



**III. C.**

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## Architectural Review Board Staff Report

**Project Type:** Amended Site Development Section Plan

**Meeting Date:** July 10, 2014

**From:** John Boyer  
Senior Planner

**Location:** 700 Chesterfield Parkway West

**Applicant:** Burns & McDonnell, Jacobs and Civil Design, Inc.

**Description:** **Monsanto 9<sup>th</sup> ASDSP**: An Amended Site Development Section Plan, Landscape Plan, Lighting Plan, Architectural Elevations and Architect's Statement of Design for a 200.51 acre tract of land zoned "C-8" Planned Commercial District located north side of Chesterfield Pkwy West, approximately 2,000 feet east of City Center Dr. (17S210094).

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### **PROPOSAL SUMMARY**

The request is for construction of a 402,600 square foot four storied research building, 150,930 square foot greenhouse addition and a 32,737 square foot Headhouse addition to the 200+ acre Monsanto campus. The subject site is zoned "C-8" Planned Commercial District and is governed under the terms and conditions of City of Chesterfield Ordinance 258.

### **ZONING HISTORY OF SUBJECT SITE**

In 1979, St. Louis County Ordinance 9002 was approved which rezoned the site from "NU" Non-Urban and "R-3" Residence District to the "C-8" Planned Commercial District. This original ordinance was amended by St. Louis County numerous times (Ordinances 10,573, 10,688, and 10,986). In March 1989, Ordinance 258 was approved by the City of Chesterfield amending previous County ordinances. Ordinance 258 is the current ordinance authority for this site.

There are currently nine buildings located at this site, totaling 1,520,878 square feet. Current ordinance authority limits total building square footage to 2,660,000 square feet. The addition of these proposed three structures would bring the total square footage to 2,107,145.



Figure 1: Site Photo

## **STAFF ANALYSIS**

### **General Requirements for Site Design:**

#### **A. Site Relationships**

The proposed structures are planned to be situated interior to the 200+ acre tract. The Greenhouse/Headhouse is planned directly over and attached to the previously approved parking garage, whereas the Technology Building is planned north of the parking garage and planned Greenhouse/Headhouse. These structures will be connected via enclosed walkways.

#### **B. Circulation System and Access**

No changes in access points are proposed associated with these improvements. All access will utilize existing site entrance and internal drives.

Additional sidewalk extensions connecting to internal pedestrian points are planned.

#### **C. Topography**

The site has a great deal of topographical relief throughout the site with few flat areas, typical of properties within this area. Specifically to the area of proposed construction, the site "falls-off" as one moves from south to north towards the river bottoms.

#### **D. Retaining Walls**

No retaining walls are planned associated with these proposed structures.



### General Requirements for Building Design:



Figure 2: Conceptual Construction of Proposed Buildings

#### A. Scale, Design, Materials and Color

Above in Figure 2, the three proposed structures can be seen in context with the site. As mentioned earlier on page 2, the topography of the construction site falls off as you move north. The most southern plan structure, the Headhouse, is a 32,737 square-foot one-story structure which is as described by the Design Team as “nestled into the hillside” to limit the structures visual impact. This structure has a predominantly brick façade matching the existing buildings within the campus.

The Greenhouse is directly north of the Headhouse and is situated partially above the recently approved parking garage structure. The 150,930 square-foot structure is comprised of mostly tilt-up concrete panels matching the parking garage underneath and glass which will incorporate the greenhouse portion of the roof. While the sites grade is falling away at this point, the Greenhouse is maintaining a similar height as the Headhouse.

The last structure planned associated with this Amended Site Development Section Plan is the 402,600 square-foot four-story building located directly north of the Greenhouse. This structure is planned where an existing surface parking lot is currently located. Building materials are mixed from brick and glass, with the rear or north portion of the building being predominantly brick and the southern section glass. Per the Architectural Design Statement, this transition in design/materials is to shift from the existing campus to the north which is brick to a more modern glass structure on the southern frontage of the structure to architecturally indicate the modern image of Monsanto. Height of the Technology building is similar with the existing structures within the facility and visually appears the same as the Greenhouse to the south.

All proposed structures within this Amended Site Development Section Plan will be connected via enclosed walkways, which can be viewed on the provided elevations and renderings. These connections facilitate coordination and physically link these buildings to the existing campus.

### **B. Landscape Design and Screening**

Landscaping is planned in association with the proposed development as required by the City of Chesterfield. In addition to the proposed landscaping, existing woodlands around the perimeter of the site are not to be disturbed insulating this site from its neighbors and limiting public view points.

### **C. Lighting**

A combination of pole standards and building lighting via wall packs is planned compliant with City Lighting standards. Associated with the proposed Greenhouse, the Applicant has identified that lighting shades are planned to prevent horizontal and vertical light leaving the structure in the evening. As described, these shades act similar to cut-off optics on a street lamp.

All proposed lighting fully complies with City of Chesterfield requirements. Full details of proposed lighting are included for the Architectural Review Board's review.

### **DEPARTMENTAL INPUT**

Staff has reviewed the Amended Site Development Section Plan, Landscape Plan, Lighting Plan, Architectural Elevations and Architect's Statement of Design. Be advised, this project is still going through development review by City Staff and will not proceed to the Planning Commission until all outstanding items have been addressed. All recommendations made by the ARB will be included in Staff's report to the Planning Commission.

Staff requests review and recommendation on this submittal for Monsanto 9<sup>th</sup> Amended Site Development Section Plan.

### **MOTION**

The following options are provided to the Architectural Review Board for consideration relative to this application:

- 1) "I move to forward the Amended Site Development Section Plan, Landscape Plan, Lighting Plan, Architectural Elevations, and Architect's Statement of Designs, for Monsanto, as presented, with a recommendation for approval (or denial) to the Planning Commission."
- 2) "I move to forward the Amended Site Development Section Plan, Landscape Plan, Lighting Plan, Architectural Elevations, and Architect's Statement of Designs, for Monsanto, to the Planning Commission with the following recommendations..."

### **Attachments**

1. Architectural Review Packet Submittal



ARCHITECTURAL REVIEW BOARD  
Project Statistics and Checklist

**Date of First Comment Letter Received from the City of Chesterfield** N/A

**Project Title:** Monsanto Chesterfield Campus Expansion **Location:** Chesterfield, Missouri

**Developer:** Monsanto **Architect:** Jacobs, Burns & McDonnell **Engineer:** Civil Design, Inc.

**PROJECT STATISTICS:**

**Size of site (in acres):** 12.55 **Total Square Footage:** 540,000 **Building Height:** max. 76'

**Proposed Usage:** TECH: Lab and Technology Building w/ office component GREENHOUSE: Research

**Exterior Building Materials:** TECH: Brick, Glass and Aluminum Curtainwall GREENHOUSE: Brick and Glass

**Roof Material & Design:** TECH: light colored, bituminous roofing, fritted glass, & aluminum GREENHOUSE: Modified Bitumen

**Screening Material & Design:** TECH: N/A GREENHOUSE: Brick

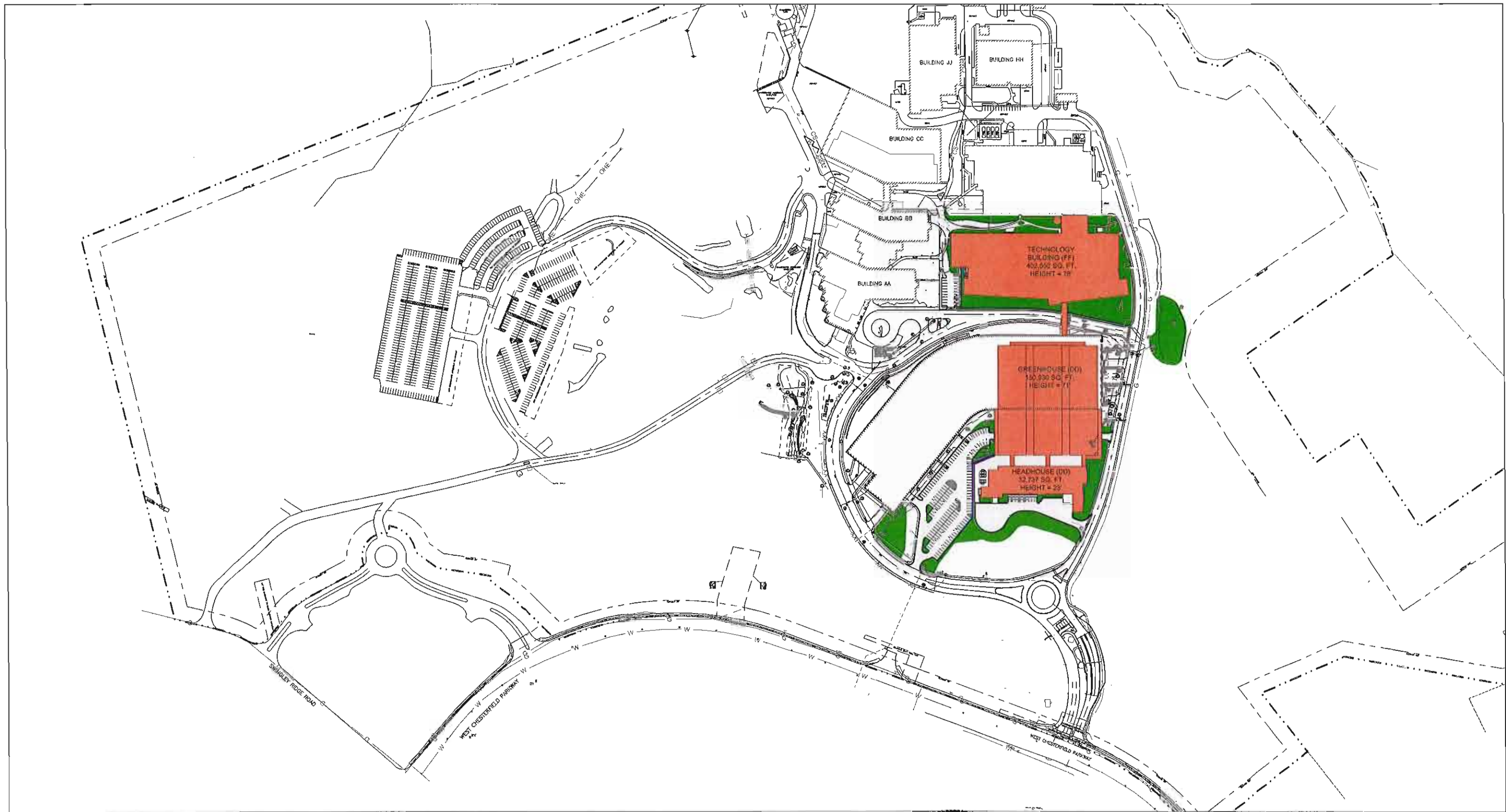
**Description of art or architecturally significant features (if any):** TECH: A combination of brick facades to match existing with modern curtainwall, south facade is a mosaic of fritted glass panels acting as billboard for new building. GREENHOUSE: N/A

**ADDITIONAL PROJECT INFORMATION:**

**Checklist:** Items to be provided in an 11" x 17" format

- Color Site Plan with contours, site location map, and identification of adjacent uses.
- Color elevations for all building faces.
- Color rendering or model reflecting proposed topography.
- Photos reflecting all views of adjacent uses and sites.
- Details of screening, retaining walls, etc.
- Section plans highlighting any building off-sets, etc. (as applicable)
- Architect's Statement of Design which clearly identifies how each section in the Standards has been addressed and the intent of the project.
- Landscape Plan.
- Lighting cut sheets for any proposed building lighting fixtures. (as applicable)
- Large exterior material samples. (to be brought to the ARB meeting)
- Any other exhibits which would aid understanding of the design proposal. (as applicable)
- Pdf files of each document required.

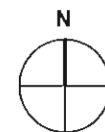
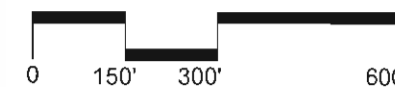




**MONSANTO - CHESTERFIELD CAMPUS  
NEW TECHNOLOGY BUILDING, HEADHOUSE  
& GREENHOUSE**

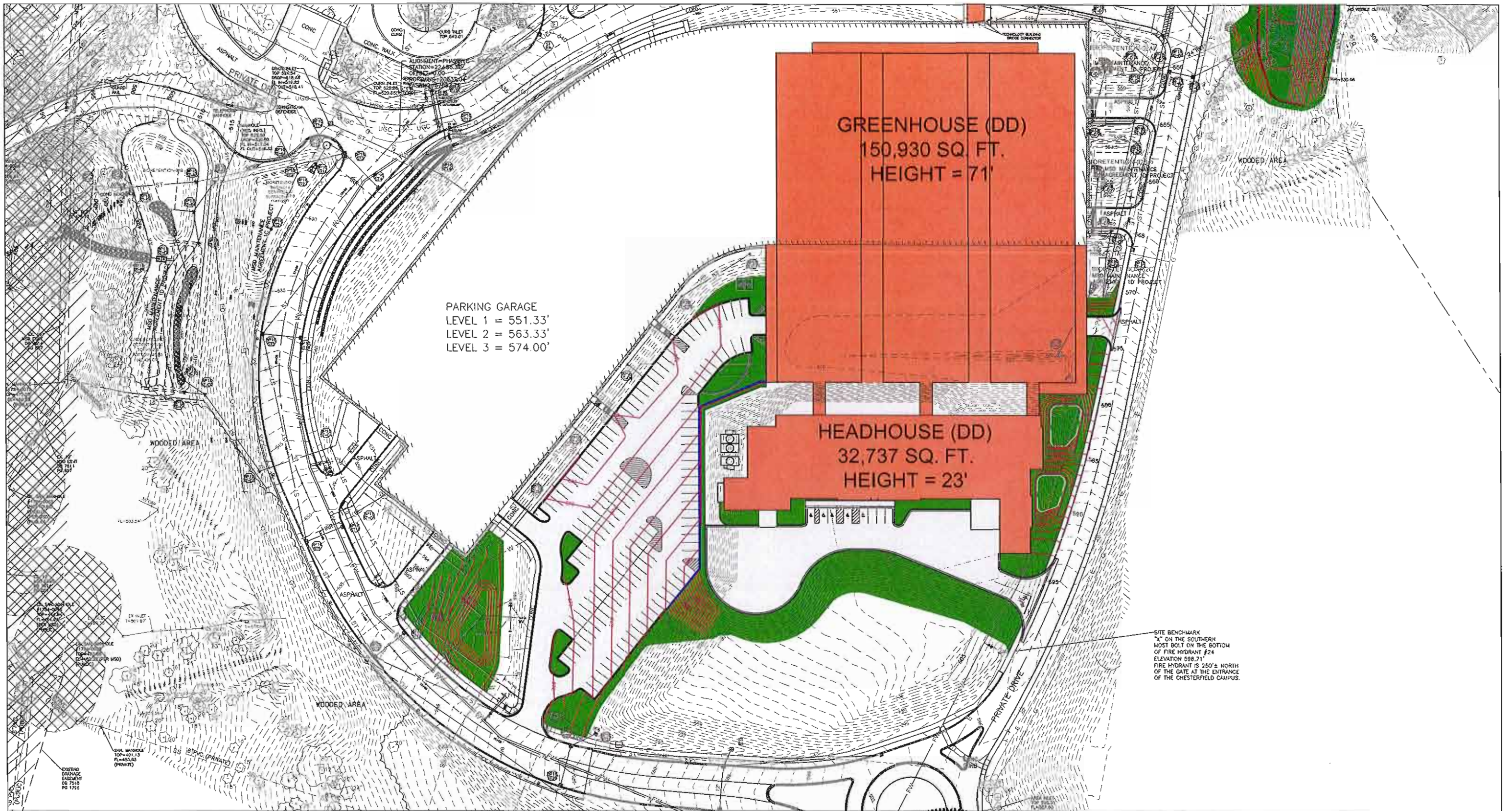


**SUBJECT PROPERTY**

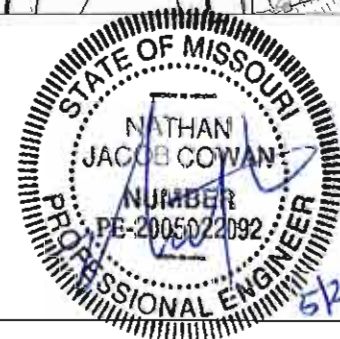


**C-1**

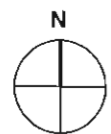
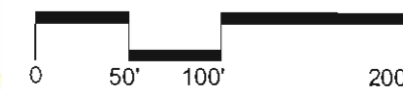




# MONSANTO - CHESTERFIELD CAMPUS NEW TECHNOLOGY BUILDING, HEADHOUSE & GREENHOUSE



SUBJECT PROPERTY



C-2











BUILDING BB  
BUILDING BB

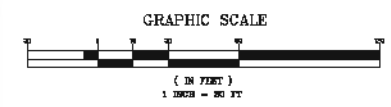
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TECHNOLOGY  
BUILDING  
FFE=540.00

BUILDING AA  
BUILDING AA

BUILDING DD  
GREENHOUSE  
LEVEL 4 = 596.00

BUILDING EE  
GARAGE EXPANSION  
LEVEL 3 = 574.00

BUILDING DD  
GREENHOUSE  
LEVEL 4 = 598.00



RANDY BURKETT LIGHTING DESIGN

MONSANTO

Sheet Number 2 OF 5

9th AMENDED SITE DEVELOPMENT PLAN

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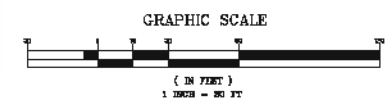
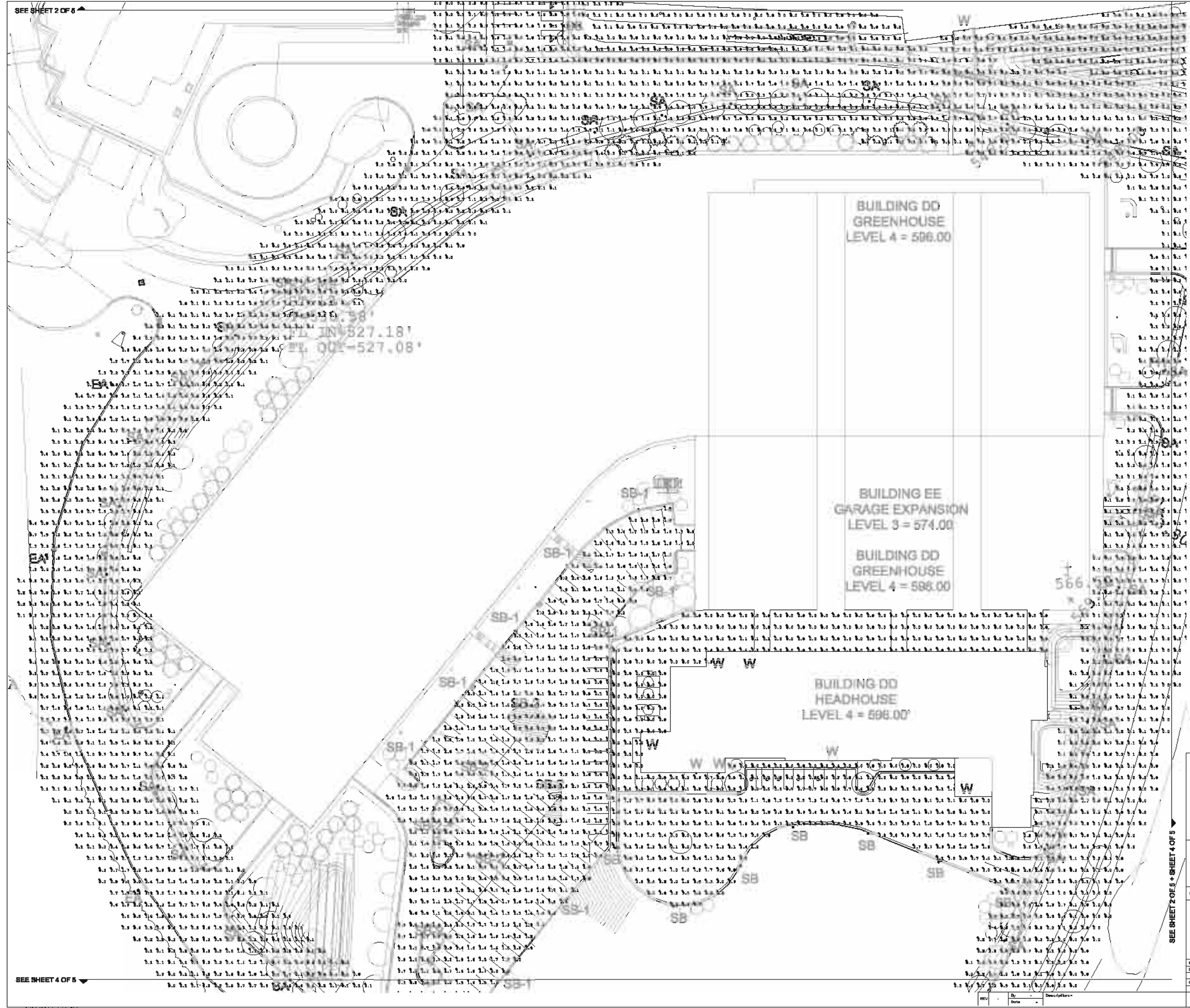
ENLARGED SITE LIGHTING PLANS

SEE SHEET 4 OF 5

PL IN=527.18'  
PL 001=527.08'

SEE SHEET 4 OF 5





**RANDY BURKETT LIGHTING DESIGN**

**MONSANTO**

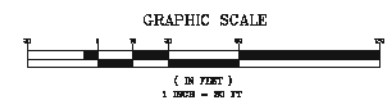
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Sheet: 3 OF 5

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DD	02/20/14	EA	EA	02/20/14	02/20/14	02/20/14

ENLARGED SITE LIGHTING PLANS





**RANDY BURKETT LIGHTING DESIGN**

**MONSANTO**

CV - Nonresidential  
 Project Name: -  
 Sheet Number: 4 OF 5

**9th AMENDED SITE DEVELOPMENT PLAN**


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DD	98	12/18/14	RB	RB	RB
DD	99	12/18/14	RB	RB	RB
DD	100	12/18/14	RB	RB	RB

Monsanto Area Site Development Plan 8  
 LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER CATALOG NUMBER	LUMINAIRE DESCRIPTION	LAMP CODE	LAMPS/UNIT	MAXIMUM WATT/UNIT	VOLTS	NOTES	R/C
SA	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE				120 to 277		A
SB	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE				120 to 277		
SB-1	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE				120 to 277		D
SB-2	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE				120 to 277		D
EA	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE				120 to 277		
W	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE	PHILIPS GARDCO GULLWING LED AREA LUMINAIRE				120 to 277		B

**TYPE SA**

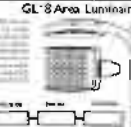
**COMPLEMENTS the Area LED**



PHILIPS GARDCO

**TYPE SB SERIES**


**Gullwing LED**  
GL-8 Area Luminaire



PHILIPS GARDCO

**TYPE SB SERIES**

**Gullwing LED**  
GL-8 Area Luminaire



PHILIPS GARDCO

**TYPE SB SERIES**


**Gullwing LED**  
GL-8 Area Luminaire



PHILIPS GARDCO

**TYPE SB SERIES**


**Poles**  
Straight Square Aluminum - Hinged Base



PHILIPS GARDCO

**TYPE SB SERIES**

**Poles**  
Straight Square Aluminum - Hinged Base



PHILIPS GARDCO

**TYPE W**



PHILIPS GARDCO

**RANDY BURKETT LIGHTING DESIGN**

**MONSANTO**

9th AMENDED SITE DEVELOPMENT PLAN

Sheet Number: 5 OF 5

DATE: 6/24/2014

BY: [Signature]

DATE: 6/24/2014

DESCRIPTION: LIGHTING SCHEDULE + CUTS





# Monsanto Greenhouse Expansion and Modernization

## Architect's Statement of Design



### 1. Overview

The proposal is for a 105,000 square foot research Greenhouse which sits atop a parking garage currently under construction. Immediately south of the Greenhouse is the 33,000 square foot Headhouse facility which provides support space for the Greenhouse functions. The site is situated directly north of the main security entrance for Monsanto's Chesterfield Valley Campus.

The design of the Greenhouse/Headhouse facility is largely an exercise in "form follows function." The Greenhouse itself is arranged to maximize useable research space for the clients as well as provide the necessary access to the future Technology building planned for the site directly north of the parking garage. It is limited by the size of the parking garage on which it sits as well as the site constraints of the Headhouse to the south. The Greenhouse plan is organized into three ranges which each consist of twelve individual zones connected by a north/south corridor. Open space is provided in between each range and around the perimeter of the Greenhouse for maintenance access. The Headhouse connects to the Greenhouse via a 36' extension of the three range corridors. This separation minimizes the shading effects of the Headhouse on the Greenhouse space. The Headhouse building is one large L-shaped volume derived from the functional layout of interior spaces which relate directly to the individual greenhouse zones.

### 2. Site Relationships and Access

The Greenhouse/Headhouse facility has a direct relationship to the parking garage on which it sits. The proposal utilizes the same precast concrete panels as the parking garage to create a seamless transition between the two projects. Pedestrian access to the Greenhouse/Headhouse facility occurs within the parking garage via stairs located at the north and south ends of the garage.

The project site features a dramatic drop in elevation from the south to the north. This limits vehicular access and loading areas for the Headhouse to the south. In order to minimize the visual effects of locating service areas on the south façade of the Headhouse, the building took on an L-shaped arrangement. This works to hide the loading dock function from the current Monsanto Drive while still providing an attractive southern façade visible upon campus entry.

### 3. Exterior Elements and Scale

The Headhouse is sited atop a hill which overlooks the rest of the Chesterfield Valley Campus. The one story design keeps the building scale from dominating the landscape and gives the impression of being nestled in the hillside.

The Headhouse exterior utilizes materials common to the Chesterfield Valley Campus. In order to emphasize the horizontal nature of the building plan, the exterior walls feature horizontal banding in light and dark brick. The banding brings the proportion of the walls down to a human scale.



The long strip windows with integrated metal canopies also work to emphasize the horizontal while serving the practical functions of views, shade and shelter.

The Greenhouse exterior is again derived from function. It consists of delicate metal framing and glazing at the walls and roof. The transparency of the Greenhouse adds a feeling of lightness to the heavy concrete parking garage below.

#### 4. Landscape Design and Screening

Several techniques are used to screen various elements from the rest of the landscape. First, the volumetric organization of the Headhouse works to hide the loading dock on the south façade and the cooling towers at the northwest corner. Also, these elements are further screened by patterned concrete walls with access gates. The walls are designed to match the concrete panels of the parking garage. Finally, the rooftop equipment is screened by the 44" parapet of the Headhouse. This parapet also acts as a guardrail providing a level of safety for rooftop maintenance.

#### 5. Light Pollution Mitigation

Light pollution reduction shades will be applied in all of the newly constructed greenhouse spaces as a means of light pollution mitigation. These shades are installed to prevent vertical and horizontal light from leaving the greenhouse structures to a level below the fixture reflector similar to cut-off optics on a street lamp thereby reducing the direct light leaving the interior spaces.



David S. Krumm, AIA, NCARB



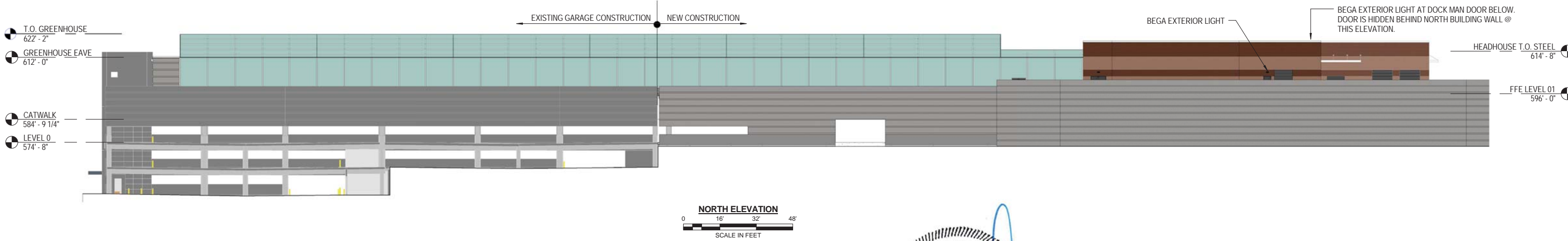
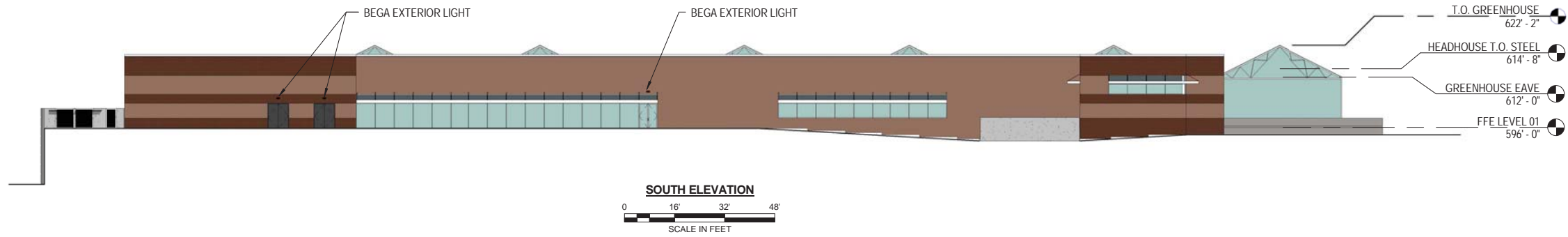
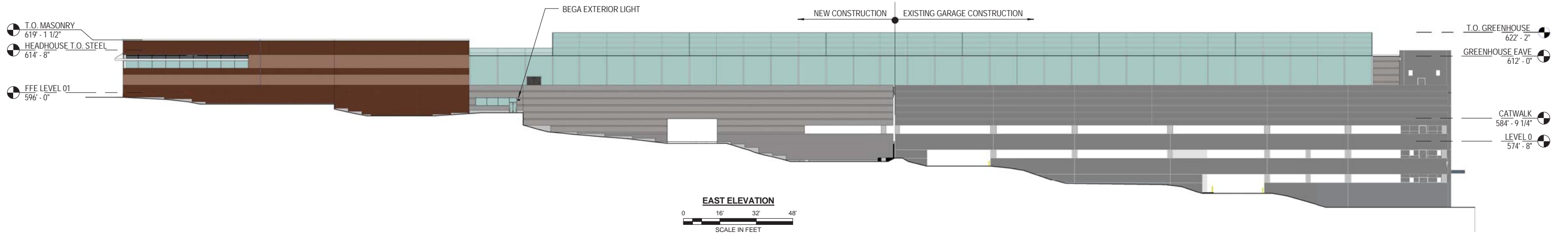
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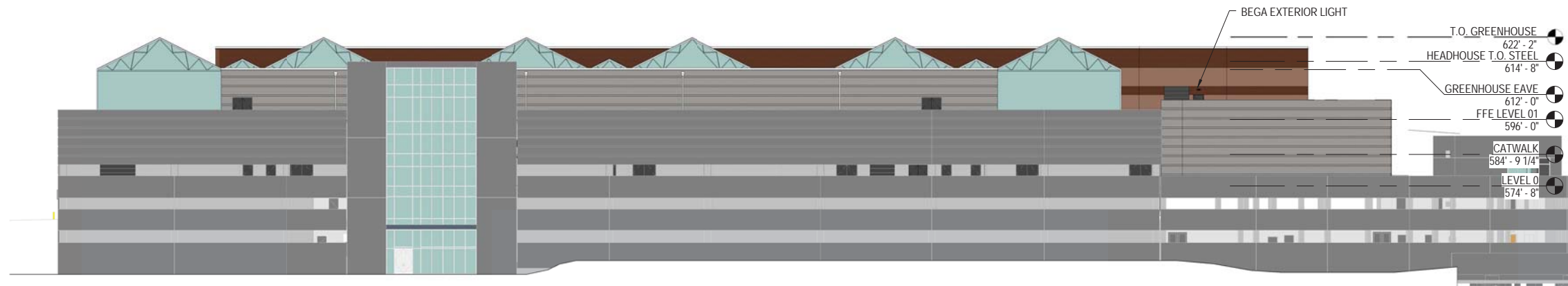
Chesterfield Village

Greenhouse /  
Headhouse

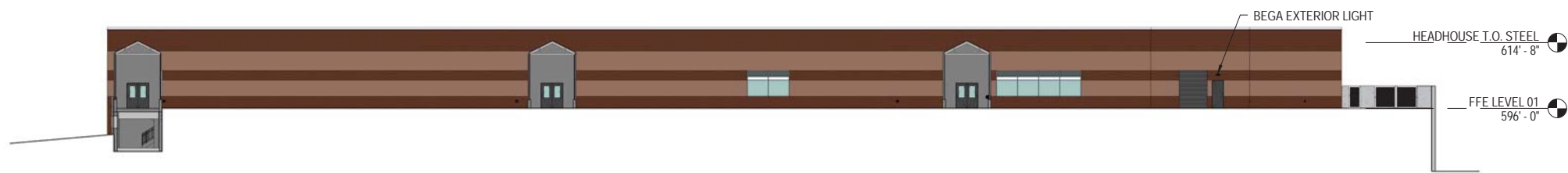




STATE OF MISSOURI  
 DAVID STEVEN KRUMM  
 ARCHITECT  
 NUMBER A-6613  
 6.18.17



**NORTH ELEVATION**



**NORTH HEADHOUSE ELEVATION**



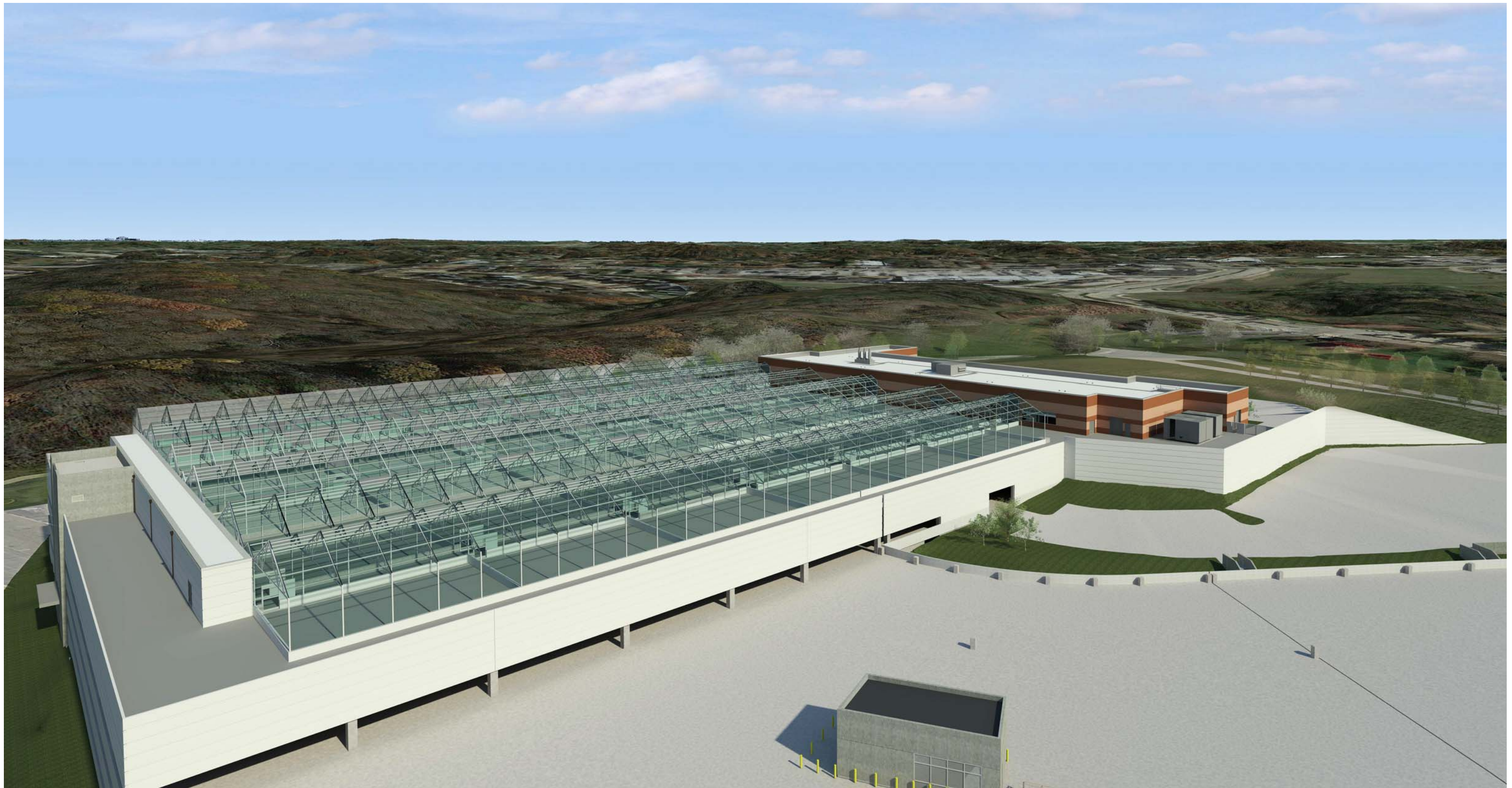




ARCHITECTURAL RENDERING - SOUTHEAST VIEW  
MONSANTO GREENHOUSE EXPANSION AND MODERNIZATION







ARCHITECTURAL RENDERING - NORTHWEST VIEW  
MONSANTO GREENHOUSE EXPANSION AND MODERNIZATION







ARCHITECTURAL RENDERING - SOUTHEAST VIEW  
MONSANTO GREENHOUSE EXPANSION AND MODERNIZATION









## Architectural Review Board

### Architect's Statement

#### Site Layout

##### A. Physical Features

- a. The site of Monsanto's proposed Chesterfield Village Technology Building poses no significant challenges to the building's design. The current site is made up almost entirely of parking spaces, the grade of which ranges from 546' on the Northwest corner to 540' at the south east end.
- b. The building elevation was set by the adjacent building GG, so as to align with the internal circulation of the campus. The use of the existing loading dock is required.

##### B. Vegetation

- a. The minimal amount of vegetation within the site lot lines provide modest context; we will retain existing trees where applicable and use plants and grasses associated with the existing landscaping. Landscaping between GG and the new Tech Building will be designed as an expansion of adjacent courtyards.
- b. The landscaping will add some native grasses, as well as some shade tolerant flowering trees.
- c. The landscaping will be coordinated with the new Garage and Greenhouse/Headhouse projects to create an overall design that is fully coordinated within the site masterplan.
- d. Immediately south of the Tech Building, the addition of linear ground cover will echo the building to create a more modern landscape.
- e. The site will include a retention basin at the south east corner, to be planted with native grasses in accordance with state guidelines.

##### C. Site Relationships

- a. The new Tech Building is sited directly south of building GG, to which it is connected via a three story "bridge." It is also located directly north of the new Garage, currently under construction. It is also connected to the garage via a fourth floor bridge. This connection serves as the main entry to the building. There are no significant entries to the building on the ground floor.

##### D. Pedestrian and vehicular circulation and orientation

- a. As a continuation of the existing campus, the Tech Building builds on the clear and safe circulation pattern already in use on the site. Pedestrian zones are clearly marked as they cross the vehicular traffic areas while stairs, plantings and landscape continue to provide the pleasant environment that exists on the site today.
- b. Existing parking spaces displaced by this building will be compensated for in the new parking garage, currently under construction. New visitor spaces and handicap accessible parking will be added immediately west of the Tech Building.
- c. Fire lane access is required to the north of the Tech Building. This is accomplished with a hard-scaped road that leads to the north from the west visitor parking lot.

- d. Service traffic remains as-is on the east drive, as the Tech Building will use the existing building GG loading dock.

## Building

### 1. All Structures

#### a. General Architectural guidelines

- i. The design of the Tech Building grows from the existing buildings on the campus. Conceived as a series of integrated “bars”, the building articulates each programmatic element from the laboratory functions to the Regulatory office. The laboratory “bar” directly mimics the existing building GG in scale, material and use of linear “ribbon” window. As one moves south, the building presents itself as more modern, utilizing floor to ceiling curtainwall, ultimately expressing the office program as a modern aluminum and glass “bar.”
- ii. As the program for the building is dense with function, the laboratory functions are separated from the Regulatory offices by an atrium, which divides the building into two discrete volumes, allowing light to penetrate the interior offices.

#### b. Scale

- i. As the continuation of the existing context, the building’s form responds to the adjacent buildings. Strong linear elements are of the same scale and shape. The south “bar” of the building bends in shape to directly respond to buildings AA through CC.
- ii. Landing well within code restrictions, the building height remains in context with the surrounding buildings. Care was taken to not shade the building GG whose rooftop greenhouses remain in use.
- iii. The floor to floor height of the building is design to accommodate modern laboratory HVAC requirements. Connections to GG and the new garage will be ramped.

#### c. Design

- i. The concept of this building creates both a building that fits into its campus as a part of the masterplan, as well as a modern one that expresses the contemporary culture of the forward-thinking corporation.
  - 1. Being respectful of the adjacent buildings and the courtyard created, the building gradually morphs from an exact copy of the GG building to the north, to a more modern office building to the south, becoming the new image for Monsanto research.
  - 2. As the new image of the campus, the south façade is ultimately clad in a “shield” of structurally glazed curtainwall. Conceived as an allegory to the Monsanto mission to help the agricultural community, the mosaic of



glass patterns evoke the rational plots of farmed land and the cultivated crops within.

d. Materials/Colors

- i. The buildings north façade is made entirely of existing materials, using the two colors of brick (as seen on the other existing buildings) in a banded pattern. The ribbon windows utilize the exact same profiles and glass patterning.
- ii. The glass utilized differs from the campus as newer technology of higher performance. Using a tinted substrate, the low-e coating with an additional room side low-e coating provide maximum insulation while allowing considerable light to the building occupants. The building uses darker, tinted glass in an effort to more closely align with most of the existing buildings.
- iii. Ceramic frit is utilized to mitigate solar gains on the south façade, creating privacy for those in offices along the exterior and mosaic described above.
- iv. The mullion colors are a dark, metallic grey to relate more to the existing buildings.

e. LEED Initiatives

- i. The Tech Building is registered with the USGBC using the LEED 2009 rating system, with a project certification goal of LEED Silver. The team plans to achieve this goal by employing various strategies across all LEED rating system categories, while focusing in particular on energy savings and water reclamation. Project strategies include:
  1. A comprehensive rainwater harvesting system that will provide flushing for water closets and urinals as well as for cooling tower make-up water
  2. Stormwater quality and quantity control
  3. Native landscaping that does not require irrigation
  4. High-performance building envelope
  5. Chilled beam cooling for general office areas
  6. LED lighting along with daylight harvesting and automated shading
  7. High efficiency chillers, pumps, and air-handling equipment
  8. Reduced plug loads and temperature set points for general office areas
  9. Low-flow plumbing fixtures

 05.28.14



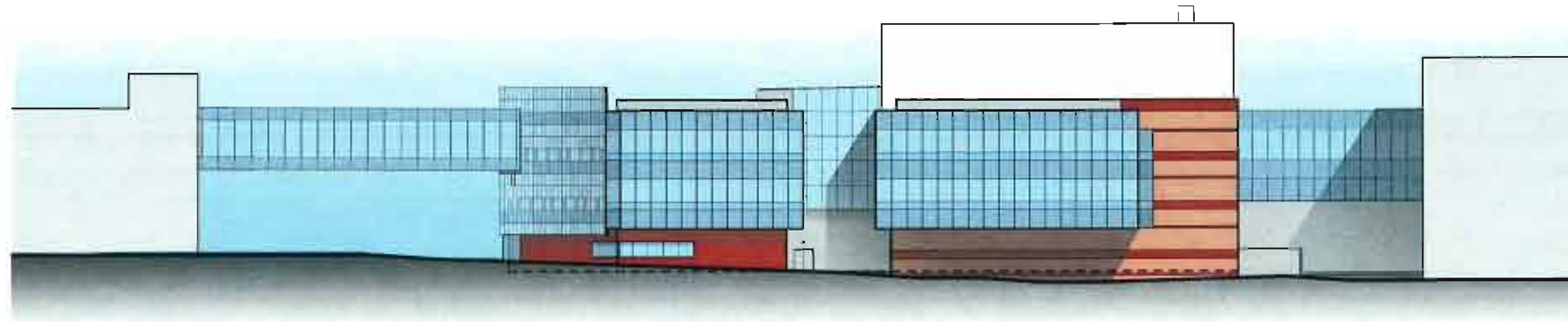
# MONSANTO



Chesterfield Village

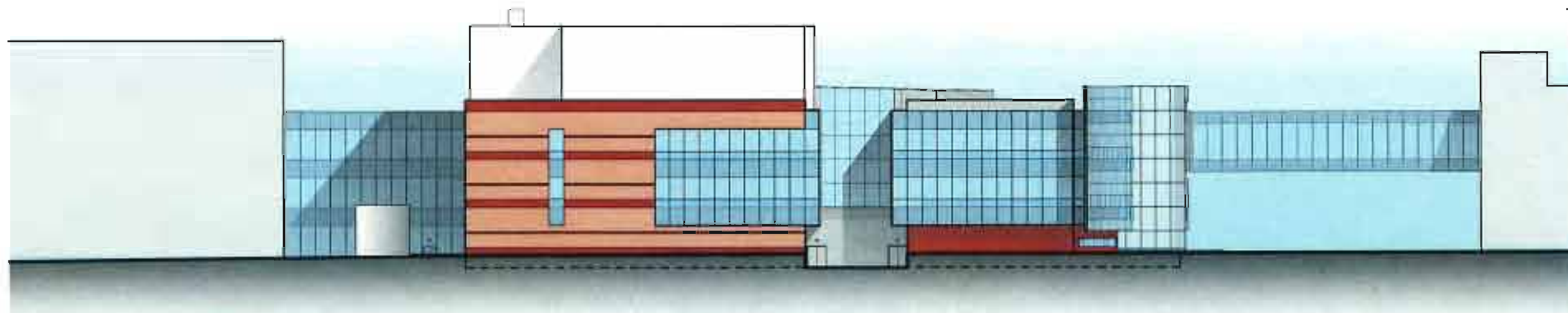
Technology /  
Laboratory Building





EAST ELEVATION

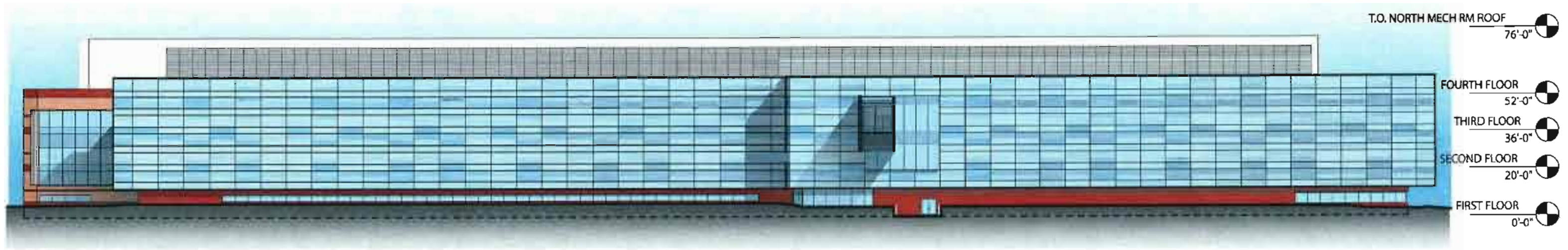
- NORTH MECH RM ROOF 76'-0"
- FOURTH FLOOR 52'-0"
- THIRD FLOOR 36'-0"
- SECOND FLOOR 20'-0"
- FIRST FLOOR 0'-0"



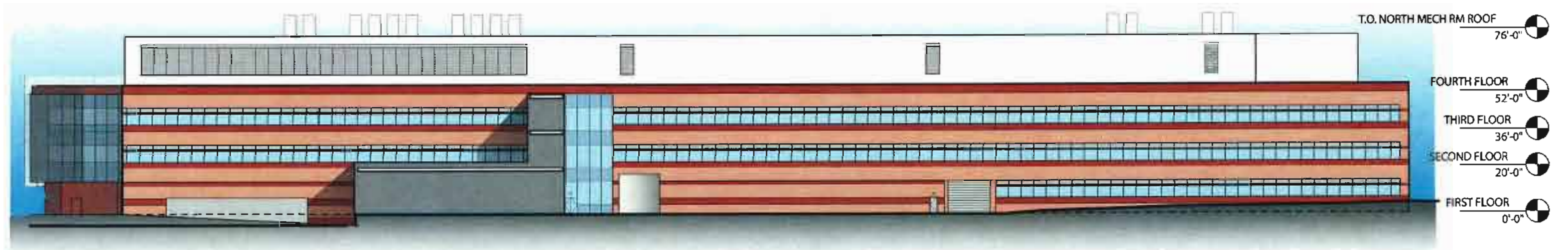
WEST ELEVATION

- T.O. NORTH MECH RM ROOF 76'-0"
- FOURTH FLOOR 52'-0"
- THIRD FLOOR 36'-0"
- SECOND FLOOR 20'-0"
- FIRST FLOOR 0'-0"





**SOUTH ELEVATION**



**NORTH ELEVATION**







Plan Diagrams

- Site Aerial





## Plan Diagrams

- Northwest View  
from existing NRB



## Plan Diagrams

- Southwest corner





Plan Diagrams

■ Southeast Corner





Plan Diagrams

■ Northeast Corner





## Plan Diagrams



- Existing Dark Brick
- WatsonTown Cayuga
- Building CC and JJ
- CV Tech Building



## Plan Diagrams



- Proposed Light Brick
- GlenGerry Allington
- CV Tech Building





## Plan Diagrams

- Glass - Vision
- Viracon VNE29-63



## Plan Diagrams



- Glass - Fritted
- Viracon VNE29-63

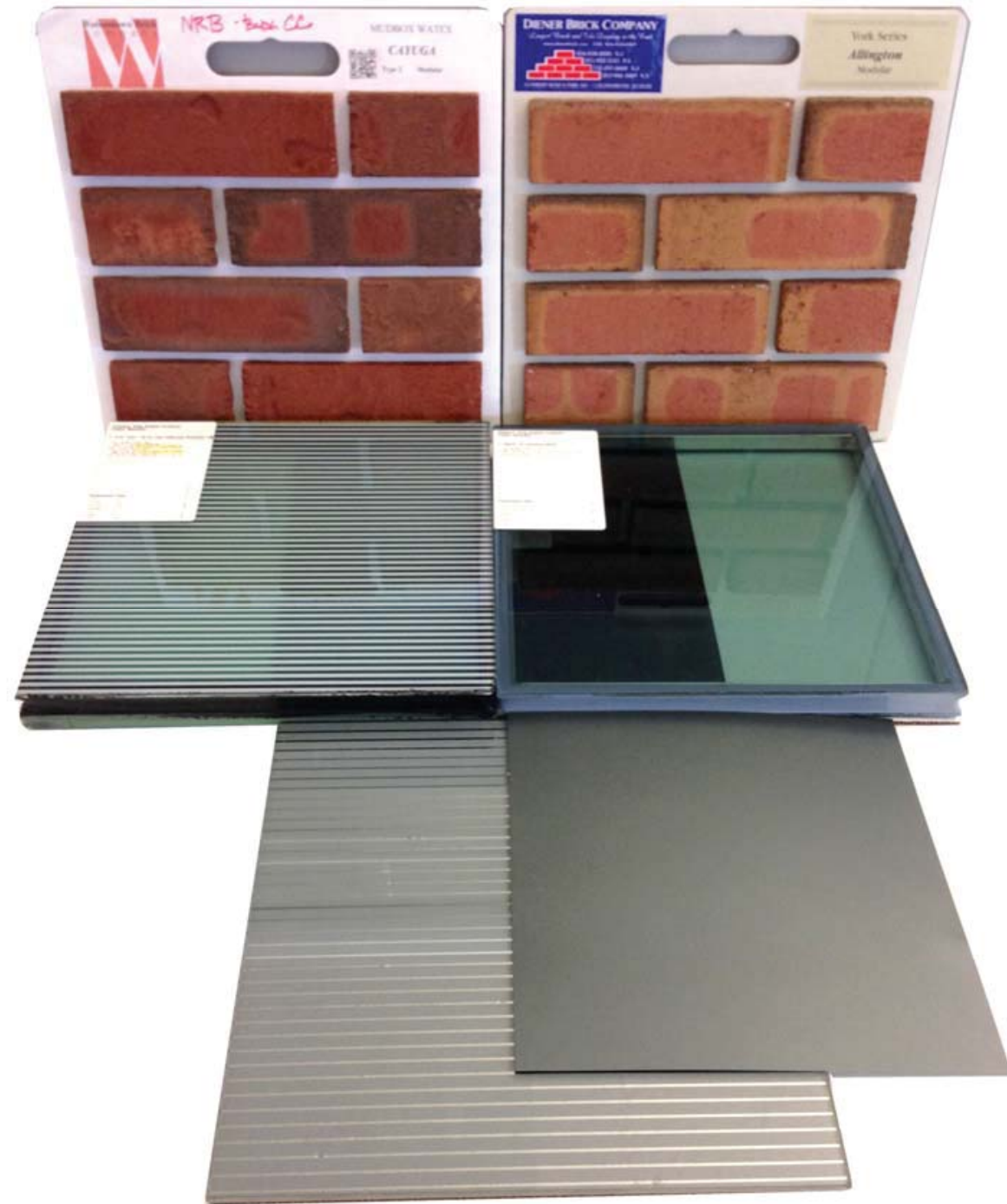


## Plan Diagrams



- Glass – Shadow Box
- Viracon VNE29-63
- Viracon VP1-13 w/ simulated acid etch backpanel





## Plan Diagrams

- Full Palette