



# Application for Plan Review

Sprinkler  
Plan  
Review

Application # FW1911-0004

Date Received: 5-13-2020 Received By: \_\_\_\_\_

Name of Project: CARLIE C'S IGA

Physical Address of Project: 333 N. RALEIGH RD.

ANGIER NC

Plans Submitted By: MARK FORD / ANDREW DORMAN

Project Phone: (9) - - - - -

Contact Person/Address: MARK FORD

P.O. BOX 250

DUNN, N.C. 28335

HARNETT COUNTY EMERGENCY SERVICES  
REVIEWED FOR CODE COMPLIANCE  
D.B. WALLACE  
CODE COMPLIANCE OFFICER  
DATE 5/19/20

Contact Phone: (910) - 892-1700 ( ) - - - - -

Contractor's Name/Info: CAROLINA FIRE PROTECTION, INC.

P.O. BOX 250

DUNN, N.C. 28335

Contractor's Phone: (910) - 892-1700

- Plans that are submitted will be reviewed as quickly as possible with an average time of review between 7-10 working days.
- Status checks may be conducted on plan reviews by visiting the website <http://hteweb.harnett.org/Click2GovBP/Index.jsp> or by calling the Harnett County Central Permitting Office (910-893-7525, Option #2), or the Harnett County Fire Marshal's Office (910-893-7580).
- Approved plans must be picked up from the Central Permitting Office and all fees paid before any required inspections can be conducted.

# Carolina Fire Protection

4055 Hodges Chapel Road  
Dunn, N.C. 28334  
Phone #(910)-892-1700  
Fax #(910)-892-7322

## Transmittal Letter

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Date April 24, 2020  
To Central Permitting  
108 E. Front Street  
Lillington, NC 27546  
Attention Plan Review  
From Mark Ford / Andrew Dorman  
Subject Carlie C's  
Angier, NC

# SETS	PAGES	DESCRIPTION	APPROVAL	FOR YOUR USE	INFORMATION	RECORDS	OTHER
3	FP-1	Sprinkler Drawings	X				
1		Hydraulic Calculation	X				
1		Permit Application	X				

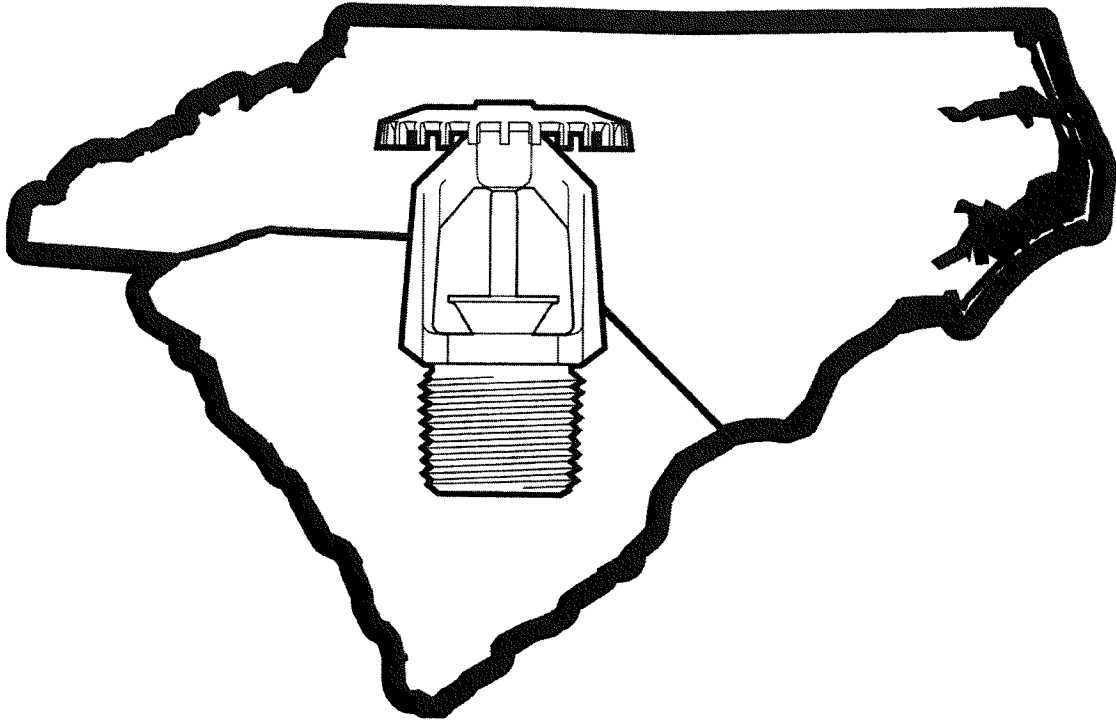
MAILED      FED EX      UPS      HAND DELIVERED

X PLEASE RETURN (1) COPY OF DRAWINGS MARKED WITH YOUR STAMP OF APPROVAL AND/OR YOUR COMMENTS

REMARKS:

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Carolina Fire Protection, Inc.  
4055 Hodges Chapel Road  
P.O. Box 250 (28335)  
Dunn, NC 28334  
910-892-1700

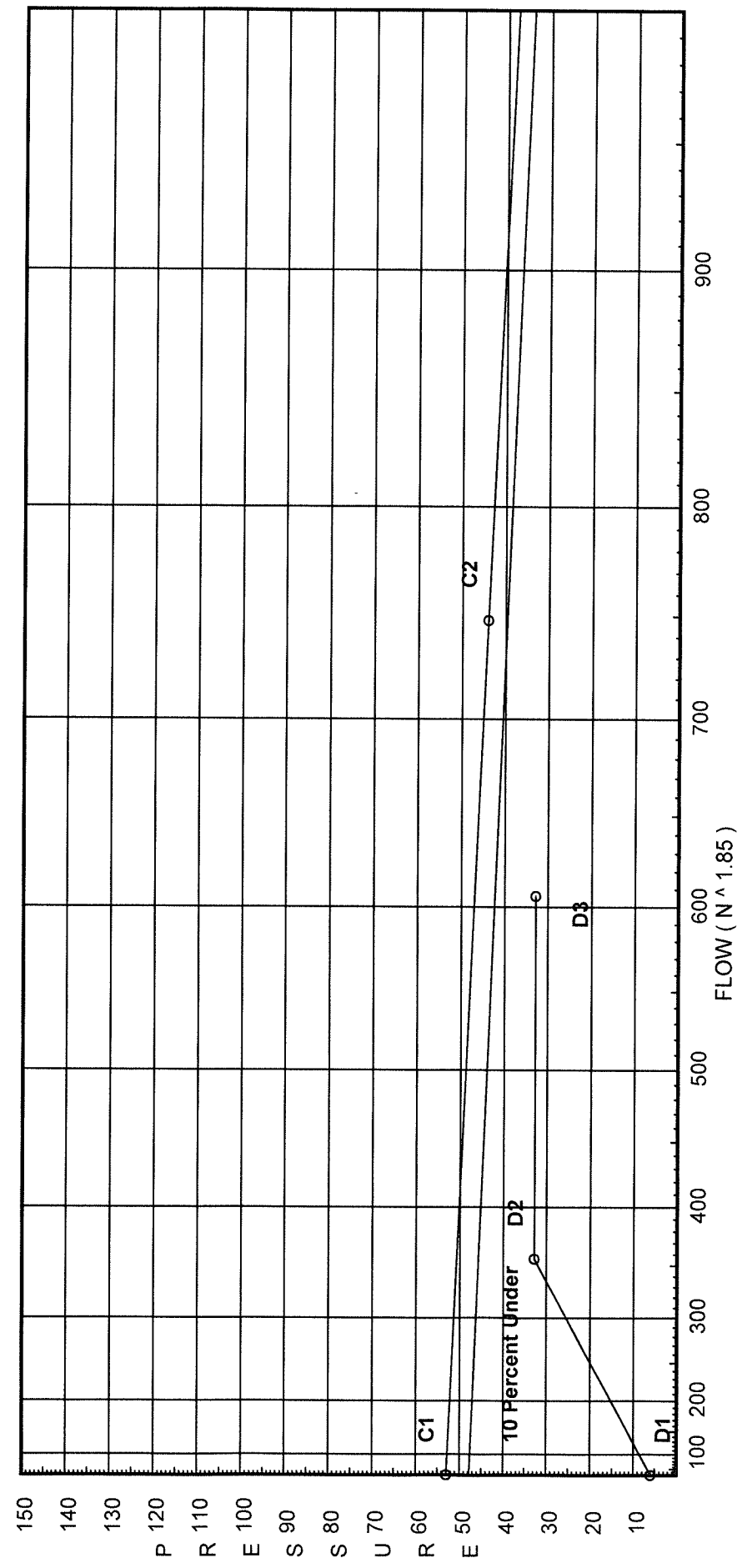
Job Name : Carlie C'S Angier  
Building : New addition  
Location : Angier, NC  
System :  
Contract : 20D471  
Data File : CARLIE C'S ANGIER 1500.wxtmp

# Water Supply Curve

Carolina Fire Protection, Inc.  
 Carlisle C'S Angier

City Water Supply:  
 C1 - Static Pressure : 53  
 C2 - Residual Pressure: 44  
 C2 - Residual Flow : 748

Demand:  
 D1 - Elevation : 5.991  
 D2 - System Flow : 356.291  
 D2 - System Pressure : 32.784  
 Hose ( Demand ) : 250  
 D3 - System Demand : 606.291  
 Safety Margin : 14.113



# Flow Summary - NFPA

Carolina Fire Protection, Inc.  
 Carlie C'S Angier

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## SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
TEST	53.0	44	748.0	46.898	606.29	32.784

## NODE ANALYSIS

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
1	14.833	8	9.0	24.0	0.2 120
2	14.833	8	9.05	24.07	0.2 120
3	14.833	8	9.25	24.33	0.2 120
4	14.833	8	9.67	24.88	0.2 120
6	14.833	8	9.06	24.09	0.2 120
7	14.833	8	9.12	24.16	0.2 120
8	14.833	8	9.32	24.42	0.2 120
9	14.833	8	9.74	24.97	0.2 120
11	14.833	8	10.48	25.9	0.2 120
12	14.833	8	10.55	25.98	0.2 120
13	14.833	8	10.77	26.26	0.2 120
M1	12.5		12.83		
5	14.833	8	11.89	27.58	0.2 120
M2	12.5		12.91		
10	14.833	8	11.96	27.67	0.2 120
M3	12.5		13.22		
14	14.833	8	12.24	27.99	0.2 120
M4	12.5		13.79		
M5	12.5		14.25		
M7	11.75		14.68		
M8	11.75		14.71		
M9	11.75		14.78		
M10	11.75		14.94		
M11	11.75		15.17		
F1	17.667		14.18		
F2	17.667		14.17		
F3	17.667		14.13		
F4	17.667		14.13		
F5	17.667		14.22		
F6	17.667		14.26		
F7	17.667		14.27		
F8	17.667		14.27		
F9	17.667		14.26		
F10	17.667		14.23		
F11	17.667		14.29		
F12	17.667		14.31		
M6	17.667		14.08		
M12	17.667		14.22		
N1	17.667		15.28		
N2	17.667		15.28		
N3	17.667		15.29		
N4	17.667		15.32		

# Final Calculations : Hazen-Williams

Carolina Fire Protection, Inc.  
 Carlie C'S Angier

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Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
1 to 2	14.833 14.833	8.00	24.00 24.0	2			10.000 10.000	120 0.0054	9.000 0.054		Vel = 2.11	
2 to 3	14.833 14.833	8.00	24.07 48.07	2			10.000 10.000	120 0.0197	9.054 0.197		Vel = 4.22	
3 to 4	14.833 14.833	8.00	24.34 72.41	2			10.000 10.000	120 0.0421	9.251 0.421		Vel = 6.36	
4 to M1	14.833 12.500	8.00	24.87 97.28	2	2T	24.613	5.000 24.613 29.613	120 0.0726	9.672 1.010 2.149		Vel = 8.54	
M1			0.0 97.28						12.831		K Factor = 27.16	
6 to 7	14.833 14.833	8.00	24.09 24.09	2			10.000 10.000	120 0.0055	9.064 0.055		Vel = 2.12	
7 to 8	14.833 14.833	8.00	24.15 48.24	2			10.000 10.000	120 0.0198	9.119 0.198		Vel = 4.24	
8 to 9	14.833 14.833	8.00	24.42 72.66	2			10.000 10.000	120 0.0423	9.317 0.423		Vel = 6.38	
9 to M2	14.833 12.500	8.00	24.97 97.63	2	2T	24.613	5.000 24.613 29.613	120 0.0730	9.740 1.010 2.163		Vel = 8.57	
M2			0.0 97.63						12.913		K Factor = 27.17	
11 to 12	14.833 14.833	8.00	25.90 25.9	2			10.000 10.000	120 0.0062	10.484 0.062		Vel = 2.27	
12 to 13	14.833 14.833	8.00	25.98 51.88	2			10.000 10.000	120 0.0227	10.546 0.227		Vel = 4.56	
13 to M3	14.833 12.500	8.00	26.26 78.14	2	2T	24.613	5.000 24.613 29.613	120 0.0484	10.773 1.010 1.433		Vel = 6.86	
M3			0.0 78.14						13.216		K Factor = 21.49	
M1 to 5	12.500 14.833		13.51 13.51	2	2T	24.613	10.333 24.613 34.946	120 0.0019	12.831 -1.010 0.065		Vel = 1.19	
5 to M7	14.833 11.750	8.00	27.58 41.09	2	2T	24.613	74.667 24.613 99.280	120 0.0147	11.886 1.335 1.463		Vel = 3.61	
M7			0.0 41.09						14.684		K Factor = 10.72	
M2 to 10	12.500 14.833		12.61 12.61	2	2T	24.613	10.333 24.613 34.946	120 0.0017	12.913 -1.010 0.058		Vel = 1.11	

# Final Calculations : Hazen-Williams

Carolina Fire Protection, Inc.  
 Carlie C'S Angier

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Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
M10 to M11	11.750 11.750		25.70 144.18	3 3.26			11.250 11.250	120 0.0202	14.941 0.0 0.227			Vel = 5.54
M11 to M12	11.750 17.667		21.44 165.62	3 3.26	2E T	18.815 20.159	23.083 38.974 62.057	120 0.0260	15.168 -2.563 1.612			Vel = 6.37
M12			0.0 165.62						14.217			K Factor = 43.92
F1 to N1	17.667 17.667		26.47 26.47	2 2.157	2T	24.613	144.000 24.613 168.613	120 0.0065	14.179 0.0 1.101			Vel = 2.32
N1			0.0 26.47						15.280			K Factor = 6.77
F2 to N2	17.667 17.667		26.64 26.64	2 2.157	2T	24.613	144.000 24.613 168.613	120 0.0066	14.168 0.0 1.114			Vel = 2.34
N2			0.0 26.64						15.282			K Factor = 6.81
F3 to N3	17.667 17.667		27.26 27.26	2 2.157	2T	24.613	144.000 24.613 168.613	120 0.0069	14.130 0.0 1.163			Vel = 2.39
N3			0.0 27.26						15.293			K Factor = 6.97
F4 to N4	17.667 17.667		27.53 27.53	2 2.157	2T	24.613	144.000 24.613 168.613	120 0.0070	14.131 0.0 1.184			Vel = 2.42
N4			0.0 27.53						15.315			K Factor = 7.03
F5 to N5	17.667 17.667		26.92 26.92	2 2.157	2T	24.613	144.000 24.613 168.613	120 0.0067	14.217 0.0 1.136			Vel = 2.36
N5			0.0 26.92						15.353			K Factor = 6.87
F6 to N6	17.667 17.667		27.13 27.13	2 2.157	2T	24.613	144.000 24.613 168.613	120 0.0068	14.259 0.0 1.152			Vel = 2.38
N6			0.0 27.13						15.411			K Factor = 6.91
F7 to N7	17.667 17.667		28.00 28.0	2 2.157	2T	24.613	144.000 24.613 168.613	120 0.0072	14.271 0.0 1.221			Vel = 2.46
N7			0.0 28.00						15.492			K Factor = 7.11
F8 to N8	17.667 17.667		29.32 29.32	2 2.157	2T	24.613	144.000 24.613 168.613	120 0.0079	14.271 0.0 1.331			Vel = 2.57
			0.0									

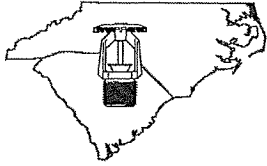
# Final Calculations : Hazen-Williams

Carolina Fire Protection, Inc.  
 Carlie C'S Angier

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 Date 4-24-2020

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
F9 to M12	17.667 17.667		-31.11 -59.71	3 3.26			10.667 10.667	120 -0.0039	14.259 0.0 -0.042		Vel = 2.30	
M12 to F10	17.667 17.667		165.62 105.91	3 3.26			1.333 1.333	120 0.0113	14.217 0.0 0.015		Vel = 4.07	
F10 to F11	17.667 17.667		-33.41 72.5	3 3.26			10.333 10.333	120 0.0057	14.232 0.0 0.059		Vel = 2.79	
F11 to F12	17.667 17.667		-35.06 37.44	3 3.26			10.833 10.833	120 0.0017	14.291 0.0 0.018		Vel = 1.44	
F12			0.0 37.44						14.309		K Factor = 9.90	
N1 to N2	17.667 17.667		26.47 26.47	4 4.26			12.000 12.000	120 0.0002	15.280 0.0 0.002		Vel = 0.60	
N2 to N3	17.667 17.667		26.64 53.11	4 4.26			12.000 12.000	120 0.0009	15.282 0.0 0.011		Vel = 1.20	
N3 to N4	17.667 17.667		27.26 80.37	4 4.26			12.000 12.000	120 0.0018	15.293 0.0 0.022		Vel = 1.81	
N4 to N5	17.667 17.667		27.53 107.9	4 4.26			12.000 12.000	120 0.0032	15.315 0.0 0.038		Vel = 2.43	
N5 to N6	17.667 17.667		26.92 134.82	4 4.26			12.000 12.000	120 0.0048	15.353 0.0 0.058		Vel = 3.03	
N6 to N7	17.667 17.667		27.13 161.95	4 4.26			12.000 12.000	120 0.0068	15.411 0.0 0.081		Vel = 3.65	
N7 to N8	17.667 17.667		27.99 189.94	4 4.26			12.000 12.000	120 0.0092	15.492 0.0 0.110		Vel = 4.28	
N8 to N9	17.667 17.667		29.32 219.26	4 4.26			12.000 12.000	120 0.0118	15.602 0.0 0.142		Vel = 4.94	
N9 to N10	17.667 17.667		31.12 250.38	4 4.26			12.000 12.000	120 0.0152	15.744 0.0 0.182		Vel = 5.64	
N10 to N11	17.667 17.667		33.41 283.79	4 4.26			11.333 11.333	120 0.0191	15.926 0.0 0.217		Vel = 6.39	
N11 to N12	17.667 17.667		35.06 318.85	4 4.26			10.833 10.833	120 0.0237	16.143 0.0 0.257		Vel = 7.18	
N12 to BASR	17.667 1		37.44 356.29	4 4.26	3E	39.501	47.667 39.501 87.168	120 0.0291	16.400 7.218 2.539		Vel = 8.02	





# Carolina Fire Protection, Inc.

P.O. Box 250  
Dunn, NC 28335

Phone: (910) 892-1700  
Fax: (910) 892-7322

## Fire Flow Analysis Fire Sprinkler and / or Standpipe Design

### SERVICE LOCATION

Address 333 N. Raleigh St. Angier, NC  
Proposed Tap Location Existing  
Requested Flow Location 333 N. Raleigh St.

### TESTING AGENT

Firm Name Carolina Fire Protection, Inc  
Address P.O. Box 250 Dunn, NC 28335  
Phone 910-892-1700 Fax 910-892-7322

### RESULTS

Static Pressure 53 psi Flowing Pressure 20 WKM (2" PL. COVERED) psi  
Residual Pressure 44 psi Volume 748 gpm  
Comments \_\_\_\_\_

Completed By: K. WILDER Date: 12-14-18

Time of Test: 10:03 AM

### FIRE FLOW LOCATION SKETCH:

