CIORBA GROUP | Consulting Engineers

Quality Engineering Services for the Community

Fairmont Community

Flood Study Feasibility Report

Volume II

Prepared for

Will County Land Use Department

April 2015

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APPENDICES

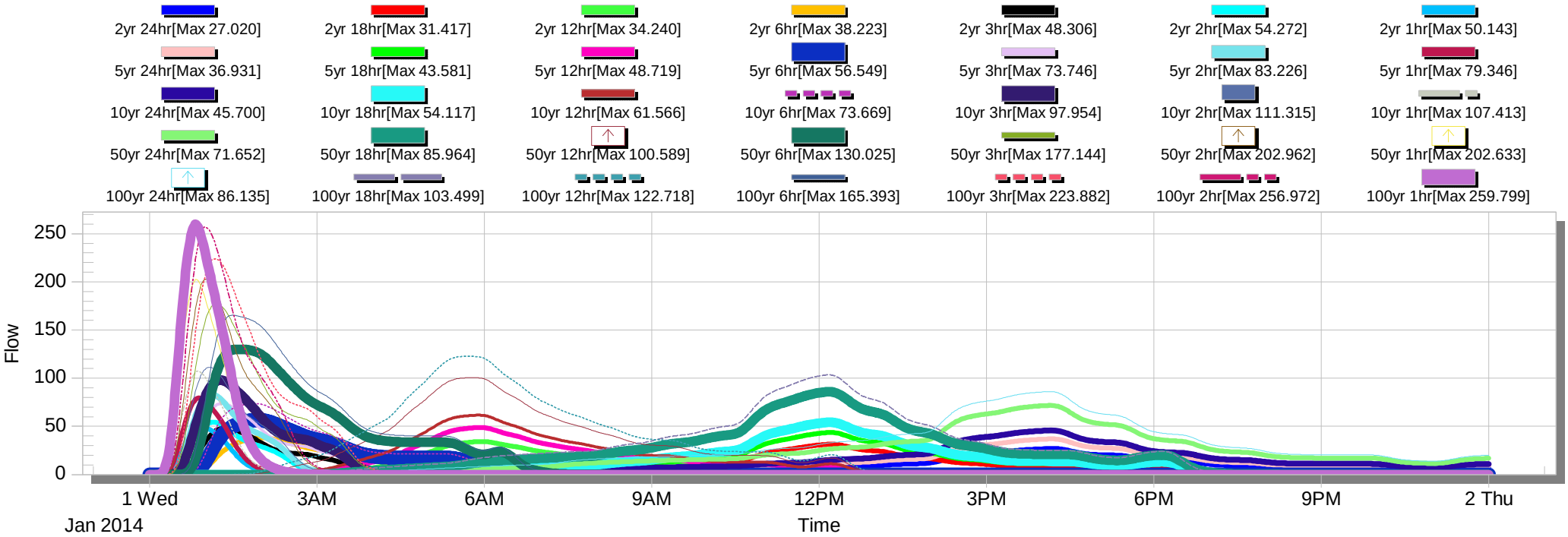
XP-SWMM

EXISTING CONDITIONS ANALYSIS

EXISTING CONDITIONS

PEAK FLOW RATES BY TRIBUTARY AREA

Node - Node11



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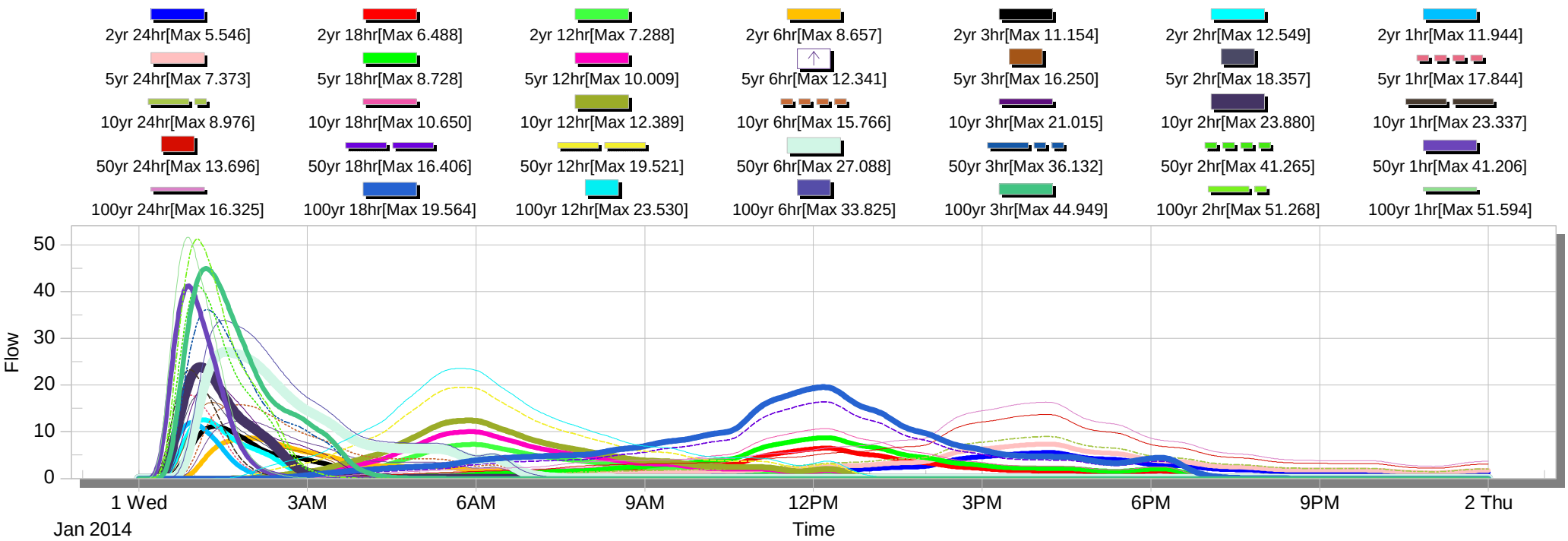

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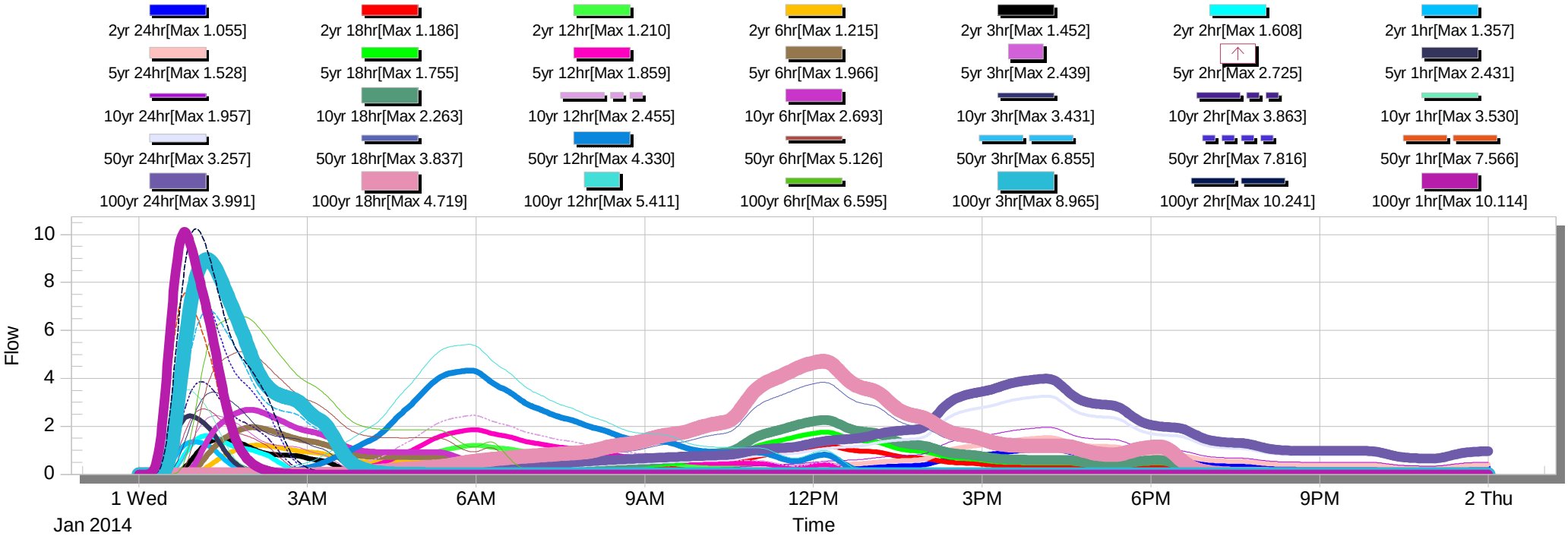

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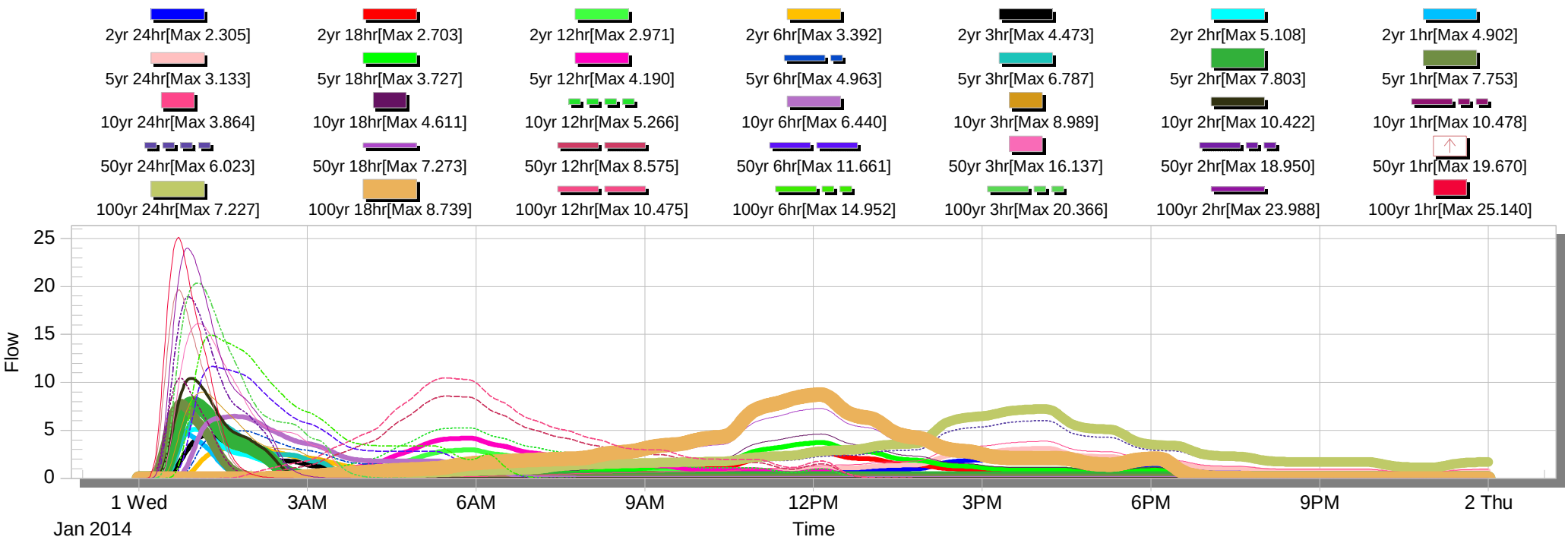

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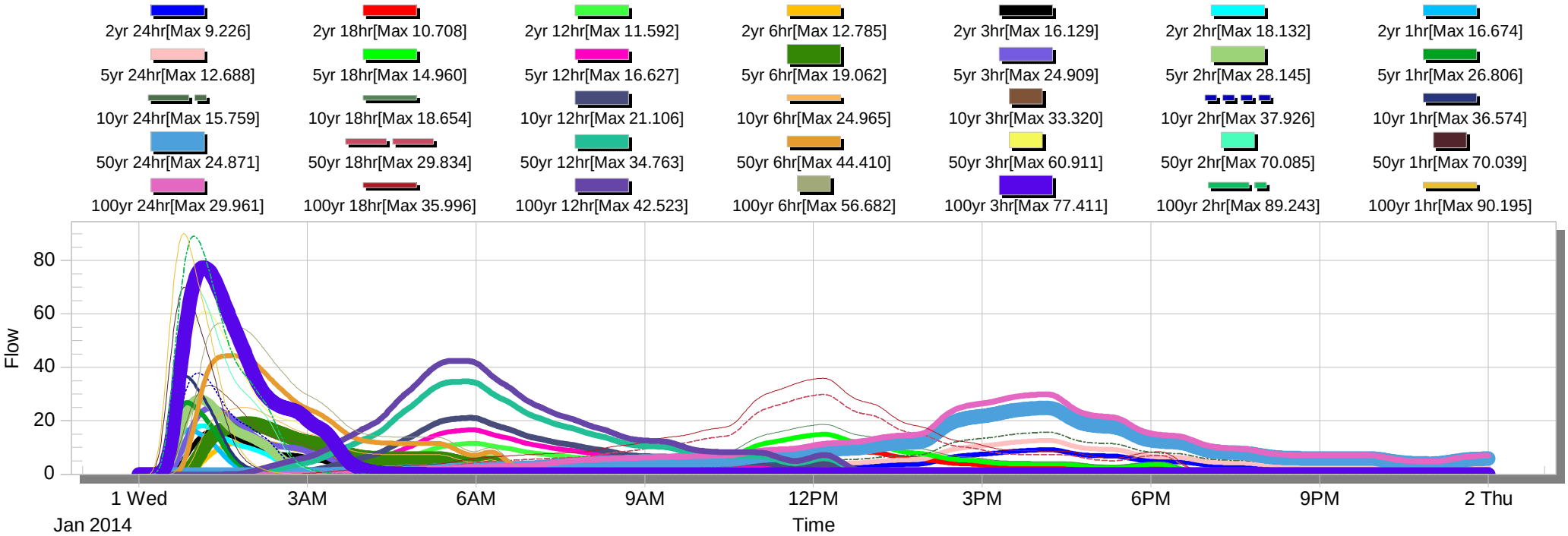

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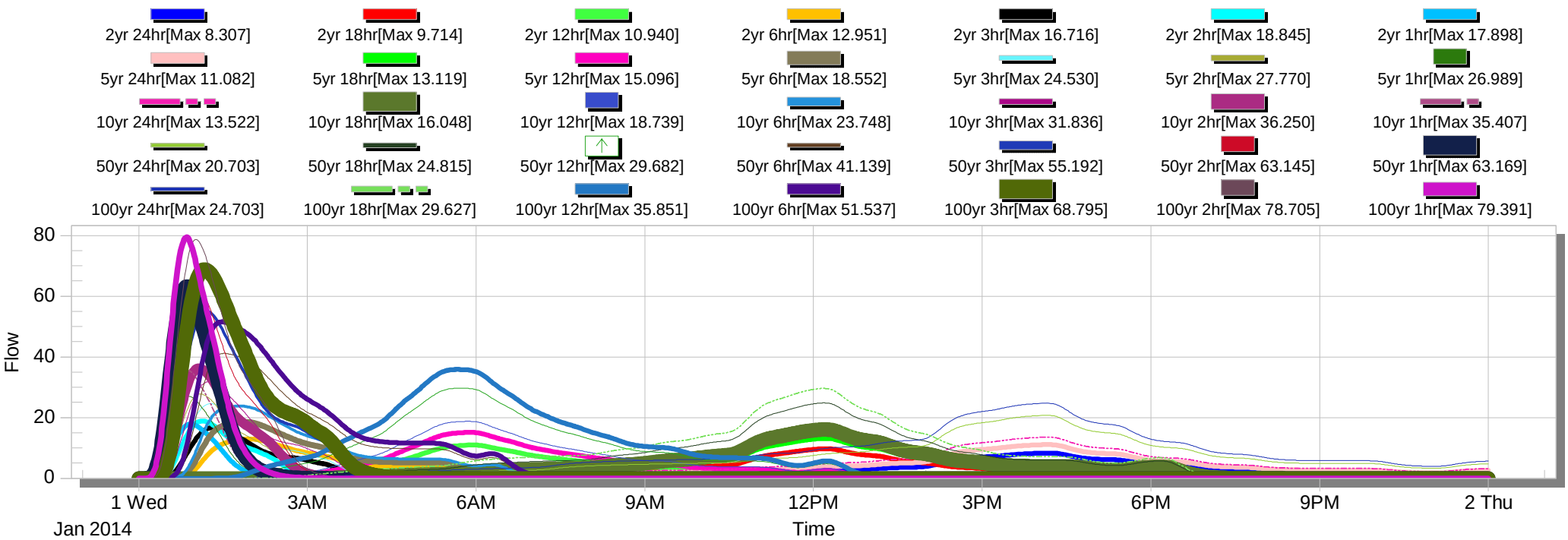

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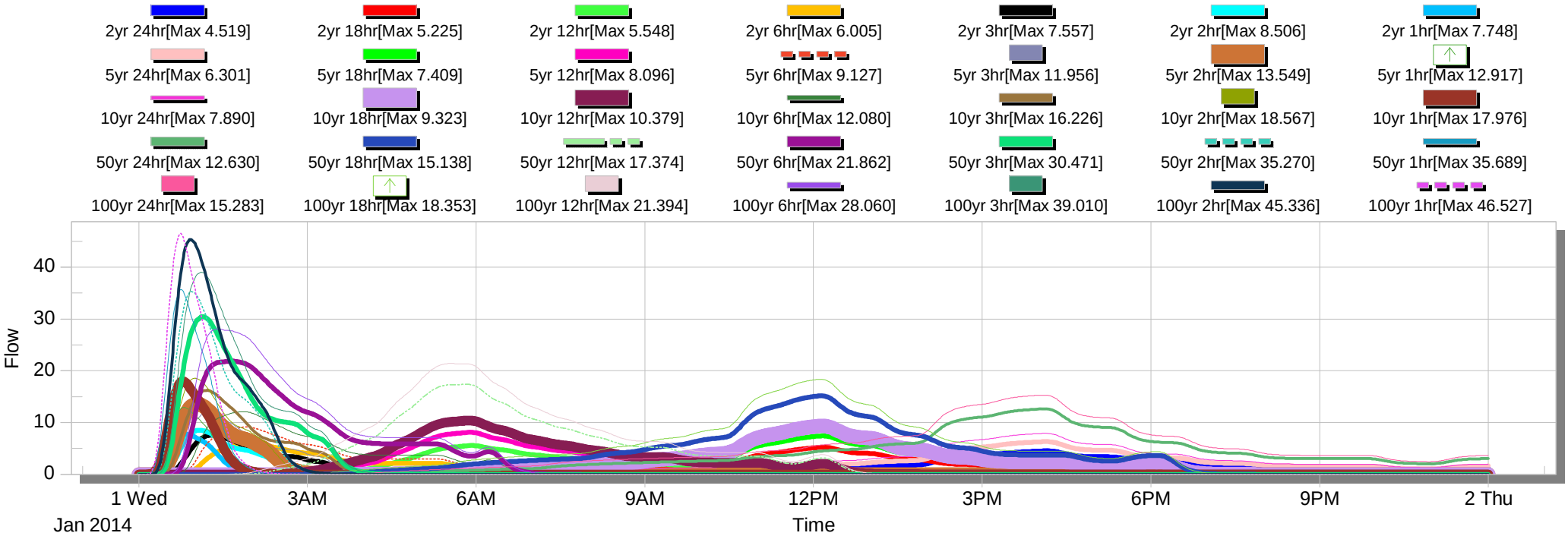

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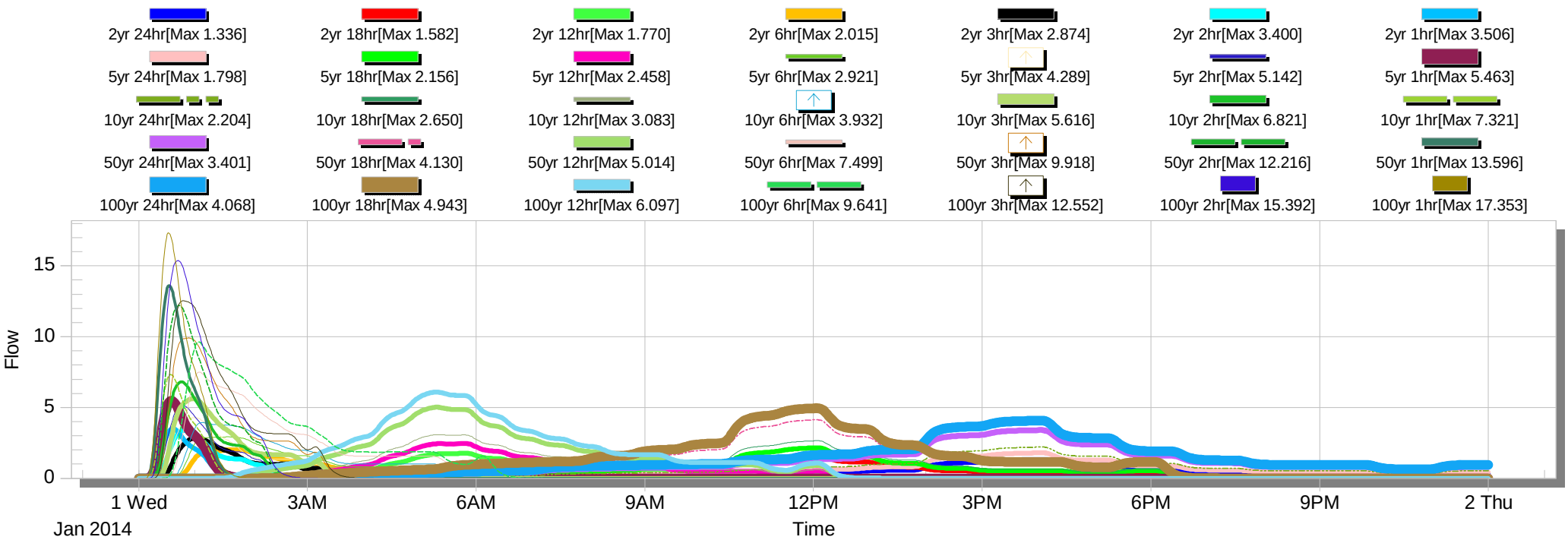

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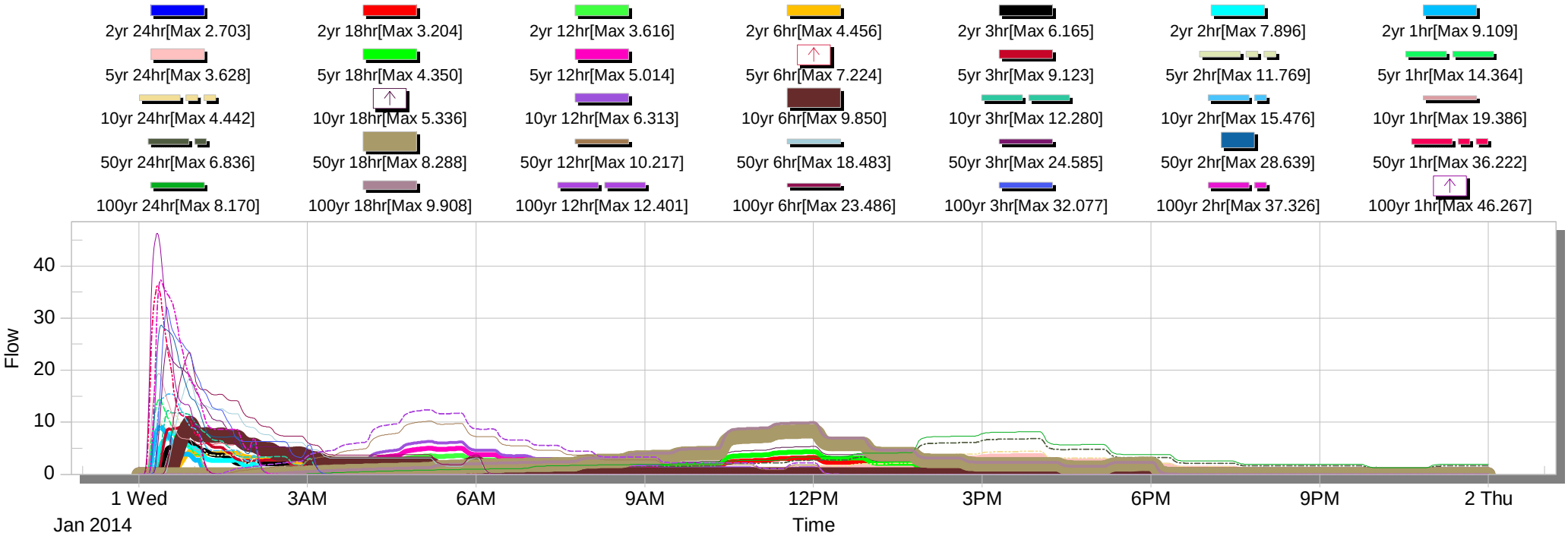

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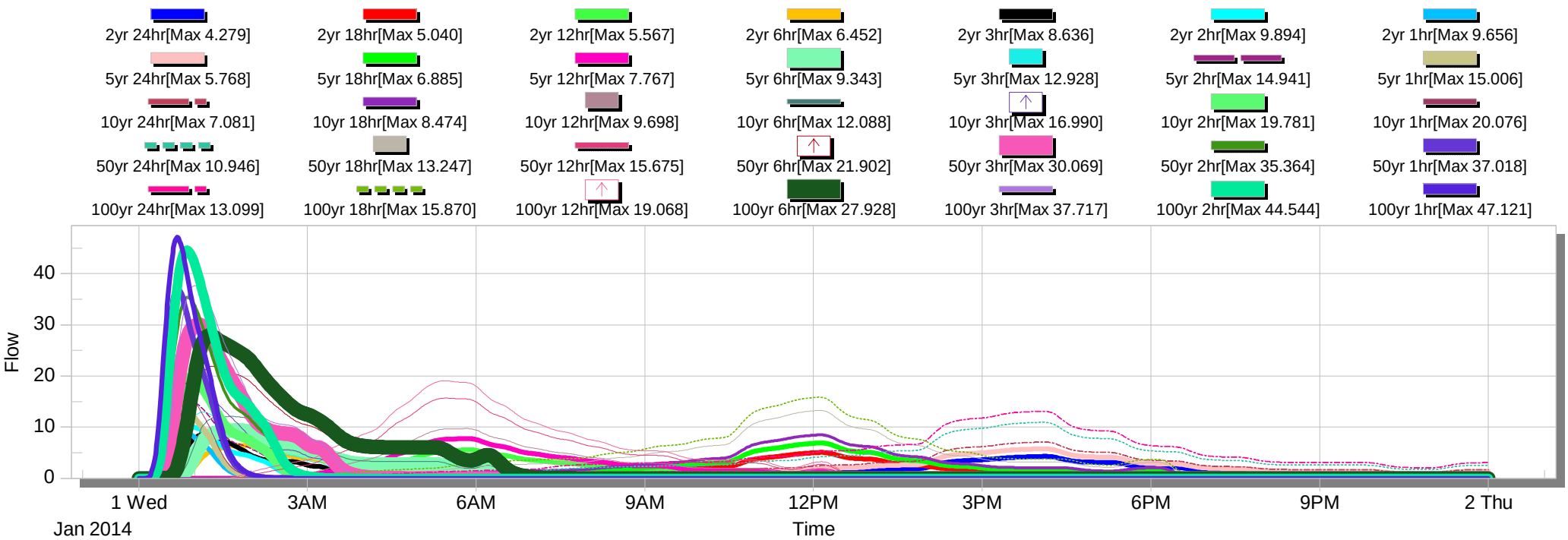

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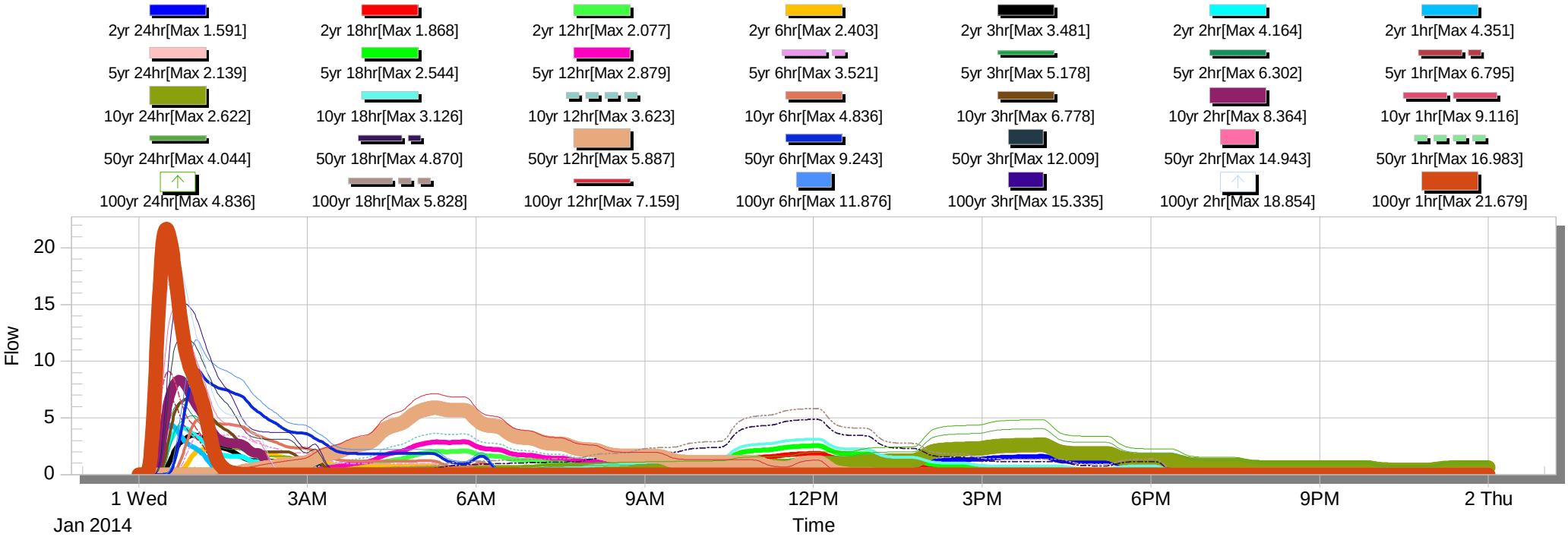

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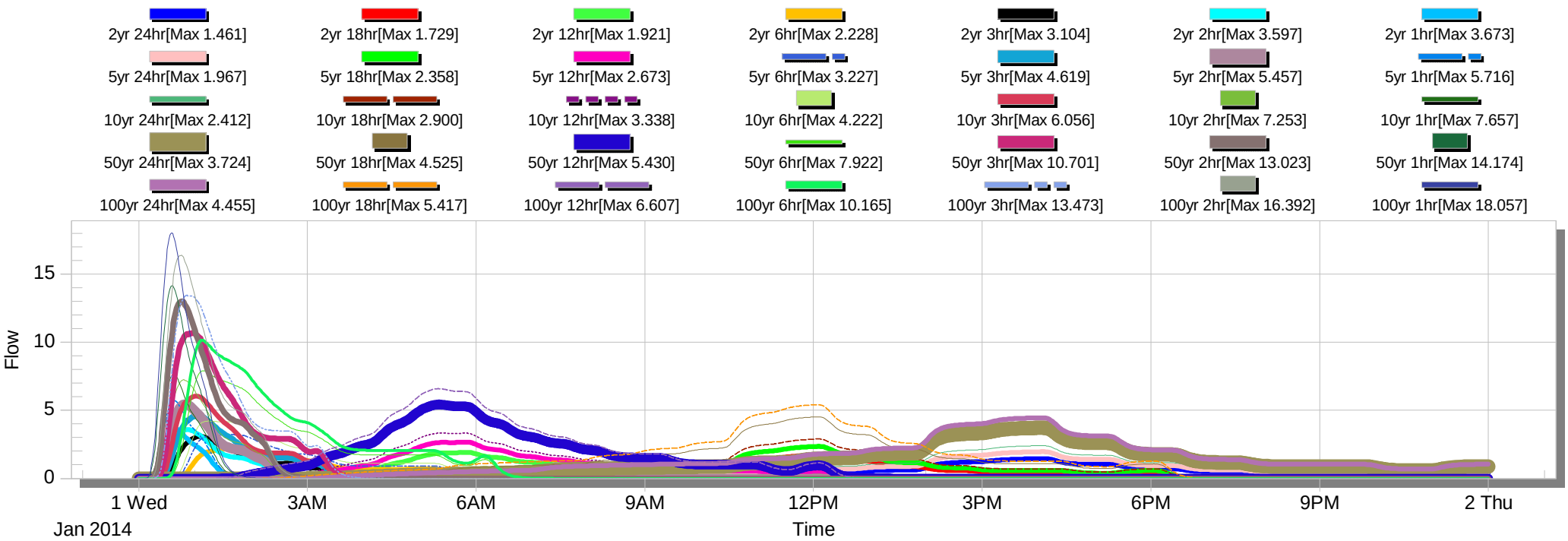

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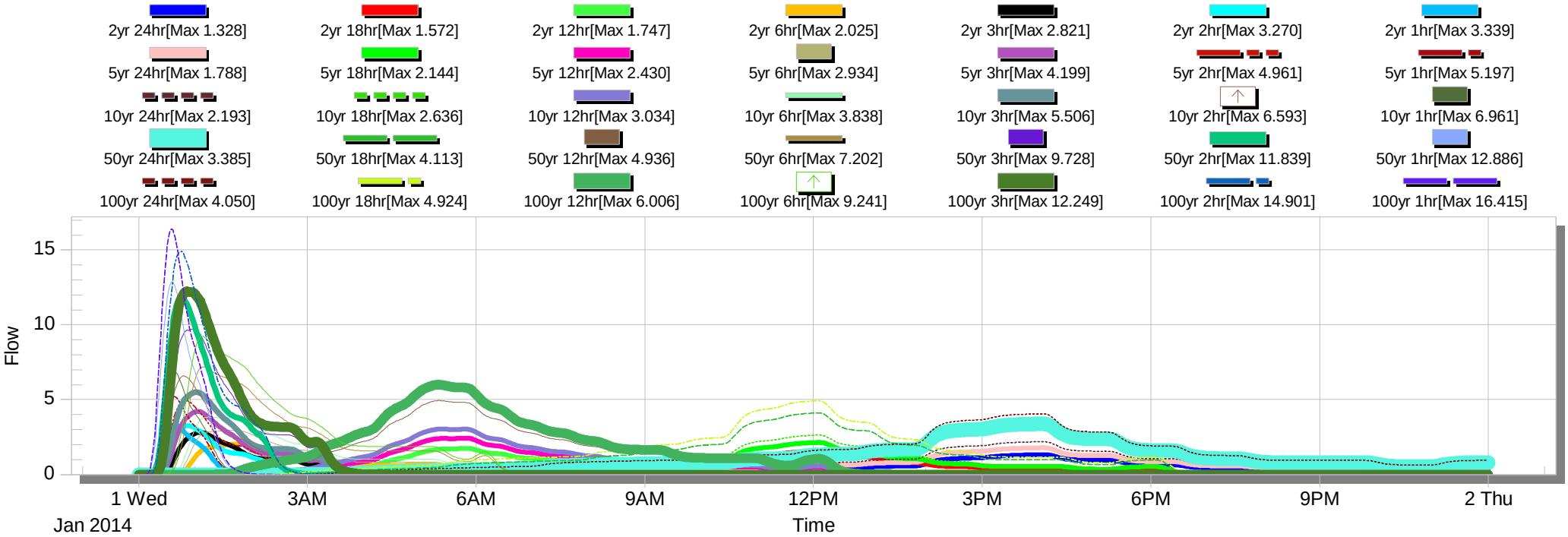

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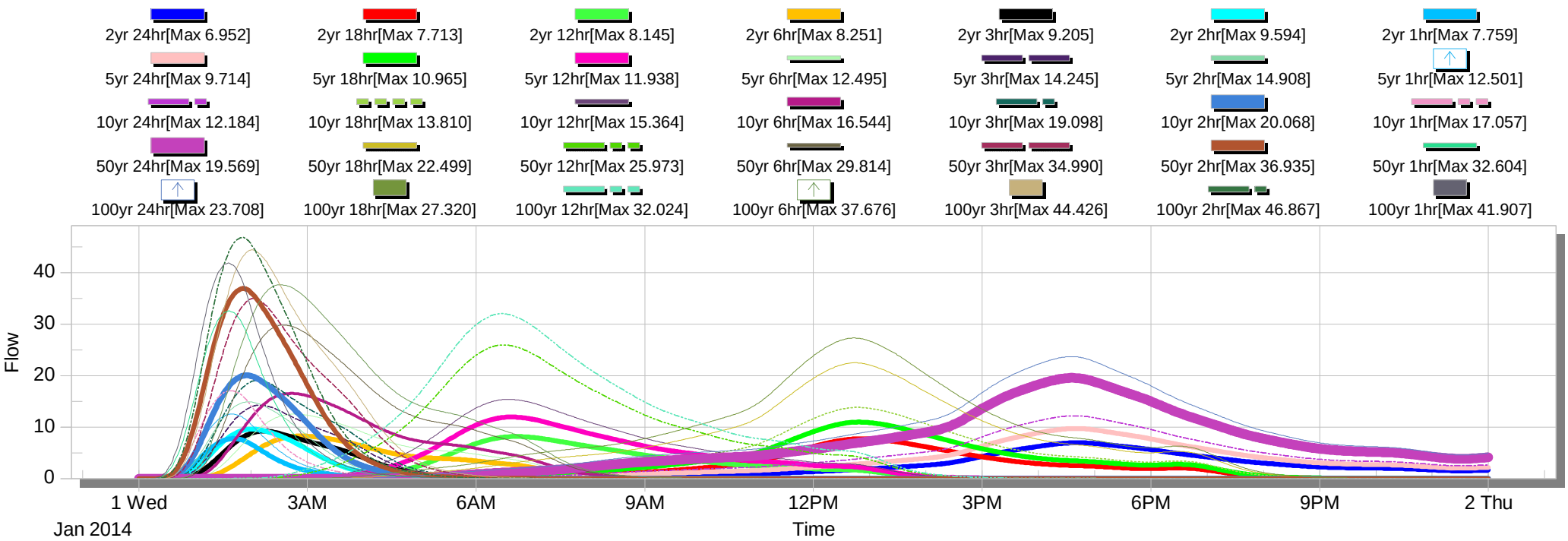

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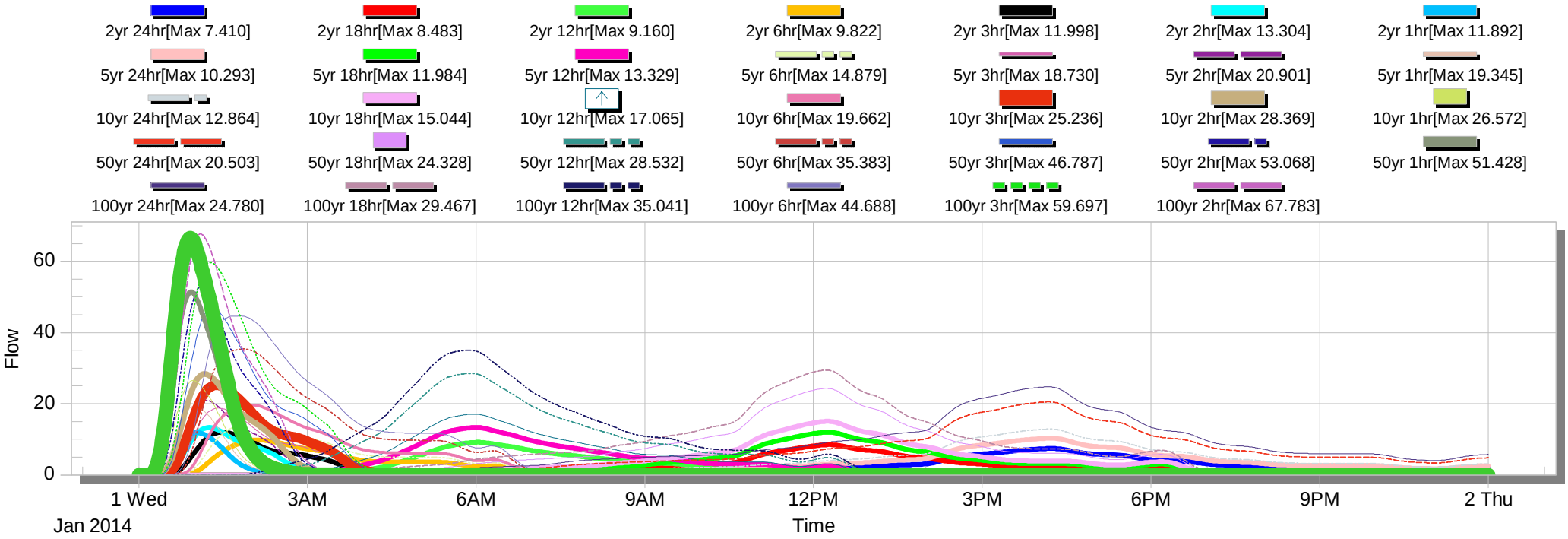

EXISTING CONDITIONS
HIGH WATER LEVEL BY NODE

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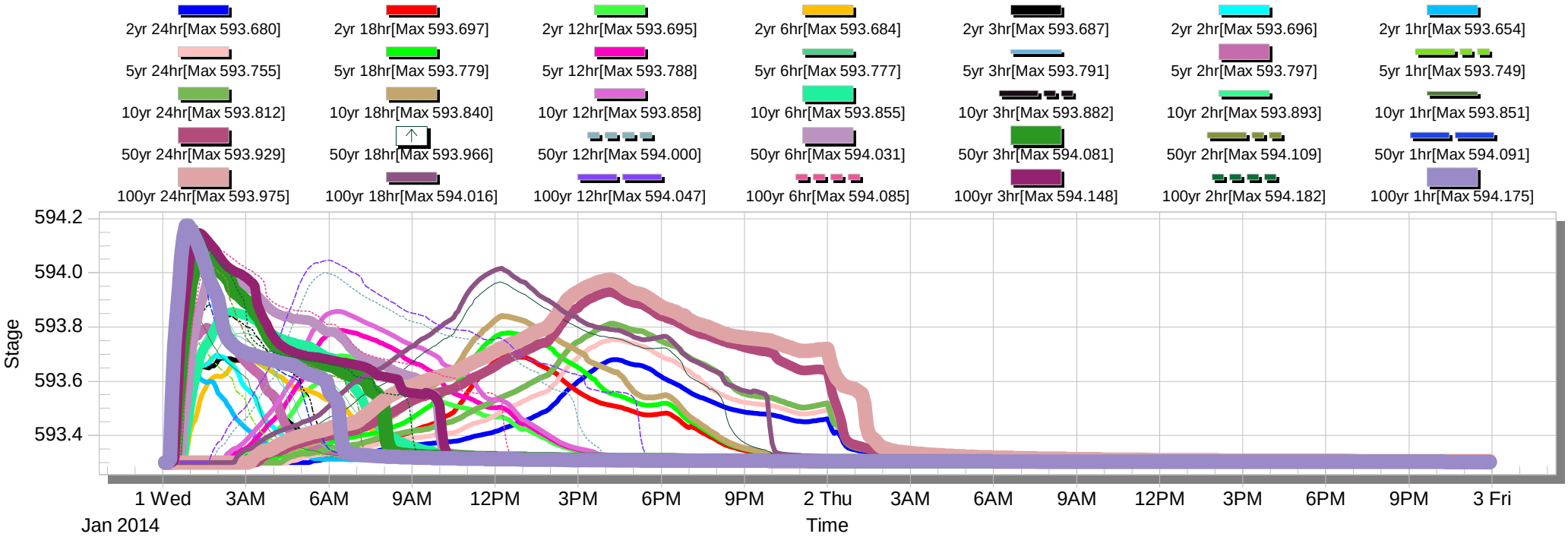

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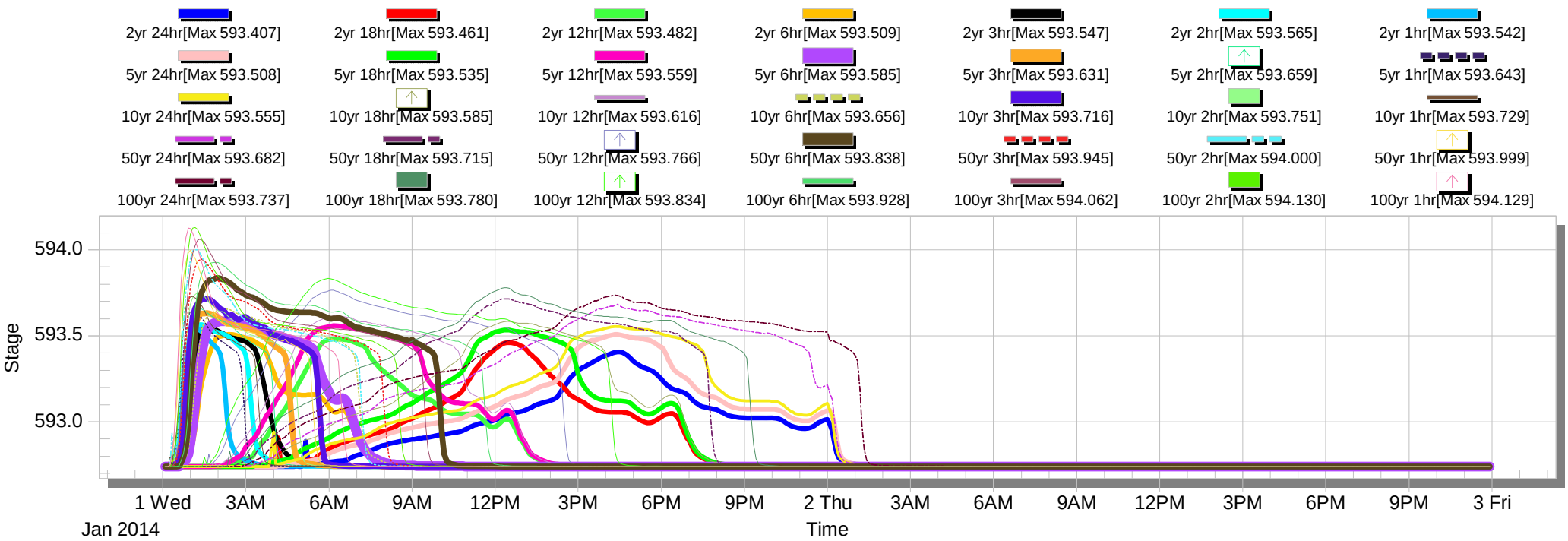

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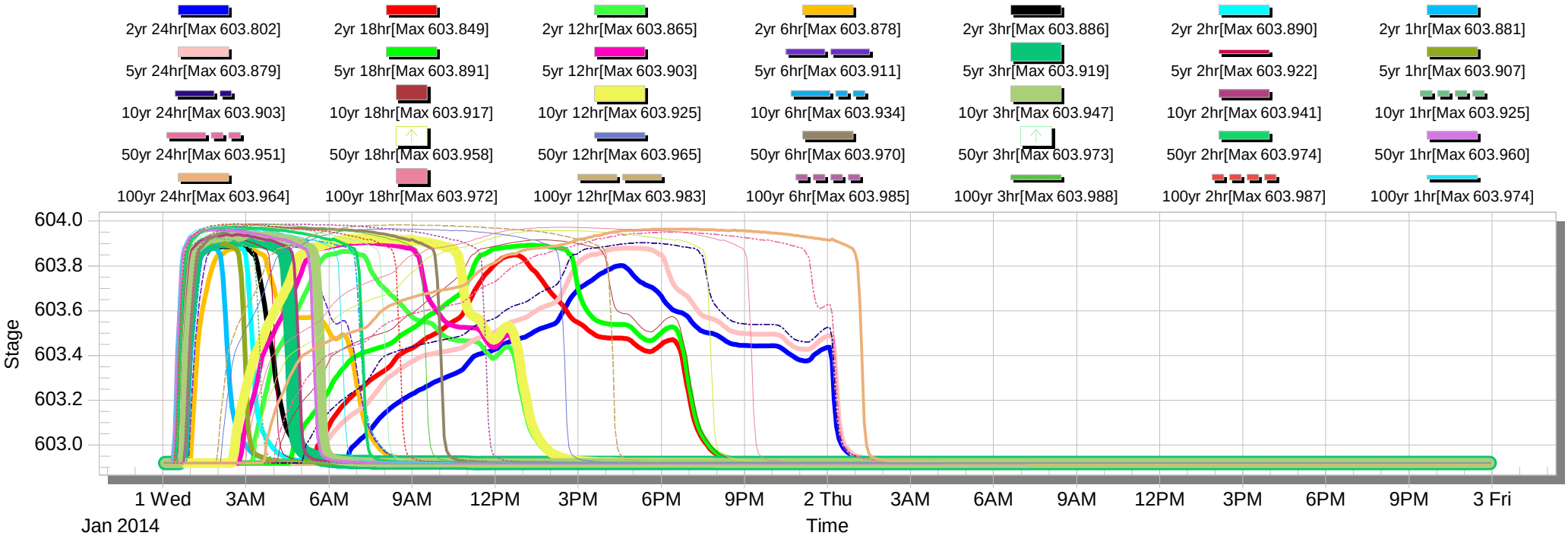

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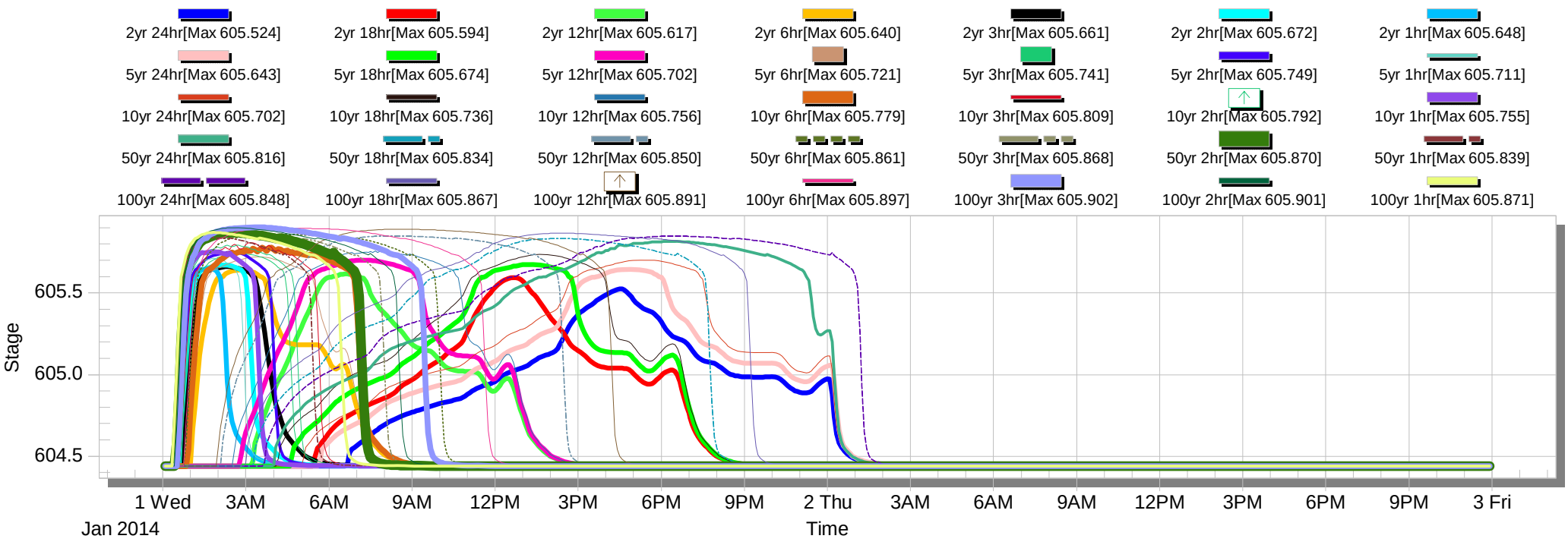

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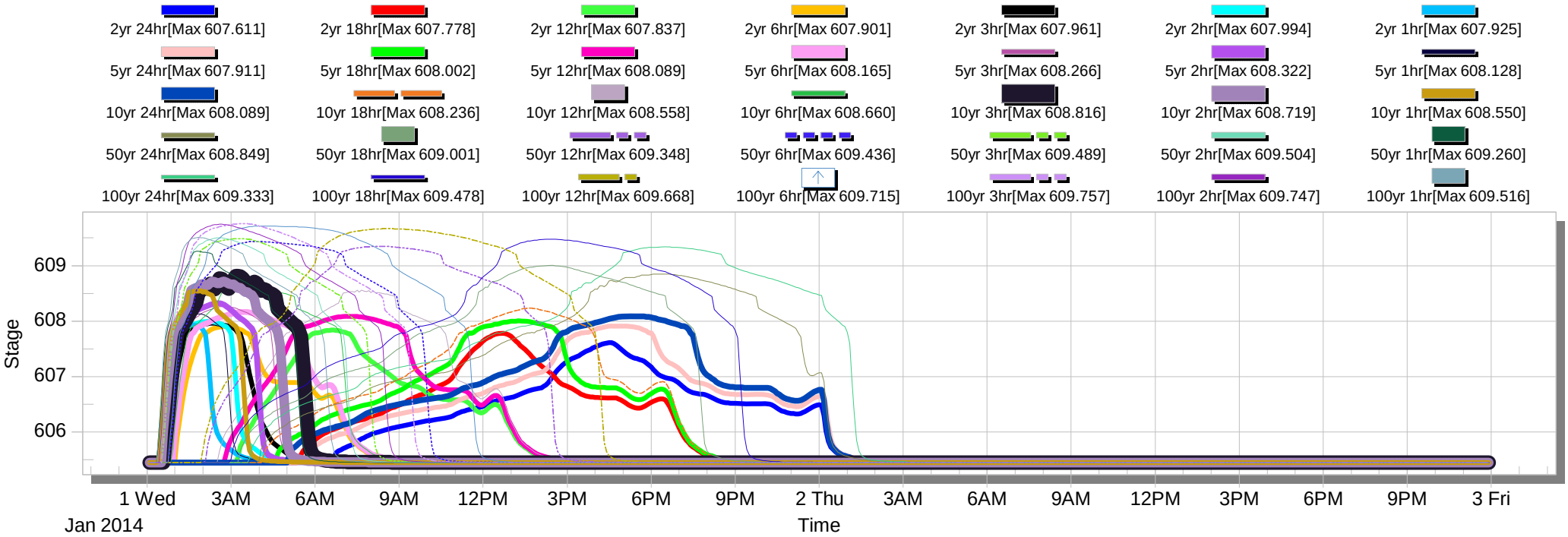

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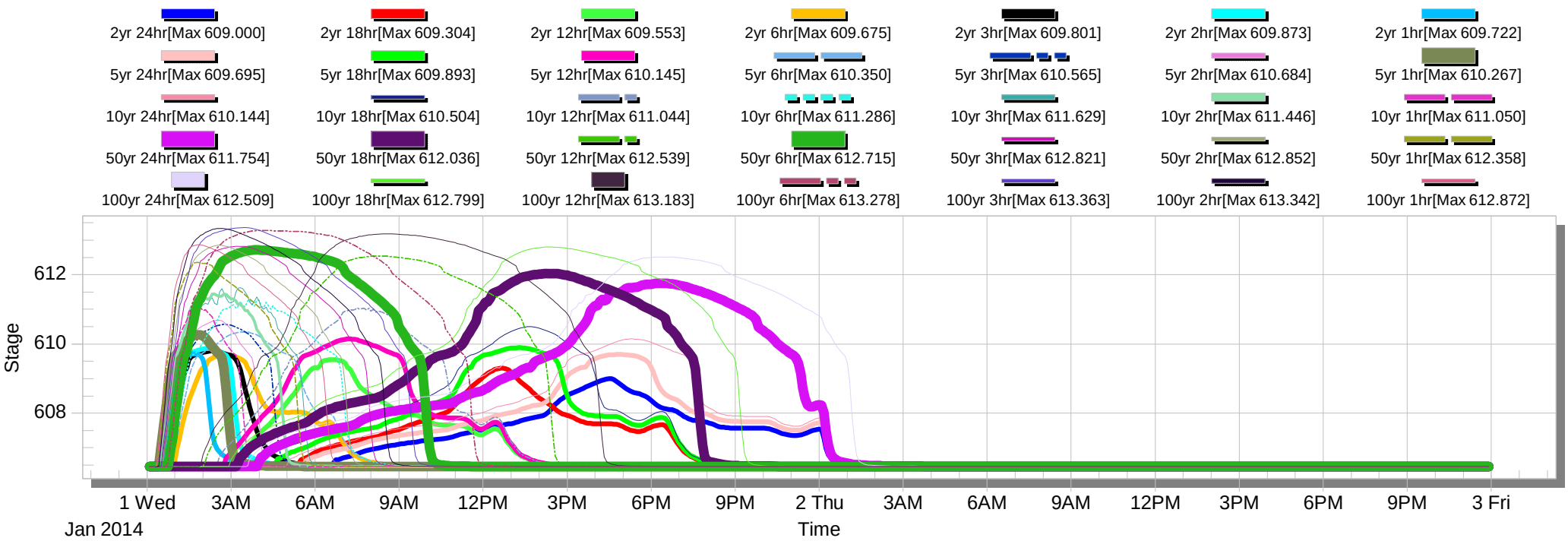

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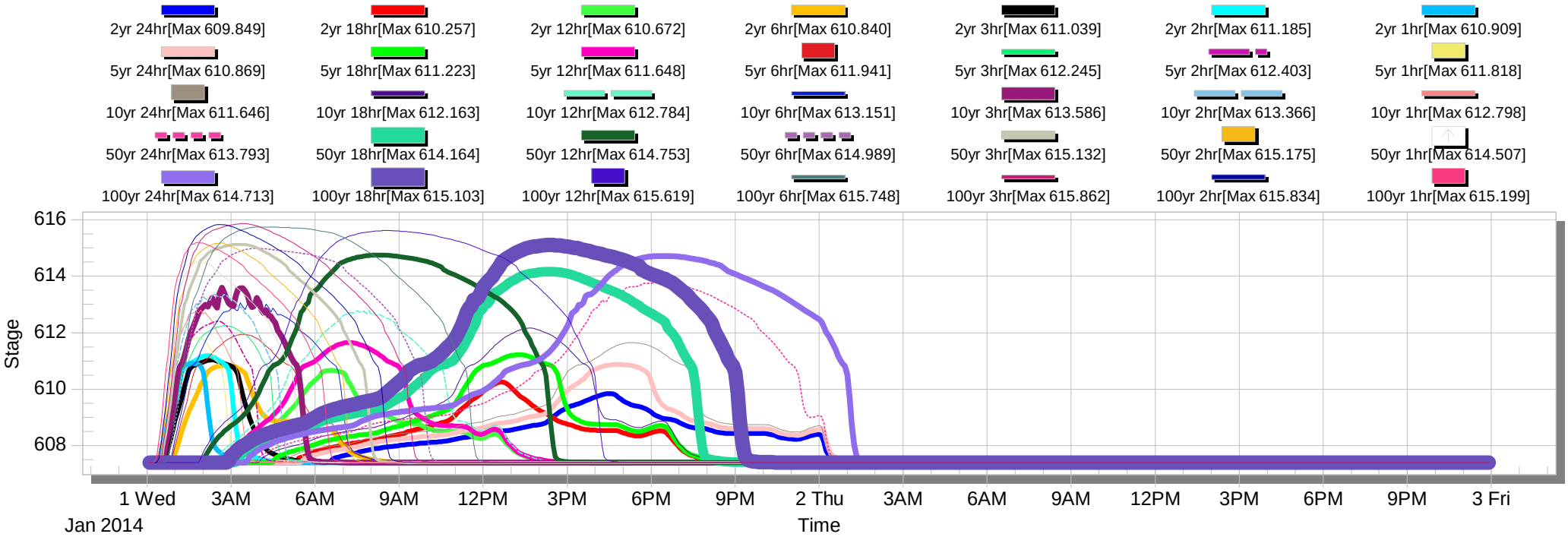

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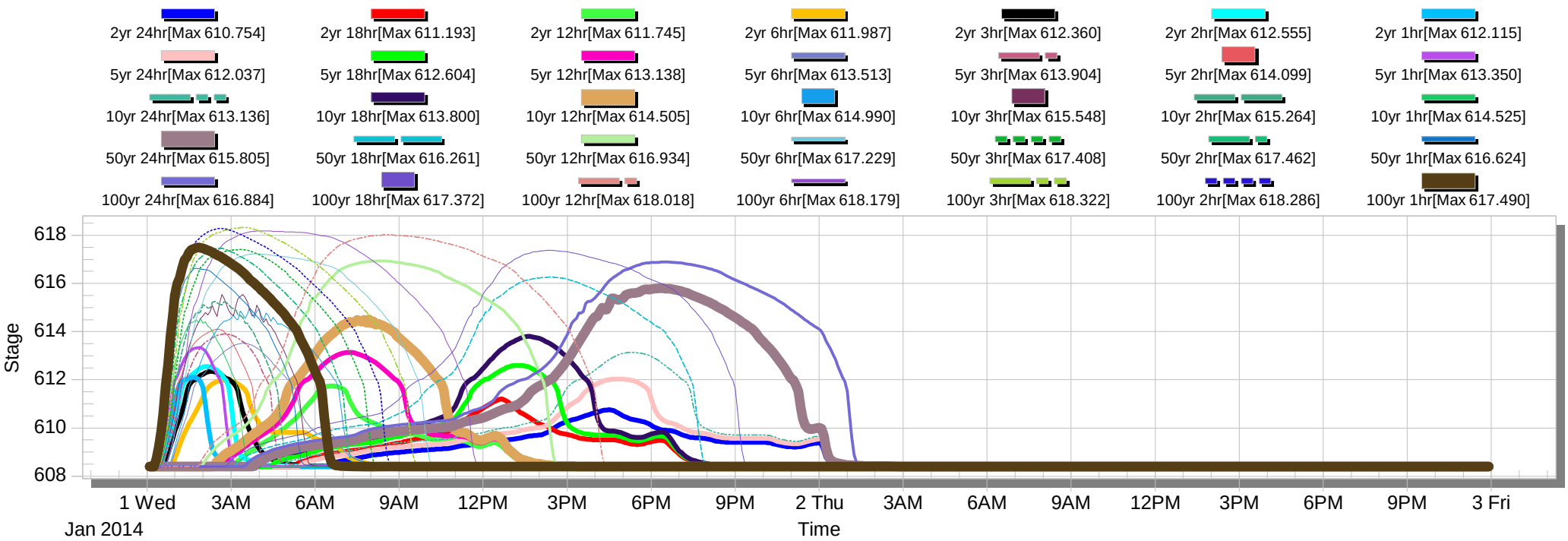

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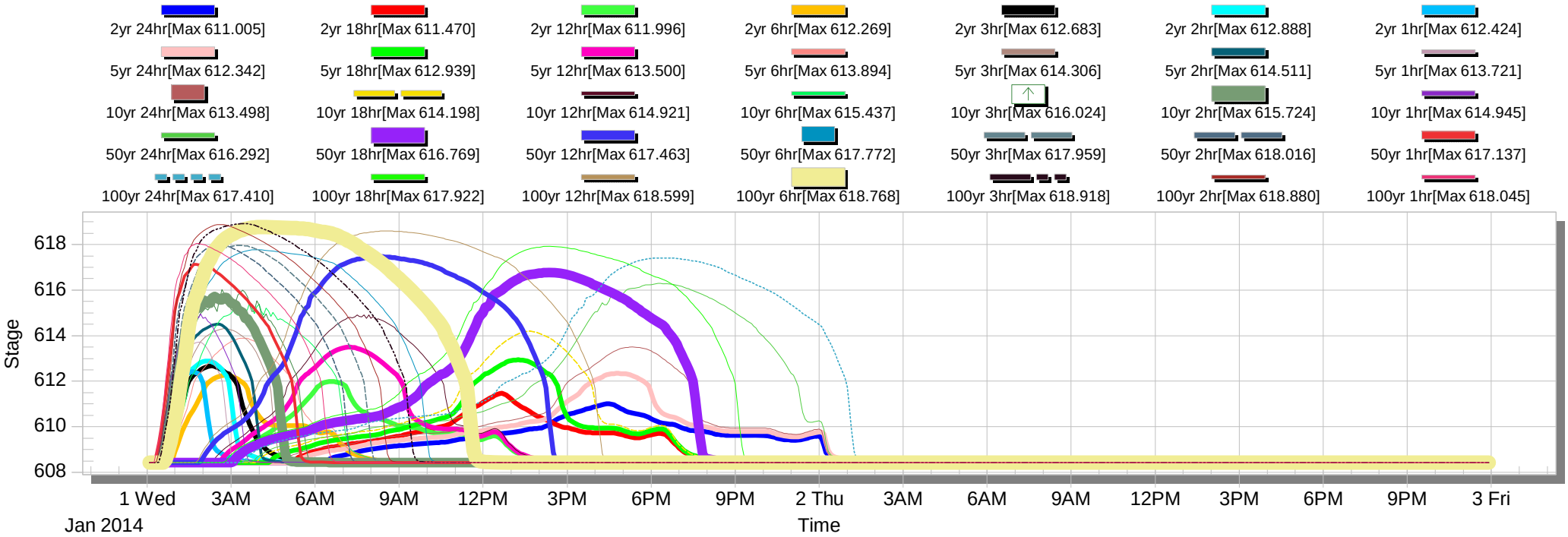

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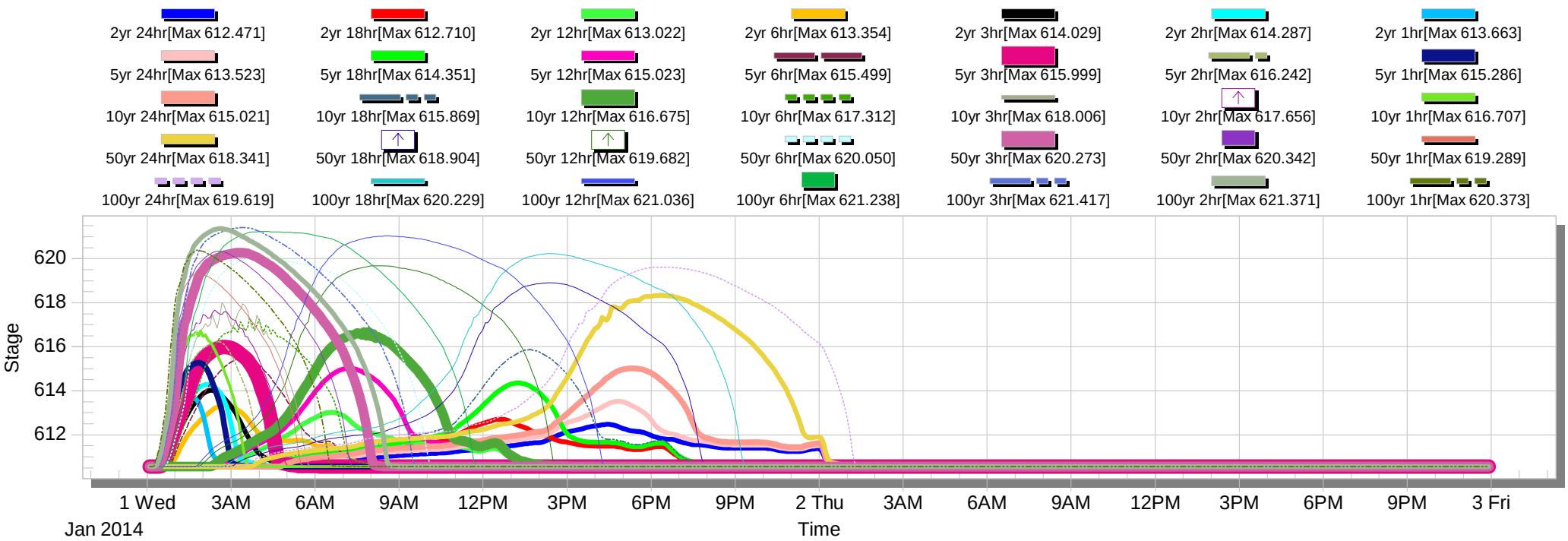

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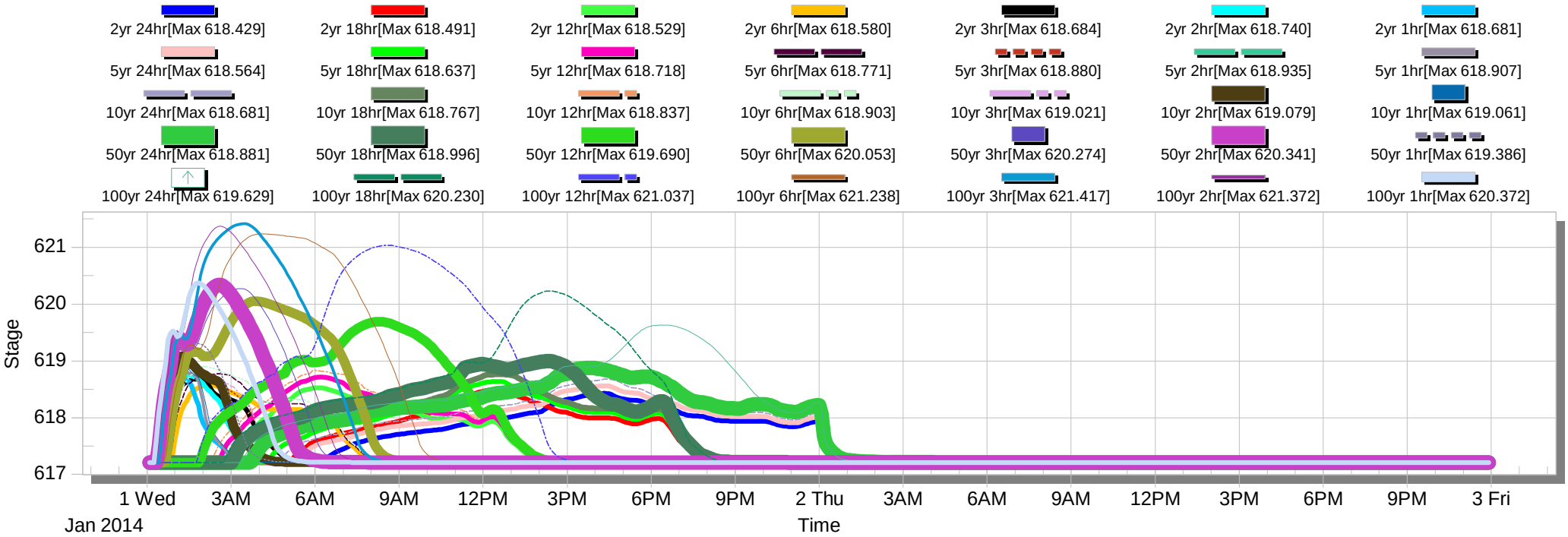

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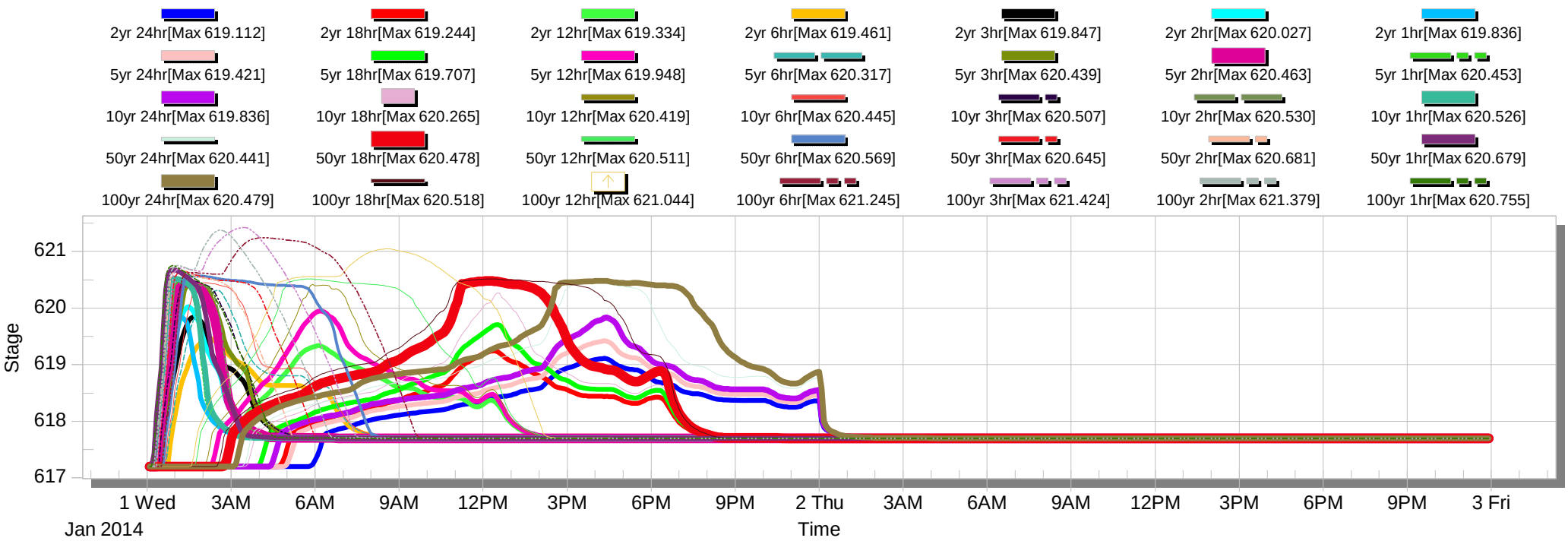

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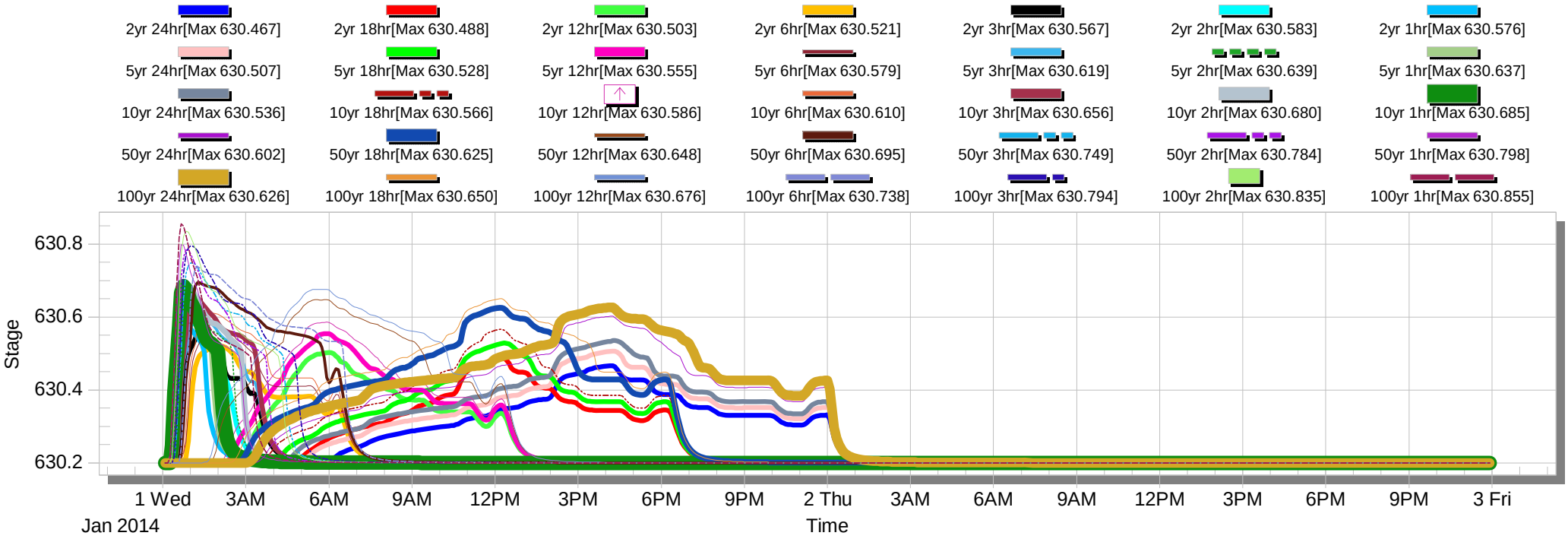

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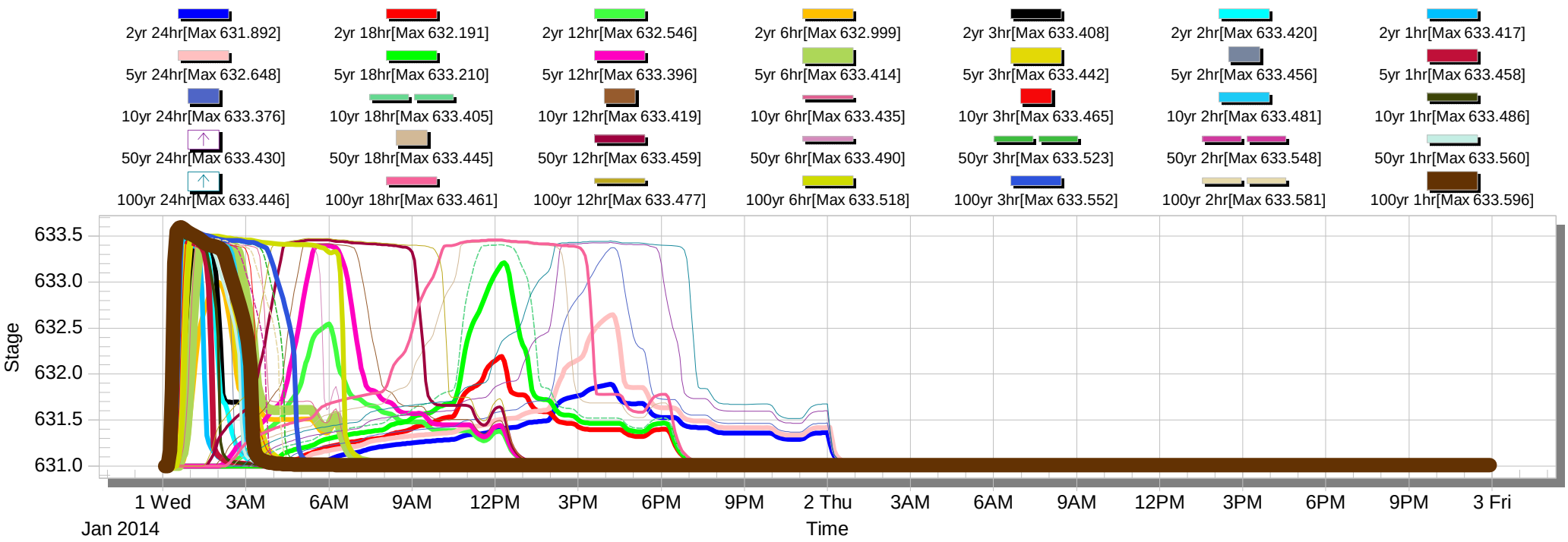

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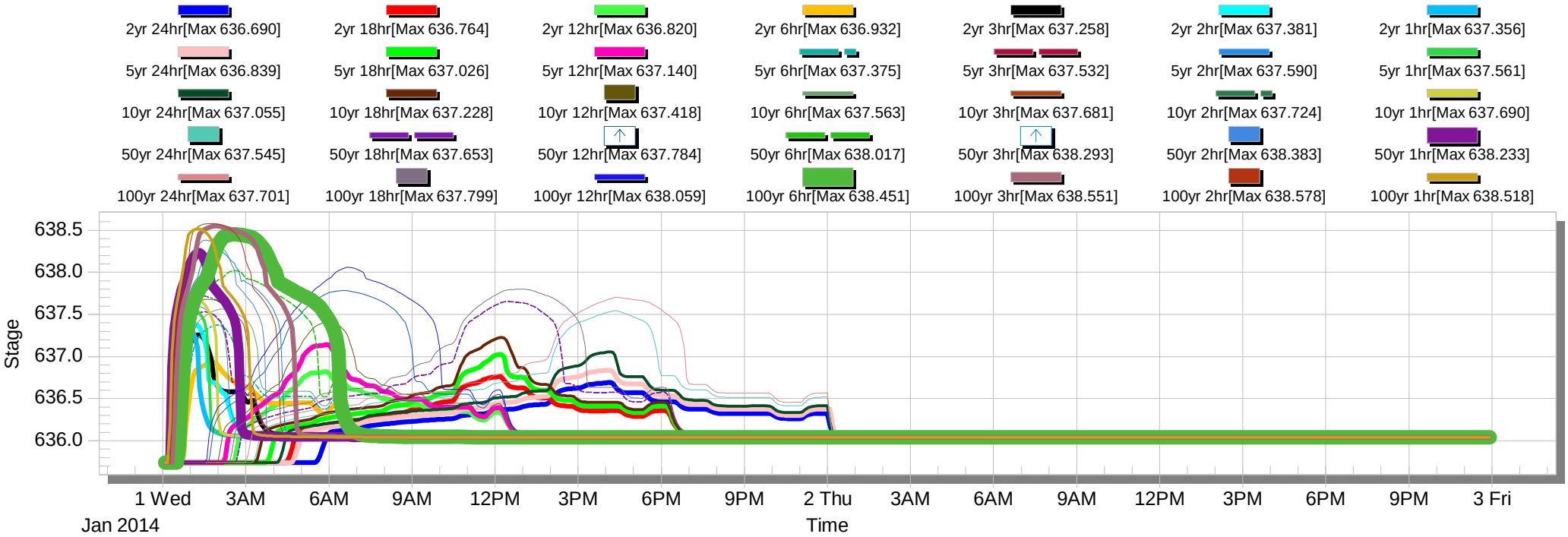

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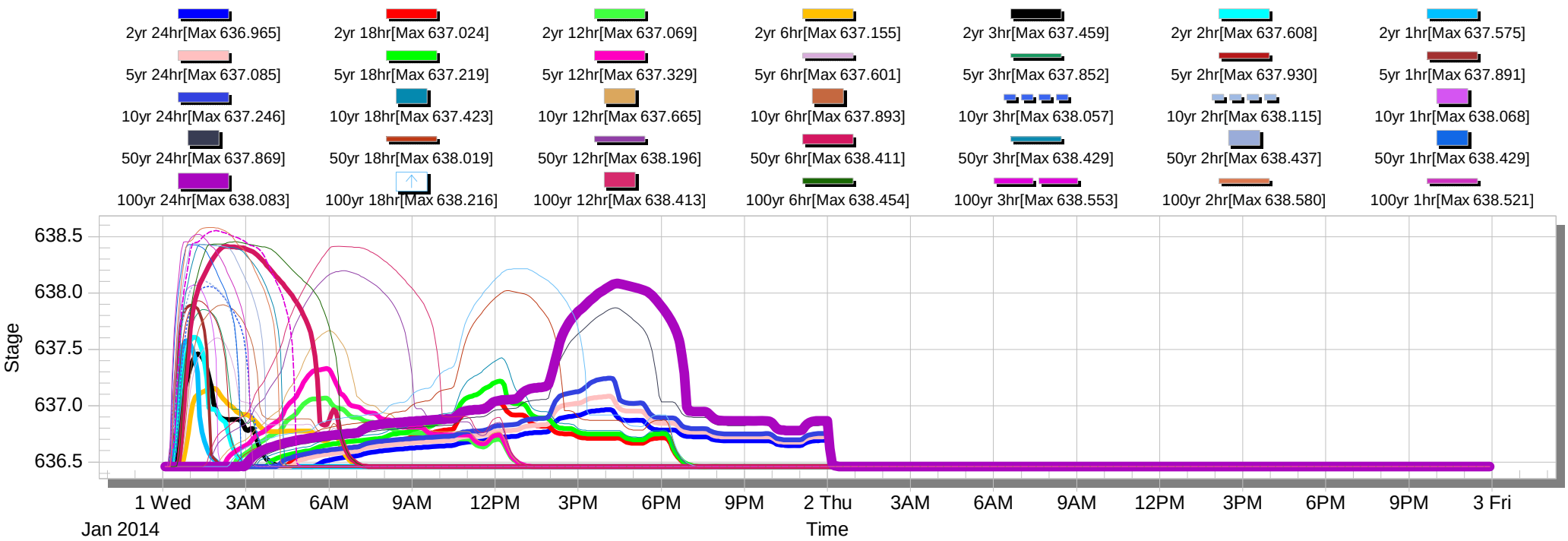

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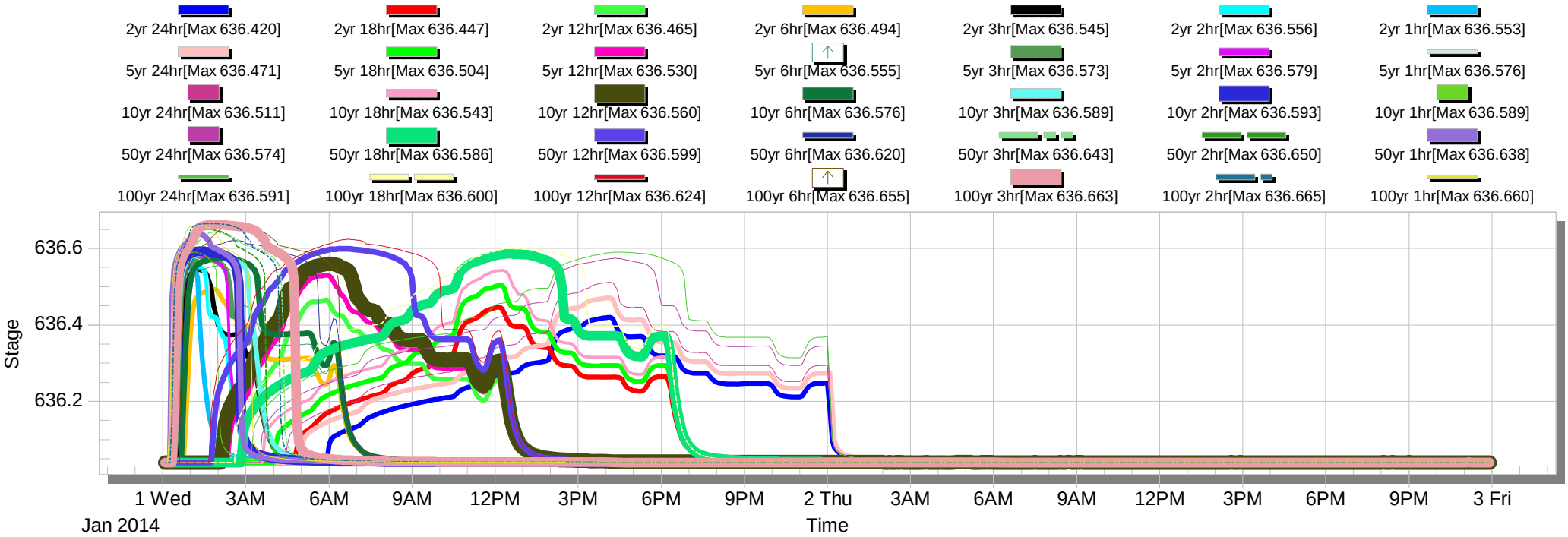

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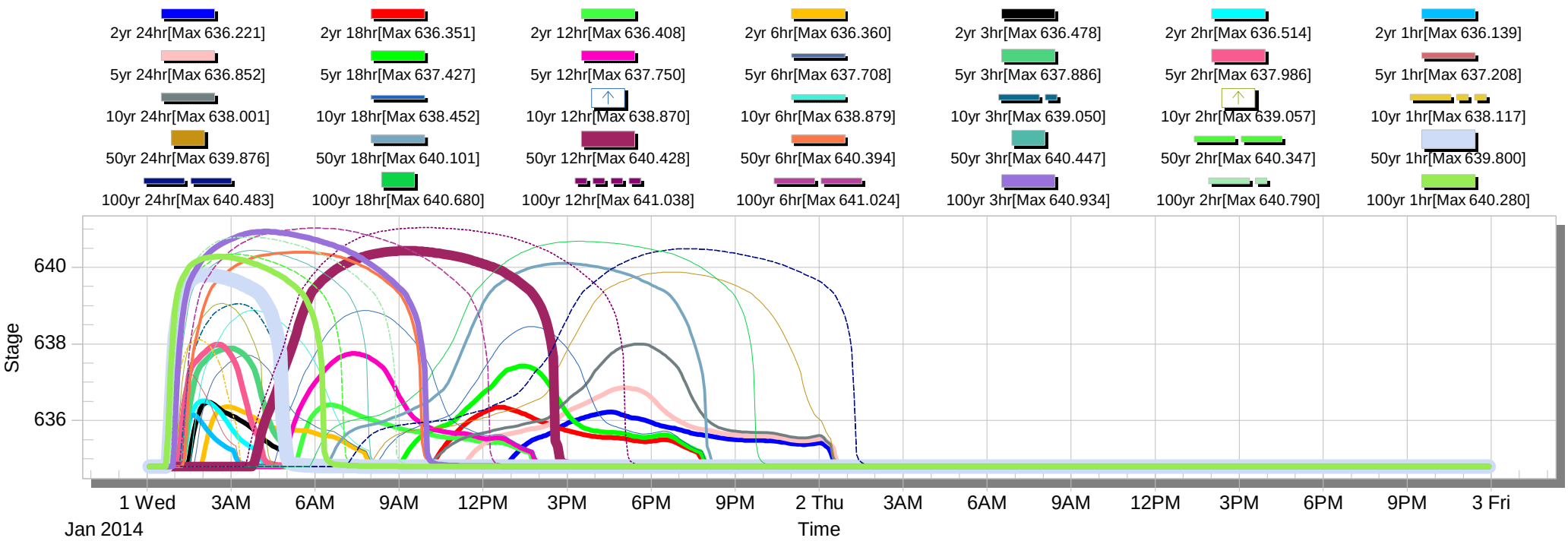

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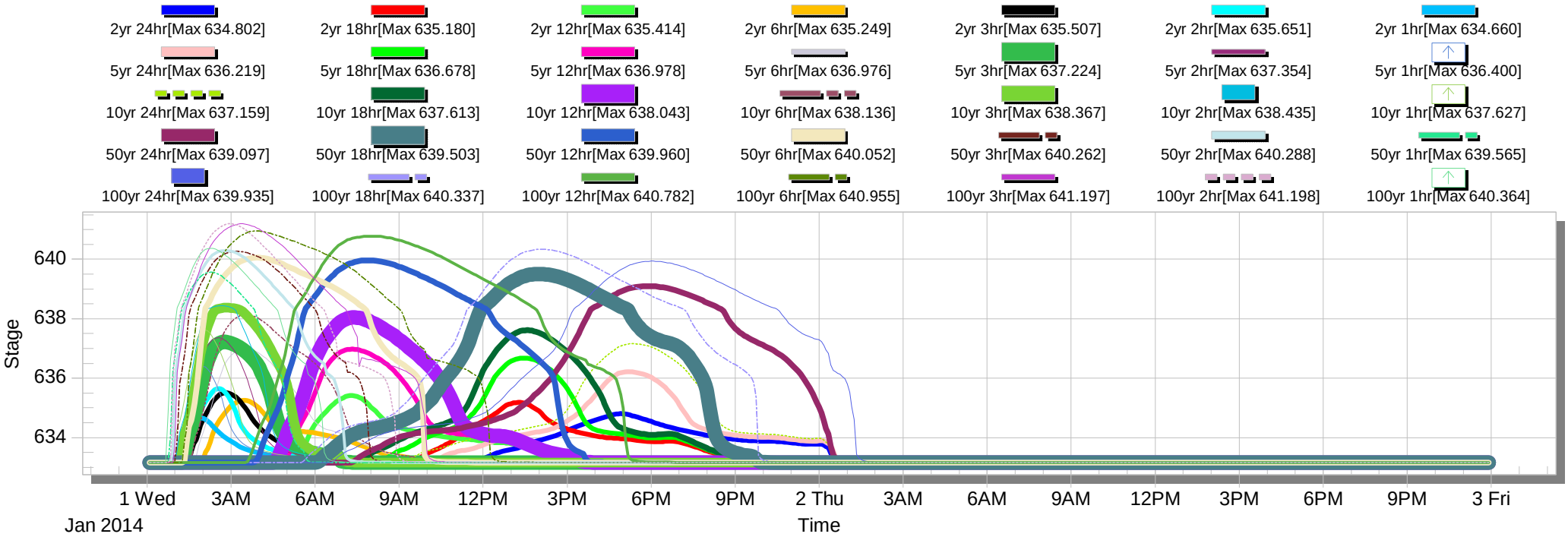

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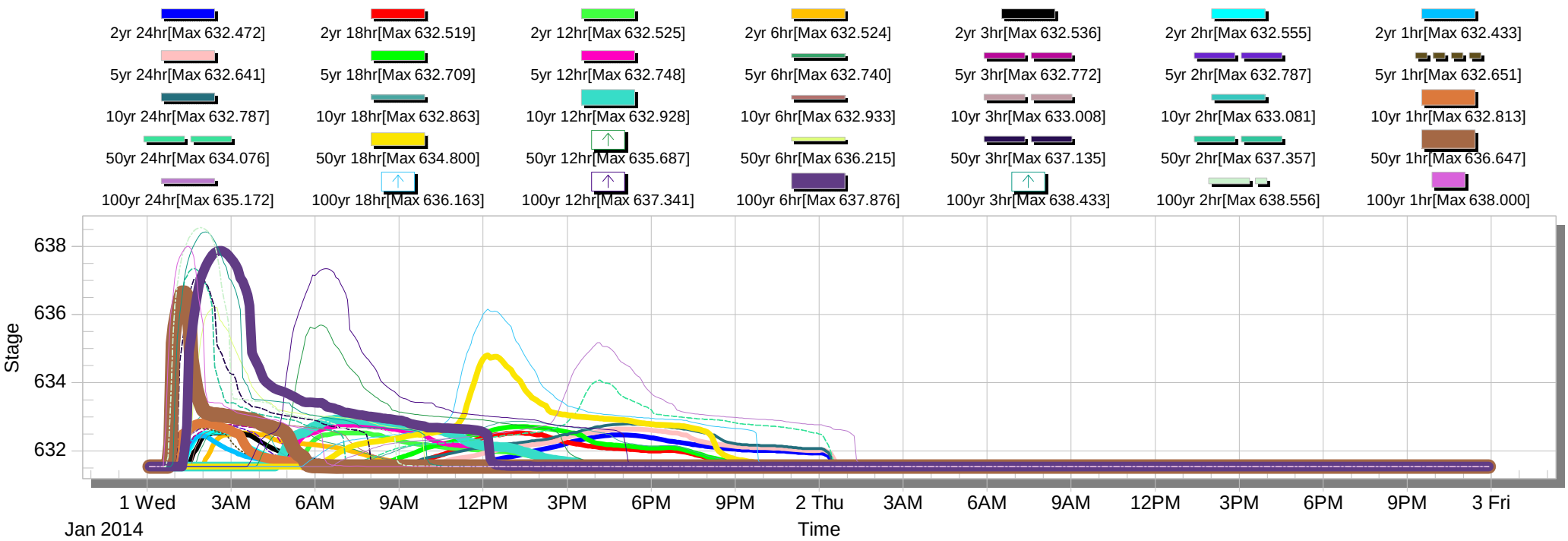

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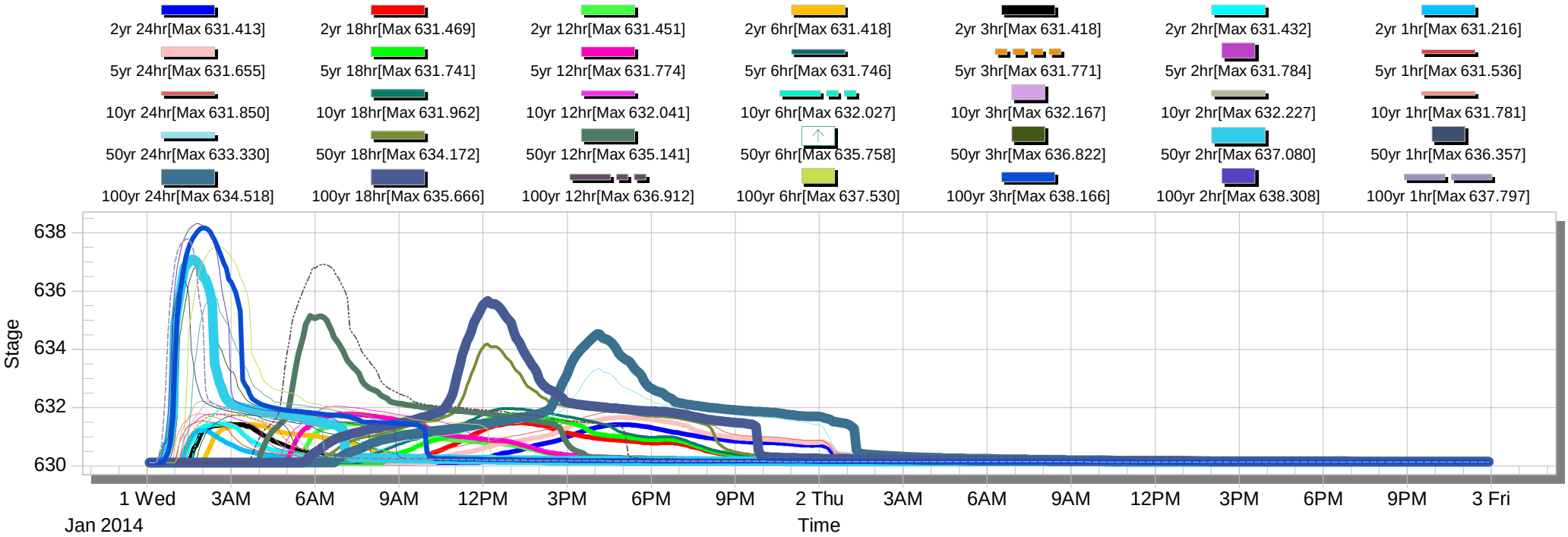

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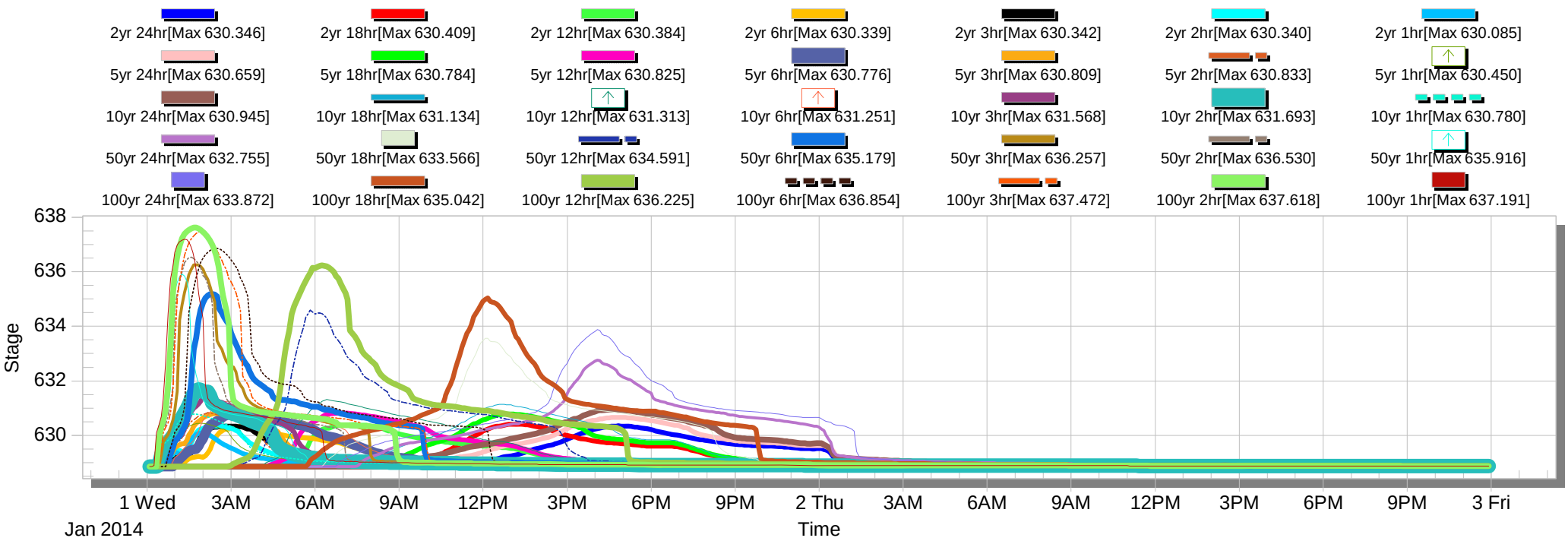

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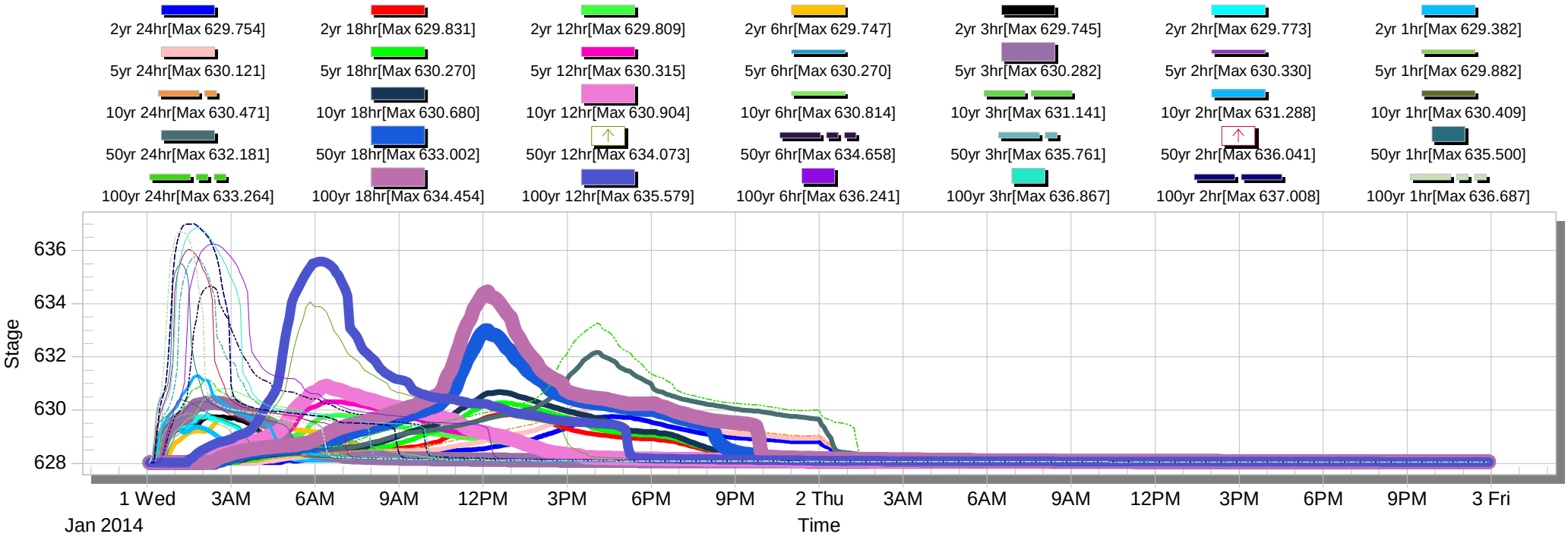

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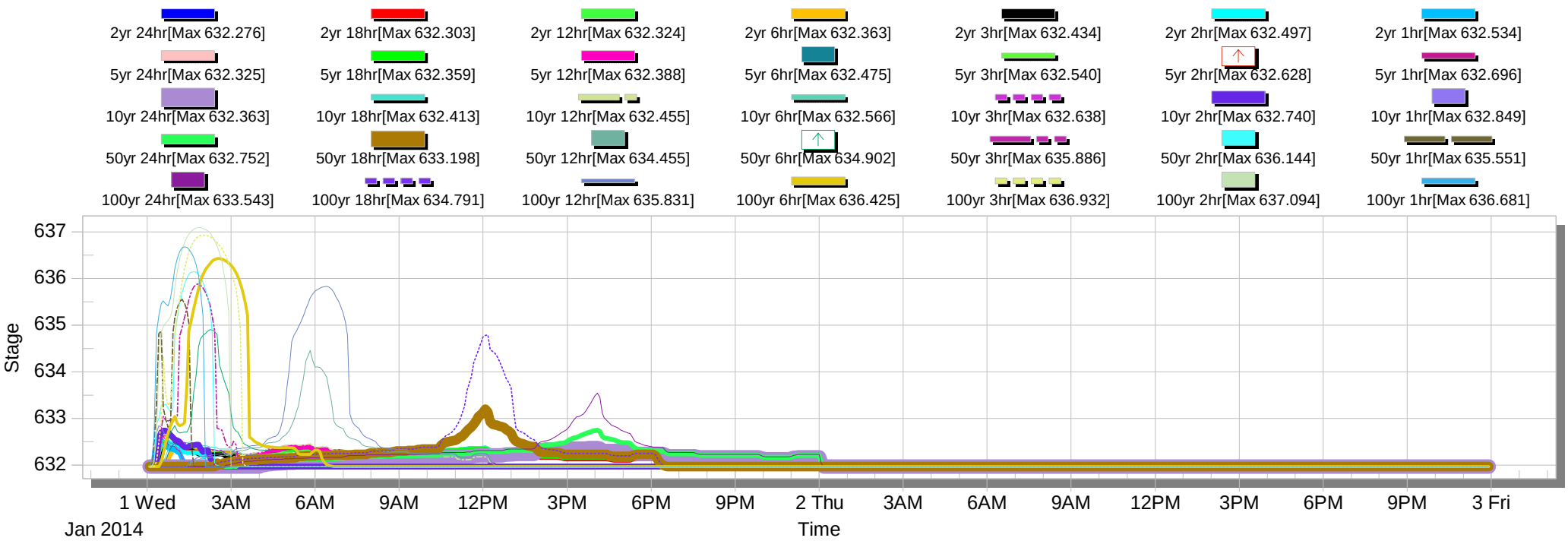

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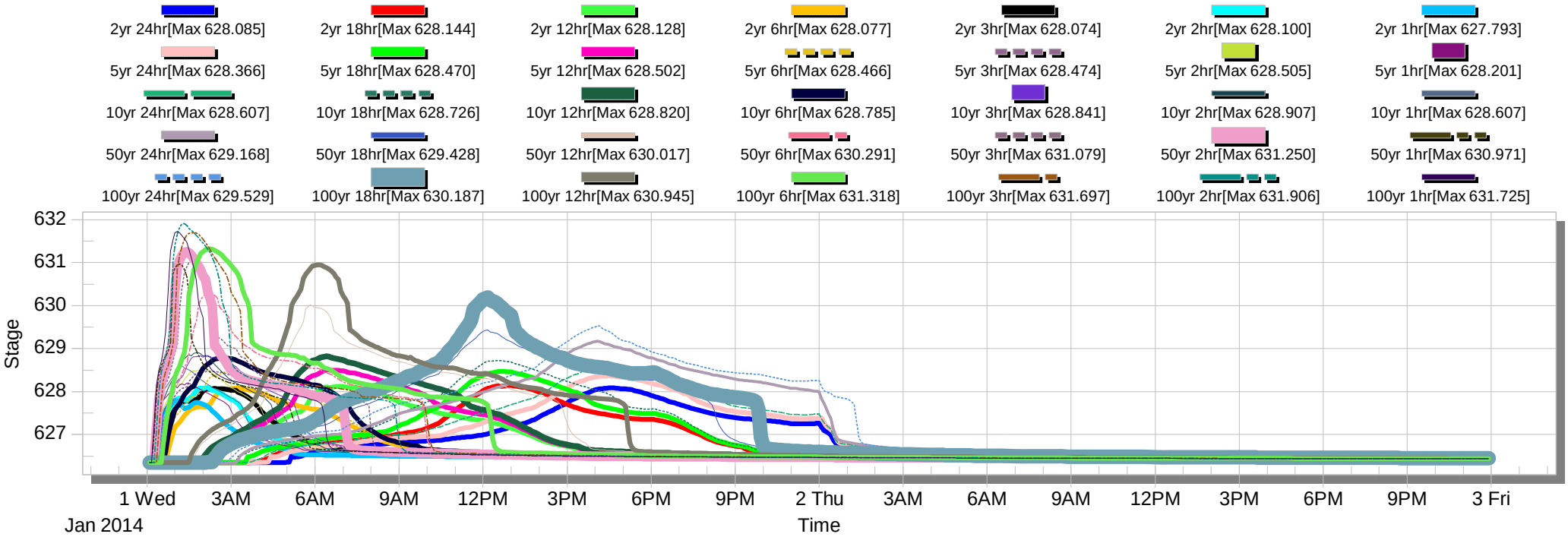

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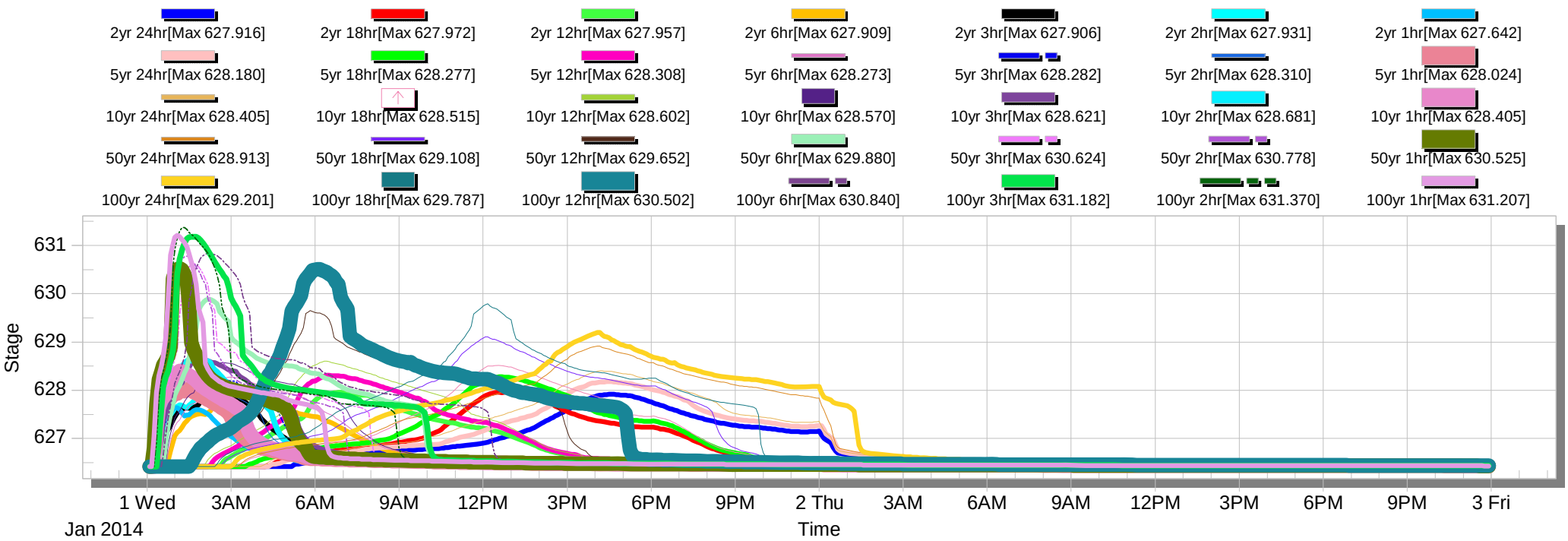

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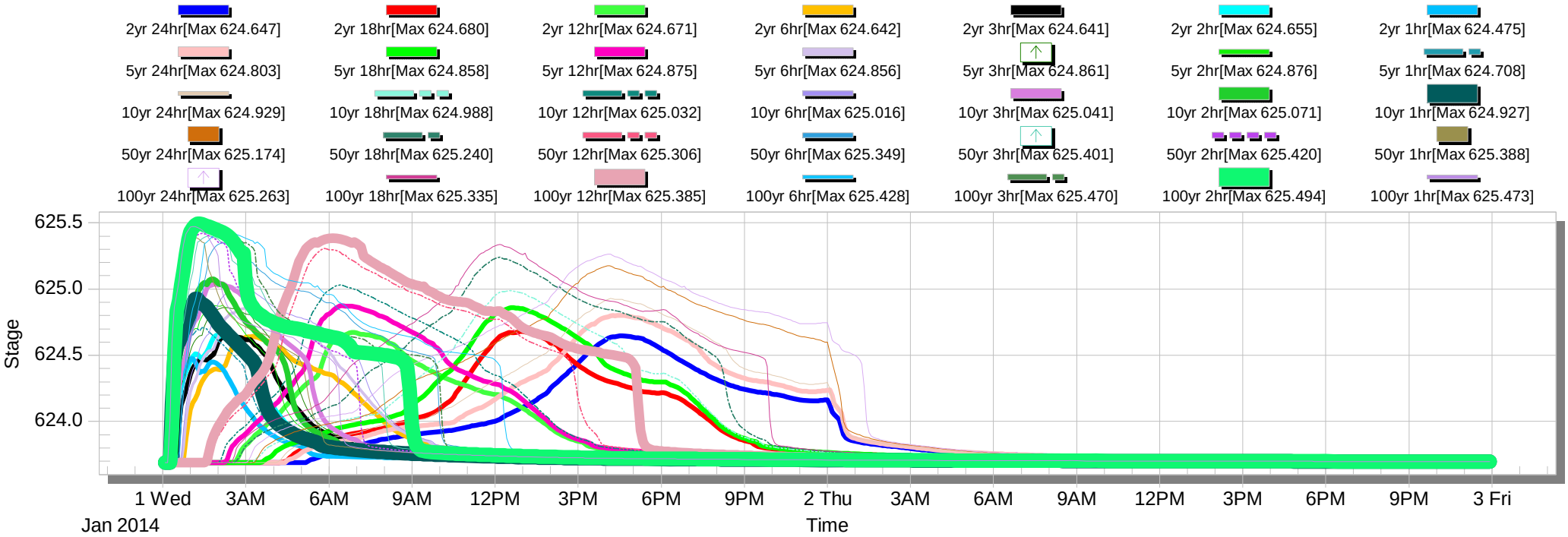

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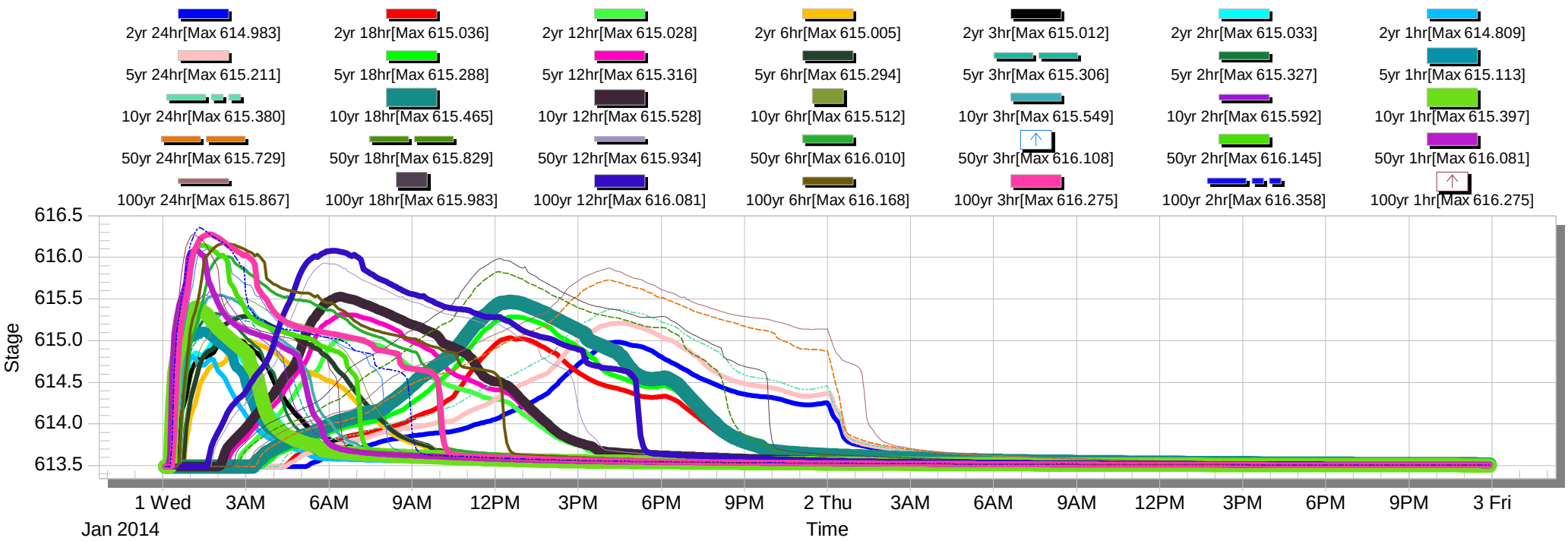

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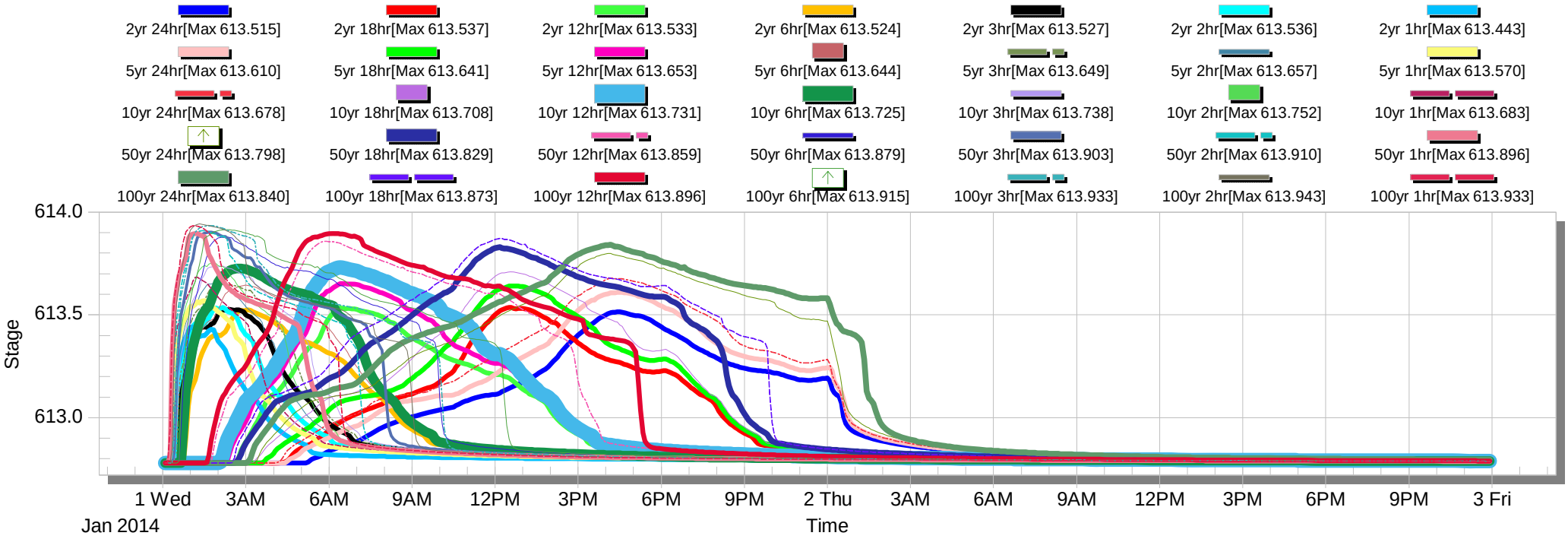

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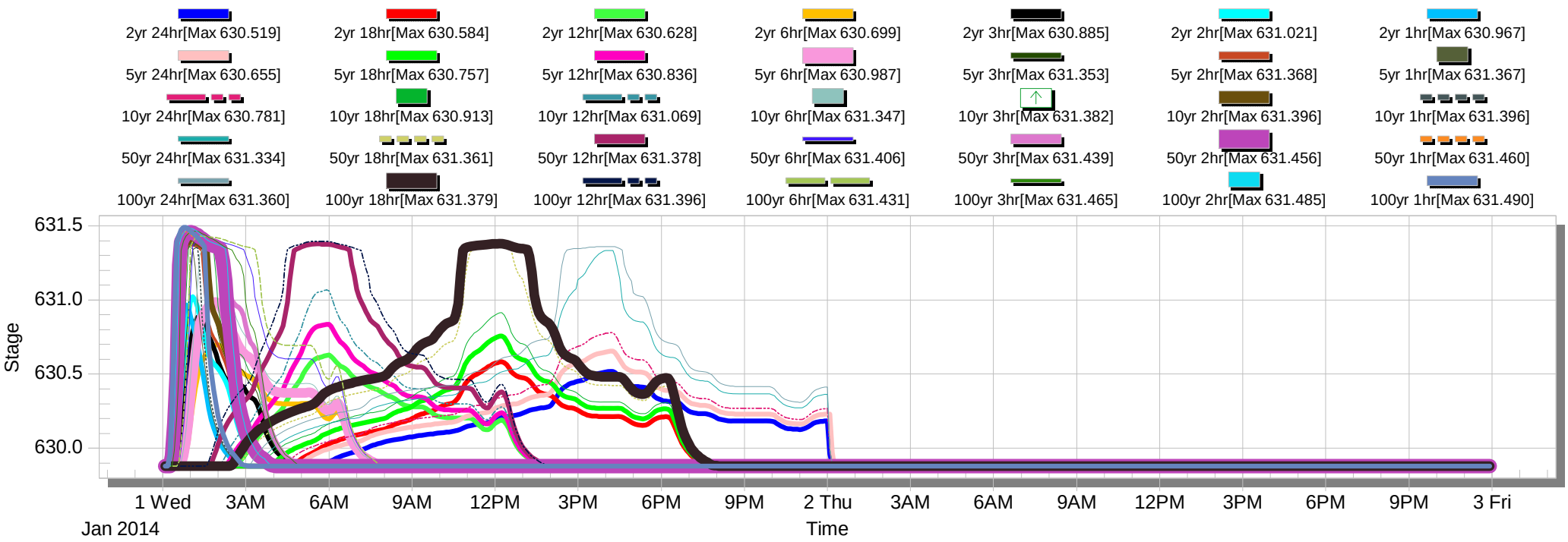

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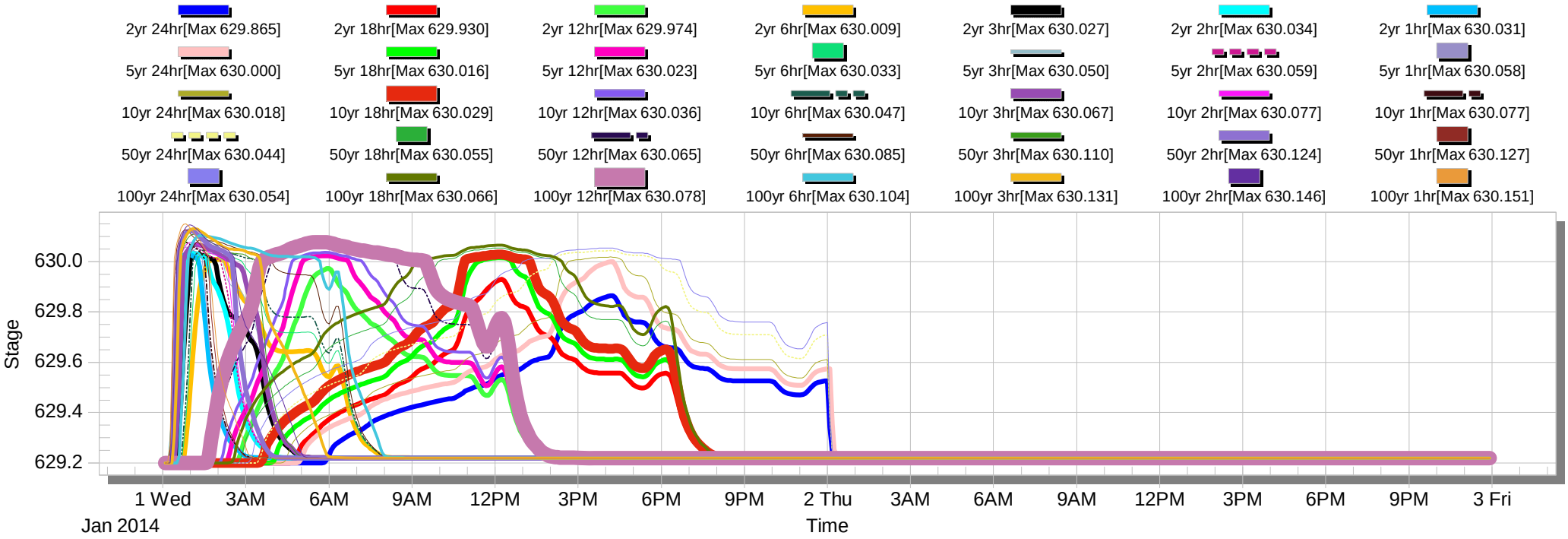

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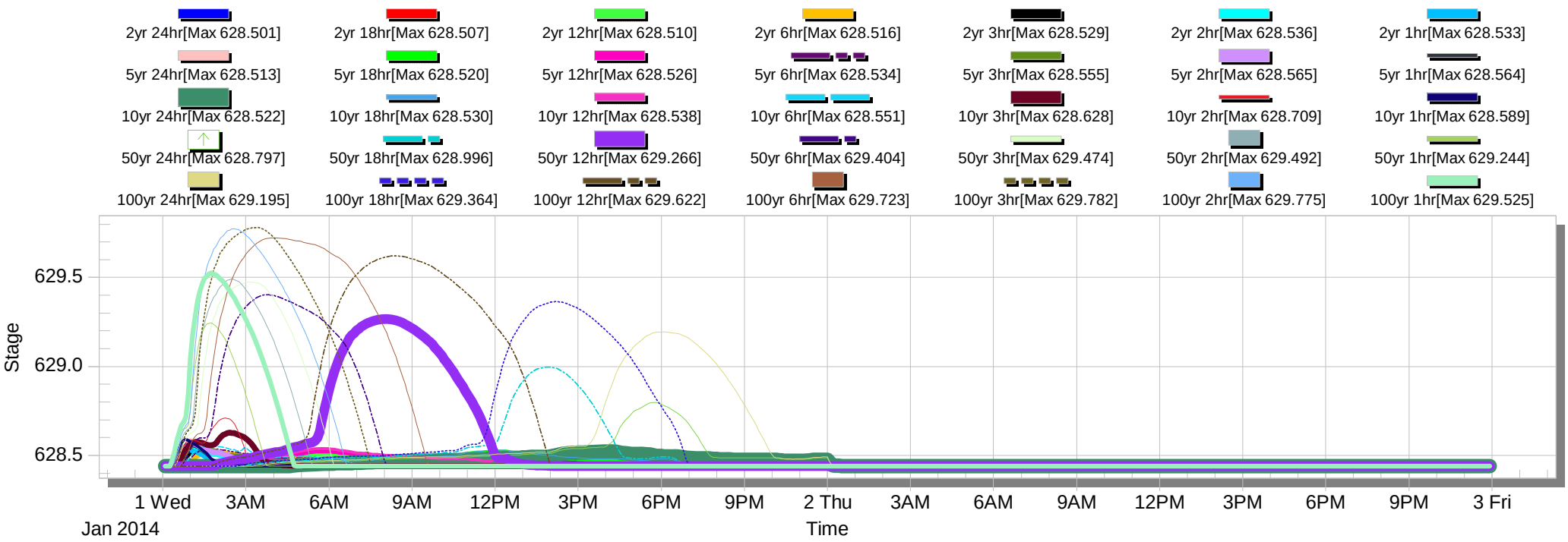

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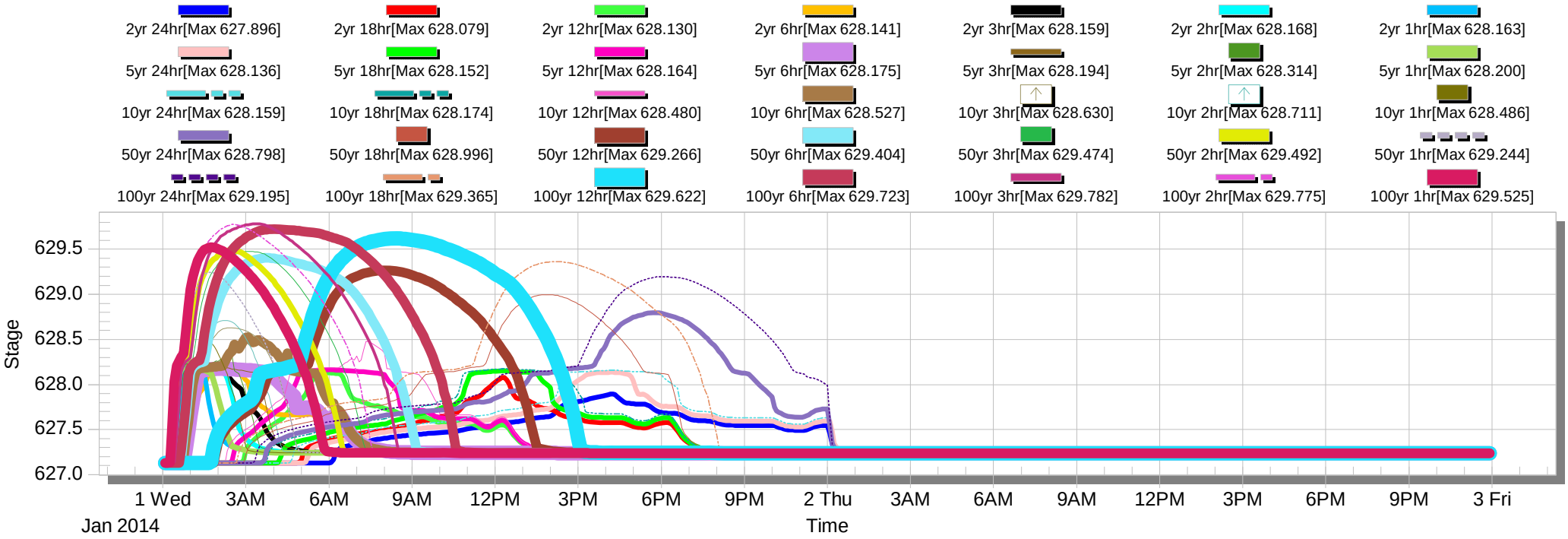

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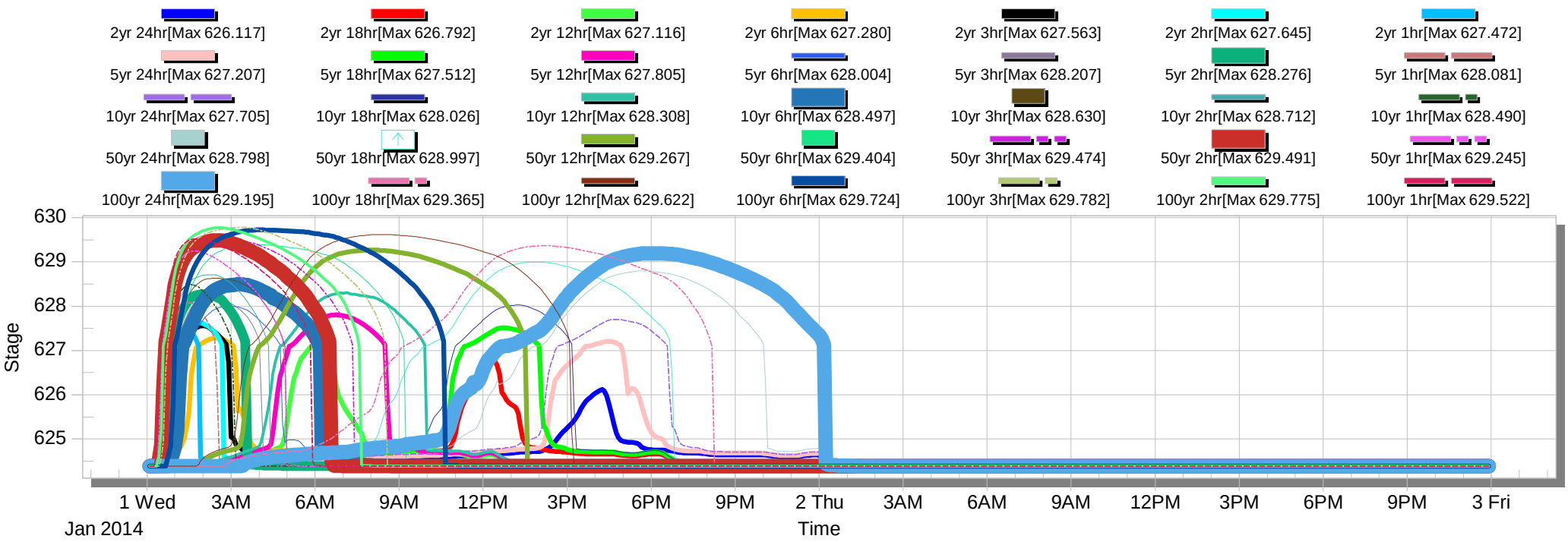

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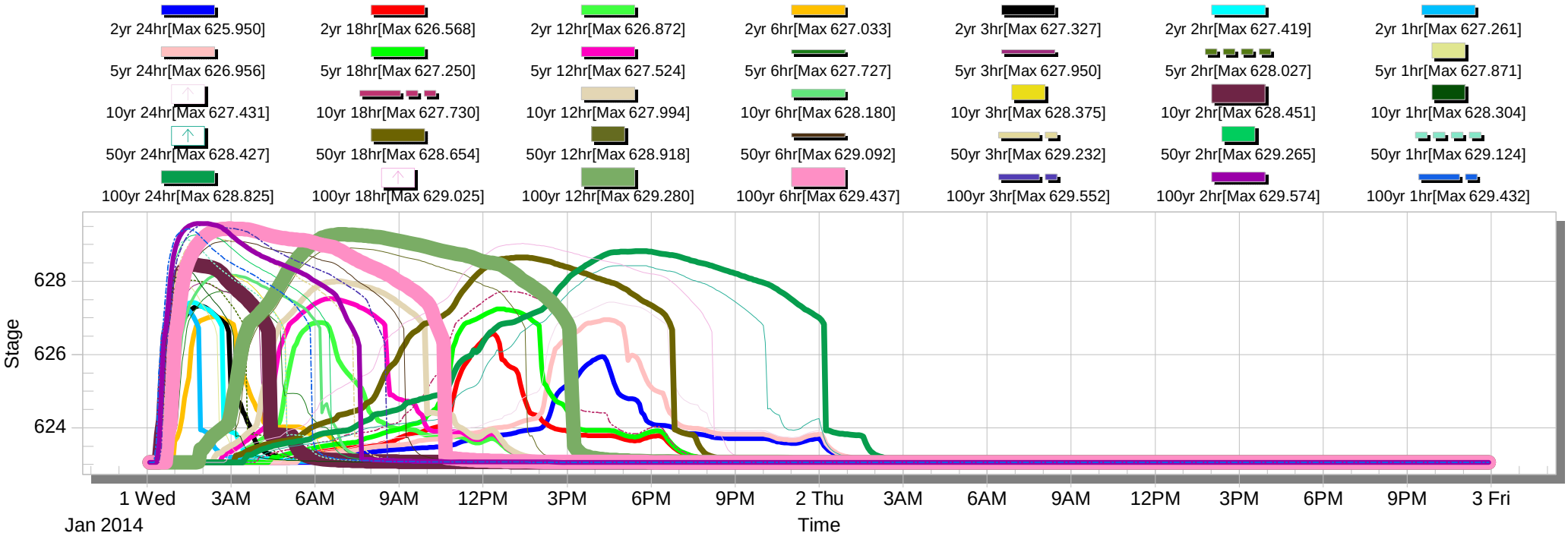
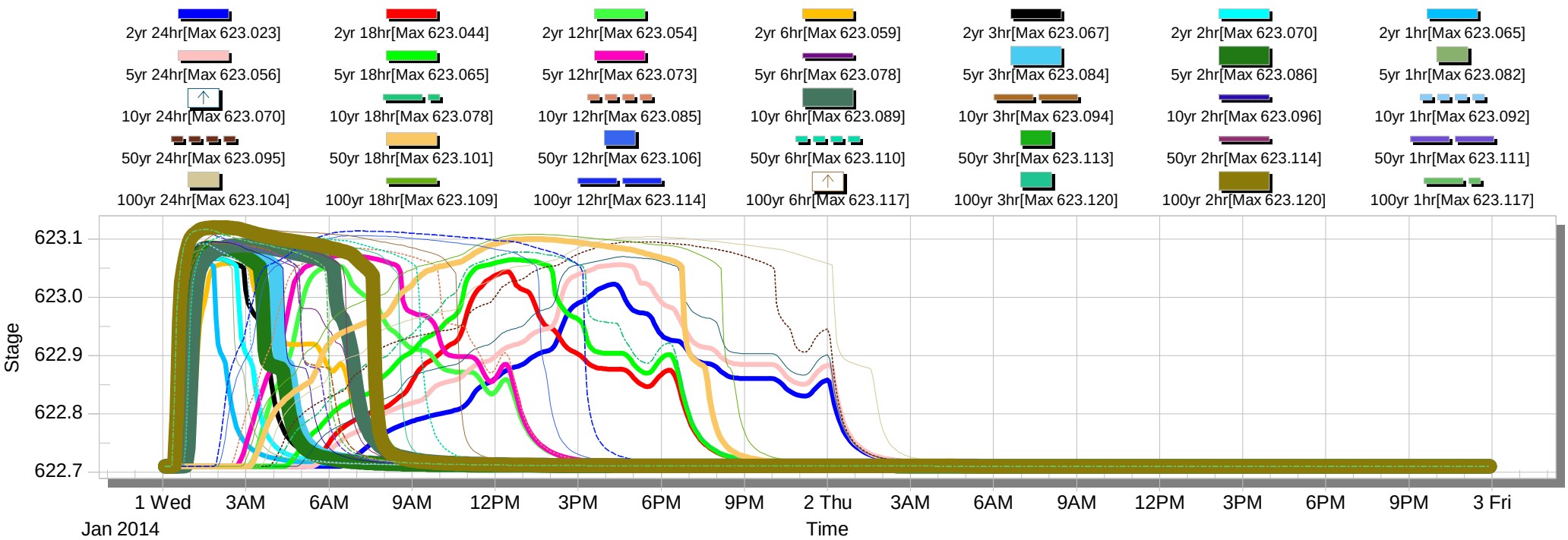


Node - Node88



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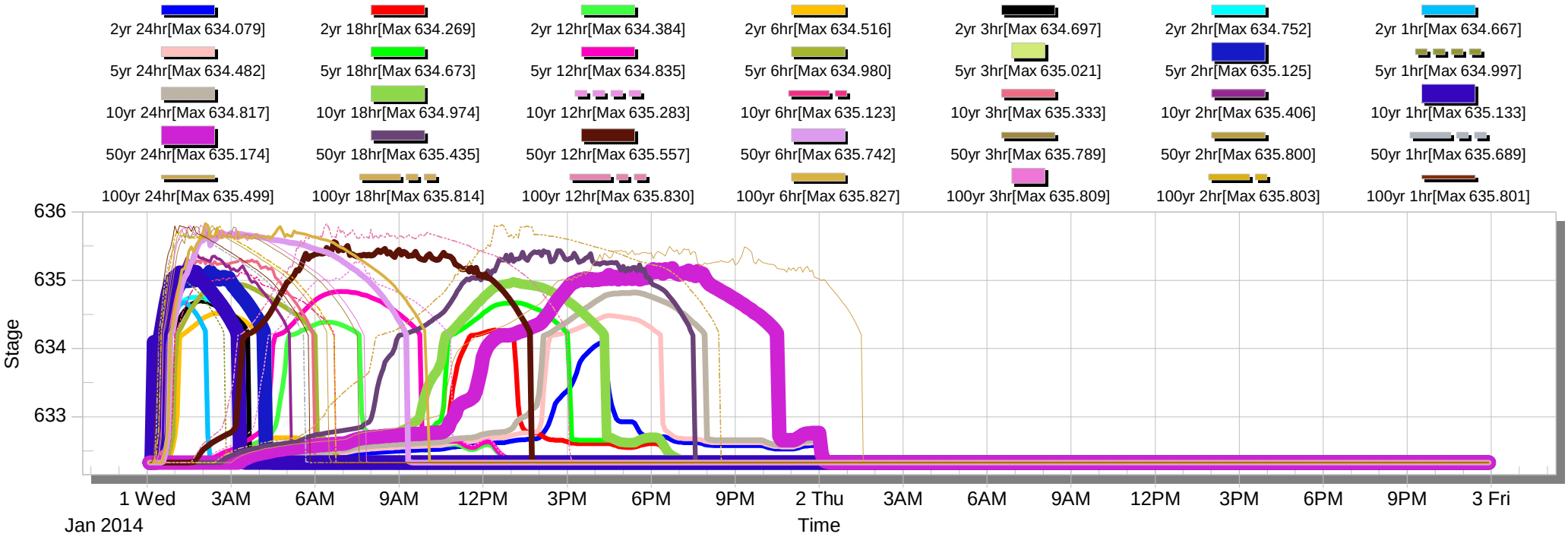

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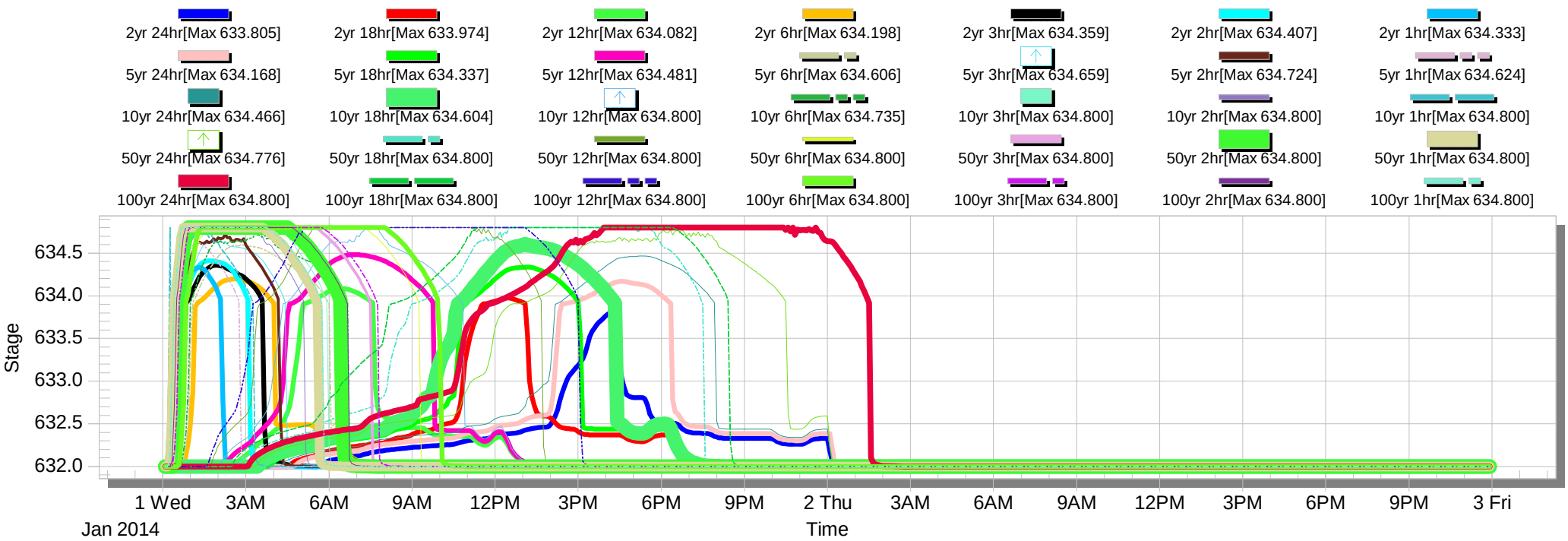

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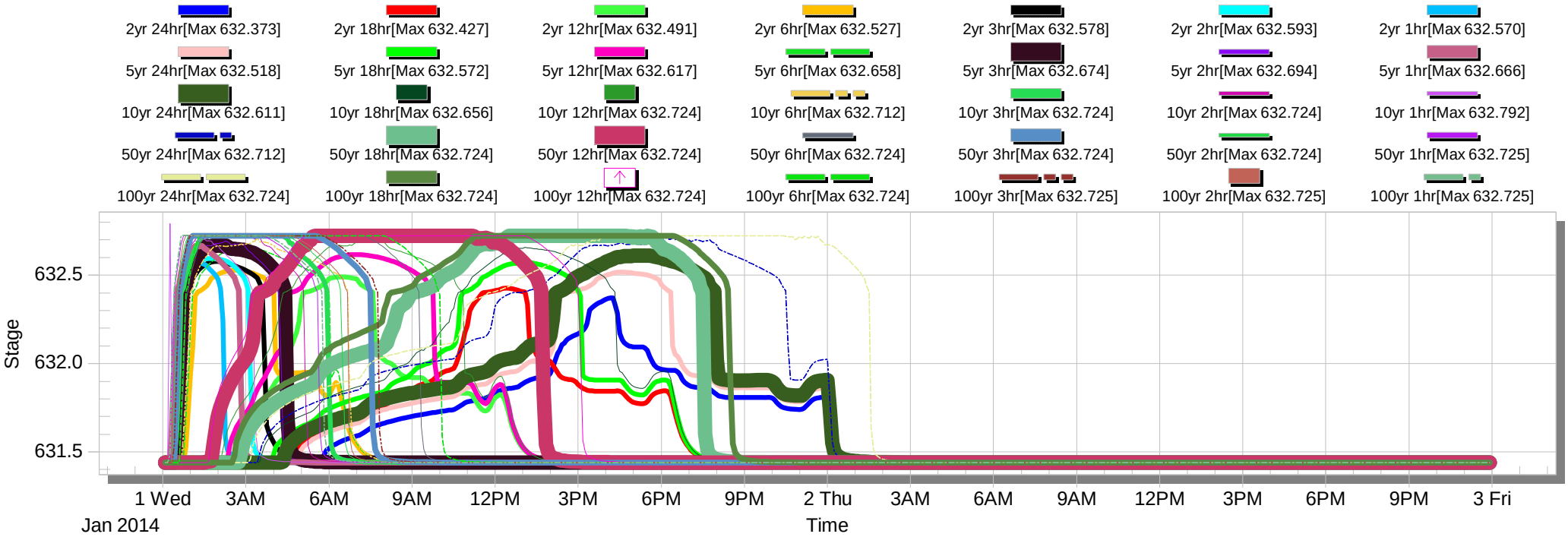

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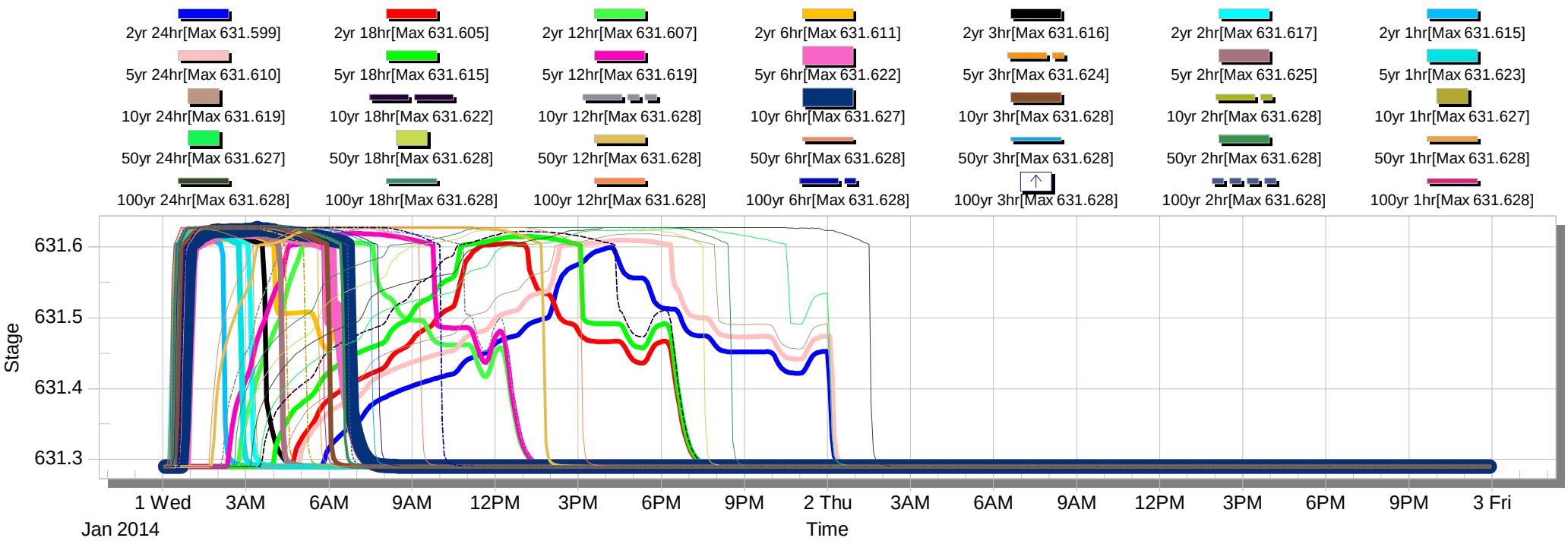
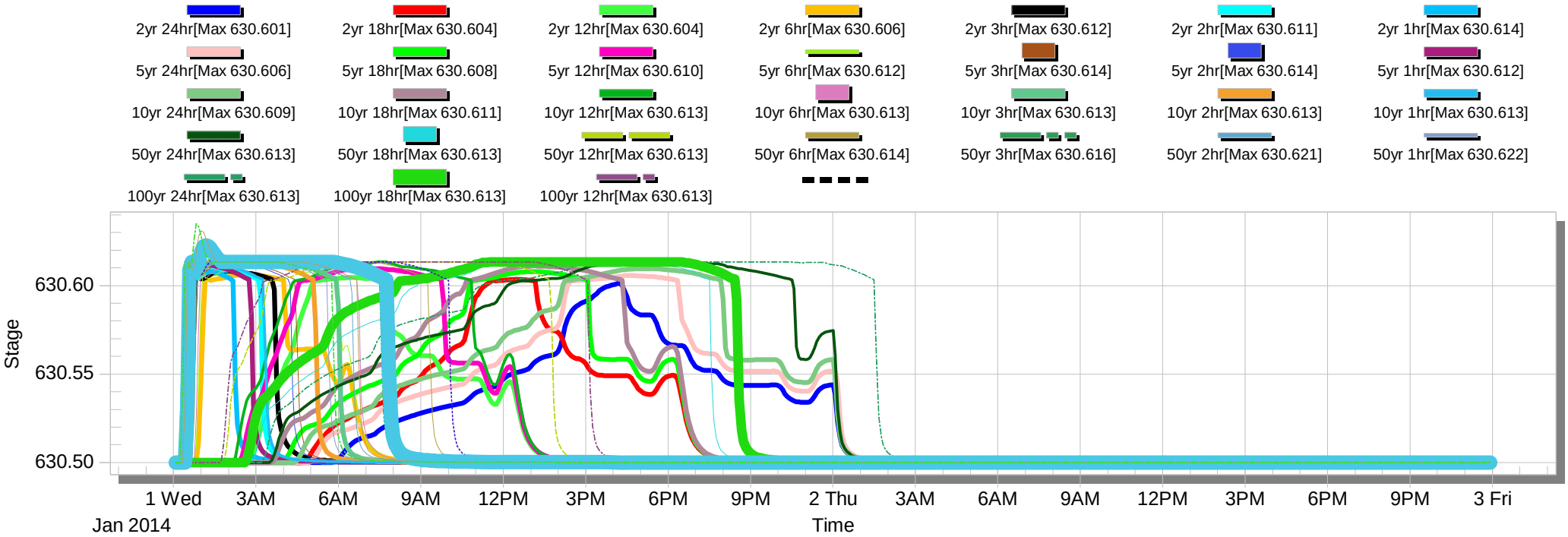


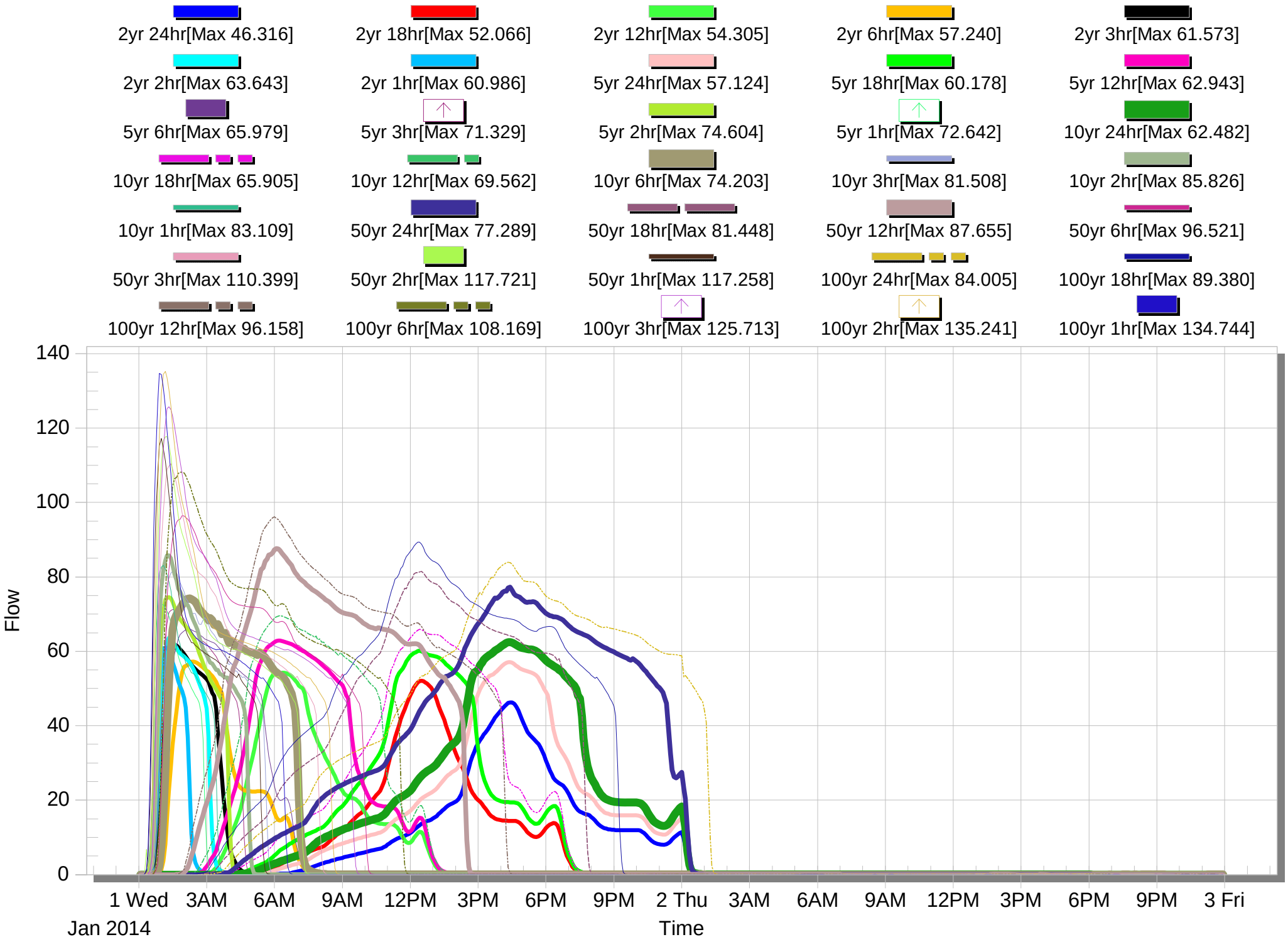
Node - Node107



EXISTING CONDITIONS

RELEASE RATES (NORTH)

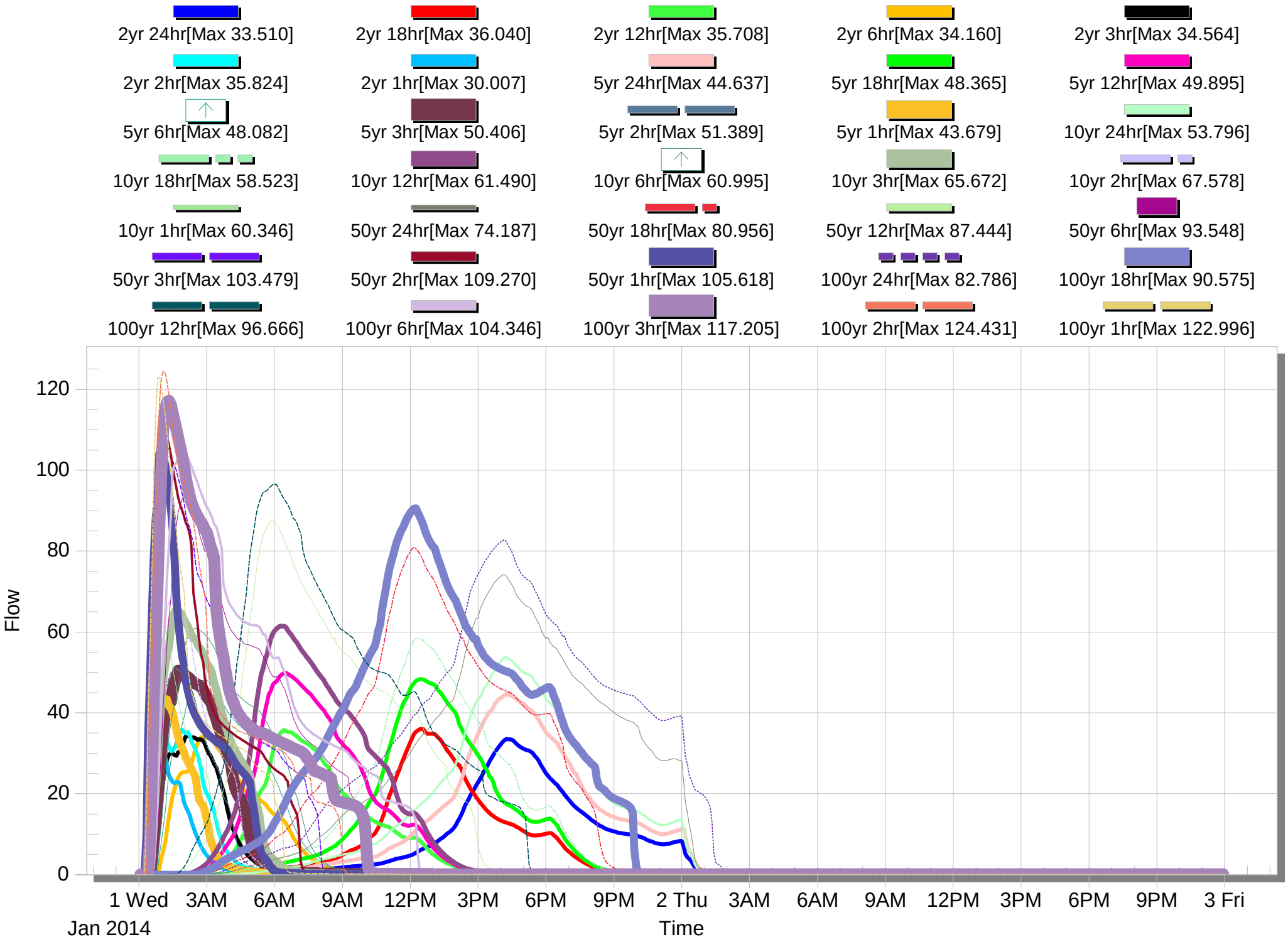
Conduit Link32 from Node46 to Node47



EXISTING CONDITIONS

RELEASE RATES (SOUTH)

Conduit Link33 from Node48 to Node47



EXISTING CONDITIONS

XPSWMM OUTPUT REPORT

```
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Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


Input File : _Drain_Study\XPSWMM model\Existing\ExistingConditions_10yr 2hr.XP

          *===============================================*
          |                    xpswmm                     |
          |     Storm and Wastewater Management Model     |
          |        Developed by XP Solutions Inc.         |
          |===============================================|
          |                                               |
          | Last Update      : Jan., 2013                 |
          | Interface Version: 2012                       |
          | Engine Version   : 12.0                       |
          | Data File Version: 12.6                       |
          |                                               |
          |                                               |
          *===============================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*====================================================*
|       Input and Output file names by Layer         |
*====================================================*

 Input File  to Layer #     1 JOT.US


 Output File to Layer #     1 JOT.US


 Input File  to Layer #     2 JOT.US


 Output File to Layer #     2 JOT.US


*==========================================================*
|   Special command line arguments in XP-SWMM2000. This    |
|   now includes program defaults. $Keywords are the program|
|   defaults.  Other Keywords are from the SWMMCOM.CFG file.|
|   or the command line or any cfg file on the command line.|
|   Examples include these in the file xpswm.bat under the  |
|   section :solve or in the windows version XPSWMM32 in the|
|   file solve.bat                                          |
|                                                           |
|   Note: the cfg file should be in the subdirectory swmxp  |
|         or defined by the set variable in the xpswm.bat   |
|         file.  Some examples of the command lines possible|
|         are shown below:                                  |
|                                                           |
|   swmmd swmmcom.cfg                                       |
|   swmmd my.cfg                                            |
|   swmmd nokeys nconv5 perv extranwq                       |
*==========================================================*

 $powerstation                        0.0000         1         2
 $perv                                0.0000         0         4
 $oldegg                              0.0000         0         7
 $as                                  0.0000         0        11
 $noflat                              0.0000         0        21
 $oldomega                            0.0000         0        24
 $oldvol                              0.0000         1        28
 $implicit                            0.0000         1        29
 $oldhot                              0.0000         1        31
 $oldscs                              0.0000         0        33
 $flood                               0.0000         1        40
 $nokeys                              0.0000         0        42
 $pzero                               0.0000         0        55
 $oldvol2                             0.0000         2        59
 $storage2                            0.0000         3        62
 $oldhot1                             0.0000         1        63
 $pumpwt                              0.0000         1        70
 $ecloss                              0.0000         1        77
 $exout                               0.0000         0        97
 $spatial = 0.90                      0.9000         5       124
 $djref = -1.0                       -0.1000         3       143
 $weirlen = 50                       50.0000         1       153
 $oldbnd                              0.0000         1       154
 $nogrelev                            0.0000         1       161
 $ncmid                               0.0000         0       164
 $new_nl_97                           0.0000         2       290
 SCSIADEPTH=ON                        0.0000         1       293
 $best97                              0.0000         1       294
 $newbound                            0.0000         1       295
 $q_tol = 0.01                        0.0001         1       316
 $new_storage                         0.0000         1       322
 $old_iteration                       0.0000         1       333
 MINLEN=5                             5.0000         1       346
 $review_elevation                    0.0000         1       383
 $use_half_volume                     0.0000         1       385
 VERT_WALLS=ON                        0.0000         1       389
 $min_ts = 1.0                        1.0000         1       407
 $design_restart = on                 0.0000         1       412
 $zero_value=1.e-05                   0.0000         1       415
 SUBCATCHMENT_RES=ON                  0.0000         1       419
 $relax_depth = on                    0.0000         1       427
 $saveallpts = on                     0.0000         1       434
 $channel_geometry=1                  0.0000         1       456

 *==========================================================*
```

```
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation.                        |
*==========================================================*

 Number of Subcatchments in the Runoff Block (NW)....    15
 Number of Channel/Pipes in the Runoff Block (NG)....     0
 Runoff Water quality constituents (NRQ)............     0
 Runoff Land Uses per Subcatchment (NLU)............     0
 Number of Elements in the Transport Block (NET).....     0
 Number of Storage Junctions in Transport (NTSE).....     0
 Number of Input Hydrographs in Transport (NTH)......     0
 Number of Elements in the Extran Block (NEE)........    71
 Number of Groundwater Subcatchments in Runoff (NGW).     0
 Number of Interface locations for all Blocks (NIE)..    71
 Number of Pumps in Extran (NEP).....................     0
 Number of Orifices in Extran (NEO)..................     0
 Number of Tide Gates/Free Outfalls in Extran (NTG)..     1
 Number of Extran Weirs (NEW)........................     8
 Number of scs hydrograph points.....................  1513
 Number of Extran printout locations (NPO)...........     0
 Number of Tide elements in Extran (NTE)............     1
 Number of Natural channels (NNC)....................    12
 Number of Storage junctions in Extran (NVSE)........     6
 Number of Time history data points in Extran(NTVAL).     0
 Number of Variable storage elements in Extran (NVST)     4
 Number of Input Hydrographs in Extran (NEH).........     0
 Number of Particle sizes in Transport Block (NPS)...     0
 Number of User defined conduits (NHW)...............    15
 Number of Connecting conduits in Extran (NECC)......    20
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............    71
 Number of Plugs in a Storage Treatment Unit.........     1


#######################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
#    Last Updated Jan., 2013 by XP Solutions          #

*==========================================================*
|          RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*==========================================================*

                    A1

###########################################
#             RUNOFF JOB CONTROL          #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                     60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                    60.0
 Simulation length is......                               24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ........................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..         21
 KINC   - Rainfall values(pairs) per line..         10
 KPRINT - Print rainfall(0-Yes,1-No)......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
```

```
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval...........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00
```

```
#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    2.6400 inches

   ############################
   #        Data Group F1     #
   # Evaporation Rate (in/day) #
   ############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100

  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################
```

Number	Subcatchment Name	Channel or inlet	Width (ft)	Area (ac)	Per-cent Imperv	Slope ft/ft	"n" Imprv	"n" Perv	Deprs -sion Storge Imprv	Deprs -sion Strge Perv	Prcnt Zero Deten -tion
1	Node89#1	Node89	200.00	5.9000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
2	Node63#1	Node63	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
3	Node11#1	Node11	1000.0	107.90	0.00	0.020	0.020	0.020	0.000	0.000	0.00
4	Node33#1	Node33	400.00	37.800	0.00	0.010	0.020	0.020	0.000	0.000	0.00
5	Node46#1	Node46	600.00	30.100	0.00	0.015	0.020	0.020	0.000	0.000	0.00
6	Node65#1	Node65	450.00	16.100	0.00	0.023	0.020	0.020	0.000	0.000	0.00
7	Node120#1	Node120	700.00	32.000	0.00	0.020	0.020	0.020	0.000	0.000	0.00
8	Node99#1	Node99	700.00	32.100	0.00	0.020	0.020	0.020	0.000	0.000	0.00
9	Node66#1	Node66	150.00	10.000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
10	Node24#1	Node24	950.00	19.700	0.00	0.040	0.020	0.020	0.000	0.000	0.00
11	Node25#1	Node25	300.00	5.4000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
12	Node30#1	Node30	450.00	9.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
13	Node92#1	Node92	200.00	5.5000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
14	Node94#1	Node94	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
15	Node48#1	Node48	600.00	19.600	0.00	0.014	0.020	0.020	0.000	0.000	0.00

```
##########################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                 #
#                     Infiltration or Time of Concentration Data                         #
#                                                                                        #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                  N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                      N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant               N/A                  N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                  N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                  N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula     -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)            #
#                     Rational Formula Tc Method: 1 = Constant                                       #
#                                                 2 = Friend's Equation                              #
#                                                 3 = Kinematic Wave                                 #
#                                                 4 = Alameda Method                                 #
#                                                 5 = Izzard's Formula                               #
#                                                 6 = Kerby's Equation                               #
#                                                 7 = Kirpich's Equation                             #
#                                                 8 = Bransby Williams Equation                      #
#                                                 9 = Federal Aviation Authority Equation            #
##########################################################################################
```

Number	Subcatchment Name	Infl # 1	Infl # 2	Infl # 3	Infl # 4	Infl # 5	Infl # 6	Infl # 7	Infl # 8
1	Node89#1	87.0000	0.3183	484.0000	0.2000				
2	Node63#1	87.0000	0.3617	484.0000	0.2000				
3	Node11#1	85.5000	0.6700	484.0000	0.2000				
4	Node33#1	84.7000	0.6350	484.0000	0.2000				
5	Node46#1	88.5000	0.7083	484.0000	0.2000				
6	Node65#1	87.0000	0.5283	484.0000	0.2000				
7	Node120#1	83.7000	0.7500	484.0000	0.2000				
8	Node99#1	83.7000	1.5200	484.0000	0.2000				
9	Node66#1	87.0000	0.1450	484.0000	0.2000				
10	Node24#1	89.0000	0.7383	484.0000	0.2000				
11	Node25#1	79.0000	0.6200	484.0000	0.2000				
12	Node30#1	86.0000	0.5333	484.0000	0.2000				
13	Node92#1	87.0000	0.4167	484.0000	0.2000				
14	Node94#1	87.0000	0.4167	484.0000	0.2000				
15	Node48#1	83.0000	0.5633	484.0000	0.2000				

```
##############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names  #
##############################################################
```

Number	Subcatchment Name	Gage No	Infiltration Type	Routing Type
1	Node89#1	1	SCS Method	SCS curvilinear
2	Node63#1	1	SCS Method	SCS curvilinear

```
     3         Node11#1      1   SCS Method       SCS curvilinear
     4         Node33#1      1   SCS Method       SCS curvilinear
     5         Node46#1      1   SCS Method       SCS curvilinear
     6         Node65#1      1   SCS Method       SCS curvilinear
     7        Node120#1      1   SCS Method       SCS curvilinear
     8         Node99#1      1   SCS Method       SCS curvilinear
     9         Node66#1      1   SCS Method       SCS curvilinear
    10         Node24#1      1   SCS Method       SCS curvilinear
    11         Node25#1      1   SCS Method       SCS curvilinear
    12         Node30#1      1   SCS Method       SCS curvilinear
    13         Node92#1      1   SCS Method       SCS curvilinear
    14         Node94#1      1   SCS Method       SCS curvilinear
    15         Node48#1      1   SCS Method       SCS curvilinear

Total Number of Subcatchments...             15
Total Tributary Area (acres)....         341.10
Impervious Area (acres).........           0.00
Pervious Area (acres)...........         341.10
Total Width (feet)..............        7300.00
Impervious Area (%).............           0.00


 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil                11 - 3rd infil    #
 ##################################################

Column           1         2         3         4         5         6         7         8         9        10        11
Default     0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
Ratio       1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000

*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************


    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


*********************************************************
* Hydrographs will be stored for the following  15 INLETS *
*********************************************************
Node89    Node63    Node11    Node33    Node46    Node65
Node120   Node99    Node66    Node24    Node25    Node30
Node92    Node94    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



***************************************************
*  Precipitation Interface File Summary           *
*  Number of precipitation station....        1   *
***************************************************

Location Station Number
-------- --------------
       1.             1

XXX End of Header Section XXX

#########################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in Jan., 2013 by XP Solutions       #

#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
```

```
#    Last Updated Jan., 2013 by XP Solutions          #

*=========================================================*
|         RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,     |
|  for example: search for Table R3 to check continuity.  |
|  This output file can be imported into a Word Processor |
|  and printed on US letter or A4 paper using portrait    |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                         |
| Table R1  - Physical Hydrology Data                     |
| Table R2  - Infiltration data                           |
| Table R3  - Raingage and Infiltration Database Names    |
| Table R4  - Groundwater Data                            |
| Table R5  - Continuity Check for Surface Water          |
| Table R6  - Continuity Check for Channels/Pipes         |
| Table R7  - Continuity Check for Subsurface Water       |
| Table R8  - Infiltration/Inflow Continuity Check        |
| Table R9  - Summary Statistics for Subcatchments        |
| Table R10 - Sensitivity anlysis for Subcatchments       |
*=========================================================*

                    A1

###########################################
#          RUNOFF JOB CONTROL             #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                      60.0
 Dry time step length (seconds)......                   86400.0
 Wet/Dry time step length (seconds)...                     60.0
 Simulation length is......                                24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ............................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..        21
 KINC   - Rainfall values(pairs) per line..        10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval..........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    2.6400 inches

   ############################
   #        Data Group F1     #
   # Evaporation Rate (in/day) #
   ############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################
```

Number	Subcatchment Name	Channel or inlet	Width (ft)	Area (ac)	Per-cent Imperv	Slope ft/ft	"n" Imprv	"n" Perv	Deprs -sion Storge	Deprs -sion Strge Perv	Prcnt Zero Deten -tion
1	Node89#1	Node89	200.00	5.9000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
2	Node63#1	Node63	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
3	Node11#1	Node11	1000.0	107.90	0.00	0.020	0.020	0.020	0.000	0.000	0.00
4	Node33#1	Node33	400.00	37.800	0.00	0.010	0.020	0.020	0.000	0.000	0.00
5	Node46#1	Node46	600.00	30.100	0.00	0.015	0.020	0.020	0.000	0.000	0.00
6	Node65#1	Node65	450.00	16.100	0.00	0.023	0.020	0.020	0.000	0.000	0.00

```
      7        Node120#1          Node120 700.00    32.000      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      8         Node99#1           Node99 700.00    32.100      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      9         Node66#1           Node66 150.00    10.000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     10         Node24#1           Node24 950.00    19.700      0.00 0.040 0.020 0.020 0.000 0.000  0.00
     11         Node25#1           Node25 300.00    5.4000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     12         Node30#1           Node30 450.00    9.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     13         Node92#1           Node92 200.00    5.5000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     14         Node94#1           Node94 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     15         Node48#1           Node48 600.00    19.600      0.00 0.014 0.020 0.020 0.000 0.000  0.00


##############################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                     #
#                     Infiltration or Time of Concentration Data                             #
#                                                                                            #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                    N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant                N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                 N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                 N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula    -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)            #
#                     Rational Formula Tc Method: 1 = Constant                                       #
#                                                 2 = Friend's Equation                              #
#                                                 3 = Kinematic Wave                                 #
#                                                 4 = Alameda Method                                 #
#                                                 5 = Izzard's Formula                               #
#                                                 6 = Kerby's Equation                               #
#                                                 7 = Kirpich's Equation                             #
#                                                 8 = Bransby Williams Equation                      #
#                                                 9 = Federal Aviation Authority Equation            #
##############################################################################################
```

Subcatchment Number	Name	Infl # 1	Infl # 2	Infl # 3	Infl # 4	Infl # 5	Infl # 6	Infl # 7	Infl # 8
1	Node89#1	87.0000	0.3183	484.0000	0.2000				
2	Node63#1	87.0000	0.3617	484.0000	0.2000				
3	Node11#1	85.5000	0.6700	484.0000	0.2000				
4	Node33#1	84.7000	0.6350	484.0000	0.2000				
5	Node46#1	88.5000	0.7083	484.0000	0.2000				
6	Node65#1	87.0000	0.5283	484.0000	0.2000				
7	Node120#1	83.7000	0.7500	484.0000	0.2000				
8	Node99#1	83.7000	1.5200	484.0000	0.2000				
9	Node66#1	87.0000	0.1450	484.0000	0.2000				
10	Node24#1	89.0000	0.7383	484.0000	0.2000				
11	Node25#1	79.0000	0.6200	484.0000	0.2000				
12	Node30#1	86.0000	0.5333	484.0000	0.2000				
13	Node92#1	87.0000	0.4167	484.0000	0.2000				
14	Node94#1	87.0000	0.4167	484.0000	0.2000				
15	Node48#1	83.0000	0.5633	484.0000	0.2000				

```
##############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names  #
##############################################################
```

Subcatchment Number	Name	Gage No	Infiltration Type	Routing Type
1	Node89#1	1	SCS Method	SCS curvilinear
2	Node63#1	1	SCS Method	SCS curvilinear
3	Node11#1	1	SCS Method	SCS curvilinear
4	Node33#1	1	SCS Method	SCS curvilinear
5	Node46#1	1	SCS Method	SCS curvilinear
6	Node65#1	1	SCS Method	SCS curvilinear
7	Node120#1	1	SCS Method	SCS curvilinear
8	Node99#1	1	SCS Method	SCS curvilinear
9	Node66#1	1	SCS Method	SCS curvilinear
10	Node24#1	1	SCS Method	SCS curvilinear
11	Node25#1	1	SCS Method	SCS curvilinear
12	Node30#1	1	SCS Method	SCS curvilinear
13	Node92#1	1	SCS Method	SCS curvilinear
14	Node94#1	1	SCS Method	SCS curvilinear
15	Node48#1	1	SCS Method	SCS curvilinear

```
Total Number of Subcatchments...              15
Total Tributary Area (acres)....          341.10
Impervious Area (acres).........            0.00
Pervious Area (acres)...........          341.10
Total Width (feet)..............         7300.00
Impervious Area (%).............            0.00


 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil               11 - 3rd infil     #
 ##################################################
```

Column	1	2	3	4	5	6	7	8	9	10	11
Default	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ratio	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

```
*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************
```

```
    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


************************************************************
* Hydrographs will be stored for the following  15 INLETS *
************************************************************
Node89    Node63    Node11    Node33    Node46    Node65
Node120   Node99    Node66    Node24    Node25    Node30
Node92    Node94    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



*****************************************************
*  Precipitation Interface File Summary             *
*  Number of precipitation station....          1   *
*****************************************************

Location Station Number
-------- --------------
       1.             1


    A1


*==========================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE               |
|  These are the more important tables in the output file.  |
|  You can use your editor to find the table numbers,       |
|  for example: search for Table E20 to check continuity.   |
|  This output file can be imported into a Word Processor   |
|  and printed on US letter or A4 paper using portrait      |
|  mode, courier font, a size of 8 pt. and margins of 0.75  |
|                                                           |
| Table E1   - Basic Conduit Data                           |
| Table E2   - Conduit Factor Data                          |
| Table E3a  - Junction Data                                |
| Table E3b  - Junction Data                                |
| Table E4   - Conduit Connectivity Data                    |
| Table E4a  - Dry Weather Flow Data                        |
| Table E4b  - Real Time Control Data                       |
| Table E5   - Junction Time Step Limitation Summary        |
| Table E5a  - Conduit Explicit Condition Summary           |
| Table E6   - Final Model Condition                        |
| Table E7   - Iteration Summary                            |
| Table E8   - Junction Time Step Limitation Summary        |
| Table E9   - Junction  Summary  Statistics                |
| Table E10  - Conduit   Summary  Statistics                |
| Table E11  - Area assumptions used in the analysis        |
| Table E12  - Mean conduit information                     |
| Table E13  - Channel losses(H) and culvert info           |
| Table E13a - Culvert Analysis Classification              |
| Table E14  - Natural Channel Overbank Flow Information    |
| Table E14a - Natural Channel Encroachment Information     |
| Table E14b - Floodplain Mapping                           |
| Table E15  - Spreadsheet Info List                        |
| Table E15a - Spreadsheet Reach List                       |
| Table E16  - New Conduit Output Section                   |
| Table E17  - Pump Operation                               |
| Table E18  - Junction Continuity Error                    |
| Table E19  - Junction Inflow & Outflow Listing            |
| Table E20  - Junction Flooding and Volume List            |
| Table E21  - Continuity balance at simulation end         |
| Table E22  - Model Judgement Section                      |
*==========================================================*

Time Control from Hydraulics Job Control
```

```
Year.........    2014 Month.......       1
Day..........       1 Hour........       0
Minute.......       0 Second......       0


Control information for simulation
----------------------------------

Integration cycles................       576
Length of integration step is......    300.00 seconds
Simulation length..................     48.00 hours
Do not create equiv. pipes(NEQUAL).         0
Use U.S. customary units for I/O...         0
Printing starts in cycle...........         1
Intermediate printout intervals of.       500 cycles
Intermediate printout intervals of.   2500.00 minutes
Summary printout intervals of......       500 cycles
Summary printout time interval of..   2500.00 minutes
Hot start file parameter (REDO)....         0
Initial time.......................      0.00 hours

Iteration variables: Flow Tolerance.   0.00010
                     Head Tolerance.   0.00050
    Minimum depth (m or ft).........   0.00001
    Underrelaxation parameter........  0.85000
    Time weighting parameter........   0.85000
    Conduit roughness factor........   1.00000
    Flow adjustment factor..........   1.00000
    Initial Condition Smoothing.....         0
    Courant Time Step Factor........   1.00000
    Default Expansion/Contraction K.   0.00000
    Default Entrance/Exit K.........   0.00000
    Routing Method..................   Dynamic Wave
Default surface area of junctions...     12.57 square feet.
Minimum Junction/Conduit Depth......   0.00001 feet.
Ponding Area Coefficient............   5000.00
Ponding Area Exponent...............    1.0000
Minimum Orifice Length..............   1000.00 feet.
NJSW input hydrograph junctions.....     0
     or user defined hydrographs....

*==========================================================*
|               Flap Gate Conduit Information              |
|               ----------------------------               |
| Positive Flap Gate - Flow only allowed from the upstream |
|                      to the downstream junction          |
| Negative Flap Gate - Flow only allowed from the          |
|                      downstream to the upstream junction |
*==========================================================*

   Conduit   Type of Flap Gate
   -------   -----------------
Link12      Positive Flap Gate

        Natural Cross-Section information for Channel Link53
        ====================================================
         Cross-Section ID (from X1 card) :     1.0 Channel sequence number :     1

  Left Overbank Length   :     33.0 ft                Maximum Elevation        :   636.86 ft.
  Main Channel Length    :     33.0 ft                Maximum Depth            :     0.50 ft.
  Right Overbank Length  :     33.0 ft                Maximum Section Area     :   1.8534 ft^2
                                                      Maximum hydraulic radius :     0.30 ft.
  Manning N :      0.025  to Station         -21.2    Max topwidth             :     6.04 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.17E+00 ft
    "    "  :      0.025  Beyond station      17.8    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :   1.8534 ft^2

        Natural Cross-Section information for Channel Link55
        ====================================================
         Cross-Section ID (from X1 card) :     2.0 Channel sequence number :     2

  Left Overbank Length   :    138.0 ft                Maximum Elevation        :   633.71 ft.
  Main Channel Length    :    138.0 ft                Maximum Depth            :     2.63 ft.
  Right Overbank Length  :    138.0 ft                Maximum Section Area     :  38.1355 ft^2
                                                      Maximum hydraulic radius :     1.14 ft.
  Manning N :      0.025  to Station         -23.6    Max topwidth             :    33.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.34E+01 ft
    "    "  :      0.025  Beyond station       9.4    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  38.1355 ft^2

        Natural Cross-Section information for Channel Link68
        ====================================================
         Cross-Section ID (from X1 card) :     3.0 Channel sequence number :     3

  Left Overbank Length   :    400.0 ft                Maximum Elevation        :   622.00 ft.
  Main Channel Length    :    400.0 ft                Maximum Depth            :     2.70 ft.
  Right Overbank Length  :    400.0 ft                Maximum Section Area     :  45.1725 ft^2
                                                      Maximum hydraulic radius :     0.46 ft.
  Manning N :      0.025  to Station         -67.2    Max topwidth             :    97.80 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 9.85E+01 ft
    "    "  :      0.025  Beyond station      30.6    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  45.1725 ft^2

        Natural Cross-Section information for Channel Link69
        ====================================================
         Cross-Section ID (from X1 card) :     4.0 Channel sequence number :     4

  Left Overbank Length   :    258.0 ft                Maximum Elevation        :   624.37 ft.
  Main Channel Length    :    260.0 ft                Maximum Depth            :     6.05 ft.
  Right Overbank Length  :    262.0 ft                Maximum Section Area     : 1075.528 ft^2
                                                      Maximum hydraulic radius :     3.57 ft.
  Manning N :      0.025  to Station        -126.4    Max topwidth             :   301.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.01E+02 ft
```

```
  "    "  :      0.025  Beyond station     174.6    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1075.528 ft^2

      Natural Cross-Section information for Channel Link70
      ====================================================
       Cross-Section ID (from X1 card) :     5.0 Channel sequence number :     5

Left Overbank Length   :    450.0 ft                Maximum Elevation        :   624.09 ft.
Main Channel Length    :    450.0 ft                Maximum Depth            :     7.76 ft.
Right Overbank Length  :    450.0 ft                Maximum Section Area     : 955.4430 ft^2
                                                    Maximum hydraulic radius :     5.13 ft.
Manning N :      0.025  to Station         -64.2    Max topwidth             :   185.50 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.86E+02 ft
  "    "  :      0.025  Beyond station     121.3    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 955.4430 ft^2

      Natural Cross-Section information for Channel Link71
      ====================================================
       Cross-Section ID (from X1 card) :     6.0 Channel sequence number :     6

Left Overbank Length   :    383.0 ft                Maximum Elevation        :   624.37 ft.
Main Channel Length    :    383.0 ft                Maximum Depth            :     8.76 ft.
Right Overbank Length  :    383.0 ft                Maximum Section Area     : 2270.844 ft^2
                                                    Maximum hydraulic radius :     7.27 ft.
Manning N :      0.025  to Station        -245.8    Max topwidth             :   311.30 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.12E+02 ft
  "    "  :      0.025  Beyond station      65.5    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 2270.844 ft^2

      Natural Cross-Section information for Channel Link73
      ====================================================
       Cross-Section ID (from X1 card) :     7.0 Channel sequence number :     7

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   613.47 ft.
Main Channel Length    :     73.0 ft                Maximum Depth            :    11.92 ft.
Right Overbank Length  :    100.0 ft                Maximum Section Area     : 1101.166 ft^2
                                                    Maximum hydraulic radius :     6.02 ft.
Manning N :      0.025  to Station         -92.8    Max topwidth             :   181.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
  "    "  :      0.025  Beyond station      88.6    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1101.166 ft^2

      Natural Cross-Section information for Channel Link74
      ====================================================
       Cross-Section ID (from X1 card) :     8.0 Channel sequence number :     8

Left Overbank Length   :    102.0 ft                Maximum Elevation        :   613.84 ft.
Main Channel Length    :    102.0 ft                Maximum Depth            :    15.95 ft.
Right Overbank Length  :    102.0 ft                Maximum Section Area     : 1003.556 ft^2
                                                    Maximum hydraulic radius :     7.52 ft.
Manning N :      0.025  to Station         -93.3    Max topwidth             :   126.70 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.33E+02 ft
  "    "  :      0.025  Beyond station      33.4    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1003.556 ft^2

      Natural Cross-Section information for Channel Link75
      ====================================================
       Cross-Section ID (from X1 card) :     9.0 Channel sequence number :     9

Left Overbank Length   :     52.0 ft                Maximum Elevation        :   612.13 ft.
Main Channel Length    :     52.0 ft                Maximum Depth            :    17.46 ft.
Right Overbank Length  :     52.0 ft                Maximum Section Area     : 1220.157 ft^2
                                                    Maximum hydraulic radius :     8.32 ft.
Manning N :      0.025  to Station         -92.5    Max topwidth             :   141.30 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.47E+02 ft
  "    "  :      0.025  Beyond station      48.8    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1220.157 ft^2

      Natural Cross-Section information for Channel Link76
      ====================================================
       Cross-Section ID (from X1 card) :    10.0 Channel sequence number :    10

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   609.77 ft.
Main Channel Length    :     40.0 ft                Maximum Depth            :    17.61 ft.
Right Overbank Length  :     40.0 ft                Maximum Section Area     : 829.0790 ft^2
                                                    Maximum hydraulic radius :     7.27 ft.
Manning N :      0.025  to Station         -46.5    Max topwidth             :   106.90 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.14E+02 ft
  "    "  :      0.025  Beyond station      60.4    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 829.0790 ft^2

      Natural Cross-Section information for Channel Link84
      ====================================================
       Cross-Section ID (from X1 card) :    11.0 Channel sequence number :    11

Left Overbank Length   :    270.0 ft                Maximum Elevation        :   618.53 ft.
Main Channel Length    :    280.0 ft                Maximum Depth            :     7.43 ft.
Right Overbank Length  :    290.0 ft                Maximum Section Area     : 222.9791 ft^2
                                                    Maximum hydraulic radius :     3.66 ft.
Manning N :      0.025  to Station         -30.6    Max topwidth             :    57.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.09E+01 ft
  "    "  :      0.025  Beyond station      26.8    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 222.9791 ft^2

      Natural Cross-Section information for Channel Link85
      ====================================================
       Cross-Section ID (from X1 card) :    12.0 Channel sequence number :    12
```

```
  Left Overbank Length   :    450.0 ft                Maximum Elevation        :   616.00 ft.
  Main Channel Length    :    470.0 ft                Maximum Depth            :    16.50 ft.
  Right Overbank Length  :    490.0 ft                Maximum Section Area     : 1074.025 ft^2
                                                      Maximum hydraulic radius :     5.87 ft.
  Manning N :      0.025  to Station         -68.1    Max topwidth             :   177.10 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
    "    "  :      0.025  Beyond station     109.0    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1074.025 ft^2
```

==========
|Table E1 - Conduit Data|
==========

Inp Num	Conduit Name	Length (ft)	Conduit Class	Area (ft^2)	Manning Coef.	Max Width (ft)	Depth (ft)	Trapezoid Side Slopes	Hazen Williams c-factor
1	Link12	312.0000	Circular	2.4053	0.0120	1.7500	1.7500		
2	Link13	311.0000	Circular	2.4053	0.0120	1.7500	1.7500		
3	Link14	341.0000	Circular	7.0686	0.0120	3.0000	3.0000		
4	Link15	322.0000	Circular	7.0686	0.0120	3.0000	3.0000		
5	Link16	631.0000	Circular	7.0686	0.0120	3.0000	3.0000		
6	Link17	51.0000	Circular	7.0686	0.0120	3.0000	3.0000		
7	Link18	462.0000	Circular	7.0686	0.0120	3.0000	3.0000		
8	Link22	39.0000	Circular	1.2272	0.0240	1.2500	1.2500		
9	Link23	312.0000	Circular	7.0686	0.0120	3.0000	3.0000		
10	Link24	74.0000	Circular	7.0686	0.0120	3.0000	3.0000		
11	Link25	305.0000	Circular	7.0686	0.0120	3.0000	3.0000		
12	Link26	308.0000	Circular	7.0686	0.0120	3.0000	3.0000		
13	Link27	324.0000	Circular	7.0686	0.0140	3.0000	3.0000		
14	Link28	327.0000	Circular	7.0686	0.0120	3.0000	3.0000		
15	Link31	60.4000	Circular	1.2272	0.0240	1.2500	1.2500		
16	Link32	400.0000	Rectangle	16.0000	0.0120	4.0000	4.0000		
17	Link33	260.0000	Rectangle	24.0000	0.0140	6.0000	4.0000		
18	Link47	54.0000	Circular	1.7671	0.0120	1.5000	1.5000		
19	Link53	33.0000	Natural	1.8534	0.0250	6.0429	0.5000		
20	Link54	250.0000	Trapezoid	1.6250	0.0400	4.0000	0.2500	10.0000	10.0000
21	Link55	138.0000	Natural	38.1355	0.0250	33.0000	2.6300		
22	Link56	610.0000	Trapezoid	19.0000	0.0400	4.0000	1.0000	15.0000	15.0000
23	Link68	400.0000	Natural	45.1725	0.0250	97.8000	2.7000		
24	Link69	260.0000	Natural	1075.5285	0.0250	301.0000	6.0500		
25	Link70	450.0000	Natural	955.4430	0.0250	185.5000	7.7600		
26	Link71	383.0000	Natural	2270.8440	0.0250	311.3000	8.7600		
27	Link72	42.0000	Circular	7.0686	0.0120	3.0000	3.0000		
28	Link73	73.0000	Natural	1101.1655	0.0250	181.4000	11.9200		
29	Link74	102.0000	Natural	1003.5558	0.0250	126.7000	15.9500		
30	Link75	52.0000	Natural	1220.1569	0.0250	141.3000	17.4600		
31	Link76	40.0000	Natural	829.0790	0.0250	106.9000	17.6100		
32	Link77	60.0000	Circular	3.1416	0.0120	2.0000	2.0000		
33	Link78	325.0000	Trapezoid	195.0000	0.0400	20.0000	3.0000	15.0000	15.0000
34	Link79	52.0000	Circular	2.4053	0.0120	1.7500	1.7500		
35	Link82	436.0000	Circular	7.0686	0.0120	3.0000	3.0000		
36	Link83	123.0000	Circular	7.0686	0.0120	3.0000	3.0000		
37	Link84	280.0000	Natural	222.9791	0.0250	57.4000	7.4310		
38	Link85	470.0000	Natural	1074.0250	0.0250	177.1000	16.5000		
39	Link86	350.0000	Trapezoid	160.0000	0.0400	8.0000	4.0000	8.0000	8.0000
40	Link87	38.0000	Circular	1.2272	0.0240	1.2500	1.2500		
41	Link93	10.0000	Trapezoid	14.0800	0.0400	80.0000	0.1600	50.0000	50.0000
42	Link95	108.0000	Trapezoid	3.0240	0.0400	8.0000	0.2800	10.0000	10.0000
43	Link103	27.0000	Circular	3.1416	0.0140	2.0000	2.0000		
44	Link104	162.0000	Circular	0.4418	0.0140	0.7500	0.7500		
45	Link105	89.0000	Circular	0.5411	0.0140	0.8300	0.8300		
46	Link107	505.0000	Trapezoid	60.0000	0.0400	20.0000	2.0000	5.0000	5.0000
47	Link108	145.0000	Trapezoid	100.0000	0.0400	30.0000	2.0000	10.0000	10.0000
48	Link109	160.0000	Trapezoid	30.0000	0.0400	20.0000	1.0000	10.0000	10.0000
49	Link118	10.0000	Trapezoid	84.0000	0.0400	30.0000	2.0000	6.0000	6.0000
50	214.1	29.0000	Circular	3.1416	0.0240	2.0000	2.0000		
51	249.1	40.8700	Circular	1.2272	0.0240	1.2500	1.2500		
52	ROAD1	82.0000	Trapezoid	3.0100	0.0140	30.0000	0.1000	1.0000	1.0000
53	272.1	32.0000	Circular	1.2272	0.0240	1.2500	1.2500		
54	283.1	40.0000	Circular	0.7854	0.0240	1.0000	1.0000		
55	Link98.1	31.0000	Circular	0.4418	0.0140	0.7500	0.7500		
56	388.1	50.0000	Circular	0.7854	0.0200	1.0000	1.0000		
57	403.1	163.5000	Circular	1.2272	0.0240	1.2500	1.2500		
58	ROAD4	129.0000	Trapezoid	3.0100	0.0140	30.0000	0.1000	1.0000	1.0000
59	405.1	81.7500	Circular	1.2272	0.0240	1.2500	1.2500		
60	ROAD3	52.0000	Trapezoid	3.0100	0.0140	30.0000	0.1000	1.0000	1.0000
61	407.1	40.8800	Circular	1.2272	0.0240	1.2500	1.2500		
62	ROAD2	67.0000	Trapezoid	3.0100	0.0140	30.0000	0.1000	1.0000	1.0000

Total length of all conduits .... 11915.4000 feet

==========
|Table E2 - Conduit Factor Data|
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Time Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
Link31	1.0000	0.0000	0.0000	0.0000	0.6500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
Link56	1.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
Link87	1.0000	0.0000	0.9500	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
214.1	2.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

==========
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length |
| in the output file all it means is that the |
| program will lower the internal time step to |
| satisfy this condition (explicit condition). |
| You control the actual internal time step by |
| using the minimum courant time step factor in the |
| HYDRAULICS job control. The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection. |

```
| You have further control by using the modify      |
| conduit option in the HYDRAULICS Job Control.     |
*===================================================*


        Conduit     Courant
           Name       Ratio
---------------   ---------
         Link12        7.22  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link13        7.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link14        8.65  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link15        9.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link16        4.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link17       57.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link18        6.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link22       48.80  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link23        9.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link24       39.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link25        9.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link26        9.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link27        9.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link28        9.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link31       31.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link32        8.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link33       13.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link47       38.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link53       28.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link54        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link55       13.26  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link56        2.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link68        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link69       12.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link70        8.59  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link71       12.00  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link72       70.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link73       57.46  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link74       46.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link75       96.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link76      119.30  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link77       40.12  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link78        6.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link79       43.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link82        6.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link83       23.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link84       11.98  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link85        8.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link86        7.25  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link87       50.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link93       65.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link95        7.43  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link103       89.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link104        9.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link105       17.43  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link107        4.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link108       14.03  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link109        9.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link118      212.32  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          214.1       83.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          249.1       46.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          ROAD1        6.55  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          272.1       59.48  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          283.1       42.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
       Link98.1       47.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          388.1       34.05  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          403.1       11.64  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          ROAD4        4.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          405.1       23.28  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          ROAD3       10.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          407.1       46.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          ROAD2        8.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)

*==================*
|  Conduit Volume  |
*==================*

Full pipe or full open conduit volume
Input full depth volume............    2.6768E+06 cubic feet

===> Warning !! The upstream and downstream junctions for the following conduits
                have been reversed to correspond to the positive flow and decreasing
                slope convention.  A negative flow in the output thus means
                the flow was from your original upstream junction to your original
                downstream junction.  Any initial flow has been multiplied by -1.

                1.  Conduit #...Link17      has been changed.
                2.  Conduit #...Link31      has been changed.

===> ERROR !!!  Conduit Link73           has caused ZCROWN  of Junction Node75     to lie above the specified ground elev of     614.84
611.73

===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node81     to lie above the specified ground elev of     612.64
611.30

===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.13
611.67

===> ERROR !!!  Conduit Link76           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.28
611.67


*===================================================*
|           Table E3a - Junction Data               |
*===================================================*

Inp         Junction     Ground     Crown    Invert    Qinst  Initial  Interface
Num             Name  Elevation Elevation Elevation      cfs Depth-ft   Flow (%)
```

1	Node11	623.2500	623.2500	617.2000	0.0000	0.0000	100.0000
2	Node12	624.9700	624.9700	617.2100	0.0000	0.0000	100.0000
3	Node20	637.3000	636.5500	634.8000	0.0000	0.0000	100.0000
4	Node21	639.0000	636.2000	633.1600	0.0000	0.0000	100.0000
5	Node22	639.3500	639.3500	630.1100	0.0000	0.0000	100.0000
6	Node23	635.9100	631.8600	628.8600	0.0000	0.0000	100.0000
7	Node24	635.3400	631.0300	628.0300	0.0000	0.0000	100.0000
8	Node25	634.1030	629.3500	626.3500	0.0000	0.0000	100.0000
9	Node26	634.3200	629.4200	626.4200	0.0000	0.0000	100.0000
10	Node27	635.4400	626.6900	623.6900	0.0000	0.0000	100.0000
11	Node29	620.2110	620.2110	612.7800	0.0000	0.0000	100.0000
12	Node30	631.4300	631.4300	629.8800	0.0000	0.0000	100.0000
13	Node31	627.0900	627.0900	624.3900	0.0000	0.0000	100.0000
14	Node32	636.1400	626.1400	623.0600	0.0000	0.0000	100.0000
15	Node33	619.3200	619.3200	610.5600	0.0000	0.0000	100.0000
16	Node34	618.6800	611.4300	608.4300	0.0000	0.0000	100.0000
17	Node35	621.6500	611.4000	608.4000	0.0000	0.0000	100.0000
18	Node36	633.6100	610.4000	607.4000	0.0000	0.0000	100.0000
19	Node37	632.4600	609.4600	606.4600	0.0000	0.0000	100.0000
20	Node38	626.7800	608.4500	605.4500	0.0000	0.0000	100.0000
21	Node39	611.6440	607.4400	604.4400	0.0000	0.0000	100.0000
22	Node41	633.3700	631.2200	630.2000	0.0000	0.0000	100.0000
23	Node43	638.5000	638.5000	636.4600	0.0000	0.0000	100.0000
24	Node44	637.9900	636.9900	635.7400	0.0000	0.0000	100.0000
25	Node45	637.2900	637.2900	636.0400	0.0000	0.0000	100.0000
26	Node46	608.0000	610.3500	592.7400	0.0000	0.0000	100.0000
27	Node47	610.0000	576.0000	572.0000	0.0000	0.0000	100.0000
28	Node48	618.0000	609.8000	593.3000	0.0000	0.0000	100.0000
29	Node63	633.6300	633.6300	631.0000	0.0000	0.0000	100.0000
30	Node65	642.0000	642.0000	638.0000	0.0000	0.0000	100.0000
31	Node66	634.7700	633.4700	631.9700	0.0000	0.0000	100.0000
32	Node69	638.1000	636.5000	636.0000	0.0000	0.0000	100.0000
33	Node70	636.1000	636.0600	633.4300	0.0000	0.0000	100.0000
34	Node71	624.7000	624.7000	622.0000	0.0000	0.0000	100.0000
35	Node74	625.0300	625.0300	618.9800	0.0000	0.0000	100.0000
36	Node75	611.7300	611.7200	602.9200	0.0000	0.0000	100.0000
37	Node79	624.3700	624.3700	615.6100	0.0000	0.0000	100.0000
38	Node80	613.8400	613.8400	597.8900	0.0000	0.0000	100.0000
39	Node81	611.3000	611.2900	595.1800	0.0000	0.0000	100.0000
40	Node82	611.6700	611.6600	594.6700	0.0000	0.0000	100.0000
41	Node83	642.6000	642.6000	639.6000	0.0000	0.0000	100.0000
42	Node84	639.7400	633.2900	631.5400	0.0000	0.0000	100.0000
43	Node86	621.1000	621.1000	613.4900	0.0000	0.0000	100.0000
44	Node87	622.5000	622.5000	606.0000	0.0000	0.0000	100.0000
45	Node88	626.7100	626.7100	622.7100	0.0000	0.0000	100.0000
46	Node89	639.1000	639.1000	637.1000	0.0000	0.0000	100.0000
47	Node92	636.3000	635.0600	634.9000	0.0000	0.0000	100.0000
48	Node94	635.3000	633.3000	633.3000	0.0000	0.0000	100.0000
49	Node96	630.0000	630.0000	628.0000	0.0000	0.0000	100.0000
50	Node99	639.7000	637.7000	637.7000	0.0000	0.0000	100.0000
51	Node100	634.1900	634.1900	632.3300	0.0000	0.0000	100.0000
52	Node101	634.8000	632.7500	632.0000	0.0000	0.0000	100.0000
53	Node103	634.8400	632.2700	631.4400	0.0000	0.0000	100.0000
54	Node104	633.2900	633.2900	631.2900	0.0000	0.0000	100.0000
55	Node107	633.0000	632.5000	630.5000	0.0000	0.0000	100.0000
56	Node108	633.9000	633.6000	632.2000	0.0000	0.0000	100.0000
57	Node109	634.8700	633.5000	632.5000	0.0000	0.0000	100.0000
58	Node110	634.0000	632.0000	630.0000	0.0000	0.0000	100.0000
59	Node30.1	629.1600	628.4900	627.1300	0.0000	0.0000	100.0000
60	Node30.2	630.2500	629.8100	628.4400	0.0000	0.0000	100.0000
61	Node30.3	630.7900	630.4700	629.2000	0.0000	0.0000	100.0000
62	Node120	639.6000	638.0000	638.0000	0.0000	0.0000	100.0000

==========
| Table E3b - Junction Data |
==========

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	Node11	0.0000	0.0000	F	Normal		0	0.0000
2	Node12	0.0000	0.0000	No P	Normal		0	0.0000
3	Node20	0.0000	0.0000	F	Normal		0	0.0000
4	Node21	0.0000	0.0000	F	Normal		0	0.0000
5	Node22	0.0000	0.0000		Normal		0	0.0000
6	Node23	0.0000	0.0000		Normal		0	0.0000
7	Node24	0.0000	0.0000		Normal		0	0.0000
8	Node25	0.0000	0.0000	F	Normal		0	0.0000
9	Node26	0.0000	0.0000	F	Normal		0	0.0000
10	Node27	0.0000	0.0000	F	Normal		0	0.0000
11	Node29	0.0000	0.0000	No P	Normal		0	0.0000
12	Node30	0.0000	0.0000	F	Normal		0	0.0000
13	Node31	0.0000	0.0000	F	Normal		0	0.0000
14	Node32	0.0000	0.0000	F	Normal		0	0.0000
15	Node33	0.0000	0.0000	F	Normal		0	0.0000
16	Node34	0.0000	0.0000		Normal		0	0.0000
17	Node35	0.0000	0.0000		Normal		0	0.0000
18	Node36	0.0000	0.0000		Normal		0	0.0000
19	Node37	0.0000	0.0000		Normal		0	0.0000
20	Node38	0.0000	0.0000	No P	Normal		0	0.0000
21	Node39	0.0000	0.0000		Normal		0	0.0000
22	Node41	0.0000	0.0000	No P	Normal		0	0.0000
23	Node43	0.0000	0.0000	F	Normal		0	0.0000
24	Node44	0.0000	0.0000	F	Normal		0	0.0000
25	Node45	0.0000	0.0000	No P	Normal		0	0.0000
26	Node46	0.0000	0.0000	F	Normal		0	0.0000
27	Node47	0.0000	0.0000	No P	Normal		0	0.0000
28	Node48	0.0000	0.0000	No P	Normal		0	0.0000
29	Node63	0.0000	0.0000	F	Normal		0	0.0000
30	Node65	0.0000	0.0000	F	Normal		0	0.0000
31	Node66	0.0000	0.0000	F	Normal		0	0.0000
32	Node69	0.0000	0.0000	No P	Normal		0	0.0000
33	Node70	0.0000	0.0000	F	Normal		0	0.0000
34	Node71	0.0000	0.0000	No P	Normal		0	0.0000

35	Node74	0.0000	0.0000	No	P	Normal	0	0.0000
36	Node75	0.0000	0.0000	No	P	Normal	0	0.0000
37	Node79	0.0000	0.0000	No	P	Normal	0	0.0000
38	Node80	0.0000	0.0000	No	P	Normal	0	0.0000
39	Node81	0.0000	0.0000	No	P	Normal	0	0.0000
40	Node82	0.0000	0.0000	No	P	Normal	0	0.0000
41	Node83	0.0000	0.0000	No	P	Normal	0	0.0000
42	Node84	0.0000	0.0000	No	P	Normal	0	0.0000
43	Node86	0.0000	0.0000		F	Normal	0	0.0000
44	Node87	0.0000	0.0000	No	P	Normal	0	0.0000
45	Node88	0.0000	0.0000	No	P	Normal	0	0.0000
46	Node89	0.0000	0.0000		F	Normal	0	0.0000
47	Node92	0.0000	0.0000		F	Normal	0	0.0000
48	Node94	0.0000	0.0000		F	Normal	0	0.0000
49	Node96	0.0000	0.0000	No	P	Normal	0	0.0000
50	Node99	0.0000	0.0000		F	Normal	0	0.0000
51	Node100	0.0000	0.0000		F	Normal	0	0.0000
52	Node101	0.0000	0.0000	No	P	Normal	0	0.0000
53	Node103	0.0000	0.0000	No	P	Normal	0	0.0000
54	Node104	0.0000	0.0000	No	P	Normal	0	0.0000
55	Node107	0.0000	0.0000	No	P	Normal	0	0.0000
56	Node108	0.0000	0.0000		F	Normal	0	0.0000
57	Node109	0.0000	0.0000	No	P	Normal	0	0.0000
58	Node110	0.0000	0.0000	No	P	Normal	0	0.0000
59	Node30.1	0.0000	0.0000		F	Normal	0	0.0000
60	Node30.2	0.0000	0.0000		F	Normal	0	0.0000
61	Node30.3	0.0000	0.0000		F	Normal	0	0.0000
62	Node120	0.0000	0.0000		F	Normal	0	0.0000

==========
|Table E4 - Conduit Connectivity|
==========

Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation	
1	Link12	Node20	Node21	634.8000	634.4500	No Design
2	Link13	Node21	Node84	633.1600	631.5400	No Design
3	Link14	Node22	Node23	630.1100	628.8600	No Design
4	Link15	Node23	Node24	628.8600	628.0300	No Design
5	Link16	Node24	Node25	628.0300	626.3500	No Design
6	Link17	Node26	Node25	626.4200	626.3500	No Design
7	Link18	Node26	Node27	626.4200	623.6900	No Design
8	Link22	Node31	Node32	624.3900	623.0600	No Design
9	Link23	Node33	Node34	610.5630	608.4300	No Design
10	Link24	Node34	Node35	608.4300	608.4000	No Design
11	Link25	Node35	Node36	608.4000	607.4000	No Design
12	Link26	Node36	Node37	607.4000	606.4600	No Design
13	Link27	Node37	Node38	606.4600	605.4500	No Design
14	Link28	Node38	Node39	605.4500	604.4400	No Design
15	Link31	Node45	Node44	636.0400	635.7400	No Design
16	Link32	Node46	Node47	592.7400	572.0000	No Design
17	Link33	Node48	Node47	593.3000	572.0000	No Design
18	Link47	Node66	Node24	631.9700	628.3300	No Design
19	Link53	Node45	Node69	636.0400	636.0000	No Design
20	Link54	Node69	Node70	636.0000	633.4300	No Design
21	Link55	Node70	Node63	633.4300	631.0000	No Design
22	Link56	Node41	Node71	630.2000	622.0000	No Design
23	Link68	Node71	Node74	622.0000	618.9800	No Design
24	Link69	Node74	Node11	618.9800	617.2000	No Design
25	Link70	Node12	Node79	617.2100	615.6100	No Design
26	Link71	Node79	Node33	615.6100	610.5600	No Design
27	Link72	Node39	Node75	604.4400	602.9220	No Design
28	Link73	Node75	Node80	602.9200	597.8900	No Design
29	Link74	Node80	Node81	597.8900	595.1800	No Design
30	Link75	Node81	Node82	595.1800	594.6700	No Design
31	Link76	Node82	Node46	594.6700	592.7400	No Design
32	Link77	Node65	Node83	640.0000	639.6000	No Design
33	Link78	Node83	Node22	639.6000	636.3500	No Design
34	Link79	Node84	Node22	631.5400	630.5100	No Design
35	Link82	Node27	Node86	623.6900	613.4900	No Design
36	Link83	Node86	Node29	613.4900	612.7800	No Design
37	Link84	Node29	Node87	612.7800	606.0000	No Design
38	Link85	Node87	Node48	606.0000	593.3000	No Design
39	Link86	Node88	Node86	622.7100	617.1000	No Design
40	Link87	Node32	Node88	623.0600	622.7100	No Design
41	Link93	Node92	Node100	634.9000	634.0300	No Design
42	Link95	Node96	Node32	628.0000	625.8600	No Design
43	Link103	Node104	Node107	631.2900	630.5000	No Design
44	Link104	Node101	Node103	632.0000	631.4400	No Design
45	Link105	Node103	Node104	631.4400	631.2900	No Design
46	Link107	Node110	Node96	630.0000	628.0000	No Design
47	Link108	Node107	Node110	630.5000	630.0000	No Design
48	Link109	Node109	Node110	632.5000	630.0000	No Design
49	Link118	Node89	Node43	637.1000	636.5000	No Design
50	214.1	Node11	Node12	617.7000	617.2100	No Design
51	249.1	Node30	Node30.3	629.8800	629.2200	No Design
52	ROAD1	Node30	Node30.3	631.3300	630.0000	No Design
53	272.1	Node43	Node44	636.4600	635.7400	No Design
54	283.1	Node63	Node41	631.0100	630.2200	No Design
55	Link98.1	Node100	Node101	632.3300	632.0000	No Design
56	388.1	Node108	Node109	632.6000	632.5000	No Design
57	403.1	Node30.1	Node31	627.2400	624.5900	No Design
58	ROAD4	Node30.1	Node31	628.1100	626.9900	No Design
59	405.1	Node30.2	Node30.1	628.5600	627.2400	No Design
60	ROAD3	Node30.2	Node30.1	628.4400	628.1100	No Design
61	407.1	Node30.3	Node30.2	629.2200	628.5600	No Design
62	ROAD2	Node30.3	Node30.2	630.0000	628.4400	No Design

==========
|Storage Junction Data|
==========

MAXIMUM OR PEAK OR CROWN DEPTH

STORAGE JUNCTION NUMBER OR NAME	JUNCTION TYPE	CONSTANT SURFACE AREA (FT2)	CONSTANT VOLUME (CUBIC FEET)	ELEVATION (FT)	STARTS FROM
Node65	Stage/Area	50965.2000	114339.2685	642.0000	Node Invert
Node89	Stage/Area	26136.0000	34024.4320	639.1000	Node Invert
Node92	Stage/Area	24829.2000	22012.6977	636.3000	Node Invert
Node94	Stage/Area	16552.8000	19840.6663	635.3000	Node Invert
Node99	Stage/Area	22651.2000	39303.4343	639.7000	Node Invert
Node120	Stage/Area	26571.6000	23780.4334	639.6000	Node Invert

==========
| Variable storage data for node | Node65
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	435.6000	0.0000	0.0100	0.0000
2	639.0000	1.0000	10890.0000	4501.1550	0.2500	0.1033
3	640.0000	2.0000	29185.2000	23801.9281	0.6700	0.5464
4	641.0000	3.0000	50965.2000	63374.0685	1.1700	1.4549
5	642.0000	4.0000	50965.2000	114339.2685	1.1700	2.6249

==========
| Variable storage data for node | Node89
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	637.1000	0.0000	435.6000	0.0000	0.0100	0.0000
2	637.6000	0.5000	4356.0000	1028.1711	0.1000	0.0236
3	638.1000	1.0000	26136.0000	7888.4320	0.6000	0.1811
4	639.1000	2.0000	26136.0000	34024.4320	0.6000	0.7811

==========
| Variable storage data for node | Node92
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	634.9000	0.0000	435.6000	0.0000	0.0100	0.0000
2	635.0000	0.1000	4356.0000	205.6342	0.1000	0.0047
3	635.9000	1.0000	24829.2000	12081.0177	0.5700	0.2773
4	636.3000	1.4000	24829.2000	22012.6977	0.5700	0.5053

==========
| Variable storage data for node | Node94
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	633.3000	0.0000	435.6000	0.0000	0.0100	0.0000
2	634.0000	0.7000	4791.6000	1556.7662	0.1100	0.0357
3	634.5000	1.2000	16552.8000	6598.4263	0.3800	0.1515
4	635.3000	2.0000	16552.8000	19840.6663	0.3800	0.4555

==========
| Variable storage data for node | Node99
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	637.7000	0.0000	4.3560	0.0000	0.0001	0.0000
2	637.7100	0.0100	2178.0000	7.5991	0.0500	0.0002
3	638.0000	0.3000	12196.8000	1895.3728	0.2800	0.0435
4	638.2000	0.5000	22651.2000	5326.6343	0.5200	0.1223
5	639.7000	2.0000	22651.2000	39303.4343	0.5200	0.9023

==========
| Variable storage data for node | Node120
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	43.5600	0.0000	0.0010	0.0000
2	638.8000	0.8000	17424.0000	4890.2871	0.4000	0.1123
3	639.3000	1.3000	26571.6000	15808.9534	0.6100	0.3629
4	639.6000	1.6000	26571.6000	23780.4334	0.6100	0.5459

==========
| Weir Data |
==========

Weir Name	From Junction	To Junction	Type	Crest Height(ft)	Weir Top(ft)	Weir Length(ft)	Discharge Coefficient	Weir Power
Link 5	Node11	Node12	1	3.16	182.80	300.00	3.0000	1.5000
WEIR30	Node43	Node44	1	1.94	163.54	300.00	3.0000	1.5000
WEIR46	Node63	Node41	1	2.37	169.00	50.00	3.0000	1.5000
Overtop90	Node94	Node108	1	0.70	166.70	30.00	3.0000	1.5000
Link97.1	Node99	Node21	1	0.56	162.30	300.00	3.0000	1.5000
Roadway98	Node100	Node101	1	3.42	167.67	300.00	3.0000	1.5000
Link106.1.	Node108	Node109	1	1.62	167.80	300.00	3.0000	1.5000
WEIR119	Node120	Node20	1	1.30	162.00	300.00	3.0000	1.5000

==========
| FREE OUTFALL DATA (DATA GROUP I1) |
| BOUNDARY CONDITION ON DATA GROUP J1 |
==========

Outfall at Junction....Node47 has boundary condition number... 1

===> Warning !! Outfall Junction Node47 has two or more connecting conduits.

```
*==============================================*
|               Weir Outfall Data              |
|      Boundary Condition on data group J1     |
*==============================================*


*==================================================*
|        INTERNAL CONNECTIVITY INFORMATION         |
*==================================================*

         CONDUIT         JUNCTION         JUNCTION
---------------- ---------------- ----------------
          Link 5           Node11           Node12
          WEIR30           Node43           Node44
          WEIR46           Node63           Node41
       Overtop90           Node94          Node108
        Link97.1           Node99           Node21
       Roadway98          Node100          Node101
      Link106.1.          Node108          Node109
         WEIR119          Node120           Node20
        FREE # 1           Node47         BOUNDARY

*====================================================*
|        Boundary Condition Information              |
|                  Data Groups J1-J4                 |
*====================================================*

BC NUMBER..         1 has no control water surface.

*====================================================*
|             XP Note Field Summary                  |
*====================================================*



*==================================*
|   Conduit Convergence Criteria   |
*==================================*

         Conduit        Full     Conduit
            Name        Flow       Slope
-----------------  ----------  ----------
          Link12      5.7493      0.0011
          Link13     12.3889      0.0052
          Link14     43.7477      0.0037
          Link15     36.6850      0.0026
          Link16     37.2836      0.0027
          Link17     26.7696      0.0014
          Link18     55.5441      0.0059
          Link22      6.4617      0.0341
          Link23     59.7442      0.0068
          Link24     14.5486      0.0004
          Link25     41.3740      0.0033
          Link26     39.9177      0.0031
          Link27     34.5795      0.0031
          Link28     40.1573      0.0031
          Link31      2.4660      0.0050
          Link32    451.1614      0.0519
          Link33    823.3655      0.0819
          Link47     29.5450      0.0674
          Link53      1.7213      0.0012
          Link54      1.9517      0.0103
          Link55    328.6757      0.0176
          Link56     55.4504      0.0134
          Link68    138.7842      0.0075
          Link69  12349.6692      0.0068
          Link70  10078.6135      0.0036
          Link71  58179.1079      0.0132
          Link72    137.3690      0.0361
          Link73  56825.7885      0.0689
          Link74  37318.0904      0.0266
          Link75  29495.4038      0.0098
          Link76  40618.1464      0.0482
          Link77     20.0104      0.0067
          Link78   1059.8133      0.0100
          Link79     24.1586      0.0198
          Link82    110.5183      0.0234
          Link83     54.8977      0.0058
          Link84   4900.7542      0.0242
          Link85  34130.3174      0.0270
          Link86   1275.6218      0.0160
          Link87      3.3581      0.0092
          Link93     42.9074      0.0870
          Link95      5.7961      0.0198
         Link103     35.9324      0.0293
         Link104      0.9032      0.0035
         Link105      0.8264      0.0017
         Link107    182.6084      0.0040
         Link108    276.1874      0.0034
         Link109    114.8091      0.0156
         Link118   1022.0399      0.0600
           214.1     15.9283      0.0169
           249.1      4.4465      0.0161
           ROAD1      8.7308      0.0162
           272.1      5.2486      0.0225
           283.1      2.7121      0.0197
        Link98.1      1.5849      0.0106
           388.1      1.0357      0.0020
           403.1      4.4547      0.0162
           ROAD4      6.3878      0.0087
           405.1      4.4463      0.0161
           ROAD3      5.4613      0.0063
           407.1      4.4460      0.0161
```

```
          ROAD2     10.4607      0.0233

*================================*
|    Initial Model Condition     |
| Initial Time =      0.08 hours |
*================================*

      Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.00 /   617.20           Node12/   0.00 /   617.21           Node20/   0.00 /   634.80
         Node21/   0.00 /   633.16           Node22/   0.00 /   630.11           Node23/   0.00 /   628.86
         Node24/   0.00 /   628.03           Node25/   0.00 /   626.35           Node26/   0.00 /   626.42
         Node27/   0.00 /   623.69           Node29/   0.00 /   612.78           Node30/   0.00 /   629.88
         Node31/   0.00 /   624.39           Node32/   0.00 /   623.06           Node33/   0.00 /   610.56
         Node34/   0.00 /   608.43           Node35/   0.00 /   608.40           Node36/   0.00 /   607.40
         Node37/   0.00 /   606.46           Node38/   0.00 /   605.45           Node39/   0.00 /   604.44
         Node41/   0.00 /   630.20           Node43/   0.00 /   636.46           Node44/   0.00 /   635.74
         Node45/   0.00 /   636.04           Node46/   0.00 /   592.74           Node47/   0.00 /   572.00
         Node48/   0.00 /   593.30           Node63/   0.00 /   631.00           Node65/   0.00 /   638.00
         Node66/   0.00 /   631.97           Node69/   0.00 /   636.00           Node70/   0.00 /   633.43
         Node71/   0.00 /   622.00           Node74/   0.00 /   618.98           Node75/   0.00 /   602.92
         Node79/   0.00 /   615.61           Node80/   0.00 /   597.89           Node81/   0.00 /   595.18
         Node82/   0.00 /   594.67           Node83/   0.00 /   639.60           Node84/   0.00 /   631.54
         Node86/   0.00 /   613.49           Node87/   0.00 /   606.00           Node88/   0.00 /   622.71
         Node89/   0.00 /   637.10           Node92/   0.00 /   634.90           Node94/   0.00 /   633.30
         Node96/   0.00 /   628.00           Node99/   0.00 /   637.70          Node100/   0.00 /   632.33
        Node101/   0.00 /   632.00          Node103/   0.00 /   631.44          Node104/   0.00 /   631.29
        Node107/   0.00 /   630.50          Node108/   0.00 /   632.20          Node109/   0.00 /   632.50
        Node110/   0.00 /   630.00         Node30.1/   0.00 /   627.13         Node30.2/   0.00 /   628.44
       Node30.3/   0.00 /   629.20          Node120/   0.00 /   638.00

        Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
         Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link31/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link53/       0.00           Link54/       0.00           Link55/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link86/       0.00
         Link87/       0.00           Link93/       0.00           Link95/       0.00
        Link103/       0.00          Link104/       0.00          Link105/       0.00
        Link107/       0.00          Link108/       0.00          Link109/       0.00
        Link118/       0.00            214.1/       0.00            249.1/       0.00
          ROAD1/       0.00            272.1/       0.00            283.1/       0.00
       Link98.1/       0.00            388.1/       0.00            403.1/       0.00
          ROAD4/       0.00            405.1/       0.00            ROAD3/       0.00
          407.1/       0.00            ROAD2/       0.00           Link 5/       0.00
         WEIR30/       0.00           WEIR46/       0.00        Overtop90/       0.00
       Link97.1/       0.00        Roadway98/       0.00       Link106.1./       0.00
        WEIR119/       0.00         FREE # 1/       0.00

        Conduit/   Velocity
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
         Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link31/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link53/       0.00           Link54/       0.00           Link55/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link86/       0.00
         Link87/       0.00           Link93/       0.00           Link95/       0.00
        Link103/       0.00          Link104/       0.00          Link105/       0.00
        Link107/       0.00          Link108/       0.00          Link109/       0.00
        Link118/       0.00            214.1/       0.00            249.1/       0.00
          ROAD1/       0.00            272.1/       0.00            283.1/       0.00
       Link98.1/       0.00            388.1/       0.00            403.1/       0.00
          ROAD4/       0.00            405.1/       0.00            ROAD3/       0.00
          407.1/       0.00            ROAD2/       0.00

        Conduit/ Cross Sectional Area
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
         Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link31/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link53/       0.00           Link54/       0.00           Link55/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link86/       0.00
         Link87/       0.00           Link93/       0.00           Link95/       0.00
        Link103/       0.00          Link104/       0.00          Link105/       0.00
        Link107/       0.00          Link108/       0.00          Link109/       0.00
        Link118/       0.00            214.1/       0.00            249.1/       0.00
          ROAD1/       0.00            272.1/       0.00            283.1/       0.00
       Link98.1/       0.00            388.1/       0.00            403.1/       0.00
          ROAD4/       0.00            405.1/       0.00            ROAD3/       0.00
          407.1/       0.00            ROAD2/       0.00

        Conduit/ Hydraulic Radius
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
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         Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link31/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link53/       0.00           Link54/       0.00           Link55/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link86/       0.00
         Link87/       0.00           Link93/       0.00           Link95/       0.00
        Link103/       0.00          Link104/       0.00          Link105/       0.00
        Link107/       0.00          Link108/       0.00          Link109/       0.00
        Link118/       0.00            214.1/       0.00            249.1/       0.00
          ROAD1/       0.00            272.1/       0.00            283.1/       0.00
      Link98.1/        0.00            388.1/       0.00            403.1/       0.00
          ROAD4/       0.00            405.1/       0.00            ROAD3/       0.00
          407.1/       0.00            ROAD2/       0.00

        Conduit/ Upstream/ Downstream Elevation
         Link12/   633.16/   633.16          Link13/   631.54/   631.54          Link14/   628.86/   628.86
         Link15/   628.03/   628.03          Link16/   626.35/   626.35          Link17/   626.35/   626.35
         Link18/   623.69/   623.69          Link22/   623.06/   623.06          Link23/   608.43/   608.43
         Link24/   608.40/   608.40          Link25/   607.40/   607.40          Link26/   606.46/   606.46
         Link27/   605.45/   605.45          Link28/   604.44/   604.44          Link31/   635.74/   635.74
         Link32/   572.00/   572.00          Link33/   572.00/   572.00          Link47/   628.03/   628.03
         Link53/   636.00/   636.00          Link54/   633.43/   633.43          Link55/   631.00/   631.00
         Link56/   622.00/   622.00          Link68/   618.98/   618.98          Link69/   617.20/   617.20
         Link70/   615.61/   615.61          Link71/   610.56/   610.56          Link72/   602.92/   602.92
         Link73/   597.89/   597.89          Link74/   595.18/   595.18          Link75/   594.67/   594.67
         Link76/   592.74/   592.74          Link77/   639.60/   639.60          Link78/   630.11/   630.11
         Link79/   630.11/   630.11          Link82/   613.49/   613.49          Link83/   612.78/   612.78
         Link84/   606.00/   606.00          Link85/   593.30/   593.30          Link86/   613.49/   613.49
         Link87/   622.71/   622.71          Link93/   632.33/   632.33          Link95/   623.06/   623.06
        Link103/   630.50/   630.50         Link104/   631.44/   631.44         Link105/   631.29/   631.29
        Link107/   628.00/   628.00         Link108/   630.00/   630.00         Link109/   630.00/   630.00
        Link118/   636.46/   636.46           214.1/   617.21/   617.21           249.1/   629.20/   629.20
          ROAD1/   629.20/   629.20           272.1/   635.74/   635.74           283.1/   630.20/   630.20
      Link98.1/    632.00/   632.00           388.1/   632.50/   632.50           403.1/   624.39/   624.39
          ROAD4/   624.39/   624.39           405.1/   627.13/   627.13           ROAD3/   627.13/   627.13
          407.1/   628.44/   628.44           ROAD2/   628.44/   628.44

Cycle        500      Time         41 Hrs - 40.00 Min

      Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.50 /   617.70          Node12/   0.00 /   617.21          Node20/   0.00 /   634.80
         Node21/   0.00 /   633.16          Node22/   0.02 /   630.13          Node23/   0.02 /   628.88
         Node24/   0.02 /   628.05          Node25/   0.09 /   626.44          Node26/   0.02 /   626.44
         Node27/   0.01 /   623.70          Node29/   0.01 /   612.79          Node30/   0.00 /   629.88
         Node31/   0.00 /   624.39          Node32/   0.00 /   623.06          Node33/   0.00 /   610.56
         Node34/   0.00 /   608.43          Node35/   0.00 /   608.40          Node36/   0.00 /   607.40
         Node37/   0.00 /   606.46          Node38/   0.00 /   605.45          Node39/   0.00 /   604.44
         Node41/   0.00 /   630.20          Node43/   0.00 /   636.46          Node44/   0.30 /   636.04
         Node45/   0.00 /   636.04          Node46/   0.00 /   592.74          Node47/   0.00 /   572.00
         Node48/   0.00 /   593.30          Node63/   0.01 /   631.01          Node65/   2.02 /   640.02
         Node66/   0.00 /   631.97          Node69/   0.00 /   636.00          Node70/   0.00 /   633.43
         Node71/   0.00 /   622.00          Node74/   0.00 /   618.98          Node75/   0.00 /   602.92
         Node79/   0.00 /   615.61          Node80/   0.00 /   597.89          Node81/   0.00 /   595.18
         Node82/   0.00 /   594.67          Node83/   0.00 /   639.60          Node84/   0.00 /   631.54
         Node86/   0.02 /   613.51          Node87/   0.01 /   606.01          Node88/   0.00 /   622.71
         Node89/   0.00 /   637.10          Node92/   0.00 /   634.90          Node94/   0.50 /   633.80
         Node96/   0.00 /   628.00          Node99/   0.00 /   637.70         Node100/   0.00 /   632.33
        Node101/   0.00 /   632.00         Node103/   0.00 /   631.44         Node104/   0.00 /   631.29
        Node107/   0.00 /   630.50         Node108/   0.40 /   632.60         Node109/   0.00 /   632.50
        Node110/   0.00 /   630.00        Node30.1/   0.11 /   627.24        Node30.2/   0.00 /   628.44
       Node30.3/   0.02 /   629.22         Node120/   0.66 /   638.66

        Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
         Link12/       0.00           Link13/       0.00           Link14/       0.01*          Link15/       0.01
         Link16/       0.01*          Link17/      -0.01           Link18/       0.01           Link22/       0.00*
         Link23/       0.00           Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link31/       0.00           Link32/       0.00*
         Link33/       0.01           Link47/       0.00*          Link53/       0.00           Link54/       0.00*
         Link55/       0.00*          Link56/       0.00*          Link68/       0.00           Link69/       0.00*
         Link70/       0.00           Link71/       0.00*          Link72/       0.00           Link73/       0.00
         Link74/       0.00           Link75/       0.00*          Link76/       0.00           Link77/       0.01
         Link78/       0.01           Link79/       0.00           Link82/       0.01*          Link83/       0.01
         Link84/       0.01           Link85/       0.01           Link86/       0.00           Link87/       0.00
         Link93/       0.00*          Link95/       0.00          Link103/       0.00*         Link104/       0.00*
        Link105/       0.00          Link107/       0.00          Link108/       0.00*         Link109/       0.00*
        Link118/       0.00            214.1/       0.00*           249.1/       0.00*           ROAD1/       0.00*
          272.1/       0.00*           283.1/       0.00         Link98.1/       0.00*           388.1/       0.00
          403.1/       0.00            ROAD4/       0.00*           405.1/       0.00            ROAD3/       0.00
          407.1/       0.00            ROAD2/       0.00*          Link 5/       0.00           WEIR30/       0.00
          WEIR46/      0.00        Overtop90/       0.00         Link97.1/       0.00        Roadway98/       0.00
      Link106.1./      0.00          WEIR119/       0.00         FREE # 1/       0.01


  *==================================================*
  | Table E5 - Junction Time Limitation Summary      |
  |              (0.10 or 0.25)* Depth * Area        |
  | Time step = ------------------------------       |
  |                  Sum of Flow                     |
  *==================================================*
  |  The time this junction was the limiting junction |
  |                 is listed in the third column.   |
  *==================================================*

          Junction     Time(.10)  Time(.25)  Time(sec)
-----------------      ---------  ---------  ---------
            Node11       54.9292   137.3229  1500.0000
            Node12      127.6747   319.1867     0.0000
            Node20       43.8108   109.5271   600.0000
            Node21       55.7647   139.4117 151200.000
            Node22      130.3921   325.9803     0.0000
            Node23       62.6702   156.6754     0.0000
```

Node24	143.3804	358.4511	0.0000
Node25	166.9956	417.4891	0.0000
Node26	66.0629	165.1573	0.0000
Node27	93.6499	234.1247	0.0000
Node29	42.4698	106.1744	300.0000
Node30	273.1245	682.8113	0.0000
Node31	71.1210	177.8024	0.0000
Node32	39.8089	99.5222	3600.0000
Node33	11.2886	28.2215	900.0000
Node34	24.1588	60.3971	1500.0000
Node35	20.1520	50.3800	300.0000
Node36	22.8260	57.0650	300.0000
Node37	24.7443	61.8607	0.0000
Node38	60.3047	150.7617	600.0000
Node39	271.7431	679.3579	0.0000
Node41	438.7593	1096.8981	0.0000
Node43	57.4020	143.5050	300.0000
Node44	149.3875	373.4688	0.0000
Node45	562.7416	1406.8540	0.0000
Node46	158.4888	396.2219	0.0000
Node47	3000.0000	3000.0000	0.0000
Node48	387.7781	969.4452	0.0000
Node63	104.5079	261.2696	0.0000
Node65	99.2232	248.0579	300.0000
Node66	100.8525	252.1313	0.0000
Node69	519.1531	1297.8828	0.0000
Node70	144.0342	360.0854	0.0000
Node71	388.5479	971.3698	0.0000
Node74	97.8968	244.7420	0.0000
Node75	208.9429	522.3573	0.0000
Node79	21.4033	53.5081	0.0000
Node80	106.1747	265.4366	0.0000
Node81	115.1908	287.9769	0.0000
Node82	54.3555	135.8888	600.0000
Node83	736.0941	1840.2353	0.0000
Node84	63.5011	158.7526	300.0000
Node86	115.3365	288.3412	0.0000
Node87	125.3085	313.2712	0.0000
Node88	236.7155	591.7887	0.0000
Node89	53.3878	133.4694	0.0000
Node92	3.9966	9.9915	3300.0000
Node94	114.4292	286.0729	0.0000
Node96	673.1039	1682.7598	0.0000
Node99	319.0711	797.6778	0.0000
Node100	7.3562	18.3905	300.0000
Node101	3.0241	7.5602	6000.0000
Node103	124.9766	312.4414	600.0000
Node104	233.0512	582.6280	0.0000
Node107	1738.2043	3000.0000	0.0000
Node108	32.3065	80.7661	300.0000
Node109	807.8938	2019.7346	0.0000
Node110	340.5244	851.3109	0.0000
Node30.1	165.4644	413.6610	0.0000
Node30.2	636.2007	1590.5018	0.0000
Node30.3	109.2517	273.1293	0.0000
Node120	127.5600	318.9000	0.0000

The junction requiring the smallest time step was...Node21

```
*=========================================================*
|       Table E5a - Conduit Explicit Condition Summary     |
|       Courant   =         Conduit Length                 |
|       Time step = -------------------------------        |
|                       Velocity + sqrt(g*depth)           |
|                                                          |
|                  Conduit Implicit Condition Summary      |
|       Courant   =         Conduit Length                 |
|       Time step = --------------------------------       |
|                              Velocity                    |
*=========================================================*
|  The 3rd column is the Explicit time step times the      |
|      minimum courant time step factor                    |
|                                                          |
|  Minimum Conduit Time Step in seconds in the 4th column  |
|  in the list. Maximum possible is 10 * maximum time step |
|                                                          |
|  The 5th column is the maximum change at any time step   |
|  during the simulation. The 6th column is the wobble     |
|  value which is an indicator of the flow stability.      |
|                                                          |
|  You should use this section to find those conduits that |
|  are slowing your model down.  Use modify conduits to    |
|  alter the length of the slow conduits to make your      |
|  simulation faster, or change the conduit name to        |
|  "CHME?????" where ????? are any characters, this will   |
|  lengthen the conduit based on the model time step,      |
|  not the value listed in modify conduits.                |
*=========================================================*
```

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
Link12	19.2212	19.2212	52.2783	20.0000	0.0276	6.5876	Normal Soln
Link13	13.7282	13.7282	32.3067	0.0000	0.0297	3.8522	Normal Soln
Link14	22.9231	22.9231	54.4703	0.0000	0.0334	1.4073	Normal Soln
Link15	22.3247	22.3247	57.4496	0.0000	-0.0668	1.8295	Normal Soln
Link16	38.1812	38.1812	100.1856	0.0000	0.1849	2.5217	Normal Soln
Link17	3.0675	3.0675	6.7538	2155.0000	-0.1768	3.6724	Normal Soln
Link18	26.6949	26.6949	52.6522	0.0000	0.1908	1.7700	Normal Soln
Link22	2.4303	2.4303	10.5374	0.0000	0.0136	3.9693	Normal Soln
Link23	13.3539	13.3539	38.8149	0.0000	-0.1088	2.7680	Normal Soln
Link24	3.1685	3.1685	9.2134	0.0000	-0.1003	11.4004	Normal Soln
Link25	13.3175	13.3175	37.9485	0.0000	-0.1193	3.9577	Normal Soln
Link26	14.0575	14.0575	38.2435	0.0000	-0.1256	4.1363	Normal Soln
Link27	15.6421	15.6421	40.2860	0.0000	-0.1122	4.7382	Normal Soln
Link28	17.6427	17.6427	39.4483	0.0000	-0.1112	4.0997	Normal Soln
Link31	5.3298	5.3298	18.0857	0.0000	-0.0118	3.6449	Normal Soln

```
          Link32    14.8122    14.8122    18.7809     0.0000       0.1461   0.4590  Normal Soln
          Link33    11.0841    11.0841    14.5422     0.0000       0.0661   0.1660  Normal Soln
          Link47     2.4410     2.4410     3.3774    15.0000       0.3050   1.2282  Normal Soln
          Link53     6.3024     6.3024    17.5784     0.0000       0.0139   4.8961  Normal Soln
          Link54    59.4643    59.4643   182.8077     0.0000       0.0225   3.9738  Normal Soln
          Link55    25.9277    25.9277    87.3811     0.0000       0.0181   0.0236  Normal Soln
          Link56   126.6959   126.6959   396.5183     0.0000       0.0452   0.3683  Normal Soln
          Link68    58.0237    58.0237   134.8116     0.0000       0.0267   0.1510  Normal Soln
          Link69    39.3876    39.3876   242.2073     0.0000       3.0272   0.0586  Normal Soln
          Link70    63.4669    63.4669   178.5620     0.0000      -0.2320   0.0259  Normal Soln
          Link71    28.7391    28.7391   276.5983     0.0000      49.2253   0.8970  Normal Soln
          Link72     1.6693     1.6693     2.2626   145.0000      -0.1073   1.2069  Normal Soln
          Link73     6.2416     6.2416     9.5814     5.0000      -0.1350   0.0029  Normal Soln
          Link74     8.1204     8.1204    13.8229     0.0000      -0.1139   0.0044  Normal Soln
          Link75     6.2828     6.2828    16.5526     0.0000      -0.1098   0.0056  Normal Soln
          Link76     2.7686     2.7686     4.2151   335.0000      -0.1090   0.0040  Normal Soln
          Link77     5.0995     5.0995     8.9870     0.0000       0.0059   0.7274  Normal Soln
          Link78    84.4075    84.4075   280.6728     0.0000       0.0083   0.0137  Normal Soln
          Link79     2.8801     2.8801     4.5506    50.0000      -0.0435   1.9803  Normal Soln
          Link82    19.5007    19.5007    30.8532     0.0000       0.1673   0.8879  Normal Soln
          Link83     6.3398     6.3398    11.0062     0.0000       0.1879   2.0617  Normal Soln
          Link84    25.2006    25.2006    43.1469     0.0000       0.1271   0.0231  Normal Soln
          Link85    44.3059    44.3059    79.5945     0.0000       0.0853   0.0033  Normal Soln
          Link86    71.3820    71.3820   191.9445     0.0000       0.0221   0.0118  Normal Soln
          Link87     1.9338     1.9338     5.8689    10.0000       0.0199   4.5228  Normal Soln
          Link93     1.4984     1.4984     4.1427    15.0000    -239.4598 3095.107  Normal Soln
          Link95    21.3967    21.3967    92.5992     0.0000       0.0175   2.8422  Normal Soln
         Link103     3.0904     3.0904     4.9635     5.0000      -0.0125   0.1169  Normal Soln
         Link104    12.0693    12.0693    41.2503     0.0000      -0.0093   7.1700  Normal Soln
         Link105     9.0009     9.0009    25.7440     0.0000      -0.0116   5.1498  Normal Soln
         Link107   118.8716   118.8716   473.4233     0.0000       0.0161   0.0865  Normal Soln
         Link108    58.9103    58.9103   298.6643     0.0000      -0.0171   0.0133  Normal Soln
         Link109    41.6808    41.6808   117.3922     0.0000       0.0408   0.1108  Normal Soln
         Link118     1.8069     1.8069    16.2130    15.0000       0.4887   0.0242  Normal Soln
           214.1     1.5534     1.5534     3.0821    95.0000       0.0638   3.9387  Normal Soln
           249.1     3.4436     3.4436     8.3705     0.0000       0.0188   2.7447  Normal Soln
           ROAD1    22.6683    22.6683    38.0759     0.0000       0.0379   0.9918  Normal Soln
           272.1     2.8712     2.8712     9.9466     0.0000       0.3141   2.0879  Normal Soln
           283.1     2.6733     2.6733     6.6195     0.0000       0.0480   3.5790  Normal Soln
        Link98.1     2.0906     2.0906     6.3515    15.0000      -0.0247  42.4361  Normal Soln
           388.1     5.1225     5.1225    14.5698     0.0000       0.0300   5.3149  Normal Soln
           403.1    13.7889    13.7889    42.3420     0.0000       0.0139   2.6703  Normal Soln
           ROAD4    26.2829    26.2829    75.7399     0.0000      -0.0211   4.6628  Normal Soln
           405.1    11.7299    11.7299   813.2364     0.0000      -0.0002   0.0709  Normal Soln
           ROAD3    11.5604    11.5604    22.4032     0.0000       0.0183   3.9810  Normal Soln
           407.1     4.3872     4.3872    10.0574     0.0000       0.0133   1.6203  Normal Soln
           ROAD2    15.5129    15.5129    25.0529     0.0000       0.0169   1.3007  Normal Soln
The conduit with the smallest time step limitation was..Link17
The conduit with the largest wobble was................Link93
The conduit with the largest flow change in any
consecutive time step..................................Link93

 ***********************************************
 *      End of time step DO-loop in Runoff      *
 ***********************************************

 Final Date (Mo/Day/Year)   =             1/ 2/2014
 Total number of time steps =                  1513
 Final Julian Date          =               2014002
 Final time of day          =                    0. seconds.
 Final time of day          =                 0.00   hours.
 Final running time         =               24.0000   hours.
 Final running time         =                1.0000    days.

 ****************************************************
 *     Extrapolation Summary for Watersheds         *
 * Explains the number of time steps and iterations *
 * used in the solution of the subcatchments.       *
 * # Steps ==> Total Number of Extrapolated Steps   *
 * # Calls ==> Total Number of OVERLND Calls        *
 ****************************************************

 Subcatchment   # Steps   # Calls Subcatchment   # Steps   # Calls
 -------------  -------  -------- -------------  -------  --------
 Node89#1             0         0 Node63#1             0         0 Node11#1             0         0
 Node33#1             0         0 Node46#1             0         0 Node65#1             0         0
 Node120#1            0         0 Node99#1             0         0 Node66#1             0         0
 Node24#1             0         0 Node25#1             0         0 Node30#1             0         0
 Node92#1             0         0 Node94#1             0         0 Node48#1             0         0


##########################################################
# Rainfall input summary from Runoff Continuity Check   #
##########################################################

 Total rainfall read for gage #         1 is       2.6400 in
 Total rainfall duration for gage #     1 is       114.29 minutes

 ***********************************************************
 * Table R5. CONTINUITY CHECK FOR SURFACE WATER            *
 *       Any continuity error can be fixed by lowering the  *
 *       wet and transition time step. The transition time  *
 *       should not be much greater than the wet time step. *
 ***********************************************************
                                                                  Inches over
                                                     cubic feet   Total Basin
 Total Precipitation (Rain plus Snow)               3.268830E+06     2.640
 Total Infiltration                                 1.620276E+06         1.309
 Total Evaporation                                  9.826929E+03         0.008
 Surface Runoff from Watersheds                     1.641422E+06         1.326
 Total Water remaining in Surface Storage           0.000000E+00         0.000
 Infiltration over the Pervious Area...             1.620276E+06         1.309
                                   --------
 Infiltration + Evaporation +
 Surface Runoff + Snow removal +
 Water remaining in Surface Storage +
```

Water remaining in Snow Cover.....	3.271525E+06	2.642
Total Precipitation + Initial Storage.	3.268830E+06	2.640

The error in continuity is calculated as
```
**************************************
* Precipitation + Initial Snow Cover  *
*      - Infiltration -               *
*Evaporation - Snow removal -          *
*Surface Runoff from Watersheds -      *
*Water in Surface Storage -            *
*Water remaining in Snow Cover         *
*-------------------------------------*
* Precipitation + Initial Snow Cover  *
**************************************
```
Percent Continuity Error..... -0.0825

```
****************************************************
* Table R6. Continuity Check for Channel/Pipes     *
*           You should have zero continuity error  *
*           if you are not using runoff hydraulics *
****************************************************
```

	cubic feet	Inches over Total Basin
Initial Channel/Pipe Storage.....	0.000000E+00	0.000
Final Channel/Pipe Storage.....	0.000000E+00	0.000
Surface Runoff from Watersheds.....	1.641422E+06	1.326
Groundwater Subsurface Inflow or Diversion..	0.000000E+00	0.000
Evaporation Loss from Channels.....	0.000000E+00	0.000
Groundwater Flow Diverted Out of Network....	0.000000E+00	0.000
Channel/Pipe/Inlet Outflow.....	1.641422E+06	1.326
Initial Storage + Inflow.....	1.641422E+06	1.326
Final Storage + Outflow + Diverted GW.....	1.641422E+06	1.326

```
*******************************************
* Final Storage + Outflow + Evaporation  - *
* Watershed Runoff - Groundwater Inflow  - *
*     Initial Channel/Pipe Storage         *
*     ----------------------------------   *
*  Final Storage + Outflow  + Evaporation  *
*******************************************
```
Percent Continuity Error..... 0.0000

```
##################################################
# Table R9. Summary Statistics for Subcatchments #
##################################################
```

Note: Total Runoff Depth includes pervious & impervious areas.
Pervious and Impervious Runoff Depth is only the runoff from those two areas.
For catchments receiving redirected flow, this flow will only be shown if the flow is not directed directly to the outlet. Flow that is getting redirected is also listed with the original subcatchment.

Subcatchment.....	Node89#1	Node63#1	Node11#1	Node33#1	Node46#1	Node65#1
Area (acres).....	5.90000	5.00000	107.90000	37.80000	30.10000	16.10000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240	4.71240	4.71240	4.71240
Pervious Area						
Total Runoff Depth (in)	1.41884	1.41050	1.32013	1.26582	1.54684	1.42561
Peak Runoff Rate (cfs).	8.36443	6.82124	111.31492	37.92617	36.24971	19.78136
Total Impervious Area						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area with depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area without depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Area						
Total Runoff Depth (in)	1.41884	1.41050	1.32013	1.26582	1.54684	1.42561
Peak Runoff Rate (cfs).	8.36443	6.82124	111.31492	37.92617	36.24971	19.78136
Rational Formula						
Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node120#1	Node99#1	Node66#1	Node24#1	Node25#1	Node30#1
Area (acres).....	32.00000	32.10000	10.00000	19.70000	5.40000	9.00000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240	4.71240	4.71240	4.71240

Pervious Area

Total Runoff Depth (in)	1.19934	1.20094	1.41461	1.57507	0.92670	1.35876
Peak Runoff Rate (cfs).	28.36865	20.06800	15.47619	23.88004	3.86299	10.42217

Total Impervious Area

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Impervious Area with depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Impervious Area without depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Total Area

Total Runoff Depth (in)	1.19934	1.20094	1.41461	1.57507	0.92670	1.35876
Peak Runoff Rate (cfs).	28.36865	20.06800	15.47619	23.88004	3.86299	10.42217

Rational Formula

Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node92#1	Node94#1	Node48#1
Area (acres).....	5.50000	5.00000	19.60000
Percent Impervious.....	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240

Pervious Area

Total Runoff Depth (in)	1.42053	1.42053	1.15836
Peak Runoff Rate (cfs).	7.25282	6.59348	18.56712

Total Impervious Area

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Impervious Area with depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Impervious Area without depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Total Area

Total Runoff Depth (in)	1.42053	1.42053	1.15836
Peak Runoff Rate (cfs).	7.25282	6.59348	18.56712

Rational Formula

Pervious Tc. (mins)....	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000

===> Runoff simulation ended normally.

```
*==================================================*
|  Table E6. Final Model Condition                 |
|            This table is used for steady state   |
|            flow comparison and is the information|
|            saved to the hot-restart file.        |
|            Final Time =    48.083 hours         |
*==================================================*
```

Junction / Depth / Elevation ===> "*" Junction is Surcharged.

Node11/	0.50 /	617.70/	Node12/	0.00 /	617.21/	Node20/	0.00 /	634.80/
Node21/	0.00 /	633.16/	Node22/	0.01 /	630.12/	Node23/	0.02 /	628.88/
Node24/	0.02 /	628.05/	Node25/	0.09 /	626.44/	Node26/	0.01 /	626.43/
Node27/	0.01 /	623.70/	Node29/	0.01 /	612.79/	Node30/	0.00 /	629.88/
Node31/	0.00 /	624.39/	Node32/	0.00 /	623.06/	Node33/	0.00 /	610.56/
Node34/	0.00 /	608.43/	Node35/	0.00 /	608.40/	Node36/	0.00 /	607.40/
Node37/	0.00 /	606.46/	Node38/	0.00 /	605.45/	Node39/	0.00 /	604.44/
Node41/	0.00 /	630.20/	Node43/	0.00 /	636.46/	Node44/	0.30 /	636.04/
Node45/	0.00 /	636.04/	Node46/	0.00 /	592.74/	Node47/	0.00 /	572.00/
Node48/	0.00 /	593.30/	Node63/	0.01 /	631.01/	Node65/	2.02 /	640.02/
Node66/	0.00 /	631.97/	Node69/	0.00 /	636.00/	Node70/	0.00 /	633.43/
Node71/	0.00 /	622.00/	Node74/	0.00 /	618.98/	Node75/	0.00 /	602.92/
Node79/	0.00 /	615.61/	Node80/	0.00 /	597.89/	Node81/	0.00 /	595.18/
Node82/	0.00 /	594.67/	Node83/	0.00 /	639.60/	Node84/	0.00 /	631.54/
Node86/	0.01 /	613.50/	Node87/	0.01 /	606.01/	Node88/	0.00 /	622.71/
Node89/	0.00 /	637.10/	Node92/	0.00 /	634.90/	Node94/	0.46 /	633.76/

```
      Node96/   0.00 /   628.00/          Node99/   0.00 /   637.70/         Node100/   0.00 /   632.33/
     Node101/   0.00 /   632.00/         Node103/   0.00 /   631.44/         Node104/   0.00 /   631.29/
     Node107/   0.00 /   630.50/         Node108/   0.40 /   632.60/         Node109/   0.00 /   632.50/
     Node110/   0.00 /   630.00/        Node30.1/   0.11 /   627.24/        Node30.2/   0.00 /   628.44/
    Node30.3/   0.02 /   629.22/         Node120/   0.52 /   638.52/

Conduit/       Flow   ===> "*" Conduit uses the normal flow option.
      Link12/       0.00 /          Link13/       0.00 /          Link14/       0.01*/
      Link15/       0.01 /          Link16/       0.01*/          Link17/      -0.01 /
      Link18/       0.01 /          Link22/       0.00*/          Link23/       0.00 /
      Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00 /
      Link27/       0.00 /          Link28/       0.00 /          Link31/       0.00 /
      Link32/       0.00*/          Link33/       0.01 /          Link47/       0.00*/
      Link53/       0.00 /          Link54/       0.00*/          Link55/       0.00*/
      Link56/       0.00*/          Link68/       0.00 /          Link69/       0.00*/
      Link70/       0.00 /          Link71/       0.00*/          Link72/       0.00 /
      Link73/       0.00 /          Link74/       0.00 /          Link75/       0.00 /
      Link76/       0.00 /          Link77/       0.00 /          Link78/       0.01 /
      Link79/       0.00 /          Link82/       0.01*/          Link83/       0.01 /
      Link84/       0.01 /          Link85/       0.01 /          Link86/       0.00 /
      Link87/       0.00 /          Link93/       0.00*/          Link95/       0.00 /
     Link103/       0.00*/         Link104/       0.00*/         Link105/       0.00 /
     Link107/       0.00 /         Link108/       0.00*/         Link109/       0.00*/
     Link118/       0.00 /           214.1/       0.00*/           249.1/       0.00*/
       ROAD1/       0.00*/           272.1/       0.00*/           283.1/       0.00 /
    Link98.1/       0.00*/           388.1/       0.00 /           403.1/       0.00 /
       ROAD4/       0.00*/           405.1/       0.00 /           ROAD3/       0.00 /
       407.1/       0.00 /           ROAD2/       0.00*/          Link 5/       0.00 /
      WEIR30/       0.00 /          WEIR46/       0.00 /       Overtop90/       0.00 /
    Link97.1/       0.00 /       Roadway98/       0.00 /      Link106.1./       0.00 /
     WEIR119/       0.00 /        FREE # 1/       0.01 /

     Conduit/   Velocity
      Link12/       0.00 /          Link13/       0.00 /          Link14/       0.46 /
      Link15/       0.41 /          Link16/       0.29 /          Link17/      -0.09 /
      Link18/       0.50 /          Link22/       0.00 /          Link23/       0.00 /
      Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00 /
      Link27/       0.00 /          Link28/       0.26 /          Link31/       0.00 /
      Link32/       0.04 /          Link33/       0.41 /          Link47/       0.00 /
      Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
      Link56/       0.00 /          Link68/       0.01 /          Link69/       0.00 /
      Link70/       0.00 /          Link71/       0.00 /          Link72/       0.00 /
      Link73/       0.02 /          Link74/       0.03 /          Link75/       0.01 /
      Link76/       0.03 /          Link77/       0.51 /          Link78/       0.07 /
      Link79/       0.00 /          Link82/       0.88 /          Link83/       0.51 /
      Link84/       0.21 /          Link85/       0.17 /          Link86/       0.01 /
      Link87/       0.13 /          Link93/       0.00 /          Link95/       0.01 /
     Link103/       0.00 /         Link104/       0.00 /         Link105/       0.00 /
     Link107/       0.00 /         Link108/       0.00 /         Link109/       0.00 /
     Link118/       0.00 /           214.1/       0.00 /           249.1/       0.00 /
       ROAD1/       0.00 /           272.1/       0.00 /           283.1/       0.00 /
    Link98.1/       0.00 /           388.1/       0.00 /           403.1/       0.00 /
       ROAD4/       0.00 /           405.1/       0.00 /           ROAD3/       0.00 /
       407.1/       0.00 /           ROAD2/       0.00 /

     Conduit/      Width
      Link12/       0.69 /          Link13/       0.69 /          Link14/       1.18 /
      Link15/       1.18 /          Link16/       1.18 /          Link17/       1.18 /
      Link18/       1.18 /          Link22/       0.49 /          Link23/       1.18 /
      Link24/       1.18 /          Link25/       1.18 /          Link26/       1.18 /
      Link27/       1.18 /          Link28/       1.18 /          Link31/       0.55 /
      Link32/       4.00 /          Link33/       6.00 /          Link47/       0.59 /
      Link53/       0.00 /          Link54/       4.00 /          Link55/       0.01 /
      Link56/       4.00 /          Link68/       0.00 /          Link69/       0.38 /
      Link70/       0.00 /          Link71/       0.01 /          Link72/       1.18 /
      Link73/       0.00 /          Link74/       0.00 /          Link75/       0.00 /
      Link76/       0.00 /          Link77/       0.78 /          Link78/      20.11 /
      Link79/       0.69 /          Link82/       1.18 /          Link83/       1.18 /
      Link84/       0.17 /          Link85/       0.09 /          Link86/       8.00 /
      Link87/       0.49 /          Link93/      80.07 /          Link95/       8.00 /
     Link103/       0.78 /         Link104/       0.29 /         Link105/       0.33 /
     Link107/      20.00 /         Link108/      30.00 /         Link109/      20.00 /
     Link118/      30.00 /           214.1/       0.78 /           249.1/       0.49 /
       ROAD1/      30.00 /           272.1/       0.55 /           283.1/       0.39 /
    Link98.1/       0.29 /           388.1/       0.39 /           403.1/       0.49 /
       ROAD4/      30.00 /           405.1/       0.49 /           ROAD3/      30.00 /
       407.1/       0.49 /           ROAD2/      30.00 /

    Junction/        EGL
      Node11/       0.50 /          Node12/       0.00 /          Node20/       0.00 /
      Node21/       1.29 /          Node22/       6.24 /          Node23/       0.02 /
      Node24/       0.02 /          Node25/       0.09 /          Node26/       0.01 /
      Node27/       0.01 /          Node29/       0.01 /          Node30/       0.00 /
      Node31/       0.20 /          Node32/       2.80 /          Node33/       0.00 /
      Node34/       0.00 /          Node35/       0.00 /          Node36/       0.00 /
      Node37/       0.00 /          Node38/       0.00 /          Node39/       0.00 /
      Node41/       0.02 /          Node43/       0.00 /          Node44/       0.30 /
      Node45/       0.00 /          Node46/       0.00 /          Node47/       0.00 /
      Node48/       0.00 /          Node63/       0.01 /          Node65/       2.02 /
      Node66/       0.00 /          Node69/       0.00 /          Node70/       0.00 /
      Node71/       0.00 /          Node74/       0.00 /          Node75/       0.00 /
      Node79/       0.00 /          Node80/       0.00 /          Node81/       0.00 /
      Node82/       0.00 /          Node83/       0.01 /          Node84/       0.00 /
      Node86/       3.61 /          Node87/       0.01 /          Node88/       0.00 /
      Node89/       0.00 /          Node92/       0.00 /          Node94/       0.46 /
      Node96/       0.00 /          Node99/       0.00 /         Node100/       0.00 /
     Node101/       0.00 /         Node103/       0.00 /         Node104/       0.00 /
     Node107/       0.00 /         Node108/       0.40 /         Node109/       0.00 /
     Node110/       0.00 /        Node30.1/       0.11 /        Node30.2/       0.12 /
    Node30.3/       0.02 /         Node120/       0.52 /

    Junction/  Freeboard
      Node11/       5.55 /          Node12/       7.76 /          Node20/       2.50 /
      Node21/       5.84 /          Node22/       9.23 /          Node23/       7.03 /
      Node24/       7.29 /          Node25/       7.67 /          Node26/       7.89 /
      Node27/      11.74 /          Node29/       7.42 /          Node30/       1.55 /
```

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  Node31/       2.70 /          Node32/      13.08 /          Node33/       8.76 /
  Node34/      10.25 /          Node35/      13.25 /          Node36/      26.21 /
  Node37/      26.00 /          Node38/      21.33 /          Node39/       7.20 /
  Node41/       3.17 /          Node43/       2.04 /          Node44/       1.95 /
  Node45/       1.25 /          Node46/      15.26 /          Node47/      38.00 /
  Node48/      24.70 /          Node63/       2.62 /          Node65/       1.98 /
  Node66/       2.80 /          Node69/       2.10 /          Node70/       2.67 /
  Node71/       2.70 /          Node74/       6.05 /          Node75/       8.81 /
  Node79/       8.76 /          Node80/      15.95 /          Node81/      16.12 /
  Node82/      17.00 /          Node83/       3.00 /          Node84/       8.20 /
  Node86/       7.60 /          Node87/      16.49 /          Node88/       4.00 /
  Node89/       2.00 /          Node92/       1.40 /          Node94/       1.54 /
  Node96/       2.00 /          Node99/       2.00 /         Node100/       1.86 /
 Node101/       2.80 /         Node103/       3.40 /         Node104/       2.00 /
 Node107/       2.50 /         Node108/       1.30 /         Node109/       2.37 /
 Node110/       4.00 /        Node30.1/       1.92 /        Node30.2/       1.81 /
Node30.3/       1.57 /         Node120/       1.08 /

Junction/ Max Volume
  Node11/      41.91 /          Node12/      23.55 /          Node20/   24006.76 /
  Node21/      66.28 /          Node22/      26.60 /          Node23/      35.64 /
  Node24/      40.97 /          Node25/      32.14 /          Node26/      28.42 /
  Node27/      17.36 /          Node29/      12.22 /          Node30/      19.05 /
  Node31/   20349.41 /          Node32/      67.74 /          Node33/      89.46 /
  Node34/      91.94 /          Node35/      86.54 /          Node36/      75.26 /
  Node37/      62.89 /          Node38/      41.14 /          Node39/      17.00 /
  Node41/       6.04 /          Node43/      20.80 /          Node44/      24.94 /
  Node45/       6.95 /          Node46/      12.71 /          Node47/      12.22 /
  Node48/       7.45 /          Node63/      31.18 /          Node65/   53878.79 /
  Node66/       9.68 /          Node69/       4.44 /          Node70/       6.16 /
  Node71/      12.21 /          Node74/      19.71 /          Node75/      12.83 /
  Node79/      25.74 /          Node80/      20.65 /          Node81/      14.39 /
  Node82/      19.47 /          Node83/       3.44 /          Node84/      19.36 /
  Node86/      26.42 /          Node87/      15.02 /          Node88/       4.85 /
  Node89/    8294.11 /          Node92/    3710.00 /          Node94/    2654.15 /
  Node96/       5.68 /          Node99/   10755.98 /         Node100/   13224.29 /
 Node101/      35.18 /         Node103/      16.14 /         Node104/       4.24 /
 Node107/       1.45 /         Node108/      20.70 /         Node109/       2.45 /
 Node110/       4.29 /        Node30.1/      19.87 /        Node30.2/       3.39 /
Node30.3/      11.02 /         Node120/   18446.31 /

Junction/Total Fldng
  Node11/       0.00 /          Node12/       0.00 /          Node20/   38275.39 /
  Node21/       0.00 /          Node22/       0.00 /          Node23/       0.00 /
  Node24/       0.00 /          Node25/       0.00 /          Node26/       0.00 /
  Node27/       0.00 /          Node29/       0.00 /          Node30/       0.00 /
  Node31/   23027.27 /          Node32/       0.00 /          Node33/       0.00 /
  Node34/       0.00 /          Node35/       0.00 /          Node36/       0.00 /
  Node37/       0.00 /          Node38/       0.00 /          Node39/       0.00 /
  Node41/       0.00 /          Node43/       0.00 /          Node44/       0.00 /
  Node45/       0.00 /          Node46/       0.00 /          Node47/       0.00 /
  Node48/       0.00 /          Node63/       0.00 /          Node65/       0.00 /
  Node66/       0.00 /          Node69/       0.00 /          Node70/       0.00 /
  Node71/       0.00 /          Node74/       0.00 /          Node75/       0.00 /
  Node79/       0.00 /          Node80/       0.00 /          Node81/       0.00 /
  Node82/       0.00 /          Node83/       0.00 /          Node84/       0.00 /
  Node86/       0.00 /          Node87/       0.00 /          Node88/       0.00 /
  Node89/       0.00 /          Node92/       0.00 /          Node94/       0.00 /
  Node96/       0.00 /          Node99/       0.00 /         Node100/  304613.18 /
 Node101/       0.00 /         Node103/       0.00 /         Node104/       0.00 /
 Node107/       0.00 /         Node108/       0.00 /         Node109/       0.00 /
 Node110/       0.00 /        Node30.1/       0.00 /        Node30.2/       0.00 /
Node30.3/       0.00 /         Node120/       0.00 /

 Conduit/ Cross Sectional Area
  Link12/       0.00 /          Link13/       0.00 /          Link14/       0.01 /
  Link15/       0.01 /          Link16/       0.02 /          Link17/       0.06 /
  Link18/       0.01 /          Link22/       0.00 /          Link23/       0.00 /
  Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00 /
  Link27/       0.00 /          Link28/       0.00 /          Link31/       0.02 /
  Link32/       0.00 /          Link33/       0.01 /          Link47/       0.00 /
  Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
  Link56/       0.00 /          Link68/       0.00 /          Link69/       0.10 /
  Link70/       0.00 /          Link71/       0.00 /          Link72/       0.00 /
  Link73/       0.00 /          Link74/       0.00 /          Link75/       0.00 /
  Link76/       0.00 /          Link77/       0.01 /          Link78/       0.07 /
  Link79/       0.00 /          Link82/       0.01 /          Link83/       0.01 /
  Link84/       0.03 /          Link85/       0.03 /          Link86/       0.00 /
  Link87/       0.00 /          Link93/       0.00 /          Link95/       0.00 /
 Link103/       0.00 /         Link104/       0.00 /         Link105/       0.00 /
 Link107/       0.00 /         Link108/       0.00 /         Link109/       0.00 /
 Link118/       0.00 /           214.1/       0.00 /           249.1/       0.00 /
   ROAD1/       0.00 /           272.1/       0.02 /           283.1/       0.00 /
Link98.1/       0.00 /           388.1/       0.00 /           403.1/       0.00 /
   ROAD4/       0.00 /           405.1/       0.00 /           ROAD3/       0.00 /
   407.1/       0.00 /           ROAD2/       0.00 /

 Conduit/  Final Volume
  Link12/       0.00 /          Link13/       0.00 /          Link14/       3.81 /
  Link15/       4.06 /          Link16/      11.43 /          Link17/       3.18 /
  Link18/       4.91 /          Link22/       0.00 /          Link23/       0.00 /
  Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00 /
  Link27/       0.00 /          Link28/       0.00 /          Link31/       1.37 /
  Link32/       0.10 /          Link33/       3.44 /          Link47/       0.00 /
  Link53/       0.00 /          Link54/       0.02 /          Link55/       0.08 /
  Link56/       0.11 /          Link68/       0.03 /          Link69/      25.12 /
  Link70/       0.07 /          Link71/       0.54 /          Link72/       0.00 /
  Link73/       0.02 /          Link74/       0.09 /          Link75/       0.10 /
  Link76/       0.02 /          Link77/       0.58 /          Link78/      23.91 /
  Link79/       0.00 /          Link82/       2.65 /          Link83/       1.31 /
  Link84/       7.26 /          Link85/      14.76 /          Link86/       0.32 /
  Link87/       0.00 /          Link93/       0.00 /          Link95/       0.06 /
 Link103/       0.00 /         Link104/       0.00 /         Link105/       0.00 /
 Link107/       0.47 /         Link108/       0.02 /         Link109/       0.02 /
 Link118/       0.00 /           214.1/       0.00 /           249.1/       0.00 /
   ROAD1/       0.00 /           272.1/       0.72 /           283.1/       0.00 /
```

```
      Link98.1/       0.00 /           388.1/       0.00 /           403.1/       0.00 /
         ROAD4/       0.00 /           405.1/       0.00 /           ROAD3/       0.00 /
         407.1/       0.00 /           ROAD2/       0.00 /

       Conduit/ Hydraulic Radius
        Link12/       0.00 /          Link13/       0.00 /          Link14/       0.02 /
        Link15/       0.02 /          Link16/       0.02 /          Link17/       0.05 /
        Link18/       0.02 /          Link22/       0.00 /          Link23/       0.01 /
        Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00 /
        Link27/       0.01 /          Link28/       0.01 /          Link31/       0.02 /
        Link32/       0.00 /          Link33/       0.00 /          Link47/       0.00 /
        Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
        Link56/       0.00 /          Link68/       0.00 /          Link69/       0.02 /
        Link70/       0.00 /          Link71/       0.00 /          Link72/       0.00 /
        Link73/       0.00 /          Link74/       0.00 /          Link75/       0.00 /
        Link76/       0.00 /          Link77/       0.02 /          Link78/       0.00 /
        Link79/       0.00 /          Link82/       0.01 /          Link83/       0.02 /
        Link84/       0.00 /          Link85/       0.00 /          Link86/       0.00 /
        Link87/       0.00 /          Link93/       0.00 /          Link95/       0.00 /
       Link103/       0.00 /         Link104/       0.00 /         Link105/       0.00 /
       Link107/       0.00 /         Link108/       0.00 /         Link109/       0.00 /
       Link118/       0.00 /           214.1/       0.01 /           249.1/       0.00 /
         ROAD1/       0.00 /           272.1/       0.02 /           283.1/       0.00 /
      Link98.1/       0.00 /           388.1/       0.00 /           403.1/       0.00 /
         ROAD4/       0.00 /           405.1/       0.00 /           ROAD3/       0.00 /
         407.1/       0.00 /           ROAD2/       0.00 /

       Conduit/ Upstream/ Downstream Elevation
        Link12/   634.80/   634.45          Link13/   633.16/   631.54          Link14/   630.12/   628.88/
        Link15/   628.88/   628.05          Link16/   628.05/   626.44          Link17/   626.43/   626.44/
        Link18/   626.43/   623.70          Link22/   624.39/   623.06          Link23/   610.56/   608.43/
        Link24/   608.40/   608.40          Link25/   607.40/   607.40          Link26/   606.46/   606.46/
        Link27/   606.46/   605.45          Link28/   605.45/   604.44          Link31/   636.04/   636.04/
        Link32/   592.74/   572.00          Link33/   593.30/   572.00          Link47/   628.05/   628.05/
        Link53/   636.04/   636.00          Link54/   636.00/   633.43          Link55/   633.43/   631.01/
        Link56/   630.20/   622.00          Link68/   622.00/   618.98          Link69/   618.98/   617.70/
        Link70/   617.21/   615.61          Link71/   615.61/   610.56          Link72/   602.92/   602.92/
        Link73/   602.92/   597.89          Link74/   597.89/   595.18          Link75/   595.18/   594.67/
        Link76/   594.67/   592.74          Link77/   640.02/   639.60          Link78/   639.60/   636.35/
        Link79/   631.54/   630.51          Link82/   623.70/   613.50          Link83/   613.50/   612.79/
        Link84/   612.79/   606.01          Link85/   606.01/   593.30          Link86/   622.71/   617.10/
        Link87/   623.06/   622.71          Link93/   632.33/   632.33          Link95/   628.00/   625.86/
       Link103/   630.50/   630.50         Link104/   632.00/   631.44         Link105/   631.44/   631.29/
       Link107/   630.00/   628.00         Link108/   630.50/   630.00         Link109/   632.50/   630.00/
       Link118/   636.46/   636.46           214.1/   617.70/   617.21           249.1/   629.88/   629.22/
         ROAD1/   629.22/   629.22           272.1/   636.46/   636.04           283.1/   631.01/   630.22/
      Link98.1/   632.00/   632.00           388.1/   632.50/   632.50           403.1/   627.24/   624.59/
         ROAD4/   624.39/   624.39           405.1/   628.44/   627.24           ROAD3/   627.24/   627.24/
         407.1/   629.22/   628.56           ROAD2/   628.44/   628.44


*=======================================================*
|         Table E7 -  Iteration Summary                 |
*=======================================================*

Total number of time steps simulated...........        576
Total number of passes in the simulation........      22808
Total number of time steps during simulation....      17950
Ratio of actual # of time steps / NTCYC.........     31.163
Average number of iterations per time step......      1.271
Average  time step size(seconds)................      9.627
Smallest time step size(seconds)................      1.493
Largest  time step size(seconds)................    300.000
Average minimum Conduit Courant time step (sec).     22.272
Average minimum implicit time step (sec)........      9.877
Average minimum junction time step (sec)........      9.877
Average Courant Factor Tf.......................      9.877
Number of times omega reduced...................      11898


*=======================================================*
|     Table E8 - Junction Time Step Limitation Summary  |
*=======================================================*
|   Not Convr = Number of times this junction did not   |
|               converge during the simulation.         |
|   Avg Convr = Average junction iterations.            |
|   Conv err  = Mean convergence error.                 |
|   Omega Cng = Change of omega during iterations       |
|   Max Itern = Maximum number of iterations            |
*=======================================================*
```

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
Node11	0	2.01	36164	17	53	24	10	5
Node12	0	1.95	35091	1	111	3	1	1
Node20	0	1.78	32038	1	34	7	1	0
Node21	0	2.17	39034	179	34	5	1	0
Node22	1	23.78	426873	1426	501	1409	1370	1340
Node23	0	1.89	33851	6	410	6	4	3
Node24	2	2.05	36846	8	501	9	8	7
Node25	0	1.70	30510	4	40	1	1	1
Node26	0	1.79	32184	0	13	1	0	0
Node27	0	1.89	33899	2	8	0	0	0
Node29	0	1.68	30243	5	8	0	0	0
Node30	5	1.67	29930	9	501	13	9	9
Node31	0	1.93	34718	55	69	11	3	2
Node32	0	1.63	29243	16	70	4	1	1
Node33	0	2.49	44708	27	121	138	59	12
Node34	8	2.27	40789	21	501	19	19	19
Node35	0	1.78	32035	2	371	1	1	1
Node36	0	1.58	28377	0	7	0	0	0
Node37	0	1.64	29365	3	498	3	3	3
Node38	0	1.54	27728	2	427	2	2	2
Node39	0	21.66	388802	1140	494	1134	1110	1094
Node41	0	3.05	54694	64	499	66	65	62
Node43	1	2.30	41303	849	501	23	1	1
Node44	0	1.20	21556	4	14	2	0	0

Node45	0	1.24	22315	4	17	4	0	0
Node46	0	1.41	25306	5	30	2	1	0
Node47	0	1.77	31813	1	31	1	1	0
Node48	0	1.76	31612	14	14	1	0	0
Node63	0	2.10	37739	41	497	47	43	42
Node65	0	1.53	27391	0	5	0	0	0
Node66	0	1.25	22361	65	19	3	0	0
Node69	0	1.26	22693	2	10	1	0	0
Node70	0	1.27	22851	0	7	0	0	0
Node71	0	1.45	26110	0	8	0	0	0
Node74	0	1.79	32078	3	33	15	5	0
Node75	0	15.26	273970	898	494	818	807	789
Node79	0	2.89	51946	43	53	151	71	16
Node80	0	1.44	25773	1	6	0	0	0
Node81	0	1.68	30194	23	10	1	0	0
Node82	0	1.48	26511	2	22	1	0	0
Node83	0	1.69	30305	0	7	0	0	0
Node84	1	19.69	353416	1119	501	1103	1100	1096
Node86	0	1.81	32448	8	7	0	0	0
Node87	0	1.77	31703	5	9	0	0	0
Node88	0	1.31	23496	0	7	0	0	0
Node89	0	2.05	36795	11	8	0	0	0
Node92	0	3.61	64858	3061	43	2005	241	129
Node94	0	1.00	18016	0	67	1	1	1
Node96	0	1.57	28264	0	6	0	0	0
Node99	0	1.22	21947	0	5	0	0	0
Node100	0	3.68	66107	2741	43	1798	245	64
Node101	0	1.86	33352	8	277	1	1	1
Node103	0	1.25	22376	0	6	0	0	0
Node104	0	1.19	21349	0	6	0	0	0
Node107	0	1.17	20975	0	6	0	0	0
Node108	0	1.55	27746	0	15	7	0	0
Node109	0	1.55	27738	0	98	2	1	1
Node110	0	1.54	27659	0	6	0	0	0
Node30.1	108	5.18	93008	1	501	113	108	108
Node30.2	80	3.86	69373	1	501	80	80	80
Node30.3	0	1.76	31602	0	14	1	0	0
Node120	0	1.00	17950	0	1	0	0	0

Total number of iterations for all junctions.. 3381127

Minimum number of possible iterations..... 1112900

Efficiency of the simulation..... 3.04

Good Efficiency

```
*=========================================================*
| Extran Efficiency is an indicator of the efficiency of  |
| the simulation.  Ideal efficiency is one iteration per  |
| time step.  Altering the underrelaxation parameter,     |
| lowering the time step, increasing the flow and head    |
| tolerance are good ways of improving the efficiency,    |
| another is lowering the internal time step. The lower the|
| efficiency generally the faster your model will run.    |
| If your efficiency is less than 1.5 then you may try    |
| increasing your time step so that your overall simulation|
| is faster.  Ideal efficiency would be around 2.0        |
|                                                         |
| Good Efficiency      < 1.5           mean iterations    |
| Excellent Efficiency < 2.5 and > 1.5 mean iterations    |
| Good      Efficiency < 4.0 and > 2.5 mean iterations    |
| Fair      Efficiency < 7.5 and > 4.0 mean iterations    |
| Poor Efficiency      > 7.5           mean iterations    |
*=========================================================*
```

```
*=====================================================*
|        Table E9 - JUNCTION SUMMARY STATISTICS       |
| The Maximum area is only the area of the node, it   |
| does not include the area of the surrounding conduits|
*=====================================================*
```

Junction Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr.	Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Maximum Gutter Depth feet	Maximum Gutter Width feet	Maximum Gutter Velocity ft/s
Node11	623.2500	623.2500	620.5355	1	11	0.0000	2.7145	12.5660	0.0000	0.0000	0.0000
Node12	624.9700	624.9700	619.0843	1	12	0.0000	5.8857	12.5660	0.0000	0.0000	0.0000
Node20	637.3000	636.5500	639.0570	2	39	2.5070	0.0000	28975.345	0.0000	0.0000	0.0000
Node21	639.0000	636.2000	638.4347	2	39	2.2347	0.5653	12.5660	0.0000	0.0000	0.0000
Node22	639.3500	639.3500	632.2268	2	9	0.0000	7.1232	12.5660	0.0000	0.0000	0.0000
Node23	635.9100	631.8600	631.6961	1	50	0.0000	4.2139	12.5660	0.0000	0.0000	0.0000
Node24	635.3400	631.0300	631.2903	1	47	0.2603	4.0497	12.5660	0.0000	0.0000	0.0000
Node25	634.1030	629.3500	628.9076	1	46	0.0000	5.1954	12.5660	0.0000	0.0000	0.0000
Node26	634.3200	629.4200	628.6816	1	46	0.0000	5.6384	12.5660	0.0000	0.0000	0.0000
Node27	635.4400	626.6900	625.0719	1	47	0.0000	10.3681	12.5660	0.0000	0.0000	0.0000
Node29	620.2110	620.2110	613.7526	1	47	0.0000	6.4584	12.5660	0.0000	0.0000	0.0000
Node30	631.4300	631.4300	631.3956	1	0	0.0000	0.0344	12.5660	0.0000	0.0000	0.0000
Node31	627.0900	627.0900	628.7120	2	16	1.6220	0.0000	25315.486	0.0000	0.0000	0.0000
Node32	636.1400	626.1400	628.4509	1	39	2.3109	7.6891	12.5660	0.0000	0.0000	0.0000
Node33	619.3200	619.3200	617.6794	2	38	0.0000	1.6406	12.5660	0.0000	0.0000	0.0000
Node34	618.6800	611.4300	615.7470	2	38	4.3170	2.9330	12.5660	0.0000	0.0000	0.0000
Node35	621.6500	611.4000	615.2872	2	38	3.8872	6.3628	12.5660	0.0000	0.0000	0.0000
Node36	633.6100	610.4000	613.3894	2	39	2.9894	20.2206	12.5660	0.0000	0.0000	0.0000
Node37	632.4600	609.4600	611.4651	2	39	2.0051	20.9949	12.5660	0.0000	0.0000	0.0000
Node38	626.7800	608.4500	608.7238	2	39	0.2738	18.0562	12.5660	0.0000	0.0000	0.0000

Node39	611.6440	607.4400	605.7930	2	39	0.0000	5.8510	12.5660	0.0000	0.0000	0.0000
Node41	633.3700	631.2200	630.6806	1	56	0.0000	2.6894	12.5660	0.0000	0.0000	0.0000
Node43	638.5000	638.5000	638.1156	1	22	0.0000	0.3844	12.5660	0.0000	0.0000	0.0000
Node44	637.9900	636.9900	637.7247	1	22	0.7347	0.2653	12.5660	0.0000	0.0000	0.0000
Node45	637.2900	637.2900	636.5930	1	23	0.0000	0.6970	12.5660	0.0000	0.0000	0.0000
Node46	608.0000	610.3500	593.7514	1	15	0.0000	14.2486	12.5660	0.0000	0.0000	0.0000
Node47	610.0000	576.0000	572.9726	1	15	0.0000	37.0274	12.5660	0.0000	0.0000	0.0000
Node48	618.0000	609.8000	593.8926	1	25	0.0000	24.1074	12.5660	0.0000	0.0000	0.0000
Node63	633.6300	633.6300	633.4812	0	51	0.0000	0.1488	12.5660	0.0000	0.0000	0.0000
Node65	642.0000	642.0000	640.8045	2	4	0.0000	1.1955	46233.592	0.0000	0.0000	0.0000
Node66	634.7700	633.4700	632.7404	0	40	0.0000	2.0296	12.5660	0.0000	0.0000	0.0000
Node69	638.1000	636.5000	636.3537	1	24	0.0000	1.7463	12.5660	0.0000	0.0000	0.0000
Node70	636.1000	636.0600	633.9200	1	25	0.0000	2.1800	12.5660	0.0000	0.0000	0.0000
Node71	624.7000	624.7000	622.9720	0	53	0.0000	1.7280	12.5660	0.0000	0.0000	0.0000
Node74	625.0300	625.0300	620.5485	1	4	0.0000	4.4815	12.5660	0.0000	0.0000	0.0000
Node75	611.7300	611.7200	603.9408	2	39	0.0000	7.7892	12.5660	0.0000	0.0000	0.0000
Node79	624.3700	624.3700	617.6586	2	37	0.0000	6.7114	12.5660	0.0000	0.0000	0.0000
Node80	613.8400	613.8400	599.5333	2	37	0.0000	14.3067	12.5660	0.0000	0.0000	0.0000
Node81	611.3000	611.2900	596.3250	2	40	0.0000	14.9750	12.5660	0.0000	0.0000	0.0000
Node82	611.6700	611.6600	596.2194	2	45	0.0000	15.4506	12.5660	0.0000	0.0000	0.0000
Node83	642.6000	642.6000	639.8738	2	7	0.0000	2.7262	12.5660	0.0000	0.0000	0.0000
Node84	639.7400	633.2900	633.0809	2	10	0.0000	6.6591	12.5660	0.0000	0.0000	0.0000
Node86	621.1000	621.1000	615.5924	1	47	0.0000	5.5076	12.5660	0.0000	0.0000	0.0000
Node87	622.5000	622.5000	607.1955	1	48	0.0000	15.3045	12.5660	0.0000	0.0000	0.0000
Node88	626.7100	626.7100	623.0958	1	43	0.0000	3.6142	12.5660	0.0000	0.0000	0.0000
Node89	639.1000	639.1000	638.1155	1	22	0.0000	0.9845	26136.000	0.0000	0.0000	0.0000
Node92	636.3000	635.0600	635.4398	1	47	0.3798	0.8602	12258.144	0.0000	0.0000	0.0000
Node94	635.3000	633.3000	634.1727	1	56	0.8727	1.1273	8055.6476	0.0000	0.0000	0.0000
Node96	630.0000	630.0000	628.4517	1	39	0.0000	1.5483	12.5660	0.0000	0.0000	0.0000
Node99	639.7000	637.7000	638.4397	2	39	0.7397	1.2603	22651.200	0.0000	0.0000	0.0000
Node100	634.1900	634.1900	635.4820	1	47	1.2920	0.0000	18200.917	0.0000	0.0000	0.0000
Node101	634.8000	632.7500	634.8000	1	10	2.0500	0.0000	12.5660	0.0000	0.0000	0.0000
Node103	634.8400	632.2700	632.7243	2	35	0.4543	2.1157	12.5660	0.0000	0.0000	0.0000
Node104	633.2900	633.2900	631.6276	2	35	0.0000	1.6624	12.5660	0.0000	0.0000	0.0000
Node107	633.0000	632.5000	630.6155	0	36	0.0000	2.3845	12.5660	0.0000	0.0000	0.0000
Node108	633.9000	633.6000	633.8471	1	57	0.2471	0.0529	12.5660	0.0000	0.0000	0.0000
Node109	634.8700	633.5000	632.6949	1	2	0.0000	2.1751	12.5660	0.0000	0.0000	0.0000
Node110	634.0000	632.0000	630.3410	1	6	0.0000	3.6590	12.5660	0.0000	0.0000	0.0000
Node30.1	629.1600	628.4900	628.7114	2	15	0.2214	0.4486	12.5660	0.0000	0.0000	0.0000
Node30.2	630.2500	629.8100	628.7101	2	15	0.0000	1.5399	12.5660	0.0000	0.0000	0.0000
Node30.3	630.7900	630.4700	630.0772	1	0	0.0000	0.7128	12.5660	0.0000	0.0000	0.0000
Node120	639.6000	638.0000	639.3992	1	16	1.3992	0.2008	26571.600	0.0000	0.0000	0.0000

```
*====================================================*
|        Table E10 - CONDUIT SUMMARY STATISTICS      |
| Note: The peak flow may be less than the design flow |
| and the conduit may still surcharge because of the |
| downstream boundary conditions.                    |
|                                                    |
| * denotes an open conduit that has been overtopped |
|   this is a potential source of severe errors      |
*====================================================*
```

Conduit Name	Design Flow (cfs)	Conduit Design Velocity (ft/s)	Maximum Vertical Depth (in)	Maximum Computed Flow (cfs)	Time of Occurence Hr.	Time of Occurence Min.	Maximum Computed Velocity (ft/s)	Time of Occurence Hr.	Time of Occurence Min.	Ratio of Max. to Design Flow	Maximum Water Elev at Pipe Ends Upstream (ft)	Maximum Water Elev at Pipe Ends Dwnstrm (ft)	Ratio d/D US	Ratio d/D DS	
Link12	5.7493	2.3903	21.0000	14.5110	1	32	6.0824	1	32	2.5240	639.0570	638.4347	2.433	2.277	
Link13	12.3889	5.1507	21.0000	23.0827	2	41	9.6268	2	46	1.8632	638.4347	633.0809	3.014	0.881	
Link14	43.7477	6.1890	36.0000	30.5054	2	15	6.2609	2	51	0.6973	632.2268	631.6961	0.706	0.945	
Link15	36.6850	5.1899	36.0000	31.5918	2	15	5.6054	3	9	0.8612	631.6961	631.2903	0.945	1.087	
Link16	37.2836	5.2745	36.0000	45.5313	1	48	6.3139	2	15	1.2212	631.2903	628.9076	1.087	0.853	
Link17	26.7696	3.7871	36.0000	-47.9315	1	46	-7.5525	1	46	-1.7905	628.9076	628.6816	0.829	0.777	
Link18	55.5441	7.8579	36.0000	47.9319	1	46	8.7762	1	47	0.8630	628.6816	625.0719	0.754	0.461	
Link22	6.4617	5.2654	15.0000	4.6911	0	43	3.9373	0	37	0.7260	628.7120	628.4509	3.458	4.313	
Link23	59.7442	8.4521	36.0000	57.3806	2	38	8.0471	2	38	0.9604	617.6793	615.7469	2.372	2.439	
Link24	14.5486	2.0582	36.0000	57.3796	2	39	8.0445	2	39	3.9440	615.7470	615.2872	2.439	2.296	
Link25	41.3740	5.8532	36.0000	57.3824	2	39	8.0531	2	39	1.3869	615.2872	613.3894	2.296	1.996	
Link26	39.9177	5.6472	36.0000	57.3870	2	39	8.0691	2	39	1.4376	613.3894	611.4650	1.996	1.668	
Link27	34.5795	4.8920	36.0000	57.3909	2	39	8.0567	2	39	1.6597	611.4651	608.7238	1.668	1.091	
Link28	40.1573	5.6811	36.0000	57.3768	2	39	8.2918	2	39	1.4288	608.7238	605.7930	1.091	0.451	
Link31	2.4660	2.0095	15.0000	-3.8782	1	22	-3.3405	1	22	-1.5727	637.7247	636.5930	1.348	0.682	
Link32	451.1614	28.1976	48.0000	85.8349	1	15	21.3008	1	20	0.1903	593.7514	572.9726	0.253	0.243	
Link33	823.3655	34.3069	48.0000	67.5787	1	25	17.8797	1	25	0.0821	593.8926	572.9726	0.148	0.243	
Link47	29.5450	16.7191	18.0000	15.4464	0	40	16.0043	0	30	0.5228	632.7404	631.2903	0.514	1.974	
Link53	1.7213	0.9287	6.0006	3.8782	1	22	1.8775	1	22	2.2531	636.5930	636.3537	1.106	0.707	*
Link54	1.9517	1.2011	5.7640	3.8778	1	24	1.3676	1	23	1.9869	636.3537	633.9200	0.736	1.020	*
Link55	328.6757	8.6186	31.5600	3.8776	1	25	1.5919	0	30	0.0118	633.9200	633.4812	0.186	0.943	
Link56	55.4504	2.9184	12.0000	10.2120	1	56	1.5426	1	56	0.1842	630.6806	622.9720	0.481	0.972	
Link68	138.7842	3.0723	32.4000	10.4792	0	53	3.0398	0	53	0.0755	622.9720	620.5485	0.360	0.581	
Link69	12349.67	11.4824	72.6000	-72.2275	1	59	1.2050	0	36	-0.0058	620.5485	620.5355	0.259	0.551	
Link70	10078.61	10.5486	93.1200	120.5110	1	12	2.5278	1	13	0.0120	619.0843	617.6586	0.242	0.264	
Link71	58179.11	25.6200	105.1200	-591.878	2	8	1.4124	0	35	-0.0102	617.6586	617.6793	0.234	0.813	
Link72	137.3690	19.4337	36.0000	57.3882	2	39	18.5633	2	37	0.4178	605.7930	604.2741	0.451	0.451	
Link73	56825.79	51.6051	143.0400	57.3864	2	39	7.6211	4	37	0.0010	603.9408	599.5333	0.086	0.138	
Link74	37318.09	37.1859	191.4000	57.3837	2	40	7.3813	2	40	0.0015	599.5333	596.3250	0.103	0.072	
Link75	29495.40	24.1735	209.5200	57.3823	2	40	3.1434	2	18	0.0019	596.3250	596.2194	0.066	0.089	
Link76	40618.15	48.9919	211.3200	57.3749	2	40	9.4907	2	40	0.0014	596.2194	593.7514	0.088	0.057	
Link77	20.0104	6.3695	24.0000	7.2798	2	4	6.6766	2	4	0.3638	640.8045	639.8738	0.402	0.137	
Link78	1059.813	5.4349	36.0000	7.2622	2	7	1.1583	2	7	0.0069	639.8738	636.4986	0.091	0.050	
Link79	24.1586	10.0440	21.0000	23.0918	2	40	11.4289	3	57	0.9558	633.0809	632.2268	0.881	0.981	
Link82	110.5183	15.6351	36.0000	47.9315	1	47	14.1344	1	47	0.4337	625.0719	615.5924	0.461	0.701	
Link83	54.8977	7.7664	36.0000	55.4387	1	47	11.1780	1	47	1.0099	615.5924	613.7526	0.701	0.324	
Link84	4900.754	21.9785	89.1720	55.4384	1	47	6.4909	1	47	0.0113	613.7526	607.1955	0.131	0.161	
Link85	34130.32	31.7780	198.0000	55.4317	1	48	5.9061	1	47	0.0016	607.1955	593.8926	0.072	0.036	
Link86	1275.622	7.9726	48.0000	7.5096	1	43	1.8235	1	43	0.0059	623.0958	617.3659	0.096	0.066	
Link87	3.3581	2.7364	15.0000	7.5107	1	40	6.4748	1	40	2.2366	628.4509	623.0958	4.313	0.309	
Link93	42.9074	3.0474	17.4316	-312.793	1	47	2.8010	1	48	-7.2899	635.4398	635.4820	0.372	1.000	
Link95	5.7961	1.9167	31.0882	7.8707	1	8	1.2158	4	21	1.3579	628.4517	628.4509	0.174	1.000	*
Link103	35.9324	11.4376	24.0000	1.7609	2	35	5.4400	2	25	0.0490	631.6276	630.6155	0.169	0.058	
Link104	0.9032	2.0444	9.0000	1.7636	1	12	3.9288	1	12	1.9527	634.8000	632.7243	3.733	1.712	
Link105	0.8264	1.5273	9.9600	1.7608	2	15	3.4573	2	15	2.1309	632.7243	631.6276	1.547	0.407	
Link107	182.6084	3.0435	24.0000	7.8786	1	7	1.0683	1	7	0.0431	630.3410	628.4517	0.171	0.226	
Link108	276.1874	2.7619	24.0000	1.7608	2	40	0.4856	3	31	0.0064	630.6155	630.3410	0.058	0.171	
Link109	114.8091	3.8270	12.0000	6.3066	1	2	1.3632	1	0	0.0549	632.6949	630.3410	0.195	0.341	

Link118	1022.040	12.1671	24.0000	3.8850	1	20	0.7119	0	29	0.0038	638.1155	638.1156	0.508	0.808
214.1	15.9283	5.0701	24.0000	29.1122	1	1	9.4123	2	11	1.8277	620.5355	619.0843	1.418	0.937
249.1	4.4465	3.6234	15.0000	6.0686	1	0	4.8829	1	0	1.3648	631.3956	630.2154	1.213	0.796
ROAD1	8.7308	2.9006	1.2000	4.3294	1	0	2.1558	1	0	0.4959	631.3956	630.0772	0.656	0.772
272.1	5.2486	4.2769	15.0000	3.8782	1	22	3.7610	0	20	0.7389	638.1156	637.7247	1.325	1.588
283.1	2.7121	3.4532	12.0000	4.7619	1	55	6.0432	0	51	1.7558	633.4812	631.1216	2.471	0.902
Link98.1	1.5849	3.5876	9.0000	2.3094	1	47	5.1247	1	47	1.4571	635.4820	634.8000	4.203	3.733
388.1	1.0357	1.3187	12.0000	2.5088	0	46	3.4480	0	48	2.4224	633.8471	632.6949	1.247	0.195
403.1	4.4547	3.6300	15.0000	3.7078	0	39	4.0271	0	39	0.8323	628.7114	628.7120	1.177	3.298
ROAD4	6.3878	2.1222	20.6555	9.1782	1	13	1.7075	0	50	1.4368	628.7114	628.7120	0.349	1.000 *
405.1	4.4463	3.6231	15.0000	-0.1218	2	1	-0.1046	2	1	-0.0274	628.7101	628.7114	0.120	1.177
ROAD3	5.4613	1.8144	7.2160	10.3915	1	0	2.3263	1	0	1.9028	628.7101	628.7114	0.449	1.000 *
407.1	4.4460	3.6229	15.0000	3.6015	1	0	4.0651	1	0	0.8101	630.0772	629.3260	0.686	0.613
ROAD2	10.4607	3.4753	3.2410	6.7954	1	0	2.6771	1	0	0.6496	630.0772	628.7101	0.286	1.000 *
Link 5	Undefnd	Undefnd	Undefn	66.1890	1	11								
WEIR30	Undefnd	Undefnd	Undefn	0.0000	0	0								
WEIR46	Undefnd	Undefnd	Undefn	5.5650	0	51								
Overtop90	Undefnd	Undefnd	Undefn	6.4605	1	56								
Link97.1	Undefnd	Undefnd	Undefn	19.9287	2	0								
Roadway98	Undefnd	Undefnd	Undefn	0.0000	0	0								
Link106.1.	Undefnd	Undefnd	Undefn	4.0087	1	57								
WEIR119	Undefnd	Undefnd	Undefn	28.1404	1	16								
FREE # 1	Undefnd	Undefnd	Undefn	153.0049	1	19								

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| Table E11. Area assumptions used in the analysis|
| Subcritical and Critical flow assumptions from |
| Subroutine Head. See Figure 17-1 in the |
| manual for further information. |
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Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
Link12	58.9607	173.2194	0.0000	2647.8199	0.5255	2.4707	14.9056
Link13	59.2135	2820.7865	0.0000	0.0000	0.5228	2.3383	32.1154
Link14	60.6995	2819.3005	0.0000	0.0000	0.8897	6.0779	13.3062
Link15	24.0741	2855.9259	0.0000	0.0000	0.9111	7.1215	13.1363
Link16	15.0000	2865.0000	0.0000	0.0000	0.9122	6.8721	18.2642
Link17	20.4630	2859.5370	0.0000	0.0000	0.9105	6.0626	18.1935
Link18	20.5556	2859.4444	0.0000	0.0000	0.8861	4.3862	15.9796
Link22	2166.8707	713.1293	0.0000	0.0000	0.3734	1.2603	15.8046
Link23	668.0651	2211.9349	0.0000	0.0000	0.8965	7.2481	57.8250
Link24	170.1852	2709.8148	0.0000	0.0000	0.9117	7.3811	56.8493
Link25	263.3165	2616.6835	0.0000	0.0000	0.9127	7.4047	51.5535
Link26	159.3266	2720.6734	0.0000	0.0000	0.9127	7.3694	44.0660
Link27	87.0539	2792.9461	0.0000	0.0000	0.9105	7.2230	33.1916
Link28	65.9091	2814.0909	0.0000	0.0000	0.8853	5.0696	19.1160
Link31	20.0926	2859.9074	0.0000	0.0000	0.3663	0.8529	4.2364
Link32	20.0000	2860.0000	0.0000	0.0000	0.6700	3.9678	21.1266
Link33	15.0000	2865.0000	0.0000	0.0000	0.5184	4.6413	13.9354
Link47	2726.2222	144.4259	0.0000	9.3519	0.3884	1.2722	16.2702
Link53	20.1852	2859.8148	0.0000	0.0000	0.3354	1.6026	0.8510
Link54	20.1852	2859.8148	0.0000	0.0000	0.2475	3.4792	0.5769
Link55	20.5556	2859.4444	0.0000	0.0000	0.3420	13.7689	1.2929
Link56	15.0000	2865.0000	0.0000	0.0000	0.3166	11.0745	1.1108
Link68	20.0000	2860.0000	0.0000	0.0000	0.4756	6.1085	3.2233
Link69	20.0926	2859.9074	0.0000	0.0000	1.2579	142.9520	1.0610
Link70	23.1481	2856.8519	0.0000	0.0000	0.6314	43.3061	3.5446
Link71	23.4259	2856.5741	0.0000	0.0000	5.2851	887.6025	3.9928
Link72	738.6800	139.4934	0.0000	2001.8266	0.6997	3.0923	25.0935
Link73	77.5771	2802.4229	0.0000	0.0000	0.4853	12.7078	10.1393
Link74	28.2110	2851.7890	0.0000	0.0000	0.7528	5.9898	10.2868
Link75	30.9499	2849.0501	0.0000	0.0000	0.7755	21.9219	4.2218
Link76	31.4083	2848.5917	0.0000	0.0000	0.6764	4.3811	11.7260
Link77	60.6736	2819.3264	0.0000	0.0000	0.4041	0.6658	3.5986
Link78	60.6995	0.0000	0.0000	2819.3005	0.2239	4.8576	0.2444
Link79	59.9157	96.8338	0.0000	2723.2505	0.5324	2.3159	16.4015
Link82	20.7407	2859.2593	0.0000	0.0000	0.7277	4.1906	24.6112
Link83	20.8333	2859.1667	0.0000	0.0000	0.8541	3.5057	17.1751
Link84	21.4815	2858.5185	0.0000	0.0000	0.6360	9.6733	7.0332
Link85	22.5000	2857.5000	0.0000	0.0000	0.6331	6.2055	5.2356
Link86	25.5963	0.0000	0.0000	2854.4037	0.2926	3.4544	0.5941
Link87	24.4444	2855.5556	0.0000	0.0000	0.3607	0.7369	18.7014
Link93	2651.3714	217.1702	0.0000	11.4583	0.9100	120.8717	1.9944
Link95	22.6852	219.5941	0.0000	2637.7208	0.4442	38.6004	1.0080
Link103	2356.6524	523.3476	0.0000	0.0000	0.1935	0.1953	1.2266
Link104	2376.8519	503.1481	0.0000	0.0000	0.2277	0.4631	8.0101
Link105	21.1111	2858.8889	0.0000	0.0000	0.2430	0.3616	2.8036
Link107	22.5000	2857.5000	0.0000	0.0000	0.3143	7.8512	0.3569
Link108	468.7710	2411.2290	0.0000	0.0000	0.1284	7.0609	0.0915
Link109	1599.7890	1280.2110	0.0000	0.0000	0.1903	6.0118	0.3605
Link118	2696.0335	162.3056	0.0000	21.6609	0.9080	49.7557	0.2303
214.1	755.3387	2124.6613	0.0000	0.0000	0.6048	3.1031	20.7304
249.1	2622.6176	164.6134	0.0000	92.7689	0.3790	1.1603	6.1300
ROAD1	2827.2325	52.7675	0.0000	0.0000	0.0665	2.1451	0.1536
272.1	2662.4148	217.5852	0.0000	0.0000	0.3735	1.2585	5.7352
283.1	21.6667	0.3704	0.0000	2857.9630	0.3034	0.7687	10.1894
Link98.1	2535.9091	344.0909	0.0000	0.0000	0.2255	0.4548	14.3322
388.1	2526.0396	353.9604	0.0000	0.0000	0.2801	0.3964	2.4448
403.1	24.5370	222.9274	0.0000	2632.5356	0.3734	1.2656	4.5906
ROAD4	2703.2354	172.6464	0.0000	4.1182	0.6791	34.9102	0.8252
405.1	2752.4306	98.1200	29.4495	0.0000	0.2907	0.5642	0.0796
ROAD3	2152.7070	141.0266	0.0000	586.2665	0.2973	12.9492	0.4014
407.1	20.6481	0.0000	0.0000	2859.3519	0.3660	0.8419	3.2983
ROAD2	2778.1848	101.8152	0.0000	0.0000	0.0839	3.5639	0.3018

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| Table E12. Mean Conduit Flow Information |
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Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Flow Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness

Link12	0.5988	103479.69	0.0000	0.6801	0.5263	0.1828	0.9329	0.0120
Link13	1.4091	243500.90	0.0000	0.6746	1.2235	0.2176	1.0191	0.0120
Link14	1.7507	302517.32	0.0000	0.9412	0.6824	0.3801	1.8213	0.0120
Link15	1.7505	302487.70	0.0000	0.9971	0.5529	0.4541	2.4922	0.0120
Link16	2.6997	466502.66	0.0000	0.9996	0.6236	0.4539	2.6728	0.0120
Link17	-2.8051	-484713.9	0.0000	0.9993	0.5721	0.4851	2.5476	0.0120
Link18	2.8051	484725.82	0.0000	0.9992	1.1552	0.4261	2.0744	0.0120
Link22	0.2661	45980.681	0.0000	0.6817	0.1555	0.1499	0.5739	0.0240
Link23	4.4623	771087.30	0.0000	0.9089	2.5601	0.3957	3.4575	0.0120
Link24	4.4625	771118.75	0.0000	0.9807	1.1879	0.3986	3.5530	0.0120
Link25	4.4625	771113.33	0.0000	0.9676	3.1653	0.3961	3.5261	0.0120
Link26	4.4627	771146.58	0.0000	0.9811	3.1028	0.3971	3.5379	0.0120
Link27	4.4629	771194.84	0.0000	0.9895	2.7143	0.4016	3.5450	0.0140
Link28	4.4632	771245.25	0.0000	0.9895	4.1222	0.4153	3.2452	0.0120
Link31	-0.1741	-30085.40	0.0000	0.9995	0.2126	0.1954	0.4649	0.0240
Link32	5.4421	940395.07	0.0000	0.9996	2.4678	0.2953	1.6596	0.0120
Link33	3.8543	666027.08	0.0000	0.9996	4.7893	0.2139	1.4951	0.0140
Link47	0.2966	51256.240	0.0000	0.2881	0.5530	0.0770	0.1878	0.0120
Link53	0.1741	30085.403	0.0000	0.9994	0.2467	0.0944	0.5588	0.0250
Link54	0.1742	30101.486	0.0000	0.9994	0.2277	0.0708	0.7707	0.0400
Link55	0.1743	30110.592	0.0000	0.9993	0.1911	0.0972	1.1553	0.0250
Link56	0.3235	55895.851	0.0000	0.9996	0.2253	0.0836	1.4158	0.0400
Link68	0.3246	56088.757	0.0000	0.9996	0.3217	0.1308	0.8137	0.0250
Link69	0.3281	56693.800	0.0001	0.9996	0.0450	0.1557	11.1258	0.0250
Link70	3.3533	579443.67	0.0000	0.9977	0.2189	0.1909	9.3224	0.0250
Link71	3.4831	601872.45	0.0041	0.9975	0.0879	0.6701	182.1723	0.0250
Link72	4.4633	771254.77	0.0000	0.8740	10.2065	0.3455	1.4477	0.0120
Link73	4.4636	771306.25	0.0000	0.9861	0.9304	0.2443	3.4498	0.0250
Link74	4.4635	771286.54	0.0000	0.9926	0.8553	0.3705	3.6458	0.0250
Link75	4.4635	771294.81	0.0000	0.9891	0.3572	0.3762	8.6068	0.0250
Link76	4.4634	771282.85	0.0000	0.9885	1.2546	0.3343	2.8212	0.0250
Link77	0.3413	58980.408	0.0000	0.9413	1.8461	0.1635	0.3424	0.0120
Link78	0.3416	59028.871	0.0000	0.9412	0.6885	0.0776	1.9762	0.0400
Link79	1.4093	243532.00	0.0000	0.6644	2.2552	0.2315	0.7834	0.0120
Link82	2.8053	484750.96	0.0000	0.9991	1.8720	0.3335	1.2952	0.0120
Link83	3.3770	583541.61	0.0000	0.9990	1.4741	0.4224	2.0094	0.0120
Link84	3.3772	583582.34	0.0000	0.9987	0.8536	0.2782	3.4265	0.0250
Link85	3.3773	583602.87	0.0000	0.9981	1.1032	0.2800	3.7496	0.0250
Link86	0.5717	98791.502	0.0000	0.9958	0.7796	0.1423	1.9164	0.0400
Link87	0.5716	98765.896	0.0000	0.9965	1.4009	0.1735	0.5962	0.0240
Link93	0.1576	27238.712	0.0168	0.4466	0.1352	0.1802	30.7181	0.0400
Link95	0.3034	52426.003	0.0000	0.9980	0.4266	0.1476	3.9714	0.0400
Link103	0.1647	28466.424	0.0000	0.6290	1.9042	0.1061	0.1721	0.0140
Link104	0.1647	28460.892	0.0000	0.6247	0.3793	0.1042	0.2445	0.0140
Link105	0.1647	28466.364	0.0000	0.6465	0.6446	0.1139	0.2777	0.0140
Link107	0.3029	52343.946	0.0000	0.9981	0.2137	0.1018	2.2672	0.0400
Link108	0.1648	28478.295	0.0000	0.9433	0.1622	0.0626	2.0363	0.0400
Link109	0.1372	23703.228	0.0000	0.7587	0.1650	0.0385	0.8865	0.0400
Link118	0.1748	30213.806	0.0000	0.3485	0.0871	0.2096	8.7611	0.0400
214.1	2.5110	433905.19	0.0000	0.9033	1.2466	0.1825	0.9037	0.0240
249.1	0.2097	36237.179	0.0000	0.5018	0.3993	0.1016	0.2801	0.0240
ROAD1	0.0472	8162.9060	0.0000	0.1061	0.1396	0.0053	0.1599	0.0140
272.1	0.1746	30176.676	0.0000	0.4152	0.1414	0.1059	0.3548	0.0240

283.1	0.2279	39386.236	0.0000	0.8279	1.3750	0.0816	0.2297	0.0240
Link98.1	0.1737	30023.539	0.0000	0.5763	0.2615	0.1029	0.2441	0.0140
388.1	0.0916	15821.555	0.0000	0.5612	0.6743	0.0750	0.1770	0.0200
403.1	0.0261	4503.3278	0.0000	0.6836	0.4951	0.1440	0.4886	0.0240
ROAD4	0.2293	39625.377	0.0000	0.3609	0.0718	0.1696	5.4567	0.0140
405.1	-0.0019	-322.7503	0.0000	0.2665	0.0086	0.0593	0.2126	0.0240
ROAD3	0.2583	44626.369	0.0000	0.6867	0.3626	0.0630	1.9346	0.0140
407.1	0.1452	25097.252	0.0000	0.5581	0.6383	0.1060	0.2207	0.0240
ROAD2	0.1117	19305.700	0.0000	0.2076	0.2544	0.0139	0.4201	0.0140
Link 5	0.8090	139794.40						
WEIR30	0.0000	0.0000						
WEIR46	0.0949	16393.815						
Overtop90	0.1396	24123.639						
Link97.1	0.7594	131225.86						
Roadway98	0.0000	0.0000						
Link106.1.	0.0460	7946.5620						
WEIR119	0.7061	122012.56						
FREE # 1	9.2965	1606429.3						

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| Table E13. Channel losses(H), headwater depth (HW), tailwater |
| depth (TW), critical and normal depth (Yc and Yn). |
| Use this section for culvert comparisons |
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Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
Link12	14.2181	0.0000	2.1204	1.4004	1.7500	637.9814	635.8504	Max Flow
Link13	23.0816	0.0000	5.4935	1.6496	1.7500	638.4346	632.9410	Max Flow
Link14	30.3779	0.0000	0.8581	1.7855	1.8405	632.1701	631.4449	Max Flow
Link15	31.4512	0.0000	0.5612	1.8181	2.1402	631.4449	630.8924	Max Flow
Link16	45.5223	0.0000	2.3192	2.1967	3.0000	631.2878	628.9048	Max Flow
Link17	-0.0053	0.0000	0.2156	0.0042	0.0080	626.4342	626.4361	Max Flow
Link18	47.9127	0.0000	2.7251	2.2531	2.1504	628.6813	625.0714	Max Flow
Link22	4.4857	0.0000	0.8076	0.8580	0.7668	628.3614	627.7397	Max Flow
Link23	57.3143	0.0000	1.9666	2.4497	2.3577	617.6562	615.7244	Max Flow
Link24	57.2823	0.0000	0.4568	2.4491	3.0000	615.7219	615.2643	Max Flow
Link25	57.2663	0.0000	1.8855	2.4488	3.0000	615.2623	613.3664	Max Flow
Link26	57.2712	0.0000	1.9117	2.4489	3.0000	613.3547	611.4472	Max Flow
Link27	57.2853	0.0000	2.7297	2.4491	3.0000	611.4461	608.7180	Max Flow
Link28	57.2779	0.0000	2.1697	2.4490	3.0000	608.7050	605.7921	Max Flow
Link31	0.0000	0.0000	0.8374	0.0000	0.0000	636.0400	636.0400	Max Flow
Link32	85.8262	0.0000	20.1848	2.4267	0.9726	593.7513	572.9726	Max Flow
Link33	67.5778	0.0000	20.5348	1.5789	0.5785	593.8926	572.9663	Max Flow
Link47	15.4464	0.0000	4.1010	1.4090	0.7702	632.7404	629.6031	Max Flow
Link53	3.8773	0.0000	0.1413	0.4017	0.7469	636.5930	636.3537	Max Flow
Link54	3.8777	0.0000	2.1807	0.2485	0.3436	636.3537	633.9200	Max Flow
Link55	3.8776	0.0000	1.3551	0.5059	0.4877	633.9200	633.4365	Max Flow
Link56	10.1798	0.0000	5.0862	0.3784	0.4799	630.6799	622.9642	Max Flow
Link68	10.3179	0.0000	2.8099	0.8683	0.9640	622.9643	620.0731	Max Flow
Link69	12.5142	0.0000	0.5320	0.9157	1.0253	620.0093	620.0498	Max Flow
Link70	119.0764	0.0000	1.5016	1.5631	1.7912	619.0789	616.4656	Max Flow
Link71	178.0227	0.0000	2.8495	0.9297	0.9221	616.5941	616.7977	Max Flow
Link72	57.3634	0.0000	1.5203	2.4506	1.3518	605.7919	604.2738	Max Flow
Link73	57.3757	0.0000	3.8866	1.4465	1.0185	603.9407	599.5333	Max Flow
Link74	57.3822	0.0000	2.3003	1.8783	1.5190	599.5333	596.3248	Max Flow
Link75	57.3550	0.0000	0.3412	0.8943	0.9048	596.3249	596.2188	Max Flow
Link76	57.3230	0.0000	1.7232	1.9490	1.4573	596.2177	593.5836	Max Flow
Link77	7.2791	0.0000	0.5837	0.9581	0.8339	640.8045	639.8735	Max Flow
Link78	7.2558	0.0000	2.3238	0.1486	0.2369	639.8736	636.4986	Max Flow
Link79	23.0911	0.0000	1.0273	1.6498	1.3705	632.9410	631.9641	Max Flow
Link82	47.9001	0.0000	8.6774	2.2528	1.3806	625.0714	615.5918	Max Flow
Link83	55.4036	0.0000	1.2362	2.4138	2.4874	615.5918	613.7522	Max Flow
Link84	55.4019	0.0000	6.2103	1.1734	0.9648	613.7523	607.1954	Max Flow
Link85	55.4119	0.0000	8.6127	1.2896	0.9933	607.1954	593.8766	Max Flow
Link86	7.5090	0.0000	4.3413	0.2659	0.3444	623.0957	617.3659	Max Flow
Link87	7.5107	0.7217	2.0410	1.0889	1.2500	628.4509	623.0957	Max Flow
Link93	49.5367	0.0000	0.8624	0.2124	0.1712	635.1752	635.1435	Max Flow
Link95	7.8474	0.0000	1.5833	0.2749	0.3222	628.3302	628.1184	Max Flow
Link103	1.7608	0.0000	0.6335	0.4584	0.2990	631.6276	630.6134	Max Flow
Link104	1.7629	0.0000	2.0665	0.6082	0.7500	634.8000	632.7176	Max Flow
Link105	1.7608	0.0000	0.7824	0.5959	0.8300	632.7243	631.6276	Max Flow
Link107	7.8405	0.0000	1.9783	0.1654	0.3355	630.3405	628.3287	Max Flow
Link108	1.7608	0.0000	0.4628	0.0361	0.1088	630.6134	630.1684	Max Flow
Link109	6.2655	0.0000	2.1425	0.1407	0.1938	632.6942	630.3277	Max Flow
Link118	3.8809	0.0000	0.0811	0.0799	0.0762	638.1058	638.1059	Max Flow
214.1	29.0515	0.0000	1.6419	1.8451	2.0000	620.3607	618.7190	Max Flow
249.1	6.0684	0.0000	1.1648	0.9954	1.2500	631.3955	630.2154	Max Flow
ROAD1	4.3184	0.0000	1.2549	0.0862	0.0655	631.3955	630.0771	Max Flow
272.1	3.8770	0.0000	0.4541	0.7961	0.7996	638.1148	637.7241	Max Flow
283.1	4.7615	0.0000	2.3593	0.9016	1.0000	633.4809	631.1216	Max Flow
Link98.1	2.1981	0.0000	0.6107	0.6648	0.7500	635.4030	634.8000	Max Flow
388.1	2.5037	0.0000	0.7416	0.6777	1.0000	633.7952	632.6131	Max Flow
403.1	3.6559	0.0000	2.5006	0.7719	0.8620	628.1145	625.8112	Max Flow
ROAD4	8.9761	0.0000	0.8850	0.1362	0.1187	628.2327	628.1338	Max Flow
405.1	0.0000	0.0000	0.0024	0.0000	0.0000	628.5545	628.5546	Max Flow

ROAD3	10.3500	0.0000	0.3217	0.1501	0.1413	628.5886	628.2513	Max Flow
407.1	3.6006	0.0000	0.6729	0.7659	0.8533	630.0771	629.3259	Max Flow
ROAD2	6.7773	0.0000	1.1605	0.1140	0.0771	630.0771	628.5886	Max Flow

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| Table E13a. CULVERT ANALYSIS CLASSIFICATION, |
| and the time the culvert was in a particular |
| classification during the simulation. The time is |
| in minutes. The Dynamic Wave Equation is used for |
| all conduit analysis but the culvert flow classification |
| condition is based on the HW and TW depths. |
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Conduit Name	Critical D Outlet Control	Mild Slope Outlet Control	Mild Slope TW Outlet Control	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope TW > D Outlet Control	Mild Slope TW <= D Outlet Control	Outlet Control	Inlet Control	Inlet Configuration
Link12	205.0000	580.0000	1920.0000	5.0000	150.0000	0.0000	20.0000	0.0000	None	
Link13	40.0000	625.0000	2055.0000	0.0000	0.0000	0.0000	160.0000	0.0000	None	
Link14	0.0000	2690.0000	110.0000	0.0000	0.0000	0.0000	80.0000	0.0000	None	
Link15	0.0000	2820.0000	20.0000	0.0000	40.0000	0.0000	0.0000	0.0000	None	
Link16	5.0000	2860.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link17	0.0000	2860.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link18	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link22	0.0000	0.0000	2655.0000	5.0000	0.0000	220.0000	0.0000	0.0000	None	
Link23	0.0000	0.0000	2640.0000	20.0000	0.0000	175.0000	45.0000	0.0000	None	
Link24	20.0000	2455.0000	180.0000	0.0000	225.0000	0.0000	0.0000	0.0000	None	
Link25	25.0000	2360.0000	270.0000	0.0000	225.0000	0.0000	0.0000	0.0000	None	
Link26	10.0000	2485.0000	165.0000	0.0000	220.0000	0.0000	0.0000	0.0000	None	
Link27	10.0000	2650.0000	85.0000	0.0000	135.0000	0.0000	0.0000	0.0000	None	
Link28	605.0000	2210.0000	65.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link31	0.0000	2725.0000	20.0000	0.0000	135.0000	0.0000	0.0000	0.0000	None	
Link32	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link33	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link47	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link53	155.0000	2705.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link54	0.0000	2805.0000	20.0000	0.0000	55.0000	0.0000	0.0000	0.0000	None	
Link55	0.0000	2720.0000	115.0000	0.0000	0.0000	0.0000	45.0000	0.0000	None	
Link56	5.0000	2860.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link68	10.0000	2850.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link69	0.0000	2860.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link70	80.0000	2780.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link71	0.0000	2775.0000	30.0000	70.0000	0.0000	0.0000	5.0000	0.0000	None	
Link72	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link73	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link74	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link75	0.0000	2850.0000	30.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link76	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link77	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link78	490.0000	2330.0000	60.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link79	0.0000	0.0000	2710.0000	0.0000	0.0000	0.0000	170.0000	0.0000	None	
Link82	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link83	50.0000	0.0000	2685.0000	0.0000	0.0000	0.0000	145.0000	0.0000	None	
Link84	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link85	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link86	295.0000	2560.0000	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link87	285.0000	2345.0000	25.0000	0.0000	0.0000	0.0000	225.0000	0.0000	None	
Link93	0.0000	100.0000	2685.0000	85.0000	0.0000	0.0000	10.0000	0.0000	None	
Link95	85.0000	2730.0000	20.0000	0.0000	45.0000	0.0000	0.0000	0.0000	None	
Link103	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link104	0.0000	225.0000	2380.0000	0.0000	275.0000	0.0000	0.0000	0.0000	None	
Link105	380.0000	50.0000	2300.0000	0.0000	0.0000	0.0000	150.0000	0.0000	None	
Link107	0.0000	2860.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link108	5.0000	2405.0000	470.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link109	0.0000	1280.0000	1600.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
Link118	0.0000	0.0000	2740.0000	140.0000	0.0000	0.0000	0.0000	0.0000	None	
214.1	125.0000	1960.0000	775.0000	0.0000	0.0000	0.0000	20.0000	0.0000	None	
249.1	70.0000	185.0000	2625.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
ROAD1	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
272.1	0.0000	65.0000	2675.0000	75.0000	55.0000	0.0000	10.0000	0.0000	None	
283.1	140.0000	1300.0000	1305.0000	0.0000	0.0000	0.0000	135.0000	0.0000	None	
Link98.1	0.0000	50.0000	2550.0000	0.0000	275.0000	0.0000	5.0000	0.0000	None	
388.1	190.0000	165.0000	2525.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
403.1	45.0000	455.0000	2160.0000	0.0000	220.0000	0.0000	0.0000	0.0000	None	
ROAD4	5.0000	55.0000	2725.0000	90.0000	0.0000	0.0000	5.0000	0.0000	None	
405.1	0.0000	40.0000	2755.0000	0.0000	85.0000	0.0000	0.0000	0.0000	None	
ROAD3	70.0000	565.0000	2195.0000	15.0000	25.0000	0.0000	10.0000	0.0000	None	
407.1	120.0000	180.0000	2580.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	
ROAD2	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None	

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| Kinematic Wave Approximations |
| Time in Minutes for Each Condition |
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Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
Link12	2.1675	13.1833	0.4494	0.0000
Link13	0.0000	0.0000	257.6206	0.0000
Link14	2617.3911	2819.1192	0.0000	0.0000
Link15	453.6368	613.5100	0.0000	0.0000
Link16	2640.9549	2686.6918	5.0926	0.0000
Link17	0.0000	0.0000	0.0000	0.0000
Link18	0.0000	0.0000	799.6296	0.0000
Link22	2624.5175	2852.3546	2.4312	0.0000
Link23	1898.8916	2159.8148	2572.1250	0.0000
Link24	0.0000	0.0000	4.3943	0.0000
Link25	1473.2544	2608.4172	2473.7657	0.0000
Link26	1470.8014	2612.9283	2442.4550	0.0000
Link27	1459.7392	2588.4892	2370.6315	0.0000
Link28	0.0000	0.0000	1561.7353	0.0000
Link31	0.0000	0.0000	0.0000	0.0000
Link32	2591.4505	2592.6800	472.5926	0.0000

Link33	260.6271	260.7029	2864.1667	0.0000
Link47	2773.8805	2855.8333	122.7792	0.0000
Link53	0.3889	3.2222	0.9259	0.0000
Link54	2858.0556	2858.1481	0.4630	0.0000
Link55	2859.4444	2859.4444	0.0000	0.0000
Link56	2859.5370	2859.5370	0.0000	0.0000
Link68	151.4211	151.6000	1.0185	0.0000
Link69	2763.1026	2855.8253	0.2778	0.0000
Link70	178.4998	185.0341	0.0926	0.0000
Link71	2725.6648	2823.5460	0.0000	0.0000
Link72	18.2089	1531.7803	2849.5000	0.0000
Link73	1439.8867	1988.6046	272.4625	0.0000
Link74	0.0000	0.0000	273.7802	0.0000
Link75	2367.3425	2631.0985	0.0417	0.0000
Link76	5.1097	5.1930	2846.3792	0.0000
Link77	0.0000	0.0000	2819.1969	0.0000
Link78	0.0000	0.0000	612.9613	0.0000
Link79	32.7924	129.3874	2819.3005	0.0000
Link82	2856.0185	2856.3889	2859.4444	0.0000
Link83	0.0000	0.0000	1393.0556	0.0000
Link84	280.1376	280.2294	231.4231	0.0000
Link85	0.8333	0.8333	354.5966	0.0000
Link86	0.0000	0.0459	1377.6447	0.0000
Link87	0.0000	0.0000	231.1953	0.0000
Link93	2678.1065	2782.6100	2.4718	0.0000
Link95	132.5228	222.0263	2.5459	0.0000
Link103	2565.9677	2565.9677	2835.5057	0.0000
Link104	2571.5596	2572.2477	28.4259	0.0000
Link105	0.0000	0.0000	203.4836	0.0000
Link107	1686.7244	2807.4473	2.7752	0.0000
Link108	2838.5943	2838.6322	2.9460	0.0000
Link109	2838.0682	2838.0682	0.0000	0.0000
Link118	21.2164	161.9722	2702.7500	0.0000
214.1	2680.4719	2703.2778	2160.7272	0.0000
249.1	2727.2534	2743.3161	17.2222	0.0000
ROAD1	2836.8561	2836.8561	47.7437	0.0000
272.1	2719.0227	2859.8148	5.1852	0.0000
283.1	1.4444	1.4444	127.6976	0.0000
Link98.1	2571.6611	2631.9826	3.0556	0.0000
388.1	0.0000	0.0000	182.6445	0.0000
403.1	6.1009	78.7076	0.0926	0.0000
ROAD4	2697.8750	2836.6667	6.1142	0.0000
405.1	49.4878	52.0660	0.0000	0.0000
ROAD3	29.2999	140.5123	35.3702	0.0000
407.1	0.0000	0.0000	0.1852	0.0000
ROAD2	2843.0328	2843.0328	69.0362	0.0000

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| Table E14 - Natural Channel Overbank Flow Information |
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Conduit Name	<---- Maximum Velocity -----> Left Velocity	Center Velocity	Right Velocity	<------ Maximum Flow -------> Left Flow	Center Flow	Right Flow	<------ Maximum Area ------> Left Area	Center Area	Right Area	<--- Max. Storage Volume ---> Left Area	Center Area	Right Area	Maximum Depth
Link53	0.0000	2.4202	0.0000	0.0000	3.8782	0.0000	0.0000	1.6024	0.0000	0.0000	52.8798	0.0000	0.4563
Link55	0.0000	0.2819	0.0000	0.0000	3.8776	0.0000	0.0000	13.7572	0.0000	0.0000	1898.4951	0.0000	1.5957
Link68	0.0000	1.7177	0.0000	0.0000	10.4792	0.0000	0.0000	6.1007	0.0000	0.0000	2440.2859	0.0000	1.2786
Link69	0.0000	0.5060	0.0000	0.0000	72.2275	0.0000	0.0000	142.7453	0.0000	0.0000	37113.776	0.0000	2.4445
Link70	0.0000	2.8225	0.0000	0.0000	120.5110	0.0000	0.0000	42.6959	0.0000	0.0000	19213.166	0.0000	1.7509
Link71	0.0002	0.6668	0.0000	0.0000	591.8780	0.0000	0.0000	887.5891	0.0000	0.0097	339946.63	0.0000	4.1889
Link73	0.0000	4.6434	0.0000	0.0000	57.3864	0.0000	0.0000	12.3586	0.0000	0.0000	902.1780	0.0000	1.3873
Link74	0.0000	9.9021	0.0000	0.0000	57.3837	0.0000	0.0000	5.7951	0.0000	0.0000	591.1021	0.0000	1.4073
Link75	0.0000	2.6324	0.0000	0.0000	57.3823	0.0000	0.0000	21.7985	0.0000	0.0000	1133.5223	0.0000	1.3655
Link76	0.0000	13.7746	0.0000	0.0000	57.3749	0.0000	0.0000	4.1653	0.0000	0.0000	166.6106	0.0000	1.2672
Link84	0.0000	5.7522	0.0000	0.0000	55.4384	0.0000	0.0000	9.6378	0.0000	0.0000	2698.5827	0.0000	1.0815
Link85	0.0000	9.5995	0.0000	0.0000	55.4317	0.0000	0.0000	5.7744	0.0000	0.0000	2713.9838	0.0000	0.8828

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| Table E14a - Natural Channel Encroachment Information |
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Conduit Name	<------- Existing Conveyance Condition -------> Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	<----- Encroachment Conveyance Condition -----> Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	<- % Volume --> Reduction Left	Right	<-- Encroachment Data --> Depth Incr.	Method
Link53	0.0000	41.525	0.0000	41.525	-3.9674	1.4857	0.0000	41.525	0.0000	41.525	-3.9674	1.4857	0.0000	0.0000	0.0000	None
Link55	0.0000	659.88	0.0000	659.88	-10.521	8.1498	0.0000	659.88	0.0000	659.88	-10.521	8.1498	0.0000	0.0000	0.0000	None
Link68	0.0000	250.87	0.0000	250.87	-3.3817	6.8376	0.0000	250.87	0.0000	250.87	-3.3817	6.8376	0.0000	0.0000	0.0000	None
Link69	0.0000	7087.2	0.0000	7087.2	-44.741	141.84	0.0000	7087.2	0.0000	7087.2	-44.741	141.84	0.0000	0.0000	0.0000	None
Link70	0.0000	1778.4	0.0000	1778.4	-17.183	55.436	0.0000	1778.4	0.0000	1778.4	-17.183	55.436	0.0000	0.0000	0.0000	None

Link71	.88E-06	110264.	0.0000	110264.	-245.80	47.588	.88E-06	110264.	0.0000	110264.	-245.80	47.588	0.0000	0.0000	0.0000	None
Link73	0.0000	448.11	0.0000	448.11	-5.9004	19.760	0.0000	448.11	0.0000	448.11	-5.9004	19.760	0.0000	0.0000	0.0000	None
Link74	0.0000	262.40	0.0000	262.40	-4.8407	3.3952	0.0000	262.40	0.0000	262.40	-4.8407	3.3952	0.0000	0.0000	0.0000	None
Link75	0.0000	1191.5	0.0000	1191.5	-17.700	6.7944	0.0000	1191.5	0.0000	1191.5	-17.700	6.7944	0.0000	0.0000	0.0000	None
Link76	0.0000	173.54	0.0000	173.54	-7.8598	-1.2305	0.0000	173.54	0.0000	173.54	-7.8598	-1.2305	0.0000	0.0000	0.0000	None
Link84	0.0000	452.20	0.0000	452.20	-7.4594	5.7659	0.0000	452.20	0.0000	452.20	-7.4594	5.7659	0.0000	0.0000	0.0000	None
Link85	0.0000	214.56	0.0000	214.56	-4.5317	6.9564	0.0000	214.56	0.0000	214.56	-4.5317	6.9564	0.0000	0.0000	0.0000	None

==========
| Table E14b - Floodplain Mapping |
==========

Conduit Name	Upstream WS Elev.	Downstream WS Elev.	Channel Length	Center Station	<----- Left Offsets Natural	Encroach	------> Bank	<----- Right Offsets Natural	Encroach	------> Bank	<- Channel Widths-> Total	Encroach.
Link53	636.5930	636.3537	33.0000	0.0000	3.9674	3.9674	21.2000	1.4857	1.4857	17.8000	5.4531	5.4531
Link55	633.9200	633.4812	138.0000	0.0000	10.5209	10.5209	23.6000	8.1498	8.1498	9.4000	18.6708	18.6708
Link68	622.9720	620.5485	400.0000	0.0000	3.3817	3.3817	67.2000	6.8376	6.8376	30.6000	10.2193	10.2193
Link69	620.5485	620.5355	260.0000	0.0000	44.7407	44.7407	126.4000	141.8446	141.8446	174.6000	186.5854	186.5854
Link70	619.0843	617.6586	450.0000	0.0000	17.1834	17.1834	64.2000	55.4363	55.4363	121.3000	72.6197	72.6197
Link71	617.6586	617.6793	383.0000	0.0000	245.8000	245.8000	245.8000	47.5877	47.5877	65.5000	293.3877	293.3877
Link73	603.9408	599.5333	73.0000	0.0000	5.9004	5.9004	92.8000	19.7595	19.7595	88.6000	25.6599	25.6599
Link74	599.5333	596.3250	102.0000	0.0000	4.8407	4.8407	93.3000	3.3952	3.3952	33.4000	8.2359	8.2359
Link75	596.3250	596.2194	52.0000	0.0000	17.7002	17.7002	92.5000	6.7944	6.7944	48.8000	24.4946	24.4946
Link76	596.2194	593.7514	40.0000	-4.6000	3.2598	3.2598	41.9000	3.3695	3.3695	65.0000	6.6293	6.6293
Link84	613.7526	607.1955	280.0000	0.0000	7.4594	7.4594	30.6000	5.7659	5.7659	26.8000	13.2253	13.2253
Link85	607.1955	593.8926	470.0000	0.0000	4.5317	4.5317	68.1000	6.9564	6.9564	109.0000	11.4880	11.4880

==========
| Table E15 - SPREADSHEET INFO LIST |
| Conduit Flow and Junction Depth Information for use in |
| spreadsheets. The maximum values in this table are the |
| true maximum values because they sample every time step.|
| The values in the review results may only be the |
| maximum of a subset of all the time steps in the run. |
| Note: These flows are only the flows in a single barrel.|
==========

Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	## ## ##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
Link12	14.5110	103479.6897	6.0824	782.4804	##	Node11	617.2000	620.5355
Link13	23.0827	243500.9030	9.6268	691.6440	##	Node12	617.2100	619.0843
Link14	30.5054	302517.3243	6.2609	2067.0784	##	Node20	634.8000	639.0570
Link15	31.5918	302487.7022	5.6054	2314.4827	##	Node21	633.1600	638.4347
Link16	45.5313	466502.6577	6.3139	4335.1597	##	Node22	630.1100	632.2268
Link17	47.9315	484713.8761	7.5525	309.1585	##	Node23	628.8600	631.6961
Link18	47.9319	484725.8223	8.7762	1025.0833	##	Node24	628.0300	631.2903
Link22	4.6911	45980.6814	3.9373	48.8696	##	Node25	626.3500	628.9076
Link23	57.3806	771087.3045	8.0471	2232.4184	##	Node26	626.4200	628.6816
Link24	57.3796	771118.7527	8.0445	547.4738	##	Node27	623.6900	625.0719
Link25	57.3824	771113.3280	8.0531	2258.1012	##	Node29	612.7800	613.7526
Link26	57.3870	771146.5814	8.0691	2267.3230	##	Node30	629.8800	631.3956
Link27	57.3909	771194.8353	8.0567	2350.2178	##	Node31	624.3900	628.7120
Link28	57.3768	771245.2530	8.2918	1656.3248	##	Node32	623.0600	628.4509
Link31	3.8782	30085.3966	3.3405	74.3991	##	Node33	610.5600	617.6794
Link32	85.8349	940395.0738	21.3008	74.4203	##	Node34	608.4300	615.7470
Link33	67.5787	666027.0764	17.8797	55.0999	##	Node35	608.4000	615.2872
Link47	15.4464	51256.2398	16.0043	61.8687	##	Node36	607.4000	613.3894
Link53	3.8782	30085.4026	1.8775	62.0876	##	Node37	606.4600	611.4651
Link54	3.8778	30101.4861	1.3676	165.8529	##	Node38	605.4500	608.7238
Link55	3.8776	30110.5915	1.5919	1898.4951	##	Node39	604.4400	605.7930
Link56	10.2120	55895.8508	1.5426	788.0041	##	Node41	630.2000	630.6806

Link68	10.4792	56088.7572	3.0398	1262.9809	##	Node43	636.4600	638.1156
Link69	-72.2275	56693.7998	1.2050	37113.7762	##	Node44	635.7400	637.7247
Link70	120.5110	579443.6743	2.5278	19213.1657	##	Node45	636.0400	636.5930
Link71	-591.8780	601872.4512	1.4124	339946.6399	##	Node46	592.7400	593.7514
Link72	57.3882	771254.7728	18.5633	115.5852	##	Node47	572.0000	572.9726
Link73	57.3864	771306.2478	7.6211	294.6644	##	Node48	593.3000	593.8926
Link74	57.3837	771286.5359	7.3813	249.5825	##	Node63	631.0000	633.4812
Link75	57.3823	771294.8132	3.1434	1133.5223	##	Node65	638.0000	640.8045
Link76	57.3749	771282.8529	9.4907	85.4642	##	Node66	631.9700	632.7404
Link77	7.2798	58980.4083	6.6766	27.3157	##	Node69	636.0000	636.3537
Link78	7.2622	59028.8706	1.1583	72.1181	##	Node70	633.4300	633.9200
Link79	23.0918	243531.9956	11.4289	120.4252	##	Node71	622.0000	622.9720
Link82	47.9315	484750.9648	14.1344	376.3505	##	Node74	618.9800	620.5485
Link83	55.4387	583541.6142	11.1780	431.0393	##	Node75	602.9200	603.9408
Link84	55.4384	583582.3424	6.4909	475.2853	##	Node79	615.6100	617.6586
Link85	55.4317	583602.8735	5.9061	123.7225	##	Node80	597.8900	599.5333
Link86	7.5096	98791.5016	1.8235	57.2998	##	Node81	595.1800	596.3250
Link87	7.5107	98765.8959	6.4748	28.0025	##	Node82	594.6700	596.2194
Link93	-312.7927	27238.7121	2.8010	1151.4012	##	Node83	639.6000	639.8738
Link95	7.8707	52426.0030	1.2158	4168.7320	##	Node84	631.5400	633.0809
Link103	1.7609	28466.4240	5.4400	0.7566	##	Node86	613.4900	615.5924
Link104	1.7636	28460.8924	3.9288	71.9236	##	Node87	606.0000	607.1955
Link105	1.7608	28466.3636	3.4573	32.1787	##	Node88	622.7100	623.0958
Link107	7.8786	52343.9460	1.0683	885.2505	##	Node89	637.1000	638.1155
Link108	1.7608	28478.2947	0.4856	695.4989	##	Node92	634.9000	635.4398
Link109	6.3066	23703.2279	1.3632	130.9753	##	Node94	633.3000	634.1727
Link118	3.8850	30213.8062	0.7119	497.1568	##	Node96	628.0000	628.4517
214.1	29.1122	433905.1867	9.4123	179.8264	##	Node99	637.7000	638.4397
249.1	6.0686	36237.1786	4.8829	47.4193	##	Node100	632.3300	635.4820
ROAD1	4.3294	8162.9060	2.1558	10.1765	##	Node101	632.0000	634.8000
272.1	3.8782	30176.6764	3.7610	39.5803	##	Node103	631.4400	632.7243
283.1	4.7619	39386.2361	6.0432	30.7489	##	Node104	631.2900	631.6276
Link98.1	2.3094	30023.5391	5.1247	13.9337	##	Node107	630.5000	630.6155
388.1	2.5088	15821.5554	3.4480	19.7926	##	Node108	632.2000	633.8471
403.1	3.7078	4503.3278	4.0271	203.5794	##	Node109	632.5000	632.6949
ROAD4	9.1782	39625.3771	1.7075	4502.1051	##	Node110	630.0000	630.3410
405.1	-0.1218	-322.7503	-0.1046	55.9141	##	Node30.1	627.1300	628.7114
ROAD3	10.3915	44626.3688	2.3263	672.3604	##	Node30.2	628.4400	628.7101
407.1	3.6015	25097.2519	4.0651	34.4101	##	Node30.3	629.2000	630.0772
ROAD2	6.7954	19305.7005	2.6771	39.8358	##	Node120	638.0000	639.3992
Link 5	66.1890	139794.3977	0.0000	0.0000	##			
WEIR30	0.0000	0.0000	0.0000	0.0000	##			
WEIR46	5.5650	16393.8152	0.0000	0.0000	##			
Overtop90	6.4605	24123.6385	0.0000	0.0000	##			
Link97.1	19.9287	131225.8556	0.0000	0.0000	##			
Roadway98	0.0000	0.0000	0.0000	0.0000	##			
Link106.1.	4.0087	7946.5620	0.0000	0.0000	##			
WEIR119	28.1404	122012.5581	0.0000	0.0000	##			
FREE # 1	153.0049	1606429.276	0.0000	0.0000	##			

```
*====================================================*
|     Table E15a - SPREADSHEET REACH LIST            |
| Peak flow and Total Flow listed by Reach or those  |
|      conduits or diversions having the same        |
|      upstream and downstream nodes.                |
*====================================================*
```

Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
Node20	Node21	14.5110	103479.690
Node21	Node84	23.0827	243500.903
Node22	Node23	30.5054	302517.324
Node23	Node24	31.5918	302487.702
Node24	Node25	45.5313	466502.658
Node26	Node25	47.9315	484713.876
Node26	Node27	47.9319	484725.822
Node31	Node32	4.6911	45980.6814
Node33	Node34	57.3806	771087.304
Node34	Node35	57.3796	771118.753
Node35	Node36	57.3824	771113.328
Node36	Node37	57.3870	771146.581
Node37	Node38	57.3909	771194.835
Node38	Node39	57.3768	771245.253
Node45	Node44	3.8782	30085.3966
Node46	Node47	85.8349	940395.074
Node48	Node47	67.5787	666027.076
Node66	Node24	15.4464	51256.2398
Node45	Node69	3.8782	30085.4026
Node69	Node70	3.8778	30101.4861
Node70	Node63	3.8776	30110.5915
Node41	Node71	10.2120	55895.8508
Node71	Node74	10.4792	56088.7572
Node74	Node11	-72.2275	56693.7998
Node12	Node79	120.5110	579443.674
Node79	Node33	-591.8780	601872.451
Node39	Node75	57.3882	771254.773
Node75	Node80	57.3864	771306.248
Node80	Node81	57.3837	771286.536
Node81	Node82	57.3823	771294.813
Node82	Node46	57.3749	771282.853
Node65	Node83	7.2798	58980.4083
Node83	Node22	7.2622	59028.8706
Node84	Node22	23.0918	243531.996
Node27	Node86	47.9315	484750.965
Node86	Node29	55.4387	583541.614
Node29	Node87	55.4384	583582.342
Node87	Node48	55.4317	583602.874
Node88	Node86	7.5096	98791.5016
Node32	Node88	7.5107	98765.8959
Node92	Node100	-312.7927	27238.7121
Node96	Node32	7.8707	52426.0030
Node104	Node107	1.7609	28466.4240
Node101	Node103	1.7636	28460.8924
Node103	Node104	1.7608	28466.3636
Node110	Node96	7.8786	52343.9460
Node107	Node110	1.7608	28478.2947
Node109	Node110	6.3066	23703.2279
Node89	Node43	3.8850	30213.8062
Node11	Node12	58.2244	433905.187
Node30	Node30.3	10.3979	44400.0846

Node43	Node44	3.8782	30176.6764
Node63	Node41	4.7619	39386.2361
Node100	Node101	2.3094	30023.5391
Node108	Node109	2.5088	15821.5554
Node30.1	Node31	10.3669	44128.7049
Node30.2	Node30.1	10.3971	44303.6185
Node30.3	Node30.2	10.3969	44402.9523
Node11	Node12	66.1890	139794.398
Node63	Node41	5.5650	16393.8152
Node94	Node108	6.4605	24123.6385
Node99	Node21	19.9287	131225.856
Node108	Node109	4.0087	7946.5620
Node120	Node20	28.1404	122012.558

```
#########################################################
# Table E16. New Conduit Information Section            #
#            Conduit Invert (IE) Elevation and Conduit  #
#            Maximum Water Surface (WS) Elevations      #
#########################################################
```

Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
Link12	Node20	Node21	634.8000	634.4500	639.0570	638.4347	Circular
Link13	Node21	Node84	633.1600	631.5400	638.4347	633.0809	Circular
Link14	Node22	Node23	630.1100	628.8600	632.2268	631.6961	Circular
Link15	Node23	Node24	628.8600	628.0300	631.6961	631.2903	Circular
Link16	Node24	Node25	628.0300	626.3500	631.2903	628.9076	Circular
Link17	Node26	Node25	626.4200	626.3500	628.6816	628.9076	Circular
Link18	Node26	Node27	626.4200	623.6900	628.6816	625.0719	Circular
Link22	Node31	Node32	624.3900	623.0600	628.7120	628.4509	Circular
Link23	Node33	Node34	610.5630	608.4300	617.6793	615.7469	Circular
Link24	Node34	Node35	608.4300	608.4000	615.7470	615.2872	Circular
Link25	Node35	Node36	608.4000	607.4000	615.2872	613.3894	Circular
Link26	Node36	Node37	607.4000	606.4600	613.3894	611.4650	Circular
Link27	Node37	Node38	606.4600	605.4500	611.4651	608.7238	Circular
Link28	Node38	Node39	605.4500	604.4400	608.7238	605.7930	Circular
Link31	Node45	Node44	636.0400	635.7400	636.5930	637.7247	Circular
Link32	Node46	Node47	592.7400	572.0000	593.7514	572.9726	Rectangle
Link33	Node48	Node47	593.3000	572.0000	593.8926	572.9726	Rectangle
Link47	Node66	Node24	631.9700	628.3300	632.7404	631.2903	Circular
Link53	Node45	Node69	636.0400	636.0000	636.5930	636.3537	Natural
Link54	Node69	Node70	636.0000	633.4300	636.3537	633.9200	Trapezoid
Link55	Node70	Node63	633.4300	631.0000	633.9200	633.4812	Natural
Link56	Node41	Node71	630.2000	622.0000	630.6806	622.9720	Trapezoid
Link68	Node71	Node74	622.0000	618.9800	622.9720	620.5485	Natural
Link69	Node74	Node11	618.9800	617.2000	620.5485	620.5355	Natural
Link70	Node12	Node79	617.2100	615.6100	619.0843	617.6586	Natural
Link71	Node79	Node33	615.6100	610.5600	617.6586	617.6793	Natural
Link72	Node39	Node75	604.4400	602.9220	605.7930	604.2741	Circular
Link73	Node75	Node80	602.9200	597.8900	603.9408	599.5333	Natural
Link74	Node80	Node81	597.8900	595.1800	599.5333	596.3250	Natural
Link75	Node81	Node82	595.1800	594.6700	596.3250	596.2194	Natural
Link76	Node82	Node46	594.6700	592.7400	596.2194	593.7514	Natural
Link77	Node65	Node83	640.0000	639.6000	640.8045	639.8738	Circular
Link78	Node83	Node22	639.6000	636.3500	639.8738	636.4986	Trapezoid
Link79	Node84	Node22	631.5400	630.5100	633.0809	632.2268	Circular
Link82	Node27	Node86	623.6900	613.4900	625.0719	615.5924	Circular
Link83	Node86	Node29	613.4900	612.7800	615.5924	613.7526	Circular

Link84	Node29	Node87	612.7800	606.0000	613.7526	607.1955	Natural
Link85	Node87	Node48	606.0000	593.3000	607.1955	593.8926	Natural
Link86	Node88	Node86	622.7100	617.1000	623.0958	617.3659	Trapezoid
Link87	Node32	Node88	623.0600	622.7100	628.4509	623.0958	Circular
Link93	Node92	Node100	634.9000	634.0300	635.4398	635.4820	Trapezoid
Link95	Node96	Node32	628.0000	625.8600	628.4517	628.4509	Trapezoid
Link103	Node104	Node107	631.2900	630.5000	631.6276	630.6155	Circular
Link104	Node101	Node103	632.0000	631.4400	634.8000	632.7243	Circular
Link105	Node103	Node104	631.4400	631.2900	632.7243	631.6276	Circular
Link107	Node110	Node96	630.0000	628.0000	630.3410	628.4517	Trapezoid
Link108	Node107	Node110	630.5000	630.0000	630.6155	630.3410	Trapezoid
Link109	Node109	Node110	632.5000	630.0000	632.6949	630.3410	Trapezoid
Link118	Node89	Node43	637.1000	636.5000	638.1155	638.1156	Trapezoid
214.1	Node11	Node12	617.7000	617.2100	620.5355	619.0843	Circular
249.1	Node30	Node30.3	629.8800	629.2200	631.3956	630.2154	Circular
ROAD1	Node30	Node30.3	631.3300	630.0000	631.3956	630.0772	Trapezoid
272.1	Node43	Node44	636.4600	635.7400	638.1156	637.7247	Circular
283.1	Node63	Node41	631.0100	630.2200	633.4812	631.1216	Circular
Link98.1	Node100	Node101	632.3300	632.0000	635.4820	634.8000	Circular
388.1	Node108	Node109	632.6000	632.5000	633.8471	632.6949	Circular
403.1	Node30.1	Node31	627.2400	624.5900	628.7114	628.7120	Circular
ROAD4	Node30.1	Node31	628.1100	626.9900	628.7114	628.7120	Trapezoid
405.1	Node30.2	Node30.1	628.5600	627.2400	628.7101	628.7114	Circular
ROAD3	Node30.2	Node30.1	628.4400	628.1100	628.7101	628.7114	Trapezoid
407.1	Node30.3	Node30.2	629.2200	628.5600	630.0772	629.3260	Circular
ROAD2	Node30.3	Node30.2	630.0000	628.4400	630.0772	628.7101	Trapezoid

```
*==============================================================================*
|    Table E18 - Junction Continuity Error.   Division by Volume added 11/96   |
|                                                                              |
|  Continuity Error = Net Flow + Beginning Volume - Ending Volume              |
|                     ---------------------------------------------------      |
|                     Total Flow + (Beginning Volume + Ending Volume)/2        |
|                                                                              |
|  Net Flow   = Node Inflow - Node Outflow                                     |
|  Total Flow = absolute (Inflow + Outflow)                                    |
|  Intermediate column is a judgement on the node continuity error.            |
|                                                                              |
|  Excellent  < 1 percent    Great  1 to  2 percent  Good  2 to  5 percent     |
|  Fair  5 to 10  percent    Poor  10 to 25 percent  Bad  25 to 50 percent     |
|  Terrible > 50  percent                                                      |
*==============================================================================*
```

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
Node11	-496.1410	-0.0432	0.0302	48.5436	0.0000	-447.5974	1147447.649	0
Node12	-5841.0293	-0.5065	0.3558	0.0265	0.0000	-5841.0029	1153143.259	0
Node20	18533.0143	8.2189	1.1289	0.0018	0.0000	18533.0161	225492.2478	0
Node21	-8787.4301	-1.8376	0.5353	0.0034	0.0000	-8787.4267	478206.4483	0
Node22	28.8177	0.0048	0.0018	7.5543	0.0000	36.3720	605078.1904	1
Node23	22.1624	0.0037	0.0013	4.2448	0.0000	26.4072	605005.0265	0
Node24	-125.4647	-0.0134	0.0076	13.7713	0.0000	-111.6933	932895.3493	2
Node25	-75.3348	-0.0078	0.0046	13.5311	0.0000	-61.8037	969384.7466	0
Node26	-25.9200	-0.0027	0.0016	2.9792	0.0000	-22.9408	969439.6984	0
Node27	-39.4274	-0.0041	0.0024	3.7617	0.0000	-35.6658	969476.7871	0
Node29	-48.0743	-0.0041	0.0029	3.9885	0.0000	-44.0858	1167123.957	0
Node30	-9.3043	-0.0105	0.0006	0.0006	0.0000	-9.3037	88793.1226	5
Node31	-1865.7498	-2.0705	0.1136	0.0018	0.0000	-1865.7480	90109.3863	0
Node32	-365.8118	-0.1855	0.0223	0.0183	0.0000	-365.7935	197172.5803	0
Node33	2384.9944	0.1542	0.1453	0.9701	0.0000	2385.9645	1546671.772	0
Node34	-21.0432	-0.0014	0.0013	0.0019	0.0000	-21.0412	1542206.057	8
Node35	-1.2426	-0.0001	0.0001	0.0019	0.0000	-1.2407	1542232.081	0

Node36	-29.8519	-0.0019	0.0018	0.0031	0.0000	-29.8488	1542259.909	0
Node37	-40.2897	-0.0026	0.0025	0.0032	0.0000	-40.2865	1542341.417	0
Node38	-43.9380	-0.0028	0.0027	0.0034	0.0000	-43.9346	1542440.088	0
Node39	-25.2496	-0.0016	0.0015	0.0018	0.0000	-25.2478	1542500.026	0
Node41	-119.1033	-0.1067	0.0073	0.1186	0.0000	-118.9847	111675.9021	0
Node43	28.4189	0.0471	0.0017	1.2159	0.0000	29.6348	60390.4826	1
Node44	5.3592	0.0089	0.0003	7.2825	0.0000	12.6417	60262.0730	0
Node45	-3.7042	-0.0062	0.0002	2.2971	0.0000	-1.4070	60170.7992	0
Node46	-96.2873	-0.0051	0.0059	0.0719	0.0000	-96.2155	1880699.515	0
Node47	-11.0685	-0.0003	0.0007	0.8552	0.0000	-10.2132	3212851.426	0
Node48	-29.0471	-0.0022	0.0018	6.0529	0.0000	-22.9942	1332051.388	0
Node63	-64.6858	-0.0580	0.0039	0.2618	0.0000	-64.4240	111494.2421	0
Node65	-67.5114	-0.0437	0.0041	24410.1242	0.0000	24342.6127	142309.8996	0
Node66	368.8695	0.3586	0.0225	0.0003	0.0000	368.8698	102853.9529	0
Node69	-17.9189	-0.0298	0.0011	0.0126	0.0000	-17.9064	60186.8888	0
Node70	-10.7949	-0.0179	0.0007	0.1482	0.0000	-10.6468	60212.0776	0
Node71	-197.1980	-0.1761	0.0120	0.1318	0.0000	-197.0662	111984.6080	0
Node74	-740.6527	-0.6566	0.0451	42.2729	0.0000	-698.3798	112782.5570	0
Node75	2.0170	0.0001	0.0001	0.0261	0.0000	2.0431	1542561.021	0
Node79	-2023.0680	-0.1713	0.1232	0.9562	0.0000	-2022.1118	1181316.126	0
Node80	-6.6678	-0.0004	0.0004	0.0595	0.0000	-6.6083	1542592.784	0
Node81	-8.1866	-0.0005	0.0005	0.1027	0.0000	-8.0839	1542581.349	0
Node82	11.0689	0.0007	0.0007	0.0835	0.0000	11.1524	1542577.666	0
Node83	-54.5159	-0.0462	0.0033	5.5875	0.0000	-48.9284	118009.2788	0
Node84	-28.5006	-0.0059	0.0017	0.0020	0.0000	-28.4987	487032.8985	1
Node86	-9.2713	-0.0008	0.0006	2.5607	0.0000	-6.7106	1167084.081	0
Node87	-33.1723	-0.0028	0.0020	8.6805	0.0000	-24.4918	1167185.216	0
Node88	-23.4361	-0.0119	0.0014	0.0821	0.0000	-23.3540	197557.3975	0
Node89	-0.4613	-0.0008	0.0000	0.0001	0.0000	-0.4612	60606.7387	0
Node92	17466.5560	31.4233	1.0639	0.0001	0.0000	17466.5561	55584.7116	0
Node94	-17.7379	-0.0353	0.0011	663.1926	0.0000	645.4546	49892.7289	0
Node96	-79.6866	-0.0761	0.0049	0.3113	0.0000	-79.3752	104769.9491	0
Node99	-19.8707	-0.0073	0.0012	0.0000	0.0000	-19.8707	271154.0642	0
Node100	3912.1091	6.8319	0.2383	0.0002	0.0000	3912.1093	57262.2512	0
Node101	-3.4041	-0.0058	0.0002	0.0010	0.0000	1561.2987	58484.4315	0
Node103	-5.4905	-0.0096	0.0003	0.0018	0.0000	-5.4887	56927.2560	0
Node104	-0.1805	-0.0003	0.0000	0.0006	0.0000	-0.1799	56932.7876	0
Node107	-12.1933	-0.0214	0.0007	0.0351	0.0000	-12.1582	56944.7187	0
Node108	350.7346	0.7323	0.0214	5.0268	0.0000	355.7614	47891.7559	0
Node109	63.5578	0.1339	0.0039	0.0265	0.0000	63.5843	47471.3453	0
Node110	-167.7047	-0.1604	0.0102	0.3559	0.0000	-167.3487	104525.4687	0
Node30.1	168.7760	0.1895	0.0103	1.3848	0.0000	170.1608	89077.8240	108
Node30.2	93.3719	0.1045	0.0057	0.0012	0.0000	93.3731	89352.0714	80
Node30.3	-7.4303	-0.0084	0.0005	0.2528	0.0000	-7.1775	88803.0369	0
Node120	-59.3188	-0.0226	0.0036	1481.9030	0.0000	1422.5843	261324.7254	0

The total continuity error was 21680. cubic feet
The remaining total volume was 26741. cubic feet
Your mean node continuity error was Excellent
Your worst node continuity error was Great

```
*==================================================*
|  Table E19 - Junction Inflow & Outflow Listing    |
|              Units are either ft^3 or m^3         |
|              depending on the units in your model.|
*==================================================*
```

Junction	Constant Inflow	User Inflow	Interface Inflow	DWF Inlow	Inflow through	RNF Layer Inflow	Inflow from	Outflow	Evaporation Basin

Name	to Node	to Node	to Node	to Node	Outfall	to Node	2D Layer	from Node	from Node	Infil.
Node11	0.0000	0.0000	0.0000	0.0000	0.0000	516711.0278	0.0000	0.0000	0.0000	0.0000
Node24	0.0000	0.0000	0.0000	0.0000	0.0000	112572.5492	0.0000	0.0000	0.0000	0.0000
Node25	0.0000	0.0000	0.0000	0.0000	0.0000	18161.0251	0.0000	0.0000	0.0000	0.0000
Node30	0.0000	0.0000	0.0000	0.0000	0.0000	44318.5804	0.0000	0.0000	0.0000	0.0000
Node33	0.0000	0.0000	0.0000	0.0000	0.0000	173591.4568	0.0000	0.0000	0.0000	0.0000
Node46	0.0000	0.0000	0.0000	0.0000	0.0000	168865.5796	0.0000	0.0000	0.0000	0.0000
Node47	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.6064E+06	0.0000	0.0000
Node48	0.0000	0.0000	0.0000	0.0000	0.0000	82347.4574	0.0000	0.0000	0.0000	0.0000
Node63	0.0000	0.0000	0.0000	0.0000	0.0000	25432.8526	0.0000	0.0000	0.0000	0.0000
Node65	0.0000	0.0000	0.0000	0.0000	0.0000	83170.8361	0.0000	0.0000	0.0000	0.0000
Node66	0.0000	0.0000	0.0000	0.0000	0.0000	49465.7818	0.0000	0.0000	0.0000	0.0000
Node89	0.0000	0.0000	0.0000	0.0000	0.0000	30090.4203	0.0000	0.0000	0.0000	214.2621
Node92	0.0000	0.0000	0.0000	0.0000	0.0000	28201.3262	0.0000	0.0000	0.0000	105.1184
Node94	0.0000	0.0000	0.0000	0.0000	0.0000	25637.5693	0.0000	0.0000	0.0000	1002.9079
Node99	0.0000	0.0000	0.0000	0.0000	0.0000	139930.5265	0.0000	0.0000	0.0000	8727.0103
Node101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1564.7018	0.0000	0.0000
Node120	0.0000	0.0000	0.0000	0.0000	0.0000	139262.8709	0.0000	0.0000	0.0000	15875.3522

```
*====================================================*
| Table E20 - Junction Flooding and Volume Listing.   |
|             The maximum volume is the total volume  |
|             in the node including the volume in the |
|             flooded storage area. This is the max   |
|             volume at any time. The volume in the   |
|             flooded storage area is the total volume|
|             above the ground elevation, where the   |
|             flooded pond storage area starts.       |
| The fourth column is instantaneous, the fifth is the|
| sum of the flooded volume over the entire simulation|
| Units are either ft^3 or m^3 depending on the units.|
*====================================================*
```

Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
Node11	0.0000	0.0000	0.0000	41.9143	0.0000
Node12	0.0000	0.0000	0.0000	23.5530	0.0000
Node20	176.1913	170.2233	0.0000	24006.7596	38275.3882
Node21	151.7121	0.0000	0.0000	66.2814	0.0000
Node22	0.0000	0.0000	0.0000	26.5995	0.0000
Node23	0.0000	0.0000	0.0000	35.6381	0.0000
Node24	39.6643	0.0000	0.0000	40.9688	0.0000
Node25	0.0000	0.0000	0.0000	32.1390	0.0000
Node26	0.0000	0.0000	0.0000	28.4192	0.0000
Node27	0.0000	0.0000	0.0000	17.3647	0.0000
Node29	0.0000	0.0000	0.0000	12.2211	0.0000
Node30	0.0000	0.0000	0.0000	19.0455	0.0000
Node31	216.8460	216.8460	0.0000	20349.4142	23027.2711
Node32	218.8544	0.0000	0.0000	67.7427	0.0000
Node33	0.0000	0.0000	0.0000	89.4608	0.0000
Node34	226.7391	0.0000	0.0000	91.9448	0.0000
Node35	224.4700	0.0000	0.0000	86.5446	0.0000
Node36	224.0851	0.0000	0.0000	75.2632	0.0000
Node37	221.7310	0.0000	0.0000	62.8937	0.0000
Node38	137.8872	0.0000	0.0000	41.1391	0.0000
Node39	0.0000	0.0000	0.0000	17.0021	0.0000
Node41	0.0000	0.0000	0.0000	6.0392	0.0000
Node43	0.0000	0.0000	0.0000	20.8048	0.0000
Node44	134.5833	0.0000	0.0000	24.9394	0.0000

Node45	0.0000	0.0000	0.0000	6.9490	0.0000
Node46	0.0000	0.0000	0.0000	12.7098	0.0000
Node47	0.0000	0.0000	0.0000	12.2222	0.0000
Node48	0.0000	0.0000	0.0000	7.4465	0.0000
Node63	0.0000	0.0000	0.0000	31.1792	0.0000
Node65	0.0000	0.0000	0.0000	53878.7870	0.0000
Node66	0.0000	0.0000	0.0000	9.6811	0.0000
Node69	0.0000	0.0000	0.0000	4.4448	0.0000
Node70	0.0000	0.0000	0.0000	6.1580	0.0000
Node71	0.0000	0.0000	0.0000	12.2138	0.0000
Node74	0.0000	0.0000	0.0000	19.7101	0.0000
Node75	0.0000	0.0000	0.0000	12.8273	0.0000
Node79	0.0000	0.0000	0.0000	25.7426	0.0000
Node80	0.0000	0.0000	0.0000	20.6496	0.0000
Node81	0.0000	0.0000	0.0000	14.3883	0.0000
Node82	0.0000	0.0000	0.0000	19.4698	0.0000
Node83	0.0000	0.0000	0.0000	3.4401	0.0000
Node84	0.0000	0.0000	0.0000	19.3634	0.0000
Node86	0.0000	0.0000	0.0000	26.4190	0.0000
Node87	0.0000	0.0000	0.0000	15.0232	0.0000
Node88	0.0000	0.0000	0.0000	4.8475	0.0000
Node89	0.0000	0.0000	0.0000	8294.1115	0.0000
Node92	140.5407	0.0000	0.0000	3710.0032	0.0000
Node94	2865.0000	0.0000	0.0000	2654.1455	0.0000
Node96	0.0000	0.0000	0.0000	5.6765	0.0000
Node99	2232.9167	0.0000	0.0000	10755.9807	0.0000
Node100	275.2435	275.2852	0.0000	13224.2896	304613.1751
Node101	278.1651	107.1161	1564.7018	35.1848	0.0000
Node103	276.1315	0.0000	0.0000	16.1391	0.0000
Node104	0.0000	0.0000	0.0000	4.2426	0.0000
Node107	0.0000	0.0000	0.0000	1.4515	0.0000
Node108	82.4735	0.0000	0.0000	20.6971	0.0000
Node109	0.0000	0.0000	0.0000	2.4492	0.0000
Node110	0.0000	0.0000	0.0000	4.2851	0.0000
Node30.1	95.4383	0.0000	0.0000	19.8719	0.0000
Node30.2	0.0000	0.0000	0.0000	3.3944	0.0000
Node30.3	0.0000	0.0000	0.0000	11.0227	0.0000
Node120	2860.0000	0.0000	0.0000	18446.3104	0.0000

```
*==================================*
| Simulation Specific Information  |
*==================================*
Number of Input Conduits..........        62 Number of Simulated Conduits......        71
Number of Natural Channels........        12 Number of Junctions...............        62
Number of Storage Junctions.......         6 Number of Weirs...................         8
Number of Orifices................         0 Number of Pumps...................         0
Number of Free Outfalls...........         1 Number of Tide Gate Outfalls......         0


*=========================================================*
| Average % Change in Junction or Conduit is defined as:  |
| Conduit  % Change ==> 100.0 ( Q(n+1) - Q(n) ) / Qfull   |
| Junction % Change ==> 100.0 ( Y(n+1) - Y(n) ) / Yfull   |
*=========================================================*

The Conduit with the largest average change was..Link93     with     0.017 percent
The Junction with the largest average change was.Node43     with     0.107 percent
The Conduit with the largest sinuosity was.......Link93     with  3095.107


*==================================================================*
| Table E21. Continuity balance at the end of the simulation       |
|            Junction Inflow, Outflow or Street Flooding           |
| Error = Inflow  + Initial Volume - Outflow - Final   Volume      |
*==================================================================*

       Inflow          Inflow       Average
       Junction   Volume,ft^3   Inflow, cfs
```

Node11	517054.2646	2.9922
Node24	112648.7496	0.6519
Node25	18168.2128	0.1051
Node30	44393.0380	0.2569
Node33	173712.0164	1.0053
Node46	169021.5880	0.9781
Node48	82421.4379	0.4770
Node63	25603.5993	0.1482
Node65	83329.4913	0.4822
Node66	51597.7131	0.2986
Node89	30392.9325	0.1759
Node92	28345.9995	0.1640
Node94	25769.0904	0.1491
Node99	139928.2086	0.8098
Node120	139312.1673	0.8062
Node47	-1.606E+06	-9.2965
Node101	-1564.7018	-0.0091

Outflow Junction	Outflow Volume,ft^3	Average Outflow, cfs
Node47	1.60643E+06	9.2965
Node101	1564.7018	0.0091

```
*====================================================*
| Initial system volume        =         0.0000 Cu Ft |
| Total system inflow volume   =   1.637760E+06 Cu Ft |
| Inflow + Initial volume      =   1.637760E+06 Cu Ft |
*====================================================*
| Total system outflow         =   1.607994E+06 Cu Ft |
| Volume left (Final volume)   =     26740.8925 Cu Ft |
| Evaporation                  =         0.0000 Cu Ft |
| Basin Infiltration           =     25924.6509 Cu Ft |
| Outflow + Final Volume       =   1.660660E+06 Cu Ft |
*====================================================*

*==============================================*
| Total Model Continuity Error                 |
| Error in Continuity, Percent =        -1.3982 |
| Error in Continuity, ft^3    =     -22899.661 |
| + Error means a continuity loss, - a gain    |
*==============================================*

#####################################################
# Table E22. Numerical Model judgement section    #
#####################################################

Overall error was (minimum of Table E18 & E21)              1.3238 percent


Worst nodal error was in node Node20           with         8.2189 percent


Of the total inflow this loss was                           1.1316 percent


Your overall continuity error was                  Great


                                                  Good Efficiency


Efficiency of the simulation                        3.04


Most Number of Non Convergences at one Node      108.
```

```
 Total Number Non Convergences at all Nodes       206.


 Total Number of Nodes with Non Convergences        8.




 ##########################################################
 # Table E23. New Basin Design Information               #
 #            Maximum Hydraulic Grade Line,              #
 #            Out Conduit Sizes and Maximum Flow         #
 ##########################################################

 A) Resize d/s Pipes based on given HGL
 B) Resize Basin based on given HGL
 C) Resize d/s Pipes and Basin based on HGL and max discharge
 D) Resize d/s pipes based on given max discharge

    Basin Name    Type    Max.HGL   Conduit         Depth   Width   Barrels   Max.Flow
                            (ft)                     (ft)    (ft)              (ft^3/s)
---------------- ------  --------- --------------- ------- ------- --------- ---------

 ===> Hydraulic model simulation ended normally.
 ===> XP-SWMM Simulation ended normally.


 ===> Your input file was named  : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Existing\ExistingConditions_10yr
2hr.DAT

 ===> Your output file was named : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Existing\ExistingConditions_10yr
2hr.out


 *==============================================================*
 |             SWMM Simulation Date and Time Summary            |
 *==============================================================*
 | Starting Date... April       6, 2015  Time...   14:39:21:63  |
 |   Ending Date... April       6, 2015  Time...   14:40: 5:15  |
 |  Elapsed Time...    0.72533 minutes or     43.52000 seconds  |
 *==============================================================*
```

```
Current Directory:   N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Stud
Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


Input File : _Drain_Study\XPSWMM model\Existing\ExistingConditions_50yr 2hr.XP

          *===============================================*
          |                    xpswmm                     |
          |     Storm and Wastewater Management Model     |
          |        Developed by XP Solutions Inc.         |
          |===============================================|
          |                                               |
          | Last Update      : Jan., 2013                 |
          | Interface Version: 2012                       |
          | Engine Version   : 12.0                       |
          | Data File Version: 12.6                       |
          |                                               |
          |                                               |
          *===============================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*====================================================*
|       Input and Output file names by Layer         |
*====================================================*

 Input File  to Layer #     1 JOT.US


 Output File to Layer #     1 JOT.US


 Input File  to Layer #     2 JOT.US


 Output File to Layer #     2 JOT.US


*==========================================================*
|   Special command line arguments in XP-SWMM2000. This    |
|   now includes program defaults. $Keywords are the program|
|   defaults.  Other Keywords are from the SWMMCOM.CFG file.|
|   or the command line or any cfg file on the command line.|
|   Examples include these in the file xpswm.bat under the  |
|   section :solve or in the windows version XPSWMM32 in the|
|   file solve.bat                                          |
|                                                           |
|   Note: the cfg file should be in the subdirectory swmxp  |
|         or defined by the set variable in the xpswm.bat   |
|         file.  Some examples of the command lines possible|
|         are shown below:                                  |
|                                                           |
|   swmmd swmmcom.cfg                                       |
|   swmmd my.cfg                                            |
|   swmmd nokeys nconv5 perv extranwq                       |
*==========================================================*

 $powerstation                        0.0000         1         2
 $perv                                0.0000         0         4
 $oldegg                              0.0000         0         7
 $as                                  0.0000         0        11
 $noflat                              0.0000         0        21
 $oldomega                            0.0000         0        24
 $oldvol                              0.0000         1        28
 $implicit                            0.0000         1        29
 $oldhot                              0.0000         1        31
 $oldscs                              0.0000         0        33
 $flood                               0.0000         1        40
 $nokeys                              0.0000         0        42
 $pzero                               0.0000         0        55
 $oldvol2                             0.0000         2        59
 $storage2                            0.0000         3        62
 $oldhot1                             0.0000         1        63
 $pumpwt                              0.0000         1        70
 $ecloss                              0.0000         1        77
 $exout                               0.0000         0        97
 $spatial = 0.90                      0.9000         5       124
 $djref = -1.0                       -0.1000         3       143
 $weirlen = 50                       50.0000         1       153
 $oldbnd                              0.0000         1       154
 $nogrelev                            0.0000         1       161
 $ncmid                               0.0000         0       164
 $new_nl_97                           0.0000         2       290
 SCSIADEPTH=ON                        0.0000         1       293
 $best97                              0.0000         1       294
 $newbound                            0.0000         1       295
 $q_tol = 0.01                        0.0001         1       316
 $new_storage                         0.0000         1       322
 $old_iteration                       0.0000         1       333
 MINLEN=5                             5.0000         1       346
 $review_elevation                    0.0000         1       383
 $use_half_volume                     0.0000         1       385
 VERT_WALLS=ON                        0.0000         1       389
 $min_ts = 1.0                        1.0000         1       407
 $design_restart = on                 0.0000         1       412
 $zero_value=1.e-05                   0.0000         1       415
 SUBCATCHMENT_RES=ON                  0.0000         1       419
 $relax_depth = on                    0.0000         1       427
 $saveallpts = on                     0.0000         1       434
 $channel_geometry=1                  0.0000         1       456

 *==========================================================*
```

```
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation.                        |
*==========================================================*

 Number of Subcatchments in the Runoff Block (NW)....    15
 Number of Channel/Pipes in the Runoff Block (NG)....     0
 Runoff Water quality constituents (NRQ)............     0
 Runoff Land Uses per Subcatchment (NLU)............     0
 Number of Elements in the Transport Block (NET).....     0
 Number of Storage Junctions in Transport (NTSE).....     0
 Number of Input Hydrographs in Transport (NTH)......     0
 Number of Elements in the Extran Block (NEE)........    71
 Number of Groundwater Subcatchments in Runoff (NGW).     0
 Number of Interface locations for all Blocks (NIE)..    71
 Number of Pumps in Extran (NEP).....................     0
 Number of Orifices in Extran (NEO)..................     0
 Number of Tide Gates/Free Outfalls in Extran (NTG)..     1
 Number of Extran Weirs (NEW)........................     8
 Number of scs hydrograph points.....................  1513
 Number of Extran printout locations (NPO)...........     0
 Number of Tide elements in Extran (NTE)............     1
 Number of Natural channels (NNC)....................    12
 Number of Storage junctions in Extran (NVSE)........     6
 Number of Time history data points in Extran(NTVAL).     0
 Number of Variable storage elements in Extran (NVST)     4
 Number of Input Hydrographs in Extran (NEH).........     0
 Number of Particle sizes in Transport Block (NPS)...     0
 Number of User defined conduits (NHW)...............    15
 Number of Connecting conduits in Extran (NECC)......    20
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............    71
 Number of Plugs in a Storage Treatment Unit.........     1


#######################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
#    Last Updated Jan., 2013 by XP Solutions          #

*==========================================================*
|          RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*==========================================================*

                    A1

###########################################
#             RUNOFF JOB CONTROL          #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                 0
 Runoff graph plot control....                                 0
 Runoff output print control..                                 0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                     60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                    60.0
 Simulation length is......                               24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ........................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..         21
 KINC   - Rainfall values(pairs) per line..         10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
```

```
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval...........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


######################################
# Rainfall input summary from Runoff #
######################################

 Total rainfall for gage #     1 is    3.8200 inches

   ############################
   #        Data Group F1     #
   # Evaporation Rate (in/day) #
   ############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################

                                                                                                  Deprs Deprs Prcnt
                                                                    Per-                         -sion -sion  Zero
      Subcatchment            Channel      Width    Area      cent  Slope  "n"   "n"  Storge Strge Deten
  Number         Name         or inlet      (ft)    (ac)     Imperv ft/ft Imprv  Perv Imprv  Perv -tion
  ====== =============== =============== ======== ========   ====== ===== ===== ===== ===== ===== =====
      1         Node89#1           Node89 200.00    5.9000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      2         Node63#1           Node63 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      3         Node11#1           Node11 1000.0    107.90      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      4         Node33#1           Node33 400.00    37.800      0.00 0.010 0.020 0.020 0.000 0.000  0.00
      5         Node46#1           Node46 600.00    30.100      0.00 0.015 0.020 0.020 0.000 0.000  0.00
      6         Node65#1           Node65 450.00    16.100      0.00 0.023 0.020 0.020 0.000 0.000  0.00
      7        Node120#1          Node120 700.00    32.000      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      8         Node99#1           Node99 700.00    32.100      0.00 0.020 0.020 0.020 0.000 0.000  0.00
      9         Node66#1           Node66 150.00    10.000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     10         Node24#1           Node24 950.00    19.700      0.00 0.040 0.020 0.020 0.000 0.000  0.00
     11         Node25#1           Node25 300.00    5.4000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     12         Node30#1           Node30 450.00    9.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     13         Node92#1           Node92 200.00    5.5000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     14         Node94#1           Node94 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     15         Node48#1           Node48 600.00    19.600      0.00 0.014 0.020 0.020 0.000 0.000  0.00

#######################################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                             #
#                     Infiltration or Time of Concentration Data                                     #
#                                                                                                    #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                  N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                      N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant               N/A                  N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                 N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                 N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula    -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)             #
#                     Rational Formula Tc Method: 1 = Constant                                       #
#                                                 2 = Friend's Equation                              #
#                                                 3 = Kinematic Wave                                 #
#                                                 4 = Alameda Method                                 #
#                                                 5 = Izzard's Formula                               #
#                                                 6 = Kerby's Equation                               #
#                                                 7 = Kirpich's Equation                             #
#                                                 8 = Bransby Williams Equation                      #
#                                                 9 = Federal Aviation Authority Equation            #
#######################################################################################################

     Subcatchment           Infl      Infl      Infl      Infl      Infl      Infl      Infl      Infl
  Number     Name            # 1       # 2       # 3       # 4       # 5       # 6       # 7       # 8
  ===============        ========= ========= ========= ========= ========= ========= ========= =========
    1         Node89#1    87.0000    0.3183  484.0000    0.2000
    2         Node63#1    87.0000    0.3617  484.0000    0.2000
    3         Node11#1    85.5000    0.6700  484.0000    0.2000
    4         Node33#1    84.7000    0.6350  484.0000    0.2000
    5         Node46#1    88.5000    0.7083  484.0000    0.2000
    6         Node65#1    87.0000    0.5283  484.0000    0.2000
    7        Node120#1    83.7000    0.7500  484.0000    0.2000
    8         Node99#1    83.7000    1.5200  484.0000    0.2000
    9         Node66#1    87.0000    0.1450  484.0000    0.2000
   10         Node24#1    89.0000    0.7383  484.0000    0.2000
   11         Node25#1    79.0000    0.6200  484.0000    0.2000
   12         Node30#1    86.0000    0.5333  484.0000    0.2000
   13         Node92#1    87.0000    0.4167  484.0000    0.2000
   14         Node94#1    87.0000    0.4167  484.0000    0.2000
   15         Node48#1    83.0000    0.5633  484.0000    0.2000


#############################################################
#     Table R3.  SUBCATCHMENT  DATA                        #
#                Rainfall and Infiltration Database Names  #
#############################################################

      Subcatchment         Gage  Infiltration        Routing
  Number         Name        No       Type              Type
  ====== =============== ======= ============ ====================
      1         Node89#1      1   SCS Method       SCS curvilinear
      2         Node63#1      1   SCS Method       SCS curvilinear
```

```
     3         Node11#1      1   SCS Method       SCS curvilinear
     4         Node33#1      1   SCS Method       SCS curvilinear
     5         Node46#1      1   SCS Method       SCS curvilinear
     6         Node65#1      1   SCS Method       SCS curvilinear
     7        Node120#1      1   SCS Method       SCS curvilinear
     8         Node99#1      1   SCS Method       SCS curvilinear
     9         Node66#1      1   SCS Method       SCS curvilinear
    10         Node24#1      1   SCS Method       SCS curvilinear
    11         Node25#1      1   SCS Method       SCS curvilinear
    12         Node30#1      1   SCS Method       SCS curvilinear
    13         Node92#1      1   SCS Method       SCS curvilinear
    14         Node94#1      1   SCS Method       SCS curvilinear
    15         Node48#1      1   SCS Method       SCS curvilinear

Total Number of Subcatchments...             15
Total Tributary Area (acres)....         341.10
Impervious Area (acres).........           0.00
Pervious Area (acres)...........         341.10
Total Width (feet)..............        7300.00
Impervious Area (%).............           0.00


 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil               11 - 3rd infil     #
 ##################################################

Column           1         2         3         4         5         6         7         8         9        10        11
Default     0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
Ratio       1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000

*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************


    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


*********************************************************
* Hydrographs will be stored for the following  15 INLETS *
*********************************************************
Node89    Node63    Node11    Node33    Node46    Node65
Node120   Node99    Node66    Node24    Node25    Node30
Node92    Node94    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



***************************************************
*  Precipitation Interface File Summary           *
*  Number of precipitation station....        1   *
***************************************************

Location Station Number
-------- --------------
       1.             1

XXX End of Header Section XXX

#########################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in Jan., 2013 by XP Solutions       #

#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
```

```
#    Last Updated Jan., 2013 by XP Solutions          #

*=========================================================*
|         RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,     |
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|  This output file can be imported into a Word Processor |
|  and printed on US letter or A4 paper using portrait    |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                         |
| Table R1  - Physical Hydrology Data                     |
| Table R2  - Infiltration data                           |
| Table R3  - Raingage and Infiltration Database Names    |
| Table R4  - Groundwater Data                            |
| Table R5  - Continuity Check for Surface Water          |
| Table R6  - Continuity Check for Channels/Pipes         |
| Table R7  - Continuity Check for Subsurface Water       |
| Table R8  - Infiltration/Inflow Continuity Check        |
| Table R9  - Summary Statistics for Subcatchments        |
| Table R10 - Sensitivity anlysis for Subcatchments       |
*=========================================================*

                    A1

###########################################
#          RUNOFF JOB CONTROL             #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                      60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                     60.0
 Simulation length is......                                24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ............................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..        21
 KINC   - Rainfall values(pairs) per line..        10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval..........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    3.8200 inches

   ##############################
   #        Data Group F1       #
   # Evaporation Rate (in/day) #
   ##############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################
```

Number	Subcatchment Name	Channel or inlet	Width (ft)	Area (ac)	Per-cent Imperv	Slope ft/ft	"n" Imprv	"n" Perv	Deprs -sion Storge	Deprs -sion Strge Perv	Prcnt Zero Deten -tion
1	Node89#1	Node89	200.00	5.9000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
2	Node63#1	Node63	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
3	Node11#1	Node11	1000.0	107.90	0.00	0.020	0.020	0.020	0.000	0.000	0.00
4	Node33#1	Node33	400.00	37.800	0.00	0.010	0.020	0.020	0.000	0.000	0.00
5	Node46#1	Node46	600.00	30.100	0.00	0.015	0.020	0.020	0.000	0.000	0.00
6	Node65#1	Node65	450.00	16.100	0.00	0.023	0.020	0.020	0.000	0.000	0.00

7	Node120#1	Node120	700.00	32.000	0.00	0.020	0.020	0.020	0.000	0.000	0.00
8	Node99#1	Node99	700.00	32.100	0.00	0.020	0.020	0.020	0.000	0.000	0.00
9	Node66#1	Node66	150.00	10.000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
10	Node24#1	Node24	950.00	19.700	0.00	0.040	0.020	0.020	0.000	0.000	0.00
11	Node25#1	Node25	300.00	5.4000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
12	Node30#1	Node30	450.00	9.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
13	Node92#1	Node92	200.00	5.5000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
14	Node94#1	Node94	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
15	Node48#1	Node48	600.00	19.600	0.00	0.014	0.020	0.020	0.000	0.000	0.00

```
##################################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                          #
#                     Infiltration or Time of Concentration Data                                  #
#                                                                                                 #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                    N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant                N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                 N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                 N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula    -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)            #
#                     Rational Formula Tc Method: 1 = Constant                                      #
#                                                 2 = Friend's Equation                             #
#                                                 3 = Kinematic Wave                                #
#                                                 4 = Alameda Method                                #
#                                                 5 = Izzard's Formula                              #
#                                                 6 = Kerby's Equation                              #
#                                                 7 = Kirpich's Equation                            #
#                                                 8 = Bransby Williams Equation                     #
#                                                 9 = Federal Aviation Authority Equation           #
##################################################################################################
```

Subcatchment Number	Name	Infl # 1	Infl # 2	Infl # 3	Infl # 4	Infl # 5	Infl # 6	Infl # 7	Infl # 8
1	Node89#1	87.0000	0.3183	484.0000	0.2000				
2	Node63#1	87.0000	0.3617	484.0000	0.2000				
3	Node11#1	85.5000	0.6700	484.0000	0.2000				
4	Node33#1	84.7000	0.6350	484.0000	0.2000				
5	Node46#1	88.5000	0.7083	484.0000	0.2000				
6	Node65#1	87.0000	0.5283	484.0000	0.2000				
7	Node120#1	83.7000	0.7500	484.0000	0.2000				
8	Node99#1	83.7000	1.5200	484.0000	0.2000				
9	Node66#1	87.0000	0.1450	484.0000	0.2000				
10	Node24#1	89.0000	0.7383	484.0000	0.2000				
11	Node25#1	79.0000	0.6200	484.0000	0.2000				
12	Node30#1	86.0000	0.5333	484.0000	0.2000				
13	Node92#1	87.0000	0.4167	484.0000	0.2000				
14	Node94#1	87.0000	0.4167	484.0000	0.2000				
15	Node48#1	83.0000	0.5633	484.0000	0.2000				

```
#############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names  #
#############################################################
```

Subcatchment Number	Name	Gage No	Infiltration Type	Routing Type
1	Node89#1	1	SCS Method	SCS curvilinear
2	Node63#1	1	SCS Method	SCS curvilinear
3	Node11#1	1	SCS Method	SCS curvilinear
4	Node33#1	1	SCS Method	SCS curvilinear
5	Node46#1	1	SCS Method	SCS curvilinear
6	Node65#1	1	SCS Method	SCS curvilinear
7	Node120#1	1	SCS Method	SCS curvilinear
8	Node99#1	1	SCS Method	SCS curvilinear
9	Node66#1	1	SCS Method	SCS curvilinear
10	Node24#1	1	SCS Method	SCS curvilinear
11	Node25#1	1	SCS Method	SCS curvilinear
12	Node30#1	1	SCS Method	SCS curvilinear
13	Node92#1	1	SCS Method	SCS curvilinear
14	Node94#1	1	SCS Method	SCS curvilinear
15	Node48#1	1	SCS Method	SCS curvilinear

```
Total Number of Subcatchments...              15
Total Tributary Area (acres)....          341.10
Impervious Area (acres).........            0.00
Pervious Area (acres)...........          341.10
Total Width (feet)..............         7300.00
Impervious Area (%).............            0.00
```

```
 ####################################################
 #          S U B C A T C H M E N T  D A T A       #
 #   Default, Ratio values for subcatchment data   #
 #   Used with the calibrate node in the runoff.   #
 # 1 - width     2 - area       3 - impervious %   #
 # 4 - slope     5 - imp "n"    6 - perv "n"       #
 # 7 - imp ds    8 - perv ds    9 - 1st infil      #
 #10 - 2nd infil               11 - 3rd infil      #
 ####################################################
```

Column	1	2	3	4	5	6	7	8	9	10	11
Default	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ratio	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

```
*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************
```

```
    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


************************************************************
* Hydrographs will be stored for the following  15 INLETS *
************************************************************
Node89    Node63    Node11    Node33    Node46    Node65
Node120   Node99    Node66    Node24    Node25    Node30
Node92    Node94    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



*****************************************************
*  Precipitation Interface File Summary             *
*  Number of precipitation station....          1   *
*****************************************************

Location Station Number
-------- --------------
       1.             1


    A1


*==========================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE               |
|  These are the more important tables in the output file.  |
|  You can use your editor to find the table numbers,       |
|  for example: search for Table E20 to check continuity.   |
|  This output file can be imported into a Word Processor   |
|  and printed on US letter or A4 paper using portrait      |
|  mode, courier font, a size of 8 pt. and margins of 0.75  |
|                                                           |
| Table E1   - Basic Conduit Data                           |
| Table E2   - Conduit Factor Data                          |
| Table E3a  - Junction Data                                |
| Table E3b  - Junction Data                                |
| Table E4   - Conduit Connectivity Data                    |
| Table E4a  - Dry Weather Flow Data                        |
| Table E4b  - Real Time Control Data                       |
| Table E5   - Junction Time Step Limitation Summary        |
| Table E5a  - Conduit Explicit Condition Summary           |
| Table E6   - Final Model Condition                        |
| Table E7   - Iteration Summary                            |
| Table E8   - Junction Time Step Limitation Summary        |
| Table E9   - Junction  Summary  Statistics                |
| Table E10  - Conduit   Summary  Statistics                |
| Table E11  - Area assumptions used in the analysis        |
| Table E12  - Mean conduit information                     |
| Table E13  - Channel losses(H) and culvert info           |
| Table E13a - Culvert Analysis Classification              |
| Table E14  - Natural Channel Overbank Flow Information    |
| Table E14a - Natural Channel Encroachment Information     |
| Table E14b - Floodplain Mapping                           |
| Table E15  - Spreadsheet Info List                        |
| Table E15a - Spreadsheet Reach List                       |
| Table E16  - New Conduit Output Section                   |
| Table E17  - Pump Operation                               |
| Table E18  - Junction Continuity Error                    |
| Table E19  - Junction Inflow & Outflow Listing            |
| Table E20  - Junction Flooding and Volume List            |
| Table E21  - Continuity balance at simulation end         |
| Table E22  - Model Judgement Section                      |
*==========================================================*

Time Control from Hydraulics Job Control
```

```
Year.........    2014 Month.......       1
Day..........       1 Hour........       0
Minute.......       0 Second......       0


Control information for simulation
----------------------------------

Integration cycles................       576
Length of integration step is......    300.00 seconds
Simulation length..................     48.00 hours
Do not create equiv. pipes(NEQUAL).         0
Use U.S. customary units for I/O...         0
Printing starts in cycle...........         1
Intermediate printout intervals of.       500 cycles
Intermediate printout intervals of.   2500.00 minutes
Summary printout intervals of......       500 cycles
Summary printout time interval of..   2500.00 minutes
Hot start file parameter (REDO)....         0
Initial time.......................      0.00 hours

Iteration variables: Flow Tolerance.   0.00010
                     Head Tolerance.   0.00050
    Minimum depth (m or ft).........   0.00001
    Underrelaxation parameter........  0.85000
    Time weighting parameter........   0.85000
    Conduit roughness factor........   1.00000
    Flow adjustment factor..........   1.00000
    Initial Condition Smoothing.....         0
    Courant Time Step Factor........   1.00000
    Default Expansion/Contraction K.   0.00000
    Default Entrance/Exit K.........   0.00000
    Routing Method..................   Dynamic Wave
Default surface area of junctions...     12.57 square feet.
Minimum Junction/Conduit Depth......   0.00001 feet.
Ponding Area Coefficient............   5000.00
Ponding Area Exponent...............    1.0000
Minimum Orifice Length..............   1000.00 feet.
NJSW input hydrograph junctions.....     0
     or user defined hydrographs....

*==========================================================*
|               Flap Gate Conduit Information              |
|               ----------------------------               |
| Positive Flap Gate - Flow only allowed from the upstream |
|                      to the downstream junction          |
| Negative Flap Gate - Flow only allowed from the          |
|                      downstream to the upstream junction |
*==========================================================*

   Conduit   Type of Flap Gate
   -------   -----------------
Link12      Positive Flap Gate

        Natural Cross-Section information for Channel Link53
        ====================================================
         Cross-Section ID (from X1 card) :     1.0 Channel sequence number :     1

  Left Overbank Length   :     33.0 ft                Maximum Elevation        :   636.86 ft.
  Main Channel Length    :     33.0 ft                Maximum Depth            :     0.50 ft.
  Right Overbank Length  :     33.0 ft                Maximum Section Area     :   1.8534 ft^2
                                                      Maximum hydraulic radius :     0.30 ft.
  Manning N :      0.025  to Station         -21.2    Max topwidth             :     6.04 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.17E+00 ft
    "    "  :      0.025  Beyond station      17.8    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :   1.8534 ft^2

        Natural Cross-Section information for Channel Link55
        ====================================================
         Cross-Section ID (from X1 card) :     2.0 Channel sequence number :     2

  Left Overbank Length   :    138.0 ft                Maximum Elevation        :   633.71 ft.
  Main Channel Length    :    138.0 ft                Maximum Depth            :     2.63 ft.
  Right Overbank Length  :    138.0 ft                Maximum Section Area     :  38.1355 ft^2
                                                      Maximum hydraulic radius :     1.14 ft.
  Manning N :      0.025  to Station         -23.6    Max topwidth             :    33.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.34E+01 ft
    "    "  :      0.025  Beyond station       9.4    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  38.1355 ft^2

        Natural Cross-Section information for Channel Link68
        ====================================================
         Cross-Section ID (from X1 card) :     3.0 Channel sequence number :     3

  Left Overbank Length   :    400.0 ft                Maximum Elevation        :   622.00 ft.
  Main Channel Length    :    400.0 ft                Maximum Depth            :     2.70 ft.
  Right Overbank Length  :    400.0 ft                Maximum Section Area     :  45.1725 ft^2
                                                      Maximum hydraulic radius :     0.46 ft.
  Manning N :      0.025  to Station         -67.2    Max topwidth             :    97.80 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 9.85E+01 ft
    "    "  :      0.025  Beyond station      30.6    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  45.1725 ft^2

        Natural Cross-Section information for Channel Link69
        ====================================================
         Cross-Section ID (from X1 card) :     4.0 Channel sequence number :     4

  Left Overbank Length   :    258.0 ft                Maximum Elevation        :   624.37 ft.
  Main Channel Length    :    260.0 ft                Maximum Depth            :     6.05 ft.
  Right Overbank Length  :    262.0 ft                Maximum Section Area     : 1075.528 ft^2
                                                      Maximum hydraulic radius :     3.57 ft.
  Manning N :      0.025  to Station        -126.4    Max topwidth             :   301.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.01E+02 ft
```

```
  "    "  :      0.025  Beyond station     174.6    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1075.528 ft^2

      Natural Cross-Section information for Channel Link70
      ====================================================
       Cross-Section ID (from X1 card) :     5.0 Channel sequence number :     5

Left Overbank Length   :    450.0 ft                Maximum Elevation        :   624.09 ft.
Main Channel Length    :    450.0 ft                Maximum Depth            :     7.76 ft.
Right Overbank Length  :    450.0 ft                Maximum Section Area     : 955.4430 ft^2
                                                    Maximum hydraulic radius :     5.13 ft.
Manning N :      0.025  to Station         -64.2    Max topwidth             :   185.50 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.86E+02 ft
  "    "  :      0.025  Beyond station     121.3    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 955.4430 ft^2

      Natural Cross-Section information for Channel Link71
      ====================================================
       Cross-Section ID (from X1 card) :     6.0 Channel sequence number :     6

Left Overbank Length   :    383.0 ft                Maximum Elevation        :   624.37 ft.
Main Channel Length    :    383.0 ft                Maximum Depth            :     8.76 ft.
Right Overbank Length  :    383.0 ft                Maximum Section Area     : 2270.844 ft^2
                                                    Maximum hydraulic radius :     7.27 ft.
Manning N :      0.025  to Station        -245.8    Max topwidth             :   311.30 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.12E+02 ft
  "    "  :      0.025  Beyond station      65.5    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 2270.844 ft^2

      Natural Cross-Section information for Channel Link73
      ====================================================
       Cross-Section ID (from X1 card) :     7.0 Channel sequence number :     7

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   613.47 ft.
Main Channel Length    :     73.0 ft                Maximum Depth            :    11.92 ft.
Right Overbank Length  :    100.0 ft                Maximum Section Area     : 1101.166 ft^2
                                                    Maximum hydraulic radius :     6.02 ft.
Manning N :      0.025  to Station         -92.8    Max topwidth             :   181.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
  "    "  :      0.025  Beyond station      88.6    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1101.166 ft^2

      Natural Cross-Section information for Channel Link74
      ====================================================
       Cross-Section ID (from X1 card) :     8.0 Channel sequence number :     8

Left Overbank Length   :    102.0 ft                Maximum Elevation        :   613.84 ft.
Main Channel Length    :    102.0 ft                Maximum Depth            :    15.95 ft.
Right Overbank Length  :    102.0 ft                Maximum Section Area     : 1003.556 ft^2
                                                    Maximum hydraulic radius :     7.52 ft.
Manning N :      0.025  to Station         -93.3    Max topwidth             :   126.70 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.33E+02 ft
  "    "  :      0.025  Beyond station      33.4    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1003.556 ft^2

      Natural Cross-Section information for Channel Link75
      ====================================================
       Cross-Section ID (from X1 card) :     9.0 Channel sequence number :     9

Left Overbank Length   :     52.0 ft                Maximum Elevation        :   612.13 ft.
Main Channel Length    :     52.0 ft                Maximum Depth            :    17.46 ft.
Right Overbank Length  :     52.0 ft                Maximum Section Area     : 1220.157 ft^2
                                                    Maximum hydraulic radius :     8.32 ft.
Manning N :      0.025  to Station         -92.5    Max topwidth             :   141.30 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.47E+02 ft
  "    "  :      0.025  Beyond station      48.8    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1220.157 ft^2

      Natural Cross-Section information for Channel Link76
      ====================================================
       Cross-Section ID (from X1 card) :    10.0 Channel sequence number :    10

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   609.77 ft.
Main Channel Length    :     40.0 ft                Maximum Depth            :    17.61 ft.
Right Overbank Length  :     40.0 ft                Maximum Section Area     : 829.0790 ft^2
                                                    Maximum hydraulic radius :     7.27 ft.
Manning N :      0.025  to Station         -46.5    Max topwidth             :   106.90 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.14E+02 ft
  "    "  :      0.025  Beyond station      60.4    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 829.0790 ft^2

      Natural Cross-Section information for Channel Link84
      ====================================================
       Cross-Section ID (from X1 card) :    11.0 Channel sequence number :    11

Left Overbank Length   :    270.0 ft                Maximum Elevation        :   618.53 ft.
Main Channel Length    :    280.0 ft                Maximum Depth            :     7.43 ft.
Right Overbank Length  :    290.0 ft                Maximum Section Area     : 222.9791 ft^2
                                                    Maximum hydraulic radius :     3.66 ft.
Manning N :      0.025  to Station         -30.6    Max topwidth             :    57.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.09E+01 ft
  "    "  :      0.025  Beyond station      26.8    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 222.9791 ft^2

      Natural Cross-Section information for Channel Link85
      ====================================================
       Cross-Section ID (from X1 card) :    12.0 Channel sequence number :    12
```

```
  Left Overbank Length   :    450.0 ft                Maximum Elevation        :   616.00 ft.
  Main Channel Length    :    470.0 ft                Maximum Depth            :    16.50 ft.
  Right Overbank Length  :    490.0 ft                Maximum Section Area     : 1074.025 ft^2
                                                      Maximum hydraulic radius :     5.87 ft.
  Manning N :      0.025  to Station         -68.1    Max topwidth             :   177.10 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
    "    "  :      0.025  Beyond station     109.0    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1074.025 ft^2
```

==========
|Table E1 - Conduit Data|
==========

Inp Num	Conduit Name	Length (ft)	Conduit Class	Area (ft^2)	Manning Coef.	Max Width (ft)	Depth (ft)	Trapezoid Side Slopes	Hazen Williams c-factor
1	Link12	312.0000	Circular	2.4053	0.0120	1.7500	1.7500		
2	Link13	311.0000	Circular	2.4053	0.0120	1.7500	1.7500		
3	Link14	341.0000	Circular	7.0686	0.0120	3.0000	3.0000		
4	Link15	322.0000	Circular	7.0686	0.0120	3.0000	3.0000		
5	Link16	631.0000	Circular	7.0686	0.0120	3.0000	3.0000		
6	Link17	51.0000	Circular	7.0686	0.0120	3.0000	3.0000		
7	Link18	462.0000	Circular	7.0686	0.0120	3.0000	3.0000		
8	Link22	39.0000	Circular	1.2272	0.0240	1.2500	1.2500		
9	Link23	312.0000	Circular	7.0686	0.0120	3.0000	3.0000		
10	Link24	74.0000	Circular	7.0686	0.0120	3.0000	3.0000		
11	Link25	305.0000	Circular	7.0686	0.0120	3.0000	3.0000		
12	Link26	308.0000	Circular	7.0686	0.0120	3.0000	3.0000		
13	Link27	324.0000	Circular	7.0686	0.0140	3.0000	3.0000		
14	Link28	327.0000	Circular	7.0686	0.0120	3.0000	3.0000		
15	Link31	60.4000	Circular	1.2272	0.0240	1.2500	1.2500		
16	Link32	400.0000	Rectangle	16.0000	0.0120	4.0000	4.0000		
17	Link33	260.0000	Rectangle	24.0000	0.0140	6.0000	4.0000		
18	Link47	54.0000	Circular	1.7671	0.0120	1.5000	1.5000		
19	Link53	33.0000	Natural	1.8534	0.0250	6.0429	0.5000		
20	Link54	250.0000	Trapezoid	1.6250	0.0400	4.0000	0.2500	10.0000	10.0000
21	Link55	138.0000	Natural	38.1355	0.0250	33.0000	2.6300		
22	Link56	610.0000	Trapezoid	19.0000	0.0400	4.0000	1.0000	15.0000	15.0000
23	Link68	400.0000	Natural	45.1725	0.0250	97.8000	2.7000		
24	Link69	260.0000	Natural	1075.5285	0.0250	301.0000	6.0500		
25	Link70	450.0000	Natural	955.4430	0.0250	185.5000	7.7600		
26	Link71	383.0000	Natural	2270.8440	0.0250	311.3000	8.7600		
27	Link72	42.0000	Circular	7.0686	0.0120	3.0000	3.0000		
28	Link73	73.0000	Natural	1101.1655	0.0250	181.4000	11.9200		
29	Link74	102.0000	Natural	1003.5558	0.0250	126.7000	15.9500		
30	Link75	52.0000	Natural	1220.1569	0.0250	141.3000	17.4600		
31	Link76	40.0000	Natural	829.0790	0.0250	106.9000	17.6100		
32	Link77	60.0000	Circular	3.1416	0.0120	2.0000	2.0000		
33	Link78	325.0000	Trapezoid	195.0000	0.0400	20.0000	3.0000	15.0000	15.0000
34	Link79	52.0000	Circular	2.4053	0.0120	1.7500	1.7500		
35	Link82	436.0000	Circular	7.0686	0.0120	3.0000	3.0000		
36	Link83	123.0000	Circular	7.0686	0.0120	3.0000	3.0000		
37	Link84	280.0000	Natural	222.9791	0.0250	57.4000	7.4310		
38	Link85	470.0000	Natural	1074.0250	0.0250	177.1000	16.5000		
39	Link86	350.0000	Trapezoid	160.0000	0.0400	8.0000	4.0000	8.0000	8.0000
40	Link87	38.0000	Circular	1.2272	0.0240	1.2500	1.2500		
41	Link93	10.0000	Trapezoid	14.0800	0.0400	80.0000	0.1600	50.0000	50.0000
42	Link95	108.0000	Trapezoid	3.0240	0.0400	8.0000	0.2800	10.0000	10.0000
43	Link103	27.0000	Circular	3.1416	0.0140	2.0000	2.0000		
44	Link104	162.0000	Circular	0.4418	0.0140	0.7500	0.7500		
45	Link105	89.0000	Circular	0.5411	0.0140	0.8300	0.8300		
46	Link107	505.0000	Trapezoid	60.0000	0.0400	20.0000	2.0000	5.0000	5.0000
47	Link108	145.0000	Trapezoid	100.0000	0.0400	30.0000	2.0000	10.0000	10.0000
48	Link109	160.0000	Trapezoid	30.0000	0.0400	20.0000	1.0000	10.0000	10.0000
49	Link118	10.0000	Trapezoid	84.0000	0.0400	30.0000	2.0000	6.0000	6.0000
50	214.1	29.0000	Circular	3.1416	0.0240	2.0000	2.0000		
51	249.1	40.8700	Circular	1.2272	0.0240	1.2500	1.2500		
52	ROAD1	82.0000	Trapezoid	3.0100	0.0140	30.0000	0.1000	1.0000	1.0000
53	272.1	32.0000	Circular	1.2272	0.0240	1.2500	1.2500		
54	283.1	40.0000	Circular	0.7854	0.0240	1.0000	1.0000		
55	Link98.1	31.0000	Circular	0.4418	0.0140	0.7500	0.7500		
56	388.1	50.0000	Circular	0.7854	0.0200	1.0000	1.0000		
57	403.1	163.5000	Circular	1.2272	0.0240	1.2500	1.2500		
58	ROAD4	129.0000	Trapezoid	3.0100	0.0140	30.0000	0.1000	1.0000	1.0000
59	405.1	81.7500	Circular	1.2272	0.0240	1.2500	1.2500		
60	ROAD3	52.0000	Trapezoid	3.0100	0.0140	30.0000	0.1000	1.0000	1.0000
61	407.1	40.8800	Circular	1.2272	0.0240	1.2500	1.2500		
62	ROAD2	67.0000	Trapezoid	3.0100	0.0140	30.0000	0.1000	1.0000	1.0000

Total length of all conduits .... 11915.4000 feet

==========
|Table E2 - Conduit Factor Data|
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Time Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
Link31	1.0000	0.0000	0.0000	0.0000	0.6500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
Link56	1.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
Link87	1.0000	0.0000	0.9500	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
214.1	2.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

==========
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length |
| in the output file all it means is that the |
| program will lower the internal time step to |
| satisfy this condition (explicit condition). |
| You control the actual internal time step by |
| using the minimum courant time step factor in the |
| HYDRAULICS job control. The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection. |

```
| You have further control by using the modify      |
| conduit option in the HYDRAULICS Job Control.     |
*===================================================*


        Conduit     Courant
           Name       Ratio
---------------   ---------
         Link12        7.22  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link13        7.24  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link14        8.65  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link15        9.16  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link16        4.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link17       57.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link18        6.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link22       48.80  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link23        9.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link24       39.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link25        9.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link26        9.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link27        9.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link28        9.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link31       31.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link32        8.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link33       13.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link47       38.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link53       28.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link54        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link55       13.26  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link56        2.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link68        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link69       12.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link70        8.59  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link71       12.00  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link72       70.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link73       57.46  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link74       46.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link75       96.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link76      119.30  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link77       40.12  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link78        6.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link79       43.31  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link82        6.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link83       23.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link84       11.98  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link85        8.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link86        7.25  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link87       50.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link93       65.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link95        7.43  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link103       89.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link104        9.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link105       17.43  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link107        4.13  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link108       14.03  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link109        9.21  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link118      212.32  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          214.1       83.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          249.1       46.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          ROAD1        6.55  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          272.1       59.48  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          283.1       42.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
       Link98.1       47.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          388.1       34.05  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          403.1       11.64  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          ROAD4        4.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          405.1       23.28  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          ROAD3       10.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          407.1       46.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          ROAD2        8.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)

*==================*
|  Conduit Volume  |
*==================*

Full pipe or full open conduit volume
Input full depth volume............    2.6768E+06 cubic feet

===> Warning !! The upstream and downstream junctions for the following conduits
                have been reversed to correspond to the positive flow and decreasing
                slope convention.  A negative flow in the output thus means
                the flow was from your original upstream junction to your original
                downstream junction.  Any initial flow has been multiplied by -1.

                1.  Conduit #...Link17      has been changed.
                2.  Conduit #...Link31      has been changed.

===> ERROR !!!  Conduit Link73           has caused ZCROWN  of Junction Node75     to lie above the specified ground elev of     614.84
611.73

===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node81     to lie above the specified ground elev of     612.64
611.30

===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.13
611.67

===> ERROR !!!  Conduit Link76           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.28
611.67


*===================================================*
|           Table E3a - Junction Data               |
*===================================================*

Inp         Junction     Ground     Crown    Invert    Qinst  Initial  Interface
Num             Name  Elevation Elevation Elevation      cfs Depth-ft   Flow (%)
```

1	Node11	623.2500	623.2500	617.2000	0.0000	0.0000	100.0000
2	Node12	624.9700	624.9700	617.2100	0.0000	0.0000	100.0000
3	Node20	637.3000	636.5500	634.8000	0.0000	0.0000	100.0000
4	Node21	639.0000	636.2000	633.1600	0.0000	0.0000	100.0000
5	Node22	639.3500	639.3500	630.1100	0.0000	0.0000	100.0000
6	Node23	635.9100	631.8600	628.8600	0.0000	0.0000	100.0000
7	Node24	635.3400	631.0300	628.0300	0.0000	0.0000	100.0000
8	Node25	634.1030	629.3500	626.3500	0.0000	0.0000	100.0000
9	Node26	634.3200	629.4200	626.4200	0.0000	0.0000	100.0000
10	Node27	635.4400	626.6900	623.6900	0.0000	0.0000	100.0000
11	Node29	620.2110	620.2110	612.7800	0.0000	0.0000	100.0000
12	Node30	631.4300	631.4300	629.8800	0.0000	0.0000	100.0000
13	Node31	627.0900	627.0900	624.3900	0.0000	0.0000	100.0000
14	Node32	636.1400	626.1400	623.0600	0.0000	0.0000	100.0000
15	Node33	619.3200	619.3200	610.5600	0.0000	0.0000	100.0000
16	Node34	618.6800	611.4300	608.4300	0.0000	0.0000	100.0000
17	Node35	621.6500	611.4000	608.4000	0.0000	0.0000	100.0000
18	Node36	633.6100	610.4000	607.4000	0.0000	0.0000	100.0000
19	Node37	632.4600	609.4600	606.4600	0.0000	0.0000	100.0000
20	Node38	626.7800	608.4500	605.4500	0.0000	0.0000	100.0000
21	Node39	611.6440	607.4400	604.4400	0.0000	0.0000	100.0000
22	Node41	633.3700	631.2200	630.2000	0.0000	0.0000	100.0000
23	Node43	638.5000	638.5000	636.4600	0.0000	0.0000	100.0000
24	Node44	637.9900	636.9900	635.7400	0.0000	0.0000	100.0000
25	Node45	637.2900	637.2900	636.0400	0.0000	0.0000	100.0000
26	Node46	608.0000	610.3500	592.7400	0.0000	0.0000	100.0000
27	Node47	610.0000	576.0000	572.0000	0.0000	0.0000	100.0000
28	Node48	618.0000	609.8000	593.3000	0.0000	0.0000	100.0000
29	Node63	633.6300	633.6300	631.0000	0.0000	0.0000	100.0000
30	Node65	642.0000	642.0000	638.0000	0.0000	0.0000	100.0000
31	Node66	634.7700	633.4700	631.9700	0.0000	0.0000	100.0000
32	Node69	638.1000	636.5000	636.0000	0.0000	0.0000	100.0000
33	Node70	636.1000	636.0600	633.4300	0.0000	0.0000	100.0000
34	Node71	624.7000	624.7000	622.0000	0.0000	0.0000	100.0000
35	Node74	625.0300	625.0300	618.9800	0.0000	0.0000	100.0000
36	Node75	611.7300	611.7200	602.9200	0.0000	0.0000	100.0000
37	Node79	624.3700	624.3700	615.6100	0.0000	0.0000	100.0000
38	Node80	613.8400	613.8400	597.8900	0.0000	0.0000	100.0000
39	Node81	611.3000	611.2900	595.1800	0.0000	0.0000	100.0000
40	Node82	611.6700	611.6600	594.6700	0.0000	0.0000	100.0000
41	Node83	642.6000	642.6000	639.6000	0.0000	0.0000	100.0000
42	Node84	639.7400	633.2900	631.5400	0.0000	0.0000	100.0000
43	Node86	621.1000	621.1000	613.4900	0.0000	0.0000	100.0000
44	Node87	622.5000	622.5000	606.0000	0.0000	0.0000	100.0000
45	Node88	626.7100	626.7100	622.7100	0.0000	0.0000	100.0000
46	Node89	639.1000	639.1000	637.1000	0.0000	0.0000	100.0000
47	Node92	636.3000	635.0600	634.9000	0.0000	0.0000	100.0000
48	Node94	635.3000	633.3000	633.3000	0.0000	0.0000	100.0000
49	Node96	630.0000	630.0000	628.0000	0.0000	0.0000	100.0000
50	Node99	639.7000	637.7000	637.7000	0.0000	0.0000	100.0000
51	Node100	634.1900	634.1900	632.3300	0.0000	0.0000	100.0000
52	Node101	634.8000	632.7500	632.0000	0.0000	0.0000	100.0000
53	Node103	634.8400	632.2700	631.4400	0.0000	0.0000	100.0000
54	Node104	633.2900	633.2900	631.2900	0.0000	0.0000	100.0000
55	Node107	633.0000	632.5000	630.5000	0.0000	0.0000	100.0000
56	Node108	633.9000	633.6000	632.2000	0.0000	0.0000	100.0000
57	Node109	634.8700	633.5000	632.5000	0.0000	0.0000	100.0000
58	Node110	634.0000	632.0000	630.0000	0.0000	0.0000	100.0000
59	Node30.1	629.1600	628.4900	627.1300	0.0000	0.0000	100.0000
60	Node30.2	630.2500	629.8100	628.4400	0.0000	0.0000	100.0000
61	Node30.3	630.7900	630.4700	629.2000	0.0000	0.0000	100.0000
62	Node120	639.6000	638.0000	638.0000	0.0000	0.0000	100.0000

==========
| Table E3b - Junction Data |
==========

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	Node11	0.0000	0.0000	F	Normal		0	0.0000
2	Node12	0.0000	0.0000	No P	Normal		0	0.0000
3	Node20	0.0000	0.0000	F	Normal		0	0.0000
4	Node21	0.0000	0.0000	F	Normal		0	0.0000
5	Node22	0.0000	0.0000		Normal		0	0.0000
6	Node23	0.0000	0.0000		Normal		0	0.0000
7	Node24	0.0000	0.0000		Normal		0	0.0000
8	Node25	0.0000	0.0000	F	Normal		0	0.0000
9	Node26	0.0000	0.0000	F	Normal		0	0.0000
10	Node27	0.0000	0.0000	F	Normal		0	0.0000
11	Node29	0.0000	0.0000	No P	Normal		0	0.0000
12	Node30	0.0000	0.0000	F	Normal		0	0.0000
13	Node31	0.0000	0.0000	F	Normal		0	0.0000
14	Node32	0.0000	0.0000	F	Normal		0	0.0000
15	Node33	0.0000	0.0000	F	Normal		0	0.0000
16	Node34	0.0000	0.0000		Normal		0	0.0000
17	Node35	0.0000	0.0000		Normal		0	0.0000
18	Node36	0.0000	0.0000		Normal		0	0.0000
19	Node37	0.0000	0.0000		Normal		0	0.0000
20	Node38	0.0000	0.0000	No P	Normal		0	0.0000
21	Node39	0.0000	0.0000		Normal		0	0.0000
22	Node41	0.0000	0.0000	No P	Normal		0	0.0000
23	Node43	0.0000	0.0000	F	Normal		0	0.0000
24	Node44	0.0000	0.0000	F	Normal		0	0.0000
25	Node45	0.0000	0.0000	No P	Normal		0	0.0000
26	Node46	0.0000	0.0000	F	Normal		0	0.0000
27	Node47	0.0000	0.0000	No P	Normal		0	0.0000
28	Node48	0.0000	0.0000	No P	Normal		0	0.0000
29	Node63	0.0000	0.0000	F	Normal		0	0.0000
30	Node65	0.0000	0.0000	F	Normal		0	0.0000
31	Node66	0.0000	0.0000	F	Normal		0	0.0000
32	Node69	0.0000	0.0000	No P	Normal		0	0.0000
33	Node70	0.0000	0.0000	F	Normal		0	0.0000
34	Node71	0.0000	0.0000	No P	Normal		0	0.0000

35	Node74	0.0000	0.0000	No	P	Normal	0	0.0000
36	Node75	0.0000	0.0000	No	P	Normal	0	0.0000
37	Node79	0.0000	0.0000	No	P	Normal	0	0.0000
38	Node80	0.0000	0.0000	No	P	Normal	0	0.0000
39	Node81	0.0000	0.0000	No	P	Normal	0	0.0000
40	Node82	0.0000	0.0000	No	P	Normal	0	0.0000
41	Node83	0.0000	0.0000	No	P	Normal	0	0.0000
42	Node84	0.0000	0.0000	No	P	Normal	0	0.0000
43	Node86	0.0000	0.0000		F	Normal	0	0.0000
44	Node87	0.0000	0.0000	No	P	Normal	0	0.0000
45	Node88	0.0000	0.0000	No	P	Normal	0	0.0000
46	Node89	0.0000	0.0000		F	Normal	0	0.0000
47	Node92	0.0000	0.0000		F	Normal	0	0.0000
48	Node94	0.0000	0.0000		F	Normal	0	0.0000
49	Node96	0.0000	0.0000	No	P	Normal	0	0.0000
50	Node99	0.0000	0.0000		F	Normal	0	0.0000
51	Node100	0.0000	0.0000		F	Normal	0	0.0000
52	Node101	0.0000	0.0000	No	P	Normal	0	0.0000
53	Node103	0.0000	0.0000	No	P	Normal	0	0.0000
54	Node104	0.0000	0.0000	No	P	Normal	0	0.0000
55	Node107	0.0000	0.0000	No	P	Normal	0	0.0000
56	Node108	0.0000	0.0000		F	Normal	0	0.0000
57	Node109	0.0000	0.0000	No	P	Normal	0	0.0000
58	Node110	0.0000	0.0000	No	P	Normal	0	0.0000
59	Node30.1	0.0000	0.0000		F	Normal	0	0.0000
60	Node30.2	0.0000	0.0000		F	Normal	0	0.0000
61	Node30.3	0.0000	0.0000		F	Normal	0	0.0000
62	Node120	0.0000	0.0000		F	Normal	0	0.0000

==========
|Table E4 - Conduit Connectivity|
==========

Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation	
1	Link12	Node20	Node21	634.8000	634.4500	No Design
2	Link13	Node21	Node84	633.1600	631.5400	No Design
3	Link14	Node22	Node23	630.1100	628.8600	No Design
4	Link15	Node23	Node24	628.8600	628.0300	No Design
5	Link16	Node24	Node25	628.0300	626.3500	No Design
6	Link17	Node26	Node25	626.4200	626.3500	No Design
7	Link18	Node26	Node27	626.4200	623.6900	No Design
8	Link22	Node31	Node32	624.3900	623.0600	No Design
9	Link23	Node33	Node34	610.5630	608.4300	No Design
10	Link24	Node34	Node35	608.4300	608.4000	No Design
11	Link25	Node35	Node36	608.4000	607.4000	No Design
12	Link26	Node36	Node37	607.4000	606.4600	No Design
13	Link27	Node37	Node38	606.4600	605.4500	No Design
14	Link28	Node38	Node39	605.4500	604.4400	No Design
15	Link31	Node45	Node44	636.0400	635.7400	No Design
16	Link32	Node46	Node47	592.7400	572.0000	No Design
17	Link33	Node48	Node47	593.3000	572.0000	No Design
18	Link47	Node66	Node24	631.9700	628.3300	No Design
19	Link53	Node45	Node69	636.0400	636.0000	No Design
20	Link54	Node69	Node70	636.0000	633.4300	No Design
21	Link55	Node70	Node63	633.4300	631.0000	No Design
22	Link56	Node41	Node71	630.2000	622.0000	No Design
23	Link68	Node71	Node74	622.0000	618.9800	No Design
24	Link69	Node74	Node11	618.9800	617.2000	No Design
25	Link70	Node12	Node79	617.2100	615.6100	No Design
26	Link71	Node79	Node33	615.6100	610.5600	No Design
27	Link72	Node39	Node75	604.4400	602.9220	No Design
28	Link73	Node75	Node80	602.9200	597.8900	No Design
29	Link74	Node80	Node81	597.8900	595.1800	No Design
30	Link75	Node81	Node82	595.1800	594.6700	No Design
31	Link76	Node82	Node46	594.6700	592.7400	No Design
32	Link77	Node65	Node83	640.0000	639.6000	No Design
33	Link78	Node83	Node22	639.6000	636.3500	No Design
34	Link79	Node84	Node22	631.5400	630.5100	No Design
35	Link82	Node27	Node86	623.6900	613.4900	No Design
36	Link83	Node86	Node29	613.4900	612.7800	No Design
37	Link84	Node29	Node87	612.7800	606.0000	No Design
38	Link85	Node87	Node48	606.0000	593.3000	No Design
39	Link86	Node88	Node86	622.7100	617.1000	No Design
40	Link87	Node32	Node88	623.0600	622.7100	No Design
41	Link93	Node92	Node100	634.9000	634.0300	No Design
42	Link95	Node96	Node32	628.0000	625.8600	No Design
43	Link103	Node104	Node107	631.2900	630.5000	No Design
44	Link104	Node101	Node103	632.0000	631.4400	No Design
45	Link105	Node103	Node104	631.4400	631.2900	No Design
46	Link107	Node110	Node96	630.0000	628.0000	No Design
47	Link108	Node107	Node110	630.5000	630.0000	No Design
48	Link109	Node109	Node110	632.5000	630.0000	No Design
49	Link118	Node89	Node43	637.1000	636.5000	No Design
50	214.1	Node11	Node12	617.7000	617.2100	No Design
51	249.1	Node30	Node30.3	629.8800	629.2200	No Design
52	ROAD1	Node30	Node30.3	631.3300	630.0000	No Design
53	272.1	Node43	Node44	636.4600	635.7400	No Design
54	283.1	Node63	Node41	631.0100	630.2200	No Design
55	Link98.1	Node100	Node101	632.3300	632.0000	No Design
56	388.1	Node108	Node109	632.6000	632.5000	No Design
57	403.1	Node30.1	Node31	627.2400	624.5900	No Design
58	ROAD4	Node30.1	Node31	628.1100	626.9900	No Design
59	405.1	Node30.2	Node30.1	628.5600	627.2400	No Design
60	ROAD3	Node30.2	Node30.1	628.4400	628.1100	No Design
61	407.1	Node30.3	Node30.2	629.2200	628.5600	No Design
62	ROAD2	Node30.3	Node30.2	630.0000	628.4400	No Design

==========
|Storage Junction Data|
==========

MAXIMUM OR PEAK OR CROWN DEPTH

STORAGE JUNCTION NUMBER OR NAME	JUNCTION TYPE	CONSTANT SURFACE AREA (FT2)	CONSTANT VOLUME (CUBIC FEET)	ELEVATION (FT)	STARTS FROM
Node65	Stage/Area	50965.2000	114339.2685	642.0000	Node Invert
Node89	Stage/Area	26136.0000	34024.4320	639.1000	Node Invert
Node92	Stage/Area	24829.2000	22012.6977	636.3000	Node Invert
Node94	Stage/Area	16552.8000	19840.6663	635.3000	Node Invert
Node99	Stage/Area	22651.2000	39303.4343	639.7000	Node Invert
Node120	Stage/Area	26571.6000	23780.4334	639.6000	Node Invert

==========
| Variable storage data for node | Node65
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	435.6000	0.0000	0.0100	0.0000
2	639.0000	1.0000	10890.0000	4501.1550	0.2500	0.1033
3	640.0000	2.0000	29185.2000	23801.9281	0.6700	0.5464
4	641.0000	3.0000	50965.2000	63374.0685	1.1700	1.4549
5	642.0000	4.0000	50965.2000	114339.2685	1.1700	2.6249

==========
| Variable storage data for node | Node89
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	637.1000	0.0000	435.6000	0.0000	0.0100	0.0000
2	637.6000	0.5000	4356.0000	1028.1711	0.1000	0.0236
3	638.1000	1.0000	26136.0000	7888.4320	0.6000	0.1811
4	639.1000	2.0000	26136.0000	34024.4320	0.6000	0.7811

==========
| Variable storage data for node | Node92
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	634.9000	0.0000	435.6000	0.0000	0.0100	0.0000
2	635.0000	0.1000	4356.0000	205.6342	0.1000	0.0047
3	635.9000	1.0000	24829.2000	12081.0177	0.5700	0.2773
4	636.3000	1.4000	24829.2000	22012.6977	0.5700	0.5053

==========
| Variable storage data for node | Node94
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	633.3000	0.0000	435.6000	0.0000	0.0100	0.0000
2	634.0000	0.7000	4791.6000	1556.7662	0.1100	0.0357
3	634.5000	1.2000	16552.8000	6598.4263	0.3800	0.1515
4	635.3000	2.0000	16552.8000	19840.6663	0.3800	0.4555

==========
| Variable storage data for node | Node99
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	637.7000	0.0000	4.3560	0.0000	0.0001	0.0000
2	637.7100	0.0100	2178.0000	7.5991	0.0500	0.0002
3	638.0000	0.3000	12196.8000	1895.3728	0.2800	0.0435
4	638.2000	0.5000	22651.2000	5326.6343	0.5200	0.1223
5	639.7000	2.0000	22651.2000	39303.4343	0.5200	0.9023

==========
| Variable storage data for node | Node120
==========

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	43.5600	0.0000	0.0010	0.0000
2	638.8000	0.8000	17424.0000	4890.2871	0.4000	0.1123
3	639.3000	1.3000	26571.6000	15808.9534	0.6100	0.3629
4	639.6000	1.6000	26571.6000	23780.4334	0.6100	0.5459

==========
| Weir Data |
==========

Weir Name	From Junction	To Junction	Type	Crest Height(ft)	Weir Top(ft)	Weir Length(ft)	Discharge Coefficient	Weir Power
Link 5	Node11	Node12	1	3.16	182.80	300.00	3.0000	1.5000
WEIR30	Node43	Node44	1	1.94	163.54	300.00	3.0000	1.5000
WEIR46	Node63	Node41	1	2.37	169.00	50.00	3.0000	1.5000
Overtop90	Node94	Node108	1	0.70	166.70	30.00	3.0000	1.5000
Link97.1	Node99	Node21	1	0.56	162.30	300.00	3.0000	1.5000
Roadway98	Node100	Node101	1	3.42	167.67	300.00	3.0000	1.5000
Link106.1.	Node108	Node109	1	1.62	167.80	300.00	3.0000	1.5000
WEIR119	Node120	Node20	1	1.30	162.00	300.00	3.0000	1.5000

==========
| FREE OUTFALL DATA (DATA GROUP I1) |
| BOUNDARY CONDITION ON DATA GROUP J1 |
==========

Outfall at Junction....Node47 has boundary condition number... 1

===> Warning !! Outfall Junction Node47 has two or more connecting conduits.

```
*==============================================*
|               Weir Outfall Data              |
|      Boundary Condition on data group J1     |
*==============================================*


*==================================================*
|        INTERNAL CONNECTIVITY INFORMATION         |
*==================================================*

         CONDUIT         JUNCTION         JUNCTION
---------------- ---------------- ----------------
          Link 5           Node11           Node12
          WEIR30           Node43           Node44
          WEIR46           Node63           Node41
       Overtop90           Node94          Node108
        Link97.1           Node99           Node21
       Roadway98          Node100          Node101
      Link106.1.          Node108          Node109
         WEIR119          Node120           Node20
        FREE # 1           Node47         BOUNDARY

*====================================================*
|        Boundary Condition Information              |
|                  Data Groups J1-J4                 |
*====================================================*

BC NUMBER..         1 has no control water surface.

*====================================================*
|             XP Note Field Summary                  |
*====================================================*



*==================================*
|   Conduit Convergence Criteria   |
*==================================*

         Conduit        Full     Conduit
            Name        Flow       Slope
-----------------  ----------  ----------
          Link12      5.7493      0.0011
          Link13     12.3889      0.0052
          Link14     43.7477      0.0037
          Link15     36.6850      0.0026
          Link16     37.2836      0.0027
          Link17     26.7696      0.0014
          Link18     55.5441      0.0059
          Link22      6.4617      0.0341
          Link23     59.7442      0.0068
          Link24     14.5486      0.0004
          Link25     41.3740      0.0033
          Link26     39.9177      0.0031
          Link27     34.5795      0.0031
          Link28     40.1573      0.0031
          Link31      2.4660      0.0050
          Link32    451.1614      0.0519
          Link33    823.3655      0.0819
          Link47     29.5450      0.0674
          Link53      1.7213      0.0012
          Link54      1.9517      0.0103
          Link55    328.6757      0.0176
          Link56     55.4504      0.0134
          Link68    138.7842      0.0075
          Link69  12349.6692      0.0068
          Link70  10078.6135      0.0036
          Link71  58179.1079      0.0132
          Link72    137.3690      0.0361
          Link73  56825.7885      0.0689
          Link74  37318.0904      0.0266
          Link75  29495.4038      0.0098
          Link76  40618.1464      0.0482
          Link77     20.0104      0.0067
          Link78   1059.8133      0.0100
          Link79     24.1586      0.0198
          Link82    110.5183      0.0234
          Link83     54.8977      0.0058
          Link84   4900.7542      0.0242
          Link85  34130.3174      0.0270
          Link86   1275.6218      0.0160
          Link87      3.3581      0.0092
          Link93     42.9074      0.0870
          Link95      5.7961      0.0198
         Link103     35.9324      0.0293
         Link104      0.9032      0.0035
         Link105      0.8264      0.0017
         Link107    182.6084      0.0040
         Link108    276.1874      0.0034
         Link109    114.8091      0.0156
         Link118   1022.0399      0.0600
           214.1     15.9283      0.0169
           249.1      4.4465      0.0161
           ROAD1      8.7308      0.0162
           272.1      5.2486      0.0225
           283.1      2.7121      0.0197
        Link98.1      1.5849      0.0106
           388.1      1.0357      0.0020
           403.1      4.4547      0.0162
           ROAD4      6.3878      0.0087
           405.1      4.4463      0.0161
           ROAD3      5.4613      0.0063
           407.1      4.4460      0.0161
```

```
          ROAD2     10.4607      0.0233

*================================*
|    Initial Model Condition     |
| Initial Time =      0.08 hours |
*================================*

      Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.00 /   617.20           Node12/   0.00 /   617.21           Node20/   0.00 /   634.80
         Node21/   0.00 /   633.16           Node22/   0.00 /   630.11           Node23/   0.00 /   628.86
         Node24/   0.00 /   628.03           Node25/   0.00 /   626.35           Node26/   0.00 /   626.42
         Node27/   0.00 /   623.69           Node29/   0.00 /   612.78           Node30/   0.00 /   629.88
         Node31/   0.00 /   624.39           Node32/   0.00 /   623.06           Node33/   0.00 /   610.56
         Node34/   0.00 /   608.43           Node35/   0.00 /   608.40           Node36/   0.00 /   607.40
         Node37/   0.00 /   606.46           Node38/   0.00 /   605.45           Node39/   0.00 /   604.44
         Node41/   0.00 /   630.20           Node43/   0.00 /   636.46           Node44/   0.00 /   635.74
         Node45/   0.00 /   636.04           Node46/   0.00 /   592.74           Node47/   0.00 /   572.00
         Node48/   0.00 /   593.30           Node63/   0.00 /   631.00           Node65/   0.00 /   638.00
         Node66/   0.00 /   631.97           Node69/   0.00 /   636.00           Node70/   0.00 /   633.43
         Node71/   0.00 /   622.00           Node74/   0.00 /   618.98           Node75/   0.00 /   602.92
         Node79/   0.00 /   615.61           Node80/   0.00 /   597.89           Node81/   0.00 /   595.18
         Node82/   0.00 /   594.67           Node83/   0.00 /   639.60           Node84/   0.00 /   631.54
         Node86/   0.00 /   613.49           Node87/   0.00 /   606.00           Node88/   0.00 /   622.71
         Node89/   0.00 /   637.10           Node92/   0.00 /   634.90           Node94/   0.00 /   633.30
         Node96/   0.00 /   628.00           Node99/   0.00 /   637.70          Node100/   0.00 /   632.33
        Node101/   0.00 /   632.00          Node103/   0.00 /   631.44          Node104/   0.00 /   631.29
        Node107/   0.00 /   630.50          Node108/   0.00 /   632.20          Node109/   0.00 /   632.50
        Node110/   0.00 /   630.00         Node30.1/   0.00 /   627.13         Node30.2/   0.00 /   628.44
       Node30.3/   0.00 /   629.20          Node120/   0.00 /   638.00

        Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
         Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link31/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link53/       0.00           Link54/       0.00           Link55/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link86/       0.00
         Link87/       0.00           Link93/       0.00           Link95/       0.00
        Link103/       0.00          Link104/       0.00          Link105/       0.00
        Link107/       0.00          Link108/       0.00          Link109/       0.00
        Link118/       0.00            214.1/       0.00            249.1/       0.00
          ROAD1/       0.00            272.1/       0.00            283.1/       0.00
       Link98.1/       0.00            388.1/       0.00            403.1/       0.00
          ROAD4/       0.00            405.1/       0.00            ROAD3/       0.00
          407.1/       0.00            ROAD2/       0.00           Link 5/       0.00
         WEIR30/       0.00           WEIR46/       0.00        Overtop90/       0.00
       Link97.1/       0.00        Roadway98/       0.00       Link106.1./       0.00
        WEIR119/       0.00         FREE # 1/       0.00

        Conduit/   Velocity
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
         Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link31/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link53/       0.00           Link54/       0.00           Link55/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link86/       0.00
         Link87/       0.00           Link93/       0.00           Link95/       0.00
        Link103/       0.00          Link104/       0.00          Link105/       0.00
        Link107/       0.00          Link108/       0.00          Link109/       0.00
        Link118/       0.00            214.1/       0.00            249.1/       0.00
          ROAD1/       0.00            272.1/       0.00            283.1/       0.00
       Link98.1/       0.00            388.1/       0.00            403.1/       0.00
          ROAD4/       0.00            405.1/       0.00            ROAD3/       0.00
          407.1/       0.00            ROAD2/       0.00

        Conduit/ Cross Sectional Area
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
         Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link31/       0.00
         Link32/       0.00           Link33/       0.00           Link47/       0.00
         Link53/       0.00           Link54/       0.00           Link55/       0.00
         Link56/       0.00           Link68/       0.00           Link69/       0.00
         Link70/       0.00           Link71/       0.00           Link72/       0.00
         Link73/       0.00           Link74/       0.00           Link75/       0.00
         Link76/       0.00           Link77/       0.00           Link78/       0.00
         Link79/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link86/       0.00
         Link87/       0.00           Link93/       0.00           Link95/       0.00
        Link103/       0.00          Link104/       0.00          Link105/       0.00
        Link107/       0.00          Link108/       0.00          Link109/       0.00
        Link118/       0.00            214.1/       0.00            249.1/       0.00
          ROAD1/       0.00            272.1/       0.00            283.1/       0.00
       Link98.1/       0.00            388.1/       0.00            403.1/       0.00
          ROAD4/       0.00            405.1/       0.00            ROAD3/       0.00
          407.1/       0.00            ROAD2/       0.00

        Conduit/ Hydraulic Radius
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
```

```
         Link24/       0.00          Link25/       0.00          Link26/       0.00
         Link27/       0.00          Link28/       0.00          Link31/       0.00
         Link32/       0.00          Link33/       0.00          Link47/       0.00
         Link53/       0.00          Link54/       0.00          Link55/       0.00
         Link56/       0.00          Link68/       0.00          Link69/       0.00
         Link70/       0.00          Link71/       0.00          Link72/       0.00
         Link73/       0.00          Link74/       0.00          Link75/       0.00
         Link76/       0.00          Link77/       0.00          Link78/       0.00
         Link79/       0.00          Link82/       0.00          Link83/       0.00
         Link84/       0.00          Link85/       0.00          Link86/       0.00
         Link87/       0.00          Link93/       0.00          Link95/       0.00
        Link103/       0.00         Link104/       0.00         Link105/       0.00
        Link107/       0.00         Link108/       0.00         Link109/       0.00
        Link118/       0.00           214.1/       0.00           249.1/       0.00
          ROAD1/       0.00           272.1/       0.00           283.1/       0.00
      Link98.1/        0.00           388.1/       0.00           403.1/       0.00
          ROAD4/       0.00           405.1/       0.00           ROAD3/       0.00
          407.1/       0.00           ROAD2/       0.00

        Conduit/ Upstream/ Downstream Elevation
         Link12/   633.16/   633.16          Link13/   631.54/   631.54          Link14/   628.86/   628.86
         Link15/   628.03/   628.03          Link16/   626.35/   626.35          Link17/   626.35/   626.35
         Link18/   623.69/   623.69          Link22/   623.06/   623.06          Link23/   608.43/   608.43
         Link24/   608.40/   608.40          Link25/   607.40/   607.40          Link26/   606.46/   606.46
         Link27/   605.45/   605.45          Link28/   604.44/   604.44          Link31/   635.74/   635.74
         Link32/   572.00/   572.00          Link33/   572.00/   572.00          Link47/   628.03/   628.03
         Link53/   636.00/   636.00          Link54/   633.43/   633.43          Link55/   631.00/   631.00
         Link56/   622.00/   622.00          Link68/   618.98/   618.98          Link69/   617.20/   617.20
         Link70/   615.61/   615.61          Link71/   610.56/   610.56          Link72/   602.92/   602.92
         Link73/   597.89/   597.89          Link74/   595.18/   595.18          Link75/   594.67/   594.67
         Link76/   592.74/   592.74          Link77/   639.60/   639.60          Link78/   630.11/   630.11
         Link79/   630.11/   630.11          Link82/   613.49/   613.49          Link83/   612.78/   612.78
         Link84/   606.00/   606.00          Link85/   593.30/   593.30          Link86/   613.49/   613.49
         Link87/   622.71/   622.71          Link93/   632.33/   632.33          Link95/   623.06/   623.06
        Link103/   630.50/   630.50         Link104/   631.44/   631.44         Link105/   631.29/   631.29
        Link107/   628.00/   628.00         Link108/   630.00/   630.00         Link109/   630.00/   630.00
        Link118/   636.46/   636.46           214.1/   617.21/   617.21           249.1/   629.20/   629.20
          ROAD1/   629.20/   629.20           272.1/   635.74/   635.74           283.1/   630.20/   630.20
      Link98.1/    632.00/   632.00           388.1/   632.50/   632.50           403.1/   624.39/   624.39
          ROAD4/   624.39/   624.39           405.1/   627.13/   627.13           ROAD3/   627.13/   627.13
          407.1/   628.44/   628.44           ROAD2/   628.44/   628.44

Cycle        500      Time         41 Hrs - 40.00 Min

      Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.50 /   617.70          Node12/   0.00 /   617.21          Node20/   0.00 /   634.80
         Node21/   0.00 /   633.16          Node22/   0.02 /   630.13          Node23/   0.02 /   628.88
         Node24/   0.02 /   628.05          Node25/   0.09 /   626.44          Node26/   0.02 /   626.44
         Node27/   0.01 /   623.70          Node29/   0.01 /   612.79          Node30/   0.00 /   629.88
         Node31/   0.00 /   624.39          Node32/   0.00 /   623.06          Node33/   0.00 /   610.56
         Node34/   0.00 /   608.43          Node35/   0.00 /   608.40          Node36/   0.00 /   607.40
         Node37/   0.00 /   606.46          Node38/   0.00 /   605.45          Node39/   0.00 /   604.44
         Node41/   0.00 /   630.20          Node43/   0.00 /   636.46          Node44/   0.30 /   636.04
         Node45/   0.00 /   636.04          Node46/   0.00 /   592.74          Node47/   0.00 /   572.00
         Node48/   0.00 /   593.30          Node63/   0.01 /   631.01          Node65/   2.02 /   640.02
         Node66/   0.00 /   631.97          Node69/   0.00 /   636.00          Node70/   0.00 /   633.43
         Node71/   0.00 /   622.00          Node74/   0.00 /   618.98          Node75/   0.00 /   602.92
         Node79/   0.00 /   615.61          Node80/   0.00 /   597.89          Node81/   0.00 /   595.18
         Node82/   0.00 /   594.67          Node83/   0.00 /   639.60          Node84/   0.00 /   631.54
         Node86/   0.02 /   613.51          Node87/   0.01 /   606.01          Node88/   0.00 /   622.71
         Node89/   0.00 /   637.10          Node92/   0.00 /   634.90          Node94/   0.50 /   633.80
         Node96/   0.00 /   628.00          Node99/   0.00 /   637.70         Node100/   0.00 /   632.33
        Node101/   0.00 /   632.00         Node103/   0.00 /   631.44         Node104/   0.00 /   631.29
        Node107/   0.00 /   630.50         Node108/   0.40 /   632.60         Node109/   0.00 /   632.50
        Node110/   0.00 /   630.00        Node30.1/   0.11 /   627.24        Node30.2/   0.00 /   628.44
       Node30.3/   0.02 /   629.22         Node120/   0.71 /   638.71

        Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
         Link12/       0.00          Link13/       0.00          Link14/       0.01*         Link15/       0.01
         Link16/       0.01*         Link17/      -0.01          Link18/       0.01          Link22/       0.00*
         Link23/       0.00          Link24/       0.00          Link25/       0.00          Link26/       0.00
         Link27/       0.00          Link28/       0.00          Link31/       0.00          Link32/       0.00*
         Link33/       0.01          Link47/       0.00*         Link53/       0.00          Link54/       0.00*
         Link55/       0.00*         Link56/       0.00*         Link68/       0.00          Link69/       0.00*
         Link70/       0.00          Link71/       0.00*         Link72/       0.00          Link73/       0.00
         Link74/       0.00          Link75/       0.00          Link76/       0.00          Link77/       0.01
         Link78/       0.01          Link79/       0.00          Link82/       0.01*         Link83/       0.01
         Link84/       0.01          Link85/       0.01          Link86/       0.00          Link87/       0.00
         Link93/       0.00*         Link95/       0.00         Link103/       0.00*        Link104/       0.00*
        Link105/       0.00         Link107/       0.00         Link108/       0.00*        Link109/       0.00*
        Link118/       0.00           214.1/       0.00*          249.1/       0.00*          ROAD1/       0.00*
          272.1/       0.00*          283.1/       0.00        Link98.1/       0.00*          388.1/       0.00
          403.1/       0.00           ROAD4/       0.00*          405.1/       0.00           ROAD3/       0.00
          407.1/       0.00*          ROAD2/       0.00*         Link 5/       0.00          WEIR30/       0.00
          WEIR46/      0.00       Overtop90/       0.00        Link97.1/       0.00       Roadway98/       0.00
     Link106.1./       0.00         WEIR119/       0.00        FREE # 1/       0.01


 *==================================================*
 | Table E5 - Junction Time Limitation Summary      |
 |             (0.10 or 0.25)* Depth * Area         |
 | Time step = ------------------------------       |
 |                  Sum of Flow                     |
 *==================================================*
 |  The time this junction was the limiting junction |
 |                 is listed in the third column.   |
 *==================================================*

         Junction     Time(.10)  Time(.25)  Time(sec)
-----------------     ---------  ---------  ---------
           Node11       47.9390   119.8475  2100.0000
           Node12       63.6373   159.0934     0.0000
           Node20        7.4755    18.6887   900.0000
           Node21        8.7964    21.9910  1200.0000
           Node22       27.6593    69.1483   300.0000
           Node23       62.3067   155.7668     0.0000
```

Node24	52.0894	130.2236	0.0000
Node25	28.7621	71.9053	0.0000
Node26	93.7239	234.3097	0.0000
Node27	199.7879	499.4697	0.0000
Node29	216.1152	540.2880	0.0000
Node30	109.0456	272.6140	0.0000
Node31	22.6030	56.5074	0.0000
Node32	6.9584	17.3961	900.0000
Node33	13.7696	34.4240	2100.0000
Node34	25.5556	63.8889	2700.0000
Node35	28.1874	70.4684	300.0000
Node36	38.3350	95.8375	300.0000
Node37	49.0682	122.6704	300.0000
Node38	61.5876	153.9689	300.0000
Node39	189.5411	473.8528	0.0000
Node41	289.2848	723.2121	0.0000
Node43	57.6170	144.0425	0.0000
Node44	207.9612	519.9030	0.0000
Node45	287.1212	717.8030	0.0000
Node46	112.1253	280.3133	0.0000
Node47	3000.0000	3000.0000	0.0000
Node48	133.7599	334.3999	0.0000
Node63	28.1003	70.2507	300.0000
Node65	75.9772	189.9430	0.0000
Node66	0.3482	0.8705	1500.0000
Node69	25.2912	63.2280	0.0000
Node70	90.8383	227.0957	0.0000
Node71	169.8055	424.5137	0.0000
Node74	18.8344	47.0861	300.0000
Node75	69.5525	173.8813	0.0000
Node79	26.5237	66.3093	600.0000
Node80	48.1098	120.2745	146400.000
Node81	148.5330	371.3325	0.0000
Node82	63.9743	159.9359	300.0000
Node83	273.9920	684.9801	0.0000
Node84	47.6749	119.1873	300.0000
Node86	15.3866	38.4665	300.0000
Node87	84.8200	212.0499	0.0000
Node88	214.2052	535.5130	0.0000
Node89	70.0434	175.1085	0.0000
Node92	2.9822	7.4555	2100.0000
Node94	92.4264	231.0660	0.0000
Node96	202.2914	505.7285	0.0000
Node99	128.0153	320.0382	0.0000
Node100	6.9525	17.3811	0.0000
Node101	1.3450	3.3625	9300.0000
Node103	103.9985	259.9963	0.0000
Node104	342.2214	855.5535	0.0000
Node107	527.6624	1319.1559	0.0000
Node108	33.8068	84.5170	0.0000
Node109	640.1560	1600.3899	0.0000
Node110	191.8865	479.7162	0.0000
Node30.1	98.0283	245.0708	0.0000
Node30.2	319.0084	797.5209	0.0000
Node30.3	35.8980	89.7451	0.0000
Node120	90.9722	227.4306	0.0000

The junction requiring the smallest time step was...Node80

```
*=========================================================*
|       Table E5a - Conduit Explicit Condition Summary     |
|       Courant   =         Conduit Length                 |
|       Time step = --------------------------------       |
|                       Velocity + sqrt(g*depth)           |
|                                                          |
|                  Conduit Implicit Condition Summary      |
|       Courant   =         Conduit Length                 |
|       Time step = --------------------------------       |
|                              Velocity                    |
*=========================================================*
|  The 3rd column is the Explicit time step times the      |
|      minimum courant time step factor                    |
|                                                          |
|  Minimum Conduit Time Step in seconds in the 4th column  |
|  in the list. Maximum possible is 10 * maximum time step |
|                                                          |
|  The 5th column is the maximum change at any time step   |
|  during the simulation. The 6th column is the wobble     |
|  value which is an indicator of the flow stability.      |
|                                                          |
|  You should use this section to find those conduits that |
|  are slowing your model down.  Use modify conduits to    |
|  alter the length of the slow conduits to make your      |
|  simulation faster, or change the conduit name to        |
|  "CHME?????" where ????? are any characters, this will   |
|  lengthen the conduit based on the model time step,      |
|  not the value listed in modify conduits.                |
*=========================================================*
```

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
Link12	16.4032	16.4032	44.6738	20.0000	-0.1496	9.8680	Normal Soln
Link13	12.0740	12.0740	29.2929	0.0000	-0.1884	4.8020	Normal Soln
Link14	17.1287	17.1287	53.2617	0.0000	0.0738	2.2634	Normal Soln
Link15	15.9611	15.9611	55.7251	0.0000	-2.8003	3.2887	Normal Soln
Link16	25.2709	25.2709	70.6246	0.0000	6.0721	3.7988	Normal Soln
Link17	2.2778	2.2778	5.1887	1985.0000	-4.6086	5.5074	Normal Soln
Link18	20.9051	20.9051	45.0567	0.0000	1.5340	2.5873	Normal Soln
Link22	2.2679	2.2679	9.6521	0.0000	0.0203	5.0154	Normal Soln
Link23	11.7434	11.7434	35.3604	0.0000	-0.1080	2.4551	Normal Soln
Link24	2.8034	2.8034	8.3829	0.0000	-0.1097	10.2762	Normal Soln
Link25	11.7668	11.7668	34.5085	0.0000	-0.1082	3.5230	Normal Soln
Link26	12.4774	12.4774	34.7540	0.0000	-0.1135	3.6749	Normal Soln
Link27	13.9436	13.9436	36.4465	0.0000	-0.0993	4.1837	Normal Soln
Link28	15.6800	15.6800	34.6810	0.0000	-0.1119	3.5323	Normal Soln
Link31	4.4806	4.4806	14.1972	110.0000	-0.1369	4.1078	Normal Soln

Link32	13.4159	13.4159	17.0601	0.0000	6.7521	0.5732	Normal Soln
Link33	9.3924	9.3924	12.1332	0.0000	0.7168	0.2678	Normal Soln
Link47	2.1952	2.1952	2.9252	15.0000	-0.1397	4.5963	Normal Soln
Link53	5.8026	5.8026	15.8799	0.0000	0.0276	5.8166	Normal Soln
Link54	56.1544	56.1544	169.9069	0.0000	-0.0117	5.1094	Normal Soln
Link55	25.1911	25.1911	78.1932	0.0000	0.0118	0.0303	Normal Soln
Link56	115.2073	115.2073	350.1663	0.0000	0.0593	0.5741	Normal Soln
Link68	54.8997	54.8997	130.5891	0.0000	0.0590	0.2306	Normal Soln
Link69	43.2984	43.2984	308.0220	0.0000	-4.7178	0.0575	Normal Soln
Link70	55.6521	55.6521	149.0862	0.0000	0.7390	0.0939	Normal Soln
Link71	24.9810	24.9810	292.2461	0.0000	15.3362	0.4598	Normal Soln
Link72	1.6270	1.6270	2.2072	340.0000	-0.1091	1.0401	Normal Soln
Link73	6.2188	6.2188	9.5743	0.0000	-0.1885	0.0025	Normal Soln
Link74	7.9364	7.9364	13.4409	0.0000	-0.1168	0.0038	Normal Soln
Link75	6.1270	6.1270	15.9044	0.0000	-0.1150	0.0048	Normal Soln
Link76	2.7086	2.7086	4.1034	315.0000	-0.1109	0.0035	Normal Soln
Link77	3.8783	3.8783	6.5264	0.0000	0.0170	1.7055	Normal Soln
Link78	67.0359	67.0359	197.0569	0.0000	0.0214	0.0372	Normal Soln
Link79	2.4952	2.4952	4.5420	0.0000	-0.2787	3.5997	Normal Soln
Link82	17.5215	17.5215	27.8816	0.0000	0.7348	1.2868	Normal Soln
Link83	5.6407	5.6407	9.7932	0.0000	0.1509	2.8863	Normal Soln
Link84	22.6537	22.6537	38.2772	0.0000	0.1871	0.0323	Normal Soln
Link85	40.4842	40.4842	70.7440	0.0000	0.0914	0.0046	Normal Soln
Link86	69.6896	69.6896	186.0897	0.0000	-0.0357	0.0129	Normal Soln
Link87	1.7936	1.7936	5.3897	0.0000	-0.1376	4.9050	Normal Soln
Link93	1.2500	1.2500	3.9555	35.0000	-460.4080	4905.988	Normal Soln
Link95	18.4005	18.4005	103.1712	0.0000	0.1100	6.9913	Normal Soln
Link103	3.0904	3.0904	4.9635	0.0000	-0.0172	0.0994	Normal Soln
Link104	12.0736	12.0736	41.3012	0.0000	-0.0123	4.2494	Normal Soln
Link105	9.0005	9.0005	25.7439	0.0000	-0.0179	4.3255	Normal Soln
Link107	101.9096	101.9096	397.0611	0.0000	0.0312	0.1450	Normal Soln
Link108	56.8230	56.8230	297.5115	0.0000	0.0079	0.0134	Normal Soln
Link109	34.8575	34.8575	94.3875	0.0000	0.0645	0.2005	Normal Soln
Link118	1.5932	1.5932	14.9806	35.0000	-0.0368	0.0456	Normal Soln
214.1	1.5347	1.5347	3.1011	25.0000	0.0671	4.7155	Normal Soln
249.1	3.3581	3.3581	8.0985	0.0000	0.0343	2.7720	Normal Soln
ROAD1	15.2869	15.2869	24.4459	0.0000	0.0390	2.9168	Normal Soln
272.1	2.6891	2.6891	9.2208	0.0000	0.0257	2.7798	Normal Soln
283.1	2.6382	2.6382	6.5340	0.0000	-0.0304	3.6125	Normal Soln
Link98.1	1.8475	1.8475	4.9927	0.0000	-0.0322	39.0453	Normal Soln
388.1	5.1098	5.1098	14.4915	0.0000	-0.0043	5.3254	Normal Soln
403.1	12.9725	12.9725	44.6487	0.0000	0.0141	3.4392	Normal Soln
ROAD4	18.7761	18.7761	61.5448	0.0000	-0.0704	26.9565	Normal Soln
405.1	9.5547	9.5547	228.1706	0.0000	-0.0004	0.3055	Normal Soln
ROAD3	8.7692	8.7692	17.7480	0.0000	0.0353	10.4068	Normal Soln
407.1	4.2880	4.2880	9.8780	0.0000	0.0127	1.7483	Normal Soln
ROAD2	11.5797	11.5797	18.0264	0.0000	0.0329	2.8623	Normal Soln

The conduit with the smallest time step limitation was..Link17
The conduit with the largest wobble was.....Link93
The conduit with the largest flow change in any
consecutive time step.....Link93

```
 ***********************************************
 *      End of time step DO-loop in Runoff      *
 ***********************************************

 Final Date (Mo/Day/Year)   =             1/ 2/2014
 Total number of time steps =                  1513
 Final Julian Date          =               2014002
 Final time of day          =                    0. seconds.
 Final time of day          =                 0.00   hours.
 Final running time         =               24.0000   hours.
 Final running time         =                1.0000    days.

 ****************************************************
 *     Extrapolation Summary for Watersheds         *
 * Explains the number of time steps and iterations *
 * used in the solution of the subcatchments.       *
 * # Steps ==> Total Number of Extrapolated Steps   *
 * # Calls ==> Total Number of OVERLND Calls        *
 ****************************************************

 Subcatchment   # Steps   # Calls Subcatchment   # Steps   # Calls
 -------------  -------  -------- -------------  -------  --------
 Node89#1             0         0 Node63#1             0         0 Node11#1             0         0
 Node33#1             0         0 Node46#1             0         0 Node65#1             0         0
 Node120#1            0         0 Node99#1             0         0 Node66#1             0         0
 Node24#1             0         0 Node25#1             0         0 Node30#1             0         0
 Node92#1             0         0 Node94#1             0         0 Node48#1             0         0


 ##########################################################
 # Rainfall input summary from Runoff Continuity Check   #
 ##########################################################

 Total rainfall read for gage #         1 is       3.8200 in
 Total rainfall duration for gage #     1 is       114.29 minutes

 ***********************************************************
 * Table R5. CONTINUITY CHECK FOR SURFACE WATER            *
 *       Any continuity error can be fixed by lowering the  *
 *       wet and transition time step. The transition time  *
 *       should not be much greater than the wet time step. *
 ***********************************************************
                                                                  Inches over
                                                     cubic feet   Total Basin
 Total Precipitation (Rain plus Snow)               4.729897E+06     3.820
 Total Infiltration                                 1.825008E+06         1.474
 Total Evaporation                                  9.826929E+03         0.008
 Surface Runoff from Watersheds                     2.899722E+06         2.342
 Total Water remaining in Surface Storage           0.000000E+00         0.000
 Infiltration over the Pervious Area...             1.825008E+06         1.474
                                   --------
 Infiltration + Evaporation +
 Surface Runoff + Snow removal +
 Water remaining in Surface Storage +
```

Water remaining in Snow Cover.....	4.734557E+06	3.824
Total Precipitation + Initial Storage.	4.729897E+06	3.820

The error in continuity is calculated as

```
**************************************
* Precipitation + Initial Snow Cover  *
*      - Infiltration -               *
*Evaporation - Snow removal -          *
*Surface Runoff from Watersheds -      *
*Water in Surface Storage -            *
*Water remaining in Snow Cover         *
*-------------------------------------*
* Precipitation + Initial Snow Cover  *
**************************************
```

Percent Continuity Error..... -0.0985

```
****************************************************
* Table R6. Continuity Check for Channel/Pipes     *
*           You should have zero continuity error  *
*           if you are not using runoff hydraulics *
****************************************************
```

	cubic feet	Inches over Total Basin
Initial Channel/Pipe Storage.....	0.000000E+00	0.000
Final Channel/Pipe Storage.....	0.000000E+00	0.000
Surface Runoff from Watersheds.....	2.899722E+06	2.342
Groundwater Subsurface Inflow or Diversion..	0.000000E+00	0.000
Evaporation Loss from Channels.....	0.000000E+00	0.000
Groundwater Flow Diverted Out of Network....	0.000000E+00	0.000
Channel/Pipe/Inlet Outflow.....	2.899722E+06	2.342
Initial Storage + Inflow.....	2.899722E+06	2.342
Final Storage + Outflow + Diverted GW.....	2.899722E+06	2.342

```
*******************************************
* Final Storage + Outflow + Evaporation  - *
* Watershed Runoff - Groundwater Inflow  - *
*     Initial Channel/Pipe Storage         *
*     ----------------------------------   *
*  Final Storage + Outflow  + Evaporation  *
*******************************************
```

Percent Continuity Error..... 0.0000

```
##################################################
# Table R9. Summary Statistics for Subcatchments #
##################################################
```

Note: Total Runoff Depth includes pervious & impervious areas.
Pervious and Impervious Runoff Depth is only the runoff from those two areas.
For catchments receiving redirected flow, this flow will only be shown if the flow is not directed directly to the outlet. Flow that is getting redirected is also listed with the original subcatchment.

Subcatchment.....	Node89#1	Node63#1	Node11#1	Node33#1	Node46#1	Node65#1
Area (acres).....	5.90000	5.00000	107.90000	37.80000	30.10000	16.10000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	3.82000	3.82000	3.82000	3.82000	3.82000	3.82000
Max Intensity (in/hr)..	6.81870	6.81870	6.81870	6.81870	6.81870	6.81870
Pervious Area						
Total Runoff Depth (in)	2.45881	2.44437	2.33714	2.26706	2.62489	2.47055
Peak Runoff Rate (cfs).	14.94302	12.21648	202.96210	70.08498	63.14458	35.36448
Total Impervious Area						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area with depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area without depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Area						
Total Runoff Depth (in)	2.45881	2.44437	2.33714	2.26706	2.62489	2.47055
Peak Runoff Rate (cfs).	14.94302	12.21648	202.96210	70.08498	63.14458	35.36448
Rational Formula						
Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node120#1	Node99#1	Node66#1	Node24#1	Node25#1	Node30#1
Area (acres).....	32.00000	32.10000	10.00000	19.70000	5.40000	9.00000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	3.82000	3.82000	3.82000	3.82000	3.82000	3.82000
Max Intensity (in/hr)..	6.81870	6.81870	6.81870	6.81870	6.81870	6.81870
Pervious Area						

Total Runoff Depth (in)	2.17964	2.18259	2.45150	2.65430	1.81127	2.38841
Peak Runoff Rate (cfs).	53.06838	36.93468	28.63904	41.26456	7.81583	18.94980

Total Impervious Area

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Impervious Area with depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Impervious Area without depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Total Area

Total Runoff Depth (in)	2.17964	2.18259	2.45150	2.65430	1.81127	2.38841
Peak Runoff Rate (cfs).	53.06838	36.93468	28.63904	41.26456	7.81583	18.94980

Rational Formula

Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node92#1	Node94#1	Node48#1
Area (acres).....	5.50000	5.00000	19.60000
Percent Impervious.....	0.00000	0.00000	0.00000
Total Rainfall (in)....	3.82000	3.82000	3.82000
Max Intensity (in/hr)..	6.81870	6.81870	6.81870

Pervious Area

Total Runoff Depth (in)	2.46199	2.46199	2.12721
Peak Runoff Rate (cfs).	13.02292	11.83902	35.27000

Total Impervious Area

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Impervious Area with depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Impervious Area without depression storage

Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000

Total Area

Total Runoff Depth (in)	2.46199	2.46199	2.12721
Peak Runoff Rate (cfs).	13.02292	11.83902	35.27000

Rational Formula

Pervious Tc. (mins)....	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000

===> Runoff simulation ended normally.

```
*==================================================*
|  Table E6. Final Model Condition                 |
|            This table is used for steady state   |
|            flow comparison and is the information|
|            saved to the hot-restart file.        |
|            Final Time =    48.083 hours         |
*==================================================*
```

Junction / Depth / Elevation ===> "*" Junction is Surcharged.

Node11/	0.50 /	617.70/	Node12/	0.00 /	617.21/	Node20/	0.00 /	634.80/
Node21/	0.00 /	633.16/	Node22/	0.01 /	630.12/	Node23/	0.02 /	628.88/
Node24/	0.02 /	628.05/	Node25/	0.09 /	626.44/	Node26/	0.01 /	626.43/
Node27/	0.01 /	623.70/	Node29/	0.01 /	612.79/	Node30/	0.00 /	629.88/
Node31/	0.00 /	624.39/	Node32/	0.00 /	623.06/	Node33/	0.00 /	610.56/
Node34/	0.00 /	608.43/	Node35/	0.00 /	608.40/	Node36/	0.00 /	607.40/
Node37/	0.00 /	606.46/	Node38/	0.00 /	605.45/	Node39/	0.00 /	604.44/
Node41/	0.00 /	630.20/	Node43/	0.00 /	636.46/	Node44/	0.30 /	636.04/
Node45/	0.00 /	636.04/	Node46/	0.00 /	592.74/	Node47/	0.00 /	572.00/
Node48/	0.00 /	593.30/	Node63/	0.01 /	631.01/	Node65/	2.02 /	640.02/
Node66/	0.00 /	631.97/	Node69/	0.00 /	636.00/	Node70/	0.00 /	633.43/
Node71/	0.00 /	622.00/	Node74/	0.00 /	618.98/	Node75/	0.00 /	602.92/
Node79/	0.00 /	615.61/	Node80/	0.00 /	597.89/	Node81/	0.00 /	595.18/
Node82/	0.00 /	594.67/	Node83/	0.00 /	639.60/	Node84/	0.00 /	631.54/
Node86/	0.01 /	613.50/	Node87/	0.01 /	606.01/	Node88/	0.00 /	622.71/
Node89/	0.00 /	637.10/	Node92/	0.00 /	634.90/	Node94/	0.46 /	633.76/

```
      Node96/   0.00 /   628.00/          Node99/   0.00 /   637.70/         Node100/   0.00 /   632.33/
     Node101/   0.00 /   632.00/         Node103/   0.00 /   631.44/         Node104/   0.00 /   631.29/
     Node107/   0.00 /   630.50/         Node108/   0.40 /   632.60/         Node109/   0.00 /   632.50/
     Node110/   0.00 /   630.00/        Node30.1/   0.11 /   627.24/        Node30.2/   0.00 /   628.44/
    Node30.3/   0.02 /   629.22/         Node120/   0.58 /   638.58/

Conduit/       Flow   ===> "*" Conduit uses the normal flow option.
      Link12/       0.00 /          Link13/       0.00 /          Link14/       0.01*/
      Link15/       0.01 /          Link16/       0.01*/          Link17/      -0.01 /
      Link18/       0.01 /          Link22/       0.00*/          Link23/       0.00 /
      Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00 /
      Link27/       0.00 /          Link28/       0.00 /          Link31/       0.00 /
      Link32/       0.00*/          Link33/       0.01 /          Link47/       0.00*/
      Link53/       0.00 /          Link54/       0.00*/          Link55/       0.00*/
      Link56/       0.00*/          Link68/       0.00 /          Link69/       0.00*/
      Link70/       0.00 /          Link71/       0.00*/          Link72/       0.00 /
      Link73/       0.00 /          Link74/       0.00 /          Link75/       0.00 /
      Link76/       0.00 /          Link77/       0.01 /          Link78/       0.01 /
      Link79/       0.00 /          Link82/       0.01*/          Link83/       0.01 /
      Link84/       0.01 /          Link85/       0.01 /          Link86/       0.00 /
      Link87/       0.00 /          Link93/       0.00*/          Link95/       0.00 /
     Link103/       0.00*/         Link104/       0.00*/         Link105/       0.00 /
     Link107/       0.00 /         Link108/       0.00*/         Link109/       0.00*/
     Link118/       0.00 /           214.1/       0.00*/           249.1/       0.00*/
       ROAD1/       0.00*/           272.1/       0.00*/           283.1/       0.00 /
    Link98.1/       0.00*/           388.1/       0.00 /           403.1/       0.00 /
       ROAD4/       0.00*/           405.1/       0.00 /           ROAD3/       0.00 /
       407.1/       0.00*/           ROAD2/       0.00*/          Link 5/       0.00 /
      WEIR30/       0.00 /          WEIR46/       0.00 /       Overtop90/       0.00 /
    Link97.1/       0.00 /       Roadway98/       0.00 /      Link106.1./       0.00 /
     WEIR119/       0.00 /        FREE # 1/       0.01 /

     Conduit/   Velocity
      Link12/       0.00 /          Link13/       0.00 /          Link14/       0.47 /
      Link15/       0.42 /          Link16/       0.29 /          Link17/      -0.09 /
      Link18/       0.51 /          Link22/       0.00 /          Link23/       0.00 /
      Link24/       0.09 /          Link25/       0.27 /          Link26/       0.24 /
      Link27/       0.22 /          Link28/       0.26 /          Link31/       0.00 /
      Link32/       0.03 /          Link33/       0.41 /          Link47/       0.00 /
      Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
      Link56/       0.00 /          Link68/       0.01 /          Link69/       0.00 /
      Link70/       0.00 /          Link71/       0.00 /          Link72/       0.00 /
      Link73/       0.01 /          Link74/       0.01 /          Link75/       0.01 /
      Link76/       0.02 /          Link77/       0.52 /          Link78/       0.07 /
      Link79/       0.00 /          Link82/       0.89 /          Link83/       0.51 /
      Link84/       0.21 /          Link85/       0.17 /          Link86/       0.01 /
      Link87/       0.13 /          Link93/       0.00 /          Link95/       0.01 /
     Link103/       0.00 /         Link104/       0.00 /         Link105/       0.00 /
     Link107/       0.00 /         Link108/       0.00 /         Link109/       0.00 /
     Link118/       0.00 /           214.1/       0.00 /           249.1/       0.00 /
       ROAD1/       0.00 /           272.1/       0.00 /           283.1/       0.00 /
    Link98.1/       0.00 /           388.1/       0.00 /           403.1/       0.00 /
       ROAD4/       0.00 /           405.1/       0.00 /           ROAD3/       0.00 /
       407.1/       0.00 /           ROAD2/       0.00 /

     Conduit/      Width
      Link12/       0.69 /          Link13/       0.69 /          Link14/       1.18 /
      Link15/       1.18 /          Link16/       1.18 /          Link17/       1.18 /
      Link18/       1.18 /          Link22/       0.49 /          Link23/       1.18 /
      Link24/       1.18 /          Link25/       1.18 /          Link26/       1.18 /
      Link27/       1.18 /          Link28/       1.18 /          Link31/       1.01 /
      Link32/       4.00 /          Link33/       6.00 /          Link47/       0.59 /
      Link53/       0.01 /          Link54/       4.00 /          Link55/       0.01 /
      Link56/       4.00 /          Link68/       0.00 /          Link69/       0.38 /
      Link70/       0.00 /          Link71/       0.01 /          Link72/       1.18 /
      Link73/       0.00 /          Link74/       0.00 /          Link75/       0.00 /
      Link76/       0.00 /          Link77/       0.78 /          Link78/      20.11 /
      Link79/       0.69 /          Link82/       1.18 /          Link83/       1.18 /
      Link84/       0.18 /          Link85/       0.09 /          Link86/       8.00 /
      Link87/       0.49 /          Link93/      80.01 /          Link95/       8.00 /
     Link103/       0.78 /         Link104/       0.29 /         Link105/       0.33 /
     Link107/      20.00 /         Link108/      30.00 /         Link109/      20.00 /
     Link118/      30.00 /           214.1/       0.78 /           249.1/       0.49 /
       ROAD1/      30.00 /           272.1/       0.55 /           283.1/       0.39 /
    Link98.1/       0.29 /           388.1/       0.39 /           403.1/       0.49 /
       ROAD4/      30.00 /           405.1/       0.49 /           ROAD3/      30.00 /
       407.1/       0.49 /           ROAD2/      30.00 /

    Junction/        EGL
      Node11/       0.50 /          Node12/       0.00 /          Node20/       0.00 /
      Node21/       1.29 /          Node22/       6.24 /          Node23/       0.02 /
      Node24/       0.02 /          Node25/       0.09 /          Node26/       0.01 /
      Node27/       0.01 /          Node29/       0.01 /          Node30/       0.00 /
      Node31/       0.20 /          Node32/       2.80 /          Node33/       0.00 /
      Node34/       0.00 /          Node35/       0.00 /          Node36/       0.00 /
      Node37/       0.00 /          Node38/       0.00 /          Node39/       0.00 /
      Node41/       0.02 /          Node43/       0.00 /          Node44/       0.30 /
      Node45/       0.00 /          Node46/       0.00 /          Node47/       0.00 /
      Node48/       0.00 /          Node63/       0.01 /          Node65/       2.02 /
      Node66/       0.00 /          Node69/       0.00 /          Node70/       0.00 /
      Node71/       0.00 /          Node74/       0.00 /          Node75/       0.00 /
      Node79/       0.00 /          Node80/       0.00 /          Node81/       0.00 /
      Node82/       0.00 /          Node83/       0.01 /          Node84/       0.00 /
      Node86/       3.61 /          Node87/       0.01 /          Node88/       0.00 /
      Node89/       0.00 /          Node92/       0.00 /          Node94/       0.46 /
      Node96/       0.00 /          Node99/       0.00 /         Node100/       0.00 /
     Node101/       0.00 /         Node103/       0.00 /         Node104/       0.00 /
     Node107/       0.00 /         Node108/       0.40 /         Node109/       0.00 /
     Node110/       0.00 /        Node30.1/       0.11 /        Node30.2/       0.00 /
    Node30.3/       0.02 /         Node120/       0.58 /

    Junction/  Freeboard
      Node11/       5.55 /          Node12/       7.76 /          Node20/       2.50 /
      Node21/       5.84 /          Node22/       9.23 /          Node23/       7.03 /
      Node24/       7.29 /          Node25/       7.67 /          Node26/       7.89 /
      Node27/      11.74 /          Node29/       7.42 /          Node30/       1.55 /
```

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  Node31/       2.70 /          Node32/      13.08 /          Node33/       8.76 /
  Node34/      10.25 /          Node35/      13.25 /          Node36/      26.21 /
  Node37/      26.00 /          Node38/      21.33 /          Node39/       7.20 /
  Node41/       3.17 /          Node43/       2.04 /          Node44/       1.95 /
  Node45/       1.25 /          Node46/      15.26 /          Node47/      38.00 /
  Node48/      24.70 /          Node63/       2.62 /          Node65/       1.98 /
  Node66/       2.80 /          Node69/       2.10 /          Node70/       2.67 /
  Node71/       2.70 /          Node74/       6.05 /          Node75/       8.81 /
  Node79/       8.76 /          Node80/      15.95 /          Node81/      16.12 /
  Node82/      17.00 /          Node83/       3.00 /          Node84/       8.20 /
  Node86/       7.60 /          Node87/      16.49 /          Node88/       4.00 /
  Node89/       2.00 /          Node92/       1.40 /          Node94/       1.54 /
  Node96/       2.00 /          Node99/       2.00 /         Node100/       1.86 /
 Node101/       2.80 /         Node103/       3.40 /         Node104/       2.00 /
 Node107/       2.50 /         Node108/       1.30 /         Node109/       2.37 /
 Node110/       4.00 /        Node30.1/       1.92 /        Node30.2/       1.81 /
Node30.3/       1.57 /         Node120/       1.02 /

Junction/ Max Volume
  Node11/      43.75 /          Node12/      39.34 /          Node20/  100271.53 /
  Node21/   13220.90 /          Node22/      87.63 /          Node23/      96.43 /
  Node24/     100.67 /          Node25/      61.59 /          Node26/      54.77 /
  Node27/      21.74 /          Node29/      14.21 /          Node30/     152.20 /
  Node31/   50223.24 /          Node32/      77.98 /          Node33/    9004.13 /
  Node34/     120.46 /          Node35/     113.88 /          Node36/      97.71 /
  Node37/      80.34 /          Node38/      50.96 /          Node39/      17.97 /
  Node41/       7.36 /          Node43/      24.85 /          Node44/    2444.20 /
  Node45/       7.67 /          Node46/      15.89 /          Node47/      15.31 /
  Node48/      10.17 /          Node63/      32.02 /          Node65/   74800.40 /
  Node66/   14790.37 /          Node69/       5.03 /          Node70/       6.78 /
  Node71/      14.28 /          Node74/      21.45 /          Node75/      13.24 /
  Node79/      59.45 /          Node80/      21.44 /          Node81/      15.06 /
  Node82/      20.09 /          Node83/       5.07 /          Node84/      73.11 /
  Node86/      33.37 /          Node87/      17.20 /          Node88/       5.08 /
  Node89/   16696.46 /          Node92/    8687.46 /          Node94/    3394.38 /
  Node96/      15.91 /          Node99/   39303.49 /         Node100/   20306.90 /
 Node101/      35.18 /         Node103/      16.14 /         Node104/       4.24 /
 Node107/       1.52 /         Node108/      20.95 /         Node109/       3.47 /
 Node110/       5.75 /        Node30.1/    1995.98 /        Node30.2/      13.22 /
Node30.3/      11.61 /         Node120/   23780.59 /

Junction/Total Fldng
  Node11/       0.00 /          Node12/       0.00 /          Node20/  131784.57 /
  Node21/   23069.95 /          Node22/       0.00 /          Node23/      11.37 /
  Node24/      16.22 /          Node25/       0.00 /          Node26/       0.00 /
  Node27/       0.00 /          Node29/       0.00 /          Node30/     191.91 /
  Node31/   55417.45 /          Node32/       0.00 /          Node33/  107060.44 /
  Node34/       0.00 /          Node35/       0.00 /          Node36/       0.00 /
  Node37/       0.00 /          Node38/       0.00 /          Node39/       0.00 /
  Node41/       0.00 /          Node43/       0.00 /          Node44/    5628.85 /
  Node45/       0.00 /          Node46/       0.00 /          Node47/       0.00 /
  Node48/       0.00 /          Node63/       0.00 /          Node65/       0.00 /
  Node66/   15537.25 /          Node69/       0.00 /          Node70/       0.00 /
  Node71/       0.00 /          Node74/       0.00 /          Node75/       0.00 /
  Node79/       0.00 /          Node80/       0.00 /          Node81/       0.00 /
  Node82/       0.00 /          Node83/       0.00 /          Node84/       0.00 /
  Node86/       0.00 /          Node87/       0.00 /          Node88/       0.00 /
  Node89/       0.00 /          Node92/       0.00 /          Node94/       0.00 /
  Node96/       0.00 /          Node99/       0.00 /         Node100/  517567.89 /
 Node101/       0.00 /         Node103/       0.00 /         Node104/       0.00 /
 Node107/       0.00 /         Node108/       0.00 /         Node109/       0.00 /
 Node110/       0.00 /        Node30.1/    3253.42 /        Node30.2/       0.00 /
Node30.3/       0.00 /         Node120/       0.00 /

 Conduit/ Cross Sectional Area
  Link12/       0.00 /          Link13/       0.00 /          Link14/       0.01 /
  Link15/       0.01 /          Link16/       0.02 /          Link17/       0.06 /
  Link18/       0.01 /          Link22/       0.00 /          Link23/       0.00 /
  Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00 /
  Link27/       0.00 /          Link28/       0.00 /          Link31/       0.20 /
  Link32/       0.00 /          Link33/       0.01 /          Link47/       0.00 /
  Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
  Link56/       0.00 /          Link68/       0.00 /          Link69/       0.10 /
  Link70/       0.00 /          Link71/       0.00 /          Link72/       0.00 /
  Link73/       0.00 /          Link74/       0.00 /          Link75/       0.00 /
  Link76/       0.00 /          Link77/       0.01 /          Link78/       0.07 /
  Link79/       0.00 /          Link82/       0.01 /          Link83/       0.01 /
  Link84/       0.03 /          Link85/       0.03 /          Link86/       0.00 /
  Link87/       0.00 /          Link93/       0.00 /          Link95/       0.00 /
 Link103/       0.00 /         Link104/       0.00 /         Link105/       0.00 /
 Link107/       0.00 /         Link108/       0.00 /         Link109/       0.00 /
 Link118/       0.00 /           214.1/       0.00 /           249.1/       0.00 /
   ROAD1/       0.00 /           272.1/       0.02 /           283.1/       0.00 /
Link98.1/       0.00 /           388.1/       0.00 /           403.1/       0.00 /
   ROAD4/       0.00 /           405.1/       0.00 /           ROAD3/       0.00 /
   407.1/       0.00 /           ROAD2/       0.00 /

 Conduit/  Final Volume
  Link12/       0.00 /          Link13/       0.00 /          Link14/       3.86 /
  Link15/       4.11 /          Link16/      11.53 /          Link17/       3.18 /
  Link18/       4.97 /          Link22/       0.00 /          Link23/       0.00 /
  Link24/       0.00 /          Link25/       0.00 /          Link26/       0.01 /
  Link27/       0.00 /          Link28/       0.00 /          Link31/      12.32 /
  Link32/       0.08 /          Link33/       3.48 /          Link47/       0.00 /
  Link53/       0.00 /          Link54/       0.03 /          Link55/       0.08 /
  Link56/       0.12 /          Link68/       0.03 /          Link69/      25.12 /
  Link70/       0.07 /          Link71/       0.55 /          Link72/       0.00 /
  Link73/       0.01 /          Link74/       0.03 /          Link75/       0.04 /
  Link76/       0.01 /          Link77/       0.58 /          Link78/      24.15 /
  Link79/       0.00 /          Link82/       2.69 /          Link83/       1.32 /
  Link84/       7.33 /          Link85/      14.91 /          Link86/       0.33 /
  Link87/       0.00 /          Link93/       0.00 /          Link95/       0.06 /
 Link103/       0.00 /         Link104/       0.00 /         Link105/       0.00 /
 Link107/       0.49 /         Link108/       0.02 /         Link109/       0.02 /
 Link118/       0.00 /           214.1/       0.00 /           249.1/       0.00 /
   ROAD1/       0.00 /           272.1/       0.73 /           283.1/       0.00 /
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      Link98.1/       0.00 /           388.1/       0.00 /           403.1/       0.00 /
         ROAD4/       0.00 /           405.1/       0.00 /           ROAD3/       0.00 /
         407.1/       0.00 /           ROAD2/       0.00 /

       Conduit/ Hydraulic Radius
        Link12/       0.00 /          Link13/       0.00 /          Link14/       0.02 /
        Link15/       0.02 /          Link16/       0.02 /          Link17/       0.05 /
        Link18/       0.02 /          Link22/       0.00 /          Link23/       0.01 /
        Link24/       0.01 /          Link25/       0.01 /          Link26/       0.01 /
        Link27/       0.01 /          Link28/       0.01 /          Link31/       0.16 /
        Link32/       0.00 /          Link33/       0.00 /          Link47/       0.00 /
        Link53/       0.00 /          Link54/       0.00 /          Link55/       0.00 /
        Link56/       0.00 /          Link68/       0.00 /          Link69/       0.02 /
        Link70/       0.00 /          Link71/       0.00 /          Link72/       0.01 /
        Link73/       0.00 /          Link74/       0.00 /          Link75/       0.00 /
        Link76/       0.00 /          Link77/       0.02 /          Link78/       0.00 /
        Link79/       0.00 /          Link82/       0.01 /          Link83/       0.02 /
        Link84/       0.00 /          Link85/       0.00 /          Link86/       0.00 /
        Link87/       0.00 /          Link93/       0.00 /          Link95/       0.00 /
       Link103/       0.00 /         Link104/       0.00 /         Link105/       0.00 /
       Link107/       0.00 /         Link108/       0.00 /         Link109/       0.00 /
       Link118/       0.00 /           214.1/       0.01 /           249.1/       0.00 /
         ROAD1/       0.00 /           272.1/       0.02 /           283.1/       0.00 /
      Link98.1/       0.00 /           388.1/       0.00 /           403.1/       0.00 /
         ROAD4/       0.00 /           405.1/       0.00 /           ROAD3/       0.00 /
         407.1/       0.00 /           ROAD2/       0.00 /

       Conduit/ Upstream/ Downstream Elevation
        Link12/   634.80/   634.45          Link13/   633.16/   631.54          Link14/   630.12/   628.88/
        Link15/   628.88/   628.05          Link16/   628.05/   626.44          Link17/   626.43/   626.44/
        Link18/   626.43/   623.70          Link22/   624.39/   623.06          Link23/   610.56/   608.43/
        Link24/   608.43/   608.40          Link25/   608.40/   607.40          Link26/   607.40/   606.46/
        Link27/   606.46/   605.45          Link28/   605.45/   604.44          Link31/   636.04/   636.04/
        Link32/   592.74/   572.00          Link33/   593.30/   572.00          Link47/   628.05/   628.05/
        Link53/   636.04/   636.00          Link54/   636.00/   633.43          Link55/   633.43/   631.01/
        Link56/   630.20/   622.00          Link68/   622.00/   618.98          Link69/   618.98/   617.70/
        Link70/   617.21/   615.61          Link71/   615.61/   610.56          Link72/   604.44/   602.92/
        Link73/   602.92/   597.89          Link74/   597.89/   595.18          Link75/   595.18/   594.67/
        Link76/   594.67/   592.74          Link77/   640.02/   639.60          Link78/   639.60/   636.35/
        Link79/   631.54/   630.51          Link82/   623.70/   613.50          Link83/   613.50/   612.79/
        Link84/   612.79/   606.01          Link85/   606.01/   593.30          Link86/   622.71/   617.10/
        Link87/   623.06/   622.71          Link93/   632.33/   632.33          Link95/   628.00/   625.86/
       Link103/   630.50/   630.50         Link104/   632.00/   631.44         Link105/   631.44/   631.29/
       Link107/   630.00/   628.00         Link108/   630.50/   630.00         Link109/   632.50/   630.00/
       Link118/   636.46/   636.46           214.1/   617.70/   617.21           249.1/   629.22/   629.22/
         ROAD1/   629.22/   629.22           272.1/   636.46/   636.04           283.1/   631.01/   630.22/
      Link98.1/   632.00/   632.00           388.1/   632.50/   632.50           403.1/   627.24/   624.59/
         ROAD4/   624.39/   624.39           405.1/   628.44/   627.24           ROAD3/   627.24/   627.24/
         407.1/   628.44/   628.44           ROAD2/   628.44/   628.44


*=======================================================*
|         Table E7 -  Iteration Summary                 |
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Total number of time steps simulated...........        576
Total number of passes in the simulation........      36146
Total number of time steps during simulation....      22933
Ratio of actual # of time steps / NTCYC.........     39.814
Average number of iterations per time step......      1.576
Average  time step size(seconds)................      7.535
Smallest time step size(seconds)................      1.000
Largest  time step size(seconds)................    300.000
Average minimum Conduit Courant time step (sec).     20.792
Average minimum implicit time step (sec)........      7.719
Average minimum junction time step (sec)........      7.719
Average Courant Factor Tf.......................      7.719
Number of times omega reduced...................      23780


*=======================================================*
|     Table E8 - Junction Time Step Limitation Summary  |
*=======================================================*
|   Not Convr = Number of times this junction did not   |
|               converge during the simulation.         |
|   Avg Convr = Average junction iterations.            |
|   Conv err  = Mean convergence error.                 |
|   Omega Cng = Change of omega during iterations       |
|   Max Itern = Maximum number of iterations            |
*=======================================================*
```

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
Node11	0	2.20	50515	11	138	23	8	4
Node12	0	2.35	53779	1	7	0	0	0
Node20	0	3.55	81471	1936	52	2281	1	1
Node21	0	3.46	79410	5231	43	2033	2	1
Node22	1	25.96	595354	1845	501	1817	1776	1710
Node23	0	1.80	41231	21	500	19	14	12
Node24	1	1.92	44117	32	501	31	14	10
Node25	0	1.44	33016	7	36	7	2	0
Node26	0	1.46	33473	4	24	4	0	0
Node27	0	1.49	34243	2	31	3	1	0
Node29	0	1.40	32156	0	7	0	0	0
Node30	0	1.48	33832	10	60	4	3	2
Node31	0	2.59	59510	40	133	10	2	1
Node32	0	1.91	43778	17	137	5	2	1
Node33	2	2.58	59182	13	501	70	24	6
Node34	7	2.05	47027	36	501	34	32	32
Node35	0	1.46	33556	2	340	3	1	1
Node36	0	1.35	30965	0	6	0	0	0
Node37	0	1.38	31543	2	499	2	2	2
Node38	0	1.30	29892	1	488	1	1	1
Node39	0	10.46	239935	616	494	604	597	592
Node41	0	3.00	68800	81	492	82	81	81
Node43	0	2.51	57507	1528	58	48	3	2
Node44	0	1.38	31711	4	9	0	0	0

Node45	0	1.31	30053	2	488	2	2	1
Node46	0	1.29	29557	1	18	1	0	0
Node47	0	1.59	36366	2	60	3	1	1
Node48	0	1.51	34629	1	11	1	0	0
Node63	0	2.13	48859	56	491	63	54	53
Node65	0	1.46	33520	0	5	0	0	0
Node66	1	1.36	31199	44	501	21	6	5
Node69	0	1.29	29529	0	7	0	0	0
Node70	0	1.29	29563	0	6	0	0	0
Node71	0	1.44	32937	1	26	1	1	0
Node74	0	1.70	39084	2	50	22	6	3
Node75	0	6.71	153938	374	495	344	337	337
Node79	0	3.18	72950	35	40	77	31	1
Node80	0	1.26	28848	14	7	0	0	0
Node81	0	1.37	31405	47	8	0	0	0
Node82	0	1.27	29175	21	29	1	1	0
Node83	0	1.68	38444	0	5	0	0	0
Node84	2	23.37	535929	1502	501	1491	1485	1478
Node86	0	1.50	34329	1	26	1	1	0
Node87	0	1.45	33304	0	19	1	0	0
Node88	0	1.27	29104	0	7	0	0	0
Node89	0	2.17	49667	9	488	1	1	1
Node92	0	3.65	83759	2018	45	1167	178	95
Node94	0	1.00	22933	0	1	0	0	0
Node96	0	2.12	48514	0	6	0	0	0
Node99	0	2.53	57922	2816	26	1100	128	0
Node100	0	4.86	111547	1544	184	1430	437	272
Node101	0	1.44	33132	1	500	2	2	2
Node103	0	1.13	25811	0	6	0	0	0
Node104	0	1.12	25688	0	6	0	0	0
Node107	0	1.15	26436	0	7	0	0	0
Node108	0	1.52	34906	1	110	13	2	1
Node109	0	1.46	33592	0	95	2	1	1
Node110	0	1.55	35465	0	23	1	0	0
Node30.1	0	2.96	67857	1	26	9	1	0
Node30.2	0	2.51	57581	0	10	1	0	0
Node30.3	3	1.76	40378	2	501	6	3	3
Node120	0	3.09	70941	3845	17	2155	0	0

Total number of iterations for all junctions.. 4034854

Minimum number of possible iterations..... 1421846

Efficiency of the simulation..... 2.84

Good Efficiency

```
*=========================================================*
| Extran Efficiency is an indicator of the efficiency of  |
| the simulation.  Ideal efficiency is one iteration per  |
| time step.  Altering the underrelaxation parameter,     |
| lowering the time step, increasing the flow and head    |
| tolerance are good ways of improving the efficiency,    |
| another is lowering the internal time step. The lower the|
| efficiency generally the faster your model will run.    |
| If your efficiency is less than 1.5 then you may try    |
| increasing your time step so that your overall simulation|
| is faster.  Ideal efficiency would be around 2.0        |
|                                                         |
| Good Efficiency      < 1.5           mean iterations    |
| Excellent Efficiency < 2.5 and > 1.5 mean iterations    |
| Good      Efficiency < 4.0 and > 2.5 mean iterations    |
| Fair      Efficiency < 7.5 and > 4.0 mean iterations    |
| Poor Efficiency      > 7.5           mean iterations    |
*=========================================================*
```

```
*=====================================================*
|        Table E9 - JUNCTION SUMMARY STATISTICS       |
| The Maximum area is only the area of the node, it   |
| does not include the area of the surrounding conduits|
*=====================================================*
```

Junction Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr.	Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Maximum Gutter Depth feet	Maximum Gutter Width feet	Maximum Gutter Velocity ft/s
Node11	623.2500	623.2500	620.6814	1	8	0.0000	2.5686	12.5660	0.0000	0.0000	0.0000
Node12	624.9700	624.9700	620.3405	2	35	0.0000	4.6295	12.5660	0.0000	0.0000	0.0000
Node20	637.3000	636.5500	640.3468	3	4	3.7968	0.0000	105240.12	0.0000	0.0000	0.0000
Node21	639.0000	636.2000	640.2891	2	47	4.0891	0.0000	18147.518	0.0000	0.0000	0.0000
Node22	639.3500	639.3500	637.0838	1	36	0.0000	2.2662	12.5660	0.0000	0.0000	0.0000
Node23	635.9100	631.8600	636.5337	1	33	4.6737	0.0000	12.5660	0.0000	0.0000	0.0000
Node24	635.3400	631.0300	636.0414	1	30	5.0114	0.0000	12.5660	0.0000	0.0000	0.0000
Node25	634.1030	629.3500	631.2506	1	25	1.9006	2.8524	12.5660	0.0000	0.0000	0.0000
Node26	634.3200	629.4200	630.7784	1	25	1.3584	3.5416	12.5660	0.0000	0.0000	0.0000
Node27	635.4400	626.6900	625.4198	1	25	0.0000	10.0202	12.5660	0.0000	0.0000	0.0000
Node29	620.2110	620.2110	613.9106	1	26	0.0000	6.3004	12.5660	0.0000	0.0000	0.0000
Node30	631.4300	631.4300	631.4562	1	0	0.0262	0.0000	5132.7190	0.0000	0.0000	0.0000
Node31	627.0900	627.0900	629.4913	2	31	2.4013	0.0000	55189.311	0.0000	0.0000	0.0000
Node32	636.1400	626.1400	629.2656	1	46	3.1256	6.8744	12.5660	0.0000	0.0000	0.0000
Node33	619.3200	619.3200	620.3420	2	35	1.0220	0.0000	13894.052	0.0000	0.0000	0.0000
Node34	618.6800	611.4300	618.0165	2	35	6.5865	0.6635	12.5660	0.0000	0.0000	0.0000
Node35	621.6500	611.4000	617.4627	2	35	6.0627	4.1873	12.5660	0.0000	0.0000	0.0000
Node36	633.6100	610.4000	615.1758	2	35	4.7758	18.4342	12.5660	0.0000	0.0000	0.0000
Node37	632.4600	609.4600	612.8534	2	35	3.3934	19.6066	12.5660	0.0000	0.0000	0.0000
Node38	626.7800	608.4500	609.5054	2	35	1.0554	17.2746	12.5660	0.0000	0.0000	0.0000

Node39	611.6440	607.4400	605.8702	2	35	0.0000	5.7738	12.5660	0.0000	0.0000	0.0000
Node41	633.3700	631.2200	630.7857	0	52	0.0000	2.5843	12.5660	0.0000	0.0000	0.0000
Node43	638.5000	638.5000	638.4374	1	6	0.0000	0.0626	12.5660	0.0000	0.0000	0.0000
Node44	637.9900	636.9900	638.3842	1	32	1.3942	0.0000	7415.9226	0.0000	0.0000	0.0000
Node45	637.2900	637.2900	636.6503	1	30	0.0000	0.6397	12.5660	0.0000	0.0000	0.0000
Node46	608.0000	610.3500	594.0045	1	11	0.0000	13.9955	12.5660	0.0000	0.0000	0.0000
Node47	610.0000	576.0000	573.2186	1	11	0.0000	36.7814	12.5660	0.0000	0.0000	0.0000
Node48	618.0000	609.8000	594.1094	1	9	0.0000	23.8906	12.5660	0.0000	0.0000	0.0000
Node63	633.6300	633.6300	633.5479	0	50	0.0000	0.0821	12.5660	0.0000	0.0000	0.0000
Node65	642.0000	642.0000	641.2242	1	36	0.0000	0.7758	50965.200	0.0000	0.0000	0.0000
Node66	634.7700	633.4700	636.1440	1	39	2.6740	0.0000	19755.184	0.0000	0.0000	0.0000
Node69	638.1000	636.5000	636.4001	1	34	0.0000	1.6999	12.5660	0.0000	0.0000	0.0000
Node70	636.1000	636.0600	633.9697	1	35	0.0000	2.1303	12.5660	0.0000	0.0000	0.0000
Node71	624.7000	624.7000	623.1362	0	54	0.0000	1.5638	12.5660	0.0000	0.0000	0.0000
Node74	625.0300	625.0300	620.6869	1	7	0.0000	4.3431	12.5660	0.0000	0.0000	0.0000
Node75	611.7300	611.7200	603.9740	2	36	0.0000	7.7560	12.5660	0.0000	0.0000	0.0000
Node79	624.3700	624.3700	620.3414	2	34	0.0000	4.0286	12.5660	0.0000	0.0000	0.0000
Node80	613.8400	613.8400	599.5964	2	34	0.0000	14.2436	12.5660	0.0000	0.0000	0.0000
Node81	611.3000	611.2900	596.3783	2	45	0.0000	14.9217	12.5660	0.0000	0.0000	0.0000
Node82	611.6700	611.6600	596.2687	2	51	0.0000	15.4013	12.5660	0.0000	0.0000	0.0000
Node83	642.6000	642.6000	640.0034	2	4	0.0000	2.5966	12.5660	0.0000	0.0000	0.0000
Node84	639.7400	633.2900	637.3578	1	39	4.0678	2.3822	12.5660	0.0000	0.0000	0.0000
Node86	621.1000	621.1000	616.1457	1	25	0.0000	4.9543	12.5660	0.0000	0.0000	0.0000
Node87	622.5000	622.5000	607.3690	1	34	0.0000	15.1310	12.5660	0.0000	0.0000	0.0000
Node88	626.7100	626.7100	623.1139	1	49	0.0000	3.5961	12.5660	0.0000	0.0000	0.0000
Node89	639.1000	639.1000	638.4370	1	6	0.0000	0.6630	26136.000	0.0000	0.0000	0.0000
Node92	636.3000	635.0600	635.7493	2	19	0.6893	0.5507	20226.040	0.0000	0.0000	0.0000
Node94	635.3000	633.3000	634.2553	0	53	0.9553	1.0447	9913.1433	0.0000	0.0000	0.0000
Node96	630.0000	630.0000	629.2659	1	45	0.0000	0.7341	12.5660	0.0000	0.0000	0.0000
Node99	639.7000	637.7000	640.2914	2	47	2.5914	0.0000	22651.200	0.0000	0.0000	0.0000
Node100	634.1900	634.1900	635.8107	1	25	1.6207	0.0000	25283.524	0.0000	0.0000	0.0000
Node101	634.8000	632.7500	634.8000	0	51	2.0500	0.0000	12.5660	0.0000	0.0000	0.0000
Node103	634.8400	632.2700	632.7245	1	2	0.4545	2.1155	12.5660	0.0000	0.0000	0.0000
Node104	633.2900	633.2900	631.6276	1	30	0.0000	1.6624	12.5660	0.0000	0.0000	0.0000
Node107	633.0000	632.5000	630.6208	1	2	0.0000	2.3792	12.5660	0.0000	0.0000	0.0000
Node108	633.9000	633.6000	633.8669	0	54	0.2669	0.0331	12.5660	0.0000	0.0000	0.0000
Node109	634.8700	633.5000	632.7765	1	57	0.0000	2.0935	12.5660	0.0000	0.0000	0.0000
Node110	634.0000	632.0000	630.4576	1	58	0.0000	3.5424	12.5660	0.0000	0.0000	0.0000
Node30.1	629.1600	628.4900	629.4922	2	29	1.0022	0.0000	6970.4731	0.0000	0.0000	0.0000
Node30.2	630.2500	629.8100	629.4922	2	29	0.0000	0.7578	12.5660	0.0000	0.0000	0.0000
Node30.3	630.7900	630.4700	630.1240	1	0	0.0000	0.6660	12.5660	0.0000	0.0000	0.0000
Node120	639.6000	638.0000	640.3472	3	4	2.3472	0.0000	26571.600	0.0000	0.0000	0.0000

```
*====================================================*
|        Table E10 - CONDUIT SUMMARY STATISTICS      |
| Note: The peak flow may be less than the design flow |
| and the conduit may still surcharge because of the |
| downstream boundary conditions.                    |
|                                                    |
| * denotes an open conduit that has been overtopped |
|   this is a potential source of severe errors      |
*====================================================*
```

Conduit Name	Design Flow (cfs)	Conduit Design Velocity (ft/s)	Maximum Vertical Depth (in)	Maximum Computed Flow (cfs)	Time of Occurence Hr.	Time of Occurence Min.	Maximum Computed Velocity (ft/s)	Time of Occurence Hr.	Time of Occurence Min.	Ratio of Max. to Design Flow	Maximum Water Elev at Pipe Ends Upstream (ft)	Maximum Water Elev at Pipe Ends Dwnstrm (ft)	Ratio d/D US	Ratio d/D DS	
Link12	5.7493	2.3903	21.0000	17.1646	6	21	7.0805	6	21	2.9855	640.3468	640.2891	3.170	3.337	
Link13	12.3889	5.1507	21.0000	26.0586	2	51	10.6252	3	42	2.1034	640.2891	637.3578	4.074	3.324	
Link14	43.7477	6.1890	36.0000	38.8374	2	20	6.4036	3	6	0.8878	637.0838	636.5337	2.325	2.558	
Link15	36.6850	5.1899	36.0000	39.5622	2	20	5.7795	3	16	1.0784	636.5337	636.0414	2.558	2.670	
Link16	37.2836	5.2745	36.0000	63.7931	1	36	8.9369	1	37	1.7110	636.0415	631.2509	2.671	1.634	
Link17	26.7696	3.7871	36.0000	-69.7540	1	25	-9.8297	1	25	-2.6057	631.2506	630.7784	1.610	1.476	
Link18	55.5441	7.8579	36.0000	69.7510	1	25	10.2543	1	25	1.2558	630.7784	625.4198	1.453	0.577	
Link22	6.4617	5.2654	15.0000	5.0472	4	5	4.0406	4	8	0.7811	629.4913	629.2656	4.081	4.964	
Link23	59.7442	8.4521	36.0000	63.2657	2	35	8.8237	2	35	1.0589	620.3420	618.0165	3.260	3.196	
Link24	14.5486	2.0582	36.0000	63.2651	2	35	8.8278	2	35	4.3485	618.0165	617.4627	3.196	3.021	
Link25	41.3740	5.8532	36.0000	63.2643	2	35	8.8388	2	35	1.5291	617.4627	615.1758	3.021	2.592	
Link26	39.9177	5.6472	36.0000	63.2640	2	35	8.8628	2	35	1.5849	615.1758	612.8534	2.592	2.131	
Link27	34.5795	4.8920	36.0000	63.2639	2	35	8.8904	2	35	1.8295	612.8534	609.5054	2.131	1.352	
Link28	40.1573	5.6811	36.0000	63.2640	2	35	9.4305	2	35	1.5754	609.5054	605.8702	1.352	0.477	
Link31	2.4660	2.0095	15.0000	-4.9865	1	32	-4.2553	1	32	-2.0221	638.3842	636.6503	1.875	0.728	
Link32	451.1614	28.1976	48.0000	118.2317	1	11	23.4715	1	12	0.2621	594.0045	573.2186	0.316	0.305	
Link33	823.3655	34.3069	48.0000	109.2705	1	9	21.4550	1	6	0.1327	594.1094	573.2186	0.202	0.305	
Link47	29.5450	16.7191	18.0000	28.5382	0	30	22.1265	0	18	0.9659	636.1440	636.0415	2.783	5.141	
Link53	1.7213	0.9287	6.0019	4.9865	1	32	2.0785	1	30	2.8970	636.6503	636.4001	1.220	0.800	*
Link54	1.9517	1.2011	6.4015	4.9861	1	34	1.4714	1	33	2.5547	636.4001	633.9697	0.750	1.012	*
Link55	328.6757	8.6186	31.5600	4.9859	1	35	1.7896	3	45	0.0152	633.9697	633.5479	0.205	0.969	
Link56	55.4504	2.9184	13.6326	15.9158	0	52	1.7446	0	51	0.2870	630.7857	623.1362	0.516	1.000	*
Link68	138.7842	3.0723	32.4000	15.8606	0	54	3.2774	0	45	0.1143	623.1362	620.6869	0.421	0.632	
Link69	12349.67	11.4824	72.6000	-76.0876	0	47	0.9578	0	31	-0.0062	620.6869	620.6814	0.282	0.575	
Link70	10078.61	10.5486	93.1200	230.1136	1	14	3.0347	1	14	0.0228	620.3405	620.3414	0.403	0.610	
Link71	58179.11	25.6200	105.1214	-578.038	1	16	1.3483	0	31	-0.0099	620.3414	620.3420	0.540	1.117	*
Link72	137.3690	19.4337	36.0000	63.2648	2	36	19.0304	2	36	0.4605	605.8702	604.3519	0.477	0.477	
Link73	56825.79	51.6051	143.0400	63.2647	2	36	7.6246	2	46	0.0011	603.9740	599.5964	0.088	0.143	
Link74	37318.09	37.1859	191.4000	63.2649	2	36	7.5893	2	36	0.0017	599.5964	596.3783	0.107	0.075	
Link75	29495.40	24.1735	209.5200	63.2629	2	36	3.2727	1	29	0.0021	596.3783	596.2687	0.069	0.092	
Link76	40618.15	48.9919	211.3200	63.2580	2	36	9.7486	1	25	0.0016	596.2687	594.0045	0.091	0.072	
Link77	20.0104	6.3695	24.0000	17.0660	1	36	9.1963	1	36	0.8529	641.2242	640.0034	0.612	0.202	
Link78	1059.813	5.4349	36.0000	17.0542	1	37	1.6792	1	19	0.0161	640.0034	637.0838	0.134	0.245	
Link79	24.1586	10.0440	21.0000	26.0722	2	50	11.4496	4	54	1.0792	637.3578	637.0838	3.324	3.756	
Link82	110.5183	15.6351	36.0000	69.7487	1	25	15.6379	1	25	0.6311	625.4198	616.1457	0.577	0.885	
Link83	54.8977	7.7664	36.0000	77.8639	1	26	12.5620	1	26	1.4183	616.1457	613.9106	0.885	0.377	
Link84	4900.754	21.9785	89.1720	77.8628	1	26	7.3157	1	26	0.0159	613.9106	607.3690	0.152	0.184	
Link85	34130.32	31.7780	198.0000	77.8187	1	27	6.6446	1	16	0.0023	607.3690	594.1094	0.083	0.049	
Link86	1275.622	7.9726	48.0000	8.2253	1	49	1.8808	1	49	0.0064	623.1139	617.3833	0.101	0.071	
Link87	3.3581	2.7364	15.0000	8.2263	1	45	7.0512	1	45	2.4497	629.2656	623.1139	4.964	0.323	
Link93	42.9074	3.0474	21.3903	-611.694	1	27	3.6474	1	27	-14.2561	635.7491	635.8107	0.476	0.999	
Link95	5.7961	1.9167	40.8618	12.3701	1	56	1.0812	6	34	2.1342	629.2659	629.2656	0.372	1.000	*
Link103	35.9324	11.4376	24.0000	1.7611	1	25	6.2391	0	18	0.0490	631.6276	630.6208	0.169	0.060	
Link104	0.9032	2.0444	9.0000	1.7641	0	51	3.9298	0	51	1.9532	634.8000	632.7245	3.733	1.713	
Link105	0.8264	1.5273	9.9600	1.7609	1	25	3.4573	3	45	2.1309	632.7245	631.6276	1.548	0.407	
Link107	182.6084	3.0435	24.0000	13.2346	1	58	1.2954	1	58	0.0725	630.4576	629.2659	0.229	0.633	
Link108	276.1874	2.7619	24.0000	1.7789	1	14	0.4874	4	29	0.0064	630.6208	630.4576	0.060	0.229	
Link109	114.8091	3.8270	12.0000	11.4875	1	57	1.6955	1	55	0.1001	632.7765	630.4576	0.277	0.458	

Link118	1022.040	12.1671	24.0000	10.2568	1	4	0.7607	0	26	0.0100	638.4370	638.4374	0.669	0.969	
214.1	15.9283	5.0701	24.0000	29.3718	0	49	9.4567	0	49	1.8440	620.6814	620.3405	1.491	1.565	
249.1	4.4465	3.6234	15.0000	6.1137	1	0	5.0466	1	0	1.3749	631.4562	630.2190	1.261	0.799	
ROAD1	8.7308	2.9006	1.5134	12.7325	1	0	3.3553	1	0	1.4583	631.4562	630.1240	1.001	0.983	*
272.1	5.2486	4.2769	15.0000	4.2867	1	59	3.4803	1	59	0.8167	638.4374	638.3842	1.582	2.115	
283.1	2.7121	3.4532	12.0000	4.8275	0	50	6.1222	0	50	1.7800	633.5479	631.1256	2.538	0.906	
Link98.1	1.5849	3.5876	9.0000	2.8153	1	25	6.2319	1	25	1.7763	635.8107	634.8000	4.641	3.733	
388.1	1.0357	1.3187	12.0000	2.5146	0	39	3.4663	0	40	2.4280	633.8669	632.7765	1.267	0.277	
403.1	4.4547	3.6300	15.0000	3.7204	0	33	4.0287	0	33	0.8352	629.4922	629.4913	1.802	3.921	
ROAD4	6.3878	2.1222	30.0151	17.7962	1	57	2.1056	0	45	2.7860	629.4922	629.4913	0.553	1.000	*
405.1	4.4463	3.6231	15.0000	-0.2618	1	11	0.4720	1	3	-0.0589	629.4922	629.4922	0.746	1.802	
ROAD3	5.4613	1.8144	16.5867	18.7447	1	0	2.9557	1	57	3.4323	629.4922	629.4922	0.761	1.000	*
407.1	4.4460	3.6229	15.0000	3.8810	1	0	4.1386	1	0	0.8729	630.1240	629.4922	0.723	0.746	
ROAD2	10.4607	3.4753	12.6263	14.9647	1	0	3.7384	1	57	1.4306	630.1240	629.4922	0.118	1.000	*
Link 5	Undefnd	Undefnd	Undefn	163.9521	1	8									
WEIR30	Undefnd	Undefnd	Undefn	6.5021	1	6									
WEIR46	Undefnd	Undefnd	Undefn	11.2548	0	50									
Overtop90	Undefnd	Undefnd	Undefn	11.6069	0	53									
Link97.1	Undefnd	Undefnd	Undefn	27.3489	2	56									
Roadway98	Undefnd	Undefnd	Undefn	13.4643	1	25									
Link106.1.	Undefnd	Undefnd	Undefn	9.1382	0	54									
WEIR119	Undefnd	Undefnd	Undefn	52.6365	1	12									
FREE # 1	Undefnd	Undefnd	Undefn	227.2446	1	11									

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| Table E11. Area assumptions used in the analysis|
| Subcritical and Critical flow assumptions from |
| Subroutine Head. See Figure 17-1 in the |
| manual for further information. |
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Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
Link12	50.0000	342.3262	0.0000	2487.6738	0.5291	2.4745	24.3395
Link13	50.2041	2829.7959	0.0000	0.0000	0.5233	2.4868	48.1909
Link14	32.2993	2847.7007	0.0000	0.0000	0.9067	7.2879	31.2549
Link15	18.3333	2861.6667	0.0000	0.0000	0.9126	7.4073	33.1388
Link16	15.0000	2865.0000	0.0000	0.0000	0.9116	7.2616	57.3970
Link17	15.8333	2864.1667	0.0000	0.0000	0.9105	7.3368	45.4980
Link18	15.8333	2864.1667	0.0000	0.0000	0.8970	5.6298	31.2112
Link22	2121.7188	758.2812	0.0000	0.0000	0.3735	1.2602	20.3805
Link23	625.5269	2254.4731	0.0000	0.0000	0.8965	7.2480	85.4316
Link24	83.6364	2796.3636	0.0000	0.0000	0.9117	7.3811	82.3070
Link25	126.4583	2753.5417	0.0000	0.0000	0.9127	7.4048	74.4049
Link26	149.5417	2730.4583	0.0000	0.0000	0.9127	7.3693	62.7761
Link27	94.8485	2785.1515	0.0000	0.0000	0.9105	7.2571	46.4336
Link28	80.4167	2799.5833	0.0000	0.0000	0.8853	5.1577	25.8550
Link31	19.6212	2860.3788	0.0000	0.0000	0.3663	0.8963	6.9211
Link32	17.5000	2862.5000	0.0000	0.0000	0.7730	4.9658	29.0095
Link33	15.8333	2864.1667	0.0000	0.0000	0.6602	6.0380	21.6835
Link47	2729.2973	146.5360	0.0000	4.1667	0.4483	1.8247	38.7463
Link53	44.3371	2835.6629	0.0000	0.0000	0.3813	1.8838	1.0498
Link54	20.0000	2860.0000	0.0000	0.0000	0.2734	4.1010	0.6914
Link55	20.1333	2859.8667	0.0000	0.0000	0.3613	14.5560	1.5914
Link56	15.0000	2865.0000	0.0000	0.0000	0.3745	14.9175	1.4959
Link68	15.8333	2864.1667	0.0000	0.0000	0.5402	7.6893	4.1333
Link69	17.5000	2862.5000	0.0000	0.0000	1.3002	167.7423	0.9564
Link70	21.0500	2858.9500	0.0000	0.0000	1.5753	297.5303	6.4302
Link71	21.2000	2858.8000	0.0000	0.0000	7.3623	1760.4619	4.2420
Link72	690.5485	111.6037	0.0000	2077.8478	0.7267	3.3242	27.2077
Link73	78.2817	2801.7183	0.0000	0.0000	0.4902	14.0153	10.5219
Link74	22.5833	2857.4167	0.0000	0.0000	0.7821	6.4238	11.0191
Link75	33.1065	2846.8935	0.0000	0.0000	0.8072	23.1648	4.5523
Link76	28.4074	2851.5926	0.0000	0.0000	0.6980	5.2128	13.4736
Link77	49.6648	2830.3352	0.0000	0.0000	0.5274	1.1211	7.3921
Link78	49.6927	40.1082	0.0000	2790.1990	0.3370	15.9020	0.8475
Link79	51.5051	119.1165	0.0000	2709.3784	0.5324	2.5203	39.6833
Link82	15.8333	2864.1667	0.0000	0.0000	0.8234	5.3737	34.2827
Link83	18.3333	2861.6667	0.0000	0.0000	0.8806	4.3574	23.7716
Link84	20.0000	2860.0000	0.0000	0.0000	0.7539	11.9217	9.1333
Link85	20.0500	2859.9500	0.0000	0.0000	0.7321	8.5029	7.1705
Link86	23.8000	0.0000	0.0000	2856.2000	0.3045	3.6938	0.6463
Link87	23.1500	2856.8500	0.0000	0.0000	0.3608	0.7528	23.2993
Link93	2568.9246	301.1310	0.0000	9.9444	1.0957	179.7857	2.4746
Link95	24.3000	358.6422	0.0000	2497.0578	0.8911	76.8579	1.3676
Link103	2271.1380	608.8620	0.0000	0.0000	0.1938	0.1999	1.2444
Link104	2292.5000	587.5000	0.0000	0.0000	0.2276	0.4631	8.0101
Link105	17.5000	2862.5000	0.0000	0.0000	0.2430	0.3616	2.8036
Link107	21.8000	2858.2000	0.0000	0.0000	0.4318	18.4849	0.7469
Link108	385.0955	2494.9045	0.0000	0.0000	0.1449	9.0940	0.1023
Link109	1588.0095	1291.9905	0.0000	0.0000	0.2601	8.6502	0.6169
Link118	2656.9399	209.7951	0.0000	13.2650	1.1394	65.1681	0.3108
214.1	697.0739	2182.9261	0.0000	0.0000	0.6042	3.2216	21.3357
249.1	2617.4267	140.7382	0.0000	121.8350	0.3790	1.1603	6.4979
ROAD1	2786.0484	93.9516	0.0000	0.0000	0.1250	3.7681	0.4195
272.1	2622.9670	257.0330	0.0000	0.0000	0.3735	1.2585	7.2299
283.1	17.7273	0.0000	0.0000	2862.2727	0.3034	0.7701	10.5400
Link98.1	2451.4189	428.5811	0.0000	0.0000	0.2270	0.4607	19.4658
388.1	2517.2353	362.7647	0.0000	0.0000	0.2802	0.4456	2.6205
403.1	22.8000	361.6679	0.0000	2495.5321	0.3735	1.2657	4.5911
ROAD4	2563.2285	313.4128	0.0000	3.3587	1.3705	61.3451	1.3741
405.1	2605.8293	274.1707	0.0000	0.0000	0.3189	1.1049	0.2796
ROAD3	2112.5529	292.5430	0.0000	474.9041	1.0197	37.8995	0.8451
407.1	2602.3271	199.4960	0.0000	78.1770	0.3718	0.9074	3.5188
ROAD2	2760.0618	119.9382	0.0000	0.0000	0.1531	13.1587	0.8539

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| Table E12. Mean Conduit Flow Information |
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Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness

Link12	1.1917	205920.83	0.0000	0.7562	0.4585	0.2651	1.4341	0.0120
Link13	2.5744	444862.04	0.0000	0.7522	1.1148	0.2655	1.4138	0.0120
Link14	3.2705	565147.81	0.0000	0.9777	0.6388	0.5042	3.0957	0.0120
Link15	3.2701	565081.14	0.0000	0.9995	0.5551	0.5321	3.4215	0.0120
Link16	4.8979	846361.24	0.0001	0.9997	0.6508	0.5378	3.4443	0.0120
Link17	-5.1020	-881618.5	0.0001	0.9997	0.6319	0.5538	3.3342	0.0120
Link18	5.1022	881668.19	0.0000	0.9997	1.1932	0.5019	2.8576	0.0120
Link22	0.4604	79554.285	0.0000	0.7391	0.1886	0.1869	0.7317	0.0240
Link23	7.7372	1336996.2	0.0000	0.9224	2.0951	0.4866	4.4166	0.0120
Link24	7.7374	1337022.4	0.0000	0.9854	1.0530	0.4889	4.4825	0.0120
Link25	7.7373	1337001.6	0.0000	0.9727	2.6382	0.4865	4.4591	0.0120
Link26	7.7375	1337042.6	0.0000	0.9820	2.6539	0.4867	4.4605	0.0120
Link27	7.7379	1337104.4	0.0000	0.9912	2.4191	0.4893	4.4606	0.0140
Link28	7.7384	1337194.2	0.0000	0.9927	3.6849	0.4967	4.1568	0.0120
Link31	-0.2908	-50248.85	0.0000	0.9995	0.2802	0.2034	0.5118	0.0240
Link32	9.4012	1624532.6	0.0001	0.9996	2.8361	0.3826	2.2030	0.0120
Link33	6.9092	1193903.8	0.0000	0.9997	4.6255	0.2789	1.9913	0.0140
Link47	0.5295	91503.260	0.0000	0.2432	0.2119	0.0992	0.4165	0.0120
Link53	0.2908	50250.756	0.0000	0.9963	0.2780	0.1174	0.7124	0.0250
Link54	0.2909	50275.139	0.0000	0.9994	0.2420	0.0858	0.9919	0.0400
Link55	0.2908	50245.048	0.0000	0.9991	0.2078	0.1122	1.3234	0.0250
Link56	0.5492	94893.894	0.0000	0.9997	0.2390	0.0981	1.8108	0.0400
Link68	0.5511	95225.269	0.0000	0.9996	0.3368	0.1516	1.0761	0.0250
Link69	0.5629	97263.476	0.0001	0.9996	0.0236	0.1644	15.4652	0.0250
Link70	5.8712	1014548.2	0.0001	0.9967	0.1161	0.4719	49.3474	0.0250
Link71	5.8854	1016997.3	0.0014	0.9963	0.0518	1.4609	425.7477	0.0250
Link72	7.7385	1337211.0	0.0000	0.8998	8.8667	0.4439	1.9385	0.0120
Link73	7.7387	1337250.0	0.0000	0.9909	1.0214	0.3072	4.7248	0.0250
Link74	7.7387	1337245.8	0.0000	0.9928	0.9386	0.4766	4.8717	0.0250
Link75	7.7388	1337266.7	0.0000	0.9827	0.3988	0.4870	11.4055	0.0250
Link76	7.7388	1337257.3	0.0000	0.9823	1.3757	0.4273	3.7740	0.0250
Link77	0.6947	120051.39	0.0000	0.9542	1.8799	0.1936	0.4750	0.0120
Link78	0.6957	120220.43	0.0000	0.9541	0.6729	0.0996	2.7743	0.0400
Link79	2.5746	444897.24	0.0000	0.7442	1.8151	0.2875	1.2630	0.0120
Link82	5.1026	881736.60	0.0000	0.9997	1.9229	0.4228	1.7952	0.0120
Link83	6.0319	1042310.9	0.0000	0.9996	1.5928	0.5153	2.7102	0.0120
Link84	6.0324	1042397.7	0.0000	0.9995	0.9177	0.3614	4.6319	0.0250
Link85	6.0330	1042499.8	0.0000	0.9993	1.1736	0.3615	5.0686	0.0250
Link86	0.9292	160565.55	0.0000	0.9895	0.7428	0.1742	2.4162	0.0400
Link87	0.9290	160537.11	0.0000	0.9908	1.5158	0.1907	0.6957	0.0240
Link93	0.0090	1546.7952	0.0200	0.5027	0.0809	0.2467	44.1606	0.0400
Link95	0.4656	80456.573	0.0000	0.9884	0.3139	0.2893	10.3653	0.0400
Link103	0.2169	37479.608	0.0000	0.7122	2.1330	0.1149	0.1869	0.0140
Link104	0.2169	37472.138	0.0000	0.7084	0.4250	0.1135	0.2644	0.0140
Link105	0.2169	37479.331	0.0000	0.7261	0.7192	0.1240	0.3002	0.0140
Link107	0.4650	80349.447	0.0000	0.9947	0.2041	0.1322	3.1663	0.0400
Link108	0.2170	37494.416	0.0000	0.9583	0.1785	0.0691	2.2564	0.0400
Link109	0.2458	42472.761	0.0000	0.7929	0.1449	0.0434	1.0419	0.0400
Link118	0.3021	52197.469	0.0000	0.3594	0.0430	0.3101	14.0447	0.0400
214.1	2.2445	387843.25	0.0000	0.9180	0.8762	0.2293	1.2265	0.0240
249.1	0.2562	44278.153	0.0000	0.4237	0.3821	0.0850	0.2654	0.0240
ROAD1	0.1953	33747.978	0.0000	0.1576	0.2270	0.0118	0.3579	0.0140
272.1	0.2052	35458.777	0.0000	0.4136	0.1216	0.1187	0.4115	0.0240

283.1	0.3141	54268.834	0.0000	0.8603	1.3343	0.0917	0.2615	0.0240
Link98.1	0.2654	45860.952	0.0000	0.6693	0.3479	0.1118	0.2640	0.0140
388.1	0.1054	18207.360	0.0000	0.5846	0.6386	0.0644	0.1598	0.0200
403.1	0.0175	3022.4995	0.0000	0.7405	0.3348	0.1830	0.6725	0.0240
ROAD4	0.4341	75020.149	0.0000	0.5131	0.0467	0.4873	16.3970	0.0140
405.1	-0.0032	-553.5102	0.0000	0.4480	0.0102	0.1261	0.4456	0.0240
ROAD3	0.4557	78749.950	0.0000	0.7474	0.1955	0.3161	10.2538	0.0140
407.1	0.1652	28543.857	0.0000	0.4538	0.2176	0.0997	0.2194	0.0240
ROAD2	0.2863	49465.106	0.0000	0.1983	0.2060	0.0433	1.3718	0.0140
Link 5	3.6128	624289.39						
WEIR30	0.0967	16706.981						
WEIR46	0.2344	40501.513						
Overtop90	0.2488	42997.941						
Link97.1	1.3608	235152.03						
Roadway98	0.0350	6049.0988						
Link106.1.	0.1414	24429.186						
WEIR119	1.3582	234696.22						
FREE # 1	16.3106	2818469.4						

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| Table E13. Channel losses(H), headwater depth (HW), tailwater |
| depth (TW), critical and normal depth (Yc and Yn). |
| Use this section for culvert comparisons |
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Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
Link12	16.9298	0.0000	2.9636	1.5073	1.7500	639.1324	636.1673	Max Flow
Link13	26.0483	0.0000	6.8715	1.7943	1.7500	640.2878	633.4153	Max Flow
Link14	36.4794	0.0000	0.8455	1.9631	2.0945	633.1719	632.3580	Max Flow
Link15	36.8449	0.0000	0.8185	1.9732	2.4740	632.3560	631.5893	Max Flow
Link16	63.7800	0.0000	4.8204	2.5627	3.0000	636.0115	631.1690	Max Flow
Link17	-0.0054	0.0000	0.4715	0.0042	0.0081	626.4344	626.4363	Max Flow
Link18	69.7468	0.0000	4.5954	2.6521	3.0000	630.7781	625.4197	Max Flow
Link22	5.0467	0.0000	1.0790	0.9105	0.8314	629.0772	628.2952	Max Flow
Link23	63.2638	0.0000	2.3246	2.5546	2.6690	620.3417	618.0160	Max Flow
Link24	63.2626	0.0000	0.5518	2.5546	3.0000	618.0159	617.4620	Max Flow
Link25	63.2616	0.0000	2.2801	2.5546	3.0000	617.4619	615.1748	Max Flow
Link26	63.2602	0.0000	2.3150	2.5545	3.0000	615.1747	612.8523	Max Flow
Link27	63.2590	0.0000	3.3352	2.5545	3.0000	612.8522	609.5043	Max Flow
Link28	63.2518	0.0000	2.7937	2.5544	3.0000	609.5043	605.8700	Max Flow
Link31	0.0001	0.0000	1.3476	0.0004	0.0010	636.0402	636.0401	Max Flow
Link32	117.7209	0.0000	20.2873	2.9958	1.2148	593.9997	573.2148	Max Flow
Link33	109.2702	0.0000	20.9381	2.1751	0.7940	594.1094	573.2144	Max Flow
Link47	28.4936	0.0000	3.6127	1.5000	1.1847	633.2710	629.9943	Max Flow
Link53	4.9854	0.0000	0.1459	0.4592	0.8263	636.6503	636.4001	Max Flow
Link54	4.9859	0.0000	2.2200	0.2791	0.3881	636.4001	633.9697	Max Flow
Link55	4.9858	0.0000	1.0269	0.5590	0.5387	633.9697	633.4655	Max Flow
Link56	15.8326	0.0000	7.4582	0.4703	0.5839	630.7844	623.1361	Max Flow
Link68	15.8576	0.0000	2.6513	1.0386	1.1350	623.1361	620.6231	Max Flow
Link69	15.1761	0.0000	0.3050	0.9942	1.1037	620.5099	620.5296	Max Flow
Link70	223.3341	0.0000	1.5925	1.8351	2.1186	619.3327	617.7479	Max Flow
Link71	413.4186	0.0000	2.7910	1.2130	1.1800	618.2309	618.1023	Max Flow
Link72	63.2498	0.0000	1.5214	2.5544	1.4297	605.8700	604.3517	Max Flow
Link73	63.2497	0.0000	4.0916	1.4772	1.0508	603.9739	599.5963	Max Flow
Link74	63.2512	0.0000	2.3075	1.9521	1.5773	599.5963	596.3772	Max Flow
Link75	63.2500	0.0000	0.3745	0.9400	0.9484	596.3772	596.2658	Max Flow
Link76	63.2475	0.0000	1.8061	2.0462	1.4998	596.2658	593.6739	Max Flow
Link77	17.0519	0.0000	0.7763	1.4876	1.4201	641.2237	639.9844	Max Flow
Link78	17.0304	0.0000	2.9795	0.2608	0.3824	639.9849	637.0728	Max Flow
Link79	26.0651	0.0000	1.1304	1.7958	1.7500	633.4153	632.2719	Max Flow
Link82	69.7390	0.0000	9.0085	2.6520	1.7292	625.4197	616.1450	Max Flow
Link83	77.8363	0.0000	1.5204	2.7470	3.0000	616.1450	613.9104	Max Flow
Link84	77.8217	0.0000	6.2031	1.3857	1.1245	613.9104	607.3655	Max Flow
Link85	77.7654	0.0000	9.0269	1.4777	1.1867	607.3683	594.0685	Max Flow
Link86	8.2253	0.0000	4.3802	0.2833	0.3605	623.1139	617.3833	Max Flow
Link87	8.2255	0.8528	2.4112	1.1229	1.2500	629.2654	623.1138	Max Flow
Link93	1.3965	0.0000	0.8236	0.0210	0.0208	635.6521	635.6521	Max Flow
Link95	11.7930	0.0000	1.5428	0.3413	0.3992	628.4105	628.2330	Max Flow
Link103	1.7608	0.0000	0.6331	0.4584	0.2990	631.6274	630.6172	Max Flow
Link104	1.7608	0.0000	2.0614	0.6079	0.7500	634.8000	632.7243	Max Flow
Link105	1.7608	0.0000	0.7824	0.5959	0.8300	632.7243	631.6276	Max Flow
Link107	13.2114	0.0000	1.8856	0.2331	0.4561	630.4571	628.5371	Max Flow
Link108	1.7789	0.0000	0.4600	0.0365	0.1095	630.6175	630.4203	Max Flow
Link109	11.4037	0.0000	2.2725	0.2081	0.2751	632.7754	630.4451	Max Flow
Link118	10.2156	0.0000	0.0774	0.1505	0.1350	638.4366	638.4370	Max Flow
214.1	29.1729	0.0000	1.6210	1.8467	2.0000	620.5296	618.9119	Max Flow
249.1	6.1137	0.0000	1.2442	0.9990	1.2500	631.4562	630.2190	Max Flow
ROAD1	12.7287	0.0000	1.3235	0.1741	0.1211	631.4562	630.1239	Max Flow
272.1	4.2747	0.0000	0.4740	0.8370	0.8570	638.4199	637.9467	Max Flow
283.1	4.8272	0.0000	2.4223	0.9056	1.0000	633.5478	631.1256	Max Flow
Link98.1	2.8047	0.0000	0.9884	0.7086	0.7500	635.8002	634.8000	Max Flow
388.1	2.5095	0.0000	0.7609	0.6786	1.0000	633.8234	632.5937	Max Flow
403.1	3.5480	0.0000	2.4967	0.7601	0.8430	628.1317	626.1108	Max Flow
ROAD4	17.3057	0.0000	0.9542	0.2157	0.1788	628.2919	628.1844	Max Flow
405.1	0.0006	0.0000	0.0643	0.0018	0.0023	628.6236	628.6233	Max Flow

ROAD3	18.6255	0.0000	0.3280	0.2260	0.2079	628.6598	628.4154	Max Flow
407.1	3.8808	0.0000	0.6830	0.7966	0.9046	630.1239	629.3566	Max Flow
ROAD2	14.9587	0.0000	1.2457	0.1966	0.1198	630.1239	628.6600	Max Flow

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| Table E13a. CULVERT ANALYSIS CLASSIFICATION, |
| and the time the culvert was in a particular |
| classification during the simulation. The time is |
| in minutes. The Dynamic Wave Equation is used for |
| all conduit analysis but the culvert flow classification |
| condition is based on the HW and TW depths. |
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Conduit Name	Mild Slope Critical D Outlet Control	Mild Slope TW Control Outlet Control	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope Outlet TW > D Control	Mild Slope Outlet TW <= D Control	Outlet Control	Inlet Control	Inlet Configuration
Link12	435.0000	345.0000	1745.0000	0.0000	320.0000	0.0000	35.0000	0.0000	None
Link13	30.0000	715.0000	1805.0000	5.0000	100.0000	0.0000	225.0000	0.0000	None
Link14	0.0000	2650.0000	35.0000	0.0000	85.0000	20.0000	90.0000	0.0000	None
Link15	0.0000	2750.0000	15.0000	0.0000	115.0000	0.0000	0.0000	0.0000	None
Link16	5.0000	2775.0000	15.0000	0.0000	85.0000	0.0000	0.0000	0.0000	None
Link17	0.0000	2780.0000	15.0000	0.0000	85.0000	0.0000	0.0000	0.0000	None
Link18	85.0000	0.0000	2795.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link22	0.0000	0.0000	2515.0000	0.0000	0.0000	360.0000	5.0000	0.0000	None
Link23	0.0000	0.0000	2500.0000	15.0000	140.0000	190.0000	35.0000	0.0000	None
Link24	15.0000	2350.0000	145.0000	0.0000	370.0000	0.0000	0.0000	0.0000	None
Link25	15.0000	2275.0000	220.0000	0.0000	370.0000	0.0000	0.0000	0.0000	None
Link26	15.0000	2365.0000	130.0000	0.0000	370.0000	0.0000	0.0000	0.0000	None
Link27	10.0000	2480.0000	90.0000	0.0000	300.0000	0.0000	0.0000	0.0000	None
Link28	675.0000	2125.0000	80.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link31	0.0000	2670.0000	15.0000	0.0000	195.0000	0.0000	0.0000	0.0000	None
Link32	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link33	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link47	0.0000	0.0000	2795.0000	0.0000	0.0000	85.0000	0.0000	0.0000	None
Link53	205.0000	2655.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link54	0.0000	2815.0000	20.0000	0.0000	45.0000	0.0000	0.0000	0.0000	None
Link55	0.0000	2660.0000	115.0000	0.0000	0.0000	0.0000	105.0000	0.0000	None
Link56	0.0000	2855.0000	15.0000	0.0000	10.0000	0.0000	0.0000	0.0000	None
Link68	25.0000	2840.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link69	0.0000	2865.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link70	50.0000	2810.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link71	0.0000	2765.0000	30.0000	35.0000	45.0000	0.0000	5.0000	0.0000	None
Link72	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link73	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link74	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link75	0.0000	2855.0000	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link76	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link77	0.0000	0.0000	2875.0000	0.0000	0.0000	0.0000	5.0000	0.0000	None
Link78	505.0000	2330.0000	45.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link79	0.0000	0.0000	2525.0000	0.0000	0.0000	90.0000	265.0000	0.0000	None
Link82	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link83	115.0000	0.0000	2565.0000	0.0000	0.0000	0.0000	200.0000	0.0000	None
Link84	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link85	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link86	235.0000	2625.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link87	240.0000	2260.0000	20.0000	0.0000	0.0000	0.0000	360.0000	0.0000	None
Link93	5.0000	245.0000	2585.0000	40.0000	0.0000	0.0000	5.0000	0.0000	None
Link95	70.0000	2760.0000	20.0000	0.0000	30.0000	0.0000	0.0000	0.0000	None
Link103	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link104	0.0000	230.0000	2290.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
Link105	375.0000	40.0000	2215.0000	0.0000	0.0000	0.0000	250.0000	0.0000	None
Link107	5.0000	2855.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link108	5.0000	2490.0000	385.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link109	0.0000	1290.0000	1590.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link118	0.0000	0.0000	2685.0000	195.0000	0.0000	0.0000	0.0000	0.0000	None
214.1	20.0000	1920.0000	715.0000	55.0000	125.0000	40.0000	5.0000	0.0000	None
249.1	80.0000	180.0000	2620.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
ROAD1	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
272.1	0.0000	50.0000	2630.0000	50.0000	50.0000	95.0000	5.0000	0.0000	None
283.1	130.0000	1345.0000	1220.0000	0.0000	0.0000	0.0000	185.0000	0.0000	None
Link98.1	5.0000	55.0000	2450.0000	0.0000	360.0000	0.0000	10.0000	0.0000	None
388.1	200.0000	160.0000	2520.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
403.1	35.0000	370.0000	2115.0000	0.0000	360.0000	0.0000	0.0000	0.0000	None
ROAD4	5.0000	180.0000	2575.0000	115.0000	0.0000	0.0000	5.0000	0.0000	None
405.1	0.0000	25.0000	2605.0000	0.0000	250.0000	0.0000	0.0000	0.0000	None
ROAD3	10.0000	645.0000	2145.0000	75.0000	5.0000	0.0000	0.0000	0.0000	None
407.1	25.0000	250.0000	2605.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
ROAD2	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None

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| Kinematic Wave Approximations |
| Time in Minutes for Each Condition |
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Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
Link12	0.0463	99.4827	0.3316	0.0000
Link13	0.0000	39.8704	280.9466	0.0000
Link14	2460.7353	2823.8325	0.0000	0.0000
Link15	291.4333	567.3624	0.0000	0.0000
Link16	2474.9356	2544.4222	0.8333	0.0000
Link17	0.0000	0.0000	0.0000	0.0000
Link18	0.0000	0.0000	854.7024	0.0000
Link22	2488.8097	2832.2449	1.8130	0.0000
Link23	1798.3599	2039.4512	2437.7687	0.0000
Link24	0.0000	0.0000	3.3000	0.0000
Link25	1239.2431	2461.5381	2380.2143	0.0000
Link26	1236.8021	2469.1316	2355.3519	0.0000
Link27	1234.5296	2449.5833	2296.4370	0.0000
Link28	0.0000	0.0000	1632.6227	0.0000
Link31	107.6420	179.2045	0.4545	0.0000
Link32	2422.2385	2425.9090	611.8590	0.0000

Link33	403.3185	404.3067	2864.0333	0.0000
Link47	2740.4153	2856.6082	42.9577	0.0000
Link53	0.4363	42.7877	2.2000	0.0000
Link54	2856.7000	2856.8000	1.0667	0.0000
Link55	2859.9000	2859.9000	0.0000	0.0000
Link56	2860.8333	2860.8333	1.6667	0.0000
Link68	222.6387	222.7783	5.5833	0.0000
Link69	2701.3000	2857.9458	0.0000	0.0000
Link70	125.2156	366.2961	0.2833	0.0000
Link71	2561.0289	2844.7145	0.0167	0.0000
Link72	11.9137	1475.2206	2862.5000	0.0000
Link73	1482.9707	1906.5692	414.3360	0.0000
Link74	0.0000	0.0000	415.3181	0.0000
Link75	1860.2876	2266.3064	0.0000	0.0000
Link76	3.3993	3.5818	2849.3436	0.0000
Link77	0.0000	0.0000	2830.3352	0.0000
Link78	37.5857	37.6506	591.9898	0.0000
Link79	81.5003	194.3801	2735.3243	0.0000
Link82	2859.6833	2860.8333	2864.1667	0.0000
Link83	0.0000	0.0000	1592.4667	0.0000
Link84	406.7068	406.7568	383.6321	0.0000
Link85	0.1167	0.1167	422.8536	0.0000
Link86	0.0000	0.0000	1209.0729	0.0000
Link87	0.0000	0.0000	367.6709	0.0000
Link93	2580.9378	2810.8920	1.3333	0.0000
Link95	143.4705	358.6056	0.0333	0.0000
Link103	2484.6821	2484.6821	2846.5171	0.0000
Link104	2490.3714	2491.0857	27.6537	0.0000
Link105	0.0000	0.0000	293.5899	0.0000
Link107	1606.8254	2821.9577	0.0000	0.0000
Link108	2806.0267	2841.8182	5.9000	0.0000
Link109	2843.7762	2843.7762	0.0000	0.0000
Link118	14.1644	209.7404	2655.2049	0.0000
214.1	2571.6294	2757.0380	2059.8005	0.0000
249.1	2716.0526	2730.7297	2633.2377	0.0000
ROAD1	2822.1872	2826.9878	87.9338	0.0000
272.1	2662.1210	2862.5000	0.0000	0.0000
283.1	1.8033	1.8033	163.8057	0.0000
Link98.1	2490.4550	2542.4009	1.4333	0.0000
388.1	0.0000	0.0000	191.7118	0.0000
403.1	6.0875	70.6071	0.2000	0.0000
ROAD4	2552.2783	2843.3217	8.2900	0.0000
405.1	26.8546	2627.6552	0.0000	0.0000
ROAD3	27.4725	292.2169	25.1952	0.0000
407.1	2662.3640	2767.7568	0.1333	0.0000
ROAD2	2848.4672	2848.4672	56.8593	0.0000

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| Table E14 - Natural Channel Overbank Flow Information |
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Conduit Name	<---- Maximum Velocity -----> Left Velocity	Center Velocity	Right Velocity	<------ Maximum Flow -------> Left Flow	Center Flow	Right Flow	<------ Maximum Area ------> Left Area	Center Area	Right Area	<--- Max. Storage Volume ---> Left Area	Center Area	Right Area	Maximum Depth
Link53	0.0000	1.9801	0.0000	0.0000	4.9865	0.0000	0.0000	2.5183	0.0000	0.0000	83.1035	0.0000	0.5991
Link55	0.0000	0.3430	0.0000	0.0000	4.9859	0.0000	0.0000	14.5355	0.0000	0.0000	2005.8927	0.0000	1.6367
Link68	0.0000	2.0649	0.0000	0.0000	15.8606	0.0000	0.0000	7.6810	0.0000	0.0000	3072.3952	0.0000	1.4232
Link69	0.0000	0.4550	0.0000	0.0000	76.0876	0.0000	0.0000	167.2113	0.0000	0.0000	43474.945	0.0000	2.5722
Link70	0.0002	0.7736	0.0000	0.0000	230.1136	0.0000	0.0000	297.4399	0.0000	0.0026	133847.97	0.0000	3.9044
Link71	0.0001	0.3283	0.0000	0.0000	578.0384	0.0000	0.0002	1760.4454	0.0000	0.0668	674250.60	0.0000	7.1037
Link73	0.0000	4.5509	0.0000	0.0000	63.2647	0.0000	0.0000	13.9015	0.0000	0.0000	1014.8128	0.0000	1.4457
Link74	0.0000	10.2298	0.0000	0.0000	63.2649	0.0000	0.0000	6.1844	0.0000	0.0000	630.8095	0.0000	1.4538
Link75	0.0000	2.7387	0.0000	0.0000	63.2629	0.0000	0.0000	23.0998	0.0000	0.0000	1201.1904	0.0000	1.4180
Link76	0.0000	12.1623	0.0000	0.0000	63.2580	0.0000	0.0000	5.2012	0.0000	0.0000	208.0461	0.0000	1.4144
Link84	0.0000	6.5446	0.0000	0.0000	77.8628	0.0000	0.0000	11.8973	0.0000	0.0000	3331.2486	0.0000	1.2487
Link85	0.0000	9.6697	0.0000	0.0000	77.8187	0.0000	0.0000	8.0477	0.0000	0.0000	3782.3982	0.0000	1.0676

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| Table E14a - Natural Channel Encroachment Information |
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Conduit Name	<------- Existing Conveyance Condition -------> Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	<----- Encroachment Conveyance Condition -----> Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	<- % Volume --> Reduction Left	Right	<-- Encroachment Data --> Depth Incr.	Method
Link53	0.0000	72.167	0.0000	72.167	-5.4303	1.9504	0.0000	72.167	0.0000	72.167	-5.4303	1.9504	0.0000	0.0000	0.0000	None
Link55	0.0000	707.85	0.0000	707.85	-10.757	8.5316	0.0000	707.85	0.0000	707.85	-10.757	8.5316	0.0000	0.0000	0.0000	None
Link68	0.0000	337.83	0.0000	337.83	-3.6404	7.9974	0.0000	337.83	0.0000	337.83	-3.6404	7.9974	0.0000	0.0000	0.0000	None
Link69	0.0000	8912.6	0.0000	8912.6	-49.339	147.17	0.0000	8912.6	0.0000	8912.6	-49.339	147.17	0.0000	0.0000	0.0000	None
Link70	.14E-06	27166.3	0.0000	27166.3	-64.200	91.625	.14E-06	27166.3	0.0000	27166.3	-64.200	91.625	0.0000	0.0000	0.0000	None

Link71	.000012	336147.	0.0000	336147.	-245.80	59.223	.000012	336147.	0.0000	336147.	-245.80	59.223	0.0000	0.0000	0.0000	None
Link73	0.0000	524.39	0.0000	524.39	-6.0638	21.143	0.0000	524.39	0.0000	524.39	-6.0638	21.143	0.0000	0.0000	0.0000	None
Link74	0.0000	286.16	0.0000	286.16	-5.0006	3.5074	0.0000	286.16	0.0000	286.16	-5.0006	3.5074	0.0000	0.0000	0.0000	None
Link75	0.0000	1294.1	0.0000	1294.1	-17.955	7.0559	0.0000	1294.1	0.0000	1294.1	-17.955	7.0559	0.0000	0.0000	0.0000	None
Link76	0.0000	232.58	0.0000	232.58	-8.2902	-0.8393	0.0000	232.58	0.0000	232.58	-8.2902	-0.8393	0.0000	0.0000	0.0000	None
Link84	0.0000	621.35	0.0000	621.35	-7.5495	6.2513	0.0000	621.35	0.0000	621.35	-7.5495	6.2513	0.0000	0.0000	0.0000	None
Link85	0.0000	340.81	0.0000	340.81	-4.8365	8.2864	0.0000	340.81	0.0000	340.81	-4.8365	8.2864	0.0000	0.0000	0.0000	None

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| Table E14b - Floodplain Mapping |
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Conduit Name	Upstream WS Elev.	Downstream WS Elev.	Channel Length	Center Station	<----- Left Offsets Natural	Encroach	------> Bank	<----- Right Offsets Natural	Encroach	------> Bank	<- Channel Widths-> Total	Encroach.
Link53	636.6503	636.4001	33.0000	0.0000	5.4303	5.4303	21.2000	1.9504	1.9504	17.8000	7.3808	7.3808
Link55	633.9697	633.5479	138.0000	0.0000	10.7566	10.7566	23.6000	8.5316	8.5316	9.4000	19.2881	19.2881
Link68	623.1362	620.6869	400.0000	0.0000	3.6404	3.6404	67.2000	7.9974	7.9974	30.6000	11.6379	11.6379
Link69	620.6869	620.6814	260.0000	0.0000	49.3389	49.3389	126.4000	147.1707	147.1707	174.6000	196.5096	196.5096
Link70	620.3405	620.3414	450.0000	0.0000	64.2000	64.2000	64.2000	91.6255	91.6255	121.3000	155.8255	155.8255
Link71	620.3414	620.3420	383.0000	0.0000	245.8001	245.8001	245.8000	59.2232	59.2232	65.5000	305.0233	305.0233
Link73	603.9740	599.5964	73.0000	0.0000	6.0638	6.0638	92.8000	21.1427	21.1427	88.6000	27.2065	27.2065
Link74	599.5964	596.3783	102.0000	0.0000	5.0006	5.0006	93.3000	3.5074	3.5074	33.4000	8.5080	8.5080
Link75	596.3783	596.2687	52.0000	0.0000	17.9547	17.9547	92.5000	7.0559	7.0559	48.8000	25.0106	25.0106
Link76	596.2687	594.0045	40.0000	-4.6000	3.6902	3.6902	41.9000	3.7607	3.7607	65.0000	7.4509	7.4509
Link84	613.9106	607.3690	280.0000	0.0000	7.5495	7.5495	30.6000	6.2513	6.2513	26.8000	13.8008	13.8008
Link85	607.3690	594.1094	470.0000	0.0000	4.8365	4.8365	68.1000	8.2864	8.2864	109.0000	13.1229	13.1229

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| Table E15 - SPREADSHEET INFO LIST |
| Conduit Flow and Junction Depth Information for use in |
| spreadsheets. The maximum values in this table are the |
| true maximum values because they sample every time step.|
| The values in the review results may only be the |
| maximum of a subset of all the time steps in the run. |
| Note: These flows are only the flows in a single barrel.|
==========

Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	## ## ##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
Link12	17.1646	205920.8342	7.0805	783.2818	##	Node11	617.2000	620.6814
Link13	26.0586	444862.0415	10.6252	775.1082	##	Node12	617.2100	620.3405
Link14	38.8374	565147.8051	6.4036	2496.5564	##	Node20	634.8000	640.3468
Link15	39.5622	565081.1380	5.7795	2373.3582	##	Node21	633.1600	640.2891
Link16	63.7931	846361.2399	8.9369	4560.3396	##	Node22	630.1100	637.0838
Link17	69.7540	881618.5499	9.8297	371.1448	##	Node23	628.8600	636.5337
Link18	69.7510	881668.1854	10.2543	1637.1583	##	Node24	628.0300	636.0414
Link22	5.0472	79554.2853	4.0406	49.0681	##	Node25	626.3500	631.2506
Link23	63.2657	1336996.211	8.8237	2236.2205	##	Node26	626.4200	630.7784
Link24	63.2651	1337022.360	8.8278	548.3205	##	Node27	623.6900	625.4198
Link25	63.2643	1337001.576	8.8388	2257.4694	##	Node29	612.7800	613.9106
Link26	63.2640	1337042.600	8.8628	2268.2029	##	Node30	629.8800	631.4562
Link27	63.2639	1337104.441	8.8904	2373.5828	##	Node31	624.3900	629.4913
Link28	63.2640	1337194.223	9.4305	1686.0524	##	Node32	623.0600	629.2656
Link31	4.9865	50248.8537	4.2553	74.6480	##	Node33	610.5600	620.3420
Link32	118.2317	1624532.649	23.4715	115.9495	##	Node34	608.4300	618.0165
Link33	109.2705	1193903.833	21.4550	89.3932	##	Node35	608.4000	617.4627
Link47	28.5382	91503.2604	22.1265	97.9414	##	Node36	607.4000	615.1758
Link53	4.9865	50250.7564	2.0785	83.1035	##	Node37	606.4600	612.8534
Link54	4.9861	50275.1392	1.4714	215.3033	##	Node38	605.4500	609.5054
Link55	4.9859	50245.0483	1.7896	2005.8927	##	Node39	604.4400	605.8702
Link56	15.9158	94893.8944	1.7446	1259.7513	##	Node41	630.2000	630.7857

Link68	15.8606	95225.2688	3.2774	1734.1722	##	Node43	636.4600	638.4374
Link69	-76.0876	97263.4758	0.9578	43474.9453	##	Node44	635.7400	638.3842
Link70	230.1136	1014548.245	3.0347	133847.9710	##	Node45	636.0400	636.6503
Link71	-578.0384	1016997.272	1.3483	771524.8470	##	Node46	592.7400	594.0045
Link72	63.2648	1337211.023	19.0304	131.4698	##	Node47	572.0000	573.2186
Link73	63.2647	1337250.012	7.6246	344.2132	##	Node48	593.3000	594.1094
Link74	63.2649	1337245.848	7.5893	278.9275	##	Node63	631.0000	633.5479
Link75	63.2629	1337266.721	3.2727	1201.1904	##	Node65	638.0000	641.2242
Link76	63.2580	1337257.252	9.7486	133.6185	##	Node66	631.9700	636.1440
Link77	17.0660	120051.3874	9.1963	64.5918	##	Node69	636.0000	636.4001
Link78	17.0542	120220.4305	1.6792	1154.3750	##	Node70	633.4300	633.9697
Link79	26.0722	444897.2357	11.4496	130.9372	##	Node71	622.0000	623.1362
Link82	69.7487	881736.5986	15.6379	609.7613	##	Node74	618.9800	620.6869
Link83	77.8639	1042310.928	12.5620	535.8348	##	Node75	602.9200	603.9740
Link84	77.8628	1042397.709	7.3157	672.6104	##	Node79	615.6100	620.3414
Link85	77.8187	1042499.799	6.6446	238.3731	##	Node80	597.8900	599.5964
Link86	8.2253	160565.5529	1.8808	65.2684	##	Node81	595.1800	596.3783
Link87	8.2263	160537.1147	7.0512	28.6066	##	Node82	594.6700	596.2687
Link93	-611.6940	1546.7952	3.6474	1751.2454	##	Node83	639.6000	640.0034
Link95	12.3701	80456.5731	1.0812	8299.7507	##	Node84	631.5400	637.3578
Link103	1.7611	37479.6075	6.2391	0.8235	##	Node86	613.4900	616.1457
Link104	1.7641	37472.1384	3.9298	71.9241	##	Node87	606.0000	607.3690
Link105	1.7609	37479.3307	3.4573	32.1787	##	Node88	622.7100	623.1139
Link107	13.2346	80349.4467	1.2954	5846.5527	##	Node89	637.1000	638.4370
Link108	1.7789	37494.4160	0.4874	1205.5789	##	Node92	634.9000	635.7493
Link109	11.4875	42472.7610	1.6955	252.3514	##	Node94	633.3000	634.2553
Link118	10.2568	52197.4692	0.7607	651.4880	##	Node96	628.0000	629.2659
214.1	29.3718	387843.2469	9.4567	176.3057	##	Node99	637.7000	640.2914
249.1	6.1137	44278.1529	5.0466	47.4224	##	Node100	632.3300	635.8107
ROAD1	12.7325	33747.9777	3.3553	28.7917	##	Node101	632.0000	634.8000
272.1	4.2867	35458.7773	3.4803	39.5773	##	Node103	631.4400	632.7245
283.1	4.8275	54268.8336	6.1222	30.8041	##	Node104	631.2900	631.6276
Link98.1	2.8153	45860.9521	6.2319	13.9337	##	Node107	630.5000	630.6208
388.1	2.5146	18207.3599	3.4663	22.2461	##	Node108	632.2000	633.8669
403.1	3.7204	3022.4995	4.0287	204.3755	##	Node109	632.5000	632.7765
ROAD4	17.7962	75020.1490	2.1056	7912.7132	##	Node110	630.0000	630.4576
405.1	-0.2618	-553.5102	0.4720	98.2967	##	Node30.1	627.1300	629.4922
ROAD3	18.7447	78749.9502	2.9557	1970.0673	##	Node30.2	628.4400	629.4922
407.1	3.8810	28543.8565	4.1386	37.0685	##	Node30.3	629.2000	630.1240
ROAD2	14.9647	49465.1056	3.7384	581.3360	##	Node120	638.0000	640.3472
Link 5	163.9521	624289.3935	0.0000	0.0000	##			
WEIR30	6.5021	16706.9808	0.0000	0.0000	##			
WEIR46	11.2548	40501.5128	0.0000	0.0000	##			
Overtop90	11.6069	42997.9412	0.0000	0.0000	##			
Link97.1	27.3489	235152.0342	0.0000	0.0000	##			
Roadway98	13.4643	6049.0988	0.0000	0.0000	##			
Link106.1.	9.1382	24429.1859	0.0000	0.0000	##			
WEIR119	52.6365	234696.2167	0.0000	0.0000	##			
FREE # 1	227.2446	2818469.440	0.0000	0.0000	##			

```
*====================================================*
|     Table E15a - SPREADSHEET REACH LIST            |
| Peak flow and Total Flow listed by Reach or those  |
|      conduits or diversions having the same        |
|      upstream and downstream nodes.                |
*====================================================*
```

Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
Node20	Node21	17.1646	205920.834
Node21	Node84	26.0586	444862.041
Node22	Node23	38.8374	565147.805
Node23	Node24	39.5622	565081.138
Node24	Node25	63.7931	846361.240
Node26	Node25	69.7540	881618.550
Node26	Node27	69.7510	881668.185
Node31	Node32	5.0472	79554.2853
Node33	Node34	63.2657	1336996.21
Node34	Node35	63.2651	1337022.36
Node35	Node36	63.2643	1337001.58
Node36	Node37	63.2640	1337042.60
Node37	Node38	63.2639	1337104.44
Node38	Node39	63.2640	1337194.22
Node45	Node44	4.9865	50248.8537
Node46	Node47	118.2317	1624532.65
Node48	Node47	109.2705	1193903.83
Node66	Node24	28.5382	91503.2604
Node45	Node69	4.9865	50250.7564
Node69	Node70	4.9861	50275.1392
Node70	Node63	4.9859	50245.0483
Node41	Node71	15.9158	94893.8944
Node71	Node74	15.8606	95225.2688
Node74	Node11	-76.0876	97263.4758
Node12	Node79	230.1136	1014548.24
Node79	Node33	-578.0384	1016997.27
Node39	Node75	63.2648	1337211.02
Node75	Node80	63.2647	1337250.01
Node80	Node81	63.2649	1337245.85
Node81	Node82	63.2629	1337266.72
Node82	Node46	63.2580	1337257.25
Node65	Node83	17.0660	120051.387
Node83	Node22	17.0542	120220.430
Node84	Node22	26.0722	444897.236
Node27	Node86	69.7487	881736.599
Node86	Node29	77.8639	1042310.93
Node29	Node87	77.8628	1042397.71
Node87	Node48	77.8187	1042499.80
Node88	Node86	8.2253	160565.553
Node32	Node88	8.2263	160537.115
Node92	Node100	-611.6940	1546.7952
Node96	Node32	12.3701	80456.5731
Node104	Node107	1.7611	37479.6075
Node101	Node103	1.7641	37472.1384
Node103	Node104	1.7609	37479.3307
Node110	Node96	13.2346	80349.4467
Node107	Node110	1.7789	37494.4160
Node109	Node110	11.4875	42472.7610
Node89	Node43	10.2568	52197.4692
Node11	Node12	58.7437	387843.247
Node30	Node30.3	18.8462	78026.1307

Node43	Node44	4.2867	35458.7773
Node63	Node41	4.8275	54268.8336
Node100	Node101	2.8153	45860.9521
Node108	Node109	2.5146	18207.3599
Node30.1	Node31	18.5360	78042.6485
Node30.2	Node30.1	18.8060	78196.4400
Node30.3	Node30.2	18.8457	78008.9621
Node11	Node12	163.9521	624289.393
Node43	Node44	6.5021	16706.9808
Node63	Node41	11.2548	40501.5128
Node94	Node108	11.6069	42997.9412
Node99	Node21	27.3489	235152.034
Node100	Node101	13.4643	6049.0988
Node108	Node109	9.1382	24429.1859
Node120	Node20	52.6365	234696.217

```
#########################################################
# Table E16. New Conduit Information Section            #
#            Conduit Invert (IE) Elevation and Conduit  #
#            Maximum Water Surface (WS) Elevations      #
#########################################################
```

Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
Link12	Node20	Node21	634.8000	634.4500	640.3468	640.2891	Circular
Link13	Node21	Node84	633.1600	631.5400	640.2891	637.3578	Circular
Link14	Node22	Node23	630.1100	628.8600	637.0838	636.5337	Circular
Link15	Node23	Node24	628.8600	628.0300	636.5337	636.0414	Circular
Link16	Node24	Node25	628.0300	626.3500	636.0415	631.2509	Circular
Link17	Node26	Node25	626.4200	626.3500	630.7784	631.2506	Circular
Link18	Node26	Node27	626.4200	623.6900	630.7784	625.4198	Circular
Link22	Node31	Node32	624.3900	623.0600	629.4913	629.2656	Circular
Link23	Node33	Node34	610.5630	608.4300	620.3420	618.0165	Circular
Link24	Node34	Node35	608.4300	608.4000	618.0165	617.4627	Circular
Link25	Node35	Node36	608.4000	607.4000	617.4627	615.1758	Circular
Link26	Node36	Node37	607.4000	606.4600	615.1758	612.8534	Circular
Link27	Node37	Node38	606.4600	605.4500	612.8534	609.5054	Circular
Link28	Node38	Node39	605.4500	604.4400	609.5054	605.8702	Circular
Link31	Node45	Node44	636.0400	635.7400	636.6503	638.3842	Circular
Link32	Node46	Node47	592.7400	572.0000	594.0045	573.2186	Rectangle
Link33	Node48	Node47	593.3000	572.0000	594.1094	573.2186	Rectangle
Link47	Node66	Node24	631.9700	628.3300	636.1440	636.0415	Circular
Link53	Node45	Node69	636.0400	636.0000	636.6503	636.4001	Natural
Link54	Node69	Node70	636.0000	633.4300	636.4001	633.9697	Trapezoid
Link55	Node70	Node63	633.4300	631.0000	633.9697	633.5479	Natural
Link56	Node41	Node71	630.2000	622.0000	630.7857	623.1362	Trapezoid
Link68	Node71	Node74	622.0000	618.9800	623.1362	620.6869	Natural
Link69	Node74	Node11	618.9800	617.2000	620.6869	620.6814	Natural
Link70	Node12	Node79	617.2100	615.6100	620.3405	620.3414	Natural
Link71	Node79	Node33	615.6100	610.5600	620.3414	620.3420	Natural
Link72	Node39	Node75	604.4400	602.9220	605.8702	604.3519	Circular
Link73	Node75	Node80	602.9200	597.8900	603.9740	599.5964	Natural
Link74	Node80	Node81	597.8900	595.1800	599.5964	596.3783	Natural
Link75	Node81	Node82	595.1800	594.6700	596.3783	596.2687	Natural
Link76	Node82	Node46	594.6700	592.7400	596.2687	594.0045	Natural
Link77	Node65	Node83	640.0000	639.6000	641.2242	640.0034	Circular
Link78	Node83	Node22	639.6000	636.3500	640.0034	637.0838	Trapezoid
Link79	Node84	Node22	631.5400	630.5100	637.3578	637.0838	Circular

Link82	Node27	Node86	623.6900	613.4900	625.4198	616.1457	Circular
Link83	Node86	Node29	613.4900	612.7800	616.1457	613.9106	Circular
Link84	Node29	Node87	612.7800	606.0000	613.9106	607.3690	Natural
Link85	Node87	Node48	606.0000	593.3000	607.3690	594.1094	Natural
Link86	Node88	Node86	622.7100	617.1000	623.1139	617.3833	Trapezoid
Link87	Node32	Node88	623.0600	622.7100	629.2656	623.1139	Circular
Link93	Node92	Node100	634.9000	634.0300	635.7491	635.8107	Trapezoid
Link95	Node96	Node32	628.0000	625.8600	629.2659	629.2656	Trapezoid
Link103	Node104	Node107	631.2900	630.5000	631.6276	630.6208	Circular
Link104	Node101	Node103	632.0000	631.4400	634.8000	632.7245	Circular
Link105	Node103	Node104	631.4400	631.2900	632.7245	631.6276	Circular
Link107	Node110	Node96	630.0000	628.0000	630.4576	629.2659	Trapezoid
Link108	Node107	Node110	630.5000	630.0000	630.6208	630.4576	Trapezoid
Link109	Node109	Node110	632.5000	630.0000	632.7765	630.4576	Trapezoid
Link118	Node89	Node43	637.1000	636.5000	638.4370	638.4374	Trapezoid
214.1	Node11	Node12	617.7000	617.2100	620.6814	620.3405	Circular
249.1	Node30	Node30.3	629.8800	629.2200	631.4562	630.2190	Circular
ROAD1	Node30	Node30.3	631.3300	630.0000	631.4562	630.1240	Trapezoid
272.1	Node43	Node44	636.4600	635.7400	638.4374	638.3842	Circular
283.1	Node63	Node41	631.0100	630.2200	633.5479	631.1256	Circular
Link98.1	Node100	Node101	632.3300	632.0000	635.8107	634.8000	Circular
388.1	Node108	Node109	632.6000	632.5000	633.8669	632.7765	Circular
403.1	Node30.1	Node31	627.2400	624.5900	629.4922	629.4913	Circular
ROAD4	Node30.1	Node31	628.1100	626.9900	629.4922	629.4913	Trapezoid
405.1	Node30.2	Node30.1	628.5600	627.2400	629.4922	629.4922	Circular
ROAD3	Node30.2	Node30.1	628.4400	628.1100	629.4922	629.4922	Trapezoid
407.1	Node30.3	Node30.2	629.2200	628.5600	630.1240	629.4922	Circular
ROAD2	Node30.3	Node30.2	630.0000	628.4400	630.1240	629.4922	Trapezoid

```
*==========================================================================*
|    Table E18 - Junction Continuity Error.   Division by Volume added 11/96  |
|                                                                            |
|  Continuity Error = Net Flow + Beginning Volume - Ending Volume            |
|                     ----------------------------------------------         |
|                     Total Flow + (Beginning Volume + Ending Volume)/2      |
|                                                                            |
|  Net Flow   = Node Inflow - Node Outflow                                   |
|  Total Flow = absolute (Inflow + Outflow)                                  |
|  Intermediate column is a judgement on the node continuity error.          |
|                                                                            |
|  Excellent  < 1 percent    Great  1 to  2 percent  Good  2 to  5 percent   |
|  Fair  5 to 10  percent    Poor  10 to 25 percent  Bad  25 to 50 percent   |
|  Terrible > 50  percent                                                    |
*==========================================================================*
```

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
Node11	429.2881	0.0212	0.0148	48.5531	0.0000	477.8412	2024755.277	0
Node12	-2544.2460	-0.1255	0.0877	0.0274	0.0000	-2544.2186	2026680.885	0
Node20	28592.3541	6.4892	0.9860	0.0018	0.0000	28592.3559	440617.0510	0
Node21	-3332.0722	-0.3761	0.1149	0.0033	0.0000	-3332.0689	885934.9099	0
Node22	-55.6245	-0.0049	0.0019	7.6368	0.0000	-47.9876	1130265.471	1
Node23	-48.8753	-0.0043	0.0017	4.2962	0.0000	-44.5792	1130228.943	0
Node24	-127.8085	-0.0076	0.0044	13.8553	0.0000	-113.9532	1692775.509	1
Node25	-50.0953	-0.0028	0.0017	13.5954	0.0000	-36.4998	1763488.758	0
Node26	-50.8783	-0.0029	0.0018	3.0102	0.0000	-47.8682	1763286.735	0
Node27	-75.0632	-0.0043	0.0026	3.8107	0.0000	-71.2525	1763404.784	0
Node29	-105.4211	-0.0051	0.0036	4.0292	0.0000	-101.3919	2084708.637	0
Node30	-0.8995	-0.0006	0.0000	0.0006	0.0000	-0.8989	156053.8812	0
Node31	-1539.8853	-0.9771	0.0531	0.0018	0.0000	-1539.8835	157596.9338	0
Node32	-540.3041	-0.1686	0.0186	0.0190	0.0000	-540.2851	320547.9731	0
Node33	-8525.3638	-0.3199	0.2940	0.9738	0.0000	-8524.3900	2665093.106	2

Node34	-38.1355	-0.0014	0.0013	0.0032	0.0000	-38.1324	2674018.571	7
Node35	-15.5035	-0.0006	0.0005	0.0029	0.0000	-15.5006	2674023.936	0
Node36	-44.7172	-0.0017	0.0015	0.0050	0.0000	-44.7121	2674044.176	0
Node37	-56.3877	-0.0021	0.0019	0.0045	0.0000	-56.3832	2674147.040	0
Node38	-82.6050	-0.0031	0.0028	0.0037	0.0000	-82.6013	2674298.663	0
Node39	-23.0759	-0.0009	0.0008	0.0021	0.0000	-23.0738	2674405.246	0
Node41	-129.4178	-0.0682	0.0045	0.1257	0.0000	-129.2921	189664.2408	0
Node43	-20.8308	-0.0200	0.0007	1.2166	0.0000	-19.6142	104363.2273	0
Node44	1908.7466	1.8637	0.0658	7.3077	0.0000	1916.0543	102414.6118	0
Node45	-3.9256	-0.0039	0.0001	2.3224	0.0000	-1.6032	100499.6101	0
Node46	-194.6461	-0.0060	0.0067	0.0630	0.0000	-194.5831	3248601.643	0
Node47	-43.7426	-0.0008	0.0015	0.8575	0.0000	-42.8851	5636905.922	0
Node48	-93.2817	-0.0039	0.0032	6.1136	0.0000	-87.1680	2387756.605	0
Node63	-175.9614	-0.0929	0.0061	0.2644	0.0000	-175.6970	189379.9119	0
Node65	-72.5126	-0.0262	0.0025	24416.7471	0.0000	24344.2345	264455.9195	0
Node66	-1690.7146	-0.9357	0.0583	0.0003	0.0000	-1690.7143	180689.2933	1
Node69	-33.5240	-0.0333	0.0012	0.0218	0.0000	-33.5021	100525.8956	0
Node70	28.7662	0.0286	0.0010	0.1597	0.0000	28.9259	100520.1875	0
Node71	-334.7386	-0.1761	0.0115	0.1396	0.0000	-334.5990	190119.1632	0
Node74	-1998.4072	-1.0381	0.0689	42.2831	0.0000	-1956.1240	192488.7446	0
Node75	-7.9529	-0.0003	0.0003	0.0082	0.0000	-7.9447	2674461.036	0
Node79	-96.0610	-0.0047	0.0033	0.9603	0.0000	-95.1006	2031545.517	0
Node80	-16.3905	-0.0006	0.0006	0.0193	0.0000	-16.3711	2674495.860	0
Node81	-20.5931	-0.0008	0.0007	0.0438	0.0000	-20.5494	2674512.568	0
Node82	6.1238	0.0002	0.0002	0.0404	0.0000	6.1642	2674523.972	0
Node83	-176.3837	-0.0734	0.0061	5.6458	0.0000	-170.7379	240271.8178	0
Node84	-30.8810	-0.0035	0.0011	0.0021	0.0000	-30.8789	889759.2772	2
Node86	-20.8363	-0.0010	0.0007	2.5958	0.0000	-18.2405	2084613.080	0
Node87	-115.7066	-0.0055	0.0040	8.7671	0.0000	-106.9396	2084897.508	0
Node88	-29.0174	-0.0090	0.0010	0.0853	0.0000	-28.9321	321102.6676	0
Node89	12.9724	0.0124	0.0004	0.0001	0.0000	12.9725	104863.1466	0
Node92	19324.1697	38.1386	0.6664	0.0001	0.0000	19324.1698	50668.2447	0
Node94	-19.0653	-0.0217	0.0007	664.1337	0.0000	645.0684	87653.8044	0
Node96	-109.2640	-0.0679	0.0038	0.3245	0.0000	-108.9395	160806.0198	0
Node99	-1838.3657	-0.3756	0.0634	0.0000	0.0000	-1838.3657	489455.5170	0
Node100	-67262.1481	-125.8251	2.3195	0.0002	0.0000	-67262.1479	53456.8460	0
Node101	-70.9786	-0.0794	0.0024	0.0010	0.0000	14297.6761	89382.1893	0
Node103	-7.2611	-0.0097	0.0003	0.0018	0.0000	-7.2593	74951.4691	0
Node104	-0.4791	-0.0006	0.0000	0.0006	0.0000	-0.4786	74958.9382	0
Node107	-15.7134	-0.0210	0.0005	0.0365	0.0000	-15.6769	74974.0236	0
Node108	356.2285	0.4160	0.0123	5.0268	0.0000	361.2553	85634.4871	0
Node109	162.7901	0.1913	0.0056	0.0276	0.0000	162.8177	85109.3068	0
Node110	-390.1965	-0.2434	0.0135	0.3710	0.0000	-389.8256	160316.6237	0
Node30.1	138.2368	0.0879	0.0048	1.3847	0.0000	139.6215	157346.1089	0
Node30.2	-197.7670	-0.1257	0.0068	0.0012	0.0000	-197.7657	157312.4225	0
Node30.3	7.2411	0.0046	0.0002	0.2526	0.0000	7.4937	156035.0928	3
Node120	-58.3302	-0.0119	0.0020	1975.1867	0.0000	1916.8565	487871.1094	0

```
The total continuity error was  -41565.     cubic feet
The remaining total volume was   27242.     cubic feet
Your mean node continuity error was   Excellent
Your worst node continuity error was  Good
```

```
*==================================================*
|  Table E19 - Junction Inflow & Outflow Listing    |
|              Units are either ft^3 or m^3         |
|              depending on the units in your model.|
*==================================================*
```

Junction Name	Constant Inflow to Node	User Inflow to Node	Interface Inflow to Node	DWF Inlow to Node	Inflow through Outfall	RNF Layer Inflow to Node	Inflow from 2D Layer	Outflow from Node	Evaporation from Node	Basin Infil.
Node11	0.0000	0.0000	0.0000	0.0000	0.0000	915099.2680	0.0000	0.0000	0.0000	0.0000
Node24	0.0000	0.0000	0.0000	0.0000	0.0000	189779.2054	0.0000	0.0000	0.0000	0.0000
Node25	0.0000	0.0000	0.0000	0.0000	0.0000	35502.8215	0.0000	0.0000	0.0000	0.0000
Node30	0.0000	0.0000	0.0000	0.0000	0.0000	77977.4280	0.0000	0.0000	0.0000	0.0000
Node33	0.0000	0.0000	0.0000	0.0000	0.0000	311009.5948	0.0000	0.0000	0.0000	0.0000
Node46	0.0000	0.0000	0.0000	0.0000	0.0000	286712.6473	0.0000	0.0000	0.0000	0.0000
Node47	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.8185E+06	0.0000	0.0000
Node48	0.0000	0.0000	0.0000	0.0000	0.0000	151292.7274	0.0000	0.0000	0.0000	0.0000
Node63	0.0000	0.0000	0.0000	0.0000	0.0000	44252.3661	0.0000	0.0000	0.0000	0.0000
Node65	0.0000	0.0000	0.0000	0.0000	0.0000	144296.9956	0.0000	0.0000	0.0000	0.0000
Node66	0.0000	0.0000	0.0000	0.0000	0.0000	86712.0435	0.0000	0.0000	0.0000	0.0000
Node89	0.0000	0.0000	0.0000	0.0000	0.0000	52457.5937	0.0000	0.0000	0.0000	369.2412
Node92	0.0000	0.0000	0.0000	0.0000	0.0000	49026.8876	0.0000	0.0000	0.0000	292.9821
Node94	0.0000	0.0000	0.0000	0.0000	0.0000	44569.8978	0.0000	0.0000	0.0000	1017.1795
Node99	0.0000	0.0000	0.0000	0.0000	0.0000	254305.9780	0.0000	0.0000	0.0000	8839.9092
Node101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	14368.6537	0.0000	0.0000
Node120	0.0000	0.0000	0.0000	0.0000	0.0000	253142.1073	0.0000	0.0000	0.0000	16511.3781

==========
| Table E20 - Junction Flooding and Volume Listing. |
| The maximum volume is the total volume |
| in the node including the volume in the |
| flooded storage area. This is the max |
| volume at any time. The volume in the |
| flooded storage area is the total volume |
| above the ground elevation, where the |
| flooded pond storage area starts. |
| The fourth column is instantaneous, the fifth is the |
| sum of the flooded volume over the entire simulation |
| Units are either ft^3 or m^3 depending on the units. |
==========

Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
Node11	0.0000	0.0000	0.0000	43.7467	0.0000
Node12	0.0000	0.0000	0.0000	39.3375	0.0000
Node20	360.5817	357.5422	0.0000	100271.5333	131784.5704
Node21	319.6519	178.8276	0.0000	13220.9032	23069.9538
Node22	0.0000	0.0000	0.0000	87.6323	0.0000
Node23	106.1046	44.7615	0.0000	96.4277	11.3702
Node24	114.2849	50.1157	0.0000	100.6727	16.2167
Node25	84.2896	0.0000	0.0000	61.5852	0.0000
Node26	81.7919	0.0000	0.0000	54.7682	0.0000
Node27	0.0000	0.0000	0.0000	21.7371	0.0000
Node29	0.0000	0.0000	0.0000	14.2076	0.0000
Node30	32.4262	32.4758	0.0000	152.1963	191.9112
Node31	356.7263	356.7263	0.0000	50223.2394	55417.4538
Node32	357.9553	0.0000	0.0000	77.9792	0.0000
Node33	140.4240	140.4502	0.0000	9004.1299	107060.4448
Node34	373.6294	0.0000	0.0000	120.4643	0.0000
Node35	371.6259	0.0000	0.0000	113.8816	0.0000
Node36	371.2966	0.0000	0.0000	97.7107	0.0000
Node37	369.2396	0.0000	0.0000	80.3393	0.0000
Node38	301.2332	0.0000	0.0000	50.9603	0.0000
Node39	0.0000	0.0000	0.0000	17.9714	0.0000
Node41	0.0000	0.0000	0.0000	7.3605	0.0000

Node43	0.0000	0.0000	0.0000	24.8477	0.0000
Node44	194.7661	97.0666	0.0000	2444.1961	5628.8525
Node45	0.0000	0.0000	0.0000	7.6693	0.0000
Node46	0.0000	0.0000	0.0000	15.8902	0.0000
Node47	0.0000	0.0000	0.0000	15.3128	0.0000
Node48	0.0000	0.0000	0.0000	10.1706	0.0000
Node63	0.0000	0.0000	0.0000	32.0169	0.0000
Node65	0.0000	0.0000	0.0000	74800.4043	0.0000
Node66	83.5282	81.4636	0.0000	14790.3688	15537.2528
Node69	0.0000	0.0000	0.0000	5.0281	0.0000
Node70	0.0000	0.0000	0.0000	6.7820	0.0000
Node71	0.0000	0.0000	0.0000	14.2770	0.0000
Node74	0.0000	0.0000	0.0000	21.4487	0.0000
Node75	0.0000	0.0000	0.0000	13.2443	0.0000
Node79	0.0000	0.0000	0.0000	59.4546	0.0000
Node80	0.0000	0.0000	0.0000	21.4430	0.0000
Node81	0.0000	0.0000	0.0000	15.0582	0.0000
Node82	0.0000	0.0000	0.0000	20.0889	0.0000
Node83	0.0000	0.0000	0.0000	5.0691	0.0000
Node84	138.8921	0.0000	0.0000	73.1065	0.0000
Node86	0.0000	0.0000	0.0000	33.3711	0.0000
Node87	0.0000	0.0000	0.0000	17.2023	0.0000
Node88	0.0000	0.0000	0.0000	5.0751	0.0000
Node89	0.0000	0.0000	0.0000	16696.4618	0.0000
Node92	246.1796	0.0000	0.0000	8687.4637	0.0000
Node94	2865.0000	0.0000	0.0000	3394.3755	0.0000
Node96	0.0000	0.0000	0.0000	15.9067	0.0000
Node99	2244.1667	0.0000	0.0000	39303.4875	0.0000
Node100	360.5937	360.5937	0.0000	20306.8972	517567.8910
Node101	362.6783	216.9116	14368.6537	35.1848	0.0000
Node103	361.2222	0.0000	0.0000	16.1412	0.0000
Node104	0.0000	0.0000	0.0000	4.2427	0.0000
Node107	0.0000	0.0000	0.0000	1.5185	0.0000
Node108	109.0633	0.0000	0.0000	20.9461	0.0000
Node109	0.0000	0.0000	0.0000	3.4750	0.0000
Node110	0.0000	0.0000	0.0000	5.7505	0.0000
Node30.1	257.5278	154.1309	0.0000	1995.9821	3253.4218
Node30.2	0.0000	0.0000	0.0000	13.2221	0.0000
Node30.3	0.0000	0.0000	0.0000	11.6107	0.0000
Node120	2863.3333	0.0000	0.0000	23780.5915	0.0000

```
*==================================*
| Simulation Specific Information  |
*==================================*
Number of Input Conduits..........        62 Number of Simulated Conduits......        71
Number of Natural Channels........        12 Number of Junctions...............        62
Number of Storage Junctions.......         6 Number of Weirs...................         8
Number of Orifices................         0 Number of Pumps...................         0
Number of Free Outfalls...........         1 Number of Tide Gate Outfalls......         0


*==========================================================*
| Average % Change in Junction or Conduit is defined as:  |
| Conduit  % Change ==> 100.0 ( Q(n+1) - Q(n) ) / Qfull   |
| Junction % Change ==> 100.0 ( Y(n+1) - Y(n) ) / Yfull   |
*==========================================================*

The Conduit with the largest average change was..Link93     with     0.020 percent
The Junction with the largest average change was.Node25     with     0.090 percent
The Conduit with the largest sinuosity was.......Link93     with  4905.988


*==================================================================*
| Table E21. Continuity balance at the end of the simulation       |
|            Junction Inflow, Outflow or Street Flooding           |
| Error = Inflow  + Initial Volume - Outflow - Final   Volume      |
```

```
*==================================================================*

       Inflow          Inflow       Average
       Junction   Volume,ft^3   Inflow, cfs
---------------  ------------  -------------
         Node11   915359.1607         5.2972

         Node24   189829.8704         1.0986

         Node25    35508.9681         0.2055

         Node30    78027.7505         0.4515

         Node33   311099.6223         1.8003

         Node46   286811.7422         1.6598

         Node48   151352.9731         0.8759

         Node63    44364.5172         0.2567

         Node65   144404.5321         0.8357

         Node66    89186.0328         0.5161

         Node89    52665.6774         0.3048

         Node92    49121.4495         0.2843

         Node94    44655.8632         0.2584

         Node99   254303.4828         1.4717

        Node120   253174.8927         1.4651

         Node47    -2.818E+06       -16.3106

        Node101   -14368.6537        -0.0832

       Outflow      Outflow          Average
       Junction  Volume,ft^3    Outflow, cfs
---------------  ------------   ------------
         Node47   2.81847E+06        16.3106

        Node101    14368.6537         0.0832


*=====================================================*

| Initial system volume        =         0.0000 Cu Ft |

| Total system inflow volume   =   2.896138E+06 Cu Ft |

| Inflow + Initial volume      =   2.896138E+06 Cu Ft |

*=====================================================*

| Total system outflow         =   2.832838E+06 Cu Ft |

| Volume left (Final volume)   =     27242.3757 Cu Ft |

| Evaporation                  =         0.0000 Cu Ft |

| Basin Infiltration           =     27030.6901 Cu Ft |

| Outflow + Final Volume       =   2.887111E+06 Cu Ft |

*=====================================================*


*==============================================*
| Total Model Continuity Error                 |
| Error in Continuity, Percent =         0.3117 |
| Error in Continuity, ft^3    =       9026.402 |
| + Error means a continuity loss, - a gain    |
*==============================================*


####################################################
# Table E22. Numerical Model judgement section    #
####################################################

Overall error was (minimum of Table E18 & E21)              0.3117 percent


Worst nodal error was in node Node100          with      -125.8251 percent


Of the total inflow this loss was                           2.3225 percent


Your overall continuity error was                  Excellent


                                                  Good Efficiency


Efficiency of the simulation                       2.84
```

```
 Most Number of Non Convergences at one Node        7.


 Total Number Non Convergences at all Nodes        17.


 Total Number of Nodes with Non Convergences        7.




 ##########################################################
 # Table E23. New Basin Design Information               #
 #            Maximum Hydraulic Grade Line,              #
 #            Out Conduit Sizes and Maximum Flow         #
 ##########################################################

 A) Resize d/s Pipes based on given HGL
 B) Resize Basin based on given HGL
 C) Resize d/s Pipes and Basin based on HGL and max discharge
 D) Resize d/s pipes based on given max discharge

    Basin Name    Type    Max.HGL   Conduit         Depth   Width   Barrels   Max.Flow
                            (ft)                     (ft)    (ft)             (ft^3/s)
 --------------- ------  --------- --------------- ------- ------- --------- ---------

 ===> Hydraulic model simulation ended normally.
 ===> XP-SWMM Simulation ended normally.



 ===> Your input file was named  : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Existing\ExistingConditions_50yr
2hr.DAT

 ===> Your output file was named : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Existing\ExistingConditions_50yr
2hr.out


 *==============================================================*
 |             SWMM Simulation Date and Time Summary            |
 *==============================================================*
 | Starting Date... April       6, 2015  Time...   14:45:48:58  |
 |   Ending Date... April       6, 2015  Time...   14:46:44:52  |
 |  Elapsed Time...    0.93233 minutes or     55.94000 seconds  |
 *==============================================================*
```

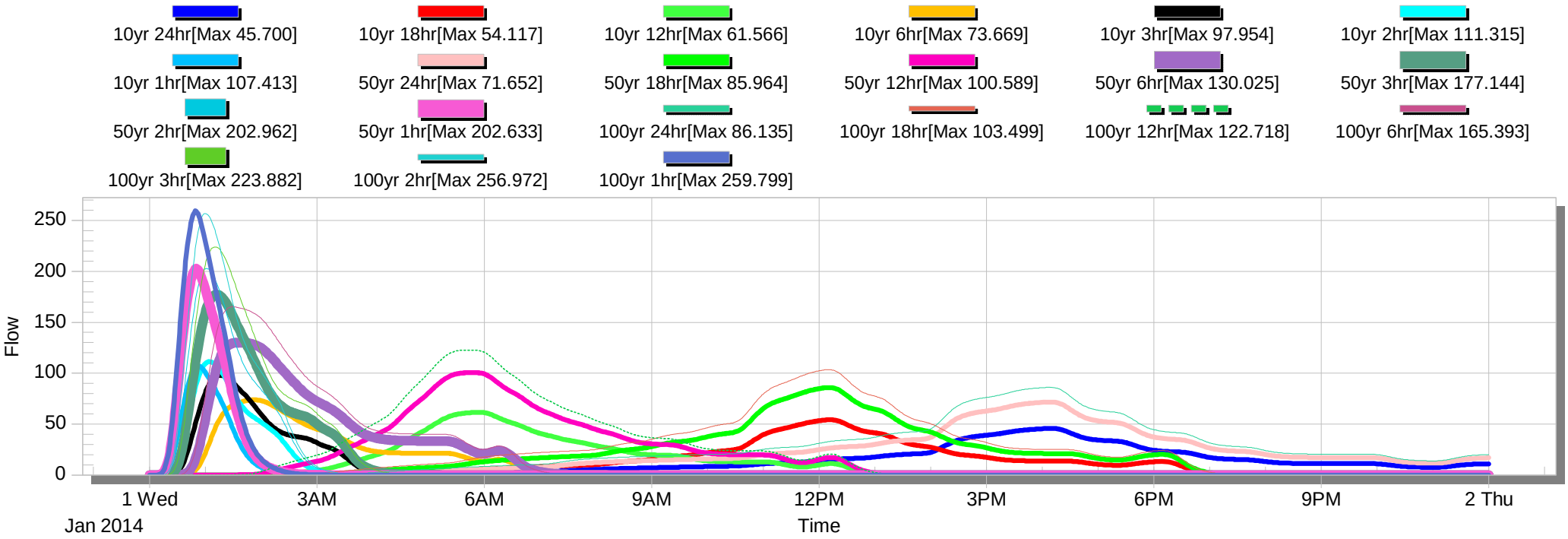
XP-SWMM

PROPOSED ALTERNATIVE 1A ANALYSIS

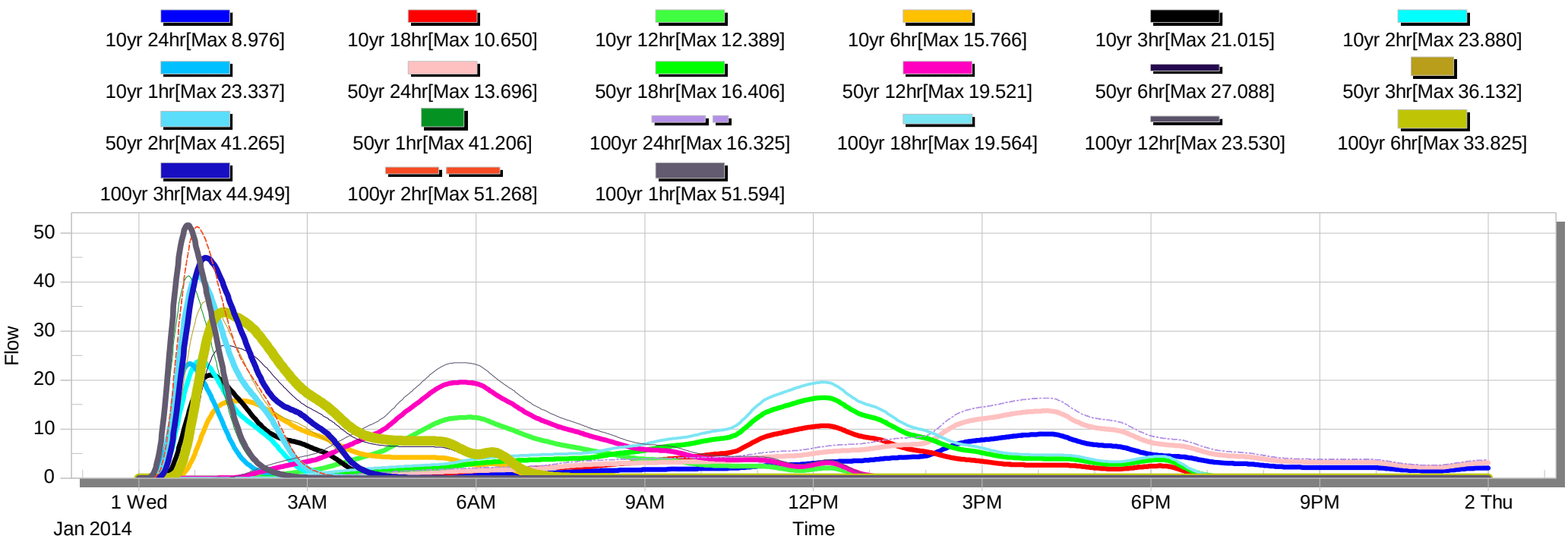
PROPOSED ALTERNATIVE 1A

PEAK FLOW RATES BY TRIBUTARY AREA

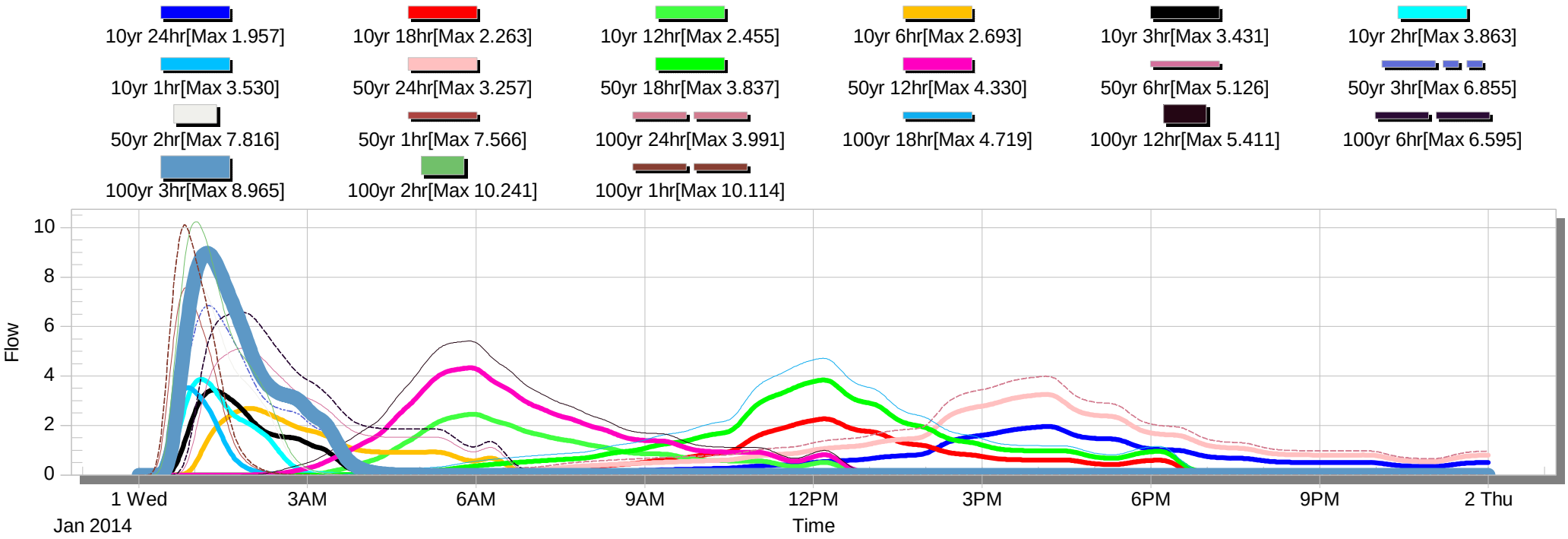
Node - Node11



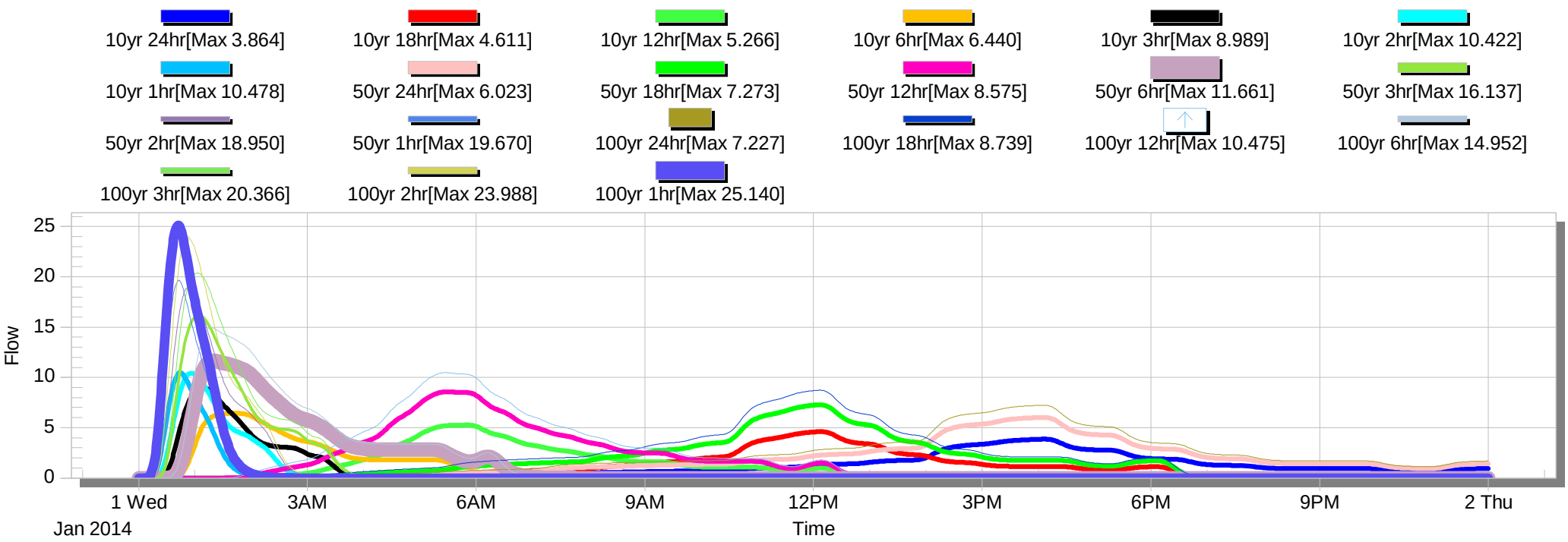
Node - Node24



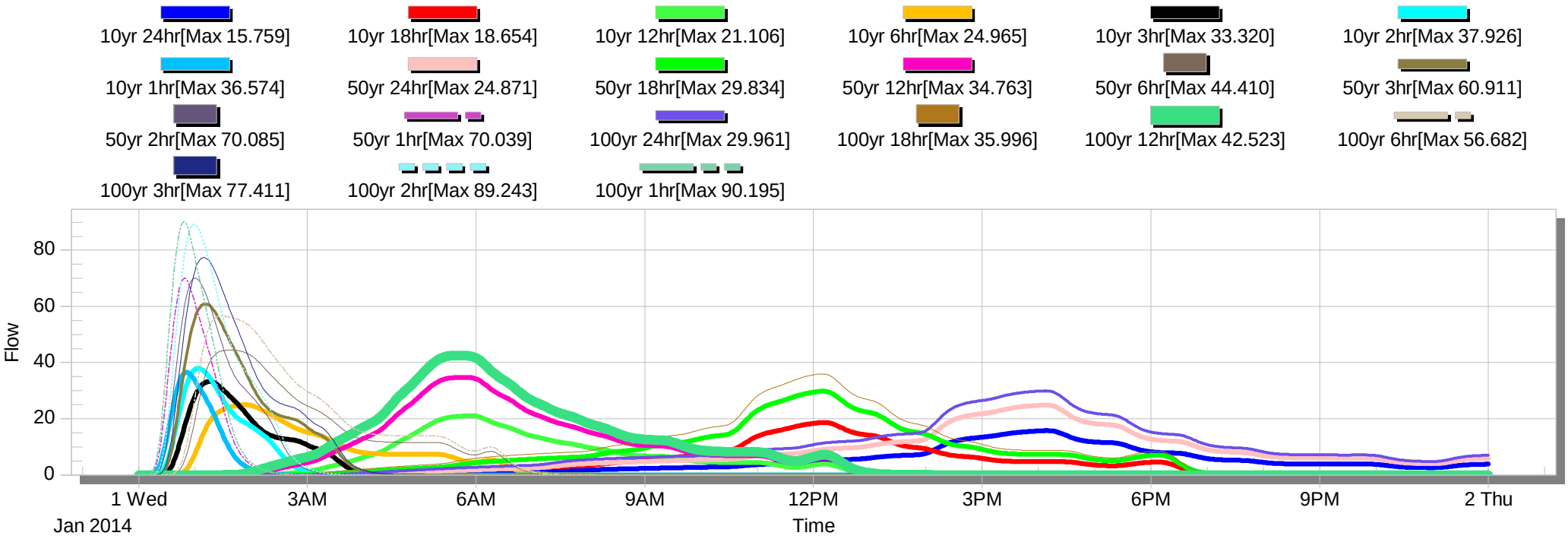
Node - Node25



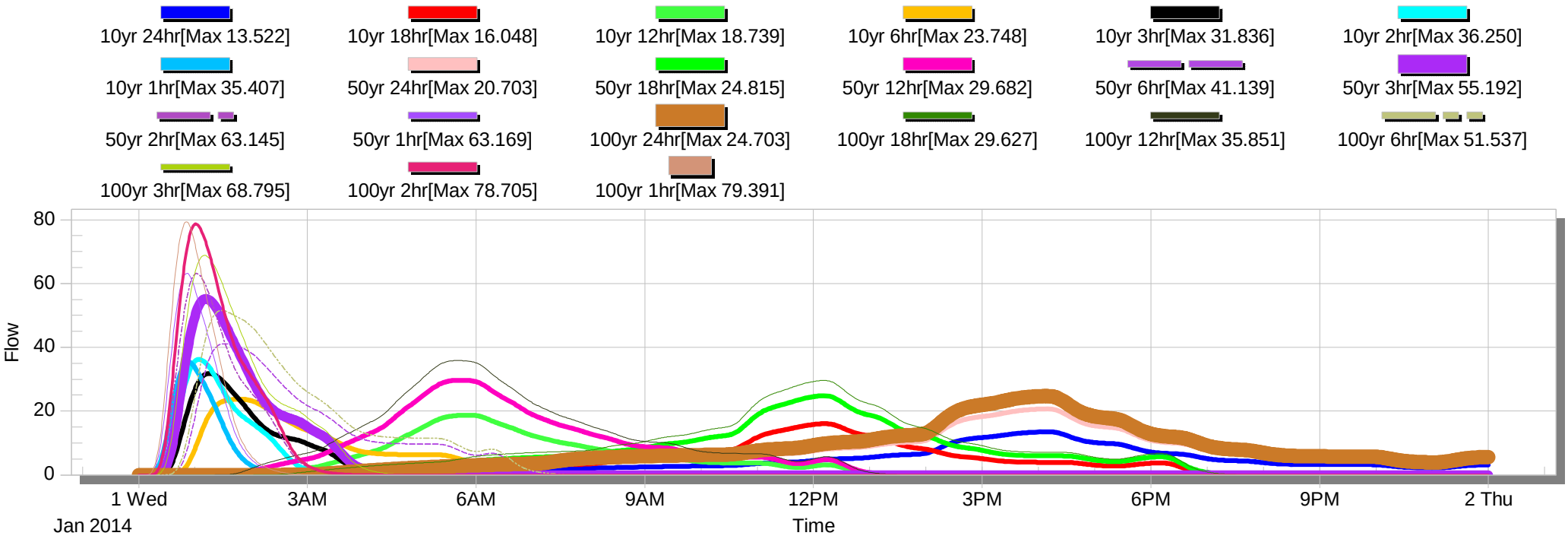
Node - Node30



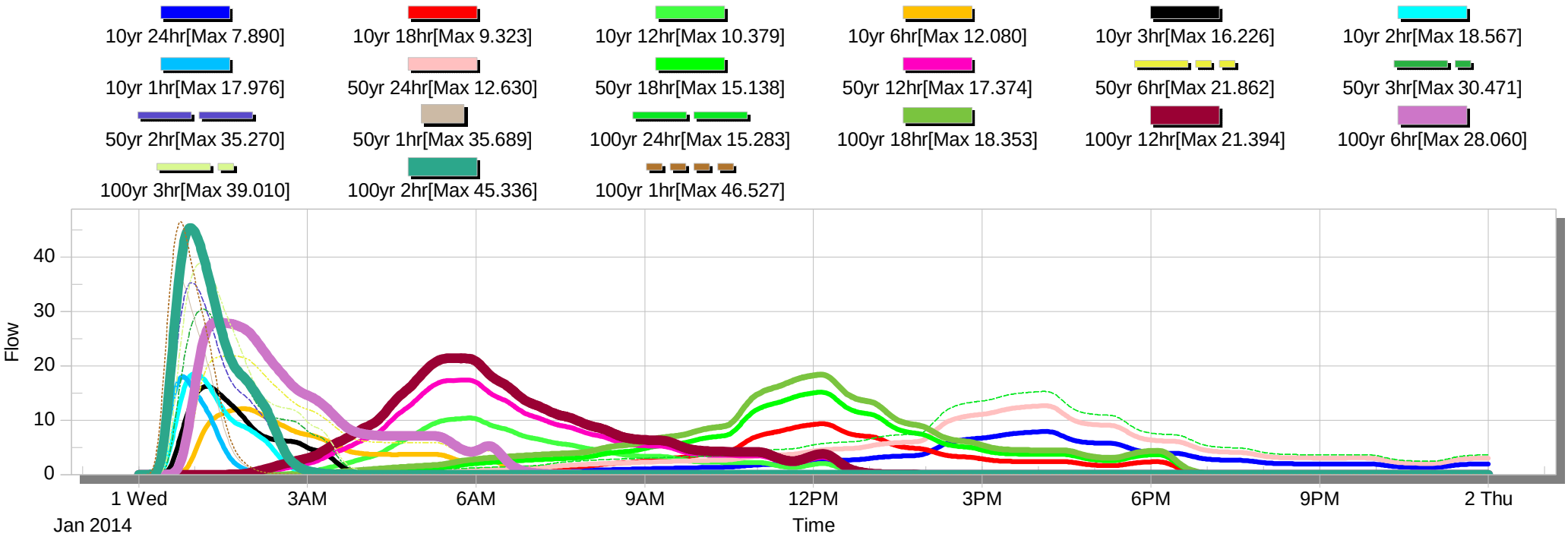
Node - Node33



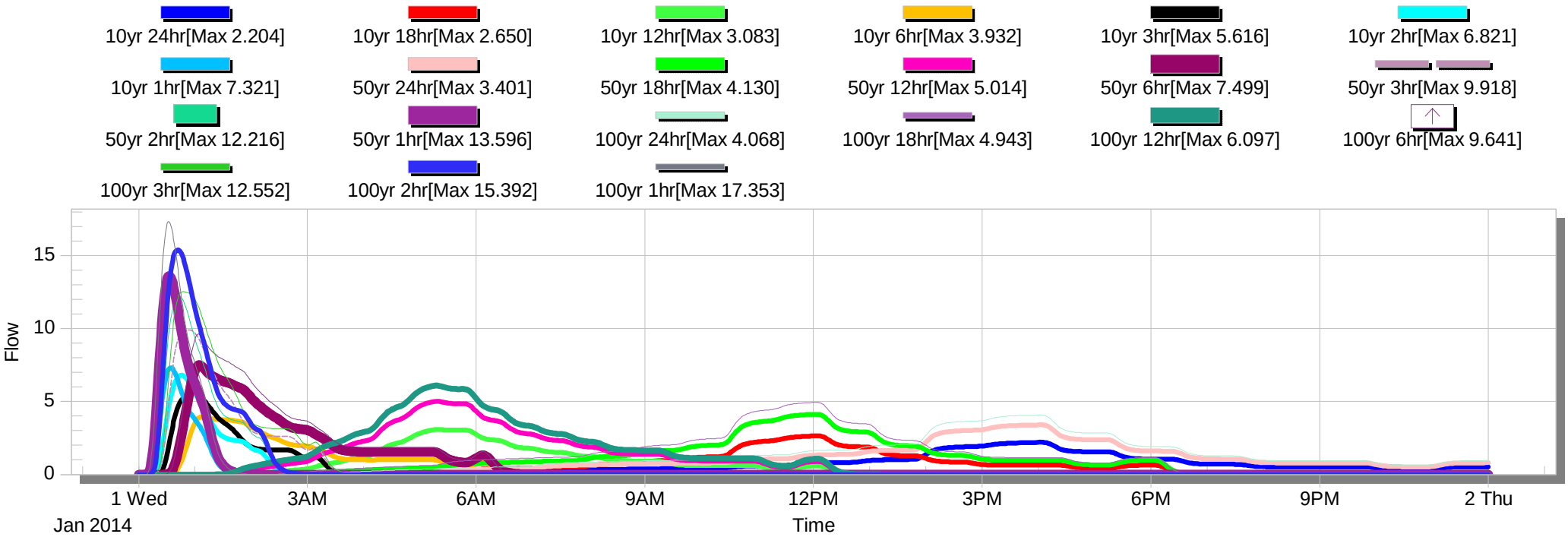
Node - Node46



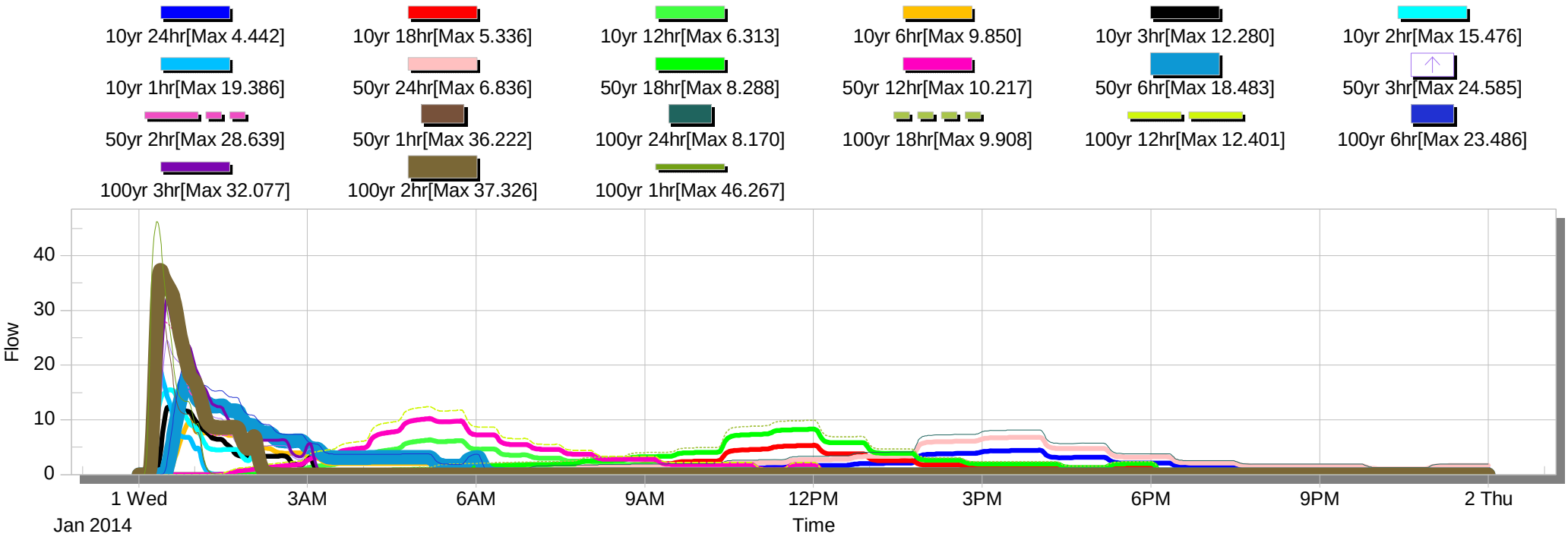
Node - Node48



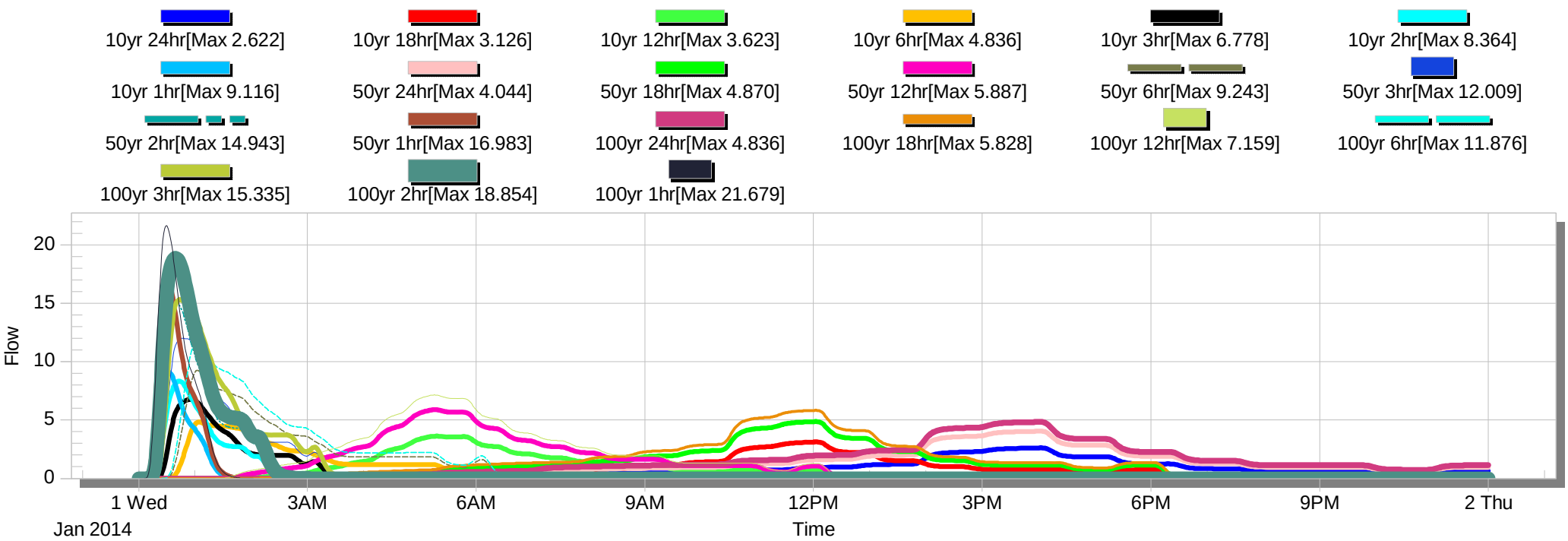
Node - Node63



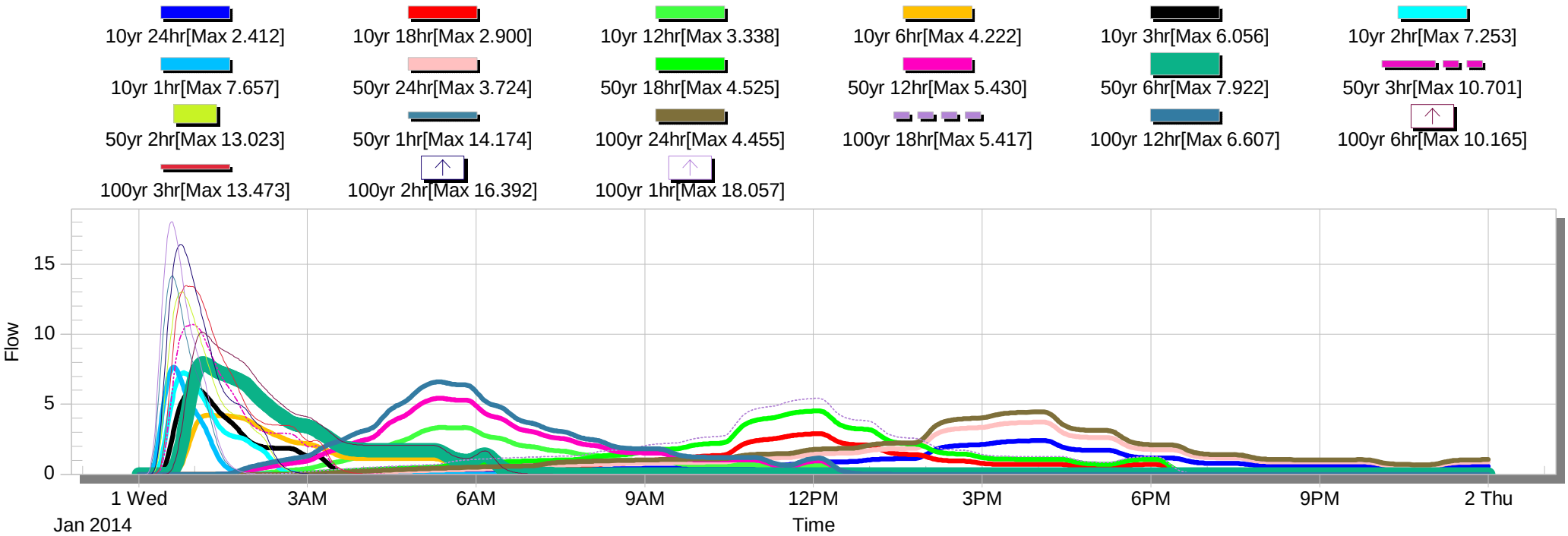
Node - Node66



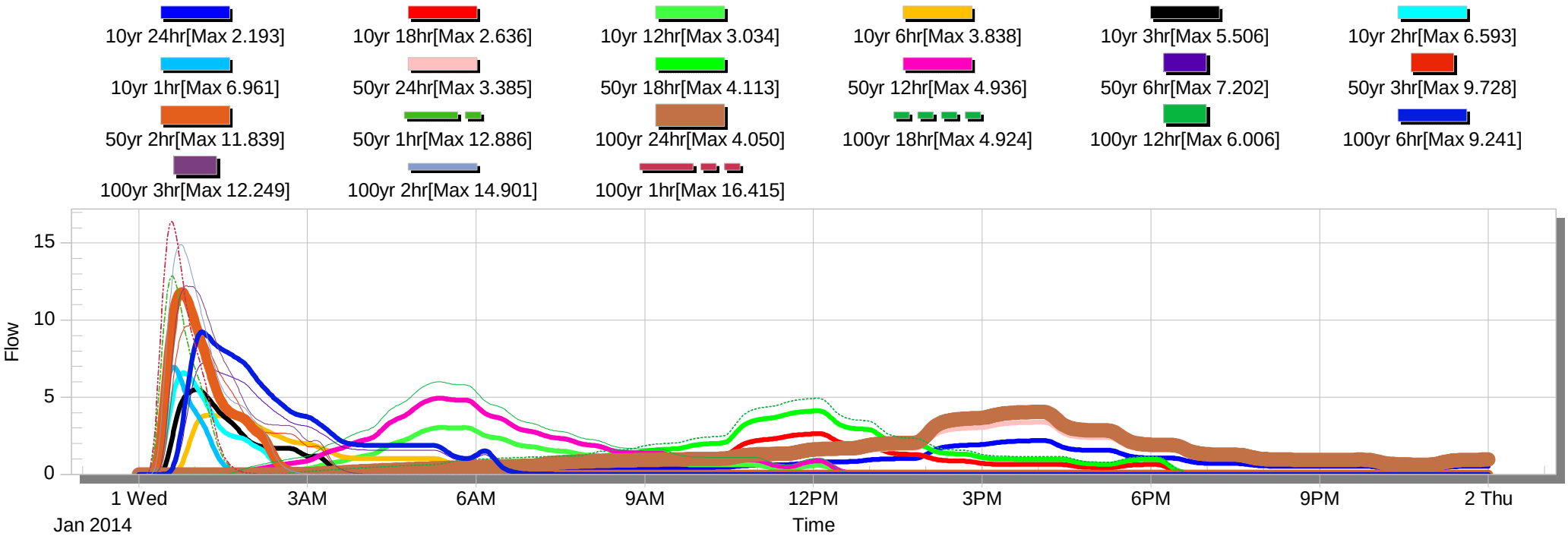
Node - Node89



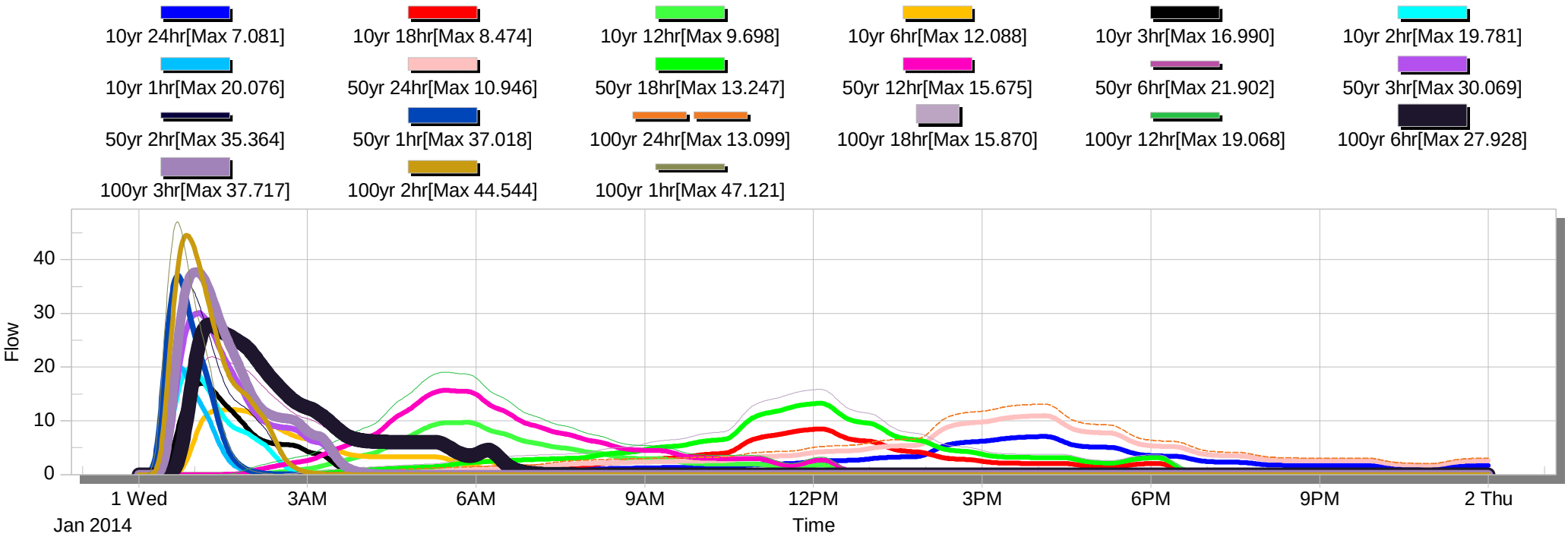
Node - Node92



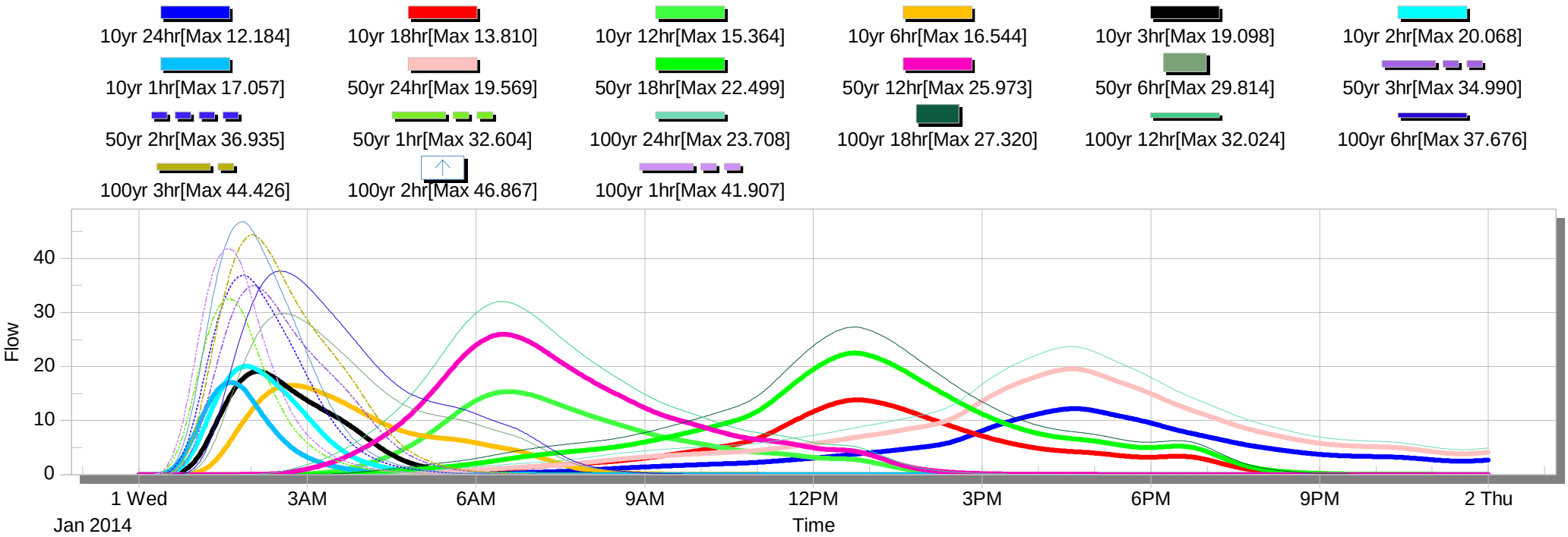
Node - Node94



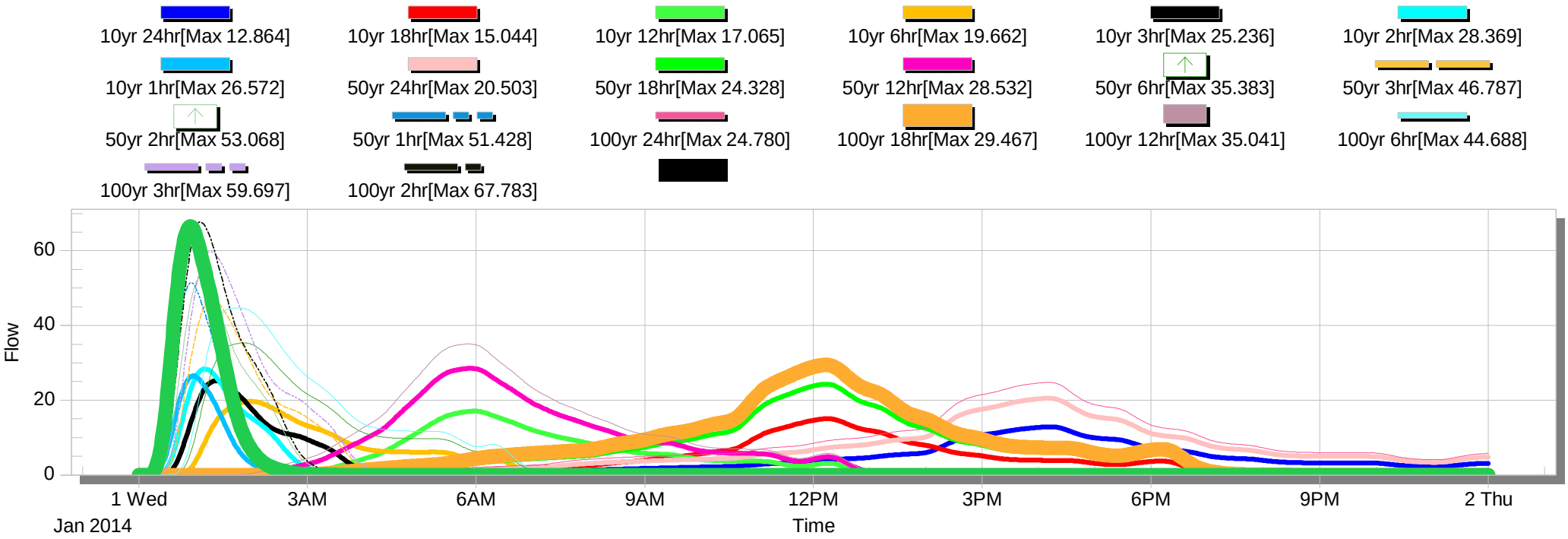
Node - Node65



Node - Node99



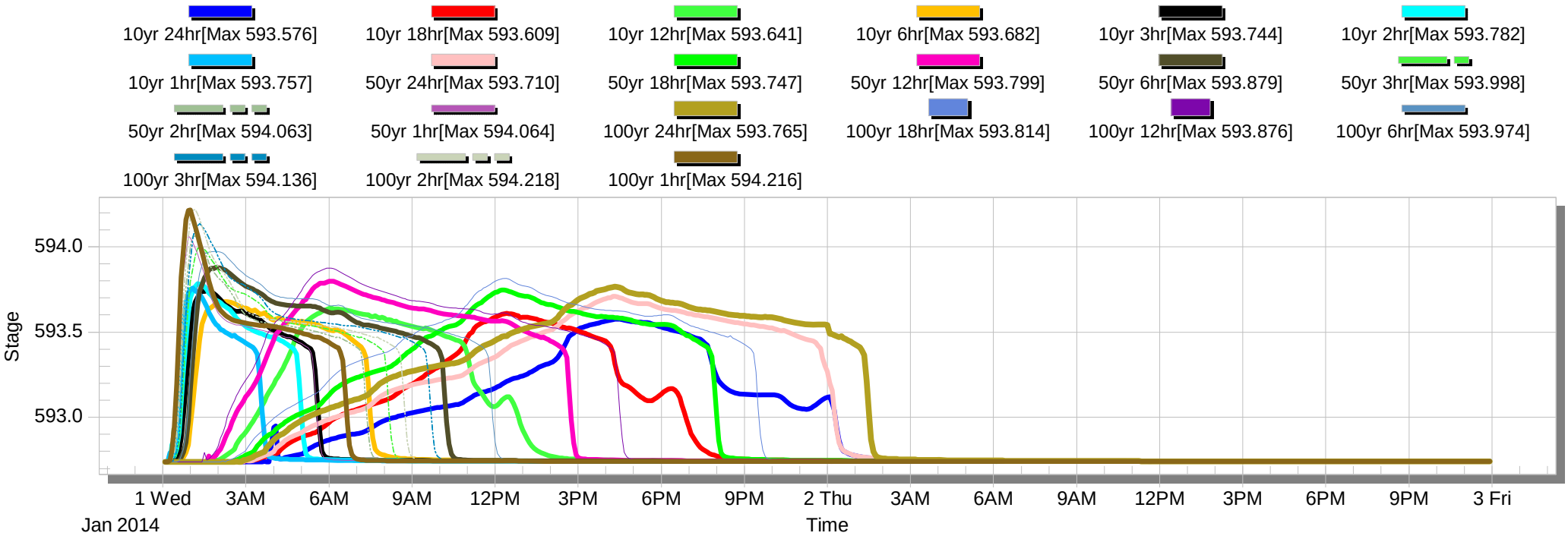
Node - Node120



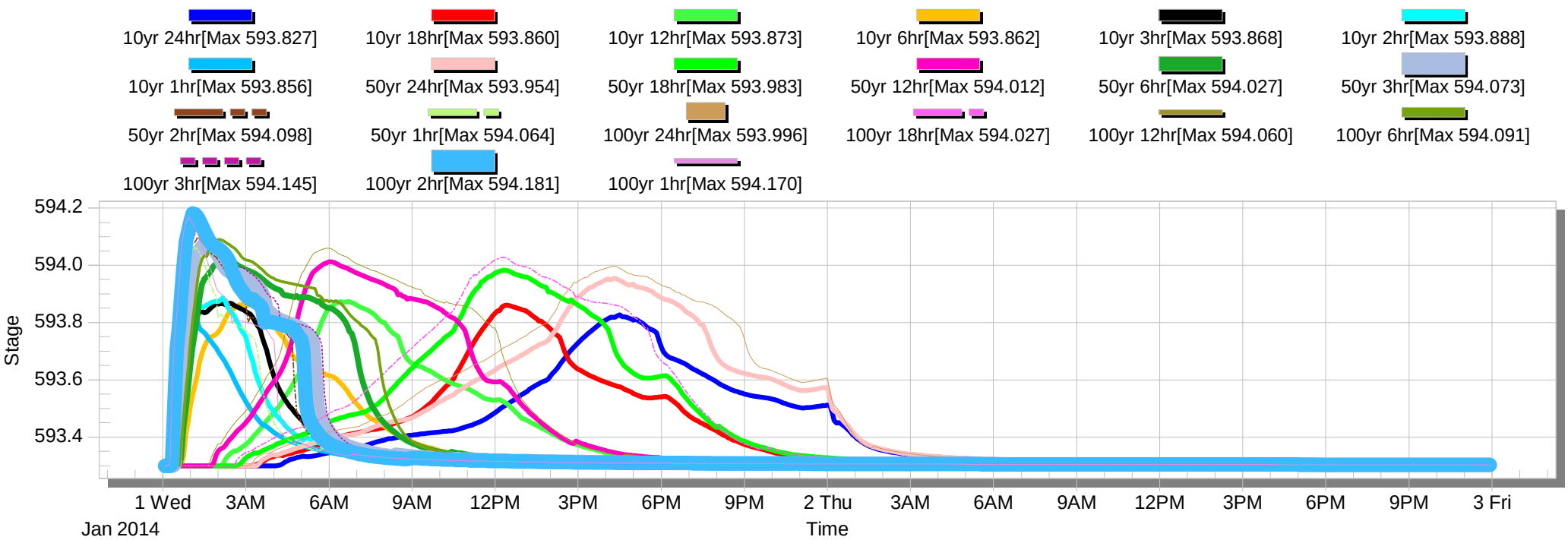
PROPOSED ALTERNATIVE 1A

HIGH WATER LEVEL AT EACH NODE

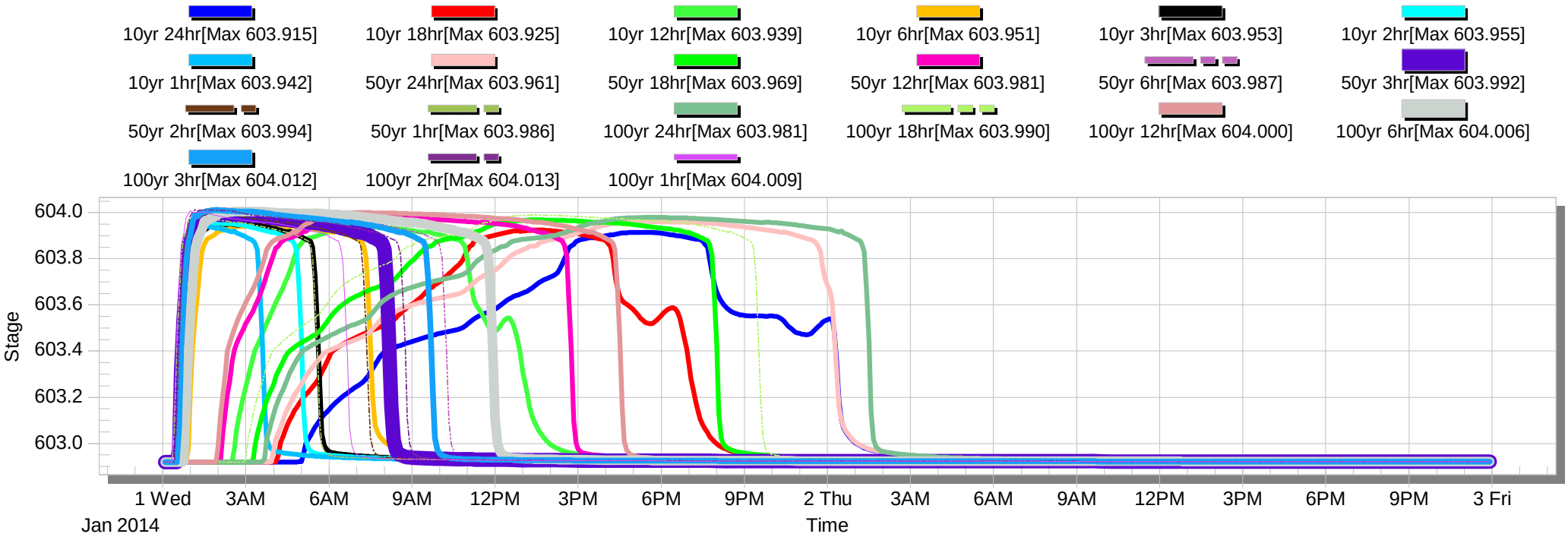
Node - Node46



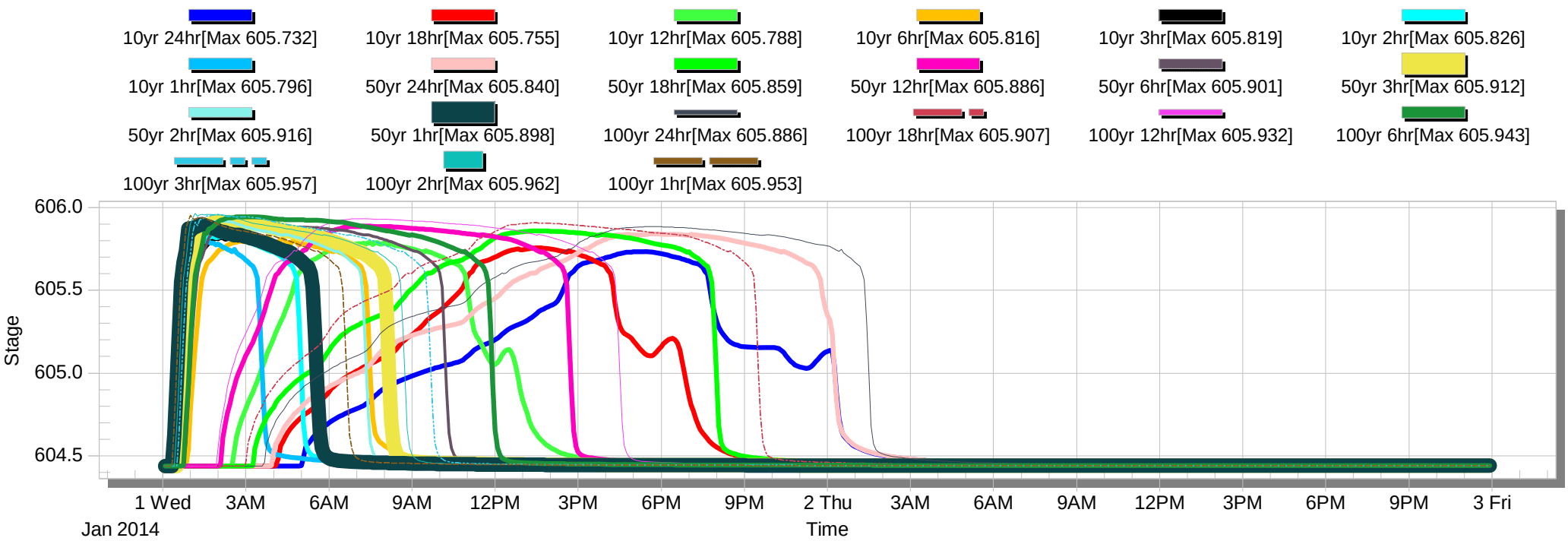
Node - Node48



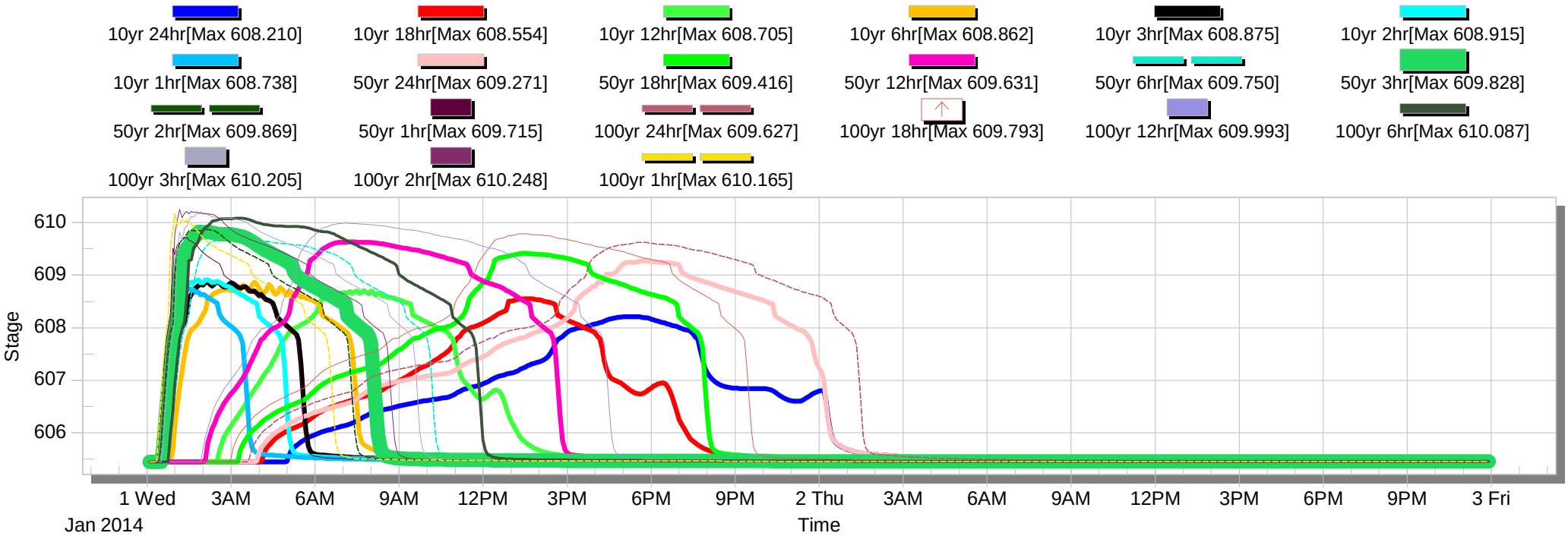
Node - Node75



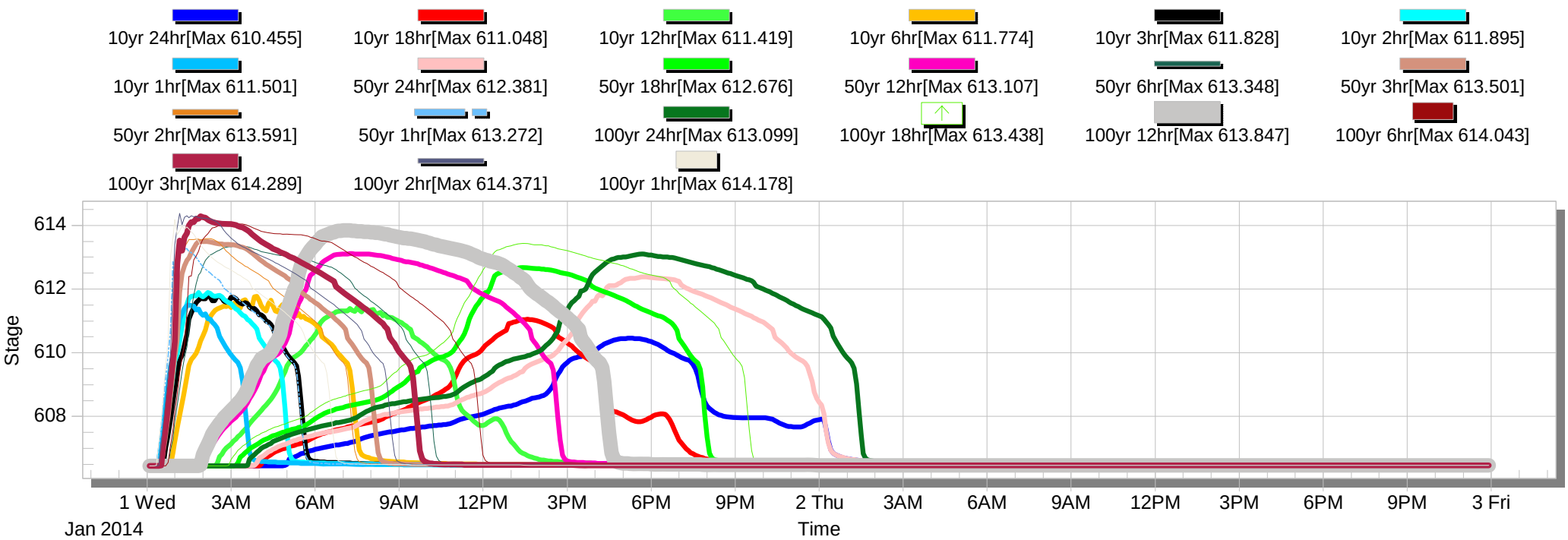
Node - Node39



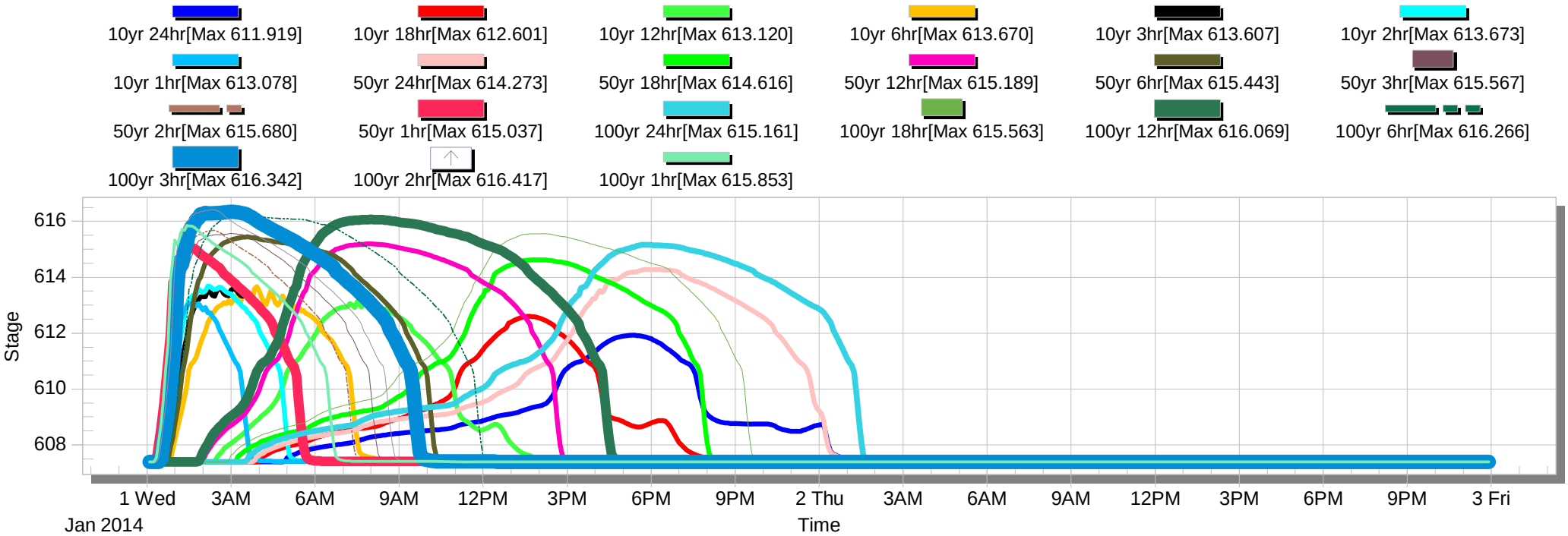
Node - Node38



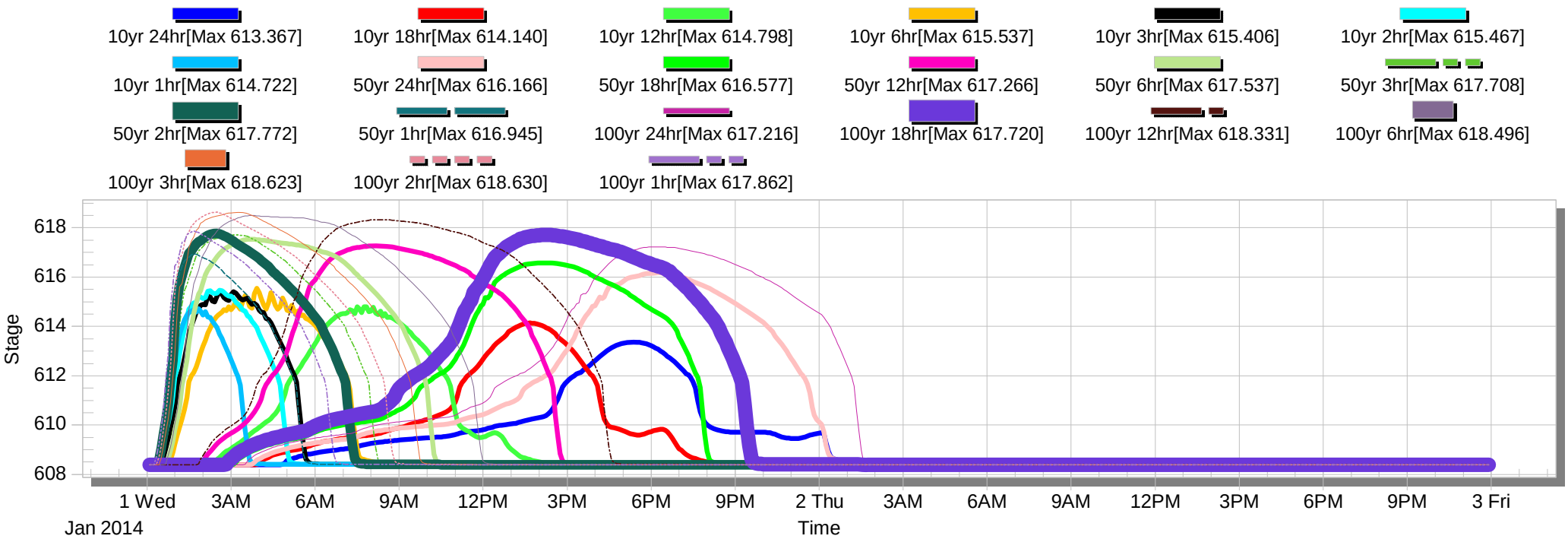
Node - Node37



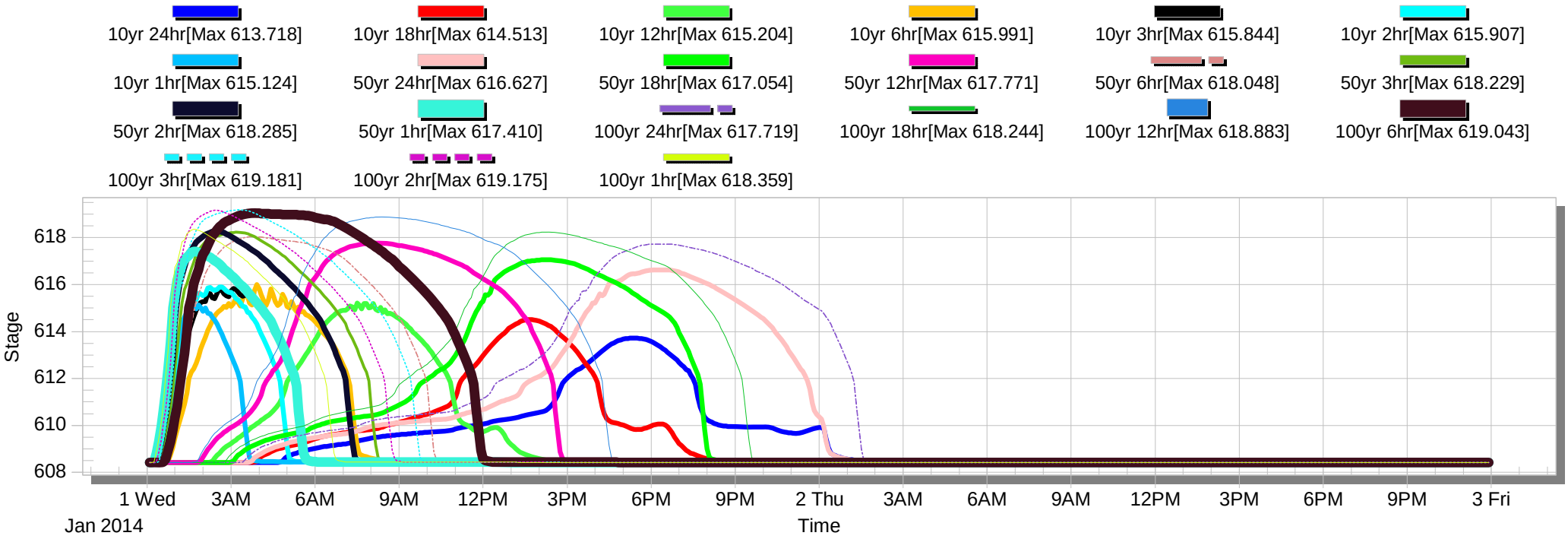
Node - Node36



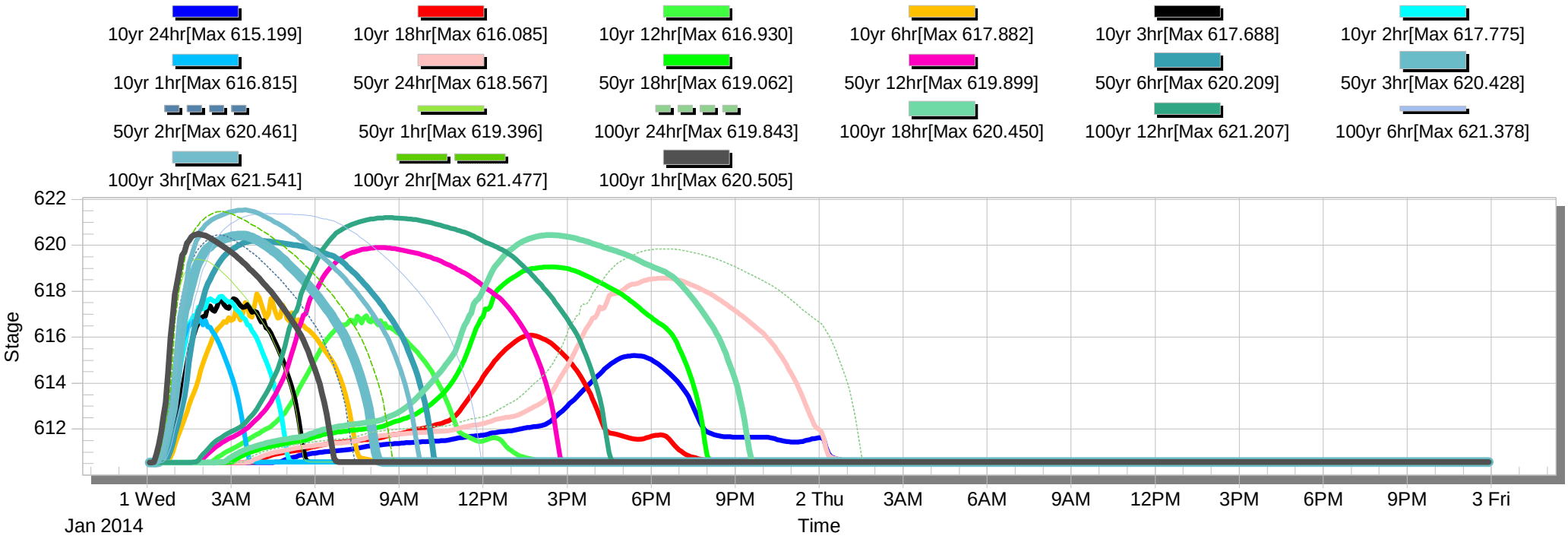
Node - Node35



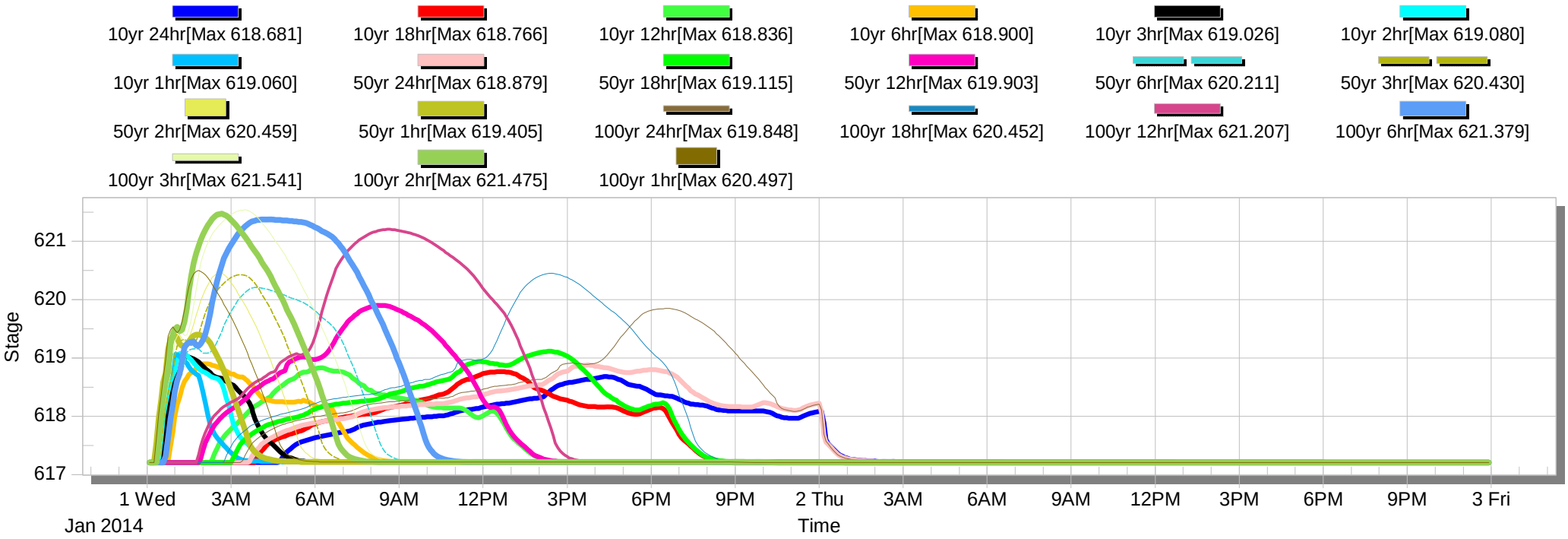
Node - Node34



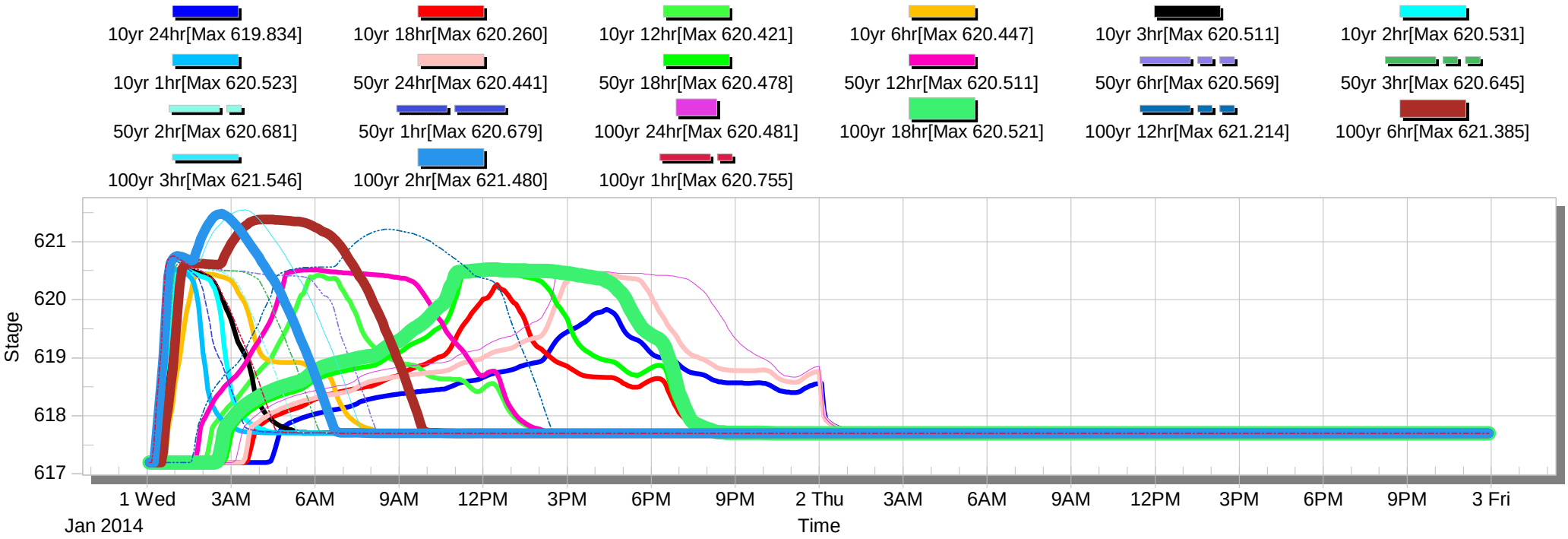
Node - Node33



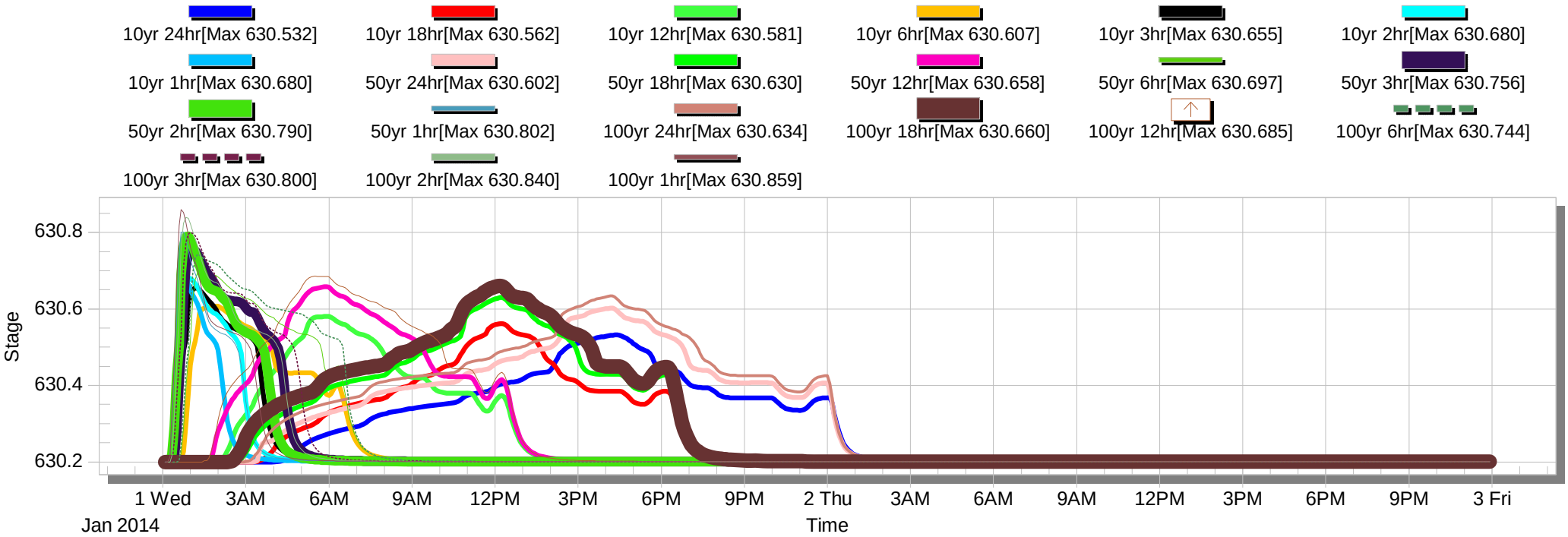
Node - Node12



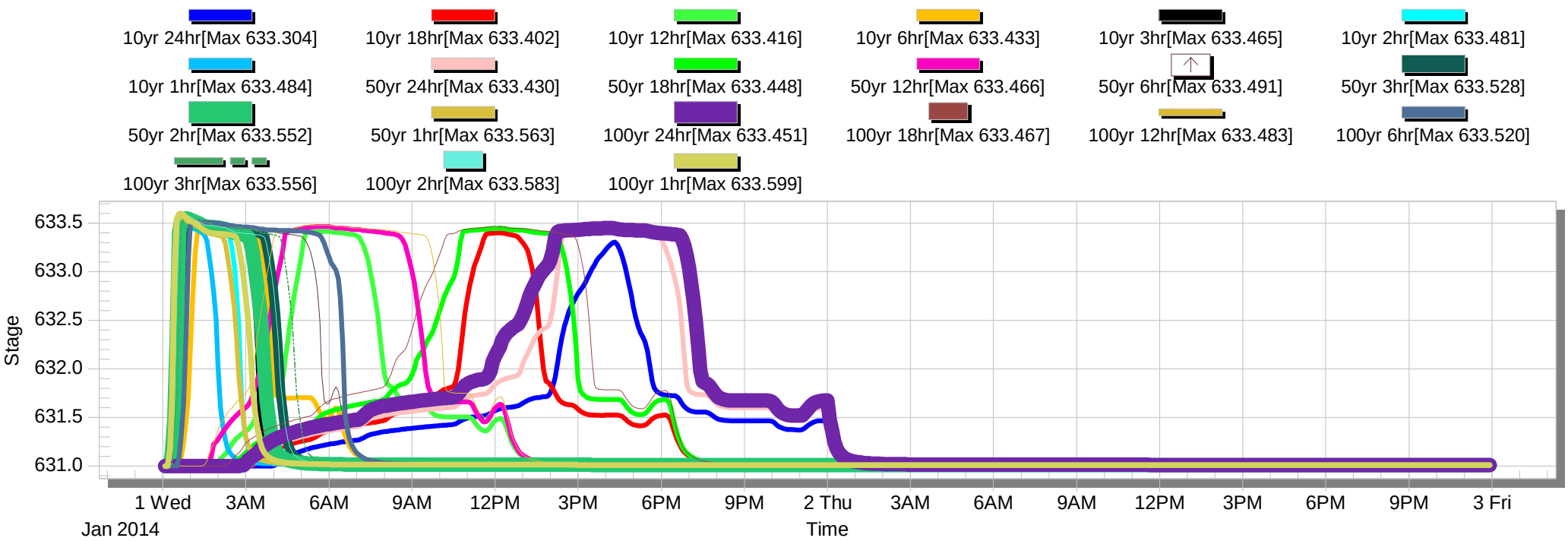
Node - Node11



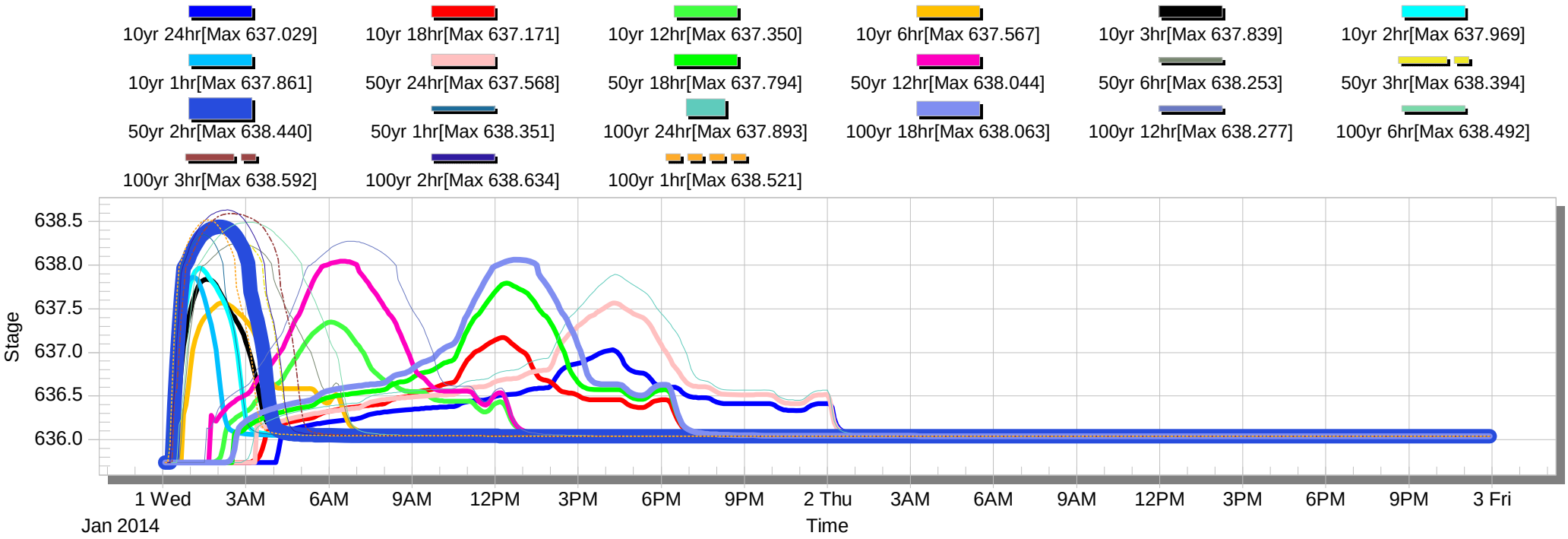
Node - Node41



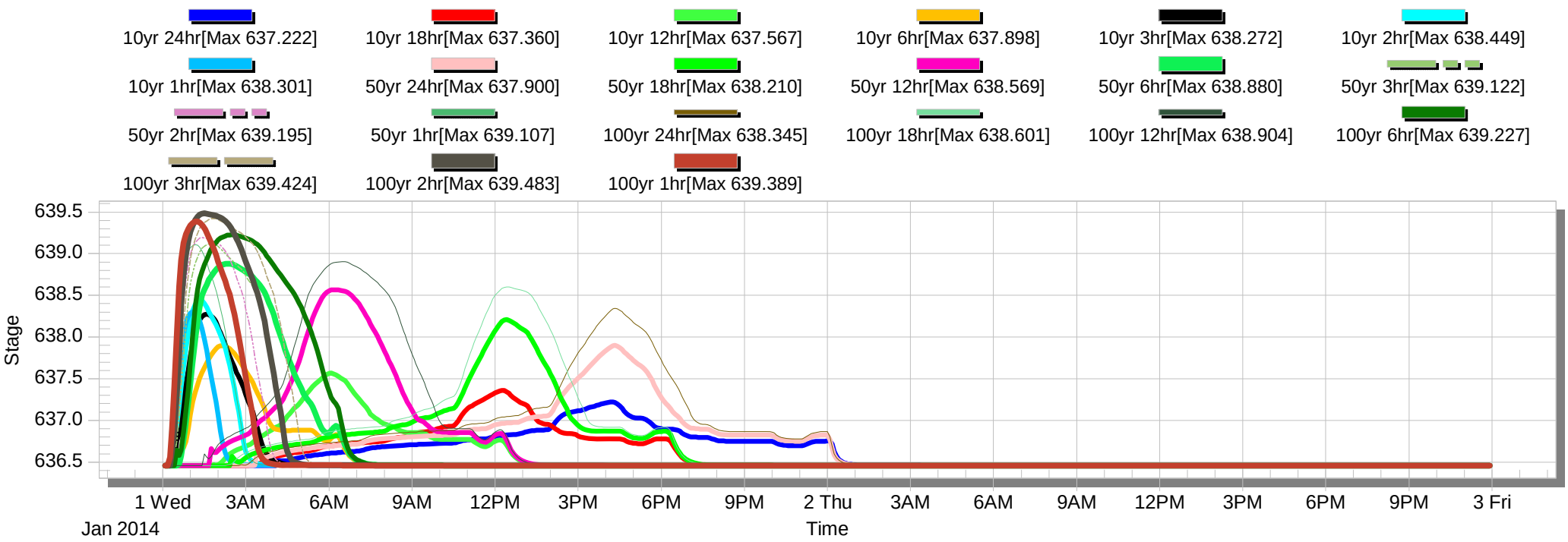
Node - Node63



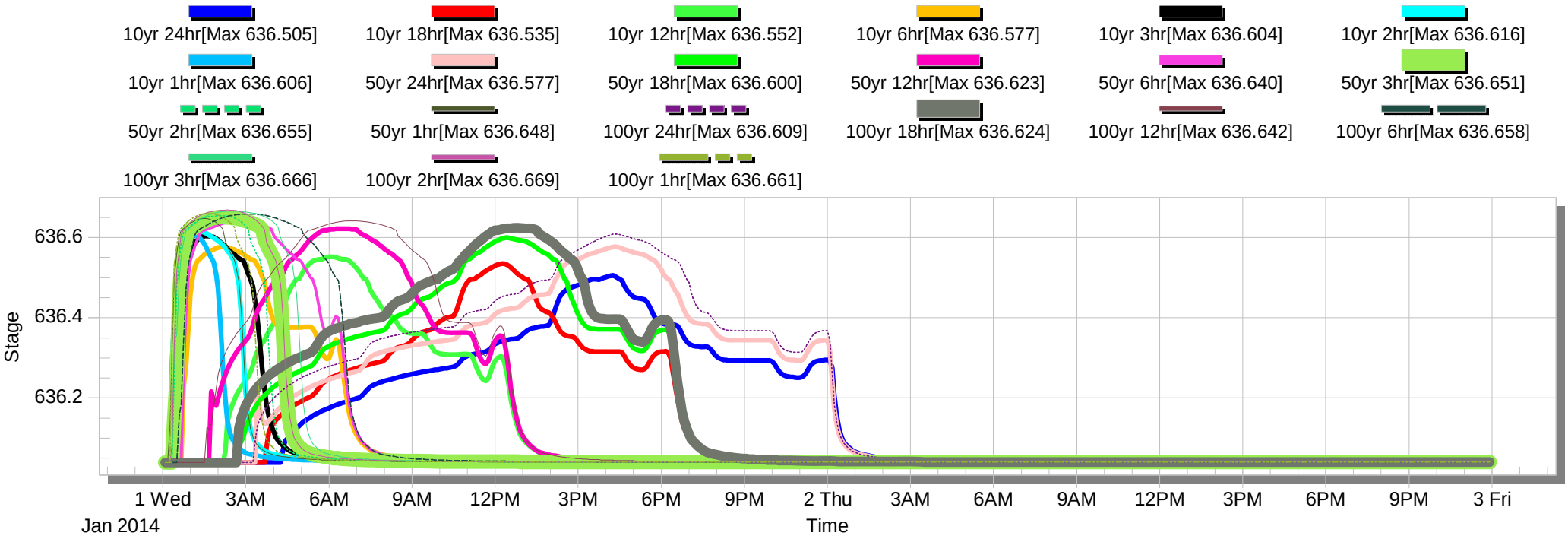
Node - Node44



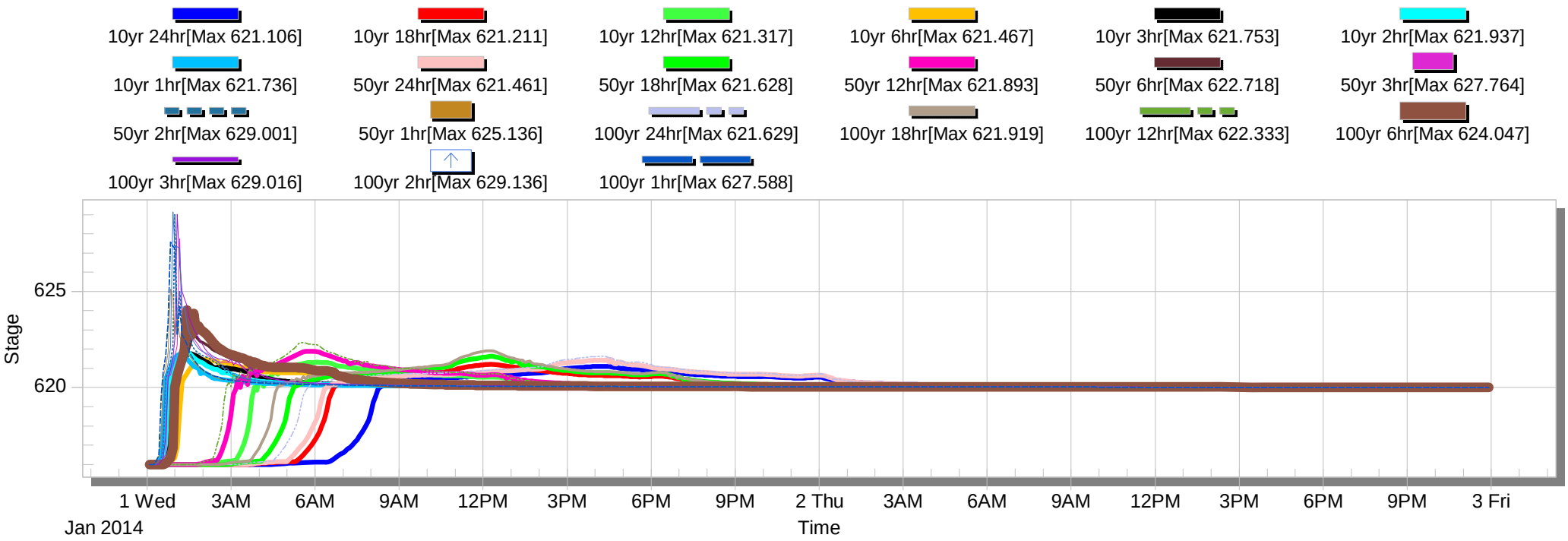
Node - Node43



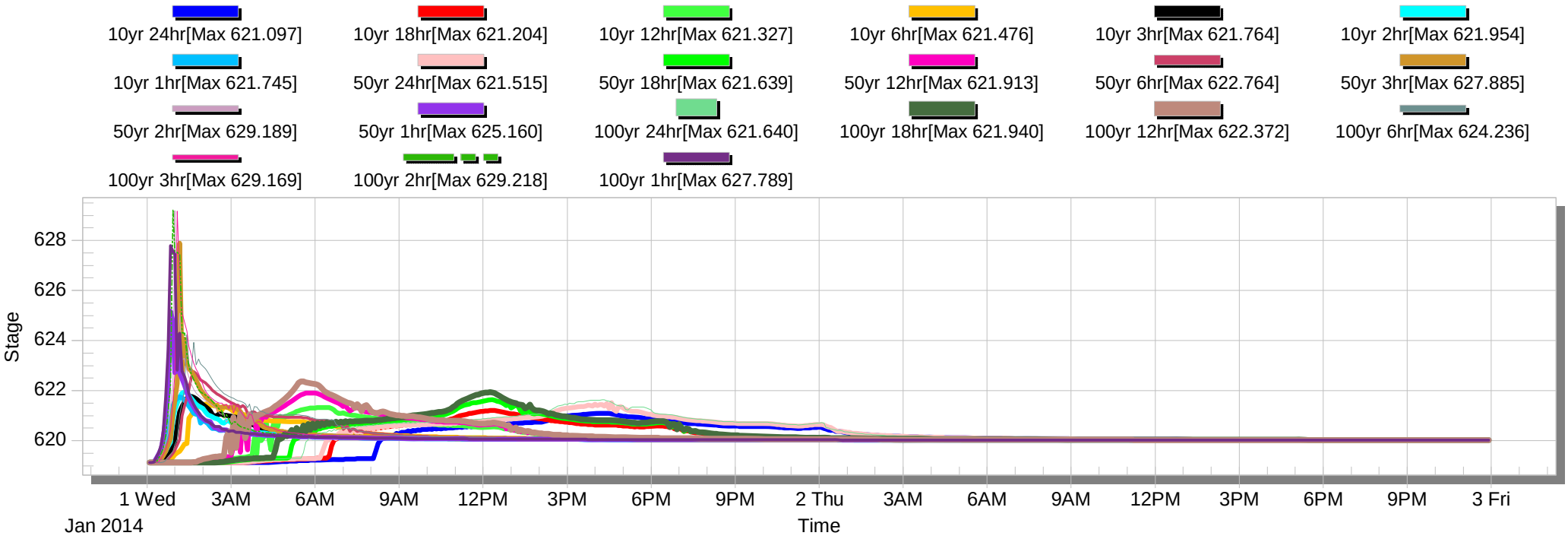
Node - Node45



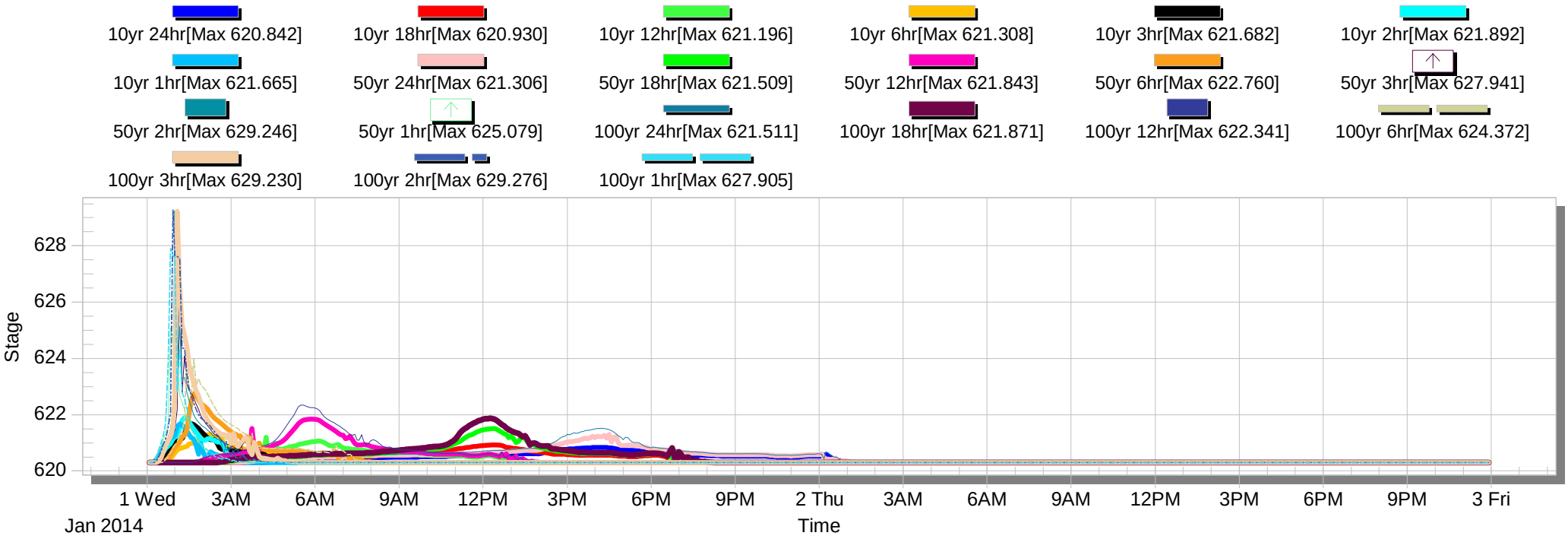
Node - Node31



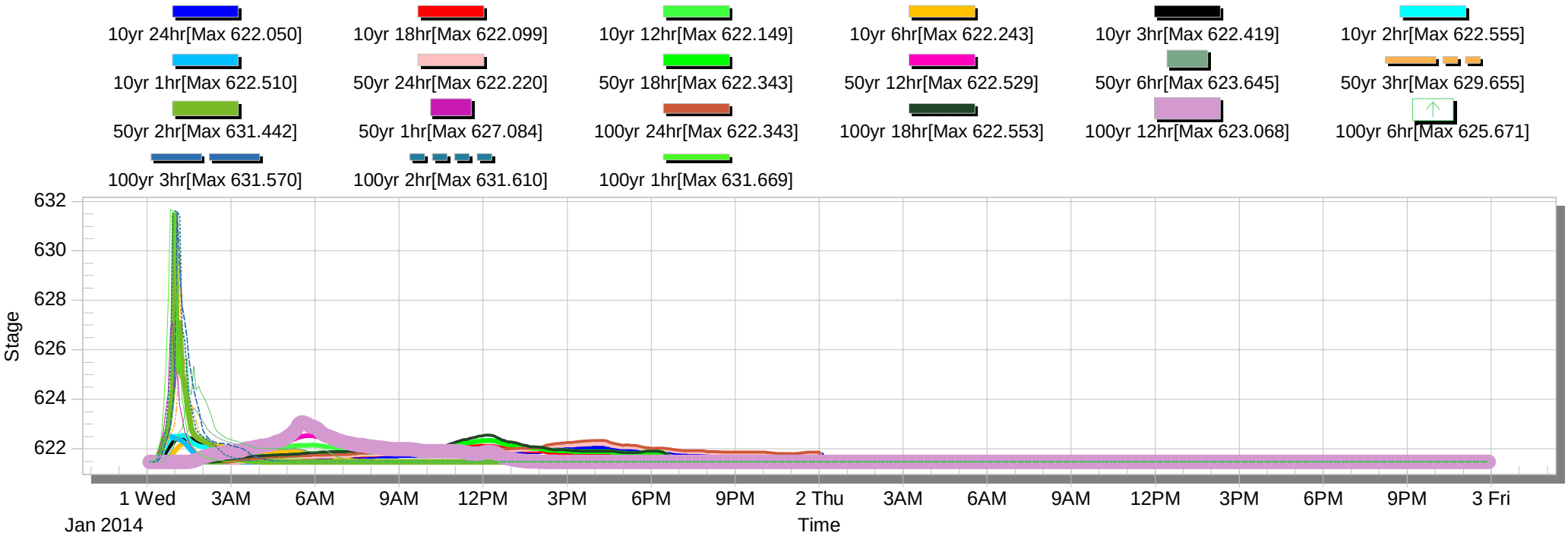
Node - Node30.1



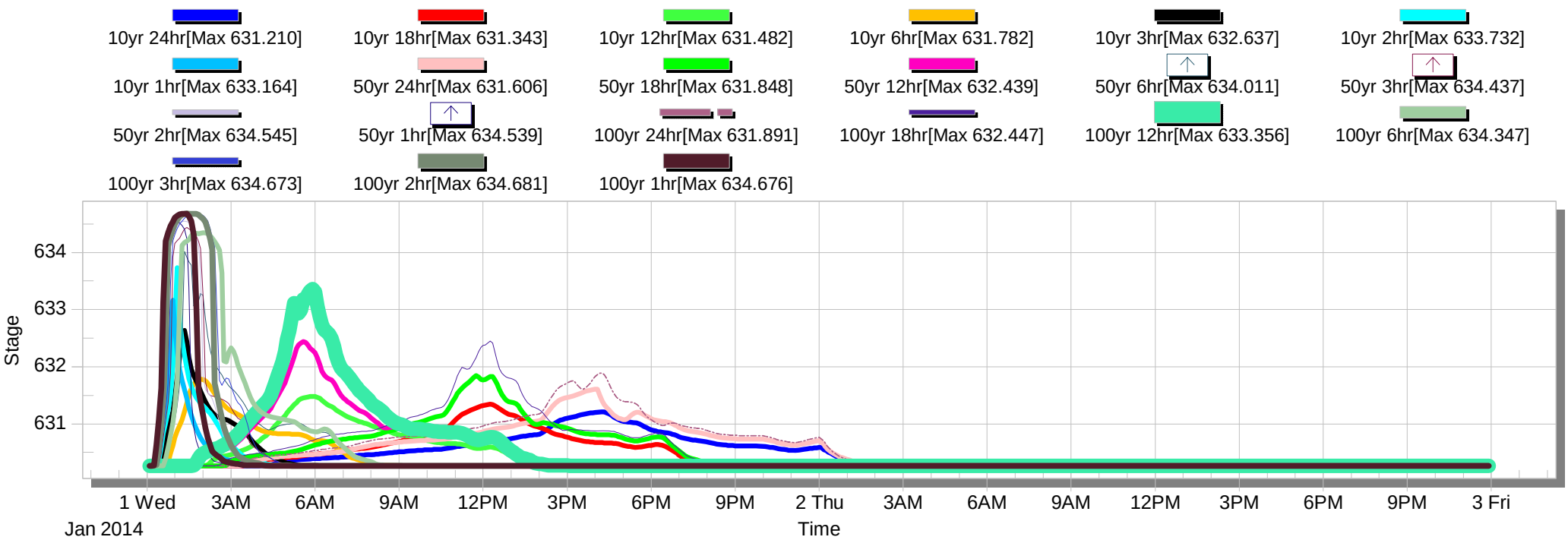
Node - Node30.2



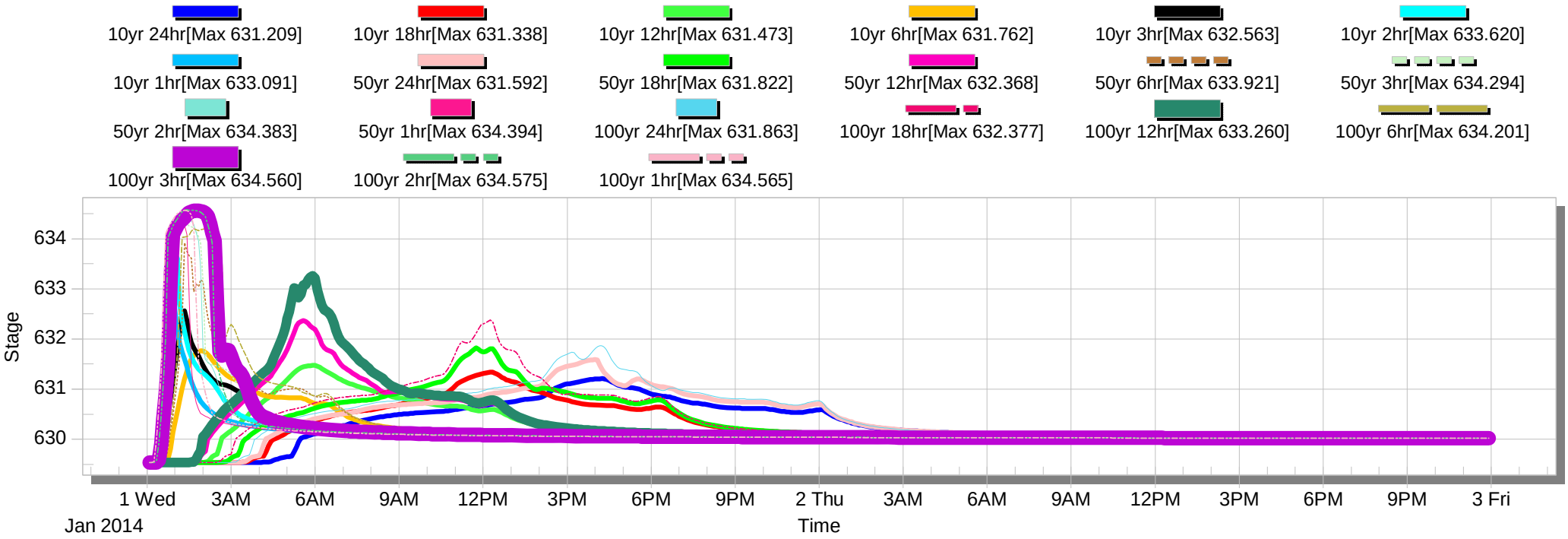
Node - Node30



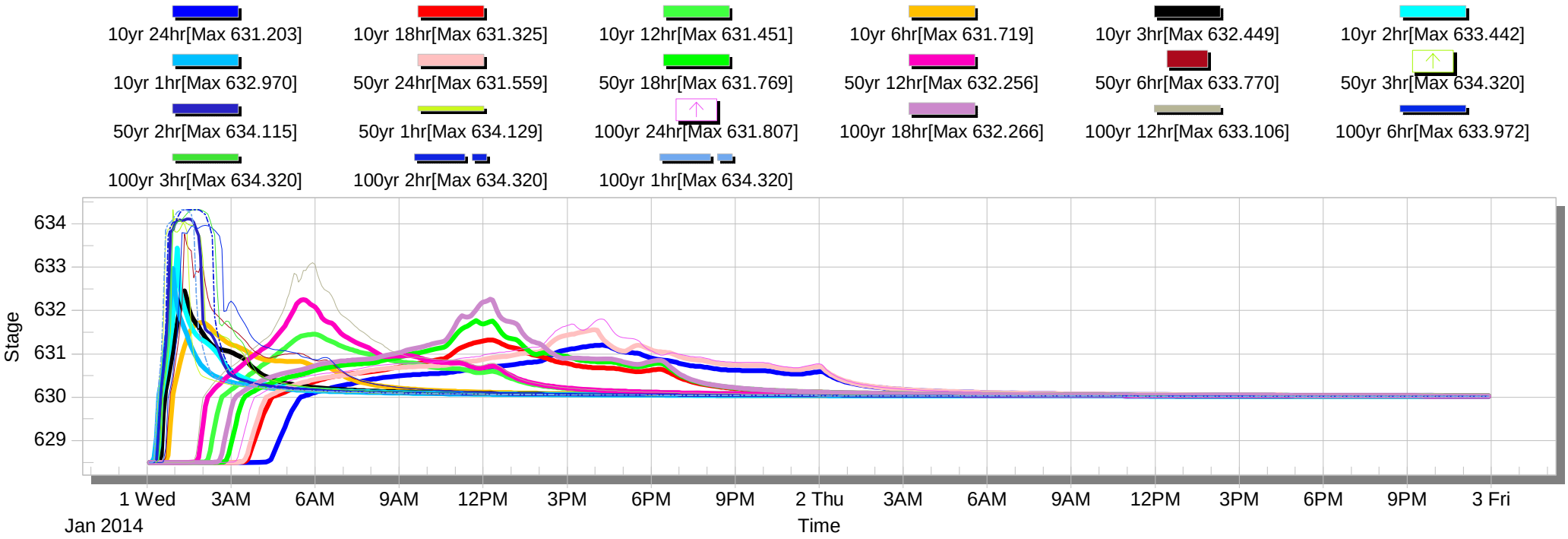
Node - Node103



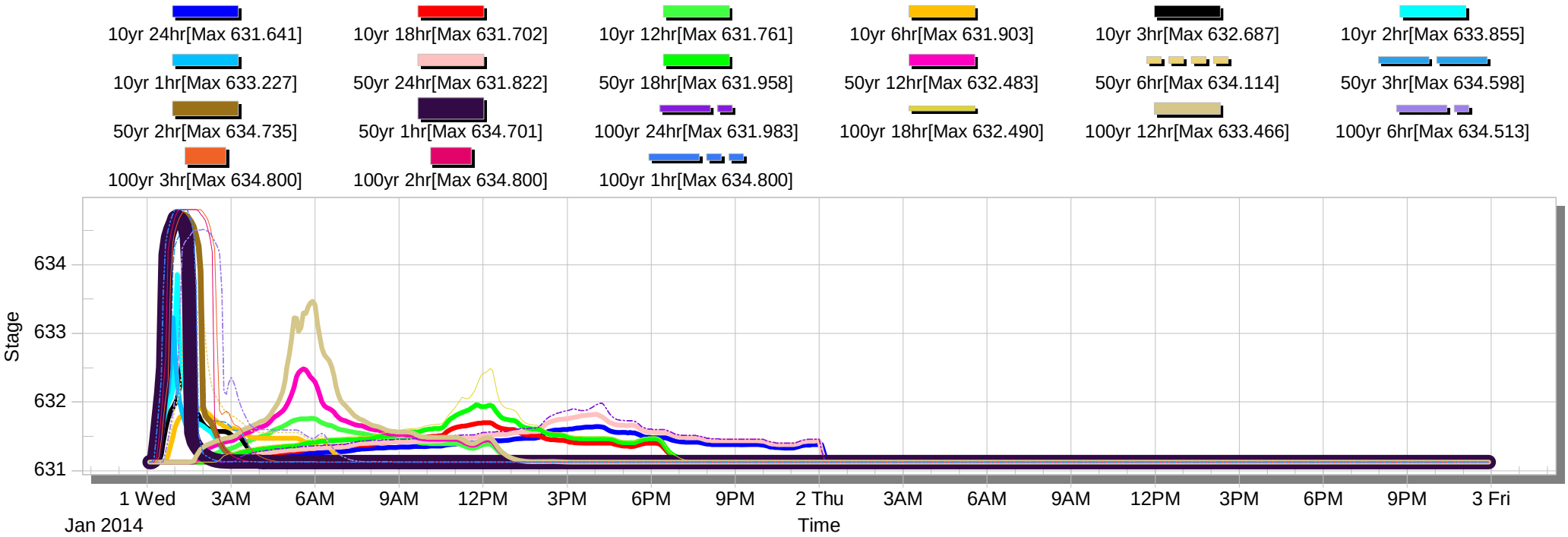
Node - Node108



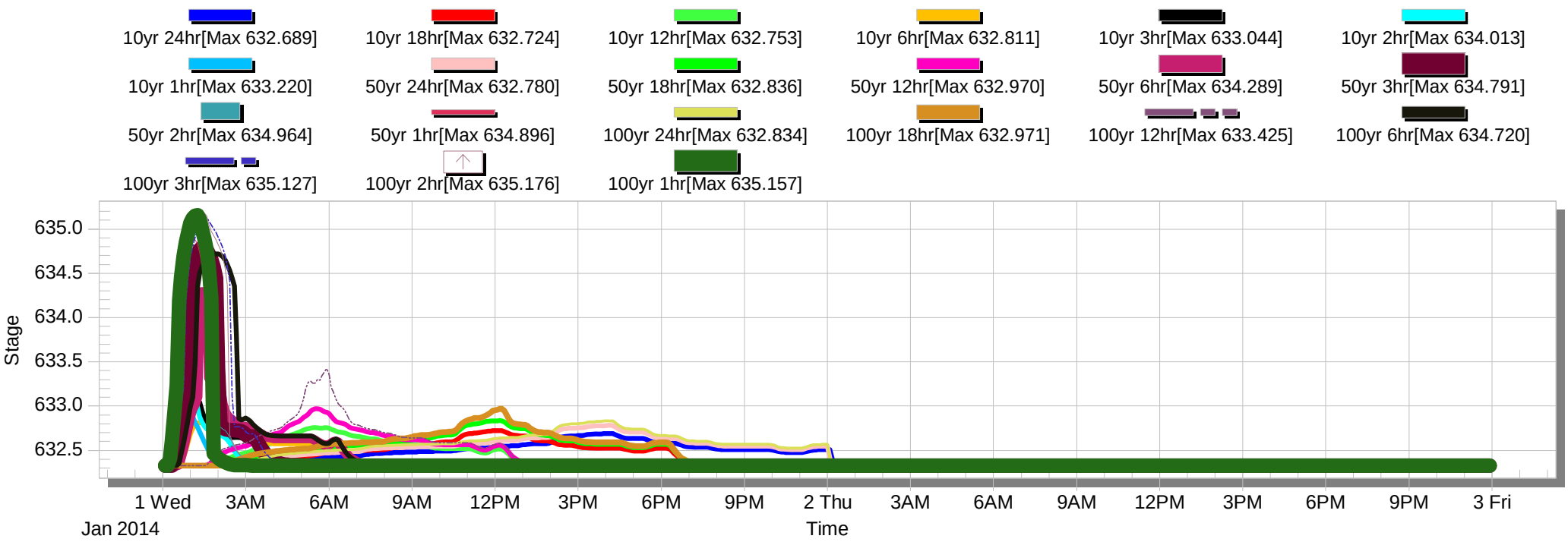
Node - Node125



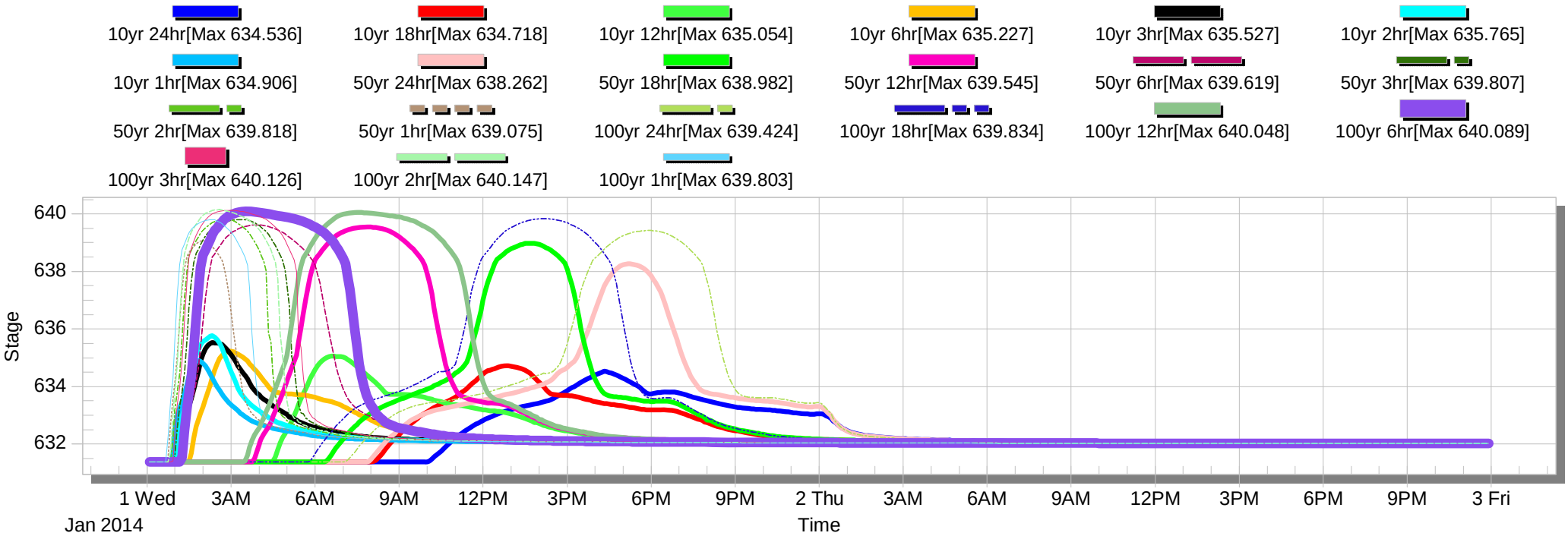
Node - Node101



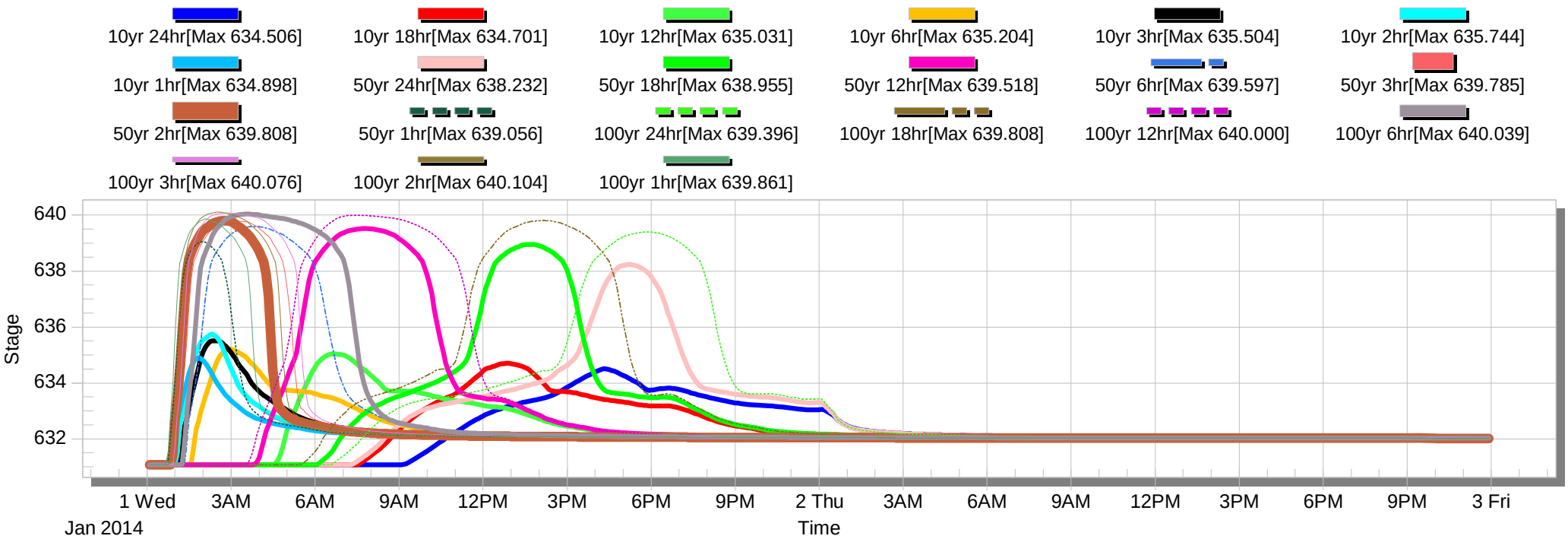
Node - Node100



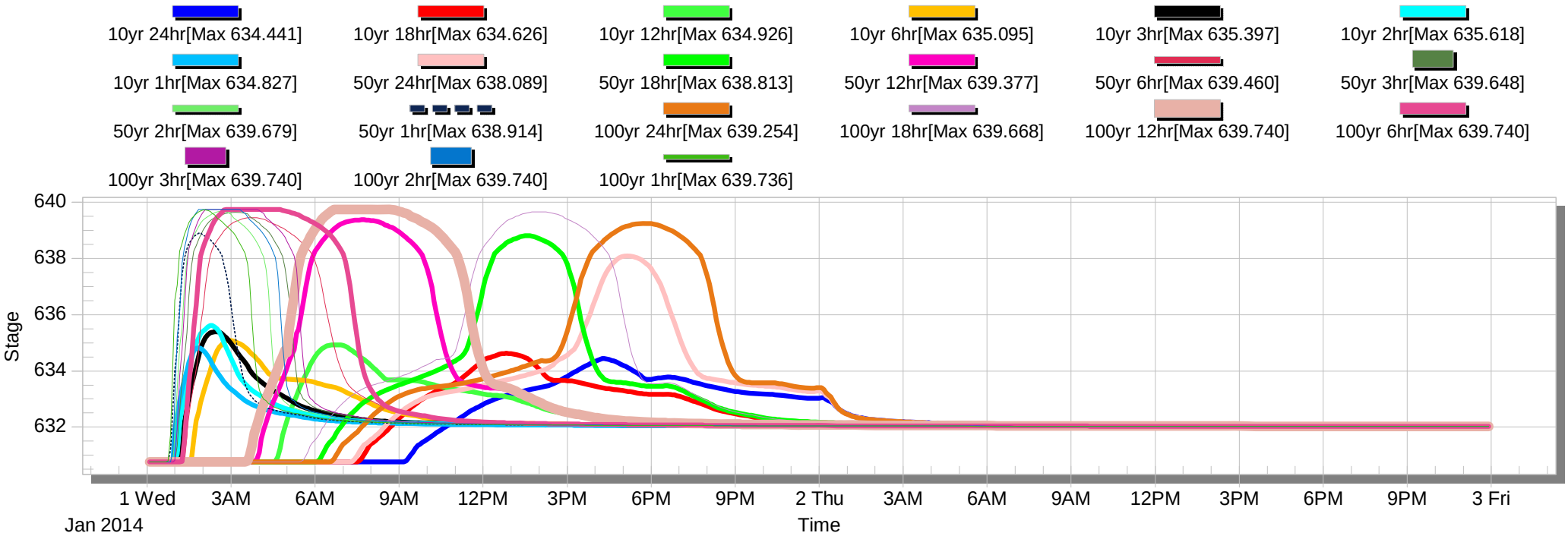
Node - Node20



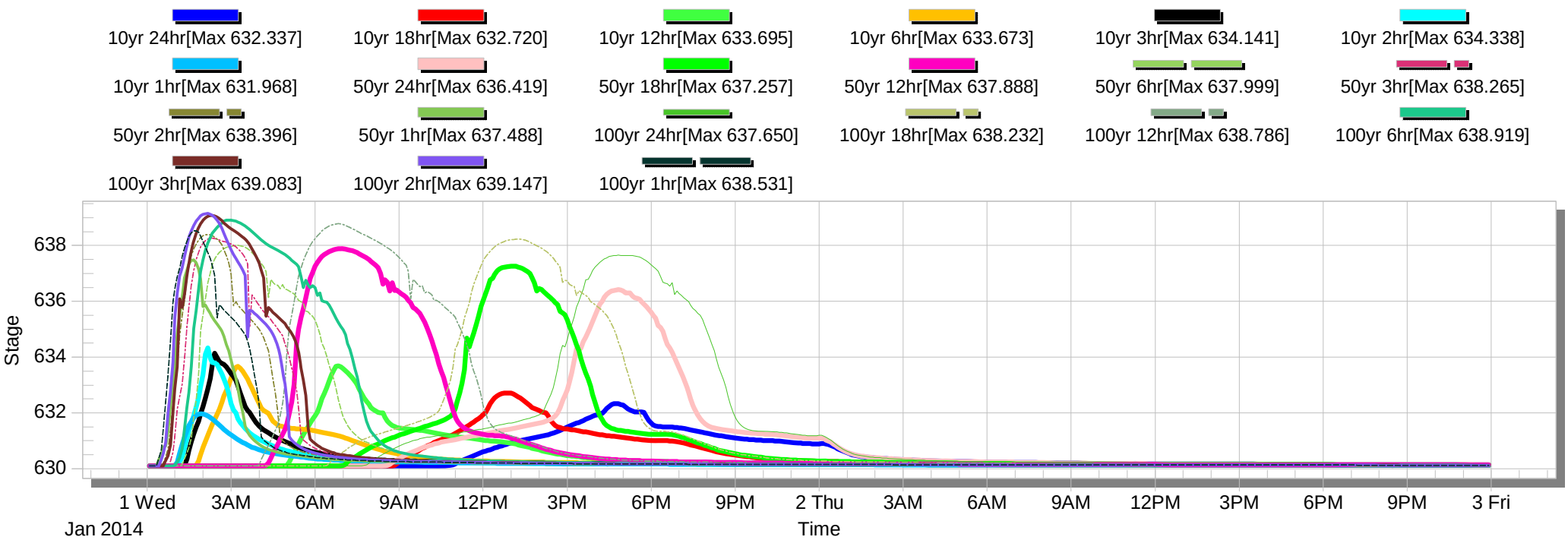
Node - Node21



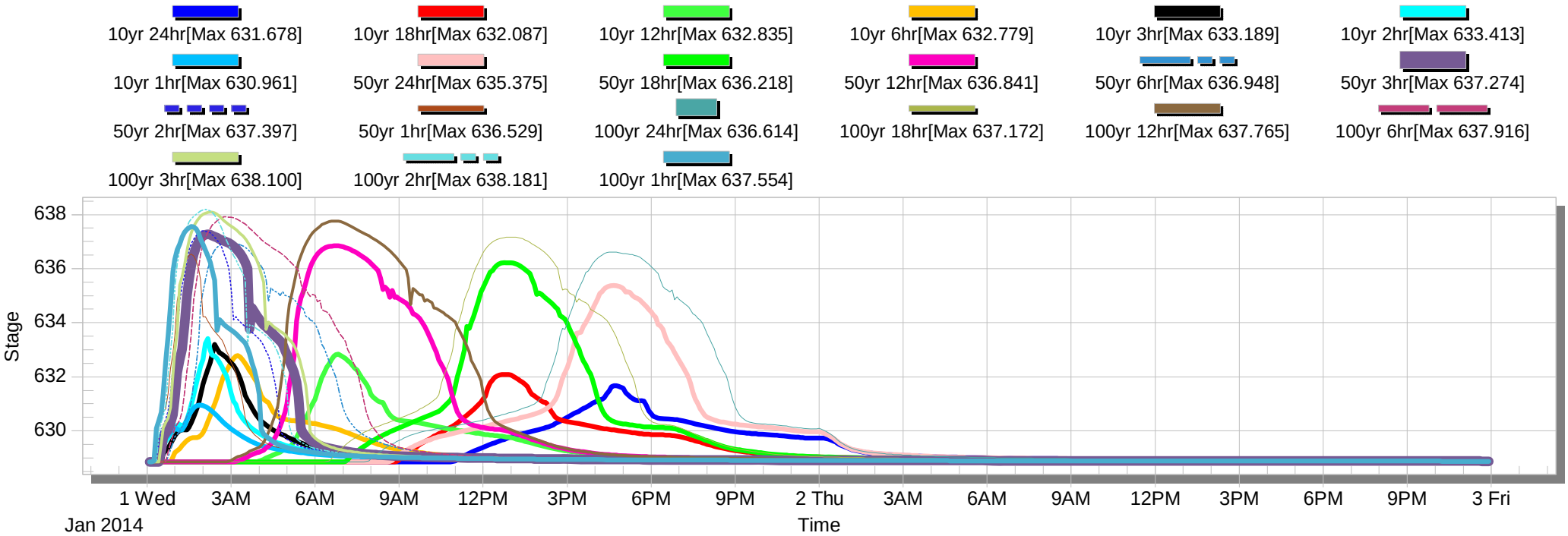
Node - Node84



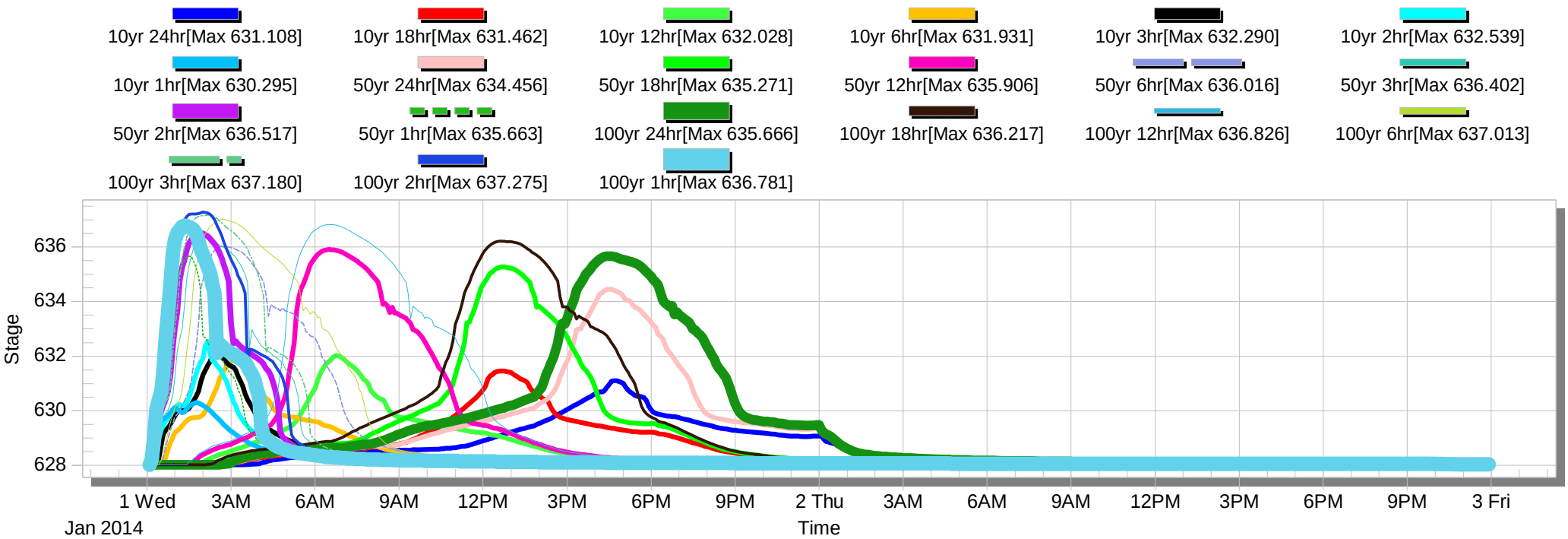
Node - Node22



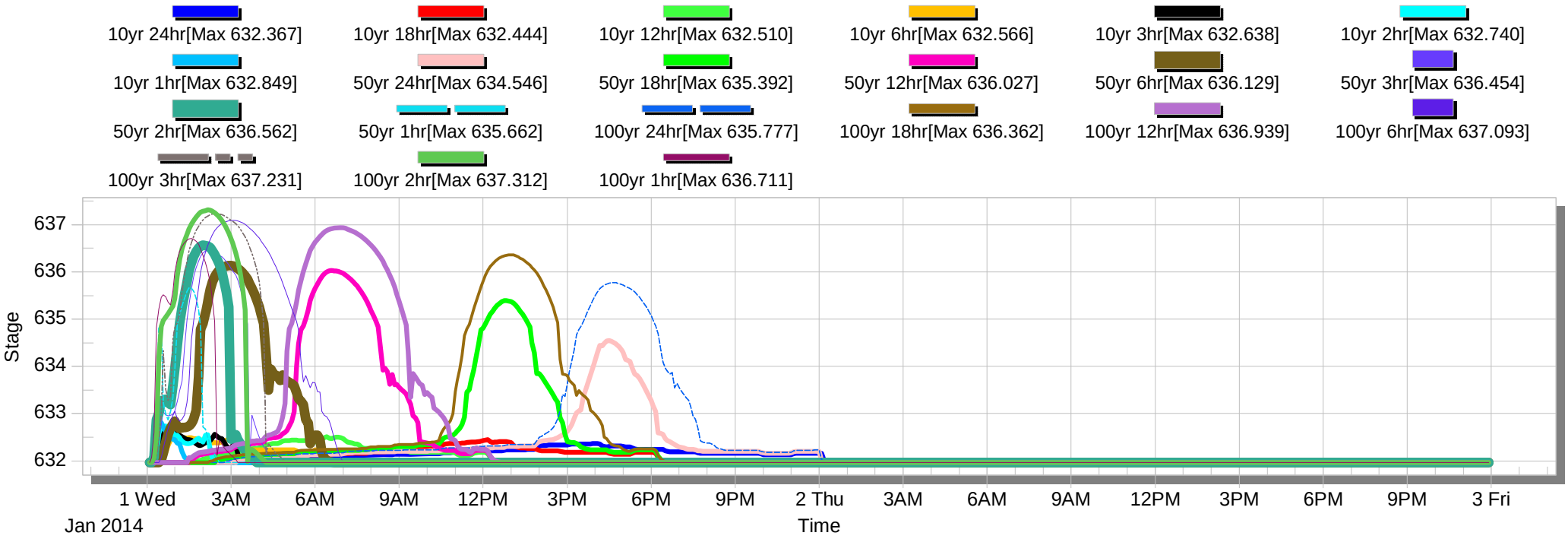
Node - Node23



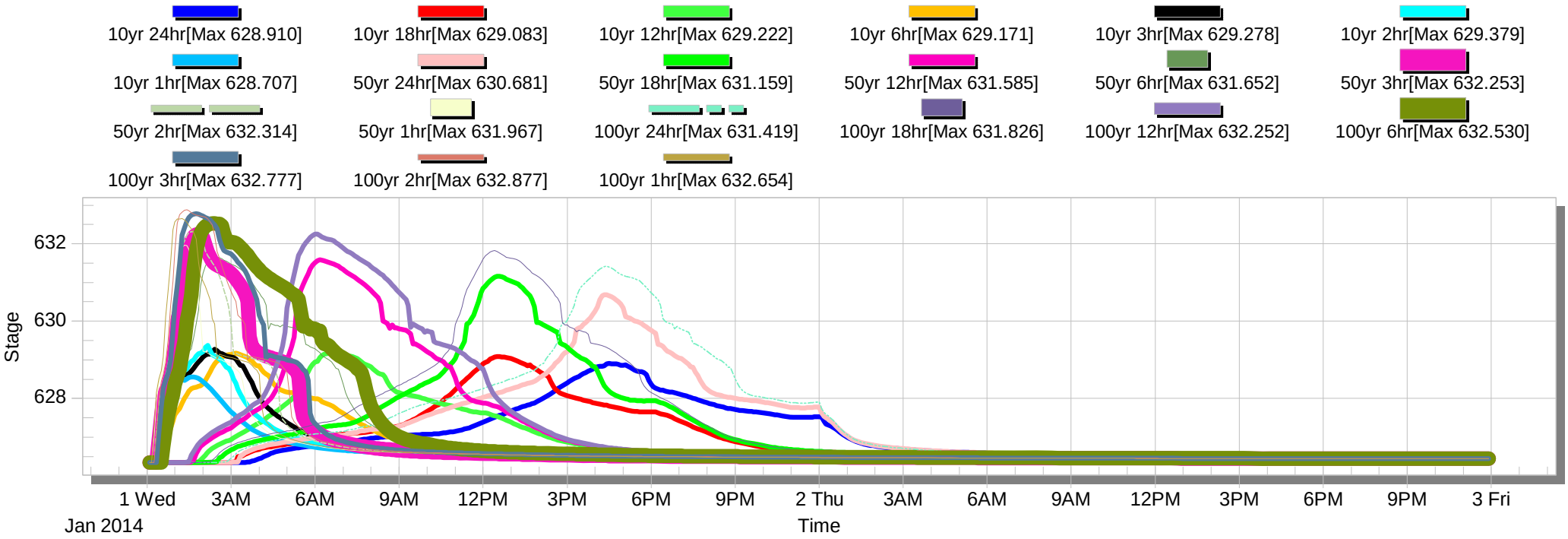
Node - Node24



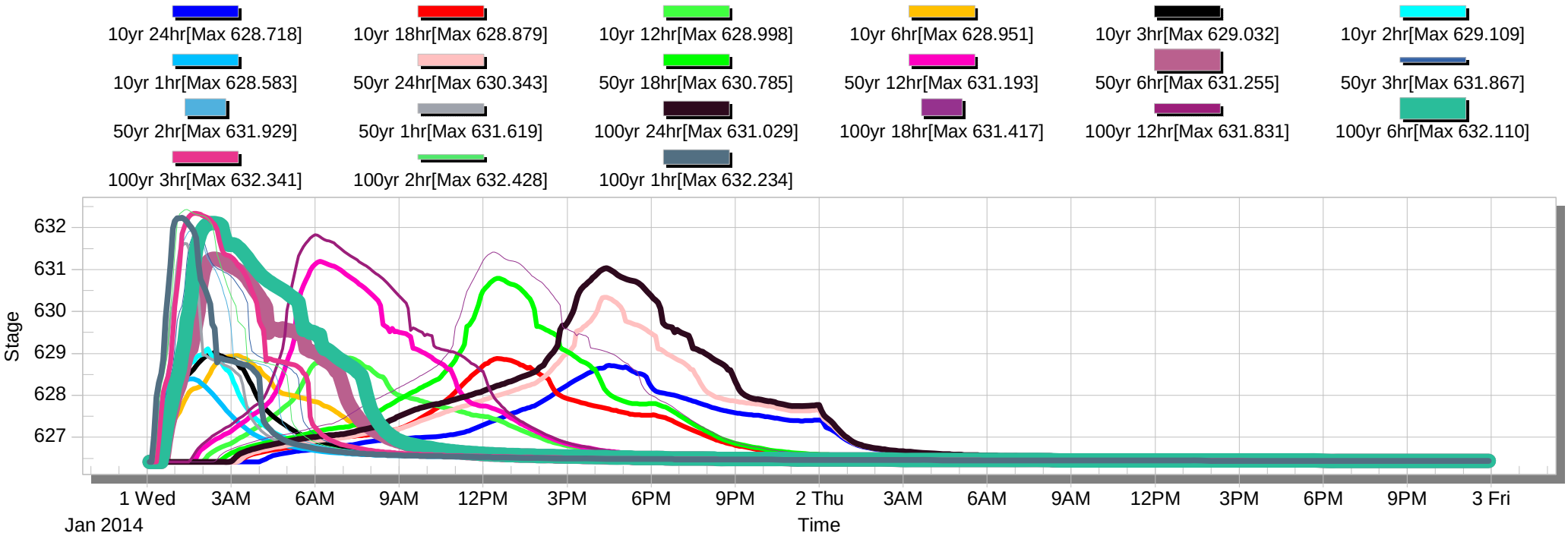
Node - Node66



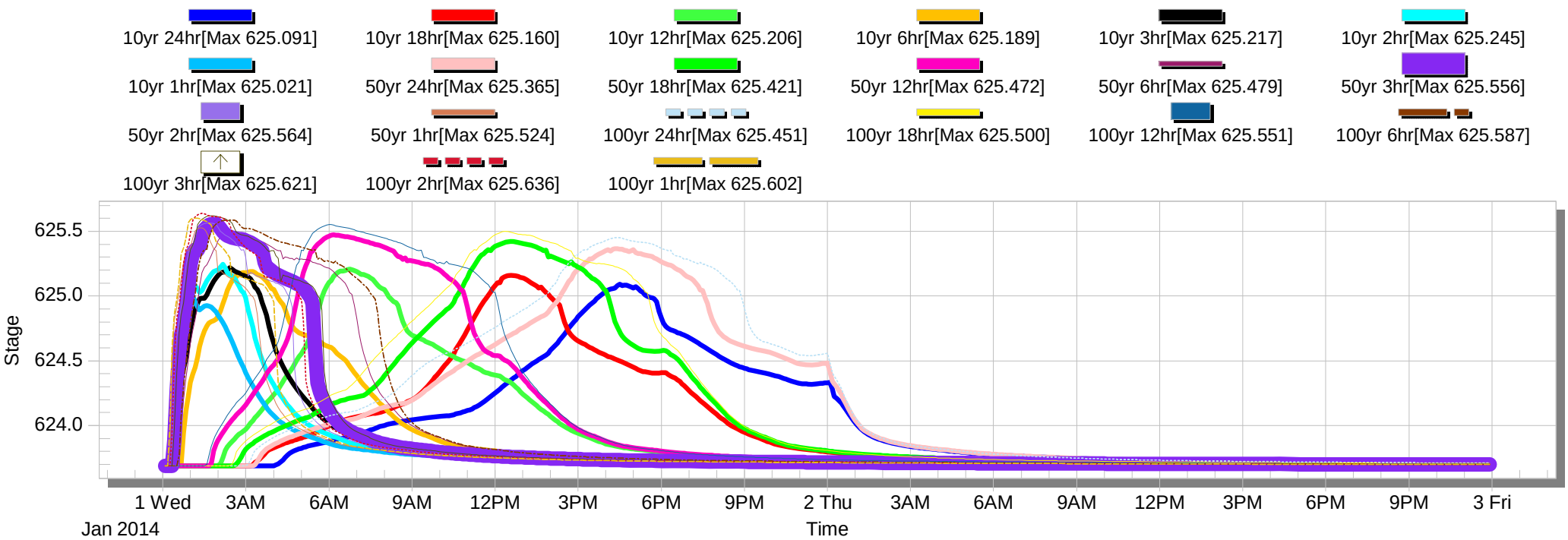
Node - Node25



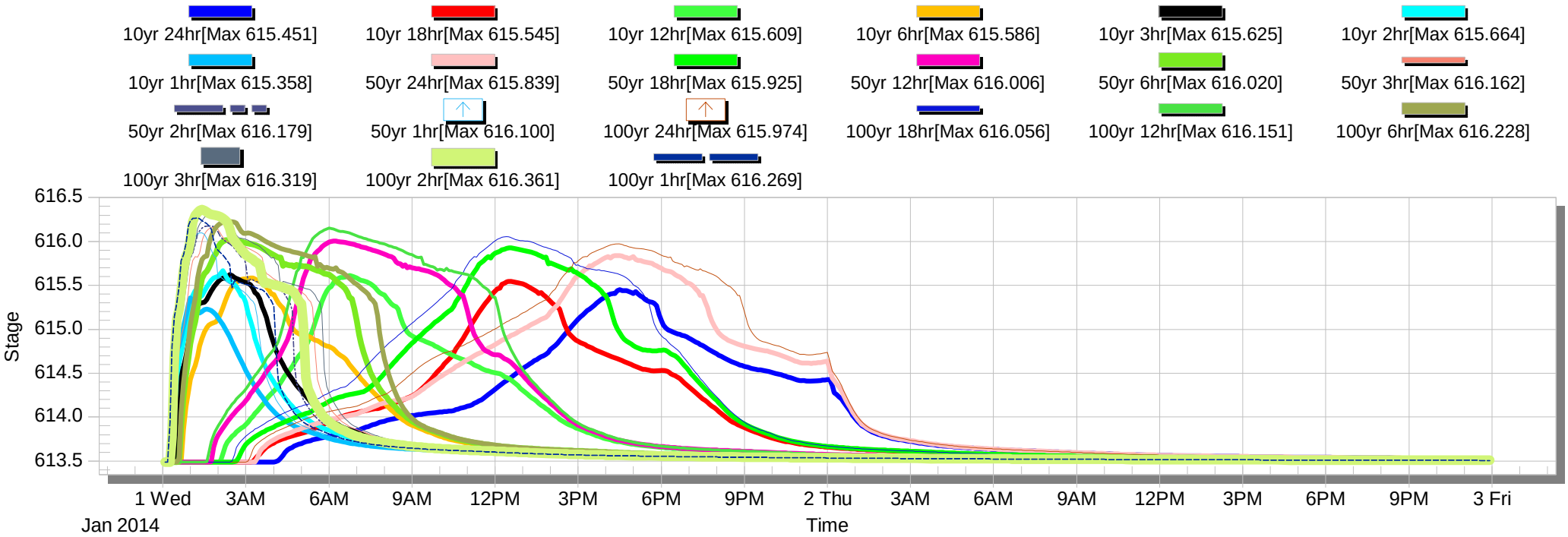
Node - Node26



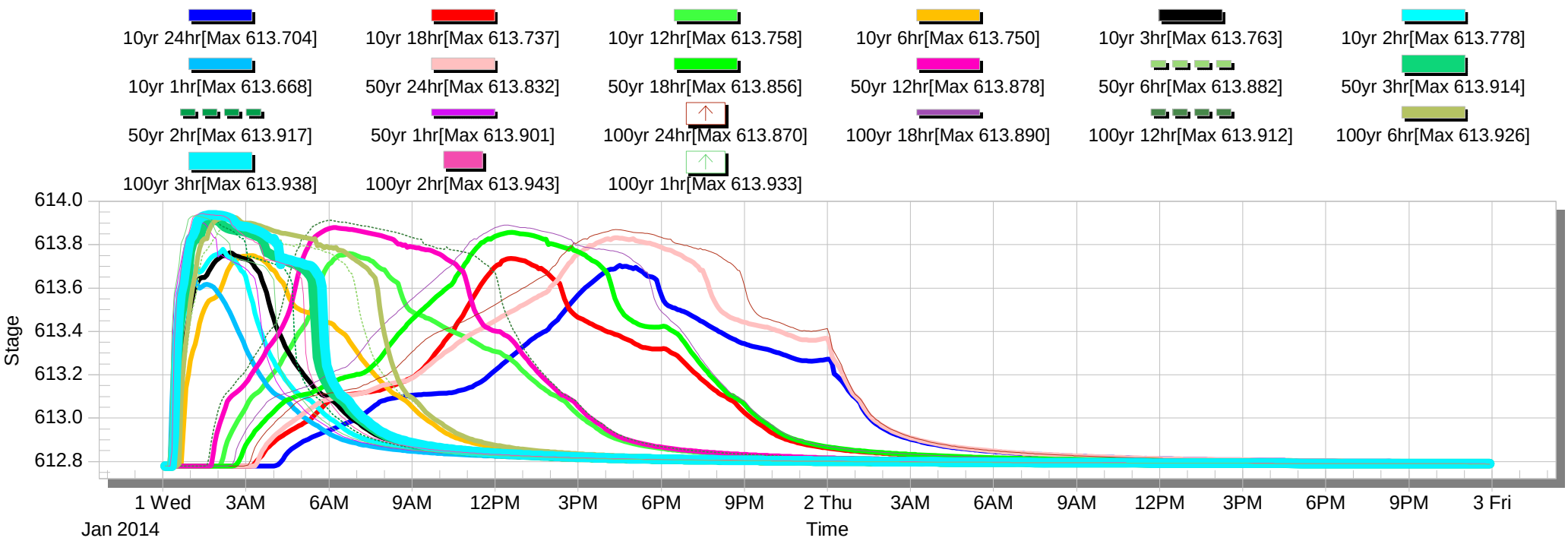
Node - Node27



Node - Node86



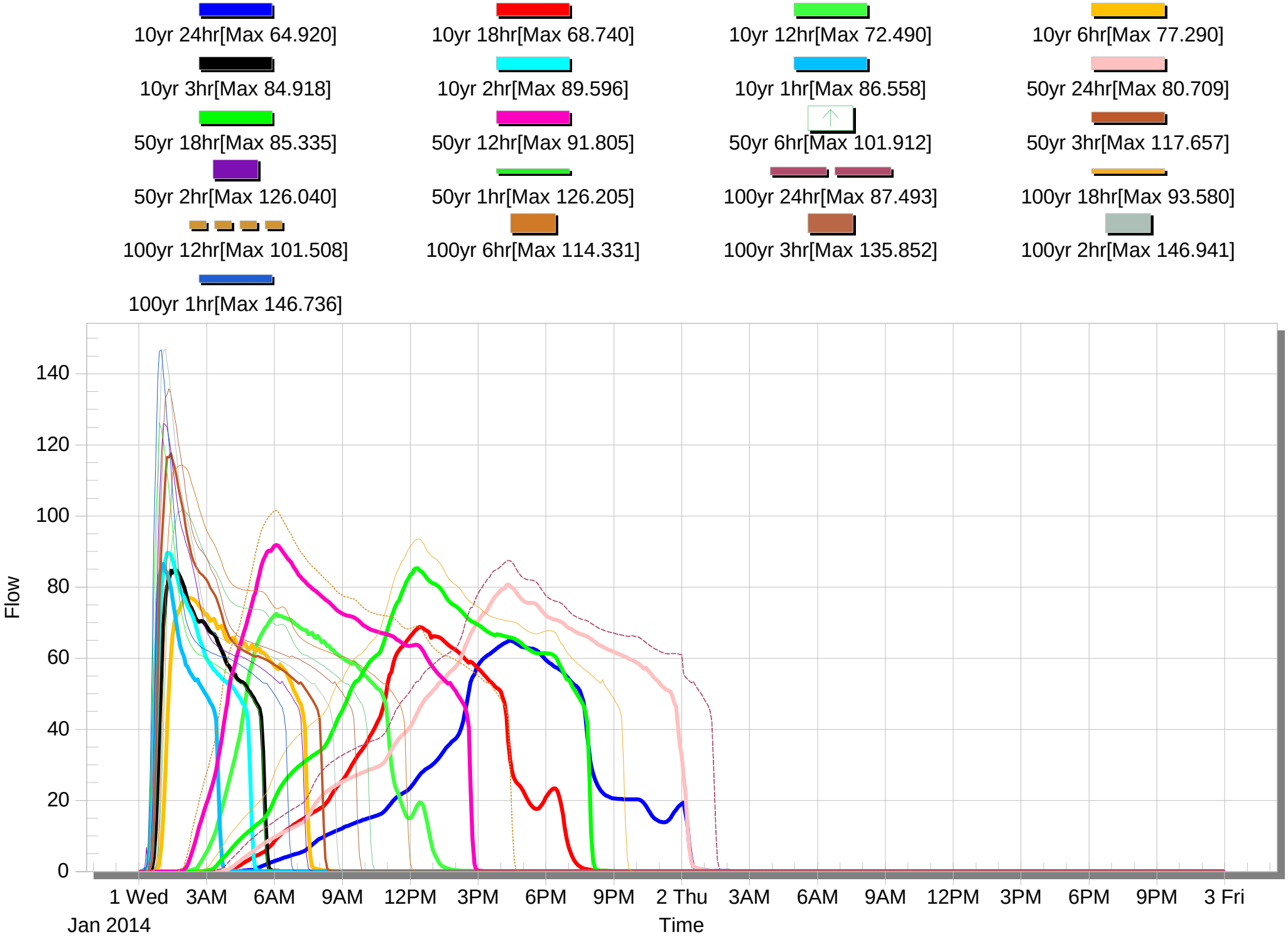
Node - Node29



PROPOSED ALTERNATIVE 1A

RELEASE RATES (NORTH)

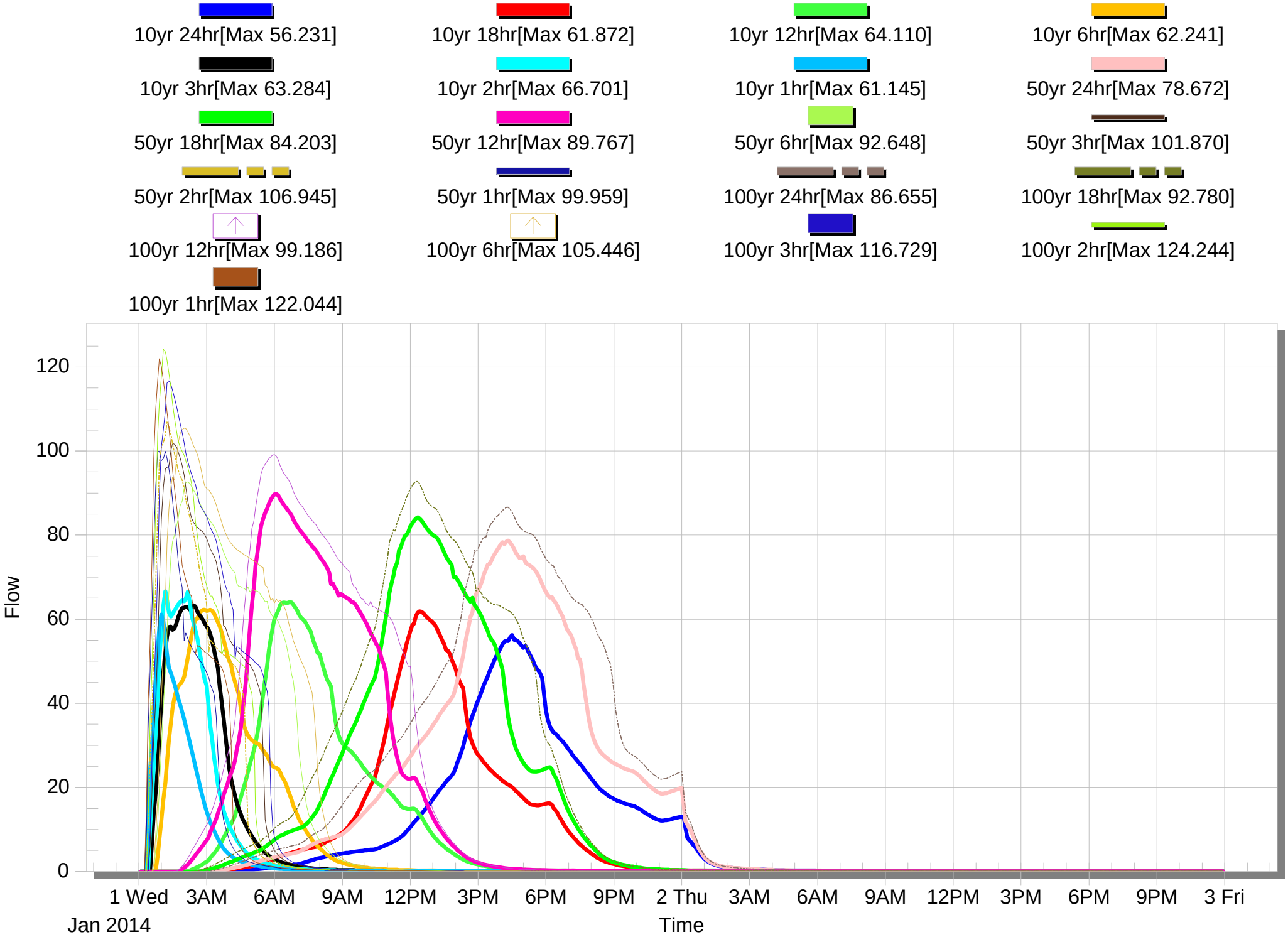
Conduit Link32 from Node46 to Node47



PROPOSED ALTERNATIVE 1A

RELEASE RATES (SOUTH)

Conduit Link33 from Node48 to Node47



PROPOSED ALTERNATIVE 1A

XPSWMM OUTPUT REPORT

```
Current Directory:   N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Stud
Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


Input File : port\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1A_10yr 2hr.XP

          *==============================================*
          |                   xpswmm                     |
          |     Storm and Wastewater Management Model    |
          |        Developed by XP Solutions Inc.        |
          |==============================================|
          |                                              |
          | Last Update      : Jan., 2013                |
          | Interface Version: 2012                      |
          | Engine Version   : 12.0                      |
          | Data File Version: 12.6                      |
          |                                              |
          |                                              |
          *==============================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*====================================================*
|       Input and Output file names by Layer         |
*====================================================*

 Input File  to Layer #     1 JOT.US


 Output File to Layer #     1 JOT.US


 Input File  to Layer #     2 JOT.US


 Output File to Layer #     2 JOT.US


*==========================================================*
|   Special command line arguments in XP-SWMM2000. This    |
|   now includes program defaults. $Keywords are the program|
|   defaults.  Other Keywords are from the SWMMCOM.CFG file.|
|   or the command line or any cfg file on the command line.|
|   Examples include these in the file xpswm.bat under the  |
|   section :solve or in the windows version XPSWMM32 in the|
|   file solve.bat                                          |
|                                                           |
|   Note: the cfg file should be in the subdirectory swmxp  |
|         or defined by the set variable in the xpswm.bat   |
|         file.  Some examples of the command lines possible|
|         are shown below:                                  |
|                                                           |
|   swmmd swmmcom.cfg                                       |
|   swmmd my.cfg                                            |
|   swmmd nokeys nconv5 perv extranwq                       |
*==========================================================*

 $powerstation                        0.0000         1         2
 $perv                                0.0000         0         4
 $oldegg                              0.0000         0         7
 $as                                  0.0000         0        11
 $noflat                              0.0000         0        21
 $oldomega                            0.0000         0        24
 $oldvol                              0.0000         1        28
 $implicit                            0.0000         1        29
 $oldhot                              0.0000         1        31
 $oldscs                              0.0000         0        33
 $flood                               0.0000         1        40
 $nokeys                              0.0000         0        42
 $pzero                               0.0000         0        55
 $oldvol2                             0.0000         2        59
 $storage2                            0.0000         3        62
 $oldhot1                             0.0000         1        63
 $pumpwt                              0.0000         1        70
 $ecloss                              0.0000         1        77
 $exout                               0.0000         0        97
 $spatial = 0.90                      0.9000         5       124
 $djref = -1.0                       -0.1000         3       143
 $weirlen = 50                       50.0000         1       153
 $oldbnd                              0.0000         1       154
 $nogrelev                            0.0000         1       161
 $ncmid                               0.0000         0       164
 $new_nl_97                           0.0000         2       290
 SCSIADEPTH=ON                        0.0000         1       293
 $best97                              0.0000         1       294
 $newbound                            0.0000         1       295
 $q_tol = 0.01                        0.0001         1       316
 $new_storage                         0.0000         1       322
 $old_iteration                       0.0000         1       333
 MINLEN=5                             5.0000         1       346
 $review_elevation                    0.0000         1       383
 $use_half_volume                     0.0000         1       385
 VERT_WALLS=ON                        0.0000         1       389
 $min_ts = 1.0                        1.0000         1       407
 $design_restart = on                 0.0000         1       412
 $zero_value=1.e-05                   0.0000         1       415
 SUBCATCHMENT_RES=ON                  0.0000         1       419
 $relax_depth = on                    0.0000         1       427
 $saveallpts = on                     0.0000         1       434
 $channel_geometry=1                  0.0000         1       456

 *==========================================================*
```

```
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation.                        |
*==========================================================*

 Number of Subcatchments in the Runoff Block (NW)....    15
 Number of Channel/Pipes in the Runoff Block (NG)....     0
 Runoff Water quality constituents (NRQ)............     0
 Runoff Land Uses per Subcatchment (NLU)............     0
 Number of Elements in the Transport Block (NET).....     0
 Number of Storage Junctions in Transport (NTSE).....     0
 Number of Input Hydrographs in Transport (NTH)......     0
 Number of Elements in the Extran Block (NEE)........    58
 Number of Groundwater Subcatchments in Runoff (NGW).     0
 Number of Interface locations for all Blocks (NIE)..    58
 Number of Pumps in Extran (NEP).....................     0
 Number of Orifices in Extran (NEO)..................     3
 Number of Tide Gates/Free Outfalls in Extran (NTG)..     1
 Number of Extran Weirs (NEW)........................     4
 Number of scs hydrograph points.....................  1513
 Number of Extran printout locations (NPO)...........     0
 Number of Tide elements in Extran (NTE)............     1
 Number of Natural channels (NNC)....................    12
 Number of Storage junctions in Extran (NVSE)........     3
 Number of Time history data points in Extran(NTVAL).     0
 Number of Variable storage elements in Extran (NVST)     4
 Number of Input Hydrographs in Extran (NEH).........     0
 Number of Particle sizes in Transport Block (NPS)...     0
 Number of User defined conduits (NHW)...............    15
 Number of Connecting conduits in Extran (NECC)......    20
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............    58
 Number of Plugs in a Storage Treatment Unit.........     1


#######################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
#    Last Updated Jan., 2013 by XP Solutions          #

*==========================================================*
|         RUNOFF TABLES IN THE OUTPUT FILE.                |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*==========================================================*

                    A1

###########################################
#             RUNOFF JOB CONTROL          #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                 0
 Runoff graph plot control....                                 0
 Runoff output print control..                                 0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                     60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                    60.0
 Simulation length is......                               24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ........................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..         21
 KINC   - Rainfall values(pairs) per line..         10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
```

```
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval...........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    2.6400 inches

   ############################
   #        Data Group F1     #
   # Evaporation Rate (in/day) #
   ############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################
```

Number	Subcatchment Name	Channel or inlet	Width (ft)	Area (ac)	Per-cent Imperv	Slope ft/ft	"n" Imprv	"n" Perv	Deprs -sion Storge Imprv	Deprs -sion Strge Perv	Prcnt Zero Deten -tion
1	Node89#1	Node89	200.00	5.9000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
2	Node63#1	Node63	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
3	Node11#1	Node11	1000.0	107.90	0.00	0.020	0.020	0.020	0.000	0.000	0.00
4	Node33#1	Node33	400.00	37.800	0.00	0.010	0.020	0.020	0.000	0.000	0.00
5	Node30#1	Node30	450.00	9.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
6	Node46#1	Node46	600.00	30.100	0.00	0.015	0.020	0.020	0.000	0.000	0.00
7	Node65#1	Node65	450.00	16.100	0.00	0.023	0.020	0.020	0.000	0.000	0.00
8	Node120#1	Node120	700.00	32.000	0.00	0.020	0.020	0.020	0.000	0.000	0.00
9	Node99#1	Node99	700.00	32.100	0.00	0.020	0.020	0.020	0.000	0.000	0.00
10	Node66#1	Node66	150.00	10.000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
11	Node24#1	Node24	950.00	19.700	0.00	0.040	0.020	0.020	0.000	0.000	0.00
12	Node25#1	Node25	300.00	5.4000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
13	Node94#1	Node94	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
14	Node92#1	Node92	200.00	5.5000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
15	Node48#1	Node48	600.00	19.600	0.00	0.014	0.020	0.020	0.000	0.000	0.00

```
##########################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                 #
#                     Infiltration or Time of Concentration Data                         #
#                                                                                        #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                 N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                     N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant               N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                Exponent  #
# Rational Formula     -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)            #
#                     Rational Formula Tc Method: 1 = Constant                                       #
#                                                 2 = Friend's Equation                              #
#                                                 3 = Kinematic Wave                                 #
#                                                 4 = Alameda Method                                 #
#                                                 5 = Izzard's Formula                               #
#                                                 6 = Kerby's Equation                               #
#                                                 7 = Kirpich's Equation                             #
#                                                 8 = Bransby Williams Equation                      #
#                                                 9 = Federal Aviation Authority Equation            #
##########################################################################################
```

Number	Subcatchment Name	Infl # 1	Infl # 2	Infl # 3	Infl # 4	Infl # 5	Infl # 6	Infl # 7	Infl # 8
1	Node89#1	87.0000	0.3183	484.0000	0.2000				
2	Node63#1	87.0000	0.3617	484.0000	0.2000				
3	Node11#1	85.5000	0.6700	484.0000	0.2000				
4	Node33#1	84.7000	0.6350	484.0000	0.2000				
5	Node30#1	86.0000	0.5333	484.0000	0.2000				
6	Node46#1	88.5000	0.7083	484.0000	0.2000				
7	Node65#1	87.0000	0.5283	484.0000	0.2000				
8	Node120#1	83.7000	0.7500	484.0000	0.2000				
9	Node99#1	83.7000	1.5200	484.0000	0.2000				
10	Node66#1	87.0000	0.1450	484.0000	0.2000				
11	Node24#1	89.0000	0.7383	484.0000	0.2000				
12	Node25#1	79.0000	0.6200	484.0000	0.2000				
13	Node94#1	87.0000	0.4167	484.0000	0.2000				
14	Node92#1	87.0000	0.4167	484.0000	0.2000				
15	Node48#1	83.0000	0.5633	484.0000	0.2000				

```
#############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names  #
#############################################################
```

Number	Subcatchment Name	Gage No	Infiltration Type	Routing Type
1	Node89#1	1	SCS Method	SCS curvilinear
2	Node63#1	1	SCS Method	SCS curvilinear

```
     3         Node11#1      1   SCS Method       SCS curvilinear
     4         Node33#1      1   SCS Method       SCS curvilinear
     5         Node30#1      1   SCS Method       SCS curvilinear
     6         Node46#1      1   SCS Method       SCS curvilinear
     7         Node65#1      1   SCS Method       SCS curvilinear
     8        Node120#1      1   SCS Method       SCS curvilinear
     9         Node99#1      1   SCS Method       SCS curvilinear
    10         Node66#1      1   SCS Method       SCS curvilinear
    11         Node24#1      1   SCS Method       SCS curvilinear
    12         Node25#1      1   SCS Method       SCS curvilinear
    13         Node94#1      1   SCS Method       SCS curvilinear
    14         Node92#1      1   SCS Method       SCS curvilinear
    15         Node48#1      1   SCS Method       SCS curvilinear

Total Number of Subcatchments...             15
Total Tributary Area (acres)....         341.10
Impervious Area (acres).........           0.00
Pervious Area (acres)...........         341.10
Total Width (feet)..............        7300.00
Impervious Area (%).............           0.00


 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data   #
 #   Used with the calibrate node in the runoff.   #
 # 1 - width     2 - area       3 - impervious %   #
 # 4 - slope     5 - imp "n"    6 - perv "n"       #
 # 7 - imp ds    8 - perv ds    9 - 1st infil      #
 #10 - 2nd infil               11 - 3rd infil      #
 ##################################################

Column           1         2         3         4         5         6         7         8         9        10        11
Default     0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
Ratio       1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000

*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************


    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


*********************************************************
* Hydrographs will be stored for the following  15 INLETS *
*********************************************************
Node89    Node63    Node11    Node33    Node30    Node46
Node65    Node120   Node99    Node66    Node24    Node25
Node94    Node92    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



***************************************************
*  Precipitation Interface File Summary           *
*  Number of precipitation station....        1   *
***************************************************

Location Station Number
-------- --------------
       1.             1

XXX End of Header Section XXX

#########################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in Jan., 2013 by XP Solutions       #

#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
```

```
#    Last Updated Jan., 2013 by XP Solutions          #

*=========================================================*
|         RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*=========================================================*

                    A1

###########################################
#          RUNOFF JOB CONTROL             #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                      60.0
 Dry time step length (seconds)......                   86400.0
 Wet/Dry time step length (seconds)...                     60.0
 Simulation length is......                                24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ............................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..        21
 KINC   - Rainfall values(pairs) per line..        10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval..........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    2.6400 inches

   ##############################
   #        Data Group F1       #
   # Evaporation Rate (in/day) #
   ##############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################

                                                                                   Deprs Deprs Prcnt
                                                          Per-                     -sion -sion  Zero
      Subcatchment            Channel      Width    Area      cent  Slope  "n"   "n"  Storge Strge Deten
 Number          Name         or inlet      (ft)    (ac)     Imperv ft/ft Imprv  Perv Imprv  Perv -tion
 ====== =============== ================ ======== ========   ====== ===== ===== ===== ===== ===== =====
     1         Node89#1           Node89 200.00    5.9000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     2         Node63#1           Node63 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     3         Node11#1           Node11 1000.0    107.90      0.00 0.020 0.020 0.020 0.000 0.000  0.00
     4         Node33#1           Node33 400.00    37.800      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     5         Node30#1           Node30 450.00    9.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     6         Node46#1           Node46 600.00    30.100      0.00 0.015 0.020 0.020 0.000 0.000  0.00
```

7	Node65#1	Node65	450.00	16.100	0.00	0.023	0.020	0.020	0.000	0.000	0.00
8	Node120#1	Node120	700.00	32.000	0.00	0.020	0.020	0.020	0.000	0.000	0.00
9	Node99#1	Node99	700.00	32.100	0.00	0.020	0.020	0.020	0.000	0.000	0.00
10	Node66#1	Node66	150.00	10.000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
11	Node24#1	Node24	950.00	19.700	0.00	0.040	0.020	0.020	0.000	0.000	0.00
12	Node25#1	Node25	300.00	5.4000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
13	Node94#1	Node94	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
14	Node92#1	Node92	200.00	5.5000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
15	Node48#1	Node48	600.00	19.600	0.00	0.014	0.020	0.020	0.000	0.000	0.00

```
##########################################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                                  #
#                     Infiltration or Time of Concentration Data                                         #
#                                                                                                        #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)              Infl #4(#8)   #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction   #
# SBUH                ->   Comp CN          Time Conc                N/A                      N/A      #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                 N/A      #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume   #
# Proportional        ->  Constant                N/A                N/A                      N/A      #
# Initial/Cont Loss   ->   Initial         Continuing                N/A                      N/A      #
# Initial/Proportional ->  Initial           Constant                N/A                      N/A      #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent   #
# Rational Formula    -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance   #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)               #
#                     Rational Formula Tc Method: 1 = Constant                                           #
#                                                 2 = Friend's Equation                                  #
#                                                 3 = Kinematic Wave                                     #
#                                                 4 = Alameda Method                                     #
#                                                 5 = Izzard's Formula                                   #
#                                                 6 = Kerby's Equation                                   #
#                                                 7 = Kirpich's Equation                                 #
#                                                 8 = Bransby Williams Equation                          #
#                                                 9 = Federal Aviation Authority Equation                #
##########################################################################################################
```

Subcatchment Number	Name	Infl # 1	Infl # 2	Infl # 3	Infl # 4	Infl # 5	Infl # 6	Infl # 7	Infl # 8
1	Node89#1	87.0000	0.3183	484.0000	0.2000				
2	Node63#1	87.0000	0.3617	484.0000	0.2000				
3	Node11#1	85.5000	0.6700	484.0000	0.2000				
4	Node33#1	84.7000	0.6350	484.0000	0.2000				
5	Node30#1	86.0000	0.5333	484.0000	0.2000				
6	Node46#1	88.5000	0.7083	484.0000	0.2000				
7	Node65#1	87.0000	0.5283	484.0000	0.2000				
8	Node120#1	83.7000	0.7500	484.0000	0.2000				
9	Node99#1	83.7000	1.5200	484.0000	0.2000				
10	Node66#1	87.0000	0.1450	484.0000	0.2000				
11	Node24#1	89.0000	0.7383	484.0000	0.2000				
12	Node25#1	79.0000	0.6200	484.0000	0.2000				
13	Node94#1	87.0000	0.4167	484.0000	0.2000				
14	Node92#1	87.0000	0.4167	484.0000	0.2000				
15	Node48#1	83.0000	0.5633	484.0000	0.2000				

```
#############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names   #
#############################################################
```

Subcatchment Number	Name	Gage No	Infiltration Type	Routing Type
1	Node89#1	1	SCS Method	SCS curvilinear
2	Node63#1	1	SCS Method	SCS curvilinear
3	Node11#1	1	SCS Method	SCS curvilinear
4	Node33#1	1	SCS Method	SCS curvilinear
5	Node30#1	1	SCS Method	SCS curvilinear
6	Node46#1	1	SCS Method	SCS curvilinear
7	Node65#1	1	SCS Method	SCS curvilinear
8	Node120#1	1	SCS Method	SCS curvilinear
9	Node99#1	1	SCS Method	SCS curvilinear
10	Node66#1	1	SCS Method	SCS curvilinear
11	Node24#1	1	SCS Method	SCS curvilinear
12	Node25#1	1	SCS Method	SCS curvilinear
13	Node94#1	1	SCS Method	SCS curvilinear
14	Node92#1	1	SCS Method	SCS curvilinear
15	Node48#1	1	SCS Method	SCS curvilinear

```
Total Number of Subcatchments...              15
Total Tributary Area (acres)....          341.10
Impervious Area (acres).........            0.00
Pervious Area (acres)...........          341.10
Total Width (feet)..............         7300.00
Impervious Area (%).............            0.00
```

```
 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil               11 - 3rd infil     #
 ##################################################
```

Column	1	2	3	4	5	6	7	8	9	10	11
Default	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ratio	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

```
*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes  *
*******************************************************
```

```
    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


************************************************************
* Hydrographs will be stored for the following  15 INLETS *
************************************************************
Node89    Node63    Node11    Node33    Node30    Node46
Node65    Node120   Node99    Node66    Node24    Node25
Node94    Node92    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



*****************************************************
*  Precipitation Interface File Summary             *
*  Number of precipitation station....          1   *
*****************************************************

Location Station Number
-------- --------------
       1.             1


    A1


*==========================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE               |
|  These are the more important tables in the output file.  |
|  You can use your editor to find the table numbers,       |
|  for example: search for Table E20 to check continuity.   |
|  This output file can be imported into a Word Processor   |
|  and printed on US letter or A4 paper using portrait      |
|  mode, courier font, a size of 8 pt. and margins of 0.75  |
|                                                           |
| Table E1   - Basic Conduit Data                           |
| Table E2   - Conduit Factor Data                          |
| Table E3a  - Junction Data                                |
| Table E3b  - Junction Data                                |
| Table E4   - Conduit Connectivity Data                    |
| Table E4a  - Dry Weather Flow Data                        |
| Table E4b  - Real Time Control Data                       |
| Table E5   - Junction Time Step Limitation Summary        |
| Table E5a  - Conduit Explicit Condition Summary           |
| Table E6   - Final Model Condition                        |
| Table E7   - Iteration Summary                            |
| Table E8   - Junction Time Step Limitation Summary        |
| Table E9   - Junction  Summary  Statistics                |
| Table E10  - Conduit   Summary  Statistics                |
| Table E11  - Area assumptions used in the analysis        |
| Table E12  - Mean conduit information                     |
| Table E13  - Channel losses(H) and culvert info           |
| Table E13a - Culvert Analysis Classification              |
| Table E14  - Natural Channel Overbank Flow Information    |
| Table E14a - Natural Channel Encroachment Information     |
| Table E14b - Floodplain Mapping                           |
| Table E15  - Spreadsheet Info List                        |
| Table E15a - Spreadsheet Reach List                       |
| Table E16  - New Conduit Output Section                   |
| Table E17  - Pump Operation                               |
| Table E18  - Junction Continuity Error                    |
| Table E19  - Junction Inflow & Outflow Listing            |
| Table E20  - Junction Flooding and Volume List            |
| Table E21  - Continuity balance at simulation end         |
| Table E22  - Model Judgement Section                      |
*==========================================================*

Time Control from Hydraulics Job Control
```

```
Year.........    2014 Month.......       1
Day..........       1 Hour........       0
Minute.......       0 Second......       0


Control information for simulation
----------------------------------

Integration cycles................       576
Length of integration step is......    300.00 seconds
Simulation length..................     48.00 hours
Do not create equiv. pipes(NEQUAL).         0
Use U.S. customary units for I/O...         0
Printing starts in cycle...........         1
Intermediate printout intervals of.       500 cycles
Intermediate printout intervals of.   2500.00 minutes
Summary printout intervals of......       500 cycles
Summary printout time interval of..   2500.00 minutes
Hot start file parameter (REDO)....         0
Initial time.......................      0.00 hours

Iteration variables: Flow Tolerance.   0.00010
                     Head Tolerance.   0.00050
    Minimum depth (m or ft).........   0.00001
    Underrelaxation parameter.......   0.85000
    Time weighting parameter........   0.85000
    Conduit roughness factor........   1.00000
    Flow adjustment factor..........   1.00000
    Initial Condition Smoothing.....         0
    Courant Time Step Factor........   1.00000
    Default Expansion/Contraction K.   0.00000
    Default Entrance/Exit K.........   0.00000
    Routing Method..................   Dynamic Wave
Default surface area of junctions...     12.57 square feet.
Minimum Junction/Conduit Depth......   0.00001 feet.
Ponding Area Coefficient............   5000.00
Ponding Area Exponent...............    1.0000
Minimum Orifice Length..............   1000.00 feet.
NJSW input hydrograph junctions.....     0
     or user defined hydrographs....

*==========================================================*
|               Flap Gate Conduit Information              |
|               ----------------------------               |
| Positive Flap Gate - Flow only allowed from the upstream |
|                      to the downstream junction          |
| Negative Flap Gate - Flow only allowed from the          |
|                      downstream to the upstream junction |
*==========================================================*

   Conduit   Type of Flap Gate
   -------   -----------------
Link12      Positive Flap Gate

        Natural Cross-Section information for Channel Link53
        ====================================================
         Cross-Section ID (from X1 card) :     1.0 Channel sequence number :     1

  Left Overbank Length   :     33.0 ft                Maximum Elevation        :   636.86 ft.
  Main Channel Length    :     33.0 ft                Maximum Depth            :     0.50 ft.
  Right Overbank Length  :     33.0 ft                Maximum Section Area     :   1.8534 ft^2
                                                      Maximum hydraulic radius :     0.30 ft.
  Manning N :      0.025  to Station         -21.2    Max topwidth             :     6.04 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.17E+00 ft
    "    "  :      0.025  Beyond station      17.8    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :   1.8534 ft^2

        Natural Cross-Section information for Channel Link55
        ====================================================
         Cross-Section ID (from X1 card) :     2.0 Channel sequence number :     2

  Left Overbank Length   :    138.0 ft                Maximum Elevation        :   633.71 ft.
  Main Channel Length    :    138.0 ft                Maximum Depth            :     2.63 ft.
  Right Overbank Length  :    138.0 ft                Maximum Section Area     :  38.1355 ft^2
                                                      Maximum hydraulic radius :     1.14 ft.
  Manning N :      0.025  to Station         -23.6    Max topwidth             :    33.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.34E+01 ft
    "    "  :      0.025  Beyond station       9.4    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  38.1355 ft^2

        Natural Cross-Section information for Channel Link68
        ====================================================
         Cross-Section ID (from X1 card) :     3.0 Channel sequence number :     3

  Left Overbank Length   :    400.0 ft                Maximum Elevation        :   622.00 ft.
  Main Channel Length    :    400.0 ft                Maximum Depth            :     2.70 ft.
  Right Overbank Length  :    400.0 ft                Maximum Section Area     :  45.1725 ft^2
                                                      Maximum hydraulic radius :     0.46 ft.
  Manning N :      0.025  to Station         -67.2    Max topwidth             :    97.80 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 9.85E+01 ft
    "    "  :      0.025  Beyond station      30.6    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  45.1725 ft^2

        Natural Cross-Section information for Channel Link69
        ====================================================
         Cross-Section ID (from X1 card) :     4.0 Channel sequence number :     4

  Left Overbank Length   :    258.0 ft                Maximum Elevation        :   624.37 ft.
  Main Channel Length    :    260.0 ft                Maximum Depth            :     6.05 ft.
  Right Overbank Length  :    262.0 ft                Maximum Section Area     : 1075.528 ft^2
                                                      Maximum hydraulic radius :     3.57 ft.
  Manning N :      0.025  to Station        -126.4    Max topwidth             :   301.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.01E+02 ft
```

```
  "    "  :      0.025  Beyond station     174.6    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1075.528 ft^2

      Natural Cross-Section information for Channel Link70
      ====================================================
       Cross-Section ID (from X1 card) :     5.0 Channel sequence number :     5

Left Overbank Length   :    450.0 ft                Maximum Elevation        :   624.09 ft.
Main Channel Length    :    450.0 ft                Maximum Depth            :     7.76 ft.
Right Overbank Length  :    450.0 ft                Maximum Section Area     : 955.4430 ft^2
                                                    Maximum hydraulic radius :     5.13 ft.
Manning N :      0.025  to Station         -64.2    Max topwidth             :   185.50 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.86E+02 ft
  "    "  :      0.025  Beyond station     121.3    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 955.4430 ft^2

      Natural Cross-Section information for Channel Link71
      ====================================================
       Cross-Section ID (from X1 card) :     6.0 Channel sequence number :     6

Left Overbank Length   :    383.0 ft                Maximum Elevation        :   624.37 ft.
Main Channel Length    :    383.0 ft                Maximum Depth            :     8.76 ft.
Right Overbank Length  :    383.0 ft                Maximum Section Area     : 2270.844 ft^2
                                                    Maximum hydraulic radius :     7.27 ft.
Manning N :      0.025  to Station        -245.8    Max topwidth             :   311.30 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.12E+02 ft
  "    "  :      0.025  Beyond station      65.5    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 2270.844 ft^2

      Natural Cross-Section information for Channel Link73
      ====================================================
       Cross-Section ID (from X1 card) :     7.0 Channel sequence number :     7

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   613.47 ft.
Main Channel Length    :     73.0 ft                Maximum Depth            :    11.92 ft.
Right Overbank Length  :    100.0 ft                Maximum Section Area     : 1101.166 ft^2
                                                    Maximum hydraulic radius :     6.02 ft.
Manning N :      0.025  to Station         -92.8    Max topwidth             :   181.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
  "    "  :      0.025  Beyond station      88.6    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1101.166 ft^2

      Natural Cross-Section information for Channel Link74
      ====================================================
       Cross-Section ID (from X1 card) :     8.0 Channel sequence number :     8

Left Overbank Length   :    102.0 ft                Maximum Elevation        :   613.84 ft.
Main Channel Length    :    102.0 ft                Maximum Depth            :    15.95 ft.
Right Overbank Length  :    102.0 ft                Maximum Section Area     : 1003.556 ft^2
                                                    Maximum hydraulic radius :     7.52 ft.
Manning N :      0.025  to Station         -93.3    Max topwidth             :   126.70 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.33E+02 ft
  "    "  :      0.025  Beyond station      33.4    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1003.556 ft^2

      Natural Cross-Section information for Channel Link75
      ====================================================
       Cross-Section ID (from X1 card) :     9.0 Channel sequence number :     9

Left Overbank Length   :     52.0 ft                Maximum Elevation        :   612.13 ft.
Main Channel Length    :     52.0 ft                Maximum Depth            :    17.46 ft.
Right Overbank Length  :     52.0 ft                Maximum Section Area     : 1220.157 ft^2
                                                    Maximum hydraulic radius :     8.32 ft.
Manning N :      0.025  to Station         -92.5    Max topwidth             :   141.30 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.47E+02 ft
  "    "  :      0.025  Beyond station      48.8    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1220.157 ft^2

      Natural Cross-Section information for Channel Link76
      ====================================================
       Cross-Section ID (from X1 card) :    10.0 Channel sequence number :    10

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   609.77 ft.
Main Channel Length    :     40.0 ft                Maximum Depth            :    17.61 ft.
Right Overbank Length  :     40.0 ft                Maximum Section Area     : 829.0790 ft^2
                                                    Maximum hydraulic radius :     7.27 ft.
Manning N :      0.025  to Station         -46.5    Max topwidth             :   106.90 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.14E+02 ft
  "    "  :      0.025  Beyond station      60.4    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 829.0790 ft^2

      Natural Cross-Section information for Channel Link84
      ====================================================
       Cross-Section ID (from X1 card) :    11.0 Channel sequence number :    11

Left Overbank Length   :    270.0 ft                Maximum Elevation        :   618.53 ft.
Main Channel Length    :    280.0 ft                Maximum Depth            :     7.43 ft.
Right Overbank Length  :    290.0 ft                Maximum Section Area     : 222.9791 ft^2
                                                    Maximum hydraulic radius :     3.66 ft.
Manning N :      0.025  to Station         -30.6    Max topwidth             :    57.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.09E+01 ft
  "    "  :      0.025  Beyond station      26.8    Max left bank area       :     0.00 ft^2
                                                    Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 222.9791 ft^2

      Natural Cross-Section information for Channel Link85
      ====================================================
       Cross-Section ID (from X1 card) :    12.0 Channel sequence number :    12
```

```
  Left Overbank Length   :    450.0 ft                Maximum Elevation        :   616.00 ft.
  Main Channel Length    :    470.0 ft                Maximum Depth            :    16.50 ft.
  Right Overbank Length  :    490.0 ft                Maximum Section Area     : 1074.025 ft^2
                                                      Maximum hydraulic radius :     5.87 ft.
  Manning N :      0.025  to Station         -68.1    Max topwidth             :   177.10 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
    "    "  :      0.025  Beyond station     109.0    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1074.025 ft^2
```

==========
|Table E1 - Conduit Data|
==========

Inp Num	Conduit Name	Length (ft)	Conduit Class	Area (ft^2)	Manning Coef.	Max Width (ft)	Depth (ft)	Trapezoid Side Slopes	Hazen Williams c-factor
1	Link12	312.0000	Circular	12.5664	0.0120	4.0000	4.0000		
2	Link13	311.0000	Circular	12.5664	0.0120	4.0000	4.0000		
3	Link14	341.0000	Circular	7.0686	0.0120	3.0000	3.0000		
4	Link15	322.0000	Circular	7.0686	0.0120	3.0000	3.0000		
5	Link16	631.0000	Circular	7.0686	0.0120	3.0000	3.0000		
6	Link17	51.0000	Circular	7.0686	0.0120	3.0000	3.0000		
7	Link18	462.0000	Circular	7.0686	0.0120	3.0000	3.0000		
8	Link22	340.0000	Circular	7.0686	0.0120	3.0000	3.0000		
9	Link23	312.0000	Circular	7.0686	0.0120	3.0000	3.0000		
10	Link24	74.0000	Circular	7.0686	0.0120	3.0000	3.0000		
11	Link25	305.0000	Circular	7.0686	0.0120	3.0000	3.0000		
12	Link26	308.0000	Circular	7.0686	0.0120	3.0000	3.0000		
13	Link27	324.0000	Circular	7.0686	0.0140	3.0000	3.0000		
14	Link28	327.0000	Circular	7.0686	0.0120	3.0000	3.0000		
15	Link30	32.0000	Circular	1.2272	0.0240	1.2500	1.2500		
16	Link31	60.4000	Circular	1.2272	0.0240	1.2500	1.2500		
17	Link32	400.0000	Rectangle	16.0000	0.0120	4.0000	4.0000		
18	Link33	260.0000	Rectangle	24.0000	0.0140	6.0000	4.0000		
19	Link47	54.0000	Circular	1.7671	0.0120	1.5000	1.5000		
20	Link53	33.0000	Natural	1.8534	0.0250	6.0429	0.5000		
21	Link54	250.0000	Trapezoid	1.6250	0.0400	4.0000	0.2500	10.0000	10.0000
22	Link55	138.0000	Natural	38.1355	0.0250	33.0000	2.6300		
23	Link56	610.0000	Trapezoid	19.0000	0.0400	4.0000	1.0000	15.0000	15.0000
24	Link68	400.0000	Natural	45.1725	0.0250	97.8000	2.7000		
25	Link69	260.0000	Natural	1075.5285	0.0250	301.0000	6.0500		
26	Link70	450.0000	Natural	955.4430	0.0250	185.5000	7.7600		
27	Link71	383.0000	Natural	2270.8440	0.0250	311.3000	8.7600		
28	Link72	42.0000	Circular	7.0686	0.0120	3.0000	3.0000		
29	Link73	73.0000	Natural	1101.1655	0.0250	181.4000	11.9200		
30	Link74	102.0000	Natural	1003.5558	0.0250	126.7000	15.9500		
31	Link75	52.0000	Natural	1220.1569	0.0250	141.3000	17.4600		
32	Link76	40.0000	Natural	829.0790	0.0250	106.9000	17.6100		
33	Link77	60.0000	Circular	3.1416	0.0120	2.0000	2.0000		
34	Link78	325.0000	Trapezoid	195.0000	0.0400	20.0000	3.0000	15.0000	15.0000
35	Link82	436.0000	Circular	7.0686	0.0120	3.0000	3.0000		
36	Link83	123.0000	Circular	7.0686	0.0120	3.0000	3.0000		
37	Link84	280.0000	Natural	222.9791	0.0250	57.4000	7.4310		
38	Link85	470.0000	Natural	1074.0250	0.0250	177.1000	16.5000		
39	Link90	250.0000	Circular	1.7671	0.0120	1.5000	1.5000		
40	Link93	150.0000	Circular	1.7671	0.0120	1.5000	1.5000		
41	Link98	31.0000	Circular	1.7671	0.0140	1.5000	1.5000		
42	Link104	162.0000	Circular	3.1416	0.0120	2.0000	2.0000		
43	Link105	145.0000	Circular	3.1416	0.0120	2.0000	2.0000		
44	Link106	208.0000	Circular	4.9087	0.0120	2.5000	2.5000		
45	Link21.1	180.0000	Circular	7.0686	0.0120	3.0000	3.0000		
46	Link118	150.0000	Trapezoid	84.0000	0.0120	30.0000	2.0000	6.0000	6.0000
47	Link124	90.0000	Circular	1.7671	0.0120	1.5000	1.5000		
48	Link124.1	90.0000	Circular	7.0686	0.0120	3.0000	3.0000		
49	214.1	29.0000	Circular	3.1416	0.0240	2.0000	2.0000		
50	283.1	40.0000	Circular	0.7854	0.0240	1.0000	1.0000		

Total length of all conduits .... 11278.4000 feet

==========
|Table E2 - Conduit Factor Data|
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Time Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
Link31	1.0000	0.0000	0.0000	0.0000	0.6500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
Link56	1.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
Link124.1	1.0000	0.0000	0.0000	0.0000	0.6500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
214.1	2.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

```
*==================================================*
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length  |
| in the output file all it means is that the       |
| program will lower the internal time step to      |
| satisfy this condition (explicit condition).      |
| You control the actual internal time step by      |
| using the minimum courant time step factor in the |
| HYDRAULICS job control.  The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection.    |
| You have further control by using the modify      |
| conduit option in the HYDRAULICS Job Control.     |
*==================================================*
```

Conduit Name	Courant Ratio	
Link12	10.91	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link13	10.95	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link14	8.65	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link15	9.16	===> Warning ! (sqrt(wave celerity)*time step/conduit length)

```
          Link16        4.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link17       57.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link18        6.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link22        8.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link23        9.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link24       39.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link25        9.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link26        9.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link27        9.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link28        9.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link30       59.48  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link31       31.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link32        8.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link33       13.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link47       38.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link53       28.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link54        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link55       13.26  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link56        2.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link68        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link69       12.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link70        8.59  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link71       12.00  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link72       70.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link73       57.46  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link74       46.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link75       96.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link76      119.30  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link77       40.12  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link78        6.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link82        6.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link83       23.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link84       11.98  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link85        8.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link90        8.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link93       13.90  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link98       67.26  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link104       14.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link105       16.60  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link106       12.94  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link21.1       16.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link118       14.15  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link124       23.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
       Link124.1       32.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           214.1       83.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           283.1       42.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)

 *==================*
 |  Conduit Volume  |
 *==================*

 Full pipe or full open conduit volume
 Input full depth volume............    2.5942E+06 cubic feet

 ===> Warning !! The upstream and downstream junctions for the following conduits
                 have been reversed to correspond to the positive flow and decreasing
                 slope convention.  A negative flow in the output thus means
                 the flow was from your original upstream junction to your original
                 downstream junction.  Any initial flow has been multiplied by -1.

                 1.  Conduit #...Link17      has been changed.
                 2.  Conduit #...Link31      has been changed.

 ===> ERROR !!!  Conduit Link73           has caused ZCROWN  of Junction Node75     to lie above the specified ground elev of     614.84
611.73

 ===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node81     to lie above the specified ground elev of     612.64
611.30

 ===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.13
611.67

 ===> ERROR !!!  Conduit Link76           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.28
611.67


 *==================================================*
 |           Table E3a - Junction Data              |
 *==================================================*

 Inp         Junction     Ground     Crown    Invert     Qinst  Initial  Interface
 Num             Name  Elevation Elevation Elevation       cfs Depth-ft   Flow (%)
 ---  ---------------  --------- --------- --------- -------- --------  ---------
   1           Node11   623.2500  623.2500  617.2000   0.0000   0.0000   100.0000
   2           Node12   624.9700  624.9700  617.2100   0.0000   0.0000   100.0000
   3           Node20   637.3000  635.3900  631.3900   0.0000   0.0000   100.0000
   4           Node21   638.2600  635.0800  631.0800   0.0000   0.0000   100.0000
   5           Node22   639.3500  639.3500  630.1100   0.0000   0.0000   100.0000
   6           Node23   635.9100  631.8600  628.8600   0.0000   0.0000   100.0000
   7           Node24   635.3400  631.0300  628.0300   0.0000   0.0000   100.0000
   8           Node25   634.1030  629.3500  626.3500   0.0000   0.0000   100.0000
   9           Node26   634.3200  629.4200  626.4200   0.0000   0.0000   100.0000
  10           Node27   635.4400  626.6900  623.6900   0.0000   0.0000   100.0000
  11           Node29   620.2110  620.2110  612.7800   0.0000   0.0000   100.0000
  12           Node30   631.4300  622.9800  621.4800   0.0000   0.0000   100.0000
  13           Node31   627.0900  619.0000  616.0000   0.0000   0.0000   100.0000
  14           Node33   619.3200  619.3200  610.5600   0.0000   0.0000   100.0000
  15           Node34   618.6800  611.4300  608.4300   0.0000   0.0000   100.0000
  16           Node35   621.6500  611.4000  608.4000   0.0000   0.0000   100.0000
  17           Node36   633.6100  610.4000  607.4000   0.0000   0.0000   100.0000
  18           Node37   632.4600  609.4600  606.4600   0.0000   0.0000   100.0000
  19           Node38   626.7800  608.4500  605.4500   0.0000   0.0000   100.0000
  20           Node39   611.6440  607.4400  604.4400   0.0000   0.0000   100.0000
  21           Node41   633.3700  631.2200  630.2000   0.0000   0.0000   100.0000
  22           Node43   638.5000  638.4600  636.4600   0.0000   0.0000   100.0000
  23           Node44   637.9900  636.9900  635.7400   0.0000   0.0000   100.0000
```

24	Node45	637.2900	637.2900	636.0400	0.0000	0.0000	100.0000
25	Node46	608.0000	610.3500	592.7400	0.0000	0.0000	100.0000
26	Node47	610.0000	576.0000	572.0000	0.0000	0.0000	100.0000
27	Node48	618.0000	609.8000	593.3000	0.0000	0.0000	100.0000
28	Node63	633.6300	633.6300	631.0000	0.0000	0.0000	100.0000
29	Node65	642.0000	642.0000	638.0000	0.0000	0.0000	100.0000
30	Node66	634.7700	633.4700	631.9700	0.0000	0.0000	100.0000
31	Node69	638.1000	636.5000	636.0000	0.0000	0.0000	100.0000
32	Node70	636.1000	636.0600	633.4300	0.0000	0.0000	100.0000
33	Node71	624.7000	624.7000	622.0000	0.0000	0.0000	100.0000
34	Node74	625.0300	625.0300	618.9800	0.0000	0.0000	100.0000
35	Node75	611.7300	611.7200	602.9200	0.0000	0.0000	100.0000
36	Node79	624.3700	624.3700	615.6100	0.0000	0.0000	100.0000
37	Node80	613.8400	613.8400	597.8900	0.0000	0.0000	100.0000
38	Node81	611.3000	611.2900	595.1800	0.0000	0.0000	100.0000
39	Node82	611.6700	611.6600	594.6700	0.0000	0.0000	100.0000
40	Node83	642.6000	642.6000	639.6000	0.0000	0.0000	100.0000
41	Node84	639.7400	634.7700	630.7700	0.0000	0.0000	100.0000
42	Node86	621.1000	616.4900	613.4900	0.0000	0.0000	100.0000
43	Node87	622.5000	622.5000	606.0000	0.0000	0.0000	100.0000
44	Node89	639.1000	639.1000	637.1000	0.0000	0.0000	100.0000
45	Node92	636.3000	634.5800	633.0800	0.0000	0.0000	100.0000
46	Node94	635.3000	634.8000	633.3000	0.0000	0.0000	100.0000
47	Node99	639.7000	637.7000	637.7000	0.0000	0.0000	100.0000
48	Node100	634.1900	633.8300	632.3300	0.0000	0.0000	100.0000
49	Node101	634.8000	633.1300	631.1300	0.0000	0.0000	100.0000
50	Node103	634.8400	632.3200	630.2700	0.0000	0.0000	100.0000
51	Node108	633.9000	632.7000	629.5400	0.0000	0.0000	100.0000
52	Node30.1	629.1600	622.1400	619.1400	0.0000	0.0000	100.0000
53	Node120	639.6000	638.0000	638.0000	0.0000	0.0000	100.0000
54	Node124	632.4600	616.4000	613.4000	0.0000	0.0000	100.0000
55	Node125	634.3200	631.0000	628.5000	0.0000	0.0000	100.0000
56	Node30.2	630.2900	623.3100	620.3100	0.0000	0.0000	100.0000

==========
| Table E3b - Junction Data |
==========

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	Node11	0.0000	0.0000	F	Normal		0	0.0000
2	Node12	0.0000	0.0000	No P	Normal		0	0.0000
3	Node20	0.0000	0.0000	F	Normal		0	0.0000
4	Node21	0.0000	0.0000	F	Normal		0	0.0000
5	Node22	0.0000	0.0000		Normal		0	0.0000
6	Node23	0.0000	0.0000		Normal		0	0.0000
7	Node24	0.0000	0.0000		Normal		0	0.0000
8	Node25	0.0000	0.0000	F	Normal		0	0.0000
9	Node26	0.0000	0.0000	F	Normal		0	0.0000
10	Node27	0.0000	0.0000	F	Normal		0	0.0000
11	Node29	0.0000	0.0000	No P	Normal		0	0.0000
12	Node30	0.0000	0.0000	F	Normal		0	0.0000
13	Node31	0.0000	0.0000		Normal		0	0.0000
14	Node33	0.0000	0.0000	F	Normal		0	0.0000
15	Node34	0.0000	0.0000		Normal		0	0.0000
16	Node35	0.0000	0.0000		Normal		0	0.0000
17	Node36	0.0000	0.0000		Normal		0	0.0000
18	Node37	0.0000	0.0000		Normal		0	0.0000
19	Node38	0.0000	0.0000	No P	Normal		0	0.0000
20	Node39	0.0000	0.0000		Normal		0	0.0000
21	Node41	0.0000	0.0000	No P	Normal		0	0.0000
22	Node43	0.0000	0.0000	F	Normal		0	0.0000
23	Node44	0.0000	0.0000	F	Normal		0	0.0000
24	Node45	0.0000	0.0000	No P	Normal		0	0.0000
25	Node46	0.0000	0.0000	F	Normal		0	0.0000
26	Node47	0.0000	0.0000	No P	Normal		0	0.0000
27	Node48	0.0000	0.0000	No P	Normal		0	0.0000
28	Node63	0.0000	0.0000	F	Normal		0	0.0000
29	Node65	0.0000	0.0000	F	Normal		0	0.0000
30	Node66	0.0000	0.0000	F	Normal		0	0.0000
31	Node69	0.0000	0.0000	No P	Normal		0	0.0000
32	Node70	0.0000	0.0000	F	Normal		0	0.0000
33	Node71	0.0000	0.0000	No P	Normal		0	0.0000
34	Node74	0.0000	0.0000	No P	Normal		0	0.0000
35	Node75	0.0000	0.0000	No P	Normal		0	0.0000
36	Node79	0.0000	0.0000	No P	Normal		0	0.0000
37	Node80	0.0000	0.0000	No P	Normal		0	0.0000
38	Node81	0.0000	0.0000	No P	Normal		0	0.0000
39	Node82	0.0000	0.0000	No P	Normal		0	0.0000
40	Node83	0.0000	0.0000	No P	Normal		0	0.0000
41	Node84	0.0000	0.0000	No P	Normal		0	0.0000
42	Node86	0.0000	0.0000	F	Normal		0	0.0000
43	Node87	0.0000	0.0000	No P	Normal		0	0.0000
44	Node89	0.0000	0.0000	F	Normal		0	0.0000
45	Node92	0.0000	0.0000	F	Normal		0	0.0000
46	Node94	0.0000	0.0000	F	Normal		0	0.0000
47	Node99	0.0000	0.0000	F	Normal		0	0.0000
48	Node100	0.0000	0.0000	F	Normal		0	0.0000
49	Node101	0.0000	0.0000	No P	Normal		0	0.0000
50	Node103	0.0000	0.0000	No P	Normal		0	0.0000
51	Node108	0.0000	0.0000	F	Normal		0	0.0000
52	Node30.1	0.0000	0.0000	F	Normal		0	0.0000
53	Node120	0.0000	0.0000	F	Normal		0	0.0000
54	Node124	0.0000	0.0000	No P	Normal		0	0.0000
55	Node125	0.0000	0.0000	No P	Normal		0	0.0000
56	Node30.2	0.0000	0.0000	No P	Normal		0	0.0000

==========
| Table E4 - Conduit Connectivity |
==========

Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation

1	Link12	Node20	Node21	631.3900	631.0800	No Design
2	Link13	Node21	Node84	631.0800	630.7700	No Design
3	Link14	Node22	Node23	630.1100	628.8600	No Design
4	Link15	Node23	Node24	628.8600	628.0300	No Design
5	Link16	Node24	Node25	628.0300	626.3500	No Design
6	Link17	Node26	Node25	626.4200	626.3500	No Design
7	Link18	Node26	Node27	626.4200	623.6900	No Design
8	Link22	Node31	Node124	616.0000	613.4000	No Design
9	Link23	Node33	Node34	610.5630	608.4300	No Design
10	Link24	Node34	Node35	608.4300	608.4000	No Design
11	Link25	Node35	Node36	608.4000	607.4000	No Design
12	Link26	Node36	Node37	607.4000	606.4600	No Design
13	Link27	Node37	Node38	606.4600	605.4500	No Design
14	Link28	Node38	Node39	605.4500	604.4400	No Design
15	Link30	Node43	Node44	636.4600	635.7400	No Design
16	Link31	Node45	Node44	636.0400	635.7400	No Design
17	Link32	Node46	Node47	592.7400	572.0000	No Design
18	Link33	Node48	Node47	593.3000	572.0000	No Design
19	Link47	Node66	Node24	631.9700	628.3300	No Design
20	Link53	Node45	Node69	636.0400	636.0000	No Design
21	Link54	Node69	Node70	636.0000	633.4300	No Design
22	Link55	Node70	Node63	633.4300	631.0000	No Design
23	Link56	Node41	Node71	630.2000	622.0000	No Design
24	Link68	Node71	Node74	622.0000	618.9800	No Design
25	Link69	Node74	Node11	618.9800	617.2000	No Design
26	Link70	Node12	Node79	617.2100	615.6100	No Design
27	Link71	Node79	Node33	615.6100	610.5600	No Design
28	Link72	Node39	Node75	604.4400	602.9220	No Design
29	Link73	Node75	Node80	602.9200	597.8900	No Design
30	Link74	Node80	Node81	597.8900	595.1800	No Design
31	Link75	Node81	Node82	595.1800	594.6700	No Design
32	Link76	Node82	Node46	594.6700	592.7400	No Design
33	Link77	Node65	Node83	640.0000	639.6000	No Design
34	Link78	Node83	Node22	639.6000	636.3500	No Design
35	Link82	Node27	Node86	623.6900	613.4900	No Design
36	Link83	Node86	Node29	613.4900	612.7800	No Design
37	Link84	Node29	Node87	612.7800	606.0000	No Design
38	Link85	Node87	Node48	606.0000	593.3000	No Design
39	Link90	Node94	Node108	633.3000	631.2000	No Design
40	Link93	Node92	Node100	633.0800	632.3300	No Design
41	Link98	Node100	Node101	632.3300	631.1300	No Design
42	Link104	Node101	Node103	631.1300	630.3200	No Design
43	Link105	Node103	Node108	630.2700	629.5400	No Design
44	Link106	Node108	Node125	629.5400	628.5000	No Design
45	Link21.1	Node30.1	Node31	619.1400	616.0000	No Design
46	Link118	Node89	Node43	637.1000	636.4600	No Design
47	Link124	Node30	Node30.2	621.4800	620.3100	No Design
48	Link124.1	Node30.2	Node30.1	620.3100	619.1400	No Design
49	214.1	Node11	Node12	617.7000	617.2100	No Design
50	283.1	Node63	Node41	631.0100	630.2200	No Design

Storage Junction Data

STORAGE JUNCTION NUMBER OR NAME	JUNCTION TYPE	MAXIMUM OR CONSTANT SURFACE AREA (FT2)	PEAK OR CONSTANT VOLUME (CUBIC FEET)	CROWN ELEVATION (FT)	DEPTH STARTS FROM
Node65	Stage/Area	50965.2000	114339.2685	642.0000	Node Invert
Node99	Stage/Area	22651.2000	39303.4343	639.7000	Node Invert
Node120	Stage/Area	26571.6000	23780.4334	639.6000	Node Invert

Variable storage data for node | Node65

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	435.6000	0.0000	0.0100	0.0000
2	639.0000	1.0000	10890.0000	4501.1550	0.2500	0.1033
3	640.0000	2.0000	29185.2000	23801.9281	0.6700	0.5464
4	641.0000	3.0000	50965.2000	63374.0685	1.1700	1.4549
5	642.0000	4.0000	50965.2000	114339.2685	1.1700	2.6249

Variable storage data for node | Node99

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	637.7000	0.0000	4.3560	0.0000	0.0001	0.0000
2	637.7100	0.0100	2178.0000	7.5991	0.0500	0.0002
3	638.0000	0.3000	12196.8000	1895.3728	0.2800	0.0435
4	638.2000	0.5000	22651.2000	5326.6343	0.5200	0.1223
5	639.7000	2.0000	22651.2000	39303.4343	0.5200	0.9023

Variable storage data for node | Node120

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	43.5600	0.0000	0.0010	0.0000
2	638.8000	0.8000	17424.0000	4890.2871	0.4000	0.1123
3	639.3000	1.3000	26571.6000	15808.9534	0.6100	0.3629
4	639.6000	1.6000	26571.6000	23780.4334	0.6100	0.5459

Orifice Data

Conduit	From	To	Area	Depth	Discharge	Height Above

Name	Junction	Junction	Type	(ft2)	(ft)	Coefficient	Junction (ft)
Restrct10	Node84	Node22	Circ Side	3.14	0.00	1.000	1.230
restrict6	Node124	Node37	Circ Side	2.18	0.00	0.600	6.600
restrict7	Node125	Node26	Circ Side	2.18	0.00	0.600	1.500

```
====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                1
      CONDUIT NAME..........................        Restrct10
      Upstream node.........................           Node84
      Downstream node.......................           Node22
      PIPE DIAMETER.......................                2.00
      PIPE LENGTH.........................             4814.37
      MANNINGS ROUGHNESS..................               0.0017
      INVERT ELEVATION AT UPSTREAM END.....            632.0000
      INVERT ELEVATION AT DOWNSTREAM END...            631.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                2
      CONDUIT NAME..........................         restrict6
      Upstream node.........................          Node124
      Downstream node.......................           Node37
      PIPE DIAMETER.......................                1.67
      PIPE LENGTH.........................             4394.62
      MANNINGS ROUGHNESS..................               0.0026
      INVERT ELEVATION AT UPSTREAM END.....            620.0000
      INVERT ELEVATION AT DOWNSTREAM END...            619.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                3
      CONDUIT NAME..........................         restrict7
      Upstream node.........................          Node125
      Downstream node.......................           Node26
      PIPE DIAMETER.......................                1.67
      PIPE LENGTH.........................             4394.62
      MANNINGS ROUGHNESS..................               0.0026
      INVERT ELEVATION AT UPSTREAM END.....            630.0000
      INVERT ELEVATION AT DOWNSTREAM END...            629.9900

Note: For a Bottom-outlet orifice the invert elevation of the downstream node will be
      adjusted to accomodate the equivalent conduit.  Conduit grades are not affected.


*==========================================*
|                 Weir Data                |
*==========================================*
```

Weir Name	From Junction	To Junction	Type	Crest Height(ft)	Weir Top(ft)	Weir Length(ft)	Discharge Coefficient	Weir Power
Link 5	Node11	Node12	1	3.16	182.80	300.00	3.0000	1.5000
WEIR46	Node63	Node41	1	2.37	169.00	50.00	3.0000	1.5000
Link97.1	Node99	Node21	1	0.56	162.30	300.00	3.0000	1.5000
WEIR119	Node120	Node20	1	1.30	162.00	300.00	3.0000	1.5000

```
*==============================================*
|          FREE OUTFALL DATA (DATA GROUP I1)     |
|         BOUNDARY CONDITION ON DATA GROUP J1    |
*==============================================*

Outfall at Junction....Node47           has boundary condition number...         1

===> Warning !!  Outfall Junction Node47           has two or more connecting conduits.


*==========================================*
|               Weir Outfall Data          |
|      Boundary Condition on data group J1 |
*==========================================*


*==============================================*
|        INTERNAL CONNECTIVITY INFORMATION     |
*==============================================*
```

CONDUIT	JUNCTION	JUNCTION
Restrct10	Node84	Node22
restrict6	Node124	Node37
restrict7	Node125	Node26
Link 5	Node11	Node12
WEIR46	Node63	Node41
Link97.1	Node99	Node21
WEIR119	Node120	Node20
FREE # 1	Node47	BOUNDARY

```
*==================================================*
|        Boundary Condition Information            |
|                Data Groups J1-J4                 |
*==================================================*


BC NUMBER..         1 has no control water surface.

*==================================================*
|             XP Note Field Summary                |
*==================================================*



*================================*
|   Conduit Convergence Criteria |
*================================*
```

Conduit Name	Full Flow	Conduit Slope

Link12	49.0514	0.0010
Link13	49.1301	0.0010
Link14	43.7477	0.0037
Link15	36.6850	0.0026
Link16	37.2836	0.0027
Link17	26.7696	0.0014
Link18	55.5441	0.0059
Link22	63.1866	0.0076
Link23	59.7442	0.0068
Link24	14.5486	0.0004
Link25	41.3740	0.0033
Link26	39.9177	0.0031
Link27	34.5795	0.0031
Link28	40.1573	0.0031
Link30	5.2486	0.0225
Link31	2.4660	0.0050
Link32	451.1614	0.0519
Link33	823.3655	0.0819
Link47	29.5450	0.0674
Link53	1.7213	0.0012
Link54	1.9517	0.0103
Link55	328.6757	0.0176
Link56	55.4504	0.0134
Link68	138.7842	0.0075
Link69	12349.6692	0.0068
Link70	10078.6135	0.0036
Link71	58179.1079	0.0132
Link72	137.3690	0.0361
Link73	56825.7885	0.0689
Link74	37318.0904	0.0266
Link75	29495.4038	0.0098
Link76	40618.1464	0.0482
Link77	20.0104	0.0067
Link78	1059.8133	0.0100
Link82	110.5183	0.0234
Link83	54.8977	0.0058
Link84	4900.7542	0.0242
Link85	34130.3174	0.0270
Link90	10.4297	0.0084
Link93	8.0467	0.0050
Link98	19.1908	0.0387
Link104	17.3295	0.0050
Link105	17.3891	0.0050
Link106	31.4205	0.0050
Link21.1	95.4346	0.0174
Link118	908.4799	0.0043
Link124	12.9749	0.0130
Link124.1	82.3852	0.0130
214.1	15.9283	0.0169
283.1	2.7121	0.0197
Restrct10	35.6314	0.0000
restrict6	13.5485	0.0000
restrict7	13.5485	0.0000

```
*================================*
|    Initial Model Condition     |
| Initial Time =      0.08 hours |
*================================*
```

Junction / Depth / Elevation ===> "*" Junction is Surcharged.

Node11/	0.00 /	617.20	Node12/	0.00 /	617.21	Node20/	0.00 /	631.39
Node21/	0.00 /	631.08	Node22/	0.00 /	630.11	Node23/	0.00 /	628.86
Node24/	0.00 /	628.03	Node25/	0.00 /	626.35	Node26/	0.00 /	626.42
Node27/	0.00 /	623.69	Node29/	0.00 /	612.78	Node30/	0.00 /	621.48
Node31/	0.00 /	616.00	Node33/	0.00 /	610.56	Node34/	0.00 /	608.43
Node35/	0.00 /	608.40	Node36/	0.00 /	607.40	Node37/	0.00 /	606.46
Node38/	0.00 /	605.45	Node39/	0.00 /	604.44	Node41/	0.00 /	630.20
Node43/	0.00 /	636.46	Node44/	0.00 /	635.74	Node45/	0.00 /	636.04
Node46/	0.00 /	592.74	Node47/	0.00 /	572.00	Node48/	0.00 /	593.30
Node63/	0.00 /	631.00	Node65/	0.00 /	638.00	Node66/	0.00 /	631.97
Node69/	0.00 /	636.00	Node70/	0.00 /	633.43	Node71/	0.00 /	622.00
Node74/	0.00 /	618.98	Node75/	0.00 /	602.92	Node79/	0.00 /	615.61
Node80/	0.00 /	597.89	Node81/	0.00 /	595.18	Node82/	0.00 /	594.67
Node83/	0.00 /	639.60	Node84/	0.00 /	630.77	Node86/	0.00 /	613.49
Node87/	0.00 /	606.00	Node89/	0.00 /	637.10	Node92/	0.00 /	633.08
Node94/	0.00 /	633.30	Node99/	0.00 /	637.70	Node100/	0.00 /	632.33
Node101/	0.00 /	631.13	Node103/	0.00 /	630.27	Node108/	0.00 /	629.54
Node30.1/	0.00 /	619.14	Node120/	0.00 /	638.00	Node124/	0.00 /	613.40
Node125/	0.00 /	628.50	Node30.2/	0.00 /	620.31			

Conduit/ FLOW ===> "*" Conduit uses the normal flow option.

Link12/	0.00	Link13/	0.00	Link14/	0.00
Link15/	0.00	Link16/	0.00	Link17/	0.00
Link18/	0.00	Link22/	0.00	Link23/	0.00
Link24/	0.00	Link25/	0.00	Link26/	0.00
Link27/	0.00	Link28/	0.00	Link30/	0.00
Link31/	0.00	Link32/	0.00	Link33/	0.00
Link47/	0.00	Link53/	0.00	Link54/	0.00
Link55/	0.00	Link56/	0.00	Link68/	0.00
Link69/	0.00	Link70/	0.00	Link71/	0.00
Link72/	0.00	Link73/	0.00	Link74/	0.00
Link75/	0.00	Link76/	0.00	Link77/	0.00
Link78/	0.00	Link82/	0.00	Link83/	0.00
Link84/	0.00	Link85/	0.00	Link90/	0.00
Link93/	0.00	Link98/	0.00	Link104/	0.00
Link105/	0.00	Link106/	0.00	Link21.1/	0.00
Link118/	0.00	Link124/	0.00	Link124.1/	0.00
214.1/	0.00	283.1/	0.00	Restrct10/	0.00
restrict6/	0.00	restrict7/	0.00	Link 5/	0.00
WEIR46/	0.00	Link97.1/	0.00	WEIR119/	0.00
FREE # 1/	0.00				

Conduit/ Velocity

Link12/	0.00	Link13/	0.00	Link14/	0.00
Link15/	0.00	Link16/	0.00	Link17/	0.00

```
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link30/       0.00
      Link31/       0.00          Link32/       0.00          Link33/       0.00
      Link47/       0.00          Link53/       0.00          Link54/       0.00
      Link55/       0.00          Link56/       0.00          Link68/       0.00
      Link69/       0.00          Link70/       0.00          Link71/       0.00
      Link72/       0.00          Link73/       0.00          Link74/       0.00
      Link75/       0.00          Link76/       0.00          Link77/       0.00
      Link78/       0.00          Link82/       0.00          Link83/       0.00
      Link84/       0.00          Link85/       0.00          Link90/       0.00
      Link93/       0.00          Link98/       0.00         Link104/       0.00
     Link105/       0.00         Link106/       0.00        Link21.1/       0.00
     Link118/       0.00         Link124/       0.00       Link124.1/       0.00
       214.1/       0.00           283.1/       0.00       Restrct10/       0.00
   restrict6/       0.00       restrict7/       0.00

     Conduit/ Cross Sectional Area
      Link12/       0.00          Link13/       0.00          Link14/       0.00
      Link15/       0.00          Link16/       0.00          Link17/       0.00
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link30/       0.00
      Link31/       0.00          Link32/       0.00          Link33/       0.00
      Link47/       0.00          Link53/       0.00          Link54/       0.00
      Link55/       0.00          Link56/       0.00          Link68/       0.00
      Link69/       0.00          Link70/       0.00          Link71/       0.00
      Link72/       0.00          Link73/       0.00          Link74/       0.00
      Link75/       0.00          Link76/       0.00          Link77/       0.00
      Link78/       0.00          Link82/       0.00          Link83/       0.00
      Link84/       0.00          Link85/       0.00          Link90/       0.00
      Link93/       0.00          Link98/       0.00         Link104/       0.00
     Link105/       0.00         Link106/       0.00        Link21.1/       0.00
     Link118/       0.00         Link124/       0.00       Link124.1/       0.00
       214.1/       0.00           283.1/       0.00       Restrct10/       0.00
   restrict6/       0.00       restrict7/       0.00

     Conduit/ Hydraulic Radius
      Link12/       0.00          Link13/       0.00          Link14/       0.00
      Link15/       0.00          Link16/       0.00          Link17/       0.00
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link30/       0.00
      Link31/       0.00          Link32/       0.00          Link33/       0.00
      Link47/       0.00          Link53/       0.00          Link54/       0.00
      Link55/       0.00          Link56/       0.00          Link68/       0.00
      Link69/       0.00          Link70/       0.00          Link71/       0.00
      Link72/       0.00          Link73/       0.00          Link74/       0.00
      Link75/       0.00          Link76/       0.00          Link77/       0.00
      Link78/       0.00          Link82/       0.00          Link83/       0.00
      Link84/       0.00          Link85/       0.00          Link90/       0.00
      Link93/       0.00          Link98/       0.00         Link104/       0.00
     Link105/       0.00         Link106/       0.00        Link21.1/       0.00
     Link118/       0.00         Link124/       0.00       Link124.1/       0.00
       214.1/       0.00           283.1/       0.00       Restrct10/       0.00
   restrict6/       0.00       restrict7/       0.00

     Conduit/ Upstream/ Downstream Elevation
      Link12/   631.08/   631.08          Link13/   630.77/   630.77          Link14/   628.86/   628.86
      Link15/   628.03/   628.03          Link16/   626.35/   626.35          Link17/   626.35/   626.35
      Link18/   623.69/   623.69          Link22/   613.40/   613.40          Link23/   608.43/   608.43
      Link24/   608.40/   608.40          Link25/   607.40/   607.40          Link26/   606.46/   606.46
      Link27/   605.45/   605.45          Link28/   604.44/   604.44          Link30/   635.74/   635.74
      Link31/   635.74/   635.74          Link32/   572.00/   572.00          Link33/   572.00/   572.00
      Link47/   628.03/   628.03          Link53/   636.00/   636.00          Link54/   633.43/   633.43
      Link55/   631.00/   631.00          Link56/   622.00/   622.00          Link68/   618.98/   618.98
      Link69/   617.20/   617.20          Link70/   615.61/   615.61          Link71/   610.56/   610.56
      Link72/   602.92/   602.92          Link73/   597.89/   597.89          Link74/   595.18/   595.18
      Link75/   594.67/   594.67          Link76/   592.74/   592.74          Link77/   639.60/   639.60
      Link78/   630.11/   630.11          Link82/   613.49/   613.49          Link83/   612.78/   612.78
      Link84/   606.00/   606.00          Link85/   593.30/   593.30          Link90/   629.54/   629.54
      Link93/   632.33/   632.33          Link98/   631.13/   631.13         Link104/   630.27/   630.27
     Link105/   629.54/   629.54         Link106/   628.50/   628.50        Link21.1/   616.00/   616.00
     Link118/   636.46/   636.46         Link124/   620.31/   620.31       Link124.1/   619.14/   619.14
       214.1/   617.21/   617.21           283.1/   630.20/   630.20       Restrct10/   630.11/   630.11
   restrict6/   606.46/   606.46       restrict7/   626.42/   626.42

Cycle        500      Time         41 Hrs - 40.00 Min

   Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
      Node11/   0.50 /   617.70          Node12/   0.00 /   617.21          Node20/   0.63 /   632.02
      Node21/   0.94 /   632.02          Node22/   0.02 /   630.13          Node23/   0.02 /   628.88
      Node24/   0.02 /   628.05          Node25/   0.09 /   626.44          Node26/   0.02 /   626.44
      Node27/   0.01 /   623.70          Node29/   0.01 /   612.79          Node30/   0.00 /   621.48
      Node31/   4.02*/   620.02          Node33/   0.00 /   610.56          Node34/   0.00 /   608.43
      Node35/   0.00 /   608.40          Node36/   0.00 /   607.40          Node37/   0.00 /   606.46
      Node38/   0.00 /   605.45          Node39/   0.00 /   604.44          Node41/   0.00 /   630.20
      Node43/   0.00 /   636.46          Node44/   0.30 /   636.04          Node45/   0.00 /   636.04
      Node46/   0.00 /   592.74          Node47/   0.00 /   572.00          Node48/   0.00 /   593.30
      Node63/   0.01 /   631.01          Node65/   2.02 /   640.02          Node66/   0.00 /   631.97
      Node69/   0.00 /   636.00          Node70/   0.00 /   633.43          Node71/   0.00 /   622.00
      Node74/   0.00 /   618.98          Node75/   0.00 /   602.92          Node79/   0.00 /   615.61
      Node80/   0.00 /   597.89          Node81/   0.00 /   595.18          Node82/   0.00 /   594.67
      Node83/   0.00 /   639.60          Node84/   1.25 /   632.02          Node86/   0.02 /   613.51
      Node87/   0.01 /   606.01          Node89/   0.00 /   637.10          Node92/   0.00 /   633.08
      Node94/   0.00 /   633.30          Node99/   0.00 /   637.70         Node100/   0.00 /   632.33
     Node101/   0.00 /   631.13         Node103/   0.00 /   630.27         Node108/   0.48 /   630.02
    Node30.1/   0.88 /   620.02         Node120/   0.66 /   638.66         Node124/   6.62*/   620.02
     Node125/   1.52 /   630.02        Node30.2/   0.00 /   620.31

     Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
      Link12/       0.00          Link13/       0.00          Link14/       0.01*         Link15/       0.01
      Link16/       0.01*         Link17/      -0.01          Link18/       0.01          Link22/       0.00
      Link23/       0.00          Link24/       0.00          Link25/       0.00          Link26/       0.00*
      Link27/       0.00*         Link28/       0.00          Link30/       0.00*         Link31/       0.00
      Link32/       0.00          Link33/       0.01          Link47/       0.00*         Link53/       0.00
```

Link54/	0.00*	Link55/	0.00*	Link56/	0.00*	Link68/	0.00
Link69/	0.00*	Link70/	0.00	Link71/	0.00*	Link72/	0.00
Link73/	0.00*	Link74/	0.00	Link75/	0.00*	Link76/	0.00
Link77/	0.01	Link78/	0.01	Link82/	0.01*	Link83/	0.01
Link84/	0.01	Link85/	0.01	Link90/	0.00	Link93/	0.00
Link98/	0.00*	Link104/	0.00	Link105/	0.00*	Link106/	0.00
Link21.1/	0.00	Link118/	0.00	Link124/	0.00*	Link124.1/	0.00*
214.1/	0.00*	283.1/	0.00	Restrct10/	0.00	restrict6/	0.00
restrict7/	0.00	Link 5/	0.00	WEIR46/	0.00	Link97.1/	0.00
WEIR119/	0.00	FREE # 1/	0.01				

```
 *====================================================*
 | Table E5 - Junction Time Limitation Summary        |
 |              (0.10 or 0.25)* Depth * Area          |
 | Time step = ----------------------------           |
 |                  Sum of Flow                       |
 *====================================================*
 |  The time this junction was the limiting junction |
 |                is listed in the third column.      |
 *====================================================*
```

Junction	Time(.10)	Time(.25)	Time(sec)
Node11	55.3636	138.4089	1500.0000
Node12	123.3568	308.3921	0.0000
Node20	80.7487	201.8718	300.0000
Node21	74.7568	186.8920	0.0000
Node22	60.7316	151.8290	300.0000
Node23	53.6698	134.1745	0.0000
Node24	115.6533	289.1334	0.0000
Node25	68.7224	171.8060	0.0000
Node26	205.6839	514.2097	0.0000
Node27	290.3383	725.8458	0.0000
Node29	330.9461	827.3653	0.0000
Node30	191.3503	478.3757	0.0000
Node31	17.2077	43.0192	900.0000
Node33	25.4594	63.6485	3300.0000
Node34	32.7904	81.9760	2700.0000
Node35	26.4043	66.0108	600.0000
Node36	27.7365	69.3414	0.0000
Node37	28.6904	71.7260	600.0000
Node38	76.1899	190.4747	154200.000
Node39	288.0196	720.0490	0.0000
Node41	272.3184	680.7960	0.0000
Node43	53.5767	133.9417	300.0000
Node44	183.2705	458.1763	0.0000
Node45	626.1267	1565.3169	0.0000
Node46	147.7581	369.3952	0.0000
Node47	3000.0000	3000.0000	0.0000
Node48	189.5142	473.7855	0.0000
Node63	61.4812	153.7029	0.0000
Node65	99.2176	248.0439	0.0000
Node66	69.0506	172.6266	0.0000
Node69	559.2946	1398.2365	0.0000
Node70	362.6890	906.7226	0.0000
Node71	209.3572	523.3931	0.0000
Node74	93.6921	234.2303	0.0000
Node75	123.7897	309.4743	0.0000
Node79	19.6676	49.1691	2400.0000
Node80	109.9851	274.9627	0.0000
Node81	135.4525	338.6313	0.0000
Node82	53.9774	134.9434	0.0000
Node83	732.5711	1831.4277	0.0000
Node84	38.2443	95.6107	600.0000
Node86	32.4342	81.0856	300.0000
Node87	57.5379	143.8447	0.0000
Node89	117.6586	294.1465	0.0000
Node92	143.9944	359.9860	0.0000
Node94	158.4001	396.0003	0.0000
Node99	319.0720	797.6800	0.0000
Node100	102.8396	257.0989	0.0000
Node101	44.5243	111.3108	300.0000
Node103	73.7210	184.3026	0.0000
Node108	52.6235	131.5588	0.0000
Node30.1	36.0119	90.0296	0.0000
Node120	127.5611	318.9026	0.0000
Node124	14.6125	36.5313	600.0000
Node125	15.8783	39.6958	600.0000
Node30.2	7.1526	17.8814	3300.0000

The junction requiring the smallest time step was...Node38

```
 *=========================================================*
 |       Table E5a - Conduit Explicit Condition Summary    |
 |       Courant   =         Conduit Length                |
 |       Time step = -------------------------------       |
 |                     Velocity + sqrt(g*depth)            |
 |                                                         |
 |                  Conduit Implicit Condition Summary     |
 |       Courant   =         Conduit Length                |
 |       Time step = -------------------------------       |
 |                              Velocity                   |
 *=========================================================*
 |  The 3rd column is the Explicit time step times the     |
 |      minimum courant time step factor                   |
 |                                                         |
 |  Minimum Conduit Time Step in seconds in the 4th column |
 |  in the list. Maximum possible is 10 * maximum time step |
 |                                                         |
 |  The 5th column is the maximum change at any time step  |
 |  during the simulation. The 6th column is the wobble    |
 |  value which is an indicator of the flow stability.     |
 |                                                         |
 |  You should use this section to find those conduits that |
 |  are slowing your model down.  Use modify conduits to   |
```

```
|  alter the length of the slow conduits to make your      |
|  simulation faster, or change the conduit name to        |
|  "CHME?????" where ????? are any characters, this will   |
|  lengthen the conduit based on the model time step,       |
|  not the value listed in modify conduits.                 |
*==========================================================*
```

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
Link12	23.5323	23.5323	86.8840	20.0000	0.0411	1.2075	Normal Soln
Link13	20.8134	20.8134	102.1447	0.0000	0.0818	1.7286	Normal Soln
Link14	19.5511	19.5511	53.2115	0.0000	0.0420	2.0243	Normal Soln
Link15	18.4645	18.4645	55.2335	0.0000	-0.0613	2.5111	Normal Soln
Link16	32.7075	32.7075	87.1240	0.0000	0.1458	2.9539	Normal Soln
Link17	2.9256	2.9256	6.7502	75.0000	-0.1560	4.2098	Normal Soln
Link18	24.9911	24.9911	50.3199	0.0000	0.1589	2.2834	Normal Soln
Link22	19.1714	19.1714	160.3537	0.0000	-0.2643	4.0641	Normal Soln
Link23	13.3174	13.3174	39.4068	0.0000	-0.1254	2.6120	Normal Soln
Link24	3.1593	3.1593	9.3526	0.0000	-0.1153	10.7615	Normal Soln
Link25	13.2670	13.2670	38.5039	0.0000	-0.1311	3.7379	Normal Soln
Link26	13.9407	13.9407	38.8071	0.0000	-0.1127	3.8920	Normal Soln
Link27	14.9808	14.9808	38.5784	0.0000	-0.1104	4.5800	Normal Soln
Link28	17.0931	17.0931	38.1675	0.0000	-0.1080	3.8489	Normal Soln
Link30	2.6743	2.6743	9.1580	5.0000	1.2926	2.3898	Normal Soln
Link31	4.9646	4.9646	16.3490	0.0000	-0.0093	3.8525	Normal Soln
Link32	14.6153	14.6153	18.5395	0.0000	0.1439	0.4443	Normal Soln
Link33	11.1342	11.1342	14.4438	0.0000	0.0792	0.1788	Normal Soln
Link47	2.4409	2.4409	3.3774	15.0000	0.2847	1.1746	Normal Soln
Link53	6.0895	6.0895	16.8579	0.0000	0.0083	5.4366	Normal Soln
Link54	58.0715	58.0715	177.3656	0.0000	0.0105	4.4455	Normal Soln
Link55	25.6501	25.6501	71.9700	0.0000	0.0077	0.0262	Normal Soln
Link56	126.6663	126.6663	395.4534	0.0000	0.0150	0.3678	Normal Soln
Link68	58.1151	58.1151	134.7834	0.0000	0.0284	0.1491	Normal Soln
Link69	44.0879	44.0879	217.2698	0.0000	-0.5084	0.0453	Normal Soln
Link70	63.4218	63.4218	178.4285	0.0000	0.1932	0.0258	Normal Soln
Link71	28.7086	28.7086	271.5324	0.0000	48.6198	0.7354	Normal Soln
Link72	1.6513	1.6513	2.2391	165.0000	-0.1068	1.1373	Normal Soln
Link73	6.2323	6.2323	9.5813	0.0000	-0.1356	0.0027	Normal Soln
Link74	8.0413	8.0413	13.6567	0.0000	-0.1123	0.0042	Normal Soln
Link75	6.2095	6.2095	16.2204	0.0000	-0.1071	0.0053	Normal Soln
Link76	2.7418	2.7418	4.1662	2490.0000	-0.1039	0.0038	Normal Soln
Link77	5.0995	5.0995	8.9870	0.0000	0.0059	0.7274	Normal Soln
Link78	84.4075	84.4075	280.6731	0.0000	0.0083	0.0137	Normal Soln
Link82	18.5521	18.5521	28.8099	0.0000	0.1860	1.1437	Normal Soln
Link83	6.2147	6.2147	10.7669	0.0000	0.1530	2.3057	Normal Soln
Link84	24.7359	24.7359	42.2968	0.0000	0.1181	0.0258	Normal Soln
Link85	43.5952	43.5952	77.9754	0.0000	0.0696	0.0037	Normal Soln
Link90	18.9416	18.9416	40.1607	0.0000	0.0153	1.3684	Normal Soln
Link93	13.1630	13.1630	27.4070	0.0000	0.0162	1.9871	Normal Soln
Link98	2.1300	2.1300	3.4086	5.0000	0.0158	1.0176	Normal Soln
Link104	12.8805	12.8805	32.7623	0.0000	0.0163	1.1844	Normal Soln
Link105	10.6926	10.6926	36.4500	0.0000	0.0169	1.3198	Normal Soln
Link106	13.7034	13.7034	58.7186	0.0000	0.0306	1.2070	Normal Soln
Link21.1	11.0966	11.0966	33.0168	0.0000	-0.0783	1.7562	Normal Soln
Link118	24.2062	24.2062	127.7100	0.0000	5.0748	0.0317	Normal Soln
Link124	6.4524	6.4524	10.9704	0.0000	0.0190	2.0614	Normal Soln
Link124.1	6.8438	6.8438	12.4984	0.0000	0.4595	5.7994	Normal Soln
214.1	1.5531	1.5531	3.0829	105.0000	0.0616	3.8842	Normal Soln
283.1	2.6732	2.6732	6.6192	0.0000	0.0480	3.6067	Normal Soln
Restrct10	226.4697	226.4697	440.2940	0.0000	0.0225	2.0506	Normal Soln
restrict6	377.9540	377.9540	1132.9217	0.0000	0.0117	1.2641	Normal Soln
restrict7	267.6308	267.6308	734.8408	0.0000	0.0190	1.9775	Normal Soln

```
The conduit with the smallest time step limitation was..Link76
The conduit with the largest wobble was................Link24
The conduit with the largest flow change in any
consecutive time step..................................Link71

 ***********************************************
 *      End of time step DO-loop in Runoff      *
 ***********************************************

 Final Date (Mo/Day/Year)   =             1/ 2/2014
 Total number of time steps =                  1513
 Final Julian Date          =               2014002
 Final time of day          =                    0. seconds.
 Final time of day          =                 0.00   hours.
 Final running time         =               24.0000   hours.
 Final running time         =                1.0000    days.

 ****************************************************
 *     Extrapolation Summary for Watersheds         *
 * Explains the number of time steps and iterations *
 * used in the solution of the subcatchments.       *
 * # Steps ==> Total Number of Extrapolated Steps   *
 * # Calls ==> Total Number of OVERLND Calls        *
 ****************************************************
```

Subcatchment	# Steps	# Calls	Subcatchment	# Steps	# Calls			
Node89#1	0	0	Node63#1	0	0	Node11#1	0	0
Node33#1	0	0	Node30#1	0	0	Node46#1	0	0
Node65#1	0	0	Node120#1	0	0	Node99#1	0	0
Node66#1	0	0	Node24#1	0	0	Node25#1	0	0
Node94#1	0	0	Node92#1	0	0	Node48#1	0	0

```
##########################################################
# Rainfall input summary from Runoff Continuity Check   #
##########################################################

 Total rainfall read for gage #         1 is       2.6400 in
 Total rainfall duration for gage #     1 is       114.29 minutes

 *********************************************************
 * Table R5. CONTINUITY CHECK FOR SURFACE WATER          *
 *       Any continuity error can be fixed by lowering the  *
```

```
*       wet and transition time step. The transition time  *
*       should not be much greater than the wet time step. *
************************************************************
```

	cubic feet	Inches over Total Basin
Total Precipitation (Rain plus Snow)	3.268830E+06	2.640
Total Infiltration	1.620276E+06	1.309
Total Evaporation	9.826929E+03	0.008
Surface Runoff from Watersheds	1.641422E+06	1.326
Total Water remaining in Surface Storage	0.000000E+00	0.000
Infiltration over the Pervious Area...	1.620276E+06	1.309

Infiltration + Evaporation + Surface Runoff + Snow removal + Water remaining in Surface Storage + Water remaining in Snow Cover.....	3.271525E+06	2.642
Total Precipitation + Initial Storage.	3.268830E+06	2.640

```
The error in continuity is calculated as
****************************************
* Precipitation + Initial Snow Cover  *
*      - Infiltration -               *
*Evaporation - Snow removal -         *
*Surface Runoff from Watersheds -     *
*Water in Surface Storage -           *
*Water remaining in Snow Cover        *
*--------------------------------------*
* Precipitation + Initial Snow Cover  *
****************************************
```

Percent Continuity Error..... -0.0825

```
****************************************************
* Table R6. Continuity Check for Channel/Pipes     *
*           You should have zero continuity error  *
*           if you are not using runoff hydraulics *
****************************************************
```

	cubic feet	Inches over Total Basin
Initial Channel/Pipe Storage.....	0.000000E+00	0.000
Final Channel/Pipe Storage.....	0.000000E+00	0.000
Surface Runoff from Watersheds.....	1.641422E+06	1.326
Groundwater Subsurface Inflow or Diversion..	0.000000E+00	0.000
Evaporation Loss from Channels.....	0.000000E+00	0.000
Groundwater Flow Diverted Out of Network....	0.000000E+00	0.000
Channel/Pipe/Inlet Outflow.....	1.641422E+06	1.326
Initial Storage + Inflow.....	1.641422E+06	1.326
Final Storage + Outflow + Diverted GW.....	1.641422E+06	1.326

```
*****************************************
* Final Storage + Outflow + Evaporation  - *
* Watershed Runoff - Groundwater Inflow  - *
*     Initial Channel/Pipe Storage         *
*     ----------------------------------   *
*  Final Storage + Outflow  + Evaporation  *
*****************************************
```

Percent Continuity Error..... 0.0000

```
##################################################
# Table R9. Summary Statistics for Subcatchments #
##################################################
```

Note: Total Runoff Depth includes pervious & impervious areas.
Pervious and Impervious Runoff Depth is only the runoff from those two areas.
For catchments receiving redirected flow, this flow will only be shown if the flow is not directed directly to the outlet. Flow that is getting redirected is also listed with the original subcatchment.

Subcatchment.....	Node89#1	Node63#1	Node11#1	Node33#1	Node30#1	Node46#1
Area (acres).....	5.90000	5.00000	107.90000	37.80000	9.00000	30.10000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240	4.71240	4.71240	4.71240
Pervious Area						
Total Runoff Depth (in)	1.41884	1.41050	1.32013	1.26582	1.35876	1.54684
Peak Runoff Rate (cfs).	8.36443	6.82124	111.31492	37.92617	10.42217	36.24971
Total Impervious Area						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area with depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area without depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Area						
Total Runoff Depth (in)	1.41884	1.41050	1.32013	1.26582	1.35876	1.54684
Peak Runoff Rate (cfs).	8.36443	6.82124	111.31492	37.92617	10.42217	36.24971
Rational Formula						
Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node65#1	Node120#1	Node99#1	Node66#1	Node24#1	Node25#1
Area (acres).....	16.10000	32.00000	32.10000	10.00000	19.70000	5.40000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240	4.71240	4.71240	4.71240
Pervious Area						
Total Runoff Depth (in)	1.42561	1.19934	1.20094	1.41461	1.57507	0.92670
Peak Runoff Rate (cfs).	19.78136	28.36865	20.06800	15.47619	23.88004	3.86299
Total Impervious Area						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area with depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area without depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Area						
Total Runoff Depth (in)	1.42561	1.19934	1.20094	1.41461	1.57507	0.92670
Peak Runoff Rate (cfs).	19.78136	28.36865	20.06800	15.47619	23.88004	3.86299
Rational Formula						
Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node94#1	Node92#1	Node48#1
Area (acres).....	5.00000	5.50000	19.60000
Percent Impervious.....	0.00000	0.00000	0.00000
Total Rainfall (in)....	2.64000	2.64000	2.64000
Max Intensity (in/hr)..	4.71240	4.71240	4.71240
Pervious Area			
Total Runoff Depth (in)	1.42053	1.42053	1.15836
Peak Runoff Rate (cfs).	6.59348	7.25282	18.56712
Total Impervious Area			
Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000
Impervious Area with depression storage			
Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000
Impervious Area without depression storage			
Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000
Total Area			
Total Runoff Depth (in)	1.42053	1.42053	1.15836
Peak Runoff Rate (cfs).	6.59348	7.25282	18.56712
Rational Formula			
Pervious Tc. (mins)....	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000

===> Runoff simulation ended normally.

```
*==================================================*
|  Table E6. Final Model Condition                 |
|            This table is used for steady state   |
|            flow comparison and is the information|
|            saved to the hot-restart file.        |
|            Final Time =    48.083 hours         |
*==================================================*
```

Junction / Depth / Elevation ===> "*" Junction is Surcharged.
Node11/ 0.50 / 617.70/ Node12/ 0.00 / 617.21/ Node20/ 0.63 / 632.02/

```
      Node21/   0.94 /   632.02/          Node22/   0.02 /   630.13/          Node23/   0.02 /   628.88/
      Node24/   0.02 /   628.05/          Node25/   0.09 /   626.44/          Node26/   0.02 /   626.44/
      Node27/   0.01 /   623.70/          Node29/   0.01 /   612.79/          Node30/   0.00 /   621.48/
      Node31/   4.02*/   620.02/          Node33/   0.00 /   610.56/          Node34/   0.00 /   608.43/
      Node35/   0.00 /   608.40/          Node36/   0.00 /   607.40/          Node37/   0.00 /   606.46/
      Node38/   0.00 /   605.45/          Node39/   0.00 /   604.44/          Node41/   0.00 /   630.20/
      Node43/   0.00 /   636.46/          Node44/   0.30 /   636.04/          Node45/   0.00 /   636.04/
      Node46/   0.00 /   592.74/          Node47/   0.00 /   572.00/          Node48/   0.00 /   593.30/
      Node63/   0.01 /   631.01/          Node65/   2.02 /   640.02/          Node66/   0.00 /   631.97/
      Node69/   0.00 /   636.00/          Node70/   0.00 /   633.43/          Node71/   0.00 /   622.00/
      Node74/   0.00 /   618.98/          Node75/   0.00 /   602.92/          Node79/   0.00 /   615.61/
      Node80/   0.00 /   597.89/          Node81/   0.00 /   595.18/          Node82/   0.00 /   594.67/
      Node83/   0.00 /   639.60/          Node84/   1.25 /   632.02/          Node86/   0.02 /   613.51/
      Node87/   0.01 /   606.01/          Node89/   0.00 /   637.10/          Node92/   0.00 /   633.08/
      Node94/   0.00 /   633.30/          Node99/   0.00 /   637.70/         Node100/   0.00 /   632.33/
     Node101/   0.00 /   631.13/         Node103/   0.00 /   630.27/         Node108/   0.48 /   630.02/
    Node30.1/   0.88 /   620.02/         Node120/   0.52 /   638.52/         Node124/   6.62*/   620.02/
     Node125/   1.52 /   630.02/        Node30.2/   0.00 /   620.31/

Conduit/       Flow   ===> "*" Conduit uses the normal flow option.
      Link12/       0.00 /          Link13/       0.00 /          Link14/       0.01*/
      Link15/       0.01 /          Link16/       0.01*/          Link17/      -0.01 /
      Link18/       0.01 /          Link22/       0.00 /          Link23/       0.00 /
      Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00*/
      Link27/       0.00*/          Link28/       0.00 /          Link30/       0.00*/
      Link31/       0.00 /          Link32/       0.00 /          Link33/       0.01 /
      Link47/       0.00*/          Link53/       0.00 /          Link54/       0.00*/
      Link55/       0.00*/          Link56/       0.00*/          Link68/       0.00 /
      Link69/       0.00*/          Link70/       0.00 /          Link71/       0.00*/
      Link72/       0.00 /          Link73/       0.00*/          Link74/       0.00 /
      Link75/       0.00*/          Link76/       0.00 /          Link77/       0.00 /
      Link78/       0.01 /          Link82/       0.01*/          Link83/       0.01 /
      Link84/       0.01 /          Link85/       0.01 /          Link90/       0.00 /
      Link93/       0.00 /          Link98/       0.00*/         Link104/       0.00 /
     Link105/       0.00*/         Link106/       0.00 /         Link21.1/       0.00 /
     Link118/       0.00 /         Link124/       0.00*/       Link124.1/       0.00*/
       214.1/       0.00*/           283.1/       0.00 /       Restrct10/       0.00 /
   restrict6/       0.00 /       restrict7/       0.00 /          Link 5/       0.00 /
      WEIR46/       0.00 /        Link97.1/       0.00 /         WEIR119/       0.00 /
    FREE # 1/       0.01 /

     Conduit/   Velocity
      Link12/       0.00 /          Link13/       0.00 /          Link14/       0.48 /
      Link15/       0.43 /          Link16/       0.31 /          Link17/      -0.10 /
      Link18/       0.53 /          Link22/       0.00 /          Link23/       0.39 /
      Link24/       0.09 /          Link25/       0.18 /          Link26/       0.00 /
      Link27/       0.25 /          Link28/       0.25 /          Link30/       0.00 /
      Link31/       0.00 /          Link32/       0.17 /          Link33/       0.45 /
      Link47/       0.00 /          Link53/       0.00 /          Link54/       0.00 /
      Link55/       0.00 /          Link56/       0.00 /          Link68/       0.01 /
      Link69/       0.00 /          Link70/       0.00 /          Link71/       0.00 /
      Link72/       0.74 /          Link73/       0.11 /          Link74/       0.09 /
      Link75/       0.04 /          Link76/       0.11 /          Link77/       0.51 /
      Link78/       0.07 /          Link82/       0.93 /          Link83/       0.54 /
      Link84/       0.23 /          Link85/       0.19 /          Link90/       0.00 /
      Link93/       0.00 /          Link98/       0.00 /         Link104/       0.00 /
     Link105/       0.00 /         Link106/       0.00 /         Link21.1/       0.00 /
     Link118/       0.00 /         Link124/       0.00 /       Link124.1/       0.00 /
       214.1/       0.00 /           283.1/       0.00 /       Restrct10/       0.10 /
   restrict6/       0.06 /       restrict7/       0.07 /

     Conduit/      Width
      Link12/       2.96 /          Link13/       3.42 /          Link14/       1.18 /
      Link15/       1.18 /          Link16/       1.18 /          Link17/       1.18 /
      Link18/       1.18 /          Link22/       0.01 /          Link23/       1.18 /
      Link24/       1.18 /          Link25/       1.18 /          Link26/       1.18 /
      Link27/       1.18 /          Link28/       1.18 /          Link30/       0.55 /
      Link31/       1.01 /          Link32/       4.00 /          Link33/       6.00 /
      Link47/       0.59 /          Link53/       0.00 /          Link54/       4.00 /
      Link55/       0.01 /          Link56/       4.00 /          Link68/       0.00 /
      Link69/       0.38 /          Link70/       0.00 /          Link71/       0.01 /
      Link72/       1.18 /          Link73/       0.02 /          Link74/       0.02 /
      Link75/       0.02 /          Link76/       0.01 /          Link77/       0.78 /
      Link78/      20.11 /          Link82/       1.18 /          Link83/       1.18 /
      Link84/       0.20 /          Link85/       0.10 /          Link90/       0.59 /
      Link93/       0.59 /          Link98/       0.59 /         Link104/       0.78 /
     Link105/       0.88 /         Link106/       2.01 /         Link21.1/       2.46 /
     Link118/      30.00 /         Link124/       0.59 /       Link124.1/       1.33 /
       214.1/       0.78 /           283.1/       0.39 /       Restrct10/       0.78 /
   restrict6/       0.65 /       restrict7/       0.65 /

    Junction/        EGL
      Node11/       0.50 /          Node12/       0.00 /          Node20/       0.63 /
      Node21/       0.94 /          Node22/       6.24 /          Node23/       0.02 /
      Node24/       0.02 /          Node25/       0.09 /          Node26/       3.57 /
      Node27/       0.01 /          Node29/       0.01 /          Node30/       0.00 /
      Node31/       4.02 /          Node33/       0.00 /          Node34/       0.00 /
      Node35/       0.00 /          Node36/       0.00 /          Node37/      13.53 /
      Node38/       0.00 /          Node39/       0.00 /          Node41/       0.02 /
      Node43/       0.00 /          Node44/       0.30 /          Node45/       0.00 /
      Node46/       0.00 /          Node47/       0.00 /          Node48/       0.00 /
      Node63/       0.01 /          Node65/       2.02 /          Node66/       0.00 /
      Node69/       0.00 /          Node70/       0.00 /          Node71/       0.00 /
      Node74/       0.00 /          Node75/       0.01 /          Node79/       0.00 /
      Node80/       0.00 /          Node81/       0.00 /          Node82/       0.00 /
      Node83/       0.01 /          Node84/       1.25 /          Node86/       0.03 /
      Node87/       0.01 /          Node89/       0.00 /          Node92/       0.00 /
      Node94/       0.00 /          Node99/       0.00 /         Node100/       0.00 /
     Node101/       0.00 /         Node103/       0.05 /         Node108/       1.66 /
    Node30.1/       0.88 /         Node120/       0.52 /         Node124/       6.62 /
     Node125/       1.52 /        Node30.2/       0.00 /

    Junction/  Freeboard
      Node11/       5.55 /          Node12/       7.76 /          Node20/       5.28 /
      Node21/       6.24 /          Node22/       9.22 /          Node23/       7.03 /
      Node24/       7.29 /          Node25/       7.66 /          Node26/       7.88 /
```

```
   Node27/      11.74 /          Node29/       7.42 /          Node30/       9.95 /
   Node31/       7.07 /          Node33/       8.76 /          Node34/      10.25 /
   Node35/      13.25 /          Node36/      26.21 /          Node37/      26.00 /
   Node38/      21.33 /          Node39/       7.20 /          Node41/       3.17 /
   Node43/       2.04 /          Node44/       1.95 /          Node45/       1.25 /
   Node46/      15.26 /          Node47/      38.00 /          Node48/      24.70 /
   Node63/       2.62 /          Node65/       1.98 /          Node66/       2.80 /
   Node69/       2.10 /          Node70/       2.67 /          Node71/       2.70 /
   Node74/       6.05 /          Node75/       8.81 /          Node79/       8.76 /
   Node80/      15.95 /          Node81/      16.12 /          Node82/      17.00 /
   Node83/       3.00 /          Node84/       7.72 /          Node86/       7.59 /
   Node87/      16.49 /          Node89/       2.00 /          Node92/       3.22 /
   Node94/       2.00 /          Node99/       2.00 /         Node100/       1.86 /
  Node101/       3.67 /         Node103/       4.57 /         Node108/       3.88 /
 Node30.1/       9.14 /         Node120/       1.08 /         Node124/      12.44 /
  Node125/       4.30 /        Node30.2/       9.98 /

 Junction/ Max Volume
   Node11/      41.91 /          Node12/      23.55 /          Node20/      55.01 /
   Node21/      58.63 /          Node22/      57.58 /          Node23/      61.16 /
   Node24/      59.94 /          Node25/      38.87 /          Node26/      34.57 /
   Node27/      19.66 /          Node29/      12.58 /          Node30/      13.53 /
   Node31/      74.61 /          Node33/      90.70 /          Node34/      94.14 /
   Node35/      89.04 /          Node36/      79.00 /          Node37/      68.35 /
   Node38/      43.65 /          Node39/      17.42 /          Node41/       6.04 /
   Node43/      24.99 /          Node44/      28.01 /          Node45/       7.24 /
   Node46/      13.10 /          Node47/      12.59 /          Node48/       7.38 /
   Node63/      31.18 /          Node65/   53878.76 /          Node66/       9.68 /
   Node69/       4.68 /          Node70/       6.41 /          Node71/      12.12 /
   Node74/      19.61 /          Node75/      13.00 /          Node79/      27.07 /
   Node80/      20.99 /          Node81/      14.64 /          Node82/      19.68 /
   Node83/       3.44 /          Node84/      60.98 /          Node86/      27.52 /
   Node87/      15.49 /          Node89/      16.95 /          Node92/      17.35 /
   Node94/      13.18 /          Node99/    8471.90 /         Node100/      21.64 /
  Node101/      34.83 /         Node103/      44.09 /         Node108/      51.84 /
 Node30.1/      35.38 /         Node120/   18446.31 /         Node124/     106.77 /
  Node125/      62.86 /        Node30.2/      19.90 /

 Junction/Total Fldng
   Node11/       0.00 /          Node12/       0.00 /          Node20/       0.00 /
   Node21/       0.00 /          Node22/       0.00 /          Node23/       0.00 /
   Node24/       0.00 /          Node25/       0.00 /          Node26/       0.00 /
   Node27/       0.00 /          Node29/       0.00 /          Node30/       0.00 /
   Node31/       0.00 /          Node33/       0.00 /          Node34/       0.00 /
   Node35/       0.00 /          Node36/       0.00 /          Node37/       0.00 /
   Node38/       0.00 /          Node39/       0.00 /          Node41/       0.00 /
   Node43/       0.00 /          Node44/       0.00 /          Node45/       0.00 /
   Node46/       0.00 /          Node47/       0.00 /          Node48/       0.00 /
   Node63/       0.00 /          Node65/       0.00 /          Node66/       0.00 /
   Node69/       0.00 /          Node70/       0.00 /          Node71/       0.00 /
   Node74/       0.00 /          Node75/       0.00 /          Node79/       0.00 /
   Node80/       0.00 /          Node81/       0.00 /          Node82/       0.00 /
   Node83/       0.00 /          Node84/       0.00 /          Node86/       0.00 /
   Node87/       0.00 /          Node89/       0.00 /          Node92/       0.00 /
   Node94/       0.00 /          Node99/       0.00 /         Node100/       0.00 /
  Node101/       0.00 /         Node103/       0.00 /         Node108/       0.00 /
 Node30.1/       0.00 /         Node120/       0.00 /         Node124/       0.00 /
  Node125/       0.00 /        Node30.2/       0.00 /

  Conduit/ Cross Sectional Area
   Link12/       1.36 /          Link13/       2.36 /          Link14/       0.01 /
   Link15/       0.01 /          Link16/       0.02 /          Link17/       0.06 /
   Link18/       0.01 /          Link22/       7.09 /          Link23/       0.00 /
   Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00 /
   Link27/       0.00 /          Link28/       0.00 /          Link30/       0.02 /
   Link31/       0.20 /          Link32/       0.00 /          Link33/       0.02 /
   Link47/       0.00 /          Link53/       0.00 /          Link54/       0.00 /
   Link55/       0.00 /          Link56/       0.00 /          Link68/       0.00 /
   Link69/       0.10 /          Link70/       0.00 /          Link71/       0.00 /
   Link72/       0.00 /          Link73/       0.00 /          Link74/       0.00 /
   Link75/       0.01 /          Link76/       0.00 /          Link77/       0.01 /
   Link78/       0.07 /          Link82/       0.01 /          Link83/       0.01 /
   Link84/       0.03 /          Link85/       0.04 /          Link90/       0.00 /
   Link93/       0.00 /          Link98/       0.00 /         Link104/       0.00 /
  Link105/       0.06 /         Link106/       0.90 /        Link21.1/       2.26 /
  Link118/       0.00 /         Link124/       0.00 /       Link124.1/       0.17 /
    214.1/       0.00 /           283.1/       0.00 /       Restrct10/       0.01 /
restrict6/       0.01 /       restrict7/       0.01 /

  Conduit/  Final Volume
   Link12/     425.61 /          Link13/     733.17 /          Link14/       4.28 /
   Link15/       4.55 /          Link16/      12.43 /          Link17/       3.30 /
   Link18/       5.82 /          Link22/    2409.83 /          Link23/       0.00 /
   Link24/       0.00 /          Link25/       0.00 /          Link26/       0.06 /
   Link27/       0.57 /          Link28/       0.59 /          Link30/       0.73 /
   Link31/      12.31 /          Link32/       1.06 /          Link33/       3.95 /
   Link47/       0.00 /          Link53/       0.00 /          Link54/       0.02 /
   Link55/       0.08 /          Link56/       0.13 /          Link68/       0.03 /
   Link69/      25.12 /          Link70/       0.11 /          Link71/       0.57 /
   Link72/       0.03 /          Link73/       0.29 /          Link74/       0.51 /
   Link75/       0.63 /          Link76/       0.17 /          Link77/       0.58 /
   Link78/      23.92 /          Link82/       3.18 /          Link83/       1.56 /
   Link84/       8.32 /          Link85/      16.92 /          Link90/       0.00 /
   Link93/       0.00 /          Link98/       0.00 /         Link104/       0.00 /
  Link105/       8.37 /         Link106/     187.93 /        Link21.1/     406.55 /
  Link118/       0.00 /         Link124/       0.00 /       Link124.1/      15.50 /
    214.1/       0.00 /           283.1/       0.00 /       Restrct10/      42.35 /
restrict6/      30.30 /       restrict7/      32.22 /

  Conduit/ Hydraulic Radius
   Link12/       0.40 /          Link13/       0.57 /          Link14/       0.02 /
   Link15/       0.02 /          Link16/       0.02 /          Link17/       0.06 /
   Link18/       0.02 /          Link22/       0.75 /          Link23/       0.01 /
   Link24/       0.01 /          Link25/       0.01 /          Link26/       0.01 /
   Link27/       0.01 /          Link28/       0.01 /          Link30/       0.02 /
   Link31/       0.16 /          Link32/       0.00 /          Link33/       0.00 /
```

```
        Link47/       0.00 /          Link53/       0.00 /          Link54/       0.00 /
        Link55/       0.00 /          Link56/       0.00 /          Link68/       0.00 /
        Link69/       0.02 /          Link70/       0.00 /          Link71/       0.00 /
        Link72/       0.01 /          Link73/       0.00 /          Link74/       0.00 /
        Link75/       0.00 /          Link76/       0.00 /          Link77/       0.02 /
        Link78/       0.00 /          Link82/       0.01 /          Link83/       0.02 /
        Link84/       0.00 /          Link85/       0.00 /          Link90/       0.00 /
        Link93/       0.00 /          Link98/       0.00 /         Link104/       0.01 /
       Link105/       0.03 /         Link106/       0.33 /        Link21.1/       0.53 /
       Link118/       0.00 /         Link124/       0.00 /       Link124.1/       0.06 /
         214.1/       0.01 /           283.1/       0.00 /       Restrct10/       0.01 /
     restrict6/       0.01 /       restrict7/       0.01 /

       Conduit/ Upstream/ Downstream Elevation
        Link12/   632.02/   632.02          Link13/   632.02/   632.02          Link14/   630.13/   628.88/
        Link15/   628.88/   628.05          Link16/   628.05/   626.44          Link17/   626.44/   626.44/
        Link18/   626.44/   623.70          Link22/   620.02/   620.02          Link23/   610.56/   608.43/
        Link24/   608.43/   608.40          Link25/   608.40/   607.40          Link26/   607.40/   606.46/
        Link27/   606.46/   605.45          Link28/   605.45/   604.44          Link30/   636.46/   636.04/
        Link31/   636.04/   636.04          Link32/   592.74/   572.00          Link33/   593.30/   572.00/
        Link47/   628.05/   628.05          Link53/   636.04/   636.00          Link54/   636.00/   633.43/
        Link55/   633.43/   631.01          Link56/   630.20/   622.00          Link68/   622.00/   618.98/
        Link69/   618.98/   617.70          Link70/   617.21/   615.61          Link71/   615.61/   610.56/
        Link72/   604.44/   602.92          Link73/   602.92/   597.89          Link74/   597.89/   595.18/
        Link75/   595.18/   594.67          Link76/   594.67/   592.74          Link77/   640.02/   639.60/
        Link78/   639.60/   636.35          Link82/   623.70/   613.51          Link83/   613.51/   612.79/
        Link84/   612.79/   606.01          Link85/   606.01/   593.30          Link90/   633.30/   631.20/
        Link93/   633.08/   632.33          Link98/   632.33/   631.13         Link104/   631.13/   630.32/
       Link105/   630.27/   630.02         Link106/   630.02/   630.02        Link21.1/   620.02/   620.02/
       Link118/   636.46/   636.46         Link124/   620.31/   620.31       Link124.1/   620.31/   620.02/
         214.1/   617.70/   617.21           283.1/   631.01/   630.22       Restrct10/   632.02/   631.99/
     restrict6/   620.02/   619.99       restrict7/   630.02/   629.99


*=========================================================*
|         Table E7 -  Iteration Summary                   |
*=========================================================*

Total number of time steps simulated...........        576
Total number of passes in the simulation........      40069
Total number of time steps during simulation....      24214
Ratio of actual # of time steps / NTCYC.........     42.038
Average number of iterations per time step......      1.655
Average  time step size(seconds)................      7.136
Smallest time step size(seconds)................      1.546
Largest  time step size(seconds)................    300.000
Average minimum Conduit Courant time step (sec).     12.168
Average minimum implicit time step (sec)........      7.231
Average minimum junction time step (sec)........      7.231
Average Courant Factor Tf.......................      7.231
Number of times omega reduced...................       4698


*=========================================================*
|     Table E8 - Junction Time Step Limitation Summary    |
*=========================================================*
|   Not Convr = Number of times this junction did not     |
|               converge during the simulation.           |
|   Avg Convr = Average junction iterations.              |
|   Conv err  = Mean convergence error.                   |
|   Omega Cng = Change of omega during iterations         |
|   Max Itern = Maximum number of iterations              |
*=========================================================*
```

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
Node11	0	1.70	41185	15	48	29	8	1
Node12	0	1.71	41398	0	106	1	1	1
Node20	0	1.91	46243	0	34	7	1	0
Node21	0	2.09	50530	0	34	6	1	0
Node22	0	1.76	42553	0	6	0	0	0
Node23	0	1.88	45583	1	18	1	0	0
Node24	3	2.43	58838	102	501	93	77	70
Node25	0	1.60	38661	1	17	1	0	0
Node26	0	1.79	43323	0	17	1	0	0
Node27	0	1.72	41687	0	7	0	0	0
Node29	0	1.56	37819	5	8	0	0	0
Node30	0	1.32	31911	1	339	1	1	1
Node31	0	2.56	62034	37	332	202	4	1
Node33	0	2.13	51678	19	142	151	58	11
Node34	8	1.97	47751	23	501	21	21	21
Node35	0	1.55	37491	2	352	2	2	2
Node36	0	1.40	33919	0	7	0	0	0
Node37	0	1.59	38472	2	496	2	2	2
Node38	0	1.36	33038	2	430	2	2	2
Node39	0	14.25	345084	1223	493	1136	1052	1030
Node41	0	3.84	92922	157	479	157	154	152
Node43	0	1.69	40927	2	42	3	3	1
Node44	0	1.27	30735	4	17	2	0	0
Node45	0	1.34	32462	6	14	4	0	0
Node46	0	1.27	30865	5	25	2	1	0
Node47	0	1.61	39050	0	31	1	1	0
Node48	0	1.63	39546	14	13	1	0	0
Node63	10	2.85	68962	101	501	111	105	103
Node65	0	1.38	33454	0	5	0	0	0
Node66	0	1.77	42795	212	483	89	77	73
Node69	0	1.34	32500	2	10	1	0	0
Node70	0	1.32	32035	0	6	0	0	0
Node71	0	1.36	33005	0	7	0	0	0
Node74	0	1.62	39295	2	48	16	7	4
Node75	0	7.36	178169	570	494	454	447	443
Node79	0	2.42	58617	43	51	164	81	12
Node80	0	1.29	31295	2	8	0	0	0
Node81	0	1.44	34818	35	13	1	0	0
Node82	0	1.31	31657	3	8	0	0	0
Node83	0	1.51	36544	0	6	0	0	0
Node84	0	1.64	39735	0	6	0	0	0

Node86	0	1.74	42252	0	7	0	0	0
Node87	0	1.63	39431	1	8	0	0	0
Node89	0	1.72	41759	0	15	1	0	0
Node92	0	1.26	30560	0	6	0	0	0
Node94	4	12.42	300641	817	501	820	804	788
Node99	0	1.00	24214	0	1	0	0	0
Node100	0	1.61	39090	18	319	16	15	15
Node101	0	1.65	39880	42	334	16	15	15
Node103	0	1.63	39384	0	26	6	1	0
Node108	5	14.61	353796	943	501	975	931	907
Node30.1	0	2.72	65825	145	297	267	44	5
Node120	0	1.00	24214	0	1	0	0	0
Node124	0	2.02	48889	12	73	42	2	1
Node125	0	1.61	38900	0	12	2	0	0
Node30.2	0	2.15	52103	129	311	148	19	3

Total number of iterations for all junctions.. 3349524

Minimum number of possible iterations..... 1355984

Efficiency of the simulation..... 2.47

Excellent Efficiency

```
*=========================================================*
| Extran Efficiency is an indicator of the efficiency of  |
| the simulation.  Ideal efficiency is one iteration per  |
| time step.  Altering the underrelaxation parameter,     |
| lowering the time step, increasing the flow and head    |
| tolerance are good ways of improving the efficiency,    |
| another is lowering the internal time step. The lower the|
| efficiency generally the faster your model will run.    |
| If your efficiency is less than 1.5 then you may try    |
| increasing your time step so that your overall simulation|
| is faster.  Ideal efficiency would be around 2.0        |
|                                                         |
| Good Efficiency      < 1.5           mean iterations    |
| Excellent Efficiency < 2.5 and > 1.5 mean iterations    |
| Good      Efficiency < 4.0 and > 2.5 mean iterations    |
| Fair      Efficiency < 7.5 and > 4.0 mean iterations    |
| Poor Efficiency      > 7.5           mean iterations    |
*=========================================================*
```

```
*=====================================================*
|        Table E9 - JUNCTION SUMMARY STATISTICS       |
| The Maximum area is only the area of the node, it   |
| does not include the area of the surrounding conduits|
*=====================================================*
```

Junction Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr.	Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Maximum Gutter Depth feet	Maximum Gutter Width feet	Maximum Gutter Velocity ft/s
Node11	623.2500	623.2500	620.5352	1	11	0.0000	2.7148	12.5660	0.0000	0.0000	0.0000
Node12	624.9700	624.9700	619.0843	1	12	0.0000	5.8857	12.5660	0.0000	0.0000	0.0000
Node20	637.3000	635.3900	635.7674	2	18	0.3774	1.5326	12.5660	0.0000	0.0000	0.0000
Node21	638.2600	635.0800	635.7459	2	18	0.6659	2.5141	12.5660	0.0000	0.0000	0.0000
Node22	639.3500	639.3500	634.6921	2	7	0.0000	4.6579	12.5660	0.0000	0.0000	0.0000
Node23	635.9100	631.8600	633.7274	2	7	1.8674	2.1826	12.5660	0.0000	0.0000	0.0000
Node24	635.3400	631.0300	632.7994	2	7	1.7694	2.5406	12.5660	0.0000	0.0000	0.0000
Node25	634.1030	629.3500	629.4429	2	7	0.0929	4.6601	12.5660	0.0000	0.0000	0.0000
Node26	634.3200	629.4200	629.1714	2	7	0.0000	5.1486	12.5660	0.0000	0.0000	0.0000
Node27	635.4400	626.6900	625.2547	2	8	0.0000	10.1853	12.5660	0.0000	0.0000	0.0000
Node29	620.2110	620.2110	613.7812	2	8	0.0000	6.4298	12.5660	0.0000	0.0000	0.0000
Node30	631.4300	622.9800	622.5569	1	15	0.0000	8.8731	12.5660	0.0000	0.0000	0.0000
Node31	627.0900	619.0000	621.9377	1	20	2.9377	5.1523	12.5660	0.0000	0.0000	0.0000
Node33	619.3200	619.3200	617.7784	2	40	0.0000	1.5416	12.5660	0.0000	0.0000	0.0000
Node34	618.6800	611.4300	615.9219	2	29	4.4919	2.7581	12.5660	0.0000	0.0000	0.0000
Node35	621.6500	611.4000	615.4860	2	23	4.0860	6.1640	12.5660	0.0000	0.0000	0.0000
Node36	633.6100	610.4000	613.6868	2	20	3.2868	19.9232	12.5660	0.0000	0.0000	0.0000
Node37	632.4600	609.4600	611.8996	2	1	2.4396	20.5604	12.5660	0.0000	0.0000	0.0000
Node38	626.7800	608.4500	608.9239	2	1	0.4739	17.8561	12.5660	0.0000	0.0000	0.0000
Node39	611.6440	607.4400	605.8262	2	2	0.0000	5.8178	12.5660	0.0000	0.0000	0.0000
Node41	633.3700	631.2200	630.6803	1	58	0.0000	2.6897	12.5660	0.0000	0.0000	0.0000
Node43	638.5000	638.4600	638.4491	1	19	0.0000	0.0509	12.5660	0.0000	0.0000	0.0000
Node44	637.9900	636.9900	637.9689	1	20	0.9789	0.0211	12.5660	0.0000	0.0000	0.0000
Node45	637.2900	637.2900	636.6160	1	20	0.0000	0.6740	12.5660	0.0000	0.0000	0.0000
Node46	608.0000	610.3500	593.7822	1	15	0.0000	14.2178	12.5660	0.0000	0.0000	0.0000
Node47	610.0000	576.0000	573.0018	1	15	0.0000	36.9982	12.5660	0.0000	0.0000	0.0000
Node48	618.0000	609.8000	593.8876	1	10	0.0000	24.1124	12.5660	0.0000	0.0000	0.0000
Node63	633.6300	633.6300	633.4811	1	55	0.0000	0.1489	12.5660	0.0000	0.0000	0.0000
Node65	642.0000	642.0000	640.8045	2	4	0.0000	1.1955	46233.577	0.0000	0.0000	0.0000
Node66	634.7700	633.4700	632.7404	0	40	0.0000	2.0296	12.5660	0.0000	0.0000	0.0000
Node69	638.1000	636.5000	636.3723	1	21	0.0000	1.7277	12.5660	0.0000	0.0000	0.0000
Node70	636.1000	636.0600	633.9405	1	22	0.0000	2.1595	12.5660	0.0000	0.0000	0.0000
Node71	624.7000	624.7000	622.9648	0	53	0.0000	1.7352	12.5660	0.0000	0.0000	0.0000
Node74	625.0300	625.0300	620.5407	1	9	0.0000	4.4893	12.5660	0.0000	0.0000	0.0000
Node75	611.7300	611.7200	603.9549	2	2	0.0000	7.7751	12.5660	0.0000	0.0000	0.0000
Node79	624.3700	624.3700	617.7642	2	38	0.0000	6.6058	12.5660	0.0000	0.0000	0.0000
Node80	613.8400	613.8400	599.5607	2	2	0.0000	14.2793	12.5660	0.0000	0.0000	0.0000
Node81	611.3000	611.2900	596.3452	2	16	0.0000	14.9548	12.5660	0.0000	0.0000	0.0000
Node82	611.6700	611.6600	596.2364	2	25	0.0000	15.4336	12.5660	0.0000	0.0000	0.0000
Node83	642.6000	642.6000	639.8738	2	7	0.0000	2.7262	12.5660	0.0000	0.0000	0.0000
Node84	639.7400	634.7700	635.6228	2	17	0.8528	4.1172	12.5660	0.0000	0.0000	0.0000
Node86	621.1000	616.4900	615.6802	2	8	0.0000	5.4198	12.5660	0.0000	0.0000	0.0000
Node87	622.5000	622.5000	607.2330	2	9	0.0000	15.2670	12.5660	0.0000	0.0000	0.0000

Node89	639.1000	639.1000	638.4489	1	20	0.0000	0.6511	12.5660	0.0000	0.0000	0.0000
Node92	636.3000	634.5800	634.4608	1	4	0.0000	1.8392	12.5660	0.0000	0.0000	0.0000
Node94	635.3000	634.8000	634.3491	1	4	0.0000	0.9509	12.5660	0.0000	0.0000	0.0000
Node99	639.7000	637.7000	638.3389	2	0	0.6389	1.3611	22651.200	0.0000	0.0000	0.0000
Node100	634.1900	633.8300	634.0522	1	4	0.2222	0.1378	12.5660	0.0000	0.0000	0.0000
Node101	634.8000	633.1300	633.9020	1	4	0.7720	0.8980	12.5660	0.0000	0.0000	0.0000
Node103	634.8400	632.3200	633.7791	1	4	1.4591	1.0609	12.5660	0.0000	0.0000	0.0000
Node108	633.9000	632.7000	633.6654	1	4	0.9654	0.2346	12.5660	0.0000	0.0000	0.0000
Node30.1	629.1600	622.1400	621.9558	1	20	0.0000	7.2042	12.5660	0.0000	0.0000	0.0000
Node120	639.6000	638.0000	639.3992	1	16	1.3992	0.2008	26571.600	0.0000	0.0000	0.0000
Node124	632.4600	616.4000	621.8967	1	20	5.4967	10.5633	12.5660	0.0000	0.0000	0.0000
Node125	634.3200	631.0000	633.5028	1	3	2.5028	0.8172	12.5660	0.0000	0.0000	0.0000
Node30.2	630.2900	623.3100	621.8940	1	20	0.0000	8.3960	12.5660	0.0000	0.0000	0.0000

```
*====================================================*
|        Table E10 - CONDUIT SUMMARY STATISTICS      |
| Note: The peak flow may be less than the design flow |
| and the conduit may still surcharge because of the |
| downstream boundary conditions.                    |
|                                                    |
| * denotes an open conduit that has been overtopped |
|   this is a potential source of severe errors      |
*====================================================*
```

Conduit Name	Design Flow (cfs)	Conduit Design Velocity (ft/s)	Maximum Vertical Depth (in)	Maximum Computed Flow (cfs)	Time of Occurence Hr.	Time of Occurence Min.	Maximum Computed Velocity (ft/s)	Time of Occurence Hr.	Time of Occurence Min.	Ratio of Max. to Design Flow	Maximum Water Elev at Pipe Ends Upstream (ft)	Maximum Water Elev at Pipe Ends Dwnstrm (ft)	Ratio d/D US	Ratio d/D DS	
Link12	49.0514	3.9034	48.0000	22.1050	1	17	3.7461	1	16	0.4507	635.7674	635.7459	1.094	1.166	
Link13	49.1301	3.9097	48.0000	33.4376	2	34	3.1318	1	14	0.6806	635.7459	635.6228	1.166	1.213	
Link14	43.7477	6.1890	36.0000	41.4020	2	37	6.4140	3	3	0.9464	634.6918	633.7274	1.527	1.622	
Link15	36.6850	5.1899	36.0000	41.5275	2	38	5.8498	3	55	1.1320	633.7264	632.7997	1.622	1.590	
Link16	37.2836	5.2745	36.0000	52.6153	2	7	7.4092	2	7	1.4112	632.7994	629.4429	1.590	1.031	
Link17	26.7696	3.7871	36.0000	-54.4085	2	7	-7.6382	2	7	-2.0325	629.4429	629.1715	1.008	0.940	
Link18	55.5441	7.8579	36.0000	59.3657	2	8	9.1963	2	8	1.0688	629.1714	625.2547	0.917	0.522	
Link22	63.1866	8.9391	36.0000	12.1778	1	56	2.3623	0	37	0.1927	621.9377	621.8967	1.979	2.832	
Link23	59.7442	8.4521	36.0000	56.6409	2	48	7.9790	0	53	0.9481	617.7783	615.9218	2.405	2.497	
Link24	14.5486	2.0582	36.0000	56.6433	2	48	7.9396	2	48	3.8934	615.9219	615.4860	2.497	2.362	
Link25	41.3740	5.8532	36.0000	56.6482	2	48	7.9479	2	48	1.3692	615.4859	613.6868	2.362	2.096	
Link26	39.9177	5.6472	36.0000	56.6534	2	48	7.9630	2	48	1.4193	613.6868	611.8996	2.096	1.813	
Link27	34.5795	4.8920	36.0000	59.9485	2	1	8.4016	2	1	1.7336	611.8996	608.9238	1.813	1.158	
Link28	40.1573	5.6811	36.0000	59.8650	2	2	8.5699	2	2	1.4908	608.9239	605.8262	1.158	0.462	
Link30	5.2486	4.2769	15.0000	4.3048	1	19	3.6332	0	20	0.8202	638.4491	637.9689	1.591	1.783	
Link31	2.4660	2.0095	15.0000	-4.3048	1	20	-3.6944	1	20	-1.7456	637.9689	636.6160	1.543	0.701	
Link32	451.1614	28.1976	48.0000	89.6078	1	15	21.5932	1	15	0.1986	593.7822	573.0018	0.261	0.250	
Link33	823.3655	34.3069	48.0000	66.7014	1	10	18.0082	2	9	0.0810	593.8876	573.0018	0.147	0.250	
Link47	29.5450	16.7191	18.0000	15.4464	0	40	16.0041	0	30	0.5228	632.7404	632.7994	0.514	2.980	
Link53	1.7213	0.9287	6.0001	4.3048	1	20	1.9575	1	19	2.5009	636.6160	636.3723	1.152	0.745	*
Link54	1.9517	1.2011	6.1089	4.3035	1	21	1.4096	1	21	2.2050	636.3723	633.9405	0.731	1.003	*
Link55	328.6757	8.6186	31.5600	4.3028	1	22	2.0198	2	51	0.0131	633.9405	633.4811	0.194	0.943	
Link56	55.4504	2.9184	12.0000	10.1986	1	58	1.5442	1	57	0.1839	630.6803	622.9648	0.480	0.965	
Link68	138.7842	3.0723	32.4000	10.2970	0	53	3.0343	0	53	0.0742	622.9648	620.5407	0.357	0.578	
Link69	12349.67	11.4824	72.6000	-53.6579	1	59	1.2346	0	36	-0.0043	620.5407	620.5352	0.258	0.551	
Link70	10078.61	10.5486	93.1200	120.5097	1	12	2.5278	1	13	0.0120	619.0843	617.7642	0.242	0.278	
Link71	58179.11	25.6200	105.1200	-529.257	2	59	1.4229	0	35	-0.0091	617.7642	617.7783	0.246	0.824	
Link72	137.3690	19.4337	36.0000	59.8781	2	2	18.7700	2	2	0.4359	605.8262	604.3071	0.462	0.462	
Link73	56825.79	51.6051	143.0400	59.8763	2	2	7.6215	1	59	0.0011	603.9549	599.5607	0.087	0.140	
Link74	37318.09	37.1859	191.4000	59.8728	2	2	7.4702	2	2	0.0016	599.5607	596.3452	0.105	0.073	
Link75	29495.40	24.1735	209.5200	59.8671	2	2	3.2070	1	45	0.0020	596.3452	596.2364	0.067	0.090	
Link76	40618.15	48.9919	211.3200	59.8599	2	2	9.6055	1	45	0.0015	596.2364	593.7822	0.089	0.059	
Link77	20.0104	6.3695	24.0000	7.2798	2	4	6.6766	2	4	0.3638	640.8045	639.8738	0.402	0.137	
Link78	1059.813	5.4349	36.0000	7.2622	2	7	1.1583	2	7	0.0069	639.8738	636.4986	0.091	0.050	
Link82	110.5183	15.6351	36.0000	59.2981	2	8	15.1714	2	8	0.5365	625.2547	615.6802	0.522	0.730	
Link83	54.8977	7.7664	36.0000	59.3268	2	8	11.4572	2	8	1.0807	615.6802	613.7812	0.730	0.334	
Link84	4900.754	21.9785	89.1720	59.2802	2	8	6.6387	2	8	0.0121	613.7812	607.2330	0.135	0.166	
Link85	34130.32	31.7780	198.0000	59.1427	2	9	6.0289	2	9	0.0017	607.2330	593.8876	0.075	0.036	
Link90	10.4297	5.9020	18.0000	6.5334	1	55	6.2293	1	55	0.6264	634.3491	633.6654	0.699	1.644	
Link93	8.0467	4.5535	18.0000	7.1920	1	55	5.4770	1	55	0.8938	634.4608	634.0522	0.921	1.148	
Link98	19.1908	10.8598	18.0000	7.2248	1	7	9.0950	0	50	0.3765	634.0522	633.9021	1.148	1.848	
Link104	17.3295	5.5161	24.0000	7.4025	1	7	4.9603	0	45	0.4272	633.9020	633.7791	1.386	1.730	
Link105	17.3891	5.5351	24.0000	7.4661	1	7	3.9999	0	40	0.4294	633.7790	633.6654	1.755	2.063	
Link106	31.4205	6.4009	30.0000	13.2464	1	7	3.5694	0	41	0.4216	633.6654	633.5027	1.650	2.001	
Link21.1	95.4346	13.5012	36.0000	12.1625	1	56	6.2597	0	38	0.1274	621.9558	621.9377	0.939	1.979	
Link118	908.4799	10.8152	24.0000	6.1021	0	49	1.1745	0	20	0.0067	638.4489	638.4491	0.674	0.995	
Link124	12.9749	7.3423	18.0000	10.4037	1	0	8.2143	1	0	0.8018	622.5569	621.8940	0.718	1.056	
Link124.1	82.3852	11.6551	36.0000	10.4551	1	0	7.2187	0	50	0.1269	621.8940	621.9558	0.528	0.939	
214.1	15.9283	5.0701	24.0000	29.1386	1	1	9.4093	2	11	1.8294	620.5352	619.0843	1.418	0.937	
283.1	2.7121	3.4532	12.0000	4.7622	1	55	6.0434	1	55	1.7559	633.4811	631.1216	2.471	0.902	
Restrct10	35.6314	0.8025	23.9939	33.6604	2	38	10.9345	2	40	0.9447	635.6228	634.6918	1.812	1.351	
restrict6	13.5485	0.4815	19.9924	8.5630	1	25	3.8919	1	27	0.6320	621.8967	621.0921	1.138	0.662	
restrict7	13.5485	0.4815	19.9924	13.3963	1	7	6.1918	1	7	0.9888	633.5027	631.3606	2.102	0.823	
Link 5	Undefnd	Undefnd	Undefn	65.9722	1	11									
WEIR46	Undefnd	Undefnd	Undefn	5.5565	1	55									
Link97.1	Undefnd	Undefnd	Undefn	19.9287	2	0									
WEIR119	Undefnd	Undefnd	Undefn	28.1404	1	16									
FREE # 1	Undefnd	Undefnd	Undefn	154.8213	1	12									

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*==================================================*
| Table E11.  Area assumptions used in the analysis|
| Subcritical and Critical flow assumptions from   |
|    Subroutine Head.  See Figure 17-1 in the      |
|          manual for further information.         |
*==================================================*
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Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
Link12	58.9607	2821.0393	0.0000	0.0000	1.2157	13.1140	6.7860
Link13	59.1573	2820.8427	0.0000	0.0000	1.2162	13.1522	11.8138
Link14	60.7254	2819.2746	0.0000	0.0000	0.9100	7.3756	23.4126
Link15	24.0580	2855.9420	0.0000	0.0000	0.9127	7.3982	24.1552
Link16	15.0000	2865.0000	0.0000	0.0000	0.9126	7.1345	27.2997

Link17	20.4348	2859.5652	0.0000	0.0000	0.9115	6.9815	21.6032
Link18	20.4348	2859.5652	0.0000	0.0000	0.8950	5.1775	19.4852
Link22	20.0725	2859.9275	0.0000	0.0000	0.8963	7.2619	10.2234
Link23	525.3301	2354.6699	0.0000	0.0000	0.8965	7.2488	58.1284
Link24	20.1449	2859.8551	0.0000	0.0000	0.9117	7.3812	57.4657
Link25	61.3205	2818.6795	0.0000	0.0000	0.9127	7.4061	52.5691
Link26	130.0081	2749.9919	0.0000	0.0000	0.9127	7.3937	45.8250
Link27	22.6087	2857.3913	0.0000	0.0000	0.9105	7.2569	37.3726
Link28	25.7727	2854.2273	0.0000	0.0000	0.8853	5.1550	20.7813
Link30	2161.9643	718.0357	0.0000	0.0000	0.3735	1.2585	7.3691
Link31	20.2174	2859.7826	0.0000	0.0000	0.3652	0.8703	5.1810
Link32	20.0000	2860.0000	0.0000	0.0000	0.6834	4.0877	22.0493
Link33	15.0000	2865.0000	0.0000	0.0000	0.5164	4.6831	13.9361
Link47	2730.5249	140.1273	0.0000	9.3478	0.3884	1.2730	16.2781
Link53	20.2899	2859.7101	0.0000	0.0000	0.3540	1.7143	0.9281
Link54	20.2899	2859.7101	0.0000	0.0000	0.2580	3.7266	0.6220
Link55	20.7246	2859.2754	0.0000	0.0000	0.3498	13.8243	1.4097
Link56	15.0000	2865.0000	0.0000	0.0000	0.3163	10.9276	1.1097
Link68	20.0000	2860.0000	0.0000	0.0000	0.4762	6.0873	3.2317
Link69	20.0725	2859.9275	0.0000	0.0000	1.2528	142.8870	1.1119
Link70	23.1884	2856.8116	0.0000	0.0000	0.6314	47.1084	3.5887
Link71	23.4058	2856.5942	0.0000	0.0000	5.3766	927.3893	3.9110
Link72	27.5000	1614.8574	0.0000	1237.6426	0.7113	3.1912	25.9789
Link73	29.4091	2850.5909	0.0000	0.0000	0.4874	13.2711	10.2996
Link74	29.2273	2850.7727	0.0000	0.0000	0.7654	6.1682	10.5774
Link75	31.0417	2848.9583	0.0000	0.0000	0.7874	22.3710	4.3649
Link76	31.4167	2848.5833	0.0000	0.0000	0.6865	4.6584	12.3283
Link77	60.6736	2819.3264	0.0000	0.0000	0.4041	0.6658	3.5986
Link78	60.6995	0.0000	0.0000	2819.3005	0.2239	4.8576	0.2444
Link82	20.7246	2859.2754	0.0000	0.0000	0.7823	4.5988	28.2227
Link83	20.7971	2859.2029	0.0000	0.0000	0.8645	3.6574	18.1232
Link84	21.7391	2858.2609	0.0000	0.0000	0.6577	10.1195	7.3835
Link85	22.5362	2857.4638	0.0000	0.0000	0.6533	6.4327	5.4825
Link90	20.0000	34.4881	0.0000	2825.5119	0.4370	1.5413	7.5616
Link93	20.0000	2860.0000	0.0000	0.0000	0.4530	1.7764	5.8334
Link98	2606.3952	273.6048	0.0000	0.0000	0.4482	1.8145	7.8751
Link104	20.0000	205.0784	0.0000	2654.9216	0.5976	3.2226	6.4313
Link105	2522.7207	357.2793	0.0000	0.0000	0.5976	3.2219	7.9148
Link106	20.0000	2860.0000	0.0000	0.0000	0.7471	5.0350	11.5507
Link21.1	20.0725	2859.9275	0.0000	0.0000	0.8965	6.9976	10.9765
Link118	2130.0725	749.9275	0.0000	0.0000	1.1503	66.7531	0.3972
Link124	2636.6092	243.3908	0.0000	0.0000	0.4441	1.5735	8.4383
Link124.1	2625.0000	255.0000	0.0000	0.0000	0.7963	5.2576	7.3583
214.1	633.0032	2246.9968	0.0000	0.0000	0.6048	3.1031	20.7692
283.1	15.0000	0.2174	0.0000	2864.7826	0.3034	0.7687	10.1905
Restrct10	67.9948	89.2865	0.0000	2722.7188	0.6072	3.2235	28.6890
restrict6	43.9535	0.0000	0.0000	2836.0465	0.5005	1.8923	5.7527
restrict7	30.0417	0.0000	0.0000	2849.9583	0.5004	2.0529	14.0889

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| Table E12. Mean Conduit Flow Information |
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Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Flow Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness
Link12	0.6320	109206.39	0.0000	0.9586	0.0477	0.6132	3.9063	0.0120
Link13	1.4069	243105.33	0.0000	0.9583	0.0732	0.7213	4.7851	0.0120
Link14	1.7475	301970.45	0.0000	0.9559	0.6481	0.2636	1.4488	0.0120
Link15	1.7467	301833.44	0.0000	0.9974	0.5431	0.3160	1.8277	0.0120
Link16	2.6956	465795.67	0.0000	0.9997	0.5806	0.3283	1.9492	0.0120
Link17	-2.8008	-483971.2	0.0000	0.9994	0.4500	0.3688	1.9707	0.0120
Link18	3.1126	537860.32	0.0000	0.9994	1.1032	0.3224	1.6392	0.0120
Link22	0.2473	42727.837	0.0000	0.9996	0.0357	0.7403	6.9810	0.0120
Link23	4.4913	776093.39	0.0000	0.8728	3.2873	0.3018	2.6258	0.0120
Link24	4.4914	776118.37	0.0000	0.9857	1.5402	0.3038	2.6967	0.0120
Link25	4.4914	776115.00	0.0000	0.9456	4.3356	0.3018	2.6765	0.0120
Link26	4.4916	776148.05	0.0000	0.9737	0.4946	0.3028	2.6854	0.0120
Link27	4.7306	817442.08	0.0000	0.9974	0.7384	0.3097	2.6999	0.0140
Link28	4.7309	817505.94	0.0000	0.9954	1.1617	0.3174	2.5084	0.0120
Link30	0.1819	31423.917	0.0000	0.5184	0.1344	0.0892	0.2660	0.0240
Link31	-0.1799	-31080.18	0.0000	0.9995	0.1676	0.1979	0.4181	0.0240
Link32	5.7098	986650.01	0.0000	0.9997	2.9309	0.2271	1.2811	0.0120
Link33	3.5903	620401.69	0.0000	0.9997	5.0342	0.1521	1.0632	0.0140
Link47	0.2965	51233.129	0.0000	0.2071	0.3854	0.0589	0.1397	0.0120
Link53	0.1799	31080.046	0.0000	0.9995	0.2236	0.0749	0.4322	0.0250
Link54	0.1800	31099.176	0.0000	0.9995	0.2048	0.0554	0.5954	0.0400
Link55	0.1799	31081.434	0.0000	0.9993	0.1681	0.0748	0.8491	0.0250
Link56	0.3289	56833.611	0.0000	0.9997	0.1992	0.0637	1.0699	0.0400
Link68	0.3300	57018.940	0.0000	0.9997	0.2878	0.0996	0.6118	0.0250
Link69	0.3350	57883.649	0.0000	0.9997	0.0386	0.1231	8.2178	0.0250

Link70	3.3677	581931.45	0.0000	0.9979	0.1885	0.1432	7.0629	0.0250
Link71	3.4979	604433.70	0.0036	0.9978	0.0768	0.5279	144.5196	0.0250
Link72	4.7310	817515.21	0.0000	0.9940	4.7207	0.2691	1.1270	0.0120
Link73	4.7312	817553.83	0.0000	0.9931	0.9052	0.1872	2.7099	0.0250
Link74	4.7311	817541.00	0.0000	0.9930	0.8609	0.2865	2.8393	0.0250
Link75	4.7312	817548.58	0.0000	0.9912	0.3576	0.2904	6.6875	0.0250
Link76	4.7311	817538.21	0.0000	0.9909	1.2307	0.2577	2.2007	0.0250
Link77	0.3413	58980.611	0.0000	0.9560	1.7566	0.1289	0.2596	0.0120
Link78	0.3416	59028.162	0.0000	0.9559	0.7618	0.0596	1.5068	0.0400
Link82	3.1128	537892.45	0.0000	0.9993	1.8197	0.2555	1.0018	0.0120
Link83	3.1128	537894.41	0.0000	0.9992	1.3332	0.3053	1.3872	0.0120
Link84	3.1131	537944.14	0.0000	0.9987	0.7626	0.1964	2.3631	0.0250
Link85	3.1133	537973.75	0.0000	0.9983	1.0066	0.1972	2.5909	0.0250
Link90	0.1489	25734.034	0.0000	0.4435	0.8068	0.0643	0.1251	0.0120
Link93	0.1641	28355.169	0.0000	0.3995	0.6607	0.0721	0.1568	0.0120
Link98	0.1641	28354.166	0.0000	0.3939	0.9734	0.0555	0.1056	0.0140
Link104	0.1636	28274.121	0.0000	0.4271	0.6904	0.0827	0.2414	0.0120
Link105	0.1640	28344.507	0.0000	0.4315	0.0670	0.1503	0.5117	0.0120
Link106	0.3125	54000.641	0.0000	0.9997	0.0476	0.4793	1.9480	0.0120
Link21.1	0.2564	44313.150	0.0000	0.9996	0.0773	0.6478	3.9147	0.0120
Link118	0.1843	31842.120	0.0001	0.5254	0.0629	0.1622	7.0941	0.0120
Link124	0.2569	44397.784	0.0000	0.3526	0.4457	0.0761	0.1754	0.0120
Link124.1	0.2573	44457.837	0.0000	0.3691	0.1573	0.1803	0.6903	0.0120
214.1	2.5136	434343.47	0.0000	0.8593	1.3461	0.1370	0.6695	0.0240
283.1	0.2298	39703.130	0.0000	0.7673	1.5039	0.0653	0.1749	0.0240
Restrct10	1.4013	242141.64	0.0000	0.9443	0.7450	0.2008	0.8520	0.0017
restrict6	0.2387	41241.269	0.0000	0.9781	0.3966	0.1468	0.4015	0.0026
restrict7	0.3118	53875.635	0.0000	0.9922	0.4158	0.1525	0.4366	0.0026
Link 5	0.8167	141122.41						
WEIR46	0.0986	17039.216						
Link97.1	0.7594	131218.68						
WEIR119	0.7061	122012.60						
FREE # 1	9.3001	1607062.5						

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| Table E13. Channel losses(H), headwater depth (HW), tailwater |
| depth (TW), critical and normal depth (Yc and Yn). |
| Use this section for culvert comparisons |
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Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
Link12	20.7823	0.0000	0.3033	1.3400	1.8172	633.4092	633.2547	Max Flow
Link13	33.4081	0.0000	0.2314	1.7167	2.4200	635.4976	635.3684	Max Flow
Link14	41.3376	0.0000	1.0295	2.0927	2.3242	633.3957	632.3765	Max Flow
Link15	41.5035	0.0000	1.0174	2.0970	3.0000	632.3755	631.4092	Max Flow
Link16	51.3674	0.0000	3.1675	2.3295	3.0000	632.5391	629.3796	Max Flow
Link17	-0.0062	0.0000	0.2716	0.0049	0.0093	626.4368	626.4391	Max Flow
Link18	58.5663	0.0000	3.0035	2.4732	2.6413	629.1091	625.2454	Max Flow
Link22	11.2004	0.0000	0.6805	1.0597	0.8544	621.2293	621.1425	Max Flow
Link23	56.4682	0.0000	1.9888	2.4338	2.3248	617.7753	615.9014	Max Flow
Link24	56.4535	0.0000	0.4433	2.4335	3.0000	615.9012	615.4546	Max Flow
Link25	56.4394	0.0000	1.8299	2.4333	3.0000	615.4544	613.6146	Max Flow
Link26	56.4475	0.0000	1.8567	2.4334	3.0000	613.4014	611.5426	Max Flow
Link27	59.9261	0.0000	2.9768	2.4988	3.0000	611.8952	608.9147	Max Flow
Link28	59.8541	0.0000	2.3129	2.4974	3.0000	608.9151	605.8261	Max Flow
Link30	4.3047	0.0000	0.6495	0.8401	0.8616	638.4491	637.9688	Max Flow
Link31	0.0000	0.0000	1.0213	0.0000	0.0000	636.0401	636.0401	Max Flow
Link32	89.5959	0.0000	20.1720	2.4970	1.0017	593.7822	573.0017	Max Flow
Link33	66.7008	0.0000	21.1698	1.5650	0.5735	593.8876	572.9854	Max Flow
Link47	15.4464	0.0000	4.1010	1.4090	0.7702	632.7404	629.6034	Max Flow
Link53	4.3047	0.0000	0.1430	0.4239	0.7810	636.6160	636.3723	Max Flow
Link54	4.3018	0.0000	2.1923	0.2604	0.3614	636.3723	633.9403	Max Flow
Link55	4.2990	0.0000	1.5721	0.5293	0.5090	633.9403	633.4434	Max Flow
Link56	10.1804	0.0000	5.6674	0.3784	0.4799	630.6799	622.9589	Max Flow
Link68	10.1812	0.0000	2.8338	0.8637	0.9584	622.9589	620.4649	Max Flow
Link69	12.7415	0.0000	0.6130	0.9233	1.0320	620.0163	620.0529	Max Flow
Link70	119.4453	0.0000	1.5016	1.5640	1.7927	619.0803	616.4659	Max Flow
Link71	297.3897	0.0000	2.8443	1.0996	1.0841	617.1898	617.3262	Max Flow
Link72	59.8597	0.0000	1.5198	2.4975	1.3848	605.8261	604.3068	Max Flow
Link73	59.8479	0.0000	3.8878	1.4594	1.0321	603.9547	599.5600	Max Flow
Link74	59.7971	0.0000	2.2986	1.9170	1.5430	599.5602	596.3416	Max Flow

Link75	59.8189	0.0000	0.3412	0.9134	0.9230	596.3437	596.2341	Max Flow
Link76	59.8429	0.0000	1.7298	1.9903	1.4754	596.2341	593.6815	Max Flow
Link77	7.2791	0.0000	0.5837	0.9581	0.8339	640.8045	639.8735	Max Flow
Link78	7.2558	0.0000	2.3238	0.1486	0.2369	639.8736	636.4986	Max Flow
Link82	58.7020	0.0000	9.0759	2.4758	1.5552	625.2453	615.6645	Max Flow
Link83	58.7636	0.0000	1.2740	2.4769	2.7399	615.6645	613.7784	Max Flow
Link84	58.8941	0.0000	6.2111	1.2089	0.9896	613.7784	607.2324	Max Flow
Link85	59.0843	0.0000	8.6080	1.3322	1.0251	607.2324	593.8868	Max Flow
Link90	6.5311	0.0000	2.0982	0.9880	0.8604	634.1609	632.0604	Max Flow
Link93	7.1906	0.0000	0.8790	1.0379	1.1068	634.1693	633.0035	Max Flow
Link98	7.1685	0.0000	1.1172	1.0363	0.6347	633.0032	632.1870	Max Flow
Link104	7.0192	0.0000	0.7817	0.9396	0.8860	632.0555	631.5143	Max Flow
Link105	6.6261	0.0000	0.6421	0.9115	0.8558	633.7317	633.6200	Max Flow
Link106	12.8359	0.0000	0.4511	1.2035	1.1128	631.9416	631.8056	Max Flow
Link21.1	11.1656	0.0000	3.0068	1.0579	0.6912	621.2198	621.2293	Max Flow
Link118	6.0149	0.0000	0.2008	0.1037	0.1041	637.8654	637.8675	Max Flow
Link124	10.3940	0.0000	1.1869	1.2388	1.0157	622.5048	621.2015	Max Flow
Link124.1	10.4426	0.0000	1.0933	1.0212	0.7212	621.2015	621.2198	Max Flow
214.1	29.0472	0.0000	1.6410	1.8451	2.0000	620.3616	618.7206	Max Flow
283.1	4.7617	0.0000	2.3595	0.9016	1.0000	633.4811	631.1216	Max Flow
Restrct10	33.5980	0.0000	1.8116	1.9024	1.9995	635.2066	633.3957	Max Flow
restrict6	8.5548	0.0000	0.6354	1.1016	1.6660	621.8645	621.0915	Max Flow
restrict7	12.9027	0.0000	1.4992	1.3482	1.6660	632.5447	631.3382	Max Flow

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| Table E13a. CULVERT ANALYSIS CLASSIFICATION, |
| and the time the culvert was in a particular |
| classification during the simulation. The time is |
| in minutes. The Dynamic Wave Equation is used for |
| all conduit analysis but the culvert flow classification |
| condition is based on the HW and TW depths. |
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Conduit Name	Mild Slope Critical D Outlet Control	Mild Slope TW Control Outlet Control	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope TW > D Outlet Control	Mild Slope TW <= D Outlet Control	Outlet Control	Inlet Control	Inlet Configuration
Link12	10.0000	2645.0000	55.0000	110.0000	60.0000	0.0000	0.0000	0.0000	None
Link13	0.0000	2755.0000	55.0000	0.0000	70.0000	0.0000	0.0000	0.0000	None
Link14	0.0000	2595.0000	180.0000	0.0000	65.0000	0.0000	40.0000	0.0000	None
Link15	0.0000	2785.0000	20.0000	0.0000	75.0000	0.0000	0.0000	0.0000	None
Link16	5.0000	2855.0000	15.0000	0.0000	5.0000	0.0000	0.0000	0.0000	None
Link17	0.0000	2855.0000	20.0000	0.0000	5.0000	0.0000	0.0000	0.0000	None
Link18	35.0000	0.0000	2845.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link22	0.0000	0.0000	35.0000	5.0000	0.0000	2840.0000	0.0000	0.0000	None
Link23	0.0000	0.0000	2635.0000	20.0000	0.0000	180.0000	45.0000	0.0000	None
Link24	15.0000	2555.0000	80.0000	0.0000	230.0000	0.0000	0.0000	0.0000	None
Link25	25.0000	2340.0000	285.0000	0.0000	230.0000	0.0000	0.0000	0.0000	None
Link26	10.0000	2515.0000	125.0000	0.0000	230.0000	0.0000	0.0000	0.0000	None
Link27	10.0000	2690.0000	20.0000	0.0000	160.0000	0.0000	0.0000	0.0000	None
Link28	405.0000	2450.0000	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link30	0.0000	560.0000	2170.0000	50.0000	70.0000	0.0000	30.0000	0.0000	None
Link31	0.0000	2735.0000	20.0000	0.0000	125.0000	0.0000	0.0000	0.0000	None
Link32	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link33	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link47	0.0000	0.0000	2865.0000	0.0000	0.0000	0.0000	15.0000	0.0000	None
Link53	175.0000	2685.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link54	0.0000	2835.0000	20.0000	0.0000	25.0000	0.0000	0.0000	0.0000	None
Link55	0.0000	2705.0000	125.0000	0.0000	0.0000	0.0000	50.0000	0.0000	None
Link56	5.0000	2860.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link68	10.0000	2850.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link69	0.0000	2860.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link70	75.0000	2785.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link71	0.0000	2785.0000	30.0000	55.0000	0.0000	0.0000	10.0000	0.0000	None
Link72	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link73	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link74	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link75	0.0000	2850.0000	30.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link76	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link77	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link78	475.0000	2345.0000	60.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link82	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link83	50.0000	0.0000	2730.0000	0.0000	0.0000	0.0000	100.0000	0.0000	None
Link84	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link85	0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link90	0.0000	0.0000	2875.0000	0.0000	0.0000	0.0000	5.0000	0.0000	None
Link93	60.0000	100.0000	2715.0000	0.0000	5.0000	0.0000	0.0000	0.0000	None
Link98	0.0000	0.0000	2860.0000	0.0000	0.0000	5.0000	15.0000	0.0000	None
Link104	45.0000	145.0000	2590.0000	30.0000	0.0000	5.0000	65.0000	0.0000	None
Link105	0.0000	205.0000	2530.0000	110.0000	0.0000	20.0000	15.0000	0.0000	None
Link106	0.0000	2695.0000	25.0000	130.0000	0.0000	25.0000	5.0000	0.0000	None
Link21.1	0.0000	0.0000	40.0000	2840.0000	0.0000	0.0000	0.0000	0.0000	None
Link118	20.0000	730.0000	2130.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link124	0.0000	0.0000	2845.0000	0.0000	0.0000	0.0000	35.0000	0.0000	None
Link124.1	0.0000	0.0000	2680.0000	165.0000	0.0000	0.0000	35.0000	0.0000	None
214.1	125.0000	2065.0000	665.0000	0.0000	0.0000	0.0000	25.0000	0.0000	None
283.1	100.0000	1540.0000	1115.0000	0.0000	0.0000	0.0000	125.0000	0.0000	None
Restrct10	280.0000	2475.0000	65.0000	0.0000	10.0000	0.0000	50.0000	0.0000	None
restrict6	475.0000	2365.0000	40.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
restrict7	195.0000	2640.0000	30.0000	0.0000	0.0000	0.0000	15.0000	0.0000	None

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| Kinematic Wave Approximations |
| Time in Minutes for Each Condition |
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Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
Link12	0.0000	2796.1065	2.6153	0.0000
Link13	0.0000	2813.3073	1.1595	0.0000
Link14	2636.9779	2812.3173	0.0000	0.0000
Link15	316.2409	433.1219	0.0000	0.0000
Link16	2672.5720	2746.4199	5.0000	0.0000

Link17	0.0000	0.0000	0.0000	0.0000
Link18	0.0000	0.0000	440.5870	0.0000
Link22	13.2341	2143.3334	2.8261	0.0000
Link23	2019.5967	2286.9485	2562.0369	0.0000
Link24	0.0000	0.0000	4.3676	0.0000
Link25	1975.5899	1991.1853	2451.6350	0.0000
Link26	2584.3493	2607.3587	5.0810	0.0000
Link27	2582.1475	2582.1918	3.9394	0.0000
Link28	0.0000	0.0000	270.7888	0.0000
Link30	2706.9890	2859.6377	0.2174	0.0000
Link31	0.0000	0.0000	0.0000	0.0000
Link32	207.6524	208.6387	2860.0000	0.0000
Link33	268.5391	268.5801	2864.1304	0.0000
Link47	2783.6778	2855.7971	108.9321	0.0000
Link53	0.0000	0.0000	1.1594	0.0000
Link54	2857.8986	2857.9710	0.2899	0.0000
Link55	2859.2754	2859.2754	0.0000	0.0000
Link56	2859.5652	2859.5652	0.0000	0.0000
Link68	157.5108	157.6942	0.8696	0.0000
Link69	2762.4396	2855.6420	0.0725	0.0000
Link70	191.2592	192.9916	0.0725	0.0000
Link71	2718.0941	2822.3956	0.0000	0.0000
Link72	14.2450	14.2450	2851.3182	0.0000
Link73	2848.2083	2848.2083	280.3723	0.0000
Link74	0.0000	0.0000	282.1578	0.0000
Link75	2577.7140	2847.9583	0.0000	0.0000
Link76	2.3750	2.4583	2846.3750	0.0000
Link77	0.0000	0.0000	2819.1969	0.0000
Link78	0.0000	0.0000	2.9613	0.0000
Link82	2855.8696	2856.3043	2859.0580	0.0000
Link83	0.0000	0.0000	2858.2609	0.0000
Link84	267.6494	267.7403	181.9550	0.0000
Link85	0.8696	0.9420	397.3048	0.0000
Link90	15.0424	39.2283	2824.6932	0.0000
Link93	0.0259	5.2469	119.2675	0.0000
Link98	2795.9024	2856.0870	2852.3386	0.0000
Link104	108.9487	203.8255	2638.4943	0.0000
Link105	2627.5446	2847.9492	0.0000	0.0000
Link106	7.7325	1072.2389	0.5797	0.0000
Link21.1	12.2465	2232.9706	23.2221	0.0000
Link118	535.8099	665.8929	0.0725	0.0000
Link124	2728.0711	2803.1744	2799.4784	0.0000
Link124.1	2654.8611	2813.2884	35.7185	0.0000
214.1	2679.6611	2703.4807	2201.9056	0.0000
283.1	2.9332	2.9332	122.1145	0.0000
Restrct10	0.0000	0.0000	93.0642	0.0000
restrict6	0.0000	0.0000	0.0000	0.0000
restrict7	0.0000	0.0000	0.0000	0.0000

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| Table E14 - Natural Channel Overbank Flow Information |
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Conduit Name	<---- Maximum Velocity -----> Left Velocity	Center Velocity	Right Velocity	<------ Maximum Flow -------> Left Flow	Center Flow	Right Flow	<------ Maximum Area ------> Left Area	Center Area	Right Area	<--- Max. Storage Volume ---> Left Area	Center Area	Right Area	Maximum Depth
Link53	0.0000	2.5117	0.0000	0.0000	4.3048	0.0000	0.0000	1.7139	0.0000	0.0000	56.5587	0.0000	0.4763
Link55	0.0000	0.3115	0.0000	0.0000	4.3028	0.0000	0.0000	13.8112	0.0000	0.0000	1905.9405	0.0000	1.5986
Link68	0.0000	1.6939	0.0000	0.0000	10.2970	0.0000	0.0000	6.0788	0.0000	0.0000	2431.5275	0.0000	1.2764
Link69	0.0000	0.3761	0.0000	0.0000	53.6579	0.0000	0.0000	142.6828	0.0000	0.0000	37097.516	0.0000	2.4441
Link70	0.0000	2.5800	0.0000	0.0000	120.5097	0.0000	0.0000	46.7092	0.0000	0.0000	21019.144	0.0000	1.8051
Link71	0.0002	0.5707	0.0000	0.0000	529.2569	0.0000	0.0000	927.3202	0.0000	0.0112	355163.64	0.0000	4.3241
Link73	0.0000	4.5469	0.0000	0.0000	59.8763	0.0000	0.0000	13.1685	0.0000	0.0000	961.2981	0.0000	1.4183
Link74	0.0000	10.0565	0.0000	0.0000	59.8728	0.0000	0.0000	5.9536	0.0000	0.0000	607.2720	0.0000	1.4264
Link75	0.0000	2.6808	0.0000	0.0000	59.8671	0.0000	0.0000	22.3319	0.0000	0.0000	1161.2572	0.0000	1.3871
Link76	0.0000	13.2828	0.0000	0.0000	59.8599	0.0000	0.0000	4.5066	0.0000	0.0000	180.2636	0.0000	1.3176
Link84	0.0000	5.8746	0.0000	0.0000	59.2802	0.0000	0.0000	10.0910	0.0000	0.0000	2825.4674	0.0000	1.1156
Link85	0.0000	9.8805	0.0000	0.0000	59.1427	0.0000	0.0000	5.9858	0.0000	0.0000	2813.3217	0.0000	0.9011

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| Table E14a - Natural Channel Encroachment Information |
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Conduit Name	<------- Existing Conveyance Condition -------> Left Bank	Centre Channel	Right Bank	Total	<----- Encroachment Conveyance Condition -----> Left Station	Right Station	Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	<- % Volume --> Left Reduction	Right Reduction	<-- Encroachment Data --> Depth Incr.	Method
Link53	0.0000	44.989	0.0000	44.989	-4.1719	1.5507	0.0000	44.989	0.0000	44.989	-4.1719	1.5507	0.0000	0.0000	0.0000	None
Link55	0.0000	663.17	0.0000	663.17	-10.538	8.1767	0.0000	663.17	0.0000	663.17	-10.538	8.1767	0.0000	0.0000	0.0000	None
Link68	0.0000	249.72	0.0000	249.72	-3.3778	6.8204	0.0000	249.72	0.0000	249.72	-3.3778	6.8204	0.0000	0.0000	0.0000	None
Link69	0.0000	7082.7	0.0000	7082.7	-44.729	141.83	0.0000	7082.7	0.0000	7082.7	-44.729	141.83	0.0000	0.0000	0.0000	None

Link70	0.0000	2011.1	0.0000	2011.1	-17.776	57.823	0.0000	2011.1	0.0000	2011.1	-17.776	57.823	0.0000	0.0000	0.0000	None
Link71	.11E-05	118427.	0.0000	118427.	-245.80	48.266	.11E-05	118427.	0.0000	118427.	-245.80	48.266	0.0000	0.0000	0.0000	None
Link73	0.0000	487.78	0.0000	487.78	-5.9874	20.496	0.0000	487.78	0.0000	487.78	-5.9874	20.496	0.0000	0.0000	0.0000	None
Link74	0.0000	272.01	0.0000	272.01	-4.9064	3.4413	0.0000	272.01	0.0000	272.01	-4.9064	3.4413	0.0000	0.0000	0.0000	None
Link75	0.0000	1232.5	0.0000	1232.5	-17.829	6.9022	0.0000	1232.5	0.0000	1232.5	-17.829	6.9022	0.0000	0.0000	0.0000	None
Link76	0.0000	192.51	0.0000	192.51	-8.0073	-1.0965	0.0000	192.51	0.0000	192.51	-8.0073	-1.0965	0.0000	0.0000	0.0000	None
Link84	0.0000	484.82	0.0000	484.82	-7.4778	5.8649	0.0000	484.82	0.0000	484.82	-7.4778	5.8649	0.0000	0.0000	0.0000	None
Link85	0.0000	225.65	0.0000	225.65	-4.5618	7.0879	0.0000	225.65	0.0000	225.65	-4.5618	7.0879	0.0000	0.0000	0.0000	None

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| Table E14b - Floodplain Mapping |
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Conduit Name	Upstream WS Elev.	Downstream WS Elev.	Channel Length	Center Station	<----- Left Offsets Natural	Encroach	------> Bank	<----- Right Offsets Natural	Encroach	------> Bank	<- Channel Widths-> Total	Encroach.
Link53	636.6160	636.3723	33.0000	0.0000	4.1719	4.1719	21.2000	1.5507	1.5507	17.8000	5.7226	5.7226
Link55	633.9405	633.4811	138.0000	0.0000	10.5375	10.5375	23.6000	8.1767	8.1767	9.4000	18.7142	18.7142
Link68	622.9648	620.5407	400.0000	0.0000	3.3778	3.3778	67.2000	6.8204	6.8204	30.6000	10.1982	10.1982
Link69	620.5407	620.5352	260.0000	0.0000	44.7286	44.7286	126.4000	141.8307	141.8307	174.6000	186.5593	186.5593
Link70	619.0843	617.7642	450.0000	0.0000	17.7762	17.7762	64.2000	57.8235	57.8235	121.3000	75.5997	75.5997
Link71	617.7642	617.7783	383.0000	0.0000	245.8000	245.8000	245.8000	48.2659	48.2659	65.5000	294.0659	294.0659
Link73	603.9549	599.5607	73.0000	0.0000	5.9874	5.9874	92.8000	20.4956	20.4956	88.6000	26.4830	26.4830
Link74	599.5607	596.3452	102.0000	0.0000	4.9064	4.9064	93.3000	3.4413	3.4413	33.4000	8.3478	8.3478
Link75	596.3452	596.2364	52.0000	0.0000	17.8291	17.8291	92.5000	6.9022	6.9022	48.8000	24.7313	24.7313
Link76	596.2364	593.7822	40.0000	-4.6000	3.4073	3.4073	41.9000	3.5035	3.5035	65.0000	6.9108	6.9108
Link84	613.7812	607.2330	280.0000	0.0000	7.4778	7.4778	30.6000	5.8649	5.8649	26.8000	13.3427	13.3427
Link85	607.2330	593.8876	470.0000	0.0000	4.5618	4.5618	68.1000	7.0879	7.0879	109.0000	11.6497	11.6497

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| Table E15 - SPREADSHEET INFO LIST |
| Conduit Flow and Junction Depth Information for use in |
| spreadsheets. The maximum values in this table are the |
| true maximum values because they sample every time step.|
| The values in the review results may only be the |
| maximum of a subset of all the time steps in the run. |
| Note: These flows are only the flows in a single barrel.|
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Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
Link12	22.1050	109206.3932	3.7461	4110.1381	##	Node11	617.2000	620.5352
Link13	33.4376	243105.3271	3.1318	4096.7425	##	Node12	617.2100	619.0843
Link14	41.4020	301970.4452	6.4140	2516.9938	##	Node20	631.3900	635.7674
Link15	41.5275	301833.4399	5.8498	2382.5505	##	Node21	631.0800	635.7459
Link16	52.6153	465795.6727	7.4092	4488.4919	##	Node22	630.1100	634.6921
Link17	54.4085	483971.1755	7.6382	355.9373	##	Node23	628.8600	633.7274
Link18	59.3657	537860.3167	9.1963	1346.6981	##	Node24	628.0300	632.7994
Link22	12.1778	42727.8371	2.3623	2431.3450	##	Node25	626.3500	629.4429
Link23	56.6409	776093.3869	7.9790	2229.7942	##	Node26	626.4200	629.1714
Link24	56.6433	776118.3694	7.9396	545.6453	##	Node27	623.6900	625.2547
Link25	56.6482	776115.0034	7.9479	2256.9452	##	Node29	612.7800	613.7812
Link26	56.6534	776148.0452	7.9630	2271.8375	##	Node30	621.4800	622.5569
Link27	59.9485	817442.0817	8.4016	2373.5808	##	Node31	616.0000	621.9377
Link28	59.8650	817505.9409	8.5699	1685.5273	##	Node33	610.5600	617.7784
Link30	4.3048	31423.9167	3.6332	39.5822	##	Node34	608.4300	615.9219
Link31	4.3048	31080.1756	3.6944	74.4915	##	Node35	608.4000	615.4860
Link32	89.6078	986650.0112	21.5932	78.9680	##	Node36	607.4000	613.6868
Link33	66.7014	620401.6910	18.0082	57.1543	##	Node37	606.4600	611.8996
Link47	15.4464	51233.1288	16.0041	87.9204	##	Node38	605.4500	608.9239
Link53	4.3048	31080.0458	1.9575	71.3803	##	Node39	604.4400	605.8262
Link54	4.3035	31099.1757	1.4096	184.8903	##	Node41	630.2000	630.6803

Link55	4.3028	31081.4343	2.0198	1905.9405	##	Node43	636.4600	638.4491
Link56	10.1986	56833.6114	1.5442	778.3122	##	Node44	635.7400	637.9689
Link68	10.2970	57018.9402	3.0343	1256.3789	##	Node45	636.0400	636.6160
Link69	-53.6579	57883.6491	1.2346	37097.5158	##	Node46	592.7400	593.7822
Link70	120.5097	581931.4464	2.5278	21019.1439	##	Node47	572.0000	573.0018
Link71	-529.2569	604433.7032	1.4229	355163.6552	##	Node48	593.3000	593.8876
Link72	59.8781	817515.2087	18.7700	122.2542	##	Node63	631.0000	633.4811
Link73	59.8763	817553.8335	7.6215	319.0535	##	Node65	638.0000	640.8045
Link74	59.8728	817541.0014	7.4702	261.0115	##	Node66	631.9700	632.7404
Link75	59.8671	817548.5767	3.2070	1161.2572	##	Node69	636.0000	636.3723
Link76	59.8599	817538.2145	9.6055	95.3447	##	Node70	633.4300	633.9405
Link77	7.2798	58980.6110	6.6766	27.3157	##	Node71	622.0000	622.9648
Link78	7.2622	59028.1623	1.1583	72.1178	##	Node74	618.9800	620.5407
Link82	59.2981	537892.4454	15.1714	424.2484	##	Node75	602.9200	603.9549
Link83	59.3268	537894.4076	11.4572	447.2039	##	Node79	615.6100	617.7642
Link84	59.2802	537944.1412	6.6387	505.5811	##	Node80	597.8900	599.5607
Link85	59.1427	537973.7453	6.0289	127.0247	##	Node81	595.1800	596.3452
Link90	6.5334	25734.0338	6.2293	409.8682	##	Node82	594.6700	596.2364
Link93	7.1920	28355.1693	5.4770	267.9771	##	Node83	639.6000	639.8738
Link98	7.2248	28354.1659	9.0950	55.0664	##	Node84	630.7700	635.6228
Link104	7.4025	28274.1209	4.9603	511.2251	##	Node86	613.4900	615.6802
Link105	7.4661	28344.5067	3.9999	460.3758	##	Node87	606.0000	607.2330
Link106	13.2464	54000.6410	3.5694	1027.3758	##	Node89	637.1000	638.4489
Link21.1	12.1625	44313.1499	6.2597	1278.9192	##	Node92	633.0800	634.4608
Link118	6.1021	31842.1202	1.1745	10012.9521	##	Node94	633.3000	634.3491
Link124	10.4037	44397.7841	8.2143	142.6275	##	Node99	637.7000	638.3389
Link124.1	10.4551	44457.8368	7.2187	472.8628	##	Node100	632.3300	634.0522
214.1	29.1386	434343.4663	9.4093	179.8657	##	Node101	631.1300	633.9020
283.1	4.7622	39703.1300	6.0434	30.7491	##	Node103	630.2700	633.7791
Restrct10	33.6604	242141.6429	10.9345	15801.0740	##	Node108	629.5400	633.6654
restrict6	8.5630	41241.2690	3.8919	8315.8621	##	Node30.1	619.1400	621.9558
restrict7	13.3963	53875.6345	6.1918	8949.3772	##	Node120	638.0000	639.3992
Link 5	65.9722	141122.4071	0.0000	0.0000	##	Node124	613.4000	621.8967
WEIR46	5.5565	17039.2158	0.0000	0.0000	##	Node125	628.5000	633.5028
Link97.1	19.9287	131218.6774	0.0000	0.0000	##	Node30.2	620.3100	621.8940
WEIR119	28.1404	122012.6002	0.0000	0.0000	##			
FREE # 1	154.8213	1607062.515	0.0000	0.0000	##			

```
*====================================================*
|     Table E15a - SPREADSHEET REACH LIST            |
| Peak flow and Total Flow listed by Reach or those  |
|      conduits or diversions having the same        |
|      upstream and downstream nodes.                |
*====================================================*
```

Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
Node20	Node21	22.1050	109206.393
Node21	Node84	33.4376	243105.327
Node22	Node23	41.4020	301970.445
Node23	Node24	41.5275	301833.440
Node24	Node25	52.6153	465795.673
Node26	Node25	54.4085	483971.175
Node26	Node27	59.3657	537860.317
Node31	Node124	12.1778	42727.8371
Node33	Node34	56.6409	776093.387
Node34	Node35	56.6433	776118.369

Node35	Node36	56.6482	776115.003
Node36	Node37	56.6534	776148.045
Node37	Node38	59.9485	817442.082
Node38	Node39	59.8650	817505.941
Node43	Node44	4.3048	31423.9167
Node45	Node44	4.3048	31080.1756
Node46	Node47	89.6078	986650.011
Node48	Node47	66.7014	620401.691
Node66	Node24	15.4464	51233.1288
Node45	Node69	4.3048	31080.0458
Node69	Node70	4.3035	31099.1757
Node70	Node63	4.3028	31081.4343
Node41	Node71	10.1986	56833.6114
Node71	Node74	10.2970	57018.9402
Node74	Node11	-53.6579	57883.6491
Node12	Node79	120.5097	581931.446
Node79	Node33	-529.2569	604433.703
Node39	Node75	59.8781	817515.209
Node75	Node80	59.8763	817553.833
Node80	Node81	59.8728	817541.001
Node81	Node82	59.8671	817548.577
Node82	Node46	59.8599	817538.215
Node65	Node83	7.2798	58980.6110
Node83	Node22	7.2622	59028.1623
Node27	Node86	59.2981	537892.445
Node86	Node29	59.3268	537894.408
Node29	Node87	59.2802	537944.141
Node87	Node48	59.1427	537973.745
Node94	Node108	6.5334	25734.0338
Node92	Node100	7.1920	28355.1693
Node100	Node101	7.2248	28354.1659
Node101	Node103	7.4025	28274.1209
Node103	Node108	7.4661	28344.5067
Node108	Node125	13.2464	54000.6410
Node30.1	Node31	12.1625	44313.1499
Node89	Node43	6.1021	31842.1202
Node30	Node30.2	10.4037	44397.7841
Node30.2	Node30.1	10.4551	44457.8368
Node11	Node12	58.2772	434343.466
Node63	Node41	4.7622	39703.1300
Node84	Node22	33.6604	242141.643
Node124	Node37	8.5630	41241.2690
Node125	Node26	13.3963	53875.6345
Node11	Node12	65.9722	141122.407
Node63	Node41	5.5565	17039.2158
Node99	Node21	19.9287	131218.677
Node120	Node20	28.1404	122012.600

```
#########################################################
# Table E16. New Conduit Information Section           #
#            Conduit Invert (IE) Elevation and Conduit  #
#            Maximum Water Surface (WS) Elevations      #
#########################################################
```

Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
Link12	Node20	Node21	631.3900	631.0800	635.7674	635.7459	Circular
Link13	Node21	Node84	631.0800	630.7700	635.7459	635.6228	Circular

Link14	Node22	Node23	630.1100	628.8600	634.6918	633.7274	Circular
Link15	Node23	Node24	628.8600	628.0300	633.7264	632.7997	Circular
Link16	Node24	Node25	628.0300	626.3500	632.7994	629.4429	Circular
Link17	Node26	Node25	626.4200	626.3500	629.1715	629.4429	Circular
Link18	Node26	Node27	626.4200	623.6900	629.1714	625.2547	Circular
Link22	Node31	Node124	616.0000	613.4000	621.9377	621.8967	Circular
Link23	Node33	Node34	610.5630	608.4300	617.7783	615.9218	Circular
Link24	Node34	Node35	608.4300	608.4000	615.9219	615.4860	Circular
Link25	Node35	Node36	608.4000	607.4000	615.4859	613.6868	Circular
Link26	Node36	Node37	607.4000	606.4600	613.6868	611.8996	Circular
Link27	Node37	Node38	606.4600	605.4500	611.8996	608.9238	Circular
Link28	Node38	Node39	605.4500	604.4400	608.9239	605.8262	Circular
Link30	Node43	Node44	636.4600	635.7400	638.4491	637.9689	Circular
Link31	Node45	Node44	636.0400	635.7400	636.6160	637.9689	Circular
Link32	Node46	Node47	592.7400	572.0000	593.7822	573.0018	Rectangle
Link33	Node48	Node47	593.3000	572.0000	593.8876	573.0018	Rectangle
Link47	Node66	Node24	631.9700	628.3300	632.7404	632.7994	Circular
Link53	Node45	Node69	636.0400	636.0000	636.6160	636.3723	Natural
Link54	Node69	Node70	636.0000	633.4300	636.3723	633.9405	Trapezoid
Link55	Node70	Node63	633.4300	631.0000	633.9405	633.4811	Natural
Link56	Node41	Node71	630.2000	622.0000	630.6803	622.9648	Trapezoid
Link68	Node71	Node74	622.0000	618.9800	622.9648	620.5407	Natural
Link69	Node74	Node11	618.9800	617.2000	620.5407	620.5352	Natural
Link70	Node12	Node79	617.2100	615.6100	619.0843	617.7642	Natural
Link71	Node79	Node33	615.6100	610.5600	617.7642	617.7783	Natural
Link72	Node39	Node75	604.4400	602.9220	605.8262	604.3071	Circular
Link73	Node75	Node80	602.9200	597.8900	603.9549	599.5607	Natural
Link74	Node80	Node81	597.8900	595.1800	599.5607	596.3452	Natural
Link75	Node81	Node82	595.1800	594.6700	596.3452	596.2364	Natural
Link76	Node82	Node46	594.6700	592.7400	596.2364	593.7822	Natural
Link77	Node65	Node83	640.0000	639.6000	640.8045	639.8738	Circular
Link78	Node83	Node22	639.6000	636.3500	639.8738	636.4986	Trapezoid
Link82	Node27	Node86	623.6900	613.4900	625.2547	615.6802	Circular
Link83	Node86	Node29	613.4900	612.7800	615.6802	613.7812	Circular
Link84	Node29	Node87	612.7800	606.0000	613.7812	607.2330	Natural
Link85	Node87	Node48	606.0000	593.3000	607.2330	593.8876	Natural
Link90	Node94	Node108	633.3000	631.2000	634.3491	633.6654	Circular
Link93	Node92	Node100	633.0800	632.3300	634.4608	634.0522	Circular
Link98	Node100	Node101	632.3300	631.1300	634.0522	633.9021	Circular
Link104	Node101	Node103	631.1300	630.3200	633.9020	633.7791	Circular
Link105	Node103	Node108	630.2700	629.5400	633.7790	633.6654	Circular
Link106	Node108	Node125	629.5400	628.5000	633.6654	633.5027	Circular
Link21.1	Node30.1	Node31	619.1400	616.0000	621.9558	621.9377	Circular
Link118	Node89	Node43	637.1000	636.4600	638.4489	638.4491	Trapezoid
Link124	Node30	Node30.2	621.4800	620.3100	622.5569	621.8940	Circular
Link124.1	Node30.2	Node30.1	620.3100	619.1400	621.8940	621.9558	Circular
214.1	Node11	Node12	617.7000	617.2100	620.5352	619.0843	Circular
283.1	Node63	Node41	631.0100	630.2200	633.4811	631.1216	Circular
Restrct10	Node84	Node22	632.0000	631.9900	635.6228	634.6918	Circ Orif
restrict6	Node124	Node37	620.0000	619.9900	621.8967	621.0921	Circ Orif
restrict7	Node125	Node26	630.0000	629.9900	633.5027	631.3606	Circ Orif

==========
| Table E18 - Junction Continuity Error. Division by Volume added 11/96 |

```
|                                                                          |
|  Continuity Error = Net Flow + Beginning Volume - Ending Volume          |
|                     ---------------------------------------------        |
|                     Total Flow + (Beginning Volume + Ending Volume)/2    |
|                                                                          |
|  Net Flow   = Node Inflow - Node Outflow                                 |
|  Total Flow = absolute (Inflow + Outflow)                                |
|  Intermediate column is a judgement on the node continuity error.        |
|                                                                          |
|  Excellent  < 1 percent    Great  1 to  2 percent  Good  2 to  5 percent |
|  Fair  5 to 10  percent    Poor  10 to 25 percent  Bad  25 to 50 percent |
|  Terrible > 50  percent                                                  |
*==========================================================================*
```

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
Node11	-511.1387	-0.0444	0.0311	48.5686	0.0000	-462.5701	1150403.823	0
Node12	-6542.8102	-0.5653	0.3985	0.0435	0.0000	-6542.7666	1157397.320	0
Node20	12519.7311	5.4114	0.7626	278.2838	0.0000	12798.0150	231218.9934	0
Node21	-3408.0260	-0.7043	0.2076	714.6005	0.0000	-2693.4255	483530.3976	0
Node22	-826.1443	-0.1370	0.0503	18.1750	0.0000	-807.9693	603140.2505	0
Node23	129.0220	0.0214	0.0079	4.7547	0.0000	133.7767	603803.8851	0
Node24	-98.2390	-0.0105	0.0060	14.6799	0.0000	-83.5591	931510.9843	3
Node25	-33.0427	-0.0034	0.0020	14.2743	0.0000	-18.7684	967935.0708	0
Node26	-33.4594	-0.0031	0.0020	10.9799	0.0000	-22.4794	1075707.127	0
Node27	-51.3485	-0.0048	0.0031	4.4891	0.0000	-46.8594	1075752.762	0
Node29	-52.8035	-0.0049	0.0032	4.5867	0.0000	-48.2168	1075838.549	0
Node30	-6.1273	-0.0069	0.0004	0.0005	0.0000	-6.1268	88790.7753	0
Node31	-52.0251	-0.0592	0.0032	1627.0313	0.0000	1575.0063	87040.9870	0
Node33	1339.3107	0.0862	0.0816	0.9998	0.0000	1340.3105	1554239.147	0
Node34	-15.8361	-0.0010	0.0010	0.0025	0.0000	-15.8336	1552211.756	8
Node35	-7.8115	-0.0005	0.0005	0.0021	0.0000	-7.8094	1552233.373	0
Node36	-31.8059	-0.0020	0.0019	0.0975	0.0000	-31.7084	1552263.049	0
Node37	-53.5003	-0.0033	0.0033	7.4742	0.0000	-46.0261	1634831.396	0
Node38	-58.2710	-0.0036	0.0035	0.5277	0.0000	-57.7433	1634948.023	0
Node39	-12.4084	-0.0008	0.0008	0.2189	0.0000	-12.1896	1635021.150	0
Node41	-94.6109	-0.0833	0.0058	0.1338	0.0000	-94.4771	113575.9572	0
Node43	599.6677	0.9478	0.0365	1.2168	0.0000	600.8845	63266.0368	0
Node44	0.0916	0.0001	0.0000	7.2915	0.0000	7.3831	62504.0923	0
Node45	-3.9029	-0.0063	0.0002	2.3060	0.0000	-1.5969	62160.2214	0
Node46	-96.7524	-0.0049	0.0059	0.3713	0.0000	-96.3811	1973209.754	0
Node47	-10.4304	-0.0003	0.0006	1.2239	0.0000	-9.2065	3214114.217	0
Node48	-45.6013	-0.0037	0.0028	6.9478	0.0000	-38.6536	1240796.891	0
Node63	-56.5906	-0.0499	0.0034	0.2631	0.0000	-56.3274	113427.1483	10
Node65	-67.6940	-0.0438	0.0041	24410.2147	0.0000	24342.5207	142309.9772	0
Node66	364.2828	0.3543	0.0222	0.0003	0.0000	364.2830	102825.3338	0
Node69	-21.2526	-0.0342	0.0013	0.0162	0.0000	-21.2363	62179.2215	0
Node70	15.4738	0.0249	0.0009	0.1530	0.0000	15.6269	62180.6100	0
Node71	-189.7280	-0.1666	0.0116	0.1487	0.0000	-189.5793	113852.5517	0
Node74	-343.4313	-0.2988	0.0209	42.2993	0.0000	-301.1320	114902.5893	0
Node75	-3.0034	-0.0002	0.0002	0.2195	0.0000	-2.7839	1635069.042	0
Node79	-1595.1963	-0.1345	0.0972	1.0022	0.0000	-1594.1941	1186365.150	0
Node80	-4.8265	-0.0003	0.0003	0.4002	0.0000	-4.4263	1635094.835	0
Node81	-8.4731	-0.0005	0.0005	0.6647	0.0000	-7.8084	1635089.578	0
Node82	9.3419	0.0006	0.0006	0.5690	0.0000	9.9109	1635086.791	0
Node83	-53.4219	-0.0453	0.0033	5.5884	0.0000	-47.8336	118008.7733	0
Node84	504.7541	0.1040	0.0307	458.4641	0.0000	963.2183	485246.9700	0
Node86	-7.9320	-0.0007	0.0005	2.9547	0.0000	-4.9773	1075786.853	0
Node87	-43.7024	-0.0041	0.0027	9.9506	0.0000	-33.7518	1075917.886	0
Node89	-169.3854	-0.2722	0.0103	0.0008	0.0000	-169.3846	62234.6076	0
Node92	-10.7841	-0.0190	0.0007	0.0011	0.0000	-10.7830	56701.0355	0

Node94	33.6295	0.0653	0.0020	0.0016	0.0000	33.6311	51503.0030	4
Node99	-19.2522	-0.0071	0.0012	0.0000	0.0000	-19.2522	271146.8767	0
Node100	-0.4703	-0.0008	0.0000	0.0009	0.0000	-0.4694	56709.3352	0
Node101	77.0467	0.1361	0.0047	0.0012	0.0000	77.0479	56628.2868	0
Node103	-89.0013	-0.1572	0.0054	14.0053	0.0000	-74.9959	56618.6276	0
Node108	-139.6777	-0.1291	0.0085	200.5935	0.0000	60.9158	108079.1814	5
Node30.1	-240.5172	-0.2703	0.0147	405.9053	0.0000	165.3881	88770.9867	0
Node120	-58.6427	-0.0224	0.0036	1481.6038	0.0000	1422.9611	261324.8001	0
Node124	185.3671	0.2191	0.0113	1297.7760	0.0000	1483.1432	83969.1061	0
Node125	-92.7533	-0.0859	0.0056	207.2004	0.0000	114.4471	107876.2755	0
Node30.2	-10.6924	-0.0120	0.0007	25.9000	0.0000	15.2076	88855.6208	0

The total continuity error was 505.19 cubic feet
The remaining total volume was 31335. cubic feet
Your mean node continuity error was Excellent
Your worst node continuity error was Excellent

```
*=====================================================*
|  Table E19 - Junction Inflow & Outflow Listing     |
|              Units are either ft^3 or m^3          |
|              depending on the units in your model.|
*=====================================================*
```

Junction Name	Constant Inflow to Node	User Inflow to Node	Interface Inflow to Node	DWF Inlow to Node	Inflow through Outfall	RNF Layer Inflow to Node	Inflow from 2D Layer	Outflow from Node	Evaporation from Node	Basin Infil.
Node11	0.0000	0.0000	0.0000	0.0000	0.0000	516714.5125	0.0000	0.0000	0.0000	0.0000
Node24	0.0000	0.0000	0.0000	0.0000	0.0000	112572.7212	0.0000	0.0000	0.0000	0.0000
Node25	0.0000	0.0000	0.0000	0.0000	0.0000	18161.0247	0.0000	0.0000	0.0000	0.0000
Node30	0.0000	0.0000	0.0000	0.0000	0.0000	44319.1177	0.0000	0.0000	0.0000	0.0000
Node33	0.0000	0.0000	0.0000	0.0000	0.0000	173592.4273	0.0000	0.0000	0.0000	0.0000
Node46	0.0000	0.0000	0.0000	0.0000	0.0000	168866.2695	0.0000	0.0000	0.0000	0.0000
Node47	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.6071E+06	0.0000	0.0000
Node48	0.0000	0.0000	0.0000	0.0000	0.0000	82347.9721	0.0000	0.0000	0.0000	0.0000
Node63	0.0000	0.0000	0.0000	0.0000	0.0000	25434.1886	0.0000	0.0000	0.0000	0.0000
Node65	0.0000	0.0000	0.0000	0.0000	0.0000	83172.0842	0.0000	0.0000	0.0000	0.0000
Node66	0.0000	0.0000	0.0000	0.0000	0.0000	49466.2384	0.0000	0.0000	0.0000	0.0000
Node89	0.0000	0.0000	0.0000	0.0000	0.0000	30092.2887	0.0000	0.0000	0.0000	0.0000
Node92	0.0000	0.0000	0.0000	0.0000	0.0000	28202.3792	0.0000	0.0000	0.0000	0.0000
Node94	0.0000	0.0000	0.0000	0.0000	0.0000	25638.5266	0.0000	0.0000	0.0000	0.0000
Node99	0.0000	0.0000	0.0000	0.0000	0.0000	139930.6725	0.0000	0.0000	0.0000	8725.4084
Node120	0.0000	0.0000	0.0000	0.0000	0.0000	139263.0711	0.0000	0.0000	0.0000	15874.8805

```
*=====================================================*
| Table E20 - Junction Flooding and Volume Listing.   |
|             The maximum volume is the total volume  |
|             in the node including the volume in the |
|             flooded storage area. This is the max   |
|             volume at any time. The volume in the   |
|             flooded storage area is the total volume|
|             above the ground elevation, where the   |
|             flooded pond storage area starts.       |
| The fourth column is instantaneous, the fifth is the|
| sum of the flooded volume over the entire simulation|
| Units are either ft^3 or m^3 depending on the units.|
*=====================================================*
```

Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
Node11	0.0000	0.0000	0.0000	41.9095	0.0000
Node12	0.0000	0.0000	0.0000	23.5529	0.0000
Node20	46.1063	0.0000	0.0000	55.0058	0.0000
Node21	61.1481	0.0000	0.0000	58.6312	0.0000
Node22	0.0000	0.0000	0.0000	57.5763	0.0000
Node23	67.3700	0.0000	0.0000	61.1553	0.0000

Node24	72.4853	0.0000	0.0000	59.9359	0.0000
Node25	5.6959	0.0000	0.0000	38.8659	0.0000
Node26	0.0000	0.0000	0.0000	34.5747	0.0000
Node27	0.0000	0.0000	0.0000	19.6625	0.0000
Node29	0.0000	0.0000	0.0000	12.5811	0.0000
Node30	0.0000	0.0000	0.0000	13.5320	0.0000
Node31	2836.7054	0.0000	0.0000	74.6135	0.0000
Node33	0.0000	0.0000	0.0000	90.7047	0.0000
Node34	233.0635	0.0000	0.0000	94.1435	0.0000
Node35	231.0212	0.0000	0.0000	89.0430	0.0000
Node36	230.8336	0.0000	0.0000	79.0000	0.0000
Node37	229.1890	0.0000	0.0000	68.3544	0.0000
Node38	160.2123	0.0000	0.0000	43.6523	0.0000
Node39	0.0000	0.0000	0.0000	17.4186	0.0000
Node41	0.0000	0.0000	0.0000	6.0356	0.0000
Node43	0.0000	0.0000	0.0000	24.9947	0.0000
Node44	127.0059	0.0000	0.0000	28.0078	0.0000
Node45	0.0000	0.0000	0.0000	7.2375	0.0000
Node46	0.0000	0.0000	0.0000	13.0965	0.0000
Node47	0.0000	0.0000	0.0000	12.5886	0.0000
Node48	0.0000	0.0000	0.0000	7.3842	0.0000
Node63	0.0000	0.0000	0.0000	31.1778	0.0000
Node65	0.0000	0.0000	0.0000	53878.7577	0.0000
Node66	0.0000	0.0000	0.0000	9.6811	0.0000
Node69	0.0000	0.0000	0.0000	4.6789	0.0000
Node70	0.0000	0.0000	0.0000	6.4150	0.0000
Node71	0.0000	0.0000	0.0000	12.1241	0.0000
Node74	0.0000	0.0000	0.0000	19.6122	0.0000
Node75	0.0000	0.0000	0.0000	13.0042	0.0000
Node79	0.0000	0.0000	0.0000	27.0703	0.0000
Node80	0.0000	0.0000	0.0000	20.9936	0.0000
Node81	0.0000	0.0000	0.0000	14.6424	0.0000
Node82	0.0000	0.0000	0.0000	19.6831	0.0000
Node83	0.0000	0.0000	0.0000	3.4401	0.0000
Node84	70.6489	0.0000	0.0000	60.9798	0.0000
Node86	0.0000	0.0000	0.0000	27.5224	0.0000
Node87	0.0000	0.0000	0.0000	15.4943	0.0000
Node89	0.0000	0.0000	0.0000	16.9500	0.0000
Node92	0.0000	0.0000	0.0000	17.3512	0.0000
Node94	0.0000	0.0000	0.0000	13.1826	0.0000
Node99	2232.5926	0.0000	0.0000	8471.8990	0.0000
Node100	3.0884	0.0000	0.0000	21.6413	0.0000
Node101	6.6223	0.0000	0.0000	34.8344	0.0000
Node103	20.2632	0.0000	0.0000	44.0942	0.0000
Node108	9.7921	0.0000	0.0000	51.8401	0.0000
Node30.1	0.0000	0.0000	0.0000	35.3834	0.0000
Node120	2860.0000	0.0000	0.0000	18446.3086	0.0000
Node124	2842.2951	0.0000	0.0000	106.7699	0.0000
Node125	105.3472	0.0000	0.0000	62.8644	0.0000
Node30.2	0.0000	0.0000	0.0000	19.9048	0.0000

```
*==================================*
| Simulation Specific Information  |
*==================================*
Number of Input Conduits.........        50 Number of Simulated Conduits......        58
Number of Natural Channels........        12 Number of Junctions...............        56
```

```
Number of Storage Junctions.......         3 Number of Weirs..................         4
Number of Orifices................         3 Number of Pumps..................         0
Number of Free Outfalls...........         1 Number of Tide Gate Outfalls......         0


*=========================================================*
| Average % Change in Junction or Conduit is defined as:  |
| Conduit  % Change ==> 100.0 ( Q(n+1) - Q(n) ) / Qfull   |
| Junction % Change ==> 100.0 ( Y(n+1) - Y(n) ) / Yfull   |
*=========================================================*

The Conduit with the largest average change was..Link71     with     0.004 percent
The Junction with the largest average change was.Node43     with     0.087 percent
The Conduit with the largest sinuosity was.......Link24     with    10.761


*==================================================================*
| Table E21. Continuity balance at the end of the simulation       |
|          Junction Inflow, Outflow or Street Flooding             |
| Error = Inflow  + Initial Volume - Outflow - Final   Volume      |
*==================================================================*

       Inflow          Inflow       Average
       Junction   Volume,ft^3   Inflow, cfs
---------------  ------------  -------------
         Node11   517054.3010         2.9922

         Node24   112648.7428         0.6519

         Node25    18168.2226         0.1051

         Node30    44392.9913         0.2569

         Node33   173712.0565         1.0053

         Node46   169021.5286         0.9781

         Node48    82421.4549         0.4770

         Node63    25603.3682         0.1482

         Node65    83329.3662         0.4822

         Node66    51592.2049         0.2986

         Node89    30392.4874         0.1759

         Node92    28345.8661         0.1640

         Node94    25768.9692         0.1491

         Node99   139928.1993         0.8098

        Node120   139312.1998         0.8062

         Node47    -1.607E+06        -9.3001

       Outflow      Outflow          Average
       Junction  Volume,ft^3    Outflow, cfs
---------------  ------------   ------------
         Node47   1.60706E+06         9.3001


*====================================================*

| Initial system volume        =         0.0000 Cu Ft |

| Total system inflow volume   =   1.637773E+06 Cu Ft |

| Inflow + Initial volume      =   1.637773E+06 Cu Ft |

*====================================================*

| Total system outflow         =   1.607063E+06 Cu Ft |

| Volume left (Final volume)   =     31335.1806 Cu Ft |

| Evaporation                  =         0.0000 Cu Ft |

| Basin Infiltration           =     24600.2889 Cu Ft |

| Outflow + Final Volume       =   1.662998E+06 Cu Ft |

*====================================================*


*==============================================*
| Total Model Continuity Error                 |
| Error in Continuity, Percent =        -1.5402 |
| Error in Continuity, ft^3    =     -25224.490 |
| + Error means a continuity loss, - a gain    |
*==============================================*


####################################################
# Table E22. Numerical Model judgement section    #
####################################################

Overall error was (minimum of Table E18 & E21)              0.0308 percent


Worst nodal error was in node Node20           with         5.4146 percent
```

```
Of the total inflow this loss was                          0.7644 percent


Your overall continuity error was                  Excellent


                                                  Excellent Efficiency


Efficiency of the simulation                        2.47


Most Number of Non Convergences at one Node       10.


Total Number Non Convergences at all Nodes        30.


Total Number of Nodes with Non Convergences        5.



#########################################################
# Table E23. New Basin Design Information               #
#            Maximum Hydraulic Grade Line,              #
#            Out Conduit Sizes and Maximum Flow         #
#########################################################

A) Resize d/s Pipes based on given HGL
B) Resize Basin based on given HGL
C) Resize d/s Pipes and Basin based on HGL and max discharge
D) Resize d/s pipes based on given max discharge

   Basin Name    Type    Max.HGL   Conduit         Depth   Width   Barrels   Max.Flow
                           (ft)                     (ft)    (ft)             (ft^3/s)
--------------- ------  --------- --------------- ------- ------- --------- ---------

===> Hydraulic model simulation ended normally.
===> XP-SWMM Simulation ended normally.


===> Your input file was named  : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1A_10yr 2hr.DAT

===> Your output file was named : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1A_10yr 2hr.out


*============================================================*
|             SWMM Simulation Date and Time Summary          |
*============================================================*
| Starting Date... April       6, 2015  Time...   15: 6:30:36  |
|   Ending Date... April       6, 2015  Time...   15: 6:54: 2  |
|  Elapsed Time...    0.39433 minutes or     23.66000 seconds  |
*============================================================*
```

```
Current Directory:   N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Stud
Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


Input File : port\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1A_50yr 2hr.XP

          *==============================================*
          |                    xpswmm                    |
          |     Storm and Wastewater Management Model    |
          |         Developed by XP Solutions Inc.       |
          |==============================================|
          |                                              |
          | Last Update      : Jan., 2013                |
          | Interface Version: 2012                      |
          | Engine Version   : 12.0                      |
          | Data File Version: 12.6                      |
          |                                              |
          |                                              |
          *==============================================*

Engine Name: C:\PROGRA~2\XPSOLU~1\XPSWMM~1\SWMMEN~2.EXE


*====================================================*
|       Input and Output file names by Layer         |
*====================================================*

 Input File  to Layer #     1 JOT.US


 Output File to Layer #     1 JOT.US


 Input File  to Layer #     2 JOT.US


 Output File to Layer #     2 JOT.US


*==========================================================*
|   Special command line arguments in XP-SWMM2000. This    |
|   now includes program defaults. $Keywords are the program|
|   defaults.  Other Keywords are from the SWMMCOM.CFG file.|
|   or the command line or any cfg file on the command line.|
|   Examples include these in the file xpswm.bat under the  |
|   section :solve or in the windows version XPSWMM32 in the|
|   file solve.bat                                          |
|                                                           |
|   Note: the cfg file should be in the subdirectory swmxp  |
|         or defined by the set variable in the xpswm.bat   |
|         file.  Some examples of the command lines possible|
|         are shown below:                                  |
|                                                           |
|   swmmd swmmcom.cfg                                       |
|   swmmd my.cfg                                            |
|   swmmd nokeys nconv5 perv extranwq                       |
*==========================================================*

 $powerstation                        0.0000         1         2
 $perv                                0.0000         0         4
 $oldegg                              0.0000         0         7
 $as                                  0.0000         0        11
 $noflat                              0.0000         0        21
 $oldomega                            0.0000         0        24
 $oldvol                              0.0000         1        28
 $implicit                            0.0000         1        29
 $oldhot                              0.0000         1        31
 $oldscs                              0.0000         0        33
 $flood                               0.0000         1        40
 $nokeys                              0.0000         0        42
 $pzero                               0.0000         0        55
 $oldvol2                             0.0000         2        59
 $storage2                            0.0000         3        62
 $oldhot1                             0.0000         1        63
 $pumpwt                              0.0000         1        70
 $ecloss                              0.0000         1        77
 $exout                               0.0000         0        97
 $spatial = 0.90                      0.9000         5       124
 $djref = -1.0                       -0.1000         3       143
 $weirlen = 50                       50.0000         1       153
 $oldbnd                              0.0000         1       154
 $nogrelev                            0.0000         1       161
 $ncmid                               0.0000         0       164
 $new_nl_97                           0.0000         2       290
 SCSIADEPTH=ON                        0.0000         1       293
 $best97                              0.0000         1       294
 $newbound                            0.0000         1       295
 $q_tol = 0.01                        0.0001         1       316
 $new_storage                         0.0000         1       322
 $old_iteration                       0.0000         1       333
 MINLEN=5                             5.0000         1       346
 $review_elevation                    0.0000         1       383
 $use_half_volume                     0.0000         1       385
 VERT_WALLS=ON                        0.0000         1       389
 $min_ts = 1.0                        1.0000         1       407
 $design_restart = on                 0.0000         1       412
 $zero_value=1.e-05                   0.0000         1       415
 SUBCATCHMENT_RES=ON                  0.0000         1       419
 $relax_depth = on                    0.0000         1       427
 $saveallpts = on                     0.0000         1       434
 $channel_geometry=1                  0.0000         1       456

 *==========================================================*
```

```
| Parameter Values on the Tapes Common Block.These are the |
| values read from the data file and dynamically allocated |
| by the model for this simulation.                        |
*==========================================================*

 Number of Subcatchments in the Runoff Block (NW)....    15
 Number of Channel/Pipes in the Runoff Block (NG)....     0
 Runoff Water quality constituents (NRQ)............     0
 Runoff Land Uses per Subcatchment (NLU)............     0
 Number of Elements in the Transport Block (NET).....     0
 Number of Storage Junctions in Transport (NTSE).....     0
 Number of Input Hydrographs in Transport (NTH)......     0
 Number of Elements in the Extran Block (NEE)........    58
 Number of Groundwater Subcatchments in Runoff (NGW).     0
 Number of Interface locations for all Blocks (NIE)..    58
 Number of Pumps in Extran (NEP).....................     0
 Number of Orifices in Extran (NEO)..................     3
 Number of Tide Gates/Free Outfalls in Extran (NTG)..     1
 Number of Extran Weirs (NEW)........................     4
 Number of scs hydrograph points.....................  1513
 Number of Extran printout locations (NPO)...........     0
 Number of Tide elements in Extran (NTE)............     1
 Number of Natural channels (NNC)....................    12
 Number of Storage junctions in Extran (NVSE)........     3
 Number of Time history data points in Extran(NTVAL).     0
 Number of Variable storage elements in Extran (NVST)     4
 Number of Input Hydrographs in Extran (NEH).........     0
 Number of Particle sizes in Transport Block (NPS)...     0
 Number of User defined conduits (NHW)...............    15
 Number of Connecting conduits in Extran (NECC)......    20
 Number of Upstream elements in Transport (NTCC).....    10
 Number of Storage/treatment plants (NSTU)...........     1
 Number of Values for R1 lines in Transport (NR1)....     0
 Number of Nodes to be allowed for (NNOD)............    58
 Number of Plugs in a Storage Treatment Unit.........     1


#######################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
#    Last Updated Jan., 2013 by XP Solutions          #

*==========================================================*
|          RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*==========================================================*

                    A1

###########################################
#             RUNOFF JOB CONTROL          #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                     60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                    60.0
 Simulation length is......                               24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ........................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..         21
 KINC   - Rainfall values(pairs) per line..         10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
```

```
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval...........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    3.8200 inches

   ############################
   #        Data Group F1     #
   # Evaporation Rate (in/day) #
   ############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################
```

Number	Subcatchment Name	Channel or inlet	Width (ft)	Area (ac)	Per-cent Imperv	Slope ft/ft	"n" Imprv	"n" Perv	Deprs -sion Storge Imprv	Deprs -sion Strge Perv	Prcnt Zero Deten -tion
1	Node89#1	Node89	200.00	5.9000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
2	Node63#1	Node63	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
3	Node11#1	Node11	1000.0	107.90	0.00	0.020	0.020	0.020	0.000	0.000	0.00
4	Node33#1	Node33	400.00	37.800	0.00	0.010	0.020	0.020	0.000	0.000	0.00
5	Node30#1	Node30	450.00	9.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
6	Node46#1	Node46	600.00	30.100	0.00	0.015	0.020	0.020	0.000	0.000	0.00
7	Node65#1	Node65	450.00	16.100	0.00	0.023	0.020	0.020	0.000	0.000	0.00
8	Node120#1	Node120	700.00	32.000	0.00	0.020	0.020	0.020	0.000	0.000	0.00
9	Node99#1	Node99	700.00	32.100	0.00	0.020	0.020	0.020	0.000	0.000	0.00
10	Node66#1	Node66	150.00	10.000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
11	Node24#1	Node24	950.00	19.700	0.00	0.040	0.020	0.020	0.000	0.000	0.00
12	Node25#1	Node25	300.00	5.4000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
13	Node94#1	Node94	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
14	Node92#1	Node92	200.00	5.5000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
15	Node48#1	Node48	600.00	19.600	0.00	0.014	0.020	0.020	0.000	0.000	0.00

```
##########################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                 #
#                     Infiltration or Time of Concentration Data                         #
#                                                                                        #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)             Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                 N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                     N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant               N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                Exponent  #
# Rational Formula     -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)            #
#                     Rational Formula Tc Method: 1 = Constant                                       #
#                                                 2 = Friend's Equation                              #
#                                                 3 = Kinematic Wave                                 #
#                                                 4 = Alameda Method                                 #
#                                                 5 = Izzard's Formula                               #
#                                                 6 = Kerby's Equation                               #
#                                                 7 = Kirpich's Equation                             #
#                                                 8 = Bransby Williams Equation                      #
#                                                 9 = Federal Aviation Authority Equation            #
##########################################################################################
```

Number	Subcatchment Name	Infl # 1	Infl # 2	Infl # 3	Infl # 4	Infl # 5	Infl # 6	Infl # 7	Infl # 8
1	Node89#1	87.0000	0.3183	484.0000	0.2000				
2	Node63#1	87.0000	0.3617	484.0000	0.2000				
3	Node11#1	85.5000	0.6700	484.0000	0.2000				
4	Node33#1	84.7000	0.6350	484.0000	0.2000				
5	Node30#1	86.0000	0.5333	484.0000	0.2000				
6	Node46#1	88.5000	0.7083	484.0000	0.2000				
7	Node65#1	87.0000	0.5283	484.0000	0.2000				
8	Node120#1	83.7000	0.7500	484.0000	0.2000				
9	Node99#1	83.7000	1.5200	484.0000	0.2000				
10	Node66#1	87.0000	0.1450	484.0000	0.2000				
11	Node24#1	89.0000	0.7383	484.0000	0.2000				
12	Node25#1	79.0000	0.6200	484.0000	0.2000				
13	Node94#1	87.0000	0.4167	484.0000	0.2000				
14	Node92#1	87.0000	0.4167	484.0000	0.2000				
15	Node48#1	83.0000	0.5633	484.0000	0.2000				

```
##############################################################
#     Table R3.  SUBCATCHMENT  DATA                          #
#                Rainfall and Infiltration Database Names   #
##############################################################
```

Number	Subcatchment Name	Gage No	Infiltration Type	Routing Type
1	Node89#1	1	SCS Method	SCS curvilinear
2	Node63#1	1	SCS Method	SCS curvilinear

```
     3         Node11#1      1   SCS Method       SCS curvilinear
     4         Node33#1      1   SCS Method       SCS curvilinear
     5         Node30#1      1   SCS Method       SCS curvilinear
     6         Node46#1      1   SCS Method       SCS curvilinear
     7         Node65#1      1   SCS Method       SCS curvilinear
     8        Node120#1      1   SCS Method       SCS curvilinear
     9         Node99#1      1   SCS Method       SCS curvilinear
    10         Node66#1      1   SCS Method       SCS curvilinear
    11         Node24#1      1   SCS Method       SCS curvilinear
    12         Node25#1      1   SCS Method       SCS curvilinear
    13         Node94#1      1   SCS Method       SCS curvilinear
    14         Node92#1      1   SCS Method       SCS curvilinear
    15         Node48#1      1   SCS Method       SCS curvilinear

Total Number of Subcatchments...             15
Total Tributary Area (acres)....         341.10
Impervious Area (acres).........           0.00
Pervious Area (acres)...........         341.10
Total Width (feet)..............        7300.00
Impervious Area (%).............           0.00


 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil                11 - 3rd infil    #
 ##################################################

Column           1         2         3         4         5         6         7         8         9        10        11
Default     0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000
Ratio       1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000    1.0000

*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************


    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


*********************************************************
* Hydrographs will be stored for the following  15 INLETS *
*********************************************************
Node89    Node63    Node11    Node33    Node30    Node46
Node65    Node120   Node99    Node66    Node24    Node25
Node94    Node92    Node48


***********************************************
*  Quality Simulation not included in this run *
***********************************************



****************************************************
*  Precipitation Interface File Summary            *
*  Number of precipitation station....         1   *
****************************************************

Location Station Number
-------- --------------
       1.             1

XXX End of Header Section XXX

#########################################################
#    Entry made to the HYDRAULIC Layer of XP-SWMM     #
#    Last Updated in Jan., 2013 by XP Solutions       #

#########################################################
#    Entry made to the Runoff Layer(Block) of SWMM    #
```

```
#    Last Updated Jan., 2013 by XP Solutions          #

*=========================================================*
|         RUNOFF TABLES IN THE OUTPUT FILE.               |
|  These are the more important tables in the output file. |
|  You can use your editor to find the table numbers,      |
|  for example: search for Table R3 to check continuity.   |
|  This output file can be imported into a Word Processor  |
|  and printed on US letter or A4 paper using portrait     |
|  mode, courier font, a size of 8 pt. and margins of 0.75 |
|                                                          |
| Table R1  - Physical Hydrology Data                      |
| Table R2  - Infiltration data                            |
| Table R3  - Raingage and Infiltration Database Names     |
| Table R4  - Groundwater Data                             |
| Table R5  - Continuity Check for Surface Water           |
| Table R6  - Continuity Check for Channels/Pipes          |
| Table R7  - Continuity Check for Subsurface Water        |
| Table R8  - Infiltration/Inflow Continuity Check         |
| Table R9  - Summary Statistics for Subcatchments         |
| Table R10 - Sensitivity anlysis for Subcatchments        |
*=========================================================*

                    A1

###########################################
#          RUNOFF JOB CONTROL             #
###########################################

 Snowmelt parameter - ISNOW.......................            0
 Number of rain gages - NRGAG.....................            1
 Quality is not simulated - KWALTY................            0
 Default evaporation rate used - IVAP.............            0
 Hour of day at start of storm - NHR..............            0
 Minute of hour at start of storm - NMN...........            0
 Time TZERO at start of storm (hours).............        0.000
 Use U.S. Customary units for most I/O - METRIC...            0
 Runoff input print control...                                0
 Runoff graph plot control....                                0
 Runoff output print control..                                0
 Limit number of groundwater convergence messages to      10000

 Print headers every 50 lines - NOHEAD (0=yes, 1=no)          0

 Print land use load percentages -LANDUPR (0=no, 1=yes)       0
 Month, day, year of start of storm is:               1/ 1/2014
 Wet time step length (seconds)......                      60.0
 Dry time step length (seconds)......                  86400.0
 Wet/Dry time step length (seconds)...                     60.0
 Simulation length is......                                24.0 Hours

 If Horton infiltration model is being used
 A mixture of infiltration options may be used in
 XP-SWMM2000 as a watershed specific option.
 Rate for regeneration of infiltration = REGEN * DECAY
 Decay is read in for each subcatchment
 REGEN = ............................................  0.01000


 Raingage #...............................          1
 KTYPE  - Rainfall input type.............          0
 NHISTO - Total number of rainfall values..        21
 KINC   - Rainfall values(pairs) per line..        10
 KPRINT - Print rainfall(0-Yes,1-No).......          0
 KTIME  - Precipitation time units
 0 --> Minutes  1 --> Hours...............          1
 KPREP  - Precipitation unit type
 0 --> Intensity  1 --> Volume............          1
 KTHIS - Variable rainfall intervals
 0 --> No, > 1 --> Yes....................          0
 THISTO - Rainfall time interval..........       0.10
 TZRAIN - Starting time(KTIME units).......       0.00


#######################################
# Rainfall input summary from Runoff #
#######################################

 Total rainfall for gage #     1 is    3.8200 inches

   ##############################
   #        Data Group F1       #
   # Evaporation Rate (in/day) #
   ##############################

  JAN.  FEB.  MAR.  APR.  MAY   JUN.  JUL.  AUG.  SEP.  OCT.  NOV  DEC.
  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ---- ----
 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100


  ####################################################
  #  Table R1.  S U B C A T C H M E N T  D A T A    #
  #             Physical Hydrology Data              #
  ####################################################

                                                                                   Deprs Deprs Prcnt
                                                          Per-                     -sion -sion  Zero
      Subcatchment            Channel      Width    Area      cent  Slope  "n"   "n"  Storge Strge Deten
 Number          Name         or inlet      (ft)    (ac)     Imperv ft/ft Imprv  Perv Imprv  Perv -tion
 ====== =============== ================ ======== ========   ====== ===== ===== ===== ===== ===== =====
     1         Node89#1           Node89 200.00    5.9000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     2         Node63#1           Node63 300.00    5.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     3         Node11#1           Node11 1000.0    107.90      0.00 0.020 0.020 0.020 0.000 0.000  0.00
     4         Node33#1           Node33 400.00    37.800      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     5         Node30#1           Node30 450.00    9.0000      0.00 0.010 0.020 0.020 0.000 0.000  0.00
     6         Node46#1           Node46 600.00    30.100      0.00 0.015 0.020 0.020 0.000 0.000  0.00
```

7	Node65#1	Node65	450.00	16.100	0.00	0.023	0.020	0.020	0.000	0.000	0.00
8	Node120#1	Node120	700.00	32.000	0.00	0.020	0.020	0.020	0.000	0.000	0.00
9	Node99#1	Node99	700.00	32.100	0.00	0.020	0.020	0.020	0.000	0.000	0.00
10	Node66#1	Node66	150.00	10.000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
11	Node24#1	Node24	950.00	19.700	0.00	0.040	0.020	0.020	0.000	0.000	0.00
12	Node25#1	Node25	300.00	5.4000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
13	Node94#1	Node94	300.00	5.0000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
14	Node92#1	Node92	200.00	5.5000	0.00	0.010	0.020	0.020	0.000	0.000	0.00
15	Node48#1	Node48	600.00	19.600	0.00	0.014	0.020	0.020	0.000	0.000	0.00

```
##########################################################################################################
#          Table R2.  SUBCATCHMENT  DATA                                                                  #
#                     Infiltration or Time of Concentration Data                                         #
#                                                                                                        #
# Infiltration Type      Infl #1(#5)       Infl #2(#6)          Infl #3(#7)              Infl #4(#8)  #
# SCS                 ->   Comp CN          Time Conc         Shape Factor        Depth or Fraction  #
# SBUH                ->   Comp CN          Time Conc                N/A                      N/A  #
# Green Ampt          ->   Suction          Hydr Cond           Initial MD                    N/A  #
# Horton              ->  Max Rate           Min Rate   Decay Rate (1/sec)      Max. Infilt. Volume  #
# Proportional        ->  Constant                N/A                 N/A                      N/A  #
# Initial/Cont Loss   ->   Initial         Continuing                 N/A                      N/A  #
# Initial/Proportional ->  Initial           Constant                 N/A                      N/A  #
# Laurenson Parameters ->  B Value       Pervious "n"      Impervious Cont                 Exponent  #
# Rational Formula    -> Tc Method   Flow Path Length      Flow Path Slope  Roughness or Retardance  #
#                                 (#1 - #4 is Impervious Data / #5 - #8 is Pervious Data)              #
#                     Rational Formula Tc Method: 1 = Constant                                         #
#                                                 2 = Friend's Equation                                #
#                                                 3 = Kinematic Wave                                   #
#                                                 4 = Alameda Method                                   #
#                                                 5 = Izzard's Formula                                 #
#                                                 6 = Kerby's Equation                                 #
#                                                 7 = Kirpich's Equation                               #
#                                                 8 = Bransby Williams Equation                        #
#                                                 9 = Federal Aviation Authority Equation              #
##########################################################################################################
```

Subcatchment Number	Name	Infl # 1	Infl # 2	Infl # 3	Infl # 4	Infl # 5	Infl # 6	Infl # 7	Infl # 8
1	Node89#1	87.0000	0.3183	484.0000	0.2000				
2	Node63#1	87.0000	0.3617	484.0000	0.2000				
3	Node11#1	85.5000	0.6700	484.0000	0.2000				
4	Node33#1	84.7000	0.6350	484.0000	0.2000				
5	Node30#1	86.0000	0.5333	484.0000	0.2000				
6	Node46#1	88.5000	0.7083	484.0000	0.2000				
7	Node65#1	87.0000	0.5283	484.0000	0.2000				
8	Node120#1	83.7000	0.7500	484.0000	0.2000				
9	Node99#1	83.7000	1.5200	484.0000	0.2000				
10	Node66#1	87.0000	0.1450	484.0000	0.2000				
11	Node24#1	89.0000	0.7383	484.0000	0.2000				
12	Node25#1	79.0000	0.6200	484.0000	0.2000				
13	Node94#1	87.0000	0.4167	484.0000	0.2000				
14	Node92#1	87.0000	0.4167	484.0000	0.2000				
15	Node48#1	83.0000	0.5633	484.0000	0.2000				

```
#############################################################
#     Table R3.  SUBCATCHMENT  DATA                         #
#                Rainfall and Infiltration Database Names  #
#############################################################
```

Subcatchment Number	Name	Gage No	Infiltration Type	Routing Type
1	Node89#1	1	SCS Method	SCS curvilinear
2	Node63#1	1	SCS Method	SCS curvilinear
3	Node11#1	1	SCS Method	SCS curvilinear
4	Node33#1	1	SCS Method	SCS curvilinear
5	Node30#1	1	SCS Method	SCS curvilinear
6	Node46#1	1	SCS Method	SCS curvilinear
7	Node65#1	1	SCS Method	SCS curvilinear
8	Node120#1	1	SCS Method	SCS curvilinear
9	Node99#1	1	SCS Method	SCS curvilinear
10	Node66#1	1	SCS Method	SCS curvilinear
11	Node24#1	1	SCS Method	SCS curvilinear
12	Node25#1	1	SCS Method	SCS curvilinear
13	Node94#1	1	SCS Method	SCS curvilinear
14	Node92#1	1	SCS Method	SCS curvilinear
15	Node48#1	1	SCS Method	SCS curvilinear

```
Total Number of Subcatchments...              15
Total Tributary Area (acres)....          341.10
Impervious Area (acres).........            0.00
Pervious Area (acres)...........          341.10
Total Width (feet)..............         7300.00
Impervious Area (%).............            0.00
```

```
 ##################################################
 #          S U B C A T C H M E N T  D A T A      #
 #   Default, Ratio values for subcatchment data  #
 #   Used with the calibrate node in the runoff.  #
 # 1 - width     2 - area       3 - impervious %  #
 # 4 - slope     5 - imp "n"    6 - perv "n"      #
 # 7 - imp ds    8 - perv ds    9 - 1st infil     #
 #10 - 2nd infil               11 - 3rd infil     #
 ##################################################
```

Column	1	2	3	4	5	6	7	8	9	10	11
Default	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ratio	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

```
*******************************************************
*     Arrangement of Subcatchments and Channel/Pipes    *
*******************************************************
```

```
    Inlet
Node89          No Tributary Channel/Pipes
                Tributary Subareas........ Node89#1
Node63          No Tributary Channel/Pipes
                Tributary Subareas........ Node63#1
Node11          No Tributary Channel/Pipes
                Tributary Subareas........ Node11#1
Node33          No Tributary Channel/Pipes
                Tributary Subareas........ Node33#1
Node30          No Tributary Channel/Pipes
                Tributary Subareas........ Node30#1
Node46          No Tributary Channel/Pipes
                Tributary Subareas........ Node46#1
Node65          No Tributary Channel/Pipes
                Tributary Subareas........ Node65#1
Node120         No Tributary Channel/Pipes
                Tributary Subareas........ Node120#1
Node99          No Tributary Channel/Pipes
                Tributary Subareas........ Node99#1
Node66          No Tributary Channel/Pipes
                Tributary Subareas........ Node66#1
Node24          No Tributary Channel/Pipes
                Tributary Subareas........ Node24#1
Node25          No Tributary Channel/Pipes
                Tributary Subareas........ Node25#1
Node94          No Tributary Channel/Pipes
                Tributary Subareas........ Node94#1
Node92          No Tributary Channel/Pipes
                Tributary Subareas........ Node92#1
Node48          No Tributary Channel/Pipes
                Tributary Subareas........ Node48#1


************************************************************
* Hydrographs will be stored for the following  15 INLETS *
************************************************************
Node89    Node63    Node11    Node33    Node30    Node46
Node65    Node120   Node99    Node66    Node24    Node25
Node94    Node92    Node48


************************************************
*  Quality Simulation not included in this run *
************************************************



**************************************************
*  Precipitation Interface File Summary          *
*  Number of precipitation station....        1   *
**************************************************

Location Station Number
-------- --------------
       1.             1


    A1


*==========================================================*
|        HYDRAULICS TABLES IN THE OUTPUT FILE               |
|  These are the more important tables in the output file.  |
|  You can use your editor to find the table numbers,       |
|  for example: search for Table E20 to check continuity.   |
|  This output file can be imported into a Word Processor   |
|  and printed on US letter or A4 paper using portrait      |
|  mode, courier font, a size of 8 pt. and margins of 0.75  |
|                                                           |
| Table E1   - Basic Conduit Data                           |
| Table E2   - Conduit Factor Data                          |
| Table E3a  - Junction Data                                |
| Table E3b  - Junction Data                                |
| Table E4   - Conduit Connectivity Data                    |
| Table E4a  - Dry Weather Flow Data                        |
| Table E4b  - Real Time Control Data                       |
| Table E5   - Junction Time Step Limitation Summary        |
| Table E5a  - Conduit Explicit Condition Summary           |
| Table E6   - Final Model Condition                        |
| Table E7   - Iteration Summary                            |
| Table E8   - Junction Time Step Limitation Summary        |
| Table E9   - Junction  Summary  Statistics                |
| Table E10  - Conduit   Summary  Statistics                |
| Table E11  - Area assumptions used in the analysis        |
| Table E12  - Mean conduit information                     |
| Table E13  - Channel losses(H) and culvert info           |
| Table E13a - Culvert Analysis Classification              |
| Table E14  - Natural Channel Overbank Flow Information    |
| Table E14a - Natural Channel Encroachment Information     |
| Table E14b - Floodplain Mapping                           |
| Table E15  - Spreadsheet Info List                        |
| Table E15a - Spreadsheet Reach List                       |
| Table E16  - New Conduit Output Section                   |
| Table E17  - Pump Operation                               |
| Table E18  - Junction Continuity Error                    |
| Table E19  - Junction Inflow & Outflow Listing            |
| Table E20  - Junction Flooding and Volume List            |
| Table E21  - Continuity balance at simulation end         |
| Table E22  - Model Judgement Section                      |
*==========================================================*

Time Control from Hydraulics Job Control
```

```
Year.........    2014 Month.......       1
Day..........       1 Hour........       0
Minute.......       0 Second......       0


Control information for simulation
----------------------------------

Integration cycles................       576
Length of integration step is......    300.00 seconds
Simulation length..................     48.00 hours
Do not create equiv. pipes(NEQUAL).         0
Use U.S. customary units for I/O...         0
Printing starts in cycle...........         1
Intermediate printout intervals of.       500 cycles
Intermediate printout intervals of.   2500.00 minutes
Summary printout intervals of......       500 cycles
Summary printout time interval of..   2500.00 minutes
Hot start file parameter (REDO)....         0
Initial time.......................      0.00 hours

Iteration variables: Flow Tolerance.   0.00010
                     Head Tolerance.   0.00050
    Minimum depth (m or ft).........   0.00001
    Underrelaxation parameter........  0.85000
    Time weighting parameter........   0.85000
    Conduit roughness factor........   1.00000
    Flow adjustment factor..........   1.00000
    Initial Condition Smoothing.....         0
    Courant Time Step Factor........   1.00000
    Default Expansion/Contraction K.   0.00000
    Default Entrance/Exit K.........   0.00000
    Routing Method..................   Dynamic Wave
Default surface area of junctions...     12.57 square feet.
Minimum Junction/Conduit Depth......   0.00001 feet.
Ponding Area Coefficient............   5000.00
Ponding Area Exponent...............    1.0000
Minimum Orifice Length..............   1000.00 feet.
NJSW input hydrograph junctions.....     0
     or user defined hydrographs....

*==========================================================*
|               Flap Gate Conduit Information              |
|               ----------------------------               |
| Positive Flap Gate - Flow only allowed from the upstream |
|                      to the downstream junction          |
| Negative Flap Gate - Flow only allowed from the          |
|                      downstream to the upstream junction |
*==========================================================*

   Conduit   Type of Flap Gate
   -------   -----------------
Link12      Positive Flap Gate

        Natural Cross-Section information for Channel Link53
        ====================================================
         Cross-Section ID (from X1 card) :     1.0 Channel sequence number :     1

  Left Overbank Length   :     33.0 ft                Maximum Elevation        :   636.86 ft.
  Main Channel Length    :     33.0 ft                Maximum Depth            :     0.50 ft.
  Right Overbank Length  :     33.0 ft                Maximum Section Area     :   1.8534 ft^2
                                                      Maximum hydraulic radius :     0.30 ft.
  Manning N :      0.025  to Station         -21.2    Max topwidth             :     6.04 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.17E+00 ft
    "    "  :      0.025  Beyond station      17.8    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :   1.8534 ft^2

        Natural Cross-Section information for Channel Link55
        ====================================================
         Cross-Section ID (from X1 card) :     2.0 Channel sequence number :     2

  Left Overbank Length   :    138.0 ft                Maximum Elevation        :   633.71 ft.
  Main Channel Length    :    138.0 ft                Maximum Depth            :     2.63 ft.
  Right Overbank Length  :    138.0 ft                Maximum Section Area     :  38.1355 ft^2
                                                      Maximum hydraulic radius :     1.14 ft.
  Manning N :      0.025  to Station         -23.6    Max topwidth             :    33.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.34E+01 ft
    "    "  :      0.025  Beyond station       9.4    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  38.1355 ft^2

        Natural Cross-Section information for Channel Link68
        ====================================================
         Cross-Section ID (from X1 card) :     3.0 Channel sequence number :     3

  Left Overbank Length   :    400.0 ft                Maximum Elevation        :   622.00 ft.
  Main Channel Length    :    400.0 ft                Maximum Depth            :     2.70 ft.
  Right Overbank Length  :    400.0 ft                Maximum Section Area     :  45.1725 ft^2
                                                      Maximum hydraulic radius :     0.46 ft.
  Manning N :      0.025  to Station         -67.2    Max topwidth             :    97.80 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 9.85E+01 ft
    "    "  :      0.025  Beyond station      30.6    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  :  45.1725 ft^2

        Natural Cross-Section information for Channel Link69
        ====================================================
         Cross-Section ID (from X1 card) :     4.0 Channel sequence number :     4

  Left Overbank Length   :    258.0 ft                Maximum Elevation        :   624.37 ft.
  Main Channel Length    :    260.0 ft                Maximum Depth            :     6.05 ft.
  Right Overbank Length  :    262.0 ft                Maximum Section Area     : 1075.528 ft^2
                                                      Maximum hydraulic radius :     3.57 ft.
  Manning N :      0.025  to Station        -126.4    Max topwidth             :   301.00 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.01E+02 ft
```

```
  "    "  :      0.025  Beyond station     174.6    Max left bank area       :     0.00 ft^2
                                                   Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1075.528 ft^2

      Natural Cross-Section information for Channel Link70
      ====================================================
       Cross-Section ID (from X1 card) :     5.0 Channel sequence number :     5

Left Overbank Length   :    450.0 ft                Maximum Elevation        :   624.09 ft.
Main Channel Length    :    450.0 ft                Maximum Depth            :     7.76 ft.
Right Overbank Length  :    450.0 ft                Maximum Section Area     : 955.4430 ft^2
                                                    Maximum hydraulic radius :     5.13 ft.
Manning N :      0.025  to Station         -64.2    Max topwidth             :   185.50 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.86E+02 ft
  "    "  :      0.025  Beyond station     121.3    Max left bank area       :     0.00 ft^2
                                                   Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 955.4430 ft^2

      Natural Cross-Section information for Channel Link71
      ====================================================
       Cross-Section ID (from X1 card) :     6.0 Channel sequence number :     6

Left Overbank Length   :    383.0 ft                Maximum Elevation        :   624.37 ft.
Main Channel Length    :    383.0 ft                Maximum Depth            :     8.76 ft.
Right Overbank Length  :    383.0 ft                Maximum Section Area     : 2270.844 ft^2
                                                    Maximum hydraulic radius :     7.27 ft.
Manning N :      0.025  to Station        -245.8    Max topwidth             :   311.30 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 3.12E+02 ft
  "    "  :      0.025  Beyond station      65.5    Max left bank area       :     0.00 ft^2
                                                   Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 2270.844 ft^2

      Natural Cross-Section information for Channel Link73
      ====================================================
       Cross-Section ID (from X1 card) :     7.0 Channel sequence number :     7

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   613.47 ft.
Main Channel Length    :     73.0 ft                Maximum Depth            :    11.92 ft.
Right Overbank Length  :    100.0 ft                Maximum Section Area     : 1101.166 ft^2
                                                    Maximum hydraulic radius :     6.02 ft.
Manning N :      0.025  to Station         -92.8    Max topwidth             :   181.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
  "    "  :      0.025  Beyond station      88.6    Max left bank area       :     0.00 ft^2
                                                   Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1101.166 ft^2

      Natural Cross-Section information for Channel Link74
      ====================================================
       Cross-Section ID (from X1 card) :     8.0 Channel sequence number :     8

Left Overbank Length   :    102.0 ft                Maximum Elevation        :   613.84 ft.
Main Channel Length    :    102.0 ft                Maximum Depth            :    15.95 ft.
Right Overbank Length  :    102.0 ft                Maximum Section Area     : 1003.556 ft^2
                                                    Maximum hydraulic radius :     7.52 ft.
Manning N :      0.025  to Station         -93.3    Max topwidth             :   126.70 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.33E+02 ft
  "    "  :      0.025  Beyond station      33.4    Max left bank area       :     0.00 ft^2
                                                   Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1003.556 ft^2

      Natural Cross-Section information for Channel Link75
      ====================================================
       Cross-Section ID (from X1 card) :     9.0 Channel sequence number :     9

Left Overbank Length   :     52.0 ft                Maximum Elevation        :   612.13 ft.
Main Channel Length    :     52.0 ft                Maximum Depth            :    17.46 ft.
Right Overbank Length  :     52.0 ft                Maximum Section Area     : 1220.157 ft^2
                                                    Maximum hydraulic radius :     8.32 ft.
Manning N :      0.025  to Station         -92.5    Max topwidth             :   141.30 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.47E+02 ft
  "    "  :      0.025  Beyond station      48.8    Max left bank area       :     0.00 ft^2
                                                   Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1220.157 ft^2

      Natural Cross-Section information for Channel Link76
      ====================================================
       Cross-Section ID (from X1 card) :    10.0 Channel sequence number :    10

Left Overbank Length   :     40.0 ft                Maximum Elevation        :   609.77 ft.
Main Channel Length    :     40.0 ft                Maximum Depth            :    17.61 ft.
Right Overbank Length  :     40.0 ft                Maximum Section Area     : 829.0790 ft^2
                                                    Maximum hydraulic radius :     7.27 ft.
Manning N :      0.025  to Station         -46.5    Max topwidth             :   106.90 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.14E+02 ft
  "    "  :      0.025  Beyond station      60.4    Max left bank area       :     0.00 ft^2
                                                   Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 829.0790 ft^2

      Natural Cross-Section information for Channel Link84
      ====================================================
       Cross-Section ID (from X1 card) :    11.0 Channel sequence number :    11

Left Overbank Length   :    270.0 ft                Maximum Elevation        :   618.53 ft.
Main Channel Length    :    280.0 ft                Maximum Depth            :     7.43 ft.
Right Overbank Length  :    290.0 ft                Maximum Section Area     : 222.9791 ft^2
                                                    Maximum hydraulic radius :     3.66 ft.
Manning N :      0.025  to Station         -30.6    Max topwidth             :    57.40 ft.
  "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 6.09E+01 ft
  "    "  :      0.025  Beyond station      26.8    Max left bank area       :     0.00 ft^2
                                                   Max right bank area      :     0.00 ft^2
Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 222.9791 ft^2

      Natural Cross-Section information for Channel Link85
      ====================================================
       Cross-Section ID (from X1 card) :    12.0 Channel sequence number :    12
```

```
  Left Overbank Length   :    450.0 ft                Maximum Elevation        :   616.00 ft.
  Main Channel Length    :    470.0 ft                Maximum Depth            :    16.50 ft.
  Right Overbank Length  :    490.0 ft                Maximum Section Area     : 1074.025 ft^2
                                                      Maximum hydraulic radius :     5.87 ft.
  Manning N :      0.025  to Station         -68.1    Max topwidth             :   177.10 ft.
    "    "  :      0.025  in main Channel             Maximum Wetted Perimeter : 1.83E+02 ft
    "    "  :      0.025  Beyond station     109.0    Max left bank area       :     0.00 ft^2
                                                      Max right bank area      :     0.00 ft^2
  Allowable Encroachment Depth :    0.00 ft           Max center channel area  : 1074.025 ft^2
```

==========
|Table E1 - Conduit Data|
==========

Inp Num	Conduit Name	Length (ft)	Conduit Class	Area (ft^2)	Manning Coef.	Max Width (ft)	Depth (ft)	Trapezoid Side Slopes	Hazen Williams c-factor
1	Link12	312.0000	Circular	12.5664	0.0120	4.0000	4.0000		
2	Link13	311.0000	Circular	12.5664	0.0120	4.0000	4.0000		
3	Link14	341.0000	Circular	7.0686	0.0120	3.0000	3.0000		
4	Link15	322.0000	Circular	7.0686	0.0120	3.0000	3.0000		
5	Link16	631.0000	Circular	7.0686	0.0120	3.0000	3.0000		
6	Link17	51.0000	Circular	7.0686	0.0120	3.0000	3.0000		
7	Link18	462.0000	Circular	7.0686	0.0120	3.0000	3.0000		
8	Link22	340.0000	Circular	7.0686	0.0120	3.0000	3.0000		
9	Link23	312.0000	Circular	7.0686	0.0120	3.0000	3.0000		
10	Link24	74.0000	Circular	7.0686	0.0120	3.0000	3.0000		
11	Link25	305.0000	Circular	7.0686	0.0120	3.0000	3.0000		
12	Link26	308.0000	Circular	7.0686	0.0120	3.0000	3.0000		
13	Link27	324.0000	Circular	7.0686	0.0140	3.0000	3.0000		
14	Link28	327.0000	Circular	7.0686	0.0120	3.0000	3.0000		
15	Link30	32.0000	Circular	1.2272	0.0240	1.2500	1.2500		
16	Link31	60.4000	Circular	1.2272	0.0240	1.2500	1.2500		
17	Link32	400.0000	Rectangle	16.0000	0.0120	4.0000	4.0000		
18	Link33	260.0000	Rectangle	24.0000	0.0140	6.0000	4.0000		
19	Link47	54.0000	Circular	1.7671	0.0120	1.5000	1.5000		
20	Link53	33.0000	Natural	1.8534	0.0250	6.0429	0.5000		
21	Link54	250.0000	Trapezoid	1.6250	0.0400	4.0000	0.2500	10.0000	10.0000
22	Link55	138.0000	Natural	38.1355	0.0250	33.0000	2.6300		
23	Link56	610.0000	Trapezoid	19.0000	0.0400	4.0000	1.0000	15.0000	15.0000
24	Link68	400.0000	Natural	45.1725	0.0250	97.8000	2.7000		
25	Link69	260.0000	Natural	1075.5285	0.0250	301.0000	6.0500		
26	Link70	450.0000	Natural	955.4430	0.0250	185.5000	7.7600		
27	Link71	383.0000	Natural	2270.8440	0.0250	311.3000	8.7600		
28	Link72	42.0000	Circular	7.0686	0.0120	3.0000	3.0000		
29	Link73	73.0000	Natural	1101.1655	0.0250	181.4000	11.9200		
30	Link74	102.0000	Natural	1003.5558	0.0250	126.7000	15.9500		
31	Link75	52.0000	Natural	1220.1569	0.0250	141.3000	17.4600		
32	Link76	40.0000	Natural	829.0790	0.0250	106.9000	17.6100		
33	Link77	60.0000	Circular	3.1416	0.0120	2.0000	2.0000		
34	Link78	325.0000	Trapezoid	195.0000	0.0400	20.0000	3.0000	15.0000	15.0000
35	Link82	436.0000	Circular	7.0686	0.0120	3.0000	3.0000		
36	Link83	123.0000	Circular	7.0686	0.0120	3.0000	3.0000		
37	Link84	280.0000	Natural	222.9791	0.0250	57.4000	7.4310		
38	Link85	470.0000	Natural	1074.0250	0.0250	177.1000	16.5000		
39	Link90	250.0000	Circular	1.7671	0.0120	1.5000	1.5000		
40	Link93	150.0000	Circular	1.7671	0.0120	1.5000	1.5000		
41	Link98	31.0000	Circular	1.7671	0.0140	1.5000	1.5000		
42	Link104	162.0000	Circular	3.1416	0.0120	2.0000	2.0000		
43	Link105	145.0000	Circular	3.1416	0.0120	2.0000	2.0000		
44	Link106	208.0000	Circular	4.9087	0.0120	2.5000	2.5000		
45	Link21.1	180.0000	Circular	7.0686	0.0120	3.0000	3.0000		
46	Link118	150.0000	Trapezoid	84.0000	0.0120	30.0000	2.0000	6.0000	6.0000
47	Link124	90.0000	Circular	1.7671	0.0120	1.5000	1.5000		
48	Link124.1	90.0000	Circular	7.0686	0.0120	3.0000	3.0000		
49	214.1	29.0000	Circular	3.1416	0.0240	2.0000	2.0000		
50	283.1	40.0000	Circular	0.7854	0.0240	1.0000	1.0000		

Total length of all conduits .... 11278.4000 feet

==========
|Table E2 - Conduit Factor Data|
==========

Conduit Name	Number of Barrels	Entrance Loss Coef	Exit Loss Coef	Exp/Contc Coefficnt	Time Weighting Parameter	Low Flow Roughness Factor	Depth at Which n Changes	Sediment Depth	Flow Routing
Link31	1.0000	0.0000	0.0000	0.0000	0.6500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
Link56	1.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
Link124.1	1.0000	0.0000	0.0000	0.0000	0.6500	1.0000	0.0000	0.0000	Standard - Dynamic Wave
214.1	2.0000	0.0000	0.0000	0.0000	0.8500	1.0000	0.0000	0.0000	Standard - Dynamic Wave

```
*==================================================*
| If there are messages about (sqrt(g*d)*dt/dx), or |
| the sqrt(wave celerity)*time step/conduit length  |
| in the output file all it means is that the       |
| program will lower the internal time step to      |
| satisfy this condition (explicit condition).      |
| You control the actual internal time step by      |
| using the minimum courant time step factor in the |
| HYDRAULICS job control.  The message put in words |
| states that the smallest conduit with the fastest |
| velocity will control the time step selection.    |
| You have further control by using the modify      |
| conduit option in the HYDRAULICS Job Control.     |
*==================================================*
```

Conduit Name	Courant Ratio	
Link12	10.91	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link13	10.95	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link14	8.65	===> Warning ! (sqrt(wave celerity)*time step/conduit length)
Link15	9.16	===> Warning ! (sqrt(wave celerity)*time step/conduit length)

```
          Link16        4.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link17       57.81  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link18        6.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link22        8.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link23        9.45  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link24       39.85  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link25        9.67  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link26        9.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link27        9.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link28        9.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link30       59.48  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link31       31.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link32        8.51  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link33       13.10  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link47       38.61  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link53       28.57  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link54        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link55       13.26  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link56        2.09  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link68        2.89  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link69       12.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link70        8.59  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link71       12.00  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link72       70.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link73       57.46  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link74       46.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link75       96.20  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link76      119.30  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link77       40.12  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link78        6.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link82        6.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link83       23.97  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link84       11.98  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link85        8.92  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link90        8.34  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link93       13.90  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
          Link98       67.26  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link104       14.86  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link105       16.60  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link106       12.94  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
        Link21.1       16.38  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link118       14.15  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
         Link124       23.17  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
       Link124.1       32.76  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           214.1       83.02  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)
           283.1       42.56  ===> Warning ! (sqrt(wave celerity)*time step/conduit length)

 *==================*
 |  Conduit Volume  |
 *==================*

 Full pipe or full open conduit volume
 Input full depth volume............    2.5942E+06 cubic feet

 ===> Warning !! The upstream and downstream junctions for the following conduits
                 have been reversed to correspond to the positive flow and decreasing
                 slope convention.  A negative flow in the output thus means
                 the flow was from your original upstream junction to your original
                 downstream junction.  Any initial flow has been multiplied by -1.

                 1.  Conduit #...Link17      has been changed.
                 2.  Conduit #...Link31      has been changed.

 ===> ERROR !!!  Conduit Link73           has caused ZCROWN  of Junction Node75     to lie above the specified ground elev of     614.84
611.73

 ===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node81     to lie above the specified ground elev of     612.64
611.30

 ===> ERROR !!!  Conduit Link75           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.13
611.67

 ===> ERROR !!!  Conduit Link76           has caused ZCROWN  of Junction Node82     to lie above the specified ground elev of     612.28
611.67


 *==================================================*
 |            Table E3a - Junction Data             |
 *==================================================*

 Inp         Junction     Ground     Crown    Invert     Qinst  Initial  Interface
 Num             Name  Elevation Elevation Elevation       cfs Depth-ft   Flow (%)
 ---  ---------------  --------- --------- --------- -------- --------  ---------
   1           Node11   623.2500  623.2500  617.2000   0.0000   0.0000   100.0000
   2           Node12   624.9700  624.9700  617.2100   0.0000   0.0000   100.0000
   3           Node20   637.3000  635.3900  631.3900   0.0000   0.0000   100.0000
   4           Node21   638.2600  635.0800  631.0800   0.0000   0.0000   100.0000
   5           Node22   639.3500  639.3500  630.1100   0.0000   0.0000   100.0000
   6           Node23   635.9100  631.8600  628.8600   0.0000   0.0000   100.0000
   7           Node24   635.3400  631.0300  628.0300   0.0000   0.0000   100.0000
   8           Node25   634.1030  629.3500  626.3500   0.0000   0.0000   100.0000
   9           Node26   634.3200  629.4200  626.4200   0.0000   0.0000   100.0000
  10           Node27   635.4400  626.6900  623.6900   0.0000   0.0000   100.0000
  11           Node29   620.2110  620.2110  612.7800   0.0000   0.0000   100.0000
  12           Node30   631.4300  622.9800  621.4800   0.0000   0.0000   100.0000
  13           Node31   627.0900  619.0000  616.0000   0.0000   0.0000   100.0000
  14           Node33   619.3200  619.3200  610.5600   0.0000   0.0000   100.0000
  15           Node34   618.6800  611.4300  608.4300   0.0000   0.0000   100.0000
  16           Node35   621.6500  611.4000  608.4000   0.0000   0.0000   100.0000
  17           Node36   633.6100  610.4000  607.4000   0.0000   0.0000   100.0000
  18           Node37   632.4600  609.4600  606.4600   0.0000   0.0000   100.0000
  19           Node38   626.7800  608.4500  605.4500   0.0000   0.0000   100.0000
  20           Node39   611.6440  607.4400  604.4400   0.0000   0.0000   100.0000
  21           Node41   633.3700  631.2200  630.2000   0.0000   0.0000   100.0000
  22           Node43   638.5000  638.4600  636.4600   0.0000   0.0000   100.0000
  23           Node44   637.9900  636.9900  635.7400   0.0000   0.0000   100.0000
```

24	Node45	637.2900	637.2900	636.0400	0.0000	0.0000	100.0000
25	Node46	608.0000	610.3500	592.7400	0.0000	0.0000	100.0000
26	Node47	610.0000	576.0000	572.0000	0.0000	0.0000	100.0000
27	Node48	618.0000	609.8000	593.3000	0.0000	0.0000	100.0000
28	Node63	633.6300	633.6300	631.0000	0.0000	0.0000	100.0000
29	Node65	642.0000	642.0000	638.0000	0.0000	0.0000	100.0000
30	Node66	634.7700	633.4700	631.9700	0.0000	0.0000	100.0000
31	Node69	638.1000	636.5000	636.0000	0.0000	0.0000	100.0000
32	Node70	636.1000	636.0600	633.4300	0.0000	0.0000	100.0000
33	Node71	624.7000	624.7000	622.0000	0.0000	0.0000	100.0000
34	Node74	625.0300	625.0300	618.9800	0.0000	0.0000	100.0000
35	Node75	611.7300	611.7200	602.9200	0.0000	0.0000	100.0000
36	Node79	624.3700	624.3700	615.6100	0.0000	0.0000	100.0000
37	Node80	613.8400	613.8400	597.8900	0.0000	0.0000	100.0000
38	Node81	611.3000	611.2900	595.1800	0.0000	0.0000	100.0000
39	Node82	611.6700	611.6600	594.6700	0.0000	0.0000	100.0000
40	Node83	642.6000	642.6000	639.6000	0.0000	0.0000	100.0000
41	Node84	639.7400	634.7700	630.7700	0.0000	0.0000	100.0000
42	Node86	621.1000	616.4900	613.4900	0.0000	0.0000	100.0000
43	Node87	622.5000	622.5000	606.0000	0.0000	0.0000	100.0000
44	Node89	639.1000	639.1000	637.1000	0.0000	0.0000	100.0000
45	Node92	636.3000	634.5800	633.0800	0.0000	0.0000	100.0000
46	Node94	635.3000	634.8000	633.3000	0.0000	0.0000	100.0000
47	Node99	639.7000	637.7000	637.7000	0.0000	0.0000	100.0000
48	Node100	634.1900	633.8300	632.3300	0.0000	0.0000	100.0000
49	Node101	634.8000	633.1300	631.1300	0.0000	0.0000	100.0000
50	Node103	634.8400	632.3200	630.2700	0.0000	0.0000	100.0000
51	Node108	633.9000	632.7000	629.5400	0.0000	0.0000	100.0000
52	Node30.1	629.1600	622.1400	619.1400	0.0000	0.0000	100.0000
53	Node120	639.6000	638.0000	638.0000	0.0000	0.0000	100.0000
54	Node124	632.4600	616.4000	613.4000	0.0000	0.0000	100.0000
55	Node125	634.3200	631.0000	628.5000	0.0000	0.0000	100.0000
56	Node30.2	630.2900	623.3100	620.3100	0.0000	0.0000	100.0000

==========
| Table E3b - Junction Data |
==========

Inp Num	Junction Name	X Coord.	Y Coord.	Type of Manhole	Type of Inlet	Maximum Capacity	Pavement Shape	Pavement Slope
1	Node11	0.0000	0.0000	F	Normal		0	0.0000
2	Node12	0.0000	0.0000	No P	Normal		0	0.0000
3	Node20	0.0000	0.0000	F	Normal		0	0.0000
4	Node21	0.0000	0.0000	F	Normal		0	0.0000
5	Node22	0.0000	0.0000		Normal		0	0.0000
6	Node23	0.0000	0.0000		Normal		0	0.0000
7	Node24	0.0000	0.0000		Normal		0	0.0000
8	Node25	0.0000	0.0000	F	Normal		0	0.0000
9	Node26	0.0000	0.0000	F	Normal		0	0.0000
10	Node27	0.0000	0.0000	F	Normal		0	0.0000
11	Node29	0.0000	0.0000	No P	Normal		0	0.0000
12	Node30	0.0000	0.0000	F	Normal		0	0.0000
13	Node31	0.0000	0.0000		Normal		0	0.0000
14	Node33	0.0000	0.0000	F	Normal		0	0.0000
15	Node34	0.0000	0.0000		Normal		0	0.0000
16	Node35	0.0000	0.0000		Normal		0	0.0000
17	Node36	0.0000	0.0000		Normal		0	0.0000
18	Node37	0.0000	0.0000		Normal		0	0.0000
19	Node38	0.0000	0.0000	No P	Normal		0	0.0000
20	Node39	0.0000	0.0000		Normal		0	0.0000
21	Node41	0.0000	0.0000	No P	Normal		0	0.0000
22	Node43	0.0000	0.0000	F	Normal		0	0.0000
23	Node44	0.0000	0.0000	F	Normal		0	0.0000
24	Node45	0.0000	0.0000	No P	Normal		0	0.0000
25	Node46	0.0000	0.0000	F	Normal		0	0.0000
26	Node47	0.0000	0.0000	No P	Normal		0	0.0000
27	Node48	0.0000	0.0000	No P	Normal		0	0.0000
28	Node63	0.0000	0.0000	F	Normal		0	0.0000
29	Node65	0.0000	0.0000	F	Normal		0	0.0000
30	Node66	0.0000	0.0000	F	Normal		0	0.0000
31	Node69	0.0000	0.0000	No P	Normal		0	0.0000
32	Node70	0.0000	0.0000	F	Normal		0	0.0000
33	Node71	0.0000	0.0000	No P	Normal		0	0.0000
34	Node74	0.0000	0.0000	No P	Normal		0	0.0000
35	Node75	0.0000	0.0000	No P	Normal		0	0.0000
36	Node79	0.0000	0.0000	No P	Normal		0	0.0000
37	Node80	0.0000	0.0000	No P	Normal		0	0.0000
38	Node81	0.0000	0.0000	No P	Normal		0	0.0000
39	Node82	0.0000	0.0000	No P	Normal		0	0.0000
40	Node83	0.0000	0.0000	No P	Normal		0	0.0000
41	Node84	0.0000	0.0000	No P	Normal		0	0.0000
42	Node86	0.0000	0.0000	F	Normal		0	0.0000
43	Node87	0.0000	0.0000	No P	Normal		0	0.0000
44	Node89	0.0000	0.0000	F	Normal		0	0.0000
45	Node92	0.0000	0.0000	F	Normal		0	0.0000
46	Node94	0.0000	0.0000	F	Normal		0	0.0000
47	Node99	0.0000	0.0000	F	Normal		0	0.0000
48	Node100	0.0000	0.0000	F	Normal		0	0.0000
49	Node101	0.0000	0.0000	No P	Normal		0	0.0000
50	Node103	0.0000	0.0000	No P	Normal		0	0.0000
51	Node108	0.0000	0.0000	F	Normal		0	0.0000
52	Node30.1	0.0000	0.0000	F	Normal		0	0.0000
53	Node120	0.0000	0.0000	F	Normal		0	0.0000
54	Node124	0.0000	0.0000	No P	Normal		0	0.0000
55	Node125	0.0000	0.0000	No P	Normal		0	0.0000
56	Node30.2	0.0000	0.0000	No P	Normal		0	0.0000

==========
| Table E4 - Conduit Connectivity |
==========

Input Number	Conduit Name	Upstream Node	Downstream Node	Upstream Elevation	Downstream Elevation

1	Link12	Node20	Node21	631.3900	631.0800	No Design
2	Link13	Node21	Node84	631.0800	630.7700	No Design
3	Link14	Node22	Node23	630.1100	628.8600	No Design
4	Link15	Node23	Node24	628.8600	628.0300	No Design
5	Link16	Node24	Node25	628.0300	626.3500	No Design
6	Link17	Node26	Node25	626.4200	626.3500	No Design
7	Link18	Node26	Node27	626.4200	623.6900	No Design
8	Link22	Node31	Node124	616.0000	613.4000	No Design
9	Link23	Node33	Node34	610.5630	608.4300	No Design
10	Link24	Node34	Node35	608.4300	608.4000	No Design
11	Link25	Node35	Node36	608.4000	607.4000	No Design
12	Link26	Node36	Node37	607.4000	606.4600	No Design
13	Link27	Node37	Node38	606.4600	605.4500	No Design
14	Link28	Node38	Node39	605.4500	604.4400	No Design
15	Link30	Node43	Node44	636.4600	635.7400	No Design
16	Link31	Node45	Node44	636.0400	635.7400	No Design
17	Link32	Node46	Node47	592.7400	572.0000	No Design
18	Link33	Node48	Node47	593.3000	572.0000	No Design
19	Link47	Node66	Node24	631.9700	628.3300	No Design
20	Link53	Node45	Node69	636.0400	636.0000	No Design
21	Link54	Node69	Node70	636.0000	633.4300	No Design
22	Link55	Node70	Node63	633.4300	631.0000	No Design
23	Link56	Node41	Node71	630.2000	622.0000	No Design
24	Link68	Node71	Node74	622.0000	618.9800	No Design
25	Link69	Node74	Node11	618.9800	617.2000	No Design
26	Link70	Node12	Node79	617.2100	615.6100	No Design
27	Link71	Node79	Node33	615.6100	610.5600	No Design
28	Link72	Node39	Node75	604.4400	602.9220	No Design
29	Link73	Node75	Node80	602.9200	597.8900	No Design
30	Link74	Node80	Node81	597.8900	595.1800	No Design
31	Link75	Node81	Node82	595.1800	594.6700	No Design
32	Link76	Node82	Node46	594.6700	592.7400	No Design
33	Link77	Node65	Node83	640.0000	639.6000	No Design
34	Link78	Node83	Node22	639.6000	636.3500	No Design
35	Link82	Node27	Node86	623.6900	613.4900	No Design
36	Link83	Node86	Node29	613.4900	612.7800	No Design
37	Link84	Node29	Node87	612.7800	606.0000	No Design
38	Link85	Node87	Node48	606.0000	593.3000	No Design
39	Link90	Node94	Node108	633.3000	631.2000	No Design
40	Link93	Node92	Node100	633.0800	632.3300	No Design
41	Link98	Node100	Node101	632.3300	631.1300	No Design
42	Link104	Node101	Node103	631.1300	630.3200	No Design
43	Link105	Node103	Node108	630.2700	629.5400	No Design
44	Link106	Node108	Node125	629.5400	628.5000	No Design
45	Link21.1	Node30.1	Node31	619.1400	616.0000	No Design
46	Link118	Node89	Node43	637.1000	636.4600	No Design
47	Link124	Node30	Node30.2	621.4800	620.3100	No Design
48	Link124.1	Node30.2	Node30.1	620.3100	619.1400	No Design
49	214.1	Node11	Node12	617.7000	617.2100	No Design
50	283.1	Node63	Node41	631.0100	630.2200	No Design

Storage Junction Data

STORAGE JUNCTION NUMBER OR NAME	JUNCTION TYPE	MAXIMUM OR CONSTANT SURFACE AREA (FT2)	PEAK OR CONSTANT VOLUME (CUBIC FEET)	CROWN ELEVATION (FT)	DEPTH STARTS FROM
Node65	Stage/Area	50965.2000	114339.2685	642.0000	Node Invert
Node99	Stage/Area	22651.2000	39303.4343	639.7000	Node Invert
Node120	Stage/Area	26571.6000	23780.4334	639.6000	Node Invert

Variable storage data for node | Node65

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	435.6000	0.0000	0.0100	0.0000
2	639.0000	1.0000	10890.0000	4501.1550	0.2500	0.1033
3	640.0000	2.0000	29185.2000	23801.9281	0.6700	0.5464
4	641.0000	3.0000	50965.2000	63374.0685	1.1700	1.4549
5	642.0000	4.0000	50965.2000	114339.2685	1.1700	2.6249

Variable storage data for node | Node99

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	637.7000	0.0000	4.3560	0.0000	0.0001	0.0000
2	637.7100	0.0100	2178.0000	7.5991	0.0500	0.0002
3	638.0000	0.3000	12196.8000	1895.3728	0.2800	0.0435
4	638.2000	0.5000	22651.2000	5326.6343	0.5200	0.1223
5	639.7000	2.0000	22651.2000	39303.4343	0.5200	0.9023

Variable storage data for node | Node120

Data Point	Elevation ft	Depth ft	Area ft^2	Volume ft^3	Area acres	Volume ac-ft
1	638.0000	0.0000	43.5600	0.0000	0.0010	0.0000
2	638.8000	0.8000	17424.0000	4890.2871	0.4000	0.1123
3	639.3000	1.3000	26571.6000	15808.9534	0.6100	0.3629
4	639.6000	1.6000	26571.6000	23780.4334	0.6100	0.5459

Orifice Data

Conduit	From	To	Area	Depth	Discharge	Height Above

Name	Junction	Junction	Type	(ft2)	(ft)	Coefficient	Junction (ft)
Restrct10	Node84	Node22	Circ Side	3.14	0.00	1.000	1.230
restrict6	Node124	Node37	Circ Side	2.18	0.00	0.600	6.600
restrict7	Node125	Node26	Circ Side	2.18	0.00	0.600	1.500

```
====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                1
      CONDUIT NAME..........................        Restrct10
      Upstream node.........................           Node84
      Downstream node.......................           Node22
      PIPE DIAMETER.......................                2.00
      PIPE LENGTH.........................             4814.37
      MANNINGS ROUGHNESS..................              0.0017
      INVERT ELEVATION AT UPSTREAM END.....            632.0000
      INVERT ELEVATION AT DOWNSTREAM END...            631.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                2
      CONDUIT NAME..........................         restrict6
      Upstream node.........................          Node124
      Downstream node.......................           Node37
      PIPE DIAMETER.......................                1.67
      PIPE LENGTH.........................             4394.62
      MANNINGS ROUGHNESS..................              0.0026
      INVERT ELEVATION AT UPSTREAM END.....            620.0000
      INVERT ELEVATION AT DOWNSTREAM END...            619.9900

====> EQUIVALENT PIPE INFORMATION FOR ORIFICE                3
      CONDUIT NAME..........................         restrict7
      Upstream node.........................          Node125
      Downstream node.......................           Node26
      PIPE DIAMETER.......................                1.67
      PIPE LENGTH.........................             4394.62
      MANNINGS ROUGHNESS..................              0.0026
      INVERT ELEVATION AT UPSTREAM END.....            630.0000
      INVERT ELEVATION AT DOWNSTREAM END...            629.9900

Note: For a Bottom-outlet orifice the invert elevation of the downstream node will be
      adjusted to accomodate the equivalent conduit.  Conduit grades are not affected.
```

==========
| Weir Data |
==========

Weir Name	From Junction	To Junction	Type	Crest Height(ft)	Weir Top(ft)	Weir Length(ft)	Discharge Coefficient	Weir Power
Link 5	Node11	Node12	1	3.16	182.80	300.00	3.0000	1.5000
WEIR46	Node63	Node41	1	2.37	169.00	50.00	3.0000	1.5000
Link97.1	Node99	Node21	1	0.56	162.30	300.00	3.0000	1.5000
WEIR119	Node120	Node20	1	1.30	162.00	300.00	3.0000	1.5000

==========
| FREE OUTFALL DATA (DATA GROUP I1) |
| BOUNDARY CONDITION ON DATA GROUP J1 |
==========

```
Outfall at Junction....Node47           has boundary condition number...         1

===> Warning !!  Outfall Junction Node47           has two or more connecting conduits.
```

==========
| Weir Outfall Data |
| Boundary Condition on data group J1 |
==========

==========
| INTERNAL CONNECTIVITY INFORMATION |
==========

CONDUIT	JUNCTION	JUNCTION
Restrct10	Node84	Node22
restrict6	Node124	Node37
restrict7	Node125	Node26
Link 5	Node11	Node12
WEIR46	Node63	Node41
Link97.1	Node99	Node21
WEIR119	Node120	Node20
FREE # 1	Node47	BOUNDARY

==========
| Boundary Condition Information |
| Data Groups J1-J4 |
==========

```
BC NUMBER..         1 has no control water surface.
```

==========
| XP Note Field Summary |
==========

==========
| Conduit Convergence Criteria |
==========

Conduit Name	Full Flow	Conduit Slope

Link12	49.0514	0.0010
Link13	49.1301	0.0010
Link14	43.7477	0.0037
Link15	36.6850	0.0026
Link16	37.2836	0.0027
Link17	26.7696	0.0014
Link18	55.5441	0.0059
Link22	63.1866	0.0076
Link23	59.7442	0.0068
Link24	14.5486	0.0004
Link25	41.3740	0.0033
Link26	39.9177	0.0031
Link27	34.5795	0.0031
Link28	40.1573	0.0031
Link30	5.2486	0.0225
Link31	2.4660	0.0050
Link32	451.1614	0.0519
Link33	823.3655	0.0819
Link47	29.5450	0.0674
Link53	1.7213	0.0012
Link54	1.9517	0.0103
Link55	328.6757	0.0176
Link56	55.4504	0.0134
Link68	138.7842	0.0075
Link69	12349.6692	0.0068
Link70	10078.6135	0.0036
Link71	58179.1079	0.0132
Link72	137.3690	0.0361
Link73	56825.7885	0.0689
Link74	37318.0904	0.0266
Link75	29495.4038	0.0098
Link76	40618.1464	0.0482
Link77	20.0104	0.0067
Link78	1059.8133	0.0100
Link82	110.5183	0.0234
Link83	54.8977	0.0058
Link84	4900.7542	0.0242
Link85	34130.3174	0.0270
Link90	10.4297	0.0084
Link93	8.0467	0.0050
Link98	19.1908	0.0387
Link104	17.3295	0.0050
Link105	17.3891	0.0050
Link106	31.4205	0.0050
Link21.1	95.4346	0.0174
Link118	908.4799	0.0043
Link124	12.9749	0.0130
Link124.1	82.3852	0.0130
214.1	15.9283	0.0169
283.1	2.7121	0.0197
Restrct10	35.6314	0.0000
restrict6	13.5485	0.0000
restrict7	13.5485	0.0000

```
*================================*
|    Initial Model Condition     |
| Initial Time =      0.08 hours |
*================================*
```

```
      Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
         Node11/   0.00 /   617.20           Node12/   0.00 /   617.21           Node20/   0.00 /   631.39
         Node21/   0.00 /   631.08           Node22/   0.00 /   630.11           Node23/   0.00 /   628.86
         Node24/   0.00 /   628.03           Node25/   0.00 /   626.35           Node26/   0.00 /   626.42
         Node27/   0.00 /   623.69           Node29/   0.00 /   612.78           Node30/   0.00 /   621.48
         Node31/   0.00 /   616.00           Node33/   0.00 /   610.56           Node34/   0.00 /   608.43
         Node35/   0.00 /   608.40           Node36/   0.00 /   607.40           Node37/   0.00 /   606.46
         Node38/   0.00 /   605.45           Node39/   0.00 /   604.44           Node41/   0.00 /   630.20
         Node43/   0.00 /   636.46           Node44/   0.00 /   635.74           Node45/   0.00 /   636.04
         Node46/   0.00 /   592.74           Node47/   0.00 /   572.00           Node48/   0.00 /   593.30
         Node63/   0.00 /   631.00           Node65/   0.00 /   638.00           Node66/   0.00 /   631.97
         Node69/   0.00 /   636.00           Node70/   0.00 /   633.43           Node71/   0.00 /   622.00
         Node74/   0.00 /   618.98           Node75/   0.00 /   602.92           Node79/   0.00 /   615.61
         Node80/   0.00 /   597.89           Node81/   0.00 /   595.18           Node82/   0.00 /   594.67
         Node83/   0.00 /   639.60           Node84/   0.00 /   630.77           Node86/   0.00 /   613.49
         Node87/   0.00 /   606.00           Node89/   0.00 /   637.10           Node92/   0.00 /   633.08
         Node94/   0.00 /   633.30           Node99/   0.00 /   637.70          Node100/   0.00 /   632.33
       Node101/   0.00 /   631.13          Node103/   0.00 /   630.27          Node108/   0.00 /   629.54
      Node30.1/   0.00 /   619.14          Node120/   0.00 /   638.00          Node124/   0.00 /   613.40
       Node125/   0.00 /   628.50         Node30.2/   0.00 /   620.31

        Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
         Link18/       0.00           Link22/       0.00           Link23/       0.00
         Link24/       0.00           Link25/       0.00           Link26/       0.00
         Link27/       0.00           Link28/       0.00           Link30/       0.00
         Link31/       0.00           Link32/       0.00           Link33/       0.00
         Link47/       0.00           Link53/       0.00           Link54/       0.00
         Link55/       0.00           Link56/       0.00           Link68/       0.00
         Link69/       0.00           Link70/       0.00           Link71/       0.00
         Link72/       0.00           Link73/       0.00           Link74/       0.00
         Link75/       0.00           Link76/       0.00           Link77/       0.00
         Link78/       0.00           Link82/       0.00           Link83/       0.00
         Link84/       0.00           Link85/       0.00           Link90/       0.00
         Link93/       0.00           Link98/       0.00          Link104/       0.00
        Link105/       0.00          Link106/       0.00         Link21.1/       0.00
        Link118/       0.00          Link124/       0.00        Link124.1/       0.00
          214.1/       0.00            283.1/       0.00        Restrct10/       0.00
      restrict6/       0.00        restrict7/       0.00           Link 5/       0.00
         WEIR46/       0.00         Link97.1/       0.00          WEIR119/       0.00
       FREE # 1/       0.00

        Conduit/   Velocity
         Link12/       0.00           Link13/       0.00           Link14/       0.00
         Link15/       0.00           Link16/       0.00           Link17/       0.00
```

```
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link30/       0.00
      Link31/       0.00          Link32/       0.00          Link33/       0.00
      Link47/       0.00          Link53/       0.00          Link54/       0.00
      Link55/       0.00          Link56/       0.00          Link68/       0.00
      Link69/       0.00          Link70/       0.00          Link71/       0.00
      Link72/       0.00          Link73/       0.00          Link74/       0.00
      Link75/       0.00          Link76/       0.00          Link77/       0.00
      Link78/       0.00          Link82/       0.00          Link83/       0.00
      Link84/       0.00          Link85/       0.00          Link90/       0.00
      Link93/       0.00          Link98/       0.00         Link104/       0.00
     Link105/       0.00         Link106/       0.00        Link21.1/       0.00
     Link118/       0.00         Link124/       0.00       Link124.1/       0.00
       214.1/       0.00           283.1/       0.00       Restrct10/       0.00
   restrict6/       0.00       restrict7/       0.00

     Conduit/ Cross Sectional Area
      Link12/       0.00          Link13/       0.00          Link14/       0.00
      Link15/       0.00          Link16/       0.00          Link17/       0.00
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link30/       0.00
      Link31/       0.00          Link32/       0.00          Link33/       0.00
      Link47/       0.00          Link53/       0.00          Link54/       0.00
      Link55/       0.00          Link56/       0.00          Link68/       0.00
      Link69/       0.00          Link70/       0.00          Link71/       0.00
      Link72/       0.00          Link73/       0.00          Link74/       0.00
      Link75/       0.00          Link76/       0.00          Link77/       0.00
      Link78/       0.00          Link82/       0.00          Link83/       0.00
      Link84/       0.00          Link85/       0.00          Link90/       0.00
      Link93/       0.00          Link98/       0.00         Link104/       0.00
     Link105/       0.00         Link106/       0.00        Link21.1/       0.00
     Link118/       0.00         Link124/       0.00       Link124.1/       0.00
       214.1/       0.00           283.1/       0.00       Restrct10/       0.00
   restrict6/       0.00       restrict7/       0.00

     Conduit/ Hydraulic Radius
      Link12/       0.00          Link13/       0.00          Link14/       0.00
      Link15/       0.00          Link16/       0.00          Link17/       0.00
      Link18/       0.00          Link22/       0.00          Link23/       0.00
      Link24/       0.00          Link25/       0.00          Link26/       0.00
      Link27/       0.00          Link28/       0.00          Link30/       0.00
      Link31/       0.00          Link32/       0.00          Link33/       0.00
      Link47/       0.00          Link53/       0.00          Link54/       0.00
      Link55/       0.00          Link56/       0.00          Link68/       0.00
      Link69/       0.00          Link70/       0.00          Link71/       0.00
      Link72/       0.00          Link73/       0.00          Link74/       0.00
      Link75/       0.00          Link76/       0.00          Link77/       0.00
      Link78/       0.00          Link82/       0.00          Link83/       0.00
      Link84/       0.00          Link85/       0.00          Link90/       0.00
      Link93/       0.00          Link98/       0.00         Link104/       0.00
     Link105/       0.00         Link106/       0.00        Link21.1/       0.00
     Link118/       0.00         Link124/       0.00       Link124.1/       0.00
       214.1/       0.00           283.1/       0.00       Restrct10/       0.00
   restrict6/       0.00       restrict7/       0.00

     Conduit/ Upstream/ Downstream Elevation
      Link12/   631.08/   631.08          Link13/   630.77/   630.77          Link14/   628.86/   628.86
      Link15/   628.03/   628.03          Link16/   626.35/   626.35          Link17/   626.35/   626.35
      Link18/   623.69/   623.69          Link22/   613.40/   613.40          Link23/   608.43/   608.43
      Link24/   608.40/   608.40          Link25/   607.40/   607.40          Link26/   606.46/   606.46
      Link27/   605.45/   605.45          Link28/   604.44/   604.44          Link30/   635.74/   635.74
      Link31/   635.74/   635.74          Link32/   572.00/   572.00          Link33/   572.00/   572.00
      Link47/   628.03/   628.03          Link53/   636.00/   636.00          Link54/   633.43/   633.43
      Link55/   631.00/   631.00          Link56/   622.00/   622.00          Link68/   618.98/   618.98
      Link69/   617.20/   617.20          Link70/   615.61/   615.61          Link71/   610.56/   610.56
      Link72/   602.92/   602.92          Link73/   597.89/   597.89          Link74/   595.18/   595.18
      Link75/   594.67/   594.67          Link76/   592.74/   592.74          Link77/   639.60/   639.60
      Link78/   630.11/   630.11          Link82/   613.49/   613.49          Link83/   612.78/   612.78
      Link84/   606.00/   606.00          Link85/   593.30/   593.30          Link90/   629.54/   629.54
      Link93/   632.33/   632.33          Link98/   631.13/   631.13         Link104/   630.27/   630.27
     Link105/   629.54/   629.54         Link106/   628.50/   628.50        Link21.1/   616.00/   616.00
     Link118/   636.46/   636.46         Link124/   620.31/   620.31       Link124.1/   619.14/   619.14
       214.1/   617.21/   617.21           283.1/   630.20/   630.20       Restrct10/   630.11/   630.11
   restrict6/   606.46/   606.46       restrict7/   626.42/   626.42

Cycle        500      Time         41 Hrs - 40.00 Min

   Junction / Depth  / Elevation    ===>  "*" Junction is Surcharged.
      Node11/   0.50 /   617.70          Node12/   0.00 /   617.21          Node20/   0.63 /   632.02
      Node21/   0.94 /   632.02          Node22/   0.02 /   630.13          Node23/   0.02 /   628.88
      Node24/   0.02 /   628.05          Node25/   0.09 /   626.44          Node26/   0.02 /   626.44
      Node27/   0.01 /   623.70          Node29/   0.01 /   612.79          Node30/   0.00 /   621.48
      Node31/   4.02*/   620.02          Node33/   0.00 /   610.56          Node34/   0.00 /   608.43
      Node35/   0.00 /   608.40          Node36/   0.00 /   607.40          Node37/   0.00 /   606.46
      Node38/   0.00 /   605.45          Node39/   0.00 /   604.44          Node41/   0.00 /   630.20
      Node43/   0.00 /   636.46          Node44/   0.30 /   636.04          Node45/   0.00 /   636.04
      Node46/   0.00 /   592.74          Node47/   0.00 /   572.00          Node48/   0.00 /   593.30
      Node63/   0.01 /   631.01          Node65/   2.02 /   640.02          Node66/   0.00 /   631.97
      Node69/   0.00 /   636.00          Node70/   0.00 /   633.43          Node71/   0.00 /   622.00
      Node74/   0.00 /   618.98          Node75/   0.00 /   602.92          Node79/   0.00 /   615.61
      Node80/   0.00 /   597.89          Node81/   0.00 /   595.18          Node82/   0.00 /   594.67
      Node83/   0.00 /   639.60          Node84/   1.25 /   632.02          Node86/   0.02 /   613.51
      Node87/   0.01 /   606.01          Node89/   0.00 /   637.10          Node92/   0.00 /   633.08
      Node94/   0.00 /   633.30          Node99/   0.00 /   637.70         Node100/   0.00 /   632.33
     Node101/   0.00 /   631.13         Node103/   0.00 /   630.27         Node108/   0.48 /   630.02
    Node30.1/   0.88 /   620.02         Node120/   0.66 /   638.66         Node124/   6.62*/   620.02
     Node125/   1.52 /   630.02        Node30.2/   0.00 /   620.31

     Conduit/       FLOW   ===> "*" Conduit uses the normal flow option.
      Link12/       0.00          Link13/       0.00          Link14/       0.01*         Link15/       0.01
      Link16/       0.01*         Link17/      -0.01          Link18/       0.01          Link22/       0.00
      Link23/       0.00          Link24/       0.00          Link25/       0.00          Link26/       0.00*
      Link27/       0.00*         Link28/       0.00          Link30/       0.00*         Link31/       0.00
      Link32/       0.00          Link33/       0.01          Link47/       0.00          Link53/       0.00
```

Link54/	0.00*	Link55/	0.00*	Link56/	0.00*	Link68/	0.00
Link69/	0.00*	Link70/	0.00	Link71/	0.00*	Link72/	0.00
Link73/	0.00*	Link74/	0.00	Link75/	0.00*	Link76/	0.00
Link77/	0.01	Link78/	0.01	Link82/	0.01*	Link83/	0.01
Link84/	0.01	Link85/	0.01	Link90/	0.00	Link93/	0.00
Link98/	0.00*	Link104/	0.00	Link105/	0.00*	Link106/	0.00
Link21.1/	0.00	Link118/	0.00	Link124/	0.00*	Link124.1/	0.00*
214.1/	0.00*	283.1/	0.00	Restrct10/	0.00	restrict6/	0.00
restrict7/	0.00	Link 5/	0.00	WEIR46/	0.00	Link97.1/	0.00
WEIR119/	0.00	FREE # 1/	0.01				

```
*====================================================*
| Table E5 - Junction Time Limitation Summary        |
|              (0.10 or 0.25)* Depth * Area          |
| Time step = ----------------------------           |
|                  Sum of Flow                       |
*====================================================*
|  The time this junction was the limiting junction |
|                is listed in the third column.      |
*====================================================*
```

Junction	Time(.10)	Time(.25)	Time(sec)
Node11	96.0301	240.0753	1200.0000
Node12	94.8461	237.1153	0.0000
Node20	24.3695	60.9237	300.0000
Node21	20.7733	51.9334	600.0000
Node22	18.0774	45.1934	300.0000
Node23	1.3777	3.4442	0.0000
Node24	0.9434	2.3584	900.0000
Node25	40.3693	100.9233	0.0000
Node26	48.0850	120.2124	300.0000
Node27	242.0281	605.0703	0.0000
Node29	228.3508	570.8771	0.0000
Node30	16.0526	40.1315	600.0000
Node31	14.3972	35.9929	2100.0000
Node33	15.5637	38.9091	4800.0000
Node34	23.7340	59.3350	4500.0000
Node35	21.4921	53.7301	300.0000
Node36	27.2404	68.1009	300.0000
Node37	30.8450	77.1124	300.0000
Node38	44.8842	112.2105	145800.000
Node39	164.2282	410.5705	0.0000
Node41	264.5109	661.2772	0.0000
Node43	63.7061	159.2652	0.0000
Node44	104.8017	262.0043	0.0000
Node45	307.8310	769.5776	0.0000
Node46	90.8307	227.0767	0.0000
Node47	3000.0000	3000.0000	0.0000
Node48	133.7599	334.3999	0.0000
Node63	25.2495	63.1237	300.0000
Node65	75.9746	189.9366	0.0000
Node66	0.3482	0.8705	600.0000
Node69	258.3719	645.9297	0.0000
Node70	199.9647	499.9118	0.0000
Node71	156.3700	390.9249	0.0000
Node74	79.0387	197.5969	0.0000
Node75	69.5506	173.8766	0.0000
Node79	43.8238	109.5596	1500.0000
Node80	48.1112	120.2780	0.0000
Node81	114.6188	286.5471	0.0000
Node82	64.3879	160.9698	0.0000
Node83	401.3584	1003.3961	0.0000
Node84	11.6027	29.0067	2100.0000
Node86	15.3871	38.4678	600.0000
Node87	80.0321	200.0803	0.0000
Node89	59.3151	148.2878	300.0000
Node92	5.6152	14.0380	1200.0000
Node94	40.1726	100.4314	0.0000
Node99	105.9962	264.9906	300.0000
Node100	23.1726	57.9316	0.0000
Node101	16.9510	42.3774	0.0000
Node103	57.0284	142.5711	0.0000
Node108	20.5994	51.4985	0.0000
Node30.1	30.2631	75.6578	0.0000
Node120	90.9729	227.4323	0.0000
Node124	24.1143	60.2857	0.0000
Node125	21.9585	54.8962	900.0000
Node30.2	5.2242	13.0604	2700.0000

The junction requiring the smallest time step was...Node38

```
*=========================================================*
|       Table E5a - Conduit Explicit Condition Summary    |
|       Courant   =         Conduit Length                |
|       Time step = -------------------------------       |
|                     Velocity + sqrt(g*depth)            |
|                                                         |
|                  Conduit Implicit Condition Summary     |
|       Courant   =         Conduit Length                |
|       Time step = -------------------------------       |
|                              Velocity                   |
*=========================================================*
|  The 3rd column is the Explicit time step times the     |
|      minimum courant time step factor                   |
|                                                         |
|  Minimum Conduit Time Step in seconds in the 4th column |
|  in the list. Maximum possible is 10 * maximum time step |
|                                                         |
|  The 5th column is the maximum change at any time step  |
|  during the simulation. The 6th column is the wobble    |
|  value which is an indicator of the flow stability.     |
|                                                         |
|  You should use this section to find those conduits that |
|  are slowing your model down.  Use modify conduits to   |
```

```
|  alter the length of the slow conduits to make your      |
|  simulation faster, or change the conduit name to        |
|  "CHME?????" where ????? are any characters, this will   |
|  lengthen the conduit based on the model time step,       |
|  not the value listed in modify conduits.                 |
*==========================================================*
```

Conduit	Time(exp)	Expl*Cmin	Time(imp)	Time(min)	Max Qchange	Wobble	Type of Soln
Link12	17.1202	17.1202	69.8671	20.0000	0.1604	5.4510	Normal Soln
Link13	15.2825	15.2825	74.4048	0.0000	-0.7012	5.7098	Normal Soln
Link14	15.3262	15.3262	46.4670	0.0000	0.2837	3.8907	Normal Soln
Link15	14.4720	14.4720	43.8214	0.0000	-2.8003	5.1570	Normal Soln
Link16	25.0440	25.0440	71.5675	0.0000	6.0721	4.2092	Normal Soln
Link17	2.2396	2.2396	5.4801	0.0000	-4.6086	6.0114	Normal Soln
Link18	18.6244	18.6244	40.2157	0.0000	1.5340	3.0884	Normal Soln
Link22	13.6486	13.6486	124.4459	0.0000	-0.2606	3.7705	Normal Soln
Link23	11.7952	11.7952	35.9253	0.0000	-0.1076	2.5667	Normal Soln
Link24	2.8060	2.8060	8.5176	0.0000	-0.1126	10.7472	Normal Soln
Link25	11.7636	11.7636	35.0629	0.0000	-0.1301	3.6454	Normal Soln
Link26	12.3986	12.3986	35.3149	0.0000	-0.1144	3.7838	Normal Soln
Link27	13.2113	13.2113	34.5714	0.0000	-0.1082	4.3642	Normal Soln
Link28	14.9596	14.9596	32.9297	0.0000	-0.1026	3.8794	Normal Soln
Link30	2.2683	2.2683	6.6660	0.0000	0.0136	2.8165	Normal Soln
Link31	4.4247	4.4247	13.9590	0.0000	-0.0109	4.1849	Normal Soln
Link32	13.1439	13.1439	16.7321	0.0000	6.7521	0.6070	Normal Soln
Link33	9.4606	9.4606	12.3268	0.0000	0.7168	0.2713	Normal Soln
Link47	2.1952	2.1952	2.9252	15.0000	-0.9841	5.4705	Normal Soln
Link53	5.7691	5.7691	15.7647	0.0000	0.0131	5.9213	Normal Soln
Link54	55.9315	55.9315	169.0326	0.0000	0.0129	5.1995	Normal Soln
Link55	25.0702	25.0702	65.3043	0.0000	0.0204	0.0309	Normal Soln
Link56	114.6687	114.6687	347.8479	0.0000	0.0841	0.5869	Normal Soln
Link68	54.6845	54.6845	128.6549	0.0000	0.1058	0.2343	Normal Soln
Link69	43.4685	43.4685	341.7343	0.0000	0.5711	0.0377	Normal Soln
Link70	55.6227	55.6227	149.5284	0.0000	0.7653	0.0831	Normal Soln
Link71	25.8700	25.8700	289.6897	0.0000	19.3979	0.3881	Normal Soln
Link72	1.6040	1.6040	2.1773	365.0000	-0.1062	1.1388	Normal Soln
Link73	6.2058	6.2058	9.5641	0.0000	-0.1225	0.0027	Normal Soln
Link74	7.8359	7.8359	13.2328	0.0000	-0.1050	0.0042	Normal Soln
Link75	6.0254	6.0254	15.3766	0.0000	0.1246	0.0053	Normal Soln
Link76	2.6663	2.6663	4.0145	2425.0000	0.1459	0.0038	Normal Soln
Link77	3.8776	3.8776	6.5250	0.0000	0.0169	1.7064	Normal Soln
Link78	66.1125	66.1125	195.3925	0.0000	-0.0656	0.0362	Normal Soln
Link82	17.0543	17.0543	26.8128	0.0000	0.7347	1.5355	Normal Soln
Link83	5.6146	5.6146	9.7599	0.0000	-0.1014	3.1010	Normal Soln
Link84	22.5718	22.5718	38.1318	0.0000	-0.2412	0.0345	Normal Soln
Link85	40.4240	40.4240	70.8394	0.0000	-0.1417	0.0049	Normal Soln
Link90	16.8025	16.8025	38.0691	0.0000	0.0265	2.5622	Normal Soln
Link93	8.6222	8.6222	20.8028	0.0000	0.0460	3.8387	Normal Soln
Link98	1.9735	1.9735	3.1872	10.0000	0.0278	1.9528	Normal Soln
Link104	11.2946	11.2946	30.2866	0.0000	0.0507	2.0789	Normal Soln
Link105	9.5707	9.5707	33.6795	0.0000	0.0219	2.2656	Normal Soln
Link106	12.3677	12.3677	47.9569	0.0000	0.0888	2.9009	Normal Soln
Link21.1	7.7514	7.7514	27.5057	0.0000	0.1208	1.7034	Normal Soln
Link118	20.3221	20.3221	124.1127	0.0000	-0.0526	0.1161	Normal Soln
Link124	3.2212	3.2212	8.6096	0.0000	0.0335	4.1748	Normal Soln
Link124.1	4.3792	4.3792	11.6376	0.0000	0.3601	5.2110	Normal Soln
214.1	1.5335	1.5335	3.0973	45.0000	0.0746	4.7040	Normal Soln
283.1	2.6361	2.6361	6.5287	0.0000	0.0124	3.6224	Normal Soln
Restrct10	159.5120	159.5120	319.4097	0.0000	-0.0435	2.7010	Normal Soln
restrict6	174.4432	174.4432	511.5483	0.0000	0.1064	3.8137	Normal Soln
restrict7	229.6027	229.6027	572.1542	0.0000	0.0277	2.7505	Normal Soln

```
The conduit with the smallest time step limitation was..Link76
The conduit with the largest wobble was................Link24
The conduit with the largest flow change in any
consecutive time step..................................Link71

 ************************************************
 *      End of time step DO-loop in Runoff      *
 ************************************************

 Final Date (Mo/Day/Year)   =             1/ 2/2014
 Total number of time steps =                  1513
 Final Julian Date          =               2014002
 Final time of day          =                    0. seconds.
 Final time of day          =                 0.00   hours.
 Final running time         =               24.0000   hours.
 Final running time         =                1.0000    days.

 ****************************************************
 *     Extrapolation Summary for Watersheds         *
 * Explains the number of time steps and iterations *
 * used in the solution of the subcatchments.       *
 * # Steps ==> Total Number of Extrapolated Steps   *
 * # Calls ==> Total Number of OVERLND Calls        *
 ****************************************************

 Subcatchment   # Steps   # Calls Subcatchment   # Steps   # Calls
 -------------  -------  -------- -------------  -------  --------
 Node89#1             0         0 Node63#1             0         0 Node11#1             0         0
 Node33#1             0         0 Node30#1             0         0 Node46#1             0         0
 Node65#1             0         0 Node120#1            0         0 Node99#1             0         0
 Node66#1             0         0 Node24#1             0         0 Node25#1             0         0
 Node94#1             0         0 Node92#1             0         0 Node48#1             0         0


##########################################################
# Rainfall input summary from Runoff Continuity Check   #
##########################################################

 Total rainfall read for gage #         1 is       3.8200 in
 Total rainfall duration for gage #     1 is       114.29 minutes

 *********************************************************
 * Table R5. CONTINUITY CHECK FOR SURFACE WATER          *
 *       Any continuity error can be fixed by lowering the  *
```

```
*       wet and transition time step. The transition time  *
*       should not be much greater than the wet time step. *
************************************************************
```

	cubic feet	Inches over Total Basin
Total Precipitation (Rain plus Snow)	4.729897E+06	3.820
Total Infiltration	1.825008E+06	1.474
Total Evaporation	9.826929E+03	0.008
Surface Runoff from Watersheds	2.899722E+06	2.342
Total Water remaining in Surface Storage	0.000000E+00	0.000
Infiltration over the Pervious Area...	1.825008E+06	1.474

Infiltration + Evaporation + Surface Runoff + Snow removal + Water remaining in Surface Storage + Water remaining in Snow Cover.....	4.734557E+06	3.824
Total Precipitation + Initial Storage.	4.729897E+06	3.820

```
The error in continuity is calculated as
****************************************
* Precipitation + Initial Snow Cover  *
*      - Infiltration -               *
*Evaporation - Snow removal -         *
*Surface Runoff from Watersheds -     *
*Water in Surface Storage -           *
*Water remaining in Snow Cover        *
*--------------------------------------*
* Precipitation + Initial Snow Cover  *
****************************************
```

Percent Continuity Error..... -0.0985

```
****************************************************
* Table R6. Continuity Check for Channel/Pipes     *
*           You should have zero continuity error  *
*           if you are not using runoff hydraulics *
****************************************************
```

	cubic feet	Inches over Total Basin
Initial Channel/Pipe Storage.....	0.000000E+00	0.000
Final Channel/Pipe Storage.....	0.000000E+00	0.000
Surface Runoff from Watersheds.....	2.899722E+06	2.342
Groundwater Subsurface Inflow or Diversion..	0.000000E+00	0.000
Evaporation Loss from Channels.....	0.000000E+00	0.000
Groundwater Flow Diverted Out of Network....	0.000000E+00	0.000
Channel/Pipe/Inlet Outflow.....	2.899722E+06	2.342
Initial Storage + Inflow.....	2.899722E+06	2.342
Final Storage + Outflow + Diverted GW.....	2.899722E+06	2.342

```
*****************************************
* Final Storage + Outflow + Evaporation  - *
* Watershed Runoff - Groundwater Inflow  - *
*     Initial Channel/Pipe Storage         *
*     ----------------------------------   *
*  Final Storage + Outflow  + Evaporation  *
*****************************************
```

Percent Continuity Error..... 0.0000

```
##################################################
# Table R9. Summary Statistics for Subcatchments #
##################################################
```

Note: Total Runoff Depth includes pervious & impervious areas.
Pervious and Impervious Runoff Depth is only the runoff from those two areas.
For catchments receiving redirected flow, this flow will only be shown if the flow is not directed directly to the outlet. Flow that is getting redirected is also listed with the original subcatchment.

Subcatchment.....	Node89#1	Node63#1	Node11#1	Node33#1	Node30#1	Node46#1
Area (acres).....	5.90000	5.00000	107.90000	37.80000	9.00000	30.10000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	3.82000	3.82000	3.82000	3.82000	3.82000	3.82000
Max Intensity (in/hr)..	6.81870	6.81870	6.81870	6.81870	6.81870	6.81870
Pervious Area						
Total Runoff Depth (in)	2.45881	2.44437	2.33714	2.26706	2.38841	2.62489
Peak Runoff Rate (cfs).	14.94302	12.21648	202.96210	70.08498	18.94980	63.14458
Total Impervious Area						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area with depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area without depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Area						
Total Runoff Depth (in)	2.45881	2.44437	2.33714	2.26706	2.38841	2.62489
Peak Runoff Rate (cfs).	14.94302	12.21648	202.96210	70.08498	18.94980	63.14458
Rational Formula						
Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node65#1	Node120#1	Node99#1	Node66#1	Node24#1	Node25#1
Area (acres).....	16.10000	32.00000	32.10000	10.00000	19.70000	5.40000
Percent Impervious.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Rainfall (in)....	3.82000	3.82000	3.82000	3.82000	3.82000	3.82000
Max Intensity (in/hr)..	6.81870	6.81870	6.81870	6.81870	6.81870	6.81870
Pervious Area						
Total Runoff Depth (in)	2.47055	2.17964	2.18259	2.45150	2.65430	1.81127
Peak Runoff Rate (cfs).	35.36448	53.06838	36.93468	28.63904	41.26456	7.81583
Total Impervious Area						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area with depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Area without depression storage						
Total Runoff Depth (in)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Area						
Total Runoff Depth (in)	2.47055	2.17964	2.18259	2.45150	2.65430	1.81127
Peak Runoff Rate (cfs).	35.36448	53.06838	36.93468	28.63904	41.26456	7.81583
Rational Formula						
Pervious Tc. (mins)....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Subcatchment.....	Node94#1	Node92#1	Node48#1
Area (acres).....	5.00000	5.50000	19.60000
Percent Impervious.....	0.00000	0.00000	0.00000
Total Rainfall (in)....	3.82000	3.82000	3.82000
Max Intensity (in/hr)..	6.81870	6.81870	6.81870
Pervious Area			
Total Runoff Depth (in)	2.46199	2.46199	2.12721
Peak Runoff Rate (cfs).	11.83902	13.02292	35.27000
Total Impervious Area			
Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000
Impervious Area with depression storage			
Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000
Impervious Area without depression storage			
Total Runoff Depth (in)	0.00000	0.00000	0.00000
Peak Runoff Rate (cfs).	0.00000	0.00000	0.00000
Total Area			
Total Runoff Depth (in)	2.46199	2.46199	2.12721
Peak Runoff Rate (cfs).	11.83902	13.02292	35.27000
Rational Formula			
Pervious Tc. (mins)....	0.00000	0.00000	0.00000
Perv. Intensity (in/hr)	0.00000	0.00000	0.00000
Pervious C	0.00000	0.00000	0.00000
Impervious Tc. (mins)..	0.00000	0.00000	0.00000
Imp. Intensity (in/hr).	0.00000	0.00000	0.00000
Impervious C	0.00000	0.00000	0.00000
Partial Area (Ha).....	0.00000	0.00000	0.00000
Partial Area Tc.....	0.00000	0.00000	0.00000
Partial Area Intensity.	0.00000	0.00000	0.00000

===> Runoff simulation ended normally.

```
*==================================================*
|  Table E6. Final Model Condition                 |
|            This table is used for steady state   |
|            flow comparison and is the information|
|            saved to the hot-restart file.        |
|            Final Time =    48.083 hours         |
*==================================================*
```

Junction / Depth / Elevation ===> "*" Junction is Surcharged.
Node11/ 0.50 / 617.70/ Node12/ 0.00 / 617.21/ Node20/ 0.63 / 632.02/

```
      Node21/   0.94 /   632.02/          Node22/   0.02 /   630.13/          Node23/   0.02 /   628.88/
      Node24/   0.02 /   628.05/          Node25/   0.09 /   626.44/          Node26/   0.02 /   626.44/
      Node27/   0.01 /   623.70/          Node29/   0.01 /   612.79/          Node30/   0.00 /   621.48/
      Node31/   4.02*/   620.02/          Node33/   0.00 /   610.56/          Node34/   0.00 /   608.43/
      Node35/   0.00 /   608.40/          Node36/   0.00 /   607.40/          Node37/   0.00 /   606.46/
      Node38/   0.00 /   605.45/          Node39/   0.00 /   604.44/          Node41/   0.00 /   630.20/
      Node43/   0.00 /   636.46/          Node44/   0.30 /   636.04/          Node45/   0.00 /   636.04/
      Node46/   0.00 /   592.74/          Node47/   0.00 /   572.00/          Node48/   0.00 /   593.30/
      Node63/   0.01 /   631.01/          Node65/   2.02 /   640.02/          Node66/   0.00 /   631.97/
      Node69/   0.00 /   636.00/          Node70/   0.00 /   633.43/          Node71/   0.00 /   622.00/
      Node74/   0.00 /   618.98/          Node75/   0.00 /   602.92/          Node79/   0.00 /   615.61/
      Node80/   0.00 /   597.89/          Node81/   0.00 /   595.18/          Node82/   0.00 /   594.67/
      Node83/   0.00 /   639.60/          Node84/   1.25 /   632.02/          Node86/   0.02 /   613.51/
      Node87/   0.01 /   606.01/          Node89/   0.00 /   637.10/          Node92/   0.00 /   633.08/
      Node94/   0.00 /   633.30/          Node99/   0.00 /   637.70/         Node100/   0.00 /   632.33/
     Node101/   0.00 /   631.13/         Node103/   0.00 /   630.27/         Node108/   0.48 /   630.02/
    Node30.1/   0.88 /   620.02/         Node120/   0.53 /   638.53/         Node124/   6.62*/   620.02/
     Node125/   1.52 /   630.02/        Node30.2/   0.00 /   620.31/

Conduit/       Flow   ===> "*" Conduit uses the normal flow option.
      Link12/       0.00 /          Link13/       0.00 /          Link14/       0.01*/
      Link15/       0.01 /          Link16/       0.01*/          Link17/      -0.01 /
      Link18/       0.01 /          Link22/       0.00 /          Link23/       0.00 /
      Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00*/
      Link27/       0.00*/          Link28/       0.00 /          Link30/       0.00*/
      Link31/       0.00 /          Link32/       0.00 /          Link33/       0.01 /
      Link47/       0.00 /          Link53/       0.00 /          Link54/       0.00*/
      Link55/       0.00*/          Link56/       0.00*/          Link68/       0.00 /
      Link69/       0.00*/          Link70/       0.00 /          Link71/       0.00*/
      Link72/       0.00 /          Link73/       0.00*/          Link74/       0.00 /
      Link75/       0.00*/          Link76/       0.00 /          Link77/       0.01 /
      Link78/       0.01 /          Link82/       0.01*/          Link83/       0.01 /
      Link84/       0.01 /          Link85/       0.01 /          Link90/       0.00 /
      Link93/       0.00 /          Link98/       0.00*/         Link104/       0.00 /
     Link105/       0.00*/         Link106/       0.00 /        Link21.1/       0.00 /
     Link118/       0.00 /         Link124/       0.00*/       Link124.1/       0.00*/
       214.1/       0.00*/           283.1/       0.00 /       Restrct10/       0.00 /
   restrict6/       0.00 /       restrict7/       0.00 /          Link 5/       0.00 /
      WEIR46/       0.00 /        Link97.1/       0.00 /         WEIR119/       0.00 /
    FREE # 1/       0.01 /

     Conduit/   Velocity
      Link12/       0.00 /          Link13/       0.00 /          Link14/       0.49 /
      Link15/       0.43 /          Link16/       0.32 /          Link17/      -0.10 /
      Link18/       0.54 /          Link22/       0.00 /          Link23/       0.00 /
      Link24/       0.08 /          Link25/       0.27 /          Link26/       0.01 /
      Link27/       0.25 /          Link28/       0.25 /          Link30/       0.00 /
      Link31/       0.00 /          Link32/       0.17 /          Link33/       0.45 /
      Link47/       0.00 /          Link53/       0.00 /          Link54/       0.00 /
      Link55/       0.00 /          Link56/       0.00 /          Link68/       0.01 /
      Link69/       0.00 /          Link70/       0.00 /          Link71/       0.00 /
      Link72/       0.75 /          Link73/       0.11 /          Link74/       0.09 /
      Link75/       0.04 /          Link76/       0.11 /          Link77/       0.52 /
      Link78/       0.07 /          Link82/       0.93 /          Link83/       0.54 /
      Link84/       0.23 /          Link85/       0.19 /          Link90/       0.00 /
      Link93/       0.00 /          Link98/       0.00 /         Link104/       0.00 /
     Link105/       0.00 /         Link106/       0.00 /        Link21.1/       0.00 /
     Link118/       0.00 /         Link124/       0.00 /       Link124.1/       0.00 /
       214.1/       0.16 /           283.1/       0.00 /       Restrct10/       0.10 /
   restrict6/       0.06 /       restrict7/       0.06 /

     Conduit/      Width
      Link12/       2.96 /          Link13/       3.42 /          Link14/       1.18 /
      Link15/       1.18 /          Link16/       1.18 /          Link17/       1.18 /
      Link18/       1.18 /          Link22/       0.01 /          Link23/       1.18 /
      Link24/       1.18 /          Link25/       1.18 /          Link26/       1.18 /
      Link27/       1.18 /          Link28/       1.18 /          Link30/       0.55 /
      Link31/       1.01 /          Link32/       4.00 /          Link33/       6.00 /
      Link47/       0.59 /          Link53/       0.00 /          Link54/       4.00 /
      Link55/       0.01 /          Link56/       4.00 /          Link68/       0.00 /
      Link69/       0.38 /          Link70/       0.00 /          Link71/       0.01 /
      Link72/       1.18 /          Link73/       0.02 /          Link74/       0.02 /
      Link75/       0.03 /          Link76/       0.01 /          Link77/       0.78 /
      Link78/      20.11 /          Link82/       1.18 /          Link83/       1.18 /
      Link84/       0.20 /          Link85/       0.10 /          Link90/       0.59 /
      Link93/       0.59 /          Link98/       0.59 /         Link104/       0.78 /
     Link105/       0.88 /         Link106/       2.01 /        Link21.1/       2.46 /
     Link118/      30.00 /         Link124/       0.59 /       Link124.1/       1.33 /
       214.1/       0.78 /           283.1/       0.39 /       Restrct10/       0.78 /
   restrict6/       0.65 /       restrict7/       0.65 /

    Junction/        EGL
      Node11/       0.50 /          Node12/       0.00 /          Node20/       0.63 /
      Node21/       0.94 /          Node22/       6.24 /          Node23/       0.02 /
      Node24/       0.02 /          Node25/       0.09 /          Node26/       3.57 /
      Node27/       0.01 /          Node29/       0.01 /          Node30/       0.00 /
      Node31/       4.02 /          Node33/       0.00 /          Node34/       0.00 /
      Node35/       0.00 /          Node36/       0.00 /          Node37/      13.53 /
      Node38/       0.00 /          Node39/       0.00 /          Node41/       0.02 /
      Node43/       0.00 /          Node44/       0.30 /          Node45/       0.00 /
      Node46/       0.00 /          Node47/       0.00 /          Node48/       0.00 /
      Node63/       0.01 /          Node65/       2.02 /          Node66/       0.00 /
      Node69/       0.00 /          Node70/       0.00 /          Node71/       0.00 /
      Node74/       0.00 /          Node75/       0.01 /          Node79/       0.00 /
      Node80/       0.00 /          Node81/       0.00 /          Node82/       0.00 /
      Node83/       0.01 /          Node84/       1.25 /          Node86/       0.03 /
      Node87/       0.01 /          Node89/       0.00 /          Node92/       0.00 /
      Node94/       0.00 /          Node99/       0.00 /         Node100/       0.00 /
     Node101/       0.00 /         Node103/       0.05 /         Node108/       1.66 /
    Node30.1/       0.88 /         Node120/       0.53 /         Node124/       6.62 /
     Node125/       1.52 /        Node30.2/       0.00 /

    Junction/  Freeboard
      Node11/       5.55 /          Node12/       7.76 /          Node20/       5.28 /
      Node21/       6.24 /          Node22/       9.22 /          Node23/       7.03 /
      Node24/       7.29 /          Node25/       7.66 /          Node26/       7.88 /
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   Node27/      11.74 /          Node29/       7.42 /          Node30/       9.95 /
   Node31/       7.07 /          Node33/       8.76 /          Node34/      10.25 /
   Node35/      13.25 /          Node36/      26.21 /          Node37/      26.00 /
   Node38/      21.33 /          Node39/       7.20 /          Node41/       3.17 /
   Node43/       2.04 /          Node44/       1.95 /          Node45/       1.25 /
   Node46/      15.26 /          Node47/      38.00 /          Node48/      24.70 /
   Node63/       2.62 /          Node65/       1.98 /          Node66/       2.80 /
   Node69/       2.10 /          Node70/       2.67 /          Node71/       2.70 /
   Node74/       6.05 /          Node75/       8.81 /          Node79/       8.76 /
   Node80/      15.95 /          Node81/      16.12 /          Node82/      17.00 /
   Node83/       3.00 /          Node84/       7.72 /          Node86/       7.59 /
   Node87/      16.49 /          Node89/       2.00 /          Node92/       3.22 /
   Node94/       2.00 /          Node99/       2.00 /         Node100/       1.86 /
  Node101/       3.67 /         Node103/       4.57 /         Node108/       3.88 /
 Node30.1/       9.14 /         Node120/       1.07 /         Node124/      12.44 /
  Node125/       4.30 /        Node30.2/       9.98 /

 Junction/ Max Volume
   Node11/      43.75 /          Node12/      40.83 /          Node20/   57170.55 /
   Node21/   18590.18 /          Node22/     104.13 /          Node23/     107.27 /
   Node24/     106.67 /          Node25/      74.96 /          Node26/      69.25 /
   Node27/      23.55 /          Node29/      14.29 /          Node30/     209.91 /
   Node31/     165.59 /          Node33/   10753.44 /          Node34/     123.89 /
   Node35/     117.83 /          Node36/     104.05 /          Node37/      89.65 /
   Node38/      55.56 /          Node39/      18.55 /          Node41/       7.43 /
   Node43/    5043.03 /          Node44/    2868.37 /          Node45/       7.72 /
   Node46/      16.68 /          Node47/      16.10 /          Node48/      10.03 /
   Node63/      32.07 /          Node65/   74818.28 /          Node66/   25037.96 /
   Node69/       5.07 /          Node70/       6.82 /          Node71/      14.39 /
   Node74/      21.46 /          Node75/      13.49 /          Node79/      60.95 /
   Node80/      21.93 /          Node81/      15.35 /          Node82/      20.36 /
   Node83/       5.07 /          Node84/     111.95 /          Node86/      33.79 /
   Node87/      17.34 /          Node89/     522.91 /          Node92/     281.19 /
   Node94/    2831.62 /          Node99/   39303.49 /         Node100/    5875.74 /
  Node101/      45.30 /         Node103/      53.72 /         Node108/    3158.47 /
 Node30.1/     284.45 /         Node120/   23780.59 /         Node124/     197.20 /
  Node125/      73.13 /        Node30.2/     113.47 /

 Junction/Total Fldng
   Node11/       0.00 /          Node12/       0.00 /          Node20/   78350.47 /
   Node21/   30806.08 /          Node22/       0.00 /          Node23/      26.91 /
   Node24/      28.46 /          Node25/       0.00 /          Node26/       0.00 /
   Node27/       0.00 /          Node29/       0.00 /          Node30/      65.07 /
   Node31/      38.29 /          Node33/  106305.02 /          Node34/       0.00 /
   Node35/       0.00 /          Node36/       0.00 /          Node37/       0.00 /
   Node38/       0.00 /          Node39/       0.00 /          Node41/       0.00 /
   Node43/    8297.67 /          Node44/    3285.25 /          Node45/       0.00 /
   Node46/       0.00 /          Node47/       0.00 /          Node48/       0.00 /
   Node63/       0.00 /          Node65/       0.00 /          Node66/   26601.14 /
   Node69/       0.00 /          Node70/       0.00 /          Node71/       0.00 /
   Node74/       0.00 /          Node75/       0.00 /          Node79/       0.00 /
   Node80/       0.00 /          Node81/       0.00 /          Node82/       0.00 /
   Node83/       0.00 /          Node84/       0.00 /          Node86/       0.00 /
   Node87/       0.00 /          Node89/    1005.51 /          Node92/     253.15 /
   Node94/    3160.32 /          Node99/       0.00 /         Node100/    6056.34 /
  Node101/       0.00 /         Node103/       0.00 /         Node108/    3300.87 /
 Node30.1/     157.34 /         Node120/       0.00 /         Node124/       0.00 /
  Node125/       0.00 /        Node30.2/       0.00 /

  Conduit/ Cross Sectional Area
   Link12/       1.36 /          Link13/       2.36 /          Link14/       0.01 /
   Link15/       0.01 /          Link16/       0.02 /          Link17/       0.06 /
   Link18/       0.01 /          Link22/       7.09 /          Link23/       0.00 /
   Link24/       0.00 /          Link25/       0.00 /          Link26/       0.00 /
   Link27/       0.00 /          Link28/       0.00 /          Link30/       0.02 /
   Link31/       0.20 /          Link32/       0.00 /          Link33/       0.02 /
   Link47/       0.00 /          Link53/       0.00 /          Link54/       0.00 /
   Link55/       0.00 /          Link56/       0.00 /          Link68/       0.00 /
   Link69/       0.10 /          Link70/       0.00 /          Link71/       0.00 /
   Link72/       0.00 /          Link73/       0.00 /          Link74/       0.00 /
   Link75/       0.01 /          Link76/       0.00 /          Link77/       0.01 /
   Link78/       0.07 /          Link82/       0.01 /          Link83/       0.01 /
   Link84/       0.03 /          Link85/       0.04 /          Link90/       0.00 /
   Link93/       0.00 /          Link98/       0.00 /         Link104/       0.00 /
  Link105/       0.06 /         Link106/       0.90 /        Link21.1/       2.26 /
  Link118/       0.00 /         Link124/       0.00 /       Link124.1/       0.17 /
    214.1/       0.00 /           283.1/       0.00 /       Restrct10/       0.01 /
restrict6/       0.01 /       restrict7/       0.01 /

  Conduit/  Final Volume
   Link12/     425.74 /          Link13/     733.31 /          Link14/       4.33 /
   Link15/       4.60 /          Link16/      12.53 /          Link17/       3.30 /
   Link18/       5.88 /          Link22/    2409.83 /          Link23/       0.00 /
   Link24/       0.00 /          Link25/       0.00 /          Link26/       0.06 /
   Link27/       0.57 /          Link28/       0.59 /          Link30/       0.73 /
   Link31/      12.31 /          Link32/       1.07 /          Link33/       3.98 /
   Link47/       0.00 /          Link53/       0.00 /          Link54/       0.02 /
   Link55/       0.08 /          Link56/       0.13 /          Link68/       0.03 /
   Link69/      25.12 /          Link70/       0.13 /          Link71/       0.58 /
   Link72/       0.03 /          Link73/       0.29 /          Link74/       0.51 /
   Link75/       0.64 /          Link76/       0.17 /          Link77/       0.58 /
   Link78/      24.15 /          Link82/       3.22 /          Link83/       1.57 /
   Link84/       8.38 /          Link85/      17.06 /          Link90/       0.00 /
   Link93/       0.00 /          Link98/       0.00 /         Link104/       0.00 /
  Link105/       8.37 /         Link106/     187.87 /        Link21.1/     406.44 /
  Link118/       0.00 /         Link124/       0.00 /       Link124.1/      15.50 /
    214.1/       0.00 /           283.1/       0.00 /       Restrct10/      42.66 /
restrict6/      30.20 /       restrict7/      31.93 /

  Conduit/ Hydraulic Radius
   Link12/       0.40 /          Link13/       0.57 /          Link14/       0.02 /
   Link15/       0.02 /          Link16/       0.02 /          Link17/       0.06 /
   Link18/       0.02 /          Link22/       0.75 /          Link23/       0.01 /
   Link24/       0.01 /          Link25/       0.01 /          Link26/       0.01 /
   Link27/       0.01 /          Link28/       0.01 /          Link30/       0.02 /
   Link31/       0.16 /          Link32/       0.00 /          Link33/       0.00 /
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```
        Link47/       0.00 /          Link53/       0.00 /          Link54/       0.00 /
        Link55/       0.00 /          Link56/       0.00 /          Link68/       0.00 /
        Link69/       0.02 /          Link70/       0.00 /          Link71/       0.00 /
        Link72/       0.01 /          Link73/       0.00 /          Link74/       0.00 /
        Link75/       0.00 /          Link76/       0.00 /          Link77/       0.02 /
        Link78/       0.00 /          Link82/       0.01 /          Link83/       0.02 /
        Link84/       0.00 /          Link85/       0.00 /          Link90/       0.00 /
        Link93/       0.00 /          Link98/       0.00 /         Link104/       0.01 /
       Link105/       0.03 /         Link106/       0.33 /        Link21.1/       0.53 /
       Link118/       0.00 /         Link124/       0.00 /       Link124.1/       0.06 /
         214.1/       0.01 /           283.1/       0.00 /       Restrct10/       0.01 /
     restrict6/       0.01 /       restrict7/       0.01 /

       Conduit/ Upstream/ Downstream Elevation
        Link12/   632.02/   632.02          Link13/   632.02/   632.02          Link14/   630.13/   628.88/
        Link15/   628.88/   628.05          Link16/   628.05/   626.44          Link17/   626.44/   626.44/
        Link18/   626.44/   623.70          Link22/   620.02/   620.02          Link23/   610.56/   608.43/
        Link24/   608.43/   608.40          Link25/   608.40/   607.40          Link26/   607.40/   606.46/
        Link27/   606.46/   605.45          Link28/   605.45/   604.44          Link30/   636.46/   636.04/
        Link31/   636.04/   636.04          Link32/   592.74/   572.00          Link33/   593.30/   572.00/
        Link47/   628.05/   628.05          Link53/   636.04/   636.00          Link54/   636.00/   633.43/
        Link55/   633.43/   631.01          Link56/   630.20/   622.00          Link68/   622.00/   618.98/
        Link69/   618.98/   617.70          Link70/   617.21/   615.61          Link71/   615.61/   610.56/
        Link72/   604.44/   602.92          Link73/   602.92/   597.89          Link74/   597.89/   595.18/
        Link75/   595.18/   594.67          Link76/   594.67/   592.74          Link77/   640.02/   639.60/
        Link78/   639.60/   636.35          Link82/   623.70/   613.51          Link83/   613.51/   612.79/
        Link84/   612.79/   606.01          Link85/   606.01/   593.30          Link90/   633.30/   631.20/
        Link93/   633.08/   632.33          Link98/   632.33/   631.13         Link104/   631.13/   630.32/
       Link105/   630.27/   630.02         Link106/   630.02/   630.02        Link21.1/   620.02/   620.02/
       Link118/   636.46/   636.46         Link124/   620.31/   620.31       Link124.1/   620.31/   620.02/
         214.1/   617.70/   617.21           283.1/   631.01/   630.22       Restrct10/   632.02/   631.99/
     restrict6/   620.02/   619.99       restrict7/   630.02/   629.99


*=========================================================*
|         Table E7 -  Iteration Summary                   |
*=========================================================*

Total number of time steps simulated............        576
Total number of passes in the simulation........      49256
Total number of time steps during simulation....      28915
Ratio of actual # of time steps / NTCYC.........     50.200
Average number of iterations per time step......      1.703
Average  time step size(seconds)................      5.976
Smallest time step size(seconds)................      1.000
Largest  time step size(seconds)................    300.000
Average minimum Conduit Courant time step (sec).     11.344
Average minimum implicit time step (sec)........      6.054
Average minimum junction time step (sec)........      6.054
Average Courant Factor Tf.......................      6.054
Number of times omega reduced...................      10178


*=========================================================*
|     Table E8 - Junction Time Step Limitation Summary    |
*=========================================================*
|   Not Convr = Number of times this junction did not     |
|               converge during the simulation.           |
|   Avg Convr = Average junction iterations.              |
|   Conv err  = Mean convergence error.                   |
|   Omega Cng = Change of omega during iterations         |
|   Max Itern = Maximum number of iterations              |
*=========================================================*
```

Junction	Not Convr	Avg Convr	Total Itt	Omega Cng	Max Itern	Ittrn >10	Ittrn >25	Ittrn >40
Node11	0	1.90	54913	6	47	20	7	3
Node12	0	2.12	61410	1	6	0	0	0
Node20	0	2.15	62030	1006	54	478	4	2
Node21	0	3.19	92326	3203	172	1276	105	72
Node22	1	2.20	63489	36	501	41	31	31
Node23	1	1.86	53783	14	501	10	7	7
Node24	4	2.03	58597	33	501	26	12	7
Node25	0	1.46	42322	5	30	5	1	0
Node26	0	1.70	49151	4	24	5	0	0
Node27	0	1.62	46822	2	31	3	1	0
Node29	0	1.44	41623	0	7	0	0	0
Node30	0	1.41	40640	29	403	18	12	12
Node31	0	2.25	65132	52	242	171	2	1
Node33	2	2.27	65533	10	501	67	27	6
Node34	9	1.82	52527	30	501	30	29	28
Node35	0	1.40	40486	4	453	5	4	4
Node36	0	1.48	42889	15	487	15	15	15
Node37	0	1.66	47931	16	494	15	14	14
Node38	0	1.24	35746	1	466	3	1	1
Node39	0	8.81	254776	662	493	656	646	635
Node41	0	3.53	101991	155	481	153	152	150
Node43	0	1.87	54029	2	21	1	0	0
Node44	0	1.26	36468	3	25	2	1	0
Node45	0	1.28	37019	0	5	0	0	0
Node46	0	1.23	35521	1	18	1	0	0
Node47	0	1.52	44035	4	60	3	1	1
Node48	0	1.62	46920	2	11	1	0	0
Node63	8	2.58	74522	111	501	118	109	106
Node65	0	1.36	39435	0	5	0	0	0
Node66	1	1.37	39663	42	501	20	6	5
Node69	0	1.27	36725	0	6	0	0	0
Node70	0	1.27	36750	0	6	0	0	0
Node71	0	1.38	39900	1	26	1	1	0
Node74	0	1.52	43981	1	35	10	2	0
Node75	0	6.17	178279	521	495	437	428	420
Node79	0	2.73	78832	33	42	75	25	2
Node80	0	1.20	34758	1	8	0	0	0
Node81	0	1.29	37303	44	8	0	0	0
Node82	0	1.22	35333	16	8	0	0	0
Node83	0	1.53	44281	0	5	0	0	0
Node84	1	1.85	53466	33	501	39	28	22

Node86	0	1.54	44620	1	26	1	1	0
Node87	0	1.55	44693	0	19	1	0	0
Node89	0	1.92	55639	2	26	3	1	0
Node92	0	1.24	35785	3	12	2	0	0
Node94	6	11.05	319632	681	501	683	678	678
Node99	0	1.86	53839	1496	131	770	98	55
Node100	0	1.46	42173	18	308	7	4	4
Node101	0	1.37	39693	36	310	4	2	1
Node103	0	1.49	42952	9	33	18	3	0
Node108	8	12.48	360922	752	501	785	759	751
Node30.1	0	2.35	68063	214	244	261	36	1
Node120	0	1.42	41139	739	10	408	0	0
Node124	0	1.86	53829	3	25	45	1	0
Node125	0	1.50	43441	0	13	15	0	0
Node30.2	0	2.04	58855	125	251	155	37	15

Total number of iterations for all junctions.. 3706612

Minimum number of possible iterations..... 1619240

Efficiency of the simulation..... 2.29

Excellent Efficiency

```
*==========================================================*
| Extran Efficiency is an indicator of the efficiency of   |
| the simulation.  Ideal efficiency is one iteration per   |
| time step.  Altering the underrelaxation parameter,      |
| lowering the time step, increasing the flow and head     |
| tolerance are good ways of improving the efficiency,     |
| another is lowering the internal time step. The lower the|
| efficiency generally the faster your model will run.     |
| If your efficiency is less than 1.5 then you may try     |
| increasing your time step so that your overall simulation|
| is faster.  Ideal efficiency would be around 2.0         |
|                                                          |
| Good Efficiency      < 1.5           mean iterations     |
| Excellent Efficiency < 2.5 and > 1.5 mean iterations     |
| Good      Efficiency < 4.0 and > 2.5 mean iterations     |
| Fair      Efficiency < 7.5 and > 4.0 mean iterations     |
| Poor Efficiency      > 7.5           mean iterations     |
*==========================================================*
```

```
*=====================================================*
|        Table E9 - JUNCTION SUMMARY STATISTICS       |
| The Maximum area is only the area of the node, it   |
| does not include the area of the surrounding conduits|
*=====================================================*
```

Junction Name	Ground Elevation feet	Uppermost PipeCrown Elevation feet	Maximum Junction Elevation feet	Time of Occurence Hr.	Min.	Feet of Surcharge at Max Elevation	Freeboard of node feet	Maximum Junction Area ft^2	Maximum Gutter Depth feet	Maximum Gutter Width feet	Maximum Gutter Velocity ft/s
Node11	623.2500	623.2500	620.6818	1	8	0.0000	2.5682	12.5660	0.0000	0.0000	0.0000
Node12	624.9700	624.9700	620.4592	2	35	0.0000	4.5108	12.5660	0.0000	0.0000	0.0000
Node20	637.3000	635.3900	639.8192	2	47	4.4292	0.0000	62096.286	0.0000	0.0000	0.0000
Node21	638.2600	635.0800	639.8076	2	45	4.7276	0.0000	23499.952	0.0000	0.0000	0.0000
Node22	639.3500	639.3500	638.3964	2	9	0.0000	0.9536	12.5660	0.0000	0.0000	0.0000
Node23	635.9100	631.8600	637.3968	2	0	5.5368	0.0000	12.5660	0.0000	0.0000	0.0000
Node24	635.3400	631.0300	636.5188	2	55	5.4888	0.0000	12.5660	0.0000	0.0000	0.0000
Node25	634.1030	629.3500	632.3156	1	37	2.9656	1.7874	12.5660	0.0000	0.0000	0.0000
Node26	634.3200	629.4200	631.9309	1	37	2.5109	2.3891	12.5660	0.0000	0.0000	0.0000
Node27	635.4400	626.6900	625.5643	1	38	0.0000	9.8757	12.5660	0.0000	0.0000	0.0000
Node29	620.2110	620.2110	613.9170	1	38	0.0000	6.2940	12.5660	0.0000	0.0000	0.0000
Node30	631.4300	622.9800	631.4468	1	1	8.4668	0.0000	5084.8805	0.0000	0.0000	0.0000
Node31	627.0900	619.0000	629.1770	1	59	10.1770	0.0000	12.5660	0.0000	0.0000	0.0000
Node33	619.3200	619.3200	620.4606	2	35	1.1406	0.0000	15643.364	0.0000	0.0000	0.0000
Node34	618.6800	611.4300	618.2893	2	28	6.8593	0.3907	12.5660	0.0000	0.0000	0.0000
Node35	621.6500	611.4000	617.7766	2	26	6.3766	3.8734	12.5660	0.0000	0.0000	0.0000
Node36	633.6100	610.4000	615.6800	2	20	5.2800	17.9300	12.5660	0.0000	0.0000	0.0000
Node37	632.4600	609.4600	613.5944	2	9	4.1344	18.8656	12.5660	0.0000	0.0000	0.0000
Node38	626.7800	608.4500	609.8716	1	38	1.4216	16.9084	12.5660	0.0000	0.0000	0.0000
Node39	611.6440	607.4400	605.9166	1	39	0.0000	5.7274	12.5660	0.0000	0.0000	0.0000
Node41	633.3700	631.2200	630.7915	0	52	0.0000	2.5785	12.5660	0.0000	0.0000	0.0000
Node43	638.5000	638.4600	639.1949	1	25	0.7349	0.0000	10017.400	0.0000	0.0000	0.0000
Node44	637.9900	636.9900	638.4398	2	4	1.4498	0.0000	7840.0946	0.0000	0.0000	0.0000
Node45	637.2900	637.2900	636.6545	2	4	0.0000	0.6355	12.5660	0.0000	0.0000	0.0000
Node46	608.0000	610.3500	594.0675	1	11	0.0000	13.9325	12.5660	0.0000	0.0000	0.0000
Node47	610.0000	576.0000	573.2811	1	11	0.0000	36.7189	12.5660	0.0000	0.0000	0.0000
Node48	618.0000	609.8000	594.0982	1	15	0.0000	23.9018	12.5660	0.0000	0.0000	0.0000
Node63	633.6300	633.6300	633.5521	0	50	0.0000	0.0779	12.5660	0.0000	0.0000	0.0000
Node65	642.0000	642.0000	641.2245	1	36	0.0000	0.7755	50965.200	0.0000	0.0000	0.0000
Node66	634.7700	633.4700	636.5619	2	0	3.0919	0.0000	30002.771	0.0000	0.0000	0.0000
Node69	638.1000	636.5000	636.4036	2	5	0.0000	1.6964	12.5660	0.0000	0.0000	0.0000
Node70	636.1000	636.0600	633.9731	2	6	0.0000	2.1269	12.5660	0.0000	0.0000	0.0000
Node71	624.7000	624.7000	623.1453	0	54	0.0000	1.5547	12.5660	0.0000	0.0000	0.0000
Node74	625.0300	625.0300	620.6875	1	7	0.0000	4.3425	12.5660	0.0000	0.0000	0.0000
Node75	611.7300	611.7200	603.9939	1	39	0.0000	7.7361	12.5660	0.0000	0.0000	0.0000
Node79	624.3700	624.3700	620.4603	2	36	0.0000	3.9097	12.5660	0.0000	0.0000	0.0000
Node80	613.8400	613.8400	599.6348	1	39	0.0000	14.2052	12.5660	0.0000	0.0000	0.0000
Node81	611.3000	611.2900	596.4019	2	16	0.0000	14.8981	12.5660	0.0000	0.0000	0.0000
Node82	611.6700	611.6600	596.2905	2	25	0.0000	15.3795	12.5660	0.0000	0.0000	0.0000
Node83	642.6000	642.6000	640.0035	1	24	0.0000	2.5965	12.5660	0.0000	0.0000	0.0000
Node84	639.7400	634.7700	639.6791	2	39	4.9091	0.0609	12.5660	0.0000	0.0000	0.0000
Node86	621.1000	616.4900	616.1789	1	38	0.0000	4.9211	12.5660	0.0000	0.0000	0.0000
Node87	622.5000	622.5000	607.3803	1	45	0.0000	15.1197	12.5660	0.0000	0.0000	0.0000

Node89	639.1000	639.1000	639.1949	1	24	0.0949	0.0000	5497.7738	0.0000	0.0000	0.0000
Node92	636.3000	634.5800	636.3470	1	1	1.7670	0.0000	5240.7313	0.0000	0.0000	0.0000
Node94	635.3000	634.8000	635.7455	1	12	0.9455	0.0000	7806.4915	0.0000	0.0000	0.0000
Node99	639.7000	637.7000	639.8103	2	45	2.1103	0.0000	22651.200	0.0000	0.0000	0.0000
Node100	634.1900	633.8300	634.9649	1	16	1.1349	0.0000	10852.371	0.0000	0.0000	0.0000
Node101	634.8000	633.1300	634.7353	1	16	1.6053	0.0647	12.5660	0.0000	0.0000	0.0000
Node103	634.8400	632.3200	634.5450	1	19	2.2250	0.2950	12.5660	0.0000	0.0000	0.0000
Node108	633.9000	632.7000	634.3829	1	25	1.6829	0.0000	8103.6813	0.0000	0.0000	0.0000
Node30.1	629.1600	622.1400	629.1912	1	59	7.0512	0.0000	5158.5435	0.0000	0.0000	0.0000
Node120	639.6000	638.0000	639.8208	2	47	1.8208	0.0000	26571.600	0.0000	0.0000	0.0000
Node124	632.4600	616.4000	629.0928	1	59	12.6928	3.3672	12.5660	0.0000	0.0000	0.0000
Node125	634.3200	631.0000	634.3200	0	46	3.3200	0.0000	12.5660	0.0000	0.0000	0.0000
Node30.2	630.2900	623.3100	629.3399	1	58	6.0299	0.9501	12.5660	0.0000	0.0000	0.0000

```
*====================================================*
|        Table E10 - CONDUIT SUMMARY STATISTICS      |
| Note: The peak flow may be less than the design flow |
| and the conduit may still surcharge because of the |
| downstream boundary conditions.                    |
|                                                    |
| * denotes an open conduit that has been overtopped |
|   this is a potential source of severe errors      |
*====================================================*
```

Conduit Name	Design Flow (cfs)	Conduit Design Velocity (ft/s)	Maximum Vertical Depth (in)	Maximum Computed Flow (cfs)	Time of Occurence Hr.	Time of Occurence Min.	Maximum Computed Velocity (ft/s)	Time of Occurence Hr.	Time of Occurence Min.	Ratio of Max. to Design Flow	Maximum Water Elev at Pipe Ends Upstream (ft)	Maximum Water Elev at Pipe Ends Dwnstrm (ft)	Ratio d/D US	Ratio d/D DS	
Link12	49.0514	3.9034	48.0000	38.6410	1	6	4.5657	1	6	0.7878	639.8192	639.8076	2.107	2.182	
Link13	49.1301	3.9097	48.0000	48.0085	3	40	4.3894	1	1	0.9772	639.8076	639.6791	2.182	2.227	
Link14	43.7477	6.1890	36.0000	55.2293	3	0	7.7534	3	0	1.2624	638.3964	637.3968	2.762	2.846	
Link15	36.6850	5.1899	36.0000	54.9350	3	0	7.7220	3	0	1.4975	637.3968	636.5187	2.846	2.830	
Link16	37.2836	5.2745	36.0000	62.9813	2	15	8.8170	2	15	1.6893	636.5188	632.3155	2.830	1.989	
Link17	26.7696	3.7871	36.0000	-66.1111	2	10	-9.3078	2	11	-2.4696	632.3156	631.9309	1.965	1.860	
Link18	55.5441	7.8579	36.0000	78.8211	1	37	11.4899	1	37	1.4191	631.9309	625.5643	1.837	0.625	
Link22	63.1866	8.9391	36.0000	23.2825	1	1	3.2320	1	1	0.3685	629.1770	629.0931	4.392	5.231	
Link23	59.7442	8.4521	36.0000	62.2644	3	5	8.6858	3	5	1.0422	620.4606	618.2893	3.299	3.286	
Link24	14.5486	2.0582	36.0000	62.2666	3	5	8.6891	3	5	4.2799	618.2893	617.7766	3.286	3.126	
Link25	41.3740	5.8532	36.0000	62.2664	3	5	8.6995	3	5	1.5050	617.7766	615.6800	3.126	2.760	
Link26	39.9177	5.6472	36.0000	62.2717	3	5	8.7227	3	5	1.5600	615.6800	613.5944	2.760	2.378	
Link27	34.5795	4.8920	36.0000	66.8012	2	9	9.3736	2	9	1.9318	613.5944	609.8716	2.378	1.474	
Link28	40.1573	5.6811	36.0000	66.8053	2	9	9.9305	2	9	1.6636	609.8716	605.9166	1.474	0.492	
Link30	5.2486	4.2769	15.0000	5.9426	1	6	4.8087	1	6	1.1322	639.1949	638.4398	2.188	2.160	
Link31	2.4660	2.0095	15.0000	-5.0741	2	4	-4.3270	2	4	-2.0576	638.4398	636.6545	1.920	0.732	
Link32	451.1614	28.1976	48.0000	126.6812	1	11	23.9577	1	11	0.2808	594.0675	573.2811	0.332	0.320	
Link33	823.3655	34.3069	48.0000	106.9822	1	15	21.1052	1	15	0.1299	594.0982	573.2811	0.200	0.320	
Link47	29.5450	16.7191	18.0000	28.5382	0	30	22.1265	0	18	0.9659	636.5619	636.5188	3.061	5.459	
Link53	1.7213	0.9287	6.0009	5.0741	2	4	2.0933	2	4	2.9479	636.6545	636.4036	1.229	0.807	*
Link54	1.9517	1.2011	6.4616	5.0740	2	5	1.4790	2	5	2.5998	636.4036	633.9731	0.749	1.009	*
Link55	328.6757	8.6186	31.5600	5.0739	2	6	2.1350	3	43	0.0154	633.9731	633.5521	0.207	0.970	
Link56	55.4504	2.9184	13.7424	16.2722	0	52	1.7563	0	51	0.2935	630.7915	623.1453	0.516	1.000	*
Link68	138.7842	3.0723	32.4000	16.2018	0	54	3.2756	0	45	0.1167	623.1453	620.6875	0.424	0.632	
Link69	12349.67	11.4824	72.6000	-82.8223	0	47	0.8112	0	32	-0.0067	620.6875	620.6818	0.282	0.575	
Link70	10078.61	10.5486	93.1200	230.3298	1	13	3.0379	1	14	0.0229	620.4592	620.4603	0.419	0.625	
Link71	58179.11	25.6200	105.1218	-496.841	1	15	1.3448	0	31	-0.0085	620.4603	620.4606	0.554	1.130	*
Link72	137.3690	19.4337	36.0000	66.8090	1	39	19.2954	1	39	0.4863	605.9166	604.3978	0.492	0.492	
Link73	56825.79	51.6051	143.0400	66.8076	1	39	7.6329	2	13	0.0012	603.9939	599.6348	0.090	0.146	
Link74	37318.09	37.1859	191.4000	66.8070	2	10	7.7087	2	10	0.0018	599.6348	596.4019	0.109	0.077	
Link75	29495.40	24.1735	209.5200	66.8054	2	10	3.3929	1	13	0.0023	596.4019	596.2905	0.070	0.093	
Link76	40618.15	48.9919	211.3200	66.8008	2	10	9.9938	1	14	0.0016	596.2905	594.0675	0.092	0.075	
Link77	20.0104	6.3695	24.0000	17.0752	1	36	9.1983	1	36	0.8533	641.2245	640.0035	0.612	0.202	
Link78	1059.813	5.4349	36.0000	18.0153	1	24	1.7382	1	24	0.0170	640.0035	638.3964	0.135	0.682	
Link82	110.5183	15.6351	36.0000	78.8208	1	38	16.2613	1	38	0.7132	625.5643	616.1789	0.625	0.896	
Link83	54.8977	7.7664	36.0000	78.8209	1	38	12.6030	1	40	1.4358	616.1789	613.9170	0.896	0.379	
Link84	4900.754	21.9785	89.1720	78.8207	1	38	7.3430	1	35	0.0161	613.9170	607.3803	0.153	0.186	
Link85	34130.32	31.7780	198.0000	78.7903	1	39	6.6376	1	28	0.0023	607.3803	594.0982	0.084	0.048	
Link90	10.4297	5.9020	18.0000	10.9589	0	44	6.6883	0	44	1.0507	635.7455	634.3829	1.630	2.122	
Link93	8.0467	4.5535	18.0000	12.9021	0	49	7.2517	0	49	1.6034	636.3470	634.9649	2.178	1.757	
Link98	19.1908	10.8598	18.0000	11.9522	0	45	9.7908	0	40	0.6228	634.9649	634.7353	1.757	2.404	
Link104	17.3295	5.5161	24.0000	11.8420	0	45	5.3604	0	39	0.6833	634.7353	634.5450	1.803	2.113	
Link105	17.3891	5.5351	24.0000	11.5610	0	45	4.3550	0	36	0.6648	634.5450	634.3829	2.138	2.421	
Link106	31.4205	6.4009	30.0000	21.9592	0	45	4.4604	0	45	0.6989	634.3829	634.3200	1.937	2.328	
Link21.1	95.4346	13.5012	36.0000	22.9578	1	1	6.8505	0	34	0.2406	629.1912	629.1770	3.350	4.392	
Link118	908.4799	10.8152	32.8184	13.6088	0	46	1.2143	0	29	0.0150	639.1949	639.1949	0.766	1.000	*
Link124	12.9749	7.3423	18.0000	22.3812	1	1	12.2382	1	1	1.7250	631.4468	629.3399	6.645	6.020	
Link124.1	82.3852	11.6551	36.0000	22.6541	1	1	7.8082	0	43	0.2750	629.3399	629.1912	3.010	3.350	
214.1	15.9283	5.0701	24.0000	29.3898	0	49	9.4605	0	49	1.8451	620.6818	620.4592	1.491	1.625	
283.1	2.7121	3.4532	12.0000	4.8315	0	50	6.1272	0	50	1.7815	633.5521	631.1258	2.542	0.906	
Restrct10	35.6314	0.8025	23.9939	48.0230	3	41	15.0748	3	41	1.3478	639.6791	638.3964	3.841	3.204	
restrict6	13.5485	0.4815	19.9924	23.8929	1	2	10.7791	1	2	1.7635	629.0931	621.6560	5.458	1.000	
restrict7	13.5485	0.4815	19.9924	16.8911	1	14	7.9940	1	56	1.2467	634.3200	631.9309	2.593	1.165	
Link 5	Undefnd	Undefnd	Undefn	164.2663	1	8									
WEIR46	Undefnd	Undefnd	Undefn	11.6520	0	50									
Link97.1	Undefnd	Undefnd	Undefn	30.5157	2	7									
WEIR119	Undefnd	Undefnd	Undefn	52.6365	1	12									
FREE # 1	Undefnd	Undefnd	Undefn	232.8969	1	14									

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*==================================================*
| Table E11.  Area assumptions used in the analysis|
| Subcritical and Critical flow assumptions from   |
|    Subroutine Head.  See Figure 17-1 in the      |
|          manual for further information.         |
*==================================================*
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Conduit Name	Duration of Dry Flow(min)	Duration of Sub-Critical Flow(min)	Durat. of Upstream Critical Flow(min)	Durat. of Downstream Critical Flow(min)	Maximum Hydraulic Radius-m	Maximum X-Sect Area(ft^2)	Maximum Vel*D (ft^2/s)
Link12	50.0000	2830.0000	0.0000	0.0000	1.2158	13.1321	17.8762
Link13	50.1786	2829.8214	0.0000	0.0000	1.2165	13.1618	31.8033
Link14	32.2993	2847.7007	0.0000	0.0000	0.9104	7.4054	49.0391
Link15	18.3333	2861.6667	0.0000	0.0000	0.9127	7.3425	48.3035
Link16	15.0000	2865.0000	0.0000	0.0000	0.9121	7.2857	60.5918

Link17	15.8333	2864.1667	0.0000	0.0000	0.9108	7.3576	51.0309
Link18	15.8333	2864.1667	0.0000	0.0000	0.8968	5.8316	42.4051
Link22	20.2500	2859.7500	0.0000	0.0000	0.8782	7.2611	38.6289
Link23	470.6481	2409.3519	0.0000	0.0000	0.8965	7.2489	84.7292
Link24	15.8333	2864.1667	0.0000	0.0000	0.9117	7.3811	82.2168
Link25	67.3148	2812.6852	0.0000	0.0000	0.9127	7.4048	75.1929
Link26	128.2407	2751.7593	0.0000	0.0000	0.9127	7.3942	65.2038
Link27	17.5000	2862.5000	0.0000	0.0000	0.9105	7.2574	54.1212
Link28	17.5000	2862.5000	0.0000	0.0000	0.8853	5.1699	29.2716
Link30	2113.6905	766.3095	0.0000	0.0000	0.3735	1.2585	12.5080
Link31	22.4167	2857.5833	0.0000	0.0000	0.3652	0.8994	7.1705
Link32	17.5000	2862.5000	0.0000	0.0000	0.7962	5.2166	31.0665
Link33	15.8333	2864.1667	0.0000	0.0000	0.6565	6.1668	21.7908
Link47	2662.3913	213.4420	0.0000	4.1667	0.4483	1.8221	33.1131
Link53	22.5167	2857.4833	0.0000	0.0000	0.3846	1.9051	1.0656
Link54	22.6833	2857.3167	0.0000	0.0000	0.2753	4.1467	0.7000
Link55	23.5333	2856.4667	0.0000	0.0000	0.3652	14.7116	1.6230
Link56	15.0000	2865.0000	0.0000	0.0000	0.3776	15.1423	1.5179
Link68	15.8333	2864.1667	0.0000	0.0000	0.5435	7.7400	4.1788
Link69	17.5000	2862.5000	0.0000	0.0000	1.2940	167.8493	0.8467
Link70	21.0500	2858.9500	0.0000	0.0000	1.5856	315.5868	6.3129
Link71	21.2000	2858.8000	0.0000	0.0000	7.4073	1797.7362	3.7853
Link72	20.2167	1490.8975	0.0000	1368.8858	0.7417	3.4627	28.4746
Link73	20.8167	2859.1833	0.0000	0.0000	0.4932	14.8072	10.7546
Link74	22.5833	2857.4167	0.0000	0.0000	0.7993	6.6584	11.4289
Link75	27.4815	2852.5185	0.0000	0.0000	0.8212	23.7117	4.7651
Link76	28.4074	2851.5926	0.0000	0.0000	0.7125	5.6930	14.3548
Link77	49.6893	2830.3107	0.0000	0.0000	0.5275	1.1215	7.3956
Link78	49.7175	97.1942	0.0000	2733.0883	0.3963	47.7430	1.0567
Link82	15.8333	2864.1667	0.0000	0.0000	0.8529	5.6294	37.0970
Link83	18.3333	2861.6667	0.0000	0.0000	0.8803	4.3946	24.1058
Link84	20.0000	2860.0000	0.0000	0.0000	0.7590	12.0452	9.2369
Link85	20.0500	2859.9500	0.0000	0.0000	0.7363	8.4418	7.1264
Link90	15.8333	75.5793	0.0000	2788.5873	0.4563	1.8474	13.4121
Link93	15.8333	2864.1667	0.0000	0.0000	0.4562	1.8141	19.1680
Link98	2601.3095	278.6905	0.0000	0.0000	0.4482	1.8141	14.8736
Link104	17.5000	195.4643	0.0000	2667.0357	0.5976	3.2229	10.4964
Link105	2508.5795	371.4205	0.0000	0.0000	0.5976	3.2220	12.1843
Link106	15.8333	2864.1667	0.0000	0.0000	0.7471	5.0351	17.7813
Link21.1	20.0667	2859.9333	0.0000	0.0000	0.8965	7.2654	31.8210
Link118	2081.9643	798.0357	0.0000	0.0000	1.6471	107.4766	0.4919
Link124	2631.3798	248.6202	0.0000	0.0000	0.4501	1.8271	94.7722
Link124.1	2614.7436	265.2564	0.0000	0.0000	0.8965	7.2506	24.3332
214.1	591.0500	2288.9500	0.0000	0.0000	0.6042	3.2217	21.3710
283.1	15.0000	0.0000	0.0000	2865.0000	0.3034	0.7702	10.5620
Restrct10	52.5255	227.8316	0.0000	2599.6429	0.6079	3.2311	83.3096
restrict6	38.2500	0.0000	0.0000	2841.7500	0.5003	2.2086	43.3253
restrict7	27.2222	118.9153	0.0000	2733.8624	0.5034	2.2459	21.9537

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| Table E12. Mean Conduit Flow Information |
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Conduit Name	Mean Flow (cfs)	Total Flow (ft^3)	Mean Percent Change	Low Flow Weightng	Mean Froude Number	Mean Hydraulic Radius	Mean Cross Area	Mean Conduit Roughness
Link12	1.0872	187875.90	0.0000	0.9635	0.0383	0.6258	4.8217	0.0120
Link13	2.5399	438887.47	0.0000	0.9633	0.0759	0.7273	5.5298	0.0120
Link14	3.2503	561652.25	0.0000	0.9823	0.5976	0.3172	2.3735	0.0120
Link15	3.2489	561409.21	0.0000	0.9996	0.5352	0.3351	2.4975	0.0120
Link16	4.8767	842701.93	0.0001	0.9998	0.5912	0.3440	2.5228	0.0120
Link17	-5.0801	-877842.9	0.0001	0.9997	0.4802	0.3862	2.5062	0.0120
Link18	5.5998	967646.97	0.0000	0.9997	1.1287	0.3470	2.2152	0.0120
Link22	0.4423	76420.907	0.0000	0.9991	0.0521	0.7378	6.9628	0.0120
Link23	7.7161	1333343.3	0.0000	0.9023	2.7932	0.3939	3.5660	0.0120
Link24	7.7162	1333359.3	0.0000	0.9868	1.3426	0.3957	3.6185	0.0120
Link25	7.7161	1333337.3	0.0000	0.9593	3.6383	0.3938	3.6001	0.0120
Link26	7.7163	1333378.6	0.0000	0.9787	0.5525	0.3943	3.6020	0.0120
Link27	8.1453	1407505.9	0.0000	0.9997	0.8001	0.3985	3.6053	0.0140
Link28	8.1460	1407635.8	0.0000	0.9997	1.3147	0.4037	3.3596	0.0120
Link30	0.3044	52604.868	0.0000	0.6067	0.1533	0.1013	0.3254	0.0240
Link31	-0.3033	-52406.44	0.0000	0.9945	0.2307	0.2035	0.4608	0.0240
Link32	9.8090	1694990.8	0.0001	0.9997	3.1189	0.3111	1.7971	0.0120
Link33	6.4769	1119214.4	0.0000	0.9998	4.5897	0.1999	1.4449	0.0140
Link47	0.5302	91618.996	0.0000	0.2761	0.1744	0.0987	0.4077	0.0120
Link53	0.3033	52407.547	0.0000	0.9943	0.2548	0.0968	0.5791	0.0250
Link54	0.3034	52428.707	0.0000	0.9940	0.2203	0.0700	0.8097	0.0400
Link55	0.3030	52365.764	0.0000	0.9924	0.1867	0.0919	1.0793	0.0250
Link56	0.5609	96931.548	0.0000	0.9998	0.2162	0.0791	1.4447	0.0400
Link68	0.5629	97276.242	0.0000	0.9997	0.3075	0.1225	0.8604	0.0250
Link69	0.5733	99061.692	0.0000	0.9997	0.0191	0.1369	12.1008	0.0250

Link70	5.8800	1016061.9	0.0001	0.9974	0.1138	0.3965	43.0056	0.0250
Link71	5.8946	1018586.3	0.0011	0.9971	0.0526	1.2052	351.7186	0.0250
Link72	8.1462	1407659.2	0.0000	0.9987	4.7643	0.3652	1.6015	0.0120
Link73	8.1464	1407702.4	0.0000	0.9979	0.9804	0.2495	3.9342	0.0250
Link74	8.1464	1407698.2	0.0000	0.9943	0.9246	0.3906	4.0232	0.0250
Link75	8.1465	1407721.2	0.0000	0.9869	0.3890	0.3988	9.3967	0.0250
Link76	8.1465	1407717.8	0.0000	0.9860	1.3327	0.3493	3.1230	0.0250
Link77	0.6947	120051.62	0.0000	0.9639	1.8116	0.1587	0.3753	0.0120
Link78	0.6922	119603.52	0.0000	0.9639	0.7065	0.0870	2.9223	0.0400
Link82	5.6001	967699.67	0.0000	0.9997	1.8268	0.3131	1.4137	0.0120
Link83	5.6001	967702.57	0.0000	0.9997	1.3944	0.3563	1.8933	0.0120
Link84	5.6006	967786.55	0.0000	0.9996	0.8091	0.2536	3.2442	0.0250
Link85	5.6007	967808.16	0.0000	0.9994	1.0535	0.2487	3.5866	0.0250
Link90	0.2571	44433.361	0.0000	0.5142	1.3004	0.0652	0.2032	0.0120
Link93	0.2841	49100.546	0.0000	0.3595	0.5451	0.0676	0.2277	0.0120
Link98	0.2840	49081.140	0.0000	0.3542	0.6728	0.0598	0.2014	0.0140
Link104	0.2834	48978.566	0.0000	0.4533	0.9877	0.0827	0.3723	0.0120
Link105	0.2839	49061.894	0.0000	0.4712	0.0651	0.1320	0.5333	0.0120
Link106	0.5402	93352.955	0.0000	0.9997	0.0541	0.4657	1.9367	0.0120
Link21.1	0.4513	77989.630	0.0000	0.9994	0.0950	0.6399	3.9766	0.0120
Link118	0.3048	52669.646	0.0000	0.6118	0.0703	0.3094	16.0969	0.0120
Link124	0.4517	78046.382	0.0000	0.3165	0.3289	0.0720	0.2245	0.0120
Link124.1	0.4522	78139.268	0.0000	0.3385	0.1360	0.1934	0.9351	0.0120
214.1	2.1076	364199.73	0.0000	0.8877	1.0262	0.1872	0.9992	0.0240
283.1	0.3196	55225.321	0.0000	0.8123	1.4359	0.0769	0.2097	0.0240
Restrct10	2.5576	441957.77	0.0000	0.9601	0.6243	0.2181	1.0389	0.0017
restrict6	0.4287	74076.817	0.0000	0.9766	0.4137	0.1455	0.4229	0.0026
restrict7	0.5047	87213.844	0.0000	0.9871	0.4639	0.1395	0.4156	0.0026
Link 5	3.7609	649887.91						
WEIR46	0.2409	41627.193						
Link97.1	1.4051	242795.35						
WEIR119	1.3646	235795.39						
FREE # 1	16.2860	2814221.6						

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| Table E13. Channel losses(H), headwater depth (HW), tailwater |
| depth (TW), critical and normal depth (Yc and Yn). |
| Use this section for culvert comparisons |
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Conduit Name	Maximum Flow	Head Loss	Friction Loss	Critical Depth	Normal Depth	HW Elevat	TW Elevat	
Link12	35.3962	0.0000	0.3784	1.7704	2.5184	633.8150	633.3970	Max Flow
Link13	48.0067	0.0000	0.4672	2.0763	3.1987	639.2413	638.9494	Max Flow
Link14	52.1831	0.0000	1.7574	2.3469	3.0000	635.9781	634.2193	Max Flow
Link15	52.1906	0.0000	1.6638	2.3471	3.0000	634.2186	632.5524	Max Flow
Link16	62.9809	0.0000	4.6942	2.5502	3.0000	636.3112	631.5965	Max Flow
Link17	-0.0063	0.0000	0.4227	0.0050	0.0095	626.4370	626.4393	Max Flow
Link18	78.8072	0.0000	5.7346	2.7584	3.0000	631.9283	625.5641	Max Flow
Link22	19.7315	0.0000	1.1812	1.4244	1.1502	629.0011	628.6765	Max Flow
Link23	62.2565	0.0000	2.2520	2.5388	2.5961	620.2383	617.9852	Max Flow
Link24	62.2587	0.0000	0.5345	2.5388	3.0000	617.9853	617.4487	Max Flow
Link25	62.2607	0.0000	2.2086	2.5389	3.0000	617.4488	615.2336	Max Flow
Link26	62.2641	0.0000	2.2421	2.5389	3.0000	615.2337	612.9847	Max Flow
Link27	66.7887	0.0000	3.7068	2.6098	3.0000	613.5905	609.8692	Max Flow
Link28	66.8030	0.0000	3.0904	2.6100	3.0000	609.8690	605.9164	Max Flow
Link30	5.9333	0.0000	0.9071	0.9847	1.2500	639.1358	638.2277	Max Flow
Link31	0.0000	0.0000	1.3932	0.0000	0.0000	636.0401	636.0401	Max Flow
Link32	126.0403	0.0000	20.2873	3.1353	1.2764	594.0627	573.2763	Max Flow
Link33	106.9447	0.0000	20.6723	2.1441	0.7824	594.0980	573.2682	Max Flow
Link47	28.4936	0.0000	3.6127	1.5000	1.1847	633.2710	629.9943	Max Flow
Link53	5.0741	0.0000	0.1463	0.4637	0.8172	636.6545	636.4035	Max Flow
Link54	5.0739	0.0000	2.2124	0.2815	0.3916	636.4035	633.9731	Max Flow
Link55	5.0736	0.0000	0.2504	0.5627	0.5419	633.9731	633.4482	Max Flow
Link56	16.1812	0.0000	7.4582	0.4754	0.5897	630.7900	623.1452	Max Flow
Link68	16.2003	0.0000	2.7052	1.0479	1.1442	623.1452	620.6208	Max Flow
Link69	14.2716	0.0000	0.2425	0.9727	1.0770	620.6842	620.6808	Max Flow
Link70	219.1319	0.0000	1.6027	1.8241	2.1063	619.3240	617.6913	Max Flow
Link71	353.8415	0.0000	2.7910	1.1548	1.1307	617.6913	617.8497	Max Flow
Link72	66.8074	0.0000	1.5198	2.6101	1.4758	605.9164	604.3978	Max Flow
Link73	66.8072	0.0000	4.0917	1.4958	1.0704	603.9939	599.6341	Max Flow
Link74	66.8022	0.0000	2.3127	1.9883	1.6126	599.6341	596.4013	Max Flow

Link75	66.7949	0.0000	0.3745	0.9675	0.9746	596.4013	596.2883	Max Flow
Link76	66.7822	0.0000	1.7992	2.1043	1.5252	596.2883	593.7915	Max Flow
Link77	17.0617	0.0000	0.7765	1.4880	1.4207	641.2241	639.9845	Max Flow
Link78	17.3674	0.0000	2.9152	0.2638	0.3863	639.9891	636.8561	Max Flow
Link82	78.8108	0.0000	9.2948	2.7585	1.8737	625.5641	616.1786	Max Flow
Link83	78.8129	0.0000	1.5413	2.7585	3.0000	616.1786	613.9169	Max Flow
Link84	78.8149	0.0000	6.2031	1.3950	1.1316	613.9169	607.3794	Max Flow
Link85	78.7876	0.0000	9.0003	1.4856	1.1955	607.3794	594.0496	Max Flow
Link90	10.9571	0.0000	2.0554	1.2673	1.3134	634.6393	632.5879	Max Flow
Link93	12.8291	0.0000	1.8807	1.3426	1.5000	636.3025	634.4242	Max Flow
Link98	11.6079	0.0000	1.0623	1.2961	0.8417	633.6252	633.1820	Max Flow
Link104	11.0559	0.0000	0.7643	1.1922	1.1609	633.1820	632.8577	Max Flow
Link105	10.7700	0.0000	0.6507	1.1756	1.1392	632.8578	632.5879	Max Flow
Link106	20.9449	0.0000	0.4989	1.5541	1.4928	632.5878	632.0974	Max Flow
Link21.1	19.8203	0.0000	2.9556	1.4279	0.9267	629.1891	629.0011	Max Flow
Link118	11.5437	0.0000	0.1770	0.1640	0.1598	638.8700	638.8697	Max Flow
Link124	18.6399	0.0000	2.3716	1.6426	1.5000	624.5064	622.1240	Max Flow
Link124.1	18.4529	0.0000	1.1020	1.3748	0.9649	622.8452	622.8543	Max Flow
214.1	29.2058	0.0000	1.6249	1.8471	2.0000	620.5314	618.9091	Max Flow
283.1	4.8312	0.0000	2.4262	0.9058	1.0000	633.5520	631.1258	Max Flow
Restrct10	48.0209	0.0000	3.5277	2.8781	1.9995	638.9494	635.4027	Max Flow
restrict6	18.8653	0.0000	3.0311	1.5448	1.6660	628.6765	621.5348	Max Flow
restrict7	16.8688	0.0000	2.5167	1.4966	1.6660	634.0781	631.6141	Max Flow

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| Table E13a. CULVERT ANALYSIS CLASSIFICATION, |
| and the time the culvert was in a particular |
| classification during the simulation. The time is |
| in minutes. The Dynamic Wave Equation is used for |
| all conduit analysis but the culvert flow classification |
| condition is based on the HW and TW depths. |
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Conduit Name	Critical D	Mild Slope Outlet Control	Mild Slope TW Control Outlet Control	Steep Slope TW Insignf Entrance Control	Slug Flow Outlet/ Entrance Control	Mild Slope TW > D Outlet Control	Mild Slope TW <= D Outlet Control	Outlet Control	Inlet Control	Inlet Configuration
Link12		5.0000	2590.0000	50.0000	40.0000	190.0000	5.0000	0.0000	0.0000	None
Link13		10.0000	2620.0000	50.0000	0.0000	200.0000	0.0000	0.0000	0.0000	None
Link14		0.0000	2555.0000	105.0000	10.0000	190.0000	20.0000	0.0000	0.0000	None
Link15		0.0000	2640.0000	15.0000	0.0000	225.0000	0.0000	0.0000	0.0000	None
Link16		5.0000	2725.0000	15.0000	0.0000	130.0000	0.0000	5.0000	0.0000	None
Link17		0.0000	2735.0000	15.0000	0.0000	130.0000	0.0000	0.0000	0.0000	None
Link18		65.0000	0.0000	2735.0000	0.0000	0.0000	0.0000	80.0000	0.0000	None
Link22		0.0000	0.0000	30.0000	5.0000	0.0000	2845.0000	0.0000	0.0000	None
Link23		0.0000	0.0000	2490.0000	20.0000	95.0000	240.0000	35.0000	0.0000	None
Link24		20.0000	2390.0000	90.0000	0.0000	380.0000	0.0000	0.0000	0.0000	None
Link25		15.0000	2235.0000	250.0000	0.0000	380.0000	0.0000	0.0000	0.0000	None
Link26		15.0000	2360.0000	125.0000	0.0000	380.0000	0.0000	0.0000	0.0000	None
Link27		10.0000	2535.0000	15.0000	0.0000	320.0000	0.0000	0.0000	0.0000	None
Link28		465.0000	2400.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link30		0.0000	535.0000	2145.0000	30.0000	125.0000	25.0000	20.0000	0.0000	None
Link31		0.0000	2675.0000	20.0000	0.0000	185.0000	0.0000	0.0000	0.0000	None
Link32		0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link33		0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link47		0.0000	0.0000	2700.0000	55.0000	0.0000	115.0000	10.0000	0.0000	None
Link53		225.0000	2635.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link54		5.0000	2785.0000	20.0000	0.0000	70.0000	0.0000	0.0000	0.0000	None
Link55		0.0000	2655.0000	120.0000	0.0000	0.0000	0.0000	105.0000	0.0000	None
Link56		0.0000	2850.0000	15.0000	0.0000	15.0000	0.0000	0.0000	0.0000	None
Link68		20.0000	2845.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link69		0.0000	2865.0000	15.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link70		50.0000	2810.0000	20.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link71		0.0000	2745.0000	30.0000	25.0000	75.0000	0.0000	5.0000	0.0000	None
Link72		0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link73		0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link74		0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link75		0.0000	2855.0000	25.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link76		0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link77		0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link78		425.0000	2410.0000	45.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link82		0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link83		160.0000	0.0000	2630.0000	0.0000	0.0000	0.0000	90.0000	0.0000	None
Link84		0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link85		0.0000	0.0000	2880.0000	0.0000	0.0000	0.0000	0.0000	0.0000	None
Link90		0.0000	5.0000	2805.0000	10.0000	0.0000	0.0000	60.0000	0.0000	None
Link93		45.0000	100.0000	2665.0000	10.0000	45.0000	15.0000	0.0000	0.0000	None
Link98		0.0000	0.0000	2805.0000	0.0000	0.0000	70.0000	5.0000	0.0000	None
Link104		45.0000	155.0000	2560.0000	10.0000	0.0000	70.0000	40.0000	0.0000	None
Link105		0.0000	205.0000	2515.0000	75.0000	0.0000	75.0000	10.0000	0.0000	None
Link106		0.0000	2700.0000	20.0000	75.0000	0.0000	75.0000	10.0000	0.0000	None
Link21.1		0.0000	0.0000	35.0000	2800.0000	0.0000	45.0000	0.0000	0.0000	None
Link118		40.0000	695.0000	2085.0000	45.0000	10.0000	0.0000	5.0000	0.0000	None
Link124		10.0000	0.0000	2795.0000	0.0000	15.0000	5.0000	55.0000	0.0000	None
Link124.1		0.0000	0.0000	2665.0000	165.0000	0.0000	10.0000	40.0000	0.0000	None
214.1		20.0000	1955.0000	670.0000	60.0000	105.0000	65.0000	5.0000	0.0000	None
283.1		140.0000	1490.0000	1070.0000	0.0000	0.0000	0.0000	180.0000	0.0000	None
Restrct10		195.0000	2420.0000	50.0000	15.0000	110.0000	85.0000	5.0000	0.0000	None
restrict6		340.0000	2475.0000	35.0000	0.0000	0.0000	0.0000	30.0000	0.0000	None
restrict7		280.0000	2505.0000	25.0000	0.0000	40.0000	0.0000	30.0000	0.0000	None

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| Kinematic Wave Approximations |
| Time in Minutes for Each Condition |
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Conduit Name	Duration of Normal Flow	Slope Criteria	Super-Critical	Roll Waves
Link12	0.0267	2796.1389	2.1939	0.0000
Link13	0.0266	2813.4192	5.8806	0.0000
Link14	2593.7861	2706.4499	0.0000	0.0000
Link15	268.0001	335.0503	0.0000	0.0000
Link16	2599.1962	2600.2795	0.8333	0.0000

Link17	0.0000	0.0000	0.0000	0.0000
Link18	0.0000	0.0000	463.5215	0.0000
Link22	9.9640	2215.9092	1.6167	0.0000
Link23	1918.8465	2222.3186	1887.0192	0.0000
Link24	0.0000	0.0000	3.3000	0.0000
Link25	1877.2257	1889.0756	2368.1667	0.0000
Link26	2443.4271	2463.1198	11.0926	0.0000
Link27	2441.1258	2441.1258	3.6593	0.0000
Link28	0.0000	0.0000	423.7344	0.0000
Link30	2656.3742	2801.5334	1.6667	0.0000
Link31	0.0000	0.0000	0.0000	0.0000
Link32	42.7000	47.7524	2864.1667	0.0000
Link33	412.4786	413.4333	2864.0333	0.0000
Link47	4.1333	2827.3880	45.9896	0.0000
Link53	0.0000	0.0000	1.7000	0.0000
Link54	2853.4444	2853.5185	0.6333	0.0000
Link55	2856.4667	2856.4667	0.0000	0.0000
Link56	2860.8333	2860.8333	1.6667	0.0000
Link68	230.9433	231.1128	5.5833	0.0000
Link69	2672.9532	2859.8791	0.0000	0.0000
Link70	125.1445	374.7751	0.2833	0.0000
Link71	2552.6636	2845.5853	0.0167	0.0000
Link72	13.3010	23.3936	2862.5000	0.0000
Link73	2851.1481	2851.1481	423.0605	0.0000
Link74	0.0000	0.0000	424.2850	0.0000
Link75	2436.3801	2850.8519	0.0000	0.0000
Link76	3.3993	3.5818	2849.3436	0.0000
Link77	0.0000	0.0000	2830.2825	0.0000
Link78	96.0331	96.1026	1.9898	0.0000
Link82	2859.6833	2860.8333	2864.1667	0.0000
Link83	0.0000	0.0000	2862.4667	0.0000
Link84	301.0833	301.1611	260.2843	0.0000
Link85	0.1167	0.1167	431.9990	0.0000
Link90	8.9561	80.8646	2765.0167	0.0000
Link93	2.2603	40.1347	66.7802	0.0000
Link98	2758.2025	2857.4833	2789.2411	0.0000
Link104	81.0723	195.4457	2653.2188	0.0000
Link105	2641.9886	2851.6170	0.0000	0.0000
Link106	5.6500	838.8534	2.7333	0.0000
Link21.1	7.2659	2270.1114	21.0833	0.0000
Link118	523.2415	713.8095	0.0000	0.0000
Link124	2720.7474	2795.3858	137.9491	0.0000
Link124.1	2645.4025	2818.5920	30.9040	0.0000
214.1	2563.4522	2761.6310	2069.4102	0.0000
283.1	2.8544	2.8544	172.6832	0.0000
Restrct10	0.0000	0.7754	99.7238	0.0000
restrict6	0.0000	0.0000	18.5714	0.0000
restrict7	0.0000	0.0000	35.0684	0.0000

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| Table E14 - Natural Channel Overbank Flow Information |
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Conduit Name	<---- Maximum Velocity -----> Left Velocity	Center Velocity	Right Velocity	<------ Maximum Flow -------> Left Flow	Center Flow	Right Flow	<------ Maximum Area ------> Left Area	Center Area	Right Area	<--- Max. Storage Volume ---> Left Area	Center Area	Right Area	Maximum Depth
Link53	0.0000	2.0197	0.0000	0.0000	5.0741	0.0000	0.0000	2.5123	0.0000	0.0000	82.9052	0.0000	0.5982
Link55	0.0000	0.3453	0.0000	0.0000	5.0739	0.0000	0.0000	14.6923	0.0000	0.0000	2027.5341	0.0000	1.6448
Link68	0.0000	2.0959	0.0000	0.0000	16.2018	0.0000	0.0000	7.7303	0.0000	0.0000	3092.1043	0.0000	1.4274
Link69	0.0000	0.4950	0.0000	0.0000	82.8223	0.0000	0.0000	167.3196	0.0000	0.0000	43503.109	0.0000	2.5727
Link70	0.0002	0.7299	0.0000	0.0000	230.3298	0.0000	0.0000	315.5700	0.0000	0.0035	142006.48	0.0000	4.0204
Link71	0.0001	0.2764	0.0000	0.0000	496.8412	0.0000	0.0002	1797.7182	0.0000	0.0703	688526.07	0.0000	7.2258
Link73	0.0000	4.5967	0.0000	0.0000	66.8076	0.0000	0.0000	14.5338	0.0000	0.0000	1060.9676	0.0000	1.4686
Link74	0.0000	10.4384	0.0000	0.0000	66.8070	0.0000	0.0000	6.4001	0.0000	0.0000	652.8096	0.0000	1.4789
Link75	0.0000	2.8319	0.0000	0.0000	66.8054	0.0000	0.0000	23.5904	0.0000	0.0000	1226.7030	0.0000	1.4376
Link76	0.0000	11.9641	0.0000	0.0000	66.8008	0.0000	0.0000	5.5834	0.0000	0.0000	223.3370	0.0000	1.4647
Link84	0.0000	6.5584	0.0000	0.0000	78.8207	0.0000	0.0000	12.0182	0.0000	0.0000	3365.1065	0.0000	1.2574
Link85	0.0000	9.8694	0.0000	0.0000	78.7903	0.0000	0.0000	7.9833	0.0000	0.0000	3752.1354	0.0000	1.0626

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| Table E14a - Natural Channel Encroachment Information |
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Conduit Name	<------- Existing Conveyance Condition -------> Left Bank	Centre Channel	Right Bank	Total	<----- Encroachment Conveyance Condition -----> Left Station	Right Station	Left Bank	Centre Channel	Right Bank	Total	Left Station	Right Station	<- % Volume --> Reduction Left	Right	<-- Encroachment Data --> Depth Incr.	Method
Link53	0.0000	71.951	0.0000	71.951	-5.4220	1.9478	0.0000	71.951	0.0000	71.951	-5.4220	1.9478	0.0000	0.0000	0.0000	None
Link55	0.0000	717.62	0.0000	717.62	-10.803	8.6070	0.0000	717.62	0.0000	717.62	-10.803	8.6070	0.0000	0.0000	0.0000	None
Link68	0.0000	340.65	0.0000	340.65	-3.6480	8.0313	0.0000	340.65	0.0000	340.65	-3.6480	8.0313	0.0000	0.0000	0.0000	None
Link69	0.0000	8920.9	0.0000	8920.9	-49.359	147.19	0.0000	8920.9	0.0000	8920.9	-49.359	147.19	0.0000	0.0000	0.0000	None

Link70	.20E-06	29867.1	0.0000	29867.1	-64.200	92.518	.20E-06	29867.1	0.0000	29867.1	-64.200	92.518	0.0000	0.0000	0.0000	None
Link71	.000012	347729.	0.0000	347729.	-245.80	59.686	.000012	347729.	0.0000	347729.	-245.80	59.686	0.0000	0.0000	0.0000	None
Link73	0.0000	556.49	0.0000	556.49	-6.1282	21.687	0.0000	556.49	0.0000	556.49	-6.1282	21.687	0.0000	0.0000	0.0000	None
Link74	0.0000	299.54	0.0000	299.54	-5.0871	3.5680	0.0000	299.54	0.0000	299.54	-5.0871	3.5680	0.0000	0.0000	0.0000	None
Link75	0.0000	1333.8	0.0000	1333.8	-18.034	7.1531	0.0000	1333.8	0.0000	1333.8	-18.034	7.1531	0.0000	0.0000	0.0000	None
Link76	0.0000	255.43	0.0000	255.43	-8.4375	-0.7054	0.0000	255.43	0.0000	255.43	-8.4375	-0.7054	0.0000	0.0000	0.0000	None
Link84	0.0000	630.84	0.0000	630.84	-7.5542	6.2767	0.0000	630.84	0.0000	630.84	-7.5542	6.2767	0.0000	0.0000	0.0000	None
Link85	0.0000	337.03	0.0000	337.03	-4.8284	8.2511	0.0000	337.03	0.0000	337.03	-4.8284	8.2511	0.0000	0.0000	0.0000	None

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| Table E14b - Floodplain Mapping |
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Conduit Name	Upstream WS Elev.	Downstream WS Elev.	Channel Length	Center Station	<----- Left Offsets Natural	Encroach	------> Bank	<----- Right Offsets Natural	Encroach	------> Bank	<- Channel Widths-> Total	Encroach.
Link53	636.6545	636.4036	33.0000	0.0000	5.4220	5.4220	21.2000	1.9478	1.9478	17.8000	7.3698	7.3698
Link55	633.9731	633.5521	138.0000	0.0000	10.8031	10.8031	23.6000	8.6070	8.6070	9.4000	19.4102	19.4102
Link68	623.1453	620.6875	400.0000	0.0000	3.6480	3.6480	67.2000	8.0313	8.0313	30.6000	11.6793	11.6793
Link69	620.6875	620.6818	260.0000	0.0000	49.3588	49.3588	126.4000	147.1937	147.1937	174.6000	196.5524	196.5524
Link70	620.4592	620.4603	450.0000	0.0000	64.2000	64.2000	64.2000	92.5184	92.5184	121.3000	156.7184	156.7184
Link71	620.4603	620.4606	383.0000	0.0000	245.8001	245.8001	245.8000	59.6859	59.6859	65.5000	305.4860	305.4860
Link73	603.9939	599.6348	73.0000	0.0000	6.1282	6.1282	92.8000	21.6872	21.6872	88.6000	27.8154	27.8154
Link74	599.6348	596.4019	102.0000	0.0000	5.0871	5.0871	93.3000	3.5680	3.5680	33.4000	8.6551	8.6551
Link75	596.4019	596.2905	52.0000	0.0000	18.0342	18.0342	92.5000	7.1531	7.1531	48.8000	25.1874	25.1874
Link76	596.2905	594.0675	40.0000	-4.6000	3.8375	3.8375	41.9000	3.8946	3.8946	65.0000	7.7321	7.7321
Link84	613.9170	607.3803	280.0000	0.0000	7.5542	7.5542	30.6000	6.2767	6.2767	26.8000	13.8309	13.8309
Link85	607.3803	594.0982	470.0000	0.0000	4.8284	4.8284	68.1000	8.2511	8.2511	109.0000	13.0794	13.0794

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| Table E15 - SPREADSHEET INFO LIST |
| Conduit Flow and Junction Depth Information for use in |
| spreadsheets. The maximum values in this table are the |
| true maximum values because they sample every time step.|
| The values in the review results may only be the |
| maximum of a subset of all the time steps in the run. |
| Note: These flows are only the flows in a single barrel.|
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Conduit Name	Maximum Flow (cfs)	Total Flow (ft^3)	Maximum Velocity (ft/s)	Maximum Volume (ft^3)	##	Junction Name	Invert Elevation (ft)	Maximum Elevation (ft)
Link12	38.6410	187875.9045	4.5657	4107.4254	##	Node11	617.2000	620.6818
Link13	48.0085	438887.4713	4.3894	4095.1677	##	Node12	617.2100	620.4592
Link14	55.2293	561652.2487	7.7534	2503.0631	##	Node20	631.3900	639.8192
Link15	54.9350	561409.2098	7.7220	2361.9085	##	Node21	631.0800	639.8076
Link16	62.9813	842701.9288	8.8170	4590.2995	##	Node22	630.1100	638.3964
Link17	66.1111	877842.8740	9.3078	375.4363	##	Node23	628.8600	637.3968
Link18	78.8211	967646.9748	11.4899	1849.4686	##	Node24	628.0300	636.5188
Link22	23.2825	76420.9074	3.2320	2465.9287	##	Node25	626.3500	632.3156
Link23	62.2644	1333343.255	8.6858	2237.4784	##	Node26	626.4200	631.9309
Link24	62.2666	1333359.316	8.6891	547.8923	##	Node27	623.6900	625.5643
Link25	62.2664	1333337.270	8.6995	2258.2721	##	Node29	612.7800	613.9170
Link26	62.2717	1333378.572	8.7227	2268.5229	##	Node30	621.4800	631.4468
Link27	66.8012	1407505.936	9.3736	2373.5883	##	Node31	616.0000	629.1770
Link28	66.8053	1407635.784	9.9305	1690.4558	##	Node33	610.5600	620.4606
Link30	5.9426	52604.8676	4.8087	39.5599	##	Node34	608.4300	618.2893
Link31	5.0741	52406.4413	4.3270	74.6692	##	Node35	608.4000	617.7766
Link32	126.6812	1694990.795	23.9577	127.9474	##	Node36	607.4000	615.6800
Link33	106.9822	1119214.398	21.1052	95.1209	##	Node37	606.4600	613.5944
Link47	28.5382	91618.9963	22.1265	98.1343	##	Node38	605.4500	609.8716
Link53	5.0741	52407.5470	2.0933	82.9052	##	Node39	604.4400	605.9166
Link54	5.0740	52428.7071	1.4790	219.0673	##	Node41	630.2000	630.7915

Link55	5.0739	52365.7636	2.1350	2027.5341	##	Node43	636.4600	639.1949
Link56	16.2722	96931.5482	1.7563	1289.2287	##	Node44	635.7400	638.4398
Link68	16.2018	97276.2417	3.2756	1745.7364	##	Node45	636.0400	636.6545
Link69	-82.8223	99061.6917	0.8112	43503.1085	##	Node46	592.7400	594.0675
Link70	230.3298	1016061.947	3.0379	142006.4873	##	Node47	572.0000	573.2811
Link71	-496.8412	1018586.258	1.3448	799179.2862	##	Node48	593.3000	594.0982
Link72	66.8090	1407659.217	19.2954	141.3862	##	Node63	631.0000	633.5521
Link73	66.8076	1407702.375	7.6329	367.8863	##	Node65	638.0000	641.2245
Link74	66.8070	1407698.173	7.7087	294.2762	##	Node66	631.9700	636.5619
Link75	66.8054	1407721.195	3.3929	1226.7030	##	Node69	636.0000	636.4036
Link76	66.8008	1407717.786	9.9938	151.0762	##	Node70	633.4300	633.9731
Link77	17.0752	120051.6220	9.1983	64.6316	##	Node71	622.0000	623.1453
Link78	18.0153	119603.5206	1.7382	9759.8744	##	Node74	618.9800	620.6875
Link82	78.8208	967699.6716	16.2613	646.8942	##	Node75	602.9200	603.9939
Link83	78.8209	967702.5738	12.6030	540.5005	##	Node79	615.6100	620.4603
Link84	78.8207	967786.5457	7.3430	685.0586	##	Node80	597.8900	599.6348
Link85	78.7903	967808.1613	6.6376	232.5673	##	Node81	595.1800	596.4019
Link90	10.9589	44433.3613	6.6883	444.7878	##	Node82	594.6700	596.2905
Link93	12.9021	49100.5461	7.2517	266.3476	##	Node83	639.6000	640.0035
Link98	11.9522	49081.1402	9.7908	55.2708	##	Node84	630.7700	639.6791
Link104	11.8420	48978.5657	5.3604	512.5425	##	Node86	613.4900	616.1789
Link105	11.5610	49061.8944	4.3550	459.6530	##	Node87	606.0000	607.3803
Link106	21.9592	93352.9555	4.4604	1029.1179	##	Node89	637.1000	639.1949
Link21.1	22.9578	77989.6298	6.8505	1299.3481	##	Node92	633.0800	636.3470
Link118	13.6088	52669.6456	1.2143	16120.5436	##	Node94	633.3000	635.7455
Link124	22.3812	78046.3820	12.2382	164.0623	##	Node99	637.7000	639.8103
Link124.1	22.6541	78139.2678	7.8082	645.6888	##	Node100	632.3300	634.9649
214.1	29.3898	364199.7326	9.4605	175.9327	##	Node101	631.1300	634.7353
283.1	4.8315	55225.3209	6.1272	30.8075	##	Node103	630.2700	634.5450
Restrct10	48.0230	441957.7699	15.0748	15822.9038	##	Node108	629.5400	634.3829
restrict6	23.8929	74076.8169	10.7791	9548.7226	##	Node30.1	619.1400	629.1912
restrict7	16.8911	87213.8439	7.9940	10042.2260	##	Node120	638.0000	639.8208
Link 5	164.2663	649887.9123	0.0000	0.0000	##	Node124	613.4000	629.0928
WEIR46	11.6520	41627.1929	0.0000	0.0000	##	Node125	628.5000	634.3200
Link97.1	30.5157	242795.3537	0.0000	0.0000	##	Node30.2	620.3100	629.3399
WEIR119	52.6365	235795.3896	0.0000	0.0000	##			
FREE # 1	232.8969	2814221.564	0.0000	0.0000	##			

```
*====================================================*
|     Table E15a - SPREADSHEET REACH LIST            |
| Peak flow and Total Flow listed by Reach or those  |
|      conduits or diversions having the same        |
|      upstream and downstream nodes.                |
*====================================================*
```

Upstream Node	Downstream Node	Maximum Flow (cfs)	Total Flow (ft^3)
Node20	Node21	38.6410	187875.904
Node21	Node84	48.0085	438887.471
Node22	Node23	55.2293	561652.249
Node23	Node24	54.9350	561409.210
Node24	Node25	62.9813	842701.929
Node26	Node25	66.1111	877842.874
Node26	Node27	78.8211	967646.975
Node31	Node124	23.2825	76420.9074
Node33	Node34	62.2644	1333343.25
Node34	Node35	62.2666	1333359.32

Node35	Node36	62.2664	1333337.27
Node36	Node37	62.2717	1333378.57
Node37	Node38	66.8012	1407505.94
Node38	Node39	66.8053	1407635.78
Node43	Node44	5.9426	52604.8676
Node45	Node44	5.0741	52406.4413
Node46	Node47	126.6812	1694990.79
Node48	Node47	106.9822	1119214.40
Node66	Node24	28.5382	91618.9963
Node45	Node69	5.0741	52407.5470
Node69	Node70	5.0740	52428.7071
Node70	Node63	5.0739	52365.7636
Node41	Node71	16.2722	96931.5482
Node71	Node74	16.2018	97276.2417
Node74	Node11	-82.8223	99061.6917
Node12	Node79	230.3298	1016061.95
Node79	Node33	-496.8412	1018586.26
Node39	Node75	66.8090	1407659.22
Node75	Node80	66.8076	1407702.38
Node80	Node81	66.8070	1407698.17
Node81	Node82	66.8054	1407721.20
Node82	Node46	66.8008	1407717.79
Node65	Node83	17.0752	120051.622
Node83	Node22	18.0153	119603.521
Node27	Node86	78.8208	967699.672
Node86	Node29	78.8209	967702.574
Node29	Node87	78.8207	967786.546
Node87	Node48	78.7903	967808.161
Node94	Node108	10.9589	44433.3613
Node92	Node100	12.9021	49100.5461
Node100	Node101	11.9522	49081.1402
Node101	Node103	11.8420	48978.5657
Node103	Node108	11.5610	49061.8944
Node108	Node125	21.9592	93352.9555
Node30.1	Node31	22.9578	77989.6298
Node89	Node43	13.6088	52669.6456
Node30	Node30.2	22.3812	78046.3820
Node30.2	Node30.1	22.6541	78139.2678
Node11	Node12	58.7796	364199.733
Node63	Node41	4.8315	55225.3209
Node84	Node22	48.0230	441957.770
Node124	Node37	23.8929	74076.8169
Node125	Node26	16.8911	87213.8439
Node11	Node12	164.2663	649887.912
Node63	Node41	11.6520	41627.1929
Node99	Node21	30.5157	242795.354
Node120	Node20	52.6365	235795.390

```
#########################################################
# Table E16. New Conduit Information Section           #
#            Conduit Invert (IE) Elevation and Conduit  #
#            Maximum Water Surface (WS) Elevations      #
#########################################################
```

Conduit Name	Upstream Node	Downstream Node	IE Up	IE Dn	WS Up	WS Dn	Conduit Type
Link12	Node20	Node21	631.3900	631.0800	639.8192	639.8076	Circular
Link13	Node21	Node84	631.0800	630.7700	639.8076	639.6791	Circular

Link14	Node22	Node23	630.1100	628.8600	638.3964	637.3968	Circular
Link15	Node23	Node24	628.8600	628.0300	637.3968	636.5187	Circular
Link16	Node24	Node25	628.0300	626.3500	636.5188	632.3155	Circular
Link17	Node26	Node25	626.4200	626.3500	631.9309	632.3156	Circular
Link18	Node26	Node27	626.4200	623.6900	631.9309	625.5643	Circular
Link22	Node31	Node124	616.0000	613.4000	629.1770	629.0931	Circular
Link23	Node33	Node34	610.5630	608.4300	620.4606	618.2893	Circular
Link24	Node34	Node35	608.4300	608.4000	618.2893	617.7766	Circular
Link25	Node35	Node36	608.4000	607.4000	617.7766	615.6800	Circular
Link26	Node36	Node37	607.4000	606.4600	615.6800	613.5944	Circular
Link27	Node37	Node38	606.4600	605.4500	613.5944	609.8716	Circular
Link28	Node38	Node39	605.4500	604.4400	609.8716	605.9166	Circular
Link30	Node43	Node44	636.4600	635.7400	639.1949	638.4398	Circular
Link31	Node45	Node44	636.0400	635.7400	636.6545	638.4398	Circular
Link32	Node46	Node47	592.7400	572.0000	594.0675	573.2811	Rectangle
Link33	Node48	Node47	593.3000	572.0000	594.0982	573.2811	Rectangle
Link47	Node66	Node24	631.9700	628.3300	636.5619	636.5188	Circular
Link53	Node45	Node69	636.0400	636.0000	636.6545	636.4036	Natural
Link54	Node69	Node70	636.0000	633.4300	636.4036	633.9731	Trapezoid
Link55	Node70	Node63	633.4300	631.0000	633.9731	633.5521	Natural
Link56	Node41	Node71	630.2000	622.0000	630.7915	623.1453	Trapezoid
Link68	Node71	Node74	622.0000	618.9800	623.1453	620.6875	Natural
Link69	Node74	Node11	618.9800	617.2000	620.6875	620.6818	Natural
Link70	Node12	Node79	617.2100	615.6100	620.4592	620.4603	Natural
Link71	Node79	Node33	615.6100	610.5600	620.4603	620.4606	Natural
Link72	Node39	Node75	604.4400	602.9220	605.9166	604.3978	Circular
Link73	Node75	Node80	602.9200	597.8900	603.9939	599.6348	Natural
Link74	Node80	Node81	597.8900	595.1800	599.6348	596.4019	Natural
Link75	Node81	Node82	595.1800	594.6700	596.4019	596.2905	Natural
Link76	Node82	Node46	594.6700	592.7400	596.2905	594.0675	Natural
Link77	Node65	Node83	640.0000	639.6000	641.2245	640.0035	Circular
Link78	Node83	Node22	639.6000	636.3500	640.0035	638.3964	Trapezoid
Link82	Node27	Node86	623.6900	613.4900	625.5643	616.1789	Circular
Link83	Node86	Node29	613.4900	612.7800	616.1789	613.9170	Circular
Link84	Node29	Node87	612.7800	606.0000	613.9170	607.3803	Natural
Link85	Node87	Node48	606.0000	593.3000	607.3803	594.0982	Natural
Link90	Node94	Node108	633.3000	631.2000	635.7455	634.3829	Circular
Link93	Node92	Node100	633.0800	632.3300	636.3470	634.9649	Circular
Link98	Node100	Node101	632.3300	631.1300	634.9649	634.7353	Circular
Link104	Node101	Node103	631.1300	630.3200	634.7353	634.5450	Circular
Link105	Node103	Node108	630.2700	629.5400	634.5450	634.3829	Circular
Link106	Node108	Node125	629.5400	628.5000	634.3829	634.3200	Circular
Link21.1	Node30.1	Node31	619.1400	616.0000	629.1912	629.1770	Circular
Link118	Node89	Node43	637.1000	636.4600	639.1949	639.1949	Trapezoid
Link124	Node30	Node30.2	621.4800	620.3100	631.4468	629.3399	Circular
Link124.1	Node30.2	Node30.1	620.3100	619.1400	629.3399	629.1912	Circular
214.1	Node11	Node12	617.7000	617.2100	620.6818	620.4592	Circular
283.1	Node63	Node41	631.0100	630.2200	633.5521	631.1258	Circular
Restrct10	Node84	Node22	632.0000	631.9900	639.6791	638.3964	Circ Orif
restrict6	Node124	Node37	620.0000	619.9900	629.0931	621.6560	Circ Orif
restrict7	Node125	Node26	630.0000	629.9900	634.3200	631.9309	Circ Orif

==========
| Table E18 - Junction Continuity Error. Division by Volume added 11/96 |

```
|                                                                          |
|  Continuity Error = Net Flow + Beginning Volume - Ending Volume          |
|                     ---------------------------------------------        |
|                     Total Flow + (Beginning Volume + Ending Volume)/2    |
|                                                                          |
|  Net Flow   = Node Inflow - Node Outflow                                 |
|  Total Flow = absolute (Inflow + Outflow)                                |
|  Intermediate column is a judgement on the node continuity error.        |
|                                                                          |
|  Excellent  < 1 percent    Great  1 to  2 percent  Good  2 to  5 percent |
|  Fair  5 to 10  percent    Poor  10 to 25 percent  Bad  25 to 50 percent |
|  Terrible > 50  percent                                                  |
*==========================================================================*
```

Junction Name	<------Continuity Error -------> Volume	% of Node	% of Inflow	Remaining Volume	Beginning Volume	Net Flow Thru Node	Total Flow Thru Node	Failed to Converge
Node11	253.3777	0.0125	0.0087	48.5735	0.0000	301.9512	2028504.762	0
Node12	-2109.9537	-0.1039	0.0728	0.0499	0.0000	-2109.9038	2030149.592	0
Node20	47574.0042	11.2253	1.6406	278.3519	0.0000	47852.3560	423671.2941	0
Node21	-9185.9835	-1.0560	0.3168	714.7407	0.0000	-8471.2428	869558.7295	0
Node22	-112.2055	-0.0100	0.0039	18.3423	0.0000	-93.8631	1123213.539	1
Node23	137.1876	0.0122	0.0047	4.8088	0.0000	141.9964	1123061.458	1
Node24	-10.2424	-0.0006	0.0004	14.7661	0.0000	4.5237	1685559.325	4
Node25	73.3159	0.0042	0.0025	14.3391	0.0000	87.6550	1756053.635	0
Node26	-2603.5196	-0.1347	0.0898	10.9355	0.0000	-2592.5840	1932703.693	0
Node27	-49.0699	-0.0025	0.0017	4.5355	0.0000	-44.5344	1935346.646	0
Node29	-99.1251	-0.0051	0.0034	4.6248	0.0000	-94.5004	1935489.119	0
Node30	-19.6887	-0.0126	0.0007	0.0005	0.0000	-19.6883	156073.7146	0
Node31	-73.9673	-0.0477	0.0026	1626.9871	0.0000	1553.0198	154410.5372	0
Node33	-6021.1393	-0.2261	0.2076	1.0073	0.0000	-6020.1320	2663027.781	2
Node34	-36.1910	-0.0014	0.0012	0.0040	0.0000	-36.1871	2666702.571	9
Node35	-23.9631	-0.0009	0.0008	0.0024	0.0000	-23.9608	2666696.586	0
Node36	-52.8647	-0.0020	0.0018	0.0977	0.0000	-52.7670	2666715.842	0
Node37	-58.8984	-0.0021	0.0020	7.4467	0.0000	-51.4517	2814961.324	0
Node38	-125.3514	-0.0045	0.0043	0.5302	0.0000	-124.8212	2815141.720	0
Node39	-35.2657	-0.0013	0.0012	0.2202	0.0000	-35.0455	2815295.002	0
Node41	-87.7047	-0.0453	0.0030	0.1358	0.0000	-87.5689	193784.0620	0
Node43	45.9240	0.0436	0.0016	1.2168	0.0000	47.1408	105274.5132	0
Node44	189.3534	0.1803	0.0065	7.2919	0.0000	196.6454	105011.3088	0
Node45	-4.0041	-0.0038	0.0001	2.3064	0.0000	-1.6976	104813.9883	0
Node46	-197.2519	-0.0058	0.0068	0.3743	0.0000	-196.8776	3389519.180	0
Node47	-35.1994	-0.0006	0.0012	1.2345	0.0000	-33.9648	5628426.757	0
Node48	-83.7438	-0.0037	0.0029	7.0048	0.0000	-76.7390	2238374.790	0
Node63	-144.6223	-0.0747	0.0050	0.2632	0.0000	-144.3590	193582.5143	8
Node65	-73.3371	-0.0265	0.0025	24416.7238	0.0000	24343.3867	264455.3817	0
Node66	-1804.7389	-0.9982	0.0622	0.0003	0.0000	-1804.7387	180804.3934	1
Node69	-22.1411	-0.0211	0.0008	0.0167	0.0000	-22.1244	104836.2541	0
Node70	61.5160	0.0587	0.0021	0.1536	0.0000	61.6697	104794.4707	0
Node71	-344.5325	-0.1774	0.0119	0.1510	0.0000	-344.3815	194207.7898	0
Node74	-1826.9547	-0.9304	0.0630	42.3044	0.0000	-1784.6504	196337.9334	0
Node75	-13.5973	-0.0005	0.0005	0.2205	0.0000	-13.3768	2815361.593	0
Node79	-53.5755	-0.0026	0.0018	1.0150	0.0000	-52.5605	2034648.205	0
Node80	-25.4376	-0.0009	0.0009	0.4020	0.0000	-25.0356	2815400.548	0
Node81	-28.9713	-0.0010	0.0010	0.6677	0.0000	-28.3037	2815419.368	0
Node82	-5.2267	-0.0002	0.0002	0.5716	0.0000	-4.6552	2815438.981	0
Node83	438.1265	0.1828	0.0151	5.6458	0.0000	443.7724	239655.1426	0
Node84	-3532.9570	-0.4010	0.1218	458.6224	0.0000	-3074.3346	880845.2413	1
Node86	-17.9573	-0.0009	0.0006	2.9850	0.0000	-14.9723	1935402.245	0
Node87	-36.8988	-0.0019	0.0013	10.0314	0.0000	-26.8674	1935594.707	0
Node89	-22.6093	-0.0215	0.0008	0.0008	0.0000	-22.6085	105334.9696	0
Node92	19.8695	0.0202	0.0007	0.0011	0.0000	19.8705	98221.7030	0

Node94	223.3164	0.2507	0.0077	0.0016	0.0000	223.3180	89088.9585	6
Node99	-487.7689	-0.0981	0.0168	0.0000	0.0000	-487.7689	497100.8811	0
Node100	19.1942	0.0195	0.0007	0.0009	0.0000	19.1951	98181.6862	0
Node101	99.6773	0.1016	0.0034	0.0012	0.0000	99.6785	98059.7059	0
Node103	-102.5612	-0.1046	0.0035	13.9988	0.0000	-88.5624	98040.4601	0
Node108	-72.5143	-0.0388	0.0025	200.5454	0.0000	128.0311	186848.2111	8
Node30.1	-242.1791	-0.1549	0.0084	405.8499	0.0000	163.6707	156128.8976	0
Node120	-59.2847	-0.0121	0.0020	1504.4680	0.0000	1445.1833	488969.6512	0
Node124	1038.7043	0.6872	0.0358	1297.7463	0.0000	2336.4506	150497.7244	0
Node125	5810.5024	3.2161	0.2004	207.0853	0.0000	6129.2123	180566.7994	0
Node30.2	-45.0016	-0.0288	0.0016	25.8897	0.0000	-19.1119	156185.6499	0

The total continuity error was 25996. cubic feet
The remaining total volume was 31365. cubic feet
Your mean node continuity error was Excellent
Your worst node continuity error was Great

```
*=====================================================*
|  Table E19 - Junction Inflow & Outflow Listing     |
|              Units are either ft^3 or m^3          |
|              depending on the units in your model.|
*=====================================================*
```

Junction Name	Constant Inflow to Node	User Inflow to Node	Interface Inflow to Node	DWF Inlow to Node	Inflow through Outfall	RNF Layer Inflow to Node	Inflow from 2D Layer	Outflow from Node	Evaporation from Node	Basin Infil.
Node11	0.0000	0.0000	0.0000	0.0000	0.0000	915102.3688	0.0000	0.0000	0.0000	0.0000
Node24	0.0000	0.0000	0.0000	0.0000	0.0000	189781.4789	0.0000	0.0000	0.0000	0.0000
Node25	0.0000	0.0000	0.0000	0.0000	0.0000	35503.0373	0.0000	0.0000	0.0000	0.0000
Node30	0.0000	0.0000	0.0000	0.0000	0.0000	77978.2671	0.0000	0.0000	0.0000	0.0000
Node33	0.0000	0.0000	0.0000	0.0000	0.0000	311012.2147	0.0000	0.0000	0.0000	0.0000
Node46	0.0000	0.0000	0.0000	0.0000	0.0000	286714.1188	0.0000	0.0000	0.0000	0.0000
Node47	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.8142E+06	0.0000	0.0000
Node48	0.0000	0.0000	0.0000	0.0000	0.0000	151293.9796	0.0000	0.0000	0.0000	0.0000
Node63	0.0000	0.0000	0.0000	0.0000	0.0000	44252.7708	0.0000	0.0000	0.0000	0.0000
Node65	0.0000	0.0000	0.0000	0.0000	0.0000	144298.5884	0.0000	0.0000	0.0000	0.0000
Node66	0.0000	0.0000	0.0000	0.0000	0.0000	86712.7928	0.0000	0.0000	0.0000	0.0000
Node89	0.0000	0.0000	0.0000	0.0000	0.0000	52458.0012	0.0000	0.0000	0.0000	0.0000
Node92	0.0000	0.0000	0.0000	0.0000	0.0000	49027.3988	0.0000	0.0000	0.0000	0.0000
Node94	0.0000	0.0000	0.0000	0.0000	0.0000	44570.3626	0.0000	0.0000	0.0000	0.0000
Node99	0.0000	0.0000	0.0000	0.0000	0.0000	254303.6264	0.0000	0.0000	0.0000	8838.8214
Node120	0.0000	0.0000	0.0000	0.0000	0.0000	253143.2995	0.0000	0.0000	0.0000	15945.3964
Node125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	111.6246	0.0000	0.0000

```
*=====================================================*
| Table E20 - Junction Flooding and Volume Listing.   |
|             The maximum volume is the total volume  |
|             in the node including the volume in the |
|             flooded storage area. This is the max   |
|             volume at any time. The volume in the   |
|             flooded storage area is the total volume|
|             above the ground elevation, where the   |
|             flooded pond storage area starts.       |
| The fourth column is instantaneous, the fifth is the|
| sum of the flooded volume over the entire simulation|
| Units are either ft^3 or m^3 depending on the units.|
*=====================================================*
```

Junction Name	Surcharged Time (min)	Flooded Time(min)	Out of 1D-System (Flooded Volume)	Maximum Volume	Passed to 2D cell OR Volume Stored in allowed Flood Pond of 1D-System
Node11	0.0000	0.0000	0.0000	43.7518	0.0000
Node12	0.0000	0.0000	0.0000	40.8297	0.0000
Node20	192.2350	178.6599	0.0000	57170.5508	78350.4661
Node21	194.3992	164.1248	0.0000	18590.1756	30806.0839
Node22	0.0000	0.0000	0.0000	104.1272	0.0000

Node23	221.5439	94.7781	0.0000	107.2737	26.9094
Node24	222.8063	88.3338	0.0000	106.6697	28.4592
Node25	130.9735	0.0000	0.0000	74.9635	0.0000
Node26	128.4789	0.0000	0.0000	69.2493	0.0000
Node27	0.0000	0.0000	0.0000	23.5523	0.0000
Node29	0.0000	0.0000	0.0000	14.2870	0.0000
Node30	47.4616	2.9728	0.0000	209.9122	65.0700
Node31	2842.3214	3.8474	0.0000	165.5857	38.2895
Node33	149.9369	149.9369	0.0000	10753.4426	106305.0199
Node34	382.0356	0.0000	0.0000	123.8924	0.0000
Node35	380.1324	0.0000	0.0000	117.8267	0.0000
Node36	379.9978	0.0000	0.0000	104.0463	0.0000
Node37	378.4592	0.0000	0.0000	89.6511	0.0000
Node38	317.2730	0.0000	0.0000	55.5622	0.0000
Node39	0.0000	0.0000	0.0000	18.5549	0.0000
Node41	0.0000	0.0000	0.0000	7.4326	0.0000
Node43	129.8870	127.9283	0.0000	5043.0347	8297.6672
Node44	187.8586	141.3871	0.0000	2868.3681	3285.2499
Node45	0.0000	0.0000	0.0000	7.7223	0.0000
Node46	0.0000	0.0000	0.0000	16.6810	0.0000
Node47	0.0000	0.0000	0.0000	16.0978	0.0000
Node48	0.0000	0.0000	0.0000	10.0304	0.0000
Node63	0.0000	0.0000	0.0000	32.0691	0.0000
Node65	0.0000	0.0000	0.0000	74818.2809	0.0000
Node66	127.5061	112.4858	0.0000	25037.9559	26601.1439
Node69	0.0000	0.0000	0.0000	5.0710	0.0000
Node70	0.0000	0.0000	0.0000	6.8246	0.0000
Node71	0.0000	0.0000	0.0000	14.3916	0.0000
Node74	0.0000	0.0000	0.0000	21.4560	0.0000
Node75	0.0000	0.0000	0.0000	13.4945	0.0000
Node79	0.0000	0.0000	0.0000	60.9486	0.0000
Node80	0.0000	0.0000	0.0000	21.9256	0.0000
Node81	0.0000	0.0000	0.0000	15.3539	0.0000
Node82	0.0000	0.0000	0.0000	20.3627	0.0000
Node83	0.0000	0.0000	0.0000	5.0709	0.0000
Node84	196.8493	0.0000	0.0000	111.9519	0.0000
Node86	0.0000	0.0000	0.0000	33.7893	0.0000
Node87	0.0000	0.0000	0.0000	17.3445	0.0000
Node89	58.7166	58.7166	0.0000	522.9058	1005.5102
Node92	72.4156	20.1669	0.0000	281.1938	253.1509
Node94	53.4559	52.7862	0.0000	2831.6235	3160.3234
Node99	2243.7037	0.0000	0.0000	39303.4875	0.0000
Node100	70.1156	69.6949	0.0000	5875.7436	6056.3402
Node101	71.1468	0.0000	0.0000	45.3039	0.0000
Node103	73.6096	0.0000	0.0000	53.7198	0.0000
Node108	71.0337	65.0224	0.0000	3158.4690	3300.8718
Node30.1	43.6697	2.2280	0.0000	284.4548	157.3395
Node120	2863.3333	0.0000	0.0000	23780.5915	0.0000
Node124	2846.6423	0.0000	0.0000	197.1991	0.0000
Node125	117.4534	0.3672	111.6246	73.1341	0.0000
Node30.2	16.9559	0.0000	0.0000	113.4680	0.0000

```
*==================================*
| Simulation Specific Information  |
*==================================*
```

```
Number of Input Conduits..........        50 Number of Simulated Conduits.....        58
Number of Natural Channels........        12 Number of Junctions..............        56
Number of Storage Junctions.......         3 Number of Weirs..................         4
Number of Orifices................         3 Number of Pumps..................         0
Number of Free Outfalls...........         1 Number of Tide Gate Outfalls......         0


*=========================================================*
| Average % Change in Junction or Conduit is defined as:  |
| Conduit  % Change ==> 100.0 ( Q(n+1) - Q(n) ) / Qfull   |
| Junction % Change ==> 100.0 ( Y(n+1) - Y(n) ) / Yfull   |
*=========================================================*

The Conduit with the largest average change was..Link71     with     0.001 percent
The Junction with the largest average change was.Node24     with     0.130 percent
The Conduit with the largest sinuosity was.......Link24     with    10.747


*==================================================================*
| Table E21. Continuity balance at the end of the simulation       |
|            Junction Inflow, Outflow or Street Flooding           |
| Error = Inflow  + Initial Volume - Outflow - Final   Volume      |
*==================================================================*

       Inflow          Inflow       Average
       Junction   Volume,ft^3   Inflow, cfs
---------------  ------------  -------------
         Node11   915355.4249         5.2972

         Node24   189829.1897         1.0985

         Node25    35508.8320         0.2055

         Node30    78027.3325         0.4515

         Node33   311098.2680         1.8003

         Node46   286810.5989         1.6598

         Node48   151352.2306         0.8759

         Node63    44364.2368         0.2567

         Node65   144403.7597         0.8357

         Node66    89185.3971         0.5161

         Node89    52665.3239         0.3048

         Node92    49121.1569         0.2843

         Node94    44655.5972         0.2584

         Node99   254305.5274         1.4717

        Node120   253174.2616         1.4651

         Node47    -2.814E+06       -16.2860

        Node125     -111.6246        -0.0006

       Outflow      Outflow          Average
       Junction  Volume,ft^3    Outflow, cfs
---------------  ------------   ------------
         Node47   2.81422E+06        16.2860

        Node125      111.6246         0.0006


*=====================================================*

| Initial system volume        =         0.0000 Cu Ft |

| Total system inflow volume   =   2.896152E+06 Cu Ft |

| Inflow + Initial volume      =   2.896152E+06 Cu Ft |

*=====================================================*

| Total system outflow         =   2.814333E+06 Cu Ft |

| Volume left (Final volume)   =     31365.2919 Cu Ft |

| Evaporation                  =         0.0000 Cu Ft |

| Basin Infiltration           =     24784.2178 Cu Ft |

| Outflow + Final Volume       =   2.870483E+06 Cu Ft |

*=====================================================*


*==============================================*
| Total Model Continuity Error                 |
| Error in Continuity, Percent =        0.8863 |
| Error in Continuity, ft^3    =      25669.607 |
| + Error means a continuity loss, - a gain    |
*==============================================*


####################################################
# Table E22. Numerical Model judgement section    #
####################################################
```

```
Overall error was (minimum of Table E18 & E21)             0.8863 percent


Worst nodal error was in node Node20           with        11.2289 percent


Of the total inflow this loss was                           1.6427 percent


Your overall continuity error was                  Excellent


                                                  Excellent Efficiency


Efficiency of the simulation                        2.29


Most Number of Non Convergences at one Node        9.


Total Number Non Convergences at all Nodes        41.


Total Number of Nodes with Non Convergences       10.



#########################################################
# Table E23. New Basin Design Information               #
#            Maximum Hydraulic Grade Line,              #
#            Out Conduit Sizes and Maximum Flow         #
#########################################################

A) Resize d/s Pipes based on given HGL
B) Resize Basin based on given HGL
C) Resize d/s Pipes and Basin based on HGL and max discharge
D) Resize d/s pipes based on given max discharge

   Basin Name    Type    Max.HGL   Conduit         Depth   Width   Barrels   Max.Flow
                           (ft)                     (ft)    (ft)             (ft^3/s)
--------------- ------  --------- --------------- ------- ------- --------- ---------

===> Hydraulic model simulation ended normally.
===> XP-SWMM Simulation ended normally.


===> Your input file was named  : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1A_50yr 2hr.DAT

===> Your output file was named : N:\PROJ\0020242.01\Reports\Drainage_Report\Loc_Drain_Study\XPSWMM model\Proposed\Proposed1A_50yr 2hr.out


*==============================================================*
|             SWMM Simulation Date and Time Summary            |
*==============================================================*
| Starting Date... April       6, 2015  Time...   15:10:20:66  |
|   Ending Date... April       6, 2015  Time...   15:10:53:90  |
|  Elapsed Time...    0.55400 minutes or     33.24000 seconds  |
*==============================================================*
```