PLANNING & ZONING COMMISSION MEETING

Tuesday, May 23, 2023 at 6:00 PM

Agenda

1. **Call to Order**
2. **Consideration and Approval of Minutes**
   - A) Approval of April 25th 2023 minutes
3. **New Site Plan Considerations**
   - A) Joni's House Conditional Use Consideration
   - B) Hilton Home 2 Suite Dimensional Variance Application Consideration
   - C) Hilton Home 2 Site Plan Consideration
   - D) Springhill Suites Dimensional Variance Application Consideration
   - E) Springhill Suites Site Plan Consideration
   - F) Madison Motor Werks Site Plan Consideration
   - G) Autozone Site Plan Consideration
4. **Request for Rezoning**
5. **New Business**
6. **Next Meeting**
   - A) The Next Planning And Zoning Meeting Will Be Held On June 27, 2023
7. **Adjourn**

PLANNING & ZONING COMMISSION MEETING

Tuesday, April 25, 2023, at 6:00 PM

Minutes

Call to Order

Chairman Greer called the meeting to order.

The following Commissioners were present: Commissioner Sam McGaugh, Commissioner Tim Slattery, Commissioner Katrina Myricks; Commissioner Kayce Saik and Commissioner Phillips King.

Commissioner Andrew Duggar was absent.

City Employees William Hall, Mike McCollum and Bridgette Smith and City Attorney Zach Giddy were present.

Consideration and Approval of Minutes

Commissioner Sam McGaugh made the motion to approve the March 28, 2023, minutes and the motion was seconded by Commissioner Katrina Myricks and was approved by all attending members.

New Site Plan Considerations

The Board discussed a Special Call Meeting for Joni's House, no action was taken.

The Board discussed drafting a formal letter to the Mayor and Board of Alderman on a status update for the Comprehensive Plan, or consideration on hiring another firm to assist with the data. Commissioner Melanie Greer will draft the letter to present to the Planning and Zoning Commissioners at the next scheduled meeting.

Request for Rezoning

No action was taken.

New Business

No action was taken.

Next Meeting

The Next Planning and Zoning Meeting will be held on May 23, 2023

Adjourn

Commissioner Philips King moved the meeting be adjourned. The motion was seconded by Commissioner Sam McGaugh and was approved by all attending members. The Chairman declared the motion carried.

City of Gluckstadt

Application for Conditional Use

Subject Property Address: Corner of Calhoun Station Parkway and Stout Road, Gluckstadt, MS
Parcel #: 082B-09-002/00.00

Owner: Martie B. Kwasny, M.A.
Address: 795 Woodlands Pkwy. Suite 108
Richland, MS 39175

Phone #: (769) 243 – 8976
E-Mail: mkwasny@joniandfriends.org

Applicant: Ron McMaster
Address: 212 Waterford Squarequare #300
Madison, MS 39110

Phone #: (601) 605 – 1090
E-Mail: ron@mcmastereng.com

Current Zoning District: Future Land Use: General/Indoor Commercial & Residential Estate
Acreage of Property (If applicable): 200.12
Use sought of Property: TBD

Requirements of Applicant:

1. Letter demonstrating how the proposed use will comply with or otherwise satisfy the requirements for granting a Conditional Use pursuant to Section 804.01 of the Zoning Ordinance.
2. Copy of written legal description.
3. Additional items may be requested depending on the nature and status of the proposed development or property.
4. $ 250.00 fee required for processing
5. Sie Plan as required in Section 807-810

Requirements for Granting Conditional Use: (Section 805.01, Zoning Ordinance)

A Conditional Use shall not be granted unless satisfactory provisions and arrangements have been made concerning all the following:

(a). Ingress and egress to property and proposed structures
(b). Off-Street parking and loading areas
(c). Refuse and service areas
(d). Utilities, with reference locations, availability, and compatibility.
(e). Screening and buffering with reference to type, dimensions, and character.
(f). Required yards and other open spaces.
(g). General compatibility with adjacent properties and other properties in the district.
(h). Any other provisions deemed applicable by the Mayor and Board of Aldermen.

Applicant shall be present at the Planning and Zoning Commission meeting and Mayor and Board of Alderman meeting. Documents shall be submitted thirty (30) days prior to the Planning and Zoning Commission meeting.

Applicant is responsible for complying with all applicable requirements of the Zoning Ordinance.

By signing this application, it is understood and agreed that permission is given to the Zoning Administrator to have a sign erected on subject property, giving notice to the public that said property is being considered for a dimensional variance.

04/03/23

Applicant Signature **Date**

Property Owner Signature **Date**

Joni and Friends Mississippi
795 Woodlands Pkwy, Ste 108
Ridgeland, MS 39157

Introduction.

Joni and Friends Mississippi ("Applicant") respectfully requests that the City of Gluckstadt ("City") grant a Conditional Use Permit to enable the Applicant to construct and operate a "Joni's House" respite facility on the property as depicted on the submitted Site Plan ("Property"). Because the Applicant is a religious charitable organization, the Joni's House facility qualifies as a Quasi-Public Facility under the City's Zoning Ordinances and, therefore, may be located in any zoning district of the City. (*See* Section 301 and Section 4.02 of the Ordinances). In addition, the intended uses of the Joni's House facility are either outright permitted uses or acceptable conditional uses given the Property's existing zoning classifications (the Property consists of C-2, A-1 and R-1 classifications). This letter is intended to describe the proposed use of the Joni's House facility and demonstrate how such use complies with the City's requirements for granting a Conditional Use Permit.

Proposed Use of Joni's House.

Joni and Friends Mississippi is the regional branch of Joni and Friends International, which is a non-profit, charitable religious organization. The Applicant's mission is "to glorify God as we communicate the Gospel and mobilize the global church to evangelize, disciple and serve people living with disability." This mission provides necessary and desirable services for the general health and welfare of the community. (*See* Section 301 of Ordinances – definition of Public/Quasi-Public Facilities). Practically, the Applicant carries out this mission by 1) equipping, educating, and encouraging ministry workers as well as individuals and families impacted by disability and 2) by raising awareness concerning the needs of the disabled.

In line with the Applicant's mission, Joni's House will primarily serve as a respite and support center for ministry workers and families and individuals impacted by mental or physical disability. Respite is not a word commonly used today. The dictionary defines "respite" as "a short period of rest or relief from something difficult or unpleasant." Joni's House will provide various activities and programs designed to deliver such respite to those affected by the difficulties of disability. Key examples include: training seminars; courses; conferences; workshops; day camps and programs; short-term (one week or less) retreats; fundraising events; special entertainment events; and accessible recreational activities.

The main Respite Center and Day Program buildings depicted on the Site Plan will include: various meeting areas for events and gatherings; multi-purpose rooms for teaching arts, crafts, music, and other skills; a dining facility; indoor recreational spaces; a first-aid station; living rooms and volunteer guest rooms; a library and reading rooms.

The main building will also include administrative offices housing the Applicant's regional headquarters. The Applicant's headquarters is presently located in Ridgeland but will relocate to the Joni's House property upon completion of construction.

The outdoor spaces and features will be used for accessible recreational activities. These include a zero-entry pool, walking trails, basketball courts, a great lawn, and an outdoor amphitheater. All these features will be specially designed for accessibility and enjoyment by those with disabilities.

The Camp Houses depicted on the Site Plan will be used for short-term (one week or less) retreats, such as training and planning retreats for ministry workers, refuge retreats to provide parents of disabled children with an opportunity to rest and rejuvenate, and short term recreational camps for disabled individuals and their families.

The Corral and Stables depicted on the Site Plan will be used to provide disabled individuals with access to the enjoyment of equestrian activities specially tailored to their unique conditions.

Aesthetics are critical to providing an environment conducive to respite relief. Consequently, the Applicant has placed the utmost emphasis on designing an aesthetically pleasing and impressive center, which will hopefully add to the value of the surrounding area.

Conditional Use.

The Property is comprised of multiple zoning classifications; C-2, R-1, and A-1. The Joni's House uses are outright permitted uses on that portion of the Property lying in the C-2 district. (See Article XXII, pg. 128 of the Zoning Ordinances). Therefore, a Conditional Use Permit is not even necessary to proceed with the Joni's House project on that area of the Property. However, out of an abundance of caution, and since part of the Joni's House facilities will be located on the R-1 and A-1 portions of the Property, the Applicant is respectfully seeking a Conditional Use Permit for this project.

As a Quasi-Public Facility, the Joni's House facility qualifies as an acceptable conditional use in any zoning district of the City and complies with the City's requirements for granting a Conditional Use Permit.

Section 3.01 of the Ordinances defines Public/Quasi-Public Facilities and Utilities as follows:

> Public/Quasi-Public Facilities and Utilities: Any building, structure, system, use, or combination of uses, which is customarily and ordinarily provided by either public or private agencies, groups, societies, corporations, or organizations, whose purpose is the provision of necessary and ***desirable goods and/or services for the general public health, safety, and welfare***. Such uses shall include, but not be limited to: . . . A. Churches and ***other religious institutions***. . . . G. ***Buildings and facilities erected by charitable organizations*** (e.g., American Red Cross, Salvation Army, etc.)

Section 4.02 of the Ordinances states that Public/Quasi-Public Facilities "**may be located in any district in the City. . .**"

As stated above, the Applicant is both a religious and charitable organization, and the Joni's House will provide numerous necessary and desirable services for the general public health and welfare. Accordingly, the Joni's House, in addition to being an outright permitted use on the C-2 portion of the Property, is also an acceptable conditional use on the remaining A-1 and R-1 portions of the Property.

In addition to satisfying the Quasi-Public Facility requirements, the particular proposed uses of Joni's House described above are all outright permitted uses under the C-2 classification and are consistent with the spirit and intent of the conditional uses acceptable under the A-1 and R-1 classifications.

Furthermore, a Conditional Use Permit may be granted because the Applicant has made satisfactory provision and arrangement for the following eight elements as required by Section 805.01 of the City's Zoning Ordinance. Each element is addressed as follows:

A. Ingress and egress to property and proposed structures thereon with particular reference to vehicular and pedestrian safety and convenience, traffic flow and control, and access in case of fire or catastrophe.

The Site Plan provides ample ingress and egress by virtue of direct vehicular access to Calhoun Parkway on the East and Stout Road on the North. These access points to major roadways allow for quick and convenient access to both the users of Joni's House as well as emergency response personnel.

B. Off-street parking and loading areas.

All parking for Joni's House is off-street, and the number of parking stalls will meet or exceed the minimum number required by ordinance for a facility of this size.

C. Refuse and service areas.

All refuse and service areas will meet or exceed the area and nature required by ordinance for a facility of this size.

D. Utilities, with reference to locations, availability, and compatibility.

Based on Applicant's due diligence to date, all utilities in the general vicinity of the site are available and compatible with Joni's House and sufficient to service the proposed use.

E. Screening and buffering with reference to type, dimensions, and character.

Screening and buffering on the West, East and South is provided or mitigated by natural means, specifically relatively large undeveloped areas on the East half and South half of the Property. On the Western boundary, the proposed site plan includes a fifty foot (50') setback which will contain trees as a natural barrier, and in addition, the adjoining property to the West is dense, unharvested, largely unoccupied forest. Stout Road forms the Northern boundary line, thus lessening the need for screening and buffering. Additionally, greater setbacks than required by ordinance are being followed. Therefore, Joni's House will be sufficiently buffered from most residential properties in the area.

F. Required yards and other open space.

The total property is 70 acres of pasture with a lake in the center. As shown on the Site Plan, the proposed Joni's House structures essentially occupy only a portion of the Northwest quarter of the Property, except for the strip of eight camp houses that spans a short distance into the Southeast quarter. The remaining three-quarters of the Property will be open space pasture. This is comparable to other properties in the area.

G. General compatibility with adjacent properties and other property in the district.

Given C-2 zoning classification of neighboring tracts and the Site Plan's positioning, size of the improvements, low density of improvements, provision for substantial undeveloped open spaces and natural areas, and emphasis on a visually appealing design, the Joni's House improvements, though unique in the immediate area, will be generally compatible with the adjacent properties and will not materially change the character of the surrounding area.

It is critical to note that 1) part of the Property is already zoned C-2 and 2) the adjacent tract to the East is zoned C-2 and other properties to the East are comprised of primarily land zoned as C-1 or C-2. All of the intended uses of the Joni's House, as described above, are permitted uses under the C-1 and C-2 classifications. Therefore, using the A-1 and R-1 portions of the Property for the same purposes is compatible with those other properties in the area.

The Property actually lies at the convergence of multiple zoning classifications. As noted in the last paragraph, the land to the East primarily is C-1 and C-2. The land to the West is comprised primarily of R-1, and the land to the North being comprised primarily of A-1. The proposed multiple uses of the Joni's House described above have elements consistent with all of those zoning classifications.

More specifically, the property to the South is an undeveloped lake area. Joni's House will have open pasture land and its own lake near that boundary line, and the Joni's House improvements are located a significant distance from that boundary line. Thus, Joni's House is compatible with that property.

Many of the adjacent properties to the North have significant open pasture land. Joni's House will have the same. Those properties are also located across Stout Road. Many of those residential properties have substantial setbacks from the road. Additionally, the main road access for Joni's House is located on Calhoun Parkway thus minimizing the impact of traffic on those residential properties. Thus, Joni's House is generally compatible with those properties.

The large property across Calhoun Parkway to the East is undeveloped pasture land and does not appear occupied. The Eastern half of the Joni's House property will be the same. Thus, Joni's House is compatible with that property.

The property immediately adjacent to the Western boundary is densely wooded. While there appears to be three or four residences to the Southwest, Joni's House will not have any improvements along or near its Southwest boundary. Additionally, the portion of the Western neighboring property that is immediately adjacent to the area where the Joni's House improvements will be located (i.e., the Northwest quarter of the Joni's House Property) appears to be vacant and unimproved forest. Therefore, Joni's House will not incompatible with that property.

Furthermore, Joni's House sits at the intersection of the north-south corridor of Calhoun Parkway and the east-west corridor of Stout Road. These corridors, especially Calhoun Parkway, are the likely channels for the greater area's development trajectory. Development is seen progressing northward on Calhoun Parkway. Specifically, there is significant new development only one mile to one and one-half mile down Calhoun Parkway, including Capitol Body Shop, Callaway Garden Center, Mac Haik Dodge, AgUp Equipment, and Ricks Pro Truck. Germantown Middle and High School are also located within one mile. All of those facilities are arguably less compatible with the general area than Joni's House will be.

Conclusion.

Joni's House will be a Quasi-Public Facility used to provide various services that further the public health and welfare, namely respite services to ministry workers and families and individuals impacted by mental or physical disability. This use is an outright permitted use on the C-2 portion of the Property and complies with the City's requirements for a Conditional Use on the R-1 and A-1 portions of the Property. Accordingly, the Applicant respectfully requests that the City grant the requested Conditional Use Permit.

BOOK 0484 PAGE 380

INDEXING INSTRUCTIONS:
S9, T8N, R2E, Madison Co., MS

333145

PREPARED BY:
Jim B. Tohill
Watkins Ludlam Winter & Stennis, P.A.
P. O. Box 427
Jackson, MS 39205-0427

QUITCLAIM DEED

FOR AND IN CONSIDERATION of the sum of One Dollar ($1.00), cash in hand paid, and other good and valuable considerations, the receipt and sufficiency of which are hereby acknowledged, the undersigned ***MEADOWLANDS MANAGEMENT, LLC, a Mississippi Limited Liability Company,*** Grantor, does hereby quitclaim and convey all of its right, title, and interest unto ***MARTIN MEADOWLANDS, LLC, a Mississippi Limited Liability Company***, Grantee, in and to the following described property situated in Madison County, Mississippi, to-wit:

A parcel of land containing 200.12 acres (8,717,153.88 square feet), more or less, (usable acres being 199.56, more or less), being situated in the South ½ of the Northwest ¼ , the North ½ of the Southwest ¼, and the Southeast ¼ of the Southwest ¼ of Section 9, Township 8 North, Range 2 East, Madison County, Mississippi, and being more particularly described by metes and bounds as follows:

Commence at a concrete monument marking the Southeast corner of the Southwest ¼ of Section 9, said monument also marking the **POINT OF BEGINNING** for the parcel herein described; run thence North 00 degrees 11 minutes 21 seconds West for a distance of 3,960.00 feet; thence South 89 degrees 28 minutes 41 seconds West for a distance of 2,643.86 feet to a concrete monument marking the Southwest corner of the Northwest ¼ of the Northwest ¼ of Section 9; thence run along the western line of Section 9 South 00 degrees 13 minutes 45 seconds East for a distance of 2,640.95 feet; thence leave said section line and run North 89 degrees 21 minutes 19 seconds East for a distance of 1,323.17 feet; thence South 00 degrees 14 minutes 09 seconds East for a distance of 1,322.37 feet to the South line of Section 9; thence run along said section line North 89 degrees 27 minutes 23 seconds East for a distance of 1,317.80 feet to the Point of Beginning.

It is the intention of the Grantor to convey and it does hereby convey unto Grantee all of its right, title, and interest in and to the property described in Warranty Deed recorded in Book 484 at Page 380, whether or not correctly described hereinabove.

635921.1/10775.07730

BOOK 0484 PAGE 381

Grantee assumes ad valorem taxes for the current and subsequent years.

WITNESS THE SIGNATURES of the undersigned, this the 30 day of March, 2001.

MEADOWLANDS MANAGEMENT, LLC, a Mississippi Limited Liability Company
BY:

W. GARY HAWKINS, Co-Manager & Member

MARK J. McCREERY, Co-Manager & Member

STATE OF MISSISSIPPI

COUNTY OF Hinds

Personally appeared before me, the undersigned authority in and for the said county and state, on this 30th day of March, 2001, within my jurisdiction, the within named W. GARY HAWKINS and MARK J. McCREERY, Co-Managers and Members, respectively, of the within named MEADOWLANDS MANAGEMENT, LLC, a Mississippi Limited Liability Company, who acknowledged to and before me that they executed and delivered the above and foregoing instrument.

NOTARY PUBLIC

MARK THOMAS DAVIS NOTARY PUBLIC MADISON COUNTY, MS My Commission Expires April 23, 2001

My Commission Expires:

GRANTOR'S ADDRESS & PHONE NO.

P. O. Box 55725
Jackson, MS 39296-5725
(601) 981-1003

GRANTEE'S ADDRESS & PHONE NO.

P. O. Box 55725
Jackson, MS 39296-5725
(601) 981-1003

STATE OF MISSISSIPPI, COUNTY OF MADISON

I certify that the within instrument was filed for record in my office this 6 day of April, 2001, at 9 o'clock a M., and was duly recorded on the APR 06 2001, Book No. 484, Page 380.

STEVE DUNCAN, CHANCERY CLERK BY:

Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)							Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	51.43	-------	76.16	99.72	123.91	136.15	165.78	PRE
2	SCS Runoff	------	-------	118.29	-------	154.37	186.99	219.43	235.58	274.22	POST
3	Reservoir	2	-------	6.417	-------	10.08	13.89	17.28	18.89	22.61	ROUTE

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

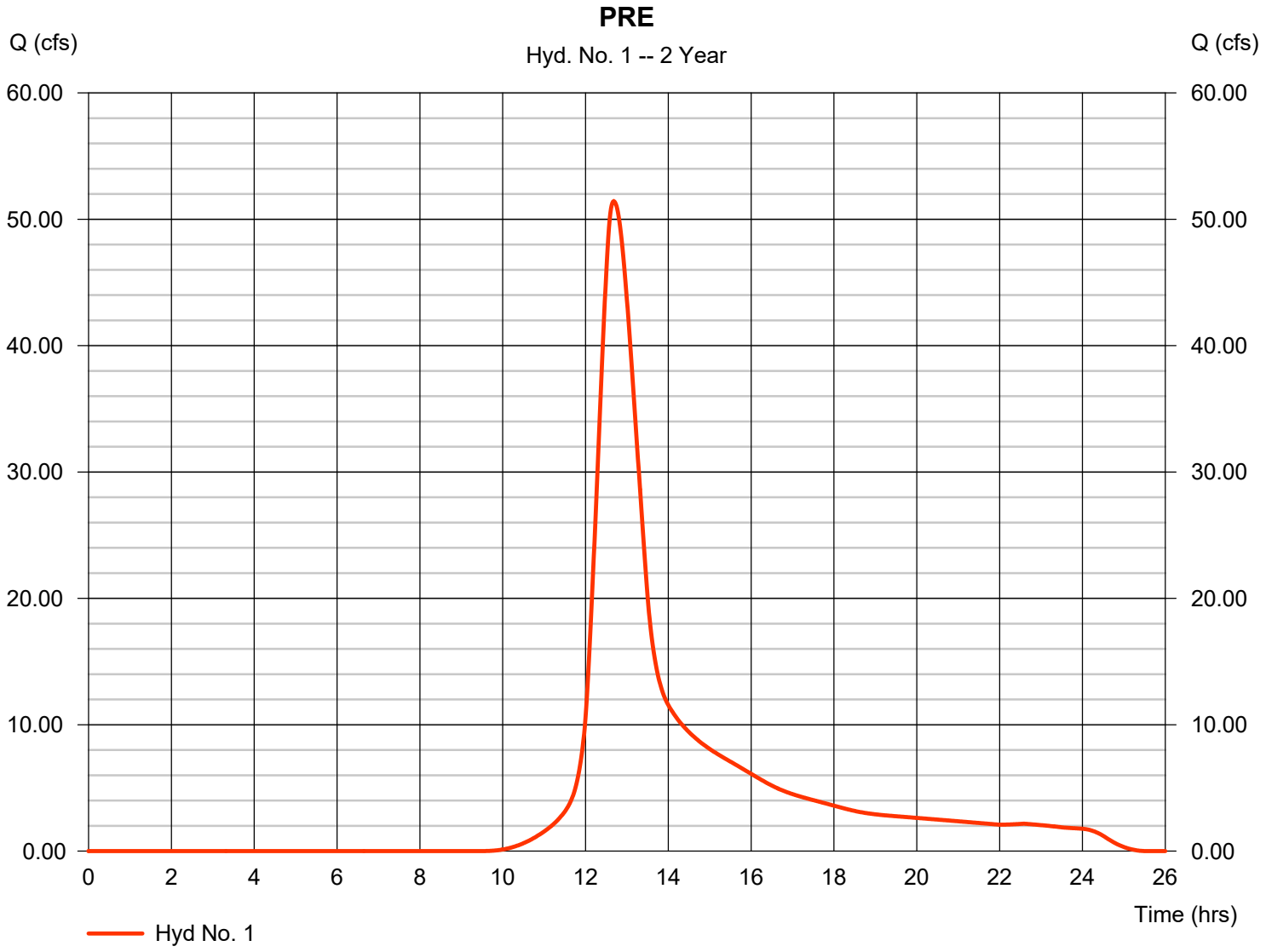
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	51.43	1	761	388,109	------	------	------	PRE
2	SCS Runoff	118.29	1	743	678,030	------	------	------	POST
3	Reservoir	6.417	1	982	462,740	2	280.95	496,774	ROUTE

Hydrograph Report

Hyd. No. 1

PRE

Hydrograph type	= SCS Runoff	Peak discharge	= 51.43 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.68 hrs
Time interval	= 1 min	Hyd. volume	= 388,109 cuft
Drainage area	= 56.600 ac	Curve number	= 74
Basin Slope	= 1.0 %	Hydraulic length	= 1744 ft
Tc method	= LAG	Time of conc. (Tc)	= 59.30 min
Total precip.	= 4.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

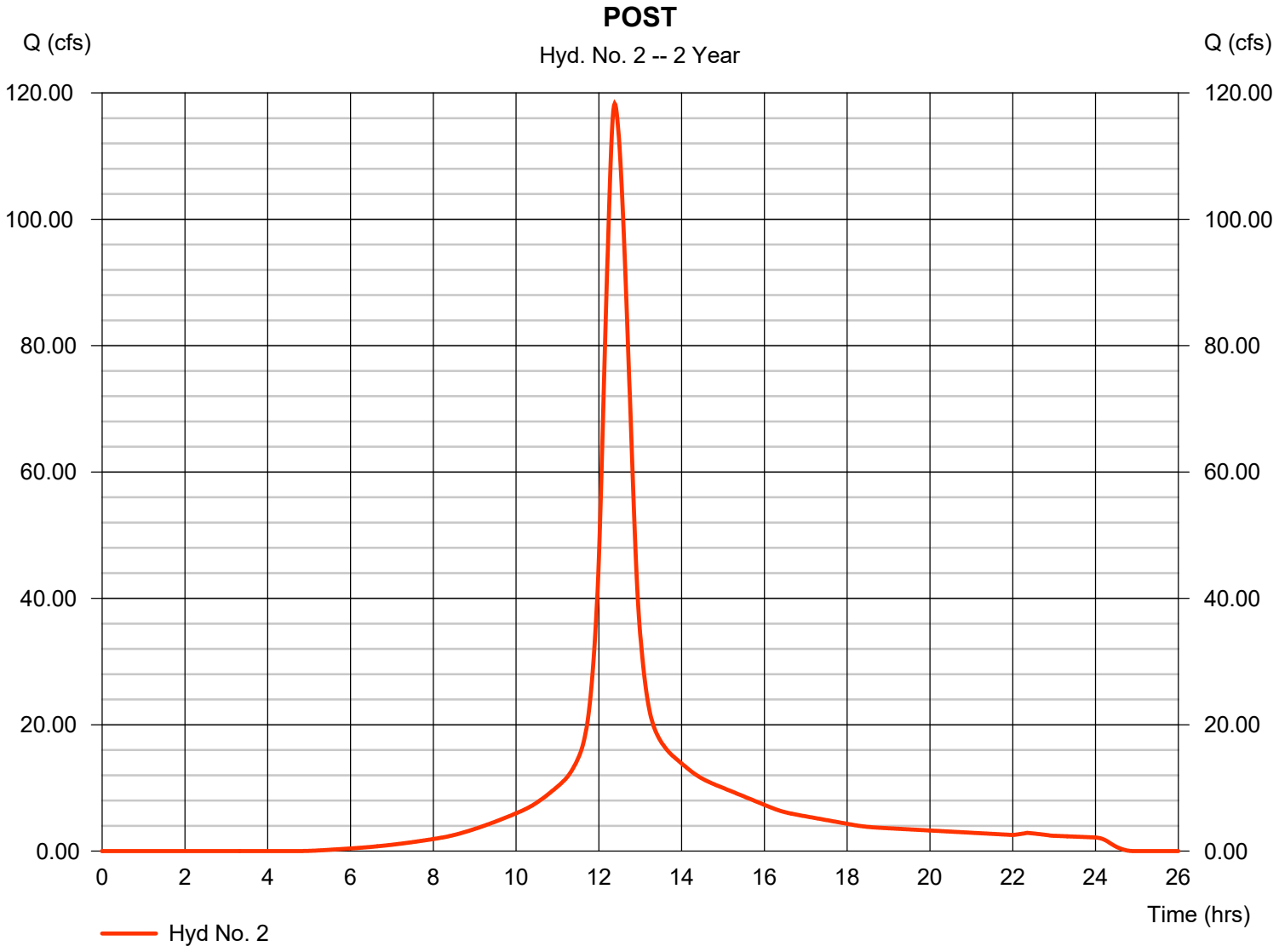


Hydrograph Report

Hyd. No. 2

POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	118.29 cfs
Storm frequency	=	2 yrs	Time to peak	=	12.38 hrs
Time interval	=	1 min	Hyd. volume	=	678,030 cuft
Drainage area	=	56.600 ac	Curve number	=	90
Basin Slope	=	1.0 %	Hydraulic length	=	1744 ft
Tc method	=	LAG	Time of conc. (Tc)	=	34.80 min
Total precip.	=	4.40 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



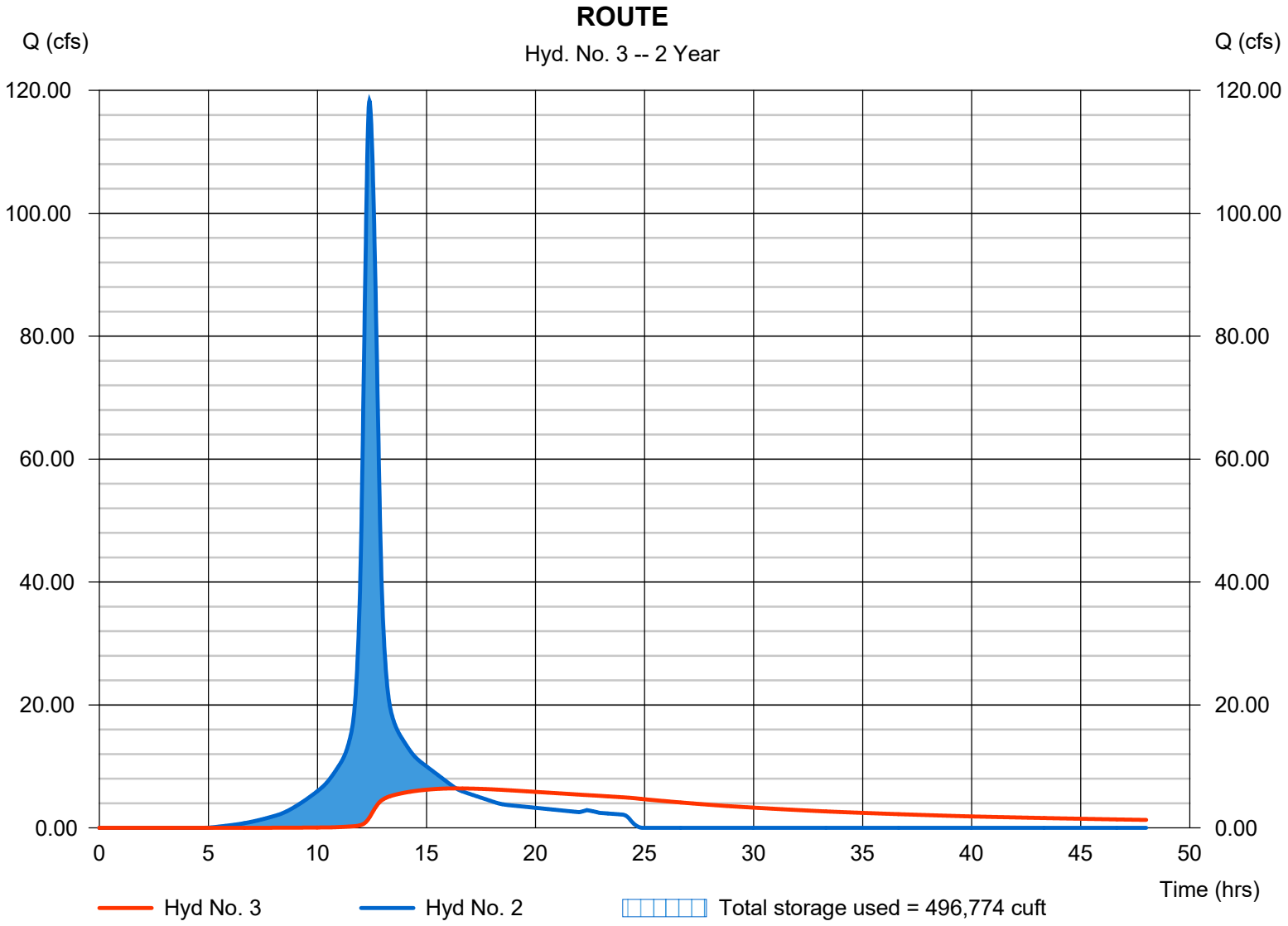
Hydrograph Report

Hyd. No. 3

ROUTE

Hydrograph type	= Reservoir	Peak discharge	= 6.417 cfs
Storm frequency	= 2 yrs	Time to peak	= 16.37 hrs
Time interval	= 1 min	Hyd. volume	= 462,740 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 280.95 ft
Reservoir name	= POND	Max. Storage	= 496,774 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - POND

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 280.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	280.00	517,622	0	0
1.00	281.00	527,288	522,395	522,395
2.00	282.00	537,013	532,090	1,054,485
3.00	283.00	546,797	541,844	1,596,329
4.00	284.00	556,641	551,657	2,147,985
5.00	285.00	566,545	561,530	2,709,515

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	0.00	0.00	0.00
Span (in)	= 36.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 280.00	0.00	0.00	0.00
Length (ft)	= 50.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

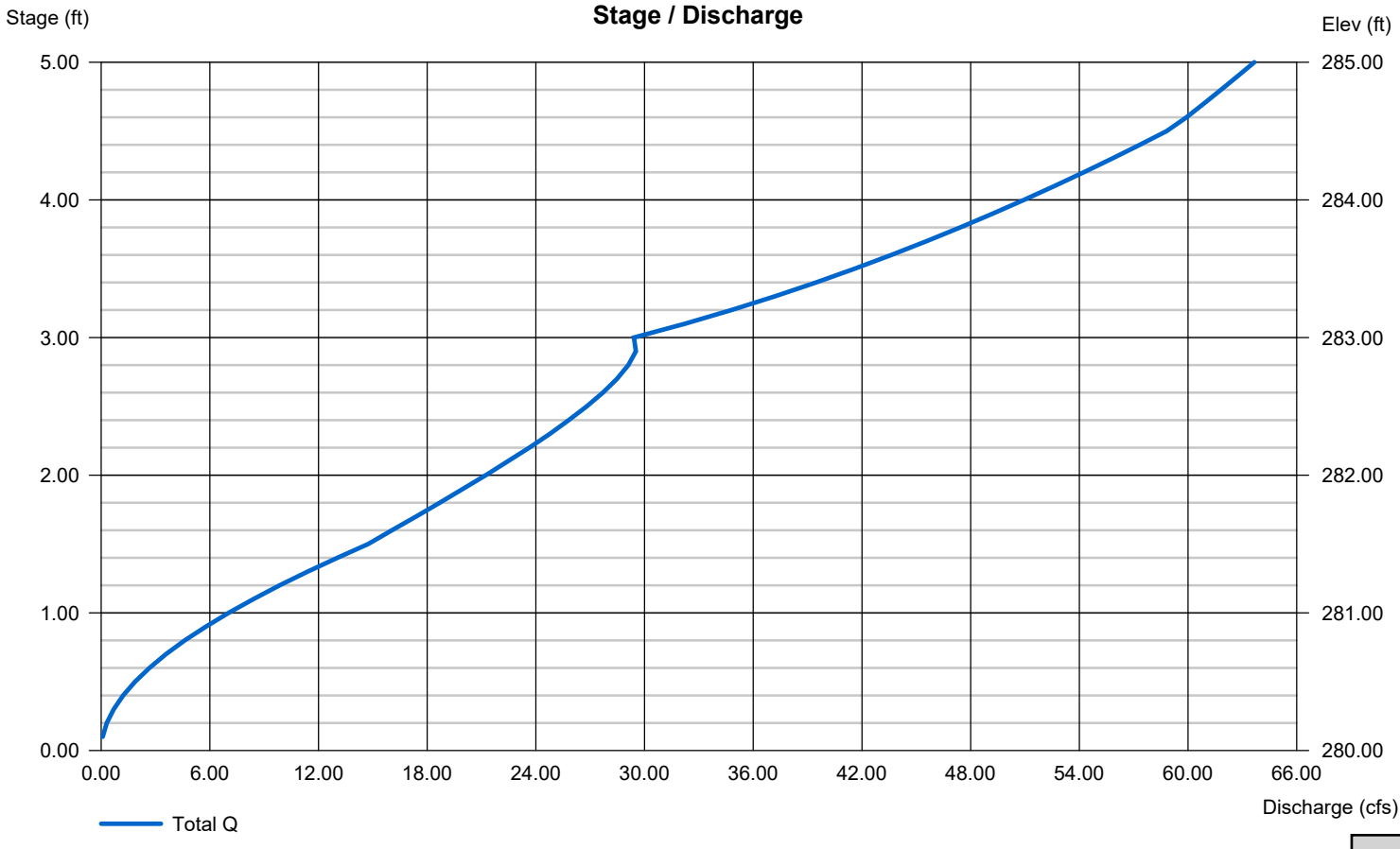
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

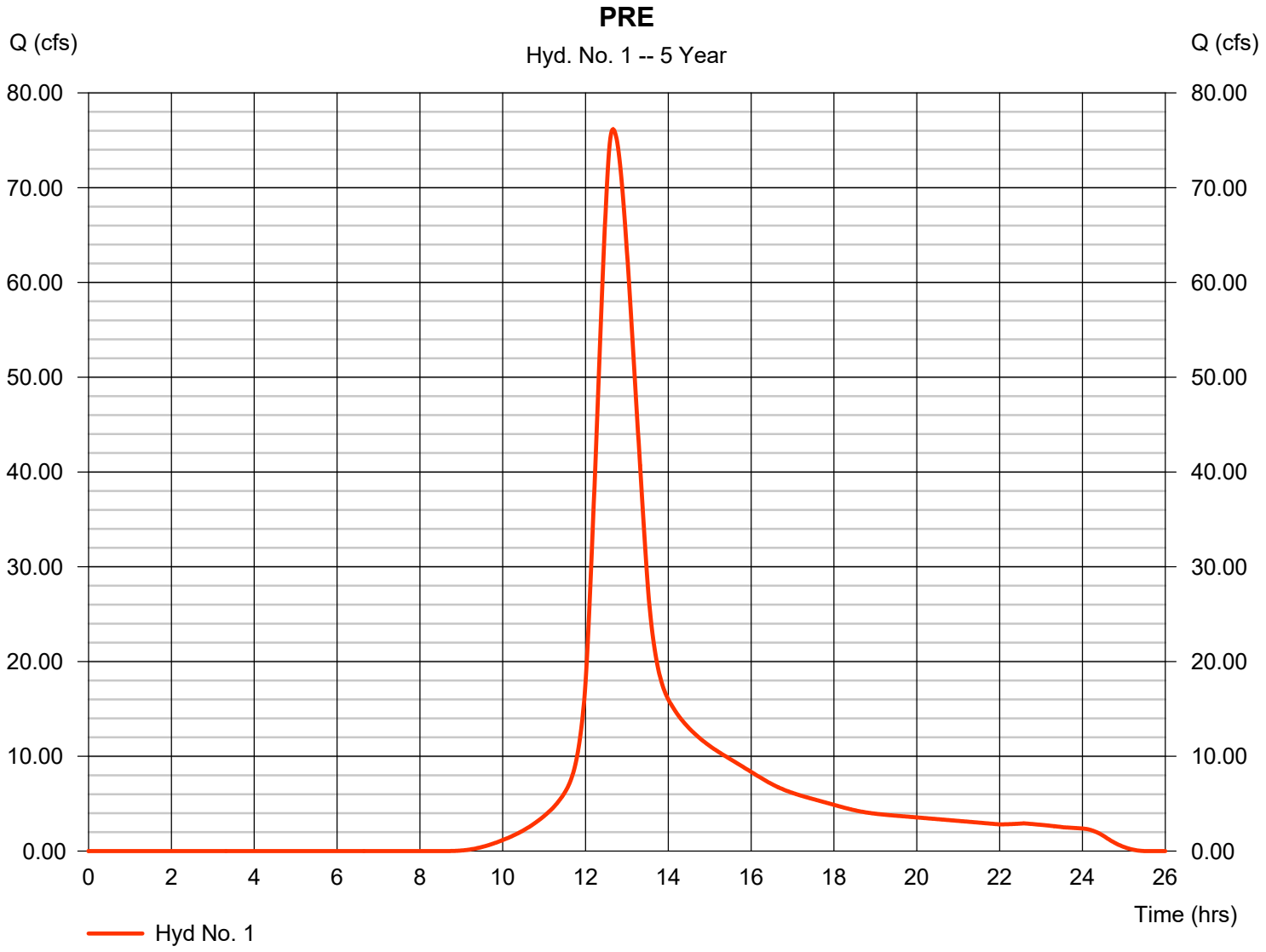
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	76.16	1	760	566,916	------	------	------	PRE
2	SCS Runoff	154.37	1	743	895,776	------	------	------	POST
3	Reservoir	10.08	1	947	659,681	2	281.21	636,576	ROUTE

Hydrograph Report

Hyd. No. 1

PRE

Hydrograph type	= SCS Runoff	Peak discharge	= 76.16 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.67 hrs
Time interval	= 1 min	Hyd. volume	= 566,916 cuft
Drainage area	= 56.600 ac	Curve number	= 74
Basin Slope	= 1.0 %	Hydraulic length	= 1744 ft
Tc method	= LAG	Time of conc. (Tc)	= 59.30 min
Total precip.	= 5.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

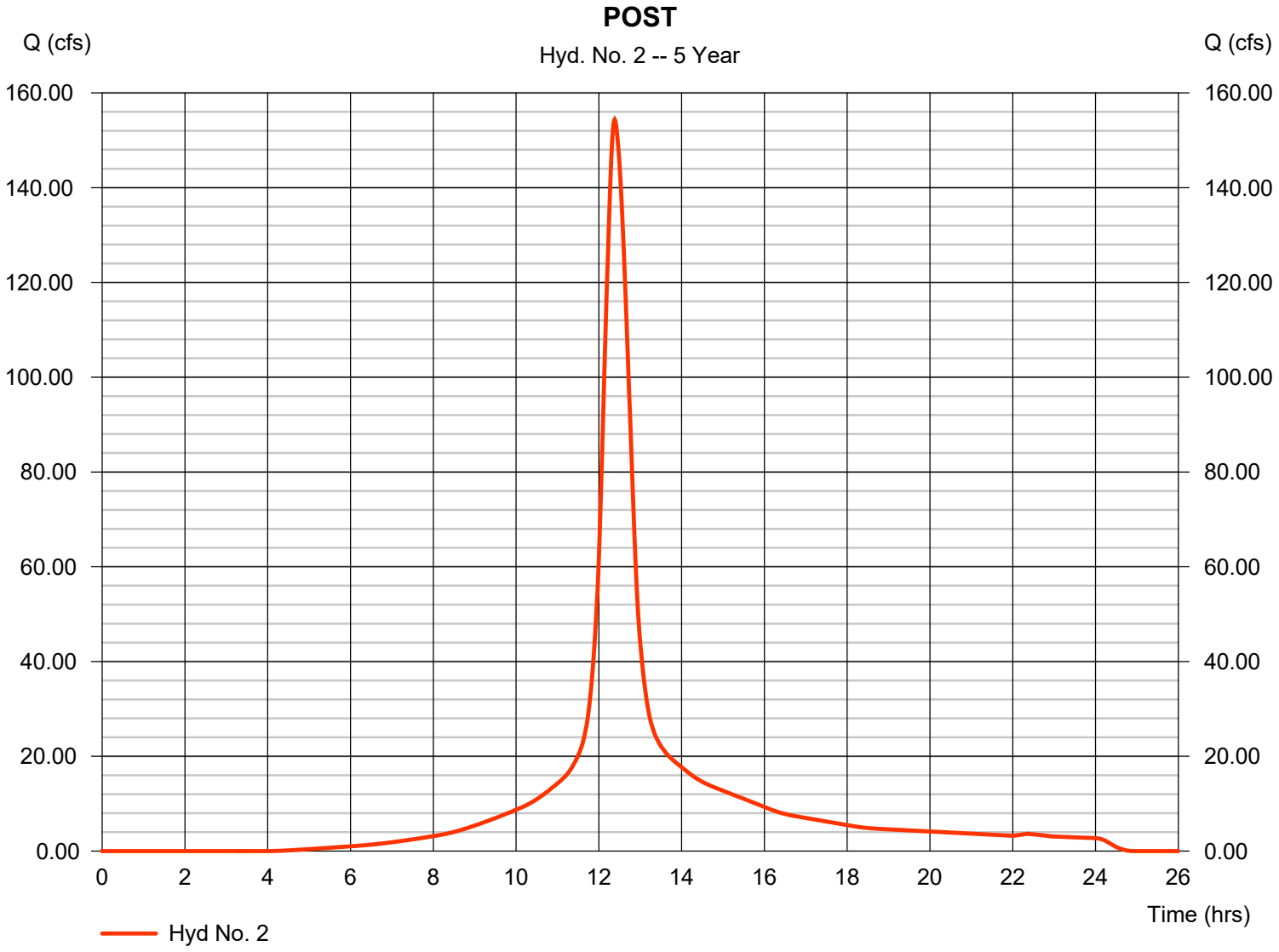


Hydrograph Report

Hyd. No. 2

POST

Hydrograph type	= SCS Runoff	Peak discharge	= 154.37 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.38 hrs
Time interval	= 1 min	Hyd. volume	= 895,776 cuft
Drainage area	= 56.600 ac	Curve number	= 90
Basin Slope	= 1.0 %	Hydraulic length	= 1744 ft
Tc method	= LAG	Time of conc. (Tc)	= 34.80 min
Total precip.	= 5.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



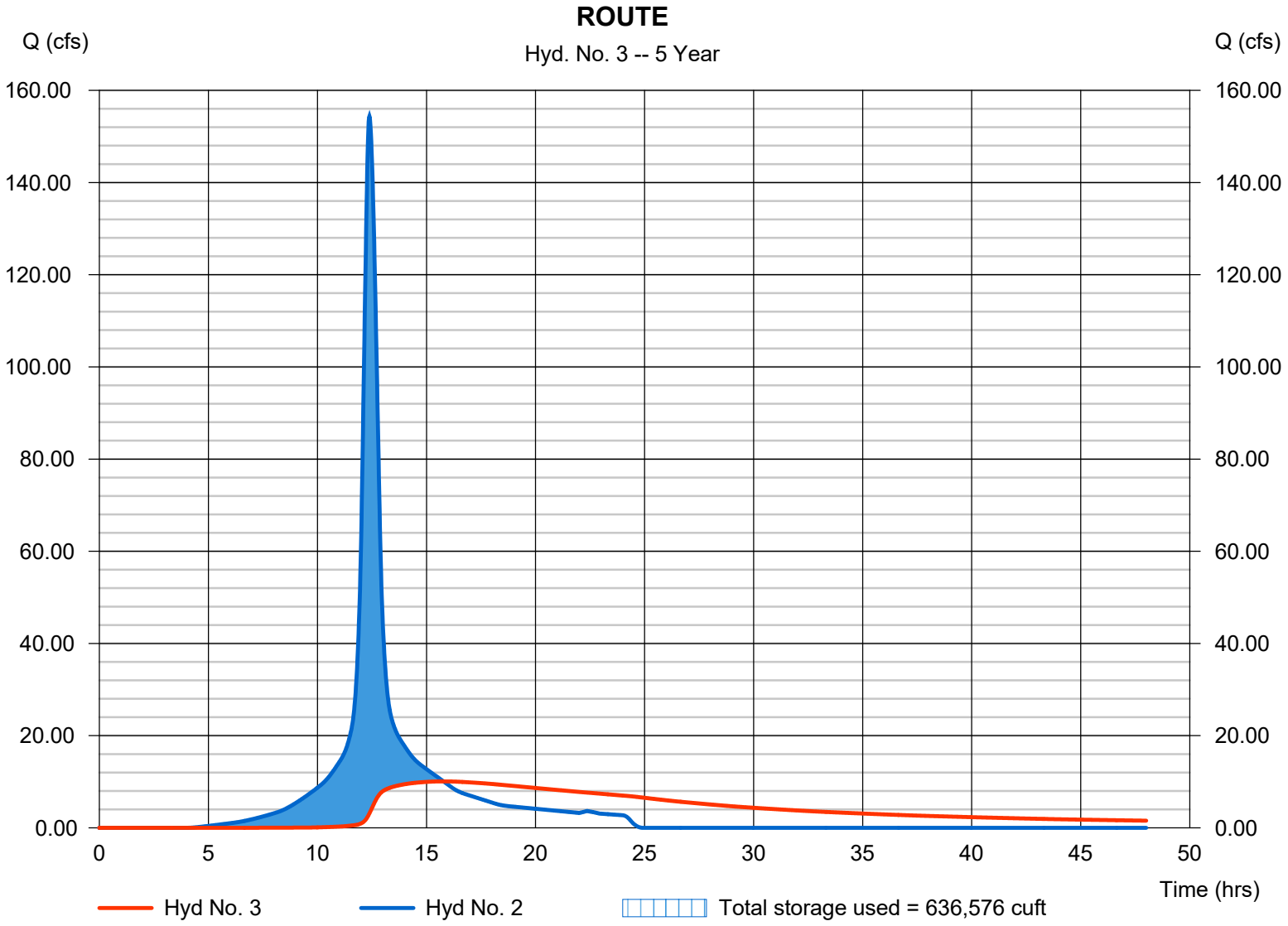
Hydrograph Report

Hyd. No. 3

ROUTE

Hydrograph type	= Reservoir	Peak discharge	= 10.08 cfs
Storm frequency	= 5 yrs	Time to peak	= 15.78 hrs
Time interval	= 1 min	Hyd. volume	= 659,681 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 281.21 ft
Reservoir name	= POND	Max. Storage	= 636,576 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

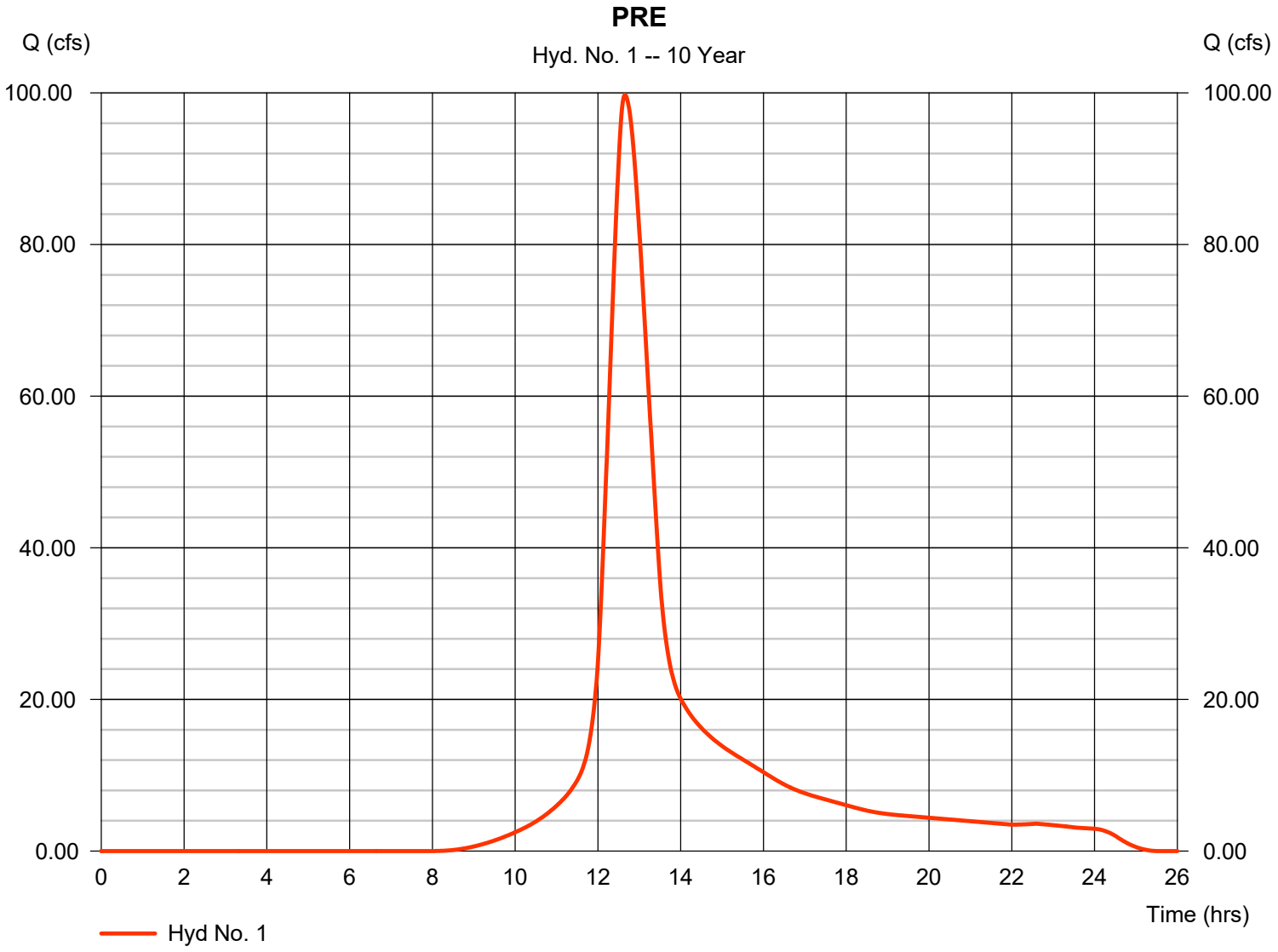
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	99.72	1	759	738,979	------	------	------	PRE
2	SCS Runoff	186.99	1	743	1,095,861	------	------	------	POST
3	Reservoir	13.89	1	919	845,112	2	281.45	761,631	ROUTE

Hydrograph Report

Hyd. No. 1

PRE

Hydrograph type	= SCS Runoff	Peak discharge	= 99.72 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.65 hrs
Time interval	= 1 min	Hyd. volume	= 738,979 cuft
Drainage area	= 56.600 ac	Curve number	= 74
Basin Slope	= 1.0 %	Hydraulic length	= 1744 ft
Tc method	= LAG	Time of conc. (Tc)	= 59.30 min
Total precip.	= 6.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

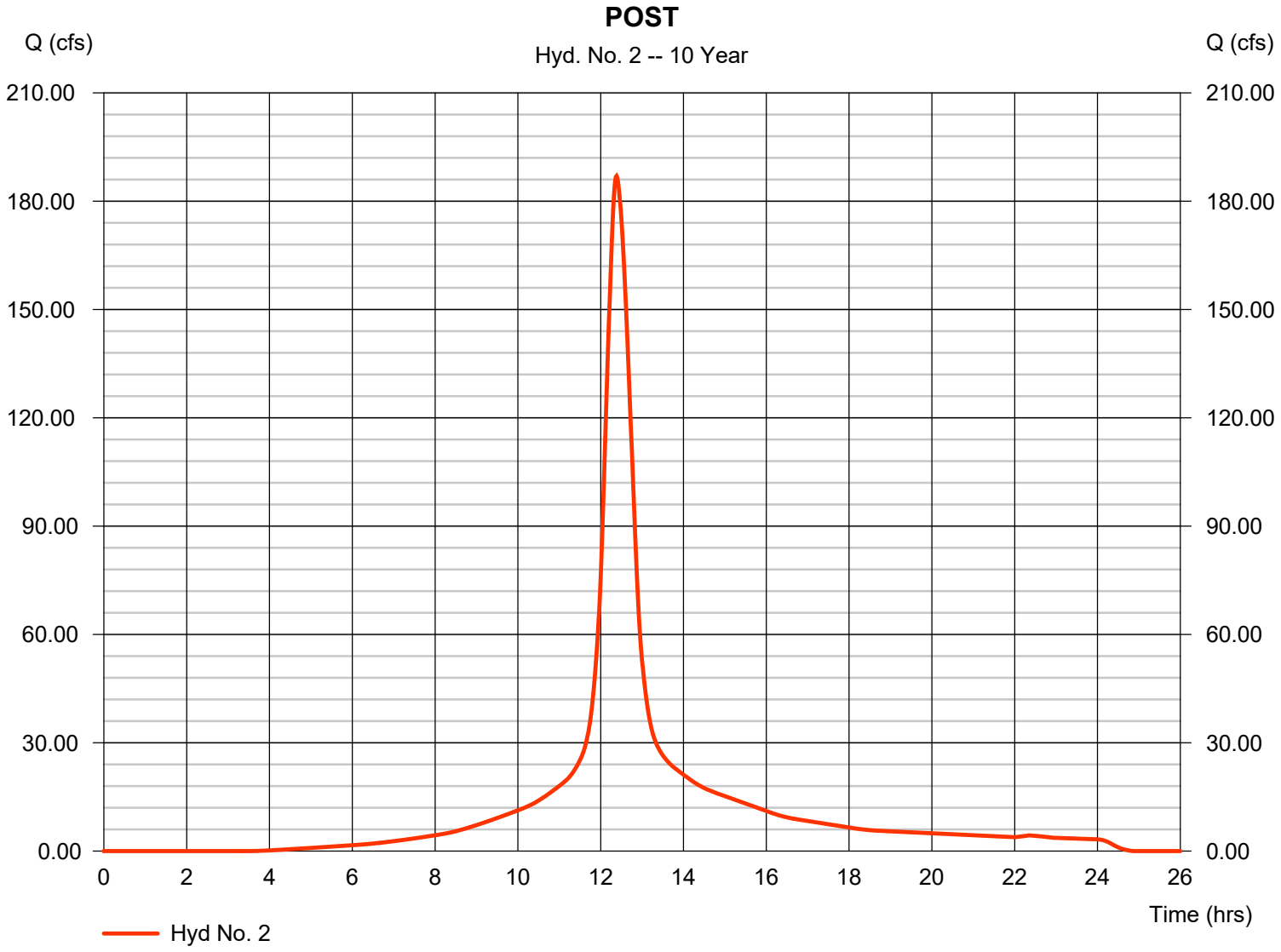


Hydrograph Report

Hyd. No. 2

POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	186.99 cfs
Storm frequency	=	10 yrs	Time to peak	=	12.38 hrs
Time interval	=	1 min	Hyd. volume	=	1,095,861 cuft
Drainage area	=	56.600 ac	Curve number	=	90
Basin Slope	=	1.0 %	Hydraulic length	=	1744 ft
Tc method	=	LAG	Time of conc. (Tc)	=	34.80 min
Total precip.	=	6.50 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



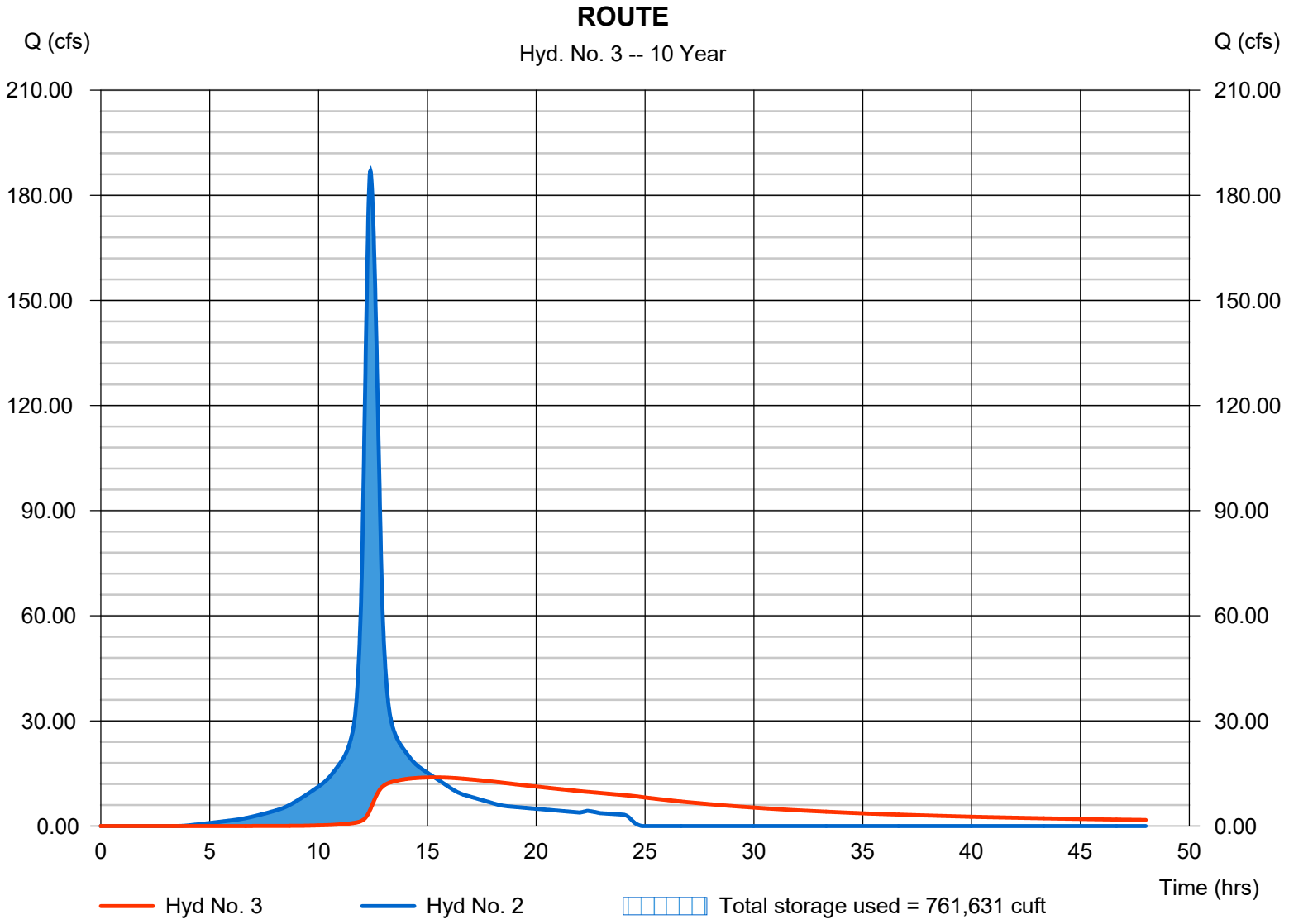
Hydrograph Report

Hyd. No. 3

ROUTE

Hydrograph type	= Reservoir	Peak discharge	= 13.89 cfs
Storm frequency	= 10 yrs	Time to peak	= 15.32 hrs
Time interval	= 1 min	Hyd. volume	= 845,112 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 281.45 ft
Reservoir name	= POND	Max. Storage	= 761,631 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

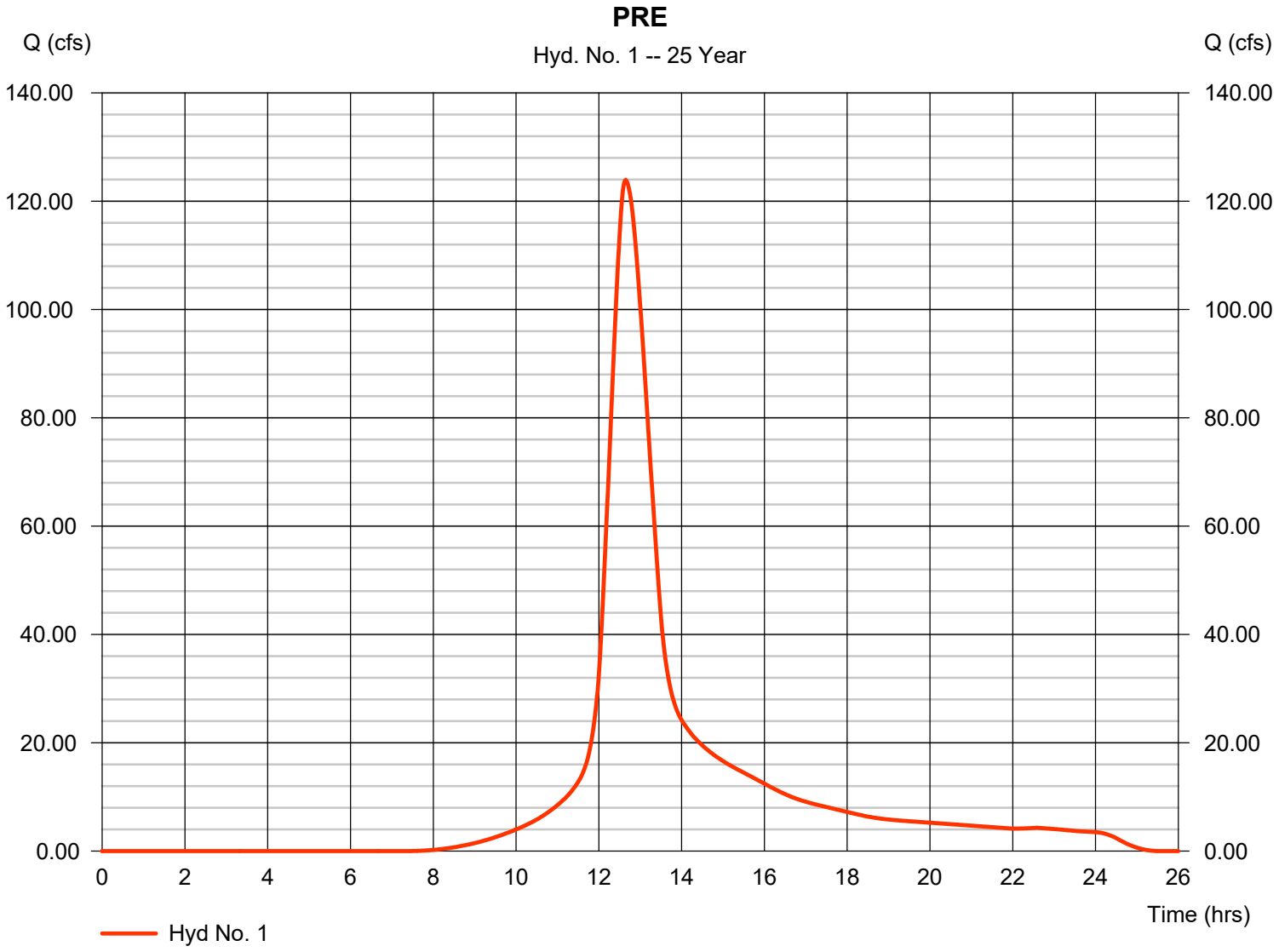
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	123.91	1	759	917,380	------	------	------	PRE
2	SCS Runoff	219.43	1	743	1,297,227	------	------	------	POST
3	Reservoir	17.28	1	905	1,033,547	2	281.69	890,604	ROUTE

Hydrograph Report

Hyd. No. 1

PRE

Hydrograph type	= SCS Runoff	Peak discharge	= 123.91 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.65 hrs
Time interval	= 1 min	Hyd. volume	= 917,380 cuft
Drainage area	= 56.600 ac	Curve number	= 74
Basin Slope	= 1.0 %	Hydraulic length	= 1744 ft
Tc method	= LAG	Time of conc. (Tc)	= 59.30 min
Total precip.	= 7.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

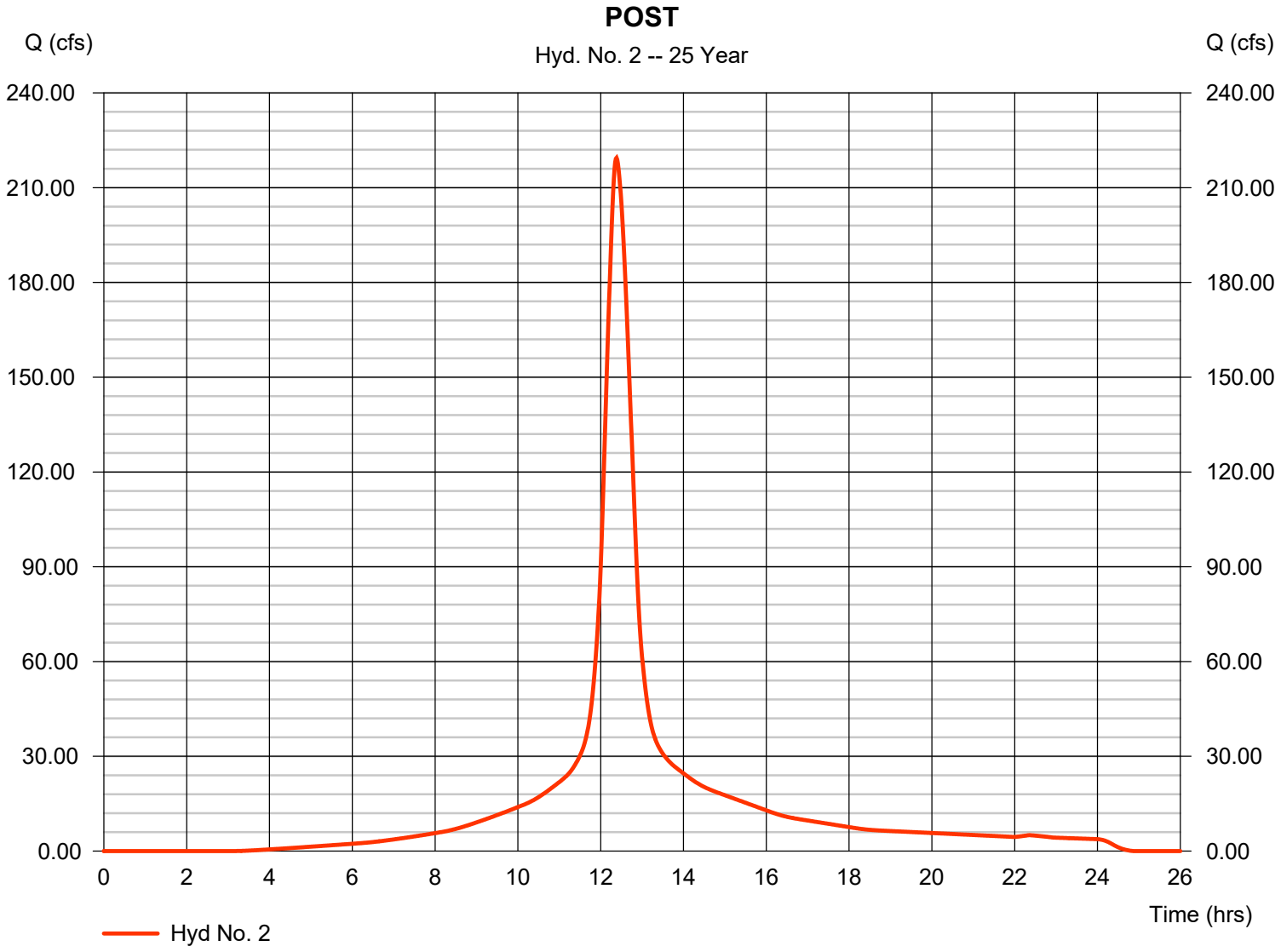


Hydrograph Report

Hyd. No. 2

POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	219.43 cfs
Storm frequency	=	25 yrs	Time to peak	=	12.38 hrs
Time interval	=	1 min	Hyd. volume	=	1,297,227 cuft
Drainage area	=	56.600 ac	Curve number	=	90
Basin Slope	=	1.0 %	Hydraulic length	=	1744 ft
Tc method	=	LAG	Time of conc. (Tc)	=	34.80 min
Total precip.	=	7.50 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



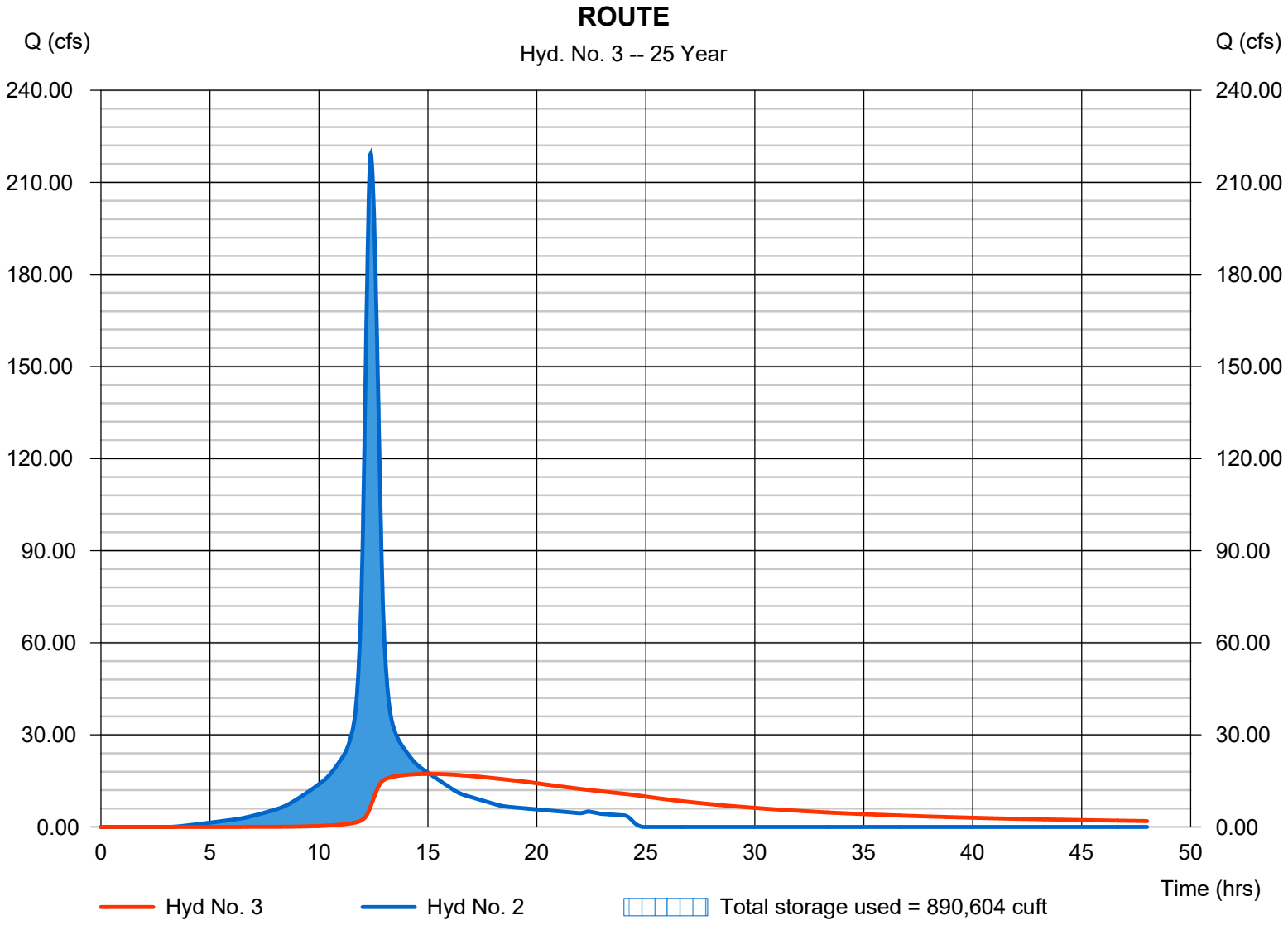
Hydrograph Report

Hyd. No. 3

ROUTE

Hydrograph type	= Reservoir	Peak discharge	= 17.28 cfs
Storm frequency	= 25 yrs	Time to peak	= 15.08 hrs
Time interval	= 1 min	Hyd. volume	= 1,033,547 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 281.69 ft
Reservoir name	= POND	Max. Storage	= 890,604 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

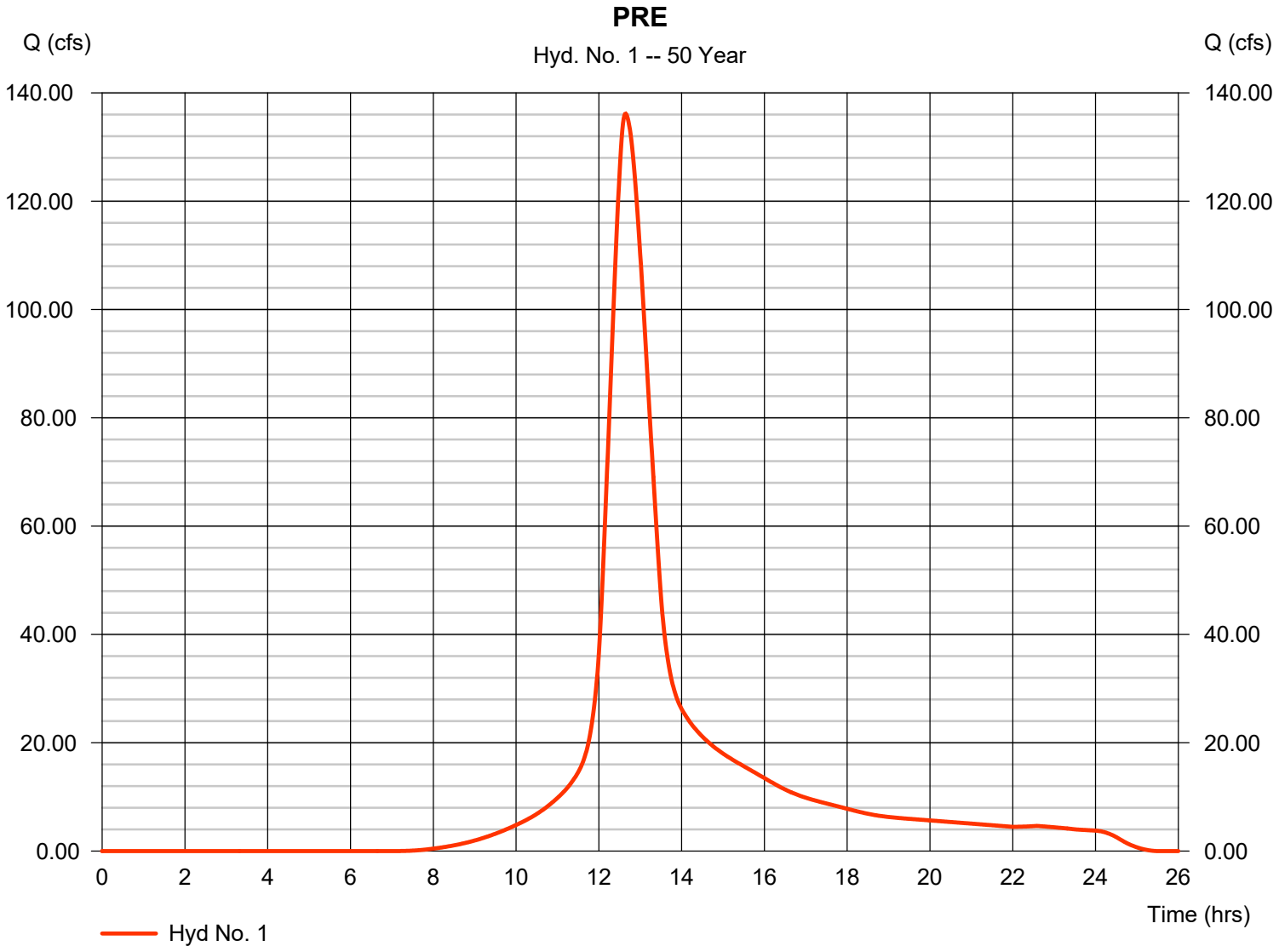
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	136.15	1	759	1,008,405	------	------	------	PRE
2	SCS Runoff	235.58	1	743	1,398,256	------	------	------	POST
3	Reservoir	18.89	1	900	1,128,258	2	281.82	956,610	ROUTE

Hydrograph Report

Hyd. No. 1

PRE

Hydrograph type	=	SCS Runoff	Peak discharge	=	136.15 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.65 hrs
Time interval	=	1 min	Hyd. volume	=	1,008,405 cuft
Drainage area	=	56.600 ac	Curve number	=	74
Basin Slope	=	1.0 %	Hydraulic length	=	1744 ft
Tc method	=	LAG	Time of conc. (Tc)	=	59.30 min
Total precip.	=	8.00 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484

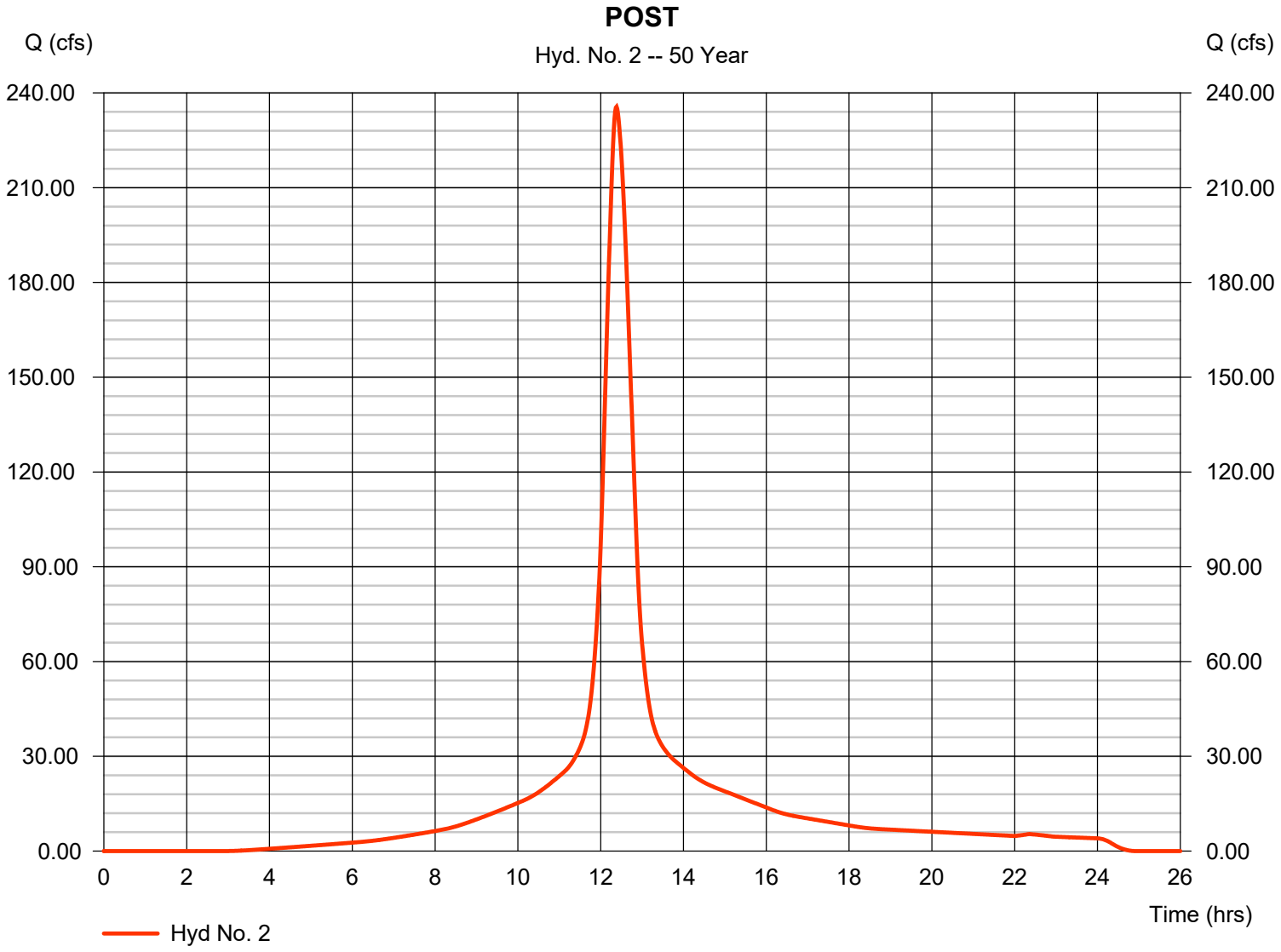


Hydrograph Report

Hyd. No. 2

POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	235.58 cfs
Storm frequency	=	50 yrs	Time to peak	=	12.38 hrs
Time interval	=	1 min	Hyd. volume	=	1,398,256 cuft
Drainage area	=	56.600 ac	Curve number	=	90
Basin Slope	=	1.0 %	Hydraulic length	=	1744 ft
Tc method	=	LAG	Time of conc. (Tc)	=	34.80 min
Total precip.	=	8.00 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



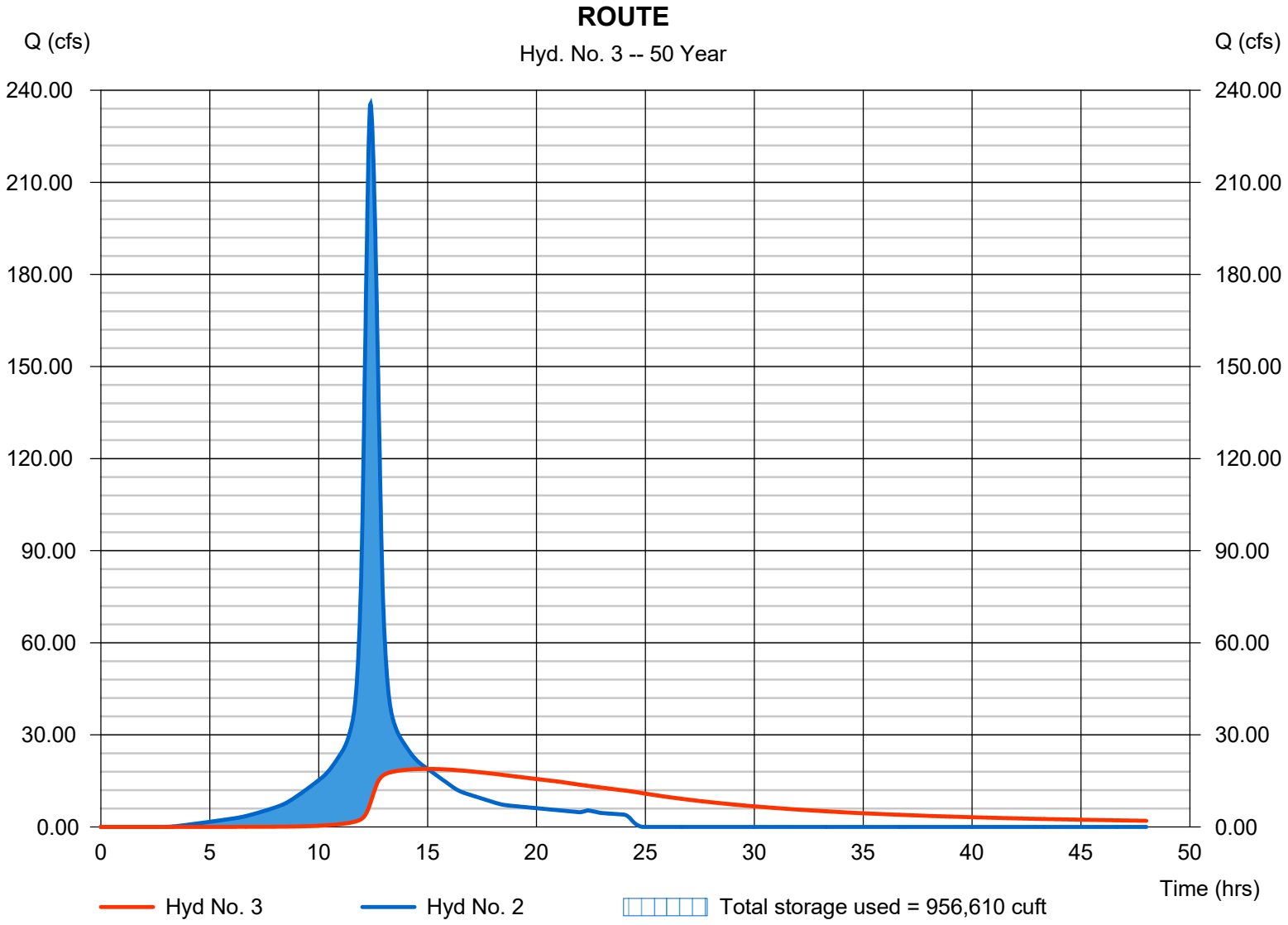
Hydrograph Report

Hyd. No. 3

ROUTE

Hydrograph type	= Reservoir	Peak discharge	= 18.89 cfs
Storm frequency	= 50 yrs	Time to peak	= 15.00 hrs
Time interval	= 1 min	Hyd. volume	= 1,128,258 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 281.82 ft
Reservoir name	= POND	Max. Storage	= 956,610 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

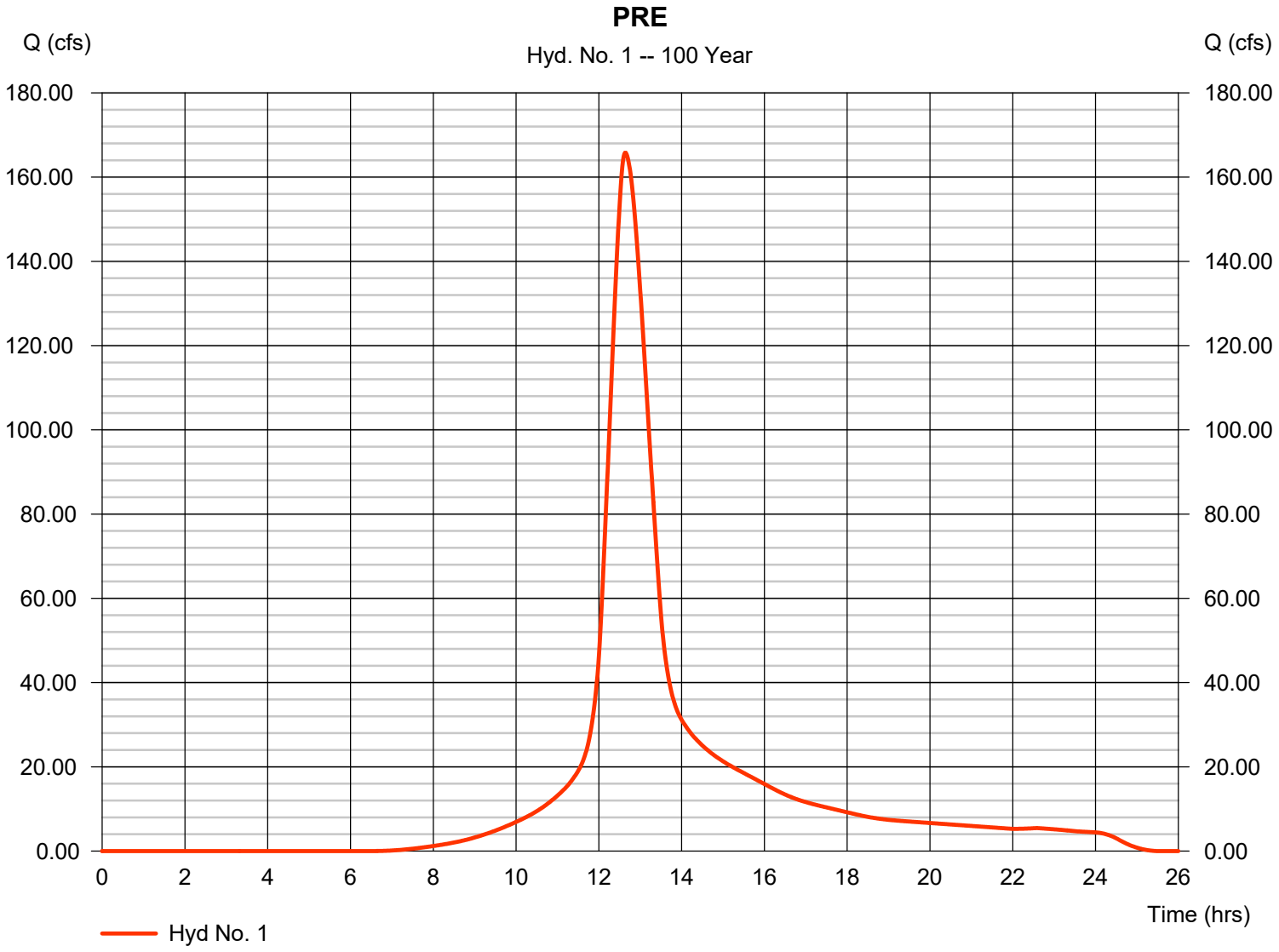
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	165.78	1	758	1,230,717	------	------	------	PRE
2	SCS Runoff	274.22	1	743	1,641,410	------	------	------	POST
3	Reservoir	22.61	1	892	1,356,512	2	282.11	1,116,691	ROUTE

Hydrograph Report

Hyd. No. 1

PRE

Hydrograph type	= SCS Runoff	Peak discharge	= 165.78 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.63 hrs
Time interval	= 1 min	Hyd. volume	= 1,230,717 cuft
Drainage area	= 56.600 ac	Curve number	= 74
Basin Slope	= 1.0 %	Hydraulic length	= 1744 ft
Tc method	= LAG	Time of conc. (Tc)	= 59.30 min
Total precip.	= 9.20 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

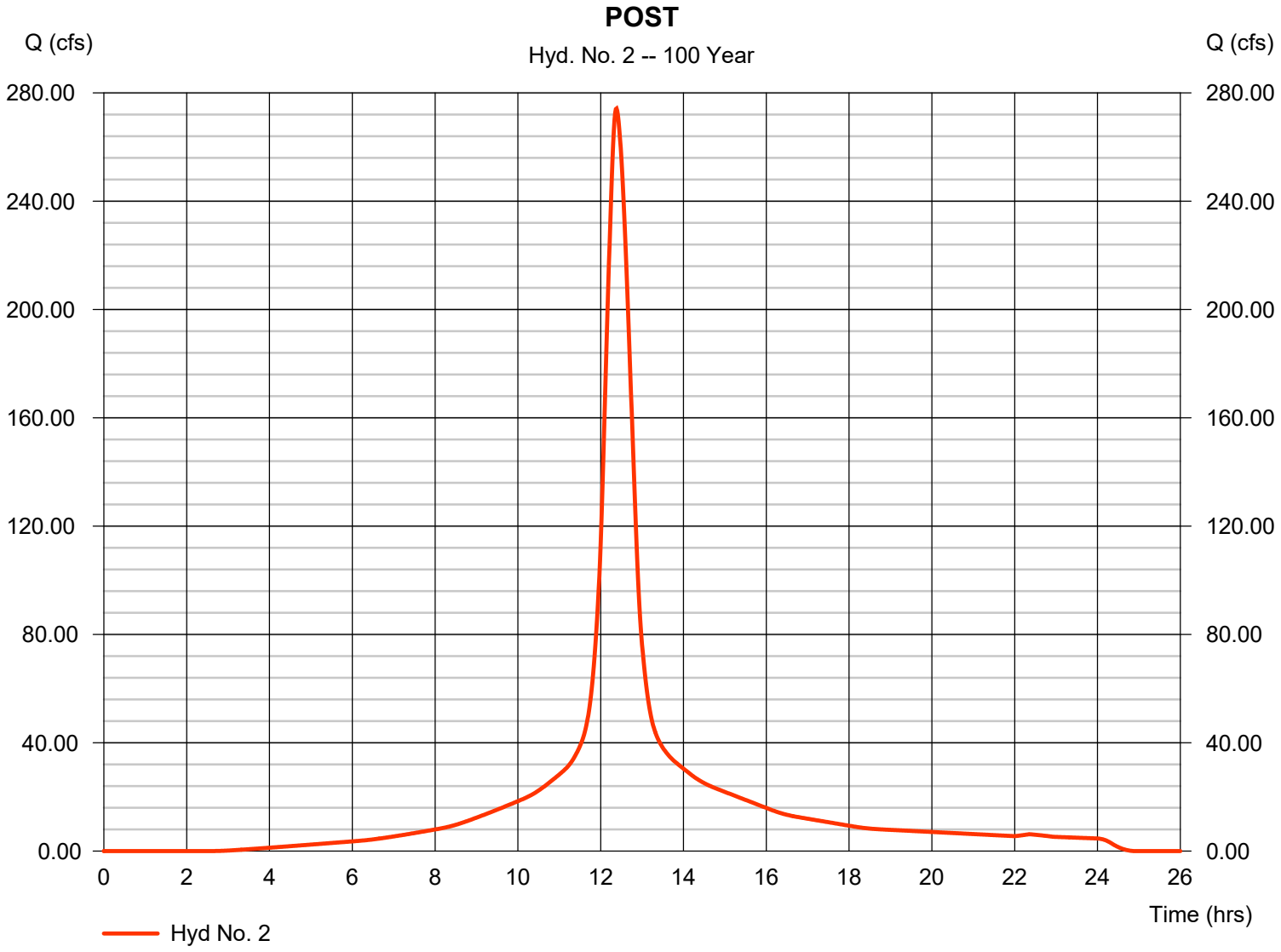


Hydrograph Report

Hyd. No. 2

POST

Hydrograph type	=	SCS Runoff	Peak discharge	=	274.22 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.38 hrs
Time interval	=	1 min	Hyd. volume	=	1,641,410 cuft
Drainage area	=	56.600 ac	Curve number	=	90
Basin Slope	=	1.0 %	Hydraulic length	=	1744 ft
Tc method	=	LAG	Time of conc. (Tc)	=	34.80 min
Total precip.	=	9.20 in	Distribution	=	Type III
Storm duration	=	24 hrs	Shape factor	=	484



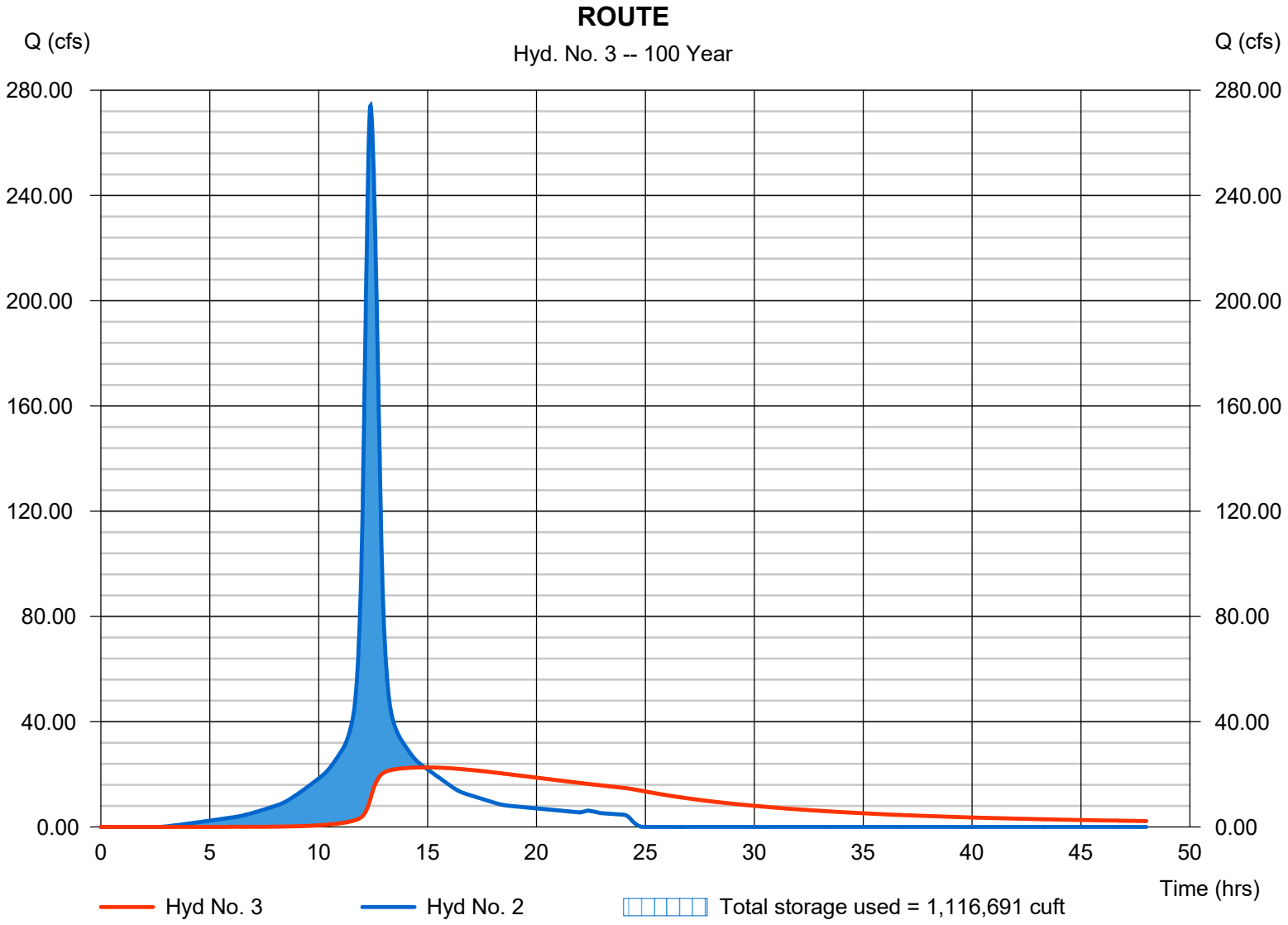
Hydrograph Report

Hyd. No. 3

ROUTE

Hydrograph type	= Reservoir	Peak discharge	= 22.61 cfs
Storm frequency	= 100 yrs	Time to peak	= 14.87 hrs
Time interval	= 1 min	Hyd. volume	= 1,356,512 cuft
Inflow hyd. No.	= 2 - POST	Max. Elevation	= 282.11 ft
Reservoir name	= POND	Max. Storage	= 1,116,691 cuft

Storage Indication method used.



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	173.2505	22.5000	1.0000	--------
3	0.0000	0.0000	0.0000	--------
5	207.8044	24.8001	0.9867	--------
10	446.9887	30.7001	1.1254	--------
25	63.0648	13.0000	0.6739	--------
50	453.3015	32.8001	1.0613	--------
100	512.3378	33.2001	1.0647	--------

File name: MADISON_REV..IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	6.30	5.33	4.62	4.08	3.65	3.30	3.01	2.77	2.57	2.39	2.24	2.10
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	7.30	6.26	5.48	4.88	4.40	4.00	3.67	3.39	3.15	2.94	2.76	2.60
10	8.00	6.90	6.06	5.39	4.85	4.40	4.02	3.71	3.43	3.19	2.98	2.80
25	8.99	7.62	6.68	5.98	5.43	5.00	4.64	4.34	4.09	3.87	3.67	3.50
50	9.60	8.41	7.48	6.73	6.12	5.60	5.16	4.79	4.46	4.18	3.92	3.70
100	10.60	9.30	8.27	7.45	6.77	6.20	5.72	5.30	4.94	4.63	4.35	4.10

Tc = time in minutes. Values may exceed 60.

Precip. file name: P:\Common Files\Design Folders\Hydraflow\Madison.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	4.40	0.00	5.50	6.50	7.50	8.00	9.20
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

DALE
PARTNERS

05/03/23 12:25:16 PM

Joni's House

Calhoun Station Pky & Stout Rd/ Gluckstadt

DPA PN: 21165

Planning & Zoning Submittal

5 May 2023

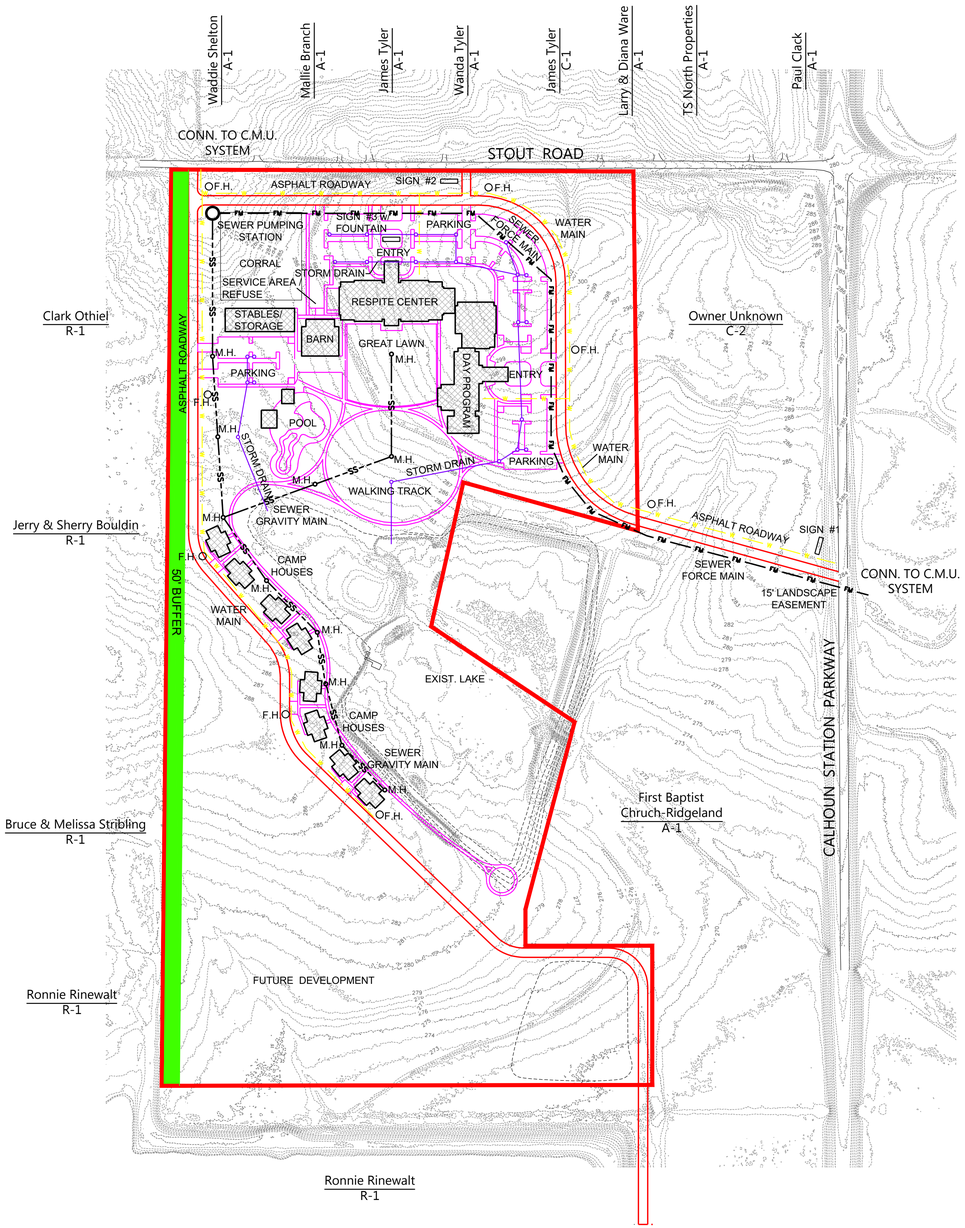
Not for Construction

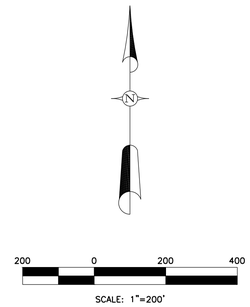
Team

Owner	Owner Name
Architect	Dale Partners Architects, P.A.
Civil	McMaster & Associates Inc.
Landscape	Landscape Name
Structural	Structural Name
Mechanical	Mechanical Name
Electrical	Electrical Name
Food Service	Food Service Name

NOTES:

1. THE TOTAL AREA OF THIS DEVELOPMENT IS 67.4054 AC./2,936,183.54 S.F., MORE OR LESS.
2. THIS BUILDINGS WILL BE UTILIZED AS A RESPITE CENTER AND CAMP.
3. THIS PROPERTY IS LOCATED IN ZONE X – OTHER AREAS, WHICH IS DEFINED AS, "AREAS DETERMINED TO BE OUTSIDE THE 0.2% CHANCE FLOODPLAIN," AS SHOWN ON FIRM MAP NUMBERS 28089C0415F, DATED MARCH 17, 2010.
4. ALL CONSTRUCTION WILL BE IN ACCORDANCE WITH THE CITY OF GLUCKSTADT SPECIFICATIONS.
5. DOMESTIC WATER SERVICE, FIRE PROTECTION, AND SEWER SERVICE WILL BE PROVIDED BY CANTON MUNICIPAL UTILITIES.
6. ALL SIGNING AND STRIPING SHALL CONFORM TO THE CITY OF GLUCKSTADT SPECIFICATIONS.
7. PARKING SPACES PROVIDED – 383 SPACES (8 HANDICAP SPACES)
8. GROSS LOT COVERAGE FOR BUILDINGS AND STRUCTURES: 4%
   118,658 S.F.(BUILDINGS & STRUCTURES) / 2,936,184 (OVERALL SITE) = 4%





Revisions				
#	Date	Nature	By	App'd.
1	4-20-23	Response to Comments	R.C.M.	R.C.M.

Project No.	M-3084
Date	3-31-23
Scale	SEE ABOVE
Designed By	R.C.M.
Drawn By	R.C.M.
Checked By	R.C.M.

JONI'S HOUSE

GLUCKSTADT, MISSISSIPPI

McMASTER & ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
212 WATERFORD SQUARE
SUITE 300
MADISON, MS 39110
601.605.1090

NOT FOR CONSTRUCTION

SITE PLAN

1

1 Vicinity Map
1 : 6500

DALE PARTNERS

Architecture
Interiors
Planning

One Jackson Place 250
188 East Capitol Street
Jackson, MS 39201
p 601.352.5411

161 Lameuse Street 201
Biloxi, MS 39530
p 228.374.1409

dalepartners.com

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Consultant Logo

Joni's House

Calhoun Station Pky& Stout Rd/ Gluckstadt

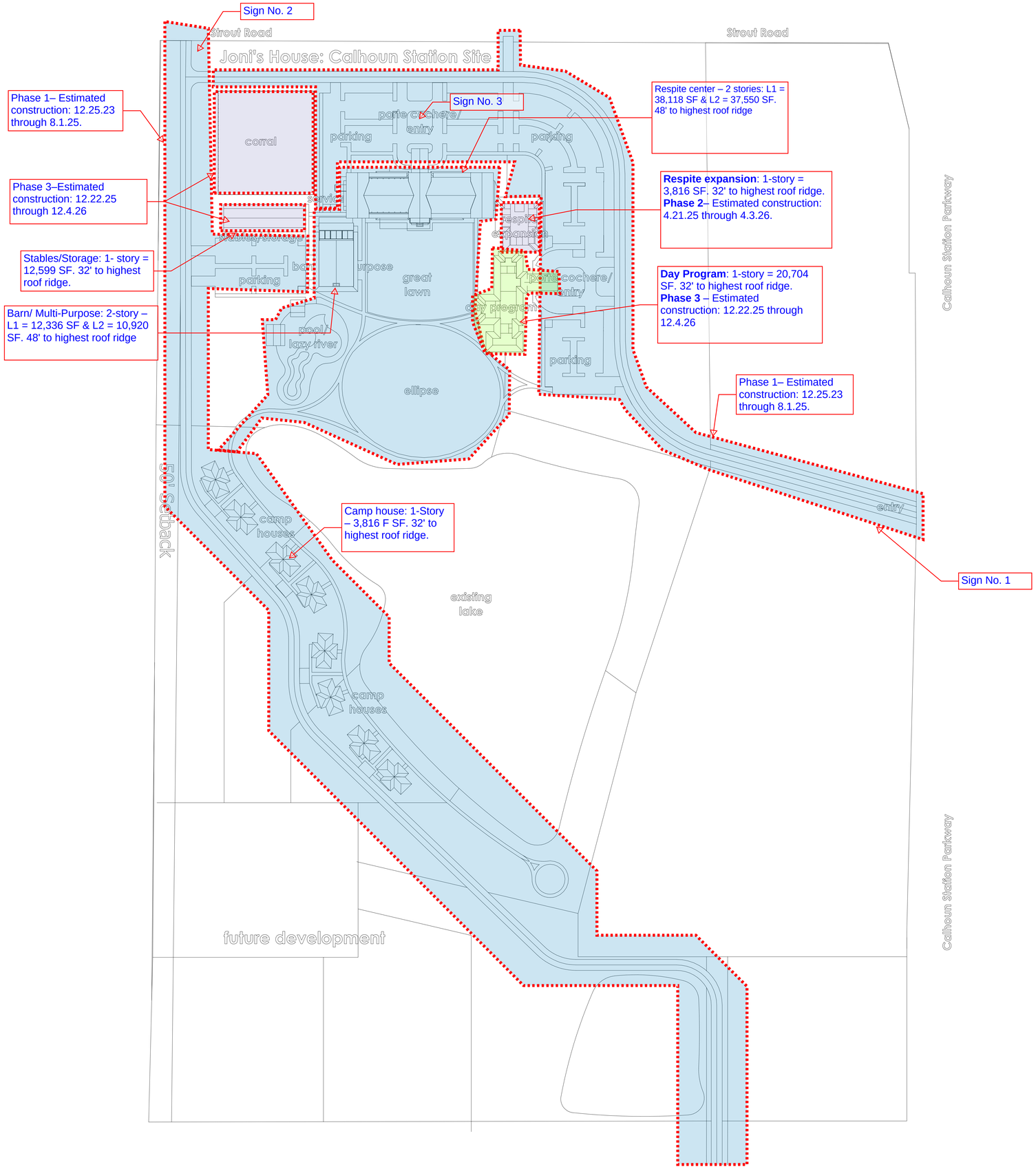
Package Number

Planning & Zoning Submittal

Project No	21165
Date	25 April 2023
Revisions	Rev Date

AS102

Vicinity Map



1 Site
1" = 100'-0"

General Site Notes

1. See Civil Drawing for finish grades at exterior paving. All paving and grades at perimeter of building to have positve slope away from structures and towards drainage basins.
2. All grassed areas shall be graded to drain to the appropriate inlet or slope to ensure positive drainage away from the building
3. All downspouts and boots to be connected to subsurface drainage. See Civil drawings.

Sheet Keynote Legend

Hours of operation

This facility will be used weekly and daily. Various aspects of the facility will be open 24/7: Respite Center (hotel) year-round, Lodges will be seasonal, Café and Store 8 hours Monday – Saturday.

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Joni's House
Calhoun Station Pky& Stout Rd/ Gluckstadt

Package Number
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Project No	21165
Date	25 April 2023
Revisions	Rev Date

AS101
Site Plan

DALE BAILEY
AN ASSOCIATION

Architects

One Jackson Place 250
188 East Capitol Street
Jackson, MS 39201
p 601.352.5411

201 Park Court Suite B
Ridgeland, MS 39157
p 601.790.9432

161 Lameuse St. Suite 201
Biloxi, MS 39530
p 228.374.1409

dalebaileyplans.com

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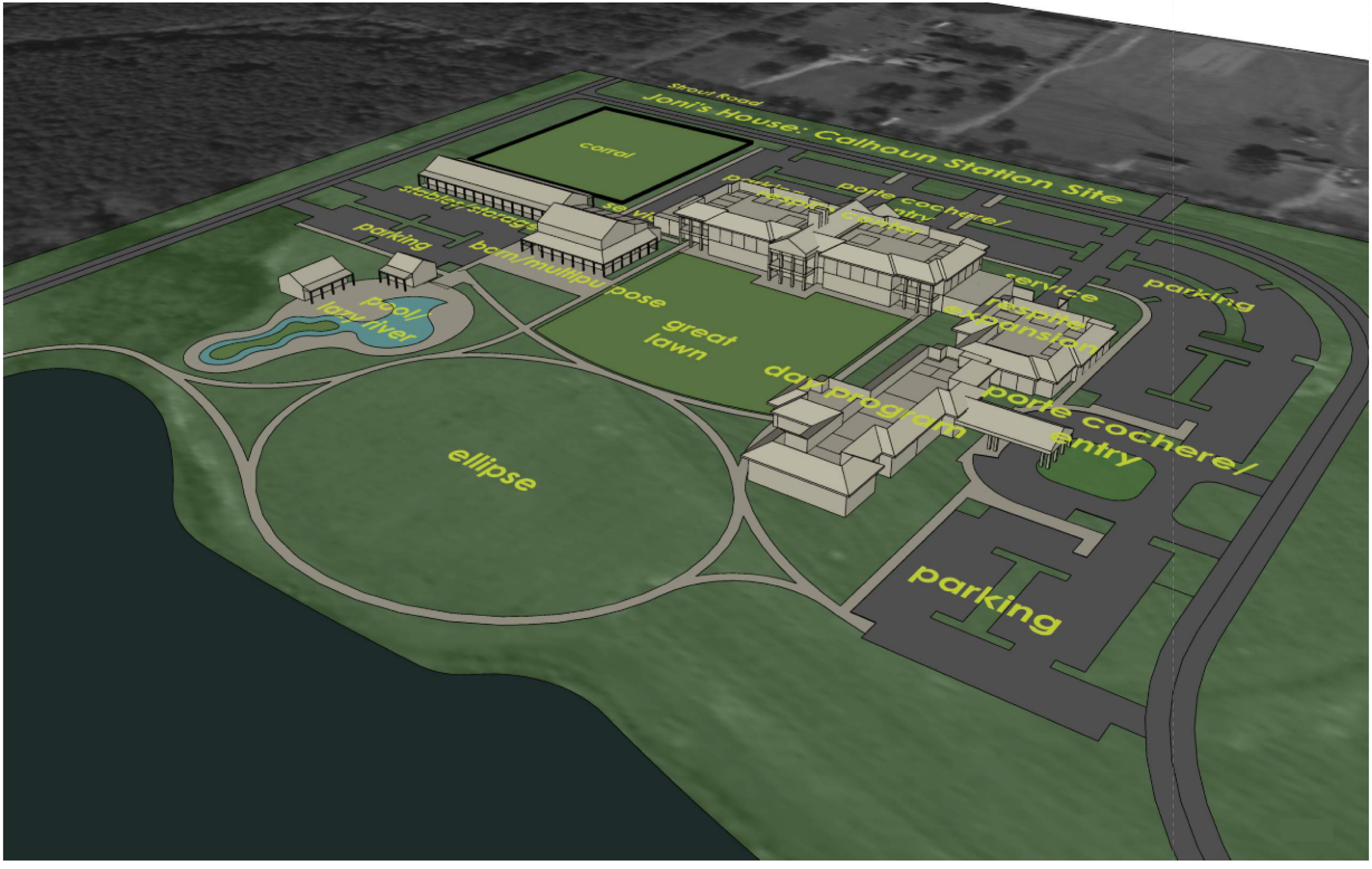
Project No	21165
Date	5 May 2023
Revisions	Rev Date

AG201

Ste Signage



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Project No	21165
Date	5 May 2023
Revisions	Rev Date

AG101

Site Massing

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Joni's House

Calhoun Station Pky & Stout Rd/ Gluckstadt

Package Number

Planning & Zoning Submittal

Project No	21165
Date	5 May 2023
Revisions	Rev Date

AG102

MP & Respite Center

05/03/23 12:32:42 PM
J:\21165 Joni's House\10 Drawings, Models\01 Working\21165 Joni's House R22.rvt

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Architecture
Interiors
Planning

One Jackson Place
Suite 250
188 East Capitol Street
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161 Lameuse Street
Suite 201
Biloxi, MS 39530
p 228.374.1409

dalepartners.com

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Joni's House

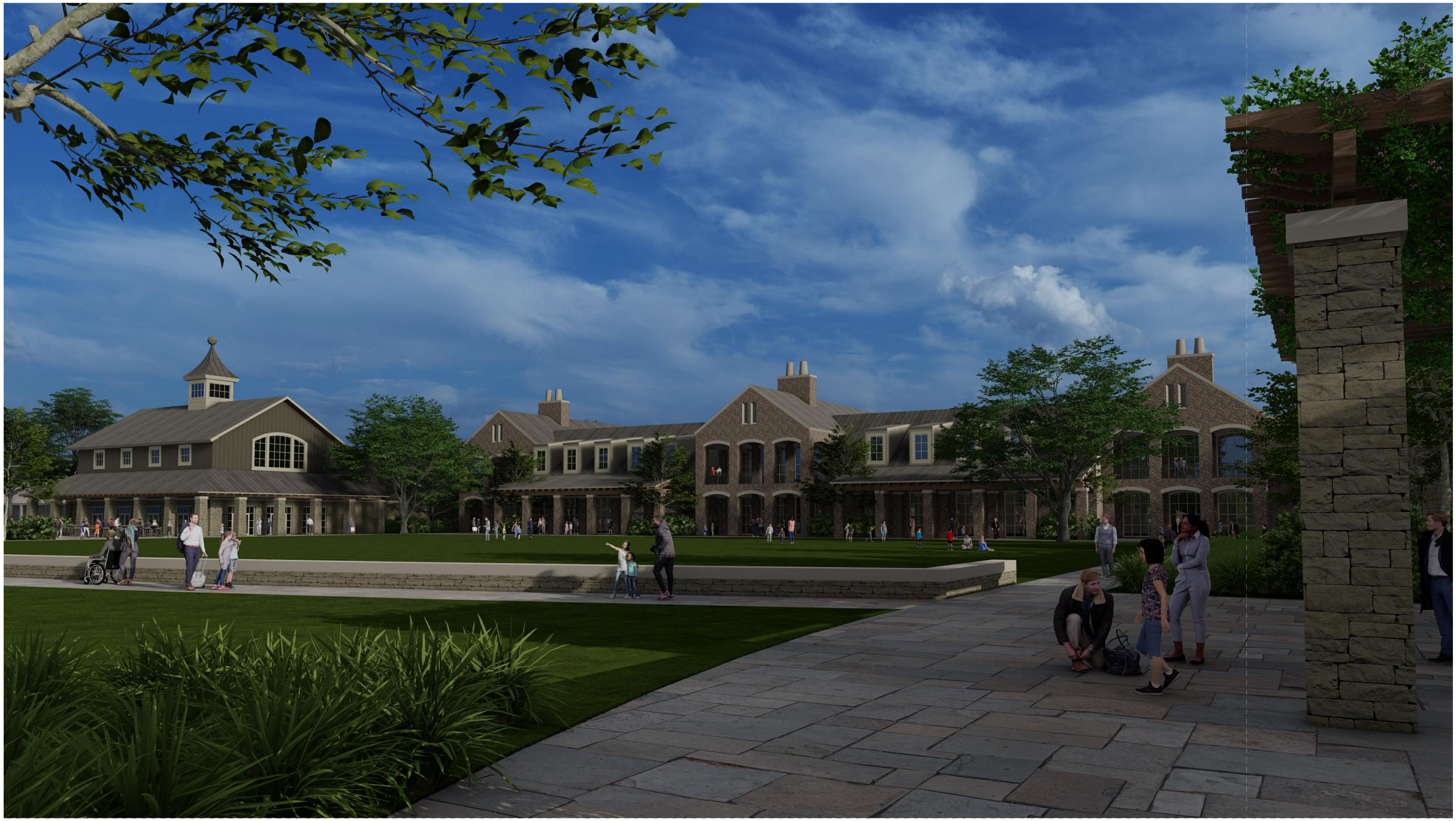
Calhoun Station Pky & Stout Rd/ Gluckstadt

Planning & Zoning Submittal

Project No	21165
Date	5 May 2023
Drawn	Author
Checked	Checker
Revisions	Rev Date

AG103

Respite Center View 1



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Architecture
Interiors
Planning

One Jackson Place 250
188 East Capitol Street
Jackson, MS 39201
p 601.352.5411

161 Lameuse Street 201
Biloxi, MS 39530
p 228.374.1409

dalepartners.com

Not For Construction

Consultant Logo

Joni's House

Calhoun Station Pky & Stout Rd/ Gluckstadt

Package Number

Planning & Zoning Submittal

Project No	21165
Date	5 May 2023
Revisions	Rev Date

AG104

Respite Center View 2

05/03/23 12:32:43 PM
J:\21165 Jonis House\10 Drawings, Models\01 Working\21165 Jonis House R22.rvt

DALE BAILEY
AN ASSOCIATION

Architects

One Jackson Place 250
188 East Capitol Street
Jackson, MS 39201
p 601.352.5411

201 Park Court Suite B
Ridgeland, MS 39157
p 601.790.9432

161 Lameuse St. Suite 201
Biloxi, MS 39530
p 228.374.1409

dalebaileyplans.com

Not For Construction

Joni's House

Calhoun Station Pky& Stout Rd/ Gluckstadt

Planning & Zoning Submittal

Project No	21165
Date	5 May 2023
Revisions	Rev Date

AG201

Ste Signage

City of Gluckstadt

Application for Variance

Subject Property Address: Home 2 Calhoun Station Parkway
Parcel #: 083E-21-006

Owner: Sunny Sethi
Address:

Applicant: Sunny Sethi
Address: Bellamore Development
1554 W. Peace St. Canton, MS

Phone #: 601.613.1188
E-Mail: sethi@jackiesinternational.com

Phone #: 601.613.1188
E-Mail: sethi@jackiesinternational.com

Current Zoning District: C-2
Acreage of Property (If applicable): 2.35 ac
Current Use of Property: Commercial

Requirements of Applicant:

1. Letter demonstrating how the requested Variance will comply with or otherwise satisfy the requirements for granting a Variance pursuant to Section 804.01 of the Zoning Ordinance.
2. Copy of written legal description.
3. Additional items may be requested depending on the nature and status of the proposed development or property.
4. $ 250.00 fee required for processing

Requirements for Granting Variances: (Section 804.01, Zoning Ordinance)

(a). Applicant shall demonstrate that special conditions and circumstances exist which are peculiar to the land, structure, or building involved and which are not applicable to other lands, structures, or buildings in the same district.

(b). Applicant shall demonstrate that the literal interpretation of this Ordinance would deprive the applicant's rights commonly enjoyed by other properties in the same district under the terms of this Ordinance.

(c). Applicant shall demonstrate that granting the Variance will not confer on the applicant any special privilege that is denied by this Ordinance to other lands, structures, or buildings in the same zoning district.

Applicant shall be present at the Planning and Zoning Commission meeting and Mayor and Board of Alderman meeting. Documents shall be submitted thirty (30) days prior to the Planning and Zoning Commission meeting.

Applicant is responsible for complying with all applicable requirements of the Zoning Ordinance.

By signing this application, it is understood and agreed that permission is given to the Zoning Administrator to have a sign erected on subject property, giving notice to the public that said property is being considered for a dimensional variance.

Applicant Signature

April 30, 2023
Date

Property Owner Signature

April 30, 2023
Date

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110

May 1, 2023

Hilton Home 2 & Springhill

Variance Request; hotel heights & parking count

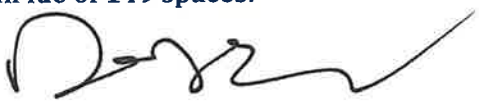
To secure the premium brands (Hilton & Marriot) for the Germantown Village development, we are required to build a minimum of 90 rooms per property. As the lot sizes are limited, we need to exceed the 3 story restriction. We will be able to remain under the 40' height requirement as the first floor will be 12' in height and the upper floors will be 9' each.

The hotels we are developing are limited service vs Full Service (no on site restaurants). Typically in most municipalities select service hotels are 1 parking space per room plus 10% additional for employees.

Home 2 = 91rooms x 1/room = 91 + 10% = 100 parking spaces (121 provided) in lue of 136 spaces.

Springhill = 90 rooms x 1/room = 90 + 10% =99 parking spaces

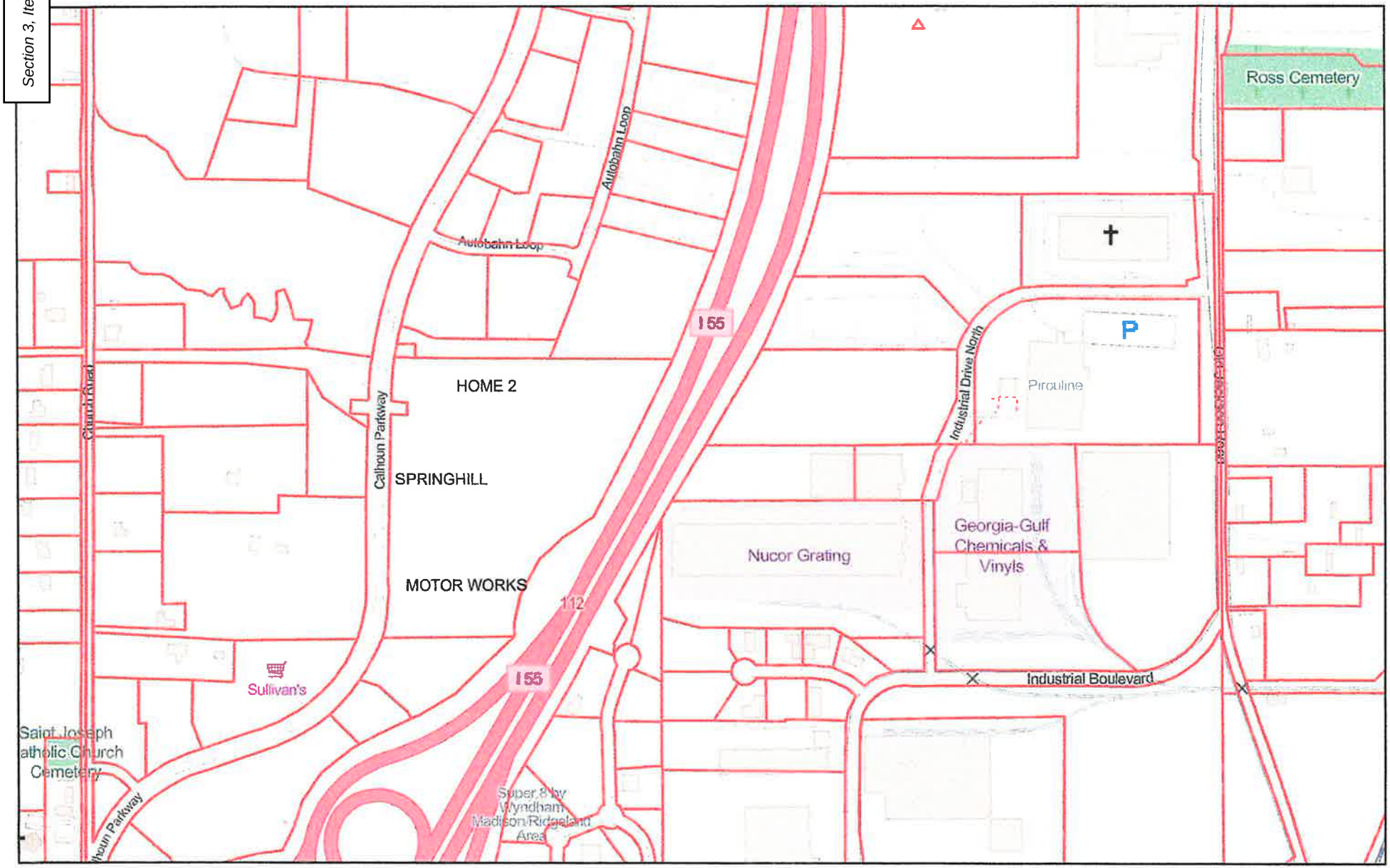
Office 3000sf / 225 = 13.5 parking spaces = 113 parking spaces required (128 provided) in lue of 149 spaces.



Thank you

Daniel Wooldridge

Edit Title Here



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0 0.1 0.2 0.4 km

CMPDD
Madison County GIS

BOOK 3578 PAGE 594 DOC 01 TY @
INST # 834758 MADISON COUNTY MS.
This instrument was filed for
record 3/09/18 at 1:14:17 PM
RONNY LOTT, C.C. BY: ILB D.C.

Prepared by and return to:
Giddens Law Firm, PLLC
Attorneys at Law
385 Edgewood Terrace Drive
Jackson, MS 39206
(601) 373-4647

WARRANTY DEED

FOR AND IN CONSIDERATION of the sum of Ten Dollars ($10.00), cash in hand paid, and other good and valuable considerations, the receipt and sufficiency of all of which is hereby acknowledged, we,

Dr. S. L. Sethi and Raksha Sethi
1554 W Peace Street
Canton, MS 39046
Telephone: (601) 855-0146

do hereby sell, convey and warrant unto

R & S Holdings, LLC.
1554 W Peace Street
Canton, MS 39046
Telephone: (601) 855-0146

12 00 (2) #601

the following described property located and situated in Madison County, Mississippi, being more particularly described as follows, to-wit:

Indexing Instructions:
SW 1/4 Sec 21, T8N, R2E Madison Co., MS

SEE ATTACHED EXHIBIT "A"

BOOK 3578 PAGE 595

THIS CONVEYANCE is subject to all easements, restrictive covenants, affecting the above described property.

AD VALOREM taxes for the current year shall be assumed by the Grantee herein.

WITNESS THE SIGNATURE of the Grantors this 6th day of March, 2018.

S. L. Sethi

Dr. S. L. Sethi

Raksha Sethi

Raksha Sethi

STATE OF MISSISSIPPI

COUNTY OF HINDS

PERSONALLY appeared before me, the undersigned authority in and for the State and County aforesaid, on this 6th day of March, 2018, within my jurisdiction, the within named Dr. S. L. Sethi and Raksha Sethi, who acknowledged that he/she/he executed the above and foregoing instrument of writing on the date listed above.

Christie Cowart

NOTARY PUBLIC

STATE OF MISSISSIPPI NOTARY PUBLIC ID # 31103 CHRISTIE COWART Commission Expires April 24, 2021 MADISON COUNTY

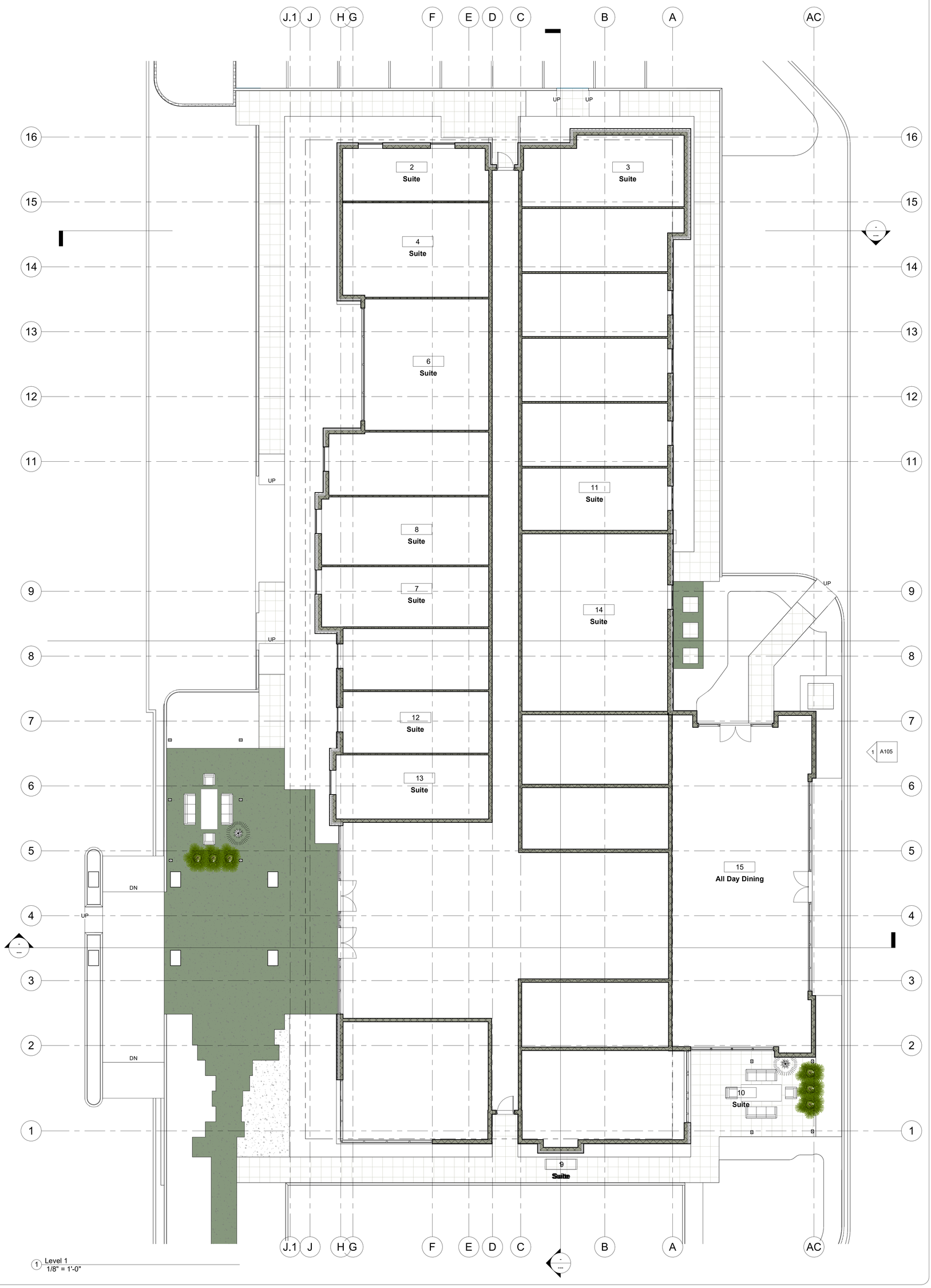
My Commission Expires: April 24, 2021

BOOK 3578 PAGE 596
###

EXHIBIT "A"

A parcel of land lying and situated in the SW ¼ of Section 21, Township 8 North, Range 2 East, Madison County, Mississippi being more particularly described as follows: Commence at a 2" iron pipe representing the SE corner of Section 21, Township 8 North, Range 2 East, Madison County, Mississippi and run thence S 90 degrees 00 minutes 00 seconds W for a distance of 3341.44 feet to a point; thence run N O degrees 00 minutes 00 seconds E for a distance of 1310.87 feet to an iron pin at the intersection of the westerly line of that parcel described in Book 2768 at page 443 and southerly line of the survey description in Exhibit A in Book 539 at page 863, said iron pin being the Point of Beginning of the parcel herein described. From the Point of Beginning run thence S 89 degrees 44 minutes 15 seconds W for a distance of 614.57 feet to the easterly line of that parcel described in Book 2549 at Page 206; thence run northerly along said easterly line for the following calls:

Northeasterly along the arc of a curve to the left having a radius of 812.00 feet, a delta angle of 18 degrees 21 minutes 54 seconds, a chord bearing of N 9 degrees 18 minutes 10 seconds E, a chord length of 259.16 feet and an arc length of 260.27 feet for a distance of 260.27 feet to a concrete right of way monument; thence N 0 degrees 10 minutes 34 seconds E for a distance of 744.83 feet to a point; thence northeasterly along the arc of a curve to the right having a radius of 1950.00 feet, a delta angle of 0 degrees 51 minutes 26 seconds; a chord bearing of N 0 degrees 36 minutes 16 seconds E, a chord length of 29.17 feet and an arc length of 29.17 feet for a distance of 29.17 feet to a concrete right of way monument; thence S 88 degrees 58 minutes 01 seconds E for a distance of 75.00 feet to a concrete right of way monument; thence northeasterly along the arc of a curve to the right having a radius of 1875.00 feet, a delta angle of 1 degrees 43 minutes 08 seconds, a chord bearing of N 1 degrees53 minutes 33 seconds E, a chord length of 56.25 feet and an arc length of 56.25 feet for a distance of 56.25 feet to an iron pin; thence N 87 degrees 14 minutes 53 seconds W for a distance of 75.00 feet to a concrete right of way monument; thence northeasterly along the arc of a curve to the right having a radius of 1950.00 feet, a delta angel of 5 degrees 57 minutes 16 seconds, a chord bearing of N 5 degrees 43 minutes 44 seconds E, a chord length of 202.56 feet and an arc length of 202.56 feet for a distance of 202.56 feet to an iron pin on the north line of the survey description in Exhibit A, Book 539 at page 863; thence run N 89 degrees 43 minutes 17 seconds E along said north line for a distance of 816.42 feet to a point; thence run S 88 degrees 33 minutes 54 seconds E along said north line for a distance of 428.34 feet to an iron pin; thence run S 0 degrees 06 minutes 48 seconds W along the easterly line of said Exhibit A for a distance of 131.31 feet to an iron pin on the westerly right of way of Interstate Highway 55 per Federal Aid Project #IR- 55-2(140)111; thence in southwesterly along said right of way and along the arc of a curve to the right having a radius of 5623.58 feet; a delta angle of 4 degrees 23 minutes 17 seconds, a chord bearing of S 27 degrees 40 minutes 57 seconds W, a chord length of 430.57 feet and an arc length of 430.68 feet for a distance of 430.68 feet to a point; thence run S 29 degrees 52 minutes 35 seconds W along said right of way for a distance of 253.37 feet to an iron pin representing the northernmost corner of that parcel described in Book 2768 at page 443; thence run along the westerly line of said parcel for the following calls: S 60 degrees 36 minutes 28 seconds W for a distance of 174.92 feet to an iron pin; thence S 45 degrees 03 minutes 58 seconds W for a distance of 150.42 feet to an iron pin; thence S 28 degrees 05 minutes 45 seconds W for a distance of 185.07 feet to an iron pin; S 11 degrees 12 minutes 33 seconds W for a distance of 126.49 feet to an iron pin; thence S 0 degrees 25 minutes 28 seconds E for a distance of 65.49 feet to the Point of Beginning. This parcel contains 27.82 acres, more or less.



1 Level 1
1/8" = 1'-0"

Germantown Hilton Home-2

Calhoun Station Parkway
Gluckstadt, Mississippi

A101

REVISIONS

Section 2, Item B)

1 East
1/8" = 1'-0"

REVISIONS BY

Germantown Hilton Home–2
Calhoun Station Parkway
Gluckstadt, Mississippi

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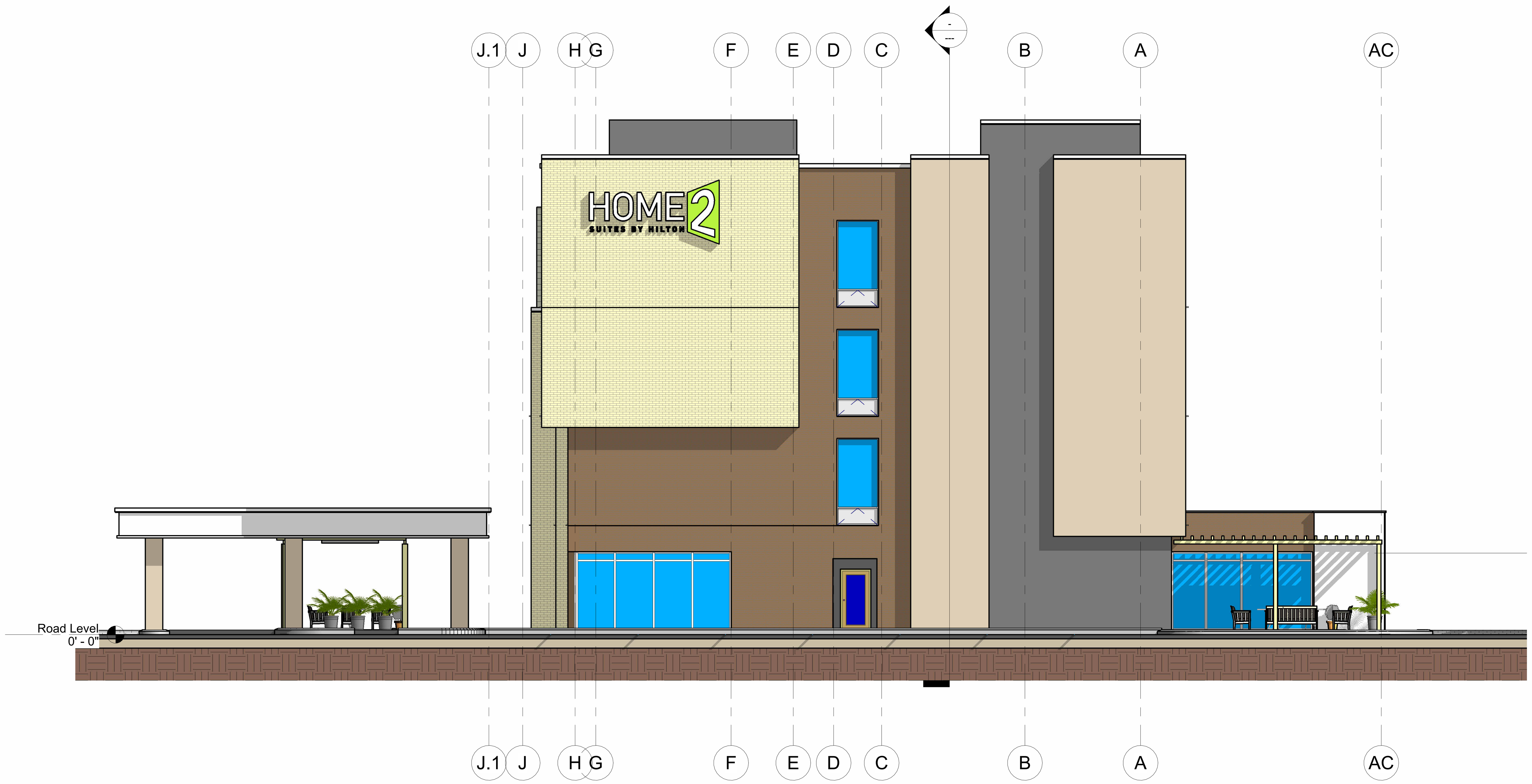

1 North
1/8" = 1'-0"

REVISIONS BY

Germantown Hilton Home-2

Calhoun Station Parkway
Gluckstadt, Mississippi

A103

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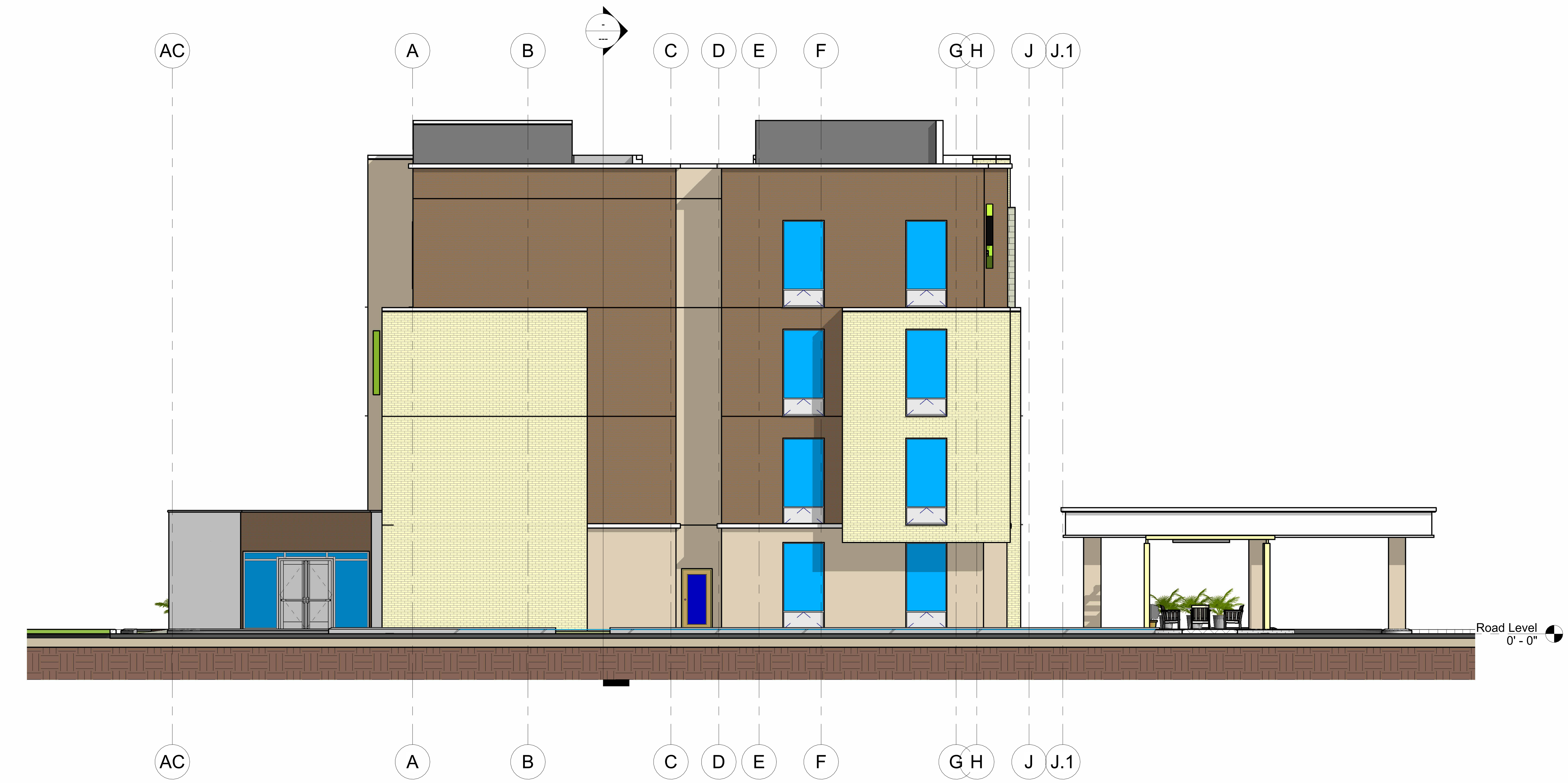

1 South
1/8" = 1'-0"

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Germantown Hilton Home-2

Calhoun Station Parkway
Gluckstadt, Mississippi

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1 West
1/8" = 1'-0"

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Germantown Hilton Home-2
Calhoun Station Parkway
Gluckstadt, Mississippi

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City of Gluckstadt

Application for Site Plan Review

Subject Property Address: Home 2. by Hilton

Parcel #: 083E-21-006

Owner: Bellamare Development
Address: 1554 W. Peace St.
Canton, MS 39046

Phone #: 601-613-1188
E-Mail: same

Applicant: Sunny Sehti
Address: 1554 W. Peace St.
Canton, MS 39046

Phone #: 601-613-1188
E-Mail: sunny.sehti@jackiesinternational.com

Current Zoning District: C-2

Acreage of Property (If applicable): 2.35ac

Use sought of Property: Hotel / Tesla Super Charging Station

Requirements of Applicant:

1. Copy of written legal description.
2. Site Plan as required in Sections 807-810 of City of Gluckstadt Zoning Ordinance
3. Color Rendering & Elevations at time of submittal

Requirements for Site Plan Submittal (Refer to Section 807, Gluckstadt Zoning Ordinance)

Nine (9) copies of the site plan shall be prepared and submitted to the Zoning Administrator. Digital copies are acceptable. Three (3) hard copies are required.

Site Plan Specifications (Section 809, Zoning Ordinance)

A. Lot Lines (property lines)
B. Zoning of the adjacent lots
C. The names of owners of adjacent lots
D. Rights of way existing and proposed streets, including streets shown on the adopted Throughfares plan
E. Access ways, curb cuts, driveways, and parking, including number of parking spaces to be provided
F. All existing and proposed easements
G. All existing and proposed water and sewer lines. Also, the location of all existing and proposed fire hydrants.
H. Drainage plan showing existing and proposed storm drainage facilities. The drainage plan shall indicate adjacent off site drainage courses and projected storm water flow rates from off-site and on-site sources.

I. Contours at vertical intervals of five (5) feet or less.
J. Floodplain designation, according to FEMA Maps.
K. Landscaped areas and planting screens.
L. Building lines and the locations of all structures, existing and proposed
M. Proposed uses of the land and buildings, if known
N. Open space and recreation areas, where required.
O. Area in square feet, and/or square acres of parcel
P. Proposed gross lot coverage in square feet
Q. Number and type of dwelling units where proposed
R. Location of sign structures and drawings. (Section 701)
S. Location of garbage dumpster and enclosure. (Section 406.06)
T. Any other data necessary to allow for a through evaluation of the proposed use, including a traffic study.

Applicant shall be present at the monthly meeting of the Planning and Zoning Commission when site plan is on the agenda for consideration; additionally, applicant shall be present at the Mayor and Board of Alderman meeting when the site plan is on the agenda for final approval.

Applicant is responsible for complying with all applicable requirements of the Gluckstadt Zoning Ordinance.

Site Plans shall be submitted by the 5:00 pm on the 5th day of the month, immediately preceding the next regular meeting of the Planning and Zoning Commission. No Exceptions.

Once submitted to the Planning & Zoning Administrator for approval to add to the Planning and Zoning Commission's agenda, no amendments or changes shall be made to the site plan. If you wish to submit changes, you will be required to resubmit by the 5th of the following month for the next monthly meeting of the Planning and Zoning Commission.

Attestation: ***By signing this application, the applicant agrees to all the terms and conditions laid out in this document. Approval of site plan is subject to Board approval.***

Sunil Sehti
Applicant Signature

3.6.23
Date

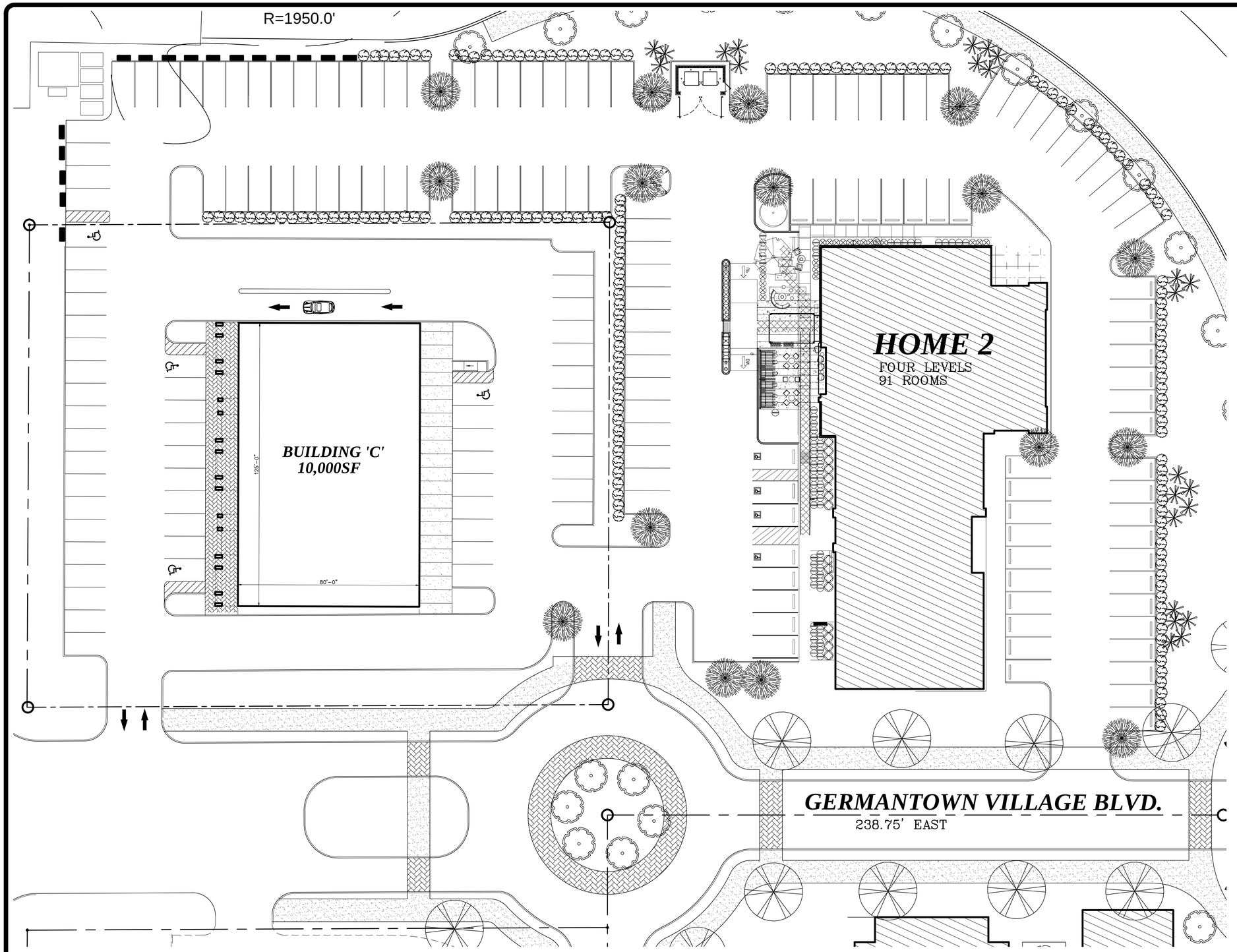
CITY OF GLUCKSTADT BUILDING DEPARTMENT
OFFICE USE ONLY

Date Received: _____

Application Complete & Approved to Submit to P&Z Board (please check):

Yes_____ **No**_____

Signature: _____
Planning & Zoning Administrator (or Authorized Representative)



1 A1.0 LANDSCAPE PLAN
SCALE: 1"=20'-0"

REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110
601-209-8665
WOOLDRIDGEARCHITECTURE@YAHOO.COM

Home 2
Calhoun Station Parkway
Gluckstadt, Mississippi

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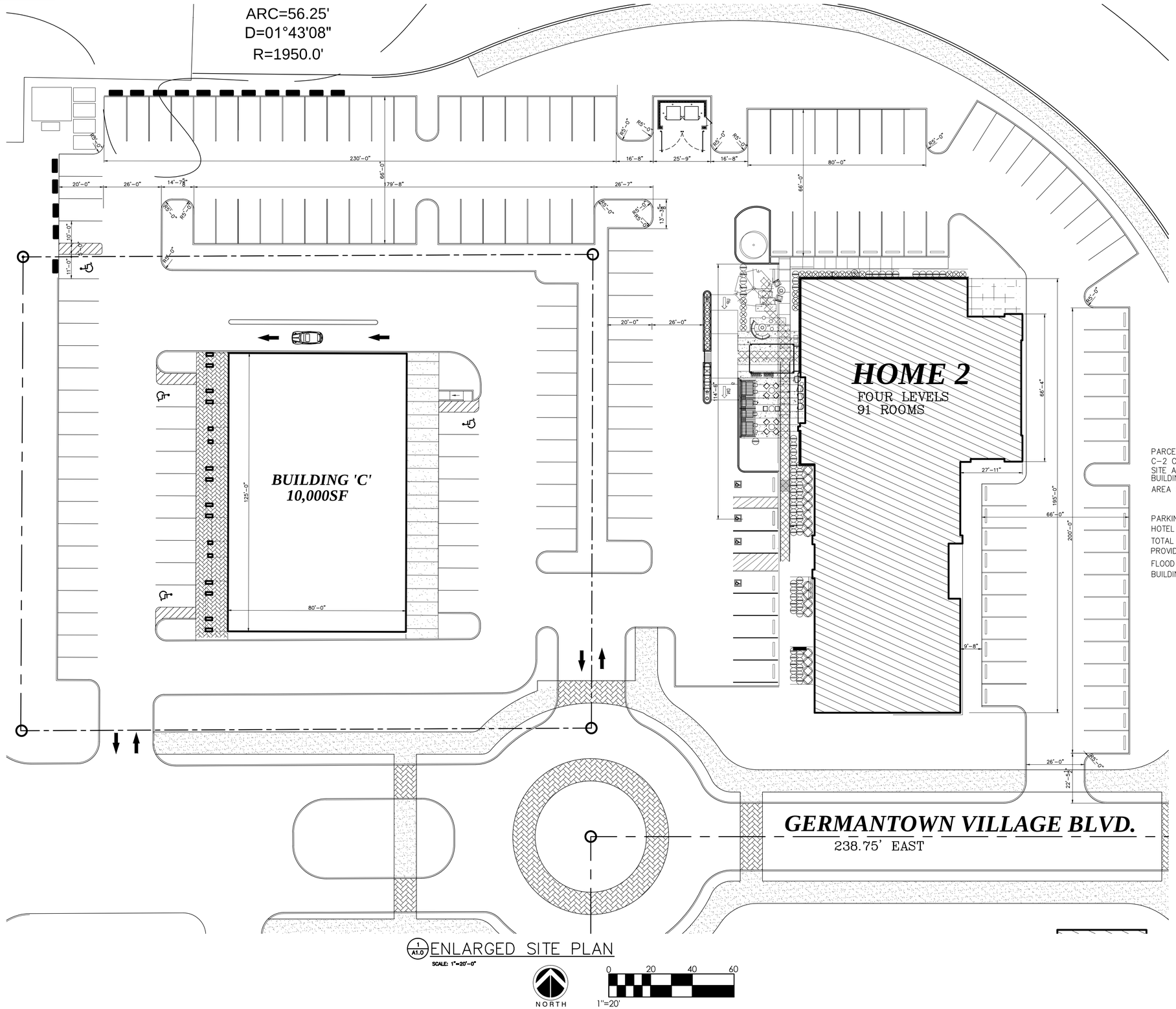
ARC=56.25'
D=01°43'08"
R=1950.0'



1 A1.0 ENLARGED SITE PLAN
SCALE: 1"=20'-0"

PARCEL# 082E-21-006
C-2 COMMERCIAL ZONING
SITE AREA 102,271SF
BUILDING AREA 15,116SF
AREA COVERAGE 14.7%

PARKING REQUIRED
HOTEL 91 ROOMS
TOTAL REQUIRED SPACES = 1.5 X 91 = 136 SPACES
PROVIDED SPACES = 121 SPACES
FLOOD ZONE 'X'
BUILDING USE; HOTEL

REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110
601-209-8665
WOOLDRIDGEARCHITECTURE@YAHOO.COM

HOME 2
Calhoun Station Parkway
Gluckstadt, Mississippi

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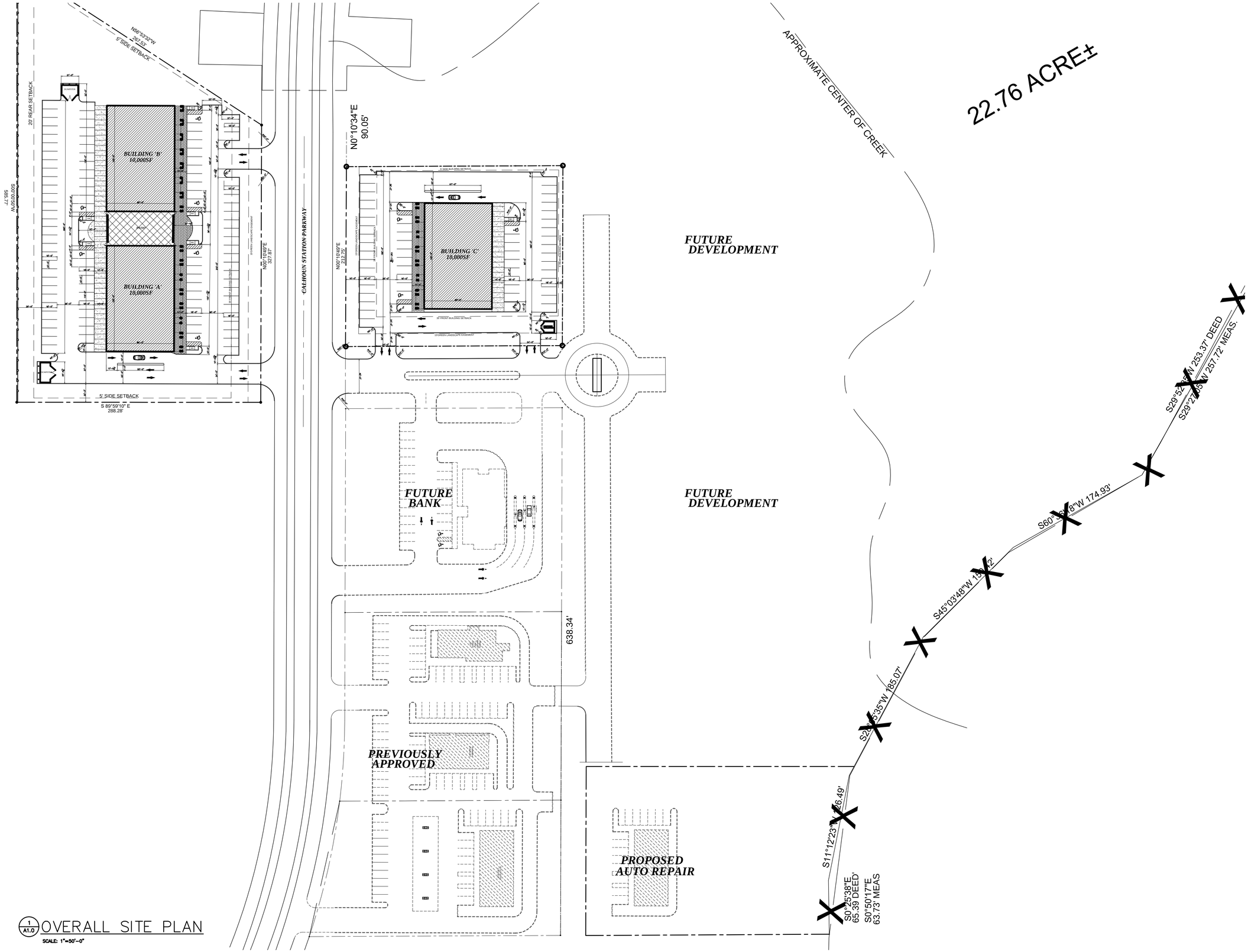

1 A1.0 OVERALL SITE PLAN

SCALE: 1"=50'-0"

REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110
601 — 209 — 6665
WOOLDRIDGEARCHITECTURE@YAHOO.COM

Germantown Retail Complex

Calhoun Station Parkway
Gluckstadt, Mississippi

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ANNETTE MARIA SCHMIDT HARROLD
(C-2)

N30°09'24"W
131.30'
5' SIDE SETBACK

N58°53'32"W
267.53'
5' SIDE SETBACK

ARC=202.56'
D=05°57'16"
R=1950.0'

FND CONC.
0.3' SOUTH, 0.3' EAST

20' REAR SETBACK

KATHLEEN & PATRICK WOOD
(R-1)

S00°00'50"W
585.77'

BUILDING 'B'
10,000SF

BUILDING 'A'
10,000SF

RATIO

DUMPSTER

DUMPSTER ENCLOSURE

15'GREEN LANDSCAPE EASEMENT

35' FRONT BUILDING SETBACK

N00°10'49"E
327.87'

CALHOUN STATION PARKWAY

N0°10'34"E
90.05'

DR RAKSHA SETHI
(C-2)

N89°44'15"E
255.89'

5' SIDE BUILDING SETBACK

BUILDING 'C'
10,000SF

35' FRONT BUILDING SETBACK

15'GREEN LANDSCAPE EASEMENT

N89°44'15"E
256.29'

N00°10'49"E
212.75'

5' REAR BUILDING SETBACK

N00°10'49"E
212.75'

DR RAKSHA SETHI
(C-2)

DR RAKSHA SETHI
(C-2)

1. SITE SQUARE FEET = 54,449SF
2. BUILDING SQUARE FEET = 10,000SF
3. SITE COVERAGE RATIO = 18.3%
4. PROPERTY ZONED C-2
   FRONT SETBACK = 35'
   SIDE & REAR SETBACK = 5'
   FRONT YARD LANDSCAPING = 15'
5. BUILDING USAGE = REATAIL
6. REQUIRED PARKING 10,000SF/ 220 = 46 PARKING SPACES
   PROVIDED PARKING 53 SPACES (INCLUDES 3 ADA SPACES)
   PARKING SPACE SIZE = 10'X18' (180SF) 180SF REQUIRED

5' SIDE SETBACK

S 89°59'10" E
288.28'

TUCKER WILLIAM EVERETT II
(C-2)

1. SITE SQUARE FEET = 124,199SF
2. BUILDING SQUARE FEET = 20,000SF
3. SITE COVERAGE RATIO = 16%
4. PROPERTY ZONED C-2
   FRONT SETBACK = 35'
   SIDE & REAR SETBACK = 5'
   FRONT YARD LANDSCAPING = 15'
5. BUILDING USAGE = REATAIL
6. REQUIRED PARKING 20,000SF/ 220 = 91 PARKING SPACES
   PROVIDED PARKING 100 SPACES (INCLUDES 6 ADA SPACES)
   PARKING SPACE SIZE = 10'X18' (180SF) 180SF REQUIRED

1 / A1.0 ENLARGED SITE PLAN
SCALE: 1"=30'-0"

REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110
601-209-8665
WOOLDRIDGEARCHITECTURE@YAHOO.COM

Gluckstadt Chevron
Calhoun Station Parkway
Gluckstadt, Mississippi

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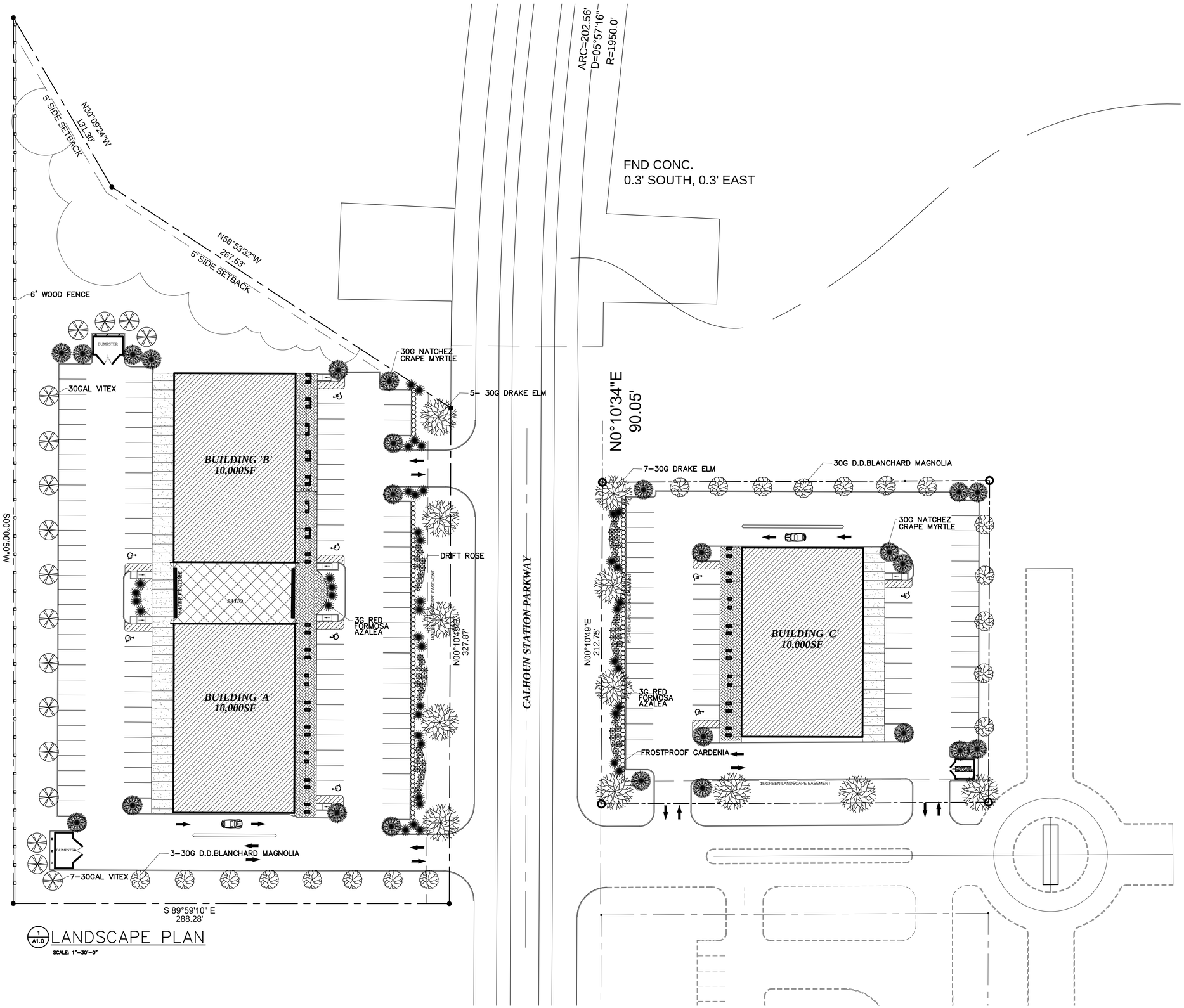

1 A1.0 LANDSCAPE PLAN

SCALE: 1"=30'-0"

REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
454 CHURCH RD. SUITE 700
MADISON, MS 39110
601-209-8665
WOOLDRIDGEARCHITECTURE@YAHOO.COM

Gluckstadt Chevron
Calhoun Station Parkway
Gluckstadt, Mississippi

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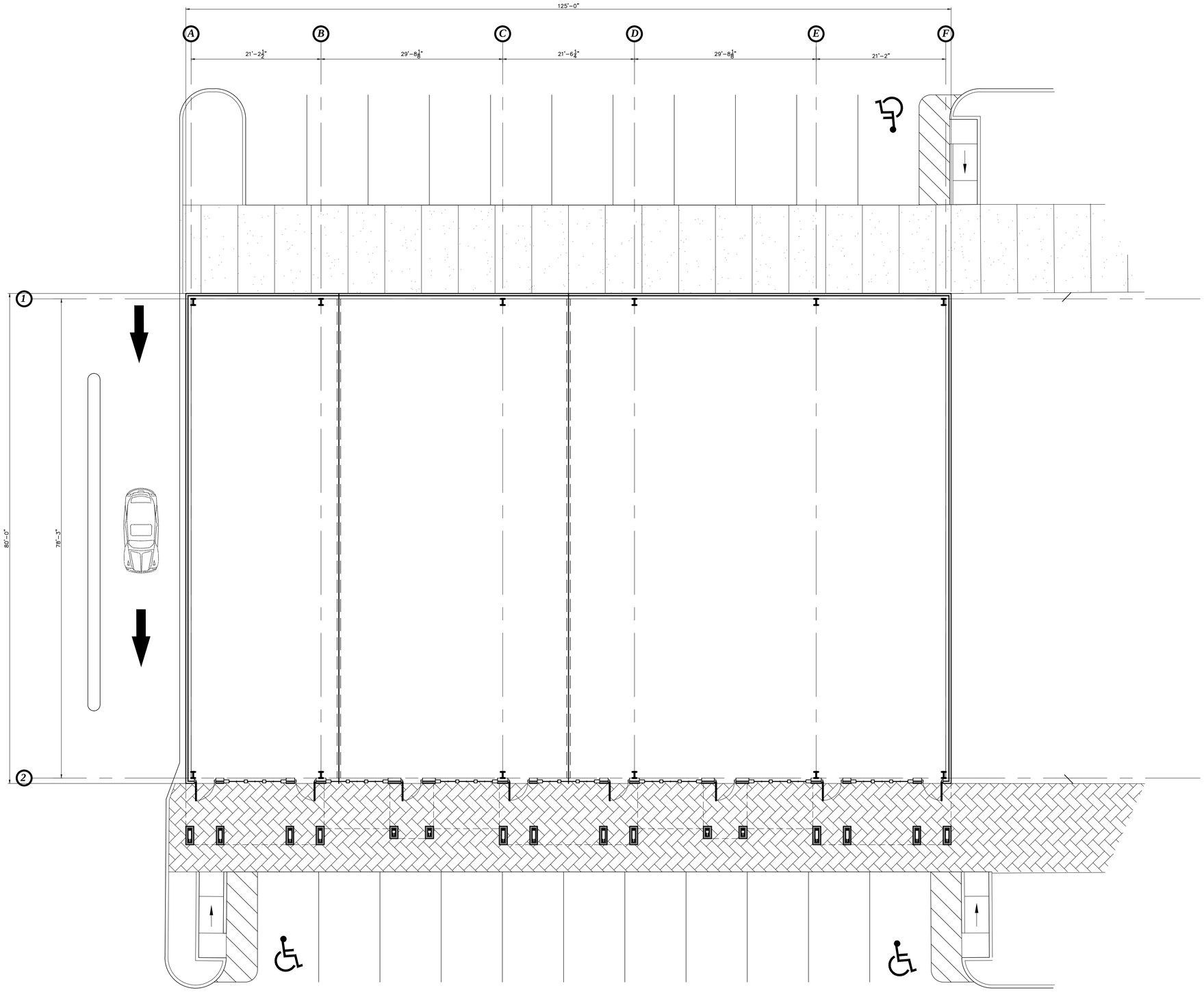

1/A1.0 FLOOR PLAN

SCALE: 1/8"=1'-0"

REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110
601-209-6655
WOOLDRIDGEARCHITECTURE@YAHOO.COM

Germantown Retail Complex
Calhoun Station Parkway
Gluckstadt, Mississippi

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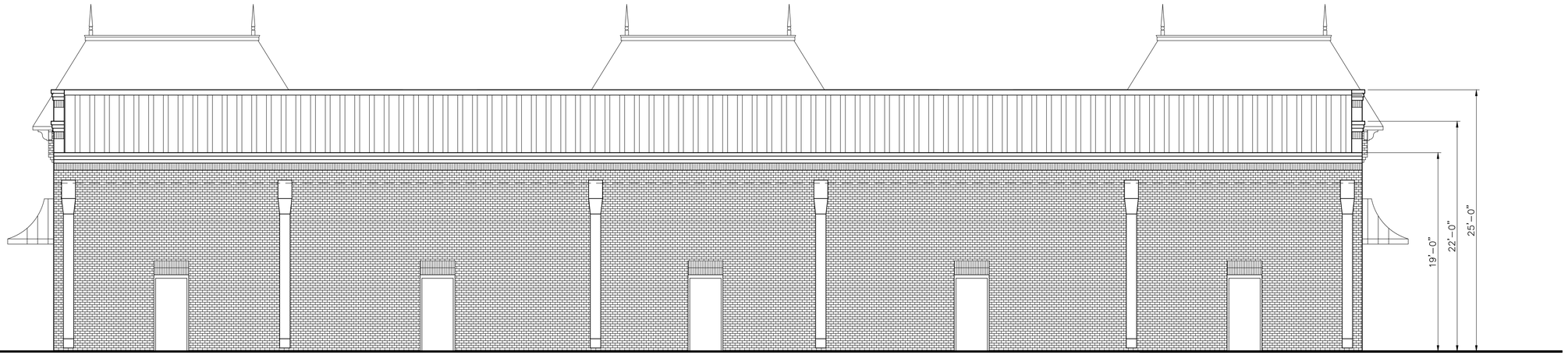
1 A1.0 FRONT ELEVATION

SCALE: 3/16"=1'-0"



1 A1.0 REAR ELEVATION

SCALE: 3/16"=1'-0"

REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110
601-209-6665
WOOLDRIDGEARCHITECTURE@YAHOO.COM

Germantown Retail Complex
Calhoun Station Parkway
Gluckstadt, Mississippi

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OF	SHEETS

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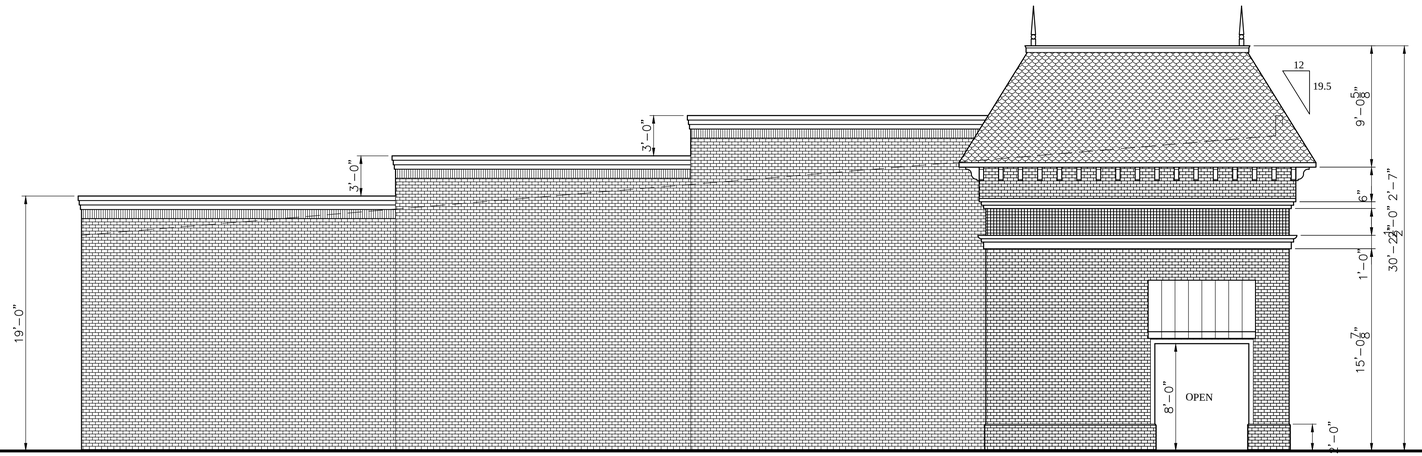
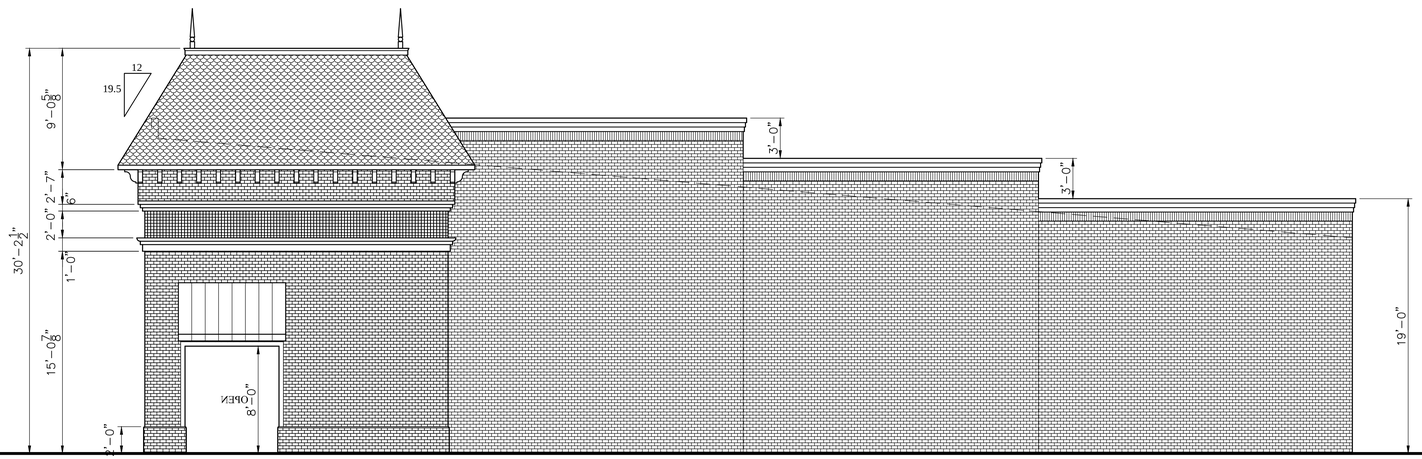


1 A1.0 SIDE ELEVATION

SCALE: 3/16"=1'-0"



1 A1.0 SIDE ELEVATION

SCALE: 3/16"=1'-0"

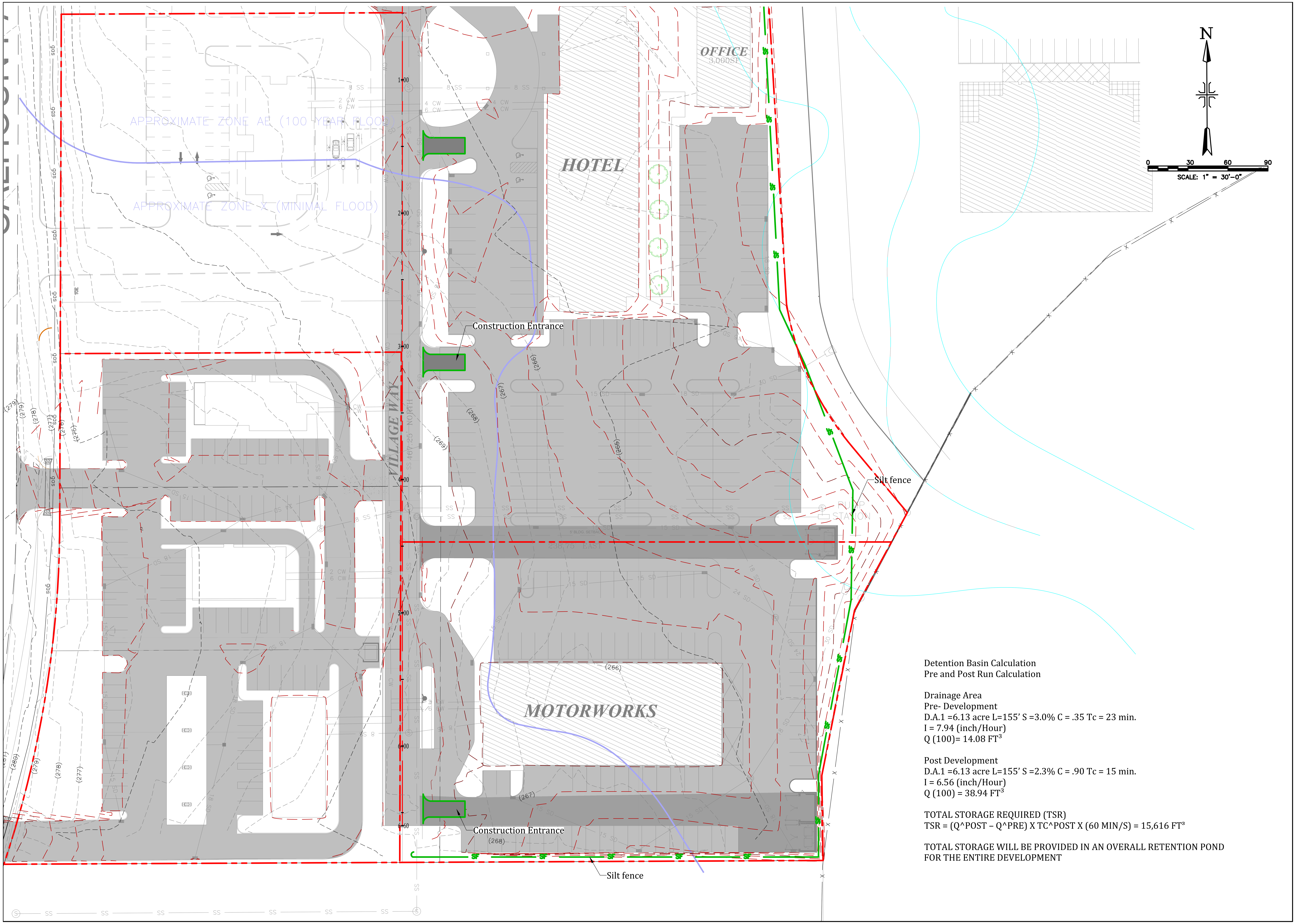
REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110
601-209-6665
WOOLDRIDGEARCHITECTURE@YAHOO.COM

Germantown Retail Complex
Calhoun Station Parkway
Gluckstadt, Mississippi

DRAWN	
CHECKED	
DATE	3/26/22
SCALE	
JOB NO.	
SHEET	A3.1
OF	SHEETS

DW 3/26/2022 2:22 PM SUNNY CALHOUN STATION MASTER SITE.dwg



Detention Basin Calculation
Pre and Post Run Calculation

Drainage Area
Pre- Development
D.A.1 =6.13 acre L=155’ S =3.0% C = .35 Tc = 23 min.
I = 7.94 (inch/Hour)
Q (100)= 14.08 FT^3

Post Development
D.A.1 =6.13 acre L=155’ S =2.3% C = .90 Tc = 15 min.
I = 6.56 (inch/Hour)
Q (100) = 38.94 FT^3

TOTAL STORAGE REQUIRED (TSR)
TSR = (Q^POST – Q^PRE) X TC^POST X (60 MIN/S) = 15,616 FT^3

TOTAL STORAGE WILL BE PROVIDED IN AN OVERALL RETENTION POND
FOR THE ENTIRE DEVELOPMENT

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4607 WOMACK
JACKSON MS 39209

MARQUES T. HALL
LICENSED PROFESSIONAL
ENGINEER
21329
STATE OF MISSISSIPPI

VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI

EROSION CONTROL PLAN - SOUTH

REVISIONS		
SYMBOL	DESCRIPTION	DATE

DRAWN	DESIGN	CHECK	SUBMIT	SCALE	PLOTTED
JLS	MH	MH	03-20-23	1" = 30'	

C-01

D=01°43'08"
R=1950.0'

Silt fence

BUILDING 'C'
10,000SF

HOTEL
FOUR LEVELS

GERMANTOWN VILLAGE BLVD.
(38.75' EAST)

Construction Entrance

Construction Entrance

Silt fence

Silt fence

Silt fence

N

0 20 40 60
SCALE: 1" = 20'-0"

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CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI

EROSION CONTROL PLAN – NORTH

REVISIONS					
SYMBOL	DESCRIPTION	DATE			

DRAWN	DESIGN	CHECK	SUBMIT	SCALE	PLOTTED
JLS	MH	MH	03-20-23	1" = 20'	

C-02

NOTES:

1. CONTRACTOR WILL BE ADVISED TO COORDINATED WITH BEAR CREAK FOR SEWER SERVICES.
2. WATER SERVICE IS PROVIDED BY BEAR CREEK.
3. DOUBLE CHECK VALVE WILL BE INSTALLED BEHIND METER.
4. SHUT OFF VALVE WILL BE INSTALLED BEHIND WATER METER.
5. ENTERGY POWER AND LIGHT WILL PROVIDE ELECTRICAL SERVICE. THE UTILITY COMPANY WILL EXTEND THE PRIMARY ELECTRICAL SERVICE TO A METER PROVIDED BY THE ELECTRICAL CONTRACTOR.
6. TELEPHONE SERVICE IS PROVIDED BY A LOCAL SERVICE, FROM AN EXISTING TERMINAL BOX. THE PHONE COMPANY WILL EXTEND THE CABLE TO THE TELEPHONE TERMINALBOARD ON THE SIDE OF THE BUILDING.

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VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI

UTILITY PLAN – SOUTH

REVISIONS					
SYMBOL	DESCRIPTION	CHECK	DESIGN	DRAWN	DATE
		MH	MH	JLS	PLOTTED
					SCALE 1" = 30'
					SUBMIT 03-20-23

C-03

D=01°43'08"
R=1950.0'

N

0 20 40 60

SCALE: 1" = 20'-0"

BUILDING 'C'
10,000SF

HOTEL
FOUR LEVELS

GERMANTOWN VILLAGE BLVD.
238.75' EAST

RETENTION AREA

RETENTION AREA

OFFICE

Install storm drain catch basin
Install storm drain manhole
Install fire hydrant
Install sanitary sewer manhole
Outlet to creek
Sta 0+51.00 LT 0.02'
Sta 2+70.53 LT 0.00'
Sta 0+50.98 LT 0.00

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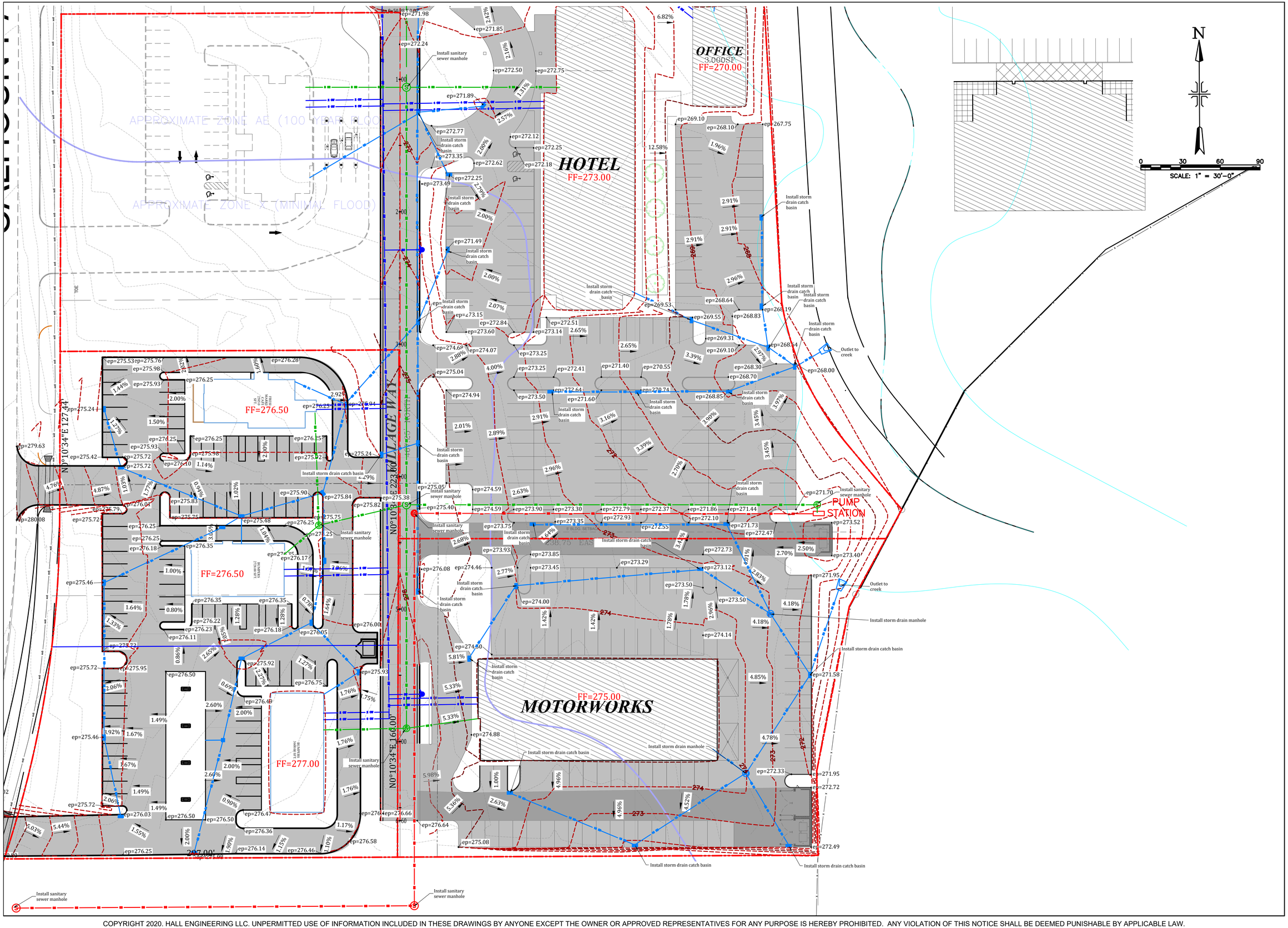
VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI

UTILITY PLAN – NORTH

REVISIONS	DATE
DESCRIPTION	
SYMBOL	

PLOTTED	
SCALE	1" = 20'
SUBMIT	03-20-23
CHECK	MH
DESIGN	MH
DRAWN	JLS

C-04



VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI

GRADING PLAN – SOUTH

REVISIONS

SYMBOL	DESCRIPTION	DATE

DRAWN	DESIGN	CHECK	SUBMIT	SCALE	PLOTTED
JLS	MH	MH	03-20-23	1" = 30'	

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ENGINEER
21329
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C-05

D=01°43'08"
R=1950.0'

N

0 20 40 60

SCALE: 1" = 20'-0"

BUILDING 'C'
10,000SF
FF=274.00

HOTEL
FOUR LEVELS
FF=271.00

GERMANTOWN VILLAGE BLVD.

238.75' EAST

DUMPSTER ENCLOSURE

Install storm drain catch basin
Install storm drain manhole
Install sanitary sewer manhole
Outlet to creek
Sta 0+51.00 LT 0.00'
Sta 2+70.53 LT 0.00'
Sta 0+59.98 LT 0.00'

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STATE OF MISSISSIPPI

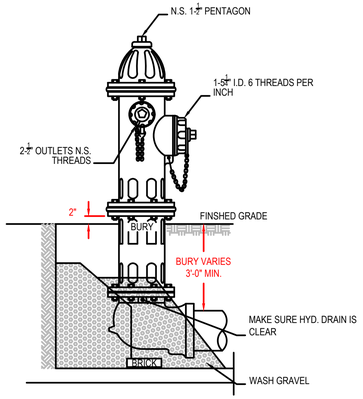
VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI

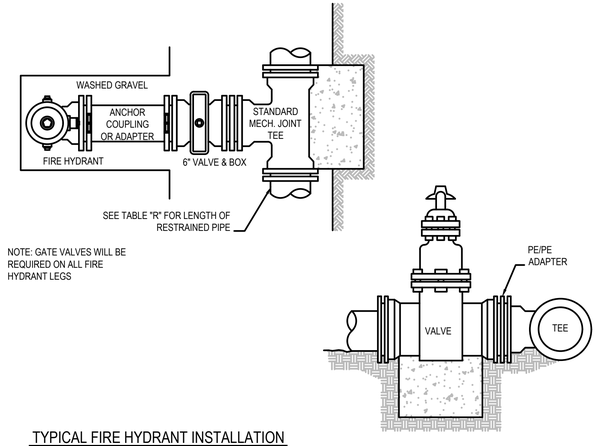
GRADING PLAN – NORTH

REVISIONS					
SYMBOL	DESCRIPTION	DATE			

DRAWN	DESIGN	CHECK	SUBMIT	SCALE	PLOTTED
JLS	MH	MH	03-20-23	1" = 20'	

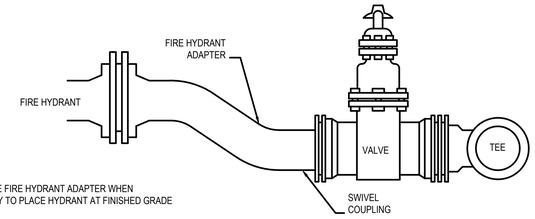
C-06





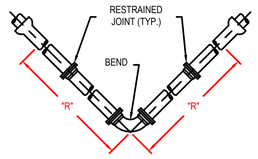
NOTE: GATE VALVES WILL BE REQUIRED ON ALL FIRE HYDRANT LEGS

TYPICAL FIRE HYDRANT INSTALLATION
SCALE: N.T.S.



NOTES: USE FIRE HYDRANT ADAPTER WHEN NECESSARY TO PLACE HYDRANT AT FINISHED GRADE

FIRE HYDRANT ADAPTER
SCALE: N.T.S.

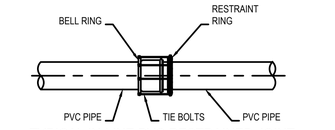


PIPE DIAMETER	"R" FOR 11¼° BEND	"R" FOR 22½° BEND	"R" FOR 45° BEND	"R" FOR 90° BEND	"R" FOR DEAD END
8"	3'	6'	12'	29'	25'
12"	4'	8'	17'	42'	37'
16"	5'	11'	23'	55'	49'
18"	6'	12'	25'	61'	55'
24"	8'	16'	33'	80'	73'
30"	10'	20'	41'	99'	90'

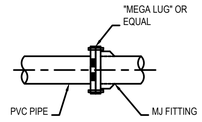
NOTES:
1. RESTRAINED JOINT PIPE SHALL BE USED AT ALL BENDS.
2. THE LENGTH OF RESTRAINED PIPE ON EACH SIDE OF THE BEND SHALL BE NOT LESS THAN THE "R" DISTANCES.
3. ALL JOINTS WITHIN THE DISTANCE "R" ESTABLISHED ABOVE SHALL BE RESTRAINED.
4. ALL PIPE IN CASINGS SHALL BE RESTRAINED, BUT PIPE LENGTHS IN CASING SHALL NOT APPLY TOWARD REQUIRED RESTRAINED LENGTHS FOR ADJACENT BENDS.
5. RESTRAINED JOINT LENGHTS WERE CALCULATED BASED ON DIPRA THRUST RESTRAINT GUIDELINES UNDER THE FOLLOWING CONDITIONS:
   - LAYING CONDITION - TYPE 3
   - SOIL DESIGNATION - CLAY 2
   - DEPTH OF COVER - 3.5'
   - DESIGN PRESSURE - 150 PSI
   - SAFETY FACTOR - 1.5

   IF ANY OF THESE ASSUMPTIONS SIGNFICANTLY DIFFER FROM THE LAYING CONDITIONS, NEW THRUST RESTRAINT CALCULATIONS SHOULD BE PERFORMED.
6. FOR BENDS IN THE VERTICAL PLANE INCREASE THE "R" DISTANCE BY A FACTOR OF 1.75.

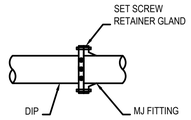
RESTRAINED JOINT DETAL
SCALE: N.T.S.



TYPICAL IN-LINE PVC RESTRAINED JOINT
SCALE: N.T.S.

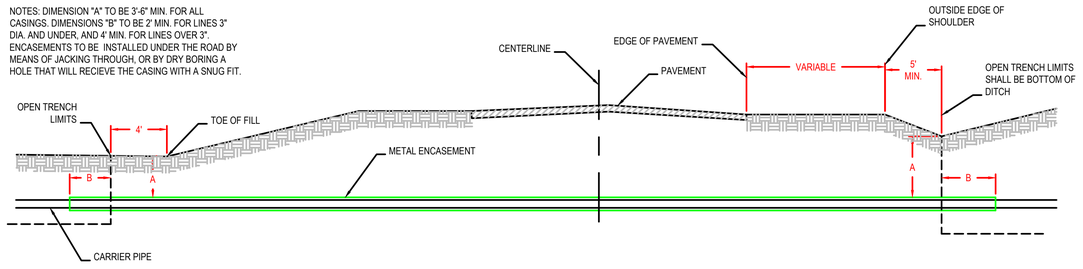


TYPICAL PVC RESTRAINED JOINT AT MJ FITTING
SCALE: N.T.S.

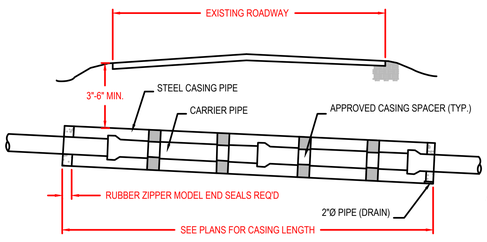


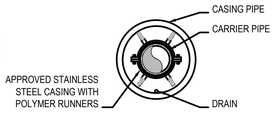
TYPICAL DI RESTRAINED JOINT AT MJ FITTING
SCALE: N.T.S.

NOTES: DIMENSION "A" TO BE 3'-6" MIN. FOR ALL CASINGS. DIMENSIONS "B" TO BE 2' MIN. FOR LINES 3" DIA. AND UNDER, AND 4' MIN. FOR LINES OVER 3". ENCASEMENTS TO BE INSTALLED UNDER THE ROAD BY MEANS OF JACKING THROUGH, OR BY DRY BORING A HOLE THAT WILL RECIEVE THE CASING WITH A SNUG FIT.



CROSS SECTION OF CONDUIT CROSSING
SCALE: N.T.S.

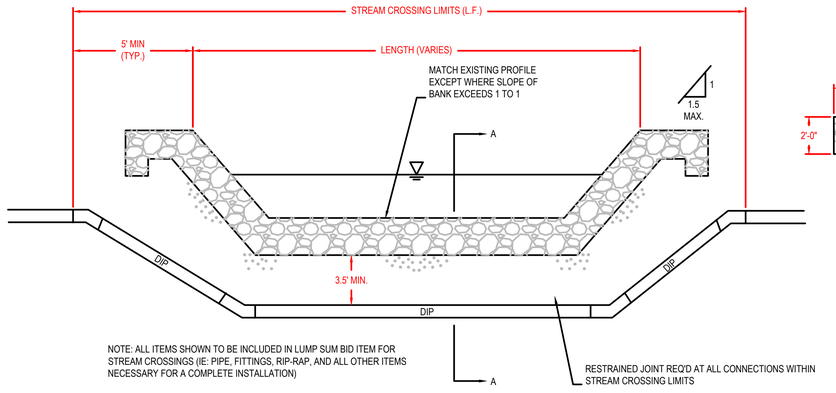




PIPE IN CASING END VIEW

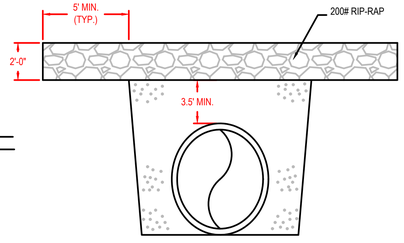
NOTES
1. SPACE CASING SPACERS ACCORDIND TO PIPE OR SPACER MANUFACTURE'S RECOMMENDATIONS OR 2 PER SECTION OF PIPE, WHICHEVER IS GREATEST, PLUS 1 WITHIN 2 FEET OF EACH END OF CROSSING.
2. PUSH OR PULL THE CARRIER PIPE THROUGH THE CASING SO THAT THE CARRIER JOINTS ARE ALWAYS COMPRESSED.

CASING SPACER DETAIL
SCALE: N.T.S.



NOTE: ALL ITEMS SHOWN TO BE INCLUDED IN LUMP SUM BID ITEM FOR STREAM CROSSINGS (IE: PIPE, FITTINGS, RIP-RAP, AND ALL OTHER ITEMS NECESSARY FOR A COMPLETE INSTALLATION)

ELEVATION



SECTION A-A

STREAM CROSSING
SCALE: N.T.S.

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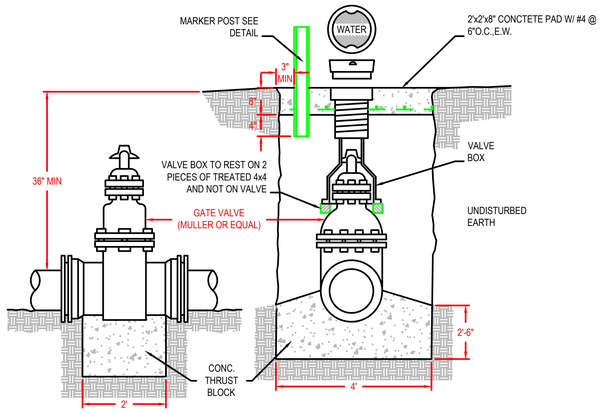
VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI
CONSTRUCTION DETAILS

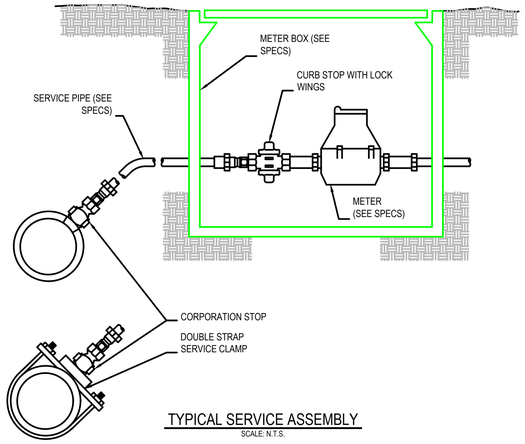
REVISIONS				PLOTTED	
SYMBOL	DESCRIPTION	CHECK	DATE	SCALE	N.T.S.
		DESIGN	MH	SUBMIT	03-20-23
		DRAWN	JLS	CHECK	MH

C-07



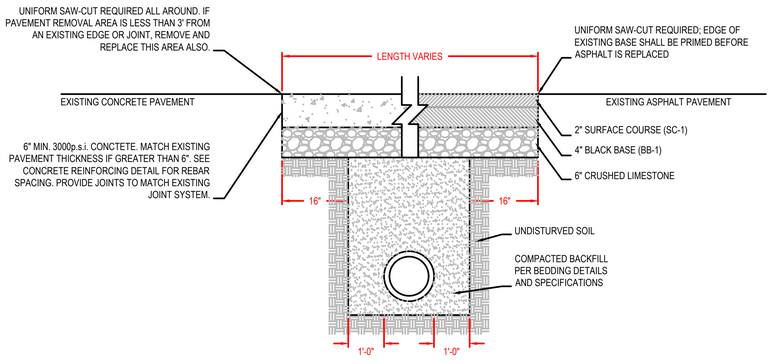
GATE VALVE & BOX

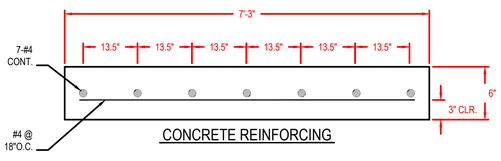
SCALE: N.T.S.



TYPICAL SERVICE ASSEMBLY

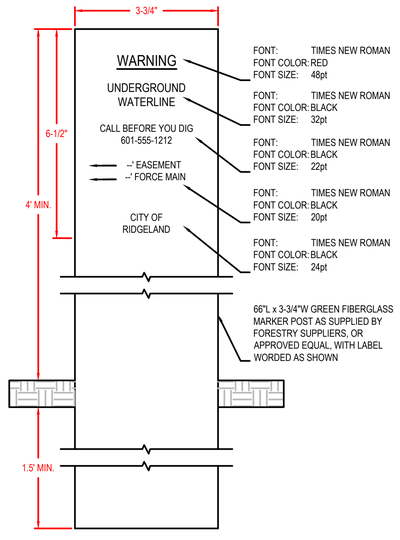
SCALE: N.T.S.





STREET REPAIR OF OPEN CUT

SCALE: N.T.S.



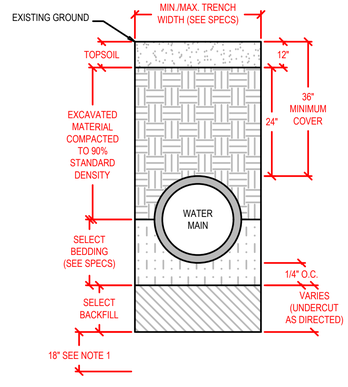
MARKER POST

SCALE: N.T.S.

NOTE:

1) DEWATERING REQUIRED TO THIS LEVEL (MIN.). THE CONTRACTOR SHALL MAINTAIN WATER LEVEL TO A LEVEL OF 18" OR GREATER BELOW THE UNDERCUT DEPTH OR THE TRENCH SUBGRADE, WHICHEVER IS DEEPER, BEFORE PIPE PLACEMENT WILL BE ALLOWED.

2) SEE SPECIFICATIONS FOR COMPACTION REQUIREMENTS AND MIN/MAX TRENCH WIDTH



TRENCH DETAIL

SCALE: N.T.S.

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ENGINEER
21329
STATE OF MISSISSIPPI

VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI
CONSTRUCTION DETAILS

REVISIONS					
SYMBOL	DESCRIPTION	DATE			

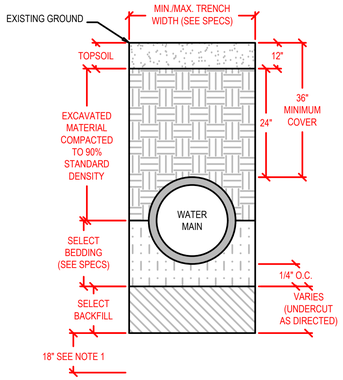
DRAWN	JLS	SCALE	N.T.S.
DESIGN	MH	SUBMIT	03-20-23
CHECK	MH	PLOTTED	

C-08

NOTE:

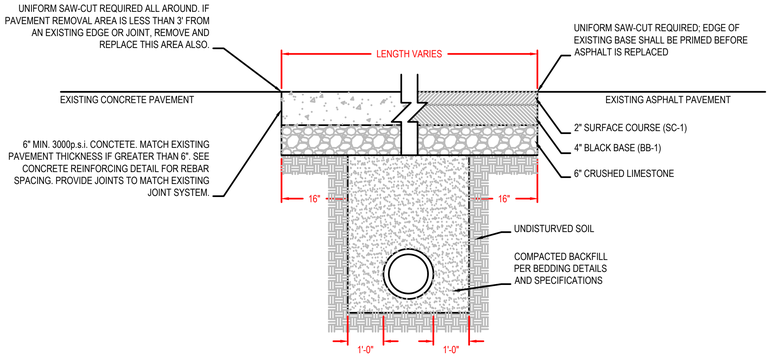
1) DEWATERING REQUIRED TO THIS LEVEL (MIN.). THE CONTRACTOR SHALL MAINTAIN WATER LEVEL TO A LEVEL OF 18" OR GREATER BELOW THE UNDERCUT DEPTH OR THE TRENCH SUBGRADE, WHICHEVER IS DEEPER, BEFORE PIPE PLACEMENT WILL BE ALLOWED.

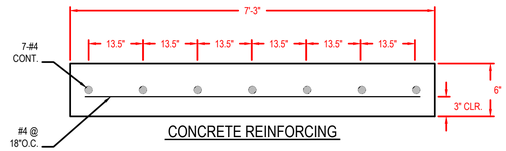
2) SEE SPECIFICATIONS FOR COMPACTION REQUIREMENTS AND MIN/MAX TRENCH WIDTH



TRENCH DETAIL

SCALE: N.T.S.

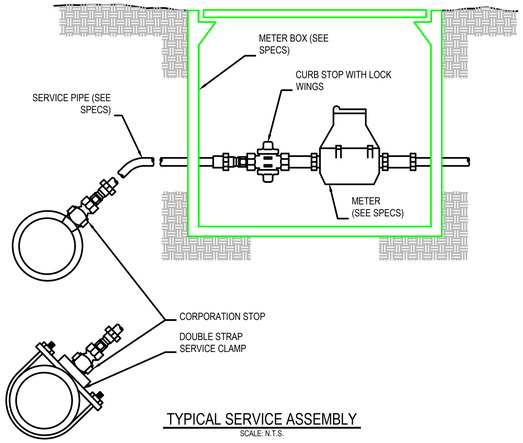




CONCRETE REINFORCING

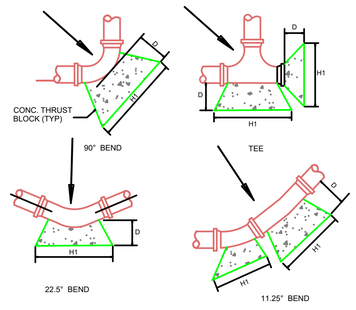
STREET REPAIR OF OPEN CUT

SCALE: N.T.S.



TYPICAL SERVICE ASSEMBLY

SCALE: N.T.S.

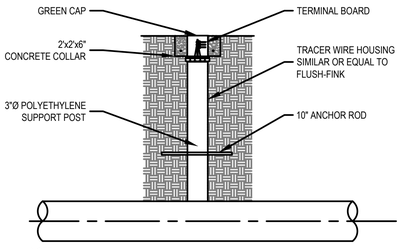


NOTES:
1. ARROWS INDICATE DIRECTION OF THRUST.
2. THRUST BLOCKS TO BEAR AGAINST UNDISTURBED EARTH.
3. THRUST BLOCKS TO BE CONCRETE WITH A MINIMUM 3000 PSI COMPRESSIVE STRENGTH.

TABLE OF DIMENSIONS FOR CONCRETE THRUST BLOCKS

SIZE OF PIPE	TAPPING SLEEVES TEES AND PLUGS					90° BENDS					45° BENDS					22.5° BENDS					11.25° BENDS				
	H1	H2	V	D	CU.FT	H1	H2	V	D	CU.FT	H1	H2	V	D	CU.FT	H1	H2	V	D	CU.FT	H1	H2	V	D	CU.FT
2" & 2-1/4"	18"	10"	12"	12"	1.00	18"	10"	12"	12"	1.00	18"	8"	12"	12"	1.50	18"	6"	12"	18"	1.50	18"	6"	12"	18"	1.50
3" & 4"	24"	12"	18"	12"	2.25	24"	12"	18"	12"	2.25	24"	10"	18"	12"	1.60	24"	10"	18"	18"	1.60	24"	10"	18"	18"	1.60
6"	24"	16"	18"	18"	3.50	24"	16"	18"	18"	4.05	24"	15"	18"	18"	3.20	24"	16"	18"	18"	3.20	24"	16"	18"	18"	3.20
8"	36"	16"	18"	18"	5.05	36"	16"	18"	24"	7.30	30"	15"	18"	18"	3.95	24"	16"	18"	24"	3.40	24"	16"	18"	18"	3.40
10"+	45"	24"	18"	18"	7.10	45"	24"	18"	24"	10.15	36"	21"	18"	18"	4.60	24"	16"	18"	24"	4.60	24"	16"	18"	24"	4.60
12"	54"	34"	36"	36"	13.40	54"	34"	36"	36"	18.15	36"	30"	36"	36"	9.60	24"	24"	24"	24"	6.10	24"	24"	24"	24"	6.10
16"	66"	36"			22.50	66"	36"			2.90	48"	30"			17.0	30"	24"			9.10	30"	24"			9.10
18"		36"										40"				42"	24"				42"	24"			
20"		42"										48"				48"	24"				48"	24"			
24"		48"										72"				72"	24"				72"	24"			
30"		60"																							
36"		66"																							

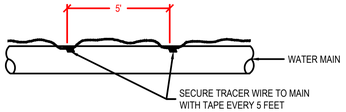
THRUST BLOCKS



NOTE:
1. THE CONTRACTOR SHALL CONNECT THE TRACER TAPE TO THE TERMINAL BOARD.
2. HOUSINGS TO BE LOCATED AT EACH FIRE HYDRANT.
3. TRACER WIRE HOUSING SHALL BE CONSIDERED AN ABSORBED COST ITEM.

TRACER WIRE HOUSING

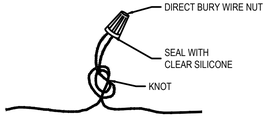
SCALE: N.T.S.



NOTE:
TRACER WIRE SHALL BE CONSIDERED AN ABSORBED COST ITEM.

TRACER WIRE INSTALLATION

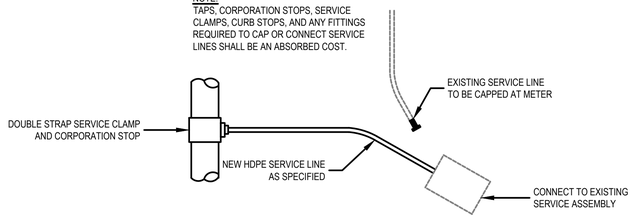
SCALE: N.T.S.



DIRECT BURY WIRE NUT CONNECTION

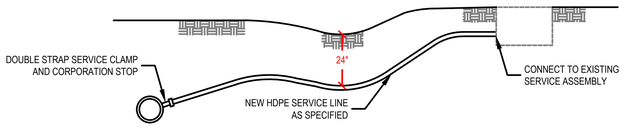
SCALE: N.T.S.

NOTE:
TAPS, CORPORATION STOPS, SERVICE CLAMPS, CURB STOPS, AND ANY FITTINGS REQUIRED TO CAP OR CONNECT SERVICE LINES SHALL BE AN ABSORBED COST.



RECONNECTION, PLAN VIEW

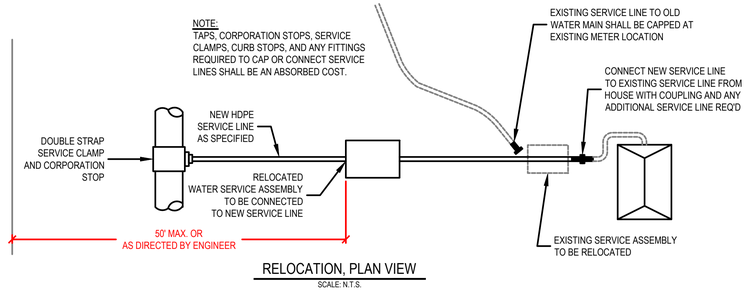
SCALE: N.T.S.



RECONNECTION, PROFILE VIEW

SCALE: N.T.S.

NOTE:
TAPS, CORPORATION STOPS, SERVICE CLAMPS, CURB STOPS, AND ANY FITTINGS REQUIRED TO CAP OR CONNECT SERVICE LINES SHALL BE AN ABSORBED COST.



RELOCATION, PLAN VIEW

SCALE: N.T.S.

TYPICAL WATER SERVICE CONNECTIONS TO NEW WATER MAIN

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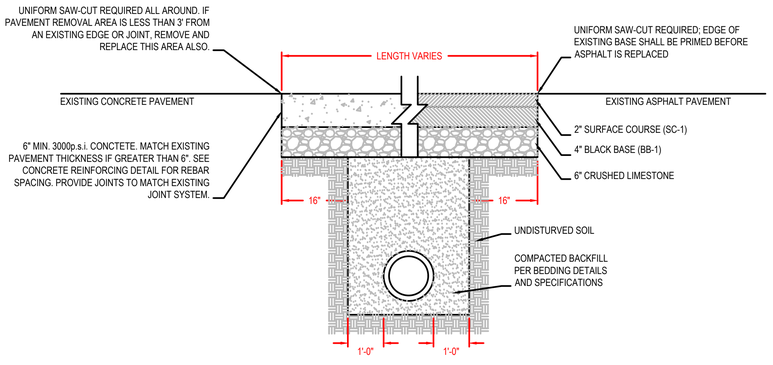
REGISTERED PROFESSIONAL
ENGINEER
21329
STATE OF MISSISSIPPI

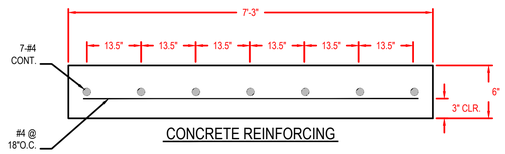
VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI

CONSTRUCTION DETAILS

REVISIONS						
SYMBOL	DESCRIPTION	DESIGN	CHECK	SUBMIT	SCALE	PLOTTED
		MH	MH	03-20-23	N.T.S.	
DRAWN	DATE					
JLS						

C-09

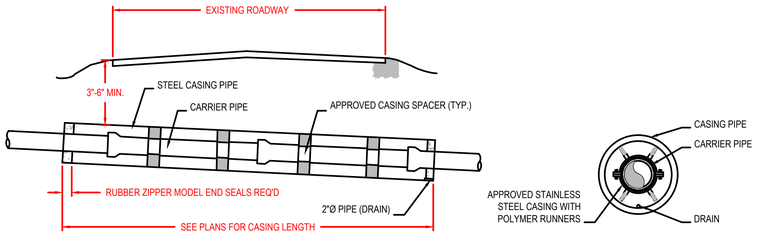




CONCRETE REINFORCING

STREET REPAIR OF OPEN CUT

SCALE: N.T.S.



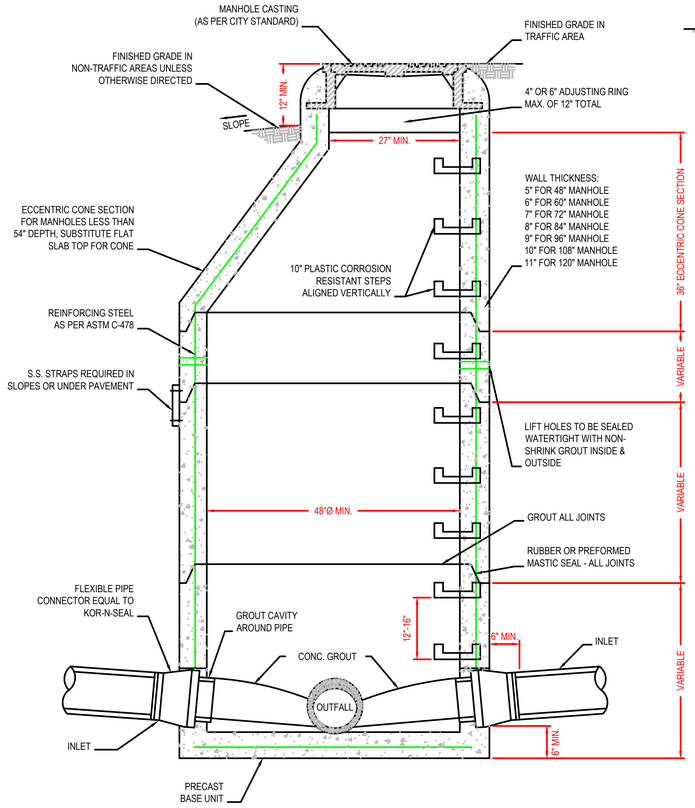
PIPE IN CASING END VIEW

NOTES

1. SPACE CASING SPACERS ACCORDIND TO PIPE OR SPACER MANUFACTURE'S RECOMMENDATIONS OR 2 PER SECTION OF PIPE, WHICHEVER IS GREATEST, PLUS 1 WITHIN 2 FEET OF EACH END OF CROSSING.
2. PUSH OR PULL THE CARRIER PIPE THROUGH THE CASING SO THAT THE CARRIER JOINTS ARE ALWAYS COMPRESSED.

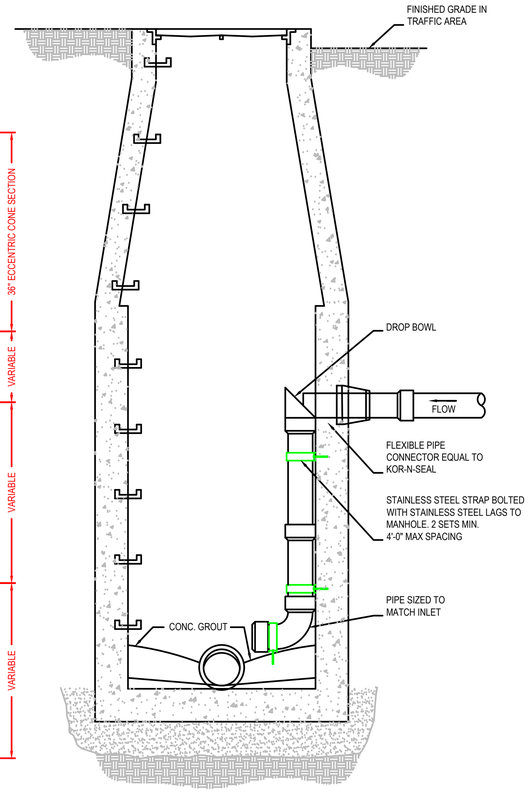
CASING SPACER DETAIL

SCALE: N.T.S.



SECTION - PRECAST CONC. MANHOLE

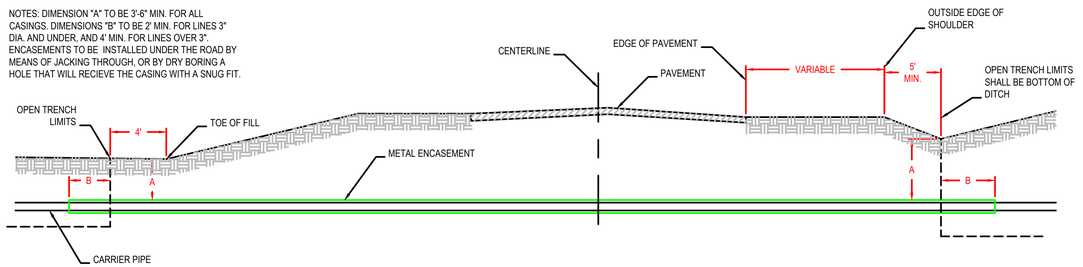
SCALE: N.T.S.



INSIDE DROP INLET

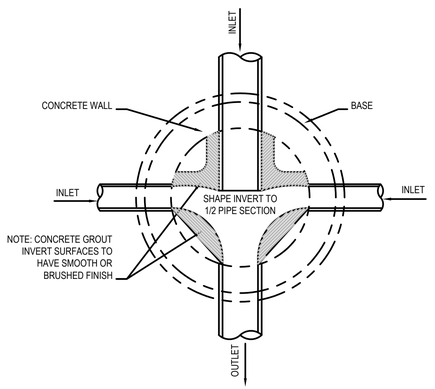
SCALE: N.T.S.

NOTES: DIMENSION "A" TO BE 3'-6" MIN. FOR ALL CASINGS. DIMENSIONS "B" TO BE 2' MIN. FOR LINES 3" DIA. AND UNDER, AND 4' MIN. FOR LINES OVER 3". ENCASEMENTS TO BE INSTALLED UNDER THE ROAD BY MEANS OF JACKING THROUGH, OR BY DRY BORING A HOLE THAT WILL RECIEVE THE CASING WITH A SNUG FIT.



CROSS SECTION OF CONDUIT CROSSING

SCALE: N.T.S.



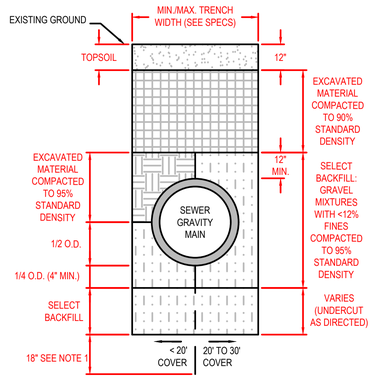
PLAN - MANHOLE FLOW CHANNELS

SCALE: N.T.S.

NOTE:

1) DEWATERING REQUIRED TO THIS LEVEL (MIN.). THE CONTRACTOR SHALL MAINTAIN WATER LEVEL TO A LEVEL OF 18" OR GREATER BELOW THE UNDERCUT DEPTH OR THE TRENCH SUBGRADE, WHICHEVER IS DEEPER, BEFORE PIPE PLACEMENT WILL BE ALLOWED.

2) SEE SPECIFICATIONS FOR COMPACTION REQUIREMENTS AND MIN/MAX TRENCH WIDTH



GRAVITY SEWER TRENCH DETAIL

SCALE: N.T.S.

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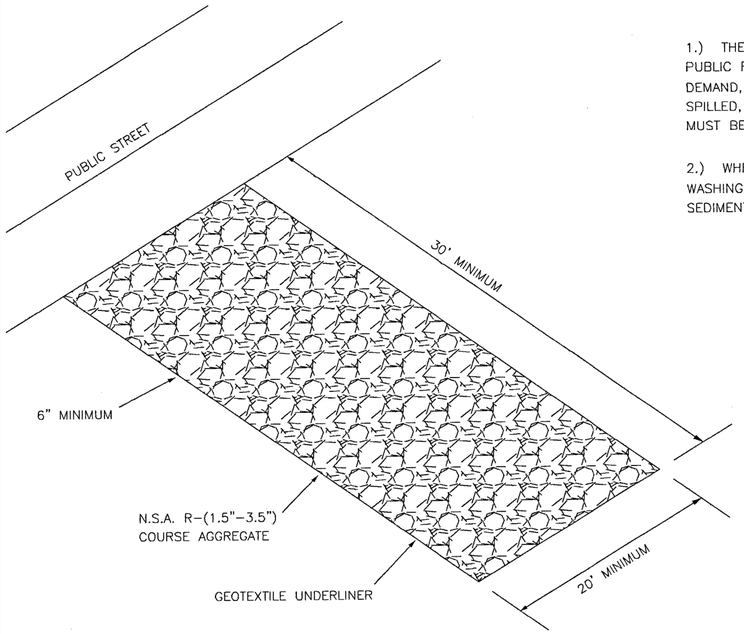
VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI

CONSTRUCTION DETAILS

REVISIONS					
SYMBOL	DESCRIPTION	DATE			

DRAWN	JLS	PLOTTED	
DESIGN	MH	SCALE	N.T.S.
CHECK	MH	SUBMIT	03-20-23

C-10



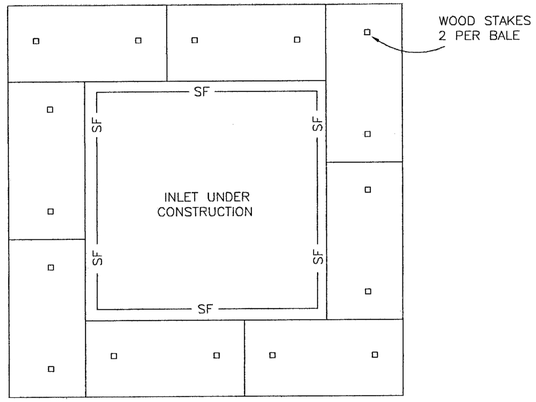
AGGREGATE PAD TEMPORARY CONSTRUCTION ENTRANCE

N.T.S.

1.) THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 1.5-3.5 INCH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEAN OUT OF ANY STRUCTURE USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES OR SITE ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

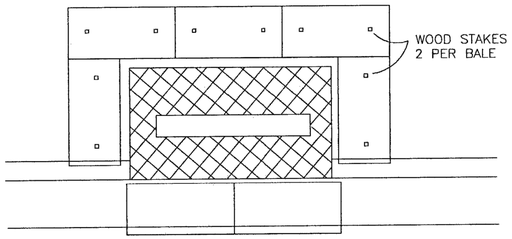
2.) WHEELS MUST BE CLEANED TO REMOVE MUD PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

NOTE:
Contractor to use wattles in place of hay bales for temporary curb inlet protection.



TEMPORARY CURB INLET PROTECTION (INLET UNDER CONSTRUCTION)

N.T.S.

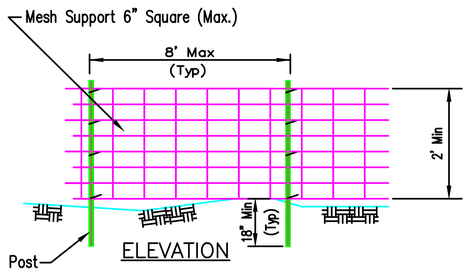


TEMPORARY CURB INLET PROTECTION (INLET COMPLETE)

N.T.S.

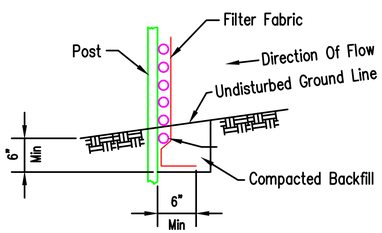
STORMWATER MANAGEMENT PLAN

1. The Contractor shall install/ implement measures as needed to take all prudent and reasonable measures otect to prproperties from damage caused by the construction.
2. The Contractor shall install all the silt fencing, wattles, sediment control ponds, drainage pipes, and rock riprap required, prior to the beginning of any stripping and / or excavation.
3. The Contractor shall maintain a minimal buffer of undisturbed areas, where practical, around the perimeter of the site. This buffer will reduce the erosion caused by wind and water and also help reduce the amount of sediment leaving the site.
4. Earth fill procedure will utilize temporary diversions to eliminate surface runoff.
5. The Contractor shall provide for protective measures for the containment of hazardous materials, including petroleum products and lubricants, etc.
6. The Contractor shall provide trash containers on site for disposal of all construction materials and prevent trash from the site from entering into the storm drainage system.
7. The Contractor shall inspect all installed erosion control measures and repair as necessary during the length of the construction at least every seven (7) days during dry periods. The Contractor shall diligently inspect and repair, within 24 hours of a rainfall event, all erosion control measures.
8. The Contractor shall maintain the erosion control measures required to assure that the storm water discharged shall be free from:
   a. Debris, oil, scum and other floating materials, other than in trace amounts;
   b. Eroded soils and other materials that will settle to form objectionable deposits in receiving waters;
   c. Suspended solids, turbidity and color at levels inconsistent with receiving waters;
   d. Chemicals in concentrations that would cause violation of the State Water Quality Criteria in the receiving waters.
9. The Contractor shall maintain adequate record keeping documenting inspection and repair of all erosion control measures installed.
10. The Contractor shall make himself familiar with the Storm Water Constuction General Permit Regulations and the "Planning and Design Manual for the Control of Erosion, Sediment and Stormwater", published by the MDEQ, Mississippi Soil & Water Commission and the USDA Soil Conservation Service.
11. This plan contains the minimum erosion control measures to be taken. The Contractor shall utilize the BMP's outlined in the above referenced material for implementation of additional measures, as required.
12. Silt fence will extend 5' beyond disturbed area and curve uphill.



FABRIC ANCHOR DETAIL

SCALE: NTS



NOTES:
1. Wires of mesh support shall be minimum gage no. 12.
2. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
3. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size of at least 30 for nonwoven and 50 for woven.
4. Fence posts shall be either wood post with a minimum cross-sectional area of 3.0 sq. in. or a standard steel post.

CONSTRUCTION SPECIFICATIONS

1. Wattles shall be placed at the toe of a slope, on the contour, and in a row with the ends of each bale tightly abutting the adjacent bales.

2. Each bale shall be entrenched in the soil a minimum of 4" and placed so the bindings are horizontal.

3. Bales shall be securely anchored in place by either two stakes or re-bars driven through the bale 12" to 18" into the ground. The first stake in each bale shall be driven toward the previously laid bale at an angle to force the bales together. Stakes shall be driven flush with the top of the bale.

4. Straw bale dikes shall be inspected frequently and after each rain event and maintenance performed as necessary.

5. All bales shall be removed when the site has been stabilized. The trench where the bales were located shall be graded flush and stabilized.

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21329
STATE OF MISSISSIPPI

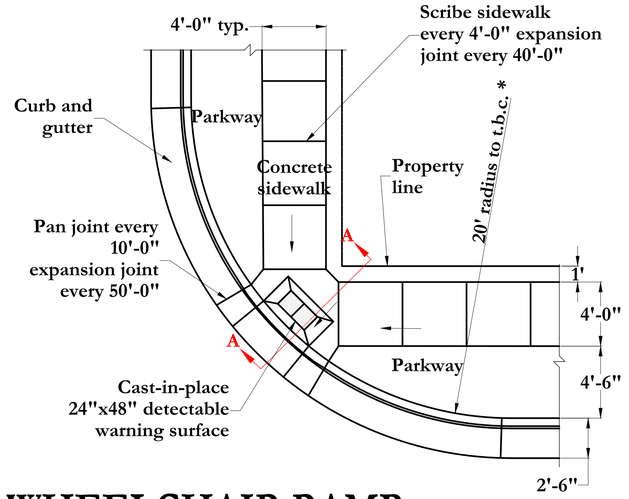
VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI

CONSTRUCTION DETAILS

REVISIONS	DATE
DESCRIPTION	
SYMBOL	

DRAWN	JLS
DESIGN	MH
CHECK	MH
SUBMIT	03-20-23
SCALE	N.T.S.
PLOTTED	

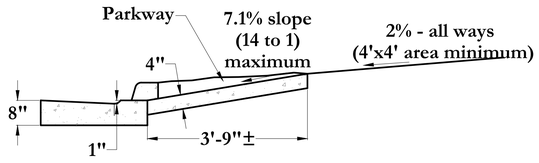
C-11



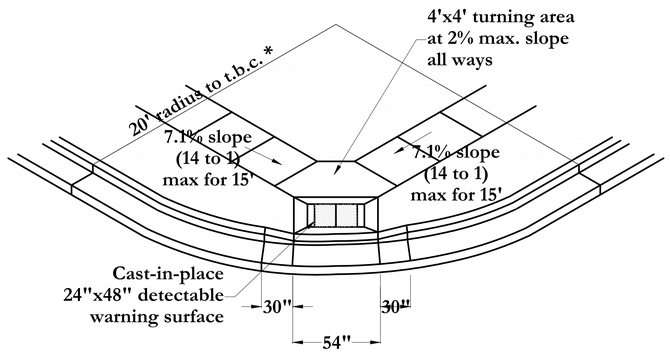
WHEELCHAIR RAMP-PEDESTRIAN ACCESS

SCALE: NONE

1
-



SECTION A



PICTORIAL VIEW

NOTES:

1. A minimum 6" depth of roadbase material or crushed gravel shall be placed to grade and compacted under handicap ramps to 95% of maximum dry density prior to placement of concrete.

2. Locate all inlet grates 2' minimum away from the pedestrian crosswalk, with all drainage intercepted before storm water crosses the crosswalk area.

3. Slopes shown are maximum slopes.

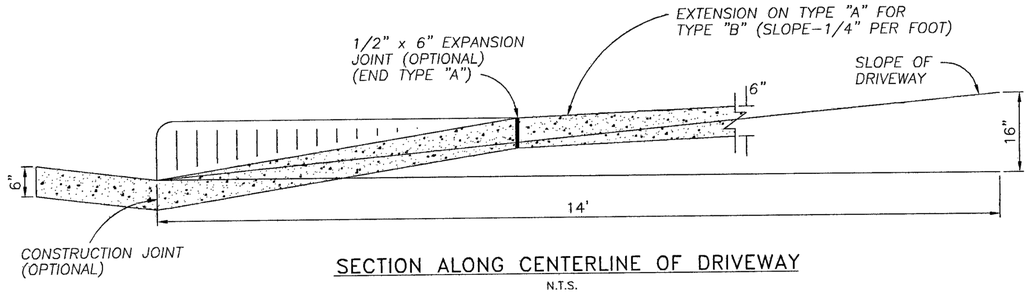
4. Expansion joints shall be constructed by placing an approved material, (typically bituminous impregnated fiberboard), the full depth of the concrete. expansion material shall be set 1/4" below the finish level of sidewalk ramp.

5. Materials, construction, and workmanship shall be in accordance with Clearfield City standards and specifications.

6. When a city roadway intersects with a UDOT road, a 35' minimum radius (or other) will be required as per UDOT requirement.

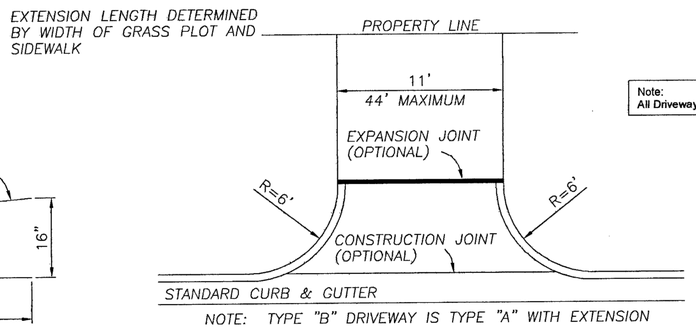
7. Detectable warning surface materials & installation must conform to "ADA cast-in-place tactile warning panels" requirements & specifications.

8. Detectable warning panels by "ADA Solutions, Inc.", color to be specified by City. (other products to be approved by City prior to installation).



SECTION ALONG CENTERLINE OF DRIVEWAY

N.T.S.

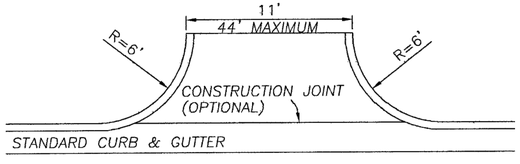


NOTE: TYPE "B" DRIVEWAY IS TYPE "A" WITH EXTENSION

TYPE "B"

N.T.S.

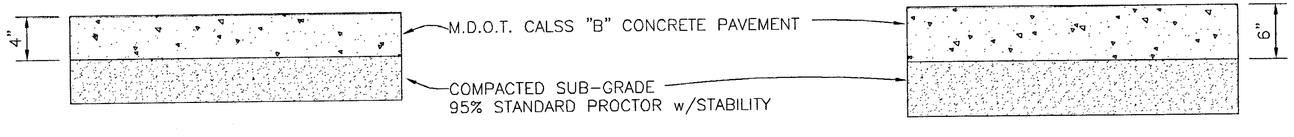
Note:
All Driveway to be 3500 psi Concrete.



TYPE "A"

N.T.S.

STANDARD DRIVEWAYS

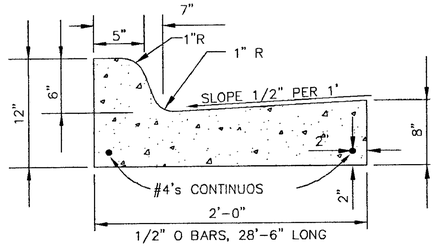


TYPICAL STANDARD-DUTY CONCRETE PAVEMENT

N.T.S.

TYPICAL HEAVY-DUTY CONCRETE PAVEMENT

N.T.S.



NOTES: 1. ALL CURBS, GUTTERS & DRIVEWAYS TO BE CONSTRUCTED OF 3000 LB. CONCRETE.
2. 2-3/4" DOWEL BARS, 15" LONG REQ'D. AT EXPANSION JOINTS. THEY SHALL BE HELD IN PLACE BY APPROVED CHAIRS OR SUPPORTS AND 1/2" EXPANSION MATERIALS.

STANDARD CURB & GUTTER

NOTE: MOUNTABLE CURB MAY BE SUBSTITUTED GRATE INLET IN CURB LINE - DF-3623

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VILLAGE OF GLUCKSTADT
CALHOUN STATION PARKWAY
GLUCKSTADT, MISSISSIPPI

CONSTRUCTION DETAILS

REVISIONS					
SYMBOL	DESCRIPTION	DESIGN	CHECK	SUBMIT	DATE
		DRAWN	DESIGN	SCALE	PLOTTED
		JLS	MH	03-20-23	N.T.S.

C-12

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

LARGE CONSTRUCTION STORM WATER GENERAL NPDES PERMIT

FOR

Gluckstadt Crossing – MSR107374
Modification

Madison County, Mississippi

July 2022

PREPARED BY:

Headwaters, Inc.
P. O. Box 2836
Ridgeland, Mississippi 39158
(601) 634-0097

HEADWATERS
NATURAL RESOURCES CONSULTING

TABLE OF CONTENTS

I. INTRODUCTION

The purpose of the Storm Water Pollution Prevention Plan (SWPPP) is to provide a site-specific description of the best management practices to prevent contamination of the site storm water flows from potential pollutants associated with construction activities. The SWPPP has been prepared for R&S Holdings, LLC, as required by the Mississippi Department of Environmental Quality (MDEQ) in compliance with the applicable regulations for coverage under the Large Construction Storm Water General NPDES Permit. Headwaters, Inc. has developed this SWPPP to be incorporated into the routine construction activities associated with the proposed site development plans. The potential sources of pollution have been identified at the site and are described in the plan. Several pollution control measures are specified in the plan to prevent contamination of storm water runoff from those sources. The plan also outlines implementation, inspection, and maintenance requirements. The erosion and sediment control practices should be monitored, and the plan revised if the quality of storm water runoff is not satisfactory.

II. SITE ASSESSMENT

A. **Location**: The overall subject property contains 31.10-acres and is located within the City of Gluckstadt, Mississippi. The property is situated in two (2) parcels positioned along Calhoun Parkway, north of Gluckstadt Road and south of Church Road. More specifically, the subject property is located within partial Section 21, Township 8 North, Range 2 East, Madison County, Mississippi. Furthermore, the subject property may also be referenced by the Global Positioning System (GPS) coordinates, N32.522832° - W90.100091°. Primary access to the property is granted along Calhoun Parkway. The current project site is centered around the ±2.91-acre parcel along the west side of Calhoun Parkway, and around a ±13.56-acre parcel east of Calhoun Parkway. The total project site included within this SWPPP contains approximately 16.47-acres (Appendix I).

B. **Soils:** Our initial review of the Madison County, Mississippi Soil Survey revealed that the soil types contained within the subject property include Calloway silt loam (CbA, CbB), Gillsburg silt loam (Gb), and Loring silt loam (LoB2, LoC2). These soil types are described within the NRCS Custom Soil Resource Report for Madison County, Mississippi included as Appendix II.

C. **Description of Work**: Phase I of the proposed project included the clearing and grubbing of the subject property. The next phase of the project will consist of the construction components of the project that will occur within the aforementioned 16.47-acre project site. The plan consists of the construction of access points, parking areas and the commercial and office space developments. Additional property is being included for the purpose of borrow material, staging and support of the development activities.

The subject property contains one (1) wetland habitat within the northcentral portion of the site. R&S Holdings, LLC received a USACE Section 404 wetland permit to impact this site referenced as MVK-2021-755. A copy of this information is included within the appendices of this report. All other wetlands and "other waters" will be avoided as part of the planned project. The adjacent "other waters" is located to the north and east of the project site but would be protected through the implementation of this erosion control plan. Any exposed soils along the perimeter of the site, specifically along the east and north would be reestablished with warm/cool season grasses accordingly and when completing the project.

Construction Access: R&S Holdings, LLC plans to utilize three (3) primary access locations to complete the planned construction. These locations will serve as the primary ingress / egress locations to gain access to the adjacent Calhoun Parkway. The site's ingress / egress locations are depicted on the plan view maps in Appendix III.

Crushed aggregate or matted areas located at each construction ingress / egress location where vehicles enter and leave the project site will provide a buffer for the deposition of mud and sediment onto the adjacent Calhoun Parkway. This will minimize pollution onto public roads or other off-site paved areas.

Temporary Sediment Basin: One (1) temporary sediment basin will be constructed along the east side of the site and upgradient from the receiving stream. The sediment basin is designed to accept storm water runoff from the site where it will be detained in accordance with Madison County and MDEQ storm water management requirements. The basin is designed to detail surface water runoff and sediment utilizing a stone filter ring and a surface faircloth skimmer system. The maintenance plan will include the removal of accumulated sediment outside the stone filter ring when the basin reaches 50% capacity or sooner. Consideration for properly working faircloth skimmer systems and general house keeping items will also be included in the maintenance plan (Appendix III).

General Storm Water Management Plan: The storm water and erosion control design will include the general maintenance of the property during and post-construction operations. Perimeter erosion controls will be installed, as needed, to prevent any secondary movement of sediment off site to adjacent habitats. Further, additional erosion controls shall be considered within low lying drainages to prevent movement of sediment off site and within receiving drains. Maintenance of these low-lying areas and discharge points will be a component of the site maintenance and general housekeeping to ensure the integrity of all erosion controls are maintained. As operations progress, exposed soils shall be graded and stabilized through acceptable erosion control practices. Exposed soils

shall be seeded with native (warm/cool season) grasses and covered to ensure germination. Other improvements to the site are not planned at this time. As a result, increased runoff rates are not anticipated with the planned project.

Overall, the proposed construction activities will expose some soil due to nature of the work being completed. Once construction activities are complete, exposed soils will be seeded and stabilized with vegetative cover. Though no runoff is anticipated, the contractor will implement perimeter BMP's that will protect the wetlands and "other waters" located off site.

D. **Potential Pollution Sources**: The most significant potential pollutants are soil particles subject to removal by storm water. Other potential pollutants subject to removal by storm water are spilled fuel and lubricants. Material may also be inadvertently tracked off-site or blown off-site when distributed by hauling equipment. The storm water which leaves the site shall meet the non-numeric limitations of being free from oil, scum, debris and other floating materials; eroded soils and other materials that will settle out of the storm water to form objectionable deposits in receiving waters; suspended solids, turbidity and color levels inconsistent with the receiving waters; chemicals in concentrations that would cause violations of the State Water Quality Criteria in the receiving waters.

E. **Non-Storm Water Solid Materials**: The on-site generation of solid materials will be minimal, and its proper disposal will be closely monitored. All solid waste will be taken off-site for proper disposal.

F. **Drainage Patterns**: Based upon our field assessments, storm water drainage on the subject property can be considered relatively good with storm water runoff flowing generally to the north and east on the east side of Calhoun Parkway, with storm water runoff flowing generally north on the parcel west of Calhoun Parkway. Storm water within the site is conveyed into the depressional, relatively flat topographic features and stream conveyances observed within the limits of the overall property boundary. Storm water conveyances across the entire site ultimately run into the unnamed tributary of Bear Creek, which serves as the primary receiving water for the entire site. The design of the project will include the construction of one (1) sediment basin on the east side of the project and adjacent to the receiving waters.

G. **Receiving Waters / Established TMDLs**: In accordance with the MDEQ 2020 303 (d) list of impaired streams, the primary receiving waters, an unnamed tributary of Bear Creek, is not listed as an impaired stream. As a result, no adverse impacts to the receiving streams are anticipated due to the planned construction and the planned erosion controls to be implemented within the site. The nearest stream listed is referenced as Little Bear Creek 105712 and is located to the east of the site flowing into Bear Creek well to the north of our project.

The TMDL's identified for Bear Creek MS431BE are Organic Enrichment/Low Dissolved Oxygen, Sediment, Total Nitrogen and Total Phosphorus. The design of the project with the implementation of the erosion control plan and the other distance from these stream reaches would reduce the potential for any further adverse impacts to these identified stream reaches.

H. Wetlands: A preliminary jurisdictional determination (PJD) was issued by USACE on October 21, 2021 covering the subject property. Furthermore, a USACE Nationwide Permit 29 has been issued (MVK-2021-755) authorizing the fill of a scrub shrub wetland habitat that will be impacted by the modified site construction plans. Additional areas identified by the PJD will be protected through the implementation of the planned erosion controls and BMP's described within this plan. Copies of the issued PJD and NWP 39 are included in Appendix V.

III. BEST MANAGEMENT PRACTICES (BMPs)

A. Erosion and Sediment Control: Construction activities shall not cause more than minimal and temporal water quality degradation of any adjacent potential wetlands, streams, or waterbodies. Appropriately chosen and installed erosion and sediment control BMPs will be used to prevent sediment from leaving the site. All BMPs implemented for the site will be in accordance with the standards set forth in the most current edition of the MDEQ "Planning and Design Manual for the Control of Erosion, Sediment and Storm Water. The contractor will be responsible for installing, inspecting, and maintaining the erosion and sediment controls for the duration of the project until final stabilization of the site is achieved. The site plan found in Appendix III will detail where each BMP will be used.

B. Structural Practices: Below is a list of Best Management Practices that can be used to prevent the contamination of storm water. The BMP's selected for this project and their location are indicated on the attached site plan. The locations shown are not exclusive; if additional BMP's are required that are not shown on the plan then the plan will be updated as required by the General Permit. All BMP's shall conform to the specifications of the State of Mississippi SWPPP Guidance Manual.

Construction Entrance/Exit (Temporary Practice): Aggregate should be at least six (6) inches thick and 50 feet long using DOT #1 coarse aggregate. The entrances will be inspected weekly and periodic top dressing with new gravel may be necessary when it becomes clogged with dirt and/or debris to prevent the tracking of mud and dirt onto the roadway. In addition, dirt and debris that accumulates on the roadway should be removed immediately. Construction entrance/exit is considered temporary until final grading of interior roads are complete.

Dust Control (Temporary Practice): Dust will be controlled as much as possible during construction by temporary seeding and spraying with water. The construction accesses shall be stabilized and monitored during high traffic times to minimize the dust on construction roads.

Silt Fence (Temporary Practice): Double-rowed silt fence will be installed as shown on the site erosion control plan. It will be placed along the perimeter of the planned construction area and at any other locations deemed necessary once construction begins. The fence will be maintained, and the sediment removed when the deposits reach one-third (1/3) to one-half (1/2) the fence height. Silt fence used will be trenched into the ground a minimum of six (6) inches.

Hay Wattles (Temporary Practice): Hay wattles are also used below small, disturbed areas to capture sediment from sheet flow. The drainage area must be restricted to 1/8 acre per 100 feet of barrier. The barrier must be located so that the water depth does not exceed one foot at any point. Sediment will be removed when it reaches one half (1/2) the height of the barrier. Hay wattle must be a minimum eighteen (18) inches in diameter.

Exact locations for each of the BMP's are included in Appendix III within this report.

C. Vegetative Practices:

Temporary Seeding (Temporary Practice) – When a disturbed area will be left undisturbed for fourteen (14) days or more, the appropriate temporary or permanent vegetative practices shall be implemented immediately.

Mulching (Temporary): Mulch will be used whenever possible to aid in slope stabilization to hold moisture, dampen temperature extremes and retard erosion on steep slopes until temporary or permanent seeding can be implemented.

Permanent Seeding: The vegetative practices should be fertilized at one-half the initial rates at the beginning of the second growing season. Eroded areas should be shaped, smoothed and replanted at this time. See the MDEQ SWPPP Guidance Manual for seeding, mulching and fertilizing rates. All seed mix considered would be selected from the MDEQ approved listing (Appendix IV). This will apply to any areas that are not hydro-seeded.

D. Spill Prevention and Response Procedures: All above-ground fuel storage tanks (AST) shall be double-wall tanks and shall additionally include additional secondary containment measures (dike/berm per US EPA standards). If any fuel storage tanks are present on site, a dike should be constructed around them in order to contain any accidental spillage. All truck mounted tanks shall be

double-walled tanks. It is understood that fuel will likely be transported via truck to equipment on the project site. In all circumstances, fuel that is transported on the project site shall be transported within a double-walled tank. The name and number of a competent hazardous waste disposal contractor shall be maintained by the contractor for use in the event of a spill.

Fueling and Vehicle Maintenance Locations: Fueling and vehicle maintenance areas shall use BMP's for industrial activities to ensure that pollutants do not impact the storm water runoff. Impervious dikes and berms shall be used to contain potential spills. Drums and containers for holding and transporting contaminated materials should be on site.

E. **Operation and Maintenance**: The best management practices, once implemented, must be maintained to ensure that satisfactory operation continues. The sediment controls and diversions should routinely have excess sediment removed. This may be required following each major storm event. This material should be stockpiled and protected from possible re-entry into the storm water until it can be used.

Any poorly functioning erosion or sediment controls, non-compliant discharges or any other deficiencies observed during the inspections shall be corrected as soon as possible, but not to exceed 24 hours of the inspection unless prevented by unsafe weather conditions as documented on the inspection form.

F. **Record Keeping:** Records shall be retained for three (3) years of all maintenance activities, spills and inspections, including a description of the quality and quantity of storm water.

G. **Employee Training:** Pre-construction training with all on-site workers is required to discuss the requirements and responsibilities of all environmental permitting required by the project. A training roster must be signed and maintained on site. All employees joining the project after the initial meeting must receive the environmental training and sign the roster.

H. **Housekeeping Practices:** Pollutants that may enter storm water from construction sites because of poor housekeeping include oils, grease, paints, gasoline, solvents, litter, debris and sanitary waste. During construction activities, the contractor is required to:

1. designate areas for equipment maintenance and repair
2. provide waste receptacles at convenient locations and provide regular collection of waste
3. provide protected storage areas for chemicals, paints, solvents, fertilizers and other potentially toxic materials
4. provide adequately maintained sanitary facilities

5. designate an area for concrete truck wash off
6. streets will be swept as needed to remove sediment or other debris that has been tracked from construction site
7. sediment or other pollutants will be periodically removed from control measures, conveyance channels or storm drain inlets

IV. CONSTRUCTION SEQUENCE

Below is a construction sequence for the proposed project activities. The following sequence is based upon the current plans and the anticipated construction activities. This sequence is subject to change, as applicable, through the construction of the project. Further, not all of these items may be applicable to this project. Updating construction activities can be submitted to MDEQ if needed.

8. Obtain plan approval and all other permits as needed.
9. Have a pre-construction conference to review all needed BMP's.
10. Install the construction entrances as shown on the plans.
11. Identify timber harvest and site preparation boundaries.
12. Identify environmentally sensitive areas including wetlands and "other waters".
13. Install all erosion and sediment controls as indicated on the site plan.
14. Begin site work.
15. Perform weekly reviews of sediment, erosion, and sediment practices to ensure compliance with the SWPPP. Inspection reports will be kept on site with an updated SWPPP.
16. As site is cleared, maintain BMP's as needed to insure minimal erosion and sedimentation problems.
17. Perform any temporary seeding as needed and instructed throughout the site preparation and clearing process.
18. Ensure final stabilization is achieved within the timber harvest and site preparation boundary.

V. IMPLEMENTATION SCHEDULE

A. **Structural Measures**: The non-existing structural measures shall be installed as the weather permits, and the existing measures shall be re-conditioned as well. General implementation principles are:

- install down-slope and perimeter controls before other site work
- divert upslope water around area before major site grading
- do not disturb an area until it is necessary
- time construction activities to limit impact from seasonal weather
- cover or stabilize disturbed area as soon as possible
- do not remove temporary controls until after site stabilization

B. **Vegetative Measures**: Vegetative plantings will be performed in accordance with the planting and seeding schedule found in the Mississippi SWPPP Guidance Manual. Disturbed areas shall be grassed during the first open planting season after completion. Construction should be scheduled in order that un-vegetated exposure is minimized.

C. **Proof of Coverage**: A copy of the Large Construction Storm Water General Permit certificate and a copy of the Storm Water Pollution Prevention Plan should be kept onsite or locally available. Copies of these documents are provided in the Appendix.

VI. INSPECTIONS AND REPORTING

A. Inspections: Inspections of the best management practices and other storm water pollution prevention plan requirements shall be performed as follows:

1. At least weekly for a minimum of four inspections per month,
2. After any rain event that produces a discharge, and
3. As often as necessary to ensure that appropriate erosion and sediment controls have been properly constructed and maintained.

The minimum inspection requirement in no way relieves the permittee of performing whatever inspections are needed to insure safe and pollution free facility operation. A copy of an inspection report is provided in the Appendix.

B. Reporting: The owner and/or contractor must inspect, as described in above section, and maintain controls and prepare weekly reports noting damages or deficiencies and corrective measures. These inspection reports are kept on-site until the site is stabilized.

As previously stated, all records, reports and information resulting from activities required by this plan and your permit coverage shall be retained for at least three years from the date construction was completed.

A rain gauge shall be placed in a central location on the site and used to obtain rainfall amounts. This information will be needed for proper completion of the inspection report.

VII. REVISIONS

The storm water pollution prevention plan will be kept current by the company representative and will be revised as changes in site conditions warrant. The company representative may notify the SWPPP developer for assistance when necessary. Factors that would compel the SWPPP to be modified include:

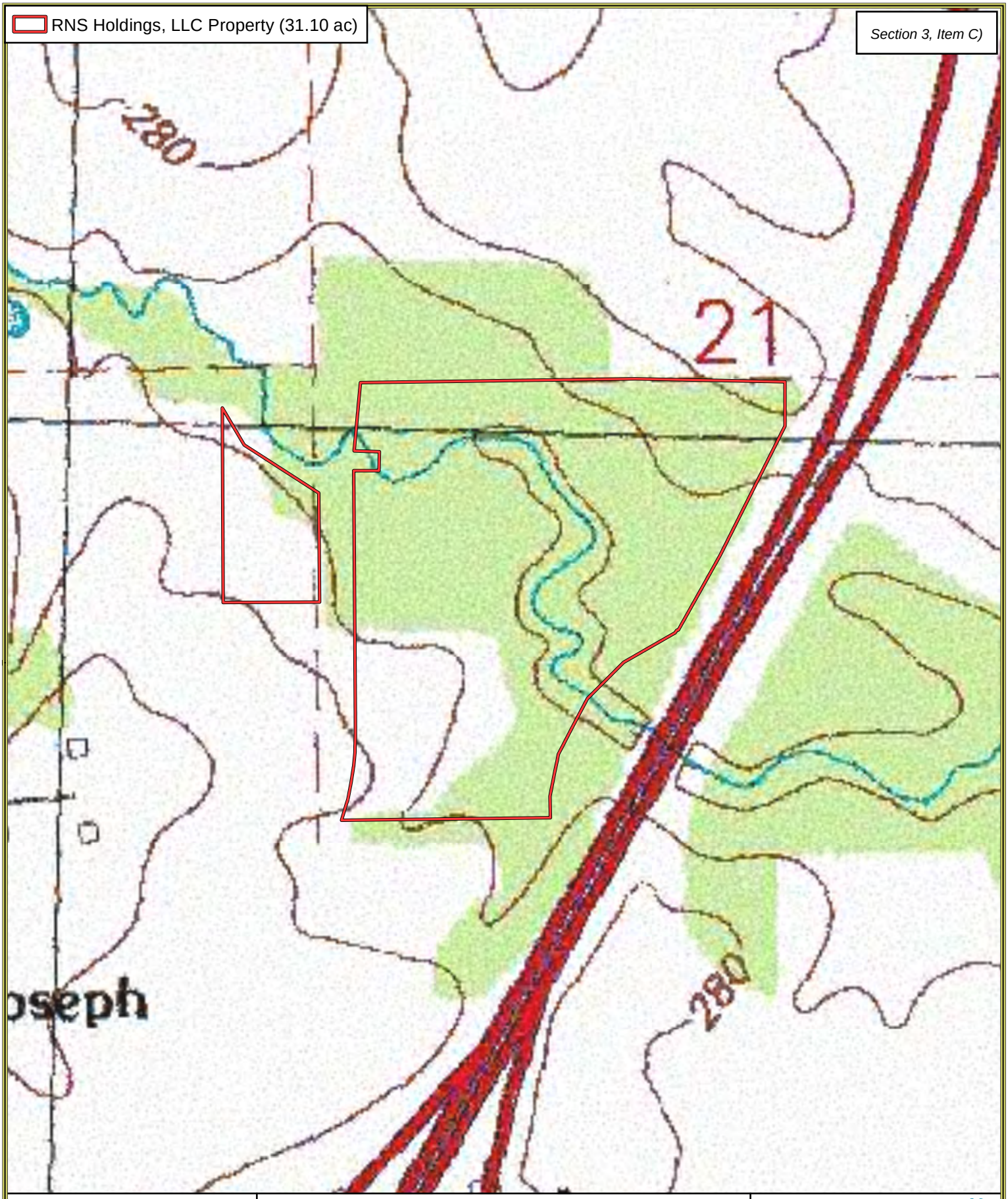
- Inadequacies revealed by routine inspections.
- Changes in identified sources, non-storm water discharges or non-storm water solid wastes.
- Office of Pollution Control notification that the plan does not meet one or more of the minimum requirements.
- Changes in design, construction, operation or maintenance, which has affected the discharge of pollutants to waters of the State and which were not otherwise addressed in the SWPPP.
- Identification of any new contractor and/or subcontractor that will implement a measure of the SWPPP.
- Install additional erosion and sediment controls when existing controls prove to be ineffective.

A plan revision will be completed within 30 days of the date if determined that a revision is warranted. If the modification is in response to a request by the Office of Pollution Control, the permittee must submit to the OPC certification that the requested changes have been made.

VIII. TERMINATION OF COVERAGE

Within thirty (30) days of final stabilization, the Office of Pollution Control must be notified by a completed Request for Termination (RFT) of Coverage form (copy provided). MDEQ staff will inspect the site and if no sediment or erosion problems are identified and adequate permanent controls are established, the owner or operator will receive a termination letter. Coverage is not terminated until notified in writing by MDEQ.

IX. APPENDIX I – LOCATION MAPS



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NATURAL RESOURCES CONSULTING
WWW.HEADWATERS-INC.COM

Date Created: 7/5/2022 | Created by: JDL

Gluckstadt Crossing

Sec. 21 - T 8N - R 2E
Madison County, Mississippi
Site Location Map

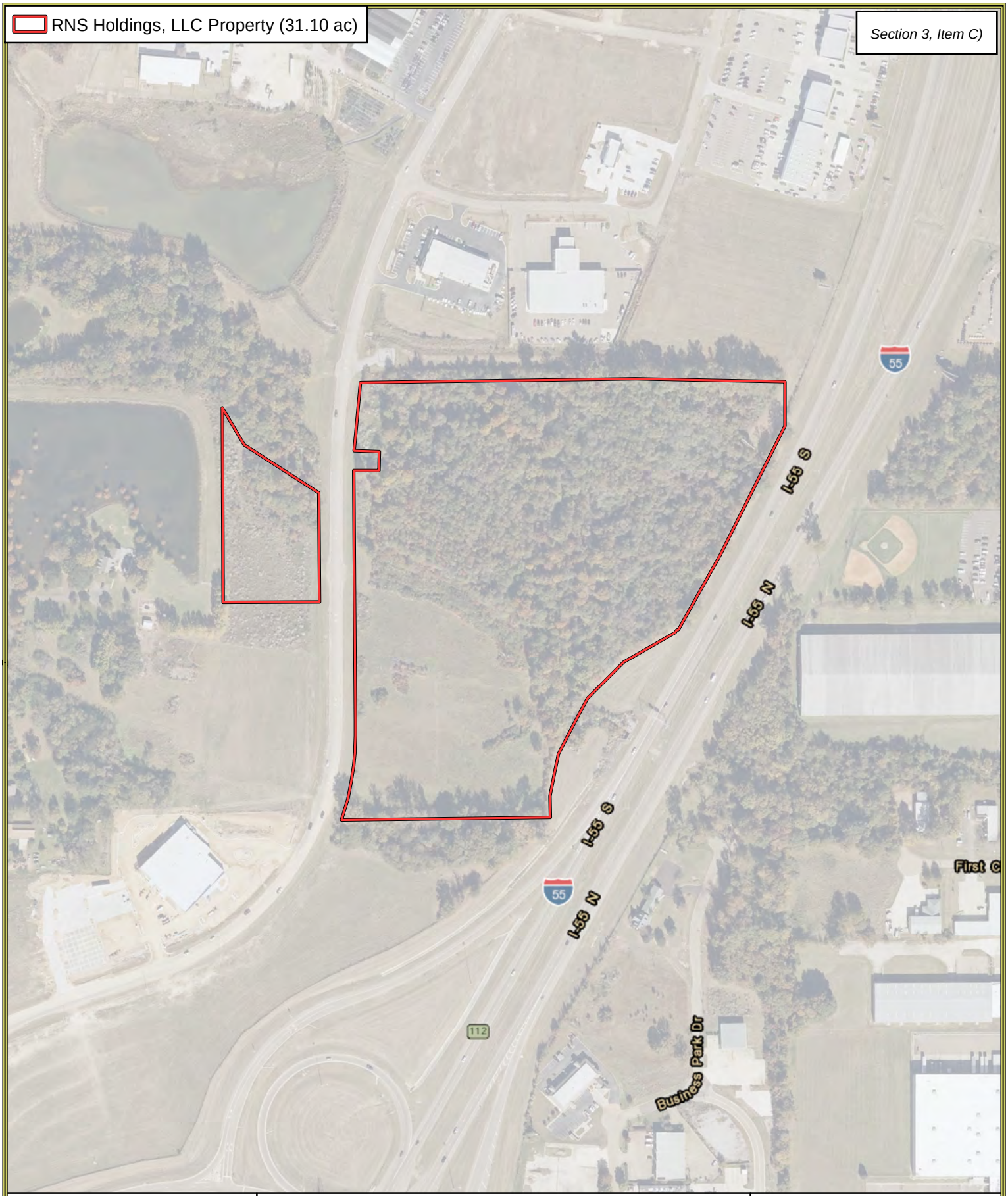
0 225 450 Feet
1:4,500

N

NAD 1983 StatePlane Mississippi West FIPS 23

USGS Canton (MS) Quad

Document Path: S:\PROJECT FILES\Sethie, Dr\Calhoun Parkway\Calhounn Parkway 2022 Phase II\Mapping\8.5x11 - PORTRAIT.mxd



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Date Created: 7/5/2022 | Created by: JDL

Gluckstadt Crossing

Sec. 21 - T 8N - R 2E
Madison County, Mississippi
Site Location Map

0 225 450 Feet
1:4,500

N

NAD 1983 StatePlane Mississippi West FIPS 23

USDA NAIP 2021 Imagery Basema

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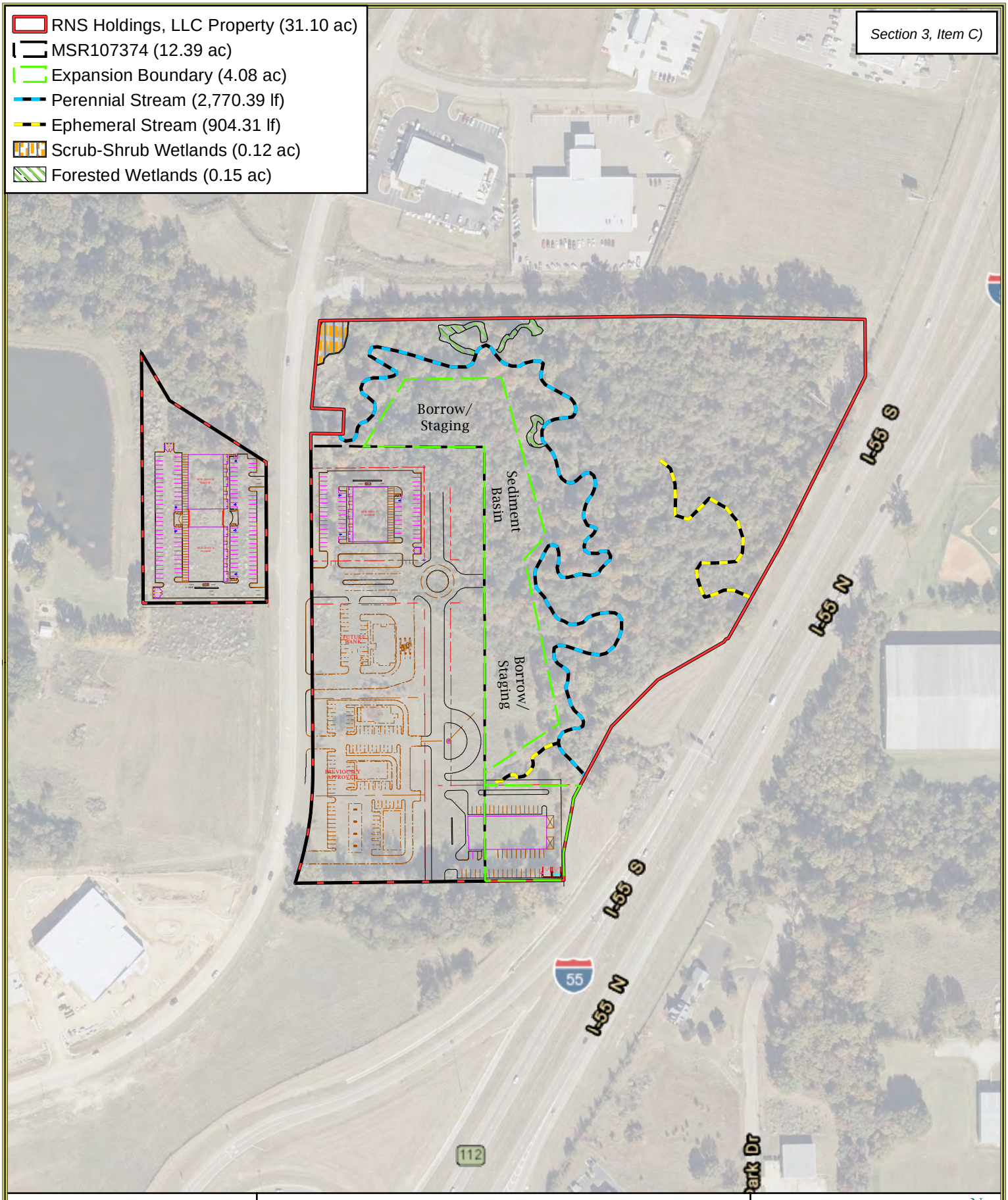

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Date Created: 7/5/2022 | Created by: JDL

Gluckstadt Crossing

Sec. 21 - T 8N - R 2E
Madison County, Mississippi
Site Plan Map

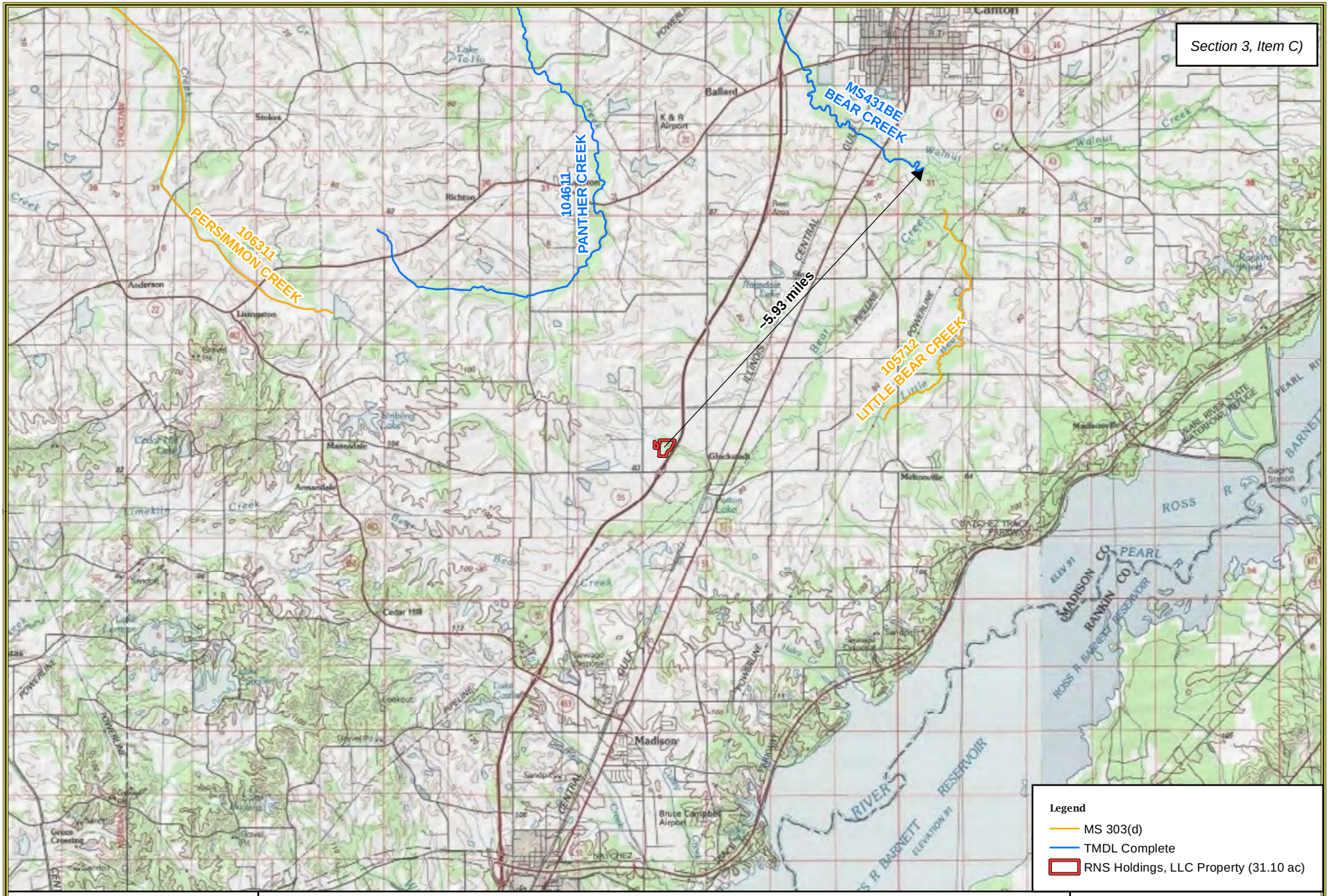
0 175 350 Feet
1:3,500

N

NAD 1983 StatePlane Mississippi West FIPS 23

USDA NAIP 2021 Imagery Basema

Document Path: S:\PROJECT FILES\Sethie, Dr\Calhoun Parkway\Calhounn Parkway 2022 Phase II\Mapping\8.5x11 - PORTRAIT.mxd



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Date Created: 7/5/2022
Created by: JDL

Gluckstadt Crossing

Sec. 21 - T 8N - R 2E
Madison County, Mississippi

MS 303 (d) Map

0 6,250 12,500 Feet
1:125,000

N

NAD 1983 StatePlane Mississippi West FIPS 23

ESRI USA Topographic Basemap

X. APPENDIX II – NRCS SOILS REPORT

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Madison County, Mississippi

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (Soil Map)

Map Scale: 1:3,340 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Madison County, Mississippi
Survey Area Data: Version 16, Sep 8, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Soil Map)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CbA	Calloway silt loam, 0 to 1 percent slopes	1.0	3.3%
CbB	Calloway silt loam, 1 to 3 percent slopes	2.7	8.8%
Gb	Gillsburg silt loam	19.8	64.9%
LoB2	Loring silt loam, 2 to 5 percent slopes, moderately eroded, central	5.8	19.0%
LoC2	Loring silt loam, 5 to 8 percent slopes, moderately eroded, central	1.2	4.0%
Totals for Area of Interest		**30.5**	**100.0%**

Map Unit Descriptions (Soil Map)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Madison County, Mississippi

CbA—Calloway silt loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: m28m
Elevation: 10 to 430 feet
Mean annual precipitation: 53 to 62 inches
Mean annual air temperature: 61 to 66 degrees F
Frost-free period: 250 to 310 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Calloway and similar soils: 90 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Calloway

Setting

Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess deposits

Typical profile

H1 - 0 to 25 inches: silt loam
H2 - 25 to 64 inches: silt loam
H3 - 64 to 68 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 18 to 28 inches to fragipan
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 20 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Unnamed hydric soils (134de)

Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave

Across-slope shape: Concave
Hydric soil rating: Yes

CbB—Calloway silt loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: m28n
Elevation: 10 to 390 feet
Mean annual precipitation: 53 to 62 inches
Mean annual air temperature: 61 to 66 degrees F
Frost-free period: 250 to 310 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Calloway and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Calloway

Setting

Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess deposits

Typical profile

H1 - 0 to 25 inches: silt loam
H2 - 25 to 64 inches: silt loam
H3 - 64 to 68 inches: silt loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 18 to 28 inches to fragipan
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 7 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Unnamed hydric soils (134de)

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Calhoun

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Gb—Gillsburg silt loam

Map Unit Setting

National map unit symbol: m28p
Elevation: 10 to 620 feet
Mean annual precipitation: 60 to 75 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 270 to 335 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Gillsburg and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gillsburg

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium deposits

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 42 inches: silt loam
H3 - 42 to 65 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: RareOccasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Hydric soil rating: No

Minor Components

Unnamed hydric soils (134de)

Percent of map unit: 10 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

LoB2—Loring silt loam, 2 to 5 percent slopes, moderately eroded, central

Map Unit Setting

National map unit symbol: 2x0tr
Elevation: 170 to 660 feet
Mean annual precipitation: 52 to 58 inches
Mean annual air temperature: 60 to 66 degrees F
Frost-free period: 180 to 290 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Loring and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loring

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear

Parent material: Noncalcareous loess

Typical profile

Ap - 0 to 5 inches: silt loam
Bt - 5 to 27 inches: silty clay loam
Btx - 27 to 56 inches: silt loam
C - 56 to 80 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 27 to 33 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Providence

Percent of map unit: 5 percent
Landform: Loess hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Memphis

Percent of map unit: 3 percent
Landform: Terraces, interfluves
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Grenada

Percent of map unit: 1 percent
Landform: Stream terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Byram

Percent of map unit: 1 percent
Landform: Loess hills

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

LoC2—Loring silt loam, 5 to 8 percent slopes, moderately eroded, central

Map Unit Setting

National map unit symbol: 2x0ts
Elevation: 170 to 660 feet
Mean annual precipitation: 52 to 69 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 290 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Loring and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loring

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Noncalcareous loess

Typical profile

Ap - 0 to 5 inches: silt loam
Bt - 5 to 24 inches: silty clay loam
Btx - 24 to 48 inches: silt loam
C - 48 to 65 inches: silt loam

Properties and qualities

Slope: 5 to 8 percent
Depth to restrictive feature: 23 to 27 inches to fragipan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Memphis

Percent of map unit: 4 percent
Landform: Interfluves, terraces
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, crest, riser
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Providence

Percent of map unit: 2 percent
Landform: Loess hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Grenada

Percent of map unit: 2 percent
Landform: Stream terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Byram

Percent of map unit: 1 percent
Landform: Loess hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Smithdale

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit (Soil Map)

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

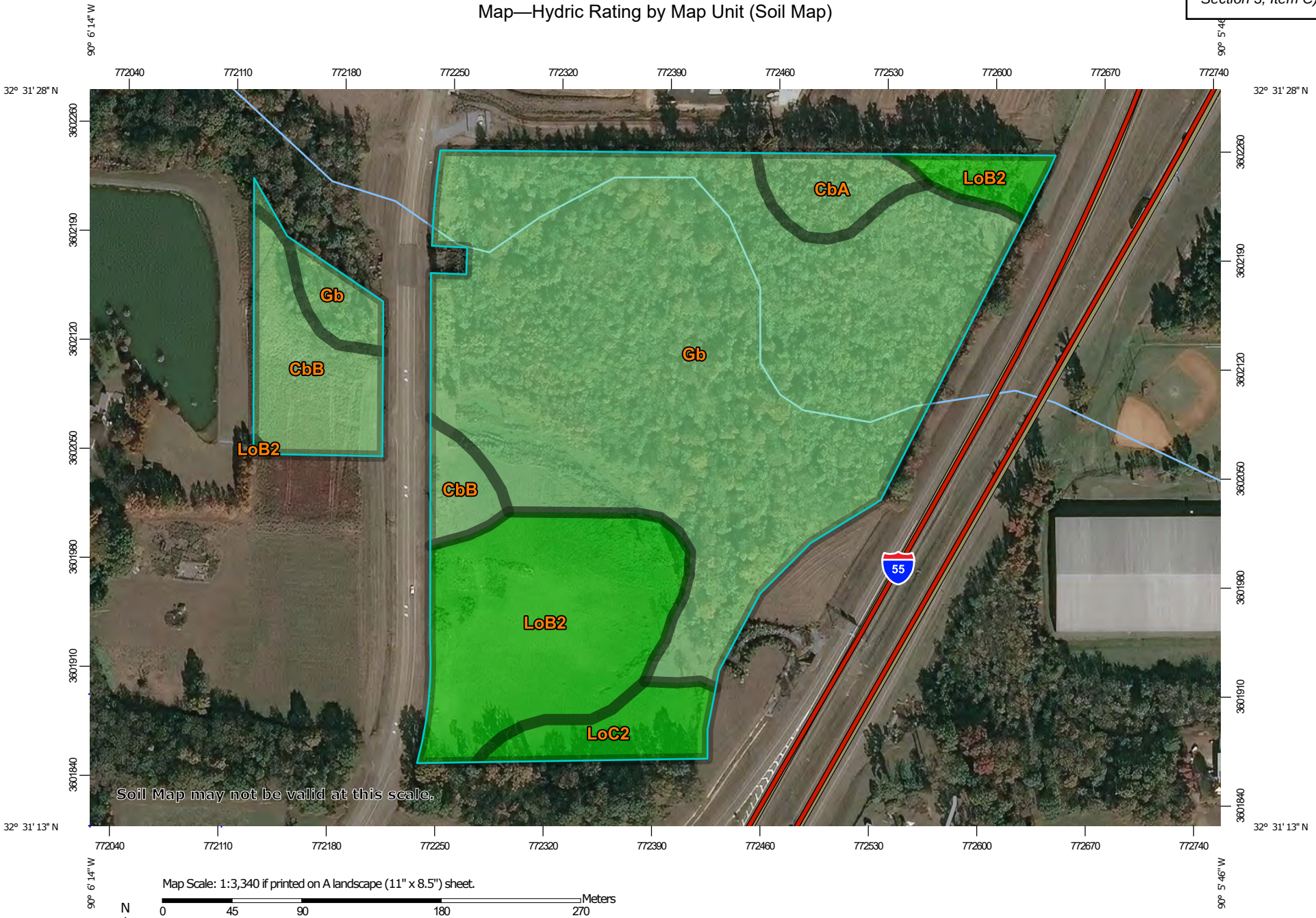
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Custom Soil Resource Report
Map—Hydric Rating by Map Unit (Soil Map)



Map Scale: 1:3,340 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Madison County, Mississippi
Survey Area Data: Version 16, Sep 8, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydric Rating by Map Unit (Soil Map)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CbA	Calloway silt loam, 0 to 1 percent slopes	3	1.0	3.3%
CbB	Calloway silt loam, 1 to 3 percent slopes	10	2.7	8.8%
Gb	Gillsburg silt loam	10	19.8	64.9%
LoB2	Loring silt loam, 2 to 5 percent slopes, moderately eroded, central	0	5.8	19.0%
LoC2	Loring silt loam, 5 to 8 percent slopes, moderately eroded, central	0	1.2	4.0%
Totals for Area of Interest			**30.5**	**100.0%**

Rating Options—Hydric Rating by Map Unit (Soil Map)

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

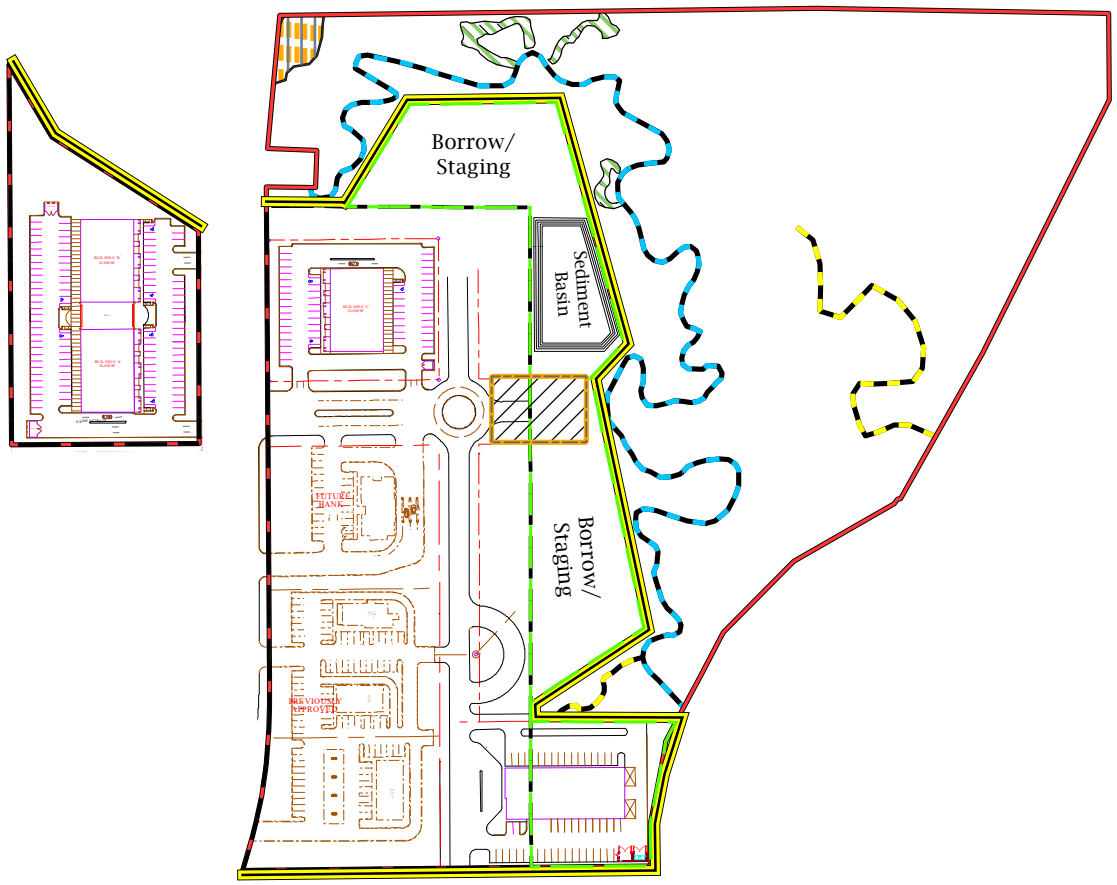
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

XI. APPENDIX III – STORM WATER MANAGEMENT PLAN

- R&S Holdings, LLC Property (31.10 ac)
- MSR107374 (12.39 ac)
- Expansion Boundary (4.08 ac)
- Maintenance Area
- Double-Row Silt Fence (±3,081 lf)
- Perennial Stream (2,770.39 lf)
- Ephemeral Stream (904.31 lf)
- Scrub-Shrub Wetlands (0.12 ac)
- Forested Wetlands (0.15 ac)



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Date Created: 3/20/2023 | Created by: JDL

Gluckstadt Crossing

Sec. 21 - T 8N - R 2E
Madison County, Mississippi
Site Plan Map

0 175 350 Feet
1:3,500

N

NAD 1983 StatePlane Mississippi West FIPS

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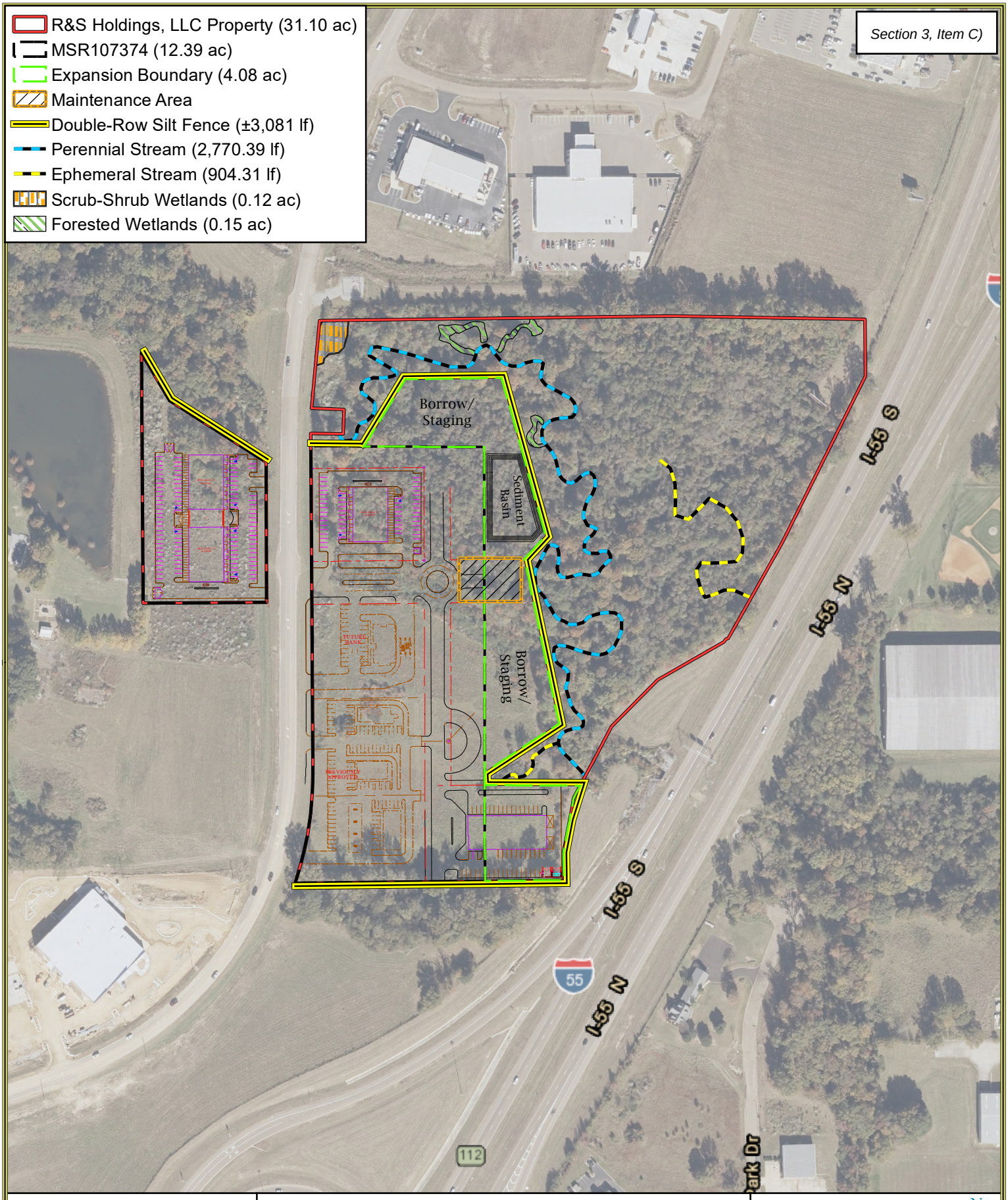

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WWW.HEADWATERS-INC.COM

Date Created: 3/20/2023 | Created by: JDL

Gluckstadt Crossing

Sec. 21 - T 8N - R 2E
Madison County, Mississippi
Site Plan Map

0 175 350 Feet
1:3,500

N

NAD 1983 StatePlane Mississippi West FIPS

USDA NAIP 2021 Imagery Base

Document Path: S:\PROJECT FILES\Sethie, Dr\Calhoun Parkway\Calhoun Parkway 2022 Phase II\Mapping\8.5x11 - PORTRAIT.mxd

Gluckstadt Crossing

Madison County, Mississippi

MSR107374 – AI71260

- Drainage Area – 13.7 Acres
- Storage Req'd (3,600 Cu. Ft/ / Acre) – 49,320 Cu. Ft.
- Storage Provided at the 2-Year Stage – 89,903 Cu. Ft.
- Outlet – 18" Pipe with a 5" Faircloth Skimmer attached for top-draw discharge in basin.

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	15.09	-------	22.76	30.13	37.73	41.59	50.95	Pre
2	SCS Runoff	------	-------	43.40	-------	55.00	65.49	75.94	81.15	93.64	Post
3	Reservoir	2	-------	9.758	-------	11.35	12.50	13.51	13.99	15.09	Route

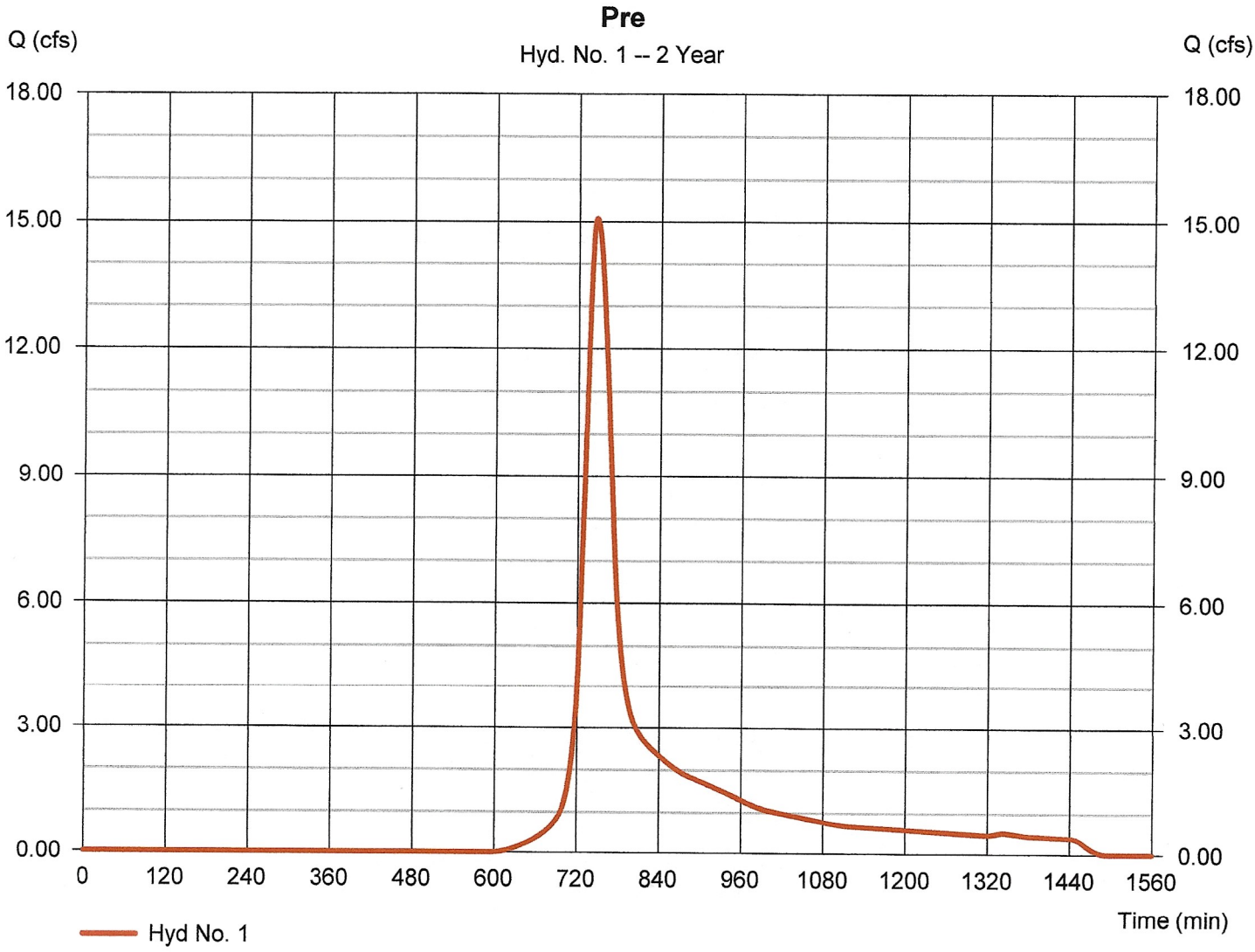
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 03 / 19 / 2023

Hyd. No. 1

Pre

Hydrograph type	= SCS Runoff	Peak discharge	= 15.09 cfs
Storm frequency	= 2 yrs	Time to peak	= 746 min
Time interval	= 1 min	Hyd. volume	= 86,871 cuft
Drainage area	= 13.700 ac	Curve number	= 72
Basin Slope	= 1.5 %	Hydraulic length	= 1100 ft
Tc method	= LAG	Time of conc. (Tc)	= 35.45 min
Total precip.	= 4.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



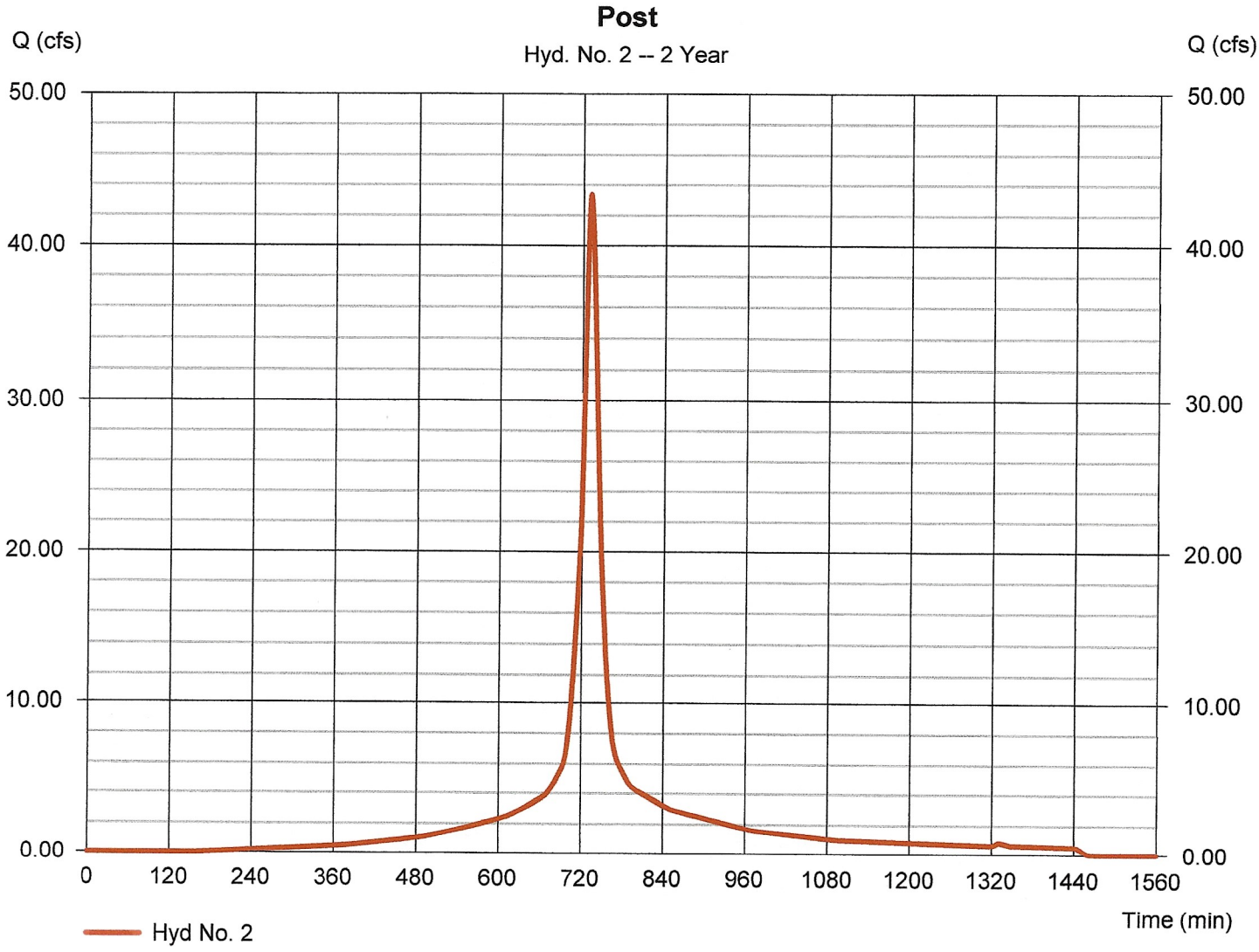
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 03 / 19 / 2023

Hyd. No. 2

Post

Hydrograph type	= SCS Runoff	Peak discharge	= 43.40 cfs
Storm frequency	= 2 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 192,643 cuft
Drainage area	= 13.700 ac	Curve number	= 95
Basin Slope	= 1.5 %	Hydraulic length	= 1100 ft
Tc method	= LAG	Time of conc. (Tc)	= 15.69 min
Total precip.	= 4.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

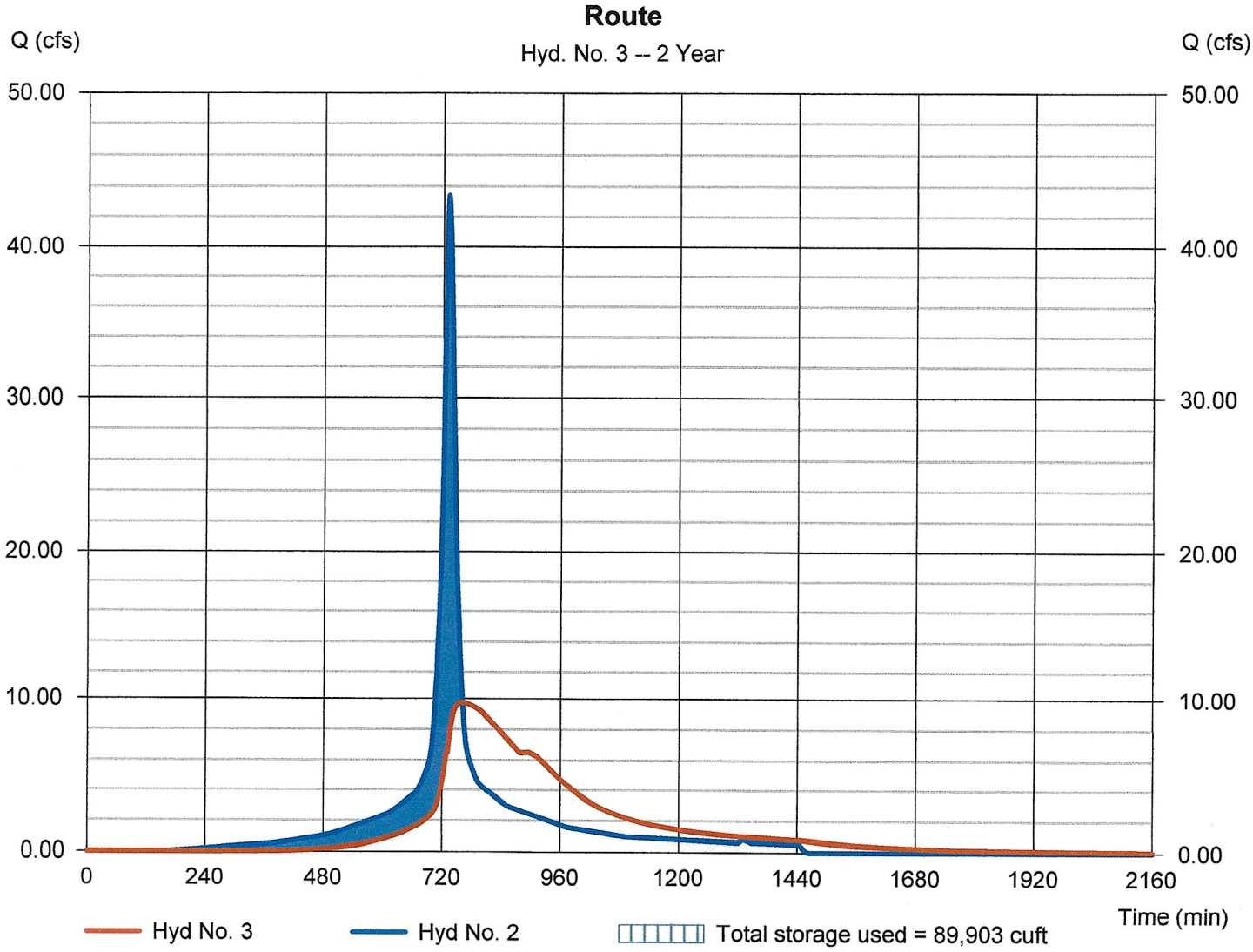
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Sunday, 03 / 19 / 2023

Hyd. No. 3

Route

Hydrograph type	= Reservoir	Peak discharge	= 9.758 cfs
Storm frequency	= 2 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 190,179 cuft
Inflow hyd. No.	= 2 - Post	Max. Elevation	= 267.14 ft
Reservoir name	= Ponds	Max. Storage	= 89,903 cuft

Storage Indication method used.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Sunday, 03 / 19 / 2023

Pond No. 1 - Ponds

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 265.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	265.00	53,824	0	0
1.00	266.00	26,644	39,442	39,442
2.00	267.00	59,536	41,998	81,440
3.00	268.00	62,500	61,006	142,446
4.00	269.00	65,536	64,006	206,452
5.00	270.00	68,644	67,077	273,529
6.00	271.00	71,824	70,221	343,750

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	0.00	0.00	0.00
Span (in)	= 18.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 265.00	0.00	0.00	0.00
Length (ft)	= 50.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

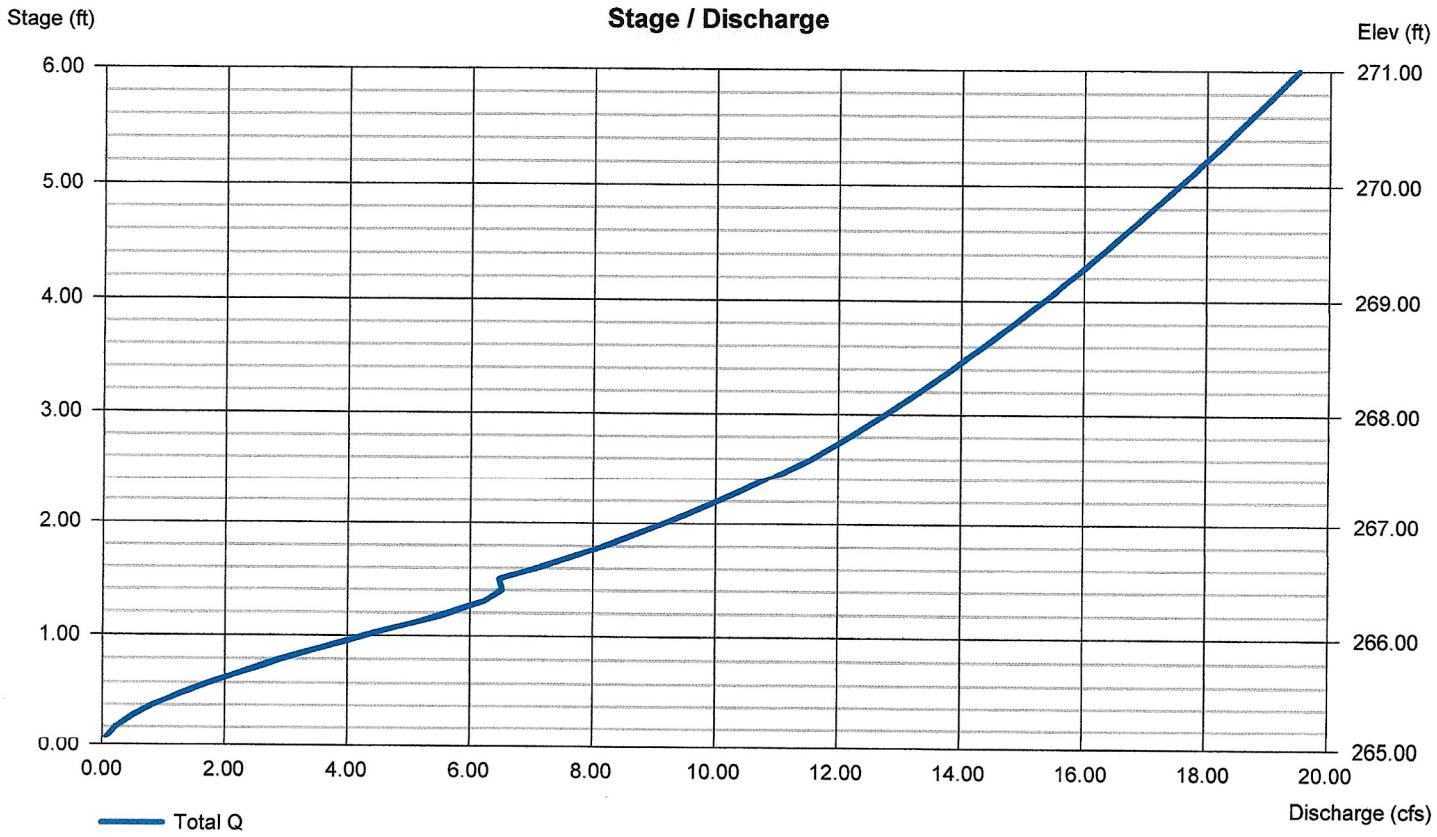
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



XII. APPENDIX IV – MDEQ SEEDING CHART

SEEDING CHART FOR THE STATE OF MISSISSIPPI

SPECIES	SEEDING RATE/ACRE	PLANTING TIME	DESIRED pH RANGE	FERTILIZATION RATE/ACRE	METHOD OF ESTABLISHMENT	ZONE OF ADAPTABILITY[1]
Common Bermuda	15 lbs. alone 10 lbs. mixture	3/1 - 7/15 9/1 - 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed or sod	All
Bahia	40 lbs. alone 30 lbs. mixture	3/1 - 7/15 9/1 - 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed	Central South
Fescue	40 lbs. alone 30 lbs. mixture	9/1- 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed	North Central
Saint Augustine	--	3/1 - 7/15	6.0 - 7.0	600 lbs. 13-13-13	sod only	Central South
Centipede	4 lbs. alone 2.5 lbs. mix	3/1 - 7/15	6.0 - 7.0	600 lbs. 13-13-13	seed or sod	All
Carpet Grass	15 lbs. alone 10 lbs. mixture	3/1 - 7/15	6.0 - 7.0	600 lbs. 13-13-13	seed or sod	All
Oysia Grass	--	3/1 - 7/15	6.0 - 7.0	600 lbs. 13-13-13	sod only	All
Creeping Red Fescue	30 lbs. alone 22.5 lbs. mix	9/1 - 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed	All
Weeping Lovegrass	10 lbs. alone 5 lbs. mix	3/1 - 7/15	6.0 - 7.0	600 lbs. 13-13-13	seed	All
Sericea Lespedeza	40 lbs.	3/1 - 7/15 9/1 - 11/30	6.0 - 7.0	400 lbs. 6-24-24	seed	All
***Wheat**	90 lbs. alone	9/1 - 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed	All
***Ryegrass**	30 lbs.	9/1 - 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed	All
***White Clover**	5 lbs.	9/1 - 11/30	6.0 - 7.0	400 lbs. 6-24-24	seed	All
***Crimson Clover**	25 lbs. alone 15 lbs. mix	9/1 - 11/30	6.0 - 7.0	400 lbs. 6-24-24	seed	All
***Hairy Vetch**	30 lbs.	9/1 - 11/30	6.0 - 7.0	400 lbs. 6-24-24	seed	All
***Browntop Millet**	40 lbs. alone 15 lbs. mix	4/1 - 8/30	6.0 - 7.0	600 lbs. 13-13-13	seed	All

* Annuals. For permanent seeding, annuals can only be used in a mixture with perennials.

North- north of Hwy. 82
Central- south of Hwy. 82 & north of Hwy. 84
South- South of Hwy. 84

XIII. APPENDIX V – USACE DOCUMENTATION

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, VICKSBURG DISTRICT
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

May 20, 2022

Regulatory Division

SUBJECT: Department of the Army Regulatory Requirements Associated with the Proposed Gluckstadt Crossing Phase II Commercial Development Project, Located in Section 21, T8N-R2E, Madison County, Mississippi

Mr. Sunny Sethi
R&S Holdings, LLC
1554 West Peace Street
Canton, Mississippi 39046

Dear Mr. Sethi:

Based upon the information furnished (enclosure 1), it appears that Department of the Army permit requirements for the proposed work, will be authorized by Nationwide Permit No. 39, as specified in the January 13, 2021, *Federal Register*, Reissuance and Modification of Nationwide Permits; Final Rule; Notice (86 FR 2744), provided the activity complies with the Special Conditions (enclosure 2), the General Conditions (enclosure 3) and the conditions of the Clean Water Act Section 401 Water Quality Certification (enclosure 4). It is your responsibility to read and become familiar with the enclosed conditions in order for you to ensure that the activity authorized herein complies with the Nationwide Permit.

This verification is valid until March 14, 2026, unless the Nationwide Permit is modified, suspended, or revoked. Activities which are under construction, or that are under contract to commence, in reliance upon a Nationwide Permit will remain authorized provided the activity is completed within 12 months of the date of any subsequent modification, expiration, or revocation of the Nationwide Permit. Upon completion of the activity authorized by this Nationwide Permit, please fill out the enclosed certification of compliance (enclosure 5) and return it to our office.

This verification of Department of the Army regulatory requirements does not convey any property rights, either in real estate or material or any exclusive privileges and does not authorize any injury to property or invasion of rights or local laws or regulations or obviate the requirement to obtain State or local assent required by law for the activity discussed herein.

Thank you for advising us of your plans. If you change your plans for the proposed work, or if the proposed work does not comply with the conditions of the Nationwide Permit, please contact Ms. Samantha Thompson at email address: Samantha.H.Thompson@usace.army.mil. In any future correspondence concerning this project, please refer to Identification No. MVK-2021-755.

I am providing a copy of this letter via email to Mr. Clay Cromwell, Headwaters, Incorporated.

Sincerely,

Bryan Williamson

Bryan Williamson
Chief, Permit and Evaluation Branch
Regulatory Division

Enclosures

STATE OF MISSISSIPPI
TATE REEVES
GOVERNOR
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY
CHRIS WELLS, EXECUTIVE DIRECTOR
December 11, 2020

Ms. Jennifer Mallard
U.S Army Corps of Engineers,
Vicksburg District
4155 Clay Street
Vicksburg, Mississippi 39183-3435

Re: US Army COE,
Nationwide Permit No. 39
WQC No. WQC20200066

Pursuant to Section 401 of the Federal Water Pollution Control Act (33 U. S. C. 1251, 1341), the Office of Pollution Control (OPC) issues this Certification, after public notice and opportunity for public hearing, to the U.S. Army Corps of Engineers, an applicant for a Federal License or permit to conduct the following activity:

US Army COE, Nationwide Permit No. 39:

Nationwide Permits (NWPs) are general permits issued on a nationwide basis to streamline the authorization of activities that have no more than minimal and cumulative adverse effects on the aquatic environment. The U.S. Army Corps of Engineers issues NWPs to authorize certain activities that require Department of the Army permits under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899.

39. *Commercial and Institutional Developments*. Discharges of dredged or fill material into non-tidal waters of the United States for the construction or expansion of commercial and institutional building foundations and building pads and attendant features that are necessary for the use and maintenance of the structures. Attendant features may include, but are not limited to, roads, parking lots, garages, yards, utility lines, storm water management facilities, wastewater treatment facilities, and recreation facilities such as playgrounds and playing fields. Examples of commercial developments include retail stores, industrial facilities, restaurants, business parks, and shopping centers. Examples of institutional developments include schools, fire stations, government office buildings, judicial buildings, public works buildings, libraries, hospitals, and places of worship. The construction of new golf courses and new ski areas is not authorized by this NWP.

The discharge must not cause the loss of greater than 1⁄2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into nontidal wetlands adjacent to tidal waters.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 32.) (Authorities: Sections 10 and 404)

Note: For any activity that involves the construction of a wind energy generating structure, solar tower, or overhead transmission line, a copy of the PCN and NWP verification will be provided by the Corps to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities. [NWP 39, WQC2020066].

The Office of Pollution Control certifies that the above-described activity will be in compliance with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act and Section 49-17-29 of the Mississippi Code of 1972, if the applicant complies with the following conditions:

1. Impacts in excess of 300 linear feet to perennial and/or intermittent streams shall not be authorized by this certification. Perennial streams will generally be indicated by a solid blue line on the latest version of the United States Department of the Interior, Geological Survey Quadrangle Map (Scale 1:24,000, 7.5 minute series). Intermittent streams will generally be indicated by a broken blue line on the latest version of the United States Department of the Interior, Geological Survey Quadrangle Map (Scale 1:24,000, 7.5 minute series). (Statement D) (11 Miss. Admin. Code Pt. 6, R. 1.3.4.A(3))

2. This permit shall not be used for marinas. (Statement A & C) (11 Miss. Admin. Code Pt. 6, R. 1.3.4.C(2))

3. In cases where a pre-construction notification (PCN) is required, a PCN shall be provided to the Mississippi Department of Environmental Quality for projects that include channel work within waterways found on the latest version of the State of Mississippi's Section 303(d) List of Impaired Water Bodies for sediment or biological impairment or waterways with a completed Total Maximum Daily Load (TMDL) for sediment or biological impairment. This notification shall include the following:

    a. Justification of why the impacts cannot be avoided;

    b. Proposed best management practices that would minimized the impacts to receiving sensitive waters; and

c. Compensatory mitigation primarily along the same reach of stream or on another impaired stream within the same drainage basin. (Statement A, D, & E) (11 Miss. Admin. Code Pt. 6, R. 1.3.4.A(3))

4. The permittee shall obtain appropriate wastewater permits and/or approvals for the proposed activity prior to the commencement of construction activities. (Statement C) (11 Miss. Admin. Code Pt. 6, R. 1.1.1.B.)

5. For projects greater than five acres of total ground disturbances including clearing, grading, excavating, or other construction activities, the applicant shall obtain the necessary coverage under the State of Mississippi's Large Construction Storm Water General NPDES Permit. For projects greater than one, to less the five acres of total ground disturbances including clearing, grading, excavating, or other construction activities, the applicant shall follow the conditions and limitations of the State of Mississippi's Small Construction Storm Water General NPDES Permit. No construction activities shall begin until the necessary approvals and/or permits have been obtained. (Statement B & C) (11 Miss. Admin. Code Pt. 6, R. 1.1.1.B.)

6. Turbidity outside the limits of a 750-foot mixing zone shall not exceed the ambient turbidity by more than 50 Nephelometric Turbidity Units. (Statement A (11 Miss. Admin. Code Pt. 6, R. 2.2.A.)

7. No sewage, oil, refuse, or other pollutants shall be discharged into the watercourse. (Statement A) (11 Miss. Admin. Code Pt. 6, R. 2.2.A.(3))

As part of the Scope of Review for Application Decisions, 11 Mississippi Administrative Code Part 6, Rule 1.3.4(B), the above conditions are necessary for the Department to ensure that appropriate measures will be taken to eliminate unreasonable degradation and irreparable harm to waters of the State, such that the activity will not meet the criteria for denial:

(A) The proposed activity permanently alters the aquatic ecosystem such that water quality criteria are violated and/or it no longer supports its existing or classified uses. An example is the channelization of streams

(B) Nonpoint source/storm water management practices necessary to protect water quality have not been proposed.

(C) Denial of wastewater permits and/or approvals by the State with regard to the proposed activities.

(D) The proposed activity in conjunction with other activities may result in adverse cumulative impacts.

(E) The proposed activity results in significant environmental impacts which may adversely impact water quality.

The Office of Pollution Control also certifies that there are no limitations under Section 302 nor standards under Sections 306 and 307 of the Federal Water Pollution Control Act which are applicable to the applicant's above-described activity.

This certification is valid for the project as proposed. Any deviations without proper modifications and/or approvals may result in a violation of the 401 Water Quality Certification. If you have any questions, please contact the Department.

Sincerely,

Krystal Rudolph

Krystal Rudolph, P.E., BCEE
Chief, Environmental Permits Division

KR: ld

cc: U.S. Army Corps of Engineers, Mobile District
U.S. Army Corps of Engineers, Memphis District
U.S. Army Corps of Engineers, Nashville District
U.S. Army Corps of Engineers, New Orleans District
Department of Marine Resources
U.S. Fish and Wildlife Service
U.S Environmental Protection Agency, Region 4

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, VICKSBURG DISTRICT
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

October 21, 2021

Regulatory Division

SUBJECT: Jurisdictional Determination – Jackies International Commercial Development Project, 27.82 Acre Tract, Madison County, Mississippi, MVK-2021-755

Mr. S. L. Sethi
1554 West Peace Street
Canton, Mississippi 39046

Dear Mr. Sethi:

I refer to your request for a jurisdictional determination for the proposed commercial development project on the approximately 27.82 acre tract that is located in section 21, T8N-R2E, Madison County, Mississippi.

Based upon the information provided, it appears that there are jurisdictional wetlands and other waters of the United States located within the boundary of the property subject to regulation pursuant to Section 404 of the Clean Water Act. The approximate extent of jurisdictional waters of the United States is depicted on the enclosed map (enclosure 1). Any work involving the discharge of dredged or fill material (land clearing, ditching, filling. leveeing, dredging, culvert crossings, etc.) within the identified jurisdictional waters will require a Department of the Army Section 404 permit prior to beginning work. For your information, I have enclosed an appeals form for this preliminary determination (enclosure 2).

For your convenience, I am enclosing a Department of the Army permit application with instructions (enclosure 3). Your application for any proposed work in wetlands or other waters of the United States should be submitted at least 120 days in advance of the proposed starting date. To expedite the evaluation process, please refer to Identification No. MVK-2021-755 when submitting the application or requesting project updates.

If you have any questions, please contact Mr. Bryton Hixson, of this office, telephone 601-631-5591, or e-mail address: Bryton.K.Hixson@usace.army.mil.

Sincerely,

Jeremy Stokes

For

Gerald G. Bourne
Acting Chief, Enforcement and Compliance Branch
Regulatory Division

Enclosures

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: S. L. Sethi, Jackies International	**File No.:** MVK-2021-755	**Date:** 10/21/21

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed) by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact the Division Engineer through:
Attn: Bryton Hixson Regulatory Branch 4155 Clay Street Vicksburg, MS 39183-3435 (601) 631-5591	Administrative Appeals Review Officer Mississippi Valley Division P.O. Box 80 (1400 Walnut Street) Vicksburg, MS 39181-0080 601-634-5820 FAX: 601-634-5816

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
Signature of appellant or agent.		

Section 3, Item C)

0 190
Feet

Legend

- Project Boundary
- Jurisdictional Wetlands (0.59 Ac.)
- Jurisdictional Streams (3635.09 LF)

*There are jurisdictional wetlands and other waters of the U.S. within the project boundary; therefore, any activity involving the discharge of dredged or fill material into said waters requires a permit.

N

MVK-2021-755
Jackies International: 27.82 Acre Tract

Preliminary JD

21 October 2021
Bryton Hixson

City of Gluckstadt

Application for Variance

Subject Property Address: Springhill Calhoun Station Parkway
Parcel #: 083E-21.006

Owner: Sunny Sethi
Address: ~~Bett~~

Applicant: Sunny Sethi
Address: Bellamone Development 1554 W. Peace St, Canton, MS

Phone #: 601-613-1188
E-Mail: sethi@jacksonsinternational.com

Phone #: 601-613-1188
E-Mail:

Current Zoning District: C-2
Acreage of Property (If applicable): 3.08 ac
Current Use of Property: Commercial

Requirements of Applicant:

1. Letter demonstrating how the requested Variance will comply with or otherwise satisfy the requirements for granting a Variance pursuant to Section 804.01 of the Zoning Ordinance.
2. Copy of written legal description.
3. Additional items may be requested depending on the nature and status of the proposed development or property.
4. $ 250.00 fee required for processing

Requirements for Granting Variances: (Section 804.01, Zoning Ordinance)

(a). Applicant shall demonstrate that special conditions and circumstances exist which are peculiar to the land, structure, or building involved and which are not applicable to other lands, structures, or buildings in the same district.

(b). Applicant shall demonstrate that the literal interpretation of this Ordinance would deprive the applicant's rights commonly enjoyed by other properties in the same district under the terms of this Ordinance.

(c). Applicant shall demonstrate that granting the Variance will not confer on the applicant any special privilege that is denied by this Ordinance to other lands, structures, or buildings in the same zoning district.

Applicant shall be present at the Planning and Zoning Commission meeting and Mayor and Board of Alderman meeting. Documents shall be submitted thirty (30) days prior to the Planning and Zoning Commission meeting.

Applicant is responsible for complying with all applicable requirements of the Zoning Ordinance.

By signing this application, it is understood and agreed that permission is given to the Zoning Administrator to have a sign erected on subject property, giving notice to the public that said property is being considered for a dimensional variance.

Applicant Signature

April 30, 2023
Date

Property Owner Signature

April 30, 2023
Date

WOOLDRIDGE & ASSOCIATES
461 CHURCH RD, SUITE 700
MADISON, MS 39110

May 1, 2023

Hilton Home 2 & Springhill

Variance Request; hotel heights & parking count

To secure the premium brands (Hilton & Marriot) for the Germantown Village development, we are required to build a minimum of 90 rooms per property. As the lot sizes are limited, we need to exceed the 3 story restriction. We will be able to remain under the 40' height requirement as the first floor will be 12' in height and the upper floors will be 9' each.

The hotels we are developing are limited service vs Full Service (no on site restaurants). Typically in most municipalities select service hotels are 1 parking space per room plus 10% additional for employees.

Home 2 = 91rooms x 1/room = 91 + 10% = 100 parking spaces (121 provided) in lue of 136 spaces.

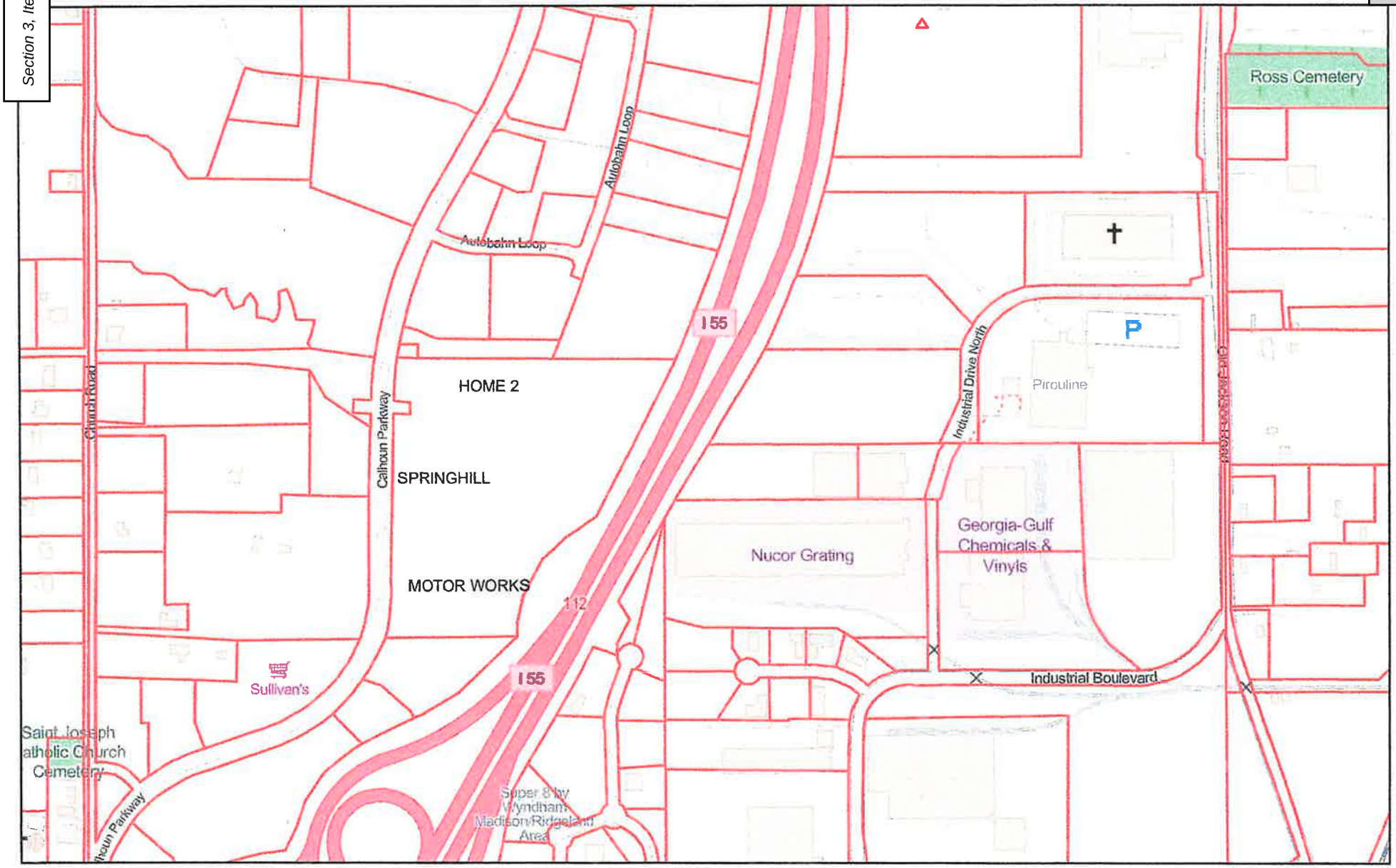
Springhill = 90 rooms x 1/room = 90 + 10% =99 parking spaces

Office 3000sf / 225 = 13.5 parking spaces = 113 parking spaces required (128 provided) in lue of 149 spaces.

Thank you

Daniel Wooldridge

Edit Title Here



4/30/2023, 6:21:47 PM

Parcels

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

CMPDD
Madison County GIS

BOOK 3578 PAGE 594 DOC 01 TY W
INST # 834758 MADISON COUNTY MS.
This instrument was filed for
record 3/09/18 at 1:14:17 PM
RONNY LOTT, C.C. BY: ILB D.C.

Prepared by and return to:
Giddens Law Firm, PLLC
Attorneys at Law
385 Edgewood Terrace Drive
Jackson, MS 39206
(601) 373-4647

WARRANTY DEED

FOR AND IN CONSIDERATION of the sum of Ten Dollars ($10.00), cash in hand paid, and other good and valuable considerations, the receipt and sufficiency of all of which is hereby acknowledged, we,

Dr. S. L. Sethi and Raksha Sethi
1554 W Peace Street
Canton, MS 39046
Telephone: (601) 855-0146

do hereby sell, convey and warrant unto

R & S Holdings, LLC.
1554 W Peace Street
Canton, MS 39046
Telephone: (601) 855-0146

12 00 (2) #601

the following described property located and situated in Madison County, Mississippi, being more particularly described as follows, to-wit:

Indexing Instructions:
SW 1/4 Sec 21, T8N, R2E Madison Co., MS

SEE ATTACHED EXHIBIT "A"

BOOK 3578 PAGE 595

THIS CONVEYANCE is subject to all easements, restrictive covenants, affecting the above described property.

AD VALOREM taxes for the current year shall be assumed by the Grantee herein.

WITNESS THE SIGNATURE of the Grantors this 6th day of March, 2018.

S. L. Sethi

Dr. S. L. Sethi

Raksha Sethi

Raksha Sethi

STATE OF MISSISSIPPI

COUNTY OF HINDS

PERSONALLY appeared before me, the undersigned authority in and for the State and County aforesaid, on this 6th day of March, 2018, within my jurisdiction, the within named Dr. S. L. Sethi and Raksha Sethi, who acknowledged that he/she/he executed the above and foregoing instrument of writing on the date listed above.

Christie Cowart

NOTARY PUBLIC

STATE OF MISSISSIPPI NOTARY PUBLIC ID # 31103 CHRISTIE COWART Commission Expires April 24, 2021 MADISON COUNTY

My Commission Expires: April 24, 2021

BOOK 3578 PAGE 596
###

EXHIBIT "A"

A parcel of land lying and situated in the SW ¼ of Section 21, Township 8 North, Range 2 East, Madison County, Mississippi being more particularly described as follows: Commence at a 2" iron pipe representing the SE corner of Section 21, Township 8 North, Range 2 East, Madison County, Mississippi and run thence S 90 degrees 00 minutes 00 seconds W for a distance of 3341.44 feet to a point; thence run N O degrees 00 minutes 00 seconds E for a distance of 1310.87 feet to an iron pin at the intersection of the westerly line of that parcel described in Book 2768 at page 443 and southerly line of the survey description in Exhibit A in Book 539 at page 863, said iron pin being the Point of Beginning of the parcel herein described. From the Point of Beginning run thence S 89 degrees 44 minutes 15 seconds W for a distance of 614.57 feet to the easterly line of that parcel described in Book 2549 at Page 206; thence run northerly along said easterly line for the following calls:

Northeasterly along the arc of a curve to the left having a radius of 812.00 feet, a delta angle of 18 degrees 21 minutes 54 seconds, a chord bearing of N 9 degrees 18 minutes 10 seconds E, a chord length of 259.16 feet and an arc length of 260.27 feet for a distance of 260.27 feet to a concrete right of way monument; thence N 0 degrees 10 minutes 34 seconds E for a distance of 744.83 feet to a point; thence northeasterly along the arc of a curve to the right having a radius of 1950.00 feet, a delta angle of 0 degrees 51 minutes 26 seconds; a chord bearing of N 0 degrees 36 minutes 16 seconds E, a chord length of 29.17 feet and an arc length of 29.17 feet for a distance of 29.17 feet to a concrete right of way monument; thence S 88 degrees 58 minutes 01 seconds E for a distance of 75.00 feet to a concrete right of way monument; thence northeasterly along the arc of a curve to the right having a radius of 1875.00 feet, a delta angle of 1 degrees 43 minutes 08 seconds, a chord bearing of N 1 degrees53 minutes 33 seconds E, a chord length of 56.25 feet and an arc length of 56.25 feet for a distance of 56.25 feet to an iron pin; thence N 87 degrees 14 minutes 53 seconds W for a distance of 75.00 feet to a concrete right of way monument; thence northeasterly along the arc of a curve to the right having a radius of 1950.00 feet, a delta angel of 5 degrees 57 minutes 16 seconds, a chord bearing of N 5 degrees 43 minutes 44 seconds E, a chord length of 202.56 feet and an arc length of 202.56 feet for a distance of 202.56 feet to an iron pin on the north line of the survey description in Exhibit A, Book 539 at page 863; thence run N 89 degrees 43 minutes 17 seconds E along said north line for a distance of 816.42 feet to a point; thence run S 88 degrees 33 minutes 54 seconds E along said north line for a distance of 428.34 feet to an iron pin; thence run S 0 degrees 06 minutes 48 seconds W along the easterly line of said Exhibit A for a distance of 131.31 feet to an iron pin on the westerly right of way of Interstate Highway 55 per Federal Aid Project #IR- 55-2(140)111; thence in southwesterly along said right of way and along the arc of a curve to the right having a radius of 5623.58 feet; a delta angle of 4 degrees 23 minutes 17 seconds, a chord bearing of S 27 degrees 40 minutes 57 seconds W, a chord length of 430.57 feet and an arc length of 430.68 feet for a distance of 430.68 feet to a point; thence run S 29 degrees 52 minutes 35 seconds W along said right of way for a distance of 253.37 feet to an iron pin representing the northernmost corner of that parcel described in Book 2768 at page 443; thence run along the westerly line of said parcel for the following calls: S 60 degrees 36 minutes 28 seconds W for a distance of 174.92 feet to an iron pin; thence S 45 degrees 03 minutes 58 seconds W for a distance of 150.42 feet to an iron pin; thence S 28 degrees 05 minutes 45 seconds W for a distance of 185.07 feet to an iron pin; S 11 degrees 12 minutes 33 seconds W for a distance of 126.49 feet to an iron pin; thence S 0 degrees 25 minutes 28 seconds E for a distance of 65.49 feet to the Point of Beginning. This parcel contains 27.82 acres, more or less.

City of Gluckstadt

Application for Site Plan Review

Subject Property Address: Springhill Suites · Gluckstadt Village

Parcel #: 082E-21-006

Owner: Bellamare Development
Address: 1554 W. Peace St
Canton, MS 39046

Applicant: Sunny Sehti
Address: 1554 W. Peace St.
Canton, MS 39046

Phone #: 601-613-1188

Phone #: 601-613-1188

E-Mail: Sunny.Sehti@JackiesInternational.com

Current Zoning District: C-2

Acreage of Property (If applicable): 3.08 ac

Use sought of Property: Hotel / Office

Requirements of Applicant:

1. Copy of written legal description.
2. Site Plan as required in Sections 807-810 of City of Gluckstadt Zoning Ordinance
3. Color Rendering & Elevations at time of submittal

Requirements for Site Plan Submittal (Refer to Section 807, Gluckstadt Zoning Ordinance)

Nine (9) copies of the site plan shall be prepared and submitted to the Zoning Administrator. Digital copies are acceptable. Three (3) hard copies are required.

Site Plan Specifications (Section 809, Zoning Ordinance)

A. Lot Lines (property lines)
B. Zoning of the adjacent lots
C. The names of owners of adjacent lots
D. Rights of way existing and proposed streets, including streets shown on the adopted Throughfares plan
E. Access ways, curb cuts, driveways, and parking, including number of parking spaces to be provided
F. All existing and proposed easements
G. All existing and proposed water and sewer lines. Also, the location of all existing and proposed fire hydrants.
H. Drainage plan showing existing and proposed storm drainage facilities. The drainage plan shall indicate adjacent off site drainage courses and projected storm water flow rates from off-site and on-site sources.

I. Contours at vertical intervals of five (5) feet or less.
J. Floodplain designation, according to FEMA Maps.
K. Landscaped areas and planting screens.
L. Building lines and the locations of all structures, existing and proposed
M. Proposed uses of the land and buildings, if known
N. Open space and recreation areas, where required.
O. Area in square feet, and/or square acres of parcel
P. Proposed gross lot coverage in square feet
Q. Number and type of dwelling units where proposed
R. Location of sign structures and drawings. (Section 701)
S. Location of garbage dumpster and enclosure. (Section 406.06)
T. Any other data necessary to allow for a through evaluation of the proposed use, including a traffic study.

Applicant shall be present at the monthly meeting of the Planning and Zoning Commission when site plan is on the agenda for consideration; additionally, applicant shall be present at the Mayor and Board of Alderman meeting when the site plan is on the agenda for final approval.

Applicant is responsible for complying with all applicable requirements of the Gluckstadt Zoning Ordinance.

Site Plans shall be submitted by the 5:00 pm on the 5th day of the month, immediately preceding the next regular meeting of the Planning and Zoning Commission. No Exceptions.

Once submitted to the Planning & Zoning Administrator for approval to add to the Planning and Zoning Commission's agenda, no amendments or changes shall be made to the site plan. If you wish to submit changes, you will be required to resubmit by the 5th of the following month for the next monthly meeting of the Planning and Zoning Commission.

Attestation: ***By signing this application, the applicant agrees to all the terms and conditions laid out in this document. Approval of site plan is subject to Board approval.***

Sam Salti — 3.6.23

Applicant Signature **Date**

CITY OF GLUCKSTADT BUILDING DEPARTMENT
OFFICE USE ONLY

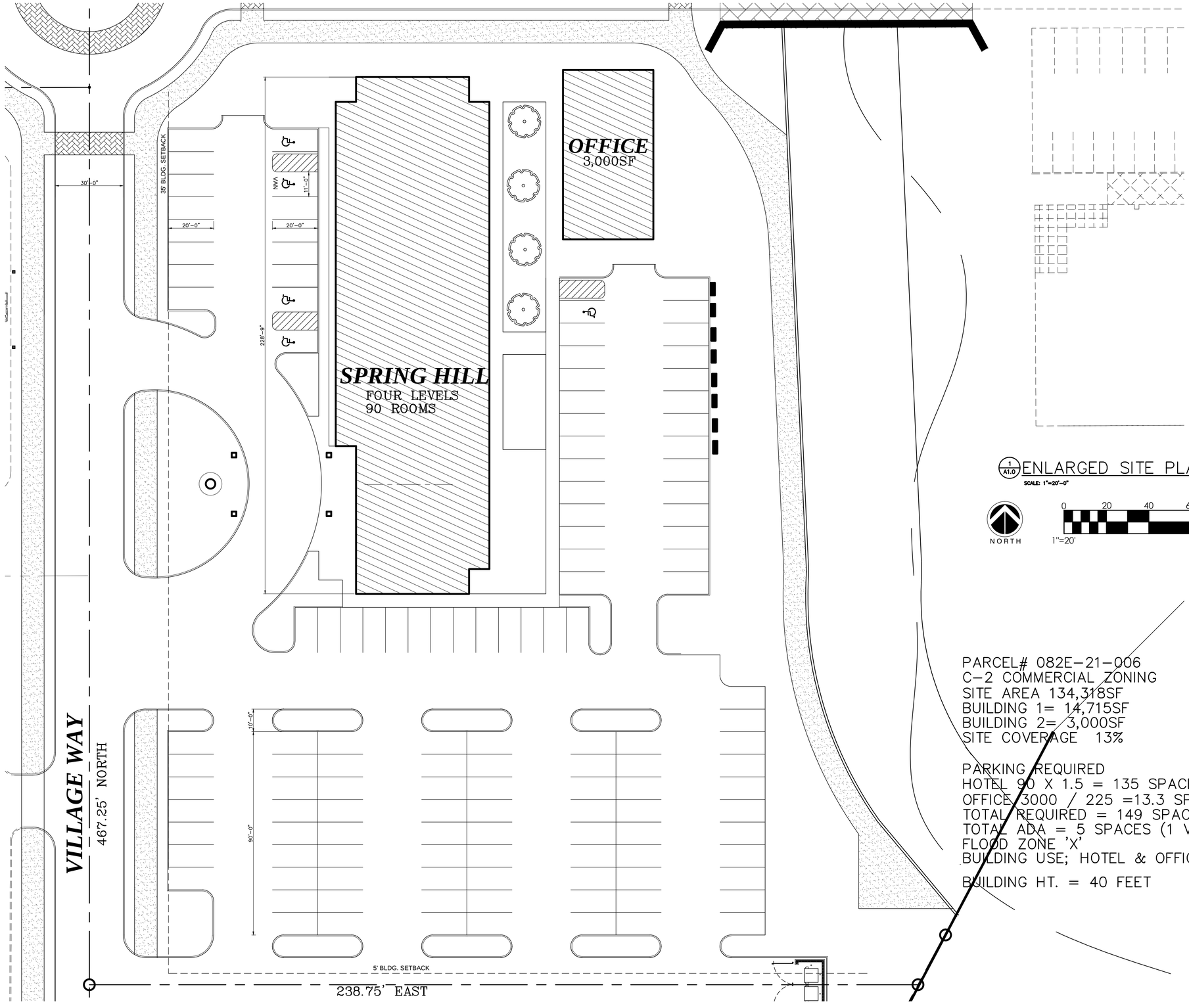
Date Received: _____

Application Complete & Approved to Submit to P&Z Board (please check):

Yes_____ **No**_____

Signature: _____

Planning & Zoning Administrator (or Authorized Representative)



1/A1.0 ENLARGED SITE PLAN

SCALE: 1"=20'-0"

NORTH

0 20 40 60

1"=20'

PARCEL# 082E-21-006
C-2 COMMERCIAL ZONING
SITE AREA 134,318SF
BUILDING 1= 14,715SF
BUILDING 2= 3,000SF
SITE COVERAGE 13%

PARKING REQUIRED
HOTEL 90 X 1.5 = 135 SPACES
OFFICE 3000 / 225 =13.3 SPACES
TOTAL REQUIRED = 149 SPACES
TOTAL ADA = 5 SPACES (1 VAN INCLUDED)
FLOOD ZONE 'X'
BUILDING USE; HOTEL & OFFICE

BUILDING HT. = 40 FEET

REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110
601-209-8665
WOOLDRIDGEARCHITECTURE@YAHOO.COM

Springhill
Calhoun Station Parkway
Gluckstadt, Mississippi

DRAWN	
CHECKED	
DATE	4/17/23
SCALE	
JOB NO.	
SHEET	A0.1
OF	SHEETS

DW 4/17/2023 8:34 AM MOTOR WORKS OVERALLL SITE PLAN.dwg

City of Gluckstadt

Application for Site Plan Review

Subject Property Address: Madison Motorworks in Gluckstadt Village

Parcel #: 083E-21-006

Owner: Stephen Magowan

Address: 176 American Way
Madison, MS 39110

Phone #: 601-968-7838

E-Mail: stephen@madisonmotorworks.com

Applicant: Stephen Magowan

Address:

Phone #: 601-968-7838

E-Mail: Same

Current Zoning District: C-2

Acreage of Property (If applicable): 1.81 ac

Use sought of Property: Automotive Repair

Requirements of Applicant:

1. Copy of written legal description.
2. Site Plan as required in Sections 807-810 of City of Gluckstadt Zoning Ordinance
3. Color Rendering & Elevations at time of submittal

Requirements for Site Plan Submittal (Refer to Section 807, Gluckstadt Zoning Ordinance)

Nine (9) copies of the site plan shall be prepared and submitted to the Zoning Administrator. Digital copies are acceptable. Three (3) hard copies are required.

Site Plan Specifications (Section 809, Zoning Ordinance)

A. Lot Lines (property lines)
B. Zoning of the adjacent lots
C. The names of owners of adjacent lots
D. Rights of way existing and proposed streets, including streets shown on the adopted Throughfares plan
E. Access ways, curb cuts, driveways, and parking, including number of parking spaces to be provided
F. All existing and proposed easements
G. All existing and proposed water and sewer lines. Also, the location of all existing and proposed fire hydrants.
H. Drainage plan showing existing and proposed storm drainage facilities. The drainage plan shall indicate adjacent off site drainage courses and projected storm water flow rates from off-site and on-site sources.

I. Contours at vertical intervals of five (5) feet or less.
J. Floodplain designation, according to FEMA Maps.
K. Landscaped areas and planting screens.
L. Building lines and the locations of all structures, existing and proposed
M. Proposed uses of the land and buildings, if known
N. Open space and recreation areas, where required.
O. Area in square feet, and/or square acres of parcel
P. Proposed gross lot coverage in square feet
Q. Number and type of dwelling units where proposed
R. Location of sign structures and drawings. (Section 701)
S. Location of garbage dumpster and enclosure. (Section 406.06)
T. Any other data necessary to allow for a through evaluation of the proposed use, including a traffic study.

Applicant shall be present at the monthly meeting of the Planning and Zoning Commission when site plan is on the agenda for consideration; additionally, applicant shall be present at the Mayor and Board of Alderman meeting when the site plan is on the agenda for final approval.

Applicant is responsible for complying with all applicable requirements of the Gluckstadt Zoning Ordinance.

Site Plans shall be submitted by the 5:00 pm on the 5th day of the month, immediately preceding the next regular meeting of the Planning and Zoning Commission. No Exceptions.

Once submitted to the Planning & Zoning Administrator for approval to add to the Planning and Zoning Commission's agenda, no amendments or changes shall be made to the site plan. If you wish to submit changes, you will be required to resubmit by the 5th of the following month for the next monthly meeting of the Planning and Zoning Commission.

Attestation: ***By signing this application, the applicant agrees to all the terms and conditions laid out in this document. Approval of site plan is subject to Board approval.***

_____ 3.6.23
Applicant Signature **Date**

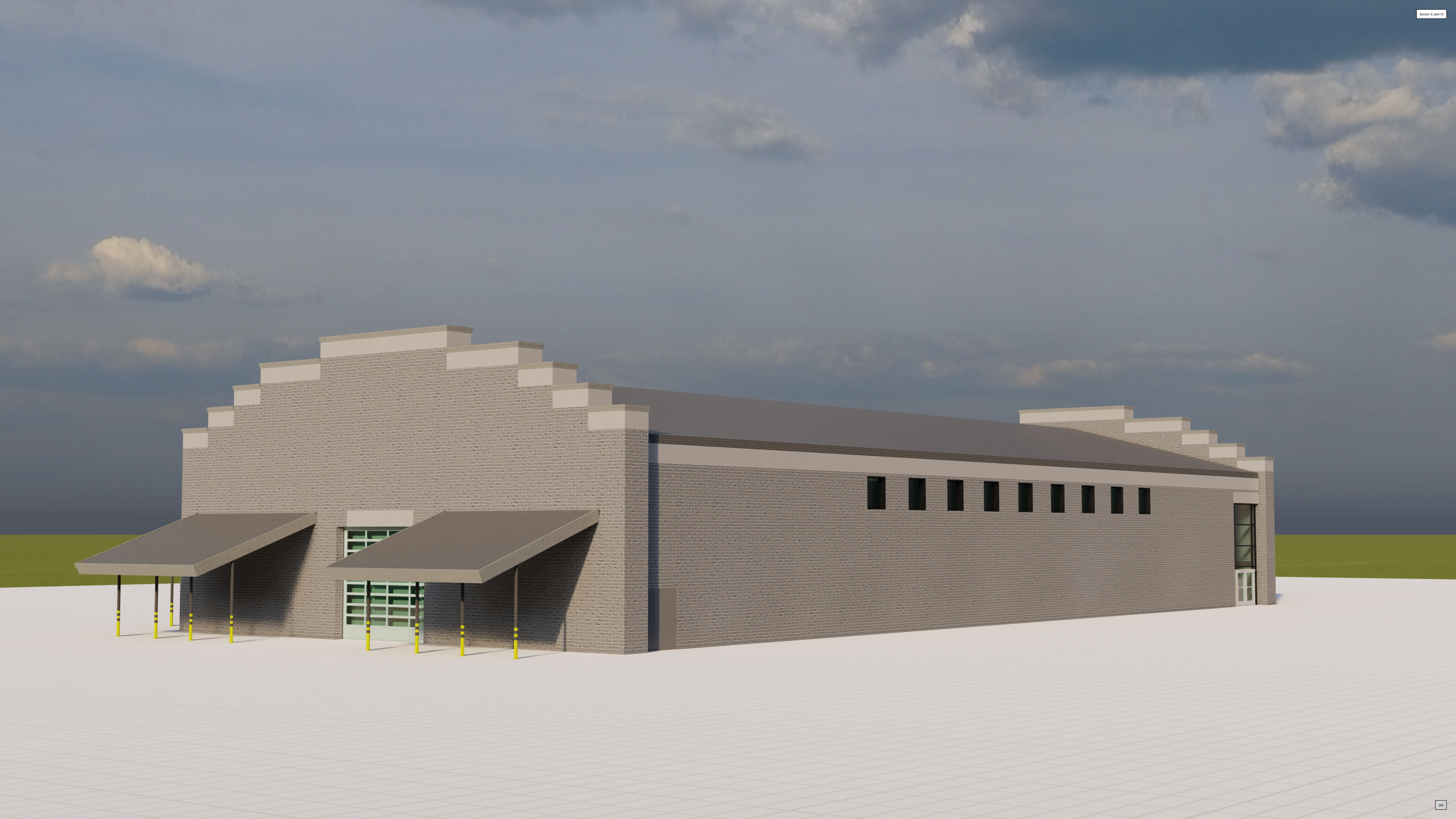
CITY OF GLUCKSTADT BUILDING DEPARTMENT
OFFICE USE ONLY

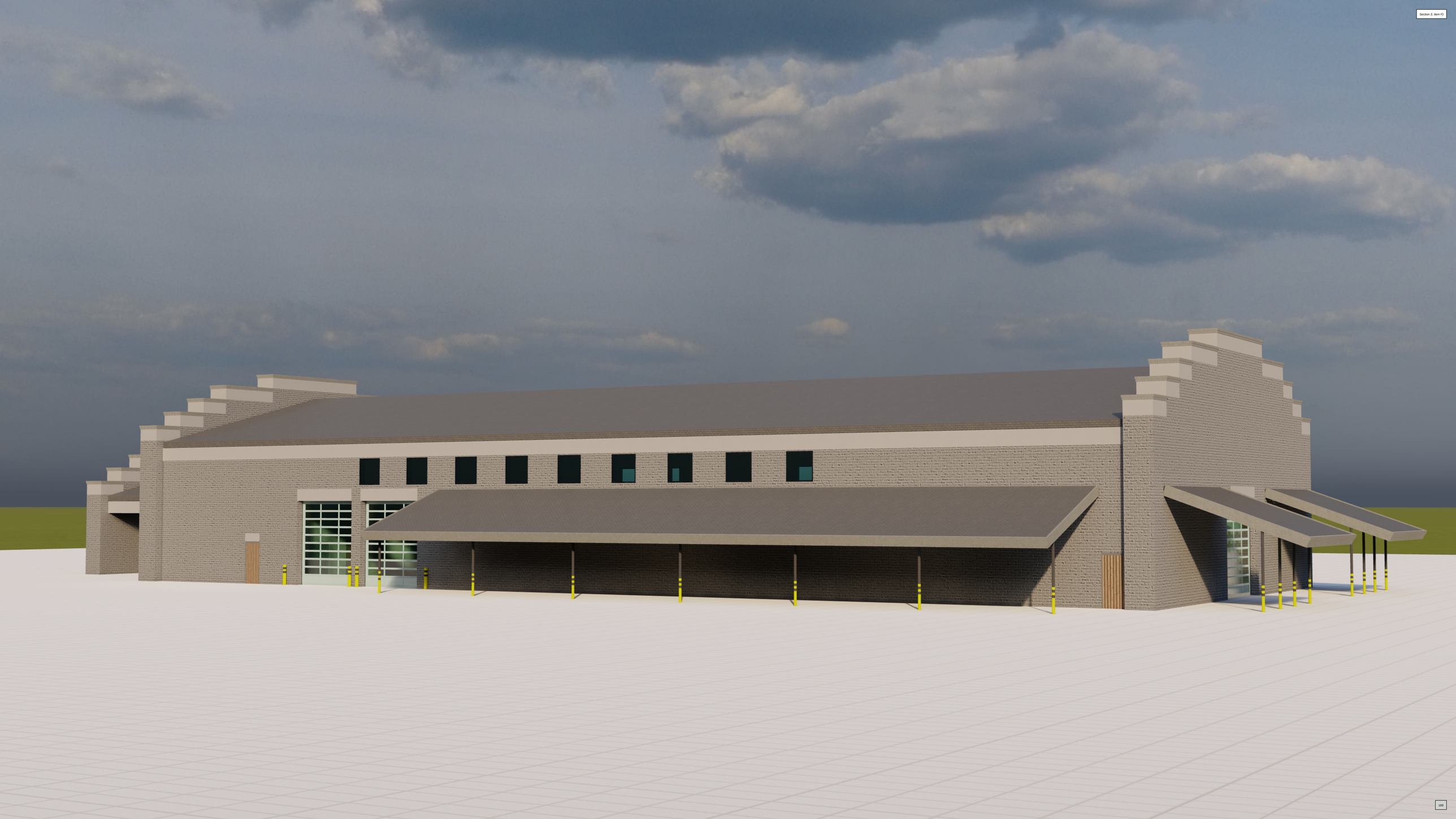
Date Received: _____

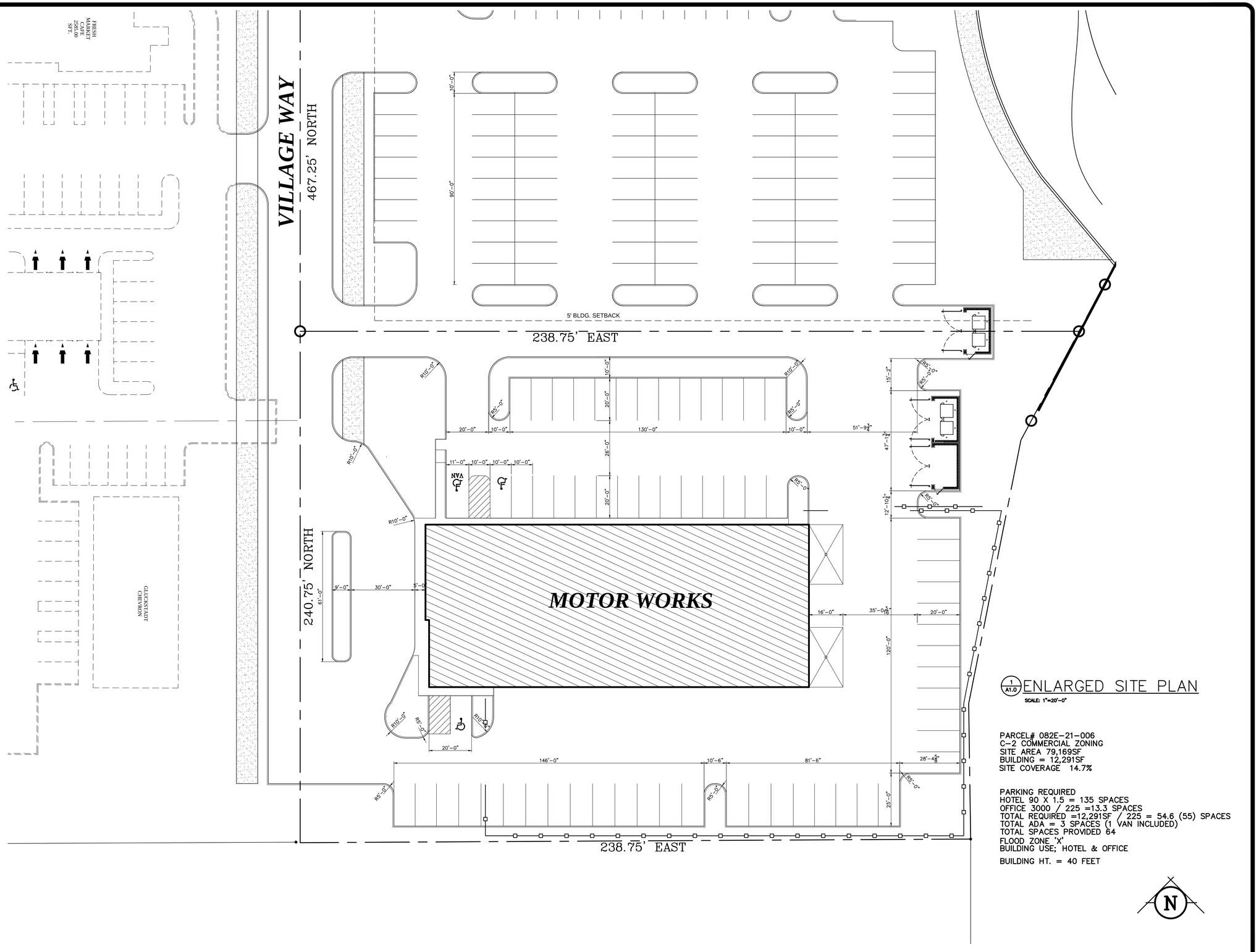
Application Complete & Approved to Submit to P&Z Board (please check):

Yes_____ **No**_____

Signature: _____
Planning & Zoning Administrator (or Authorized Representative)







ENLARGED SITE PLAN

A1.0 — SCALE: 1"=20'-0"

PARCEL# 082E-21-006
C-2 COMMERCIAL ZONING
SITE AREA 79,169SF
BUILDING = 12,291SF
SITE COVERAGE 14.7%

PARKING REQUIRED
HOTEL 90 X 1.5 = 135 SPACES
OFFICE 3000 / 225 =13.3 SPACES
TOTAL REQUIRED =12,291SF / 225 = 54.6 (55) SPACES
TOTAL ADA = 3 SPACES (1 VAN INCLUDED)
TOTAL SPACES PROVIDED 64
FLOOD ZONE 'X'
BUILDING USE; HOTEL & OFFICE

BUILDING HT. = 40 FEET

N

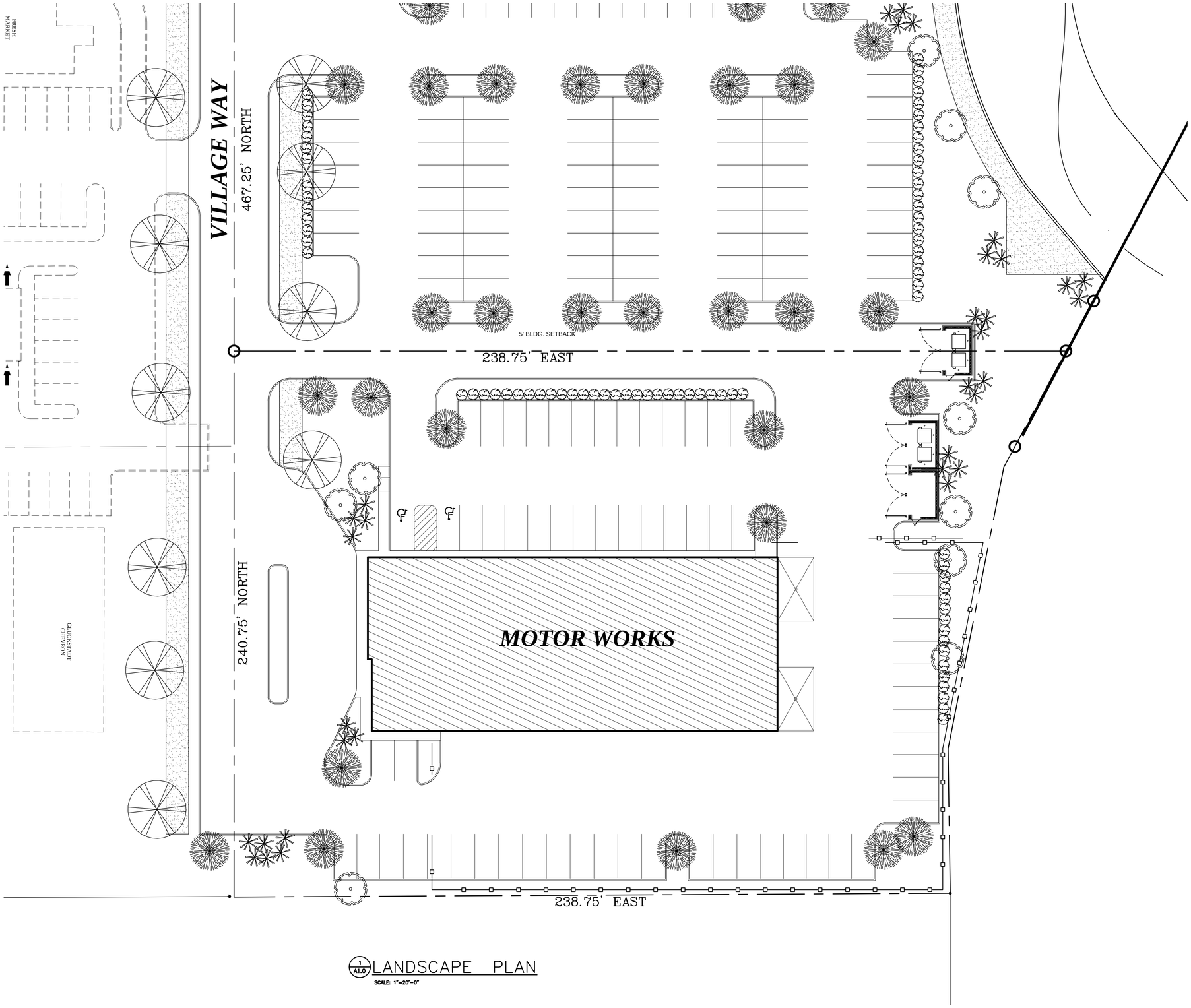
REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110
601-209-8665
WOOLDRIDGEARCHITECTURE@YAHOO.COM

Madison Motor Works
Calhoun Station Parkway
Gluckstadt, Mississippi

DRAWN	
CHECKED	
DATE	4/17/23
SCALE	
JOB NO.	
SHEET	A0.1
OF	SHEETS

DW 4/17/2023 8:34 AM MOTOR WORKS OVERALLL SITE PLAN.dwg



1 A1.0 LANDSCAPE PLAN
SCALE: 1"=20'-0"

REVISIONS	BY

WOOLDRIDGE & ASSOCIATES
464 CHURCH RD. SUITE 700
MADISON, MS 39110
601-209-8665
WOOLDRIDGEARCHITECTURE@YAHOO.COM

Madison Motor Works
Calhoun Station Parkway
Gluckstadt, Mississippi

DRAWN	
CHECKED	
DATE	4/17/23
SCALE	
JOB NO.	
SHEET	A0.2
OF	SHEETS

DW 4/17/2023 8:34 AM MOTOR WORKS OVERALLL SITE PLAN.dwg

City of Gluckstadt

Application for Site Plan Review

Subject Property Address: 1076 Gluckstadt Rd, Madison, MS 39110

Parcel #: 082D-20 -002/01.00

Owner: AutoZone, Attn: Wade Davis

Address: 1076 Gluckstadt Rd

Gluckstadt, MS 39110

Phone #: (901) 495-8701

E-Mail: wade.davis@autozone.com

Applicant: Yuri Hawley

Address: P.O. Box 1302

Fairview, TN 37062

Phone #: 615-495-0132

E-Mail: yuri@civilengineeringservices.net

Current Zoning District: General Commercial C-1

Acreage of Property (If applicable): 50,702± Sq. Ft. or 1.164± Ac

Use sought of Property: AutoZone Store

Requirements of Applicant:

1. Copy of written legal description.
2. Site Plan as required in Sections 807-810 of City of Gluckstadt Zoning Ordinance
3. Color Rendering & Elevations at time of submittal

Requirements for Site Plan Submittal (Refer to Section 807, Gluckstadt Zoning Ordinance)

Nine (9) copies of the site plan shall be prepared and submitted to the Zoning Administrator. Digital copies are acceptable. Three (3) hard copies are required.

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E. Access ways, curb cuts, driveways, and parking, including number of parking spaces to be provided
F. All existing and proposed easements
G. All existing and proposed water and sewer lines. Also, the location of all existing and proposed fire hydrants.
H. Drainage plan showing existing and proposed storm drainage facilities. The drainage plan shall indicate adjacent off site drainage courses and projected storm water flow rates from off-site and on-site sources.

I. Contours at vertical intervals of five (5) feet or less.
J. Floodplain designation, according to FEMA Maps.
K. Landscaped areas and planting screens.
L. Building lines and the locations of all structures, existing and proposed
M. Proposed uses of the land and buildings, if known
N. Open space and recreation areas, where required.
O. Area in square feet, and/or square acres of parcel
P. Proposed gross lot coverage in square feet
Q. Number and type of dwelling units where proposed
R. Location of sign structures and drawings. (Section 701)
S. Location of garbage dumpster and enclosure. (Section 406.06)
T. Any other data necessary to allow for a through evaluation of the proposed use, including a traffic study.

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Attestation: ***By signing this application, the applicant agrees to all the terms and conditions laid out in this document. Approval of site plan is subject to Board approval.***

Verified by pdfFiller 04/25/2023

Yuri Hawley
Applicant Signature

04/25/2023
Date

CITY OF GLUCKSTADT BUILDING DEPARTMENT

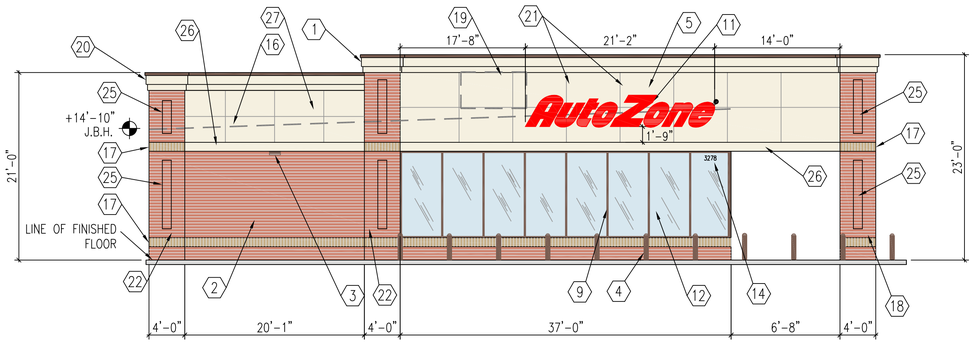
OFFICE USE ONLY

Date Received: 5-1-2023

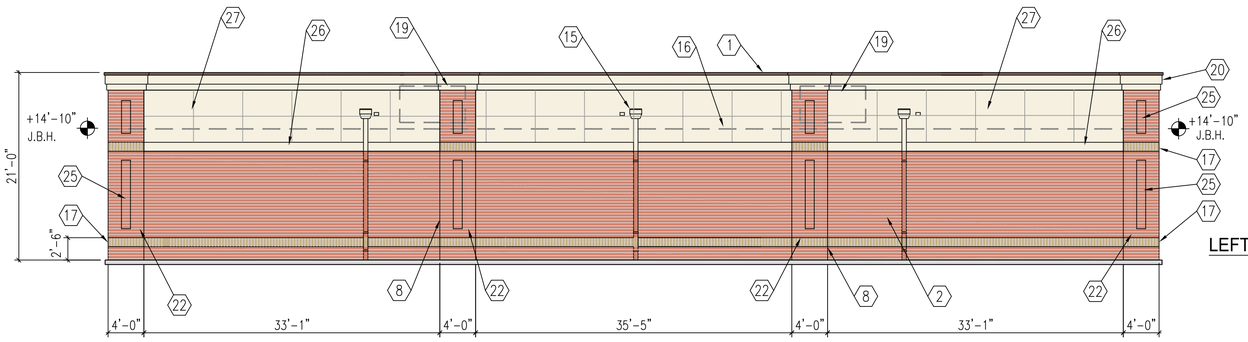
Application Complete & Approved to Submit to P&Z Board (please check):

Yes_____ **No**_____

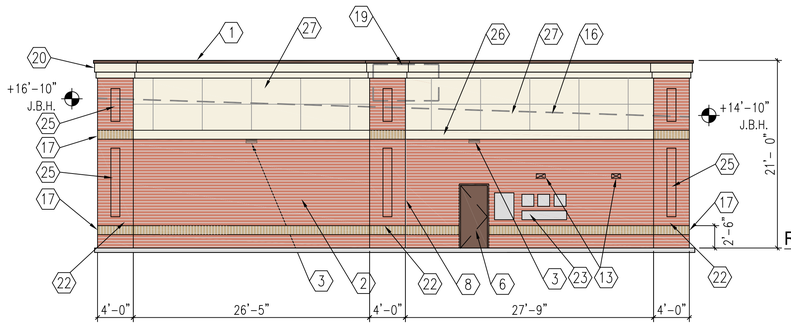
Signature: _____
Planning & Zoning Administrator (or Authorized Representative)



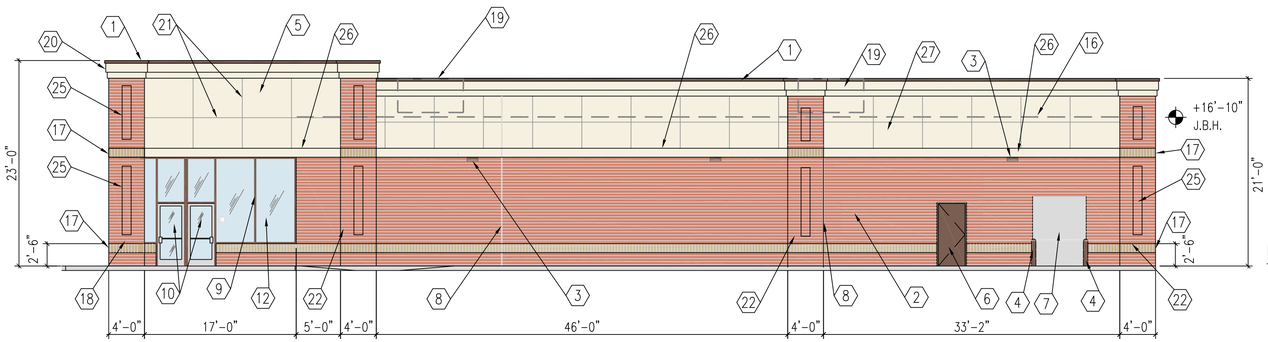
FRONT WALL (South View)
Gluckstadt Road



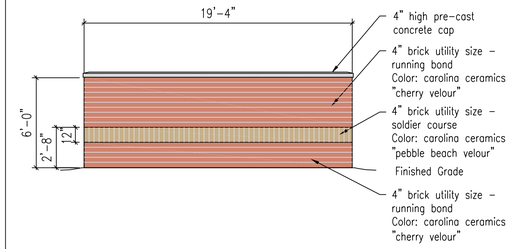
LEFT SIDE WALL (West View)



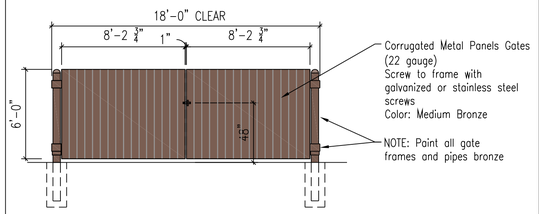
REAR WALL (North View)



LEFT SIDE WALL (South View)



3 DUMPSTER WALL ELEVATIONS



3 GATE DETAIL DUMPSTER ENCLOSURE

BRICK COLORS:

FIELD BRICK RUNNING BOND - UTILITY SIZE
COLOR: CAROLINA CERAMICS "CHERRY VELOUR"

STACKED BRICK - UTILITY SIZE
COLOR: CAROLINA CERAMICS "CHERRY VELOUR"

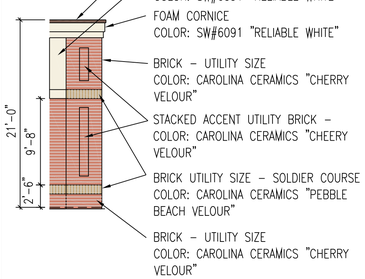
SOLDIER COURSE BRICK - UTILITY SIZE
COLOR: CAROLINA CERAMICS "PEBBLE BEACH VELOUR"

J.B.H. = JOIST BEARING HEIGHT

1 BUILDING ELEVATIONS

1. PREFINISHED TWO PIECE COMPRESSION TRIM
COLOR: DURO-LAST "DARK BRONZE"
2. BRICK UTILITY SIZE - RUNNING BOND
COLOR: CAROLINA CERAMICS "CHERRY VELOUR"
3. WALL MOUNTED LIGHT FIXTURE - DARK BRONZE FINISH
4. PIPE GUARD WITH ARCHITECTURAL BROWN SLEEVE
5. STUCCO FINISH
COLOR: SW#6091 RELIABLE WHITE
6. PAINT MAN DOOR & METAL FRAMES DARK BRONZE
7. PAINT OVERHEAD DOOR & ANGLES DARK BRONZE
8. EXPANSION JOINT
9. ALUMINUM STOREFRONT - DARK BRONZE FINISH
10. GLASS AND ALUMINUM DOORS - CLEAR ANODIZED FINISH
11. FRONT WALL SIGN - 42" RED CHANNEL LETTERS
12. ALUMINUM STOREFRONT - DARK BRONZE FACTORY FINISH WITH TINTED GRAY GLASS
13. TOILET WALL VENTS PAINT TO MATCH WALL
14. STORE ADDRESS - 6" WHITE REFLECTIVE NUMBERS
15. SCUPPERS AND DOWNSPOUTS. PAINTED TO MATCH BACKGROUND WALL COLOR. ADJACENT 4" H. X 6" W. OVERFLOW SCUPPER. FLOWLINE 2" ABOVE ROOF.
16. BOND BEAM AT ROOF LINE
17. BRICK UTILITY SIZE - SOLDIER COURSE
COLOR: CAROLINA CERAMICS "PEBBLE BEACH VELOUR"
18. 4'-0" SQUARE BRICK COLUMN
19. HVAC UNITS SCREENED BEHIND PARAPET WALL
20. FOAM CORNICE
COLOR: SW#6091 "RELIABLE WHITE"
21. 1" VERTICAL AND HORIZONTAL V-GROVE SCORED JOINTS (TYP.)
22. 4'-0" WIDE BRICK PILASTER (8" PROJECTION)
23. ELECTRICAL EQUIPMENT
24. NOT USED
25. STACKED ACCENT UTILITY BRICK - (⅛" RECESSED)
COLOR: CAROLINA CERAMICS "CHERRY VELOUR"
26. 12" HIGH X 1" DEPTH FOAM BOARD TRIM W/ E.F.S.
COLOR: SW #6091 "RELIABLE WHITE"
27. STUCCO FINISH
COLOR: SW #6091 "RELIABLE WHITE"

2 ELEVATION KEYNOTES



FIELD BRICK RUNNING BOND - UTILITY SIZE
COLOR: CAROLINA CERAMICS "CHERRY VELOUR"

STACKED BRICK - UTILITY SIZE
COLOR: CAROLINA CERAMICS "CHERRY VELOUR"

SOLDIER COURSE BRICK - UTILITY SIZE
COLOR: CAROLINA CERAMICS "PEBBLE BEACH VELOUR"

BRICK MORTAR COLOR: BEIGE

CONTACT: JEAN BREKLICH 803-788-1917

SCALE: ⅛" = 1'-0"

3 EXTERIOR WALL COLOR SCHEME

AUTOZONE INC.
Architect: Lew Ellis
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL: (901) 495-8707 FAX: (901) 495-8969
Email Address: george.callow@autozone.com

Prepared For: **AutoZone** STORE DEVELOPMENT
Store No. 5607
1076 GLUCKSTADT ROAD
GLUCKSTADT, MS 39110

COLOR ELEVATIONS

REVISIONS
1.
2.
3.
4.

SCALE: 1/8" = 1'-0"

REGISTERED ARCHITECT
George W. Callow
2079
Memphis TN
STATE OF MISSISSIPPI

DATE
10/12/21

PROTOTYPE SIZE
7N2L

CE

PREPARED BY AND RETURN TO:

Gardner Richey (MS Bar #: 105292)
Maples & Richey, PLLC
801 Baptist Drive, Suite 203
Madison, Mississippi 39110
Phone: (601) 707-4114

INDEXING INSTRUCTIONS:

SE 1/4 of Section 20, T8N, R2E
Madison County, Mississippi

Parcel #: 082D-20-002/01.00

WARRANTY DEED

FOR AND IN CONSIDERATION of the sum of Ten Dollars and No/100 ($10.00), cash in hand paid, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned,

Cliff Smith and Charlotte T. Smith ("Grantor")
104 Sumter Court, Madison, MS 39110
Phone: 601-940-6520

does hereby GRANT, BARGAIN, SELL, CONVEY AND WARRANT to

AutoZone Mississippi Properties, LLC, a Nevada limited liability company ("Grantee")
123 S. Front Street, 3rd Floor, Memphis, TN 38103
Phone: 901-495-6500

the following described land (the "Property"), situated, lying and being in **Madison County**, Mississippi, to-wit:

See Exhibit A attached hereto and made a part hereof.

TOGETHER WITH all improvements and appurtenances, with every privilege, right, title, interest and estate, reversion, remainder, and easement thereto belonging or in anyway appertaining, to have and to hold the same in fee simple forever.

This conveyance and the warranty hereof are SUBJECT TO (a) ad valorem real property taxes and assessments for the current and subsequent years; (b) all zoning, environmental and other building and other regulations, laws, ordinances, orders, rules, permits, restrictions, codes and requirements of any governmental authorities, federal, state, county, local or otherwise; and (c) all covenants, conditions, restrictions, reservations (including prior oil, gas, mineral and royalty reservations), severances, easements, rights of way, leases or any other encumbrance or limitation of record, if any.

Current ad valorem taxes on the Property having been prorated, Grantee hereby assumes payment of all ad valorem real property taxes and assessments on the Property for the current year and subsequent years.

The terms "Grantor" and "Grantee" are used for singular or plural, as context requires, and include the respective heirs, personal representatives, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, Grantor has signed this Warranty Deed on the date acknowledged below.

GRANTOR:

Cliff Smith

Charlotte T. Smith

STATE OF MS
COUNTY OF Madison

Personally appeared before me, the undersigned authority in and for the said county and state, on this 16th day of August, 2022, within my jurisdiction, the within named Cliff Smith and Charlotte T. Smith, who acknowledged that they executed the above and foregoing instrument.

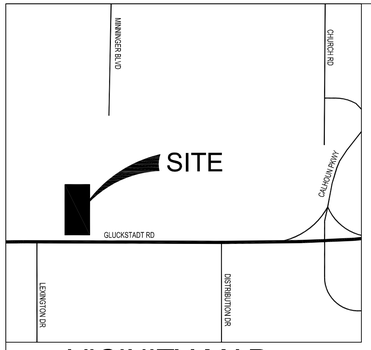
Notary Public

STATE OF MISSISSIPPI
John David Harrison
NOTARY PUBLIC
ID No. 168764
My Comm. Expires
Dec. 26, 2023
HINDS COUNTY

EXHIBIT A
LEGAL DESCRIPTION

A PARCEL OF LAND CONTAINING 1.16 ACRES, MORE OR LESS, SITUATED IN THE SOUTHEAST 1/4 OF SECTION 20, TOWNSHIP 8 NORTH, RANGE 2 EAST, MADISON COUNTY, MISSISSIPPI AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT A FOUND IRON PIN IN THE NEW NORTHERN RIGHT OF WAY LINE OF GLUCKSTADT ROAD WHICH IS 2620.57 FEET SOUTH OF AND 1425.29 FEET EAST OF THE NORTHWEST CORNER OF THE SOUTHEAST 1/4 OF SAID SECTION 20, AS SHOWN ON ATTACHED SURVEY AND RUN THENCE SOUTH 89 DEGREES 30 MINUTES 58 SECONDS WEST ALONG SAID NORTHERN RIGHT OF WAY LINE FOR A DISTANCE OF 160.00 FEET TO A FOUND IRON PIN; LEAVING SAID NEW RIGHT OF WAY LINE, RUN THENCE NORTH 00 DEGREES 19 MINUTES 46 SECONDS WEST FOR A DISTANCE OF 349.28 FEET TO A FOUND IRON PIN; THENCE SOUTH 69 DEGREES 43 MINUTES 45 SECONDS EAST FOR A DISTANCE OF 68.24 FEET; THENCE SOUTH 66 DEGREES 15 MINUTES 08 SECONDS EAST FOR A DISTANCE OF 99.48 FEET; THENCE SOUTH 63 DEGREES 08 MINUTES 15 SECONDS EAST FOR A DISTANCE OF 5.89 FEET; THENCE SOUTH 00 DEGREES 19 MINUTES 46 SECONDS EAST ALONG THE EDGE OF CONCRETE PARKING AND A PROJECTION THEREOF FOR A DISTANCE OF 281.57 FEET TO THE POINT OF BEGINNING.



VICINITY MAP
(NOT TO SCALE)

AutoZone

AutoZone Store Development
Preliminary/Final Site Plan Submission

for:

AutoZone Store No. O152
1076 GLUCKSTADT RD
MADISON, MS 39110

PARCEL: 002 / 01.00

SURVEYOR:
BLEW & ASSOCIATES, PA
3825 N. SHILOH DRIVE
FAYETTEVILLE, AR 72703
(479) 443-4506

OWNER:
AUTOZONE, INC.
c/o: WADE DAVIS
123 S. FRONT STREET, 3RD FLOOR
MEMPHIS, TENNESSEE 38103
(901) 495-8701

CIVIL ENGINEERING:
Civil Engineering Services
7705 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: ray@civilengineeringservices.net
Engineering, Land Planning, and Environmental

PLAN SUBMITTAL DATE:
APRIL, 2023

INDEX OF DRAWINGS

NAD83 MS STATE PLANE

REVISIONS
1 | 2 | 3 | 4 | 5 | 6

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110
COVER SHEET

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL.:(901) 495-8994 FAX: (901) 495-8969

For Bidding & Contractor Information Contact:
Dodge Data & Analytics. Tel. 413-930-4215
Cindy.searcy@construction.com

RAYMOND G. CLARK LICENSED PROFESSIONAL ENGINEER 21060 STATE OF MISSISSIPPI 03/10/2022

4/25/2023

7N2

C0.0

ALTA/NSPS Land Title Survey

Title Information

First American Title Insurance Company National Commerical Services
File No.: NCS-1078176-MICH
Commitment Date: July 26, 2021 at 8:00 AM

Schedule A Description

The Land referred to herein below is situated in the County of Madison, State of Mississippi, and is described as follows:

A parcel of land containing 1.16 acres, more or less, situated in the Southeast 1/4 of Section 20, Township 8 North, Range 2 East, Madison County, Mississippi and more particularly described as follows:

Begin at a found iron pin in the new Northern Right of Way line of Gluckstadt Road which is 2620.57 feet South of and 1425.29 feet East of the Northwest corner of the Southeast 1/4 of said Section 20, as shown on attached survey and run Thence South 89 Degrees 30 Minutes 58 Seconds West along said Northern Right of Way line for a distance of 160.00 feet to a found iron pin; Leaving said new Right of Way line, Run thence North 00 Degrees 19 Minutes 46 Seconds West for a distance of 349.28 feet to a found iron pin; Thence South 69 Degrees 43 Minutes 45 Seconds East for a distance of 68.24 feet; Thence South 66 Degrees 15 Minutes 08 Seconds East for a distance of 99.48 feet; Thence South 63 Degrees 08 Minutes 15 Seconds East for a distance of 5.89 feet; Thence South 00 Degrees 19 Minutes 46 Seconds East along the edge of concrete parking and a projection thereof for a distance of 281.57 feet to the Point of Beginning.

Schedule B - Section II

10 – Right of Way Easement granted to Bear Creek Water Association, Inc. recorded in Book 161, Page 632.Mecklenburg County Registry.
(Does not affect)

11 – Right of Way and easement granted to Mississippi Power & Light Company recorded in Book 324, Page 724.
(Does not affect)

12 – Right of Way and Easement Deed for Distribution System granted to Centerpoint Energy Resources Corp., d/b/a Centerpoint Energy Mississippi Gas recorded in Book 2018, Page 53.
(Does not affect)

13 – Right of Way and easement granted to Mississippi Power & Light Company recorded in Book 235, Page 124.
(Affects, approximate location shown hereon)

14 – Terms and conditions of that certain Quitclaim and Boundary Line Agreement by and between Cliff Smith and Charlotte T. Smith; The Giles Group, LLC; and Sturdivant Empire, LLC recorded in Book 3455, Page 917.
(Affects, Current Boundary as shown)

Zoning Information

PROPERTY IS CURRENTLY ZONED:
Zone - (C1) General/Indoor Commercial

ITEM	REQUIRED	OBSERVED
PERMITTED USE	General Commercial	OBSERVED
MIN. LOT AREA	21780 SQ FEET	OBSERVED
MIN. LOT WIDTH	REFER TO NOTES	OBSERVED
MAX. BLDG COVERAGE	NONE	OBSERVED
MIN. SETBACKS FRONT	35 FEET	OBSERVED
MIN. SETBACKS SIDE	REFER TO NOTES	OBSERVED
MIN. SETBACKS REAR	REFER TO NOTES	OBSERVED
MAX BUILDING HEIGHT	40 FEET	OBSERVED
PARKING REGULAR	REFER TO NOTES	OBSERVED
PARKING HANDICAP	REFER TO NOTES	OBSERVED
PARKING TOTAL	REFER TO NOTES	OBSERVED

Blew & Associates makes no warranty to the exact regulations or ordinances represented on the drawing hereon. The user of this survey should consult an attorney or title insurer to verify the zoning classification of the property as well as the applicable restrictions and requirements associated with such zoning classification.

Specific zoning information as shown hereon is as interpreted by the surveyor per Madison County zoning 2019 PDF, and should be confirmed by a licensed Mississippi attorney or zoning professional in the controlling jurisdiction.

Notes:

Because there may be a need for interpretation of the applicable zoning codes, we refer you to Madison County for zoning laws and applicable codes.

Lot Width Notes:

Shopping centers:
200 feet.

Independent commercial uses:
100 feet. For any lot having a width of less than 200 feet, there shall be no more than one access driveway per lot. For lots having a width of 200 feet or more, two access driveways may be provided for every 200 feet of street/ road frontage. Interior circulation streets shall be provided for all commercial subdivisions approved after the effective date of this Ordinance.

Setback Notes:

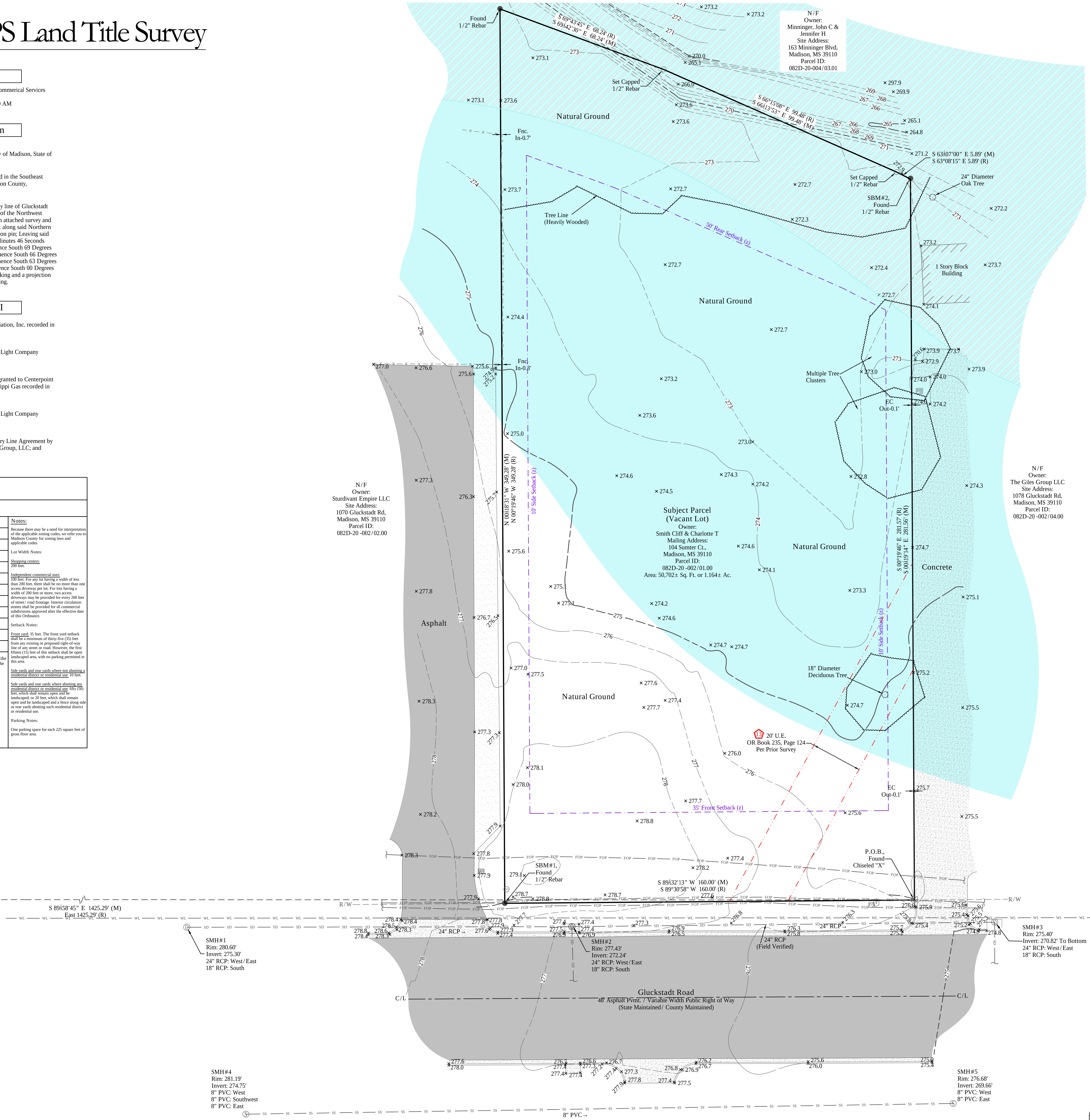
Front yard: 35 feet. The front yard setback shall be a minimum of thirty-five (35) feet from any existing or proposed right-of-way line of any street or road. However, the first fifteen (15) feet of this setback shall be open landscaped area, with no parking permitted in this area.

Side yards and rear yards where not abutting a residential district or residential use: 10 feet.

Side yards and rear yards where abutting any residential district or residential use: fifty (50) feet, which shall remain open and be landscaped; or 20 feet, which shall remain open and be landscaped and a fence along side or rear yards abutting such residential district or residential use.

Parking Notes:

One parking space for each 225 square feet of gross floor area.



Miscellaneous Notes

1. Completed field work was August 19, 2021.
2. The Basis of Bearing for this survey is Grid North per GPS coordinate observations Mississippi State Plane, West Zone NAD83.
   Latitude = 32°31'01.52438"
   Longitude = -90°06'38.10102"
   Convergence Angle = -00°07'11.06336"
3. Distances shown on plat are ground.
   Combined scale factor (ground to grid) = 0.99995539893531
4. Some features on this plat may be shown out of scale for clarity.
5. Dimensions on this plat are expressed in feet and decimal parts thereof unless otherwise noted. Monuments were found at points where indicated.
6. Any servitudes and restrictions shown on this survey are limited to those set forth in the description furnished to surveyor, and there is no representation that all applicable servitudes and restrictions are shown hereon.
7. Names and addresses of adjoining property owners were taken from Madison County tax cards and deeds.
8. The nearest fire hydrant is located in the South Right of Way of Cluckstadt Road approximately 200'± West of the Southwest corner of subject property .
9. No surveyor or any other person other than a licensed Mississippi attorney may provide legal advice concerning the status of Title to the property described in this survey ("the subject property"). The purpose of this survey, and the comments related to the Schedule B-II exceptions, is only to show the location of boundaries and physical objections in relation thereto. To the extent that the survey indicates that the legal instrument "affects" the subject property, such statement is only intended to indicate that property boundaries included in such instrument include some or all of the subject property. The surveyor does not purport to describe how such instrument affects the subject property or the enforceability or legal consequences of such instrument.
10. All bearings and distances shown hereon are measured dimensions unless otherwise noted hereon. Record dimensions, if differing from measured dimensions, will be followed by "(R#)" where the # indicates from which reference document the dimension originated.
11. Contour Interval = 1 foot
12. No parking spaces observed.
13. Surveyor notes that the property abuts the right-of-way of Cluckstadt Road. Access to the right-of-way may be subject to other agreements or proper governmental approvals.
14. There was no evidence of monitor wells, or any test borings on the subject property at the time of the survey.
15. At the time of the survey, there was no observable evidence of site use as a cemetery, isolated grave site or burial grounds.
16. At the time of the survey, there was no observable evidence of site use as a solid waste dump, sump, or sanitary landfill.
17. Elevations established with GPS static observations utilizing online positioning user service (OPUS) for post processing. (NAVD 1988 datum)
18. At the time of the survey, there were no changes in street right-of-way lines either completed or proposed, and available from controlling jurisdiction or observable evidence of recent street or sidewalk construction repairs.
19. There was no observable evidence of Earth moving work, building construction or building additions within recent months.
20. The nearest intersecting street is the intersection of Cluckstadt Road and Lexington Drive, which is approximately 200' from the Southwest corner of the subject property.
21. Surveyor did not receive current deeds for adjoining properties from the title insurer. Surveyor obtained the deed information reflected on this survey on their own. The user of this survey should consult an attorney or title insurer to verify the current deed descriptions for adjoining properties.
22. Reference documents noted hereon were obtained by the surveyor and any and all representations based thereon should be reviewed by a licensed attorney or title insurer for verification.
23. Surveyor did not receive any information from the title insurer regarding the current zoning classification of the property or any requirements related to the applicable zoning classification. Surveyor obtained the zoning information reflected on this survey on their own. The user of this survey should consult an attorney or title insurer to verify the zoning classification of the property as well as the applicable restrictions and requirements associated with such zoning classification.
24. No Buildings observed at the time of the Survey
25. Sanitary Sewer, Gas, and Water lines shown per map provided by the Bear Creek Water Association. No markings or other evidence for such utilities was observed in the field.
26. Due to silting, standing water or other environmental considerations, invert elevations depicted herein are measured down to the bottom center of the storm structure.

Flood Note

By graphic plotting only, this property is in Zone AE of the Flood Insurance Rate Map, Community Panel No. 28089-C0415-F, which bears an effective date of 03/17/2010 and is in a Special Flood Hazard Area

Zone Definitions According to the FEMA website.

Zone "AE" - The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.

Zone "X Unshaded" - Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.

Zone "Shaded X" - Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods.

Utility Notes

The utilities shown on this drawing hereon have been located by field measurements, utility map drawings, and one-call utility locate request. Blew & Associates makes no warranty to the exact location of any underground utilities shown or not shown on this drawing. It is the responsibility of the contractor to verify any and all utilities prior to construction. Call Mississippi one-call at 1 (800) 227-6477 for field locations (request for ground markings) of underground utility lines before digging.

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

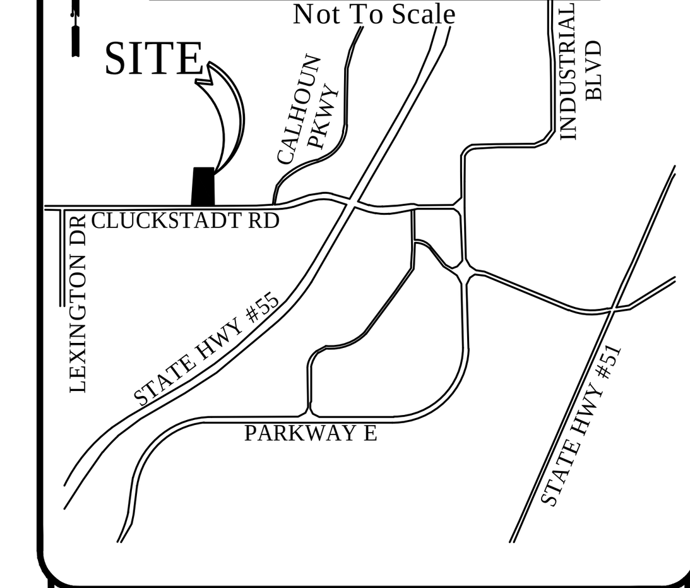
Elevation Benchmarks

Site Benchmark #1		Site Benchmark #2	
Type	Found 1/2" Rebar	Type	Found 1/2" Rebar
Northing	1097408.07	Northing	1097409.61
Easting	2365109.95	Easting	2365269.98
Elevation	277.93'	Elevation	272.84'
Benchmarks Northing & Eastings are applied with scale factor			

DATE	REVISION	BY

Vicinity Map

Not To Scale



Legend of Symbols & Abbreviations

Symbol	Meaning	Abbreviation	Meaning
×XXX.X	Spot Elevation	(M)	Measured Dimension
●	Found Rebar (As Noted)	(R)	Recorded Dimension
○	Set Rebar (As Noted)	(z)	Zoning Requirements
⌖	Computed Point	N/F	Now or Formerly
X	Found Chiseled "X"	SBM	Site Benchmark
FO	Fiber Optic Box	MH	Manhole
T	Telephone Pedestal	CI	Curb Inlet Basin
FO	Fiber Optic Vault	Inv	Invert of Pipe
MB	Mail Box	P.O.C.	Point of Commencement
PB	Power Box	P.O.B.	Point of Beginning
	Tree		

- Adjoiner Property Line
- Subject Property Line
- Easement line
- Utility Easement
- Building Setback
- Right-of-Way
- FOP Fiber Optic Line
- SD Storm Sewer Line
- WL Buried Water Line
- SS Sanitary Sewer Line
- GAS Underground Gas
- × Chainlink Fence
- Contour Major
- Contour Minor

Asphalt · Concrete · Gravel
Flood Zone - AE / AO / AH
Flood Zone- Floodway (Zones AE, AO, AH, VE, AR)

NORTH

Scale: 1" = 20'
0 20' 40'

Surveyor's Certification

To: AutoZone Parts, Inc; Cliff Smith and Charlotte T. Smith; Civil Engineering Services, PC; First American Title Insurance Company National Commerical Services:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 3, 4, 5, 7(a), 7(b1), 8, 9, 11, 13, 16, 17, 18, 19, 20 & 21 of Table A thereof. The field work was completed on 08/19/2021.

Date of Plat or Map: 10/14/2021

Preliminary

Buckley Blew
Professional Surveyor #27863
State of Mississippi

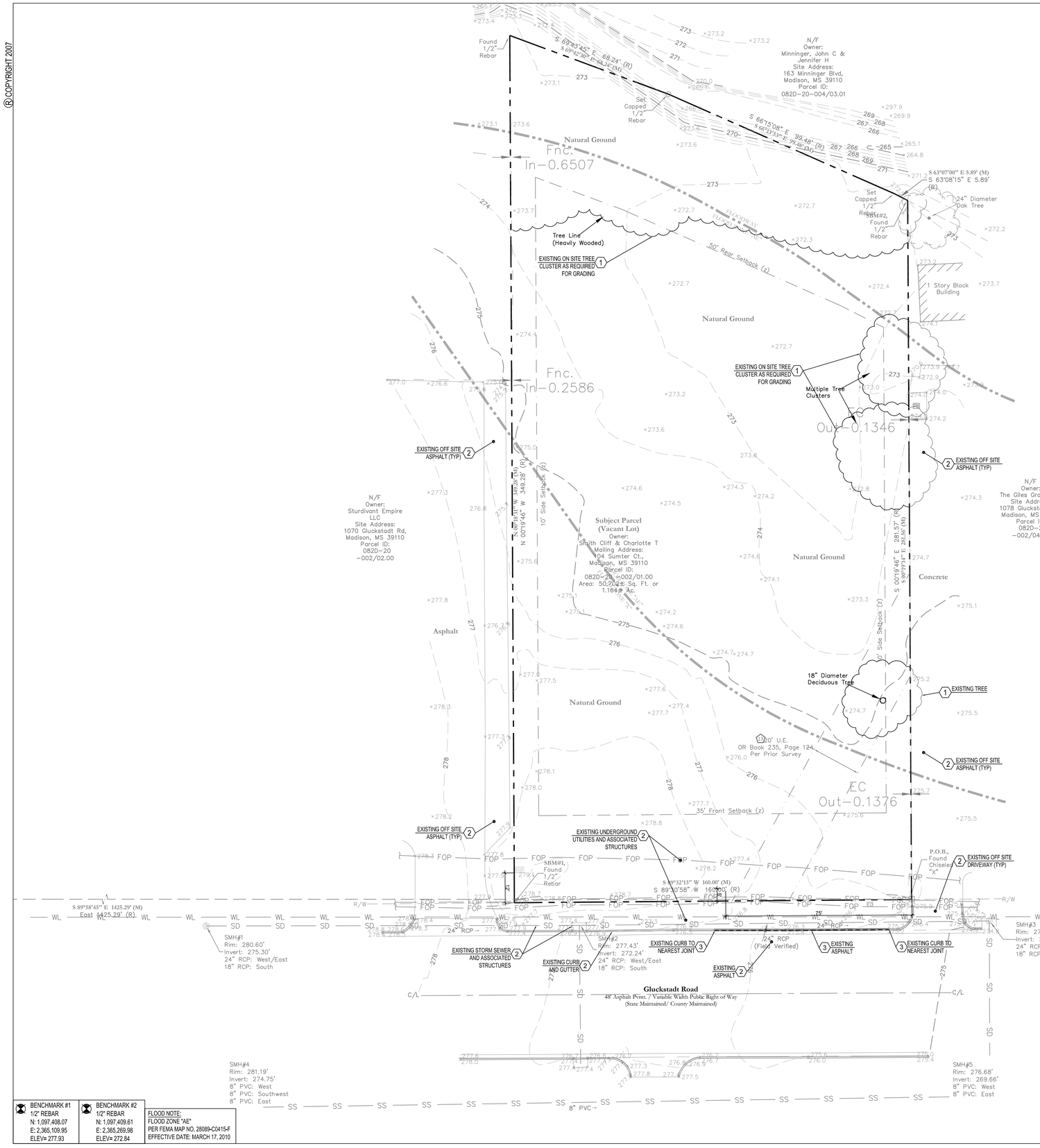
FIRM:
BLEW & ASSOCIATES, PA
CIVIL ENGINEERS & LAND SURVEYORS
3825 N. SHILOH DRIVE
FAYETTEVILLE, ARKANSAS 72703
OFFICE: 479.443.4506
FAX: 479.582.1883
www.BLEWINC.com

DRAWN BY & DATE:	REVIEWED BY:	SURVEYED BY:
DLD/MB 10/14/2021	GC/PRS	BJ

COUNTY & STATE:	JOB NUMBER:
Madison, Mississippi	21-6523

LOCATION:
Property west of 1078 Gluckstadt Rd, Gluckstadt, MS

FOR THE USE AND BENEFIT OF:
CES (AutoZone) - (MS5607) Gluckstadt, MS



DEMOLITION LEGEND

- APPROXIMATE LIMITS OF ASPHALT/CONCRETE SAWCUT
- APPROXIMATE LIMITS OF ASPHALT/CONCRETE REMOVAL

KEYNOTES

1. REMOVE EXISTING STRUCTURE
2. PROTECT EXISTING STRUCTURE
3. SAWCUT ASPHALT / CONCRETE
4. RELOCATE EXISTING SITE STRUCTURE OR UTILITY

DEMOLITION NOTES

1. ALL WORK TO BE ACCOMPLISHED IN STRICT ACCORDANCE WITH ALL LOCAL ORDINANCES, CITY OR STATE.
2. WITHIN THE SUBJECT PROPERTY, THE INTENT IS TO HAVE A CLEAN, CLEAR SITE, FREE OF ALL EXISTING ITEMS NOTED TO BE REMOVED IN ORDER TO PERMIT THE CONSTRUCTION OF THE NEW PROJECT.
3. ALL ITEMS NOTED TO BE REMOVED BY THE SELLER SHALL BE ACCOMPLISHED PRIOR TO THE CLOSING OF THE REAL ESTATE TRANSACTION. ALL OTHER ITEMS NOTED TO BE REMOVED SHALL BE DONE SO AS PART OF THE CONTRACT FOR GENERAL CONSTRUCTION.
4. REMOVE AND DISPOSE OF ANY SIDEWALKS, FENCES, STAIRS, WALLS, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF SITE LANDFILL.
5. THE CONTRACTOR SHALL SECURE ALL PERMITS FOR HIS DEMOLITION AND DISPOSAL OF HIS DEMOLITION MATERIAL TO BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL POST BONDS AND PAY PERMIT FEES AS REQUIRED. BUILDING DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITS AND DISPOSAL OF BUILDING DEMOLITION DEBRIS.
6. THE DETAILED PLANS MAY NOT REFLECT ALL UTILITIES ON THE SITE OR SURROUNDING STREETS AND PROPERTIES. THE CONTRACTOR SHALL VERIFY LOCATIONS AND EXISTENCE OF UTILITY SERVICES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 1-800-344-7233, 72 HOURS PRIOR TO CONSTRUCTION.
7. THE CONTRACTOR TO REMOVE ALL UTILITIES TO EXISTING STRUCTURES WHETHER SHOWN OR NOT OR ARRANGE FOR THE APPROPRIATE UTILITY COMPANY TO CUT AND CAP SERVICE PIPING AT THE PROPERTY LINE OR MAIN (AS REQUIRED). ALL SERVICES MAY NOT BE SHOWN ON THIS PLAN.
9. FOR ALL ITEMS NOTED TO BE REMOVED - REMOVE NOT ONLY THE ABOVE GROUND ELEMENTS, BUT ALL UNDERGROUND ELEMENTS AS WELL INCLUDING BUT NOT NECESSARILY LIMITED TO: FOUNDATIONS, GRAVEL FILLS, TREE ROOTS, OLD PIPES, ETC.
10. BACK FILL ALL EXCAVATIONS RESULTING FROM THE DEMOLITION WORK TO MEET THE REQUIREMENTS FOR FILL OUTLINED IN THE GEOTECHNICAL REPORT.
11. THE CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS AND PROPERTY CORNERS DURING CONSTRUCTION. ANY CONTRACTOR DISTURBED PINS, MONUMENTS, ETC. SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPES, PAVEMENT, CURBS, SIDEWALKS OR LANDSCAPED AREAS DISTURBED DURING DEMOLITION TO THEIR ORIGINAL CONDITION TO THE SATISFACTION.
13. ALL BUILDINGS, FOUNDATION WALLS AND FOOTINGS INDICATED ON THIS PLAN TO BE REMOVED FROM SITE. CONTRACTOR SHALL SECURE ANY PERMITS AND PAY ALL FEES AND PERFORM CLEARING AND GRUBBING AND DEBRIS REMOVAL PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
14. ASBESTOS AND ANY OTHER HAZARDOUS MATERIAL SHALL BE REMOVED BY THE CONTRACTOR USING A LICENSED HAZARDOUS MATERIAL CONTRACTOR PER ASBESTOS REPORT PREPARED BY XXXXXXXXXX. PRIOR TO THE START OF DEMOLITION, FEDERAL LAW REQUIRES THAT THE LOCAL EPA OFFICE TO BE NOTIFIED IN WRITING @ LEAST 10 WORKING DAYS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

NAD83 MS STATE PLANE

REVISIONS

1	2	3
4	5	6

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110
DEMOLITION PLAN

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL: (901) 495-8994 FAX: (901) 495-8969

For Bidding & Contractor Information Contact:
Dodge Data & Analytics. Tel. 413-930-4215
Cindy.searcy@construction.com

REGISTERED PROFESSIONAL ENGINEER 21060 STATE OF MISSISSIPPI
03/10/2022

4/25/2023

7N2

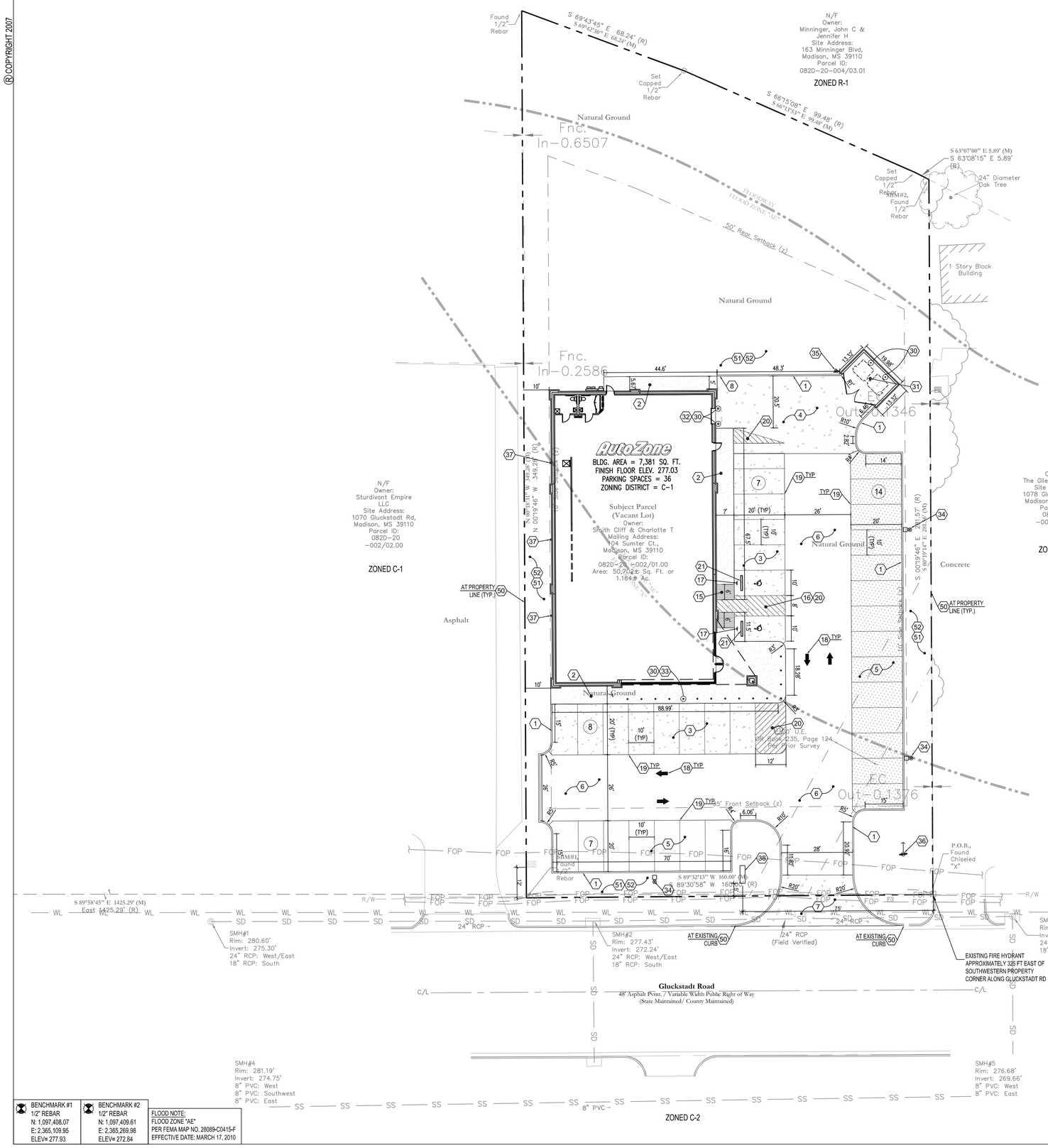
D1.0

BENCHMARK #1
1/2" REBAR
N: 1,097,408.07
E: 2,365,109.95
ELEV= 277.93

BENCHMARK #2
1/2" REBAR
N: 1,097,409.61
E: 2,365,269.98
ELEV= 272.84

FLOOD NOTE:
FLOOD ZONE "AE"
PER FEMA MAP NO. 28089-C0415-F
EFFECTIVE DATE: MARCH 17, 2010

Civil Engineering Services
7705 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: ray@civilengineeringservices.net
Engineering, Environmental, Land Planning



SITE LEGEND

- (10) PARKING STALL COUNT - SEE PLANS
- REGULAR ASPHALT PAVING (SEE DETAIL SHEET)
- HEAVY DUTY ASPHALT PAVING (SEE DETAIL SHEET)
- CONCRETE SIDEWALK (SEE DETAIL SHEET)
- HEAVY DUTY CONCRETE PAVING (SEE DETAIL SHEET)
- REGULAR DUTY CONCRETE PAVEMENT AT PARKING STALLS AROUND BUILDING (SEE DETAIL SHEET)

KEYNOTES

PAVEMENT AND CURBING

1. CONCRETE CURB @ CONCRETE/ASPHALT PAVING - SEE DETAIL 1 & 2 / C4.0
2. CONCRETE SIDEWALK - SEE DETAIL 27/C4.0 - SEE DETAIL 22/C4.0 FOR SIDEWALKS AROUND BUILDING
3. REGULAR DUTY CONCRETE PAVING - SEE DTL. 4/ C4.0. EXPANSION AND CONTROL JOINTS - SEE DTLS. 23 & 24/ C4.0. MAXIMUM SPACING FOR CONTROL JOINTS PER SOILS REPORT.
4. HEAVY DUTY CONCRETE PAVING - SEE DTL. 4/ C4.0. EXPANSION AND CONTROL JOINTS - SEE DTLS. 23 & 24/ C4.0. MAXIMUM SPACING FOR CONTROL JOINTS PER SOILS REPORT.
5. REGULAR DUTY ASPHALT PAVING - SEE DTL. 3/ C4.0. PROVIDE ALTERNATE CONCRETE BID - SEE DTL. 4/ C4.0
6. HEAVY DUTY ASPHALT PAVING - SEE DTL. 3/ C4.0. PROVIDE ALTERNATE CONCRETE BID - SEE DTL. 4/ C4.0
7. PROVIDE NEW CURB CUT & APPROACH PER LOCAL CODES & SPECS. - ENTRANCE TO BE HEAVY DUTY CONCRETE - SEE DTL. 3/ C4.0
8. TAPER CURB HEIGHT FROM 6" TO 0" OVER TWO FEET

PAVEMENT STRIPING / ADA FEATURES / TRAFFIC SIGNAGE

15. ACCESSIBLE RAMP - SEE DETAIL 19/C4.0 - MAX. SLOPE 1:12 (8.33%) , MAX. CROSS SLOPE 1:50 (2.00%) TRUNCATED DOME TO BE A CONTRASTING COLOR.
16. HANDICAP PARKING AREA - SEE THIS PLAN FOR DIMENSIONS - SEE DETAILS 6,7, AND 12/C4.0
17. HANDICAP PARKING SIGN - SEE DETAIL 12/C4.0 G.C. TO PROVIDE ONE VAN ACCESSIBLE SIGN.
18. ONSITE PAVEMENT MARKINGS - SEE DETAIL 25 & 26/C4.0
19. 4" WIDE PARKING STRIPE PAINTED YELLOW (TYP.)
20. 4" WIDE DIAGONAL STRIPES PAINTED YELLOW AT 2 FT. O.C.
21. 6'-0" LONG CONCRETE WHEEL STOP PINNED TO PAVEMENT (TYPICAL). LOCATE 3'-6" FROM FACE OF CURB OR SIDEWALK SEE DETAIL 17 / C4.0

AUTOZONE SITE FEATURES

30. PIPE GUARD - SEE DETAIL 16 / C4.0
31. DUMPSTER LAYOUT - SEE DETAILS 8,9,10, & 11/ C4.0
32. SERVICE DOOR PLAN - SEE DETAIL 15/ C4.0
33. BOLLARD PLAN - SEE DETAIL 14/ C4.0
34. CONCRETE LIGHT POLE BASE - SEE DETAIL 13/ C4.0 AIM LIGHT FIXTURE IN DIRECTION AS INDICATED. SEE ELECTRICAL PLANS FOR ROUTING
35. FREEZELESS YARD HYDRANT AT BUILDING - SEE DETAIL 6 ON SHEET M2
36. APPROXIMATE LOCATION FOR POLE MOUNTED TRANSFORMER PER SERVICE PROVIDER SPECIFICATIONS - COORDINATE WITH SERVICE PROVIDER PRIOR TO CONSTRUCTION
37. PROVIDE DOWNSPOUT CONNECTOR AT BUILDING DOWN SPOUT - SEE ARCHITECTURAL PLANS - SEE DETAIL 21/ C4.0 - SEE GRADING PLAN FOR INVERTS
38. 4'-2"X7'-0"X2'-0" MONUMENT SIGN 12'-0" OVERALL HEIGHT - SEE SIGNAGE SHEETS FOR DETAILS - FINAL LOCATION AND DESIGN TO BE DETERMINED DURING SIGN PERMIT REVIEW

ADDITIONAL SITE FEATURES

50. TIE TO EXISTING - MATCH GRADE
51. GRASS AREA - PROVIDE 6" TOPSOIL & SOD COMMON TO REGION ON ALL DISTURBED AREAS NOT TO BE PAVED
52. SLOPE GRADE FROM BACK OF CURB DOWN TO MATCH THE EXISTING/PROPOSED GRADE - SEE GRADING PLAN

GENERAL AZ NOTES

1. PROOF ROLL BUILDING AND ALL PARKING AREAS. NOTIFY THE ARCHITECT OF ANY UNACCEPTABLE AREAS.
2. EDGE OF NEW PAVEMENT TO BE FLUSH WITH EXISTING PAVEMENT.
3. ALL SIDEWALK CURB AND GUTTER STREET PAVING, CURB CUTS, DRIVEWAY APPROACHES, HANDICAP RAMP, ETC. CONSTRUCTED OUTSIDE THE PROPERTY LINE IN THE RIGHT-OF-WAY SHALL CONFORM TO ALL MUNICIPAL AND/OR STATE SPECIFICATIONS AND REQUIREMENTS.
4. FOR AREAS OUTSIDE THE PROPERTY LINES, REPAIR AND/OR REPLACE ALL DAMAGE DONE TO EXISTING ELEMENTS (SIDEWALKS, PAVING, LANDSCAPING, ETC.) AS REQUIRED BY OWNER AND/OR GOVERNING AUTHORITY.
5. FOR PROPOSED UTILITY LOCATIONS, SEE THE UTILITY PLAN.

SITE DATA INFORMATION

PARKING REQUIRED (1225 SF) = 33
EXISTING PARKING = 0
PROPOSED PARKING = 34
HC SPACES REQUIRED = 2
HC SPACES PROVIDED = 2
TOTAL PARKING = 36
PARKING STALL SIZE = 10'X20'
ADA PARKING STALL SIZE = 8'X20'
LOT AREA = 50,702 SF / 1.164 AC
NUMBER OF BUILDINGS = 1
BUILDING AREA = 7,381 SF
FLOOR AREA RATIO = 14.56%

ALL DISTURBED AREA SHALL BE STABILIZED WITH SOD, COMMON TO THE REGION - CONTRACTOR TO GUARANTEE AND MAINTAIN ALL NEW SODDED AREAS FOR 60 DAYS MINIMUM, AND ALL SODDED AREAS ARE STABILIZED.

PROVIDE (2) 4" PVC CONDUITS UNDER DRIVES TO ALL LANDSCAPED AREAS. PROVIDE 2' COVER AND CAP OFF. MARK STUB OUT WITH FLAG/MARKER.

ALL NEW GRASS SODDED AREAS TO BE IRRIGATED - IRRIGATION PLAN TO BE DESIGN BUILD BY G.C. - COORDINATE WITH A SOUTH CAROLINA CERTIFIED IRRIGATION CONTRACTOR

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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Engineering, Environmental, Land Planning

NAD83 MS STATE PLANE

REVISIONS			
1	2	3	
4	5	6	

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110
SITE PLAN

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL.: (901) 495-8994 FAX: (901) 495-8969
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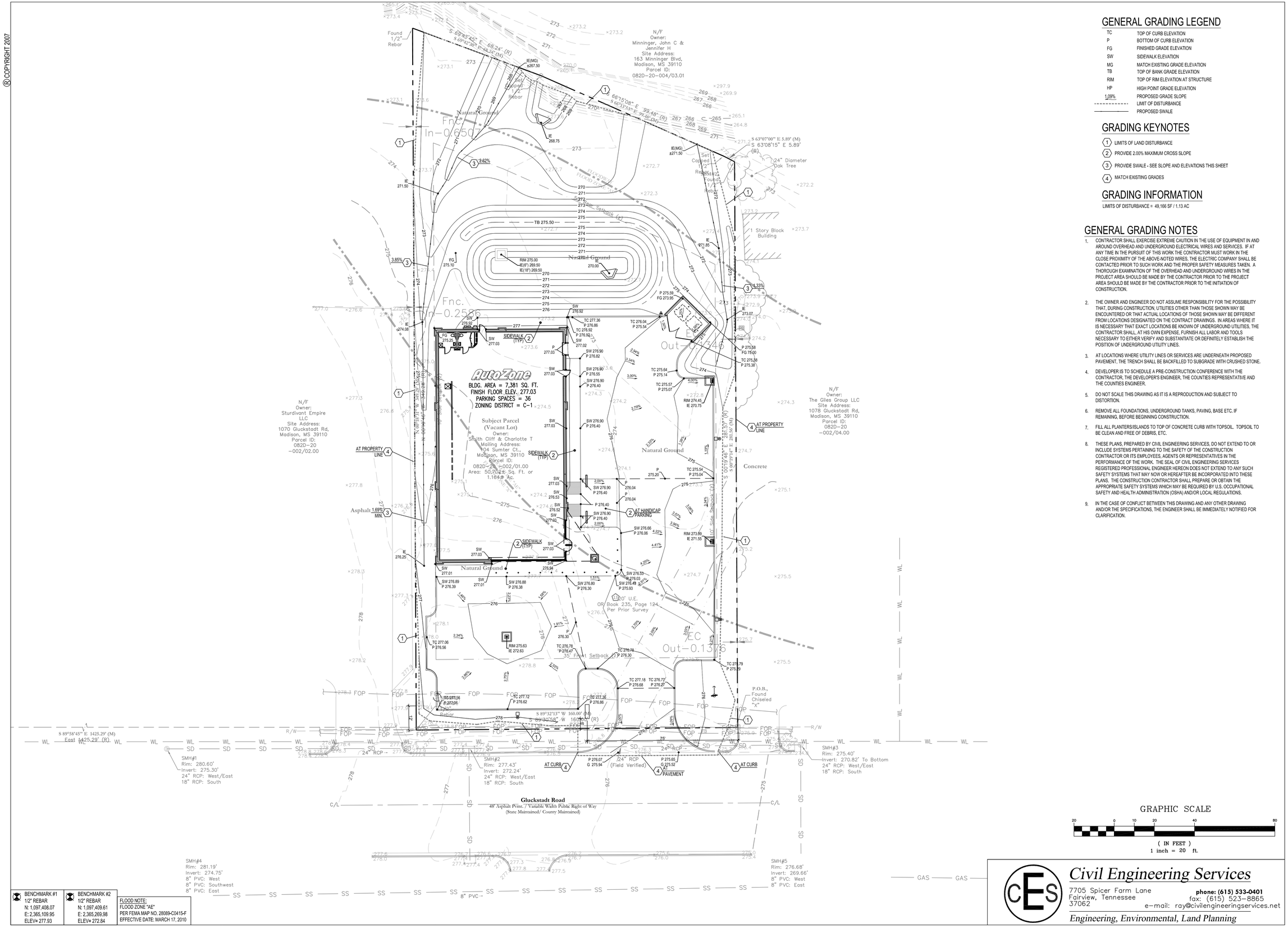
LICENSED PROFESSIONAL ENGINEER 21060 STATE OF MISSISSIPPI
05/10/2022

4/25/2023

7N2

C1.0



GENERAL GRADING LEGEND

TC	TOP OF CURB ELEVATION
P	BOTTOM OF CURB ELEVATION
FG	FINISHED GRADE ELEVATION
SW	SIDEWALK ELEVATION
MG	MATCH EXISTING GRADE ELEVATION
TB	TOP OF BANK GRADE ELEVATION
RIM	TOP OF RIM ELEVATION AT STRUCTURE
HP	HIGH POINT GRADE ELEVATION
1.09%	PROPOSED GRADE SLOPE
----------	LIMIT OF DISTURBANCE
————	PROPOSED SWALE

GRADING KEYNOTES

1. LIMITS OF LAND DISTURBANCE
2. PROVIDE 2.00% MAXIMUM CROSS SLOPE
3. PROVIDE SWALE - SEE SLOPE AND ELEVATIONS THIS SHEET
4. MATCH EXISTING GRADES

GRADING INFORMATION

LIMITS OF DISTURBANCE = 49,166 SF / 1.13 AC

GENERAL GRADING NOTES

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND ELECTRICAL WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN THE CLOSE PROXIMITY OF THE ABOVE-NOTED WIRES, THE ELECTRIC COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD AND UNDERGROUND WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION.
2. THE OWNER AND ENGINEER DO NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT, DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAY BE DIFFERENT FROM LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT EXACT LOCATIONS BE KNOWN OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS NECESSARY TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE POSITION OF UNDERGROUND UTILITY LINES.
3. AT LOCATIONS WHERE UTILITY LINES OR SERVICES ARE UNDERNEATH PROPOSED PAVEMENT, THE TRENCH SHALL BE BACKFILLED TO SUBGRADE WITH CRUSHED STONE.
4. DEVELOPER IS TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR, THE DEVELOPER'S ENGINEER, THE COUNTIES REPRESENTATIVE AND THE COUNTIES ENGINEER.
5. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
6. REMOVE ALL FOUNDATIONS, UNDERGROUND TANKS, PAVING, BASE ETC. IF REMAINING, BEFORE BEGINNING CONSTRUCTION.
7. FILL ALL PLANTERS/ISLANDS TO TOP OF CONCRETE CURB WITH TOPSOIL. TOPSOIL TO BE CLEAN AND FREE OF DEBRIS, ETC.
8. THESE PLANS, PREPARED BY CIVIL ENGINEERING SERVICES, DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF CIVIL ENGINEERING SERVICES REGISTERED PROFESSIONAL ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
9. IN THE CASE OF CONFLICT BETWEEN THIS DRAWING AND ANY OTHER DRAWING AND/OR THE SPECIFICATIONS, THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR CLARIFICATION.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BENCHMARK #1	BENCHMARK #2
1/2" REBAR	1/2" REBAR
N: 1,097,408.07	N: 1,097,409.61
E: 2,365,109.95	E: 2,365,269.98
ELEV= 277.93	ELEV= 272.84

FLOOD NOTE:
FLOOD ZONE "AE"
PER FEMA MAP NO. 28089-C0415-F
EFFECTIVE DATE: MARCH 17, 2010

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Engineering, Environmental, Land Planning

NAD83 MS STATE PLANE

REVISIONS					
1		2		3	
4		5		6	

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110
GRADING PLAN

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
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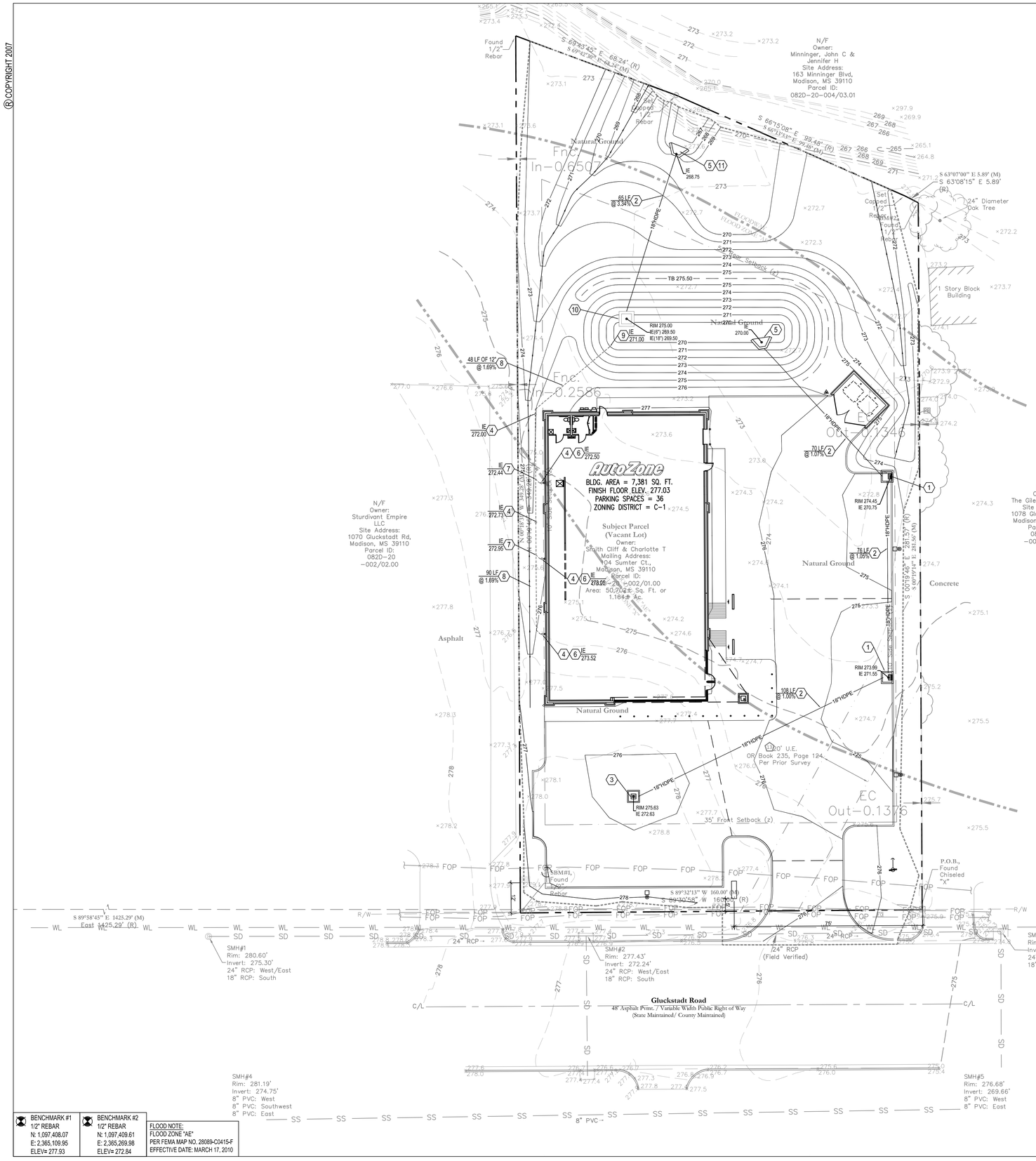
LICENSED PROFESSIONAL ENGINEER
RAY G. FERGUSON
21060
STATE OF MISSISSIPPI
05/10/2022

4/25/2023

7N2

C2.0



GENERAL GRADING LEGEND

IE	TOP OF BANK GRADE ELEVATION
RIM	INVERT ELEVATION AT STRUCTURE
	CURB INLET
	HEADWALL
	AREA INLET

GRADING KEYNOTES

1. PROVIDE CURB INLET - SEE THIS SHEET FOR ELEVATIONS - SEE DETAIL SHEET (C4.1)
2. PROVIDE STORM SEWER PIPE - SEE THIS SHEET FOR ELEVATIONS - SEE DETAIL SHEET (C4.1)
3. PROVIDE AREA INLET - SEE THIS SHEET FOR ELEVATIONS - SEE DETAIL SHEET (C4.1)
4. PROVIDE STORM SEWER CLEANOUT - SEE INVERT ELEVATION THIS SHEET - SEE DETAIL SHEET (C4.1)
5. PROVIDE PRECAST CONCRETE HEADWALL - SEE ELEVATIONS THIS SHEET - - SEE DETAIL SHEET (C4.1)
6. PROVIDE DOWNSPOUT COLLECTOR AT ROOF DRAIN - SEE ELEVATIONS THIS SHEET - SEE DETAIL SHEET (C4.0)
7. PROVIDE 8"X8"WATER TIGHT HDPE WYE PER MANUFACTURER SPECS. - SEE INVERT ELEVATION THIS SHEET
8. PROVIDE WATER TIGHT POLYETHYLENE PIPE FOR ROOF DRAINS - SEE THIS SHEET FOR SIZE, TYPE AND ELEVATIONS
9. DAYLIGHTPIPE FROM ROOF DRAIN - SEE THIS SHEET FOR ELEVATION
10. PROVIDE DETENTION OUTLET STRUCTURE - SEE DETAIL SHEET (C4.1)
11. PROVIDE RED VALVE TIDEFLEX TF-1 CHECK VALVE, OR APPROVED EQUAL

GENERAL GRADING NOTES

SEE SHEET C2.0

GRAPHIC SCALE

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(IN FEET)
1 inch = 20 ft.

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NAD83 MS STATE PLANE

REVISIONS			
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4	5	6	

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110
DRAINAGE PLAN

Owner / Developer: AUTOZONE STORES LLC
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REGISTERED PROFESSIONAL ENGINEER 21060 STATE OF MISSISSIPPI
03/10/2022

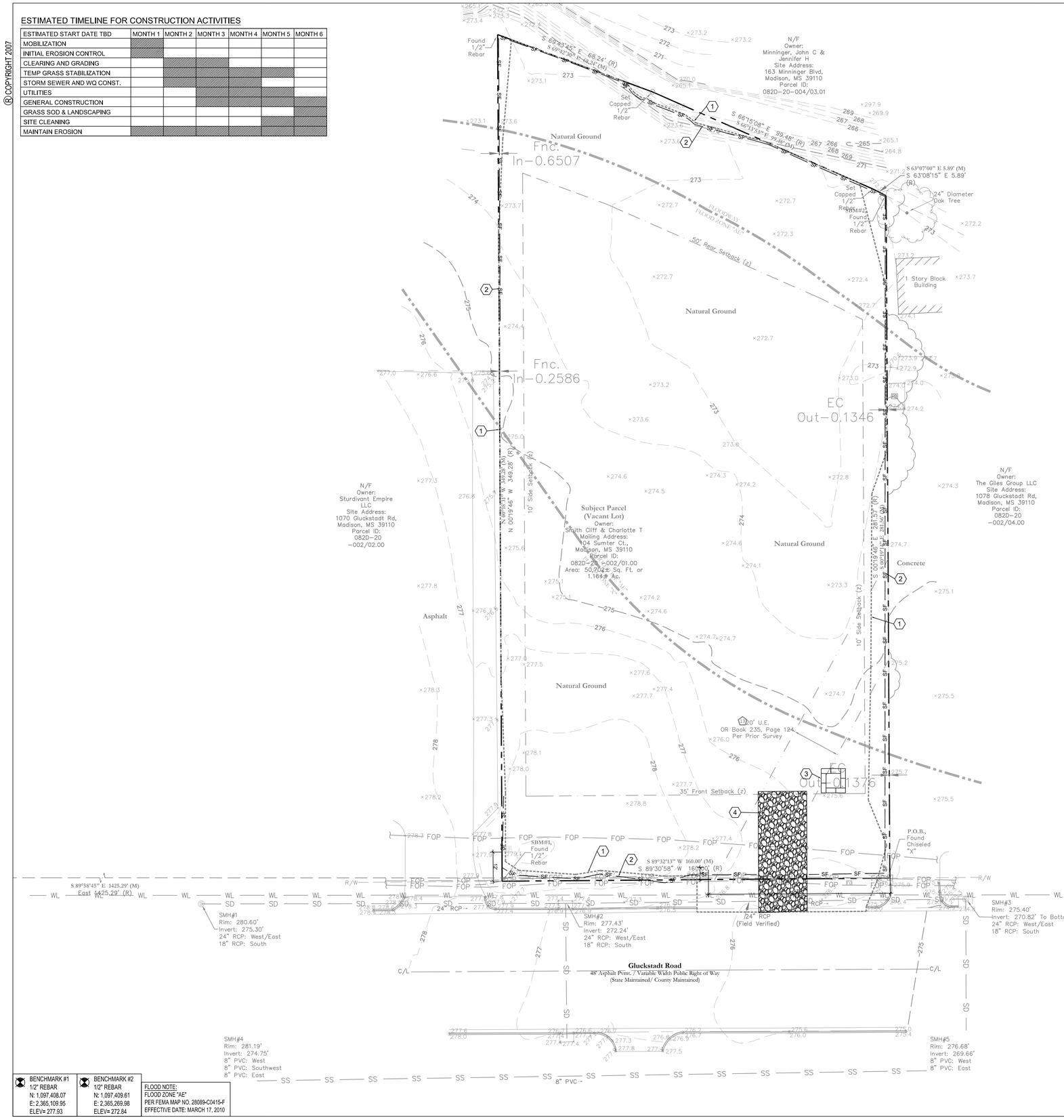
4/25/2023

7N2

C2.1

ESTIMATED TIMELINE FOR CONSTRUCTION ACTIVITIES

ESTIMATED START DATE TBD	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6
MOBILIZATION						
INITIAL EROSION CONTROL						
CLEARING AND GRADING						
TEMP GRASS STABILIZATION						
STORM SEWER AND WQ CONST.						
UTILITIES						
GENERAL CONSTRUCTION						
GRASS SOD & LANDSCAPING						
SITE CLEANING						
MAINTAIN EROSION						



PROPOSED LEGEND

- INSTALL INLET PROTECTION (SEE DETAIL SHEET)
- SF — INSTALL SILT FENCE (SEE DETAIL SHEET)
- TEMPORARY CONSTRUCTION EXIT
- CONCRETE WASHOUT AREA
- LIMITS OF DISTURBANCE

KEYNOTES

1. LIMITS OF LAND DISTURBANCE
2. INSTALL SILT FENCE AT LIMITS OF DISTURBANCE - MAINTAIN THROUGHOUT CONSTRUCTION - FIELD ADJUST AS REQUIRED - (SEE DETAIL SHEET)
3. CONCRETE WASHOUT PER EPA STANDARDS - CONTRACTOR TO FIELD ADJUST LOCATION ON SITE AS NEEDED
4. TEMPORARY CONSTRUCTION ENTRANCE

GRADING INFORMATION

LIMITS OF DISTURBANCE = 49,166 SF / 1.13 AC

EROSION CONTROL NOTES

1. SEDIMENT BARRIERS SHALL BE PLACED AS INDICATED ON THE GRADING WORK. PLAN PRIOR TO ANY SITE CONSTRUCTION

2. DUST CONTROL ON SITE SHALL BE KEPT WITHIN ACCEPTABLE LIMITS BY SPRINKLING WITH WATER OR OTHER ACCEPTABLE METHODS.

3. MAXIMUM SLOPE CUTS SHALL NOT EXCEED 3:1 UNLESS APPROVED BY THE OWNERS REPRESENTATIVE. CUT AND FILL SLOPES 3:1 AND GREATER, SHALL BE STABILIZED BY EROSION CONTROL BLANKETS (ECB) AND SOD COMMON TO THE REGION.

4. ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTORS RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

5. THE LOCATIONS OF EROSION CONTROL DEVICES SHALL BE ADJUSTED AS CONSTRUCTION PROGRESSES TO MAINTAIN A FUNCTIONAL EROSION CONTROL SYSTEM.

6. ANY FAILURE OF ANY EROSION CONTROL DEVICE TO FUNCTION AS INTENDED FOR ANY REASON SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

7. EROSION CONTROL DEVICES SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED PERIODS OF CONTINUOUS RAINFALL.

8. EROSION CONTROL DEVICES SHALL BE REPAIRED AS NECESSARY TO MAINTAIN A FUNCTIONAL EROSION CONTROL SYSTEM.

9. EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED AND THEN REMOVED SO THAT DRAINAGE OF THE SITE IS NOT IMPEDED.

10. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD OF 14 DAYS OR MORE SHALL BE STABILIZED WITH TEMPORARY SEEDING.

11. CLEAN SILT BARRIERS WHEN THEY ARE APPROXIMATELY 33% OBSTRUCTED BY SEDIMENT OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. SILT BARRIERS SHALL BE REPLACED AS EFFECTIVENESS IS SIGNIFICANTLY REDUCED.

12. TOPSOIL SHALL BE RE-SPREAD A MINIMUM DEPTH OF 6" OVER ALL DISTURBED AREAS. DISTURBED AREAS SHALL HAVE PERMANENT STABILIZATION APPLIED (SOD COMMON TO THE LOCAL AREA) PERMANENT.

13. AREAS THAT HAVE BEEN STRIPPED, CUT SLOPES, FILL SLOPES OR AREAS OTHER WISE DISTURBED SHALL HAVE PERMANENT STABILIZATION APPLIED WITH SOD COMMON TO THE LOCAL AREA. PERMANENT STABILIZATION SHALL BE IN PLACE PRIOR TO ACCEPTANCE OF FINAL GRADING.

14. REMOVE SEDIMENT FROM ALL DRAINAGE STRUCTURES PRIOR TO ACCEPTANCE BY THE OWNER. STABILIZATION SHALL BE PLACED PRIOR TO ACCEPTANCE OF FINAL GRADING.

15. STOCK PILING OF SOILS ON SITE IF REQUIRED, SHALL BE LOCATED BY CONTRACTOR AND BE PROTECTED BY PERIMETER SILT FENCE. IF LEFT EXPOSED FOR A PERIOD OF 13 DAYS OR MORE SHALL BE STABILIZED WITH TEMPORARY SEEDING.

ALL DISTURBED AREA SHALL BE STABILIZED WITH SOD, COMMON TO THE REGION - SEE LANDSCAPE PLAN

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BENCHMARK #1	BENCHMARK #2	FLOOD NOTE:
1/2" REBAR	1/2" REBAR	FLOOD ZONE "AE"
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AutoZone Store No. 0152
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INITIAL EROSION PLAN

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RAY G. CLEARY LICENSED PROFESSIONAL ENGINEER 21060 STATE OF MISSISSIPPI
03/10/2022

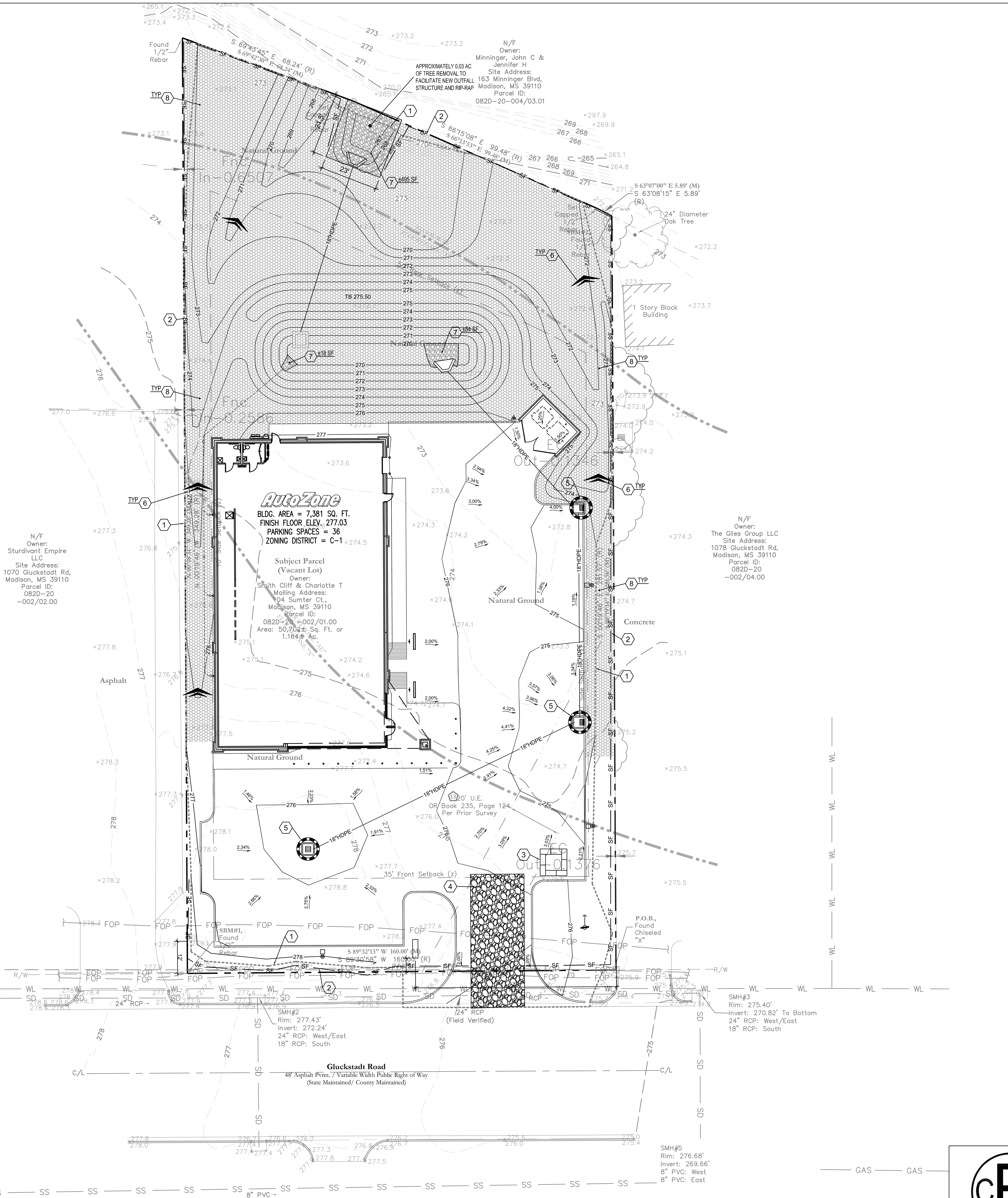
4/25/2023

7N2

C2.2

ESTIMATED TIMELINE FOR CONSTRUCTION ACTIVITIES

ESTIMATED START DATE TBD	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6
MOBILIZATION	▨					
INITIAL EROSION CONTROL	▨					
CLEARING AND GRADING		▨	▨			
TEMP GRASS STABILIZATION		▨	▨	▨	▨	
STORM SEWER CONST.		▨	▨	▨		
UTILITIES			▨	▨	▨	
GENERAL CONSTRUCTION			▨	▨	▨	▨
GRASS SOD & LANDSCAPING						▨
SITE CLEANING					▨	▨
MAINTAIN EROSION	▨	▨	▨	▨	▨	▨



S 89°58'45" E 1425.29' (M)
East 1425.29' (R)

SMH#1
Rim: 280.60'
Invert: 275.30'
24" RCP: West/East
18" RCP: South

SMH#4
Rim: 281.19'
Invert: 274.75'
8" PVC: West
8" PVC: Southwest
8" PVC: East

BENCHMARK #1	BENCHMARK #2	FLOOD NOTE:
1/2" REBAR	1/2" REBAR	FLOOD ZONE "AE"
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PROPOSED LEGEND

- INSTALL INLET PROTECTION (SEE DETAIL SHEET)
- SF — INSTALL SILT FENCE (SEE DETAIL SHEET)
- TEMPORARY CONSTRUCTION EXIT
- CONCRETE WASHOUT AREA
- LIMITS OF DISTURBANCE
- RIP-RAP
- INSTALL CHECK DAM
- EROSION CONTROL BLANKET

KEYNOTES

1. LIMITS OF LAND DISTURBANCE
2. INSTALL SILT FENCE AT LIMITS OF DISTURBANCE - MAINTAIN THROUGHOUT CONSTRUCTION - FIELD ADJUST AS REQUIRED - (SEE DETAIL SHEET)
3. CONCRETE WASHOUT PER EPA STANDARDS - CONTRACTOR TO FIELD ADJUST LOCATION ON SITE AS NEEDED
4. TEMPORARY CONSTRUCTION ENTRANCE
5. INSTALL INLET PROTECTION OR APPROVED EQUAL - (SEE DETAIL SHEET)
6. INSTALL CHECK DAM OR APPROVED EQUAL (SEE DETAIL SHEET)
7. RIP-RAP PROTECTION OR APPROVED EQUAL (SEE DETAIL SHEET)
8. INSTALL TEMPORARY / PERMANENT SOD STABLIZATION (SEE DETAIL SHEET)

GRADING INFORMATION

LIMITS OF DISTURBANCE = 49,166 SF / 1.13 AC

EROSION CONTROL NOTES

1. SEDIMENT BARRIERS SHALL BE PLACED AS INDICATED ON THE GRADING WORK. PLAN PRIOR TO ANY SITE CONSTRUCTION

2. DUST CONTROL ON SITE SHALL BE KEPT WITHIN ACCEPTABLE LIMITS BY SPRINKLING WITH WATER OR OTHER ACCEPTABLE METHODS.

3. MAXIMUM SLOPE CUTS SHALL NOT EXCEED 3:1 UNLESS APPROVED BY THE OWNERS REPRESENTATIVE. CUT AND FILL SLOPES 3:1 AND GREATER, SHALL BE STABILIZED BY EROSION CONTROL BLANKETS (ECB) AND SOD COMMON TO THE REGION.

4. ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTORS RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

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9. EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED AND THEN REMOVED SO THAT DRAINAGE OF THE SITE IS NOT IMPEDED.

10. ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD OF 14 DAYS OR MORE SHALL BE STABILIZED WITH TEMPORARY SEEDING.

11. CLEAN SILT BARRIERS WHEN THEY ARE APPROXIMATELY 33% OBSTRUCTED BY SEDIMENT OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. SILT BARRIERS SHALL BE REPLACED AS EFFECTIVENESS IS SIGNIFICANTLY REDUCED.

12. TOPSOIL SHALL BE RE-SPREAD A MINIMUM DEPTH OF 6" OVER ALL DISTURBED AREAS. DISTURBED AREAS SHALL HAVE PERMANENT STABILIZATION APPLIED (SOD COMMON TO THE LOCAL AREA) PERMANENT.

13. AREAS THAT HAVE BEEN STRIPPED, CUT SLOPES, FILL SLOPES OR AREAS OTHER WISE DISTURBED SHALL HAVE PERMANENT STABILIZATION APPLIED WITH SOD COMMON TO THE LOCAL AREA. PERMANENT STABILIZATION SHALL BE IN PLACE PRIOR TO ACCEPTANCE OF FINAL GRADING.

14. REMOVE SEDIMENT FROM ALL DRAINAGE STRUCTURES PRIOR TO ACCEPTANCE BY THE OWNER. STABILIZATION SHALL BE PLACED PRIOR TO ACCEPTANCE OF FINAL GRADING.

15. STOCK PILING OF SOILS ON SITE IF REQUIRED, SHALL BE LOCATED BY CONTRACTOR AND BE PROTECTED BY PERIMETER SILT FENCE, IF LEFT EXPOSED FOR A PERIOD OF 13 DAYS OR MORE SHALL BE STABILIZED WITH TEMPORARY SEEDING.

ALL DISTURBED AREA SHALL BE STABILIZED WITH SOD, COMMON TO THE REGION - SEE LANDSCAPE PLAN

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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7705 Spicer Farm Lane
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Engineering, Environmental, Land Planning

NAD83 MS STATE PLANE

REVISIONS

1	2	3
4	5	6

AutoZone Store No. 0152
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RAY G. FLAKE LICENSED PROFESSIONAL ENGINEER 21060 STATE OF MISSISSIPPI
03/10/2022

4/25/2023

7N2

C2.3

GENERAL UTILITY NOTES

1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS ONLY AND HAVE BEEN COMPILED FROM THE LATEST AVAILABLE MAPPING. THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
2. GENERAL CONTRACTOR TO COORDINATE WITH THE LOCAL UTILITY COMPANIES FOR ALL LOCATIONS AND CONNECTIONS. A PRECONSTRUCTION MEETING WITH THE VARIOUS UTILITY COMPANIES, IS REQUIRED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY.
3. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE SEWERS CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT AUTOZONE IN THE EVENT OF ANY UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
4. THE CONTRACTOR SHALL INSURE THAT ALL UTILITY COMPANIES AND CITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY COMPANY. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY COMPANIES AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTION, RELOCATIONS, INSPECTIONS, AND DEMOLITION. (AUTOZONE TO REIMBURSE GENERAL CONTRACTOR FOR ALL SANITARY SEWER AND WATER TAP FEES).
5. ALL VALVE BOXES AND CURB BOXES SHALL BE ADJUSTED TO THE FINAL GRADES. ALL CURB BOXES SHALL BE LOCATED IN GRASSED AREAS UNLESS INDICATED OTHERWISE ON THE PLANS.
6. SANITARY LATERAL SHALL MAINTAIN (10' MIN. HORIZONTAL 1.5' VERTICAL MIN.) SEPARATION DISTANCE FROM WATER LINES UNLESS OTHERWISE SHOWN, OR ADDITIONAL PROTECTION MEASURES WILL BE REQUIRED. WHERE WATER LINE CROSSES ABOVE SANITARY LATERAL BY LESS THAN 2' VERTICAL A CONCRETE ENCASEMENT SHALL BE INSTALLED, CONTRACTOR SHALL CENTER ONE JOINT OF PIPE AT CROSSING.
7. THIS PLAN DETAILS PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO THE BUILDING DRAWINGS FOR BUILDING CONNECTIONS. SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY.
8. ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT AND REPLACED IN ACCORDANCE WITH THE PAVEMENT REPAIR REQUIREMENTS OF THE GOVERNING AUTHORITY.
9. WATER PIPE SHALL BE PEX (HDPE) TUBING.
10. ALL SANITARY SEWER MAIN LINES SHALL BE SCHEDULE 40 PVC PIPE (EXCEPT AS NOTED ON PLANS). ALL PVC PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURE.

AUTOZONE WATER NOTES:

ALL WATER INFRASTRUCTURE CONSTRUCTION TO BE COORDINATED WITH THE LOCAL UTILITY SERVICE DEPARTMENT.

AUTOZONE TO REIMBURSE GENERAL CONTRACTOR FOR ALL SANITARY SEWER, GAS, AND WATER TAP FEES.

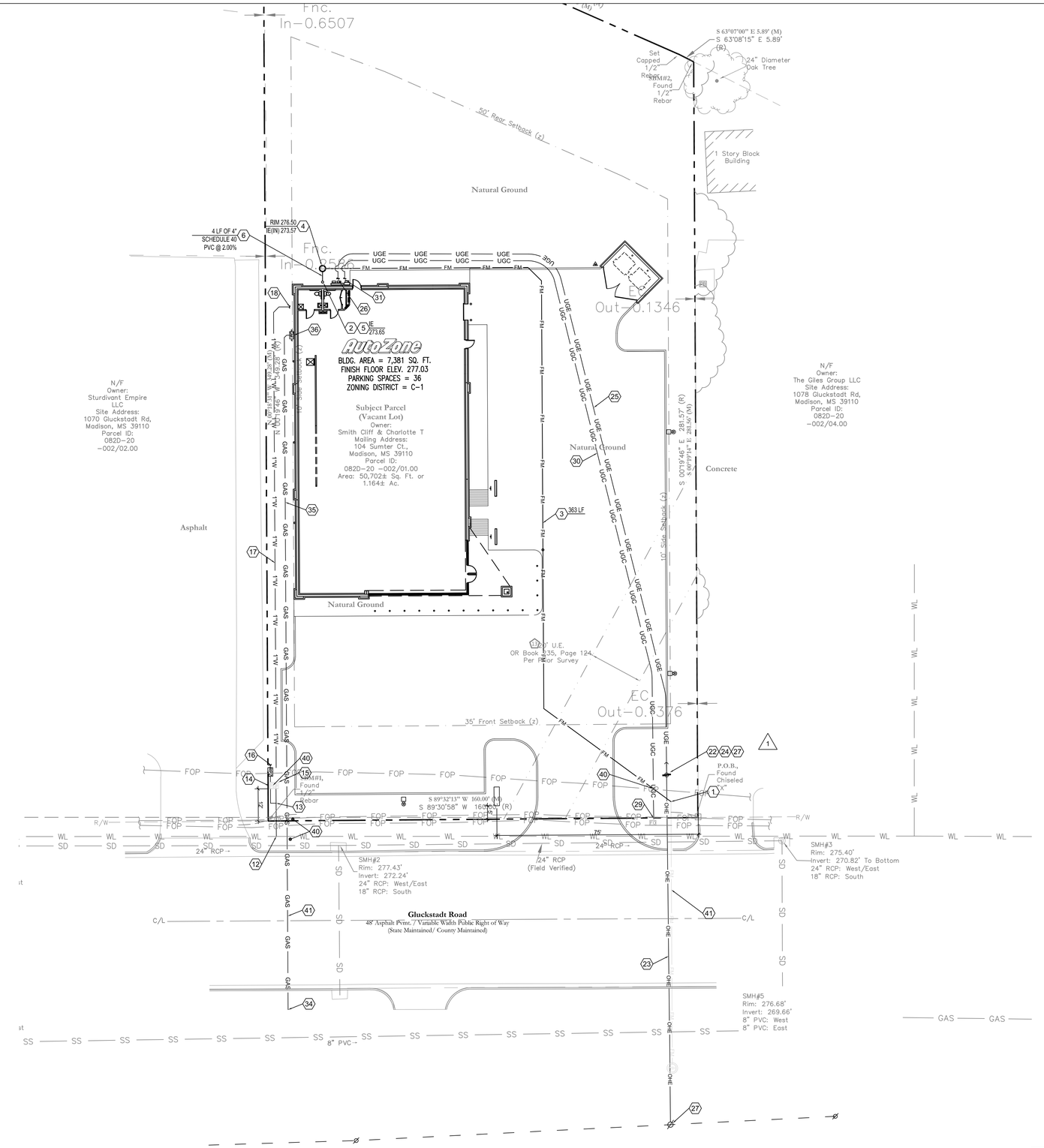
UTILITY CONTACTS

WATER / SEWER DEPARTMENT
BEAR CREEK WATER ASSOCIATION
301 DISTRIBUTION DR.
GLUCKSTADT, MS 39110
NOLAN WILLIAMSON - MANAGER / ENGINEER
(601) 594-9457
nwilliamson@bcwaterms.org

ELECTRIC DEPARTMENT
ENTERGY
GREG GINNS - ENGINEER ASSOCIATE
(601) 668-0404
gbinns@entergy.com

GAS DEPARTMENT
CENTER POINT ENERGY
ERIC FERREN
(601) 720-9825
eric.ferren@centerpointenergy.com

COMMUNICATIONS DEPARTMENT
AT&T
DAVID MIZELL - ENGINEER
(601) 591-3434
david.mizell@att.com



PROPOSED UTILITY LEGEND

FM	LOW PRESSURE FORCE MAIN FOR SANITARY SEWER SERVICE PER LOCAL SERVICE PROVIDER SPECS.
W	WATER LINE PER LOCAL UTILITY CO SPECS.
GAS	GAS LINE PER LOCAL UTILITY CO SPECS.
UGE	UNDERGROUND ELECTRIC SERVICE PER LOCAL UTILITY CO SPECS.
UGC	UNDERGROUND TELEPHONE AND COMMUNICATIONS SERVICE PER LOCAL UTILITY CO SPECS.
RPBP	BACK FLOW PREVENTER PER LOCAL UTILITY CO SPECS.
WM	WATER METER PER LOCAL UTILITY CO SPECS.

PROPOSED UTILITY BLOCK NOTES

SANITARY SEWER SERVICE:

1. TIE TO EXISTING FORCE MAIN STUB PER SERVICE PROVIDER SPECS - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
2. SANITARY SEWER SERVICE ENTRY TO BUILDING - SEE ELEVATION THIS SHEET - SEE PLUMBING PLANS FOR CONTINUATION AND POINT OF ENTRY
3. INSTALL SCHEDULE 40 PVC LOW PRESSURE FORCE MAIN FOR SANITARY SEWER SERVICE PER LOCAL SERVICE PROVIDER SPECS.
4. INSTALL 1HP EONE SIMPLEX GRINDER PUMP STATION WITH 24"X72" TANK WITH FIBERGLASS LID OR APPROVED EQUAL - SEE DETAIL SHEET
5. INSTALL SANITARY SEWER CLEANOUT PER LOCAL SERVICE PROVIDER SPECS. - SEE SIZE, TYPE AND SLOPE THIS SHEET - SEE DETAIL SHEET
6. INSTALL SCHEDULE 40 PVC SANITARY SEWER LINE, PER LOCAL SERVICE PROVIDER SPECS. - SEE SIZE AND SLOPE THIS SHEET

WATER SERVICE:

12. TIE TO EXISTING WATER METERS PER SERVICE PROVIDER SPECS - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
13. EXISTING 1.5" WATERLINE AND 1.5" TEE WITH 3/4" REDUCER FOR DOMESTIC SERVICE AND 1" REDUCER FOR IRRIGATION SERVICE
14. EXISTING 1" METER AND VALVE PROVIDE ABOVE GROUND RPBP AND ENCLOSURE FOR IRRIGATION SERVICE PER LOCAL SERVICE PROVIDER SPECS. - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE - FIELD VERIFY LOCATION AND SIZES
15. EXISTING 3/4" METER AND VALVE FOR DOMESTIC WATER SERVICE PER LOCAL SERVICE PROVIDER SPECS. - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE - FIELD VERIFY LOCATION AND SIZES
16. STUB OUT 1" SCH 40 PVC LINE FOR IRRIGATION
17. PROVIDE DOMESTIC WATER SERVICE LINE - INSTALL 1" CLASS 200, DR9 HDPE PIPE (POLYPIPE PW-PE3408/PE3608 OR APPROVED EQUAL) - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
18. DOMESTIC WATER SERVICE ENTRY WITH INTERNAL 1" RPBP PER CITY SPECS. - SEE PLUMBING PLANS

ELECTRIC SERVICE:

22. CONNECTION TO EXISTING ELECTRICAL SERVICE PER LOCAL SERVICE PROVIDER SPECS. - G.C. TO COORDINATE WITH LOCAL SERVICE PROVIDER PRIOR TO ANY WORK DONE
23. PROVIDE PRIMARY OVERHEAD ELECTRICAL PER LOCAL SERVICE PROVIDER SPECS. - COORDINATE WITH LOCAL SERVICE PROVIDER PRIOR TO ANY WORK DONE
24. PROVIDE POLE MOUNTED TRANSFORMER - COORDINATE WITH LOCAL SERVICE PROVIDER PRIOR TO ANY WORK DONE
25. PROVIDE SECONDARY UNDERGROUND ELECTRIC PER LOCAL SERVICE PROVIDER SPECS. - COORDINATE WITH LOCAL SERVICE PROVIDE PRIOR TO ANY WORK DONE - SEE ELECTRICAL PLANS FOR CONDUIT SIZE AND CONNECTION POINT INTO THE BUILDING.
26. ELECTRIC SERVICE POINT OF ENTRY INTO BUILDING - SEE ELECTRICAL PLANS FOR CONDUIT SIZE AND CONNECTION POINT INTO THE BUILDING.
27. PROVIDE SERVICE POLE WITH GUY WIRE(S) PER LOCAL SERVICE PROVIDER SPECS. - COORDINATE WITH LOCAL SERVICE PROVIDER PRIOR TO ANY WORK DONE

COMMUNICATIONS SERVICE:

29. POINT OF CONNECTION FOR TELEPHONE / COMMUNICATIONS SERVICE PER SERVICE PROVIDER SPECS. - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
30. PROVIDE UNDERGROUND TELEPHONE / COMMUNICATIONS PER LOCAL SERVICE PROVIDER REQUIREMENTS COORDINATE WITH LOCAL SERVICE PROVIDERS PRIOR TO ANY WORK DONE - SEE M.E.P. PLANS FOR DEMANDS, SIZE, AND CONNECTION POINT INTO THE BUILDING.
31. UNDERGROUND TELEPHONE / COMMUNICATIONS POINT INTO THE BUILDING - COORDINATE WITH ELECTRIC SERVICE PROVIDER PRIOR TO ANY WORK DONE - SEE M.E.P. PLANS FOR DEMANDS, SIZE, AND CONNECTION POINT INTO THE BUILDING - PROVIDE BOLLARD SEE PLAN - SEE DETAIL

GAS SERVICE:

34. SERVICE PROVIDER TO TIE TO EXISTING GAS LINE PER LOCAL SERVICE PROVIDER REQUIREMENTS - COORDINATE WITH LOCAL SERVICE PROVIDER PRIOR TO ANY WORK DONE
35. GAS SERVICE PER LOCAL SERVICE PROVIDER SPECS. - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE
36. GAS METER AND SERVICE POINT INTO THE BUILDING - COORDINATE WITH ELECTRIC SERVICE PROVIDER PRIOR TO ANY WORK DONE - SEE M.E.P. PLANS FOR DEMANDS, SIZE, AND CONNECTION POINT INTO THE BUILDING

ADDITIONAL KEY NOTES:

40. UTILITY CROSSING PER SERVICE PROVIDER SPECS. - COORDINATE WITH SERVICE PROVIDERS PRIOR TO ANY WORK DONE
41. EXISTING SANITARY SEWER FORCEMAIN STUB - FIELD VERIFY EXACT LOCATION PRIOR TO ANY WORK DONE - COORDINATE WITH SERVICE PROVIDER PRIOR TO ANY WORK DONE

NOTE:
PROVIDE (2) 4" PVC CONDUITS UNDER DRIVES TO ALL LANDSCAPED AREAS. PROVIDE 2' COVER AND CAP OFF. MARK STUB OUT WITH FLAG/MARKER.

ALL LANDSCAPED AREAS TO BE IRRIGATED (IRRIGATION PLAN TO BE SUBBED OUT THRU G.C.) - SEE LANDSCAPE DRAWINGS FOR PLANTINGS AND DETAILS

SEE M.E.P. PLANS FOR ALL UTILITY SERVICE ENTRIES.
LOCATIONS SHOW ARE APPROXIMATE.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BENCHMARK #1	BENCHMARK #2
1/2" REBAR	1/2" REBAR
N: 1,097,408.07	N: 1,097,409.61
E: 2,365,109.95	E: 2,365,269.98
ELEV= 277.93	ELEV= 272.84

FLOOD NOTE:
FLOOD ZONE "AE"
PER FEMA MAP NO. 28089-C0415-F
EFFECTIVE DATE: MARCH 17, 2010

Civil Engineering Services
7705 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: ray@civilengineeringservices.net
Engineering, Environmental, Land Planning

Section 3. Item G)

NAD83 MS STATE PLANE

REVISIONS			
1	2	3	
4	5	6	

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110

UTILITY PLAN

Owner / Developer: AUTOZONE STORES LLC
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RAY G. FERREN LICENSED PROFESSIONAL ENGINEER 21060 STATE OF MISSISSIPPI
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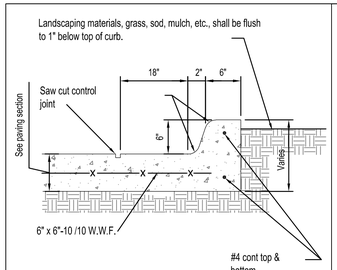
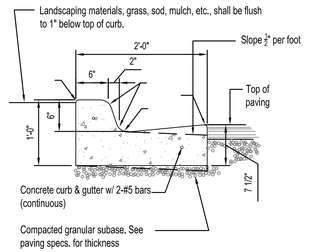
C3.0



N.T.S.

1 CONCRETE MONOLITHIC CURB



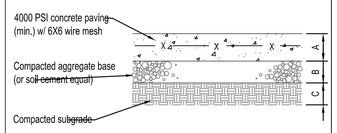
1" = 1'-0" SEC-C01

2 CONC. CURB & GUTTER (at Asphalt paving only)

DIMENSION & TYPE

Concrete Section	A	B	C
Parking Areas	5"	--	see note
Loading/Dumpster	8"	--	see note
Approaches	7"	--	see note

NOTE: Compacted subgrade should be as specified in soils report.



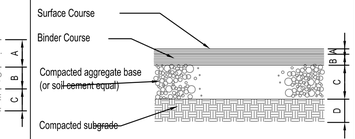
NO SCALE SEC-C04

3 CONCRETE PAVING SECTION

DIMENSION & TYPE

Asphalt Section	A	B	C	D
Parking Areas	2"	4"	--	see note
Drive Aisle	2"	6"	--	see note

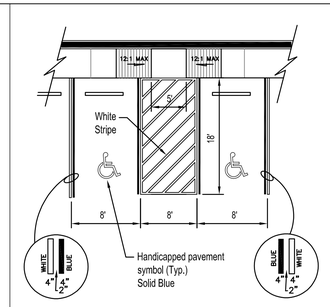
NOTE: Compacted subgrade should be as specified in soils report.



NO SCALE

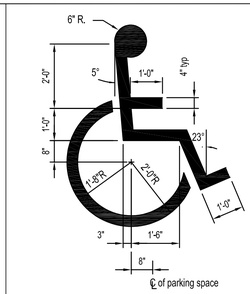
4 ASPHALT PAVING SECTION

5 NOT USED



NO SCALE

6 HANDICAP PARKING DETAIL



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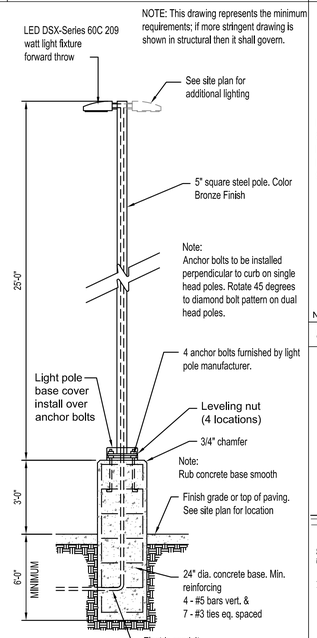
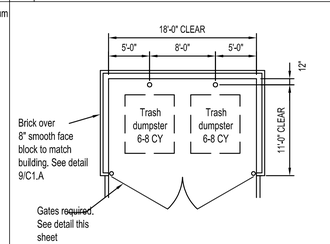
7 INT'L BARRIER FREE SYMBOL



NO SCALE SEC-C13

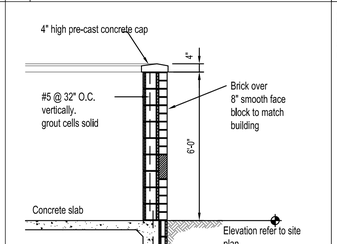
13 TYPICAL LIGHT POLE



NOTE: Bollards behind the dumpsters shall be 6'-0" tall above the pavement surface and extend 3'-0" into the ground. Paint inside CMU same color as brick

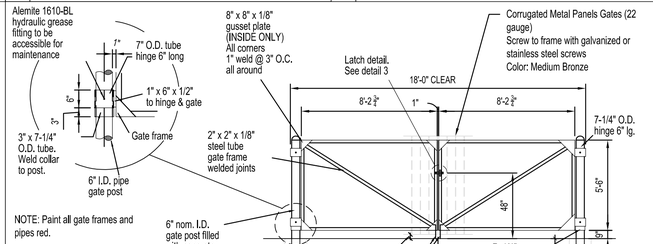
NO SCALE SEC-C17M

8 BRICK DUMPSTER LAYOUT



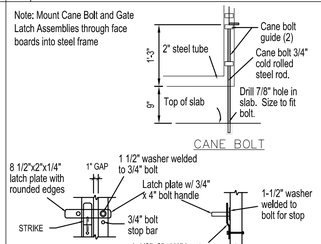
NO SCALE MDUMPSEC

9 BRICK DUMPSTER SECTION



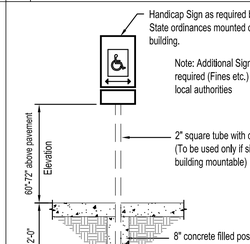
NO SCALE SEC-C18

10 GATE DETAIL FOR MASONRY WALL DUMPSTER ENCLOSURE



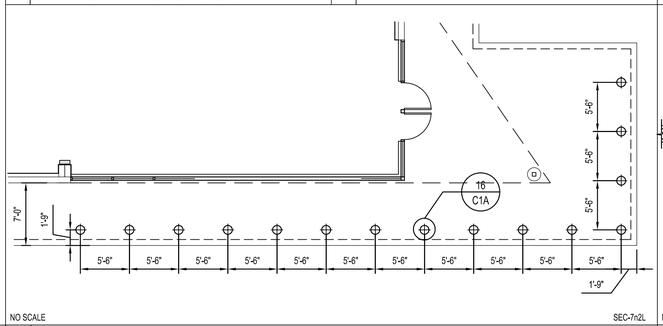
NO SCALE SEC-C19

11 GATE LATCH / BOLT DETAILS



NO SCALE

12 TYPICAL HANDICAP SIGN

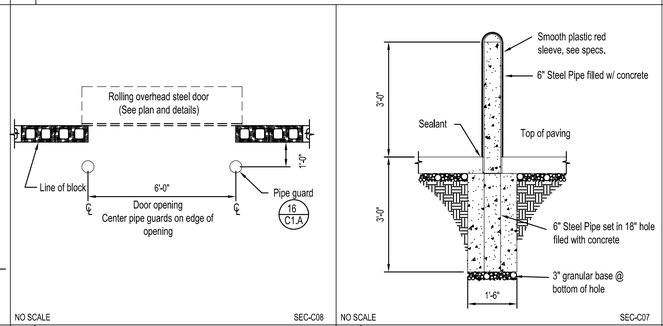


NO SCALE

25 TYPICAL PAVEMENT MARKINGS

NO SCALE

26 TYPICAL PAVEMENT MARKINGS

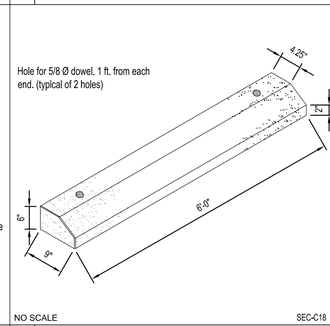


NO SCALE SEC-C08

15 PIPE GUARD @ ROLL-UP DOOR

NO SCALE SEC-C07

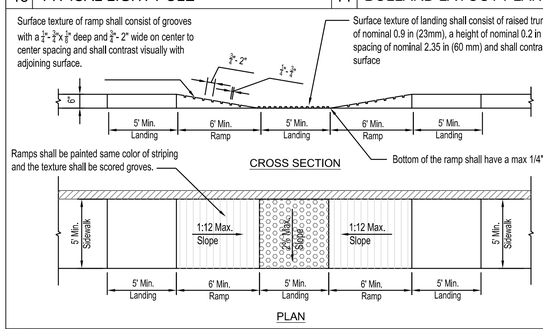
16 TYPICAL PIPE GUARD SECTION



NO SCALE SEC-C18

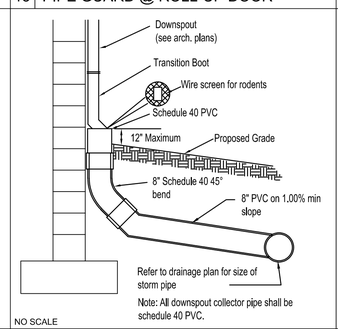
17 WHEEL STOP DETAIL

18 NOT USED



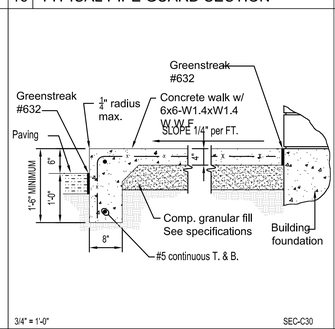
19 HANDICAP PARKING RAMP

20 NOT USED



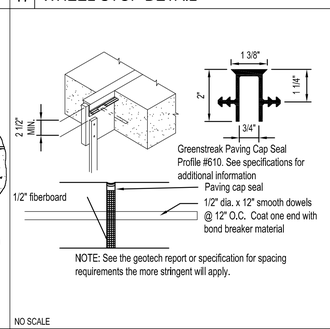
NO SCALE

21 DOWNSPOUT DETAIL



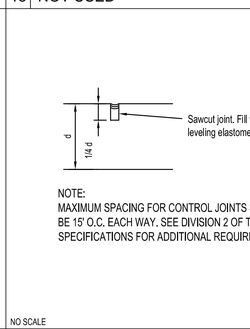
3/4" = 1'-0" SEC-C30

22 TYPICAL WALK SECTION



NO SCALE

23 TYPICAL EXPANSION JOINT

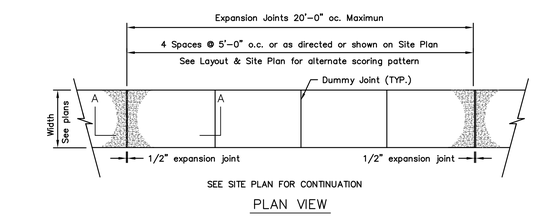


NO SCALE

24 TYPICAL CONTROL JOINT

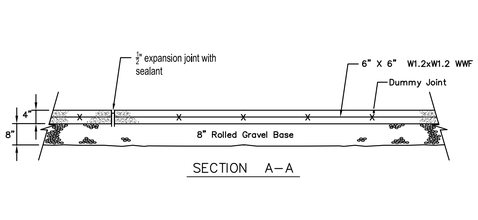
For all details on this sheet which call for a minimum depth of concrete, that depth shall be adjusted to the deeper of that called for in the detail or the frost depth shown in the Geotechnical Report.

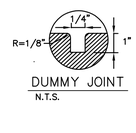
FROST DEPTH NOTES



NO SCALE

27 CONCRETE SIDEWALK





NAD83 MS STATE PLANE

REVISIONS			
1	2	3	
4	5	6	

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110
DETAIL SHEET 1

Owner / Developer: AUTOZONE STORES LLC
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TEL.: (901) 495-8994 FAX: (901) 495-8969

For Bidding & Contractor Information Contact:
Dodge Data & Analytics, Tel. 413-930-4215
Cindy.searcy@construction.com

REGISTERED PROFESSIONAL ENGINEER 21060 03/10/2022

4/25/2023

7N2

C4.0

NAD83 MS STATE PLANE

REVISIONS

1	2	3
4	5	6

AutoZone Store No. 0152
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MADISON MS 39110

DETAIL SHEET 2

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Memphis, Tennessee 38103
TEL.: (901) 495-8994 FAX: (901) 495-8969

For Bidding & Contractor Information Contact:
Dodge Data & Analytics; Tel. 413-930-4215
Cindy.searcy@construction.com

LICENSED PROFESSIONAL ENGINEER 21060 STATE OF MISSISSIPPI
05/10/2022

4/25/2023

7N2

C4.1

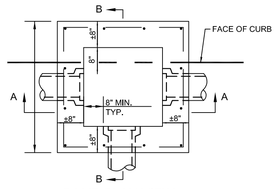
SINGLE CURB INLET

N.T.S.

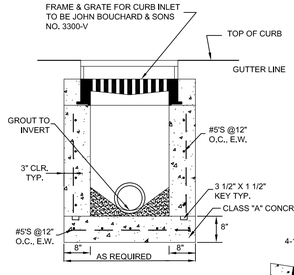
NOTE:
1. STORM WATER CURB INLET/AREA INLET TO HAVE ENVIRONMENTAL MESSAGE STAMPED INTO THE METAL"DUMP NO WASTE","DRAINS TO STREAM".

2. THE CONTRACTOR SHALL POUR THE INVERTS IN ALL STORM WATER STRUCTURES.

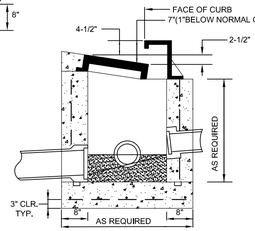
3. OPTIONAL CONSTRUCTION PRE-FAB, CONCRETE EQUIVALENT.



RAMP PLAN VIEW



SECTION A-A

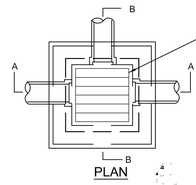


SECTION B-B

AREA INLET/JUNCTION BOX

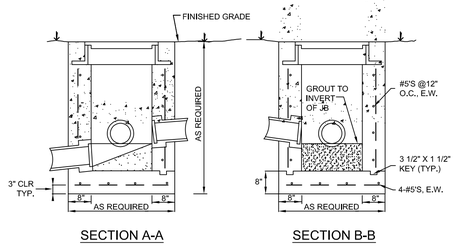
N.T.S.

NOTE
OPTIONAL CONSTRUCTION MATERIALS INCLUDE PRE-FAB. CONCRETE.



PLAN

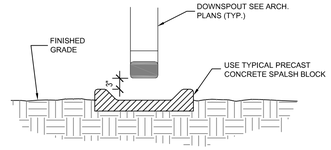
FRAME & GRATE FOR AREA INLET TO BE JOHN BOUCHARD & SONS NO. 4310 ADJUST HORIZONTAL DIMENSIONS ACCORDINGLY. MANHOLE FRAME AND LID TO BE JOHN BOUCHARD & SONS NO. 1131 OR APPROVED EQUAL



SECTION A-A SECTION B-B

CONCRETE SPLASH BLOCK

N.T.S.



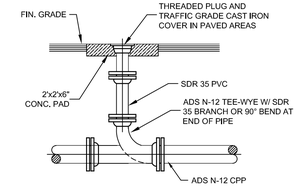
NOTE:

FRONT EDGE OF FLUME TO BE FLUSH W/ FINISHED GRADE.

PRIVATE STORM SEWER CLEANOUT

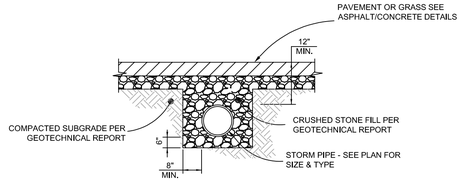
N.T.S.

NOTE:
IN GRASS AREAS WHERE NO PAVEMENT IS PROPOSED, CONCRETE BLOCK SHALL NOT BE CONSTRUCTED.



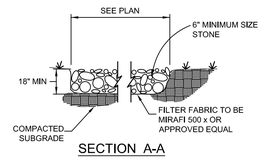
STORM SEWER PIPE TRENCH DETAIL

N.T.S.

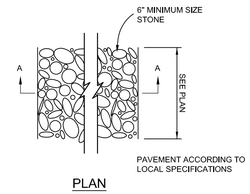


RIPRAP DETAIL

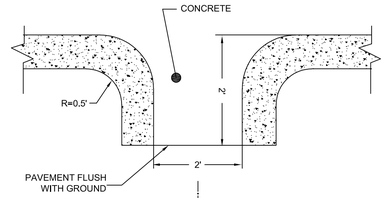
N.T.S.



SECTION A-A

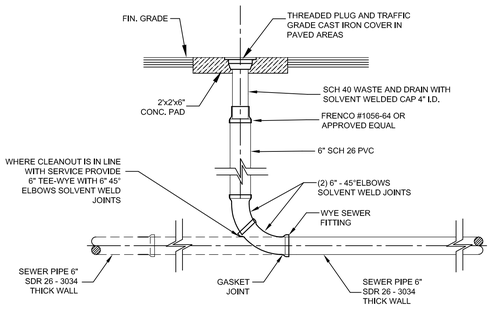


PLAN



CURB CUT DETAIL

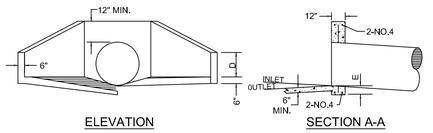
N.T.S.



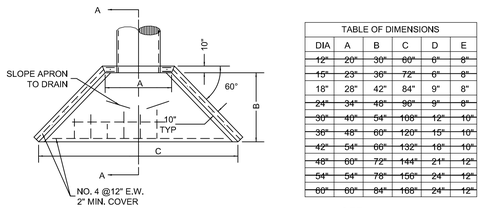
NOTE:
IN GRASS AREAS WHERE NO PAVEMENT IS PROPOSED, CONCRETE PAD SHALL NOT BE CONSTRUCTED.

PRIVATE SANITARY SEWER CLEANOUT

N.T.S.



ELEVATION SECTION A-A



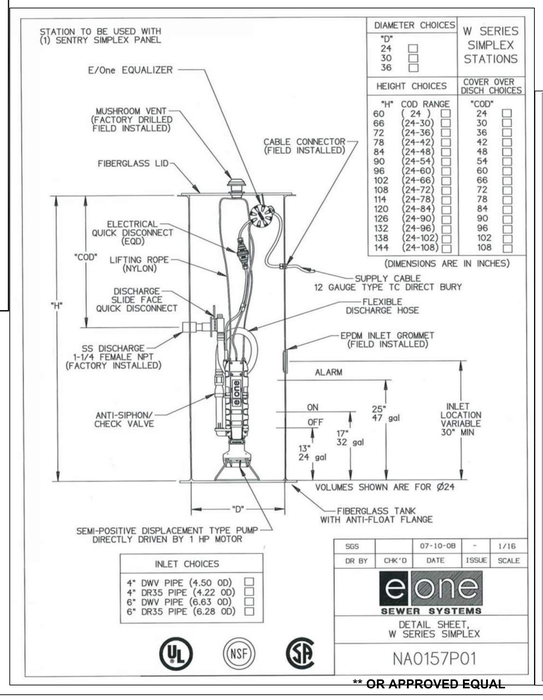
PLAN VIEW

TABLE OF DIMENSIONS					
DIA	A	B	C	D	E
12"	20"	30"	60"	6"	8"
15"	23"	36"	72"	6"	8"
18"	28"	42"	84"	9"	8"
24"	34"	48"	96"	9"	8"
30"	40"	54"	108"	12"	10"
36"	48"	60"	120"	15"	10"
42"	54"	66"	132"	18"	10"
48"	60"	72"	144"	21"	12"
54"	54"	78"	156"	24"	12"
60"	66"	84"	168"	24"	12"

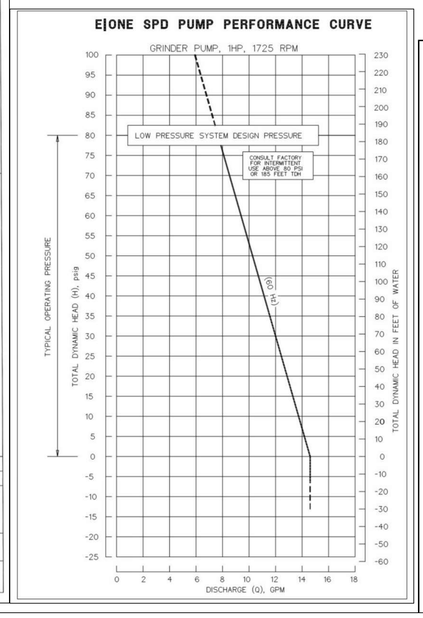
NOTE:
ALL EDGES OF EXPOSED CONCRETE TO BE CHAMFERED TO ONE CONCRETE TO BE

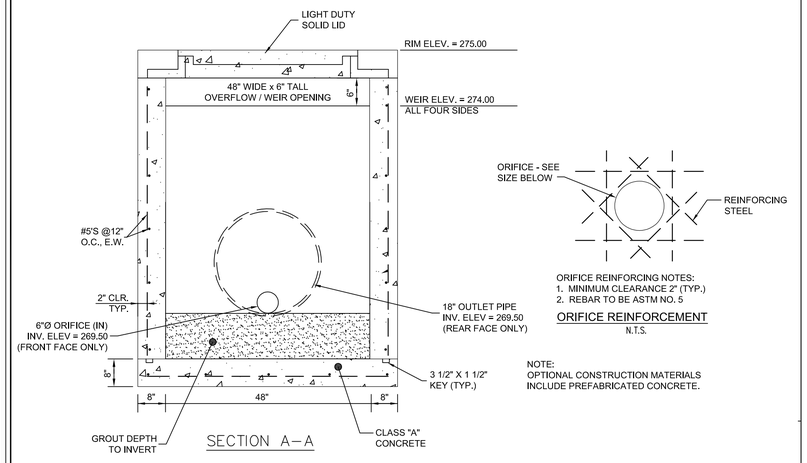
WINGED HEADWALL/ENDWALL

N.T.S.



** OR APPROVED EQUAL





SECTION A—A

ORIFICE REINFORCING NOTES:
1. MINIMUM CLEARANCE 2" (TYP.)
2. REBAR TO BE ASTM NO. 5

ORIFICE REINFORCEMENT
N.T.S.

NOTE:
OPTIONAL CONSTRUCTION MATERIALS INCLUDE PREFABRICATED CONCRETE.

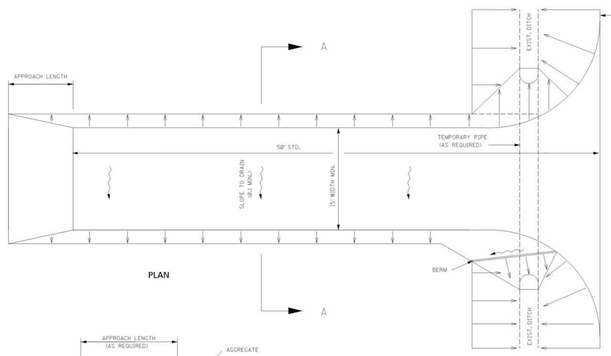
DETENTION OUTLET STRUCTURE

N.T.S.

NAD83 MS STATE PLANE

REVISIONS					
1		2		3	
4		5		6	

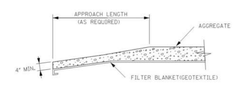
STATE	PROJECT NO.
MISS.	



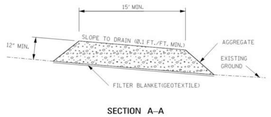
PLAN

GENERAL NOTES:

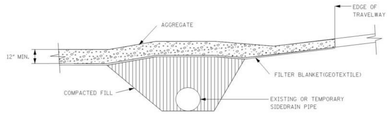
1. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFFSITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE PROJECT SHALL BE DIRECTED THRU THE STABILIZED ENTRANCE. BARRIERS, FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TO LIMIT AND DIRECT VEHICULAR EGRESS ACROSS THE STABILIZED ENTRANCE.
2. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE TECHNIQUE TO MINIMIZE OFFSITE TRACKING OF SEDIMENT. THE ALTERNATIVE MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ITS USE.
3. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE STABILIZED CONSTUCTION ENTRANCE AGGREGATE AND CONSTRUCTION MUD) SHOULD BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED BY THE ENGINEER.
4. SIZE III STABILIZER AGGREGATE OR LARGER SHALL BE USED.
5. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION TO PREVENT OFFSITE TRACKING. THE STABILIZED CONSTRUCTION ENTRANCE SHOULD BE RINSED WHEN NECESSARY TO MOVE ACCUMULATED MUD DOWNWARD THRU THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUTE LEADING TO THE STABILIZED ENTRANCE MAY BE REQUIRED TO LIMIT THE MUD TRACKED.
6. THE NOMINAL SIZE OF A STANDARD STABILIZED CONSTRUCTION ENTRANCE IS 15' X 50' UNLESS OTHERWISE SHOWN IN THE EROSION CONTROL PLAN.
7. COSTS OF ALL ITEMS ON THIS SHEET SHALL BE INCLUDED IN OTHER ITEMS BID.



TRANSITION DETAIL



SECTION A–A



RURAL CONNECTION DETAIL

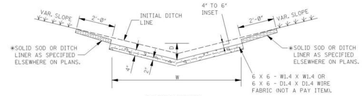
NO.	REVISION	BY	DATE

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

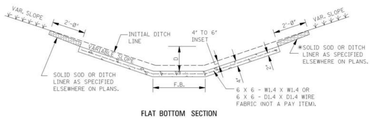
STABILIZED CONSTRUCTION ENTRANCE

MDOT
WORKING NUMBER ECD-16
SHEET NUMBER 6116

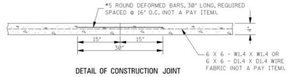
ISSUE DATE: AUGUST 01, 2017



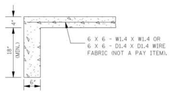
"V" TYPE SECTION



FLAT BOTTOM SECTION



DETAIL OF CONSTRUCTION JOINT



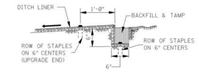
DETAIL OF TOE WALL

NOTE: TOE WALL REQUIRED UPSTREAM AND DOWNSTREAM.

CONCRETE PAVED DITCH

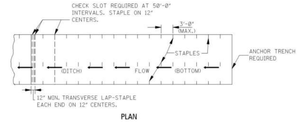
NOTES:
1. CONCRETE PAVED DITCHES SHALL BE GROOVED AT 20'-0" INTERVALS. THE GROOVES SHALL BE CUT TO A DEPTH OF NOT LESS THAN 1".
2. DIMENSIONS D & W ARE AS FOLLOWS:
   DMINIMUM = 6"
   DMAXIMUM = 9"
   WMINIMUM = 24"
3. CHAIR SUPPORTS FOR THE WIRE MESH WILL NOT BE REQUIRED. HOWEVER, THE CONTRACTOR SHALL PLACE THE WIRE MESH IN A SATISFACTORY AND WORKMANLIKE MANNER TO ENSURE THAT THE FINAL POSITION IS REASONABLY NEAR THE POSITION INDICATED.

*4. CENTER ROW OF STAPLES MAY BE OMITTED ON DITCH LINER.

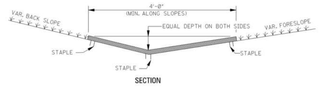


ANCHOR TRENCH DETAIL

NOTE: ANCHOR TRENCH REQUIRED AT THE BEGINNING AND ENDING OF EACH AREA TO BE COVERED, EXCEPT DOWNSTREAM END ADJOINING A STRUCTURE.



PLAN

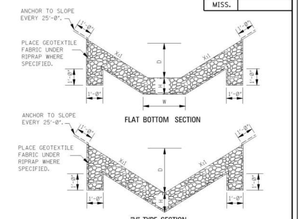


SECTION

DITCH LINER TREATMENT
(EXCELSIOR BLANKET, JUTE MESH OR EROSION CONTROL FABRIC)

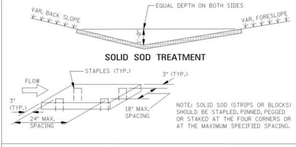
NOTE: DITCHES TREATED WITH DITCH LINER WILL BE VEGETATED PRIOR TO TREATMENT, UNLESS OTHERWISE INDICATED.

STATE	PROJECT NO.
MISS.	



NOTES:
1. DIMENSIONS D, W AND X ARE VARIABLE AND ARE SHOWN ELSEWHERE ON THE PLANS.
2. THE RIPRAP SIZE AND MINIMUM DEPTH "H" FOR RIPRAP TREATMENT ARE AS FOLLOWS:

RIPRAP SIZE & MINIMUM DEPTH "H"	
RIPRAP SIZE (Dn)	H (BOTTOM) (Da)
12"	18"
18"	36"



SOLID SOD TREATMENT

NOTE: SOLID SOD (STRIPS OR BLOCKS) SHOULD BE STAPLED, PINNED, PEGGED OR STAKED AT THE FOUR CORNERS OR AT THE MAXIMUM SPECIFIED SPACING.

GENERAL NOTE:
1. FOR LOCATION OF APPROPRIATE DITCH TREATMENTS, SEE PLAN SHEETS AS DENOTED BY THE FOLLOWING LEGEND OR AS DIRECTED BY THE ENGINEER:
   DITCH LINER
   SOLID SOD
   CONCRETE PAVED DITCH
   RIPRAP

NO.	REVISION	BY	DATE

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

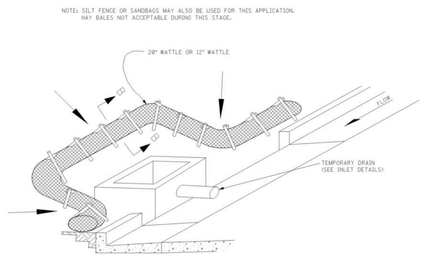
DETAILS OF TYPICAL DITCH TREATMENTS

MDOT
WORKING NUMBER DT-1
SHEET NUMBER 6123

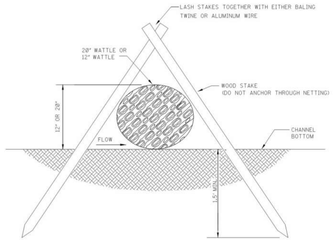
ISSUE DATE: AUGUST 01, 2017

STATE	PROJECT NO.
MISS.	

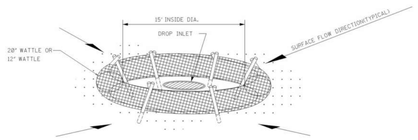
NOTE: SILT FENCE OR SANDBAGS MAY ALSO BE USED FOR THIS APPLICATION. HAY BALES NOT ACCEPTABLE DURING THIS STAGE.



CURB INLET PROTECTION (STAGE 2)
SINGLE OR DOUBLE WING INLET



SECTION B–B



DROP INLET PROTECTION

NOTES:
1. ANCHORING STAKES SHALL BE SIZED, SPACED, AND BE OF A MATERIAL THAT EFFECTIVELY SECURES THE WATTLE. STAKE SPACING SHALL BE A MAXIMUM OF THREE FEET.
2. OVERLAP ENDS OF WATTLES PER MANUFACTURER'S RECOMMENDATIONS (2' MIN., 3' MAX.)
3. TRENCHING OF WATTLES MAY BE NECESSARY IF PIPING BECOMES EVIDENT.
4. IN THE EVENT WATTLES CANNOT BE SECURED IN PLACE USING WOOD STAKES, SANDBAGS MAY BE USED IN LIEU OF WOOD STAKES IN ORDER TO SECURE WATTLES IN PLACE. COST OF SANDBAGS USED IN THIS APPLICATION SHALL BE INCLUDED IN OTHER ITEMS BID.

NO.	REVISION	BY	DATE

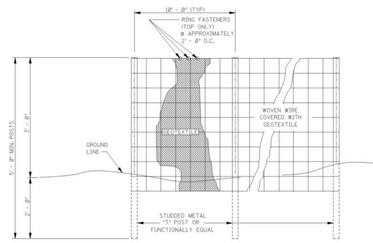
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

INLET PROTECTION DETAILS OF WATTLES

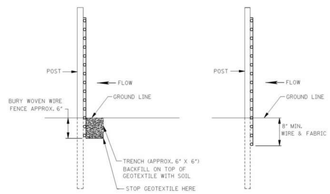
MDOT
WORKING NUMBER ECD-15
SHEET NUMBER 6113

ISSUE DATE: AUGUST 01, 2017

STATE	PROJECT NO.
MISS.	

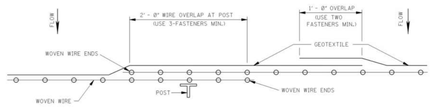


ELEVATION VIEW



METHOD I
METHOD II
MECHANICAL INSTALLATION

SIDE VIEW



PLAN VIEW
REQUIRED LAPPING

GENERAL NOTES:
1. SILT FENCES SHOULD BE USED IN AREAS WHERE FLOW IS NOT SEVERE.
2. SILT FENCES ARE TEMPORARY SEDIMENT CONTROL ITEMS THAT SHOULD BE ERECTED OPPOSITE ERODIBLE AREAS SUCH AS NEWLY GRADED FILL SLOPES AND ADJACENT TO STEAMS AND CHANNELS.
3. SILT FENCE SHOULD BE PLACED WELL INSIDE RIGHT-OF-WAY AND ALONG EDGE OF CLEARING LIMITS. THIS WILL ALLOW ROOM FOR BACK-UP FENCE IF FIRST FENCE BECOMES FULL.
4. WHENEVER POSSIBLE SILT FENCE SHOULD BE CONSTRUCTED ACROSS A LEVEL AREA IN THE SHAPE OF A SMILE. THIS AIDS IN PONDING OF RUNOFF AN FACILITATES SEDIMENTATION.
5. THE CONTRACTOR MAY ELECT TO USE EITHER METHOD I OR METHOD II. COST TO BE LINEAR FEET OF SILT FENCE.
6. METHOD II INSTALLATION SHALL BE ACCOMPLISHED USING AN IMPLEMENT THAT IS MANUFACTURED FOR THE APPLICATION AND PROVIDES A CONFIGURATION MEETING THE REQUIREMENTS OF DETAIL.
7. WIRE SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
8. GEOTEXTILE FABRIC MEETING THE TYPE II MATERIAL REQUIREMENTS AND INSTALLED ACCORDING TO SPECIFICATION MAY BE USED WITHOUT WIRE FENCE.

NO.	REVISION	BY	DATE

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

DETAILS OF SILT FENCE INSTALLATION

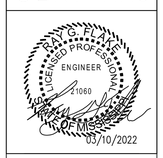
MDOT
WORKING NUMBER ECD-3
SHEET NUMBER 6103

ISSUE DATE: AUGUST 01, 2017

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110
DETAIL SHEET 3

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL.: (901) 495-8994 FAX: (901) 495-8969

For Bidding & Contractor Information Contact:
Dodge Data & Analytics, Tel. 413-930-4215
Cindy.searcy@construction.com



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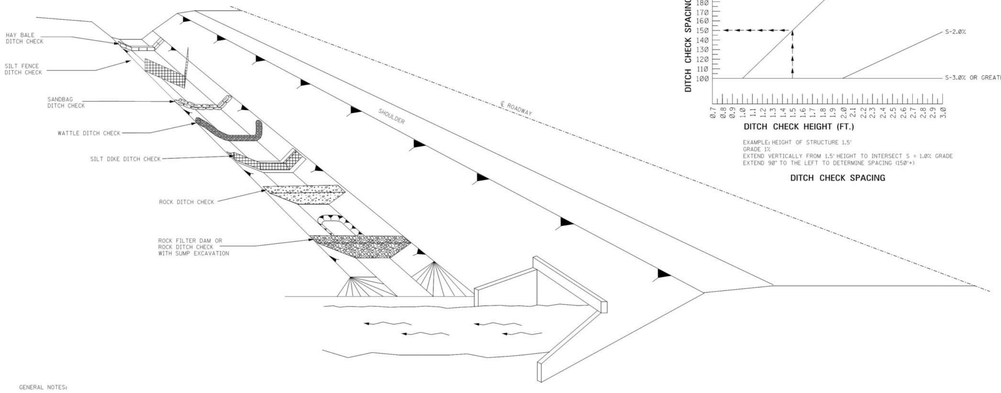

DITCH CHECK SPACING

GENERAL NOTES:

1. THE DITCH CHECK PERSPECTIVE ILLUSTRATES A TOOL BOX OF TEMPORARY PRACTICES THAT MAY BE USED. DITCH CHECKS ARE INSTALLED TO CONTROL RUNOFF VELOCITY AND THUS REDUCE EROSION AND PROVIDE FOR TRAPPING OF SEDIMENTS.
2. SELECTION OF THE APPROPRIATE DITCH CHECK SHOULD BE A FUNCTION OF CONSTRUCTION PHASE, DRAINAGE AREA, DITCH GRADIENT, SOIL TYPE, ECONOMY AND SAFETY.
3. DITCH CHECKS CAN BE REMOVED FOR MAINTENANCE AND/OR REPLACEMENT BUT MUST REMAIN IN PLACE UNTIL UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED. MAINTENANCE INCLUDES REMOVAL OF SEDIMENT BEGINNING WHEN SEDIMENT ACCUMULATION REACHES ½ THE CAPACITY OR HEIGHT OF THE STRUCTURE AND NEVER ALLOWING FOR SEDIMENT TO ACCUMULATE MORE THAN ½ THE VOLUME OR HEIGHT OF THE DITCH CHECK STRUCTURE.
4. HAY BALES SHOULD BE USED TO INTERCEPT LOW VOLUME FLOWS IN LOW TO MODERATE GRADIENT DITCHES.
5. SILT FENCE DITCH CHECKS SHOULD BE USED WHERE IT HAS BEEN DETERMINED THAT HAY BALE CHECKS ARE INADEQUATE. SILT FENCE DITCH CHECKS SHOULD BE USED TO INTERCEPT LOW VOLUME FLOWS IN LOW TO MODERATE GRADIENT DITCHES.
6. SANDBAG DITCH CHECKS SHOULD BE USED FOR VELOCITY REDUCTION AND MINIMAL SEDIMENT TRAPPING IN CONCRETE PAVED DITCHES OR IN DITCHES THAT HAVE ROCK BOTTOMS.
7. WATTLE DITCH CHECKS CAN BE USED FOR VELOCITY REDUCTION AND CONTROL OF SEDIMENT TRANSPORT UNDER LOW TO MEDIUM FLOW CONDITIONS.
8. SILT DIKES CAN BE USED IN DITCHES WITH CONCENTRATED FLOWS WITHIN THE CLEAR ZONE WHERE RIPRAP CAN NOT BE USED AS CONSTRUCTION PROGRESSES.
9. ROCK DITCH CHECKS WITH SUMP EXCAVATION CAN BE PLACED IN DITCHES TO ASSURE ON-SITE SEDIMENT TRAPPING REQUIREMENTS ARE MET. DITCH CHECK WITH SUMP EXCAVATION IS USED WHEN DITCHES RECEIVE DRAINAGE FROM CUT OR FILL SLOPES OR OTHER CRITICAL AREAS WHERE SOIL EROSION IS EXPECTED. DRAINAGE AREA FOR A TEMPORARY SEDIMENT TRAP SHOULD BE LIMITED TO 5 ACRES. THEY CAN BE USED IN SERIES TO INCREASE ON-SITE SEDIMENT TRAPPING EFFICIENCY.
10. DITCH CHECKS, IN NO CASE, SHALL BE PLACED IN LIVE STREAMS.
11. CONFIGURATION AND SPACING MAY BE ADJUSTED IF APPROVED BY THE ENGINEER TO ACCOMMODATE TRAVELWAY SAFETY, WATER FLOW, OR SOIL AND INSTALLATION CHALLENGES.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

DITCH CHECK STRUCTURES, TYPICAL APPLICATIONS AND DETAILS

MDOT WORKING NUMBER: ECD-4
ISSUE DATE: AUGUST 01, 2017
SHEET NUMBER: 6104

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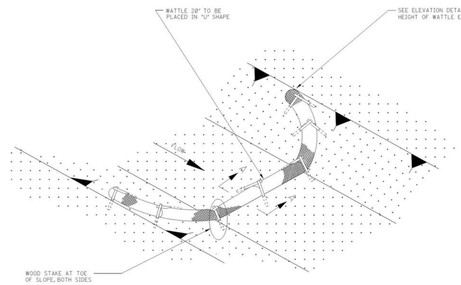

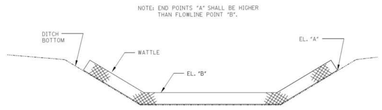

NOTES:

1. WATTLE DITCH CHECKS CAN BE USED FOR VELOCITY REDUCTION AND CONTROL OF SEDIMENT TRANSPORT UNDER LOW TO MEDIUM FLOW CONDITIONS.
2. THE PLACEMENT INTERVAL BETWEEN WATTLE DITCH CHECK SHALL BE 100' UNLESS SHOWN OTHERWISE ON THE PLANS OR EROSION CONTROL PLAN APPROVED BY THE ENGINEER. SEE SPACING GUIDANCE ON MS. NO. ECD-4.
3. ANCHORING WOOD STAKES SHALL BE SIZED, SPACED, DRIVEN, AND BE OF A MATERIAL THAT EFFECTIVELY SECURES THE CHECK. STAKE SPACING SHALL BE A MAXIMUM OF THREE FEET. ALL NON-DEGRADABLE MATERIALS SHALL BE REMOVED WHEN NO LONGER NEEDED.
4. TRENCHING OF WATTLES MAY BE NECESSARY IF PIPING BECOMES EVIDENT.
5. WATTLES SHOULD NOT BE USED IN HARD BOTTOM CHANNELS.
6. IN THE EVENT WATTLES CANNOT BE SECURED IN PLACE USING WOOD STAKES, SAND BAGS MAY BE USED IN LIEU OF WOOD STAKES IN ORDER TO SECURE THE WATTLES IN PLACE. IF SANDS BAGS ARE USED IN THIS APPLICATION THEY WILL NOT BE A SEPARATE PAY ITEM.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

DETAILS OF EROSION CONTROL WATTLE DITCH CHECK

MDOT WORKING NUMBER: ECD-6
ISSUE DATE: AUGUST 01, 2017
SHEET NUMBER: 6106

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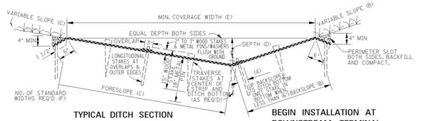
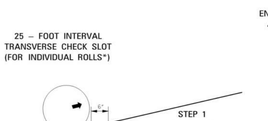


MAT PLACEMENT TABLE

DIMENSIONS OF MAT PLACEMENT IN DITCH (INDIVIDUAL 38" WIDTH ROLLS)				
ELEMENTS OF MAT PLACEMENT	SIDE SLOPE COMBINATIONS FORESLOPE – BACKSLOPE			
	3:1 & 3:1	4:1 & 3:1	4:1 & 4:1	6:1 & 4:1
(A) LF BACKSLOPE TO DITCH BOTTOM	1' – 7"	1' – 1"	8" – 4"	0" – 10"
(B) BACKSLOPE	4' – 0"	3' – 6"	2' – 9"	3' – 3"
(C) FORESLOPE	4' – 0"	4' – 6"	5' – 3"	4' – 9"
(D) DEPTH OF COVERAGE	1' – 3"	1' – 1"	0" – 10"	0" – 9"
(E) WIDTH OF COVERAGE	7' – 7"	7' – 8"	7' – 9"	7' – 10"
(F) MINIMUM NUMBER OF STAND. WIDTH STRIPS	3	3	3	3
(B) + (C) TOTAL COVERAGE ON SLOPES	8' – 0"	8' – 0"	8' – 0"	8' – 0"
SQ. YDS.-LIN. FT.	0.89	0.89	0.89	0.89
MULTI – WIDTH WELDED SEAM MAT (WELDED 38" WIDTH STRIPS)				
(B) + (C) TOTAL COVERAGE MULTI-WIDTH ROLLS	8' – 3"	8' – 3"	8' – 3"	8' – 3"
SQ. YDS.-LIN. FT.	0.92	0.92	0.92	0.92

A. ROLL MAT UPSTREAM OVER BACKFILLED TERMINAL.
B. STAKE MAT DOWN TO ANCHOR TERMINAL, 18" APART ACROSS IN TWO ROWS.
C. PROGRESS UPSTREAM WITH ROLL.

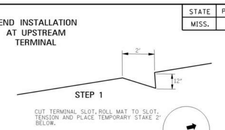
25 – FOOT INTERVAL TRANSVERSE CHECK SLOT (FOR INDIVIDUAL ROLLS*)



A. BACKFILL AND COMPACT, PROGRESS UPSTREAM.
B. PULL OUT TEMPORARY STAKES WHEN NO LONGER NEEDED FOR TENSIONING, OR MAY BECOME PERMANENT STAKING PATTERN.

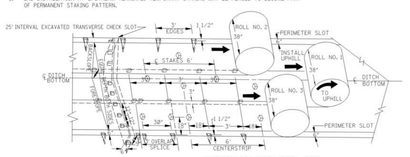
* WHEN MULTI-WIDTH (WELDED SEAM) ROLLS ARE USED, OMIT EXCAVATED CHECK SLOT AND REPLACE WITH A ROW OF STAKES ONE FOOT APART AT 25-FT. INTERVALS (SEE DETAILS). TEMPORARY STAKES NOT REQUIRED.

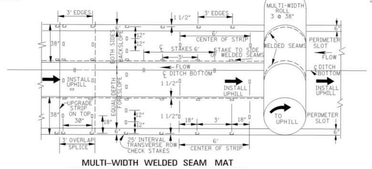
END INSTALLATION AT UPSTREAM TERMINAL



GENERAL INSTRUCTIONS:

1. BEGIN INSTALLATION AT DOWNSTREAM TERMINAL AND PROGRESS UPSTREAM.
2. FIRST ROLL IS ALIGNED FROM DITCH BOTTOM UP BACKSLOPE (SEE MAT PLACEMENT TABLE) AND UNDER MODERATE TENSION TEMPORARILY STAKED TO MAINTAIN PROPER DESIGN COVERAGE ALIGNMENT.
3. WORKING OUTWARD FROM DITCH BOTTOM TO EDGES, SUBSEQUENT ADJACENT ROLLS FOLLOW IN STAGGERED SEQUENCE UNDER MODERATE TENSION.
4. OVERLAP MAT SEAMS 3 INCHES AND STAKE AT 3-FT. INTERVALS WITH STAKES ALIGNED LONGITUDINALLY TO DITCH AND DIAGONAL EDGE OF STAKE TO THE UPSTREAM. OUTER EDGES (PERIMETER) OF MAT ARE STAKED SIMILARLY.
5. STAKE THE CENTER OF EACH MAT STRIP AND WHEN REQUIRED ALONG THE DITCH BOTTOM AT 6-FT. INTERVALS STAGGERED BETWEEN THE 3-FT. SPACING OF OVERLAP AND OUTER EDGE STAKES WITH THE BROADSIDE TO THE FLOW DIRECTION AND DIAGONAL EDGE TOWARD THE SLOPE.
6. USE 3-FT. OVERLAP AT END OF MAT ROLL SPLICES WITH UPGRADE STRIP ON TOP, STAKED IN TWO ROWS 30 INCHES APART, AND STAKES IN INCHES APART ACROSS FULL WIDTH.
7. TRANSVERSE CHECK SLOTS 6 INCHES WIDE BY 9 INCHES DEEP ARE EXCAVATED AT 25-FT. INTERVALS WITH STAKES 12 INCHES APART FULL WIDTH OF TREATMENT. WELDED SEAM MULTI-WIDTH MAT WILL HAVE SIMILAR TRANSVERSE CHECKS OMITTING EXCAVATED SLOTS ONLY.
8. END INSTALLATION AT UPSTREAM TERMINAL. TEMPORARY STAKING MAY BE PLACED TO BECOME PART OF PERMANENT STAKING PATTERN.





MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

DITCH TREATMENT INSTALLATION DETAIL FOR SOIL REINFORCING MAT

MDOT WORKING NUMBER: DT-1A
ISSUE DATE: AUGUST 01, 2017
SHEET NUMBER: 6124

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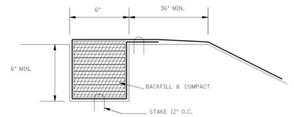
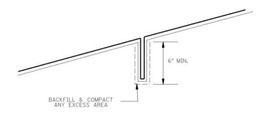
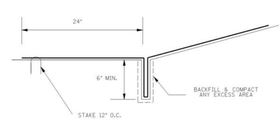
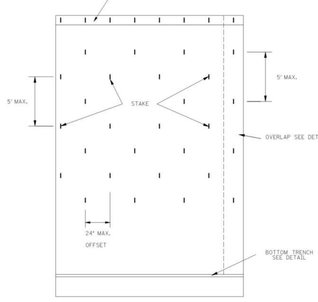
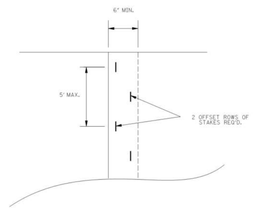
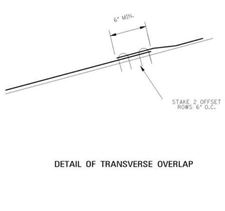












MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

EROSION CONTROL BLANKET

MDOT WORKING NUMBER: ECB-1
ISSUE DATE: AUGUST 01, 2017
SHEET NUMBER: 6131

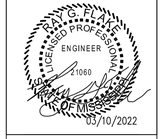
REVISIONS					
1		2		3	
4		5		6	

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110

DETAIL SHEET 4

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL.: (901) 495-8994 FAX: (901) 495-8969

For Bidding & Contractor Information Contact:
Dodge Data & Analytics, Tel. 413-930-4215
Cindy.searcy@construction.com



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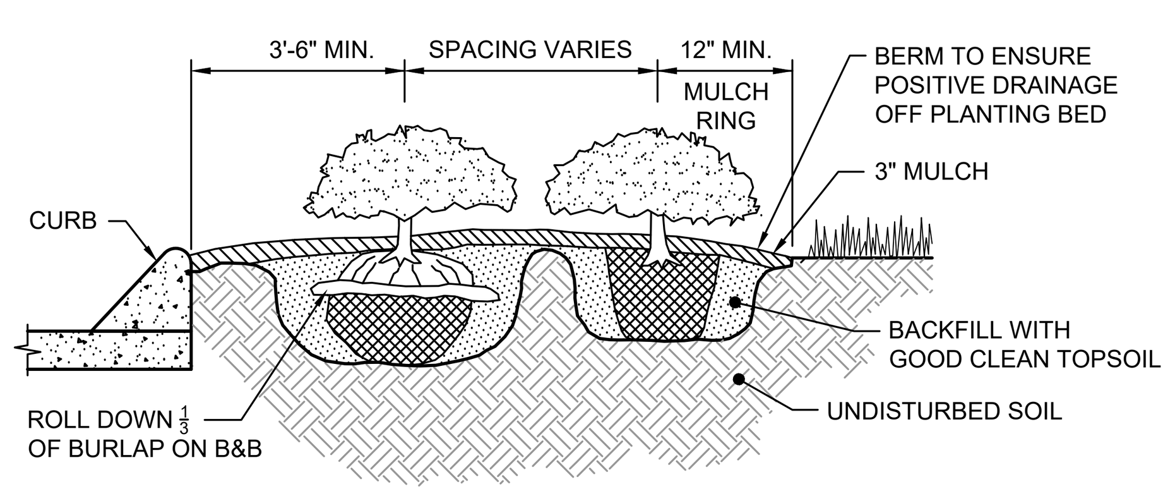
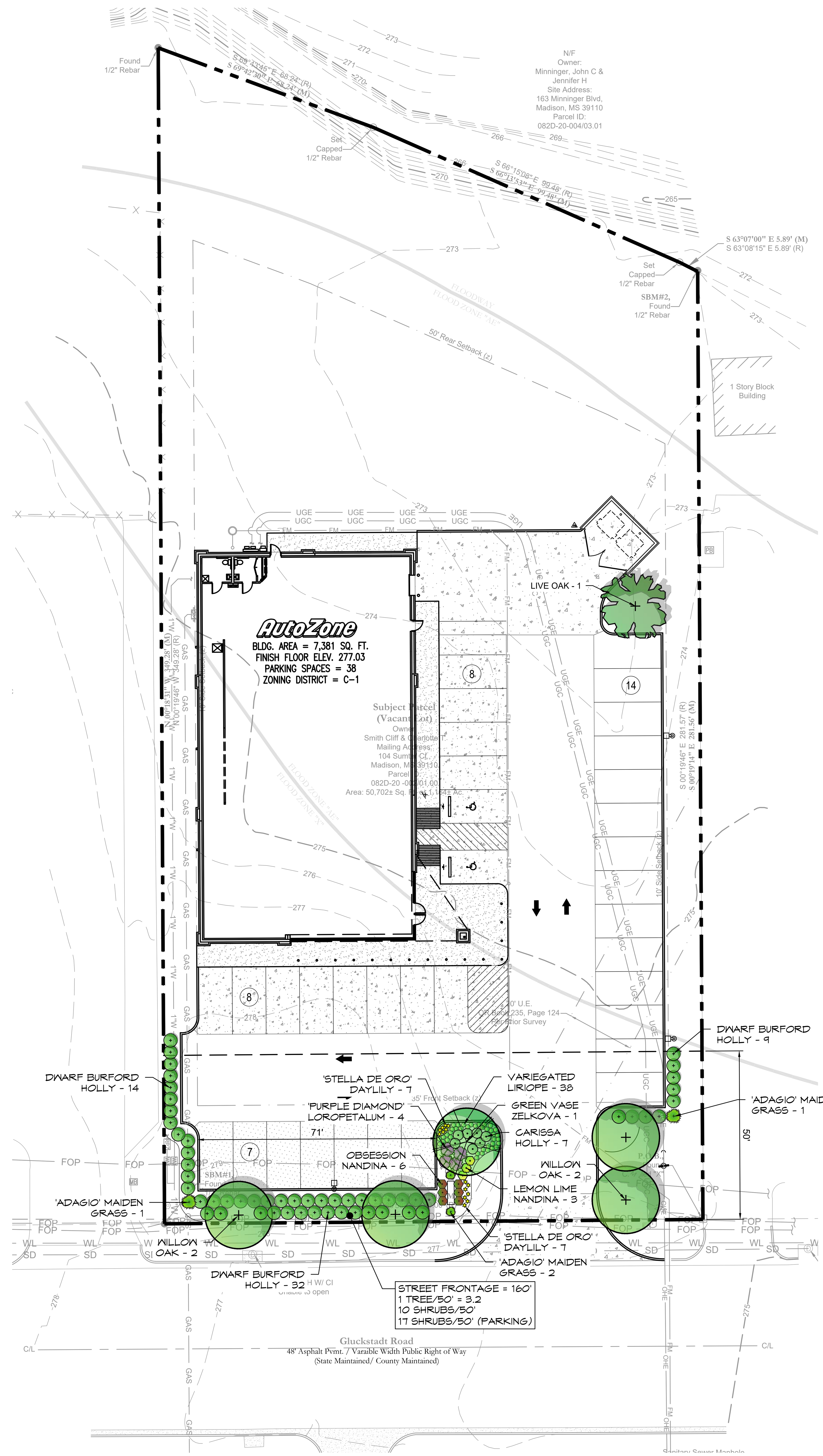
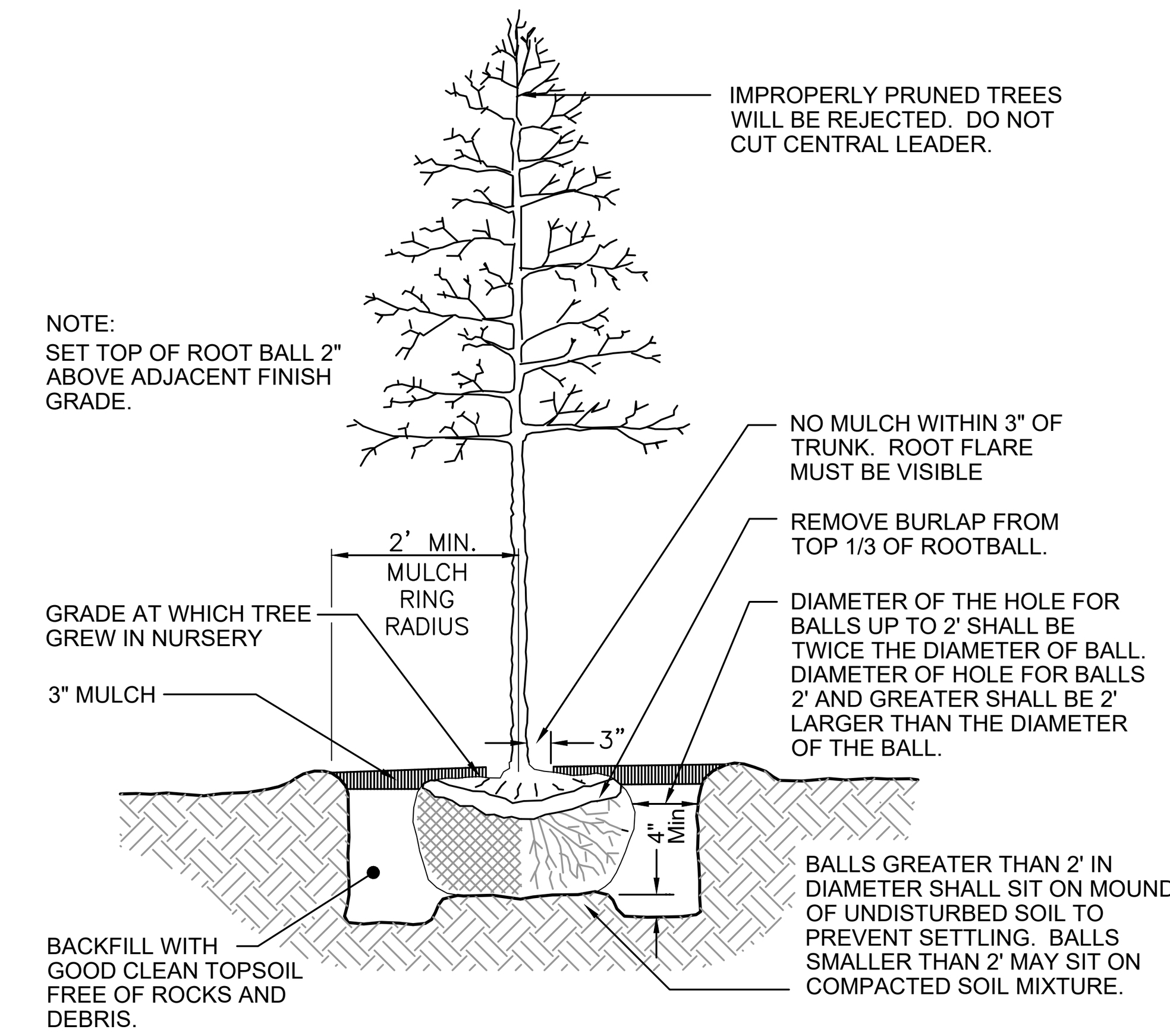
LANDSCAPE NOTES:

1. WHEN APPLICABLE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING TREES TO REMAIN. NO HEAVY EQUIPMENT SHOULD BE PERMITTED TO OPERATE OR BE STORED, NOR ANY MATERIALS TO BE HANDLED OR STORED, WITHIN THE DRIPLINES OF TREES OUTSIDE THE LIMIT OF GRADING.
2. THE QUANTITIES INDICATED ON THE PLANT LIST AND PLAN ARE PROVIDED FOR THE BENEFIT OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY CALCULATIONS AND THE LIABILITY WHICH PERTAINS TO THOSE QUANTITIES AND TO ANY RELATED CONTRACT DOCUMENTS AND/OR PRICE QUOTATIONS. QUESTIONS SHOULD BE DIRECTED TO THE LANDSCAPE ARCHITECT.
3. ALL PLANT MATERIALS SHALL COMPLY WITH THE AMERICAN STANDARD FOR NURSERY STOCK: ANSI Z-60.1; LATEST EDITION, FOR SIZE AND QUALITY.
4. NO SUBSTITUTIONS AS TO TYPE, SIZE, OR SPACING OF PLANT MATERIALS SPECIFIED ON THIS PLAN MAY BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT. KITA LANDSCAPE DESIGN (615) 469-1222.
5. THE CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES AND TO PROTECT UTILITIES THAT ARE TO REMAIN. THE CONTRACTOR SHALL REPAIR ANY DAMAGE ACCORDING TO LOCAL STANDARDS AT THE CONTRACTOR'S EXPENSE. COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANY.
6. SOD ALL DISTURBED AREAS.
7. SOIL USED FOR PLANTING SHALL CONSIST OF (5) PARTS TOPSOIL, (1) PART SAND AND (2) PARTS ORGANIC MATTER, MIXED WITH I POUND OF FERTILIZER PER CUBIC YARD.
   A. SAND SHALL BE CLEAN MASONRY SAND.
   B. ORGANIC MATTER SHALL BE PEAT MOSS, OR WELL COMPOSTED PINE BARK, OR APPROVED EQUAL AND SHALL BE FINELY GROUND AND FREE OF WEEDS.
   C. ALL FERTILIZER SHALL BE 10-10-10 WITH MINOR ELEMENTS. FERTILIZER SHALL HAVE 40-50% OF ITS TOTAL NITROGEN IN A WATER INSOLUBLE FORM.
8. PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO ALL PLANT BEDS AND SOD AREAS PRIOR TO INSTALLATION. TREFLAN OR AN APPROVED EQUAL SHALL BE USED.
9. ALL PLANT BEDS SHALL HAVE A MINIMUM OF 3" DEEP MULCH. MULCH SHALL BE SHREDDED HARDWOOD.
10. IT IS THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO CONFIRM MATERIAL QUANTITIES. IN THE EVENT OF A DISCREPANCY, THE QUANTITIES SHOWN ON THE PLAN SHALL TAKE PRECEDENCE OVER QUANTITIES SHOWN ON THE PLANT LIST.
11. PRIOR TO FINAL PAYMENT, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE OWNER WITH COMPLETE WRITTEN INSTRUCTIONS ON PROPER CARE OF ALL SPECIFIED PLANT MATERIALS.
12. THE LANDSCAPE INSTALLATION SHALL BE COORDINATED WITH THE IRRIGATION INSTALLATION WHEN APPLICABLE.
13. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM STRUCTURES AND TAKE SPECIAL CARE TO INSURE THAT BED PREPARATION DOES NOT INHIBIT DRAINAGE.
14. ALL LAWN AREAS SHALL BE CULTIVATED TO A DEPTH OF 4" PRIOR TO SODDING AND SEEDING. PREPARED TURF BEDS SHALL BE FREE FROM STONES OVER 2" DIAMETER, WEEDS AND OTHER DELETERIOUS MATERIAL.
15. THE LANDSCAPE CONTRACTOR SHALL RAKE SMOOTH ALL SEED OR SOD AREAS PRIOR TO INSTALLATION.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BACKFILLING BEHIND THE CURB SO GRADE IS LEVEL WITH TOP OF CURB.
17. SODDED AREAS SHALL HAVE NO BARE AREAS. SEEDED AREAS SHALL BE CONSIDERED ACCEPTABLE WHEN FULL COVERAGE OF THE PERMANENT TURF GRASS SPECIES IS ESTABLISHED.
18. CUT AWAY ROPES OR WIRES FROM B&B PLANTS. PULL BACK BURLAP FROM TOP OF ROOT BALL. DO NOT ALLOW BURLAP TO BE EXPOSED AT SURFACE. TOTALLY REMOVE BURLAP IF IT IS SYNTHETIC.
19. IF CONTAINER GROWN PLANTS SHOW SIGNS OF BEING ROOT BOUND, SCORE ROOTS VERTICALLY.
20. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
21. ALL REPLACEMENTS SHALL BE OF THE SAME TYPE, SIZE, AND QUALITY AS SPECIFIED ON THE PLANT LIST, UNLESS APPROVED OTHERWISE IN WRITING BY THE LANDSCAPE ARCHITECT.
22. ANY MATERIAL THAT IS DEEMED TO BE 25% DEAD OR MORE SHALL BE CONSIDERED DEAD, AND MUST BE REPLACED AT NO CHARGE. A TREE IS CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED BACK, OR MORE THAN 25% OF THE CROWN IS DEAD.
23. REPLACEMENTS SHALL BE MADE DURING THE NEXT PLANTING SEASON UNLESS THE LANDSCAPE CONTRACTOR AGREES TO AN EARLIER DATE.
    PLANTING DATES
    SPRING: MARCH 15 - APRIL 15
    FALL: OCTOBER 1 - NOVEMBER 30
24. THE LANDSCAPE CONTRACTOR WILL NOT BE RESPONSIBLE FOR PLANT MATERIAL THAT HAS BEEN DAMAGED BY VANDALISM, FIRE, RELOCATION, WILDLIFE, THEFT, OR OTHER ACTIVITIES BEYOND THE LANDSCAPE CONTRACTOR'S CONTROL.
25. CONTRACTOR TO IRRIGATE ALL NEW LANDSCAPE PLANTINGS AND LAWN AREAS WITH AN AUTOMATED UNDERGROUND IRRIGATION SYSTEM.
26. IRRIGATION TO HAVE A SEPARATE METER.
27. GENERAL CONTRACTOR TO COORDINATE AND BE RESPONSIBLE FOR WATERING ALL PLANTS AND SEEDED AREAS AFTER PLANTING UNTIL IRRIGATION SYSTEM IS OPERABLE.



SHRUB / GROUND COVER PLANTING
NOT TO SCALE





DECIDUOUS TREE PLANTING
NOT TO SCALE

LANDSCAPE CALCULATIONS

SITE AREA:	50,702 SF	(1.16 AC)
	REQUIRED	PROVIDED
STREET YARD: 160'		
1 TREE/50'	3.2	3
10 SHRUBS/50'	32.0	
PARKING SPACES:	-	37
200 SF AREA PER SPACE	7,400 SF	
1 TREE / 10 SPACES:	4	
INTERIOR PARKING AREA:	-	16,093
PLANTING AREA: (MIN.)	8%	9.3%
PLANTING AREA: (SQ. FT.)	1287 SF	1490 SF

PLANT SCHEDULE

QTY.	COMMON NAME	BOTANICAL NAME	HEIGHT	TRUNK	COMMENTS
CANOPY TREES					
1	'Green Vase' Japanese Zelkova	Zelkova serrata 'Green Vase'	10' - 12'	2" Cal.	B&B
1	Live Oak	Quercus virginiana	10' - 12'	2" Cal.	B&B
4	Willow Oak	Quercus phellos	10' - 12'	2" Cal.	B&B
6	TOTAL - CANOPY TREES				
UNDERSTORY/COLUMNAR TREES					
0	'Arnold' Tulip Poplar	Liriodendron tulipifera 'Arnold'	10' - 12'	2" Cal.	B&B
0	TOTAL - UNDERSTORY TREES				
6	TOTAL - ALL TREES				
SHRUBS					
7	Carissa Holly	Ilex cornuta 'Carissa'	18" Min.		Container
55	Dwarf Burford Holly	Ilex cornuta 'Burfordii nana'	24" Min.		Container
3	'Lemon Lime' Nandina	Nandina domestica 'Lemon-Lime'	12" Min.		Container
6	'Obsession' Nandina	Nandina domestica 'Seika'	18" Min.		Container
4	Purple Diamond Loropetalum	Loropetalum chinense 'Shang-hi'	24" Min.		Container
75	TOTAL - SHRUBS				
GRASSES, PERENNIALS AND GROUND COVER					
4	'Adagio' Maiden Grass	Miscanthus sinensis 'Adagio'	24"	3 Gal.	
14	Stella De Oro Daylily	Hemerocallis x 'Stella de Oro'		1 Gal.	
38	Variegated Liriope	Liriope muscari 'Variegata'		1 Gal.	
TURF					
-	Hybrid Fescue Seed/Sod	Drought tolerant fescue blend			

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

KITA designs
Beauty | Economy | Sustainability

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Civil Engineering Services
7105 Spicer Farm Lane
Fairview, Tennessee 37062
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fax: (615) 523-8865
e-mail: ray@civilengineeringservices.net
Engineering, Environmental, Land Planning

NAD83 MS STATE PLANE

REVISIONS

	Item
1	Adagio Maid
2	Carissa
3	Dwf Burfor
4	Green Vase
5	Lemon Lime
6	Live O
	Loropet
	Obsession
	Stella De Or
	Variegated
	Willow

AutoZone Store No. 0152
WEST OF 1078 GLUCKSTADT RD
GLUCKSTADT MS 39110
LANDSCAPE PLAN

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL:(901) 495-8994 FAX: (901) 495-8969
For Bidding & Contractor Information Contact:
Dodge Data & Analytics. Tel. 413-930-4215
Cindy.searcy@construction.com

10/08/2021

7N2

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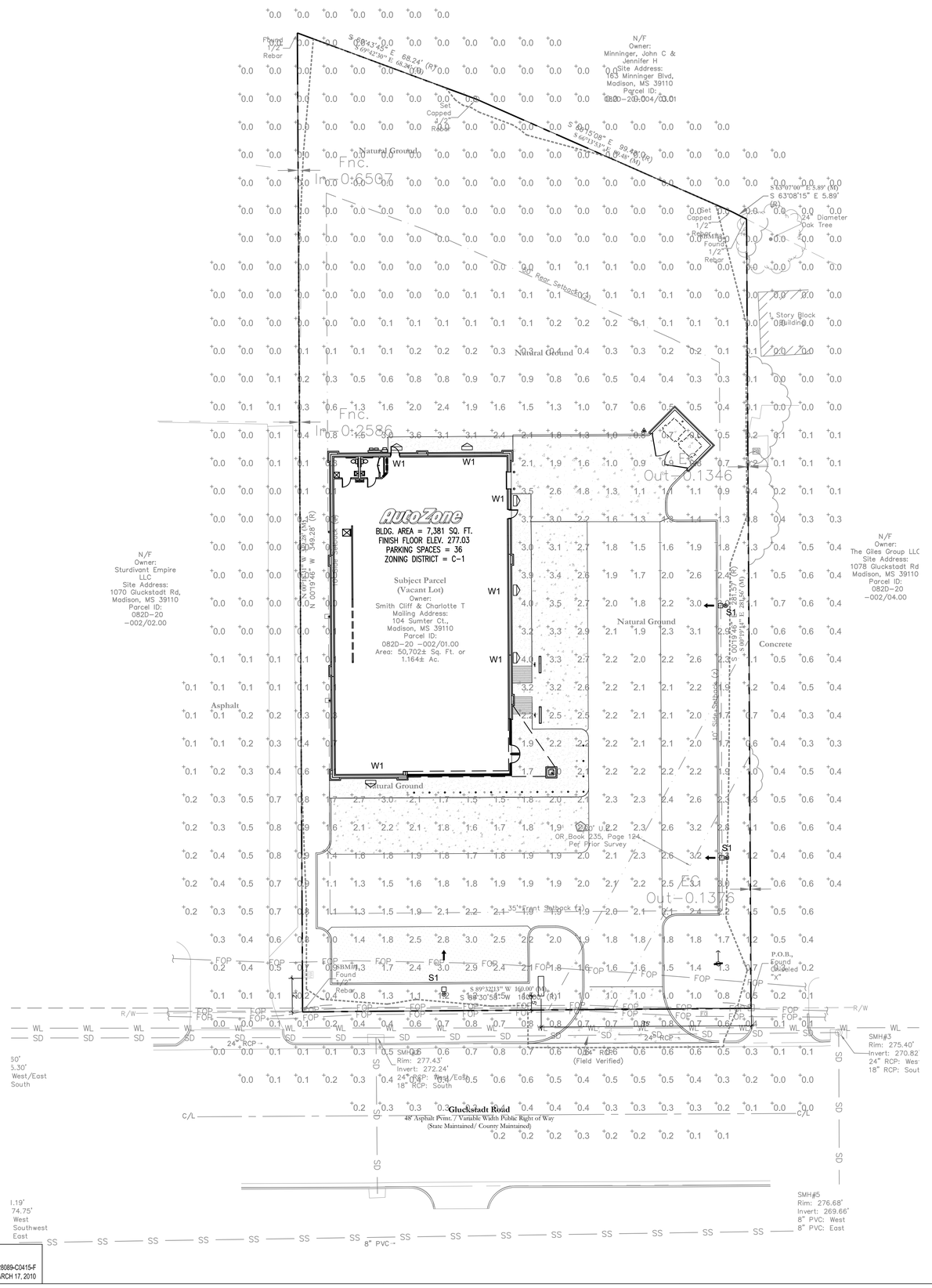


BENCHMARK #1	BENCHMARK #2	FLOOD NOTE:
1/2" REBAR	1/2" REBAR	FLOOD ZONE "AE"
N: 1,097,408.07	N: 1,097,409.61	PER FEMA MAP NO. 28089-C0415-F
E: 2,365,109.95	E: 2,365,269.98	EFFECTIVE DATE: MARCH 17, 2010
ELEV= 277.93	ELEV= 272.84	

LUMINAIRE SCHEDULE

TYP	SYMBOL	DESCRIPTION	LAMP	LUMENS	LLF	QTY
S1		LITHONIA - DSX1 LED 60C IES FULL CUTOFF DISTRIBUTION MOUNTED 0° DOWN POSITION MOUNTED HEIGHT = 28'-0"	LED - 209 WATTS	ABSOLUTE	0.95	3
W1		LITHONIA - DSW1 LED 10C IESNA FULL CUTOFF DISTRIBUTION MOUNTED 0° DOWN POSITION MOUNTED HEIGHT = 12'-0"	LED - 40 WATTS	ABSOLUTE	0.95	6

STATISTICS

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone	+	1.0 fc	4.0 fc	0.0 fc	N/A	N/A

LIGHTING NOTES:

1. TIME CONTROLS: ALL SITE LIGHTING IS CONTROLLED AND MONITORED BY AN ENERGY MANAGEMENT SYSTEM CALLED VENSTAR WHICH IS CONTROLLED AT AUTOZONE CORPORATE OFFICES. ALL SITE LIGHTING IS PROGRAMMED TO AUTOMATICALLY TURN ON AT DUSK AND TURN OFF 30 MINUTES AFTER THE CLOSE OF BUSINESS.

2. ALL FIXTURES ARE FULL CUTOFF DISTRIBUTION AND MOUNTED @ 0° DOWN POSITION.

3. NO FLOODLIGHTS ARE PROPOSED.

4. THE LIGHTING PLAN COMPLIES WITH THE PROVISIONS OF SECTION 1907 - LANDSCAPING AND LIGHTING FOR COMMERCIAL DEVELOPMENT IN MLHP OVERLAY DISTRICT LIGHTING STANDARDS AND GUIDELINES.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

Civil Engineering Services
7705 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523--8865
e--mail: ray@civilengineeringservices.net
Engineering, Environmental, Land Planning

NAD83 MS STATE PLANE

REVISIONS			
1	2	3	
4	5	6	

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110
PHOTOMETRIC PLAN

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL.:(901) 495-8994 FAX: (901) 495-8969

For Bidding & Contractor Information Contact:
Dodge Data & Analytics. Tel. 413-930-4215
Cindy.searcy@cconstruction.com

RAY G. CLEARY LICENSED PROFESSIONAL ENGINEER 21060 PROFESSIONAL
03/10/2022

4/25/2023

7N2

PH 5.0

D-Series Size 1
LED Area Luminaire

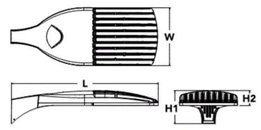
d-series

Catalog Number
Notes
Type

Hit the Tab key or mouse over the page to see all interactive elements

Specifications

EPA:	1.01 ft² (0.09 m²)
Length:	33" (83.8 cm)
Width:	13" (33.0 cm)
Height H1:	7-1/2" (19.0 cm)
Height H2:	3-1/2"
Weight (max):	27 lbs (12.2 kg)



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX1 LED

Series	LEDs	Color temperature	Distribution	Voltage	Mounting
DSX1 LED	**Forward optics** P1 P4[1] P7[1] P2 P5[1] P8 P3 P6[1] P9[1] **Rotated optics** P10[2] P12[2] P11[2] P13[1,2]	30K 3000 K 40K 4000 K 50K 5000 K	T1S Type I short (Automotive) T2S Type II short T2M Type II medium T3S Type III short T3M Type III medium T4M Type IV medium TFTM Forward throw medium T5VS Type V very short[1] T5S Type V short[1] T5M Type V medium[1] T5W Type V wide[1] BLC Backlight control[4] LCCO Left corner cutoff[4] RCCO Right corner cutoff[4]	MVOLT[3] 120[3] 208[3] 240[3] 277[3] 347[3] 480[3]	**Shipped included** SPA Square pole mounting RPA Round pole mounting[1] WBA Wall bracket[1] SPUMBA Square pole universal mounting adaptor[1] RPUMBA Round pole universal mounting adaptor[1] **Shipped separately** KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish)[1]

Control options		Other options		Finish (required)	
Shipped installed NLTAIR2 nLight AIR generation 2 enabled[10] PIRHN Network, high/low motion/ambient sensor[11] PER NEMA twist-lock receptacle only (controls ordered separate)[12] PER5 Five-pin receptacle only (controls ordered separate)[12,13] PER7 Seven-pin receptacle only (controls ordered separate)[12,13] DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)[14] DS Dual switching[15,16,17]	PIR High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc[17,18] PIRH High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc[17,18] PIR1FC3V High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc[17,18] PIRH1FC3V Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc[17,18] FAO Field adjustable output[12,19]	**Shipped installed** HS House-side shield[20] SF Single fuse (120, 277, 347V)[1] DF Double fuse (208, 240, 480V)[1] L90 Left rotated optics[2] R90 Right rotated optics[2] HA 50°C ambient operations[1] **Shipped separately** BS Bird spikes[21] EGS External glare shield	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white	

D-Series Size 1
LED Wall Luminaire

d-series

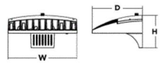
Catalog Number
Notes
Type

Hit the Tab key or mouse over the page to see all interactive elements

Specifications

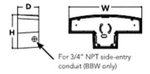
Luminaire

Width:	13-3/4" (34.9 cm)	**Weight:**	12 lbs (5.4 kg)
Depth:	10" (25.4 cm)		
Height:	6-3/8" (16.2 cm)		



Back Box (BBW, ELCW)

Width:	13-3/4" (34.9 cm)	**BBW Weight:**	5 lbs (2.3 kg)
Depth:	4" (10.2 cm)	**ELCW Weight:**	10 lbs (4.5 kg)
Height:	6-3/8" (16.2 cm)		



Introduction

The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and up to 74% in energy savings over comparable 250W metal halide luminaires, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

Ordering Information

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

DSXW1 LED

Series	LEDs	Drive Current	Color temperature	Distribution	Voltage	Mounting	Control Options
DSXW1 LED	10C 10 LEDs (one engine) 20C 20 LEDs (two engines)[1]	350 350 mA 530 530 mA 700 700 mA 1000 1000 mA (1 A)[1]	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted	T2S Type II Short T2M Type II Medium T3S Type III Short T3M Type III Medium T4M Type IV Medium TFTM Forward Throw Medium	MVOLT[2] 120[3] 208[3] 240[3] 277[3] 347[3,4] 480[3,4]	**Shipped included** (blank) Surface mounting bracket BBW Surface-mounted back box (for conduit entry)[5]	**Shipped installed** PE Photoelectric cell, button type[6] DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) PIR 180° motion/ambient light sensor, <15' mtg ht[7,8] PIRH 180° motion/ambient light sensor, 15-30' mtg ht[7,8] PIR1FC3V Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc[7,8] PIRH1FC3V Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc[7,8] ELCW Emergency battery backup (includes external component enclosure), CA Title 20 Noncompliant[9,11]

Other Options		Finish (required)			
Shipped installed SF Single fuse (120, 277 or 347V)[3,10] DF Double fuse (208, 240 or 480V)[3,10] HS House-side shield[11] SPD Separate surge protection[12] **Shipped separately**[11] BSW Bird-deterrent spikes VG Vandal guard DDL Diffused drop lens		DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DSSTXD Textured sandstone		DWHGXD Textured white	

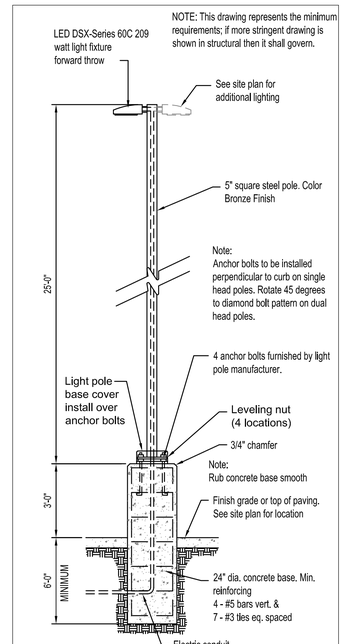
Accessories

Ordered and shipped separately.

DSXW8S U House-side shield (one per light engine)
DSXW8SW U Bird-deterrent spikes
DSXW1VG U Vandal guard accessory

NOTES

1. 20C 1000 is not available with PIR, PIRH, PIR1FC3V or PIRH1FC3V.
2. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
3. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
4. Only available with 20C, 700mA or 1000mA. Not available with PIR or PIRH.
5. Back box ships installed on fixture. Cannot be field installed. Cannot be ordered as an accessory.
6. Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option. Not available with motion/ambient light sensors (PIR or PIRH).
7. Reference Motion Sensor table on page 3.
8. Cold weather (-20C) rated. Not compatible with conduit entry applications. Not available with BBW mounting option. Not available with fusing. Not available with 347 or 480 voltage options. Emergency components located in back box housing. Emergency mode IES files located on product page at www.lithonia.com
9. Not available with SPD.
10. Not available with ELCW.
11. Also available as a separate accessory; see Accessories information.
12. Not available with ELCW.



13 TYPICAL LIGHT POLE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BENCHMARK #1	BENCHMARK #2
1/2" REBAR	1/2" REBAR
N: 1,097,408.07	N: 1,097,409.61
E: 2,365,109.95	E: 2,365,269.98
ELEV= 277.93	ELEV= 272.84

FLOOD NOTE:
FLOOD ZONE "AE"
PER FEMA MAP NO. 28089-C0415-F
EFFECTIVE DATE: MARCH 17, 2010

Civil Engineering Services
7705 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: ray@civilengineeringservices.net
Engineering, Environmental, Land Planning

NAD83 MS STATE PLANE

REVISIONS

1	2	3
4	5	6

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110

PHOTOMETRIC DETAILS

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL: (901) 495-8994 FAX: (901) 495-8969
For Bidding & Contractor Information Contact:
Dodge Data & Analytics. Tel. 413-930-4215
Cindy.searcy@construction.com

RAY C. FLEMING LICENSED PROFESSIONAL ENGINEER 21060 STATE OF MISSISSIPPI
03/10/2022

4/25/2023

7N2

PH 5.1

Civil Engineering Services

P.O. Box 1302, Fairview, TN 37062 Office: (615) 533-0401

November 18, 2021

Attn: Tim Bryan
Madison County Road Department
3137 South Liberty Street
P.O. Box 608
Canton, MS 39046
(601) 855-5670

RE: Drainage / Stormwater Design Report
AutoZone retail store (Store #0152)
West of 1078 Gluckstadt Road
Gluckstadt, Madison County, Mississippi 39110

Mr. Bryan:

Below and enclosed is our submittal of the stormwater design letter report for the site of the proposed AutoZone retail store located at the address referenced above (see Enclosure 1 for site location map). Please include this report in your review of the proposed site development plans.

Existing Site Conditions:

The subject property is currently undeveloped and is situated between 1070 and 1078 Gluckstadt Road. The site is bordered to the east by an office building, now or formerly The Giles Group, LLC. To the west, the site is bordered by the Gluckstadt Animal Hospital. The site is bordered to the north by a heavily wooded drainage channel (referred to as Stream O in the FEMA FIS), and to the south by Gluckstadt Road.

The existing project site generally drains southwest to northeast. There is an existing storm sewer, along with two storm sewer inlets, on Gluckstadt Road. The size and depth of this storm sewer is unknown, as the inlets were not accessible at the time of the survey. There are two outfall points for the existing site. Outfall #1 is the existing storm sewer inlet, located just east of this site. Only a small portion of the site and adjacent right-of-way drain to Gluckstadt Road, and to this existing inlet. Outfall #2 is at the northern property line where runoff from this site drains into Stream O.

Proposed Site Conditions:

The proposed project is to construct an AutoZone retail store with a detention pond, drainage system, drive aisle, and parking spaces, and to bring all utilities to the building envelopes. Proposed site drainage

patterns have been designed to limit the amount of sheet flow to Outfall #1 and to drain the majority of the proposed site to the proposed detention pond and ultimately to Outfall #2 (at Stream O).

The onsite drainage system, which includes an above ground detention pond, was designed to meet Madison County stormwater regulations. More specifically, it is required that the proposed site and stormwater system limit site runoff to pre-development levels. Also, the proposed detention pond has been designed to safely pass the 100-year, 24-hour design storm.

Flood Plain Information:

This site lies in Special Flood Hazard Areas Zone AE with Base Flood Elevation (BFE) determined, according to FEMA FIRM Map Number 28089C0415F with an effective date of March 17, 2010. The base flood elevation of Stream O at this site is approximately 275.00 for the 100-year storm event, and approximately 274.50 for the 10-year storm event. These elevations have been interpolated from the Flood Insurance Study (FIS) flood profiles, for the approximate site location. The FEMA Firmette and FIS are included with this report in Enclosure 2.

To raise the proposed building above the 100-year flood elevation, fill will be placed on the site within the flood plain. The finish floor elevation of the proposed building has been set at 277.03, and a minimum elevation of 275.50 has been established for the top of berm around the detention pond. Approximately 600 cubic yards (net) of fill material (including pavement) will be required to achieve proposed finish grades, within the flood plain. However, only 2 cubic yards of fill material will be placed within the floodway, at the northeast corner of the detention pond. The remainder of the proposed grading within the floodway will be approximately 405 cubic yards of excavation.

Methods:

Since this is a small site and the storm water runoff is directed to the proposed storm drainage system, only one drainage area encompassing the entire site was used for the pre-development and post-development conditions (see Enclosure 3). The time of concentration and the SCS Curve number (CN) for each sub-drainage area were estimated based on the soil type and development conditions, and then the Rational Method was utilized to calculate runoff peak flows. Rainfall intensity data obtained from the NOAA Atlas 14, Volume 2, Version 3 (see Enclosure 5) were used along with a SCS Type III 24-hr storm to generate runoff hydrographs.

The NRCS's Soil Survey was reviewed for Hydrologic Soil type. The soils report, included as Enclosure 4, shows the entire site to be in a B soil classification. Due to small size of the site, the time of concentration was assumed to be 10 minutes for both pre-developed and post-developed conditions.

To perform the calculations described above, Autodesk Storm & Sanitary Analysis modeling software was used. The Rational Method runoff calculations for the existing and proposed conditions are included as Enclosure 7, as well as the detention calculations. Enclosure 8 includes the pipe capacity calculations.

Remainder of page intentionally blank

Results:

The proposed site decreases peak discharges resulting from the 2, 10, 25, 50 and 100-yr design storms. The results, including peak pond elevations, are included in the table below:

Storm Event	Existing Conditions Q (cfs)	Proposed Conditions			
		Q_{inflow} (cfs)	Peak Storage Volume (cu.ft.)	Peak Storage Elevation (ft.)	$Q_{outfall}$ (cfs)
2-yr	0.95	3.45	1,393	271.43	0.88
10-yr	1.29	4.69	2,033	271.90	0.99
25-yr	1.50	5.48	2,454	272.17	1.05
50-yr	1.67	6.11	2,787	272.36	1.09
100-yr	1.84	6.73	3,124	272.55	1.13

If you have any questions or need further information during your review of this site, please do not hesitate to call me at (615) 533-0401 to discuss.

Respectfully,

Ray G. Flake, $PE_{(MS)}$

Enc. Enclosure 1 – Site Location Map
Enclosure 2 – FEMA Flood Map
Enclosure 3 – Drainage Area Maps
Enclosure 4 – NRCS Soils Report
Enclosure 5 – Rainfall and Curve Number Reference Information
Enclosure 6 – Curve Number Calculations
Enclosure 7 – Rational Method Runoff & Detention Calculations
Enclosure 8 – Pipe Capacity Calculations

Enclosure 1

Site Location Map

Gluckstadt, MS

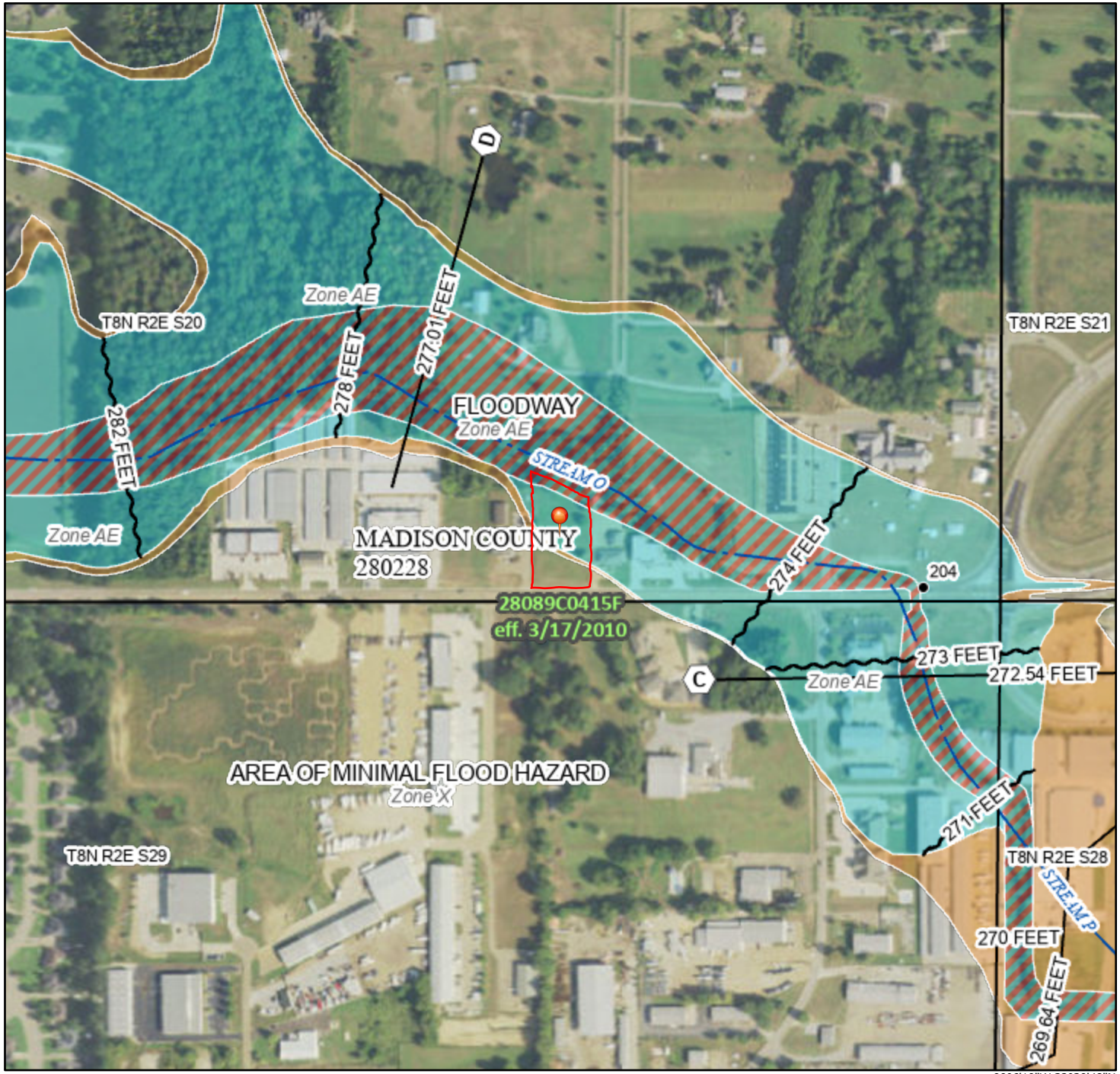
AutoZone, store #0152

Enclosure 2

FEMA Flood Map

National Flood Hazard Layer FIRMette

90°6'56"W 32°31'18"N



90°6'19"W 32°30'48"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND IN UT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

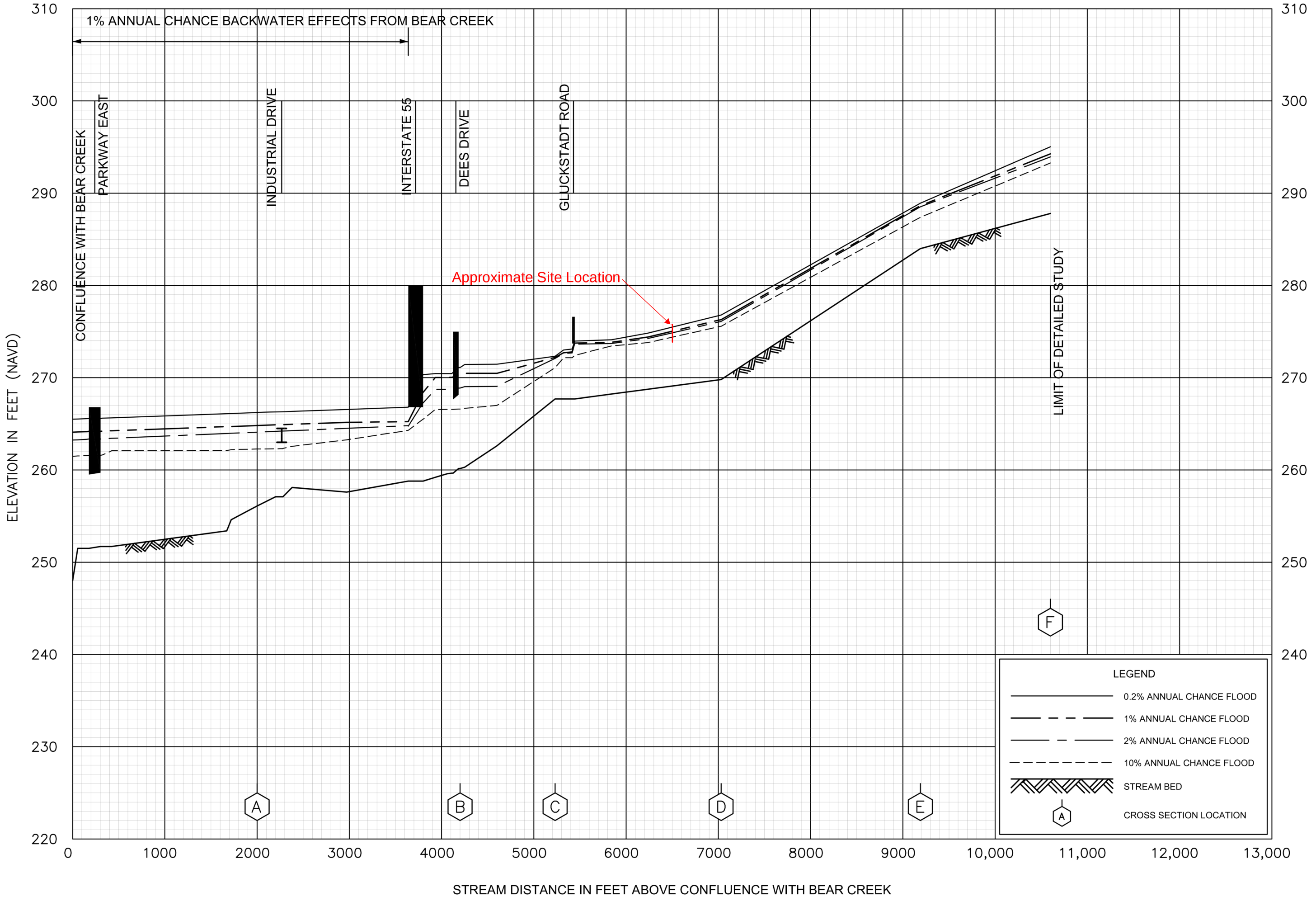
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/8/2021 at 9:42 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community id FIRM panel number, and FIRM effective date. Map i unmapped and unmodernized areas cannot be use regulatory purposes.

200



FLOOD PROFILES

STREAM O

FEDERAL EMERGENCY MANAGEMENT AGENCY

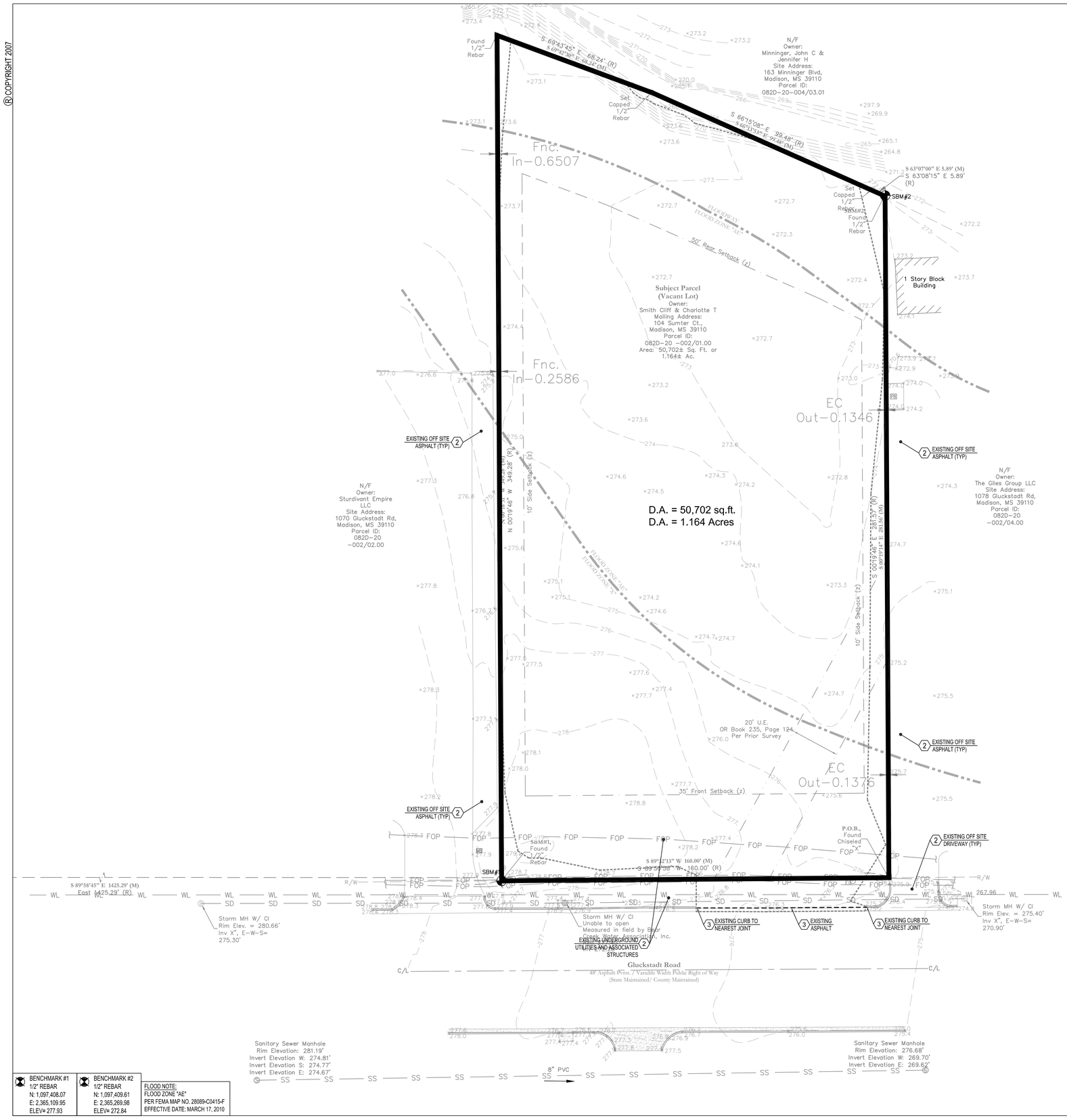
MADISON COUNTY, MS

AND INCORPORATED AREAS

68P

Enclosure 3

Drainage Area Maps



DEMOLITION LEGEND

- APPROXIMATE LIMITS OF ASPHALT/CONCRETE SAWCUT
- APPROXIMATE LIMITS OF ASPHALT/CONCRETE REMOVAL

KEYNOTES

1. REMOVE EXISTING STRUCTURE
2. PROTECT EXISTING STRUCTURE
3. SAWCUT ASPHALT / CONCRETE
4. RELOCATE EXISTING SITE STRUCTURE OR UTILITY

DEMOLITION NOTES

1. ALL WORK TO BE ACCOMPLISHED IN STRICT ACCORDANCE WITH ALL LOCAL ORDINANCES, CITY OR STATE.
2. WITHIN THE SUBJECT PROPERTY, THE INTENT IS TO HAVE A CLEAN, CLEAR SITE, FREE OF ALL EXISTING ITEMS NOTED TO BE REMOVED IN ORDER TO PERMIT THE CONSTRUCTION OF THE NEW PROJECT.
3. ALL ITEMS NOTED TO BE REMOVED BY THE SELLER SHALL BE ACCOMPLISHED PRIOR TO THE CLOSING OF THE REAL ESTATE TRANSACTION. ALL OTHER ITEMS NOTED TO BE REMOVED SHALL BE DONE SO AS PART OF THE CONTRACT FOR GENERAL CONSTRUCTION.
4. REMOVE AND DISPOSE OF ANY SIDEWALKS, FENCES, STAIRS, WALLS, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF SITE LANDFILL.
5. THE CONTRACTOR SHALL SECURE ALL PERMITS FOR HIS DEMOLITION AND DISPOSAL OF HIS DEMOLITION MATERIAL TO BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL POST BONDS AND PAY PERMIT FEES AS REQUIRED. BUILDING DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITS AND DISPOSAL OF BUILDING DEMOLITION DEBRIS.
6. THE DETAILED PLANS MAY NOT REFLECT ALL UTILITIES ON THE SITE OR SURROUNDING STREETS AND PROPERTIES. THE CONTRACTOR SHALL VERIFY LOCATIONS AND EXISTENCE OF UTILITY SERVICES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 1-800-344-7233, 72 HOURS PRIOR TO CONSTRUCTION.
7. THE CONTRACTOR TO REMOVE ALL UTILITIES TO EXISTING STRUCTURES WHETHER SHOWN OR NOT OR ARRANGE FOR THE APPROPRIATE UTILITY COMPANY TO CUT AND CAP SERVICE PIPING AT THE PROPERTY LINE OR MAIN (AS REQUIRED). ALL SERVICES MAY NOT BE SHOWN ON THIS PLAN.
9. FOR ALL ITEMS NOTED TO BE REMOVED - REMOVE NOT ONLY THE ABOVE GROUND ELEMENTS, BUT ALL UNDERGROUND ELEMENTS AS WELL INCLUDING BUT NOT NECESSARILY LIMITED TO: FOUNDATIONS, GRAVEL FILLS, TREE ROOTS, OLD PIPES, ETC.
10. BACK FILL ALL EXCAVATIONS RESULTING FROM THE DEMOLITION WORK TO MEET THE REQUIREMENTS FOR FILL OUTLINED IN THE GEOTECHNICAL REPORT.
11. THE CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS AND PROPERTY CORNERS DURING CONSTRUCTION. ANY CONTRACTOR DISTURBED PINS, MONUMENTS, ETC. SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPES, PAVEMENT, CURBS, SIDEWALKS OR LANDSCAPED AREAS DISTURBED DURING DEMOLITION TO THEIR ORIGINAL CONDITION TO THE SATISFACTION.
13. ALL BUILDINGS, FOUNDATION WALLS AND FOOTINGS INDICATED ON THIS PLAN TO BE REMOVED FROM SITE. CONTRACTOR SHALL SECURE ANY PERMITS AND PAY ALL FEES AND PERFORM CLEARING AND GRUBBING AND DEBRIS REMOVAL PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
14. ASBESTOS AND ANY OTHER HAZARDOUS MATERIAL SHALL BE REMOVED BY THE CONTRACTOR USING A LICENSED HAZARDOUS MATERIAL CONTRACTOR PER ASBESTOS REPORT PREPARED BY XXXXXXXXXX. PRIOR TO THE START OF DEMOLITION, FEDERAL LAW REQUIRES THAT THE LOCAL EPA OFFICE TO BE NOTIFIED IN WRITING @ LEAST 10 WORKING DAYS.

EXISTING CONDITIONS DRAINAGE AREA MAP

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BENCHMARK #1	BENCHMARK #2	FLOOD NOTE:
1/2" REBAR	1/2" REBAR	FLOOD ZONE "AE"
N: 1,097,408.07	N: 1,097,409.61	PER FEMA MAP NO. 28089-C0415-F
E: 2,365,109.95	E: 2,365,269.98	EFFECTIVE DATE: MARCH 17, 2010
ELEV= 277.93	ELEV= 272.64	

Civil Engineering Services
7705 Spicer Farm Lane
Fairview, Tennessee
37062
phone: (615) 533-0401
fax: (615) 523-8865
e-mail: ray@civilengineeringservices.net
Engineering, Environmental, Land Planning

NAD83 MS STATE PLANE

REVISIONS					
1	2	3	4	5	6

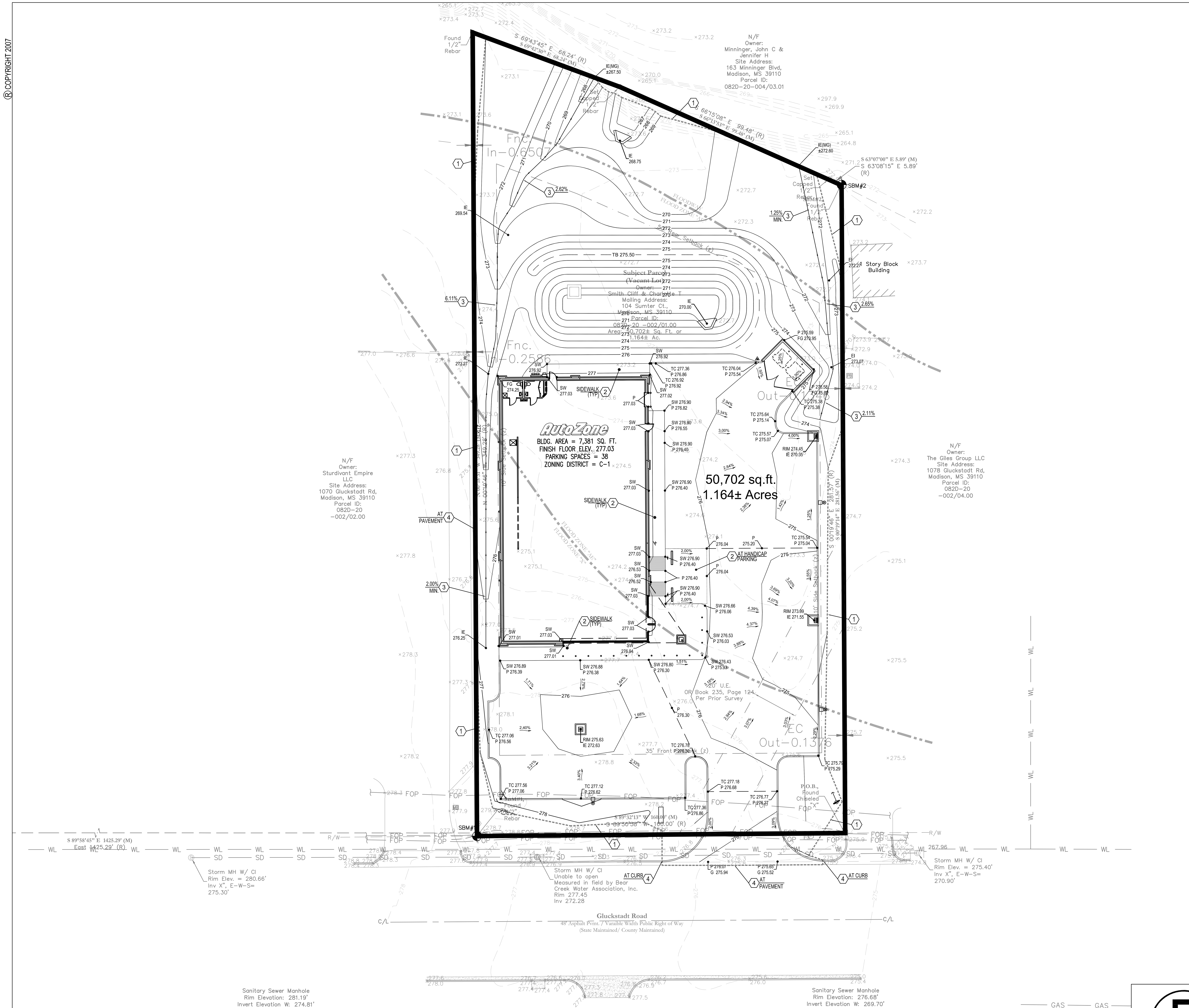
AutoZone Store No. 0152
WEST OF 1078 GLUCKSTADT RD
GLUCKSTADT MS 39110
DEMOLITION PLAN

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL: (901) 495-8994 FAX: (901) 495-8969
For Bidding & Contractor Information Contact:
Dodge Data & Analytics. Tel. 413-930-4215
Cindy.searcy@construction.com

10/08/2021

7N2

D1.0



BENCHMARK #1 1/2" REBAR N: 1,097,408.07 E: 2,365,109.95 ELEV= 277.93	BENCHMARK #2 1/2" REBAR N: 1,097,409.61 E: 2,365,269.98 ELEV= 272.84	FLOOD NOTE: FLOOD ZONE "AE" PER FEMA MAP NO. 28089-C0415-F EFFECTIVE DATE: MARCH 17, 2010

GENERAL GRADING LEGEND

TC	TOP OF CURB ELEVATION
P	BOTTOM OF CURB ELEVATION
FG	FINISHED GRADE ELEVATION
SW	SIDEWALK ELEVATION
MG	MATCH EXISTING GRADE ELEVATION
TB	TOP OF BANK GRADE ELEVATION
RIM	TOP OF RIM ELEVATION AT STRUCTURE
HP	HIGH POINT GRADE ELEVATION
1.09%	PROPOSED GRADE SLOPE
- - - - -	LIMIT OF DISTURBANCE
——	PROPOSED SWALE

GRADING KEYNOTES

1. LIMITS OF LAND DISTURBANCE
2. PROVIDE 2.00% MAXIMUM CROSS SLOPE
3. PROVIDE SWALE - SEE SLOPE AND ELEVATIONS THIS SHEET
4. MATCH EXISTING GRADES

GRADING INFORMATION

LIMITS OF DISTURBANCE = 49,010 SF / 1.13 AC

GENERAL GRADING NOTES

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND ELECTRICAL WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN THE CLOSE PROXIMITY OF THE ABOVE-NOTED WIRES, THE ELECTRIC COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD AND UNDERGROUND WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION.
2. THE OWNER AND ENGINEER DO NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT, DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAY BE DIFFERENT FROM LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT EXACT LOCATIONS BE KNOWN OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS NECESSARY TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE POSITION OF UNDERGROUND UTILITY LINES.
3. AT LOCATIONS WHERE UTILITY LINES OR SERVICES ARE UNDERNEATH PROPOSED PAVEMENT, THE TRENCH SHALL BE BACKFILLED TO SUBGRADE WITH CRUSHED STONE.
4. DEVELOPER IS TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR, THE DEVELOPER'S ENGINEER, THE COUNTIES REPRESENTATIVE AND THE COUNTIES ENGINEER.
5. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
6. REMOVE ALL FOUNDATIONS, UNDERGROUND TANKS, PAVING, BASE ETC. IF REMAINING, BEFORE BEGINNING CONSTRUCTION.
7. FILL ALL PLANTERS/ISLANDS TO TOP OF CONCRETE CURB WITH TOPSOIL. TOPSOIL TO BE CLEAN AND FREE OF DEBRIS, ETC.
8. THESE PLANS, PREPARED BY CIVIL ENGINEERING SERVICES, DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF CIVIL ENGINEERING SERVICES REGISTERED PROFESSIONAL ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
9. IN THE CASE OF CONFLICT BETWEEN THIS DRAWING AND ANY OTHER DRAWING AND/OR THE SPECIFICATIONS, THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR CLARIFICATION.

PROPOSED CONDITIONS DRAINAGE AREA MAP

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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NAD83 MS STATE PLANE

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Cindy.searcy@construction.com

10/08/2021

7N2

C2.0

Enclosure 4

NRCS Soils Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Madison County, Mississippi

Gluckstadt, MS

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:678 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 30 60 120 180

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Madison County, Mississippi
Survey Area Data: Version 16, Sep 8, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
LoB2	Loring silt loam, 2 to 5 percent slopes, moderately eroded, central	0.1	7.9%
Oa	Oaklimeter silt loam, 0 to 2 percent slopes, occasionally flooded, north	1.1	92.1%
Totals for Area of Interest		**1.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Madison County, Mississippi

LoB2—Loring silt loam, 2 to 5 percent slopes, moderately eroded, central

Map Unit Setting

National map unit symbol: 2x0tr
Elevation: 170 to 660 feet
Mean annual precipitation: 52 to 58 inches
Mean annual air temperature: 60 to 66 degrees F
Frost-free period: 180 to 290 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Loring and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loring

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Noncalcareous loess

Typical profile

Ap - 0 to 5 inches: silt loam
Bt - 5 to 27 inches: silty clay loam
Btx - 27 to 56 inches: silt loam
C - 56 to 80 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 27 to 33 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Providence

Percent of map unit: 5 percent

Landform: Loess hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Memphis

Percent of map unit: 3 percent
Landform: Terraces, interfluves
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Grenada

Percent of map unit: 1 percent
Landform: Stream terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Byram

Percent of map unit: 1 percent
Landform: Loess hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Oa—Oaklimeter silt loam, 0 to 2 percent slopes, occasionally flooded, north

Map Unit Setting

National map unit symbol: 2x0th
Elevation: 110 to 390 feet
Mean annual precipitation: 54 to 59 inches
Mean annual air temperature: 59 to 65 degrees F
Frost-free period: 165 to 290 days
Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Oaklimeter and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oaklimeter

Setting

Landform: Alluvial flats, flood plains
Landform position (three-dimensional): Talf, rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium

Typical profile

Ap - 0 to 6 inches: silt loam
Bw - 6 to 27 inches: silt loam
EBb - 27 to 52 inches: silt loam
Btgb - 52 to 70 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very high (about 13.6 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Gillsburg

Percent of map unit: 4 percent
Landform: Flood plains, alluvial flats
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Ariel

Percent of map unit: 4 percent
Landform: Flood plains, alluvial flats
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rosebloom

Percent of map unit: 2 percent
Landform: Flood plains, alluvial flats
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear

Hydric soil rating: Yes

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Enclosure 5

Curve Number and Rainfall Reference Information

NOAA's National Weather Service
Hydrometeorological Design Studies Center
Precipitation Frequency Data Server (PFDS)

General Information
Homepage
Progress Reports
FAQ
Glossary

Precipitation Frequency
Data Server
GIS Grids
Maps
Time Series
Temporals
Documents

Probable Maximum Precipitation
Documents

Miscellaneous
Publications
Storm Analysis
Record Precipitation

Contact Us
Inquiries

NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: MS

Data description

Data type: Precipitation intensity **Units:** English **Time series type:** Partial duration

Select location

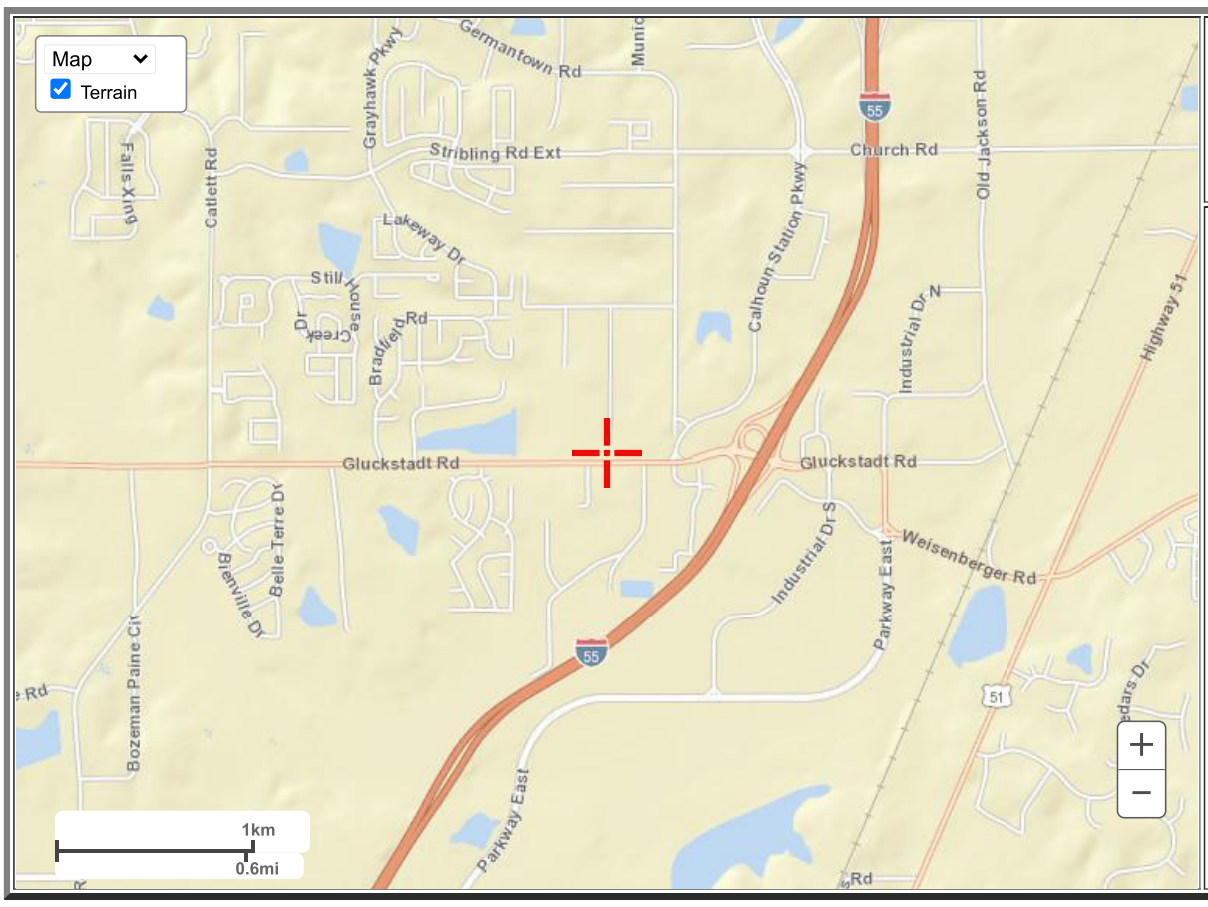
1) Manually:

a) By location (decimal degrees, use "-" for S and W): Latitude: Longitude: Submit

b) By station (list of MS stations): Select station

c) By address 1078 Gluckstadt Rd, Madison, MS, 39

2) Use map (if ESRI interactive map is not loading, try adding the host: **https://js.arcgis.com/** to the firewall, or contact us at hdsc.questions@noaa.gov):



a) Select location
Move crosshair or double click

b) Click on station icon
Show stations on map

Location information:
Name: Madison, Mississippi, USA*
Latitude: 32.5174°
Longitude: -90.1100°
Elevation: 275.8 ft **

* Source: ESRI Maps
** Source: USGS

POINT PRECIPITATION FREQUENCY (PF) ESTIMATES

WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION
NOAA Atlas 14, Volume 9, Version 2

PF tabular PF graphical Supplementary information Print page

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**5.74** (4.93-6.72)	**6.52** (5.59-7.63)	**7.80** (6.67-9.17)	**8.88** (7.55-10.5)	**10.4** (8.53-12.6)	**11.6** (9.26-14.3)	**12.7** (9.86-16.2)	**13.9** (10.3-18.2)	**15.6** (11.1-20.9)	**16.8** (11.7-22.9)
10-min	**4.20** (3.61-4.92)	**4.78** (4.10-5.59)	**5.71** (4.89-6.71)	**6.50** (5.53-7.67)	**7.60** (6.25-9.26)	**8.46** (6.79-10.5)	**9.32** (7.22-11.8)	**10.2** (7.58-13.3)	**11.4** (8.12-15.3)	**12.3** (8.54-16.8)
15-min	**3.42** (2.94-4.00)	**3.88** (3.33-4.54)	**4.65** (3.97-5.46)	**5.29** (4.50-6.24)	**6.18** (5.08-7.52)	**6.88** (5.52-8.50)	**7.58** (5.87-9.61)	**8.30** (6.16-10.8)	**9.26** (6.60-12.4)	**9.99** (6.94-13.7)
30-min	**2.49** (2.14-2.92)	**2.84** (2.44-3.33)	**3.41** (2.91-4.00)	**3.88** (3.30-4.58)	**4.54** (3.73-5.52)	**5.05** (4.05-6.24)	**5.56** (4.30-7.05)	**6.08** (4.51-7.93)	**6.77** (4.83-9.09)	**7.30** (5.07-9.98)
60-min	**1.66** (1.42-1.94)	**1.89** (1.62-2.21)	**2.28** (1.95-2.68)	**2.61** (2.22-3.08)	**3.07** (2.52-3.75)	**3.43** (2.76-4.25)	**3.81** (2.95-4.83)	**4.19** (3.11-5.48)	**4.71** (3.36-6.33)	**5.11** (3.55-6.98)
2-hr	**1.03** (0.893-1.20)	**1.18** (1.02-1.37)	**1.43** (1.23-1.66)	**1.64** (1.40-1.92)	**1.93** (1.60-2.35)	**2.17** (1.76-2.67)	**2.42** (1.89-3.05)	**2.67** (2.00-3.47)	**3.02** (2.17-4.03)	**3.29** (2.30-4.46)
3-hr	**0.774** (0.671-0.896)	**0.884** (0.766-1.02)	**1.07** (0.925-1.25)	**1.23** (1.06-1.44)	**1.47** (1.22-1.78)	**1.66** (1.34-2.03)	**1.85** (1.45-2.33)	**2.05** (1.54-2.66)	**2.34** (1.69-3.11)	**2.56** (1.79-3.46)
6-hr	**0.463** (0.404-0.532)	**0.530** (0.462-0.610)	**0.645** (0.560-0.744)	**0.746** (0.644-0.864)	**0.892** (0.747-1.08)	**1.01** (0.826-1.23)	**1.13** (0.895-1.42)	**1.26** (0.957-1.63)	**1.45** (1.05-1.92)	**1.59** (1.12-2.13)
12-hr	**0.268** (0.235-0.306)	**0.308** (0.270-0.352)	**0.376** (0.328-0.431)	**0.435** (0.378-0.501)	**0.521** (0.439-0.623)	**0.590** (0.485-0.715)	**0.662** (0.526-0.823)	**0.738** (0.562-0.944)	**0.842** (0.616-1.11)	**0.925** (0.658-1.23)
24-hr	**0.155** (0.137-0.176)	**0.179** (0.158-0.203)	**0.219** (0.193-0.249)	**0.253** (0.221-0.290)	**0.302** (0.256-0.358)	**0.341** (0.281-0.409)	**0.380** (0.304-0.469)	**0.422** (0.323-0.535)	**0.478** (0.352-0.624)	**0.522** (0.374-0.692)
2-day	**0.090** (0.080-0.101)	**0.104** (0.092-0.117)	**0.126** (0.111-0.142)	**0.145** (0.127-0.164)	**0.171** (0.146-0.201)	**0.192** (0.159-0.228)	**0.213** (0.171-0.260)	**0.234** (0.180-0.294)	**0.262** (0.194-0.340)	**0.284** (0.205-0.375)
3-day	**0.066** (0.059-0.074)	**0.075** (0.067-0.085)	**0.090** (0.080-0.102)	**0.103** (0.091-0.117)	**0.121** (0.103-0.141)	**0.135** (0.112-0.160)	**0.149** (0.120-0.181)	**0.163** (0.126-0.204)	**0.182** (0.136-0.235)	**0.197** (0.143-0.259)
4-day	**0.054** (0.048-0.060)	**0.061** (0.054-0.068)	**0.072** (0.064-0.081)	**0.081** (0.072-0.092)	**0.095** (0.081-0.110)	**0.105** (0.088-0.124)	**0.115** (0.093-0.140)	**0.126** (0.098-0.158)	**0.141** (0.105-0.181)	**0.152** (0.110-0.199)
7-day	**0.036** (0.033-0.041)	**0.041** (0.036-0.045)	**0.047** (0.042-0.053)	**0.053** (0.047-0.059)	**0.061** (0.052-0.070)	**0.067** (0.056-0.078)	**0.073** (0.059-0.088)	**0.079** (0.062-0.098)	**0.087** (0.065-0.112)	**0.094** (0.068-0.122)
10-day	**0.029** (0.026-0.032)	**0.032** (0.029-0.035)	**0.037** (0.033-0.041)	**0.041** (0.037-0.046)	**0.047** (0.040-0.054)	**0.051** (0.043-0.060)	**0.056** (0.045-0.067)	**0.060** (0.047-0.074)	**0.066** (0.050-0.084)	**0.071** (0.052-0.091)
20-day	**0.019** (0.017-0.021)	**0.021** (0.019-0.023)	**0.024** (0.022-0.026)	**0.026** (0.024-0.029)	**0.030** (0.026-0.034)	**0.033** (0.028-0.038)	**0.035** (0.029-0.042)	**0.038** (0.030-0.046)	**0.041** (0.031-0.052)	**0.044** (0.032-0.057)
30-day	**0.015** (0.014-0.017)	**0.017** (0.015-0.018)	**0.019** (0.017-0.021)	**0.021** (0.019-0.023)	**0.024** (0.021-0.027)	**0.026** (0.022-0.030)	**0.028** (0.023-0.033)	**0.030** (0.024-0.037)	**0.033** (0.025-0.041)	**0.035** (0.026-0.044)
45-day	**0.013** (0.012-0.014)	**0.014** (0.013-0.015)	**0.016** (0.014-0.017)	**0.017** (0.016-0.019)	**0.020** (0.017-0.022)	**0.021** (0.018-0.024)	**0.023** (0.019-0.027)	**0.024** (0.019-0.029)	**0.026** (0.020-0.033)	**0.028** (0.021-0.035)
60-day	**0.011** (0.010-0.012)	**0.012** (0.011-0.013)	**0.014** (0.013-0.015)	**0.015** (0.014-0.017)	**0.017** (0.015-0.019)	**0.019** (0.016-0.021)	**0.020** (0.016-0.023)	**0.021** (0.017-0.025)	**0.023** (0.017-0.028)	**0.024** (0.018-0.030)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Estimates from the table in CSV format: Precipitation frequency estimates Submit

Rational Method
c values
from Autodesk Storm and Sanitary Sewer Analysis

Land Use	Return Period	A(0-2%)	A(2-6%)	A(6%+)	B(0-2%)	B(2-6%)	B(6%+)	C(0-2%)	C(2-6%)	C(6%+)	D(0-2%)	D(2-6%)	D(6%+)
Cultivated Land	less than 25 years	0.08	0.13	0.16	0.11	0.15	0.21	0.14	0.19	0.26	0.18	0.23	0.31
Cultivated Land	25 years or greater	0.14	0.18	0.22	0.16	0.21	0.28	0.20	0.25	0.34	0.24	0.29	0.41
Pasture	less than 25 years	0.12	0.20	0.30	0.18	0.28	0.37	0.24	0.34	0.44	0.30	0.40	0.50
Pasture	25 years or greater	0.15	0.25	0.37	0.23	0.34	0.45	0.30	0.42	0.52	0.37	0.50	0.62
Meadow	less than 25 years	0.10	0.16	0.25	0.14	0.22	0.30	0.20	0.28	0.36	0.24	0.30	0.40
Meadow	25 years or greater	0.14	0.22	0.30	0.20	0.28	0.37	0.26	0.35	0.44	0.30	0.40	0.50
Forest	less than 25 years	0.05	0.08	0.11	0.08	0.11	0.14	0.10	0.13	0.16	0.12	0.16	0.20
Forest	25 years or greater	0.08	0.11	0.14	0.10	0.14	0.18	0.12	0.16	0.20	0.15	0.20	0.25
Residential Lot Size 1/8 Acre	less than 25 years	0.25	0.28	0.31	0.27	0.30	0.35	0.30	0.33	0.38	0.33	0.36	0.42
Residential Lot Size 1/8 Acre	25 years or greater	0.33	0.37	0.40	0.35	0.39	0.44	0.38	0.42	0.49	0.41	0.45	0.54
Residential Lot Size 1/4 Acre	less than 25 years	0.22	0.26	0.29	0.24	0.29	0.33	0.27	0.31	0.36	0.30	0.34	0.40
Residential Lot Size 1/4 Acre	25 years or greater	0.30	0.34	0.37	0.33	0.37	0.42	0.36	0.40	0.47	0.38	0.42	0.52
Residential Lot Size 1/3 Acre	less than 25 years	0.19	0.23	0.26	0.22	0.26	0.30	0.25	0.29	0.34	0.28	0.32	0.39
Residential Lot Size 1/3 Acre	25 years or greater	0.28	0.32	0.35	0.30	0.35	0.39	0.33	0.38	0.45	0.36	0.40	0.50
Residential Lot Size 1/2 Acre	less than 25 years	0.16	0.20	0.24	0.19	0.23	0.28	0.22	0.27	0.32	0.26	0.30	0.37
Residential Lot Size 1/2 Acre	25 years or greater	0.25	0.29	0.32	0.28	0.32	0.36	0.31	0.35	0.42	0.34	0.38	0.48
Residential Lot Size 1 Acre	less than 25 years	0.14	0.19	0.22	0.17	0.21	0.26	0.20	0.25	0.31	0.24	0.29	0.35
Residential Lot Size 1 Acre	25 years or greater	0.22	0.26	0.29	0.24	0.28	0.34	0.28	0.32	0.40	0.31	0.35	0.46
Industrial	less than 25 years	0.67	0.68	0.68	0.68	0.68	0.69	0.68	0.69	0.69	0.69	0.69	0.70
Industrial	25 years or greater	0.85	0.85	0.86	0.85	0.86	0.86	0.86	0.86	0.87	0.86	0.86	0.88
Commercial	less than 25 years	0.71	0.71	0.72	0.71	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Commercial	25 years or greater	0.88	0.88	0.89	0.89	0.89	0.89	0.89	0.89	0.90	0.89	0.89	0.90
Streets	less than 25 years	0.70	0.71	0.72	0.71	0.72	0.74	0.72	0.73	0.76	0.73	0.75	0.78
Streets	25 years or greater	0.76	0.77	0.79	0.80	0.82	0.84	0.84	0.85	0.89	0.89	0.91	0.95
Open Space	less than 25 years	0.05	0.10	0.14	0.08	0.13	0.19	0.12	0.17	0.24	0.16	0.21	0.28
Open Space	25 years or greater	0.11	0.16	0.20	0.14	0.19	0.26	0.18	0.23	0.32	0.22	0.27	0.39
Parking	less than 25 years	0.85	0.86	0.87	0.85	0.86	0.87	0.85	0.86	0.87	0.85	0.86	0.87
Parking	25 years or greater	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	0.97

Enclosure 6

Curve Number Calculations

Gluckstadt, MS **AutoZone** **11/16/2021**

Existing Conditions

	Area (sq.ft.)	Area (acres)	Rational c
-	0	0.000	0.00
-	0	0.000	0.00
lawn	43,390	0.996	0.18
woods	7,312	0.168	0.12
paved	0	0.000	0.95
total	50,702	1.164	0.17

Proposed Conditions

	Area (sq.ft.)	Area (acres)	Rational c
pond area	4,986	0.114	0.80
bypass area	11,410	0.262	0.20
lawn	1,886	0.043	0.18
woods	6,969	0.160	0.12
paved	25,451	0.584	0.95
total	50,702	1.164	0.62

Enclosure 7

Rational Method Runoff & Detention Calculations

Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... rational method runoff.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Modified Rational
Time of Concentration..... Kirpich
Return Period..... 2 years
Storm Duration..... 5 min
Storage Node Exfiltration.. None
Starting Date MAR-15-2021 00:00:00
Ending Date MAR-15-2021 12:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 2
Number of nodes 2
Number of links 0

****
Subbasin Summary
****

Subbasin ID	Total Area ft²	Flow Length ft	Average Slope %
DA#1-Post	50701.81	200.00	2.0000
DA#1-Pre	50701.81	100.00	2.0000

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Out-1-Post	OUTFALL	268.75	268.75	0.00	
Out-1-Pre	OUTFALL	268.75	268.75	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	0.155	0.797
Continuity Error (%)	1.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.061	0.020
Initial Stored Volume	0.000	0.000

Final Stored Volume 0.000 0.000
Continuity Error (%) 0.000

****
Runoff Coefficient Computations Report
****

Subbasin DA#1-Post

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	1886.01	C (0-2%)	0.18
Forest, 25 years or greater	6968.96	C (0-2%)	0.12
Parking, 25 years or greater	25450.92	C (0-2%)	0.95
Pond-Area	4985.99	C (0-2%)	0.80
Bypass-Area	11409.97	C (0-2%)	0.18
Composite Area & Weighted Runoff Coeff.	50701.85		0.62

Subbasin DA#1-Pre

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	43389.81	C (0-2%)	0.18
Forest, 25 years or greater	7311.95	C (0-2%)	0.12
Composite Area & Weighted Runoff Coeff.	50701.76		0.17

****
Kirpich Time of Concentration Computations Report
****

Tc = (0.0078 * (L^0.77) * (S^-0.385))

Where:

Tc = Time of Concentration (min)
L = Flow length (ft)
S = Slope (ft/ft)

Subbasin DA#1-Post

User-Defined TOC override (minutes): 10.00

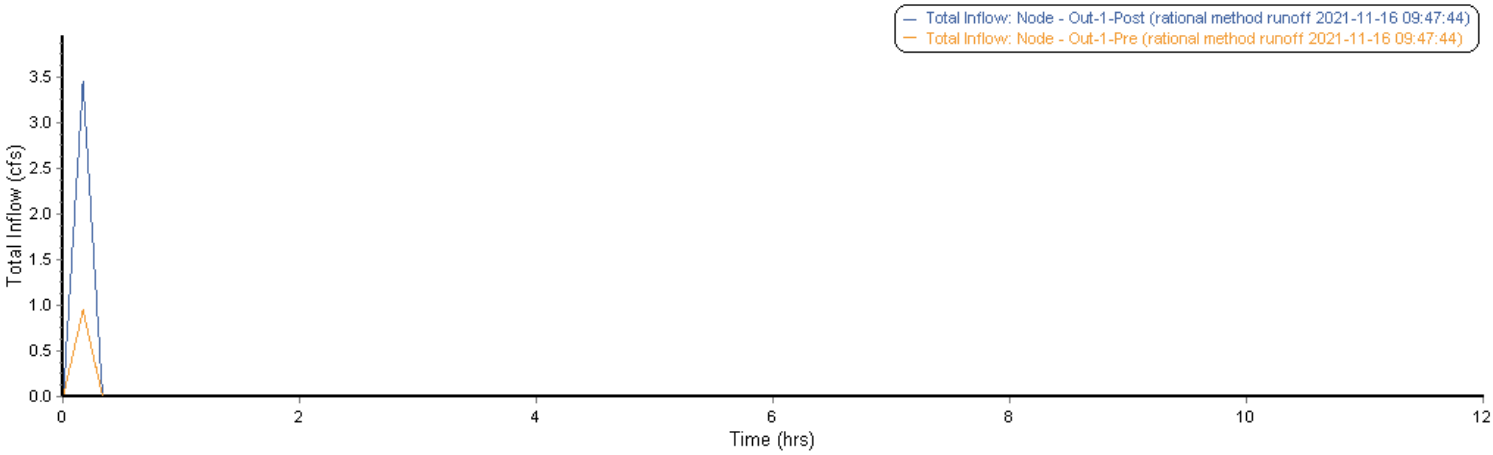
Subbasin DA#1-Pre

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DA#1-Post	0.80	4.78	0.49	3.45	0.620	0	00:10:00
DA#1-Pre	0.80	4.78	0.14	0.95	0.170	0	00:10:00

Analysis began on: Tue Nov 16 09:47:42 2021
Analysis ended on: Tue Nov 16 09:47:43 2021
Total elapsed time: 00:00:01


Total Inflow: Node - Out-1-Post (rational method runoff 2021-11-16 09:47:44)
Total Inflow: Node - Out-1-Pre (rational method runoff 2021-11-16 09:47:44)
Total Inflow (cfs)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
0
2
4
6
8
10
12
Time (hrs)

Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... rational method runoff.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Modified Rational
Time of Concentration..... Kirpich
Return Period..... 10 years
Storm Duration..... 5 min
Storage Node Exfiltration.. None
Starting Date MAR-15-2021 00:00:00
Ending Date MAR-15-2021 12:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 2
Number of nodes 2
Number of links 0

****
Subbasin Summary
****

Subbasin ID	Total Area ft²	Flow Length ft	Average Slope %
DA#1-Post	50701.81	200.00	2.0000
DA#1-Pre	50701.81	100.00	2.0000

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Out-1-Post	OUTFALL	268.75	268.75	0.00	
Out-1-Pre	OUTFALL	268.75	268.75	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	0.210	1.083
Continuity Error (%)	1.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.082	0.027
Initial Stored Volume	0.000	0.000

Final Stored Volume 0.000 0.000
Continuity Error (%) 0.000

****
Runoff Coefficient Computations Report
****

Subbasin DA#1-Post

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	1886.01	C (0-2%)	0.18
Forest, 25 years or greater	6968.96	C (0-2%)	0.12
Parking, 25 years or greater	25450.92	C (0-2%)	0.95
Pond-Area	4985.99	C (0-2%)	0.80
Bypass-Area	11409.97	C (0-2%)	0.18
Composite Area & Weighted Runoff Coeff.	50701.85		0.62

Subbasin DA#1-Pre

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	43389.81	C (0-2%)	0.18
Forest, 25 years or greater	7311.95	C (0-2%)	0.12
Composite Area & Weighted Runoff Coeff.	50701.76		0.17

****
Kirpich Time of Concentration Computations Report
****

Tc = (0.0078 * (L^0.77) * (S^-0.385))

Where:

Tc = Time of Concentration (min)
L = Flow length (ft)
S = Slope (ft/ft)

Subbasin DA#1-Post

User-Defined TOC override (minutes): 10.00

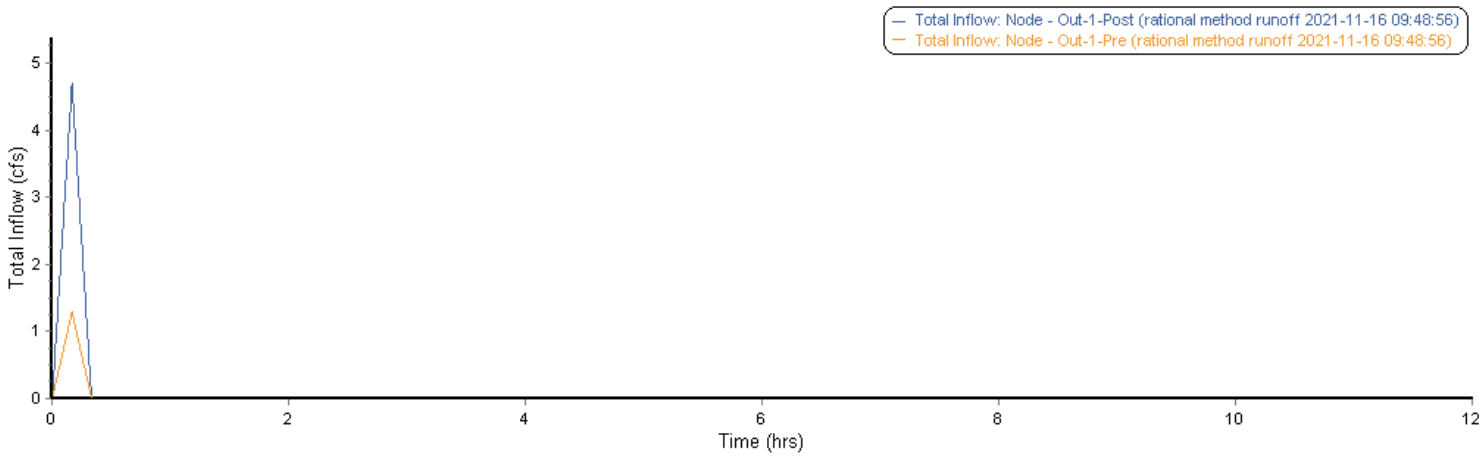
Subbasin DA#1-Pre

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DA#1-Post	1.08	6.50	0.67	4.69	0.620	0	00:10:00
DA#1-Pre	1.08	6.50	0.18	1.29	0.170	0	00:10:00

Analysis began on: Tue Nov 16 09:48:53 2021
Analysis ended on: Tue Nov 16 09:48:54 2021
Total elapsed time: 00:00:01


Total Inflow: Node - Out-1-Post (rational method runoff 2021-11-16 09:48:56)
Total Inflow: Node - Out-1-Pre (rational method runoff 2021-11-16 09:48:56)
Total Inflow (cfs)
0
1
2
3
4
5
0
2
4
6
8
10
12
Time (hrs)

Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... rational method runoff.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Modified Rational
Time of Concentration..... Kirpich
Return Period..... 25 years
Storm Duration..... 5 min
Storage Node Exfiltration.. None
Starting Date MAR-15-2021 00:00:00
Ending Date MAR-15-2021 12:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 2
Number of nodes 2
Number of links 0

****
Subbasin Summary
****

Subbasin ID	Total Area ft²	Flow Length ft	Average Slope %
DA#1-Post	50701.81	200.00	2.0000
DA#1-Pre	50701.81	100.00	2.0000

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Out-1-Post	OUTFALL	268.75	268.75	0.00	
Out-1-Pre	OUTFALL	268.75	268.75	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	0.246	1.267
Continuity Error (%)	1.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.096	0.031
Initial Stored Volume	0.000	0.000

Final Stored Volume 0.000 0.000
Continuity Error (%) 0.000

****
Runoff Coefficient Computations Report
****

Subbasin DA#1-Post

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	1886.01	C (0-2%)	0.18
Forest, 25 years or greater	6968.96	C (0-2%)	0.12
Parking, 25 years or greater	25450.92	C (0-2%)	0.95
Pond-Area	4985.99	C (0-2%)	0.80
Bypass-Area	11409.97	C (0-2%)	0.18
Composite Area & Weighted Runoff Coeff.	50701.85		0.62

Subbasin DA#1-Pre

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	43389.81	C (0-2%)	0.18
Forest, 25 years or greater	7311.95	C (0-2%)	0.12
Composite Area & Weighted Runoff Coeff.	50701.76		0.17

****
Kirpich Time of Concentration Computations Report
****

Tc = (0.0078 * (L^0.77) * (S^-0.385))

Where:

Tc = Time of Concentration (min)
L = Flow length (ft)
S = Slope (ft/ft)

Subbasin DA#1-Post

User-Defined TOC override (minutes): 10.00

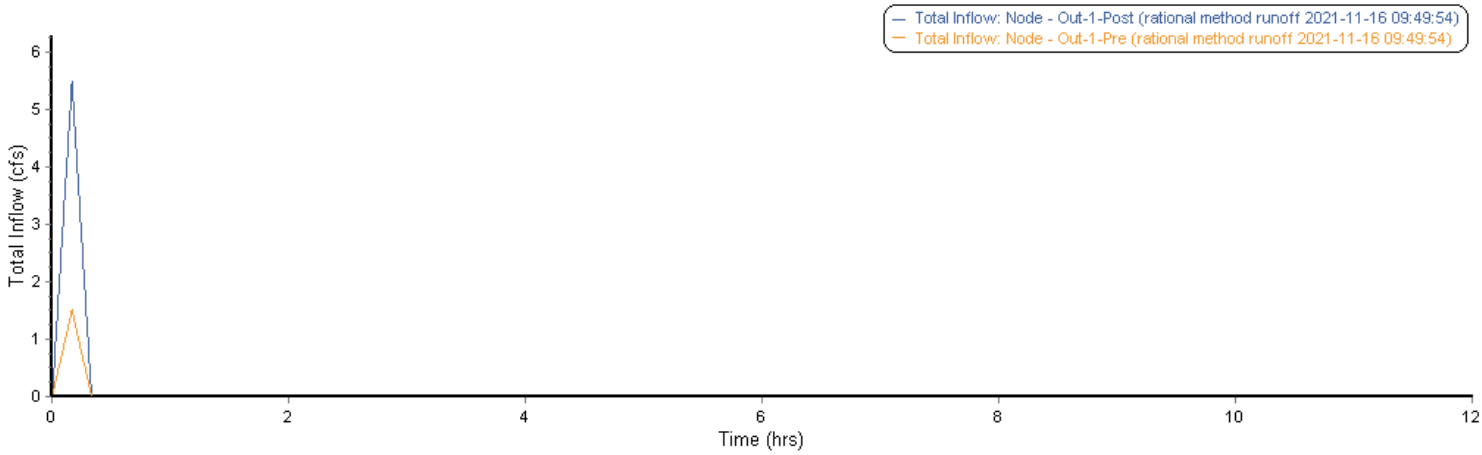
Subbasin DA#1-Pre

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DA#1-Post	1.27	7.60	0.79	5.48	0.620	0	00:10:00
DA#1-Pre	1.27	7.60	0.22	1.50	0.170	0	00:10:00

Analysis began on: Tue Nov 16 09:49:52 2021
Analysis ended on: Tue Nov 16 09:49:53 2021
Total elapsed time: 00:00:01


Total Inflow: Node - Out-1-Post (rational method runoff 2021-11-16 09:49:54)
Total Inflow: Node - Out-1-Pre (rational method runoff 2021-11-16 09:49:54)
Total Inflow (cfs)
0
1
2
3
4
5
6
Time (hrs)
0
2
4
6
8
10
12

Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... rational method runoff.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Modified Rational
Time of Concentration..... Kirpich
Return Period..... 50 years
Storm Duration..... 5 min
Storage Node Exfiltration.. None
Starting Date MAR-15-2021 00:00:00
Ending Date MAR-15-2021 12:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 2
Number of nodes 2
Number of links 0

****
Subbasin Summary
****

Subbasin ID	Total Area ft²	Flow Length ft	Average Slope %
DA#1-Post	50701.81	200.00	2.0000
DA#1-Pre	50701.81	100.00	2.0000

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Out-1-Post	OUTFALL	268.75	268.75	0.00	
Out-1-Pre	OUTFALL	268.75	268.75	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	0.274	1.410
Continuity Error (%)	1.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.107	0.035
Initial Stored Volume	0.000	0.000

Final Stored Volume 0.000 0.000
Continuity Error (%) 0.000

****
Runoff Coefficient Computations Report
****

Subbasin DA#1-Post

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	1886.01	C (0-2%)	0.18
Forest, 25 years or greater	6968.96	C (0-2%)	0.12
Parking, 25 years or greater	25450.92	C (0-2%)	0.95
Pond-Area	4985.99	C (0-2%)	0.80
Bypass-Area	11409.97	C (0-2%)	0.18
Composite Area & Weighted Runoff Coeff.	50701.85		0.62

Subbasin DA#1-Pre

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	43389.81	C (0-2%)	0.18
Forest, 25 years or greater	7311.95	C (0-2%)	0.12
Composite Area & Weighted Runoff Coeff.	50701.76		0.17

****
Kirpich Time of Concentration Computations Report
****

Tc = (0.0078 * (L^0.77) * (S^-0.385))

Where:

Tc = Time of Concentration (min)
L = Flow length (ft)
S = Slope (ft/ft)

Subbasin DA#1-Post

User-Defined TOC override (minutes): 10.00

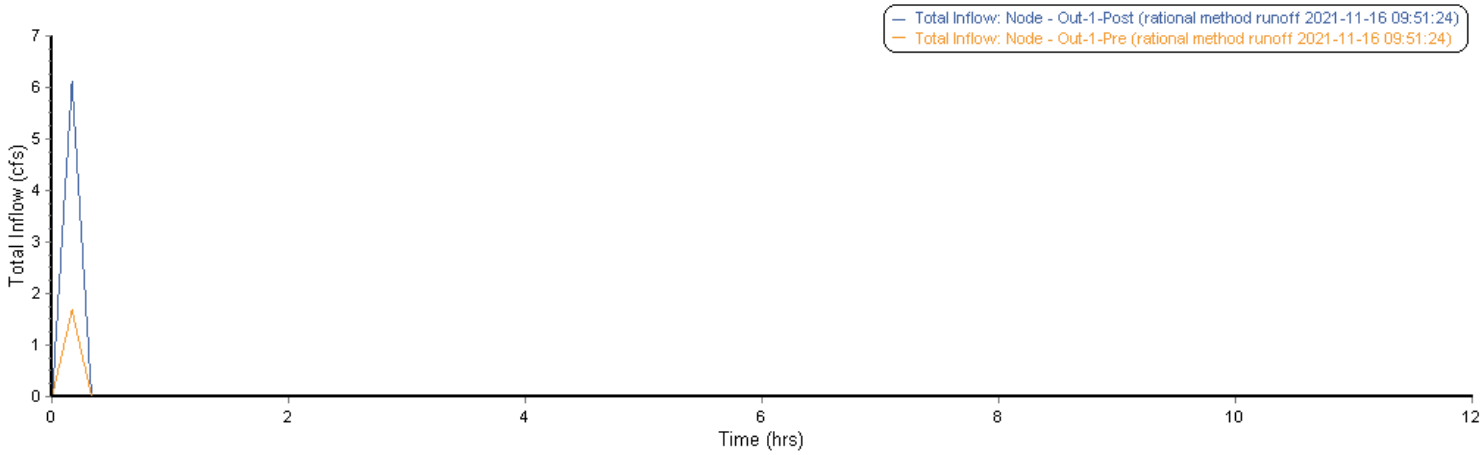
Subbasin DA#1-Pre

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DA#1-Post	1.41	8.46	0.87	6.11	0.620	0	00:10:00
DA#1-Pre	1.41	8.46	0.24	1.67	0.170	0	00:10:00

Analysis began on: Tue Nov 16 09:51:21 2021
Analysis ended on: Tue Nov 16 09:51:23 2021
Total elapsed time: 00:00:02


Total Inflow: Node - Out-1-Post (rational method runoff 2021-11-16 09:51:24)
Total Inflow: Node - Out-1-Pre (rational method runoff 2021-11-16 09:51:24)
Total Inflow (cfs)
0
1
2
3
4
5
6
7
0
2
4
6
8
10
12
Time (hrs)

Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... rational method runoff.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Modified Rational
Time of Concentration..... Kirpich
Return Period..... 100 years
Storm Duration..... 5 min
Storage Node Exfiltration.. None
Starting Date MAR-15-2021 00:00:00
Ending Date MAR-15-2021 12:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 2
Number of nodes 2
Number of links 0

****
Subbasin Summary
****

Subbasin ID	Total Area ft²	Flow Length ft	Average Slope %
DA#1-Post	50701.81	200.00	2.0000
DA#1-Pre	50701.81	100.00	2.0000

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Out-1-Post	OUTFALL	268.75	268.75	0.00	
Out-1-Pre	OUTFALL	268.75	268.75	0.00	

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	0.301	1.553
Continuity Error (%)	1.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.118	0.038
Initial Stored Volume	0.000	0.000

Final Stored Volume 0.000 0.000
Continuity Error (%) 0.000

****
Runoff Coefficient Computations Report
****

Subbasin DA#1-Post

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	1886.01	C (0-2%)	0.18
Forest, 25 years or greater	6968.96	C (0-2%)	0.12
Parking, 25 years or greater	25450.92	C (0-2%)	0.95
Pond-Area	4985.99	C (0-2%)	0.80
Bypass-Area	11409.97	C (0-2%)	0.18
Composite Area & Weighted Runoff Coeff.	50701.85		0.62

Subbasin DA#1-Pre

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	43389.81	C (0-2%)	0.18
Forest, 25 years or greater	7311.95	C (0-2%)	0.12
Composite Area & Weighted Runoff Coeff.	50701.76		0.17

****
Kirpich Time of Concentration Computations Report
****

Tc = (0.0078 * (L^0.77) * (S^-0.385))

Where:

Tc = Time of Concentration (min)
L = Flow length (ft)
S = Slope (ft/ft)

Subbasin DA#1-Post

User-Defined TOC override (minutes): 10.00

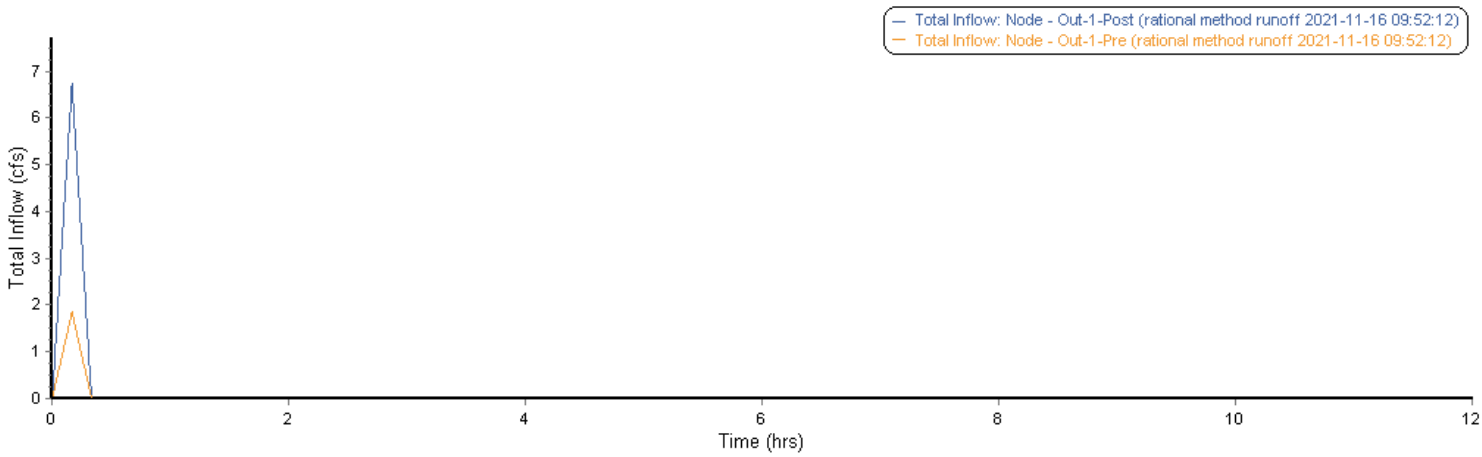
Subbasin DA#1-Pre

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DA#1-Post	1.55	9.32	0.96	6.73	0.620	0	00:10:00
DA#1-Pre	1.55	9.32	0.26	1.84	0.170	0	00:10:00

Analysis began on: Tue Nov 16 09:52:10 2021
Analysis ended on: Tue Nov 16 09:52:11 2021
Total elapsed time: 00:00:01


Total Inflow: Node - Out-1-Post (rational method runoff 2021-11-16 09:52:12)
Total Inflow: Node - Out-1-Pre (rational method runoff 2021-11-16 09:52:12)
Total Inflow (cfs)
0
1
2
3
4
5
6
7
0
2
4
6
8
10
12
Time (hrs)

Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... rational method detention.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Modified Rational
Time of Concentration..... Kirpich
Return Period..... 2 years
Storm Duration..... 5 min
Link Routing Method ..... Kinematic Wave
Storage Node Exfiltration.. None
Starting Date MAR-15-2021 00:00:00
Ending Date MAR-15-2021 12:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 1
Number of nodes 3
Number of links 3

****
Subbasin Summary
****

Subbasin ID	Total Area ft²	Flow Length ft	Average Slope %
DA#1-Post	50701.81	200.00	2.0000

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	269.00	274.90	0.00	
Out-1-Post	OUTFALL	268.75	270.25	0.00	
Stor-01	STORAGE	269.50	275.50	0.00	

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Culvert-01	Jun-01	Out-1-Post	CONDUIT	55.0	1.3636	0.0120
Orifice-01	Stor-01	Jun-01	ORIFICE			
Weir-01	Stor-01	Jun-01	WEIR			

****

Cross Section Summary
****

Link ID	Shape	Depth/ Diameter	Width	No. of Barrels	Cross Sectional Area	Full Flow Hydraulic Radius	Design Flow Capacity
		ft	ft		ft²	ft	cfs
Culvert-01	CIRCULAR	1.50	1.50	1	1.77	0.38	13.29

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	0.077	0.797
Continuity Error (%)	1.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.048	0.015
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Runoff Coefficient Computations Report
****

Subbasin DA#1-Post

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	1886.01	C (0-2%)	0.18
Forest, 25 years or greater	6968.96	C (0-2%)	0.12
Parking, 25 years or greater	25450.92	C (0-2%)	0.95
Pond-Area	4985.99	C (0-2%)	0.80
Bypass-Area	11409.97	C (0-2%)	0.18
Composite Area & Weighted Runoff Coeff.	50701.85		0.62

****
Kirpich Time of Concentration Computations Report
****

Tc = (0.0078 * (L^0.77) * (S^-0.385))

Where:

Tc = Time of Concentration (min)
L = Flow length (ft)
S = Slope (ft/ft)

Subbasin DA#1-Post

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DA#1-Post	0.80	4.78	0.49	3.45	0.620	0	00:10:00

****
Node Depth Summary
****

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.52	0.76	269.76	0	00:17	0	0	0:00:00
Out-1-Post	0.02	0.26	269.01	0	00:17	0	0	0:00:00
Stor-01	0.09	1.93	271.43	0	00:17	0	0	0:00:00

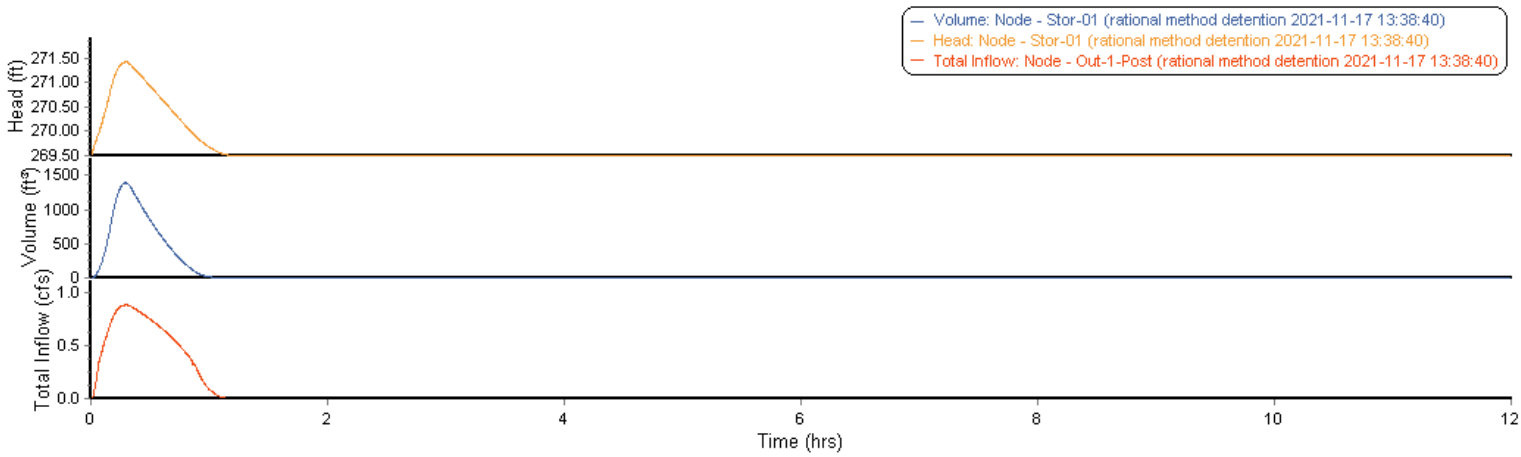
****
Node Flow Summary
****

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	0.88	0	00:17	0.00		
Out-1-Post	OUTFALL	0.00	0.88	0	00:17	0.00		
Stor-01	STORAGE	3.45	3.45	0	00:10	0.00		

****
Storage Node Summary
****

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
Stor-01	1.393	12	0	00:17	0.050	0	0.88	0.00	0:00:00	0.000

```
  **********************
  Outfall Loading Summary
  **********************

  ------------------------------------------------
  Outfall Node ID        Flow   Average      Peak
                    Frequency      Flow    Inflow
                          (%)       cfs       cfs
  ------------------------------------------------
  Out-1-Post              9.80      0.49      0.88
  ------------------------------------------------
  System                  9.80      0.49      0.88


  *****************
  Link Flow Summary
  *****************

-------------------------------------------------------------------------------------------------------
--------------------------------
  Link ID              Element       Time of   Maximum  Length   Peak Flow      Design  Ratio of
Ratio of       Total  Reported
                       Type        Peak Flow  Velocity  Factor      during        Flow   Maximum
Maximum        Time  Condition
                                  Occurrence  Attained            Analysis    Capacity   /Design
Flow  Surcharged
                                  days hh:mm    ft/sec                 cfs         cfs      Flow
Depth     minutes

-------------------------------------------------------------------------------------------------------
--------------------------------
  Culvert-01           CONDUIT      0  00:17      4.24    1.00        0.88       13.29      0.07
0.17           0  Calculated
  Orifice-01           ORIFICE      0  00:17                          0.88
0.00
  Weir-01              WEIR         0  00:00                          0.00
0.00


  *******************************
  Highest Flow Instability Indexes
  *******************************
  All links are stable.


  WARNING 107 : Initial water surface elevation defined for Junction Jun-01 is below junction
invert elevation.
                Assumed initial water surface elevation equal to invert elevation.
  WARNING 108 : Surcharge elevation defined for Junction Jun-01 is below junction maximum
elevation. Assumed surcharge elevation equal to maximum elevation.
  WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height
dimensions for Node Jun-01.

  Analysis began on:  Wed Nov 17 13:38:38 2021
  Analysis ended on:  Wed Nov 17 13:38:39 2021
  Total elapsed time: 00:00:01
```


Volume: Node - Stor-01 (rational method detention 2021-11-17 13:38:40)
Head: Node - Stor-01 (rational method detention 2021-11-17 13:38:40)
Total Inflow: Node - Out-1-Post (rational method detention 2021-11-17 13:38:40)
Head (ft)
271.50
271.00
270.50
270.00
269.50
Volume (ft³)
1500
1000
500
0
Total Inflow (cfs)
1.0
0.5
0.0
0
2
4
6
8
10
12
Time (hrs)

Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... rational method detention.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Modified Rational
Time of Concentration..... Kirpich
Return Period..... 10 years
Storm Duration..... 5 min
Link Routing Method ..... Kinematic Wave
Storage Node Exfiltration.. None
Starting Date MAR-15-2021 00:00:00
Ending Date MAR-15-2021 12:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 1
Number of nodes 3
Number of links 3

****
Subbasin Summary
****

Subbasin ID	Total Area ft²	Flow Length ft	Average Slope %
DA#1-Post	50701.81	200.00	2.0000

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	269.00	274.90	0.00	
Out-1-Post	OUTFALL	268.75	270.25	0.00	
Stor-01	STORAGE	269.50	275.50	0.00	

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Culvert-01	Jun-01	Out-1-Post	CONDUIT	55.0	1.3636	0.0120
Orifice-01	Stor-01	Jun-01	ORIFICE			
Weir-01	Stor-01	Jun-01	WEIR			

****

Cross Section Summary
****

Link ID	Shape	Depth/ Diameter	Width	No. of Barrels	Cross Sectional Area	Full Flow Hydraulic Radius	Design Flow Capacity
		ft	ft		ft²	ft	cfs
Culvert-01	CIRCULAR	1.50	1.50	1	1.77	0.38	13.29

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	0.105	1.083
Continuity Error (%)	1.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.065	0.021
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Runoff Coefficient Computations Report
****

Subbasin DA#1-Post

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	1886.01	C (0-2%)	0.18
Forest, 25 years or greater	6968.96	C (0-2%)	0.12
Parking, 25 years or greater	25450.92	C (0-2%)	0.95
Pond-Area	4985.99	C (0-2%)	0.80
Bypass-Area	11409.97	C (0-2%)	0.18
Composite Area & Weighted Runoff Coeff.	50701.85		0.62

****
Kirpich Time of Concentration Computations Report
****

Tc = (0.0078 * (L^0.77) * (S^-0.385))

Where:

Tc = Time of Concentration (min)
L = Flow length (ft)
S = Slope (ft/ft)

Subbasin DA#1-Post

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DA#1-Post	1.08	6.50	0.67	4.69	0.620	0	00:10:00

****
Node Depth Summary
****

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.52	0.78	269.78	0	00:18	0	0	0:00:00
Out-1-Post	0.02	0.28	269.03	0	00:18	0	0	0:00:00
Stor-01	0.13	2.40	271.90	0	00:18	0	0	0:00:00

****
Node Flow Summary
****

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	0.99	0	00:18	0.00		
Out-1-Post	OUTFALL	0.00	0.99	0	00:18	0.00		
Stor-01	STORAGE	4.69	4.69	0	00:10	0.00		

****
Storage Node Summary
****

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
Stor-01	2.033	18	0	00:18	0.085	1	0.99	0.00	0:00:00	0.000

****
Outfall Loading Summary
****

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Out-1-Post	11.41	0.57	0.99
System	11.41	0.57	0.99

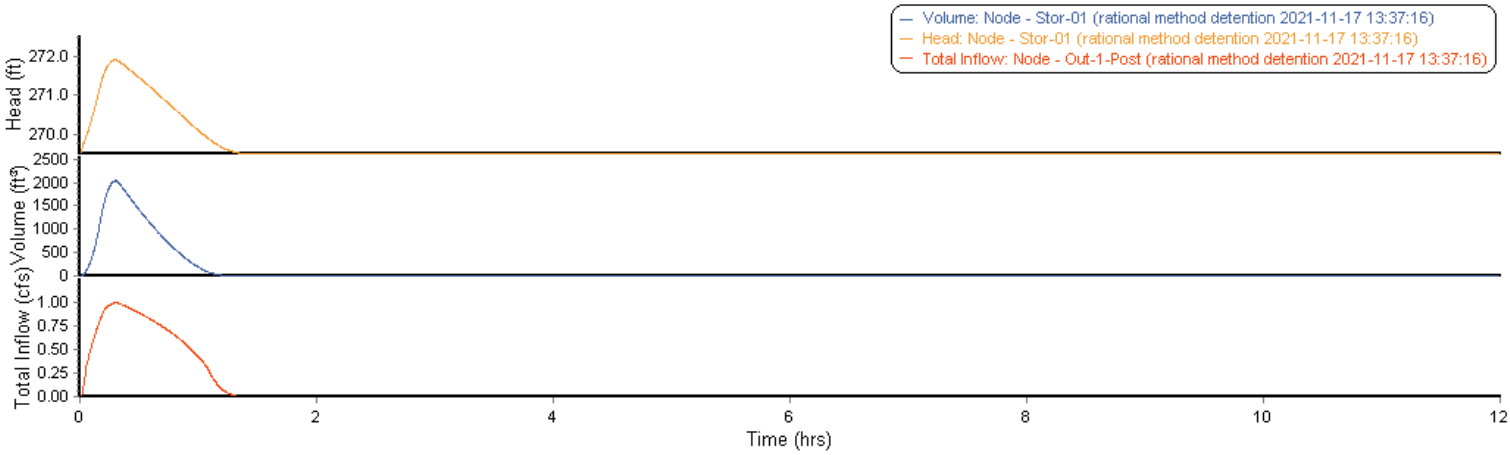
****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Depth	Total Time minutes	Reported Condition
Culvert-01	CONDUIT	0 00:18	4.42	1.00	0.99	13.29	0.07	0.18	0	Calculated
Orifice-01	ORIFICE	0 00:18			0.99			0.00		
Weir-01	WEIR	0 00:00			0.00			0.00		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 107 : Initial water surface elevation defined for Junction Jun-01 is below junction invert elevation.
Assumed initial water surface elevation equal to invert elevation.
WARNING 108 : Surcharge elevation defined for Junction Jun-01 is below junction maximum elevation. Assumed surcharge elevation equal to maximum elevation.
WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Wed Nov 17 13:37:13 2021
Analysis ended on: Wed Nov 17 13:37:14 2021
Total elapsed time: 00:00:01


Volume: Node - Stor-01 (rational method detention 2021-11-17 13:37:16)
Head: Node - Stor-01 (rational method detention 2021-11-17 13:37:16)
Total Inflow: Node - Out-1-Post (rational method detention 2021-11-17 13:37:16)
Head (ft)
272.0
271.0
270.0
Volume (ft³)
2500
2000
1500
1000
500
0
Total Inflow (cfs)
1.00
0.75
0.50
0.25
0.00
0
2
4
6
8
10
12
Time (hrs)

Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... rational method detention.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Modified Rational
Time of Concentration..... Kirpich
Return Period..... 25 years
Storm Duration..... 5 min
Link Routing Method ..... Kinematic Wave
Storage Node Exfiltration.. None
Starting Date MAR-15-2021 00:00:00
Ending Date MAR-15-2021 12:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 1
Number of nodes 3
Number of links 3

****
Subbasin Summary
****

Subbasin ID	Total Area ft²	Flow Length ft	Average Slope %
DA#1-Post	50701.81	200.00	2.0000

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	269.00	274.90	0.00	
Out-1-Post	OUTFALL	268.75	270.25	0.00	
Stor-01	STORAGE	269.50	275.50	0.00	

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Culvert-01	Jun-01	Out-1-Post	CONDUIT	55.0	1.3636	0.0120
Orifice-01	Stor-01	Jun-01	ORIFICE			
Weir-01	Stor-01	Jun-01	WEIR			

****

Cross Section Summary

Link ID	Shape	Depth/ Diameter (ft)	Width (ft)	No. of Barrels	Cross Sectional Area (ft²)	Full Flow Hydraulic Radius (ft)	Design Flow Capacity (cfs)
Culvert-01	CIRCULAR	1.50	1.50	1	1.77	0.38	13.29

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	0.123	1.267
Continuity Error (%)	1.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.076	0.025
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

Runoff Coefficient Computations Report

Subbasin DA#1-Post

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	1886.01	C (0-2%)	0.18
Forest, 25 years or greater	6968.96	C (0-2%)	0.12
Parking, 25 years or greater	25450.92	C (0-2%)	0.95
Pond-Area	4985.99	C (0-2%)	0.80
Bypass-Area	11409.97	C (0-2%)	0.18
Composite Area & Weighted Runoff Coeff.	50701.85		0.62

Kirpich Time of Concentration Computations Report

Tc = (0.0078 * (L^0.77) * (S^-0.385))

Where:

Tc = Time of Concentration (min)
L = Flow length (ft)
S = Slope (ft/ft)

Subbasin DA#1-Post

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DA#1-Post	1.27	7.60	0.79	5.48	0.620	0	00:10:00

****
Node Depth Summary
****

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.53	0.79	269.79	0	00:18	0	0	0:00:00
Out-1-Post	0.03	0.29	269.04	0	00:18	0	0	0:00:00
Stor-01	0.16	2.67	272.17	0	00:18	0	0	0:00:00

****
Node Flow Summary
****

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	1.05	0	00:18	0.00		
Out-1-Post	OUTFALL	0.00	1.05	0	00:18	0.00		
Stor-01	STORAGE	5.48	5.48	0	00:10	0.00		

****
Storage Node Summary
****

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
Stor-01	2.454	21	0	00:18	0.112	1	1.05	0.00	0:00:00	0.000

****
Outfall Loading Summary
****

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Out-1-Post	12.38	0.62	1.05
System	12.38	0.62	1.05

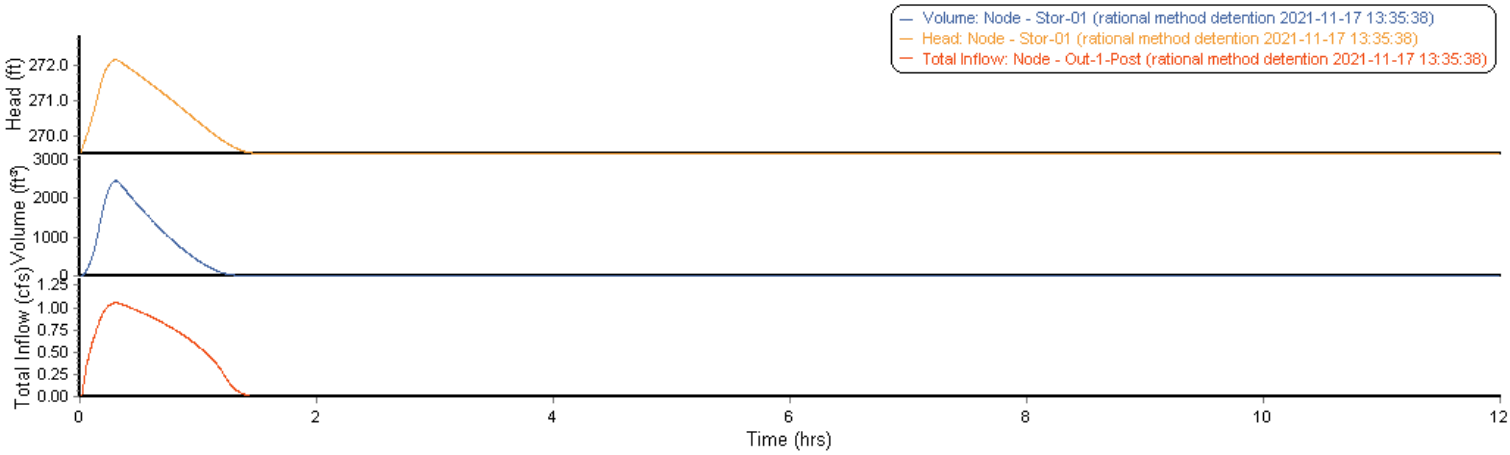
****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Depth	Total Time minutes	Reported Condition
Culvert-01	CONDUIT	0 00:18	4.50	1.00	1.05	13.29	0.08	0.19	0	Calculated
Orifice-01	ORIFICE	0 00:18			1.05			0.00		
Weir-01	WEIR	0 00:00			0.00			0.00		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 107 : Initial water surface elevation defined for Junction Jun-01 is below junction invert elevation.
Assumed initial water surface elevation equal to invert elevation.
WARNING 108 : Surcharge elevation defined for Junction Jun-01 is below junction maximum elevation. Assumed surcharge elevation equal to maximum elevation.
WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Wed Nov 17 13:35:36 2021
Analysis ended on: Wed Nov 17 13:35:37 2021
Total elapsed time: 00:00:01


Volume: Node - Stor-01 (rational method detention 2021-11-17 13:35:38)
Head: Node - Stor-01 (rational method detention 2021-11-17 13:35:38)
Total Inflow: Node - Out-1-Post (rational method detention 2021-11-17 13:35:38)
Head (ft)
272.0
271.0
270.0
Volume (ft³)
3000
2000
1000
0
Total Inflow (cfs)
1.25
1.00
0.75
0.50
0.25
0.00
0
2
4
6
8
10
12
Time (hrs)

Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... rational method detention.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Modified Rational
Time of Concentration..... Kirpich
Return Period..... 50 years
Storm Duration..... 5 min
Link Routing Method ..... Kinematic Wave
Storage Node Exfiltration.. None
Starting Date MAR-15-2021 00:00:00
Ending Date MAR-15-2021 12:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 1
Number of nodes 3
Number of links 3

****
Subbasin Summary
****

Subbasin ID	Total Area ft²	Flow Length ft	Average Slope %
DA#1-Post	50701.81	200.00	2.0000

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	269.00	274.90	0.00	
Out-1-Post	OUTFALL	268.75	270.25	0.00	
Stor-01	STORAGE	269.50	275.50	0.00	

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Culvert-01	Jun-01	Out-1-Post	CONDUIT	55.0	1.3636	0.0120
Orifice-01	Stor-01	Jun-01	ORIFICE			
Weir-01	Stor-01	Jun-01	WEIR			

****

Cross Section Summary

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Culvert-01	CIRCULAR	1.50	1.50	1	1.77	0.38	13.29

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	0.137	1.410
Continuity Error (%)	1.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.084	0.027
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

Runoff Coefficient Computations Report

Subbasin DA#1-Post

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	1886.01	C (0-2%)	0.18
Forest, 25 years or greater	6968.96	C (0-2%)	0.12
Parking, 25 years or greater	25450.92	C (0-2%)	0.95
Pond-Area	4985.99	C (0-2%)	0.80
Bypass-Area	11409.97	C (0-2%)	0.18
Composite Area & Weighted Runoff Coeff.	50701.85		0.62

Kirpich Time of Concentration Computations Report

Tc = (0.0078 * (L^0.77) * (S^-0.385))

Where:

Tc = Time of Concentration (min)
L = Flow length (ft)
S = Slope (ft/ft)

Subbasin DA#1-Post

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DA#1-Post	1.41	8.46	0.87	6.11	0.620	0	00:10:00

****
Node Depth Summary
****

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.53	0.79	269.79	0	00:18	0	0	0:00:00
Out-1-Post	0.03	0.29	269.04	0	00:18	0	0	0:00:00
Stor-01	0.18	2.86	272.36	0	00:18	0	0	0:00:00

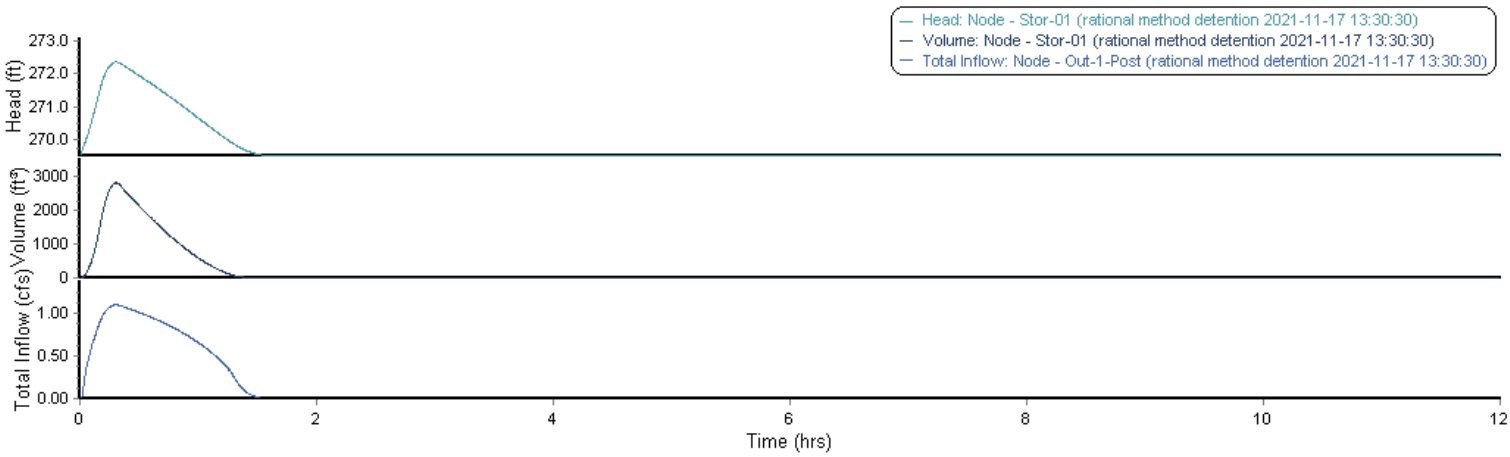
****
Node Flow Summary
****

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	1.09	0	00:18	0.00		
Out-1-Post	OUTFALL	0.00	1.09	0	00:18	0.00		
Stor-01	STORAGE	6.11	6.11	0	00:10	0.00		

****
Storage Node Summary
****

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
Stor-01	2.787	24	0	00:18	0.136	1	1.09	0.00	0:00:00	0.000

```
  **********************
  Outfall Loading Summary
  **********************

  ------------------------------------------------
  Outfall Node ID        Flow   Average      Peak
                    Frequency      Flow    Inflow
                          (%)       cfs       cfs
  ------------------------------------------------
  Out-1-Post            13.11      0.65      1.09
  ------------------------------------------------
  System                13.11      0.65      1.09


  *****************
  Link Flow Summary
  *****************

-------------------------------------------------------------------------------------------------------
--------------------------------
  Link ID              Element       Time of   Maximum  Length   Peak Flow      Design  Ratio of
Ratio of       Total  Reported
                       Type        Peak Flow  Velocity  Factor      during        Flow   Maximum
Maximum        Time  Condition
                                  Occurrence  Attained            Analysis    Capacity   /Design
Flow  Surcharged
                                  days hh:mm    ft/sec                 cfs         cfs      Flow
Depth     minutes

-------------------------------------------------------------------------------------------------------
--------------------------------
  Culvert-01           CONDUIT      0  00:18      4.55    1.00        1.09       13.29      0.08
0.19           0  Calculated
  Orifice-01           ORIFICE      0  00:18                          1.09
0.00
  Weir-01              WEIR         0  00:00                          0.00
0.00


  *******************************
  Highest Flow Instability Indexes
  *******************************
  All links are stable.


  WARNING 107 : Initial water surface elevation defined for Junction Jun-01 is below junction
invert elevation.
                Assumed initial water surface elevation equal to invert elevation.
  WARNING 108 : Surcharge elevation defined for Junction Jun-01 is below junction maximum
elevation. Assumed surcharge elevation equal to maximum elevation.
  WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height
dimensions for Node Jun-01.

  Analysis began on:  Wed Nov 17 13:30:28 2021
  Analysis ended on:  Wed Nov 17 13:30:29 2021
  Total elapsed time: 00:00:01
```


Head: Node - Stor-01 (rational method detention 2021-11-17 13:30:30)
Volume: Node - Stor-01 (rational method detention 2021-11-17 13:30:30)
Total Inflow: Node - Out-1-Post (rational method detention 2021-11-17 13:30:30)
Head (ft)
273.0
272.0
271.0
270.0
Volume (ft³)
3000
2000
1000
0
Total Inflow (cfs)
1.00
0.50
0.00
0
2
4
6
8
10
12
Time (hrs)

Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... rational method detention.SPF

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Modified Rational
Time of Concentration..... Kirpich
Return Period..... 100 years
Storm Duration..... 5 min
Link Routing Method ..... Kinematic Wave
Storage Node Exfiltration.. None
Starting Date MAR-15-2021 00:00:00
Ending Date MAR-15-2021 12:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 1
Number of nodes 3
Number of links 3

****
Subbasin Summary
****

Subbasin ID	Total Area ft²	Flow Length ft	Average Slope %
DA#1-Post	50701.81	200.00	2.0000

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	269.00	274.90	0.00	
Out-1-Post	OUTFALL	268.75	270.25	0.00	
Stor-01	STORAGE	269.50	275.50	0.00	

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Culvert-01	Jun-01	Out-1-Post	CONDUIT	55.0	1.3636	0.0120
Orifice-01	Stor-01	Jun-01	ORIFICE			
Weir-01	Stor-01	Jun-01	WEIR			

****

Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Culvert-01	CIRCULAR	1.50	1.50	1	1.77	0.38	13.29

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	0.151	1.553
Continuity Error (%)	1.000	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.093	0.030
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Runoff Coefficient Computations Report
****

Subbasin DA#1-Post

Soil/Surface Description	Area (ft²)	Soil Group	Runoff Coeff.
Open Space, 25 years or greater	1886.01	C (0-2%)	0.18
Forest, 25 years or greater	6968.96	C (0-2%)	0.12
Parking, 25 years or greater	25450.92	C (0-2%)	0.95
Pond-Area	4985.99	C (0-2%)	0.80
Bypass-Area	11409.97	C (0-2%)	0.18
Composite Area & Weighted Runoff Coeff.	50701.85		0.62

****
Kirpich Time of Concentration Computations Report
****

Tc = (0.0078 * (L^0.77) * (S^-0.385))

Where:

Tc = Time of Concentration (min)
L = Flow length (ft)
S = Slope (ft/ft)

Subbasin DA#1-Post

User-Defined TOC override (minutes): 10.00

****
Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DA#1-Post	1.55	9.32	0.96	6.73	0.620	0	00:10:00

****
Node Depth Summary
****

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Time Flooded minutes	Retention Time hh:mm:ss
Jun-01	0.53	0.80	269.80	0	00:18	0	0	0:00:00
Out-1-Post	0.03	0.30	269.05	0	00:18	0	0	0:00:00
Stor-01	0.21	3.05	272.55	0	00:18	0	0	0:00:00

****
Node Flow Summary
****

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	1.13	0	00:18	0.00		
Out-1-Post	OUTFALL	0.00	1.13	0	00:18	0.00		
Stor-01	STORAGE	6.73	6.73	0	00:10	0.00		

****
Storage Node Summary
****

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
Stor-01	3.124	27	0	00:18	0.161	1	1.13	0.00	0:00:00	0.000

****
Outfall Loading Summary
****

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Out-1-Post	13.81	0.68	1.13
System	13.81	0.68	1.13

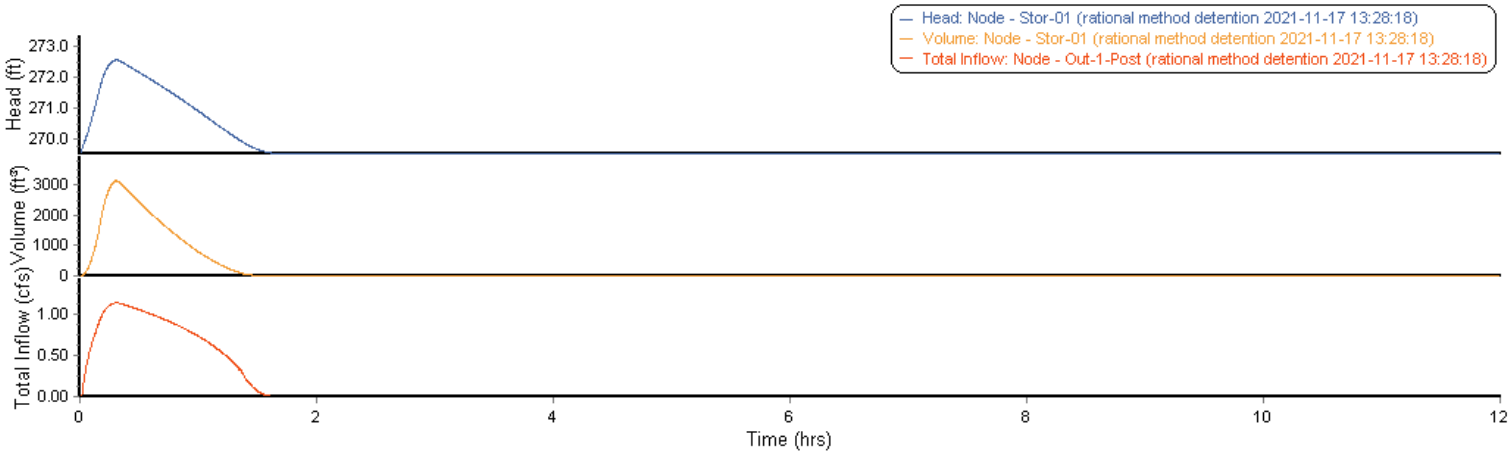
****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Depth	Total Time minutes	Reported Condition
Culvert-01	CONDUIT	0 00:18	4.59	1.00	1.13	13.29	0.09	0.20	0	Calculated
Orifice-01	ORIFICE	0 00:18			1.13			0.00		
Weir-01	WEIR	0 00:00			0.00			0.00		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 107 : Initial water surface elevation defined for Junction Jun-01 is below junction invert elevation.
Assumed initial water surface elevation equal to invert elevation.
WARNING 108 : Surcharge elevation defined for Junction Jun-01 is below junction maximum elevation. Assumed surcharge elevation equal to maximum elevation.
WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node Jun-01.

Analysis began on: Wed Nov 17 13:28:15 2021
Analysis ended on: Wed Nov 17 13:28:16 2021
Total elapsed time: 00:00:01


Head: Node - Stor-01 (rational method detention 2021-11-17 13:28:18)
Volume: Node - Stor-01 (rational method detention 2021-11-17 13:28:18)
Total Inflow: Node - Out-1-Post (rational method detention 2021-11-17 13:28:18)
Head (ft)
273.0
272.0
271.0
270.0
Volume (ft³)
3000
2000
1000
0
Total Inflow (cfs)
1.00
0.50
0.00
0
2
4
6
8
10
12
Time (hrs)

Enclosure 8

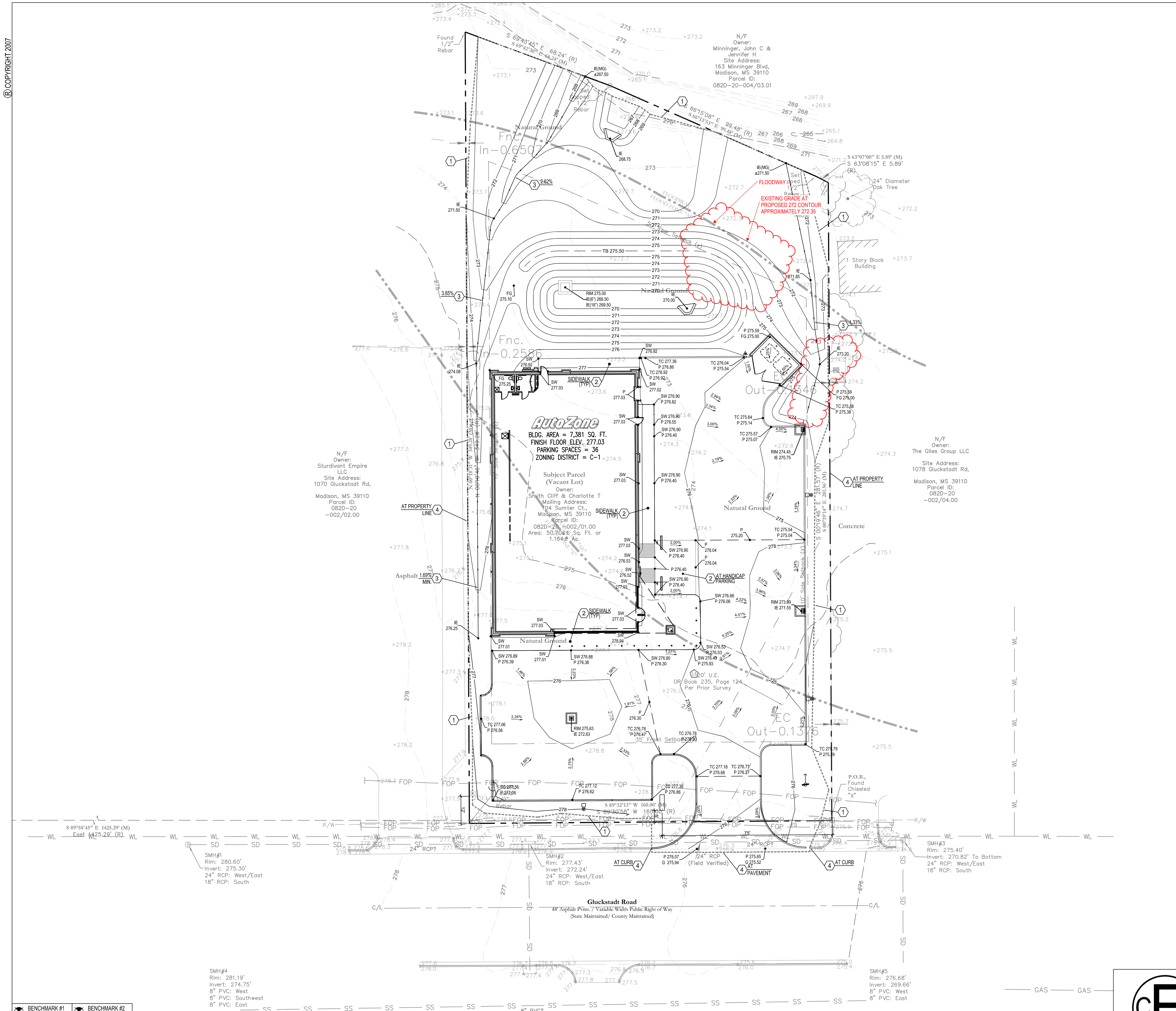
Pipe Capacity Calculations

Gluckstadt, MS **AutoZone** **11/16/2021**

24-hour storm event precipitation

Catchment	Drain Area 1 (sf)	runoff C Area 1	Drain Area 2 (sf)	runoff C Area 2	Total Area (acres)	weighted C	actual Tc (min)	chosen Tc (min)	rainfall I (10) (in/hr)	rainfall I (25) (in/hr)	rainfall I (50) (in/hr)	rainfall I (100) (in/hr)	runoff Q (10) (cfs)	runoff Q (25) (cfs)	runoff Q (50) (cfs)	runoff Q (100) (cfs)
SW Area Inlet	1,115	0.18	5280	0.95	**0.15**	**0.82**	10.0	**10.0**	**6.50**	**7.60**	**8.46**	**9.32**	**0.78**	**0.91**	**1.01**	**1.12**
SE Curb Inlet	1,052	0.18	6750	0.95	**0.18**	**0.85**	10.0	**10.0**	**6.50**	**7.60**	**8.46**	**9.32**	**0.99**	**1.15**	**1.28**	**1.41**
NE Curb Inlet	0	0.18	5740	0.95	**0.13**	**0.95**	10.0	**10.0**	**6.50**	**7.60**	**8.46**	**9.32**	**0.81**	**0.95**	**1.06**	**1.17**

Catchment	runoff Q (25) (cfs)	Catch Basin efficiency	captured flow (cfs)	cumulat. Q (25) (cfs)	Pipe Out Desig.	U.S. Invert Elev.	D.S. Invert Elev.	Pipe Length (ft)	Pipe slope %	Pipe Size (inches)	U.S. Grade at CB	Cover over pipe (ft)	D.S. Grade at CB	Cover over pipe (ft)	Full Flow (cfs)	Q / Qfull	velocity (fps)	bypass flow (cfs)
SW Area Inlet	**0.91**	100.0%	**0.91**	**0.91**		272.63	271.55	108.0	1.00%	18	275.63	1.3	273.99	0.7	11.8	0.1	2.6	0.00
SE Curb Inlet	**1.15**	100.0%	**1.15**	**2.06**		271.55	270.75	76.0	1.05%	18	273.99	0.7	274.45	1.9	12.0	0.2	4.0	0.00
NE Curb Inlet	**0.95**	100.0%	**0.95**	**3.01**	to pond	270.75	270.00	70.0	1.07%	18	274.45	1.9	272.00	0.3	12.0	0.3	5.2	0.00



GENERAL GRADING LEGEND

TC	TOP OF CURB ELEVATION
P	BOTTOM OF CURB ELEVATION
FG	FINISHED GRADE ELEVATION
SW	SIDEWALK ELEVATION
MG	MATCH EXISTING GRADE ELEVATION
TB	TOP OF BANK GRADE ELEVATION
RIM	TOP OF RIM ELEVATION AT STRUCTURE
HP	HIGH POINT GRADE ELEVATION
1.09%	PROPOSED GRADE SLOPE
	LIMIT OF DISTURBANCE
	PROPOSED SWALE

GRADING KEYNOTES

1. LIMITS OF LAND DISTURBANCE
2. PROVIDE 2.00% MAXIMUM CROSS SLOPE
3. PROVIDE SWALE - SEE SLOPE AND ELEVATIONS THIS SHEET
4. MATCH EXISTING GRADES

GRADING INFORMATION

LIMITS OF DISTURBANCE = 49,166 SF / 1.13 AC

GENERAL GRADING NOTES

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN THE USE OF EQUIPMENT IN AND AROUND OVERHEAD AND UNDERGROUND ELECTRICAL WIRES AND SERVICES. IF AT ANY TIME IN THE PURSUIT OF THIS WORK THE CONTRACTOR MUST WORK IN THE CLOSE PROXIMITY OF THE ABOVE-NOTED WIRES, THE ELECTRIC COMPANY SHALL BE CONTACTED PRIOR TO SUCH WORK AND THE PROPER SAFETY MEASURES TAKEN. A THOROUGH EXAMINATION OF THE OVERHEAD AND UNDERGROUND WIRES IN THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE PROJECT AREA SHOULD BE MADE BY THE CONTRACTOR PRIOR TO THE INITIATION OF CONSTRUCTION.
2. THE OWNER AND ENGINEER DO NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT, DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAY BE DIFFERENT FROM LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT EXACT LOCATIONS BE KNOWN OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, FURNISH ALL LABOR AND TOOLS NECESSARY TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITELY ESTABLISH THE POSITION OF UNDERGROUND UTILITY LINES.
3. AT LOCATIONS WHERE UTILITY LINES OR SERVICES ARE UNDERNEATH PROPOSED PAVEMENT, THE TRENCH SHALL BE BACKFILLED TO SUBGRADE WITH CRUSHED STONE.
4. DEVELOPER IS TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR, THE DEVELOPER'S ENGINEER, THE COUNTIES REPRESENTATIVE AND THE COUNTIES ENGINEER.
5. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
6. REMOVE ALL FOUNDATIONS, UNDERGROUND TANKS, PAVING, BASE ETC. IF REMAINING, BEFORE BEGINNING CONSTRUCTION.
7. FILL ALL PLANTERS/ISLANDS TO TOP OF CONCRETE CURB WITH TOPSOIL. TOPSOIL TO BE CLEAN AND FREE OF DEBRIS, ETC.
8. THESE PLANS, PREPARED BY CIVIL ENGINEERING SERVICES, DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF CIVIL ENGINEERING SERVICES REGISTERED PROFESSIONAL ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
9. IN THE CASE OF CONFLICT BETWEEN THIS DRAWING AND ANY OTHER DRAWING AND/OR THE SPECIFICATIONS, THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED FOR CLARIFICATION.

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

BENCHMARK #1	BENCHMARK #2	FLOOD NOTE:
1/2" REBAR	1/2" REBAR	FLOOD ZONE "AE"
N: 1,097,408.07	N: 1,097,409.61	PER FEMA MAP NO. 28089-C0415-F
E: 2,365,109.95	E: 2,365,269.98	EFFECTIVE DATE: MARCH 17, 2010
ELEV= 277.93	ELEV= 272.84	

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Engineering, Environmental, Land Planning

NAD83 MS STATE PLANE

REVISIONS

1	2	3
4	5	6

AutoZone Store No. 0152
1076 GLUCKSTADT RD
MADISON MS 39110

GRADING PLAN

Owner / Developer: AUTOZONE STORES LLC
123 South Front Street, 3rd Floor
Memphis, Tennessee 38103
TEL: (901) 495-8994 FAX: (901) 495-8969

For Bidding & Contractor Information Contact:
Dodge Data & Analytics, Tel. 413-930-4215
Cindy.searcy@construction.com

05/16/2023

4/25/2023

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