

September 30, 2022

The Planning and Zoning Commission City of Montgomery 101 Old Plantersville Road Montgomery, Texas 77316

Re: Variance Request

The Montgomery Grove City of Montgomery

#### Dear Commission:

The City received a variance request from the owners of the Montgomery Grove Food Truck Park, located at 22016 Eva Street. The Developer is requesting the following variance from the City's Code of Ordinances:

• Section 78-96(b): Any parking lots or drives, excluding single-family residential driveways, shall be paved with asphalt or concrete.

Enclosed you will find the request for variance as submitted by the owners of the property along with the additional parking lot plan provided.

The City has previously reviewed and acted on variances for the same ordinance:

- July 2021 Cornerstone Community Church Request to utilize existing gravel parking area after
  they performed regrading and dressing. We recommended disapproval of the variance as it did
  not place an undue hardship upon the development of the property. The City ultimately approved
  the request partly due to the low traffic volume on the site.
- October 2020 Montgomery Food Truck Park The same Developer submitted a similar Variance
  Request to the Commission and we offered no objection (Enclosed) to the request to use a
  permeable pavement system, similar to a TrueGrid system on areas outside of the access
  driveway in lieu of asphalt or concrete pavement. The City approved the variance. This
  development was ultimately not constructed.
- February 2017 Longview Greens Mini Golf Request to utilize gravel on new parking area for financial reasons for a temporary period of time. Detention for the site was provided in a jointly used pond. The City approved the variance.

We recommend the request be tabled until additional information is received including an escrow agreement is entered into and engineering plans provided showing the full scope of the new improvements and their impact that follow the current City Ordinances. Based on planned improvements stated by the developer (enclosed), the developer plans to install additional lighting which will require a lighting plan and construction of a stage and other structures in an area that is likely within the floodplain. Additionally, the information recently provided by the developer showing the proposed parking layout is contradictory regarding the location and number of ADA spaced.

Variance Request – The Montgomery Grove Honorable Mayor and City Council City of Montgomery Page 2 of 2 June 2, 2021

If approved, approval of the requested variance does not constitute plan approval and only allows the Developer to further refine the proposed civil site plans, which will require the full review and approval of the City.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,

Chris Roznovsky, PE Engineer for the City

Chris Romansy

#### CVR/zlgt

Z:\00574 (City of Montgomery)\\_900 General Consultation\Correspondence\Letters\2022.09.30 MEMO to PZ RE Montgomery Grove Food Truck Park Variance Request.docx

Enclosures: Variance Request – September 9, 2022

Site Survey – November 9, 2021 Parking Plan – September 22, 2022

**Previous Variance Request** 

Business Op Plan – The Montgomery Grove

Redevelopment Flow Chart from City Development Handbook

Cc (via email): Mr. Dave McCorquodale - City of Montgomery, Director of Planning & Development, and

Interim City Administrator

Ms. Nici Browe – City of Montgomery, City Secretary Mr. Alan Petrov – Johnson Petrov, LLP, City Attorney



September 9, 2022

Dave McCorquodale City of Montgomery 101 Old Plantersville Rd Montgomery, TX 77316

Re: Parking Lot Variance 22016 Eva St. Montgomery, TX 77356

Dear Mr. McCorquodale:

This letter is a formal request for a variance to allow for an existing asphalt milling parking lot at the above referenced property. The asphalt milling parking lot has been utilized at this commercial property going back several decades. The porous material also mitigates the potential negative impact on drainage and/or flood plain that a concrete or asphalt parking lot would. The parking lot has been discussed with the former mayor, city officials and city engineer with no issues being raised. Multiple other parking lots within the City of Montgomery contain asphalt millings so no new precedent is being requested.

Regards,

Joshua Cheatham

Owner

(281) 770-2748

Cc: Mike Anderson



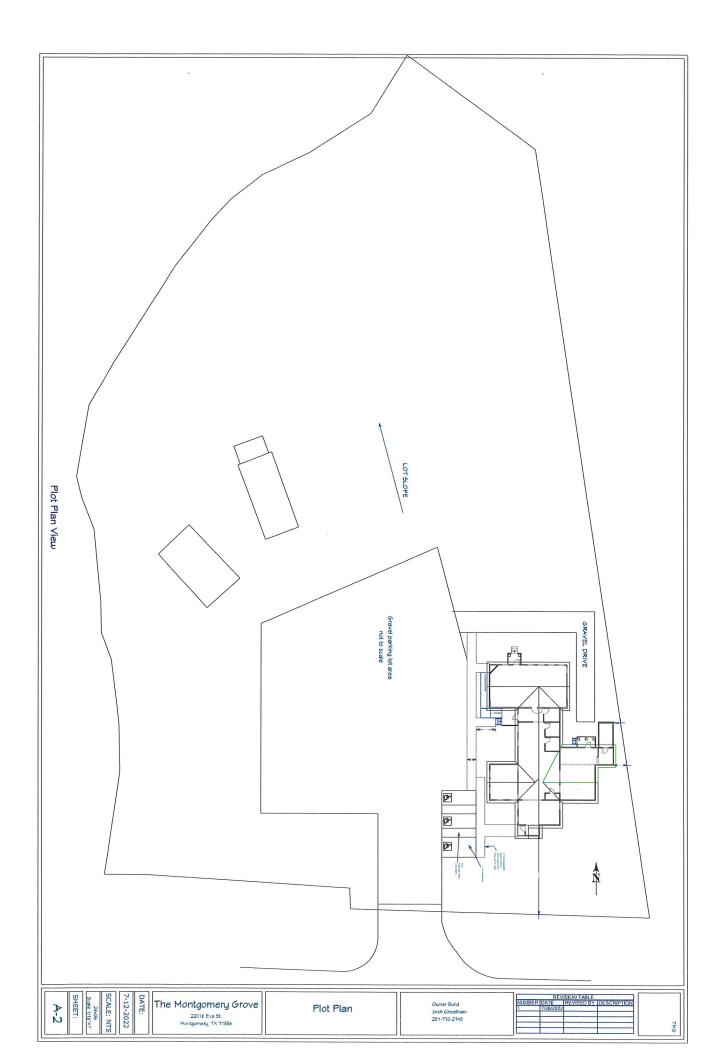
# Variance Request Application

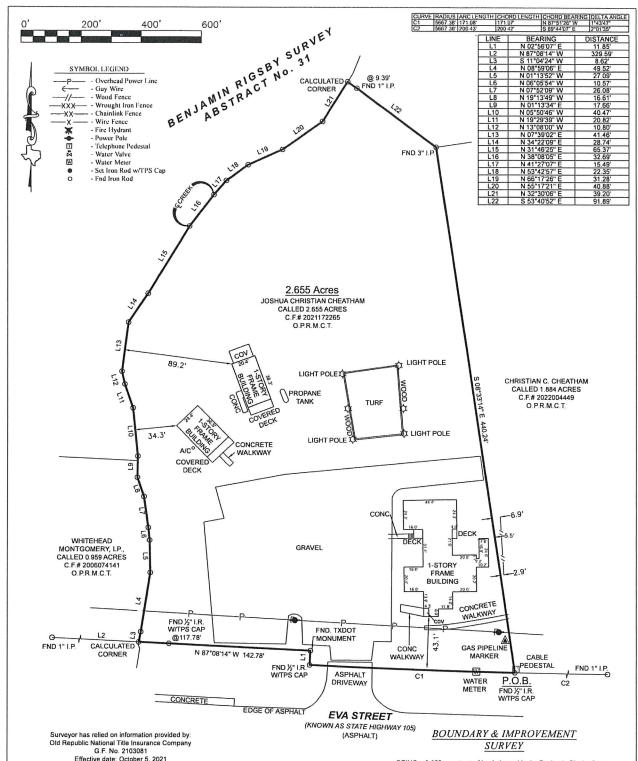
City of Montgomery 101 Old Plantersville Road Montgomery, Texas 77316 (936) 597-6434

# Upon completion return application to dmccorquodale@ci.montgomery.tx.us

Contact Information
Property Owner(s): Josh Cheatham
Address: 85 Lake Forest Cir Course, TX Zip Code: 77384
Email Address:
Applicants: Josh Cheatham & Mike Anderson
Address: 95 Lake Forest Cir Course, TX 77384
Email Address: josh @ new cor cre. com Phone: (281) 770 - 2748 (832) 418 - 1088 anderson in 3477@ gmail.com
Parcel Information
Property Identification Number (MCAD R#): 34576
Legal Description: A0031 RIGSBY BEN J, Tract BIA-1, Acres, 2.660
Street Address or Location: 22016 Eva St. Mortgomery, TX 17356
Acreage: 1.66 Present Zoning: Commercial Present Land Use: Commercial
Variance Request
Applicant is requesting a variance from the following:
City of Montgomery Ordinance No.: 2011-09 Section(s): 76-96
Ordinance wording as stated in Section ( $78-96$ ):
(b) Any parking lots or drives, excluding single-family residential driveways, shall be
paved with asphalt or concrete.
Detail the variance request by comparing what the ordinance states to what the applicant is requesting:
Requesting to use asphalt millings for the parking lot

Owner(s) of record for the above described parcel:	
Signature: 9th Ohn	Date: $9/8/22$
Signature:	Date:
Signature:	Date:
Note: Signatures are required for all owners of record for the property pro	posed for variance. Attach additional signatures on a separate sheet of paper.
*Addi	tional Information*
The following information must also be submitted:	
[ ] Cover letter on company letterhead stating what is	being asked. [ ]
A site plan.	
[ ] All applicable fees and payments.	
[ ] The application from must be signed by the owner the owner authorizing the applicant to submit the variance.	applicant. If the applicant is not the owner, written authorization from ance request shall be submitted.
Date Received	
Office Use	





The Subject Tract(s) as shown hereon may be subject to the following item(s) listed in Schedule B, of said Title Commitment:

Channel Easement to State of Texas per Vol. 997, Pg. 529, D.R.M.C.T. (Unable To Plot)

Josh Cheatham Purchaser Area 2.655 Acres Subdivision \_\_\_\_ Cabinet \_\_\_\_ County, Texas Montgomery



3032 N. FRAZIER STREET - CONROE, TX 77303 PH (936)756-7447 - FAX (936)756-7448 www.surveyingtexas.com FIRM REGISTRATION No. 100834-00

This Property Lies in Zone AE(floodway), AE, X(shaded), and X, and a portion does seem to lie within the 100 Year Flood Plain Per Graphic Scaling according to Community Panel No. 48339C0200G having an effective date of 8-18-2014.

G411-01 Scale: 1"=20" 7-16-2019 CPP/AF Date: Drawn By KH 06-08-22 Update Revised:

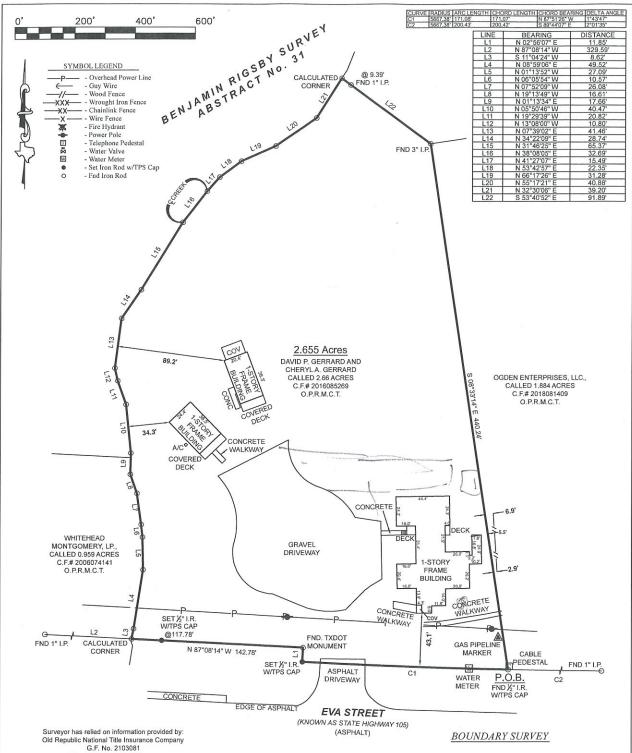
Bearings shown hereon are based on GPS observations and are referenced to the NAD83, Texas State Plane Coordinate System, South Central Zone (4204) Basis of Bearings

BEING a 2.655 acre tract of land situated in the Benjamin Rigsby Survey, Abstract Number 31, Montgomery County, Texas, being all of that same called 2.66 acre tract described in instrument to David P. Gerrard and Cheryl A. Gerrard, recorded under Clerk's File Number 2016085269 of the Official Public Records of Montgomery County, Texas (O.P.R.M.C.T.), said 2.655 acre tract being more particularly described by attached metes and bounds description.

I hereby certify that this survey was this day made under my supervision on the ground of the above described property, and that the above plat or drawing reflects the findings on the ground of the property at this time and that this survey meets the minimum standards of practice as approved by the Texas Board of Professional Land Surveying.



Carey A. Johnson Registered Professional Land Surveyor No. 6524



Effective date: October 5, 2021 The Subject Tract(s) as shown hereon may be subject to the following item(s) listed in Schedule B, of said Title Commitment:

Channel Easement to State of Texas per Vol. 997, Pg. 529, D.R.M.C.T. (Unable to plot)

, Sheet	County, Tex		Records
E.OOO PIGICS			
2.000710103			
655 Acres			
		, Α	31
Block	_, Section		
22016 Eva Street,	Montgomery,	Tx,	77356
Josh Cheatham			
	2016 Eva Street, Block Benjamin Rigsby	2016 Eva Street, Montgomery, Block, Section Benjamin Rigsby	2016 Eva Street, Montgomery, Tx, Block, Section



3032 N. FRAZIER STREET - CONROE, TX 77303 PH (936)756-7447 - FAX (936)756-7448 www.surveyingtexas.com FIRM REGISTRATION No. 100834-00

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Scale:\_\_\_\_ Date:\_\_\_ Drawn By:\_ 7-16-2019 CPP/AF Field Crew: KH
Revised: 11-09-21 Update

Basis of Bearings

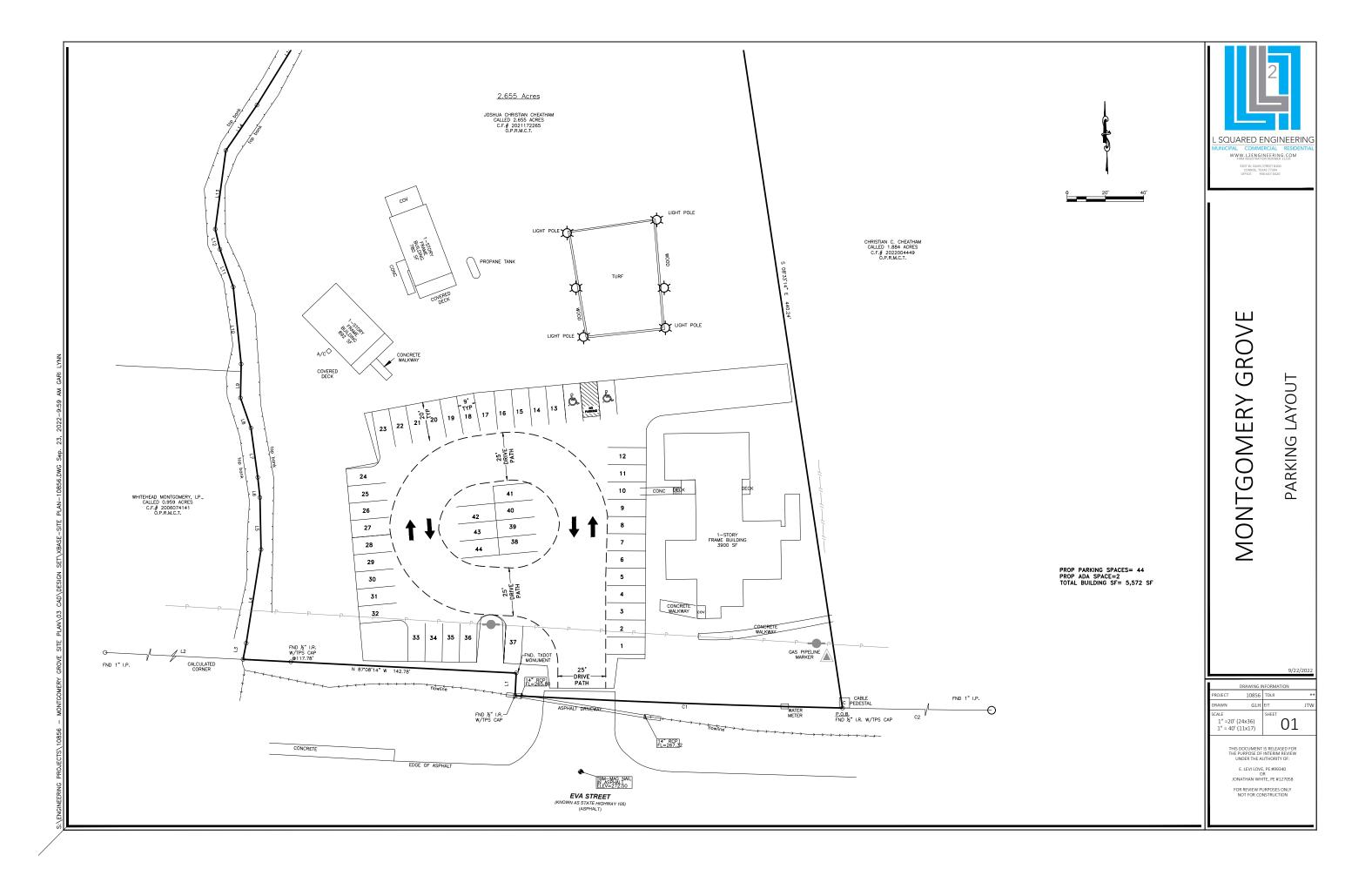
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Carey A. Johnson Registered Professional Land Surveyor No. 6524





Fax: 281.363.3459 www.jonescarter.com



October 30, 2020

The Planning and Zoning Commission City of Montgomery 101 Old Plantersville Road Montgomery, Texas 77316

Re: Variance Request

Montgomery Food Truck Park

City of Montgomery

#### Dear Commission:

Josh Cheatham ("the Developer") plans to proceed with developing a food truck park location at 21300 Eva Street. The Developer is requesting the following variance from the City's Code of Ordinances:

Section 78-96: The Code of Ordinances requires nonresidential driveways and parking lots be paved with asphalt or concrete. The Developer is requesting a variance to allow the use of a permeable pavement system, similar to TureGrid, in lieu of asphalt or concrete.

Enclosed you will find the request for variance as submitted by the engineer for the development including a site plan and information regarding the TrueGrid system.

We offer no objection to the concept of using permeable paving system on the parking areas and secondary drive aisles. However, we would recommend the main drive aisle off the driveway be constructed of asphalt or concrete for a total length of approximately 75' from the edge of pavement of SH-105 to allow for adequate deceleration space. The Developer will need to submit final details and specifications including a drainage analysis confirming detention is not required with his construction plans for review and approval by the City.

Approval of the requested variances does not constitute plan approval and only allows the Developer to further refine the proposed civil site plans, which will require the full review and approval of the City. Additionally, the proposed development will need to go through the Utility and Economic Feasibility Study and platting process.

If you have any questions or comments, please contact me.

Sincerely,

Engineer for the City



City of Montgomery Montgomery Food Truck Park Variance Page 2 October 30, 2020

**CVR** 

K:\W5841\W5841-0900-00 General Consultation\Correspondence\Letters\2020\MEMO to P&Z RE Food Truck Park Variance Request.doc

Enclosures: Variance Request

Cc (via email): Mr. Richard Tramm – City of Montgomery, City Administrator

Ms. Susan Hensley– City of Montgomery, City Secretary

Mr. Dave McCorquodale - City of Montgomery, Director of Planning & Development

Mr. Alan Petrov – Johnson Petrov, LLP, City Attorney



October 22, 2020

City of Montgomery C/o Dave McCorquodale 101 Old Plantersville Road Montgomery, TX 77316

RE: Variance request for Montgomery Food Truck Park regarding requirements for parking lot pavement type

According to Sections 78-96 of the City of Montgomery Code of Ordinances, any parking lots or drives shall be paved with asphalt or concrete. The proposed development will consist of multiple food truck vendors, and an outdoor amenity area for games/music. We propose to utilize a permeable pavement system such as TrueGrid in lieu of asphalt or concrete. We feel a variance request to utilize TrueGrid is warranted for the following reasons:

- The pavement system is certified to be permeable, which reduces stormwater flow and does have the ability to store stormwater within the void spaces of the aggregate. TrueGrid is also an environmentally friendly low impact development permeable pavement system that removes pollutants as it is filtered through its aggregate system prior to reaching the water table.
- Since the pavement system is permeable, detention would not be required allowing us to maximize the development space with parking to accommodate large events.
- TrueGrid has a lifespan of 25 years and has a manufacture warranty of 10 years. The pavement system is HS20 rates, which means it is capable of withstanding loads for firetrucks. It is also ADA compliant.

It is for the above-mentioned reasons that we feel the variance requests should be considered and approved. Please feel free to contact me at 936-647-0420 if you have any questions or concerns.

Thank you,

Jonathan White, PE L Squared Engineering

Senior Project Manager, Partner

936-647-0420

Jwhite@L2engineering.com

Attachments: Variance Request Application, Preliminary Site Plan, TrueGrid Heavy Load Detail, TrueGrid Information Packet, TrueGrid Specification



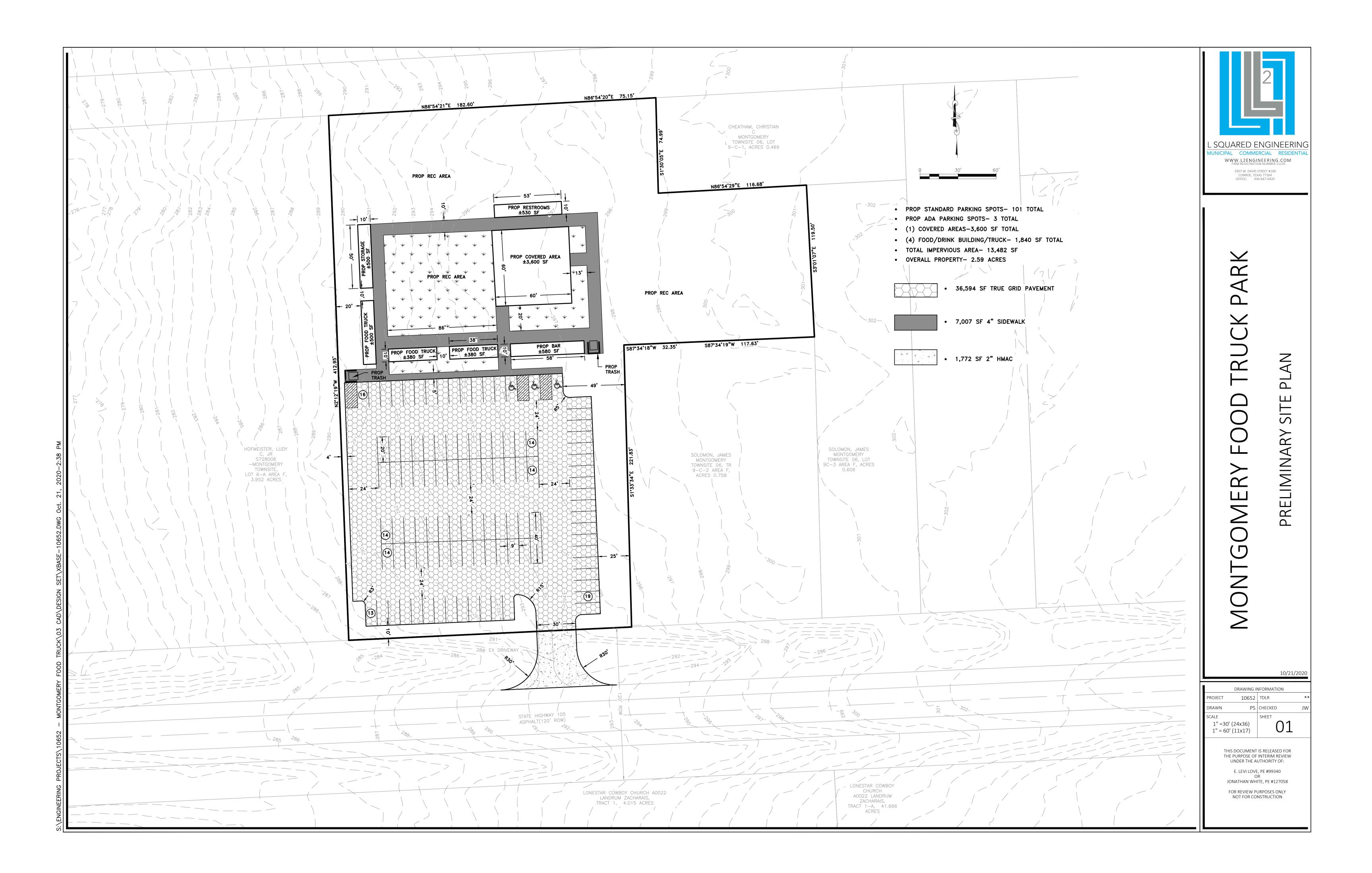
# Variance Request Application

City of Montgomery 101 Old Plantersville Road Montgomery, Texas 77316 (936) 597-6434

# Upon completion return application to shensley@ci.montgomery.tx.us

Contact Information			
Property Owner(s): Josh Cheatham			
Address: 21300 Eva Street, Suite 200 Montgomery, TX	Zip Code: 77356		
Email Address: jcheatham@lee-associates.com	Phone: 281-770-2748		
Applicants: L Squared Engineering			
Address: 3307 W Davis Street, Suite 100 Conroe, TX 77304			
Email Address: Jwhite@L2Engineering.com	Phone: 936-647-0420		
Parcel Information			
Property Identification Number (MCAD R#): 124059 and 124058  Legal Description: Lot 9-B and 9-C within Area F, Montgomery Tov	wnsite 06		
Street Address or Location: 21806 Eva Street Montgomery, TX 773:	56		
Acreage: 2.67 Present Zoning: Commercial	Present Land Use: Single Family Residence		
Variance Request			
Applicant is requesting a variance from the following:			
City of Montgomery Ordinance No.: 2011-09	Section(s):_78-96		
Ordinance wording as stated in Section (78-96):  Any parking lots or drives, excluding single-family residential drive	eways, shall be paved with asphalt or concrete.		
Detail the variance request by comparing what the ordinance states to			
Development is proposing to use TrueGrid permeable pavement, ins	stead of asphalt or concrete for the drive aisles and		
parking areas.			

Signatures	
Owner(s) of record for the above described parcel:	
Signature: Ju Elin	Date: 10/22/20
Signature:	Date:
Signature:	Date:
Note: Signatures are required for all owners of record for the property proposed for variance.	Attach additional signatures on a separate sheet of paper.
*Additional Inf	ormation*
The following information must also be submitted:	
[X] Cover letter on company letterhead stating what is being asked. [	[X]
A site plan.	
[ ] All applicable fees and payments.	
[ ] The application from must be signed by the owner/applicant. If the owner authorizing the applicant to submit the variance request sh	he applicant is not the owner, written authorization from all be submitted.
Date Received	



**NOTES:** 1. SUB-BASE DEPTH AND PREPARATION IS DEPENDENT ON SITE CONDITIONS PLUS LOADING REQUIREMENTS. 2. TRUEGRID PRO PLUS PRODUCTS DESIGNED FOR LOAD CAPACITIES OF 120,000 LBS PER SQ. FT. TRUEGRID PRODUCTS STRENGTHEN WITH FILL MATERIAL. 3. TRUEGRID PRO PLUS PRODUCTS ARE SUFFICIENTLY RATED FOR H-20 /HS-20 LOADING AND GREATER. 4. GEOGRID MESH OR GEOFABRIC MAY BE REQUIRED BETWEEN SUB-GRADE & SUB-BASE FOR CERTAIN SOILS AND SITE SPECIFIC REQUIREMENTS. 5. INCREASE SUB-BASE DEPTH FOR INCREASED STORM WATER DETENTION. 6. NO STAKING NECESSARY WITH TRUEGRID PRO PLUS WHEN SLOPE IS BELOW 10 DEGREES. ASSESS PROJECT, AS NEEDED. TRUEGRID BLOCK REFERENCE VIEW 7. FINAL ENGINEERED CROSS SECTION AGGREGATES AND DEPTH SHOULD ALLOW FOR EXPECTED INFILTRATION RATES, STORAGE CAPACITIES, OUTLET FLOW RATES, AND OTHER SITE SPECIFIC CONDITIONS AND LOAD REQUIREMENTS. PREASSEMBLED & DELIVERED IN 4' X 4' SHEET. RECONFIGURED AS NEEDED.NO EXTRA TOOLING OR ACCESSORIES REQUIRED 8. THIS CROSS SECTION IS FOR INFORMATION ONLY. 3/4" OR 1" CLEAN, WASHED ANGULAR STONE TRUEGRID FILL MATERIAL 1.8" DEPTH ANY AGGREGATE 3/4" DIA. OR 5/8" FOR DETENTION CONSIDERATIONS. I.E. #57 STONE OR CLASS II TYPE ROAD BASE, COMPACTED WHEN NO DETENTION TRUEGRID PERMEABLE DIA./CLEAN, WASHED PAVING SYSTEM -ADJOINING FINISH GRADE TRUEGRID OR HÉAVY DRAINAGE NEEDED. SURFACE FLUSH OR SLIGHTLY RECESSED 1.8" 40% VOID SPACE FOR DETENTION IN 8" MIN CLEAN, UNIFORM, ANGULAR BASE STONE **PREPARED** SUBGRADE GEOGRID MESH OR FOR PRICING OR ORDERING: CALL 1-855-355-GRID (4743). IN STOCK. FACTORY DIRECT. **GEOFABRIC OPTION LOCATION: SEE NOTE #4 APPLICATION: GRAVEL FILL HEAVY LOAD TRUEGRID PRO PLUS** 1-855-355-GRID (4743) **CLIENT / PROJECT** UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES HEAVY LOAD PARKING LOT, FIRE LANES, MADE IN EQUIPMENT YARD, SERVICE ROADS. **INFORMATION** PROPRIETARY DESIGN RIGHTS NOTICE: TRUEGRID GRAVEL 6/1/2015 FILL INSTALLATION INFORMATION ISAUTHORIZED WITHOUT CW **HEAVY LOAD** SPECIFIC AGREEMENT IN WRITING BY UPDATED TRUEGRID STANDARDS 6/2/2015 SIZE DRAWING NUMBER: TRUEGRIDPAVER.com CHECKED **APPROVED** DATE 6/2/2015 DO NOT SCALE DRAWING TG-GRV-HL 03 REVISION SCALE 1:1.5 SHEET



TRUEGRID was developed in the U.S.A, and TRUEGRID is manufactured and will always be manufactured in the U.S.A.

It is produced from 100% post-consumer recycled material.

We take plastic products with a short life cycle that end up in our land-fills, and we turn them into TRUEGRID...a product with a very long life cycle...which can then be recycled again.

## Introduction to the TRUEGRID System

In urban watersheds, almost all of the impervious surface area is represented by building rooftops and paved surfaces. In residential areas most of the paved area is represented by the roadway system and residential driveways. Parking lots and paved industrial storage areas represent an even larger portion of the impervious surface in commercial and industrial areas. Impervious pavements can produce two-thirds of the excess runoff in an urban catchment. Runoff from impervious pavements contributes a substantial loading of hydrocarbons and heavy metal pollutants, and contributes greatly to the increased temperature of surface runoff. In most urban jurisdictions, a paved roadway system with a traditional curb and gutter configuration provides a key component of the overall urban drainage system. Surface flow from adjoining tributary watersheds is conveyed directly into catch basin inlets and connected piping systems. In these traditional impervious paved systems, the runoff coefficient (runoff volume) is increased and the time of concentration is decreased resulting in increased peak rates of runoff.

**TRUEGRID** provides a highly permeable stabilized surfaces that can be used for the movement and parking of vehicles (automobiles, trucks, construction equipment, aircraft, etc.) and storage of materials and equipment. Compared to conventional pavement, the TRUEGRID system is designed to infiltrate storm water runoff instead of shedding it off the surface. TRUEGRID will reduce the amount of runoff by allowing water to pass through surfaces that would otherwise be impervious. The storm water passes through the load bearing surface and aggregate sub base that are selected based upon the intended application and required infiltration rate. Runoff is stored in the stone aggregate sub base course / storage layer, and allowed to infiltrate into the surrounding soil (functioning like an infiltration basin).

A **TRUEGRID** surface has very high initial surface infiltration rates and can immediately infiltrate and store rainfall and runoff from high intensity rainstorms. In many cases, direct runoff is completely eliminated. The surface infiltration rates for TRUEGRID will in most cases exceed 800 inches/hour. This is several orders of magnitude higher than all the rainfall intensities encountered in the Southwest and Midwest USA. These high infiltration rates are also 4 orders of magnitude higher than most soil infiltration rates. The TRUEGRID system relies on the ability of the void space within the surface material and the sub base to receive, store, and infiltrate water into the underlying sub soils. The aggregate sub base provides a temporary "reservoir", receiving the inflow from the surface pavement layer and providing temporary storage while the water is discharged to the sub grade through infiltration or released to surface discharge through a sub drain system.

**TRUEGRID Permeable Pavers** are designed to provide design professionals with an eco-friendly alternative to concrete and asphalt and other impervious surfaces.

Similar systems have been used in Europe for over 40 years and have been highly effective and accepted as a better alternative to impervious surfaces. TRUEGRID improved upon this concept and developed a stronger, more durable, USA made version that can handle any load and rigors concrete can handle....while being 100% permeable.

**TRUEGRID** has been honored as one of two winners, from hundreds of green technology products considered, to receive grants support for education from entities including the U.S. Department of the Interior and the U.S. Department of Energy. These grants were awarded to TRUEGRID to promote and educate others on the benefits of TRUEGRID as an eco-friendly alternative to concrete and asphalt. TRUEGRID was chosen due to its low impact development properties, its stormwater maintenance /high permeability qualities, high load capacities, long life expectancy-no maintenance performance and 100% post-consumer recycled material composition.

#### The value of the TRUEGRID systems includes:

**Runoff volume reduction/elimination** is achieved when TRUEGRID is placed over *in situ* soils and a defined volume of the water passing through the pavement is infiltrated into the soil subgrade below.

**Peak runoff rate reduction** is achieved when the volume of water passing through the TRUEGRID surface is "detained" for a defined period of time within the pavement cross-section and the open graded aggregate sub base beneath the pavement. The effective infiltration rate for the watershed is increased by trapping the water in the permeable surfaces and effectively increasing the time of concentration in the catchment area.

Pollutant removal. Specific field data on the reductions of pollutant concentrations by various permeable pavements are limited. However, reductions in the concentrations of total suspended solids and associated constituents, such as metals, oils, and greases appear to be relatively high. The fact that all permeable pavements significantly reduce the average annual runoff volume makes them very effective in reducing pollutant loads reaching the receiving waters. Infiltration of storm water runoff through the pavement surface will provide a degree of suspended solids removal followed by additional removal of colloidal solids and soluble pollutants in the aggregate sub base and sub soils. Sorption of metals to colloidal solids and within the pavement void matrix is another removal function. Soluble organic pollutants adsorbed within the pavement void matrix and the open graded aggregate sub base will be exposed to biodegradation over time. Adsorption and ion exchange occur as storm water travels through the unsaturated (vadose) zone below the aggregate base and reduce the particulate and dissolved pollutant loading to the groundwater (saturated zone). Permeable pavement can be used to provide ground water recharge. Some data suggest that asmuch as 70% to 80% of annual rainfall will go toward ground water recharge (Gburek and Urban, 1980). A third study by Brattebo and Booth (2003) indicates that many trademarked permeable paver systems effectively reduced concentrations of motor oil, copper, and zinc. Furthermore, the study found that almost all precipitation that fell on the permeable pavers infiltrated even after 6 years of daily use as a parking area.

**Reduces Heat Island Effect.** Heat Island Effect occurs in areas such as a city and industrial sites that have consistently higher temperatures than surrounding areas because of greater retention of heat. This retention of heat is due to buildings, concrete, and asphalt.

Using TRUEGRID in these "hot spot" areas for pathways, parking lots, driveways, roofs...etc., reduces the absorbability of solar rays and thus helps steady and cool the natural environment.

**High load bearing capacity.** TRUEGRID is designed with the highest load capacities of any grid system and can withstand significant structural loads. TRUEGRID provides a stable and continuous load-bearing surface throughout parking areas.

TRUEGRID will add to LEED Credits in the following categories.

- Water Efficiency
- Innovation & Design
- Sustainable Sites
- Indoor Environmental Quality
- Materials & Resources
- Energy & Atmosphere

#### Sub-base considerations for storm water detention

Crushed aggregate meeting ASTM No. 57 is commonly used for open-graded sub bases along with ASTM No. 2 to No. 4. These materials are widely available and they are recommended for most TRUEGRID Permeable Paver applications. These materials will have a nominal porosity (volume of voids/total volume of base) over 0.32 and a storage capacity in the void space (volume of voids/volume of aggregate) approaching 40%. A 40% void space provides 0.4 cubic feet of storage capacity for each cubic foot of aggregate (the volume of the base will need to be 2.5 times the volume of water to be stored).

<u>Chart A: Permeable Base</u>
AASHTO #57 permeable sub base material defined as:

Sieve	e Size	Percen	t Passing
mm	ln.	#57	Typical
37.5	1-1/2	100	100
25	1	95-100	97
19	3/4		75
12.5	1/2	26-60	45
9.5	3/8		25
4.75	#4	0-10	5
2.36	#8	0-5	2



#### PRODUCT GUIDE SPECIFICATION

#### **SECTION 32 14 33.13 – PERMEABLE PLASTIC PAVING**

#### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Base material, over sub base prepared by others.
- B. Porous pavement system with S-flexural joints for seasonal expansion and contraction.
- C. Parking, fire lane, and traffic delineation.
- D. Gravel fill.
- E. Grass fill.

# 1.2 RELATED REQUIREMENTS

- A. Section 31 20 00 Earth Moving: Subgrade Preparation.
- B. Section 33 41 00 Subdrainage: Subsurface Drainage.
- C. Section 32 10 00 Bases, Ballasts, and Paving.
- D. Section 32 80 00 Irrigation: Irrigation System.
- E. Section 32 30 00 Site Improvements.
- F. Section 32 92 00 Turf and Grasses.

#### 1.3 PREINSTALLATION MEETINGS

- A. Convene pre-installation meeting a minimum of two weeks prior to start of porous paving systems Specifier Notes:
- B. Verify project requirements, subbase and base conditions, manufacturer's installation instructions and coordinate with other related work.
- C. Require attendance of parties directly affecting work of this section, including the contractor, architect, engineer, and installer. Manufacturer's representative may attend by phone conference as needed.

#### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01.
- B. Product Data: Submit manufacturer's product data.
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - Installation methods.
- C. Shop drawings: Submit manufacturer's shop drawings including laying pattern and parking delineation locations.
- D. Samples: Submit two square samples of TRUEGRID Paver units.
- E. LEED and other Sustainable Design Submittals: Provide documentation of how the requirements for credit/certification will be met including, but not limited to: Recycled content, stormwater management, heat-island mitigation, water use reduction, site development, and regional materials.
- F. Manufacturer's Certificates: Certify products meet or specified requirements.
- G. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic fertilizing and maintenance.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer with a minimum of five years documented experience with products specified.
- B. Installer Qualifications: Installer experienced in performing work of this section that has specialized in installation of work similar to that required for this project. Installer must also be able to provide skilled workman with satisfactory record of performance on landscaping or paving projects of comparable size and quality.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect porous paver units from damage during delivery and store under tarp when the time from delivery to installation exceeds 30 days.
- C. Protect materials during handling and installation to prevent damage.

#### 1.7 **SEQUENCING**

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

#### 1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions recommended by manufacturer for desired results.

  Do not install products under conditions outside manufacturer's absolute limits.
- B. Do not begin installation of porous pavements until all hard surface paving adjacent to porous pavement areas, including concrete walks and asphalt paving, is completed.
- C. Install turf when ambient air temperature is at least 55 degrees F.
- D. In wet weather, do not build on wet, saturated or muddy subgrade.

- E. In cold weather, do not use frozen materials or materials coated with ice or frost, and do not build on frozen base or wet, saturated or muddy subgrade.
- F. Protect partially completed porous paving against damage from other construction traffic when work is in progress.
- G. Protect grass fill / sodded paving areas from traffic until grass root system has matured for at least 3 to 4 weeks. Use barricades to only permit access by emergency and fire equipment.

#### 1.9 WARRANTY

A. Provide the manufacturer's 10-year limited warranty.

#### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: TRUEGRID Pavers; 2500 Summer St., Suite 3225, Houston, TX 77007. Phone: 1-855-355-GRID. Email: info@truegridpaver.com Website: www.truegridpaver.com.
- B. Substitutions: Not permitted.

### 2.2 PRODUCTS

- A. Permeable Pavers, TRUEGRID PRO LITE for grass or gravel applications.
  - 1. AASHTO H20, HS20 Rated.
  - 2. Manufactured in the USA.
  - 3. High density polyethylene (HDPE): 100 percent post-consumer recycled materials
  - 4. Recycled and recyclable content: 100 percent.
  - 5. S-Flexural joints molded in for soil seasonal expansion and contraction.
  - 6. Color: black- carbon black additive for long-term UV stabilization.
  - 7. Paver size: 24 inches by 24 inches by 1 inch.
  - 8. Pre-assembled: 4-foot by 4-foot sections.
  - 9. Cylindrical cell design for column strength.

- 10. Cell size: 3.25 inch inside diameter.
- 11. Co-joined cells at 48 places for strength.
- 12. Wall thickness: 0.115 inches /.250-inch nominal.
- 13. A minimum of 2 co-joined common walls per cell for structural integrity.
- 14. Connections:
  - a. No clips or stakes necessary.
  - b. No additional parts or tools needed.
  - c. Integral male-female three-point locking system.
  - d. Wall thickness at tabs: 0.290 inch.
- 15. Molded in X-anchors to stabilize pavers: no stakes necessary.
- 16. Nominal Coverage per Paver: 4 square feet.
- 17. Weight per paver: 2.63 lbs.
- 18. Permeability of System: 100 percent.
- 19. Compressive Strength (filled): 864,000 psf; 6000 psi.
- 20. Material Safety: Groundwater neutral, 100 percent inert.
- 21. Chemical Resistant: Excellent: highly resistant to hydrocarbons, oils.
- B. Parking Delineators: TRUEGRID SuperSpots for grass or gravel applications.
  - 1. H20, HS20 rated.
  - 2. Domed and ribbed for super strength.
  - 3. Long-term UV stabilized.
  - 4. 0.40-inch profile above grid.
  - 5. 3.25-inch diameter.
  - 6. Available Colors: Yellow, white, blue, and red.
- C. Base Material: TRUEGRID PRO LITE was developed to accept multiple acceptable base materials. Locally sourced angular stone/clean for base material. Crushed granite, sandy gravel material, crushed concrete, limestone rock, and crushed lava are some of the acceptable materials. Common base materials include:
  - 1. AASHTO #57 Stone.
  - 2. Hard, clean, angular, and open-graded (uniform size) drain rock -- from 3/4" to 1-1/2".
  - 3. Base Course: Graded aggregate base course conforming to the following sieve analysis and requirements:

- a. Percent Passing: 100 Sieve Size: 3/4 1 inch
- b. Percent Passing: 85 Sieve Size: 3/8 inch
- c. Percent Passing: 60 Sieve Size: #4
- d. Percent Passing: 30 Sieve Size: #40
- e. Percent Passing: <3 Sieve Size: #200
- D. Gravel Fill: Obtain clean, washed angular rock to fill the 1-inch-tall TRUEGRID PRO LITE cells and spaces between. TRUEGRID PRO LITE can be filled to top of cells and exposed or overfilled to hide cells. Fill rock should be 5/8 inch to 3/4-inch diameter.
  - TRUEGRID PRO LITE's design does not require anchors on level ground or slopes up to 10 degrees. TRUEGRID PRO LITE's is designed for slopes above 10 degrees. However, as a precaution, anchors/staking may be considered per each sloped install above 10 degrees.
  - 2. Fill rock, level to the top of cells for ADA compliance.
- E. Base Course for Grass Filled TRUEGRID: Use base course from above Section 2.2 D-3 or comparable base material suitable for grass growth and traffic loads. Choose materials with neutral pH ranges and avoid sources from recycled/reclaimed concrete or asphalt.
- F. Grass Surface with Soil Fill: A sandy loam or loam soil should be used to fill the empty TRUEGRID PRO LITE grid. The selection of sandy loam or loam soil should be made based upon the soil requirements of the turf variety selected for the project. Other soils if compatible with type of seed or sod are acceptable.
  - Choose turf grasses with deep-growing vertical roots, high wear capacity, and for the local growing zone and climate.
  - 2. Grass Choose either sod or seed:
    - a. Seed The Preferred Method: Hydro-seeding/mulching is recommended with a wood or paper cellulose commercial mulch.
    - b. Sod shall be grown in sand or sandy loam soils only. Sod grown in soils of clay, silt, or high organic materials such as peat, will not be accepted.
  - 3. Geofabric or geogrid by others.
    - a. Choose for properties suitable for soil conditions, loading requirements, and permeability / impermeability requirements.

#### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Before beginning installation, verify site conditions are as indicated on the drawings. Notify the Architect if site conditions are not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.
- B. Ensure that adjacent hard-surfaced paving work is completed before installing porous pavement system.

#### 3.2 PREPARATION

## A. Subgrade:

- 1. Prepare subgrade as specified in Section 33 41 00. Verify subgrade in accordance with porous paving system manufacturer's instructions.
- 2. Excavate area allowing for unit thickness and the engineered base depth (where required).
- 3. Provide adequate drainage from excavated area if area has potential to collect water when working with in-place soils that have poor permeability.
- 4. Ensure in-place soil is relatively dry and free from standing water.
- 5. Uniformly grade base.
- 6. Level and clear base of large objects, such as rocks and pieces of wood.
- 7. Install irrigation, if applicable, in accordance with Section 32 80 00.
- 8. Install and secure geofabric or geogrid mesh as needed for soil stabilization and loading requirements.
- B. Install Base as specified in Section 32 10 00. Verify engineered base is installed in accordance with porous paving system manufacturer's instructions.
  - Coordinate base installation and preparation with subdrains specified in Section 33
     41 00.
  - 2. If required, place a geotextile separation layer between the natural ground and the engineered base.

- 3. Place base course material over prepared sub base to grades indicated on the drawings or from manufacturer's recommended depths per application type.
- 4. Place in lifts not to exceed 4 inches, compacting each lift separately to 95 percent Modified Proctor for non-open grade material. Open grade base material to be leveled and heavily compacted in 4-inch lifts to settle and lock in angular stone.
- 5. If required, install irrigation in accordance with Section 32 80 00.
- 6. Leave minimum 1 inches for Permeable Paver unit for final elevation.

#### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install TRUEGRID PRO LITE Permeable Paver units by placing cells face up. Sheets are preassembled in 4-foot by 4-foot sheets are connected with friction fit interlocking connectors. No tooling is required to connect or disconnect units. Sheets may be separated into 4 Individual 24 inch by 24-inch pieces and reconfigured as needed. Cut units around curves and organic shapes with an electrical handsaw. Place units to maintain a 1-inch clearance to any pre-installed object or surface structure. Top of cells shall be between 0.25 inch to 0.5 inch below the surface of adjacent hard-surface pavements. Utilize TRUEGRID's S-Flexural joints for undulations or grade reversals when required by design or in freeze-thaw climates for expansion and contraction.
- C. Parking, Traffic, and Fire Lane Delineators: Install TRUEGRID SuperSpots as indicated on the drawings or per manufacturer's recommendations.
  - Align SuperSpots locking tabs with grooves in TRUEGRID PRO LITE grid.
  - 2. Push SuperSpots TRUEGRID PRO LITE grid until it locks.
  - 3. All TRUEGRID delineators and markers can be removed and repositioned by disconnecting the locking tabs and pulling out of the grid.
- D. Gravel Surfacing: Install Gravel into TRUEGRID cavities by back dumping directly from dump truck or from buckets mounted to tractors. Hand shoveling fill gravel into the cells is also acceptable for smaller jobs.
  - 1. Direct vehicles to exit the site by driving forward. Avoid sharp turns over unfilled rings.
  - 2. Spread gravel fill using steer loaders, power brooms, blades, flat-bottomed shovels, and/or wide "asphalt rakes" to fill the cells.

- 3. Compact gravel when the cells are at capacity with a roller for larger areas or vibrating plate for smaller areas.
- 4. If fully covering TRUEGRID cells, typical coverage is 0.25 inch to 0.5 inch above cells.

#### E. Grass Surfacing:

- Install soil into TRUEGRID cavities by back dumping directly from dump truck or from buckets mounted to tractors. Hand shoveling soil mix into the cells is also acceptable for smaller jobs.
  - a. Fill level to the top of the TRUEGRID wall 1" for seeding application and thin-cut sod (1/2" soil thickness).
  - b. Fill soil mix to the top of the TRUEGRID wall minus the depth of soil on the thick-cut sod (greater than ½" soil thickness).
- 2. Hydroseeding/Hydro-Mulch Surfacing: Provide and place as specified in 32 92 00 Turf and Grasses. Homogeneously mix a combination of water, seed, and fertilizer in a truck mounted tank. Spray the seed mixture onto the site at specification rates. Coverage should be uniform and complete. Following germination of the seed, areas lacking germination larger than 8-inches by 8-inches must be reseeded immediately. Seeded areas must be fertilized and kept moist during development of the turf.
- F. Sod: Provide and place as specified in 32 92 00 Turf and Grasses.
  - 1. Preferred: Use ½" (soil thickness) rolled sod from a reputable grower. Species should be wear resistant, free from disease, and in excellent condition.
  - 2. Spray the sod rolls until saturated.
  - Use a heavy sod roller over entire sodded area to ensure root contact with the fill soil and TRUEGRID interface.

#### 3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Gravel fill: Avoid sharp turns or "jack knifes" in trailered vehicles when cells are empty.

  Damage due to buckling can occur. TRUEGRID can be driven on pre-fill by gravel trucks and construction equipment to speed the installation process.

- C. Grass Fill / Seeded: Protect seeded areas from any traffic, other than emergency vehicles, for a period of 4 to 6 weeks, or until the grass is mature to handle traffic. Avoid sharp turns or "jack knifes" in trailered vehicles when cells are empty. Damage due to buckling can occur.
- D. Grass Fill / Sodded: Sodded areas must be protected from any traffic, other than emergency vehicles, for a period of 3 to 4 weeks, or until root system has been established.
- E. Dumpster areas: A concrete pad is recommended for dumpster areas due to the drop and drag action. Permeable pavers are not recommended in these areas under and directly around the dumpster.
- F. Repair or replace damaged products before substantial completion.

#### 3.5 MAINTENANCE

- A. For gravel fill surfaces, maintain a 0.5 in (13 mm) surcharge of aggregate as a surface wear course. Surface should be inspected from time to time to identify signs of slight cell infill loss.
- B. Maintain grass in accordance with manufacturer's instructions and as specified in Section 32 92 00 Turf and Grasses.
- C. Monitor pavement to ensure traffic frequency and loading does not exceed the pavement design.
- D. When snow removal is required, keep a metal edged plow blade from coming in contact with the surface during plowing operations to avoid causing damage to the units. Use a plow blade a minimum of 1 inch above the surface and with a flexible rubber edge or with skids on the lower outside corners so the plow blade does not come in contact with the units.

#### **END OF SECTION**



The Montgomery Grove is a unique Family Friendly experience that caters to people of all ages! Come visit The Grove and enjoy being able to just hang out and kick back in our scenic naturally shaded outdoor areas, or cool off in our Country Home indoor seating area all while enjoying amazing food and drink from The Grove Kitchen or our Food Truck, Dizzy Pies.

The Business Operational Plan for The Montgomery Grove is to start with small projects we do on our own, and then have the restaurant reconstructed by our general contractor Scott Stefaniak. We began this by opening our Food Truck Dizzy Pies in March of 2022. Before we were able to operate the food truck four days a week, we first had to do some re construction and improvements to the property in order for the property to be functional for use. These reconstruction and improvement projects with dates will be listed below.

- Built 30 picnic tables for outdoor seating (January 2022)
- Cut down dead trees, and trimmed dead limbs due to possible falling hazards (January 2022)
- Cleaned out building 3 so that we could store leftover restaurant equipment ie..tables, chairs, kitchen supplies.....etc. from previous owners (January 2022)
- Began small demo projects on old Heritage House building, so we could visibly inspect the construction (January 2022)
- Reconstruction of existing parking lot (February 2022) Graded the existing crushed asphalt and laid new crushed asphalt on top of existing asphalt.
- Built a raised Cornhole Area (February 2022) out of Rail Road Ties, Sand, Stabilized Sand and topped with professional astro turf.
- Set poles in ground (February 2022) to be able to run string lights for eating, drinking and seating areas. We also set poles around Cornhole Area for Solar Lights, so that playing area would be usable in the evenings.
- Portable restrooms installed for public use (February 2022)
- Cleaned the existing Annie's building for storage and had bathroom operational for employees only (February 2022)

## **FUTURE PLANS:**

- Begin Reconstruction of Heritage House building (May 2022?)
- Get Certificate of Occupancy for Building 2 and Building 3 to use for storage and employee restroom (May 2022?)
- Add additional lighting in parking lot, seating areas, and dark areas so that we can make the whole property visible (June or July 2022?)

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- Build wood plank fence on east side of property (June 2022?)
- Build Wood 3-Beam Fence on the North Entry side of property (June 2022)
- Build small stage for local music acts, movie nights, and other events. (July or August 2022)
- Build small covered storage area on east side of Cornhole area for golf cart, mower, and outdoor games check out area. (June 2022)

## SOLID WASTE MANAGEMENT:

- We have large trash cans with closable lids stationed around the property for trash. The waste will be dumped into the dumpster nightly upon closing. Trash cans will be cleaned and stored each night out of sight (Behind Dizzy Pies Food Truck)
- We have one large dumpster on the property that is being picked up once a week on Tuesdays by Waste Management. This will increase to two days a week once the restaurant is open.
- The property will be walked by Staff throughout the day to make sure there is no trash around the property.

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# City of Montgomery, Texas Commercial Redevelopment/Previously Platted Development Process Flow Chart

