Stephen G. Pernaw & Company, Inc.

P.O. Box 1721 • Concord, NH 03302
tel: (603) 731-8500 • fax: (866) 929-6094 • sgp@ pernaw.com

Transportation: Engineering • Planning • Design

MEMORANDUM

Ref: 2125A

To: Barry Gier, P.E.
Jones & Beach Engineers, Inc.

From: Stephen G. Pernaw, P.E., PTOE

Subject: Proposed Residential Subdivision - 44 Meadowbrook Drive
Barrington, New Hampshire

Date: August 19, 2021

Thank you for forwarding the plan entitled: "Site Plan-Meadowbrook Village" that was prepared by your office for Anthony L. & Janis Serra (see Attachment 1). This plan shows that the subject property will be developed with 11 single-family detached dwelling units and one point of access via Meadowbrook Drive. As requested, Pernaw & Company, Inc. conducted a site inspection in July 2021 to provide you with input regarding access design.

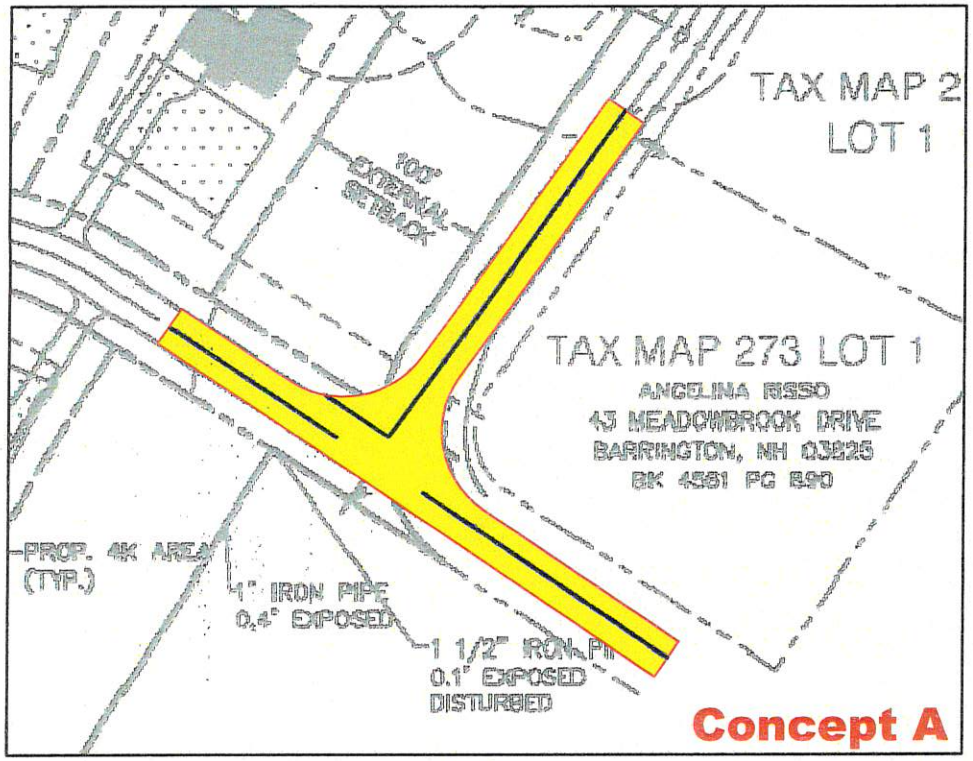
We found that Meadowbrook Drive functions as a rural collector roadway with a 20-mph posted speed limit, that it is located in a residential setting, that the subject property has frontage on the outside of a 90-degree horizontal curve on Meadowbrook Drive, and that adequate sight distances are available (see Attachment 2). As an aside, we expect this residential development will generate approximately 104 vehicle-trips (52 arrivals, 52 departures) on an average weekday basis (24 hours), and approximately 10 vehicle-trips during the weekday AM and PM peak hour periods (see Attachment 3). A development of this size and type is <u>not</u> considered to be a major traffic generator from a traffic engineering standpoint.

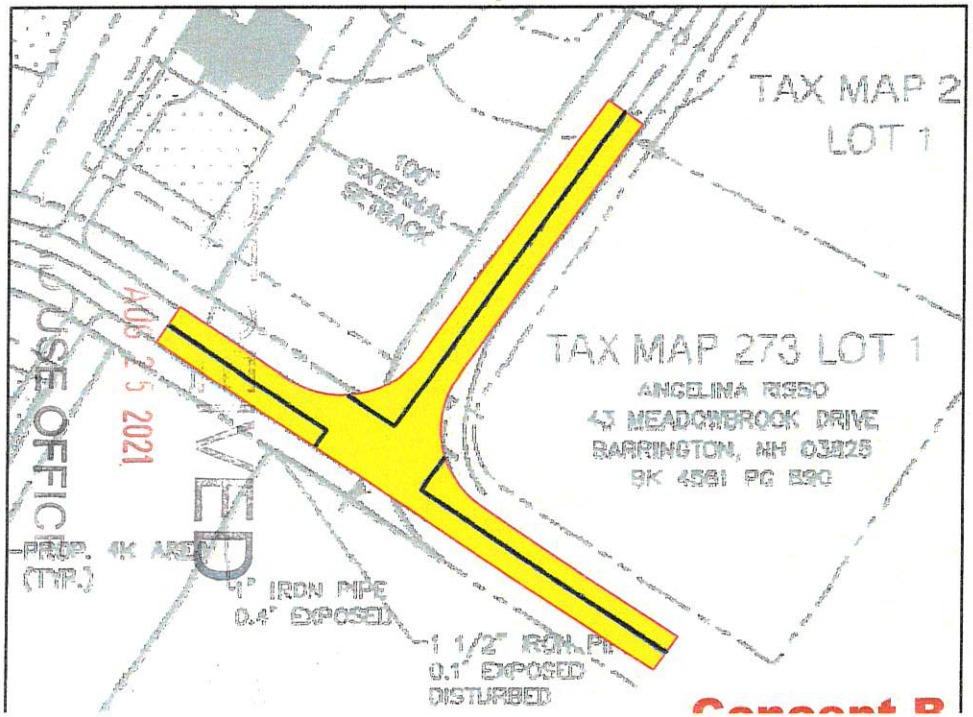
Based on our site inspection and review of the plans, we have determined that there are three viable site access configurations. As is usually the case, there are advantages and disadvantages associated with each option. The Town and Applicant should consider the following advantages and disadvantages in making a selection. In addition to stop sign control (MUTCD R1-1), Side Drive signs (MUTCD W2-2) that are consistent with the selected option, should be installed on the Meadowbrook Drive approaches, approximately 100-150 feet in advance of the intersection. The existing chevron warning signs on the outside of the horizontal curve should be removed in the event that Concept A or B is implemented.

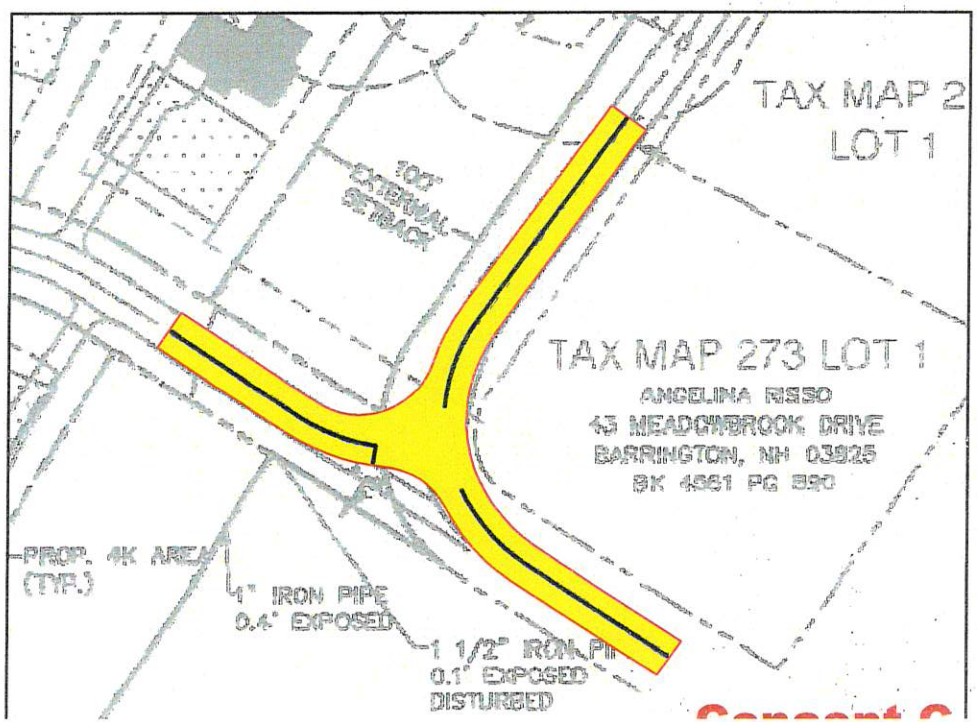
- <u>Concept A</u> - Stop sign control on the Meadowbrook Drive southbound approach.
- <u>Concept B</u> - Stop sign control on all three approaches (All-Way Stop Control)
- <u>Concept C</u> – Stop sign control on the subdivision Drive eastbound approach.

The alternative intersection configurations are shown conceptually on the following page.

Stephen G. Pernaw & Company, Inc.





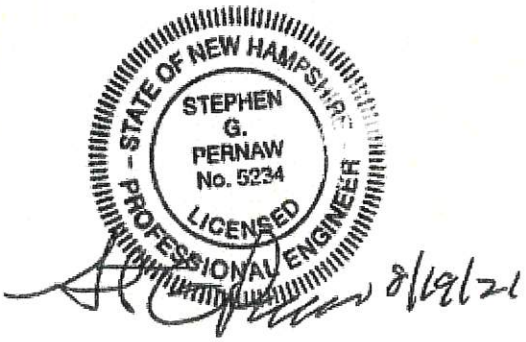


Although it is unlikely that the post-development traffic volumes will satisfy the minimum traffic volume guidelines contained in the "*Manual of Uniform Traffic Control Devices*" (MUTCD) for multi-way stop sign applications, this publication also provides subjective criteria for justifying All-Way Stop Control at certain locations: *"An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection."*

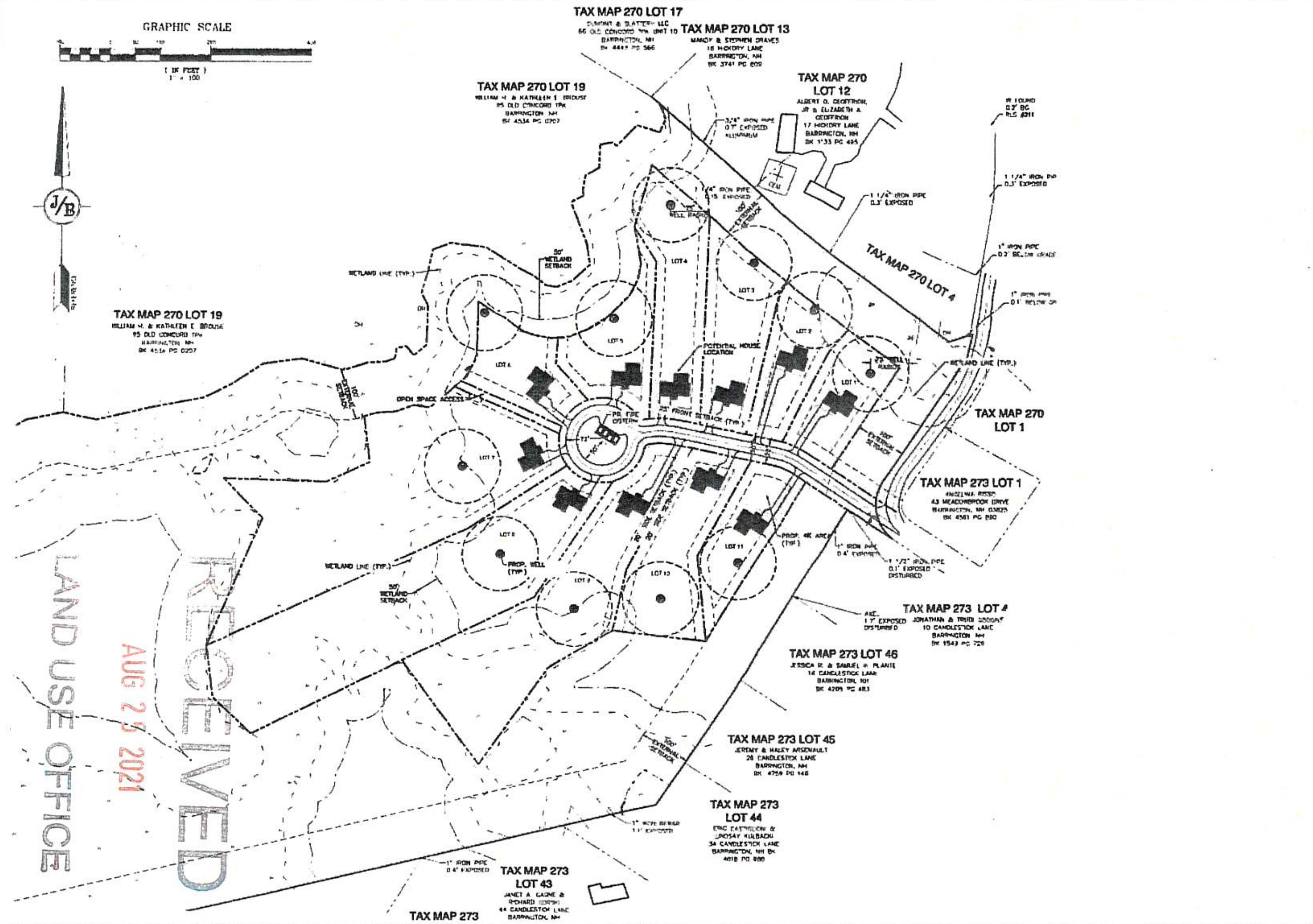
	ADVANTAGES	DISADVANTAGES
CONCEPT A (Stop SB App.)	1. Eliminates sharp corner for SB through vehicles. 2. Reduces travel speeds of SB through vehicles.	1. Requires vehicles on SB approach to stop. 2. Unintended arrivals at proposed s/d from WB approach
CONCEPT B (Stop all App.)	1. Eliminates sharp corner for SB through vehicles. 2. Reduces travel speeds in the area. 3. Reduces overall crash severity.	1. Requires the higher-volume SB and WB appr. to stop.
CONCEPT C (Stop EB App.)	1. Stop sign is on the approach with lowest traffic volumes. 2. The higher-volume appr. retain the vehicular right-of-way.	1. Sharp corner for through vehicles remains.

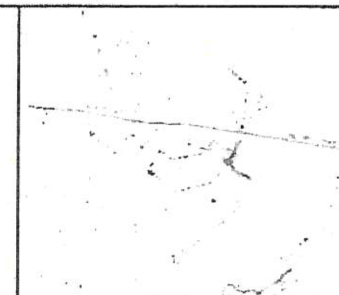
While all three options are viable from an access management standpoint for the size and type of development that is proposed, we see Concept C as being the least disruptive option, and most reflective of the post-development traffic volumes in the study area.

Attachments



Attachment 1





LOCUS SCALE 1"=2000'

SITE NOTES:

THE INTENT OF THIS PLAN IS TO SHOW THE OVERALL SUBDIVISION SITE PLAN OF DEVELOPMENT FOR THE MAP 270/LOTS 2 & 3, AND MAP 273/LOT 48. ALL HOMES WILL BE SERVICED BY ON-SITE WELLS AND SEPTICS

ZONING DISTRICT: GENERAL RESIDENTIAL (OPEN SPACE SUBDIVISION)
LOT AREA MINIMUM = 20,000 SF
LOT FRONTAGE MINIMUM = N/A
BUILDING SETBACKS (MINIMUM):
FRONT SETBACK = 25'
SIDE SETBACK = 20'
REAR SETBACK = 20'
LOT WIDTH = 75'
WETLAND SETBACK = 50'
EXTERNAL SETBACK = 100'
MAX. BUILDING HEIGHT = 35'

1. THIS PLAN SET HAS BEEN PREPARED BY JONES & BEACH ENGINEERS, INC., FOR MUNICIPAL AND STATE APPROVALS AND FOR CONSTRUCTION BASED ON DATA OBTAINED FROM ON-SITE FIELD SURVEY AND EXISTING MUNICIPAL RECORDS. THROUGHOUT THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY OF ANY FIELD DISCREPANCY FROM DATA AS SHOWN ON THE DESIGN PLANS, INCLUDING ANY UNFORESEEN CONDITIONS, SUBSURFACE OR OTHERWISE, FOR EVALUATION AND RECOMMENDATIONS. ANY CONTRADICTION BETWEEN ITEMS ON THIS PLAN/PLAN SET, OR BETWEEN THE PLANS AND ON-SITE CONDITIONS, MUST BE RESOLVED BEFORE RELATED CONSTRUCTION HAS BEEN INITIATED. CONTRACTOR TO ALWAYS CONTACT DIG SAFE PRIOR TO DIGGING ONSITE OR OFFSITE TO ENSURE SAFETY AND OBEY THE LAW.
2. ALL CONSTRUCTION SHALL CONFORM TO TOWN STANDARDS AND REGULATIONS, AND NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, WHICHEVER IS MORE STRINGENT.
3. LANDOWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL WETLAND REGULATIONS, INCLUDING PERMITTING REQUIRED UNDER THESE REGULATIONS.
4. ALL CONSTRUCTION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (S.W.P.P.P.). THIS DOCUMENT IS TO BE KEPT ONSITE AT ALL TIMES AND UPDATED AS REQUIRED.
5. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, ARCHITECT AND/OR OWNER, IN ORDER TO OBTAIN AND/OR PAY ALL THE NECESSARY LOCAL PERMITS, FEES AND BONDS.
6. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) AND NHDOT STANDARDS AND SPECIFICATIONS (NON-REFLECTORIZED PAVEMENT MARKINGS), UNLESS OTHERWISE NOTED.
7. ALL STOP BARS SHALL BE 18" IN WIDTH IN A COLOR OF WHITE; ALL TRAFFIC ARROWS SHALL BE PAINTED IN A COLOR OF WHITE.
8. A NOTICE OF INTENT TO EXCAVATE IS REQUIRED TO BE FILED WITH THE BOARD OF SELECTMAN IF 1,000 CUBIC YARDS OF MATERIAL IS TO BE EXCAVATED ONSITE. A TAX OF $0.02 PER YARD IS REQUIRED TO BE PAID ALONG WITH THE FILING FEE. A NOTICE OF INTENT TO CUT SHOULD BE FILED FOR ANY TREE CLEARING ACTIVITY NOT FOR PERSONAL USE WITH THE BOARD OF SELECTMAN. CONTACT MARY PINKHAM-LANGER AT (603) 271-8033, IF YOU HAVE ANY QUESTIONS.

LOT INFORMATION

LOT #	AREA (SQ FT)	AREA (AC)	UPLAND (SQ FT)	FRONTAGE
1	31,037	0.71	29,897	113.00'
2	31,177	0.72	31,177	74.00'
3	45,020	1.03	45,020	83.00'
4	85,005	1.97	[illegible]	101.00'
5	33,666	0.79	33,666	126.00'
6	38,123	0.87	38,123	78.00'
7	150,236	3.50	53,024	67.00'
8	152,284	3.50	78,338	102.00'
9	105,807	2.43	64,418	109.00'
10	51,684	1.19	51,684	118.00'
11	33,053	0.76	33,053	110.00'
OPEN	1,790,487	41.10	880,984	

RECEIVED
AUG 25 2021
LAND USE OFFICE

Design: BWG	Draft: DFF	Date: 7/7/21
Checked: BWG	Scale: AS NOTED	Project No.: 20747
Drawing Name: 20747-PLAN.dwg		

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM JONES & BEACH ENGINEERS, INC. (JBE). ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO JBE.

REV	DATE	REVISION	BY
0	7/8/21	ISSUED FOR REVIEW	BWG

Designed and Produced in NH
Jones & Beach Engineers, Inc.
Civil Engineering Services
85 Portsmouth Ave, PO Box 219, Stratham, NH 03885
603-772-4746 FAX: 603-772-0227
E-MAIL: JBE@JONESANDBEACH.COM

Plan Name:	SITE PLAN
Project:	MEADOWBROOK VILLAGE MEADOWBROOK DRIVE BARRINGTON, NH
Owner of Record:	ANTHONY L. & JANIS SERRA 44 MEADOWBROOK DR, BARRINGTON, NH BK. 1236 PG. 653

DRAWING No. C2
SHEET 8 OF 13
JBE PROJECT NO. 20747

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Looking Left

Looking Right

Trip Generation Summary

Alternative: Alternative 1
Phase:
Project: 2125A

Open Date: 8/19/2021
Analysis Date: 8/19/2021

ITE	Land Use		Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic		
		*	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
210	SFHOUSE 1		52	52	104	2	6	8	7	4	11
	11 Dwelling Units										
Unadjusted Volume			52	52	104	2	6	8	7	4	11
Internal Capture Trips			0	0	0	0	0	0	0	0	0
Pass-By Trips			0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets			52	52	104	2	6	8	7	4	11

Total Weekday Average Daily Trips Internal Capture = 0 Percent
Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition
TRIP GENERATION 10, TRAFFICWARE, LLC