



# VII. E.

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690 Chesterfield Pkwy W • Chesterfield MO 63017-0760  
Phone: 636-537-4000 • Fax 636-537-4798 • www.chesterfield.mo.us

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## Planning Commission Staff Report

**Project Type:** Site Development Section Plan

**Meeting Date:** January 9, 2017

**From:** Justin Wyse  
Senior Planner

**Cc:** Aimee Nassif, Planning & Development Services Director

**Location:** South side of Chesterfield Airport Road immediately west of its intersection with Spirit Drive.

**Applicant:** Stock and Associates Consulting Engineers

**Description:** **Spirit Trade Center, Lots 2 & 3 (MoHELA) 3<sup>rd</sup> ASDSP:** An Amended Site Development Section Plan, Landscape Plan, Lighting Plan, and Parking Demand Study for a 14.3 acre tract of land zoned “M3” Planned Industrial District located on the south side of Chesterfield Airport Road immediately west of its intersection of Spirit Drive (17V330276 & 17V330265).

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### **PROPOSAL SUMMARY**

Stock and Associates Consulting Engineers, on behalf of MoHELA, have requested an amended Site Development Section Plan, Landscape Plan, Lighting Plan, and Parking Demand Study for consideration before the Planning Commission. The request would permit the expansion of the existing parking area, including the addition of all required landscaping and lighting. Specifically, the request would permit an additional 300 parking stalls (322 total new, 22 removed due to reconfiguration). The purpose of the parking expansion is to permit full occupancy of the existing building and allow for future removal of parking areas to accommodate potential new buildings for the site during future phases.

### **HISTORY OF THE SUBJECT SITE**

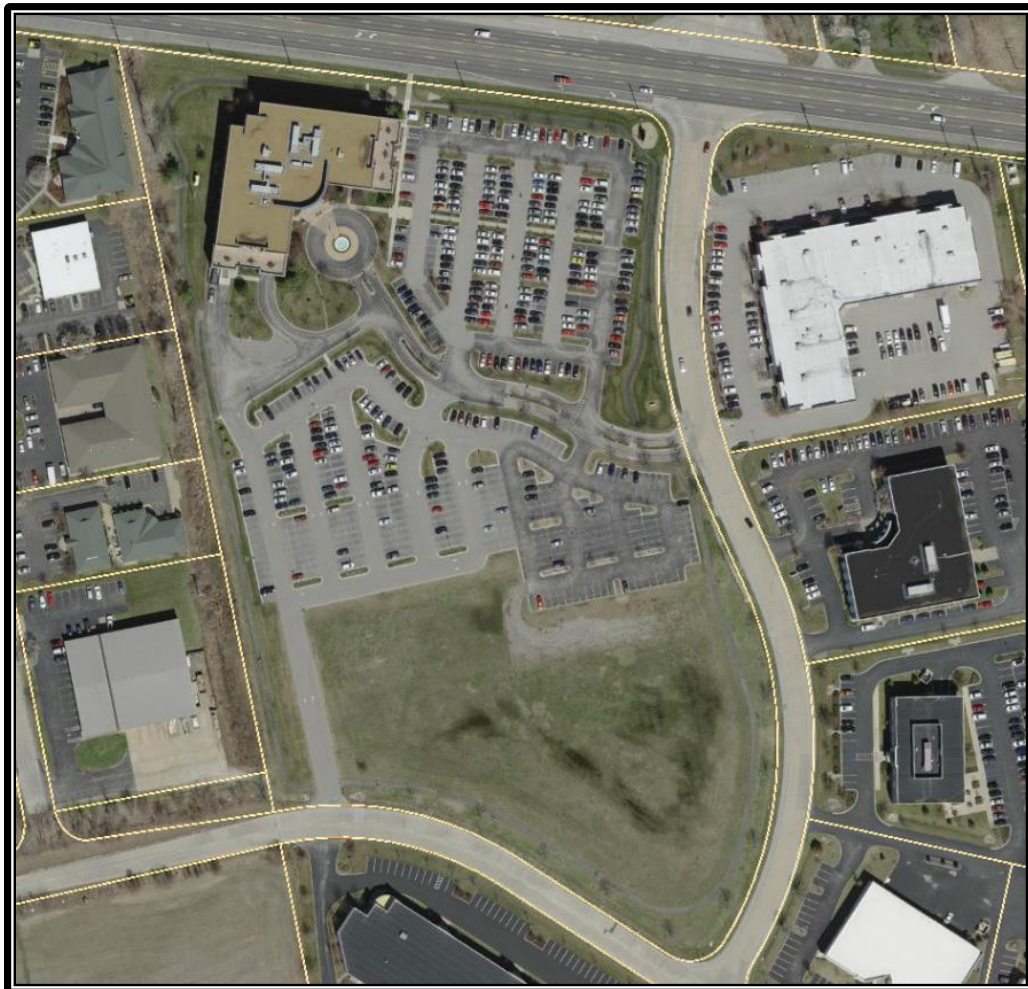
St. Louis County zoned the subject site “NU” Non-Urban District in 1965. The property was zoned “M3” Planned Industrial District through the passing of St. Louis County Ordinance 13,935 prior to the incorporation of the City of Chesterfield. In 1992, the City of Chesterfield amended said St. Louis County Ordinance with the approval of Ordinance 656 to modify right-of-way requirements for the development.

In 2000, the City of Chesterfield approved a SDSP for the purpose of the construction of a four (4) story, 72,800 sf. office building. In 2005, the City of Chesterfield approved an amendment to the SDSP to permit the addition of ninety-three (93) parking stalls on the site. Further, in June of 2012, the City of Chesterfield approved an amended site development section plan to permit an additional 222 parking stalls.

The site currently functions as a typical office land use. The site is surrounded by like land uses of the same or similar zoning. At this time, the applicant proposes to amend their plan to add additional parking. No addition to the existing office building is proposed with this phase of development.

**Land Use and Zoning of Surrounding Properties**

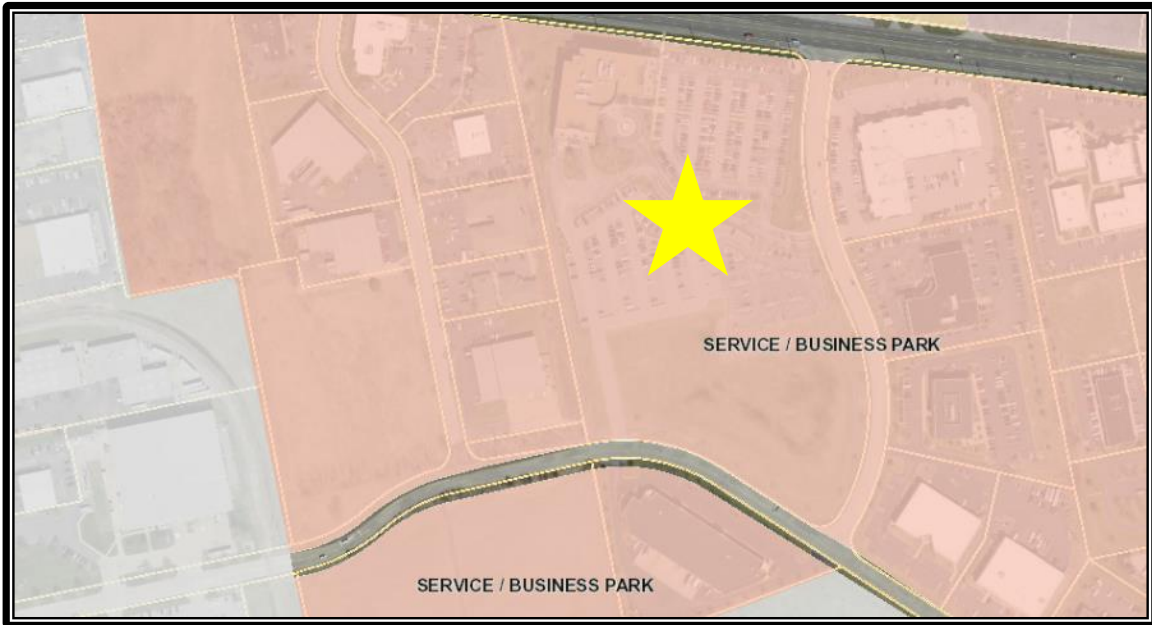
Direction	Land Use	Zoning
North	Office Warehouse	“P1” Planned Industrial District
South	Office	“M3” Planned Industrial District
East	Office Warehouse	“M3” Planned Industrial District
West	Office	“M3” Planned Industrial District



*Aerial Image*

**Comprehensive Plan Analysis**

The subject site is designated as Service / Business Park within the City of Chesterfield Comprehensive Plan.



*Comprehensive Land Use Plan*

**Commercial Development Policies**

- **3.1.1 Quality of Design** – Overall design standards should be provided for smaller-scale, mixed-use, project-oriented developments. Developments should emphasize architectural design, pedestrian circulation, landscaping, open space, innovative parking solutions and landscape buffering between any adjacent residential uses.
  - *This policy is met by this proposed development. The proposal includes large amounts of parking; however, additional landscaping is proposed to help mitigate the visual impact.*

**STAFF ANALYSIS**

**Zoning**

The subject site is currently zoned “M3” Planned Industrial District under the terms and conditions of City of Chesterfield Ordinance Number 656. The submittal was reviewed against the requirements of Ordinance 656 and all applicable requirements of the Unified Development Code. The site adheres to the applicable UDC requirements and the site specific governing ordinance.

**Access and Site Circulation**

No changes are proposed for access to the site. The design incorporates additional paths within and adjacent to the new parking area for designated pedestrian areas to provide clear and safe access through the new parking area.

### Parking

Existing and proposed parking numbers exceed the maximum parking permitted on the site, as defined in Article 4 of the UDC. Section 04-04.I. of the UDC requires that requests that exceed the maximum parking requirement by more than 20% are subject to review and approval by the Planning Commission. The applicant has provided the required Parking Demand Study which details the expansion plans for the site to accommodate full occupancy of the existing building and allow for a future building to be added which will necessitate removal of existing parking in other areas of the lot. Staff has worked with the applicant to include features into the site to mitigate the impact of the large expanse of parking. Added features include:

- Additional landscaping along Spirit Dr.
- Inclusion of striped areas within the parking field for pedestrians.
- Inclusion of dedicated pedestrian area adjacent to the new parking field.
- Inclusion of large amounts of porous paving materials within the new parking area.

The proposal adds 300 parking spaces to the site for a total of 844 spaces. The UDC allows a maximum of 360 spaces (234% over maximum). As with previous requests for this site, the provision of additional parking requires approval of a Parking Demand Study by the Planning Commission.

### Landscaping and Open Space

The site is required to provide a minimum of 30% open space and the proposed plan includes 57.34%.

Existing trees are proposed to be supplemented above minimum requirement of the UDC as well as mitigation plantings proposed to offset the impact of the parking field. Additional landscaping will include installation of numerous trees within the required thirty (30) foot landscape buffer along Edison Ave., supplemental planting along Spirit Dr., and installation of landscaping within the parking area.

### Lighting

Several light fixtures are proposed for the new parking area. The new lights are required for the new parking area and comply with all UDC requirements.

### **STAFF RECOMMENDATION**

Staff has reviewed the 3<sup>rd</sup> Amended Site Development Section Plan, Landscape Plan, and Lighting Plan and has found the proposal to be in compliance with the site specific ordinance, Comprehensive Plan, and all City Code requirements. The submittal includes a parking demand study and mitigation for parking in excess of the maximum parking provided in the UDC. Staff recommends approval of the 3<sup>rd</sup> Amended Site Development Section Plan, Landscape Plan, Lighting Plan, and Parking Demand Study for Spirit Trade Center, Lots 2 & 3 (Mohela).

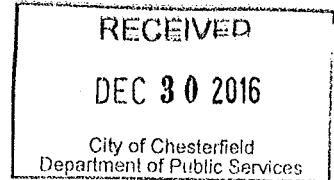
### **MOTION**

The following options are provided to the Planning Commission for consideration relative to this application:

- 1) “I move to approve (or deny) the 3<sup>rd</sup> Amended Site Development Section Plan, Landscape Plan, Lighting Plan, and Parking Demand Study for Spirit Trade Center, Lots 2 & 3 (Mohela).
  
- 2) “I move to approve the 3<sup>rd</sup> Amended Site Development Section Plan, Landscape Plan, Lighting Plan, and Parking Demand Study for Spirit Trade Center, Lots 2 & 3 (Mohela) with the following conditions...” (Conditions may be added, eliminated, altered or modified).

Attachments:   3<sup>rd</sup> Amended Site Development Section Plan  
                  Landscape Plan  
                  Lighting Plan  
                  Lighting Cut-sheets  
                  Parking Demand Study

**STOCK & ASSOCIATES**  
**Consulting Engineers, Inc.**



December 30, 2016

City of Chesterfield  
690 Chesterfield Parkway W  
Chesterfield, MO 63017-0760

Attention: Mr. Justin Wyse, AICP - Senior Planner

Re: Parking Demand Study associated with MOHELA  
3<sup>RD</sup> Amended Site Development Plan  
633 Spirit Drive  
(Stock Project No. 216-5698)

Dear Mr. Wyse:

This firm is the professional licensed civil engineering firm that has been engaged to prepare and process the 3<sup>rd</sup> Amended Site Development Plan for Mohela Office Park and its Phase 1, Phase 2, and Phase 3 expansions. Included in that engagement are the preparation and submission of this Application and a Parking Demand Study. Parking requirements are contained in Section 31-04-04.H of the City of Chesterfield Unified Development Code. Under the provisions of the Parking Section, Office General is broken down into ranges, minimum parking requirements of 3.3 spaces/1,000 s.f., and maximum parking requirements of 4.5 spaces/1,000 s.f. (gross building). This study will look and the minimum parking requirement for the site.

The existing site consists of a 3-story office building with a gross area of 80,000 s.f. and 544 existing parking spaces. Currently, Mohela employs 445 permanent employees at the Chesterfield Headquarters. An additional 165 are employed at satellite locations for a total of 610 permanent employees. Mohela plans to hire roughly 50-70 employees in the coming months, which will maximize the existing building. Assuming 1 car per employee, Mohela has a need for 680 Parking spaces currently. The phased expansions will accommodate Mohela's growth as they wish to add 2 additional 45,000 s.f. building in phase 2 and phase 3, respectively. The proposed phase 1 parking is in excess of the 680 needed spaces to accommodate for removal of roughly 174 existing parking spaces by the additional buildings during construction.

The following is their Phase 1, 2, and 3 parking demand:

Mohela Office Park		Phase1	Phase 2	Phase 3
Building Gross Area		80,000 s.f.	45,000 s.f.	45,000 s.f.
<u>Parking spaces</u>	<u>Current</u>	<u>Projected</u>		
	544		844	1,197
<u>New Employees</u>		<u>300</u>	<u>353</u>	<u>404</u>
<b>Totals</b>		<b>844</b>	<b>1,197</b>	<b>1,601</b>

Phase 1 of the project includes the addition of 300 parking spaces to allow for maximum building occupancy. The total parking for the phase 1 site expansion will be 844 total spaces. The parking ratio with the added parking and the existing building is:

$$\text{Parking Ratio} = \frac{844 \text{ spaces}}{80} = \frac{10.55 \text{ spaces}}{1,000 \text{ s.f./Bldg.}}$$

For phase 2 and 3, a parking deck totaling 835 spaces is being proposed. The balance of parking 766 spaces will be surface. The combination of the parking deck and surface parking optimize the project's open space. The project is designed to meet a minimum 30% open space at completion of construction. The parking deck is a mitigating factor against a significant surface stall component and maximization of open space.

Phase 2 of the project includes the addition of 343 parking spaces to accommodate the addition of a 3 story 45,000 s.f. building. The total parking for the phase 2 site expansion will be 1,197 total spaces. 374 spaces will be the first part of the phased parking deck detailed above. The parking deck allows for additional green space for the site. The parking ratio with the added parking and the existing building is:

:

$$\text{Parking Ratio} = \frac{1,197 \text{ spaces}}{125} = \frac{9.58 \text{ spaces}}{1,000 \text{ s.f./Bldg.}}$$

Phase 3 of the project includes the addition of 403 parking spaces to accommodate the addition of a 3 story 45,000 s.f. building, and a total gross building area of 170,000 s.f. The total parking for the phase 3 site expansion will be 1,601 total spaces. 767 spaces will be garage parking in the completed parking deck detailed above. The parking ratio with the added parking and the existing building is;

$$\text{Parking Ratio} = \frac{1,601 \text{ spaces}}{170} = \frac{9.42 \text{ spaces}}{1,000 \text{ s.f./Bldg.}}$$

The total of 1,601 spaces equates to 9.42 spaces per 1,000 s.f. of building, which is a 109.3% increase above the 4.5/1,000 s.f. allowed by code. The effective use of work stations and collaborative area places a premium on parking demand for employees and visitors. The design of this project provides parking spaces which meet the project requirements.

Based on actual employment provided by the User, the peak parking requirements do reach levels exceeding 4.5 spaces/1,000 s.f. Therefore, they have a "requirement" to park the site at 9.42 spaces/1,000 s.f., which allows the project to meet the minimum required 30% of open space.

It should be noted that trends in today's corporate work environments trend towards a more efficient and maximum use of office space. People occupy space at a greater density than in past. Current workplace strategies of open and collaborative work environments and modern workstation design are part of what is driving this efficiency. Thus, there is a higher parking requirement for new Class A office buildings in general.



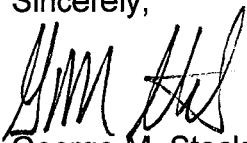
These higher parking requirements will allow for more efficient re-leasing of second generation tenancy and will enhance the value of this property long term.

Based on the above information, we respectfully request the City consider this project be parked at the rate of:

- 10.55 spaces/1,000 s.f. for Phase 1
- 9.58 spaces/1,000 s.f. for Phase 2
- 9.42 spaces/1,000 s.f. for Phase 3

which would satisfy the Corporate Users' parking needs for 1,601 spaces.

Sincerely,



George M. Stock, P.E.,  
President

CC: Ms. Aimee Nassif, Planning & Development Services Director  
Mr. Zachary S. Wolff, Civil Engineer  
Mr. Kristopher Mehrtens, Project Manager – ACI Boland Architects, via email  
Mr. Rusty Saunders, Principal – Loomis Associates, via email



# THIRD AMENDED SITE DEVELOPMENT SECTION PLAN MOHELA PHASE 1 EXPANSION

A TRACT OF LAND BEING LOT 2-A THE BOUNDARY ADJUSTMENT OF LOTS 2 AND 3 OF SPIRIT TRADE CENTER PLAT ONE AS RECORDED IN PLAT BOOK 360, PAGE 199 LOCATED IN U.S. SURVEYS 419 AND 1010, TOWNSHIP 45 NORTH, RANGE 3 EAST OF THE 5TH PRINCIPAL MERIDIAN  
CITY OF CHESTERFIELD, ST. LOUIS COUNTY, MISSOURI

## EARTHWORK NOTES

BULK CUT = 2,500 ± CUBIC YARDS  
BULK FILL = 2,500 ± CUBIC YARDS  
NET = 0 ± CUBIC YARDS

ASSUMPTIONS:  
- NO TOPSOIL  
- 12" FOR PAVEMENT AREA SUBGRADE  
- 24" FOR POROUS PAVEMENT AREA SUBGRADE  
THE FILL VOLUME SHOWN ABOVE WAS INCREASED BY 15% TO ACCOUNT FOR COMPACTION DURING CONSTRUCTION.

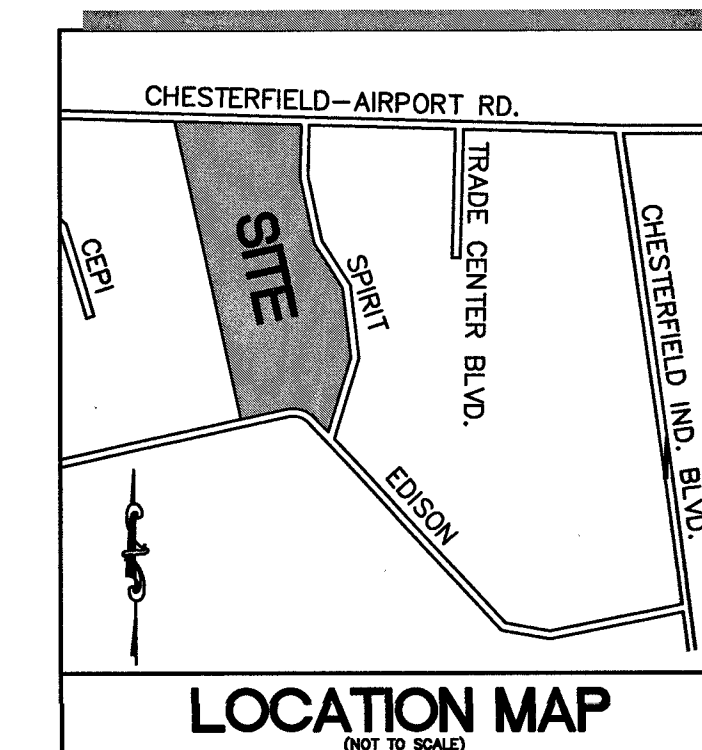
THE ENGINEER HAS CALCULATED THE ABOVE QUANTITIES OF EARTHWORK TO BE REQUIRED AS AN ESTIMATE OF THE BULK MOVEMENT OR REDISTRIBUTION OF SOILS ON THIS PROJECT. AS AN ESTIMATE, THESE QUANTITIES ARE INTENDED FOR GENERAL USE, AND THE ENGINEER ASSUMES NO LIABILITY FOR COST OVERRUNS DUE TO EXCESS EXCAVATED MATERIALS OR SHORTAGES OF FILL.

THE QUANTITIES ESTIMATED FOR EACH OF THE IMPROVEMENT ITEMS LISTED ABOVE ARE BASED UPON THE HORIZONTAL AND VERTICAL LOCATION OF THE IMPROVEMENTS AS PROPOSED ON THE SITE ENGINEERING PLANS PREPARED BY STOCK & ASSOCIATES CONSULTING ENGINEERS.

THE ENGINEER'S EARTHWORK ESTIMATE DOES NOT INCLUDE ANY OF THE FOLLOWING ITEMS REQUIRING EARTHWORK THAT MAY BE NECESSARY FOR COMPLETION OF THE PROJECT: MISCELLANEOUS UNDERGROUND CONDUITS, INCLUDING SEWER LINES AND WATER MAINS, STANDARD MANHOLES, PROCESS OR TRANSFER PIPING, ELECTRICAL OR TELEPHONE CONDUITS, BASES FOR LIGHT STANDARDS, BUILDING FOOTINGS AND FOUNDATIONS, ETC.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL SIZE OF THE FIELD EXCAVATIONS MADE FOR THE INSTALLATION OF UNDERGROUND STRUCTURES AND AS SUCH, THE ACTUAL QUANTITIES OF EARTHWORK FROM SUCH ITEMS MAY VARY FROM THE ESTIMATE SHOWN ABOVE.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR COSTS INCURRED DUE TO UNSUITABLE MATERIAL WHICH MUST BE REMOVED FROM SITE.  
THE ABOVE QUANTITIES ARE AN ESTIMATE AND SHOULD BE CONSIDERED AS SUCH. IT IS THE GRADING CONTRACTOR'S RESPONSIBILITY TO PREPARE A QUANTITY TAKEOFF AND NOTE ANY DISCREPANCIES TO THE ENGINEER.



## PERTINENT DATA

OWNER = HIGHER EDUCATION LOAN AUTHORITY OF THE STATE OF MISSOURI (BK-12628, PG.1750)  
ZONING = M3 - PLANNED INDUSTRIAL DISTRICT  
ORDINANCE = ORDINANCE 656 AMENDED ORD. 13,935  
SITE ACREAGE = 14.305±  
LOCATOR NO. = 17V330320  
FIRE DISTRICT = CHESTERFIELD FIRE PROTECTION DISTRICT  
SCHOOL DISTRICT = ROCKWOOD R6  
WATER SHED = M.S.D.  
WATER SERVICE = DONOHOO CREEK  
GAS SERVICE = MISSOURI AMERICAN WATER COMPANY  
ELECTRIC SERVICE = LACLEDE GAS COMPANY - AMEREN

## PARKING DATA

EXISTING NORTH LOT = 230 P.S.  
EXISTING SOUTH LOT = 314 P.S.  
PROPOSED SPACES PROVIDED = 300 P.S.  
PROVIDED PARKING = 844 P.S. TOTAL  
REQUIRED HANDICAP PARKING = 17 P.S. TOTAL (2% OF TOTAL PARKING)  
PROVIDED HANDICAP PARKING = 17 P.S. TOTAL

### ABBREVIATIONS

C.O.	CLEANOUT
D.B.	DEED BOOK
E.	ELECTRIC
FL	FLOWLINE
FT	FEET
FND.	FOUND
G	GAS
M.H.	MANHOLE
N/F	NOW OR FORMERLY
PL	PLAT BOOK
P.C.	PAGE
P.C.M.	POLYETHYLENE CHLORIDE PIPE
R.B.	RADIAL BEARING
R.C.P.	REINFORCED CONCRETE PIPE
SQ.	SQUARE
T.C.	TELEPHONE CABLE
V.C.P.	VERTICED CLAY PIPE
W	WATER
(80'W)	RIGHT-OF-WAY WIDTH

### ST. LOUIS COUNTY BENCHMARK

BENCHMARK 11-59 ELEV.=461.50 NVD129  
"U" ON BACK OF ROLLED CURB, 10' SOUTH OF CENTERLINE OF CHESTERFIELD AIRPORT RD. AND 13' WEST OF CENTERLINE OF GODDARD AVE.

### LEGEND

⊕	BENCH MARK
⊙	FOUND IRON ROD
⊚	FOUND IRON PIPE
⊛	RIGHT OF WAY MARKER
⊜	UTILITY POLE
⊝	SUPPORT POLE
⊞	UTILITY POLE WITH LIGHT
⊟	LIGHT STANDARD
⊠	ELECTRIC METER
⊡	ELECTRIC MANHOLE
⊢	ELECTRIC PEDestal
⊣	ELECTRIC SERVICE BOX
⊤	GAS DROP
⊥	GAS METER
⊦	GAS VALVE
⊧	TELEPHONE MANHOLE
⊨	TELEPHONE PEDestal
⊩	TELEPHONE SERVICE BOX
⊪	CABLE TV PEDestal
⊫	FIRE HYDRANT
⊬	FIRE DEPARTMENT CONNECTION
⊭	WATER MANHOLE
⊮	WATER METER
⊯	WATER VALVE
⊰	POST INDICATOR VALVE
⊱	CLEAN OUT
⊲	STORM MANHOLE
⊳	GRATED MANHOLE
⊴	STORMWATER INLET
⊵	GRATED STORMWATER INLET
⊶	SANITARY MANHOLE
⊷	TREE
⊸	BUSH
⊹	TRAFFIC SIGNAL
⊺	PARKING METER
⊻	STREET SIGN
⊼	SPRINKLER
⊽	MAIL BOX

or its assigns, the owner of the property shown on this plan for and in consideration of being granted approval of said plan to develop property under the provisions of Section 03.

04.E "M3" - Planned Industrial District Of City of Chesterfield (applicable subsection) (present zoning)

Unified Development Code, do hereby agree and declare that said property From the date of recording this plan shall be developed only as shown thereon, unless said plan is amended by the City of Chesterfield, or voided or vacated by order of ordinance of the City of Chesterfield Council.

Missouri Higher Education Loan Authority, or its assigns  
(Signature):  
(Name Typed): Scott Giles  
Chief Financial Officer

STATE OF MISSOURI }  
COUNTY OF ST. LOUIS } ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2016, before me appeared \_\_\_\_\_ to me known, who, being by me duly sworn, did say that he / she is the \_\_\_\_\_ of Missouri Higher Education Loan Authority, or its assigns, a Missouri Corporation, and that the seal affixed to the foregoing instrument is the Corporate Seal of said Corporation and that the said instrument was signed and sealed on behalf of said Corporation by authority of its Board of Directors, and said \_\_\_\_\_ acknowledged said instrument to be the free act and deed of said Corporation.

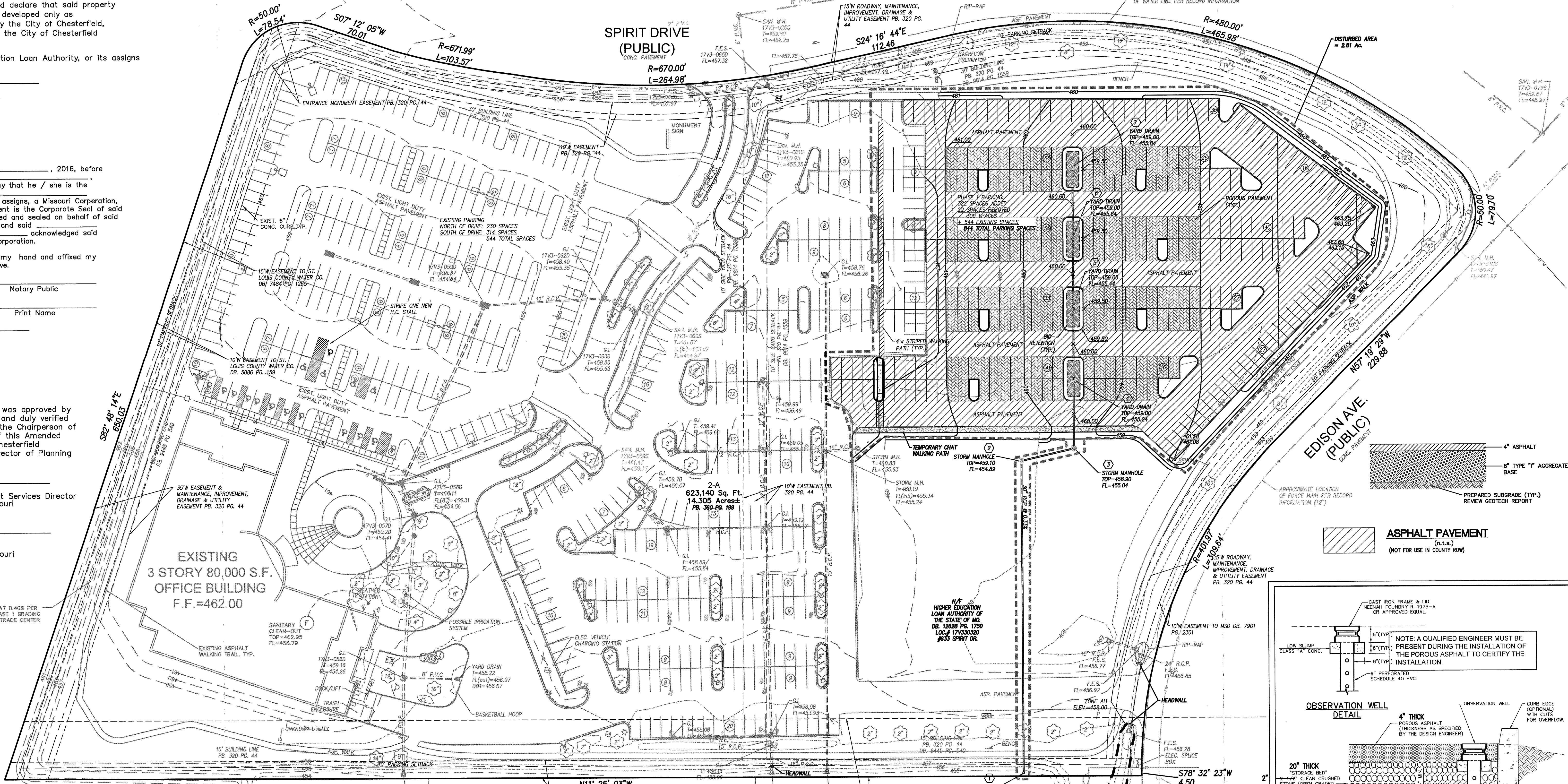
IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Notarial Seal on the day and year last written above.

Notary Public  
Print Name

My commission expires: \_\_\_\_\_

This Amended Site Development Section Plan was approved by the City of Chesterfield Planning Commission and duly verified on the \_\_\_\_\_ day of \_\_\_\_\_, 2016, by the Chairperson of said Commission, authorizing the recording of this Amended Site Development Section Plan pursuant to Chesterfield Ordinance No. 200, as attested to by the Director of Planning and the City Clerk.

Amilee Nassif, AICP  
Planning and Development Services Director  
City of Chesterfield, Missouri  
Vickie Hass  
City Clerk  
City of Chesterfield, Missouri



### SITE COVERAGE

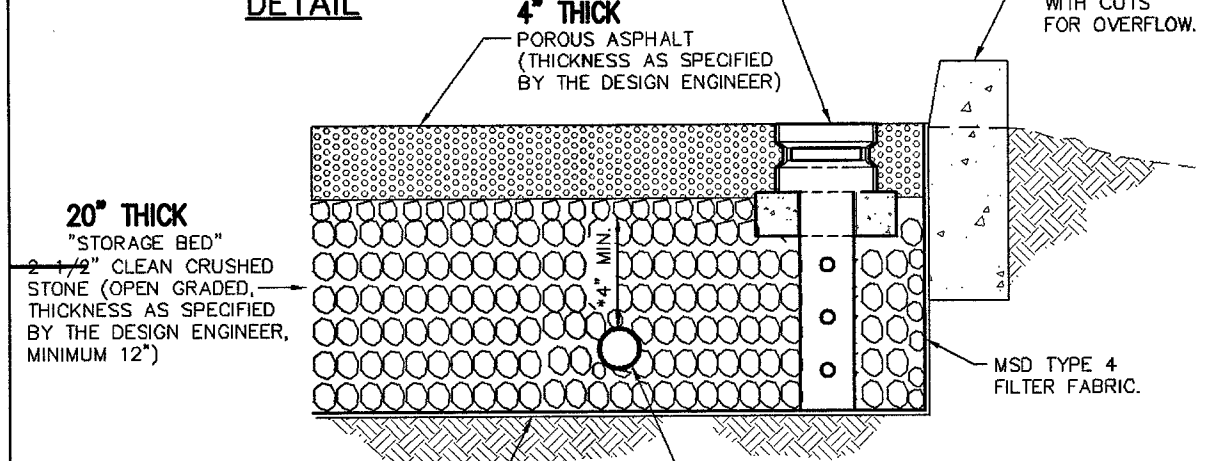
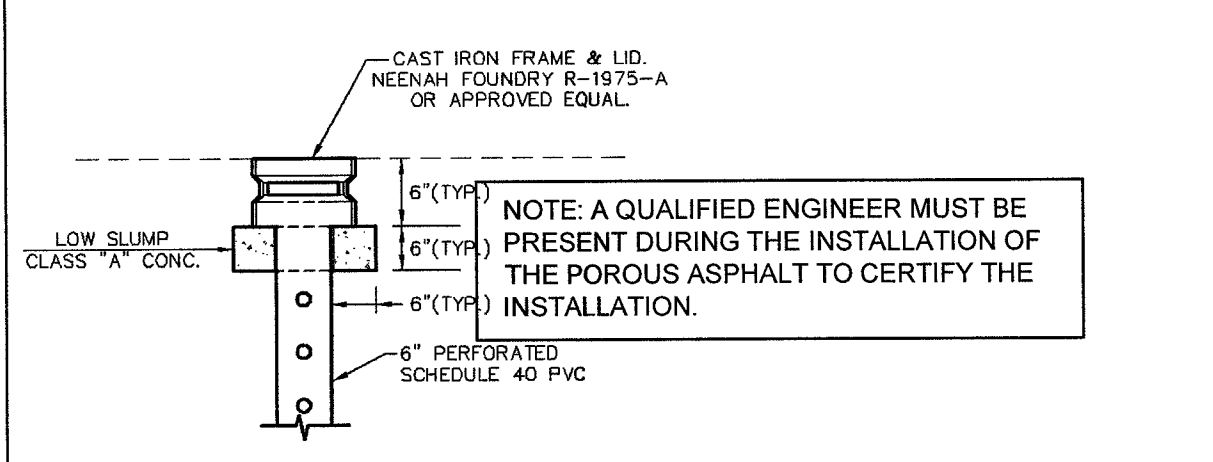
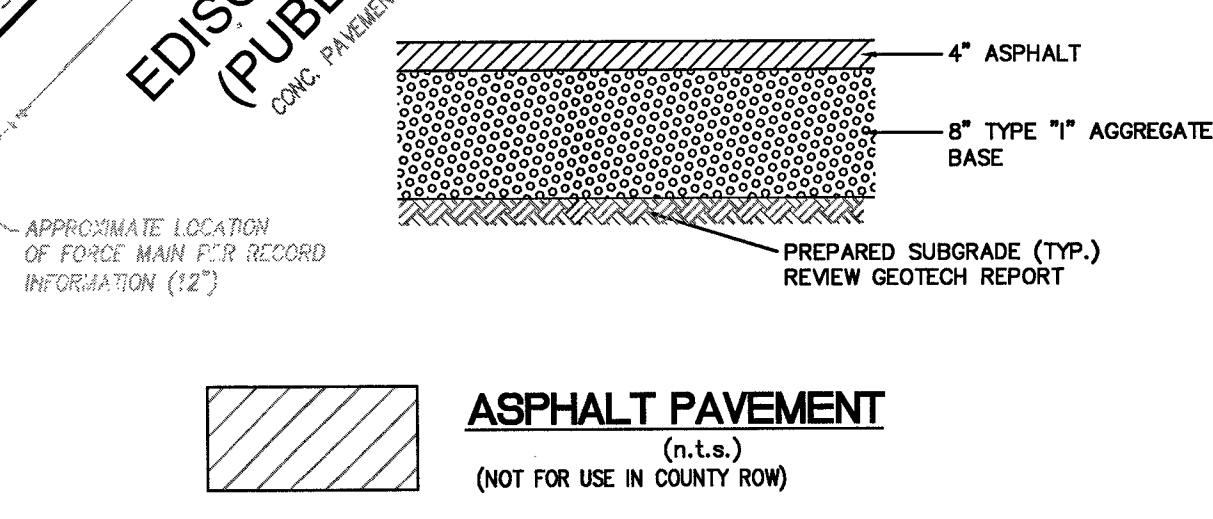
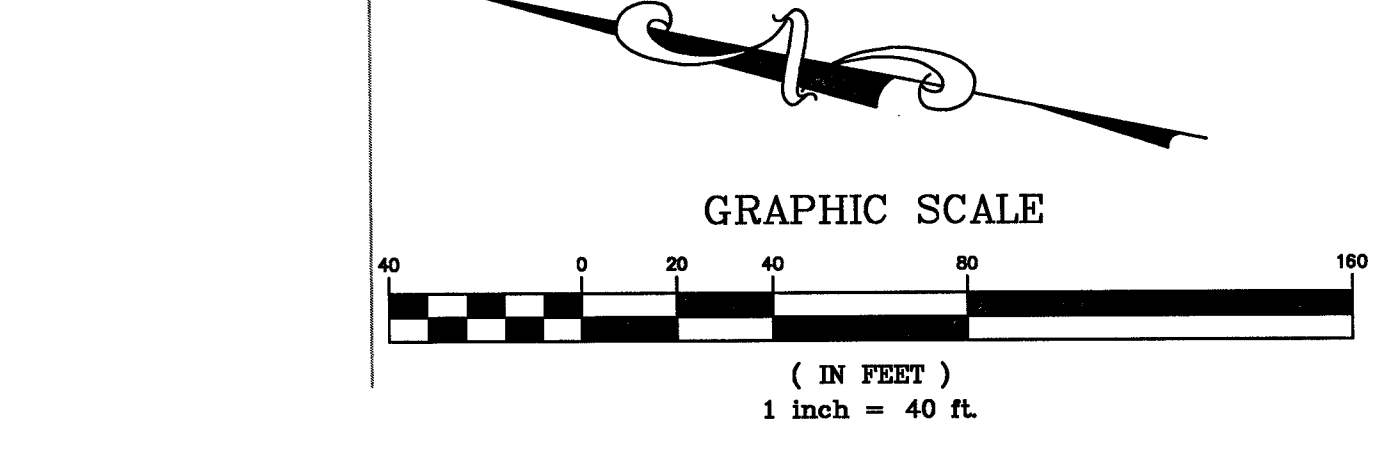
Total Site Area	= 623,140 s.f.
Total Site Coverage	= 28,520 s.f. (4.74%)
Existing Bldg.	= 145,441 s.f. (23.34%)
Existing Pmt.	= 90,973 s.f. (14.59%)
Prop. Pmt.	= 148,806 s.f. (23.91%)
Total Coverage	= 285,834 s.f. (45.86%)
Open Space Area	= 357,306 s.f. (57.34%)

### GENERAL NOTES:

1) Subject property is Zoned M3 PLANNED INDUSTRIAL DISTRICT. Subcode Requirements are established by the conditions of the planned district ordinance.  
2) Subject property lies within Flood Zone Shaded X (areas of 0.2% chance annual flood, areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from the 1% annual chance flood), and Flood Zone AH (flood depths of 1 to 3 feet, usually areas of ponding, elevation=458.00) according to the National Flood Insurance Rate Map Number 29168C014H with an effective date of 02/04/2015.

OWNER:  
MISSOURI HIGHER EDUCATION LOAN AUTHORITY  
633 SPIRIT DRIVE  
CHESTERFIELD, MISSOURI 63005

PREPARED FOR:  
ACI BOLAND ARCHITECTS  
17107 CHESTERFIELD AIRPORT RD.  
SUITE 100  
CHESTERFIELD, MO 63005  
PHONE: (314) 991-9993



METROPOLITAN ST. LOUIS SEWER DISTRICT DETAIL LIBRARY		CATAGORY: PAVEMENT TITLE: POROUS ASPHALT PAVEMENT DRAWN BY: JTP	
DESCRIPTION POROUS ASPHALT PAVEMENT (TYPICAL SECTION)	DATE 02/17/2012	DATE 02/17/2012	DATE 02/17/2012

PREPARED BY: STOCK & ASSOCIATES Consulting Engineers, Inc.  
257 Chesterfield Business Parkway  
Chesterfield, MO 63005  
TEL: (314) 991-9993 FAX: (314) 991-9994  
E-MAIL: general@stockandassociates.com  
WWW: www.stockandassociates.com

THIRD AMENDED SITE DEVELOPMENT SECTION PLAN FOR:  
**MOHELA PHASE 1 EXPANSION**  
633 SPIRIT DRIVE  
CHESTERFIELD, MISSOURI

STATE OF MISSOURI  
GEORGE MICHAEL STOCK  
NUMBER PE-2116  
EXPIRES 12/30/2016  
11/29/2016  
12/31/2016  
12/31/2016

REVISIONS:  
1 11/29/2016 - CITY COMMENTS  
2 12/13/2016 - CITY COMMENTS  
3 12/30/2016 - CITY COMMENTS

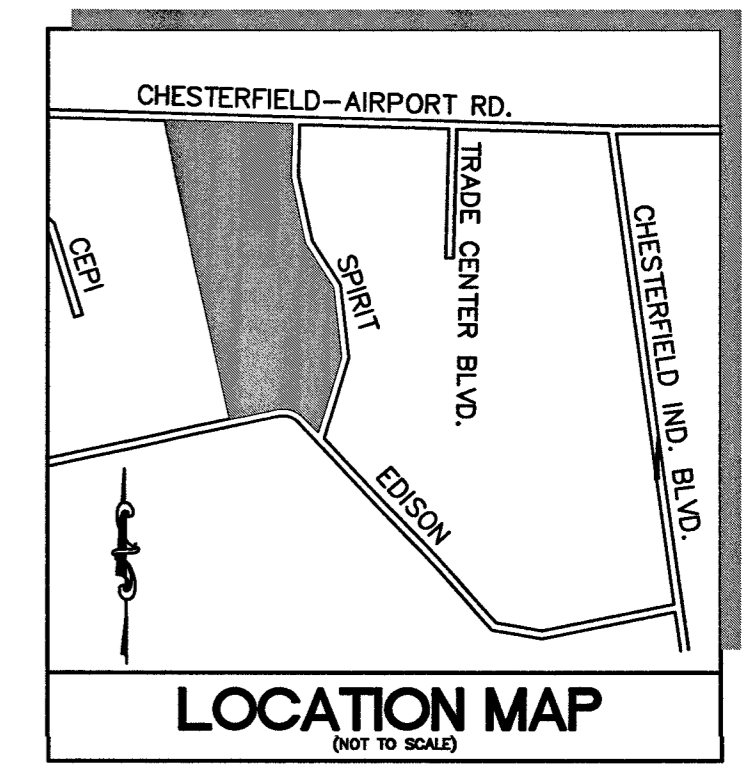
RECEIVED  
DEC 30 2016  
City of Chesterfield  
Department of Public Services

DRAWN BY: JTP	CHECKED BY: G.M.S.
DATE: 03/01/16	JOB NO: 216-0598
M.S.D. # 2	BASE WOP #
S.L.C. HWT #	HWT SUP. #
M.D.A.R. #	
SHEET TITLE: PRELIMINARY SITE PLAN	
SHEET NO: C1	



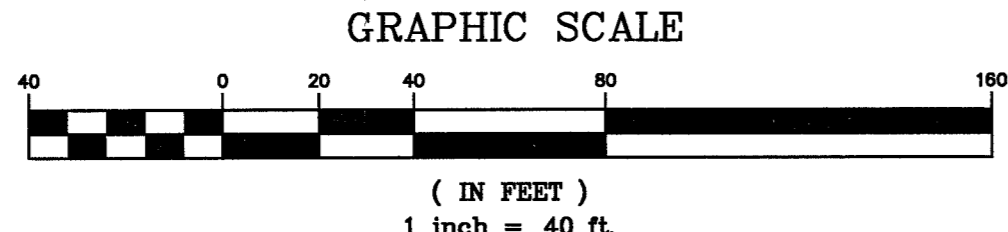
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CITY OF CHESTERFIELD, ST. LOUIS COUNTY, MISSOURI



**LEGEND**

⊕	BENCH MARK	⊕	FIRE HYDRANT
○	FOUND IRON ROD	⊕	FIRE DEPARTMENT CONNECTION
○	FOUND IRON PIPE	⊕	WATER MANHOLE
○	RIGHT OF WAY MARKER	⊕	WATER METER
○	UTILITY POLE	⊕	WATER VALVE
○	SUPPORT POLE	⊕	POST INDICATOR VALVE
○	UTILITY POLE WITH LIGHT	⊕	CLEAN OUT
○	LIGHT STANDARD	⊕	STORM MANHOLE
○	ELECTRIC METER	⊕	GRATED MANHOLE
○	ELECTRIC MANHOLE	⊕	STORMWATER INLET
⊕	ELECTRIC PEDESTAL	⊕	GRATED STORMWATER INLET
⊕	ELECTRIC SPACE BOX	⊕	SANITARY MANHOLE
⊕	GAS DRIP	⊕	TREE
⊕	GAS METER	⊕	BUSH
⊕	GAS VALVE	⊕	TRAFFIC SIGNAL
⊕	TELEPHONE MANHOLE	⊕	PARKING METER
⊕	TELEPHONE PEDESTAL	⊕	STREET SIGN
⊕	TELEPHONE SPACE BOX	⊕	SPRINKLER
⊕	CABLE TV PEDESTAL	⊕	MAIL BOX



**ABBREVIATIONS**

C.O.	CLEANOUT
DB.	DEED BOOK
E.	ELECTRIC
FL.	FLOWLINE
FT.	FEET
FO.	FOUND
G.	GAS
M.H.	MANHOLE
N/F	NOW OR FORMERLY
PL.	PLAT BOOK
PC.	PAGE
P.V.C.	POLYVINYL CHLORIDE PIPE
R.B.	RADIAL BEARING
R.C.P.	REINFORCED CONCRETE PIPE
SO.	SQUARE
T.	TELEPHONE CABLE
V.C.P.	VETROFIED CLAY PIPE
W.	WATER
W.	RIGHT-OF-WAY WIDTH

**ST. LOUIS COUNTY BENCHMARK**  
BENCHMARK # 11-59 ELEV. = 461.50 NAD2009  
1" ON BACK OF ROLLED COPIES 107' SOUTH OF CENTERLINE OF CHESTERFIELD AIRPORT RD. AND 13' WEST OF CENTERLINE OF GOODARD AVE.

**PERTINENT DATA**

OWNER = HIGHER EDUCATION LOAN AUTHORITY OF THE STATE OF MISSOURI (BK.12628,PG.1750)  
ZONING = M3 - PLANNED INDUSTRIAL DISTRICT  
ORDINANCE = ORDINANCE 656 AMENDED ORD. 13,935  
SITE ACREAGE = 14.305±  
LOCATOR NO. = 17V330320  
FIRE DISTRICT = CHESTERFIELD FIRE PROTECTION DISTRICT  
SCHOOL DISTRICT = ROCKWOOD R6  
SEWER DISTRICT = M.S.D.  
WATER SHED = BONHOMME CREEK  
WATER SERVICE = MISSOURI AMERICAN WATER COMPANY  
GAS SERVICE = KACLEDE GAS COMPANY  
ELECTRIC SERVICE = AMEREN

FIXTURES MOUNTED AT 20' INCLUDING BASE  
LIGHT LEVEL CALCULATED ON THE GROUND

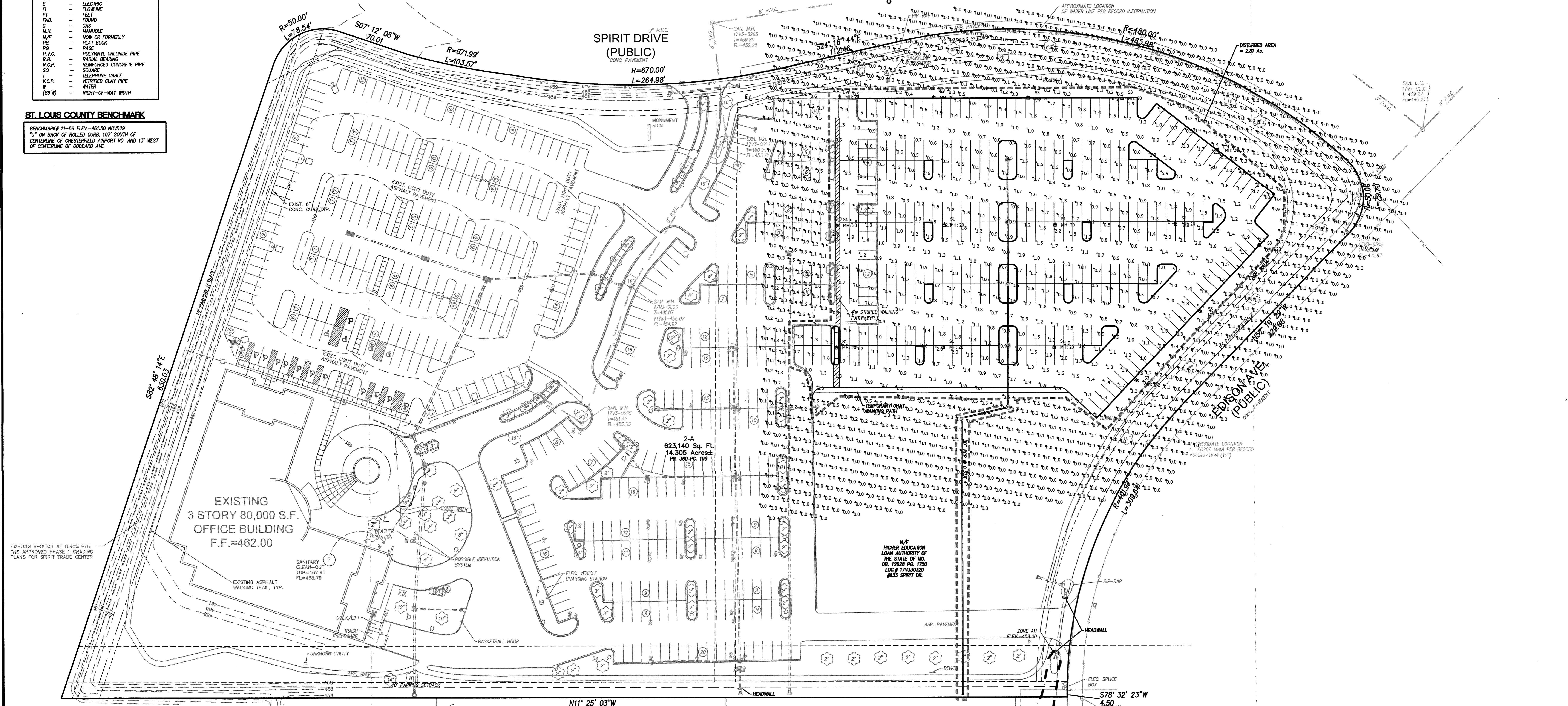
Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
SITE	Illuminance	Fc	1.07	2.3	0.5	2.14	4.60
SPILL LIGHT	Illuminance	Fc	0.11	2.1	0.0	N.A.	N.A.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Lum. Watts	Total Watts	LLF	Description
⊕	7	S1	SINGLE	113	791	1.000	GLEON-AF-02-LED-E1-5WQ
⊕	8	S3	SINGLE	59	472	1.000	GLEON-AF-01-LED-E1-SL4

DESIGN IS BASED ON CURRENT INFORMATION PROVIDED AT THE TIME OF REQUEST. ANY CHANGES IN MOUNTING HEIGHT OR LOCATION, LAMP WATTAGE, LAMP TYPE, AND EXISTING FIELD CONDITIONS, THAT EFFECT ANY OF THE PREVIOUSLY MENTIONED, WILL VOID CURRENT LAYOUT AND REQUIRE A CHANGE REQUEST AND RECALCULATION.



**EXISTING 3 STORY 80,000 S.F. OFFICE BUILDING**  
F.F. = 462.00

**2-A**  
623,140 Sq. Ft.  
14,305 Acres  
PL. 360 PG. 199

**HIGHER EDUCATION LOAN AUTHORITY OF THE STATE OF MO.**  
DB. 12628 PG. 1750  
LOC. # 17V330320  
#633 SPIRIT DR.

**GENERAL NOTES:**

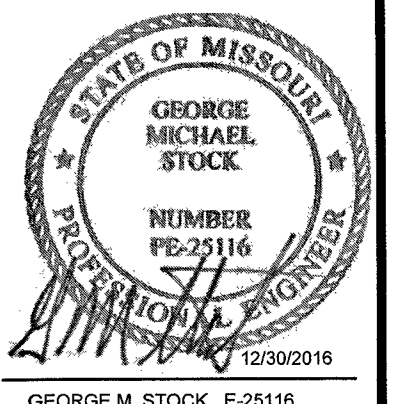
- 1) Subject property is Zoned P1 PLANNED INDUSTRIAL DISTRICT. Setback Requirements are established by the conditions of the planned district ordinance.
- 2) Subject property lies within Flood Zone Shaded X (areas of 0.2% chance annual flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from the 1% annual chance flood) according to the National Flood Insurance Rate Map Number 22169C0145K with an effective date of 02/04/2015.

**OWNER:**  
MISSOURI HIGHER EDUCATION LOAN AUTHORITY  
633 SPIRIT DRIVE  
CHESTERFIELD, MISSOURI 63005

**PREPARED FOR:**  
ACI BOLAND ARCHITECTS  
17107 CHESTERFIELD AIRPORT RD.  
SUITE 100  
CHESTERFIELD, MO 63005  
PHONE: (314) 991-9993

PREPARED BY:  
**STOCK & ASSOCIATES**  
Consulting Engineers, Inc.  
257 Chesterfield Business Parkway  
St. Louis, MO 63005 PG. (636)  
630-9100 FAX (636) 530-9100  
E-mail: general@stockinc.com  
Web: www.stockinc.com

THIRD AMENDED SITE DEVELOPMENT SECTION PLAN FOR:  
**MOHELA PHASE 1 EXPANSION**  
633 SPIRIT DRIVE  
CHESTERFIELD, MISSOURI



GEORGE M. STOCK, 62514  
CIVIL ENGINEER  
CERTIFICATE OF AUTHORITY  
NUMBER: 00089

**REVISIONS:**

NO.	DATE	DESCRIPTION
1	11/29/2016	CITY COMMENTS
2	12/13/2016	CITY COMMENTS
3	12/30/2016	CITY COMMENTS

**DRAWN BY:** Z.P.S.  
**CHECKED BY:** G.M.S.

**DATE:** 9/30/16  
**JOB NO.:** 216-5598

**M.S.D. P.#:** \_\_\_\_\_  
**BASE MAP #:** \_\_\_\_\_

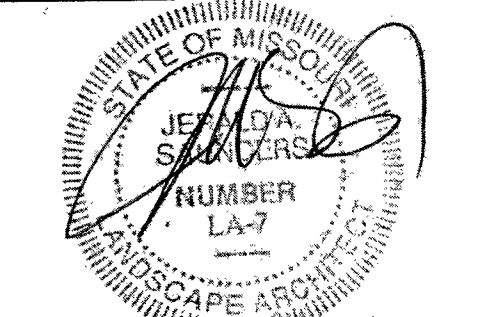
**S.L.C. HAT #:** \_\_\_\_\_  
**HAT SLP. #:** \_\_\_\_\_

**M.D.N.R. #:** \_\_\_\_\_

**SHEET TITLE:** LIGHTING PLAN

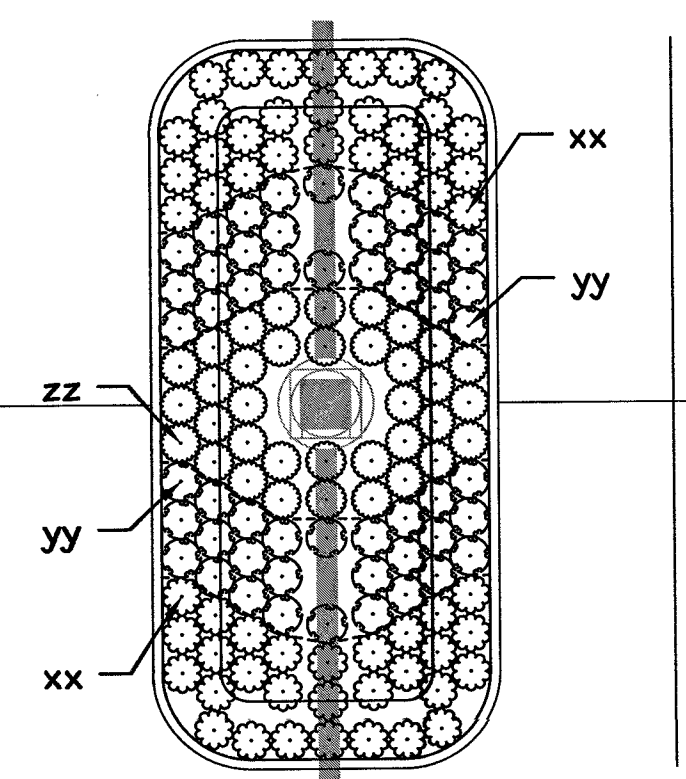
**SHEET NO.:** C2





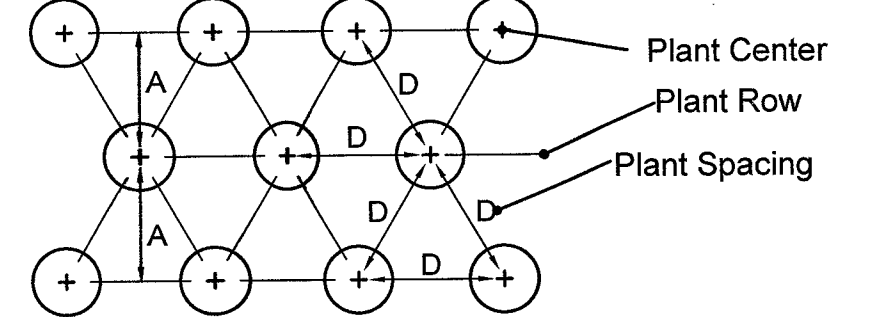
Jerald Saunders, Landscape Architect  
 MO License # L-2014  
 Consultants:

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	TYPE
<b>GRASSES, SEDGES, FORBES</b>						
xx	252	Carex vulpinoidea	Fox Sedge	DCP @ 24" o.c.		Type 3B
yy	208	Sporobolus heterolepis	Prairie Dropseed	DCP @ 24" o.c.		Type 3B
zz	144	Carex muskingumensis	Palm Sedge	DCP @ 24" o.c.		Type 3B



**Typical Bioretention**  
 SCALE 1"=10"

Note: See Landscape Plan for bioretention plant quantities.

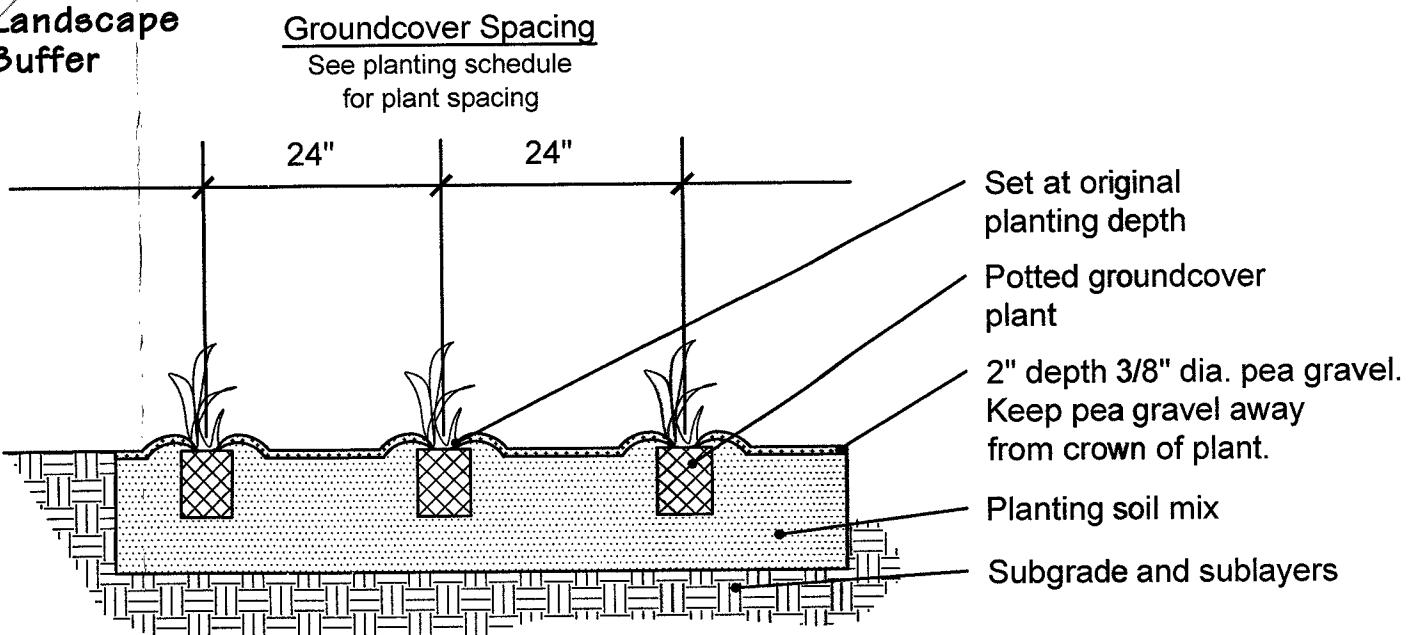


**BIORETENTION PLANT SPACING**

**PLANT SPACING TABLE**

SPACING 'D'	ROW 'A'	NUMBER OF PLANTS/SQ.FT.
30"	26"	.16
24"	20.6"	.25
18"	15.6"	.45
15"	13"	.64
12"	10.4"	1.00
10"	8.66"	1.44
6"	6.93"	2.25

Note: Plant quantities to be determined by multiplying area (sq.ft.) by number of plants/sq.ft. for required spacing. Table and diagram taken from "Landscape Guide for Stormwater Best Management Practice Design" by M&D with a revised date of May 2, 2012.



**BIORETENTION PLANT SPACING SECTION**

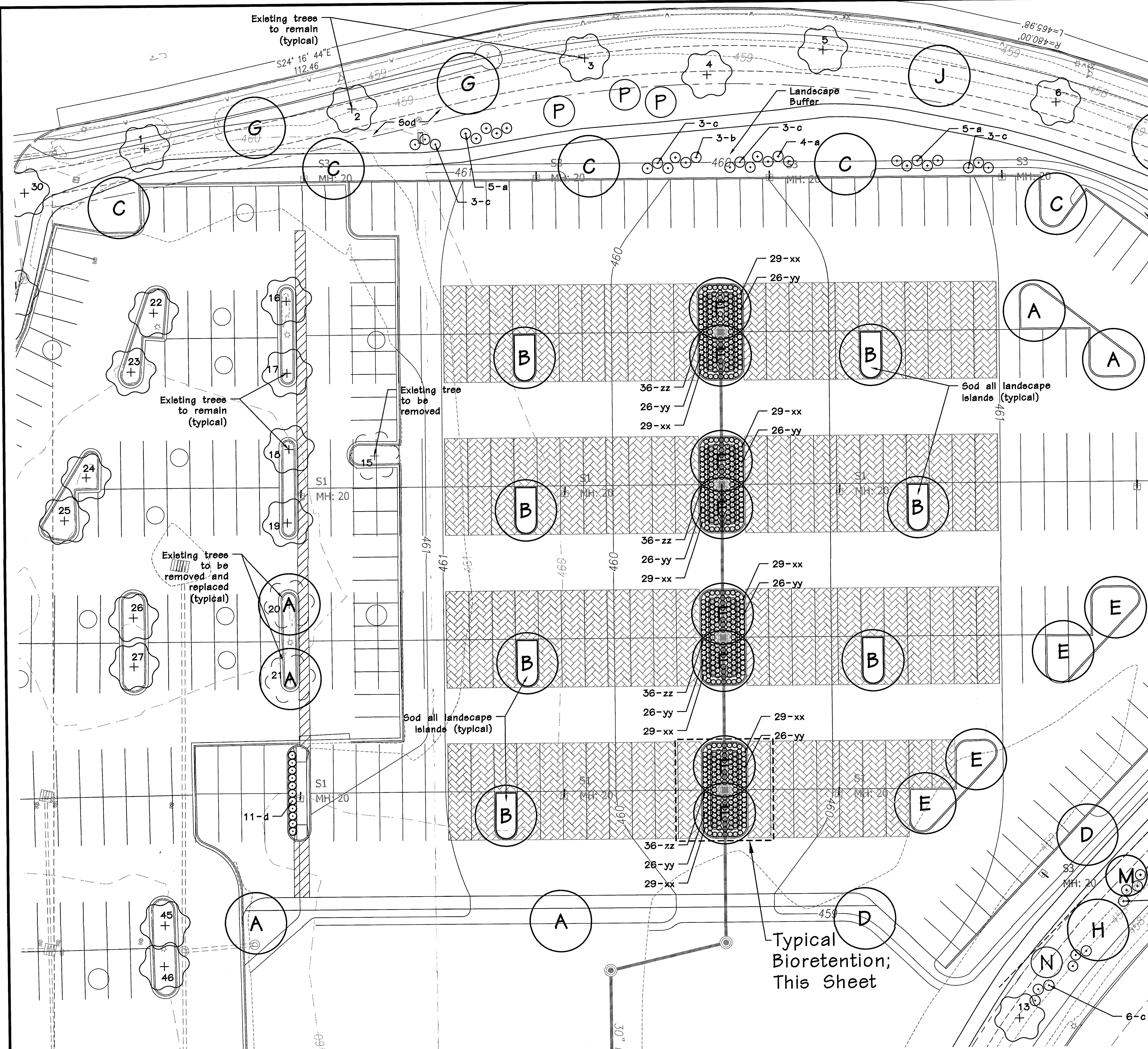
Notes:  
 1. Remove spent flowers prior to planting.  
 2. Loosen root mass at bottom of rootball.  
 3. Top of rootball stripped of 1/4" surface growing media and covered with 1/4" landscape bed mix plus surface mulch.

**TABLE 1: PLANTING, WATER, AND MULCH REQUIREMENTS**

WATER AVAILABILITY	REQUIRED PLANTING PERIOD	MINIMUM CONTAINER SIZE	WATER REQUIREMENT FIRST 3 WEEKS	WATER REQUIREMENT AFTER 3 WEEKS*	MAXIMUM MULCH DEPTH****
No ability to water after initial planting	Late Feb.-April only	2.25"x3.75" or larger (plug)	Water each plug immediately after planting		1.5" for plugs
Manual watering with standard sprinkler	Late Feb.-Early June Sept.-October	4.5"x5" (quart) or larger in summer and fall	1" (60 min) every 4 days in spring and fall	1" (60 min) every 7 days until plants established***	1.5" for plugs 2.5" for quarts
Automatic irrigation (set to water more frequently than normal during first two months after planting)	Late Feb.-Early Oct.	2.25"x3.75" (plug) or larger in spring and fall 4.5"x5" (quart) or larger in summer and fall	1" (60 min) every 4 days in spring and fall 1" (60 min) every 3 days in summer	1" (60 min) every 7 days until plants established***	1.5" for plugs 2.5" for quarts

\*This water amount includes natural rainfall. If you get a 1/2 inch of natural rain, then you will need to add a 1/2 inch of water to meet the 1 inch requirement.  
 \*\*Requires transport of water to the planting site in large containers and pouring enough water onto each plant (after planting) to moisten the entire planting pit.  
 \*\*\*Plants are established when roots have grown out of the container soil and into the native soil by 3-5 inches. This normally takes 3-4 months for most perennials and grasses and up to 6-7 months for trees and shrubs.  
 \*\*\*\*Shredded leaf compost is recommended for use with perennials and grasses. Mulch is recommended for tree and shrub plantings at a depth of 3 inches.

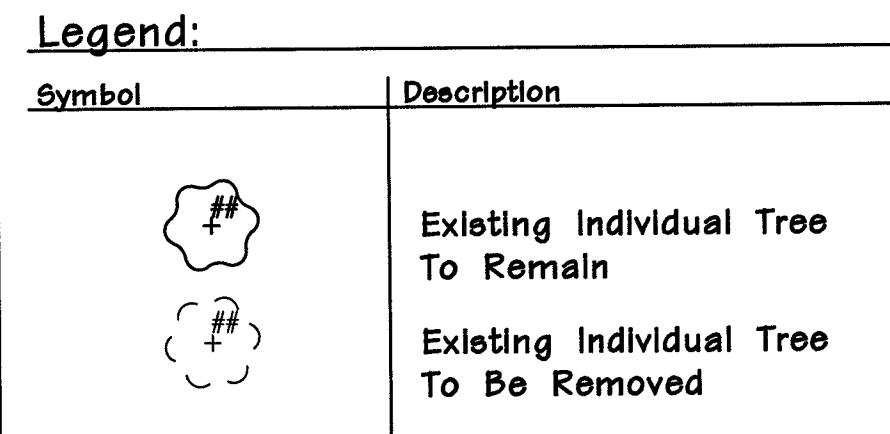
SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	TYPE	GROWTH RATE/SIZE
<b>TREES (PARKING LOT)</b>							
A	2	Platanus x acerifolia	London Planetree	2.5" cal	B&B	Deciduous	Fast / Large
B	7	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo (Male)	2.5" cal	B&B	Deciduous	Slow / Medium / Large
C	5	Quercus acutifolia	Sawtooth Oak	2.5" cal	B&B	Deciduous	Medium / Large
D	5	Quercus shumardii	Shumard Oak	2.5" cal	B&B	Deciduous	Medium-Fast / Large
E	6	Quercus bicolor	Swamp White Oak	2.5" cal	B&B	Deciduous	Medium / Large
F	8	Taxodium distichum	Bald Cypress	2.5" cal	B&B	Deciduous	Medium / Large
<b>TREES (STREET)</b>							
G	2	Acer x freemanii 'Armstrong'	Armstrong Maple	2.5" cal	B&B	Deciduous	Medium-Fast / Large
H	2	Acer rubrum 'Frankford Red Sunset'	Red Sunset Maple	2.5" cal	B&B	Deciduous	Fast / Large
J	2	Liriodendron tulipifera	Tuliptree	2.5" cal	B&B	Deciduous	Fast / Large
K	2	Gleditsia triacanthos f. inermis 'Skycole' Skyline	Skyline Honeylocust	2.5" cal	B&B	Deciduous	Fast / Large
<b>TREES AND SHRUBS (BUFFER)</b>							
M	3	Amelanchier arborea x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	2.5" cal	B&B	Deciduous	Slow-Medium / Medium
N	3	Platycladus orientalis	Oriental Arborvitae	6" h	B&B	Evergreen	Slow / Medium
P	6	Picea glauca	White Spruce	6" h	B&B	Evergreen	Medium / Medium
a	42	Ilex verticillata 'Winter Red' (female)	Winter Red Winterberry	24"		Deciduous	
b	7	Ilex verticillata 'Southern Gentleman' (male)	Southern Gentleman Winterberry	24"		Deciduous	
c	46	Itea virginica	Virginia Sweetspire	24"		Deciduous	
d	11	Buxus microphylla 'Green Pillow'	Green Pillow Boxwood	24"		Deciduous	



**Typical Bioretention; This Sheet**

**Existing Trees in project area:**

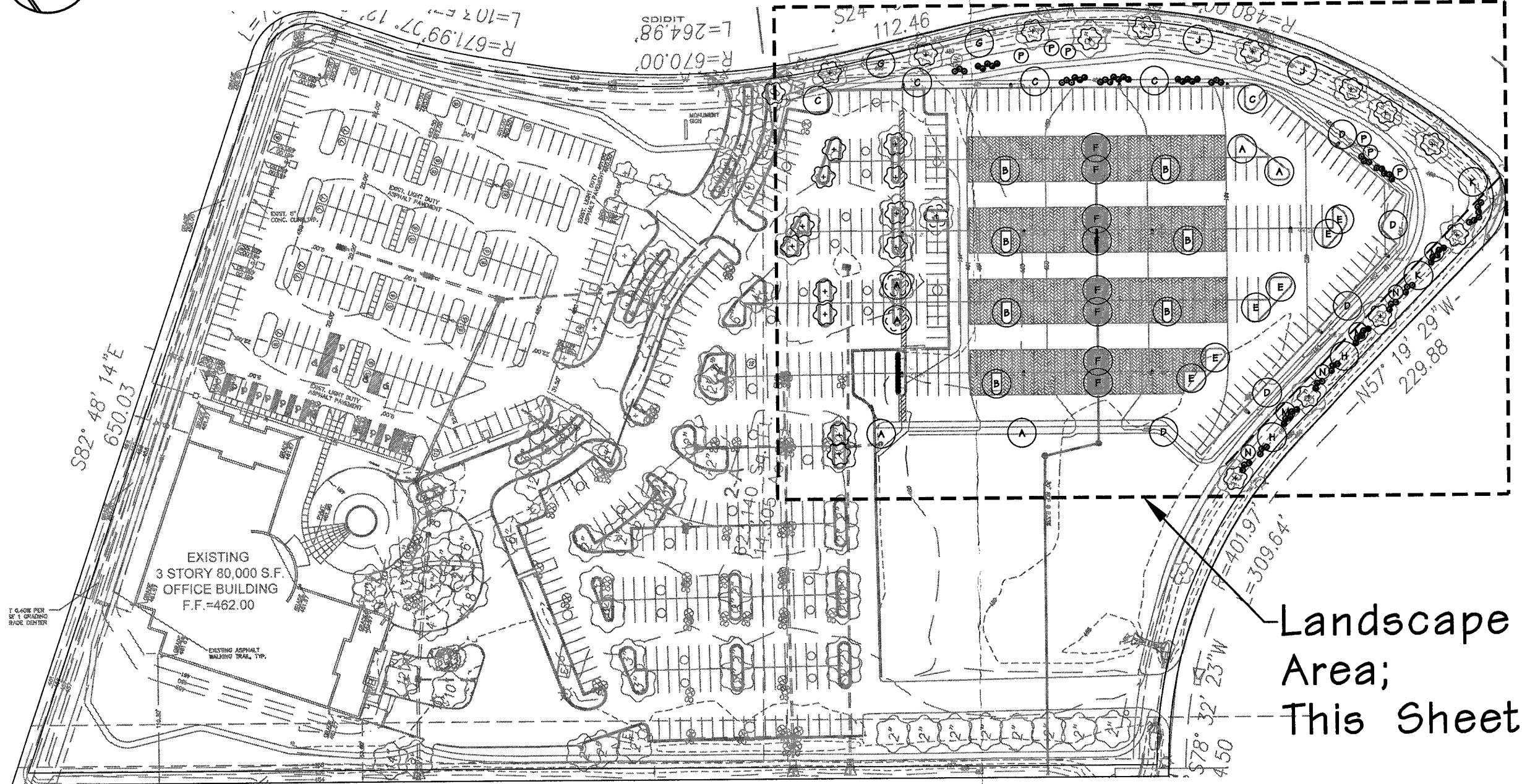
ID	Tree Name	DBH	Canopy Diam.	Condition Rating	Preserved
1	Planetree	12	30	3	Y
2	Planetree	12	30	3	Y
3	Planetree	12	30	3	Y
4	Tulip	8	15	3	Y
5	Planetree	12	30	3	Y
6	Planetree	12	30	3	Y
7	Planetree	8	30	3	Y
8	Tulip	12	20	3	Y
9	Planetree	10	30	3	Y
10	Planetree	10	30	3	Y
11	Planetree	8	30	3	Y
12	Planetree	10	25	3	Y
13	Planetree	10	25	3	Y
16	Maple	3	8	2	Y
17	Maple	3	8	2	Y
18	Maple	3	8	2	Y
19	Maple	4	8	2	Y
22	Maple	2	8	2	Y
23	Maple	2	8	2	Y
24	Maple	2	8	1	Y
25	Maple	2	8	1	Y
26	Maple	2	8	1	Y
27	Maple	2	8	2	Y
30	Ash	10	25	2	Y
45	Honeylocust	2	8	3	Y
46	Honeylocust	3	8	3	Y



Tree Rating: 1 = In Decline  
 2 = Poor Quality  
 3 = Average Quality  
 4 = Good Quality  
 5 = Excellent Quality

Tree Inventory Prepared by:  
 Brian Bage  
 Certified Arborist MW-5033A

**Landscape Plan**  
 SCALE 1"=20"



**Key Plan**  
 SCALE 1"=100"

**Mohela Phase I Expansion**  
 633 Spirit Drive, Chesterfield, Missouri

Revisions:

Date	Description	No.
11/29/16	City Comments	1
12/12/16	City Comments	2

Drawn: **KP**  
 Checked: **RS**

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 St. Louis, Missouri 63105  
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 www.loomisassociates.com

Sheet Title: **Landscape Plan**  
 Sheet No: **L-1**  
 Date: **9/27/16**  
 Job #: **613.057**