LEE'S SUMMIT
MISSOURI

DESIGN & CONSTRUCTION MANUAL
DESIGN CRITERIA MODIFICATION REQUEST

PROJECT NAME: Trilogy Apartments

ADDRESS: 800 NW Ward Rd

PERMIT NUMBER: PL2022436

OWNER'S NAME: Northpoint Development

TO: Deputy Director of Public Works / City Engineer

In accordance with the City of Lee's Summit's Design and Construction Manual (DCM), I wish to apply for a modification to one or more provisions of the code as I feel that the spirit and intent of the DCM is observed and the public health, welfare and safety are assured. The following articulates my request for your review and action. (NOTE: Cite specific code sections, justification and all appropriate supporting documents.)

Northpoint Development is requesting a variance from the asphalt parking lot paving requirements for vehicle parking and drives (Sec 8.620.F.a.(1)), and fire lane and truck access (Sec. 8.620.F.1.b.(1)). The proposed asphalt pavement section would replace the provided pavement sections in the UDO with a single design for both parking and fire lane areas. A proposed pavement section consisting of 6" asphalt, 6" aggregate base, and 14" rock-subgrade mix was designed by CFS Engineers. The attached Addendum to the geotechnical report includes design calculations of the proposed pavement section, as well as analysis the pavement sections provided in the city's UDO. This document demonstrates that the proposed pavement section will meet or exceed the performance of the pavement sections provided in the UDO, and will serve as a suitable alternative.

SUBMITTED BY:
NAME: Neil Haas ( ) OWNER (x) OWNER'S AGENT
ADDRESS: 3315 N Oak Trafficway PHONE #: 816-888-7380
CITY, STATE, ZIP: Kansas City, MO, 64116
Email: nhaas@northpointkc.com SIGNATURE: N. Haas

SUE PYLES, P.E.
DEVELOPMENT ENGINEERING MANAGER (X) APPROVAL ( ) DENIAL
SIGNATURE: Sue Pyles DATE: 7/10/23

JEFF THORN, P.E.
WATER UTILITIES ASSITANT DIRECTOR OF ENGINEERING SERVICES ( ) APPROVED ( ) DENIAL
SIGNATURE: _____ DATE: _____

GEORGE M. BINGER III, P.E.
DEPUTY DIRECTOR OF PUBLIC WORKS/CITY ENGINEER (X) APPROVED ( ) DENIAL
SIGNATURE: George M Binger III Digitally signed by George Binger III DN: CN=George Binger III, OU=Public Works, OU=LS Users, DC=COLS, DC=LOC Reason: I am approving this document Date: 2023.07.17 11:49:39-05'00' DATE: 07/17/2023

COMMENTS: _____

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_____

A COPY MUST BE ATTACHED TO THE APPROVED PLANS ON THE JOB SITE

CFS ENGINEERS
Cook, Flatt & Strobel Engineers
1100 W. Cambridge Circle Drive, Suite 700
Kansas City, Kansas 66103
913.627.9040

June 29, 2023

Brian Benjamin
Northpoint Development
3315 N. Oak Trafficway
Kansas City, MO 64116

Re: Subsurface Exploration and Recommendations Addendum #1
Summit Square Phase III (Trilogy)
Lee's Summit, Missouri

Mr. Benjamin:

Cook, Flatt & Strobel (CFS) Engineers, P.A. performed geotechnical engineered services and submitted a geotechnical report (CFS #20-5674, report date September 22, 2022) for the Summit Square Phase III project. CFS understands that the client would like to use an alternative pavement section versus the standard sections provided in Article 12 of the City of Lee's Summit Unified Development Ordinance (UDO).

At the request of the client, CFS is providing a single alternative pavement section for both the heavy and light duty pavement sections required by Lee's Summit UDO. CFS utilized the Tensar Plus pavement program to calculate the design AASHTO equivalent single axle loads (ESALs) for the UDO pavement sections. The following table provides the standard layer coefficients for each pavement layer and subbase layer that were used to calculate the design ESALs. These coefficients are multiplied by the layer thickness and added together to calculate the structural number of the pavement section.

UDO Stabilized Subgrade Pavement Section

Layer	Description	Layer Coefficient
ACC1	Asphalt Surface	0.400
ACC2	Asphalt Base	0.350
ABC	MoDOT Type 5	0.120
SBC	Stabilized Base	0.080

UDO Geotextile Pavement Section

Layer	Description	Layer Coefficient
ACC1	Asphalt Surface	0.400
ACC2	Asphalt Base	0.350
ABC	MoDOT Type 5 with Tensar TX3	0.192

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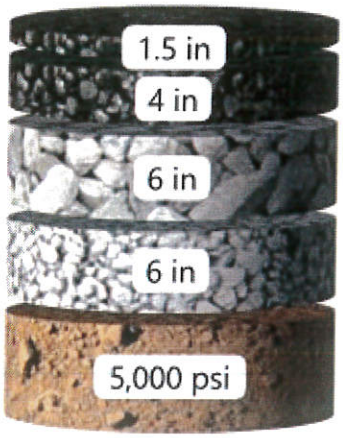
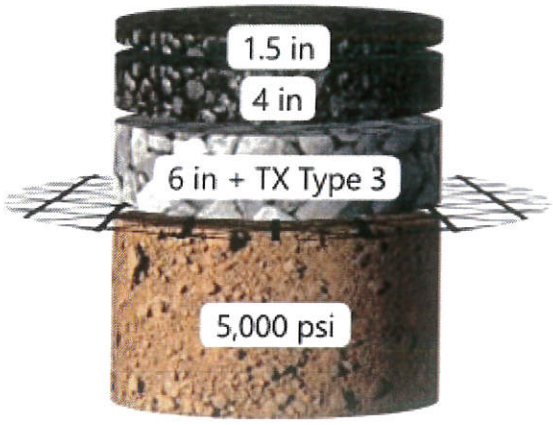
UDO Stabilized Subgrade Pavement
Light Duty

179,200 ESALs



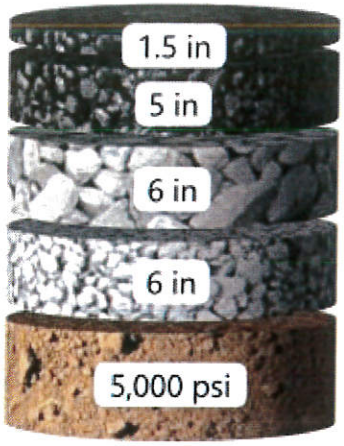
UDO Geosynthetic Pavement
Light Duty

162,100 ESALs



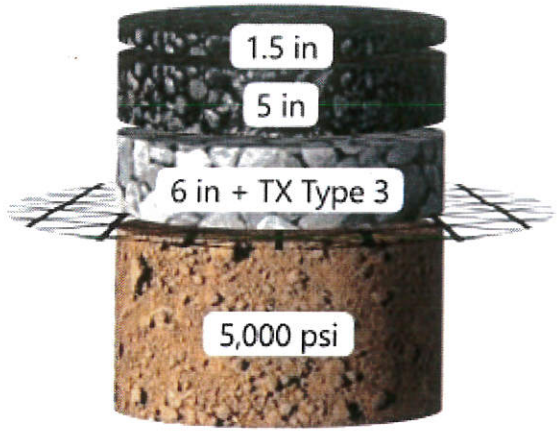
Heavy Duty

359,900 ESALs



Heavy Duty

328,200 ESALs



Based on the Tensar Plus analysis, the largest target design ESALs and structural number are 359,900 and 3.55, respectively.

NorthPoint has requested a single alternative pavement design for both the heavy and light duty sections. CFS has estimated the layer coefficient for the soil-gravel mixture to be 0.05. This coefficient has been conservatively estimated as less than half of MoDOT Type 5 (0.120) and less than a fly ash stabilized sub-grade layer coefficient (0.080). The following table shows the layer coefficients for the alternative pavement.

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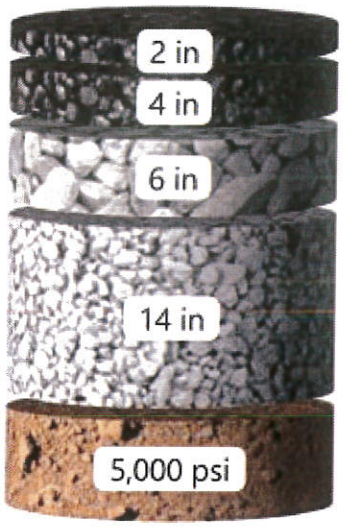
Alternative Pavement Section

Layer	Description	Layer Coefficient	Thickness (in)	Structural Number
ACC1	Asphalt Surface	0.400	2.0	0.80
ACC2	Asphalt Base	0.350	4.0	1.40
ABC	MoDOT Type 5	0.120	6.0	0.72
SBC	Rock Sub-Grade Mix	0.050	14.0	0.70
			Total	3.62

411,100 ESALs



The recommended alternative section provides an estimated ESAL's and structural value of 411,100 and 3.62, respectively. This exceeds the larger heavy duty UDO estimated values.

Please contact CFS with any questions.

Respectfully,
Cook, Flatt & Strobel Engineers, P.A.

STATE OF MISSOURI
ADAM M. McEACHRON
6/21/23
NUMBER PE-2010005591
PROFESSIONAL ENGINEER

Adam M. McEachron, P.E.
Senior Engineer