AquaSAFE™ FIRE SAFETY SYSTEM

Uponor
5925 148th Street West

Apple Valley, MN 55124
800-321-4739

Job Name	:	10 HOWARD STREET - One Head Calculation (H.31)
Drawing	:	RESIDENTIAL
Location	:	PORTLAND ME 04101
Remote Area	:	1
Contract	:	13359F
Data File	:	13359F REV 1 10 Howard St.wx1

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 05/21/13

Planner: Benjamin Wallace Jr

HYDRAULIC DESIGN INFORMATION SHEET

Name - 10 HOWARD STREET Date - 4/22/13
Location - PORTLAND ME 04101
Building - RESIDENTIAL System No. - 1
Contractor - FORTIN SERVICES Contract No. - 13359F
Calculated By - BRENT KOTULA SET IV Drawing No. - 1
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height VARIES
OCCUPANCY - RESIDENTIAL

S Type of Calculation: ( )NFPA 13 Residential ( )NFPA 13R (X)NFPA 13D
Y Number of Sprinklers Flowing: (X)1 ( )2 ( )4 ( )
S ( )Other
T ( )Specific Ruling Made by Date
E
M Listed Flow at Start Point - 18 Gpm System Type
Listed Pres. at Start Point - 13.5 Psi (X) Wet ( ) Dry
D MAXIMUM LISTED SPACING 18 x 18 ( ) Deluge ( ) PreAction
E Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
S Additional Flow Added - Gpm Make SENJU SPRINKLER Model RC-RES
I Elevation at Highest Outlet - 123 Feet Size 7/16 K-Factor 4.9
G Note: Temperature Rating 162
N

Calculation Summary Gpm Required 18 Psi Required 45.52 At Ref Pt STR
C-Factor Used: Overhead 150 Underground 150

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - 4/15/13 Rated Cap. Cap.
T Time of Test - AM @ Psi Elev.
E Static (Psi) - 85 Elev.
R Residual (Psi) - 80 Other Well
Flow (Gpm) - 300 Proof Flow Gpm
S Elevation - 99

P Location: STREET
P
L Source of Information: CONTRACTOR
Y

CITY OF PORTLAND, MAINE RESURGAM
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Water Supply Curve (C)

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Date 4/26/2013

City Water Supply:
- C1 - Static Pressure : 85
- C2 - Residual Pressure: 80
- C2 - Residual Flow : 300

Demand:

D1 - Elevation	:	10.394
D2 - System Flow	:	18.0037
D2 - System Pressure	:	45.518
Hose (Adj City)	:	_____
Hose (Demand)	:	_____
D3 - System Demand	:	18.0037
Safety Margin	:	39.454

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Fittings Used Summary

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
G	Generic Gate Valve	1	1	1	1	1	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Utb	Aquapex Tee - Branch	2	17	14	9	12	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utr	Aquapex Tee - Run	1	2	2	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

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SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
STR	85.0	80	300.0	84.973	18.0	45.518

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
H.31	123.0	4.9	13.5	18.0	
H.27	123.0		15.76		
T.59	123.0		21.58		
H.19	123.0		22.27		
T.47	123.0		22.66		
T.48	123.0		23.0		
T.53	109.0		29.13		
T.41	99.0		33.63		
T.45	99.0		34.4		
T.46	99.0		34.47		
H.16	99.0		34.85		
H.23	99.0		35.51		
H.34	99.0		36.1		
T.77	99.0		36.45		
H.35	109.0		32.2		
H.32	109.0		32.21		
T.76	99.0		36.63		
T.75	99.0		36.77		
T.74	99.0		36.84		
T.73	99.0		37.57		
T.72	99.0		37.8		
S.1	94.0		41.98		
MTR	99.0		43.95		
STR	99.0		45.52		
H.36	123.0		15.57		
H.30	123.0		15.89		
T.70	123.0		18.12		
H.26	123.0		18.59		
T.68	123.0		22.57		
T.67	109.0		29.19		
T.66	99.0		33.77		
T.69	99.0		35.41		
H.22	99.0		35.67		
T.71	99.0		35.93		
T.58	109.0		28.05		
H.12	109.0		28.63		
T.43	109.0		28.68		
T.44	109.0		28.72		
T.42	109.0		29.09		
H.3	109.0		29.21		
H.4	109.0		29.26		
T.39	109.0		29.35		

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NODE ANALYSIS (cont.)

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
H.13	109.0		29.99		
H.14	109.0		30.12		
T.51	109.0		30.22		
T.54	109.0		30.43		
H.17	109.0		30.58		
T.57	109.0		30.82		
T.61	109.0		30.97		
T.65	109.0		31.07		
T.64	109.0		31.13		
T.63	109.0		31.59		
H.21	109.0		28.59		
T.62	109.0		29.24		
H.20	123.0		22.78		
H.18	123.0		22.86		
T.50	123.0		22.96		
H.9	123.0		22.99		
H.10	123.0		23.0		
T.37	123.0		23.12		
T.38	109.0		29.3		
H.7	109.0		28.7		
H.11	123.0		22.7		
H.1	123.0		22.82		
H.2	123.0		22.93		
T.49	123.0		22.98		
T.40	99.0		33.63		
H.15	99.0		33.7		
H.6	99.0		33.63		
H.5	99.0		33.63		
H.8	99.0		34.43		
H.28	109.0		31.1		
H.24	109.0		31.33		
H.25	109.0		31.36		
H.33	99.0		36.51		
H.29	99.0		36.81		

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10 HOWARD STREET - One Head Calculation (H.31)

Date 4/26/2013

Hyd. Ref. Point	Qa / Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
H.31	9.41	0.671	1Utr	2.0	10.000	13.500		K Factor = 4.90
to		150.0		0.0	2.000	0.0		
H.27	9.41	0.1879		0.0	12.000	2.255		Vel = 8.54
H.27	0.0	0.671	1Utb	17.0	12.000	15.755		
to		150.0	1Utr	2.0	19.000	0.0		
T.59	9.41	0.1880		0.0	31.000	5.827		Vel = 8.54
T.59	-5.93	0.671	1Utb	17.0	6.000	21.582		
to		150.0		0.0	17.000	0.0		
H.19	3.48	0.0298		0.0	23.000	0.686		Vel = 3.16
H.19	0.0	0.671	1Utr	2.0	11.000	22.268		
to		150.0		0.0	2.000	0.0		
T.47	3.48	0.0298		0.0	13.000	0.388		Vel = 3.16
T.47	-1.68	0.671	2Utb	34.0	5.000	22.656		
to		150.0		0.0	34.000	0.0		
T.48	1.8	0.0088		0.0	39.000	0.342		Vel = 1.63
T.48	0.48	0.862		0.0	16.000	22.998		
to		150.0		0.0	0.0	6.063		
T.53	2.28	0.0041		0.0	16.000	0.065		Vel = 1.25
T.53	1.52	0.862	1Utr	2.0	15.000	29.126		
to		150.0		0.0	2.000	4.331		
T.41	3.8	0.0104		0.0	17.000	0.177		Vel = 2.09
T.41	-0.02	0.671	1Utr	2.0	3.000	33.634		
to		150.0	1Utb	17.0	19.000	0.0		
T.45	3.78	0.0347		0.0	22.000	0.764		Vel = 3.43
T.45	-0.73	0.671	1Utr	2.0	1.000	34.398		
to		150.0		0.0	2.000	0.0		
T.46	3.05	0.0233		0.0	3.000	0.070		Vel = 2.77
T.46	0.73	0.671	1Utr	2.0	9.000	34.468		
to		150.0		0.0	2.000	0.0		
H.16	3.78	0.0347		0.0	11.000	0.382		Vel = 3.43
H.16	0.0	0.671	1Utr	2.0	17.000	34.850		
to		150.0		0.0	2.000	0.0		
H.23	3.78	0.0347		0.0	19.000	0.659		Vel = 3.43
H.23	0.0	0.671	1Utr	2.0	15.000	35.509		
to		150.0		0.0	2.000	0.0		
H.34	3.78	0.0348		0.0	17.000	0.591		Vel = 3.43
H.34	0.0	0.671	1Utr	2.0	8.000	36.100		
to		150.0		0.0	2.000	0.0		
T.77	3.78	0.0347		0.0	10.000	0.347		Vel = 3.43
T.77	-2.87	0.671	1Utb	17.0	17.000	36.447		
to		150.0		0.0	17.000	-4.331		
H.35	0.91	0.0025		0.0	34.000	0.085		Vel = 0.83
H.35	0.0	0.671	1Utr	2.0	3.000	32.201		
to		150.0		0.0	2.000	0.0		
H.32	0.91	0.0024		0.0	5.000	0.012		Vel =
H.32	0.0	0.671	1Utb	17.0	17.000	32.213		
to		150.0	1Utr	2.0	19.000	4.331		
T.76	0.91	0.0025		0.0	36.000	0.090		Vel =

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T.76	2.87	0.671	1Utr	2.0	2.000	36.634		
to		150.0		0.0	2.000	0.0		
T.75	3.78	0.0348		0.0	4.000	0.139		Vel = 3.43
T.75	-0.74	0.671	1Utr	2.0	1.000	36.773		
to		150.0		0.0	2.000	0.0		
T.74	3.04	0.0233		0.0	3.000	0.070		Vel = 2.76
T.74	0.74	0.671	1Utr	2.0	2.000	36.843		
to		150.0	1Utb	17.0	19.000	0.0		
T.73	3.78	0.0347		0.0	21.000	0.729		Vel = 3.43
T.73	5.85	0.862	1Utr	2.0	2.000	37.572		
to		150.0		0.0	2.000	0.0		
T.72	9.63	0.0580		0.0	4.000	0.232		Vel = 5.29
T.72	8.37	0.862	1T	7.528	8.000	37.804		
to		150.0		0.0	2.904	2.166		
S.1	18.0	0.1843		0.0	10.904	2.010		Vel = 9.90
S.1	0.0	1.049	2E	6.044	10.000	41.980		
to		150.0		0.0	6.044	0.834		* Fixed loss = 3
MTR	18.0	0.0709		0.0	16.044	1.138		Vel = 6.68
MTR	0.0	1.049	1E	3.022	10.000	43.952		
to		150.0	1T	7.555	12.089	0.0		
STR	18.0	0.0709	1G	1.511	22.089	1.566		Vel = 6.68
	0.0							
	18.00					45.518		K Factor = 2.67
H.31	8.60	0.671	1Utr	2.0	11.000	13.500		
to		150.0		0.0	2.000	0.0		
H.36	8.6	0.1592		0.0	13.000	2.069		Vel = 7.80
H.36	0.0	0.671		0.0	2.000	15.569		
to		150.0		0.0	0.0	0.0		
H.30	8.6	0.1590		0.0	2.000	0.318		Vel = 7.80
H.30	0.0	0.671	1Utr	2.0	12.000	15.887		
to		150.0		0.0	2.000	0.0		
T.70	8.6	0.1592		0.0	14.000	2.229		Vel = 7.80
T.70	0.0	0.671	1Utr	2.0	1.000	18.116		
to		150.0		0.0	2.000	0.0		
H.26	8.6	0.1590		0.0	3.000	0.477		Vel = 7.80
H.26	0.0	0.671	1Utb	17.0	6.000	18.593		
to		150.0	1Utr	2.0	19.000	0.0		
T.68	8.6	0.1592		0.0	25.000	3.979		Vel = 7.80
T.68	-1.73	0.862		0.0	18.000	22.572		
to		150.0		0.0	0.0	6.063		
T.67	6.87	0.0311		0.0	18.000	0.559		Vel = 3.78
T.67	-1.86	0.862	1Utr	2.0	12.000	29.194		
to		150.0		0.0	2.000	4.331		
T.66	5.01	0.0174		0.0	14.000	0.243		Vel = 2.75
T.66	0.85	0.671	1Utr	2.0	2.000	33.768		
to		150.0	1Utb	17.0	19.000	0.0		
T.69	5.86	0.0782		0.0	21.000	1.642		Vel =
T.69	-1.61	0.671	1Utr	2.0	4.000	35.410		
to		150.0		0.0	2.000	0.0		
H.22	4.25	0.0433		0.0	6.000	0.260		Vel =

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H.22	0.0	0.671	1Utr	2.0	4.000	35.670		
to		150.0		0.0	2.000	0.0		
T.71	4.25	0.0433		0.0	6.000	0.260		Vel = 3.86
T.71	1.61	0.671	1Utb	17.0	4.000	35.930		
to		150.0		0.0	17.000	0.0		
T.73	5.86	0.0782		0.0	21.000	1.642		Vel = 5.32
	0.0							
	5.86					37.572		K Factor = 0.96
T.59	5.93	0.862		0.0	17.000	21.582		
to		150.0		0.0	0.0	6.063		
T.58	5.93	0.0236		0.0	17.000	0.401		Vel = 3.26
T.58	-3.31	0.671	1Utb	17.0	16.000	28.046		
to		150.0		0.0	17.000	0.0		
H.12	2.62	0.0177		0.0	33.000	0.584		Vel = 2.38
H.12	0.0	0.671	1Utr	2.0	1.000	28.630		
to		150.0		0.0	2.000	0.0		
T.43	2.62	0.0177		0.0	3.000	0.053		Vel = 2.38
T.43	-0.51	0.671	1Utr	2.0	1.000	28.683		
to		150.0		0.0	2.000	0.0		
T.44	2.11	0.0120		0.0	3.000	0.036		Vel = 1.91
T.44	0.51	0.671	1Utr	2.0	2.000	28.719		
to		150.0	1Utb	17.0	19.000	0.0		
T.42	2.62	0.0177		0.0	21.000	0.371		Vel = 2.38
T.42	-1.52	0.671	1Utb	17.0	17.000	29.090		
to		150.0		0.0	17.000	0.0		
H.3	1.1	0.0035		0.0	34.000	0.120		Vel = 1.00
H.3	0.0	0.671	1Utr	2.0	12.000	29.210		
to		150.0		0.0	2.000	0.0		
H.4	1.1	0.0036		0.0	14.000	0.050		Vel = 1.00
H.4	0.0	0.671	1Utb	17.0	8.000	29.260		
to		150.0		0.0	17.000	0.0		
T.39	1.1	0.0035		0.0	25.000	0.088		Vel = 1.00
T.39	2.11	0.671	1Utb	17.0	6.000	29.348		
to		150.0	1Utr	2.0	19.000	0.0		
H.13	3.21	0.0258		0.0	25.000	0.644		Vel = 2.91
H.13	0.0	0.671	1Utr	2.0	3.000	29.992		
to		150.0		0.0	2.000	0.0		
H.14	3.21	0.0258		0.0	5.000	0.129		Vel = 2.91
H.14	0.0	0.671	1Utr	2.0	2.000	30.121		
to		150.0		0.0	2.000	0.0		
T.51	3.21	0.0258		0.0	4.000	0.103		Vel = 2.91
T.51	0.0	0.671	1Utr	2.0	6.000	30.224		
to		150.0		0.0	2.000	0.0		
T.54	3.21	0.0258		0.0	8.000	0.206		Vel = 2.91
T.54	0.0	0.671	1Utr	2.0	4.000	30.430		
to		150.0		0.0	2.000	0.0		
H.17	3.21	0.0258		0.0	6.000	0.155		Vel =
H.17	0.0	0.671	1Utr	2.0	7.000	30.585		
to		150.0		0.0	2.000	0.0		
T.57	3.21	0.0257		0.0	9.000	0.231		Vel =

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T.57	0.0	0.671	1Utr	2.0	4.000	30.816		
to		150.0		0.0	2.000	0.0		
T.61	3.21	0.0258		0.0	6.000	0.155		Vel = 2.91
T.61	0.0	0.671	1Utr	2.0	2.000	30.971		
to		150.0		0.0	2.000	0.0		
T.65	3.21	0.0258		0.0	4.000	0.103		Vel = 2.91
T.65	-0.52	0.671	1Utr	2.0	1.000	31.074		
to		150.0		0.0	2.000	0.0		
T.64	2.69	0.0187		0.0	3.000	0.056		Vel = 2.44
T.64	0.52	0.671	1Utb	17.0	1.000	31.130		
to		150.0		0.0	17.000	0.0		
T.63	3.21	0.0257		0.0	18.000	0.463		Vel = 2.91
T.63	5.16	0.862	1Utb	17.0	28.000	31.593		
to		150.0		0.0	14.000	4.331		
T.72	8.37	0.0448		0.0	42.000	1.880		Vel = 4.60
	0.0							
	8.37					37.804		K Factor = 1.36
T.58	3.30	0.671	1Utb	17.0	1.000	28.046		
to		150.0	1Utr	2.0	19.000	0.0		
H.21	3.3	0.0272		0.0	20.000	0.543		Vel = 2.99
H.21	0.0	0.671	1Utb	17.0	7.000	28.589		
to		150.0		0.0	17.000	0.0		
T.62	3.3	0.0272		0.0	24.000	0.652		Vel = 2.99
T.62	1.86	0.671	2Utb	34.0	4.000	29.241		
to		150.0		0.0	34.000	0.0		
T.63	5.16	0.0619		0.0	38.000	2.352		Vel = 4.68
	0.0							
	5.16					31.593		K Factor = 0.92
T.68	1.73	0.671	1Utb	17.0	9.000	22.572		
to		150.0		0.0	17.000	0.0		
H.20	1.73	0.0082		0.0	26.000	0.213		Vel = 1.57
H.20	0.0	0.671	1Utr	2.0	7.000	22.785		
to		150.0		0.0	2.000	0.0		
H.18	1.73	0.0082		0.0	9.000	0.074		Vel = 1.57
H.18	0.0	0.671	1Utr	2.0	11.000	22.859		
to		150.0		0.0	2.000	0.0		
T.50	1.73	0.0082		0.0	13.000	0.106		Vel = 1.57
T.50	-0.48	0.671	1Utr	2.0	3.000	22.965		
to		150.0		0.0	2.000	0.0		
H.9	1.25	0.0044		0.0	5.000	0.022		Vel = 1.13
H.9	0.0	0.671	1Utr	2.0	2.000	22.987		
to		150.0		0.0	2.000	0.0		
H.10	1.25	0.0045		0.0	4.000	0.018		Vel = 1.13
H.10	0.0	0.671	1Utb	17.0	6.000	23.005		
to		150.0	1Utr	2.0	19.000	0.0		
T.37	1.25	0.0045		0.0	25.000	0.112		Vel =
T.37	1.68	0.862	1Utr	2.0	16.000	23.117		
to		150.0		0.0	2.000	6.063		
T.38	2.93	0.0064		0.0	18.000	0.116		Vel =

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Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
T.38	-0.82	0.862	1Utb	17.0	1.000	29.296		
to		150.0		0.0	14.000	0.0		
T.39	2.11	0.0035		0.0	15.000	0.052		Vel = 1.16
	0.0							
	2.11					29.348		K Factor = 0.39
T.43	0.51	0.671	1Utb	17.0	2.000	28.683		
to		150.0	1Utr	2.0	19.000	0.0		
H.7	0.51	0.0009		0.0	21.000	0.018		Vel = 0.46
H.7	0.0	0.671	1Utb	17.0	4.000	28.701		
to		150.0		0.0	17.000	0.0		
T.44	0.51	0.0009		0.0	21.000	0.018		Vel = 0.46
	0.0							
	0.51					28.719		K Factor = 0.10
T.47	1.68	0.671	1Utr	2.0	4.000	22.656		
to		150.0		0.0	2.000	0.0		
H.11	1.68	0.0078		0.0	6.000	0.047		Vel = 1.52
H.11	0.0	0.671	1Utr	2.0	13.000	22.703		
to		150.0		0.0	2.000	0.0		
H.1	1.68	0.0078		0.0	15.000	0.117		Vel = 1.52
H.1	0.0	0.671	1Utr	2.0	12.000	22.820		
to		150.0		0.0	2.000	0.0		
H.2	1.68	0.0079		0.0	14.000	0.110		Vel = 1.52
H.2	0.0	0.671	1Utb	17.0	7.000	22.930		
to		150.0		0.0	17.000	0.0		
T.37	1.68	0.0078		0.0	24.000	0.187		Vel = 1.52
	0.0							
	1.68					23.117		K Factor = 0.35
T.50	0.48	0.671	1Utb	17.0	5.617	22.965		
to		150.0		0.0	17.000	0.0		
T.49	0.48	0.0008		0.0	22.617	0.017		Vel = 0.44
T.49	0.0	0.671	1Utr	2.0	2.000	22.982		
to		150.0	1Utb	17.0	19.000	0.0		
T.48	0.48	0.0008		0.0	21.000	0.016		Vel = 0.44
	0.0							
	0.48					22.998		K Factor = 0.10
T.42	1.52	0.862	1Utb	17.0	5.000	29.090		
to		150.0		0.0	14.000	0.0		
T.53	1.52	0.0019		0.0	19.000	0.036		Vel = 0.84
	0.0							
	1.52					29.126		K Factor = 0.28
T.67	1.86	0.862	1Utb	17.0	3.000	29.194		
to		150.0		0.0	14.000	0.0		
T.62	1.86	0.0028		0.0	17.000	0.047		Vel = 1.02
	0.0							
	1.86					29.241		K Factc
T.38	0.82	0.862		0.0	12.000	29.296		
to		150.0		0.0	0.0	4.331		
T.40	0.82	0.0006		0.0	12.000	0.007		Vel =

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T.40	0.02	0.671	1Utb	17.0	12.000	33.634		
to		150.0	1Utr	2.0	19.000	0.0		
H.15	0.84	0.0022		0.0	31.000	0.067		Vel = 0.76
H.15	0.0	0.671	1Utb	17.0	14.000	33.701		
to		150.0		0.0	17.000	0.0		
T.66	0.84	0.0022		0.0	31.000	0.067		Vel = 0.76
	0.0							
	0.84					33.768		K Factor = 0.14
T.41	0.02	0.671	1Utb	17.0	14.000	33.634		
to		150.0		0.0	17.000	0.0		
H.6	0.02	0.0		0.0	31.000	0.0		Vel = 0.02
H.6	0.0	0.671	1Utr	2.0	10.000	33.634		
to		150.0		0.0	2.000	0.0		
H.5	0.02	0.0		0.0	12.000	0.0		Vel = 0.02
H.5	0.0	0.671	1Utb	17.0	6.000	33.634		
to		150.0		0.0	17.000	0.0		
T.40	0.02	0.0		0.0	23.000	0.0		Vel = 0.02
	0.0							
	0.02					33.634		K Factor = 0
T.45	0.72	0.671	1Utb	17.0	4.000	34.398		
to		150.0		0.0	17.000	0.0		
H.8	0.72	0.0016		0.0	21.000	0.034		Vel = 0.65
H.8	0.0	0.671	1Utb	17.0	3.000	34.432		
to		150.0	1Utr	2.0	19.000	0.0		
T.46	0.72	0.0016		0.0	22.000	0.036		Vel = 0.65
	0.0							
	0.72					34.468		K Factor = 0.12
T.65	0.52	0.671	1Utb	17.0	13.000	31.074		
to		150.0		0.0	17.000	0.0		
H.28	0.52	0.0009		0.0	30.000	0.027		Vel = 0.47
H.28	0.0	0.671	1Utb	17.0	13.000	31.101		
to		150.0	1Utr	2.0	19.000	0.0		
T.64	0.52	0.0009		0.0	32.000	0.029		Vel = 0.47
	0.0							
	0.52					31.130		K Factor = 0.09
T.69	1.60	0.671	1Utb	17.0	16.000	35.410		
to		150.0	1Utr	2.0	19.000	-4.331		
H.24	1.6	0.0071		0.0	35.000	0.249		Vel = 1.45
H.24	0.0	0.671	1Utr	2.0	2.000	31.328		
to		150.0		0.0	2.000	0.0		
H.25	1.6	0.0072		0.0	4.000	0.029		Vel = 1.45
H.25	0.0	0.671	1Utb	17.0	17.000	31.357		
to		150.0		0.0	17.000	4.331		
T.71	1.6	0.0071		0.0	34.000	0.242		Vel = 1.45
	0.0							
	1.60					35.930		K Facto
T.77	2.86	0.671		0.0	3.000	36.447		
to		150.0		0.0	0.0	0.0		
H.33	2.86	0.0207		0.0	3.000	0.062		Vel =

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H.33	0.0	0.671	1Utr	2.0	4.000	36.509		
to		150.0		0.0	2.000	0.0		
T.76	2.86	0.0208		0.0	6.000	0.125		Vel = 2.59
	0.0							
	2.86					36.634		K Factor = 0.47
T.75	0.74	0.671	1Utb	17.0	3.000	36.773		
to		150.0		0.0	17.000	0.0		
H.29	0.74	0.0017		0.0	20.000	0.034		Vel = 0.67
H.29	0.0	0.671	1Utb	17.0	2.000	36.807		
to		150.0	1Utr	2.0	19.000	0.0		
T.74	0.74	0.0017		0.0	21.000	0.036		Vel = 0.67
	0.0							
	0.74					36.843		K Factor = 0.12

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