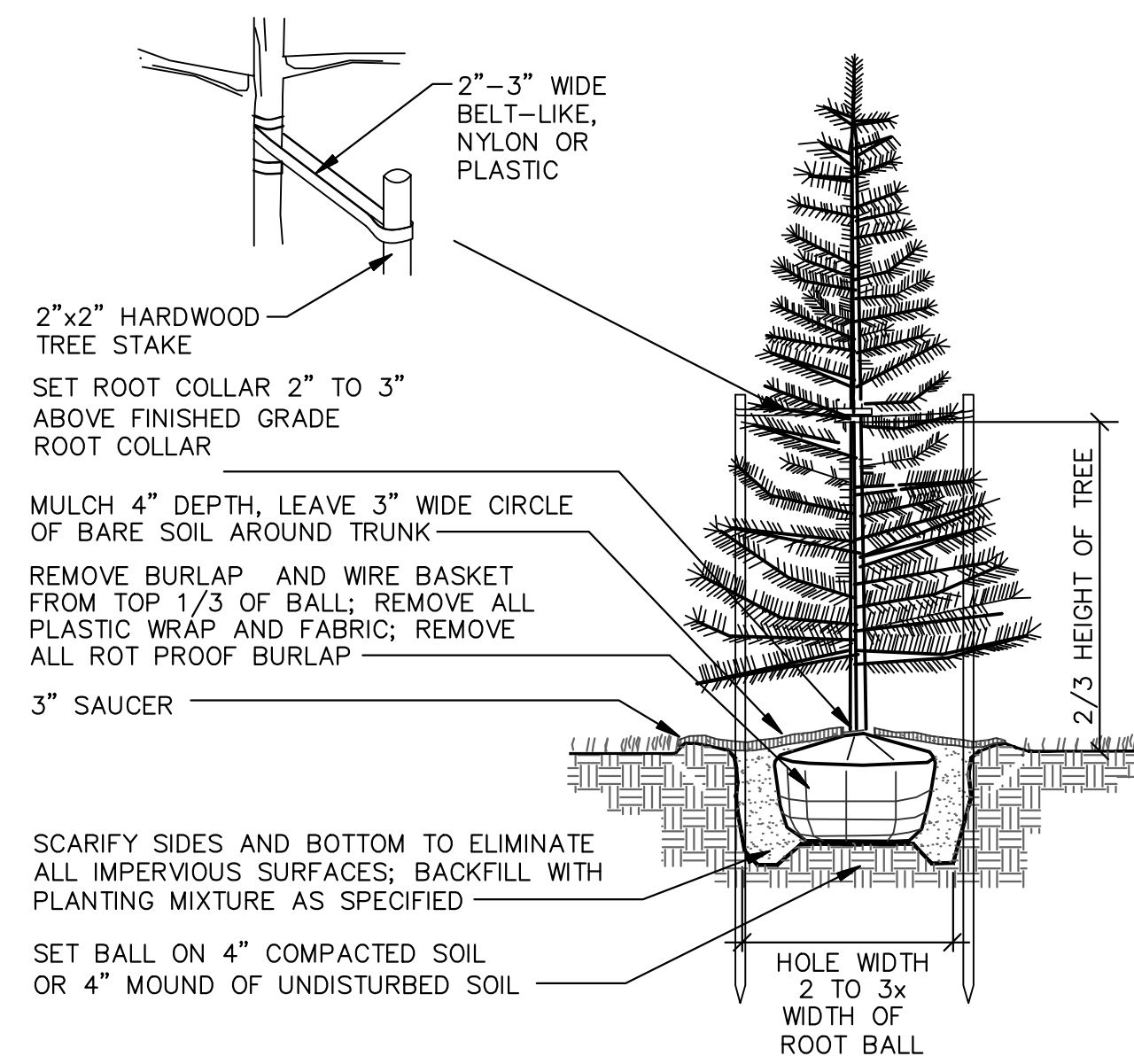
REV. DATE: 11/18/22
REV. CITY REVIEW: 12/30/22
REV. CITY REVIEW: 2/15/23
REV. CITY REVIEW: /22/20/PT

JOB No. **22170**

VERVE ANN ARBOR
SITE PLAN AND PUD REZONING FOR CITY COUNCIL
LANDSCAPE PLAN

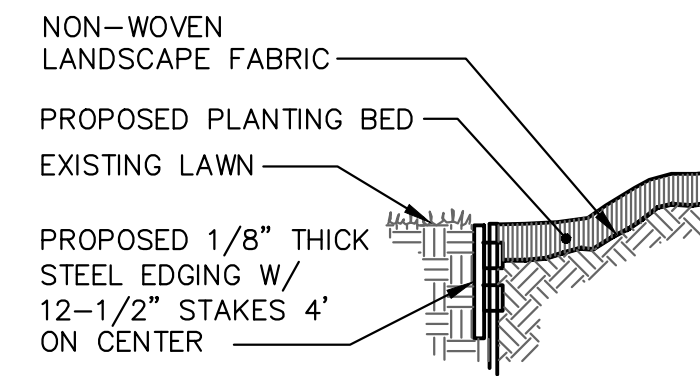
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NOTE: A: STAKING IS ONLY REQUIRED IF THE SITE IS WINDY OR THE TREES ARE GREATER THAN 3" CALIPER. IF TREES MUST BE STAKED, THE STAKED SHALL BE REMOVED IN ONE YEAR.



EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

NOTE: MATERIALS TO BE FLUSH WITH THE TOP OF EDGING



STEEL EDGING DETAIL
NOT TO SCALE

3 SECTIONS OF 2 PLY REINFORCED HOSE PER TREE

NOTE: PRUNE 20% OF BRANCHES RETAINING NORMAL PLANT SHAPE. TREE SHALL BEAR SAME RELATION TO FINISH GRADE AS IN NURSERY.

DO NOT CUT LEADER

2 PLY REINFORCED RUBBER HOSE POSITIONED DIRECTLY ABOVE FIRST BRANCH

12-14 GA. GALV. DOUBLE STRAND TWISTED GUYING WIRE, 3 GUYS PER TREE, 120" APART

TREE WRAP

4" MULCH AS SPECIFIED REMOVE BURLAP FROM TOP 1/3 OF BALL; REMOVE ALL PLASTIC WRAP AND FABRIC; REMOVE ALL ROT PROOF WRAP

3" SAUCER

2"x 2"x 30" GUYING STAKE

SCARIFY SIDES AND BOTTOM TO ELIMINATE IMPERVIOUS SURFACES; BACKFILL WITH PLANTING MIXTURE AS SPECIFIED

SET BALL ON 4" COMPACTED SOIL OR 4" MOUND OF UNDISTURBED SUBGRADE

DECIDUOUS TREE — PLANTING DETAIL
SCALE : NTS

DO NOT TRIM EVERGREENS
SHRUB SHALL BEAR SAME RELATION TO FINISH GRADE AS IN NURSERY
DO NOT PLANT SHRUBS TO WITHIN 42" OF TREE TRUNKS IN SHRUB BEDS

4" MULCH AS SPECIFIED

3" SAUCER

REMOVE BURLAP FROM TOP 1/3 OF BALL; REMOVE ALL PLASTIC WRAP AND FABRIC; REMOVE ALL ROT PROOF WRAP

PLANT MIXTURE AS SPECIFIED

SCARIFY SIDES & BOTTOM TO ELIMINATE IMPERVIOUS SURFACES

SET BALL ON 4" COMPACTED SOIL OR 4" MOUND OF UNDISTURBED SUBGRADE

SHRUB PLANTING DETAIL
NOT TO SCALE

NOTE: PRUNE 20% OF BRANCHES AND FOLIAGE RETAINING NORMAL PLANT SHAPE

SHAPE DO NOT TRIM EVERGREENS

SHRUB SHALL BEAR SAME RELATION TO FINISH GRADE AS IN NURSERY

DO NOT PLANT SHRUBS TO WITHIN 42" OF TREE TRUNKS IN SHRUB BEDS

4" MULCH AS SPECIFIED

3" SAUCER

REMOVE BURLAP FROM TOP 1/3 OF BALL; REMOVE ALL PLASTIC WRAP AND FABRIC; REMOVE ALL ROT PROOF WRAP

PLANT MIXTURE AS SPECIFIED

SCARIFY SIDES & BOTTOM TO ELIMINATE IMPERVIOUS SURFACES

SET BALL ON 4" COMPACTED SOIL OR 4" MOUND OF UNDISTURBED SUBGRADE

EVERGREEN SHRUB PLANTING DETAIL
NOT TO SCALE

LANDSCAPE NOTES

- For any plant quantity discrepancies between the plan view and the plant schedules, the plant schedule shall take precedence.
- Plant materials shall be selected and installed in accordance with standards established by the City of Ann Arbor.
- In-ground automatic irrigation shall be provided for all landscaped planting or water outlets shall be provided within 150 feet of all required plantings.
- All diseased, damaged or dead material shown on the site plan as proposed plantings shall be replaced by the end of the following growing season.
- Restore disturbed areas with a minimum of four (4) inches of topsoil and then seed/fertilize/mulch.
- All disturbed areas not to be seeded with seed mixes identified on the Landscape Plan shall be lawn areas. Fertilizer for the initial installation of lawns shall provide not less than one (1) pound of actual nitrogen per 1,000 sq ft of lawn area and shall contain not less than two percent (2%) potassium and four percent (4%) phosphoric acid.
Lawn (turfgrass) seed mix shall consist of:
15% Park Kentucky Bluegrass
10% Park Kentucky Bluegrass
40% Ruby Creeping Red Fescue
15% Pennine Perennial Ryegrass
20% Scalds Hard Fescue
Seed shall be applied at a rate of five pounds (5 lbs) per 1000 sq ft. Mulch within 24 hours with two (2) tons of straw per acre, or 71 bales of excelsior mulch per acre. Anchor straw mulch with spray coating of adhesive material applied at the rate of 150 gals. / acre.
7. After the first growing season, only fertilizers that contain NO phosphorus shall be used on the site.
8. All seeded areas with slopes less than 1:3 (one vertical foot for every 3 horizontal feet) shall be mulched with straw mulch at the rate of two (2) bales per 1,000 square feet. All seeded areas with slopes greater than 1:3 shall be seeded and biodegradable erosion control blanket North American Green SC150, or equivalent, shall be applied with biodegradable stakes.
9. Deciduous plants shall be planted between March 1 and May 15 and from October 1 until the prepared soil becomes frozen. Evergreen plants shall be planted between March 1 and June 1 and from August 15 to September 15.
10. All planting beds are to receive four (4) inches of shredded hardwood bark mulch.
11. All trees to be located a minimum of 10 feet from public utilities.
12. All single trunk, deciduous trees shall have a straight and a symmetrical crown with a central leader. One sided trees or those with thin or open crowns shall not be accepted.
13. All evergreen trees shall be branched fully to the ground, symmetrical in shape and have not been sheared in the last three (3) growing seasons.
14. All compacted subgrade soils in proposed landscape areas shall be tilled to a minimum 12-inch depth prior to placement of topsoil, geotextile fabric, or other planting media as specified.
15. Proposed trees will be planted a minimum of 15 feet apart.
16. Planting Soil: Existing, in-place or stockpiled topsoil. Supplement with imported topsoil as needed. Verify suitability of existing surface soil to produce viable planting soil. Final approval of soil composition shall be provided by the landscape contractor. Remove stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth. Mix surface soil with the following soil amendments to produce planting soil:
a. Ratio of Loose Compost to Topsoil by Volume: 1:4
b. Weight of Lime per 1000 Sq. Ft.: Amend with lime only on recommendation of soil test to adjust soil pH.
c. Weight of Sulfur or Aluminum Sulfate per 1,000 Sq. Ft.: Amend with sulfur or aluminum sulfate only on recommendation of soil test to adjust soil pH.
d. Volume of Sand: Amend with sand only on recommendation of Landscape Architect to adjust soil texture.
e. Weight of Slow-Release Fertilizer per 1,000 Sq. Ft.: Amend with fertilizer only on recommendation of soil test to adjust soil fertility.
17. Snow storage areas are located along the edges and corners of parking areas as shown on the plan.
18. All species deviations must be approved in writing by the City of Ann Arbor prior to installation.
19. The City of Ann Arbor has adopted an ordinance limiting phosphorus in fertilizer. To assist in compliance with the State mandated TMDL for phosphorus within the Middle Huron River basin. Applications of fertilizer beyond the initial topsoil and seeding shall be a fertilizer with no phosphorus.

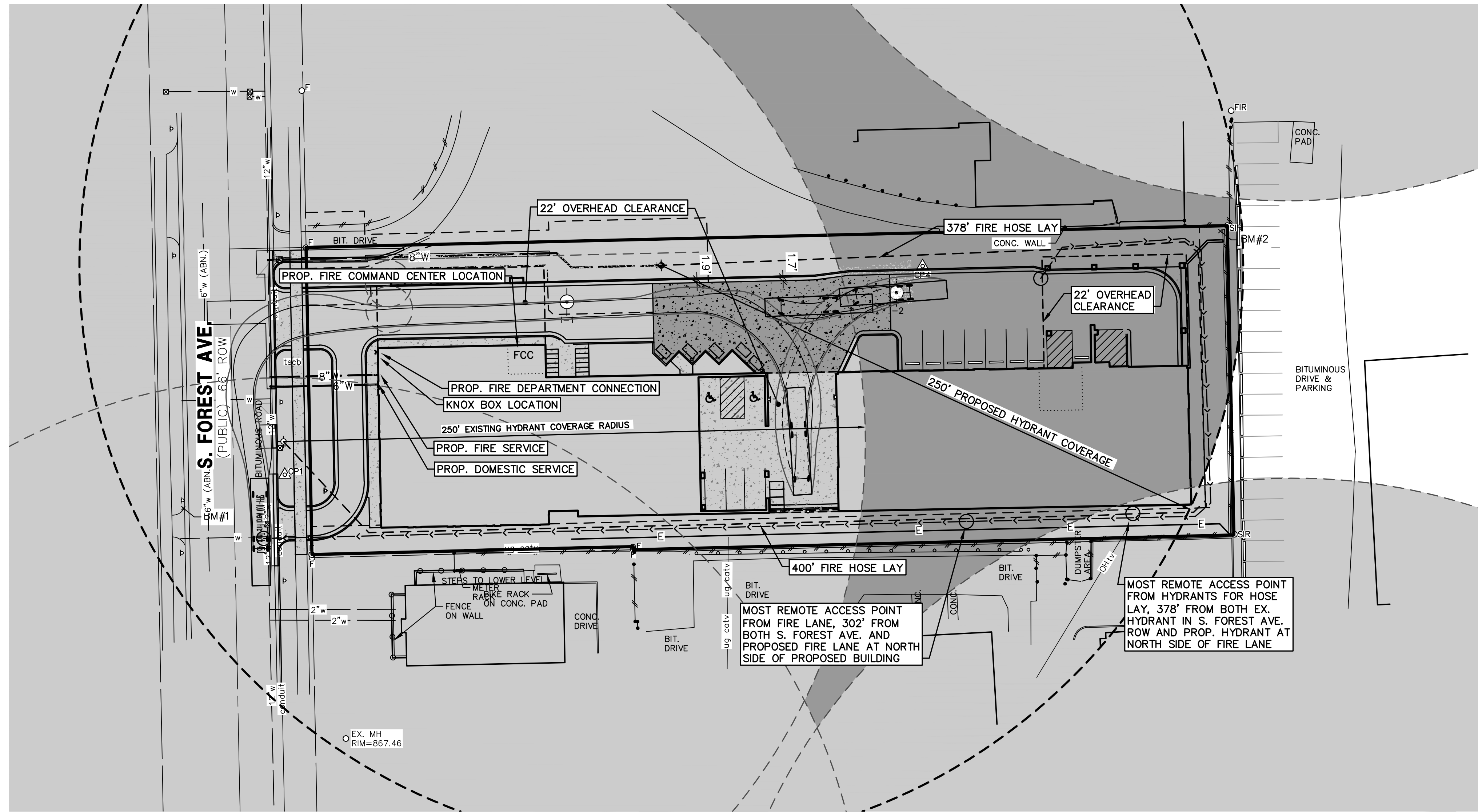
Maintenance:

- Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
- Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
- Contractor shall warranty all plant material and trees to remain alive and be in healthy, vigorous and like new condition for the specified period from installation to Substantial Completion. The entire Landscaping Project, including but not limited to: plants (perennials), trees, shrubs, mulches, shrubs, etc are to be under Warranty for One Year after Substantial Completion date of the Project. At the end of the specified One Year Warranty period the Owner's Representative will inspect plant material for compliance. Contractor shall replace, in accordance with the drawings and specifications, all plants, trees, shrubs, etc or as determined by the Owner's Representative, are in an unhealthy or unsightly condition. Warranty shall not include damage or loss of plants, trees, and shrubs caused by fires, floods, freezing rains, lightning storms, or winds over 75 miles per hour, acts of vandalism or negligence on the part of the owner, or any other incident beyond landscape contractor's control.
- Watering: The contractor shall keep seed moist for optimum plant growth (1" of total water per week, including rainfall) until the grass and/or flowers are four (4) inches high typical.
- Protection from traffic and erosion in newly seeded areas is the responsibility of the contractor. Safety fences and/or silt fence with appropriate signage may be used at the contractor's expense until the grasses and flowers are fully established.
- Erosion shall be repaired by the contractor.
- Turf installations shall meet the following criteria as determined by Owner:
a. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
b. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
c. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

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CLIENT VERVE ANN ARBOR FOREST, LLC 3000 LOCUST STREET ST. LOUIS, MO 63103 RYAN BUMB 314-396-2835	VERVE ANN ARBOR SITE PLAN AND PUD REZONING FOR CITY COUNCIL LANDSCAPE NOTES AND DETAILS
22170	
JOB No. 22170 REVISIONS: PER CITY REVIEW	DATE: 9/21/22 SHEET 9 OF 22 REV. DATE: 11/18/22 CADD: JCA ENG: JCA PK: SWB TECH: SWB /22170L01

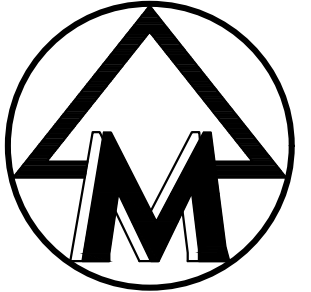
MA:\Civil\136_Proj\122170\Site Plan\22170FPF.dwg, 3/1/2023 7:42 AM, Jim Albert, 10 FIRE PROTECTION PLAN, MCLLC PDF, p03
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FIRE PROTECTION PLAN

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SCALE: 1" = 30'
0 30 60 90



FIRE PROTECTION PLAN NOTES:

1. Water services are to be separate domestic and fire lines.
2. Addressing: numerics shall be a minimum of 4 inches in height and clearly visible when approaching the building.
3. Flow requirements: flow shall comply with NFPA 13 standards and shall meet 2015 International Fire Code (IFC) standards found in Appendix B, Table B 105.1 of the code.
4. Fire department connections (FDC's) shall be within 100 feet of a hydrant.
5. Fire department connection (FDC): hook-up location is subject to Fire Marshal's approval.
6. FDC's shall be 4 inch Storz connections or (2) 2 1/2 inch NST connections.
7. FDC access shall comply with IFC 912.3.
8. FDC signage shall be provided and shall comply with IFC 912.4.
9. Fire protection alarm and detection system shall be in compliance with all applicable codes adopted by the City of Ann Arbor, including NFPA 72, 2007 edition and all other referenced standards.
 - a. A horn strobe device shall be installed above the FDC and shall activate upon sprinkler water flow.
 - b. Emergency responder radio coverage shall comply with 2015 IFC Section 510.
 - c. Emergency voice/alarm communications system shall comply with 2015 IFC Section 907.6.2.2.
 - d. Occupant notification appliances shall activate throughout the notification zones upon sprinkler water flow.
 - e. Place signage on Fire Suppression System Control Room door (IFC 2015 Section 509.1) if applicable.
10. Knox Box emergency access system with keys to access the building, the Fire Suppression System Control Room (if applicable), an elevator key, and any other keys to areas that may be relevant during emergencies will be required. Knox Box with proper keys shall be in place prior to issuance of Certificates of Occupancy for the buildings.
11. The Knox Box shall be mounted no higher than 6 feet from grade in an approved location on the exterior for emergency access to the building as well as access to the Fire Suppression System Control Rooms if applicable.
12. Construction sequencing
 - a. Hydrants must be in service and approved during construction.
 - b. Hydrants providing protection coverage for the building must be in service and approved by both engineering and fire departments before the fire department will support permit issuance for new construction phase and before combustible materials are placed on the job site.
 - c. Storage areas for construction materials must be approved so as not to interfere with fire/emergency site access.
 - d. If site access is to be restricted during construction, Knox Box locks for gates are to be provided.
13. No firewalls will be constructed within the building.
14. Booster pumps will be provided on the domestic water service and the fire suppression water service leads. The pumps shall meet 2015 IFC standards, Section 914.3.1.2.
15. No separate Fire Suppression System Control Room is required.

JOB No. **22170**

DATE: 9/21/22
SHEET 10 OF 22

REV.	DATE	BY
1	11/18/22	JCA
2	12/30/22	JCA

PER CITY REVIEW	ENG. JCA
PER CITY REVIEW	PM. SWB
PER CITY REVIEW	TECH. SWB
PER CITY REVIEW	/ZZ2170FPF

VERVE ANN ARBOR
SITE PLAN AND PUD REZONING FOR CITY COUNCIL
FIRE PROTECTION PLAN

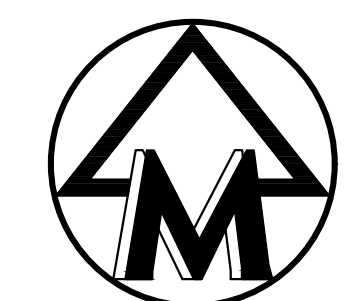
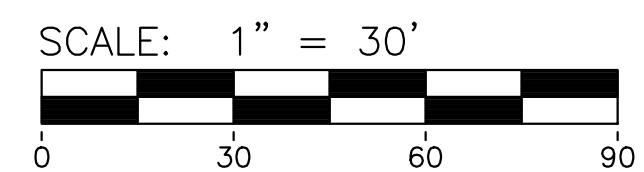
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M:\Civ\132_P\132170\Site Plan\22170RFP.dwg, 3/1/2023 7:42 AM, Jim Albert, 11 SOLID WASTE PLAN, MCLC PDF.ppt3
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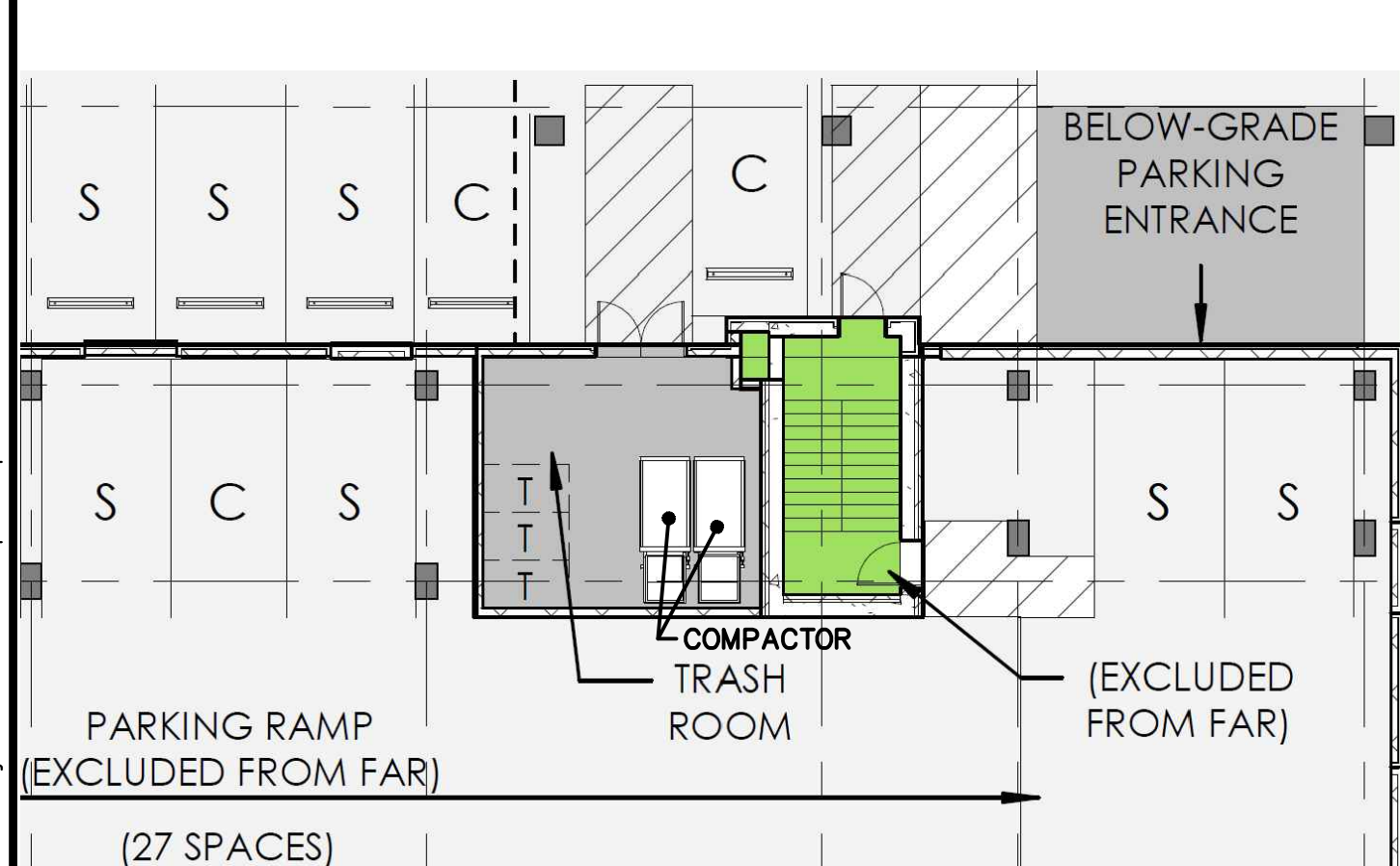


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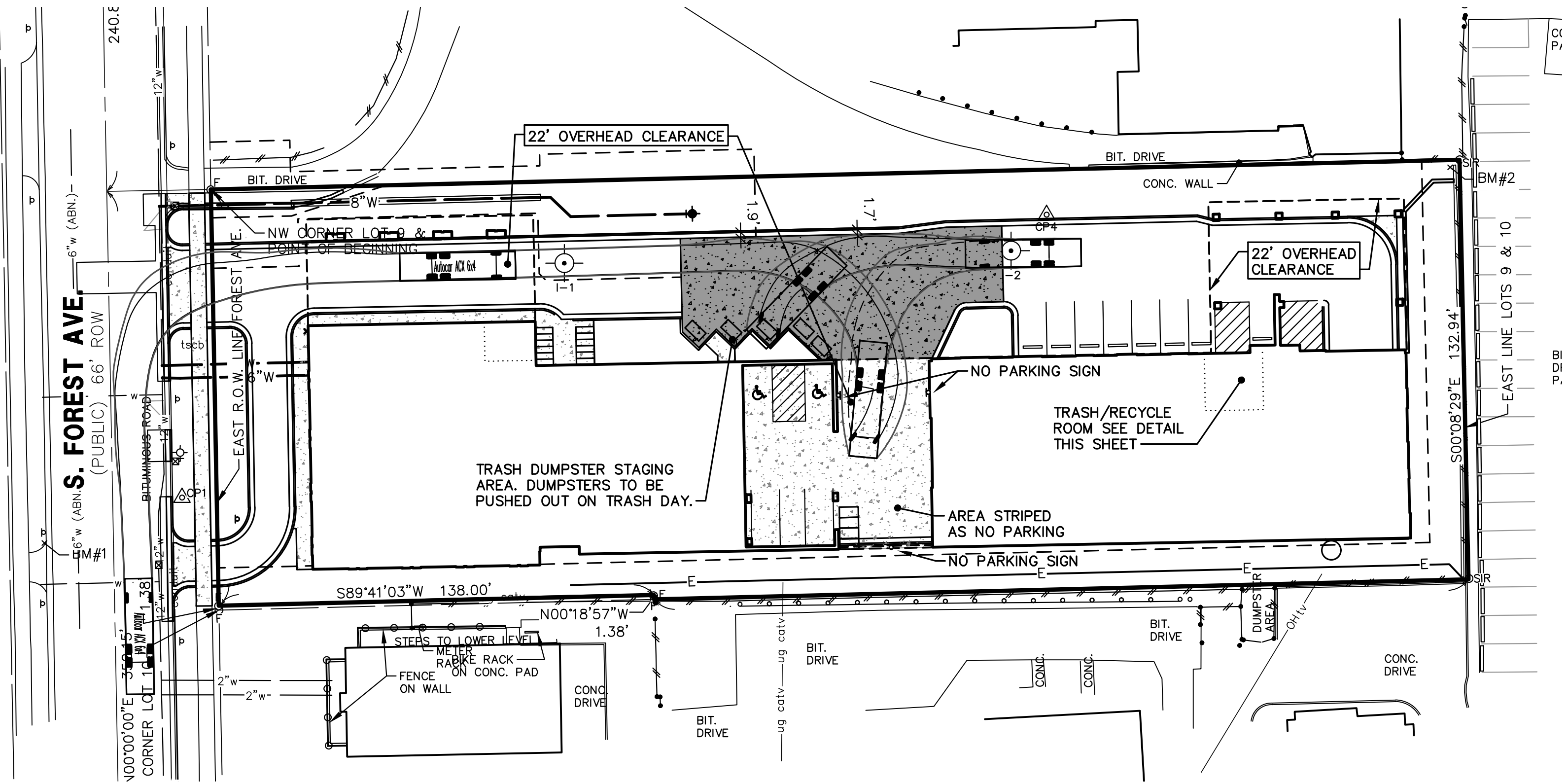
VERVE ANN ARBOR
 SITE PLAN AND PUD REZONING FOR CITY COUNCIL
 SOLID WASTE PLAN

11

JOB No. 22170
 DATE: SHEET 11 OF 22
 REV. DATE: 12/15/22
 PER CITY REVIEW: ENG. JCA
 PER CITY REVIEW: 2/14/23
 PER CITY REVIEW: PM: SWB
 PER CITY REVIEW: TECH: /Z2170RFP



TRASH/RECYCLE ROOM DETAIL



SOLID WASTE COLLECTION

Diversified Waste Solutions has reviewed the property information and site plans. Below are the comments and recommendations for the waste and recycling operation at Verve Ann Arbor 721 Forest Ave. Ann Arbor, MI

- For the current building and demographic plans, services would be as follows:
- Site services:
- 745 beds x .3 cubic yards = 224 total cubic yards per month generated.
 - Weekly volume of 52 cubic yards.
 - Trash: 40 yards per week
 - Handling the trash will require compaction (3:1)
 - 3-yard steel compactor containers - 4-5 per week
 - Recycling: 12 yards per week
 - Uncompacted
 - 3-yard poly containers - 4 per week
 - Hauling:
 - Building maintenance staff to stage dumpsters for pickup
 - Staging enclosure of at least 13' W x 7' D would be needed.
 - Waste Caddy or similar equipment can be ordered to assist in container movement.
 - Frequency
 - Once per week
 - 4 - 6 containers per pickup (Assuming trash and recycling in separate trucks, different days)
 - Twice per week (M F)
 - 2-3 containers per pickup
 - Recommended
 - Less storage duration of odorous materials
 - Less time truck is blocking drivers while servicing
 - Less area/container count needed in the trash room
 - Twice per week (M F)
 - 2-3 containers per pickup
 - Recommended
 - Less storage duration of odorous materials
 - Less time truck is blocking drivers while servicing
 - Less area/container count needed in the trash room

- Additional Notes:
- Compost services can be added in the trash room through multiple 96gal cart or 2 yard small container storage. The recommended twice per week pickup will allow more than ample room for the additional waste stream.
 - 22' clearance in center drive and plan North overhangs are sufficient for truck travel/turnaround, but not dumping (22.7' on standard truck)
 - City may designate dumpster staging configuration if staging by building staff is unserviceable.

James Brando
 Director of Business Operations
Diversified Waste Solutions
 (630) 262-8275
 321 Stevens St. Suite A Geneva, IL 60134 James@dwsmgt.com

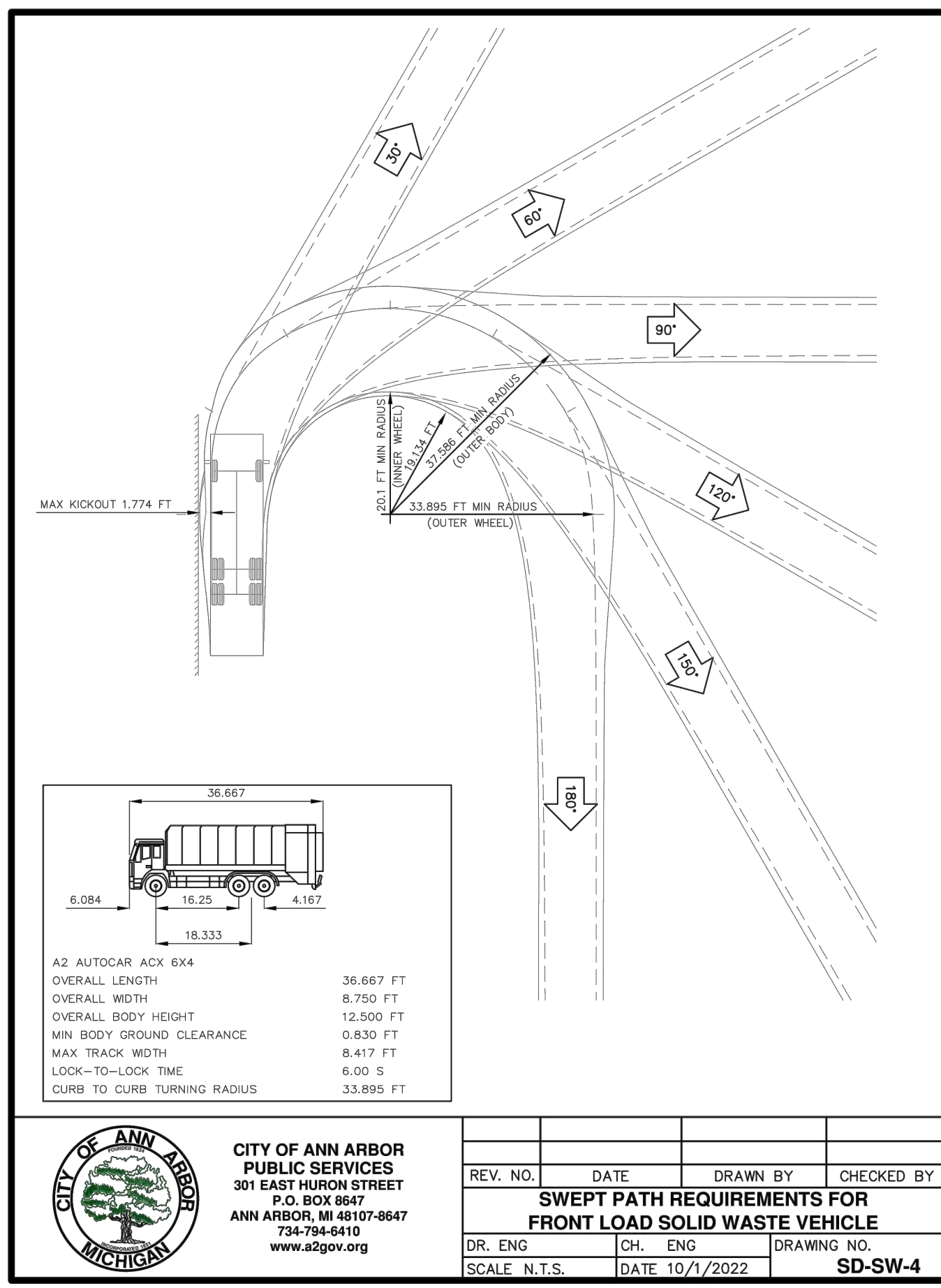
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Refuse and Recyclables Management Plan

The 721 S Forest apartment building will have trash and recycling chutes serving all floors that will deposit Solid Waste and Recyclables in a single solid waste & recycling room on the ground floor where compactors will deposit said solid waste and recyclables into roll able containers. There will be seven (7) three (3) yard rolling compactor containers for trash and four (4) three (3) yard containers for recyclables. Trash and Recycling will be serviced two (2) times per week for trash and two (2) times per week for recyclables with the number of containers serviced on each pick up varying.

These containers will be brought out of the waste/recyclables handling room by the building maintenance staff and moved to the container pick-up staging area outside the waste/recyclables handling room to be serviced by the trash and recyclables collection trucks. The emptied containers will then be returned to the waste/recyclables handling room by the building maintenance staff. The rolling containers will not remain outside the waste/recyclables handling room for more than 1 hour after being emptied.

- NOTES:**
- There is a trash room within the building that will utilize 3 cubic-yard self-containing/compacting containers for trash 3 cubic yard poly containers for recycling. Both trash and recycling will be compacted within the building and wheeled outside to a staging area for pickup. Containers will be accessed by front lifting fork. The initial plan is for garbage and recycling pickup to occur 2 times per week. The schedule and frequency of pickup will be adjusted to provide the required service.
 - Trash/recycle pickup is to be public. The City of Ann Arbor has a single hauler for all commercial refuse collection in the City, which began July 1, 2009. The City's single hauler commercial refuse collection program has the following features: A commercial refuse collection contract has been signed with Waste Management of Michigan, Inc. (WMM). WMM will be providing collection and container rental services for all commercial refuse collection service orders requested by the City. WMM was selected to provide these services through a competitive procurement. The service contract extends until June 30, 2023.



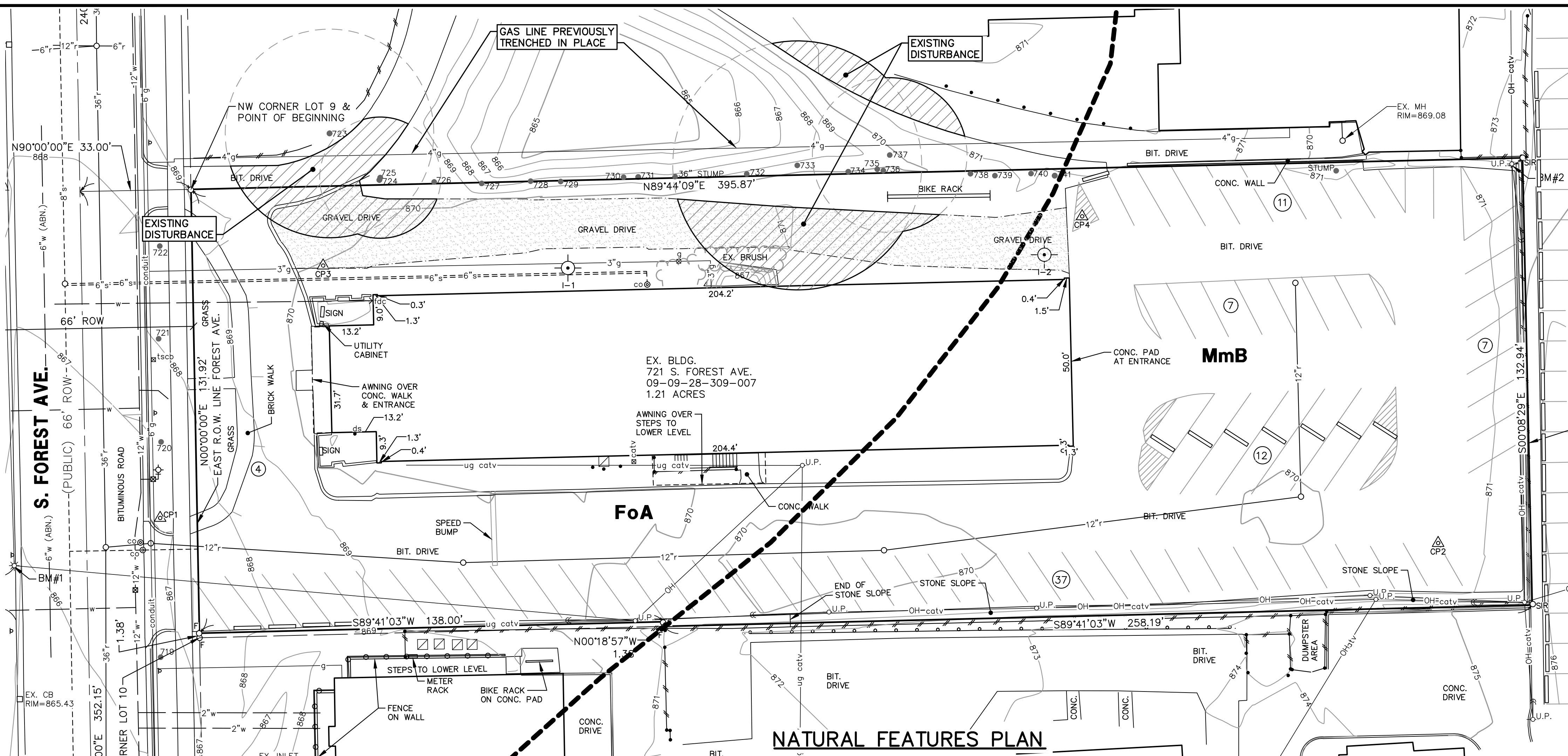
CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET P.O. BOX 8647 ANN ARBOR, MI 48107-8647 734-794-6410 www.a2gov.org	REV. NO.	DATE	DRAWN BY	CHECKED BY
	SWEEP PATH REQUIREMENTS FOR FRONT LOAD SOLID WASTE VEHICLE			
	DR. ENG	CH. ENG	DRAWING NO.	
	SCALE: N.T.S.		DATE: 10/1/2022	

CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET P.O. BOX 8647 ANN ARBOR, MI 48107-8647 734-794-6410 www.a2gov.org	REV. NO.	DATE	DRAWN BY	CHECKED BY
	SOLID WASTE GENERAL NOTES			
	DR. ENG	CH. ENG	DRAWING NO.	
	SCALE: N.T.S.		DATE: 10/1/2022	

- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF NO PARKING SIGNS ALONG THE SOLID WASTE INGRESS/EGRESS ROUTE TO ENSURE THE ROUTE REMAINS FREE OF VEHICLES.
- REFER TO ASSOCIATED STANDARD DETAILS SD-SW-1 AND SD-SW-2 FOR REQUIREMENTS ON SINGLE AND DOUBLE WIDE SOLID WASTE BIN ENCLOSURE LAYOUT AND DESIGN CRITERIA. THE CITY SHALL HAVE THE ABILITY TO MODIFY OR INTERPRET THESE DETAILS AS NECESSARY TO ACCOMMODATE THE CITY OR CITY CONTRACTOR'S NEEDS FOR SOLID WASTE PICK-UP.
- SOLID WASTE EQUIPMENT ACCESS ROADS AND SERVICE AREA SURFACES SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF COLLECTION VEHICLES WEIGHING UP TO 66,000 LBS GROSS VEHICLE WEIGHT (GVW) AND SHALL BE PROVIDED WITH AN APPROVED SURFACE SO AS TO PROVIDE ALL WEATHER DRIVING CAPABILITIES. PROPERTY OWNER SHALL BE RESPONSIBLE FOR ALL SNOW AND ICE REMOVAL REQUIRED FOR SAFE ACCESS.
- FOR SITES THAT CANNOT ACCOMMODATE A STANDARD DUMPSTER ENCLOSURE, THE DUMPSTERS MAY BE ROLLED OUT OF A BUILDING OR ALTERNATE ENCLOSURE BY THE PROPERTY OWNER TO AN APPROVED COLLECTION LOCATION.
- SOLID WASTE COLLECTION LOCATIONS MUST BE LOCATED WITHIN THE BOUNDARIES OF THE PROPERTY UNLESS AN APPROPRIATE EASEMENT IS OBTAINED.

CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET P.O. BOX 8647 ANN ARBOR, MI 48107-8647 734-794-6410 www.a2gov.org	REV. NO.	DATE	DRAWN BY	CHECKED BY
	SOLID WASTE GENERAL NOTES			
	DR. ENG	CH. ENG	DRAWING NO.	
	SCALE: N.T.S.		DATE: 10/1/2022	

M:\Civ\132_P\132170\Site Plan\22170\F1.dwg, 3/1/2023 7:42 AM, Jim Albert, 13 SITE ANALYSIS NATURAL FEATURES AND OVERLAY PLAN, MCLC PDF.ppt
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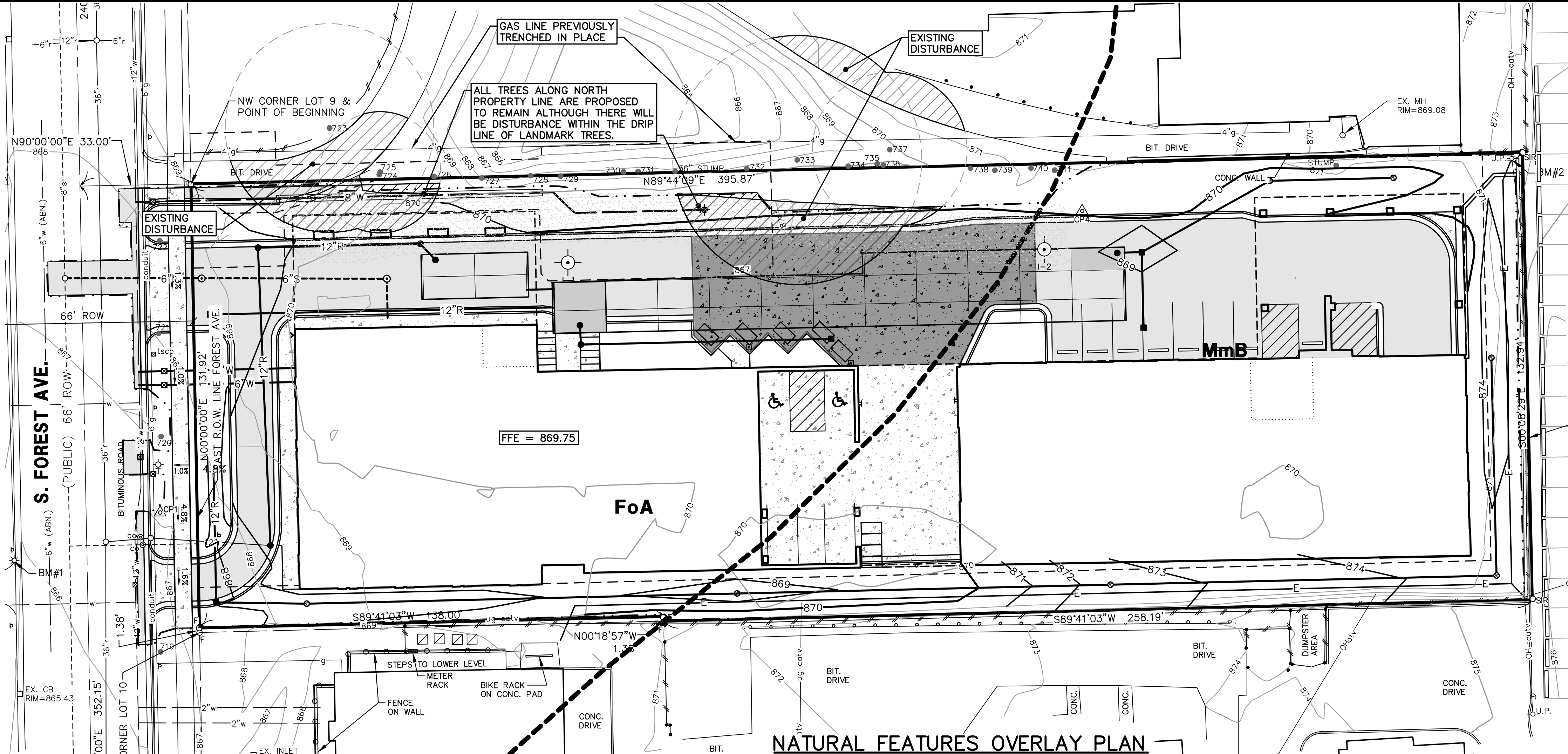


LEGEND

- 838 EXIST. CONTOUR
- x B36.2 EXIST. SPOT ELEVATION
- U.P. EXIST. UTILITY POLE
- GUY WIRE
- OH EXIST. AC UNIT
- OH EXIST. OVERHEAD UTILITY LINE
- ☆ EXIST. LIGHT POLE
- g EXIST. GAS LINE
- w EXIST. WATER MAIN
- EXIST. HYDRANT
- EXIST. GATE VALVE IN BOX
- EXIST. GATE VALVE IN WELL
- EXIST. FIRE DEPT. CONNECTION
- EXIST. STORM SEWER
- EXIST. CATCH BASIN OR INLET
- EXIST. DOWNSPOUT
- EXIST. SANITARY SEWER
- EXIST. CLEANOUT
- ug UNDERGROUND
- g CATV SIGN
- g CATV CABLE TELEVISION RISER
- g GAS METER
- POST
- FOUND IRON PIPE
- SET IRON ROD
- CONTROL PT.
- FENCE
- GUARDRAIL
- SINGLE TREE
- TREE OR BRUSH LIMIT
- SECTION CORNER

Natural Features Inventory and Impact

The site does not contain any landmark trees, 100 year floodplains, steep slopes, watercourses, wetlands or endangered species habitat. Landmark trees do exist on the property to the north and the critical root zones of four trees extend onto this site. Landmark trees include 23" black cherry, 31" red oak, 18" elm and 37" white oak. The trees currently have disturbance within their critical root zones in the form of bituminous paving and gravel driveways. Gravel and pavement drives can be seen right up to the base of the trunk of two of the trees. A previous underground gas main has likely bisected all of their critical root zones as well. While some of this existing disturbance will be removed, new pavement and the installation of a fire hydrant lead will produce new disturbance within the critical root zones. Disturbances has been kept to the minimum and generally occurs in the outer reaches of the critical root zone.



TAG#	DBH	COMMON NAME	GENUS/SPECIES	STEMS	SCORE	LM	INV	REM
719	10"	Linden	Tilia americana					
720	2"	Ginkgo	Ginkgo biloba					
721	2"	Rugged Ridge Maple	Acer myrsinifolius					X
722	3"	Sweetgum	Liquidambar styraciflua					X
723	31"	Red Oak	Quercus rubra	18	X			X
724	16"	White Mulberry	Morus alba					X
725	18"	American Elm	Ulmus americana	19	X			X
726	6"	Norway Maple	Acer platanoides	twin				X
727	8"	White Mulberry	Morus alba					X
728	6"	Black Cherry	Prunus serotina					X
729	13"	American Elm	Ulmus americana					
730	6"	American Elm	Ulmus americana					
731	7"	Black Cherry	Prunus serotina					X
732	6"	White Mulberry	Morus alba					X
733	37"	White Oak	Quercus alba	twin	21	X		X
734	6"	White Mulberry	Morus alba					X
735	10"	White Mulberry	Morus alba					X
736	7"	White Mulberry	Morus alba					X
737	23"	Black Cherry	Prunus americana	18	X			X
738	8"	American Elm	Ulmus americana					
739	14"	American Elm	Ulmus americana					
740	11"	American Elm	Ulmus americana					
741	19"	American Elm	Ulmus americana					dead

SITE SOILS INFORMATION
 FoA - Fox Sandy Loam, 0 to 2 percent slopes
 MmC - Miami Loam, 6 to 12 percent slopes

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CLIENT
 VERVE ANN ARBOR FOREST, LLC
 3000 LOCUST STREET
 ST. LOUIS, MO 63103
 RYAN BUMB
 314-396-2835

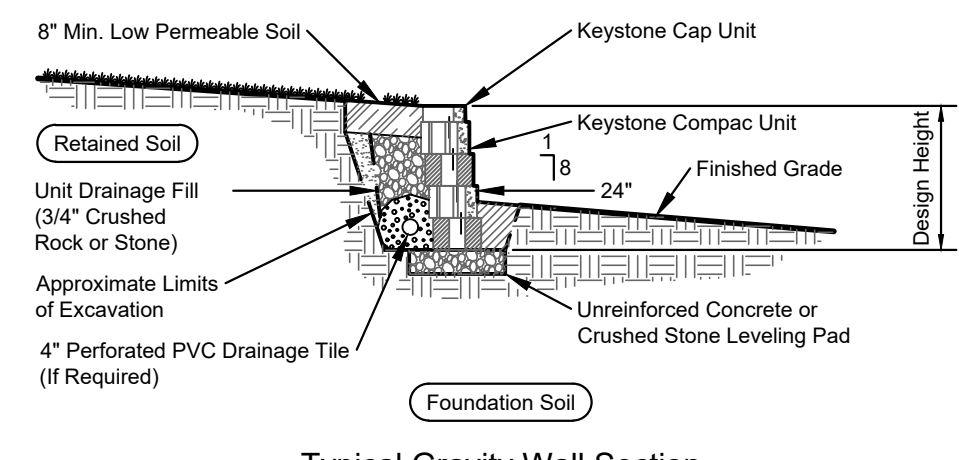
VERVE ANN ARBOR
 SITE PLAN AND PUD REZONING FOR CITY COUNCIL
 SITE ANALYSIS, NATURAL FEATURES AND OVERLAY PLAN

DATE: 9/21/22
 SHEET 13 OF 22
 REV. DATE
 ENG. JCA
 CAD: JMB
 PM: SWB
 TECH: /ZZ170NF1

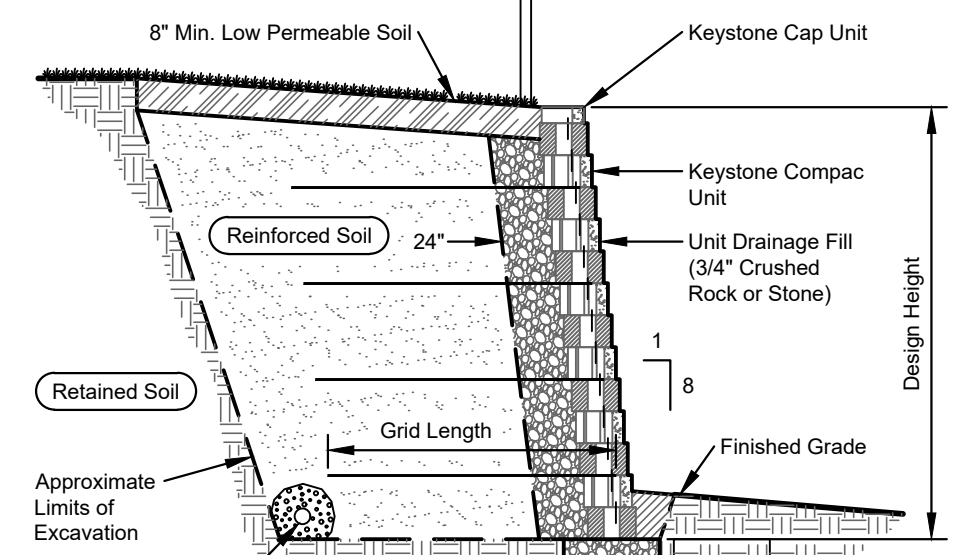
22170
 JOB No.

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

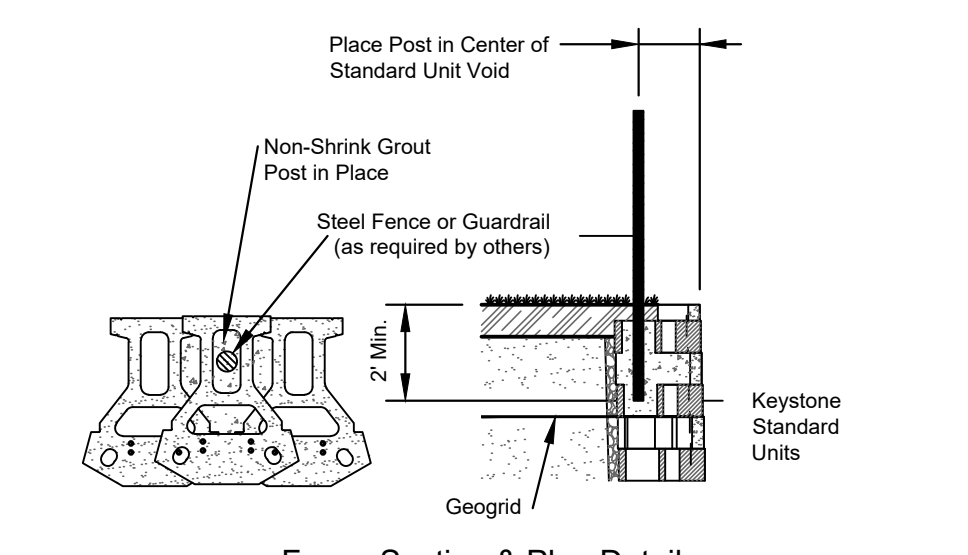
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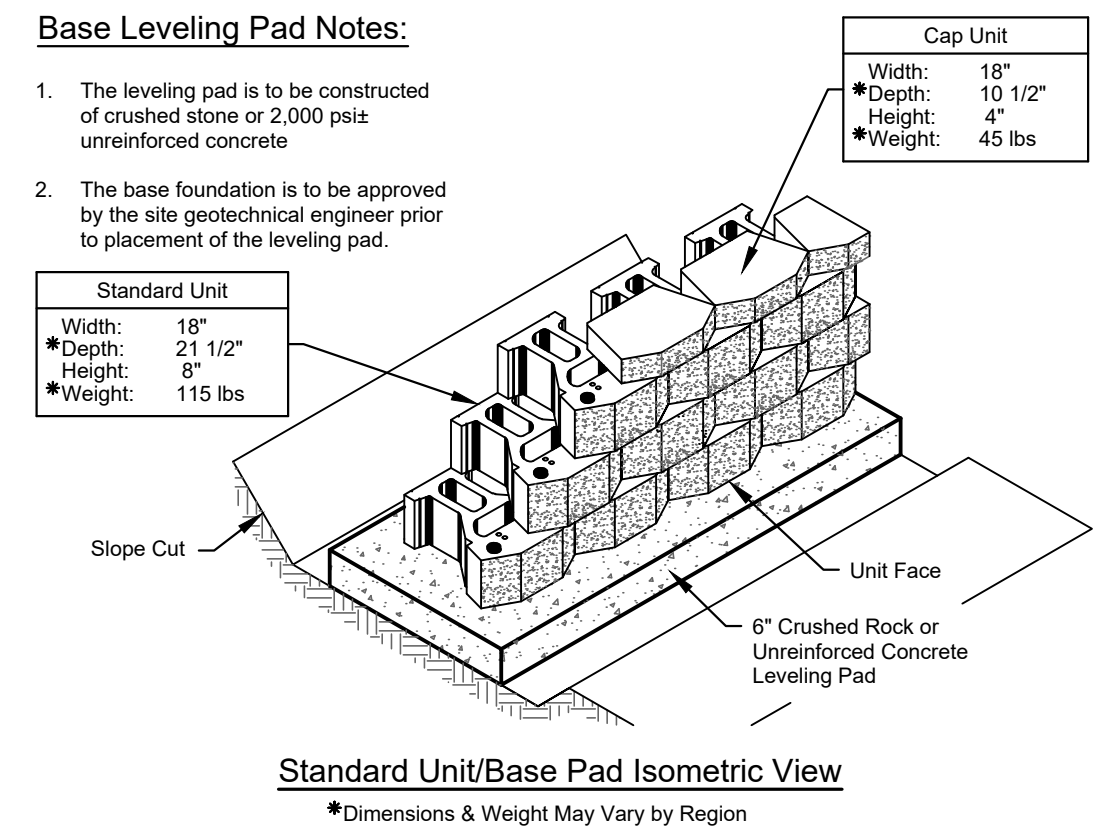
Typical Gravity Wall Section
Compac Unit - 1' Setback



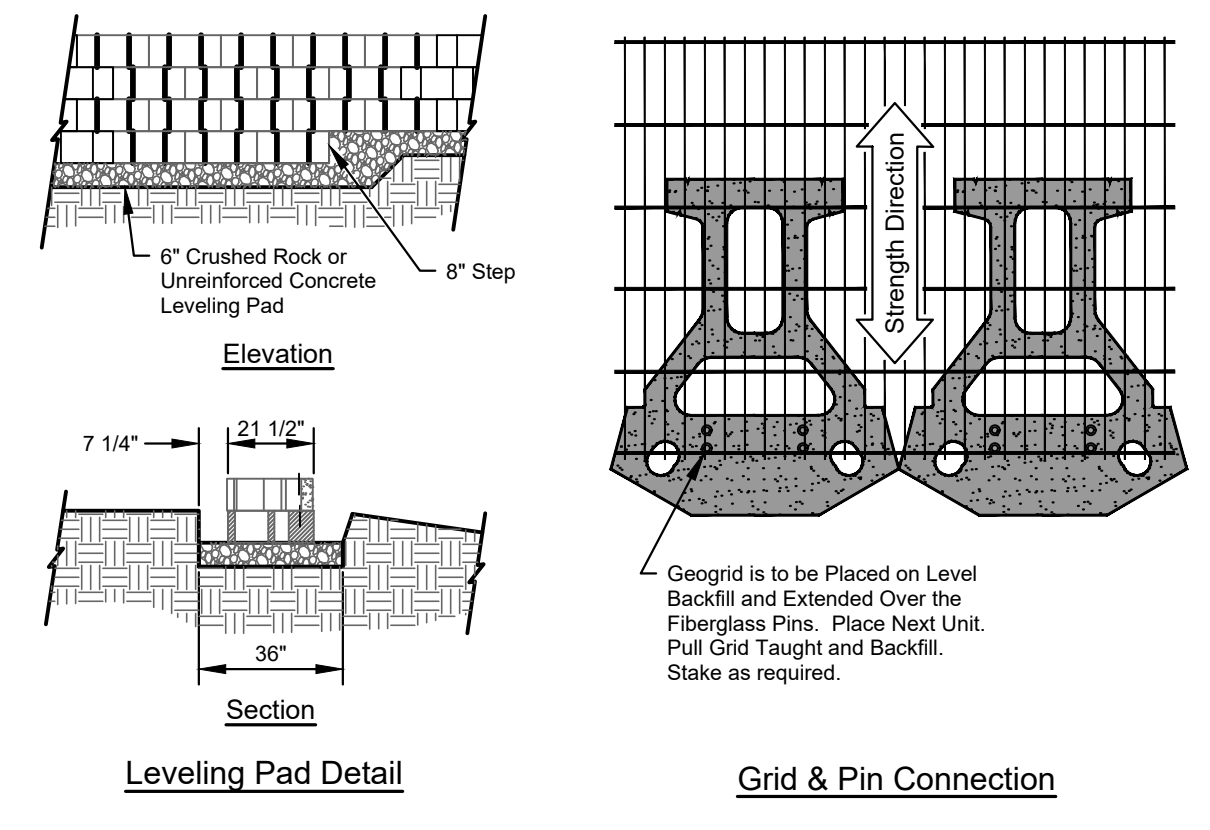
Typical Reinforced Wall Section
Compac Unit - 1' Setback



Fence Section & Plan Detail
Standard Unit - Near Vertical Setback



Standard Unit/Base Pad Isometric View
*Dimensions & Weight May Vary by Region



Leveling Pad Detail

Grid & Pin Connection

PRECAST BLOCK WALL DETAILS
NOT TO SCALE

Base Leveling Pad Notes:

- The leveling pad is to be constructed of crushed stone or 2,000 psi unreinforced concrete.
- The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.

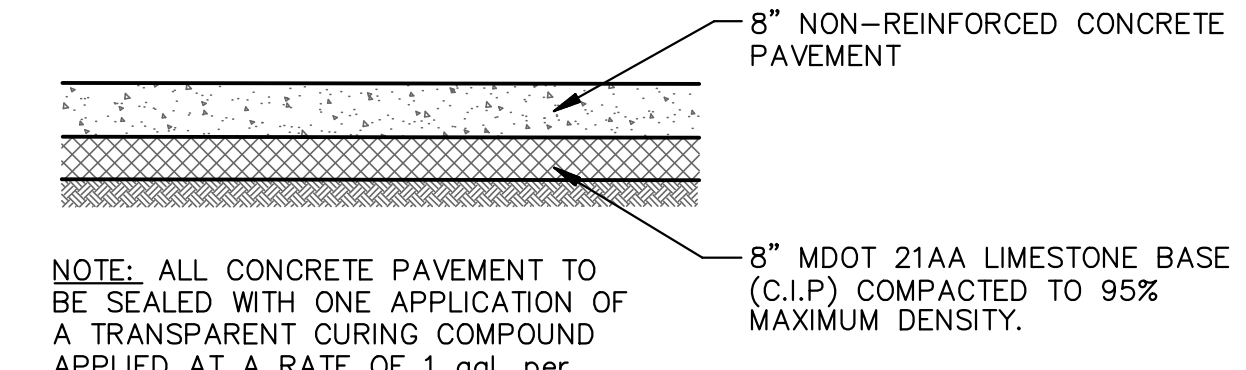
Standard Unit	
Width:	18"
Depth:	21 1/2"
Height:	6"
Weight:	115 lbs

Cap Unit	
Width:	18"
Depth:	10 1/2"
Height:	4"
Weight:	45 lbs

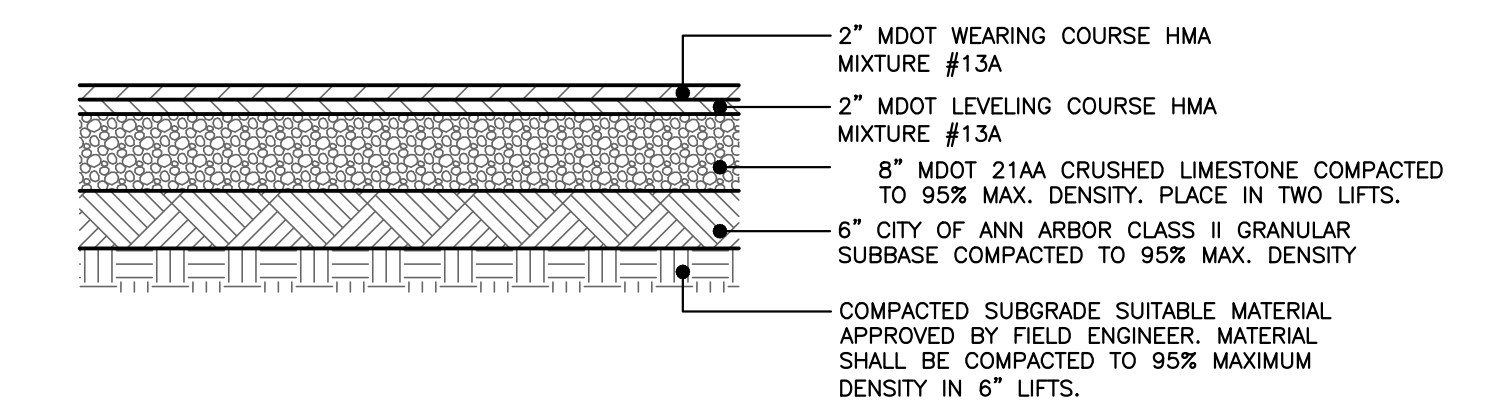
Note:

- Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.

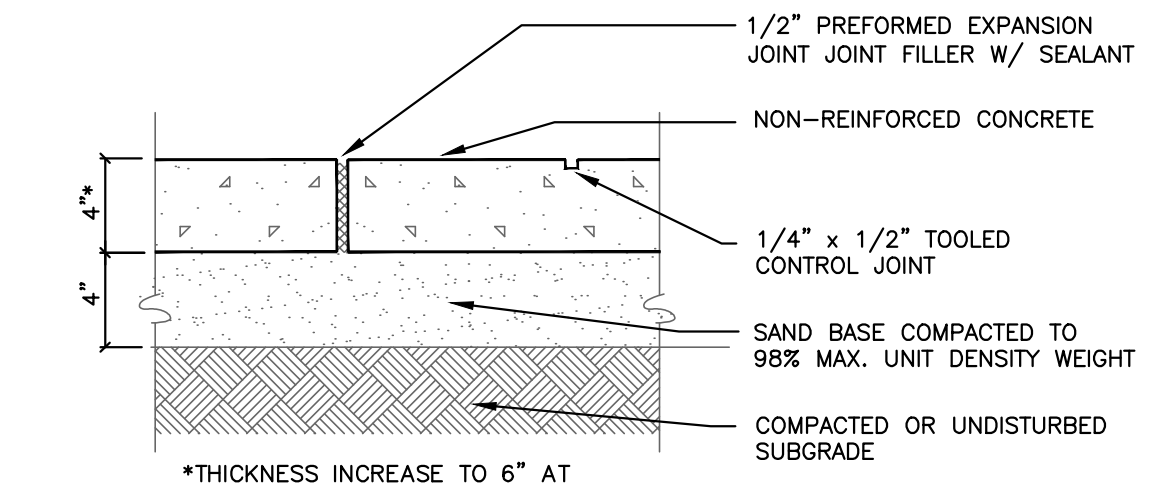
KEYSTONE
RETAINING WALL SYSTEMS
A GEORGIN COMPANY
4444 W 78th Street
Minneapolis, MN 55435
952-997-1040
OR APPROVED EQUAL



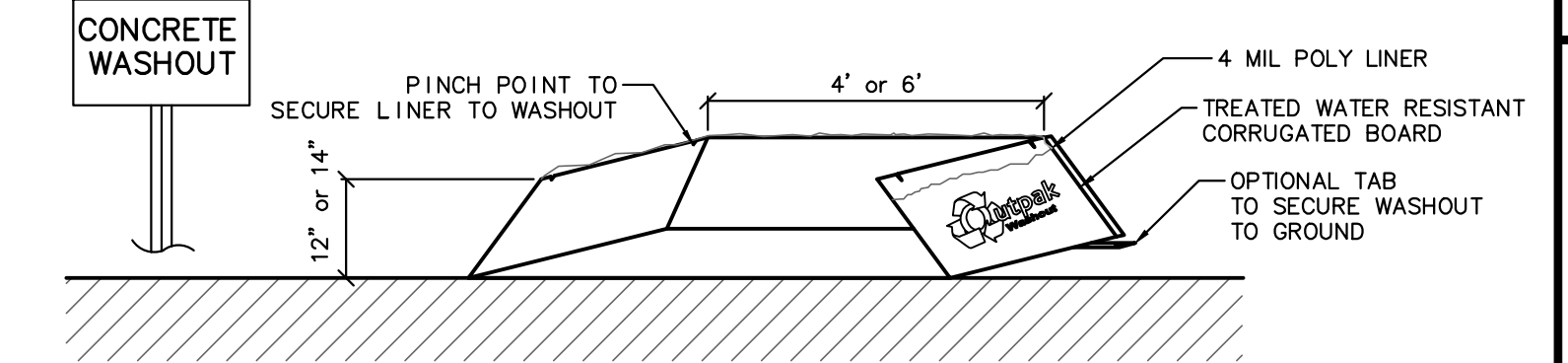
PROP. HEAVY DUTY CONCRETE DETAIL
NOT TO SCALE



ONSITE BITUMINOUS PAVEMENT SECTION
BITUMINOUS REPAIR IN THE ROW SHALL MATCH EXIST. SECTION
NOT TO SCALE



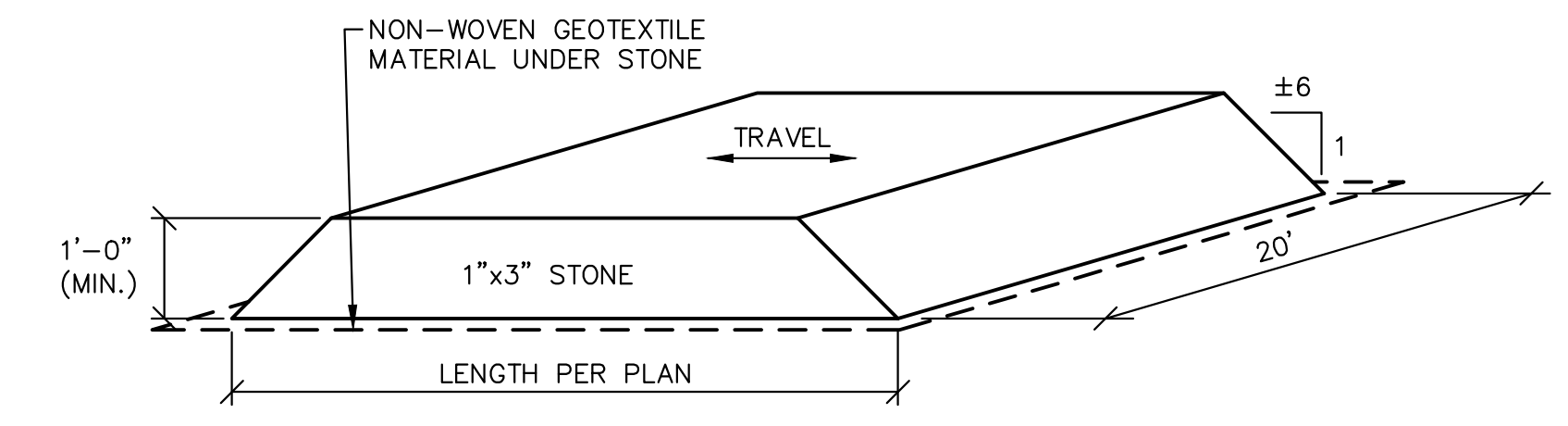
CONCRETE WALK DETAIL
NO SCALE



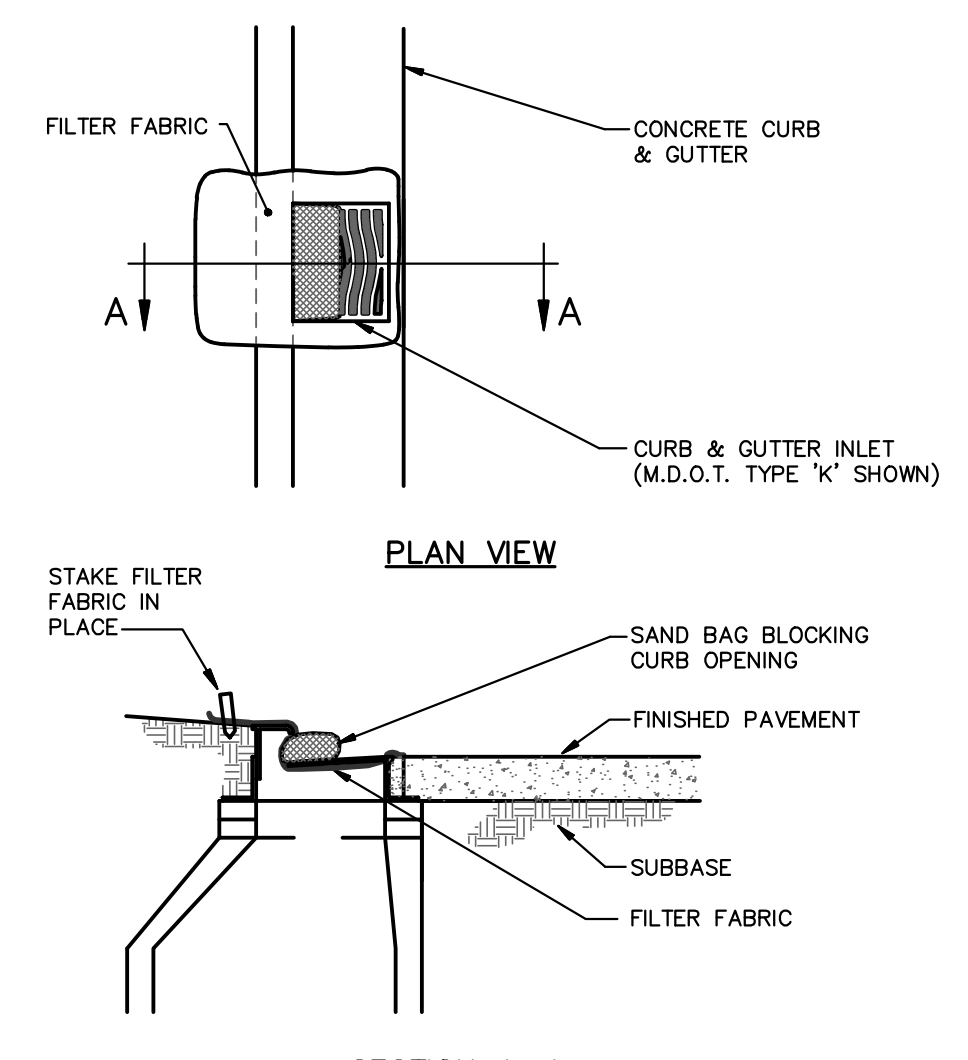
NOTES:

- THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON THIS PROJECT.
- SIGNS SHALL BE PLACED AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT.
- THE CONCRETE WASHOUT AREA WILL BE REPLACED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTE CONCRETE AND OTHER LIQUID WASTE.
- WASHOUT RESIDUE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
- DO NOT MIX EXCESS AMOUNTS OF FRESH CONCRETE OR CEMENT ON-SITE.
- DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
- AVOID DUMPING EXCESS CONCRETE IN NON-DESIGNATED DUMPING AREAS.
- LOCATE WASHOUT AREA AT LEAST 50' (15 METERS) FROM STORM DRAINS, OPEN DITCHES, OR WATERBODIES.
- WASH OUT WASTES INTO THE OUTPACK WASHOUT AS SHOWN WHERE THE CONCRETE CAN SET, BE BROKEN UP, AND THEN DISPOSED OF PROPERLY.

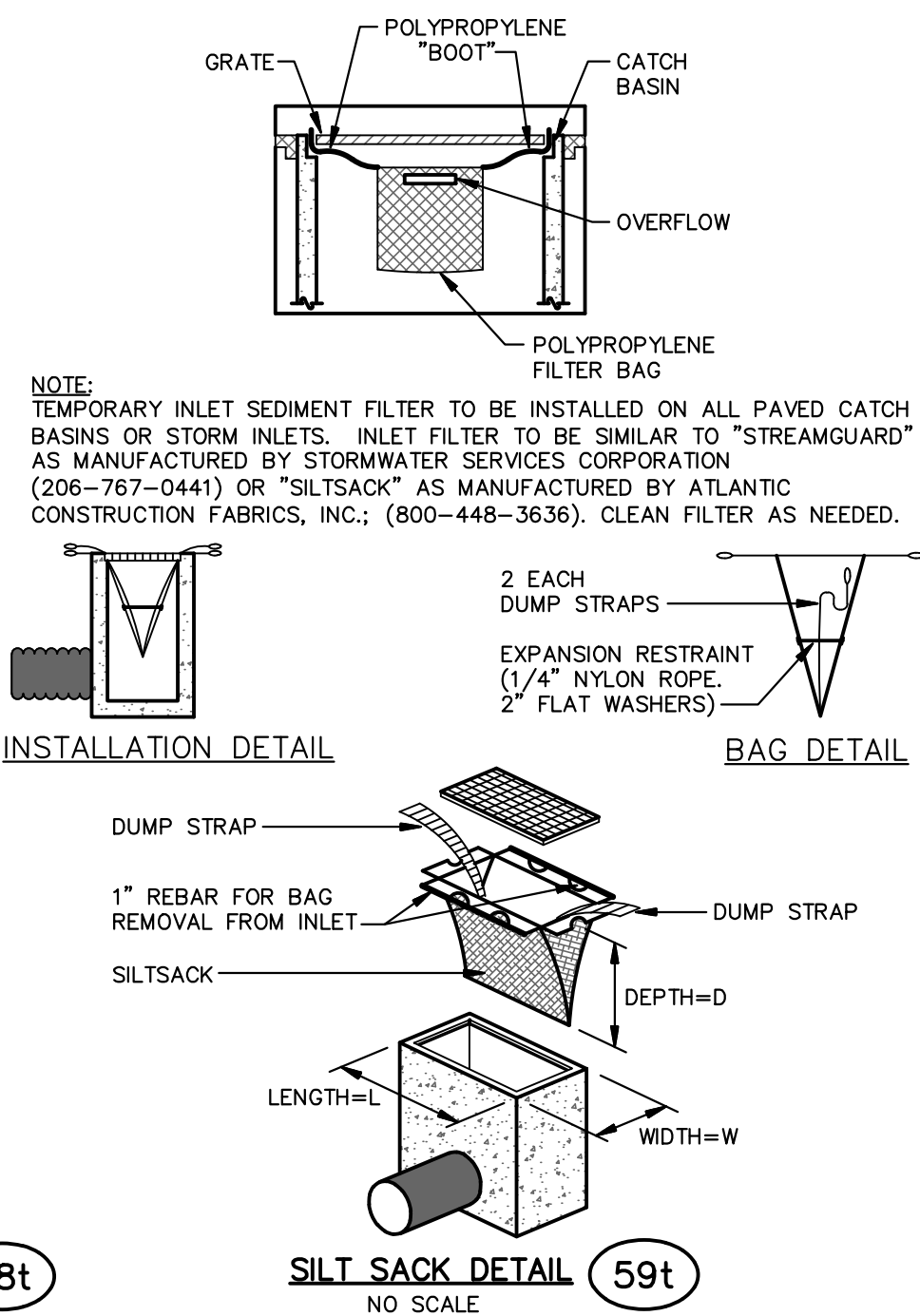
CONCRETE WASHOUT SYSTEM
NOT TO SCALE



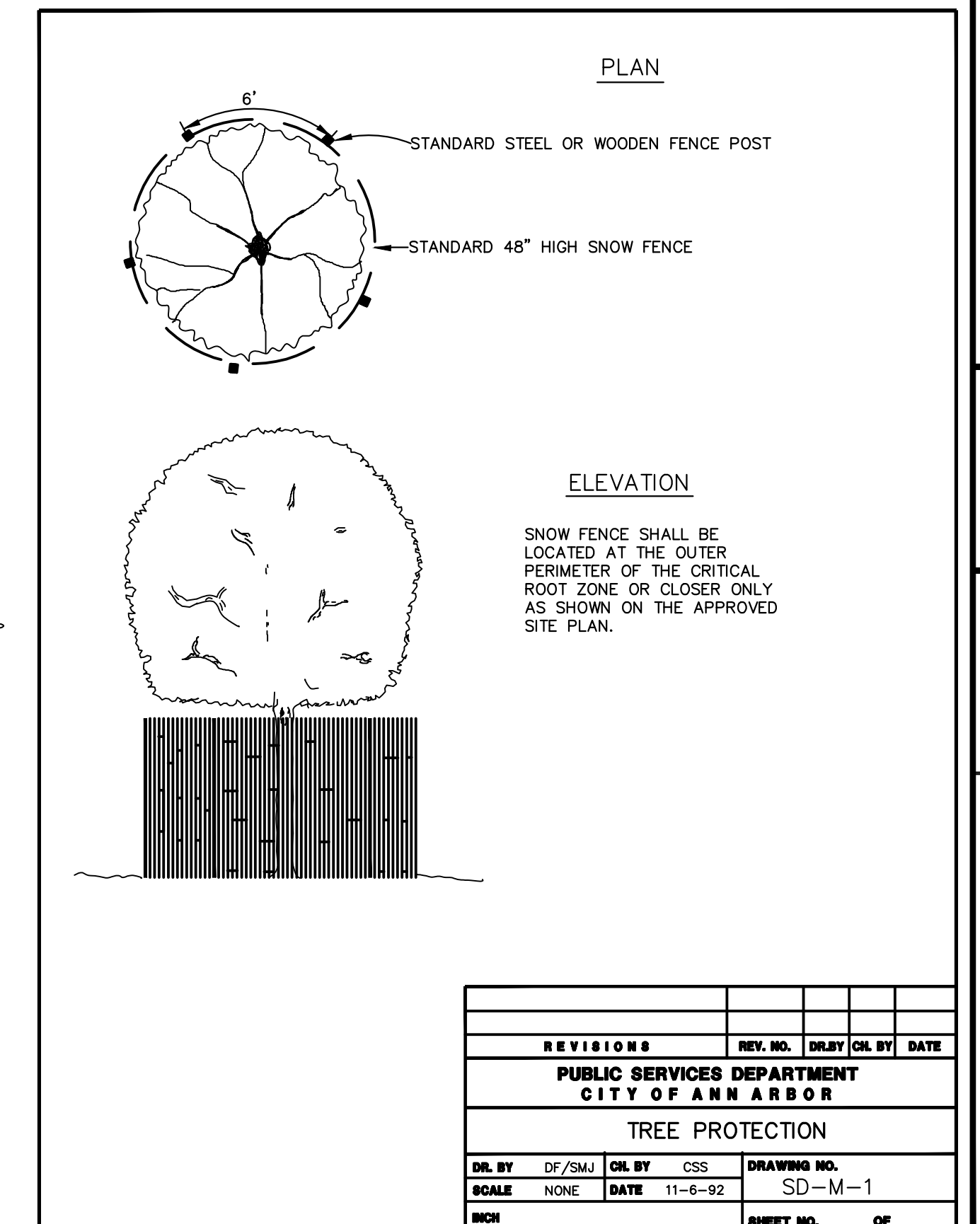
GRAVEL MUD TRACKING MAT (60t)
NOT TO SCALE



CURB & GUTTER INLET FILTER (58t)
AT EXISTING INLETS AND AT PROPOSED INLETS AFTER PAVING
NO SCALE



SILT SACK DETAIL (59t)
NO SCALE



REVISIONS	REV. NO.	DATE	BY	DATE

PUBLIC SERVICES DEPARTMENT
CITY OF ANN ARBOR

TREE PROTECTION

DR. BY	DF/SMJ	CHK BY	CSS	DRAWING NO.	SD-M-1
SCALE	NONE	DATE	11-6-92	SHEET NO.	OF

The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.



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RYAN BLUMB
314-396-2835

VERVE ANN ARBOR
SITE PLAN AND PUD REZONING FOR CITY COUNCIL
MISCELLANEOUS DETAILS

14

JOB NO. **22170**
DATE: 9/21/22
SHEET 14 OF 22
REV. DATE: 11/18/22
REV. NO.:
PER. CITY REVIEW: