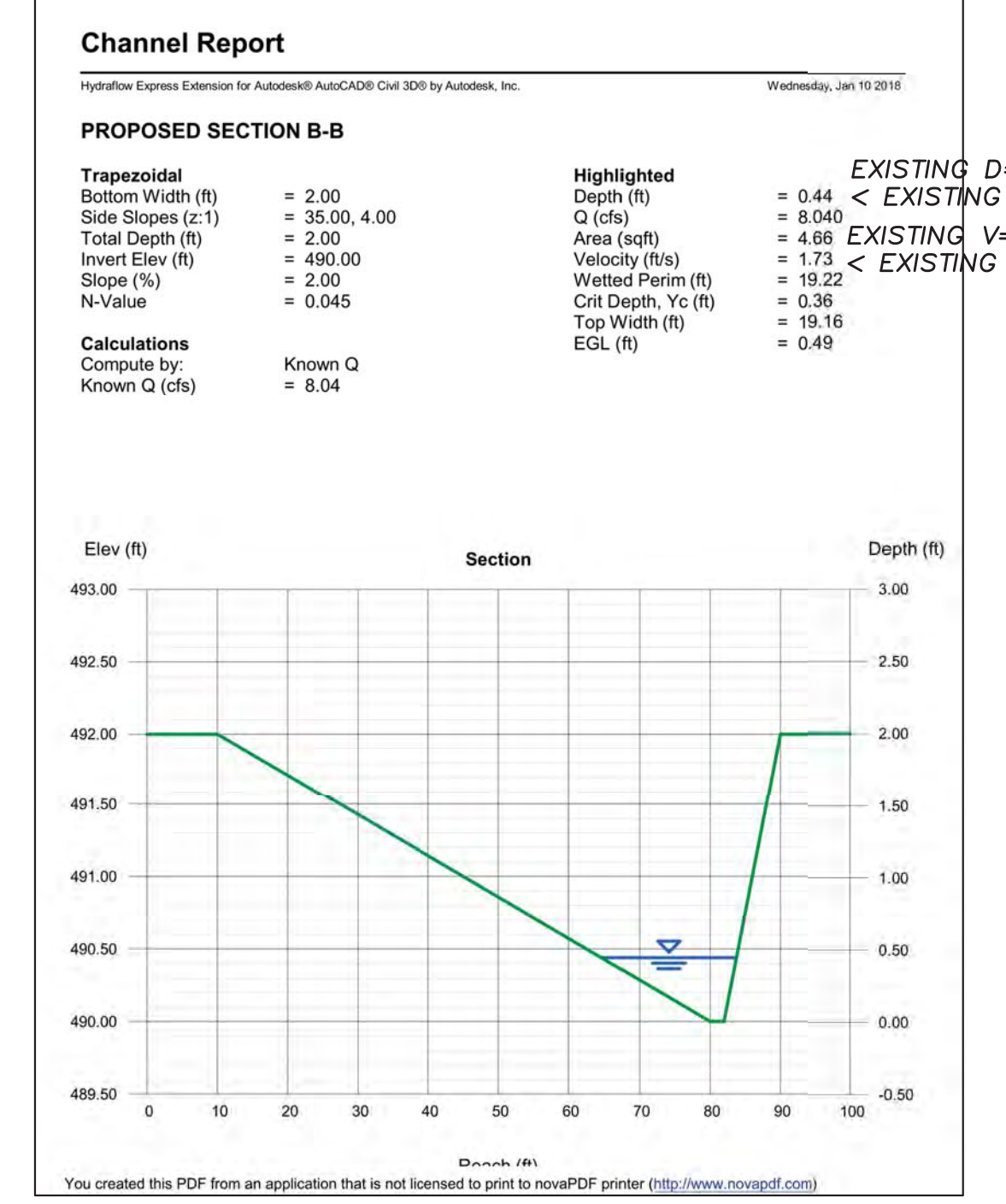
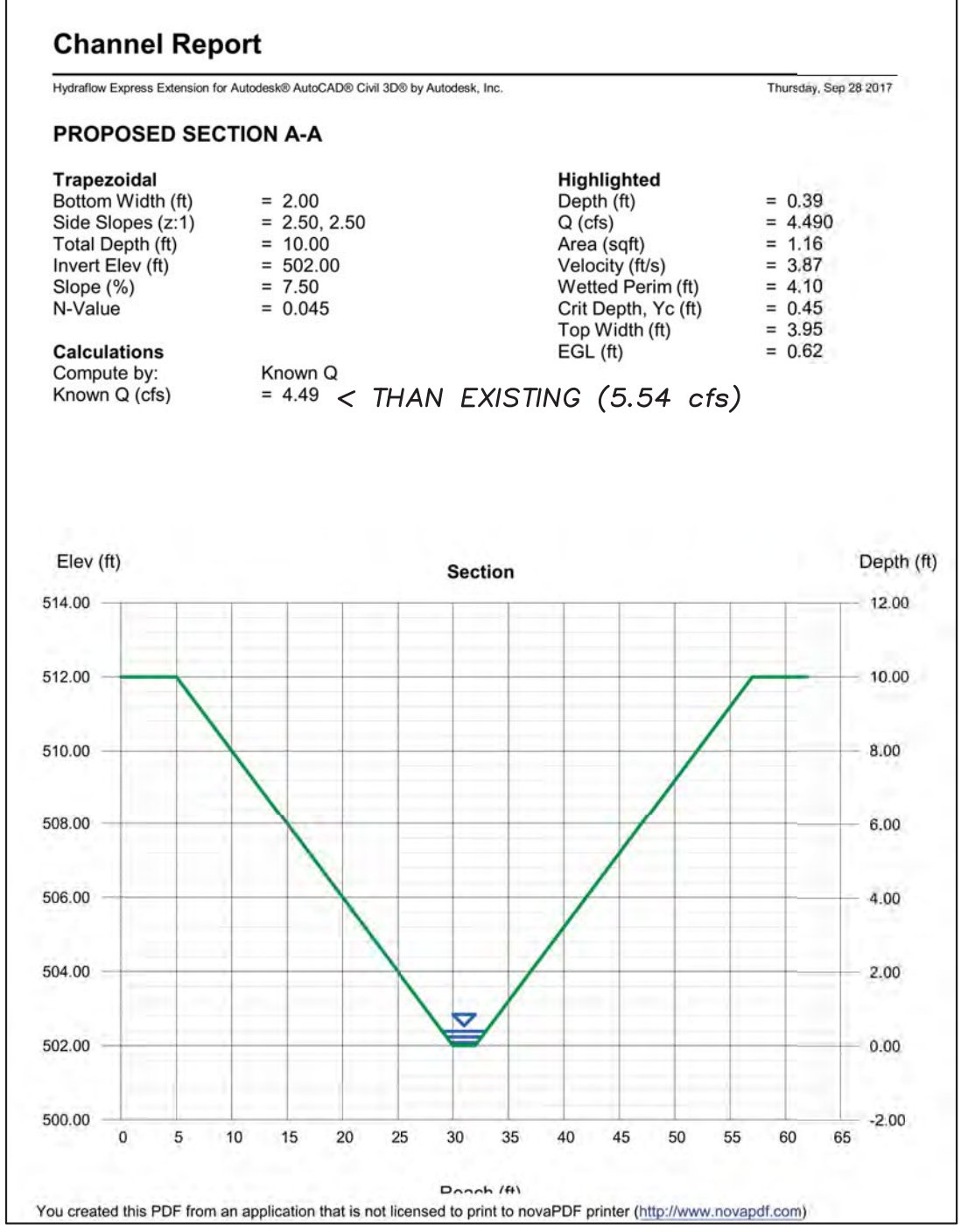


PROPOSED AREA A1  
 PROPOSED SECTION A-A  
 AREA = 2.40 ac.  
 PI = 1.87 cfs/ac.  
 Q15 = 4.49 cfs

PROPOSED AREA A4  
 TOTAL AREA = 1.4 ac.  
 GRASS AREA = 1.4 ac.  
 PI = 1.87 cfs/ac.  
 TOTAL Q15 = 2.62 cfs

PROPOSED AREAS A2 + A3  
 PROPOSED SECTION B-B  
 TOTAL AREA = 3.71 ac.  
 AREA A2 = 1.57 ac.  
 1.43 ac. ● PI = 2.64 cfs/ac.  
 0.14 ac. ● PI = 1.87 cfs/ac.  
 GRASS AREA (A3) = 2.14 ac.  
 PI = 1.87 cfs/ac.  
 TOTAL Q15 = 8.04 cfs

ISSUE	DATE / REMARKS
1	08/28/2017 Initial Submittal
2	10/06/2017 City Comments
3	11/10/2017 City Comments
4	12/16/2017 City Comments
5	01/11/2018 City Resubmittal



P.I. Factors (20 Minute Duration)

Area	Return Frequency			
	2 Year (cfs/ac)	15 Year (cfs/ac)	25 Year (cfs/ac)	100 Year (cfs/ac)
5% IMP (Grass)	1.15	1.87	2.31	2.95
40% IMP (Single Family Residential Lots, 10,000 s.f. or less)	1.63	2.64	3.26	4.17
100% IMP (Pavement/Buildings)	2.37	3.85	4.75	6.08

EXISTING DRAINAGE AREAS

Drainage Area	Description	Total Acreage (Acres)	Grass Area (Acres)	Lot Area (Acres)	Impervious Area (Acres)	2 Year Q (cfs)	15 Year Q (cfs)	25 Year Q (cfs)	100 Year Q (cfs)
EX 1A	To Existing Ditch	2.96	2.96	0.00	0.00	3.40	5.54	6.84	8.73
EX 1B	To Existing Ditch	3.00	3.00	0.00	0.00	3.45	5.61	6.93	8.85
EX 1C	To Existing Ditch	1.83	1.83	0.00	0.00	2.10	3.42	4.23	5.40
EX 1 TOTAL	To Existing Ditch	7.79	7.79	0.00	0.00	8.96	14.57	17.99	22.98
EX 2	To Existing Storm Sewer	17.29	17.29	0.00	0.00	19.88	32.33	39.94	51.01
TOTAL		25.08	25.08	0.00	0.00	28.84	46.90	57.93	73.99

PROPOSED DRAINAGE AREAS

Drainage Area	Description	Total Acreage (Acres)	Grass Area (Acres)	Lot Area (Acres)	Impervious Area (Acres)	2 Year Q (cfs)	15 Year Q (cfs)	25 Year Q (cfs)	100 Year Q (cfs)
A1	Bypass Detention-To Existing Ditch	2.40	2.40	0.00	0.00	2.76	4.49	5.54	7.08
A2	Bypass Detention-To HDS Unit & Existing Ditch	1.57	0.14	1.43	0.00	2.49	4.04	4.99	6.38
A3	Bypass Detention-To Existing Ditch	2.14	2.14	0.00	0.00	2.46	4.00	4.94	6.31
A4	Bypass Detention-To Existing Ditch	1.40	1.40	0.00	0.00	1.61	2.62	3.23	4.13
A TOTAL	Bypass Detention-To Existing Ditch	7.51	6.08	1.43	0.00	9.32	15.14	18.71	23.90
B1	To HDS Unit & Basin B	1.03	0.00	1.03	0.00	1.68	2.72	3.36	4.30
B2	To Basin B	0.75	0.35	0.40	0.00	1.05	1.71	2.11	2.70
B	To Basin B	1.78	0.35	1.43	0.00	2.73	4.43	5.47	7.00
C1	To HDS Unit & Basin C	9.74	0.00	9.74	0.00	15.88	25.71	31.75	40.62
C2	To Basin C	2.47	1.49	0.98	0.00	3.31	5.37	6.64	8.48
C	To Basin C	12.21	1.49	10.72	0.00	19.19	31.09	38.39	49.10
D	Bypass Detention-To Existing Storm Sewer	0.55	0.51	0.04	0.00	0.65	1.06	1.31	1.67
F	Bypass Detention-To Existing Ditch	0.39	0.19	0.09	0.11	0.63	1.02	1.25	1.60
G	Offsite Bypass Detention-To Ex. Storm Sewer	2.73	2.73	0.00	0.00	3.14	5.11	6.31	8.05
TOTAL		25.17	11.35	13.71	0.11	35.66	57.84	71.44	91.32

ROUTED Q'S

Basin/Drainage Area	2 Year Q Outflow (cfs)	15 Year Q Outflow (cfs)	25 Year Q Outflow (cfs)	100 Year Q Outflow (cfs)
A	9.32	15.14	18.71	23.90
B	1.83	2.23	2.44	2.7
C	9.96	12.95	14.35	24.97
D	0.65	1.06	1.31	1.67
F	0.63	1.02	1.25	1.60
G	3.14	5.11	6.31	8.05
TOTAL	25.53	37.51	44.37	62.90
EXISTING Q=	28.84	46.90	57.93	73.99

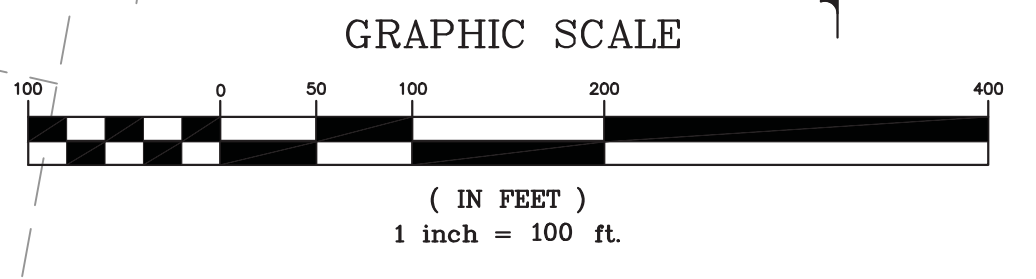
### RUNOFF DIFFERENTIAL NORTH SIDE OF SITE

(10 YR./20 MIN. STORM EVENT)

EXISTING Q100 = 22.98 C.F.S.  
 PROPOSED Q100 = 23.90 C.F.S.  
 DIFFERENTIAL = 23.90 - 22.98 = 0.92 C.F.S. < 1 C.F.S., THEREFORE DETENTION IS NOT REQUIRED.

HIGHWATER ELEVATIONS & FREEBOARD

Basin	Top of Berm Elevation (Minimum)	2 Year Storm HW ELEV. (from PondPack)	2 Year Storm Freeboard	15 Year Storm HW ELEV. (from PondPack)	15 Year Storm Freeboard	25 Year Storm HW ELEV. (from PondPack)	25 Year Storm Freeboard	100 Year Storm HW ELEV. (from PondPack)	100 Year Storm Freeboard	100 Year Low Flow Blocked HW ELEV. (from PondPack)	100 Year Low Flow Blocked Freeboard
B	546.00	542.02	3.98	542.59	3.41	543.94	3.06	543.53	2.59	544.53	1.47
C	522.50	518.76	3.74	519.64	2.86	520.15	2.35	520.68	1.82	521.04	1.46



PROJECT TITLE

Brookview

OFFALON, MISSOURI

THE STERLING CO.  
 ENGINEERS & SURVEYORS  
 5055 New Baumgartner Road  
 St. Louis, Missouri 63129  
 Ph 314-487-0440 Fax 314-487-8944  
 www.sterling-eng-survey.com  
 Corporate Certificate of Authority #001348



Date: 01/11/18  
 SEAN ACKLEY  
 LICENSE # PE-2009018679  
 Civil Engineer

McBride Guthrie, LLC  
 16091 Swingley Ridge Road, Suite 300  
 Chesterfield, Missouri 63017  
 Ph. (636) 537-2000  
 Fax (636) 537-2546

WATER QUALITY & DETENTION DRAINAGE AREA PLAN

P+Z No. 17-005894  
 City No. 17-008288  
 Date: 01/11/18  
 Job No. 17-02-041

Page No. 10.2 IMP