WOODBURY GARDENS REDEVELOPMENT

CITY OF ANN ARBOR, WASHTENAW COUNTY, MI

SITE PLAN FOR CONDITIONAL REZONING AND CITY COUNCIL

PROJECT NARRATIVE

WOODBURY GARDENS REDEVELOPMENT

CITY OF ANN ARBOR REQUIRED SITE PLAN INFORMATION

UDC 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.*
  Botanical Gardens Associates LLC, 1310 Wisteria Drive, Ann Arbor, MI 48104; Site Plan and Rezoning for City Planning Commission and City Council.
- *b. Petitioner and agent information, including name, address and contact information.*
  Petitioner: Botanical Gardens Associates LLC, Inc. 260 E. Brown Street, Suite 200, Birmingham, MI 48009. Adam Bleznak, 248-540-9300
  Agent: Midwestern Consulting LLC, 3815 Plaza Drive, Ann Arbor, MI 48108; Ph. (734) 995-0200; Attn. Scott W. Betzoldt.
- *c. Statement of interest in the land, including conditions for sale or purchases of parcels such as deed restrictions, reservation of land for other uses, or other conditions which may have bearing on the total land Development.*
  The property is owned by the applicant.
- *d. Vicinity map identifying the location of the Site within the City, including nearest major roads and significant features such as schools, shopping centers and parks.* **See Cover Sheet.**
- *e. North indicator (pointing up or to the left) and drawing scale in bar graph form.* **Shown on all relevant sheets.**
- *f. Legal description of the Site, including total acreage of the parcel(s) and total acreage of public or private roads contained in the legal description.* **See Existing Conditions and Survey Plan.**
- *g. Sheet index and date of plan set.* **See Cover Sheet.**
- *h. Required Statements - A brief written statement addressing the following concerns:*
  - *i) Identification of associated applications such as annexation petition, rezoning petition, PUD Zoning District petition, Special Exception Use petition, planned project modification request, landscape modification request, or variance application. Identification of special circumstances associated with the application that require additional procedures or specific approvals such as Natural Features buffer area.* **The Site Plan and Rezoning request entails rezoning all five of the individual parcels that make up the Woodbury Gardens apartment complex from R4A, R4B, R4C and R3 to Conditional TC1. The conditions include modification to the TC1 height and setback standards as currently approved.**
  - *ii) Proposed development program, including proposed land use, improvements, Floor Area or number of Dwelling Units and bedrooms, access and circulation, off-street parking, preliminary construction phasing and estimated construction costs.* **The proposed development is a redeveloping an existing apartment building, clubhouse, carports and surface parking located in the R4C and R4A zoning districts to two larger 7-story buildings with an enclosed parking structure under the proposed TC1 zoning.**
    Proposed Development Summary:
    Two Buildings: seven stories with six level parking garage.
    342 dwelling units proposed
    324,171 sf of net floor area
    Building height: 83 feet
    Storm water management: an underground tank between the residential building and the parking garage.

    Storm water 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 corridor between the east building and the parking garage.
    Proposed Phasing and Probable Construction Cost: **The development will be constructed in two phases, beginning on or before 10/1/2025, with completion on or before 12/1/2027 The estimated construction cost is $66,000,000.**
  - *iii) Community Analysis*
    - *(a) Impact of proposed Development on public schools.* **The units are apartments in a variety of sizes from studio, 1, 2 and 3 bedrooms. The units are designed as market rate apartments. Per 2015 NAHB estimate of an average of 21.9 children per 100 multifamily units. It is anticipated that type of development the number of students will be in the 70 – 80 range and will result in a minimal impact on public elementary and high schools.**
    - *(b) Relationship of intended use to neighboring uses.* **The residential units will provide additional housing in the south central portion of Ann Arbor. The Woodbury Gardens is on both the South Industrial and Stadium transit lines. The residents are likely to patronize existing restaurants, proposed retail, and other businesses in the nearby buildings, and may attend local churches.**
    - *(c) Impact of adjacent uses on proposed development.* **Residents will likely patronize the businesses and institutions in the surrounding area.**
    - *(d) 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 three landmark trees that will be removed for project construction.**
    - *(e) 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.**
    - *(f) Natural Features General Descriptions and Impacts: A brief summary of the Natural Features (Woodlands, Wetlands, Water Courses, 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 identification of all proposed impacts to them.*
      Endangered Species Habitat: **N/A**
      100-Year Floodplain: **none on the site.**
      Landmark Trees: **3, #3854- 14" quint Black Walnut, #3855- 23" Black Walnut, #3856- 29" Black Walnut**
      Steep Slopes: **none.**
      Existing Watercourses: **none.**
      Wetlands: **none.**
      Woodlands: **none.**
    - *iv) Traffic Statement: The number of vehicle trips per unit per peak hour and supporting documentation from the ITE Manual.* **A Traffic Impact Assessment report has been submitted under separate cover.**
    - *v) Public Sidewalk Maintenance Statement* **See Cover Sheet, General Notes number 1.**
- *i. Comparison Chart of Requirements and Existing and Proposed Conditions*
  - *i) Zoning Classification.* **Existing-R4A/R4C, Proposed-TC1**
  - *ii) Lot Area.* **5.18 acres, 225,855 square feet.**
  - *iii) Total area of all Floors (measured from exterior faces of the exterior walls or from the center line of walls separating two Buildings), Floor Area and Floor Area Ratio (FAR), or Density.*
    395,524 sf gross including residential, leasing and amenity area.
  - *iv) Open Space and Active Open Space.* **Not required.**
  - *v) Required Setbacks and Yards (front, side and rear).*
    Front (Astor Ave/Wisteria Dr.): 12.86 feet. Side, W- 30'
  - *vi) Height and stories.*
    83.0 feet, 7 stories.
  - *vii) Off-street vehicle parking, including accessible and barrier free spaces.*
    None Required. Parking provided in 6 floors, 436 space total incl. 9 barrier free. Additional surface lot parking o 72 spaces, plus roadside parking.
  - *viii) Bicycle parking, including class.*
    Class A: 54 spaces provided; Cl B: 22 spaces provided; Class C: 40 spaces provided
    Total Bicycle Parking: 116 spaces provided.
  - *ix) Notation of variances granted or proposed, planned project modifications approved or proposed.*
    N/A.

2. *Existing Conditions Plan– Drawings and written descriptions of the existing conditions of the Site must be included on the plans, including the following:*

- *a. 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 hardship 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, prepared by a professional land surveyor must be provided.* N/A
- *b. 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.**
- *c. If new City public sanitary sewer, water mains, Storm Water Management System, or streets are proposed in conjunction with a site plan, the plans must be referenced to the Ann Arbor Geodetic Reference System.*
  The survey is referenced to the AADRS (State Plane Coordinates, Michigan South Zone (2113).

3. *Dimensional Layout Plan – Drawings and written descriptions of the proposed Development must be provided on the plans, demonstrating compliance with all 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, aisles and Driveways. Identify any "no parking" areas or fire lanes and indicate any proposed signage.* **See Architectural Plan.**
- *e. Bicycle parking, including detail 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. Dimension of all Fire Department access roads or lanes, if applicable, including width at hydrant, dead end lengths, turn-around location, turning radii, etc.* **See Dimensional Site Plan, Utility Plan and Fire Protection Plan.**
- *g. Open Space and Active Open Space.* **None required**
- *h. Natural features buffer.* **N/A.**
- *i. Conflicting land use buffer.* **N/A.**
- *j. Solid waste enclosure, including dimensioned detail.* **See Architectural Plans.**
- *k. Perspective sketch of building showing Streetwall Height and Offset, if applicable.* **See Architectural Plans.**

4. *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.

- *a. 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.* **N/A.**
  - *v) Location of all Steep Slopes and a cross section through the Site showing the proposed activity in relationship 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.**
- *b. 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.**
- *c. Location and extent of required Natural Features buffer. Identification of any temporary or permanent activity (i.e. impacts or disturbance) within the Natural Features buffer.* **N/A.**
- *d. 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.**
- *e. Protection measures for those existing Natural Features proposed to be protected as part of the Development, including protections from the construction of the Development.* **N/A.**
- *f. Identification of all Natural Features proposed to be impacted, disturbed, or removed by the Development, including the construction of the Development.* **N/A**
- *g. Alternatives 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 are not proposed which demonstrate and justify that the proposed Development limits the disturbance or removal of Natural Features on and adjacent to the Site to the minimum necessary to reasonably accomplish the permitted use.* **N/A**
- *h. Proposed mitigation measures: When any Natural Features are proposed to be removed or disturbed, proposed mitigation measures must be provided including:* **N/A**
  - *i. Written description of the mitigation program, identifying the type and appropriate quantity (i.e. basal area, square feet, caliper inches) of Natural Features removed or disturbed and the appropriate quantity of the mitigation proposed.* **N/A**
- *j. Replacement calculations.* **N/A**
- *k. Location of proposed mitigation plantings.* **N/A**
- *l. Chart listing the proposed mitigation plantings, including botanical and common names, caliper sizes, root type and height.* **N/A**
- *m. Timing schedule for implementation of mitigation measures.* **N/A.**
- *n. Notation and description of any proposed alternative mitigation measures.* **N/A.**

5. *Natural Features Overlay Plan – A drawing including the dimensional layout and the existing Natural Features on Site.* **N/A.**

- *a. Landscape Plan – Drawings and written descriptions of proposed landscaping, screening and buffers demonstrating compliance with applicable Development standards such as interior landscaping of Vehicular Use Areas, Right-of-Way screening, conflicting land use buffers, and Natural Features mitigation in order to determine compliance with applicable Development standards must be provided on the plans, including the following:*
  - *a. Location, size and species of existing trees and vegetation, and Natural Features.* **See Existing Conditions and Survey Plan.**
  - *b. Location of light poles, refuse containers and enclosures, mechanical equipment and hydrants.* **See Dimensional Site Plan, Landscape Plan, and Architectural Plans.**
  - *c. Limits of Vehicular Use Area and notation of its size in square feet.* **None.**
  - *d. Proposed locations of required landscaping, screening and buffers, street trees and plantings.* **See Landscape Plan. No buffer or screening is required. Proposed street trees are shown on the plan.**
  - *e. Table identifying Vehicular Use Area, interior landscape islands, Right-of-Way screening, conflicting land use buffer, and street tree planting requirements and proposed plantings and areas to satisfy requirements.* **N/A except Street Trees**
  - *f. Proposed plant list, including caliper sizes, root type, height of material, botanical and common name, type and amount of mulch, ground cover and grasses.* **See Landscape Plan.**
  - *g. Notation of requested modifications if any.* **N/A.**
  - *h. Planting and staking details in accordance with the standards established by the PSA Administrator.* **See Miscellaneous Notes and Details sheet.**
  - *i. Specification for treatment of compacted soil on the entire Site.* **See Sheet 5 Notes, number 9.**
  - *j. Specification for planting media in landscape areas.* **See Sheet 5 Notes, number 12.**
  - *k. Irrigation plan or water outlets (hose bibs).* **See Sheet 5 Notes, number 1. See also Architectural Plans.**
  - *l. Landscape maintenance program, including a statement that all diseased, damaged, or dead material shall be replaced in accordance with this Code by the end of the following planting season as a continuing obligation for the duration of the site plan.* **See Sheet Notes, number 2.**
  - *m. Identification of snow storage areas, including a statement that snow shall not be pushed onto interior landscape islands unless designed for snow storage.* **N/A.**
  - *n. Berms, retaining walls, screen walls, fences, tree wells to preserve existing trees, culverts to maintain natural drainage patterns, or any other construction details necessary to resolve specific Site conditions.* **See Architectural Plans.**

7. *Utility Plan – Drawings and written descriptions of the existing and proposed public utilities serving the Site must be provided on the plans, including the following:*

- *a. Location and size of existing and proposed public water, sanitary sewer and storm sewer mains and leads. Note invert elevations of storm and sanitary mains.* **See Existing Conditions and Survey Plan, and Utility Plan.**
- *b. Location of existing and proposed fire hydrants. Indicate a 250-foot or 350-foot radius, as appropriate for the type of proposed Development, around each hydrant. Show and dimension hose lay to any external portion of a Structure via an approved fire route from any hydrant or combination of hydrants. Location of fire department connection (FDC) to Building. Dimension distance of the hose lay from the FDC to the nearest hydrant via an approved fire route (provide dimension following an actual hose laying route). Location of Knox Box, if applicable. Include a detail of the Knox Box and Access Plan sheet if necessary for clarity.* **See Existing Conditions and Survey Plan, Utility Plan, and Fire Protection Plan.**
- *c. Location of existing Public Utility easements, including liber and page number.* **N/A.**
- *d. Location and dimension of proposed Public Easements. Notation that legal descriptions of proposed easements will be provided with construction drawings and engineering plan submittals as required.* **N/A.**
- *e. Sanitary sewer flow mitigation calculations.* **See Utility Plan.**
- *f. Location and notation of firewalls within existing or proposed Buildings, or notation that none are existing or proposed.* **There are no firewalls in the proposed building. The building is fully fire suppressed.**

8. *Grading and Soil Erosion Control and Storm Water Management Plan – Drawings and written descriptions demonstrating compliance with the applicable Development standards for Grading and soil Erosion controls must be provided on the plans, including the following:*

- *a. Vicinity map showing location of Site and all adjacent properties within 500 feet of the Site boundaries showing relationship to any Watercourse.* See Vicinity Map on the Cover Sheet. **There are no Watercourses within 500 feet of the Site.**
- *b. Soil investigation report, survey or profile of data regarding the nature, soil type, distribution, erodibility, and supporting ability of existing soils or rock on the Site in accordance with the United States Department of Agriculture soil survey standards.* **Soils Report has been submitted separately.**
- *c. Existing and proposed topography at a maximum of two-foot contour intervals, elevations or similar slope descriptions, extending at least 50 feet beyond Site boundary.* **See Existing Conditions and Survey Plan and Grading Plan.**
- *d. Location of any existing Structure or Natural Feature on the Site and on land extending at least 50 feet beyond the Site boundary lines.* **See Existing Conditions and Survey Plan and Grading Plan.**
- *e. Location of proposed Structures or Development on the Site including physical limits of each proposed Earth Change and all proposed temporary and permanent soil Erosion and Sedimentation Control Measures.* **See Existing Conditions and Survey Plan, Grading Plan and Soil Erosion Control Plan.**
- *f. Plans, section and construction –quality details of all soil Erosion and Sedimentation Control Measures, existing and proposed on-site drainage and dewatering facilities, retaining walls, cribbing, planting, anti-Erosion devices or other protective devices to be constructed in connection with, or as part of, the proposed work.* **See Soil Erosion Control Plan details. Dewatering of the site is not required.**
- *g. Estimated total cost of the required controls during construction, including dust emission control.* **See Soil Erosion Control Plan, Soil Erosion Control Notes, number 11.**
- *h. Estimated total cost of protecting all exposed oil surfaces from Erosion should construction discontinue.* **See Soil Erosion Control Plan, Soil Erosion Control Notes, number 12.**
- *i. Estimate of the quantity of excavation and Fill involved.* **See Soil Erosion Control Plan, Soil Erosion Control Notes, number 14.**
- *j. Amount of impervious area existing and proposed, and square footage of impervious area reconfigured to accommodate new improvements.* **See Storm Water Management Sheet.** *If a Storm Water Management System is required, computations and design of the Storm Water Management System, such as:* **See Storm Water Management Calculations for the proposed detention chamber.**
  - *i) Calculations used to derive the run-off coefficients.* **See Basin Storm Water Calculations, W1.**
  - *ii) Map showing the drainage area and land tributary to the Site and estimated runoff of the area served by any drain.* **See Stormwater Management Plan.**
  - *iii) Required storage volume calculations, including first flush, bankfull, and 100-year storm events.* **See Basin Storm Water Calculations, W2-W13.**
  - *iv) Calculations for the provided/proposed storage facility.* **See Basin Storm Water Calculations, Detention Outlet Calculations.**
  - *v) Required and proposed release rate calculations.*
    See Basin Storm Water Calculations, Detention Outlet Calculations.
  - *vi) A plan for the continued maintenance of the permanent Storm Water Management System.* **See Soil Erosion Control Plan, Storm Water Management System Permanent Maintenance Plan, Schedule and Cost Estimate.**
  - *vii) Any other pertinent calculations as determined necessary by the PSA Administrator.* **To be provided if required.**
  - *viii) If an alternative method of storm water detention is proposed, a written description of the alternative method of storm water detention and a written explanation as to why the proposed alternative conforms to the Development standards of this Code.* **N/A.**
- *l. Timing and construction sequence of each proposed Earth Change, including: installation of temporary and permanent soil Erosion and Sedimentation Control Measures, striping and Clearing, rough Grading, installation and Stabilization of Storm Water Management Systems, construction of utilities, roads, infrastructure, and Buildings, final Grading and landscaping, and removal of temporary soil Erosion and Sedimentation Control Measures; identify all proposed phasing consistent with the approved site plan or final preliminary plat.* **See Soil Erosion Control Plan: Construction Sequence. (A Gannt chart has also been provided.**
- *m. A program proposal for the continued maintenance of all permanent soil Erosion and Sedimentation Control Measures that remain after Project Completion, including: designation of the person or party responsible for the maintenance; maintenance responsibilities shall become part of any sales or exchange agreement for the land on which the permanent soil Erosion and Sedimentation Control Measures are located.* **See Soil Erosion Control Plan, Maintenance Program for Soil Erosion Controls.**
- *n. Other information or data as may be required to demonstrate compliance, such as a soil Erosion control statement including:* **N/A.**
  - *i) Consideration of alternative actions with evaluation of each.* **N/A.**
  - *ii) Description of probable adverse environmental effects that cannot be avoided.* **N/A.**
  - *iii) Identification of any negative impact to Natural Features, including Woody Plants.* **N/A.**
  - *iv) Analysis of primary and secondary consequences of short-term uses of the environment in relation to the maintenance and enhancement of long-term productivity. Remedial, protective and mitigation measures are to be developed for any environmentally detrimental aspect.* **N/A.**
  - *v) If determined necessary by the Code Official, a hydrological study may be required where the Clearing, Grading, or addition of Impervious Surface is proposed within a floodplain not regulated by the MDEQ or unmapped flood prone areas or any lake, pond, Watercourse, or Wetlands. The study shall follow the format used by the MDEQ for hydraulic reports and shall demonstrate that the proposed activity complies with the review standards of this Code.* **N/A.**

9. *Massing and Architectural Plans – Drawings and written descriptions of the massing, architectural design and details, and façade materials of proposed Buildings must be provided on the plans, including:*

- *a. Dimensioned floor plans of each building Floor identifying areas excluded from Floor Area and excluded from FAR calculations.* **See Architectural Plans.**
- *b. Vertical sections through the Site showing existing and proposed elevations.* **See Architectural Plans.**
- *c. Dimensioned architectural design and details with labeled materials.* **See Architectural Plans.**
- *d. Perspective renderings of the proposed Development.* **See Architectural Plans.**

10. *Photometric Plan – Drawings and written descriptions of proposed lighting demonstrating compliance with the applicable Development standards, including:* **Provided.**

- *a. Location, type and details of proposed lighting fixtures.* **Relocated/replaced streetscape lightpole locations are shown on the Dimensional Site Plan, Utility Plan and Landscape Plan.**
- *b. Photometric diagram showing predicted maintained lighting levels of the proposed lighting fixtures.* **Provided**

11. *Traffic Impact Analysis – For proposed Developments that will generate more than three vehicle trips per unit per peak hour or 50 vehicle trips per peak hour, a traffic impact traffic impact analysis must be provided including the following:* **A Traffic Impact Assessment has been submitted under separate cover.**

- *a. Existing traffic volumes passing on all streets abutting the proposed Development during the peak hour. Traffic from other new and proposed Developments in the area should be considered.*
- *b. Existing peak hour turning movements of vehicular traffic at all public street intersections within 200 feet of the proposed Development, or those intersections that may be impacted by the proposed Development.*
- *c. Projected peak our generation rate and peak hours of generation for the proposed Development.*
- *d. Projected peak hour traffic movements as a result of the establishment of the proposed facility.*
- *e. A capacity analysis for impacted intersections.*
- *f. A statement of the total impact the projected generation will have on the existing level of service as determined and certified by a registered engineer.*
- *g. A sketch plan showing all existing Driveways to public streets within 200 feet of the proposed Development and all on-street parking or loading areas.*
- *h. Proposed Site access Driveways with a determination if a deceleration lane or taper is necessary based on current City warrant analysis standards. If a deceleration lane or left-turn by-pass lane is necessary based on a warrant analysis, and a sight distance study at the Site access Driveway.*
- *i. 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.*
- *j. A gap study for pedestrian or vehicular traffic may be required at non-signalized locations that may be impacted by the proposed Development. The traffic and/or parking impact analysis shall be reviewed by the Department of Transportation for completeness and accuracy. The analysis shall include a determination of the service volume and capacity of adjacent streets including the traffic from the new development. The methodology to be employed in determining street capacities shall conform to the 1985 edition of the Highway Capacity Manual, Special Report Number 209, or the latest revision thereof. Proposals that will contribute traffic to streets or intersections that are or will be as a result of this proposal at a level of Service D, E, or F as defined in the Highway Capacity Manual may be denied by Commission and Council until such time as necessary street or traffic improvements are scheduled for construction.*

OWNER/APPLICANT

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ENGINEER/SURVEYOR/LANDSCAPE ARCH.

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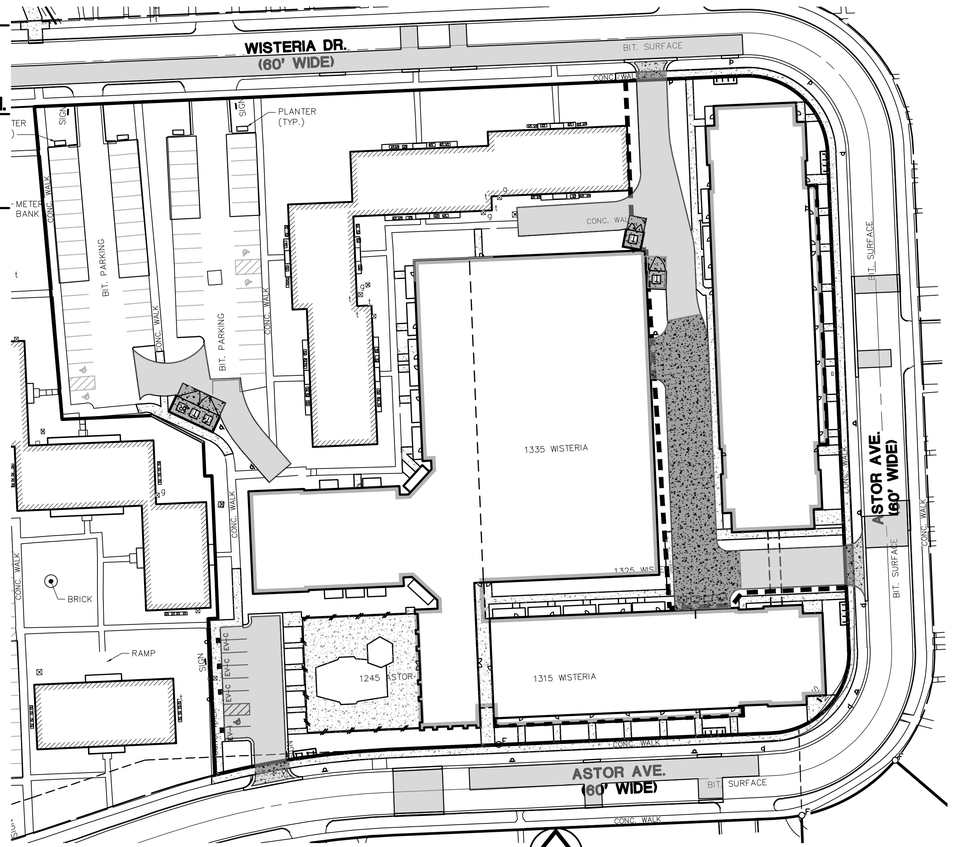
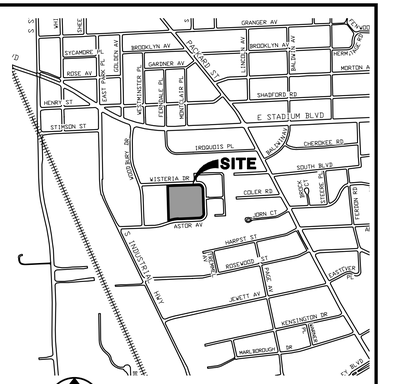
PROJECT NARRATIVE (CONT.)



SITE MAP
SCALE : NTS



VICINITY MAP
SCALE : NTS

Sheet List Table

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	ALTA SURVEY
3	EXISTING CONDITIONS
4	NATURAL FEATURES
5	ALTERNATIVE ANALYSIS
6	EXISTING STRUCTURE SCHEDULE AND TREE LISTING
7	REMOVAL PLAN
8	SITE PLAN
9	UTILITY PLAN
10	GRADING PLAN
11	DRAINAGE PLAN
12	SOIL EROSION CONTROL PLAN
13	LANDSCAPE PLAN
14	LANDSCAPE NOTES AND DETAILS
15	FIRE PROTECTION PLAN
16	SOLID WASTE MANAGEMENT PLAN
17	MISCELLANEOUS DETAILS
18	PHOTOMETRIC PLAN

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 of the public services standard specifications and details.
4. Sidewalks constructed in the public right-of-way and/or public paths shall meet all requirements and guidelines as set forth in the Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way published August 8, 2023. Note that many of the details concerning grades will need to be determined during the site plan stage in order to gain grading plan approval.
5. Pavement markings disturbed due to pavement cuts or construction related activities shall be replaced as directed by Engineering. Replacement during construction of the project may be considered temporary, with final pavement marking restoration to occur at the end of the project.
6. The contractor shall take all necessary precautions to protect the existing public road pavement. Damage to the public road pavement during the course of construction may necessitate milling and resurfacing of the damaged areas prior to issuance of the Certificate of Occupancy.

DEVELOPMENT SUMMARY AND COMPARISON CHART

	Existing	Required TC1	Phase 1	Phase 2	Proposed
Site Area:	0 sf	0 sf	5.18 ac / 225,855 sf	5.18 ac / 225,855 sf	5.18 ac / 225,855 sf
Lot Width	60 ft	120 ft	444.33 ft	444.33 ft	444.33 ft
Zoning:	R4C	R4A	Conditional TC1*	Conditional TC1*	Conditional TC1*
Land Use:	Residential		Residential	Residential	Residential
Floor Area:	79,025 sf	N/A	Prop. 142,750 sf	Prop. 253,074 sf	Ex. To remain 47,420 sf Prop. new 395,824 sf Parking garage = 152,225 sf Total = 595,469 sf
Dwelling Units:	77		Maintain Ex. 77 + 144 new 221 Total	Remove 33 Ex., add 198 new Net 165 increase	Exist. 44 to remain + 342 New = 386 Total
Bedrooms	121		121 Ex + 204 new 325 Total	Remove 44 +233 new Net 189 increase	Exist. 77 to remain + 437 New = 514 Total
Building Height:	Max. 30'	Maximum of 120'	83'-0"	83'-0"	83'-0"
Building Width:		300'	296.31'	284.56'	284.56'
Building Max. Diag. dimension:		450'	303.86'	428.00'	428.00'
Unit Types/No.s:			See architectural plans	See architectural plans	See architectural plans
Vehicular Parking*:	None Req'd	Maximum of 1/333 sf	72 spaces (exist. NW lot)	456 total in garage, 64 remain	456 total in garage including
Total Vehicular Parking		994 Max.		ex. Lot + 8 new surface	456 total; 9 barrier free 72 surface; incl. 5 BF
EV Spaces		90% EV-C, 10% EV-I		46-EV-I garage + 2 clubhouse Remainder will be EV-C	46-EV-I garage + 2 clubhouse Remainder will be EV-C
Bicycle Parking**:		1 space / 5,000 sf 50% A, 25% B,25% C	16 A, 16 C	38 A, 22 B, 24 C	114 Total Cl A - 54; Cl B - 22, Cl C - 40
Total Required	No bike parking exists	45 A, 22 B, 22 C	29 Required, 15 A, 7 B, 7 C		
Parking Lot design		Area max. 125% Bdg area			Bldg footprint=87,280 sf Parking area =31,8832 sf 36%
Setbacks:	Front: 25' Min., No Max. Side- 12' Rear, 30'	Front: 0' Min., 20' Max. Side- 0' Rear, 0'	Front: North: 20' Front: East: 8.0' Side: South: 52.71' (Exist) Rear: West: 54.87' (Exist)	Front: North: 20' Front: East: 17.23' South: 12.36' Side: 29.83'	Front: North: 20' East: 8.0' South: 12.36' Side: 29.83'

* CONDITIONS OF THIS TC1 REZONING INCLUDE MODIFICATIONS TO BUILDING HT. LIMITS (83') AND SETBACKS AS (Front-North 20', Front-East 8', Front-South 12', Side-West 29').

TC1 - Zoning non-conformities include maximum setback on existing building 1340 Wisteria of 31.2' instead of 20'.

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.

WOODBURY GARDENS REDEVELOPMENT

JOB No. **23195**
DATE: 6/20/24
SHEET 1 OF 18
CADD:
ENG: JCA
PM: SWB
TECH:
FB#

REVISIONS:	REV. DATE
PER FIRST REVIEW	10/11/24
PER CITY REVIEW	4/02/25
PER CITY REVIEW	6/18/25
PER WCWRC REVIEW	8/11/25
PER CITY REVIEW	9/15/25
PER CITY REVIEW	11/19/25

1

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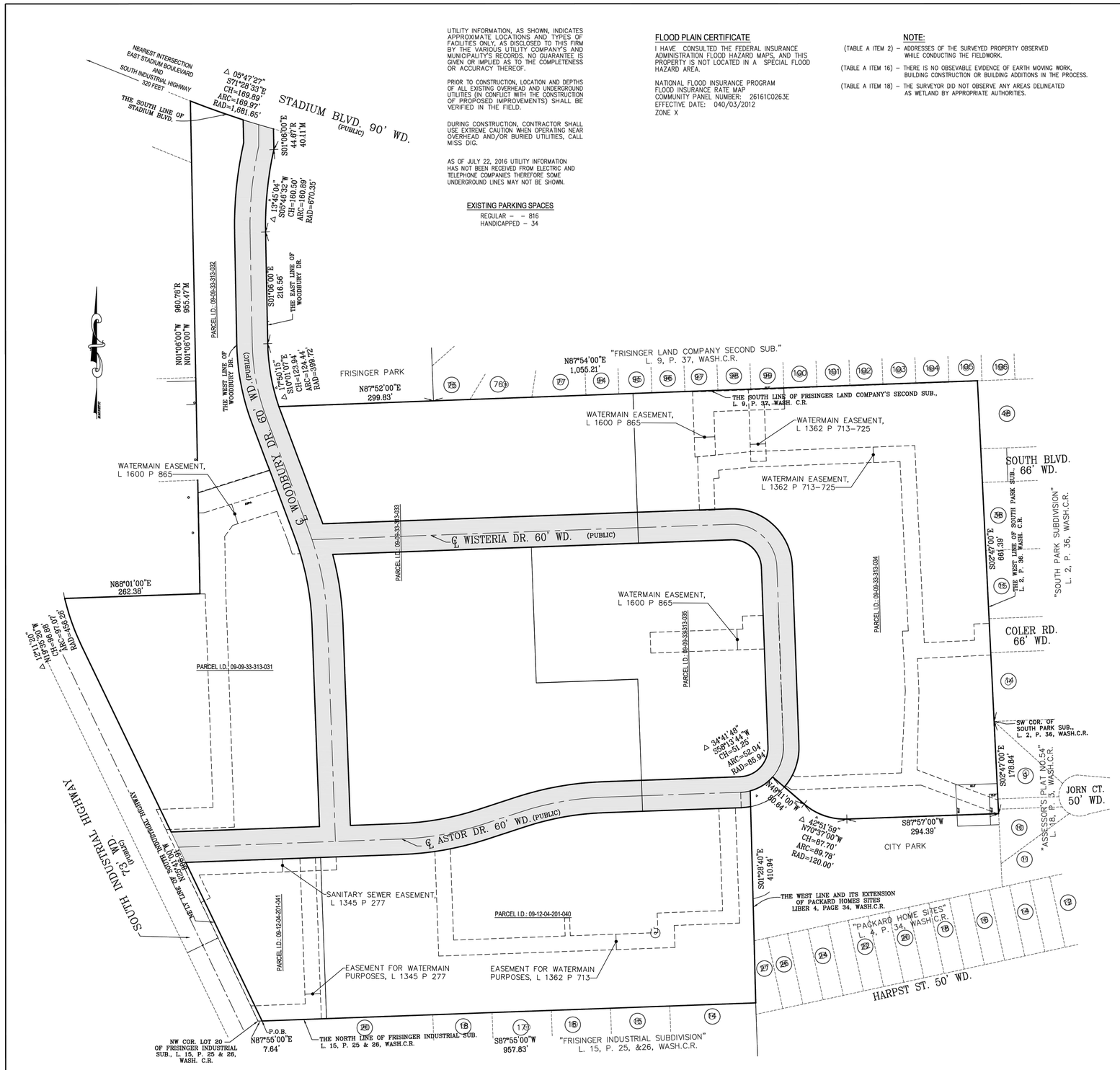
RELEASED FOR:	DATE

JAMES C. AHNERT
P.E. 43208



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF FACILITIES ONLY, AS DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANY'S AND MUNICIPALITY'S RECORDS. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, LOCATION AND DEPTHS OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD.

DURING CONSTRUCTION, CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR OVERHEAD AND/OR BURIED UTILITIES, CALL MISS DIG.

AS OF JULY 22, 2016 UTILITY INFORMATION HAS NOT BEEN RECEIVED FROM ELECTRIC AND TELEPHONE COMPANIES THEREFORE SOME UNDERGROUND LINES MAY NOT BE SHOWN.

EXISTING PARKING SPACES

REGULAR – – 816
HANDICAPPED – 34

FLOOD PLAIN CERTIFICATE

I HAVE CONSULTED THE FEDERAL INSURANCE ADMINISTRATION FLOOD HAZARD MAPS, AND THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA.

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
COMMUNITY PANEL NUMBER: 26161C0263E
EFFECTIVE DATE: 040/03/2012
ZONE X

NOTE:

(TABLE A ITEM 2) – ADDRESSES OF THE SURVEYED PROPERTY OBSERVED WHILE CONDUCTING THE FIELDWORK.

(TABLE A ITEM 16) – THERE IS NO OBSEVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS IN THE PROCESS.

(TABLE A ITEM 18) – THE SURVEYOR DID NOT OBSERVE ANY AREAS DELINEATED AS WETLAND BY APPROPRIATE AUTHORITIES.

LEGAL DESCRIPTION

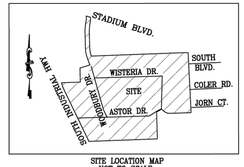
FIRST AMERICAN TITLE INSURANCE COMPANY
Commitment No.: 739772
DATE: JULY 14, 2016

Land in the City of Ann Arbor, Washtenaw County, Michigan, described as follows:

Commencing at the Northwest corner of Lot 20 of FRISINGER INDUSTRIAL SUBDIVISION, according to the Plat thereof recorded in Liber 15 of Plats, pages 25 and 26, Washtenaw County Records; thence along the North line of said Subdivision North 87 degrees 55 minutes 00 seconds East 7.64 feet for PLACE OF BEGINNING; thence along the Northeasterly line of South Industrial Highway, North 25 degrees 41 minutes 00 seconds West 806.91 feet; thence continuing along said Northeasterly line 97.07 feet along the arc of a circular curve to the right, radius 456.26 feet, chord North 19 degrees 35 minutes 20 seconds West 96.88 feet; thence North 88 degrees 01 minutes 00 seconds East 262.38 feet; thence North 01 degree 06 minutes 00 seconds West 955.47 feet (Recorded as 960.78 feet) to the South line of Stadium Boulevard (90 feet wide); thence Easterly along the South line of Stadium Boulevard 169.97 feet along the arc of a nontangential circular curve to the left, radius 1,681.65 feet, chord South 71 degrees 28 minutes 33 seconds East 169.89 feet to the East line of Woodbury Drive (60 feet wide); thence South 1 degree 06 minutes 00 seconds East 40.11 feet (Recorded as 44.67 feet) along the East line of Woodbury Drive; thence continuing along said East line 160.89 feet along the arc of a circular curve to the left, radius 670.35 feet, chord South 5 degrees 46 minutes 32 seconds West 160.50 feet; thence continuing along said East line South 1 degree 06 minutes 00 seconds East 216.56 feet; thence continuing along said East line 124.44 feet along the arc of a circular curve to the left, radius 399.72 feet, chord South 10 degrees 01 minutes 07 seconds East 123.94 feet; thence North 87 degrees 52 minutes 00 seconds East 299.83 feet; thence North 87 degrees 54 minutes 00 seconds East 1,055.21 feet along the South line of FRISINGER LAND COMPANY'S SECOND SUBDIVISION, according to the Plat thereof recorded in Liber 9 of Plats, page 37, Washtenaw County Records; thence South 2 degrees 47 minutes 00 seconds East 661.39 feet along the West line of SOUTH PARK SUBDIVISION, according to the Plat thereof recorded in Liber 2 of Plats, page 36, Washtenaw County Records; thence South 2 degrees 47 minutes 00 seconds East 178.84 feet; thence South 87 degrees 57 minutes 00 seconds West 294.39 feet; thence Northwesterly 89.78 feet along the arc of a circular curve to the right, radius 120.0 feet, chord North 70 degrees 37 minutes 00 seconds West 87.70 feet; thence North 49 degrees 11 minutes 00 seconds West 80.64 feet; thence Southwesterly 52.04 feet along the arc of a nontangential circular curve to the right, radius 85.94 feet, chord South 58 degrees 13 minutes 44 seconds West 51.25 feet; thence South 1 degree 28 minutes 40 seconds East 410.94 feet along the West line and its extension of PACKARD HOME SITES, a Subdivision, according to the Plat thereof recorded in Liber 4 of Plats, page 34, Washtenaw County Records; thence South 87 degrees 55 minutes 00 seconds West 957.83 feet along the North line of FRISINGER INDUSTRIAL SUBDIVISION, according to the plat thereof recorded in Liber 15 of Plats, pages 25 and 26, Washtenaw County Records, to the PLACE OF BEGINNING, being a part of Section 33, Town 2 South, Range 6 East, City of Ann Arbor, Washtenaw County, Michigan, and part of Section 4, Town 3 South, Range 6 East, City of Ann Arbor, Washtenaw County, Michigan. EXCEPTING THERE FROM that part deeded for road purposes to the City of Ann Arbor as disclosed by Quit Claim Deed recorded in Liber 1301, Page 358, Washtenaw County Records.

Containing 1,798,702 square feet or 41.292 acres of land, more or less.

Tax Item No.: 09-09-33-313-031, Tax Item No.: 09-09-33-313-032,
Tax Item No.: 09-09-33-313-033, Tax Item No.: 09-09-33-313-034,
Tax Item No.: 09-09-33-313-035, Tax Item No.: 09-12-04-201-040,
Tax Item No.: 09-12-04-201-041.



SITE LOCATION MAP
NOT TO SCALE

LEGEND

- BOUNDARY LINE
- EASEMENT LINE
- LOT LINE
- BUILDING LINE
- CURB LINE
- FENCE
- GAS LINE
- SANITARY SEWER
- STORM SEWER
- WATER LINE
- OVERHEAD WIRE
- FIRE HYDRANT
- GATE VALVE & WELL
- WATER VALVE
- SANITARY MANHOLE
- CLEAN OUT
- LIGHT POLE
- STORM MANHOLE
- ROUND CATCH BASIN
- SQUARE CATCH BASIN
- TRANSFORMER
- ELECTRIC METER
- ELECTRIC RISER
- UTILITY POLE
- GUY WIRE
- GAS METER
- GAS VALVE
- CABLE T.V. RISER
- CONC. PATIO
- CONC. PORCH
- EXCLUDED LAND FOR ROAD PURPOSES

R	RECORD
M	MEASURED
ASPH.	ASPHALT
CONC.	CONCRETE
1	LOT #
6	# PARKING SPACES
9	EASEMENT #
#0000	ADDRESS (STREET NO.)
00	BUILDING NO.

ORIGINAL ALTA SURVEY DATED JULY 25, 2016 HAS BEEN MODIFIED TO INCLUDE THE ADDITION OF EXISTING EASEMENTS BY MIDWESTERN CONSULTING, SEPTEMBER 2024

TO:
BOTANICAL GARDENS ASSOCIATES, LLC.
JOHN HANCOCK LIFE INSURANCE COMPANY (U.S.A.), A MICHIGAN CORPORATION, ITS SUCCESSORS AND/OR ASSIGNS, AS THEIR INTERSTS MAY APPEAR.
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 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS NOS. 2, 3, 4, 6(a), 6(b), 7(a), 7(b)(1), 7(c), 8, 9, 11, 13, 14, 16, 18 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JUNE 17, 2016.

VIJAYSINH U. MAHIDA
REGISTRATION NO. 17806
DATED: JULY 25, 2016

STATE OF MICHIGAN
VIJAYSINH U. MAHIDA
LAND SURVEYOR
No. 17806
REGISTERED LAND SURVEYOR

72 HOURS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171
(TOLL FREE)

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

ENVIRO-MATRIX LAND S.E.A. CORP.
SURVEYING • ENGINEERING
2201 EAST TWELVE MILE ROAD, WARREN, MI 48092
TELEPHONE: (248) 588-2600 FAX: (248) 398-9783
E-MAIL: envirolandsea@aol.com

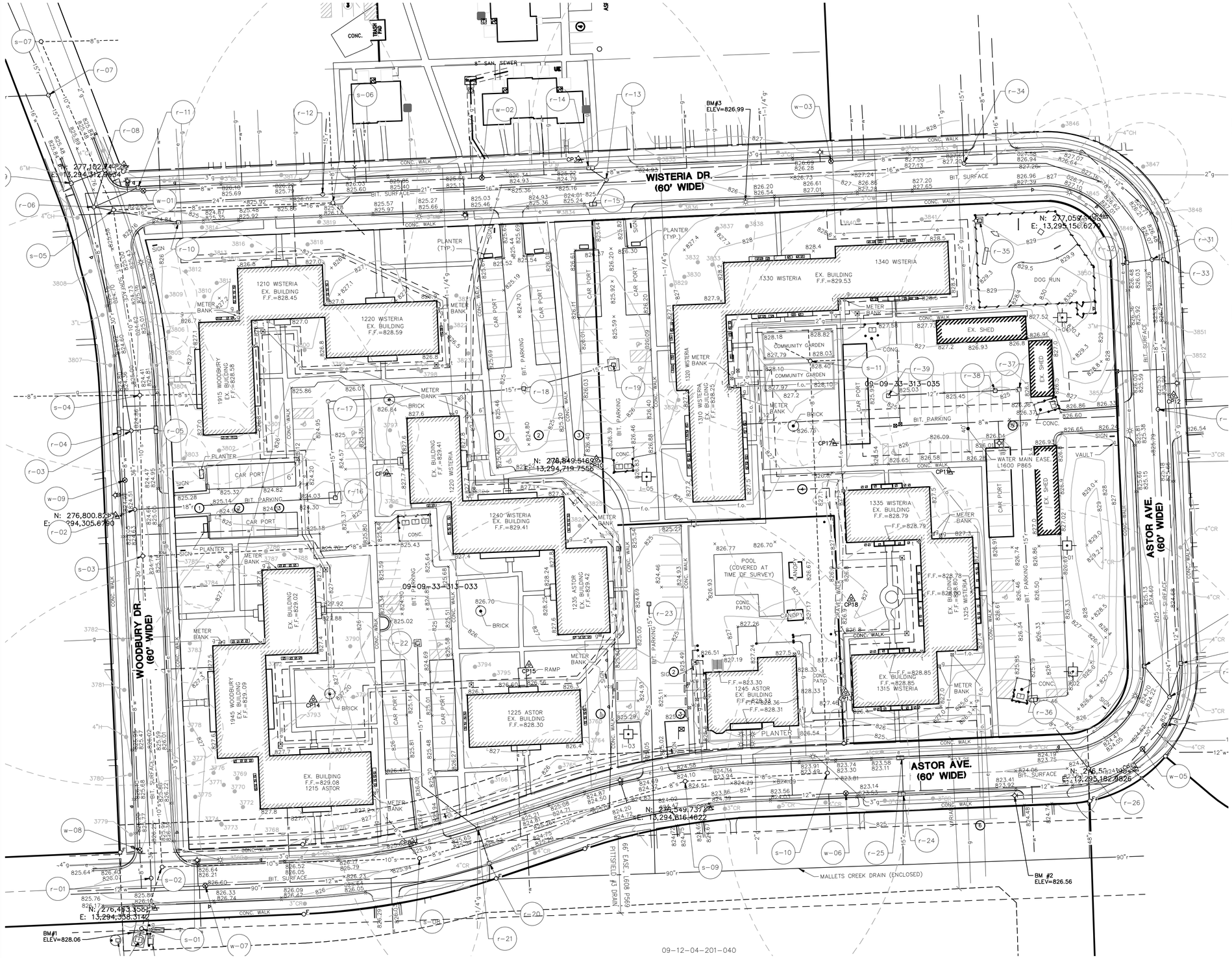
SURVEYED BY: B.B.
DRAWING BY: A.F.
DRAWN BY: R.P.
CHECKED BY: R.P.
SCALE: 1" = 100'
DATE: JUNE 29, 2016

DATE	REVISIONS	BY
07/07/03	PER CLIENT	A.F.
JUNE 29, 2016	UPDATE	R.P.
JULY 14, 2016	Per JoAnn McGee's comment – Email Jul. 13, 2016	R.P.
JULY 18, 2016	Per discussion with Jason Hines of Iodate	R.P.
JULY 25, 2016	Final Submittal of Survey	R.P.

ALTA/ACSM LAND TITLE SURVEY
WOODBURY GARDENS
CITY OF ANN ARBOR
WASHTENAW COUNTY
MICHIGAN

JOB NO. LS-03028

SHT. 1 OF 6



NOTES

1. THE BASE SURVEY WAS PREPARED BY MIDWESTERN CONSULTING IN 10/2023. 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 THERETO. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.

BENCHMARKS

BM#1 NE CORER OF LIFT STATION CONCRETE PAD, TOP OF CONCRETE
ELEVATION = 828.06 (NAVD88)

BM# 2 TOP OF MAIN STEAMER, NORTH SIDE OF HDYRANT ON SOUTH SIDE OF ASTOR AVE.
ELEVATION = 826.56 (NAVD88)

BM #3 TOP OF BOLT, NW BOLT IN LIGHT POLE, SOUTH SIDE OF WISTERIA DR.
ELEVATION = 826.99 (NAVD88)

LEGEND

838	EXIST. CONTOUR
×836.2	EXIST. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
GP	EXIST. GUY POLE
	GUY WIRE
	ELEC. TRANSFORMER
	EXIST. AC UNIT
	EXIST. GENERATOR
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
	EXIST. BLOW-OFF
c.i.v.	EXIST. POST INDICATOR VALVE
fdc	EXIST. FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	END SECTION
	HEAD WALL
	CULVERT
ds	EXIST. DOWNSPOUT
s	EXIST. SANITARY SEWER
	EXIST. CLEANOUT
	C/L OF DITCH
T	ENCLOSED TRASH AREA
	SIGN
pm	PARKING METER
	MAILBOX
tel	TELEPHONE RISER
catv	CABLE TELEVISION RISER
e	ELECTRIC METER
w	WATER METER
scb	SPRINKLER CONTROL BOX
g	GAS METER
glm	GAS LINE MARKER
fiber	FIBER OPTIC MARKER
ped	PEDESTRIAN CROSSING SIGNAL
tscb	TRAFFIC SIGNAL CONTROL BOX
	POST
	EXIST. BOLLARD
W	WELL
	FENCE
	GUARDRAIL
	SINGLE TREE
	TREE OR BRUSH LIMIT
	EXIST. BOULDER
	EXIST. SPRINKLER HEAD

GENERAL SOILS DESCRIPTION

BASED ON SOIL SURVEY OF WASHTENAW COUNTY MICHIGAN

ENTIRE SITE IS CHARACTERIZED AS:
MdA – MATHERTON SANDY LOAM, 0 TO 4 PERCENT SLOPES

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

SCALE: 1" = 40'
0 40 80 120

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BIRMINGHAM, MI 48009
ADAM BLEZNAK
248-540-9300

WOODBURY GARDENS REDEVELOPMENT

SITE PLAN FOR REZONING AND CITY COUNCIL
EXISTING CONDITIONS

3

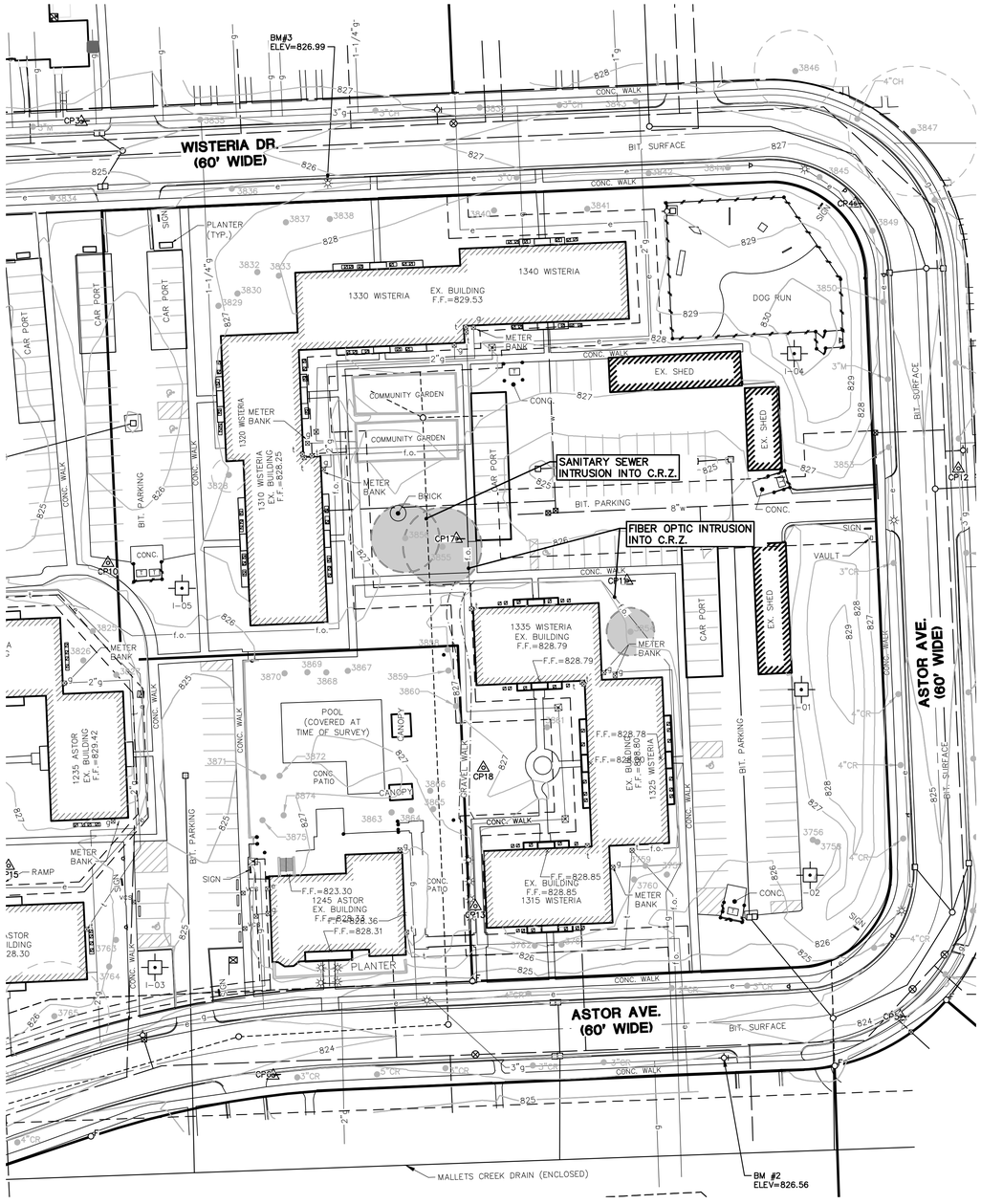
JOB No. 23195
DATE: 6/20/24
SHEET 3 OF 18
CADD:
DWG: 23195EX.dwg

REVISIONS:	REV. DATE
PER PRE-APP. REVIEW	4/02/25
PER CITY REVIEW	6/18/25
PER CITY REVIEW	

ENG: JCA
PM: SWB
TECH:

SCALE: 1" = 40'

0 40 80 120



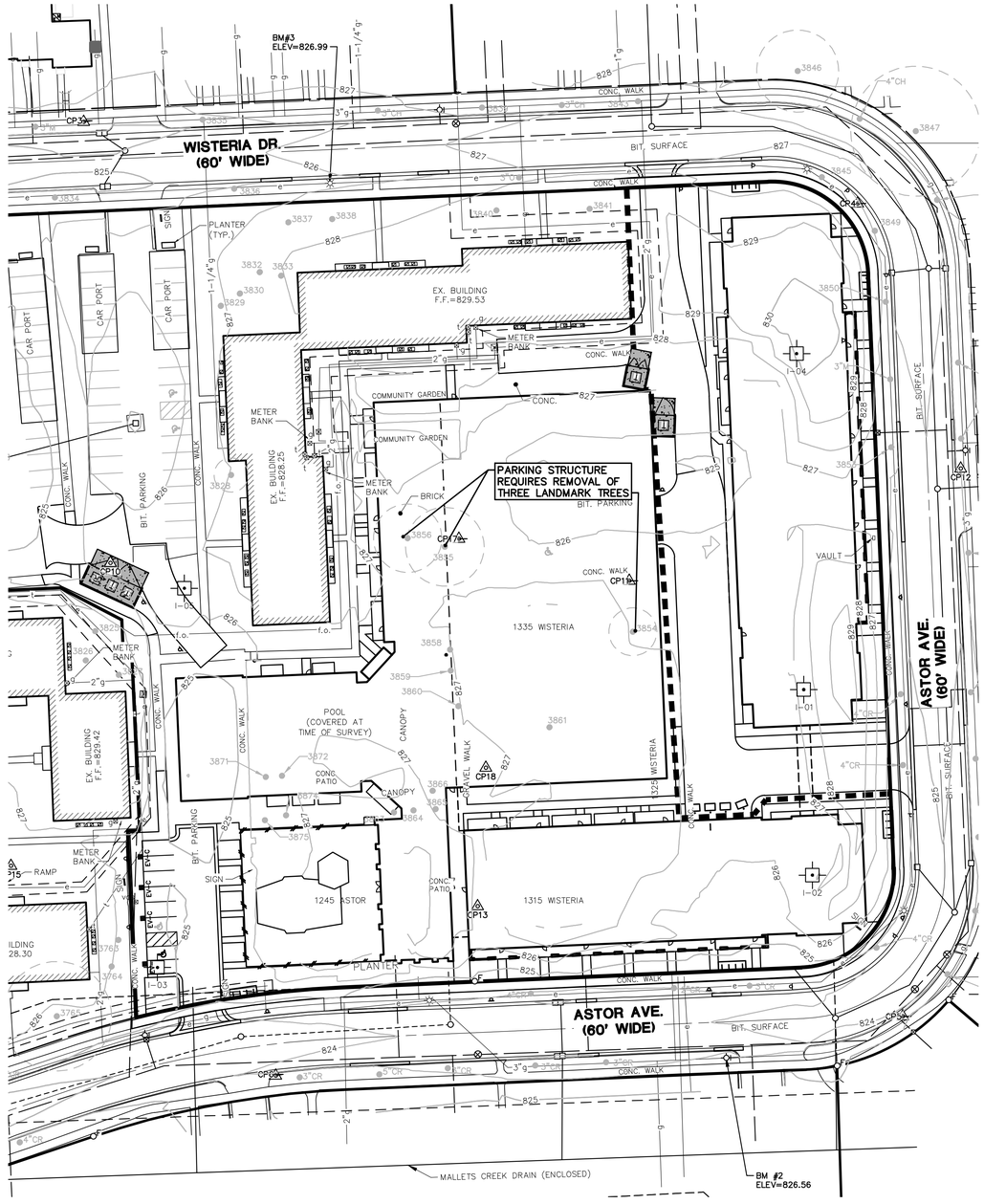
NATURAL FEATURES PLAN

Natural Features Inventory and Impact

The site does not contain any steep slopes, watercourses, floodplains, wetlands or endangered species habitat.

The site does contain 3 landmark trees that are proposed for removal. Tree #3854- 14" quint Black Walnut, #3855- 23" Black Walnut, #3856- 20" Black Walnut.

It is unknown if these are native trees or nursery, planted trees. There is minor intrusion into the critical root zones of all trees from underground utilities.



NATURAL FEATURES OVERLAY PLAN

Overlaying the proposed building development plan on the existing site and existing natural features reveals that the proposed development will require the removal of three landmark trees.

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WOODBURY GARDENS REDEVELOPMENT

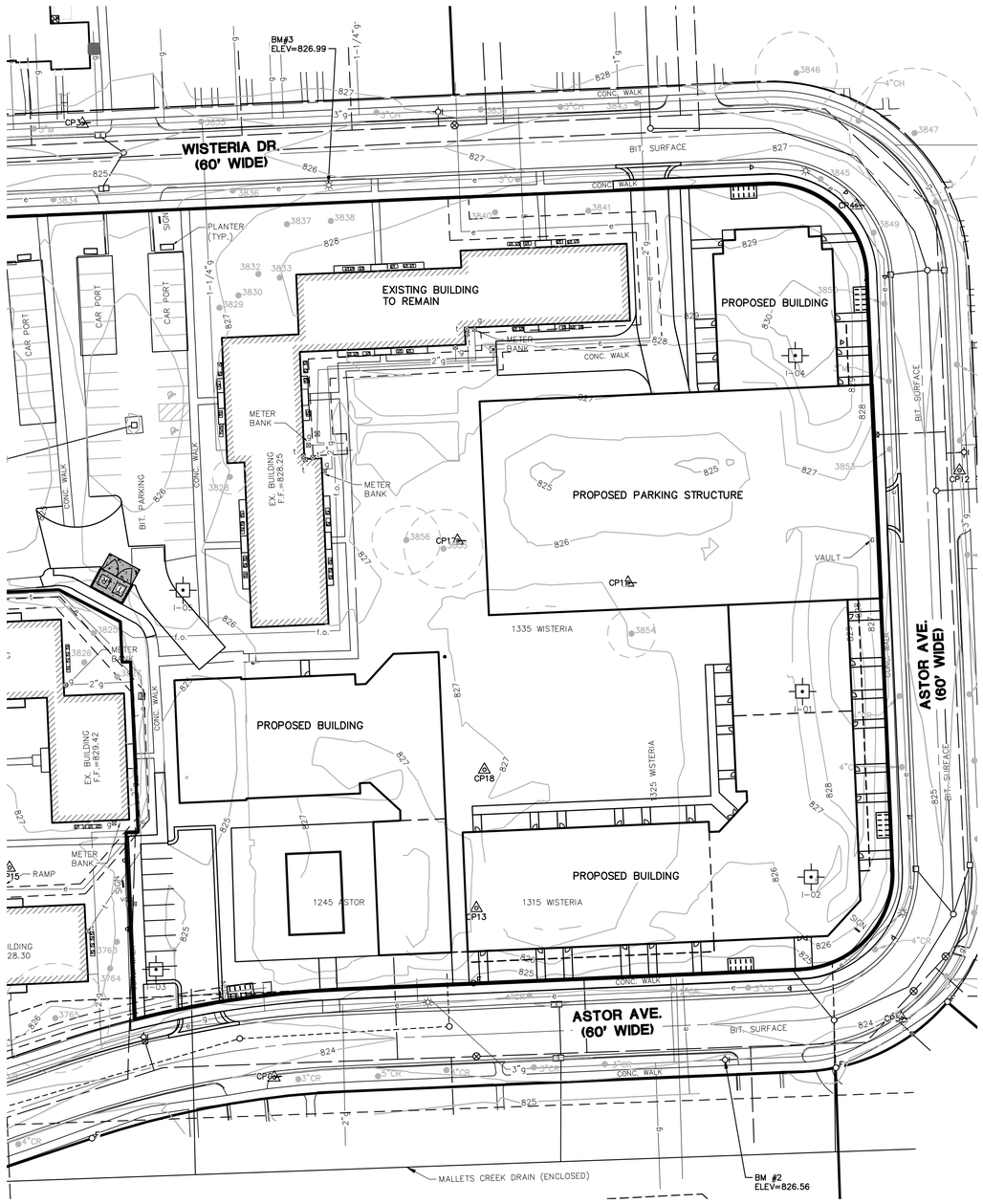
SITE PLAN FOR REZONING AND CITY COUNCIL
NATURAL FEATURES REVIEW

4

JOB No. 23195

REVISIONS:	REV. DATE:
PER ZONING REVIEW	4/02/25
PER SITE PLAN REVIEW	

DATE: 6/20/24
SHEET 4 OF 18
CADD:
ENG: JCA
PM: SWB
TECH:
23195NF.dwg
PSP



ALTERNATIVE 1

ALTERNATIVE #1

Description: Alternative #1 examined the development potential of the property by placing the parking structure adjacent to the roadway to save the trees.

Findings:

- Aerial access by the fire department to these proposed seven story building is the driving reason they are arranged around the perimeter of the existing roadway network. The fire department needs an aerial apparatus access route that is a minimum of 26' wide and between 15' and 45' from the structure. The ideal solution is the use of the existing ring road.
- Parking structures, by nature, are very efficient from a land use/low impervious surface stand point, but are not very attractive in a residential setting. Growing trends have used parking structures to house the parking needs of a development, but then wrapped them with housing units that display a residential appeal.
- Bringing the parking structure to the curb line would result in a loss of prime residential real estate location including the loss of approximately 112 units.
- The northeast building would be very in efficient and may not make sense to construct-resulting in a loss of more units.

Discussion:

- Attempts to recover lost units would result in a higher building height that would produce more shade on the existing buildings and be less desirable to surrounding neighbors.
- There are multiple other locations that could be examined that move the parking structure away from the landmark trees, but all of these alternatives result in the same conclusions that result from alternative #1;
  - The parking structure is shifted to the road edge
  - Residential units are lost
  - The parking structure is full view of passersby.

COMMENTS ON PROPOSED DESIGN

The proposed design recognizes that a centrally located parking structure to serve the needs of the proposed development would require the removal of three landmark trees, however we feel this is justified by the following reasons.

- The ideal location for seven story buildings is at the curb line from a fire safety standpoint thus making the default location of the parking structure centrally located on site.
- Multi level parking structures are highly efficient from a land use and impervious impact point of view.
- Shielding the parking structure from most view angles by residential architectural facades produces a lower intensity and softer residential appeal

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WOODBURY GARDENS REDEVELOPMENT

SITE PLAN FOR REZONING AND CITY COUNCIL
ALTERNATIVE ANALYSIS

5

JOB No. 23195
DATE: 6/20/24
SHEET 5 OF 18
REVISIONS:
PER CITY REVIEW 10/11/24
CADD:
ENG: JCA
PM: SWB
TECH:
23195AA.dwg

Know what's **below.**
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TREE TABLE

TAG#	DBH	COMMON NAME	GENUS/SPECIES	STEMS	SCORE	LM	INV	REMOVE
3756	8"	Crab Apple	Malus coronaria					X
3757	11"	Amur Honeysuckle	Lonicera maackii				X	X
3758	9"	Blue Spruce	Picea pungens					X
3759	8"	Blue Spruce	Picea pungens					X
3760	8"	Blue Spruce	Picea pungens					X
3761	4"	Dogwood	Cornus florida	triple				X
3762	4"	Dogwood	Cornus florida	triple				X
3763	9"	Crab Apple	Malus coronaria					
3764	8"	Crab Apple	Malus coronaria					
3765	32"	Silver Maple	Acer saccharinum			X		
3766	16"	Red Maple	Acer rubrum			X		
3767	28"	Silver Maple	Acer saccharinum			X		
3768	25"	Silver Maple	Acer saccharinum			X		
3769	9"	Blue Spruce	Picea pungens					
3770	7"	Blue Spruce	Picea pungens					
3771	6"	Blue Spruce	Picea pungens					
3772	6"	Blue Spruce	Picea pungens					
3773	10"	Catalpa	Catalpa speciosa				X	
3774	18"	Catalpa	Catalpa speciosa				X	
3775	13"	Sycamore	Platanus occidentalis					
3776	6"	Blue Spruce	Picea pungens					
3777	19"	Sycamore	Platanus occidentalis			X		
3778	27"	Sycamore	Platanus occidentalis			X		
3779	14"	Norway Maple	Acer platanoides				X	
3780	13"	Norway Maple	Acer platanoides				X	
3781	8"	Miyabe's Maple	Acer miyabei					
3782	6"	Miyabe's Maple	Acer miyabei					
3783	34"	Sycamore	Platanus occidentalis			X		
3784	20"	Sycamore	Platanus occidentalis			X		
3785	6"	Hop-Hornbeam	Ostrya virginia					
3786	9"	Crab Apple	Malus coronaria					
3787	8"	Crab Apple	Malus coronaria					
3788	8"	Crab Apple	Malus coronaria					
3789	19"	Norway Maple	Acer platanoides				X	
3790	44"	Bur Oak	Quercus macrocarpa			X		
3791	24"	Honey Locust	Gleditsia triacanthos			X		
3792	10"	Amur Honeysuckle	Lonicera maackii				X	
3793	6"	Blue Spruce	Picea pungens					
3794	11"	Blue Spruce	Picea pungens					
3795	10"	Blue Spruce	Picea pungens					
3796	34"	Sycamore	Platanus occidentalis			X		
3797	25"	Sugar Maple	Acer saccharum			X		
3798	6"	Crab Apple	Malus coronaria					
3799	7"	Crab Apple	Malus coronaria					
3800	12"	Crab Apple	Malus coronaria					
3801	10"	Crab Apple	Malus coronaria					
3802	29"	Swamp White Oak	Quercus bicolor		X	X		
3803	21"	Pecan	Carya illinoinensis		X	X		
3804	20"	Black Walnut	Juglans nigra		X	X		
3805	18"	Black Walnut	Juglans nigra		X	X		
3806	17"	Shagbark Hickory	Carya ovata		X	X		
3807	7"	Miyabe's Maple	Acer miyabei					
3808	7"	Miyabe's Maple	Acer miyabei					
3809	26"	Pecan	Carya illinoinensis			X		
3810	8"	Blue Spruce	Picea pungens					
3811	7"	Blue Spruce	Picea pungens					
3812	6"	Blue Spruce	Picea pungens					
3813	9"	Blue Spruce	Picea pungens					
3814	8"	Miyabe's Maple	Acer miyabei					
3815	6"	Blue Spruce	Picea pungens					
3816	14"	Crab Apple	Malus coronaria					
3817	6"	Miyabe's Maple	Acer miyabei					
3818	10"	Crab Apple	Malus coronaria					
3819	6"	Hop-Hornbeam	Ostrya virginia					
3820	8"	Miyabe's Maple	Acer miyabei					
3821	9"	Crab Apple	Malus coronaria					
3822	10"	Crab Apple	Malus coronaria					
3823	11"	Crab Apple	Malus coronaria					
3824	6"	Redbud	Cercis canadensis	triple		X		
3825	8"	Blue Spruce	Picea pungens					
3826	6"	Blue Spruce	Picea pungens					
3827	7"	Blue Spruce	Picea pungens					
3828	10"	Redbud	Cercis canadensis			X		
3829	9"	Blue Spruce	Picea pungens					
3830	7"	Blue Spruce	Picea pungens					
3831	6"	Blue Spruce	Picea pungens					
3832	7"	Blue Spruce	Picea pungens					
3833	8"	Blue Spruce	Picea pungens					
3834	9"	Miyabe's Maple	Acer miyabei					
3835	9"	Miyabe's Maple	Acer miyabei					
3836	6"	Hop-Hornbeam	Ostrya virginia					
3837	6"	Crab Apple	Malus coronaria	triple	40%			
3838	7"	Crab Apple	Malus coronaria	triple	40%			
3839	7"	Miyabe's Maple	Acer miyabei					
3840	11"	Crab Apple	Malus coronaria	twin				
3841	11"	Crab Apple	Malus coronaria	twin				
3842	8"	Miyabe's Maple	Acer miyabei					X
3843	8"	Miyabe's Maple	Acer miyabei					
3844	6"	Hop-Hornbeam	Ostrya virginia					X
3845	7"	Miyabe's Maple	Acer miyabei					
3846	24"	Persimmon	Diospyros virginiana			X		
3847	38"	Northern Hackberry	Celtis occidentalis			X		
3848	8"	Miyabe's Maple	Acer miyabei					
3849	6"	Hop-Hornbeam	Ostrya virginia					
3850	7"	Miyabe's Maple	Acer miyabei					
3851	8"	Miyabe's Maple	Acer miyabei					
3852	6"	Hop-Hornbeam	Ostrya virginia					
3853	6"	Miyabe's Maple	Acer miyabei					
3854	14"	Black Walnut	Juglans nigra	quint		X		X
3855	23"	Black Walnut	Juglans nigra			X		X
3856	20"	Black Walnut	Juglans nigra			X		X
3857	6"	Blue Spruce	Picea pungens					
3858	19"	Russian Olive	Elaeagnus angustifolia				X	X
3859	12"	Common Juniper	Juniperus communis					X
3860	16"	Blue Spruce	Picea pungens					X
3861	14"	Black Pine	Pinus nigra				X	X
3862	7"	Bradford Pear	Pyrus calleryana				X	X
3863	8"	Bradford Pear	Pyrus calleryana				X	X
3864	8"	Bradford Pear	Pyrus calleryana				X	X
3865	6"	Bradford Pear	Pyrus calleryana				X	X
3866	7"	Bradford Pear	Pyrus calleryana				X	X
3867	6"	Bradford Pear	Pyrus calleryana				X	X
3868	8"	Bradford Pear	Pyrus calleryana				X	X
3869	7"	Bradford Pear	Pyrus calleryana				X	X
3870	10"	Bradford Pear	Pyrus calleryana				X	X
3871	6"	Bradford Pear	Pyrus calleryana				X	X
3872	9"	Bradford Pear	Pyrus calleryana				X	X
3873	6"	Bradford Pear	Pyrus calleryana				X	
3874	8"	Bradford Pear	Pyrus calleryana				X	X
3875	6"	Bradford Pear	Pyrus calleryana				X	X

STRUCTURE TABLE - STORM SEWER

Structure #	Type	Rim Elevation	Pipe Size (in.)	Material	Direction	Invert Elevation	Comments
r-01	Strm MH	826.39	36	RCP	N	816.19	
		826.39	36	RCP	S	816.19	
r-02	Strm MH	824.93	36	RCP	N	817.28	
		824.93	36	RCP	S	817.23	
		824.93	18	RCP	E	818.18	
r-03	Strm MH	824.67	36	RCP	S	817.37	
		824.67	30	RCP	N	817.52	
		824.67	12	RCP	E	819.87	
		824.67	12	RCP	W	820.02	
r-04	CB	824.12	12	RCP	E	820.52	
r-05	CB	824.15	12	RCP	W	820.20	
r-06	Strm MH	825.56	30	RCP	S	818.26	
		825.56	15	RCP	N	818.81	
		825.56	12	RCP	NE	819.16	
		825.56	12	RCP	ENE	820.86	
		825.56	12	RCP	ESE	820.81	
r--07	Strm MH	826.00	15	RCP	S	819.35	
		826.00	15	RCP	N	819.45	
		826.00	12	RCP	W	819.60	
r-08	CB	825.23	12	RCP	SW	819.38	
		825.23	12	RCP	W	819.48	
r-09	CB	825.30	12	RCP	E	821.40	
r-10	CB	824.39	12	RCP	WNW	821.29	
r-11	CB	825.08	12	RCP	WSW	821.53	
r-12	Strm MH	826.01	24	RCP	W	819.21	
		826.01	21	RCP	E	819.31	
		826.01	15	RCP	N	819.81	
r-13	Strm MH	825.03	21	RCP	W	820.13	
		825.03	12	RCP	NW	820.38	
		825.03	12	RCP	SW	820.48	
r-14	CB	824.36	12	RCP	SE	820.66	
r-15	CB	824.72	12	RCP	NE	820.67	
r-16	CB	823.55	18	RCP	W	818.65	
		823.55	15	RCP	N	818.75	
r-17	Strm MH	824.83	15	RCP	S	819.03	
		824.83	12	RCP	E	819.13	
r-18	CB	823.85	15	RCP	W	819.70	
		823.85	15	RCP	E	820.20	
r-19	CB	824.80	15	RCP	W	820.80	
r-20	CB	824.97	18	RCP	S	817.02	
		824.97	15	RCP	N	817.12	
r-21	CB	825.01	15	RCP	NW	817.31	
		825.01	15	RCP	S	817.41	
r-22	CB	823.84	15	RCP	S	818.79	
r-23	CB	823.98	15	RCP	S	816.13	
r-24	CB	822.94	12	RCP	N	819.69	
		822.94	15	RCP	S	816.89	
r-25	CB	822.90	12	RCP	S	820.10	
r-26	Strm MH	824.24	48	RCP	S	813.09	
		824.24	30	RCP	NE	813.14	
		824.24	18	RCP	NW	815.14	
r-27	Strm MH	824.46	24	RCP	N	814.41	
		824.46	30	RCP	S	814.21	
		824.46	18	RCP	SE	815.31	
		824.46	12	RCP	NW	819.66	
		824.46	12	RCP	NE	819.66	
r-28	CB	824.31	12	RCP	SE	820.16	
r-29	CB	824.38	12	RCP	SW	820.43	
r-30	Strm MH	825.77	18	RCP	N	818.17	
		825.77	24	RCP	S	818.07	
		825.77	24	RCP	E	818.77	
r-31	Strm MH	826.16	18	RCP	N	818.86	
		826.16	18	RCP	S	818.76	
		826.16	12	RCP	W	819.51	
		826.16	12	RCP	E	819.51	
r-32	CB	826.01	12	RCP	E	819.71	
r-33	CB	825.93	12	RCP	W	820.58	
r-34	Strm MH	827.34	18	RCP	E	819.99	
		827.34	15	RCP	N	820.04	
r-35?	CB	828.91				828.91	Dry Well
r-36	CB	825.22	15	RCP	N	816.02	
		825.22	18	RCP	SE	815.92	
r-37	CB	824.86	15	RCP	S	817.31	
		824.86	12	RCP	W	818.11	
r-38	CB	824.79	12	RCP	E	818.74	
		824.79	12	RCP	W	818.79	
r-39	CB	824.69	12	RCP	E	819.69	

STRUCTURE TABLE - SANITARY SEWER

Structure #	Type	Rim Elevation	Pipe Size (in.)	Material	Direction	Invert Elevation	Commments
s-01	San MH	827.23	12		N	810.03	
		827.23	12		S	810.03	
s-02	San MH	826.34	10	Clay	N	810.99	
		826.34	12	Clay	S	810.49	
		826.34	10	Clay	E	812.94	
s-03	San MH	825.14	10		S	812.24	
		825.14	10		N	812.34	
		825.14	8	Clay	E	814.24	
		825.14	8	Clay	SW	815.24	
s--04	San MH	824.75	10	Clay	S	812.85	
		824.75	10	Clay	N	812.90	
		824.75	8	Clay	E	814.95	
		824.75	8	Clay	W	815.25	
s-05	San MH	825.61	10	Clay	S	813.71	
		825.61	8	Clay	N	815.61	
		825.61	10	Clay	E	813.86	
s-06	San MH	825.96	8		W	815.61	
		825.96	8		N	814.71	
		825.96	6		SE	816.86	under ladder
s-07	San MH	826.32	10	Clay	S	816.37	
		826.32	8	Clay	E	818.02	
s-08	San MH	825.76	10	Clay	W	811.86	
		825.76	8	Clay	E	811.96	
		825.76	6	Clay	NW	814.61	
s-09	San MH	824.38	8	Clay	E	812.93	
		824.38	8	Clay	W	812.83	
s-10	San MH	823.68	8	Clay	N	813.58	
		823.68	8	Clay	W	813.48	
s-11	San MH	827.42	8	Clay	S	816.12	
		827.42	6	Clay	NW	816.42	
		827.42	6	Clay	N	816.42	
		827.42	6	Clay	NE	816.42	

STRUCTURE TABLE - WATER

Structure #	Type	Rim Elevation	Pipe Size (in.)	Direction	Invert Elevation	Comments
w-01	GVIW	824.28	8	E-W	819.78	
w-02	GVIW	825.19	8	E-W	819.29	
w-03	GVIW	826.67	8	E-W	821.72	
w-04	GVIW	824.12	12	NE-SW	819.37	
w-05	GVIW	824.19	12	NE-SW	819.69	
w-06	GVIW	823.31	12	E-W	818.86	
w-07	GVIW	826.56		N-S	820.56	full of water
w-08	GVIW	825.98		N-S	819.98	full of water
w-09	GVIW	824.50		N-S	819.65	full of water

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WOODBURY GARDENS REDEVELOPMENT

SITE PLAN FOR REZONING AND CITY COUNCIL
EXISTING STRUCTURE SCHEDULE AND TREE LISTING

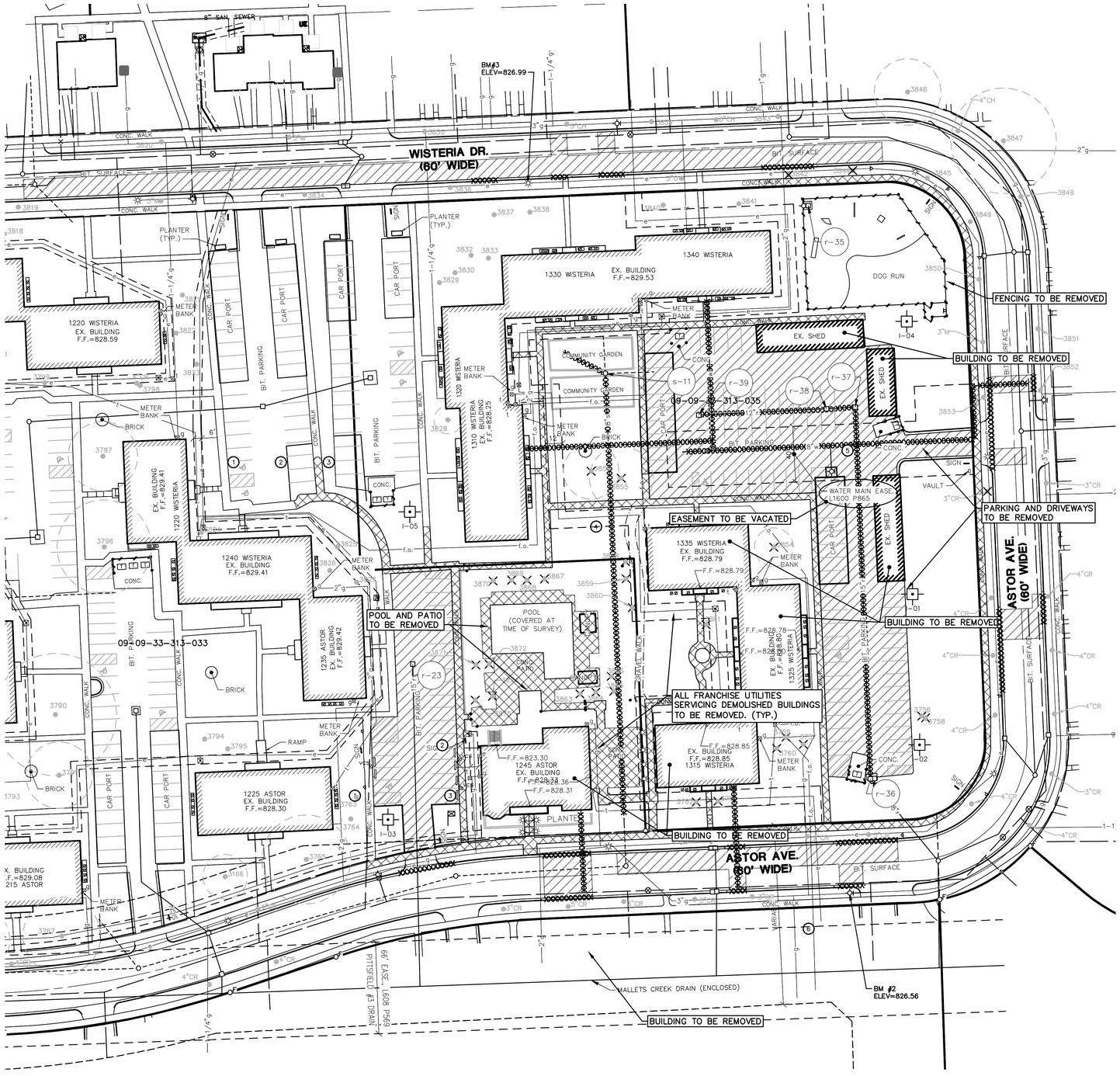
6

DATE: 6/20/24
SHEET 6 OF 18
CADD: JCA
ENG: JCA
PM: SWB
TECH:
23195EX.dwg
TBP

JOB No. 23195

REVISIONS:	REV. DATE
PER CITY REVIEW	9/15/25

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



SCALE: 1" = 40'

0 40 80 120

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

NOTES

1. THE BASE SURVEY WAS PREPARED BY MIDWESTERN CONSULTING IN OCTOBER 2024. 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 THERETO. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.

LEGEND

838	EXIST. CONTOUR
	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
fdc	FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
ds	EXIST. DOWNSPOUT
s	EXIST. SANITARY SEWER
	EXIST. CLEANOUT
	SIGN
t	TELEPHONE RISER
catv	CABLE TELEVISION RISER
e	ELECTRIC METER
w	WATER METER
	POST
	EXIST. BOLLARD
	FENCE
	GUARDRAIL
	SINGLE TREE
	TREE OR BRUSH LIMIT
	SECTION CORNER
SB-1	SOIL BORING LOCATION
	EXIST. TEST PIT LOCATION
S	SET IRON PIPE
F	FOUND IRON PIPE
S	SET MONUMENT
F	FOUND MONUMENT
spk	SET P.K.
FPK	FOUND P.K.
S	SET IRON ROD
FIR	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
REL	ITEM TO BE RELOCATED
REM	ITEM TO BE REMOVED

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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WOODBURY GARDENS REDEVELOPMENT

SITE PLAN FOR REZONING AND CITY COUNCIL
REMOVAL PLAN

7

JOB No. 23195

REVISIONS:	REV. DATE
PER CITY REVIEW	4/07/25
PER CITY REVIEW	4/02/25

DATE: 6/20/24
SHEET 7 OF 18
CADD:
ENG: JCA
PM: SWB
TECH:
F23195RM
F23195.dwg

SEE PATH CONTINUATION THIS SHEET, LOWER RIGHT

10' WIDE CONC. PROPOSED SHARED-USE PATH

BM#3 ELEV=826.99

WISTERIA DR. (60' WIDE)

60' RIGHT OF WAY

"ONE WAY" SIGN, SOUTHBOUND

32' CURB CUT

45' CURB CUT

36' CURB CUT

110' SIGHT DIST.

8 CL C BIKE PARKING SPACES

DRIVEWAY ACCESS ONE WAY SOUTHBOUND

PROPOSED BOUNDARY ADJUSTMENT

EXISTING BUILDING TO REMAIN

EX. BUILDING F.F.=829.53

NEW 5' CONCRETE WALK

EXIST. PARCEL WEST BOUNDARY TO BE ADJUSTED

PROPOSED DRIVE RECONFIGURATION FOR FIRE ACCESS AND TRASH COLLECTION VEHICLE TURN-AROUND

BITUMINOUS PAVEMENT TO BE PLACED TO CONNECT PARKING AREAS. EXISTING SIDEWALK TO BE REMOVED AT DRIVE CROSSING

"ONE WAY, DO NOT ENTER" SIGN, FACING SOUTH

LIMITS OF PARKING GARAGE

"NO PARKING" SIGN

PHASE 2

PHASE 1

BRIDGE AT, LEVEL 3

ASTOR AVE. (60' WIDE)

EXIT. SIDEWALK TO BE REMOVED AT PROP. BITUMINOUS TURN-AROUND

EXIST. PARCEL WEST BOUNDARY TO BE ADJUSTED

5' CONCRETE WALK

PROPOSED BOUNDARY ADJUSTMENT

GROUND FLOOR CLUBHOUSE WITH RESIDENTIAL OVERHEAD

TWO-WAY DRIVE ACCESS

PEDESTRIAN ACCESS WITH BUILDING OVERHEAD

PROPOSED 7-STORY BUILDING

SURFACE PARKING AREA TO BE RECONSTRUCTED

PROPOSED POOL, 1,450 SF

8 CL C BIKE PARKING SPACES

WOODBURY DR. (60' WIDE)

SITE PLAN PROPOSAL INCLUDES A PROPERTY BOUNDARY ADJUSTMENT TRANSFERRING AN AREA OF 61,766 SF (22,879 SF NORTH, 38,887 SF SOUTH) FROM WEST PARCEL TO EAST PARCEL. TOTAL NEW SITE AREA = 225,855 SF OR 5.18 AC.

BM #2 ELEV=826.56

BM#1 ELEV=828.06

09-12-04-201-040

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SCALE: 1" = 40'

0 40 80 120

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

LEGEND

- BF — BARRIER FREE PARKING SIGN
- BFV — VAN ACCESSIBLE BARRIER FREE PARKING SIGN
- R — BARRIER FREE SIDEWALK RAMP
- PROP. CURB & GUTTER
- PROP. BITUMINOUS PAVEMENT
- PROP. CONCRETE PAVEMENT
- PROP. HEAVY DUTY CONCRETE
- SIGN
- PROP. SINGLE LIGHT
- PROP. DOUBLE LIGHT
- VCS — PROP. VEHICLE CHARGING STATION

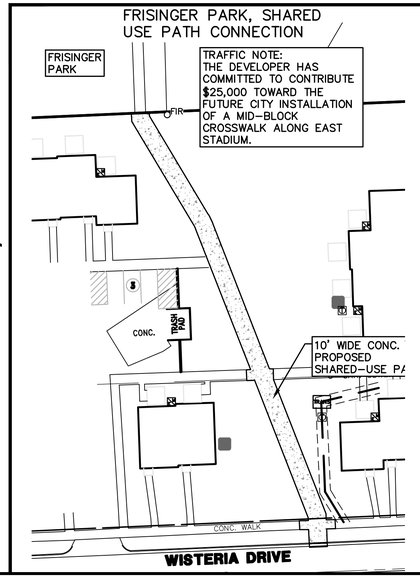
BIKE PARKING SUMMARY

52 CLASS A SPACES ARE PROVIDED IN THE PARKING STRUCTURE PHASE 1 BUILDING
22 CLASS B SPACES ARE PROVIDED IN THE PARKING STRUCTURE
40 CLASS C SPACES ARE PROVIDED AROUND THE SITE
114 BIKE PARKING SPACES ARE PROVIDED

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 and/or public paths shall meet all requirements and guidelines as set forth in the Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way published August 8, 2023. Note that many of the details concerning grades will need to be determined during the site plan stage in order to gain grading plan approval.
5. Pavement markings disturbed due to pavement cuts or construction related activities shall be replaced as directed by Engineering. Replacement during construction of the project may be considered temporary, with final pavement marking restoration to occur at the end of the project.
6. The contractor shall take all necessary precautions to protect the existing public road pavement. Damage to the public road pavement during the course of construction may necessitate milling and resurfacing of the damaged areas prior to issuance of the Certificate of Occupancy.

FRISINGER PARK, SHARED USE PATH CONNECTION



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WOODBURY GARDENS REDEVELOPMENT

SITE PLAN FOR REZONING AND CITY COUNCIL

SITE PLAN

8

DATE: 6/20/24
SHEET 8 OF 18
CADD:
ENG: JCA
PM: SWB
TECH:
23195SP

REVISIONS:	REV. DATE
PER CITY REVIEW	4/02/25
PER CITY REVIEW	6/18/25
PER CITY REVIEW	9/15/25
PER CITY REVIEW	11/19/25

JOB No. 23195

SANITARY SEWER FLOW MITIGATION CALCULATIONS

Note: There will be no backwash discharge from the pool to the sanitary sewer system.

Existing Flow	Bedrooms	Other Notes		
33 Apartments (601-1200 Square Feet) @		250	gpd =	8250 gpd
2490 SF Pool x 1 person/	50 sf X	20	gpd/per =	996 gpd
			Total =	9246 gpd

Design Flow

Based on the City of Ann Arbor's sanitary sewer flow evaluation Table 'A', the design dry weather flow rate will be:

53 Apartments (Up to 600 Square Feet) @	175	gpd =	9275 gpd
221 Apartments (601-1200 Square Feet) @	250	gpd =	55250 gpd
78 Apartments (1200+ Square Feet) @	300	gpd =	23400 gpd
20443 sf- Office / Leasing / Lobby / Mail @	0.06	gpd/sf/d =	1227 gpd
501 parking spaces @ 27 gpd/ space or a maximum of 3,375 gpd total			3375 gpd
1450 SF Pool x 1 person/ 50 sf X	20	gpd/per =	580 gpd
		Total	93106.58 gpd

Mitigation Flow

Net change in flow, design flow - existing flow =			83861 gpd
Mitigation Peak Flow = 83860.58	gpd x 4(peaking factor) x 1.1(recovery)	=	368987 gpd
			256 gpm

SCALE: 1" = 40'

0 40 80 120

LEGEND

U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
GP	EXIST. GUY POLE
	GUY WIRE
	ELEC. TRANSFORMER
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
	PROP. LIGHT POLE
	PROP. BUILDING LIGHT
t	EXIST. TELEPHONE LINE
T	PROP. TELEPHONE LINE
e	EXIST. ELECTRIC LINE
E	PROP. ELECTRIC LINE
g	EXIST. GAS LINE
G	PROP. GAS LINE
g	EXIST. GAS VALVE
f.o.	EXIST. FIBER OPTIC LINE
F.O.	PROP. 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
fdc	EXIST. FIRE DEPARTMENT CONNECTION
FDC	PROP. FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
R	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	PROP. BEEHIVE INLET
RD	PROP. ROOF DRAIN
s	EXIST. SANITARY SEWER
S	PROP. SANITARY SEWER
	EXIST. CLEANOUT
	PROP. CLEANOUT
	TELEPHONE RISER
	ELECTRIC METER
	WATER METER

PHASING NARRATIVE

Building Removal and Construction

The first building phase will consist of the portion of the building that fronts on Astor Avenue that runs north/south, a portion of the surface parking and the dog run area. It will require the removal of the four carports but no residential buildings. It will consist of 166 new apartment units. The new driveway including trash staging area will be installed in the first phase.

The second building phase will require the removal of the southeast apartment building and the clubhouse building and pool area. Phase two will consist of a parking garage, a new clubhouse/recreation and pool area, and 186 apartment units.

Storm Water

The east underground detention basin that serves the majority of the proposed site including and phase 1 areas, will be installed in the first phase of building construction. The underground detention that lies under the southwest parking area will be installed in phase 2.

Soil Erosion Control

Since the east underground detention area will be installed prior to the first building phase the first phase will be largely self-contained. The area drains behind the first building area will route storm water to the detention basin. All onsite catch basin as well as those existing basins along the site frontage will have inlet filters installed. The phase 1 area will be have perimeter fencing as well as silt fencing placed behind the curb frontage. Construction access for phase one will be the through the north mudmat connecting to Wisteria Drive.

In phase 2, the south west parking area detention basin will be installed which is mainly limited to draining the southwest parking. All new building will have roof conductors connected to the east underground detention area. Construction access for phase two will be the through the southwest mudmat connecting to Astor Avenue.

Water Main

All water main improvements will be constructed in phase one as they will be required to provide fire coverage for the project area. Twp fire department connections are proposed in phase one and two additional will be installed in phase two. Both building phases will be connected and served by a separate fire tap service lead and domestic service lead.

Sanitary Sewer

A lead connection to the of the sanitary sewer main is proposed at the north end of the northeast building by extending the main approximately 600 feet. This extension will be necessary to serve the north existing building to remain. That building is currently served by sanitary sewer that runs through the site and will be required to be removed to facilitate phase 2 building construction. A second connection will be provided along Astor Avenue at the south side of the project area for the second building. be required along Wisteria Drive to provide service to the north end of the proposed building.

UTILITY PLAN NOTES

1. DOMESTIC WATER AND FIRE SUPPRESSION WATER SERVICES ARE TO TAP INTO THE EXISTING 12" WATER MAIN IN ASTOR AVE. IT IS ANTICIPATED BOOSTER PUMPS WILL BE REQUIRED FOR THE PROJECT. FINAL DETERMINATION WILL OCCUR DURING THE DETAILED DESIGN PHASE.
2. IT IS UNKNOWN IF FOOTING DRAINS FOR THE EXISTING BUILDINGS ARE CONNECTED TO THE SANITARY SEWER SYSTEM, DISCONNECTION WILL BE REQUIRED IN ACCORDANCE WITH CURRENT CITY SPECIFICATIONS. THE CONTACT PERSON TO SCHEDULE INSPECTION OF FOOTING DRAIN CONNECTIONS, IF ANY, IS AMY PONSOCK WHO CAN BE REACHED AT 734 794-6410, EXTENSION 43622.
3. THE PROPOSED STORM DETENTION TANKS DRAIN BY METERED DISCHARGE. AN EMERGENCY OVERFLOW TO CONTINUE TO THE ASTOR AVE. STORM SEWER.
4. THERE ARE TWO SEPARATE BUILDINGS. NO ADDITIONAL FIREWALLS ARE PROPOSED.
5. POOL BACKWASH WATER IS TO BE DE-CHLORINATED AND ROUTED TO THE STORM DETENTION CHAMBERS.
6. THE PROPOSED BUILDING'S SUMP PUMP WILL DISCHARGE TO THE STORM WATER MANAGEMENT SYSTEM.

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.

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

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BIRMINGHAM, MI 48009
ADAM BLEZNAK
248-540-9300

WOODBURY GARDENS REDEVELOPMENT

SITE PLAN FOR REZONING AND CITY COUNCIL
UTILITY PLAN

9

DATE: 6/20/24
SHEET 9 OF 18
CADD:

REVISIONS:	REV. DATE
PER FIRST REVIEW	11/7/24
PER CITY REVIEW	4/02/25
PER CITY REVIEW	6/18/25
PER WCWRC REVIEW	8/11/25

JOB No. 23195

TECH: JCA
PM: SWB
ENG: JCA
23195UP
PSP

SCALE: 1" = 30'

0 30 60 90

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

LEGEND

838	EXIST. CONTOUR
838	PROP. CONTOUR
×836.2	EXIST. SPOT ELEVATION
36.60	PROP. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
	GUY WIRE
	ELEC. TRANSFORMER
	EXIST. AC UNIT
	EXIST. GENERATOR
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
	PROP. 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
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
	REDUCER
	EXIST. BLOW-OFF
	PROP. BLOW-OFF
P.I.V.	POST INDICATOR VALVE
P.I.V.	POST INDICATOR VALVE
	THRUST BLOCK
KB	PROP. KNOXBOX
fdc	EXIST. FIRE DEPARTMENT CONNECTION
FDC	PROP. FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
R	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	PROP. BEEHIVE INLET
RD	PROP. ROOF DRAIN
	END SECTION
	HEAD WALL
	CULVERT
ds	EXIST. DOWNSPOUT
DS	PROP. DOWNSPOUT
s	EXIST. SANITARY SEWER
S	PROP. SANITARY SEWER
	EXIST. CLEANOUT
	PROP. CLEANOUT
	C/L OF DITCH
	DRAINAGE DIRECTION
	SIGN
	SINGLE TREE
	TREE OR BRUSH LIMIT
	FENCE
	SILTFENCE
	LIMITS OF DISTURBANCE
	CONSTRUCTION FENCE
FF	FINISH FLOOR ELEVATION
GF	GARAGE FLOOR ELEVATION
BFF	BASEMENT FINISH FLOOR ELEVATION

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WOODBURY GARDENS REDEVELOPMENT

CITY COUNCIL

SITE PLAN FOR REZONING AND CITY COUNCIL
GRADING PLAN

10

JOB No. 23195

DATE: 6/20/24
SHEET 10 OF 18
CADD:
DRN: JCA
ENG: SWB
PM:
TECH:
23195GP

REVISIONS:	REV. DATE
PER CITY REVIEW	4/02/25
PER CITY REVIEW	6/18/25
PER CITY REVIEW	8/11/25
PER WCWRC REVIEW	

East Basin Stormwater Calculations

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

Rational Method Variables

Cover Type	Soil Type	Area (sft)	Area (ac)	Runoff Coeff. (C)	(C) x (Area)
Building/Pavement		103,300	2.37	0.95	2.25
Pavement			0.00	0.95	0.00
Grass	A		0.00	0.15	0.00
Grass	B	33,500	0.77	0.25	0.19
Grass	C		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		136,800	3.14		2.45
		Weighted C = (Sum(C)x(Area))/(Area Total)=			0.78

NRCS Variables (Pervious)

Cover Type	Soil Type	Area (sft)	Area (ac)	Curve Number	(CN) x (Area)
Grass	A	0	0.00	49	0.00
Grass	B	33,500	0.77	69	0.53
Grass	C	0	0.00	79	0.00
Grass	D	0	0.00	84	0.00
Total		33,500	0.77		0.53
		Weighted CN = (Sum(CN)x(Area))/(Area Total)=			69

NCRS Variables (Impervious)

Cover Type	Soil Type	Area (sft)	Area (ac)	Curve Number	(CN) x (Area)
Building/Pavement		103,300	2.37	98	2.32
Pavement		0	0.00	98	0.00
Water Surface		0	0.00	98	0.00
Total		103,300	2.37		2.32
		Weighted CN = (Sum(CN)x(Area))/(Area Total)=			98

W2 - W2 - First Flush Runoff Calculations (Vff)

A. Vff = 1" x 1"/12" x 43560 sf/ac x A x C — where A= 3.14 and where C= 0.78

Vff = 1" x 1"/12" x 43560 sf/ac x 3.14 x 0.78 = 8,892 cf

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

A.	2 year / 24 hour storm event:	P=	2.35 in
B.	Pre-Development CN (Good Woods Cover, Type B Soils)	CN=	58
C.	S = (1000 / CN) - 10	S=	7.241 in
D.	Q = [(P-0.2S)^2] / [P+0.8S]	Q=	0.100 in
E.	Total Site Area excluding "Self-Crediting" BMPs		136,800 sft
F.	Vbf-pre = Q x (1/12) x Area	Vbf-pre =	1,138 cft

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

A.	2 year / 24 hour storm event:	P=	2.35 in
B.	Pervious Cover CN From Worksheet 1	CN=	69
C.	S = (1000 / CN) - 10	S=	4.493 in
D.	Q = [(P-0.2S)^2] / [P+0.8S]	Q=	0.354 in
E.	Pervious Cover Area from Worksheet 1		33,500 sft
F.	Vbf-per-post = Q x (1/12) x Area	Vbf-per-post =	989 cft

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

A.	2 year / 24 hour storm event:	P=	2.35 in
B.	Impervious Cover CN From Worksheet 1	CN=	98
C.	S = (1000 / CN) - 10	S=	0.204 in
D.	Q = [(P-0.2S)^2] / [P+0.8S]	Q=	2.122 in
E.	Impervious Cover Area from Worksheet 1		103,300 sft
F.	Vbf-imp-post = Q x (1/12) x Area	Vbf-imp-post =	18,264 cft

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

A.	100 year / 24 hour storm event:	P=	5.11 in
B.	Pervious Cover CN From Worksheet 1	CN=	69
C.	S = (1000 / CN) - 10	S=	4.493 in
D.	Q = [(P-0.2S)^2] / [P+0.8S]	Q=	2.038 in
E.	Pervious Cover Area from Worksheet 1		33,500 sft
F.	V100-per-post = Q x (1/12) x Area	V100-per-post =	5,688 cft

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

A.	2 year / 24 hour storm event:	P=	5.11 in
B.	Impervious Cover CN From Worksheet 1	CN=	98
C.	S = (1000 / CN) - 10	S=	0.204 in
D.	Q = [(P-0.2S)^2] / [P+0.8S]	Q=	4.873 in
E.	Impervious Cover Area from Worksheet 1		103,300 sft
F.	V100-imp-post = Q x (1/12) x Area	V100-imp-post =	41,948 cft

W8 - Time of Concentration (Tc-hrs)

A. Assume 15-minute minimum time of concentration — Tc= 0.25 hr

W9 - Runoff Summary & On-Site Infiltration Requirement

A. Summary from Previous Worksheets	
First Flush Volume (Vff)	**8,892 cft**
Pre-Development Bankfull Runoff Volume (Vbf-pre)	**1,138 cft**
Pervious Cover Post-Development Bankfull Volume (Vbf-per-post)	*989 cft*
Impervious Cover Post-Development Bankfull Volume (Vbf-imp-post)	*18,264 cft*
Total BF Volume (Vbf-post)	**19,253 cft**
Pervious Cover Post-Development 100-Year Volume (V100-per-post)	*5,688 cft*
Impervious Cover Post-Development 100-Year Volume (V100-imp-post)	*41,948 cft*
Total 100-Year Volume (V100)	**47,637 cft**
B. Determine Onsite Infiltration Requirement	
Subtract the Pre-Development Bankfull from the Post-Development Bankfull Volume	
Total Post-Development Bankfull Volume (Vbf-post)	19,253 cft
Pre-Development Bankfull Runoff Volume (Vbf-pre)	1,138 cft
Bankfull Volume Difference	**18,115 cft**
Infiltration Requirement (Vinf)	**18,115 cft**

W10 - Detention/Retention Requirement

A.	Qp = 238.6 Tc^-0.82	743.63 cfs/(in x sq. mi)
B.	Total Site Area excluding "Self-Crediting" BMPs	3.14 ac
C.	Q100 = Q100-per + Q100-imp (from W6 and W7, respectively)	6.911 in
D.	Peak Flow (PF) = Qp x Q100 x Area / 640	25.22 cfs
E.	Delta = PF - 0.15 x Area (ac)	24.75 cfs
	[0.15 x Area (ac)]	*0.47 cfs*
F.	Vdet = Delta / PF x V100	46,747 cft
	Required Detention not including infiltration credit or penalty.	
	Sediment Forebay Volume Required (5% of V100)	2,382 cft

W11 - Determine Applicable BMPs and Associated Volume Credits

		Storage Volume (cft)		Design Infilt. Rate	Infilt. Volume in 6-hr	Total Volume
Proposed BMP	Area (sft)	Surface	In Soil	(in/hr)	Drawdown (cft)	Reduction (cft)
Subsurface Infiltration Bed	9345			3.95	18,456	18,456
				Total Volume Reduction Credit by Proposed Structural BMPs (cft)		18,456
				Runoff Volume Infiltration Requirement (Vinf) from W9 (cft)		18,115
				Runoff Volume Credit (cft)		341

W13 - Site Summary of Infiltration & Detention

A. Stormwater Management Summary

Min Infiltration Requirement (Vinf)	18,115 cft
Designed/Provided Infiltration Volume	18,456 cft
% Minimum Required Infiltration Provided	102 %
Total Calculated Detention Volume, Vdet	46,747 cft
Net Required Detention Volume	28,291 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	**46,747 cft**
[(100% + Net % Penalty) x Net Required Detention Volume)]	
Net Required Detention Volume including credit for infiltration provided	**28,291 cft**

Detention Outlet Calculcations

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

Storm Event	Req'd Volume	less	Infil. Credit	=	Final Volume
First Flush	8,892 cft	-	18,456 cft	=	**(9,564) cft**
Bankfull	19,253 cft	-	18,456 cft	=	**797 cft**
100-year	46,747 cft	-	18,456 cft	=	**28,291 cft**
100-year + Req'd Penalty	46,747 cft	-	18,456 cft	=	**28,291 cft**
Forebay Volume Required (5% of 100-yr)				=	**1,415 cft**

B. Detention Volumes Provided

StormTrap footprint of 9345 sf yields a net area of 86 % w/structur 8037 sft

Elevation	Area (sft)	Depth (ft)	Volume (cft)	Cum. Volume (cft)
819.0	8,037	0.0	0	0
820.0	8,037	1.0	8,037	8,037
821.0	8,037	1.0	8,037	16,073
822.0	8,037	1.0	8,037	24,110
823.0	8,037	1.0	8,037	32,147
				32,147
				32,147
			Total Volume =	32,147

Storage Elevation Calculation

Bankfull Elevation (Xbf)= (820.0 - 819.0) / (8,037 - 0) = Xbf - 819.0 / 797 - 0 — Xbf = 819.10 ft

100-Year Elevation (X100)= (823.0 - 822.00) / (32,147 - 24,110) = X100 - 822.00 / 28,291 - 24,110 — X100 = 822.52 ft

Freeboard Elevation = 823.52 ft

C. Full Infiltration Design

Total Storage Volume	46,747 cft
Infiltration Area	18515 sft
Infiltration Rate, Average	1.99 in/hr
Infiltration Flow Rate	3076.06 cft/hr
Time to Fully Drain	**15.2 hr**

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

West Basin Stormwater Calculations

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

Rational Method Variables

Cover Type	Soil Type	Area (sft)	Area (ac)	Runoff Coeff. (C)	(C) x (Area)
Building/Pavement		13,000	0.30	0.95	0.28
Pavement			0.00	0.95	0.00
Grass	A		0.00	0.15	0.00
Grass	B	1,850	0.04	0.25	0.01
Grass	C		0.00	0.30	0.00
Grass	D		0.00	0.45	0.00
Water Surface			0.00	1.00	0.00
Total		14,850	0.34		0.29
		Weighted C = (Sum(C)x(Area))/(Area Total)=			0.86

NRCS Variables (Pervious)

Cover Type	Soil Type	Area (sft)	Area (ac)	Curve Number	(CN) x (Area)
Grass	A	0	0.00	49	0.00
Grass	B	1,850	0.04	69	0.03
Grass	C	0	0.00	79	0.00
Grass	D	0	0.00	84	0.00
Total		1,850	0.04		0.03
		Weighted CN = (Sum(CN)x(Area))/(Area Total)=			69

NCRS Variables (Impervious)

Cover Type	Soil Type	Area (sft)	Area (ac)	Curve Number	(CN) x (Area)
Building/Pavement		13,000	0.30	98	0.29
Pavement		0	0.00	98	0.00
Water Surface		0	0.00	98	0.00
Total		13,000	0.30		0.29
		Weighted CN = (Sum(CN)x(Area))/(Area Total)=			98

W2 - W2 - First Flush Runoff Calculations (Vff)

A. Vff = 1" x 1"/12" x 43560 sf/ac x A x C — where A= 0.34 and where C= 0.86

Vff = 1" x 1"/12" x 43560 sf/ac x 0.34 x 0.86 = 1,064 cf

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

A.	2 year / 24 hour storm event:	P=	2.35 in
B.	Pre-Development CN (Good Woods, Type B Soils)	CN=	58
C.	S = (1000 / CN) - 10	S=	7.241 in
D.	Q = [(P-0.2S)^2] / [P+0.8S]	Q=	0.100 in
E.	Total Site Area excluding "Self-Crediting" BMPs		14,850 sft
F.	Vbf-pre = Q x (1/12) x Area	Vbf-pre =	124 cft

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

A.	2 year / 24 hour storm event:	P=	2.35 in
B.	Pervious Cover CN From Worksheet 1	CN=	69
C.	S = (1000 / CN) - 10	S=	4.493 in
D.	Q = [(P-0.2S)^2] / [P+0.8S]	Q=	0.354 in
E.	Pervious Cover Area from Worksheet 1		1,850 sft
F.	Vbf-per-post = Q x (1/12) x Area	Vbf-per-post =	55 cft

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

A.	2 year / 24 hour storm event:	P=	2.35 in
B.	Impervious Cover CN From Worksheet 1	CN=	98
C.	S = (1000 / CN) - 10	S=	0.204 in
D.	Q = [(P-0.2S)^2] / [P+0.8S]	Q=	2.122 in
E.	Impervious Cover Area from Worksheet 1		13,000 sft
F.	Vbf-imp-post = Q x (1/12) x Area	Vbf-imp-post =	2,298 cft

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

A.	100 year / 24 hour storm event:	P=	5.11 in
B.	Pervious Cover CN From Worksheet 1	CN=	69
C.	S = (1000 / CN) - 10	S=	4.493 in
D.	Q = [(P-0.2S)^2] / [P+0.8S]	Q=	2.038 in
E.	Pervious Cover Area from Worksheet 1		1,850 sft
F.	V100-per-post = Q x (1/12) x Area	V100-per-post =	314 cft

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

A.	2 year / 24 hour storm event:	P=	5.11 in
B.	Impervious Cover CN From Worksheet 1	CN=	98
C.	S = (1000 / CN) - 10	S=	0.204 in
D.	Q = [(P-0.2S)^2] / [P+0.8S]	Q=	4.873 in
E.	Impervious Cover Area from Worksheet 1		13,000 sft
F.	Vbf-imp-post = Q x (1/12) x Area	Vbf-imp-post =	5,279 cft

W8 - Time of Concentration (Tc-hrs)

A. Assume 15-minute minimum time of concentration — Tc= 0.25 hr

W9 - Runoff Summary & On-Site Infiltration Requirement

A. Summary from Previous Worksheets	
First Flush Volume (Vff)	**1,064 cft**
Pre-Development Bankfull Runoff Volume (Vbf-pre)	**124 cft**
Pervious Cover Post-Development Bankfull Volume (Vbf-per-post)	*55 cft*
Impervious Cover Post-Development Bankfull Volume (Vbf-imp-post)	*2,298 cft*
Total BF Volume (Vbf-post)	**2,353 cft**
Pervious Cover Post-Development 100-Year Volume (V100-per-post)	*314 cft*
Impervious Cover Post-Development 100-Year Volume (V100-imp-post)	*5,279 cft*
Total 100-Year Volume (V100)	**5,593 cft**
B. Determine Onsite Infiltration Requirement	
Subtract the Pre-Development Bankfull from the Post-Development Bankfull Volume	
Total Post-Development Bankfull Volume (Vbf-post)	2,353 cft
Pre-Development Bankfull Runoff Volume (Vbf-pre)	124 cft
Bankfull Volume Difference	**2,230 cft**
Infiltration Requirement (Vinf)	**2,230 cft**

W10 - Detention/Retention Requirement

A.	Qp = 238.6 Tc^-0.82	743.63 cfs/(in x sq. mi)
B.	Total Site Area excluding "Self-Crediting" BMPs	0.34 ac
C.	Q100 = Q100-per + Q100-imp (from W6 and W7, respectively)	6.911 in
D.	Peak Flow (PF) = Qp x Q100 x Area / 640	2.74 cfs
E.	Delta = PF - 0.15 x Area (ac)	2.69 cfs
	[0.15 x Area (ac)]	*0.05 cfs*
F.	Vdet = Delta / PF x V100	5,489 cft
	Required Detention not including infiltration credit or penalty.	
	Sediment Forebay Volume Required (5% of V100)	280 cft

W11 - Determine Applicable BMPs and Associated Volume Credits

		Storage Volume (cft)		Design Infilt. Rate	Infilt. Volume in 6-hr	Total Volume
Proposed BMP	Area (sft)	Surface	In Soil	(in/hr)	Drawdown (cft)	Reduction (cft)
Bioretention Systems	2,790			1.80	2,511	2,511
				Total Volume Reduction Credit by Proposed Structural BMPs (cft)		2,511
				Runoff Volume Infiltration Requirement (Vinf) from W9 (cft)		2,230
				Runoff Volume Credit (cft)		281

W13 - Site Summary of Infiltration & Detention

A. Stormwater Management Summary

Min Infiltration Requirement (Vinf)	2,230 cft
Designed/Provided Infiltration Volume	2,511 cft
% Minimum Required Infiltration Provided	113 %
Total Calculated Detention Volume, Vdet	5,489 cft
Net Required Detention Volume	2,978 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	**5,489 cft**
[(100% + Net % Penalty) x Net Required Detention Volume)]	

Detention Outlet Calcucations

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

Storm Event	Req'd Volume	less	Infil. Credit	=	Final Volume
First Flush	1,064 cft	-	2,511 cft	=	**(1,447) cft**
Bankfull	2,353 cft	-	2,511 cft	=	**(158) cft**
100-year	5,489 cft	-	2,511 cft	=	**2,978 cft**
100-year + Req'd Penalty	5,489 cft	-	2,511 cft	=	**2,978 cft**
Forebay Volume Required (5% of 100-yr)				=	**149 cft**

B. Detention Volumes Provided

Need to reference StormTech staged storage table

Elevation	Area (sft)	Depth (ft)	Volume (cft)	Cum. Volume (cft)
820.0	2,790	0.0	0	0
820.50	2,790	0.50	419	419
820.75	2,790	0.25	533	952
821.00	2,790	0.25	503	1,454
821.25	2,790	0.25	461	1,915
821.50	2,790	0.25	398	2,313
821.75	2,790	0.25	284	2,597
821.83	2,790	0.08	74	2,671
822.00	2,790	0.17	140	2,811
822.33	2,790	0.33	279	3,090
			Total Volume =	3,090

Storage Elevation Calculation

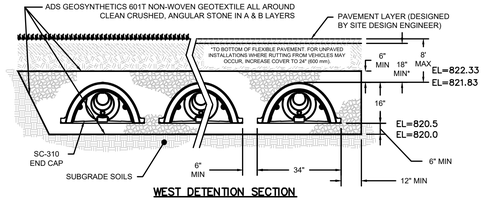
100-Year Elevation (X100)= (822.33 - 822.0) / (3,090 - 2,811) = X100 - 822.0 / 2,978 — X100 = 822.20 ft

Freeboard Elevation = 823.20 ft

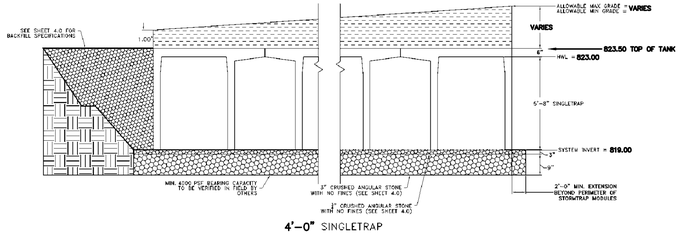
C. Full Infiltration Design

Total Storage Volume	5,489 cft
Infiltration Area	2790 sft
Infiltration Rate, Average	1.80 in/hr
Infiltration Flow Rate	418.50 cft/hr
Time to Fully Drain	**13.1 hr**

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



WEST DETENTION SECTION

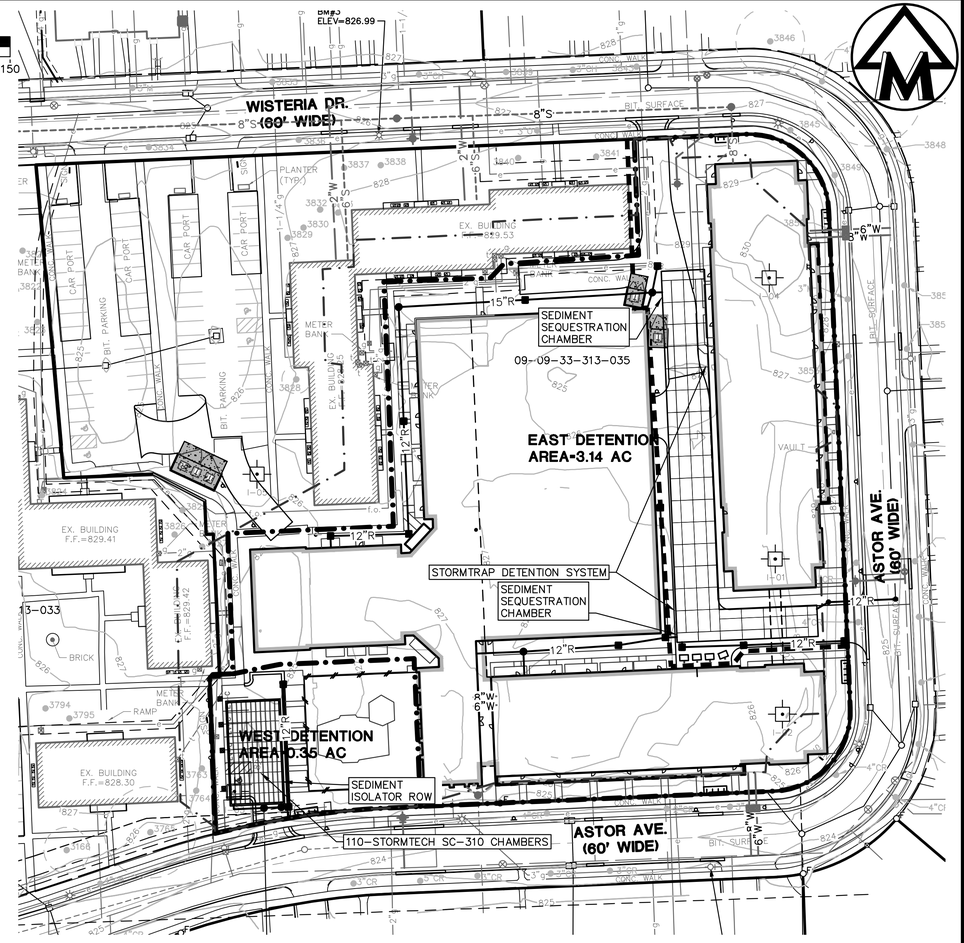


4'-0" SINGLETRAP

EAST DETENTION SECTION

SCALE: 1" = 50'

0 50 100 150



LEGEND

838	EXIST. CONTOUR
838	PROP. CONTOUR
36.60	EXIST. SPOT ELEVATION
36.60	PROP. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
	GUY WIRE
	ELEC. TRANSFORMER
	EXIST. AC UNIT
	EXIST. GENERATOR
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
	PROP. 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
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
r	EXIST. STORM SEWER
R	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	PROP. BEEHIVE INLET
RD	PROP. ROOF DRAIN
s	EXIST. SANITARY SEWER
S	PROP. SANITARY SEWER
	EXIST. CLEANOUT
	PROP. CLEANOUT
	SIGN
	SINGLE TREE
	TREE OR BRUSH LIMIT

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WOODBURY GARDENS REDEVELOPMENT

CITY COUNCIL

SITE PLAN FOR REZONING AND CITY COUNCIL DRAINAGE PLAN

11

JOB No. 23195

DATE: 6/20/24
SHEET 11 OF 18
CADD:
ENG: JCA
PM: SWB
TECH:
23195DR

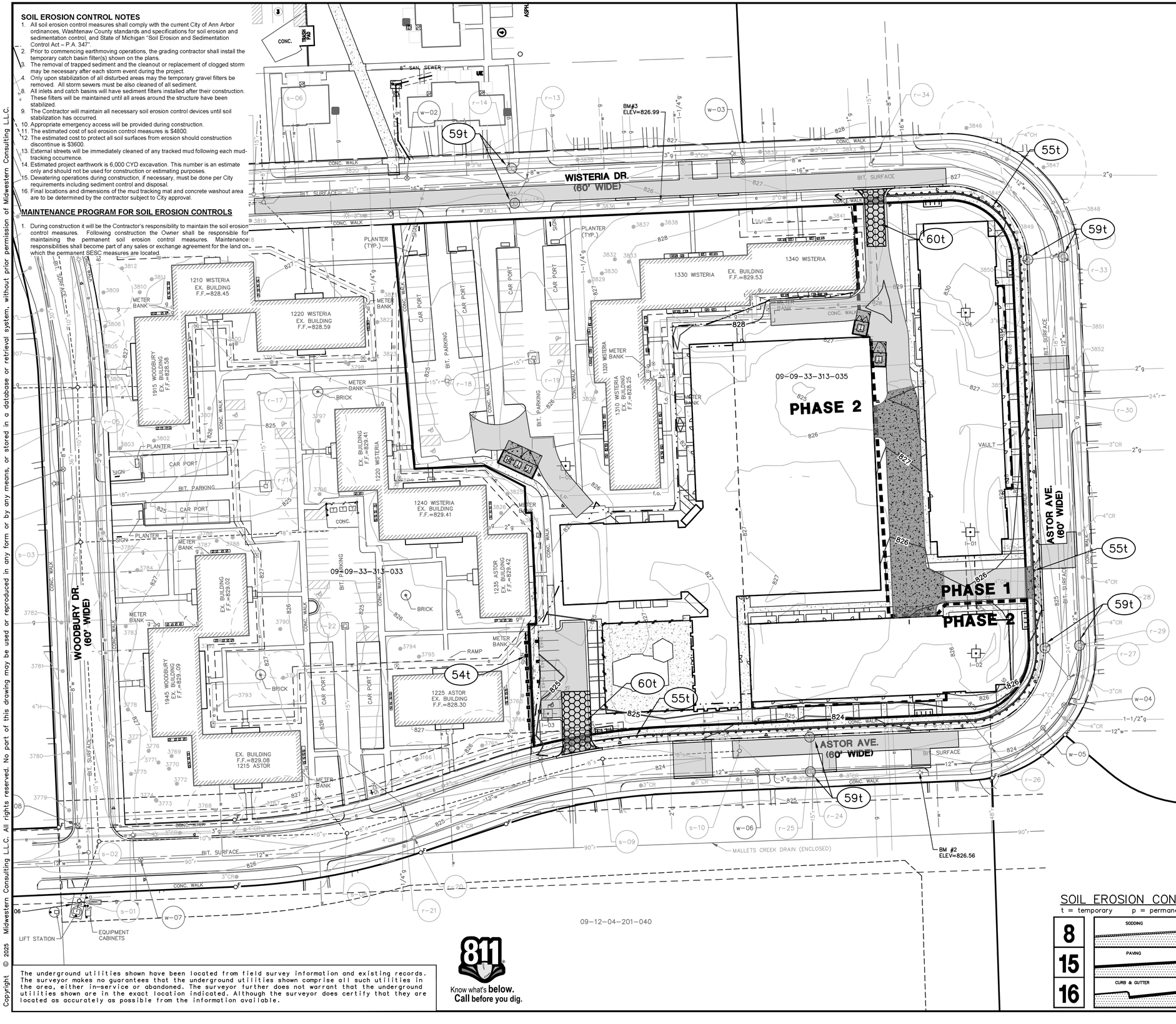
REVISIONS:	REV. DATE
PER CITY REVIEW	4/02/25
PER CITY REVIEW	6/18/25
PER WCWRC REVIEW	8/11/25

SOIL EROSION CONTROL NOTES

1. All soil erosion control measures shall comply with the current City of Ann Arbor ordinances, Washtenaw County standards and specifications for soil erosion and sedimentation control, and State of Michigan "Soil Erosion and Sedimentation Control Act – P.A. 347".
2. Prior to commencing earthmoving operations, the grading contractor shall install the temporary catch basin filter(s) shown on the plans.
3. The removal of trapped sediment and the cleanout or replacement of clogged storm may be necessary after each storm event during the project.
4. Only upon stabilization of all disturbed areas may the temporary gravel filters be removed. All storm sewers must be also cleaned of all sediment.
5. All inlets and catch basins will have sediment filters installed after their construction. These filters will be maintained until all areas around the structure have been stabilized.
9. The Contractor will maintain all necessary soil erosion control devices until soil stabilization has occurred.
10. Appropriate emergency access will be provided during construction.
11. The estimated cost of soil erosion control measures is $4800.
12. The estimated cost to protect all soil surfaces from erosion should construction discontinue is $3600.
13. External streets will be immediately cleaned of any tracked mud following each mud-tracking occurrence.
14. Estimated project earthwork is 6,000 CYD excavation. This number is an estimate only and should not be used for construction or estimating purposes.
15. Dewatering operations during construction, if necessary, must be done per City requirements including sediment control and disposal.
16. Final locations and dimensions of the mud tracking mat and concrete washout area are to be determined by the contractor subject to City approval.

MAINTENANCE PROGRAM FOR SOIL EROSION CONTROLS

1. During construction it will be the Contractor's responsibility to maintain the soil erosion control measures. Following construction 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.



SCALE: 1" = 40'

0 40 80 120

LEGEND

838	EXIST. CONTOUR
838	PROP. CONTOUR
36.60x	EXIST. SPOT ELEVATION
	PROP. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
	GUY WIRE
	ELEC. TRANSFORMER
	EXIST. AC UNIT
	EXIST. GENERATOR
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
	PROP. 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
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
KB	PROP. KNOXBOX
fdc	EXIST. FIRE DEPARTMENT CONNECTION
FDC	PROP. FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
R	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	PROP. BEEHIVE INLET
RD	PROP. ROOF DRAIN
ds	EXIST. DOWNSPOUT
DS	PROP. DOWNSPOUT
S	EXIST. SANITARY SEWER
S	PROP. SANITARY SEWER
	EXIST. CLEANOUT
	PROP. CLEANOUT
	C/L OF DITCH
	SIGN
	SINGLE TREE
	TREE OR BRUSH LIMIT
	FENCE
	SILTFENCE
	LIMITS OF DISTURBANCE
	CONSTRUCTION FENCE
FF	FINISH FLOOR ELEVATION
GF	GARAGE FLOOR ELEVATION

PHASING NARRATIVE

Building Removal and Construction

The first building phase will consist of the portion of the building that fronts on Astor Avenue that runs north/south, a portion of the surface parking and the dog run area. It will require the removal of the four carports but no residential buildings. It will consist of 166 new apartment units. The new driveway including trash staging area will be installed in the first phase.

The second building phase will require the removal of the southeast apartment building and the clubhouse building and pool area. Phase two will consist of a parking garage, a new clubhouse/recreation and pool area, and 186 apartment units.

Storm Water

The east underground detention basin that serves the majority of the proposed site including and phase 1 areas, will be installed in the first phase of building construction. The underground detention that lies under the southwest parking area will be installed in phase 2.

Soil Erosion Control

Since the east underground detention area will be installed prior to the first building phase the first phase will be largely self-contained. The area drains behind the first building area will route storm water to the detention basin. All onsite catch basin as well as those existing basins along the site frontage will have inlet filters installed. The phase 1 area will be have perimeter fencing as well as silt fencing placed behind the curb frontage. Construction access for phase one will be the through the north mudmat connecting to Wisteria Drive.

In phase 2, the south west parking area detention basin will be installed which is mainly limited to draining the southwest parking. All new building will have roof conductors connected to the east underground detention area. Construction access for phase two will be the through the southwest mudmat connecting to Astor Avenue.

SOIL EROSION CONTROL MEASURES

t = temporary p = permanent

8	SODDING	54	CONSTRUCTION FENCE OR SNOW FENCE	59	C.B./INLET FILTER
15	PAVING	55	GEOTEXTILE SILT FENCE	60	MUD TRACKING MAT
16	CURB & GUTTER	58	CURB INLET FILTER	63	SILT FENCE WITH STONE FILTER

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WOODBURY GARDENS REDEVELOPMENT

SITE PLAN FOR REZONING AND CITY COUNCIL
SOIL EROSION CONTROL PLAN

12

DATE: 6/20/24
SHEET 12 OF 18
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ENG: JCA
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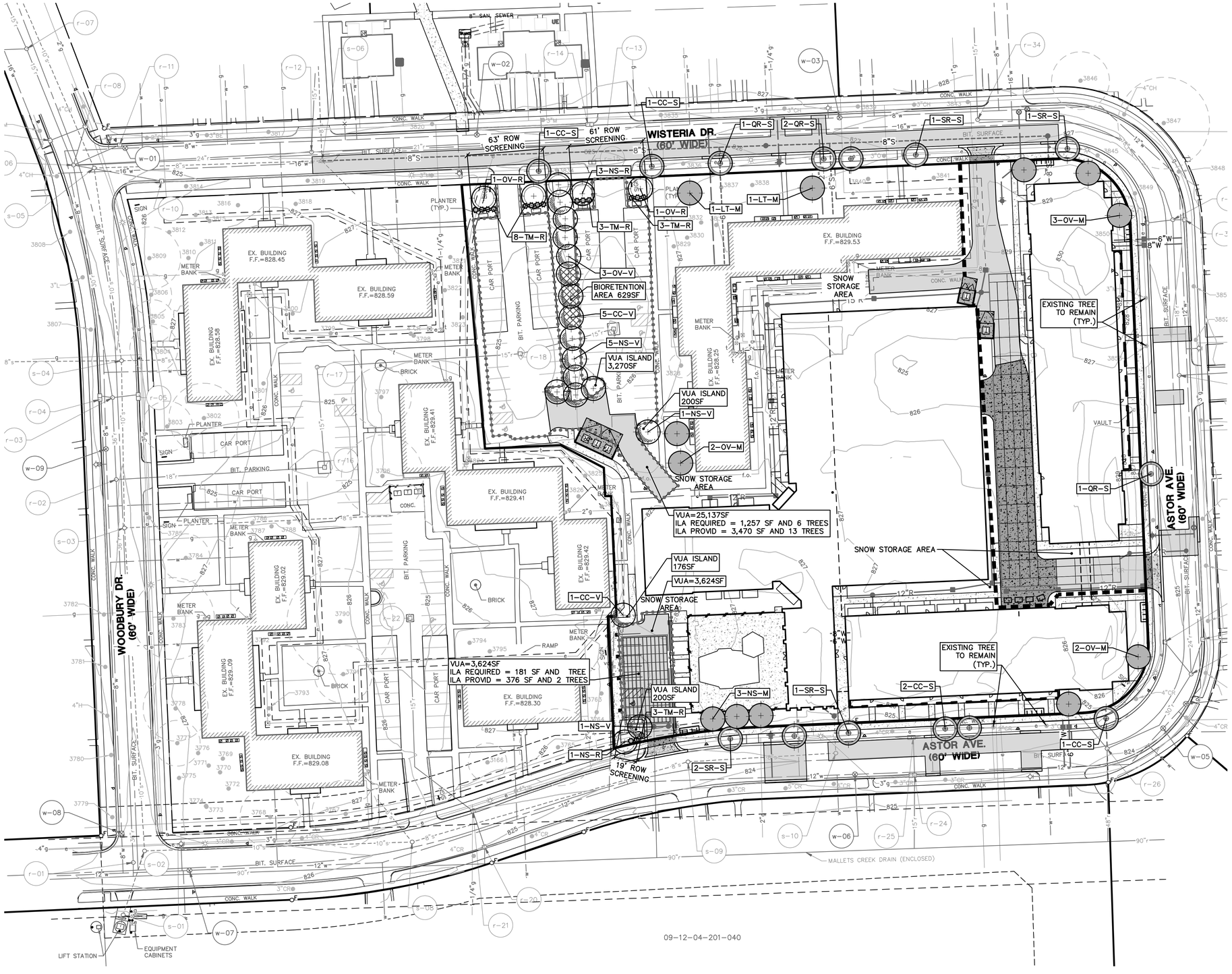
JOB No. 23195

REVISIONS:	REV. DATE
PRE-FIRST REVIEW	11/19/25
PER CITY REVIEW	4/02/25



SCALE: 1" = 40'

0 40 80 120

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LANDSCAPE LEGEND

- PROPOSED CANOPY TREE (INTERIOR VUA)
- PROPOSED CANOPY TREE (RIGHT-OF-WAY SCREEN)
- PROPOSED CANOPY TREE (STREET TREE)
- PROPOSED CANOPY TREE (MITIGATION)
- PROPOSED EVERGREEN SHRUBS
- EXISTING TREE TO REMAIN
- VUA BIORETENTION AREA
- VEHICULAR USE AREA LIMITS

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WOODBURY GARDENS REDEVELOPMENT

SITE PLAN FOR REZONING AND CITY COUNCIL
LANDSCAPE PLAN

13

JOB No. 23195

REVISIONS:	REV. DATE:
PER CITY REVIEW	4/02/25
PER CITY REVIEW	6/18/25
PER CITY REVIEW	

DATE:
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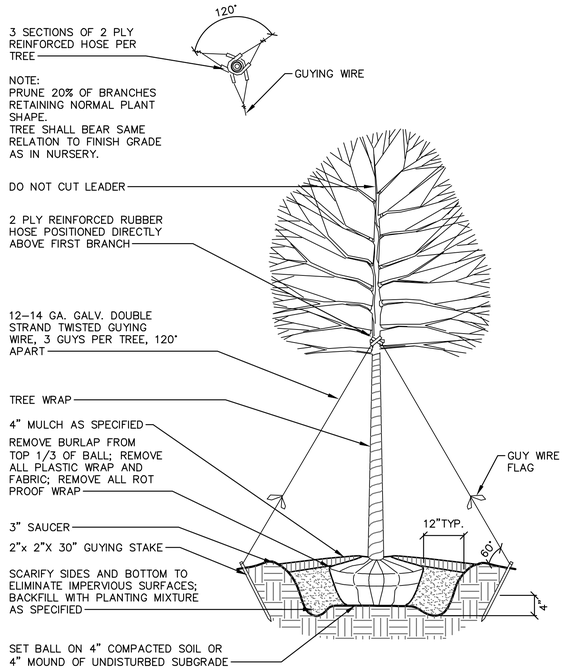


DECIDUOUS TREE - PLANTING DETAIL

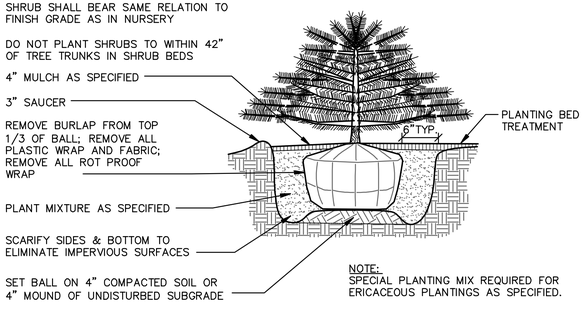
NOT TO SCALE

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

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



NOTE:
SPECIAL PLANTING MIX REQUIRED FOR ERICACEOUS PLANTINGS AS SPECIFIED.

EVERGREEN SHRUB PLANTING DETAIL

NOT TO SCALE

LANDSCAPE NOTES

1. For any plant quantity discrepancies between the plan view and the plant schedules, the plant schedule shall take precedence.
2. Plant materials shall be selected and installed in accordance with standards established by the City of Ann Arbor.
3. 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.
4. Restore disturbed areas with a minimum of four (4) inches of topsoil and then seed/fertilize/mulch.
5. All disturbed areas shall be lawn areas. Lawn (turfgrass) seed mix shall consist of the following or approved alternate:
   - Kentucky Bluegrass
   - Creeping Red Fescue
   - Perennial Ryegrass
   - Hard Fescue
6. All seeded areas with slopes less than 1:3 (one vertical foot for every 3 horizontal feet) shall be mulched with straw mulch. All seeded areas with slopes greater than 1:3 shall be seeded and secured with a biodegradable erosion control blanket.
7. All planting beds are to receive four (4) inches of shredded hardwood bark mulch.
8. All trees to be located a minimum of 10 feet from public utilities.
9. 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.
10. 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.
11. 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.
12. 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.
13. Snow storage areas are located along the edges and corners of parking areas as shown on the plan.
14. All landscaping or other screening material within a sight triangle shall be no greater than 30 inches tall, and all trees within a sight triangle shall have all branches trimmed to provide clear vision for a vertical height of 8 feet above the roadway surface. Evergreen trees shall not be permitted within sight triangles.
15. All species deviations must be approved in writing by the City of Ann Arbor prior to installation.
16. 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:

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. Erosion shall be repaired by the contractor.

LANDSCAPE REQUIREMENTS

	Required	Proposed
Right-of-Way Screening		
	10ft min. when VUA viewed from ROW 1 tree per 30lf; continuous hedge/screen 30inches in ht 18ft / 30ft = 1 tree and shrubs (Astor) 124ft / 30ft = 5 trees and shrubs	1 proposed tree, 3 proposed shrubs (Astor) 5 proposed trees, 14 proposed shrubs (Wisteria)
Vehicular Use Areas		
Interior landscape islands	1:20sf ratio for islands 3,624sf / 20 = 181sf islands (SW) 25,137sf / 20 = 1,257sf islands (NW)	376 sf proposed (SW) 3,470 sf proposed (NW)
Bioretention island	if >750sf island required; 50% bioretention 1,257sf x 50% = 629sf bioretention	629sf bioretention area provided
Deciduous trees	1 tree per island; 1 tree per 250sf required island area; 192sf / 250sf = 1 tree (SW)	1 proposed tree (SW) 6 proposed trees (NW)
Snow pile storage	Identify locations on plan	Identified on Landscape Plan
Street Trees		
Street trees	1 tree per 45lf frontage minus curb cuts 515lf / 45lf = 12 trees (Wisteria) 408lf / 45lf = 10 trees (Astor - West) 401lf / 45lf = 9 trees (Astor - South)	Wisteria: 4 existing trees, 8 proposed trees Astor - West: 9 existing trees, 1 proposed tree Astor - South: 3 existing trees, 6
Street tree canopy loss fee	total dbh removed - caliper replacement trees x $244 per inch (17 in - 35 in) x $244 = 0	Not applicable - Three existing street trees are proposed to be removed (3842, 3844 & 3" CR), but additional street trees are proposed and no canopy loss fee is required
Tree Mitigation		
	50% dbh of LM trees removed 57 inches x 0.5 = 28.5 inches 28.5 inches / 2.5 = 12 trees required	12 trees provided on site
Refuse/Recycling/Compost Containers		
	6ft high opaque wall or fence	Screening enclosure around existing/relocated dumpsters; Proposed dumpsters screened by

* When applying for a grading permit, a ROW+B4:F19 Street Tree Permit will also be required. There is no cost for this permit. Include the project number on the application. If required, the Canopy Loss Fee will be invoiced through that

PLANT SCHEDULE

Total	Street (-S)	VUA (-V)	ROW (-R)	Mitigation (-M)	Symbol	Botanical Name	Common Name	Size	Spacing	Root	Remarks
Trees											
11	5	6			CC	Cercis canadensis	Redbud	2.5" cal.	As shown	B&B	
2				2	LT	Liriodendron tulipifera	Tuliptree	2.5" cal.	As shown	B&B	
14		7	4	3	NS	Nyssa sylvatica	Black Gum	2.5" cal.	As shown	B&B	Single Stem
12		3	2	7	OV	Ostrya virginiana	Hop Hornbeam	2.5" cal.	As shown	B&B	
4	4				QR	Quercus robur x alba 'Crimschmidt'	Crimson Spire Oak	2.5" cal.	As shown	B&B	Fastigiate
5	5				SR	Syringa reticulata	Japanese Tree Lilac	2.5" cal.	As shown	B&B	
48	14	16	6	12	Total						
Shrubs											
17			17		TM	Taxus x media 'Densiformis'	Densiformis yew	18-24" ht	5' o.c.	#5 cont.	

ALL SPECIES DEVIATIONS MUST BE APPROVED IN WRITING BY THE CITY OF ANN ARBOR PRIOR TO INSTALLATION

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WOODBURY GARDENS REDEVELOPMENT

SITE PLAN FOR REZONING AND CITY COUNCIL
LANDSCAPE NOTES AND DETAILS

14

JOB No. 23195

REVISIONS:	REV. DATE
PER CITY REVIEW	10/17/25
PER CITY REVIEW	9/18/25
PER CITY REVIEW	9/15/25

DATE:
SHEET 14 OF 18
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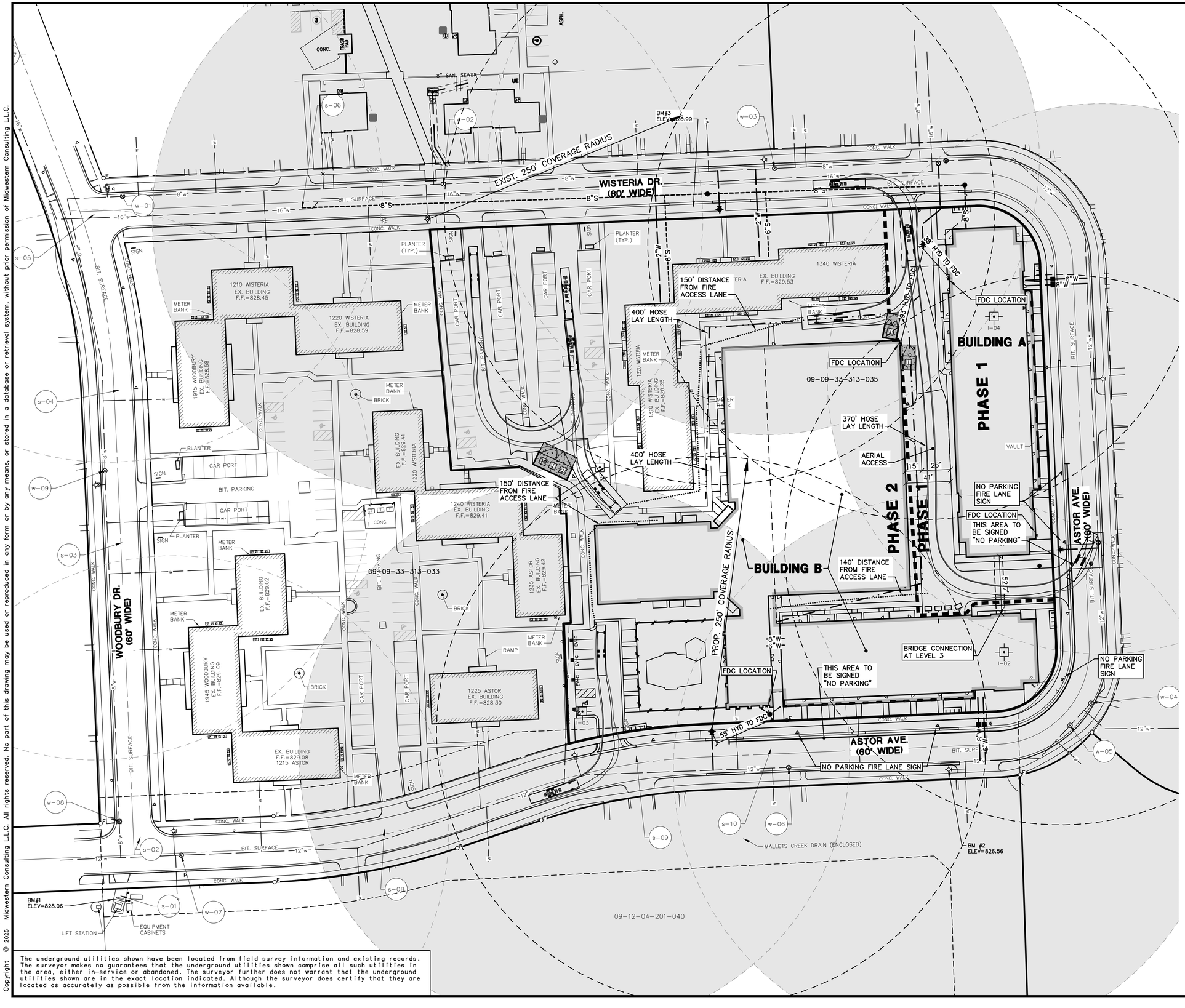

SCALE: 1" = 40'

0 40 80 120

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

REFER TO ARCHITECTURAL PLANS FOR FIRE COMMAND CENTER LOCATION.

BUILDING CONFIGURATION NOTES:

–THERE ARE TWO PROPOSED BUILDINGS.
–BUILDING A AND BUILDING B ARE CONNECTED BY A SKYWALK CONNECTING AT THE 3RD LEVEL, NO UTILITY CONNECTIONS.
–BUILDING B IS THE ENTIRELY PHASE 2 AND IS CONNECTED TO THE PARKING STRUCTURE
–BUILDING B HAS A TWO STORY BREEZEWAY LOCATED ALONG THE ASTOR AVENUE FRONTAGE. THE BUILDING IS CONTINUOUS ACROSS LEVELS 3–7.

FIRE PROTECTION PLAN NOTES:

1. The proposed building must meet the following requirements:
   a. The entire structure must be Type 1A or 1B construction.
   b. The structure must have an NFPA 13 automatic fire suppression system (throughout)
   c. The structure must be designed with a smoke removal system.
   d. There must be a Type 1 (Class 1) standpipe system from the lowest level of fire department access to all roof surfaces through an enclosed stairway.
2. Water services are to be separate domestic and fire lines.
3. Addressing: numerics shall be a minimum of 4 inches in height and clearly visible when approaching the building.
4. 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.
5. Fire department connections (FDC's) shall be within 100 feet of a hydrant.
6. Fire department connection (FDC): hook-up location is subject to Fire Marshal's approval.
7. FDC's shall be 4 inch Storz connections or (2) 2 ½ inch NST connections.
8. FDC access shall comply with IFC 912.3.
9. FDC signage shall be provided and shall comply with IFC 912.4.
10. 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.
11. 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.
12. 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.
13. 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.
14. Two separate buildings are proposed. No additional firewalls are proposed.
15. It is anticipated that booster pumps will be required on the domestic water service and the fire suppression water service leads. Final determination will occur during the detailed design phase. Any pumps shall meet 2015 IFC standards, Section 914.3.1.2.

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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WOODBURY GARDENS REDEVELOPMENT

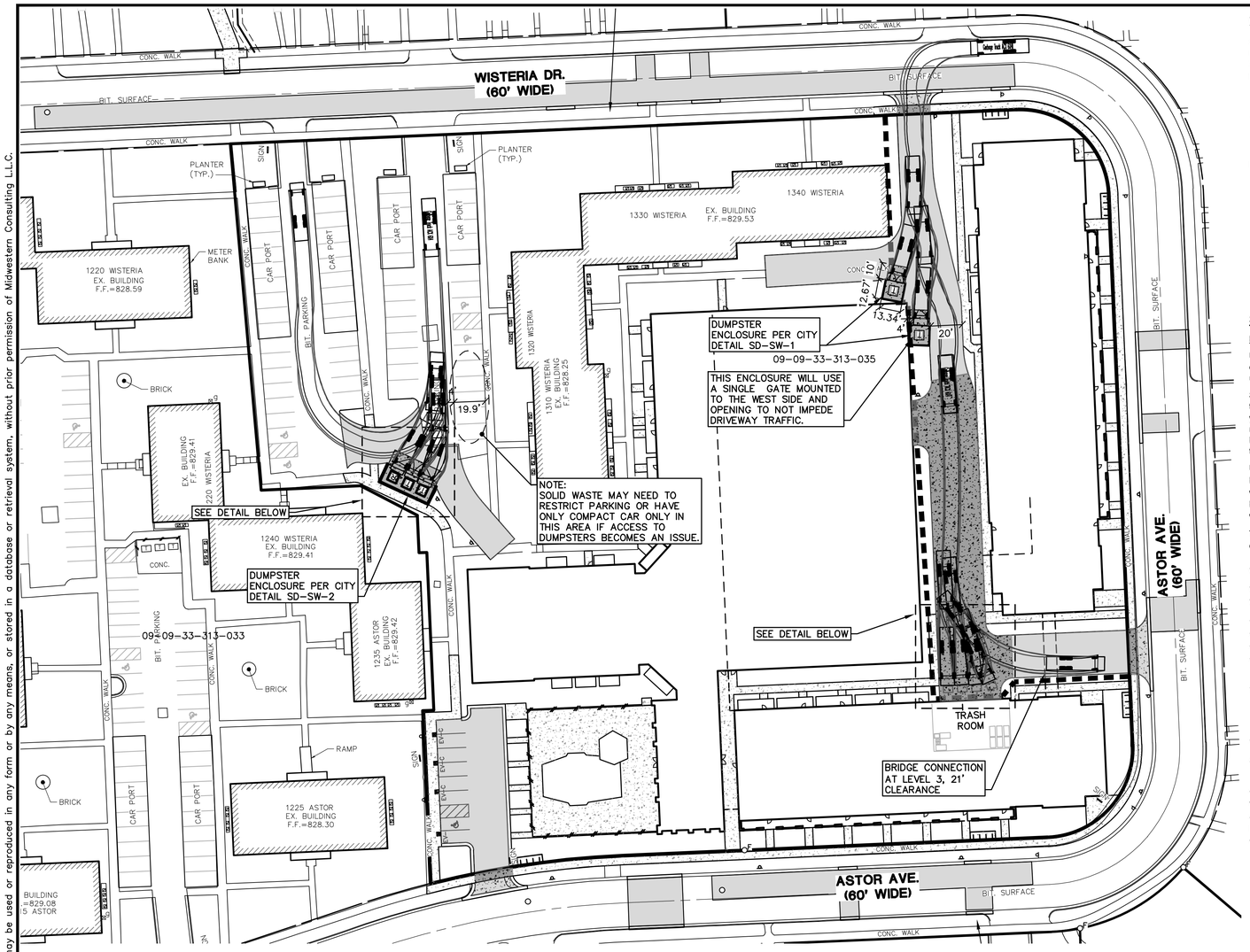
SITE PLAN FOR REZONING AND CITY COUNCIL
FIRE PROTECTION PLAN

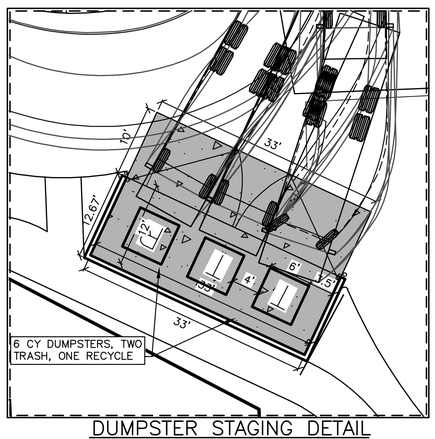
15

DATE: 6/20/24
SHEET 15 OF 18
CADD:
ENG: JCA
PM: SWB
TECH:
23195FP

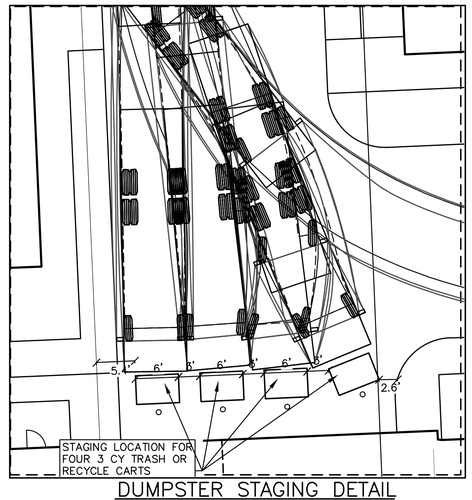
REVISIONS:	REV. DATE
PER CITY REVIEW	1/10/25
PER CITY REVIEW	4/02/25
PER CITY REVIEW	6/18/25

JOB No. **23195**





DUMPSTER STAGING DETAIL
SCALE 1"=10'



DUMPSTER STAGING DETAIL
SCALE 1"=10'

Woodbury Gardens Redevelopment Solid Waste Calculations

There will be a solid waste room on the first floor of the building with chutes on each floor for trash and recycleables. A compactor for trash will be utilized. Recycleables will not be compacted. The trash will be collected in 3 cy rolling dumpsters and the recycleables will be collected in 4 cy and be placed out on collection day.

Studio	1 BR	2 BR	3 BR
53	201	50	48

Total Bedrooms 352 BR

Assumptions: 4 lbs of solid waste per bedroom per day
1408 lbd/day x 7 days = 9856 lb/wk
It is anticipated a 80% / 20% mix of trash/recycle
7884.8 lbs trash
225 lbs/cy uncompacted trash
Compactor will provide a 2.44:1 compaction ratio
14.4 cy/week compacted trash

1971.2 lbs recycle @ 100 lbs/cy
19.7 cy uncompacted recycle

Total solid waste volume generated per week will be:

5 - 3 cy trash bins weekly
5 - 4 cy recycle bins weekly

SOLID WASTE NARRATIVE

Future Operations

Upon completion of the proposed project, residents in the new building will conform to a different protocol for their waste and recycling disposal. The remainder of the site and units will continue following the procedure they have historically adhered to.

Solid waste collection for the new buildings will be collected in the trash room located on the first floor. There will be a compactor for trash and it will be collected in three cubic yard rolling containers. Recyclables will not be compacted.There will be 10-12 total rolling containers in operation with a container under the compactor at all times, empty bin storage and full bins waiting for staging in the trash collection area outside of the trash room.

Using 3 Cy rolling dumpsters for trash and 4 cy rolling dumpsters for recycle, the new building will require 5 trash and 5 recycle dumpsters per week. The rolling dumpsters will be placed out by building staff on pickup day and carts will be moved back in the building's trash room an hour after pickup time. Three pickups per week are anticipated with 3-4 bins serviced at each pickup.

The new buildings will share one pick up day with the rest of the existing site and employ two other days to pick the additional waste and recycling.

Woodbury Club Redevelopment -Solid Waste Computation for remaining existing buildings

Within the project area there is an existing solid waste area at the west side of building 1310 Wisteria. The buildings which will remain and would contribute to those dumpsters are:

1310 Wisteria – 11 units – 22 bedrooms
1320 Wisteria – 11 units – 11 bedrooms
1330 Wisteria – 11 units – 22 bedrooms
1340 Wisteria – 11 units – 22 bedrooms

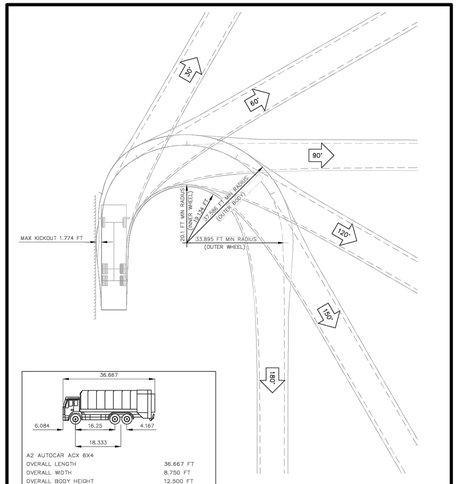
Total = 77 bedrooms each generating 4 lbs/day = 308 lbs x 7 days = 2,156 lbs wk

Assuming 80% trash and 20% recycle generates: 1,725 lbs trash and 431 lbs recycle per week

1,725 lbs / 225 lbs per cy = 7.7 cy of solid waste per week

431 lbs/100 lbs per cy = 4.3 cy of recycle per week

The existing facility currently uses 2 -6 cy trash dumpsters providing for 12 cy of trash capacity. A 6 cy recycle dumpster will be added in lieu of the current curbside wheeled carts that are utilized for recycle and placed along the drive for pickup. The existing facilities provide adequate capacity for once a week trash pickup. An additional trash and recycle dumpster have been shown at the east side of building 1340 Wisteria so the distance those residents need to walk to dispose of solid waste is not as great.



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SWEPT PATH REQUIREMENTS FOR FRONT LOAD SOLID WASTE VEHICLE

DR. ENG | CH. ENG | DRAWING NO. SD-SW-4
SCALE N.T.S. | DATE 12/8/2023

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

SCALE: 1" = 40'
0 40 80 120

1. MAINTAIN A CLEAR SPACE DIRECTLY IN FRONT OF THE SOLID WASTE ENCLOSURE. THE CLEAR SPACE SHALL BE A MINIMUM OF FIFTY (50) FEET LONG BY THE WIDTH OF THE INSIDE DIMENSION (I.D.) OF THE ENCLOSURE WALLS PLUS FOUR (4) FEET ON EACH SIDE. A MINIMUM VERTICAL CLEARANCE OF AT LEAST TWENTY-FIVE (25) FEET MUST BE PROVIDED ABOVE THIS AREA.
2. INGRESS AND EGRESS ROUTES MUST BE DEVELOPED BASED ON SOLID WASTE SWEPT PATH REQUIREMENTS PER SD-SW-4. A MINIMUM HORIZONTAL CLEARANCE OF FOUR (4) FEET FROM THE EDGE OF THE SWEPT PATH AND A MINIMUM VERTICAL CLEARANCE OF AT LEAST FIFTEEN (15) FEET MUST BE PROVIDED ALONG THE ENTIRE SOLID WASTE COLLECTION ROUTE.
3. PROVIDE TEN (10) FEET MINIMUM HORIZONTAL CLEARANCE FROM SOLID WASTE ENCLOSURE TO MAJOR ELECTRICAL EQUIPMENT, ABOVE GROUND UTILITY SERVICES, AND EDGE OF OVERHEAD OBSTRUCTIONS SUCH AS TREE BRANCHES, BALCONIES, AND OVERHANGS.
4. IF FORWARD ACCESS TO THE PUBLIC STREET IS NOT AVAILABLE FOR THE SOLID WASTE VEHICLE, THE SITE DEVELOPMENT LAYOUT MUST ACCOMMODATE A TURN-AROUND LOCATION MEETING REQUIREMENTS WITHIN SOLID WASTE REFERENCE SPECIFIC TURN-AROUND DETAIL (SD-SW-5) AND ACCEPTABLE TO THE PSAA.
5. FOR SITES THAT CANNOT ACCOMMODATE A TURN-AROUND, THE FOLLOWING ADDITIONAL REQUIREMENTS MUST BE MET:
   - 5.1. SOLID WASTE VEHICLES MUST BE ABLE TO SERVICE DUMPSTERS WITHOUT IMPEDING THE PUBLIC STREET OR SIDEWALK.
   - 5.2. THE COLLECTION LOCATION SHALL BE CLEARLY DELINEATED AND NOT HAVE A SLOPE GREATER THAN 2% IN ANY DIRECTION.
   - 5.3. BOLLARDS OR ADEQUATE CLEAR SPACE MUST BE PROVIDED BEHIND THE LIFT POINT SO THE DUMPSTERS ARE NOT PUSHED INTO ANY BUILDING OR ACCESS ROUTE.
   - 5.4. ALL SWEPT-PATH CLEARANCE AND VERTICAL CLEARANCE REQUIREMENTS PREVIOUSLY IDENTIFIED SHALL BE PROVIDED.
   - 5.5. SOLID WASTE VEHICLE BACK-UP DISTANCES MUST BE LESS THAN 30' ALONG SERVICING ROUTE.
6. GATES ON BIN ENCLOSURES SHALL OPEN A MINIMUM OF 120 DEGREES FROM THE CLOSED POSITION. THE GATES SHALL NOT IMPEDE ON THE REQUIRED BIN ENCLOSURE OPENING WIDTH, SHALL NOT BLOCK ADJACENT PARKING SPOTS, AND NOT BE IMPEDED BY ADJACENT CURBS OR LANDSCAPING.
7. GATES SHALL BE DESIGNED TO BE FREE STANDING WITHOUT CENTER POLE DESIGN. IF CENTER POLE DESIGN IS NECESSARY, 12 INCHES SHALL BE ADDED TO THE MINIMUM INTERIOR WIDTH OF THE ENCLOSURE.
8. GATE DESIGN SHALL INCLUDE A RELIABLE MEANS TO SECURE THE DOOR IN BOTH THE OPEN AND CLOSED POSITIONS.

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SOLID WASTE GENERAL NOTES

DR. ENG | CH. ENG | DRAWING NO. SD-SW-6A
SCALE N.T.S. | DATE 12/8/2023

9. 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.
10. 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.
11. 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 79,500 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.
12. 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.
13. SOLID WASTE COLLECTION LOCATIONS MUST BE LOCATED WITHIN THE BOUNDARIES OF THE PROPERTY UNLESS AN APPROPRIATE EASEMENT IS OBTAINED.

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SOLID WASTE GENERAL NOTES

DR. ENG | CH. ENG | DRAWING NO. SD-SW-6B
SCALE N.T.S. | DATE 12/8/2023

ADDITIONAL SOLID WASTE NOTES:

1. PROPERTY OWNER IS RESPONSIBLE FOR ALL SNOW AND ICE REMOVAL REQUIRED FOR SAFE ACCESS TO THE ENCLOSURES AND SERVICING OF THE SOLID WASTE CONTAINERS.
2. THE CITY'SCITY'S COMPOST PROGRAM DOES NOT CURRENTLY EXTEND TO MULTIFAMILY OR COMMERCIAL DEVELOPMENTS. PRELIMINARY SPACE FOR FUTURE MULTIFAMILY COMPOST COLLECTION MAY BE SHOWN ON THE PLANS, NOTING THAT IT IS SUBJECT TO CHANGE DEPENDING ON WHAT THE COLLECTION NEEDS ARE DETERMINED TO BE. PRIVATE COMPOST SERVICE CAN BE ARRANGED THROUGH MY GREEN MICHIGAN.
3. THE PAVEMENT SURFACE OF THE SOLID WASTE SERVICE ROUTE SHALL BE DESIGNED TO SUPPORT THE WEIGHT OF SOLID WASTE VEHICLES (79,500 GVWR).

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WOODBURY GARDENS REDEVELOPMENT

SITE PLAN FOR REZONING AND CITY COUNCIL
SOLID WASTE MANAGEMENT PLAN

16

DATE: ###
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CADD:
ENG: JCA
PM: SWB
TECH:
###23195SW

JOB No. 23195

REVISIONS:	REV. DATE
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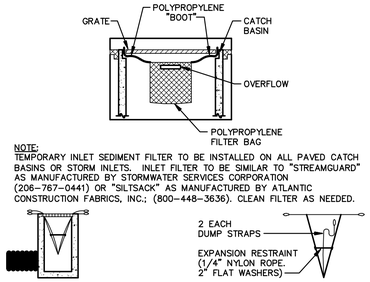
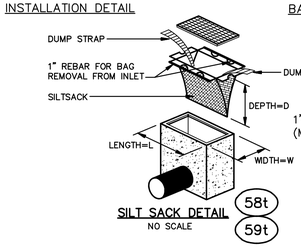
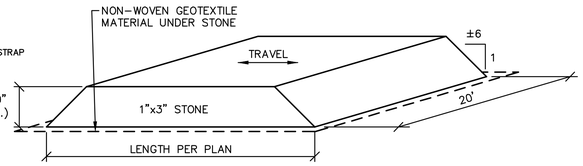
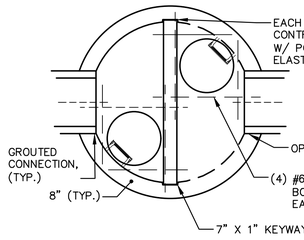
PER CITY REVIEW	6/18/25
PER CITY REVIEW	9/15/25
PER CITY REVIEW	11/19/25





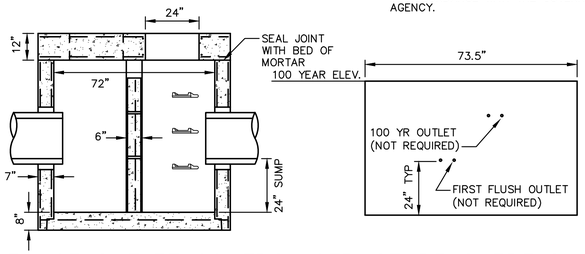


CONSTRUCTION SEQUENCE	OPERATION TIME SCHEDULE PHASE 1 BEGINNING OCT 2026													
	2026				2027				2028					
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	MARCH	APRIL	MAY	JUNE	JULY	
SESC PRE-GRADING MEETING														
INSTALL AND MAINTAIN SOIL EROSION CONTROL MEASURES AS REQUIRED														
BUILDING DEMOLITION														
UTILITY INSTALLATION AND SITE DEMOLITION														
MASS EXCAVATION														
FOUNDATION CONSTRUCTION														
BUILDING CONSTRUCTION														
FINAL GRADE SITE														
PLACE MULCH AND SEEDING														
FINAL CLEAN-UP & REMOVAL OF SOIL EROSION CONTROLS														



NOTES:

1. MANHOLE SECTIONS TO BE MANUFACTURED TO ASTM C-478 SPECIFICATIONS AND IN ACCORDANCE WITH NORTHERN CONCRETE PIPE, INC. (800-222-9918).
2. REINFORCING SHOWN FOR SCHEMATIC ONLY.
3. CONTRACTOR TO SEAL BETWEEN PRECAST WALL & BASE W/BUTYL ROPE.
4. INLET & OUTLET PIPES SIZE VARIES.
5. NUMBER, SIZE AND ELEVATION OF HOLES IN THE FLOW RESTRICTOR WALL SHALL BE IN ACCORDANCE WITH THE GOVERNING AGENCY.



PRECAST OUTLET CONTROL STRUCTURE OVERFLOW
NOT TO SCALE

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

MAINTENANCE PLAN BUDGET

Annual inspection of system for sediment accumulation	$350.00
Removal of sediment accumulation every two (2) years, as needed	$600.00
Inspect infiltration basins after storm events of 1" or more	$300.00
Inspect for floatables and debris annually and after major storms	$300.00
Removal of floatables and debris annually and after major storms	$600.00
Inspect system for erosion annually and after major storms	$300.00
Re-establish permanent vegetation on eroded slopes, as needed	$200.00
Clean drives semiannually	$250.00
Total Annual Budget	**$2,900.00**

PERMANENT MAINTENANCE TASKS AND SCHEDULE

	Components						
	Drives and Walks	Storm Sew er System	Catch Basin Sumps	Catch Basin Inlet Castings	Infiltration Basins	Detention Chambers	Schedule
Inspect for sediment accumulation	X	X	X		X	X	after all storms or 1" or more
Removal of sediment accumulation		X	X			X	every 2 years, as needed
Inspect for floatables and debris		X	X	X		X	annually
Cleaning of floatables and debris		X	X	X		X	annually
Clean streets	X						semi-annually

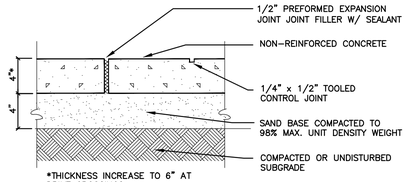
Estimated Construction Sequence

PHASE 1

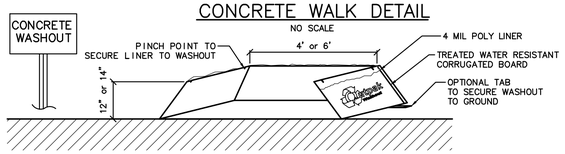
1. Inventory Site: (2 weeks)
   - SESC pre-grading meeting
   - Identify construction limits and define site access
   - Install construction fencing as required to secure phase 1 site
2. Building and site Demolition: (6 weeks)
   - Install silt fence
   - Demolish buildings and associated utilities
3. Utility Installation and Site Demolition: (6 weeks)
   - Install all soil erosion control measures
   - Demolish site amenities; including interior site curb and gutter and pavement as required
   - Install sanitary sewer main in Wisteria and sewer leads
   - Install watermain, hydrants and water service leads
   - Install storm sewer leads from ROW onto site
   - A wet or dry standpipe shall be installed per 3311.1 of the Michigan Building Code. The standpipe can be permanent or temporary with a permanent or temporary FDC provided. Connections for hose operations shall be 2 ½" NST.
4. Mass Excavation: (2 weeks)
   - Maintain existing controls
   - Excavate for foundation/basement
5. Foundation Construction: (4 weeks)
   - Pour footings and foundation walls
   - Install underground detention chambers
   - Install site storm sewer and inlets, sack all active inlets
   - Maintain existing controls; install permanent controls within five (5) days after final grading or final grade change
   - Driveway curb and first course asphalt to be installed prior to issuance of vertical building permit
6. Building Construction: (78 weeks)
   - Maintain existing controls; install permanent controls within five (5) days after final grading or final grade change
   - Construct building above grade
   - Complete roof and plumb roof drains to detention chambers
7. Fine Grade the Site, install Sidewalk, Curb and Gutter, Final Street Paving and continue Building Construction: (8 weeks)
   - Maintain existing controls
   - Install Sidewalk, Curb and Gutter and Final Street Paving
   - Plant trees and landscape items
8. Follow-Up After the Site is Stabilized: (1 week)
   - Remove construction fence and install new fencing
   - Remove catch basin silt sacks
   - Remove sediment from detention chambers and storm sewer system
   - Clean up debris
9. Finalize Building Construction: (1 week)
   - Maintain permanent soil erosion control measures
   - Remove construction fencing
   - Prior to the first Certificate of Occupancy, all Life Safety Systems shall be completed, tested and approved.
   - A "Knox Box" emergency responder access system shall be installed prior to the first Certificate of Occupancy. Forms for the Knox Box are available thru Fire Prevention.
   - Provide as-built certification of the storm water detention system.

PHASE 2

Phase 2 will follow the same sequence as phase 1 with the exception of no sewer or watermains will need to be construction. The exact date of commencement of construction activities is unknown at this time based on relocation schedule of existing residents from buildings to be demolished in Phase 2 into new units in Phase 1. It is anticipated there would be approximately one year between the completion of Phase 1 and the start of Phase 2.



CONCRETE WALK DETAIL
NO SCALE

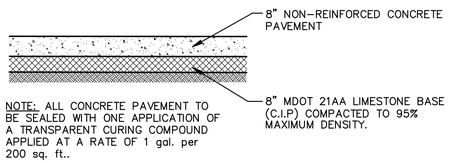


NOTES:

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

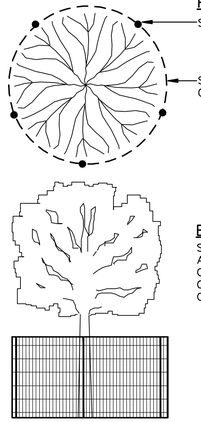
OR APPROVED EQUAL

CONCRETE WASHOUT SYSTEM
NOT TO SCALE

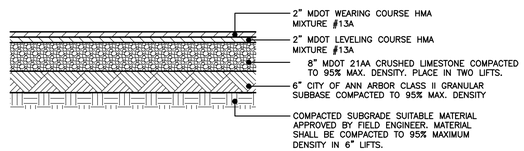


NOTE: ALL CONCRETE PAVEMENT TO BE SEALED WITH ONE APPLICATION OF A TRANSPARENT CURING COMPOUND APPLIED AT A RATE OF 1 gal. per 200 sq. ft..

PROP. HEAVY DUTY CONCRETE DETAIL
NOT TO SCALE



TREE PROTECTION DETAIL
NOT TO SCALE



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

Woodbury Gardens Redevelopment
Storm Water Narrative

Existing Drainage from site current conditions

The entire 3.49 acre of site redevelopment is currently occupied by buildings and parking areas with many small grassy areas. The site provides no storm water detention. Storm water is collected in catch basins located primarily in the parking areas and driveways and discharges to City storm sewer in the surrounding public road rights of way of Astor Avenue and Wisteria Drive.

Proposed Drainage

The proposed site redevelopment will result in a larger portion of the sites area comprised of rooftops. The buildings will collect the storm water runoff and discharge downspouts and area drains to one of two underground detention areas, both of which will have open bottom systems to allow infiltration. Onsite soil testing has shown that the underlying soils have a moderate infiltration capacity.

The north and east portions of the site will drain to the larger of the two detention systems which will be located in a corridor between two buildings. The southwest portion of the site will drain to the second underground detention area which will be located under the surface parking area adjacent to the clubhouse and pool area. The onsite infiltration will be the primary outlet with both infiltrating the 100 storm volumes in under 24 hours. There will be only an emergency overflow connection to the City storm sewer.

The proposed system will significantly reduce runoff to the storm sewer system.

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

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WOODBURY GARDENS REDEVELOPMENT
SITE PLAN FOR REZONING AND CITY COUNCIL
MISCELLANEOUS DETAILS

17

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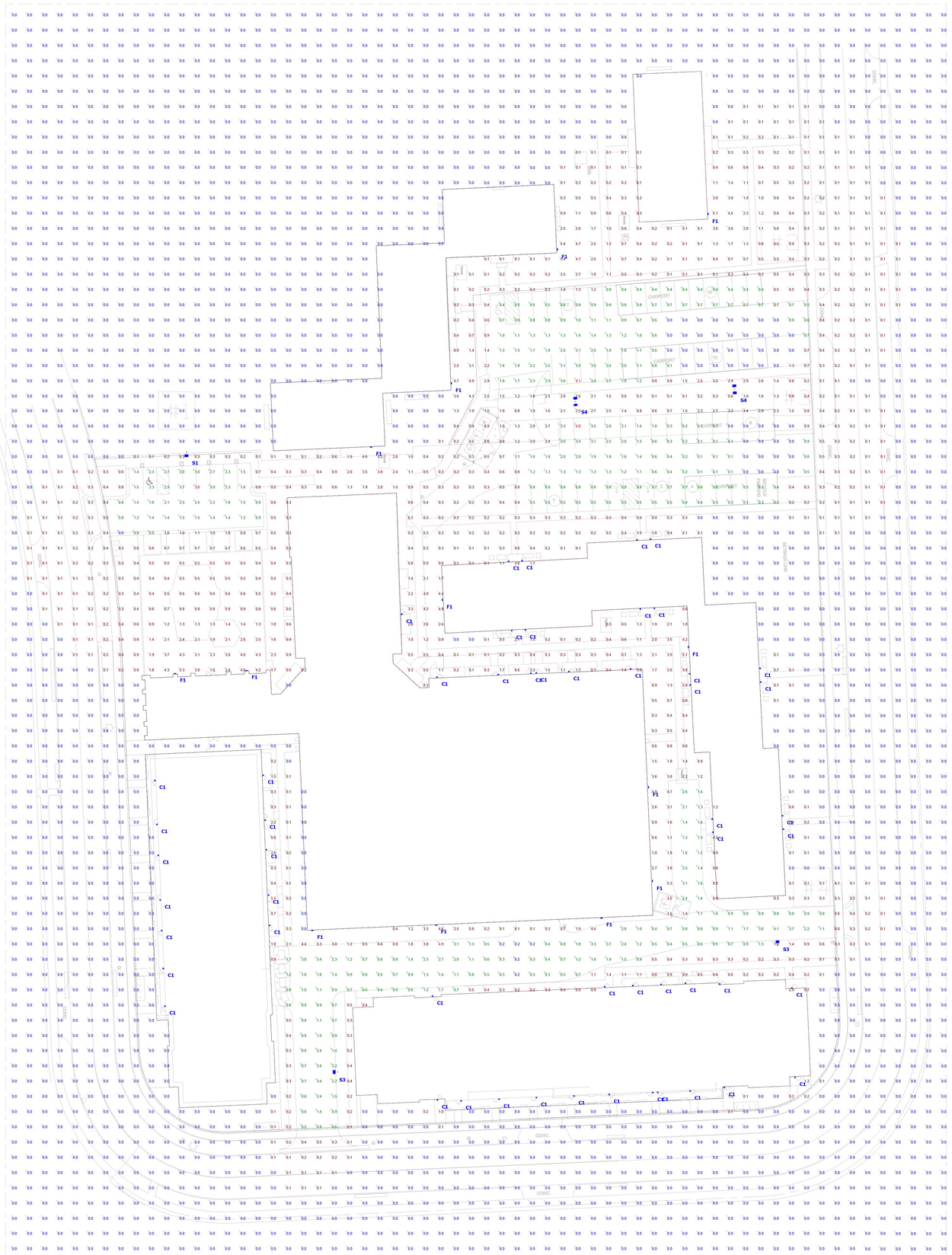
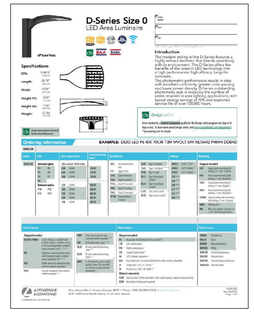
ENG: JCA
PM: SWB
TECH:
23195DT

REVISIONS:	REV. DATE
PER CITY REVIEW	1/02/25
PER CITY REVIEW	

JOB No. 23195



Plan View
Not to Scale



Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Overall	+	0.3 fc	5.5 fc	0.0 fc	N/A	N/A
Stat Zone # 1	✳	1.9 fc	3.8 fc	0.6 fc	6.3:1	3.2:1
Stat Zone # 2	✳	0.9 fc	4.1 fc	0.0 fc	N/A	N/A
Stat Zone # 3	✳	0.8 fc	4.0 fc	0.0 fc	N/A	N/A
Stat Zone # 4	✳	1.3 fc	4.9 fc	0.2 fc	24.5:1	6.5:1

Schedule

Symbol	Label	QTY	Manufacturer	Catalog	Description	Lamp Output	LLF	Input Power	Mounting Height
	C1	53	Lightway Industries	GHSW	Coach Light, Frosted Plastic Lens, Wet Location	574	0.9	12.983 3	6'
	F1	13	Lithonia Lighting	ESXF3 ALO(10,500L) SWW2(3000K) YS DDB	ESXF3 10500 Lumens 3000K 120-277V	10156	0.9	69.1	20'
	S1	1	Lithonia Lighting	DSX0 LED P6 30K 70CRI BLC4	D-Series Size 0 Area Luminaire P6 Performance Package 3000K CCT 70 CRI Type 4 Extreme Backlight Control	12352	0.9	137	20'
	S3	2	Lithonia Lighting	DSX0 LED P1 30K 70CRI T1S HS	D-Series Size 0 Area Luminaire P1 Performance Package 3000K CCT 70 CRI Type 1 Short Houseside Shield	4507	0.9	33.21	20'
	S4	2	Lithonia Lighting	DSX0 LED P6 30K 70CRI BLC4	D-Series Size 0 Area Luminaire P6 Performance Package 3000K CCT 70 CRI Type 4 Extreme Backlight Control	12352	0.9	274	20'

General Note
1. SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
2. SEE LUMINAIRE SCHEDULE FOR LIGHT LOSS FACTOR.
3. CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0"

THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIRMENTS DEFINED IN ASHRAE 90.1 2019. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT CONTROLS@GASSERBUSH.COM OR 734-266-6705.

Alternates Note
THE USE OF FIXTURE ALTERNATES MUST BE RESUBMITTED TO THE CITY FOR APPROVAL.

Ordering Note
FOR INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.

Drawing Note
THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

Mounting Height Note
MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.

WOODBURY GARDENS
PHOTOMETRIC LAYOUT
GASSER BUSH ASSOCIATES
WWW.GASSERBUSH.COM

Designer
KS
Date
06/16/2025
Scale
Not to Scale
Drawing No.
#24-30652_V6