

CONTRACT DOCUMENTS



Appendix A - Best Management Practices for Service Lines

9. SUB-CLASS 2: SERVICE LINES

9.1. Description of Class of Projects

This Sub-Class addresses the construction of new service lines including underground natural gas, water, storm water, sewage, power and communication and aboveground power and communication. It also addresses the modification, operation, maintenance and repair, and abandonment and decommissioning of existing underground and aboveground lines. The MCSR covers the areas of the CSA as described in Section 1.3.

Parks Canada is the Responsible Authority under the Act for all construction, modification, operation, maintenance or repair, and abandonment and decommissioning projects in the park communities. The plans, directives, and guidelines in Tables 1.1 and 1.2 describe the capacities of services permitted in each community related to various land use districts.

Based on the *Canadian Environmental Assessment Act*, the following projects are included in this sub-class (for more details on projects covered by this class screening see Section 1.7):

- Construction of all new service lines,
- Modification, operation, maintenance or repair of existing lines within the areas listed in Schedules I, II, and III of the *National Parks Lease and Licence of Occupation Regulations* of the *Canada National Parks Act* where the projects:
 - Take place in areas that are not built-up;
 - Involve the cutting of indigenous trees;
 - Involve the likely release of a polluting substance into the environment (A polluting substance is a substance, either natural or man-made, that can potentially have adverse effects on the environment);
 - Increase the operating capacity of the water, sewer, gas, electricity or telephone service lines; or
 - Present risk of physical harm to mammals.

Note: Modification, operation, maintenance or repair of existing lines that do not involve any of the above do not require environmental assessment under the Act.

- Abandonment and decommissioning of existing lines.

Note: Any project and its associated activities that are carried out in or on or within 30 m of a water body may not be within the MCSR and therefore may require an individual environmental assessment. Any project that may impact sensitive resources or take place on a contaminated site may require an individual environmental assessment. For more details on projects covered by this class screening see Section 1.7.

9.2. Typical Projects Associated with the Provision of Service Lines

Both underground and aboveground service lines for water, sanitary waste, storm water, natural gas, power and communication are present in the CSA. Most new construction will be

underground and many aboveground services will be replaced with belowground when appropriate.

Utilities, including water, sanitary sewer, storm water, and natural gas, which are provided in pipes, are usually located under roadways, or across development properties. Utilities provided in electrical cable are usually provided together in a conduit wherever feasible, frequently following roadways, either above or underground.

All projects in this sub-class involve a pre-planning component. Pre-planning activities include the preparation of Emergency Response Plans for potential contamination, Sediment and Erosion Control Plans and scheduling work such that it does not conflict with peak usage times and critical wildlife life stages.

9.2.1. Underground Services

The following projects occur during construction, operation, modification, maintenance or repair, and decommissioning and abandonment of underground service lines:

- **Site Preparation** includes:
 - Surveying and clearing of vegetation in the right-of-way;
 - Thawing of frozen ground during the winter through burning of propane;
 - Grading to reduce steep slopes;
 - Excavation of trenches by open cutting with backhoes, usually 1 to 3 m deep and 1 to 2 m wide, depending on the utility being installed. Smaller lines, such as electrical or phone lines, can use a trenching machine, which is less disturbing than a backhoe. Main line sewer, water lines, and storm sewers require larger trenches; and
 - Dewatering involves the removal of excess water from the site using pumps, hoses and sediment traps, and redirecting to stable vegetation.
- **Installation** of new utility lines, including electricity, natural gas, telephone and cable television, sanitary sewer, storm water, and water lines includes installing conduit, pipe or cable (for pipe this includes hauling, stringing, bending, welding, coating and placement). Trench breakers and subdrains are installed to prevent the movement of water down the trench. Cathodic protection to prevent corrosion along the line is attached to metal natural gas lines. Projects that potentially have environmental impacts include:
 - Trenching, back filling and compacting: overburden is placed in the trench over the pipe, compacted and crowned over the trench to allow for subsidence. Final grading recontours the surface; and
 - Cable or telephone lines can be installed with a trenching machine, which opens the trench, lays the line and closes the trench in one pass.

- **Maintenance and Repair** of existing lines includes many of the same projects described under site preparation and installation. Additional projects include:
 - Annual inspection of lines and facilities for breaks, leaks or other malfunctions, and replacing damaged or broken lines, which includes the same activities as described above, but usually on a smaller scale;
 - Maintaining the right-of-ways, including mowing and removal of danger trees; and
 - Stormwater system maintenance, including cleaning storm sceptors and disposing of any sediment and trapped oils.
 - Inspection and maintenance and replacement of transformers
- **Decommissioning and Abandonment** includes:
 - Disconnecting and **either** removing and disposing of underground line or pipe, **or** capping/sealing to leave the disconnected line or pipe in place.

9.2.2. Aboveground Services

The following projects occur during construction, operation, modification, maintenance or repair, and decommissioning and abandonment of aboveground service lines:

- **Site Preparation** includes:
 - Surveying and clearing of vegetation in the right-of-way;
 - Thawing of frozen ground during the winter through burning of propane;
 - Grading to reduce steep slopes;
 - Dewatering involves the removal of excess water from the site using pumps, hoses and sediment traps, and redirecting to stable vegetation.
- **Installation** of new utility lines aboveground includes:
 - digging holes for poles, planting poles, and stringing.
- **Maintenance and Repair** activities include:
 - Replacing poles and lines as necessary, including removing old poles, digging holes for new poles, planting poles, stringing, and replacing light bulbs; and
 - Maintenance of right-of-ways (outside town boundary), including mowing, clearing of shrubs, possible use of herbicides, and pruning or removal of danger trees.
- **Decommissioning and Abandonment** occurs when aboveground lines are replaced by underground service lines. This process involves:
 - Removal and disposal of aboveground poles and lines; and

- Re-installation of underground services (see Section 9.2.1).

9.2.3. Aboveground and underground services

The following activities are applicable to aboveground and underground services.

- **Restoration or Reclamation** includes the overall clean up and reclamation of the site after construction or decommissioning and abandonment, involving:
 - Removal of all garbage and debris, and
 - Revegetation by seeding, sodding or planting of native trees and shrubs.
- **General activities**, including:
 - Materials Handling/Storage includes stockpiling overburden for use during filling and compacting.
 - Equipment Operation occurs during all phases. For aboveground lines, it includes the use of bucket trucks for pruning and line work. For underground services, it includes the use of jackhammers, compressors, compactors, backhoes, trenchers, trucks, vacuum trucks, water pumps and gas rectifiers.
 - Waste Production and Disposal occurs during all phases of the project. This involves the collection of all waste and its removal to appropriate facilities. Vegetative material will be chipped and re-used, or composted. Diseased vegetation may be burned, and a burning permit is required.

9.2.4. Typical Seasonal Scheduling and Construction Duration

Service line activities can occur during all seasons of the year. However, most planned activities occur between April and November, when the ground is thawed. If necessary, ground can be thawed during the winter months by burning propane on the surface, although this is usually only done for emergency underground repair activities. Aboveground repair activities can be carried out at all times of the year. Scheduled vegetation removal on rights of way is usually scheduled to occur during the winter season when the ground is frozen.

Duration of activities varies depending upon the type and size of the project. Construction of new service lines may take up to two months to complete for major projects, major repairs may also take this long. Maintenance and minor repair activities can be done in a short period of time.

9.3. Description of Study Areas for Sub-Class 2

The MCSR is being prepared for projects that are conducted regularly and considered routine in nature, and the spatial and temporal extent of the impacts are well understood. Therefore, the potential size of the Study Area for each project subject to the MCSR has been defined below. The Study Areas are defined to include all the environmental components that could be affected by the proposed project.

Sub-Class 2 - Service Lines	Spatial Extent ^(a)	Temporal Extent
Construction of New Service Lines, and Modification, Operation,	<ul style="list-style-type: none"> • Include linear corridor that extends the length of the 	<ul style="list-style-type: none"> • Construction - Duration of Construction Phase

Maintenance and Repair, and Decommission and Abandonment of Existing Lines	<p style="text-align: center;">service line</p> <ul style="list-style-type: none"> • Include width of Right-of-Way (for power and communication lines), or width of Right-of-Way plus 20 m from centre line on either side of Right-of-Way (for gas, sewage and water lines) 	<p style="text-align: center;">(e.g. 3 weeks to 1 year)</p> <ul style="list-style-type: none"> • Modification, Operation, Maintenance or Repair - Duration is Life of Service Line operation, or duration of modification, maintenance or repair (e.g. 1 day to 2 weeks) • Decommission and Abandonment, Reclamation or Restoration - Duration of Decommissioning and Abandonment Phase and time for site to re-establish vegetation for selected end land use (e.g. 3 weeks to 1 year)
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^(a) The size of the Study Area may need to be adjusted due to site-specific conditions as identified in the CSPR.

9.4. Typical Project Sites and Environmental Setting

Potential project sites are located within different ecosystems in the CSA. The environment in the CSA and their environmental characteristics and sensitivities are described in Sections 2.2, 3.2, 4.2, 5.2, 6.2, and 7.2.

9.5. Potential Environmental Effects of Projects Associated with Service Lines

Based on the environmental conditions, location and other site-specific conditions in each ecosite in the CSA, potential effects of project activities have been identified.

An environmental matrix (Table 9.1) has been used to identify which project activities will likely impact each environmental component. The matrix identifies the potential range of magnitudes of the impacts that could result from construction, modification, maintenance or repair, and decommissioning and abandonment of service lines if no mitigation measures are implemented. Potential impacts are rated as high, moderate or low magnitude, or none. Only those activities with impacts are included in the table.

The highest magnitude potential **pre-mitigation** environmental effects as identified in Table 9.1 include:

- Impact on surface water quality from installation of underground service lines close to water bodies (but not closer than 30 m) and sedimentation from run-off during clearing and excavation activities, and dewatering into water bodies. Surface water runoff and increased sedimentation resulting from eroded soils can decrease the quality of surface waters that they enter. Changes in water quality can impact aquatic resources. Activities closer than 30 m to a water body are not covered by the MCSR, and require a separate environmental assessment;
- Potential impacts to soil, including:
 - Soil erosion during grading and excavation activities;

- Soil compaction during equipment operation; and
- Soil contamination from accidental spills and leaks from equipment operation and maintenance.
- Potential for loss or damage to adjacent vegetation from site clearing activities during site preparation.
- Impact on wildlife and wildlife habitat in previously undeveloped areas, including:
 - *Loss or fragmentation of habitat* where development occurs in or adjacent to previously undisturbed areas (including loss of nesting/seeding/resting areas);
 - *Sensory disturbance* from noise and activity during site preparation, installation and equipment operation; and
 - *Disruption of wildlife movement corridors*, where present.
- General negative aesthetic impacts including visual, noise and odour effects, and loss of the wilderness experience.

Table 9.1 Matrix of the Magnitude of Potential Environmental Impacts from the Provision of Service Lines - Sub-Class 2.

Activity and Development Phase	Environmental Components					
	Air Quality	Hydrology, Water Quality and Aquatic Resources	Landforms and Soil	Vegetation	Wildlife Habitat and Populations	Aesthetics (Vision, Noise)
<i>Underground and Aboveground Services</i>						
Site Preparation						
Clearing of vegetation	L	L-M	L	L-H	L-M	L-H
Thawing	L	—	L	—	—	L-M
Grading and excavation	L	L-M	L-H	L-M	L-M	L-H
Dewatering		L	L	L	L	L
<i>Underground Services</i>						
Installation, Maintenance and Repair						
Trenching, backfilling, compacting, grading	L	L	L-H	—	L-M	L
Right-of-way maintenance	L	L	—	L	L	—
Cleaning storm sceptors	—	L	L	—	—	—
Decommissioning and Abandonment						
Disconnection and removal of pipes/cables	—	L	L	—	L	L
<i>Aboveground Services</i>						
Installation, Maintenance and Repair						
Removal of poles and lines	—	P	L	—	L	P
Digging holes for replacement poles	—	L-M	L	L	L	—
Planting poles and stringing	—	L-M	L	—	L	L-H
Right-of-way maintenance	L	L	—	L	L	—
Decommissioning and Abandonment						
Removal of wires and poles, refilling holes	—	—	P	P	P	P
Reclamation and Restoration^(b)						
Revegetation	—	P	L	P	P	P
<i>Underground and Aboveground Services</i>						
General Activities^(c)						
Materials handling/storage	L	L	L-M	L-M	L-M	L-M
Equipment operation and maintenance	L	L-M	L-M	L	L-M	L
Waste management	—	—	L	—	L-H	L-M

Potential Magnitude of Impacts: H = High
M = Moderate
L = Low
P = Positive
— = None

9.6. Mitigation Measures, Guidelines and Standards

Standard guidelines and procedures are available which significantly reduce the magnitude of these potential impacts.

Table 9.2 provides a summary of typical mitigation measures that should be used to address the potential environmental effects identified in Table 9.2. Mitigations associated with general activities should be fully considered in the pre-planning stage to ensure that they are the most effective while on-site. It is important to recognize that appropriate mitigation measures will depend on site-specific environmental characteristics, which can be determined from Table 9.1. Many of these outlined mitigation procedures are currently practised within the CSA.

Parks Canada and the utility companies operating the communities have documented specific mitigation measures (listed in Attachment 2) to be used during project activity. Utility companies and contractors in the CSA are required to be familiar with these recommended construction techniques, and to use them at all times to minimize the impact of their projects.

Table 9.2 Sub-Class 2: Service Lines - Mitigation for Reducing Impacts of Service Line Projects

Activity	Potential Impacts	Mitigation Measures
Underground and Aboveground Services		
<i>Pre-Planning</i>		
General activities	Runoff / sedimentation; soil contamination	<ol style="list-style-type: none"> 1. Prepare an Emergency Response Plan for the worst case, i.e., heavy rainfall and runoff events, high winds, spills, fires, etc. 2. In the event of emergency operations (as defined in Section 9.11 of the MCSR), call Emergency Services and/or Parks Canada at the phone numbers indicated on Attachment 2. 3. Ensure all activities are conducted at least 30 m from waterbodies.
	Dust production	<ol style="list-style-type: none"> 4. Have a water source available to wet down exposed soil and dry areas.
	Wind and water erosion	<ol style="list-style-type: none"> 5. Prepare a satisfactory Sediment and Erosion Control Plan covering all construction and restoration periods. 6. Acquire necessary sediment control equipment (i.e., straw bales, landscaping fabric, sediment fences, etc.) and install prior to construction. 7. Extra planning should be used for areas with silty deposits and sloped areas with sandy deposits.
	Compaction of soils	<ol style="list-style-type: none"> 8. Identify soils susceptible to compaction (fine textured and organic soils) 9. Wherever possible, use equipment of low bearing weight, low PSI tires, or tracked vehicles, especially in sensitive sites. 10. Building material storage must be contained in one area and clearly flagged to prevent soil compaction and reduce area of disturbance.
	Slope failure	<ol style="list-style-type: none"> 11. Assess slope stability (based on slope length, soil texture, steepness, soil depth) and adjust activities to avoid these areas if possible. Use appropriate setbacks. 12. Pay particular attention when planning for slopes of Class 6 (15-30%) or greater, especially where soils are shallow and likely to move with disturbance.
	Habitat loss and fragmentation or encroachment on wildlife movement corridor	<ol style="list-style-type: none"> 13. Identify wildlife habitat that may be impacted by activities and avoid sensitive areas. 14. Identify and avoid wetlands. 15. Ensure only necessary vegetation is removed and delineate areas to be avoided with biodegradable flagging tape and/or temporary fences.

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Activity	Potential Impacts	Mitigation Measures
	Sensory disturbance and mortality of wildlife	<p>When working adjacent to natural areas:</p> <p>16. According to the wildlife that may be present, schedule high noise level activities and other intrusive construction activities to avoid critical life stages (breeding, nesting, rearing, migration). Consult with Parks Canada to discuss any localized wildlife concerns.</p> <p>17. Confine “noise” activities to hours set out in Attachment 2.</p> <p>18. Consider posting wildlife signs to reduce vehicle speeds and increase driver awareness near construction areas where wildlife mortality has or is likely to occur.</p> <p>19. Educate workers to not harass or attract wildlife, keep the site free of food scraps, and dispose of garbage in bear proof containers.</p>
	Disturbance of archaeological resources	<p>20. Determine whether there are archaeological sites in the area (see attached maps).</p> <p>21. Consult with Parks Canada if sites are identified.</p> <p>22. If potential archaeological sites may be subject to ground disturbance, adapt activities to avoid them.</p> <p>23. Educate workers to stop work immediately and to notify site supervisor upon finding any archaeological artefacts. Contact Parks Canada immediately.</p>
	Public safety	<p>24. Outline traffic control measures and assess the need for flagging personnel.</p> <p>25. Call utility line companies to identify infrastructure locations.</p>
	Reduced aesthetics (visual and noise)	<p>26. Evaluate the site layout, access routes and construction activities to minimize their visual impact.</p> <p>27. Plan work schedule to confine “noise” activities to hours set out in Attachment 2.</p>
Site Preparation		
Clearing of vegetation	Dust production	<p>28. Wet down dry, exposed soils, particularly during windy periods.</p> <p>29. Ensure materials being stored or transported are covered with tarps or equivalent material.</p>
	Runoff / sedimentation	<p>In all ecosites and on areas with a slope class of 5 (5-15%) or greater:</p> <p>30. Minimize vegetation cover removal.</p> <p>31. Assess slopes stability (based on slope length, soil texture, steepness, soil depth).</p> <p>32. Use appropriate geo-technical control measures to stabilize slopes.</p> <p>33. To minimize site runoff, control overland flow up and down gradient of exposed areas by use of diversion ditches, bales, vegetative filter strips, and/or sediment traps.</p> <p>34. When possible, hand clear slopes > 35%. Wait to clear steep sloped areas until immediately before scheduled construction and reclaim immediately afterwards.</p> <p>35. Regularly inspect and repair erosion control structures.</p>

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Activity	Potential Impacts	Mitigation Measures
	Wind and water erosion	Particularly in areas with silty deposits and sloped areas with sandy deposits: 36. Clear minimum area necessary in ROW. Where possible, leave stumps and roots in place. 37. Protect exposed soils with granular materials, mulches, or straw. 38. Cover stockpiles of soil with polyethylene sheeting, tarps, or vegetative cover. 39. Minimize grubbing. 40. Where possible schedule clearing in winter to minimize soil disturbance.
	Damage to adjacent vegetation	To protect areas adjacent to development site: 41. Minimize area cleared. Clearly mark area to be cleared with biodegradable flagging tape and/or temporary fences. 42. Ensure sensitive resources identified in Attachment 3 and 4 (if applicable) are protected. 43. See Attachment 2 for replanting directions. 44. Fencing around trees to be retained must be installed beyond the tree's drip line before starting work on site. 45. Where required obtain permit before removing any trees. See Attachment 2 for details. 46. Ensure excavated material does not damage or bury plant material that is to be retained on the site or in adjacent areas. 47. Trees are to be cut so they fall inside the cleared perimeters. 48. Care must be taken during grubbing and stripping to ensure trees and roots on the edge of the cleared area are not disturbed. 49. Grubbing and stripping may not be permitted on steep slopes to reduce the potential for erosion.
	Habitat fragmentation and wildlife corridor encroachment, loss of wilderness quality	When working adjacent to undeveloped areas and areas bordering natural habitat: 50. Clear only the minimum area required for construction activities. 51. Retain vegetation barriers where possible, especially trees and shrubbery.
Thawing	Decrease in ambient air quality due to emissions	52. Only use ground thawing measures in emergency situations. 53. Minimize use of propane for thawing by scheduling activities for spring/summer/fall.
Grading and excavation	Dust production / aesthetics	54. Wet down dry, exposed soils, particularly during windy periods. 55. Ensure fine materials being stored or transported are covered with tarps or equivalent material. 56. Minimize grading and excavation on windy days to limit dust production.

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Activity	Potential Impacts	Mitigation Measures
	Runoff/ sedimentation	<p>57. Halt construction activity on exposed soil during events of high rainfall intensity and runoff.</p> <p>58. Assess slopes stability (based on slope length, soil texture, steepness, soil depth).</p> <p>59. Use appropriate geo-technical control measures to stabilize slopes.</p> <p>60. Cover stockpiles of soil with polyethylene sheeting, tarps, or vegetative cover.</p> <p>Sites close to waterbodies, but not closer than 30 m:</p> <p>61. To ensure site runoff is minimized, control overland flow up and down gradient of excavated areas by use of effective diversion ditches, bales, vegetation filter strips, or sediment traps.</p>
	Wind and water erosion	<p>Particularly in areas with silty deposits and sloped areas with sandy deposits:</p> <p>62. Protect exposed soils with coarse granular materials, mulches, or straw.</p> <p>63. Cover stockpiles of soil with polyethylene sheeting, tarps, or vegetative cover.</p>
	Loss of top soil and/or top soil/subsoil mixing	<p>64. Topsoil separation is required.</p> <p>65. Topsoil will be stored away from any slopes, subsoils, spoil material, construction activities and day-to-day operations.</p>
	Slope failure	<p>66. Avoid work on steep slopes, especially areas with slope Class 6 (15-30%) or greater.</p> <p>67. Assess slopes stability (based on slope length, soil texture, steepness, soil depth).</p> <p>68. Use appropriate geo-technical control measures to stabilize slopes.</p> <p>69. Topsoil will be stored away from any slopes, subsoils, spoil material, construction activities and day-to-day operations.</p>
	Non-point source hydrocarbon contamination	<p>70. When constructing and upgrading storm sewers, install oil sumps.</p>
Dewatering	Runoff / sedimentation	<p>71. Dewatering is not permitted into any waterbody.</p> <p>72. Dewatering is permitted on previously disturbed vegetation or natural vegetation if the following conditions are met:</p> <ul style="list-style-type: none"> • sediment controls are used (i.e., silt fences, silt bags, etc.). • water velocity is controlled to dissipate energy, prevent soil erosion and allow for infiltration. • dewatering structures are continuously monitored to ensure no damage is being done to soil or vegetation. <p>73. Dewatering into the sanitary or stormwater system is restricted as indicated in Attachment 2.</p> <p>74. Sediment from the traps may be used as fill on the construction site.</p>
	Damage to adjacent vegetation	<p>75. For undeveloped areas adjacent to development site, ensure water and sediment is directed away from natural areas.</p>

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Activity	Potential Impacts	Mitigation Measures
	Sensory disturbance and mortality of wildlife	<p>When working adjacent to natural areas:</p> <p>76. According to the wildlife that may be present, schedule high noise level activities and other intrusive construction activities to avoid critical life stages (breeding, nesting, rearing, migration). Consult with Parks Canada to discuss any localized wildlife concerns.</p> <p>77. Confine “noise” activities to hours set out in Attachment 2.</p> <p>78. Consider posting wildlife signs to reduce vehicle speeds and increase driver awareness near construction areas where wildlife mortality has or is likely to occur.</p> <p>79. Educate workers to not harass or attract wildlife.</p>
Underground Services		
<i>Installation, Maintenance and Repair</i>		
Trenching, backfilling, compacting, grading	Dust production / aesthetics	<p>80. Minimize the amount of open trench at any given time.</p> <p>81. Cover stockpiles of soil with polyethylene sheeting, tarps, or vegetative cover.</p> <p>82. Wet down dry, exposed soils, particularly during windy periods.</p> <p>83. Minimize trenching, backfilling and compacting on windy days.</p>
	Runoff / sedimentation	<p>84. Assess slopes stability (based on slope length, soil texture, steepness, soil depth).</p> <p>85. Use appropriate geo-technical control measures to stabilize slopes.</p> <p>86. All excavations will remain free of water (see mitigations for “Dewatering”).</p> <p>Sites close to waterbodies, but not closer than 30 m:</p> <p>87. To ensure site runoff is minimized, control overland flow up and down gradient of excavated areas by use of effective diversion ditches, bales, vegetation filter strips, or sediment traps.</p> <p>88. Stockpiles related to excavations will be stored a minimum of 2 m from embankments, slumps, water bodies and containment sources to prevent material loss or degradation.</p> <p>89. Following excavations, lightly tamp disturbed areas to minimize slumping and potential pooling or water.</p>
	Non-point source hydrocarbon contamination	<p>90. When constructing and upgrading storm sewers, install oil sumps.</p>
	Erosion (wind and water)	<p>91. Install trench breakers of impervious material to direct groundwater seepage to the surface.</p> <p>92. Minimize the length of exposed trench and the time of excavated soil exposure.</p> <p>93. Use interceptor ditches or berms (bales) upgradient of construction to divert overland flow around exposed soil surfaces.</p> <p>94. Line steep ditches with filter fabric, rock or polyethylene lining to prevent channel erosion.</p>
	Trench collapse	<p>95. Delay trenching until just prior to lowering-in pipeline.</p> <p>96. Use trench reinforcement device (i.e. cage), if possible.</p>

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Activity	Potential Impacts	Mitigation Measures
	Compaction	97. Compact soil to approximate preconstruction conditions while allowing for settling.
	Habitat loss, fragmentation, wildlife mortality	98. Minimize the length of open trench, and the time a trench is open to reduce its affect as a barrier or trap for terrestrial wildlife. 99. Fence trench if it is to be left unattended over night.
Right-of-way maintenance (outside community boundaries)	Dust production / aesthetics	100. Wet down dry, exposed soils, particularly during windy periods. 101. Ensure materials being stored or transported are covered with tarps or equivalent material. 102. Minimize trenching, backfilling and compacting on windy days.
	Loss of wilderness quality	103. Retain vegetation barriers where possible, especially trees and shrubbery. 104. Minimize the amount of vegetation removed.
	Contamination from fertilizers and herbicides	105. Accurately assess the need for chemicals during right-of-way maintenance. An approved current integrated pest management plan must be in place. 106. Avoid herbicide/fertilizer use in proximity to, or where runoff may reach waterbodies.
	Wind and water erosion	107. Where possible schedule vegetation clearing in winter to minimize soil disturbance.
Cleaning storm sceptors (stormwater sewers)	Sedimentation/contamination of water	108. Ensure stormwater storm sceptors are cleaned regularly. 109. Dispose of sediment and trapped oils and debris at appropriate facilities.
<i>Decommissioning and Abandonment</i>		
Disconnection and removal of pipes/cables	Runoff / sedimentation	110. Stockpiles related to excavations will be stored a minimum of 2 m from embankments, slumps, water bodies and containment sources to prevent material loss or degradation. 111. Following excavations, lightly tamp disturbed areas to minimize slumping and potential pooling or water.
	Wind and water erosion	112. Begin revegetation immediately. 113. Protect exposed soils with coarse granular materials, mulches, or straw.
	Compaction	114. Select appropriate equipment, especially in erosion/slump prone areas. If possible, use wide tracked equipment, rubber tired vehicles and low bearing pressure weight equipment in sensitive areas.
	Other	115. Pipes to be abandoned must be pressure tested for leaks and sealed with no part of the line exposed above the surface. 116. The proponent will retain responsibility for the line until it is removed.
Aboveground Services		
<i>Installation, Maintenance and Repair</i>		

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Activity	Potential Impacts	Mitigation Measures
Removal of poles and lines	Compaction	<p>117. Compact soil to approximate precondition conditions while allowing for settling.</p> <p>118. Select appropriate equipment, especially in erosion/slump prone areas. If possible, use wide tracked equipment, rubber tired vehicles and low bearing pressure weight equipment in sensitive areas.</p>
Digging holes for poles	Slope failure	<p>119. Assess slopes stability (based on slope length, soil texture, steepness, soil depth).</p> <p>120. Use appropriate geo-technical control measures to stabilize slopes.</p>
	Loss of or damage to vegetation, weed invasion	121. Protect undisturbed land by only stockpiling materials on heavy canvas or polypropylene tarpaulins to protect native vegetation. Excavated material should not be permitted to damage or bury plant material that is to be retained on the RoW or in adjacent areas.
Planting poles and stringing	Heavy equipment and excavation activities may result in soil compaction, loss of organic matter, erosion and loss of topsoil	122. Soil that has been temporarily moved away from poles and placed on tarps will be shovelled back against the pole and lightly tamped to prevent slumping or pooling of water.
	Reduced aesthetics (noise)	123. Confine “noise” activities to hours set out in Attachment 2.
Right-of-way maintenance	Dust production / aesthetics	<p>124. Wet down dry, exposed soils, particularly during windy periods.</p> <p>125. Ensure fine materials being stored or transported are covered with tarps or equivalent material.</p>
	Contamination from fertilizers and herbicides	<p>126. Accurately assess the need for chemicals during right-of-way maintenance. An approved current integrated pest management plan must be in place.</p> <p>127. Avoid herbicide/fertilizer use in proximity to, or where runoff may reach waterbodies.</p>
	Loss of wilderness quality	<p>128. Retain vegetation barriers where possible, especially trees and shrubbery.</p> <p>129. Minimize the amount of vegetation removal.</p>

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Activity	Potential Impacts	Mitigation Measures
<i>Decommissioning and Abandonment</i>		
Removal wires and poles, refilling holes	Heavy equipment and excavation activities may result in soil compaction, loss of organic matter, erosion and loss of topsoil.	130. Soil that has been temporarily moved away from poles and placed on tarps will be shovelled back against the pole and lightly tamped to prevent slumping or pooling of water.
	Weed invasion	131. See mitigations for "Revegetation".
	Sensory disturbance	When working adjacent to natural areas: 132. According to the wildlife that may be present, schedule high noise level activities and other intrusive construction activities to avoid critical life stages (breeding, nesting, rearing, migration). Consult with Parks Canada to discuss any localized wildlife concerns. 133. Educate workers to not harass wildlife. 134. Trade waste will be disposed of at appropriate facilities.
Revegetation	Runoff/ sedimentation, wind and water erosion	135. Initiate replanting of disturbed areas immediately after construction is completed. 136. Protect exposed soils with coarse granular materials, mulches, or straw. 137. Use stockpiled topsoil to facilitate reclamation.
	Contamination from fertilizers and herbicides	138. Accurately assess the need for chemicals during right-of-way maintenance. An approved current integrated pest management plan must be in place. 139. Do not use fertilizers and herbicides in areas where residue or runoff may enter a waterbody or drainage pathway. 140. Do not over water.
	Compaction	141. Cultivate affected areas before reclaiming, especially areas with fine textured or organic soils.
	Weed invasion	142. Revegetate exposed areas at first opportunity. 143. Ensure topsoil is clean and weed free. If clean fill is unavailable, monitor the site, and treat as needed, to ensure appropriate weed control for 3 years following landscaping (applicable to construction crews only). 144. Revegetate with Parks Canada approved grass seed mix, if applicable, or the Town seed mix for landscape rehabilitation (see Attachment 2). 145. An approved current integrated pest management plan must be in place.
	Habitat loss, fragmentation and wildlife corridor encroachment.	146. Revegetate exposed areas at first opportunity.
	Attraction of wildlife to palatable, non-native species	147. Seed with Parks Canada-approved seed mix (see Attachment 2) and native plants that are non-palatable to wildlife.
Underground and Aboveground Services		

Model Class Screening Report for Routine Projects

Activity	Potential Impacts	Mitigation Measures
<i>General Activities</i>		
Materials handling/storage	Dust production	148. Wet down dry soil or cover with tarp. 149. Ensure materials being stored or transported are covered with tarps or equivalent material.
	Runoff/sedimentation	150. Cover stockpiles with polyethylene sheeting, tarps, or vegetative cover.
	Damage to adjacent vegetation	151. Excavated material will not be permitted to damage or bury plant material that is to be retained on the site or in adjacent areas. 152. Protect undisturbed land by only stockpiling materials on heavy canvas or polypropylene tarpaulins to protect native vegetation. Excavated material should not be permitted to damage or bury plant material that is to be retained on the construction site or in adjacent areas.
Equipment operation and maintenance	Decrease in ambient air quality due to emissions	153. Ensure all equipment is properly tuned, free of leaks, in good operating order, and fitted with standard air emission control devices. 154. Minimize idling of engines at all times.
	Dust production	155. Wet down dry and dusty roads. 156. Do not use oil-based dust suppressants. 157. Reduce speeds. 158. Ensure materials being stored or transported are covered with tarps or equivalent material.

Model Class Screening Report for Routine Projects

Activity	Potential Impacts	Mitigation Measures
	Contamination of soil and water from accidental spill	<p>159. Prepare an appropriate Spill Response Plan. In the event of emergency operations (as defined in Section 9.11 of the MCSR), call Emergency Services and/or Parks Canada at the phone numbers indicated on Attachment 2. All spills must be reported to Parks Canada.</p> <p>160. Avoid work in high risk areas, particularly in areas of high water table, steep slopes or in close proximity to streams.</p> <p>161. Spill contingency plans, equipment and supplies (to clean up 110% of the site's largest possible fuel/chemical spill) will be present on-site at all times and employees trained in their use.</p> <p>162. Ensure all construction equipment is free of leaks from oil, fuel or hydraulic fuels.</p> <p>163. The crossing of any waterbody (including wetlands) by construction equipment, or the use of such equipment within waterbodies is strictly prohibited unless prior approval has been confirmed.</p> <p>164. Designate refuelling areas at least 100 m away from any water body. Stationary stores of fuel will be bermed with an impermeable liner to contain 125% of the anticipated fuel quantity. Any contaminated rainwater will be moved out of the park.</p> <p>165. Refuelling activities should not be conducted where run-off could carry contaminants into drainage pathways (including storm sewers).</p> <p>166. Equipment will be fuelled on hardened surfaces.</p> <p>167. Dispose of contaminated materials at provincially certified disposal sites outside of the park. No treatment of contaminated soils (e.g., bioremediation) is allowed in the park. All applicable documentation demonstrating proper disposal will be provided to Parks Canada.</p>
	Compaction of soils	<p>168. Restrict vehicular travel and other equipment operation to the construction site and approved access routes.</p> <p>169. Vehicle parking will be restricted to specialized areas on the construction site.</p> <p>170. Minimize or halt construction traffic during wet conditions when the soil shows signs of ponding or rutting. Use low impact equipment when possible and repair rutted areas with approved methods</p> <p>171. In sensitive areas, if possible, use equipment that minimizes surface disturbance including low ground pressure tracks/tires, blade shoes and brush rake attachments.</p>
	Damage to adjacent vegetation	<p>Undeveloped areas adjacent to development site:</p> <p>172. Careful machine operation is required to ensure that damage to surrounding vegetation does not occur.</p> <p>173. Excavated material must not be permitted to bury plant material that is to be retained. Snow fences may be used to prevent excavated material escaping into the surrounding forest.</p>

Model Class Screening Report for Routine Projects

Activity	Potential Impacts	Mitigation Measures
	Weed invasion	174. All construction equipment from outside a national park will be steam cleaned prior to arrival to minimize the risk of introducing weeds. 175. Construction equipment from outside the park will not be washed while in the park.
	Sensory disturbance to wildlife	All undeveloped areas and areas bordering natural habitat, especially wildlife movement corridors and natural wetlands: 176. Use existing roadways, pathways and previously disturbed areas for site access and travel within the site. 177. Educate workers not to enter wildlife corridors. 178. Confine “noise” activities to hours set out in Attachment 2.
	Increased traffic levels	179. Time construction activities to minimize vehicle conflicts on access roads and/or use flagging personnel.
	Public Safety	180. If equipment infringes on driving lane, flag persons are required. 181. All roadway signage must be in accordance with provincial standards. Signs must be bilingual or symbolic. 182. The proponent is responsible for site security at all times.
	Aesthetics	183. All heavy equipment operating on paved surfaces should be equipped with street pads. Damage to paved surfaces will be restored to original conditions.
Waste management (general)	Contamination of soil and water from accidental spill or improper disposal	184. No rock, silt, cement, grout, asphalt, petroleum product, lumber, vegetation, domestic waste, or any deleterious substance shall be placed or allowed to disperse into any stream, river, pond, storm or sanitary sewer, or other water course. Excess material will not be disposed of on or adjacent to the site.
	Aesthetics (visual and smell)	185. Collect all waste, store appropriately and dispose of trade waste at appropriate landfills. 186. All garbage and food must be stored in bear-proof bins. 187. Keep site maintained in a tidy condition, free from the accumulation of waste products, debris and litter. 188. Construction sites must undergo thorough clean-up, including removal of general litter, survey stakes and flagging tape at project completion.

9.7. Residual Impacts

Residual impacts are those impacts remaining **after all appropriate mitigation has been implemented**.

The potential residual impacts likely to result from Sub-class 2 projects have been defined using the following terms:

- **Magnitude of Impact** refers to the percentage of a population or resource that may be affected. High, medium or low are the terms identified.
- **Direction** refers to whether an impact to a population or resource is considered to be positive, negative or neutral.
- **Duration** refers to the time it takes a population or resource to recover from the impact. It can be identified as short-term (< 3 to 6 months), moderate-term (6 months to 2 years) and long-term (> 3 years).
- **Frequency** refers to the number of times an activity is likely to occur and can be identified as once, intermittent, or continuous.
- **Geographical Extent** refers to the geographical area potentially affected by the impact and may be rated as local (within CSA), or regional (within the national park) or provincial.
- **Degree of Reversibility** refers to the extent an adverse effect is reversible or irreversible over a 5 year period.
- **Degree of certainty** in assessing residual impacts.

If the appropriate measures are followed, most of the potential impacts identified in Table 9.1 and described in Section 9.5 should be reduced to insignificant levels. The degree of certainty in predicting the residual impacts and significance is high because these are well understood mitigations and in known environments.

After appropriate mitigation measures are taken, the following residual impacts may remain:

- Sedimentation from site preparation and dewatering activities and contamination of surface water from equipment operation should be reduced provided contractors use appropriate mitigations as described in Table 9.2. These mitigations address equipment operation in proximity to water bodies, including using geotextile materials on steeper slopes, halting activities on steep slopes during heavy rainfall events, and ensuring an appropriate spill response plan is in place prior to operating equipment. Resulting effects would be low, negative, short-term, intermittent, local, reversible and are not considered not significant.
- Following the mitigations in Table 9.2 during site preparation activities and equipment operation can reduce soil impacts such as erosion, compaction and contamination. Mitigations include restricting vehicular traffic and other equipment operation to designated areas and using equipment of low bearing weight, where possible. Provided these and other mitigations are followed, the residual impact to soil would be low, negative, short term, local, reversible and are not considered significant.

- Minimizing vegetation clearing and avoiding use of off-site areas for material storage or access can reduce loss of wildlife habitat. Fragmentation or encroachment on wildlife movement corridors from project activities is more difficult to mitigate. The major residual impacts to wildlife will occur in and in close proximity to previously undisturbed areas. Impacts in these areas will be low to moderate (depending on the specific location), negative, short-term, intermittent, local and reversible.
- Negative aesthetic impacts can be greatly reduced by adhering to noise restrictions and reducing facility-related visual impacts by careful placement. If this is done, aesthetic impacts should be insignificant. Aesthetic impacts during site preparation will be negligible, negative, short term, local, reversible and are not considered significant.

In summary, appropriate mitigation should be effective in reducing potential impacts from service line projects to insignificant levels, except in or adjacent to previously undisturbed areas.

9.8. Malfunctions and Accidents

The likelihood of accidents and malfunctions occurring that would cause negative environmental impacts is minimal, as the projects associated with service lines are routine and their effects predictable. The likelihood of malfunctions occurring is reduced through use of appropriate operation and maintenance procedures. Examples of unlikely accidents or malfunctions that may occur include:

- Damage to or breakage of underground service lines during operation could result in flooding, gas leaks, explosions, etc. Normal safety procedures would reduce the likelihood of this occurring, and Emergency Response Plans minimize any environmental effects.
- Trees falling onto the line, lightning, and extreme ice and wind loading, and impacts from vehicles or birds could damage aboveground power lines. This could result in personal safety concerns.
- Wood pole structures can malfunction due to extreme weather situations. Wood poles can also malfunction due to loss of strength through rot.
- Substation malfunctions typically occur through mechanical failure.
- Heavy rains during construction or maintenance could lead to unexpected erosion and overflow of sediment traps or exposure of pipeline or cable. Possible mitigation measures include the use of erosion control devices to contain and direct flow.
- Spills of petroleum products from equipment. Possible mitigation includes having Emergency Response Procedures and standard spill containment kits available at all times and cleaning up spills.

9.9. Effects of the Environment on the Project

Natural events including flooding, avalanches, forest fire, heavy wind or snow have the potential to affect projects associated with service lines, and, in extreme cases, create emergency situations. These issues and concerns are considered to be mitigable through use of careful planning and Emergency Response procedures. Such measures should be included in Emergency Response Plan, as recommended under Table 9.2.

9.10. Emergencies

The Agency has advised Parks Canada “that pursuant to Section 7(1) of the Act, an environmental assessment is not required of a project where the project is to be carried out in response to an emergency and the project is carried out in the interest of preventing damage to property, the environment, or is in the interest of public health and safety. The scope and magnitude of actions taken by Federal Authorities in these circumstances will be defined by the powers that authorize the emergency actions. However, Federal Authorities should, as a matter of policy, attempt to ensure that environmental considerations are factored into their emergency response planning to the extent possible.”

Emergencies within these national parks, other than those of a national scale, include but are not limited to the actual occurrence of, and/or imminent threat of flooding, dam failure, extreme erosion, facility structural damage and forest fire, snow, rock or debris avalanche, natural gas leaks or explosions, train derailments and railway track failure, toxic materials release or spill, natural event blockage of highways or railways, and telephone or electrical failure. Initial actions or immediate containment will be approved but will require a post project environmental assessment and follow-up. If a longer-term project arises from the initial emergency, the normal environmental assessment protocol will apply to any further undertakings.

If a project would normally be covered by the MCSR, then it would also be covered if it resulted from emergency situations that occur within the CSA. Projects that would not normally be covered by the MCSR would not be covered in an emergency situation.

9.10.1. Emergency Situation Environmental Assessment Procedure

Protocols in the event of one of the above-specified emergencies include calling Parks Canada and/or emergency responders at the numbers listed in Attachment 2. Inform Parks Canada of the nature and location of the emergency, initial action proposed and any subsequent follow-up.

The week following an emergency, a CSPR form must be completed and submitted to Parks Canada as outlined in Section 9.12.

9.10.2. Post Emergency Environmental Assessment

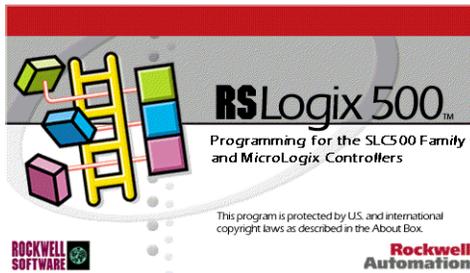
Should the emergency action require further long-term work already covered in the MCSR, a CSPR form may be used. When emergency repair is outside the activities included under the MCSR, an individual environmental assessment will be required.

CONTRACT DOCUMENTS



Appendix B - Intake Pumping Station - PLC Listing and Control Panel Drawings

RSLogix500 Project Report



INTAKE.RSS

Processor Information

Processor Type: Bul.1761 MicroLogix 1000 DH-485/HDSlave
Processor Name: INTAKE
Total Memory Used: 489 Instruction Words Used - 410 Data Table Words Used
Total Memory Left: 452 Instruction Words Left
Program Files: 17
Data Files: 8
Program ID: 2ea0

INTAKE.RSS

I/O Configuration

0 Bul.1761 MicroLogix 1000 DH-485/HDSlave

INTAKE.RSS

Channel Configuration

DF1 Baud: 9600
DF1 Node : 2 (decimal)
DH485 Baud: 19200
DH485 Node : 2 (decimal)
Primary Protocol: DH485
DF1: DF1 Full Duplex

INTAKE.RSS

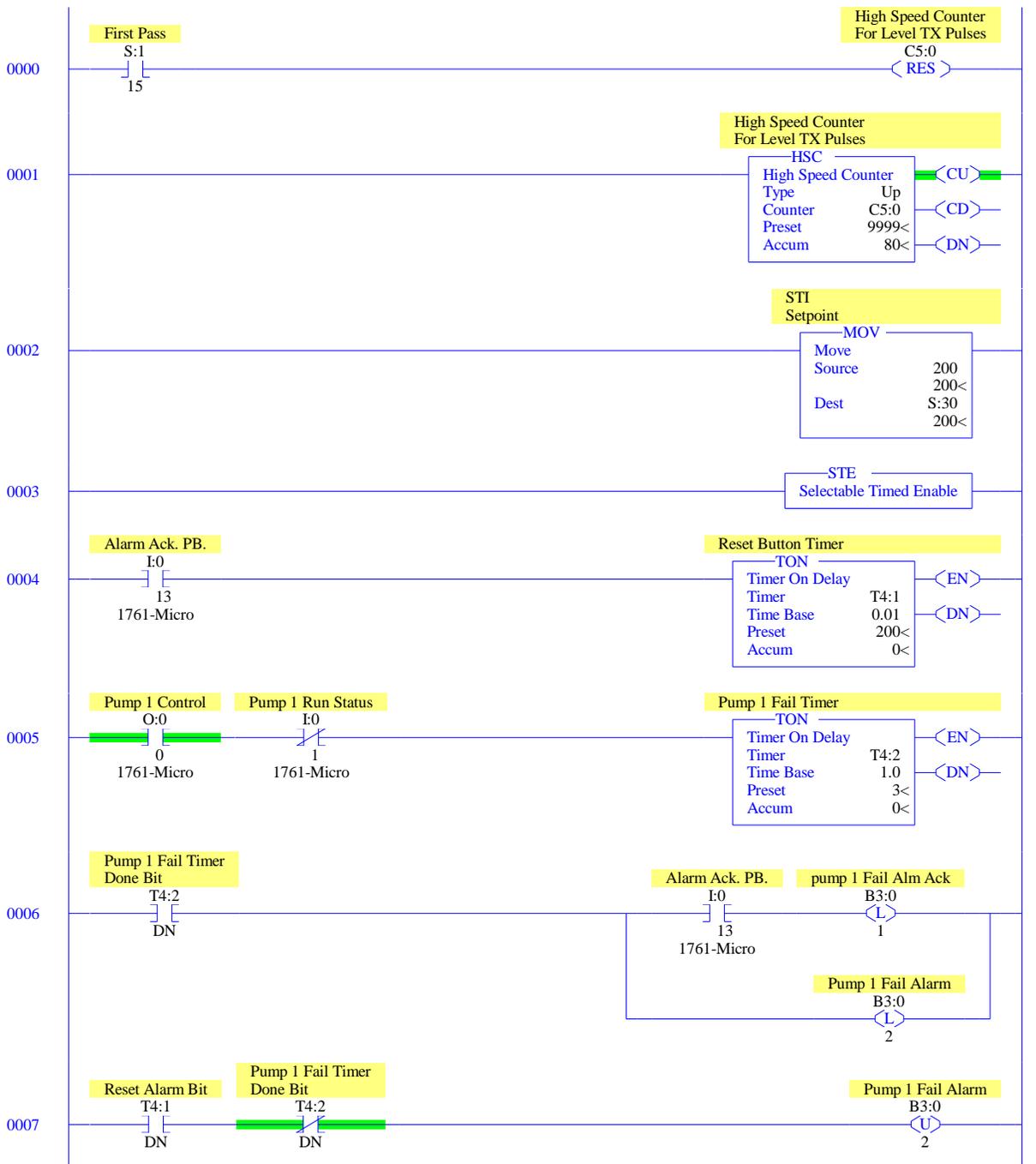
Program File List

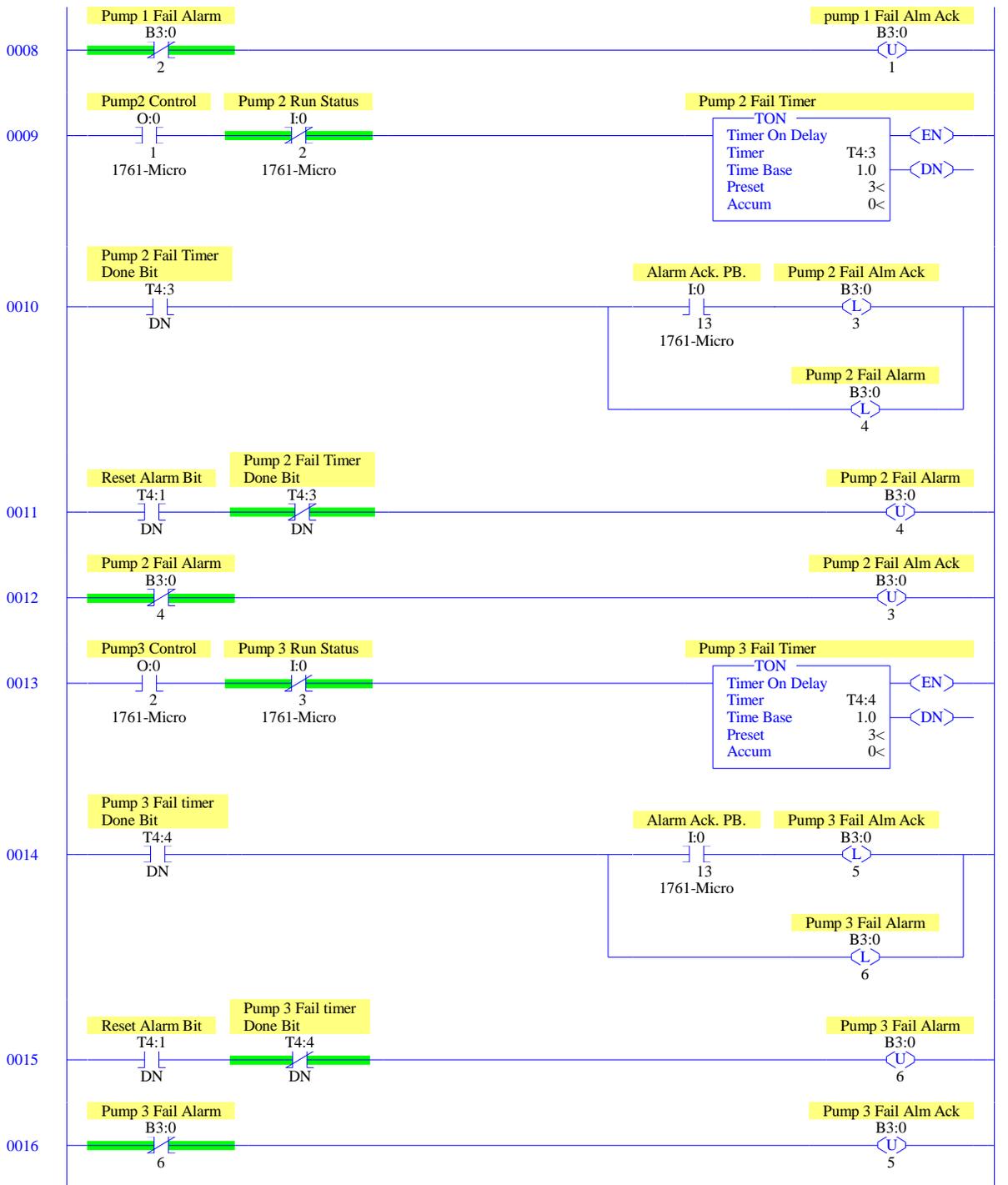
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	4	LADDER	1	No	3
STL_INT	5	LADDER	5	No	46
	6	LADDER	1	No	3
	7	LADDER	1	No	3
	8	LADDER	1	No	3
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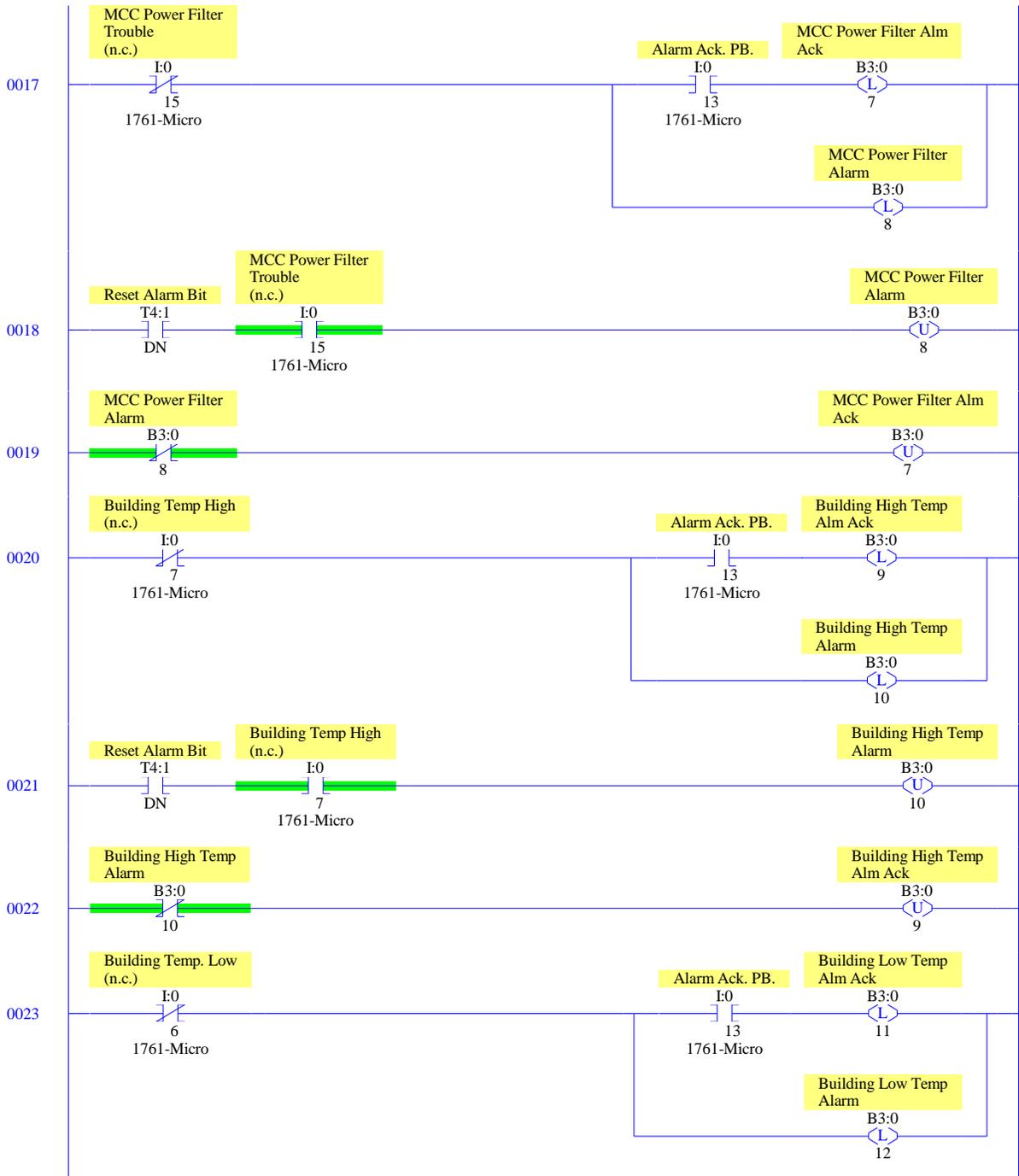
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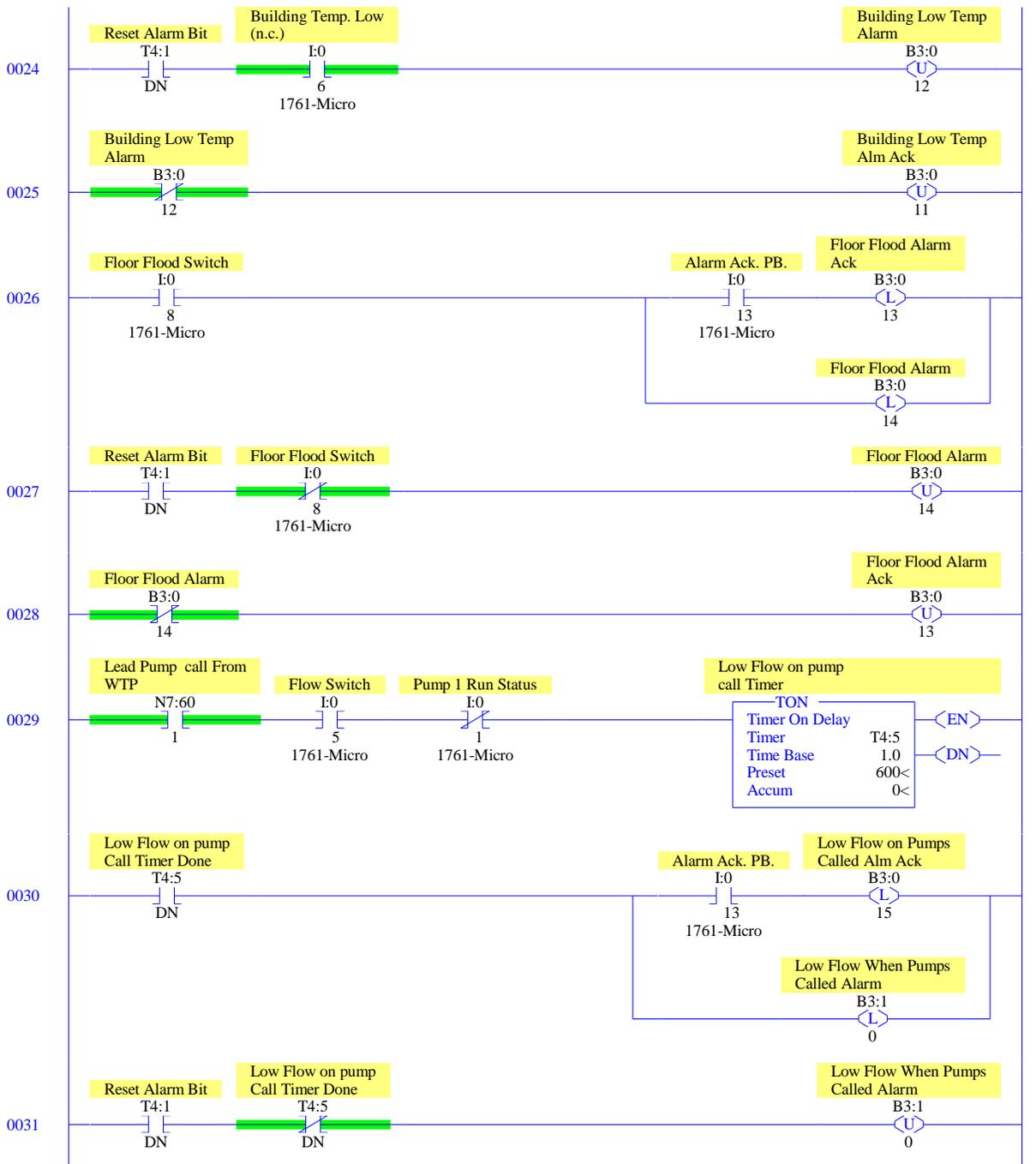
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INPUT	1	I	Global	No	6	2	I:1
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BINARY	3	B	Global	No	32	32	B3:31
TIMER	4	T	Global	No	120	40	T4:39
COUNTER	5	C	Global	No	96	32	C5:31
CONTROL	6	R	Global	No	48	16	R6:15
INTEGER	7	N	Global	No	105	105	N7:104



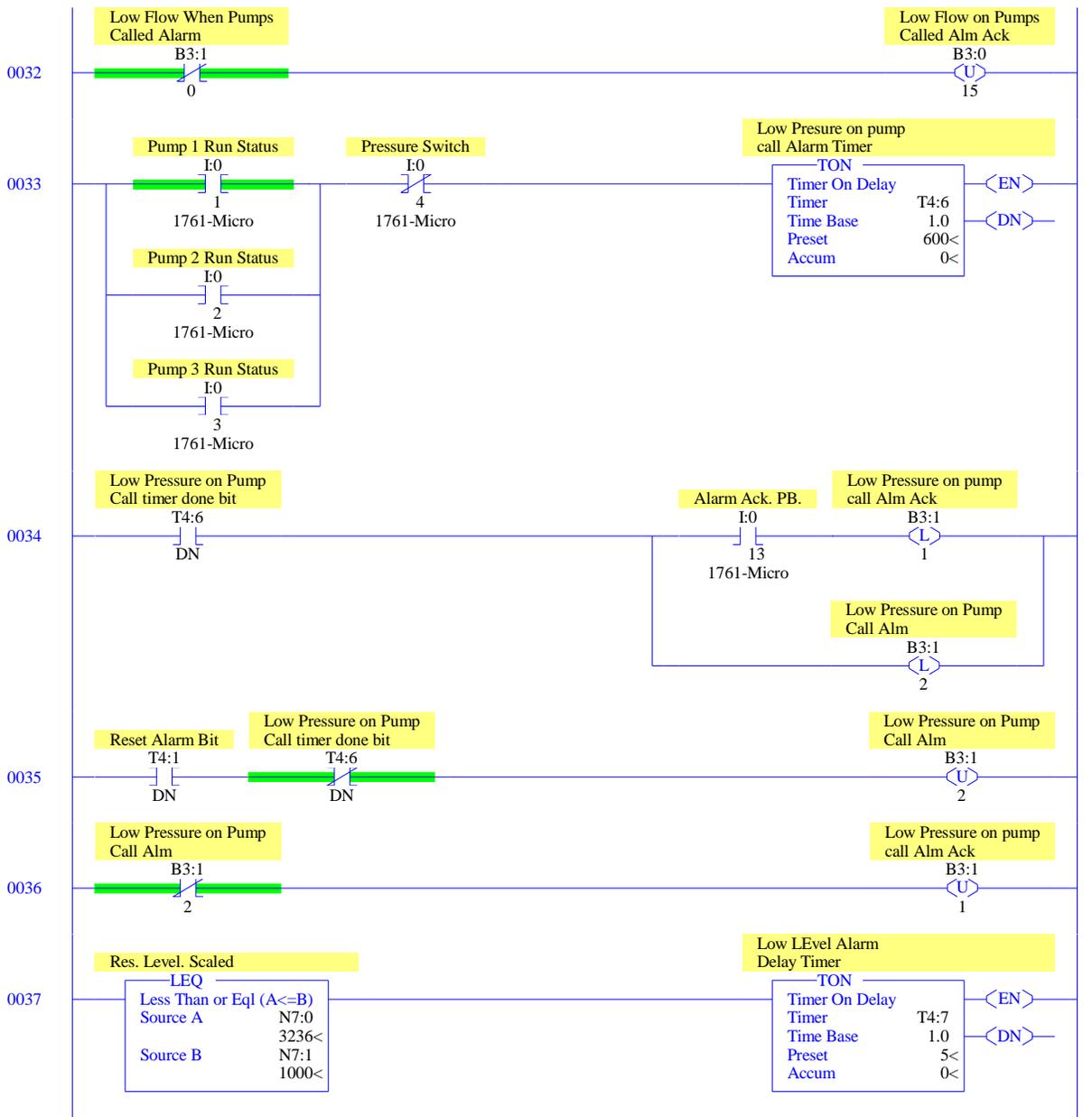


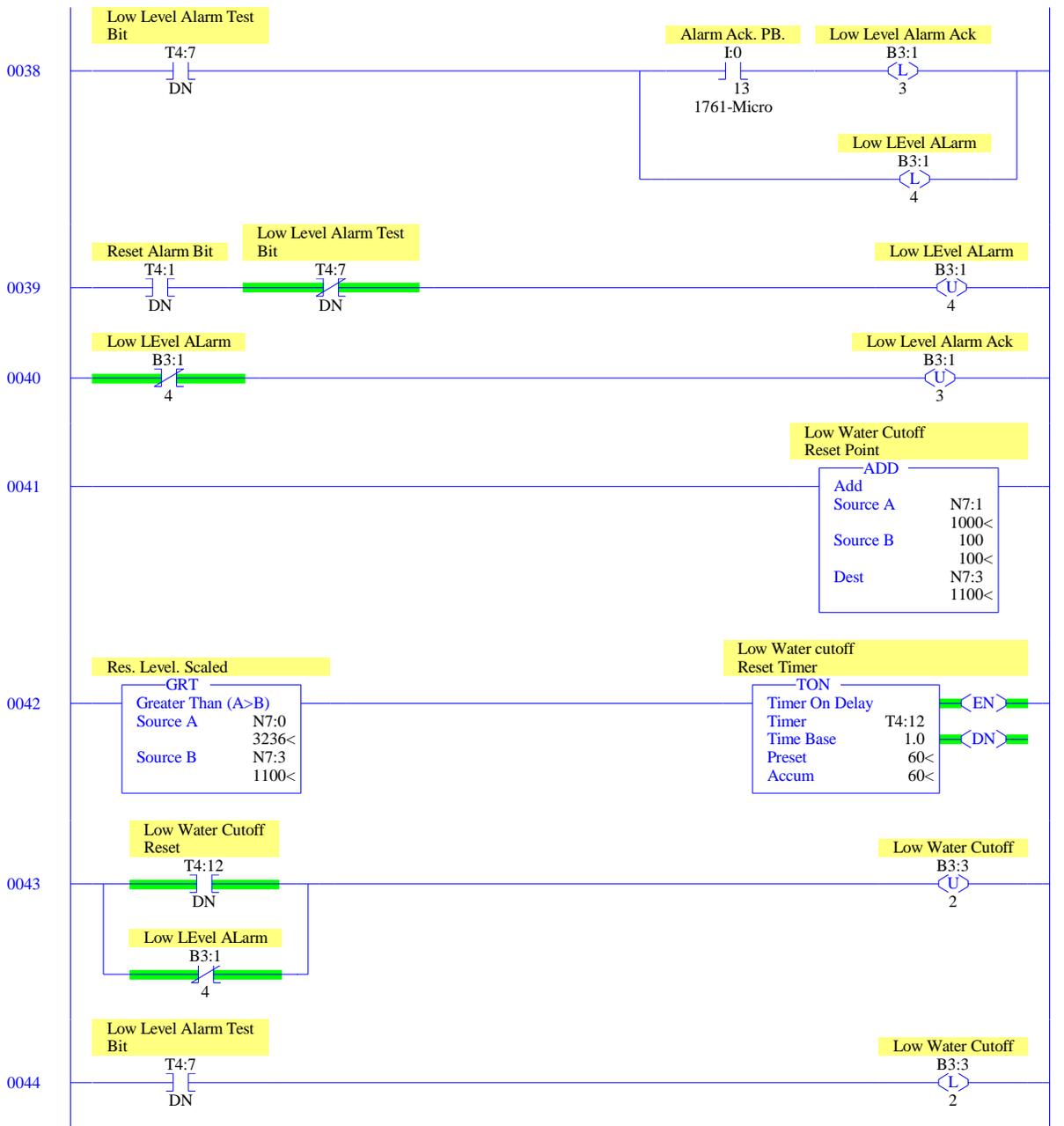


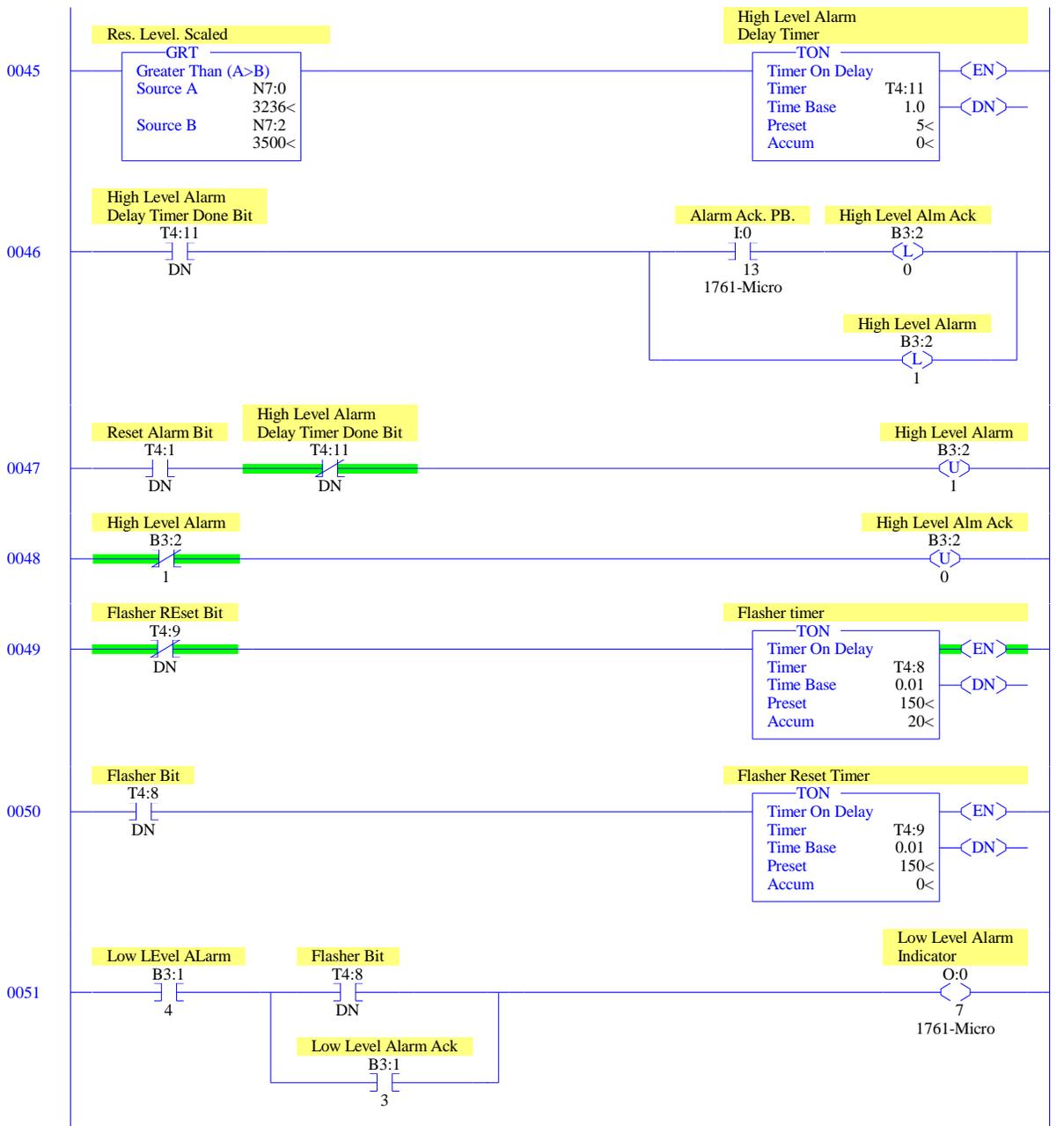


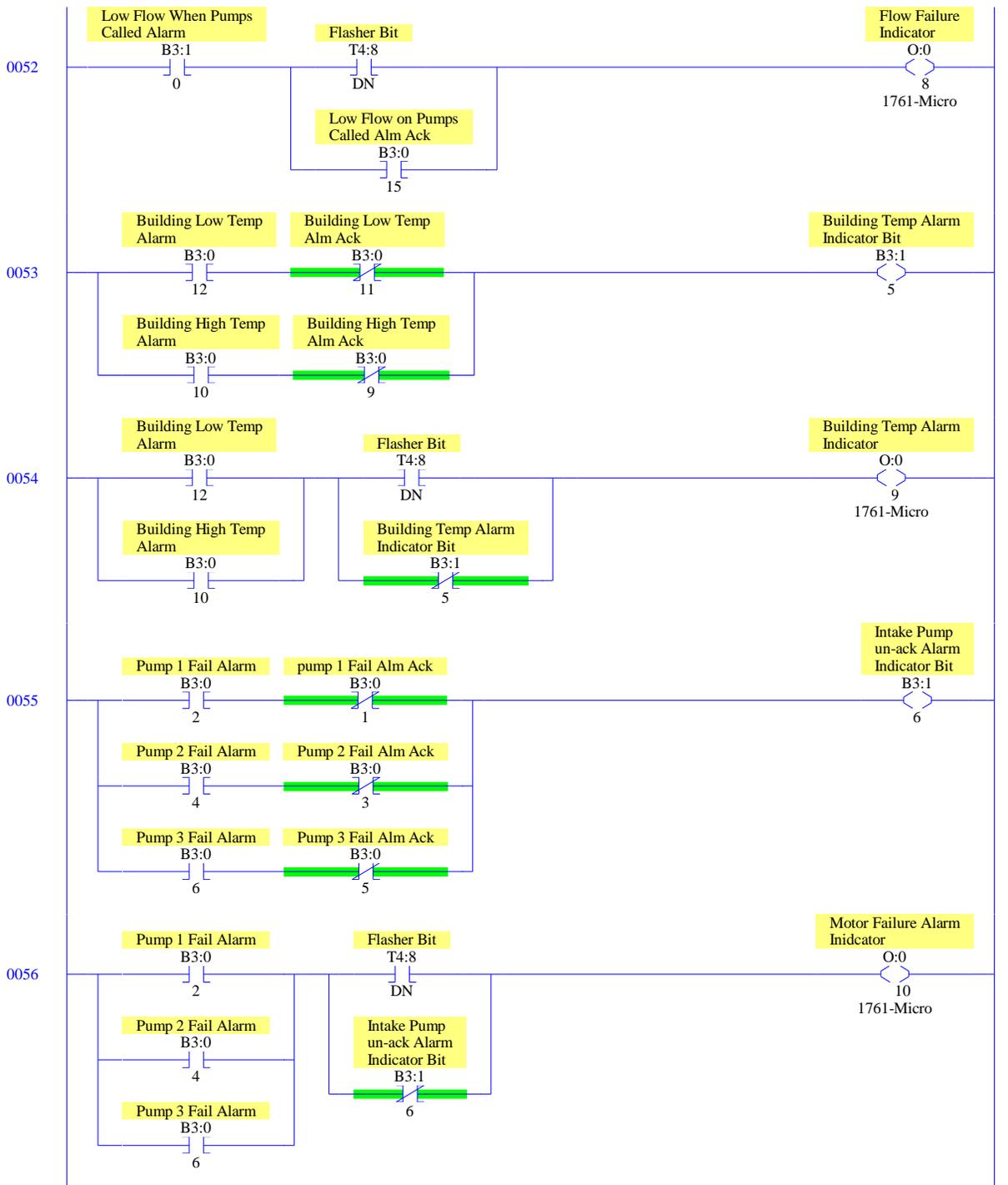
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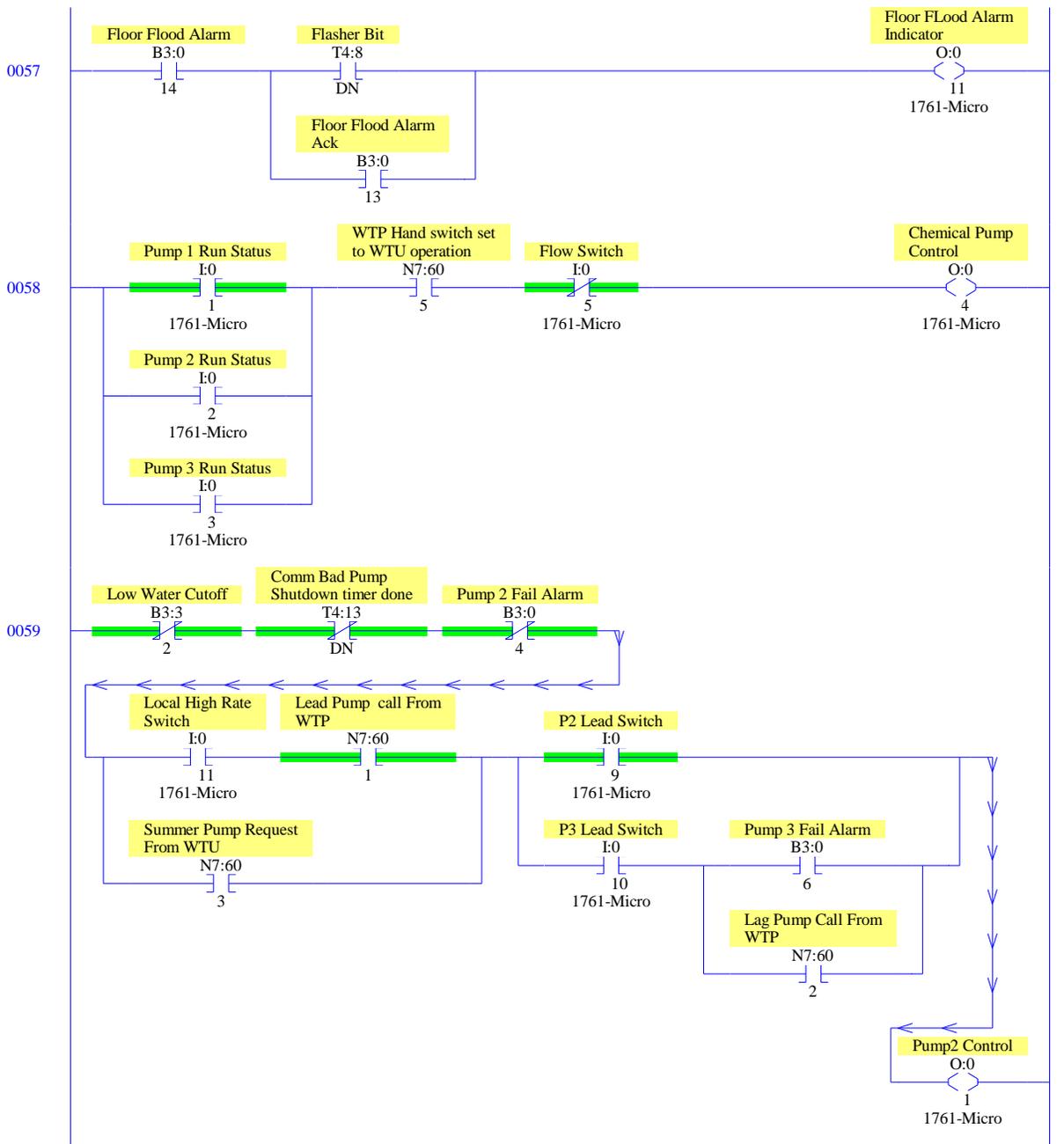
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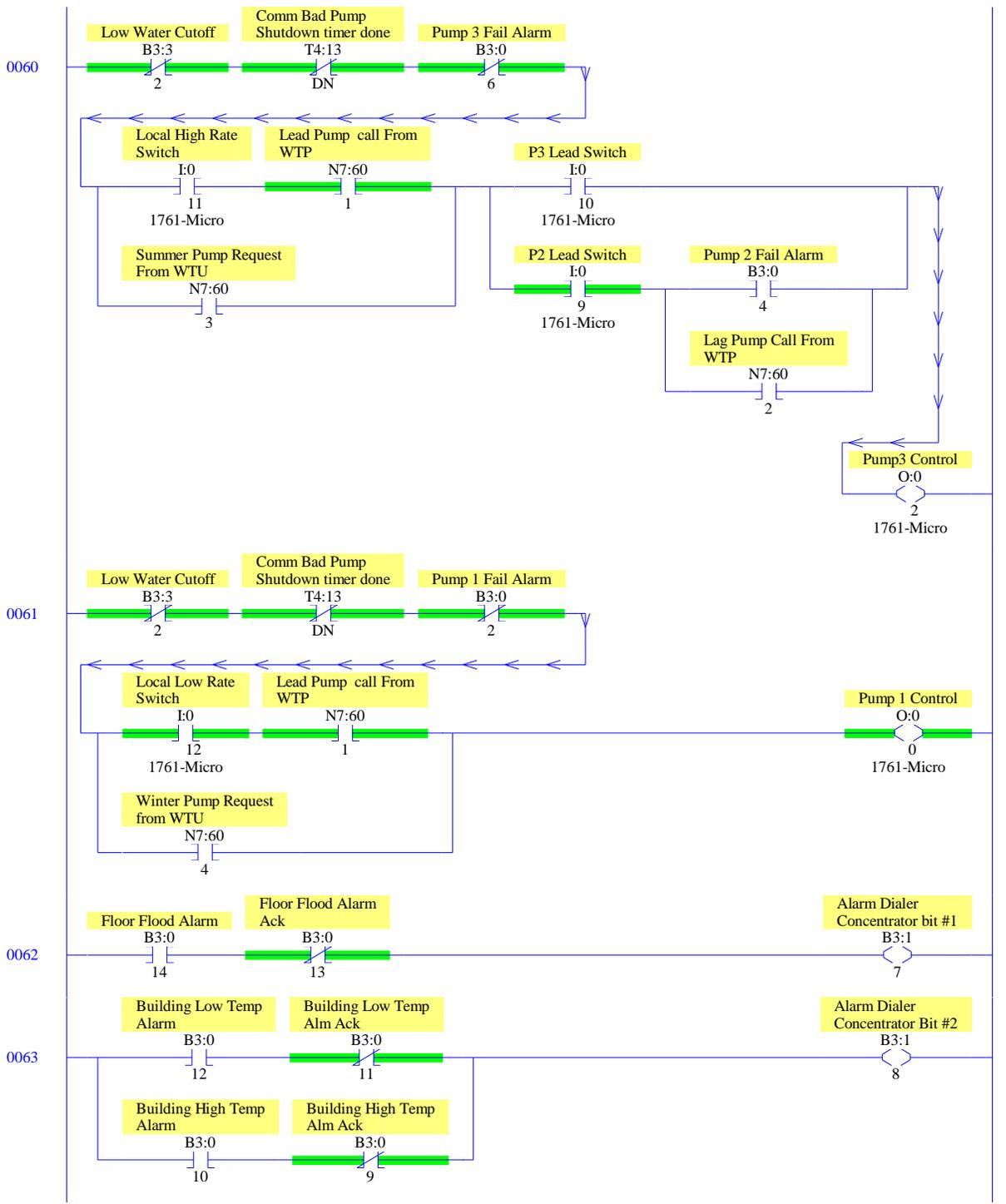


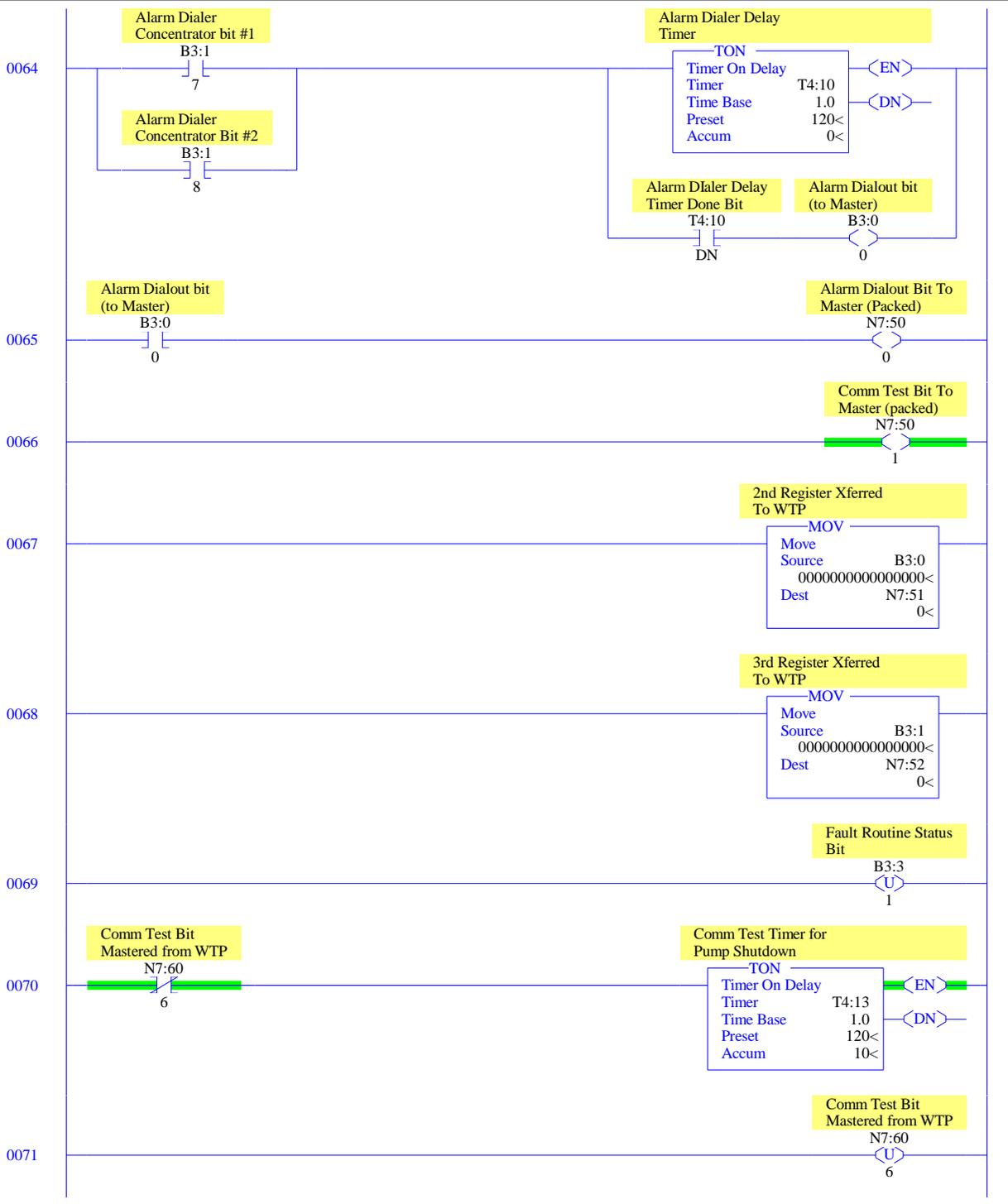












INTAKE.RSS

LAD 2 - MAIN_PROG --- Total Rungs in File = 73

0072

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INTAKE.RSS

LAD 3 - USER_FAULT --- Total Rungs in File = 5



INTAKE.RSS

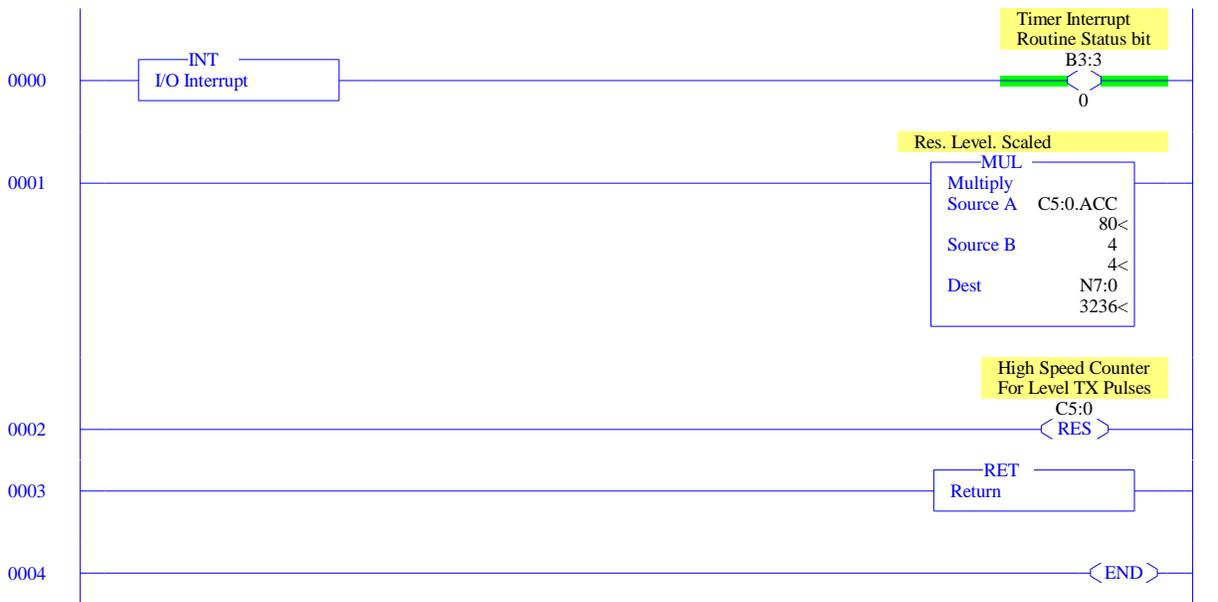
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INTAKE.RSS

LAD 5 - STI_INT --- Total Rungs in File = 5



INTAKE.RSS

LAD 6 - --- Total Rungs in File = 1

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⟨END⟩

INTAKE.RSS

LAD 7 - --- Total Rungs in File = 1

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INTAKE.RSS

LAD 8 - --- Total Rungs in File = 1

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INTAKE.RSS

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INTAKE.RSS

LAD 16 - --- Total Rungs in File = 1

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INTAKE.RSS

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INTAKE.RSS

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INTAKE.RSS

Data File S2 (hex) -- STATUS

Main

First Pass S:1/15 = No
Index Register S:24 = 0
Free Running Clock S:4 = 0100-1010-1000-0111

Scan Times

Maximum (x10 ms) S:22 = 1
Current (x10 ms) S:3 (low byte) = 0
Watchdog (x10 ms) S:3 (high byte) = 50

Math

Math Overflow Selected S:2/14 = 0 Math Register (lo word) S:13 = 0
Overflow Trap S:5/0 = 0 Math Register (high word) S:14-S:13 = 0
Carry S:0/0 = 0 Math Register (32 Bit) S:14-S:13 = 0
Overflow S:0/1 = 0
Zero Bit S:0/2 = 1
Sign Bit S:0/3 = 0

Debug

Suspend Code S:7 = 0

Errors

Extend I/O Configuration S:0/8 = 0 Major Error S:6 = 0h
Fault Override At Power Up S:1/8 = 0
Startup Protection Fault S:1/9 = 0 Error Description:
Major Error Halt S:1/13 = 0
Overflow Trap S:5/0 = 0
Control Register Error S:5/2 = 0
Major Error Executing User
Fault Rtn. S:5/3 = 0
Retentive Data Lost S:5/8 = 0
Input Filter Selection Modified S:5/13 = 0

STI

Pending Bit S:2/0 = 0
Enable Bit S:2/1 = 1
Executing Bit S:2/2 = 0
Overflow Bit S:5/10 = 0
Setpoint (x10ms) S:30 = 200

Protection

RUN Always S:1/12 = No
Deny Future Access S:1/14 = No

Forces

Forces Enabled S:1/5 = Yes
Forces Installed S:1/6 = No

INTAKE.RSS

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B3:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
B3:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
B3:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
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INTAKE.RSS

Data File T4 -- TIMER

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T4:2	0	0	0	1.0 sec	3	0	Pump 1 Fail Timer
T4:3	0	0	0	1.0 sec	3	0	Pump 2 Fail Timer
T4:4	0	0	0	1.0 sec	3	0	Pump 3 Fail Timer
T4:5	0	0	0	1.0 sec	600	0	Low Flow on pump call Timer
T4:6	0	0	0	1.0 sec	600	0	Low Pressure on pump call Alarm Timer
T4:7	0	0	0	1.0 sec	5	0	Low LEvel Alarm Delay Timer
T4:8	1	1	0	.01 sec	150	20	Flasher timer
T4:9	0	0	0	.01 sec	150	0	Flasher Reset Timer
T4:10	0	0	0	1.0 sec	120	0	Alarm Dialer Delay Timer
T4:11	0	0	0	1.0 sec	5	0	High Level Alarm Delay Timer
T4:12	1	0	1	1.0 sec	60	60	Low Water cutoff Reset Timer
T4:13	1	1	0	1.0 sec	120	10	Comm Test Timer for Pump Shutdown
T4:14	0	0	0	.01 sec	0	0	
T4:15	0	0	0	.01 sec	0	0	
T4:16	0	0	0	.01 sec	0	0	
T4:17	0	0	0	.01 sec	0	0	
T4:18	0	0	0	.01 sec	0	0	
T4:19	0	0	0	.01 sec	0	0	
T4:20	0	0	0	.01 sec	0	0	
T4:21	0	0	0	.01 sec	0	0	
T4:22	0	0	0	.01 sec	0	0	
T4:23	0	0	0	.01 sec	0	0	
T4:24	0	0	0	.01 sec	0	0	
T4:25	0	0	0	.01 sec	0	0	
T4:26	0	0	0	.01 sec	0	0	
T4:27	0	0	0	.01 sec	0	0	
T4:28	0	0	0	.01 sec	0	0	
T4:29	0	0	0	.01 sec	0	0	
T4:30	0	0	0	.01 sec	0	0	
T4:31	0	0	0	.01 sec	0	0	
T4:32	0	0	0	.01 sec	0	0	
T4:33	0	0	0	.01 sec	0	0	
T4:34	0	0	0	.01 sec	0	0	
T4:35	0	0	0	.01 sec	0	0	
T4:36	0	0	0	.01 sec	0	0	
T4:37	0	0	0	.01 sec	0	0	
T4:38	0	0	0	.01 sec	0	0	
T4:39	0	0	0	.01 sec	0	0	

INTAKE.RSS

Data File C5 -- COUNTER

Offset	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol) Description
C5:0	1	0	0	0	0	0	9999	80	High Speed Counter For Level TX Pulses
C5:1	0	0	0	0	0	0	0	0	
C5:2	0	0	0	0	0	0	0	0	
C5:3	0	0	0	0	0	0	0	0	
C5:4	0	0	0	0	0	0	0	0	
C5:5	0	0	0	0	0	0	0	0	
C5:6	0	0	0	0	0	0	0	0	
C5:7	0	0	0	0	0	0	0	0	
C5:8	0	0	0	0	0	0	0	0	
C5:9	0	0	0	0	0	0	0	0	
C5:10	0	0	0	0	0	0	0	0	
C5:11	0	0	0	0	0	0	0	0	
C5:12	0	0	0	0	0	0	0	0	
C5:13	0	0	0	0	0	0	0	0	
C5:14	0	0	0	0	0	0	0	0	
C5:15	0	0	0	0	0	0	0	0	
C5:16	0	0	0	0	0	0	0	0	
C5:17	0	0	0	0	0	0	0	0	
C5:18	0	0	0	0	0	0	0	0	
C5:19	0	0	0	0	0	0	0	0	
C5:20	0	0	0	0	0	0	0	0	
C5:21	0	0	0	0	0	0	0	0	
C5:22	0	0	0	0	0	0	0	0	
C5:23	0	0	0	0	0	0	0	0	
C5:24	0	0	0	0	0	0	0	0	
C5:25	0	0	0	0	0	0	0	0	
C5:26	0	0	0	0	0	0	0	0	
C5:27	0	0	0	0	0	0	0	0	
C5:28	0	0	0	0	0	0	0	0	
C5:29	0	0	0	0	0	0	0	0	
C5:30	0	0	0	0	0	0	0	0	
C5:31	0	0	0	0	0	0	0	0	

INTAKE.RSS

Data File R6 -- CONTROL

Offset	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol) Description
R6:0	0	0	0	0	0	0	0	0	0	0	
R6:1	0	0	0	0	0	0	0	0	0	0	
R6:2	0	0	0	0	0	0	0	0	0	0	
R6:3	0	0	0	0	0	0	0	0	0	0	
R6:4	0	0	0	0	0	0	0	0	0	0	
R6:5	0	0	0	0	0	0	0	0	0	0	
R6:6	0	0	0	0	0	0	0	0	0	0	
R6:7	0	0	0	0	0	0	0	0	0	0	
R6:8	0	0	0	0	0	0	0	0	0	0	
R6:9	0	0	0	0	0	0	0	0	0	0	
R6:10	0	0	0	0	0	0	0	0	0	0	
R6:11	0	0	0	0	0	0	0	0	0	0	
R6:12	0	0	0	0	0	0	0	0	0	0	
R6:13	0	0	0	0	0	0	0	0	0	0	
R6:14	0	0	0	0	0	0	0	0	0	0	
R6:15	0	0	0	0	0	0	0	0	0	0	

INTAKE.RSS

Data File N7 (dec) -- INTEGER

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	3236	1000	3500	1100	0	0	0	0	0	0
N7:10	0	0	0	0	0	0	0	0	0	0
N7:20	0	0	0	0	0	0	0	0	0	0
N7:30	0	0	0	0	0	0	0	0	0	0
N7:40	0	0	0	0	0	0	0	0	0	0
N7:50	2	0	0	0	0	0	0	0	0	0
N7:60	2	0	0	0	0	0	0	0	0	0
N7:70	0	0	0	0	0	0	0	0	0	0
N7:80	0	0	0	0	0	0	0	0	0	0
N7:90	0	0	0	0	0	0	0	0	0	0
N7:100	0	0	0	0	0	0	0	0	0	0

Address (Symbol) = Value [Description]

INTAKE.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

```

O:0/0      - Pump 1 Control
            OTE - File #2 MAIN_PROG - 61
            XIC - File #2 MAIN_PROG - 5
O:0/1      - Pump2 Control
            OTE - File #2 MAIN_PROG - 59
            XIC - File #2 MAIN_PROG - 9
O:0/2      - Pump3 Control
            OTE - File #2 MAIN_PROG - 60
            XIC - File #2 MAIN_PROG - 13
O:0/4      - Chemical Pump Control
            OTE - File #2 MAIN_PROG - 58
O:0/7      - Low Level Alarm Indicator
            OTE - File #2 MAIN_PROG - 51
O:0/8      - Flow Failure Indicator
            OTE - File #2 MAIN_PROG - 52
O:0/9      - Building Temp Alarm Indicator
            OTE - File #2 MAIN_PROG - 54
O:0/10     - Motor Failure Alarm Indicator
            OTE - File #2 MAIN_PROG - 56
O:0/11     - Floor Flood Alarm Indicator
            OTE - File #2 MAIN_PROG - 57
I:0/1      - Pump 1 Run Status
            XIC - File #2 MAIN_PROG - 33, 58
            XIO - File #2 MAIN_PROG - 5, 29
I:0/2      - Pump 2 Run Status
            XIC - File #2 MAIN_PROG - 33, 58
            XIO - File #2 MAIN_PROG - 9
I:0/3      - Pump 3 Run Status
            XIC - File #2 MAIN_PROG - 33, 58
            XIO - File #2 MAIN_PROG - 13
I:0/4      - Pressure Switch
            XIO - File #2 MAIN_PROG - 33
I:0/5      - Flow Switch
            XIC - File #2 MAIN_PROG - 29
            XIO - File #2 MAIN_PROG - 58
I:0/6      - Building Temp. Low (n.c.)
            XIC - File #2 MAIN_PROG - 24
            XIO - File #2 MAIN_PROG - 23
I:0/7      - Building Temp High (n.c.)
            XIC - File #2 MAIN_PROG - 21
            XIO - File #2 MAIN_PROG - 20
I:0/8      - Floor Flood Switch
            XIC - File #2 MAIN_PROG - 26
            XIO - File #2 MAIN_PROG - 27
I:0/9      - P2 Lead Switch
            XIC - File #2 MAIN_PROG - 59, 60
I:0/10     - P3 Lead Switch
            XIC - File #2 MAIN_PROG - 59, 60
I:0/11     - Local High Rate Switch
            XIC - File #2 MAIN_PROG - 59, 60
I:0/12     - Local Low Rate Switch
            XIC - File #2 MAIN_PROG - 61
I:0/13     - Alarm Ack. PB.
            XIC - File #2 MAIN_PROG - 4, 6, 10, 14, 17, 20, 23, 26, 30
            34, 38, 46
I:0/15     - MCC Power Filter Trouble (n.c.)
            XIC - File #2 MAIN_PROG - 18
            XIO - File #2 MAIN_PROG - 17
S:1/13     - Major Error Halted
            OTU - File #3 USER_FAULT - 2
S:1/15     - First Pass
            XIC - File #2 MAIN_PROG - 0
S:5/0      - Overflow Trap
            OTU - File #3 USER_FAULT - 1
S:30       - STI Setpoint
            MOV - File #2 MAIN_PROG - 2
B3:0       - MOV - File #2 MAIN_PROG - 67
B3:0/0     - Alarm Dialout bit (to Master)
            OTE - File #2 MAIN_PROG - 64
    
```

RSLogix 500 Cross Reference Report - Sorted by Address

B3:0/1	- XIC - File #2 MAIN_PROG - 65
	- pump 1 Fail Alm Ack
	OTL - File #2 MAIN_PROG - 6
	OTU - File #2 MAIN_PROG - 8
	XIO - File #2 MAIN_PROG - 55
B3:0/2	- Pump 1 Fail Alarm
	OTL - File #2 MAIN_PROG - 6
	OTU - File #2 MAIN_PROG - 7
	XIC - File #2 MAIN_PROG - 55, 56
	XIO - File #2 MAIN_PROG - 8, 61
B3:0/3	- Pump 2 Fail Alm Ack
	OTL - File #2 MAIN_PROG - 10
	OTU - File #2 MAIN_PROG - 12
	XIO - File #2 MAIN_PROG - 55
B3:0/4	- Pump 2 Fail Alarm
	OTL - File #2 MAIN_PROG - 10
	OTU - File #2 MAIN_PROG - 11
	XIC - File #2 MAIN_PROG - 55, 56, 60
	XIO - File #2 MAIN_PROG - 12, 59
B3:0/5	- Pump 3 Fail Alm Ack
	OTL - File #2 MAIN_PROG - 14
	OTU - File #2 MAIN_PROG - 16
	XIO - File #2 MAIN_PROG - 55
B3:0/6	- Pump 3 Fail Alarm
	OTL - File #2 MAIN_PROG - 14
	OTU - File #2 MAIN_PROG - 15
	XIC - File #2 MAIN_PROG - 55, 56, 59
	XIO - File #2 MAIN_PROG - 16, 60
B3:0/7	- MCC Power Filter Alm Ack
	OTL - File #2 MAIN_PROG - 17
	OTU - File #2 MAIN_PROG - 19
B3:0/8	- MCC Power Filter Alarm
	OTL - File #2 MAIN_PROG - 17
	OTU - File #2 MAIN_PROG - 18
	XIO - File #2 MAIN_PROG - 19
B3:0/9	- Building High Temp Alm Ack
	OTL - File #2 MAIN_PROG - 20
	OTU - File #2 MAIN_PROG - 22
	XIO - File #2 MAIN_PROG - 53, 63
B3:0/10	- Building High Temp Alarm
	OTL - File #2 MAIN_PROG - 20
	OTU - File #2 MAIN_PROG - 21
	XIC - File #2 MAIN_PROG - 53, 54, 63
	XIO - File #2 MAIN_PROG - 22
B3:0/11	- Building Low Temp Alm Ack
	OTL - File #2 MAIN_PROG - 23
	OTU - File #2 MAIN_PROG - 25
	XIO - File #2 MAIN_PROG - 53, 63
B3:0/12	- Building Low Temp Alarm
	OTL - File #2 MAIN_PROG - 23
	OTU - File #2 MAIN_PROG - 24
	XIC - File #2 MAIN_PROG - 53, 54, 63
	XIO - File #2 MAIN_PROG - 25
B3:0/13	- Floor Flood Alarm Ack
	OTL - File #2 MAIN_PROG - 26
	OTU - File #2 MAIN_PROG - 28
	XIC - File #2 MAIN_PROG - 57
	XIO - File #2 MAIN_PROG - 62
B3:0/14	- Floor Flood Alarm
	OTL - File #2 MAIN_PROG - 26
	OTU - File #2 MAIN_PROG - 27
	XIC - File #2 MAIN_PROG - 57, 62
	XIO - File #2 MAIN_PROG - 28
B3:0/15	- Low Flow on Pumps Called Alm Ack
	OTL - File #2 MAIN_PROG - 30
	OTU - File #2 MAIN_PROG - 32
	XIC - File #2 MAIN_PROG - 52
B3:1	- MOV - File #2 MAIN_PROG - 68
B3:1/0	- Low Flow When Pumps Called Alarm

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RSLogix 500 Cross Reference Report - Sorted by Address

	OTL - File #2 MAIN_PROG - 30
	OTU - File #2 MAIN_PROG - 31
	XIC - File #2 MAIN_PROG - 52
	XIO - File #2 MAIN_PROG - 32
B3:1/1	- Low Pressure on pump call Alm Ack
	OTL - File #2 MAIN_PROG - 34
	OTU - File #2 MAIN_PROG - 36
B3:1/2	- Low Pressure on Pump Call Alm
	OTL - File #2 MAIN_PROG - 34
	OTU - File #2 MAIN_PROG - 35
	XIO - File #2 MAIN_PROG - 36
B3:1/3	- Low Level Alarm Ack
	OTL - File #2 MAIN_PROG - 38
	OTU - File #2 MAIN_PROG - 40
	XIC - File #2 MAIN_PROG - 51
B3:1/4	- Low Level Alarm
	OTL - File #2 MAIN_PROG - 38
	OTU - File #2 MAIN_PROG - 39
	XIC - File #2 MAIN_PROG - 51
	XIO - File #2 MAIN_PROG - 40, 43
B3:1/5	- Building Temp Alarm Indicator Bit
	OTE - File #2 MAIN_PROG - 53
	XIO - File #2 MAIN_PROG - 54
B3:1/6	- Intake Pump un-ack Alarm Indicator Bit
	OTE - File #2 MAIN_PROG - 55
	XIO - File #2 MAIN_PROG - 56
B3:1/7	- Alarm Dialer Concentrator bit #1
	OTE - File #2 MAIN_PROG - 62
	XIC - File #2 MAIN_PROG - 64
B3:1/8	- Alarm Dialer Concentrator Bit #2
	OTE - File #2 MAIN_PROG - 63
	XIC - File #2 MAIN_PROG - 64
B3:2/0	- High Level Alm Ack
	OTL - File #2 MAIN_PROG - 46
	OTU - File #2 MAIN_PROG - 48
B3:2/1	- High Level Alarm
	OTL - File #2 MAIN_PROG - 46
	OTU - File #2 MAIN_PROG - 47
	XIO - File #2 MAIN_PROG - 48
B3:3/0	- Timer Interrupt Routine Status bit
	OTE - File #5 STI_INT - 0
B3:3/1	- Fault Routine Status Bit
	OTE - File #3 USER_FAULT - 0
	OTU - File #2 MAIN_PROG - 69
B3:3/2	- Low Water Cutoff
	OTL - File #2 MAIN_PROG - 44
	OTU - File #2 MAIN_PROG - 43
	XIO - File #2 MAIN_PROG - 59, 60, 61
T4:1	- Reset Button Timer
	TON - File #2 MAIN_PROG - 4
T4:1/DN	- Reset Alarm Bit
	XIC - File #2 MAIN_PROG - 7, 11, 15, 18, 21, 24, 27, 31, 35 39, 47
T4:2	- Pump 1 Fail Timer
	TON - File #2 MAIN_PROG - 5
T4:2/DN	- Pump 1 Fail Timer Done Bit
	XIC - File #2 MAIN_PROG - 6
	XIO - File #2 MAIN_PROG - 7
T4:3	- Pump 2 Fail Timer
	TON - File #2 MAIN_PROG - 9
T4:3/DN	- Pump 2 Fail Timer Done Bit
	XIC - File #2 MAIN_PROG - 10
	XIO - File #2 MAIN_PROG - 11
T4:4	- Pump 3 Fail Timer
	TON - File #2 MAIN_PROG - 13
T4:4/DN	- Pump 3 Fail timer Done Bit
	XIC - File #2 MAIN_PROG - 14
	XIO - File #2 MAIN_PROG - 15
T4:5	- Low Flow on pump call Timer

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RSLogix 500 Cross Reference Report - Sorted by Address

T4:5/DN	- TON - File #2 MAIN_PROG - 29
	- Low Flow on pump Call Timer Done
	XIC - File #2 MAIN_PROG - 30
	XIO - File #2 MAIN_PROG - 31
T4:6	- Low Pressure on pump call Alarm Timer
	TON - File #2 MAIN_PROG - 33
T4:6/DN	- Low Pressure on Pump Call timer done bit
	XIC - File #2 MAIN_PROG - 34
	XIO - File #2 MAIN_PROG - 35
T4:7	- Low LEvel Alarm Delay Timer
	TON - File #2 MAIN_PROG - 37
T4:7/DN	- Low Level Alarm Test Bit
	XIC - File #2 MAIN_PROG - 38, 44
	XIO - File #2 MAIN_PROG - 39
T4:8	- Flasher timer
	TON - File #2 MAIN_PROG - 49
T4:8/DN	- Flasher Bit
	XIC - File #2 MAIN_PROG - 50, 51, 52, 54, 56, 57
T4:9	- Flasher Reset Timer
	TON - File #2 MAIN_PROG - 50
T4:9/DN	- Flasher REset Bit
	XIO - File #2 MAIN_PROG - 49
T4:10	- Alarm Dialer Delay Timer
	TON - File #2 MAIN_PROG - 64
T4:10/DN	- Alarm DIaler Delay Timer Done Bit
	XIC - File #2 MAIN_PROG - 64
T4:11	- High Level Alarm Delay Timer
	TON - File #2 MAIN_PROG - 45
T4:11/DN	- High Level Alarm Delay Timer Done Bit
	XIC - File #2 MAIN_PROG - 46
	XIO - File #2 MAIN_PROG - 47
T4:12	- Low Water cutoff Reset Timer
	TON - File #2 MAIN_PROG - 42
T4:12/DN	- Low Water Cutoff Reset
	XIC - File #2 MAIN_PROG - 43
T4:13	- Comm Test Timer for Pump Shutdown
	TON - File #2 MAIN_PROG - 70
T4:13/DN	- Comm Bad Pump Shutdown timer done
	XIO - File #2 MAIN_PROG - 59, 60, 61
C5:0	- High Speed Counter For Level TX Pulses
	RES - File #2 MAIN_PROG - 0
	File #5 STI_INT - 2
	HSC - File #2 MAIN_PROG - 1
C5:0.ACC	- MUL - File #5 STI_INT - 1
N7:0	- Res. Level. Scaled
	MUL - File #5 STI_INT - 1
	GRT - File #2 MAIN_PROG - 42, 45
	LEQ - File #2 MAIN_PROG - 37
N7:1	- Low Level Alarm SP
	ADD - File #2 MAIN_PROG - 41
	LEQ - File #2 MAIN_PROG - 37
N7:2	- High Level Alarm SP
	GRT - File #2 MAIN_PROG - 45
N7:3	- Low Water Cutoff Reset Point
	ADD - File #2 MAIN_PROG - 41
	GRT - File #2 MAIN_PROG - 42
N7:50/0	- Alarm Dialout Bit To Master (Packed)
	OTE - File #2 MAIN_PROG - 65
N7:50/1	- Comm Test Bit To Master (packed)
	OTE - File #2 MAIN_PROG - 66
N7:51	- 2nd Register Xferred To WTP
	MOV - File #2 MAIN_PROG - 67
N7:52	- 3rd Register Xferred To WTP
	MOV - File #2 MAIN_PROG - 68
N7:60/1	- Lead Pump call From WTP
	XIC - File #2 MAIN_PROG - 29, 59, 60, 61
N7:60/2	- Lag Pump Call From WTP
	XIC - File #2 MAIN_PROG - 59, 60
N7:60/3	- Summer Pump Request From WTU

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RSLogix 500 Cross Reference Report - Sorted by Address

N7:60/4	- XIC - File #2 MAIN_PROG - 59, 60
	- Winter Pump Request from WTU
	XIC - File #2 MAIN_PROG - 61
N7:60/5	- WTP Hand switch set to WTU operation
	XIC - File #2 MAIN_PROG - 58
N7:60/6	- Comm Test Bit Mastered from WTP
	OTU - File #2 MAIN_PROG - 71
	XIO - File #2 MAIN_PROG - 70

INTAKE.RSS

Data File 00 -- OUTPUT Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
O:0.0		X	X	X	X	X	.	.	X	.	X	X	X	Bul.1761	MicroLogix 1000 DH-485/HDS

INTAKE.RSS

Data File I1 -- INPUT Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0		
I:0.0		X	.	X	X	X	X	X	X	X	X	X	X	X	X	X	.	Bul.1761	MicroLogix 1000 DH-485/HDS
I:0.1		Bul.1761	MicroLogix 1000 DH-485/HDS

INTAKE.RSS

Data File S2 -- STATUS Usage

Offset	0	1	2	3	4	5	6	7	8	9
S:0	.	X	.	.	.	X	.	.	.	.
S:10	.	.	.	.	.	.	.	.	.	.
S:20	.	.	.	.	.	.	.	.	.	.
S:30	X	.	.	.	.	.	.	.	.	.

INTAKE.RSS

Data File B3 -- BINARY Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:0	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
B3:1	W	.	.	.	.	.	.	X	X	X	X	X	X	X	X	X	X	
B3:2		.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	X	
B3:3		.	.	.	.	.	.	.	.	.	.	.	.	.	X	X	X	
B3:4		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:5		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:6		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:7		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:8		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:9		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:10		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:11		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:12		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:13		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:14		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:15		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:16		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:17		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:18		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:19		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:20		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:21		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:22		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:23		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:24		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:25		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:26		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:27		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:28		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:29		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:30		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:31		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

INTAKE.RSS

Data File T4 -- TIMER Usage

Offset	FW	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T4:0		.	.	.	.	.	.
T4:1	W	.	.	X	.	.	.	Reset Button Timer
T4:2	W	.	.	X	.	.	.	Pump 1 Fail Timer
T4:3	W	.	.	X	.	.	.	Pump 2 Fail Timer
T4:4	W	.	.	X	.	.	.	Pump 3 Fail Timer
T4:5	W	.	.	X	.	.	.	Low Flow on pump call Timer
T4:6	W	.	.	X	.	.	.	Low Pressure on pump call Alarm Timer
T4:7	W	.	.	X	.	.	.	Low LLevel Alarm Delay Timer
T4:8	W	.	.	X	.	.	.	Flasher timer
T4:9	W	.	.	X	.	.	.	Flasher Reset Timer
T4:10	W	.	.	X	.	.	.	Alarm Dialer Delay Timer
T4:11	W	.	.	X	.	.	.	High Level Alarm Delay Timer
T4:12	W	.	.	X	.	.	.	Low Water cutoff Reset Timer
T4:13	W	.	.	X	.	.	.	Comm Test Timer for Pump Shutdown
T4:14		.	.	.	.	.	.
T4:15		.	.	.	.	.	.
T4:16		.	.	.	.	.	.
T4:17		.	.	.	.	.	.
T4:18		.	.	.	.	.	.
T4:19		.	.	.	.	.	.
T4:20		.	.	.	.	.	.
T4:21		.	.	.	.	.	.
T4:22		.	.	.	.	.	.
T4:23		.	.	.	.	.	.
T4:24		.	.	.	.	.	.
T4:25		.	.	.	.	.	.
T4:26		.	.	.	.	.	.
T4:27		.	.	.	.	.	.
T4:28		.	.	.	.	.	.
T4:29		.	.	.	.	.	.
T4:30		.	.	.	.	.	.
T4:31		.	.	.	.	.	.
T4:32		.	.	.	.	.	.
T4:33		.	.	.	.	.	.
T4:34		.	.	.	.	.	.
T4:35		.	.	.	.	.	.
T4:36		.	.	.	.	.	.
T4:37		.	.	.	.	.	.
T4:38		.	.	.	.	.	.
T4:39		.	.	.	.	.	.

INTAKE.RSS

Data File C5 -- COUNTER Usage

Offset	FW	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol) Description
C5:0	W	.	.	.	.	.	.	.	X	High Speed Counter For Level TX Pulses
C5:1	
C5:2	
C5:3	
C5:4	
C5:5	
C5:6	
C5:7	
C5:8	
C5:9	
C5:10	
C5:11	
C5:12	
C5:13	
C5:14	
C5:15	
C5:16	
C5:17	
C5:18	
C5:19	
C5:20	
C5:21	
C5:22	
C5:23	
C5:24	
C5:25	
C5:26	
C5:27	
C5:28	
C5:29	
C5:30	
C5:31	

INTAKE.RSS

Data File R6 -- CONTROL Usage

Offset	FW	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol) Description
R6:0
R6:1
R6:2
R6:3
R6:4
R6:5
R6:6
R6:7
R6:8
R6:9
R6:10
R6:11
R6:12
R6:13
R6:14
R6:15

INTAKE.RSS

Data File N7 -- INTEGER Usage

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	X	X	X	X	.	.	.	.	.	.
N7:10	.	.	.	.	.	.	.	.	.	.
N7:20	.	.	.	.	.	.	.	.	.	.
N7:30	.	.	.	.	.	.	.	.	.	.
N7:40	.	.	.	.	.	.	.	.	.	.
N7:50	X	X	X	.	.	.	.	.	.	.
N7:60	X	.	.	.	.	.	.	.	.	.
N7:70	.	.	.	.	.	.	.	.	.	.
N7:80	.	.	.	.	.	.	.	.	.	.
N7:90	.	.	.	.	.	.	.	.	.	.
N7:100	.	.	.	.	.	.	.	.	.	.

INTAKE.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV	B:
B3:0/0			Alarm Dialout bit (to Master)				
B3:0/1			pump 1 Fail Alm Ack				
B3:0/2			Pump 1 Fail Alarm				
B3:0/3			Pump 2 Fail Alm Ack				
B3:0/4			Pump 2 Fail Alarm				
B3:0/5			Pump 3 Fail Alm Ack				
B3:0/6			Pump 3 Fail Alarm				
B3:0/7			MCC Power Filter Alm Ack				
B3:0/8			MCC Power Filter Alarm				
B3:0/9			Building High Temp Alm Ack				
B3:0/10			Building High Temp Alarm				
B3:0/11			Building Low Temp Alm Ack				
B3:0/12			Building Low Temp Alarm				
B3:0/13			Floor Flood Alarm Ack				
B3:0/14			Floor Flood Alarm				
B3:0/15			Low Flow on Pumps Called Alm Ack				
B3:1/0			Low Flow When Pumps Called Alarm				
B3:1/1			Low Pressure on pump call Alm Ack				
B3:1/2			Low Pressure on Pump Call Alm				
B3:1/3			Low Level Alarm Ack				
B3:1/4			Low Level Alarm				
B3:1/5			Building Temp Alarm Indicator Bit				
B3:1/6			Intake Pump un-ack Alarm Indicator Bit				
B3:1/7			Alarm Dialer Concentrator Bit #1				
B3:1/8			Alarm Dialer Concentrator Bit #2				
B3:2/0			High Level Alm Ack				
B3:2/1			High Level Alarm				
B3:3/0			Timer Interrupt Routine Status bit				
B3:3/1			Fault Routine Status Bit				
B3:3/2			Low Water Cutoff				
C5:0			High Speed Counter For Level TX Pulses				
I:0/0			Level Transmitter Pulse Input				
I:0/1			Pump 1 Run Status				
I:0/2			Pump 2 Run Status				
I:0/3			Pump 3 Run Status				
I:0/4			Pressure Switch				
I:0/5			Flow Switch				
I:0/6			Building Temp. Low (n.c.)				
I:0/7			Building Temp High (n.c.)				
I:0/8			Floor Flood Switch				
I:0/9			P2 Lead Switch				
I:0/10			P3 Lead Switch				
I:0/11			Local High Rate Switch				
I:0/12			Local Low Rate Switch				
I:0/13			Alarm Ack. PB.				
I:0/14			Sask. Power Failure				
I:0/15			MCC Power Filter Trouble (n.c.)				
I:0/16			Spare				
I:0/17			Spare				
I:0/18			Spare				
I:0/19			Spare				
N7:0			Res. Level. Scaled				
N7:1			Low Level Alarm SP				
N7:2			High Level Alarm SP				
N7:3			Low Water Cutoff Reset Point				
N7:44							
N7:45							
N7:46							
N7:47							
N7:48							
N7:50			1st of 10 Registers Xferred To WTP				
N7:50/0			Alarm Dialout Bit To Master (Packed)				
N7:50/1			Comm Test Bit To Master (packed)				
N7:50/2							
N7:50/3			3rd Pump CALL From WTP				
N7:51			2nd Register Xferred To WTP				
N7:52			3rd Register Xferred To WTP				
N7:53			4th Reg. Xferred To WTP				
N7:54			5th Reg. Xferred To WTP				
N7:55			6th Reg. Xferred To WTP				
N7:56			7th Reg. Xferred To WTP				
N7:57			8th Reg. Xferred To WTP				
N7:58			9th Reg. Xferred To WTP				
N7:59			10th Reg. Xferred To WTP				
N7:60			1st of 10 Registers Xferred From WTP (Packed Bits)				
N7:60/1			Lead Pump call From WTP				
N7:60/2			Lag Pump Call From WTP				
N7:60/3			Summer Pump Request From WTU				
N7:60/4			Winter Pump Request from WTU				
N7:60/5			WTP Hand switch set to WTU operation				
N7:60/6			Comm Test Bit Mastered from WTP				
N7:61			2nd Register Xferred From WTP				
N7:62			3rd Register Xferred From WTP				
N7:63			4th Register Xferred From WTP				
N7:64			5th Register Xferred From WTP				
N7:65			6th Register Xferred From WTP				
N7:66			7th Register Xferred From WTP				

INTAKE.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV	B:
N7:67			8th Register Xferred From WTP				
N7:68			9th Register Xferred From WTP				
N7:69			10th Register Xferred From WTP				
O:0/0			Pump 1 Control				
O:0/1			Pump2 Control				
O:0/2			Pump3 Control				
O:0/3			Spare				
O:0/4			Chemical Pump Control				
O:0/5			Spare				
O:0/6			Spare				
O:0/7			Low Level Alarm Indicator				
O:0/8			Flow Failure Indicator				
O:0/9			Building Temp Alarm Indicator				
O:0/10			Motor Failure Alarm Indicator				
O:0/11			Floor Flood Alarm Indicator				
S:0			Arithmetic Flags				
S:0/0			Processor Arithmetic Carry Flag				
S:0/1			Processor Arithmetic Underflow/ Overflow Flag				
S:0/2			Processor Arithmetic Zero Flag				
S:0/3			Processor Arithmetic Sign Flag				
S:1			Processor Mode Status/ Control				
S:1/0			Processor Mode Bit 0				
S:1/1			Processor Mode Bit 1				
S:1/2			Processor Mode Bit 2				
S:1/3			Processor Mode Bit 3				
S:1/4			Processor Mode Bit 4				
S:1/5			Forces Enabled				
S:1/6			Forces Present				
S:1/7			Comms Active				
S:1/8			Fault Override at Powerup				
S:1/9			Startup Protection Fault				
S:1/10			Load Memory Module on Memory Error				
S:1/11			Load Memory Module Always				
S:1/12			Load Memory Module and RUN				
S:1/13			Major Error Halted				
S:1/14			Access Denied				
S:1/15			First Pass				
S:2/0			STI Pending				
S:2/1			STI Enabled				
S:2/2			STI Executing				
S:2/3			Index Addressing File Range				
S:2/4			Saved with Debug Single Step				
S:2/5			DH-485 Incoming Command Pending				
S:2/6			DH-485 Message Reply Pending				
S:2/7			DH-485 Outgoing Message Command Pending				
S:2/15			Comms Servicing Selection				
S:3			Current Scan Time/ Watchdog Scan Time				
S:4			Time Base				
S:5/0			Overflow Trap				
S:5/2			Control Register Error				
S:5/3			Major Err Detected Executing UserFault Routine				
S:5/4			M0-M1 Referenced on Disabled Slot				
S:5/8			Memory Module Boot				
S:5/9			Memory Module Password Mismatch				
S:5/10			STI Overflow				
S:5/11			Battery Low				
S:6			Major Error Fault Code				
S:7			Suspend Code				
S:8			Suspend File				
S:9			Active Nodes				
S:10			Active Nodes				
S:11			I/O Slot Enables				
S:12			I/O Slot Enables				
S:13			Math Register				
S:14			Math Register				
S:15			Node Address/ Baud Rate				
S:16			Debug Single Step Rung				
S:17			Debug Single Step File				
S:18			Debug Single Step Breakpoint Rung				
S:19			Debug Single Step Breakpoint File				
S:20			Debug Fault/ Powerdown Rung				
S:21			Debug Fault/ Powerdown File				
S:22			Maximum Observed Scan Time				
S:23			Average Scan Time				
S:24			Index Register				
S:25			I/O Interrupt Pending				
S:26			I/O Interrupt Pending				
S:27			I/O Interrupt Enabled				
S:28			I/O Interrupt Enabled				
S:29			User Fault Routine File Number				
S:30			STI Setpoint				
S:31			STI File Number				
S:32			I/O Interrupt Executing				
S:33			Extended Proc Status Control Word				
S:33/0			Incoming Command Pending				
S:33/1			Message Reply Pending				
S:33/2			Outgoing Message Command Pending				

INTAKE.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV	B:
S:33/3			Selection Status User/DF1				
S:33/4			Communicat Active				
S:33/5			Communicat Servicing Selection				
S:33/6			Message Servicing Selection Channel 0				
S:33/7			Message Servicing Selection Channel 1				
S:33/8			Interrupt Latency Control Flag				
S:33/9			Scan Toggle Flag				
S:33/10			Discrete Input Interrupt Reconfigur Flag				
S:33/11			Online Edit Status				
S:33/12			Online Edit Status				
S:33/13			Scan Time Timebase Selection				
S:33/14			DTR Control Bit				
S:33/15			DTR Force Bit				
S:34			Pass-thru Disabled				
S:34/0			Pass-Thru Disabled Flag				
S:34/1			DH+ Active Node Table Enable Flag				
S:34/2			Floating Point Math Flag				
S:35			Last 1 ms Scan Time				
S:36			Extended Minor Error Bits				
S:36/8			Dll Lost				
S:36/9			STI Lost				
S:36/10			Memory Module Data File Overwrite Protection				
S:37			Clock Calendar Year				
S:38			Clock Calendar Month				
S:39			Clock Calendar Day				
S:40			Clock Calendar Hours				
S:41			Clock Calendar Minutes				
S:42			Clock Calendar Seconds				
S:43			STI Interrupt Time				
S:44			I/O Event Interrupt Time				
S:45			Dll Interrupt Time				
S:46			Discrete Input Interrupt- File Number				
S:47			Discrete Input Interrupt- Slot Number				
S:48			Discrete Input Interrupt- Bit Mask				
S:49			Discrete Input Interrupt- Compare Value				
S:50			Processor Catalog Interrupt- Preset				
S:51			Discrete Input Interrupt- Return Number				
S:52			Discrete Input Interrupt- Accumulat				
S:53			Discrete Input Interrupt- Timer				
S:54			Discrete Input Interrupt- Timer				
S:55			Last Dll Scan Time				
S:56			Maximum Observed Dll Scan Time				
S:57			Operating System Catalog Number				
S:58			Operating System Series				
S:59			Operating System FRN				
S:61			Processor Series				
S:62			Processor Revision				
S:63			User Program Type				
S:64			User Program Functional Index				
S:65			User RAM Size				
S:66			Flash EEPROM Size				
S:67			Channel 0 Active Nodes				
S:68			Channel 0 Active Nodes				
S:69			Channel 0 Active Nodes				
S:70			Channel 0 Active Nodes				
S:71			Channel 0 Active Nodes				
S:72			Channel 0 Active Nodes				
S:73			Channel 0 Active Nodes				
S:74			Channel 0 Active Nodes				
S:75			Channel 0 Active Nodes				
S:76			Channel 0 Active Nodes				
S:77			Channel 0 Active Nodes				
S:78			Channel 0 Active Nodes				
S:79			Channel 0 Active Nodes				
S:80			Channel 0 Active Nodes				
S:81			Channel 0 Active Nodes				
S:82			Channel 0 Active Nodes				
S:83			DH+ Active Nodes				
S:84			DH+ Active Nodes				
S:85			DH+ Active Nodes				
S:86			DH+ Active Nodes				
T4:1			Reset Button Timer				
T4:1/DN			Reset Alarm Bit				
T4:2			Pump 1 Fail Timer				
T4:2/DN			Pump 1 Fail Timer Done Bit				
T4:3			Pump 2 Fail Timer				
T4:3/DN			Pump 2 Fail Timer Done Bit				
T4:4			Pump 3 Fail Timer				
T4:4/DN			Pump 3 Fail timer Done Bit				
T4:5			Low Flow on pump call Timer				
T4:5/DN			Low Flow on pump Call Timer Done				
T4:6			Low Pressure on pump call Alarm Timer				
T4:6/DN			Low Pressure on Pump Call timer done bit				
T4:7			Low LLevel Alarm Delay Timer				
T4:7/DN			Low Level Alarm Test Bit				
T4:8			Flasher timer				
T4:8/DN			Flasher Bit				

INTAKE.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV	B:
T4:9			Flasher Reset Timer				
T4:9/DN			Flasher REset Bit				
T4:10			Alarm Dialer Delay Timer				
T4:10/DN			Alarm Dialer Delay Timer Done Bit				
T4:11			High Level Alarm Delay Timer				
T4:11/DN			High Level Alarm Delay Timer Done Bit				
T4:12			Low Water cutoff Reset Timer				
T4:12/DN			Low Water Cutoff Reset				
T4:13			Comm Test Timer for Pump Shutdown				
T4:13/DN			Comm Bad Pump Shutdown timer done				

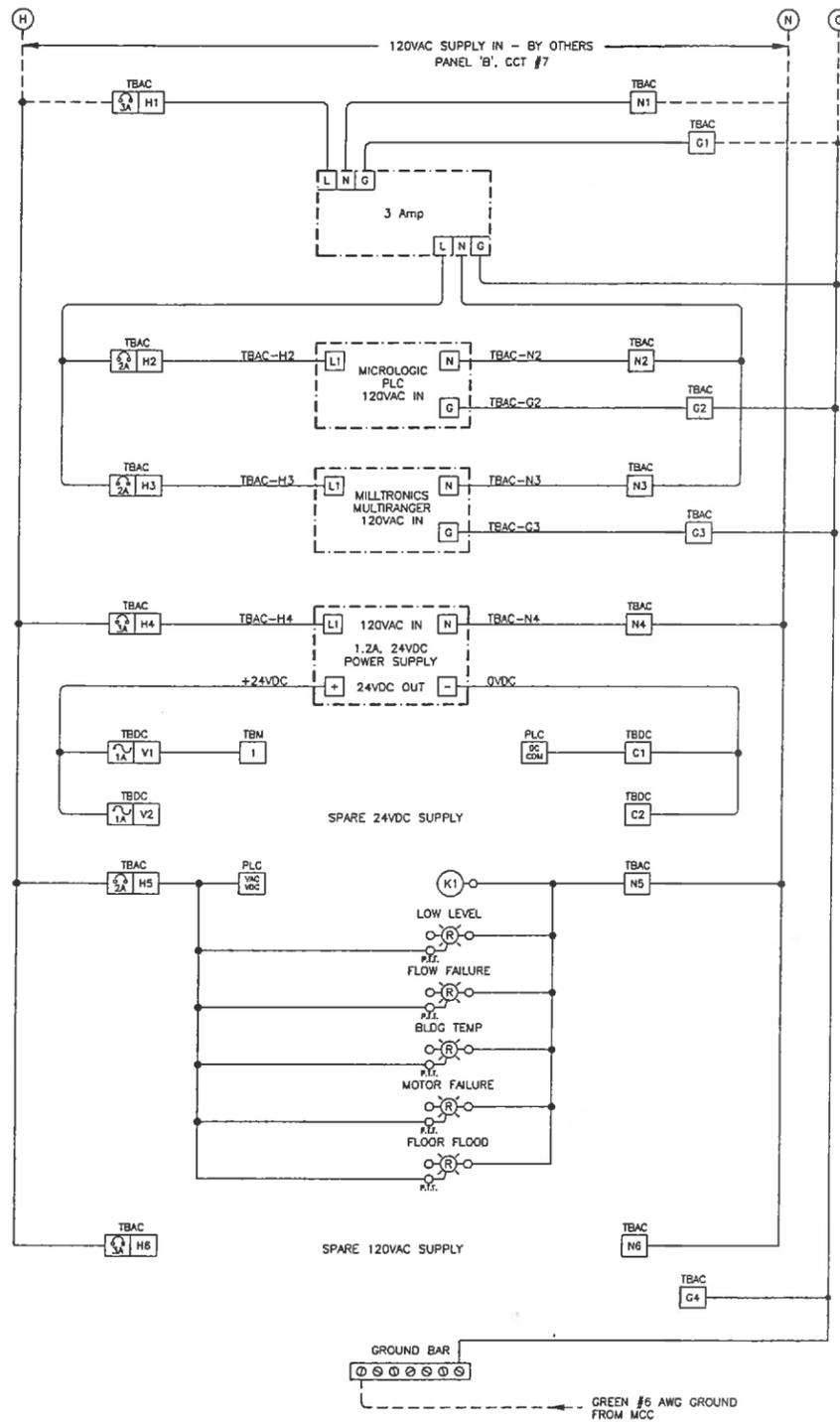
INTAKE.RSS

Instruction Comment Database

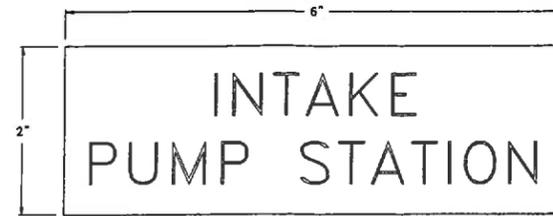
Address Instruction Description

INTAKE.RSS
Symbol Group Database

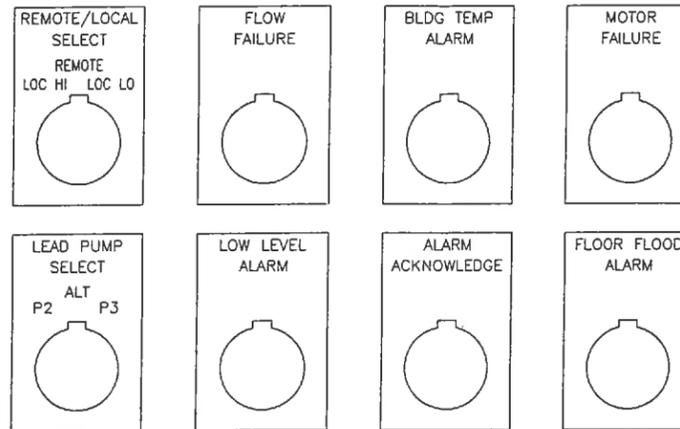
Group_Name Description



CONTROL PANEL POWER & EQUIPMENT WIRING SCHEMATIC



TYPICAL CONTROL PANEL LEGEND PLATE



TYPICAL DOOR LAMACOID

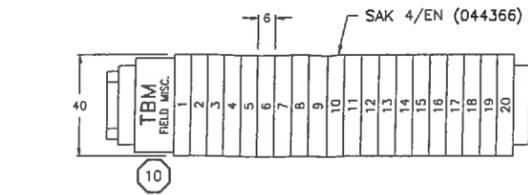
PANEL BOARD "B" SCHEDULE									
120/208V 3Ø 4W					225 amp MAINS				
FLUSH					42 CCT				
LOAD	TRIP AMP	BR No	BUS	BR No	TRIP AMP	LOAD	TRIP AMP	BR No	LOAD
MAIN FLOOR LIGHTING	1/15	1	A	2	1/15	MAIN FLOOR RECEPTACLES	1/15	1	MAIN FLOOR RECEPTACLES
LOWER FLOOR LIGHTING	1/15	3	A	4	15A	LOWER FLOOR RECEPTACLE	1/15	3	LOWER FLOOR RECEPTACLE
COOLER UNIT FAN	1/15	5	A	6	GFI		1/15	5	
CONTROLS	1/15	7	A	8	1/15	CHEMICAL PUMP	1/15	7	CHEMICAL PUMP
	1/15	9	A	10			1/15	9	
	1/15	11	A	12	3/20	UNIT HEATER	1/15	11	UNIT HEATER
	1/15	13	A	14			1/15	13	
	1/15	15	A	16	1/15	SPARE	1/15	15	SPARE
	1/15	17	A	18	1/15	SPARE	1/15	17	SPARE

LEGEND:

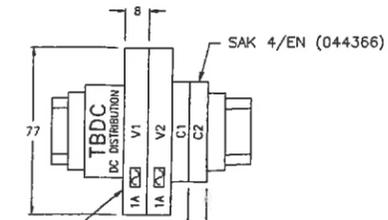
- DENOTES INTERNAL WIRING (BY DELCO)
- - - DENOTES FIELD WIRING (BY DIV. 16)
- DENOTES INTERNAL PLC CONNECTION
- ⊗ DENOTES CONTROL PANEL TERMINAL
- ⊗ DENOTES STARTER TERMINAL

NOTES:

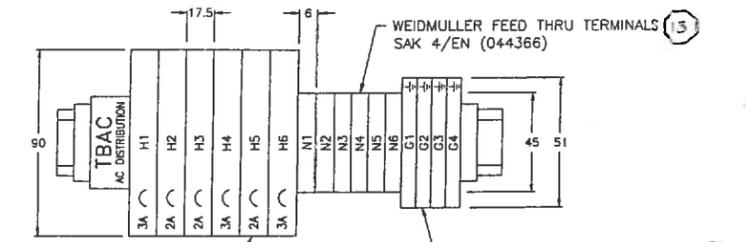
1. ALL INTERNAL CABINET WIRING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
120 VAC LINE - BLACK #14 TEW
120 VAC NEUTRAL - WHITE #14 TEW
CONTROL - RED #16 TEW
2. ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
3. ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.
4. PANEL LAYOUT ON DWG 8051-10, STARTER SCHEMATICS ON 8051-12, MICROLOGIX CONTROL WIRING SHOWN ON DWG 8051-13.



MISCELLANEOUS TB DETAIL



TBDC DISTRIBUTION BLOCK



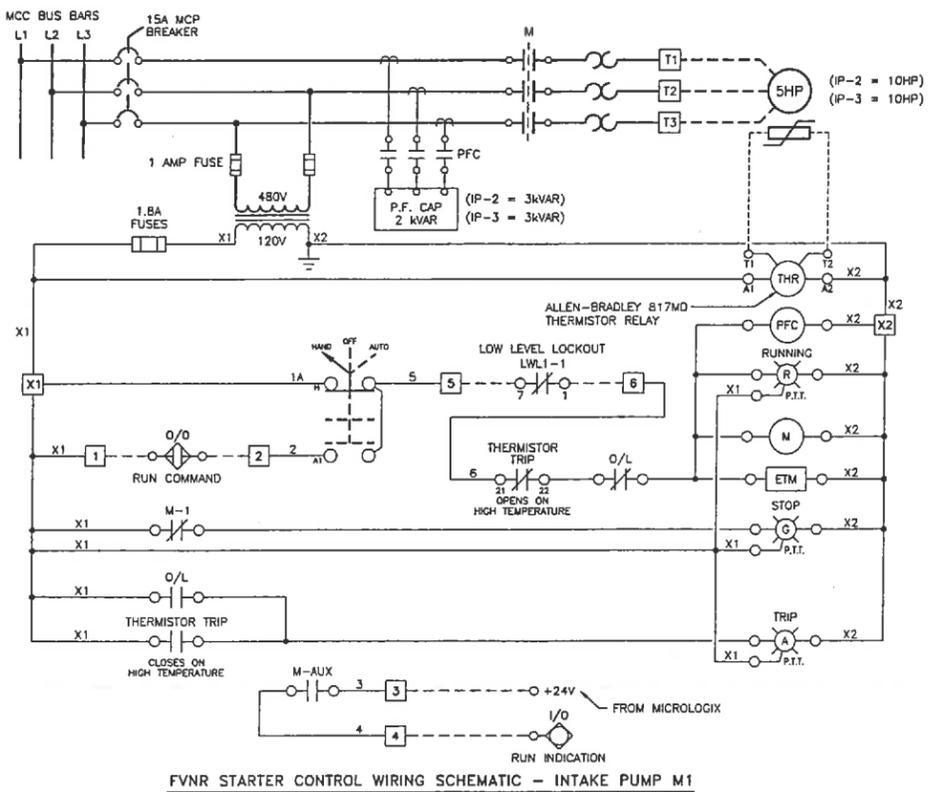
TBAC DISTRIBUTION BLOCK

NO.	DESCRIPTION	DATE	BY	NO.	DESCRIPTION	DATE	BY
D	AS BUILT	08/24/99	D.D.				
B	RE-ISSUE FOR APPROVAL	12/09/98	B.R.				
A	ISSUE FOR APPROVAL	9/11/98	BR				

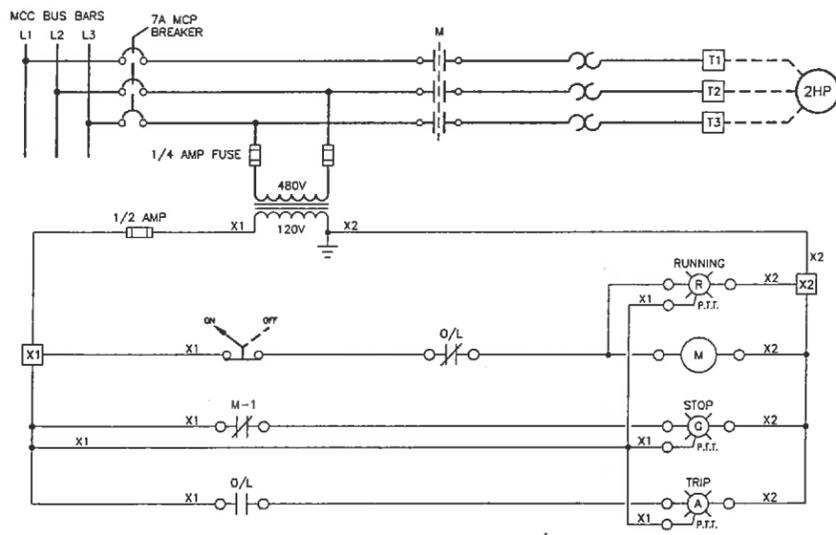
WASKESIU NATIONAL PARK
PRINCE ALBERT, SASK.
WATER TREATMENT PLANT
AND PUMPING STATION

SECTION:	
AREA:	
SCALE:	As Noted
DATE:	
DESIGNED BY:	BPR
DRAWN BY:	SON
CHECKED BY:	BPR
APPROVED BY:	

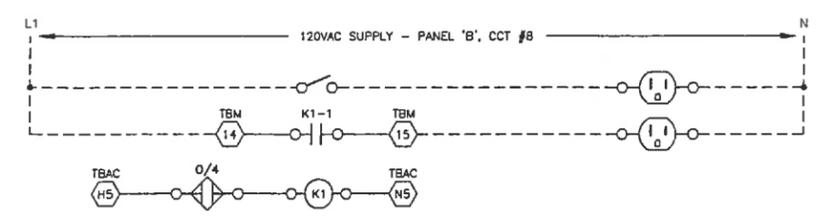
CLIENT:	PUBLIC WORKS CANADA	PROJECT NO.:	8051
TITLE:	PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT & PUMPING STATION INTAKE PUMPING STATION POWER DISTRIBUTION & MISC DETAILS	DRAWING NO.:	8051-11
		REVISION NO.:	0



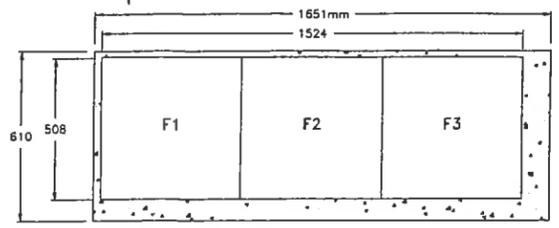
FVNR STARTER CONTROL WIRING SCHEMATIC - INTAKE PUMP M1
TYPICAL FOR INTAKE PUMPS M2 & M3



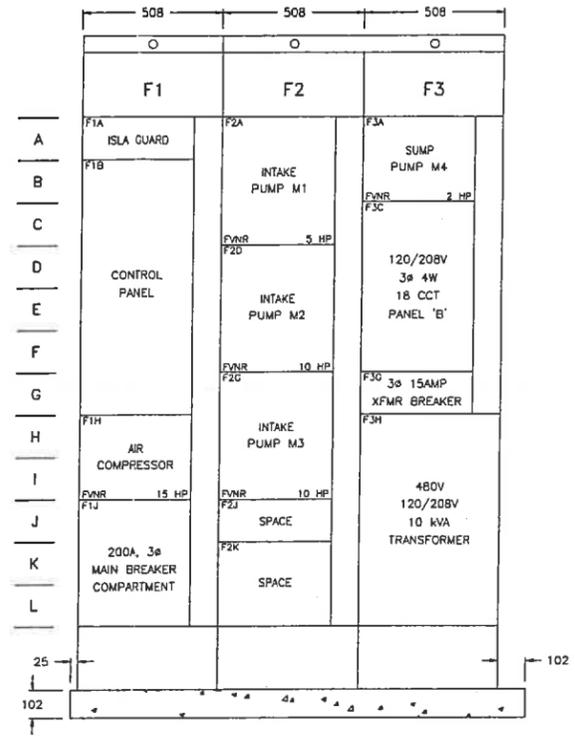
FVNR STARTER CONTROL SCHEMATIC - SUMP PUMP M4



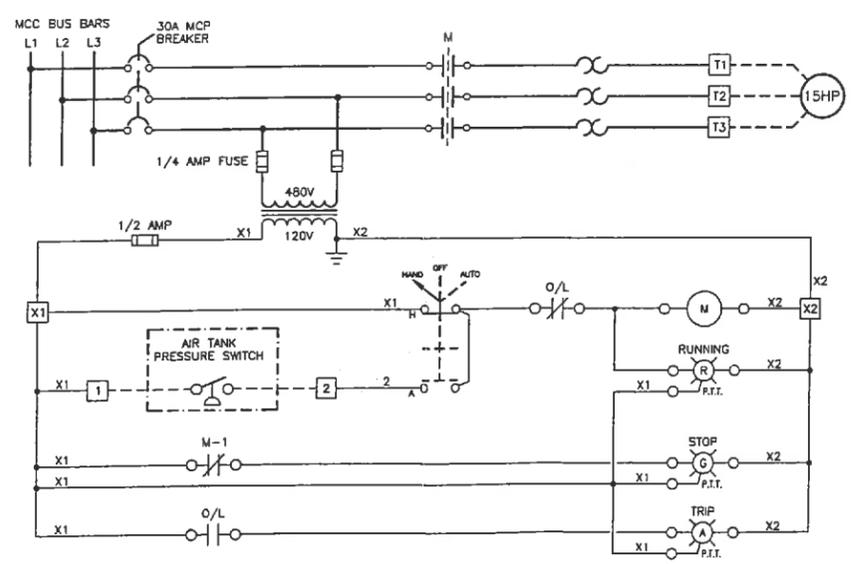
CHEM FEEDER PUMP CONTROL SCHEMATIC



TOP VIEW

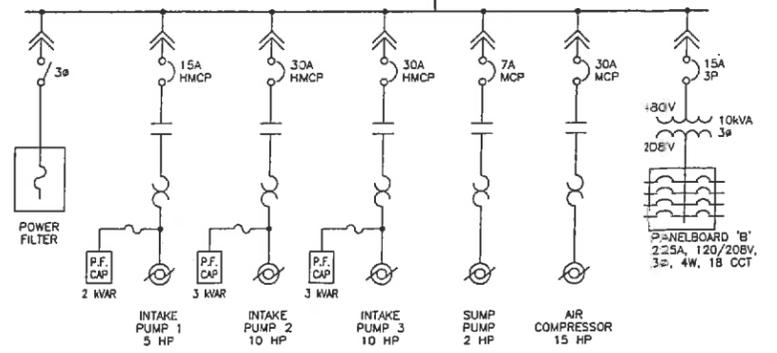
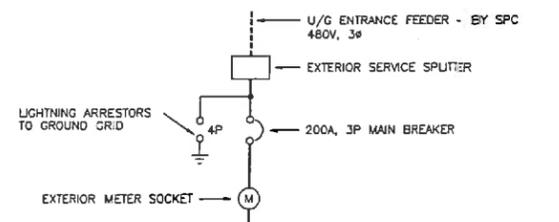


SPS MAIN DISTRIBUTION CENTER DETAIL



FVNR STARTER CONTROL SCHEMATIC - AIR COMPRESSOR

BILL OF MATERIALS			
No.	Qty.	DESCRIPTION	CAT. NO.
1	1	ALLEN-BRADLEY MICROLOGIX - 20 INS, 12 OUTS	1761-L32AWA
2	1	MILLTRONICS MULTIRANGER PLUS LEVEL TRANSMITTER	
3	1	A-B INTERFACE CONVERTER	NET-AIC
4	1	TYCOR 3 AMP PLC POWER FILTER	AGS-120-3XS
5	1	TECTROL 1.2 AMP, 24VDC POWER SUPPLY	GHOF 1-24
6	2	IDEC 1 POLE 24VDC RELAY	-
7	2	A-B 3 POSITION SELECTOR SWITCH	800T-J2A
8	1	A-B MOMENTARY PUSHBUTTON	800T-A2A
9	5	A-B RED INDICATING LIGHT	800T-PL16R
10	LOT	WEDMULLER MARKING STAND-OFF	Sch T 5
11	LOT	AEG E80 SERIES 240V BREAKERS, 3 AMP	E81S C3
12	LOT	WIELAND FLIP-TOP FUSED TERMINALS	WK 4/TH SIS...U
13	LOT	WIELAND FEED-THRU TERMINALS	SAK 4/EN
14	LOT	WIELAND CLAMP-ON GROUND TERMINALS	WK 4 SL/U
15	1	A-B SERIAL COMMUNICATION INTERFACE CABLE	1761-CBL-AM00
16	1	CALEX CURRENT-PULSE CONVERTER	8605
17	1	TYCOR RS-485 DATA TVSS FILTER (HARD WIRED)	DLSP4WHWRJ11
18			



INTAKE PUMPING STATION SINGLE LINE DIAGRAM

- LEGEND:**
- DENOTES INTERNAL WIRING (BY DELCO)
 - - - DENOTES FIELD WIRING (BY DN. 16)
 - [X] - STARTER TERMINAL
 - (X) - CONTROL PANEL TERMINAL

- NOTES:**
1. ALL INTERNAL CABINET WIRING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
120 VAC LINE - BLACK #14 TEW
120 VAC NEUTRAL - WHITE #14 TEW
CONTROL - RED #16 TEW
 2. ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
 3. ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.
 4. PANEL LAYOUT ON B051-10, POWER DISTRIBUTION ON B051-11, MICROLOGIX CONTROL WIRING SHOWN ON DWG B051-13.

NO.	DESCRIPTION	DATE	BY	REV.
0	AS BUILT	08/24/99	D.D.	
B	RE-ISSUE FOR APPROVAL	12/09/98	B.R.	
A	ISSUE FOR APPROVAL	9/11/98	B.R.	

PROJECT NO:	8051
DRAWING NO.:	8051-12
REVISION NO.:	0

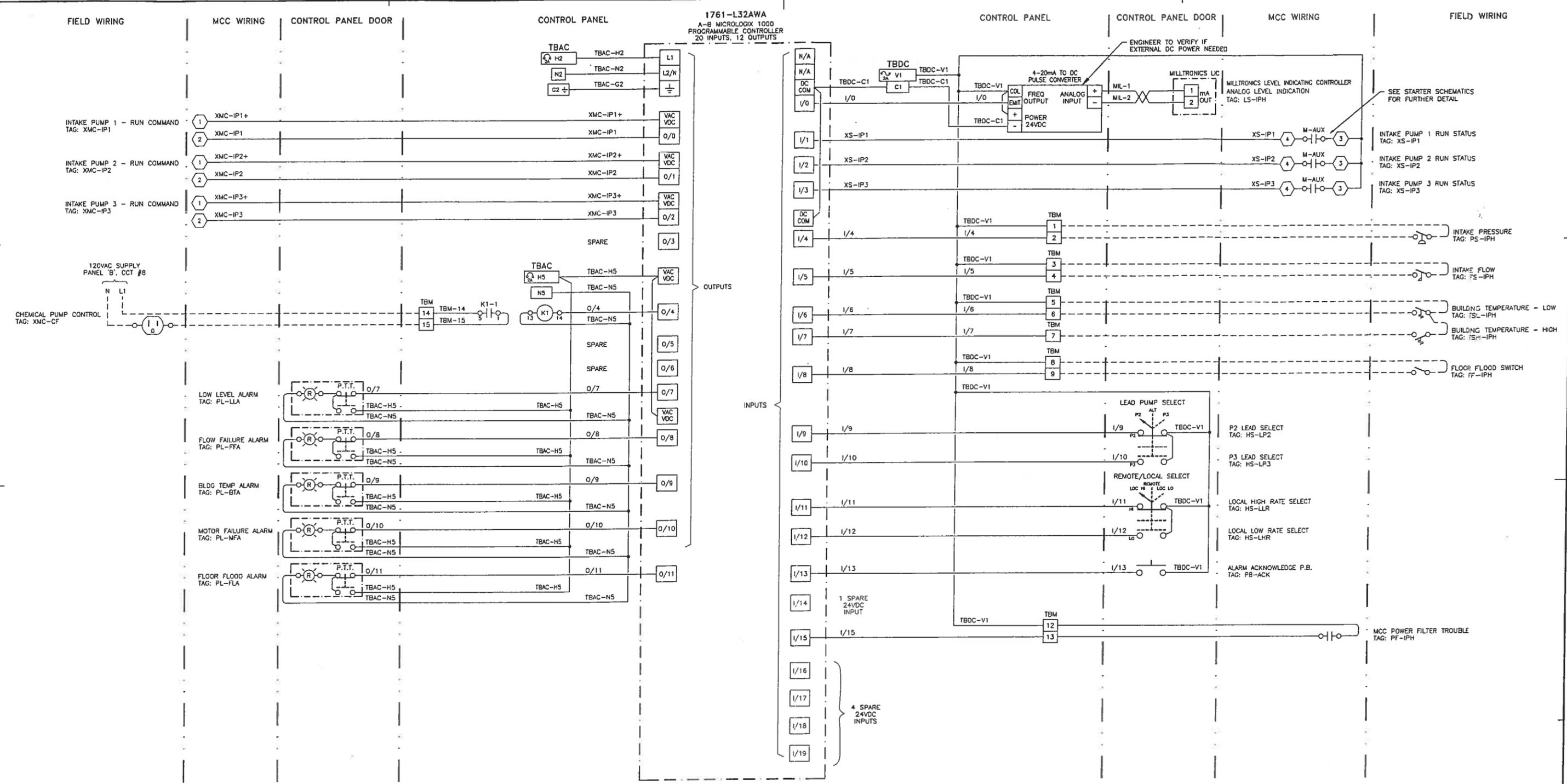
CLIENT:	PUBLIC WORKS CANADA
TITLE:	PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT & PUMPING STATION INTAKE PUMPSTATION STARTER SCHEMATICS & MCC DETAILS

SECTION:	SCALE: As Noted
DESIGNED BY:	BPR
DRAWN BY:	SON
CHECKED BY:	BPR
APPROVED BY:	

303 47th St. E. SAGINAWON, SASK S7K 5A2	PH (306) 244-8449 FAX (306) 565-7500 delco@delcocalumetion.sk.ca
---	--

WASKESIU NATIONAL PARK
PRINCE ALBERT, SASK.
WATER TREATMENT PLANT
AND PUMPING STATION





- LEGEND:**
- DENOTES INTERNAL WIRING (BY DELCO)
 - - - DENOTES FIELD WIRING (BY DIV. 16)
 - DENOTES INTERNAL PLC CONNECTION
 - [X] - CONTROL PANEL TERMINAL
 - (X) - STARTER TERMINAL

- NOTES:**
1. ALL INTERNAL CABINET WIRING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
 120 VAC LINE - BLACK #14 TEW
 120 VAC NEUTRAL - WHITE #14 TEW
 CONTROL - RED #16 TEW
 2. ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
 3. ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.
 4. PANEL LAYOUT ON 8051-10. POWER DISTRIBUTION ON 8051-11. SCHEMATICS AND DETAILS SHOWN ON DWGS 8051-11 & 12.

REV.	DATE	BY	NO.	DESCRIPTION
0	08/24/99	D.D.		AS BUILT
B	12/09/98	B.R.		RE-ISSUE FOR APPROVAL
A	9/11/98	B.R.		ISSUE FOR APPROVAL

WASKESIU NATIONAL PARK
 PRINCE ALBERT, SASK.
 WATER TREATMENT PLANT
 AND PUMPING STATION

SCALE:	As Noted	DATE:	
DESIGNED BY:	BPR		
DRAWN BY:	SON		
CHECKED BY:	BPR		
APPROVED BY:			



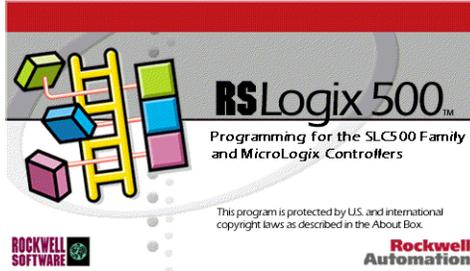
CLIENT:	PUBLIC WORKS CANADA	PROJECT NO.:	8051
TITLE:	PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT & PUMPING STATION	DRAWING NO.:	8051-13
	INTAKE PUMPSTATION MICROLOGIX CONTROL WIRING	REVISION NO.:	0

CONTRACT DOCUMENTS



Appendix C - Main Water Treatment Plant - PLC Listing and Control Panel Drawings

RSLogix500 Project Report



WTP.RSS

Processor Information

Processor Type: 1747-L532C/D 5/03 CPU - 16K Mem. OS302

Processor Name: WTP

Total Memory Used: 1684 Instruction Words Used - 2229 Data Table Words Used

Total Memory Left: 10604 Instruction Words Left

Program Files: 4

Data Files: 10

Program ID: f63a

WTP.RSS

I/O Configuration

0	1747-L532C/D	5/03 CPU - 16K Mem. OS302
1	1746-IB16	16-Input (SINK) 24 VDC
2	1746-IB16	16-Input (SINK) 24 VDC
3	1746-OX8	8-Output Isolated Relay
4	1746-OW16	16-Output (RLY) 240 VAC
5		
6	1747-KE	Interface Module, Series A
7	1747-KE	Interface Module, Series A
8		
9	1746-NI4	Analog 4 Channel Input Module
10	1746-NI4	Analog 4 Channel Input Module
11	1746-NI4	Analog 4 Channel Input Module
12		

WTP.RSS

MSG Configuration

MSG - Rung #2:237 - N9:0(14 Elements)

Communication Command: 500CPU Read Ignore if timed out(TO): No
Data Table Address: N7:100 Continuous Run (CO): No
Size in Elements: 10
Data Table Address: N7:50
Local Node Addr (dec): 2 (octal): 2
Local/Remote: Local

MSG - Rung #2:238 - N9:20(14 Elements)

Communication Command: 500CPU Write Ignore if timed out(TO): No
Data Table Address: N7:110 Continuous Run (CO): No
Size in Elements: 10
Data Table Address: N7:60
Local Node Addr (dec): 2 (octal): 2
Local/Remote: Local

MSG - Rung #2:239 - N9:40(14 Elements)

Communication Command: 500CPU Read Ignore if timed out(TO): No
Data Table Address: N7:120 Continuous Run (CO): No
Size in Elements: 10
Data Table Address: N7:50
Local Node Addr (dec): 3 (octal): 3
Local/Remote: Local

MSG - Rung #2:240 - N9:60(14 Elements)

Communication Command: 500CPU Write Ignore if timed out(TO): No
Data Table Address: N7:130 Continuous Run (CO): No
Size in Elements: 10
Data Table Address: N7:60
Local Node Addr (dec): 3 (octal): 3
Local/Remote: Local

MSG - Rung #2:241 - N9:80(14 Elements)

Communication Command: 500CPU Read Ignore if timed out(TO): No
Data Table Address: N7:140 Continuous Run (CO): No
Size in Elements: 5
Data Table Address: N7:50
Local Node Addr (dec): 4 (octal): 4
Local/Remote: Local

MSG - Rung #2:242 - N9:100(14 Elements)

Communication Command: 500CPU Write Ignore if timed out(TO): No
Data Table Address: N7:150 Continuous Run (CO): No
Size in Elements: 1
Data Table Address: N7:60
Local Node Addr (dec): 4 (octal): 4
Local/Remote: Local

MSG - Rung #2:243 - N9:120(14 Elements)

Communication Command: 500CPU Read Ignore if timed out(TO): No
Data Table Address: N7:160 Continuous Run (CO): No
Size in Elements: 10
Data Table Address: N140:0
Local Node Addr (dec): 5 (octal): 5
Local/Remote: Local

MSG - Rung #2:246 - N9:140(14 Elements)

Communication Command: 500CPU Write Ignore if timed out(TO): No
Data Table Address: N7:170 Continuous Run (CO): No
Size in Elements: 10
Data Table Address: N140:10
Local Node Addr (dec): 5 (octal): 5
Local/Remote: Local

WTP.RSS
PID Configuration

Channel Configuration

GENERAL

Channel 1 Write Protected: No
Channel 1 Edit Resource/Owner Timeout(x1 sec): 60
Channel 1 Passthru Link ID(dec): 2

Channel 0 Write Protected: No
Channel 0 Edit Resource/Owner Timeout(x1 sec): 60
Channel 0 Passthru Link ID(dec): 1
Channel 0 Current Mode: System
Channel 0 Mode Change Enabled: No
Channel 0 Mode Change Attention Character: \lb
Channel 0 Mode Change System Character: S
Channel 0 Mode Change User Character: U

CHANNEL 1 (SYSTEM) - Driver: DH485

Node : 1 (decimal)
Baud: 19200
Token Hold Factor: 1
Max Node Address: 10

CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex

Source ID: 1 (decimal)
Baud: 9600
Parity: NONE
Stop Bits: 1
Control Line : No Handshaking
Error Detection: CRC
Embedded Responses: Enabled
Duplicate Packet Detect: Yes
ACK Timeout(x20 ms): 50
NAK Retries: 3
ENQ Retries: 3

CHANNEL 0 (USER) - Driver: ASCII

Baud: 1200
Parity: NONE
Stop Bits: 1
Data Bits: 8
Control Line : No Handshaking
Delete mode: Ignore
Echo: No
XON/XOFF: No
Termination Character 1: \d
Termination Character 2: \ff
Append Character 1: \d
Append Character 2: \a

WTP.RSS

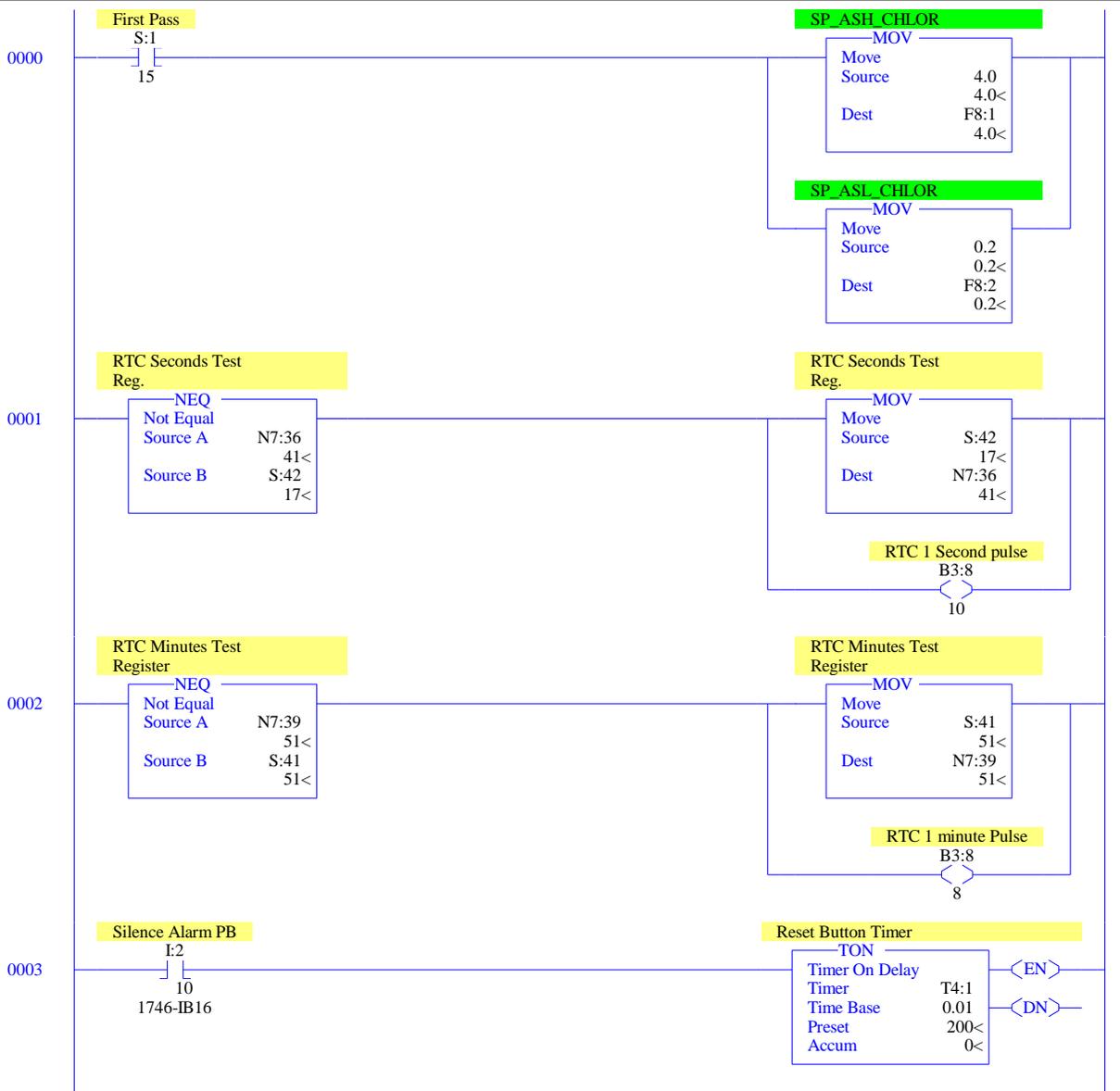
Program File List

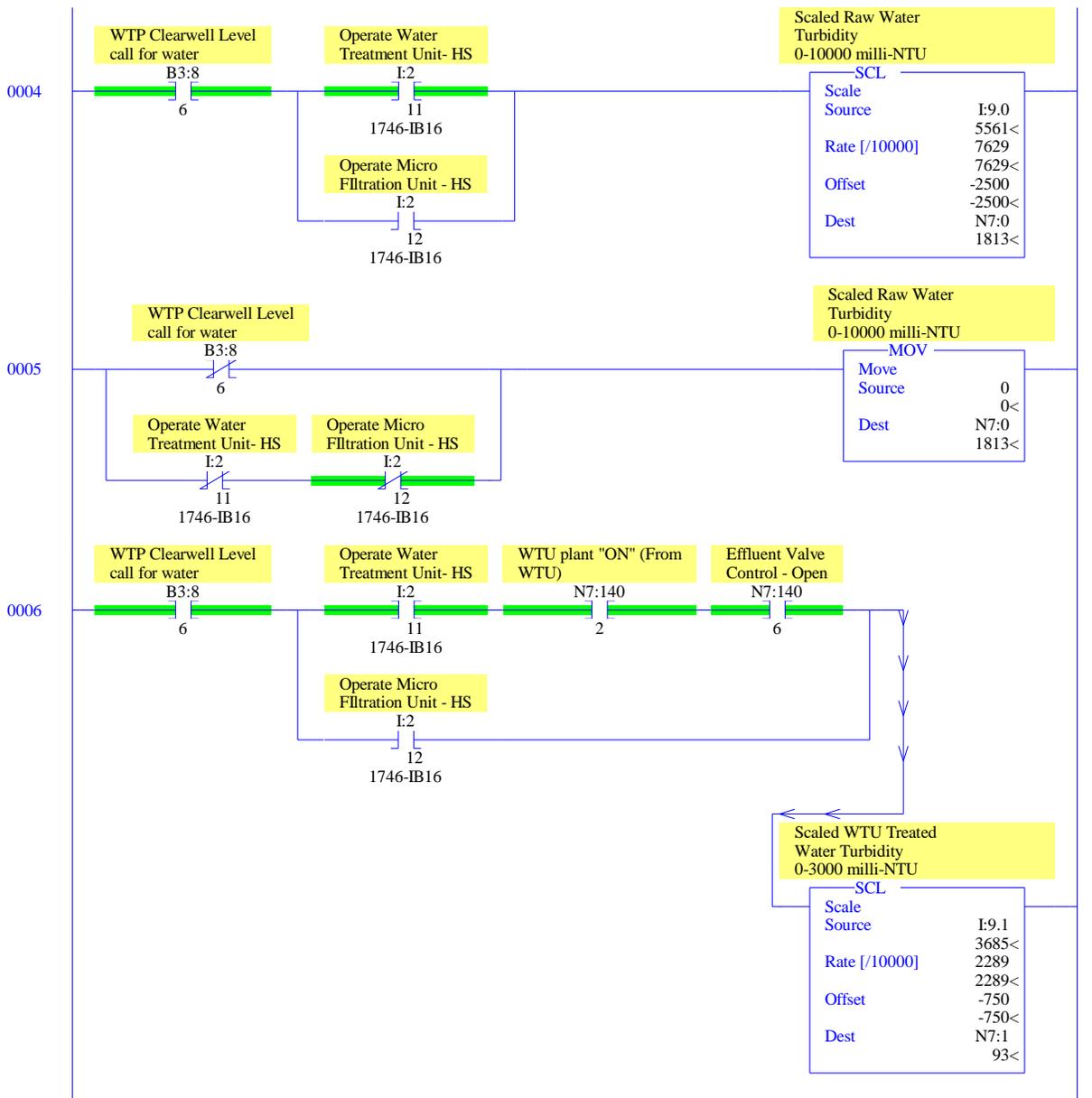
Name	Number	Type	Rungs	Debug	Bytes
[SYSTEM]	0	SYS	0	No	0
	1	SYS	0	No	0
	2	LADDER	290	No	9910
	4	LADDER	5	No	34

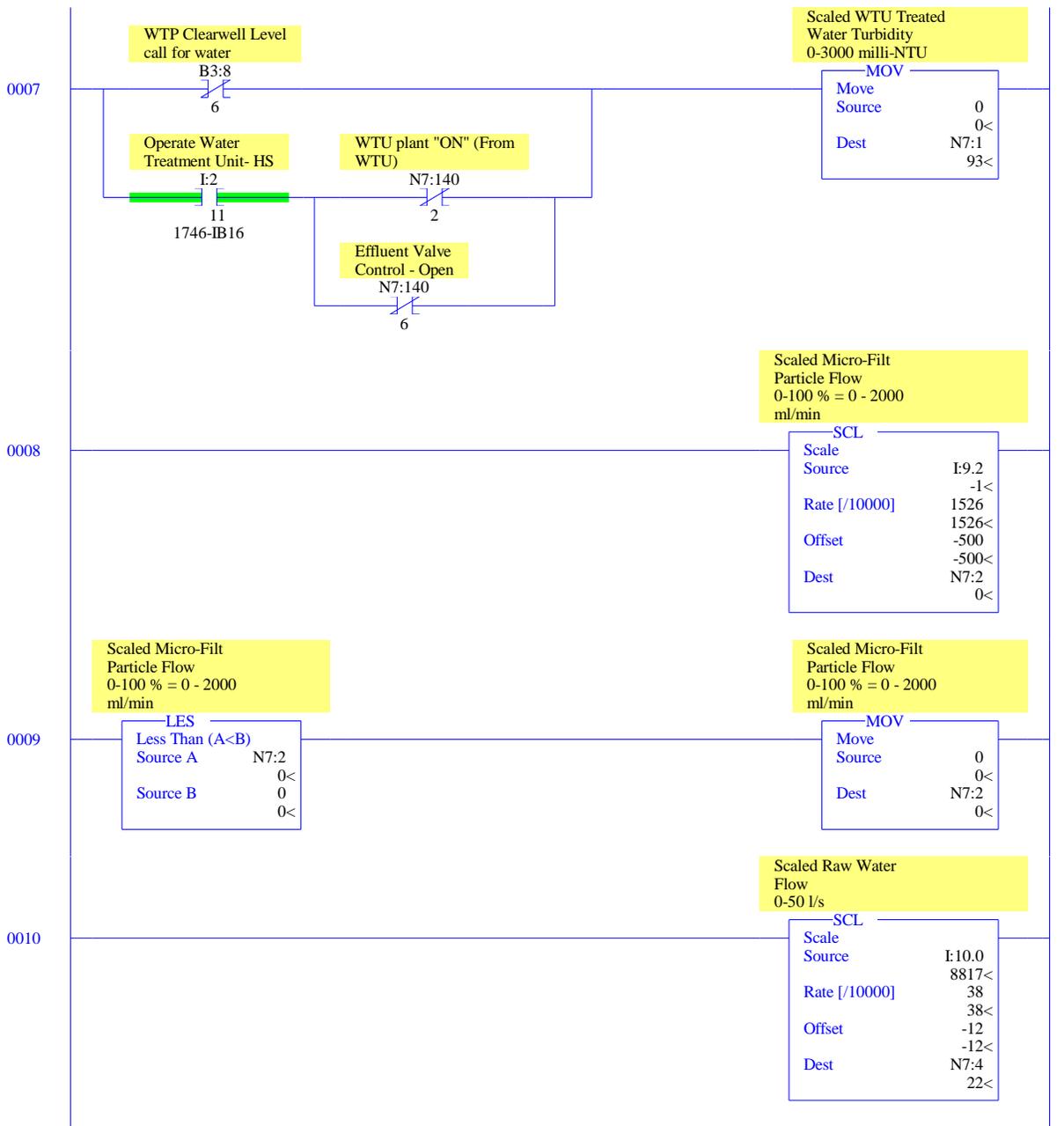
WTP.RSS

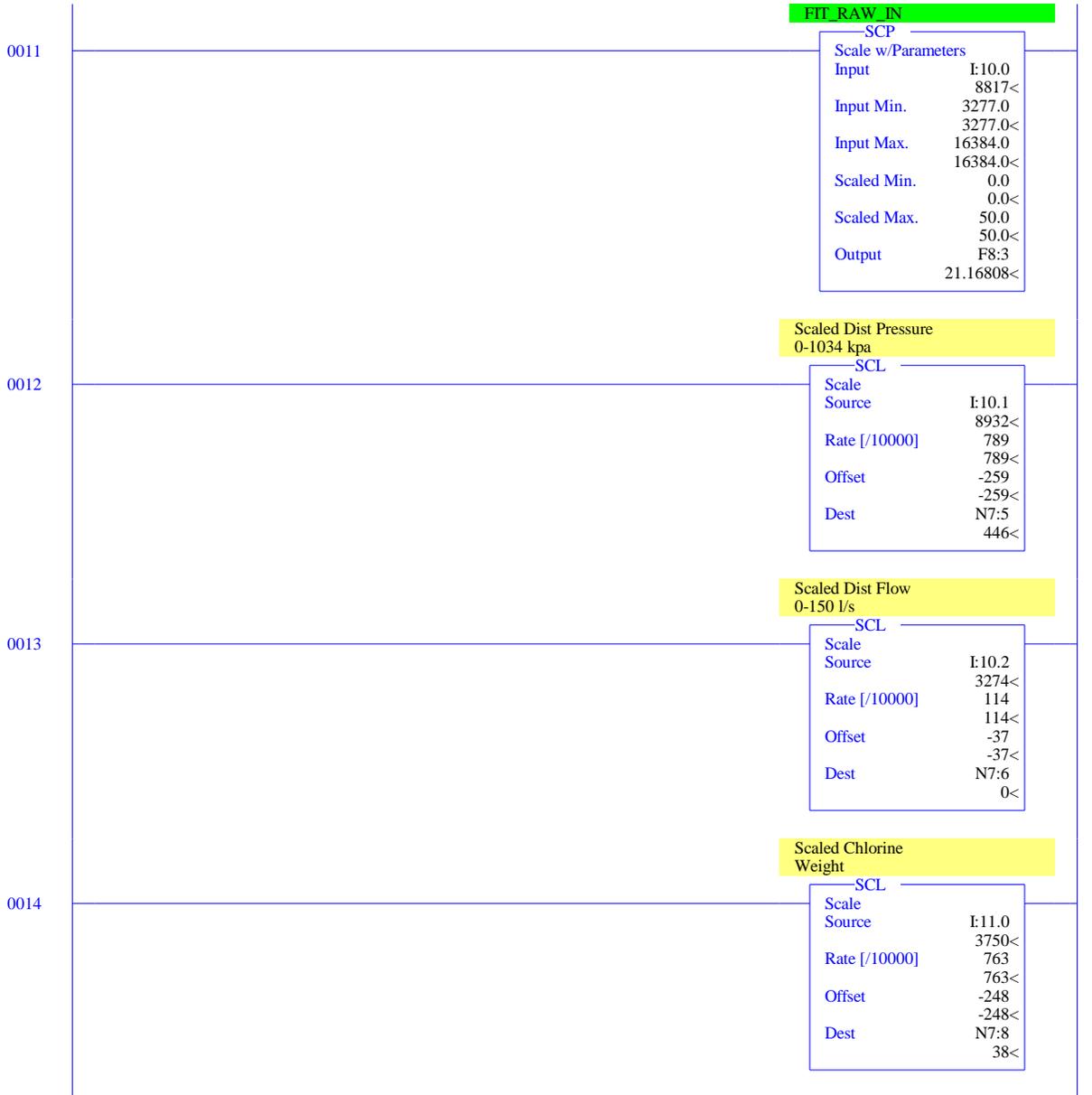
Data File List

Name	Number	Type	Scope	Debug	Words	Elements	Last
OUTPUT	0	O	Global	No	6	2	O:1
INPUT	1	I	Global	No	48	16	I:15
STATUS	2	S	Global	No	0	83	S:82
BINARY	3	B	Global	No	255	255	B3:254
TIMER	4	T	Global	No	300	100	T4:99
COUNTER	5	C	Global	No	300	100	C5:99
CONTROL	6	R	Global	No	300	100	R6:99
INTEGER	7	N	Global	No	255	255	N7:254
FLOAT	8	F	Global	No	510	255	F8:254
	9	N	Global	No	255	255	N9:254

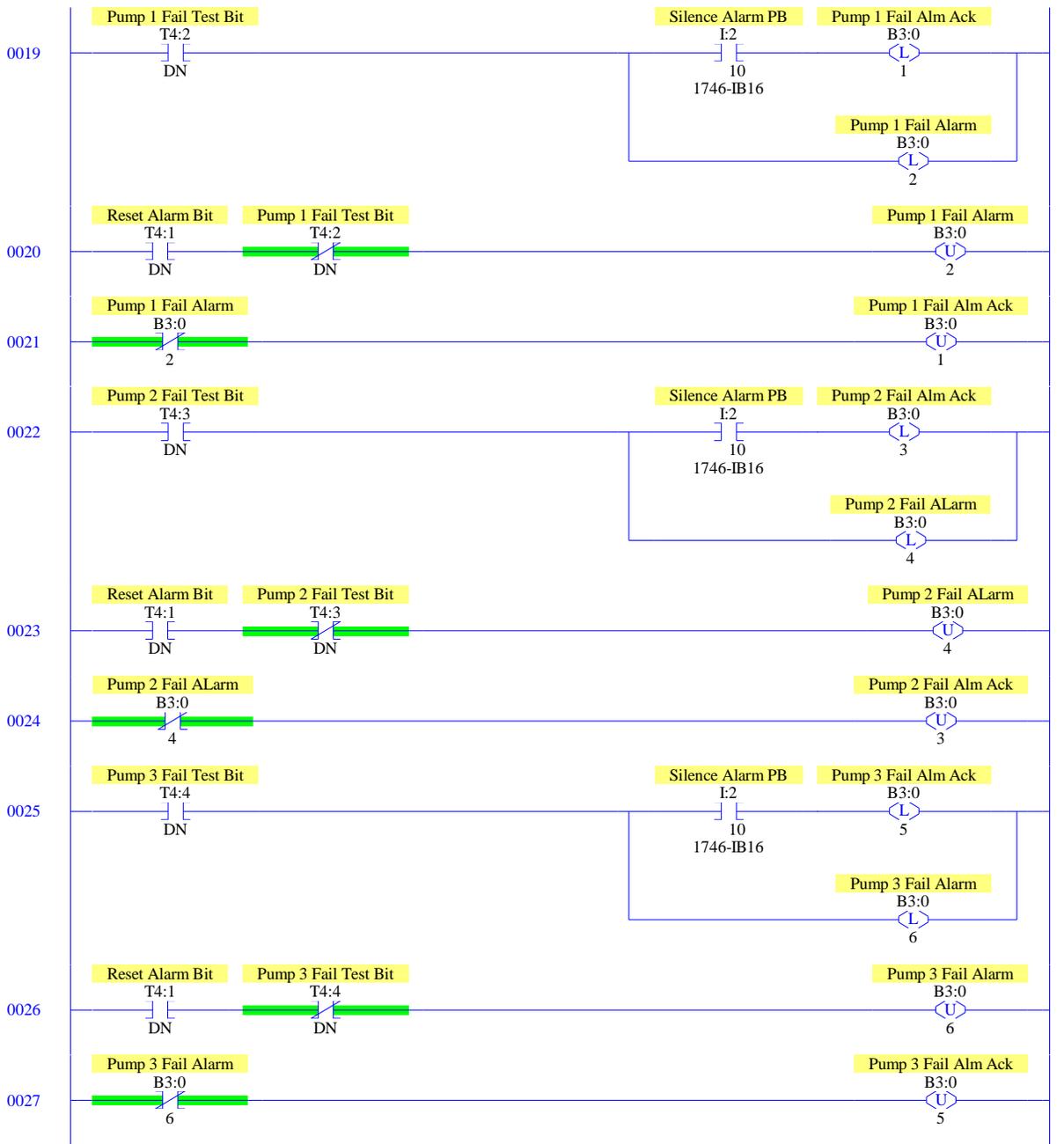


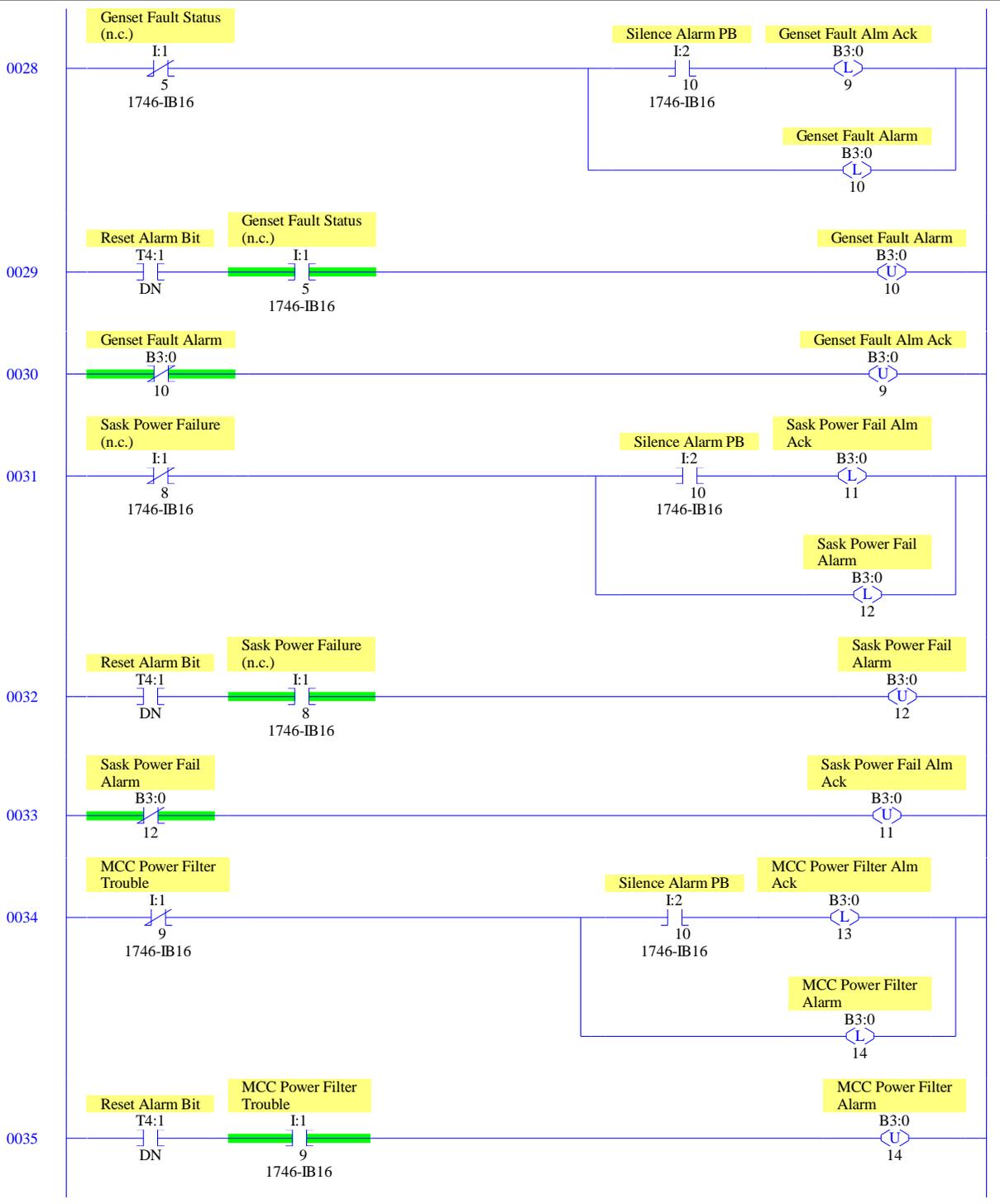


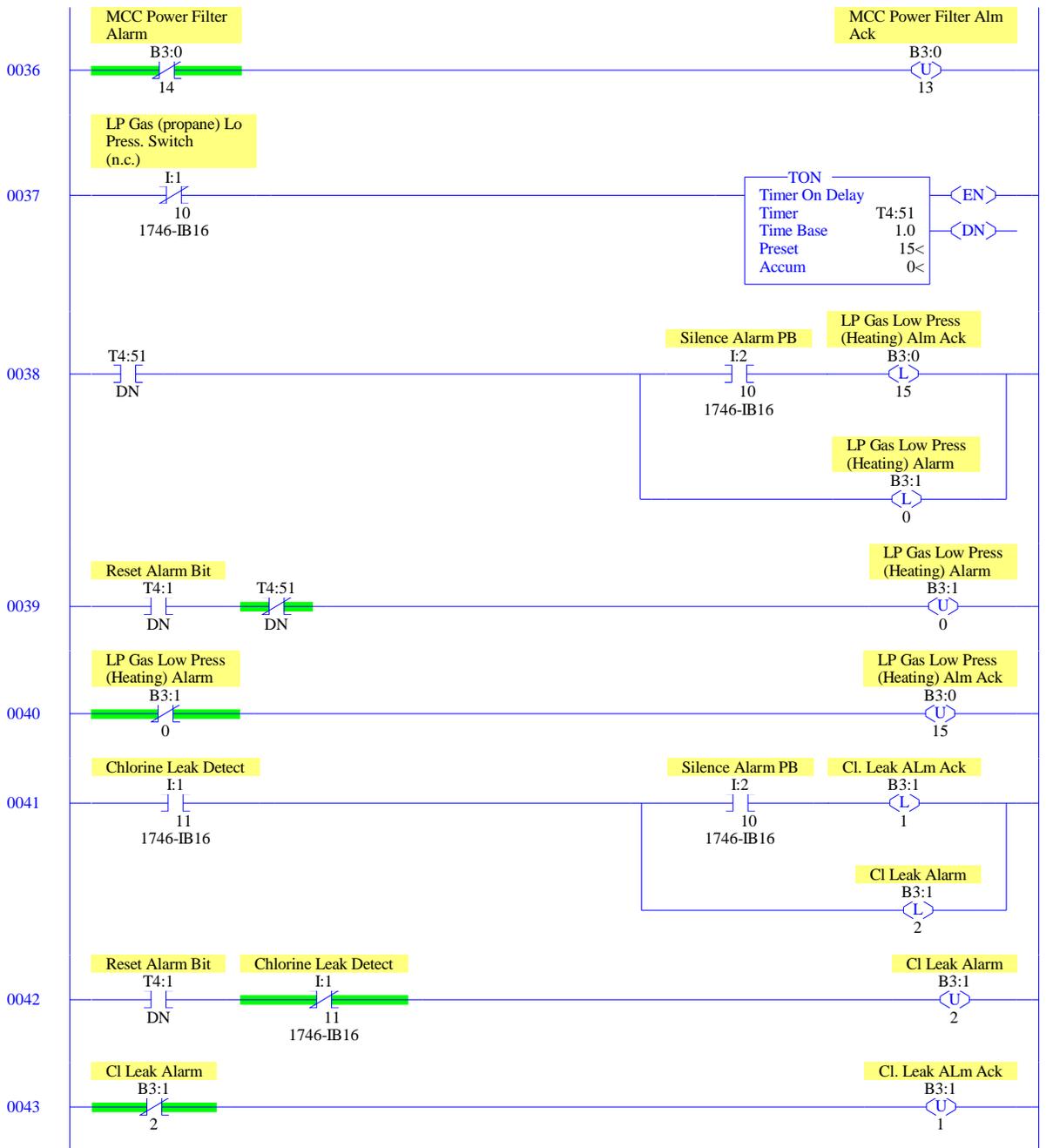


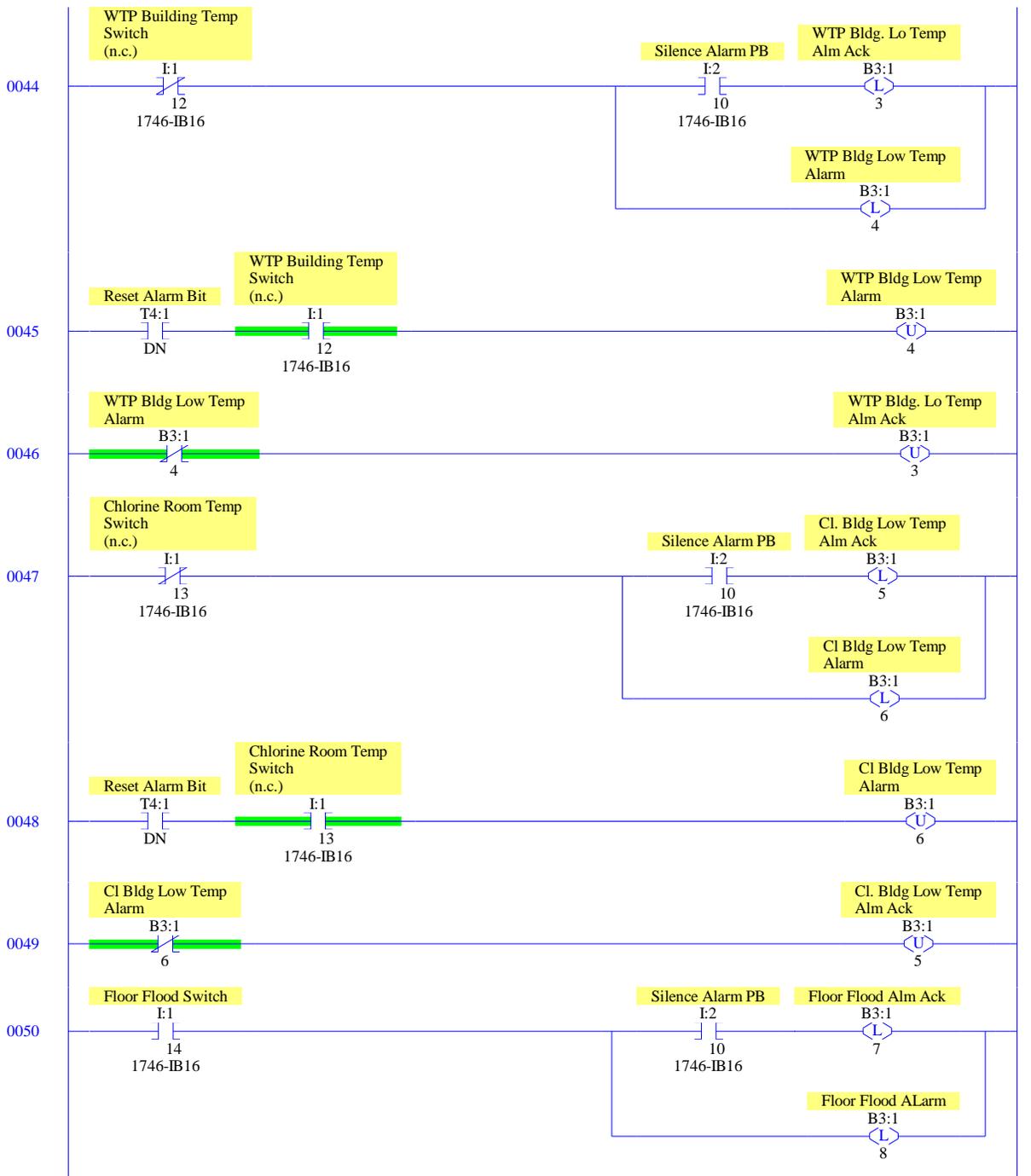


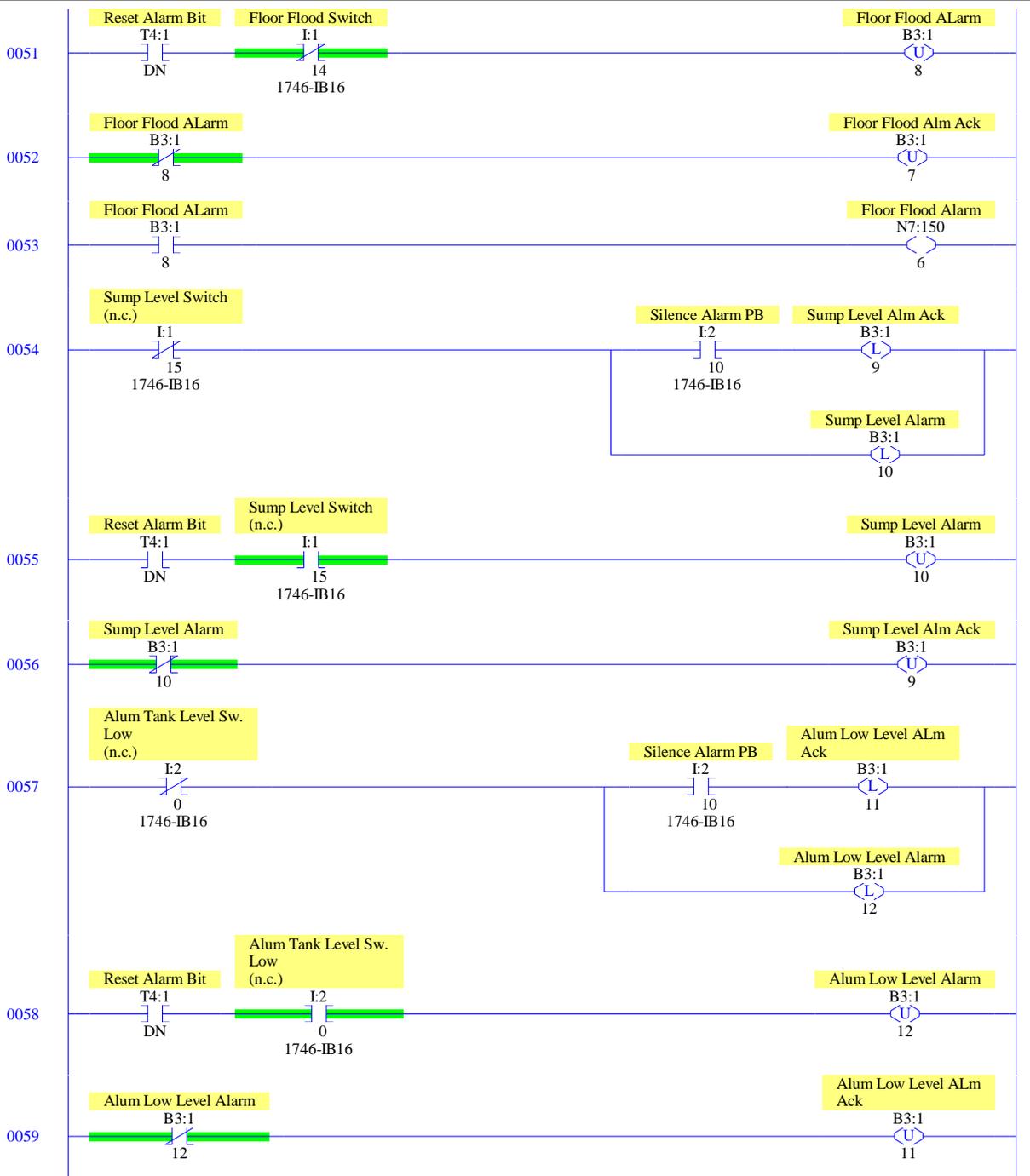


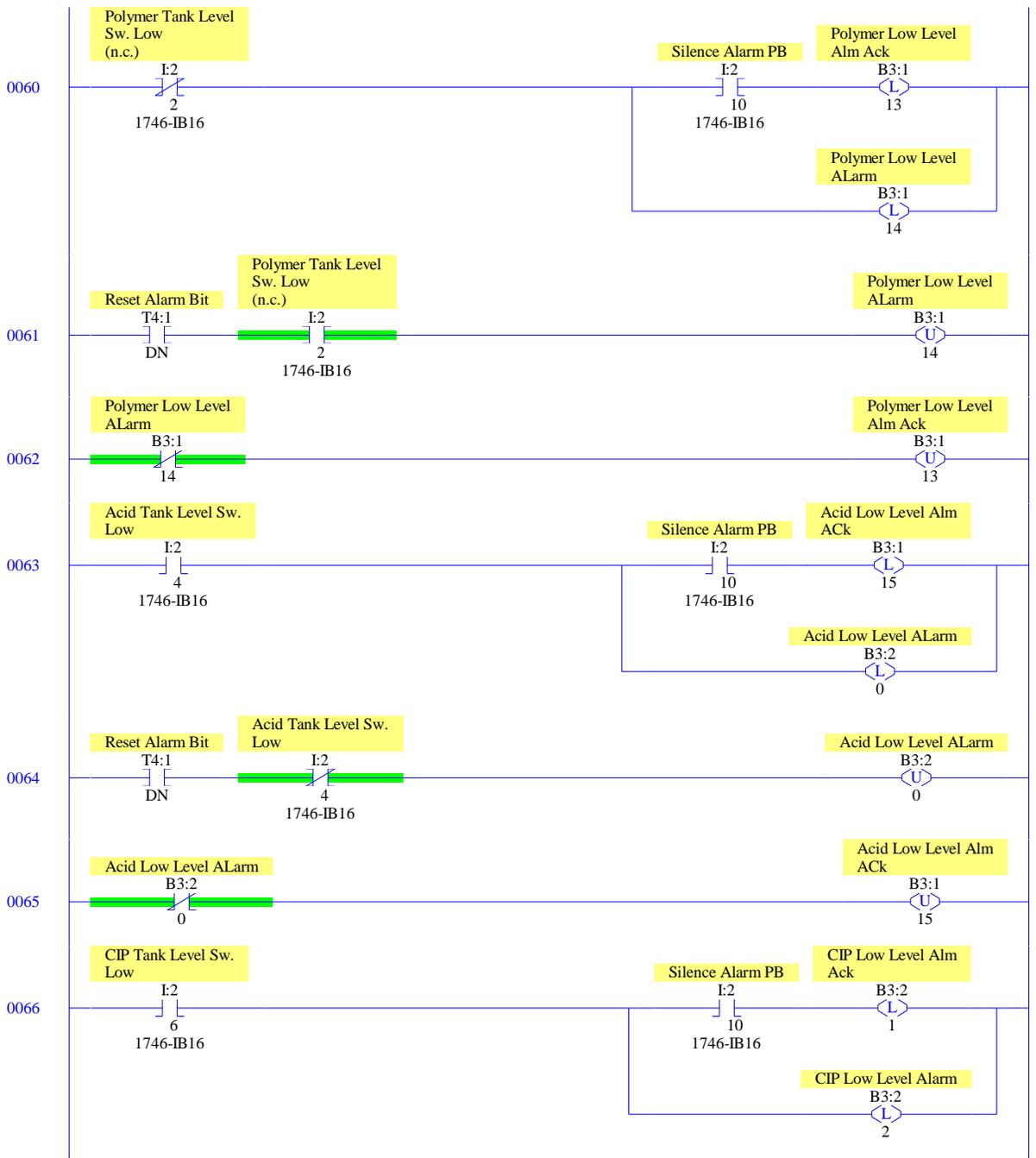


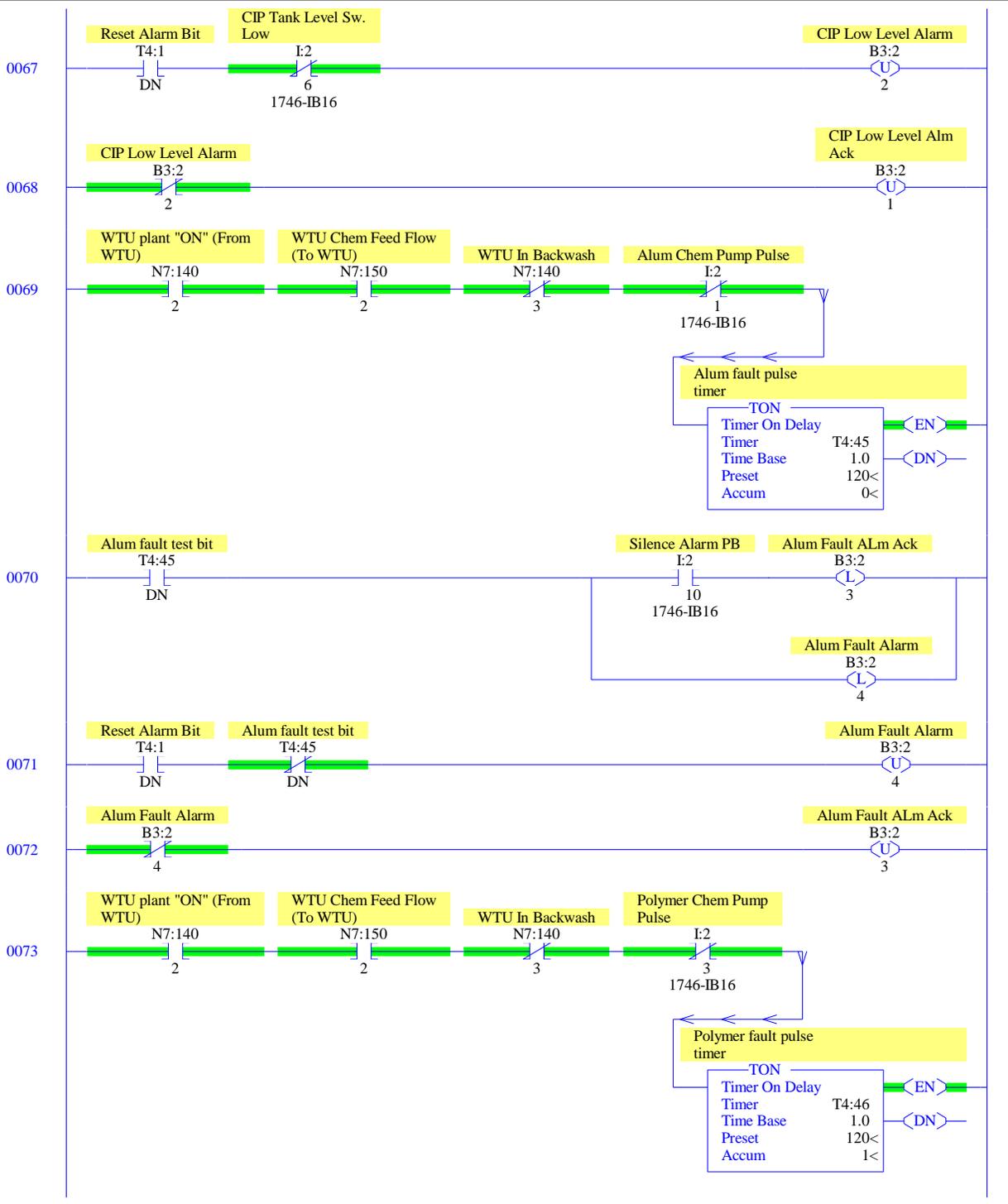


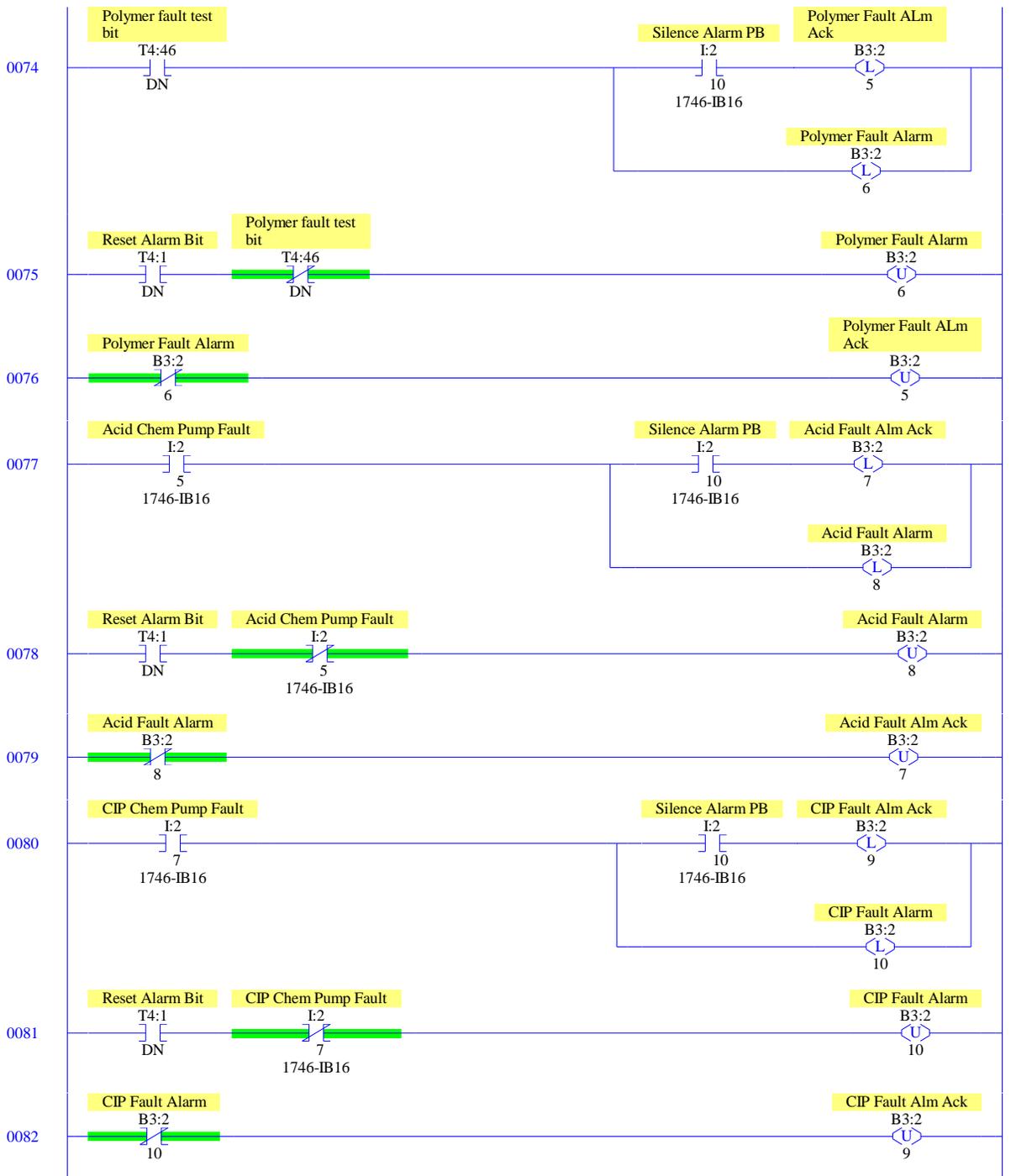


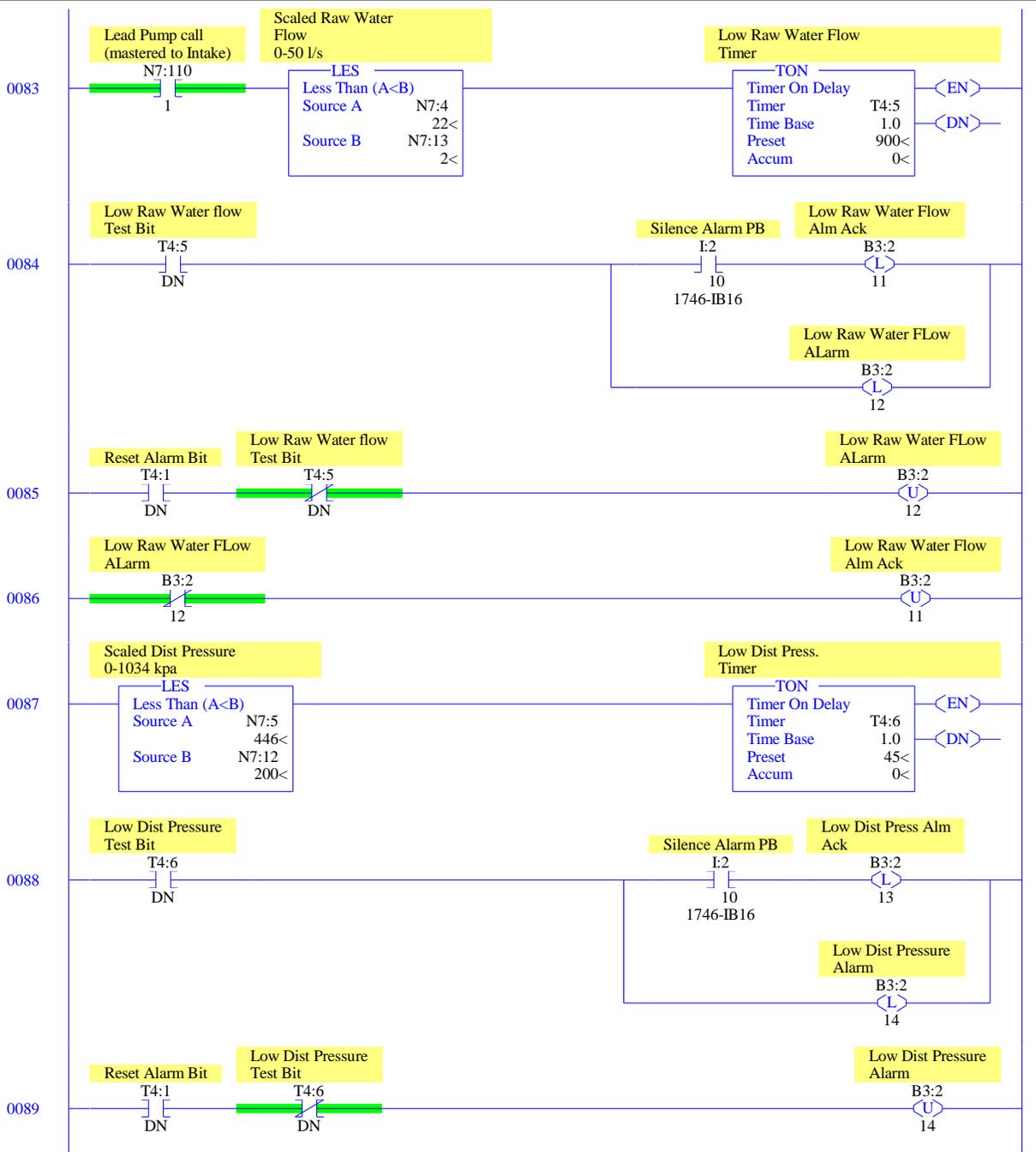


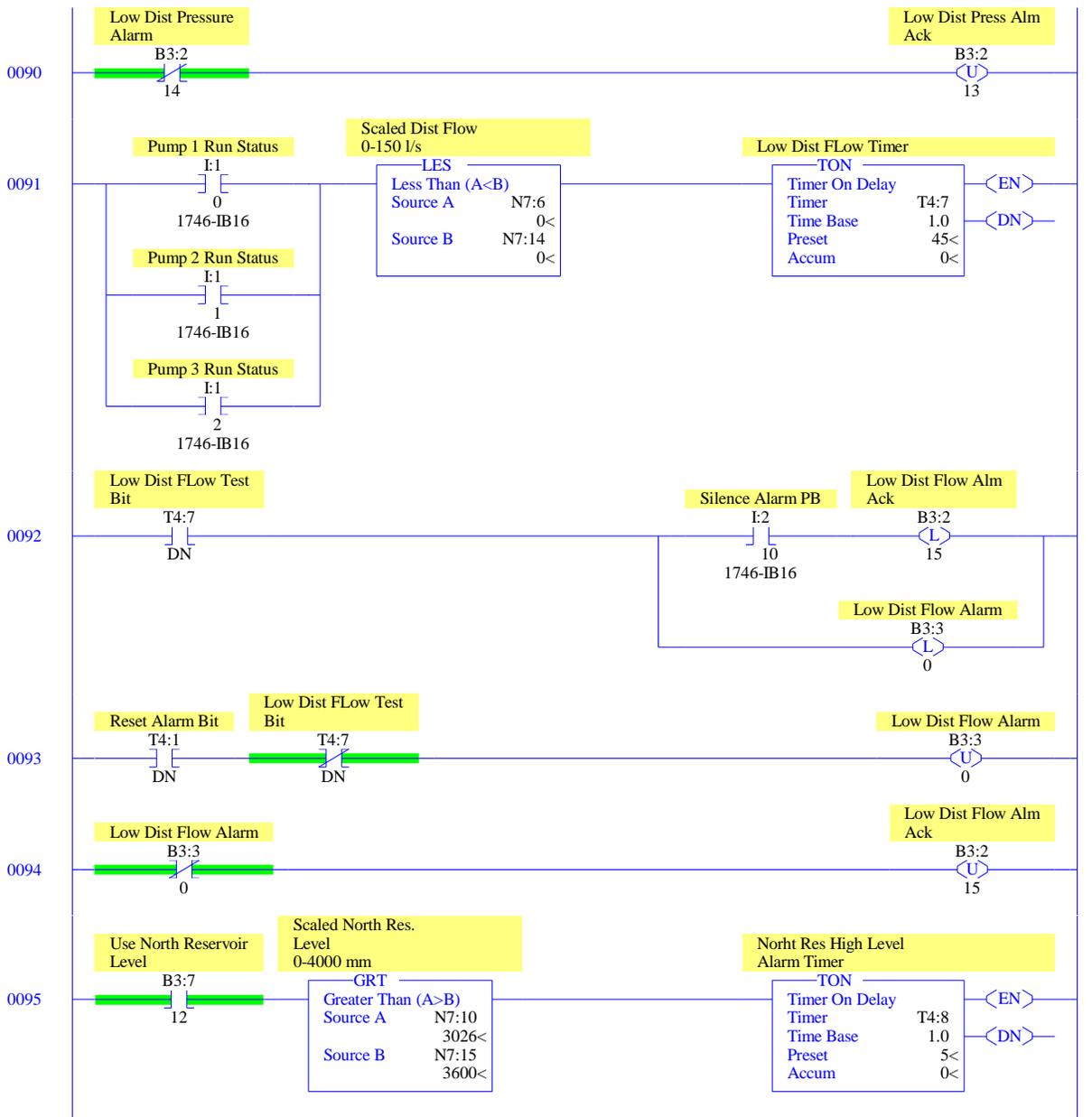


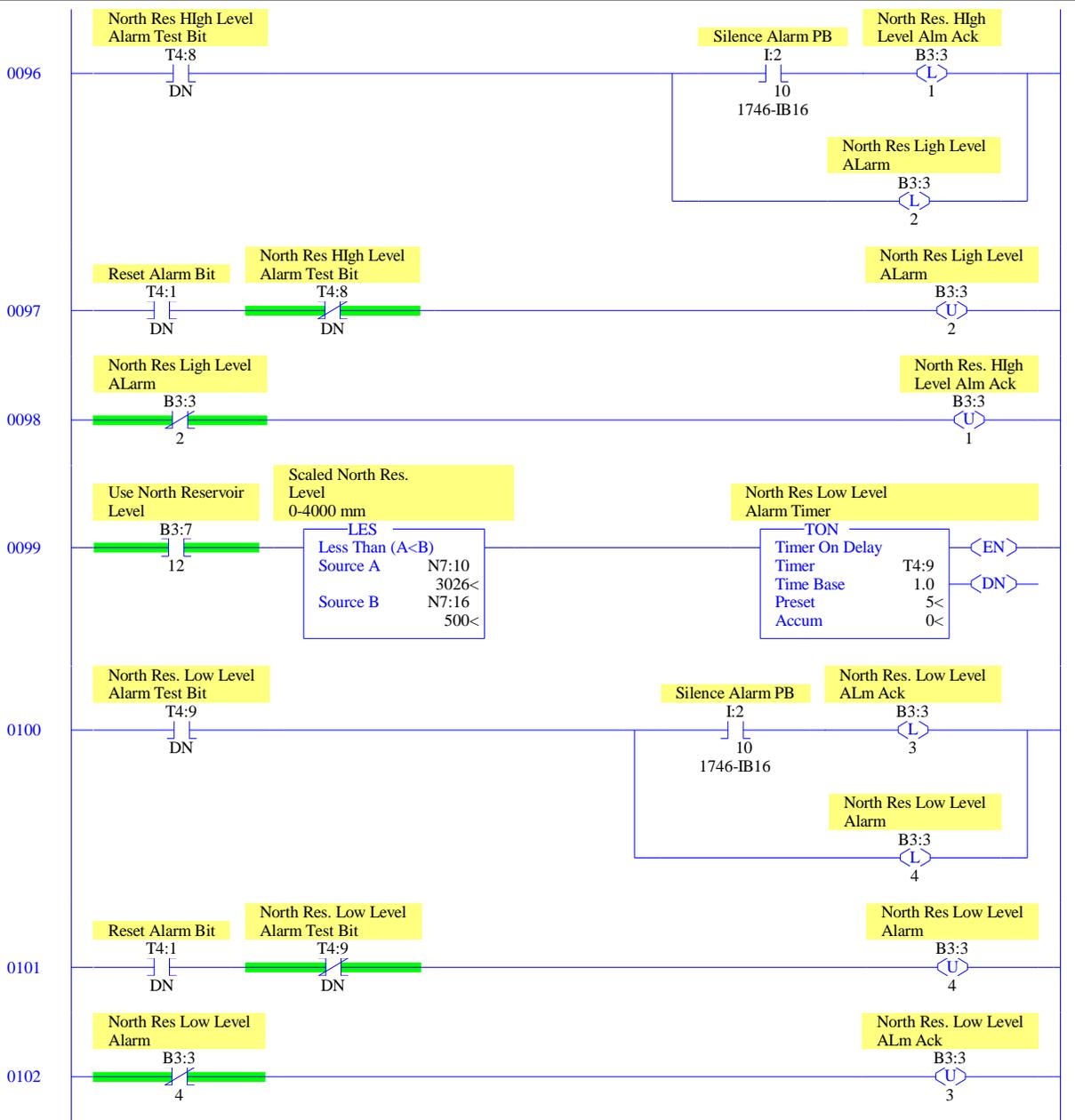


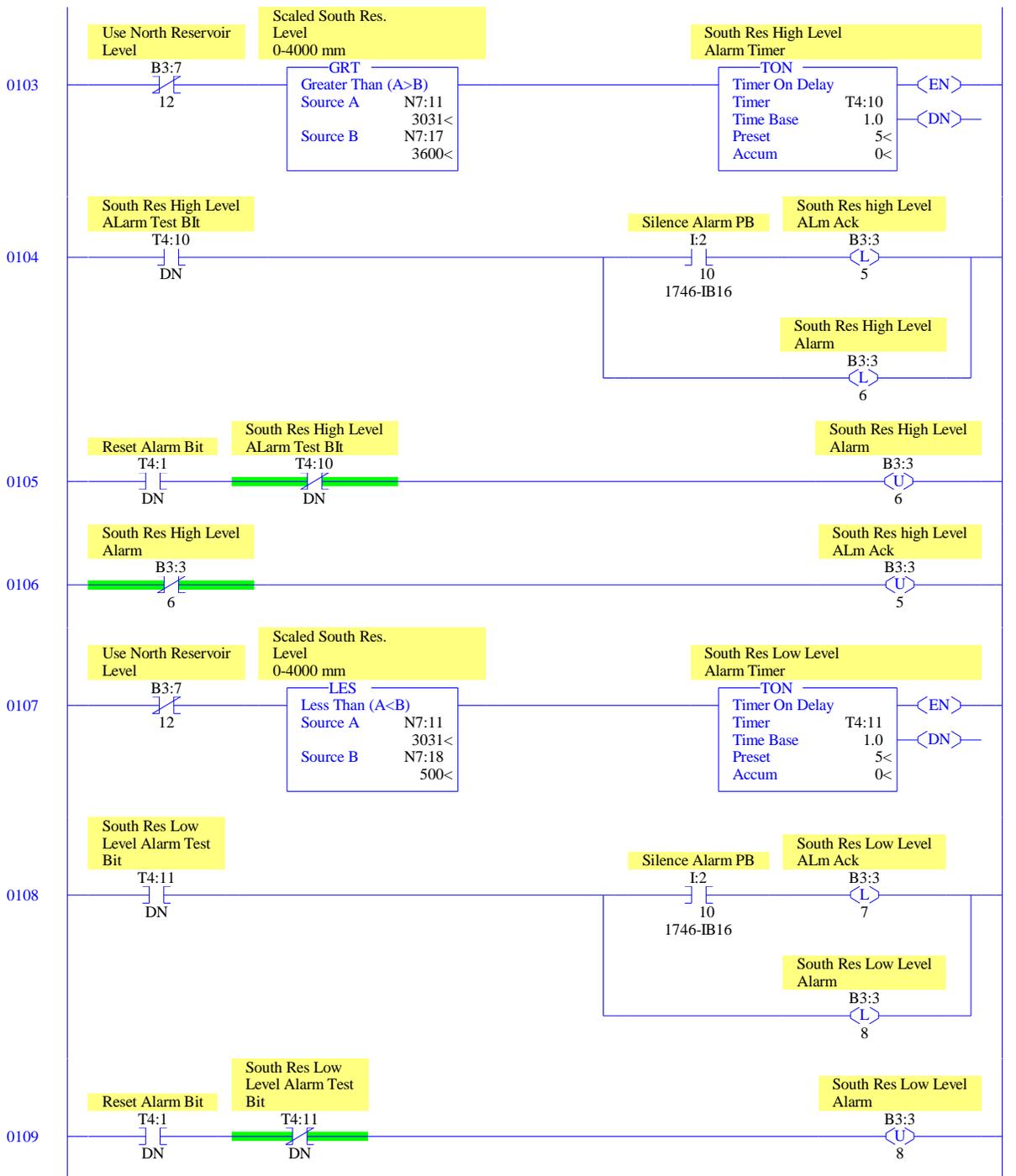


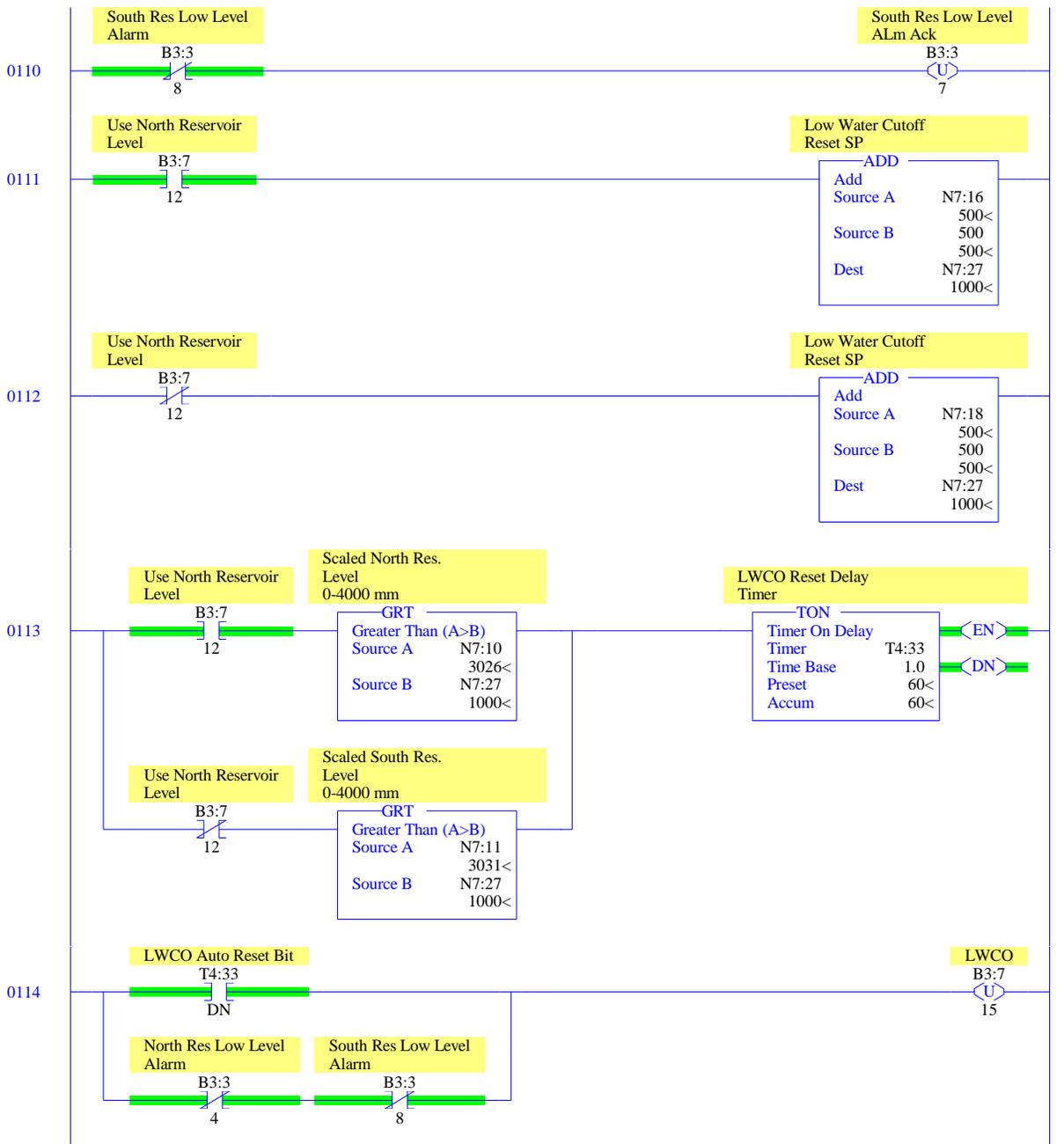


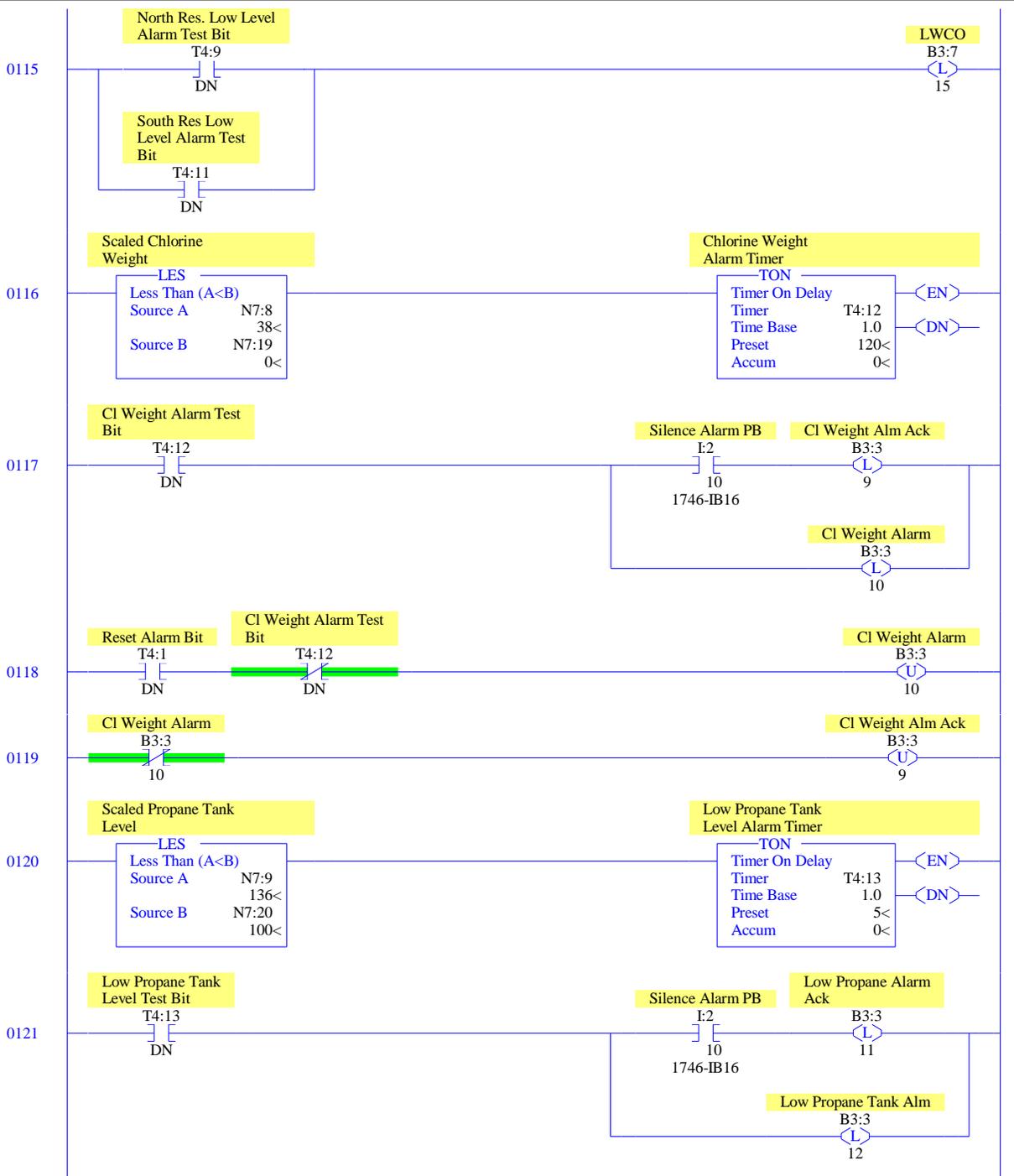


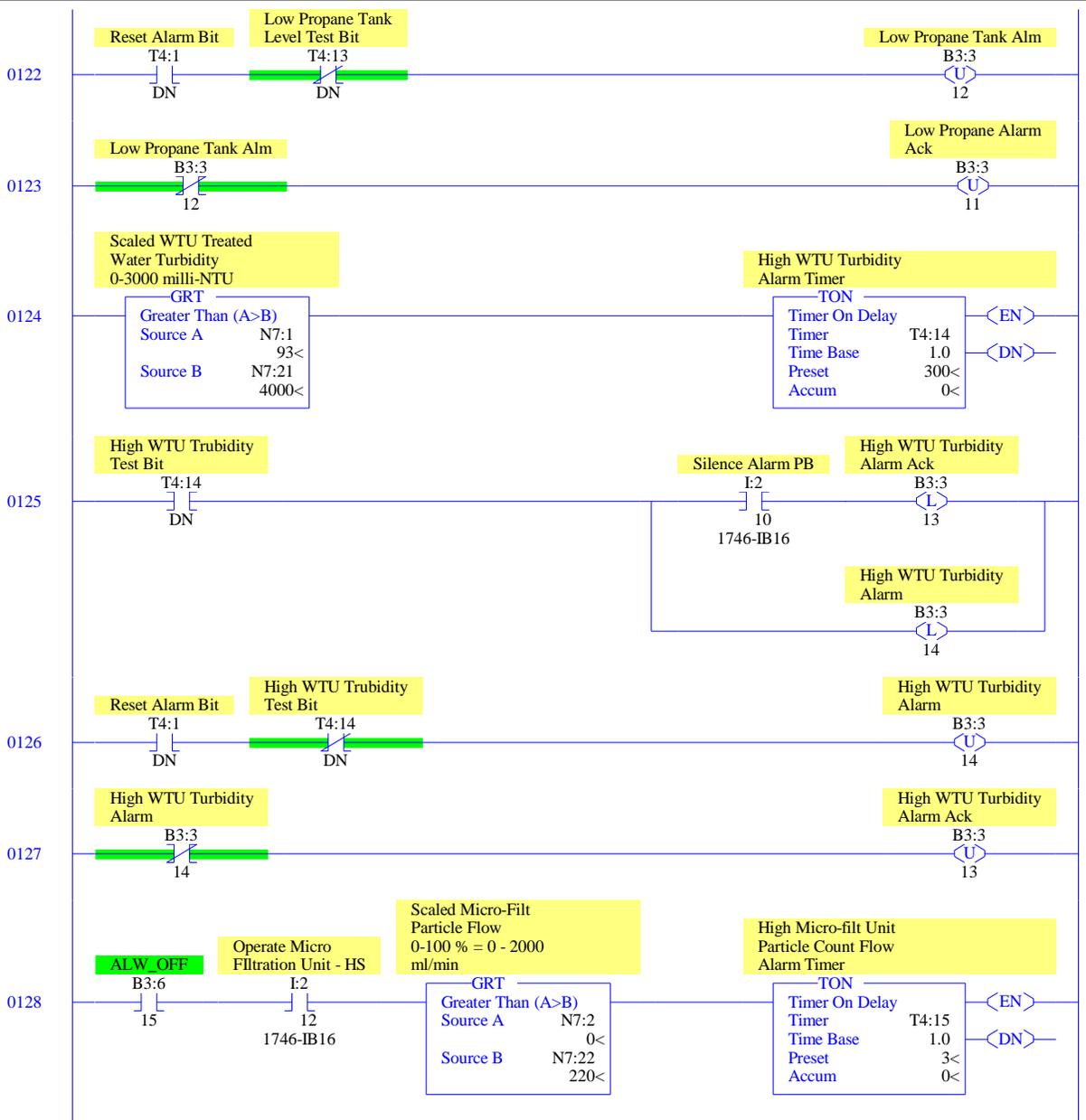


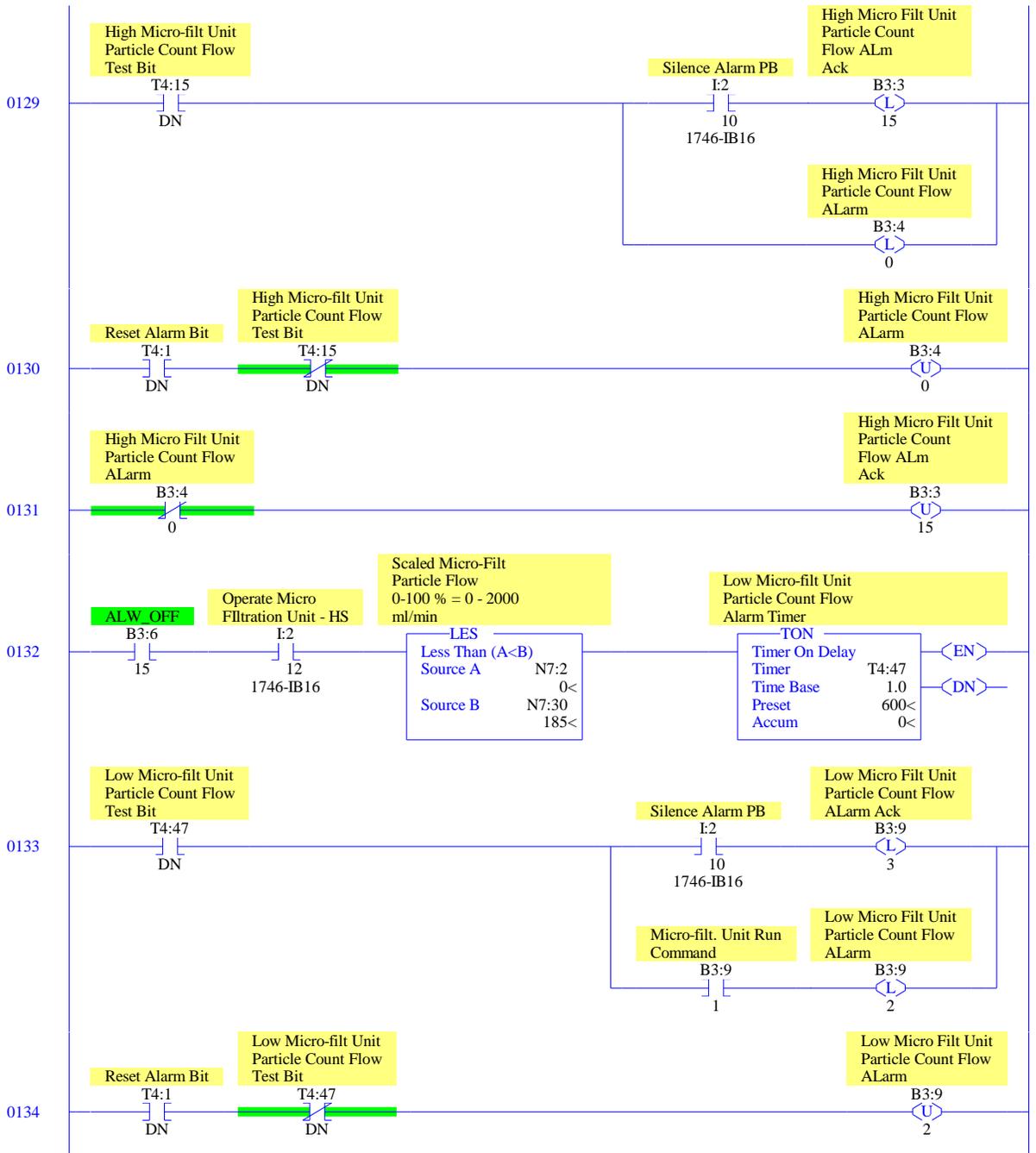


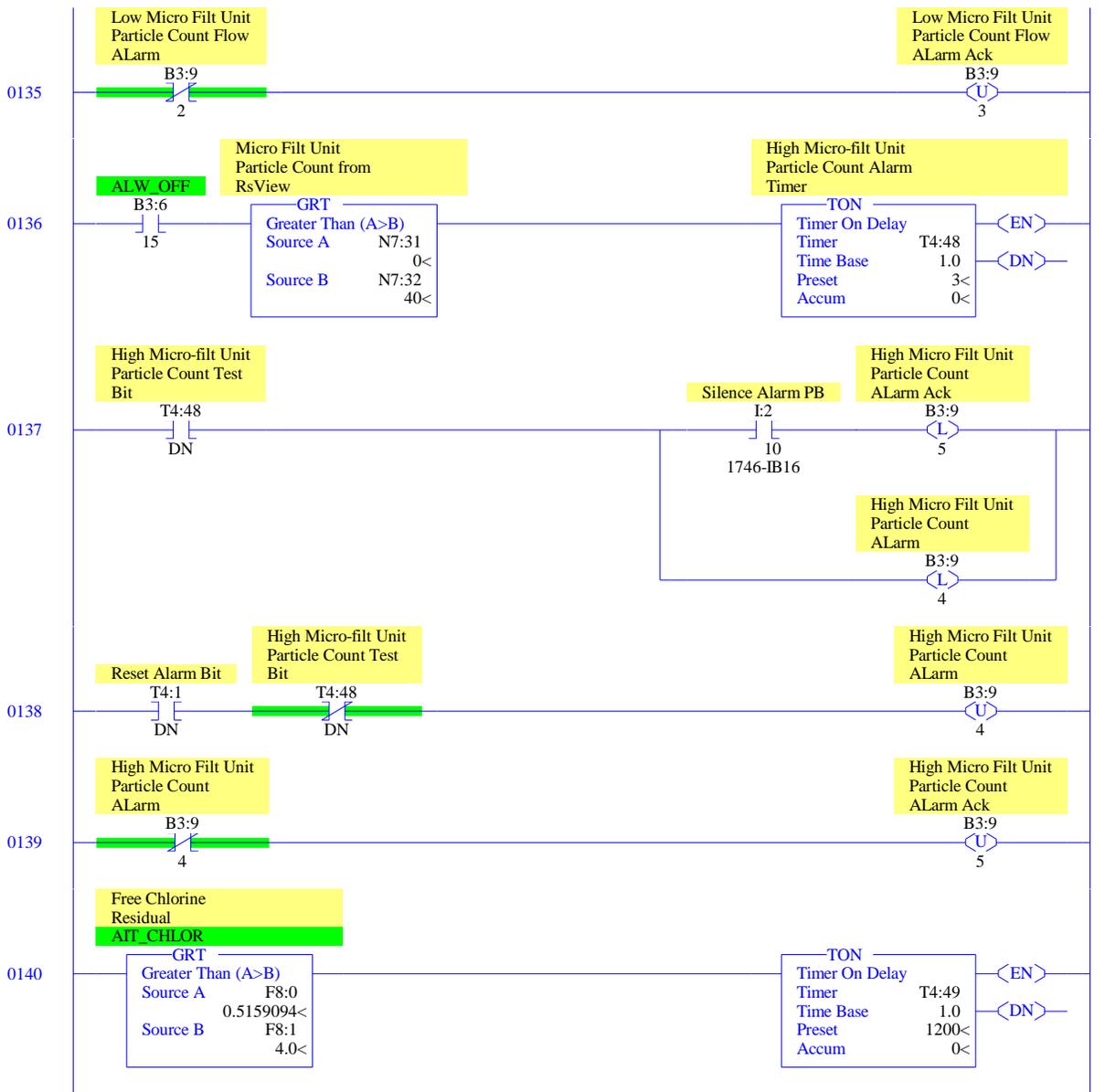


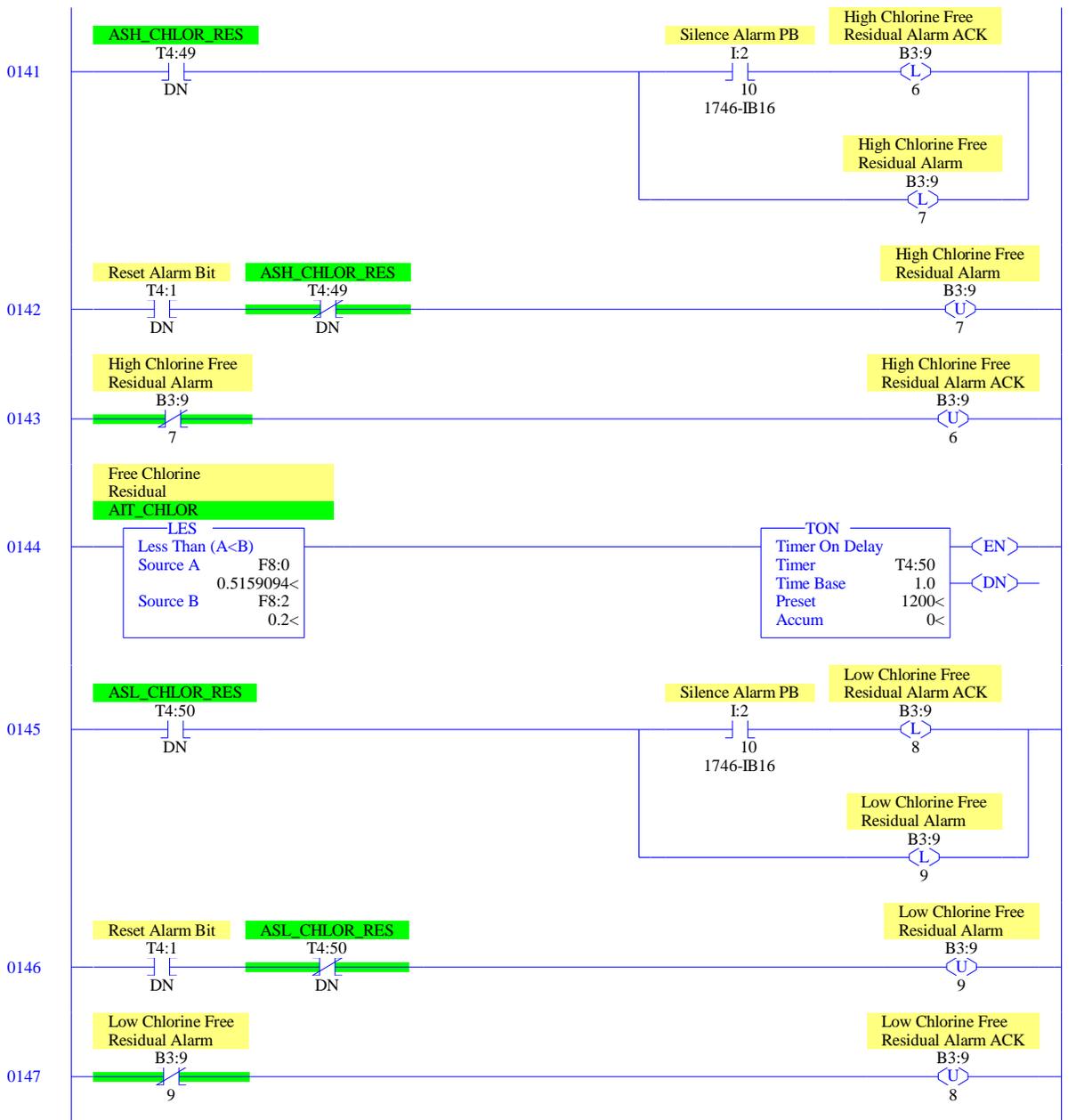


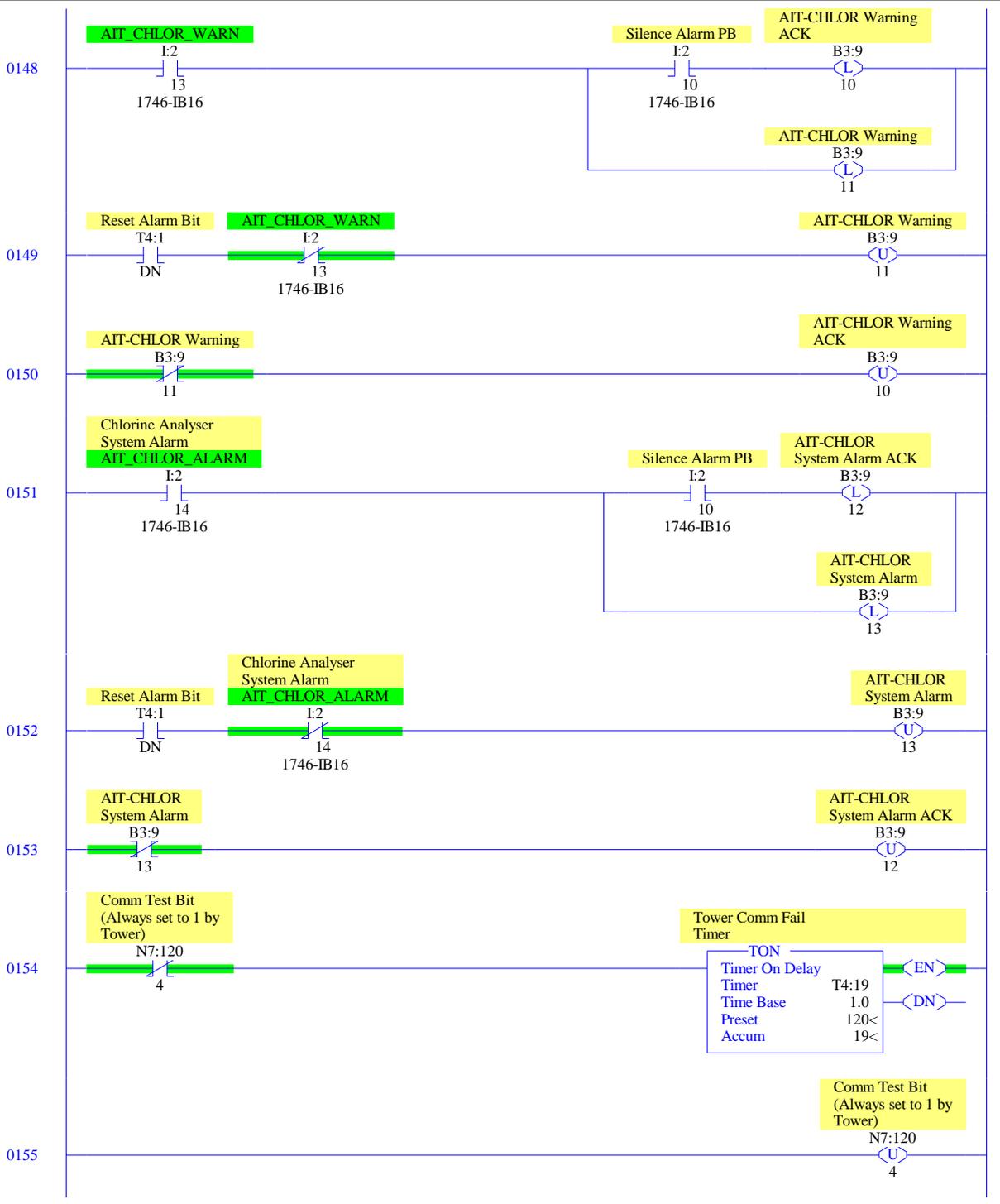


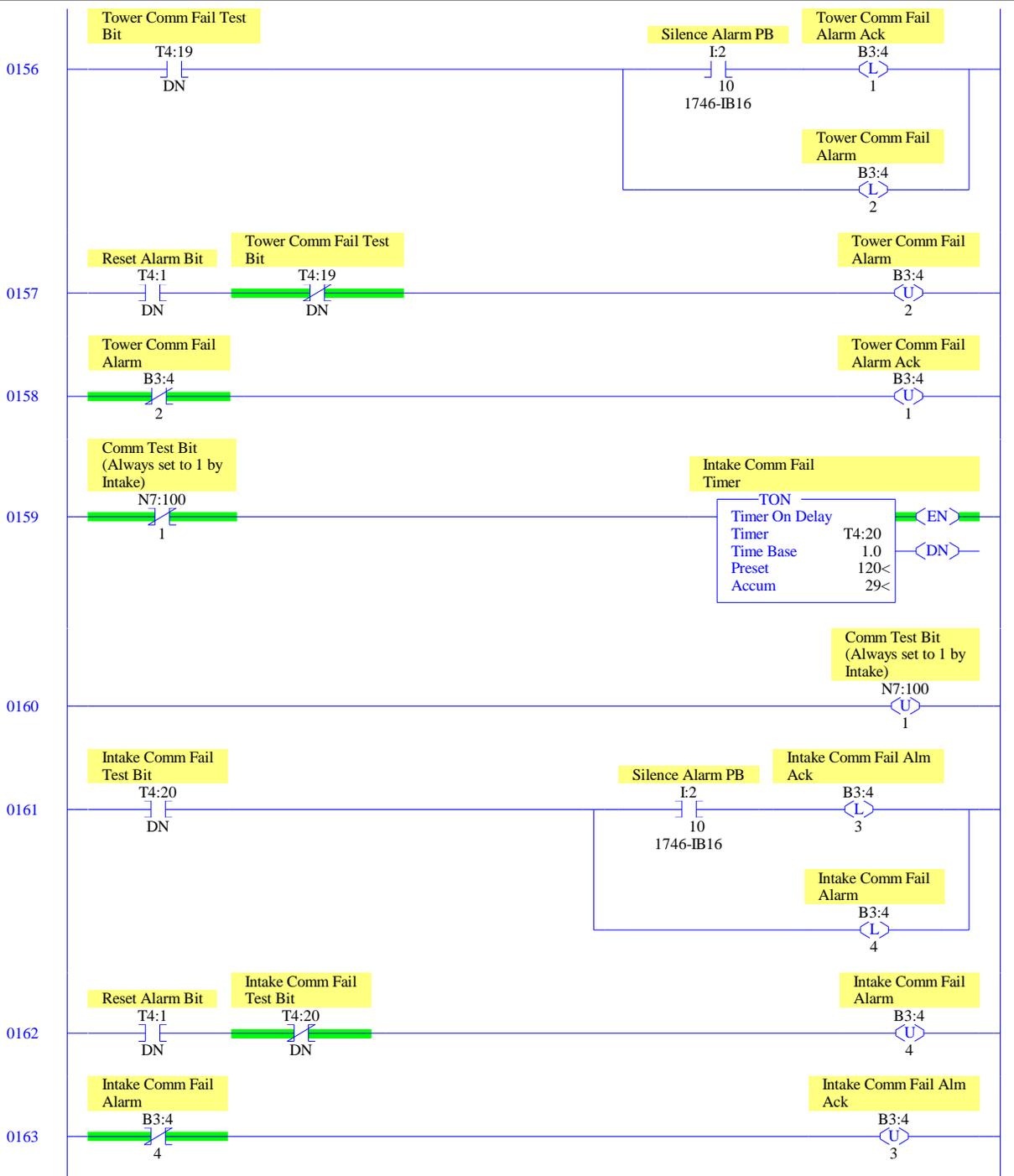


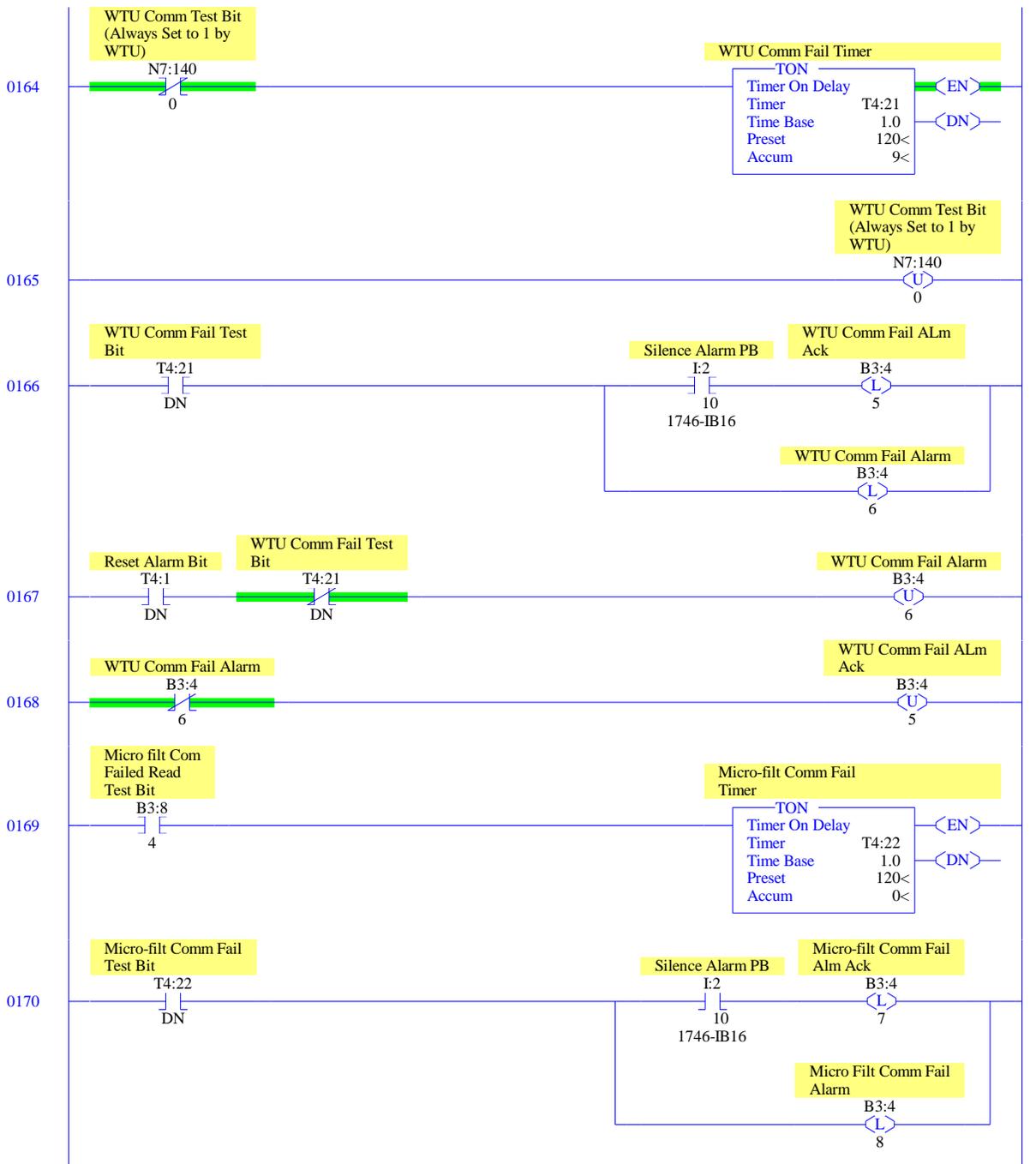


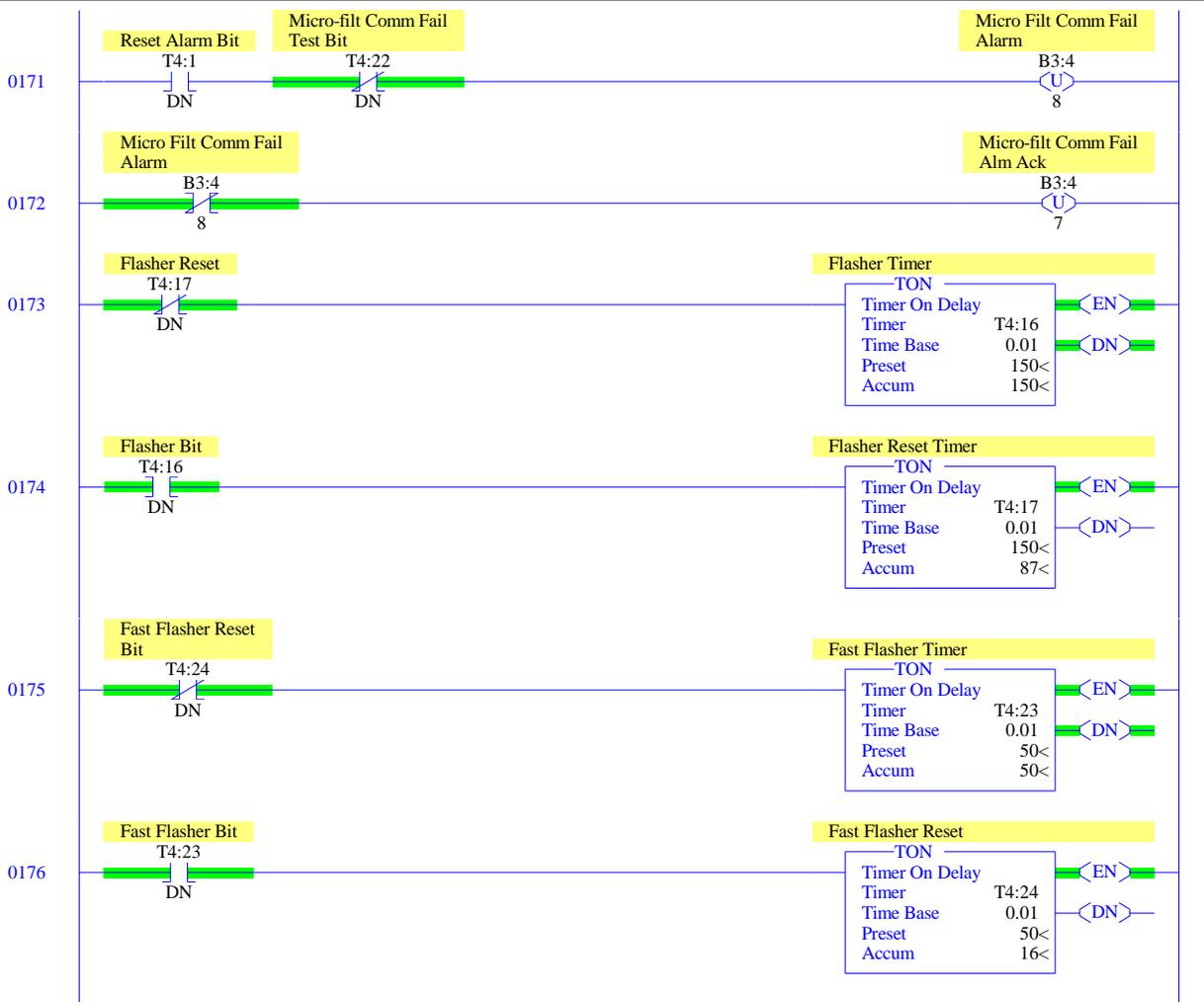


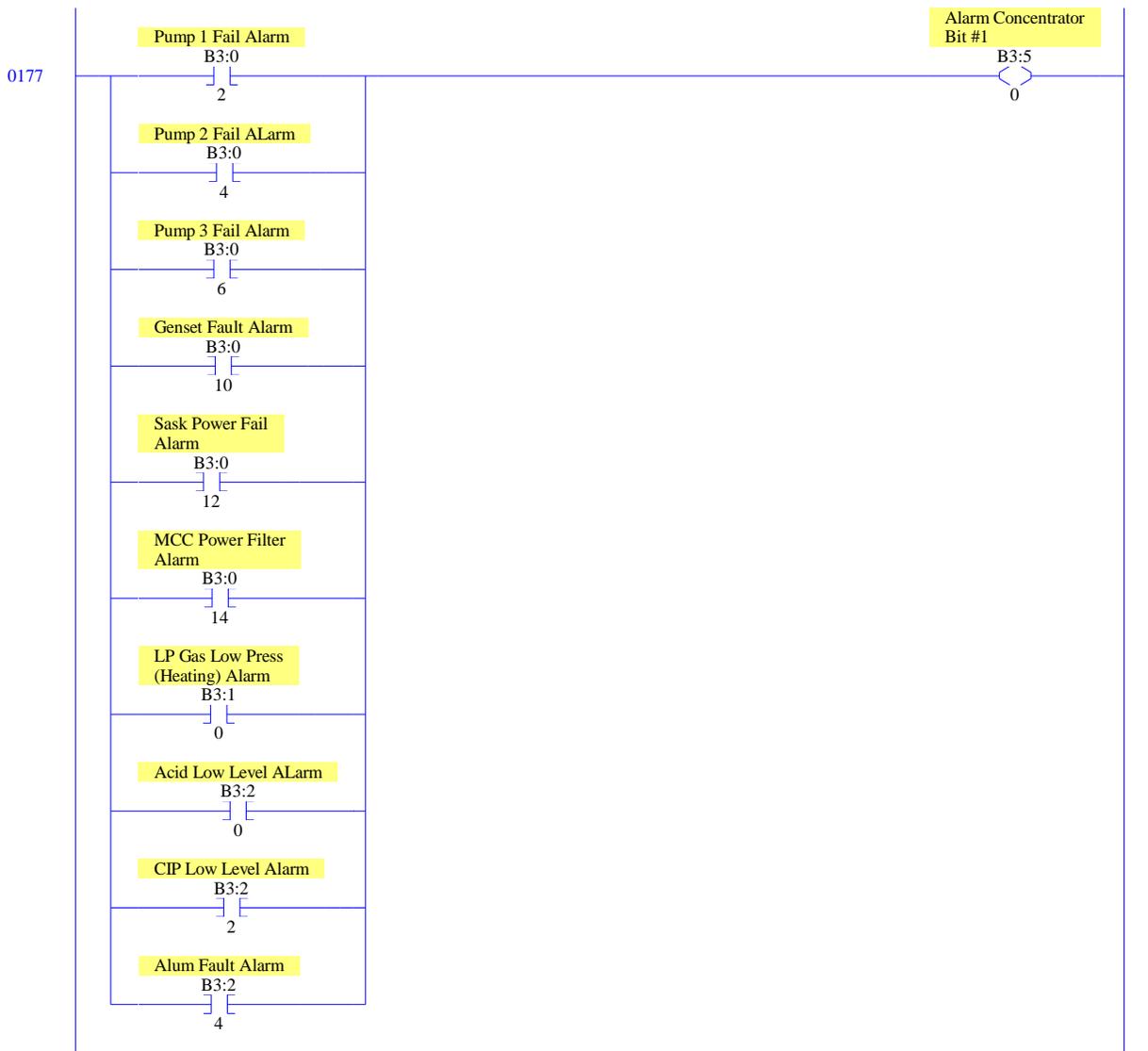


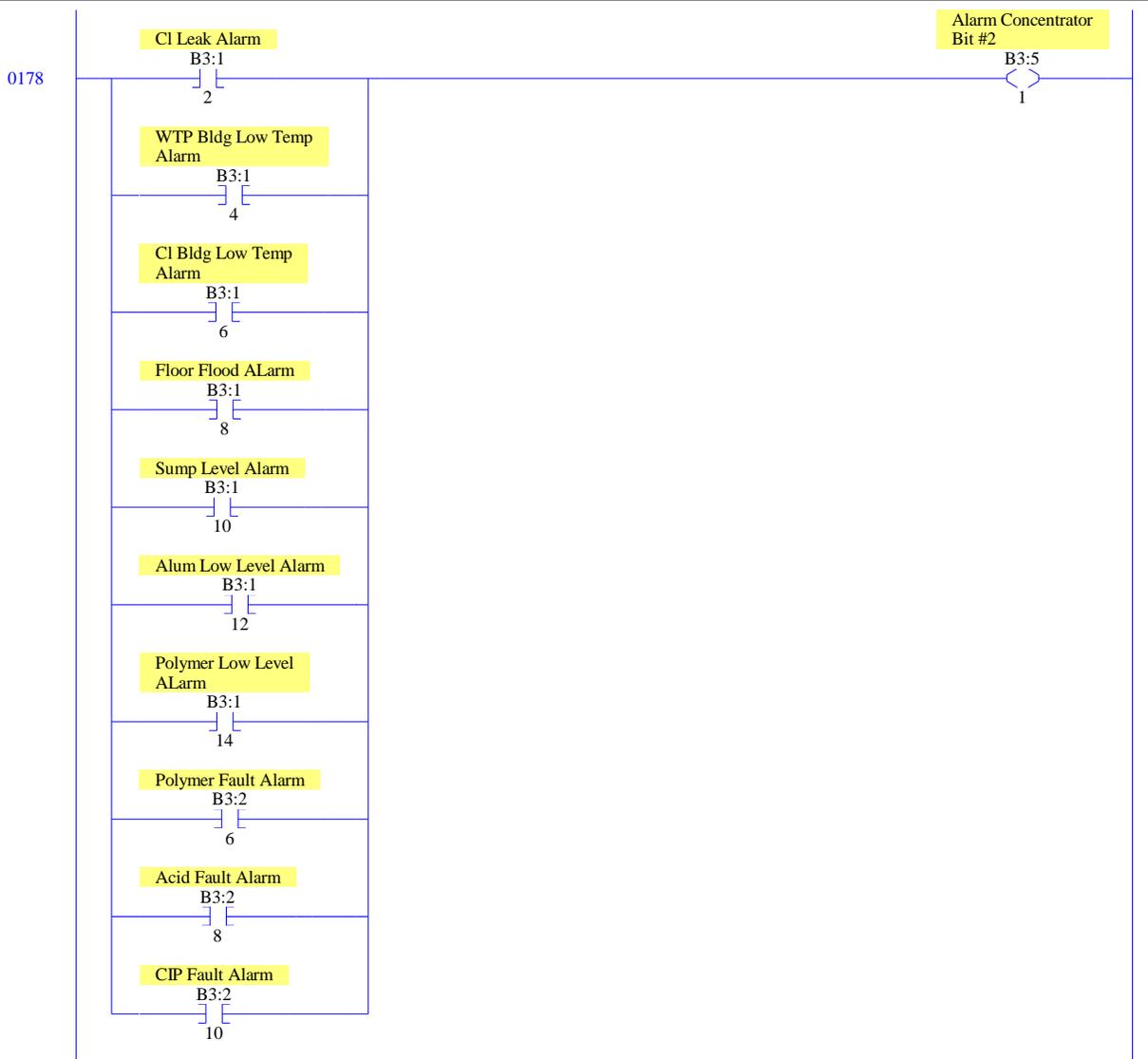


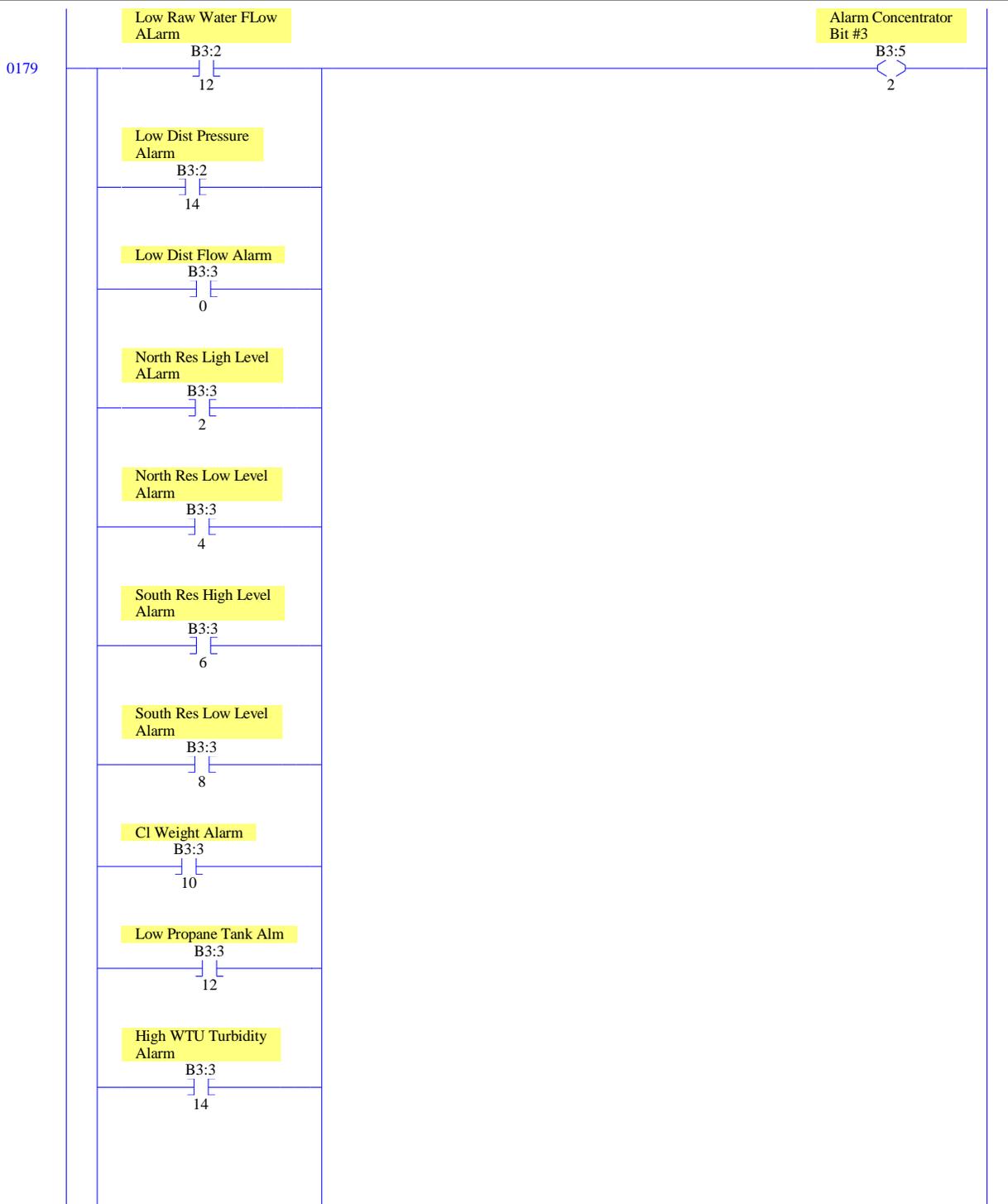




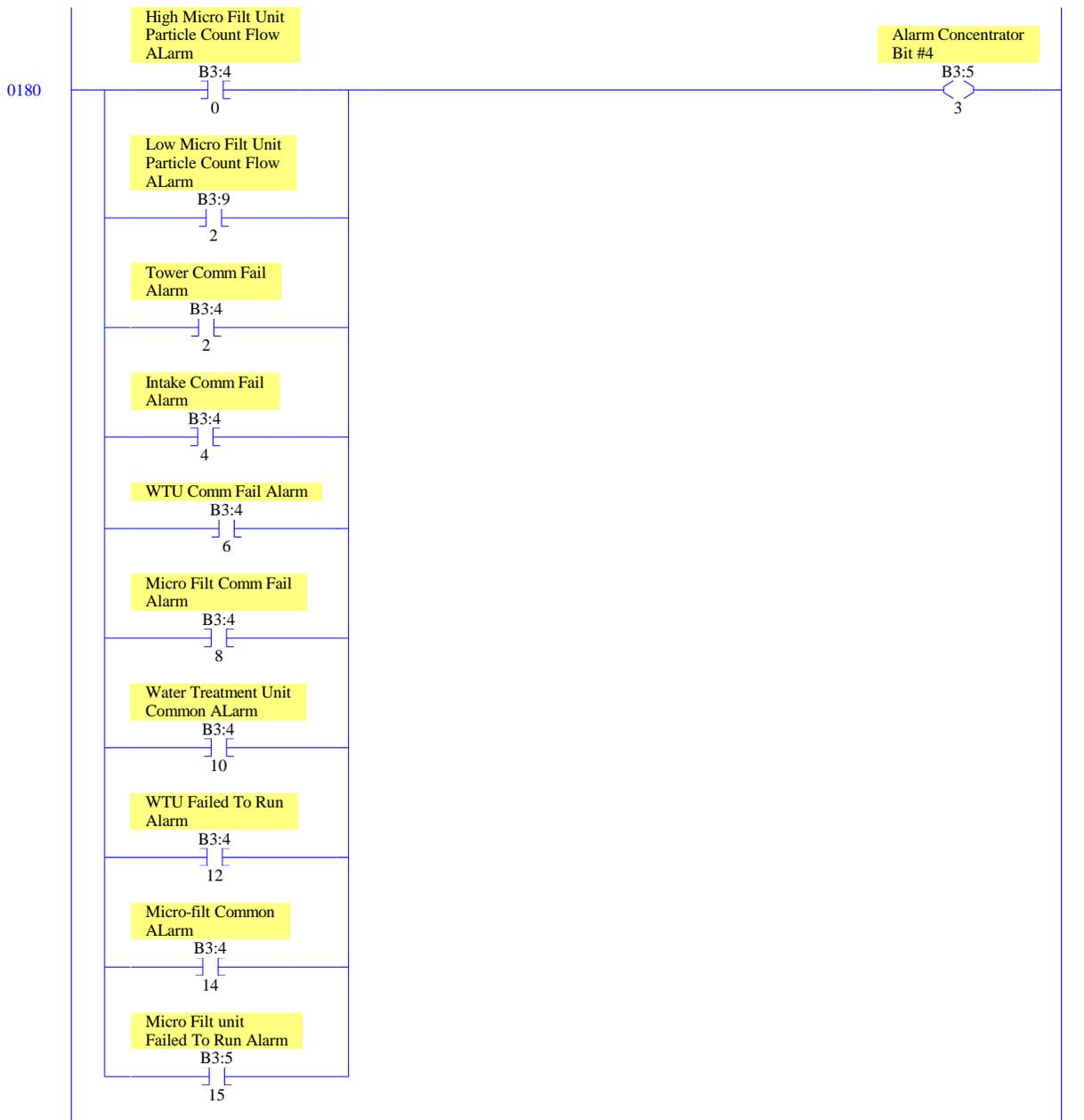


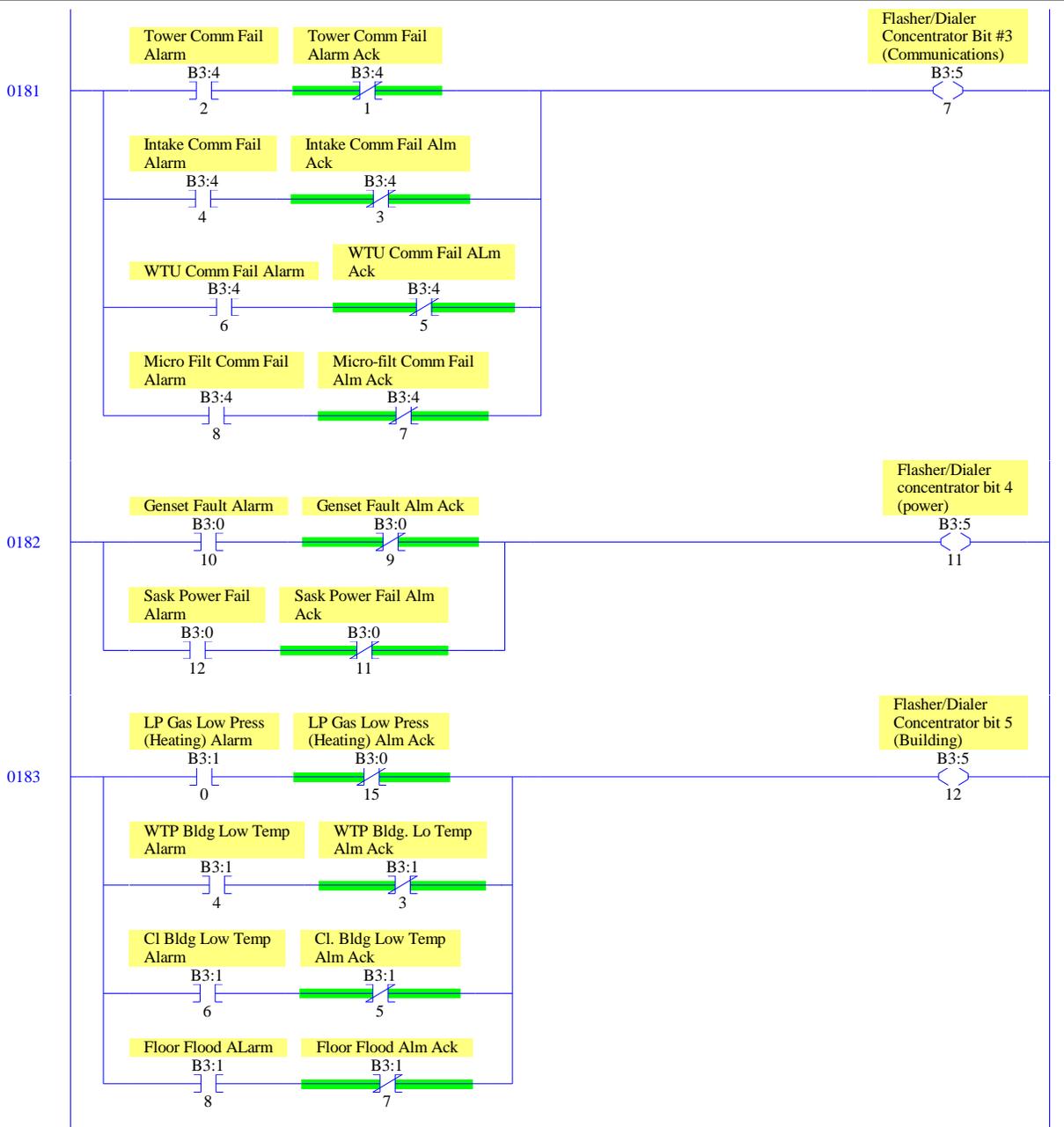


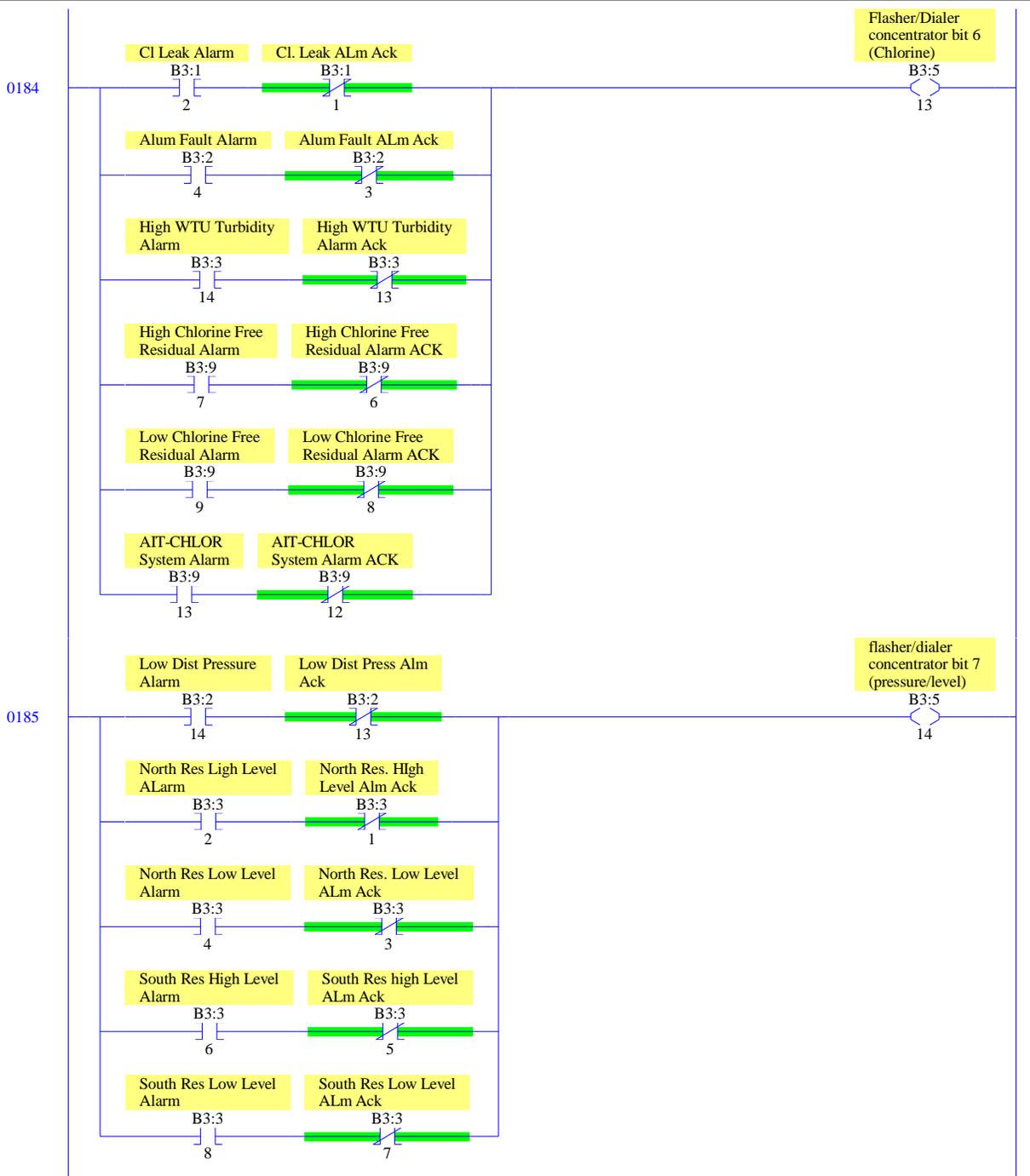


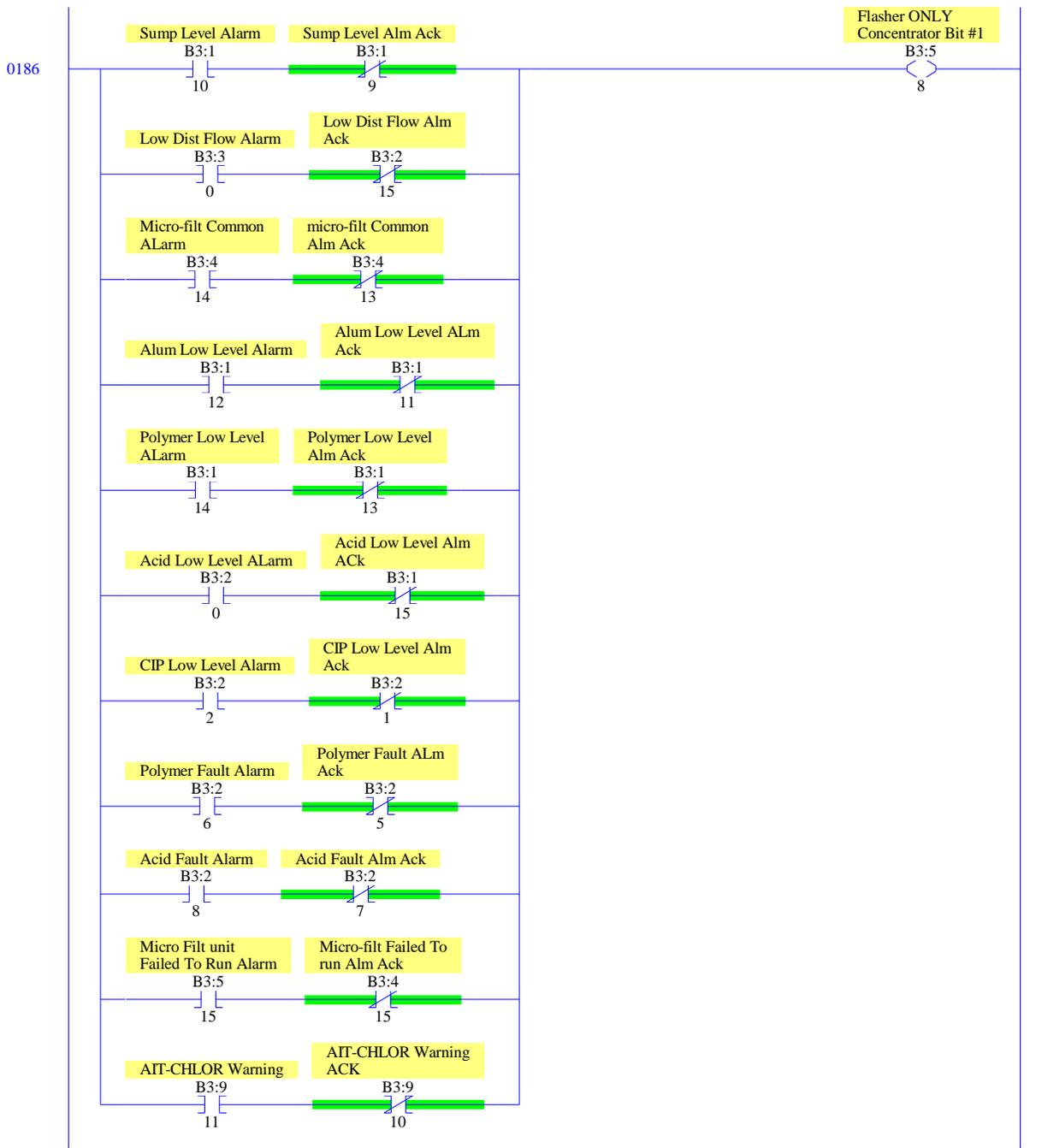


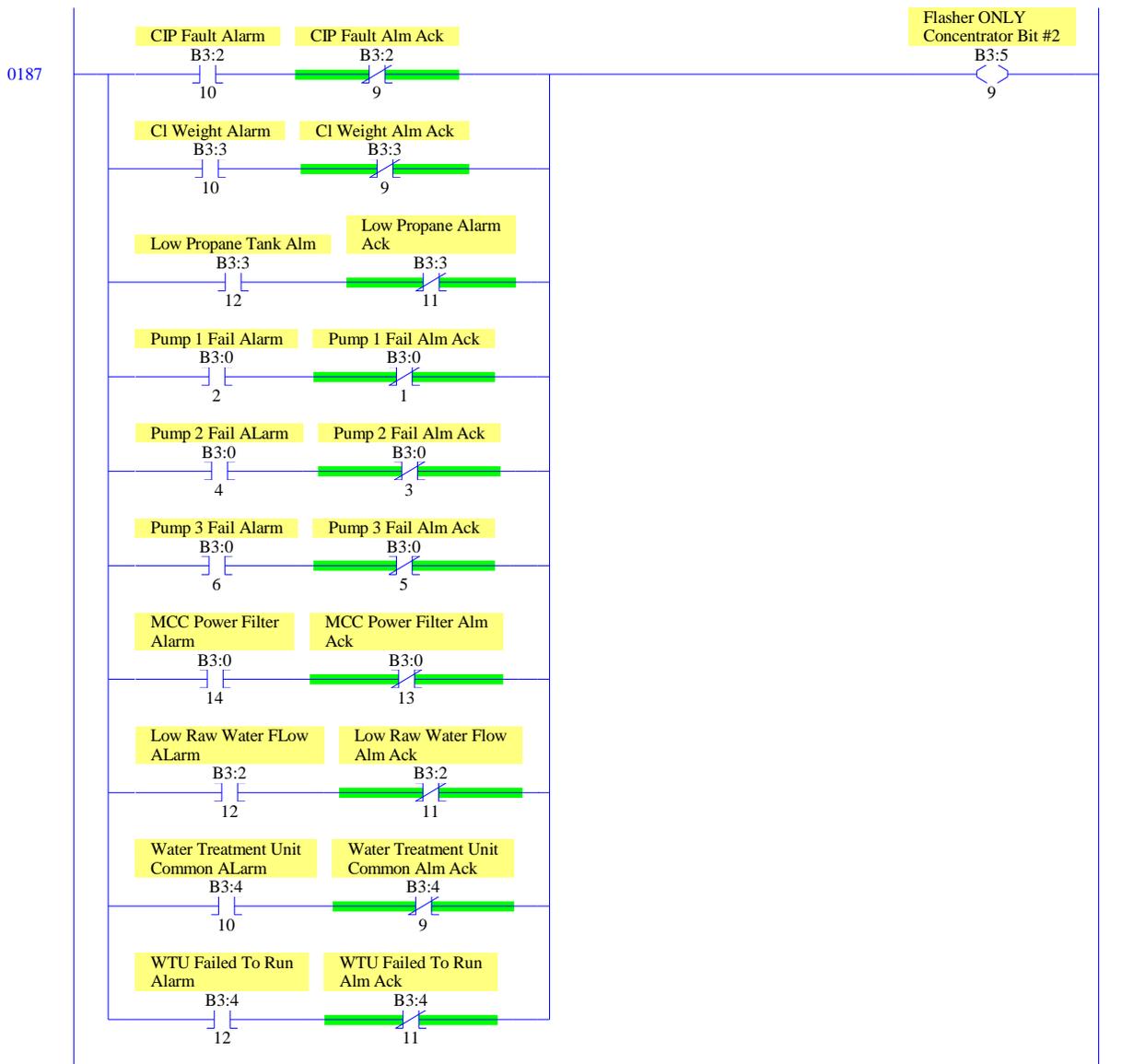


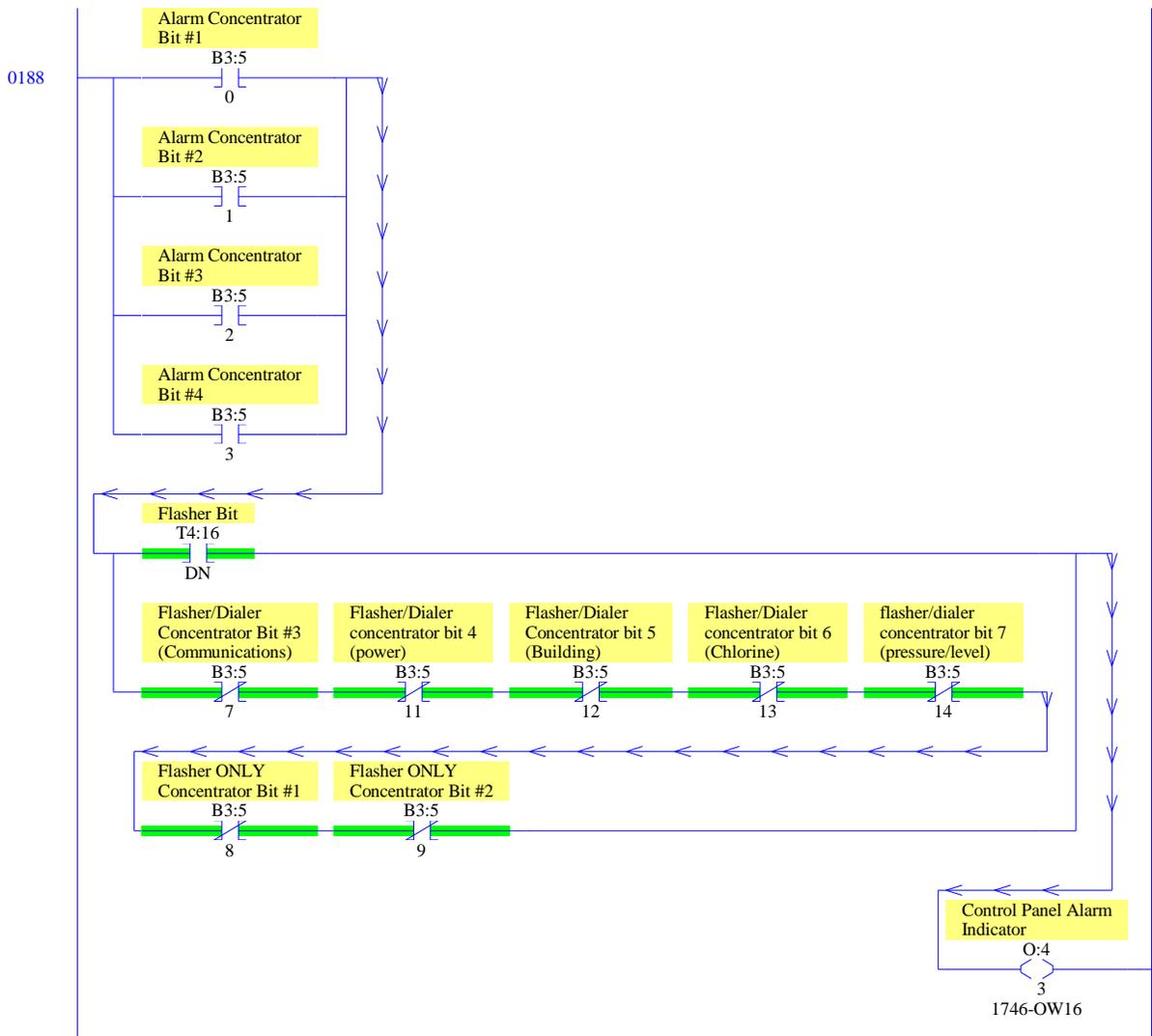


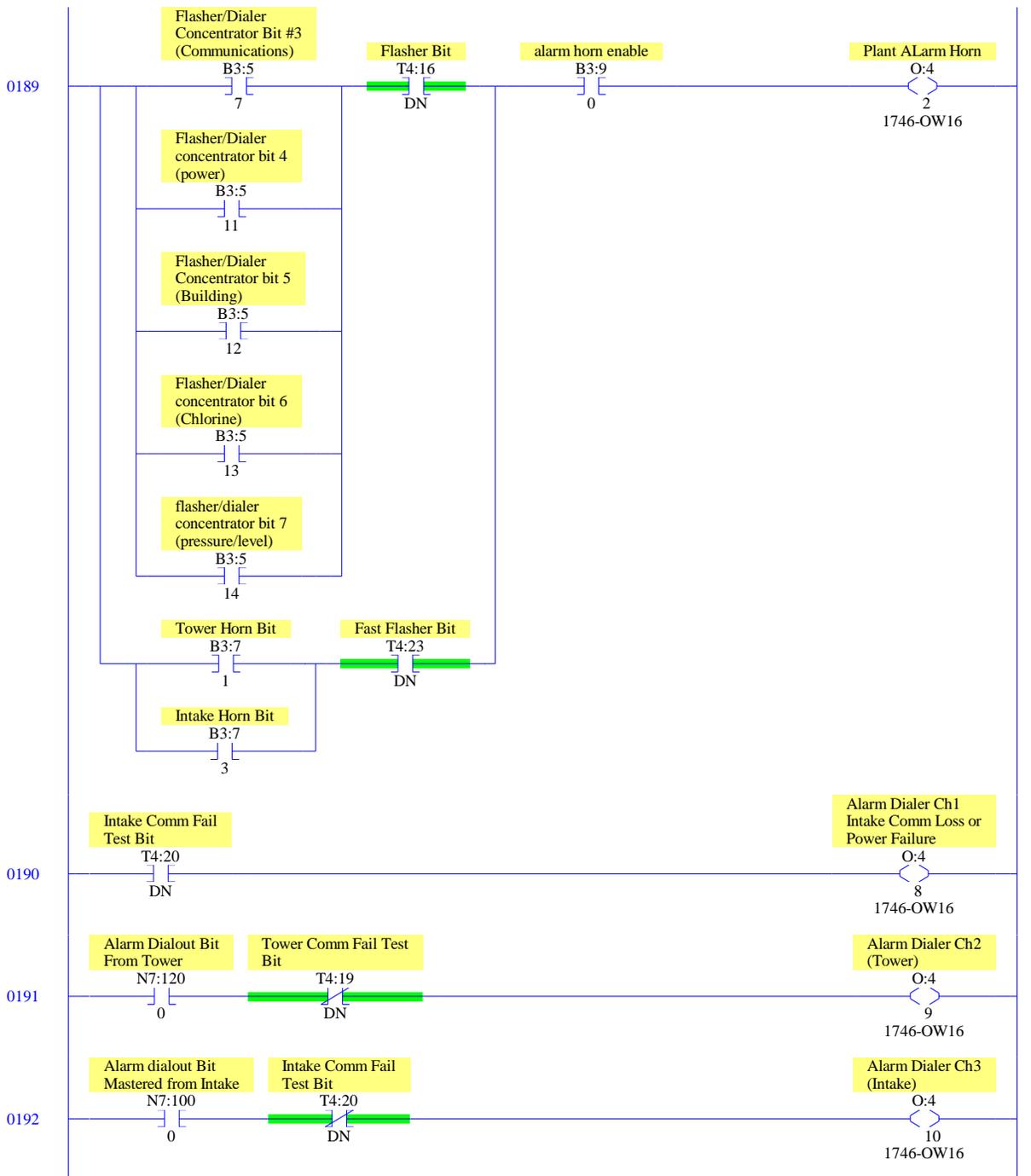


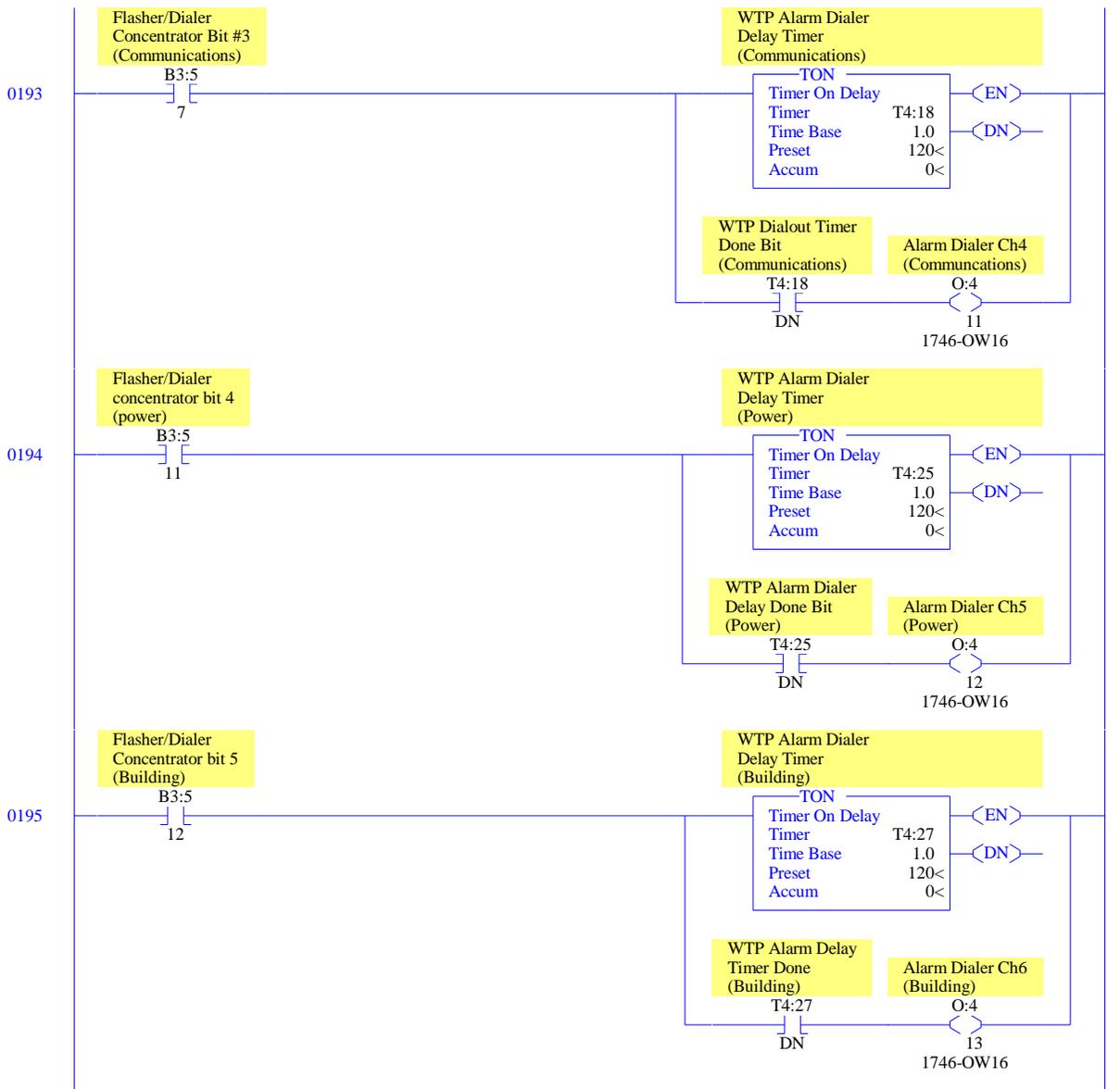


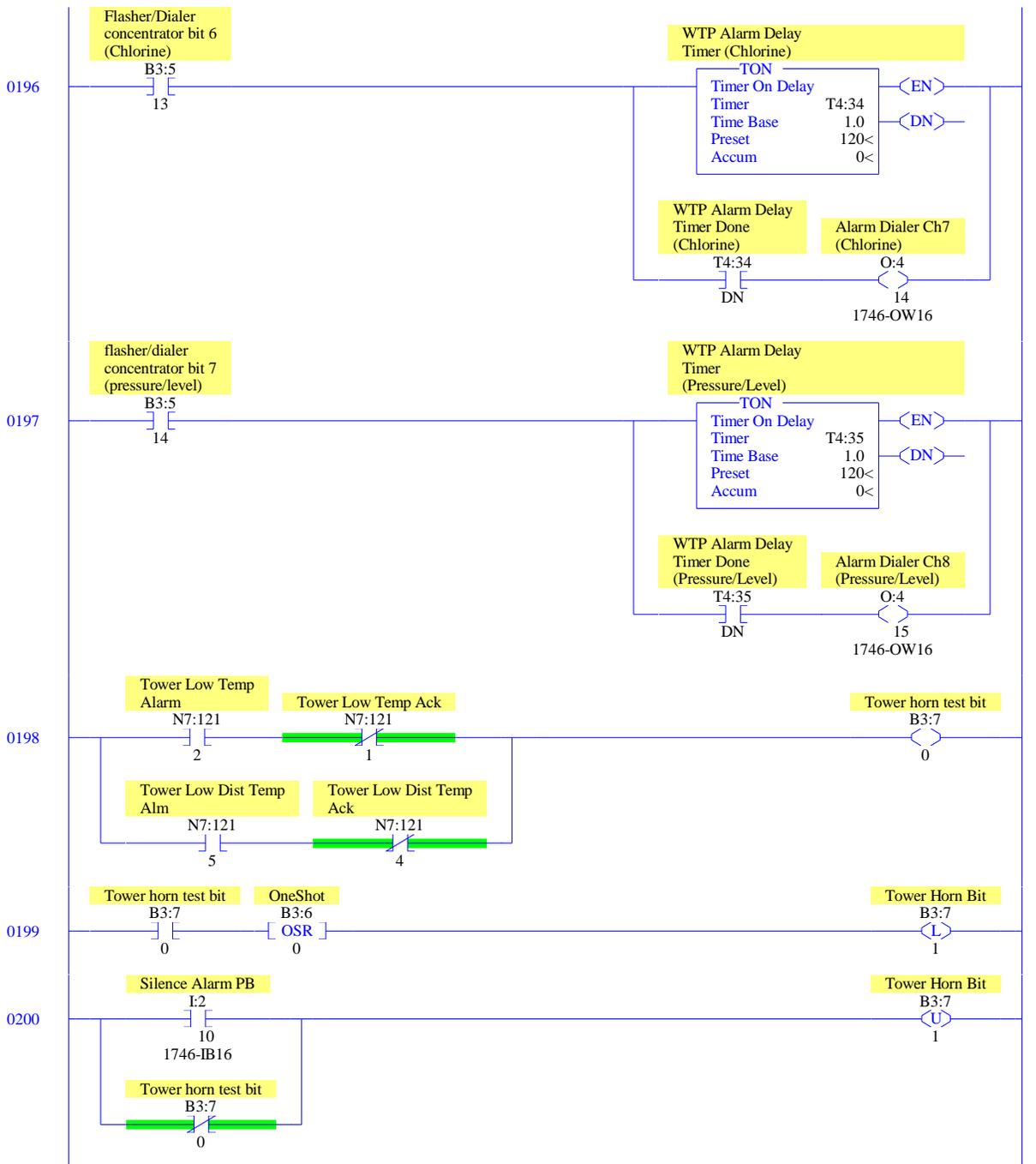


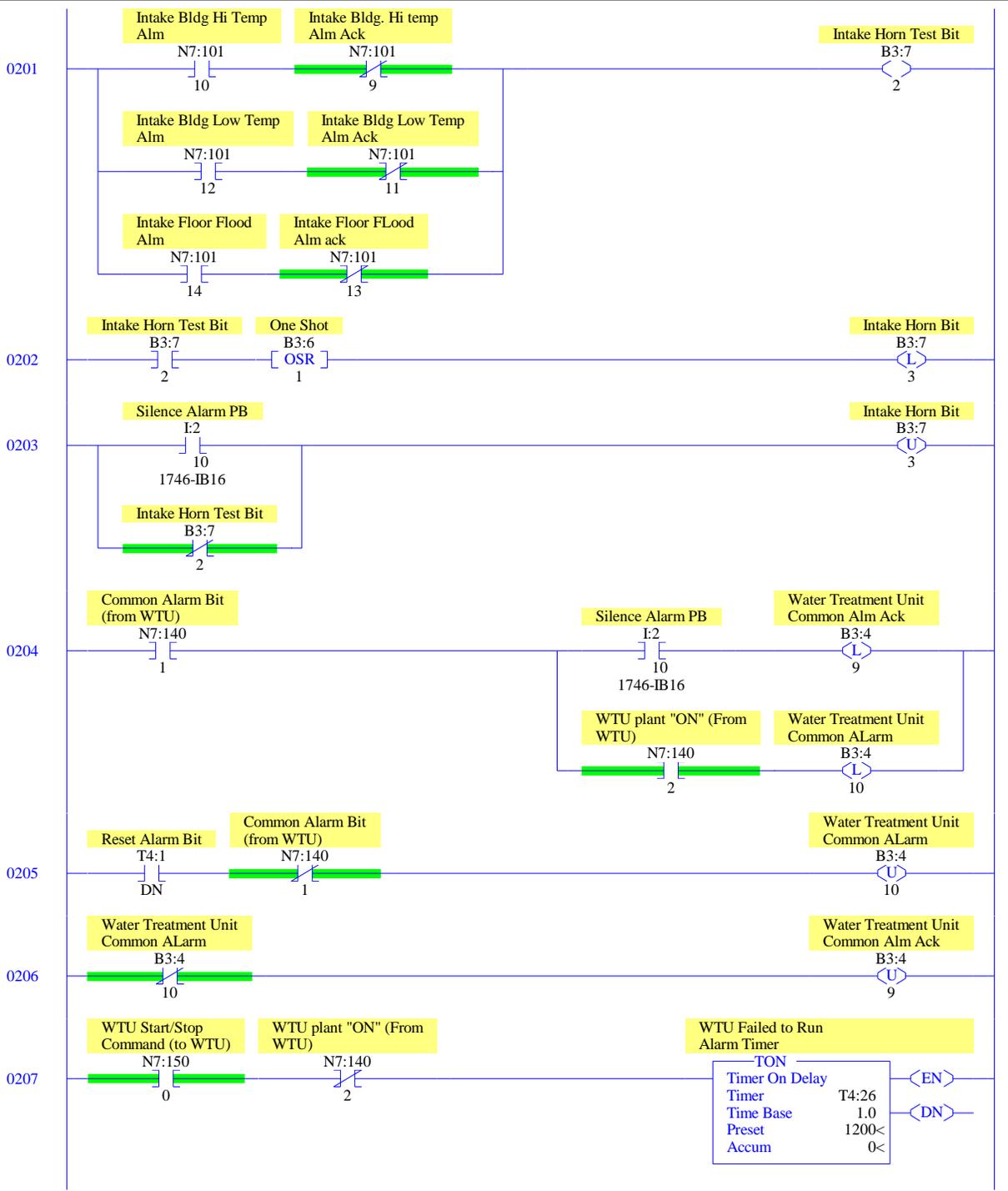


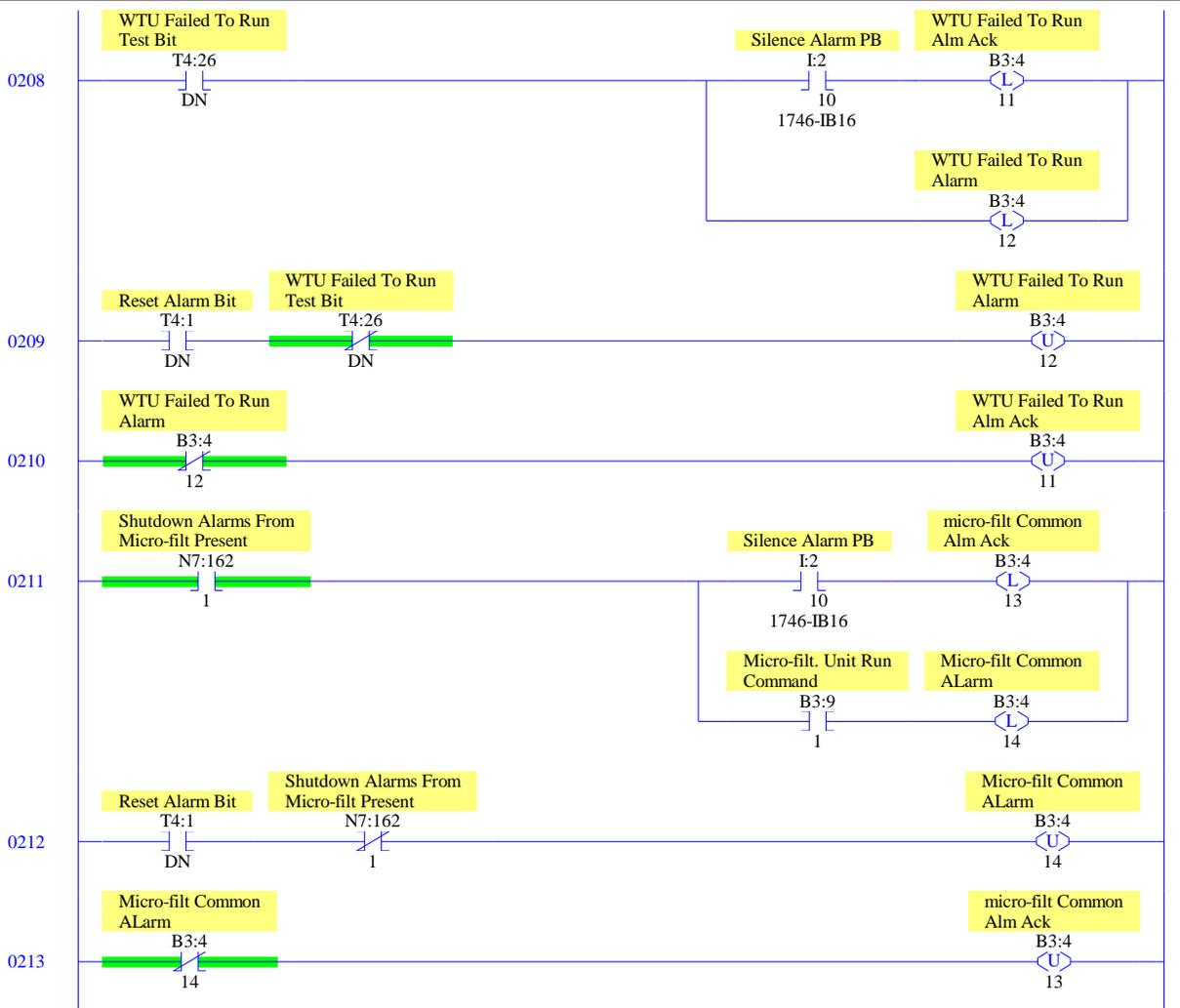


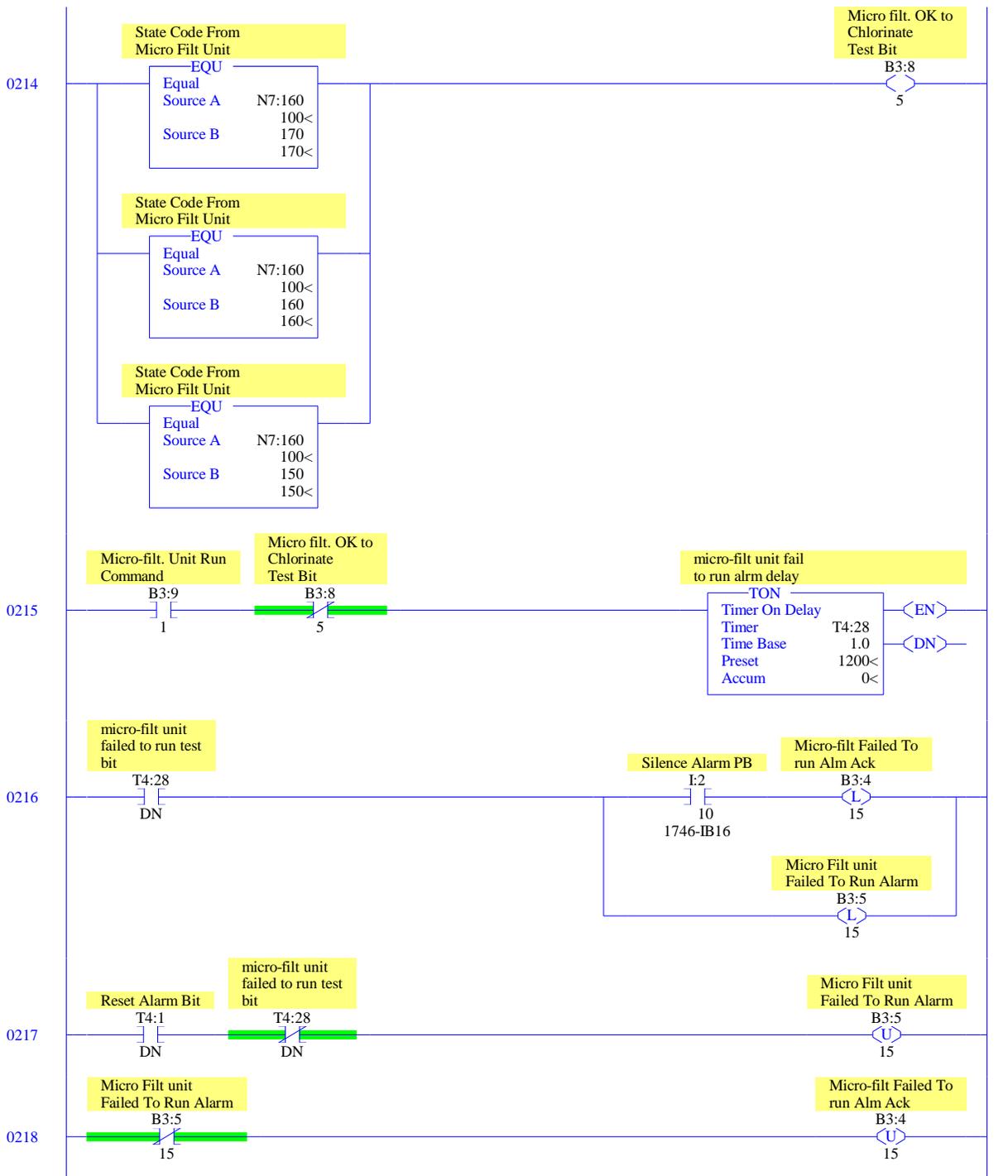


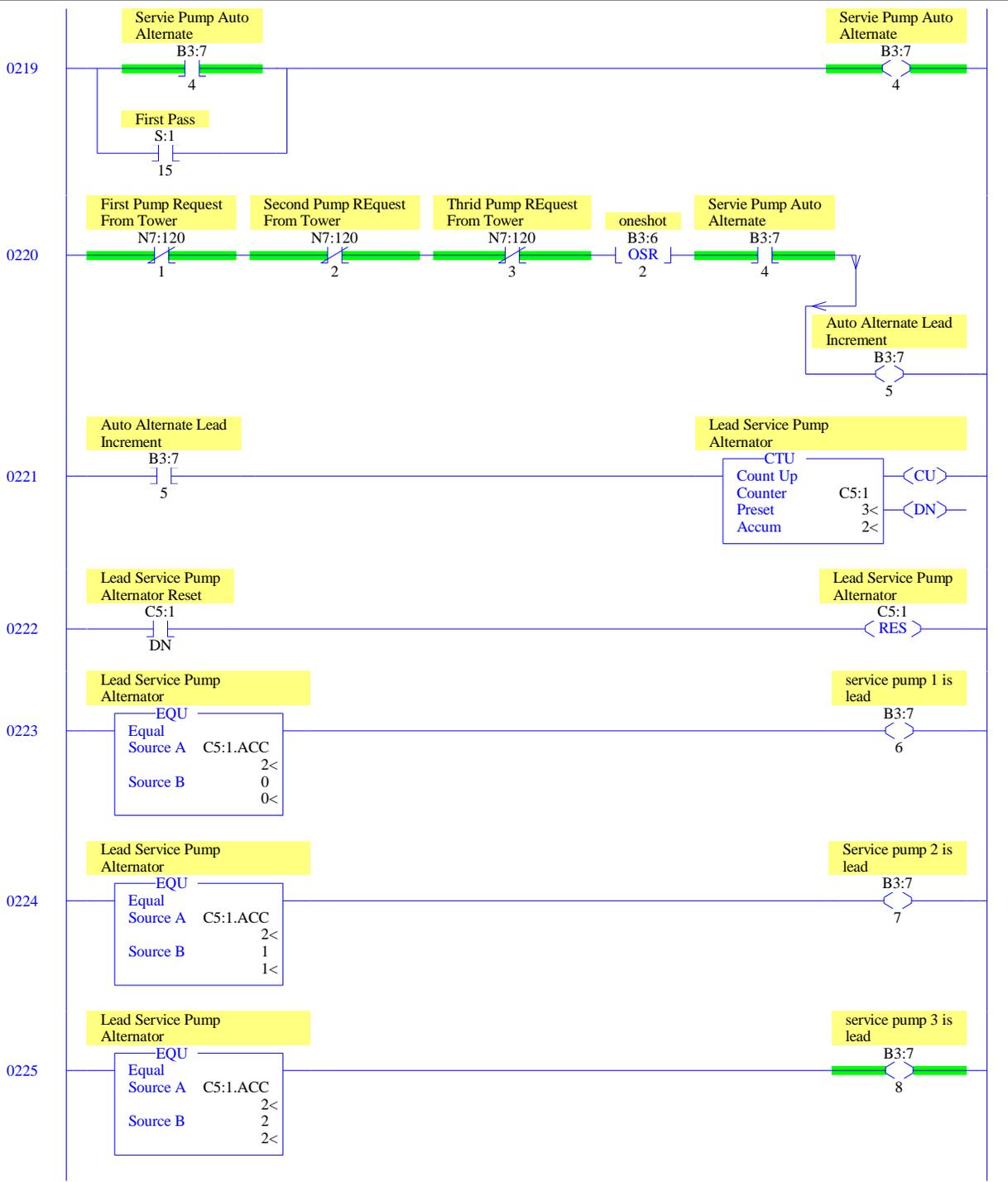


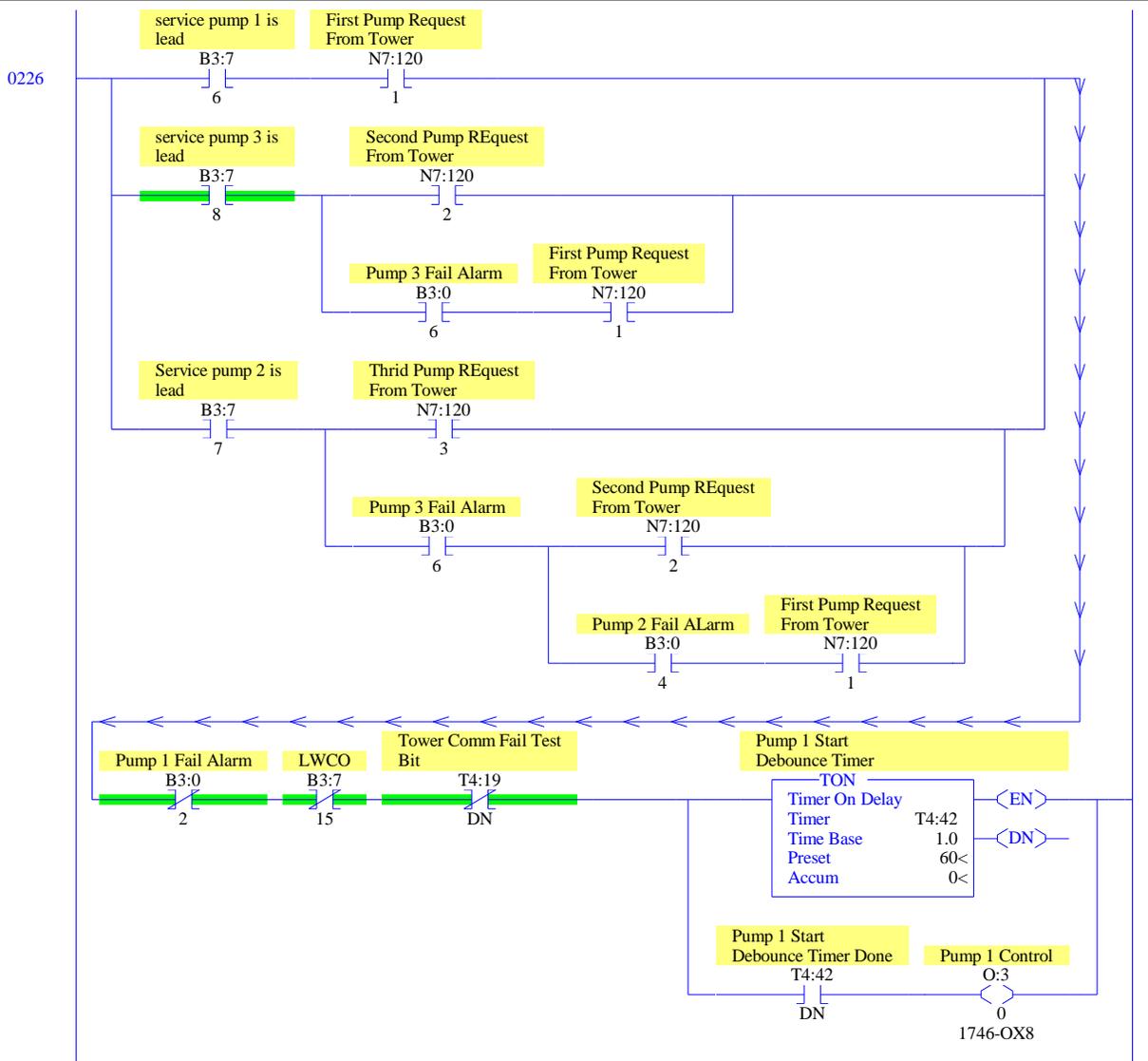


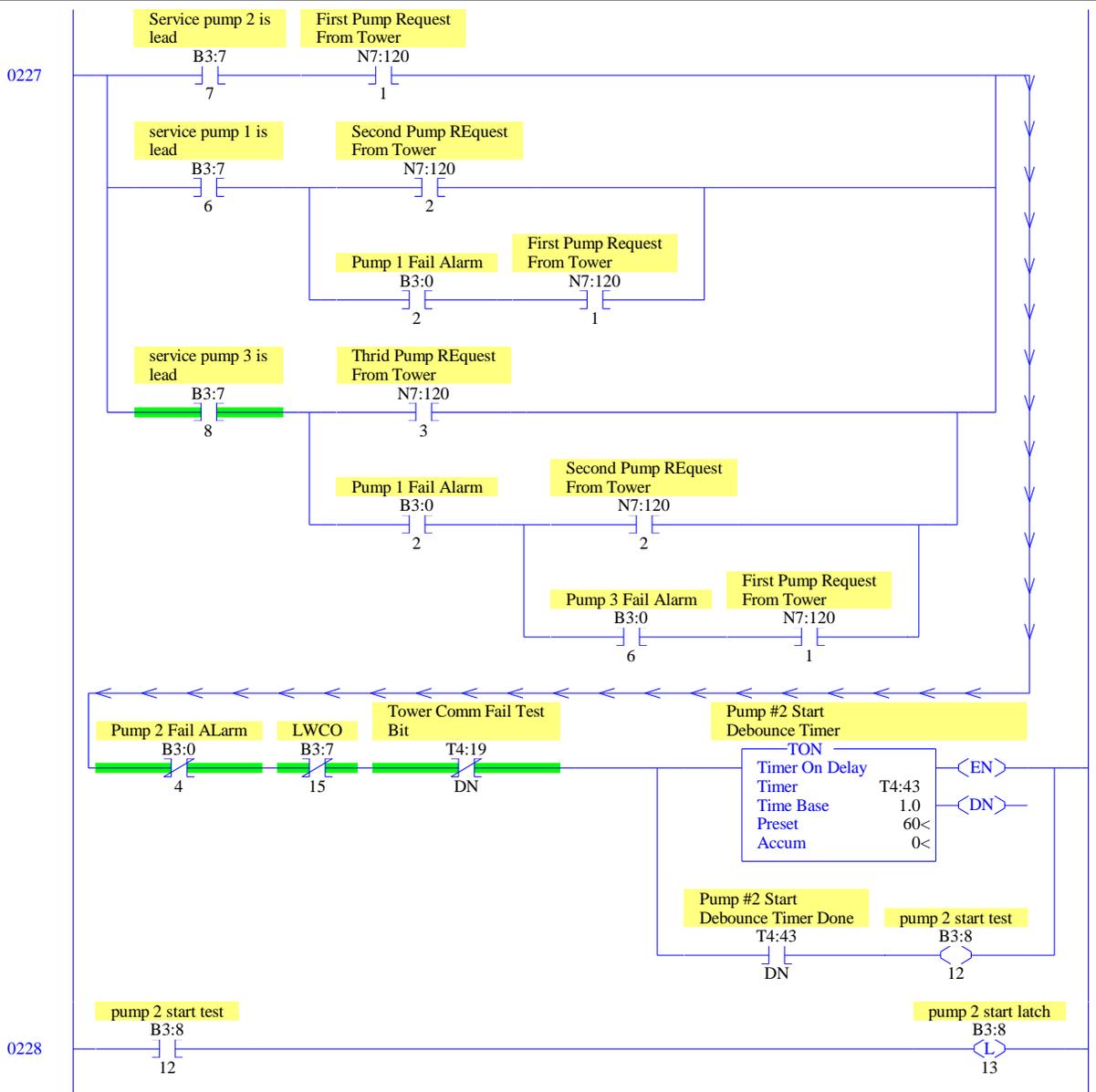


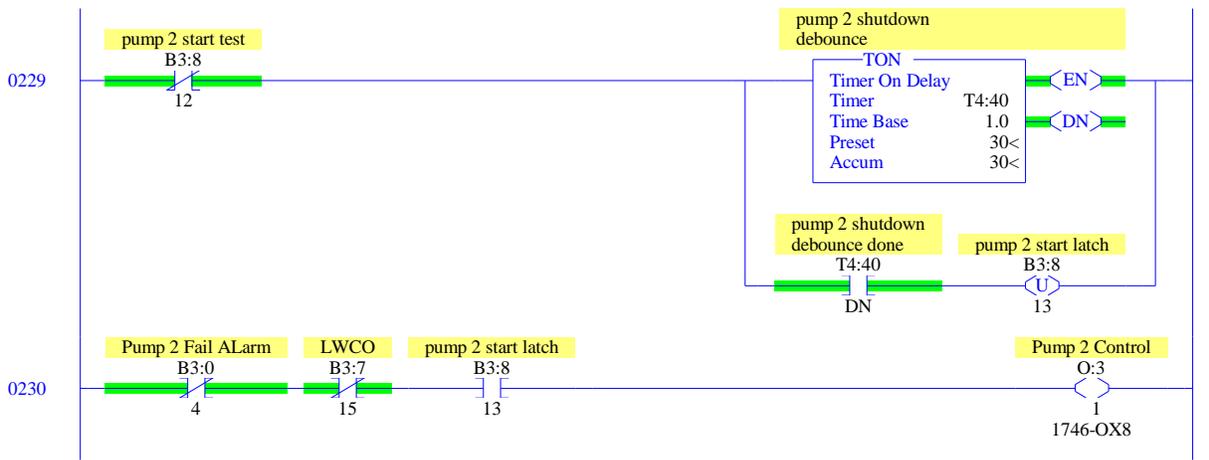


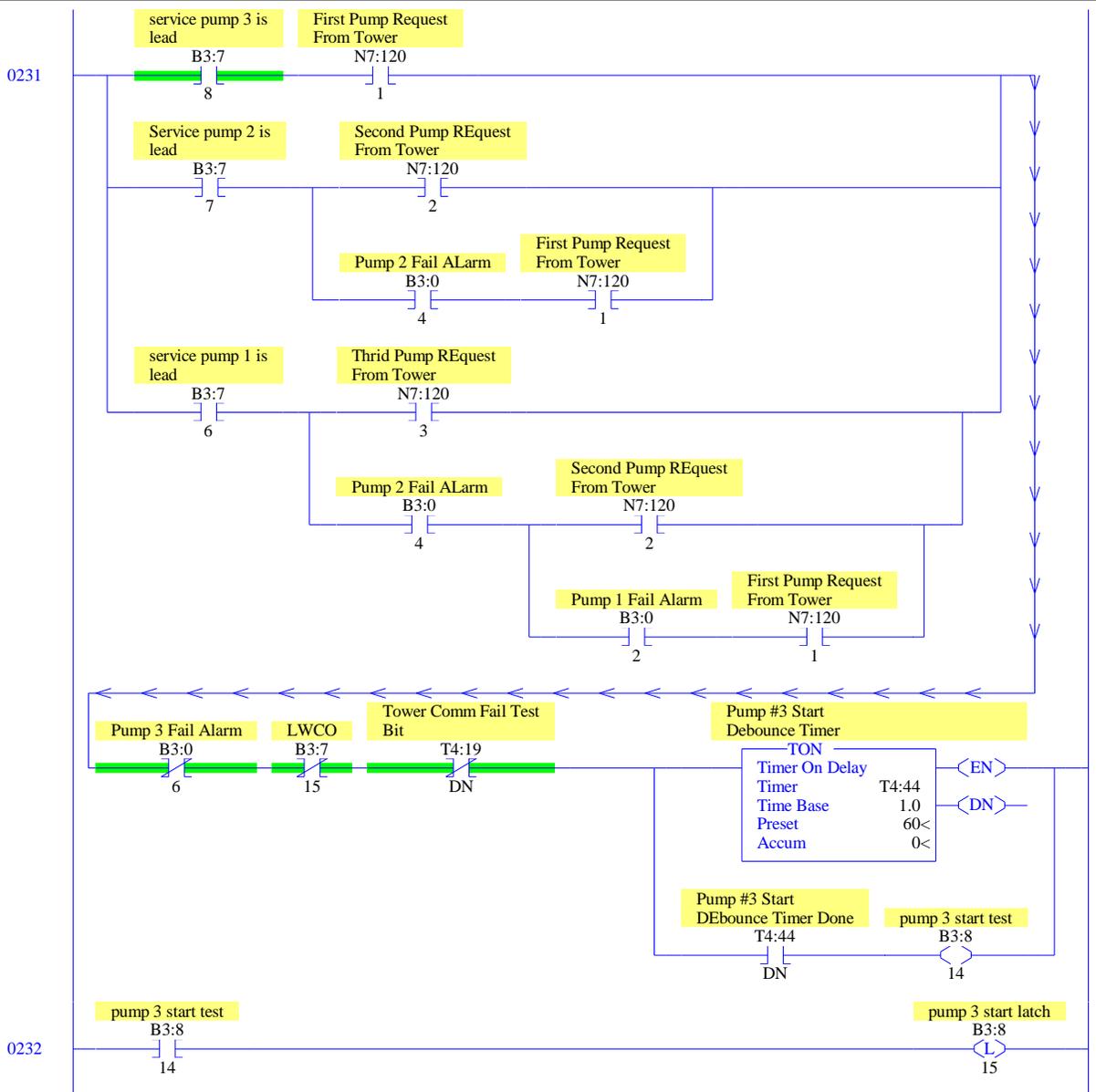


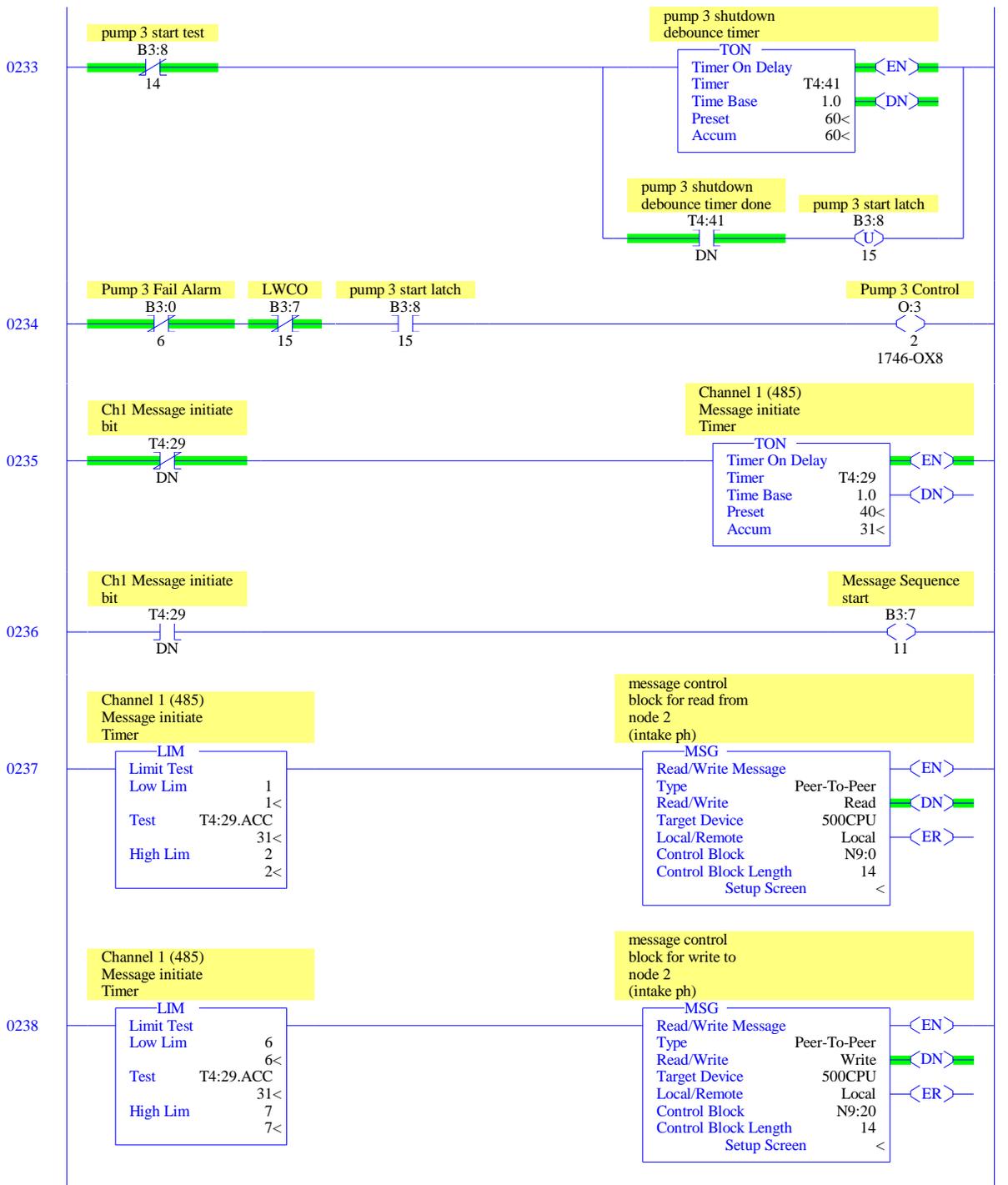


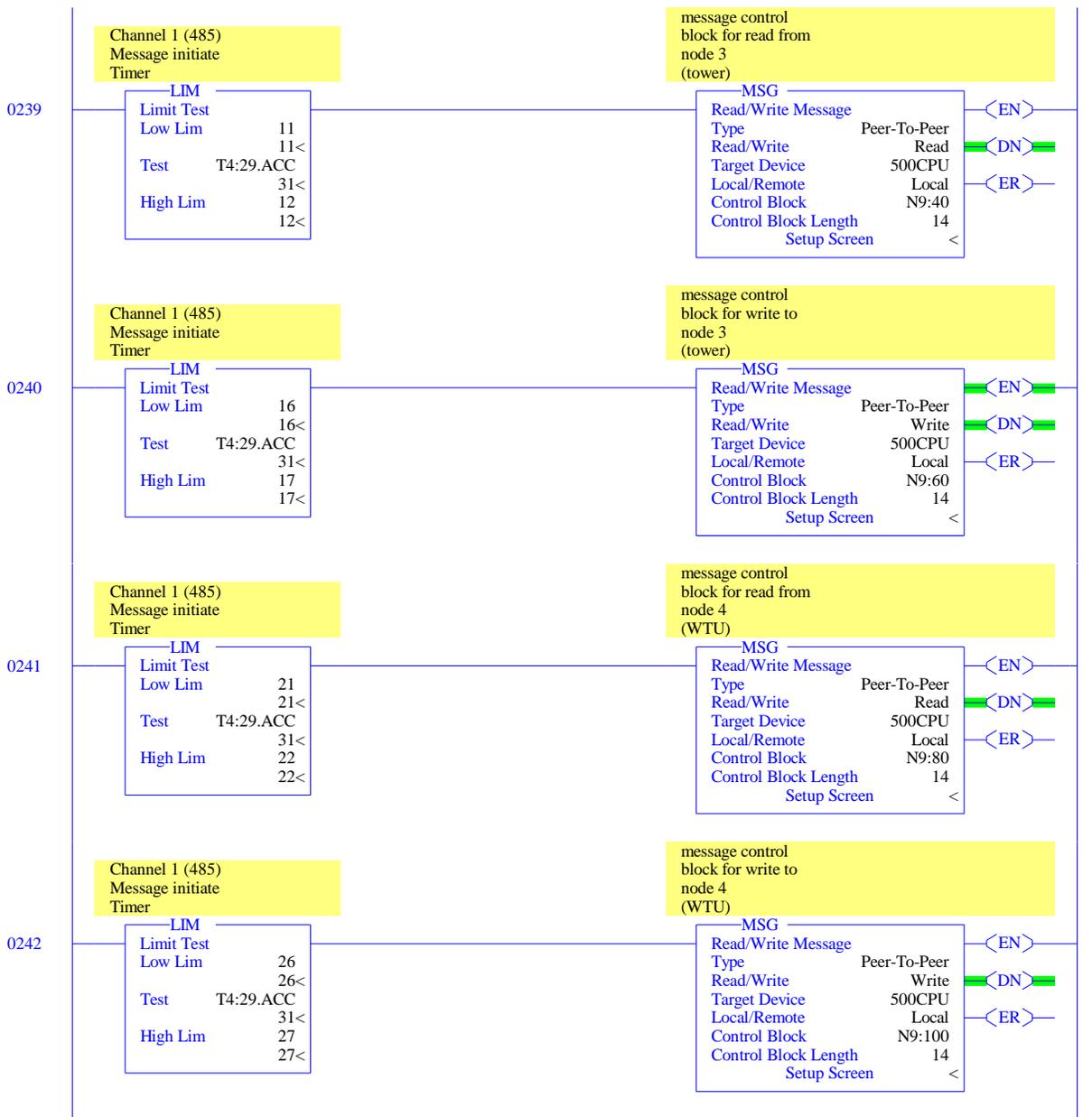


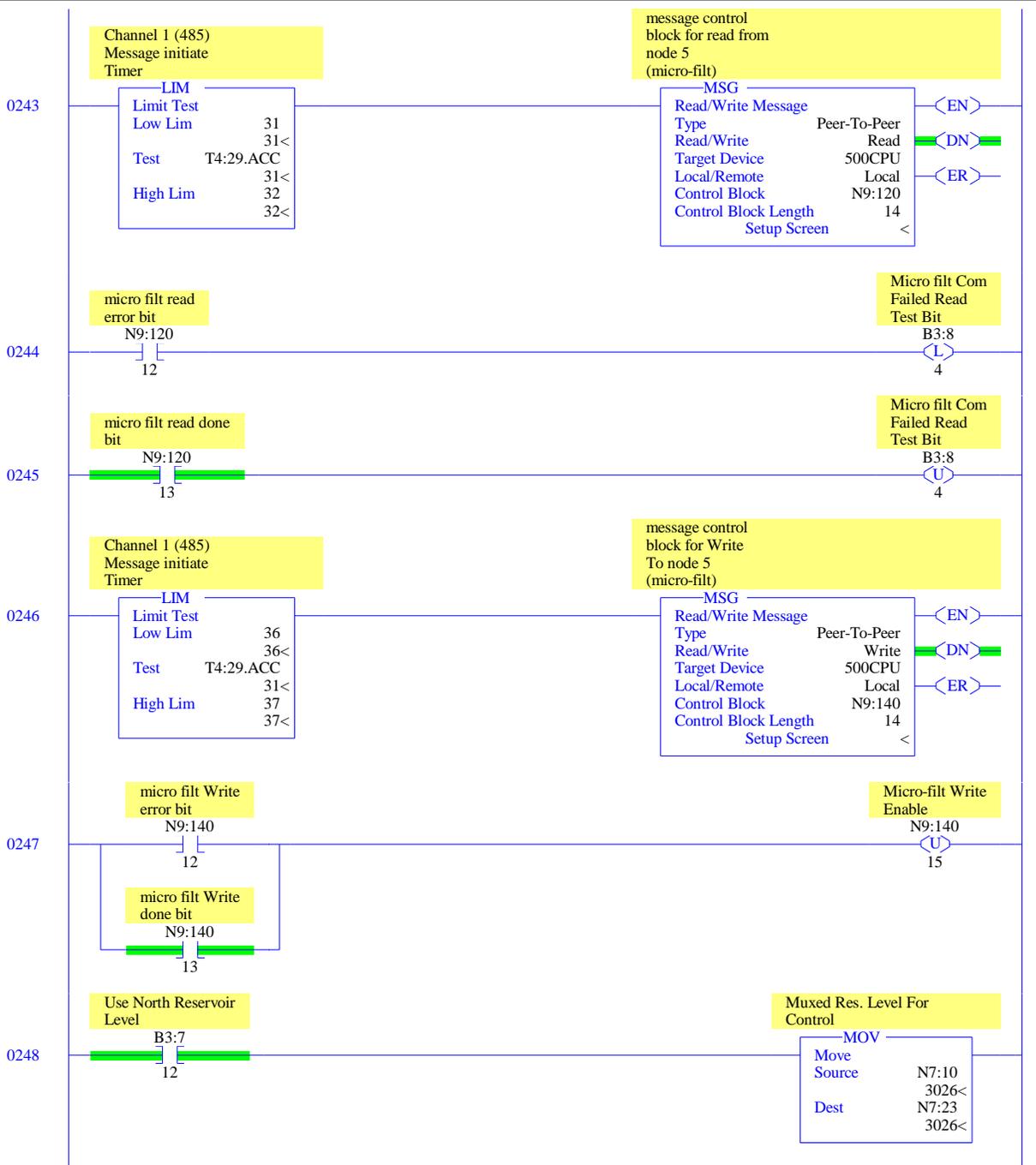


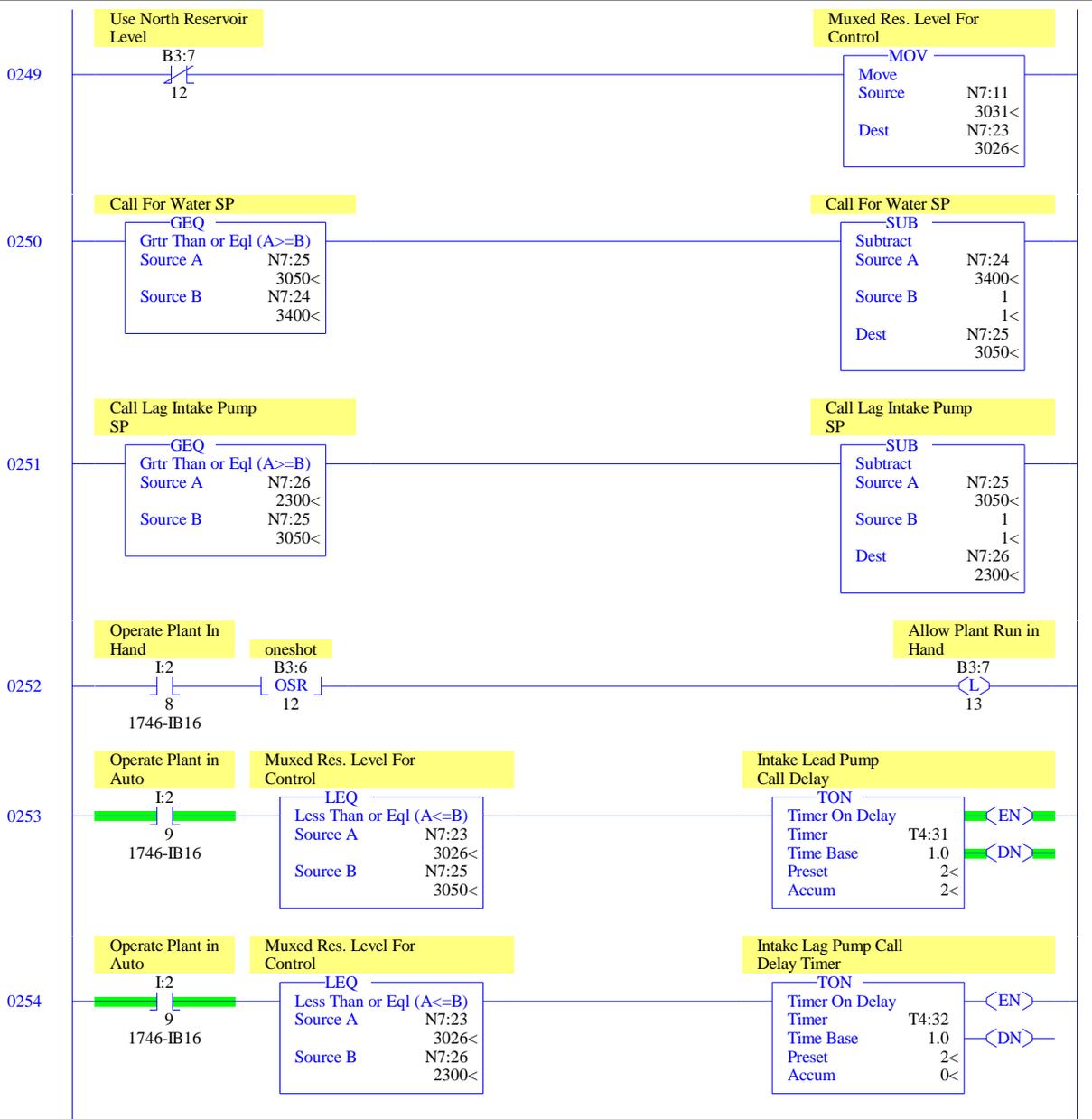


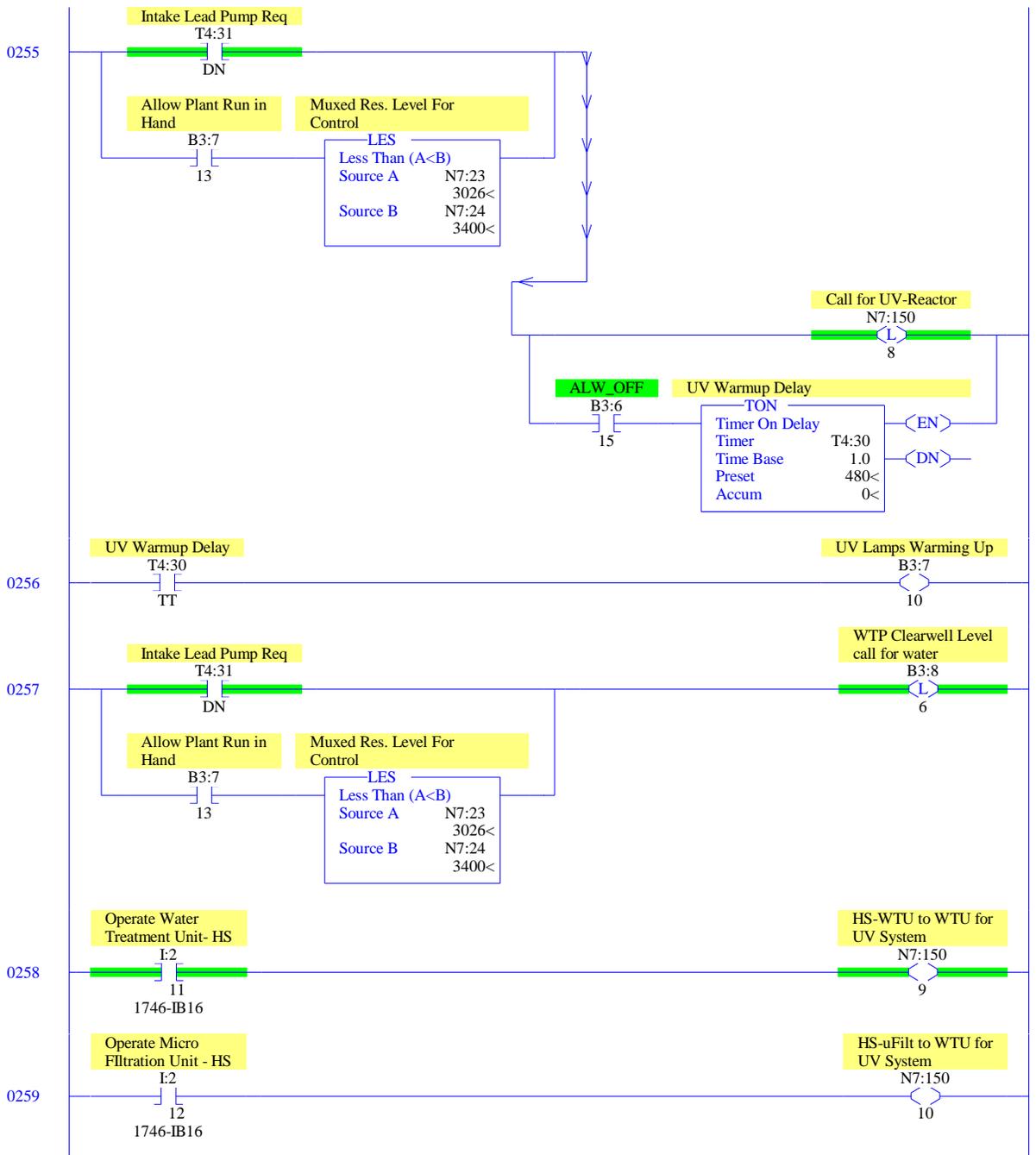


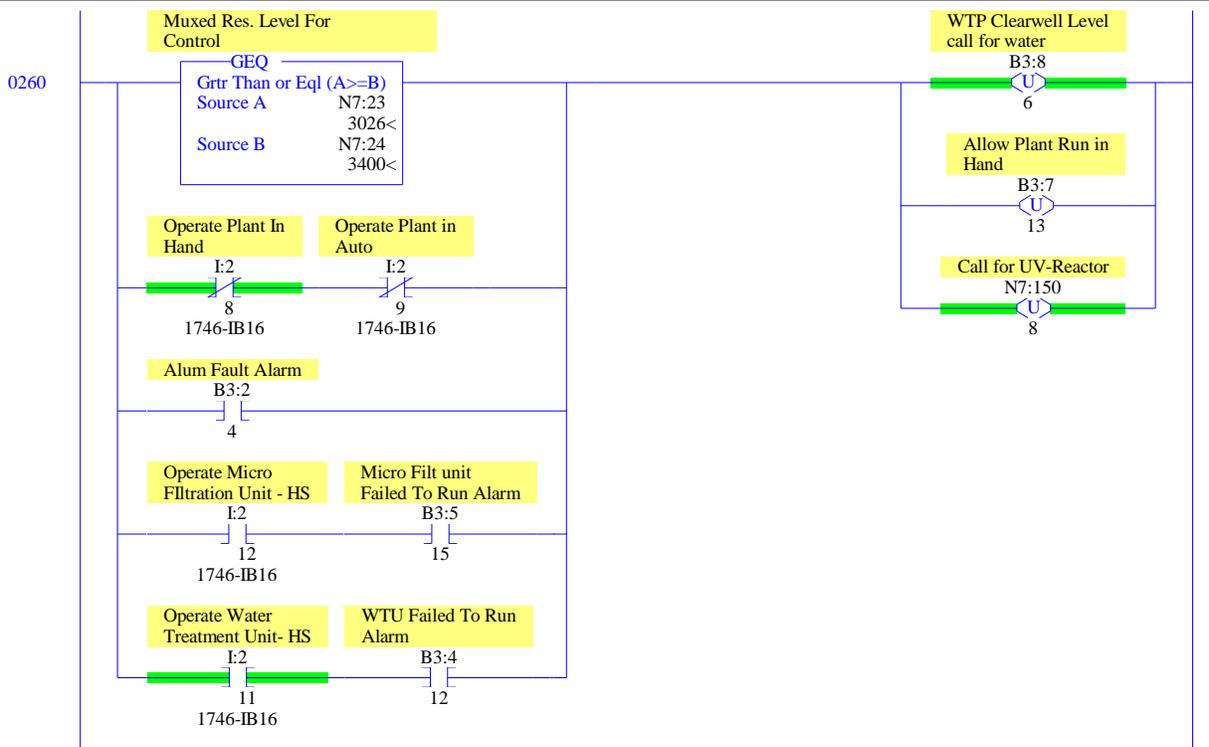






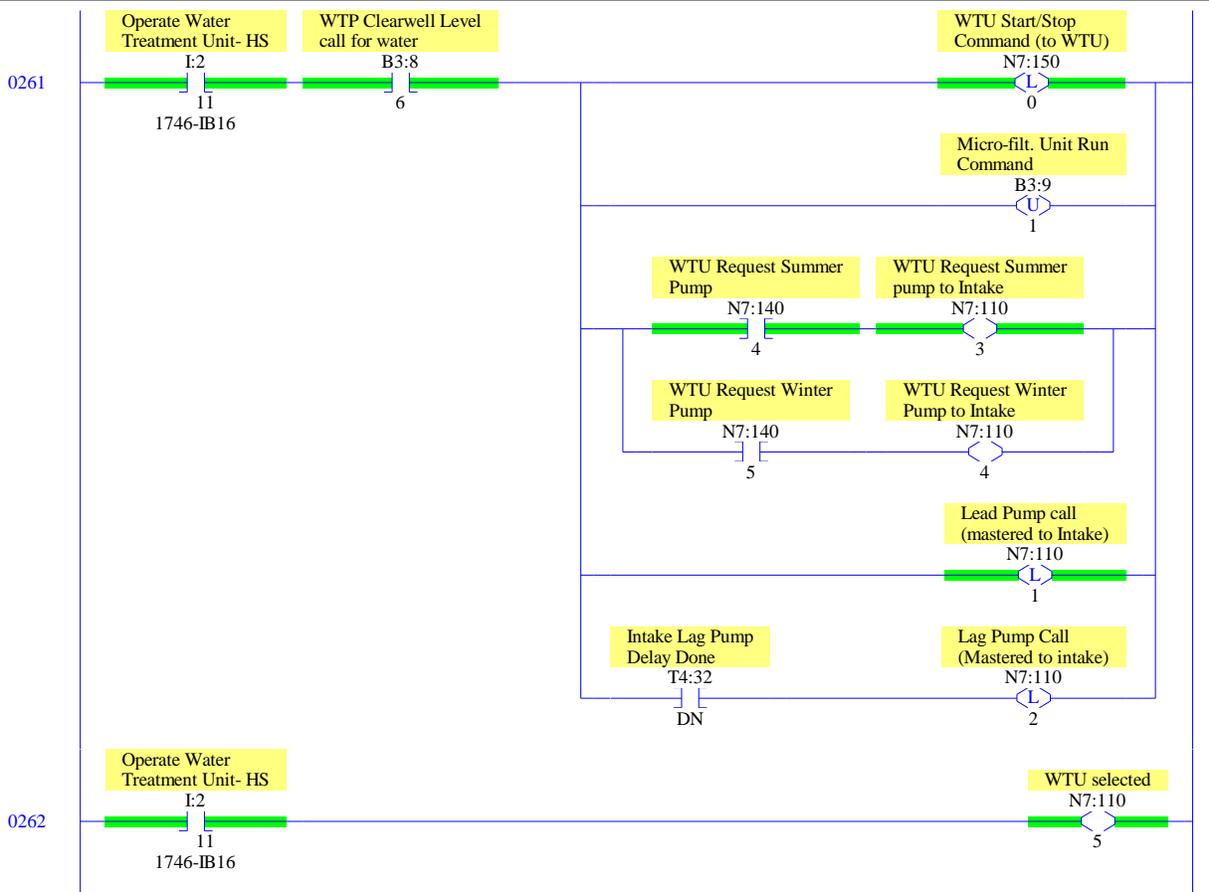


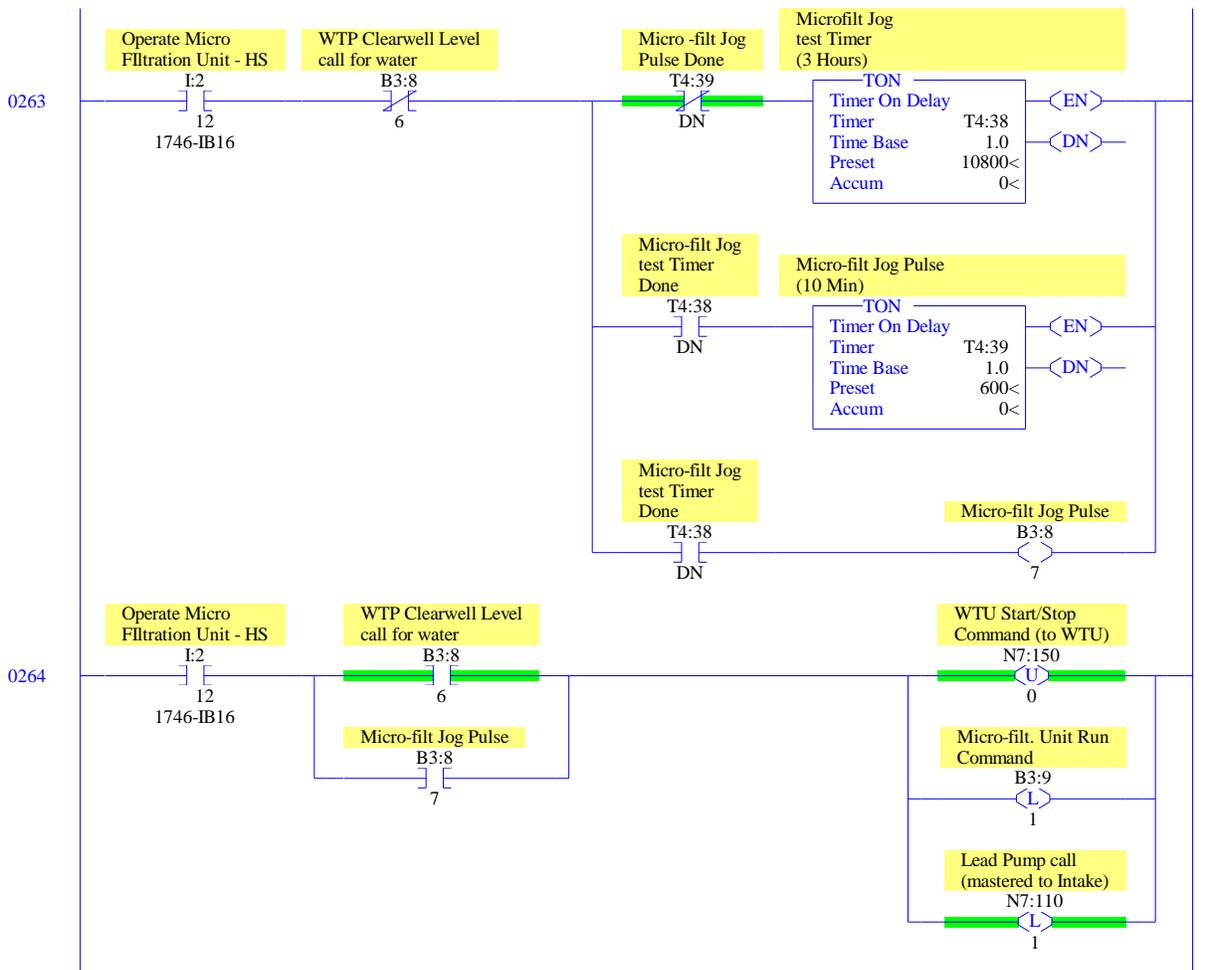


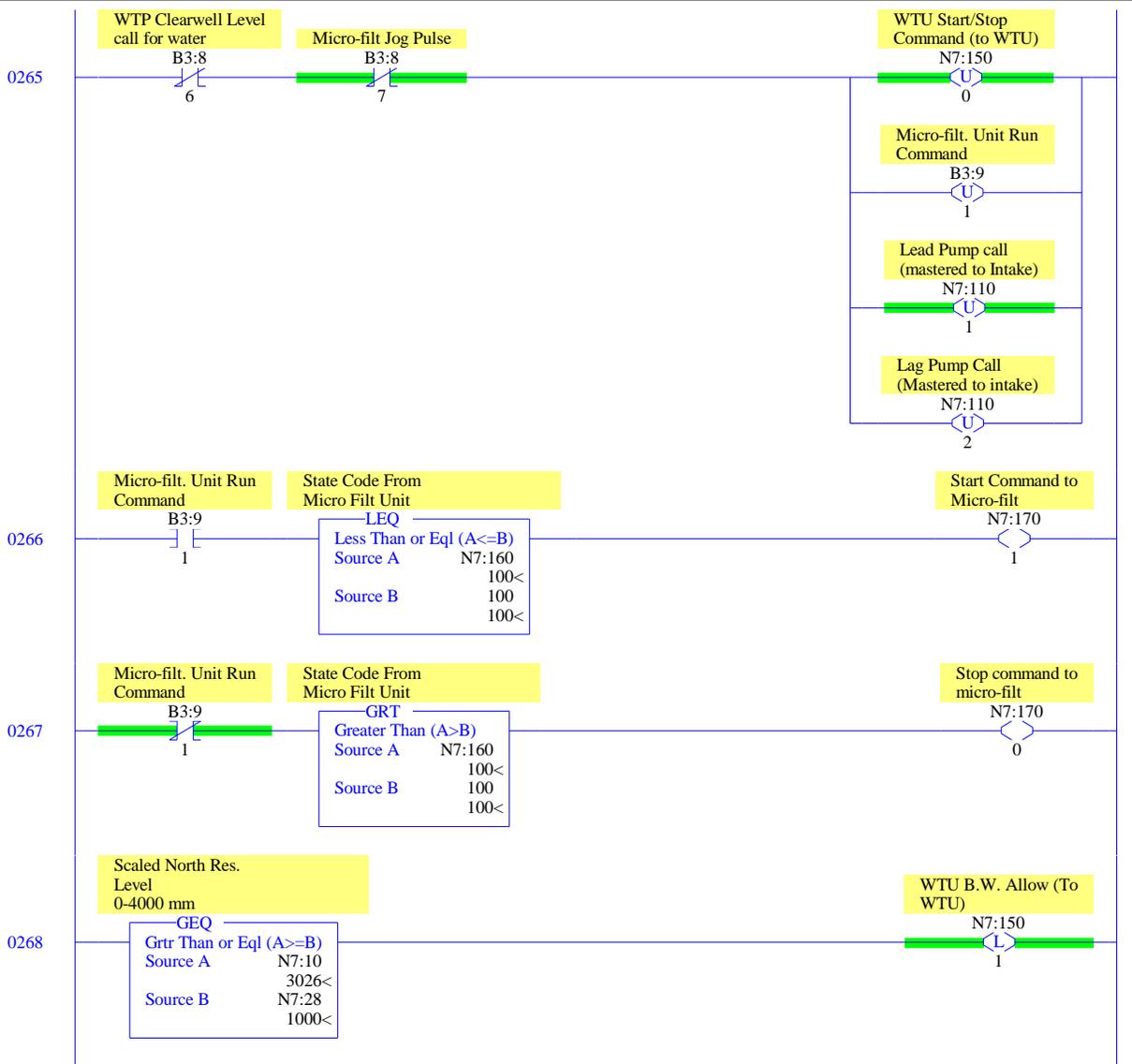


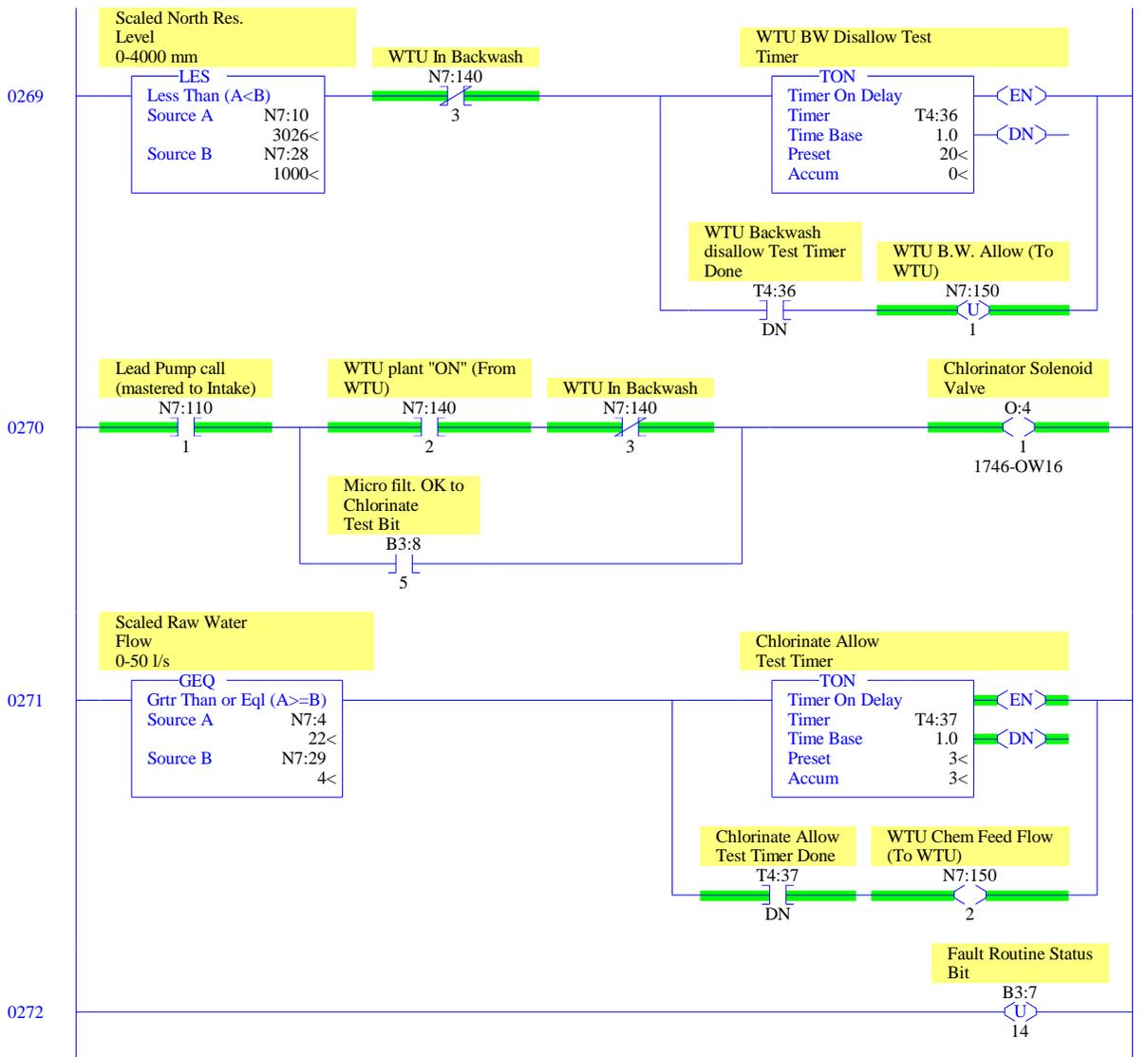
WTP.RSS

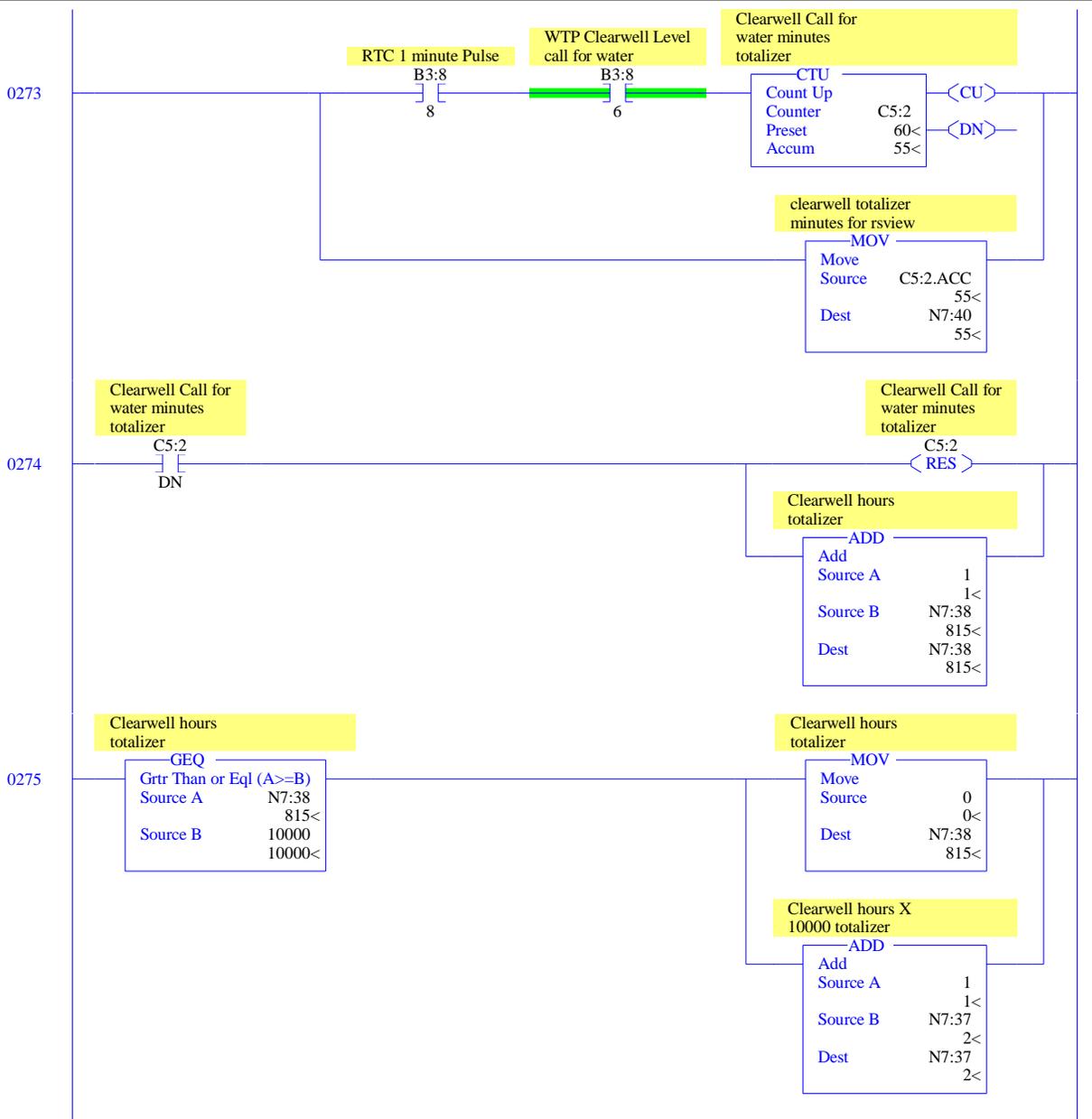
LAD 2 - --- Total Rungs in File = 290

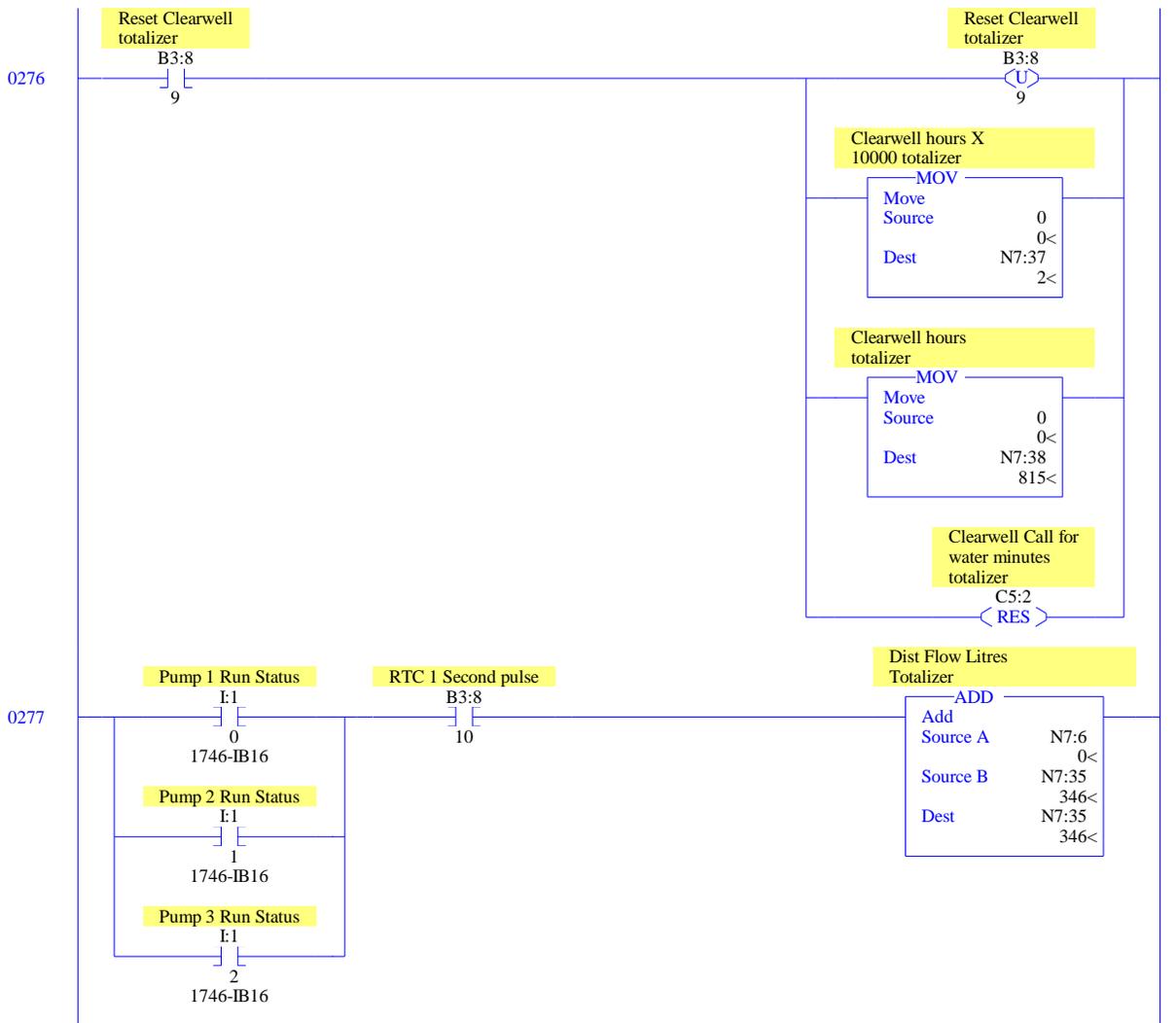


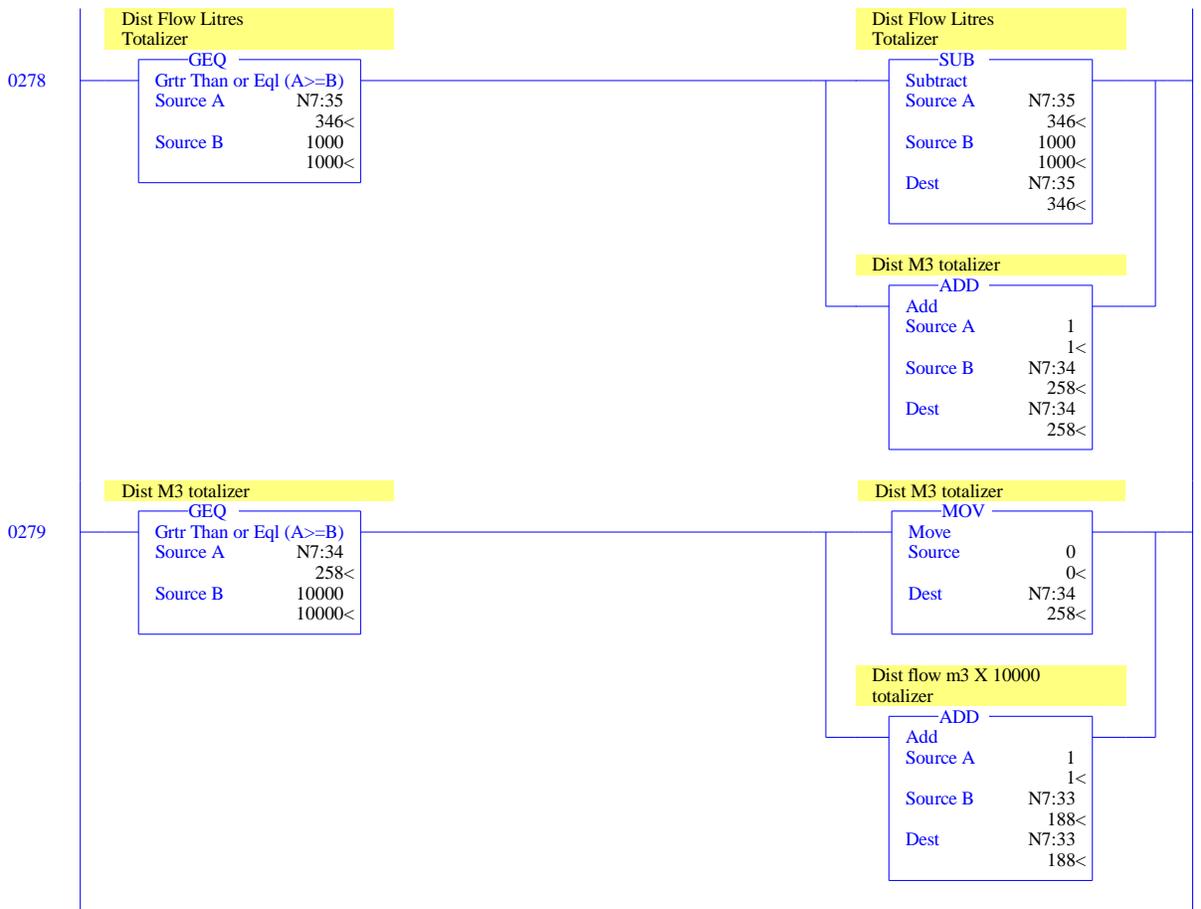


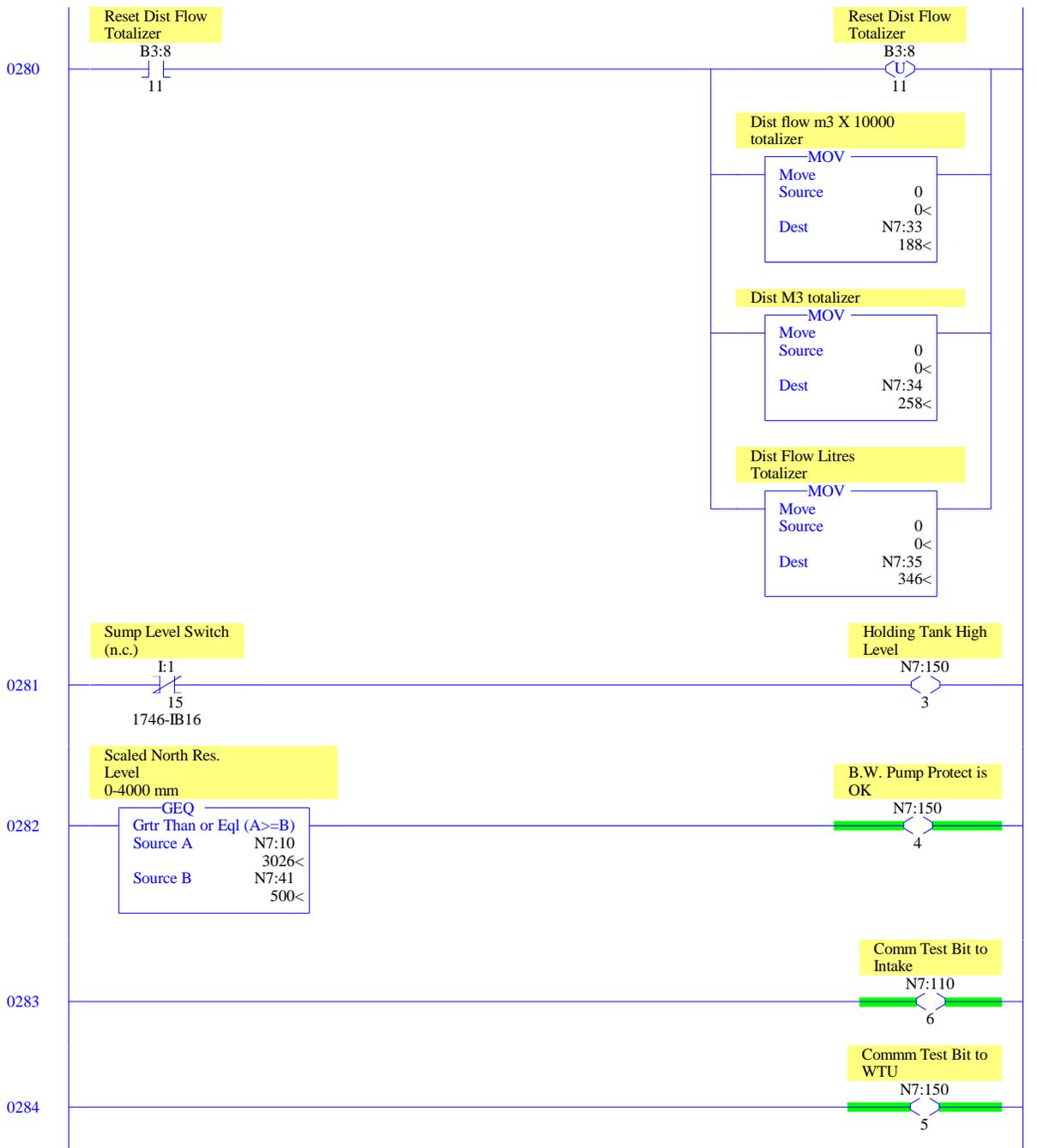


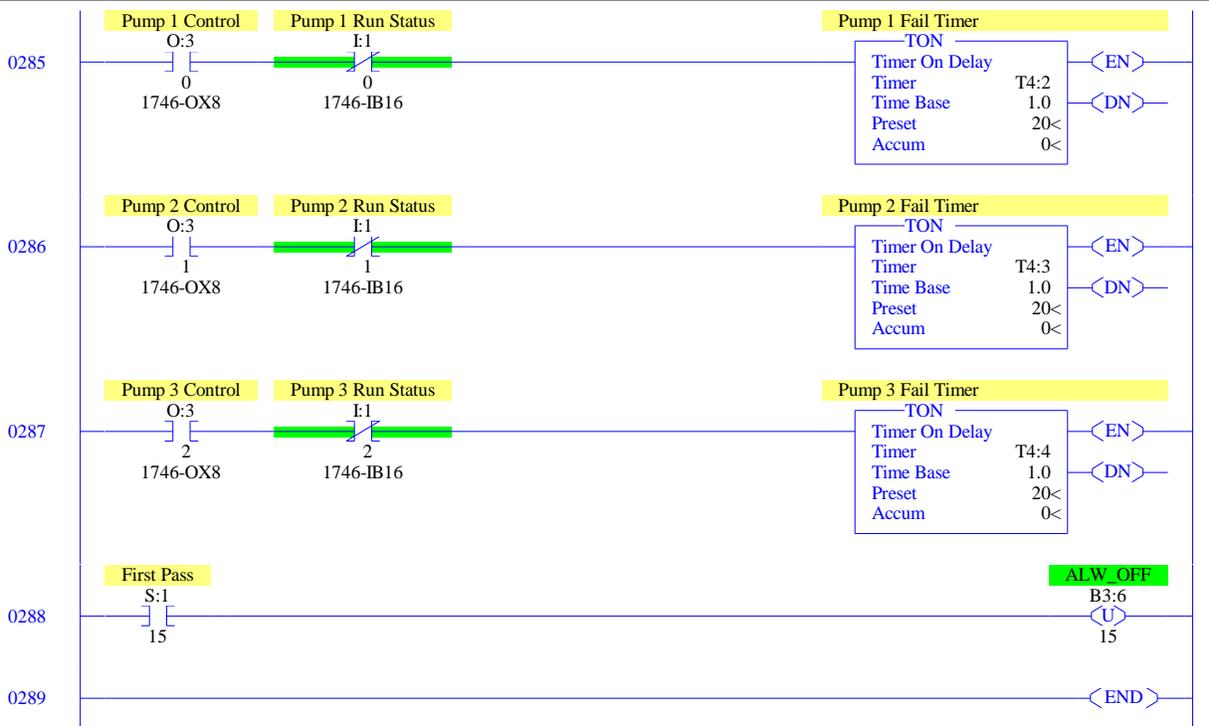














WTP.RSS

Data File 00 (bin) -- OUTPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
O:3.0									0	0	0	0	0	0	0	0	1746-OX8 - 8-Output Isolated Relay
O:4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1746-OW16 - 16-Output (RLY) 240 VAC

WTP.RSS

Data File I1 (bin) -- INPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
I:1.0	1	0	1	1	0	1	1	1	1	0	1	1	0	0	0	0	1746-IB16 - 16-Input (SINK) 24 VDC
I:2.0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1	1746-IB16 - 16-Input (SINK) 24 VDC
I:6.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1747-KE - Interface Module, Series A
I:7.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1747-KE - Interface Module, Series A
I:9.0	0	0	0	1	0	1	0	1	1	0	1	1	1	0	0	1	1746-NI4 - Analog 4 Channel Input Module
I:9.1	0	0	0	0	1	1	1	0	0	1	1	0	0	1	0	1	1746-NI4 - Analog 4 Channel Input Module
I:9.2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1746-NI4 - Analog 4 Channel Input Module
I:9.3	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	1746-NI4 - Analog 4 Channel Input Module
I:10.0	0	0	1	0	0	0	1	0	0	1	1	1	0	0	0	1	1746-NI4 - Analog 4 Channel Input Module
I:10.1	0	0	1	0	0	0	1	0	1	1	1	0	0	1	0	0	1746-NI4 - Analog 4 Channel Input Module
I:10.2	0	0	0	0	1	1	0	0	1	1	0	0	1	0	1	0	1746-NI4 - Analog 4 Channel Input Module
I:10.3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1746-NI4 - Analog 4 Channel Input Module
I:11.0	0	0	0	0	1	1	1	0	1	0	1	0	0	1	1	0	1746-NI4 - Analog 4 Channel Input Module
I:11.1	0	0	0	0	1	0	1	0	0	0	0	0	1	1	1	0	1746-NI4 - Analog 4 Channel Input Module
I:11.2	0	0	1	1	0	0	1	1	0	1	1	1	1	0	0	0	1746-NI4 - Analog 4 Channel Input Module
I:11.3	0	0	1	1	0	0	1	1	1	0	0	0	1	1	1	1	1746-NI4 - Analog 4 Channel Input Module

Main

```

First Pass S:1/15 = No
Index Register S:24 = 0
Free Running Clock S:4 = 0011-0011-1111-0110
Index Across Data Files S:2/3 = No
CIF Addressing Mode S:2/8 = 0
Online Edits S:33/11 - S:33/12 = No online edits exist

```

DD / MM / YYYY
Date S:39-37 = 20 / 11 / 1912

HH : MM : SS
Time S:40-42 = 13 : 51 : 17

Proc

```

OS Catalog Number S:57 = 302
OS Series S:58 = B
OS FRS S:59 = 10
Processor Catalog Number S:60 = 532
Processor Series S:61 = D
Processor FRN S:62 = 4
User Program Type S:63 = 1
User Program Functionality Index S:64 = 65
User RAM Size S:66 = 16
OS Memory Size S:66 = 480

```

Scan Times

```

Maximum (x10 ms) S:22 = 2
Average (x10 ms) S:23 = 1
Current (x10 ms) S:3 (low byte) = 0
Watchdog (x10 ms) S:3 (high byte) = 10
Last lms Scan Time S:35 = 6
Scan Toggle Bit S:33/9 = 0
Time Base Selection S:33/13 = 0

```

Math

```

Math Overflow Selected S:2/14 = 0
Overflow Trap S:5/0 = 0
Carry S:0/0 = 0
Overflow S:0/1 = 0
Zero Bit S:0/2 = 0
Sign Bit S:0/3 = 0
Math Register (lo word) S:13 = 0
Math Register (high word) S:14-S:13 = 0
Math Register (32 Bit) S:14-S:13 = 0

```

IO

```

I/O Interrupt Executing S:32 = 0
Interrupt Latency Control S:33/8 = 0
Event Interrupt 10 uS Time Stamp S:44 = 0

```

```

I/O Slot Enables: S:11 _S:12
0          10          20          30
11111111  11111111  11111111  11111111

```

```

I/O Slot Interrupt Enables: S:27 _S:28
0          10          20          30
11111111  11111111  11111111  11111111

```

```

I/O Slot Interrupt Pending: S:25 _S:26
0          10          20          30
00000000  00000000  00000000  00000000

```

Chan 0

```

Processor Mode S:1/0- S:1/4 = Remote Run
Channel Mode S:33/3 = 1
Comms Active S:33/4 = 0
Incoming Cmd Pending S:33/0 = 0
Msg Reply Pending S:33/1 = 0
DTR Control Bit S:33/14 = 0
DTR Force Bit S:33/15 = 0
Outgoing Msg Cmd Pending S:33/2 = 0
Comms Servicing Sel S:33/5 = 0
Msg Servicing Sel S:33/6 = 0
Modem Lost S:5/14 = 1

```

Chan 1

Processor Mode S:1/0- S:1/4 = Remote Run
 Node Address S:15 (low byte) = 1
 Baud Rate S:15 (high byte) = 19200
 Comms Active S:1/7 = 1
 Incoming Cmd Pending S:2/5 = 0
 Msg Reply Pending S:2/6 = 0
 Outgoing Msg Cmd Pending S:2/7 = 0
 Comms Servicing Sel S:2/15 = 1
 Msg Servicing Sel S:33/7 = 0

Active Nodes: S:9 _S:10

0	10	20	30
11111110	11000000	00000000	00000000

Debug

Suspend Code S:7 = 0
 Suspend File S:8 = 0
 Compiled For Single Step S:2/4 = Yes
 Test Single Step Breakpoint
 Rung # S:18 = 0
 File # S:19 = 0

Fault/Powerdown
 Fault/Powerdown (Rung #) S:20 = 288
 (File #) S:21 = 2
 Test Single Step
 Rung # S:16 = 0
 File # S:17 = 2

Errors

Fault Override At Power Up S:1/8 = 0
 Startup Protection Fault S:1/9 = 0
 Major Error Halt S:1/13 = 0
 Overflow Trap S:5/0 = 0
 Control Register Error S:5/2 = 0
 Major Error Executing User
 Fault Rtn. S:5/3 = 0
 M0/M1 Referenced On Disabled
 Slot S:5/4 = 0
 Battery Low S:5/11 = 0
 Fault/Powerdown (Rung #) S:20 = 288
 (File #) S:21 = 2
 ASCII String Manipulation error S:5/15 = 0
 Fault Routine S:29 = 4
 Major Error S:6 = 0h
 Error Description:

STI

Setpoint (x10ms) S:30 = 0
 File Number S:31 = 0
 10 uS Time Stamp S:43 = 0
 Pending Bit S:2/0 = 0
 Enable Bit S:2/1 = 1
 Resolution Select Bit S:2/10 = 0
 Executing Bit S:2/2 = 0
 Overflow Bit S:5/10 = 0
 Lost S:36/9 = 0
 Interrupt Latency Control S:33/8 = 0

DII

Preset S:50 = 0
 Accumulator S:52 = 0
 Pending Bit S:2/11 = 0
 Enable Bit S:2/12 = 1
 Executing Bit S:2/13 = 0
 Reconfiguration Bit S:33/10 = 0
 Overflow Bit S:5/12 = 0
 Lost S:36/8 = 0
 10 uS Time Stamp S:45 = 0
 File Number S:46 = 0
 Slot Number S:47 = 0
 Bit Mask S:48 = 0h
 Compare Value S:49 = 0h
 Return Mask S:51 = 0h
 Last Scan Time (x1 ms) S:55 = 0
 Max Observed Scan Time (x1 ms) S:56 = 0
 Interrupt Latency Control S:33/8 = 0

Protection

Deny Future Access S:1/14 = No

Mem Module

Memory Module Loaded On Boot S:5/8 = 0
 Password Mismatch S:5/9 = 0
 Load Memory Module On Memory Error S:1/10 = 0
 Load Memory Module Always S:1/11 = 0
 Load Memory Module and RUN S:1/12 = 0
 Program Compare S:2/9 = 0
 Data File Overwrite Protection Lost S:36/10 = 0

WTP.RSS

Data File S2 (hex) -- STATUS

Forces

Forces Enabled S:1/5 = No
Forces Installed S:1/6 = No

WTP.RSS

Data File B3 (bin) -- BINARY

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:6	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	
B3:7	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	
B3:8	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
B3:9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

WTP.RSS

Data File B3 (bin) -- BINARY

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

WTP.RSS

Data File B3 (bin) -- BINARY

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:177	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:181	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:182	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:184	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:185	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:187	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:188	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:189	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:190	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:191	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:192	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:193	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:194	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:196	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:197	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

WTP.RSS

Data File B3 (bin) -- BINARY

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:198	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:199	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:201	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:202	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:203	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:206	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:207	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:209	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:212	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:214	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:216	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:217	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:218	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:219	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:221	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:222	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:224	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:226	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:227	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:228	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:235	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:236	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:237	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:238	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:239	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:242	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:244	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:245	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:246	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:248	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:249	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:251	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:252	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:253	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:254	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

WTP.RSS

Data File T4 -- TIMER

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T4:0	0	0	0	.01 sec	0	0	
T4:1	0	0	0	.01 sec	200	0	Reset Button Timer
T4:2	0	0	0	1.0 sec	20	0	Pump 1 Fail Timer
T4:3	0	0	0	1.0 sec	20	0	Pump 2 Fail Timer
T4:4	0	0	0	1.0 sec	20	0	Pump 3 Fail Timer
T4:5	0	0	0	1.0 sec	900	0	Low Raw Water Flow Timer
T4:6	0	0	0	1.0 sec	45	0	Low Dist Press. Timer
T4:7	0	0	0	1.0 sec	45	0	Low Dist FLOW Timer
T4:8	0	0	0	1.0 sec	5	0	Norht Res High Level Alarm Timer
T4:9	0	0	0	1.0 sec	5	0	North Res Low Level Alarm Timer
T4:10	0	0	0	1.0 sec	5	0	South Res High Level Alarm Timer
T4:11	0	0	0	1.0 sec	5	0	South Res Low Level Alarm Timer
T4:12	0	0	0	1.0 sec	120	0	Chlorine Weight Alarm Timer
T4:13	0	0	0	1.0 sec	5	0	Low Propane Tank Level Alarm Timer
T4:14	0	0	0	1.0 sec	300	0	High WTU Turbidity Alarm Timer
T4:15	0	0	0	1.0 sec	3	0	High Micro-filt Unit Particle Count Flow Alarm Timer
T4:16	1	0	1	.01 sec	150	150	Flasher Timer
T4:17	1	1	0	.01 sec	150	87	Flasher Reset Timer
T4:18	0	0	0	1.0 sec	120	0	WTP Alarm Dialer Delay Timer (Communications)
T4:19	1	1	0	1.0 sec	120	19	Tower Comm Fail Timer
T4:20	1	1	0	1.0 sec	120	29	Intake Comm Fail Timer
T4:21	1	1	0	1.0 sec	120	9	WTU Comm Fail Timer
T4:22	0	0	0	1.0 sec	120	0	Micro-filt Comm Fail Timer
T4:23	1	0	1	.01 sec	50	50	Fast Flasher Timer
T4:24	1	1	0	.01 sec	50	16	Fast Flasher Reset
T4:25	0	0	0	1.0 sec	120	0	WTP Alarm Dialer Delay Timer (Power)
T4:26	0	0	0	1.0 sec	1200	0	WTU Failed to Run Alarm Timer
T4:27	0	0	0	1.0 sec	120	0	WTP Alarm Dialer Delay Timer (Building)
T4:28	0	0	0	1.0 sec	1200	0	micro-filt unit fail to run alrm delay
T4:29	1	1	0	1.0 sec	40	31	Channel 1 (485) Message initiate Timer
T4:30	0	0	0	1.0 sec	480	0	UV Warmup Delay
T4:31	1	0	1	1.0 sec	2	2	Intake Lead Pump Call Delay
T4:32	0	0	0	1.0 sec	2	0	Intake Lag Pump Call Delay Timer
T4:33	1	0	1	1.0 sec	60	60	LWCO Reset Delay Timer
T4:34	0	0	0	1.0 sec	120	0	WTP Alarm Delay Timer (Chlorine)
T4:35	0	0	0	1.0 sec	120	0	WTP Alarm Delay Timer (Pressure/Level)
T4:36	0	0	0	1.0 sec	20	0	WTU BW Disallow Test Timer
T4:37	1	0	1	1.0 sec	3	3	Chlorinate Allow Test Timer
T4:38	0	0	0	1.0 sec	10800	0	Microfilt Jog test Timer (3 Hours)
T4:39	0	0	0	1.0 sec	600	0	Micro-filt Jog Pulse (10 Min)
T4:40	1	0	1	1.0 sec	30	30	pump 2 shutdown debounce
T4:41	1	0	1	1.0 sec	60	60	pump 3 shutdown debounce timer
T4:42	0	0	0	1.0 sec	60	0	Pump 1 Start Debounce Timer
T4:43	0	0	0	1.0 sec	60	0	Pump #2 Start Debounce Timer
T4:44	0	0	0	1.0 sec	60	0	Pump #3 Start Debounce Timer
T4:45	1	1	0	1.0 sec	120	0	Alum fault pulse timer
T4:46	1	1	0	1.0 sec	120	1	Polymer fault pulse timer
T4:47	0	0	0	1.0 sec	600	0	Low Micro-filt Unit Particle Count Flow Alarm Timer
T4:48	0	0	0	1.0 sec	3	0	High Micro-filt Unit Particle Count Alarm Timer
T4:49	0	0	0	1.0 sec	1200	0	
T4:50	0	0	0	1.0 sec	1200	0	
T4:51	0	0	0	1.0 sec	15	0	
T4:52	0	0	0	.01 sec	0	0	
T4:53	0	0	0	.01 sec	0	0	
T4:54	0	0	0	.01 sec	0	0	
T4:55	0	0	0	.01 sec	0	0	
T4:56	0	0	0	.01 sec	0	0	
T4:57	0	0	0	.01 sec	0	0	
T4:58	0	0	0	.01 sec	0	0	
T4:59	0	0	0	.01 sec	0	0	
T4:60	0	0	0	.01 sec	0	0	
T4:61	0	0	0	.01 sec	0	0	
T4:62	0	0	0	.01 sec	0	0	
T4:63	0	0	0	.01 sec	0	0	
T4:64	0	0	0	.01 sec	0	0	
T4:65	0	0	0	.01 sec	0	0	

WTP.RSS

Data File T4 -- TIMER

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T4:66	0	0	0	.01 sec	0	0	
T4:67	0	0	0	.01 sec	0	0	
T4:68	0	0	0	.01 sec	0	0	
T4:69	0	0	0	.01 sec	0	0	
T4:70	0	0	0	.01 sec	0	0	
T4:71	0	0	0	.01 sec	0	0	
T4:72	0	0	0	.01 sec	0	0	
T4:73	0	0	0	.01 sec	0	0	
T4:74	0	0	0	.01 sec	0	0	
T4:75	0	0	0	.01 sec	0	0	
T4:76	0	0	0	.01 sec	0	0	
T4:77	0	0	0	.01 sec	0	0	
T4:78	0	0	0	.01 sec	0	0	
T4:79	0	0	0	.01 sec	0	0	
T4:80	0	0	0	.01 sec	0	0	
T4:81	0	0	0	.01 sec	0	0	
T4:82	0	0	0	.01 sec	0	0	
T4:83	0	0	0	.01 sec	0	0	
T4:84	0	0	0	.01 sec	0	0	
T4:85	0	0	0	.01 sec	0	0	
T4:86	0	0	0	.01 sec	0	0	
T4:87	0	0	0	.01 sec	0	0	
T4:88	0	0	0	.01 sec	0	0	
T4:89	0	0	0	.01 sec	0	0	
T4:90	0	0	0	.01 sec	0	0	
T4:91	0	0	0	.01 sec	0	0	
T4:92	0	0	0	.01 sec	0	0	
T4:93	0	0	0	.01 sec	0	0	
T4:94	0	0	0	.01 sec	0	0	
T4:95	0	0	0	.01 sec	0	0	
T4:96	0	0	0	.01 sec	0	0	
T4:97	0	0	0	.01 sec	0	0	
T4:98	0	0	0	.01 sec	0	0	
T4:99	0	0	0	.01 sec	0	0	

WTP.RSS

Data File C5 -- COUNTER

Offset	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol) Description
C5:0	0	0	0	0	0	0	0	0	
C5:1	0	0	0	0	0	0	3	2	Lead Service Pump Alternator
C5:2	0	0	0	0	0	0	60	55	Clearwell Call for water minutes totalizer
C5:3	0	0	0	0	0	0	0	0	
C5:4	0	0	0	0	0	0	0	0	
C5:5	0	0	0	0	0	0	0	0	
C5:6	0	0	0	0	0	0	0	0	
C5:7	0	0	0	0	0	0	0	0	
C5:8	0	0	0	0	0	0	0	0	
C5:9	0	0	0	0	0	0	0	0	
C5:10	0	0	0	0	0	0	0	0	
C5:11	0	0	0	0	0	0	0	0	
C5:12	0	0	0	0	0	0	0	0	
C5:13	0	0	0	0	0	0	0	0	
C5:14	0	0	0	0	0	0	0	0	
C5:15	0	0	0	0	0	0	0	0	
C5:16	0	0	0	0	0	0	0	0	
C5:17	0	0	0	0	0	0	0	0	
C5:18	0	0	0	0	0	0	0	0	
C5:19	0	0	0	0	0	0	0	0	
C5:20	0	0	0	0	0	0	0	0	
C5:21	0	0	0	0	0	0	0	0	
C5:22	0	0	0	0	0	0	0	0	
C5:23	0	0	0	0	0	0	0	0	
C5:24	0	0	0	0	0	0	0	0	
C5:25	0	0	0	0	0	0	0	0	
C5:26	0	0	0	0	0	0	0	0	
C5:27	0	0	0	0	0	0	0	0	
C5:28	0	0	0	0	0	0	0	0	
C5:29	0	0	0	0	0	0	0	0	
C5:30	0	0	0	0	0	0	0	0	
C5:31	0	0	0	0	0	0	0	0	
C5:32	0	0	0	0	0	0	0	0	
C5:33	0	0	0	0	0	0	0	0	
C5:34	0	0	0	0	0	0	0	0	
C5:35	0	0	0	0	0	0	0	0	
C5:36	0	0	0	0	0	0	0	0	
C5:37	0	0	0	0	0	0	0	0	
C5:38	0	0	0	0	0	0	0	0	
C5:39	0	0	0	0	0	0	0	0	
C5:40	0	0	0	0	0	0	0	0	
C5:41	0	0	0	0	0	0	0	0	
C5:42	0	0	0	0	0	0	0	0	
C5:43	0	0	0	0	0	0	0	0	
C5:44	0	0	0	0	0	0	0	0	
C5:45	0	0	0	0	0	0	0	0	
C5:46	0	0	0	0	0	0	0	0	
C5:47	0	0	0	0	0	0	0	0	
C5:48	0	0	0	0	0	0	0	0	
C5:49	0	0	0	0	0	0	0	0	
C5:50	0	0	0	0	0	0	0	0	
C5:51	0	0	0	0	0	0	0	0	
C5:52	0	0	0	0	0	0	0	0	
C5:53	0	0	0	0	0	0	0	0	
C5:54	0	0	0	0	0	0	0	0	
C5:55	0	0	0	0	0	0	0	0	
C5:56	0	0	0	0	0	0	0	0	
C5:57	0	0	0	0	0	0	0	0	
C5:58	0	0	0	0	0	0	0	0	
C5:59	0	0	0	0	0	0	0	0	
C5:60	0	0	0	0	0	0	0	0	
C5:61	0	0	0	0	0	0	0	0	
C5:62	0	0	0	0	0	0	0	0	
C5:63	0	0	0	0	0	0	0	0	
C5:64	0	0	0	0	0	0	0	0	
C5:65	0	0	0	0	0	0	0	0	

WTP.RSS

Data File C5 -- COUNTER

Offset	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol) Description
C5:66	0	0	0	0	0	0	0	0	
C5:67	0	0	0	0	0	0	0	0	
C5:68	0	0	0	0	0	0	0	0	
C5:69	0	0	0	0	0	0	0	0	
C5:70	0	0	0	0	0	0	0	0	
C5:71	0	0	0	0	0	0	0	0	
C5:72	0	0	0	0	0	0	0	0	
C5:73	0	0	0	0	0	0	0	0	
C5:74	0	0	0	0	0	0	0	0	
C5:75	0	0	0	0	0	0	0	0	
C5:76	0	0	0	0	0	0	0	0	
C5:77	0	0	0	0	0	0	0	0	
C5:78	0	0	0	0	0	0	0	0	
C5:79	0	0	0	0	0	0	0	0	
C5:80	0	0	0	0	0	0	0	0	
C5:81	0	0	0	0	0	0	0	0	
C5:82	0	0	0	0	0	0	0	0	
C5:83	0	0	0	0	0	0	0	0	
C5:84	0	0	0	0	0	0	0	0	
C5:85	0	0	0	0	0	0	0	0	
C5:86	0	0	0	0	0	0	0	0	
C5:87	0	0	0	0	0	0	0	0	
C5:88	0	0	0	0	0	0	0	0	
C5:89	0	0	0	0	0	0	0	0	
C5:90	0	0	0	0	0	0	0	0	
C5:91	0	0	0	0	0	0	0	0	
C5:92	0	0	0	0	0	0	0	0	
C5:93	0	0	0	0	0	0	0	0	
C5:94	0	0	0	0	0	0	0	0	
C5:95	0	0	0	0	0	0	0	0	
C5:96	0	0	0	0	0	0	0	0	
C5:97	0	0	0	0	0	0	0	0	
C5:98	0	0	0	0	0	0	0	0	
C5:99	0	0	0	0	0	0	0	0	

WTP.RSS

Data File R6 -- CONTROL

Offset	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol) Description
R6:0	0	0	0	0	0	0	0	0	0	0	
R6:1	0	0	0	0	0	0	0	0	0	0	
R6:2	0	0	0	0	0	0	0	0	0	0	
R6:3	0	0	0	0	0	0	0	0	0	0	
R6:4	0	0	0	0	0	0	0	0	0	0	
R6:5	0	0	0	0	0	0	0	0	0	0	
R6:6	0	0	0	0	0	0	0	0	0	0	
R6:7	0	0	0	0	0	0	0	0	0	0	
R6:8	0	0	0	0	0	0	0	0	0	0	
R6:9	0	0	0	0	0	0	0	0	0	0	
R6:10	0	0	0	0	0	0	0	0	0	0	
R6:11	0	0	0	0	0	0	0	0	0	0	
R6:12	0	0	0	0	0	0	0	0	0	0	
R6:13	0	0	0	0	0	0	0	0	0	0	
R6:14	0	0	0	0	0	0	0	0	0	0	
R6:15	0	0	0	0	0	0	0	0	0	0	
R6:16	0	0	0	0	0	0	0	0	0	0	
R6:17	0	0	0	0	0	0	0	0	0	0	
R6:18	0	0	0	0	0	0	0	0	0	0	
R6:19	0	0	0	0	0	0	0	0	0	0	
R6:20	0	0	0	0	0	0	0	0	0	0	
R6:21	0	0	0	0	0	0	0	0	0	0	
R6:22	0	0	0	0	0	0	0	0	0	0	
R6:23	0	0	0	0	0	0	0	0	0	0	
R6:24	0	0	0	0	0	0	0	0	0	0	
R6:25	0	0	0	0	0	0	0	0	0	0	
R6:26	0	0	0	0	0	0	0	0	0	0	
R6:27	0	0	0	0	0	0	0	0	0	0	
R6:28	0	0	0	0	0	0	0	0	0	0	
R6:29	0	0	0	0	0	0	0	0	0	0	
R6:30	0	0	0	0	0	0	0	0	0	0	
R6:31	0	0	0	0	0	0	0	0	0	0	
R6:32	0	0	0	0	0	0	0	0	0	0	
R6:33	0	0	0	0	0	0	0	0	0	0	
R6:34	0	0	0	0	0	0	0	0	0	0	
R6:35	0	0	0	0	0	0	0	0	0	0	
R6:36	0	0	0	0	0	0	0	0	0	0	
R6:37	0	0	0	0	0	0	0	0	0	0	
R6:38	0	0	0	0	0	0	0	0	0	0	
R6:39	0	0	0	0	0	0	0	0	0	0	
R6:40	0	0	0	0	0	0	0	0	0	0	
R6:41	0	0	0	0	0	0	0	0	0	0	
R6:42	0	0	0	0	0	0	0	0	0	0	
R6:43	0	0	0	0	0	0	0	0	0	0	
R6:44	0	0	0	0	0	0	0	0	0	0	
R6:45	0	0	0	0	0	0	0	0	0	0	
R6:46	0	0	0	0	0	0	0	0	0	0	
R6:47	0	0	0	0	0	0	0	0	0	0	
R6:48	0	0	0	0	0	0	0	0	0	0	
R6:49	0	0	0	0	0	0	0	0	0	0	
R6:50	0	0	0	0	0	0	0	0	0	0	
R6:51	0	0	0	0	0	0	0	0	0	0	
R6:52	0	0	0	0	0	0	0	0	0	0	
R6:53	0	0	0	0	0	0	0	0	0	0	
R6:54	0	0	0	0	0	0	0	0	0	0	
R6:55	0	0	0	0	0	0	0	0	0	0	
R6:56	0	0	0	0	0	0	0	0	0	0	
R6:57	0	0	0	0	0	0	0	0	0	0	
R6:58	0	0	0	0	0	0	0	0	0	0	
R6:59	0	0	0	0	0	0	0	0	0	0	
R6:60	0	0	0	0	0	0	0	0	0	0	
R6:61	0	0	0	0	0	0	0	0	0	0	
R6:62	0	0	0	0	0	0	0	0	0	0	
R6:63	0	0	0	0	0	0	0	0	0	0	
R6:64	0	0	0	0	0	0	0	0	0	0	
R6:65	0	0	0	0	0	0	0	0	0	0	

WTP.RSS

Data File R6 -- CONTROL

Offset	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol) Description
R6:66	0	0	0	0	0	0	0	0	0	0	
R6:67	0	0	0	0	0	0	0	0	0	0	
R6:68	0	0	0	0	0	0	0	0	0	0	
R6:69	0	0	0	0	0	0	0	0	0	0	
R6:70	0	0	0	0	0	0	0	0	0	0	
R6:71	0	0	0	0	0	0	0	0	0	0	
R6:72	0	0	0	0	0	0	0	0	0	0	
R6:73	0	0	0	0	0	0	0	0	0	0	
R6:74	0	0	0	0	0	0	0	0	0	0	
R6:75	0	0	0	0	0	0	0	0	0	0	
R6:76	0	0	0	0	0	0	0	0	0	0	
R6:77	0	0	0	0	0	0	0	0	0	0	
R6:78	0	0	0	0	0	0	0	0	0	0	
R6:79	0	0	0	0	0	0	0	0	0	0	
R6:80	0	0	0	0	0	0	0	0	0	0	
R6:81	0	0	0	0	0	0	0	0	0	0	
R6:82	0	0	0	0	0	0	0	0	0	0	
R6:83	0	0	0	0	0	0	0	0	0	0	
R6:84	0	0	0	0	0	0	0	0	0	0	
R6:85	0	0	0	0	0	0	0	0	0	0	
R6:86	0	0	0	0	0	0	0	0	0	0	
R6:87	0	0	0	0	0	0	0	0	0	0	
R6:88	0	0	0	0	0	0	0	0	0	0	
R6:89	0	0	0	0	0	0	0	0	0	0	
R6:90	0	0	0	0	0	0	0	0	0	0	
R6:91	0	0	0	0	0	0	0	0	0	0	
R6:92	0	0	0	0	0	0	0	0	0	0	
R6:93	0	0	0	0	0	0	0	0	0	0	
R6:94	0	0	0	0	0	0	0	0	0	0	
R6:95	0	0	0	0	0	0	0	0	0	0	
R6:96	0	0	0	0	0	0	0	0	0	0	
R6:97	0	0	0	0	0	0	0	0	0	0	
R6:98	0	0	0	0	0	0	0	0	0	0	
R6:99	0	0	0	0	0	0	0	0	0	0	

WTP.RSS

Data File N7 (dec) -- INTEGER

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	1813	93	0	0	22	446	0	0	38	136
N7:10	3026	3031	200	2	0	3600	500	3600	500	0
N7:20	100	4000	220	3026	3400	3050	2300	1000	1000	4
N7:30	185	0	40	188	258	346	41	2	815	51
N7:40	55	500	0	0	0	0	0	0	0	0
N7:50	0	0	0	0	0	0	0	0	0	0
N7:60	0	0	0	0	0	0	0	0	0	0
N7:70	0	0	0	0	0	0	0	0	0	0
N7:80	0	0	0	0	0	0	0	0	0	0
N7:90	0	0	0	0	0	0	0	0	0	0
N7:100	0	0	0	0	0	0	0	0	0	0
N7:110	106	0	0	0	0	0	0	0	0	0
N7:120	0	0	0	0	0	0	0	0	0	0
N7:130	0	0	0	0	0	0	0	0	0	0
N7:140	84	0	0	0	0	0	0	0	0	0
N7:150	823	0	0	0	0	0	0	0	0	0
N7:160	100	-50	2	0	0	0	0	0	0	0
N7:170	0	0	0	0	0	0	0	0	0	0
N7:180	766	605	518	0	28	0	0	0	0	0
N7:190	0	0	0	0	0	0	0	0	0	0
N7:200	0	0	0	0	0	0	0	0	0	0
N7:210	0	0	0	0	0	0	0	0	0	0
N7:220	0	0	0	0	0	0	0	0	0	0
N7:230	0	0	0	0	0	0	0	0	0	0
N7:240	0	0	0	0	0	0	0	0	0	0
N7:250	0	0	0	0	0	0	0	0	0	0

WTP.RSS

Data File F8 -- FLOAT

Offset	0	1	2	3	4
F8:0	0.5159094	4	0.2	21.16808	0
F8:5	0	0	0	0	0
F8:10	0	0	0	0	0
F8:15	0	0	0	0	0
F8:20	0	0	0	0	0
F8:25	0	0	0	0	0
F8:30	0	0	0	0	0
F8:35	0	0	0	0	0
F8:40	0	0	0	0	0
F8:45	0	0	0	0	0
F8:50	0	0	0	0	0
F8:55	0	0	0	0	0
F8:60	0	0	0	0	0
F8:65	0	0	0	0	0
F8:70	0	0	0	0	0
F8:75	0	0	0	0	0
F8:80	0	0	0	0	0
F8:85	0	0	0	0	0
F8:90	0	0	0	0	0
F8:95	0	0	0	0	0
F8:100	0	0	0	0	0
F8:105	0	0	0	0	0
F8:110	0	0	0	0	0
F8:115	0	0	0	0	0
F8:120	0	0	0	0	0
F8:125	0	0	0	0	0
F8:130	0	0	0	0	0
F8:135	0	0	0	0	0
F8:140	0	0	0	0	0
F8:145	0	0	0	0	0
F8:150	0	0	0	0	0
F8:155	0	0	0	0	0
F8:160	0	0	0	0	0
F8:165	0	0	0	0	0
F8:170	0	0	0	0	0
F8:175	0	0	0	0	0
F8:180	0	0	0	0	0
F8:185	0	0	0	0	0
F8:190	0	0	0	0	0
F8:195	0	0	0	0	0
F8:200	0	0	0	0	0
F8:205	0	0	0	0	0
F8:210	0	0	0	0	0
F8:215	0	0	0	0	0
F8:220	0	0	0	0	0
F8:225	0	0	0	0	0
F8:230	0	0	0	0	0
F8:235	0	0	0	0	0
F8:240	0	0	0	0	0
F8:245	0	0	0	0	0
F8:250	0	0	0	0	0

WTP.RSS

Data File N9 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N9:0	8192	2	10	7	137	50	0	224	4	202
N9:10	0	20	3072	0	0	0	0	0	0	0
N9:20	8192	2	10	7	137	60	0	224	4	207
N9:30	0	20	3072	0	0	0	0	0	0	0
N9:40	8192	3	10	7	137	50	0	224	4	212
N9:50	0	20	3072	0	0	0	0	0	0	0
N9:60	-24576	3	10	7	137	60	0	224	4	217
N9:70	0	20	3072	0	0	0	0	0	0	0
N9:80	8192	4	5	7	137	50	0	224	4	182
N9:90	0	10	3072	0	0	0	0	0	0	0
N9:100	8192	4	1	7	137	60	0	224	4	187
N9:110	0	2	3072	0	0	0	0	0	0	0
N9:120	8192	5	10	140	137	0	0	224	4	192
N9:130	0	20	3072	0	0	0	0	0	0	0
N9:140	8192	5	10	140	137	10	0	224	4	199
N9:150	0	20	3072	0	0	0	0	0	0	0
N9:160	8192	7	5	7	137	0	0	160	4	29
N9:170	0	10	3072	0	0	0	0	0	0	0
N9:180	0	0	0	0	0	0	0	0	0	0
N9:190	0	0	0	0	0	0	0	0	0	0
N9:200	0	0	0	0	0	0	0	0	0	0
N9:210	0	0	0	0	0	0	0	0	0	0
N9:220	0	0	0	0	0	0	0	0	0	0
N9:230	0	0	0	0	0	0	0	0	0	0
N9:240	0	0	0	0	0	0	0	0	0	0
N9:250	0	0	0	0	0	0	0	0	0	0

RSLogix 500 Cross Reference Report - Sorted by Address

O:3/0 - Pump 1 Control
OTE - File #2 - 226
XIC - File #2 - 285

O:3/1 - Pump 2 Control
OTE - File #2 - 230
XIC - File #2 - 286

O:3/2 - Pump 3 Control
OTE - File #2 - 234
XIC - File #2 - 287

O:4/1 - Chlorinator Solenoid Valve
OTE - File #2 - 270

O:4/2 - Plant ALarm Horn
OTE - File #2 - 189

O:4/3 - Control Panel Alarm Indicator
OTE - File #2 - 188

O:4/8 - Alarm Dialer Ch1 Intake Comm Loss or Power Failure
OTE - File #2 - 190

O:4/9 - Alarm Dialer Ch2 (Tower)
OTE - File #2 - 191

O:4/10 - Alarm Dialer Ch3 (Intake)
OTE - File #2 - 192

O:4/11 - Alarm Dialer Ch4 (Communcations)
OTE - File #2 - 193

O:4/12 - Alarm Dialer Ch5 (Power)
OTE - File #2 - 194

O:4/13 - Alarm Dialer Ch6 (Building)
OTE - File #2 - 195

O:4/14 - Alarm Dialer Ch7 (Chlorine)
OTE - File #2 - 196

O:4/15 - Alarm Dialer Ch8 (Pressure/Level)
OTE - File #2 - 197

I:1/0 - Pump 1 Run Status
XIC - File #2 - 91, 277
XIO - File #2 - 285

I:1/1 - Pump 2 Run Status
XIC - File #2 - 91, 277
XIO - File #2 - 286

I:1/2 - Pump 3 Run Status
XIC - File #2 - 91, 277
XIO - File #2 - 287

I:1/5 - Genset Fault Status (n.c.)
XIC - File #2 - 29
XIO - File #2 - 28

I:1/8 - Sask Power Failure (n.c.)
XIC - File #2 - 32
XIO - File #2 - 31

I:1/9 - MCC Power Filter Trouble
XIC - File #2 - 35
XIO - File #2 - 34

I:1/10 - LP Gas (propane) Lo Press. Switch (n.c.)
XIO - File #2 - 37

I:1/11 - Chlorine Leak Detect
XIC - File #2 - 41
XIO - File #2 - 42

I:1/12 - WTP Building Temp Switch (n.c.)
XIC - File #2 - 45
XIO - File #2 - 44

I:1/13 - Chlorine Room Temp Switch (n.c.)
XIC - File #2 - 48
XIO - File #2 - 47

I:1/14 - Floor Flood Switch
XIC - File #2 - 50
XIO - File #2 - 51

I:1/15 - Sump Level Switch (n.c.)
XIC - File #2 - 55
XIO - File #2 - 54, 281

I:2/0 - Alum Tank Level Sw. Low (n.c.)
XIC - File #2 - 58
XIO - File #2 - 57

RSLogix 500 Cross Reference Report - Sorted by Address

```

I:2/1      - Alum Chem Pump Pulse
            XIO - File #2 - 69
I:2/2      - Polymer Tank Level Sw. Low (n.c.)
            XIC - File #2 - 61
            XIO - File #2 - 60
I:2/3      - Polymer Chem Pump Pulse
            XIO - File #2 - 73
I:2/4      - Acid Tank Level Sw. Low
            XIC - File #2 - 63
            XIO - File #2 - 64
I:2/5      - Acid Chem Pump Fault
            XIC - File #2 - 77
            XIO - File #2 - 78
I:2/6      - CIP Tank Level Sw. Low
            XIC - File #2 - 66
            XIO - File #2 - 67
I:2/7      - CIP Chem Pump Fault
            XIC - File #2 - 80
            XIO - File #2 - 81
I:2/8      - Operate Plant In Hand
            XIC - File #2 - 252
            XIO - File #2 - 260
I:2/9      - Operate Plant in Auto
            XIC - File #2 - 253, 254
            XIO - File #2 - 260
I:2/10     - Silence Alarm PB
            XIC - File #2 - 3, 19, 22, 25, 28, 31, 34, 38, 41, 44, 47, 50
                    54, 57, 60, 63, 66, 70, 74, 77, 80, 84, 88, 92, 96
                    100, 104, 108, 117, 121, 125, 129, 133, 137, 141, 145
                    148, 151, 156, 161, 166, 170, 200, 203, 204, 208, 211
                    216
I:2/11     - Operate Water Treatment Unit- HS
            XIC - File #2 - 4, 6, 7, 258, 260, 261, 262
            XIO - File #2 - 5
I:2/12     - Operate Micro Filtration Unit - HS
            XIC - File #2 - 4, 6, 128, 132, 259, 260, 263, 264
            XIO - File #2 - 5
I:2/13     - {AIT_CHLOR_WARN}
            XIC - File #2 - 148
            XIO - File #2 - 149
I:2/14     - {AIT_CHLOR_ALARM} Chlorine Analyser System Alarm
            XIC - File #2 - 151
            XIO - File #2 - 152
I:9.0      - Raw Water Turbidity
            SCL - File #2 - 4
I:9.1      - WTU Treated Water Turbidity
            SCL - File #2 - 6
I:9.2      - Micro-Filt Particle Counter
            SCL - File #2 - 8
I:9.3      - Chlorine Analyser Free Residual
            SCP - File #2 - 18
I:10.0     - Raw Water Flow Mag-Meter
            SCL - File #2 - 10
            SCP - File #2 - 11
I:10.1     - Dist. Pressure Transmitter
            SCL - File #2 - 12
I:10.2     - Dist. Flow Mag-meter
            SCL - File #2 - 13
I:11.0     - Chlorine Weight Scale
            SCL - File #2 - 14
I:11.1     - Propane Tank Level Transmitter
            SCP - File #2 - 15
I:11.2     - North Res Level Transmitter
            SCL - File #2 - 16
I:11.3     - South Res. Level Transmitter
            SCL - File #2 - 17
S:1/13     - Major Error Halted
            OTU - File #4 - 2
S:1/15     - First Pass

```

RSLogix 500 Cross Reference Report - Sorted by Address

S:5/0	- XIC - File #2 - 0, 219, 288
	- Overflow Trap
	OTU - File #4 - 1
S:41	- Clock Calendar Minutes
	MOV - File #2 - 2
	NEQ - File #2 - 2
S:42	- Clock Calendar Seconds
	MOV - File #2 - 1
	NEQ - File #2 - 1
B3:0/1	- Pump 1 Fail Alm Ack
	OTL - File #2 - 19
	OTU - File #2 - 21
	XIO - File #2 - 187
B3:0/2	- Pump 1 Fail Alarm
	OTL - File #2 - 19
	OTU - File #2 - 20
	XIC - File #2 - 177, 187, 227, 231
	XIO - File #2 - 21, 226
B3:0/3	- Pump 2 Fail Alm Ack
	OTL - File #2 - 22
	OTU - File #2 - 24
	XIO - File #2 - 187
B3:0/4	- Pump 2 Fail ALarm
	OTL - File #2 - 22
	OTU - File #2 - 23
	XIC - File #2 - 177, 187, 226, 231
	XIO - File #2 - 24, 227, 230
B3:0/5	- Pump 3 Fail Alm Ack
	OTL - File #2 - 25
	OTU - File #2 - 27
	XIO - File #2 - 187
B3:0/6	- Pump 3 Fail Alarm
	OTL - File #2 - 25
	OTU - File #2 - 26
	XIC - File #2 - 177, 187, 226, 227
	XIO - File #2 - 27, 231, 234
B3:0/9	- Genset Fault Alm Ack
	OTL - File #2 - 28
	OTU - File #2 - 30
	XIO - File #2 - 182
B3:0/10	- Genset Fault Alarm
	OTL - File #2 - 28
	OTU - File #2 - 29
	XIC - File #2 - 177, 182
	XIO - File #2 - 30
B3:0/11	- Sask Power Fail Alm Ack
	OTL - File #2 - 31
	OTU - File #2 - 33
	XIO - File #2 - 182
B3:0/12	- Sask Power Fail Alarm
	OTL - File #2 - 31
	OTU - File #2 - 32
	XIC - File #2 - 177, 182
	XIO - File #2 - 33
B3:0/13	- MCC Power Filter Alm Ack
	OTL - File #2 - 34
	OTU - File #2 - 36
	XIO - File #2 - 187
B3:0/14	- MCC Power Filter Alarm
	OTL - File #2 - 34
	OTU - File #2 - 35
	XIC - File #2 - 177, 187
	XIO - File #2 - 36
B3:0/15	- LP Gas Low Press (Heating) Alm Ack
	OTL - File #2 - 38
	OTU - File #2 - 40
	XIO - File #2 - 183
B3:1/0	- LP Gas Low Press (Heating) Alarm
	OTL - File #2 - 38

RSLogix 500 Cross Reference Report - Sorted by Address

	OTU - File #2 - 39
	XIC - File #2 - 177, 183
	XIO - File #2 - 40
B3:1/1	- Cl. Leak ALM Ack
	OTL - File #2 - 41
	OTU - File #2 - 43
B3:1/2	- Cl Leak Alarm
	XIO - File #2 - 184
	OTL - File #2 - 41
	OTU - File #2 - 42
	XIC - File #2 - 178, 184
	XIO - File #2 - 43
B3:1/3	- WTP Bldg. Lo Temp Alm Ack
	OTL - File #2 - 44
	OTU - File #2 - 46
	XIO - File #2 - 183
B3:1/4	- WTP Bldg Low Temp Alarm
	OTL - File #2 - 44
	OTU - File #2 - 45
	XIC - File #2 - 178, 183
	XIO - File #2 - 46
B3:1/5	- Cl. Bldg Low Temp Alm Ack
	OTL - File #2 - 47
	OTU - File #2 - 49
	XIO - File #2 - 183
B3:1/6	- Cl Bldg Low Temp Alarm
	OTL - File #2 - 47
	OTU - File #2 - 48
	XIC - File #2 - 178, 183
	XIO - File #2 - 49
B3:1/7	- Floor Flood Alm Ack
	OTL - File #2 - 50
	OTU - File #2 - 52
	XIO - File #2 - 183
B3:1/8	- Floor Flood ALarm
	OTL - File #2 - 50
	OTU - File #2 - 51
	XIC - File #2 - 53, 178, 183
	XIO - File #2 - 52
B3:1/9	- Sump Level Alm Ack
	OTL - File #2 - 54
	OTU - File #2 - 56
	XIO - File #2 - 186
B3:1/10	- Sump Level Alarm
	OTL - File #2 - 54
	OTU - File #2 - 55
	XIC - File #2 - 178, 186
	XIO - File #2 - 56
B3:1/11	- Alum Low Level ALM Ack
	OTL - File #2 - 57
	OTU - File #2 - 59
	XIO - File #2 - 186
B3:1/12	- Alum Low Level Alarm
	OTL - File #2 - 57
	OTU - File #2 - 58
	XIC - File #2 - 178, 186
	XIO - File #2 - 59
B3:1/13	- Polymer Low Level Alm Ack
	OTL - File #2 - 60
	OTU - File #2 - 62
	XIO - File #2 - 186
B3:1/14	- Polymer Low Level ALarm
	OTL - File #2 - 60
	OTU - File #2 - 61
	XIC - File #2 - 178, 186
	XIO - File #2 - 62
B3:1/15	- Acid Low Level Alm ACK
	OTL - File #2 - 63
	OTU - File #2 - 65

RSLogix 500 Cross Reference Report - Sorted by Address

B3:2/0	- XIO - File #2 - 186 - Acid Low Level Alarm OTL - File #2 - 63 OTU - File #2 - 64 XIC - File #2 - 177, 186 XIO - File #2 - 65
B3:2/1	- CIP Low Level Alm Ack OTL - File #2 - 66 OTU - File #2 - 68 XIO - File #2 - 186
B3:2/2	- CIP Low Level Alarm OTL - File #2 - 66 OTU - File #2 - 67 XIC - File #2 - 177, 186 XIO - File #2 - 68
B3:2/3	- Alum Fault Alm Ack OTL - File #2 - 70 OTU - File #2 - 72 XIO - File #2 - 184
B3:2/4	- Alum Fault Alarm OTL - File #2 - 70 OTU - File #2 - 71 XIC - File #2 - 177, 184, 260 XIO - File #2 - 72
B3:2/5	- Polymer Fault Alm Ack OTL - File #2 - 74 OTU - File #2 - 76 XIO - File #2 - 186
B3:2/6	- Polymer Fault Alarm OTL - File #2 - 74 OTU - File #2 - 75 XIC - File #2 - 178, 186 XIO - File #2 - 76
B3:2/7	- Acid Fault Alm Ack OTL - File #2 - 77 OTU - File #2 - 79 XIO - File #2 - 186
B3:2/8	- Acid Fault Alarm OTL - File #2 - 77 OTU - File #2 - 78 XIC - File #2 - 178, 186 XIO - File #2 - 79
B3:2/9	- CIP Fault Alm Ack OTL - File #2 - 80 OTU - File #2 - 82 XIO - File #2 - 187
B3:2/10	- CIP Fault Alarm OTL - File #2 - 80 OTU - File #2 - 81 XIC - File #2 - 178, 187 XIO - File #2 - 82
B3:2/11	- Low Raw Water Flow Alm Ack OTL - File #2 - 84 OTU - File #2 - 86 XIO - File #2 - 187
B3:2/12	- Low Raw Water FLOW Alarm OTL - File #2 - 84 OTU - File #2 - 85 XIC - File #2 - 179, 187 XIO - File #2 - 86
B3:2/13	- Low Dist Press Alm Ack OTL - File #2 - 88 OTU - File #2 - 90 XIO - File #2 - 185
B3:2/14	- Low Dist Pressure Alarm OTL - File #2 - 88 OTU - File #2 - 89 XIC - File #2 - 179, 185 XIO - File #2 - 90

RSLogix 500 Cross Reference Report - Sorted by Address

B3:2/15 - Low Dist Flow Alm Ack
OTL - File #2 - 92
OTU - File #2 - 94
XIO - File #2 - 186

B3:3/0 - Low Dist Flow Alarm
OTL - File #2 - 92
OTU - File #2 - 93
XIC - File #2 - 179, 186
XIO - File #2 - 94

B3:3/1 - North Res. High Level Alm Ack
OTL - File #2 - 96
OTU - File #2 - 98
XIO - File #2 - 185

B3:3/2 - North Res Ligh Level ALarm
OTL - File #2 - 96
OTU - File #2 - 97
XIC - File #2 - 179, 185
XIO - File #2 - 98

B3:3/3 - North Res. Low Level ALm Ack
OTL - File #2 - 100
OTU - File #2 - 102
XIO - File #2 - 185

B3:3/4 - North Res Low Level Alarm
OTL - File #2 - 100
OTU - File #2 - 101
XIC - File #2 - 179, 185
XIO - File #2 - 102, 114

B3:3/5 - South Res high Level ALm Ack
OTL - File #2 - 104
OTU - File #2 - 106
XIO - File #2 - 185

B3:3/6 - South Res High Level Alarm
OTL - File #2 - 104
OTU - File #2 - 105
XIC - File #2 - 179, 185
XIO - File #2 - 106

B3:3/7 - South Res Low Level ALm Ack
OTL - File #2 - 108
OTU - File #2 - 110
XIO - File #2 - 185

B3:3/8 - South Res Low Level Alarm
OTL - File #2 - 108
OTU - File #2 - 109
XIC - File #2 - 179, 185
XIO - File #2 - 110, 114

B3:3/9 - Cl Weight Alm Ack
OTL - File #2 - 117
OTU - File #2 - 119
XIO - File #2 - 187

B3:3/10 - Cl Weight Alarm
OTL - File #2 - 117
OTU - File #2 - 118
XIC - File #2 - 179, 187
XIO - File #2 - 119

B3:3/11 - Low Propane Alarm Ack
OTL - File #2 - 121
OTU - File #2 - 123
XIO - File #2 - 187

B3:3/12 - Low Propane Tank Alm
OTL - File #2 - 121
OTU - File #2 - 122
XIC - File #2 - 179, 187
XIO - File #2 - 123

B3:3/13 - High WTU Turbidity Alarm Ack
OTL - File #2 - 125
OTU - File #2 - 127
XIO - File #2 - 184

B3:3/14 - High WTU Turbidity Alarm
OTL - File #2 - 125

RSLogix 500 Cross Reference Report - Sorted by Address

	OTU - File #2 - 126
	XIC - File #2 - 179, 184
	XIO - File #2 - 127
B3:3/15	- High Micro Filt Unit Particle Count Flow ALm Ack
	OTL - File #2 - 129
B3:4/0	- High Micro Filt Unit Particle Count Flow ALarm
	OTU - File #2 - 131
	OTL - File #2 - 129
	OTU - File #2 - 130
	XIC - File #2 - 180
	XIO - File #2 - 131
B3:4/1	- Tower Comm Fail Alarm Ack
	OTL - File #2 - 156
	OTU - File #2 - 158
	XIO - File #2 - 181
B3:4/2	- Tower Comm Fail Alarm
	OTL - File #2 - 156
	OTU - File #2 - 157
	XIC - File #2 - 180, 181
	XIO - File #2 - 158
B3:4/3	- Intake Comm Fail Alm Ack
	OTL - File #2 - 161
	OTU - File #2 - 163
	XIO - File #2 - 181
B3:4/4	- Intake Comm Fail Alarm
	OTL - File #2 - 161
	OTU - File #2 - 162
	XIC - File #2 - 180, 181
	XIO - File #2 - 163
B3:4/5	- WTU Comm Fail ALm Ack
	OTL - File #2 - 166
	OTU - File #2 - 168
	XIO - File #2 - 181
B3:4/6	- WTU Comm Fail Alarm
	OTL - File #2 - 166
	OTU - File #2 - 167
	XIC - File #2 - 180, 181
	XIO - File #2 - 168
B3:4/7	- Micro-filt Comm Fail Alm Ack
	OTL - File #2 - 170
	OTU - File #2 - 172
	XIO - File #2 - 181
B3:4/8	- Micro Filt Comm Fail Alarm
	OTL - File #2 - 170
	OTU - File #2 - 171
	XIC - File #2 - 180, 181
	XIO - File #2 - 172
B3:4/9	- Water Treatment Unit Common Alm Ack
	OTL - File #2 - 204
	OTU - File #2 - 206
	XIO - File #2 - 187
B3:4/10	- Water Treatment Unit Common ALarm
	OTL - File #2 - 204
	OTU - File #2 - 205
	XIC - File #2 - 180, 187
	XIO - File #2 - 206
B3:4/11	- WTU Failed To Run Alm Ack
	OTL - File #2 - 208
	OTU - File #2 - 210
	XIO - File #2 - 187
B3:4/12	- WTU Failed To Run Alarm
	OTL - File #2 - 208
	OTU - File #2 - 209
	XIC - File #2 - 180, 187, 260
	XIO - File #2 - 210
B3:4/13	- micro-filt Common Alm Ack
	OTL - File #2 - 211
	OTU - File #2 - 213
	XIO - File #2 - 186

RSLogix 500 Cross Reference Report - Sorted by Address

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B3:4/14 - Micro-filt Common ALarm
        OTL - File #2 - 211
        OTU - File #2 - 212
        XIC - File #2 - 180, 186
        XIO - File #2 - 213
B3:4/15 - Micro-filt Failed To run Alm Ack
        OTL - File #2 - 216
        OTU - File #2 - 218
        XIO - File #2 - 186
B3:5/0 - Alarm Concentrator Bit #1
        OTE - File #2 - 177
        XIC - File #2 - 188
B3:5/1 - Alarm Concentrator Bit #2
        OTE - File #2 - 178
        XIC - File #2 - 188
B3:5/2 - Alarm Concentrator Bit #3
        OTE - File #2 - 179
        XIC - File #2 - 188
B3:5/3 - Alarm Concentrator Bit #4
        OTE - File #2 - 180
        XIC - File #2 - 188
B3:5/7 - Flasher/Dialer Concentrator Bit #3 (Communications)
        OTE - File #2 - 181
        XIC - File #2 - 189, 193
        XIO - File #2 - 188
B3:5/8 - Flasher ONLY Concentrator Bit #1
        OTE - File #2 - 186
        XIO - File #2 - 188
B3:5/9 - Flasher ONLY Concentrator Bit #2
        OTE - File #2 - 187
        XIO - File #2 - 188
B3:5/11 - Flasher/Dialer concentrator bit 4 (power)
        OTE - File #2 - 182
        XIC - File #2 - 189, 194
        XIO - File #2 - 188
B3:5/12 - Flasher/Dialer Concentrator bit 5 (Building)
        OTE - File #2 - 183
        XIC - File #2 - 189, 195
        XIO - File #2 - 188
B3:5/13 - Flasher/Dialer concentrator bit 6 (Chlorine)
        OTE - File #2 - 184
        XIC - File #2 - 189, 196
        XIO - File #2 - 188
B3:5/14 - flasher/dialer concentrator bit 7 (pressure/level)
        OTE - File #2 - 185
        XIC - File #2 - 189, 197
        XIO - File #2 - 188
B3:5/15 - Micro Filt unit Failed To Run Alarm
        OTL - File #2 - 216
        OTU - File #2 - 217
        XIC - File #2 - 180, 186, 260
        XIO - File #2 - 218
B3:6/0 - OneShot
        OSR - File #2 - 199
B3:6/1 - One Shot
        OSR - File #2 - 202
B3:6/2 - oneshot
        OSR - File #2 - 220
B3:6/12 - oneshot
        OSR - File #2 - 252
B3:6/15 - {ALW_OFF}
        OTU - File #2 - 288
        XIC - File #2 - 128, 132, 136, 255
B3:7/0 - Tower horn test bit
        OTE - File #2 - 198
        XIC - File #2 - 199
        XIO - File #2 - 200
B3:7/1 - Tower Horn Bit
        OTL - File #2 - 199

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RSLogix 500 Cross Reference Report - Sorted by Address

	OTU - File #2 - 200
	XIC - File #2 - 189
B3:7/2	- Intake Horn Test Bit
	OTE - File #2 - 201
	XIC - File #2 - 202
	XIO - File #2 - 203
B3:7/3	- Intake Horn Bit
	OTL - File #2 - 202
	OTU - File #2 - 203
	XIC - File #2 - 189
B3:7/4	- Servie Pump Auto Alternate
	OTE - File #2 - 219
	XIC - File #2 - 219, 220
B3:7/5	- Auto Alternate Lead Increment
	OTE - File #2 - 220
	XIC - File #2 - 221
B3:7/6	- service pump 1 is lead
	OTE - File #2 - 223
	XIC - File #2 - 226, 227, 231
B3:7/7	- Service pump 2 is lead
	OTE - File #2 - 224
	XIC - File #2 - 226, 227, 231
B3:7/8	- service pump 3 is lead
	OTE - File #2 - 225
	XIC - File #2 - 226, 227, 231
B3:7/10	- UV Lamps Warming Up
	OTE - File #2 - 256
B3:7/11	- Message Sequence start
	OTE - File #2 - 236
B3:7/12	- Use North Reservoir Level
	XIC - File #2 - 95, 99, 111, 113, 248
	XIO - File #2 - 103, 107, 112, 113, 249
B3:7/13	- Allow Plant Run in Hand
	OTL - File #2 - 252
	OTU - File #2 - 260
	XIC - File #2 - 255, 257
B3:7/14	- Fault Routine Status Bit
	OTE - File #4 - 0
	OTU - File #2 - 272
B3:7/15	- LWCO
	OTL - File #2 - 115
	OTU - File #2 - 114
	XIO - File #2 - 226, 227, 230, 231, 234
B3:8/4	- Micro filt Com Failed Read Test Bit
	OTL - File #2 - 244
	OTU - File #2 - 245
	XIC - File #2 - 169
B3:8/5	- Micro filt. OK to Chlorinate Test Bit
	OTE - File #2 - 214
	XIC - File #2 - 270
	XIO - File #2 - 215
B3:8/6	- WTP Clearwell Level call for water
	OTL - File #2 - 257
	OTU - File #2 - 260
	XIC - File #2 - 4, 6, 261, 264, 273
	XIO - File #2 - 5, 7, 263, 265
B3:8/7	- Micro-filt Jog Pulse
	OTE - File #2 - 263
	XIC - File #2 - 264
	XIO - File #2 - 265
B3:8/8	- RTC 1 minute Pulse
	OTE - File #2 - 2
	XIC - File #2 - 273
B3:8/9	- Reset Clearwell totalizer
	OTU - File #2 - 276
	XIC - File #2 - 276
B3:8/10	- RTC 1 Second pulse
	OTE - File #2 - 1
	XIC - File #2 - 277

RSLogix 500 Cross Reference Report - Sorted by Address

B3:8/11	- Reset Dist Flow Totalizer OTU - File #2 - 280 XIC - File #2 - 280
B3:8/12	- pump 2 start test OTE - File #2 - 227 XIC - File #2 - 228 XIO - File #2 - 229
B3:8/13	- pump 2 start latch OTL - File #2 - 228 OTU - File #2 - 229 XIC - File #2 - 230
B3:8/14	- pump 3 start test OTE - File #2 - 231 XIC - File #2 - 232 XIO - File #2 - 233
B3:8/15	- pump 3 start latch OTL - File #2 - 232 OTU - File #2 - 233 XIC - File #2 - 234
B3:9/0	- alarm horn enable XIC - File #2 - 189
B3:9/1	- Micro-filt. Unit Run Command OTL - File #2 - 264 OTU - File #2 - 261, 265 XIC - File #2 - 133, 211, 215, 266 XIO - File #2 - 267
B3:9/2	- Low Micro Filt Unit Particle Count Flow ALarm OTL - File #2 - 133 OTU - File #2 - 134 XIC - File #2 - 180 XIO - File #2 - 135
B3:9/3	- Low Micro Filt Unit Particle Count Flow ALarm Ack OTL - File #2 - 133 OTU - File #2 - 135
B3:9/4	- High Micro Filt Unit Particle Count ALarm OTL - File #2 - 137 OTU - File #2 - 138 XIO - File #2 - 139
B3:9/5	- High Micro Filt Unit Particle Count ALarm Ack OTL - File #2 - 137 OTU - File #2 - 139
B3:9/6	- High Chlorine Free Residual Alarm ACK OTL - File #2 - 141 OTU - File #2 - 143 XIO - File #2 - 184
B3:9/7	- High Chlorine Free Residual Alarm OTL - File #2 - 141 OTU - File #2 - 142 XIC - File #2 - 179, 184 XIO - File #2 - 143
B3:9/8	- Low Chlorine Free Residual Alarm ACK OTL - File #2 - 145 OTU - File #2 - 147 XIO - File #2 - 184
B3:9/9	- Low Chlorine Free Residual Alarm OTL - File #2 - 145 OTU - File #2 - 146 XIC - File #2 - 179, 184 XIO - File #2 - 147
B3:9/10	- AIT-CHLOR Warning ACK OTL - File #2 - 148 OTU - File #2 - 150 XIO - File #2 - 186
B3:9/11	- AIT-CHLOR Warning OTL - File #2 - 148 OTU - File #2 - 149 XIC - File #2 - 179, 186 XIO - File #2 - 150
B3:9/12	- AIT-CHLOR System Alarm ACK

RSLogix 500 Cross Reference Report - Sorted by Address

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OTL - File #2 - 151
OTU - File #2 - 153
XIO - File #2 - 184
B3:9/13 - AIT-CHLOR System Alarm
          OTL - File #2 - 151
          OTU - File #2 - 152
          XIC - File #2 - 179, 184
          XIO - File #2 - 153
T4:1 - Reset Button Timer
      TON - File #2 - 3
T4:1/DN - Reset Alarm Bit
        XIC - File #2 - 20, 23, 26, 29, 32, 35, 39, 42, 45, 48, 51
          55, 58, 61, 64, 67, 71, 75, 78, 81, 85, 89, 93, 97
          101, 105, 109, 118, 122, 126, 130, 134, 138, 142, 146
          149, 152, 157, 162, 167, 171, 205, 209, 212, 217
T4:2 - Pump 1 Fail Timer
      TON - File #2 - 285
T4:2/DN - Pump 1 Fail Test Bit
        XIC - File #2 - 19
        XIO - File #2 - 20
T4:3 - Pump 2 Fail Timer
      TON - File #2 - 286
T4:3/DN - Pump 2 Fail Test Bit
        XIC - File #2 - 22
        XIO - File #2 - 23
T4:4 - Pump 3 Fail Timer
      TON - File #2 - 287
T4:4/DN - Pump 3 Fail Test Bit
        XIC - File #2 - 25
        XIO - File #2 - 26
T4:5 - Low Raw Water Flow Timer
      TON - File #2 - 83
T4:5/DN - Low Raw Water flow Test Bit
        XIC - File #2 - 84
        XIO - File #2 - 85
T4:6 - Low Dist Press. Timer
      TON - File #2 - 87
T4:6/DN - Low Dist Pressure Test Bit
        XIC - File #2 - 88
        XIO - File #2 - 89
T4:7 - Low Dist FLOW Timer
      TON - File #2 - 91
T4:7/DN - Low Dist FLOW Test Bit
        XIC - File #2 - 92
        XIO - File #2 - 93
T4:8 - North Res High Level Alarm Timer
      TON - File #2 - 95
T4:8/DN - North Res High Level Alarm Test Bit
        XIC - File #2 - 96
        XIO - File #2 - 97
T4:9 - North Res Low Level Alarm Timer
      TON - File #2 - 99
T4:9/DN - North Res. Low Level Alarm Test Bit
        XIC - File #2 - 100, 115
        XIO - File #2 - 101
T4:10 - South Res High Level Alarm Timer
      TON - File #2 - 103
T4:10/DN - South Res High Level Alarm Test Bit
        XIC - File #2 - 104
        XIO - File #2 - 105
T4:11 - South Res Low Level Alarm Timer
      TON - File #2 - 107
T4:11/DN - South Res Low Level Alarm Test Bit
        XIC - File #2 - 108, 115
        XIO - File #2 - 109
T4:12 - Chlorine Weight Alarm Timer
      TON - File #2 - 116
T4:12/DN - Cl Weight Alarm Test Bit
        XIC - File #2 - 117

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RSLogix 500 Cross Reference Report - Sorted by Address

T4:13	- XIO - File #2 - 118 - Low Propane Tank Level Alarm Timer TON - File #2 - 120
T4:13/DN	- Low Propane Tank Level Test Bit XIC - File #2 - 121 XIO - File #2 - 122
T4:14	- High WTU Turbidity Alarm Timer TON - File #2 - 124
T4:14/DN	- High WTU Trubidity Test Bit XIC - File #2 - 125 XIO - File #2 - 126
T4:15	- High Micro-filt Unit Particle Count Flow Alarm Timer TON - File #2 - 128
T4:15/DN	- High Micro-filt Unit Particle Count Flow Test Bit XIC - File #2 - 129 XIO - File #2 - 130
T4:16	- Flasher Timer TON - File #2 - 173
T4:16/DN	- Flasher Bit XIC - File #2 - 174, 188, 189
T4:17	- Flasher Reset Timer TON - File #2 - 174
T4:17/DN	- Flasher Reset XIO - File #2 - 173
T4:18	- WTP Alarm Dialer Delay Timer (Communications) TON - File #2 - 193
T4:18/DN	- WTP Dialout Timer Done Bit (Communications) XIC - File #2 - 193
T4:19	- Tower Comm Fail Timer TON - File #2 - 154
T4:19/DN	- Tower Comm Fail Test Bit XIC - File #2 - 156 XIO - File #2 - 157, 191, 226, 227, 231
T4:20	- Intake Comm Fail Timer TON - File #2 - 159
T4:20/DN	- Intake Comm Fail Test Bit XIC - File #2 - 161, 190 XIO - File #2 - 162, 192
T4:21	- WTU Comm Fail Timer TON - File #2 - 164
T4:21/DN	- WTU Comm Fail Test Bit XIC - File #2 - 166 XIO - File #2 - 167
T4:22	- Micro-filt Comm Fail Timer TON - File #2 - 169
T4:22/DN	- Micro-filt Comm Fail Test Bit XIC - File #2 - 170 XIO - File #2 - 171
T4:23	- Fast Flasher Timer TON - File #2 - 175
T4:23/DN	- Fast Flasher Bit XIC - File #2 - 176, 189
T4:24	- Fast Flasher Reset TON - File #2 - 176
T4:24/DN	- Fast Flasher Reset Bit XIO - File #2 - 175
T4:25	- WTP Alarm Dialer Delay Timer (Power) TON - File #2 - 194
T4:25/DN	- WTP Alarm Dialer Delay Done Bit (Power) XIC - File #2 - 194
T4:26	- WTU Failed to Run Alarm Timer TON - File #2 - 207
T4:26/DN	- WTU Failed To Run Test Bit XIC - File #2 - 208 XIO - File #2 - 209
T4:27	- WTP Alarm Dialer Delay Timer (Building) TON - File #2 - 195
T4:27/DN	- WTP Alarm Delay Timer Done (Building) XIC - File #2 - 195

RSLogix 500 Cross Reference Report - Sorted by Address

T4:28	- micro-filt unit fail to run alrm delay TON - File #2 - 215
T4:28/DN	- micro-filt unit failed to run test bit XIC - File #2 - 216 XIO - File #2 - 217
T4:29	- Channel 1 (485) Message initiate Timer TON - File #2 - 235
T4:29/DN	- Ch1 Message initiate bit XIC - File #2 - 236 XIO - File #2 - 235
T4:29.ACC	- LIM - File #2 - 237, 238, 239, 240, 241, 242, 243, 246
T4:30	- UV Warmup Delay TON - File #2 - 255
T4:30/TT	- XIC - File #2 - 256
T4:31	- Intake Lead Pump Call Delay TON - File #2 - 253
T4:31/DN	- Intake Lead Pump Req XIC - File #2 - 255, 257
T4:32	- Intake Lag Pump Call Delay Timer TON - File #2 - 254
T4:32/DN	- Intake Lag Pump Delay Done XIC - File #2 - 261
T4:33	- LWCO Reset Delay Timer TON - File #2 - 113
T4:33/DN	- LWCO Auto Reset Bit XIC - File #2 - 114
T4:34	- WTP Alarm Delay Timer (Chlorine) TON - File #2 - 196
T4:34/DN	- WTP Alarm Delay Timer Done (Chlorine) XIC - File #2 - 196
T4:35	- WTP Alarm Delay Timer (Pressure/Level) TON - File #2 - 197
T4:35/DN	- WTP Alarm Delay Timer Done (Pressure/Level) XIC - File #2 - 197
T4:36	- WTU BW Disallow Test Timer TON - File #2 - 269
T4:36/DN	- WTU Backwash disallow Test Timer Done XIC - File #2 - 269
T4:37	- Chlorinate Allow Test Timer TON - File #2 - 271
T4:37/DN	- Chlorinate Allow Test Timer Done XIC - File #2 - 271
T4:38	- Microfilt Jog test Timer (3 Hours) TON - File #2 - 263
T4:38/DN	- Micro-filt Jog test Timer Done XIC - File #2 - 263
T4:39	- Micro-filt Jog Pulse (10 Min) TON - File #2 - 263
T4:39/DN	- Micro -filt Jog Pulse Done XIO - File #2 - 263
T4:40	- pump 2 shutdown debounce TON - File #2 - 229
T4:40/DN	- pump 2 shutdown debounce done XIC - File #2 - 229
T4:41	- pump 3 shutdown debounce timer TON - File #2 - 233
T4:41/DN	- pump 3 shutdown debounce timer done XIC - File #2 - 233
T4:42	- Pump 1 Start Debounce Timer TON - File #2 - 226
T4:42/DN	- Pump 1 Start Debounce Timer Done XIC - File #2 - 226
T4:43	- Pump #2 Start Debounce Timer TON - File #2 - 227
T4:43/DN	- Pump #2 Start Debounce Timer Done XIC - File #2 - 227
T4:44	- Pump #3 Start Debounce Timer TON - File #2 - 231
T4:44/DN	- Pump #3 Start DEbounce Timer Done

RSLogix 500 Cross Reference Report - Sorted by Address

T4:45	- XIC - File #2 - 231
	- Alum fault pulse timer
	TON - File #2 - 69
T4:45/DN	- Alum fault test bit
	XIC - File #2 - 70
	XIO - File #2 - 71
T4:46	- Polymer fault pulse timer
	TON - File #2 - 73
T4:46/DN	- Polymer fault test bit
	XIC - File #2 - 74
	XIO - File #2 - 75
T4:47	- Low Micro-filt Unit Particle Count Flow Alarm Timer
	TON - File #2 - 132
T4:47/DN	- Low Micro-filt Unit Particle Count Flow Test Bit
	XIC - File #2 - 133
	XIO - File #2 - 134
T4:48	- High Micro-filt Unit Particle Count Alarm Timer
	TON - File #2 - 136
T4:48/DN	- High Micro-filt Unit Particle Count Test Bit
	XIC - File #2 - 137
	XIO - File #2 - 138
T4:49	- TON - File #2 - 140
T4:49/DN	- {ASH_CHLOR_RES}
	XIC - File #2 - 141
	XIO - File #2 - 142
T4:50	- TON - File #2 - 144
T4:50/DN	- {ASL_CHLOR_RES}
	XIC - File #2 - 145
	XIO - File #2 - 146
T4:51	- TON - File #2 - 37
T4:51/DN	- XIC - File #2 - 38
	XIO - File #2 - 39
C5:1	- Lead Service Pump Alternator
	CTU - File #2 - 221
	RES - File #2 - 222
C5:1/DN	- Lead Service Pump Alternator Reset
	XIC - File #2 - 222
C5:1.ACC	- EQU - File #2 - 223, 224, 225
C5:2	- Clearwell Call for water minutes totalizer
	CTU - File #2 - 273
	RES - File #2 - 274, 276
C5:2/DN	- XIC - File #2 - 274
C5:2.ACC	- MOV - File #2 - 273
N7:0	- Scaled Raw Water Turbidity 0-10000 milli-NTU
	MOV - File #2 - 5
	SCL - File #2 - 4
N7:1	- Scaled WTU Treated Water Turbidity 0-3000 milli-NTU
	MOV - File #2 - 7
	SCL - File #2 - 6
	GRT - File #2 - 124
N7:2	- Scaled Micro-Filt Particle Flow 0-100 % = 0 - 2000 ml/min
	MOV - File #2 - 9
	SCL - File #2 - 8
	GRT - File #2 - 128
	LES - File #2 - 9, 132
N7:4	- Scaled Raw Water Flow 0-50 l/s
	SCL - File #2 - 10
	GEQ - File #2 - 271
	LES - File #2 - 83
N7:5	- Scaled Dist Pressure 0-1034 kpa
	SCL - File #2 - 12
	LES - File #2 - 87
N7:6	- Scaled Dist Flow 0-150 l/s
	ADD - File #2 - 277
	SCL - File #2 - 13
	LES - File #2 - 91
N7:8	- Scaled Chlorine Weight
	SCL - File #2 - 14
	LES - File #2 - 116

RSLogix 500 Cross Reference Report - Sorted by Address

N7:9 - Scaled Propane Tank Level
 SCP - File #2 - 15
 LES - File #2 - 120

N7:10 - Scaled North Res. Level 0-4000 mm
 MOV - File #2 - 248
 SCL - File #2 - 16
 GRT - File #2 - 95, 113
 GEQ - File #2 - 268, 282
 LES - File #2 - 99, 269

N7:11 - Scaled South Res. Level 0-4000 mm
 MOV - File #2 - 249
 SCL - File #2 - 17
 GRT - File #2 - 103, 113
 LES - File #2 - 107

N7:12 - Low Dist. Pressure SP
 LES - File #2 - 87

N7:13 - Low Raw Water Flow SP
 LES - File #2 - 83

N7:14 - Low Dist Flow SP
 LES - File #2 - 91

N7:15 - North Res High Level SP
 GRT - File #2 - 95

N7:16 - North Res. Low Level SP
 ADD - File #2 - 111
 LES - File #2 - 99

N7:17 - South Res. High Level SP
 GRT - File #2 - 103

N7:18 - South Res. Low Level SP
 ADD - File #2 - 112
 LES - File #2 - 107

N7:19 - Low Cl Weight Alarm SP
 LES - File #2 - 116

N7:20 - Low Propane Tank Level ALarm SP
 LES - File #2 - 120

N7:21 - WTU High Turbidity ALarm SP
 GRT - File #2 - 124

N7:22 - High Micro-Filt Unit Particle Count Flow Alarm SP
 GRT - File #2 - 128

N7:23 - Muxed Res. Level For Control
 MOV - File #2 - 248, 249
 GEQ - File #2 - 260
 LES - File #2 - 255, 257
 LEQ - File #2 - 253, 254

N7:24 - Stop Calling For Water
 SUB - File #2 - 250
 GEQ - File #2 - 250, 260
 LES - File #2 - 255, 257

N7:25 - Call For Water SP
 SUB - File #2 - 250, 251
 GEQ - File #2 - 250, 251
 LEQ - File #2 - 253

N7:26 - Call Lag Intake Pump SP
 SUB - File #2 - 251
 GEQ - File #2 - 251
 LEQ - File #2 - 254

N7:27 - Low Water Cutoff Reset SP
 ADD - File #2 - 111, 112
 GRT - File #2 - 113

N7:28 - Minimum Backwash Allow SP.
 GEQ - File #2 - 268
 LES - File #2 - 269

N7:29 - Minimum Flow For Chlorination
 GEQ - File #2 - 271

N7:30 - Low Micro-Filt Unit Particle Count Flow Alarm SP
 LES - File #2 - 132

N7:31 - Micro Filt Unit Particle Count from RsView
 GRT - File #2 - 136

N7:32 - High Micro Filt Unit Particle Count SP
 GRT - File #2 - 136

RSLogix 500 Cross Reference Report - Sorted by Address

```

N7:33      - Dist flow m3 X 10000 totalizer
            MOV - File #2 - 280
            ADD - File #2 - 279
N7:34      - Dist M3 totalizer
            MOV - File #2 - 279, 280
            ADD - File #2 - 278
            GEQ - File #2 - 279
N7:35      - Dist Flow Litres Totalizer
            MOV - File #2 - 280
            ADD - File #2 - 277
            SUB - File #2 - 278
            GEQ - File #2 - 278
N7:36      - RTC Seconds Test Reg.
            MOV - File #2 - 1
            NEQ - File #2 - 1
N7:37      - Clearwell hours X 10000 totalizer
            MOV - File #2 - 276
            ADD - File #2 - 275
N7:38      - Clearwell hours totalizer
            MOV - File #2 - 275, 276
            ADD - File #2 - 274
            GEQ - File #2 - 275
N7:39      - RTC Minutes Test Register
            MOV - File #2 - 2
            NEQ - File #2 - 2
N7:40      - clearwell totalizer minutes for rsviw
            MOV - File #2 - 273
N7:41      - B.W. Pump Protect SP
            GEQ - File #2 - 282
N7:100     - 1st reg from Intake
            MSG - File #2 - 237
N7:100/0   - Alarm dialout Bit Mastered from Intake
            XIC - File #2 - 192
N7:100/1   - Comm Test Bit (Always set to 1 by Intake)
            OTU - File #2 - 160
            XIO - File #2 - 159
N7:101/9   - Intake Bldg. Hi temp Alm Ack
            XIO - File #2 - 201
N7:101/10  - Intake Bldg Hi Temp Alm
            XIC - File #2 - 201
N7:101/11  - Intake Bldg Low Temp Alm Ack
            XIO - File #2 - 201
N7:101/12  - Intake Bldg Low Temp Alm
            XIC - File #2 - 201
N7:101/13  - Intake Floor Flood Alm ack
            XIO - File #2 - 201
N7:101/14  - Intake Floor Flood Alm
            XIC - File #2 - 201
N7:110     - 1st reg To Intake
            MSG - File #2 - 238
N7:110/1   - Lead Pump call (mastered to Intake)
            OTL - File #2 - 261, 264
            OTU - File #2 - 265
            XIC - File #2 - 83, 270
N7:110/2   - Lag Pump Call (Mastered to intake)
            OTL - File #2 - 261
            OTU - File #2 - 265
N7:110/3   - WTU Request Summer pump to Intake
            OTE - File #2 - 261
N7:110/4   - WTU Request Winter Pump to Intake
            OTE - File #2 - 261
N7:110/5   - WTU selected
            OTE - File #2 - 262
N7:110/6   - Comm Test Bit to Intake
            OTE - File #2 - 283
N7:120     - 1st reg from Tower
            MSG - File #2 - 239
N7:120/0   - Alarm Dialout Bit From Tower
            XIC - File #2 - 191

```

RSLogix 500 Cross Reference Report - Sorted by Address

N7:120/1 - First Pump Request From Tower
 XIC - File #2 - 226, 227, 231
 XIO - File #2 - 220
 N7:120/2 - Second Pump REquest From Tower
 XIC - File #2 - 226, 227, 231
 XIO - File #2 - 220
 N7:120/3 - Thrid Pump REquest From Tower
 XIC - File #2 - 226, 227, 231
 XIO - File #2 - 220
 N7:120/4 - Comm Test Bit (Always set to 1 by Tower)
 OTU - File #2 - 155
 XIO - File #2 - 154
 N7:121/1 - Tower Low Temp Ack
 XIO - File #2 - 198
 N7:121/2 - Tower Low Temp Alarm
 XIC - File #2 - 198
 N7:121/4 - Tower Low Dist Temp Ack
 XIO - File #2 - 198
 N7:121/5 - Tower Low Dist Temp Alm
 XIC - File #2 - 198
 N7:130 - 1st reg To Tower
 MSG - File #2 - 240
 N7:140 - 1st reg From WTU
 MSG - File #2 - 241
 N7:140/0 - WTU Comm Test Bit (Always Set to 1 by WTU)
 OTU - File #2 - 165
 XIO - File #2 - 164
 N7:140/1 - Common Alarm Bit (from WTU)
 XIC - File #2 - 204
 XIO - File #2 - 205
 N7:140/2 - WTU plant "ON" (From WTU)
 XIC - File #2 - 6, 69, 73, 204, 270
 XIO - File #2 - 7, 207
 N7:140/3 - WTU In Backwash
 XIO - File #2 - 69, 73, 269, 270
 N7:140/4 - WTU Request Summer Pump
 XIC - File #2 - 261
 N7:140/5 - WTU Request Winter Pump
 XIC - File #2 - 261
 N7:140/6 - Effluent Valve Control - Open
 XIC - File #2 - 6
 XIO - File #2 - 7
 N7:150 - 1st reg To WTU
 MSG - File #2 - 242
 N7:150/0 - WTU Start/Stop Command (to WTU)
 OTL - File #2 - 261
 OTU - File #2 - 264, 265
 XIC - File #2 - 207
 N7:150/1 - WTU B.W. Allow (To WTU)
 OTL - File #2 - 268
 OTU - File #2 - 269
 N7:150/2 - WTU Chem Feed Flow (To WTU)
 OTE - File #2 - 271
 XIC - File #2 - 69, 73
 N7:150/3 - Holding Tank High Level
 OTE - File #2 - 281
 N7:150/4 - B.W. Pump Protect is OK
 OTE - File #2 - 282
 N7:150/5 - Commm Test Bit to WTU
 OTE - File #2 - 284
 N7:150/6 - Floor Flood Alarm
 OTE - File #2 - 53
 N7:150/8 - Call for UV-Reactor
 OTL - File #2 - 255
 OTU - File #2 - 260
 N7:150/9 - HS-WTU to WTU for UV System
 OTE - File #2 - 258
 N7:150/10 - HS-uFilt to WTU for UV System
 OTE - File #2 - 259

RSLogix 500 Cross Reference Report - Sorted by Address

```

N7:160      - State Code From Micro Filt Unit
             MSG - File #2 - 243
             EQU - File #2 - 214
             GRT - File #2 - 267
             LEQ - File #2 - 266
N7:162/1    - Shutdown Alarms From Micro-filt Present
             XIC - File #2 - 211
             XIO - File #2 - 212
N7:170      - 1st reg to Micro-Filt
             MSG - File #2 - 246
N7:170/0    - Stop command to micro-filt
             OTE - File #2 - 267
N7:170/1    - Start Command to Micro-filt
             OTE - File #2 - 266
F8:0        - {AIT_CHLOR} Free Chlorine Residual
             SCP - File #2 - 18
             GRT - File #2 - 140
             LES - File #2 - 144
F8:1        - {SP_ASH_CHLOR}
             MOV - File #2 - 0
             GRT - File #2 - 140
F8:2        - {SP_ASL_CHLOR}
             MOV - File #2 - 0
             LES - File #2 - 144
F8:3        - {FIT_RAW_IN}
             SCP - File #2 - 11
N9:0        - message control block for read from node 2 (intake ph)
             MSG - File #2 - 237
FILE N9:0 LEN:14 - MSG - File #2 - 237
N9:20       - message control block for write to node 2 (intake ph)
             MSG - File #2 - 238
FILE N9:20 LEN:14 - MSG - File #2 - 238
N9:40       - message control block for read from node 3 (tower)
             MSG - File #2 - 239
FILE N9:40 LEN:14 - MSG - File #2 - 239
N9:60       - message control block for write to node 3 (tower)
             MSG - File #2 - 240
FILE N9:60 LEN:14 - MSG - File #2 - 240
N9:80       - message control block for read from node 4 (WTU)
             MSG - File #2 - 241
FILE N9:80 LEN:14 - MSG - File #2 - 241
N9:100      - message control block for write to node 4 (WTU)
             MSG - File #2 - 242
FILE N9:100 LEN:14 - MSG - File #2 - 242
N9:120      - message control block for read from node 5 (micro-filt)
             MSG - File #2 - 243
FILE N9:120 LEN:14 - MSG - File #2 - 243
N9:120/12   - micro filt read error bit
             XIC - File #2 - 244
FILE N9:120/12 LEN:14 - MSG - File #2 - 243
N9:120/13   - micro filt read done bit
             XIC - File #2 - 245
FILE N9:120/13 LEN:14 - MSG - File #2 - 243
N9:140      - message control block for Write To node 5 (micro-filt)
             MSG - File #2 - 246
FILE N9:140 LEN:14 - MSG - File #2 - 246
N9:140/12   - micro filt Write error bit
             XIC - File #2 - 247
FILE N9:140/12 LEN:14 - MSG - File #2 - 246
N9:140/13   - micro filt Write done bit
             XIC - File #2 - 247
FILE N9:140/13 LEN:14 - MSG - File #2 - 246
N9:140/15   - Micro-filt Write Enable
             OTU - File #2 - 247
FILE N9:140/15 LEN:14 - MSG - File #2 - 246

```

WTP.RSS

Data File 00 -- OUTPUT Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
O:3.0		X	X	X	1746-OX8 - 8-Output Isolated Relay
O:4.0		X	X	X	X	X	X	X	X	.	.	.	.	X	X	X	.	1746-OW16 - 16-Output (RLY) 240 VAC

WTP.RSS

Data File I1 -- INPUT Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
I:1.0		X	X	X	X	X	X	X	X	.	.	X	.	.	X	X	X	1746-IB16 - 16-Input (SINK) 24 VDC
I:2.0		.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1746-IB16 - 16-Input (SINK) 24 VDC
I:6.0		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1747-KE - Interface Module, Series A
I:7.0		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1747-KE - Interface Module, Series A
I:9.0	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:9.1	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:9.2	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:9.3	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:10.0	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:10.1	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:10.2	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:10.3		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:11.0	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:11.1	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:11.2	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu
I:11.3	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NI4 - Analog 4 Channel Input Modu

WTP.RSS

Data File S2 -- STATUS Usage

Offset	0	1	2	3	4	5	6	7	8	9
S:0	.	X	.	.	.	X	.	.	.	.
S:10
S:20
S:30
S:40	.	X	X	.	.	.	.	.	.	.
S:50
S:60
S:70
S:80

WTP.RSS

Data File B3 -- BINARY Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:0		X	X	X	X	X	X	X	.	.	X	X	X	X	X	X	.	
B3:1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B3:2		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B3:3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B3:4		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B3:5		X	X	X	X	X	.	X	X	X	.	.	.	X	X	X	X	
B3:6		X	.	.	X	.	.	.	.	.	.	.	.	.	X	X	X	
B3:7		X	X	X	X	X	X	.	X	X	X	X	X	X	X	X	X	X
B3:8		X	X	X	X	X	X	X	X	X	X	X	X	.	.	.	.
B3:9		.	.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B3:10	
B3:11	
B3:12	
B3:13	
B3:14	
B3:15	
B3:16	
B3:17	
B3:18	
B3:19	
B3:20	
B3:21	
B3:22	
B3:23	
B3:24	
B3:25	
B3:26	
B3:27	
B3:28	
B3:29	
B3:30	
B3:31	
B3:32	
B3:33	
B3:34	
B3:35	
B3:36	
B3:37	
B3:38	
B3:39	
B3:40	
B3:41	
B3:42	
B3:43	
B3:44	
B3:45	
B3:46	
B3:47	
B3:48	
B3:49	
B3:50	
B3:51	
B3:52	
B3:53	
B3:54	
B3:55	
B3:56	
B3:57	
B3:58	
B3:59	
B3:60	
B3:61	
B3:62	
B3:63	
B3:64	
B3:65	

WTP.RSS

Data File B3 -- BINARY Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description	
B3:66	
B3:67	
B3:68	
B3:69	
B3:70	
B3:71	
B3:72	
B3:73	
B3:74	
B3:75	
B3:76	
B3:77	
B3:78	
B3:79	
B3:80	
B3:81	
B3:82	
B3:83	
B3:84	
B3:85	
B3:86	
B3:87	
B3:88	
B3:89	
B3:90	
B3:91	
B3:92	
B3:93	
B3:94	
B3:95	
B3:96	
B3:97	
B3:98	
B3:99	
B3:100	
B3:101	
B3:102	
B3:103	
B3:104	
B3:105	
B3:106	
B3:107	
B3:108	
B3:109	
B3:110	
B3:111	
B3:112	
B3:113	
B3:114	
B3:115	
B3:116	
B3:117	
B3:118	
B3:119	
B3:120	
B3:121	
B3:122	
B3:123	
B3:124	
B3:125	
B3:126	
B3:127	
B3:128	
B3:129	
B3:130	
B3:131	

WTP.RSS

Data File B3 -- BINARY Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:132
B3:133
B3:134
B3:135
B3:136
B3:137
B3:138
B3:139
B3:140
B3:141
B3:142
B3:143
B3:144
B3:145
B3:146
B3:147
B3:148
B3:149
B3:150
B3:151
B3:152
B3:153
B3:154
B3:155
B3:156
B3:157
B3:158
B3:159
B3:160
B3:161
B3:162
B3:163
B3:164
B3:165
B3:166
B3:167
B3:168
B3:169
B3:170
B3:171
B3:172
B3:173
B3:174
B3:175
B3:176
B3:177
B3:178
B3:179
B3:180
B3:181
B3:182
B3:183
B3:184
B3:185
B3:186
B3:187
B3:188
B3:189
B3:190
B3:191
B3:192
B3:193
B3:194
B3:195
B3:196
B3:197

WTP.RSS

Data File B3 -- BINARY Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:198
B3:199
B3:200
B3:201
B3:202
B3:203
B3:204
B3:205
B3:206
B3:207
B3:208
B3:209
B3:210
B3:211
B3:212
B3:213
B3:214
B3:215
B3:216
B3:217
B3:218
B3:219
B3:220
B3:221
B3:222
B3:223
B3:224
B3:225
B3:226
B3:227
B3:228
B3:229
B3:230
B3:231
B3:232
B3:233
B3:234
B3:235
B3:236
B3:237
B3:238
B3:239
B3:240
B3:241
B3:242
B3:243
B3:244
B3:245
B3:246
B3:247
B3:248
B3:249
B3:250
B3:251
B3:252
B3:253
B3:254

WTP.RSS

Data File T4 -- TIMER Usage

Offset	FW	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T4:0		.	.	.	.	.	.
T4:1	W	.	.	X	.	.	.	Reset Button Timer
T4:2	W	.	.	X	.	.	.	Pump 1 Fail Timer
T4:3	W	.	.	X	.	.	.	Pump 2 Fail Timer
T4:4	W	.	.	X	.	.	.	Pump 3 Fail Timer
T4:5	W	.	.	X	.	.	.	Low Raw Water Flow Timer
T4:6	W	.	.	X	.	.	.	Low Dist Press. Timer
T4:7	W	.	.	X	.	.	.	Low Dist FLOW Timer
T4:8	W	.	.	X	.	.	.	Norht Res High Level Alarm Timer
T4:9	W	.	.	X	.	.	.	North Res Low Level Alarm Timer
T4:10	W	.	.	X	.	.	.	South Res High Level Alarm Timer
T4:11	W	.	.	X	.	.	.	South Res Low Level Alarm Timer
T4:12	W	.	.	X	.	.	.	Chlorine Weight Alarm Timer
T4:13	W	.	.	X	.	.	.	Low Propane Tank Level Alarm Timer
T4:14	W	.	.	X	.	.	.	High Wtu Turbidity Alarm Timer
T4:15	W	.	.	X	.	.	.	High Micro-filt Unit Particle Count Flow Alarm Timer
T4:16	W	.	.	X	.	.	.	Flasher Timer
T4:17	W	.	.	X	.	.	.	Flasher Reset Timer
T4:18	W	.	.	X	.	.	.	WTP Alarm Dialer Delay Timer (Communications)
T4:19	W	.	.	X	.	.	.	Tower Comm Fail Timer
T4:20	W	.	.	X	.	.	.	Intake Comm Fail Timer
T4:21	W	.	.	X	.	.	.	WTU Comm Fail Timer
T4:22	W	.	.	X	.	.	.	Micro-filt Comm Fail Timer
T4:23	W	.	.	X	.	.	.	Fast Flasher Timer
T4:24	W	.	.	X	.	.	.	Fast Flasher Reset
T4:25	W	.	.	X	.	.	.	WTP Alarm Dialer Delay Timer (Power)
T4:26	W	.	.	X	.	.	.	WTU Failed to Run Alarm Timer
T4:27	W	.	.	X	.	.	.	WTP Alarm Dialer Delay Timer (Building)
T4:28	W	.	.	X	.	.	.	micro-filt unit fail to run alrm delay
T4:29	W	.	.	X	.	.	X	Channel 1 (485) Message initiate Timer
T4:30	W	.	X	.	.	.	.	UV Warmup Delay
T4:31	W	.	.	X	.	.	.	Intake Lead Pump Call Delay
T4:32	W	.	.	X	.	.	.	Intake Lag Pump Call Delay Timer
T4:33	W	.	.	X	.	.	.	LWCO Reset Delay Timer
T4:34	W	.	.	X	.	.	.	WTP Alarm Delay Timer (Chlorine)
T4:35	W	.	.	X	.	.	.	WTP Alarm Delay Timer (Pressure/Level)
T4:36	W	.	.	X	.	.	.	WTU BW Disallow Test Timer
T4:37	W	.	.	X	.	.	.	Chlorinate Allow Test Timer
T4:38	W	.	.	X	.	.	.	Microfilt Jog test Timer (3 Hours)
T4:39	W	.	.	X	.	.	.	Micro-filt Jog Pulse (10 Min)
T4:40	W	.	.	X	.	.	.	pump 2 shutdown debounce
T4:41	W	.	.	X	.	.	.	pump 3 shutdown debounce timer
T4:42	W	.	.	X	.	.	.	Pump 1 Start Debounce Timer
T4:43	W	.	.	X	.	.	.	Pump #2 Start Debounce Timer
T4:44	W	.	.	X	.	.	.	Pump #3 Start Debounce Timer
T4:45	W	.	.	X	.	.	.	Alum fault pulse timer
T4:46	W	.	.	X	.	.	.	Polymer fault pulse timer
T4:47	W	.	.	X	.	.	.	Low Micro-filt Unit Particle Count Flow Alarm Timer
T4:48	W	.	.	X	.	.	.	High Micro-filt Unit Particle Count Alarm Timer
T4:49	W	.	.	X	.	.	.	
T4:50	W	.	.	X	.	.	.	
T4:51	W	.	.	X	.	.	.	
T4:52	.	.	.	.	.	.	.
T4:53	.	.	.	.	.	.	.
T4:54	.	.	.	.	.	.	.
T4:55	.	.	.	.	.	.	.
T4:56	.	.	.	.	.	.	.
T4:57	.	.	.	.	.	.	.
T4:58	.	.	.	.	.	.	.
T4:59	.	.	.	.	.	.	.
T4:60	.	.	.	.	.	.	.
T4:61	.	.	.	.	.	.	.
T4:62	.	.	.	.	.	.	.
T4:63	.	.	.	.	.	.	.
T4:64	.	.	.	.	.	.	.
T4:65	.	.	.	.	.	.	.

WTP.RSS

Data File T4 -- TIMER Usage

Offset	FW	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T4:66
T4:67
T4:68
T4:69
T4:70
T4:71
T4:72
T4:73
T4:74
T4:75
T4:76
T4:77
T4:78
T4:79
T4:80
T4:81
T4:82
T4:83
T4:84
T4:85
T4:86
T4:87
T4:88
T4:89
T4:90
T4:91
T4:92
T4:93
T4:94
T4:95
T4:96
T4:97
T4:98
T4:99

WTP.RSS

Data File C5 -- COUNTER Usage

Offset	FW	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol) Description
C5:0
C5:1	W	.	.	X	.	.	.	.	X	Lead Service Pump Alternator
C5:2	W	.	.	X	.	.	.	.	X	Clearwell Call for water minutes totalizer
C5:3
C5:4
C5:5
C5:6
C5:7
C5:8
C5:9
C5:10
C5:11
C5:12
C5:13
C5:14
C5:15
C5:16
C5:17
C5:18
C5:19
C5:20
C5:21
C5:22
C5:23
C5:24
C5:25
C5:26
C5:27
C5:28
C5:29
C5:30
C5:31
C5:32
C5:33
C5:34
C5:35
C5:36
C5:37
C5:38
C5:39
C5:40
C5:41
C5:42
C5:43
C5:44
C5:45
C5:46
C5:47
C5:48
C5:49
C5:50
C5:51
C5:52
C5:53
C5:54
C5:55
C5:56
C5:57
C5:58
C5:59
C5:60
C5:61
C5:62
C5:63
C5:64
C5:65

WTP.RSS

Data File C5 -- COUNTER Usage

Offset	FW	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol) Description
C5:66	
C5:67	
C5:68	
C5:69	
C5:70	
C5:71	
C5:72	
C5:73	
C5:74	
C5:75	
C5:76	
C5:77	
C5:78	
C5:79	
C5:80	
C5:81	
C5:82	
C5:83	
C5:84	
C5:85	
C5:86	
C5:87	
C5:88	
C5:89	
C5:90	
C5:91	
C5:92	
C5:93	
C5:94	
C5:95	
C5:96	
C5:97	
C5:98	
C5:99	

WTP.RSS

Data File R6 -- CONTROL Usage

Offset	FW	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol) Description
R6:0
R6:1
R6:2
R6:3
R6:4
R6:5
R6:6
R6:7
R6:8
R6:9
R6:10
R6:11
R6:12
R6:13
R6:14
R6:15
R6:16
R6:17
R6:18
R6:19
R6:20
R6:21
R6:22
R6:23
R6:24
R6:25
R6:26
R6:27
R6:28
R6:29
R6:30
R6:31
R6:32
R6:33
R6:34
R6:35
R6:36
R6:37
R6:38
R6:39
R6:40
R6:41
R6:42
R6:43
R6:44
R6:45
R6:46
R6:47
R6:48
R6:49
R6:50
R6:51
R6:52
R6:53
R6:54
R6:55
R6:56
R6:57
R6:58
R6:59
R6:60
R6:61
R6:62
R6:63
R6:64
R6:65

WTP.RSS

Data File R6 -- CONTROL Usage

Offset	FW	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol) Description
R6:66
R6:67
R6:68
R6:69
R6:70
R6:71
R6:72
R6:73
R6:74
R6:75
R6:76
R6:77
R6:78
R6:79
R6:80
R6:81
R6:82
R6:83
R6:84
R6:85
R6:86
R6:87
R6:88
R6:89
R6:90
R6:91
R6:92
R6:93
R6:94
R6:95
R6:96
R6:97
R6:98
R6:99

WTP.RSS

Data File N7 -- INTEGER Usage

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	X	X	X	.	X	X	X	.	X	X
N7:10	X	X	X	X	X	X	X	X	X	X
N7:20	X	X	X	X	X	X	X	X	X	X
N7:30	X	X	X	X	X	X	X	X	X	X
N7:40	X	X	.	.	.	.	.	.	.	.
N7:50	.	.	.	.	.	.	.	.	.	.
N7:60	.	.	.	.	.	.	.	.	.	.
N7:70	.	.	.	.	.	.	.	.	.	.
N7:80	.	.	.	.	.	.	.	.	.	.
N7:90	.	.	.	.	.	.	.	.	.	.
N7:100	X	X	.	.	.	.	.	.	.	.
N7:110	X	.	.	.	.	.	.	.	.	.
N7:120	X	X	.	.	.	.	.	.	.	.
N7:130	X	.	.	.	.	.	.	.	.	.
N7:140	X	.	.	.	.	.	.	.	.	.
N7:150	X	.	.	.	.	.	.	.	.	.
N7:160	X	.	X	.	.	.	.	.	.	.
N7:170	X	.	.	.	.	.	.	.	.	.
N7:180	.	.	.	.	.	.	.	.	.	.
N7:190	.	.	.	.	.	.	.	.	.	.
N7:200	.	.	.	.	.	.	.	.	.	.
N7:210	.	.	.	.	.	.	.	.	.	.
N7:220	.	.	.	.	.	.	.	.	.	.
N7:230	.	.	.	.	.	.	.	.	.	.
N7:240	.	.	.	.	.	.	.	.	.	.
N7:250	.	.	.	.	.	.	.	.	.	.

WTP.RSS

Data File F8 -- FLOAT Usage

Offset	0	1	2	3	4
F8:0	X	X	X	X	.
F8:5
F8:10
F8:15
F8:20
F8:25
F8:30
F8:35
F8:40
F8:45
F8:50
F8:55
F8:60
F8:65
F8:70
F8:75
F8:80
F8:85
F8:90
F8:95
F8:100
F8:105
F8:110
F8:115
F8:120
F8:125
F8:130
F8:135
F8:140
F8:145
F8:150
F8:155
F8:160
F8:165
F8:170
F8:175
F8:180
F8:185
F8:190
F8:195
F8:200
F8:205
F8:210
F8:215
F8:220
F8:225
F8:230
F8:235
F8:240
F8:245
F8:250

WTP.RSS

Data File N9 Usage

Offset	0	1	2	3	4	5	6	7	8	9
N9:0	X	X	X	X	X	X	X	X	X	X
N9:10	X	X	X	X	.	.	.	.	.	.
N9:20	X	X	X	X	X	X	X	X	X	X
N9:30	X	X	X	X	.	.	.	.	.	.
N9:40	X	X	X	X	X	X	X	X	X	X
N9:50	X	X	X	X	.	.	.	.	.	.
N9:60	X	X	X	X	X	X	X	X	X	X
N9:70	X	X	X	X	.	.	.	.	.	.
N9:80	X	X	X	X	X	X	X	X	X	X
N9:90	X	X	X	X	.	.	.	.	.	.
N9:100	X	X	X	X	X	X	X	X	X	X
N9:110	X	X	X	X	.	.	.	.	.	.
N9:120	X	X	X	X	X	X	X	X	X	X
N9:130	X	X	X	X	.	.	.	.	.	.
N9:140	X	X	X	X	X	X	X	X	X	X
N9:150	X	X	X	X	.	.	.	.	.	.
N9:160	.	.	.	.	.	.	.	.	.	.
N9:170	.	.	.	.	.	.	.	.	.	.
N9:180	.	.	.	.	.	.	.	.	.	.
N9:190	.	.	.	.	.	.	.	.	.	.
N9:200	.	.	.	.	.	.	.	.	.	.
N9:210	.	.	.	.	.	.	.	.	.	.
N9:220	.	.	.	.	.	.	.	.	.	.
N9:230	.	.	.	.	.	.	.	.	.	.
N9:240	.	.	.	.	.	.	.	.	.	.
N9:250	.	.	.	.	.	.	.	.	.	.

WTP.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. (
B3:0/1	N726	Global	Pump 1 Fail Alm Ack		
B3:0/2			Pump 1 Fail Alarm		
B3:0/3			Pump 2 Fail Alm Ack		
B3:0/4			Pump 2 Fail Alarm		
B3:0/5			Pump 3 Fail Alm Ack		
B3:0/6			Pump 3 Fail Alarm		
B3:0/7			Pump 4 Fail Alm Ack(Future)		
B3:0/8			Pump 4 Fail Alarm (Future)		
B3:0/9			Genset Fault Alm Ack		
B3:0/10			Genset Fault Alarm		
B3:0/11			Sask Power Fail Alm Ack		
B3:0/12			Sask Power Fail Alarm		
B3:0/13			MCC Power Filter Alm Ack		
B3:0/14			MCC Power Filter Alarm		
B3:0/15			LP Gas Low Press (Heating) Alm Ack		
B3:1/0			LP Gas Low Press (Heating) Alarm		
B3:1/1			Cl. Leak ALm Ack		
B3:1/2			Cl Leak Alarm		
B3:1/3			WTP Bldg. Lo Temp Alm Ack		
B3:1/4			WTP Bldg Low Temp Alarm		
B3:1/5			Cl. Bldg Low Temp Alm Ack		
B3:1/6			Cl. Bldg Low Temp Alarm		
B3:1/7			Floor Flood Alm Ack		
B3:1/8			Floor Flood Alarm		
B3:1/9			Sump Level Alm Ack		
B3:1/10			Sump Level Alarm		
B3:1/11			Alum Low Level ALm Ack		
B3:1/12			Alum Low Level Alarm		
B3:1/13			Polymer Low Level Alm Ack		
B3:1/14			Polymer Low Level Alarm		
B3:1/15			Acid Low Level Alm Ack		
B3:2/0			Acid Low Level Alarm		
B3:2/1			CIP Low Level Alm Ack		
B3:2/2			CIP Low Level Alarm		
B3:2/3			Alum Fault ALm Ack		
B3:2/4			Alum Fault Alarm		
B3:2/5			Polymer Fault Alm Ack		
B3:2/6			Polymer Fault Alarm		
B3:2/7			Acid Fault Alm Ack		
B3:2/8			Acid Fault Alarm		
B3:2/9			CIP Fault Alm Ack		
B3:2/10			CIP Fault Alarm		
B3:2/11			Low Raw Water Flow Alm Ack		
B3:2/12			Low Raw Water FLOW Alarm		
B3:2/13			Low Dist Press Alm Ack		
B3:2/14			Low Dist Pressure Alarm		
B3:2/15			Low Dist Flow Alm Ack		
B3:3/0			Low Dist Flow Alarm		
B3:3/1			North Res. High Level Alm Ack		
B3:3/2			North Res High Level Alarm		
B3:3/3			North Res. Low Level Alm Ack		
B3:3/4			North Res Low Level Alarm		
B3:3/5			South Res high Level Alm Ack		
B3:3/6			South Res High Level Alarm		
B3:3/7			South Res Low Level ALM Ack		
B3:3/8			South Res Low Level Alarm		
B3:3/9			Cl Weight Alm Ack		
B3:3/10			Cl Weight Alarm		
B3:3/11			Low Propane Alarm Ack		
B3:3/12			Low Propane Tank Alm		
B3:3/13			High WTU Turbidity Alarm Ack		
B3:3/14			High WTU Turbidity Alarm		
B3:3/15			High Micro Filt Unit Particle Count Flow ALm Ack		
B3:4/0			High Micro Filt Unit Particle Count Flow ALarm		
B3:4/1			Tower Comm Fail Alarm Ack		
B3:4/2			Tower Comm Fail Alarm		
B3:4/3			Intake Comm Fail Alm Ack		
B3:4/4			Intake Comm Fail Alarm		
B3:4/5			WTU Comm Fail ALm Ack		
B3:4/6			WTU Comm Fail Alarm		
B3:4/7			Micro-filt Comm Fail Alm Ack		
B3:4/8			Micro Filt Comm Fail Alarm		
B3:4/9			Water Treatment Unit Common Alm Ack		
B3:4/10			Water Treatment Unit Common ALarm		
B3:4/11			WTU Failed To Run Alm Ack		
B3:4/12			WTU Failed To Run Alarm		
B3:4/13			micro-filt Common Alm Ack		
B3:4/14			Micro-filt Common ALarm		
B3:4/15			Micro-filt Failed To run Alm Ack		
B3:5/0			Alarm Concentrator Bit #1		
B3:5/1			Alarm Concentrator Bit #2		
B3:5/2			Alarm Concentrator Bit #3		
B3:5/3			Alarm Concentrator Bit #4		
B3:5/4			Alarm Concentrator Bit #5		
B3:5/5			Flasher/dialer Concentrator bit #1 (not used)		
B3:5/6			Flasher/Dialer Concentrator Bit #2 (not used)		

WTP.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. I
B3:5/7			Flasher/Dialer Concentrator Bit #3 (Communications)		
B3:5/8			Flasher ONLY Concentrator Bit #1		
B3:5/9			Flasher ONLY Concentrator Bit #2		
B3:5/11			Flasher/Dialer concentrator bit 4 (power)		
B3:5/12			Flasher/Dialer Concentrator bit 5 (Building)		
B3:5/13			Flasher/Dialer concentrator bit 6 (Chlorine)		
B3:5/14			flasher/dialer concentrator bit 7 (pressure/level)		
B3:5/15			Micro Filt unit Failed To Run Alarm		
B3:6/0			OneShot		
B3:6/1			One Shot		
B3:6/2			oneshot		
B3:6/3			oneshot		
B3:6/4					
B3:6/5			oneshot		
B3:6/6			oneshot		
B3:6/7			oneshot		
B3:6/8			oneshot		
B3:6/9			oneshot		
B3:6/10			oneshot		
B3:6/11			oneshot		
B3:6/12			oneshot		
B3:6/15	ALW_OFF	Global	oneshot		
B3:7/0			Tower horn test bit		
B3:7/1			Tower Horn Bit		
B3:7/2			Intake Horn Test Bit		
B3:7/3			Intake Horn Bit		
B3:7/4			Servie Pump Auto Alternate		
B3:7/5			Auto Alternate Lead Increment		
B3:7/6			service pump 1 is lead		
B3:7/7			Service pump 2 is lead		
B3:7/8			service pump 3 is lead		
B3:7/9			comm. initiate timer reset		
B3:7/10			UV Lamps Warming Up		
B3:7/11			Message Sequence start		
B3:7/12			Use North Reservoir Level		
B3:7/13			Allow Plant Run in Hand		
B3:7/14			Fault Routine Status Bit		
B3:7/15			LNCO		
B3:8/0			Mirco Filt. Write Disable bit		
B3:8/1			Intake Com read Failed test bit		
B3:8/2			Tower Com Read Failed Test Bit		
B3:8/3			WTU Com Read Failed Test Bit		
B3:8/4			Micro filt Com Failed Read Test Bit		
B3:8/5			Micro filt. OK to Chlorinate Test Bit		
B3:8/6			WTP Clearwell Level call for water		
B3:8/7			Micro-filt Jog Pulse		
B3:8/8			RTC 1 minute Pulse		
B3:8/9			Reset Clearwell totalizer		
B3:8/10			RTC 1 Second pulse		
B3:8/11			Reset Dist Flow Totalizer		
B3:8/12			pump 2 start test		
B3:8/13			pump 2 start latch		
B3:8/14			pump 3 start test		
B3:8/15			pump 3 start latch		
B3:9/0			alarm horn enable		
B3:9/1			Micro-filt. Unit Run Command		
B3:9/2			Low Micro Filt Unit Particle Count Flow ALarm		
B3:9/3			Low Micro Filt Unit Particle Count Flow ALarm Ack		
B3:9/4			High Micro Filt Unit Particle Count ALarm		
B3:9/5			High Micro Filt Unit Particle Count ALarm Ack		
B3:9/6			High Chlorine Free Residual Alarm ACK		
B3:9/7			High Chlorine Free Residual Alarm		
B3:9/8			Low Chlorine Free Residual Alarm ACK		
B3:9/9			Low Chlorine Free Residual Alarm		
B3:9/10			AIT-CHLOR Warning ACK		
B3:9/11			AIT-CHLOR Warning		
B3:9/12			AIT-CHLOR System Alarm ACK		
B3:9/13			AIT-CHLOR System Alarm		
C5:1			Lead Service Pump Alternator		
C5:1/DN			Lead Service Pump Alternator Reset		
C5:2			Clearwell Call for water minutes totalizer		
F8:0	AIT_CHLOR	Global	Free Chlorine Residual		
F8:1	SP_ASH_CHLOR	Global			
F8:2	SP_ASL_CHLOR	Global			
F8:3	FIT_RAW_IN	Global			
I:1/0			Pump 1 Run Status		
I:1/1			Pump 2 Run Status		
I:1/2			Pump 3 Run Status		
I:1/3			Pump 4 Run Status		
I:1/4			Genset Run Status (n.c.)		
I:1/5			Genset Fault Status (n.c.)		
I:1/6			Transfer Switch in Normal Position (n.c.)		
I:1/7			Transfer Switch in Standby Position (n.c.)		
I:1/8			Sask Power Failure (n.c.)		
I:1/9			MCC Power Filter Trouble		
I:1/10			LP Gas (propane) Lo Press. Switch (n.c.)		
I:1/11			Chlorine Leak Detect		

WTP.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. (
I:1/12			WTP Building Temp Switch (n.c.)		
I:1/13			Chlorine Room Temp Switch (n.c.)		
I:1/14			Floor Flood Switch		
I:1/15			Sump Level Switch (n.c.)		
I:2/0			Alum Tank Level Sw. Low (n.c.)		
I:2/1			Alum Chem Pump Pulse		
I:2/2			Polymer Tank Level Sw. Low (n.c.)		
I:2/3			Polymer Chem Pump Pulse		
I:2/4			Acid Tank Level Sw. Low		
I:2/5			Acid Chem Pump Fault		
I:2/6			CIP Tank Level Sw. Low		
I:2/7			CIP Chem Pump Fault		
I:2/8			Operate Plant In Hand		
I:2/9			Operate Plant in Auto		
I:2/10			Silence Alarm PB		
I:2/11			Operate Water Treatment Unit- HS		
I:2/12			Operate Micro Filtration Unit - HS		
I:2/13	AIT_CHLOR_WARN	Global			
I:2/14	AIT_CHLOR_ALARM	Global	Chlorine Analyser System Alarm		
I:2/15			Spare		
I:9.0			Raw Water Turbidity		
I:9.1			WTU Treated Water Turbidity		
I:9.2			Micro-Filt Particle Counter		
I:9.3			Chlorine Analyser Free Residual		
I:10.0			Raw Water Flow Mag-Meter		
I:10.1			Dist. Pressure Transmitter		
I:10.2			Dist. Flow Mag-meter		
I:10.3			Spare		
I:11.0			Chlorine Weight Scale		
I:11.1			Propane Tank Level Transmitter		
I:11.2			North Res Level Transmitter		
I:11.3			South Res. Level Transmitter		
N7:0			Scaled Raw Water Turbidity 0-10000 milli-NTU		
N7:1			Scaled WTU Treated Water Turbidity 0-3000 milli-NTU		
N7:2			Scaled Micro-Filt Particle Flow 0-100 % = 0 - 2000 ml/min		
N7:3			Spare Scaling Reg for Analog Input		
N7:4			Scaled Raw Water Flow 0-50 l/s		
N7:5			Scaled Dist Pressure 0-1034 kpa		
N7:6			Scaled Dist Flow 0-150 l/s		
N7:7			Spare Scaling Reg For Analog Inputs		
N7:8			Scaled Chlorine Weight		
N7:9			Scaled Propane Tank Level		
N7:10			Scaled North Res. Level 0-4000 mm		
N7:11			Scaled South Res. Level 0-4000 mm		
N7:12			Low Dist. Pressure SP		
N7:13			Low Raw Water Flow SP		
N7:14			Low Dist Flow SP		
N7:15			North Res High Level SP		
N7:16			North Res. Low Level SP		
N7:17			South Res. High Level SP		
N7:18			South Res. Low Level SP		
N7:19			Low Cl Weight Alarm SP		
N7:20			Low Propane Tank Level Alarm SP		
N7:21			WTU High Turbidity Alarm SP		
N7:22			High Micro-Filt Unit Particle Count Flow Alarm SP		
N7:23			Muxed Res. Level For Control		
N7:24			Stop Calling For Water		
N7:25			Call For Water SP		
N7:26			Call Lag Intake Pump SP		
N7:27			Low Water Cutoff Reset SP		
N7:28			Minimum Backwash Allow SP.		
N7:29			Minimum Flow For Chlorination		
N7:30			Low Micro-Filt Unit Particle Count Flow Alarm SP		
N7:31			Micro Filt Unit Particle Count from RsView		
N7:32			High Micro Filt Unit Particle Count SP		
N7:33			Dist flow m3 X 10000 totalizer		
N7:34			Dist M3 totalizer		
N7:35			Dist Flow Litres Totalizer		
N7:36			RTC Seconds Test Reg.		
N7:37			Clearwell hours X 10000 totalizer		
N7:38			Clearwell hours totalizer		
N7:39			RTC Minutes Test Register		
N7:40			clearwell totalizer minutes for rsvew		
N7:41			B.W. Pump Protect SP		
N7:50					
N7:50/1			Lead Pump Call To Intake		
N7:50/2			Lag Pump Call To Intake		
N7:50/3			Third pump Call??		
N7:51					
N7:52					
N7:53					
N7:54					
N7:55					
N7:56					
N7:57					
N7:58					
N7:59					

WTP.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. I
N7:100			1st reg from Intake		
N7:100/0			Alarm dialout Bit Mastered from Intake		
N7:100/1			Comm Test Bit (Always set to 1 by Intake)		
N7:101			2nd reg from Intake		
N7:101/1			Intake p1 Fail Alm Ack		
N7:101/2			Intake P1 Fail Alm		
N7:101/3			Intake P2 Fail ALM Ack		
N7:101/4			Intake P2 Fail Alm		
N7:101/5			Intake p3 Fail Alm Ack		
N7:101/6			Intake P3 Fail Alm		
N7:101/7			Intake MCC Fail Alm Ack		
N7:101/8			Intake MCC Fail Alm		
N7:101/9			Intake Bldg. Hi temp Alm Ack		
N7:101/10			Intake Bldg Hi Temp Alm		
N7:101/11			Intake Bldg Low Temp Alm Ack		
N7:101/12			Intake Bldg Low Temp Alm		
N7:101/13			Intake Floor Flood Alm ack		
N7:101/14			Intake Floor Flood Alm		
N7:101/15			Intake Low Flow on pumps called Alm ack		
N7:102			3rd reg from Intake		
N7:102/0			Intake Low Flow When Pumps Called Alm		
N7:102/1			Intake Low Pressure On pumps cAlled alm ack		
N7:102/2			Intake Low Pressure on pumps called Alm		
N7:102/3			Intake Low Level Alm Ack		
N7:102/4			Intake Low Level Alm		
N7:103			4th reg from Intake		
N7:104			5th reg from Intake		
N7:105			6th reg from Intake		
N7:106			7th reg from Intake		
N7:107			8th reg from Intake		
N7:108			9th reg from Intake		
N7:109			10th reg from Intake		
N7:110			1st reg To Intake		
N7:110/1			Lead Pump call (mastered to Intake)		
N7:110/2			Lag Pump Call (Mastered to intake)		
N7:110/3			WTU Request Summer pump to Intake		
N7:110/4			WTU Request Winter Pump to Intake		
N7:110/5			WTU selected		
N7:110/6			Comm Test Bit to Intake		
N7:111			2nd reg To Intake		
N7:112			3rd reg To Intake		
N7:113			4th reg To Intake		
N7:114			5th reg To Intake		
N7:115			6th reg To Intake		
N7:116			7th reg To Intake		
N7:117			8th reg To Intake		
N7:118			9th reg To Intake		
N7:119			10th reg To Intake		
N7:120			1st reg from Tower		
N7:120/0			Alarm Dialout Bit From Tower		
N7:120/1			First Pump Request From Tower		
N7:120/2			Second Pump RRequest From Tower		
N7:120/3			Thrid Pump RRequest From Tower		
N7:120/4			Comm Test Bit (Always set to 1 by Tower)		
N7:121			2nd reg from Tower		
N7:121/1			Tower Low Temp Ack		
N7:121/2			Tower Low Temp Alarm		
N7:121/4			Tower Low Dist Temp Ack		
N7:121/5			Tower Low Dist Temp Alm		
N7:121/6			Tower Heater Fail Alm Ack		
N7:121/7			Tower Heater Fail Alarm		
N7:121/9			Tower Low Level Alarm ack		
N7:121/10			Tower Low Level alm		
N7:121/12			Tower High Level Alm Ack		
N7:121/13			Tower High Level Alarm		
N7:122			3rd reg from Tower		
N7:123			4th reg from Tower		
N7:124			5th reg from Tower		
N7:125			6th reg from Tower		
N7:126			7th reg from Tower		
N7:127			8th reg from Tower		
N7:128			9th reg from Tower		
N7:129			10th reg from Tower		
N7:130			1st reg To Tower		
N7:131			2nd reg To Tower		
N7:132			3rd reg To Tower		
N7:133			4th reg To Tower		
N7:134			5th reg To Tower		
N7:135			6th reg To Tower		
N7:136			7th reg To Tower		
N7:137			8th reg To Tower		
N7:138			9th reg To Tower		
N7:139			10th reg To Tower		
N7:140			1st reg From WTU		
N7:140/0			WTU Comm Test Bit (Always Set to 1 by WTU)		
N7:140/1			Common Alarm Bit (from WTU)		
N7:140/2			WTU plant "ON" (From WTU)		

WTP.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. I
N7:140/3			WTU In Backwash		
N7:140/4			WTU Request Summer Pump		
N7:140/5			WTU Request Winter Pump		
N7:140/6			Effluent Valve Control - Open		
N7:141			2nd reg From WTU		
N7:142			3rd reg From WTU		
N7:143			4th reg From WTU		
N7:144			5th reg From WTU		
N7:145			6th reg From WTU		
N7:146			7th reg From WTU		
N7:147			8th reg From WTU		
N7:148			9th reg From WTU		
N7:149			10th reg From WTU		
N7:150			1st reg To WTU		
N7:150/0			WTU Start/Stop Command (to WTU)		
N7:150/1			WTU B.W. Allow (To WTU)		
N7:150/2			WTU Chem Feed Flow (To WTU)		
N7:150/3			Holding Tank High Level		
N7:150/4			B.W. Pump Protect is OK		
N7:150/5			Comm Test Bit to WTU		
N7:150/6			Floor Flood Alarm		
N7:150/8			Call for UV-Reactor		
N7:150/9			HS-WTU to WTU for UV System		
N7:150/10			HS-uFilt to WTU for UV System		
N7:151			2nd reg To WTU		
N7:152			3rd reg To WTU		
N7:153			4th reg To WTU		
N7:154			5th reg To WTU		
N7:155			6th reg To WTU		
N7:156			7th reg To WTU		
N7:157			8th reg To WTU		
N7:158			9th reg To WTU		
N7:159			10th reg To WTU		
N7:160			State Code From Micro Filt Unit		
N7:160/0					
N7:160/1			Micro Filt-Unit Common Alarm bit (from micro-filt)		
N7:160/2					
N7:161			Particle Count From Micro Filt. Unit		
N7:161/13			Shutdown alarms present in Micro Filt-Unit		
N7:162			3rd reg From Micro-Filt (Bits)		
N7:162/0			Warning Alarms Present		
N7:162/1			Shutdown Alarms From Micro-filt Present		
N7:163			4th reg From Micro-Filt		
N7:164			5th reg From Micro-Filt		
N7:165			6th reg From Micro-Filt		
N7:166			7th reg From Micro-Filt		
N7:167			8th reg From Micro-Filt		
N7:168			9th reg From Micro-Filt		
N7:169			10th reg From Micro-Filt		
N7:170			1st reg to Micro-Filt		
N7:170/0			Stop command to micro-filt		
N7:170/1			Start Command to Micro-filt		
N7:171			2nd reg to Micro-Filt		
N7:172			3rd reg to Micro-Filt		
N7:173			4th reg to Micro-Filt		
N7:174			5th reg to Micro-Filt		
N7:175			6th reg to Micro-Filt		
N7:176			7th reg to Micro-Filt		
N7:177			8th reg to Micro-Filt		
N7:178			9th reg to Micro-Filt		
N7:179			10th reg to Micro-Filt		
N9:0			message control block for read from node 2 (intake ph)		
N9:0/8			intake read ignore if timed out		
N9:0/12			intake read error bit		
N9:0/13			intake read done bit		
N9:0/15			Intake read Enable		
N9:20			message control block for write to node 2 (intake ph)		
N9:20/8			intake write ignore if timed out		
N9:20/12			intake write error bit		
N9:20/13			intake write done bit		
N9:20/15			Intake Write Enable		
N9:40			message control block for read from node 3 (tower)		
N9:40/8			tower read ignore if timed out		
N9:40/12			tower read error bit		
N9:40/13			tower read done bit		
N9:40/15			Tower Read Enable		
N9:60			message control block for write to node 3 (tower)		
N9:60/8			tower write ignore if timed out		
N9:60/12			tower write error bit		
N9:60/13			tower write done bit		
N9:60/15			Tower Write Enable		
N9:80			message control block for read from node 4 (WTU)		
N9:80/8			WTU read ignore if timed out		
N9:80/12			WTU read error bit		
N9:80/13			WTU read done bit		
N9:80/15			WTU Read Enable		
N9:100			message control block for write to node 4 (WTU)		

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. (
N9:100/8			WTU write ignore if timed out		
N9:100/12			WTU write error bit		
N9:100/13			WTU write done bit		
N9:100/15			WTU Write Enable		
N9:120			message control block for read from node 5 (micro-filt)		
N9:120/8			micro filt read ignore if timed out		
N9:120/12			micro filt read error bit		
N9:120/13			micro filt read done bit		
N9:120/15			Micro-filt Read Enable		
N9:140			message control block for Write To node 5 (micro-filt)		
N9:140/8			micro filt Write ignore if timed out		
N9:140/12			micro filt Write error bit		
N9:140/13			micro filt Write done bit		
N9:140/15			Micro-filt Write Enable		
O:3/0			Pump 1 Control		
O:3/1			Pump 2 Control		
O:3/2			Pump 3 Control		
O:3/3			Pump 4 Control (Future)		
O:3/4			spare		
O:3/5			spare		
O:3/6			spare		
O:3/7			spare		
O:4/0			Micro-filt. Inlet Valve Control (spare, valve does not exist)		
O:4/1			Chlorinator Solenoid Valve		
O:4/2			Plant Alarm Horn		
O:4/3			Control Panel Alarm Indicator		
O:4/4			spare		
O:4/5			spare		
O:4/6			spare		
O:4/7			spare		
O:4/8			Alarm Dialer Ch1 Intake Comm Loss or Power Failure		
O:4/9			Alarm Dialer Ch2 (Tower)		
O:4/10			Alarm Dialer Ch3 (Intake)		
O:4/11			Alarm Dialer Ch4 (Communications)		
O:4/12			Alarm Dialer Ch5 (Power)		
O:4/13			Alarm Dialer Ch6 (Building)		
O:4/14			Alarm Dialer Ch7 (Chlorine)		
O:4/15			Alarm Dialer Ch8 (Pressure/Level)		
S:0			Arithmetic Flags		
S:0/0			Processor Arithmetic Carry Flag		
S:0/1			Processor Arithmetic Underflow/ Overflow Flag		
S:0/2			Processor Arithmetic Zero Flag		
S:0/3			Processor Arithmetic Sign Flag		
S:1			Processor Mode Status/ Control		
S:1/0			Processor Mode Bit 0		
S:1/1			Processor Mode Bit 1		
S:1/2			Processor Mode Bit 2		
S:1/3			Processor Mode Bit 3		
S:1/4			Processor Mode Bit 4		
S:1/5			Forces Enabled		
S:1/6			Forces Present		
S:1/7			Comms Active		
S:1/8			Fault Override at Powerup		
S:1/9			Startup Protection Fault		
S:1/10			Load Memory Module on Memory Error		
S:1/11			Load Memory Module Always		
S:1/12			Load Memory Module and RUN		
S:1/13			Major Error Halted		
S:1/14			Access Denied		
S:1/15			First Pass		
S:2/0			STI Pending		
S:2/1			STI Enabled		
S:2/2			STI Executing		
S:2/3			Index Addressing File Range		
S:2/4			Saved with Debug Single Step		
S:2/5			DH-485 Incoming Command Pending		
S:2/6			DH-485 Message Reply Pending		
S:2/7			DH-485 Outgoing Message Command Pending		
S:2/15			Comms Servicing Selection		
S:3			Current Scan Time/ Watchdog Scan Time		
S:4			Time Base		
S:5/0			Overflow Trap		
S:5/2			Control Register Error		
S:5/3			Major Err Detected Executing UserFault Routine		
S:5/4			M0-M1 Referenced on Disabled Slot		
S:5/8			Memory Module Boot		
S:5/9			Memory Module Password Mismatch		
S:5/10			STI Overflow		
S:5/11			Battery Low		
S:6			Major Error Fault Code		
S:7			Suspend Code		
S:8			Suspend File		
S:9			Active Nodes		
S:10			Active Nodes		
S:11			I/O Slot Enables		
S:12			I/O Slot Enables		
S:13			Math Register		

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. I
S:14			Math Register		
S:15			Node Address/ Baud Rate		
S:16			Debug Single Step Rung		
S:17			Debug Single Step File		
S:18			Debug Single Step Breakpoint Rung		
S:19			Debug Single Step Breakpoint File		
S:20			Debug Fault/ Powerdown Rung		
S:21			Debug Fault/ Powerdown File		
S:22			Maximum Observed Scan Time		
S:23			Average Scan Time		
S:24			Index Register		
S:25			I/O Interrupt Pending		
S:26			I/O Interrupt Pending		
S:27			I/O Interrupt Enabled		
S:28			I/O Interrupt Enabled		
S:29			User Fault Routine File Number		
S:30			STI Setpoint		
S:31			STI File Number		
S:32			I/O Interrupt Executing		
S:33			Extended Proc Status Control Word		
S:33/0			Incoming Command Pending		
S:33/1			Message Reply Pending		
S:33/2			Outgoing Message Command Pending		
S:33/3			Selection Status User/DF1		
S:33/4			Communicat Active		
S:33/5			Communicat Servicing Selection		
S:33/6			Message Servicing Selection Channel 0		
S:33/7			Message Servicing Selection Channel 1		
S:33/8			Interrupt Latency Control Flag		
S:33/9			Scan Toggle Flag		
S:33/10			Discrete Input Interrupt Reconfigur Flag		
S:33/11			Online Edit Status		
S:33/12			Online Edit Status		
S:33/13			Scan Time Timebase Selection		
S:33/14			DTR Control Bit		
S:33/15			DTR Force Bit		
S:34			Pass-thru Disabled		
S:34/0			Pass-Thru Disabled Flag		
S:34/1			DH+ Active Node Table Enable Flag		
S:34/2			Floating Point Math Flag		
S:35			Last 1 ms Scan Time		
S:36			Extended Minor Error Bits		
S:36/8			Dll Lost		
S:36/9			STI Lost		
S:36/10			Memory Module Data File Overwrite Protection		
S:37			Clock Calendar Year		
S:38			Clock Calendar Month		
S:39			Clock Calendar Day		
S:40			Clock Calendar Hours		
S:41			Clock Calendar Minutes		
S:42			Clock Calendar Seconds		
S:43			STI Interrupt Time		
S:44			I/O Event Interrupt Time		
S:45			Dll Interrupt Time		
S:46			Discrete Input Interrupt- File Number		
S:47			Discrete Input Interrupt- Slot Number		
S:48			Discrete Input Interrupt- Bit Mask		
S:49			Discrete Input Interrupt- Compare Value		
S:50			Processor Catalog Interrupt- Preset		
S:51			Discrete Input Interrupt- Return Number		
S:52			Discrete Input Interrupt- Accumulat		
S:53			Discrete Input Interrupt- Timer		
S:54			Discrete Input Interrupt- Timer		
S:55			Last Dll Scan Time		
S:56			Maximum Observed Dll Scan Time		
S:57			Operating System Catalog Number		
S:58			Operating System Series		
S:59			Operating System FRN		
S:61			Processor Series		
S:62			Processor Revision		
S:63			User Program Type		
S:64			User Program Functional Index		
S:65			User RAM Size		
S:66			Flash EEPROM Size		
S:67			Channel 0 Active Nodes		
S:68			Channel 0 Active Nodes		
S:69			Channel 0 Active Nodes		
S:70			Channel 0 Active Nodes		
S:71			Channel 0 Active Nodes		
S:72			Channel 0 Active Nodes		
S:73			Channel 0 Active Nodes		
S:74			Channel 0 Active Nodes		
S:75			Channel 0 Active Nodes		
S:76			Channel 0 Active Nodes		
S:77			Channel 0 Active Nodes		
S:78			Channel 0 Active Nodes		
S:79			Channel 0 Active Nodes		

WTP.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. I
S:80			Channel 0 Active Nodes		
S:81			Channel 0 Active Nodes		
S:82			Channel 0 Active Nodes		
S:83			DH+ Active Nodes		
S:84			DH+ Active Nodes		
S:85			DH+ Active Nodes		
S:86			DH+ Active Nodes		
T4:1			Reset Button Timer		
T4:1/DN			Reset Alarm Bit		
T4:2			Pump 1 Fail Timer		
T4:2/DN			Pump 1 Fail Test Bit		
T4:3			Pump 2 Fail Timer		
T4:3/DN			Pump 2 Fail Test Bit		
T4:4			Pump 3 Fail Timer		
T4:4/DN			Pump 3 Fail Test Bit		
T4:5			Low Raw Water Flow Timer		
T4:5/DN			Low Raw Water flow Test Bit		
T4:6			Low Dist Press. Timer		
T4:6/DN			Low Dist Pressure Test Bit		
T4:7			Low Dist Flow Timer		
T4:7/DN			Low Dist Flow Test Bit		
T4:8			North Res High Level Alarm Timer		
T4:8/DN			North Res High Level Alarm Test Bit		
T4:9			North Res Low Level Alarm Timer		
T4:9/DN			North Res. Low Level Alarm Test Bit		
T4:10			South Res High Level Alarm Timer		
T4:10/DN			South Res High Level Alarm Test Bit		
T4:11			South Res Low Level Alarm Timer		
T4:11/DN			South Res Low Level Alarm Test Bit		
T4:12			Chlorine Weight Alarm Timer		
T4:12/DN			Cl Weight Alarm Test Bit		
T4:13			Low Propane Tank Level Alarm Timer		
T4:13/DN			Low Propane Tank Level Test Bit		
T4:14			High WTU Turbidity Alarm Timer		
T4:14/DN			High WTU Turbidity Test Bit		
T4:15			High Micro-filt Unit Particle Count Flow Alarm Timer		
T4:15/DN			High Micro-filt Unit Particle Count Flow Test Bit		
T4:16			Flasher Timer		
T4:16/DN			Flasher Bit		
T4:17			Flasher Reset Timer		
T4:17/DN			Flasher Reset		
T4:18			WTP Alarm Dialer Delay Timer (Communications)		
T4:18/DN			WTP Dialout Timer Done Bit (Communications)		
T4:19			Tower Comm Fail Timer		
T4:19/DN			Tower Comm Fail Test Bit		
T4:20			Intake Comm Fail Timer		
T4:20/DN			Intake Comm Fail Test Bit		
T4:21			WTU Comm Fail Timer		
T4:21/DN			WTU Comm Fail Test Bit		
T4:22			Micro-filt Comm Fail Timer		
T4:22/DN			Micro-filt Comm Fail Test Bit		
T4:23			Fast Flasher Timer		
T4:23/DN			Fast Flasher Bit		
T4:24			Fast Flasher Reset		
T4:24/DN			Fast Flasher Reset Bit		
T4:25			WTP Alarm Dialer Delay Timer (Power)		
T4:25/DN			WTP Alarm Dialer Delay Done Bit (Power)		
T4:26			WTU Failed to Run Alarm Timer		
T4:26/DN			WTU Failed To Run Test Bit		
T4:27			WTP Alarm Dialer Delay Timer (Building)		
T4:27/DN			WTP Alarm Delay Timer Done (Building)		
T4:28			micro-filt unit fail to run alarm delay		
T4:28/DN			micro-filt unit failed to run test bit		
T4:29			Channel 1 (485) Message initiate Timer		
T4:29/DN			Ch1 Message initiate bit		
T4:30			UV Warmup Delay		
T4:30/DN			UV Lamps warmed up		
T4:31			Intake Lead Pump Call Delay		
T4:31/DN			Intake Lead Pump Req		
T4:32			Intake Lag Pump Call Delay Timer		
T4:32/DN			Intake Lag Pump Delay Done		
T4:33			LWCO Reset Delay Timer		
T4:33/DN			LWCO Auto Reset Bit		
T4:34			WTP Alarm Delay Timer (Chlorine)		
T4:34/DN			WTP Alarm Delay Timer Done (Chlorine)		
T4:35			WTP Alarm Delay Timer (Pressure/Level)		
T4:35/DN			WTP Alarm Delay Timer Done (Pressure/Level)		
T4:36			WTU BW Disallow Test Timer		
T4:36/DN			WTU Backwash disallow Test Timer Done		
T4:37			Chlorinate Allow Test Timer		
T4:37/DN			Chlorinate Allow Test Timer Done		
T4:38			Microfilt Jog test Timer (3 Hours)		
T4:38/DN			Micro-filt Jog test Timer Done		
T4:39			Micro-filt Jog Pulse (10 Min)		
T4:39/DN			Micro -filt Jog Pulse Done		
T4:40			pump 2 shutdown debounce		
T4:40/DN			pump 2 shutdown debounce done		

WTP.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. 0
T4:41			pump 3 shutdown debounce timer		
T4:41/DN			pump 3 shutdown debounce timer done		
T4:42			Pump 1 Start Debounce Timer		
T4:42/DN			Pump 1 Start Debounce Timer Done		
T4:43			Pump #2 Start Debounce Timer		
T4:43/DN			Pump #2 Start Debounce Timer Done		
T4:44			Pump #3 Start Debounce Timer		
T4:44/DN			Pump #3 Start DEbounce Timer Done		
T4:45			Alum fault pulse timer		
T4:45/DN			Alum fault test bit		
T4:46			Polymer fault pulse timer		
T4:46/DN			Polymer fault test bit		
T4:47			Low Micro-filt Unit Particle Count Flow Alarm Timer		
T4:47/DN			Low Micro-filt Unit Particle Count Flow Test Bit		
T4:48			High Micro-filt Unit Particle Count Alarm Timer		
T4:48/DN			High Micro-filt Unit Particle Count Test Bit		
T4:49					
T4:49/DN	ASH_CHLOR_RES	Global			
T4:50					
T4:50/DN	ASL_CHLOR_RES	Global			

WTP.RSS

Instruction Comment Database

Address Instruction Description

WTP.RSS

Symbol Group Database

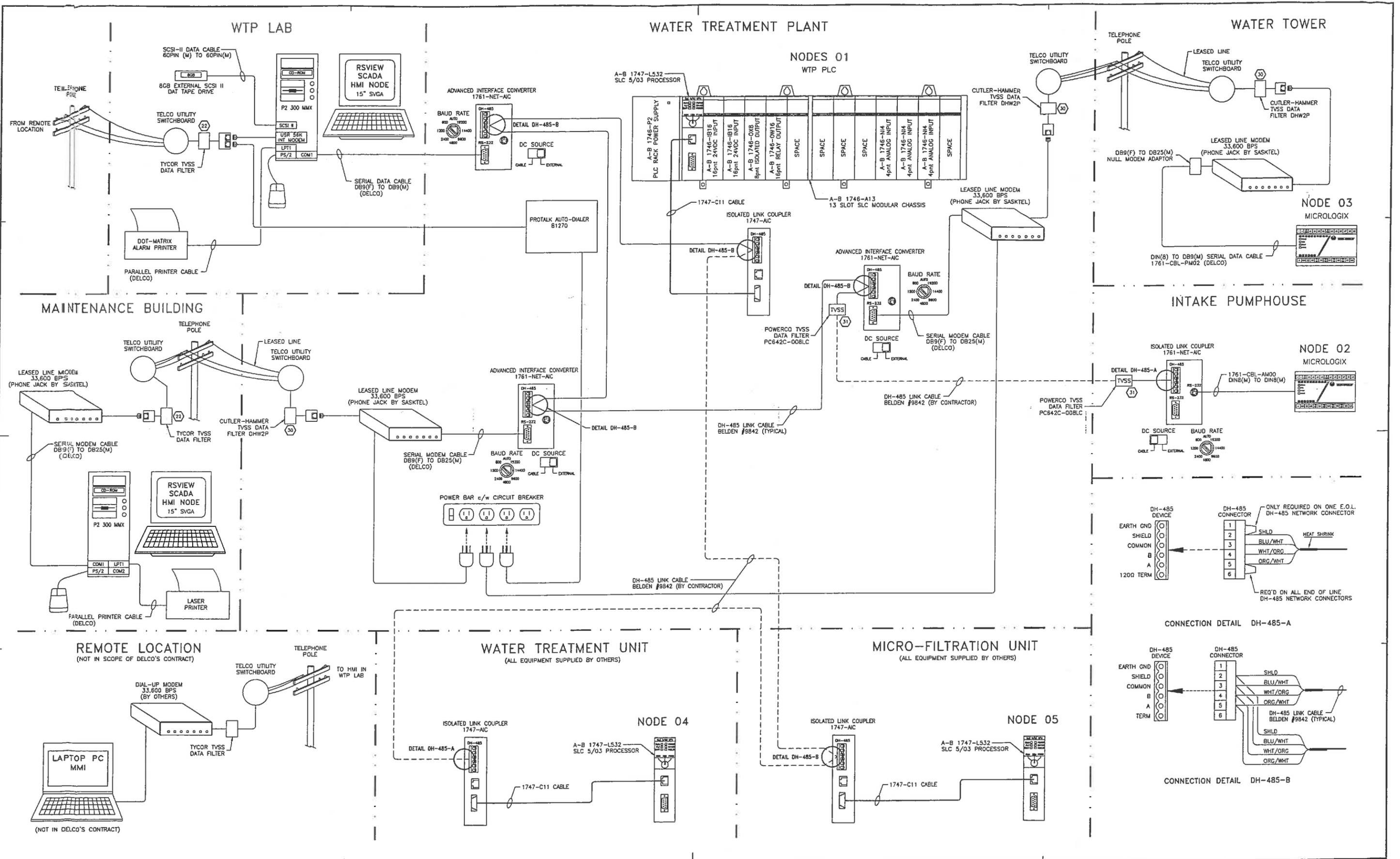
Group_Name Description

PRINCE ALBERT NATIONAL PARK WASKESIU, SASK. WATER TREATMENT SYSTEM UPGRADE

PROJECT #8051

DRAWING NO.	REV NO.	DESCRIPTION
8051-00	0	COVER PAGE
8051-NET	0	CONTROL NETWORK & PLC COMMUNICATIONS SYSTEM OVERVIEW
8051-01	0	WTP CONTROL PANEL LAYOUTS
8051-02	0	WTP CONTROL PANEL POWER DISTRIBUTION
8051-03	0	WTP CONTROL PANEL MISCELLANEOUS DETAILS
8051-04	0	WTP CONTROL PANEL SCHEMATICS AND BILL OF MATERIALS
8051-05	0	PLC 0 SLOT 1, 2, 3 & 4 MODULE WIRING
8051-06	0	PLC 0 SLOT 5, 6, 7 & 8 MODULE WIRING
8051-07	0	PLC 0 SLOT 9, 10, 11 & 12 MODULE WIRING
8051-10	0	INTAKE PUMPHOUSE CONTROL PANEL LAYOUTS
8051-11	0	INTAKE PUMPHOUSE CONTROL PANEL POWER DISTRIBUTION
8051-12	0	INTAKE PUMPHOUSE C.P. SCHEMATICS AND BILL OF MATERIALS
8051-13	0	INTAKE PUMPHOUSE C.P. MICROLIGIX CONTROL WIRING
8051-15	0	WATER TOWER CONTROL PANEL LAYOUTS
8051-16	0	WATER TOWER CONTROL PANEL POWER DISTRIBUTION & B.O.M.
8051-17	0	WATER TOWER CONTROL PANEL MICROLIGIX CONTROL WIRING



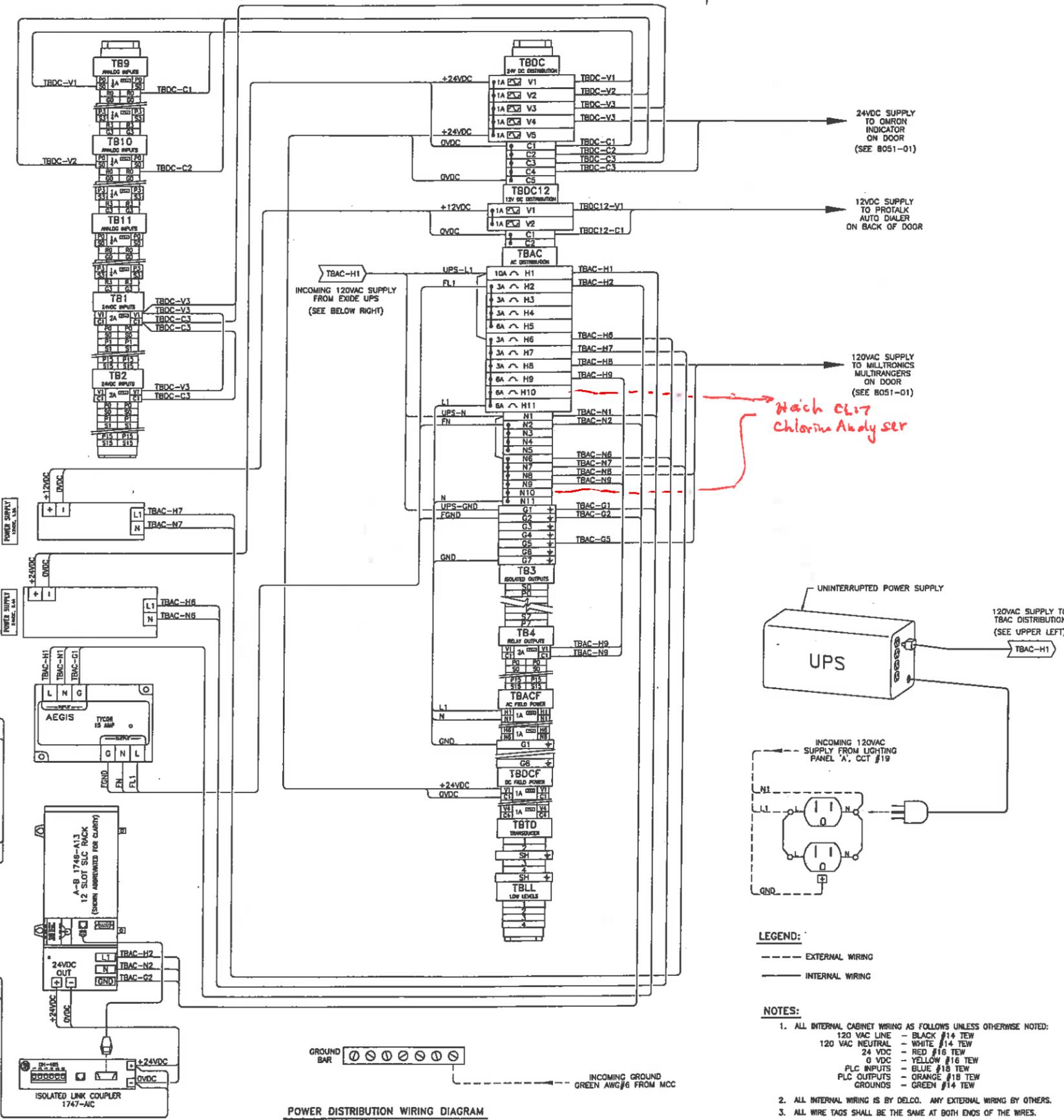


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B	RE-ISSUE FOR APPROVAL	10/26/98	B.R.	
A	ISSUE FOR APPROVAL	9/11/98	B.R.	

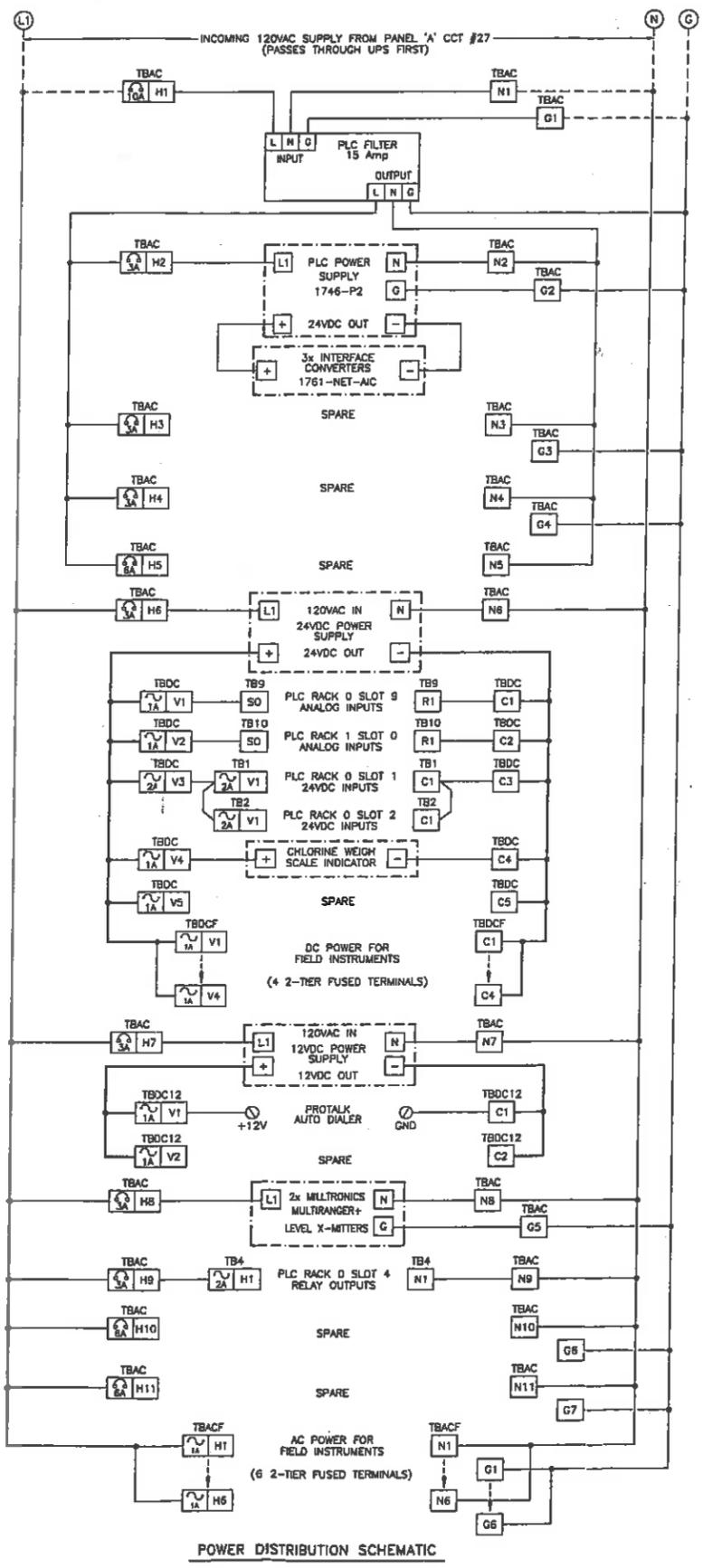
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AREA:
SCALE: As Noted
DATE:
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DRAWN BY: SON
CHECKED BY: BPR
APPROVED BY:



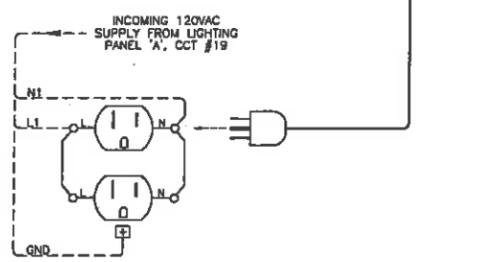
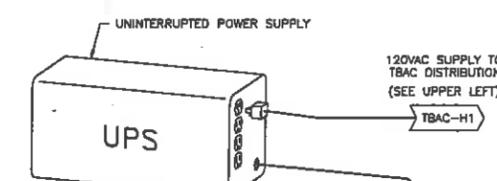
CLIENT: PUBLIC WORKS CANADA	PROJECT NO.: 8051
TITLE: PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT AND PUMPING STATION CONTROL NETWORK OVERVIEW	DRAWING NO.: 8051-NET
	REVISION NO.: 0



POWER DISTRIBUTION WIRING DIAGRAM



POWER DISTRIBUTION SCHEMATIC



- LEGEND:**
 - - - EXTERNAL WIRING
 ——— INTERNAL WIRING
- NOTES:**
 1. ALL INTERNAL CABINET WIRING AS FOLLOWS UNLESS OTHERWISE NOTED:
 120 VAC LINE - BLACK #14 TEW
 120 VAC NEUTRAL - WHITE #14 TEW
 24 VDC - RED #16 TEW
 0 VDC - YELLOW #16 TEW
 PLC INPUTS - BLUE #18 TEW
 PLC OUTPUTS - ORANGE #18 TEW
 GROUNDS - GREEN #14 TEW
2. ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
 3. ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.
 4. MODULE WIRING SHOWN ON DWGS 8051-05 TO 8051-07.

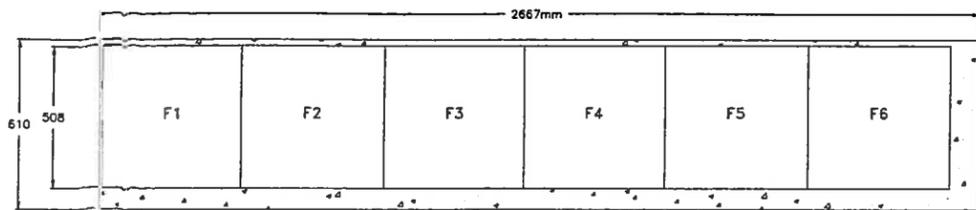
**WASKESIU NATIONAL PARK
 PRINCE ALBERT, SASK.
 WATER TREATMENT PLANT
 AND PUMPING STATION**

SECTION:	
REVISED:	As Noted
DATE:	
DESIGNED BY:	BPR
DRAWN BY:	SON
CHECKED BY:	BPR
APPROVED BY:	

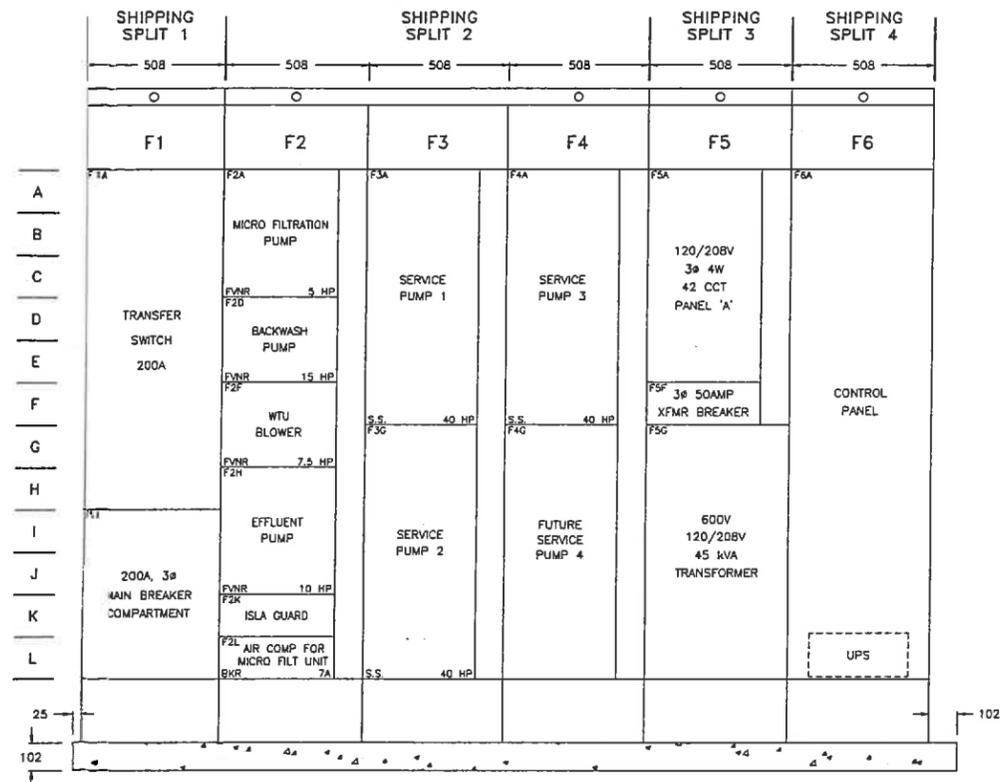


CLIENT:	PUBLIC WORKS CANADA
TITLE:	PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT & PUMPING STATION WTP CONTROL PANEL POWER DISTRIBUTION
PROJECT NO.:	8051
DRAWING NO.:	8051-02
REVISION NO.:	0

NO.	DESCRIPTION	DATE	BY	NO.	DESCRIPTION	DATE	BY
0	AS BUILT	08/24/99	D.D.				
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A	ISSUE FOR APPROVAL	9/11/98	B.R.				

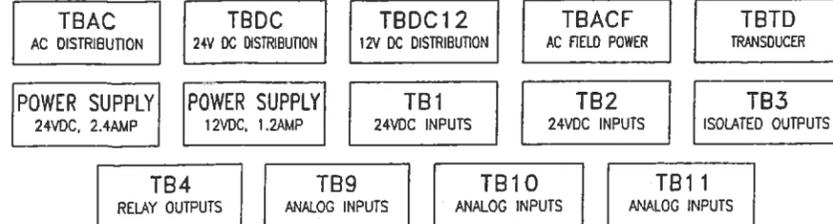


TOP VIEW

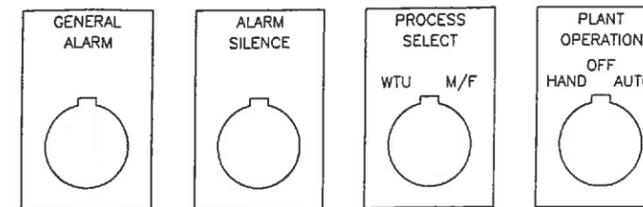


WTP MAIN DISTRIBUTION CENTER DETAIL

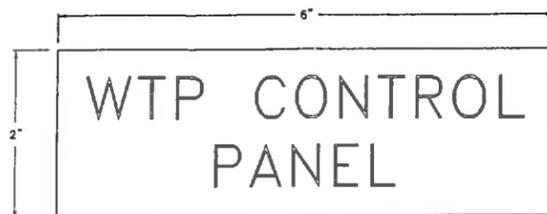
PANEL BOARD "A" SCHEDULE									
120/208V 3φ 4W					225 amp MAINS				
FLUSH					42 CCT				
LOAD	TRIP AMP	BR No	BUS	BR No	TRIP AMP	LOAD	TRIP AMP	BR No	LOAD
LIGHTING - CHLOR. LAB & W.C.	1/15	1		2	1/15	PARKING RECEPTACLE			
EXH. LIGHTS	1/15	3		4	15A GFI	HATCH RECEPTACLES			
TREATMENT AREA FLUORESCENTS	1/15	5		8	2/15	WORK BENCH RECEPTACLES			
TREATMENT AREA FLUORESCENTS	1/15	7		10	1/15	RECEPTACLES			
HID LIGHTING	1/15	9		12	1/15	RECEPTACLES			
EXHAUST FAN 1	1/15	11		14	1/15	RECEPTACLES			
EXHAUST FAN 3	1/15	13		16	1/15	RECEPTACLES			
UH-1 FAN & CEILING FANS	1/15	15		18	1/15	GENSET RECEPTACLE			
UNIT HEATER 2 FAN	1/15	17		20					
WTP CONTROLS - UPS	1/15	19		22	3/20	MICRO FILTRATION FEED			
WTU FEED	3/15	21		24					
CONTROLS	1/15	27		28	3/15	UNIT HEATER #3			
CHEMICAL FEEDER 1	1/15	29		30					
CHEMICAL FEEDER 2	1/15	31		32	2/15	PROPANE TANK BELLY WARMERS			
CHEMICAL FEEDER 3	1/15	33		34					
CHEMICAL FEEDER 4	1/15	35		36	GFI				
CHEMICAL FEEDER 5	1/15	37		38	1/15	MICRO FILT. AIR COMPRESSOR			
		39		40					
		41		42					



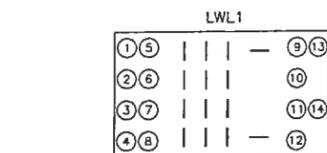
TYPICAL PANEL LAMACOIDS



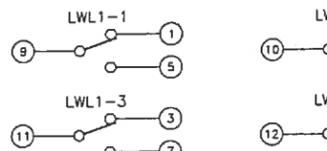
TYPICAL DOOR LAMACOIDS



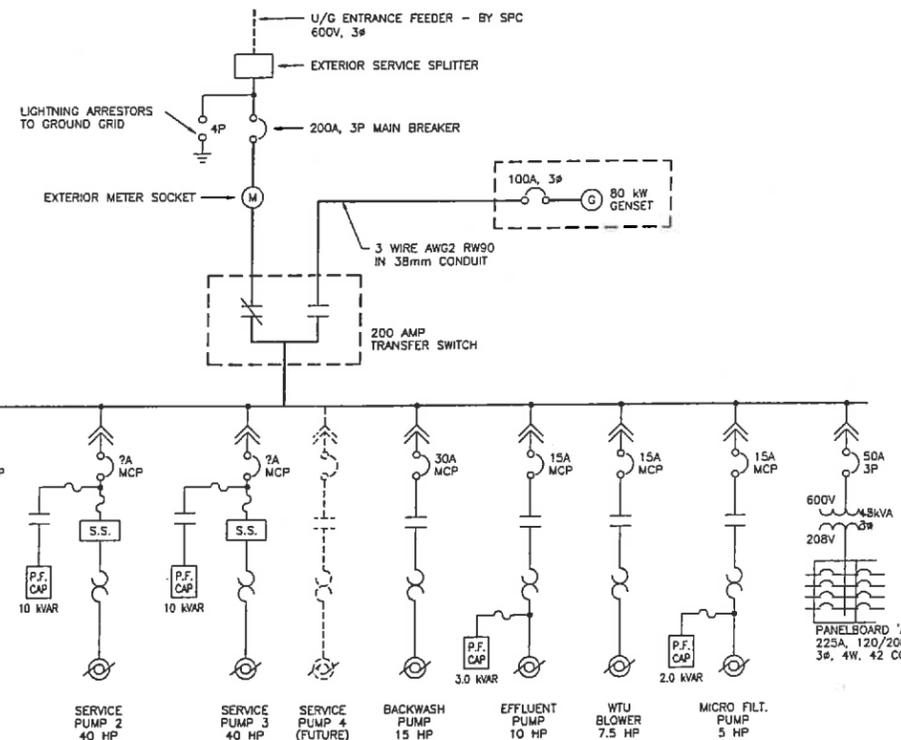
TYPICAL CONTROL PANEL LEGEND PLATE



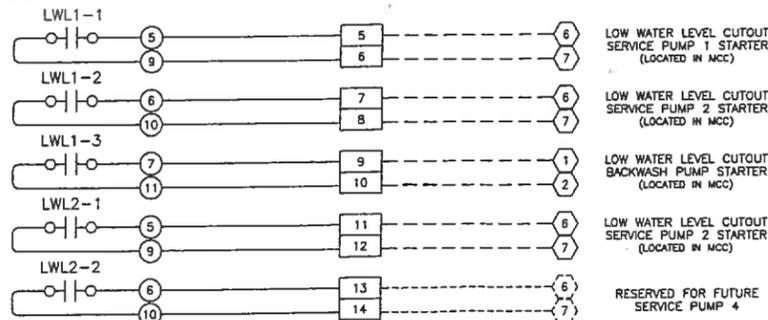
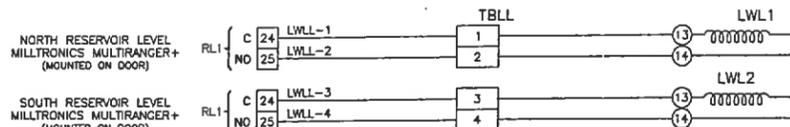
LOW WATER LEVEL CUTOUT RELAY CONTACT DETAIL



LOW WATER LEVEL CUTOUT TB WIRING DETAIL



WATER TREATMENT PLANT SINGLE LINE DIAGRAM



LEGEND:
 ——— DENOTES INTERNAL WIRING (BY DELCO)
 - - - - - DENOTES FIELD WIRING (BY DIV. 15)

NOTES:
 1. ALL INTERNAL CABINET WIRING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
 120 VAC LINE - BLACK #14 TEW
 120 VAC NEUTRAL - WHITE #14 TEW
 24 VDC - RED #16 TEW
 0 VDC - YELLOW #16 TEW
 PLC INPUTS - BLUE #18 TEW
 PLC OUTPUTS - ORANGE #18 TEW
 GROUNDS - GREEN #14 TEW
 2. ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
 3. ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.
 4. MODULE WIRING SHOWN ON DWGS 8051-05 TO 8051-07.
 5. BILL OF MATERIALS SHOWN ON DWG 8051-04.

NO.	DESCRIPTION	DATE	BY	NO.	DESCRIPTION	DATE	BY
	AS BUILT	08/24/99	D.D.				
	RE-ISSUE FOR APPROVAL	12/09/98	B.R.				
	ISSUE FOR APPROVAL	8/21/98	B.R.				

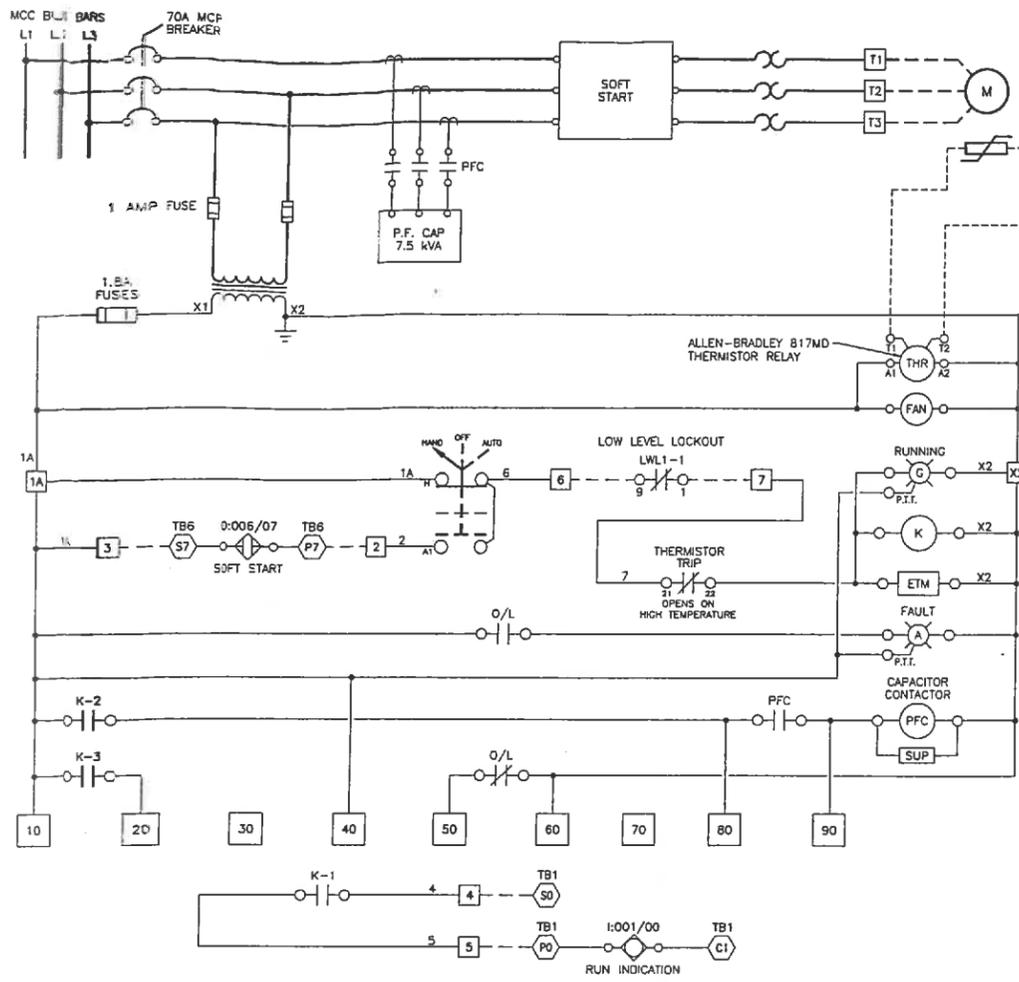
WASKESIU NATIONAL PARK
 PRINCE ALBERT, SASK.
 WATER TREATMENT PLANT
 AND PUMPING STATION

SECTION:
 AREA:
 SCALE: As Noted
 DESIGNED BY: BPR
 DRAWN BY: SON
 CHECKED BY: BPR
 APPROVED BY:

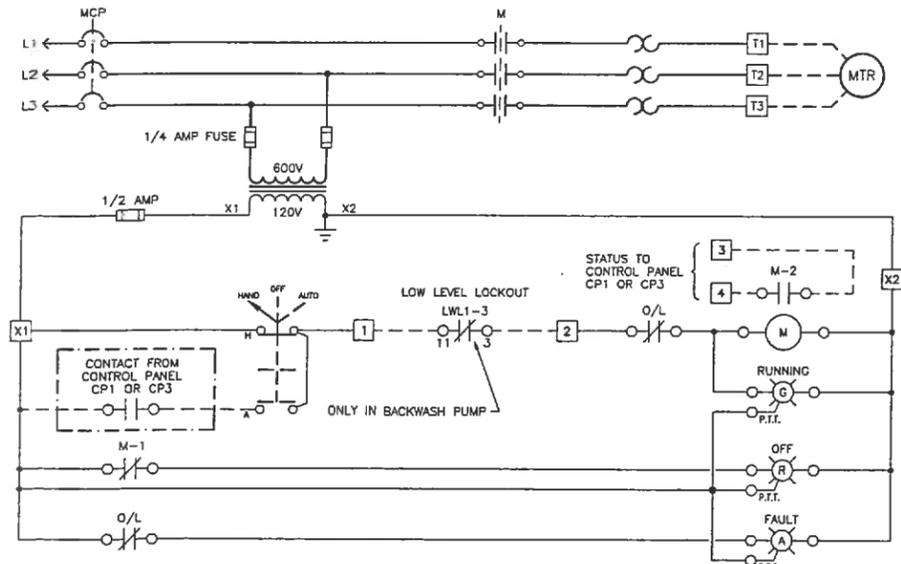


CLIENT: PUBLIC WORKS CANADA
 TITLE: PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT AND PUMPING STATION
 WTP MISCELLANEOUS DETAILS

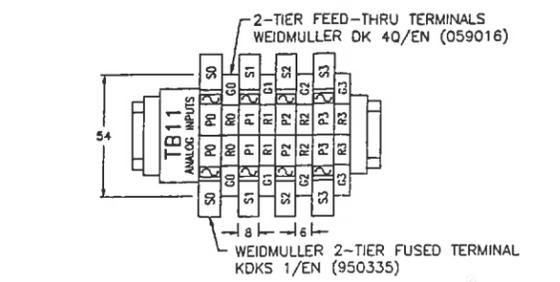
PROJECT NO.: 8051
 DRAWING NO.: 8051-03
 REVISION NO.: 0



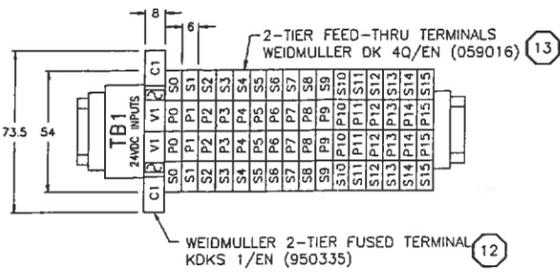
SOFT START CONTROL WIRING SCHEMATIC - SERVICE PUMP 1
TYPICAL FOR SERVICE PUMPS 2 & 3 (AND FOR FUTURE SP 4)



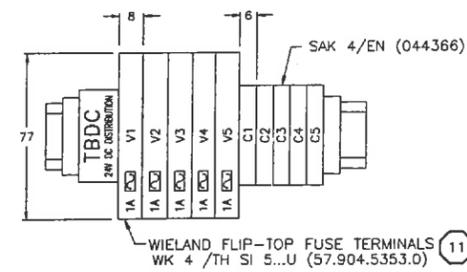
FVNR STARTER CONTROL SCHEMATIC - BACKWASH PUMP
TYPICAL FOR: EFFLUENT PUMP, WTP BLOWER AND MICRO-FILTRATION PUMP



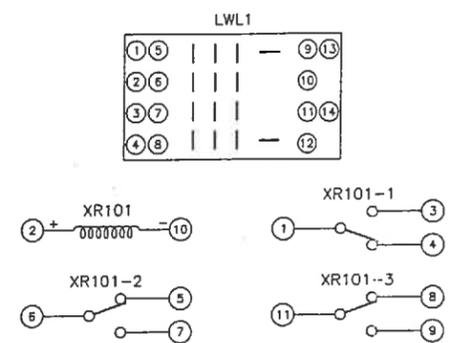
TYPICAL ANALOG INPUT BLOCK



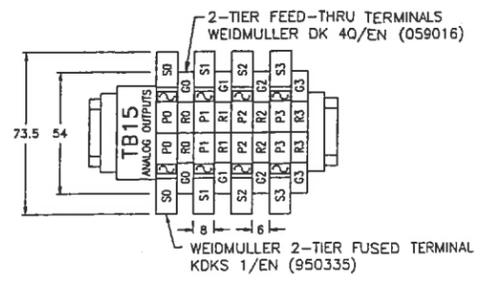
24VDC INPUT



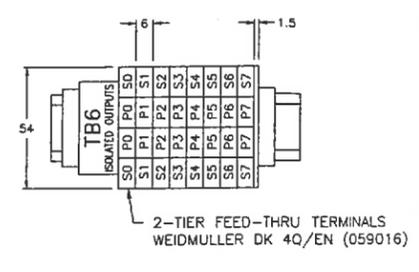
TBDC DISTRIBUTION BLOCK



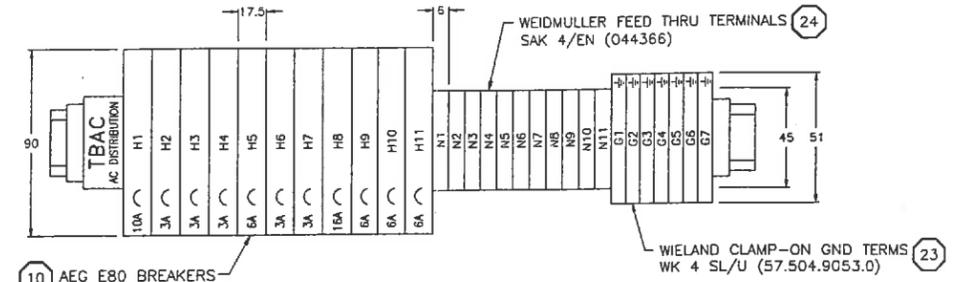
CONTROL RELAY CONTACT ARRANGEMENT
XR-101 SHOWN, TYPICAL ALL CONTROL RELAYS



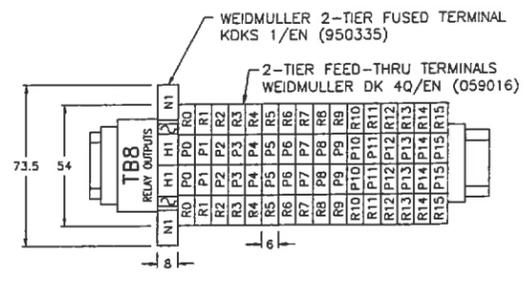
TYPICAL ANALOG OUTPUT BLOCK



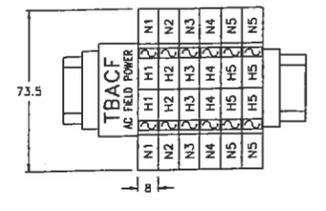
ISOLATED RELAY OUTPUT



TBAC DISTRIBUTION BLOCK



SOURCED RELAY OUTPUT



FIELD POWER DIST BLOCK

LEGEND:
 - DENOTES INTERNAL WIRING (BY DELCO)
 - DENOTES FIELD WIRING (BY DIV. 15)
 (X) - STARTER TERMINAL
 (N) - CONTROL PANEL TERMINAL
 (N) - BILL OF MATERIALS SYMBOL

NOTES:
 1. ALL INTERNAL CABINET WIRING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
 120 VAC LINE - BLACK #14 TEW
 120 VAC NEUTRAL - WHITE #14 TEW
 24 VDC - RED #16 TEW
 0 VDC - YELLOW #16 TEW
 PLC INPUTS - BLUE #18 TEW
 PLC OUTPUTS - ORANGE #18 TEW
 GROUNDS - GREEN #14 TEW
 2. ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
 3. ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.
 4. MODULE WIRING SHOWN ON DWGS 8051-05 TO 8051-07.
 5. POWER DISTRIBUTION SHOWN ON DWG 8051-02.

BILL OF MATERIALS				
No.	Qty.	DESCRIPTION	CAT. NO.	
1	1	ALLEN BRADLEY SLC500 PLC RACK 13 SLOT	1746-A13	
2	1	A-B SLC 5/03 PLC PROCESSOR MODULE	1747-L532	
3	1	A-B PLC POWER SUPPLY	1746-P2	
4	2	A-B 16 Pnt 24VDC INPUT MODULE	1746-IB16	
5	1	A-B 8 Pnt ISOLATED RELAY OUTPUT MODULE	1746-OB8	
6	1	A-B 16 Pnt RELAY OUTPUT MODULE	1746-OW16	
7	3	A-B 4 Pnt ANALOG INPUT MODULES	1746-NI4	
8	1	TYCOR AEGIS 15 Amp POWER FILTER	AGS 120 15XS	
9	1	TECTROL 2.4 Amp 24VDC POWER SUPPLY	GHOF 2-24	
10	11	AEG E80 SERIES 240 VOLT BREAKER	M E815 C3 M E815 C6 M E815 C10	
11	LOT	WIELAND FUSED TERMINALS	WK 4/TH SI 5..U	
12	LOT	WEIDMULLER FUSED 2-TIER TERMINALS	DK 4Q/EN	
13	LOT	WEIDMULLER 2-TIER TERMINALS	DK 4Q/EN	
14	1	A-B ISOLATED LINK COUPLER	1747-AIC	
15	1	A-B 3 POS MAINTAINED SELECTOR SWITCH	800T-J2A	
16	1	A-B 2 POS MAINTAINED SELECTOR SWITCH	800T-H2A	
17	1	A-B MOMENTARY PUSHBUTTON	800T-A2A	
18	1	A-B RED INDICATING LIGHT	800T-PL1BR	
19	1	PROTALK AUTO DIALER	B1270	
20	2	DATAFORTH LDW70 SHORTRAIL MODEM	-	
21	3	A-B SERIAL TO DH-485 INTERFACE CONVERTER	1761-NET-AIC	
22	2	TYCOR TVSS DATALINE FILTER (4 WIRE)	DLSP-4W-HW-RJ11	
23	LOT	WIELAND CLAMP-ON GROUND TERMINALS	WK4 SL/U	
24	LOT	WEIDMULLER FEED-THRU TERMINALS	SAK 4/EN	
25	2	MILLTRONICS MULTIRANGER+ LEVEL INDICATING TRANSMITTER	-	
26	1	OMRON SCALABLE DC DIGITAL PANEL METER	K3TJ-A116G	
27	1	TECTROL 1.2 Amp 12VDC POWER SUPPLY	GHOF 1-12	
28	1	EXIDE PRESTIGE POWERWARE UPS	1000VA	
29	1	A-B DH-485 COMMUNICATION CABLE	1747-C11	
30	3	CUTLER-HAMMER TVSS FILTER	DHW2P	
31	2	POWERCO TVSS FILTER	PC642-008LC	

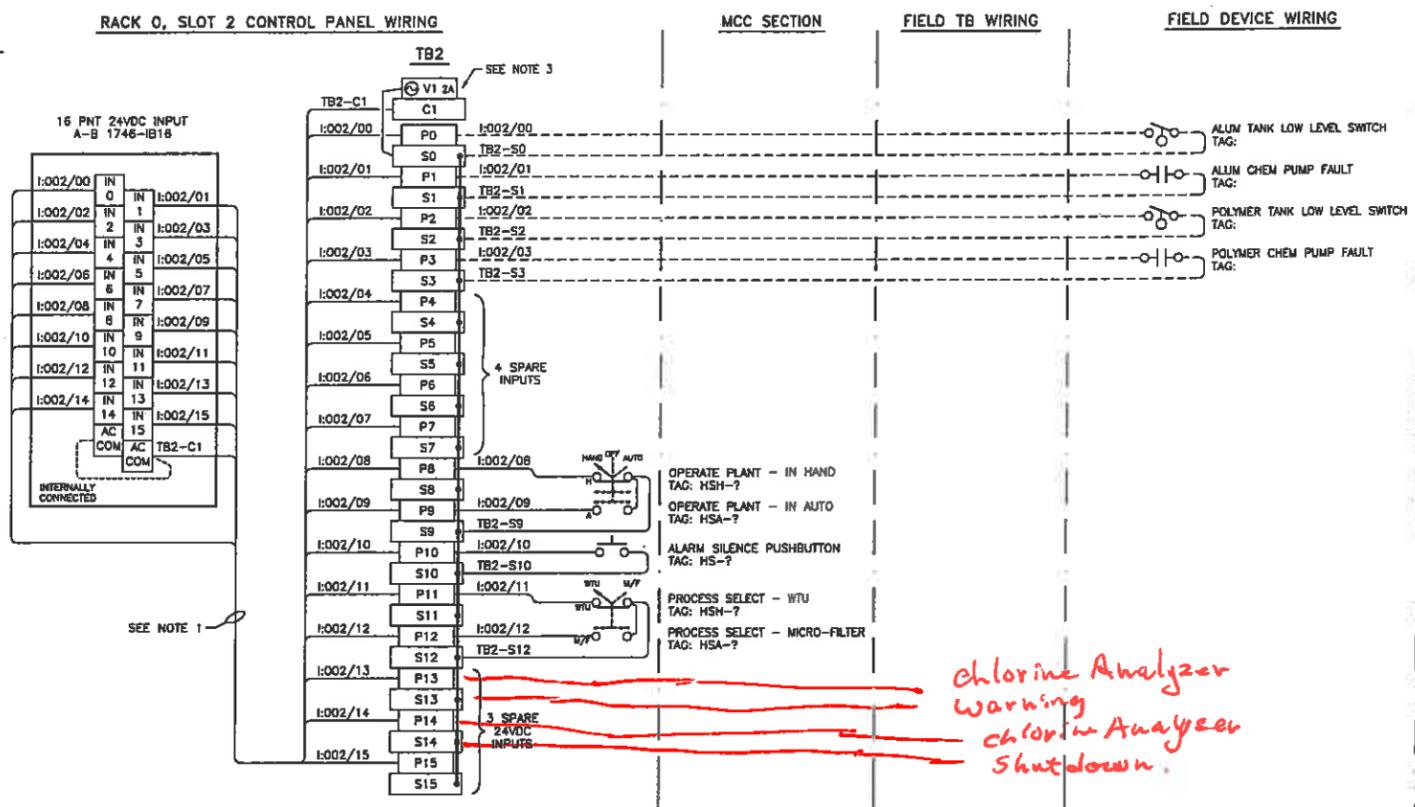
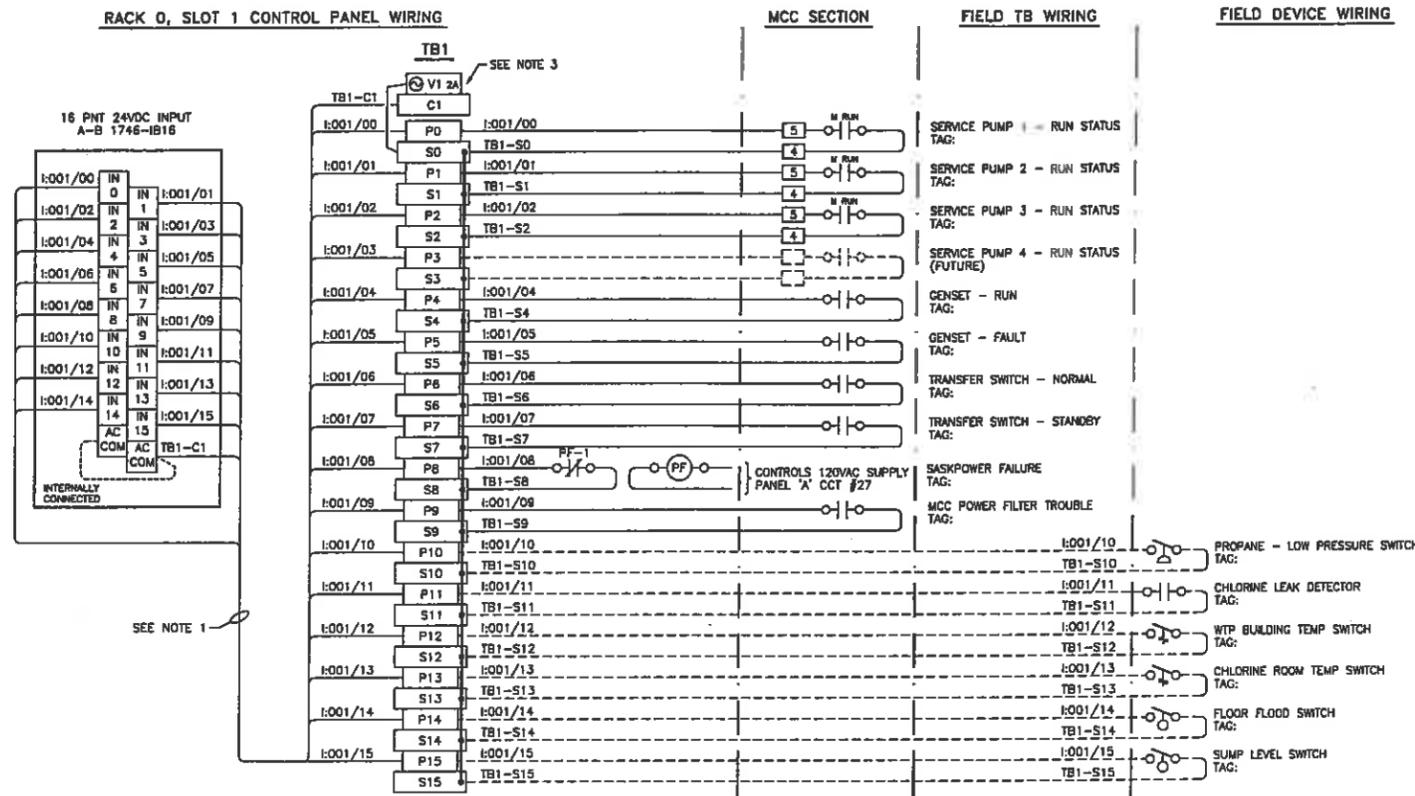
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B	RE-ISSUE FOR APPROVAL	10/28/98	B.R.				
A	ISSUE FOR APPROVAL	8/21/98	B.R.				

WASKESIU NATIONAL PARK
 PRINCE ALBERT, SASK.
 WATER TREATMENT PLANT
 AND PUMPING STATION

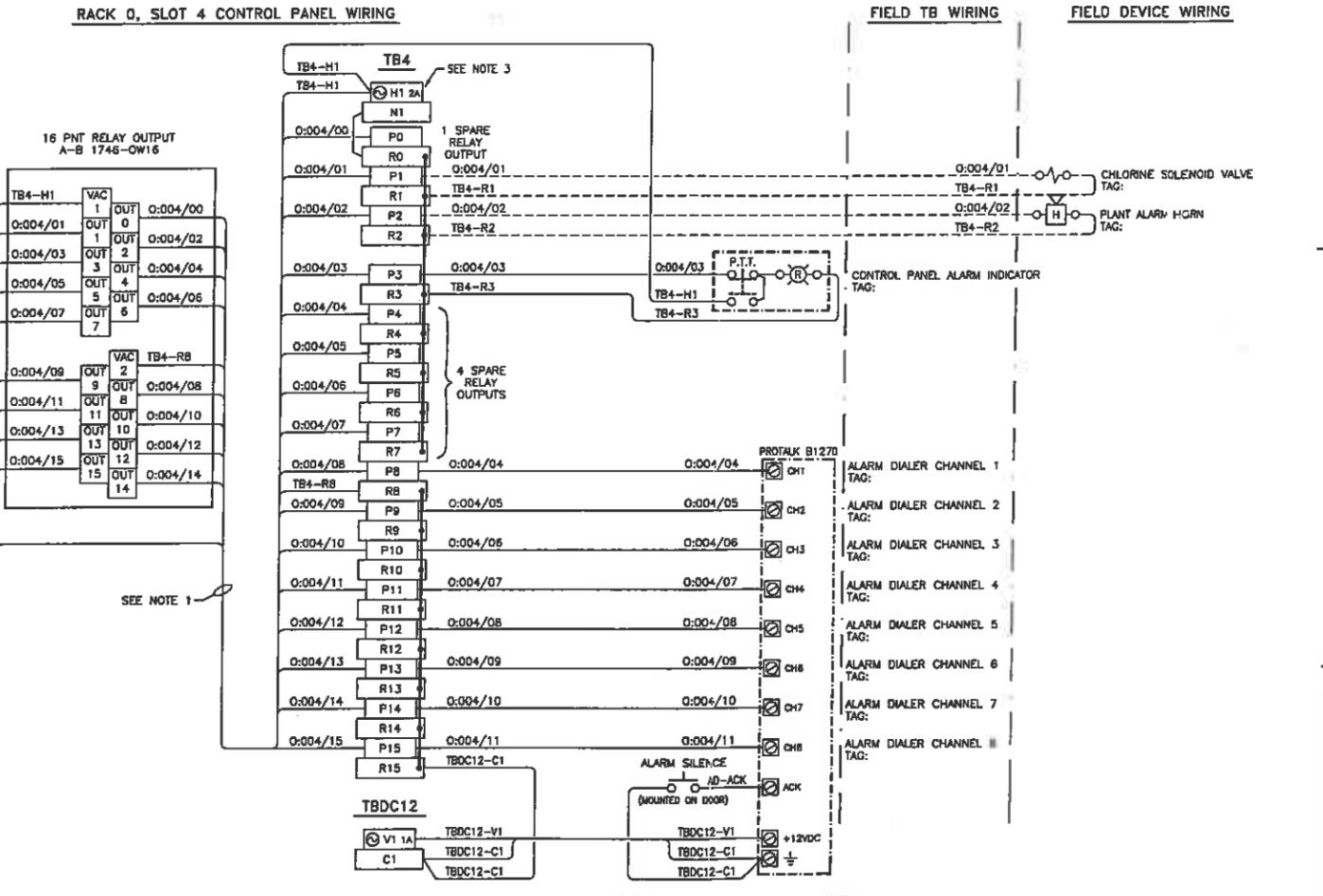
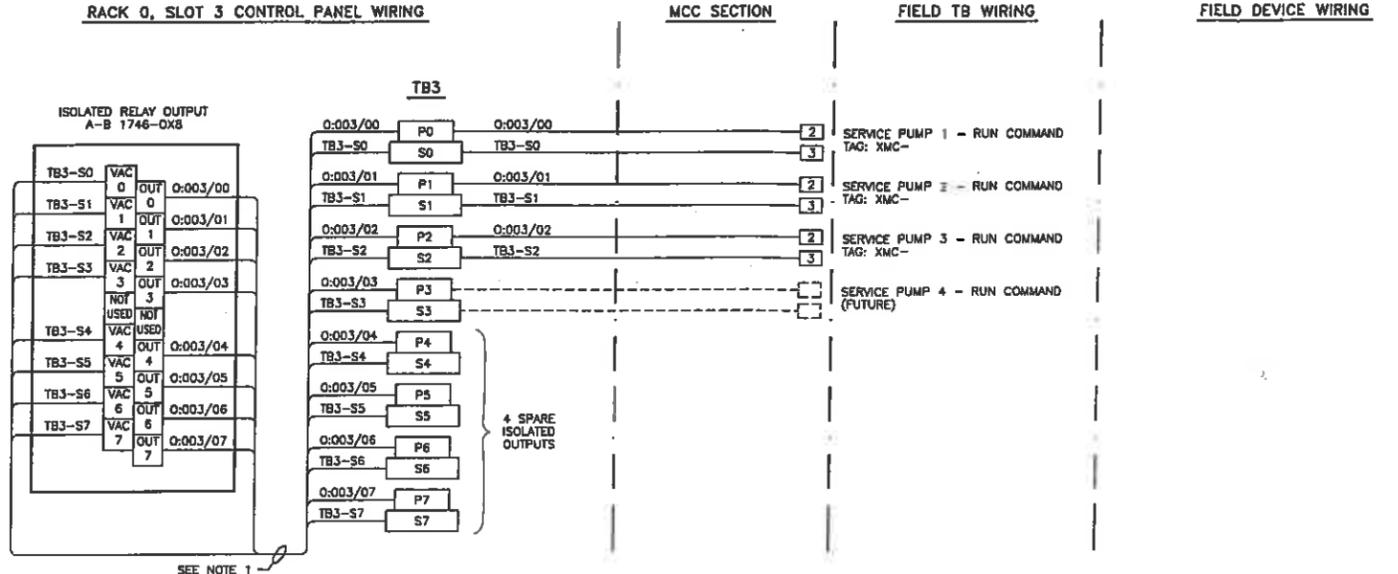
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SCALE: As Noted	DATE:
DESIGNED BY: BPR	
DRAWN BY: SON	
CHECKED BY: BPR	
APPROVED BY:	



CLIENT:	PROJECT NO.:
PUBLIC WORKS CANADA	8051
AREA:	DRAWING NO.:
PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT AND PUMPING STATION	8051-04
REVISIONS:	REVISION NO.:
WTP SCHEMATICS	A



Chlorine Analyzer warning chlorine Analyzer shutdown.



- LEGEND:**
- EXTERNAL WIRING
 - INTERNAL WIRING
- NOTES:**
- ALL INTERNAL CABINET WIRING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
 120 VAC LINE - BLACK #14 TEW
 120 VAC NEUTRAL - WHITE #14 TEW
 24 VDC - RED #18 TEW
 0 VDC - YELLOW #16 TEW
 PLC INPUTS - BLUE #18 TEW
 PLC OUTPUTS - ORANGE #18 TEW
 GROUNDS - GREEN #14 TEW
 - ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
 - POWER DISTRIBUTION WIRING SHOWN ON DWG 8051-02.
 - ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.

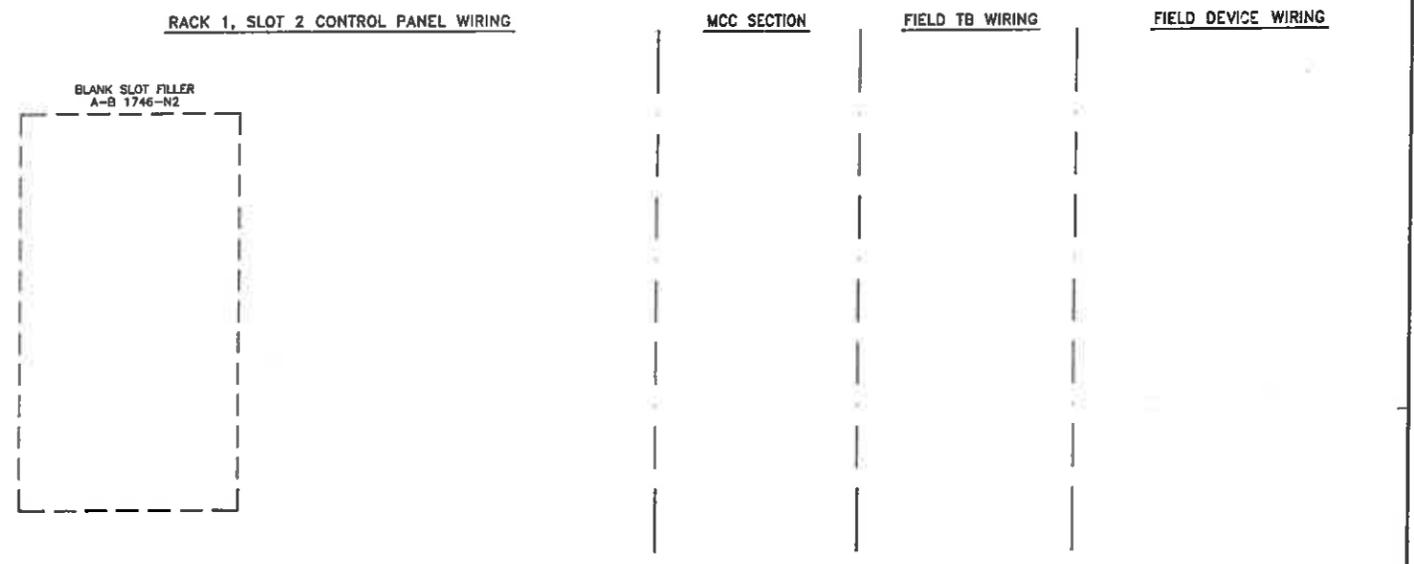
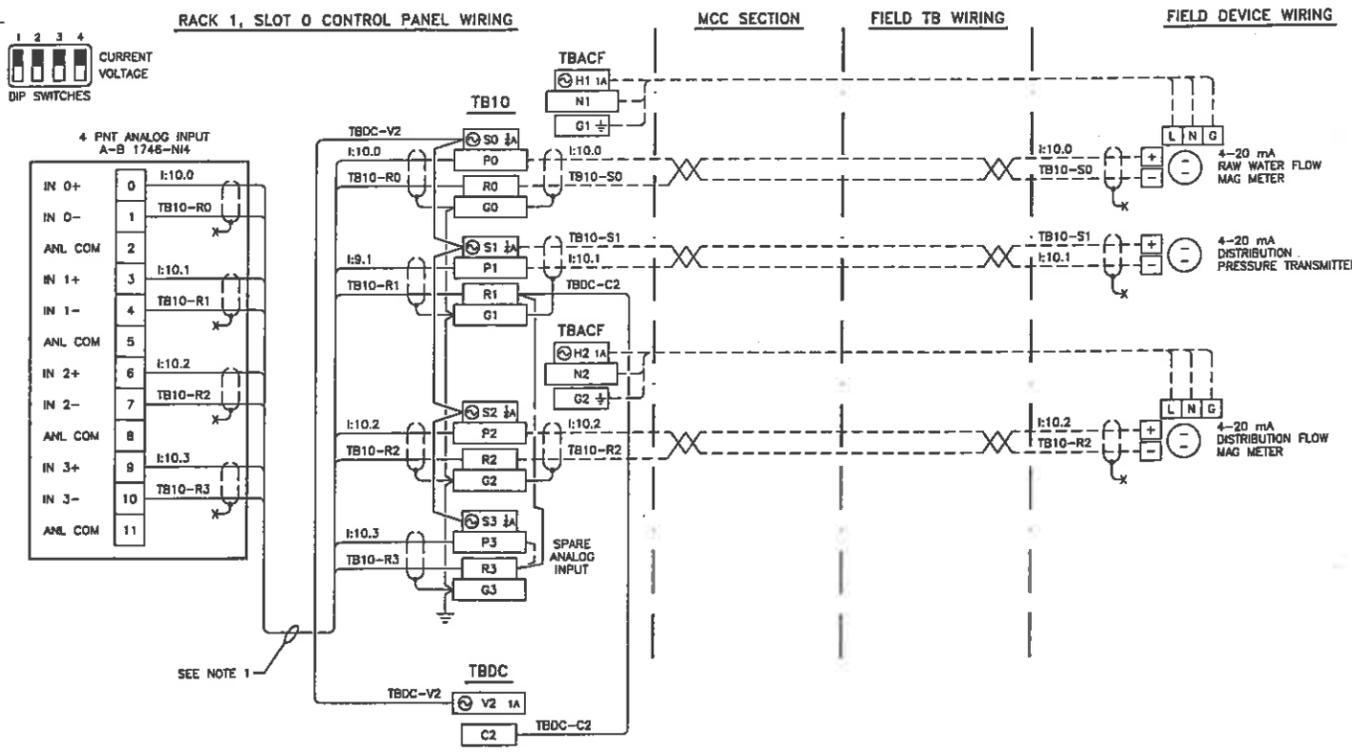
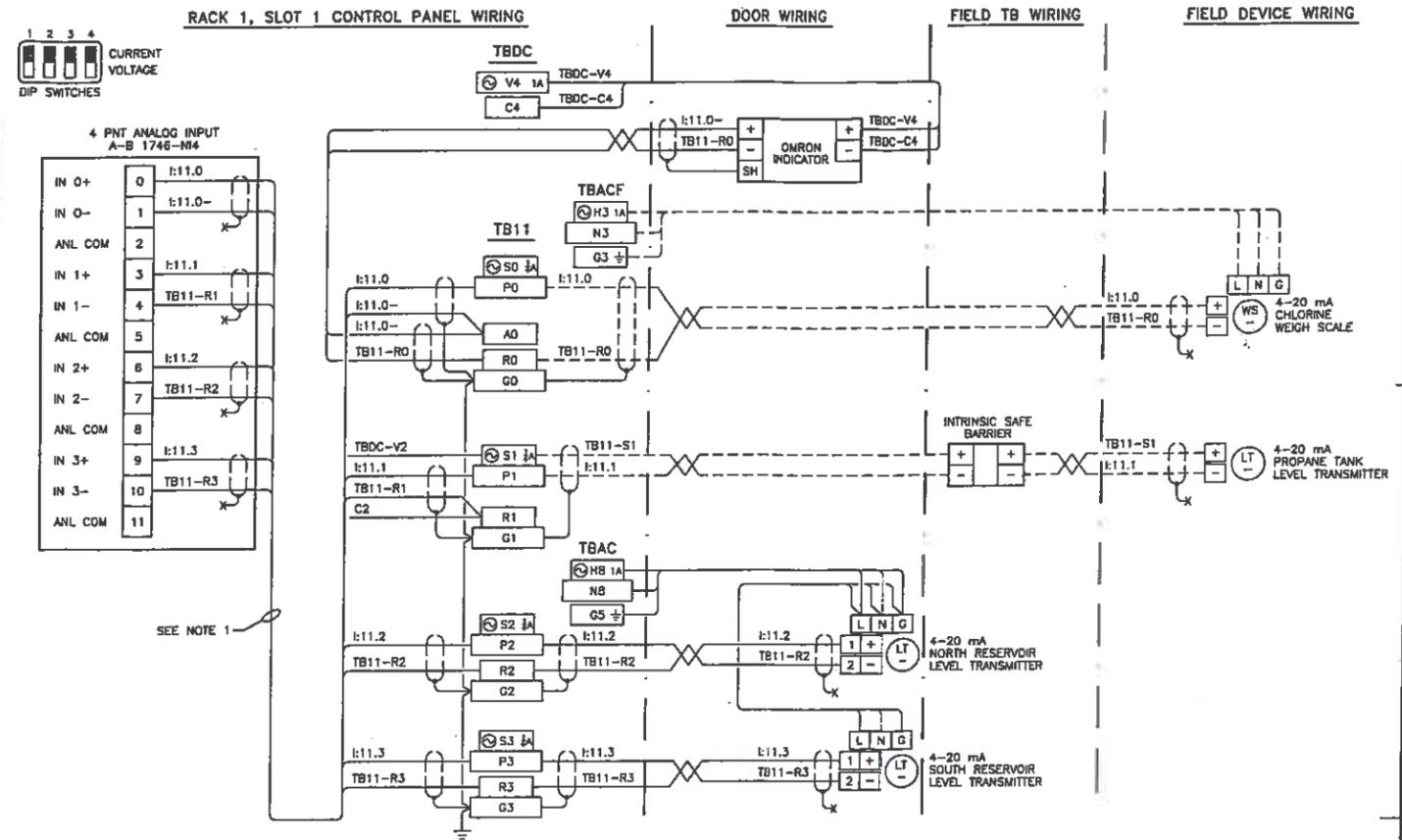
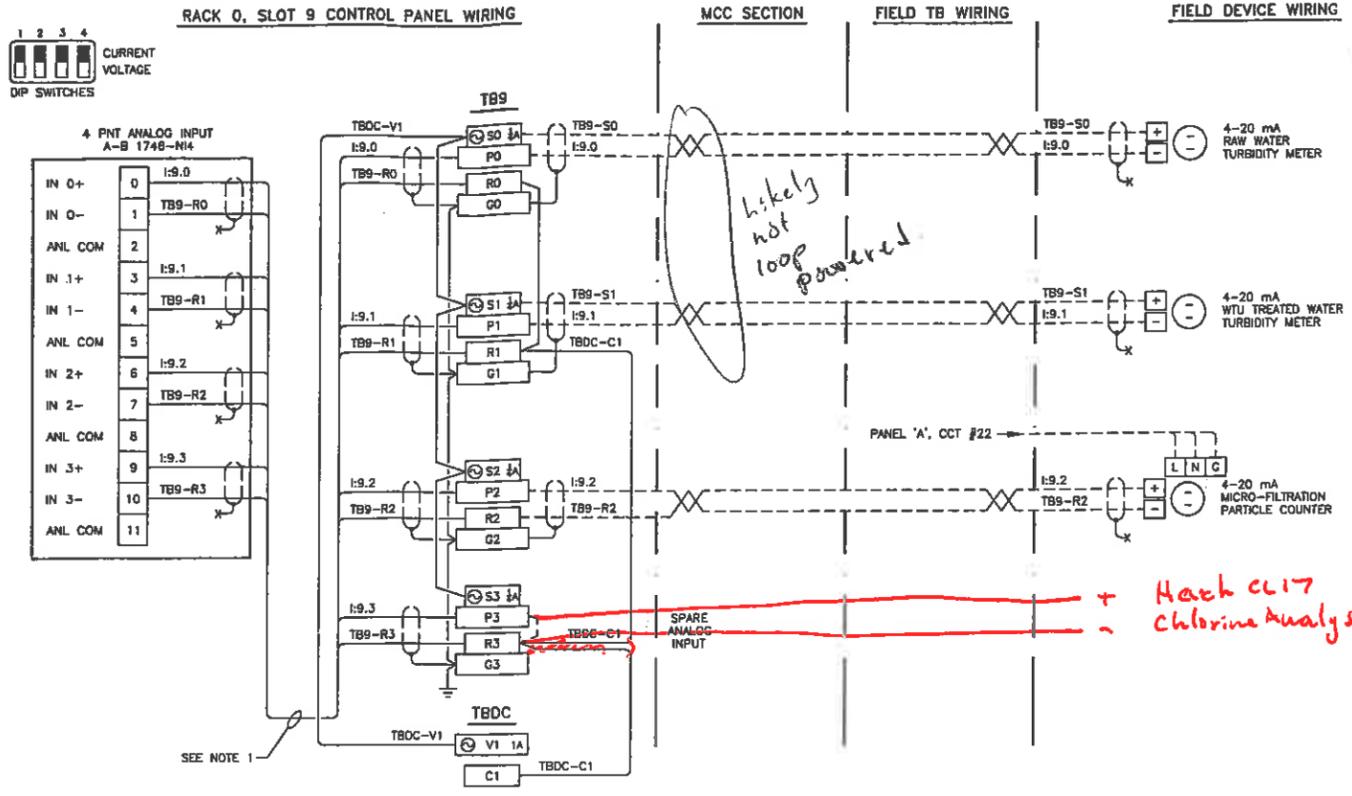
NO.	DESCRIPTION	DATE	BY
0	AS BUILT	08/24/99	D.D.
B	RE-ISSUE FOR APPROVAL	12/09/98	B.R.
A	ISSUE FOR APPROVAL	9/11/98	B.R.

WASKESIU NATIONAL PARK
 PRINCE ALBERT, SASK.
 WATER TREATMENT PLANT
 AND PUMPING STATION

SCALE:	As Noted	DATE:
DESIGNED BY:	BPR	
DRAWN BY:	SON	
CHECKED BY:	BPR	
APPROVED BY:		



CLIENT:	PUBLIC WORKS CANADA	PROJECT NO.:	8051
PROJECT:	PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT & PUMPING STATION	DRAWING NO.:	8051-05
	RACK 0, SLOTS 1, 2, 3 & 4 I/O MODULE WIRING	REVISION NO.:	0



- LEGEND:**
- EXTERNAL WIRING
 - INTERNAL WIRING
- NOTES:**
- ALL INTERNAL CABINET WIRING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
 120 VAC LINE - BLACK #14 TEW
 120 VAC NEUTRAL - WHITE #14 TEW
 24 VDC - RED #16 TEW
 0 VDC - YELLOW #16 TEW
 PLC INPUTS - BLUE #16 TEW
 PLC OUTPUTS - ORANGE #18 TEW
 GROUNDS - GREEN #14 TEW
 - ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
 - POWER DISTRIBUTION WIRING SHOWN ON DWG 8051-02.
 - ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.

REV.	DESCRIPTION	DATE	BY	NO.
0	AS BUILT	08/24/99	D.D.	
B	RE-ISSUE FOR APPROVAL	12/09/98	B.R.	
A	ISSUE FOR APPROVAL	9/11/98	B.R.	

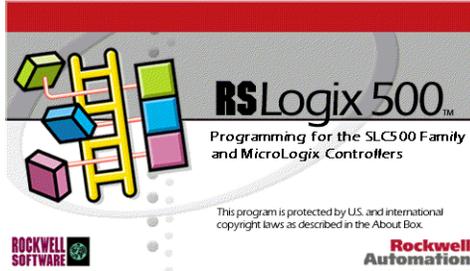
WASKESIU NATIONAL PARK PRINCE ALBERT, SASK. WATER TREATMENT PLANT AND PUMPING STATION		SECTION: AREA: SCALE: As Noted DATE: DESIGNED BY: BPR DRAWN BY: SON CHECKED BY: BPR APPROVED BY:	301 47th St. E. SASKATOON, SASK S7K 3P2 PH (306) 244-6449 FAX (306) 865-7500 delco@delco.com	CLIENT: PUBLIC WORKS CANADA PROJECT NO.: 8051 DRAWING NO.: 8051-07 REVISION NO.: 0
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CONTRACT DOCUMENTS



Appendix D - PETWA Surface Water Treatment - PLC Listing and Control Panel Drawings

RSLogix500 Project Report



PANATION.RSS

Processor Information

Processor Type: 1747-L532C/D 5/03 CPU - 16K Mem. OS302

Processor Name: PANATION

Total Memory Used: 781 Instruction Words Used - 330 Data Table Words Used

Total Memory Left: 11507 Instruction Words Left

Program Files: 5

Data Files: 11

Program ID: 421

PANATION.RSS

I/O Configuration

0	1747-L532C/D	5/03 CPU - 16K Mem. OS302
1	1746-IA16	16-Input 100/120 VAC
2	1746-IA16	16-Input 100/120 VAC
3	1746-OW16	16-Output (RLY) 240 VAC
4	1746-OW16	16-Output (RLY) 240 VAC
5	1746-IA16	16-Input 100/120 VAC
6	1746-NIO4I	Analog 2 Ch In/2 Ch Current Out

PANATION.RSS

PID Configuration

PID - Rung #4:4 - N7:20

Controller Gain, Kc: 1.25	Setpoint: 4400
Reset Term, Ti: 0.20	Maximum Setpoint Limit: 10000
Rate Term, Td: 0.02	Minimum Setpoint Limit: 0
Loop Update Time: 0.50	Control Variable Percent (CV%): 26
Control Mode: E = PV - SP	Output Max CV(%): 100
PID Control: Auto	Output Min CV(%): 0
Time Mode: Timed	Derivative Action(DA): Yes
Output Limiting: No	Deadband: 25
Reset and Gain: Yes	

PANATION.RSS

Channel Configuration

GENERAL

Channel 1 Write Protected: No
Channel 1 Edit Resource/Owner Timeout(x1 sec): 60
Channel 1 Passthru Link ID(dec): 2

Channel 0 Write Protected: No
Channel 0 Edit Resource/Owner Timeout(x1 sec): 60
Channel 0 Passthru Link ID(dec): 1
Channel 0 Current Mode: System
Channel 0 Mode Change Enabled: No
Channel 0 Mode Change Attention Character: \lb
Channel 0 Mode Change System Character: S
Channel 0 Mode Change User Character: U

CHANNEL 1 (SYSTEM) - Driver: DH485

Node : 4 (decimal)
Baud: 19200
Token Hold Factor: 1
Max Node Address: 10

CHANNEL 0 (SYSTEM) - Driver: DF1 Full Duplex

Source ID: 0 (decimal)
Baud: 19200
Parity: NONE
Stop Bits: 1
Control Line : No Handshaking
Error Detection: CRC
Embedded Responses: Enabled
Duplicate Packet Detect: Yes
ACK Timeout(x20 ms): 50
NAK Retries: 3
ENQ Retries: 3

CHANNEL 0 (USER) - Driver: ASCII

Baud: 19200
Parity: NONE
Stop Bits: 1
Data Bits: 8
Control Line : No Handshaking
Delete mode: Ignore
Echo: No
XON/XOFF: No
Termination Character 1: \d
Termination Character 2: \ff
Append Character 1: \d
Append Character 2: \a

PANATION.RSS

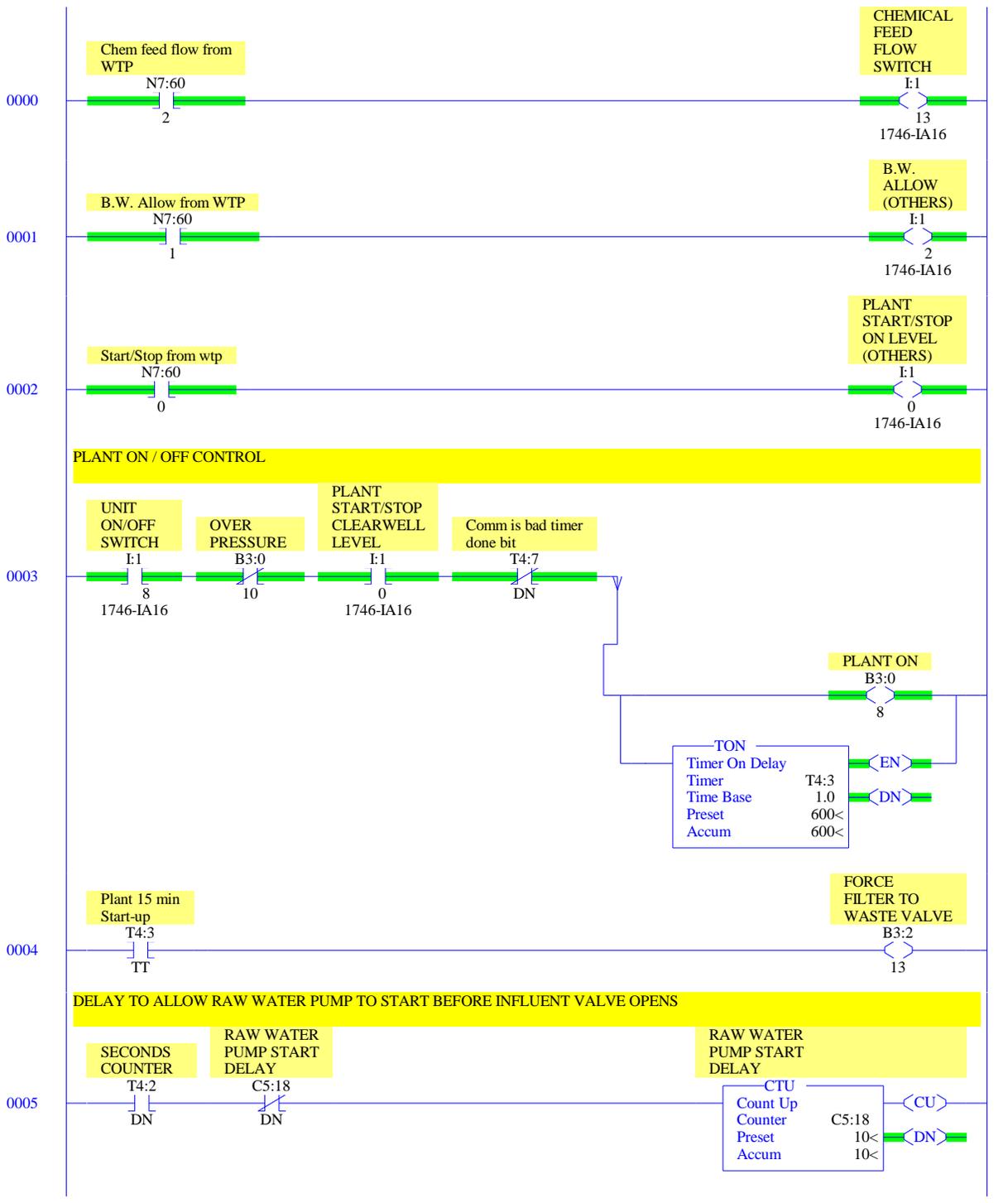
Program File List

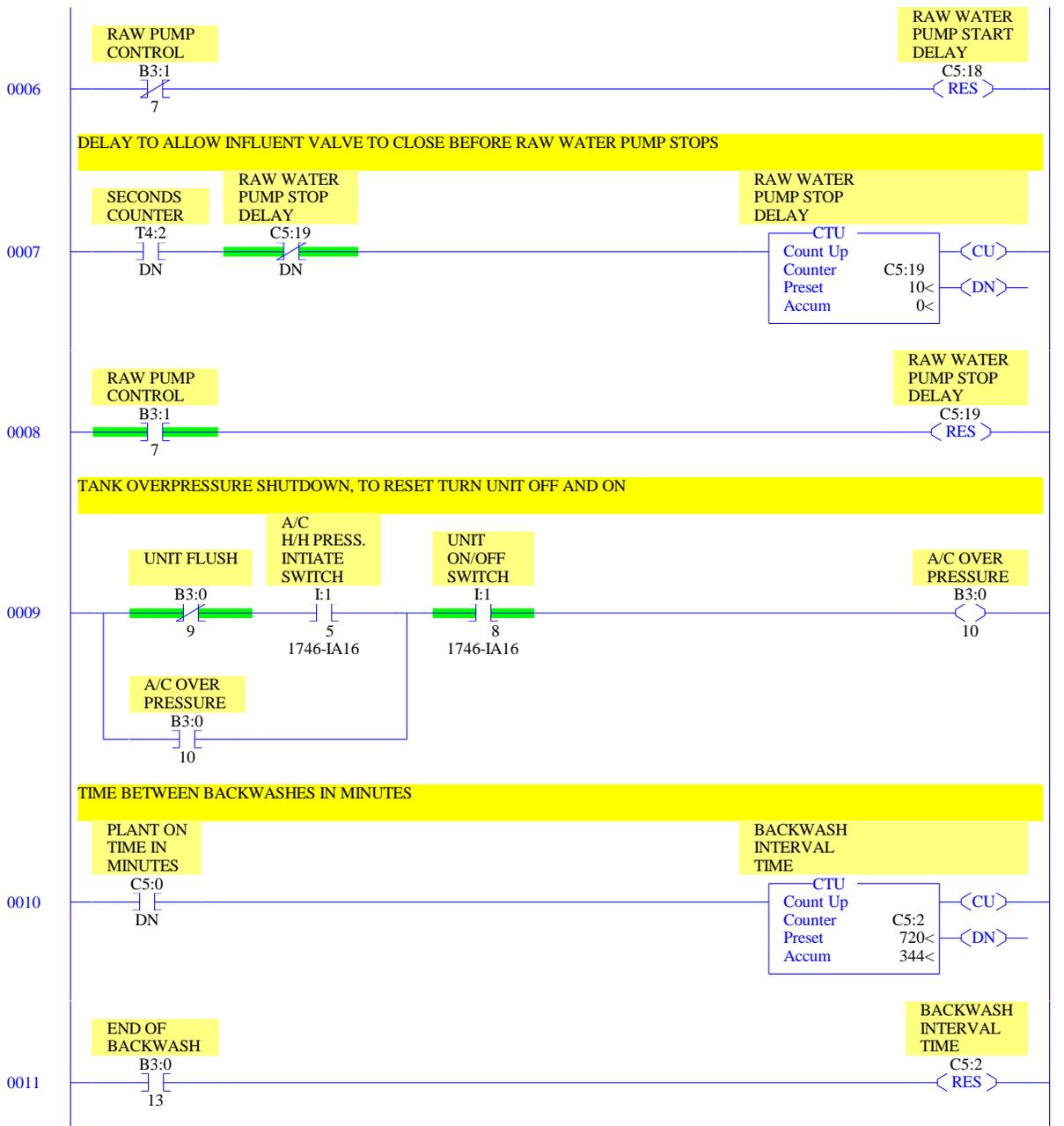
Name	Number	Type	Rungs	Debug	Bytes
[SYSTEM]	0	SYS	0	No	0
	1	SYS	0	No	0
MAIN	2	LADDER	116	No	4069
UV_REACTOR	3	LADDER	19	No	469
ANALOG_CTL	4	LADDER	12	No	310

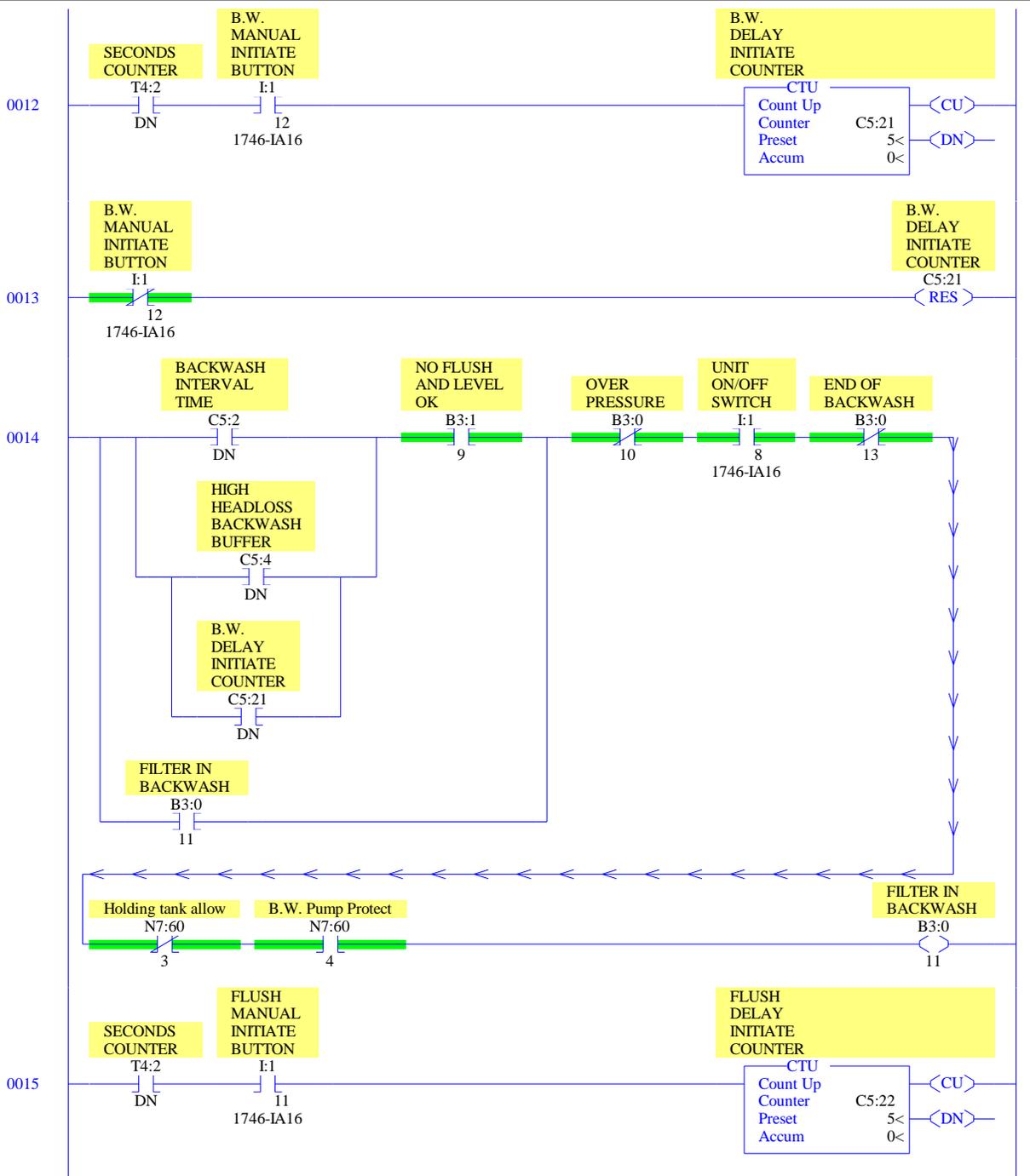
PANATION.RSS

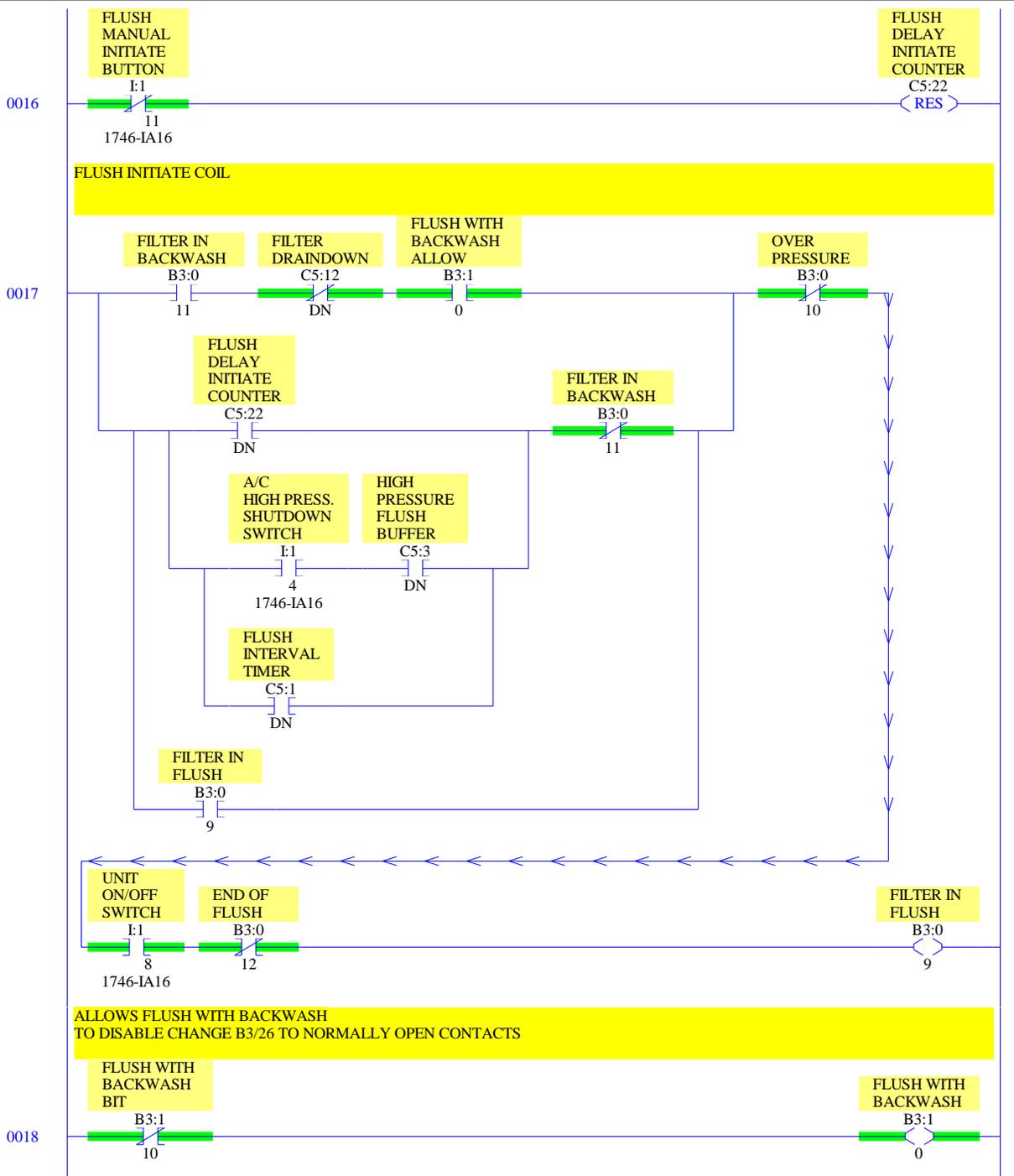
Data File List

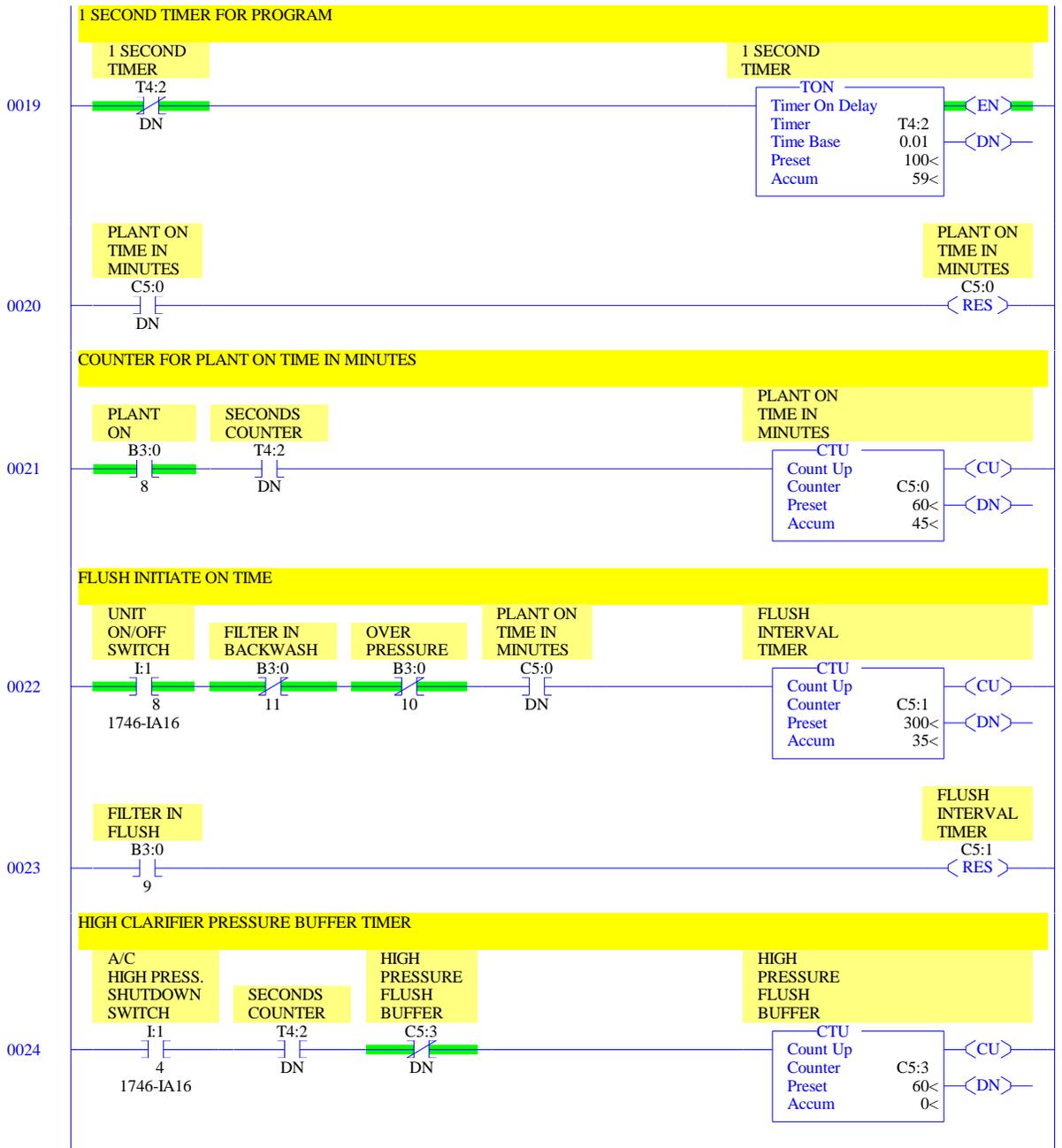
Name	Number	Type	Scope	Debug	Words	Elements	Last
OUTPUT	0	O	Global	No	12	4	O:3
INPUT	1	I	Global	No	15	5	I:4
STATUS	2	S	Global	No	0	83	S:82
BINARY	3	B	Global	No	139	139	B3:138
TIMER	4	T	Global	No	27	9	T4:8
COUNTER	5	C	Global	No	69	23	C5:22
CONTROL	6	R	Global	No	3	1	R6:0
INTEGER	7	N	Global	No	61	61	N7:60
FLOAT	8	F	Global	No	2	1	F8:0
	30	B	Global	No	1	1	B30:0
	35	B	Global	No	1	1	B35:0

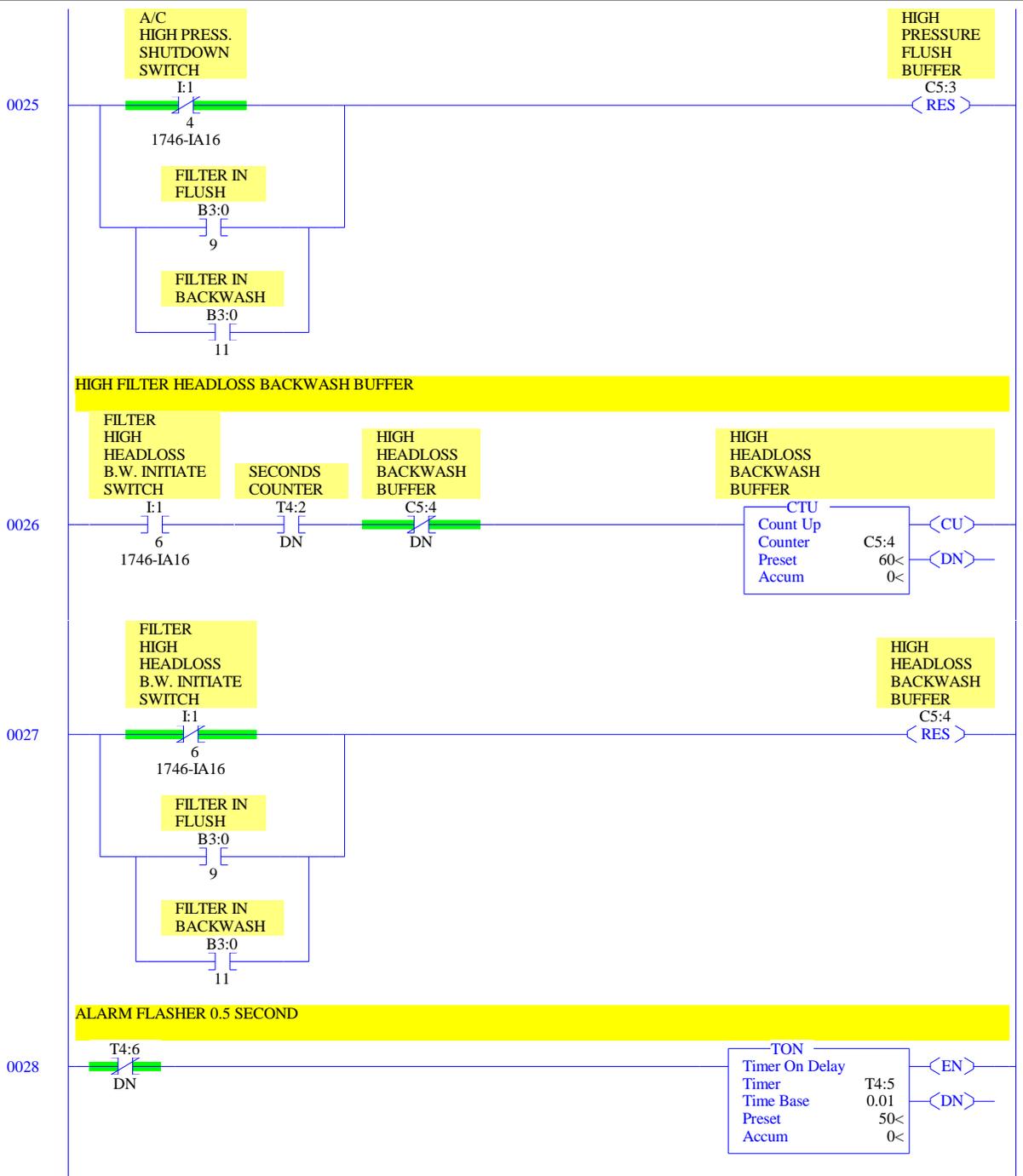


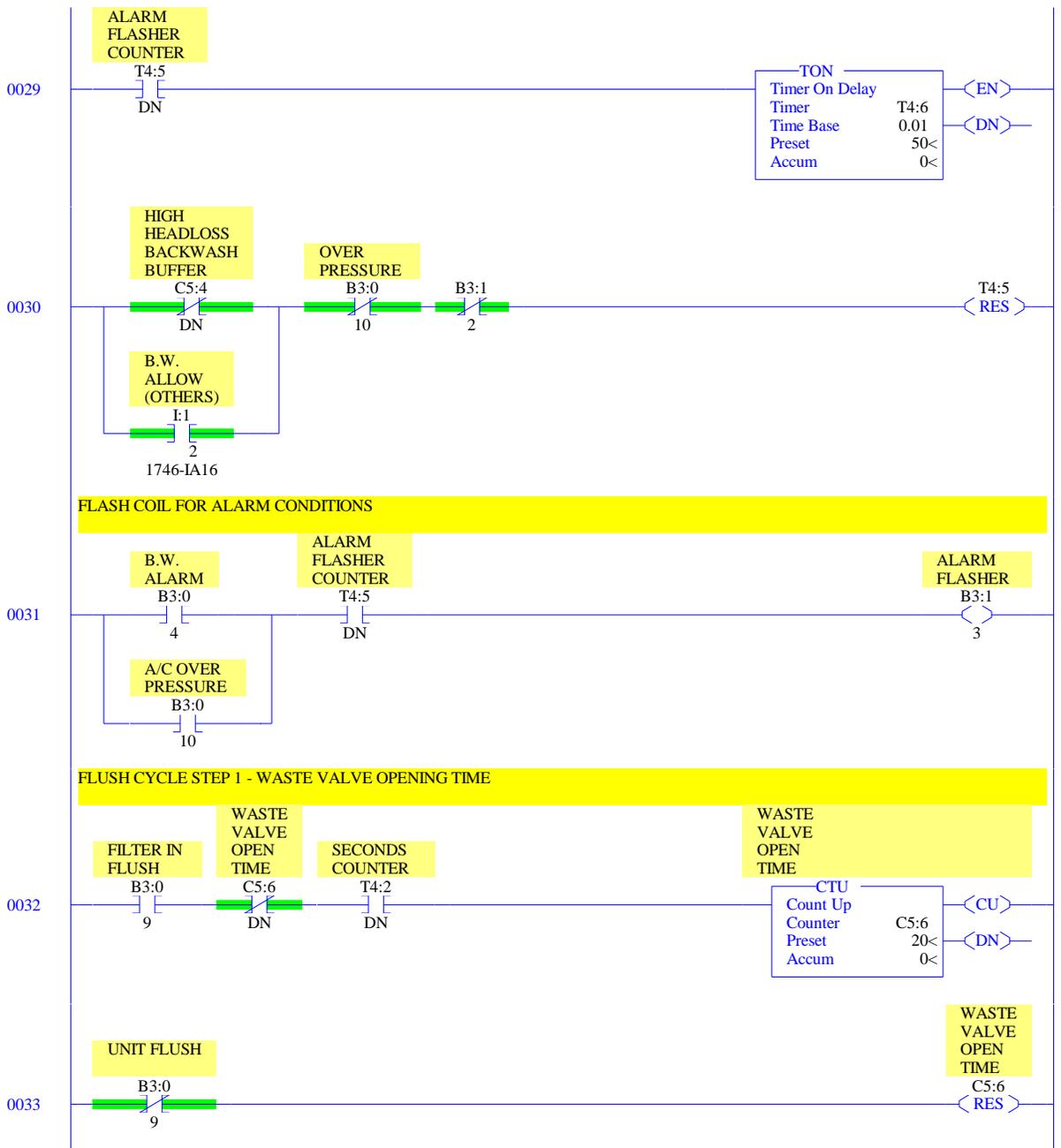


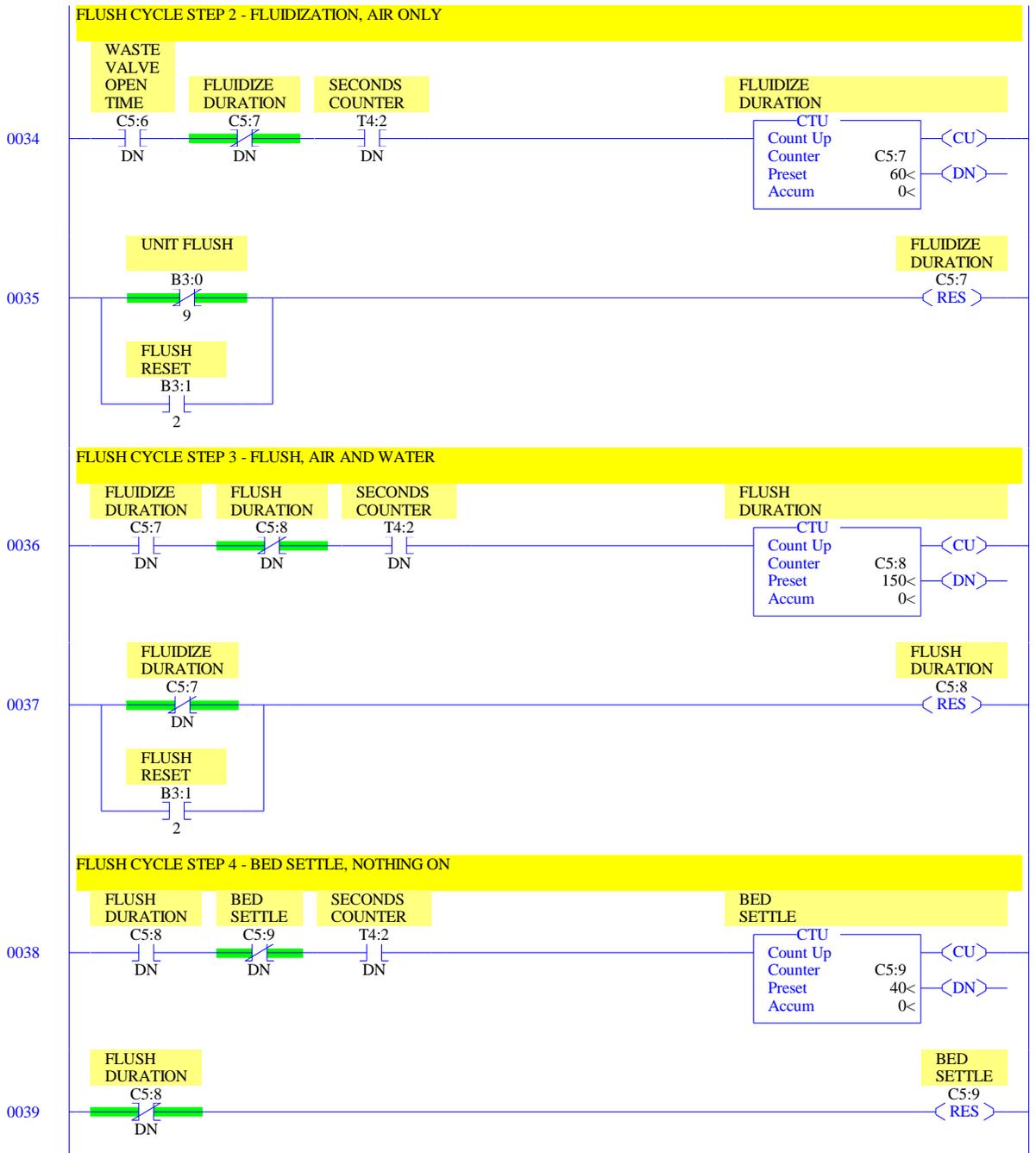


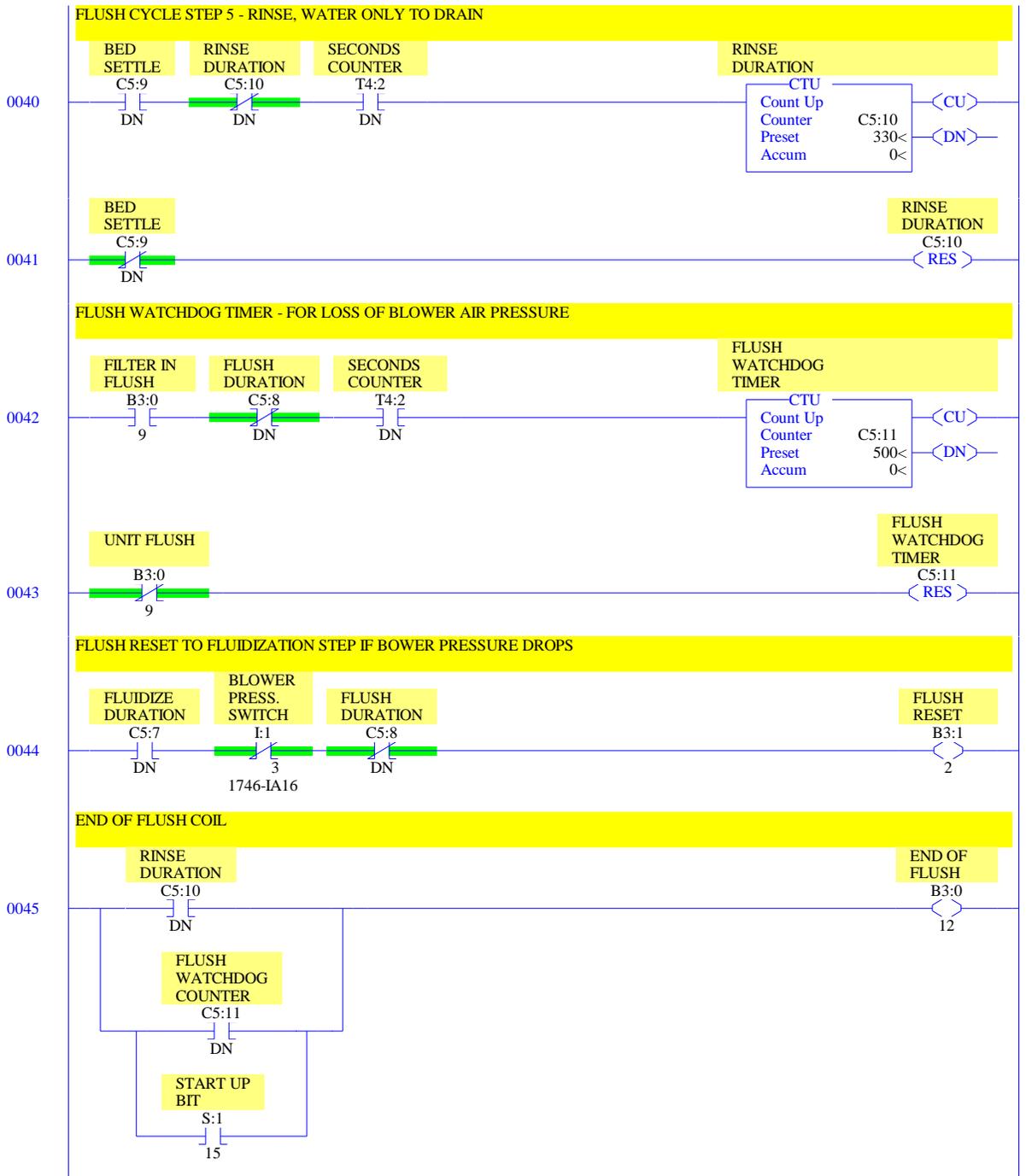


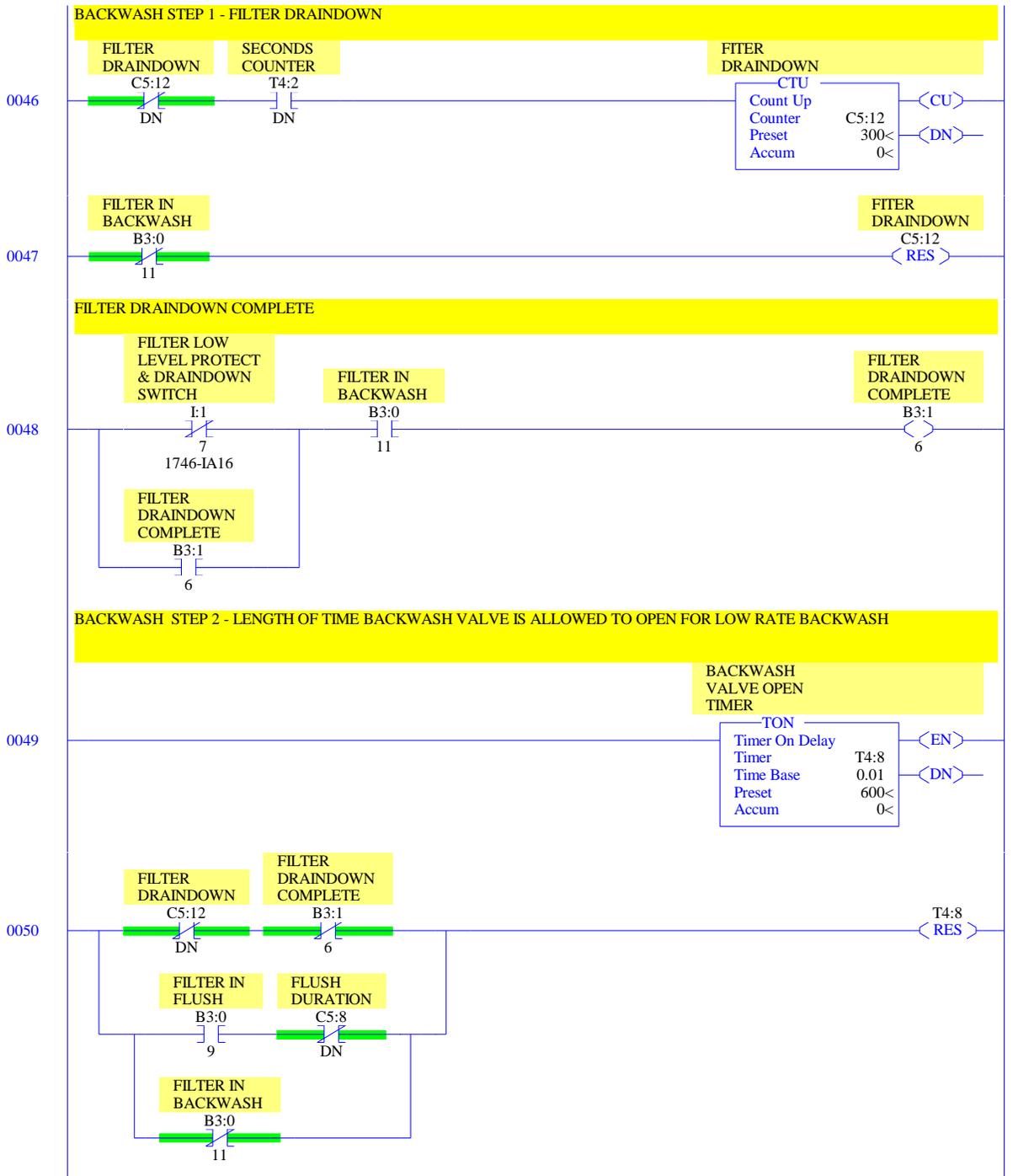


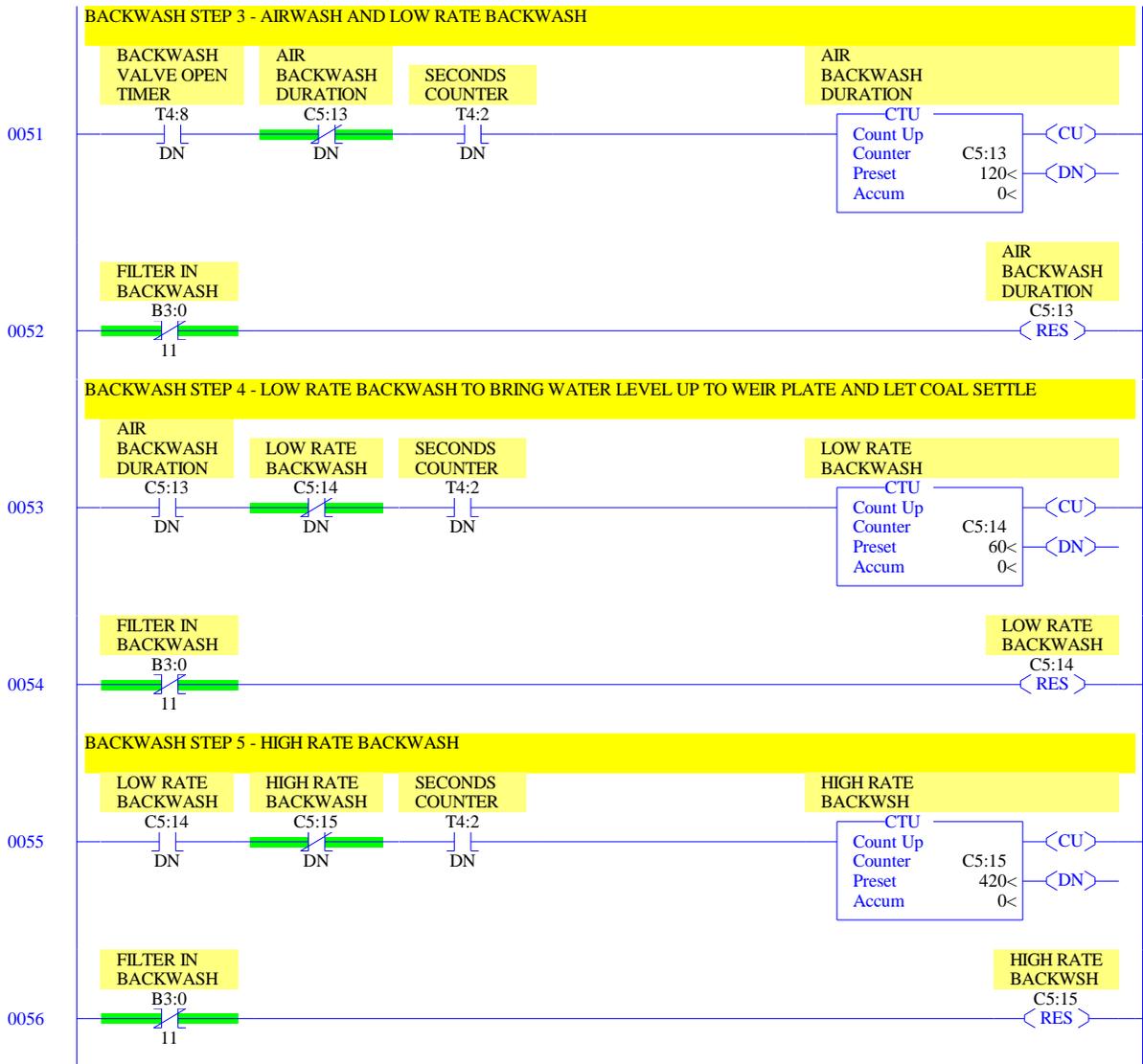


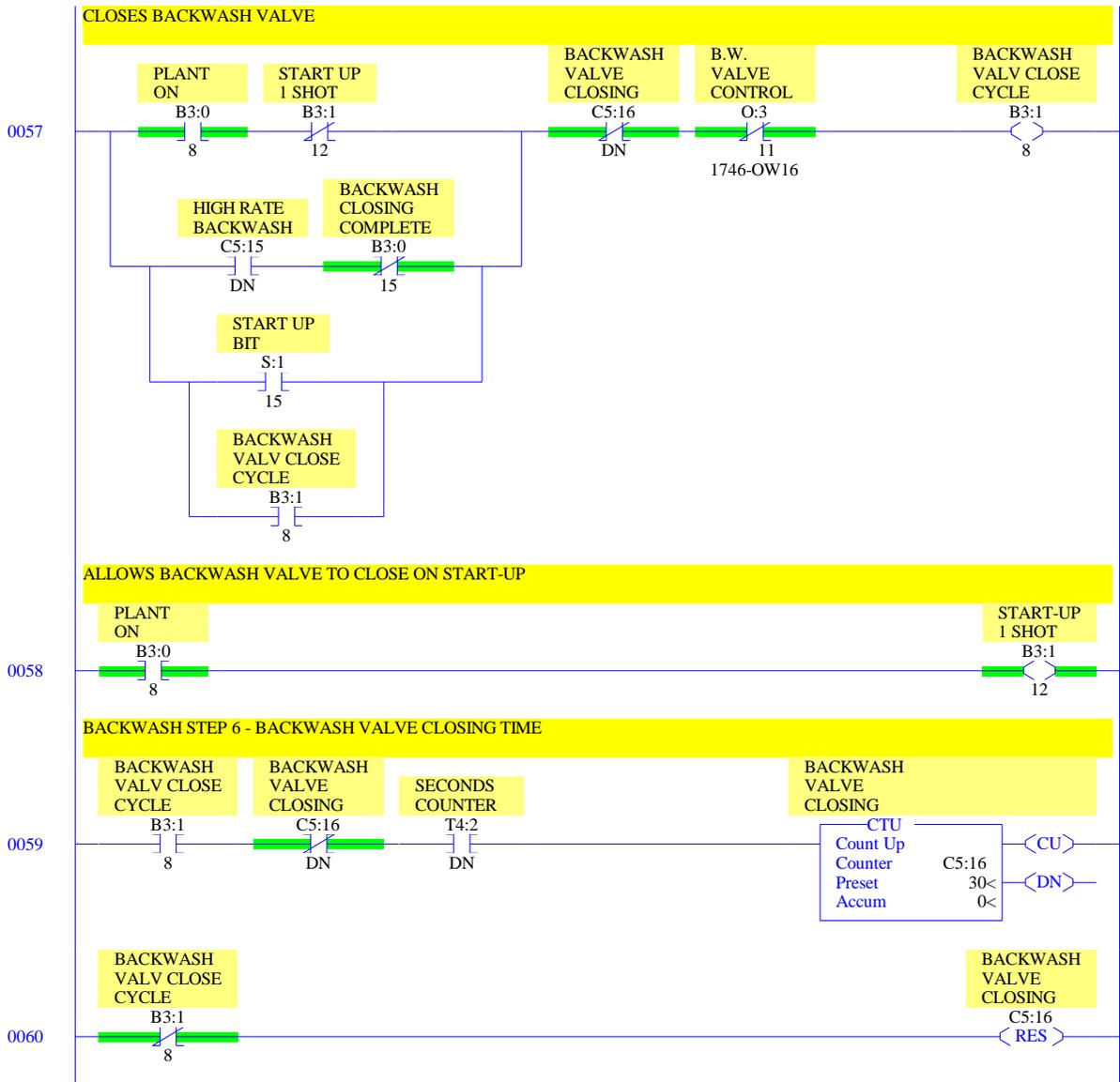


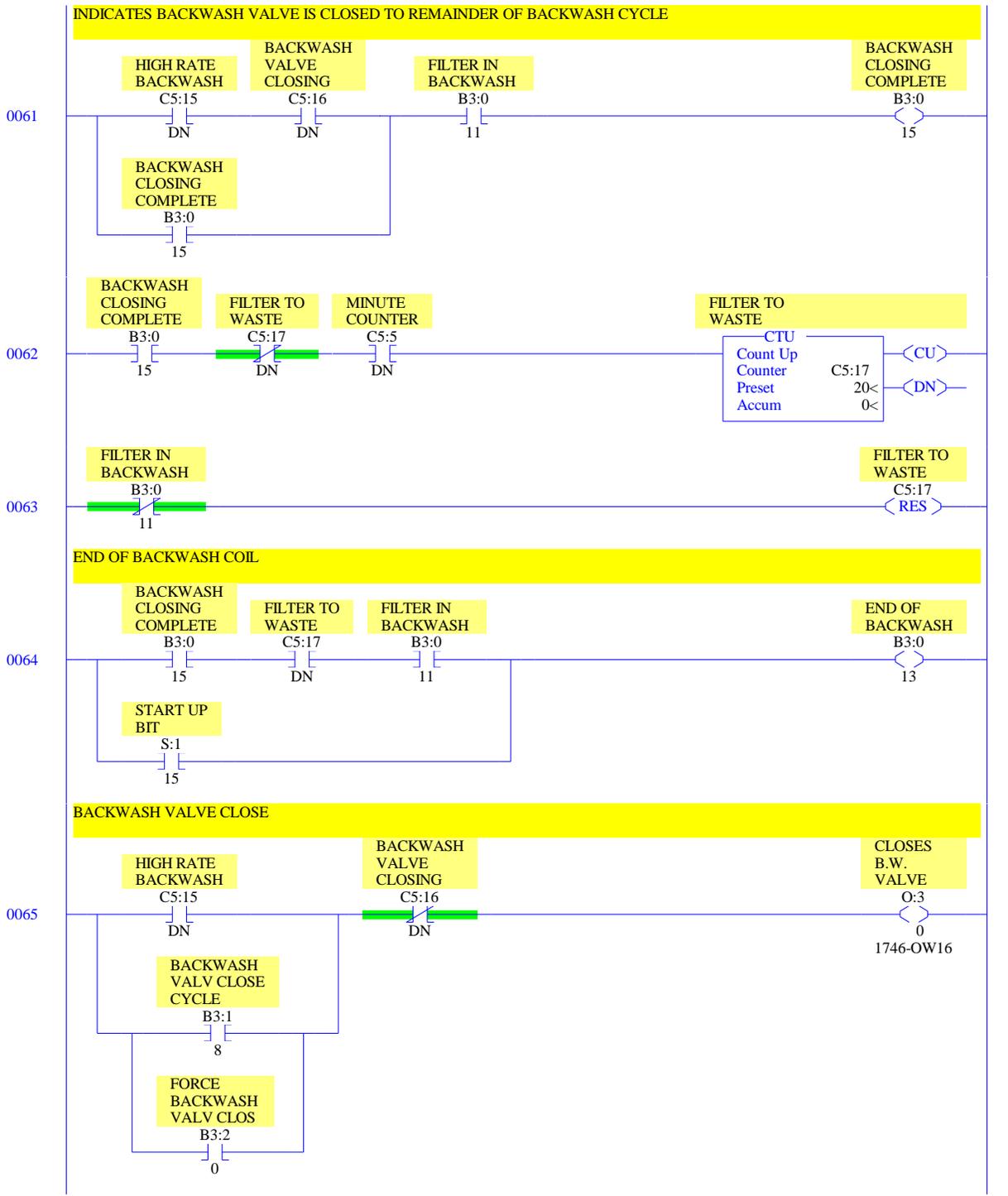


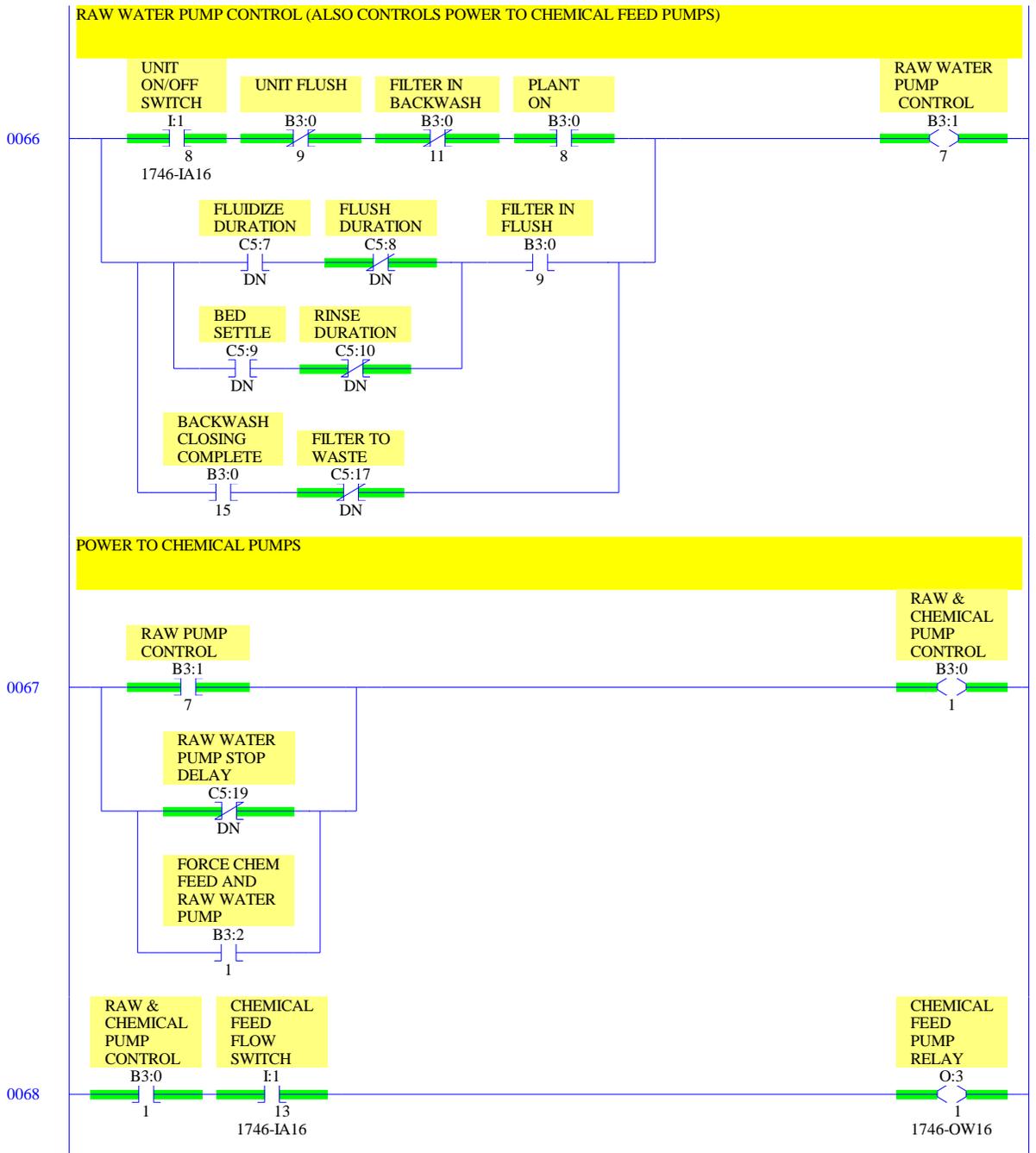


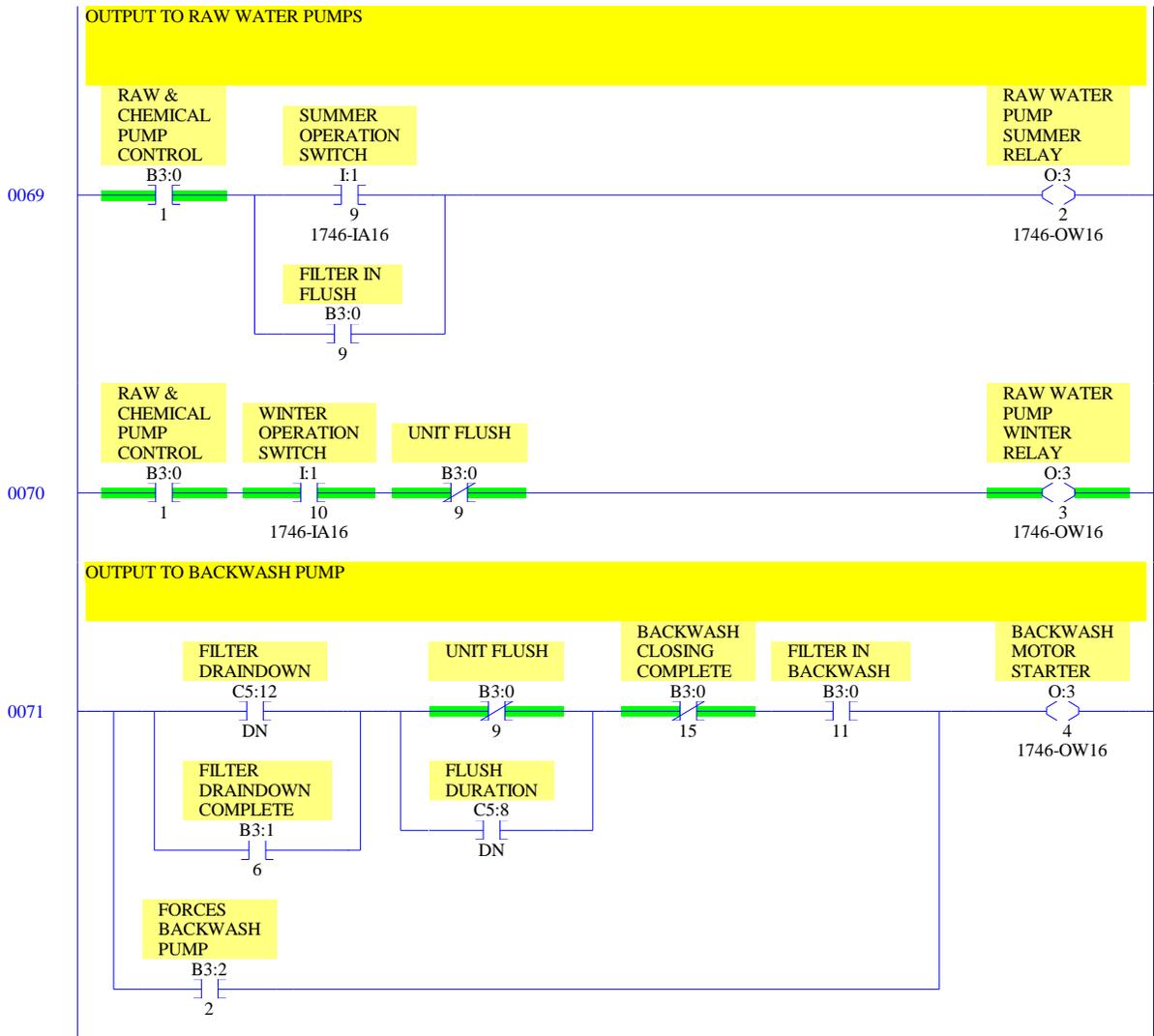


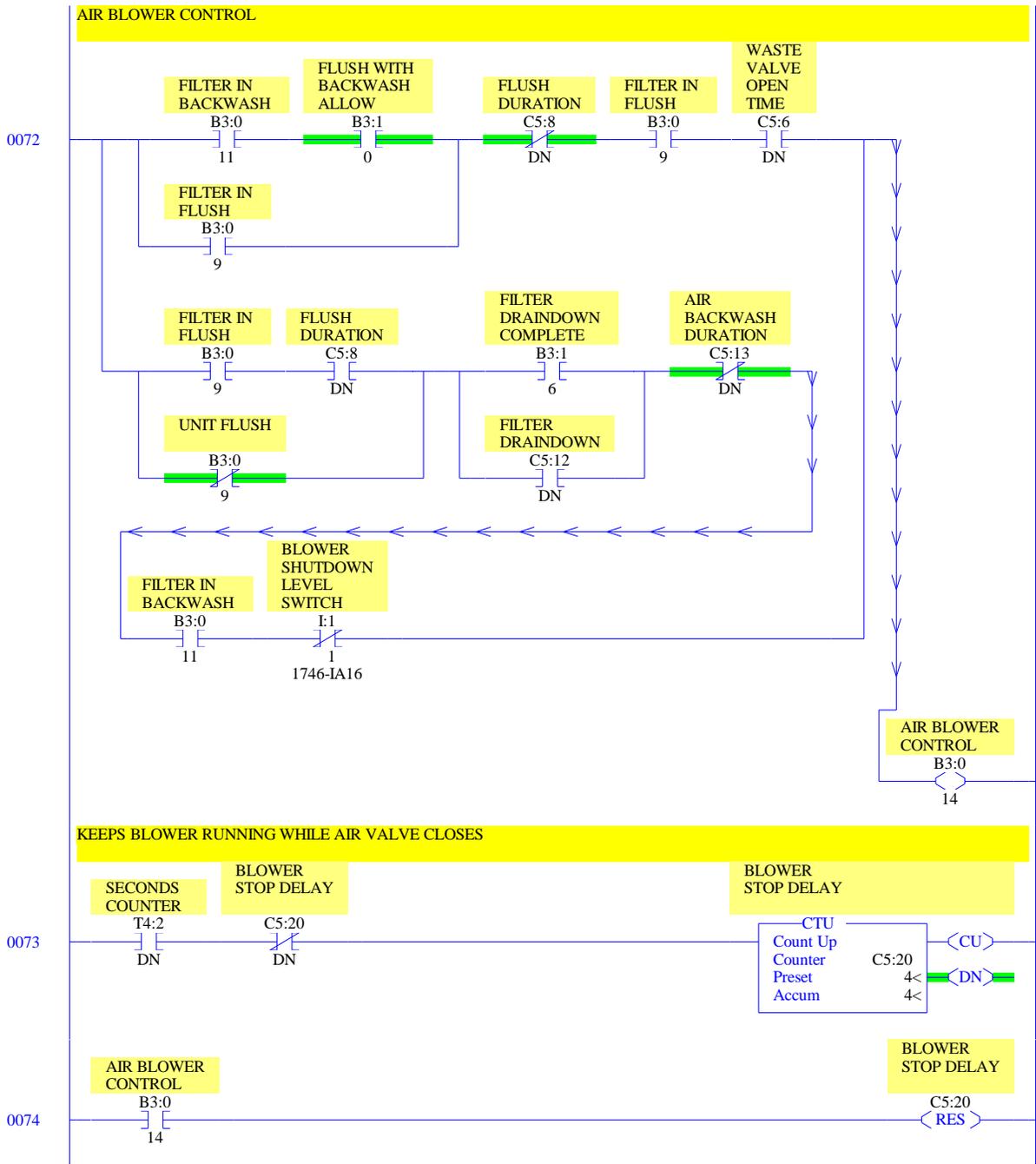


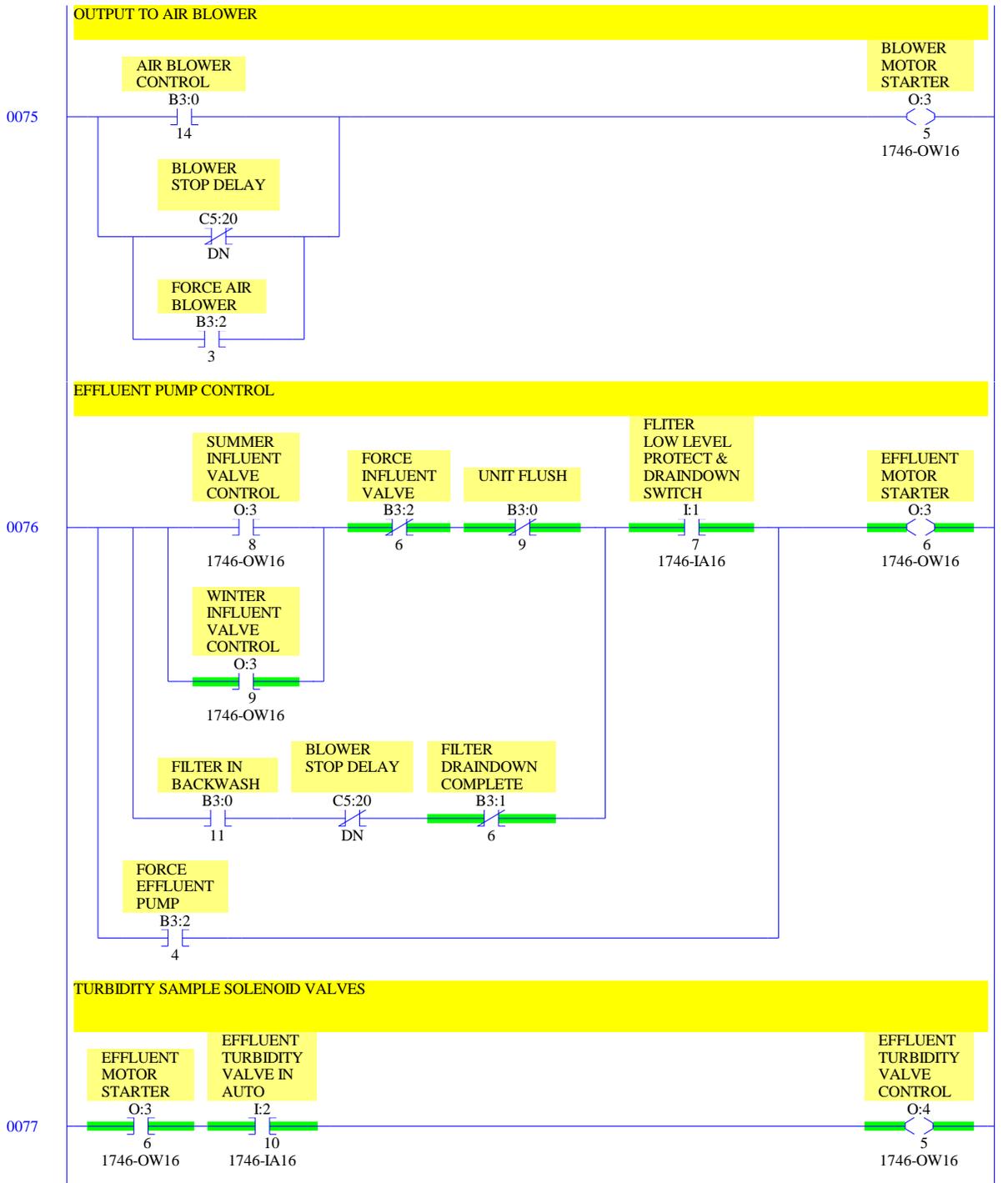


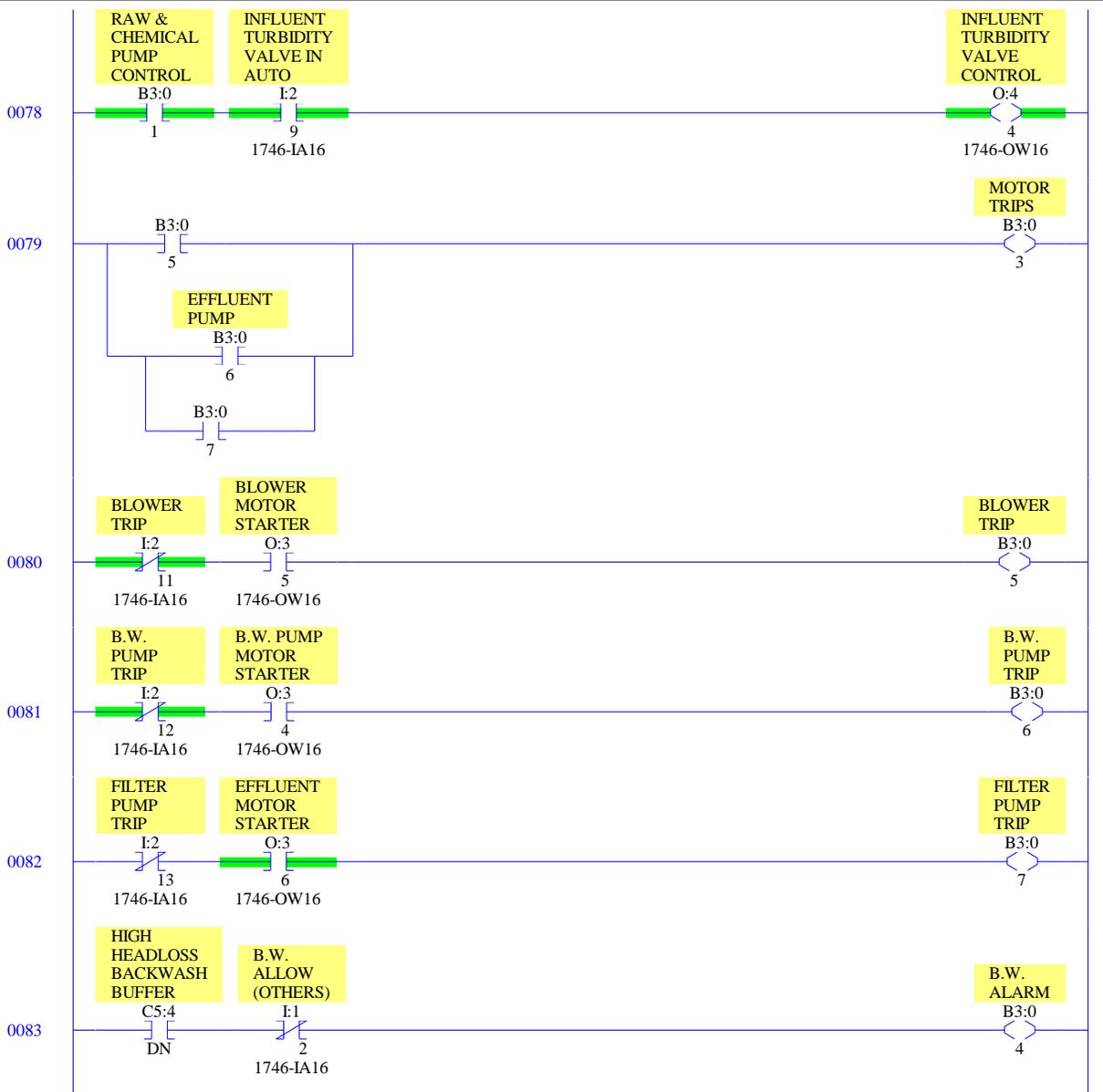


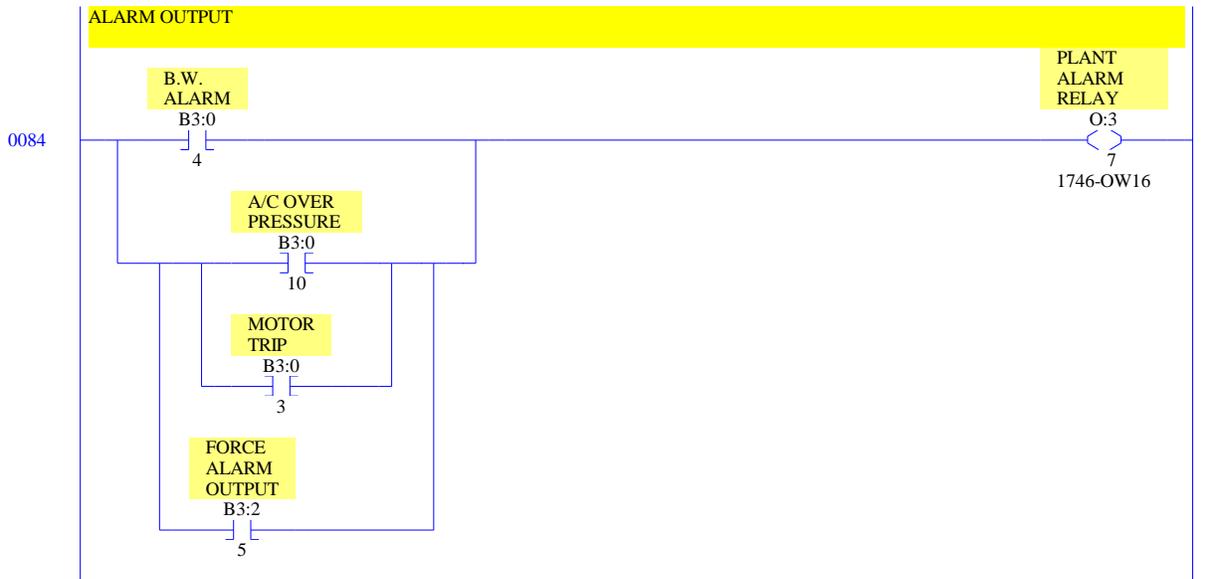


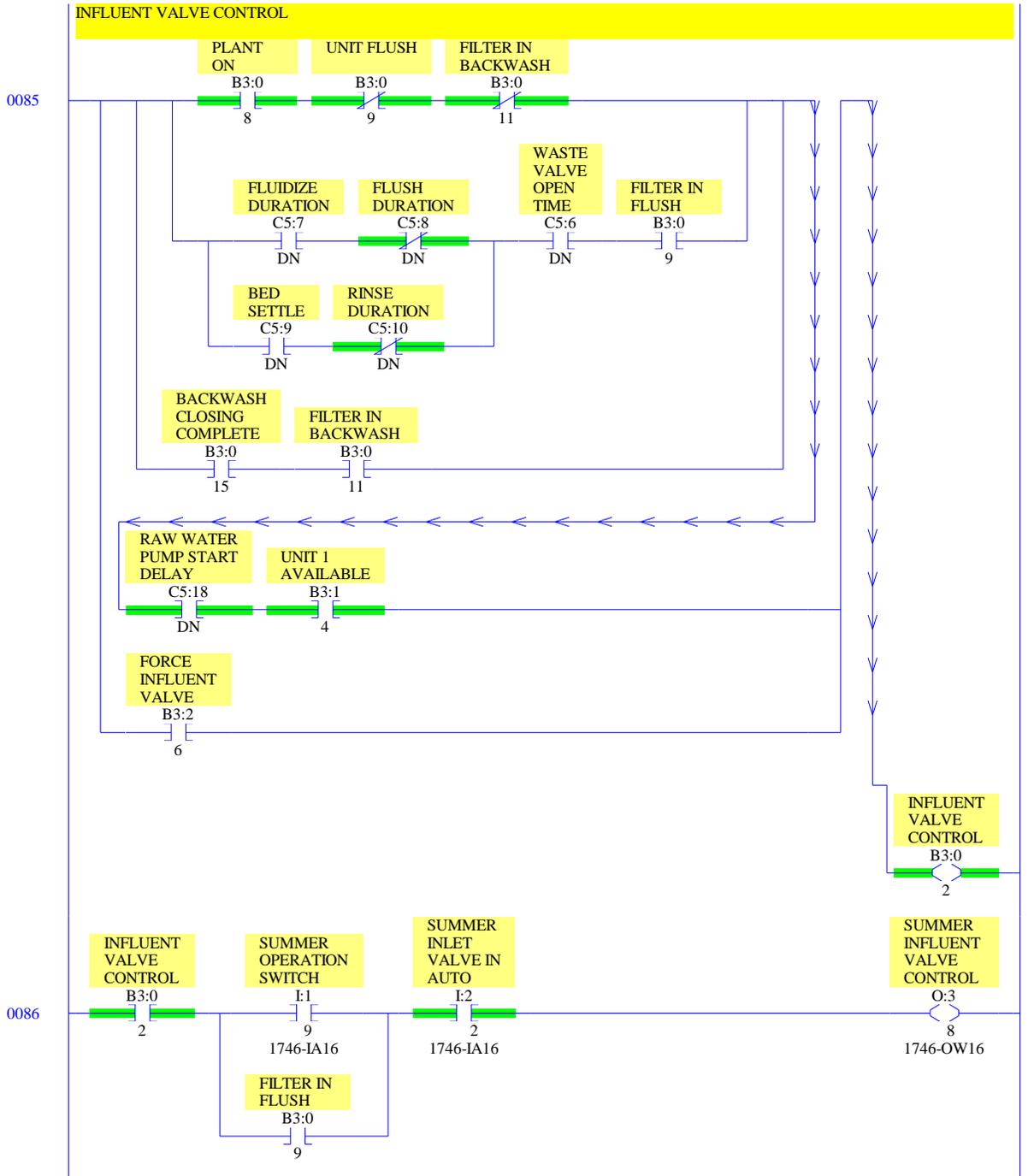


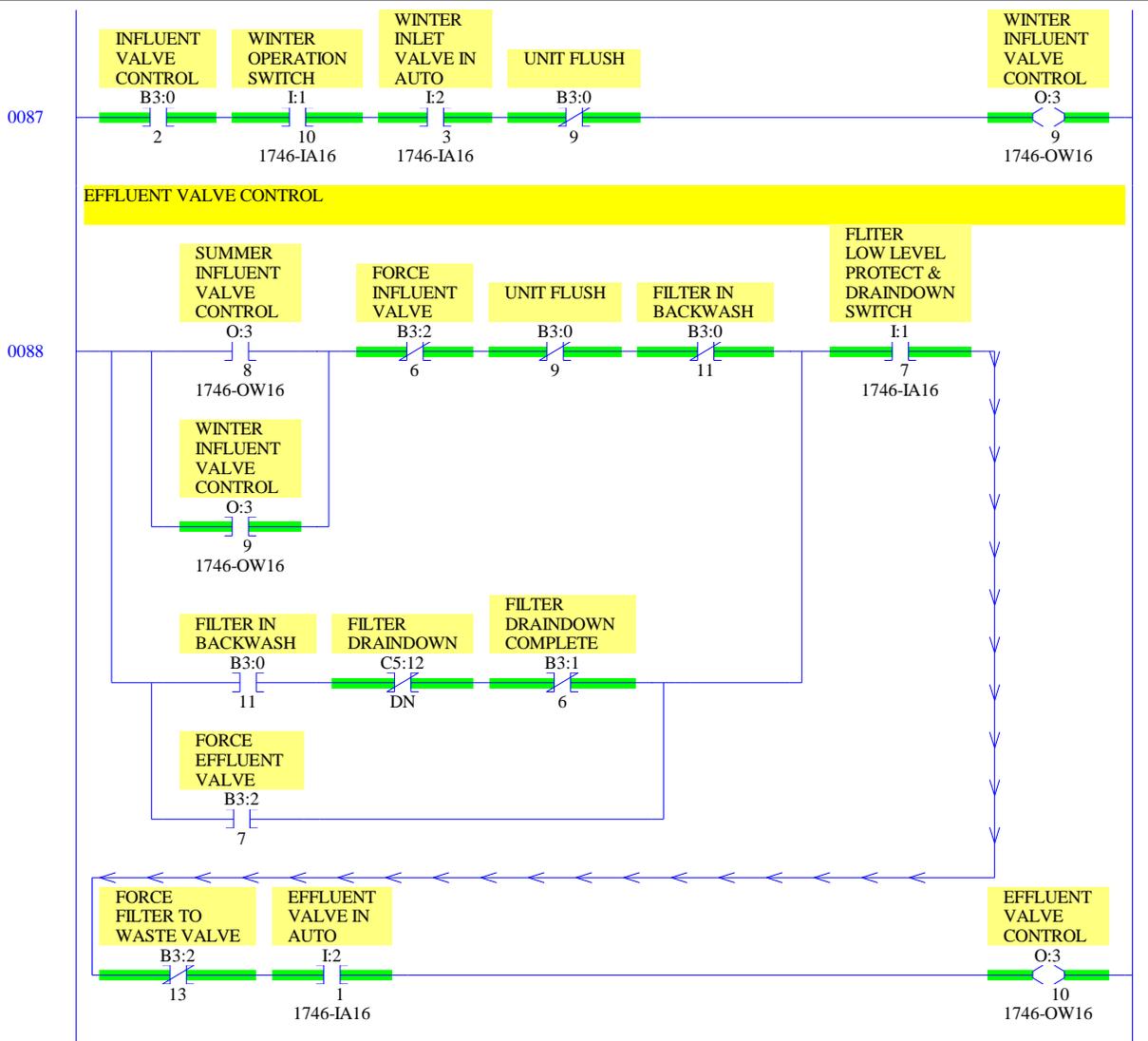


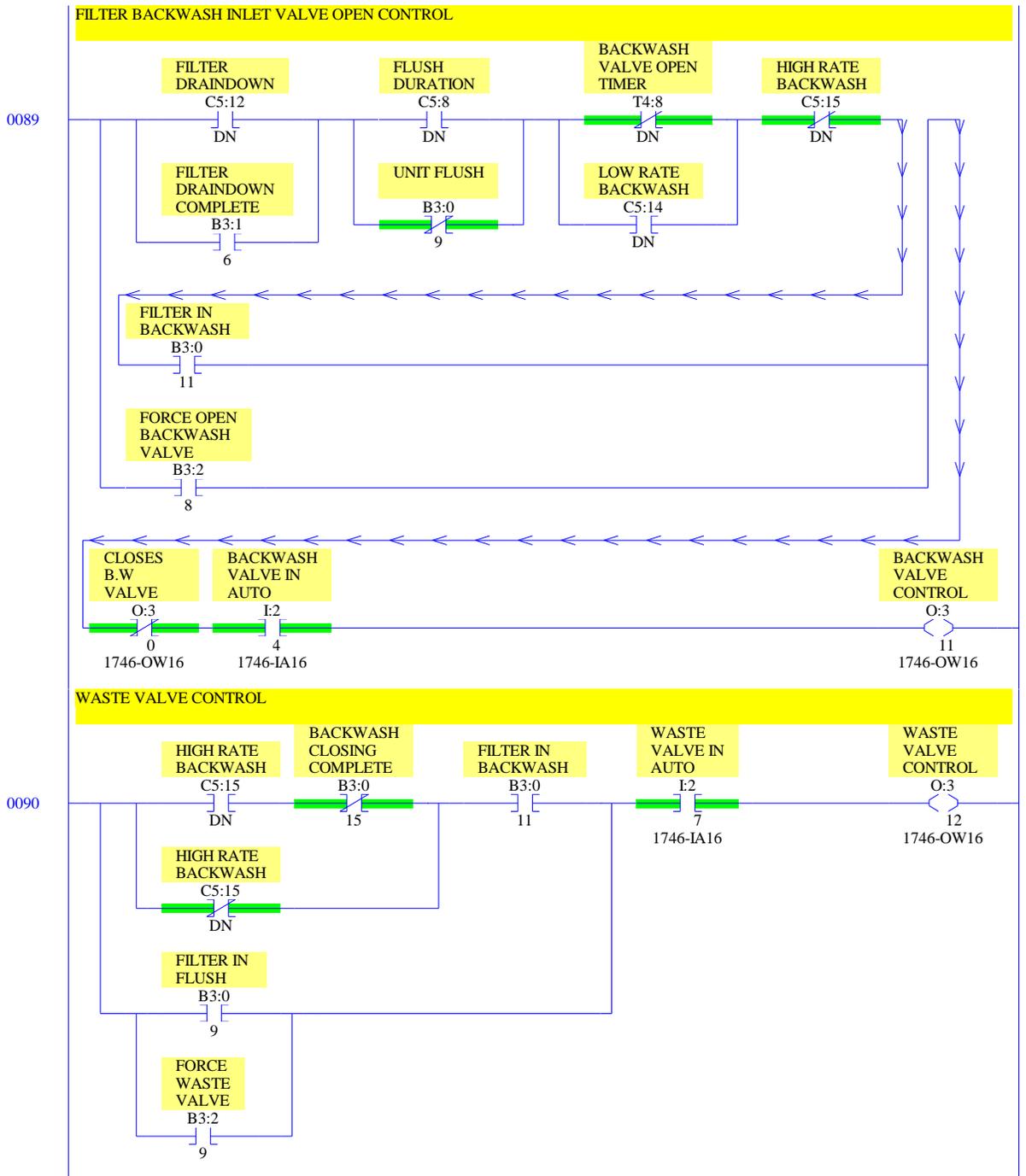


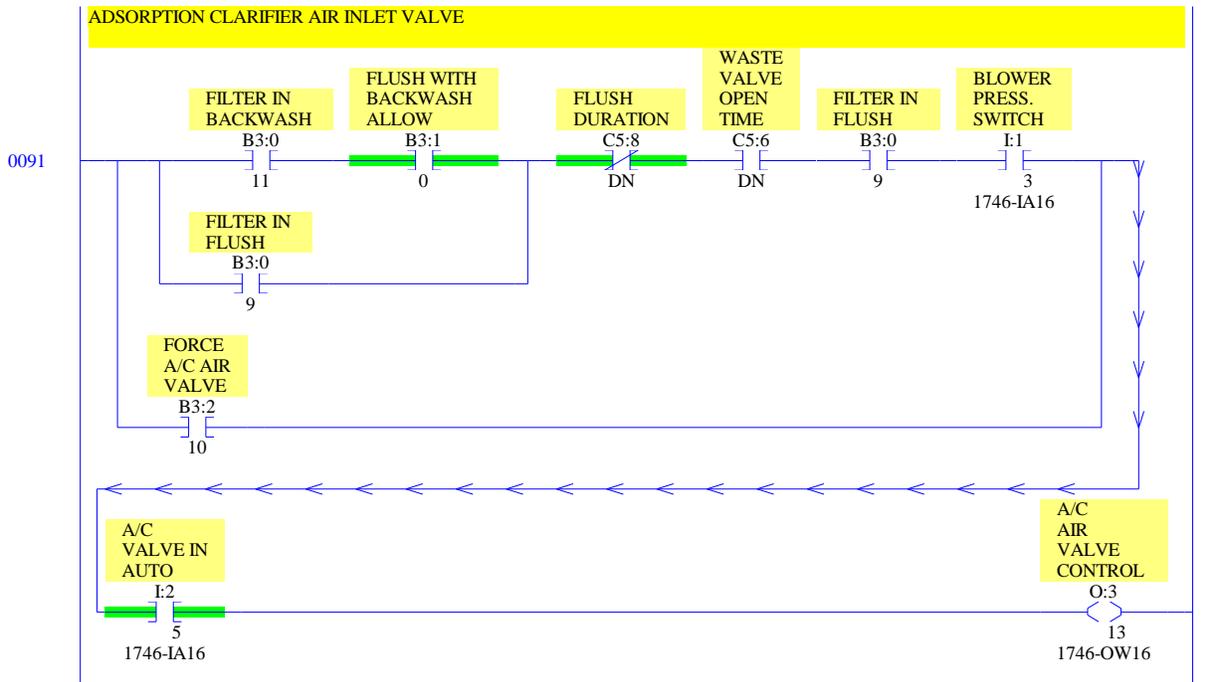


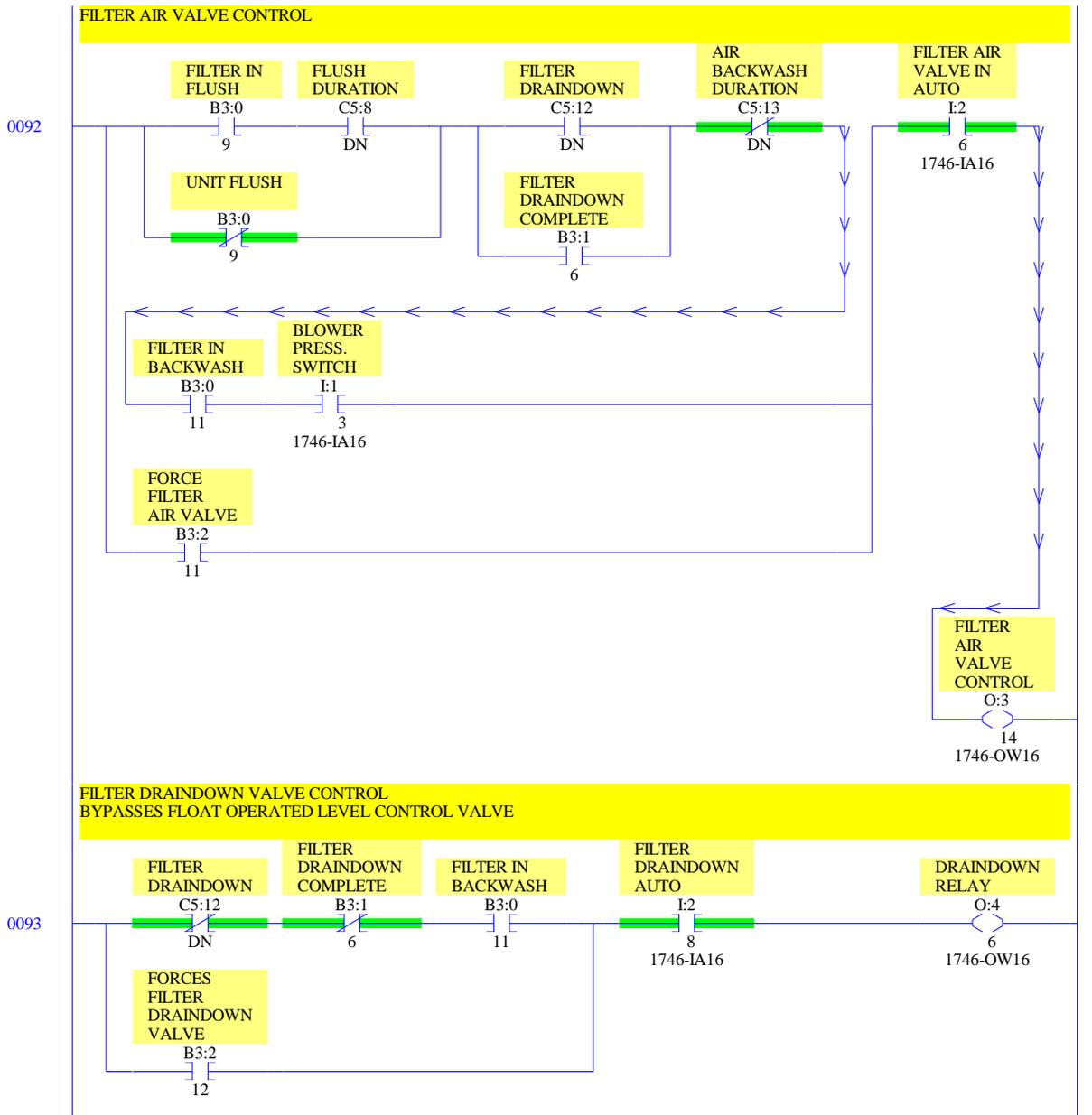


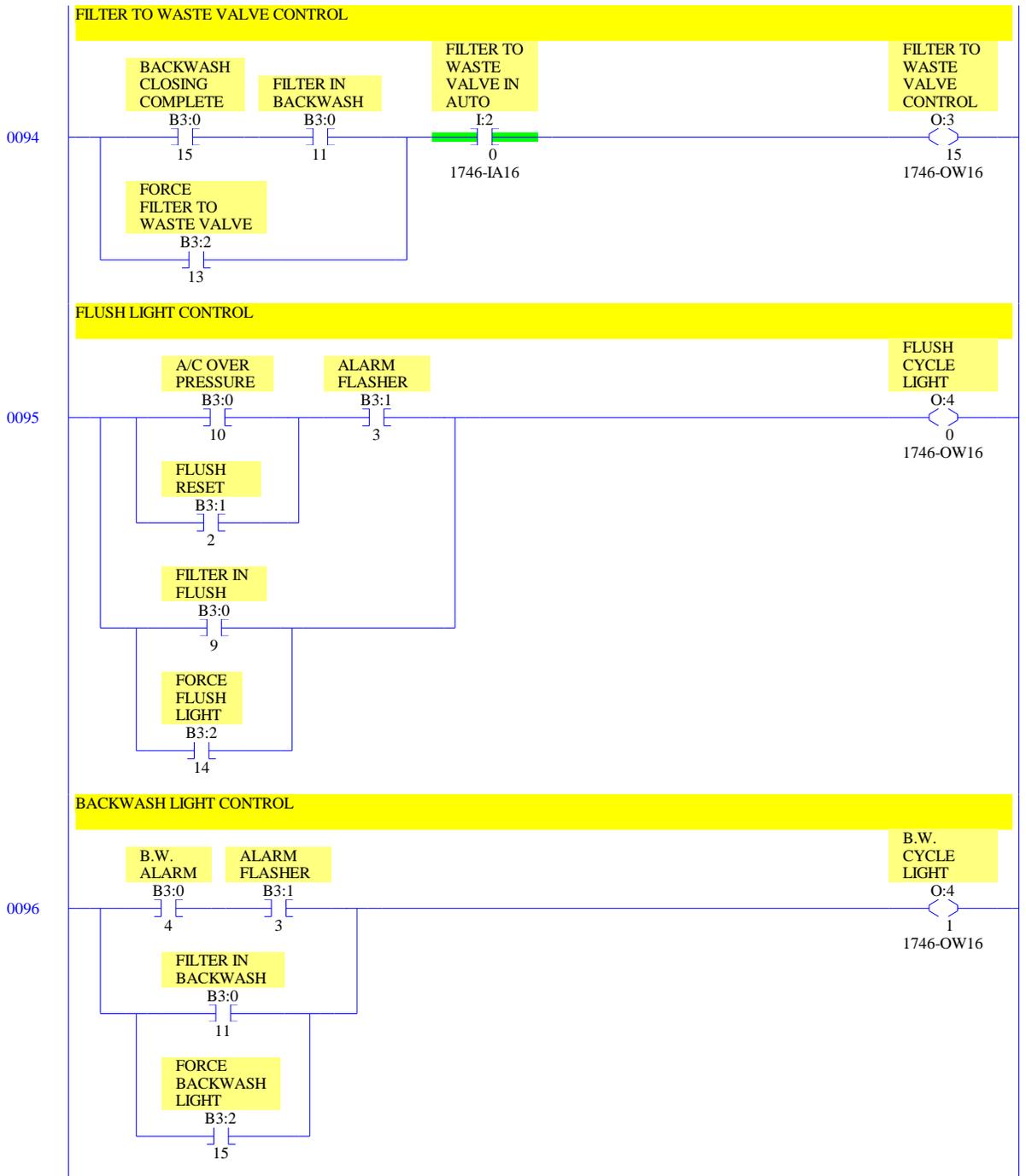


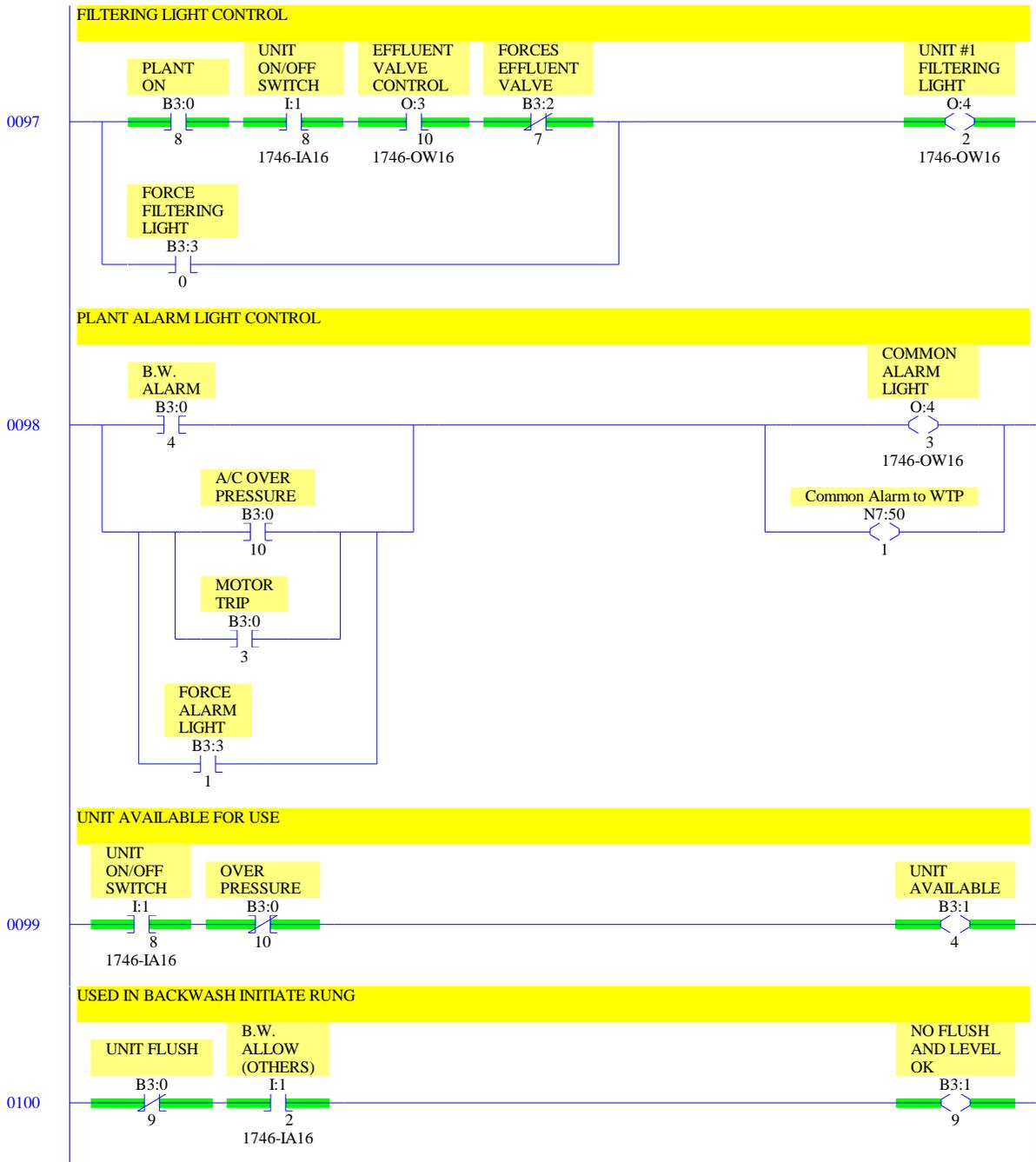


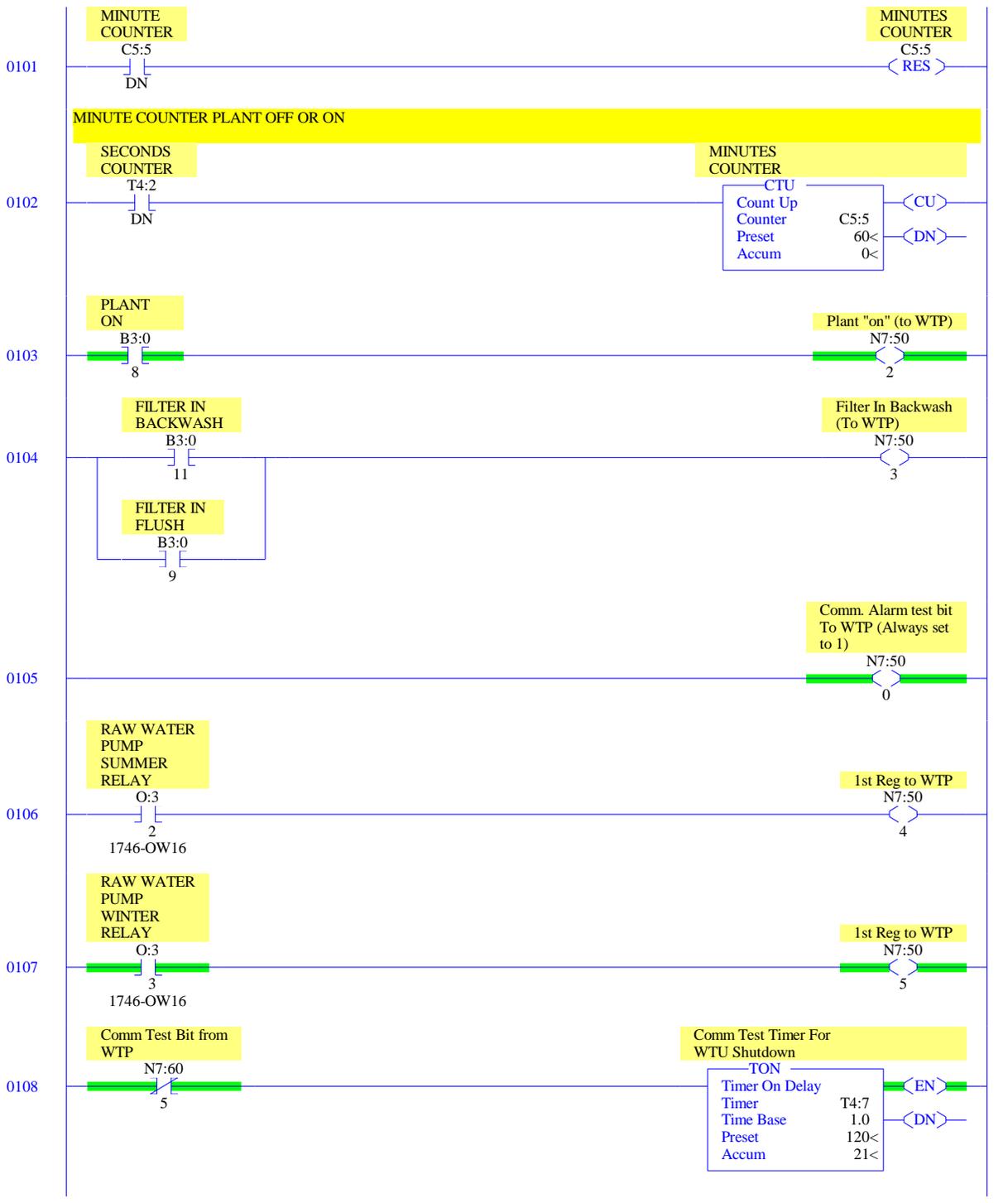


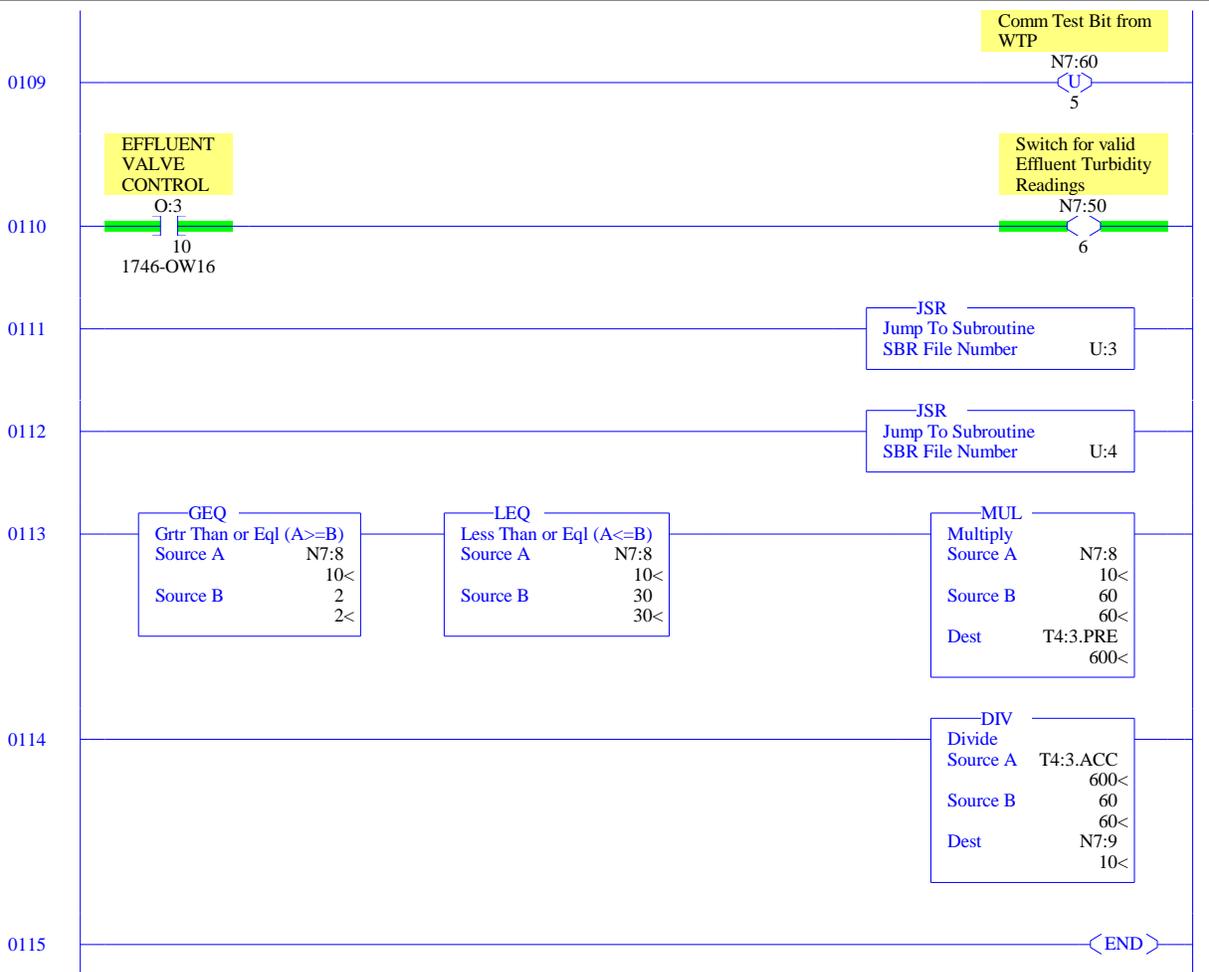


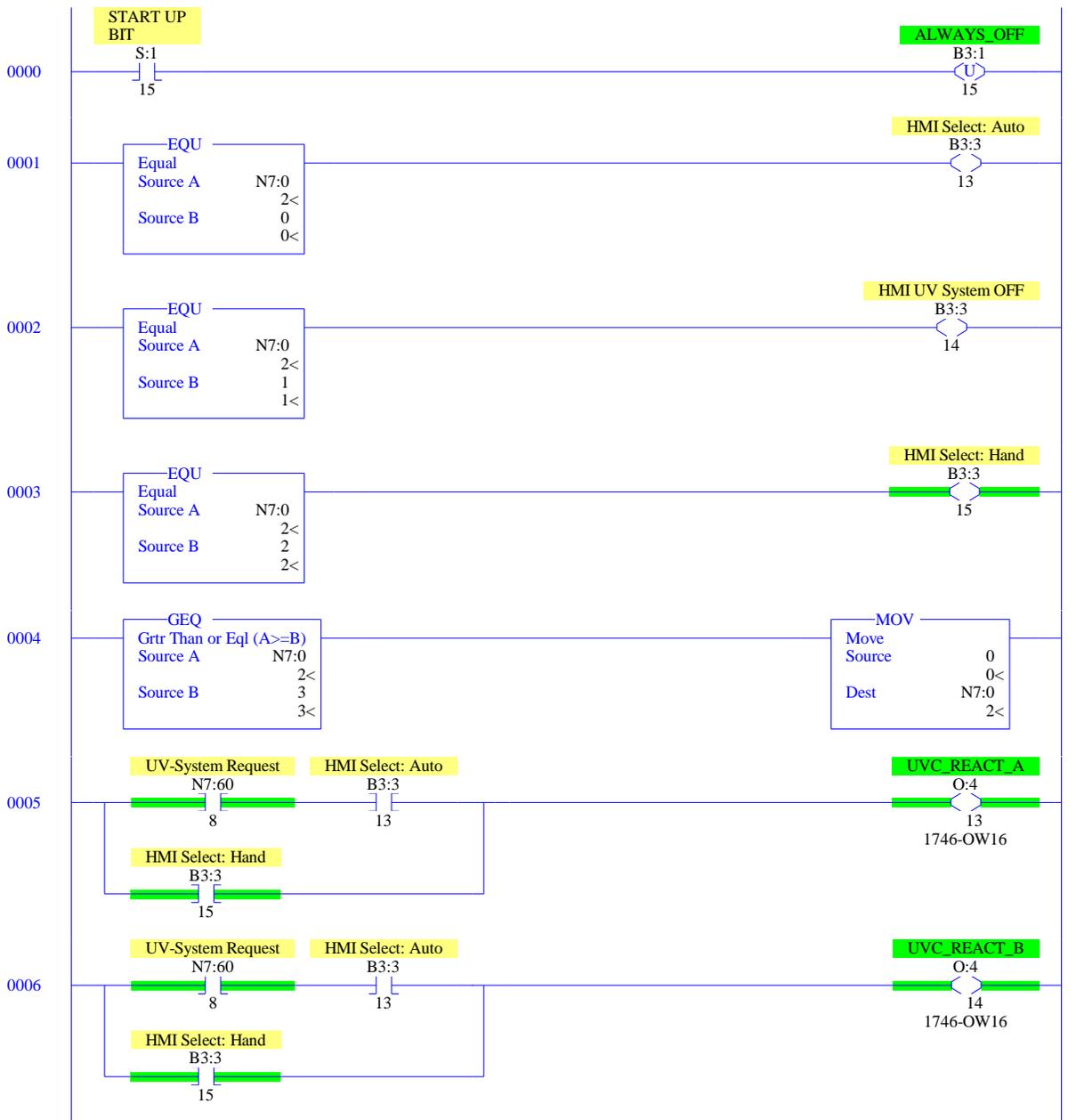


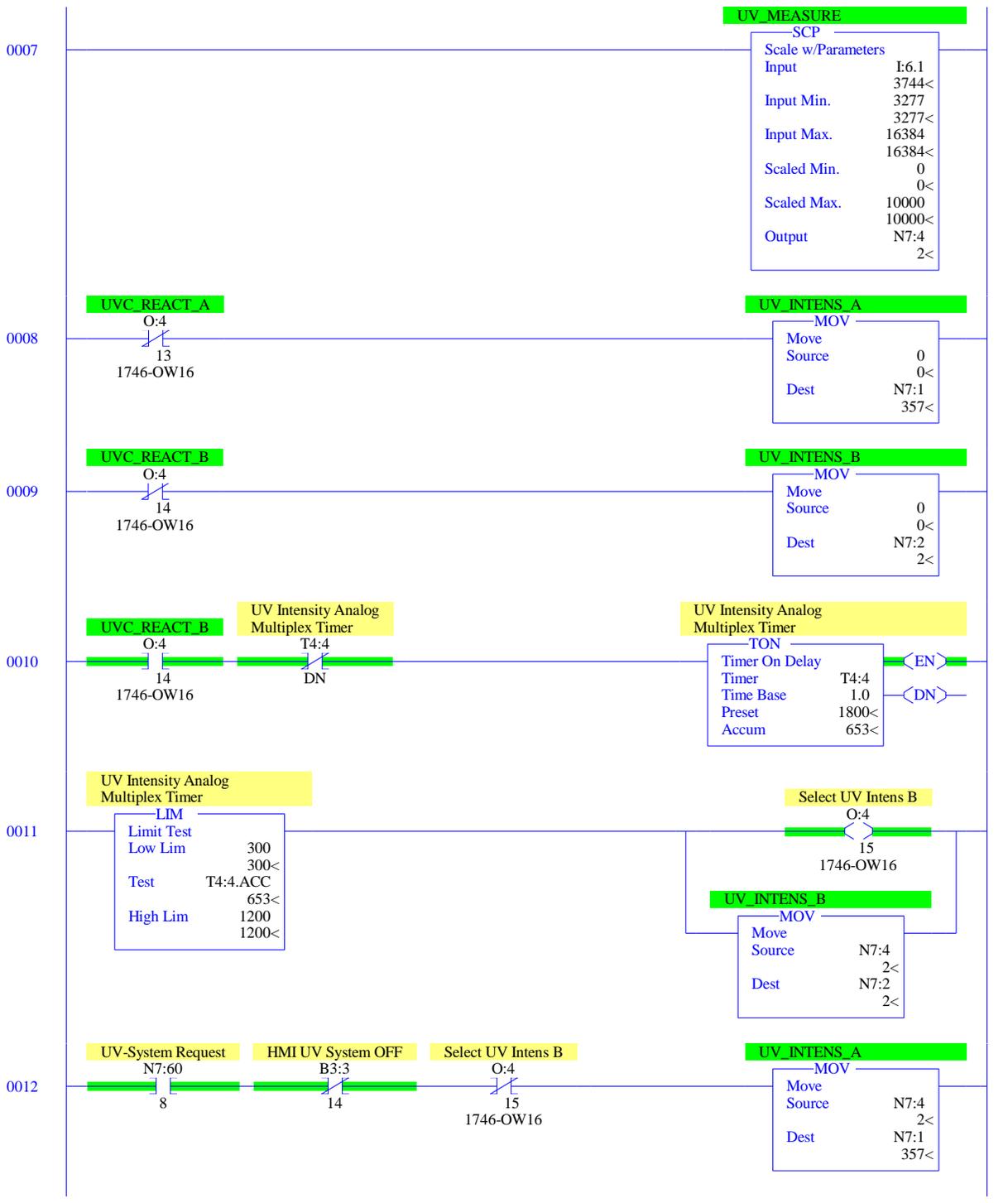


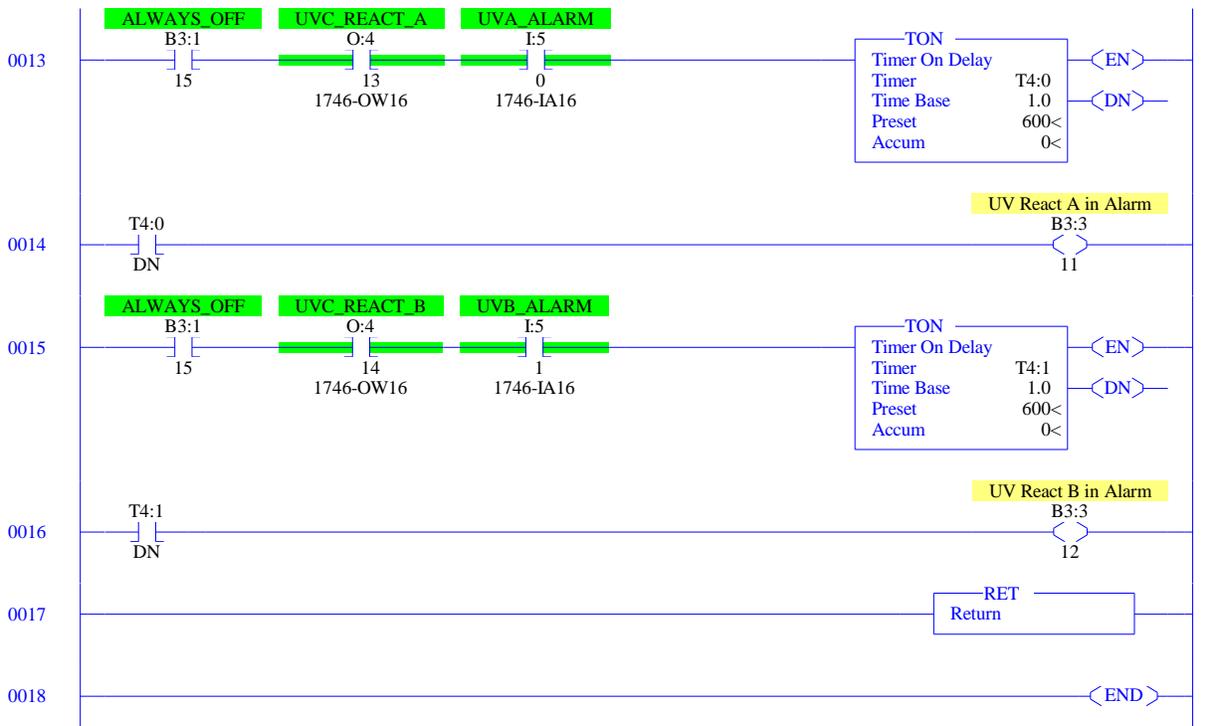


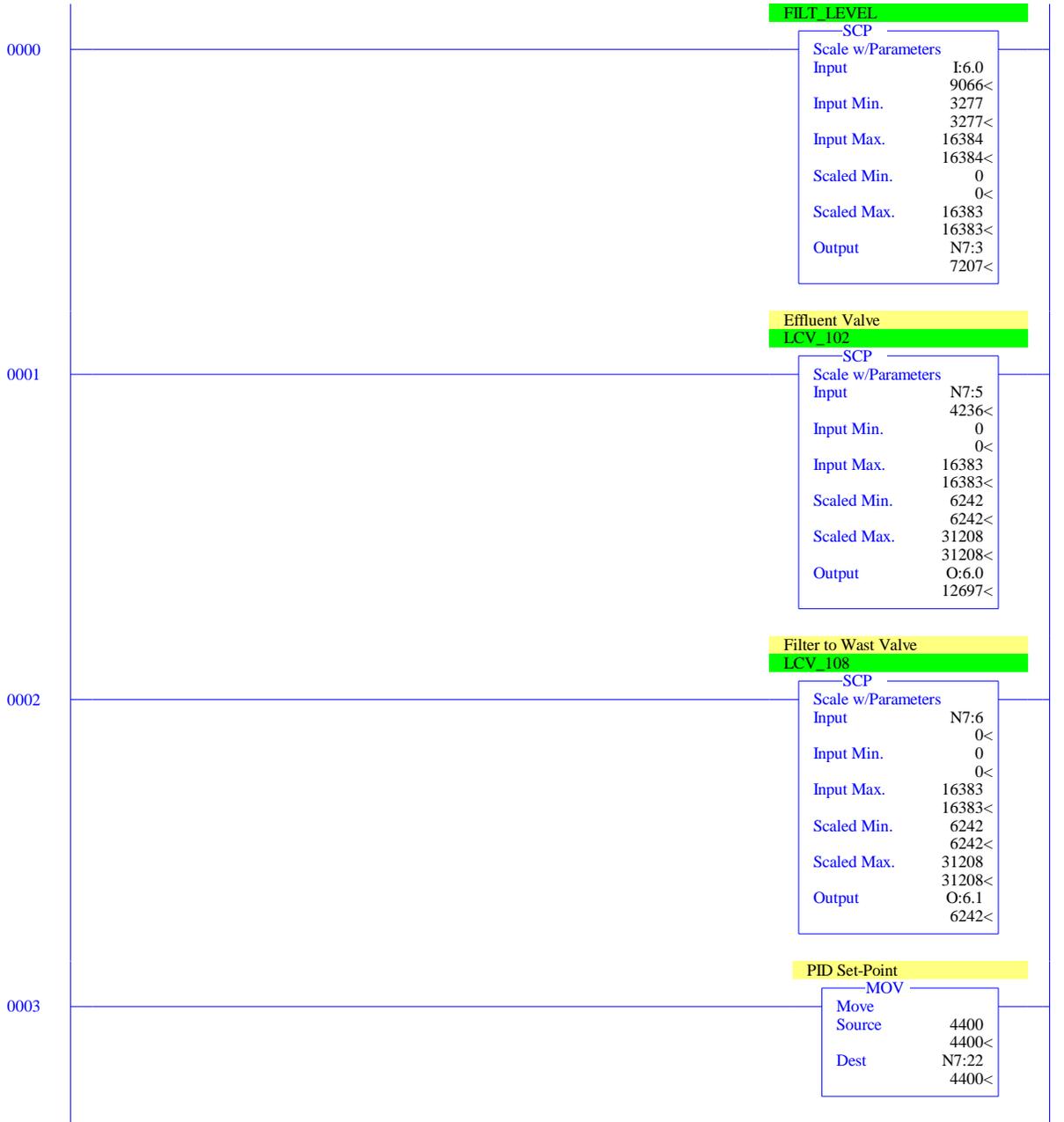


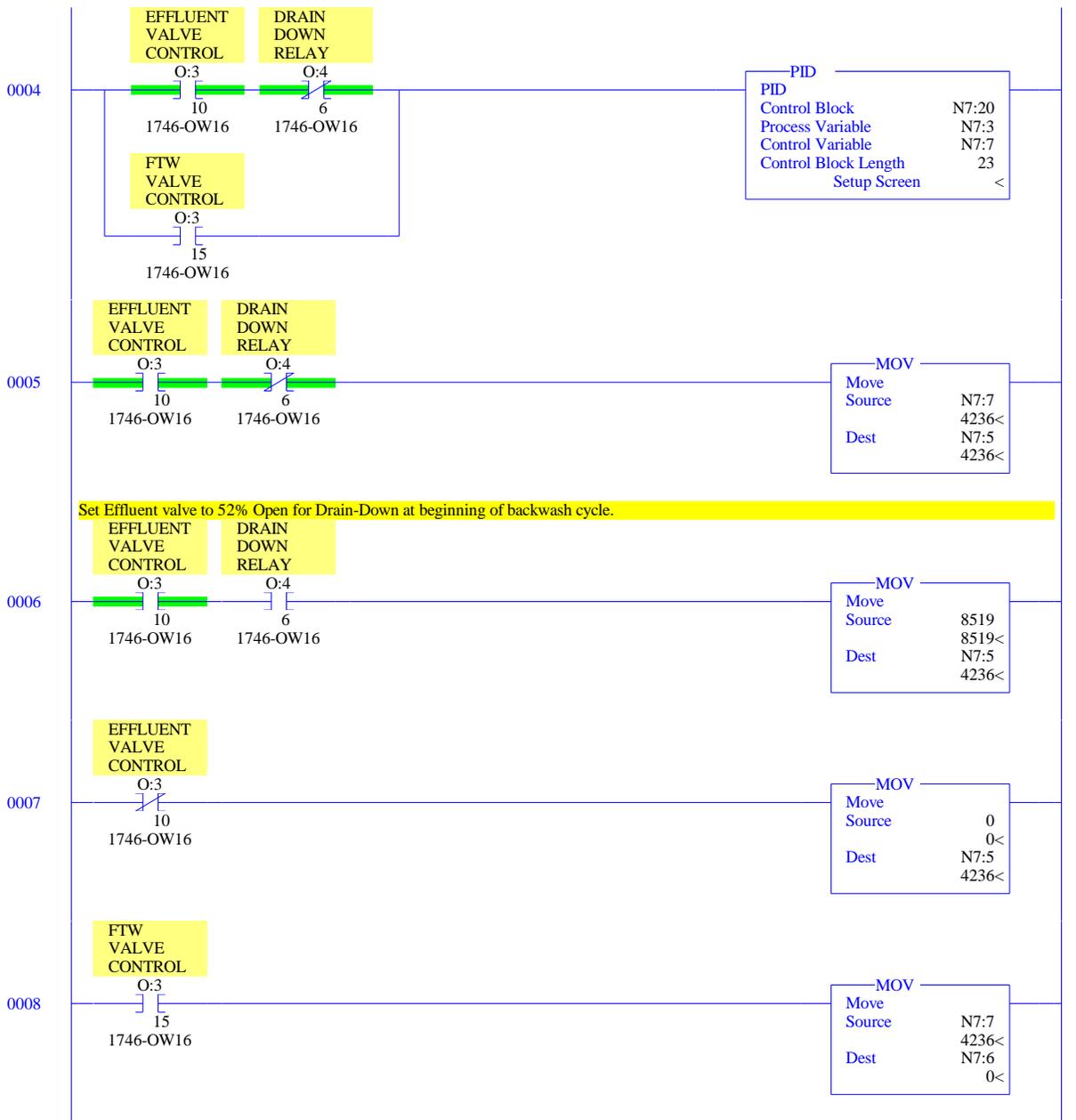






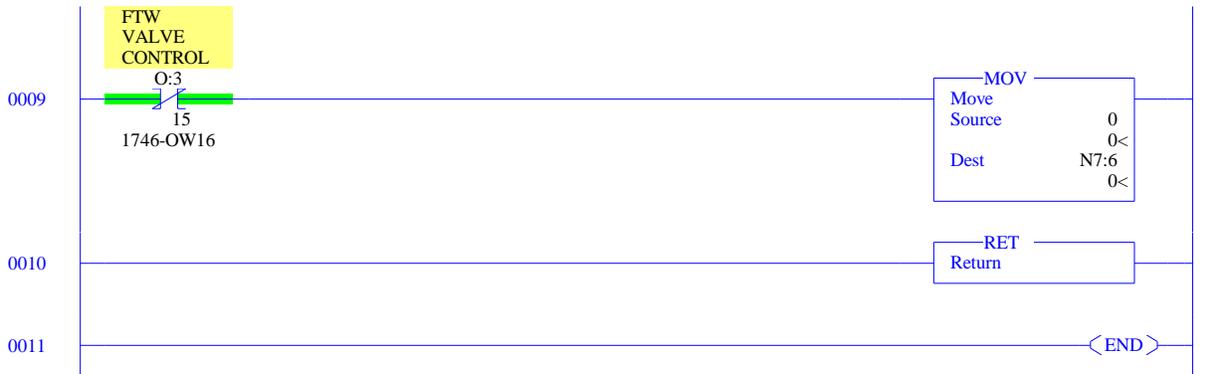






PANATION.RSS

LAD 4 - ANALOG_CTL --- Total Rungs in File = 12



PANATION.RSS

Data File 00 (bin) -- OUTPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
O:3.0	0	0	0	0	0	1	1	0	0	1	0	0	1	0	1	0	1746-OW16 - 16-Output (RLY) 240 VAC
O:4.0	1	1	1	0	0	0	0	0	0	0	1	1	0	1	0	0	1746-OW16 - 16-Output (RLY) 240 VAC
O:6.0	0	0	1	1	0	0	0	1	1	0	0	1	1	0	0	1	1746-NIO4I - Analog 2 Ch In/2 Ch Current Ou
O:6.1	0	0	0	1	1	0	0	0	0	1	1	0	0	0	1	0	1746-NIO4I - Analog 2 Ch In/2 Ch Current Ou

PANATION.RSS

Data File I1 (bin) -- INPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
I:1.0	0	0	1	0	0	1	0	1	1	0	0	0	0	1	1	1	1746-IA16 - 16-Input 100/120 VAC
I:2.0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1746-IA16 - 16-Input 100/120 VAC
I:5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1746-IA16 - 16-Input 100/120 VAC
I:6.0	0	0	1	0	0	0	1	1	0	1	1	0	1	0	1	0	1746-NIO4I - Analog 2 Ch In/2 Ch Current Ou
I:6.1	0	0	0	0	1	1	1	0	1	0	1	0	0	0	0	0	1746-NIO4I - Analog 2 Ch In/2 Ch Current Ou

PANATION.RSS

Data File S2 (hex) -- STATUS

Main

First Pass S:1/15 = No
Index Register S:24 = 0
Free Running Clock S:4 = 1000-0111-0111-1111
Index Across Data Files S:2/3 = No
CIF Addressing Mode S:2/8 = 0
Online Edits S:33/11 - S:33/12 = No online edits exist

DD / MM / YYYY
Date S:39-37 = 0 / 0 / 0
HH : MM : SS
Time S:40-42 = 0 : 0 : 0

Proc

OS Catalog Number S:57 = 302
OS Series S:58 = A
OS FRS S:59 = 9
Processor Catalog Number S:60 = 532
Processor Series S:61 = D
Processor FRN S:62 = 4

User Program Type S:63 = 1
User Program Functionality Index S:64 = 65
User RAM Size S:66 = 16
OS Memory Size S:66 = 480

Scan Times

Maximum (x10 ms) S:22 = 1
Average (x10 ms) S:23 = 1
Current (x10 ms) S:3 (low byte) = 0
Watchdog (x10 ms) S:3 (high byte) = 10
Last lms Scan Time S:35 = 3
Scan Toggle Bit S:33/9 = 1
Time Base Selection S:33/13 = 0

Math

Math Overflow Selected S:2/14 = 0
Overflow Trap S:5/0 = 0
Carry S:0/0 = 0
Overflow S:0/1 = 0
Zero Bit S:0/2 = 0
Sign Bit S:0/3 = 0

Math Register (lo word) S:13 = 0
Math Register (high word) S:14-S:13 = 10
Math Register (32 Bit) S:14-S:13 = 655360

IO

I/O Interrupt Executing S:32 = 0
Interrupt Latency Control S:33/8 = 0
Event Interrupt 10 uS Time Stamp S:44 = 0

I/O Slot Enables: S:11 _S:12
0 10 20 30
11111111 11111111 11111111 11111111

I/O Slot Interrupt Enables: S:27 _S:28
0 10 20 30
11111111 11111111 11111111 11111111

I/O Slot Interrupt Pending: S:25 _S:26
0 10 20 30
00000000 00000000 00000000 00000000

Chan 0

Processor Mode S:1/0- S:1/4 = Remote Run
Channel Mode S:33/3 = 1
Comms Active S:33/4 = 0
Incoming Cmd Pending S:33/0 = 0
Msg Reply Pending S:33/1 = 0

DTR Control Bit S:33/14 = 0
DTR Force Bit S:33/15 = 0
Outgoing Msg Cmd Pending S:33/2 = 0
Comms Servicing Sel S:33/5 = 0
Msg Servicing Sel S:33/6 = 0
Modem Lost S:5/14 = 0

PANATION.RSS

Data File S2 (hex) -- STATUS

Chan 1

Processor Mode S:1/0- S:1/4 = Remote Run
 Node Address S:15 (low byte) = 4
 Baud Rate S:15 (high byte) = 19200
 Comms Active S:1/7 = 1
 Incoming Cmd Pending S:2/5 = 0
 Msg Reply Pending S:2/6 = 0
 Outgoing Msg Cmd Pending S:2/7 = 0
 Comms Servicing Sel S:2/15 = 1
 Msg Servicing Sel S:33/7 = 0

Active Nodes: S:9 _S:10

0	10	20	30
11111110	11000000	00000000	00000000

Debug

Suspend Code S:7 = 0	Test Single Step Breakpoint
Suspend File S:8 = 0	Rung # S:18 = 0
Compiled For Single Step S:2/4 = No	File # S:19 = 0
Fault/Powerdown	Test Single Step
Fault/Powerdown (Rung #) S:20 = 111	Rung # S:16 = 0
(File #) S:21 = 2	File # S:17 = 2

Errors

Fault Override At Power Up S:1/8 = 0	ASCII String Manipulation error S:5/15 = 0
Startup Protection Fault S:1/9 = 0	Fault Routine S:29 = 0
Major Error Halt S:1/13 = 0	Major Error S:6 = 0h
Overflow Trap S:5/0 = 0	
Control Register Error S:5/2 = 0	Error Description:
Major Error Executing User	
Fault Rtn. S:5/3 = 0	
M0/M1 Referenced On Disabled	
Slot S:5/4 = 0	
Battery Low S:5/11 = 0	
Fault/Powerdown (Rung #) S:20 = 111	
(File #) S:21 = 2	

STI

Setpoint (x10ms) S:30 = 0	Resolution Select Bit S:2/10 = 0
File Number S:31 = 0	Executing Bit S:2/2 = 0
10 uS Time Stamp S:43 = 0	Overflow Bit S:5/10 = 0
Pending Bit S:2/0 = 0	Lost S:36/9 = 0
Enable Bit S:2/1 = 1	Interrupt Latency Control S:33/8 = 0

DII

Preset S:50 = 0	File Number S:46 = 0
Accumulator S:52 = 0	Slot Number S:47 = 0
Pending Bit S:2/11 = 0	Bit Mask S:48 = 0h
Enable Bit S:2/12 = 1	Compare Value S:49 = 0h
Executing Bit S:2/13 = 0	Return Mask S:51 = 0h
Reconfiguration Bit S:33/10 = 0	Last Scan Time (x1 ms) S:55 = 0
Overflow Bit S:5/12 = 0	Max Observed Scan Time (x1 ms) S:56 = 0
Lost S:36/8 = 0	Interrupt Latency Control S:33/8 = 0
10 uS Time Stamp S:45 = 0	

Protection

Deny Future Access S:1/14 = No

Mem Module

Memory Module Loaded On Boot S:5/8 = 0
 Password Mismatch S:5/9 = 0
 Load Memory Module On Memory Error S:1/10 = 0
 Load Memory Module Always S:1/11 = 0
 Load Memory Module and RUN S:1/12 = 0
 Program Compare S:2/9 = 0
 Data File Overwrite Protection Lost S:36/10 = 0

PANATION.RSS

Data File S2 (hex) -- STATUS

Forces

Forces Enabled S:1/5 = No
Forces Installed S:1/6 = No

PANATION.RSS

Data File B3 (bin) -- BINARY

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	
B3:1	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	1	
B3:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

PANATION.RSS

Data File B3 (bin) -- BINARY

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

PANATION.RSS

Data File B3 (bin) -- BINARY

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

PANATION.RSS

Data File T4 -- TIMER

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T4:0	0	0	0	1.0 sec	600	0	
T4:1	0	0	0	1.0 sec	600	0	
T4:2	1	1	0	.01 sec	100	59	
T4:3	1	0	1	1.0 sec	600	600	
T4:4	1	1	0	1.0 sec	1800	653	UV Intensity Analog Multiplex Timer
T4:5	0	0	0	.01 sec	50	0	
T4:6	0	0	0	.01 sec	50	0	
T4:7	1	1	0	1.0 sec	120	21	Comm Test Timer For WTU Shutdown
T4:8	0	0	0	.01 sec	600	0	

PANATION.RSS

Data File C5 -- COUNTER

Offset	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol)	Description
C5:0	0	0	0	0	0	0	60	45		PLANT ON TIME IN MINUTES
C5:1	0	0	0	0	0	0	300	35		FLUSH INTERVAL TIMER
C5:2	0	0	0	0	0	0	720	344		BACKWASH INTERVAL TIME
C5:3	0	0	0	0	0	0	60	0		HIGH PRESSURE FLUSH BUFFER
C5:4	0	0	0	0	0	0	60	0		HIGH HEADLOSS BACKWASH BUFFER
C5:5	0	0	0	0	0	0	60	0		MINUTES COUNTER
C5:6	0	0	0	0	0	0	20	0		WASTE VALVE OPEN TIME
C5:7	0	0	0	0	0	0	60	0		FLUIDIZE DURATION
C5:8	0	0	0	0	0	0	150	0		FLUSH DURATION
C5:9	0	0	0	0	0	0	40	0		BED SETTLE
C5:10	0	0	0	0	0	0	330	0		RINSE DURATION
C5:11	0	0	0	0	0	0	500	0		FLUSH WATCHDOG TIMER
C5:12	0	0	0	0	0	0	300	0		FITER DRAINDOWN
C5:13	0	0	0	0	0	0	120	0		AIR BACKWASH DURATION
C5:14	0	0	0	0	0	0	60	0		LOW RATE BACKWASH
C5:15	0	0	0	0	0	0	420	0		HIGH RATE BACKWASH
C5:16	0	0	0	0	0	0	30	0		BACKWASH VALVE CLOSING
C5:17	0	0	0	0	0	0	20	0		FILTER TO WASTE
C5:18	0	0	1	0	0	0	10	10		RAW WATER PUMP START DELAY
C5:19	0	0	0	0	0	0	10	0		RAW WATER PUMP STOP DELAY
C5:20	0	0	1	0	0	0	4	4		BLOWER STOP DELAY
C5:21	0	0	0	0	0	0	5	0		B.W. DELAY INITIATE COUNTER
C5:22	0	0	0	0	0	0	5	0		FLUSH DELAY INITIATE COUNTER

PANATION.RSS

Data File R6 -- CONTROL

Offset	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol) Description
R6:0	0	0	0	0	0	0	0	0	0	0	

PANATION.RSS

Data File N7 (dec) -- INTEGER

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	2	357	2	7207	2	4236	0	4236	10	10
N7:10	15	14	3486	0	0	0	10	0	0	0
N7:20	-32363	0	4400	125	20	2	0	10000	0	25
N7:30	0	100	0	50	4396	-4	26	4236	19050	0
N7:40	0	7162	4400	0	0	0	0	0	0	0
N7:50	101	0	0	0	0	0	0	0	0	0
N7:60	791									

PANATION.RSS

Data File F8 -- FLOAT

Offset	0	1	2	3	4
F8:0	0				

PANATION.RSS

Data File B30 (bin)

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B30:0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	1	

PANATION.RSS
Data File B35 (bin)

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B35:0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	

Address (Symbol) = Value [Description]

PANATION.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

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O:3/0      - CLOSES B.W VALVE
            OTE - File #2 MAIN - 65
            XIO - File #2 MAIN - 89
O:3/1      - CHEM. FEED PUMP RELAY
            OTE - File #2 MAIN - 68
O:3/2      - RAW WATER PUMP SUMMER RELAY
            OTE - File #2 MAIN - 69
            XIC - File #2 MAIN - 106
O:3/3      - RAW WATER PUMP WINTER RELAY
            OTE - File #2 MAIN - 70
            XIC - File #2 MAIN - 107
O:3/4      - B.W. PUMP MOTOR STARTER
            OTE - File #2 MAIN - 71
            XIC - File #2 MAIN - 81
O:3/5      - BLOWER MOTOR STARTER
            OTE - File #2 MAIN - 75
            XIC - File #2 MAIN - 80
O:3/6      - EFFLUENT MOTOR STARTER
            OTE - File #2 MAIN - 76
            XIC - File #2 MAIN - 77, 82
O:3/7      - PLANT ALARM RELAY
            OTE - File #2 MAIN - 84
O:3/8      - SUMMER INFLUENT VALVE CONTROL
            OTE - File #2 MAIN - 86
            XIC - File #2 MAIN - 76, 88
O:3/9      - WINTER INFLUENT VALVE CONTROL
            OTE - File #2 MAIN - 87
            XIC - File #2 MAIN - 76, 88
O:3/10     - EFFLUENT VALVE CONTROL
            OTE - File #2 MAIN - 88
            XIC - File #2 MAIN - 97, 110
            File #4 ANALOG_CTL - 4, 5, 6
            XIO - File #4 ANALOG_CTL - 7
O:3/11     - B.W. VALVE CONTROL
            OTE - File #2 MAIN - 89
            XIO - File #2 MAIN - 57
O:3/12     - WASTE VALVE CONTROL
            OTE - File #2 MAIN - 90
O:3/13     - A/C AIR VALVE CONTROL
            OTE - File #2 MAIN - 91
O:3/14     - FILTER AIR VALVE CONTROL
            OTE - File #2 MAIN - 92
O:3/15     - FTW VALVE CONTROL
            OTE - File #2 MAIN - 94
            XIC - File #4 ANALOG_CTL - 4, 8
            XIO - File #4 ANALOG_CTL - 9
O:4/0      - FLUSH CYCLE LIGHT
            OTE - File #2 MAIN - 95
O:4/1      - B.W. CYCLE LIGHT
            OTE - File #2 MAIN - 96
O:4/2      - FILTERING LIGHT
            OTE - File #2 MAIN - 97
O:4/3      - COMMON ALARM LIGHT
            OTE - File #2 MAIN - 98
O:4/4      - INFLUENT TURBIDITY VALVE CONTROL
            OTE - File #2 MAIN - 78
O:4/5      - EFFLUENT TURBIDITY VALVE CONTROL
            OTE - File #2 MAIN - 77
O:4/6      - DRAIN DOWN RELAY
            OTE - File #2 MAIN - 93
            XIC - File #4 ANALOG_CTL - 6
            XIO - File #4 ANALOG_CTL - 4, 5
O:4/13     - {UVC_REACT_A}
            OTE - File #3 UV_REACTOR - 5
            XIC - File #3 UV_REACTOR - 13
            XIO - File #3 UV_REACTOR - 8
O:4/14     - {UVC_REACT_B}
            OTE - File #3 UV_REACTOR - 6
            XIC - File #3 UV_REACTOR - 10, 15

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PANATION.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

O:4/15	- XIO - File #3 UV_REACTOR - 9 - Select UV Intens B OTE - File #3 UV_REACTOR - 11 XIO - File #3 UV_REACTOR - 12
O:6.0	- {LCV_102} Effluent Valve SCP - File #4 ANALOG_CTL - 1
O:6.1	- {LCV_108} Filter to Wast Valve SCP - File #4 ANALOG_CTL - 2
I:1/0	- PLANT START/STOP ON LEVEL (OTHERS) OTE - File #2 MAIN - 2 XIC - File #2 MAIN - 3
I:1/1	- BLOWER SHUTDOWN LEVEL SWITCH XIO - File #2 MAIN - 72
I:1/2	- B.W. ALLOW (OTHERS) OTE - File #2 MAIN - 1 XIC - File #2 MAIN - 30, 100 XIO - File #2 MAIN - 83
I:1/3	- BLOWER PRESS. SWITCH XIC - File #2 MAIN - 91, 92 XIO - File #2 MAIN - 44
I:1/4	- A/C H/H PRESS SHUTDOWN SWITCH XIC - File #2 MAIN - 17, 24 XIO - File #2 MAIN - 25
I:1/5	- A/C H/H PRESS. INITIATE SWITCH XIC - File #2 MAIN - 9
I:1/6	- FILTER HIGH HEADLOSS B.W. INITIATE SWITCH XIC - File #2 MAIN - 26 XIO - File #2 MAIN - 27
I:1/7	- FILTER LOW LEVEL PROTECT & DRAINDOWN SWITCH XIC - File #2 MAIN - 76, 88 XIO - File #2 MAIN - 48
I:1/8	- UNIT ON/OFF SWITCH XIC - File #2 MAIN - 3, 9, 14, 17, 22, 66, 97, 99
I:1/9	- SUMMER OPERATION SWITCH XIC - File #2 MAIN - 69, 86
I:1/10	- WINTER OPERATION SWITCH XIC - File #2 MAIN - 70, 87
I:1/11	- FLUSH MANUAL INITIATE BUTTON XIC - File #2 MAIN - 15 XIO - File #2 MAIN - 16
I:1/12	- B.W. MANUAL INITIATE BUTTON XIC - File #2 MAIN - 12 XIO - File #2 MAIN - 13
I:1/13	- CHEMICAL FEED FLOW SWITCH OTE - File #2 MAIN - 0 XIC - File #2 MAIN - 68
I:2/0	- FILTER TO WASTE VALVE IN AUTO XIC - File #2 MAIN - 94
I:2/1	- EFFLUENT VALVE IN AUTO XIC - File #2 MAIN - 88
I:2/2	- SUMMER INLET VALVE IN AUTO XIC - File #2 MAIN - 86
I:2/3	- WINTER INLET VALVE IN AUTO XIC - File #2 MAIN - 87
I:2/4	- BACKWASH VALVE IN AUTO XIC - File #2 MAIN - 89
I:2/5	- A/C VALVE IN AUTO XIC - File #2 MAIN - 91
I:2/6	- FILTER AIR VALVE IN AUTO XIC - File #2 MAIN - 92
I:2/7	- WASTE VALVE IN AUTO XIC - File #2 MAIN - 90
I:2/8	- FILTER DRAINDOWN AUTO XIC - File #2 MAIN - 93
I:2/9	- INFLUENT TURBIDITY VALVE IN AUTO XIC - File #2 MAIN - 78
I:2/10	- EFFLUENT TURBIDITY VALVE IN AUTO XIC - File #2 MAIN - 77
I:2/11	- BLOWER TRIP

PANATION.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

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I:2/12      - XIO - File #2 MAIN - 80
              - B.W. PUMP TRIP
              XIC - File #2 MAIN - 81
I:2/13      - FILTER PUMP TRIP
              XIO - File #2 MAIN - 82
I:5/0       - {UVA_ALARM}
              XIC - File #3 UV_REACTOR - 13
I:5/1       - {UVB_ALARM}
              XIC - File #3 UV_REACTOR - 15
I:6.0       - SCP - File #4 ANALOG_CTL - 0
I:6.1       - SCP - File #3 UV_REACTOR - 7
S:1/15      - First Pass
              XIC - File #2 MAIN - 45, 57, 64
              XIC - File #3 UV_REACTOR - 0
B3:0/1      - RAW & CHEMICAL PUMP CONTROL
              OTE - File #2 MAIN - 67
              XIC - File #2 MAIN - 68, 69, 70, 78
B3:0/2      - INFLUENT VALVE CONTROL
              OTE - File #2 MAIN - 85
              XIC - File #2 MAIN - 86, 87
B3:0/3      - MOTOR TRIP
              OTE - File #2 MAIN - 79
              XIC - File #2 MAIN - 84, 98
B3:0/4      - B.W. ALARM
              OTE - File #2 MAIN - 83
              XIC - File #2 MAIN - 31, 84, 96, 98
B3:0/5      - OTE - File #2 MAIN - 80
              XIC - File #2 MAIN - 79
B3:0/6      - OTE - File #2 MAIN - 81
              XIC - File #2 MAIN - 79
B3:0/7      - OTE - File #2 MAIN - 82
              XIC - File #2 MAIN - 79
B3:0/8      - OTE - File #2 MAIN - 3
              XIC - File #2 MAIN - 21, 57, 58, 66, 85, 97, 103
B3:0/9      - OTE - File #2 MAIN - 17
              XIC - File #2 MAIN - 17, 23, 25, 27, 32, 42, 50, 66, 69, 72
              XIC - File #2 MAIN - 85, 86, 90, 91, 92, 95, 104
              XIO - File #2 MAIN - 9, 33, 35, 43, 66, 70, 71, 72, 76, 85
              XIO - File #2 MAIN - 87, 88, 89, 92, 100
B3:0/10     - OTE - File #2 MAIN - 9
              XIC - File #2 MAIN - 9, 31, 84, 95, 98
              XIO - File #2 MAIN - 3, 14, 17, 22, 30, 99
B3:0/11     - OTE - File #2 MAIN - 14
              XIC - File #2 MAIN - 14, 17, 25, 27, 48, 61, 64, 71, 72, 76
              XIC - File #2 MAIN - 85, 88, 89, 90, 91, 92, 93, 94, 96, 104
              XIO - File #2 MAIN - 17, 22, 47, 50, 52, 54, 56, 63, 66, 85
              XIO - File #2 MAIN - 88
B3:0/12     - OTE - File #2 MAIN - 45
              XIO - File #2 MAIN - 17
B3:0/13     - OTE - File #2 MAIN - 64
              XIC - File #2 MAIN - 11
              XIO - File #2 MAIN - 14
B3:0/14     - OTE - File #2 MAIN - 72
              XIC - File #2 MAIN - 74, 75
B3:0/15     - OTE - File #2 MAIN - 61
              XIC - File #2 MAIN - 61, 62, 64, 66, 85, 94
              XIO - File #2 MAIN - 57, 71, 90
B3:1/0      - OTE - File #2 MAIN - 18
              XIC - File #2 MAIN - 17, 72, 91
B3:1/2      - OTE - File #2 MAIN - 44
              XIC - File #2 MAIN - 35, 37, 95
              XIO - File #2 MAIN - 30
B3:1/3      - OTE - File #2 MAIN - 31
              XIC - File #2 MAIN - 95, 96
B3:1/4      - OTE - File #2 MAIN - 99
              XIC - File #2 MAIN - 85
B3:1/6      - OTE - File #2 MAIN - 48
              XIC - File #2 MAIN - 48, 71, 72, 89, 92
              XIO - File #2 MAIN - 50, 76, 88, 93
    
```

PANATION.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

```

B3:1/7      - OTE - File #2 MAIN - 66
              XIC - File #2 MAIN - 8, 67
              XIO - File #2 MAIN - 6
B3:1/8      - OTE - File #2 MAIN - 57
              XIC - File #2 MAIN - 57, 59, 65
              XIO - File #2 MAIN - 60
B3:1/9      - OTE - File #2 MAIN - 100
              XIC - File #2 MAIN - 14
B3:1/10     - XIO - File #2 MAIN - 18
B3:1/12     - OTE - File #2 MAIN - 58
              XIO - File #2 MAIN - 57
B3:1/15     - {ALWAYS_OFF}
              OTU - File #3 UV_REACTOR - 0
              XIC - File #3 UV_REACTOR - 13, 15
B3:2/0      - XIC - File #2 MAIN - 65
B3:2/1      - XIC - File #2 MAIN - 67
B3:2/2      - XIC - File #2 MAIN - 71
B3:2/3      - XIC - File #2 MAIN - 75
B3:2/4      - XIC - File #2 MAIN - 76
B3:2/5      - XIC - File #2 MAIN - 84
B3:2/6      - XIC - File #2 MAIN - 85
              XIO - File #2 MAIN - 76, 88
B3:2/7      - XIC - File #2 MAIN - 88
              XIO - File #2 MAIN - 97
B3:2/8      - XIC - File #2 MAIN - 89
B3:2/9      - XIC - File #2 MAIN - 90
B3:2/10     - XIC - File #2 MAIN - 91
B3:2/11     - XIC - File #2 MAIN - 92
B3:2/12     - XIC - File #2 MAIN - 93
B3:2/13     - FORCE FILTER TO WASTE VALVE
              OTE - File #2 MAIN - 4
              XIC - File #2 MAIN - 94
              XIO - File #2 MAIN - 88
B3:2/14     - XIC - File #2 MAIN - 95
B3:2/15     - XIC - File #2 MAIN - 96
B3:3/0      - XIC - File #2 MAIN - 97
B3:3/1      - XIC - File #2 MAIN - 98
B3:3/11     - UV React A in Alarm
              OTE - File #3 UV_REACTOR - 14
B3:3/12     - UV React B in Alarm
              OTE - File #3 UV_REACTOR - 16
B3:3/13     - HMI Select: Auto
              OTE - File #3 UV_REACTOR - 1
              XIC - File #3 UV_REACTOR - 5, 6
B3:3/14     - HMI UV System OFF
              OTE - File #3 UV_REACTOR - 2
              XIO - File #3 UV_REACTOR - 12
B3:3/15     - HMI Select: Hand
              OTE - File #3 UV_REACTOR - 3
              XIC - File #3 UV_REACTOR - 5, 6
T4:0        - TON - File #3 UV_REACTOR - 13
T4:0/DN     - XIC - File #3 UV_REACTOR - 14
T4:1        - TON - File #3 UV_REACTOR - 15
T4:1/DN     - XIC - File #3 UV_REACTOR - 16
T4:2        - TON - File #2 MAIN - 19
T4:2/DN     - XIC - File #2 MAIN - 5, 7, 12, 15, 21, 24, 26, 32, 34, 36, 38
              40, 42, 46, 51, 53, 55, 59, 73, 102
              XIO - File #2 MAIN - 19
T4:3        - TON - File #2 MAIN - 3
T4:3/TT     - Plant 15 min Start-up
              XIC - File #2 MAIN - 4
T4:3.PRE    - MUL - File #2 MAIN - 113
T4:3.ACC    - DIV - File #2 MAIN - 114
T4:4        - UV Intensity Analog Multiplex Timer
              TON - File #3 UV_REACTOR - 10
T4:4/DN     - XIO - File #3 UV_REACTOR - 10
T4:4.ACC    - LIM - File #3 UV_REACTOR - 11
T4:5        - TON - File #2 MAIN - 28
              RES - File #2 MAIN - 30

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PANATION.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

T4:5/DN	- XIC - File #2 MAIN - 29, 31
T4:6	- TON - File #2 MAIN - 29
T4:6/DN	- XIO - File #2 MAIN - 28
T4:7	- Comm Test Timer For WTU Shutdown
	TON - File #2 MAIN - 108
T4:7/DN	- Comm is bad timer done bit
	XIO - File #2 MAIN - 3
T4:8	- TON - File #2 MAIN - 49
	RES - File #2 MAIN - 50
T4:8/DN	- XIC - File #2 MAIN - 51
	XIO - File #2 MAIN - 89
C5:0	- PLANT ON TIME IN MINUTES
	CTU - File #2 MAIN - 21
	RES - File #2 MAIN - 20
C5:0/DN	- PLANT ON TIME IN MINUTES
	XIC - File #2 MAIN - 10, 20, 22
C5:1	- FLUSH INTERVAL TIMER
	CTU - File #2 MAIN - 22
	RES - File #2 MAIN - 23
C5:1/DN	- FLUSH INTERVAL TIMER
	XIC - File #2 MAIN - 17
C5:2	- BACKWASH INTERVAL TIME
	CTU - File #2 MAIN - 10
	RES - File #2 MAIN - 11
C5:2/DN	- BACKWASH INTERVAL TIME
	XIC - File #2 MAIN - 14
C5:3	- HIGH PRESSURE FLUSH BUFFER
	CTU - File #2 MAIN - 24
	RES - File #2 MAIN - 25
C5:3/DN	- HIGH PRESSURE FLUSH BUFFER
	XIC - File #2 MAIN - 17
	XIO - File #2 MAIN - 24
C5:4	- HIGH HEADLOSS BACKWASH BUFFER
	CTU - File #2 MAIN - 26
	RES - File #2 MAIN - 27
C5:4/DN	- HIGH HEADLOSS BACKWASH BUFFER
	XIC - File #2 MAIN - 14, 83
	XIO - File #2 MAIN - 26, 30
C5:5	- MINUTES COUNTER
	CTU - File #2 MAIN - 102
	RES - File #2 MAIN - 101
C5:5/DN	- MINUTE COUNTER
	XIC - File #2 MAIN - 62, 101
C5:6	- WASTE VALVE OPEN TIME
	CTU - File #2 MAIN - 32
	RES - File #2 MAIN - 33
C5:6/DN	- WASTE VALVE OPEN TIME
	XIC - File #2 MAIN - 34, 72, 85, 91
	XIO - File #2 MAIN - 32
C5:7	- FLUIDIZE DURATION
	CTU - File #2 MAIN - 34
	RES - File #2 MAIN - 35
C5:7/DN	- FLUIDIZE DURATION
	XIC - File #2 MAIN - 36, 44, 66, 85
	XIO - File #2 MAIN - 34, 37
C5:8	- FLUSH DURATION
	CTU - File #2 MAIN - 36
	RES - File #2 MAIN - 37
C5:8/DN	- FLUSH DURATION
	XIC - File #2 MAIN - 38, 71, 72, 89, 92
	XIO - File #2 MAIN - 36, 39, 42, 44, 50, 66, 72, 85, 91
C5:9	- BED SETTLE
	CTU - File #2 MAIN - 38
	RES - File #2 MAIN - 39
C5:9/DN	- BED SETTLE
	XIC - File #2 MAIN - 40, 66, 85
	XIO - File #2 MAIN - 38, 41
C5:10	- RINSE DURATION
	CTU - File #2 MAIN - 40

PANATION.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

C5:10/DN	- RES - File #2 MAIN - 41
	- RINSE DURATION
	XIC - File #2 MAIN - 45
	XIO - File #2 MAIN - 40, 66, 85
C5:11	- FLUSH WATCHDOG TIMER
	CTU - File #2 MAIN - 42
	RES - File #2 MAIN - 43
C5:11/DN	- FLUSH WATCHDOG COUNTER
	XIC - File #2 MAIN - 45
C5:12	- FILTER DRAINDOWN
	CTU - File #2 MAIN - 46
	RES - File #2 MAIN - 47
C5:12/DN	- FILTER DRAINDOWN
	XIC - File #2 MAIN - 71, 72, 89, 92
	XIO - File #2 MAIN - 17, 46, 50, 88, 93
C5:13	- AIR BACKWASH DURATION
	CTU - File #2 MAIN - 51
	RES - File #2 MAIN - 52
C5:13/DN	- AIR BACKWASH DURATION
	XIC - File #2 MAIN - 53
	XIO - File #2 MAIN - 51, 72, 92
C5:14	- LOW RATE BACKWASH
	CTU - File #2 MAIN - 53
	RES - File #2 MAIN - 54
C5:14/DN	- LOW RATE BACKWASH
	XIC - File #2 MAIN - 55, 89
	XIO - File #2 MAIN - 53
C5:15	- HIGH RATE BACKWASH
	CTU - File #2 MAIN - 55
	RES - File #2 MAIN - 56
C5:15/DN	- HIGH RATE BACKWASH
	XIC - File #2 MAIN - 57, 61, 65, 90
	XIO - File #2 MAIN - 55, 89, 90
C5:16	- BACKWASH VALVE CLOSING
	CTU - File #2 MAIN - 59
	RES - File #2 MAIN - 60
C5:16/DN	- BACKWASH VALVE CLOSING
	XIC - File #2 MAIN - 61
	XIO - File #2 MAIN - 57, 59, 65
C5:17	- FILTER TO WASTE
	CTU - File #2 MAIN - 62
	RES - File #2 MAIN - 63
C5:17/DN	- FILTER TO WASTE
	XIC - File #2 MAIN - 64
	XIO - File #2 MAIN - 62, 66
C5:18	- RAW WATER PUMP START DELAY
	CTU - File #2 MAIN - 5
	RES - File #2 MAIN - 6
C5:18/DN	- RAW WATER PUMP START DELAY
	XIC - File #2 MAIN - 85
	XIO - File #2 MAIN - 5
C5:19	- RAW WATER PUMP STOP DELAY
	CTU - File #2 MAIN - 7
	RES - File #2 MAIN - 8
C5:19/DN	- RAW WATER PUMP STOP DELAY
	XIC - File #2 MAIN - 7, 67
C5:20	- BLOWER STOP DELAY
	CTU - File #2 MAIN - 73
	RES - File #2 MAIN - 74
C5:20/DN	- BLOWER STOP DELAY
	XIO - File #2 MAIN - 73, 75, 76
C5:21	- B.W. DELAY INITIATE COUNTER
	CTU - File #2 MAIN - 12
	RES - File #2 MAIN - 13
C5:21/DN	- B.W. DELAY INITIATE COUNTER
	XIC - File #2 MAIN - 14
C5:22	- FLUSH DELAY INITIATE COUNTER
	CTU - File #2 MAIN - 15
	RES - File #2 MAIN - 16

PANATION.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

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C5:22/DN - FLUSH DELAY INITIATE COUNTER
          XIC - File #2 MAIN - 17
N7:0     - MOV - File #3 UV_REACTOR - 4
          EQU - File #3 UV_REACTOR - 1, 2, 3
          GEQ - File #3 UV_REACTOR - 4
N7:1     - {UV_INTENS_A}
          MOV - File #3 UV_REACTOR - 8, 12
N7:2     - {UV_INTENS_B}
          MOV - File #3 UV_REACTOR - 9, 11
N7:3     - {FILT_LEVEL}
          PID - File #4 ANALOG_CTL - 4
          SCP - File #4 ANALOG_CTL - 0
N7:4     - {UV_MEASURE}
          MOV - File #3 UV_REACTOR - 11, 12
          SCP - File #3 UV_REACTOR - 7
N7:5     - MOV - File #4 ANALOG_CTL - 5, 6, 7
          SCP - File #4 ANALOG_CTL - 1
N7:6     - MOV - File #4 ANALOG_CTL - 8, 9
          SCP - File #4 ANALOG_CTL - 2
N7:7     - MOV - File #4 ANALOG_CTL - 5, 8
          PID - File #4 ANALOG_CTL - 4
N7:8     - MUL - File #2 MAIN - 113
          GEQ - File #2 MAIN - 113
          LEQ - File #2 MAIN - 113
N7:9     - DIV - File #2 MAIN - 114
N7:20    - PID - File #4 ANALOG_CTL - 4
FILE N7:20 LEN:23 - PID - File #4 ANALOG_CTL - 4
N7:22    - PID Set-Point
          MOV - File #4 ANALOG_CTL - 3
FILE N7:22 LEN:21 - PID - File #4 ANALOG_CTL - 4
N7:50/0  - Comm. Alarm test bit To WTP (Always set to 1)
          OTE - File #2 MAIN - 105
N7:50/1  - Common Alarm to WTP
          OTE - File #2 MAIN - 98
N7:50/2  - Plant "on" (to WTP)
          OTE - File #2 MAIN - 103
N7:50/3  - Filter In Backwash (To WTP)
          OTE - File #2 MAIN - 104
N7:50/4  - OTE - File #2 MAIN - 106
N7:50/5  - OTE - File #2 MAIN - 107
N7:50/6  - Switch for valid Effluent Turbidity Readings
          OTE - File #2 MAIN - 110
N7:60/0  - Start/Stop from wtp
          XIC - File #2 MAIN - 2
N7:60/1  - B.W. Allow from WTP
          XIC - File #2 MAIN - 1
N7:60/2  - Chem feed flow from WTP
          XIC - File #2 MAIN - 0
N7:60/3  - Holding tank allow
          XIO - File #2 MAIN - 14
N7:60/4  - B.W. Pump Protect
          XIC - File #2 MAIN - 14
N7:60/5  - Comm Test Bit from WTP
          OTU - File #2 MAIN - 109
          XIO - File #2 MAIN - 108
N7:60/8  - UV-System Request
          XIC - File #3 UV_REACTOR - 5, 6, 12
U:3     - JSR - File #2 MAIN - 111
U:4     - JSR - File #2 MAIN - 112

```

PANATION.RSS

Data File 00 -- OUTPUT Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
O:3.0		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1746-OW16 - 16-Output (RLY) 240 VAC
O:4.0		X	X	X	.	.	.	.	.	.	X	X	X	X	X	X	X	1746-OW16 - 16-Output (RLY) 240 VAC
O:6.0	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NIO4I - Analog 2 Ch In/2 Ch Curren
O:6.1	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NIO4I - Analog 2 Ch In/2 Ch Curren

PANATION.RSS

Data File I1 -- INPUT Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
I:1.0		.	.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1746-IA16 - 16-Input 100/120 VAC
I:2.0		.	.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1746-IA16 - 16-Input 100/120 VAC
I:5.0		.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	X	1746-IA16 - 16-Input 100/120 VAC
I:6.0	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NIO4I - Analog 2 Ch In/2 Ch Curren
I:6.1	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1746-NIO4I - Analog 2 Ch In/2 Ch Curren

PANATION.RSS

Data File S2 -- STATUS Usage

Offset	0	1	2	3	4	5	6	7	8	9
S:0	.	X	.	.	.	.	.	.	.	.
S:10
S:20
S:30
S:40
S:50
S:60
S:70
S:80

PANATION.RSS

Data File B3 -- BINARY Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:0		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	.	
B3:1		X	.	.	X	.	X	X	X	X	X	.	X	X	X	.	X	
B3:2		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
B3:3		X	X	X	X	X	.	.	.	.	.	.	.	.	.	X	X	
B3:4		
B3:5		
B3:6		
B3:7		
B3:8		
B3:9		
B3:10		
B3:11		
B3:12		
B3:13		
B3:14		
B3:15		
B3:16		
B3:17		
B3:18		
B3:19		
B3:20		
B3:21		
B3:22		
B3:23		
B3:24		
B3:25		
B3:26		
B3:27		
B3:28		
B3:29		
B3:30		
B3:31		
B3:32		
B3:33		
B3:34		
B3:35		
B3:36		
B3:37		
B3:38		
B3:39		
B3:40		
B3:41		
B3:42		
B3:43		
B3:44		
B3:45		
B3:46		
B3:47		
B3:48		
B3:49		
B3:50		
B3:51		
B3:52		
B3:53		
B3:54		
B3:55		
B3:56		
B3:57		
B3:58		
B3:59		
B3:60		
B3:61		
B3:62		
B3:63		
B3:64		
B3:65		

PANATION.RSS

Data File B3 -- BINARY Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:66	
B3:67	
B3:68	
B3:69	
B3:70	
B3:71	
B3:72	
B3:73	
B3:74	
B3:75	
B3:76	
B3:77	
B3:78	
B3:79	
B3:80	
B3:81	
B3:82	
B3:83	
B3:84	
B3:85	
B3:86	
B3:87	
B3:88	
B3:89	
B3:90	
B3:91	
B3:92	
B3:93	
B3:94	
B3:95	
B3:96	
B3:97	
B3:98	
B3:99	
B3:100	
B3:101	
B3:102	
B3:103	
B3:104	
B3:105	
B3:106	
B3:107	
B3:108	
B3:109	
B3:110	
B3:111	
B3:112	
B3:113	
B3:114	
B3:115	
B3:116	
B3:117	
B3:118	
B3:119	
B3:120	
B3:121	
B3:122	
B3:123	
B3:124	
B3:125	
B3:126	
B3:127	
B3:128	
B3:129	
B3:130	
B3:131	

PANATION.RSS

Data File B3 -- BINARY Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:132	
B3:133	
B3:134	
B3:135	
B3:136	
B3:137	
B3:138	

PANATION.RSS

Data File T4 -- TIMER Usage

Offset	FW	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T4:0	W	.	.	X	.	.	.	
T4:1	W	.	.	X	.	.	.	
T4:2	W	.	.	X	.	.	.	
T4:3	W	.	X	.	.	X	X	
T4:4	W	.	.	X	.	.	X	UV Intensity Analog Multiplex Timer
T4:5	W	.	.	X	.	.	.	
T4:6	W	.	.	X	.	.	.	
T4:7	W	.	.	X	.	.	.	Comm Test Timer For WTU Shutdown
T4:8	W	.	.	X	.	.	.	

PANATION.RSS

Data File C5 -- COUNTER Usage

Offset	FW	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol) Description
C5:0	W	.	.	X	.	.	.	.	.	PLANT ON TIME IN MINUTES
C5:1	W	.	.	X	.	.	.	.	.	FLUSH INTERVAL TIMER
C5:2	W	.	.	X	.	.	.	.	.	BACKWASH INTERVAL TIME
C5:3	W	.	.	X	.	.	.	.	.	HIGH PRESSURE FLUSH BUFFER
C5:4	W	.	.	X	.	.	.	.	.	HIGH HEADLOSS BACKWASH BUFFER
C5:5	W	.	.	X	.	.	.	.	.	MINUTES COUNTER
C5:6	W	.	.	X	.	.	.	.	.	WASTE VALVE OPEN TIME
C5:7	W	.	.	X	.	.	.	.	.	FLUIDIZE DURATION
C5:8	W	.	.	X	.	.	.	.	.	FLUSH DURATION
C5:9	W	.	.	X	.	.	.	.	.	BED SETTLE
C5:10	W	.	.	X	.	.	.	.	.	RINSE DURATION
C5:11	W	.	.	X	.	.	.	.	.	FLUSH WATCHDOG TIMER
C5:12	W	.	.	X	.	.	.	.	.	FITER DRAINDOWN
C5:13	W	.	.	X	.	.	.	.	.	AIR BACKWASH DURATION
C5:14	W	.	.	X	.	.	.	.	.	LOW RATE BACKWASH
C5:15	W	.	.	X	.	.	.	.	.	HIGH RATE BACKWASH
C5:16	W	.	.	X	.	.	.	.	.	BACKWASH VALVE CLOSING
C5:17	W	.	.	X	.	.	.	.	.	FILTER TO WASTE
C5:18	W	.	.	X	.	.	.	.	.	RAW WATER PUMP START DELAY
C5:19	W	.	.	X	.	.	.	.	.	RAW WATER PUMP STOP DELAY
C5:20	W	.	.	X	.	.	.	.	.	BLOWER STOP DELAY
C5:21	W	.	.	X	.	.	.	.	.	B.W. DELAY INITIATE COUNTER
C5:22	W	.	.	X	.	.	.	.	.	FLUSH DELAY INITIATE COUNTER

PANATION.RSS

Data File R6 -- CONTROL Usage

Offset	FW	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol)	Description
R6:0

PANATION.RSS

Data File N7 -- INTEGER Usage

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	X	X	X	X	X	X	X	X	X	X
N7:10	.	.	.	.	.	.	.	.	.	.
N7:20	X	X	X	X	X	X	X	X	X	X
N7:30	X	X	X	X	X	X	X	X	X	X
N7:40	X	X	X	.	.	.	.	.	.	.
N7:50	X	.	.	.	.	.	.	.	.	.
N7:60	X	.	.	.	.	.	.	.	.	.

PANATION.RSS

Data File F8 -- FLOAT Usage

Offset	0	1	2	3	4
F8:0	.				

PANATION.RSS

Data File B30 Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B30:0	

PANATION.RSS

Data File B35 Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B35:0			

PANATION.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV
B3:0/0						
B3:0/1			RAW & CHEMICAL PUMP CONTROL			
B3:0/2			INFLUENT VALVE CONTROL			
B3:0/3			MOTOR TRIP			
B3:0/4			B.W. ALARM			
B3:0/5						
B3:0/6						
B3:0/7						
B3:0/8						
B3:0/9						
B3:0/10						
B3:0/11						
B3:0/12						
B3:0/13						
B3:0/14						
B3:0/15						
B3:1/0						
B3:1/1						
B3:1/2						
B3:1/3						
B3:1/4						
B3:1/6						
B3:1/7						
B3:1/8						
B3:1/9						
B3:1/10						
B3:1/12	ALWAYS_OFF	Global				
B3:2/0						
B3:2/1						
B3:2/2						
B3:2/3						
B3:2/4						
B3:2/5						
B3:2/6						
B3:2/7						
B3:2/8						
B3:2/9						
B3:2/10						
B3:2/11						
B3:2/12						
B3:2/13			FORCE FILTER TO WASTE VALVE			
B3:2/14						
B3:2/15						
B3:3/0						
B3:3/1						
B3:3/11			UV React A in Alarm			
B3:3/12			UV React B in Alarm			
B3:3/13			HMI Select: Auto			
B3:3/14			HMI UV System OFF			
B3:3/15			HMI Select: Hand			
B30:0/0						
B30:0/1						
B30:0/2						
B30:0/3						
B30:0/4						
B30:0/5						
B30:0/6						
B30:0/7						
B30:0/8						
B35:0/1			FIRE MODE			
B35:0/4			BACKWASH TANK HIGH LEVEL			
C5:0			PLANT ON TIME IN MINUTES			
C5:0/DN			PLANT ON TIME IN MINUTES			
C5:1			FLUSH INTERVAL TIMER			
C5:1/DN			FLUSH INTERVAL TIMER			
C5:2			BACKWASH INTERVAL TIME			
C5:2/DN			BACKWASH INTERVAL TIME			
C5:3			HIGH PRESSURE FLUSH BUFFER			
C5:3/DN			HIGH PRESSURE FLUSH BUFFER			
C5:4			HIGH HEADLOSS BACKWASH BUFFER			
C5:4/DN			HIGH HEADLOSS BACKWASH BUFFER			
C5:5			MINUTES COUNTER			
C5:5/DN			MINUTE COUNTER			
C5:6			WASTE VALVE OPEN TIME			
C5:6/DN			WASTE VALVE OPEN TIME			
C5:7			FLUIDIZE DURATION			
C5:7/DN			FLUIDIZE DURATION			
C5:8			FLUSH DURATION			
C5:8/DN			FLUSH DURATION			
C5:9			BED SETTLE			
C5:9/DN			BED SETTLE			
C5:10			RINSE DURATION			
C5:10/DN			RINSE DURATION			
C5:11			FLUSH WATCHDOG TIMER			
C5:11/DN			FLUSH WATCHDOG COUNTER			
C5:12			FITER DRAINDOWN			

PANATION.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV
C5:12/DN			FILTER DRAINDOWN			
C5:13			AIR BACKWASH DURATION			
C5:13/DN			AIR BACKWASH DURATION			
C5:14			LOW RATE BACKWASH			
C5:14/DN			LOW RATE BACKWASH			
C5:15			HIGH RATE BACKWASH			
C5:15/DN			HIGH RATE BACKWASH			
C5:16			BACKWASH VALVE CLOSING			
C5:16/DN			BACKWASH VALVE CLOSING			
C5:17			FILTER TO WASTE			
C5:17/DN			FILTER TO WASTE			
C5:18			RAW WATER PUMP START DELAY			
C5:18/DN			RAW WATER PUMP START DELAY			
C5:19			RAW WATER PUMP STOP DELAY			
C5:19/DN			RAW WATER PUMP STOP DELAY			
C5:20			BLOWER STOP DELAY			
C5:20/DN			BLOWER STOP DELAY			
C5:21			B.W. DELAY INITIATE COUNTER			
C5:21/DN			B.W. DELAY INITIATE COUNTER			
C5:22			FLUSH DELAY INITIATE COUNTER			
C5:22/DN			FLUSH DELAY INITIATE COUNTER			
C5:23						
C5:26						
C5:29						
C5:32						
C5:35						
C5:41						
C5:44						
C5:47						
C5:50						
C5:53						
C5:56						
C5:59						
C5:62						
C5:68						
C5:71						
I:1/0			PLANT START/STOP ON LEVEL (OTHERS)			
I:1/1			BLOWER SHUTDOWN LEVEL SWITCH			
I:1/2			B.W. ALLOW (OTHERS)			
I:1/3			BLOWER PRESS. SWITCH			
I:1/4			A/C H/H PRESS SHUTDOWN SWITCH			
I:1/5			A/C H/H PRESS. INITIATE SWITCH			
I:1/6			FILTER HIGH HEADLOSS B.W. INITIATE SWITCH			
I:1/7			FILTER LOW LEVEL PROTECT & DRAINDOWN SWITCH			
I:1/8			UNIT ON/OFF SWITCH			
I:1/9			SUMMER OPERATION SWITCH			
I:1/10			WINTER OPERATION SWITCH			
I:1/11			FLUSH MANUAL INITIATE BUTON			
I:1/12			B.W. MANUAL INITIATE BUTON			
I:1/13			CHEMICAL FEED FLOW SWITCH			
I:2/0			FILTER TO WASTE VALVE IN AUTO			
I:2/1			EFFLUENT VALVE IN AUTO			
I:2/2			SUMMER INLET VALVE IN AUTO			
I:2/3			WINTER INLET VALVE IN AUTO			
I:2/4			BACKWASH VALVE IN AUTO			
I:2/5			A/C VALVE IN AUTO			
I:2/6			FILTER AIR VALVE IN AUTO			
I:2/7			WASTE VALVE IN AUTO			
I:2/8			FILTER DRAINDOWN AUTO			
I:2/9			INFLUENT TURBIDITY VALVE IN AUTO			
I:2/10			EFFLUENT TURBIDITY VALVE IN AUTO			
I:2/11			BLOWER TRIP			
I:2/12			B.W. PUMP TRIP			
I:2/13			FILTER PUMP TRIP			
I:5/0	UVA_ALARM	Global				
I:5/1	UVB_ALARM	Global				
N7:1	UV_INTENS_A	Global				
N7:2	UV_INTENS_B	Global				
N7:3	FILT_LEVEL	Global				
N7:4	UV_MEASURE	Global				
N7:5						
N7:6						
N7:7						
N7:8						
N7:9						
N7:10						
N7:11						
N7:12						
N7:22			PID Set-Point			
N7:50			1st Reg to WTP			
N7:50/0			Comm. Alarm test bit To WTP (Always set to 1)			
N7:50/1			Common Alarm to WTP			
N7:50/2			Plant "on" (to WTP)			
N7:50/3			Filter In Backwash (To WTP)			
N7:50/6			Switch for valid Effluent Turbidity Readings			
N7:51			2nd Reg to WTP			
N7:52			3rd Reg to WTP			

PANATION.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV
N7:53			4th Reg to WTP			
N7:54			5th Reg to WTP			
N7:55			6th Reg to WTP			
N7:56			7th Reg to WTP			
N7:57			8th Reg to WTP			
N7:58			9th Reg to WTP			
N7:59			10th Reg to WTP			
N7:60			1st Reg From WTP			
N7:60/0			Start/Stop from wtp			
N7:60/1			B.W. Allow from WTP			
N7:60/2			Chem feed flow from WTP			
N7:60/3			Holding tank allow			
N7:60/4			B.W. Pump Protect			
N7:60/5			Comm Test Bit from WTP			
N7:60/8			UV-System Request			
N7:60/9	HS_WTU	Global				
N7:60/10	HS_UFILT	Global				
N7:61			2nd Reg from WTP			
N7:62			3rd Reg from WTP			
N7:63			4th Reg from WTP			
N7:64			5th Reg from WTP			
N7:65			6th Reg from WTP			
N7:66			7th Reg from WTP			
N7:67			8th Reg from WTP			
N7:68			9th Reg from WTP			
N7:69			10th Reg from WTP			
O:2/0						
O:2/1						
O:2/2						
O:2/3						
O:2/4						
O:2/5						
O:2/6						
O:2/7						
O:2/8						
O:2/9						
O:2/10						
O:3/0			CLOSES B.W VALVE			
O:3/1			CHEM. FEED PUMP RELAY			
O:3/2			RAW WATER PUMP SUMMER RELAY			
O:3/3			RAW WATER PUMP WINTER RELAY			
O:3/4			B.W. PUMP MOTOR STARTER			
O:3/5			BLOWER MOTOR STARTER			
O:3/6			EFFLUENT MOTOR STARTER			
O:3/7			PLANT ALARM RELAY			
O:3/8			SUMMER INFLUENT VALVE CONTROL			
O:3/9			WINTER INFLUENT VALVE CONTROL			
O:3/10			EFFLUENT VALVE CONTROL			
O:3/11			B.W. VALVE CONTROL			
O:3/12			WASTE VALVE CONTROL			
O:3/13			A/C AIR VALVE CONTROL			
O:3/14			FILTER AIR VALVE CONTROL			
O:3/15			FTW VALVE CONTROL			
O:4.0						
O:4/0			FLUSH CYCLE LIGHT			
O:4/1			B.W. CYCLE LIGHT			
O:4/2			FILTERING LIGHT			
O:4/3			COMMON ALARM LIGHT			
O:4/4			INFLUENT TURBIDITY VALVE CONTROL			
O:4/5			EFFLUENT TURBIDITY VALVE CONTROL			
O:4/6			DRAIN DOWN RELAY			
O:4/13	UVC_REACT_A	Global				
O:4/14	UVC_REACT_B	Global				
O:4/15			Select UV Intens B			
O:4.1						
O:6.0	LCV_102	Global	Effluent Valve			
O:6.1	LCV_108	Global	Filter to Wast Valve			
S:0			Arithmetic Flags			
S:0/0			Processor Arithmetic Carry Flag			
S:0/1			Processor Arithmetic Underflow/ Overflow Flag			
S:0/2			Processor Arithmetic Zero Flag			
S:0/3			Processor Arithmetic Sign Flag			
S:1			Processor Mode Status/ Control			
S:1/0			Processor Mode Bit 0			
S:1/1			Processor Mode Bit 1			
S:1/2			Processor Mode Bit 2			
S:1/3			Processor Mode Bit 3			
S:1/4			Processor Mode Bit 4			
S:1/5			Forces Enabled			
S:1/6			Forces Present			
S:1/7			Comms Active			
S:1/8			Fault Override at Powerup			
S:1/9			Startup Protection Fault			
S:1/10			Load Memory Module on Memory Error			
S:1/11			Load Memory Module Always			
S:1/12			Load Memory Module and RUN			
S:1/13			Major Error Halted			

PANATION.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV
S:1/14			Access Denied			
S:1/15			First Pass			
S:2/0			STI Pending			
S:2/1			STI Enabled			
S:2/2			STI Executing			
S:2/3			Index Addressing File Range			
S:2/4			Saved with Debug Single Step			
S:2/5			DH-485 Incoming Command Pending			
S:2/6			DH-485 Message Reply Pending			
S:2/7			DH-485 Outgoing Message Command Pending			
S:2/15			Comms Servicing Selection			
S:3			Current Scan Time/ Watchdog Scan Time			
S:4			Time Base			
S:5/0			Overflow Trap			
S:5/2			Control Register Error			
S:5/3			Major Err Detected Executing UserFault Routine			
S:5/4			M0-M1 Referenced on Disabled Slot			
S:5/8			Memory Module Boot			
S:5/9			Memory Module Password Mismatch			
S:5/10			STI Overflow			
S:5/11			Battery Low			
S:6			Major Error Fault Code			
S:7			Suspend Code			
S:8			Suspend File			
S:9			Active Nodes			
S:10			Active Nodes			
S:11			I/O Slot Enables			
S:12			I/O Slot Enables			
S:13			Math Register			
S:14			Math Register			
S:15			Node Address/ Baud Rate			
S:16			Debug Single Step Rung			
S:17			Debug Single Step File			
S:18			Debug Single Step Breakpoint Rung			
S:19			Debug Single Step Breakpoint File			
S:20			Debug Fault/ Powerdown Rung			
S:21			Debug Fault/ Powerdown File			
S:22			Maximum Observed Scan Time			
S:23			Average Scan Time			
S:24			Index Register			
S:25			I/O Interrupt Pending			
S:26			I/O Interrupt Pending			
S:27			I/O Interrupt Enabled			
S:28			I/O Interrupt Enabled			
S:29			User Fault Routine File Number			
S:30			STI Setpoint			
S:31			STI File Number			
S:32			I/O Interrupt Executing			
S:33			Extended Proc Status Control Word			
S:33/0			Incoming Command Pending			
S:33/1			Message Reply Pending			
S:33/2			Outgoing Message Command Pending			
S:33/3			Selection Status User/DF1			
S:33/4			Communicat Active			
S:33/5			Communicat Servicing Selection			
S:33/6			Message Servicing Selection Channel 0			
S:33/7			Message Servicing Selection Channel 1			
S:33/8			Interrupt Latency Control Flag			
S:33/9			Scan Toggle Flag			
S:33/10			Discrete Input Interrupt Reconfigur Flag			
S:33/11			Online Edit Status			
S:33/12			Online Edit Status			
S:33/13			Scan Time Timebase Selection			
S:33/14			DTR Control Bit			
S:33/15			DTR Force Bit			
S:34			Pass-thru Disabled			
S:34/0			Pass-Thru Disabled Flag			
S:34/1			DH+ Active Node Table Enable Flag			
S:34/2			Floating Point Math Flag			
S:35			Last 1 ms Scan Time			
S:36			Extended Minor Error Bits			
S:36/8			Dll Lost			
S:36/9			STI Lost			
S:36/10			Memory Module Data File Overwrite Protection			
S:37			Clock Calendar Year			
S:38			Clock Calendar Month			
S:39			Clock Calendar Day			
S:40			Clock Calendar Hours			
S:41			Clock Calendar Minutes			
S:42			Clock Calendar Seconds			
S:43			STI Interrupt Time			
S:44			I/O Event Interrupt Time			
S:45			Dll Interrupt Time			
S:46			Discrete Input Interrupt- File Number			
S:47			Discrete Input Interrupt- Slot Number			
S:48			Discrete Input Interrupt- Bit Mask			
S:49			Discrete Input Interrupt- Compare Value			

PANATION.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV
S:50			Processor Catalog Interrupt- Preset			
S:51			Discrete Input Interrupt- Return Number			
S:52			Discrete Input Interrupt- Accumulat			
S:53			Discrete Input Interrupt- Timer			
S:54			Discrete Input Interrupt- Timer			
S:55			Last Dll Scan Time			
S:56			Maximum Observed Dll Scan Time			
S:57			Operating System Catalog Number			
S:58			Operating System Series			
S:59			Operating System FRN			
S:61			Processor Series			
S:62			Processor Revision			
S:63			User Program Type			
S:64			User Program Functional Index			
S:65			User RAM Size			
S:66			Flash EEPROM Size			
S:67			Channel 0 Active Nodes			
S:68			Channel 0 Active Nodes			
S:69			Channel 0 Active Nodes			
S:70			Channel 0 Active Nodes			
S:71			Channel 0 Active Nodes			
S:72			Channel 0 Active Nodes			
S:73			Channel 0 Active Nodes			
S:74			Channel 0 Active Nodes			
S:75			Channel 0 Active Nodes			
S:76			Channel 0 Active Nodes			
S:77			Channel 0 Active Nodes			
S:78			Channel 0 Active Nodes			
S:79			Channel 0 Active Nodes			
S:80			Channel 0 Active Nodes			
S:81			Channel 0 Active Nodes			
S:82			Channel 0 Active Nodes			
S:83			DH+ Active Nodes			
S:84			DH+ Active Nodes			
S:85			DH+ Active Nodes			
S:86			DH+ Active Nodes			
T4:2						
T4:2/DN						
T4:3/TT			Plant 15 min Start-up			
T4:4			UV Intensity Analog Multiplex Timer			
T4:5						
T4:5/DN						
T4:7			Comm Test Timer For WTU Shutdown			
T4:7/DN			Comm is bad timer done bit			
T4:8						
T4:8/DN						

PANATION.RSS

Instruction Comment Database

Address	Instruction	Description
B3:0/0	XIC	PLANT ON OFF
B3:0/1	XIO	LEVEL OK TO BACKWASH
B3:0/1	XIC	RAW & CHEMICAL PUMP CONTROL
B3:0/2	XIC	INFLUENT VALVE CONTROL
B3:0/3	OTE	MOTOR TRIPS
B3:0/4	OTE	B.W. ALARM
B3:0/5	OTE	BLOWER TRIP
B3:0/6	XIC	EFFLUENT PUMP
B3:0/6	OTE	B.W. PUMP TRIP
B3:0/7	OTE	FILTER PUMP TRIP
B3:0/8	XIC	PLANT ON
B3:0/8	OTE	PLANT ON
B3:0/9	XIC	FILTER IN FLUSH
B3:0/9	OTE	FILTER IN FLUSH
B3:0/9	XIO	UNIT FLUSH
B3:0/10	OTE	A/C OVER PRESSURE
B3:0/10	XIC	A/C OVER PRESSURE
B3:0/10	XIO	OVER PRESSURE
B3:0/11	XIO	FILTER IN BACKWASH
B3:0/11	XIC	FILTER IN BACKWASH
B3:0/11	OTE	FILTER IN BACKWASH
B3:0/12	OTE	END OF FLUSH
B3:0/12	XIO	END OF FLUSH
B3:0/13	OTE	END OF BACKWASH
B3:0/13	XIO	END OF BACKWASH
B3:0/13	XIC	END OF BACKWASH
B3:0/14	XIC	AIR BLOWER CONTROL
B3:0/14	OTE	AIR BLOWER CONTROL
B3:0/15	XIC	BACKWASH CLOSING COMPLETE
B3:0/15	OTE	BACKWASH CLOSING COMPLETE
B3:0/15	XIO	BACKWASH CLOSING COMPLETE
B3:1/0	XIO	FLUSH WITH BACKWASH ALLOW
B3:1/0	OTE	FLUSH WITH BACKWASH
B3:1/0	XIC	FLUSH WITH BACKWASH ALLOW
B3:1/1	XIO	FILTER TO WASTE CYCLE ON
B3:1/2	OTE	FLUSH RESET
B3:1/2	XIC	FLUSH RESET
B3:1/3	XIC	ALARM FLASHER
B3:1/3	XIO	ALARM FLASHER
B3:1/3	OTE	ALARM FLASHER
B3:1/4	OTE	UNIT AVAILABLE
B3:1/4	XIC	UNIT 1 AVAILABLE
B3:1/6	XIO	FILTER DRAINDOWN COMPLETE
B3:1/6	XIC	FILTER DRAINDOWN COMPLETE
B3:1/6	OTE	FILTER DRAINDOWN COMPLETE
B3:1/7	OTE	RAW WATER PUMP CONTROL
B3:1/7	XIC	RAW PUMP CONTROL
B3:1/7	XIO	RAW PUMP CONTROL
B3:1/8	XIO	BACKWASH VALV CLOSE CYCLE
B3:1/8	XIC	BACKWASH VALV CLOSE CYCLE
B3:1/8	OTE	BACKWASH VALV CLOSE CYCLE
B3:1/9	OTE	NO FLUSH AND LEVEL OK
B3:1/9	XIC	NO FLUSH AND LEVEL OK
B3:1/10	XIO	FLUSH WITH BACKWASH BIT
B3:1/12	OTE	START-UP 1 SHOT
B3:1/12	XIO	START UP 1 SHOT
B3:2/0	XIC	FORCE BACKWASH VALV CLOS
B3:2/1	XIC	FORCE CHEM FEED AND RAW WATER PUMP
B3:2/2	XIC	FORCES BACKWASH PUMP
B3:2/3	XIC	FORCE AIR BLOWER
B3:2/4	XIC	FORCE EFFLUENT PUMP
B3:2/5	XIC	FORCE ALARM OUTPUT
B3:2/6	XIC	FORCE INFLUENT VALVE
B3:2/6	XIO	FORCE INFLUENT VALVE
B3:2/7	XIO	FORCES EFFLUENT VALVE

PANATION.RSS

Instruction Comment Database

Address	Instruction	Description
B3:2/7	XIC	FORCE EFFLUENT VALVE
B3:2/8	XIC	FORCE OPEN BACKWASH VALVE
B3:2/9	XIC	FORCE WASTE VALVE
B3:2/10	XIC	FORCE A/C AIR VALVE
B3:2/11	XIC	FORCE FILTER AIR VALVE
B3:2/12	XIC	FORCES FILTER DRAINDOWN VALVE
B3:2/14	XIC	FORCE FLUSH LIGHT
B3:2/15	XIC	FORCE BACKWASH LIGHT
B3:3/0	XIC	FORCE FILTERING LIGHT
B3:3/1	XIC	FORCE ALARM LIGHT
I:1/0	XIC	PLANT START/STOP CLEARWELL LEVEL
I:1/0	XIO	PLANT START/STOP CLEARWELL LEVEL
I:1/1	XIO	BLOWER SHUTDOWN LEVEL SWITCH
I:1/1	XIC	BLOWER SHUTDOWN LEVEL SWITCH
I:1/2	XIC	B.W. ALLOW (OTHERS)
I:1/3	XIO	BLOWER PRESS. SWITCH
I:1/3	XIC	BLOWER PRESS. SWITCH
I:1/4	XIC	A/C HIGH PRESS. SHUTDOWN SWITCH
I:1/4	XIO	A/C HIGH PRESS. SHUTDOWN SWITCH
I:1/5	XIC	A/C H/H PRESS. INTIATE SWITCH
I:1/5	XIO	A/C H/H PRESS. INTIATE SWITCH
I:1/6	XIC	FILTER HIGH HEADLOSS B.W. INITIATE SWITCH
I:1/7	XIC	FLITER LOW LEVEL PROTECT & DRAINDOWN SWITCH
I:1/8	XIC	UNIT ON/OFF SWITCH
I:1/9	XIO	SUMMER OPERATION SWITCH
I:1/10	XIO	WINTER OPERATION SWITCH
I:1/11	XIO	FLUSH MANUAL INITIATE BUTTON
I:1/12	XIO	B.W. MANUAL INITIATE BUTTON
I:1/13	XIO	CHEM FEED FLOW SWITCH
I:2/0	XIO	FILTER TO WASTE VALVE IN AUTO
I:2/1	XIO	EFFLUENT VALVE IN AUTO
I:2/2	XIO	SUMMER INLET VALE IN AUTO
I:2/3	XIO	WINTER INLET VALVE IN AUTO
I:2/4	XIO	B.W. VALVE IN AUTO
I:2/5	XIO	A/C AIR VALVE IN AUTO
I:2/6	XIO	FILTER AIR VALVE IN AUTO
I:2/7	XIO	WASTE VALVE IN AUTO
I:2/8	XIO	FILTER DRAINDOWN IN AUTO
I:2/9	XIO	INFLUENT TURBIDITY VALVE IN AUTO
I:2/10	XIO	EFFLUENT TURBIDITY VALVE IN AUTO
O:2/0	XIO	BACKWASH VALVE CLOSING
O:2/0	OTE	BACKWASH VALVE CLOSE
O:2/1	XIC	CHEMICAL PUMPS
O:2/1	OTE	CHEMICAL PUMP
O:2/2	OTE	TURBIDITY SAMPLE VALVE
O:2/3	OTE	INFLUENT VALVE
O:2/3	XIC	INFLUENT VALVE
O:2/4	XIC	EFFLUENT VALVE
O:2/4	OTE	EFFLUENT VALVE
O:2/5	OTE	OPEN BACKWASH VALVE
O:2/5	XIO	OPEN BACKWASH VALVE
O:2/6	OTE	WASTE VALVE
O:2/7	OTE	A/C AIR VALVE
O:2/8	OTE	FILTER AIR VALVE
O:2/9	OTE	FILTER DRAINDOWN VALVE
O:2/10	OTE	FILTER TO WASTE VALV
O:3/0	OTE	CLOSES B.W. VALVE
O:3/1	OTE	CHEMICAL FEED PUMP RELAY
O:3/2	OTE	RAW WATER PUMP SUMMER RELAY
O:3/3	OTE	RAW WATER PUMP WINTER RELAY
O:3/4	OTE	BACKWASH MOTOR STARTER
O:3/5	OTE	BLOWER MOTOR STARTER
O:3/6	OTE	EFFLUENT MOTOR STARTER
O:3/7	OTE	PLANT ALARM RELAY

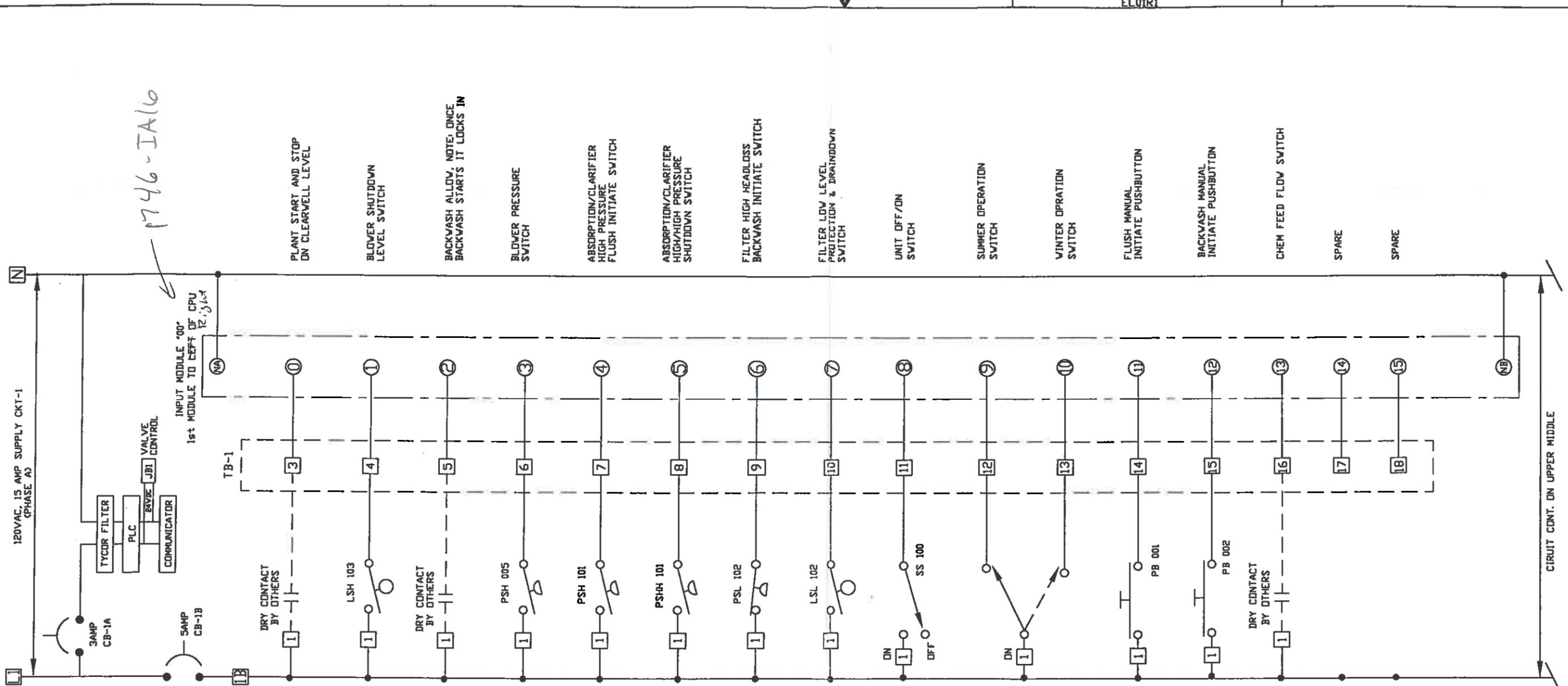
PANATION.RSS

Instruction Comment Database

Address	Instruction	Description
O:3/8	OTE	SUMMER INFLUENT VALVE CONTROL
O:3/9	OTE	WINTER INFLUENT VALVE CONTROL
O:3/10	OTE	EFFLUENT VALVE CONTROL
O:3/11	OTE	BACKWASH VALVE CONTROL
O:3/12	OTE	WASTE VALVE CONTROL
O:3/13	OTE	A/C AIR VALVE CONTROL
O:3/14	OTE	FILTER AIR VALVE CONTROL
O:3/15	OTE	FILTER TO WASTE VALVE CONTROL
O:4/0	OTE	FLUSH CYCLE LIGHT
O:4/1	OTE	B.W. CYCLE LIGHT
O:4/2	OTE	UNIT #1 FILTERING LIGHT
O:4/3	OTE	COMMON ALARM LIGHT
O:4/4	OTE	INFLUENT TURBIDITY VALVE CONTROL
O:4/5	OTE	EFFLUENT TURBIDITY VALVE CONTROL
O:4/6	OTE	DRAINDOWN RELAY
S:1/15	XIC	START UP BIT
T4:2	TON	1 SECOND TIMER
T4:2/DN	XIO	1 SECOND TIMER
T4:2/DN	XIC	SECONDS COUNTER
T4:5/DN	XIC	ALARM FLASHER COUNTER
T4:5/DN	XIO	ALARM FLASHER COUNTER
T4:8	TON	BACKWASH VALVE OPEN TIMER
T4:8/DN	XIC	BACKWASH VALVE OPEN TIMER
T4:8/DN	XIO	BACKWASH VALVE OPEN TIMER

PANATION.RSS
Symbol Group Database

Group_Name Description



1746-IA16

NOTE:
 PLC SUPPLIED:
 A-B SLC 5/03
 A-B 1746-IA16 & A-B 1746-DA16
 A-B 1746-AIC LINK COUPLER

NO.	REVISION	DATE	DRN	CHKD	APPD
R4	AS BUILT	12/05/98	SM	JK	
R3	NO MOTOR CONTROL & ADD PID CONTROLLER	10/27/98			
R2	REVISIONS & LEVEL CONTROLLER	10/06/98			

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DRAWN	DATE
SM	08/27/98
CHECKED	
APPROVED	
APPROVED	
SCALE	
NTS	

TITLE		ELECTRICAL SCHEMATIC	
CLIENT		PRINCE ALBERT NAT. PARK WTP	
PROJECT NO.		DRAWING NO.	SHT NO.
0021M2CA	EL-01	1 OF 4	REV R4

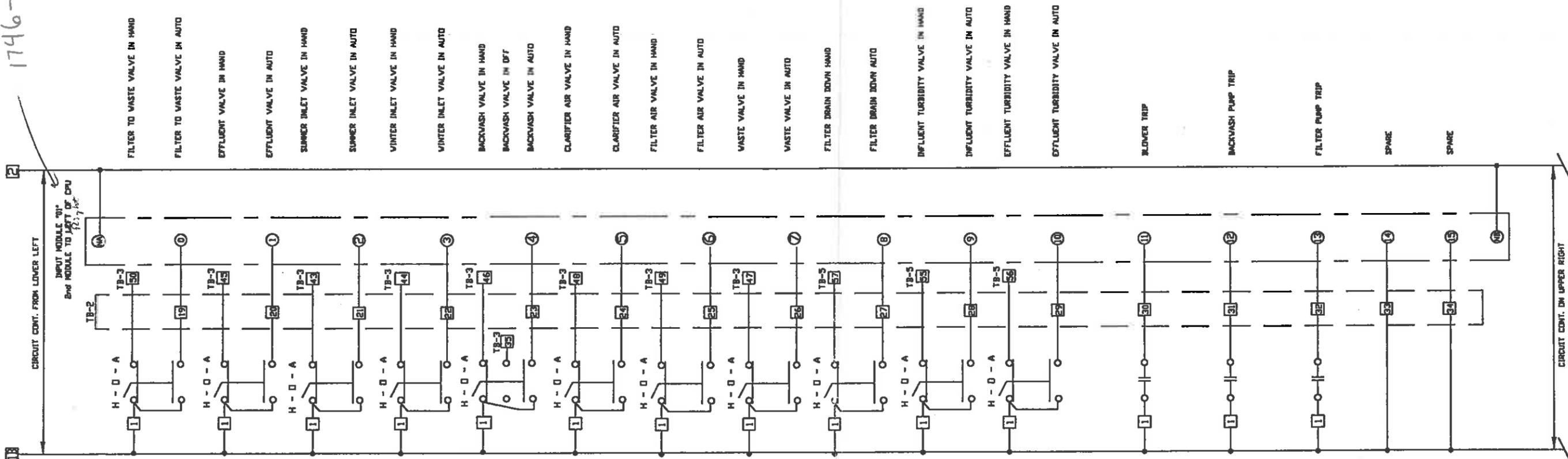


11X17

1746-IA16

EL02R1

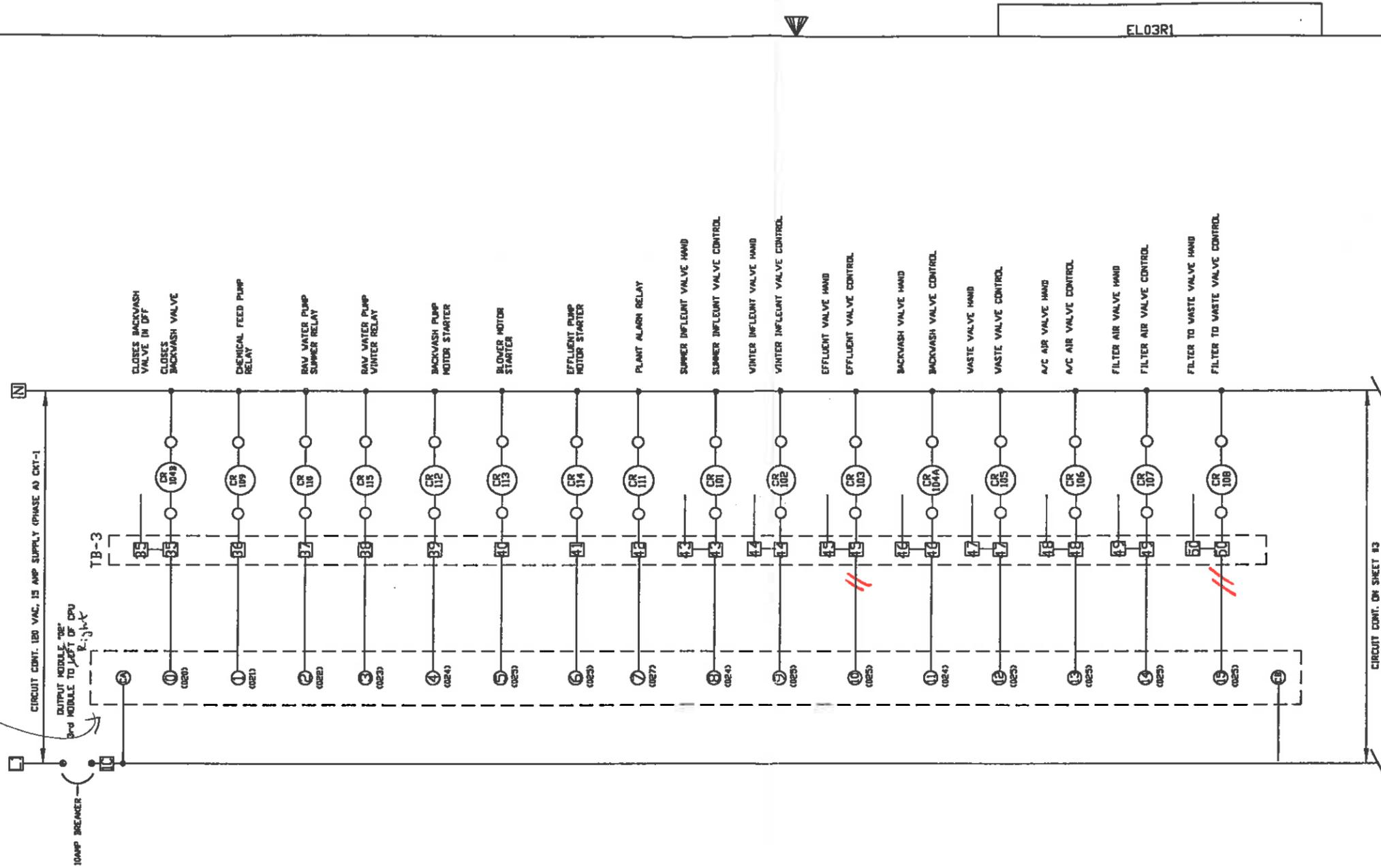
11X17



						<p>COMPANY CONFIDENTIAL THIS DRAWING OR PRINT IS THE PROPERTY OF UNITED STATES FILTER CORPORATION AND IS SUBJECT TO THE RETURN ON REQUEST. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO THAT CORPORATION AND ITS SUBSIDIARIES AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE PRINT IS EXPRESSLY LOANED. THEY MUST NOT BE DISCLOSED, REPRODUCED OR OTHERWISE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF UNITED STATES FILTER CORPORATION. ALL PATENT RIGHTS ARE RESERVED UNLESS THEY ARE SPECIFICALLY ASSIGNED IN WRITING.</p>	DRAWN SM	DATE 08/27/98	TITLE ELECTRICAL SCHEMATIC		
R4	AS BUILT	12/05/98	SM	JK	CHECKED			CLIENT PRINCE ALBERT NAT. PARK WTP			
R3	NO MOTOR CONTROL & PID CONTROLLER	10/27/98			APPROVED						
R2	REVISIONS & LEVEL CONTROLLER	10/06/98			APPROVED						
NO.	REVISION	DATE	DRN	CHKD	APPD		SCALE NTS	PROJECT NO. 0021M2CA	DRAWING NO. EL-02	SHT NO. 2 OF 4	REV R4



1746-0216



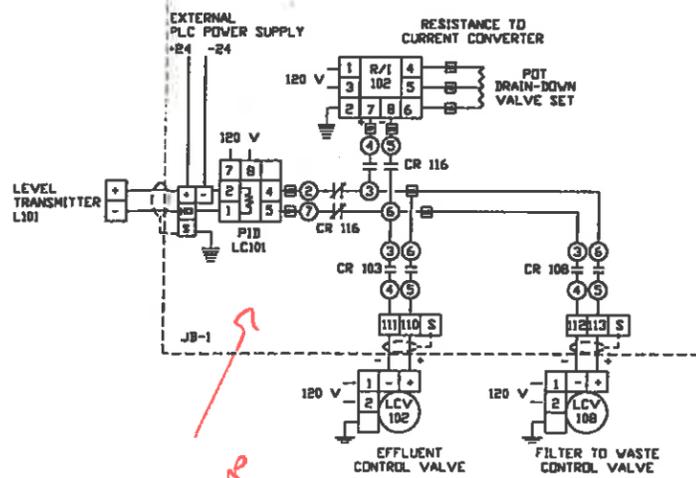
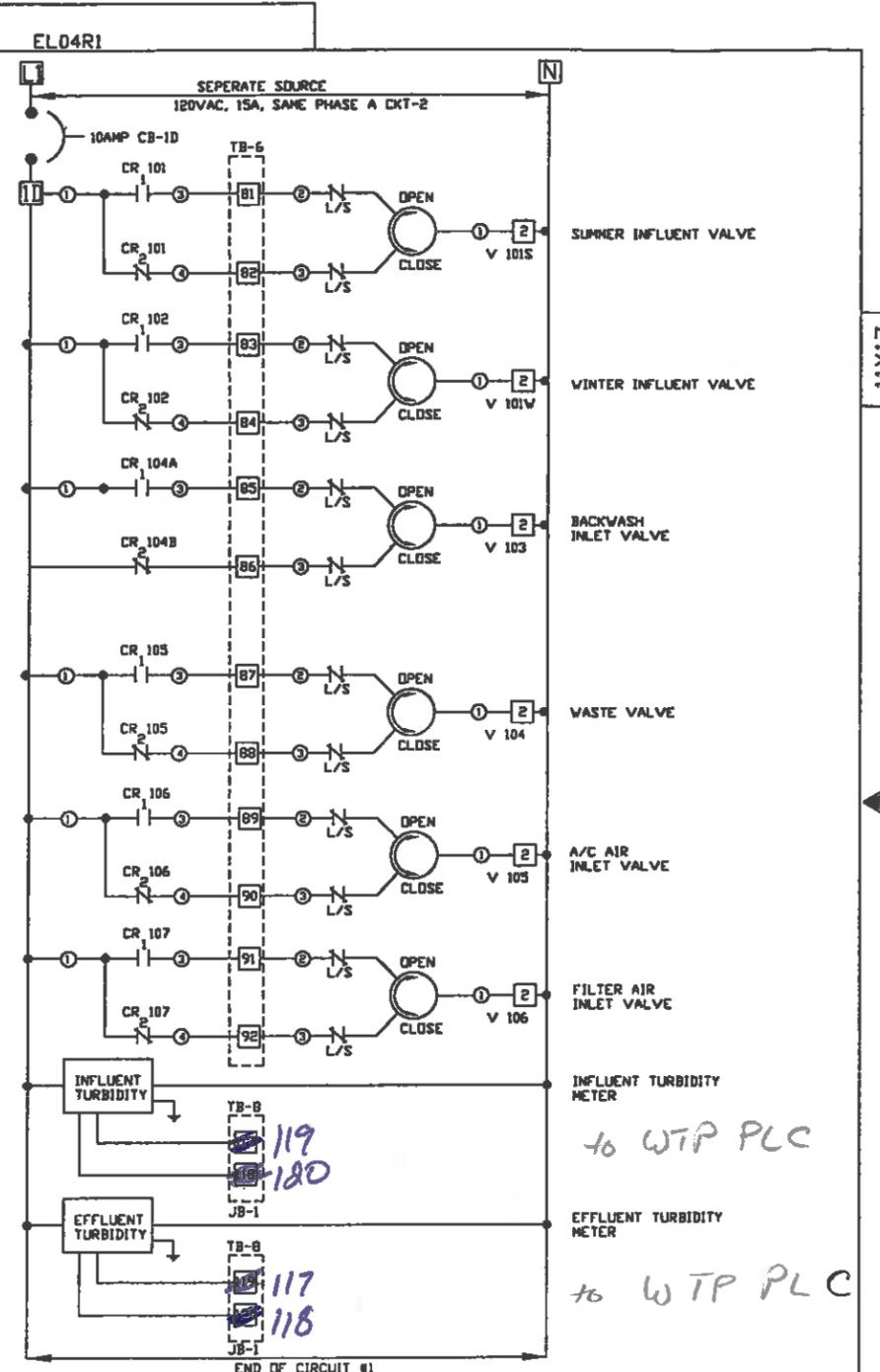
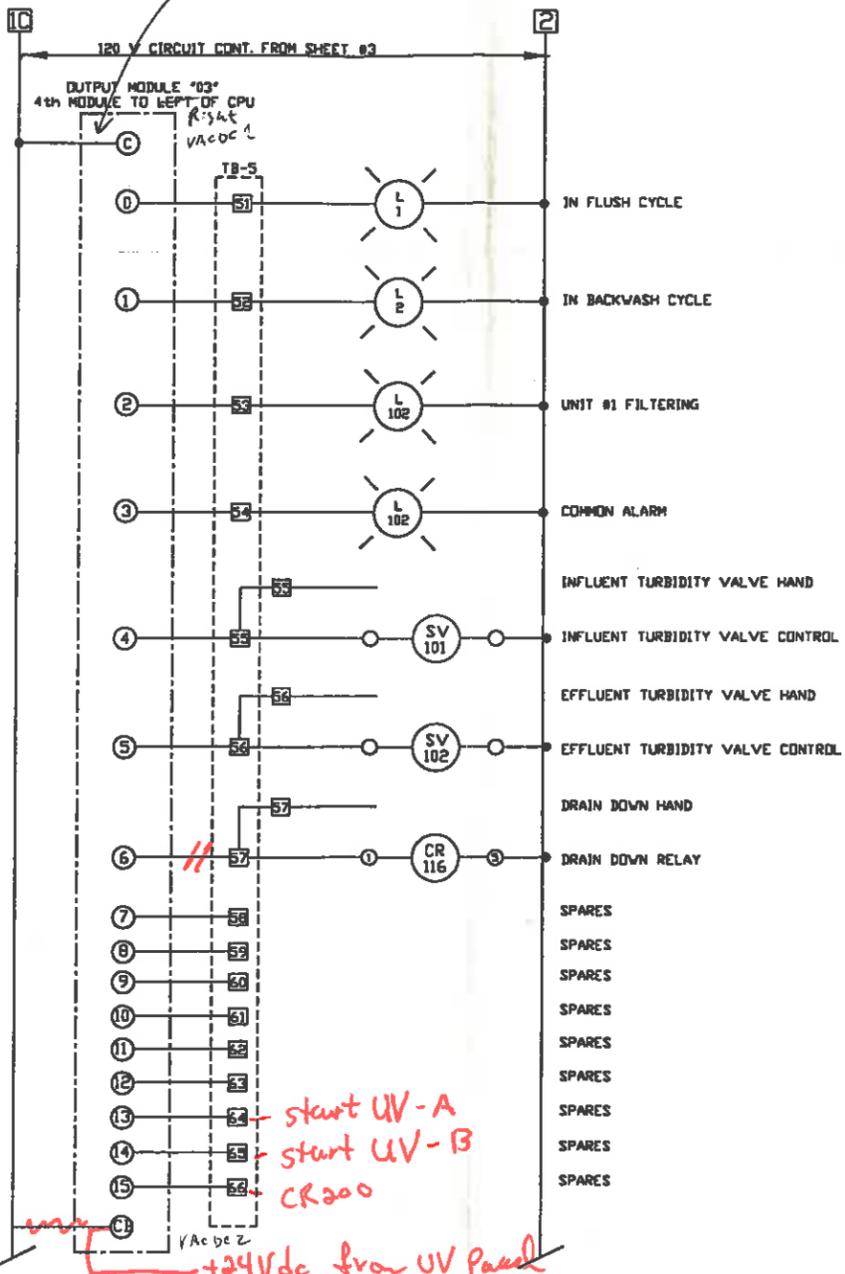
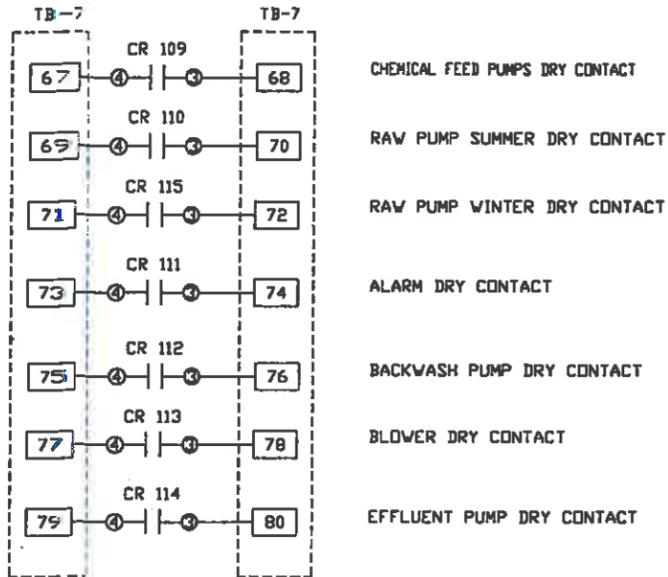
EL03R1

CIRCUIT CONT. ON SHEET #3

NO.	REVISION	DATE	DRN	CHKD	APPD	<p>COMPANY CONFIDENTIAL THIS DRAWING OR PRINT IS THE PROPERTY OF UNITED STATES FILTER CORPORATION AND IS SUBJECT TO THE RETURN ON REQUEST. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO THAT CORPORATION AND ITS SUBSIDIARIES AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE PRINT IS EXPRESSLY LOANED. THEY MUST NOT BE DISCLOSED, REPRODUCED OR OTHERWISE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF UNITED STATES FILTER CORPORATION. ALL PATENT RIGHTS ARE RESERVED UNLESS THEY ARE SPECIFICALLY ASSIGNED IN WRITING.</p>	DRAWN	DATE	TITLE		
R4	AS BUILT	12/05/98					SM	08/27/98	ELECTRICAL SCHEMATIC		
R3	CHANGE TO 16 BIT OUTPUT	10/26/98					CHECKED		CLIENT PRINCE ALBERT NAT. PARK WTP		
R2	REVISIONS & LEVEL CONTROLLER	10/06/98					APPROVED		U.S. FILTER PETWA		
						APPROVED					
						SCALE	NTS	PROJECT NO. 0021M2CA	DRAWING NO. EL-03	SHT NO. 3 OF 4	REV R4



11X17



See marked up copy in panel
 Added
 1746-IA16
 1746-N104I

NO.	REVISION	DATE	DRN	CHKI	APPD
R4	AS BUILT	12/05/98			
R3	16 BIT OUTPUT & ADDITION OF PID CONTROLLER	10/23/98			
R2	REVISIONS & LEVEL CONTROLLER	10/06/98			

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DRAWN SM	DATE 08/27/98	TITLE ELECTRICAL SCHEMATIC
CHECKED		CLIENT PRINCE ALBERT NAT. PARK WTP
APPROVED		
APPROVED		
SCALE NTS	PROJECT NO. 0021M2CA	DRAWING NO. EL-04
	SHT NO. 4 OF 4	REV R4



Project No.: _____ File: _____

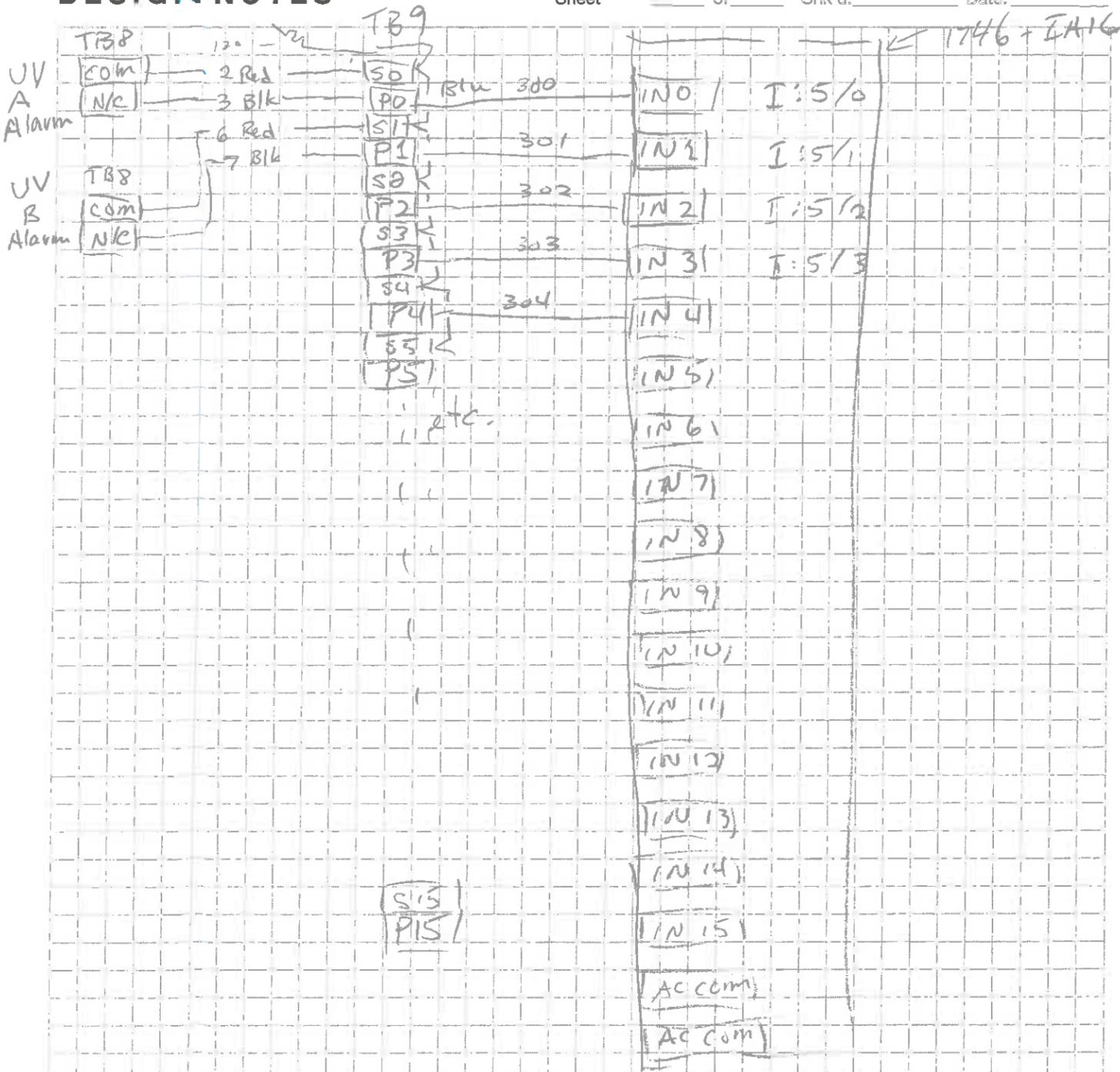
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Subject: slot 5 module.

By: _____ Date: _____

Sheet _____ of _____ Chk'd: _____ Date: _____

DESIGN NOTES



Project No.: _____ File: _____

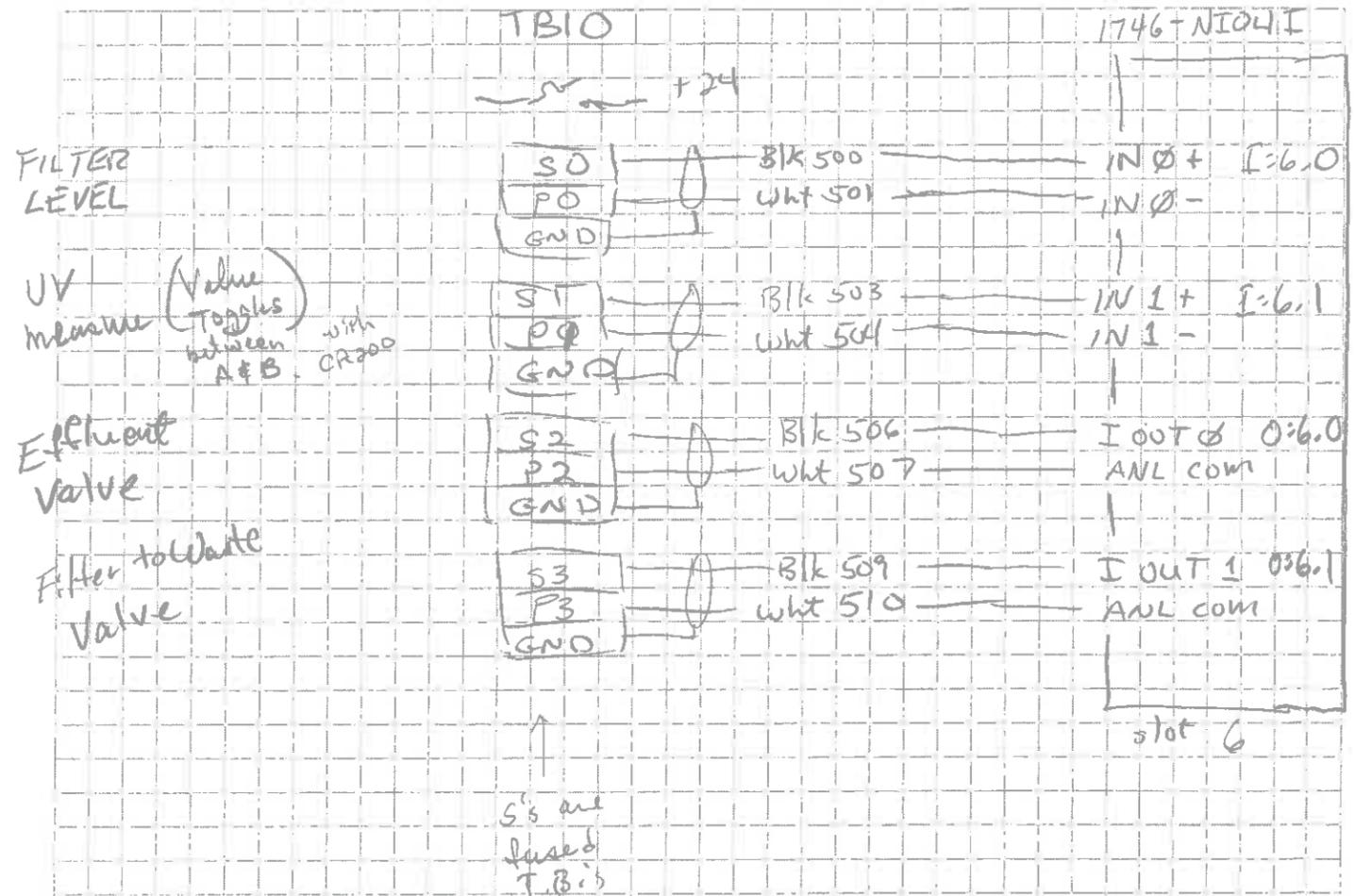
Client: US-FILTER PETWA PLC

Subject: slot 6 module

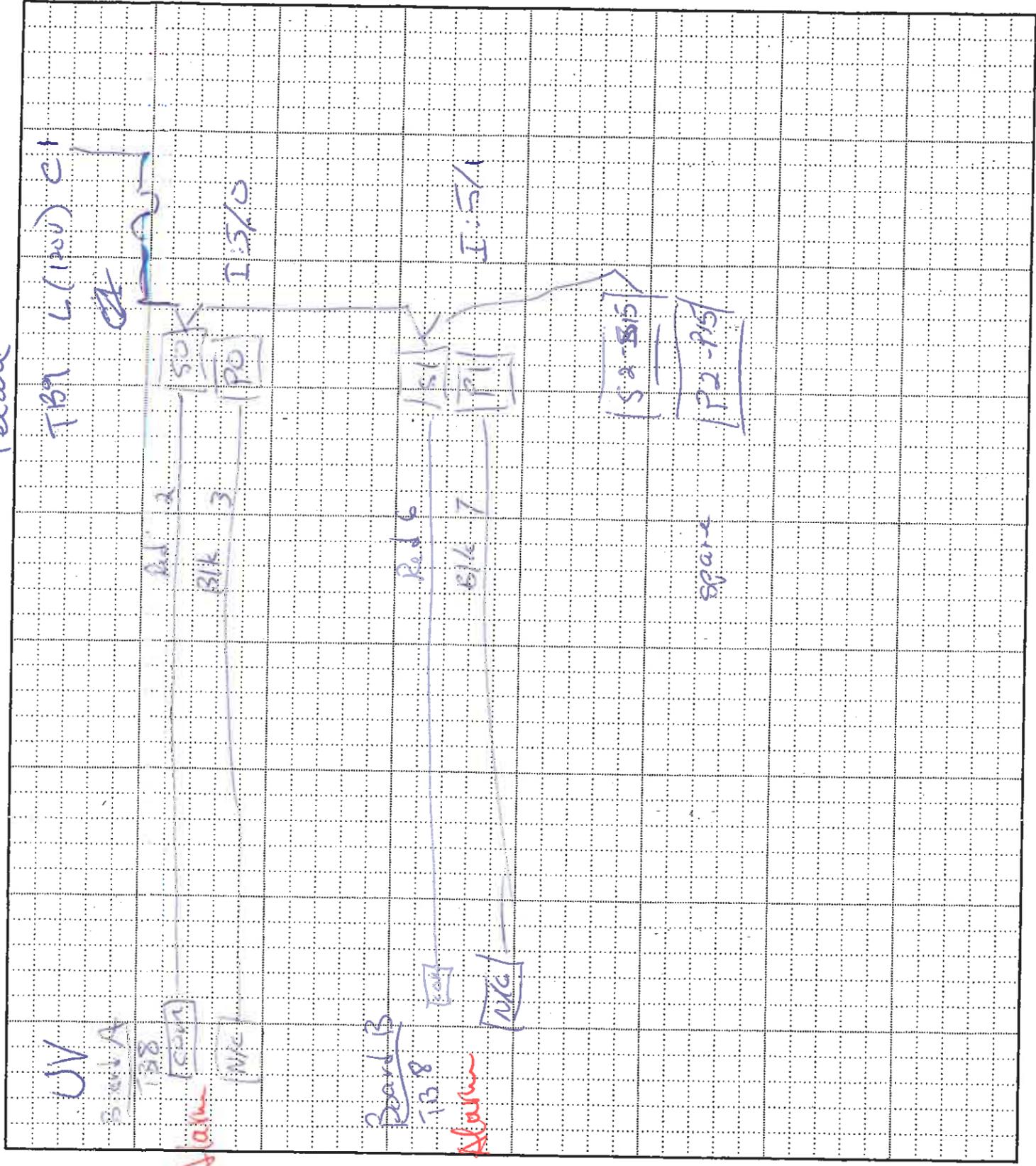
By: _____ Date: _____

Sheet _____ of _____ Chk'd: _____ Date: _____

DESIGN NOTES



Petwa



UV TB1 L(120V) CT

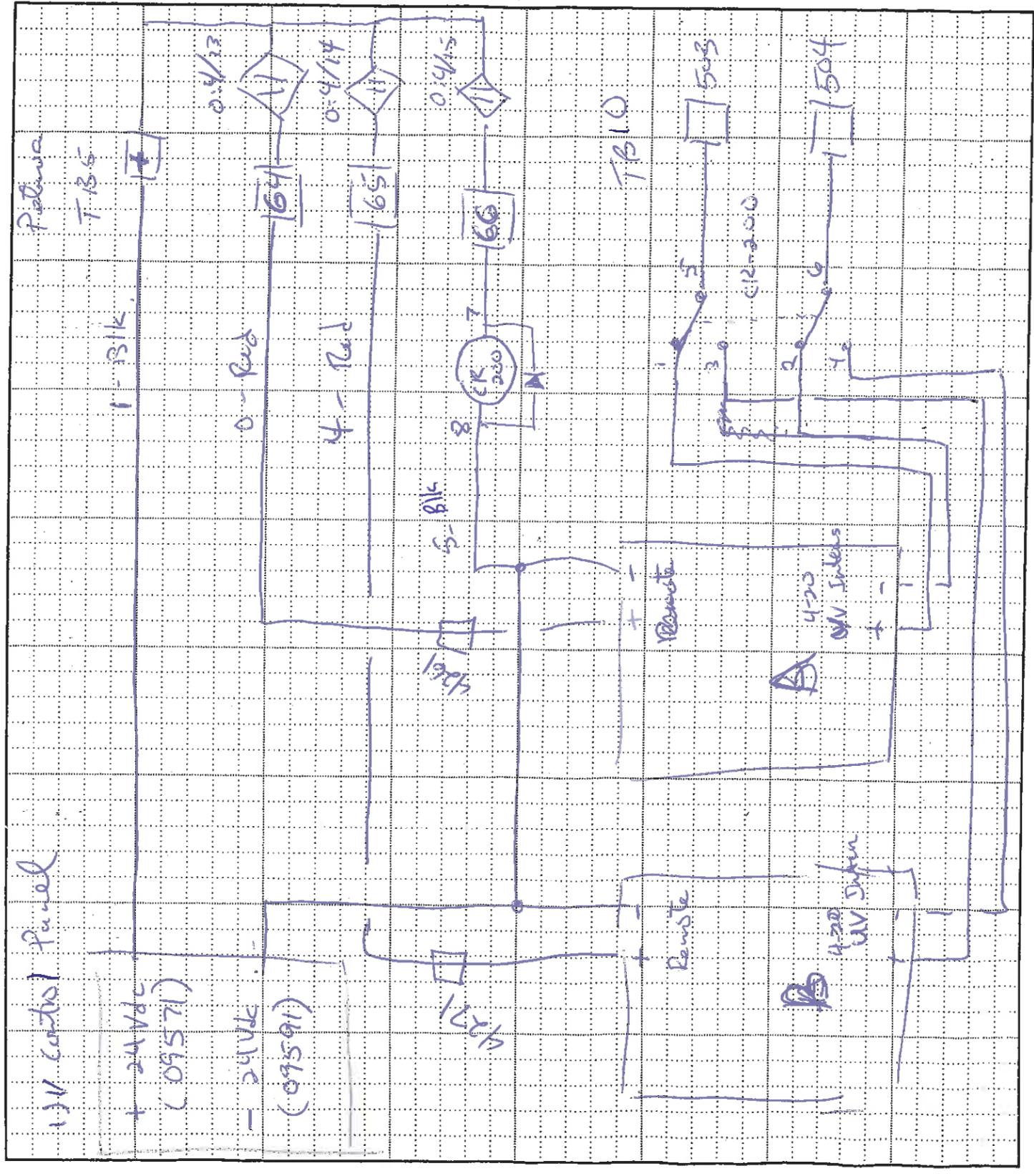
Board A

Alarm

Board B

Alarm

Spare



12V control panel

+ 24Vdc (09560)

- 24Vdc (09560)

4271

4272

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4393

4394

4395

4396

4397

4398

4399

4400

Reset

4200 UV Duplex

4200 UV Duplex

TB10

503

504

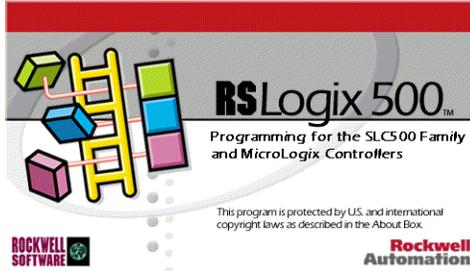
24V S.S

CONTRACT DOCUMENTS



Appendix E - Memcor Membrane Treatment - PLC & HMI Listings and Control Panel Drawings

RSLogix500 Project Report



WASKASU.RSS

Processor Information

Processor Type: 1747-L532C/D 5/03 CPU - 16K Mem. OS302

Processor Name: WASKASU

Total Memory Used: 4578 Instruction Words Used - 9522 Data Table Words Used

Total Memory Left: 966 Instruction Words Left

Program Files: 23

Data Files: 87

Program ID: 30a6

WASKASU.RSS

I/O Configuration

0	1747-L532C/D	5/03 CPU - 16K Mem. OS302
1	1746-IB16	16-Input (SINK) 24 VDC
2	1746-OW16	16-Output (RLY) 240 VAC
3		
4	1746-NI4	Analog 4 Channel Input Module
5	1746-NI4	Analog 4 Channel Input Module
6		

WASKASU.RSS
PID Configuration

WASKASU.RSS

Channel Configuration

GENERAL

Channel 1 Write Protected: No
Channel 1 Edit Resource/Owner Timeout(x1 sec): 60
Channel 1 Passthru Link ID(dec): 2

Channel 0 Write Protected: No
Channel 0 Edit Resource/Owner Timeout(x1 sec): 60
Channel 0 Passthru Link ID(dec): 1
Channel 0 Current Mode: System
Channel 0 Mode Change Enabled: No
Channel 0 Mode Change Attention Character: \lb
Channel 0 Mode Change System Character: S
Channel 0 Mode Change User Character: U

CHANNEL 1 (SYSTEM) - Driver: DH485
Node : 5 (decimal)
Baud: 19200
Token Hold Factor: 1
Max Node Address: 10

CHANNEL 0 (SYSTEM) - Driver: DH485
Node : 11 (decimal)
Baud: 19200
Token Hold Factor: 3
Max Node Address: 31

CHANNEL 0 (USER) - Driver: ASCII
Baud: 1200
Parity: NONE
Stop Bits: 1
Data Bits: 8
Control Line : No Handshaking
Delete mode: Ignore
Echo: No
XON/XOFF: No
Termination Character 1: \d
Termination Character 2: \ff
Append Character 1: \d
Append Character 2: \a

WASKASU.RSS

Program File List

Name	Number	Type	Rungs	Debug	Bytes
[SYSTEM]	0	SYS	0	No	0
	1	SYS	0	No	0
	2	LADDER	39	No	678
	3	LADDER	14	No	572
	4	LADDER	45	No	2592
	5	LADDER	15	No	538
	6	LADDER	28	No	1668
	7	LADDER	11	No	881
	8	LADDER	8	No	466
	9	LADDER	49	No	1709
	10	LADDER	15	No	369
	11	LADDER	70	No	2760
	12	LADDER	26	No	872
	13	LADDER	31	No	1073
	14	LADDER	18	No	520
	16	LADDER	15	No	422
	17	LADDER	63	No	2752
	18	LADDER	18	No	488
	19	LADDER	72	No	2736
	20	LADDER	26	No	733
	21	LADDER	23	No	885
	22	LADDER	34	No	759
	26	LADDER	72	No	2966

WASKASU.RSS

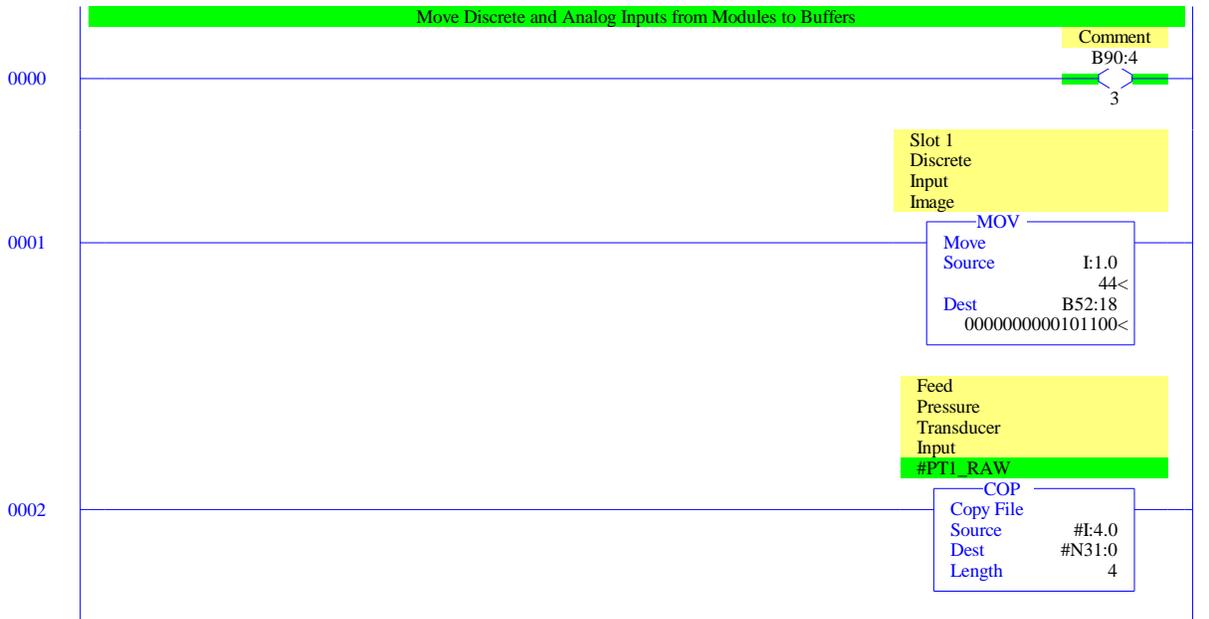
Data File List

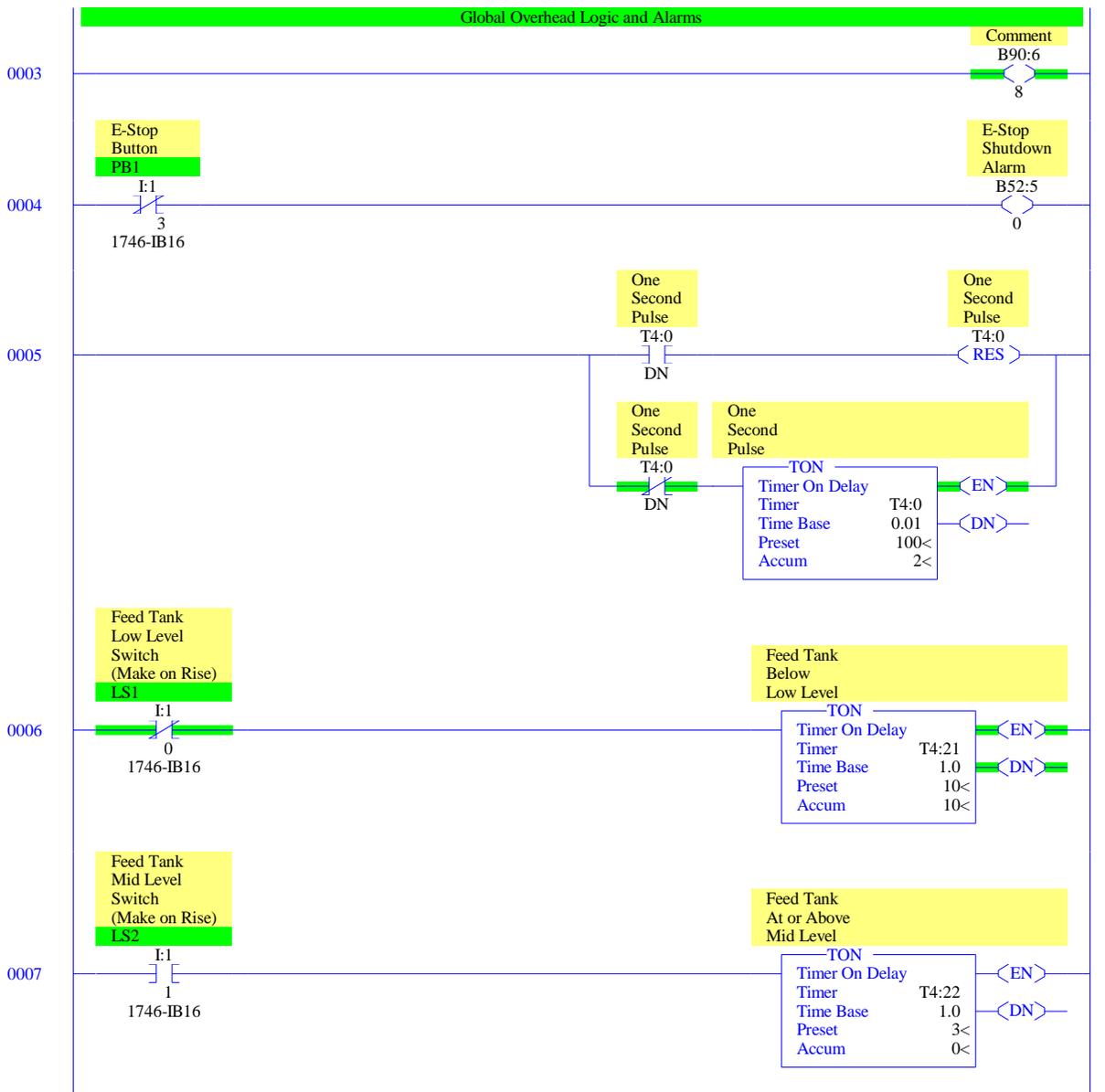
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OUTPUT	0	O	Global	No	3	1	O:0
INPUT	1	I	Global	No	27	9	I:8
STATUS	2	S	Global	No	0	83	S:82
	3	B	Global	No	11	11	B3:10
	4	T	Global	No	93	31	T4:30
	5	C	Global	No	108	36	C5:35
CONTROL	6	R	Global	No	3	1	R6:0
	7	N	Global	No	15	15	N7:14
	8	F	Global	No	76	38	F8:37
	10	B	Global	No	3	3	B10:2
	11	B	Global	No	3	3	B11:2
	12	B	Global	No	3	3	B12:2
	13	B	Global	No	3	3	B13:2
	14	B	Global	No	3	3	B14:2
	15	B	Global	No	3	3	B15:2
	16	B	Global	No	3	3	B16:2
	17	B	Global	No	4	4	B17:3
	18	B	Global	No	3	3	B18:2
	20	T	Global	No	15	5	T20:4
	21	T	Global	No	54	18	T21:17
	22	T	Global	No	36	12	T22:11
	23	T	Global	No	33	11	T23:10
	24	T	Global	No	24	8	T24:7
	25	T	Global	No	36	12	T25:11
	26	T	Global	No	15	5	T26:4
	27	T	Global	No	102	34	T27:33
	28	T	Global	No	24	8	T28:7
	30	N	Global	No	3	3	N30:2
	31	N	Global	No	40	40	N31:39
	32	F	Global	No	90	45	F32:44
	33	N	Global	No	30	30	N33:29
	34	B	Global	No	1	1	B34:0
	37	T	Global	No	27	9	T37:8
	38	N	Global	No	32	32	N38:31
	40	F	Global	No	64	32	F40:31
	41	F	Global	No	64	32	F41:31
	42	F	Global	No	64	32	F42:31
	43	F	Global	No	64	32	F43:31
	44	F	Global	No	64	32	F44:31
	45	F	Global	No	34	17	F45:16
	46	F	Global	No	2	1	F46:0
	50	F	Global	No	44	22	F50:21
	51	N	Global	No	43	43	N51:42
	52	B	Global	No	19	19	B52:18
	53	F	Global	No	10	5	F53:4
	54	N	Global	No	5	5	N54:4
	55	B	Global	No	3	3	B55:2
	56	N	Global	No	53	53	N56:52
	57	N	Global	No	20	20	N57:19
PV-METRIC	58	N	Global	No	100	100	N58:99
	61	B	Global	No	3	3	B61:2
	62	B	Global	No	21	21	B62:20
	63	N	Global	No	11	11	N63:10
	90	B	Global	No	8	8	B90:7
	100	N	Global	No	150	150	N100:149
	109	N	Global	No	40	40	N109:39
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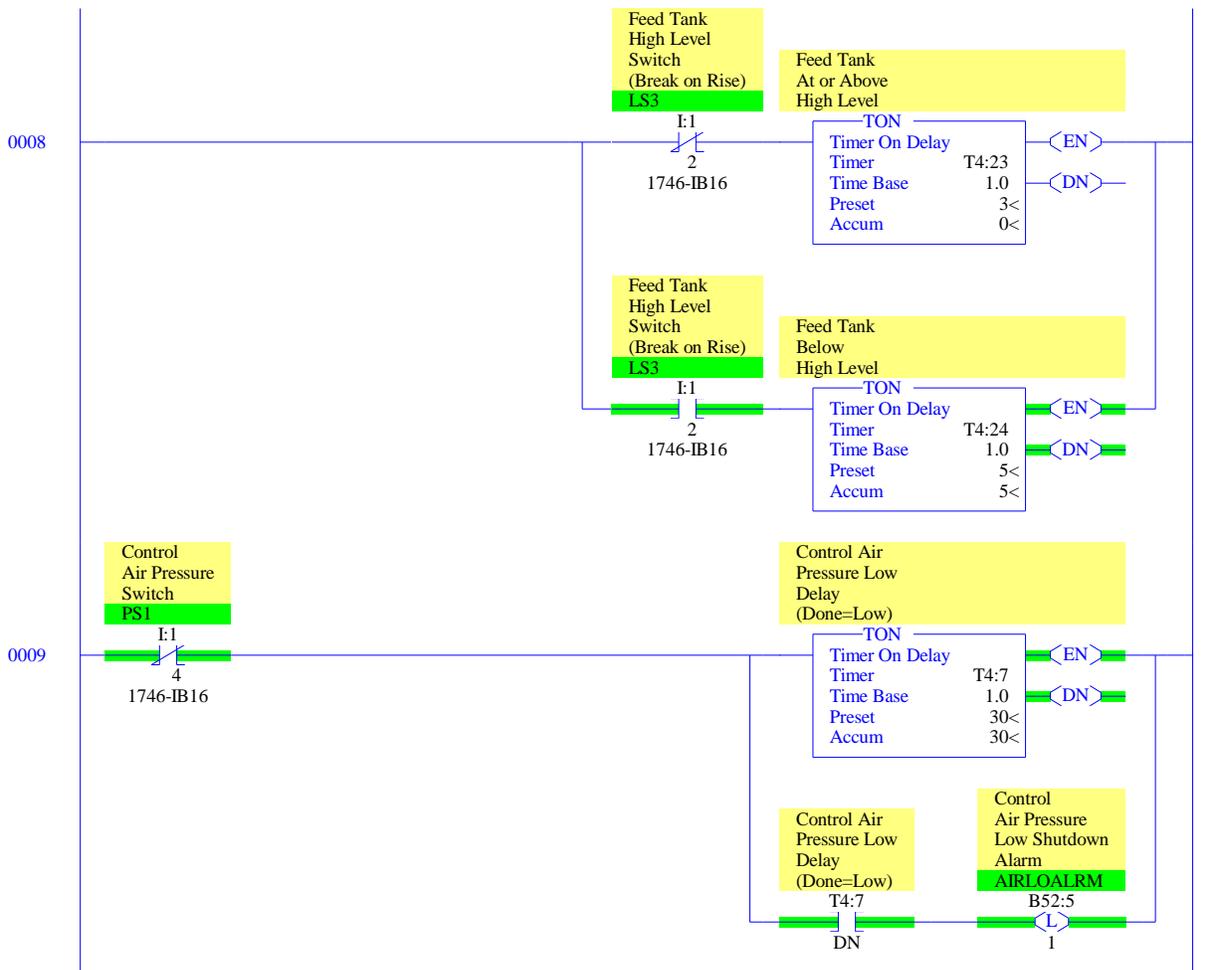
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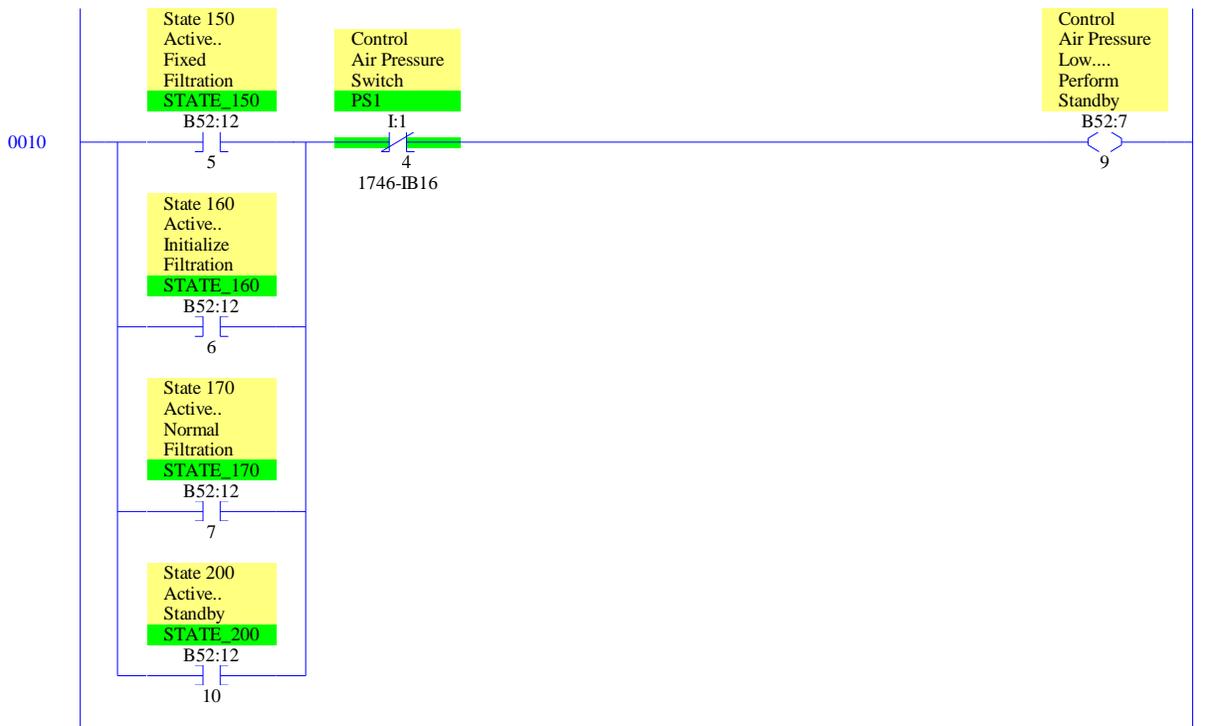
Data File List

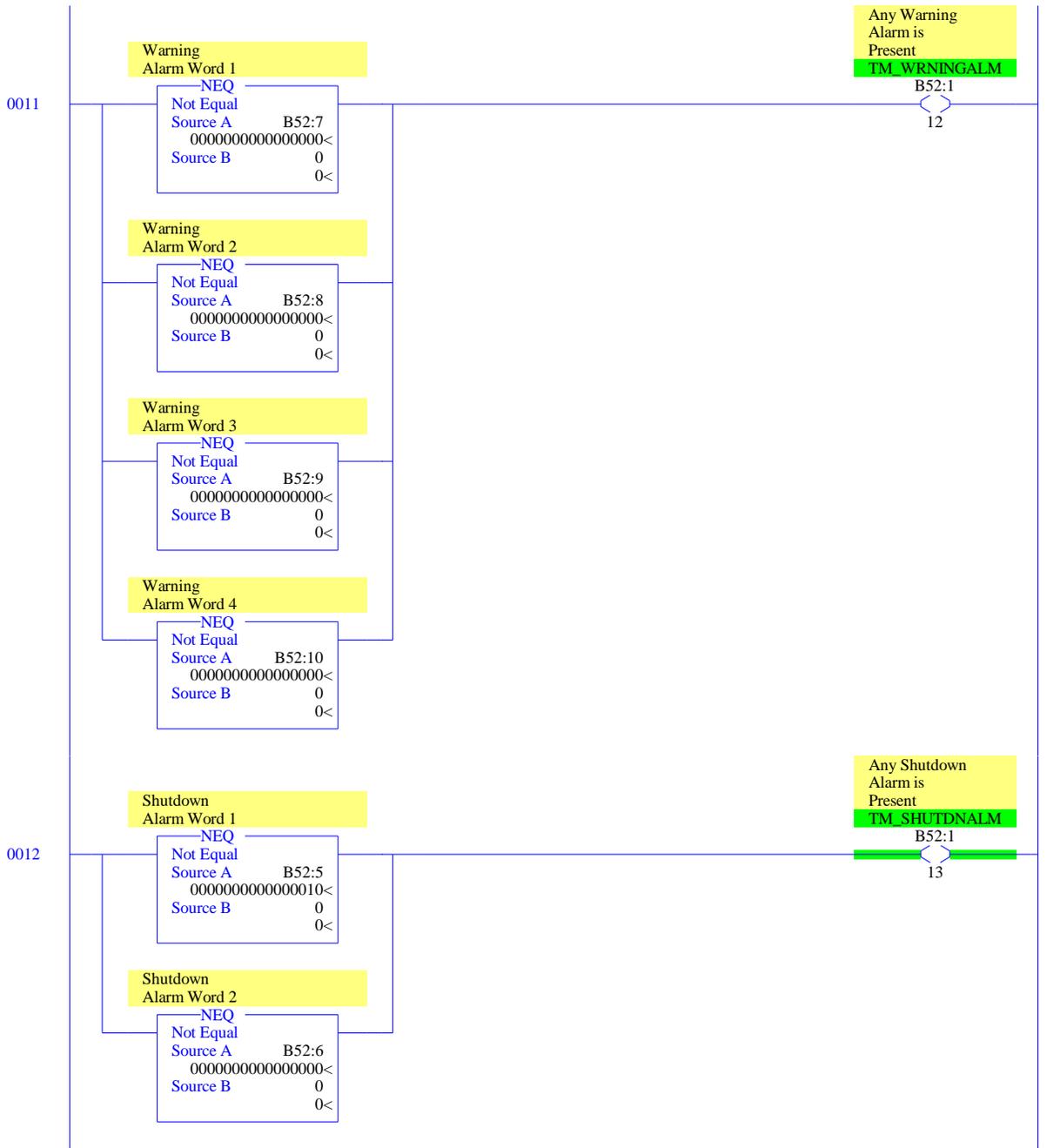
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	122	N	Global	No	256	256	N122:255
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	124	N	Global	No	256	256	N124:255
	125	N	Global	No	256	256	N125:255
	126	N	Global	No	256	256	N126:255
	127	N	Global	No	256	256	N127:255
	128	N	Global	No	256	256	N128:255
	129	N	Global	No	256	256	N129:255
	130	N	Global	No	256	256	N130:255
	131	N	Global	No	256	256	N131:255
	132	N	Global	No	256	256	N132:255
	133	N	Global	No	256	256	N133:255
	134	N	Global	No	256	256	N134:255
	135	N	Global	No	256	256	N135:255
	136	N	Global	No	256	256	N136:255
	137	N	Global	No	256	256	N137:255
	138	N	Global	No	256	256	N138:255
	139	N	Global	No	256	256	N139:255
	140	N	Global	No	30	30	N140:29

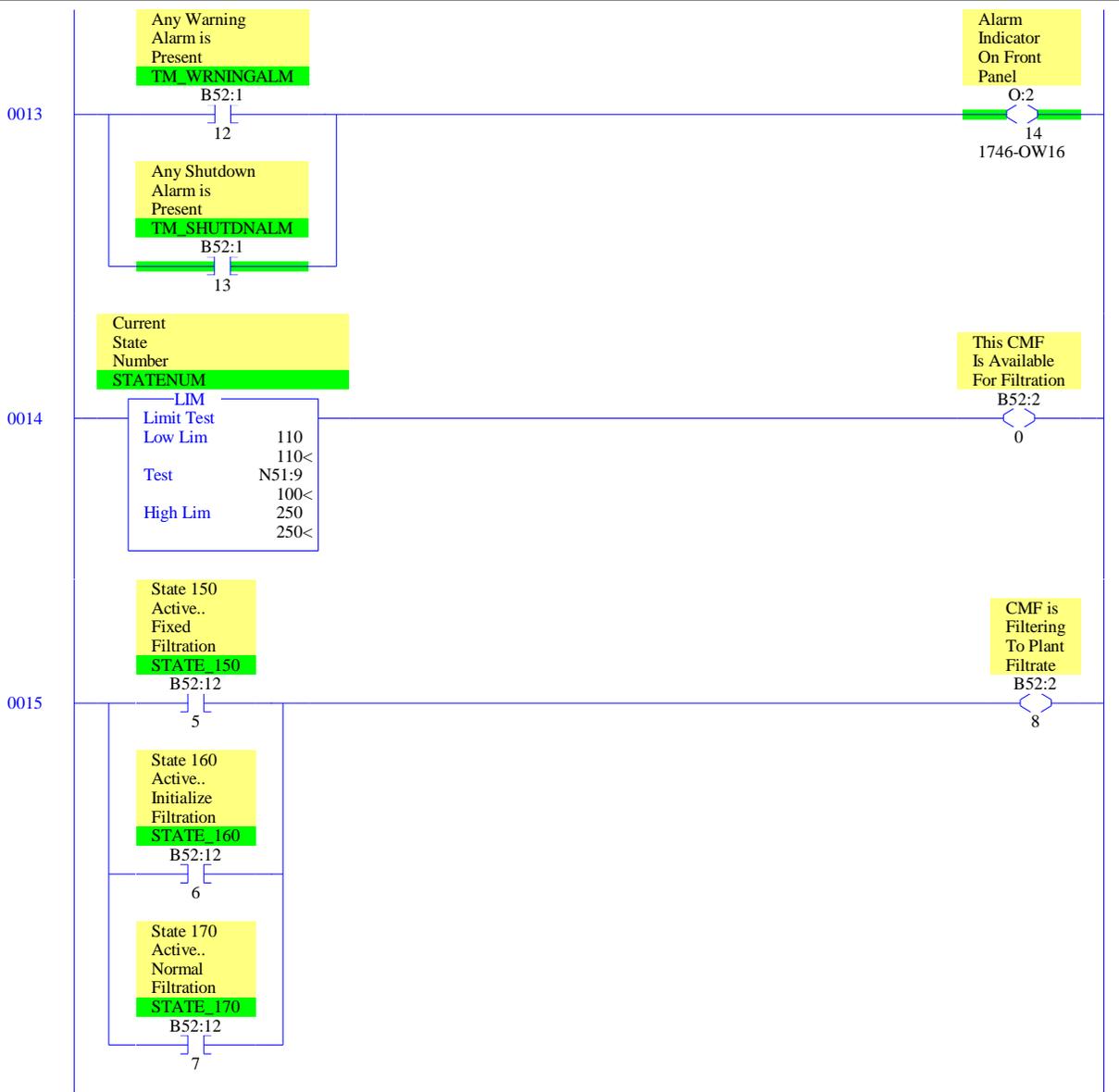










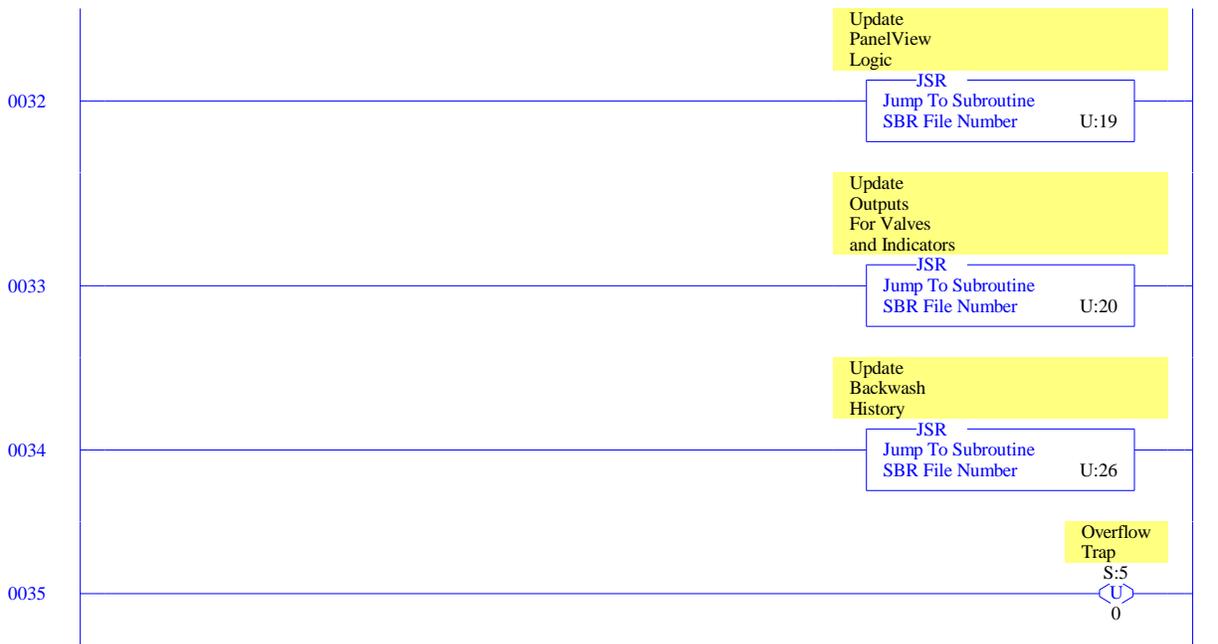


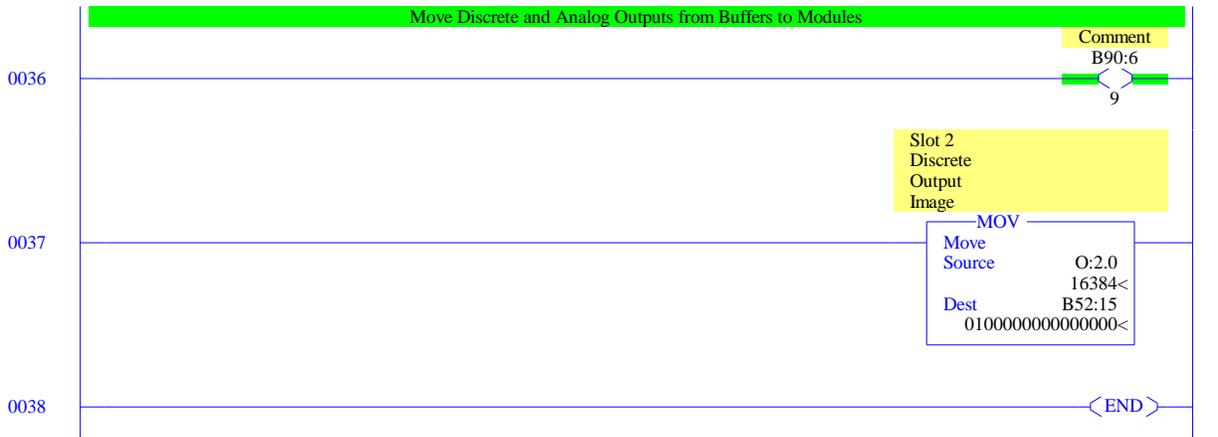


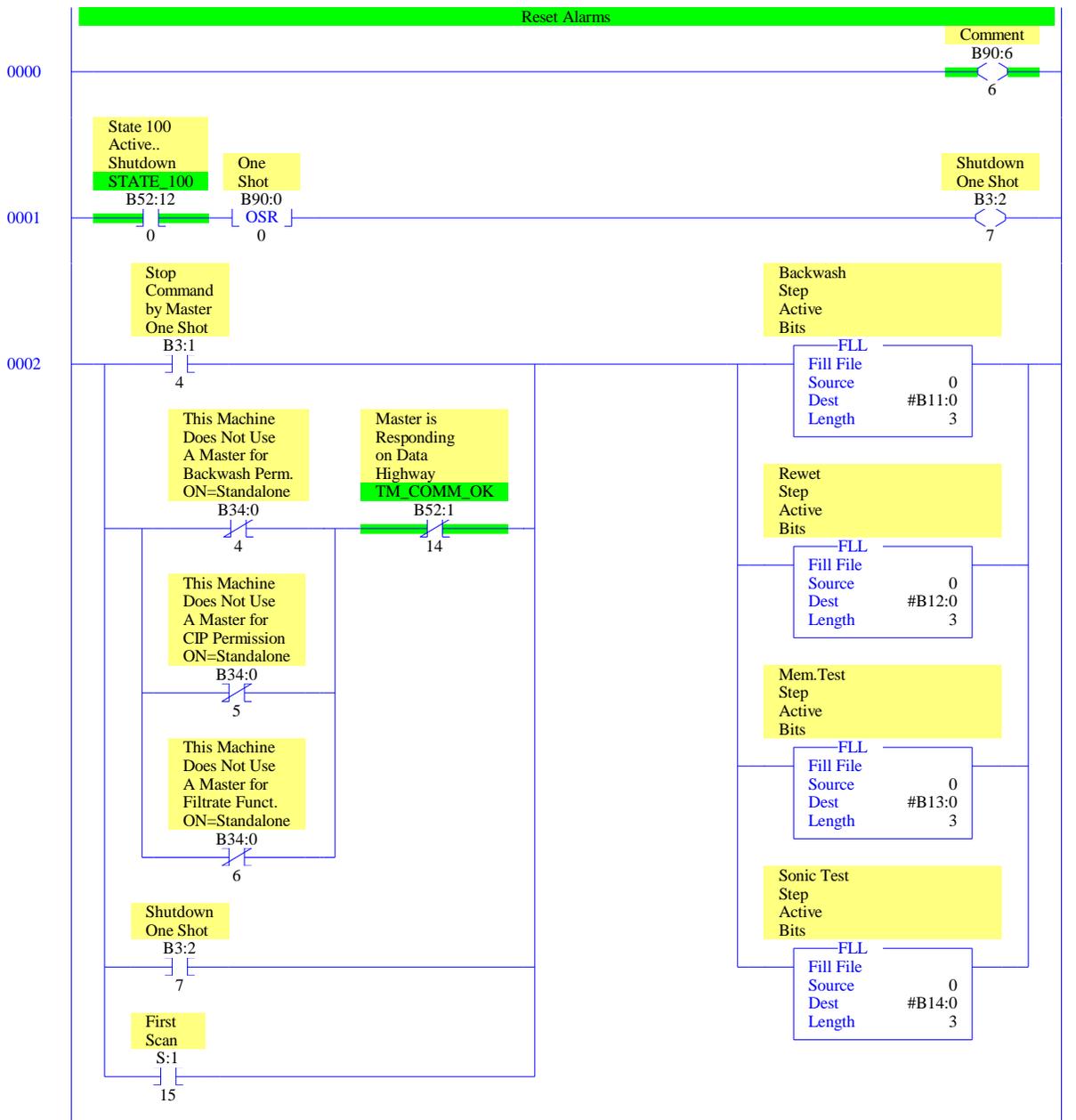
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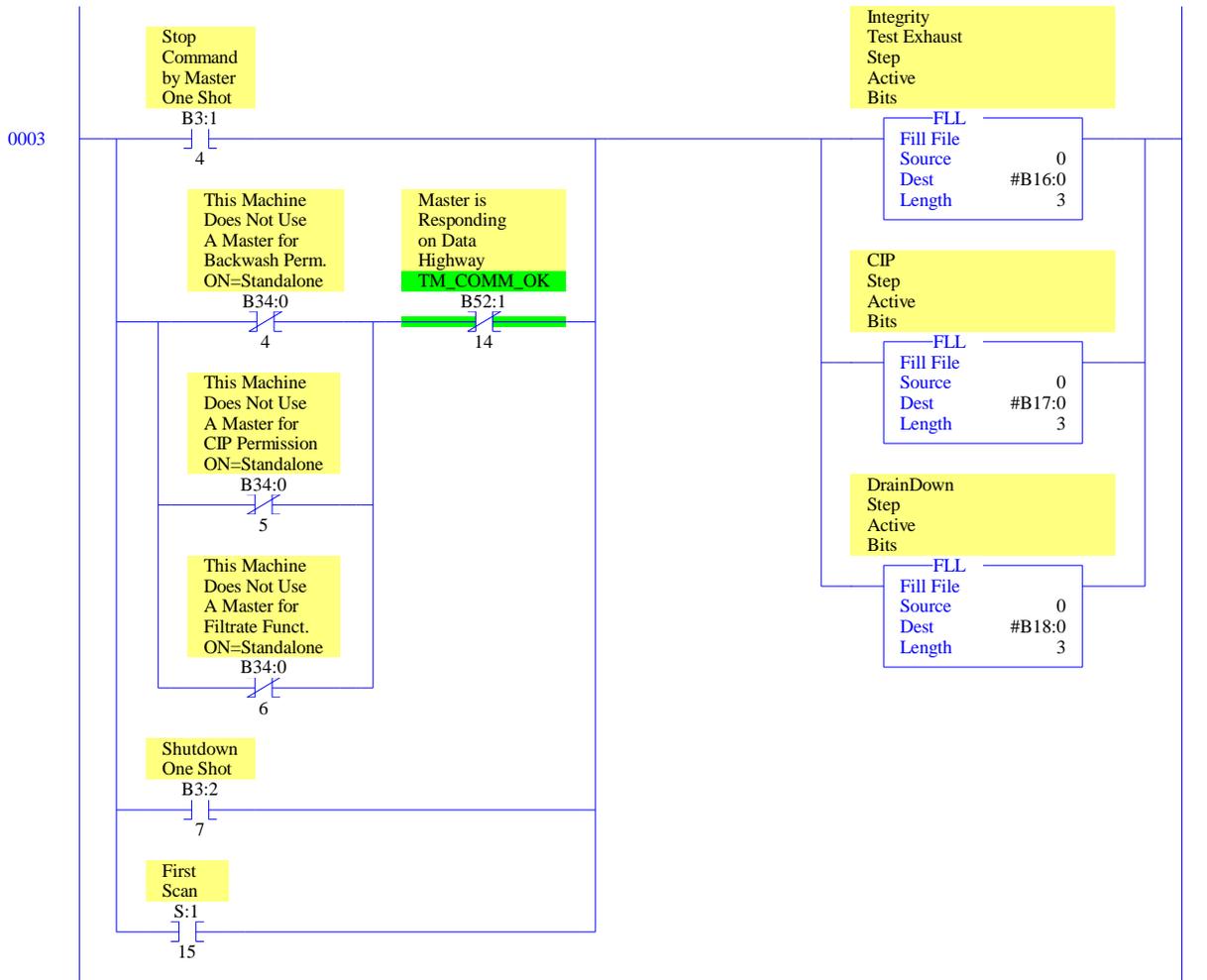
LAD 2 - - Main Program File --- Total Rungs in File = 39

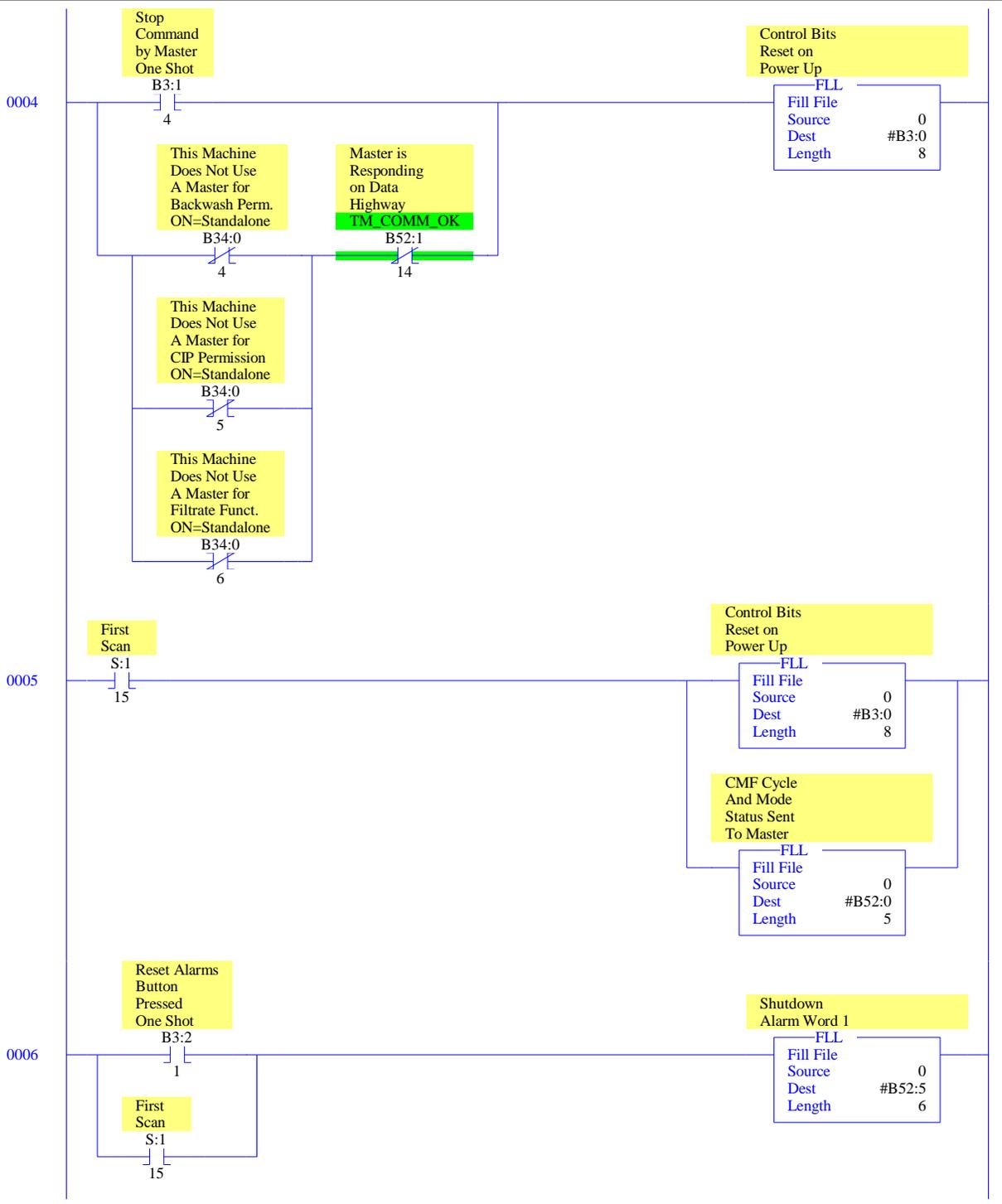


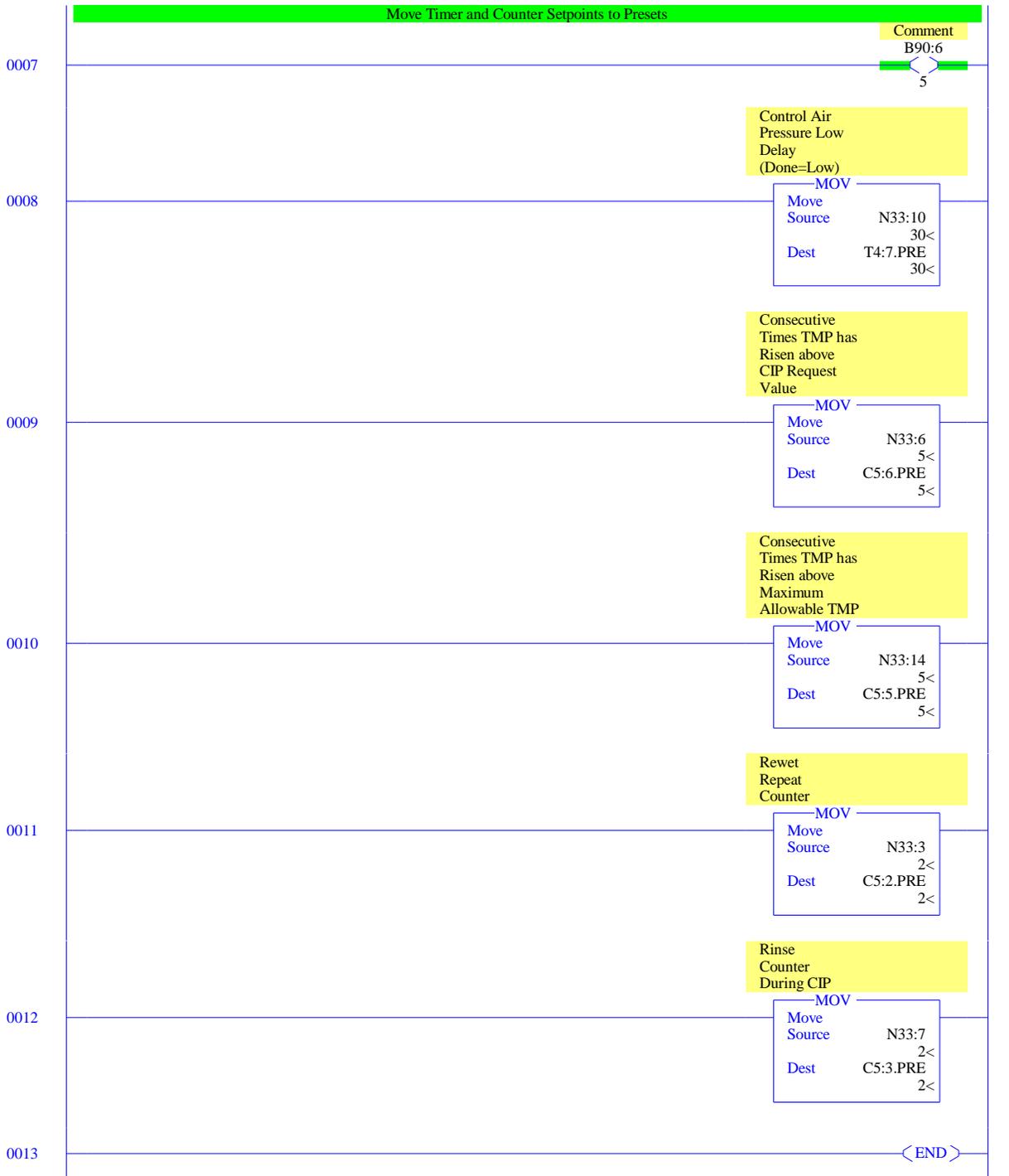


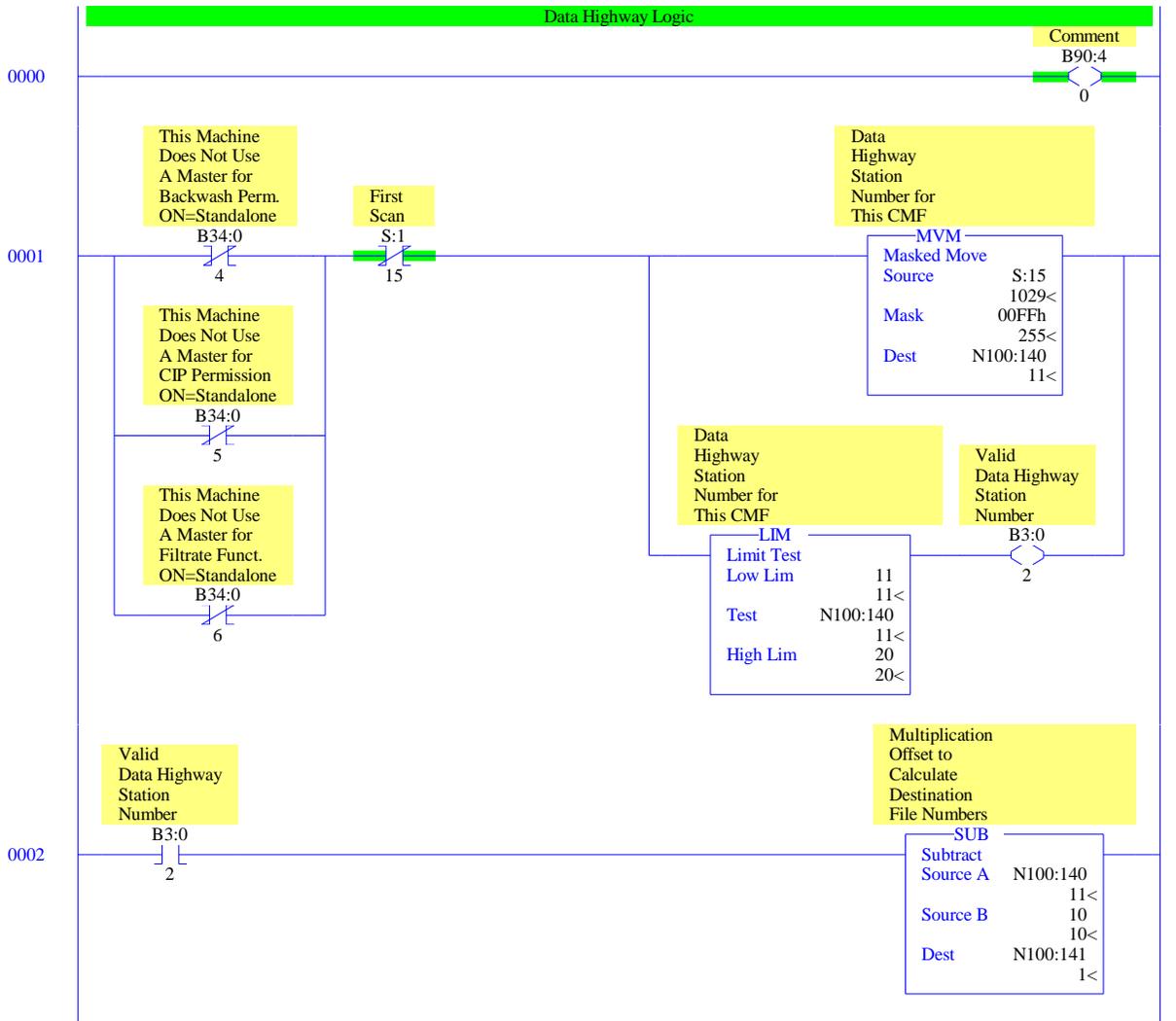


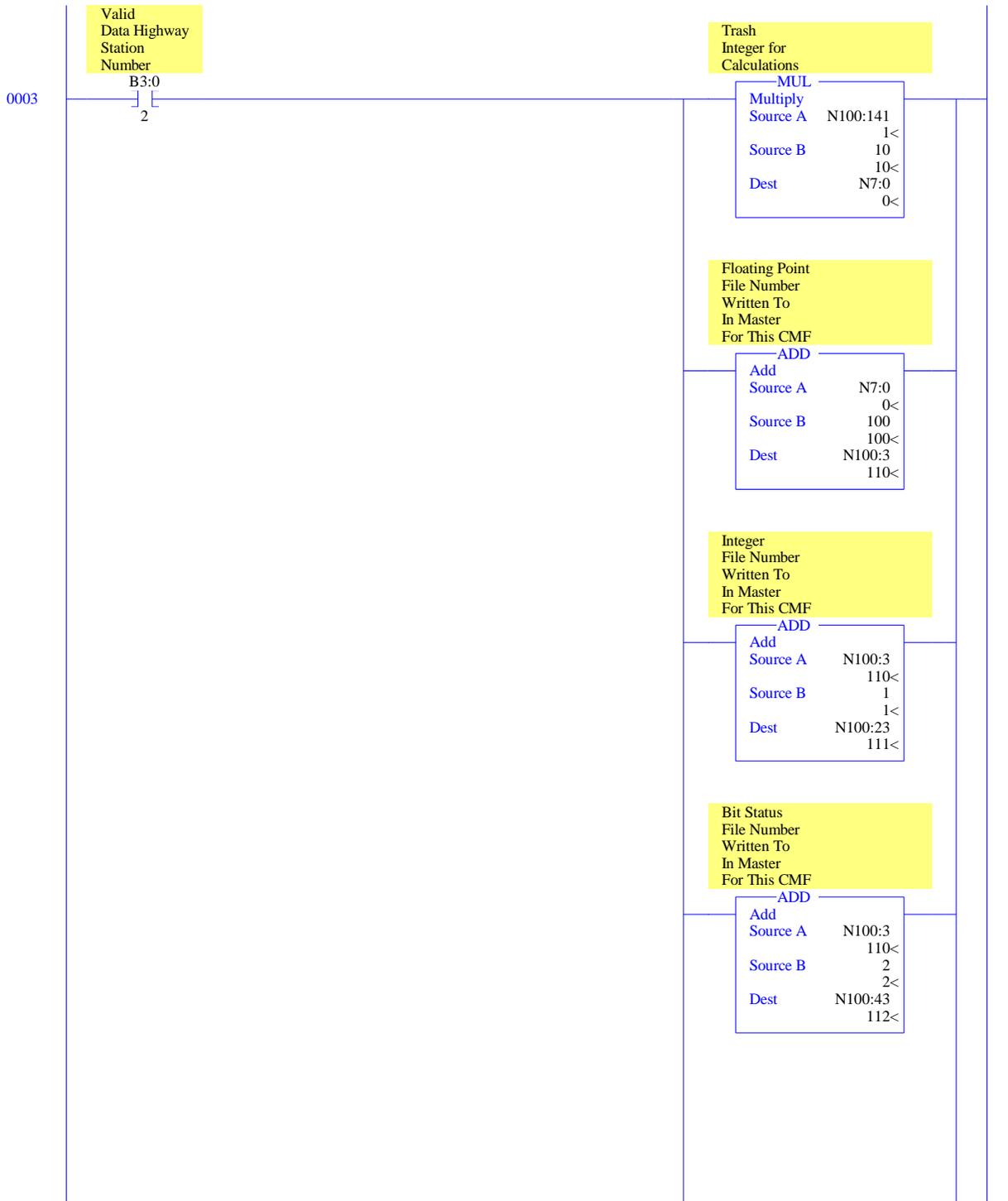


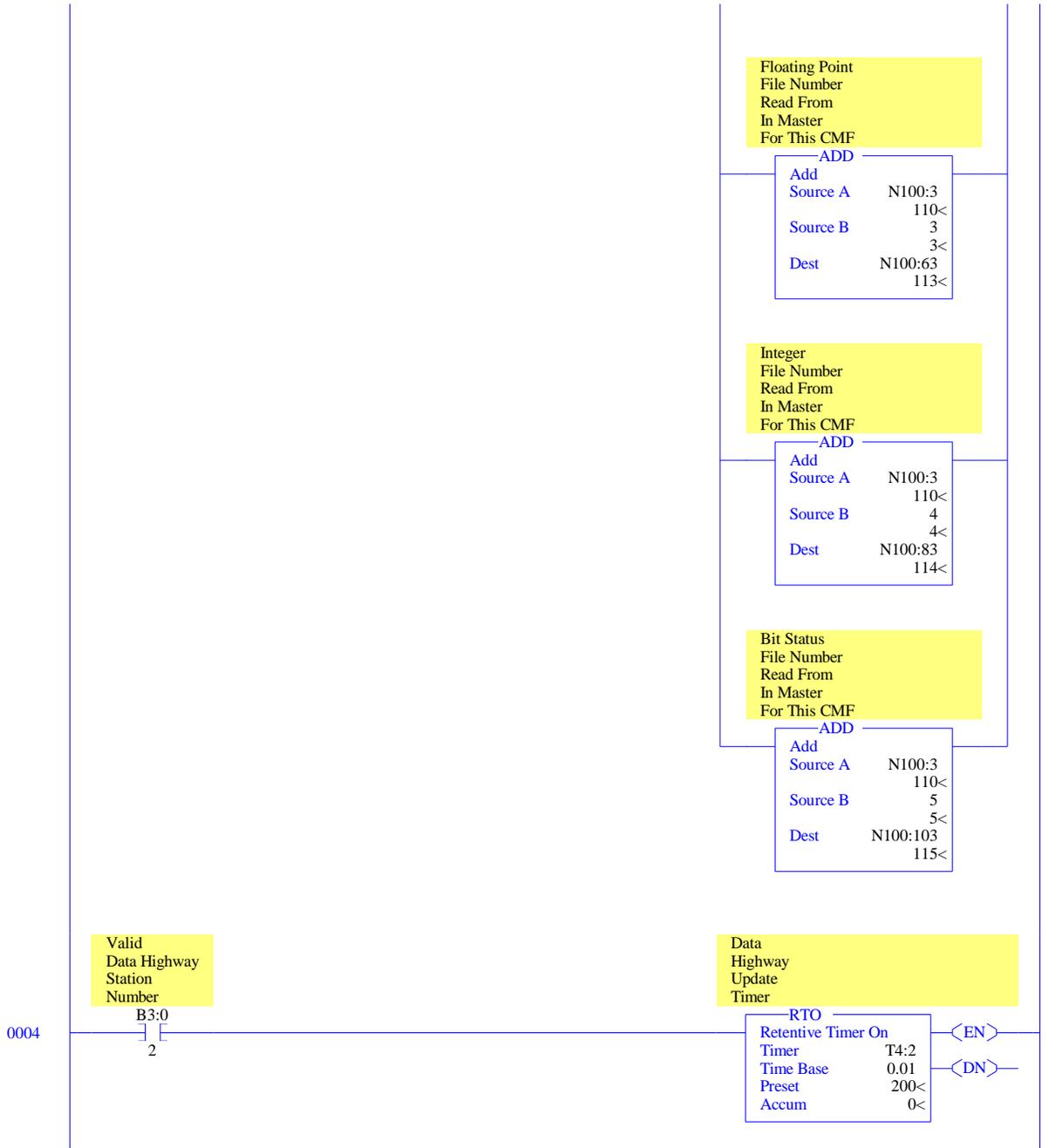


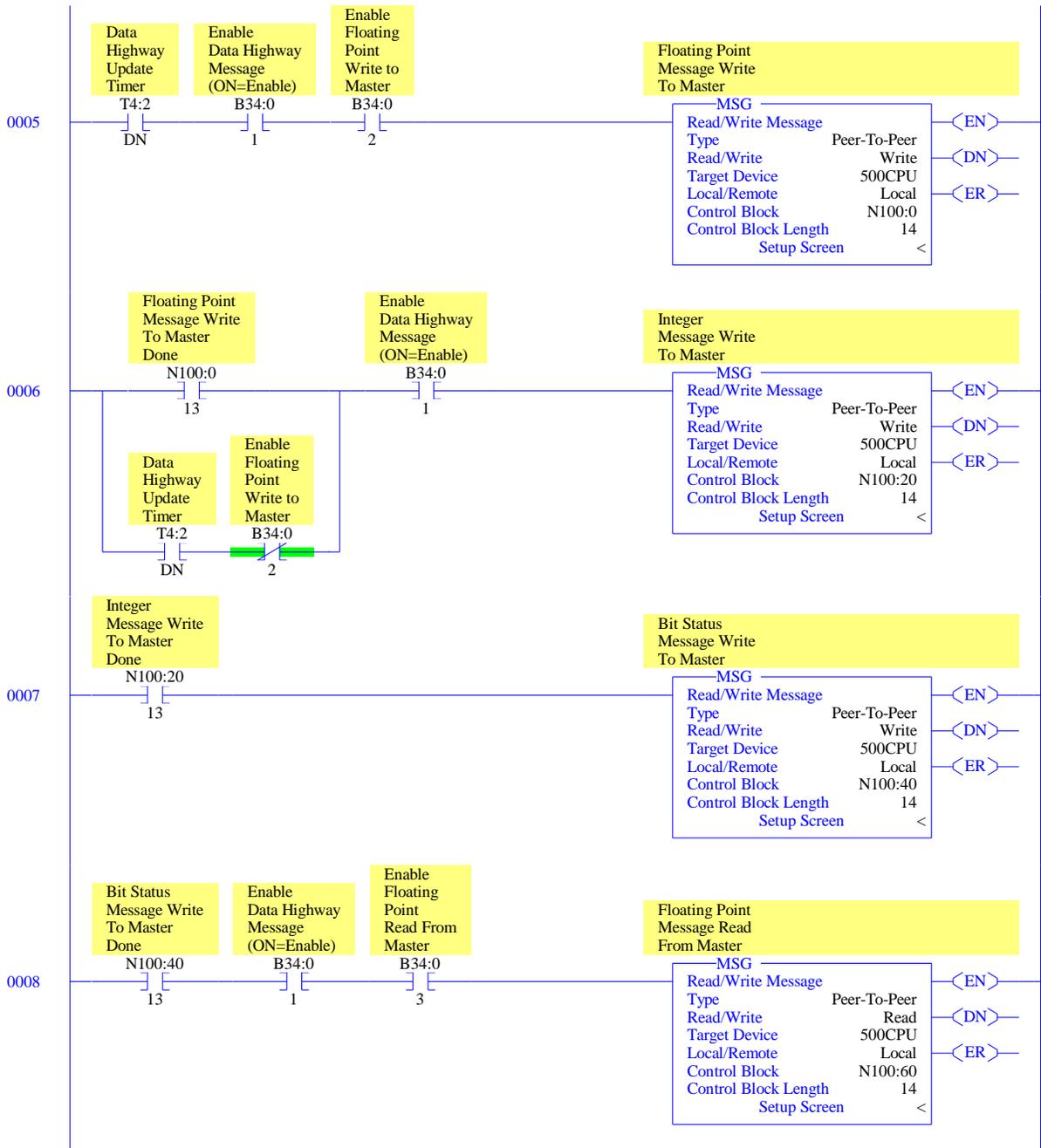


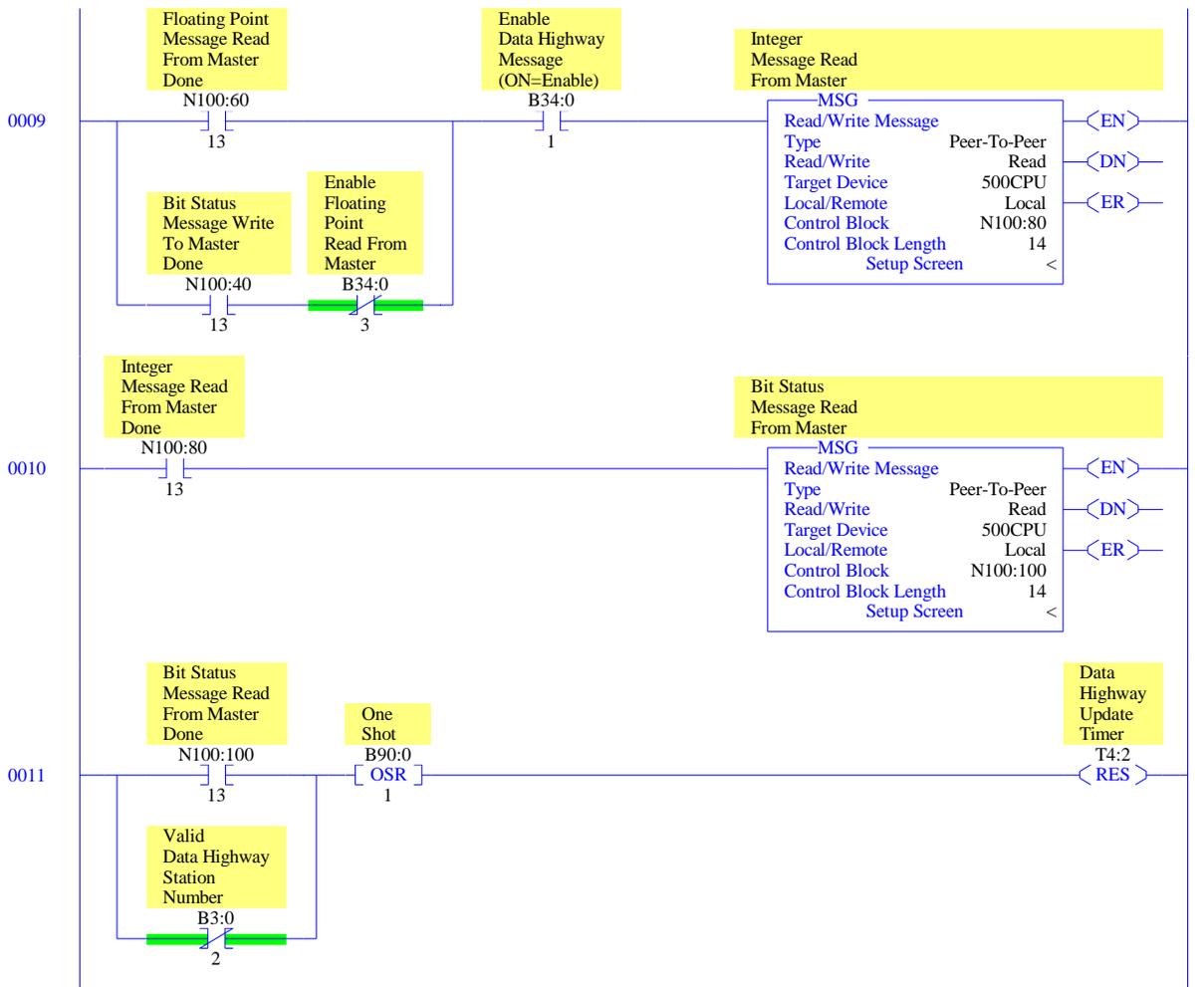


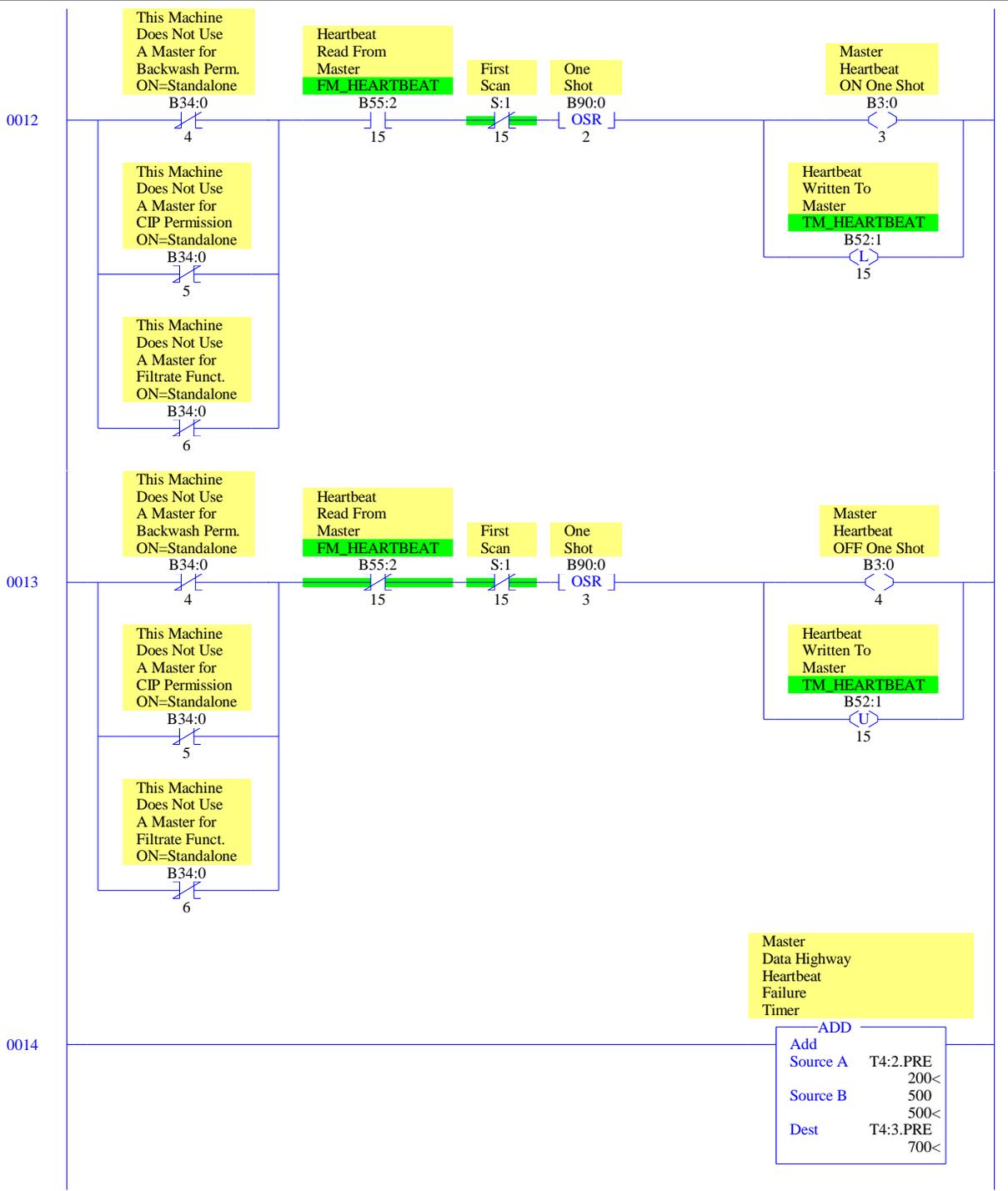


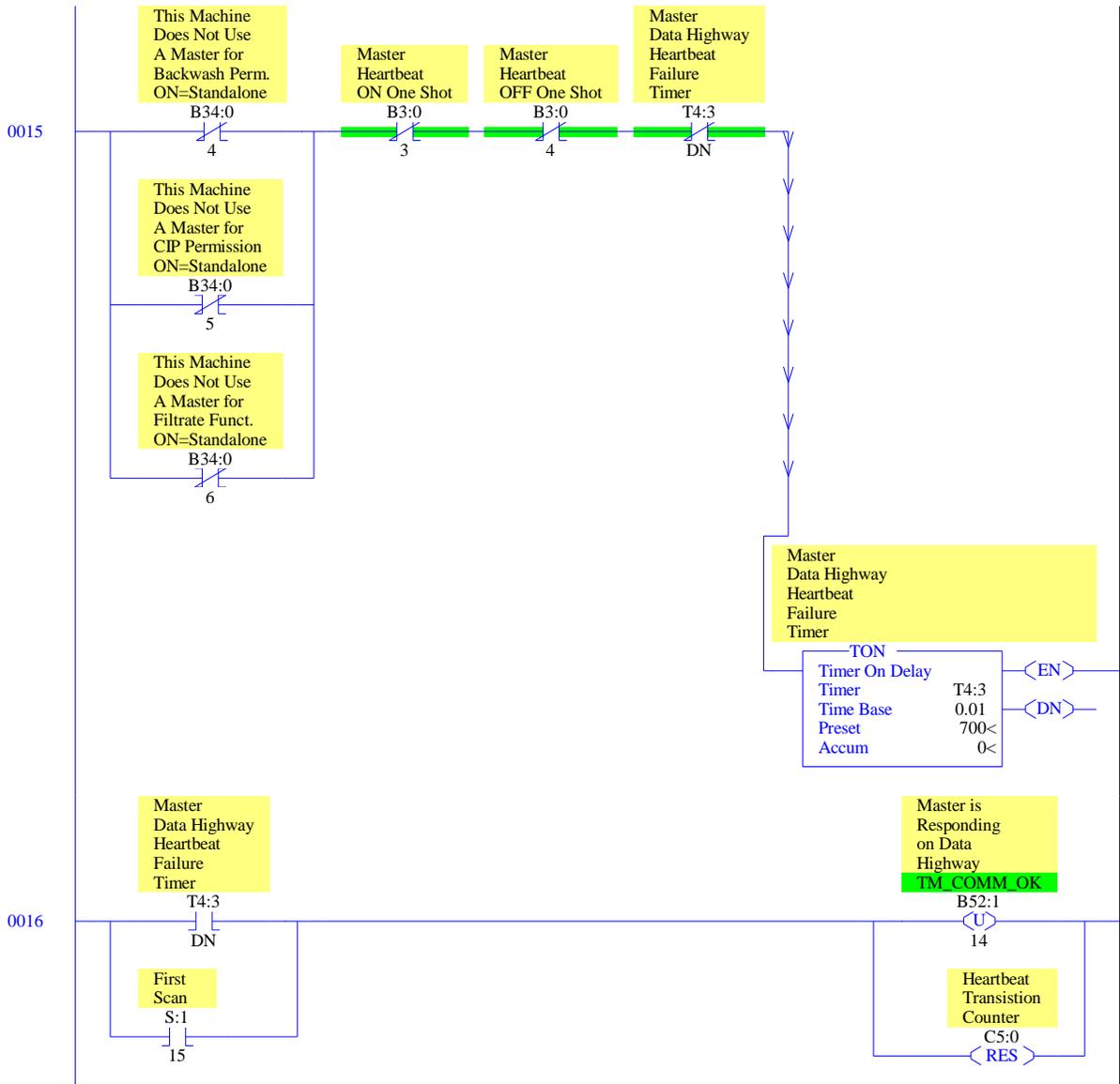


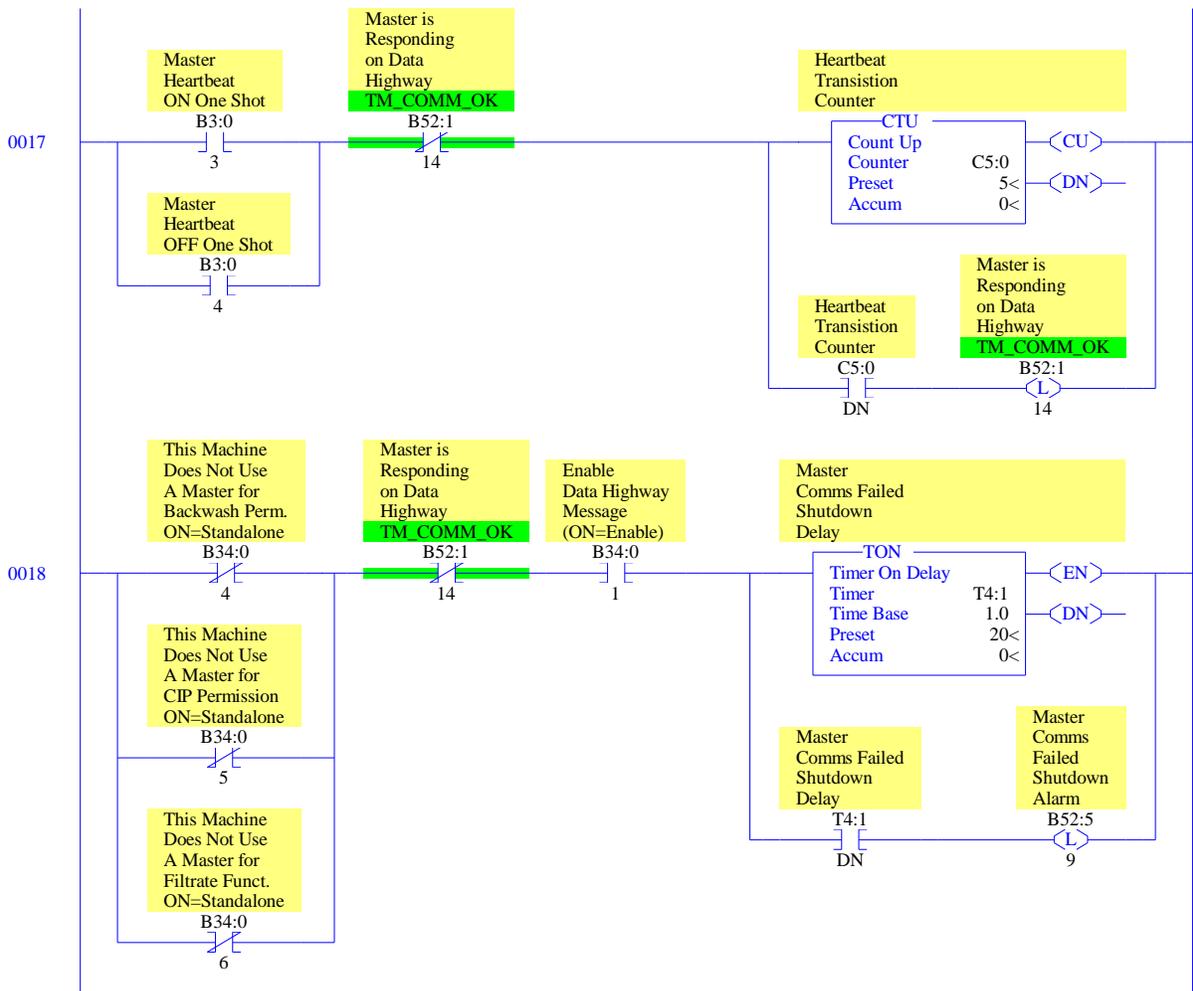


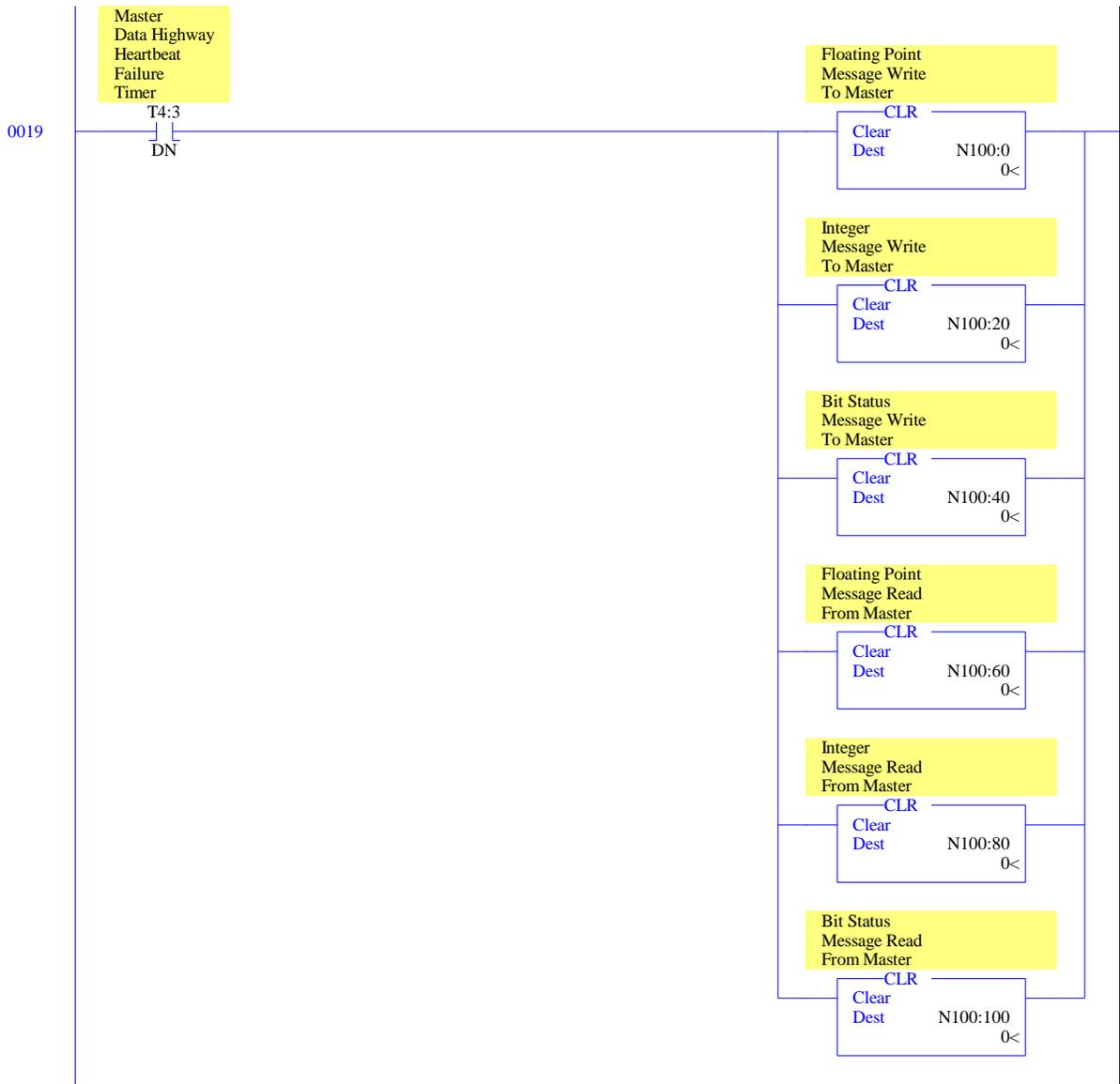


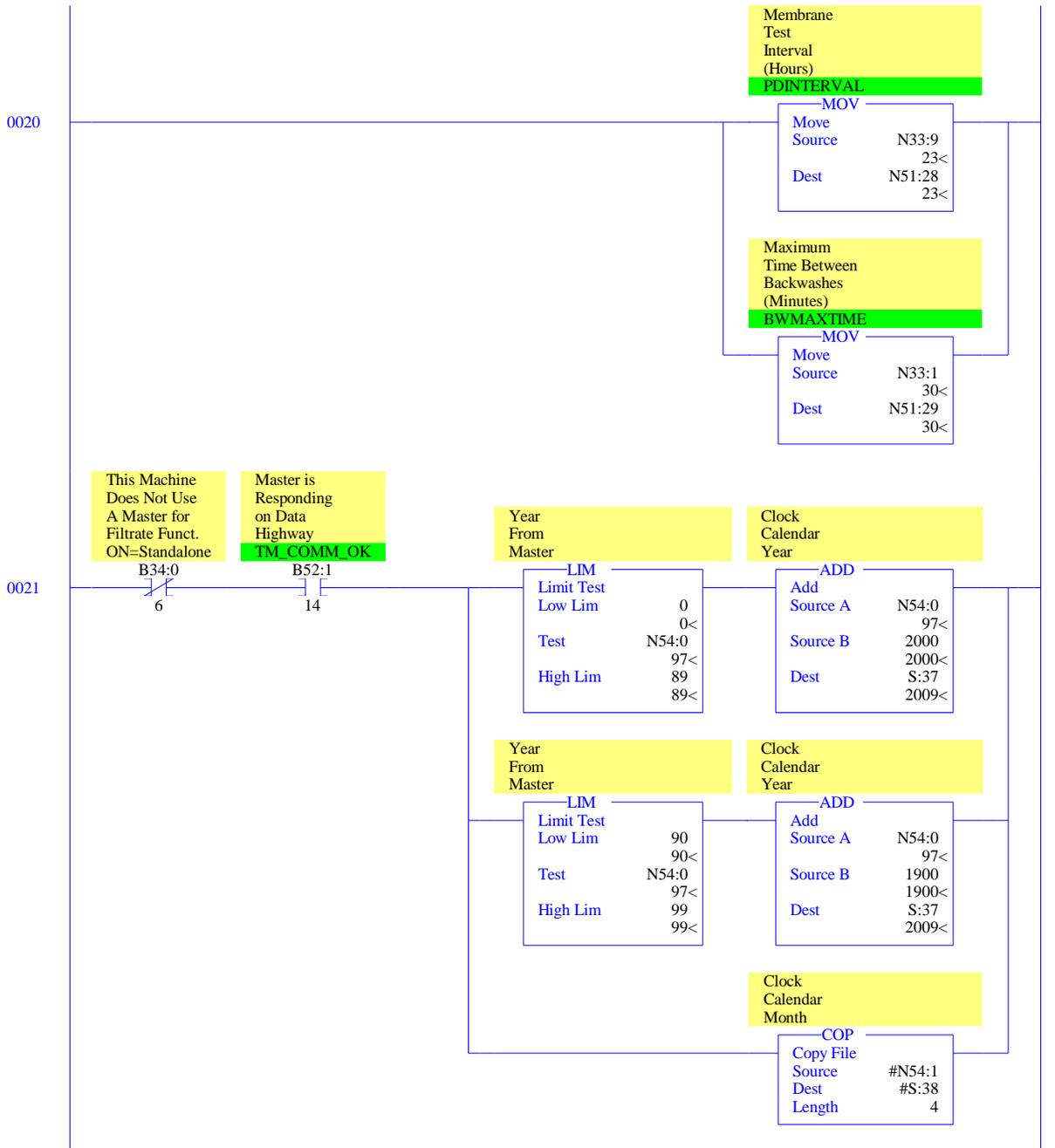


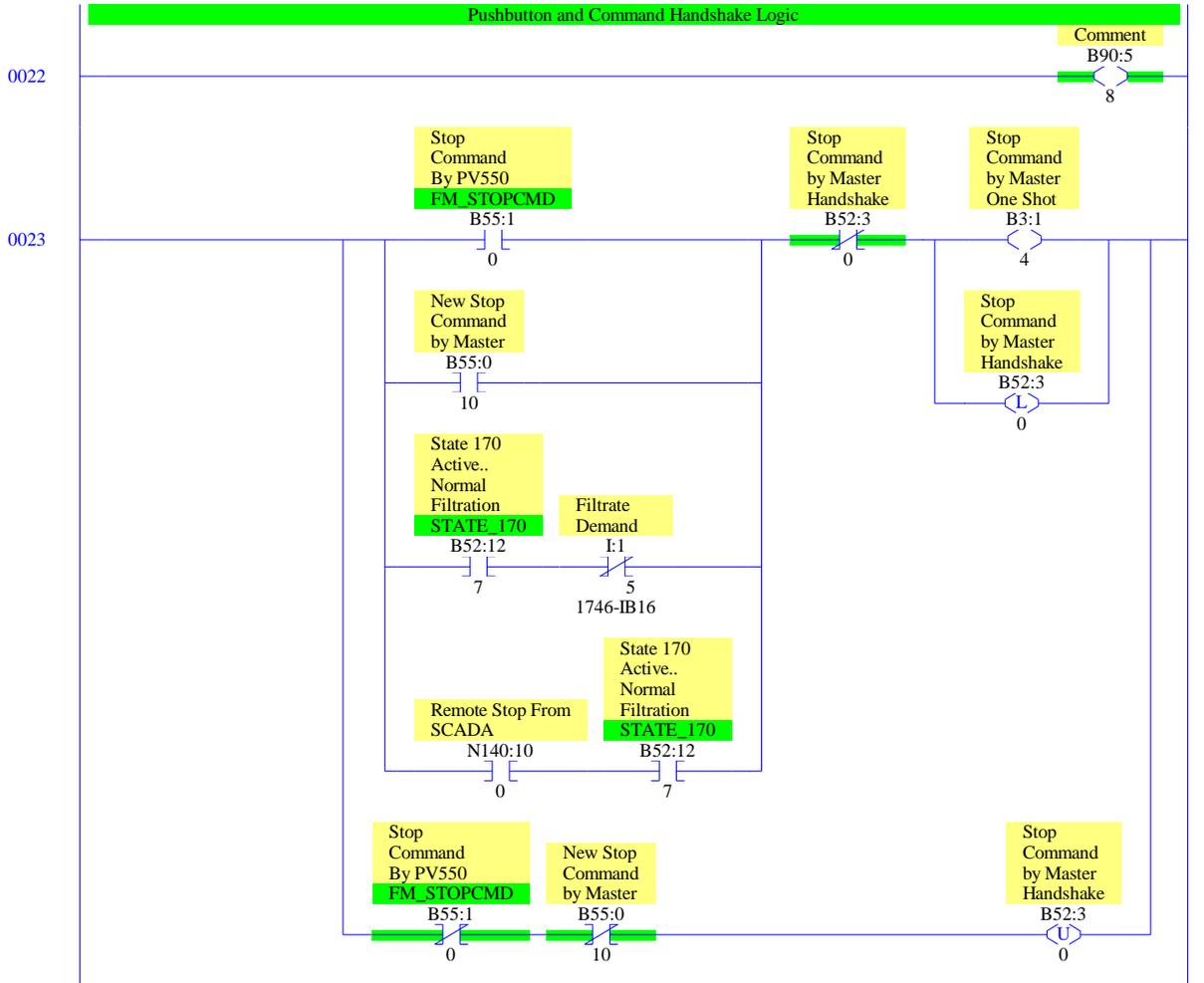


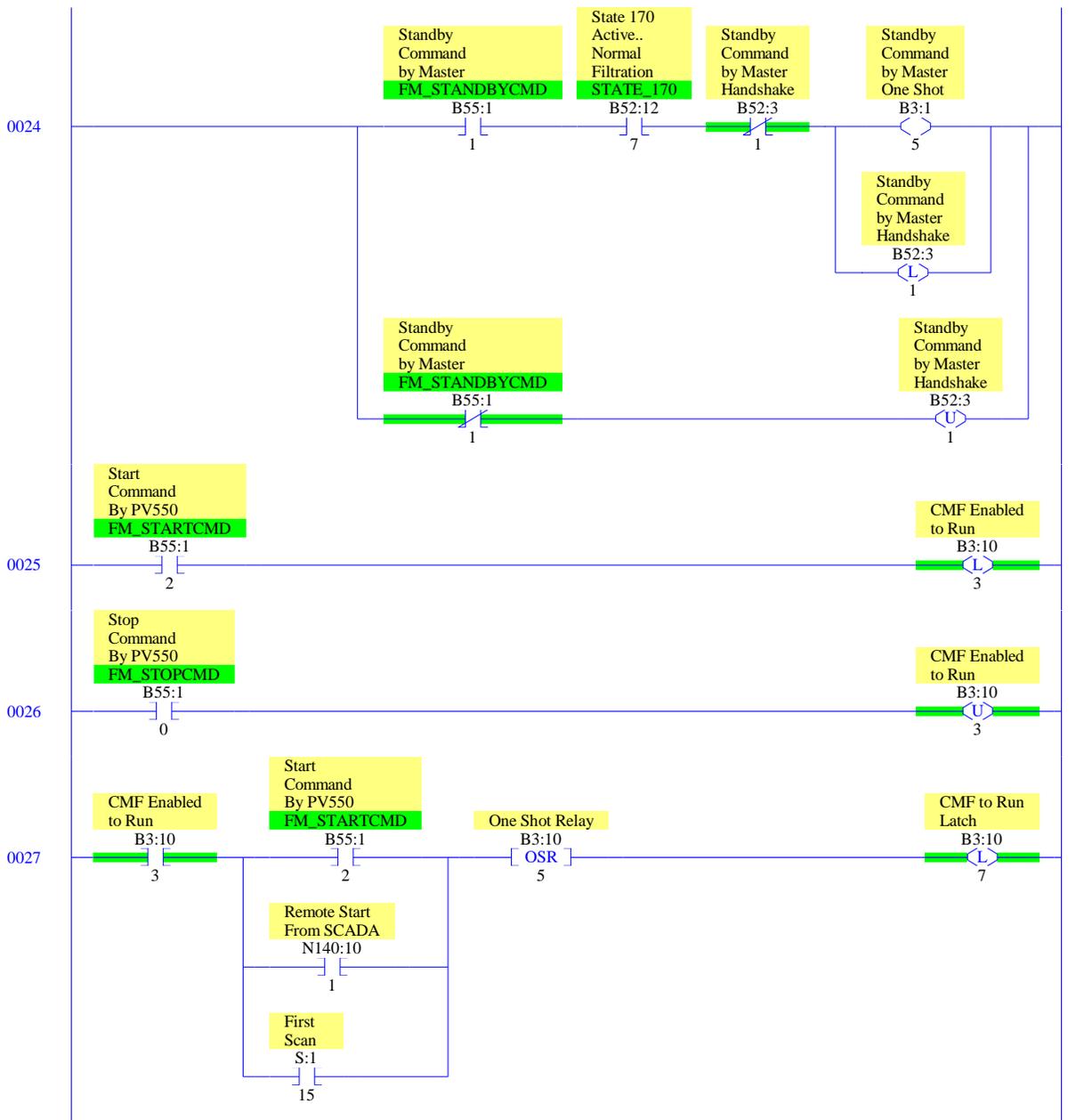


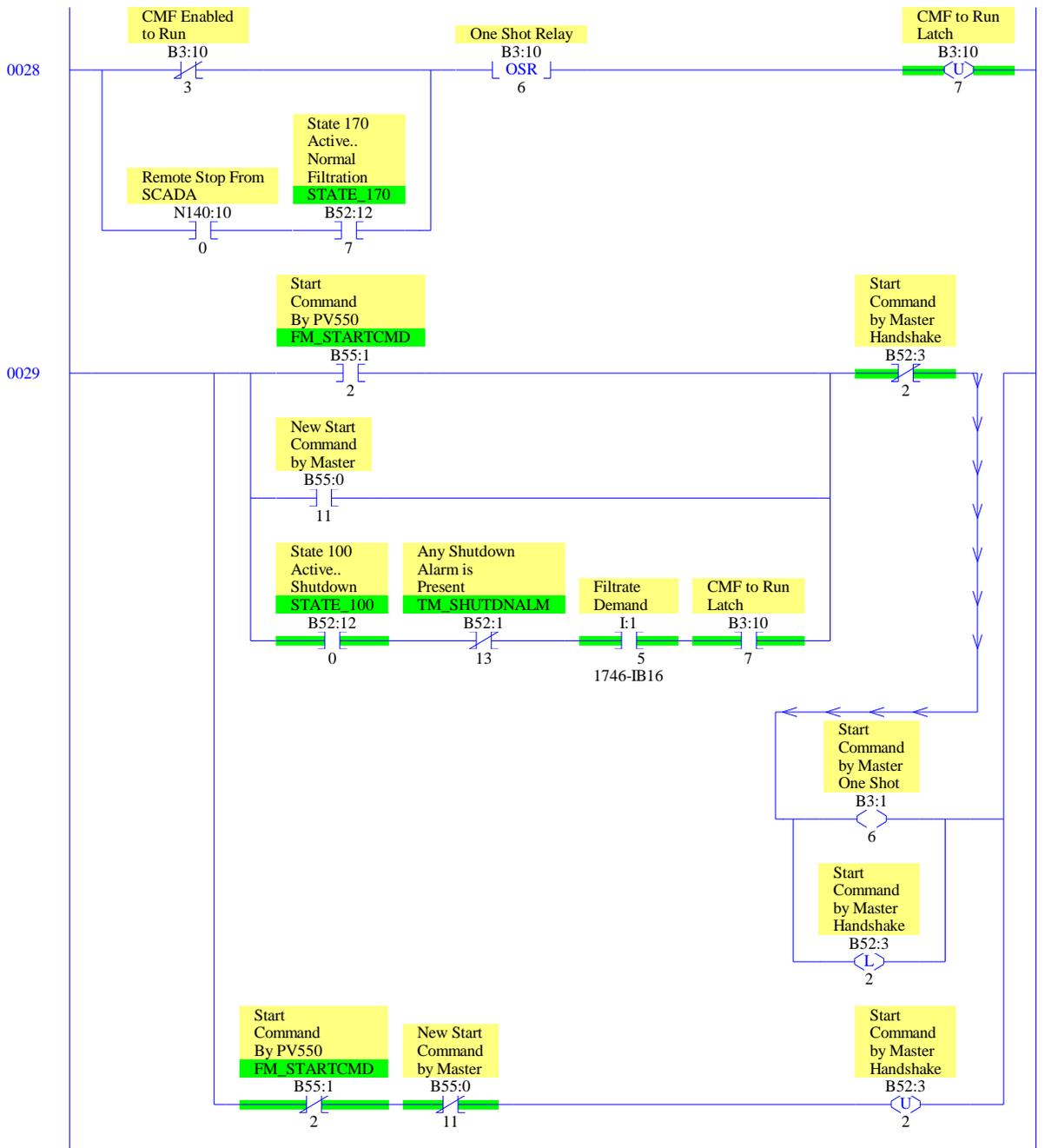


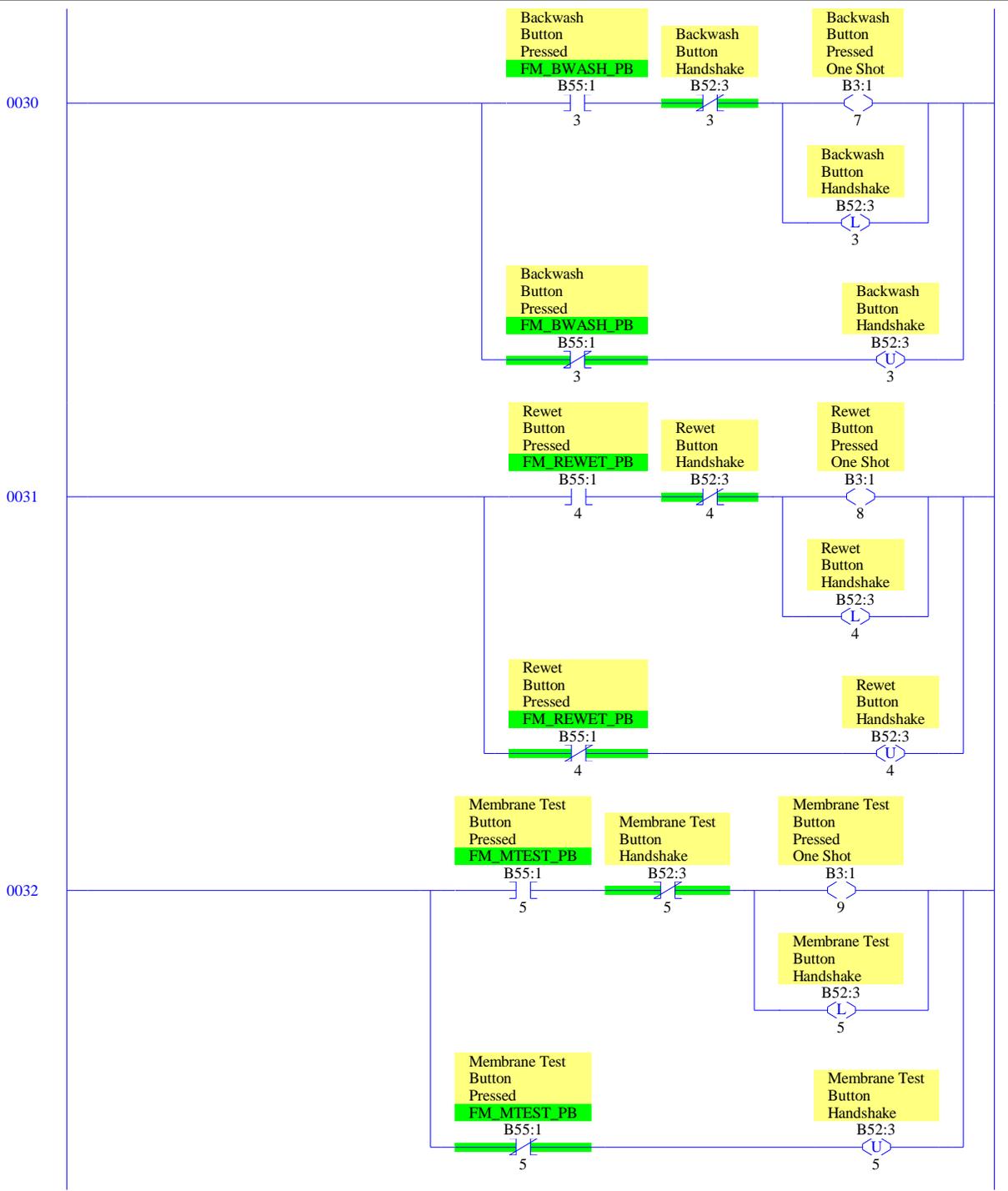


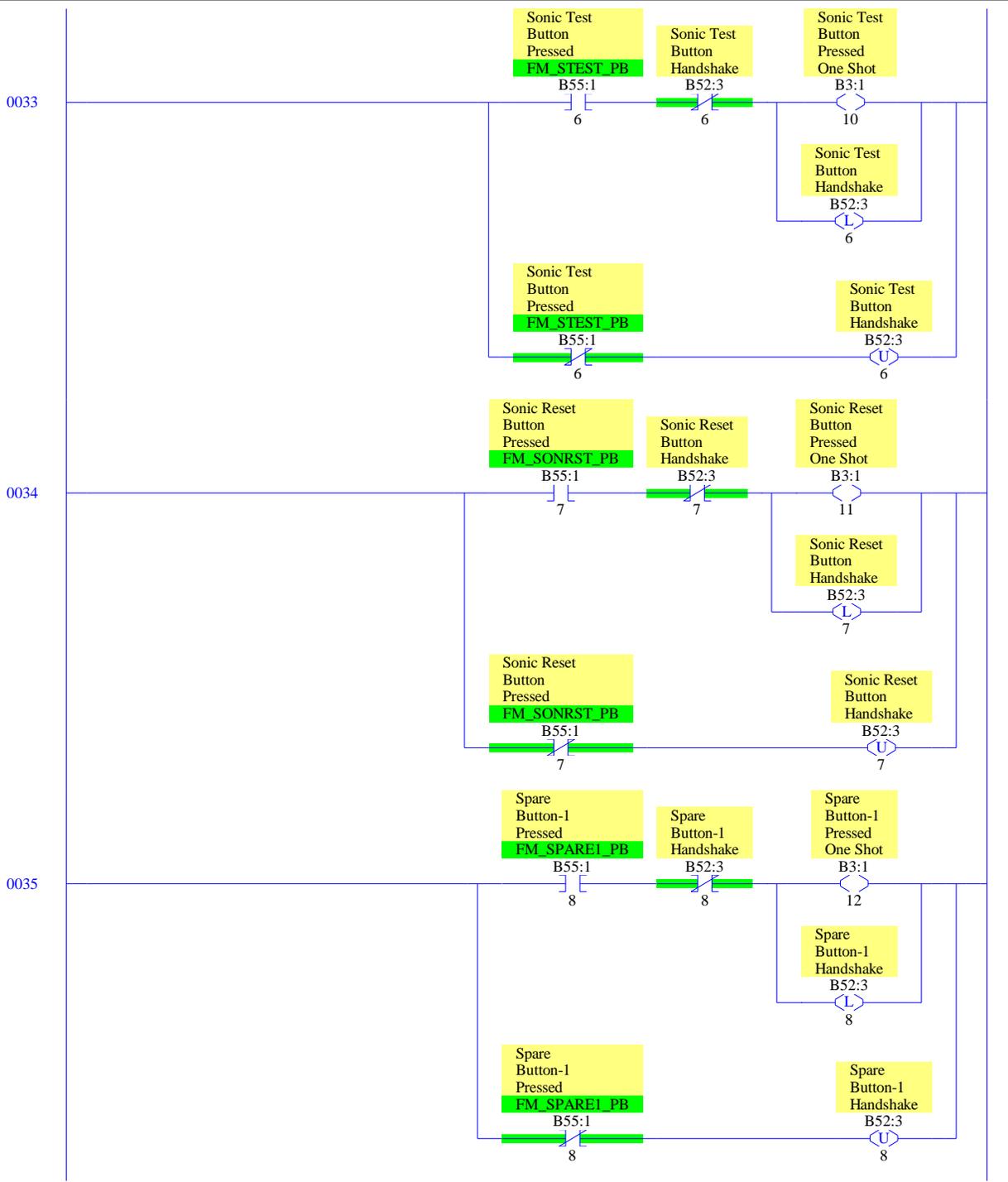


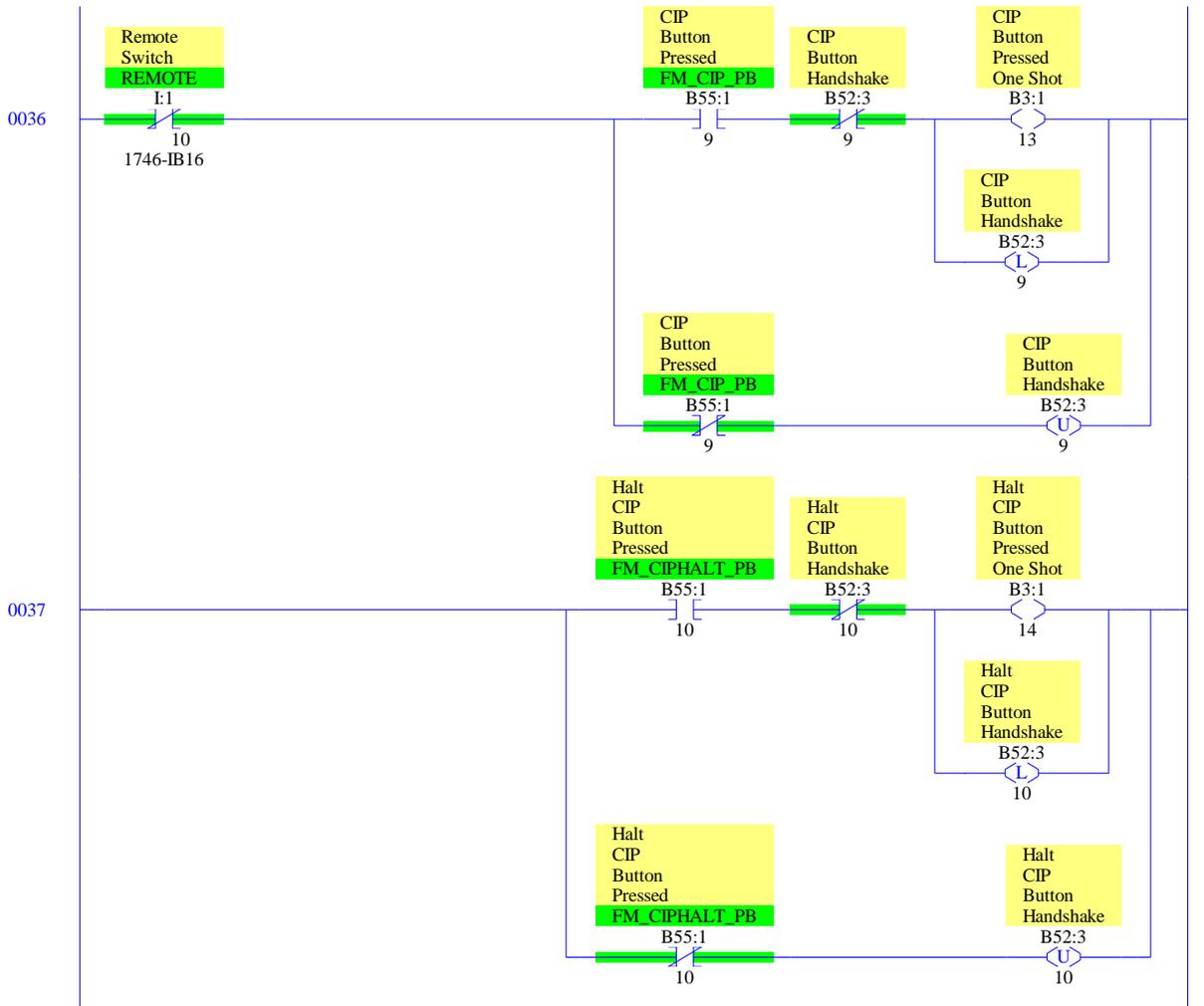


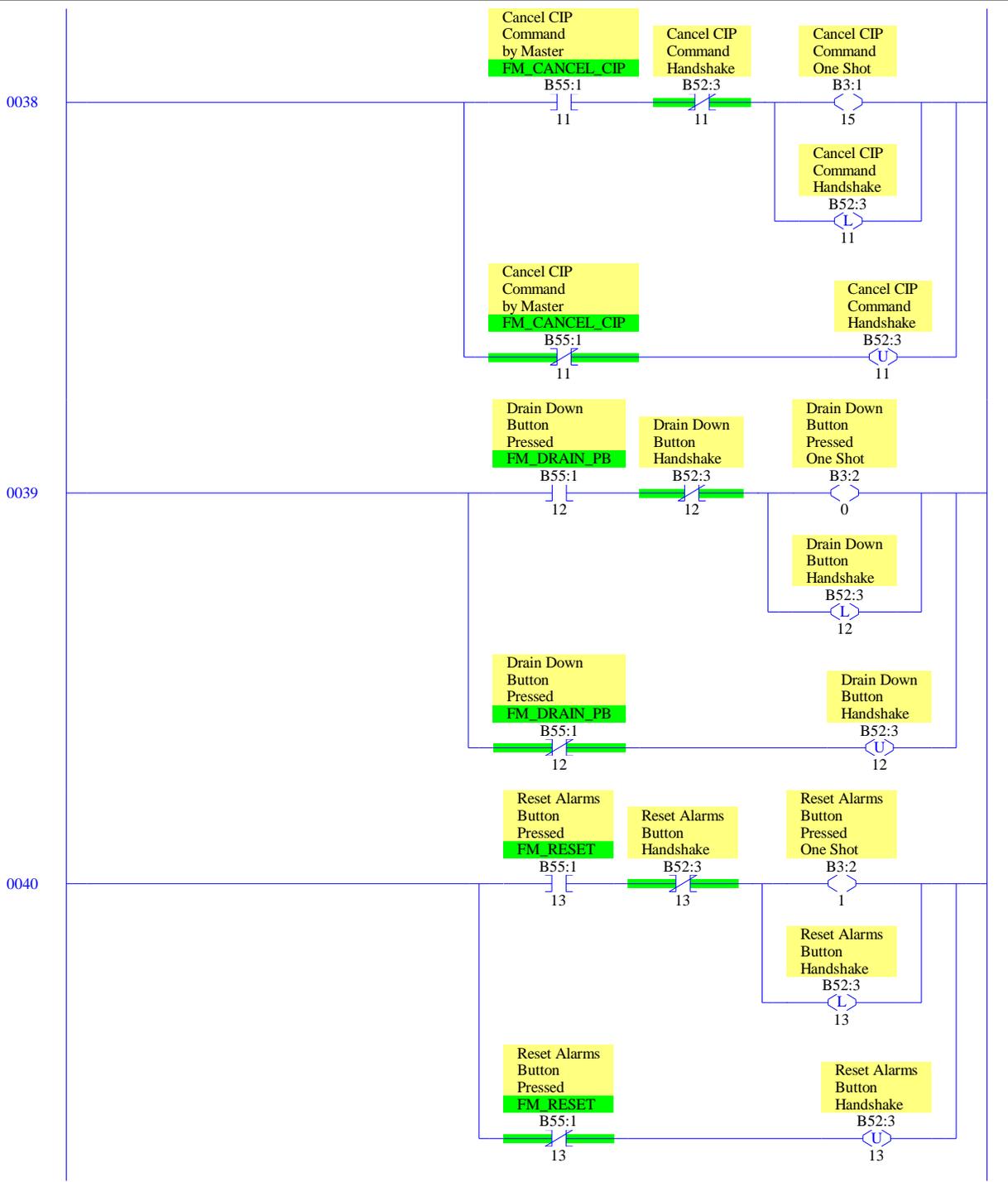


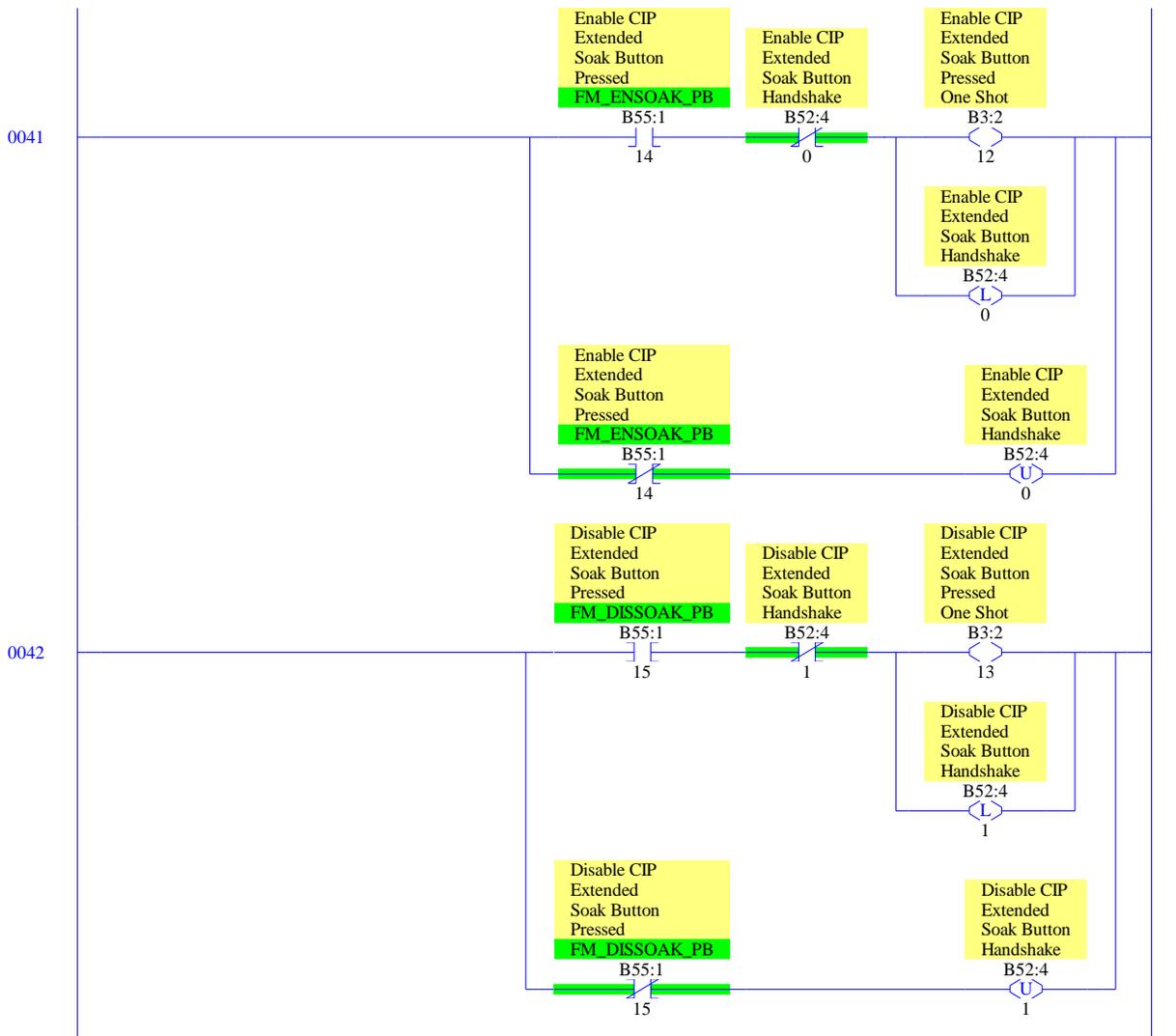


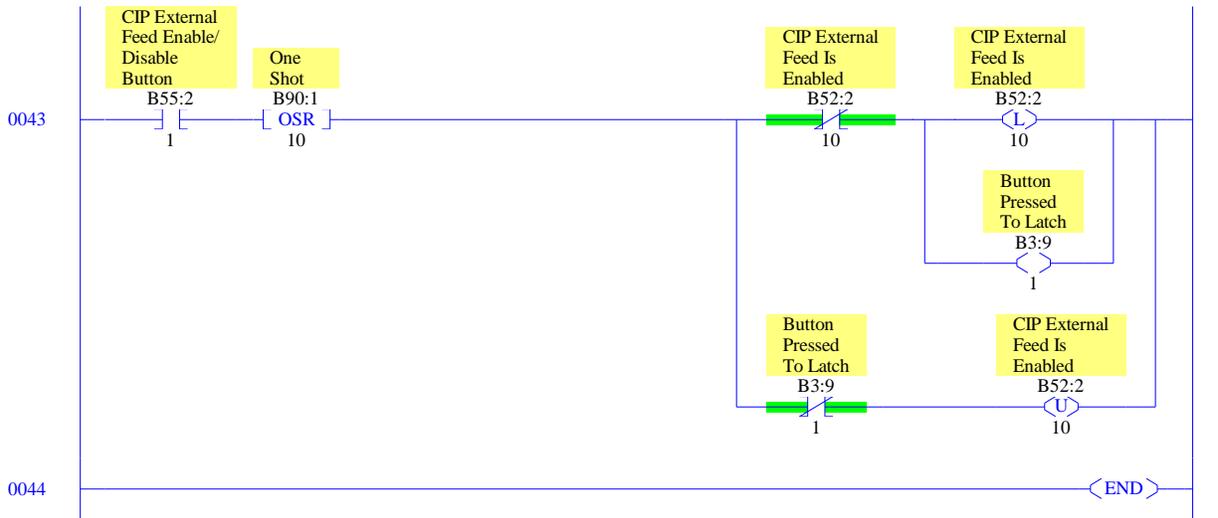


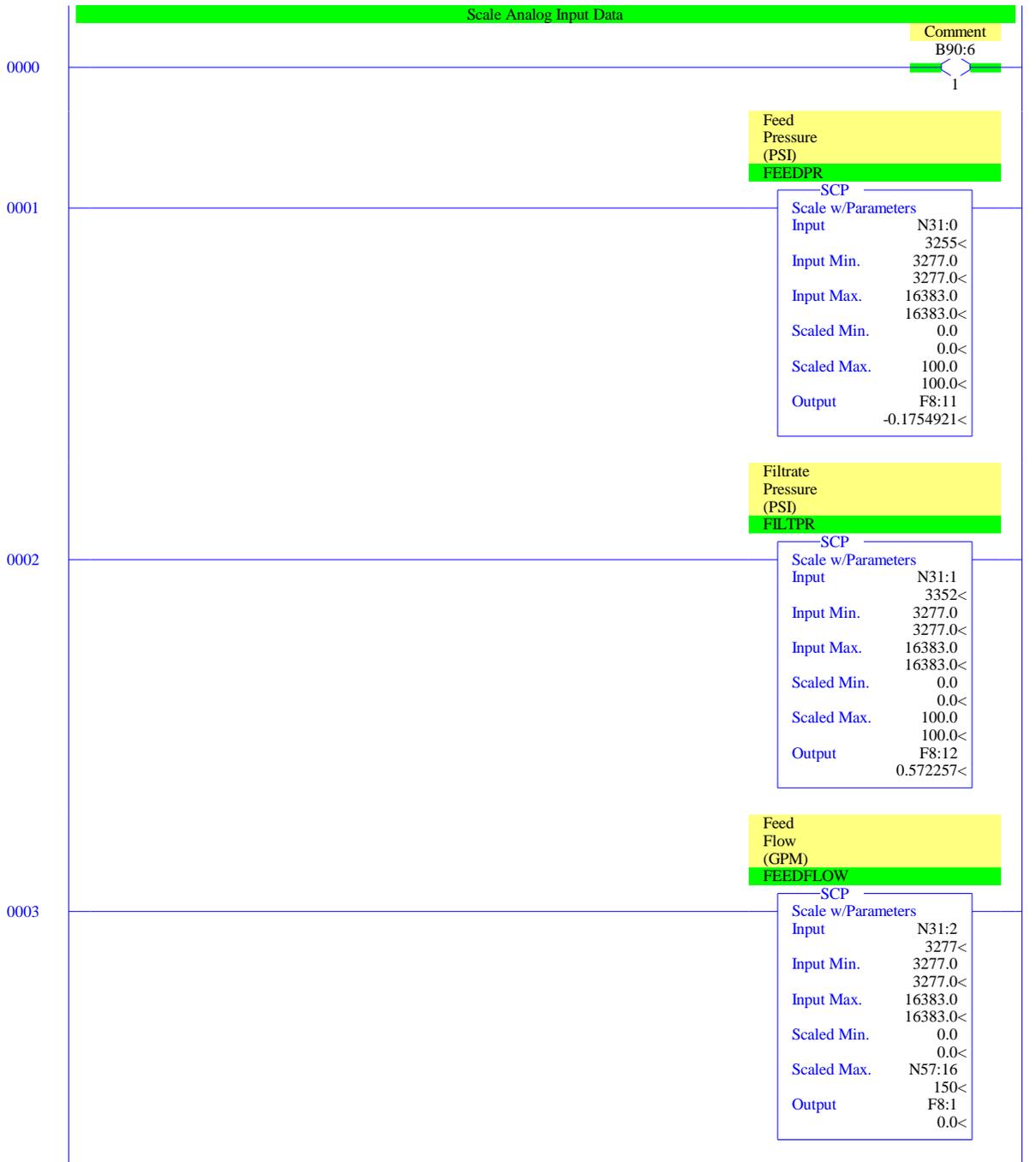


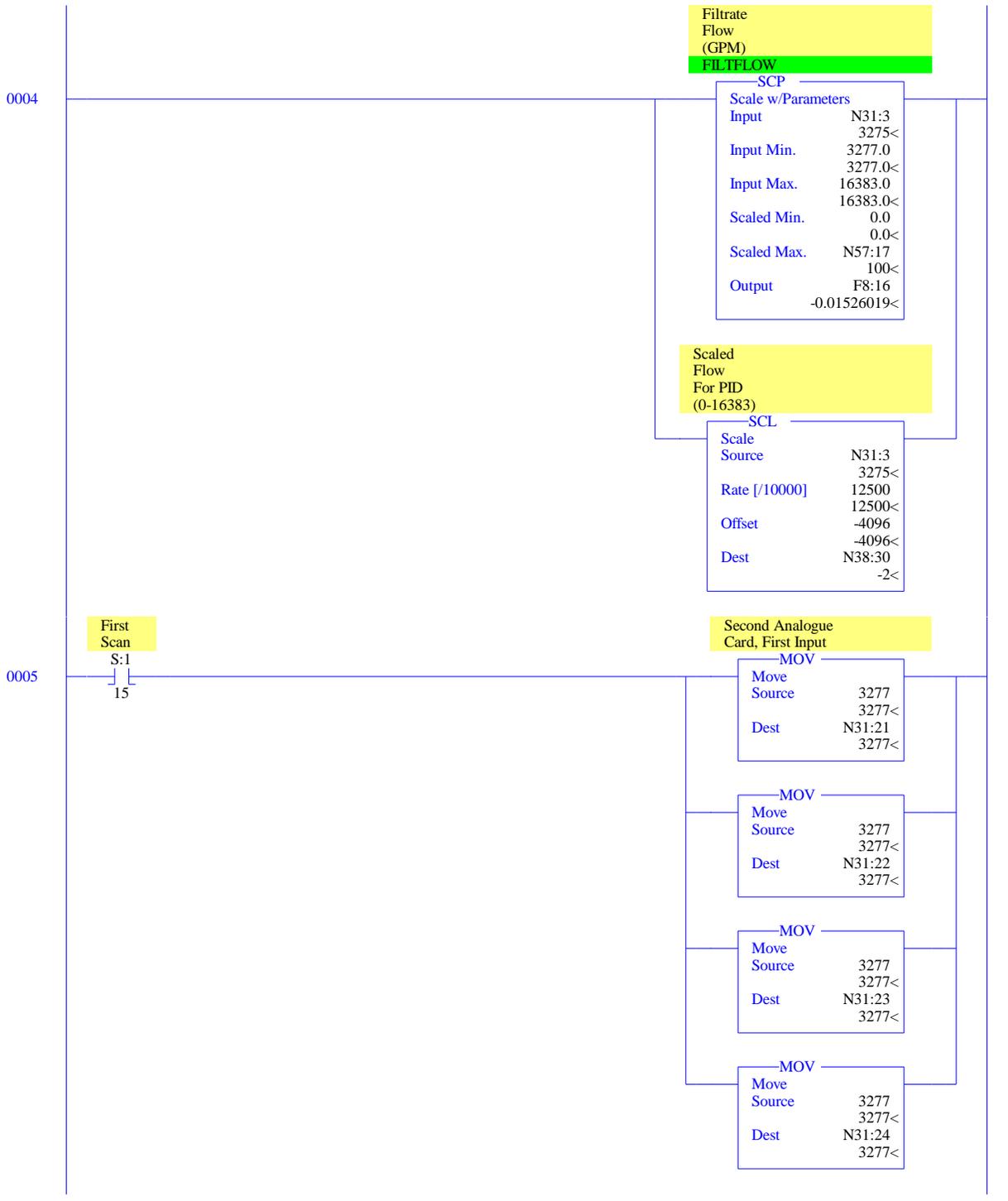


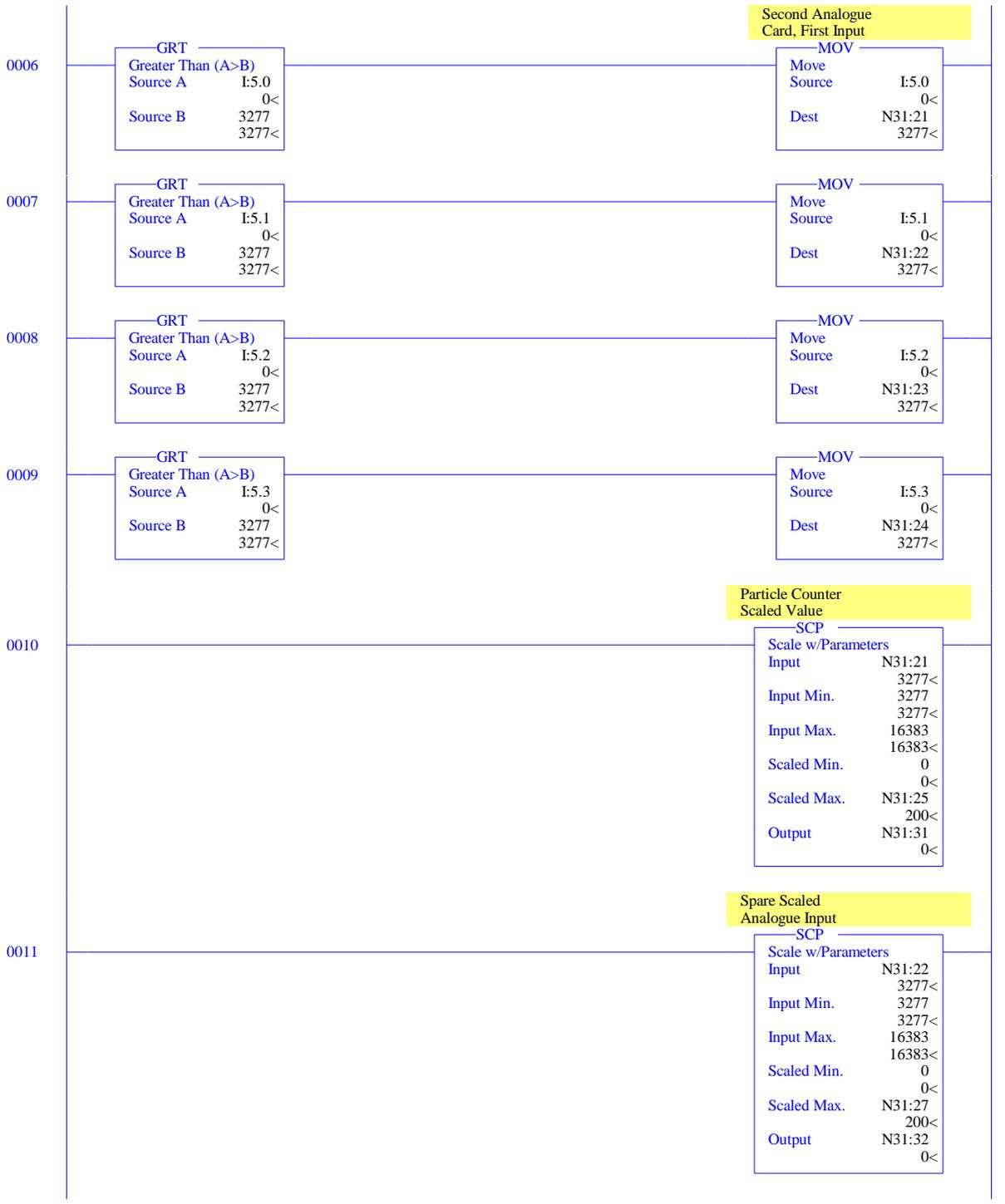


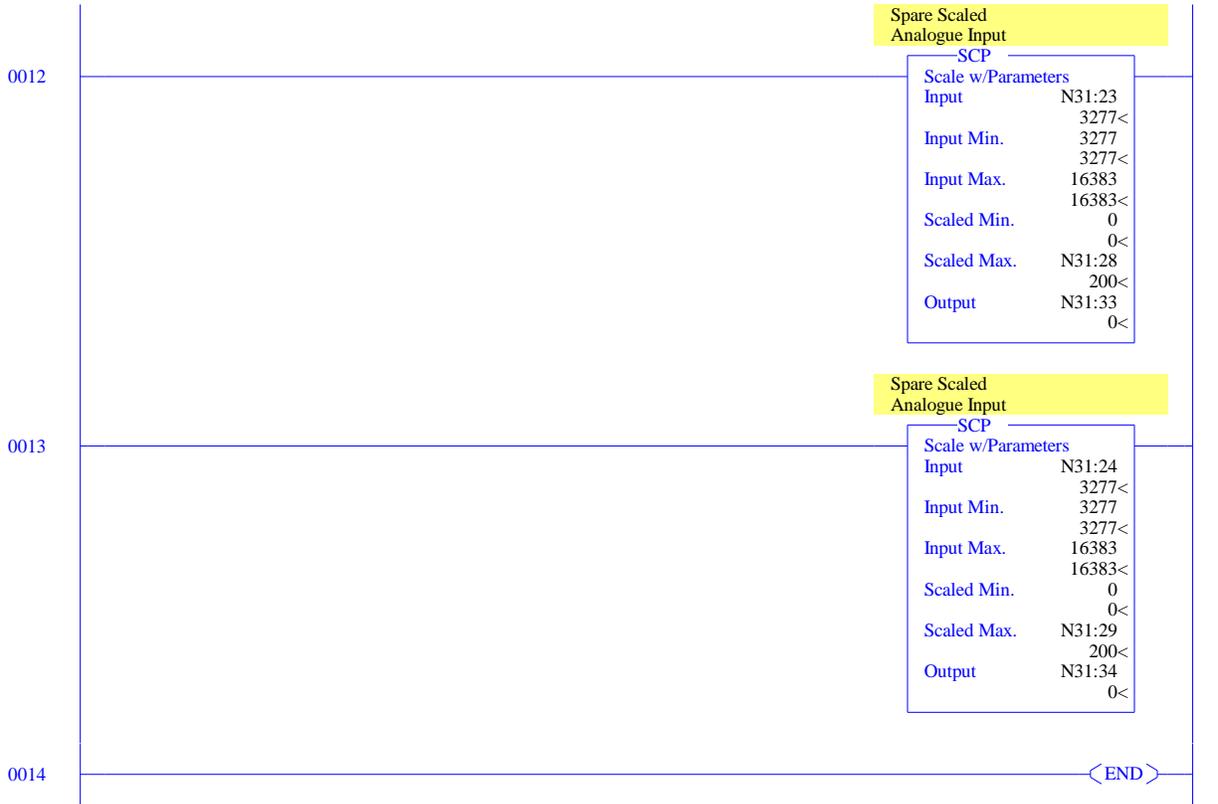


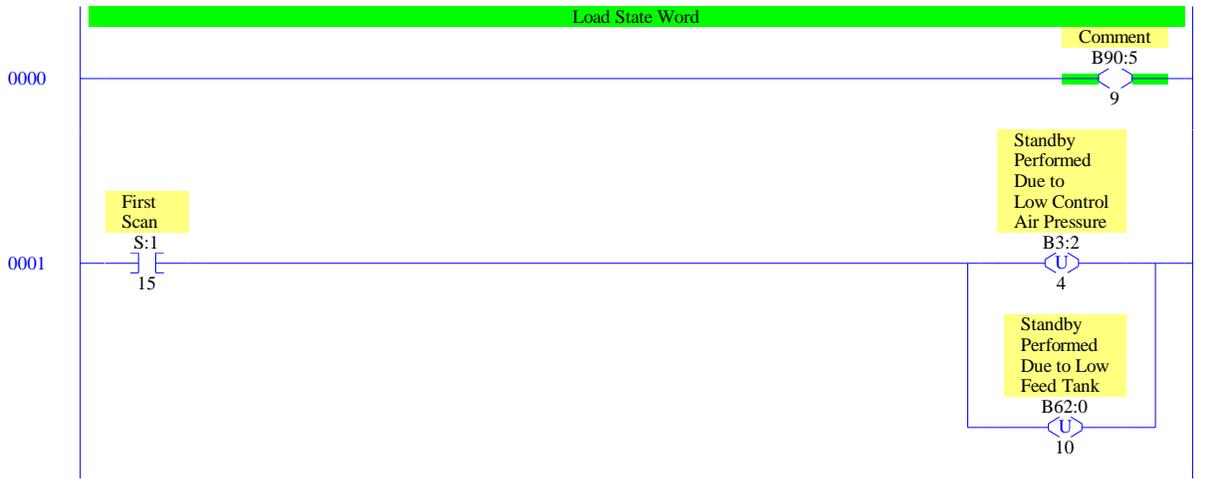


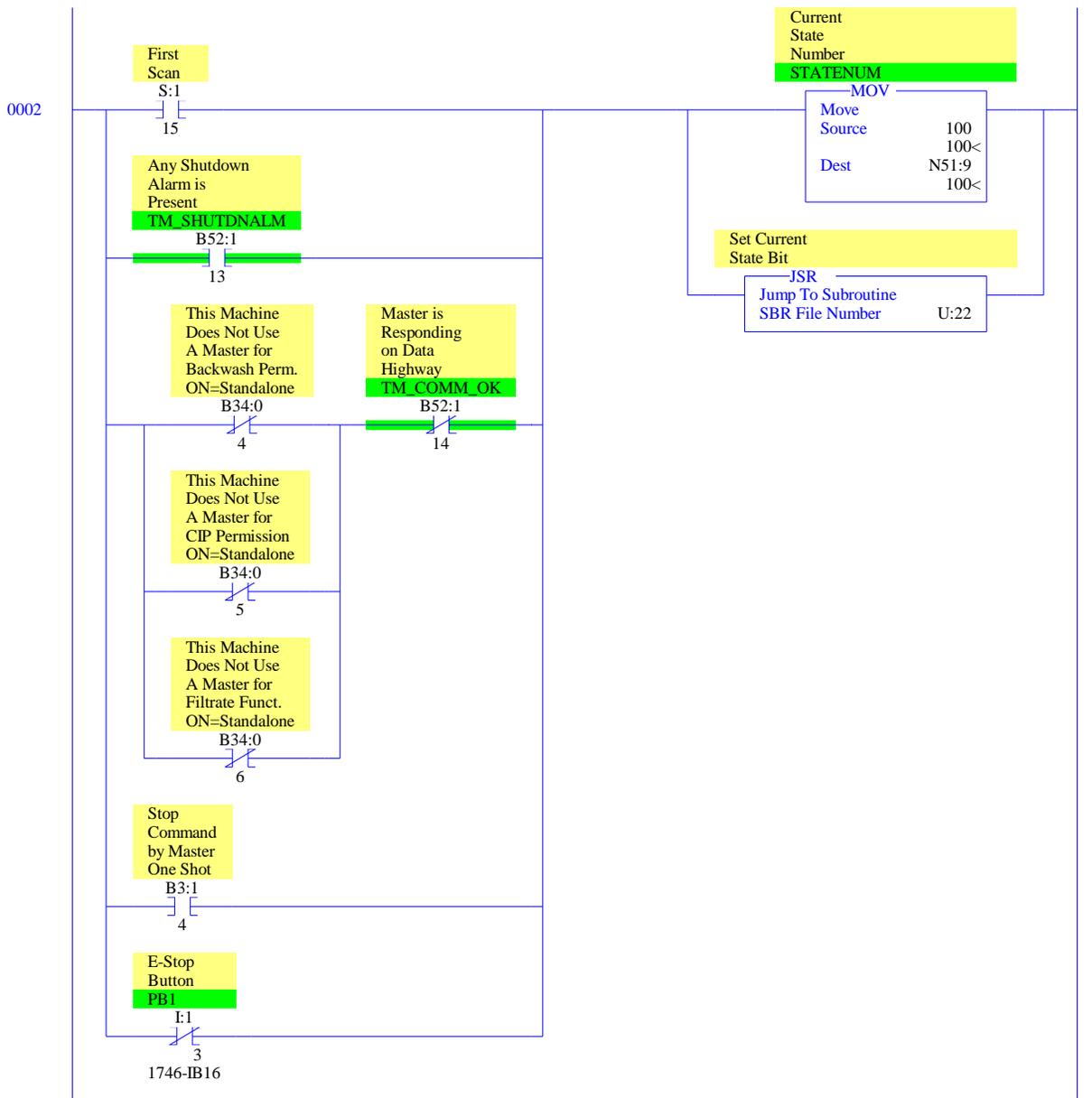


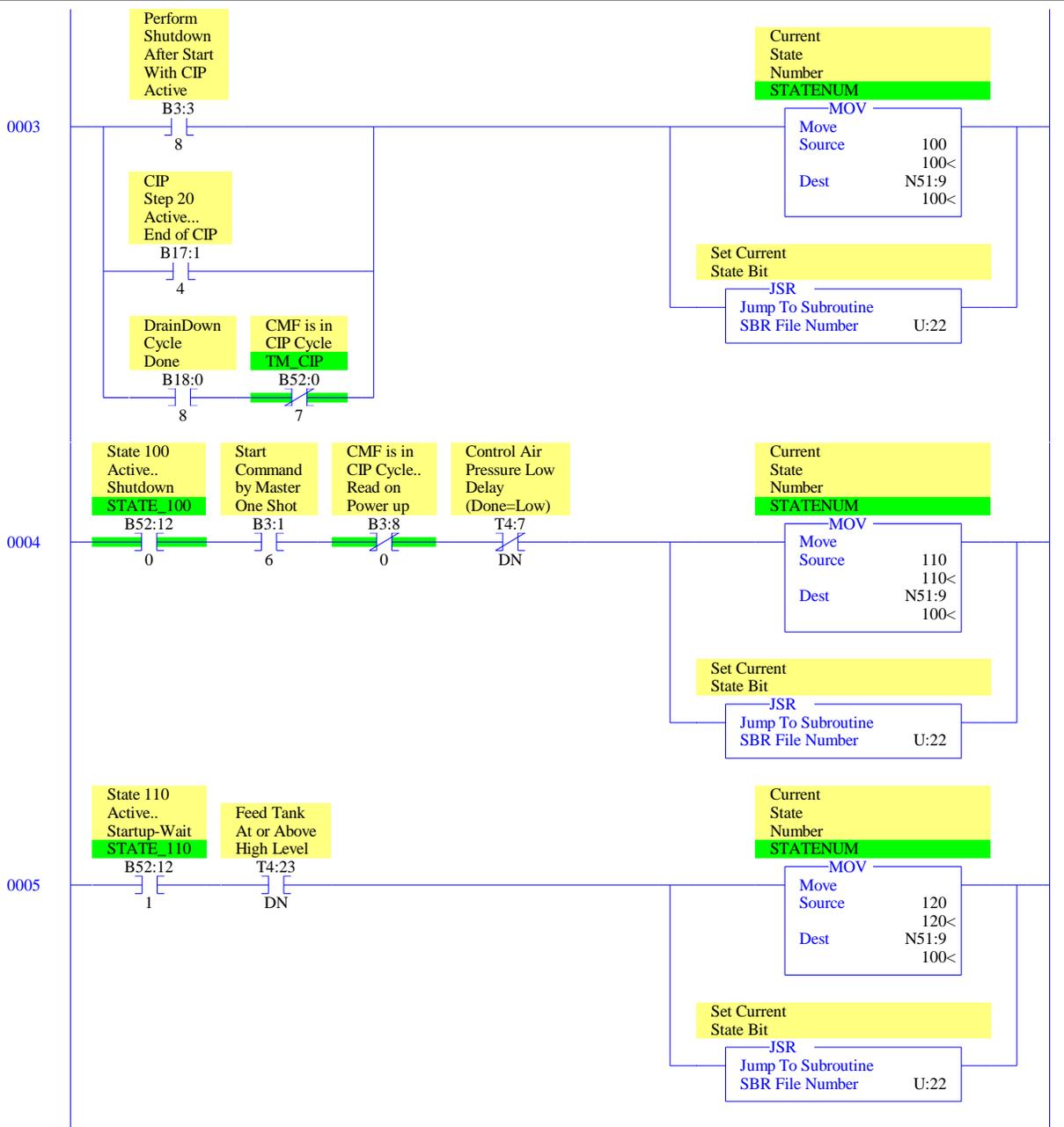


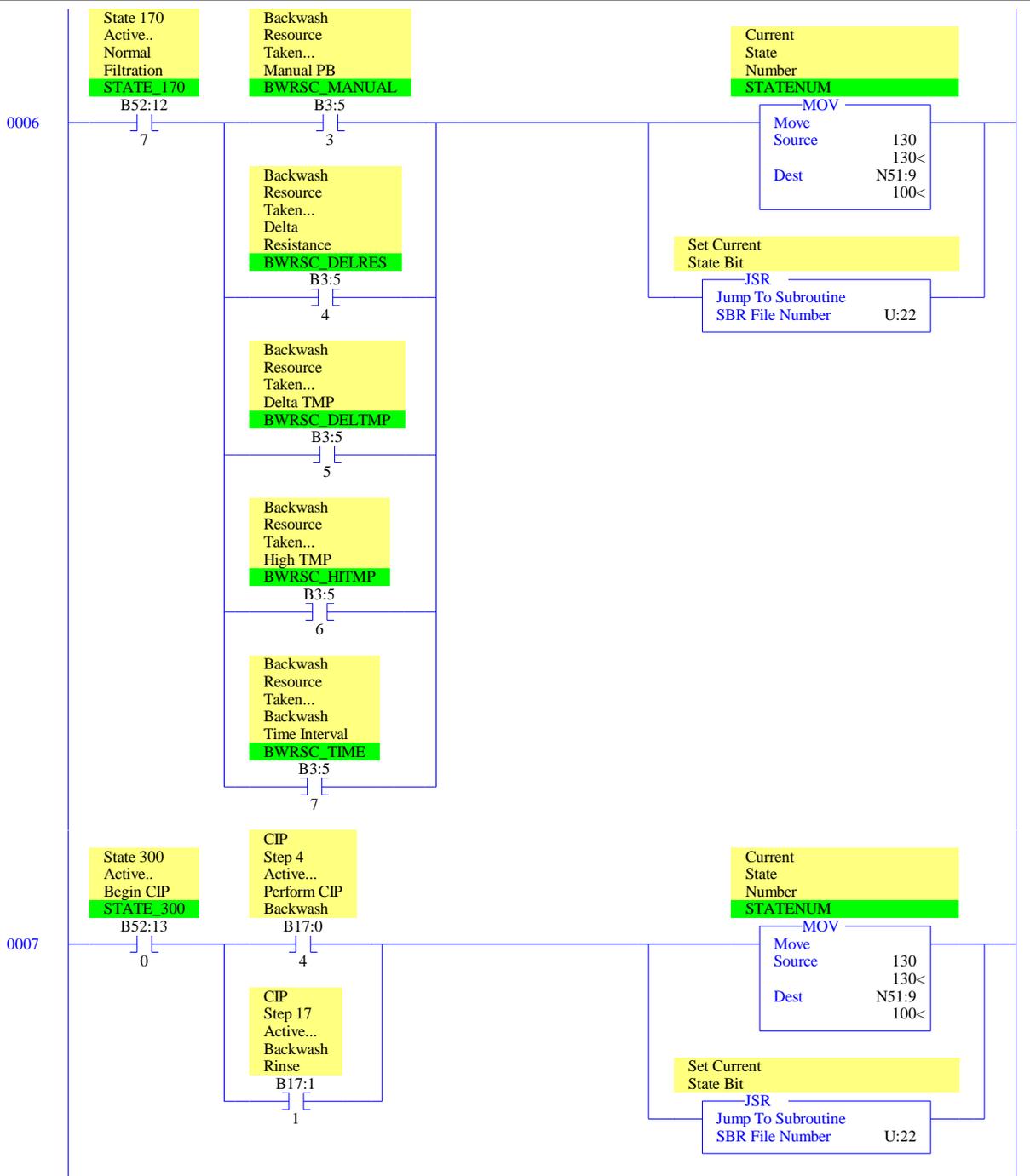


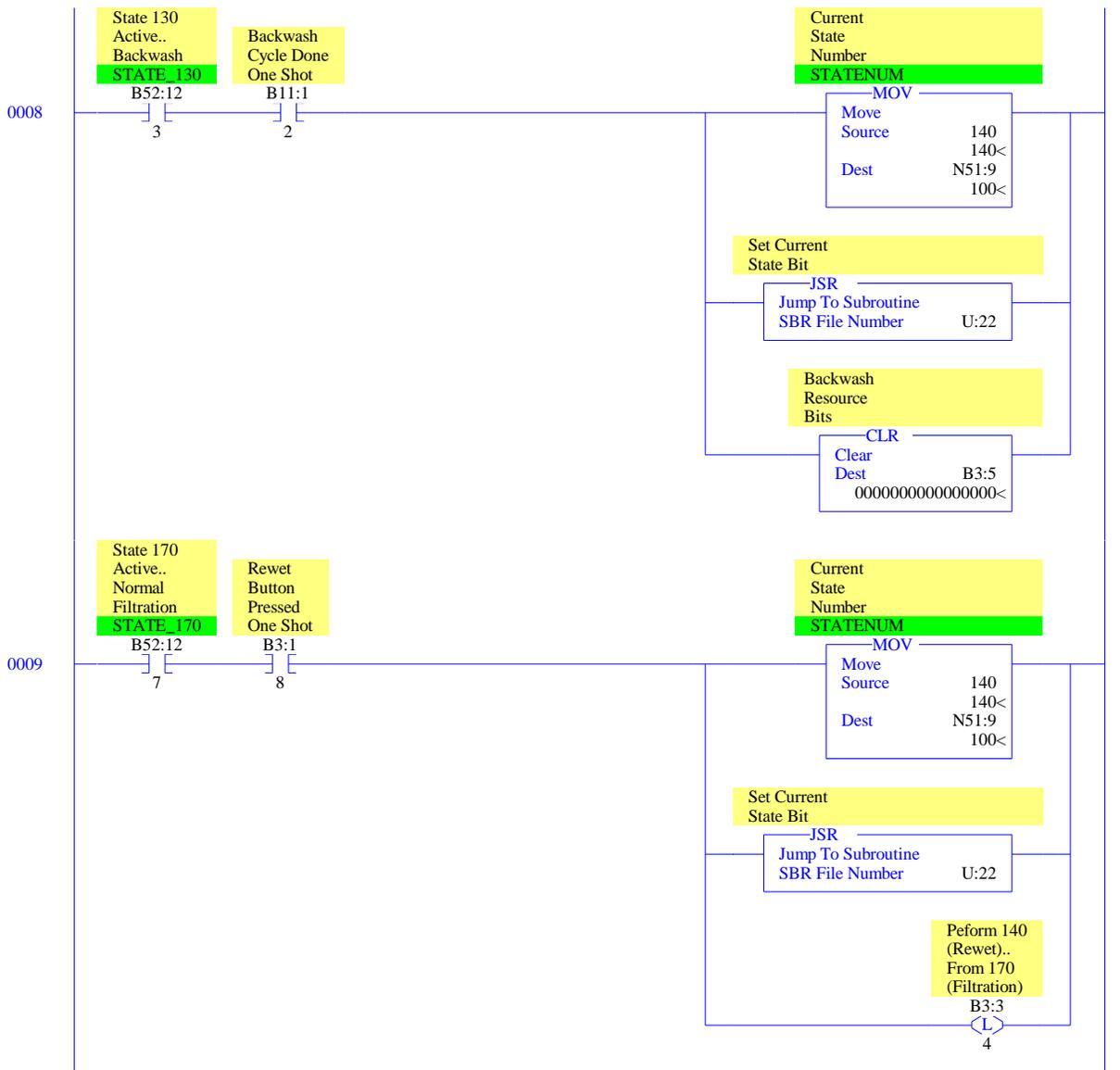


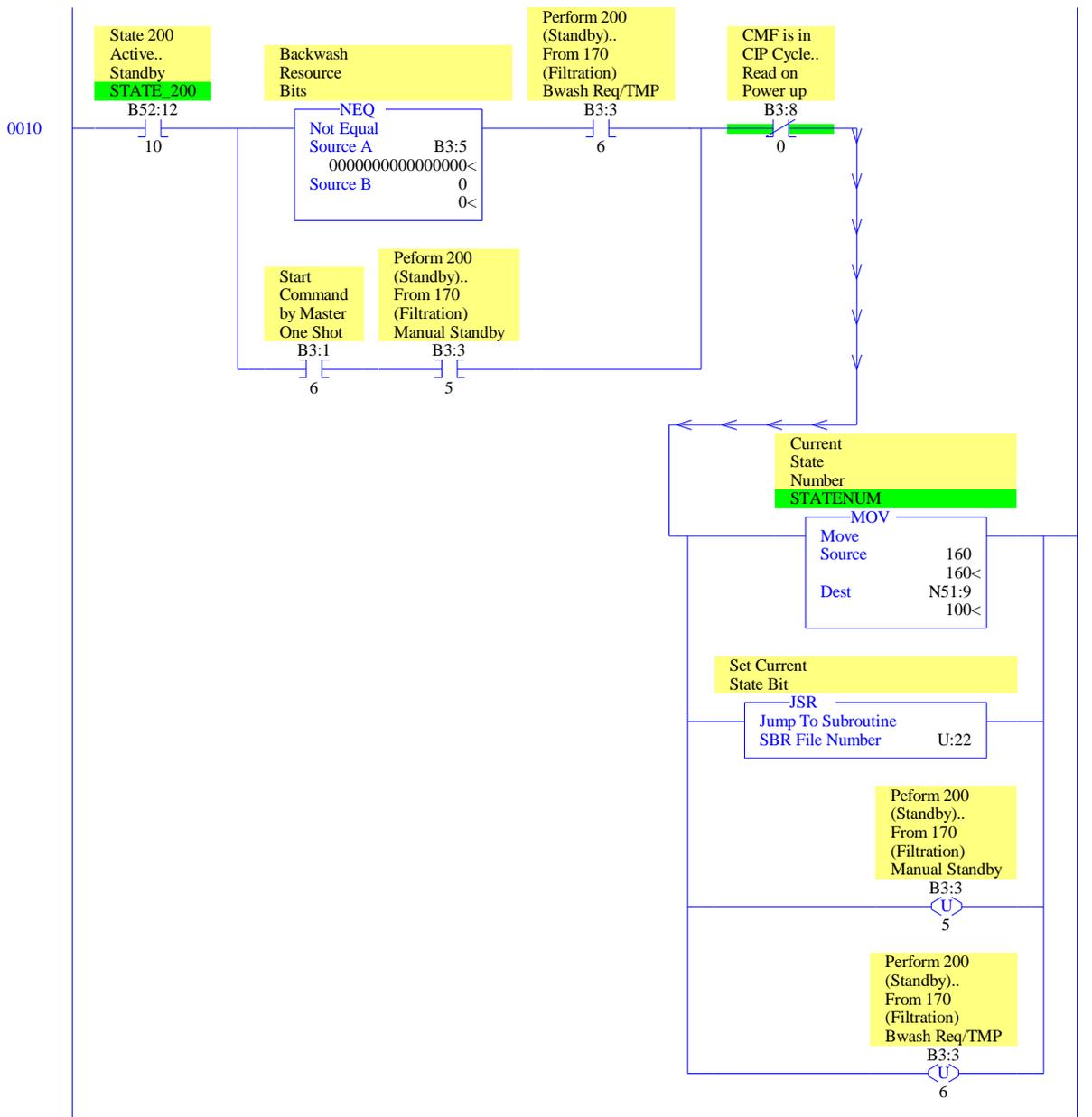


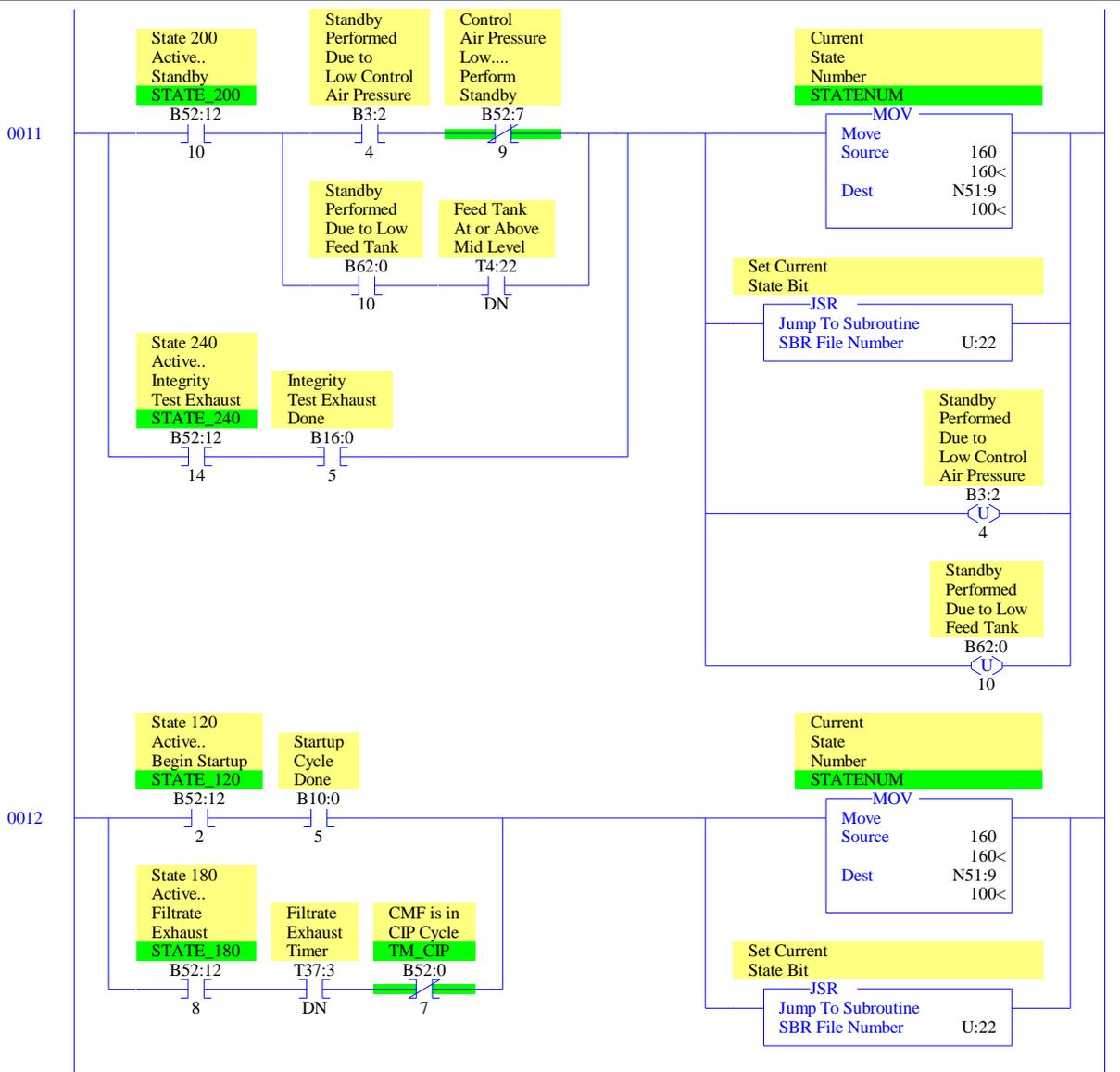


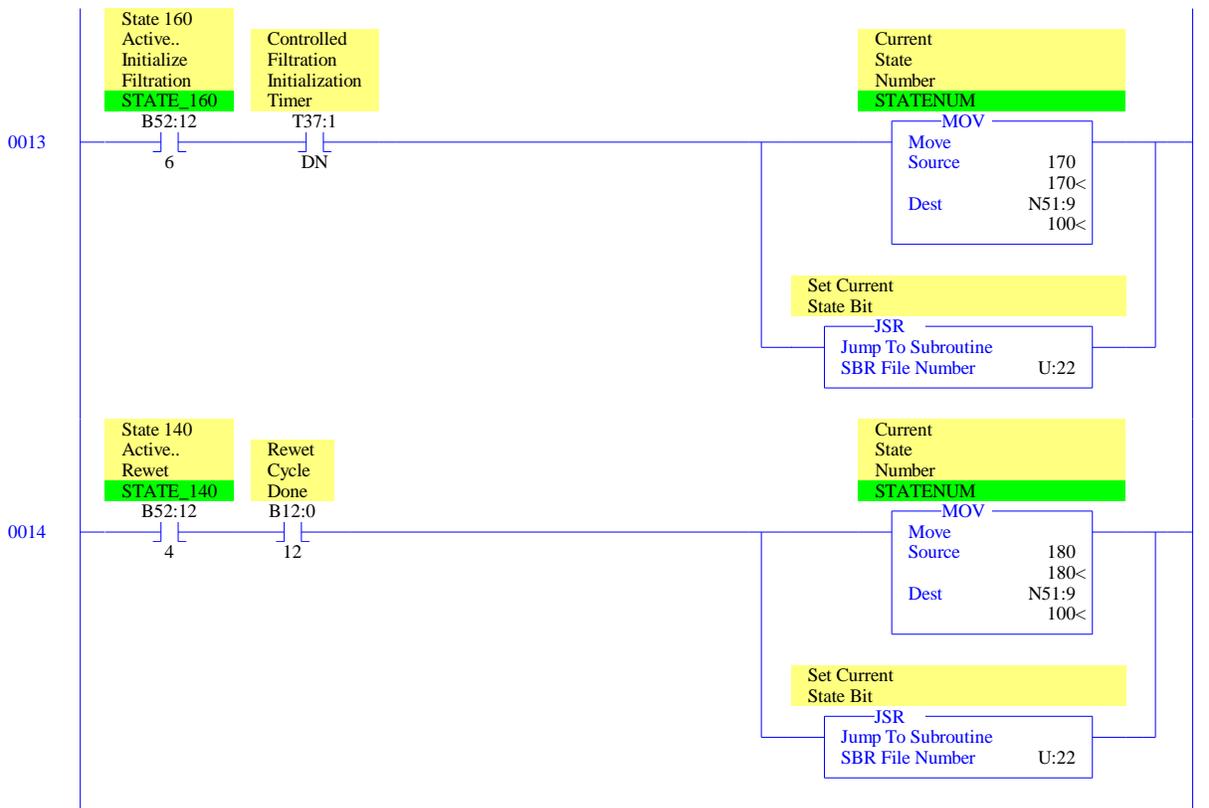


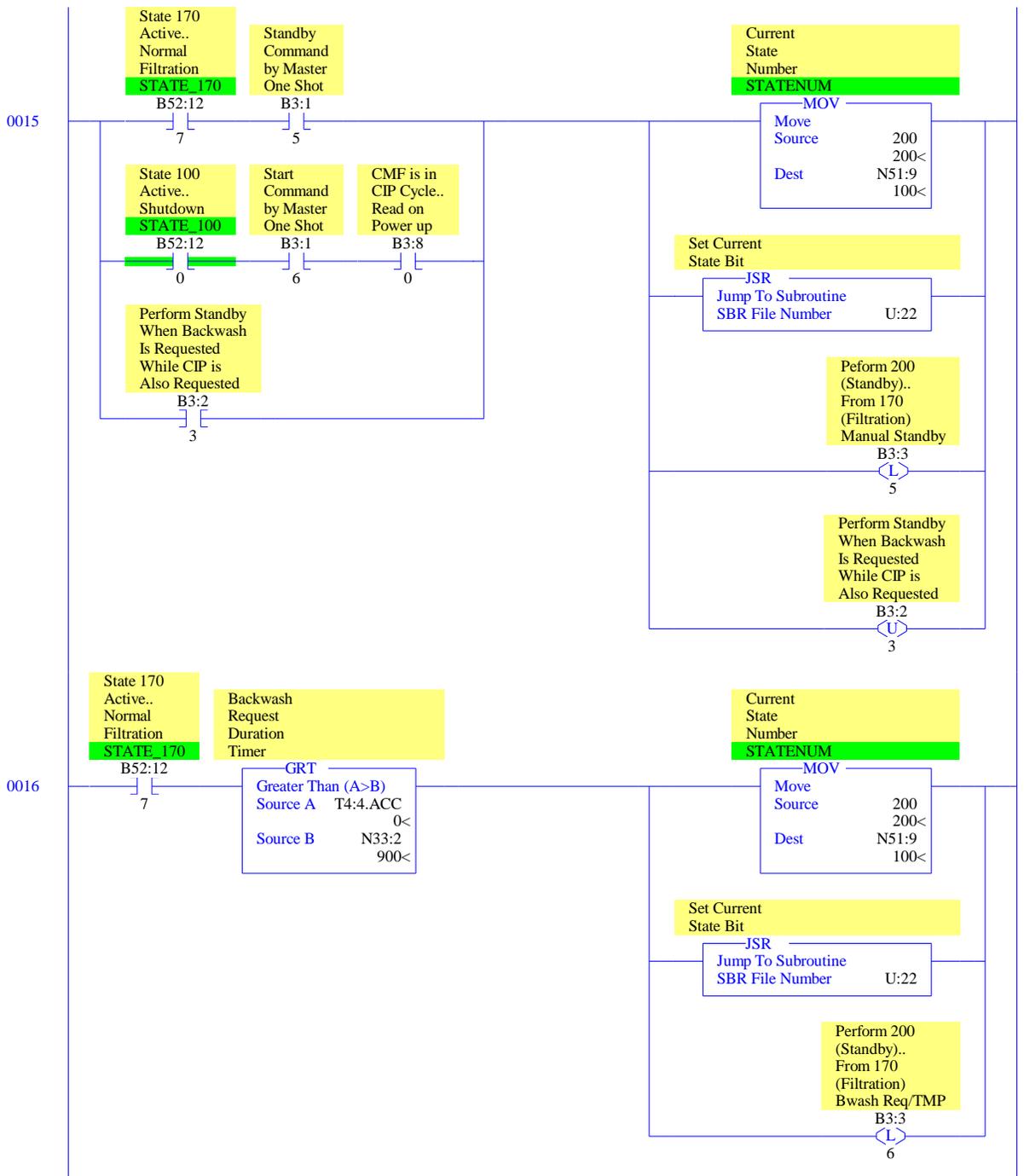


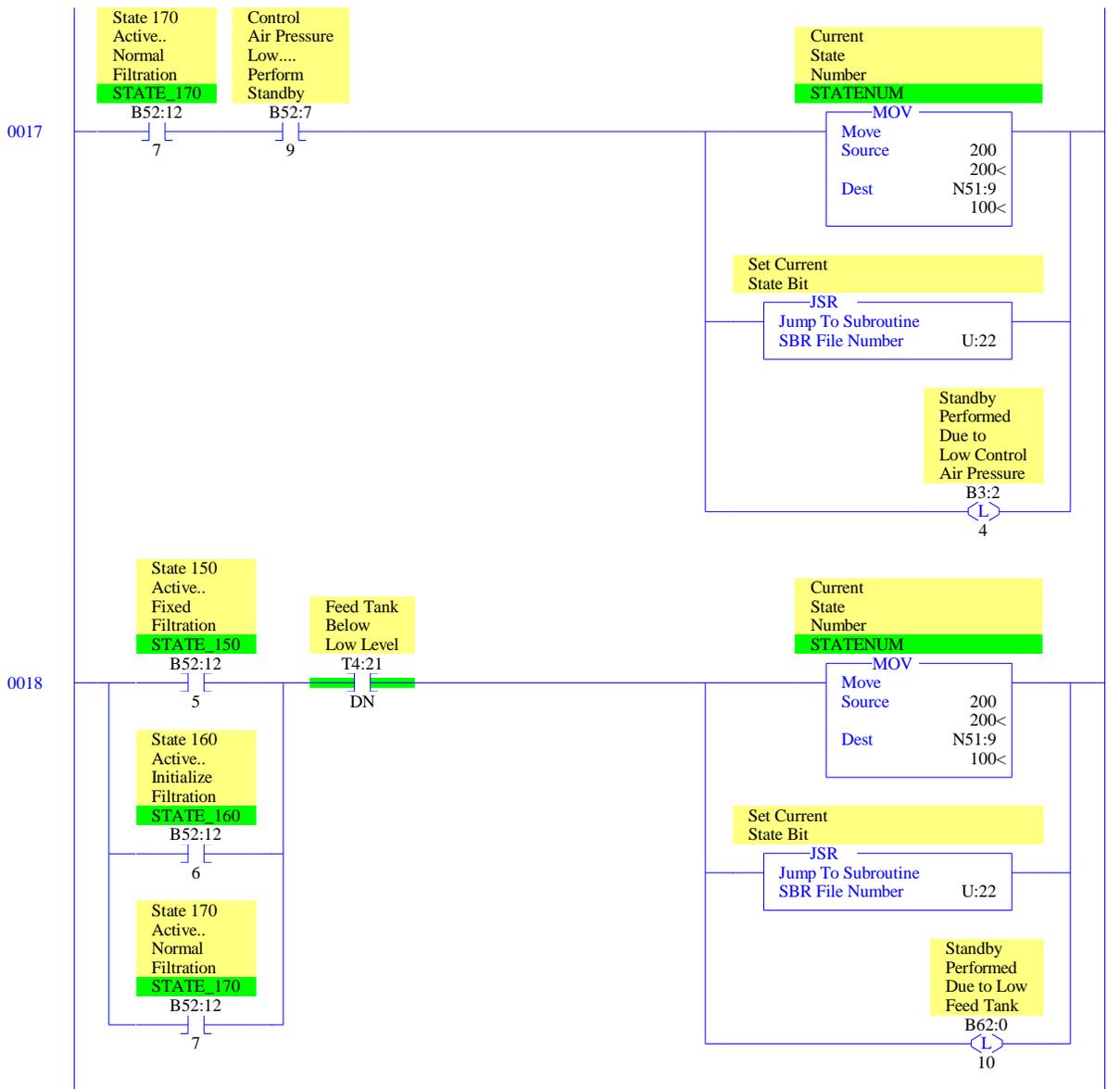


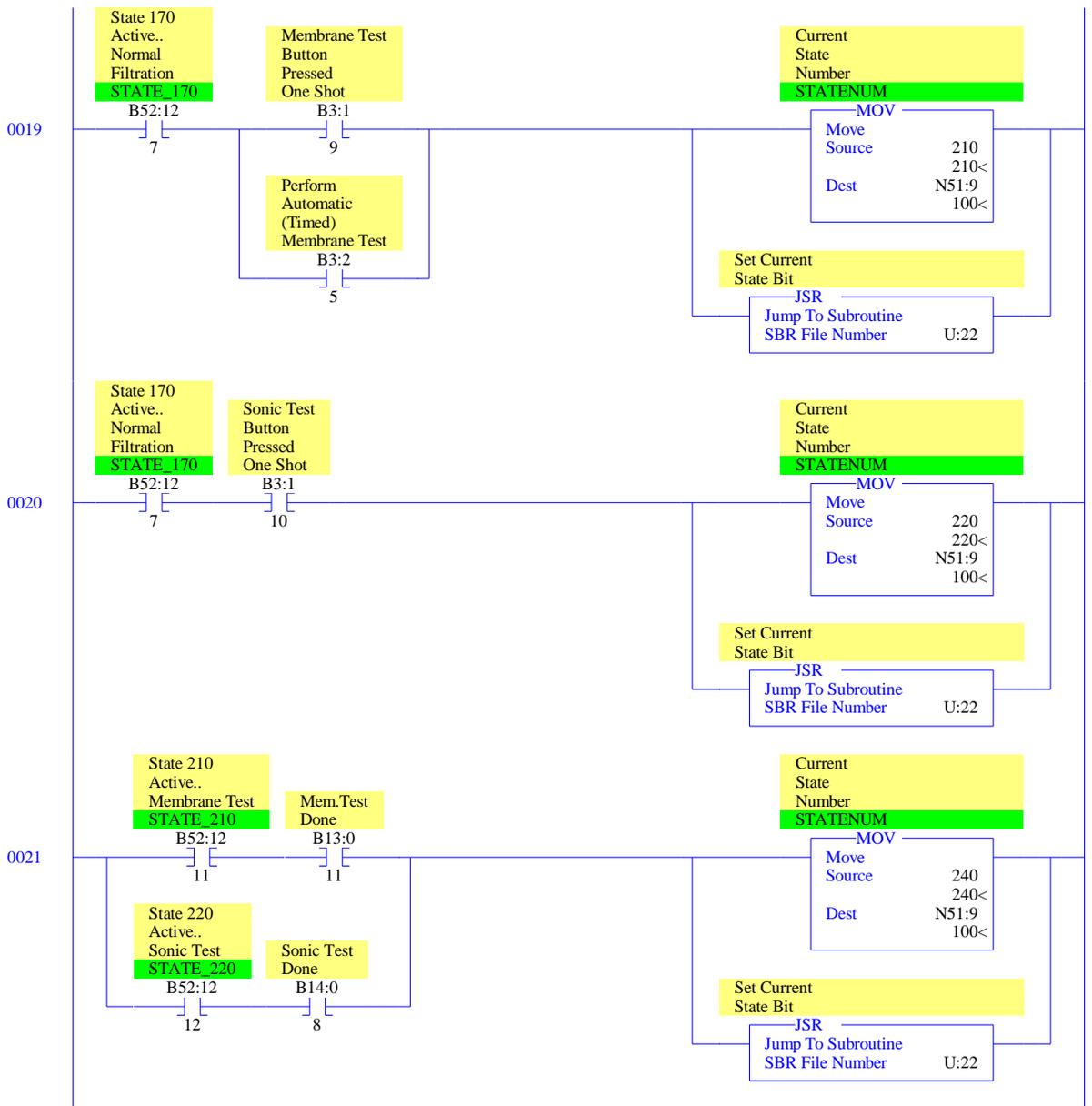


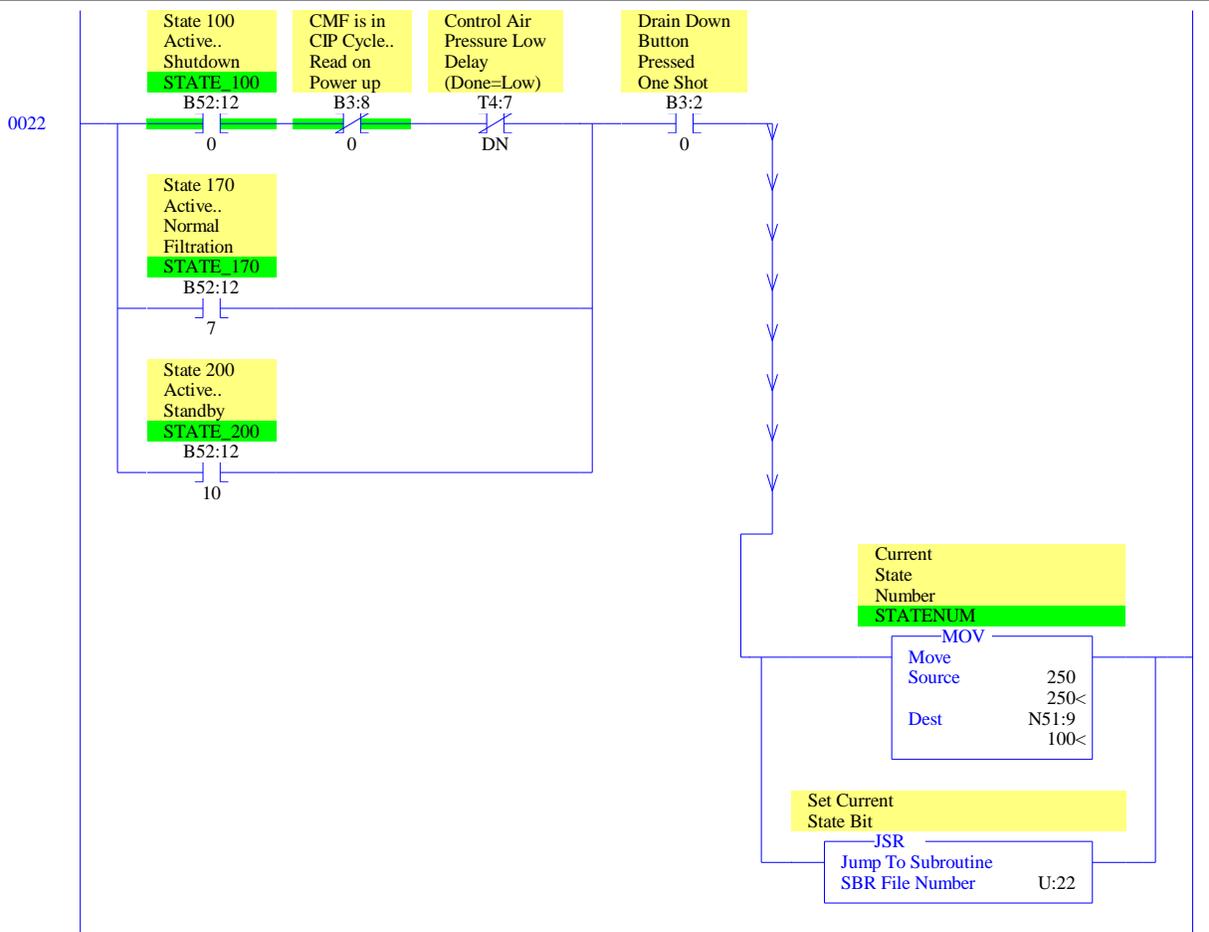


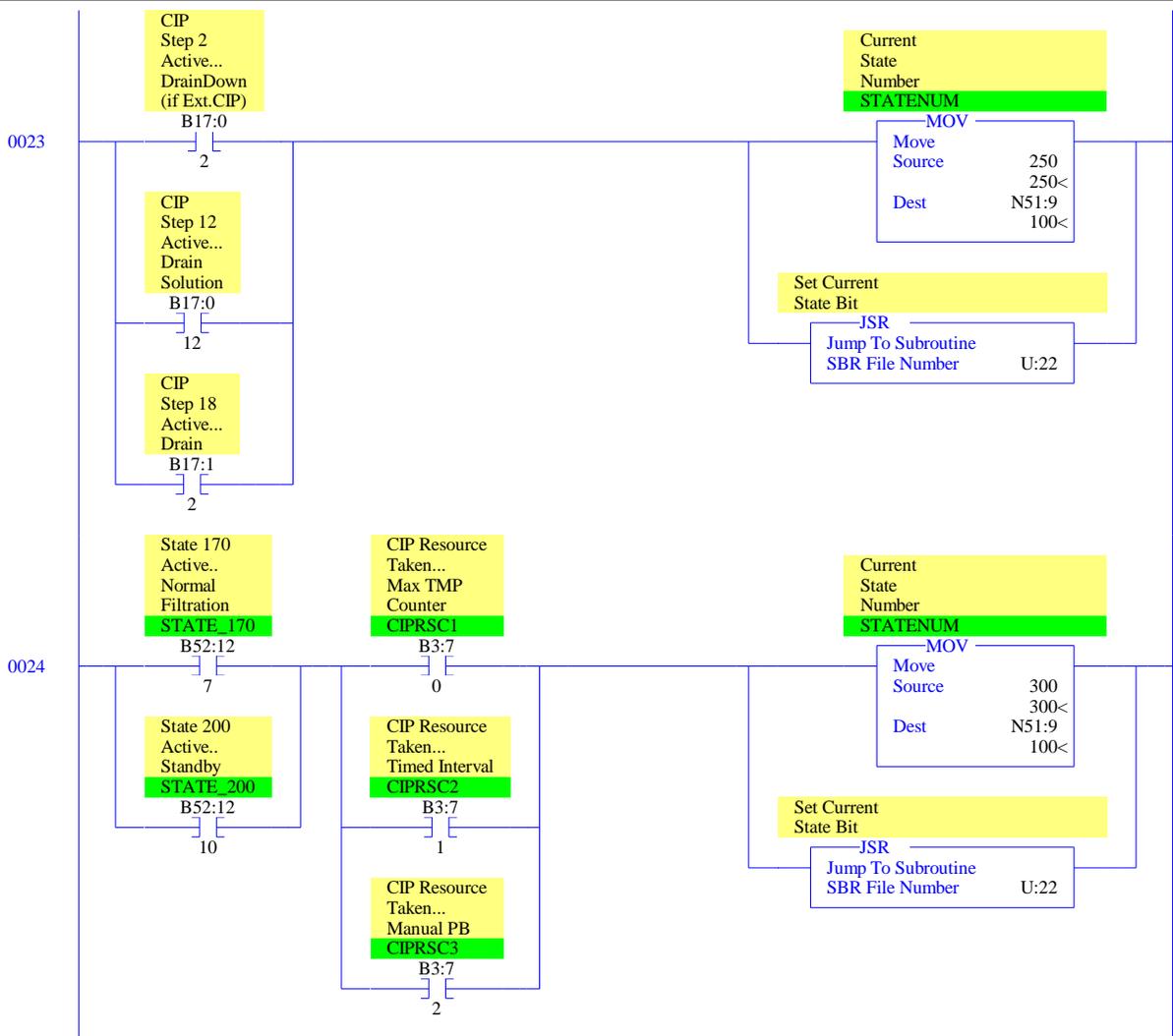


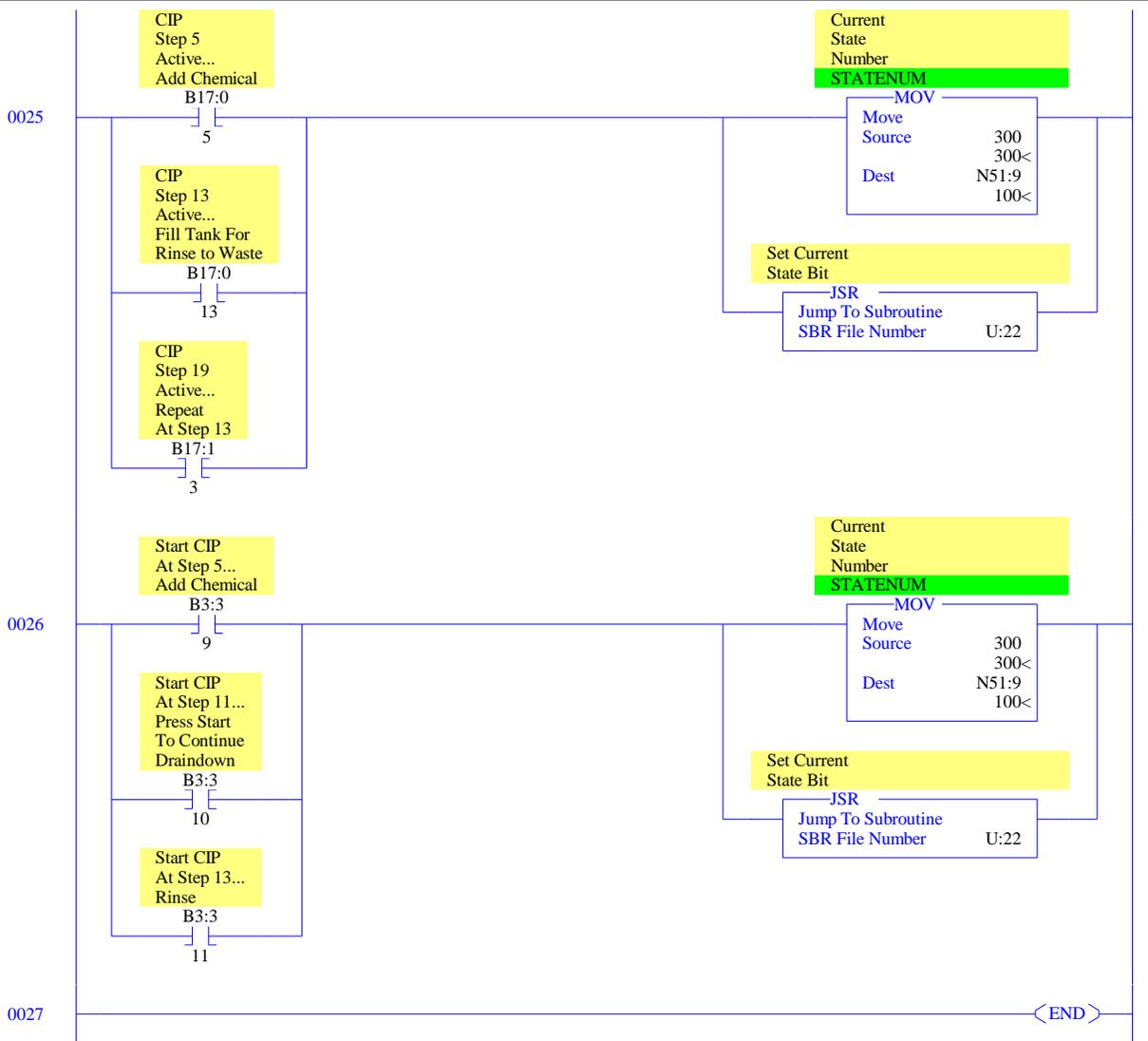


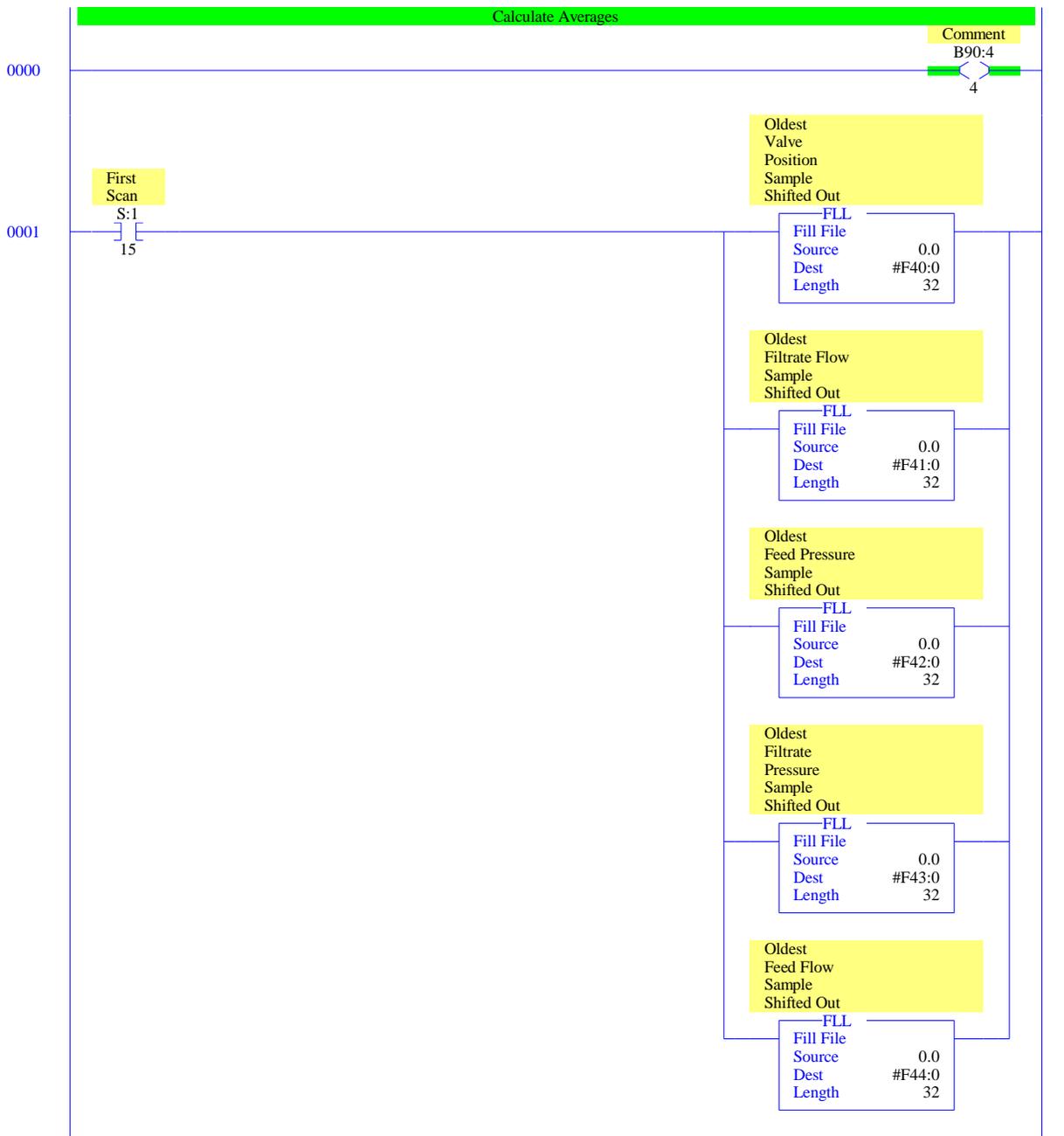


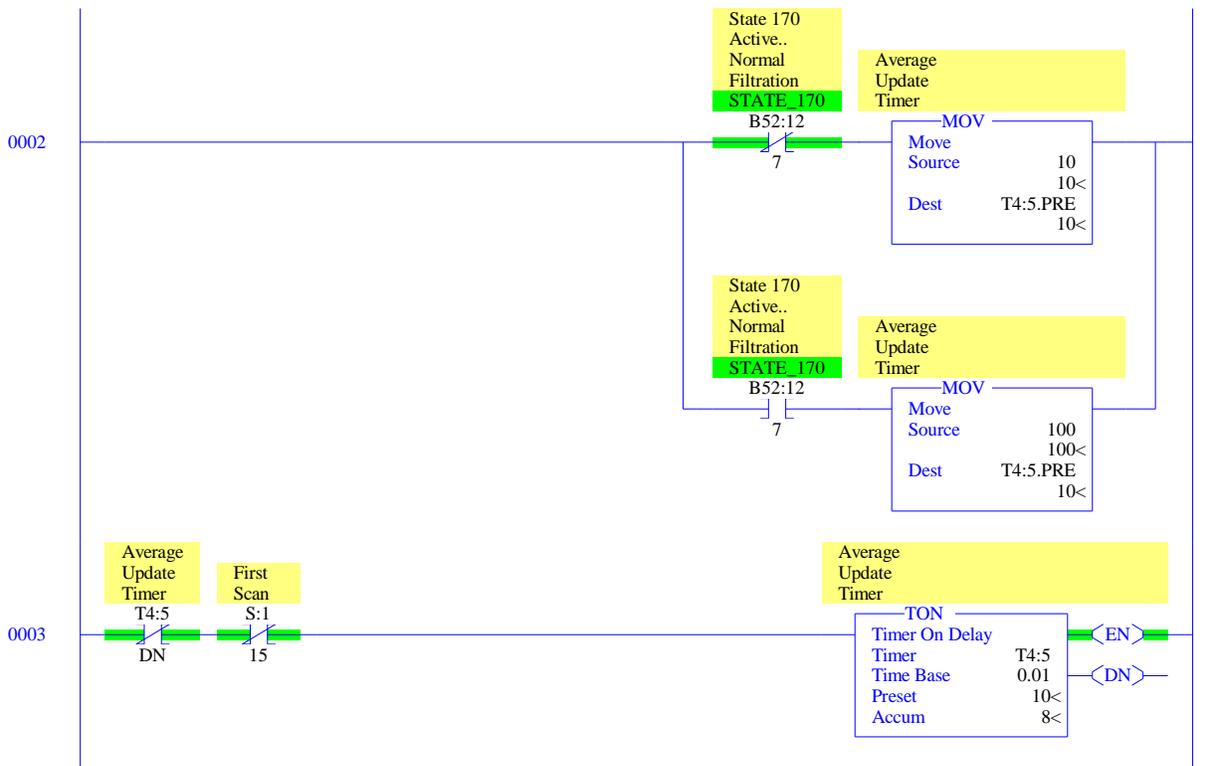


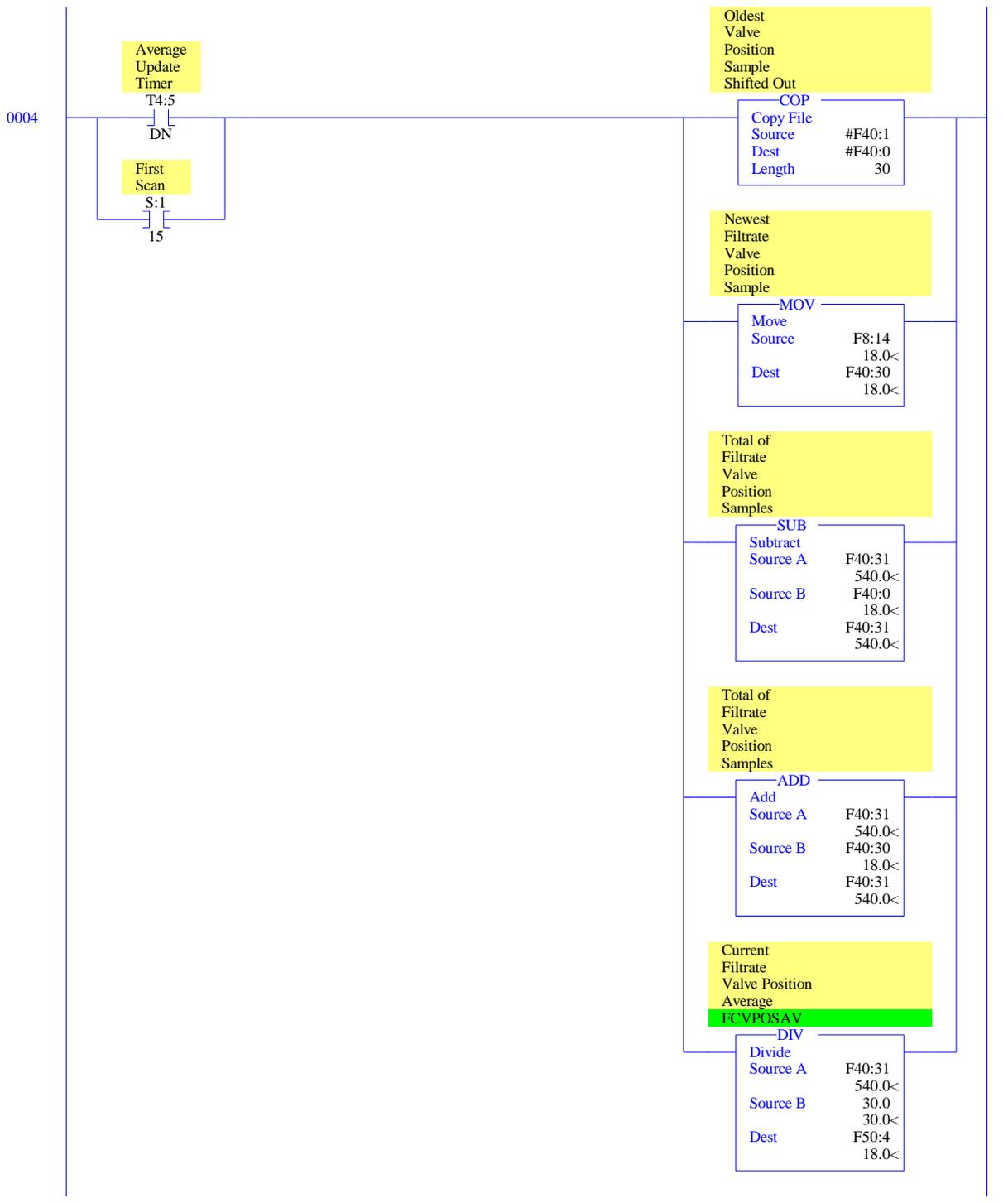


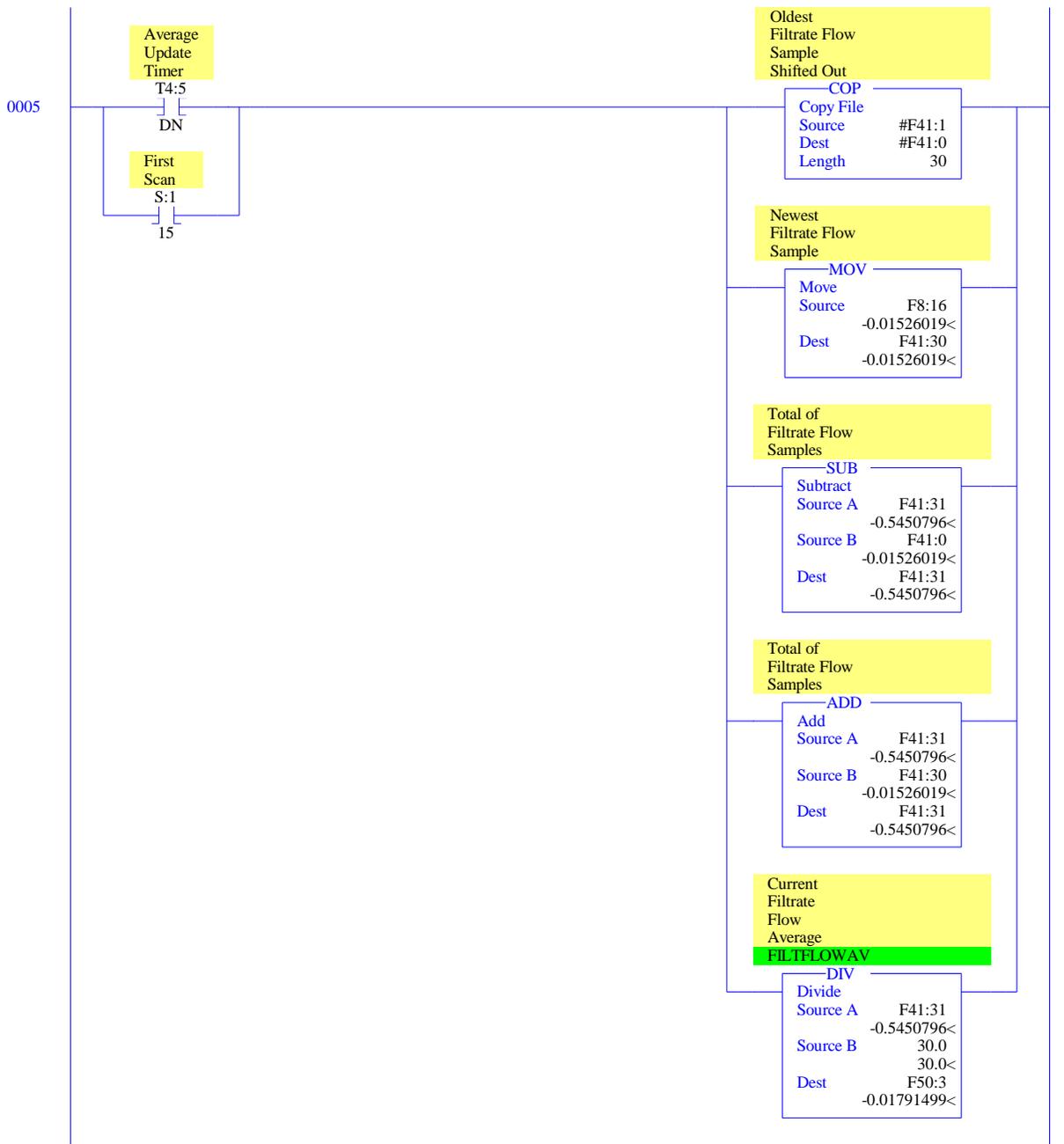


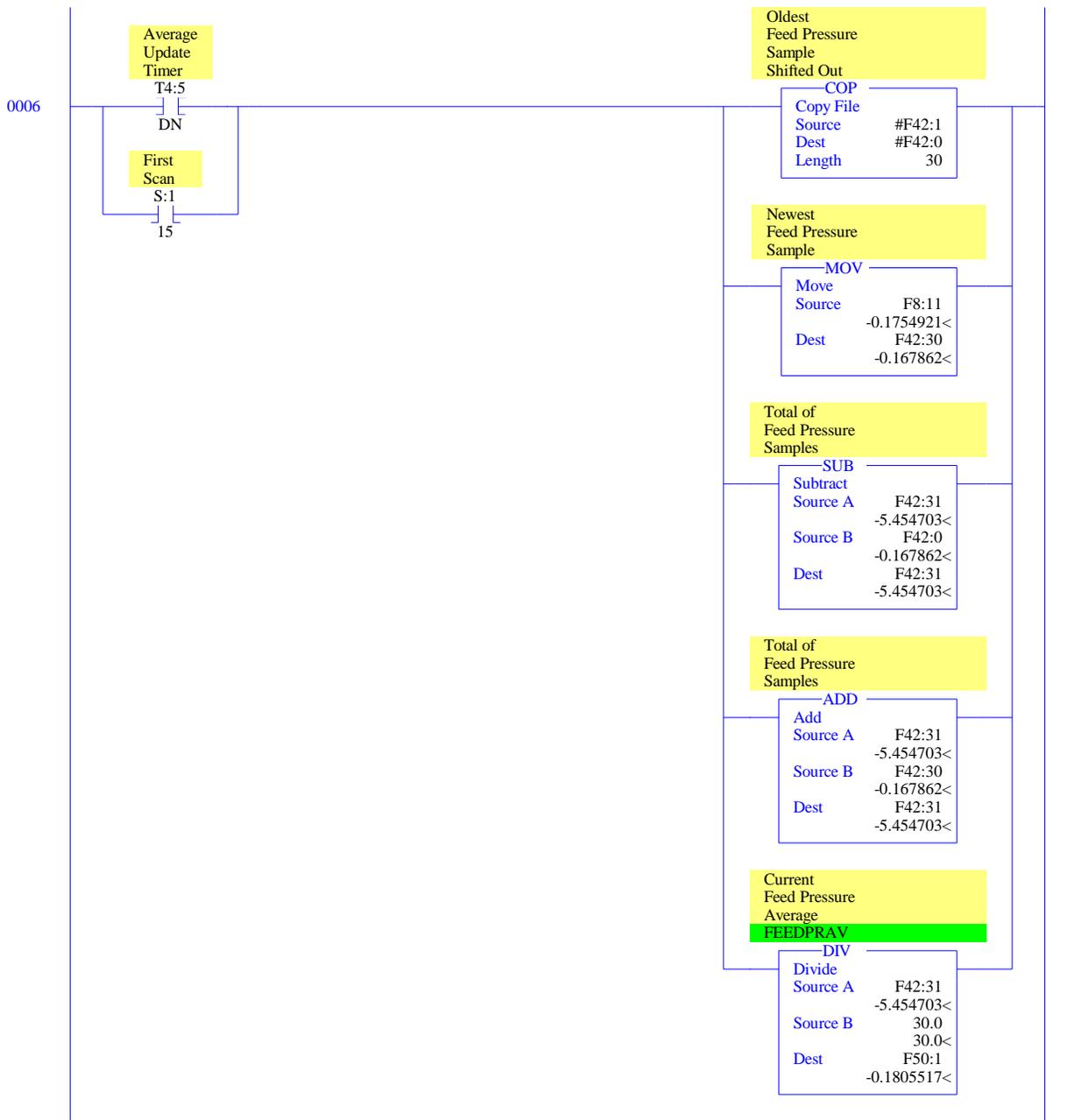


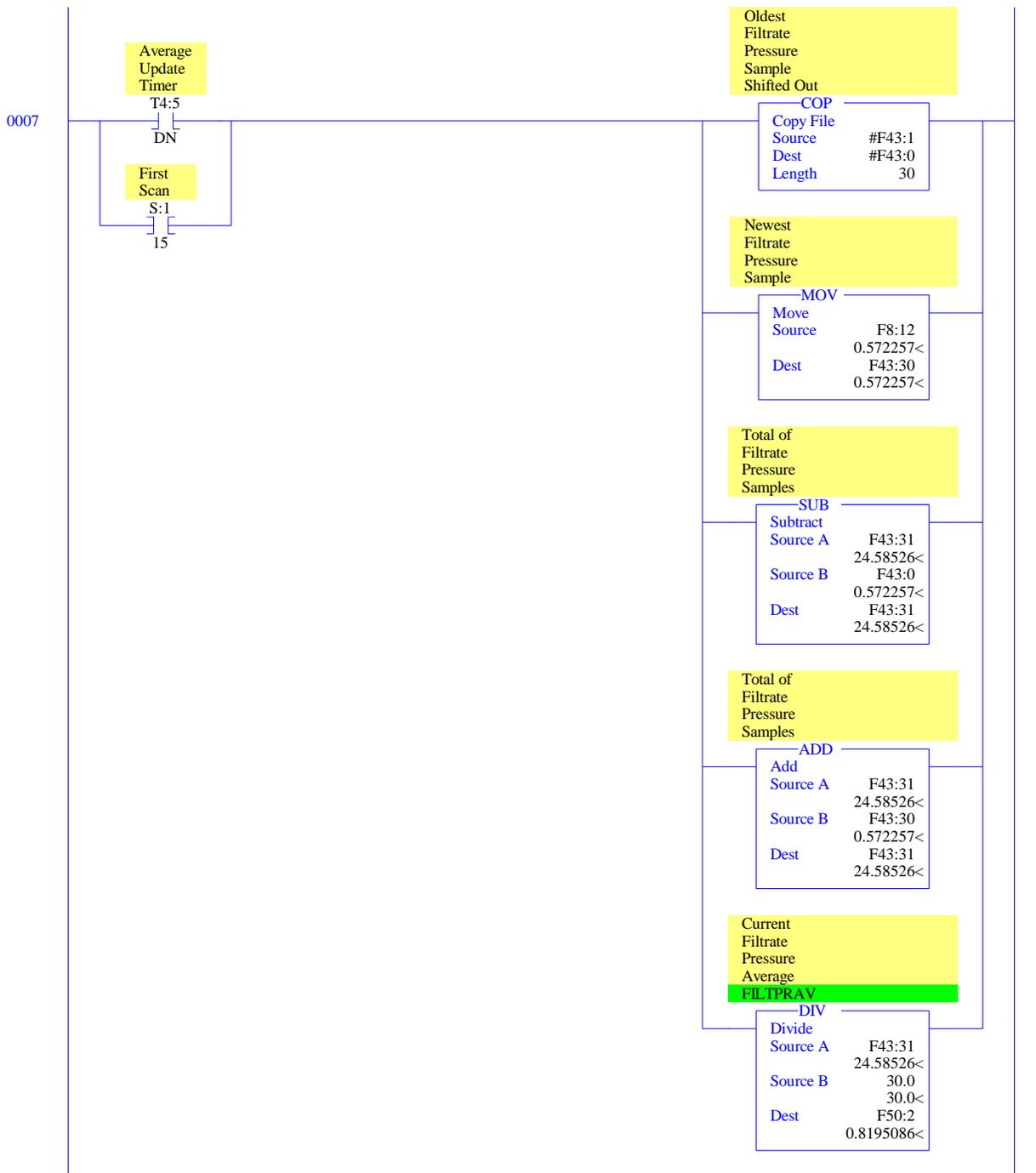












0008

TMP Actual
Value
(PSI)
TMPACT

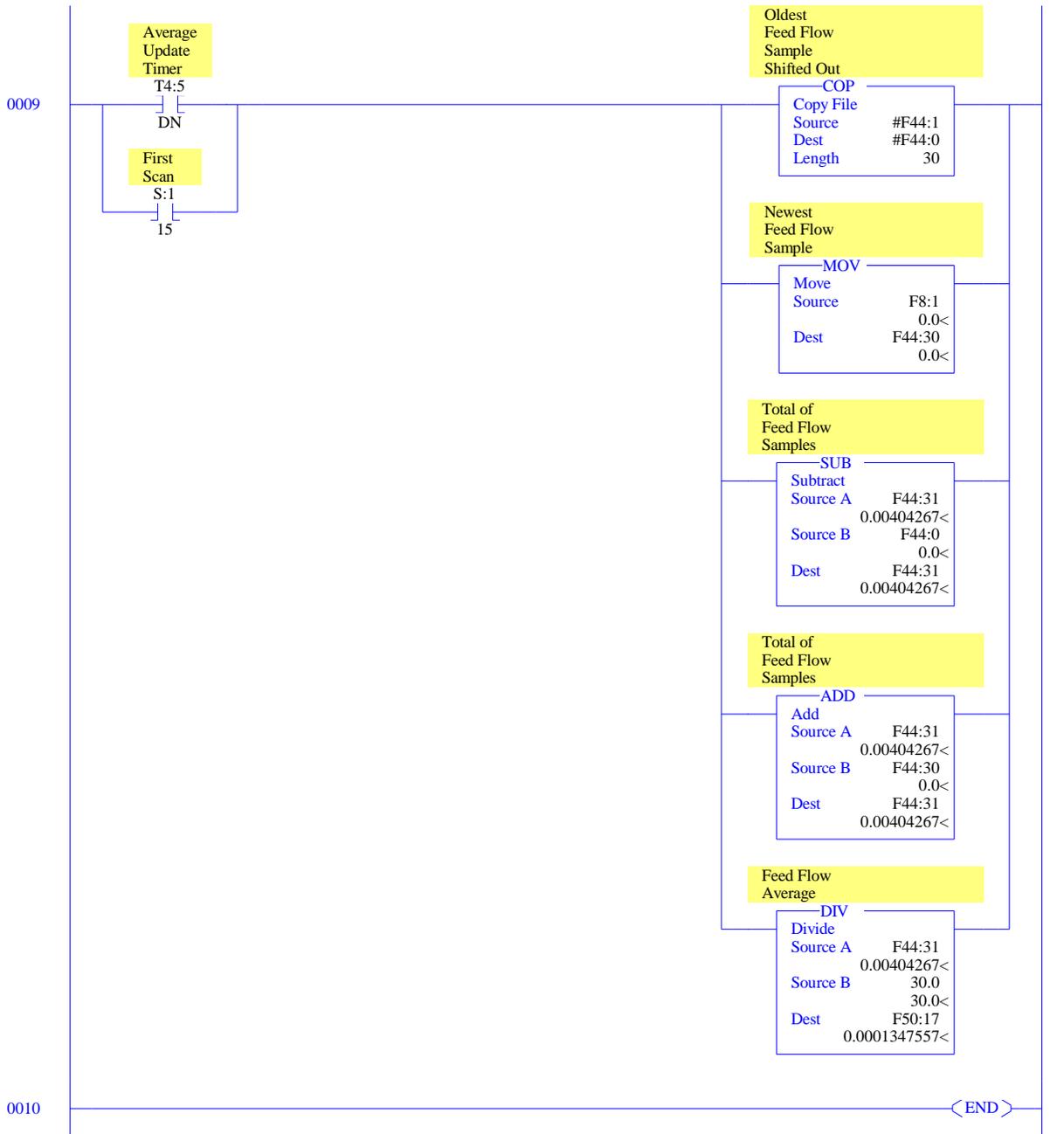
SUB
Subtract
Source A F8:11
-0.1754921<
Source B F8:12
0.572257<
Dest F8:15
-0.7477491<

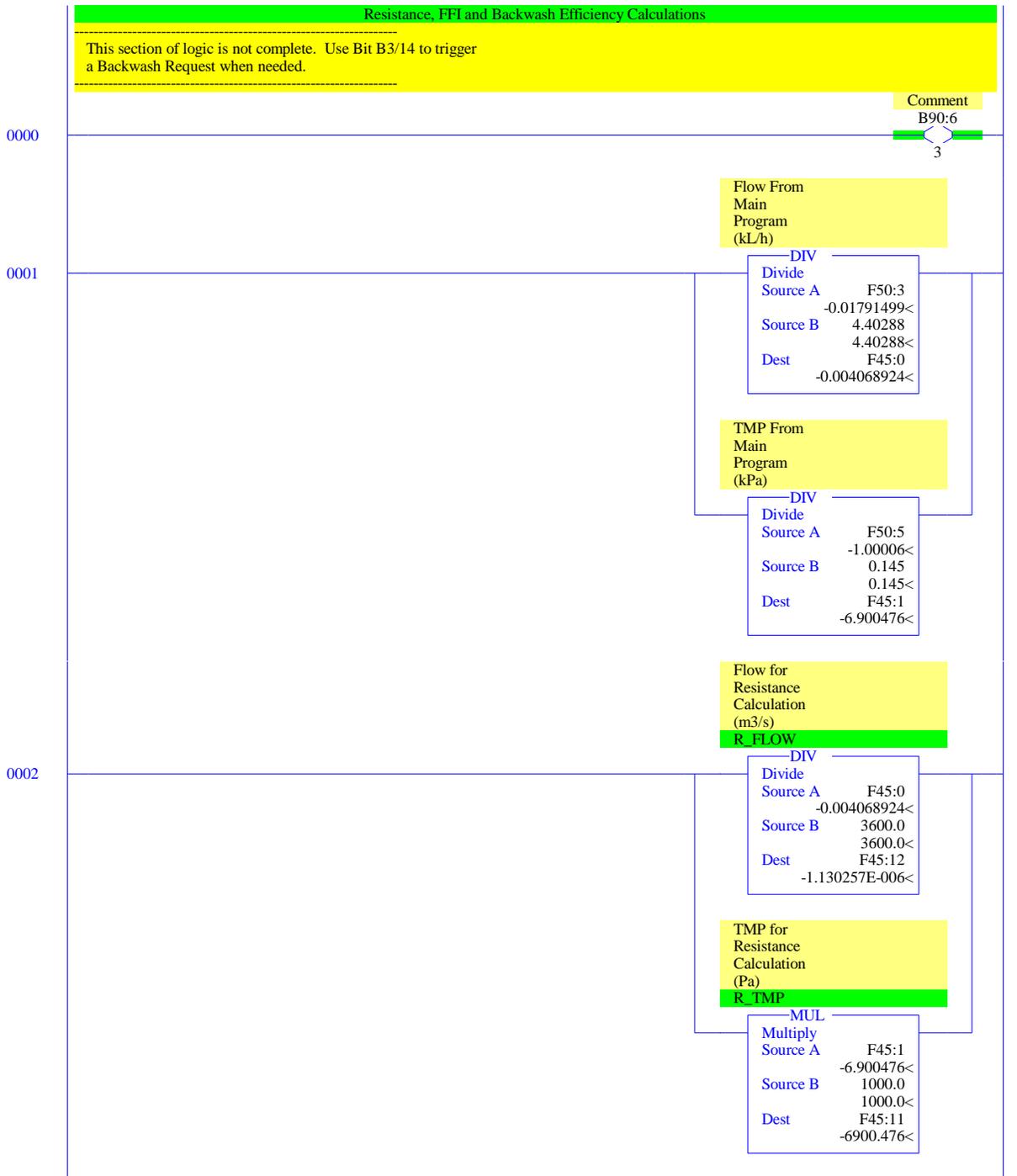
Current TMP
Average
TMPAV

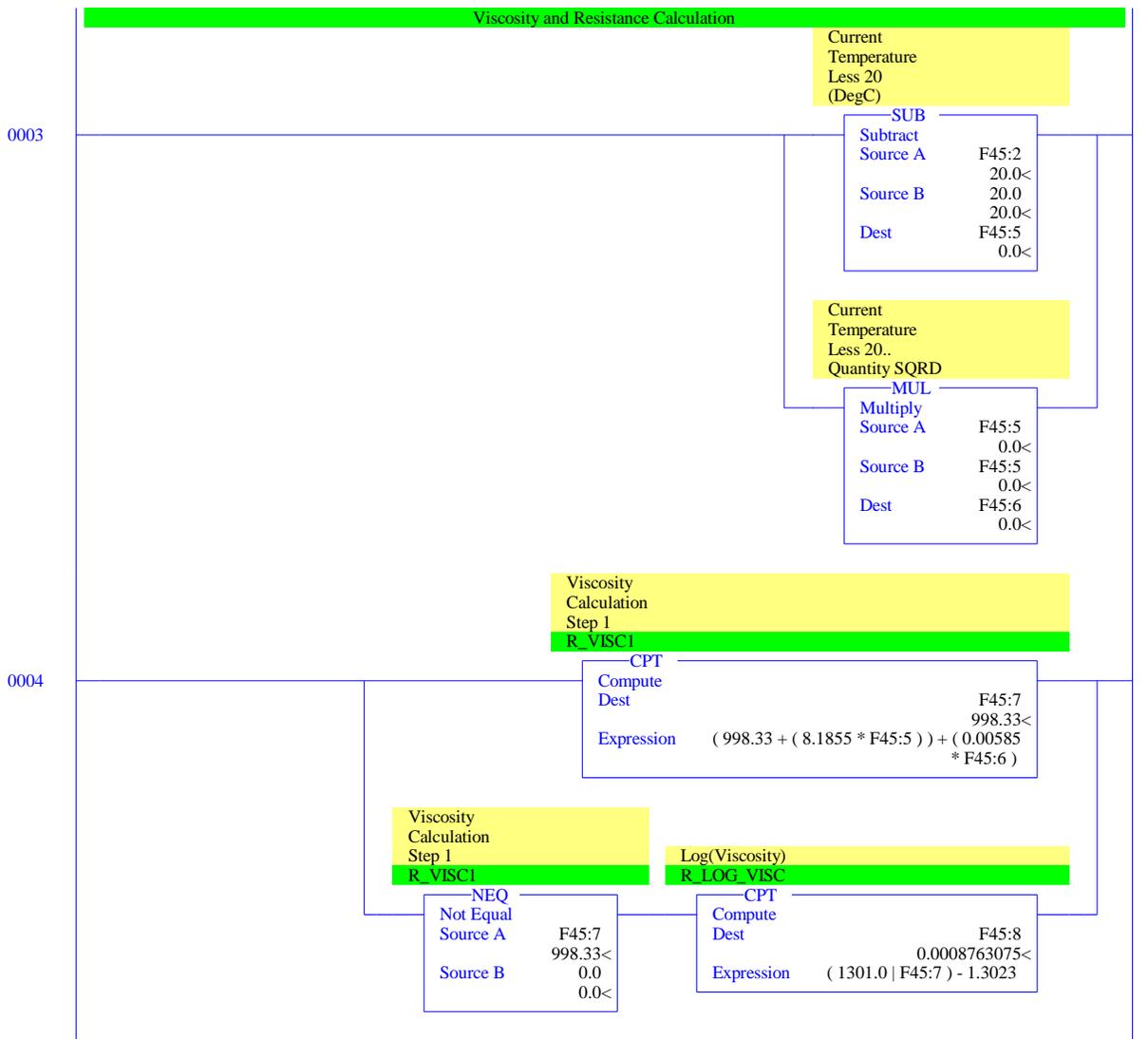
SUB
Subtract
Source A F50:1
-0.1805517<
Source B F50:2
0.8195086<
Dest F50:5
-1.00006<

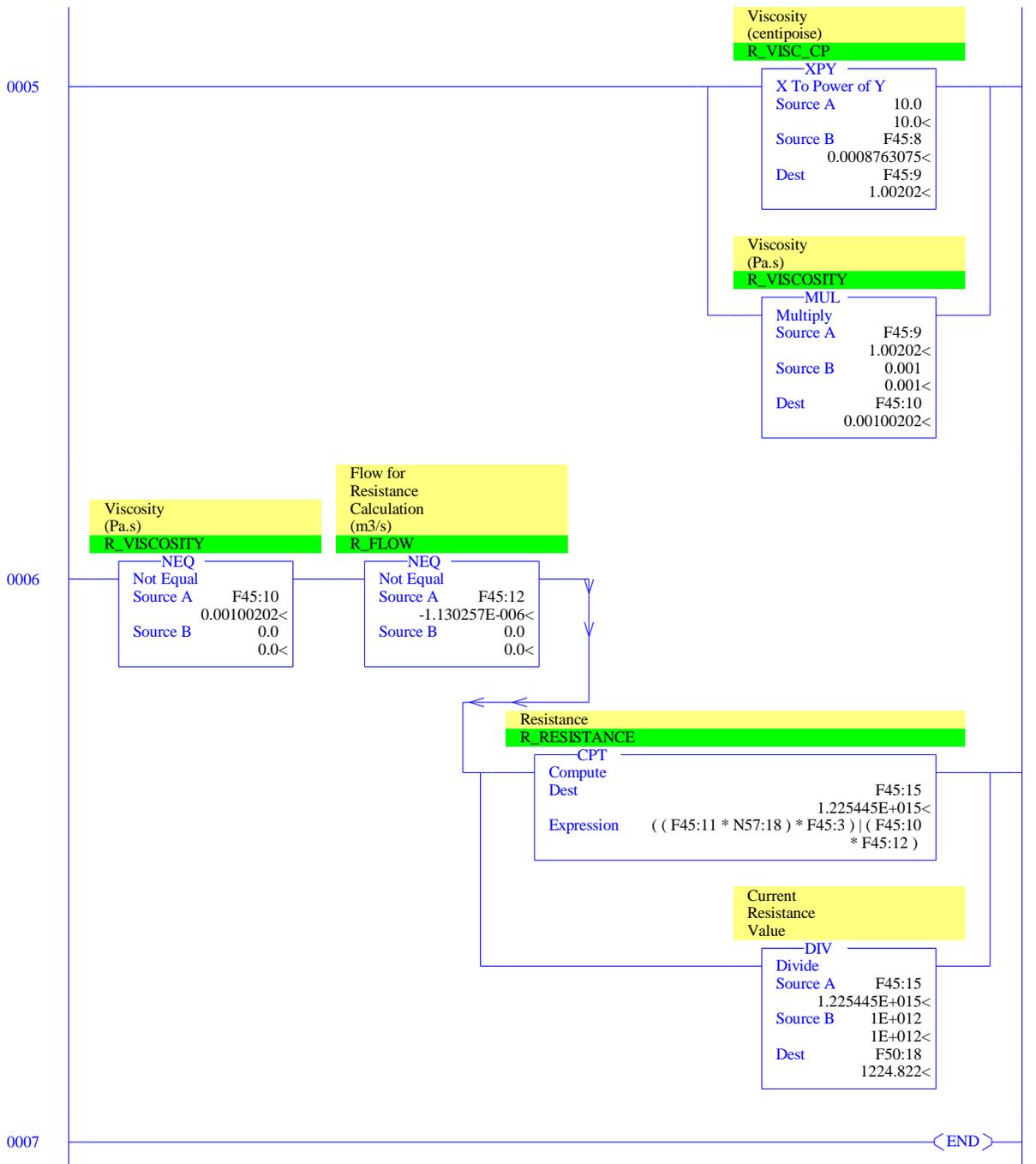
TMP Value
For PanelView

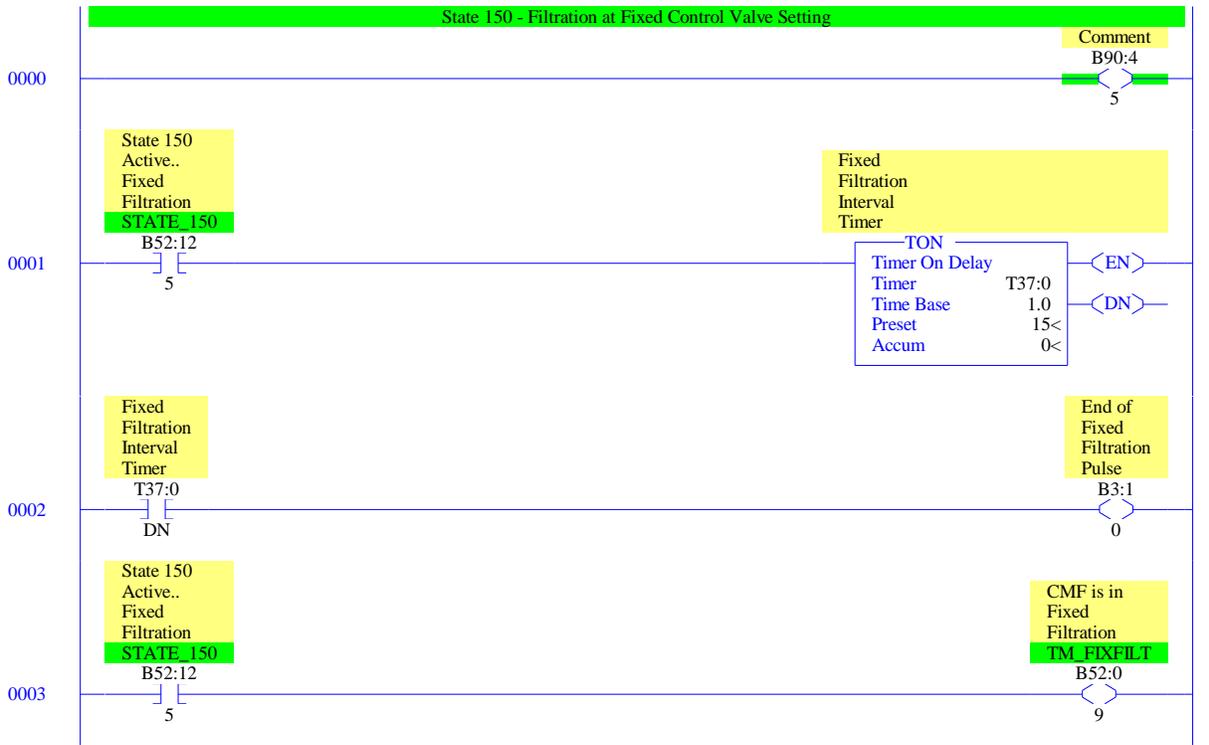
MUL
Multiply
Source A F50:5
-1.00006<
Source B 100.0
100.0<
Dest N31:15
-100<

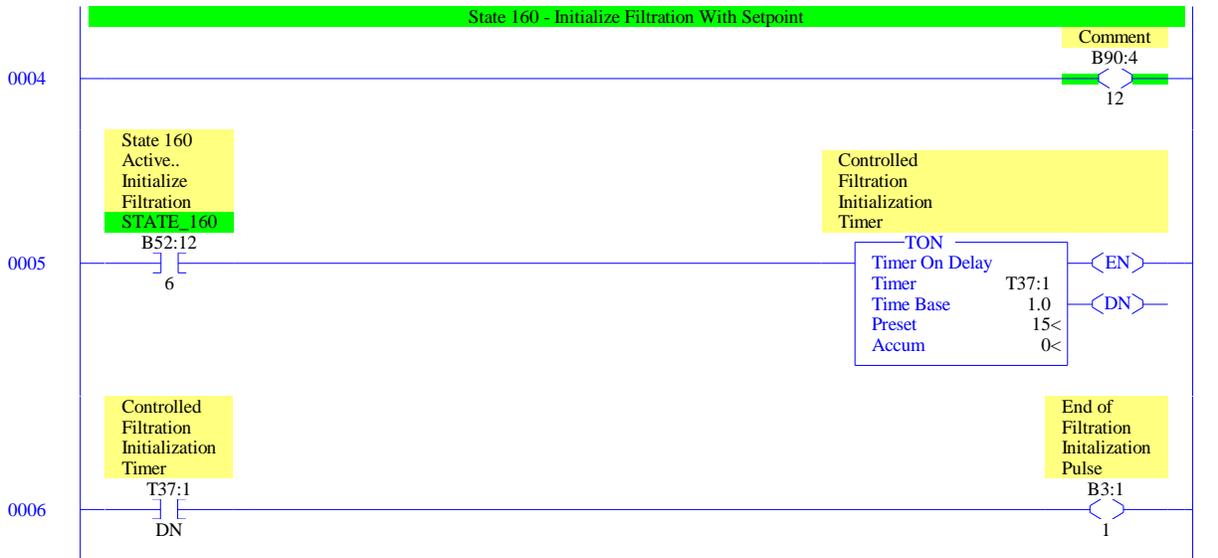


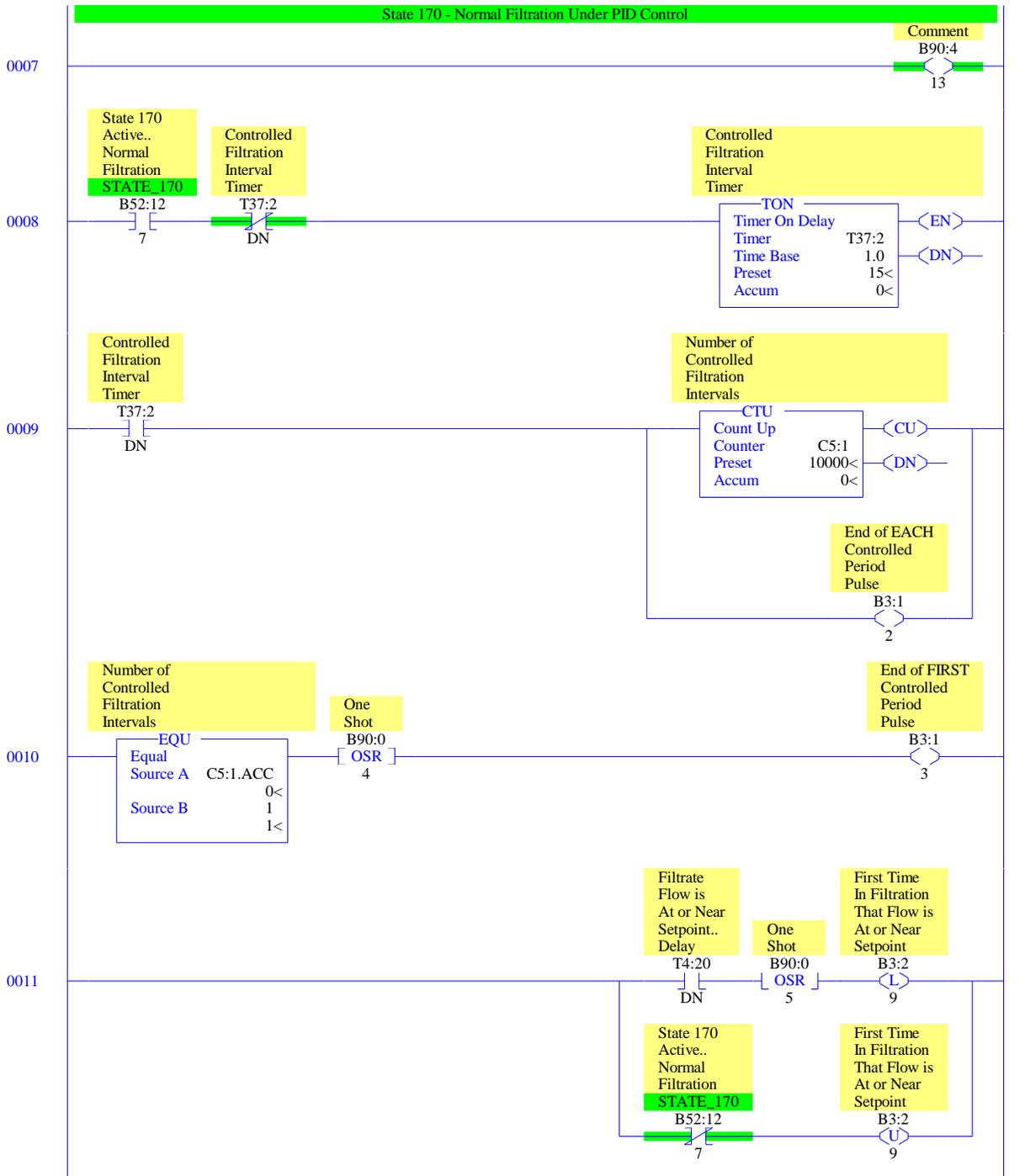


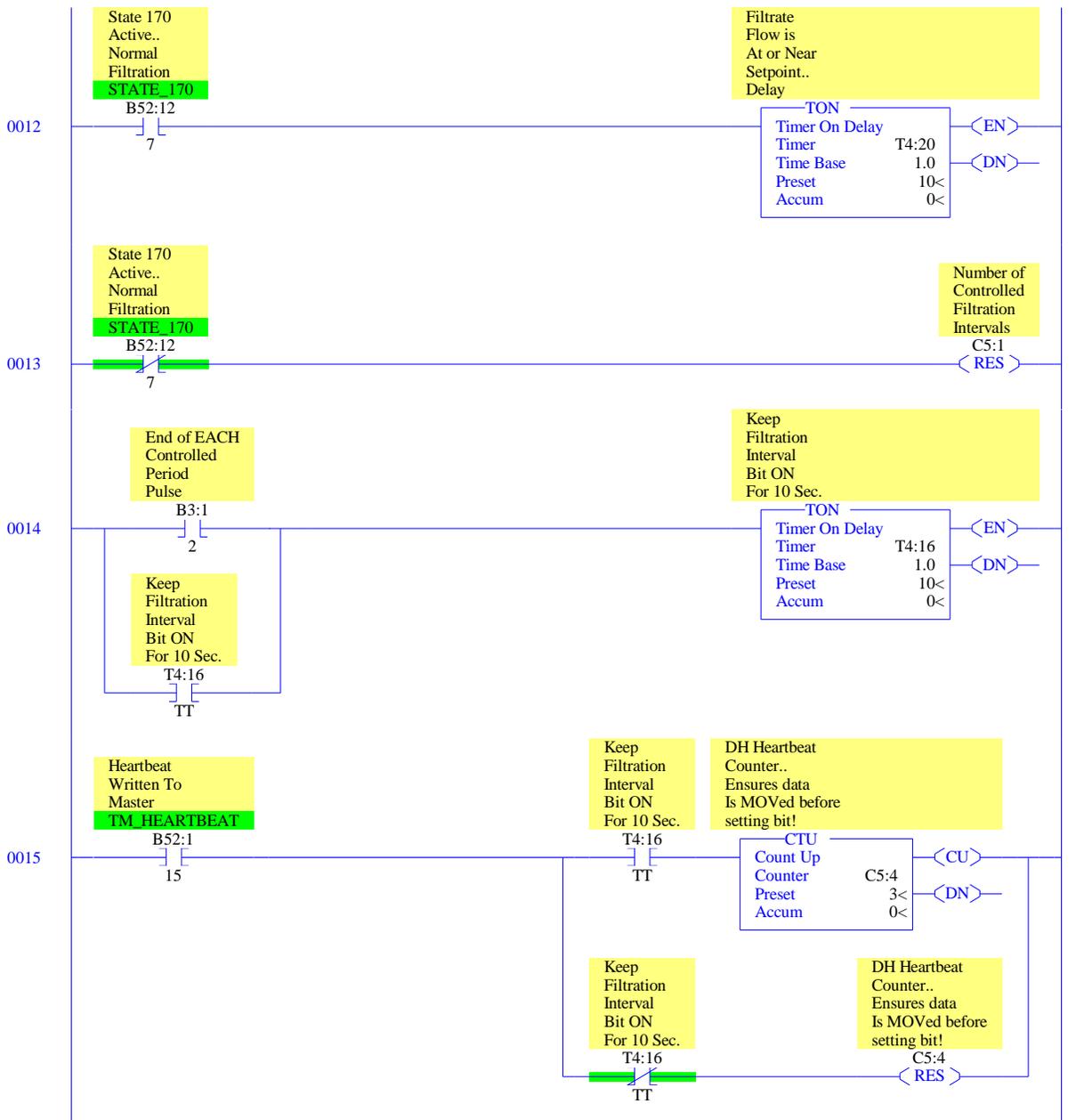


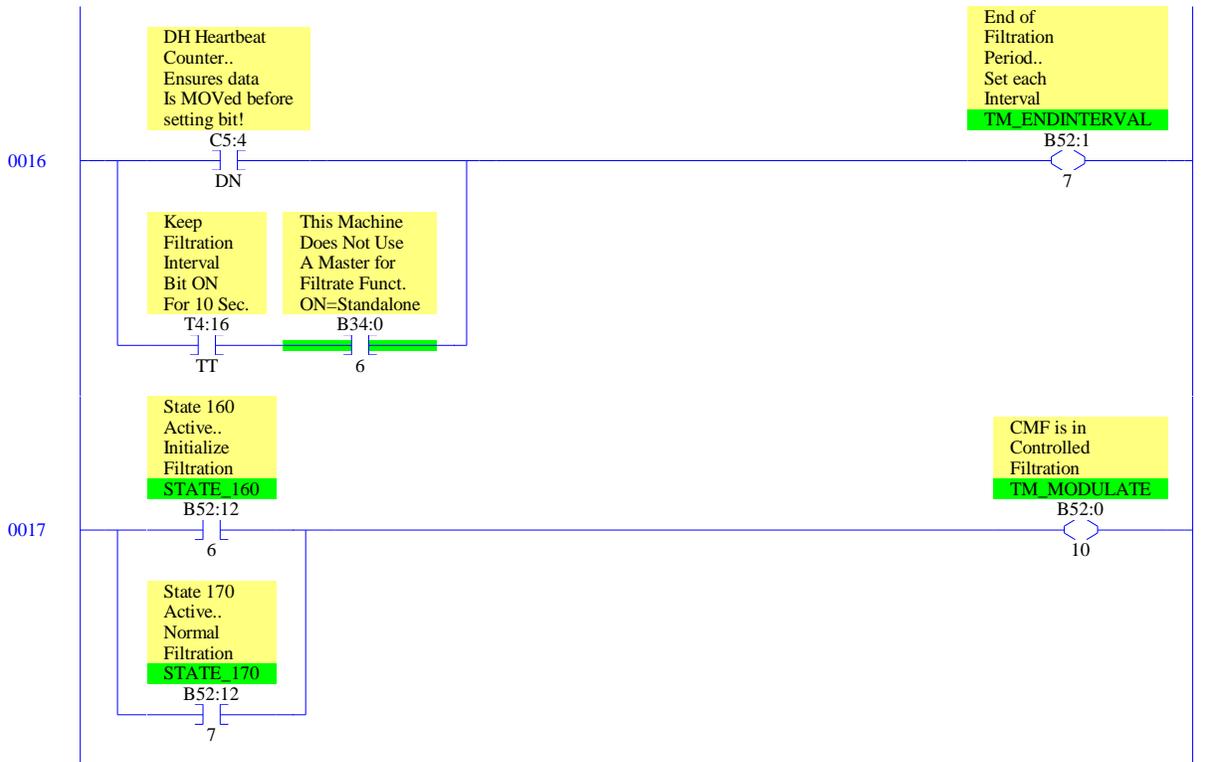


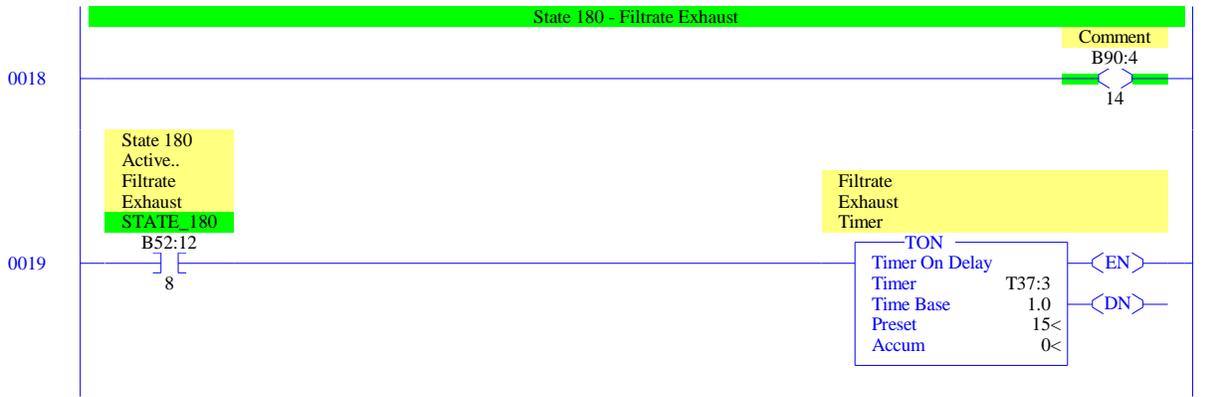


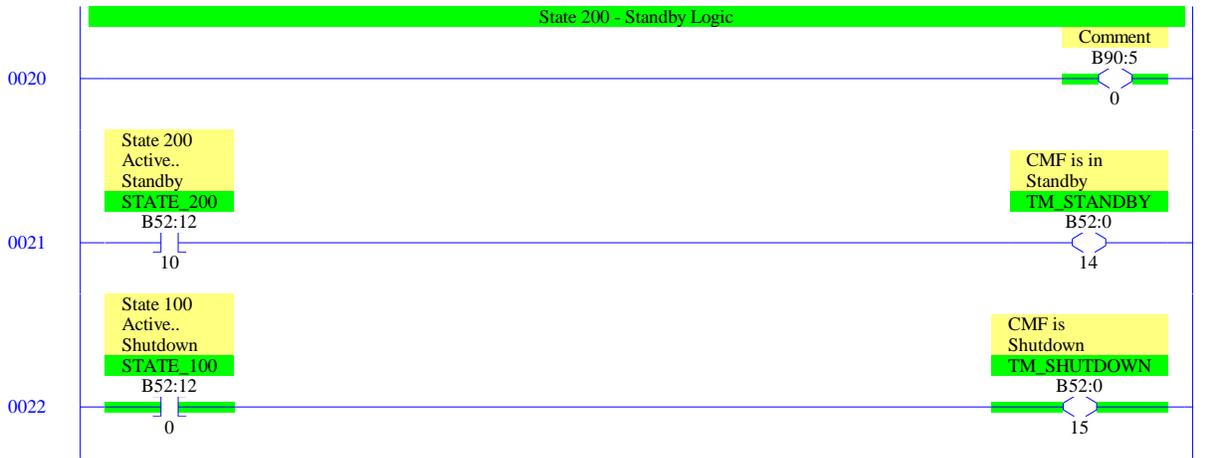


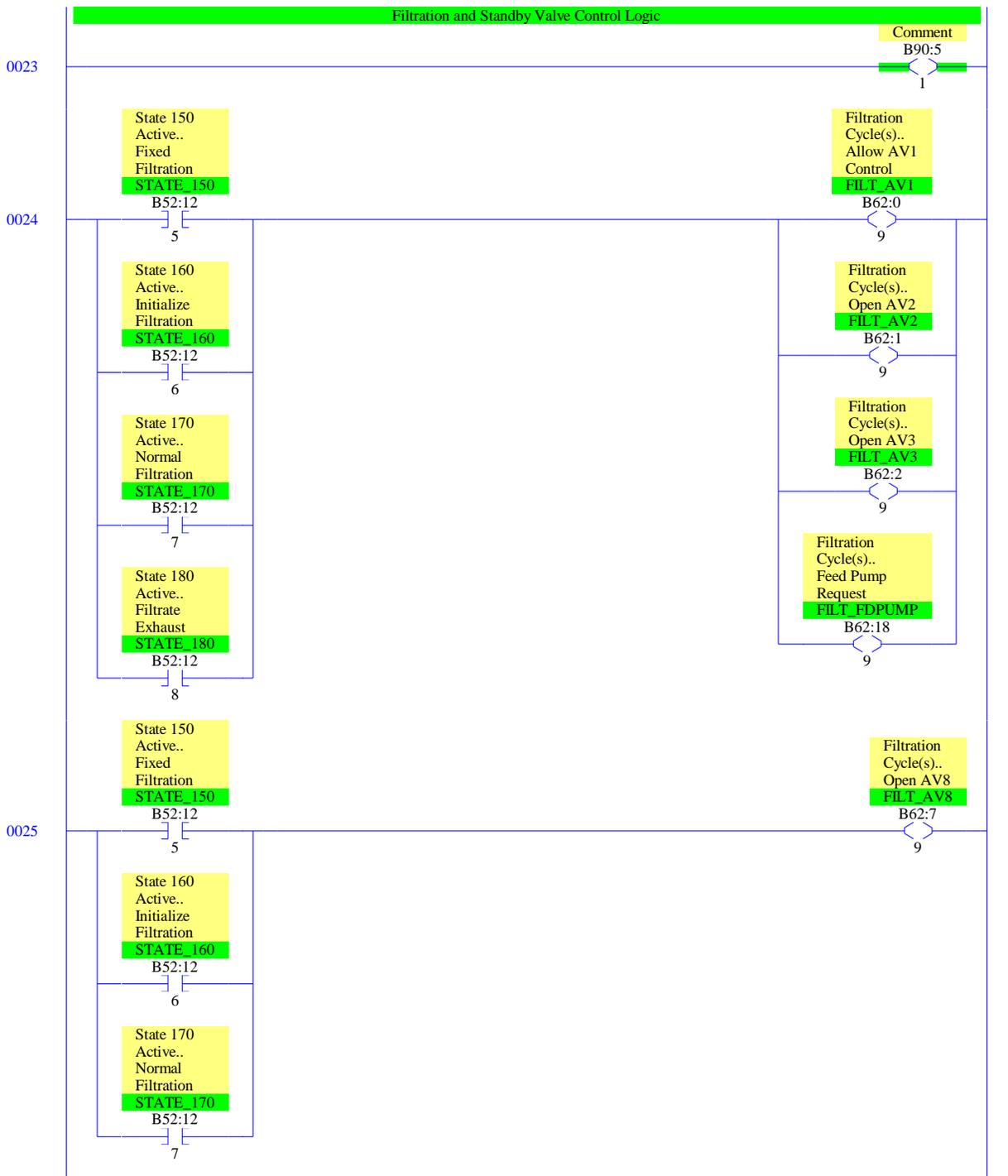


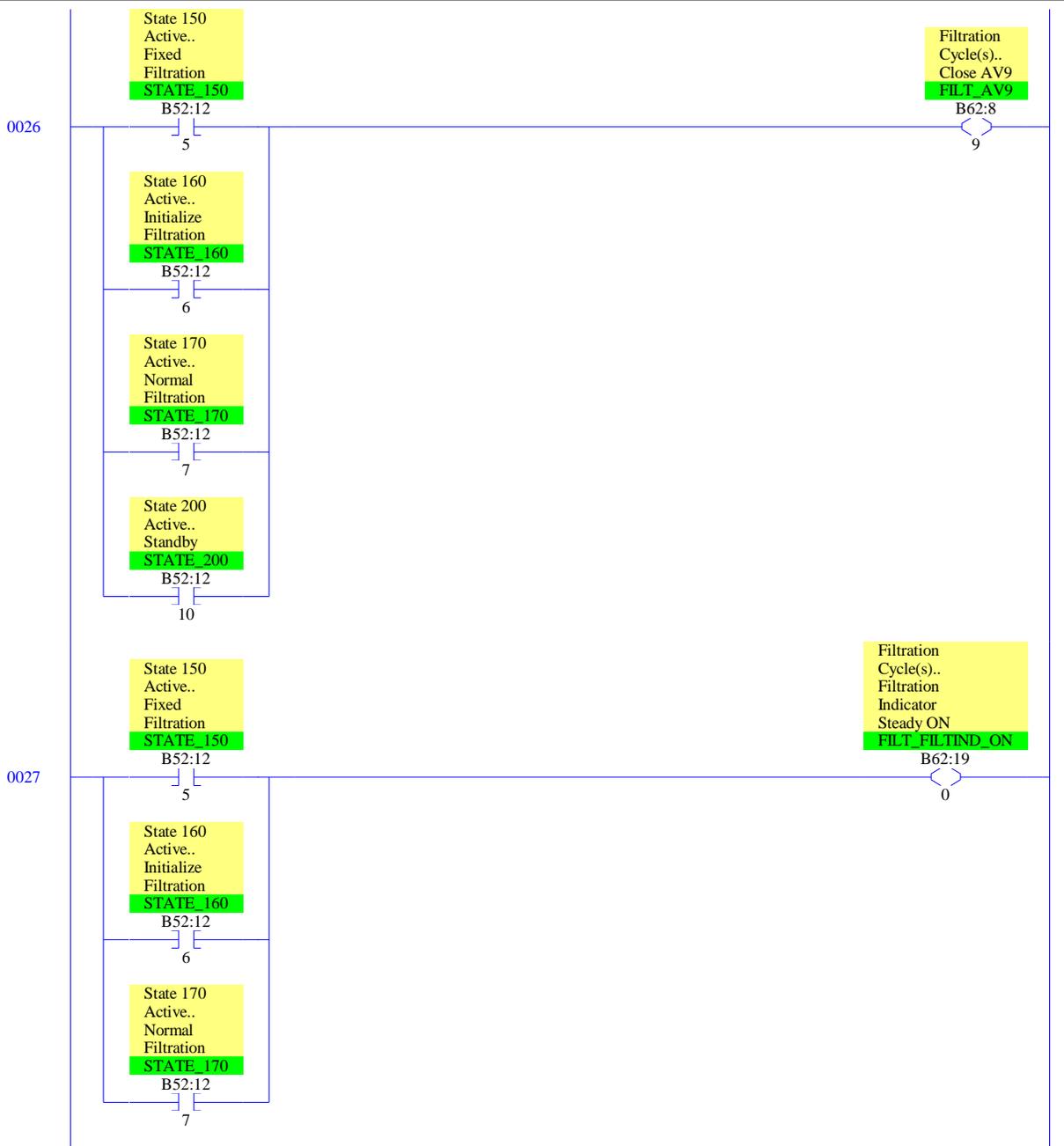


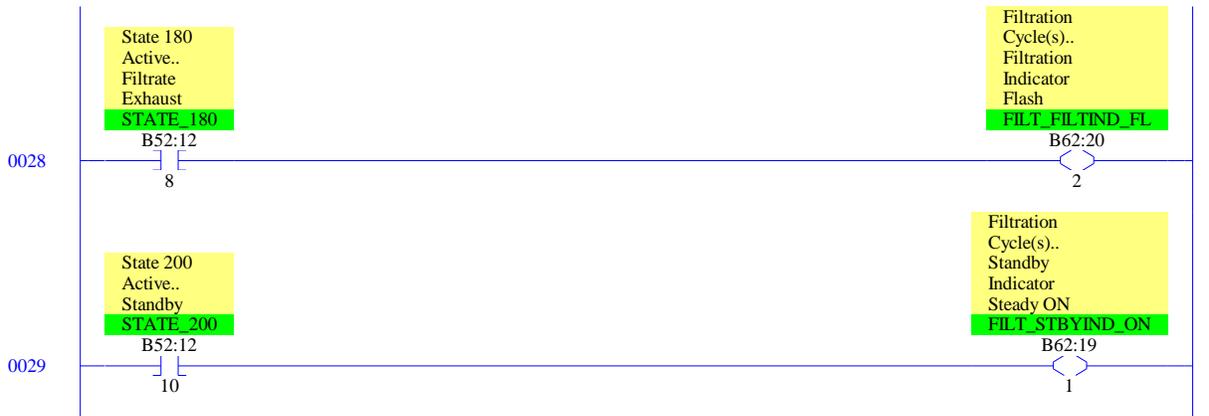


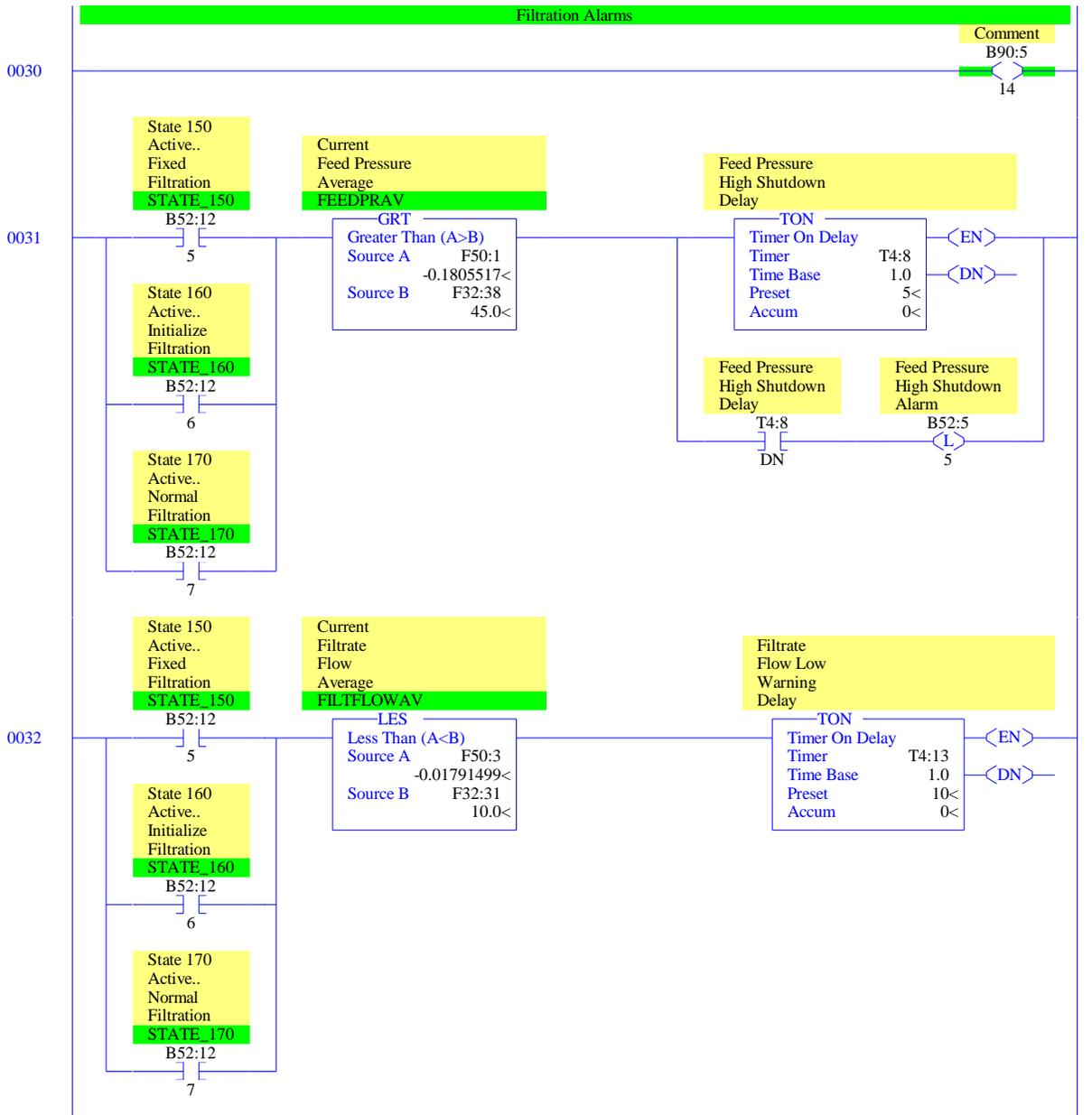


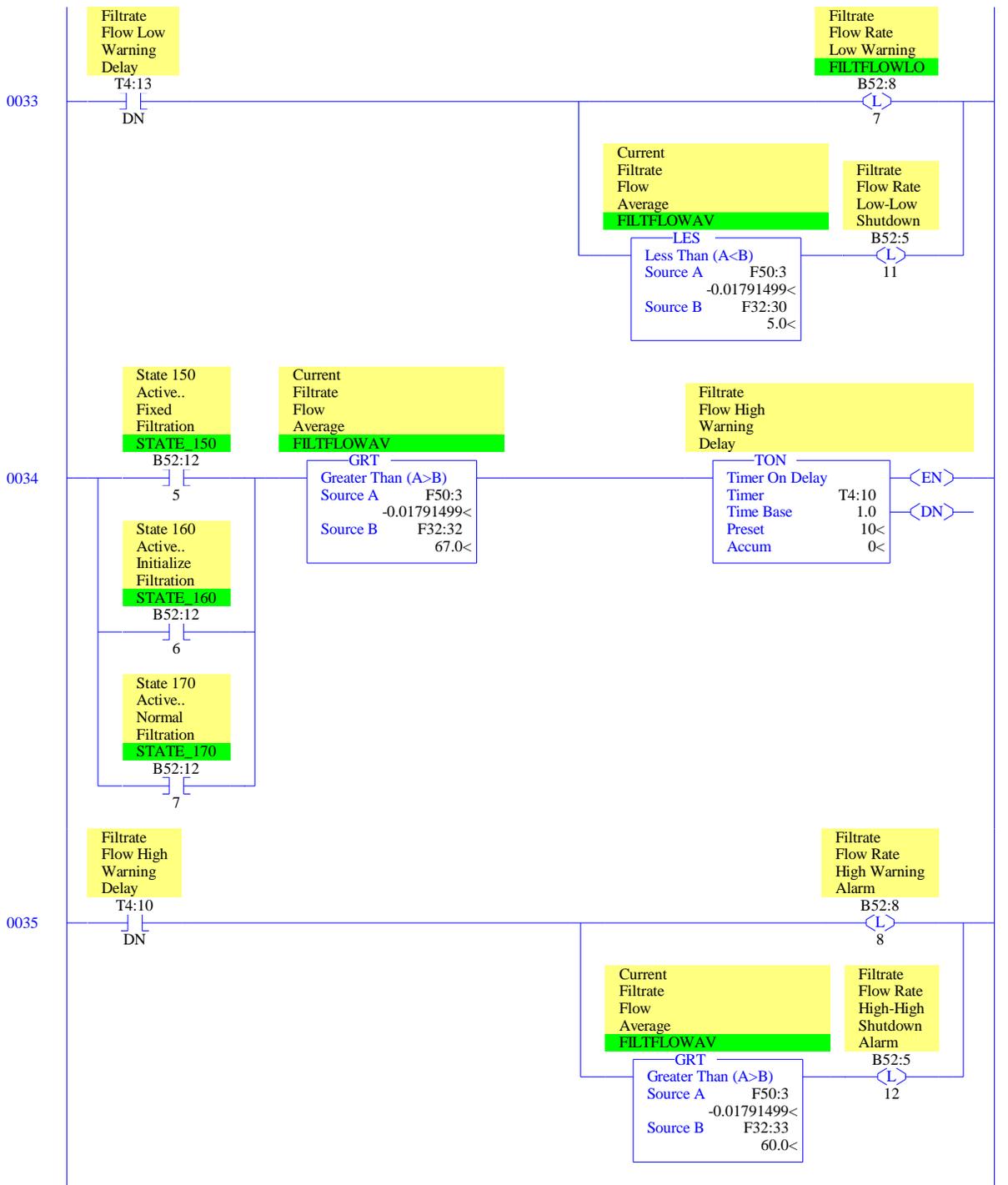


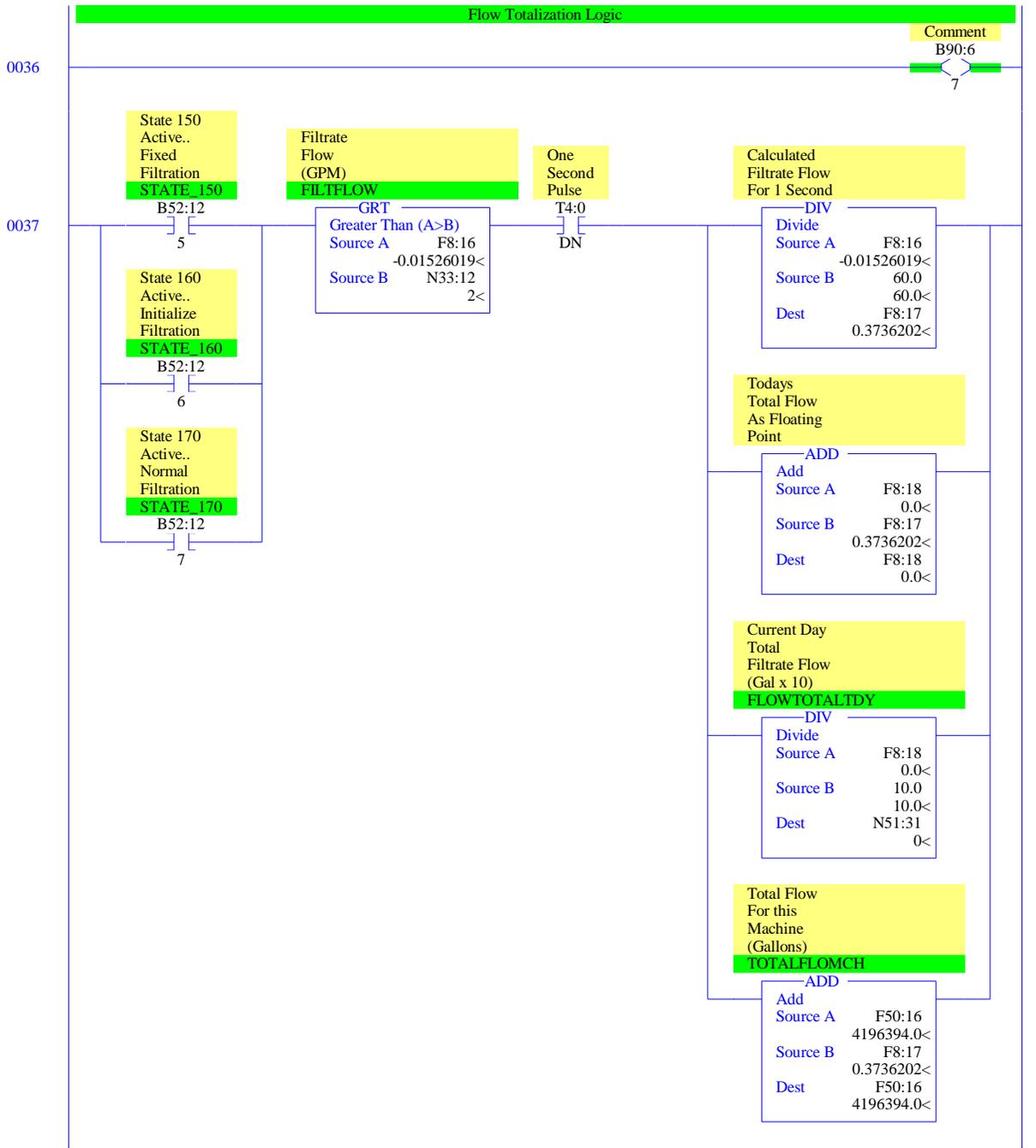


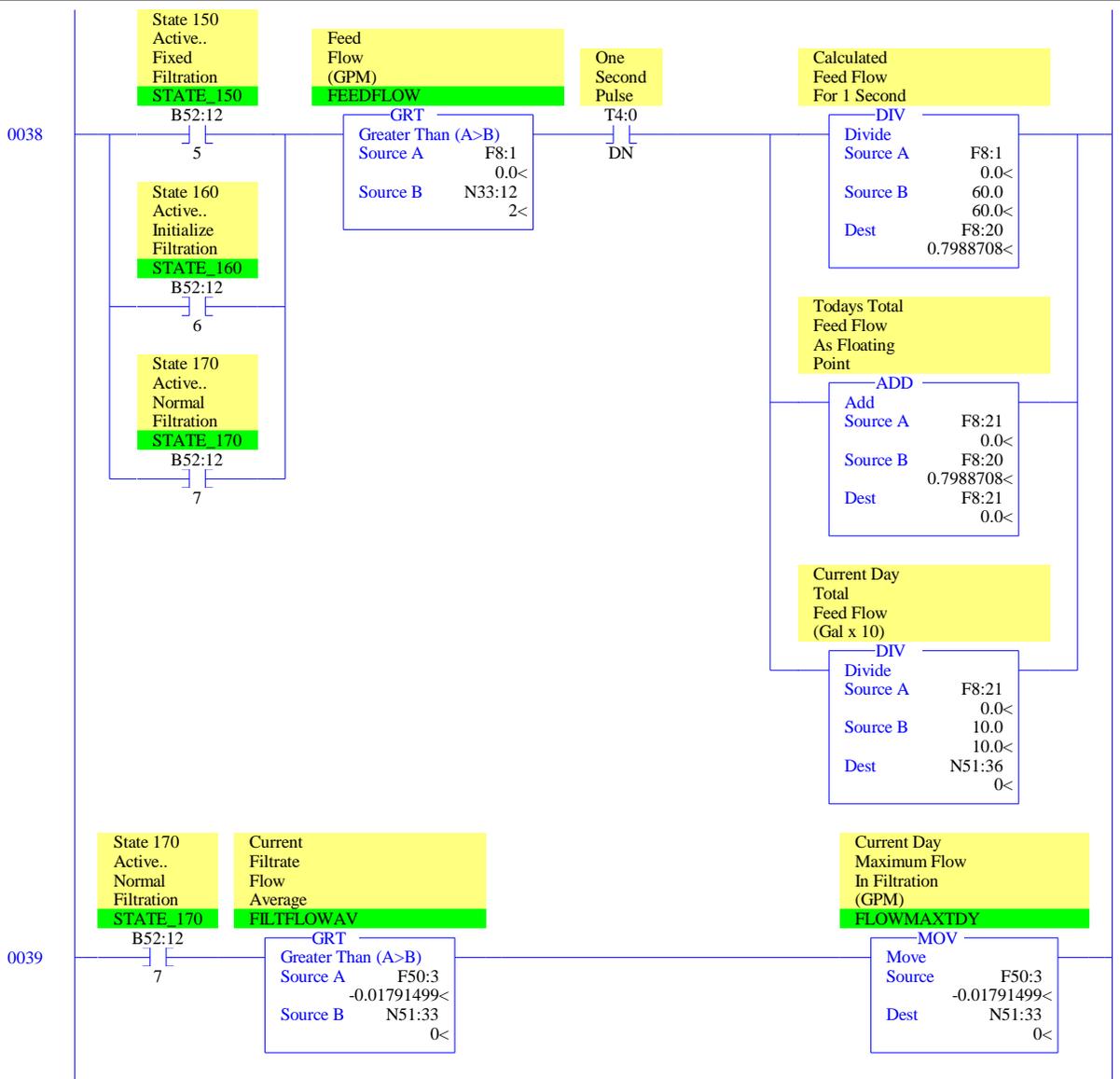


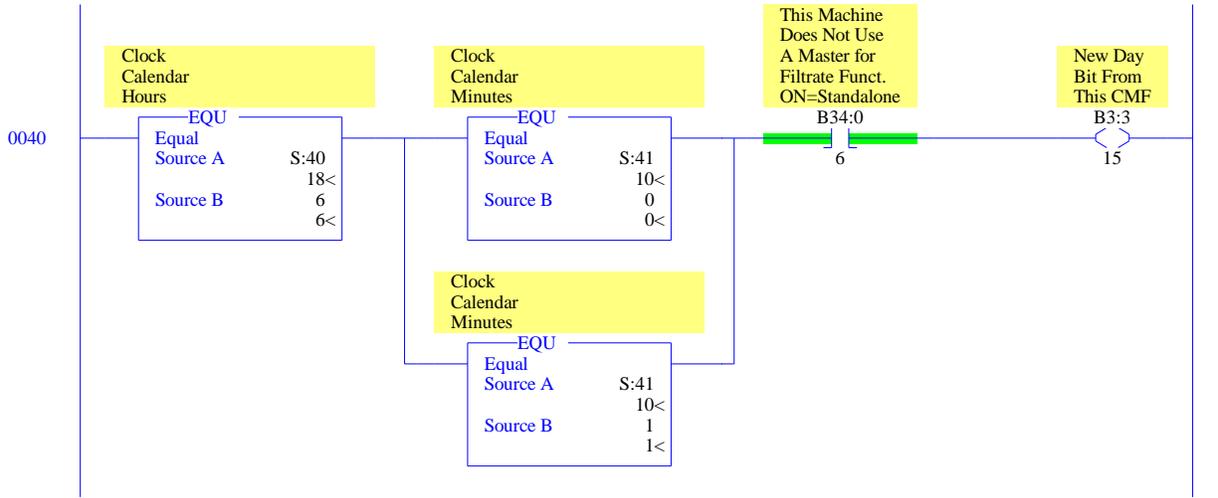


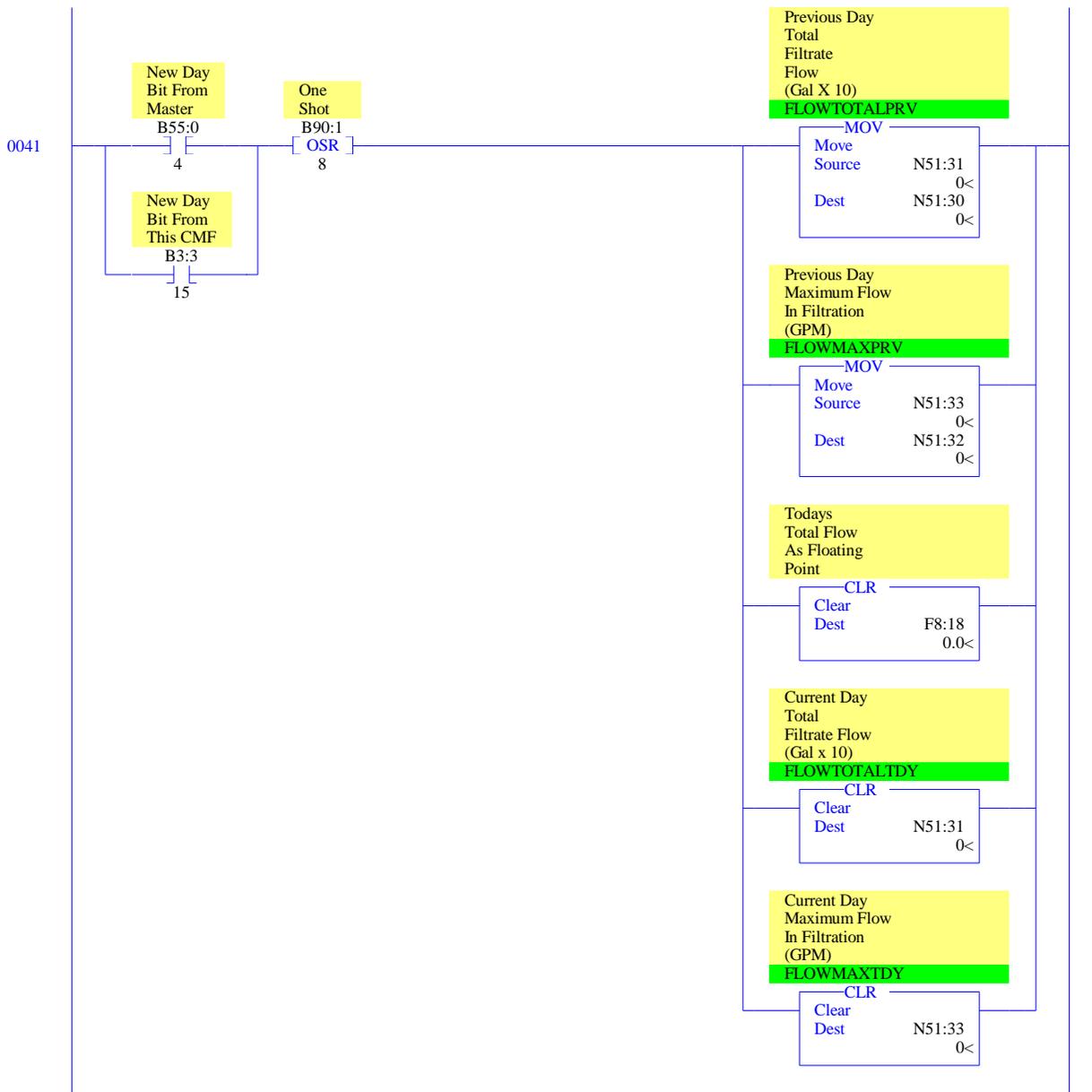


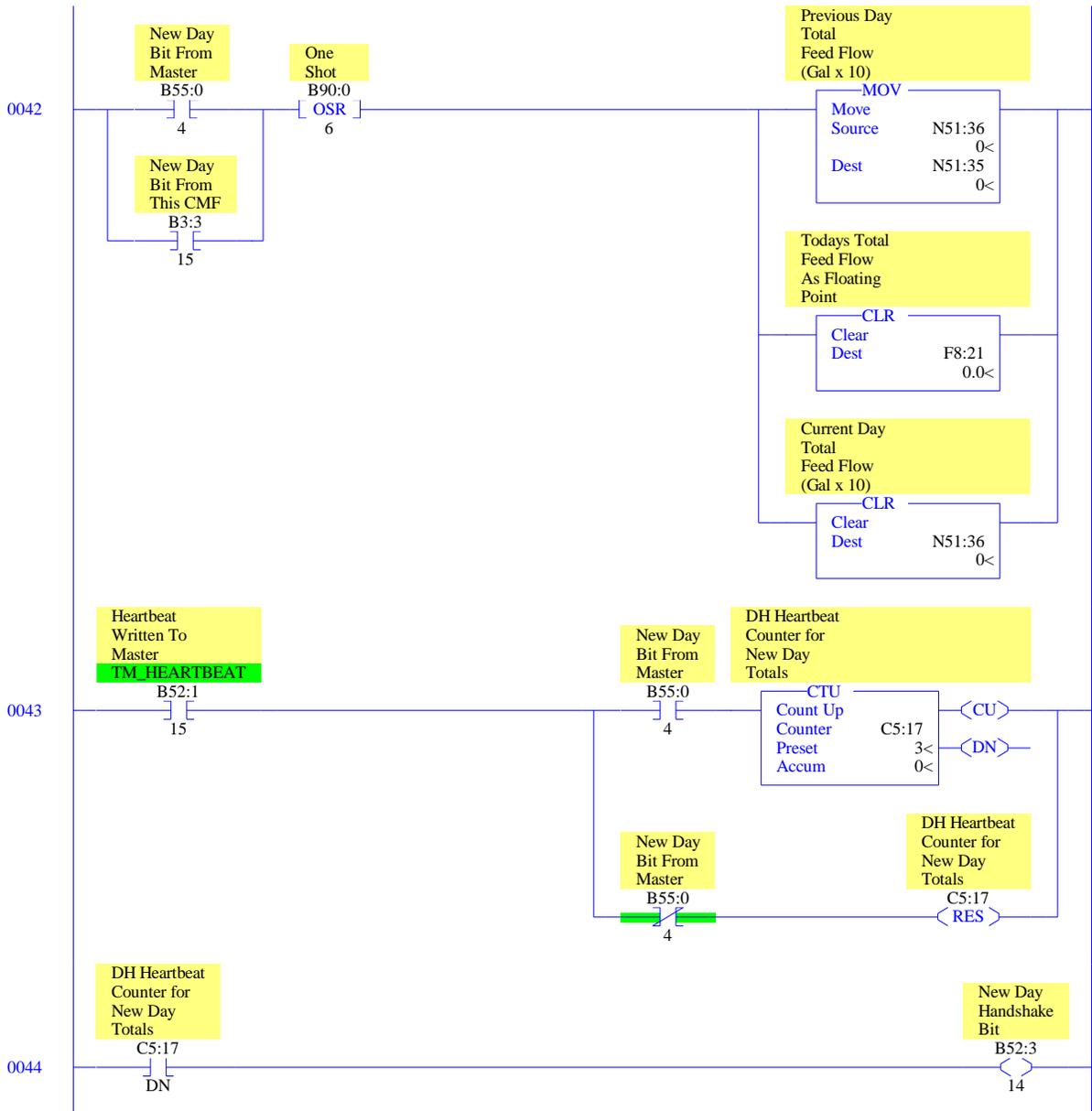


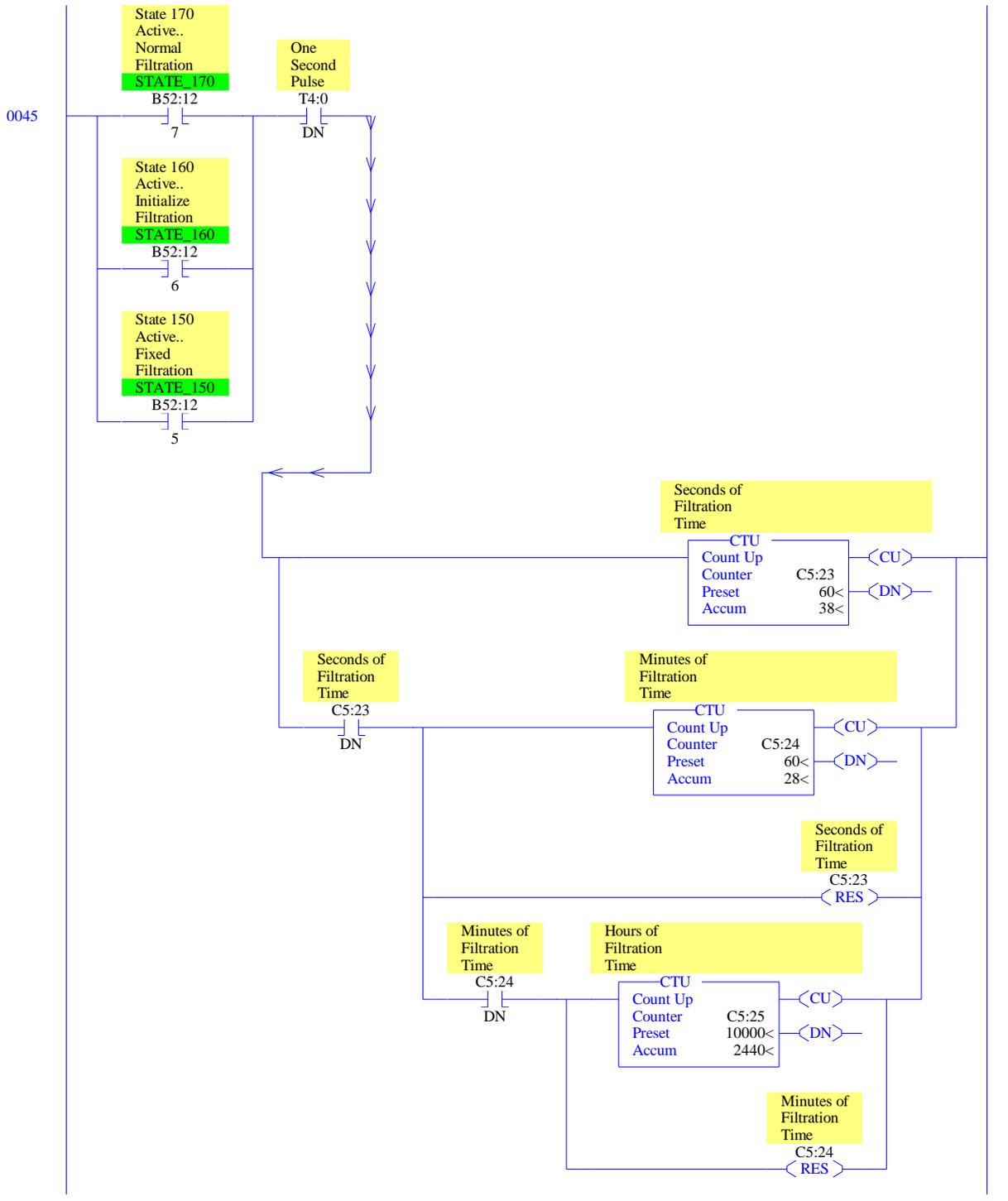


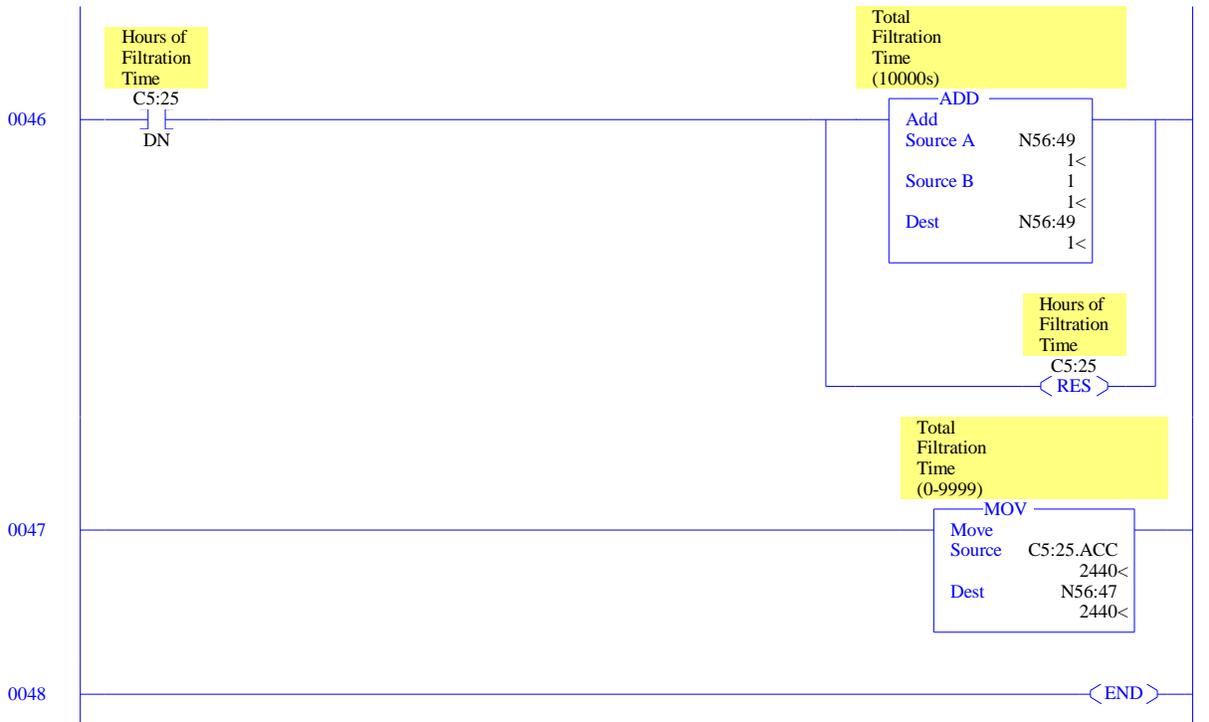


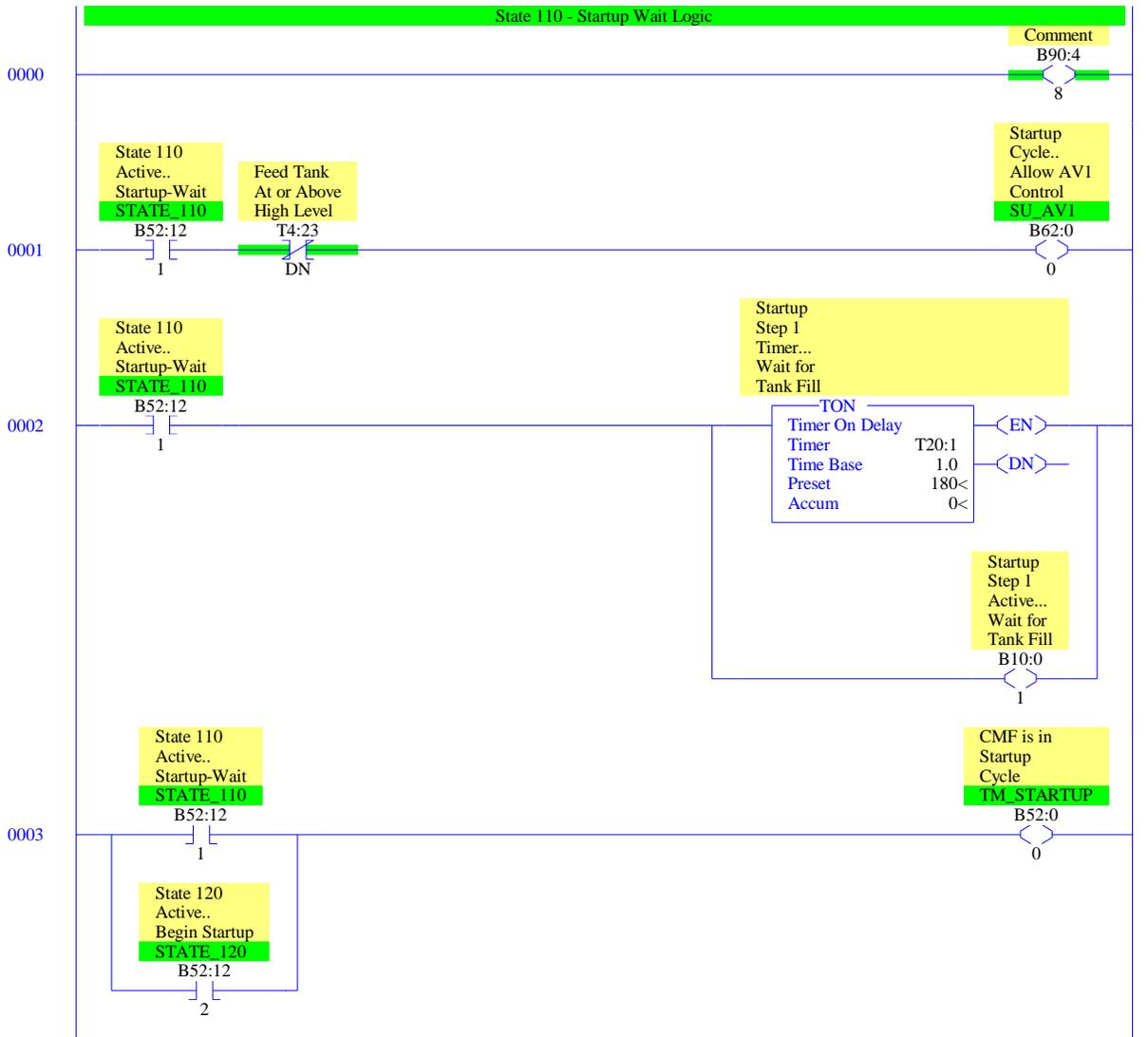


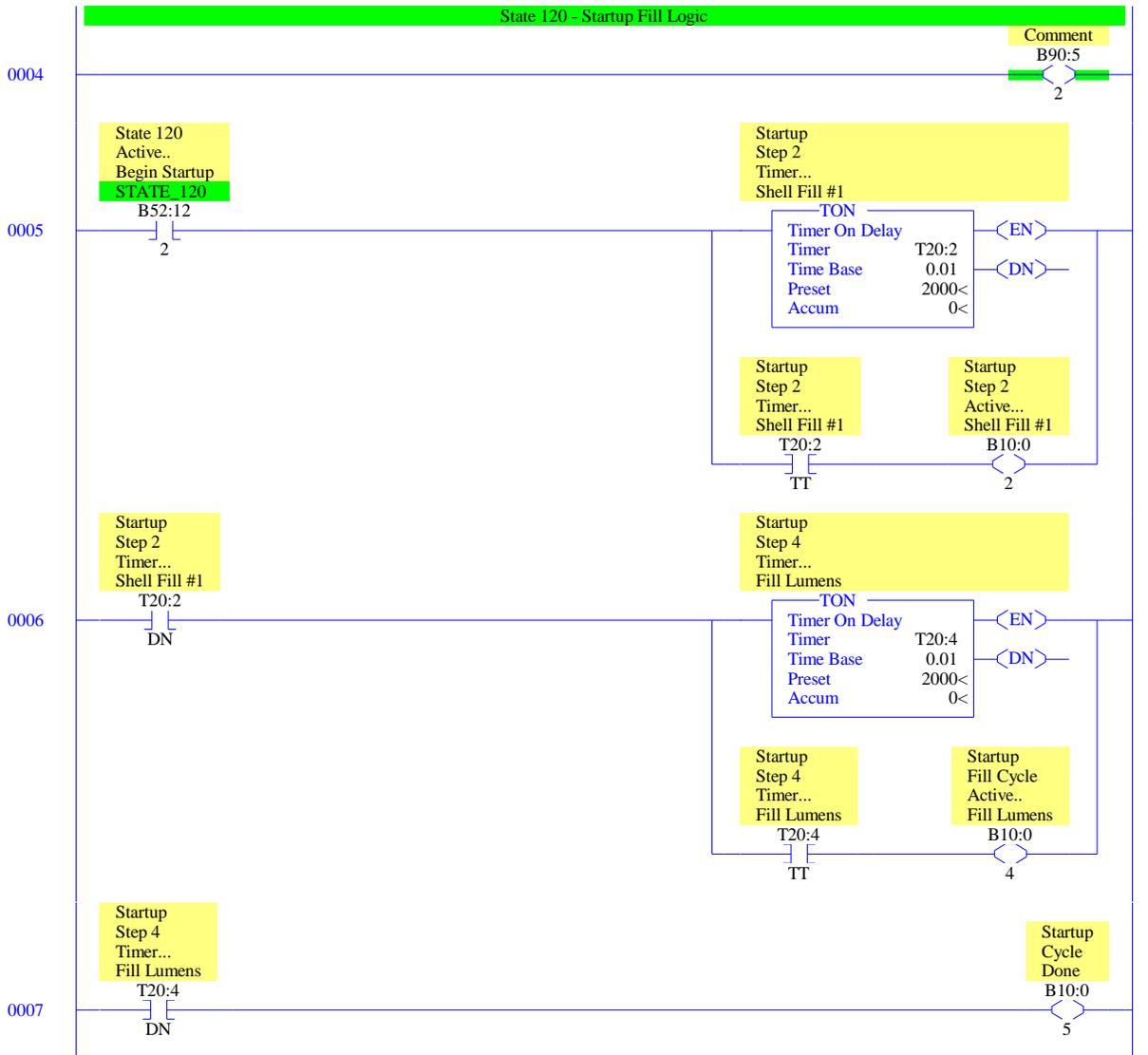


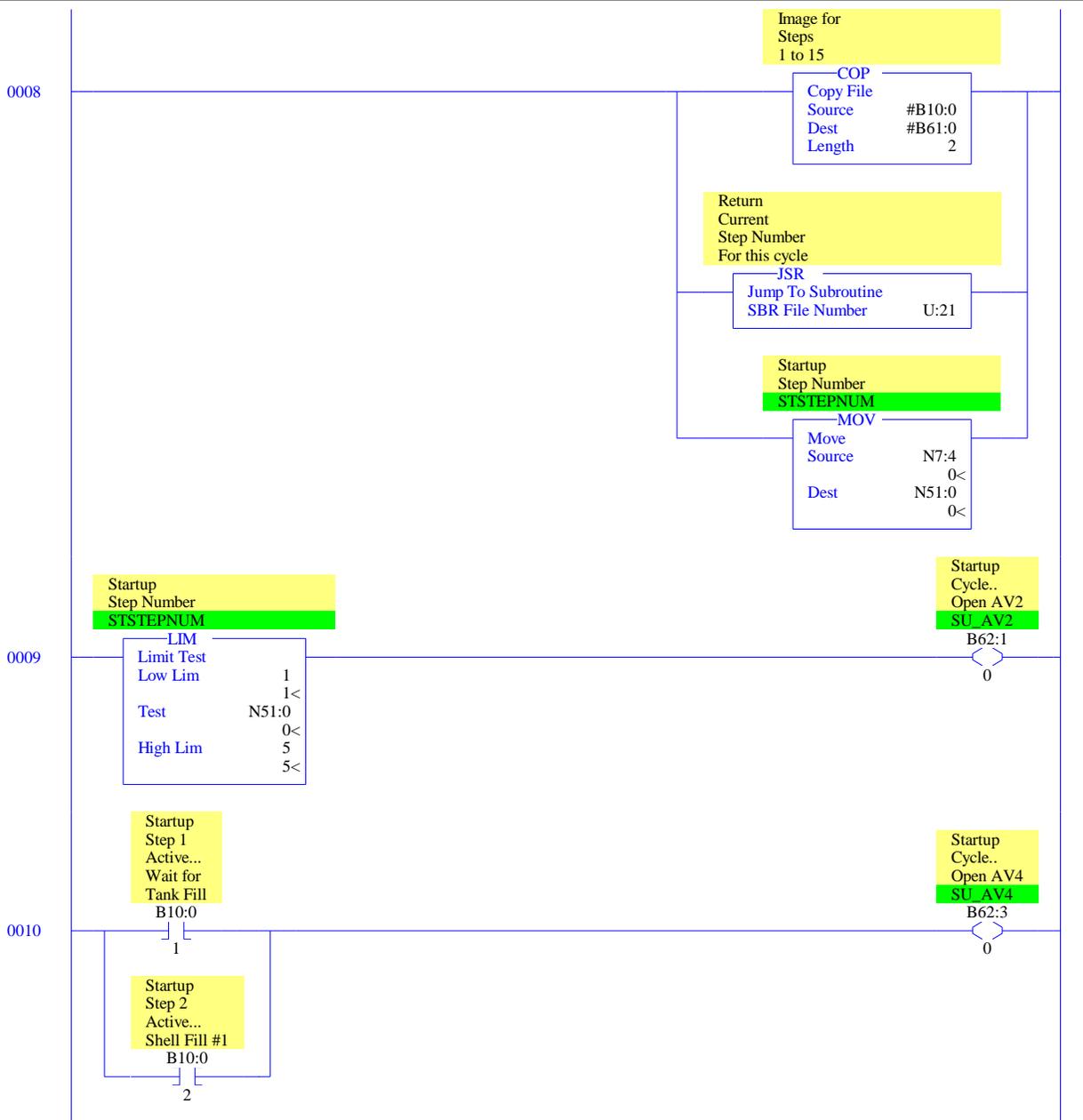


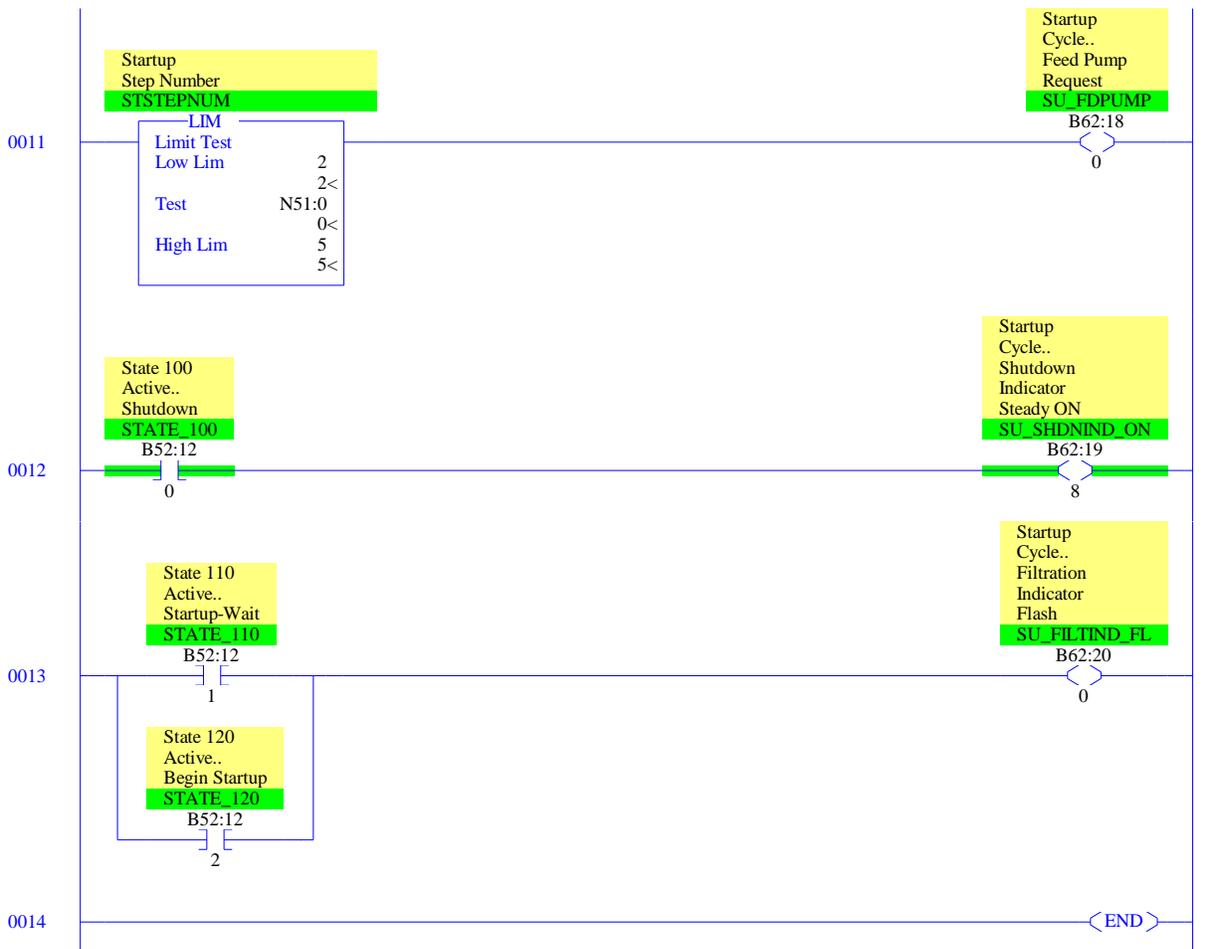


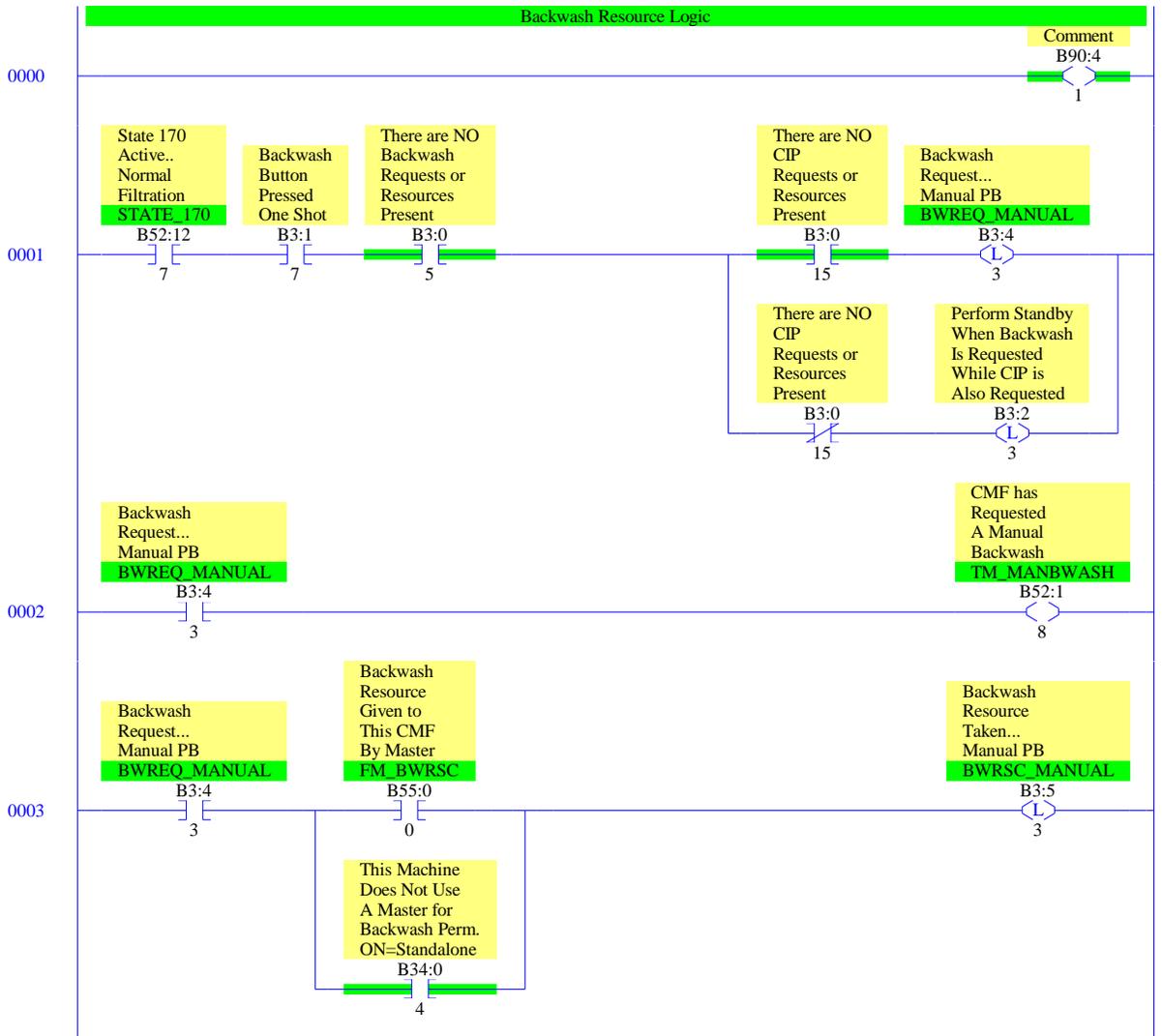


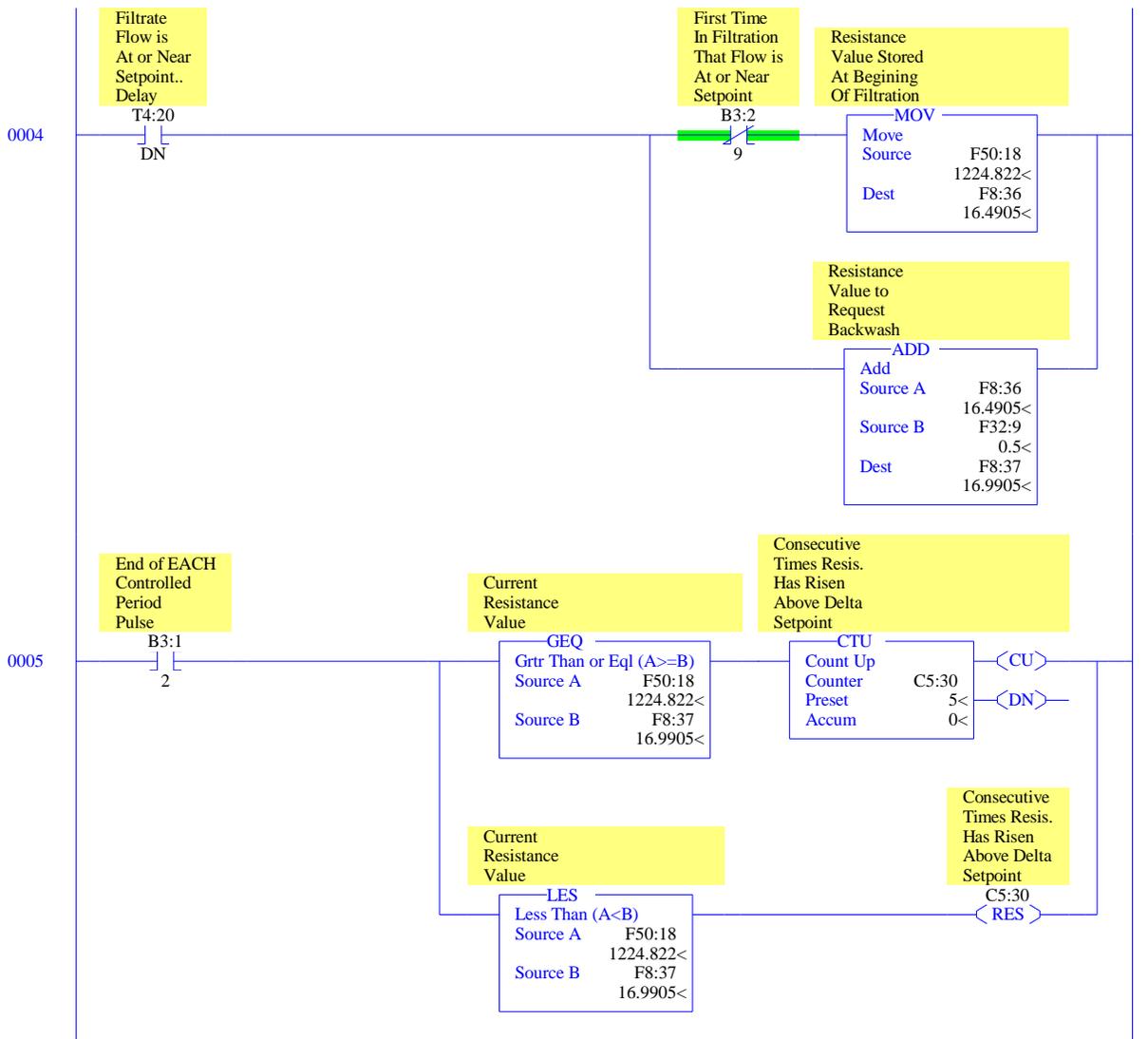


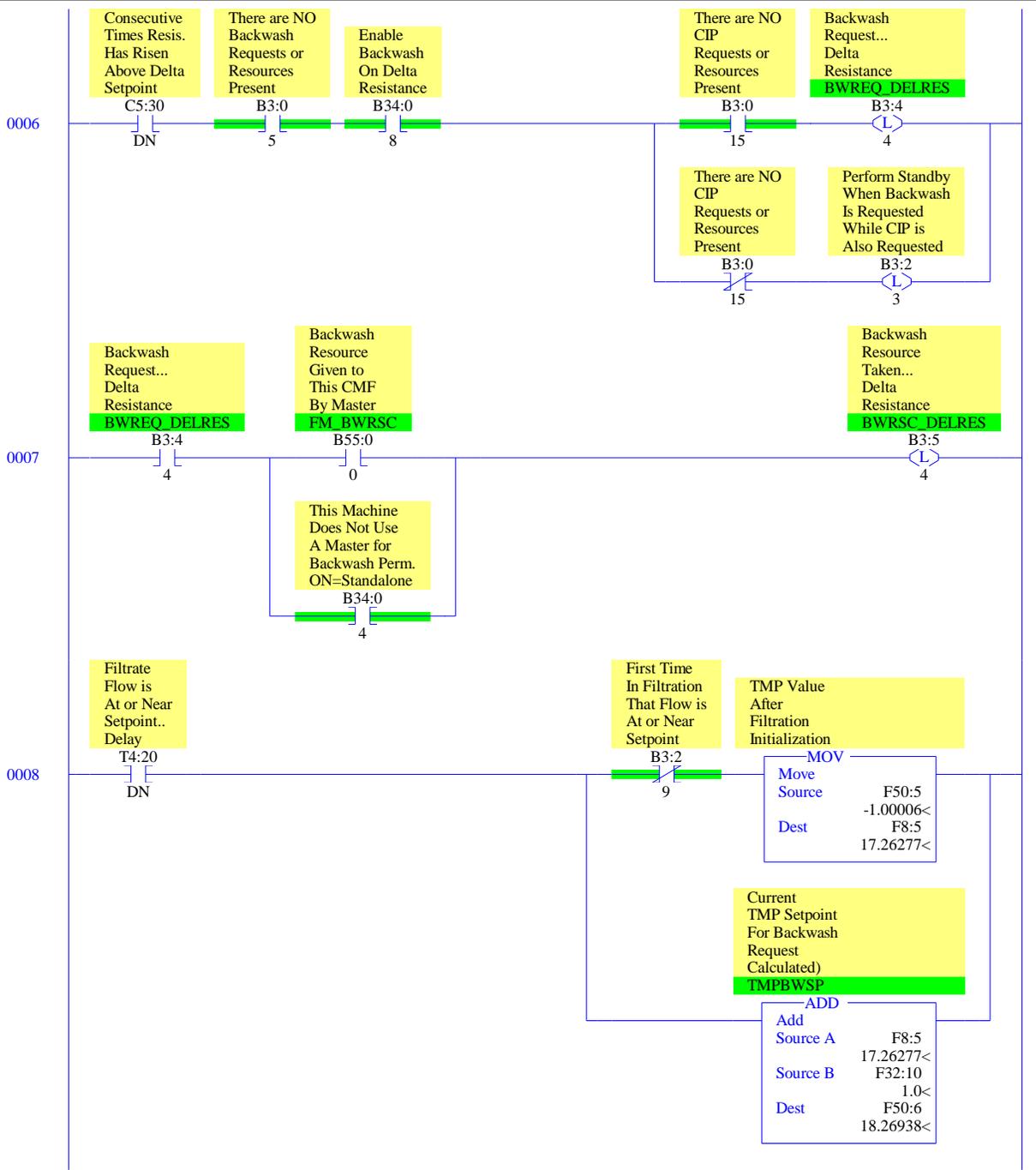


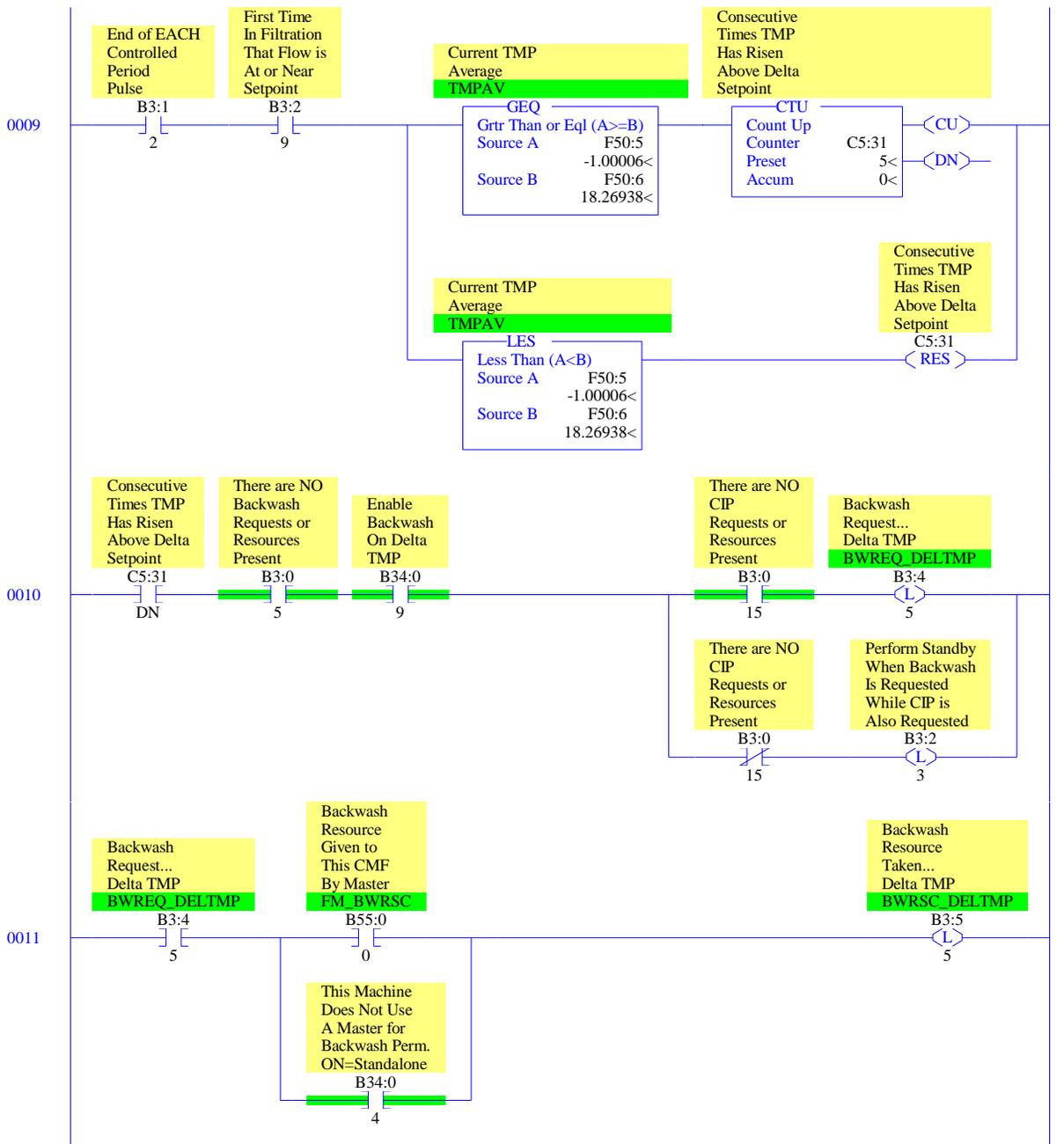


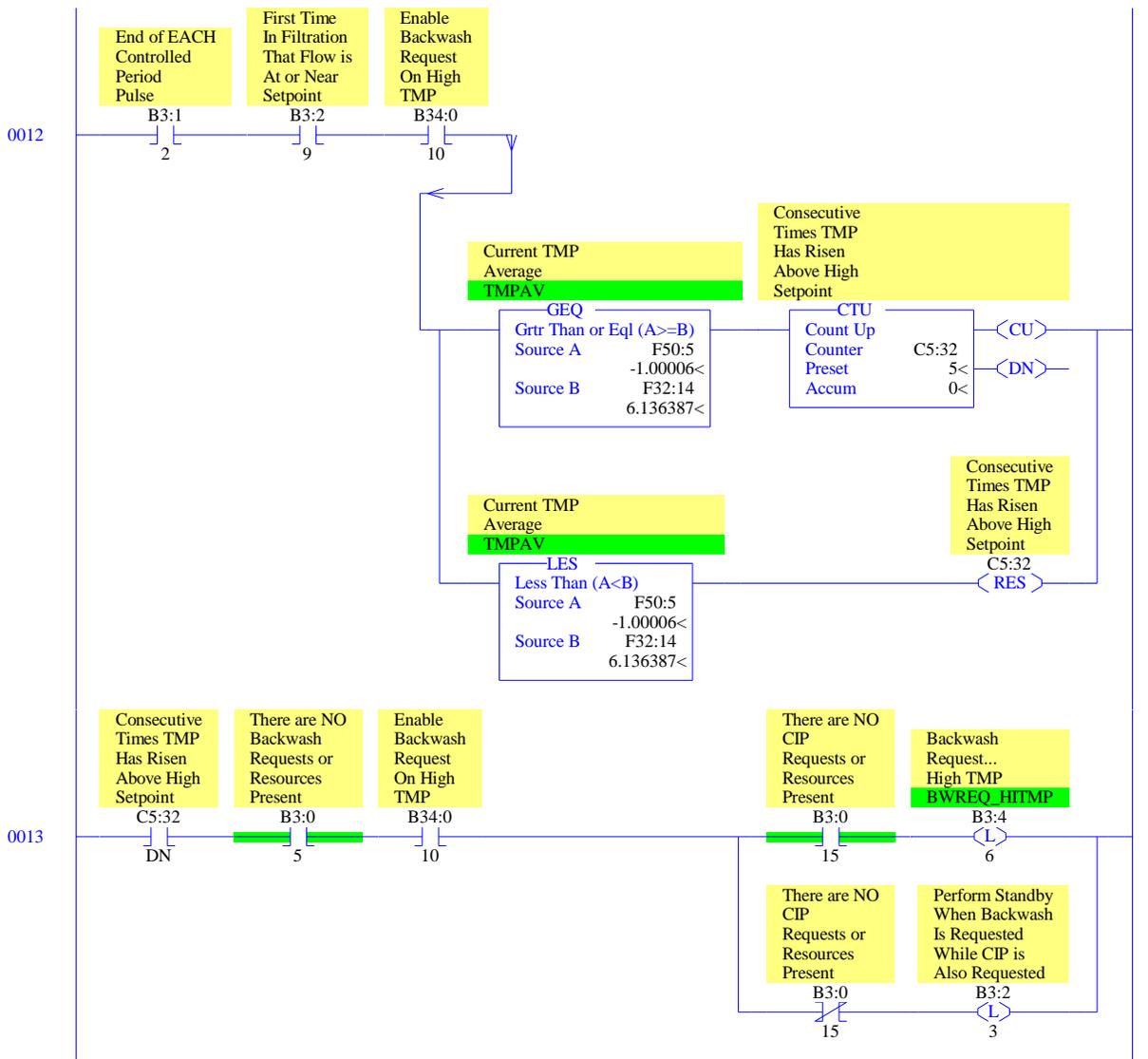


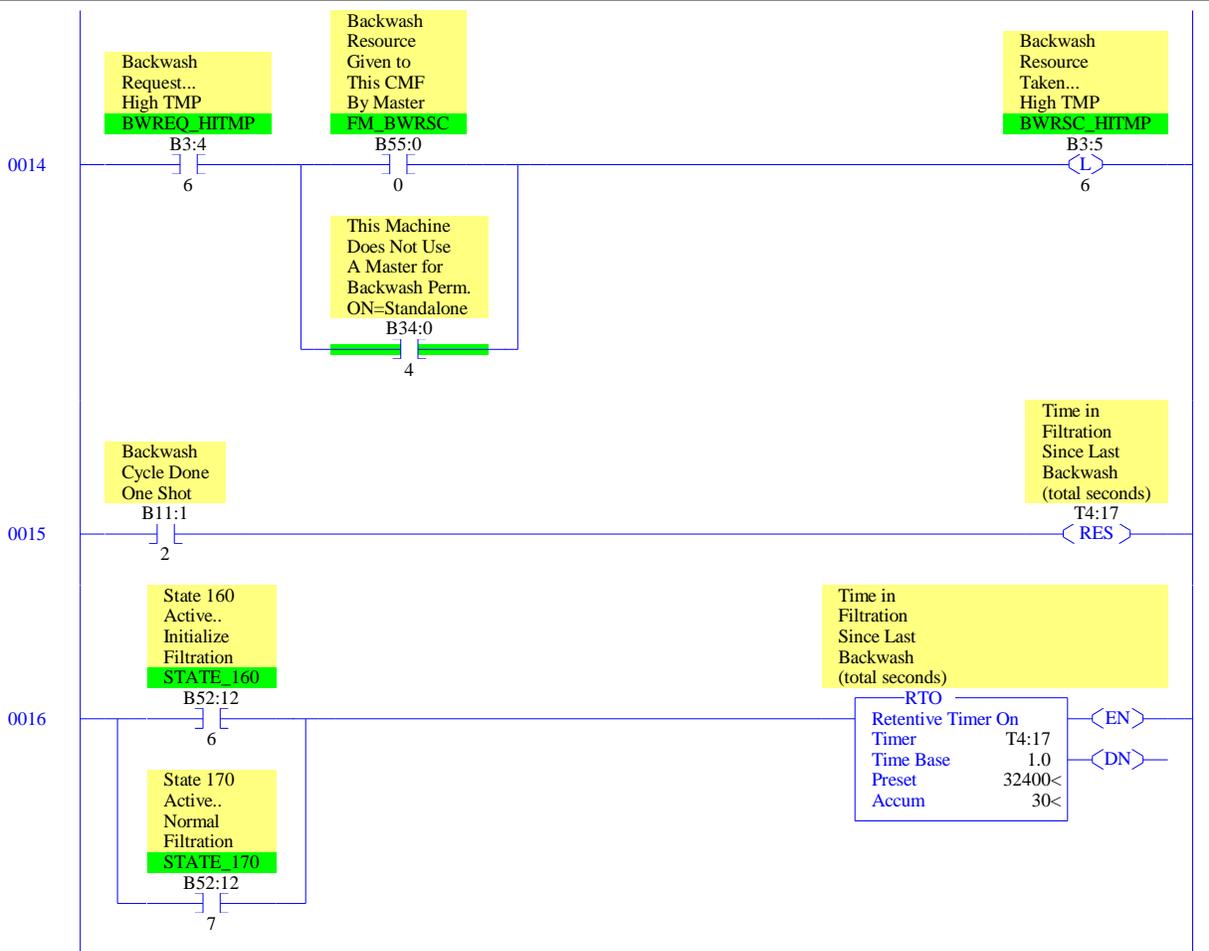












0017

Time in
Filtration
Since Last
Backwash
(total seconds)

MUL
Multiply
Source A T4:17.ACC
30<
Source B 1
1<
Dest T4:17.ACC
30<

Trash
Integer for
Calculations

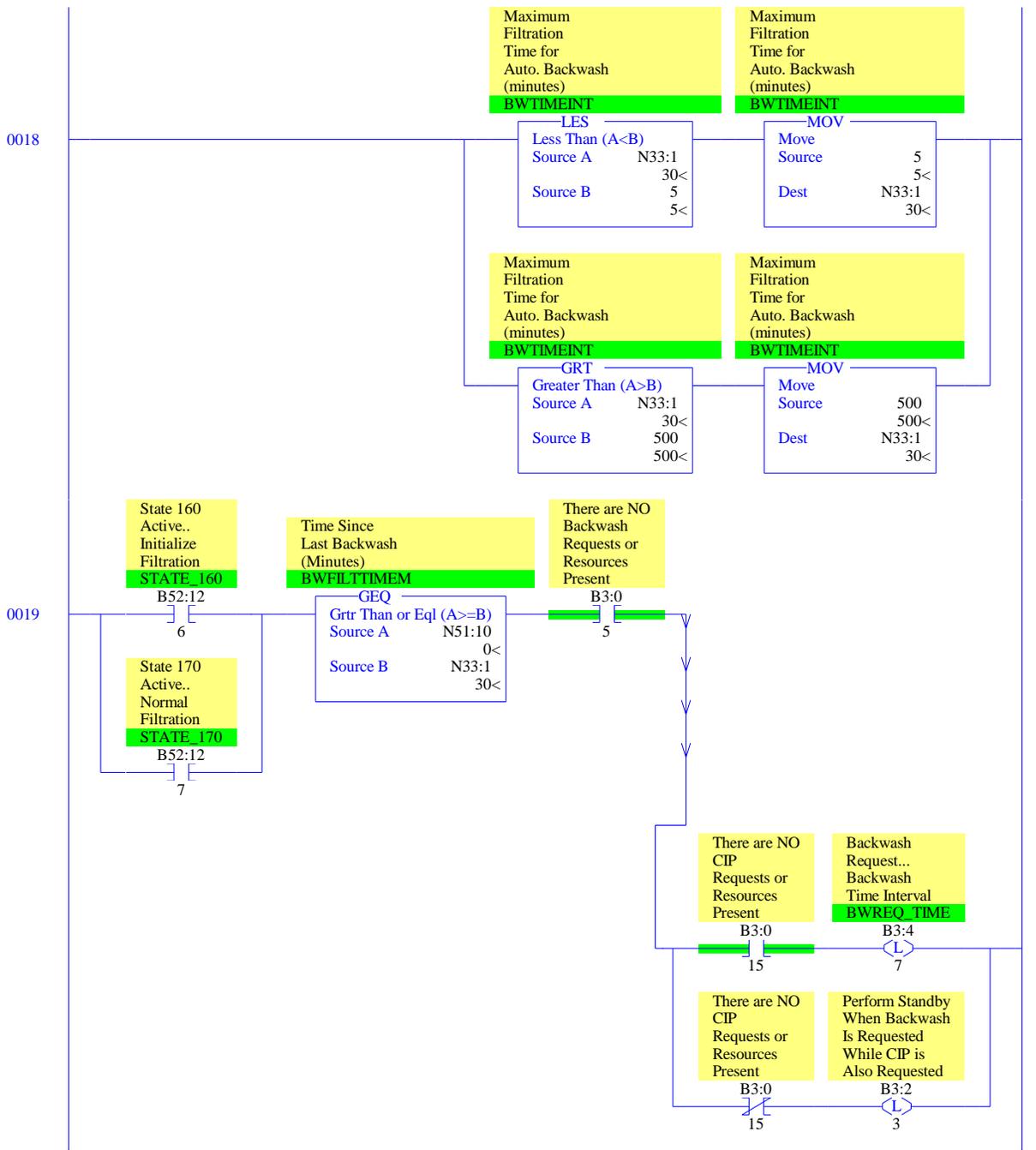
DDV
Double Divide
Source 60
60<
Dest N7:0
0<

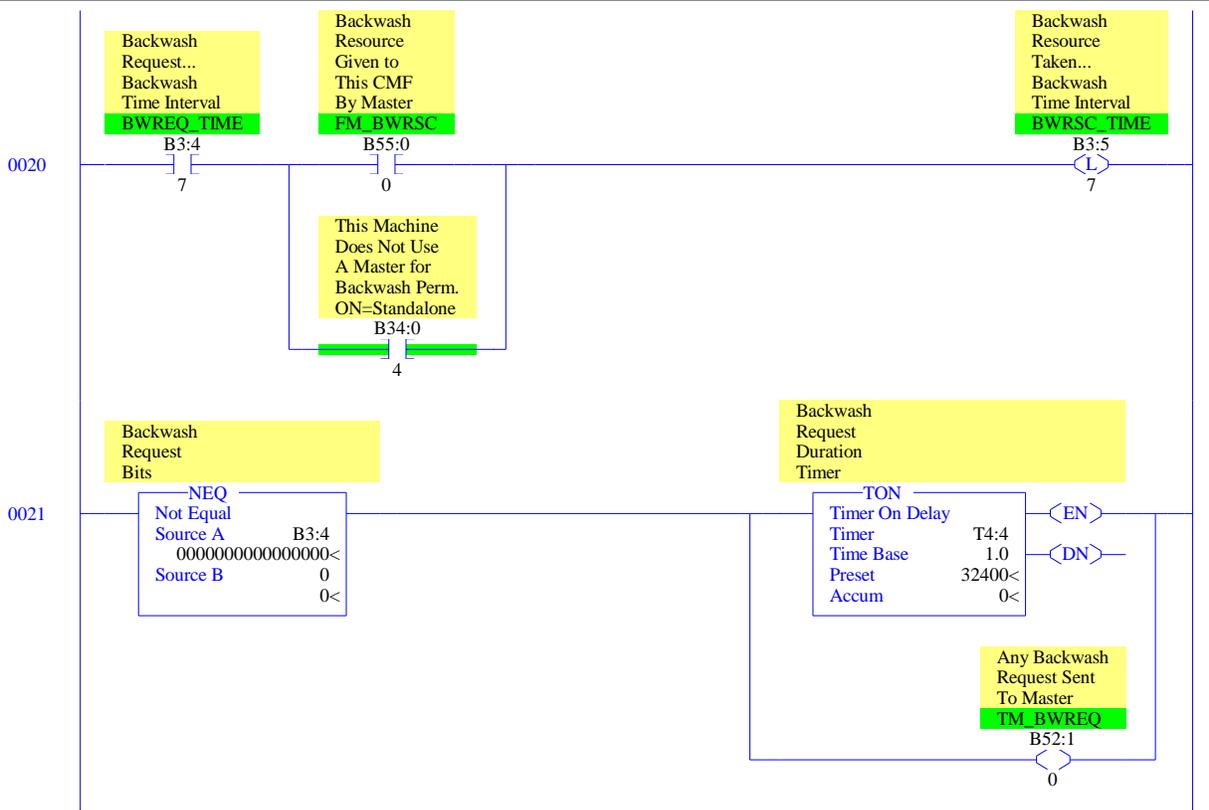
Time Since
Last Backwash
(Seconds)
BWFLTTIMES

MOV
Move
Source S:13
-32768<
Dest N51:11
30<

Time Since
Last Backwash
(Minutes)
BWFLTTIMEM

MOV
Move
Source S:14
0<
Dest N51:10
0<





0022

Backwash
Request
Duration
Timer

MUL
Multiply
Source A T4:4.ACC
0<
Source B 1
1<
Dest T4:4.ACC
0<

Trash
Integer for
Calculations

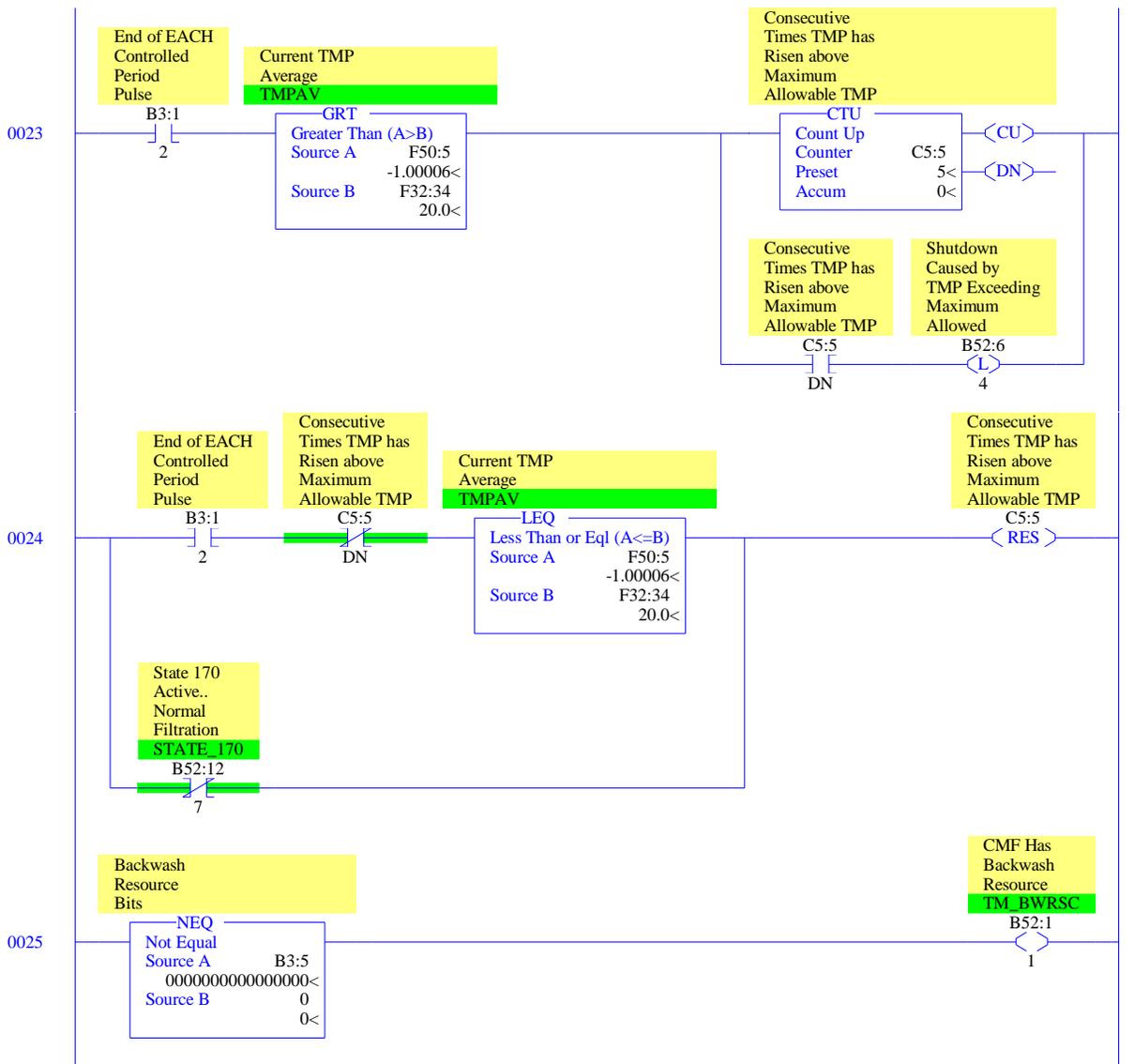
DDV
Double Divide
Source 60
60<
Dest N7:0
0<

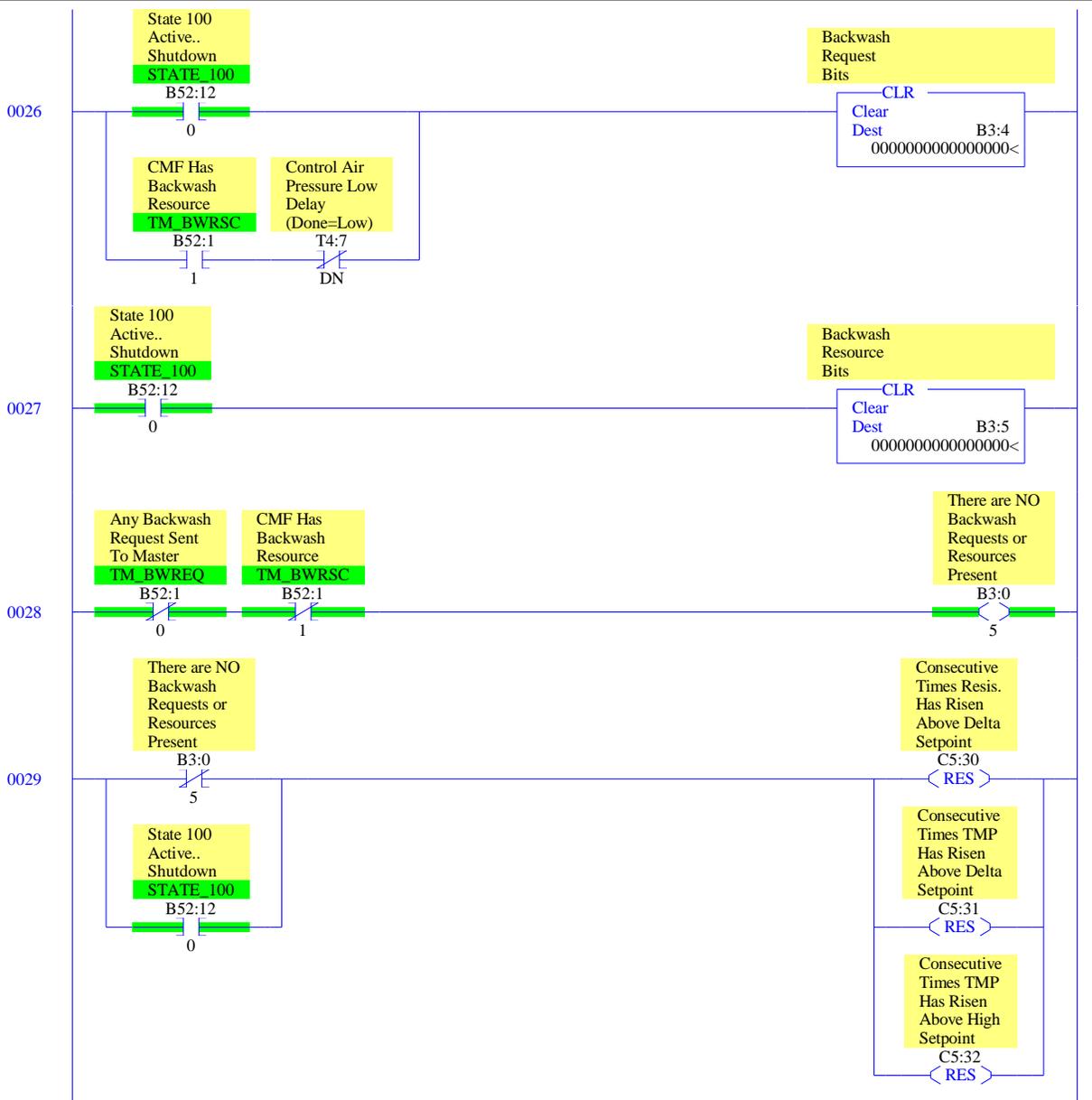
Time Since
Backwash was
Requested
(Seconds)
BWREQTIMES

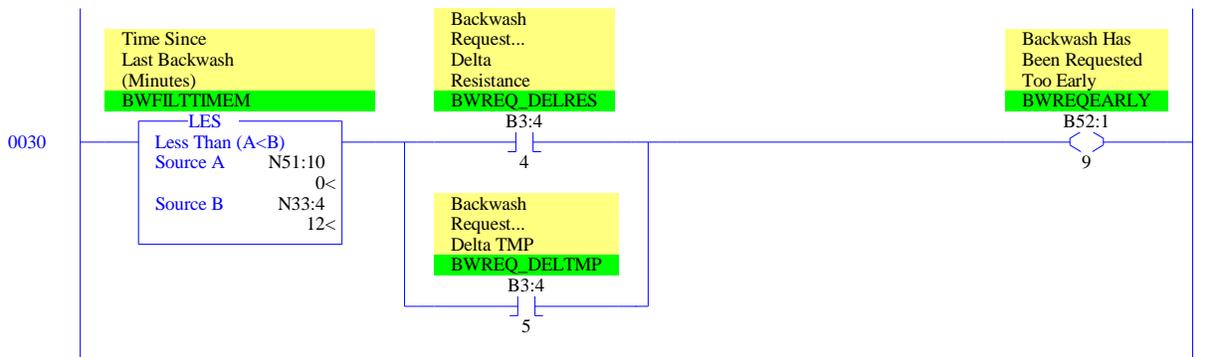
MOV
Move
Source S:13
-32768<
Dest N51:13
0<

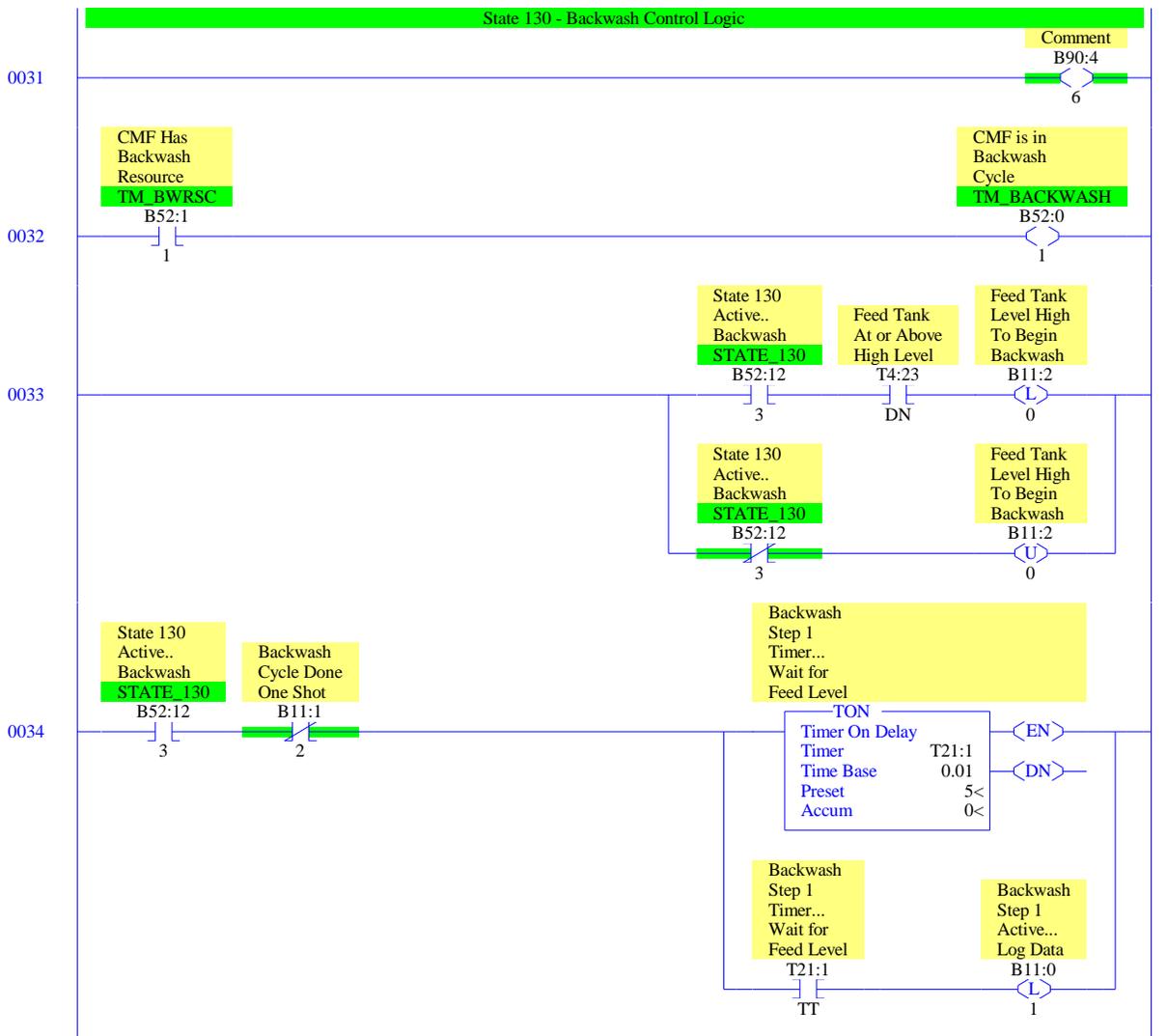
Time Since
Backwash was
Requested
(Minutes)
BWREQTIMEM

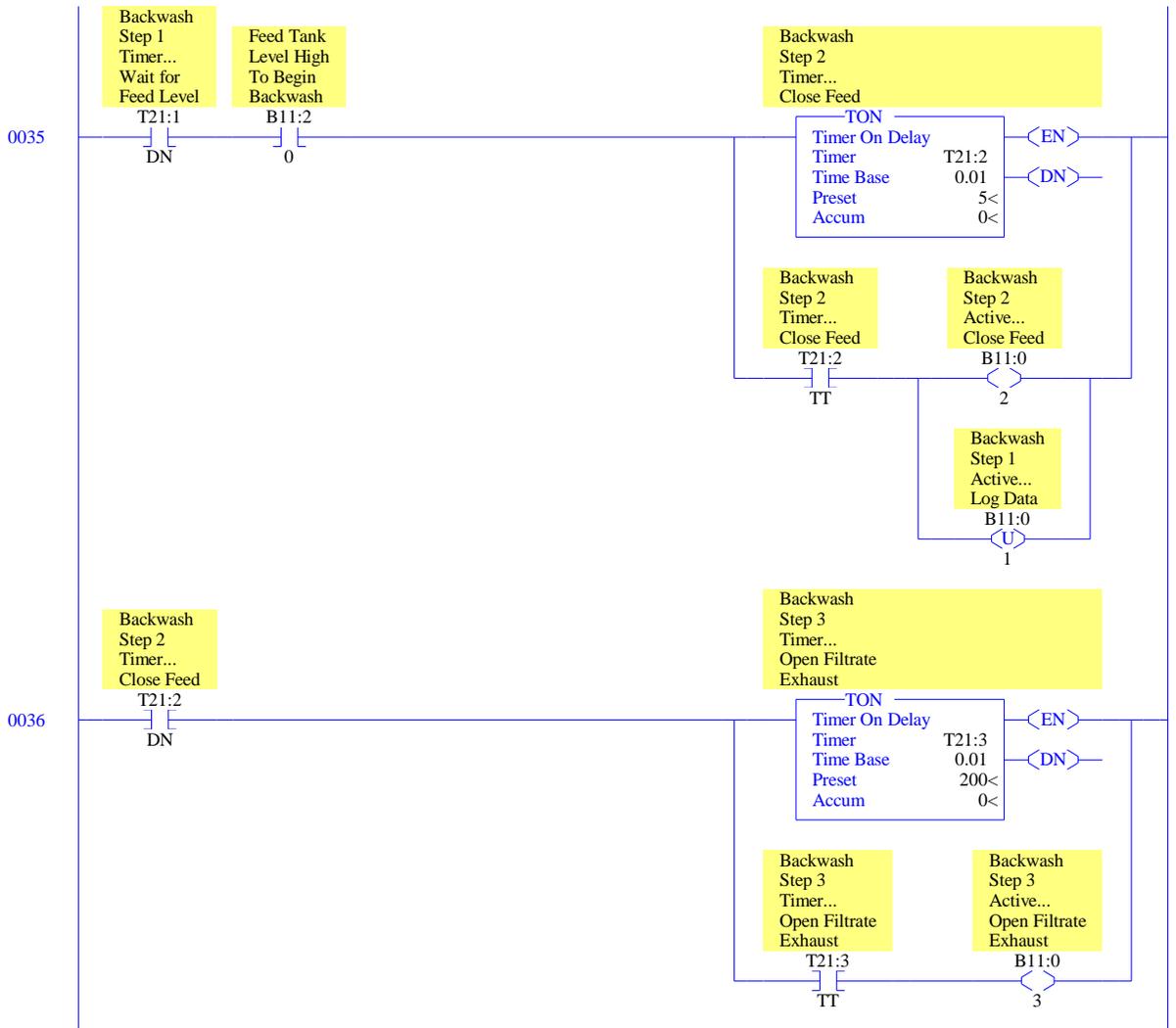
MOV
Move
Source S:14
0<
Dest N51:12
0<

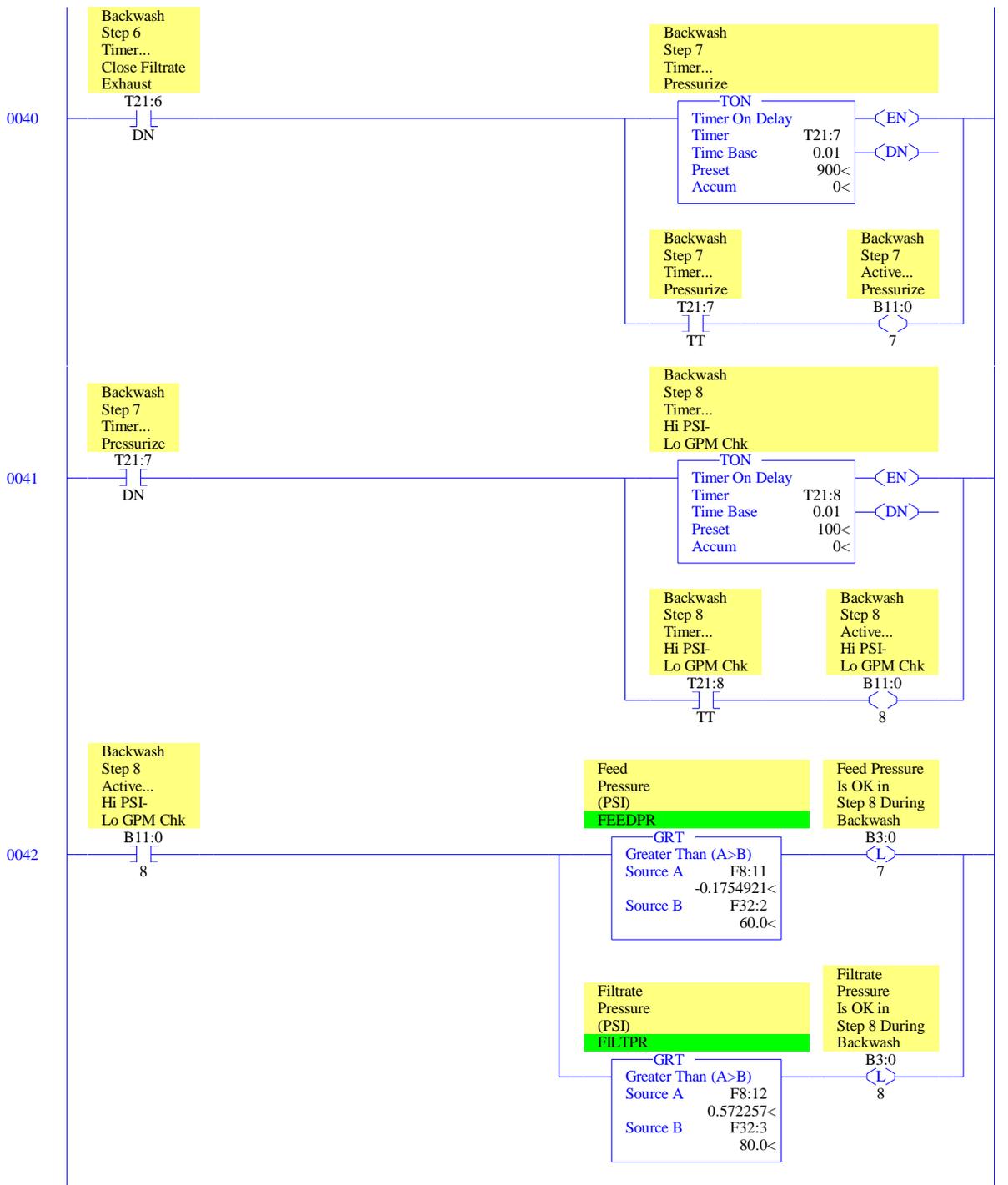


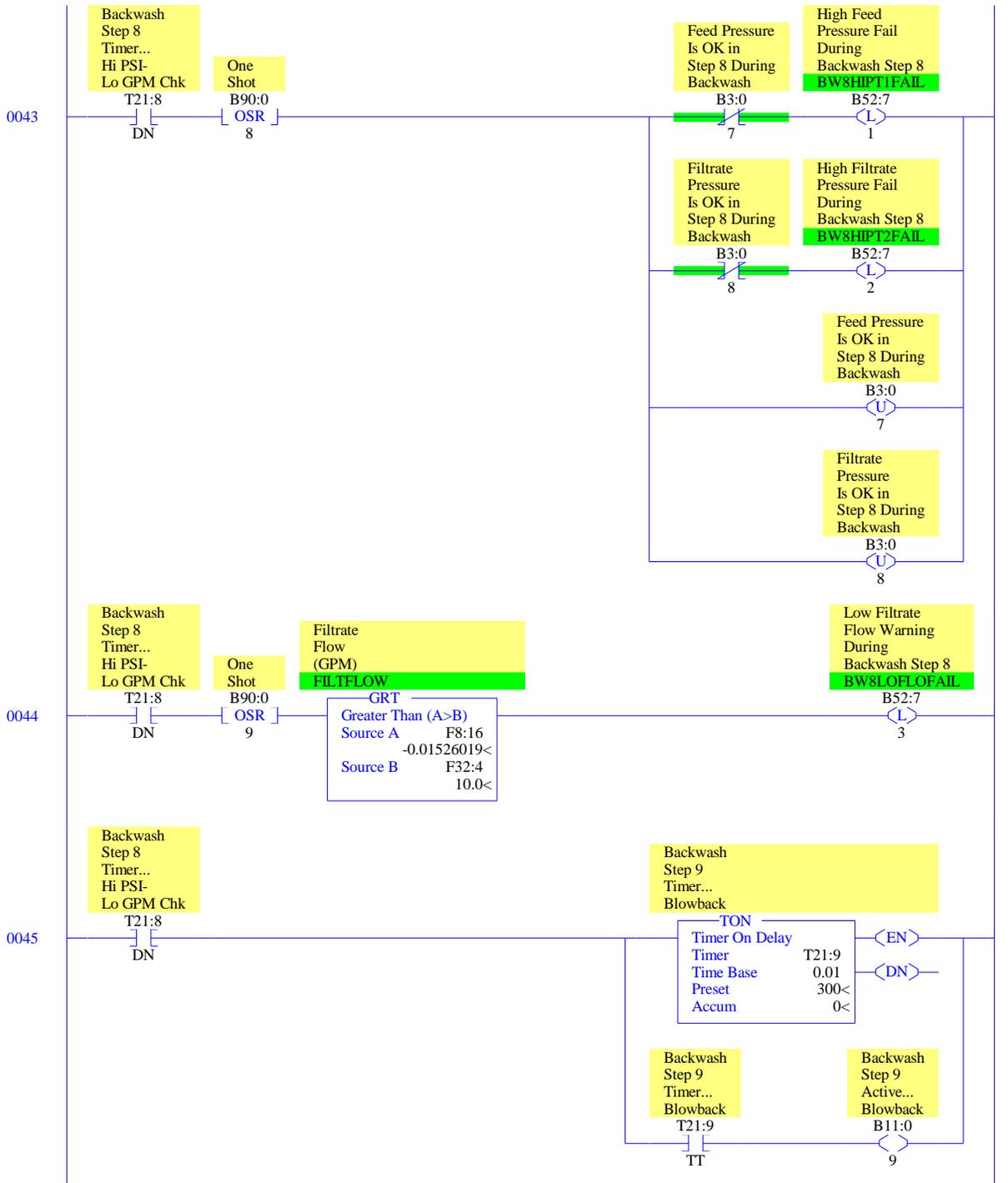


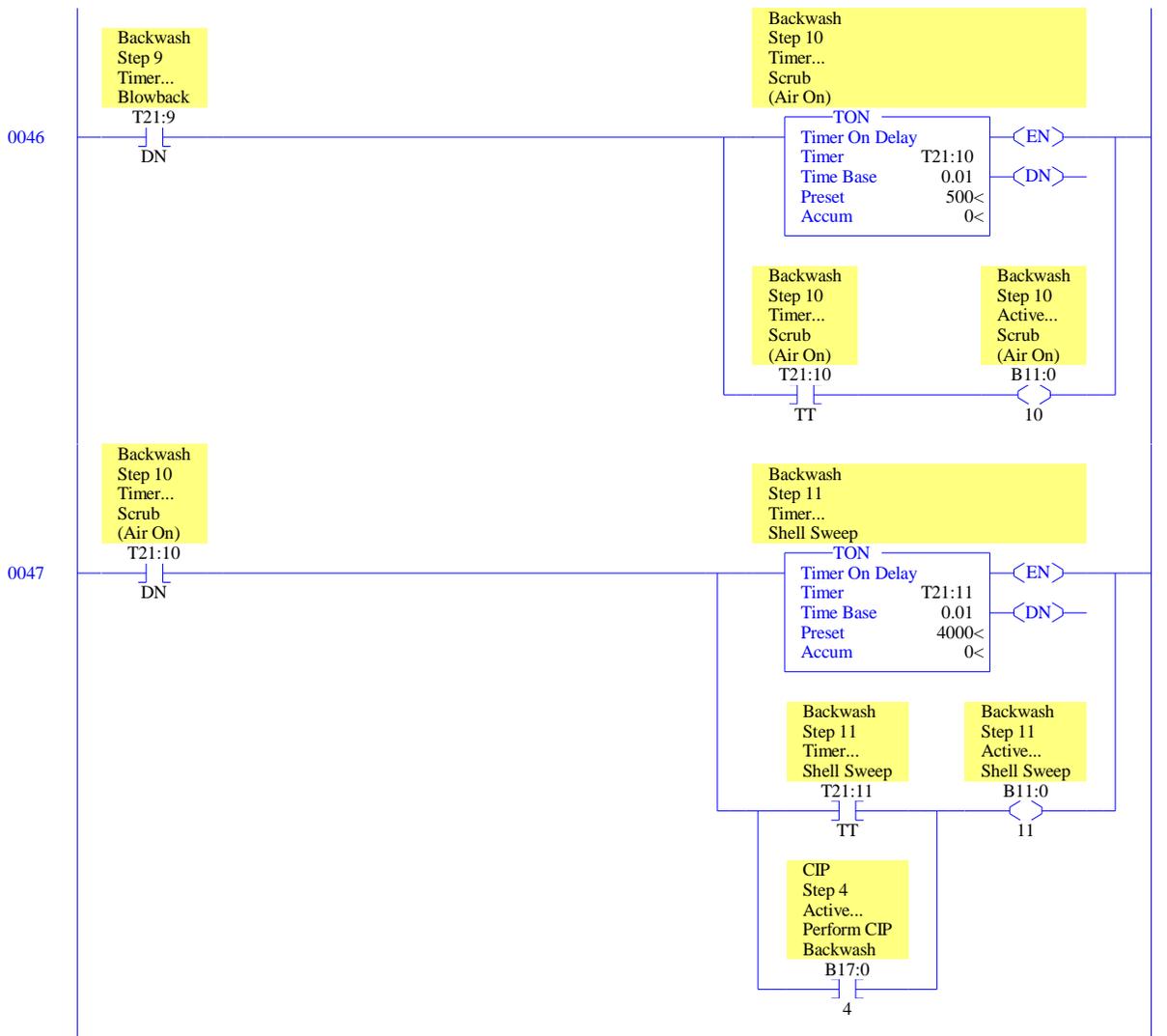


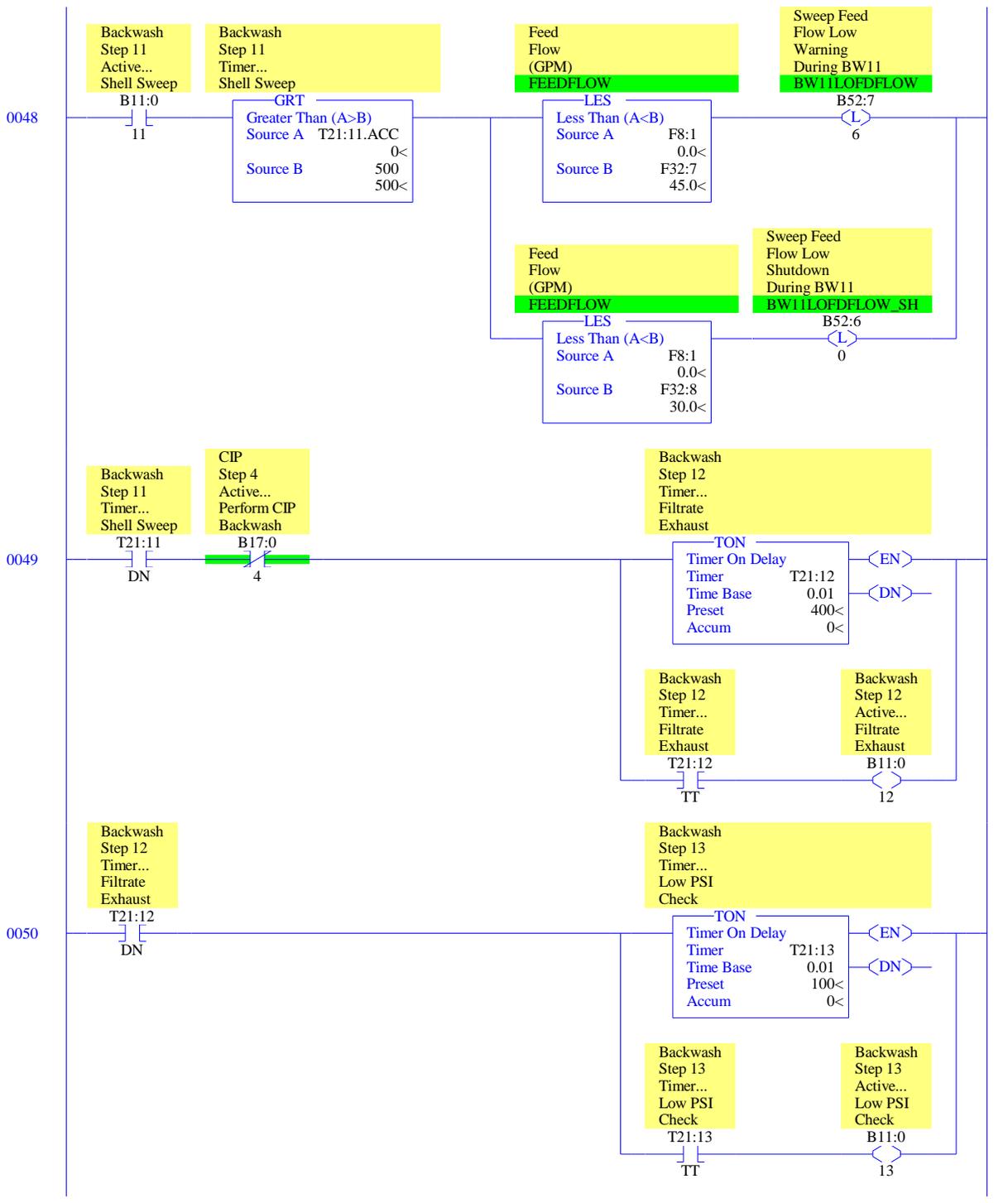


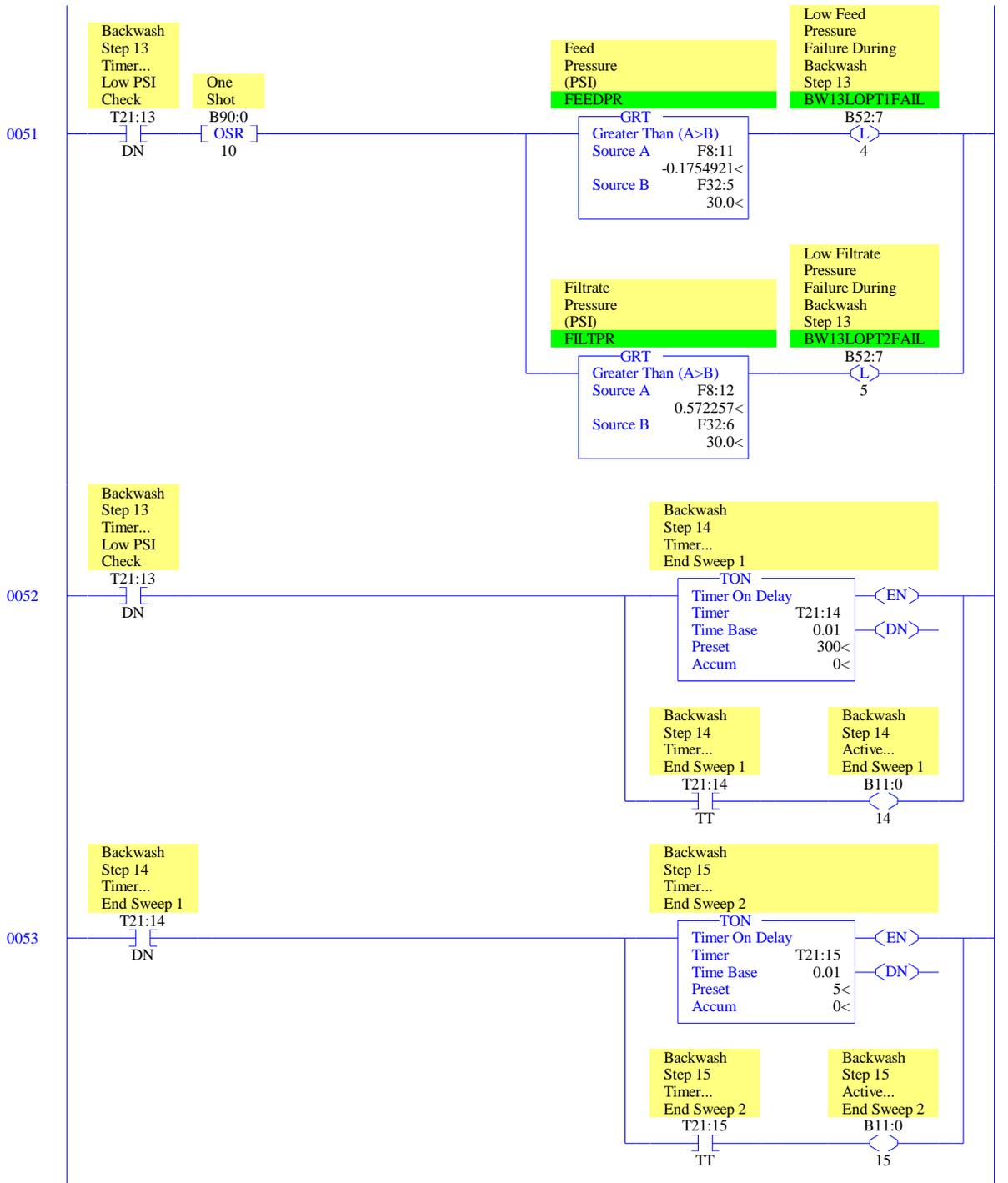


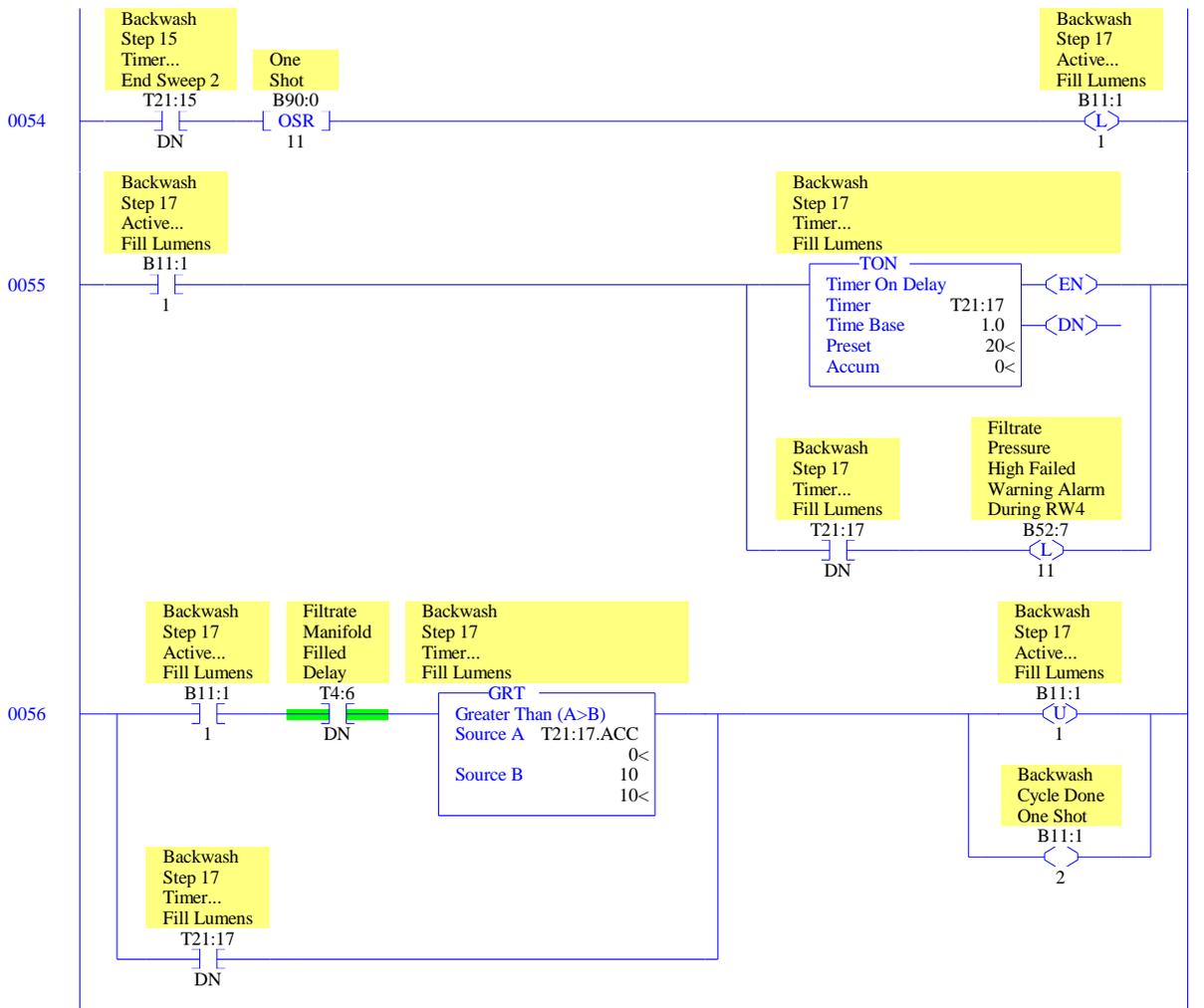


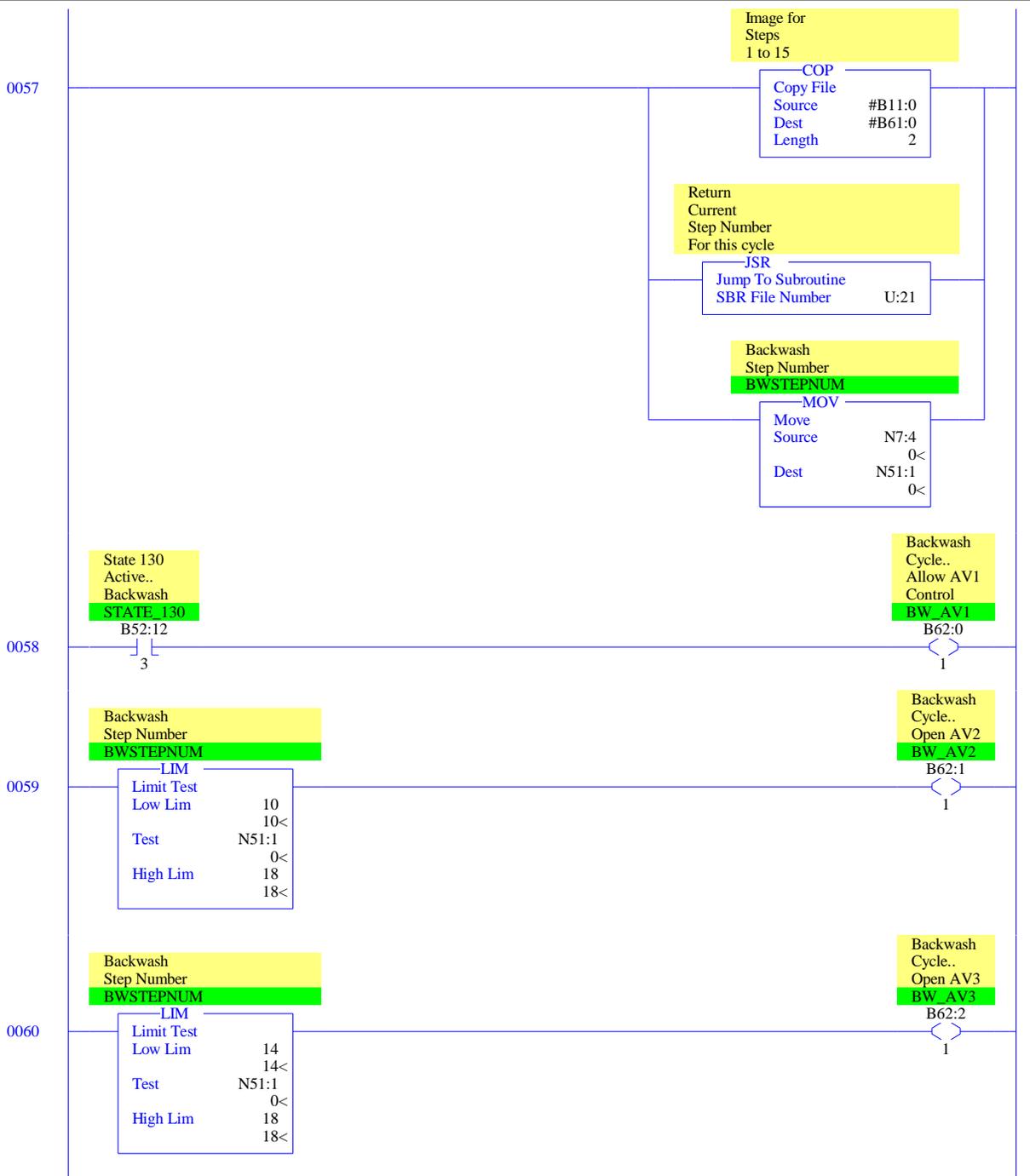


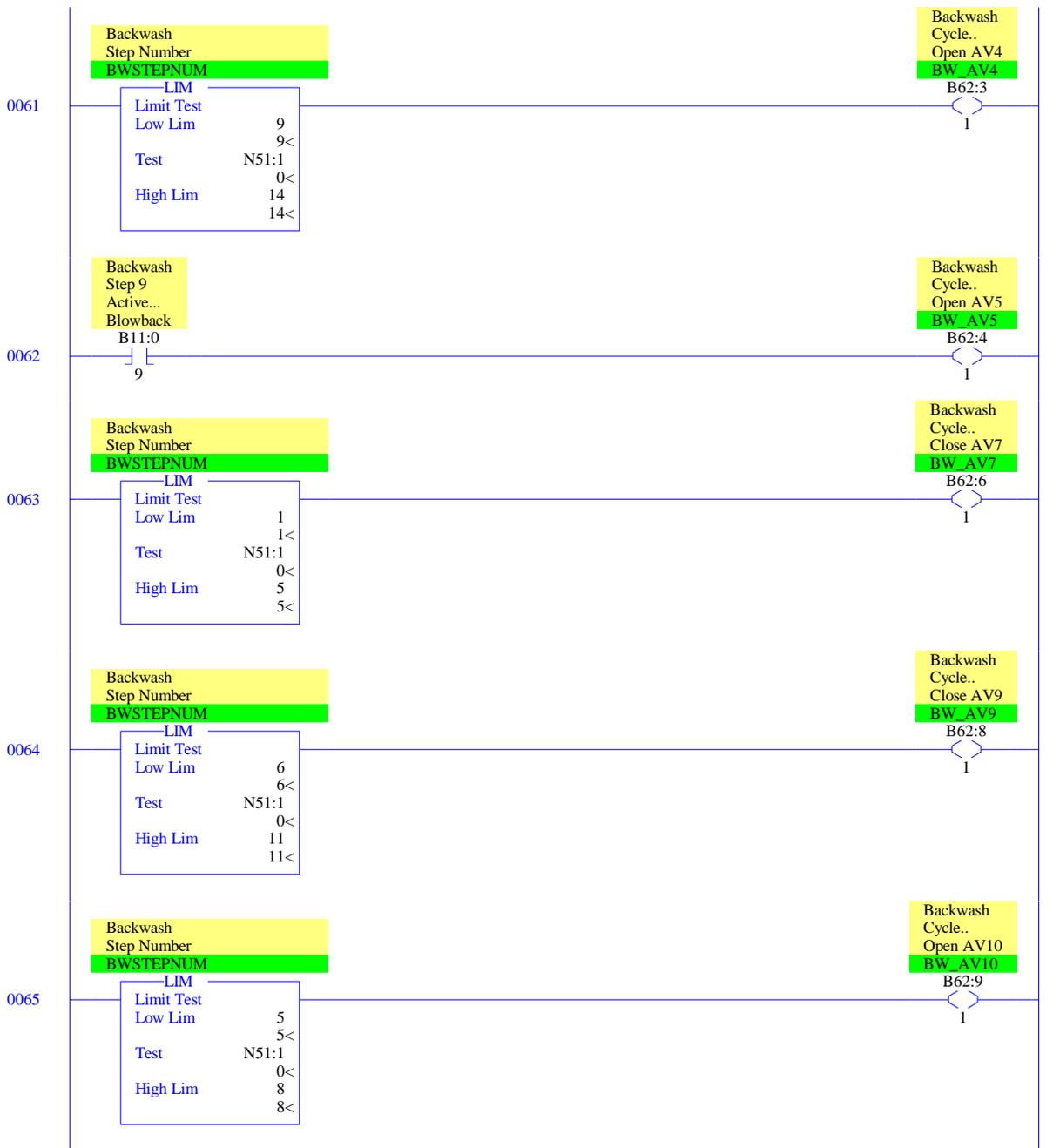


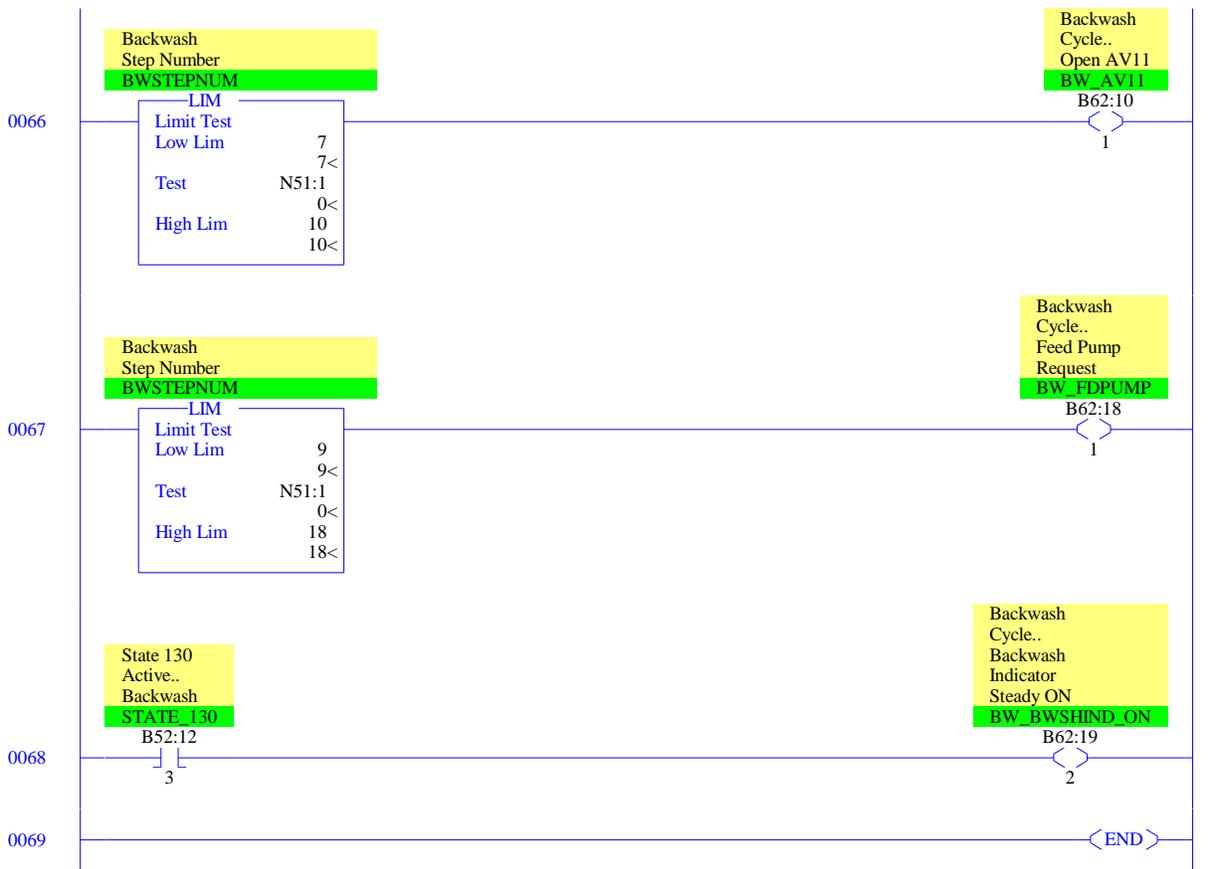


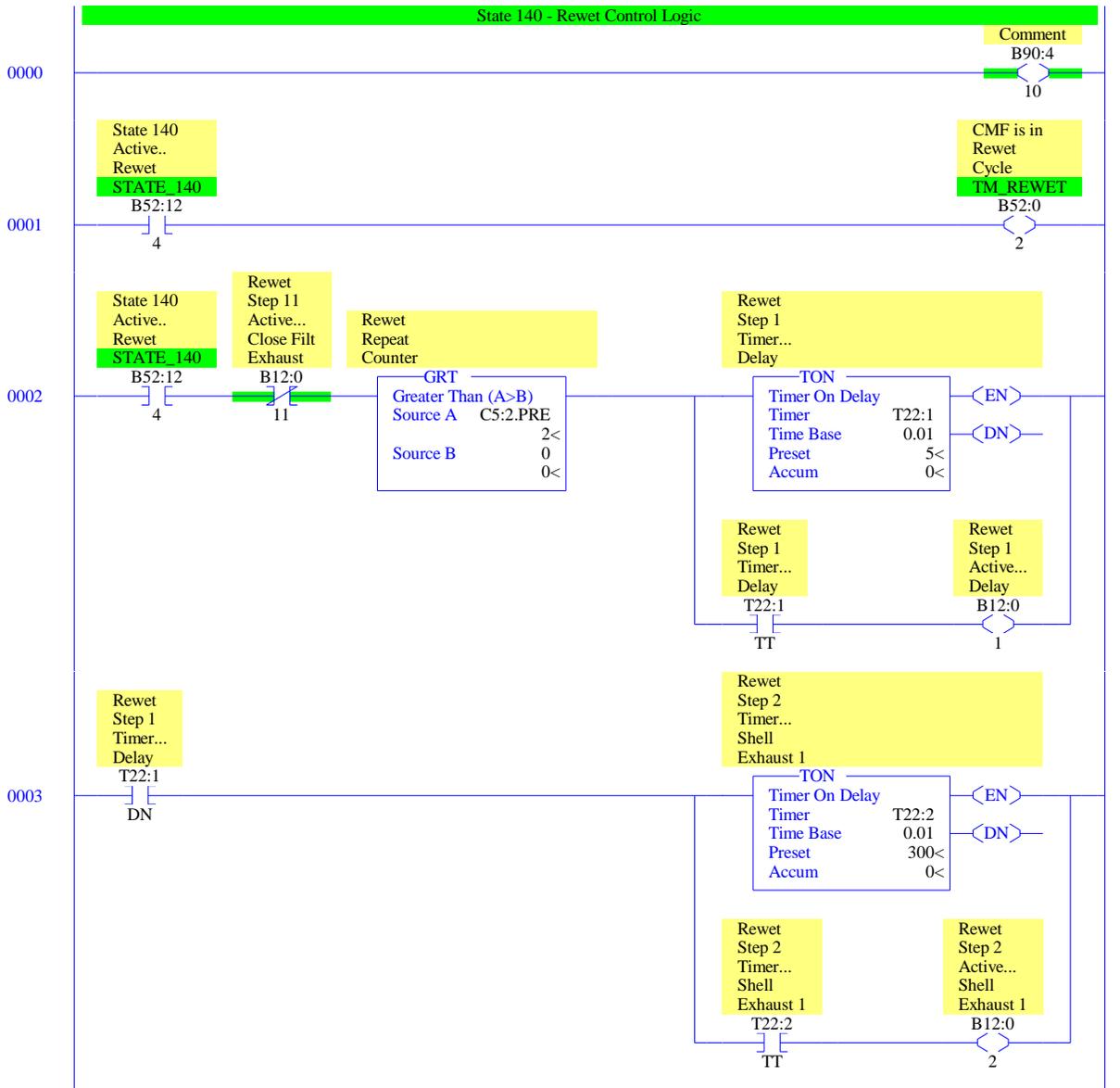


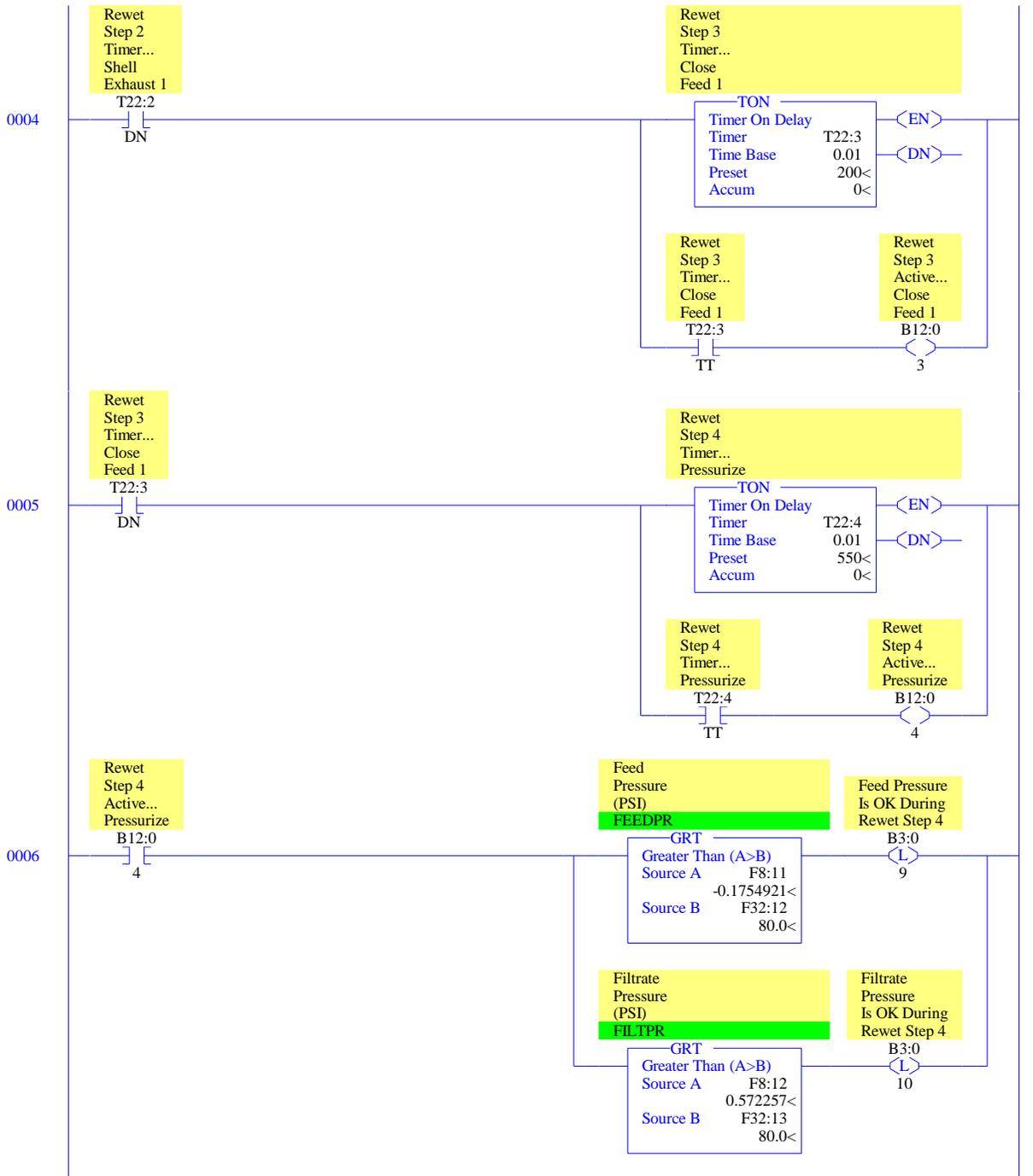


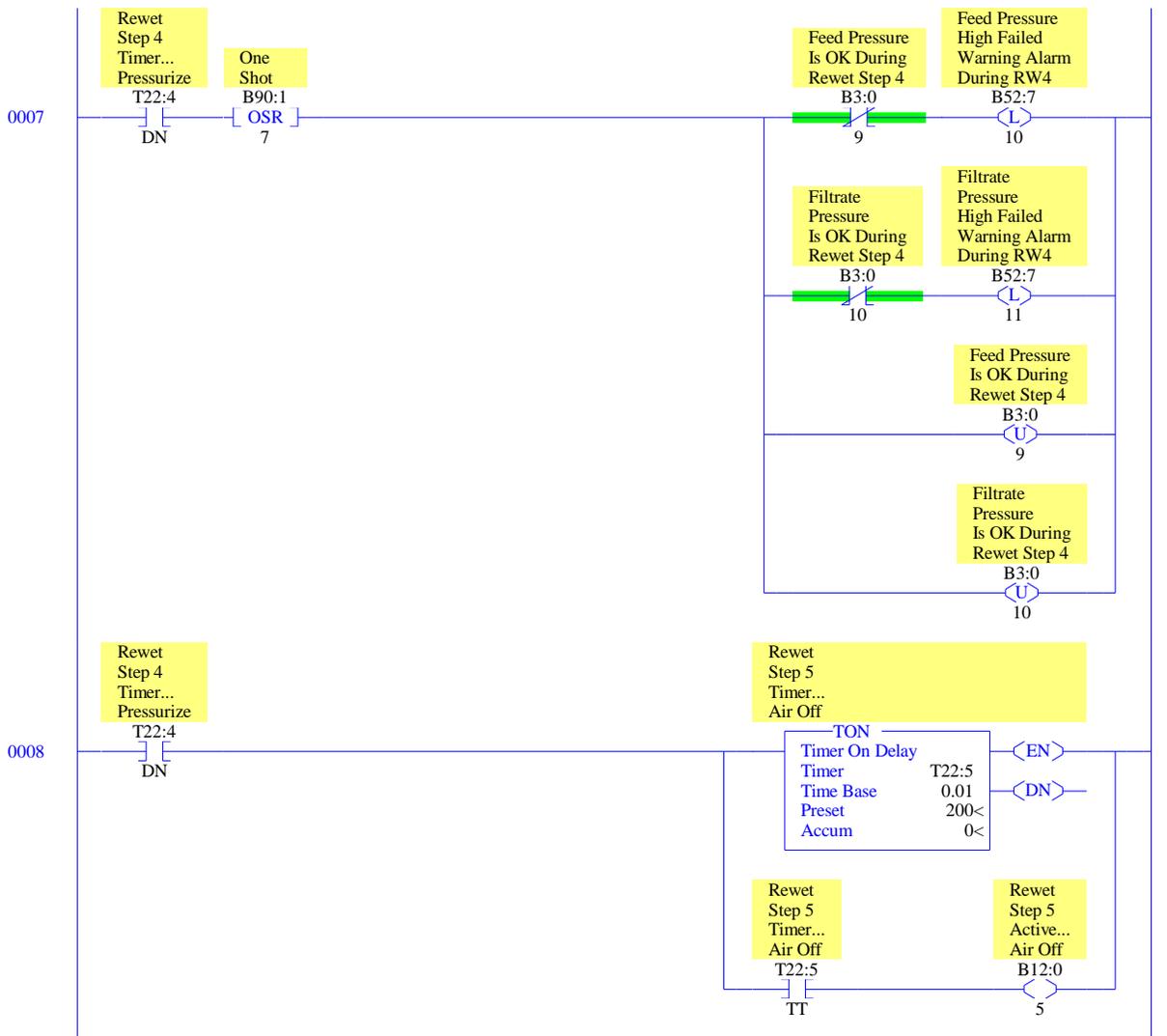


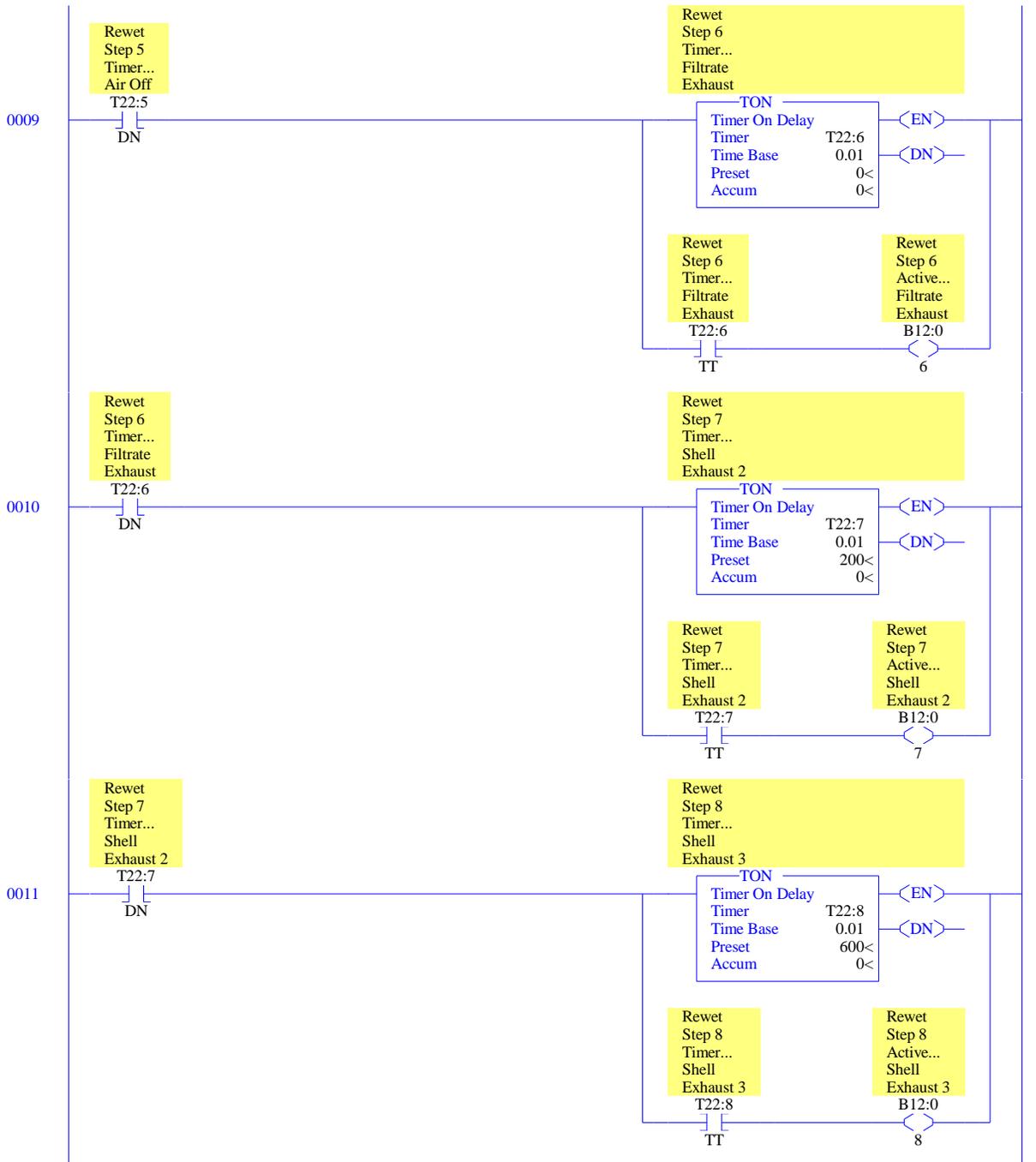


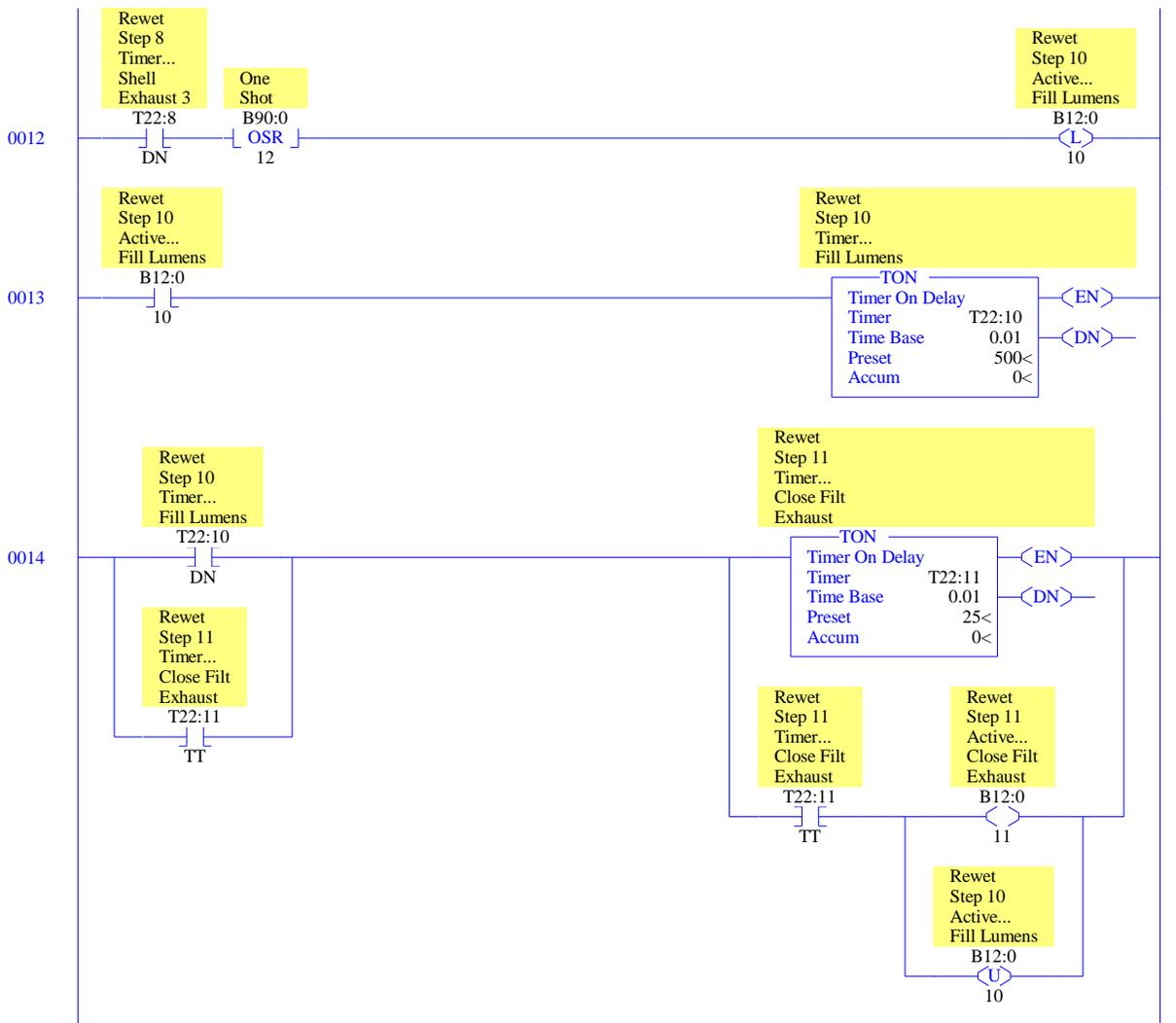


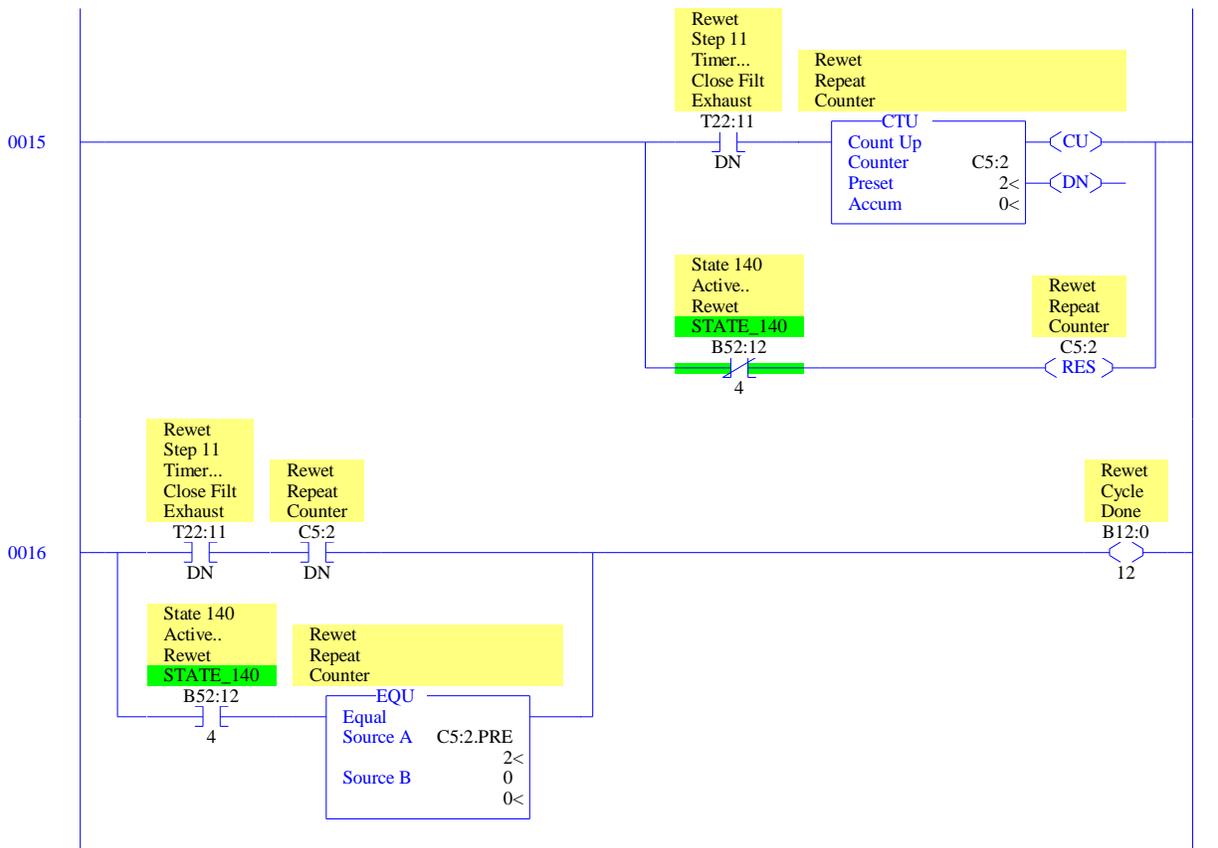


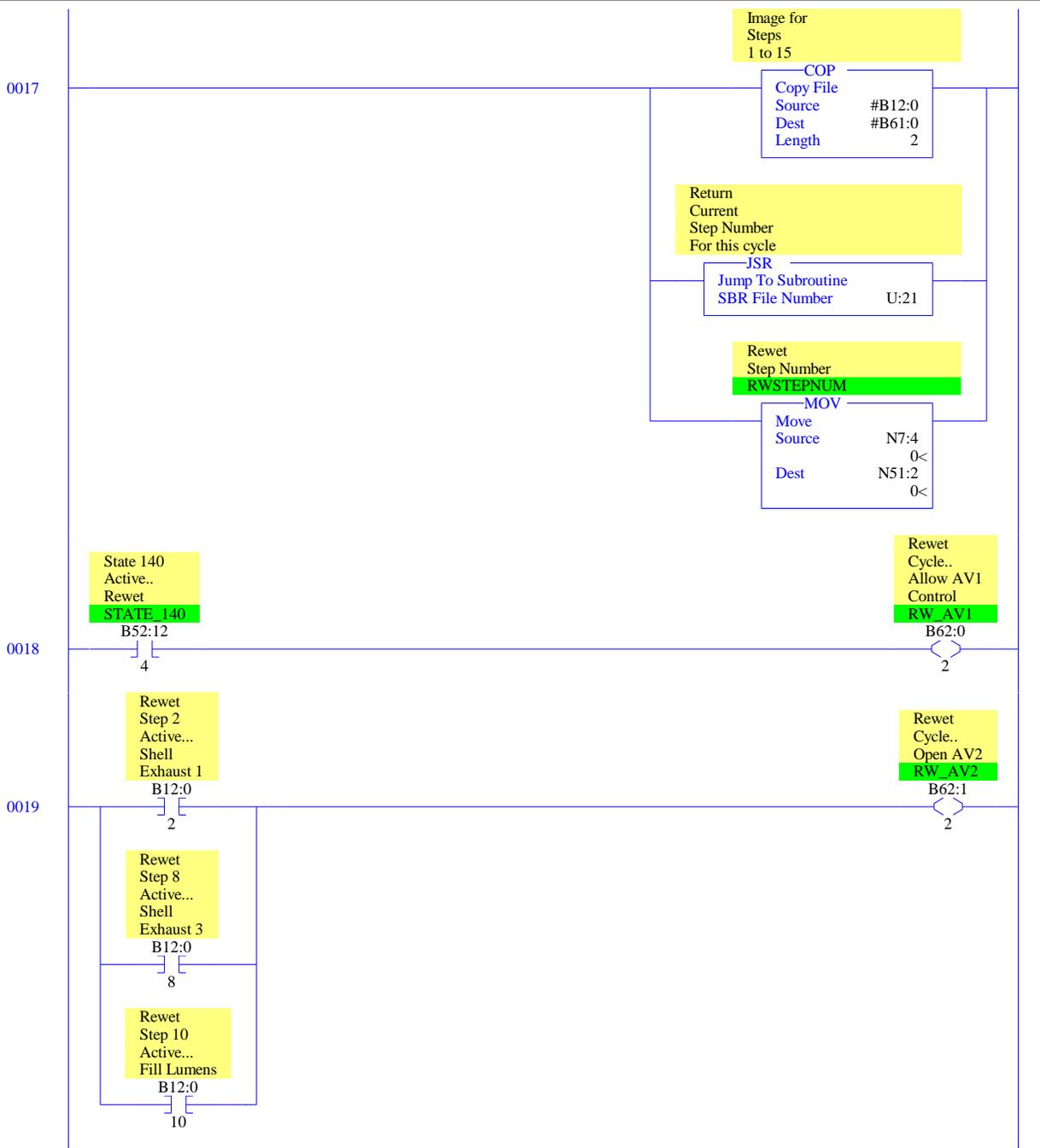


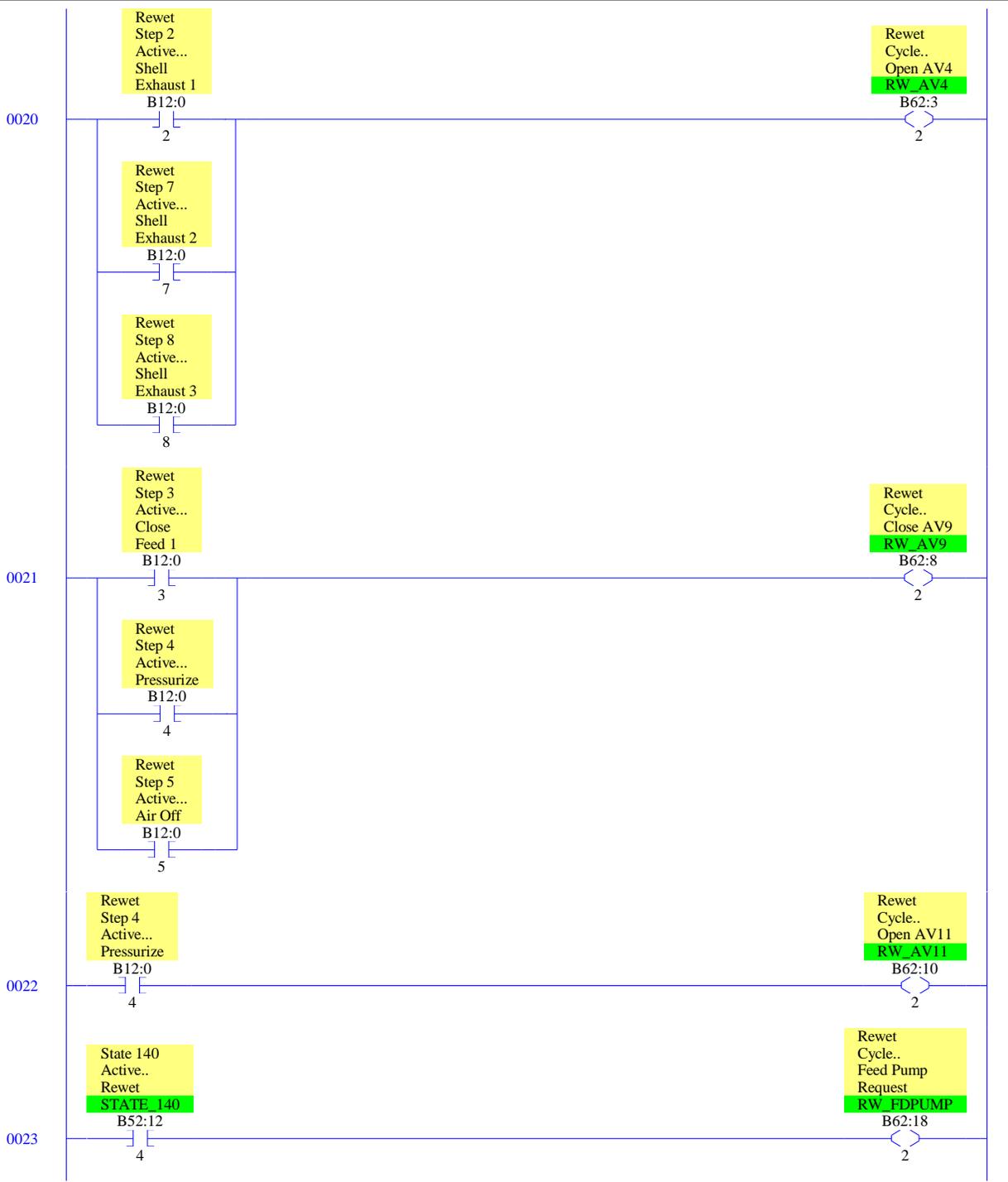




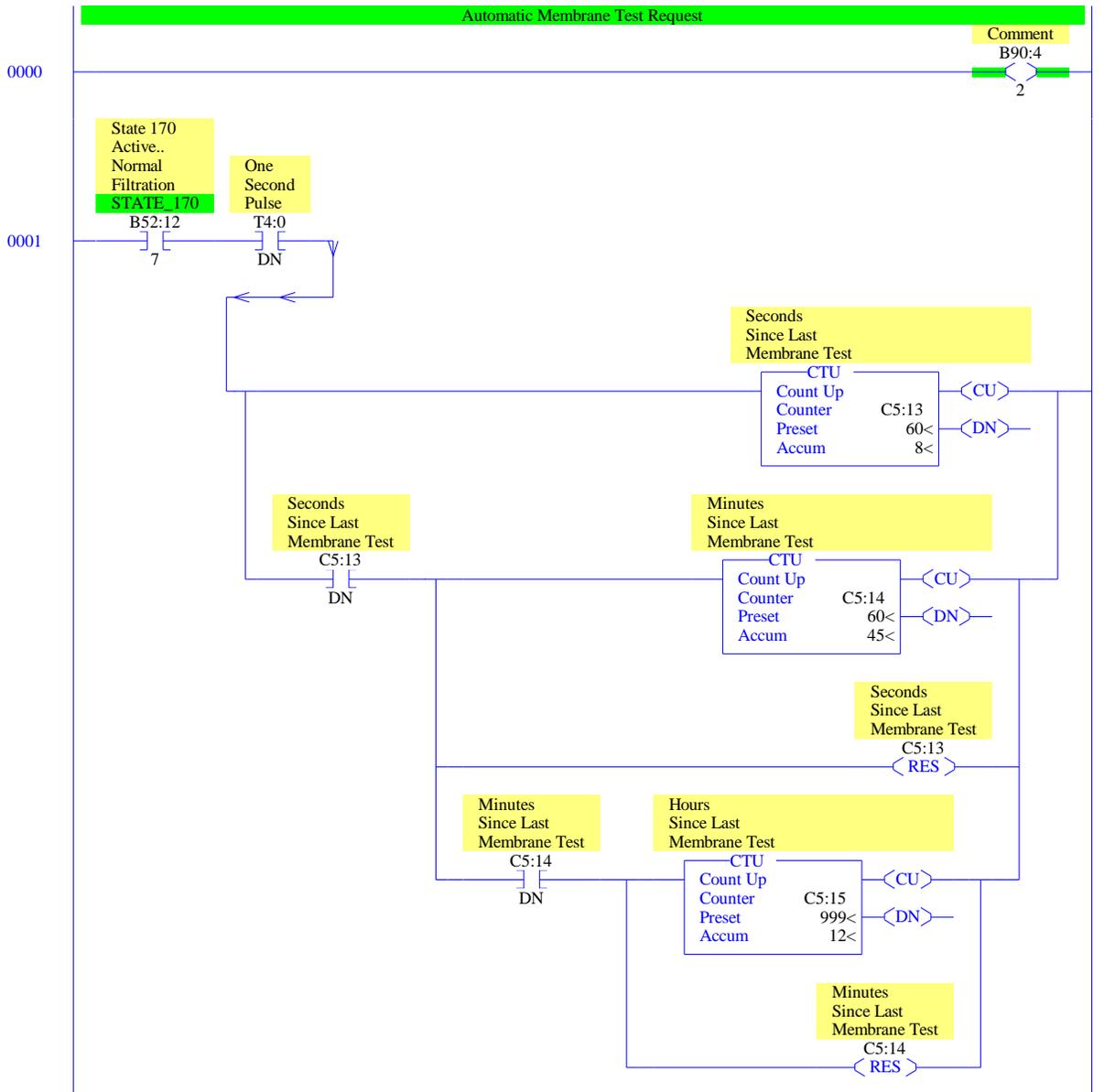


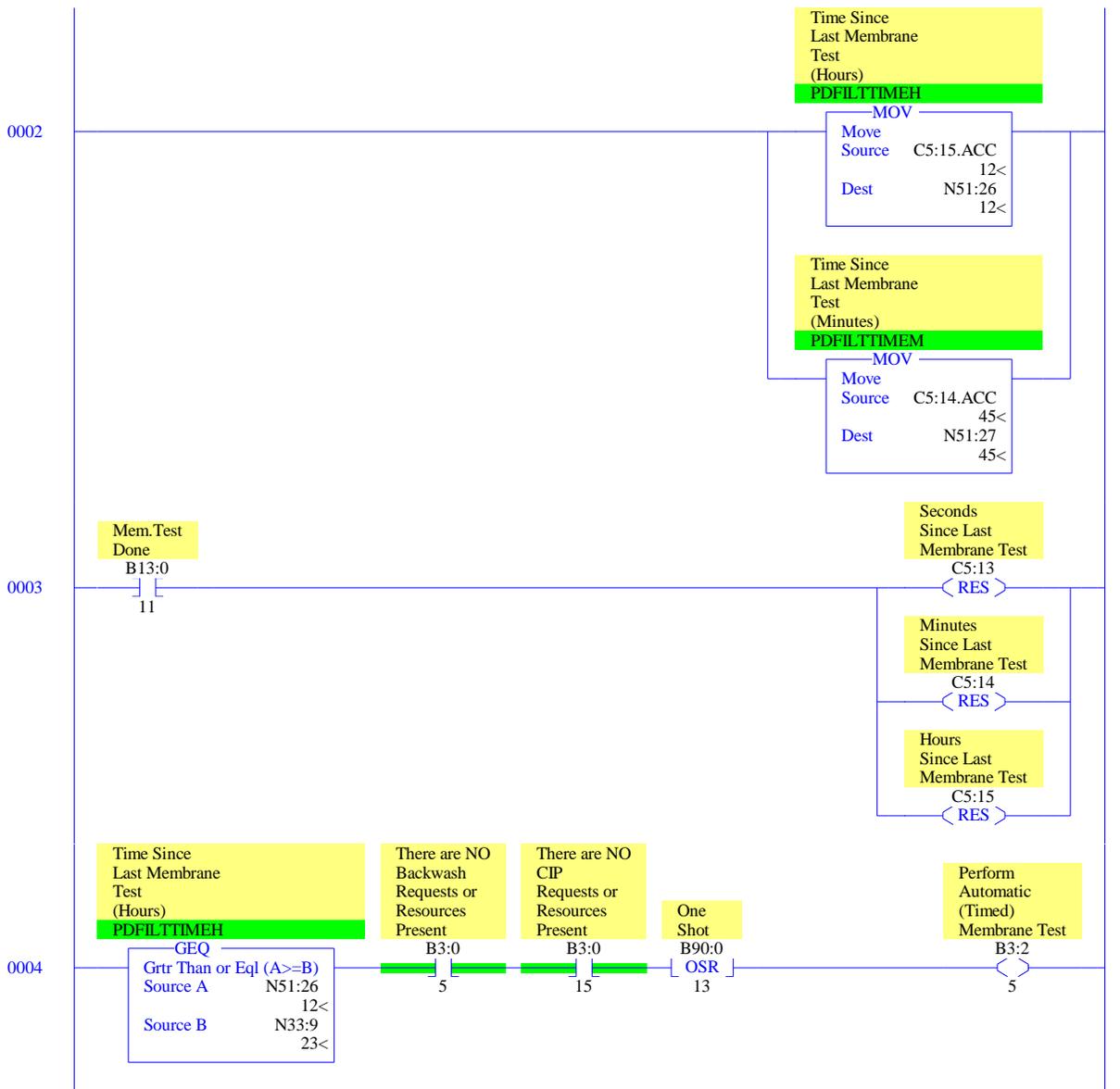


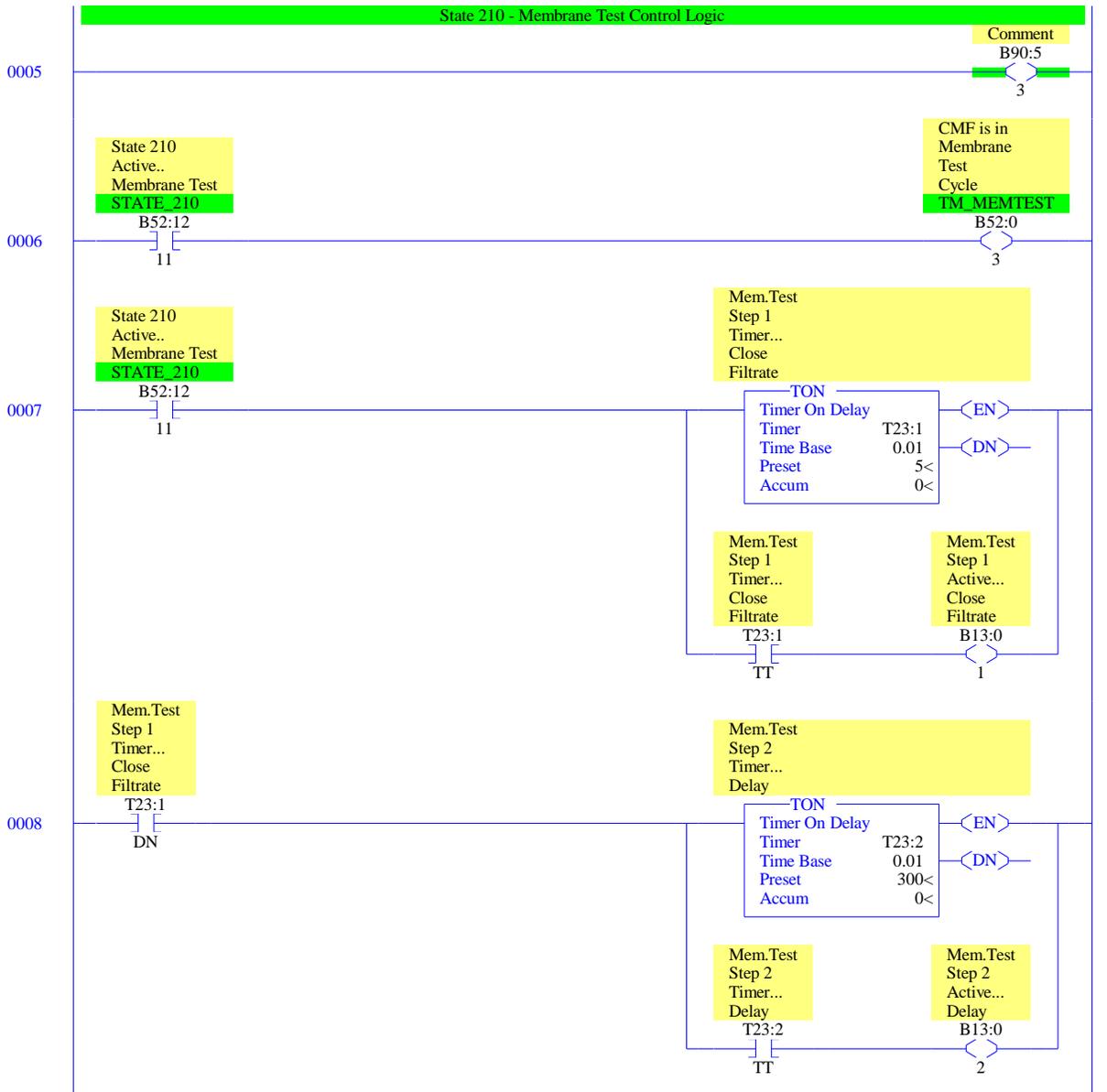


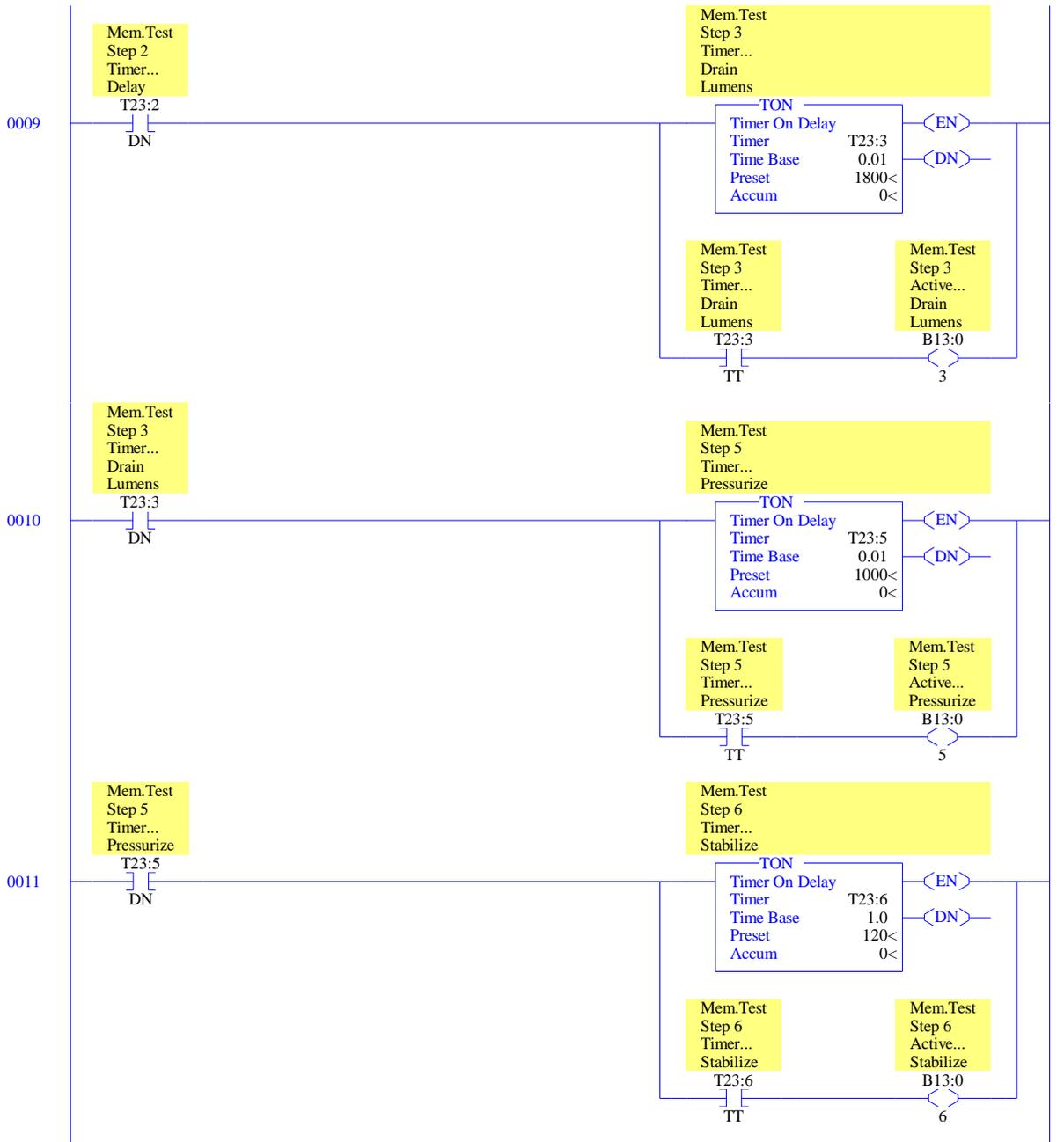


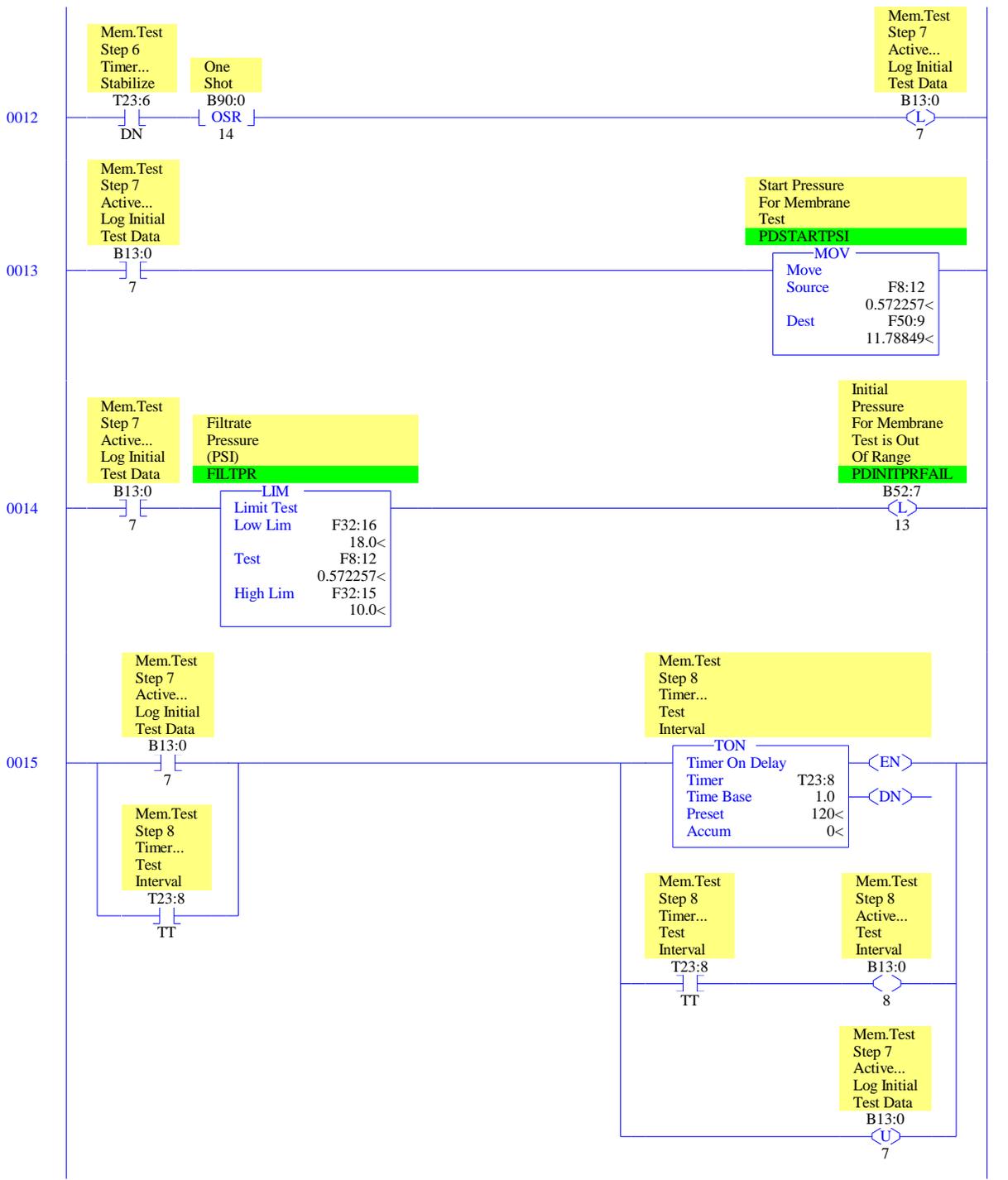


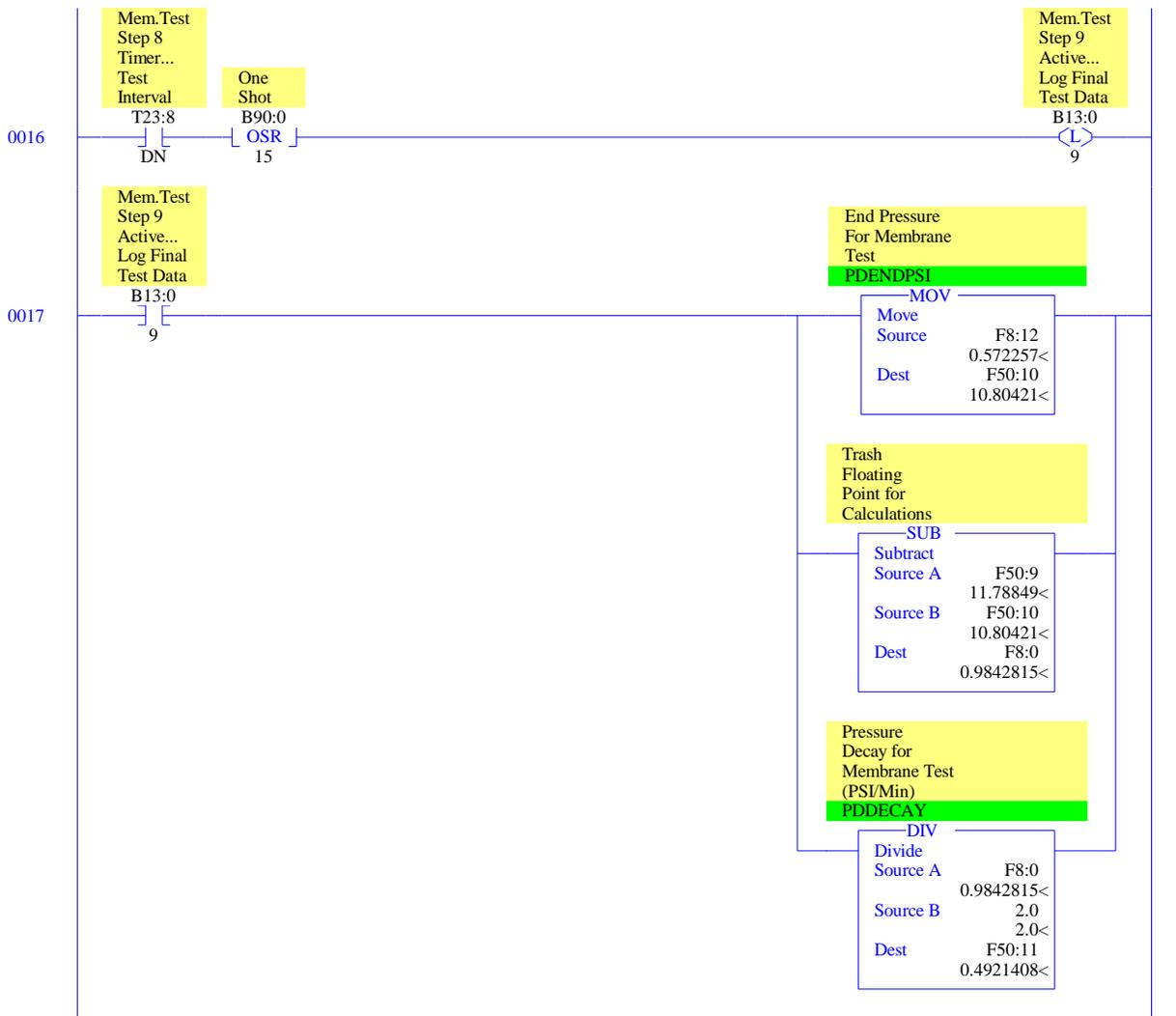


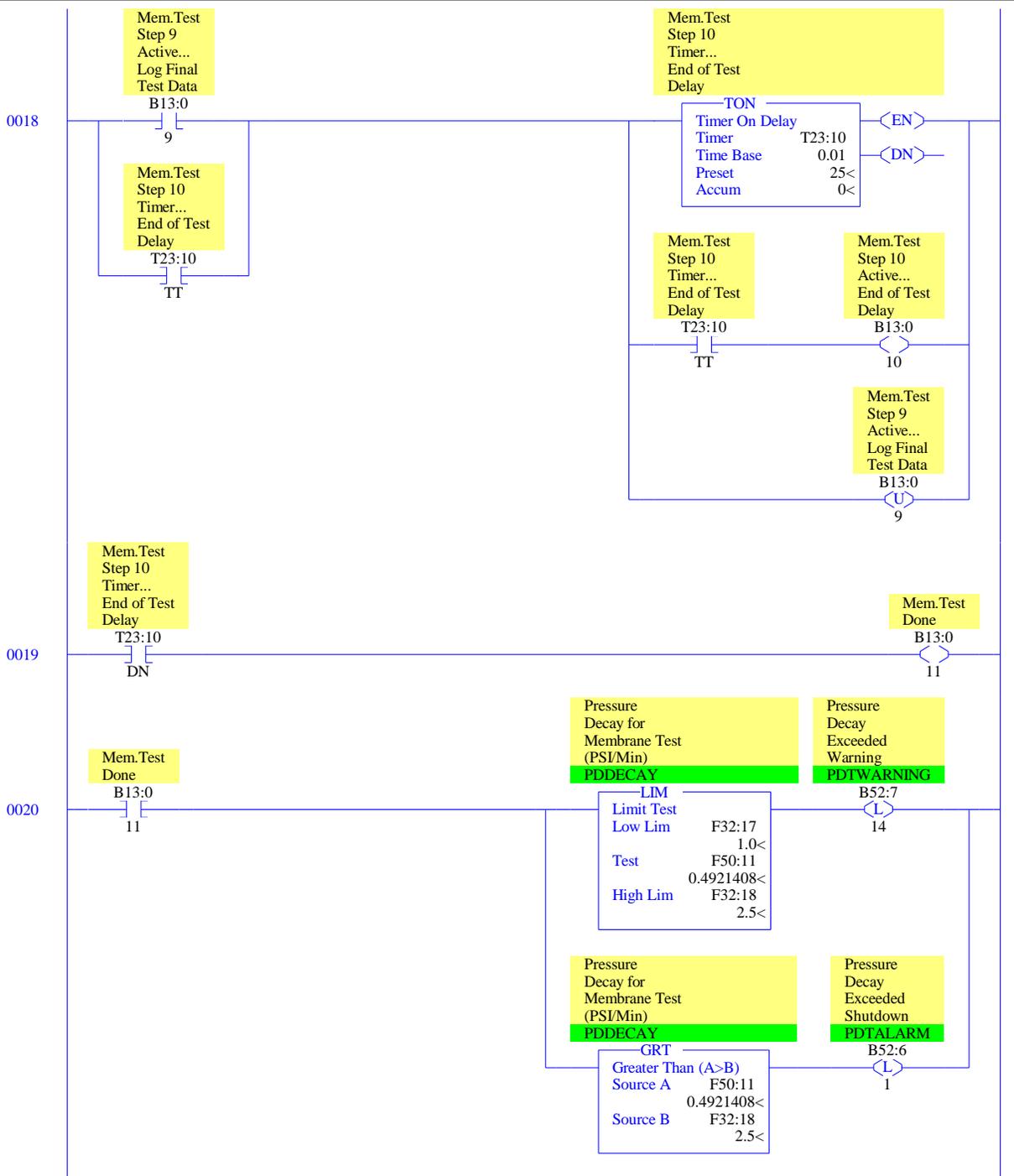


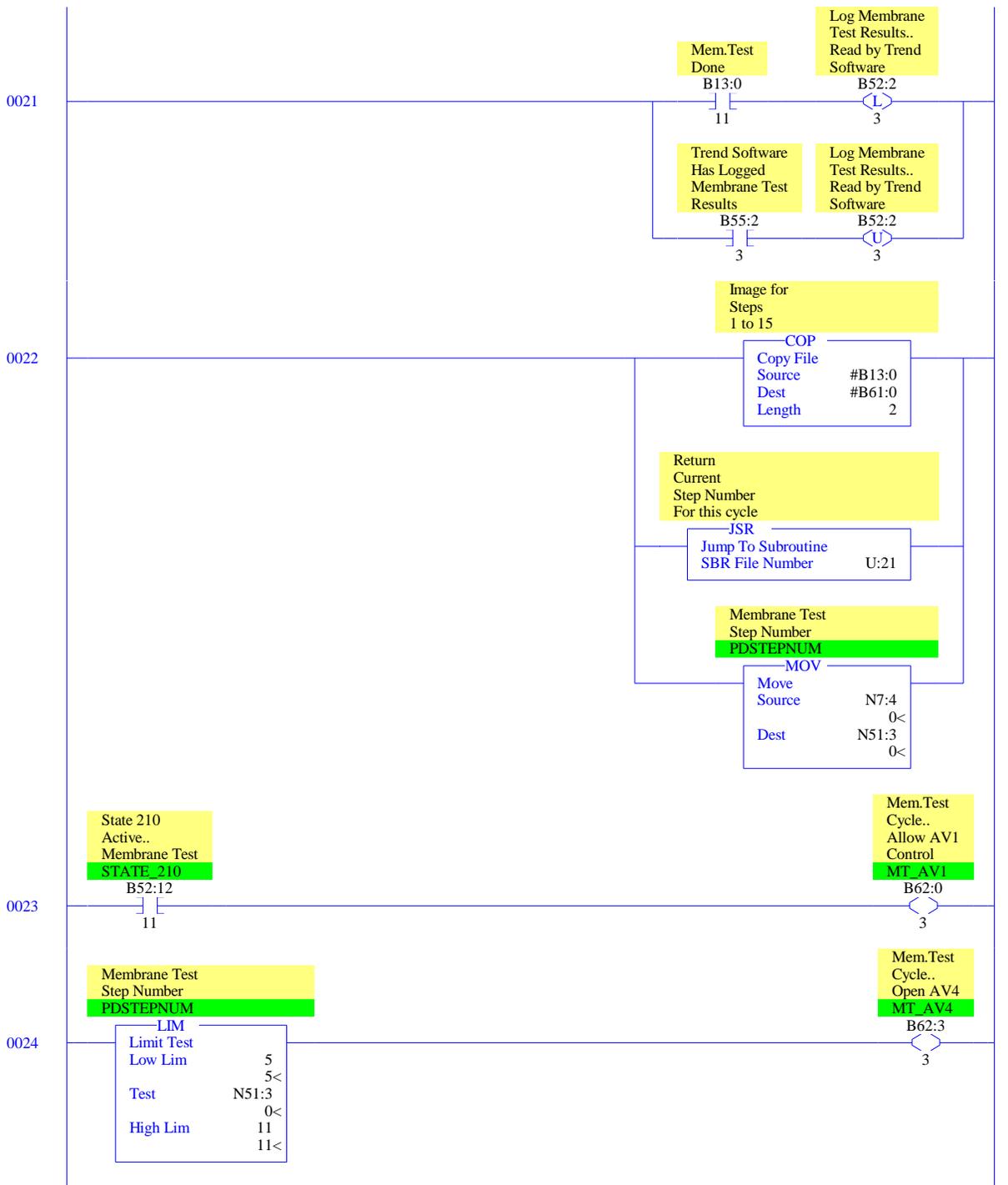


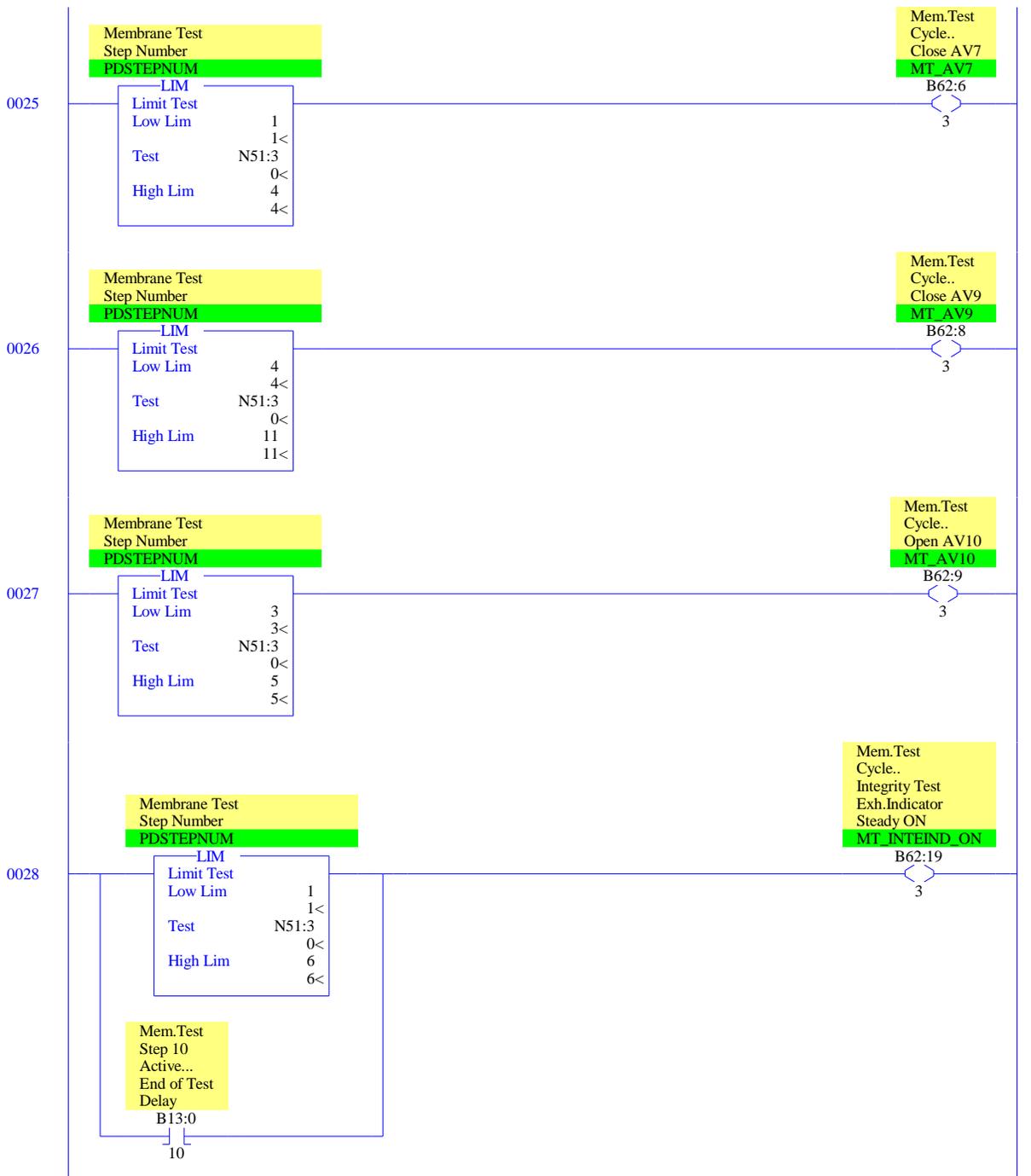


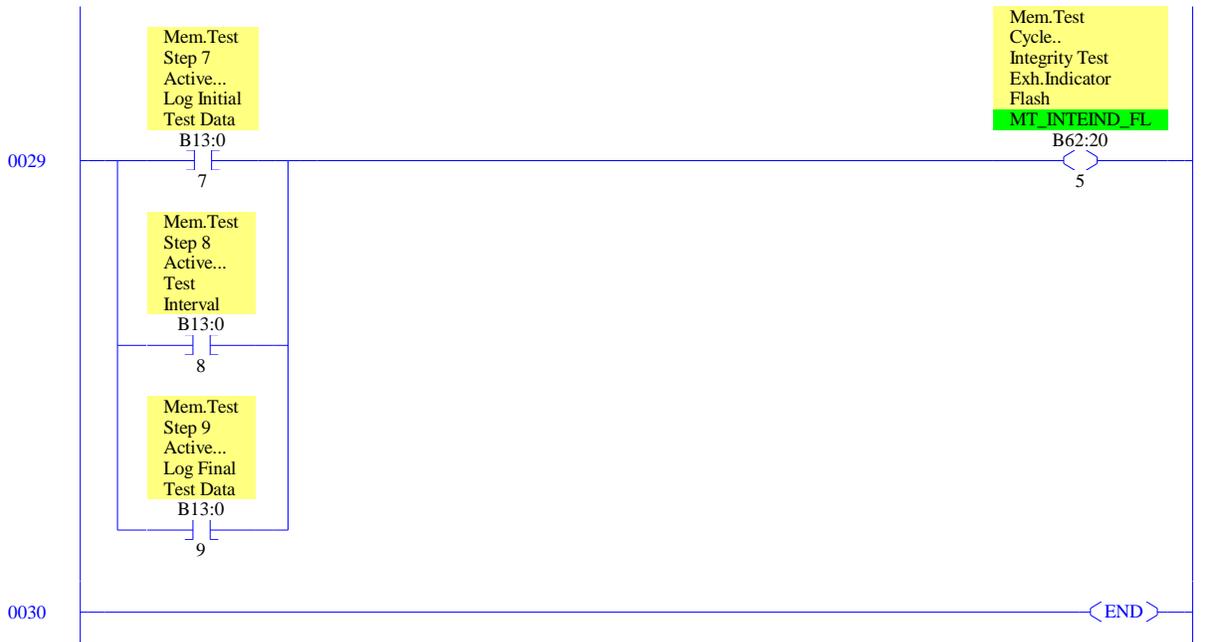


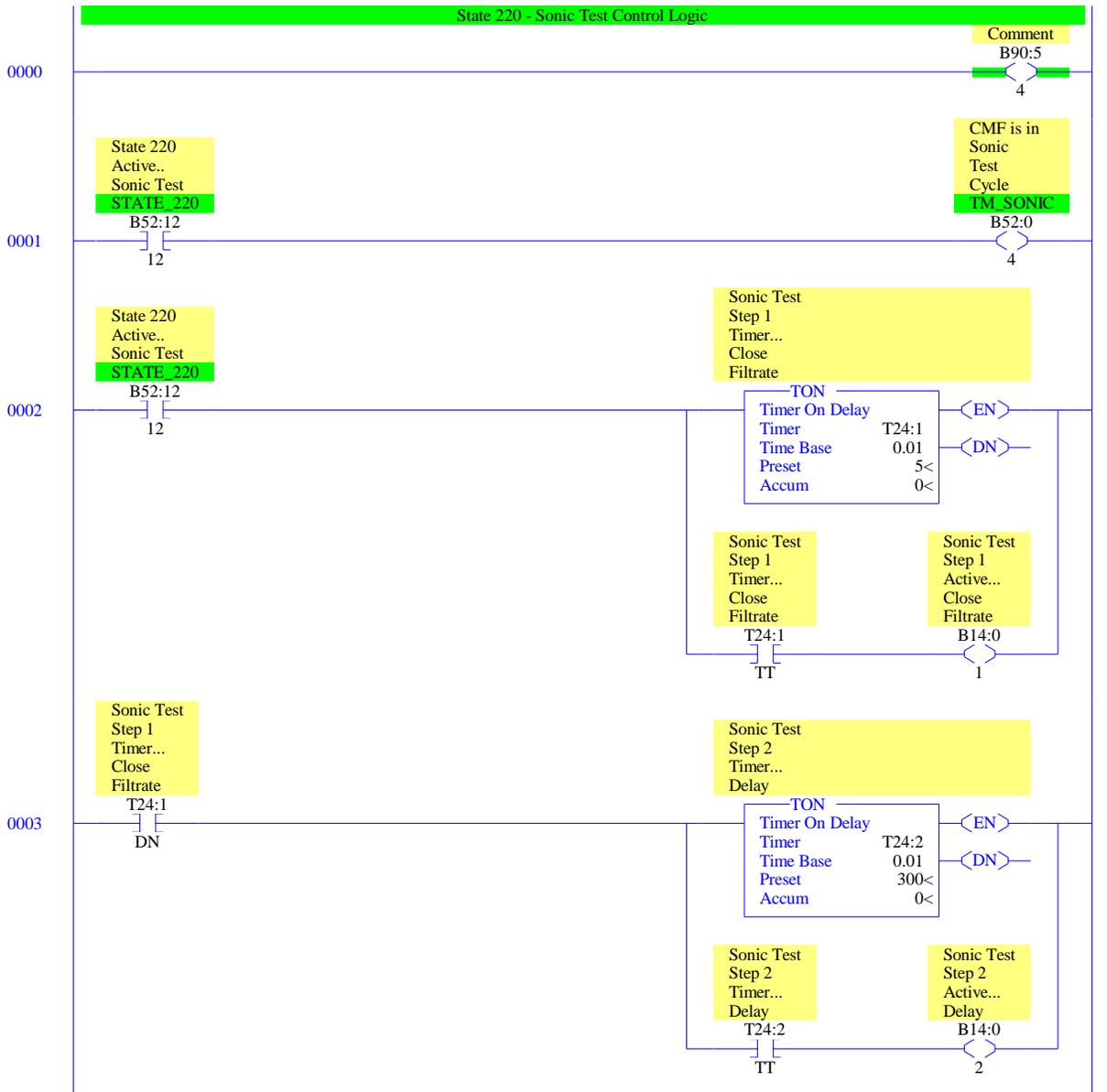


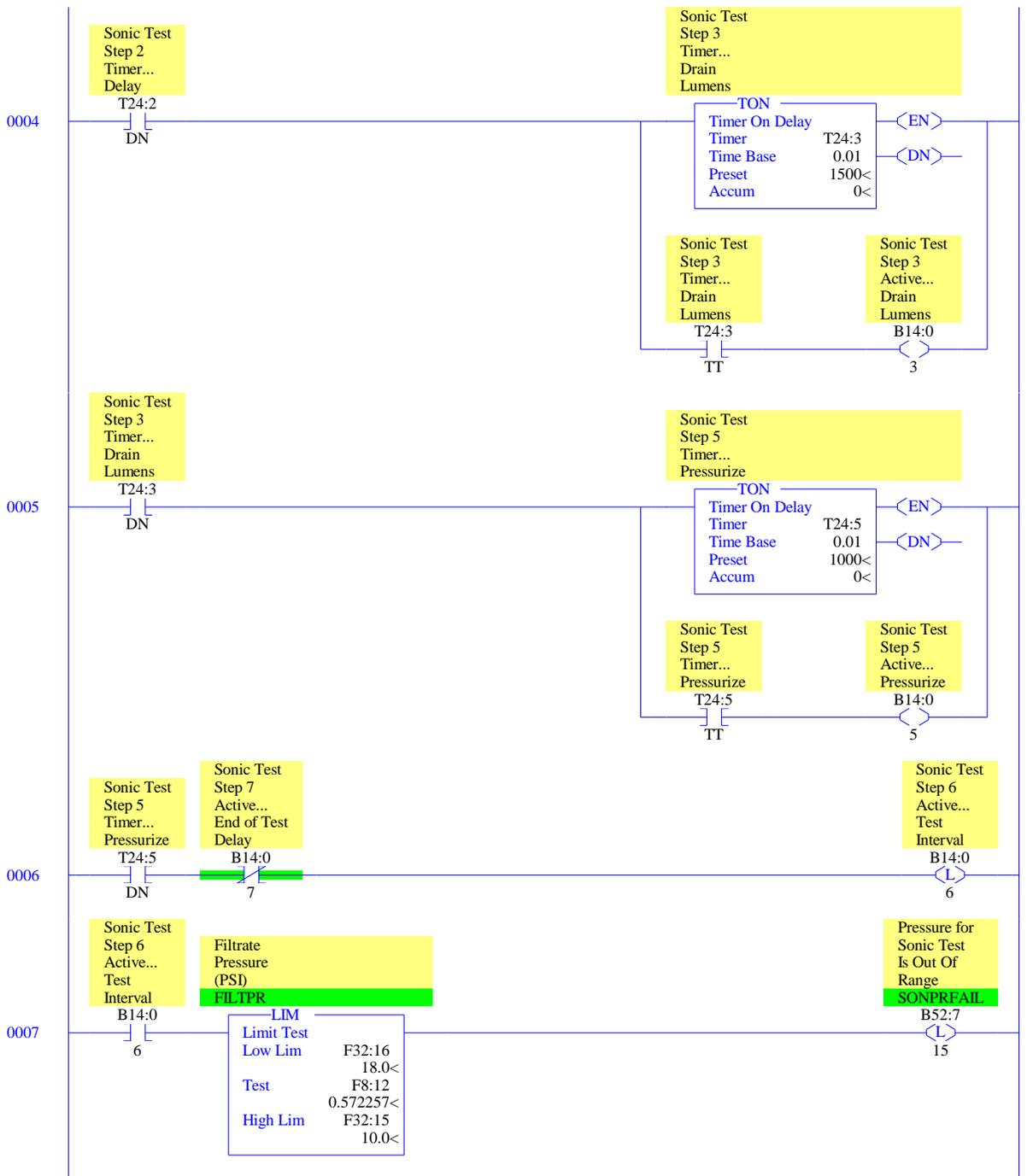


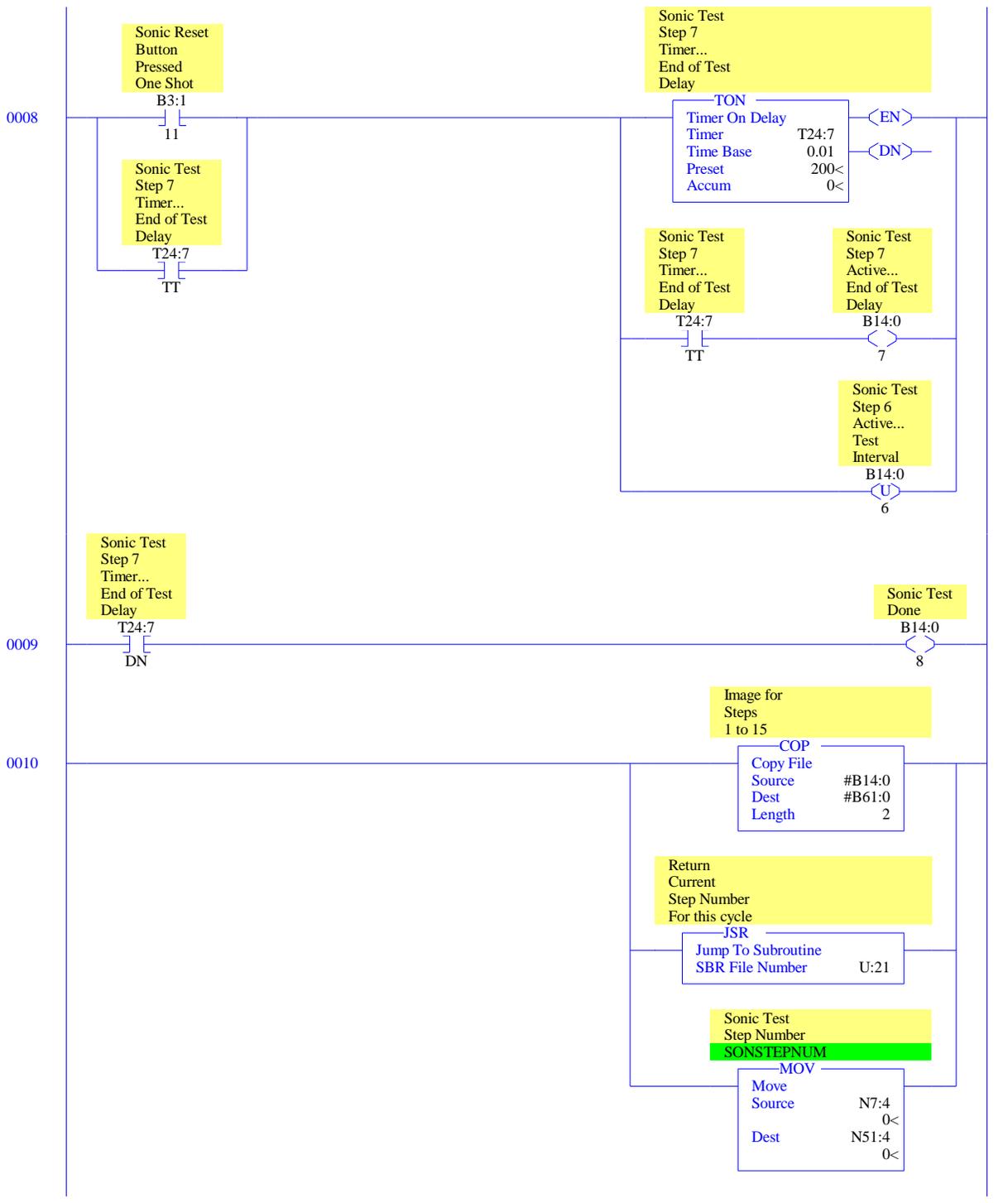


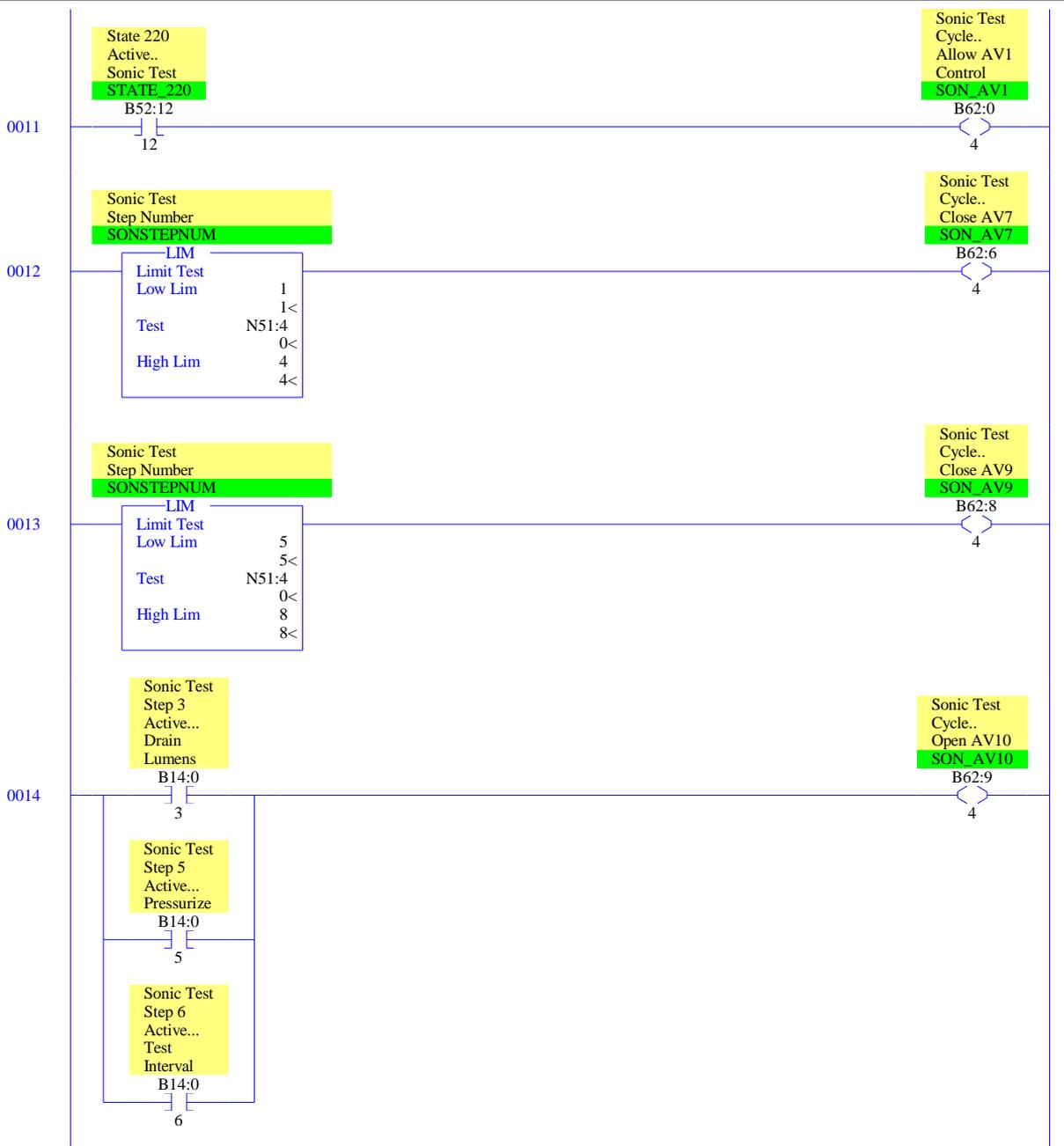


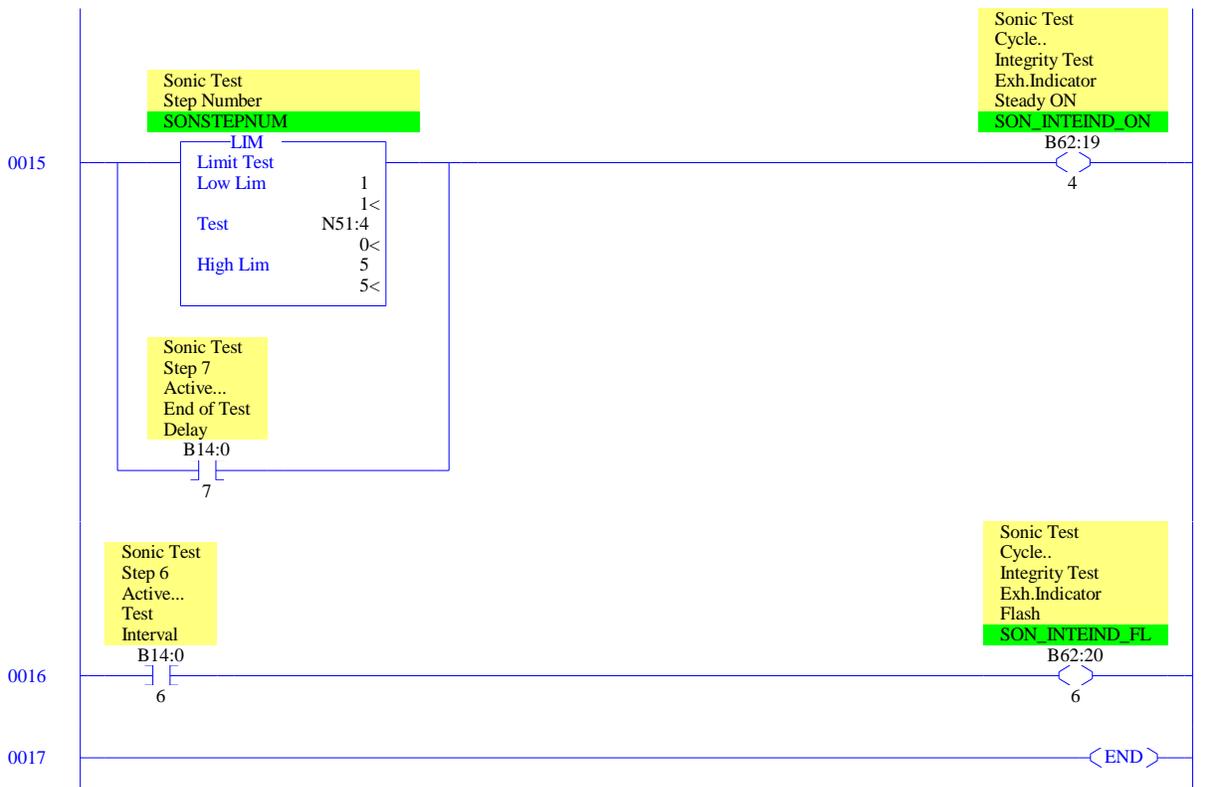


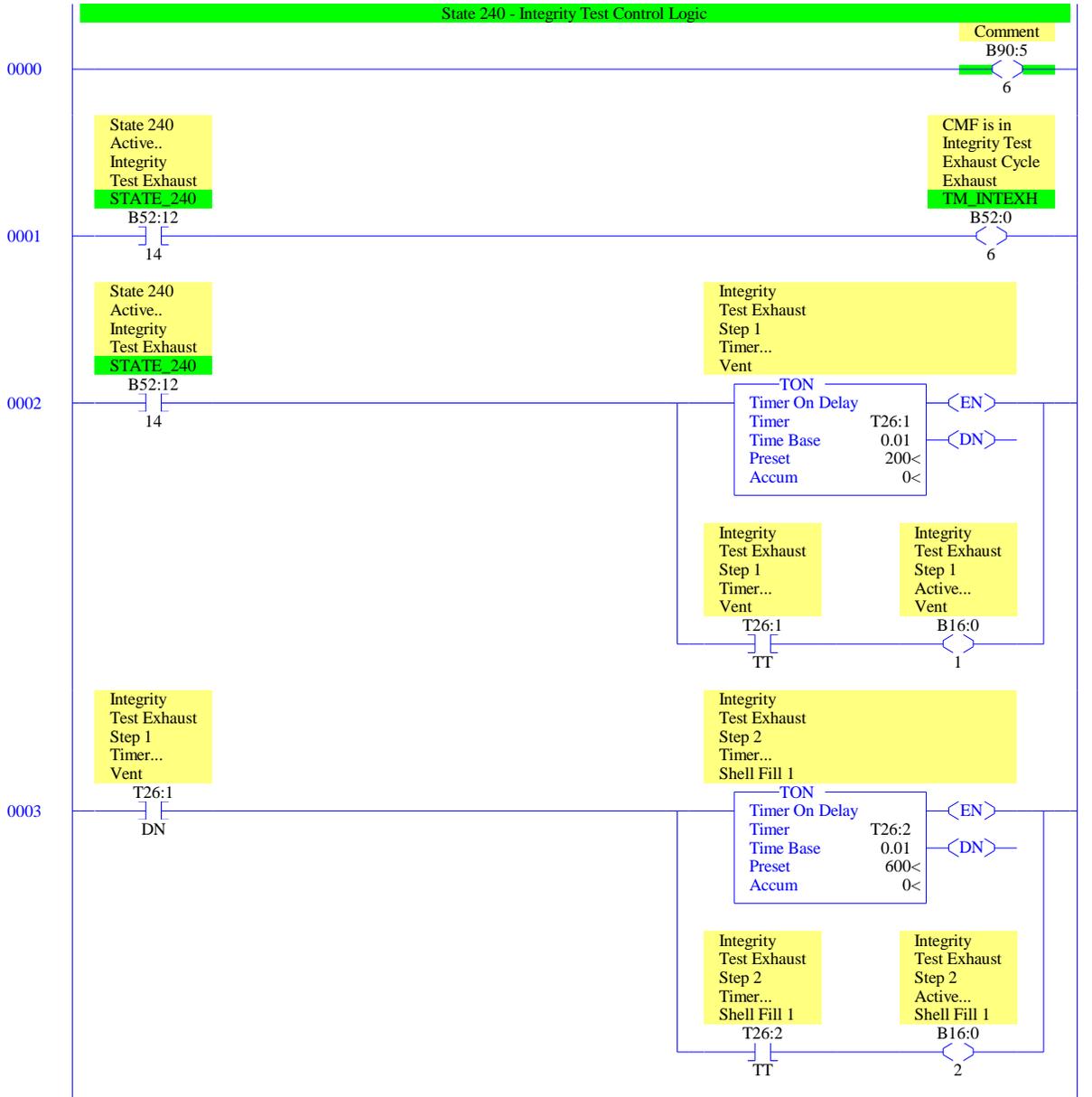


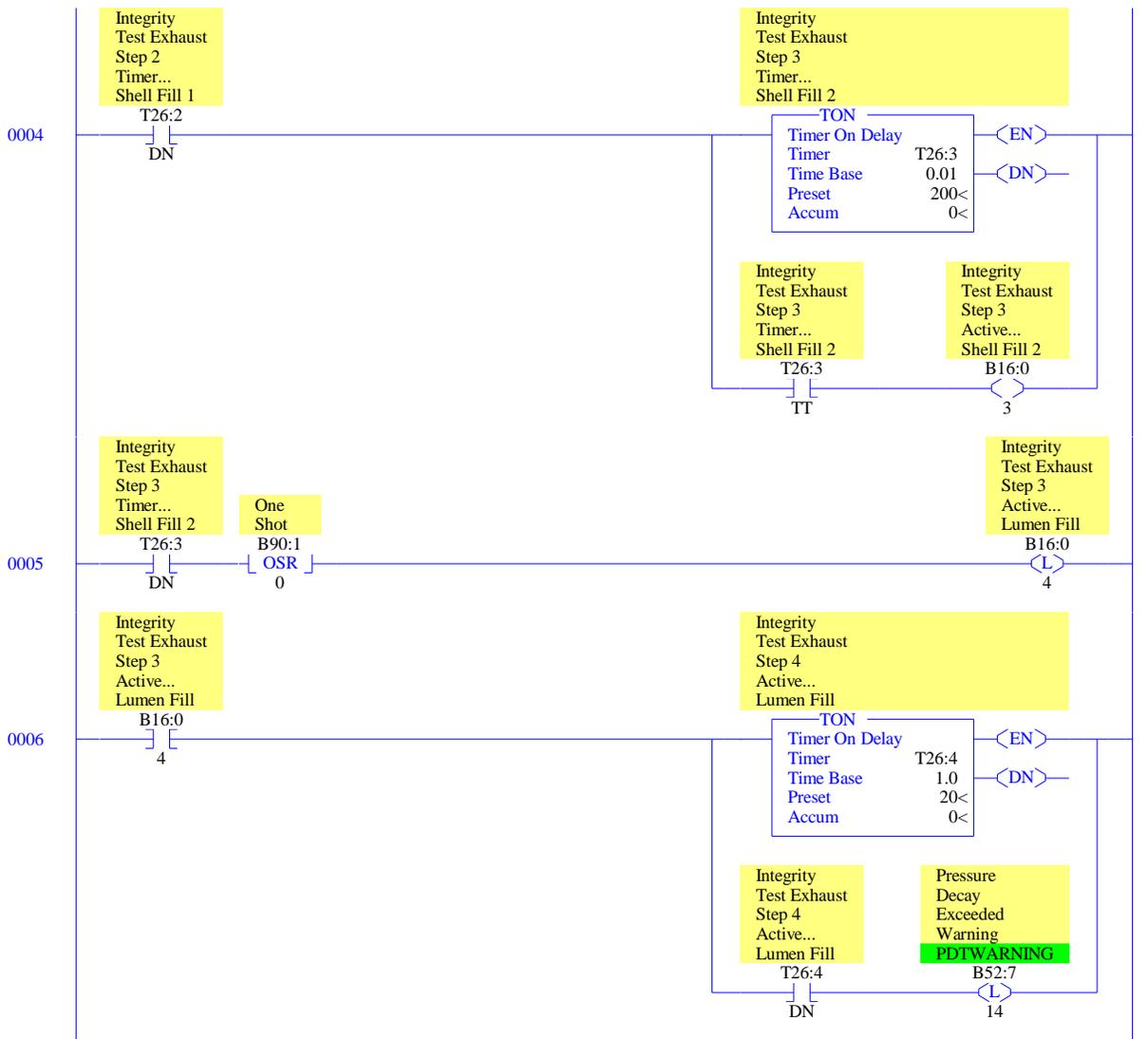


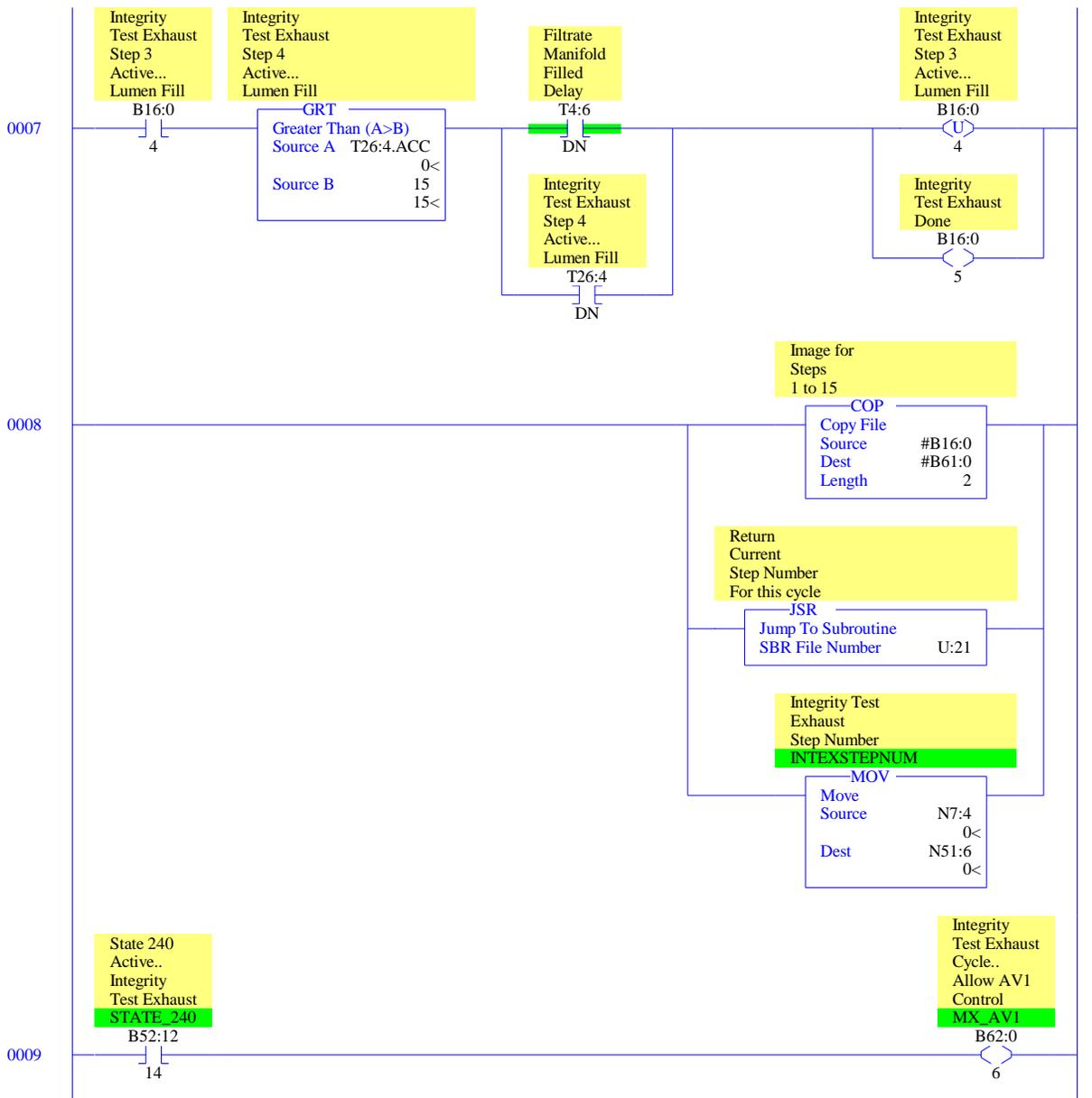


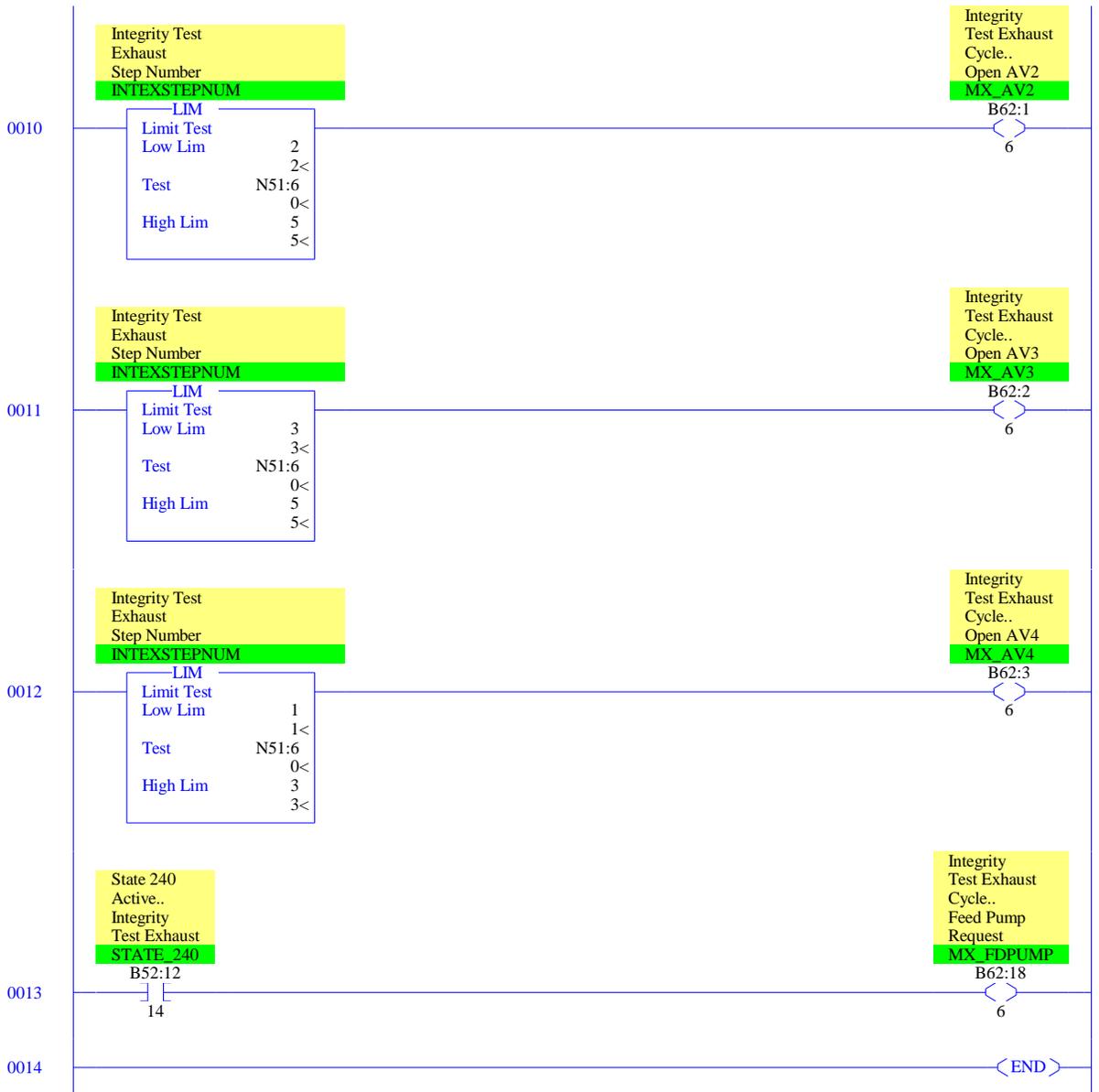


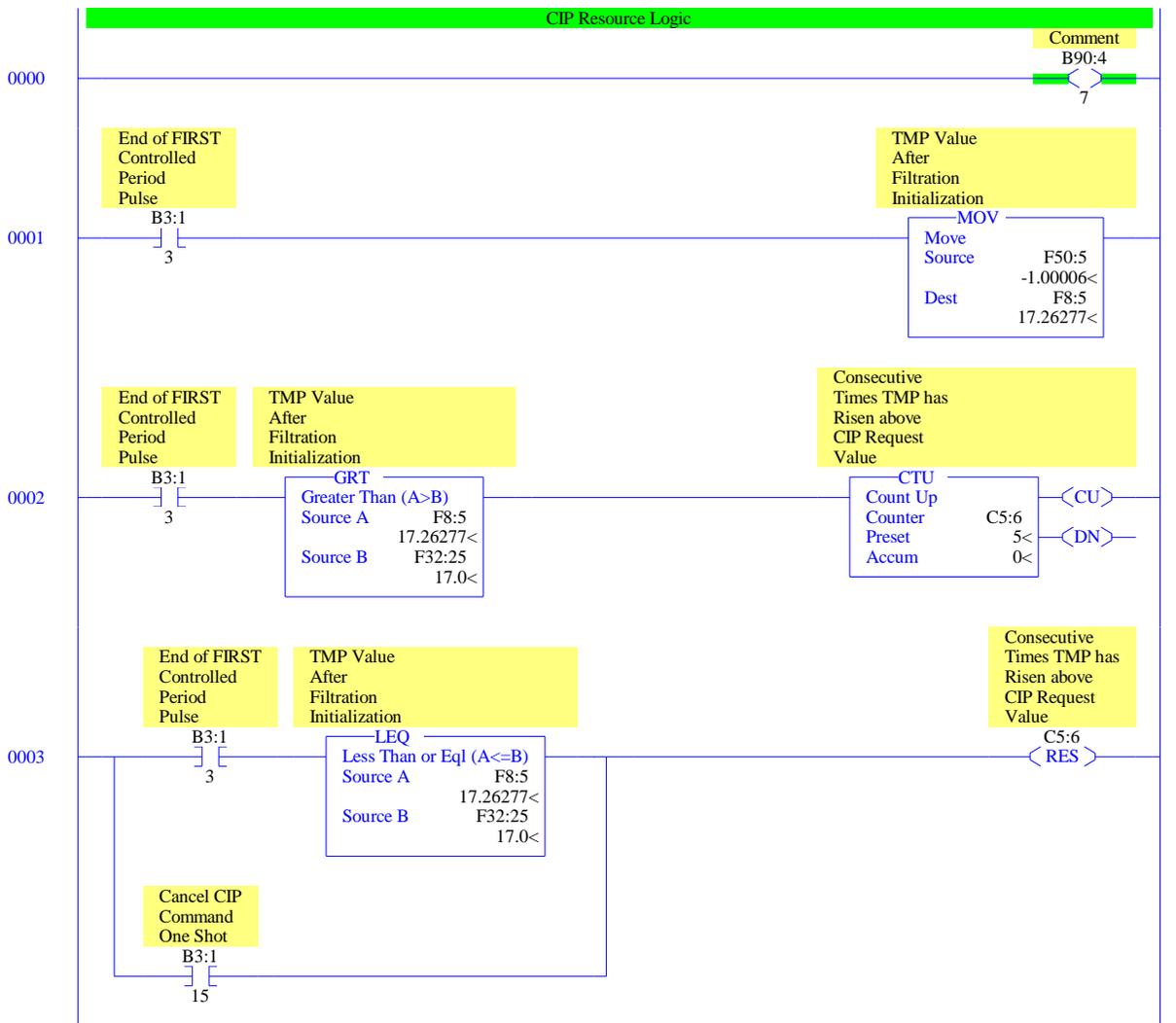


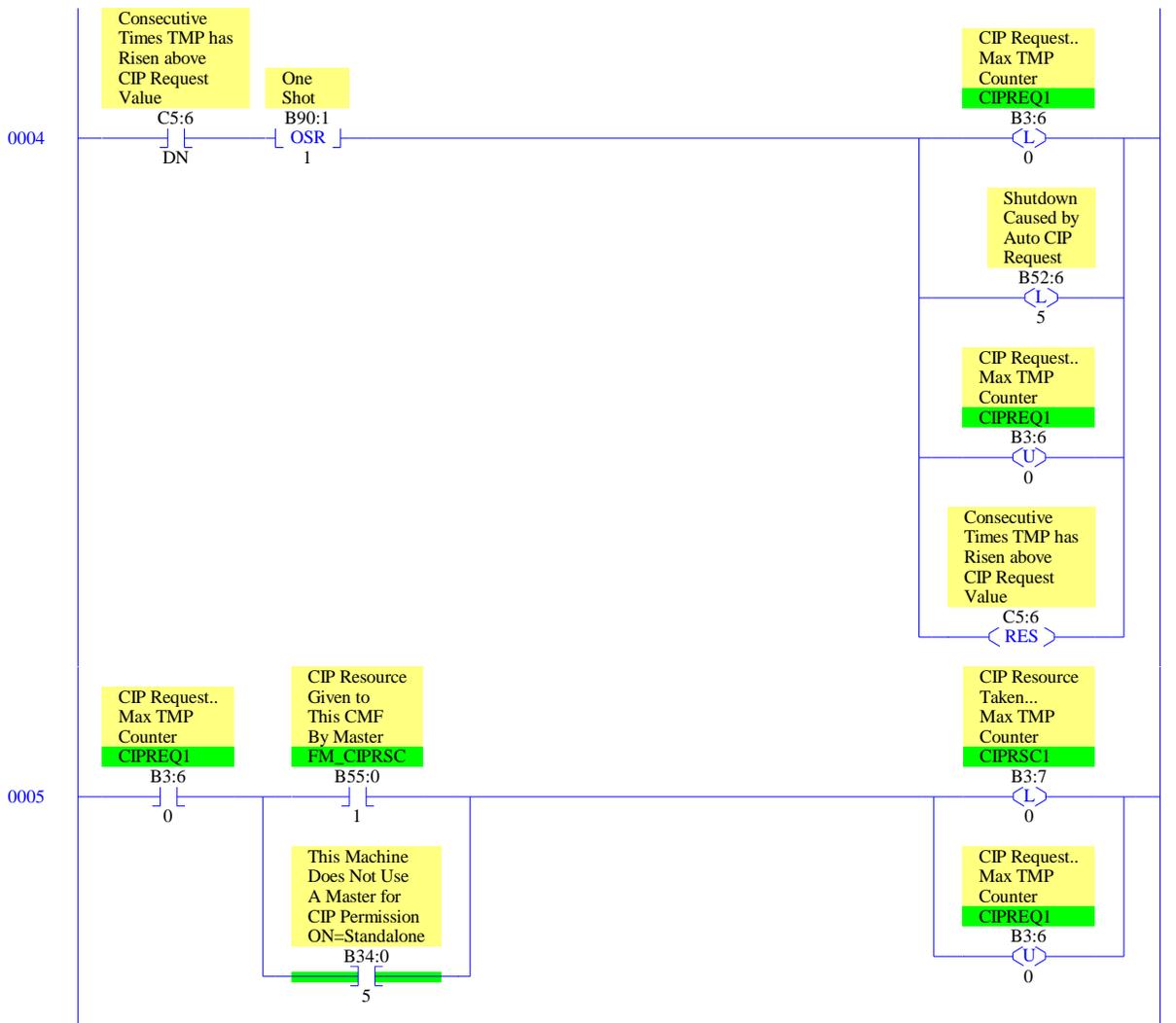


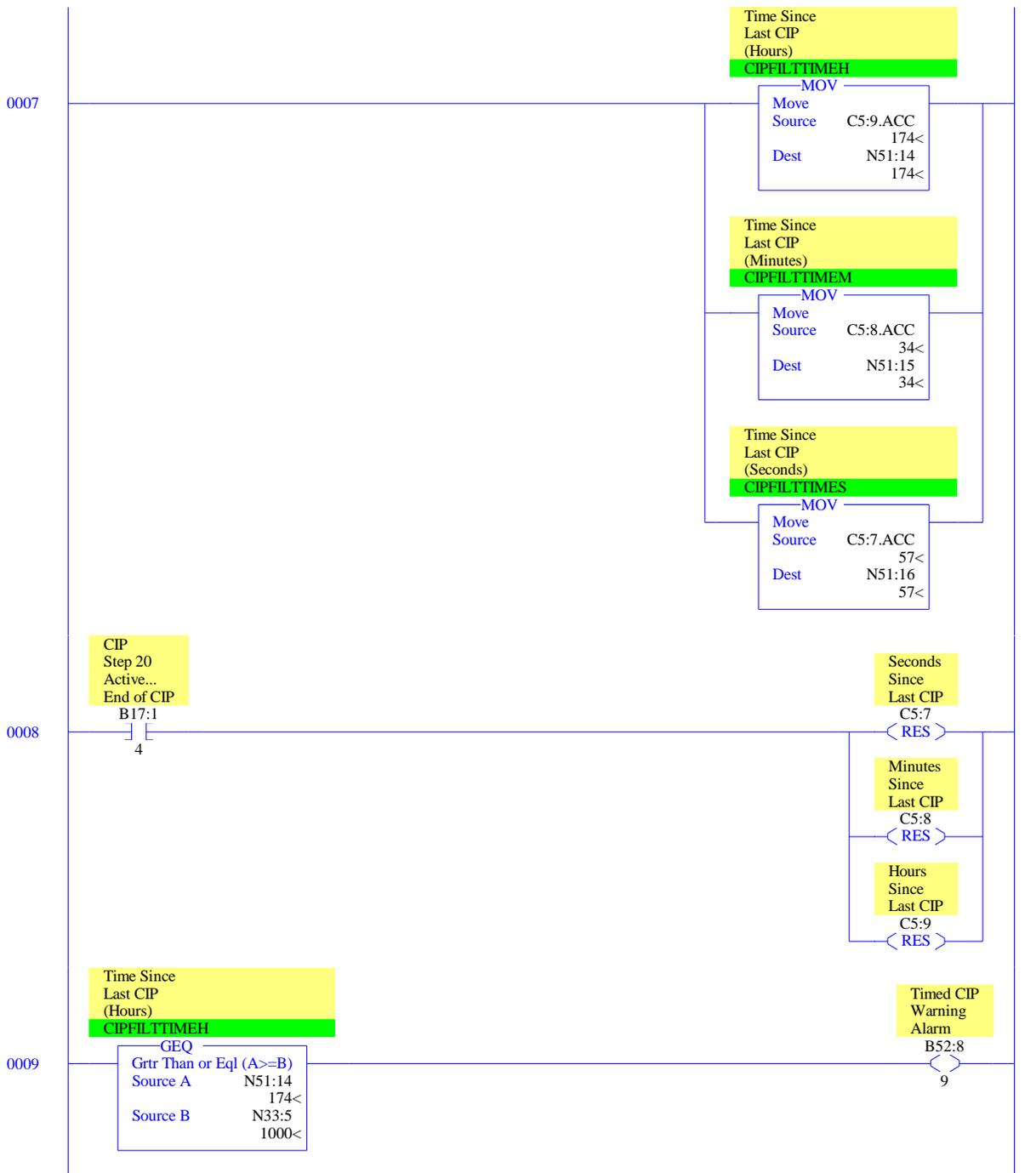


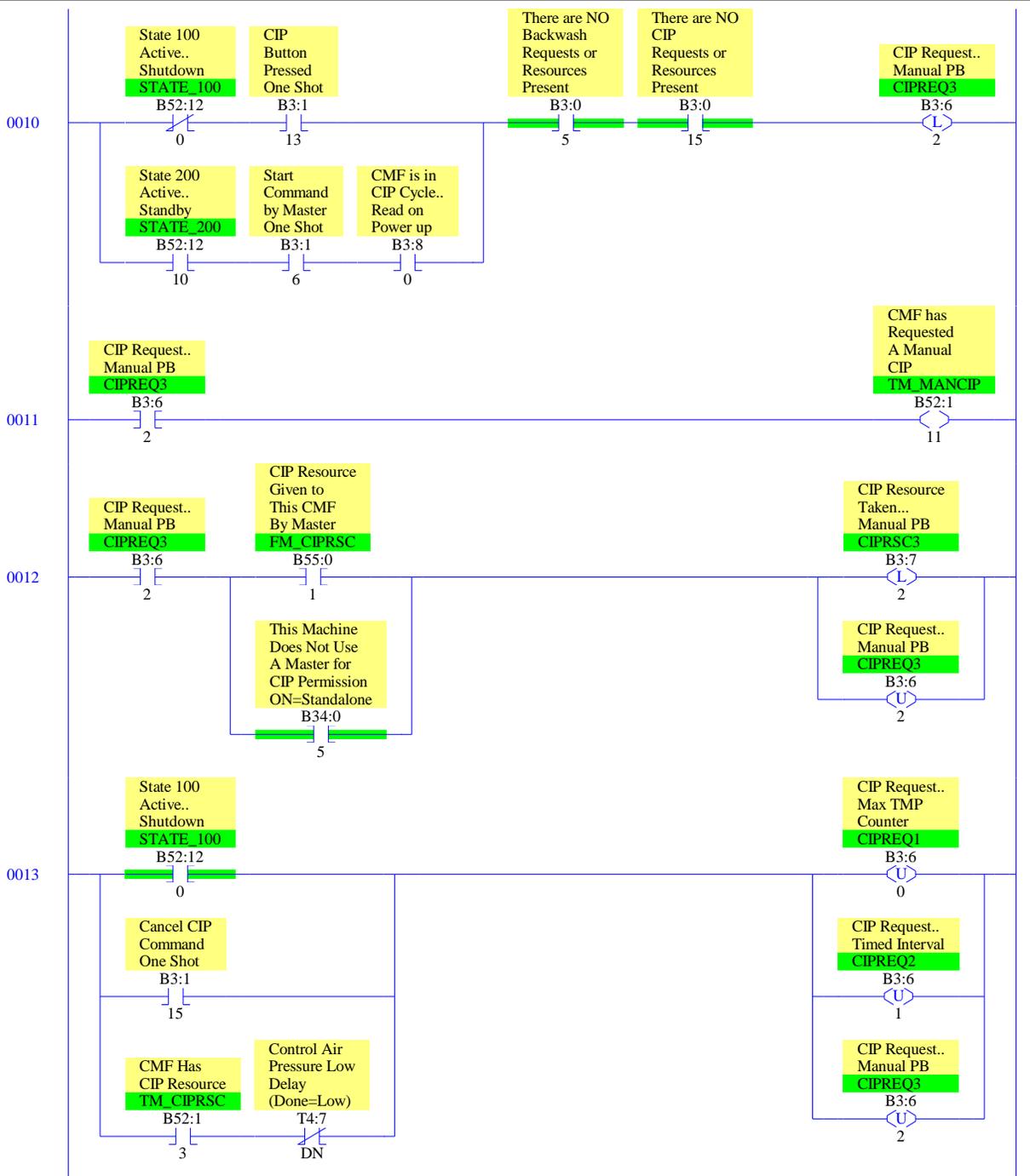


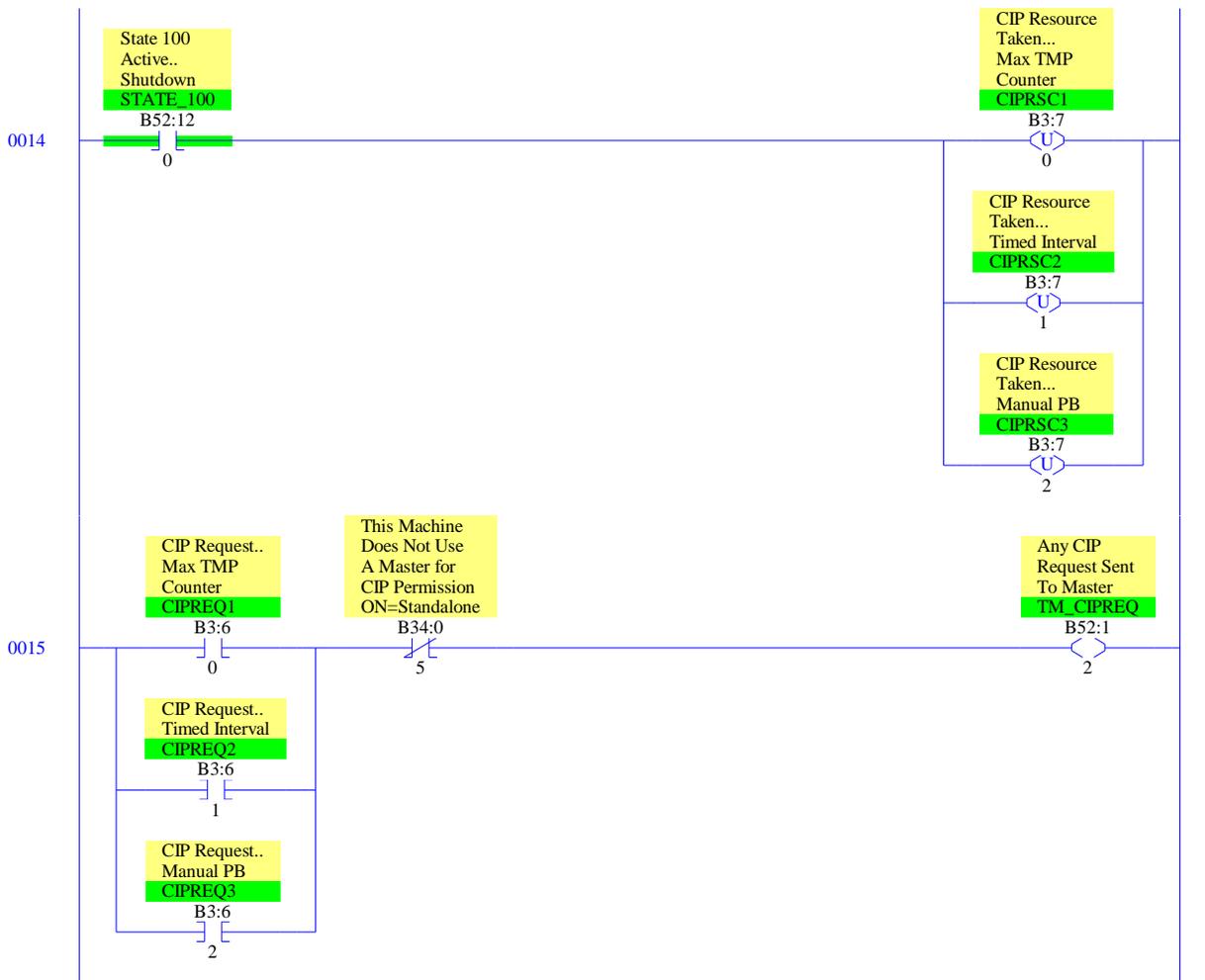


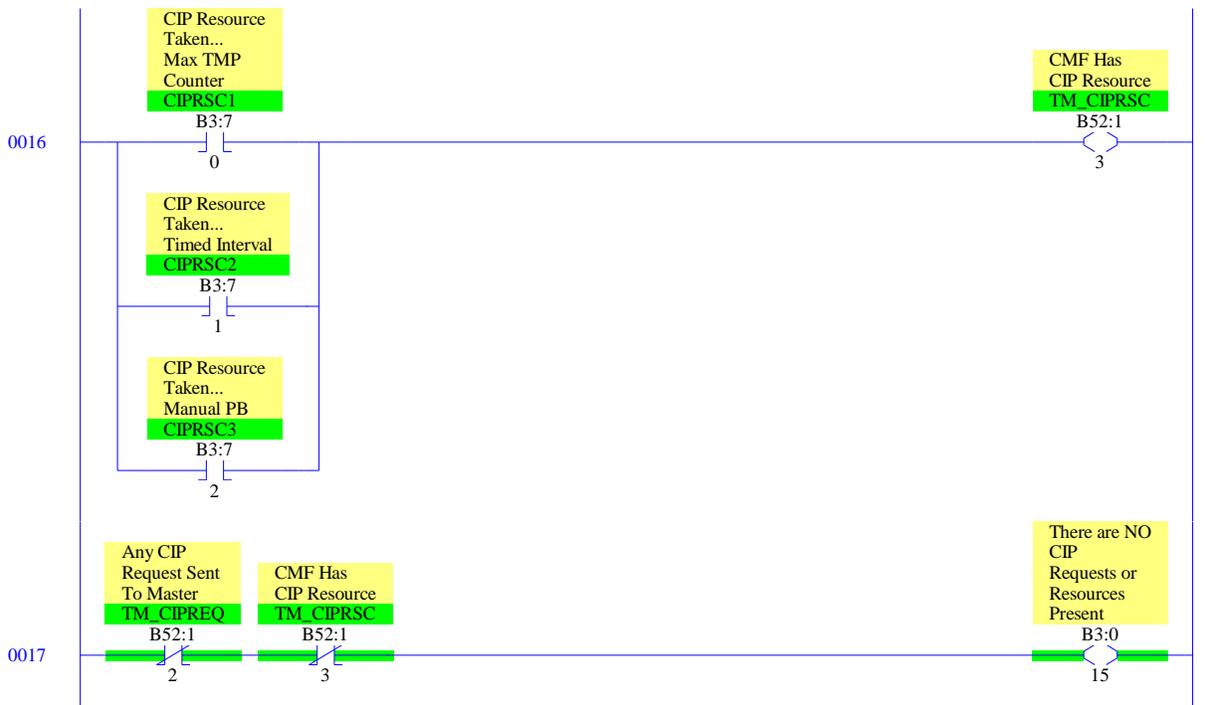


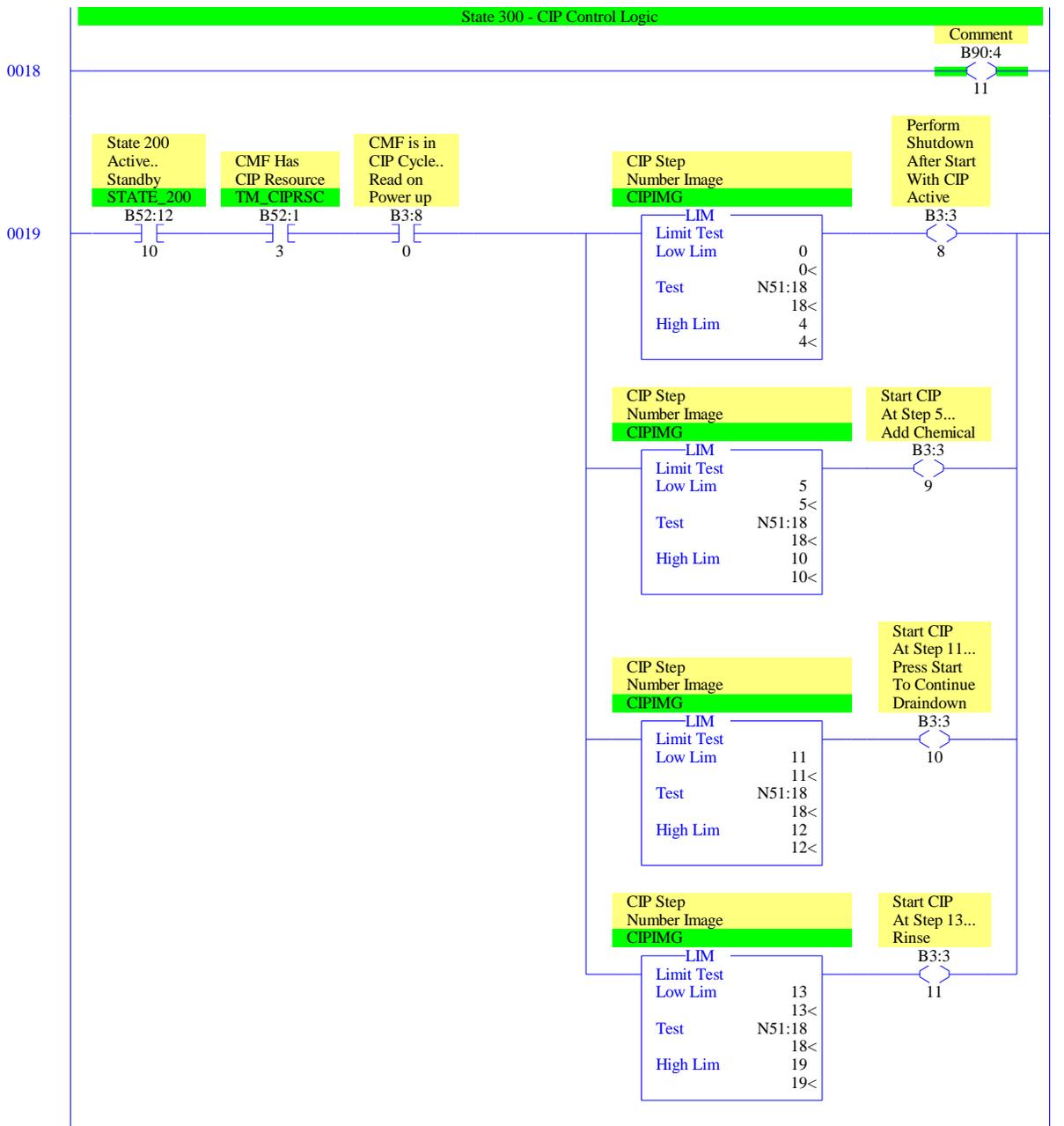


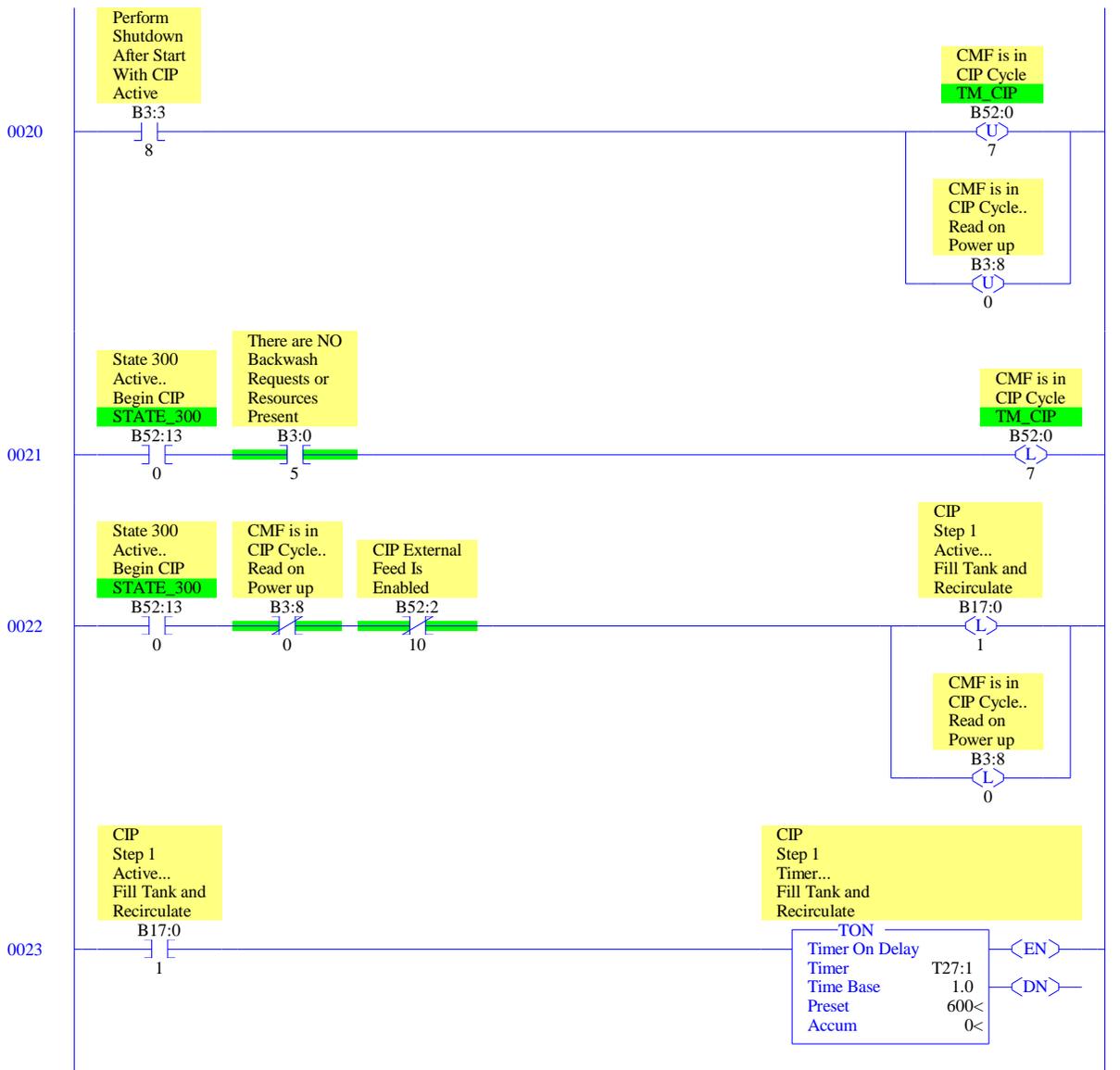


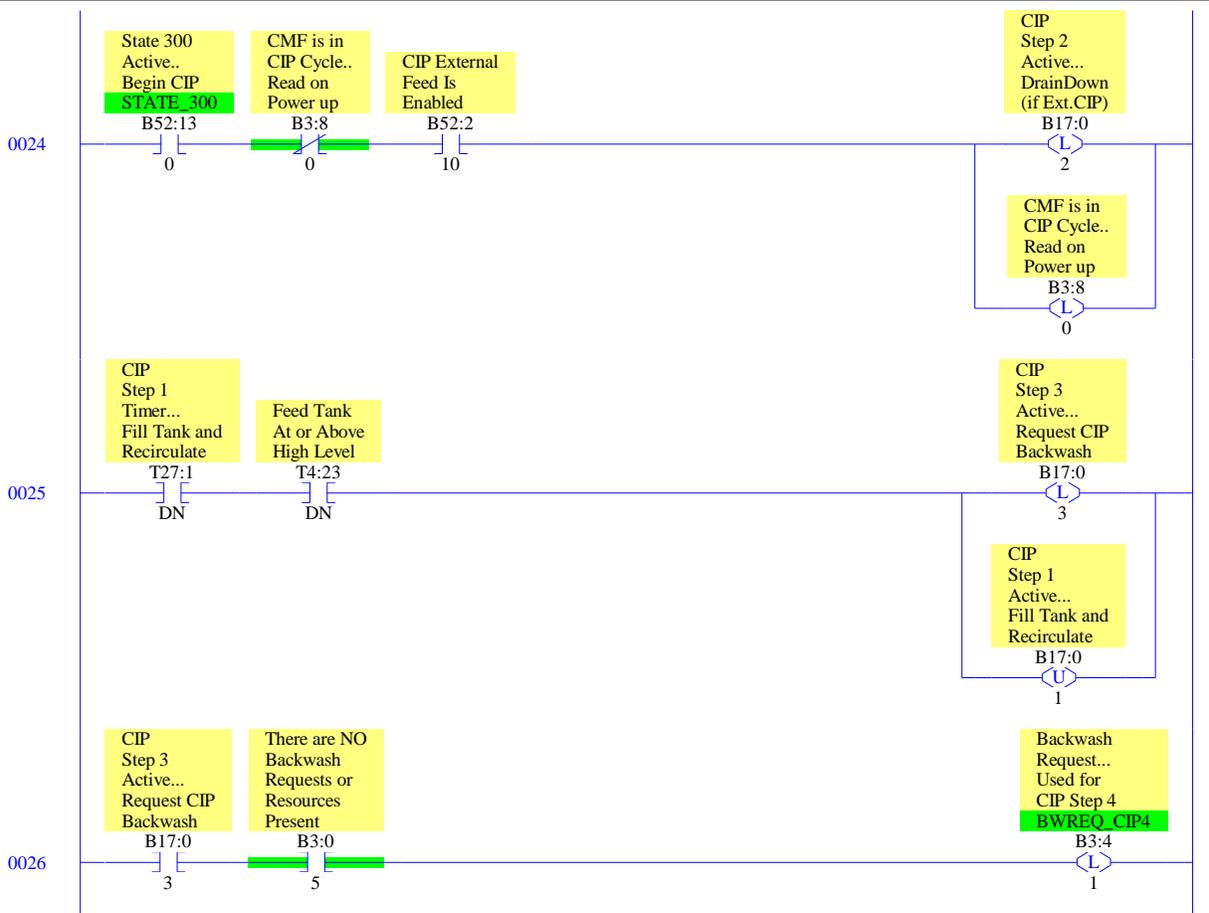


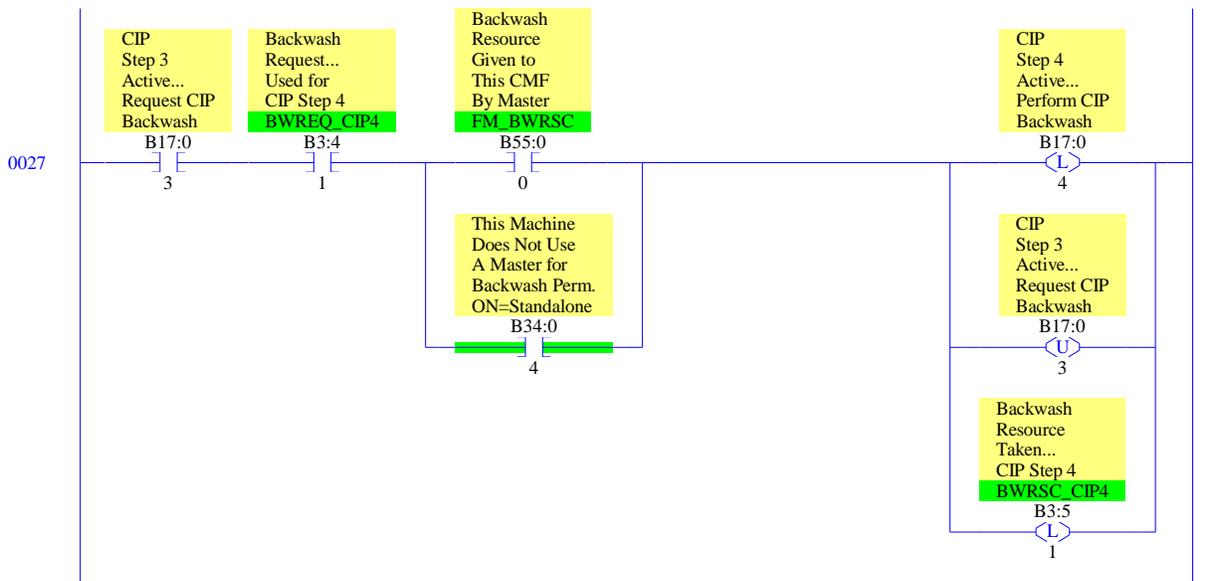


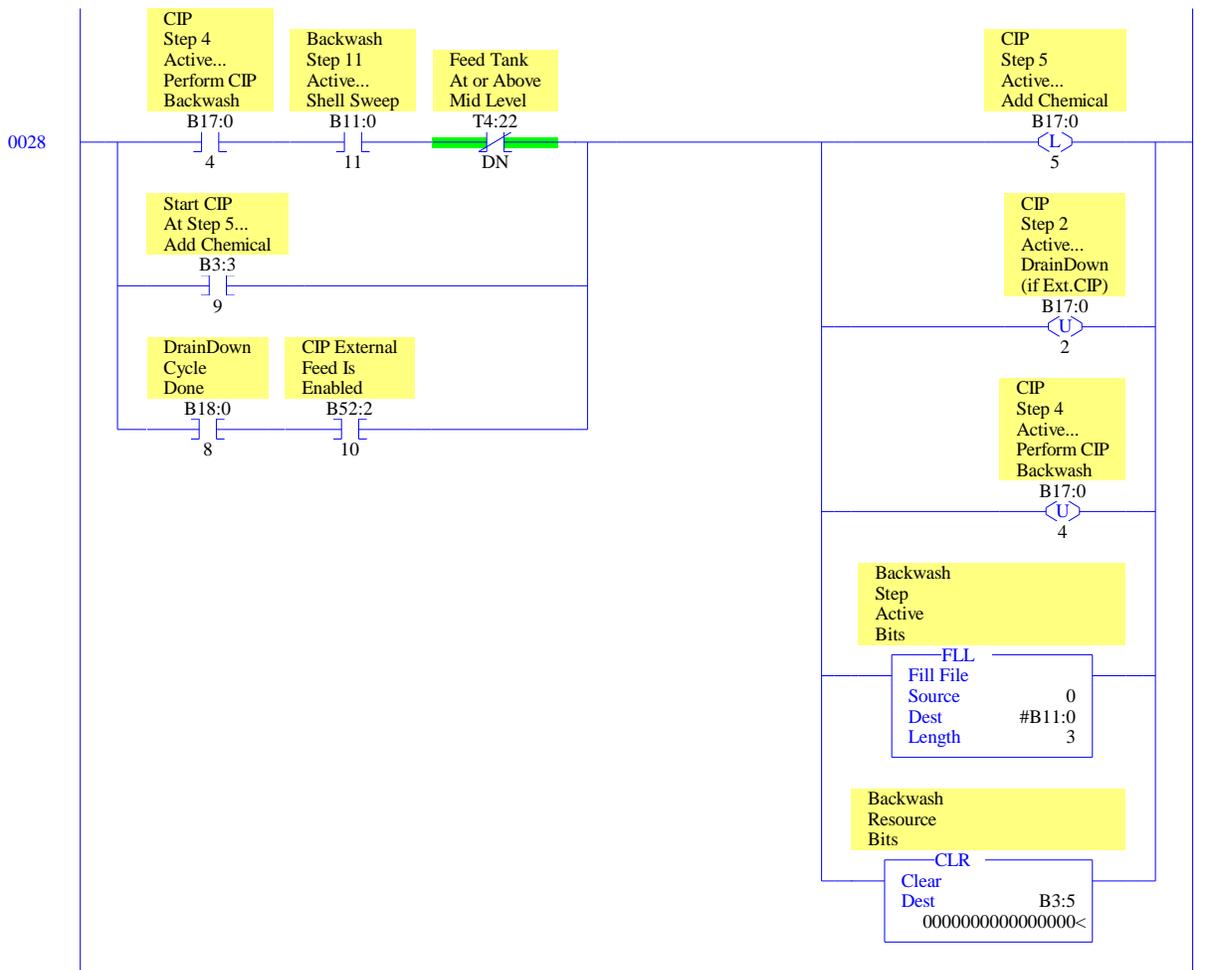


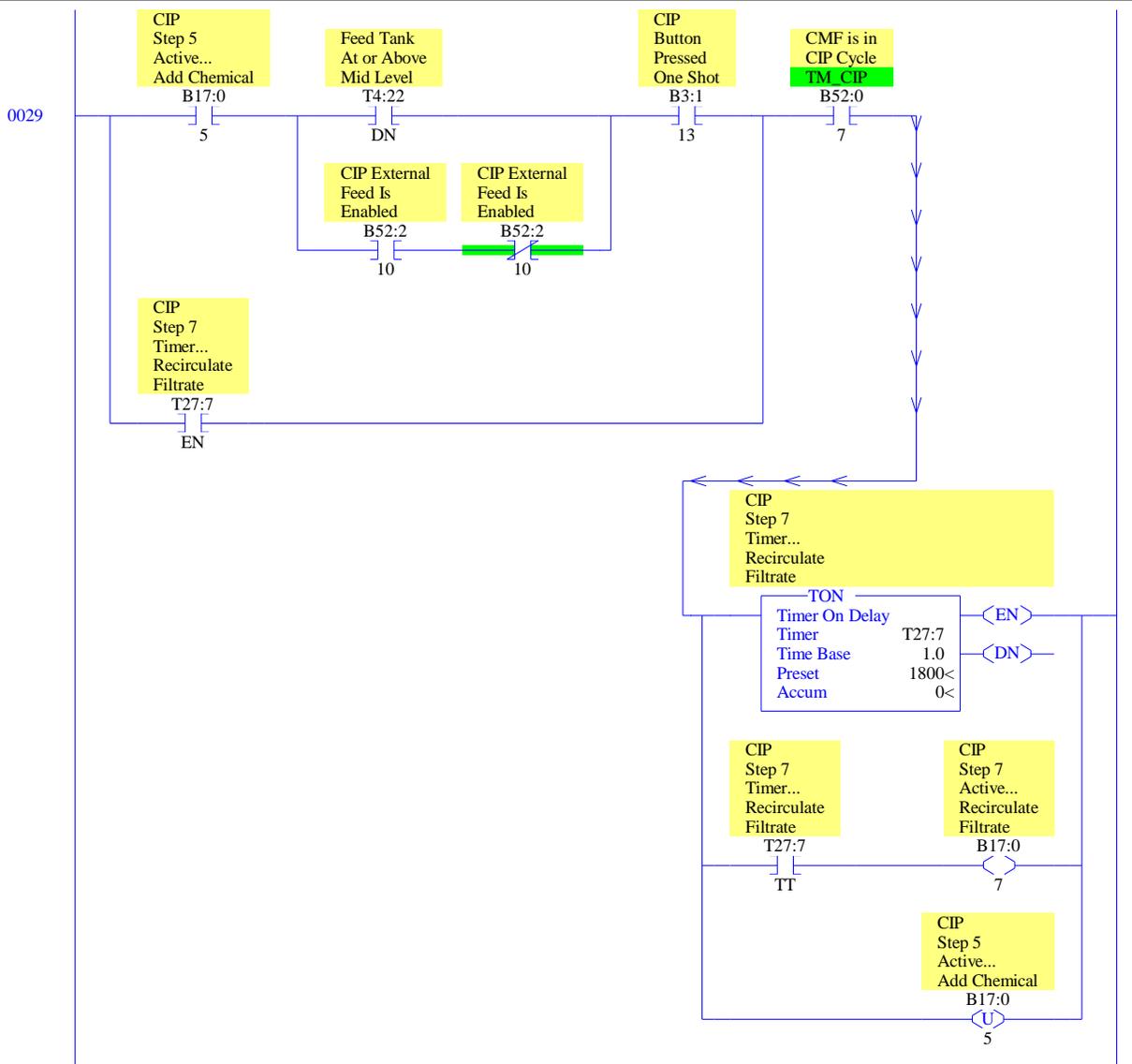


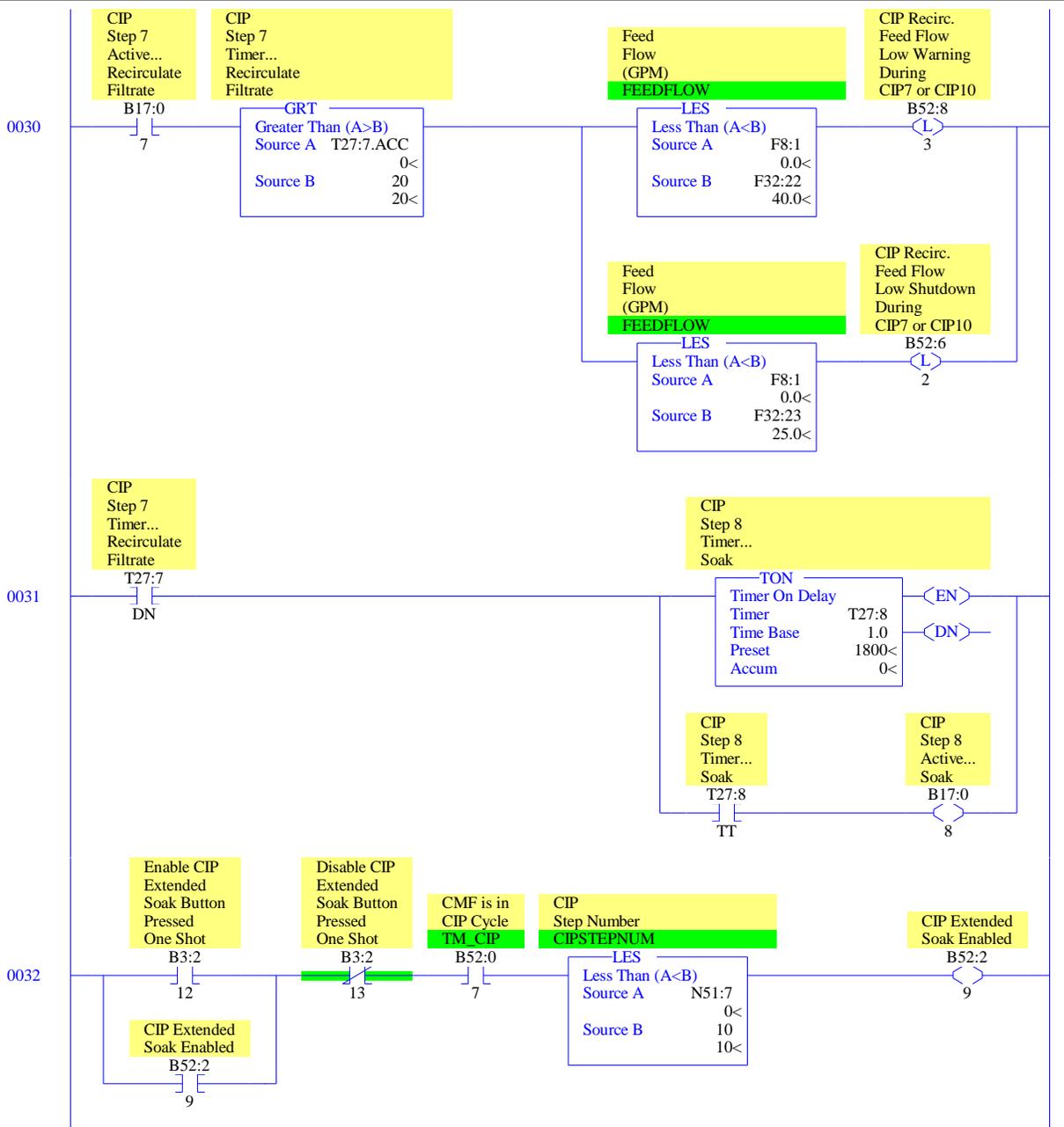


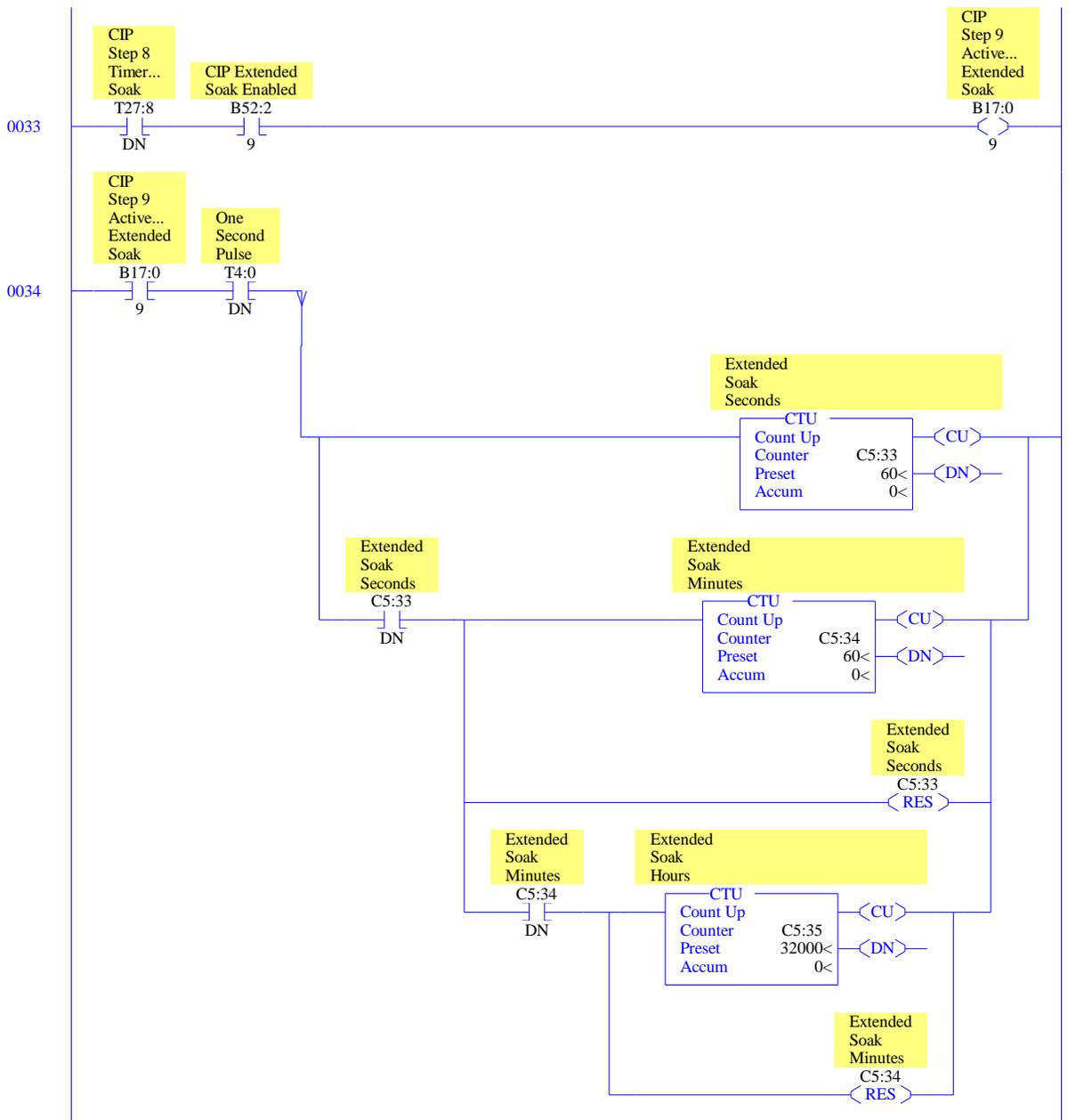


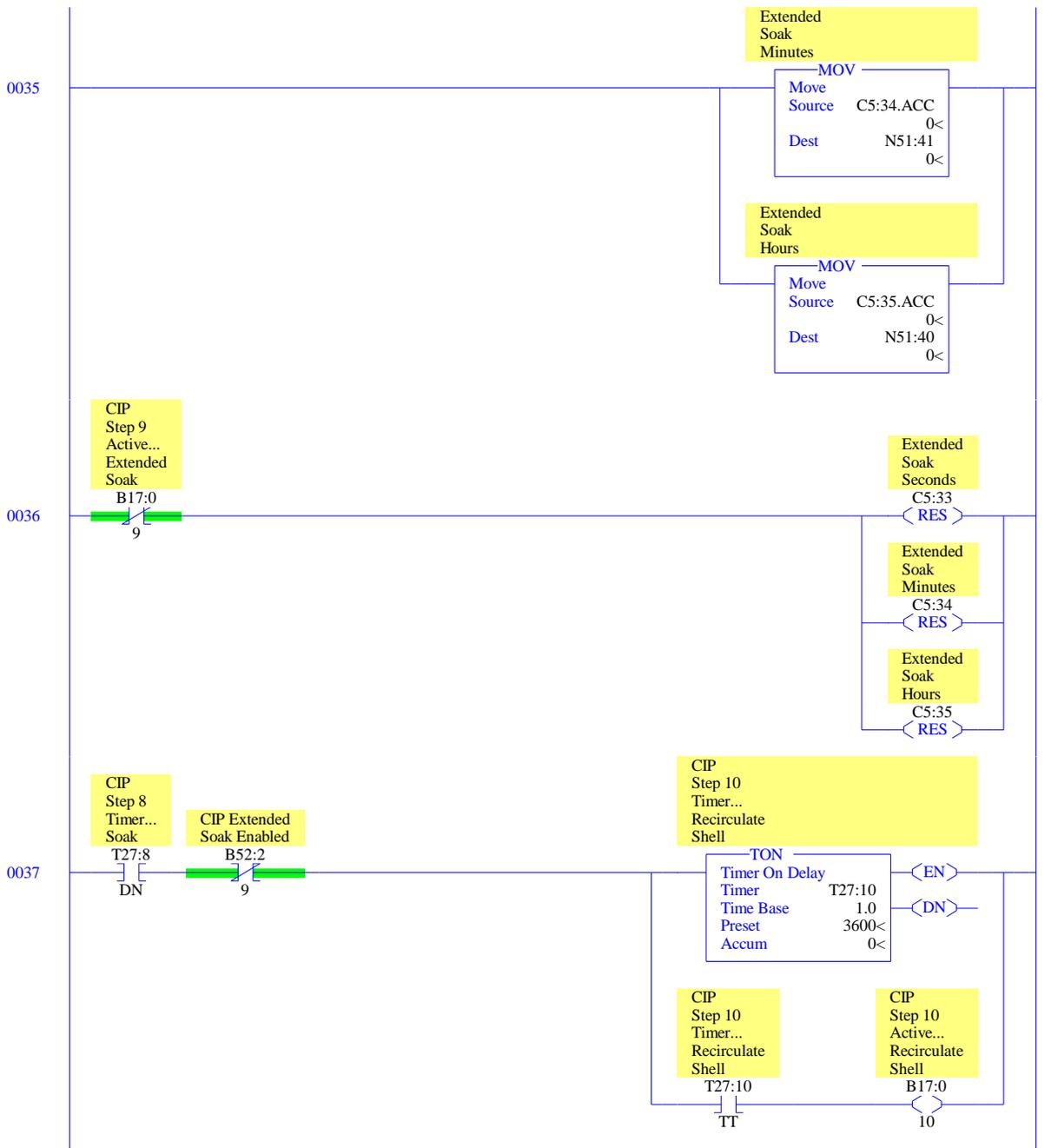


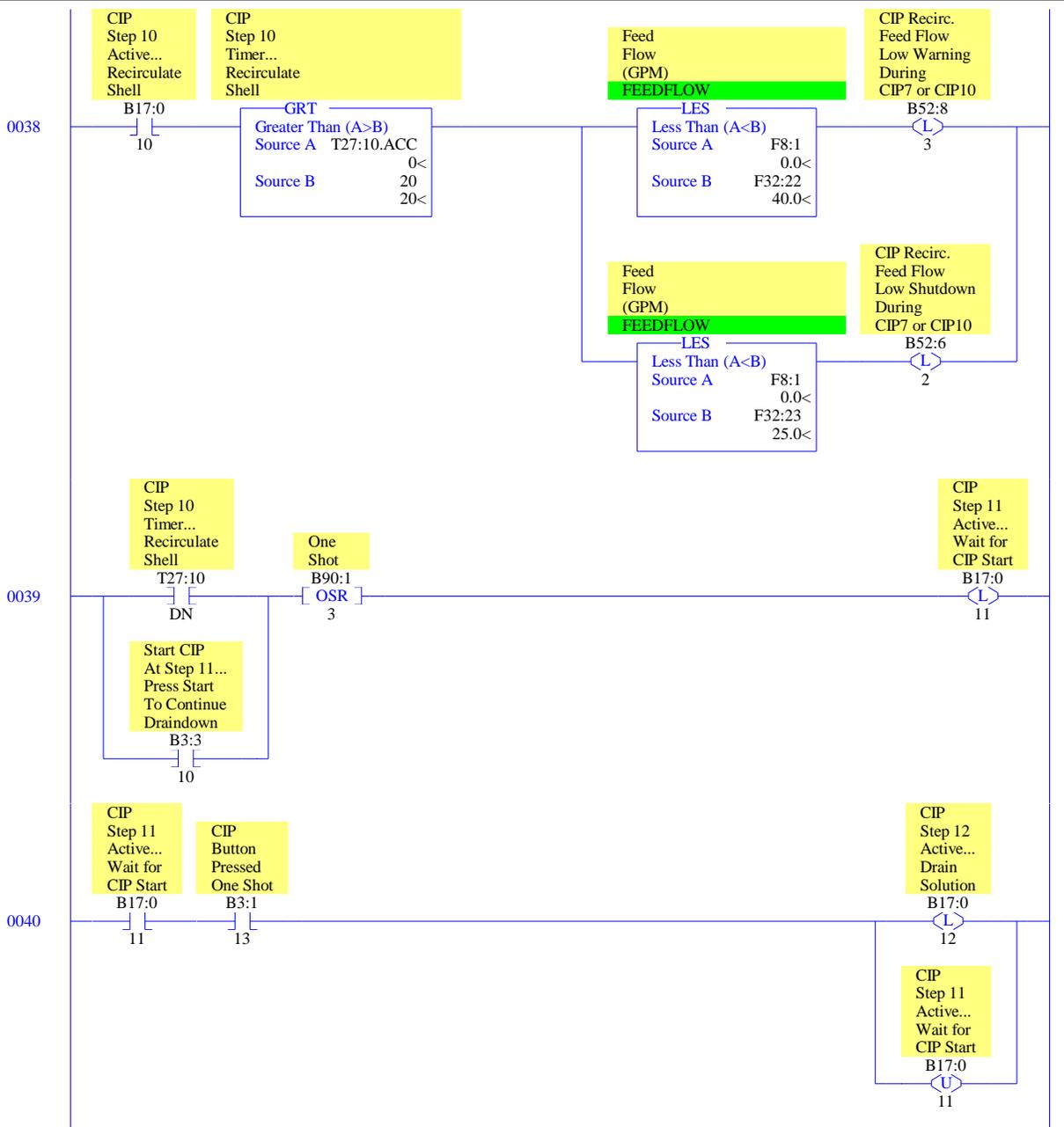


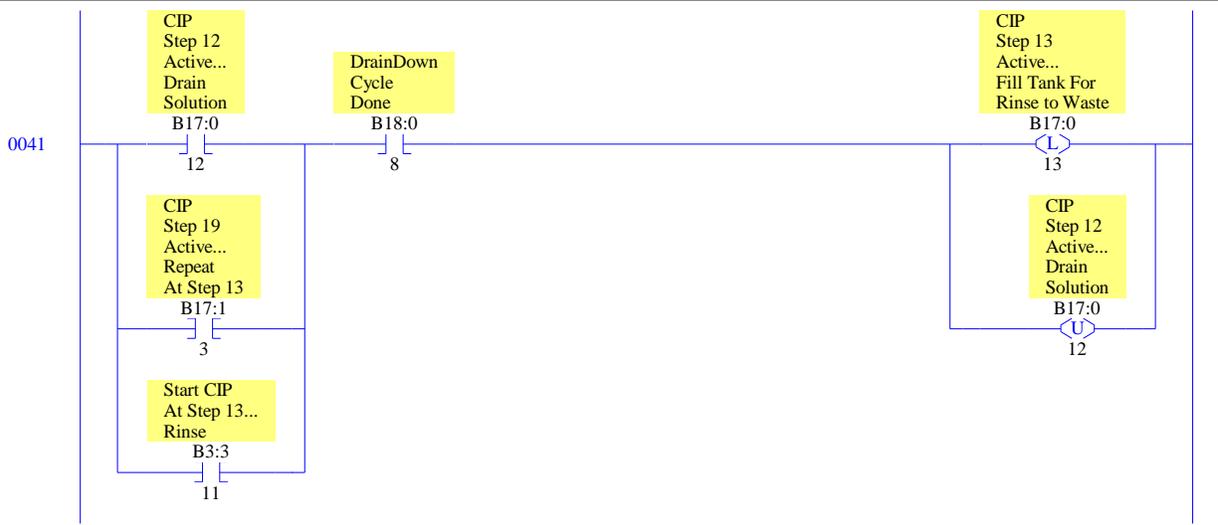


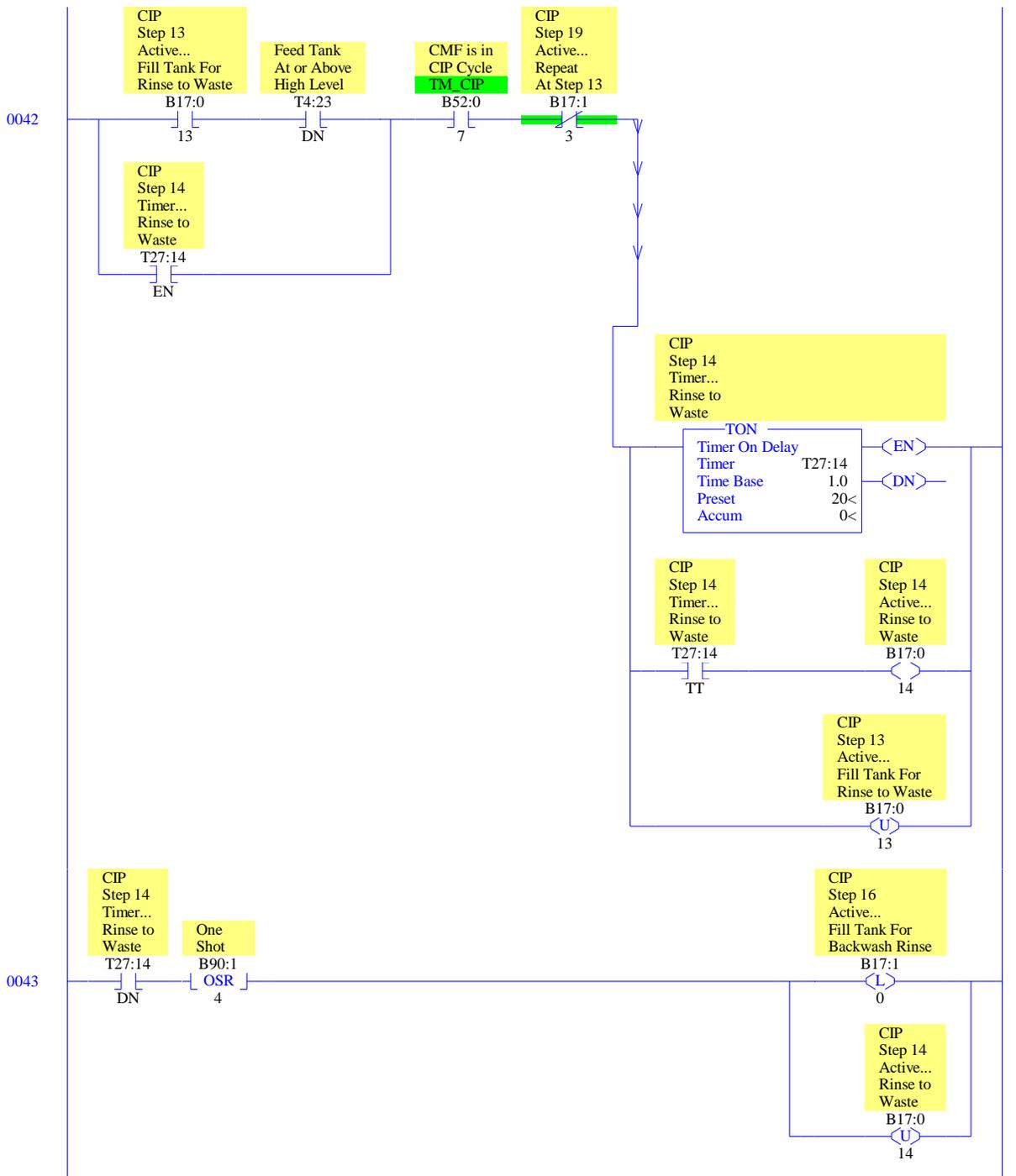


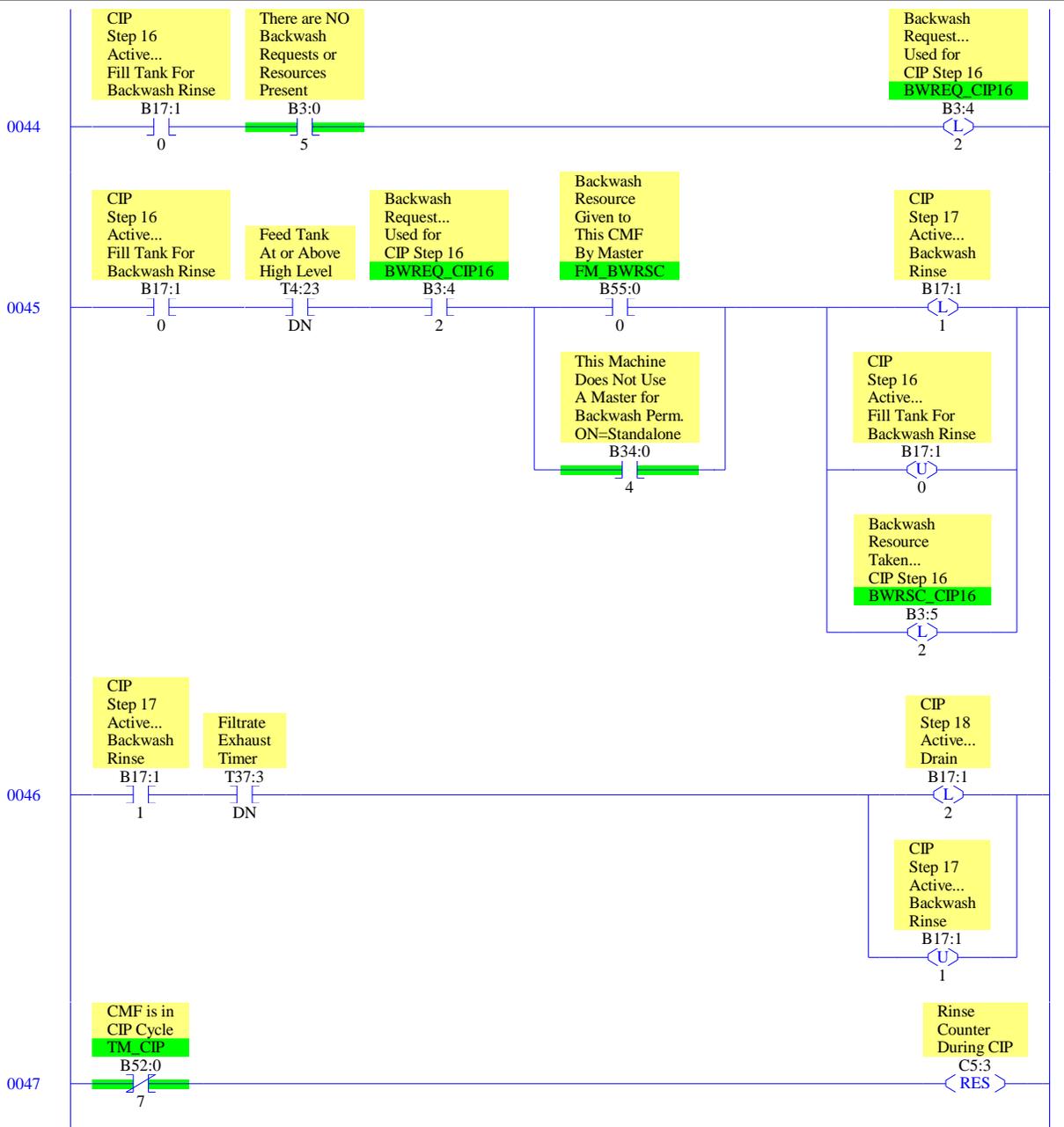


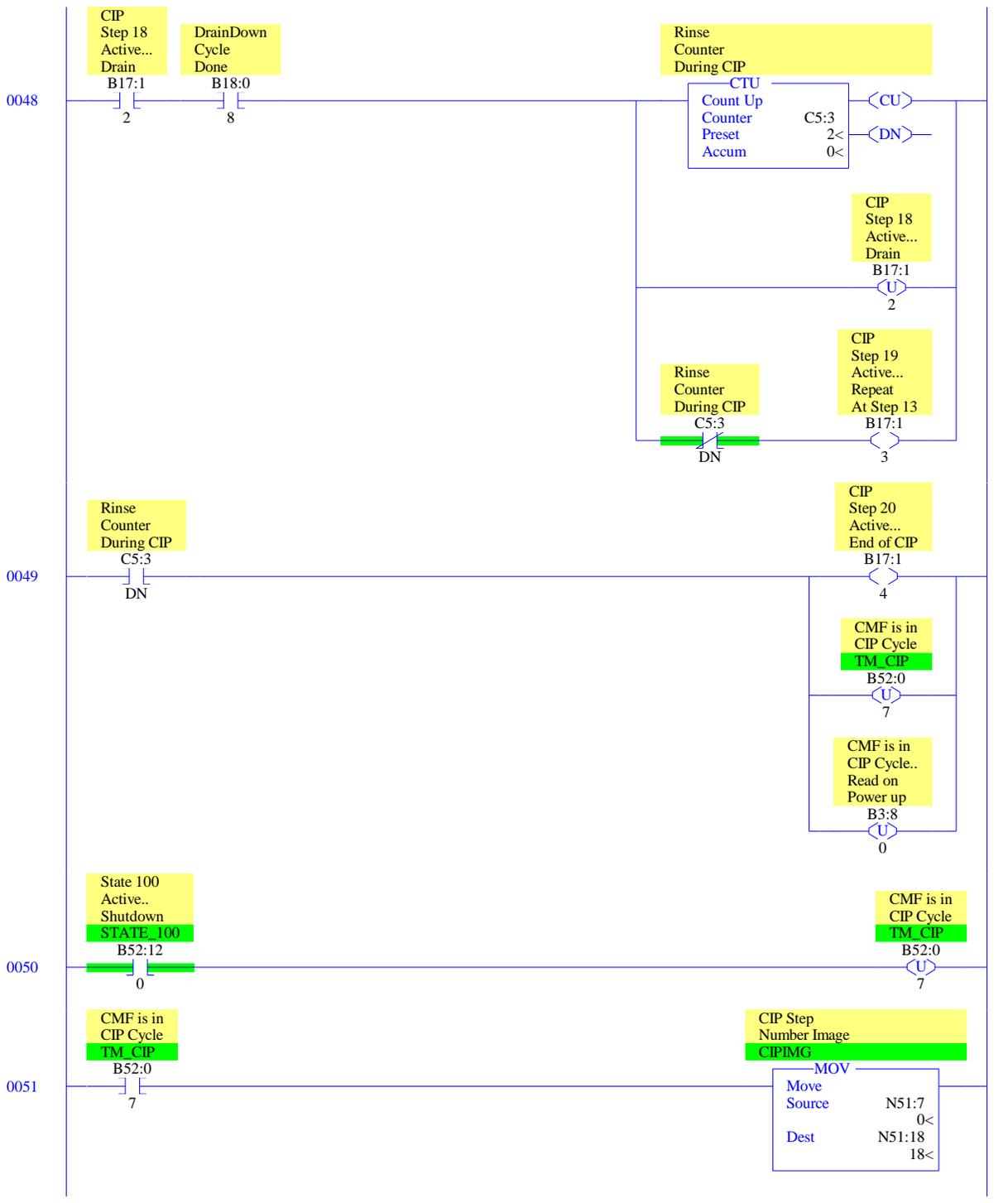


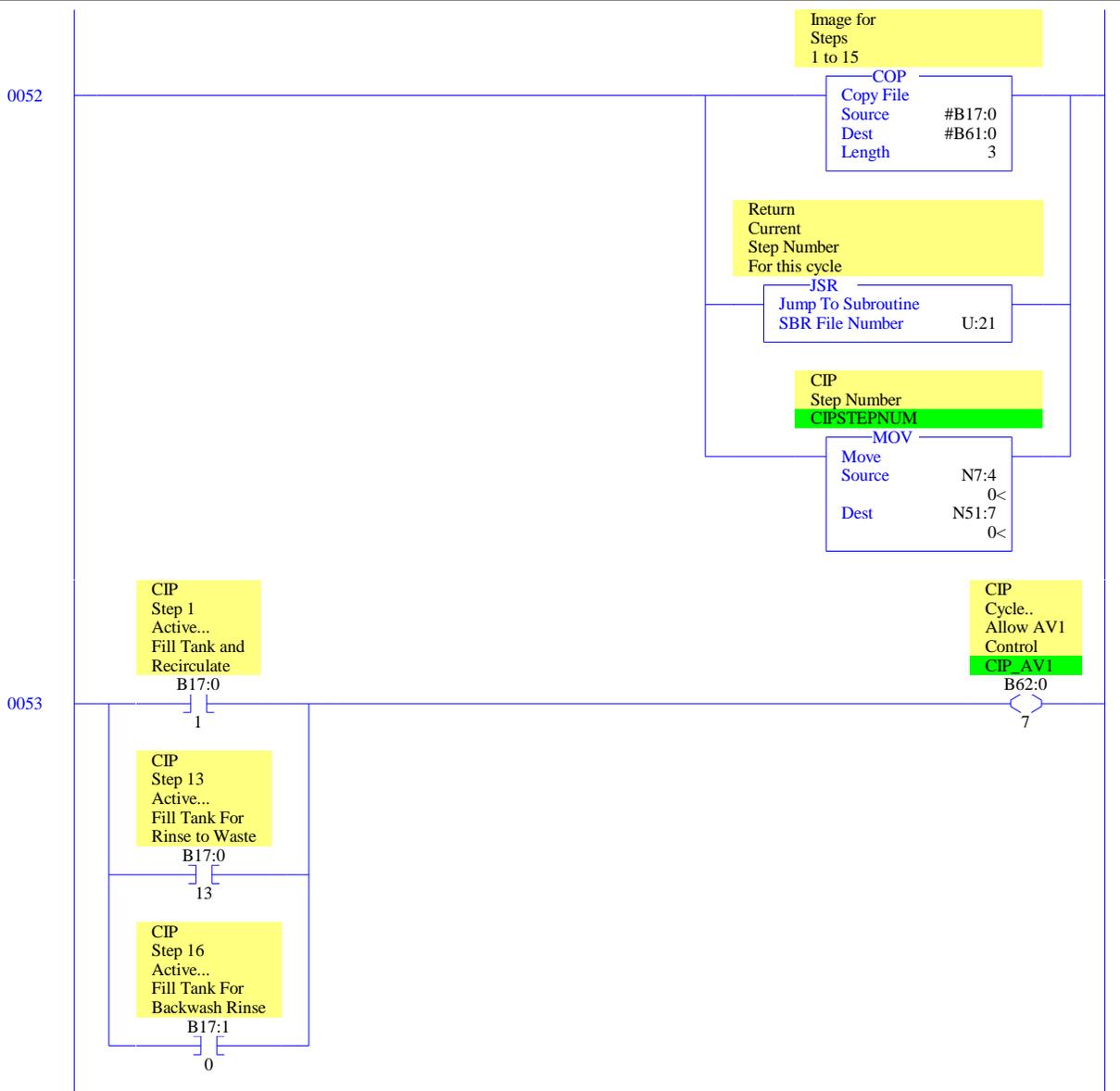


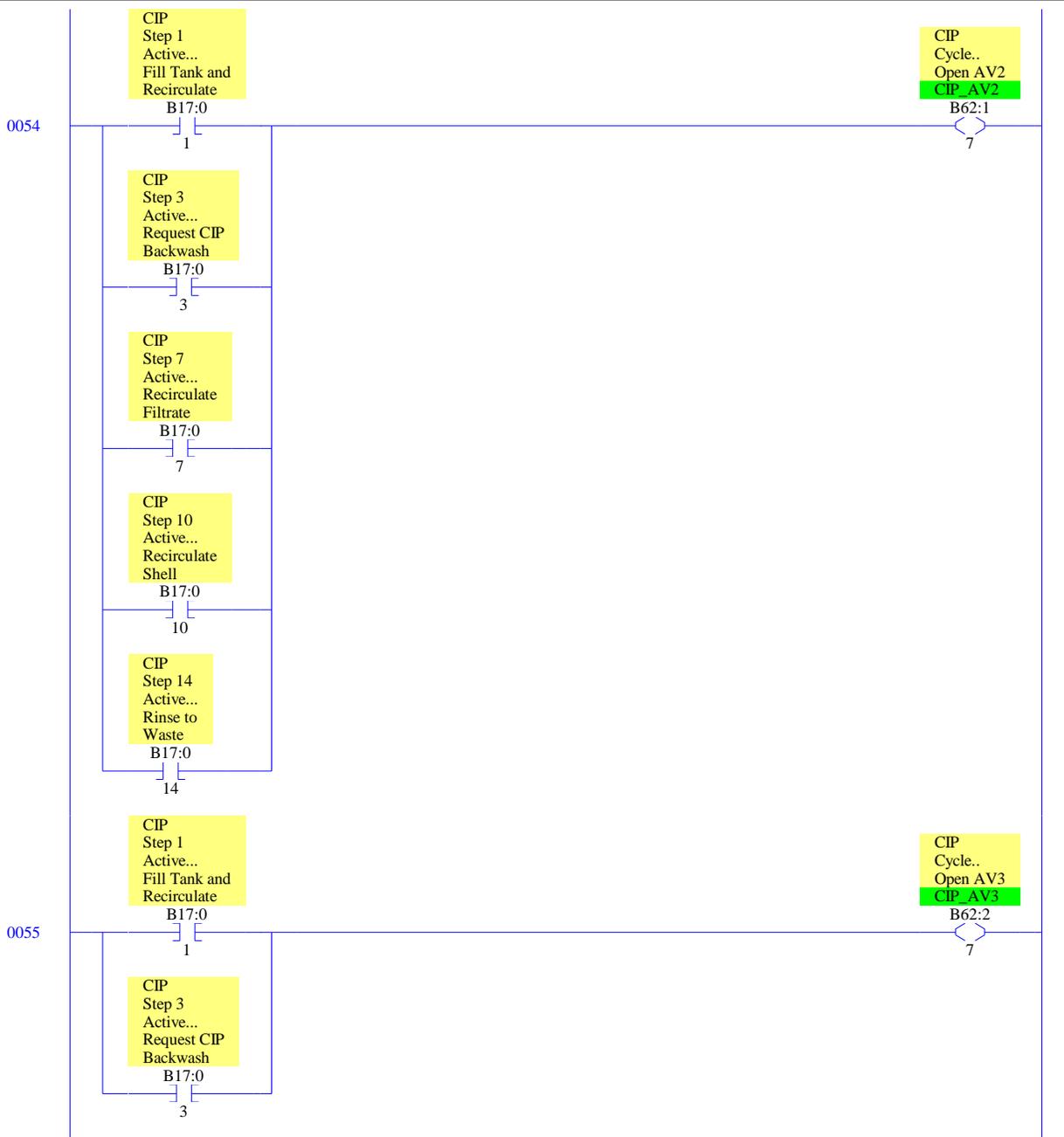


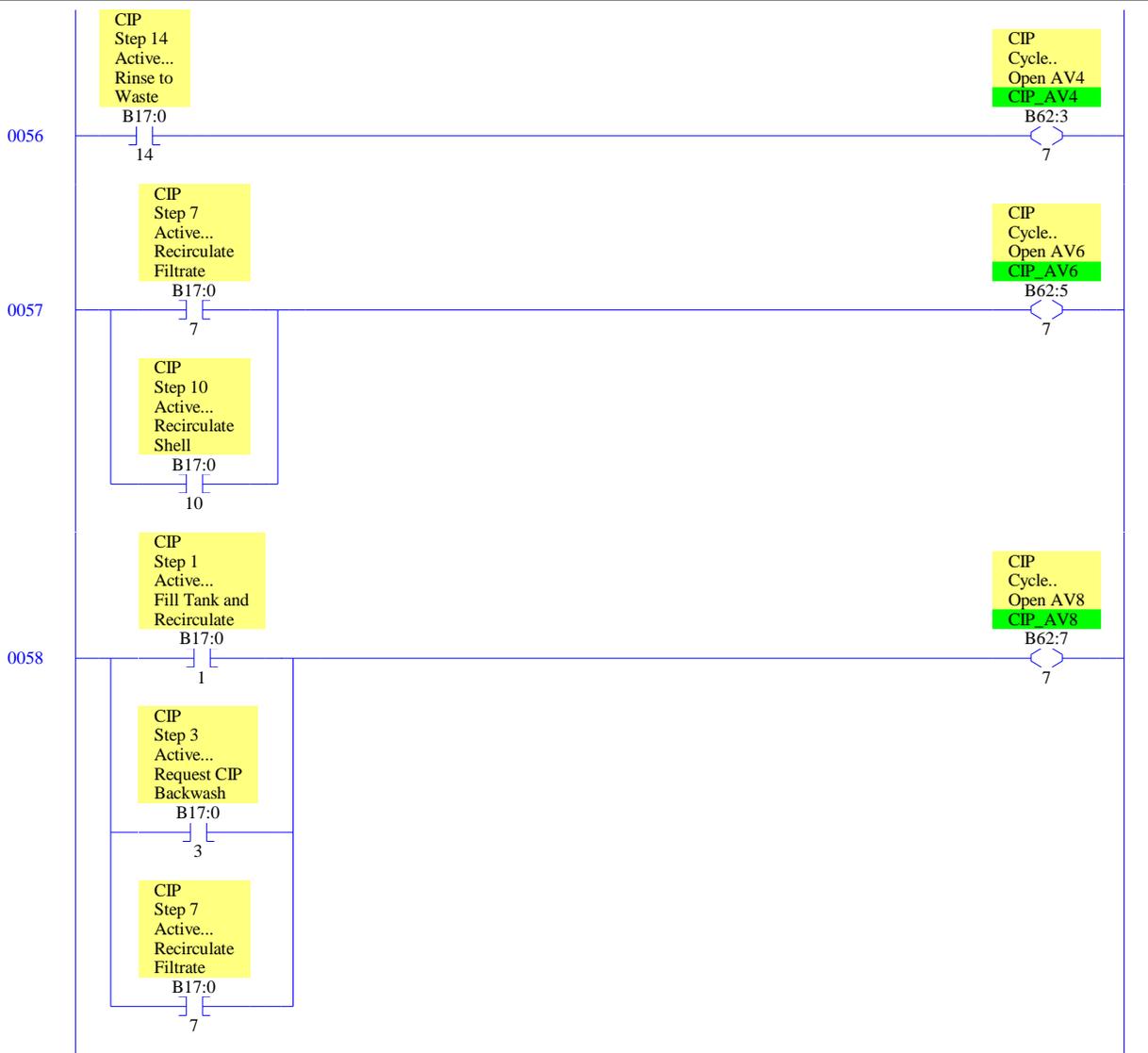


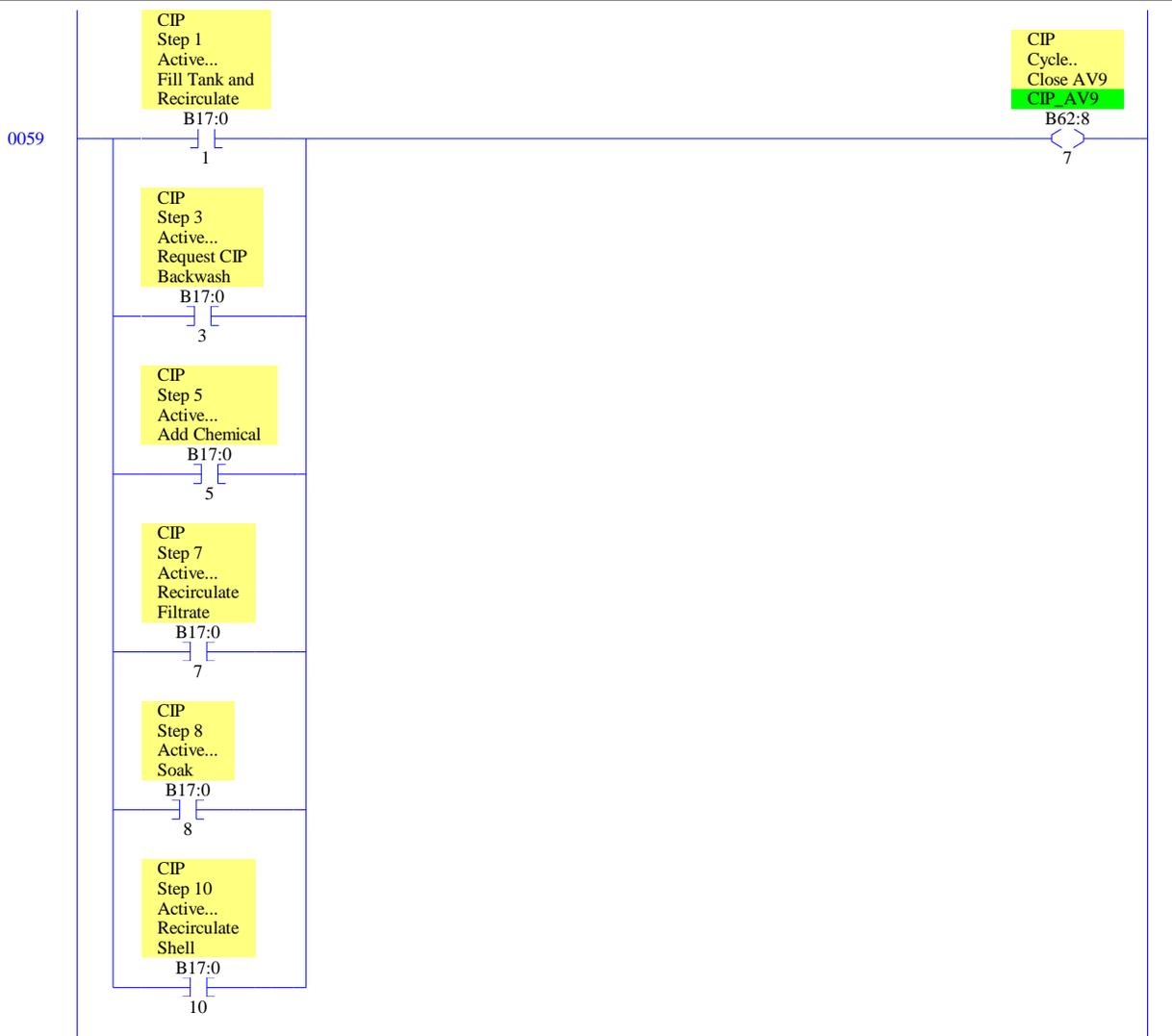


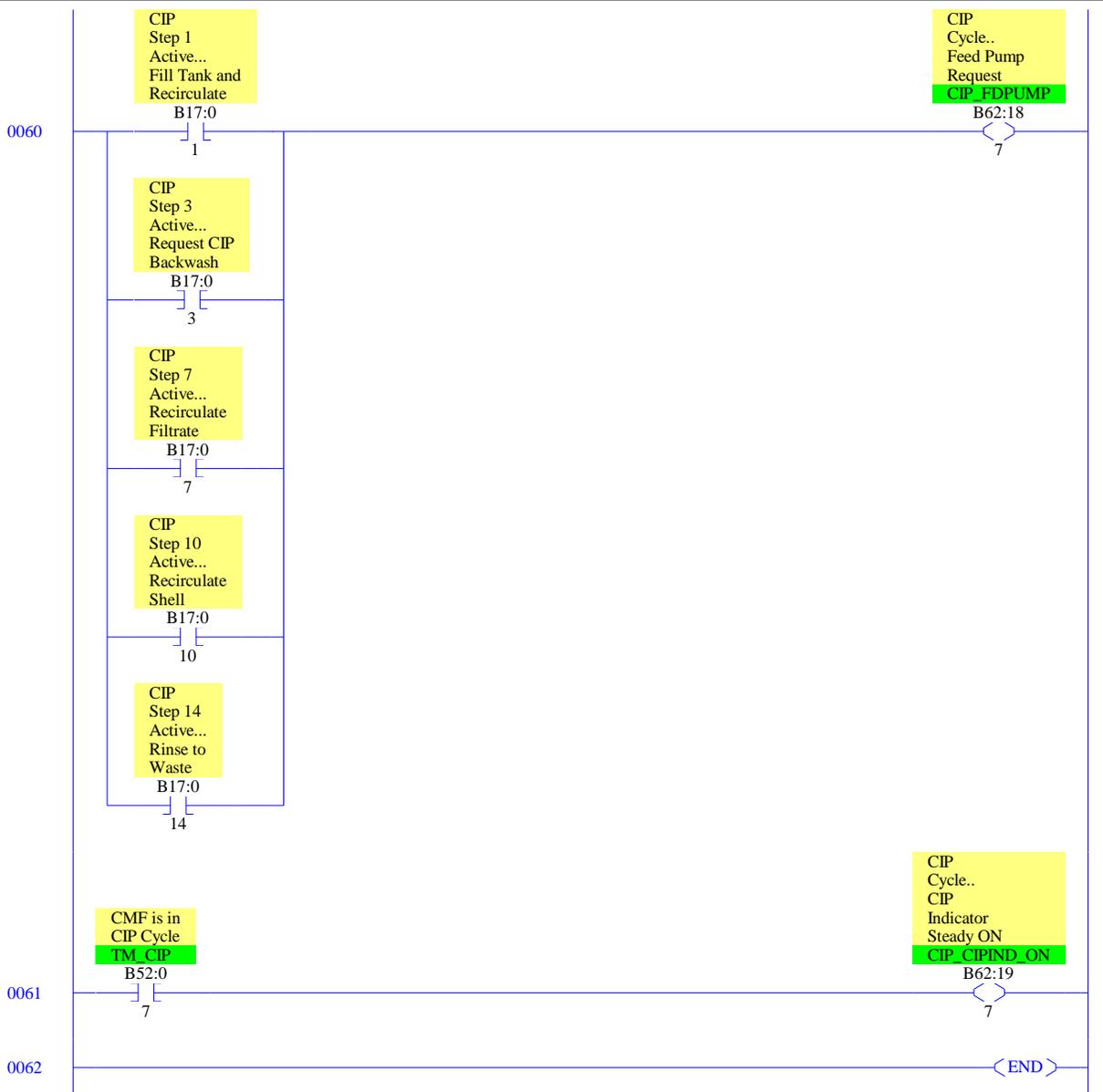


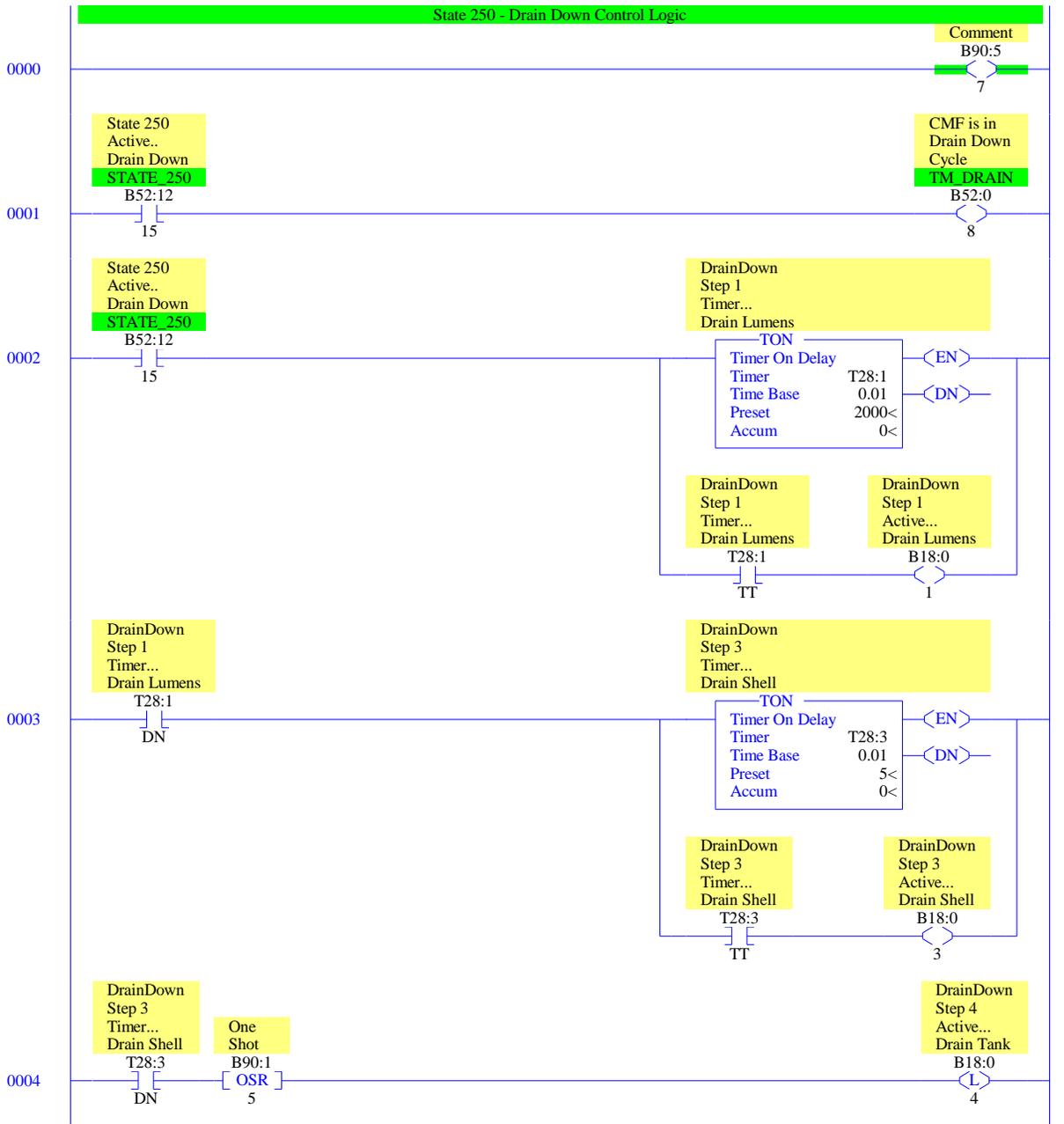


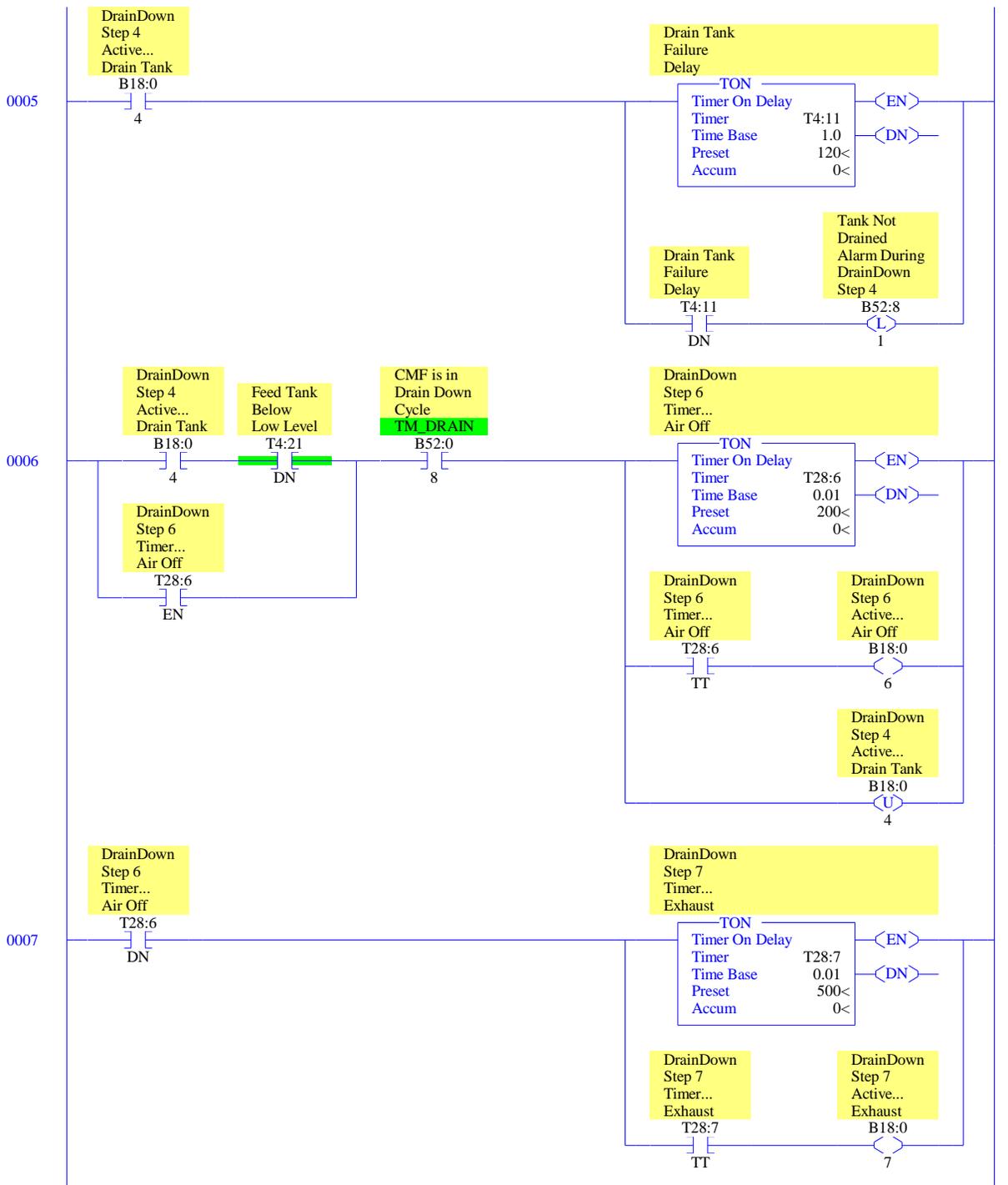


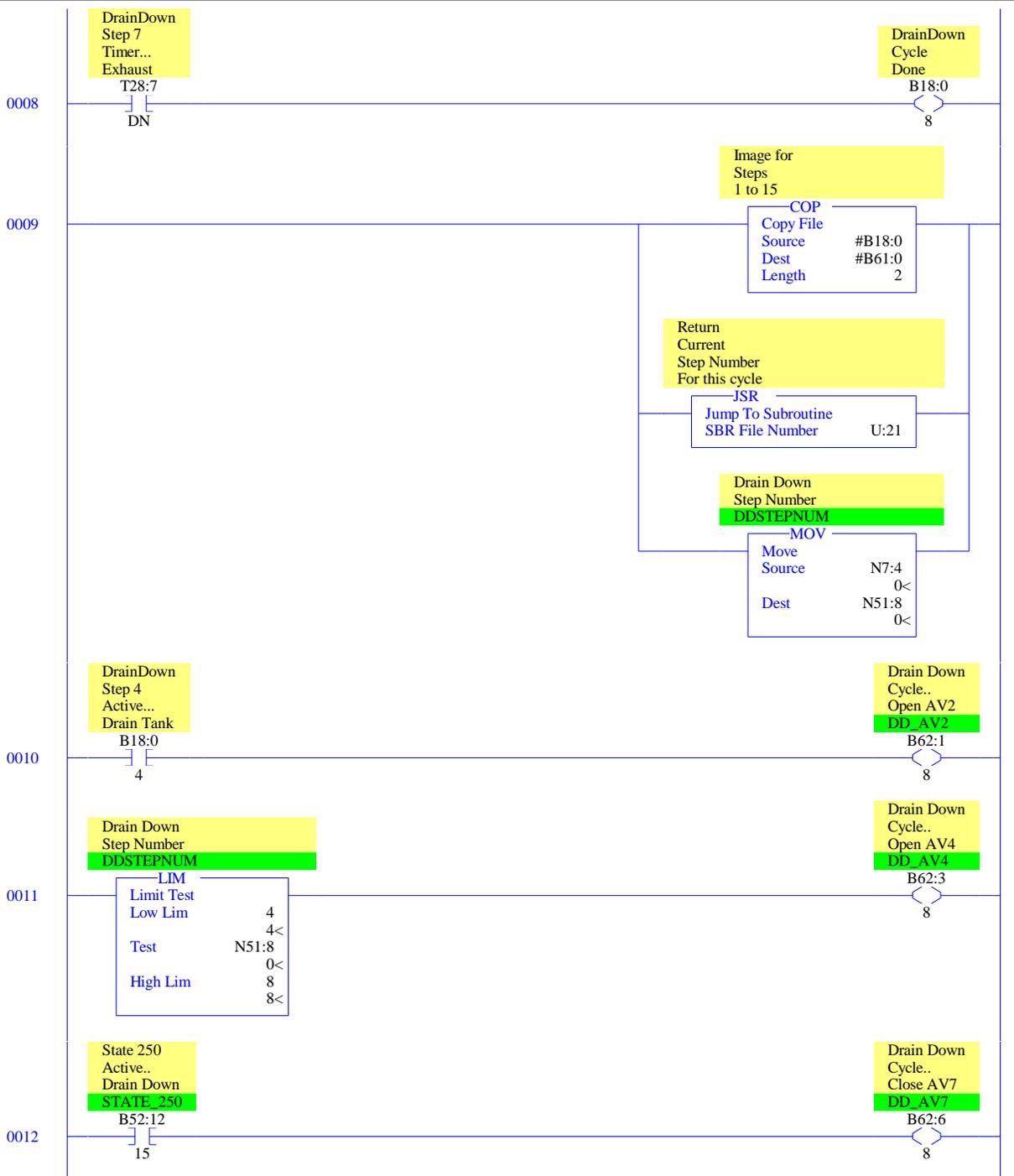


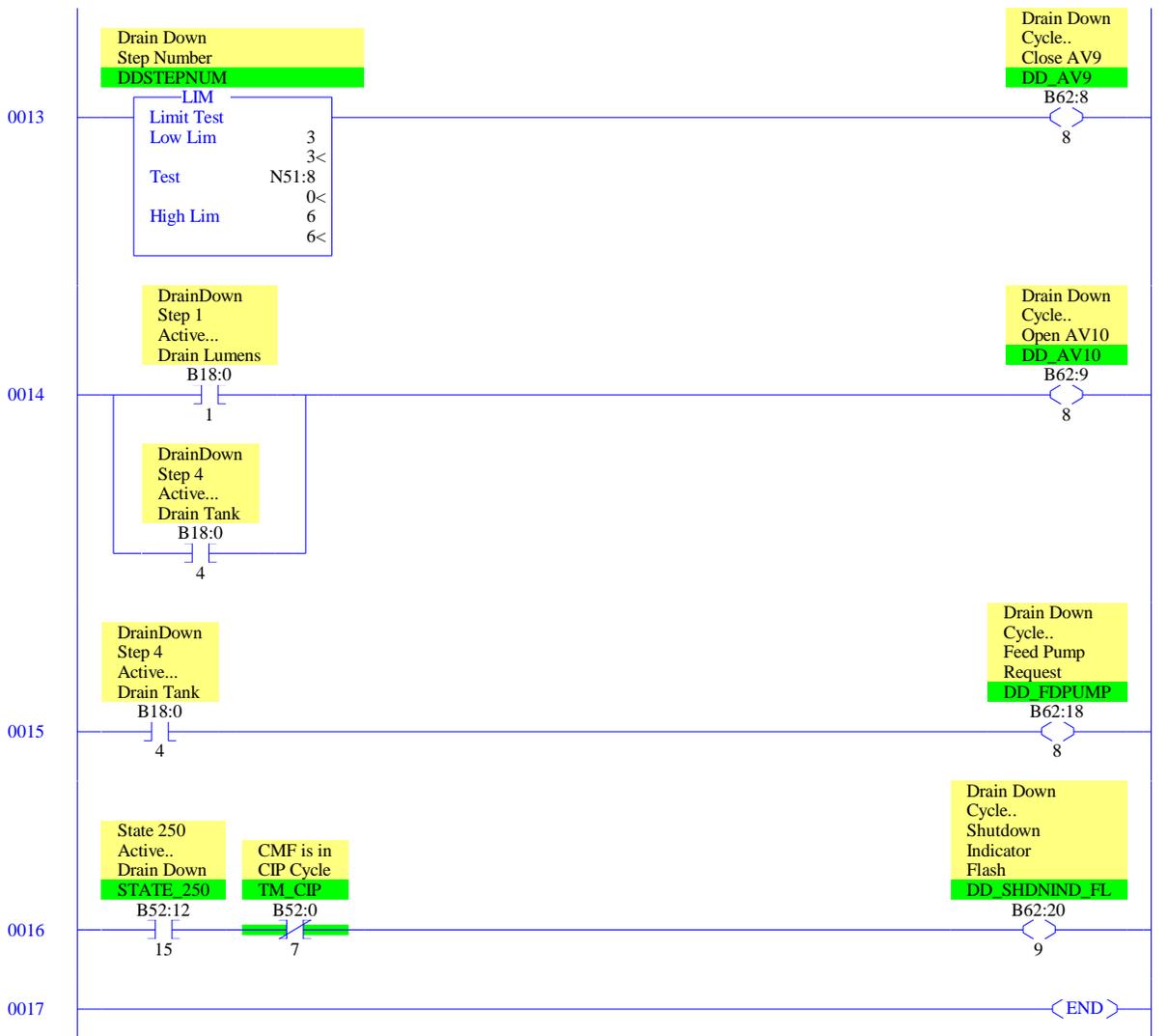


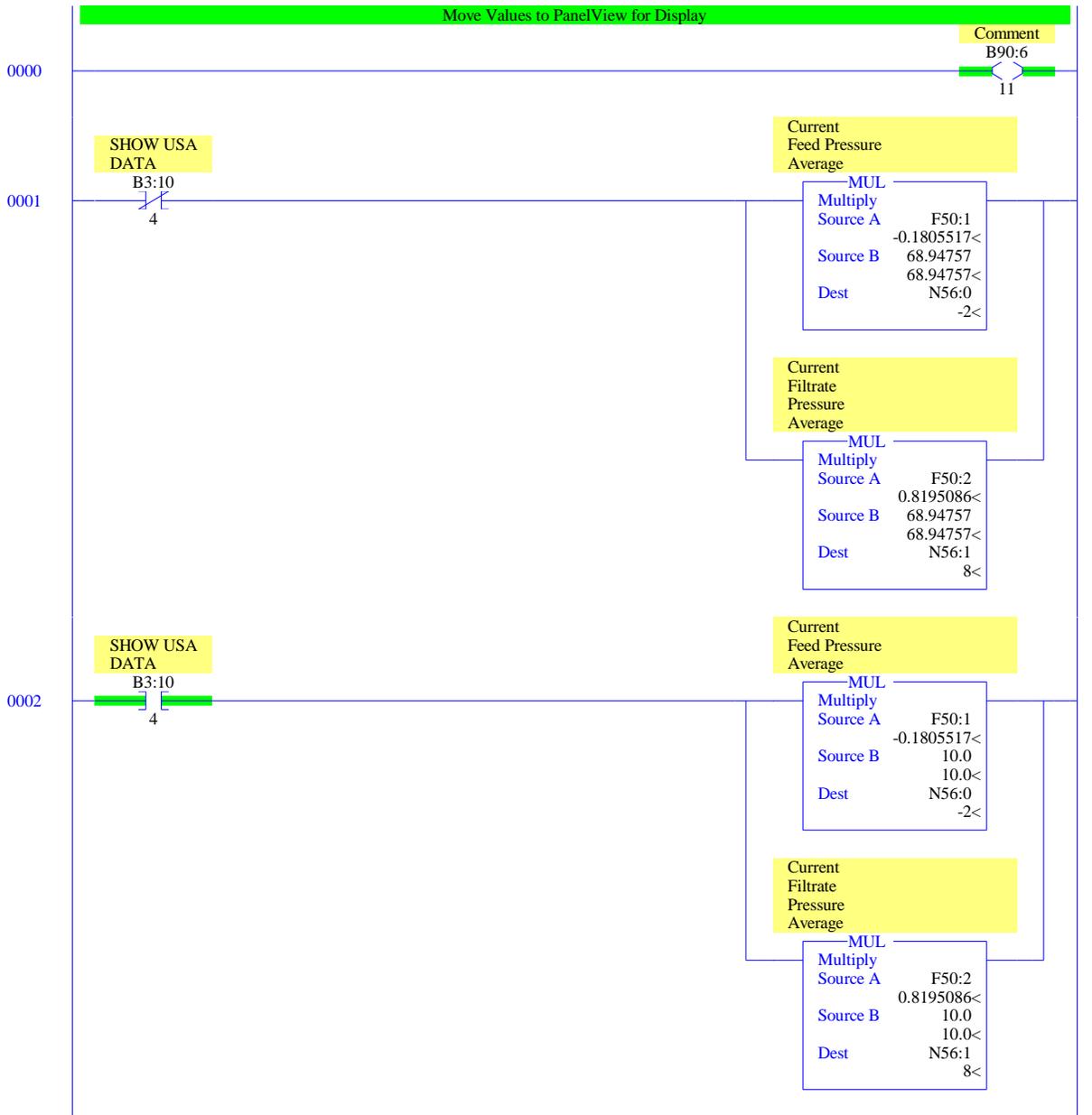


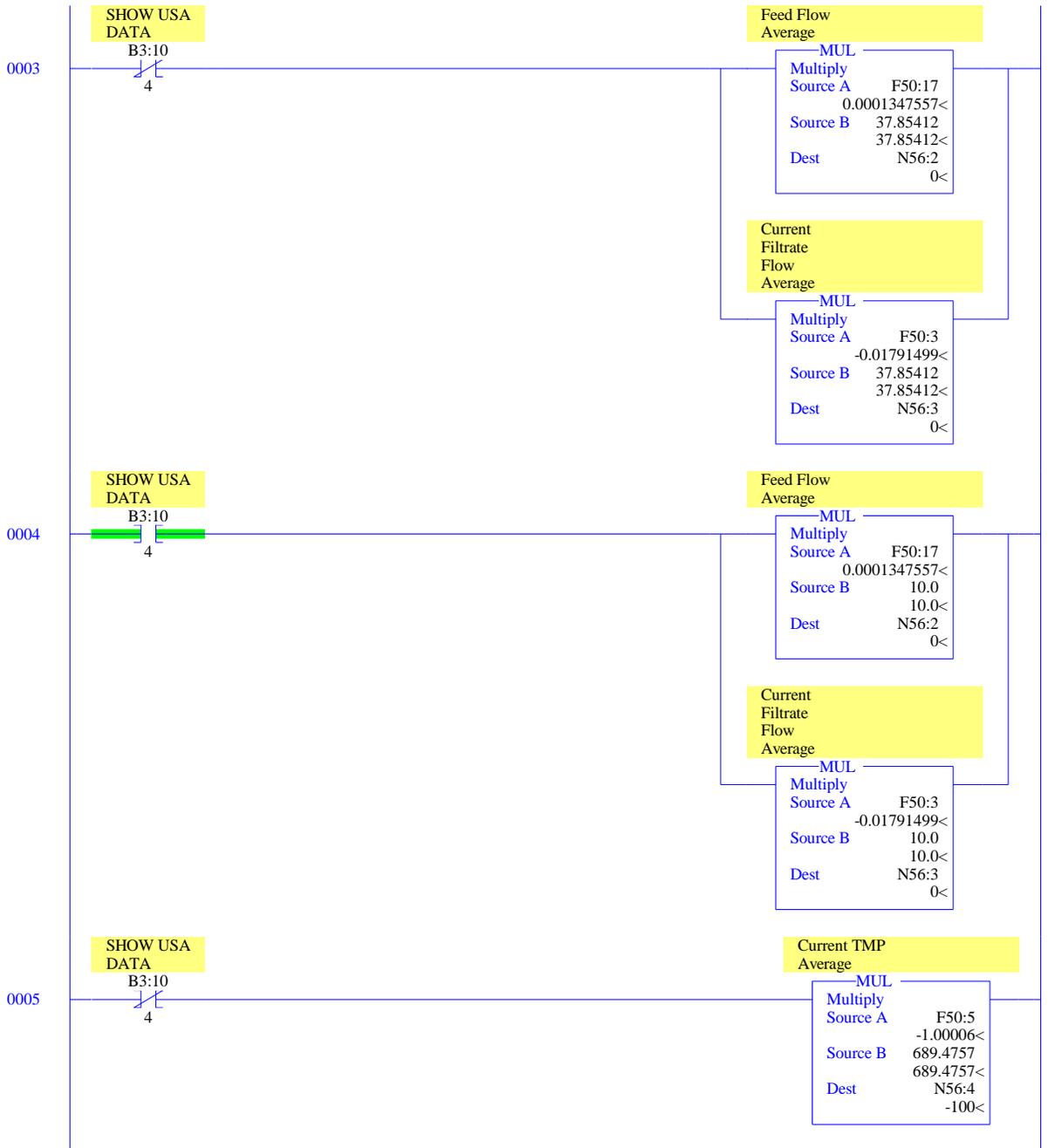


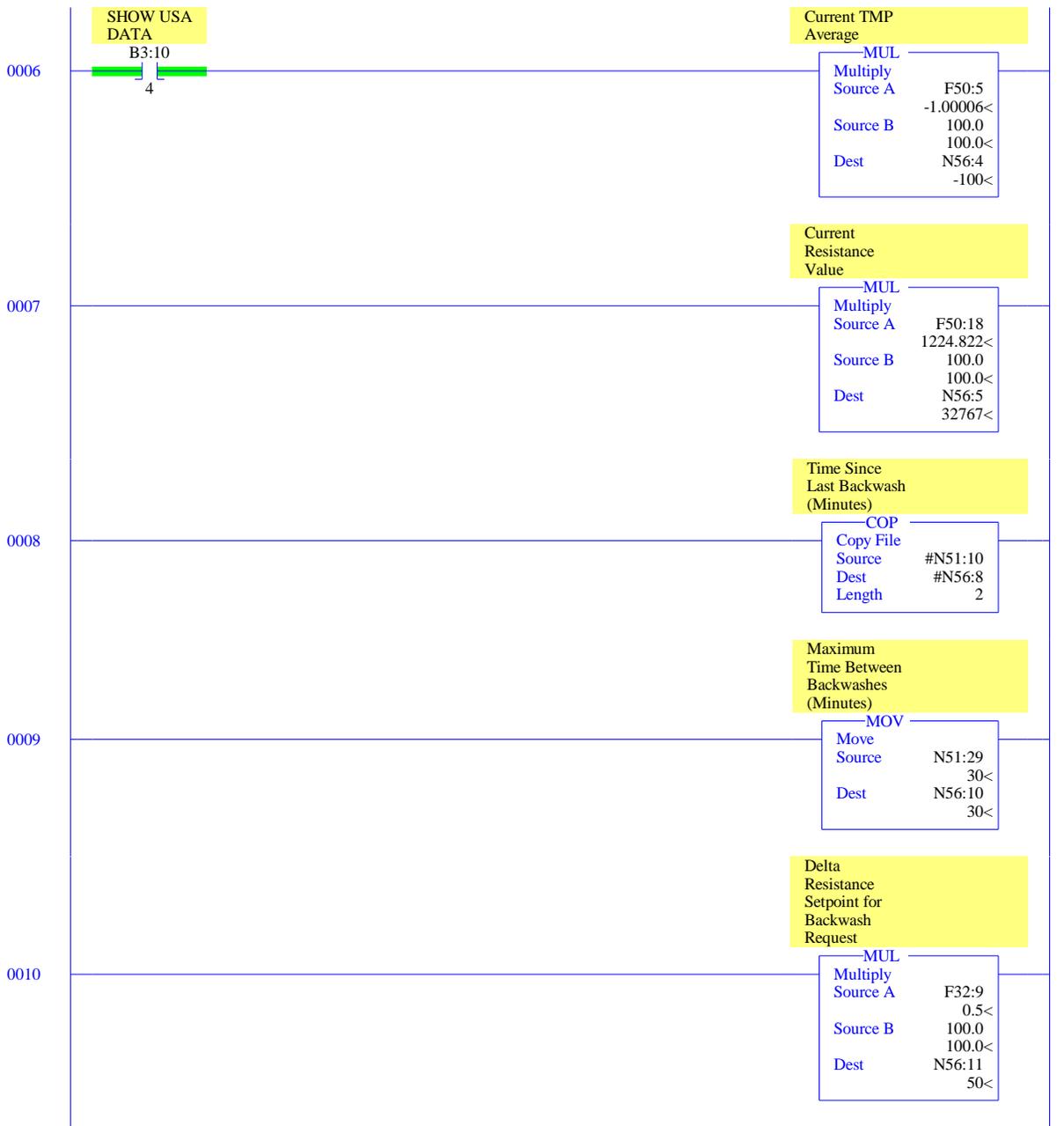


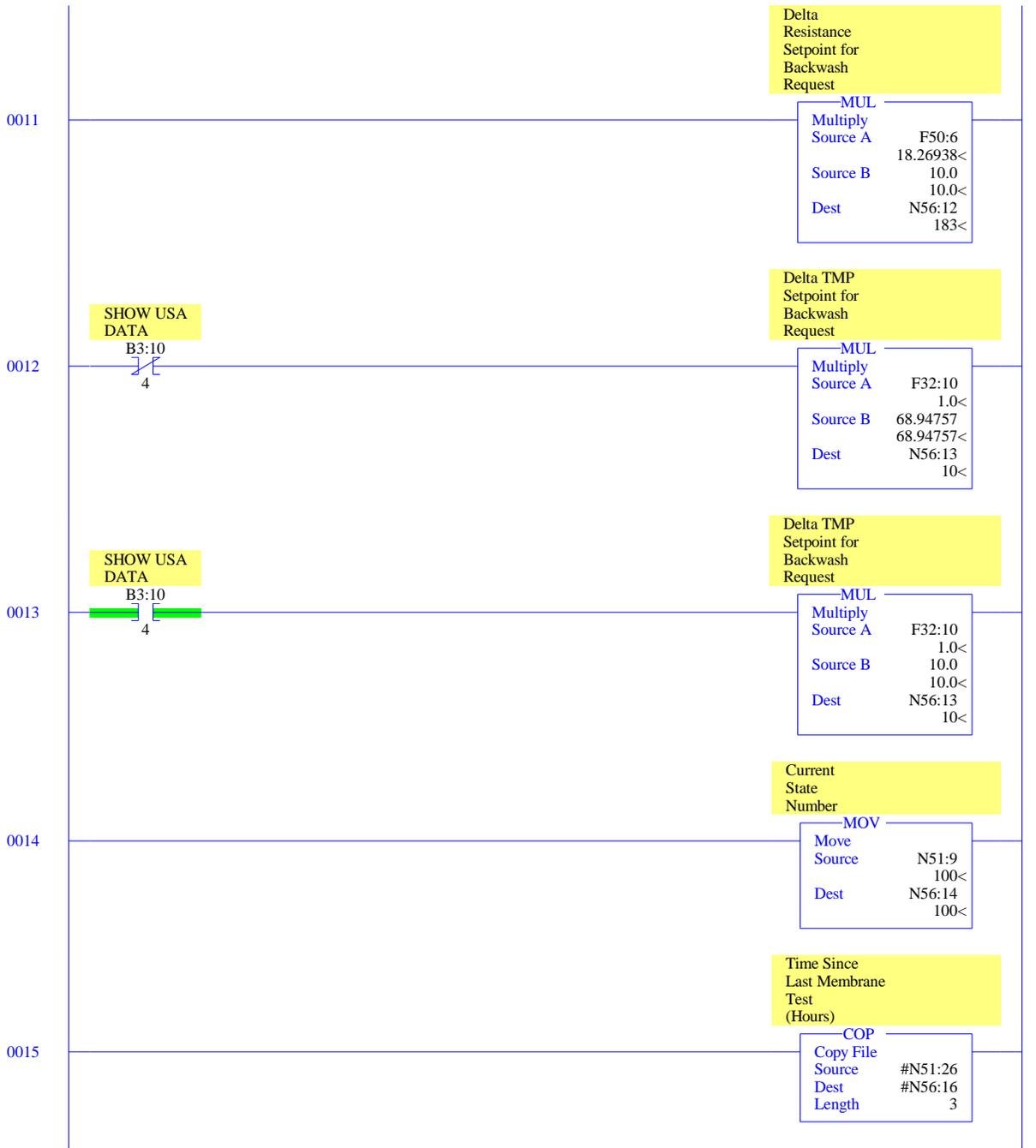


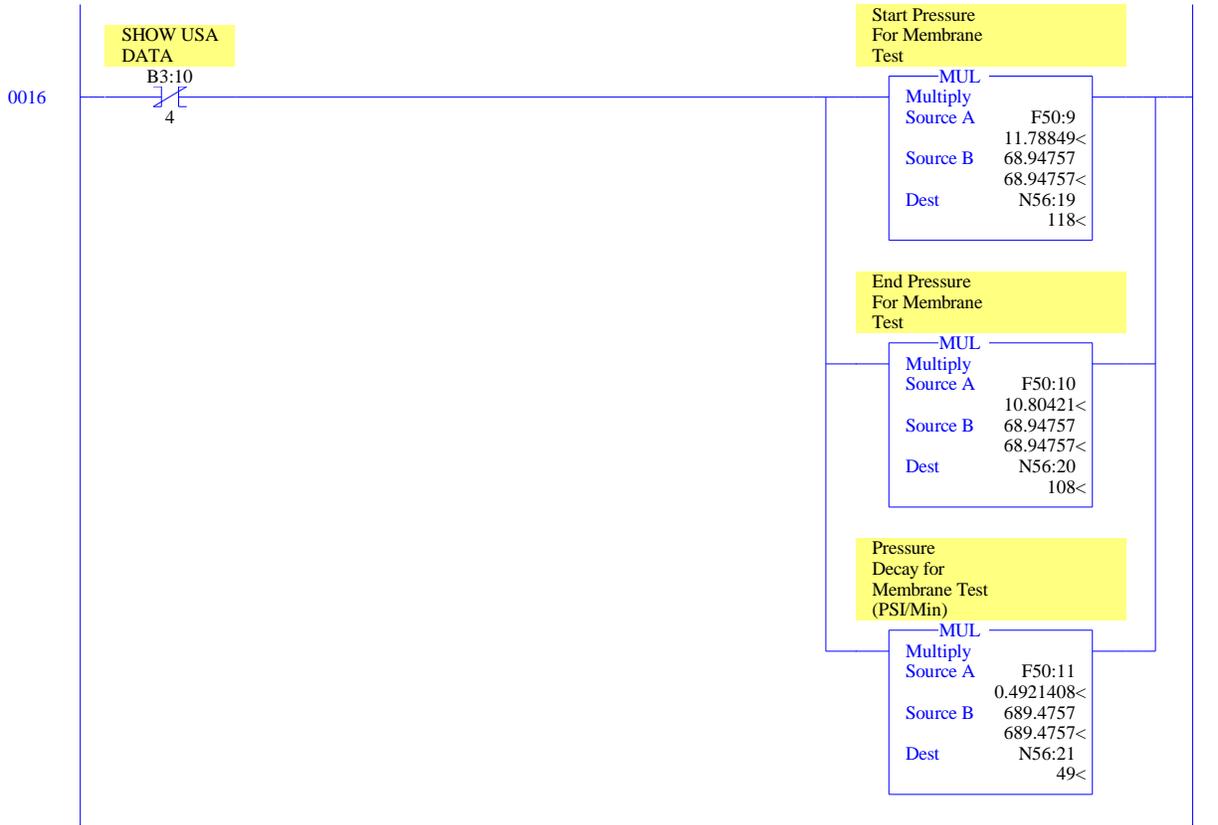


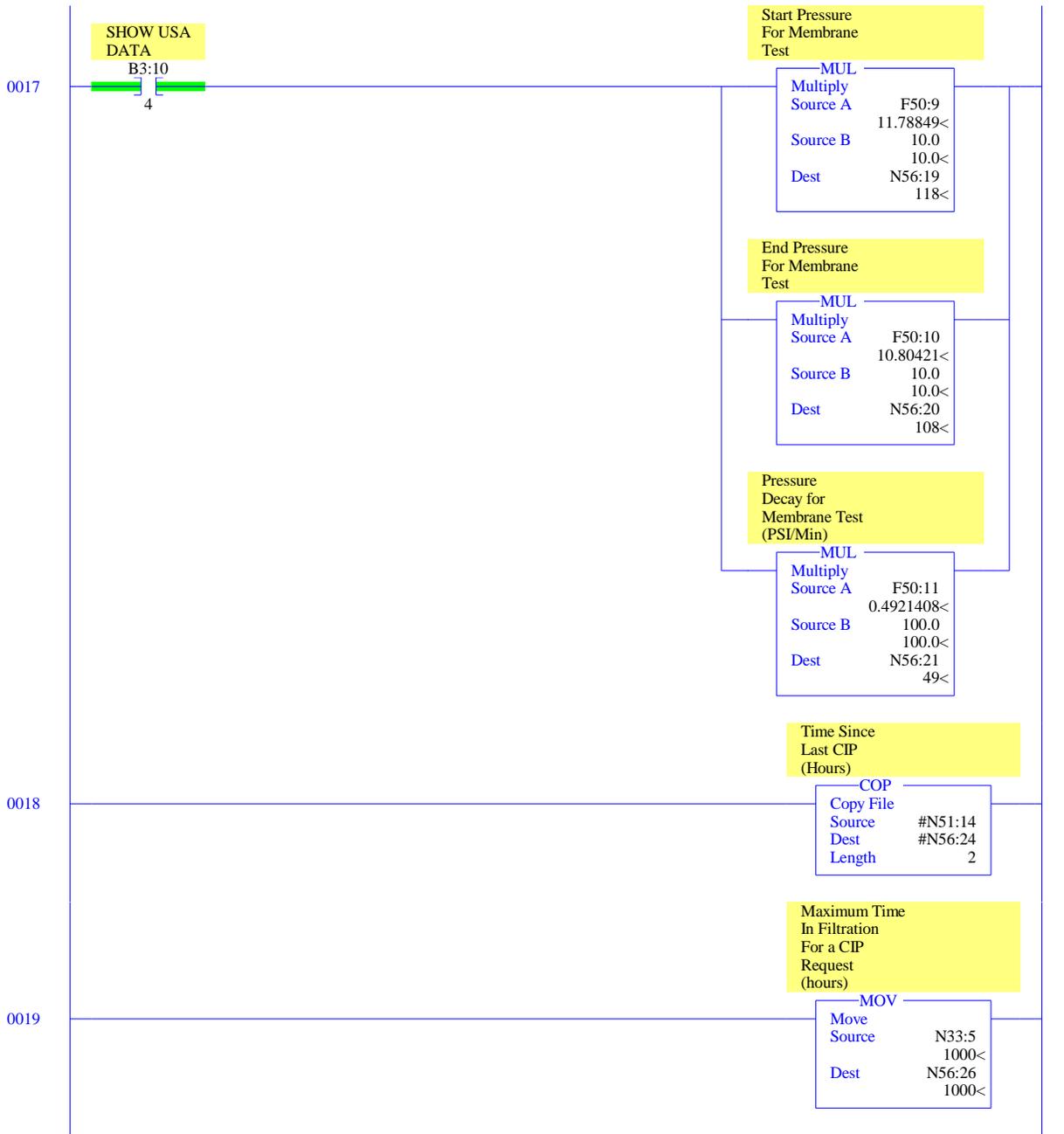


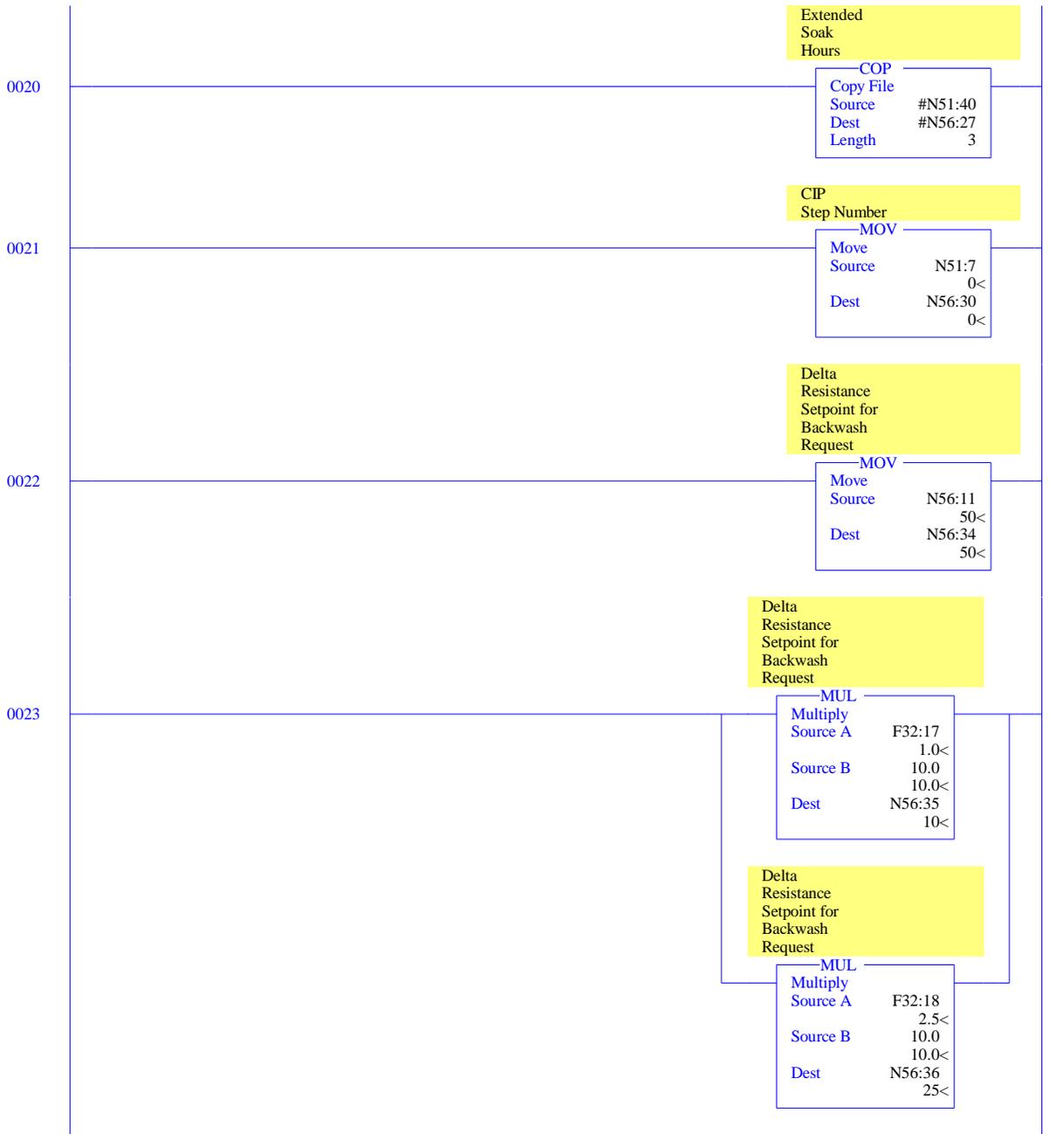


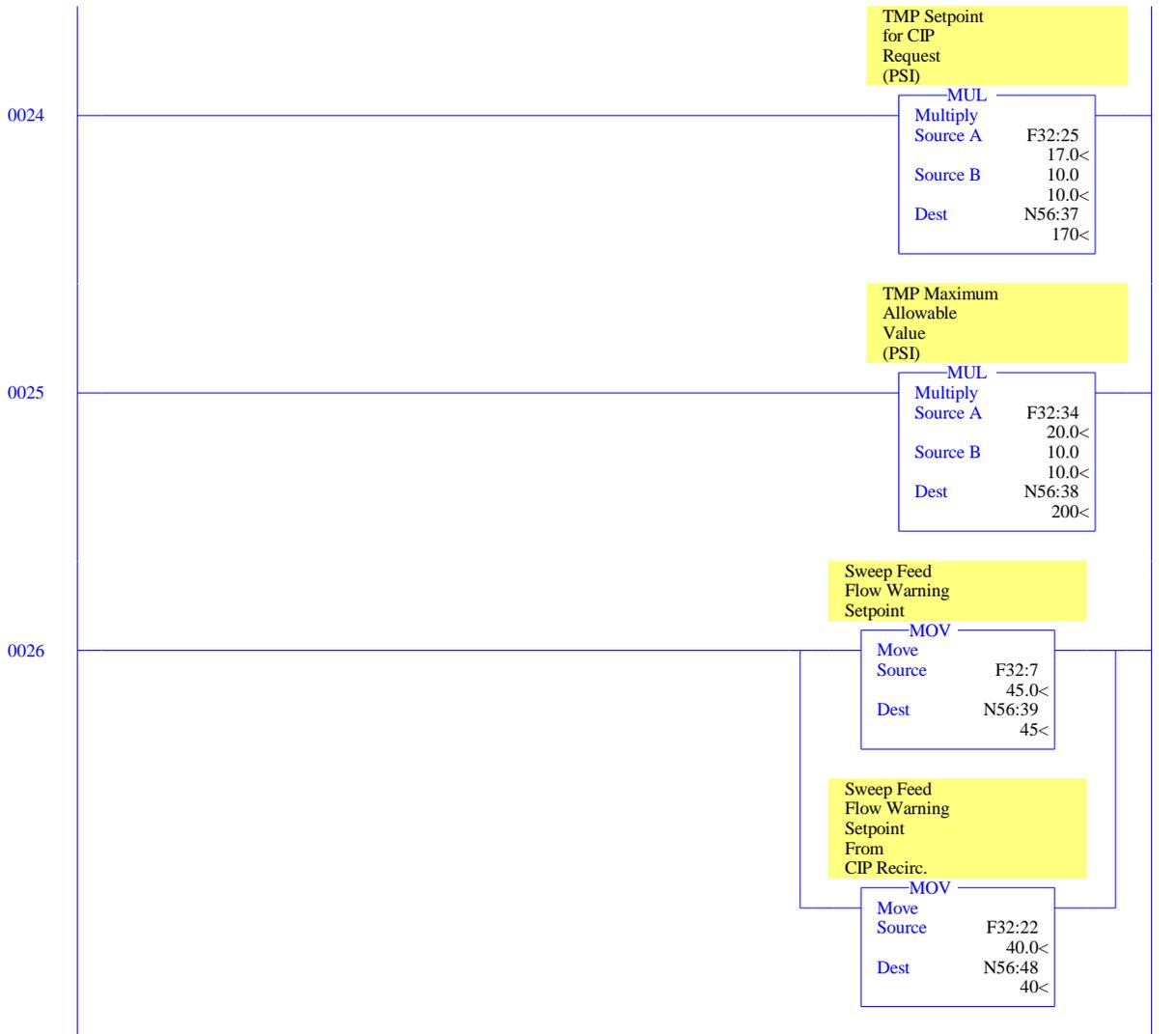


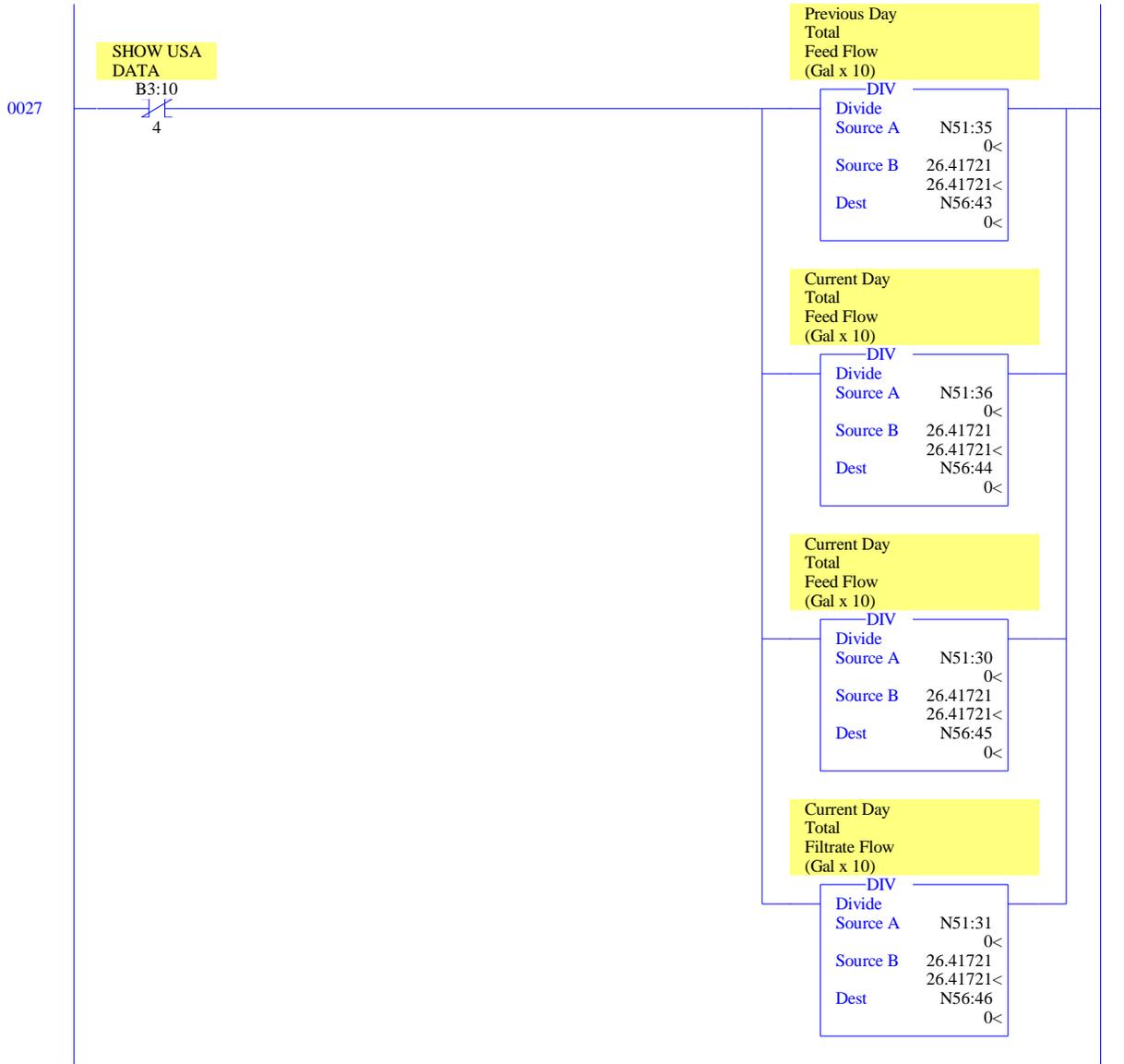


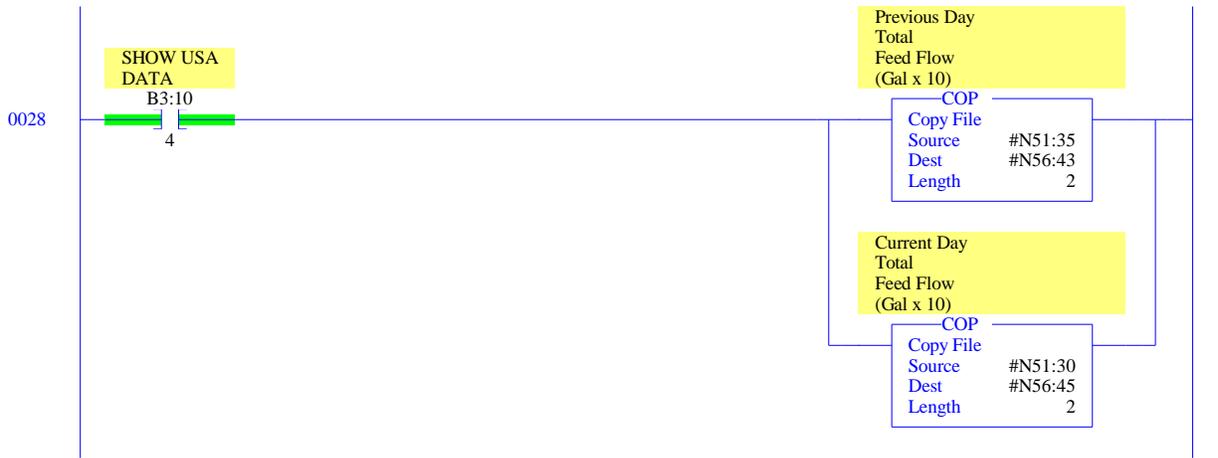


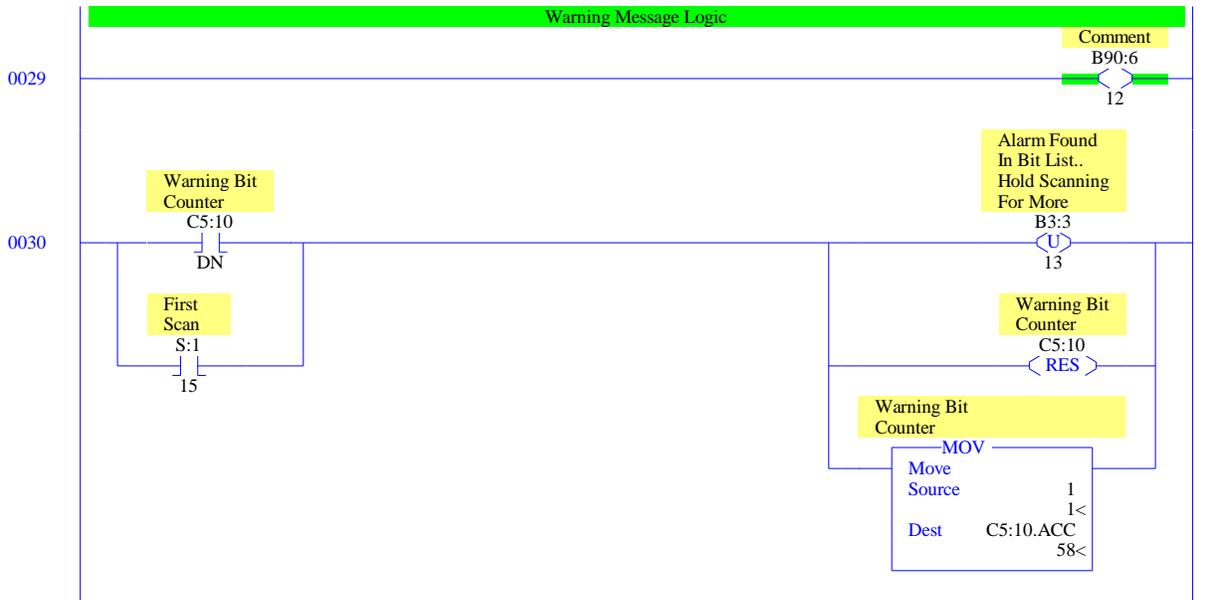


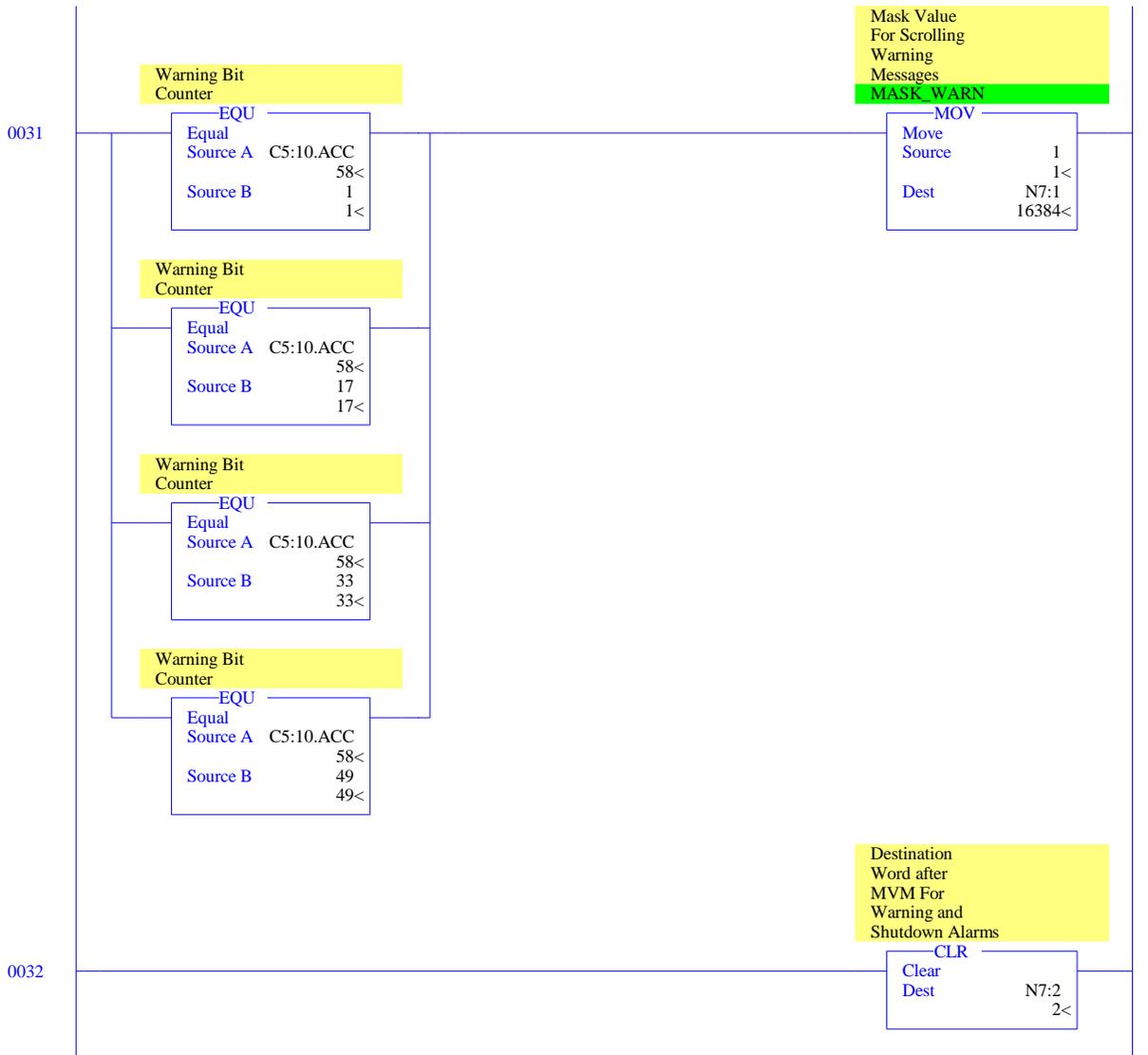




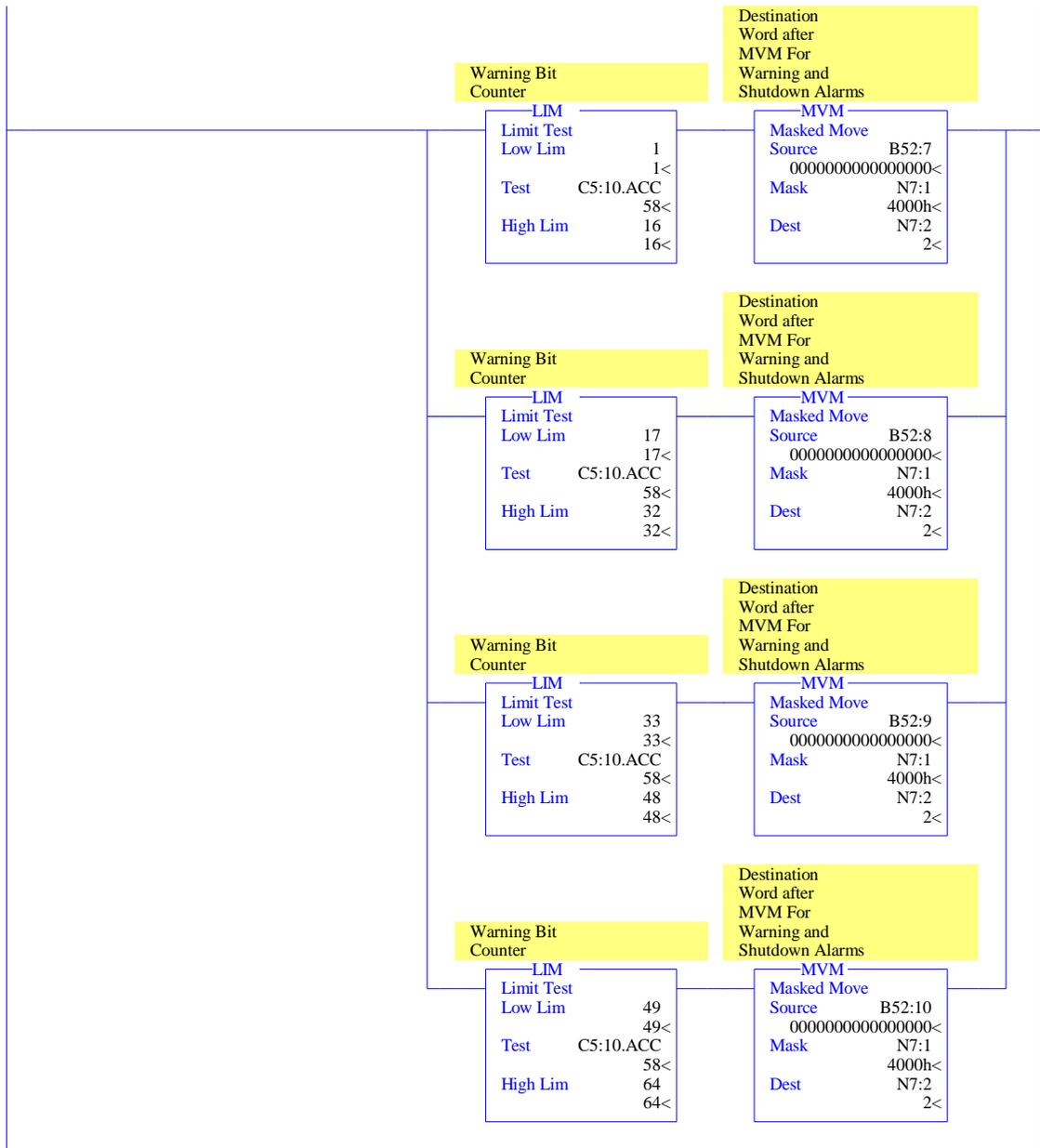


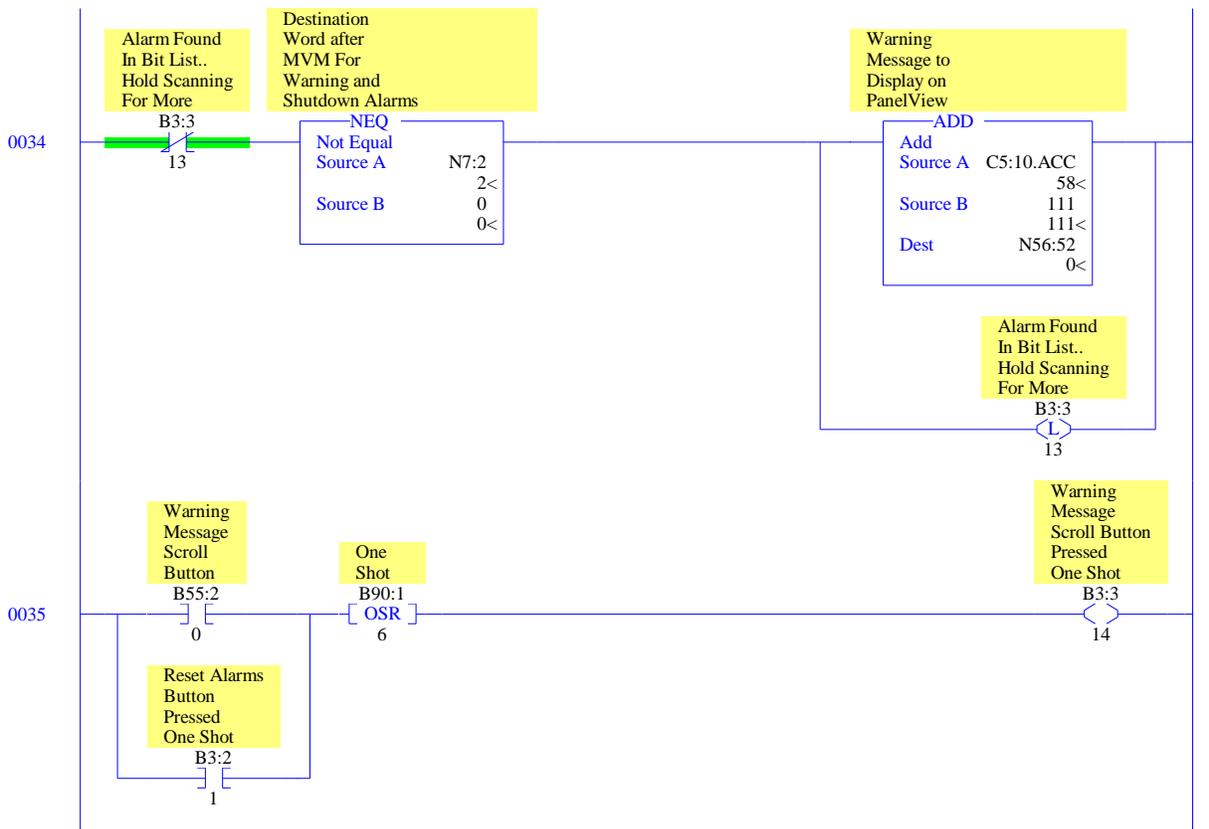


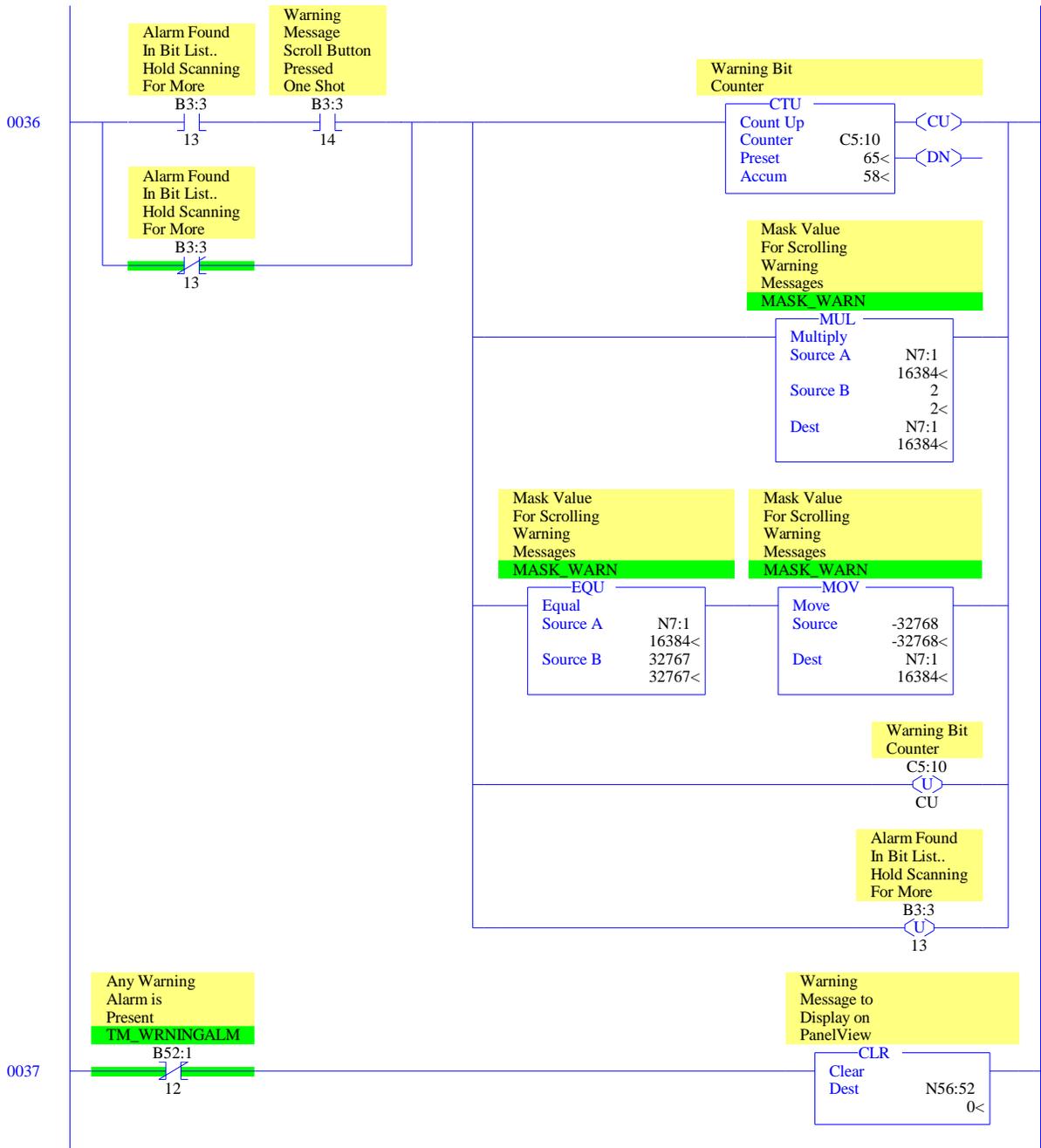


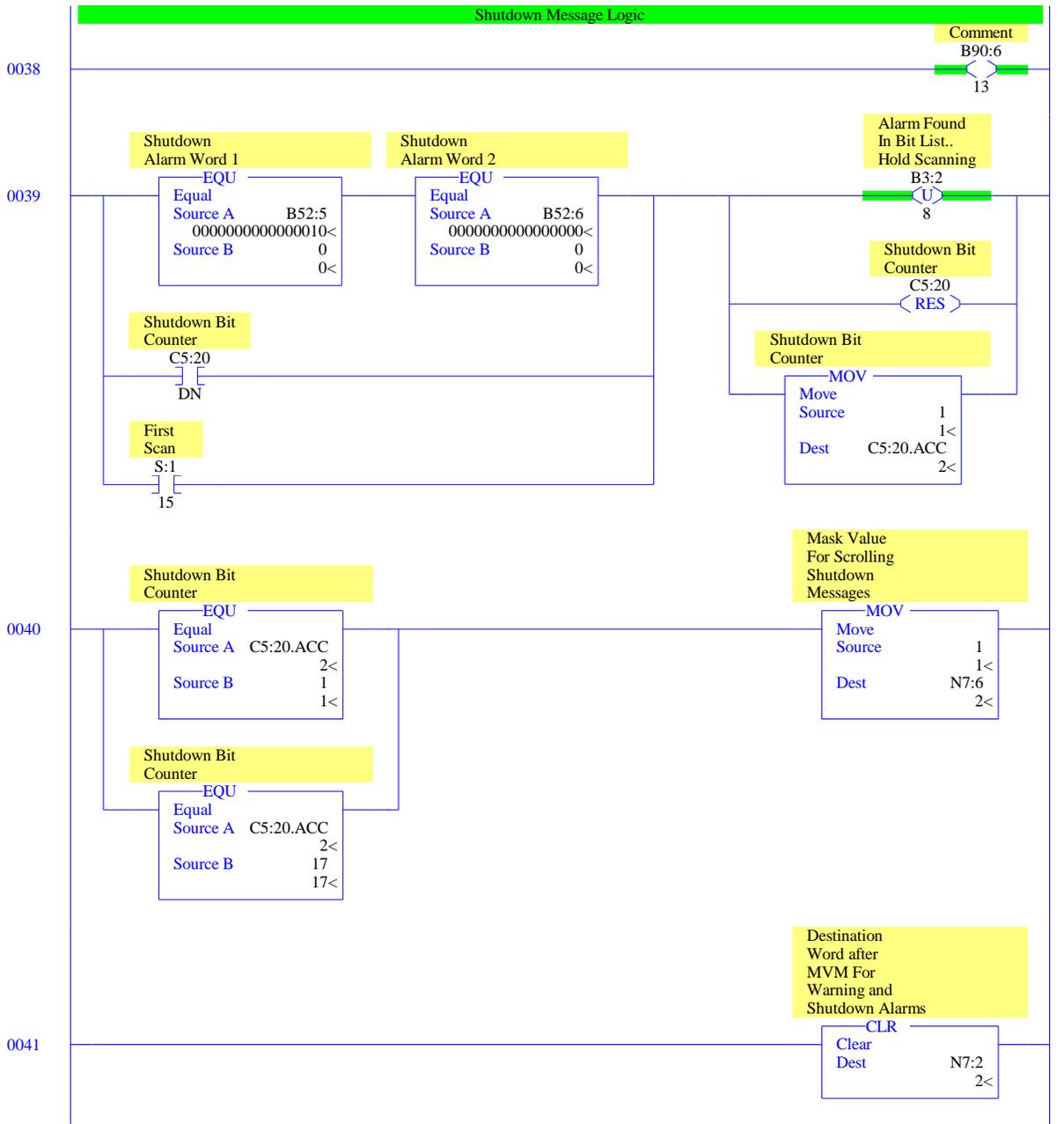


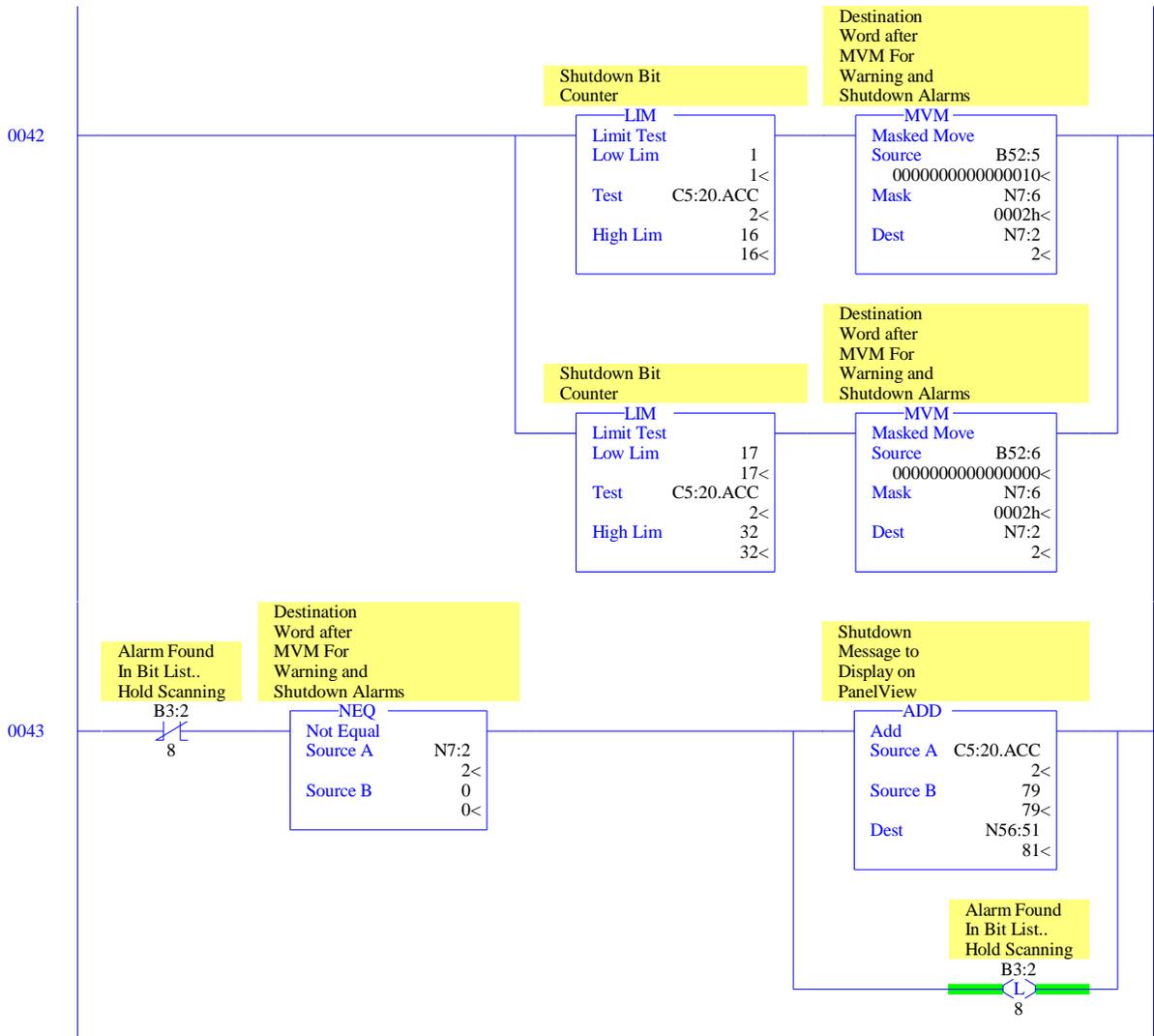
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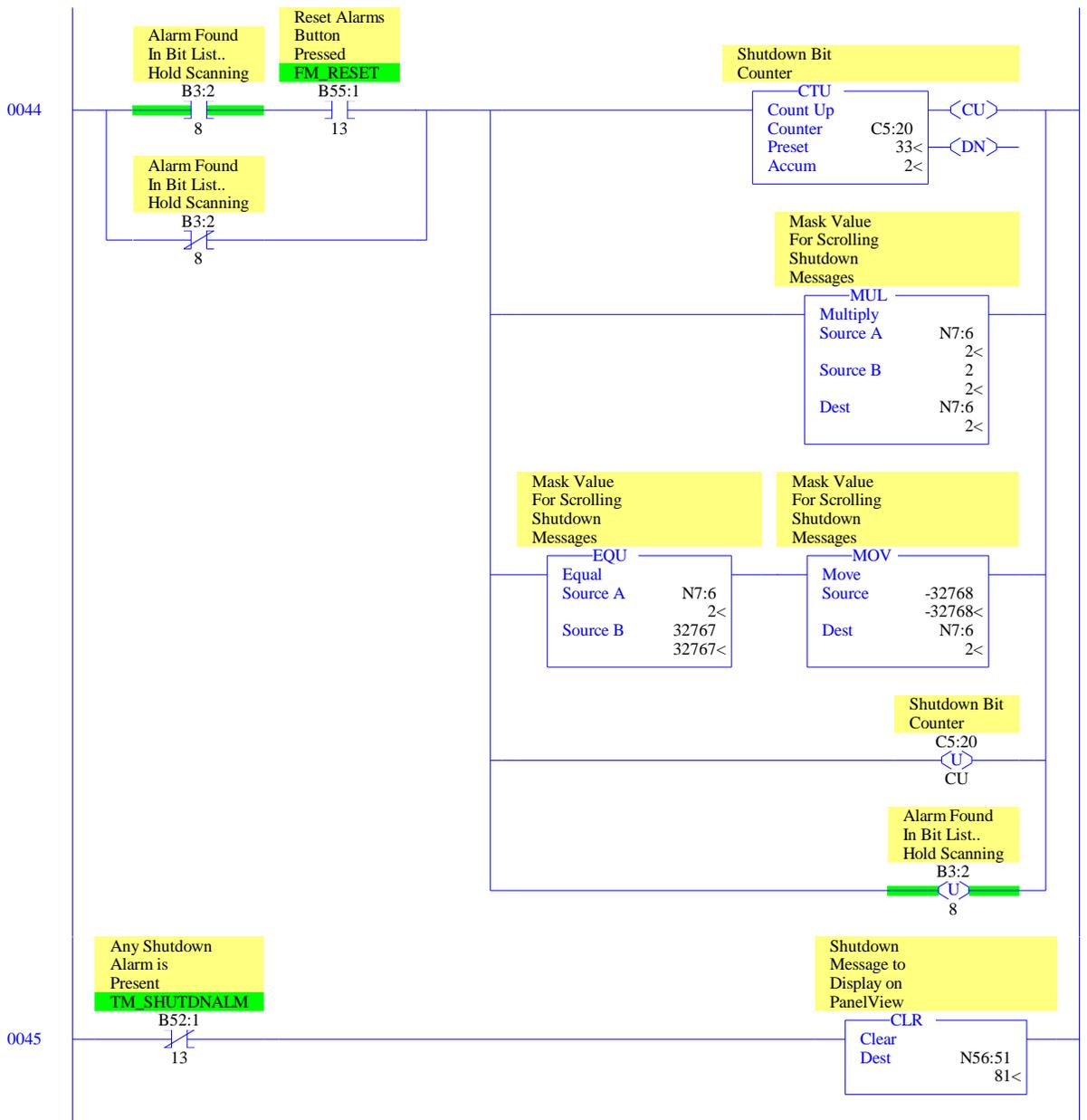


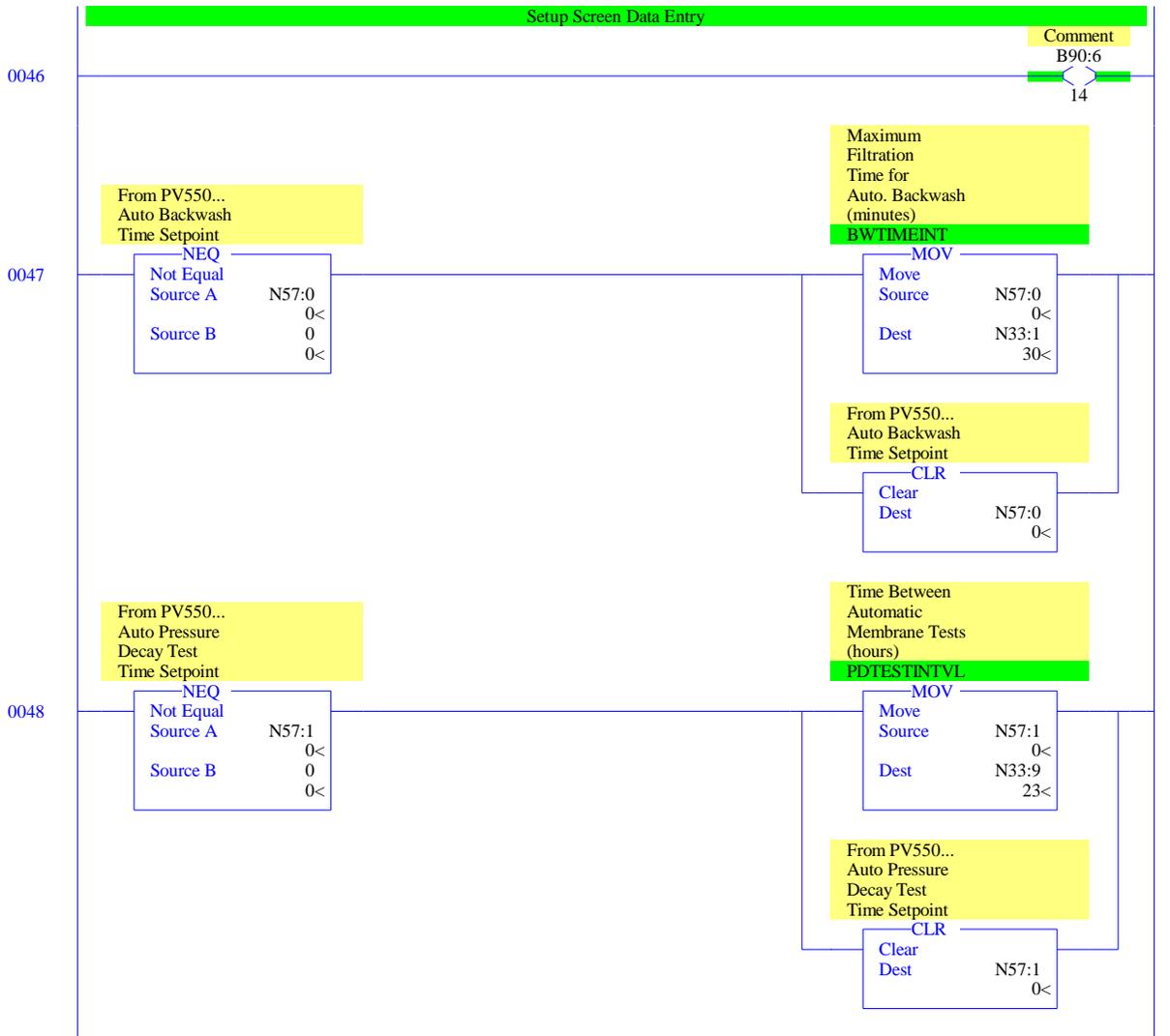


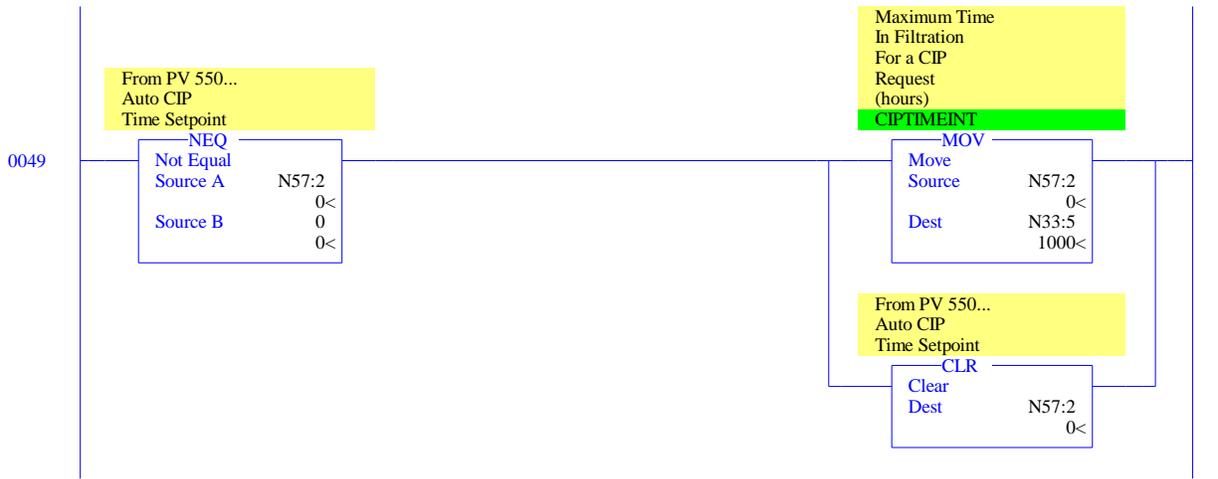


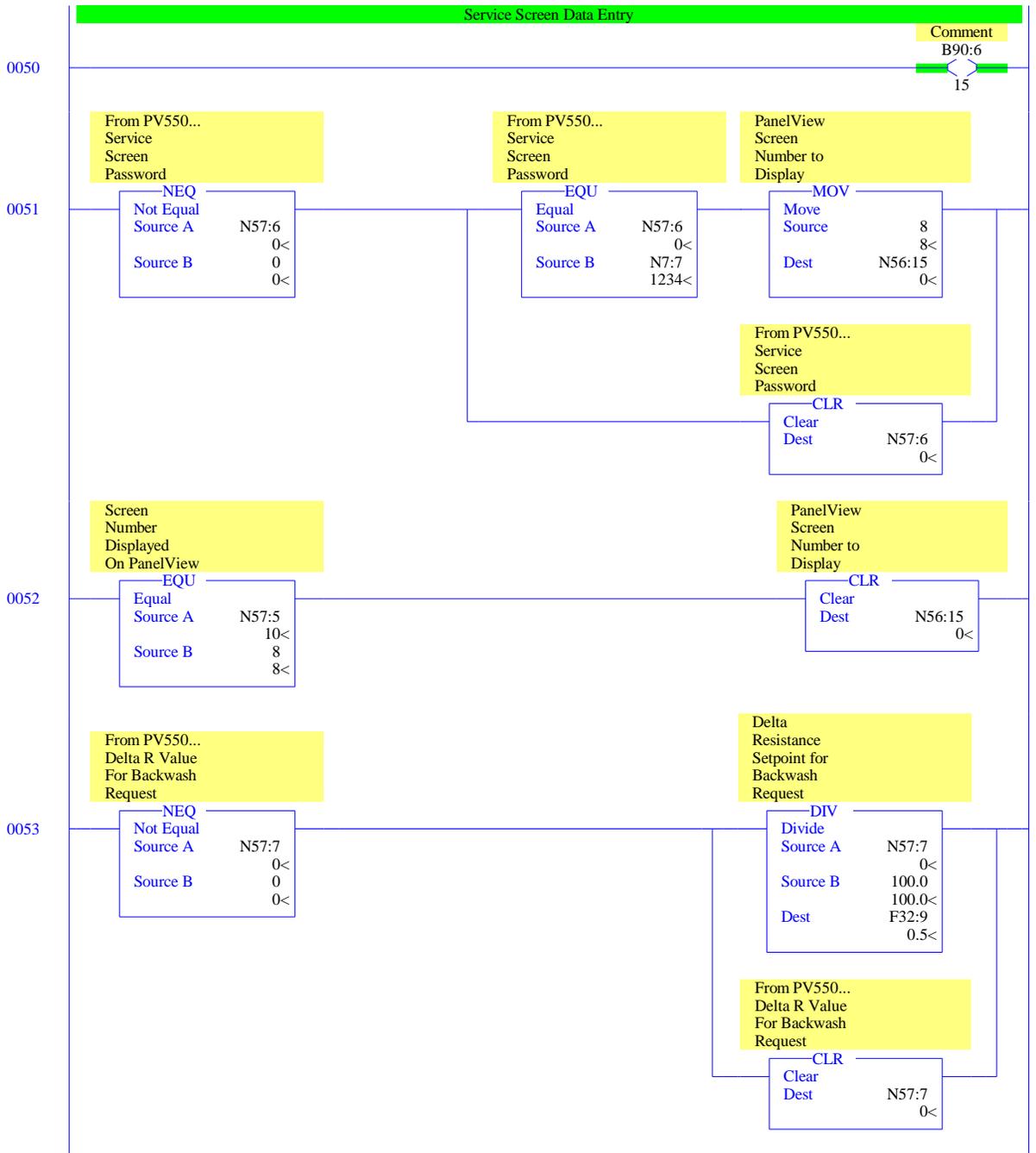


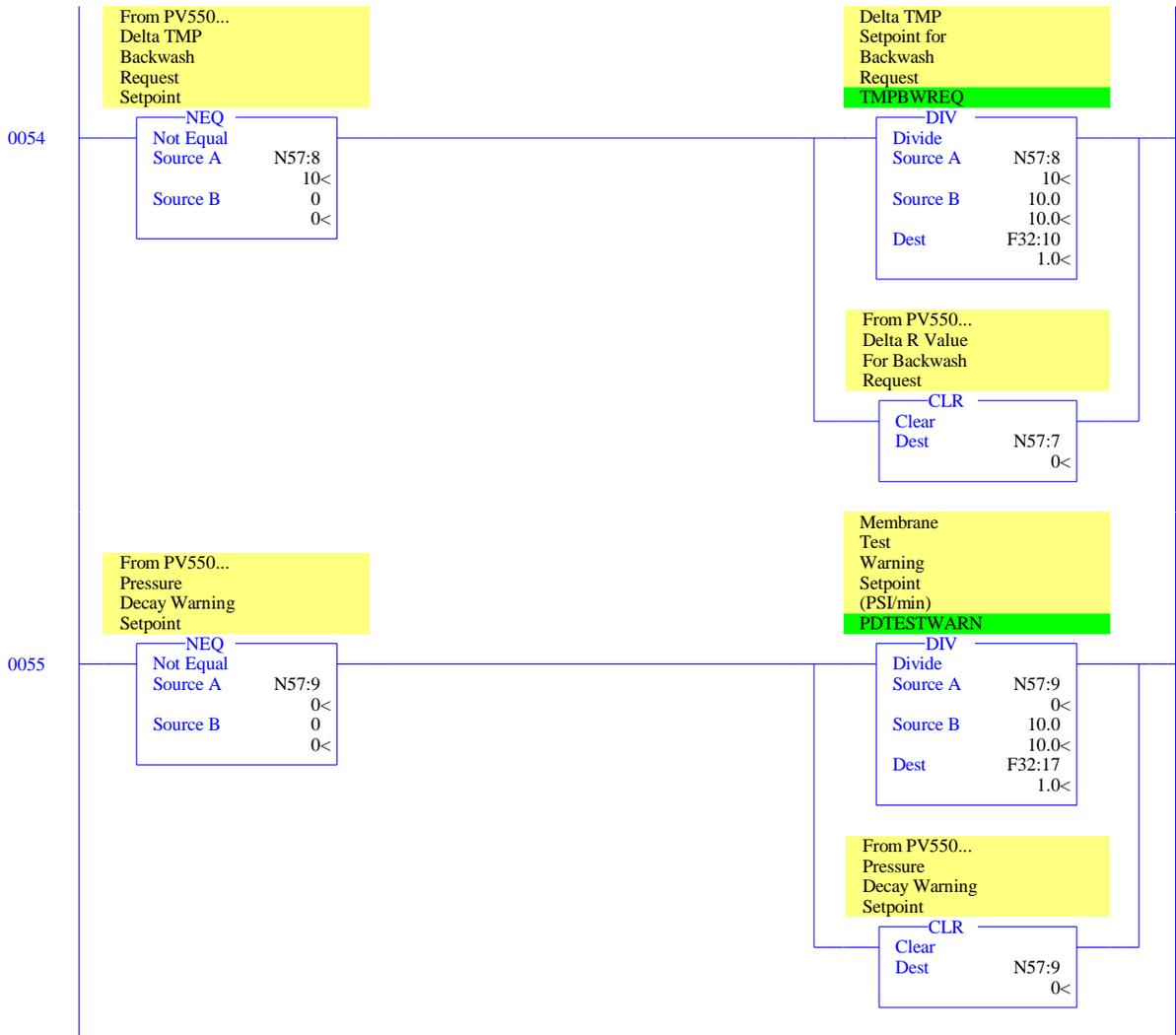


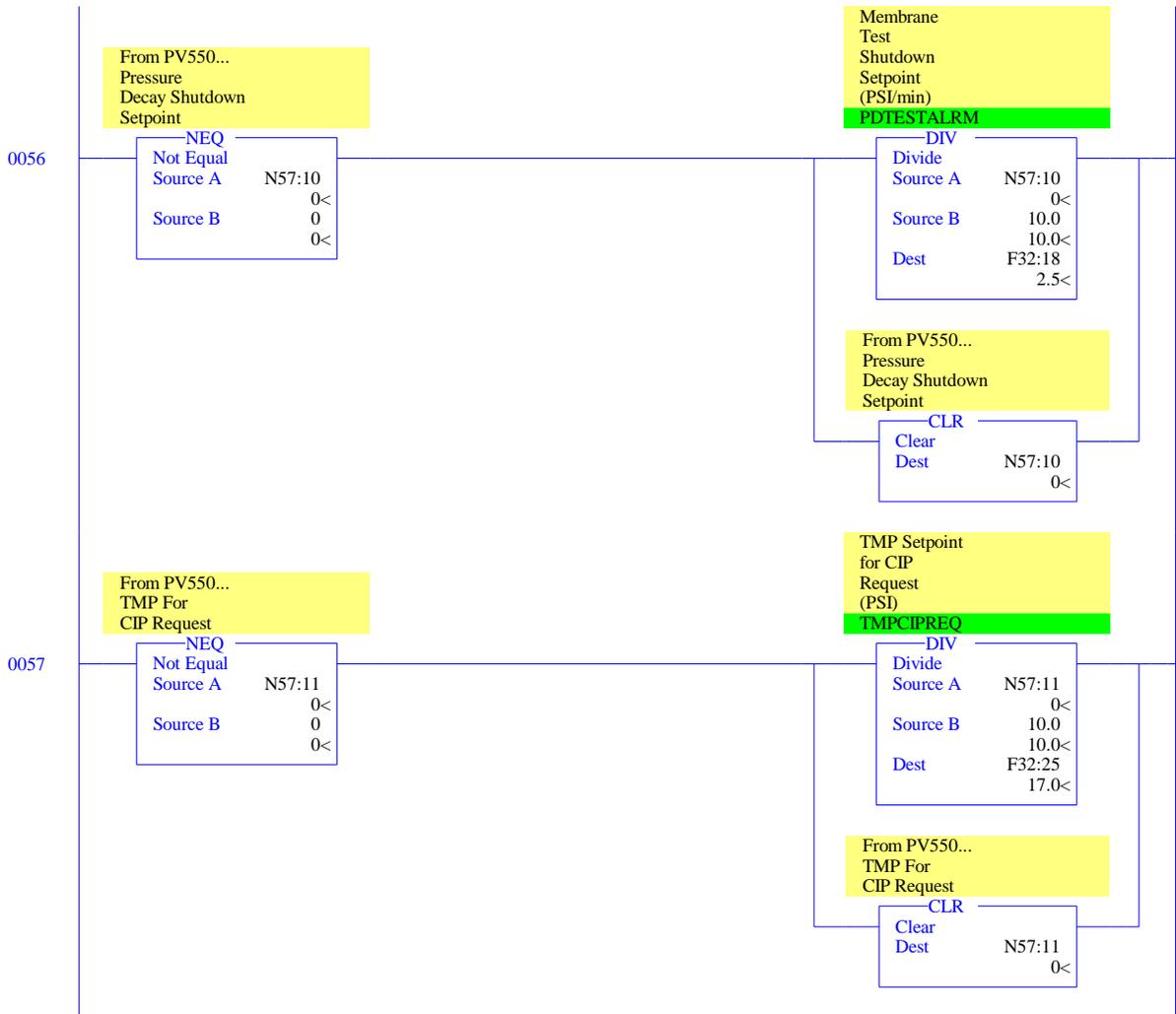


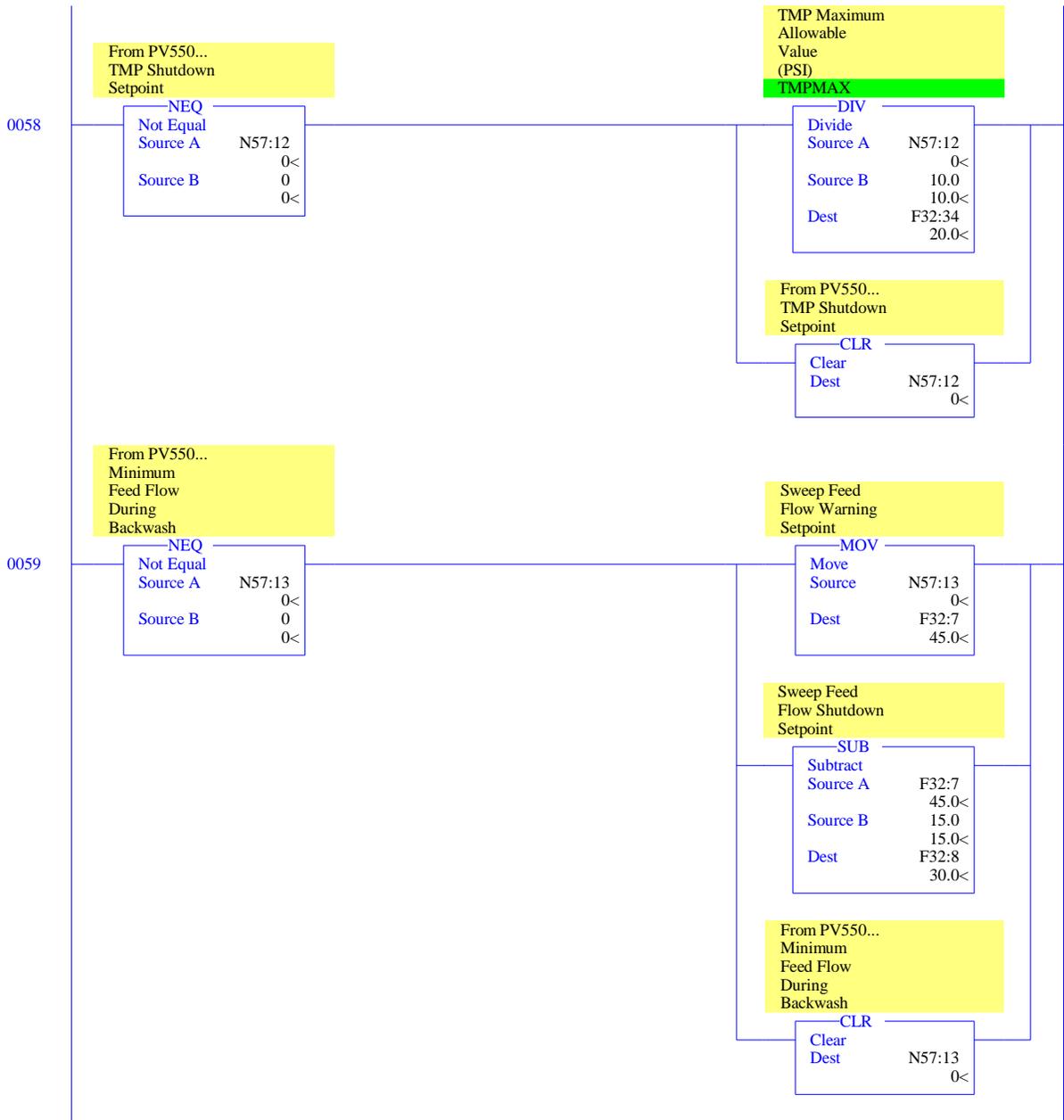


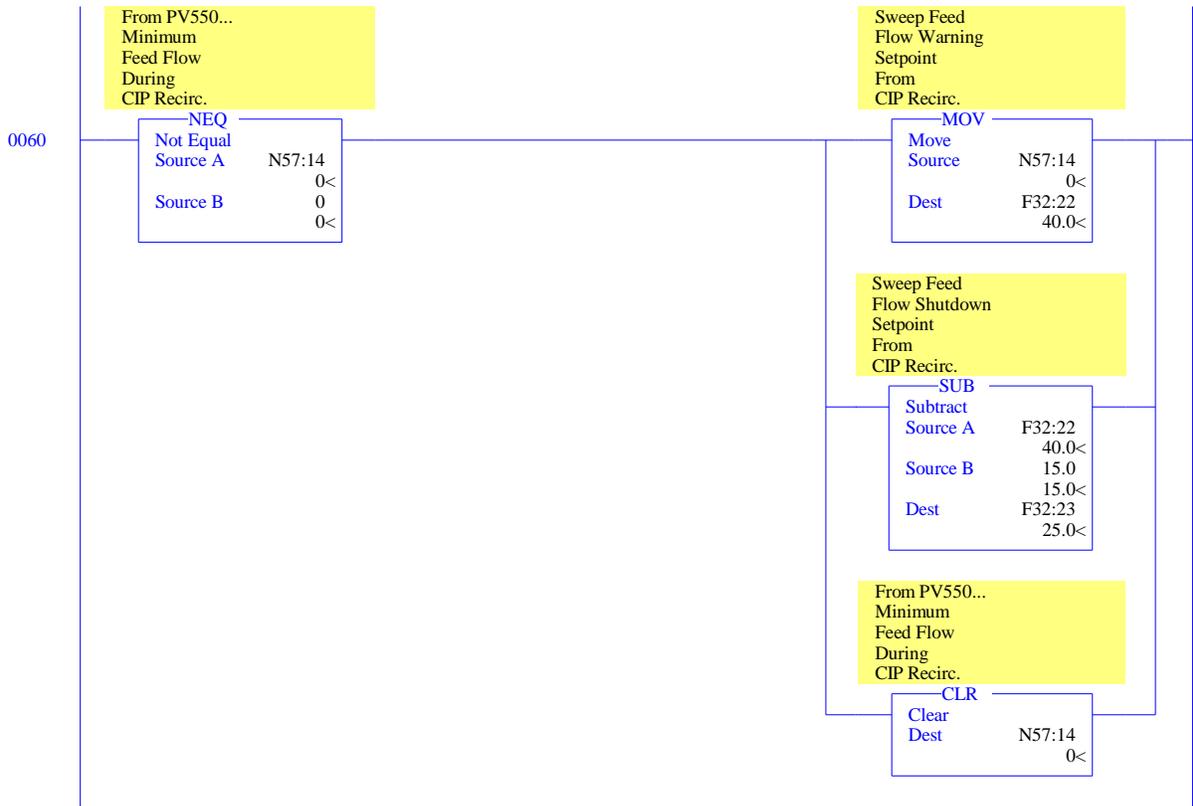


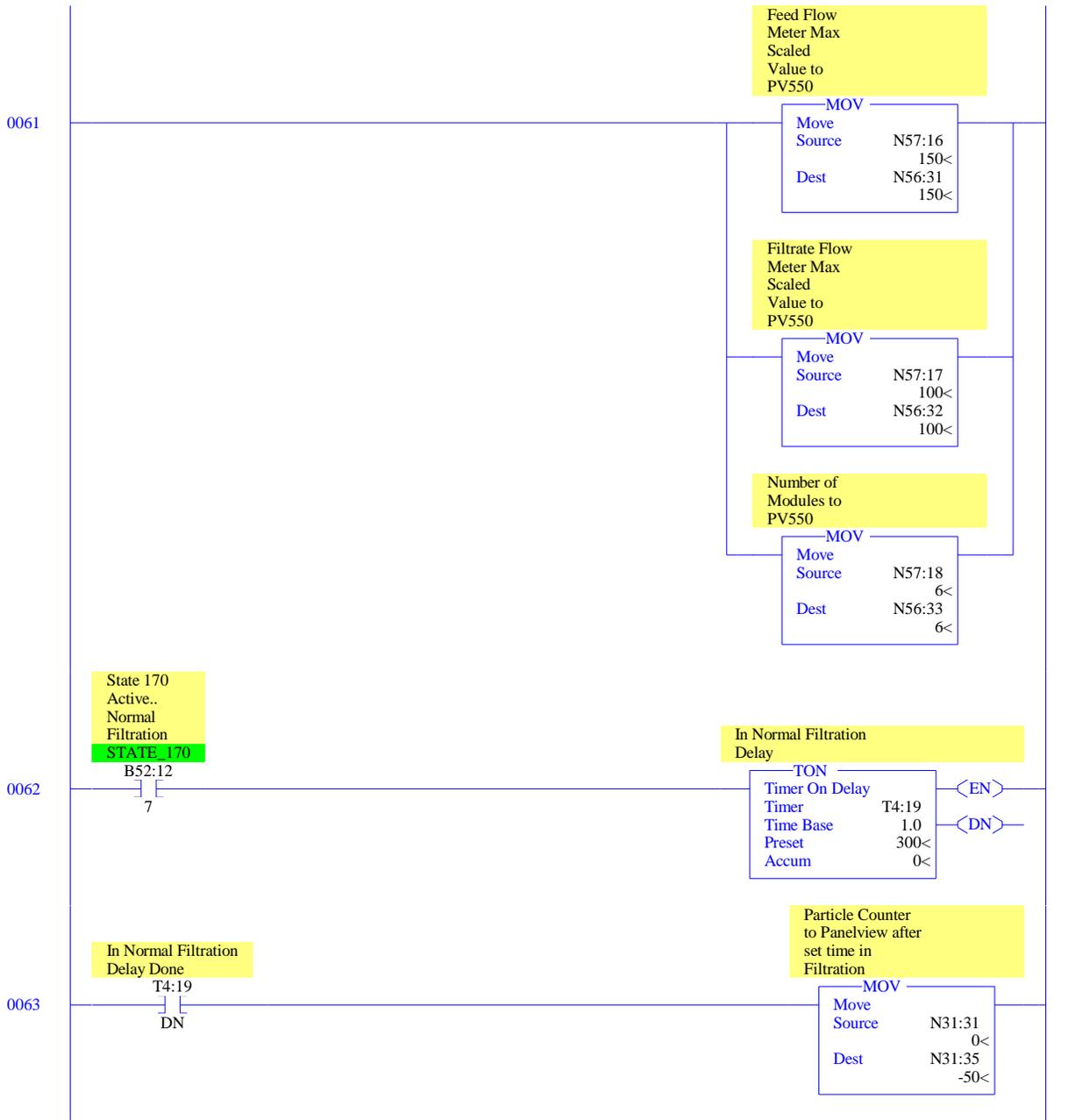


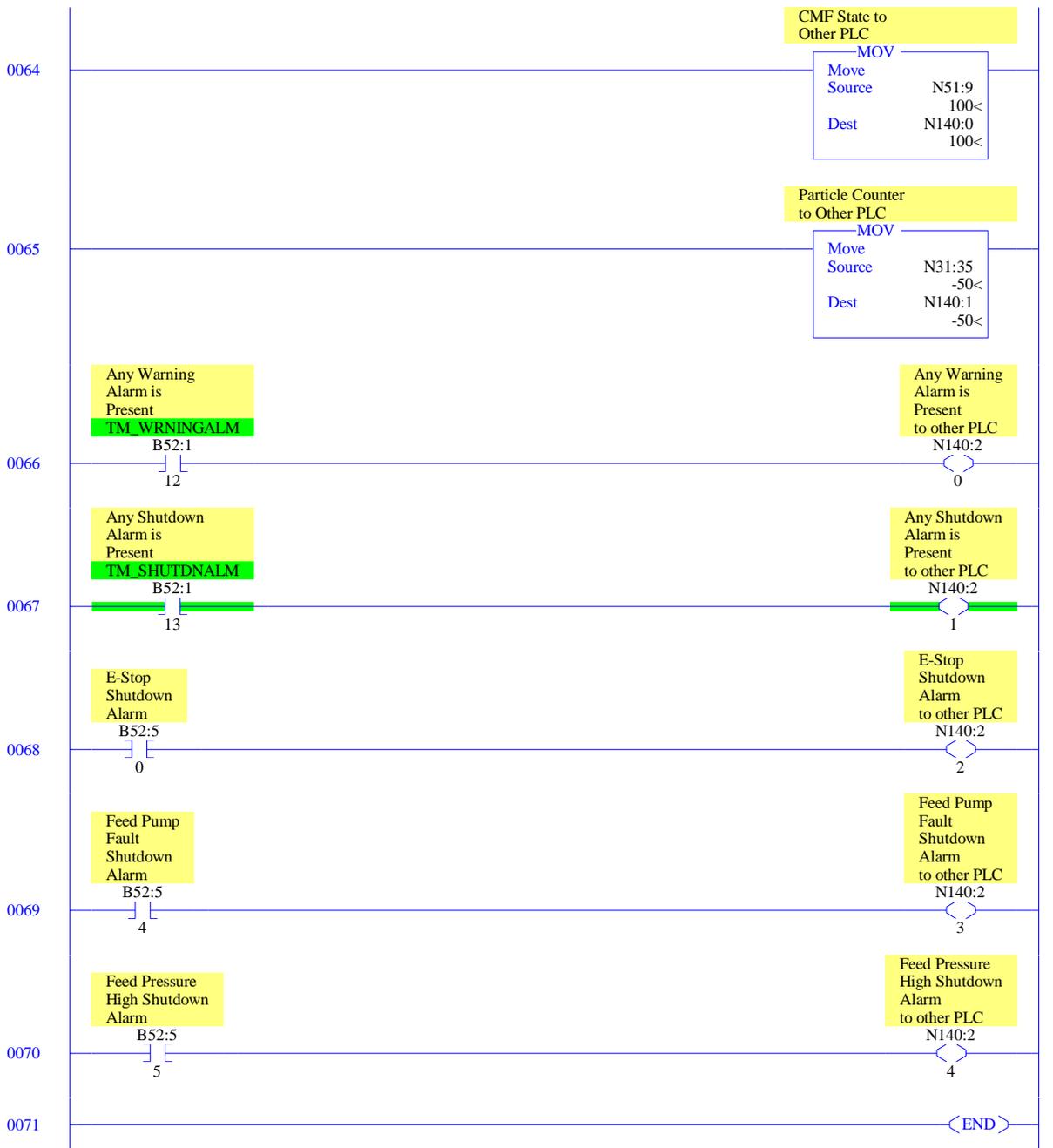


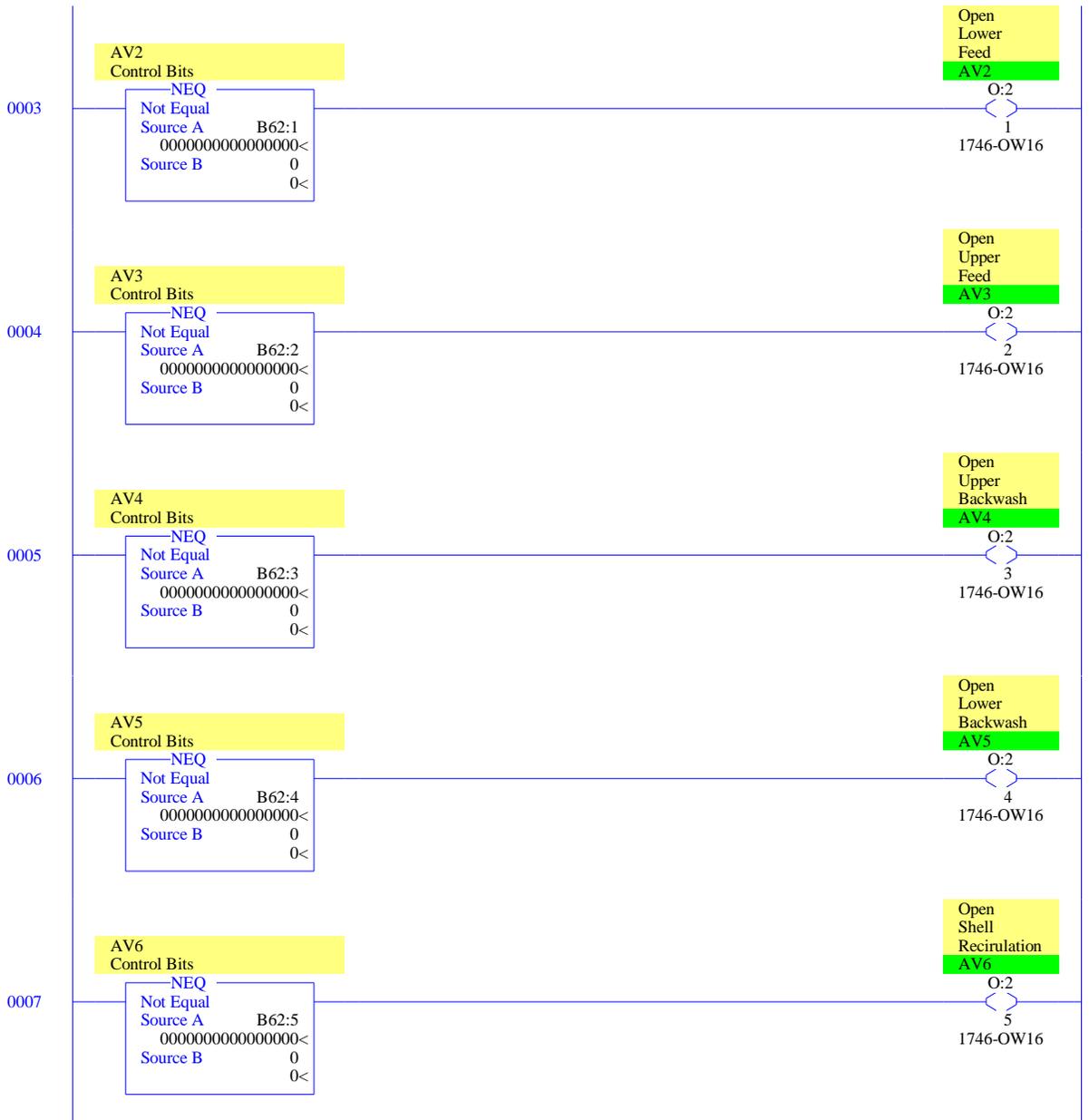


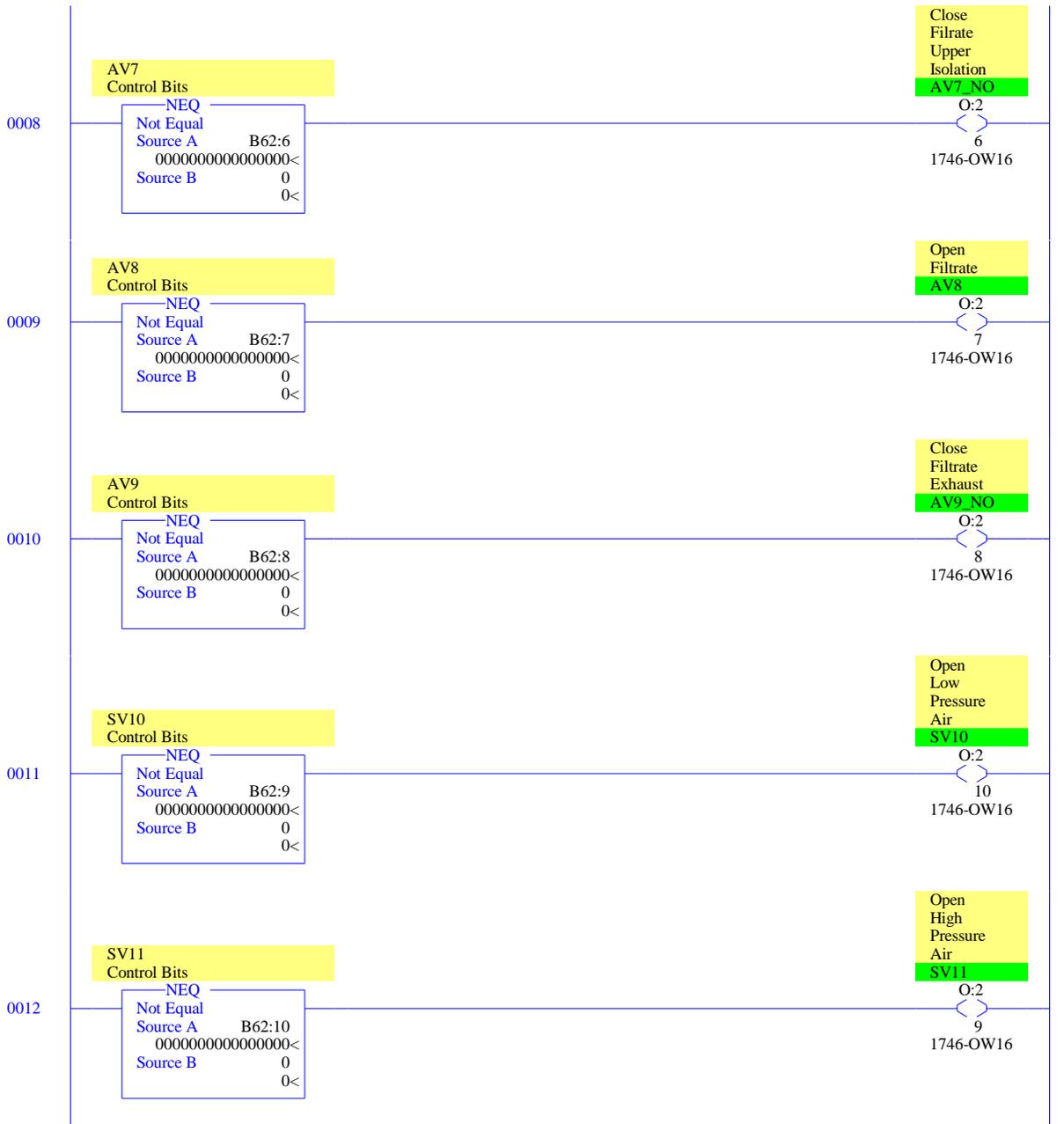


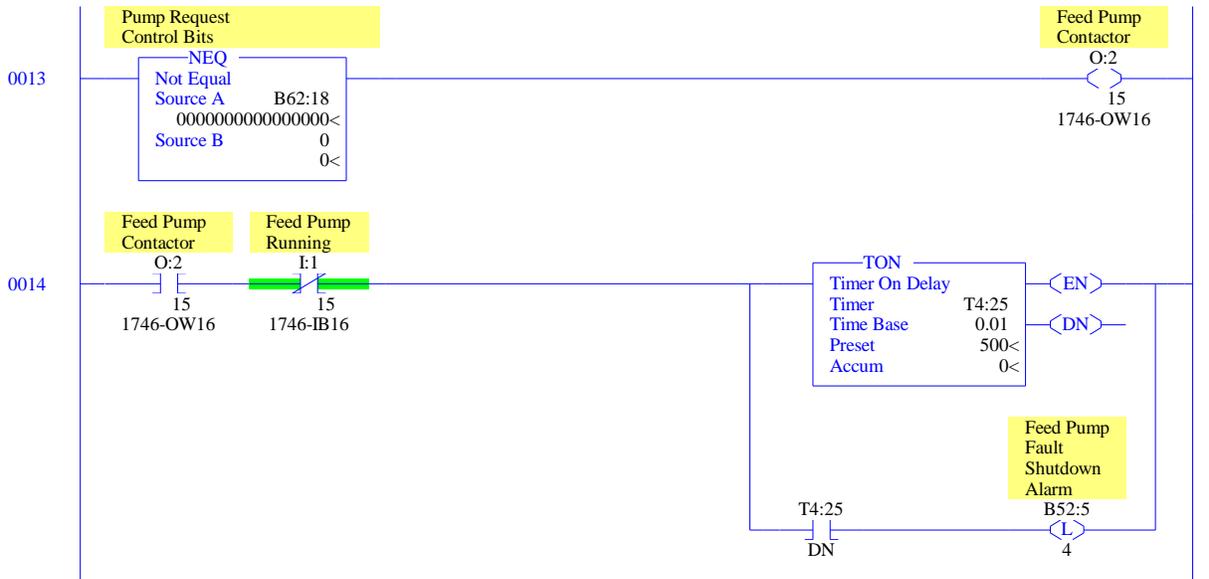


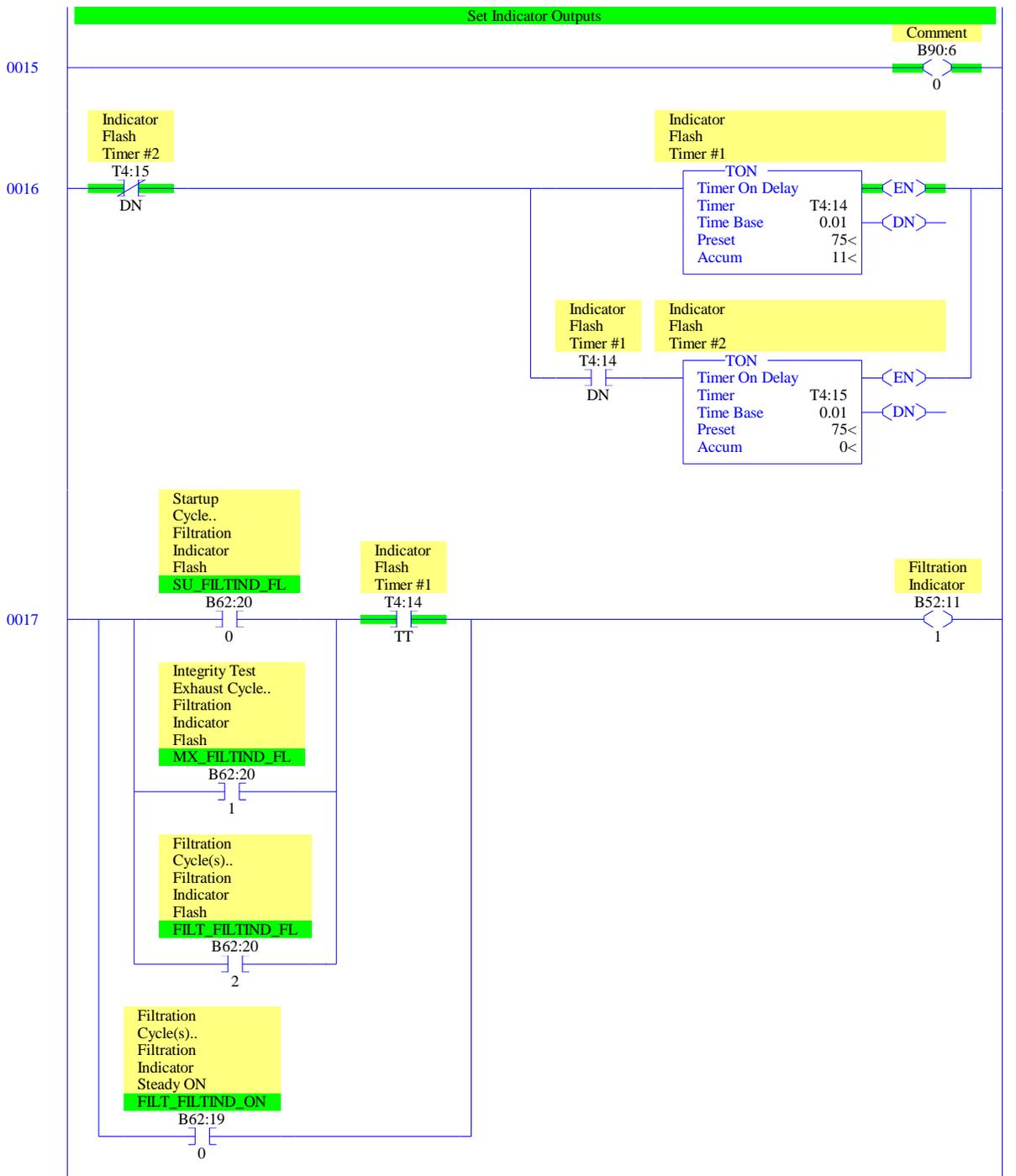


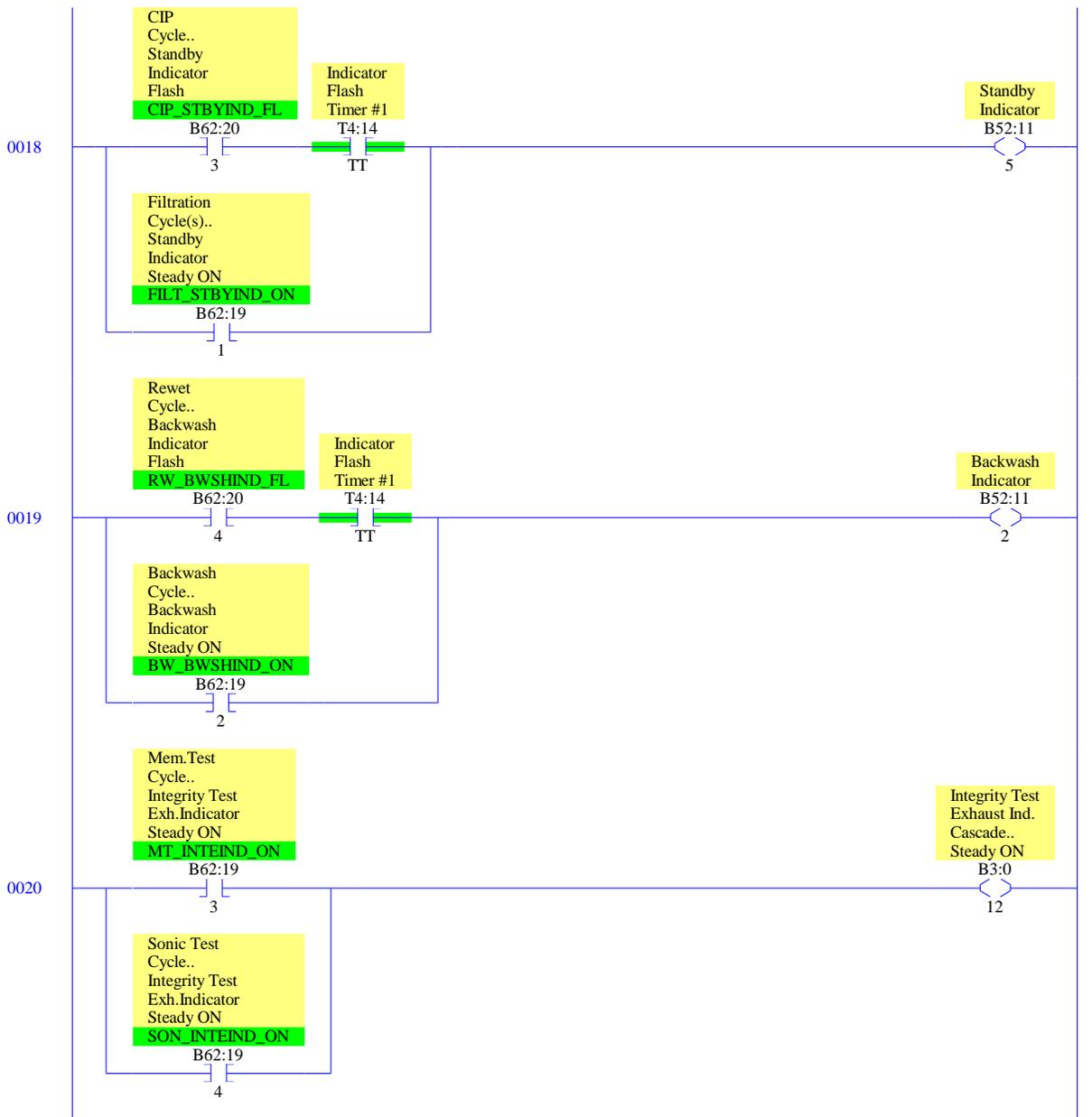


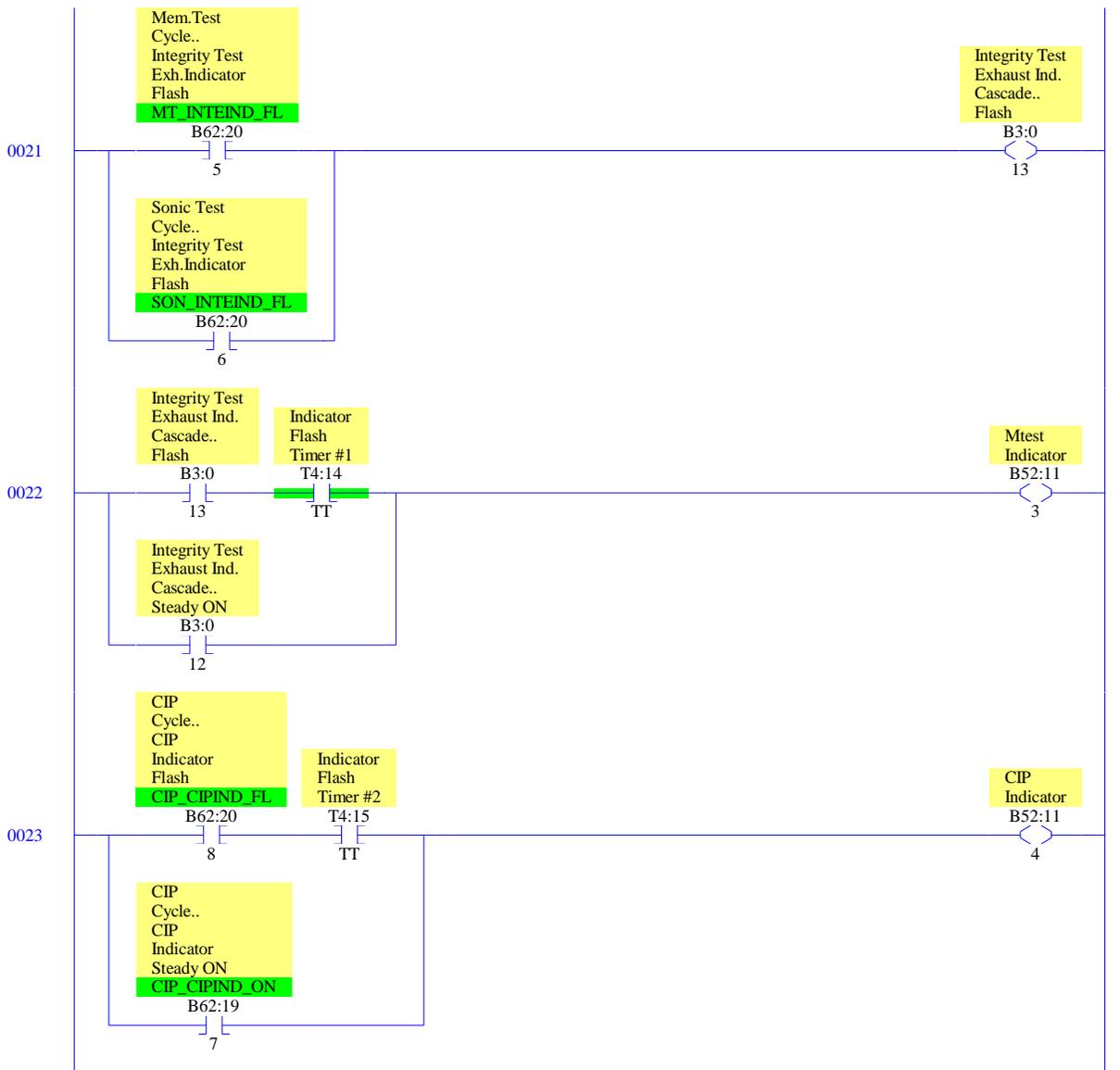


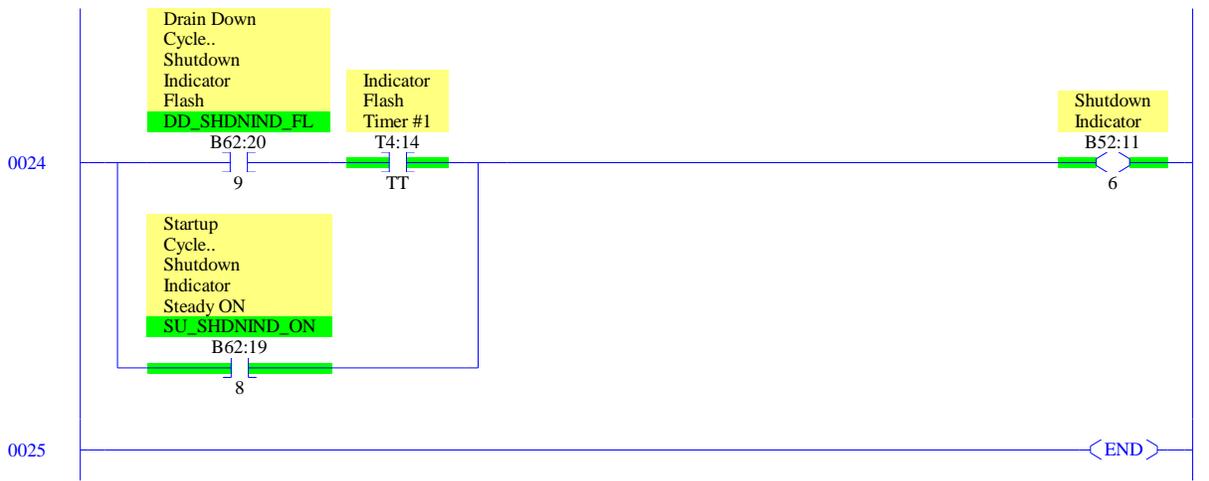


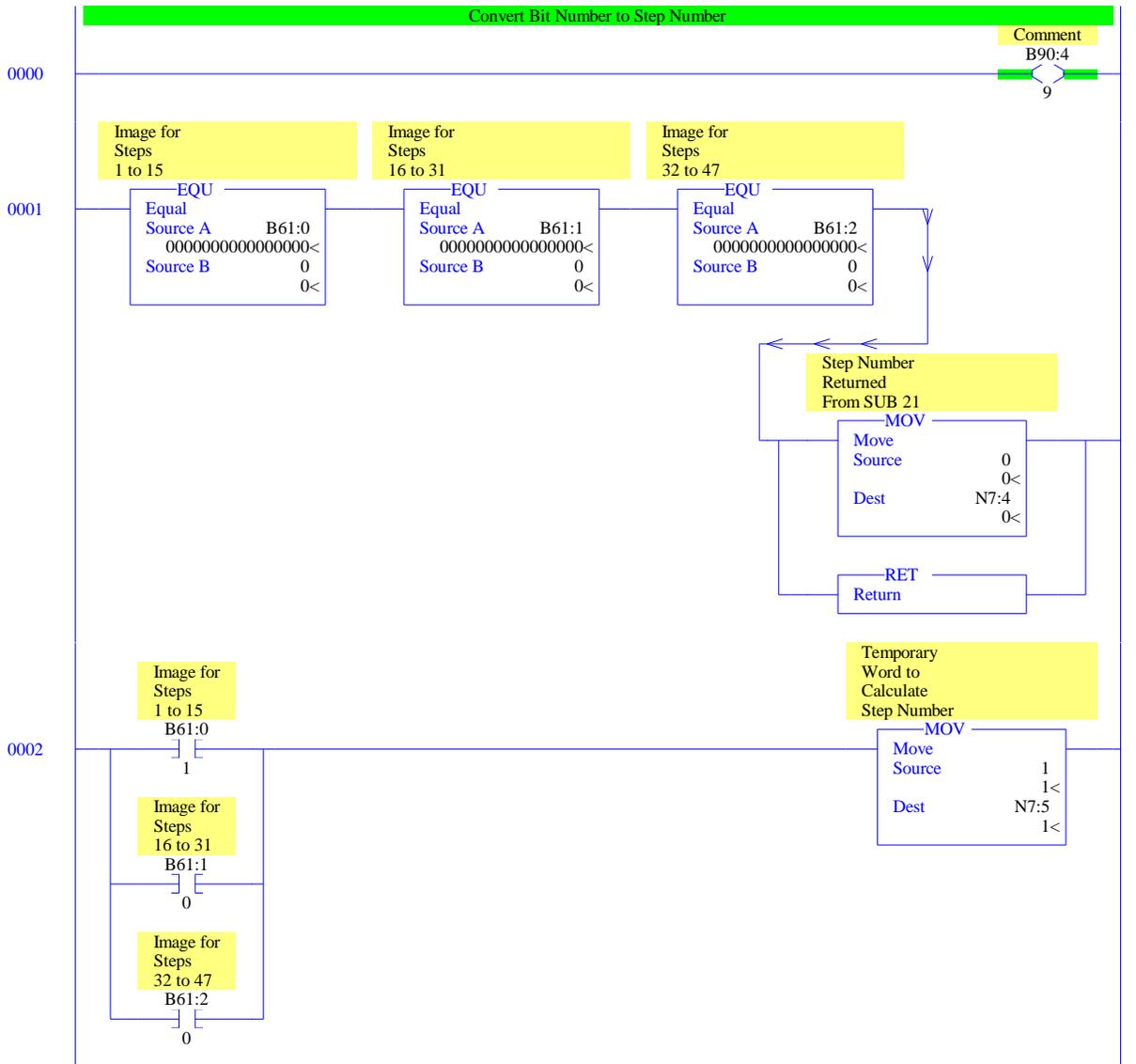


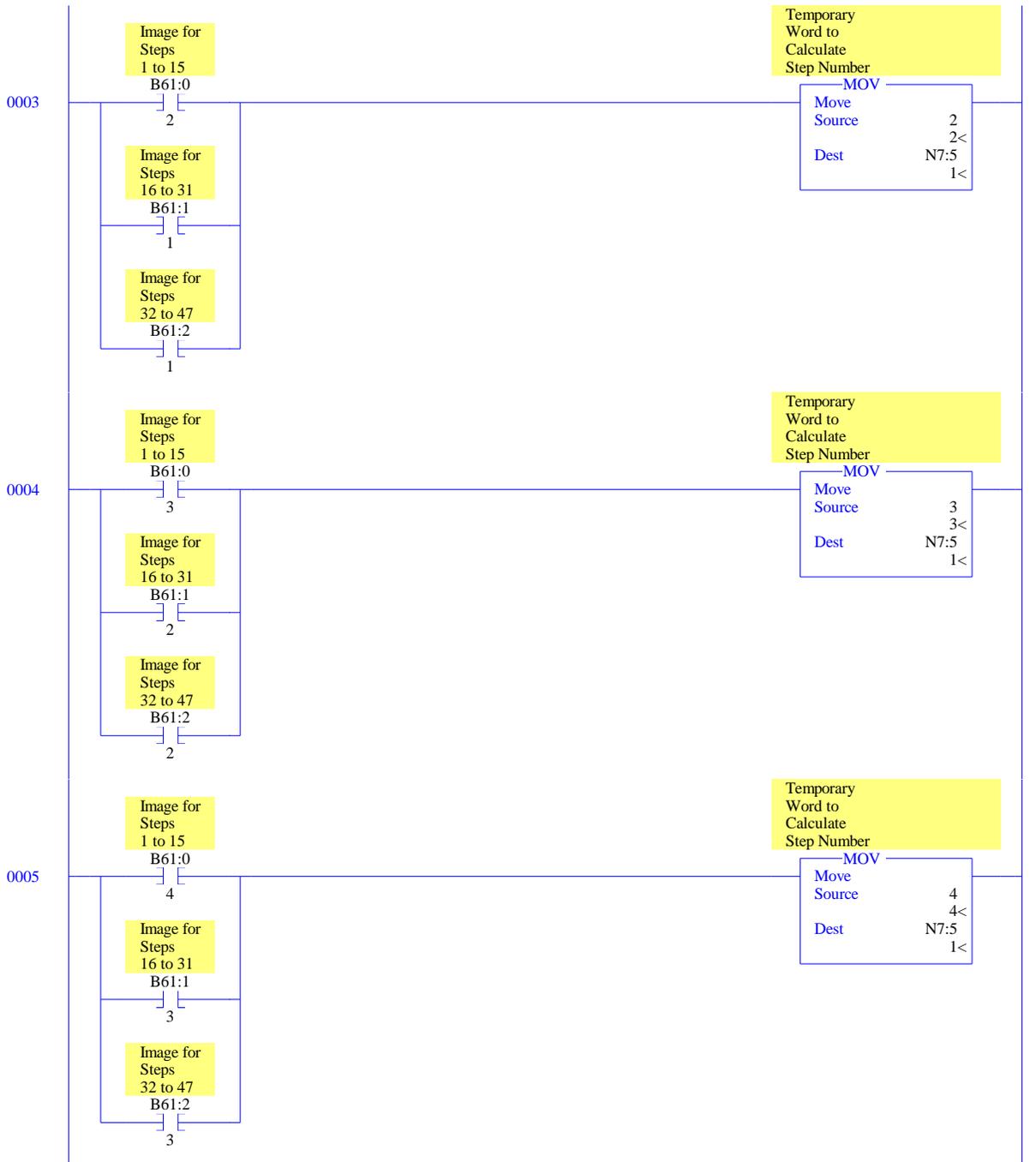


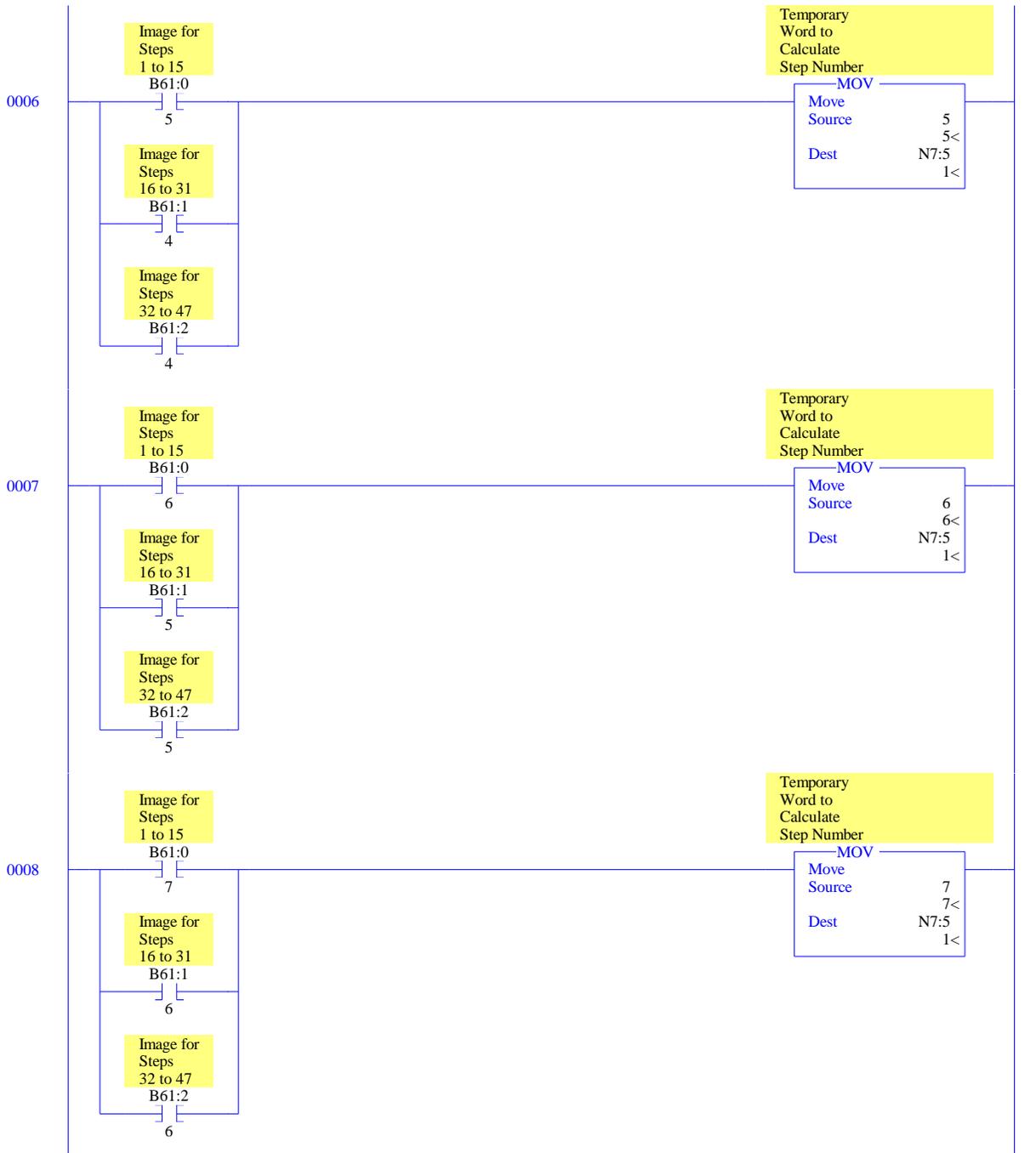


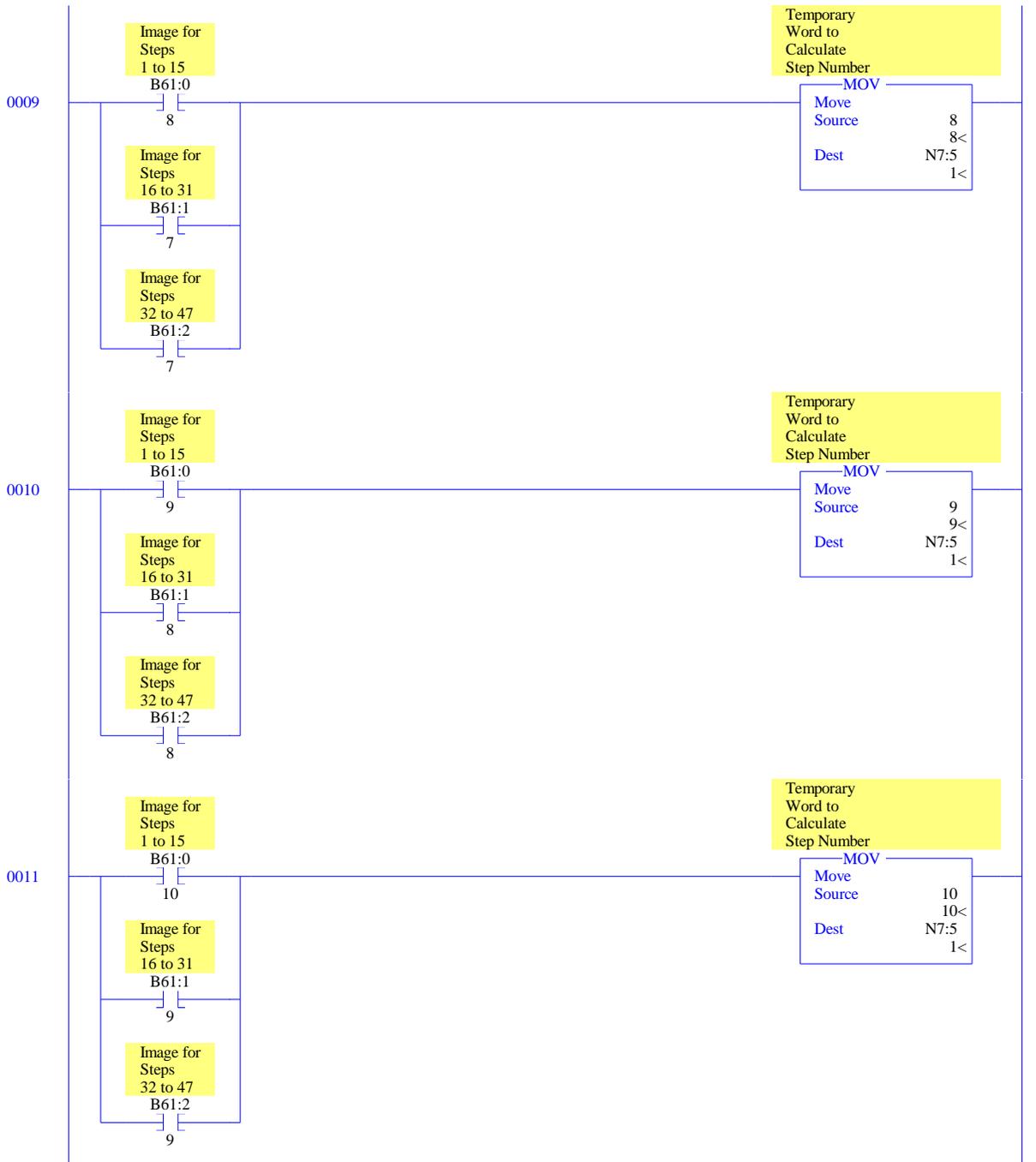


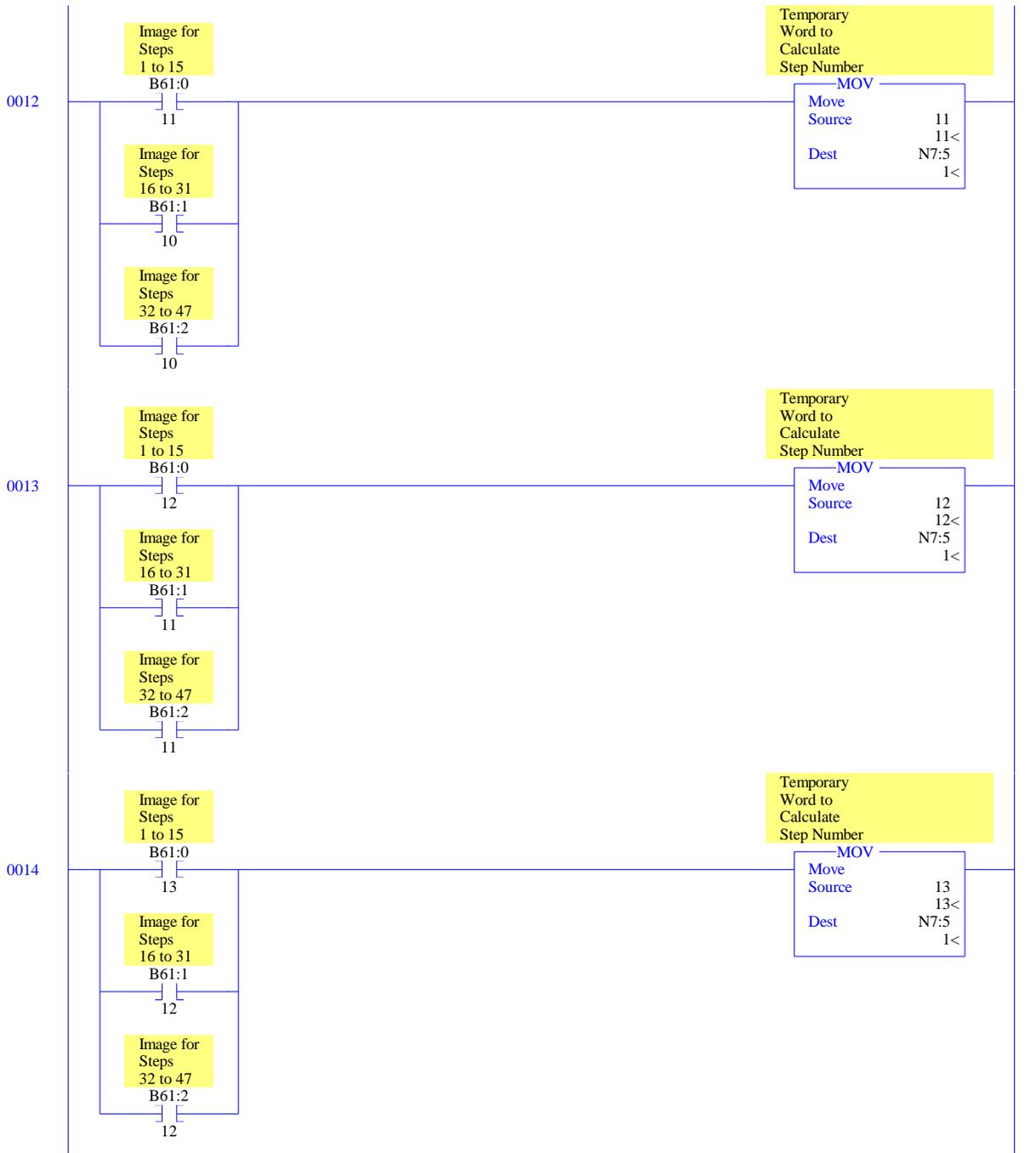


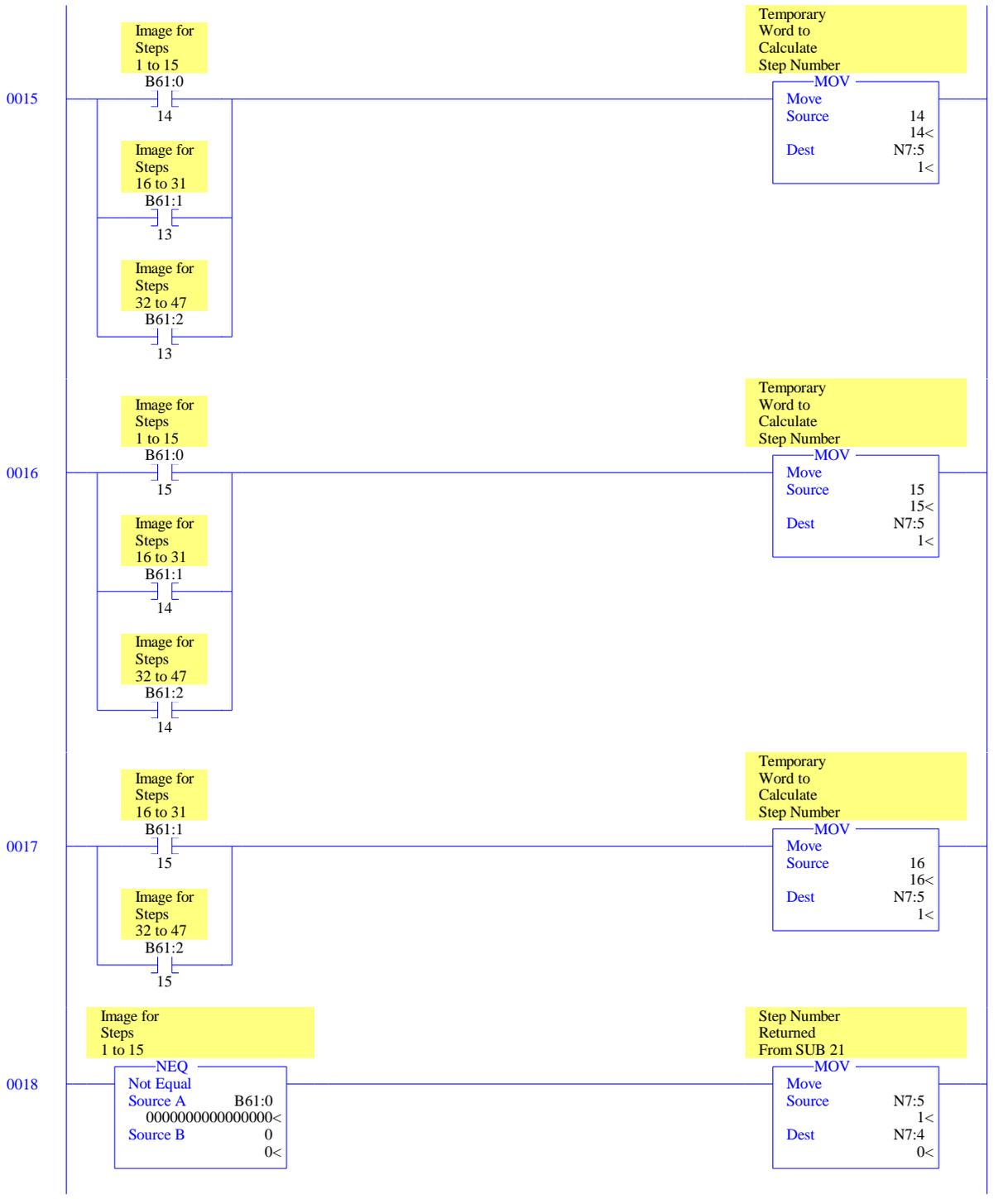




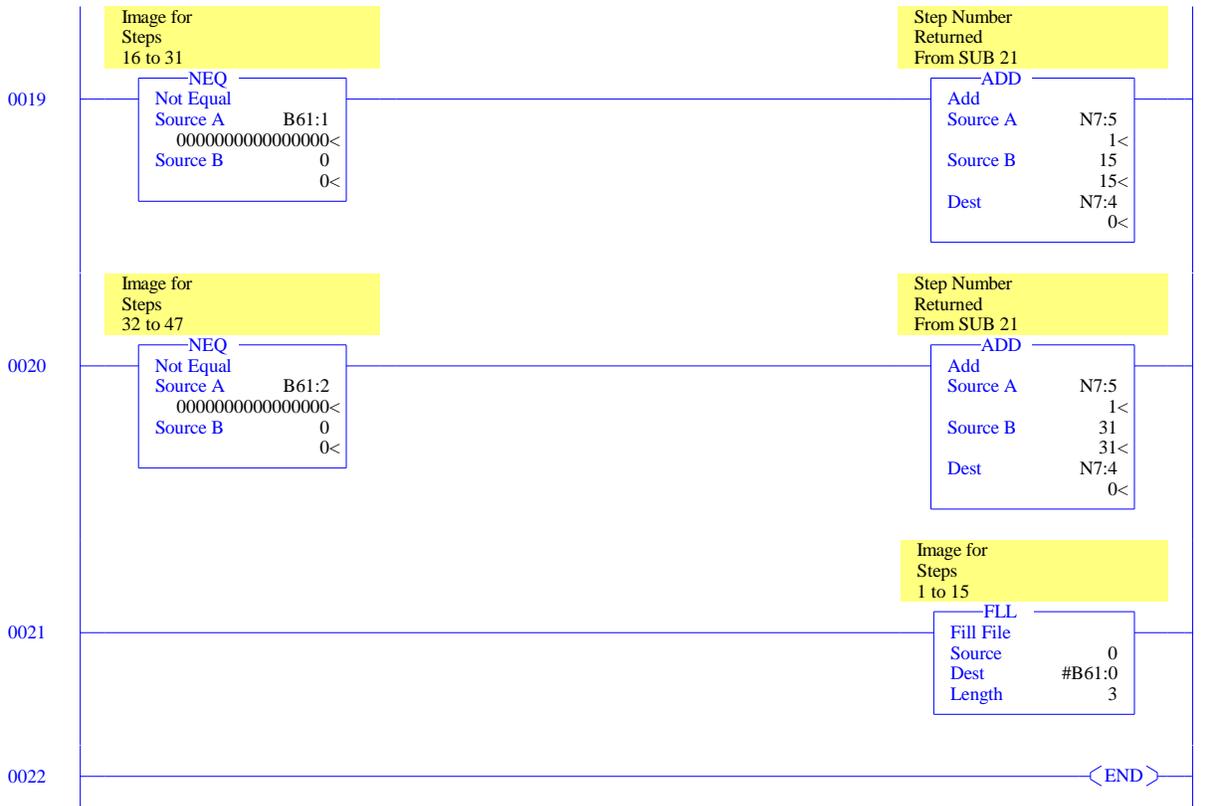


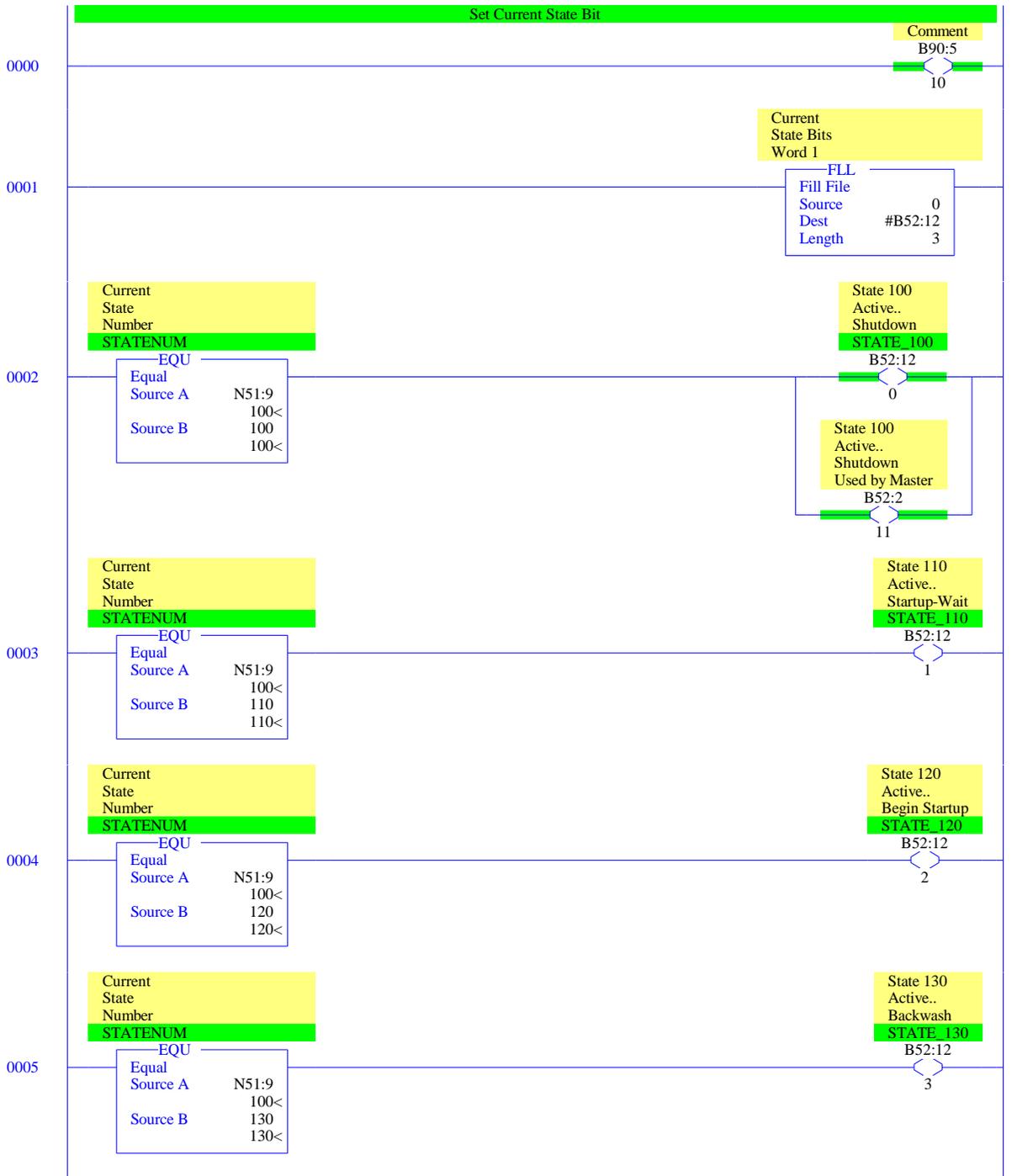


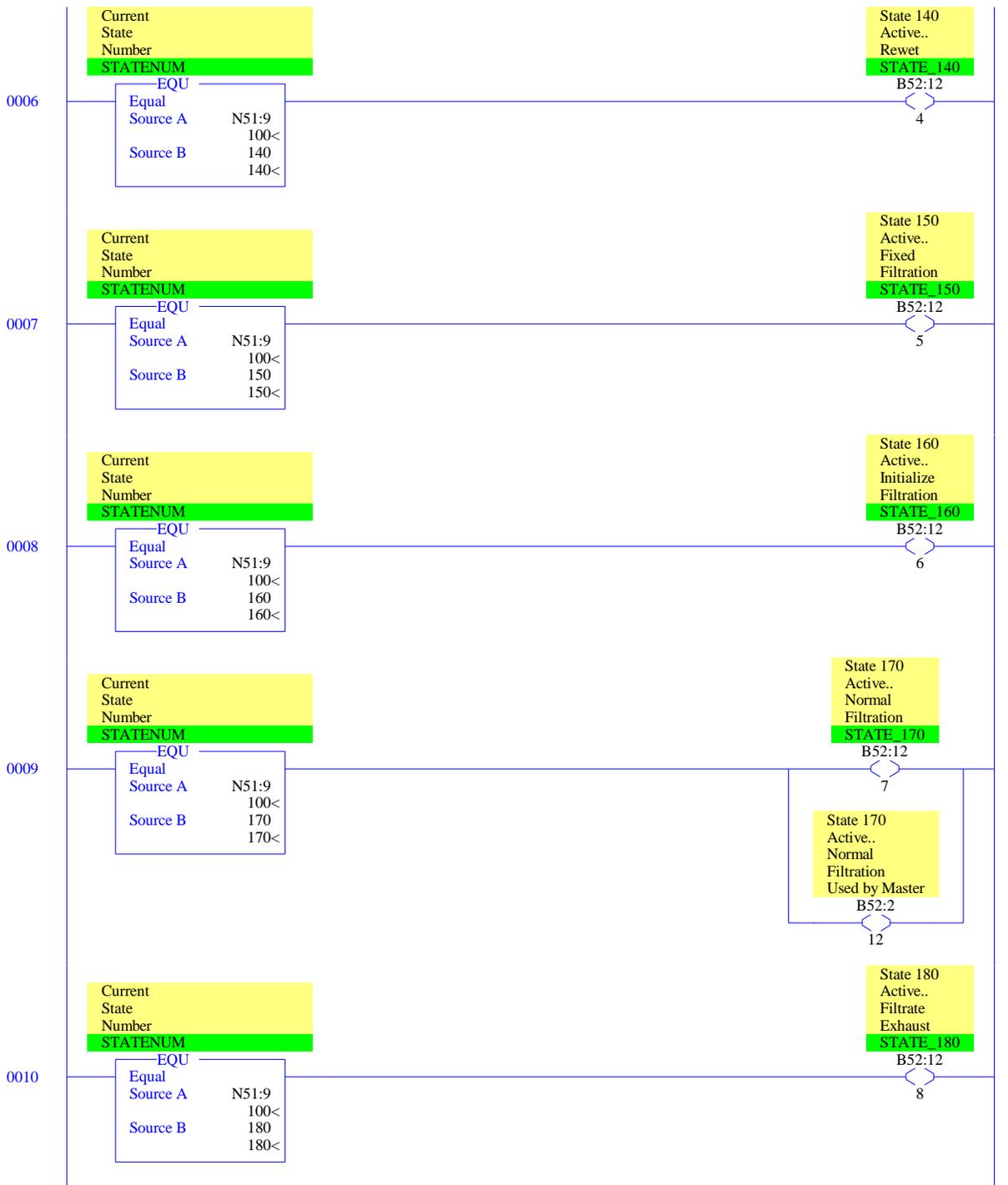


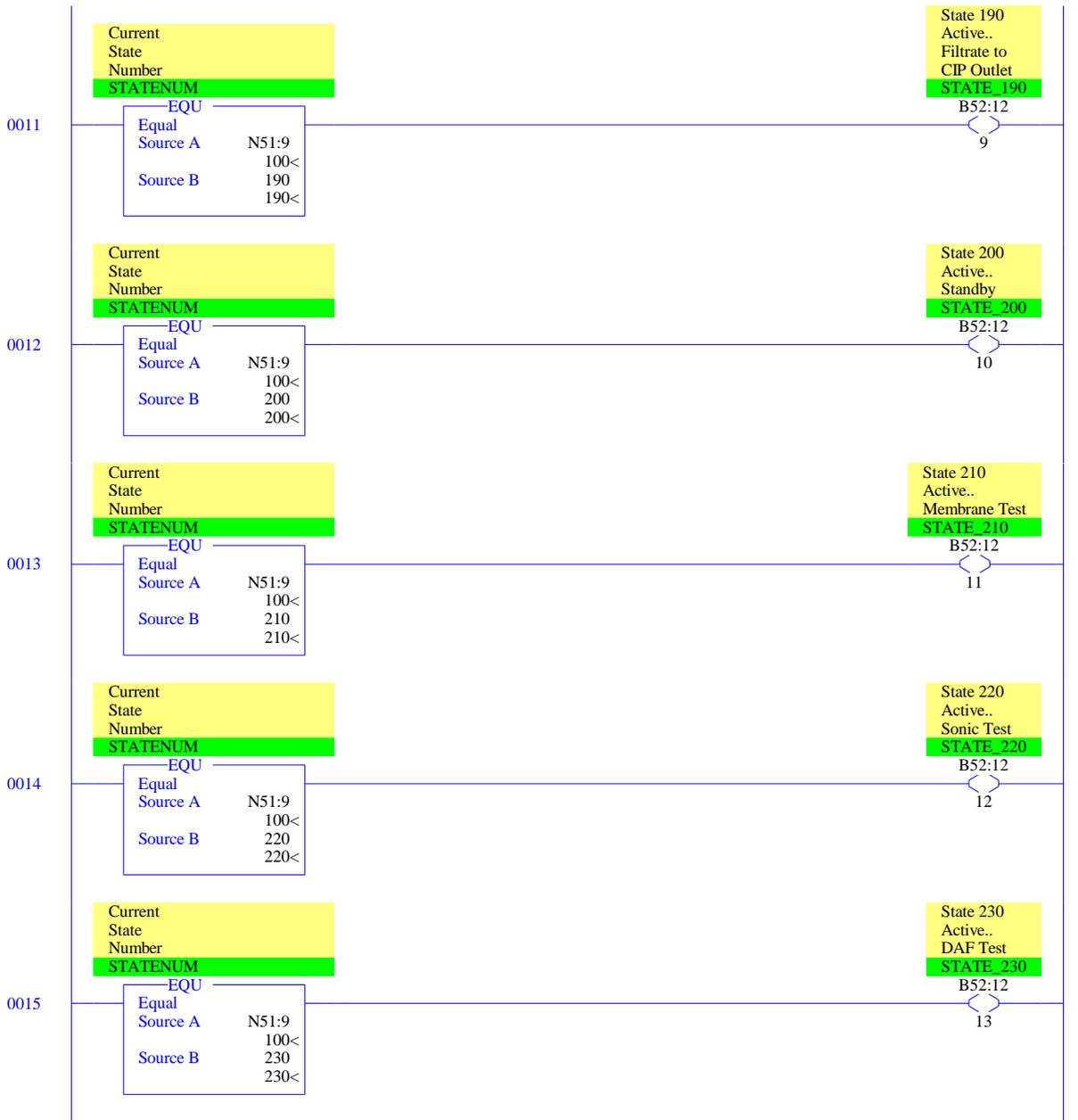


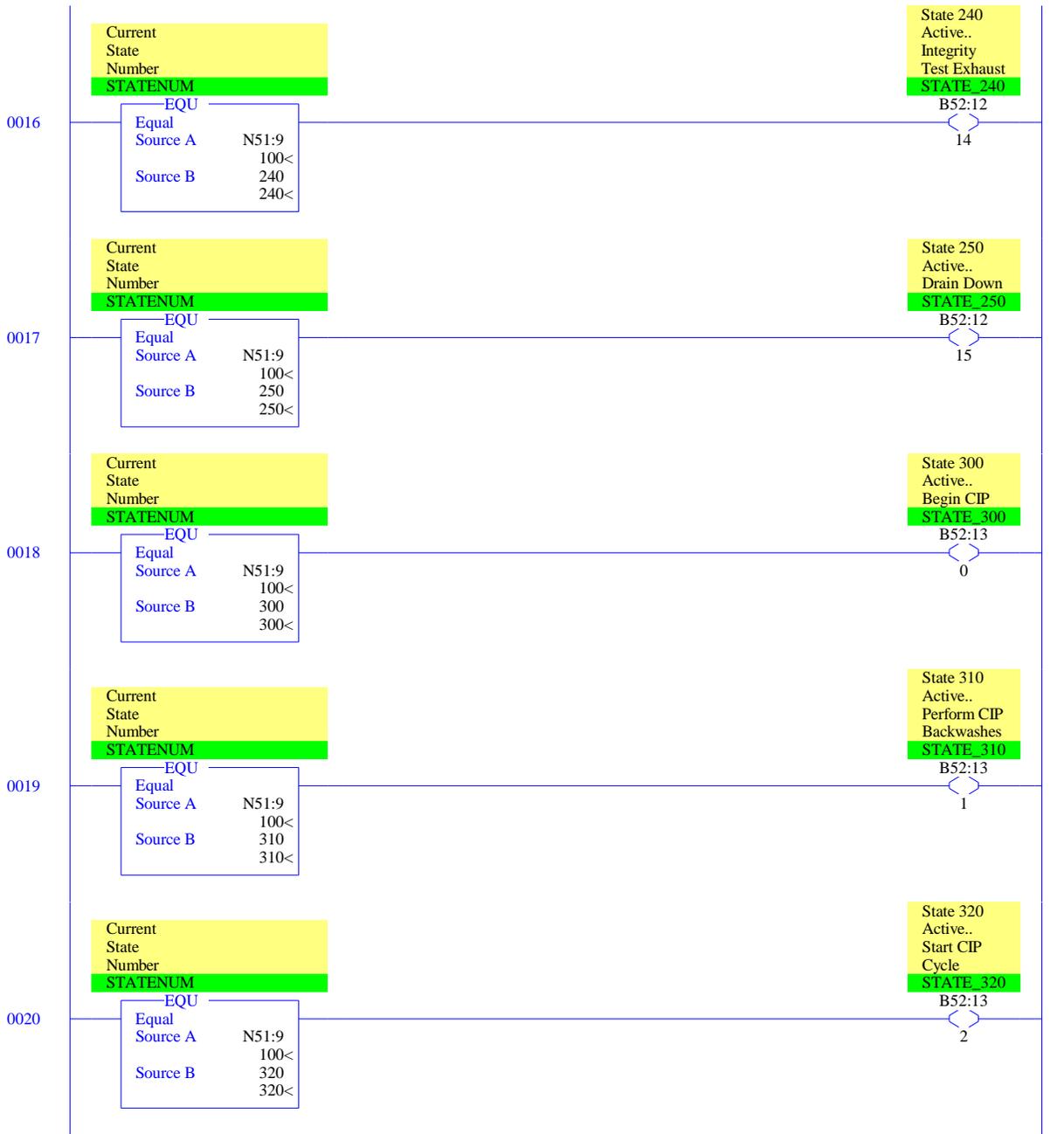
LAD 21 - - Return the Current Step Number --- Total Rungs in File = 23

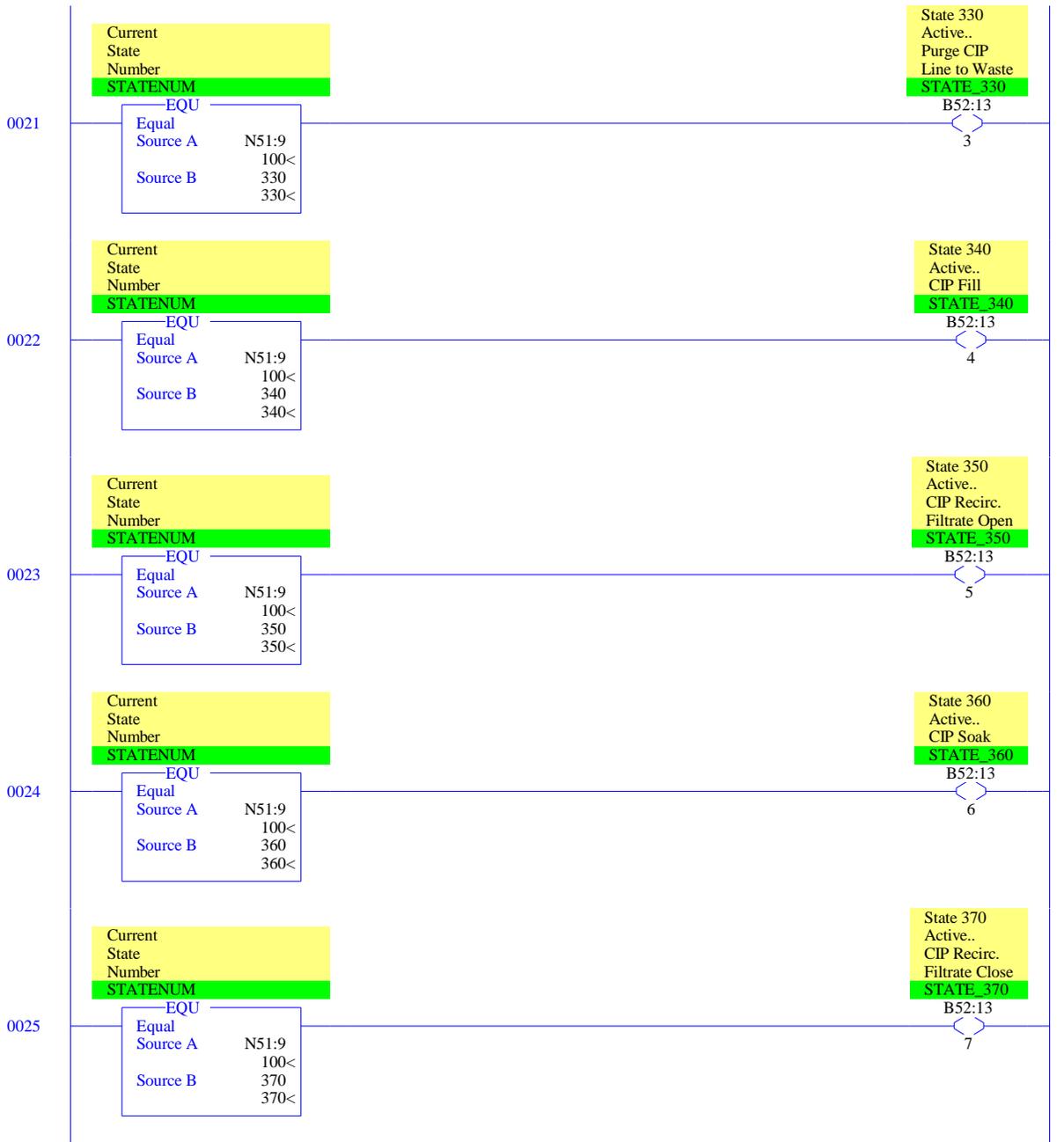


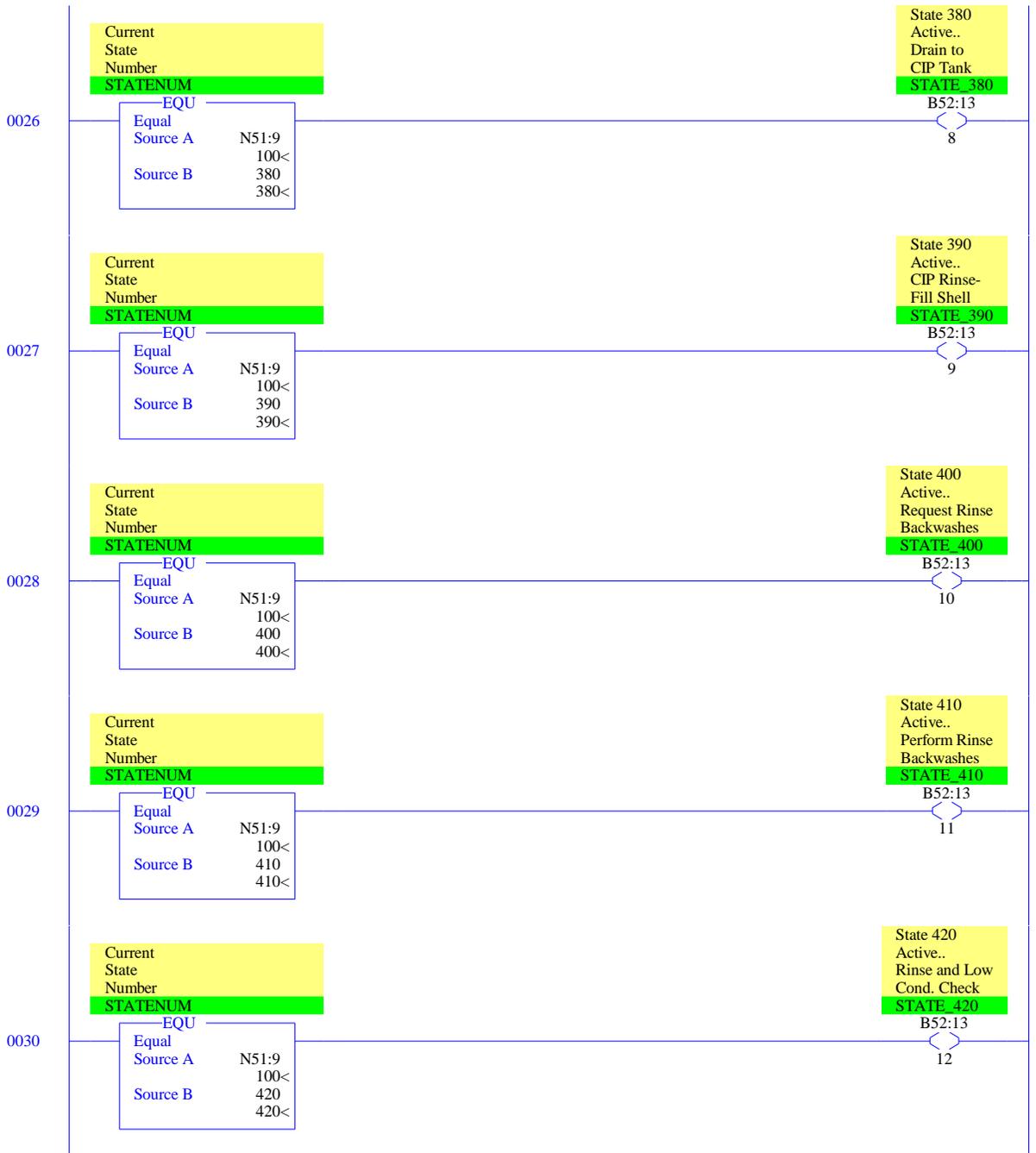


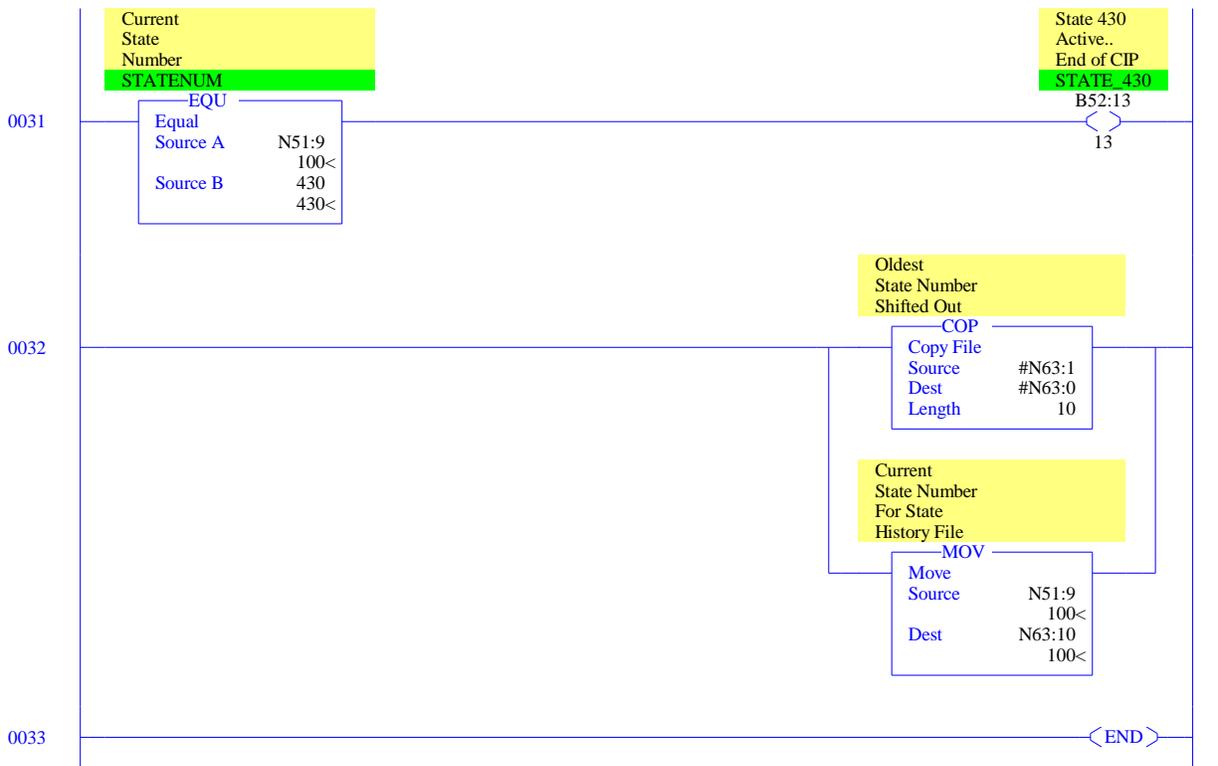


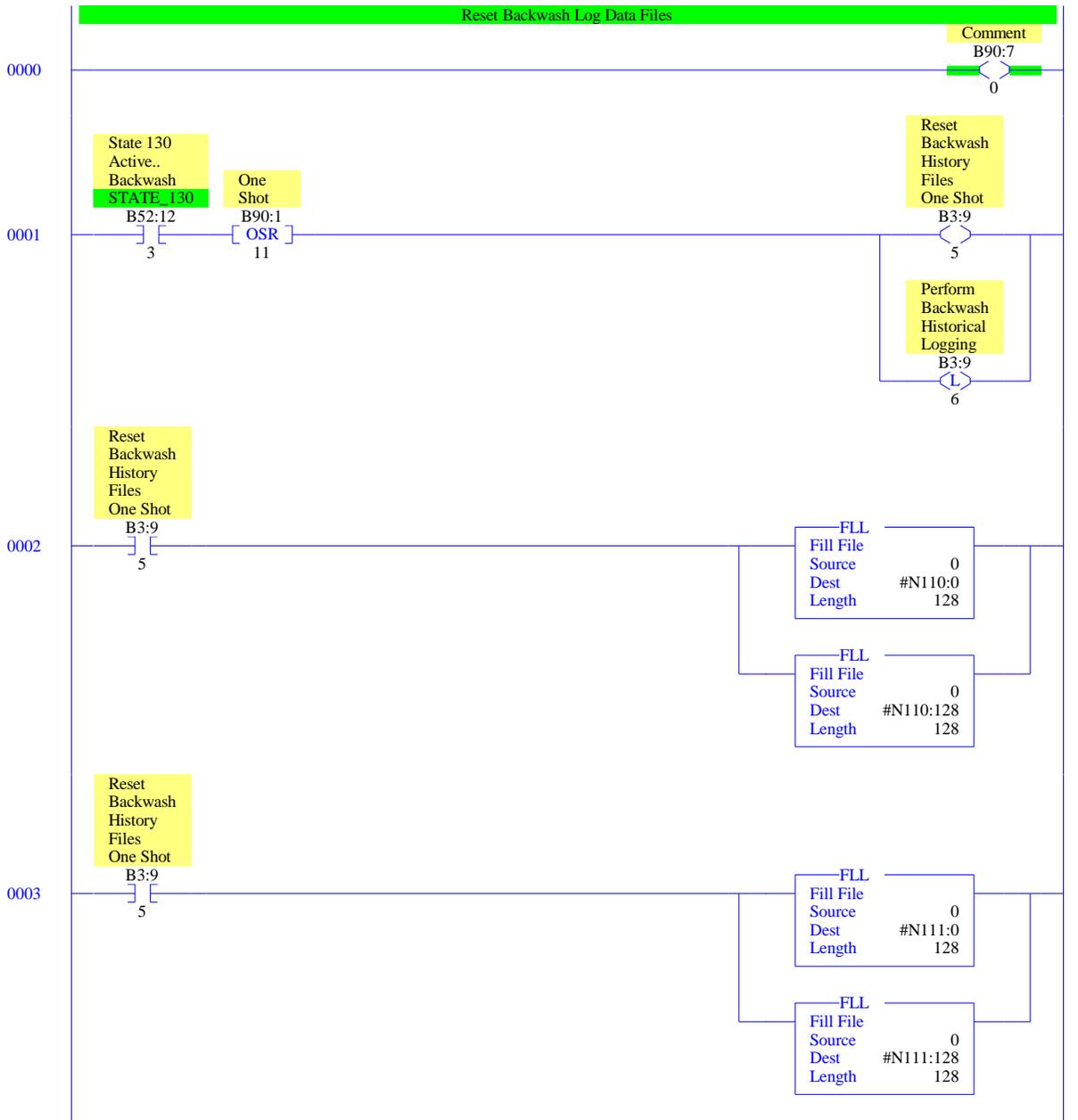


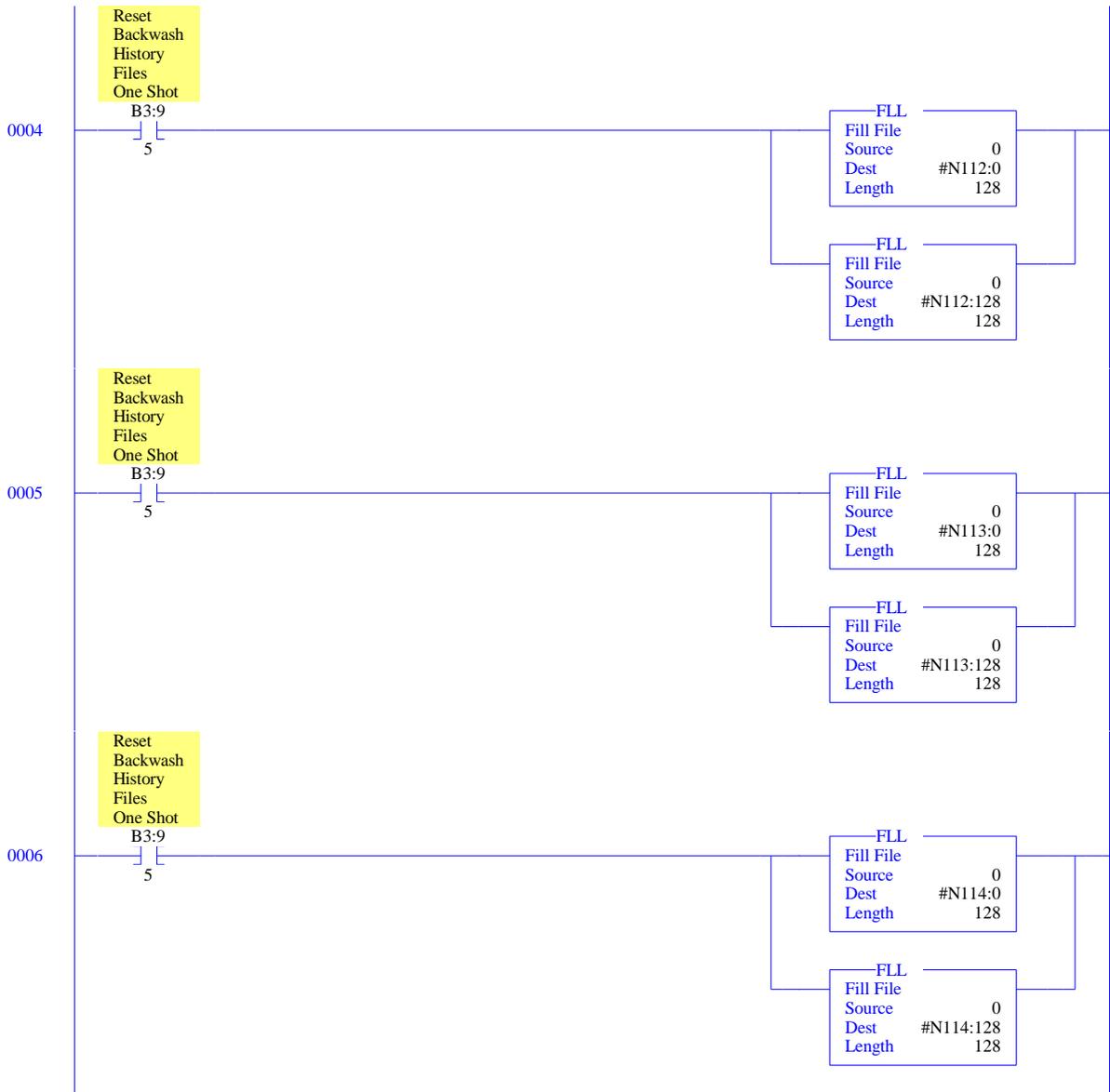


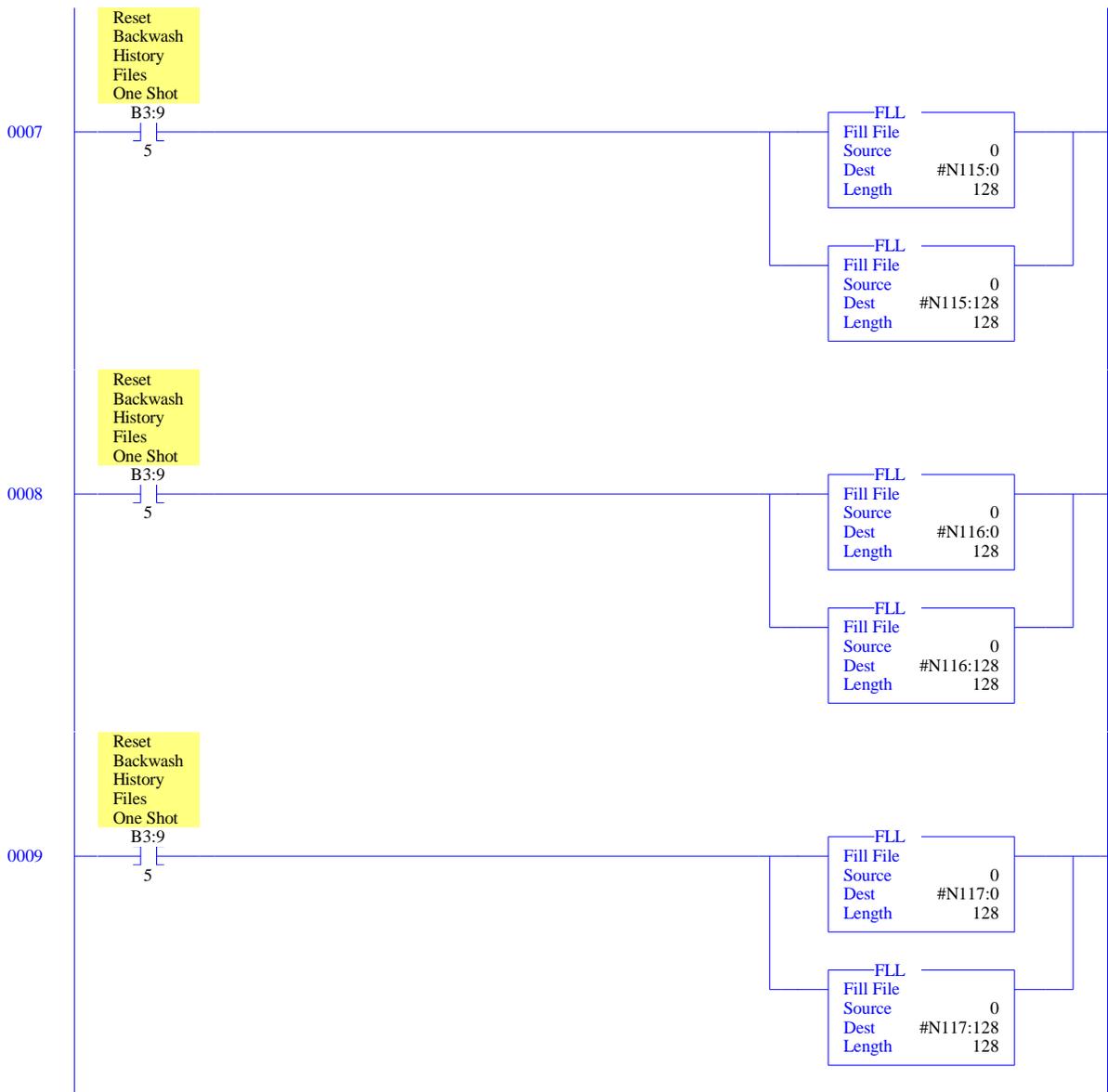


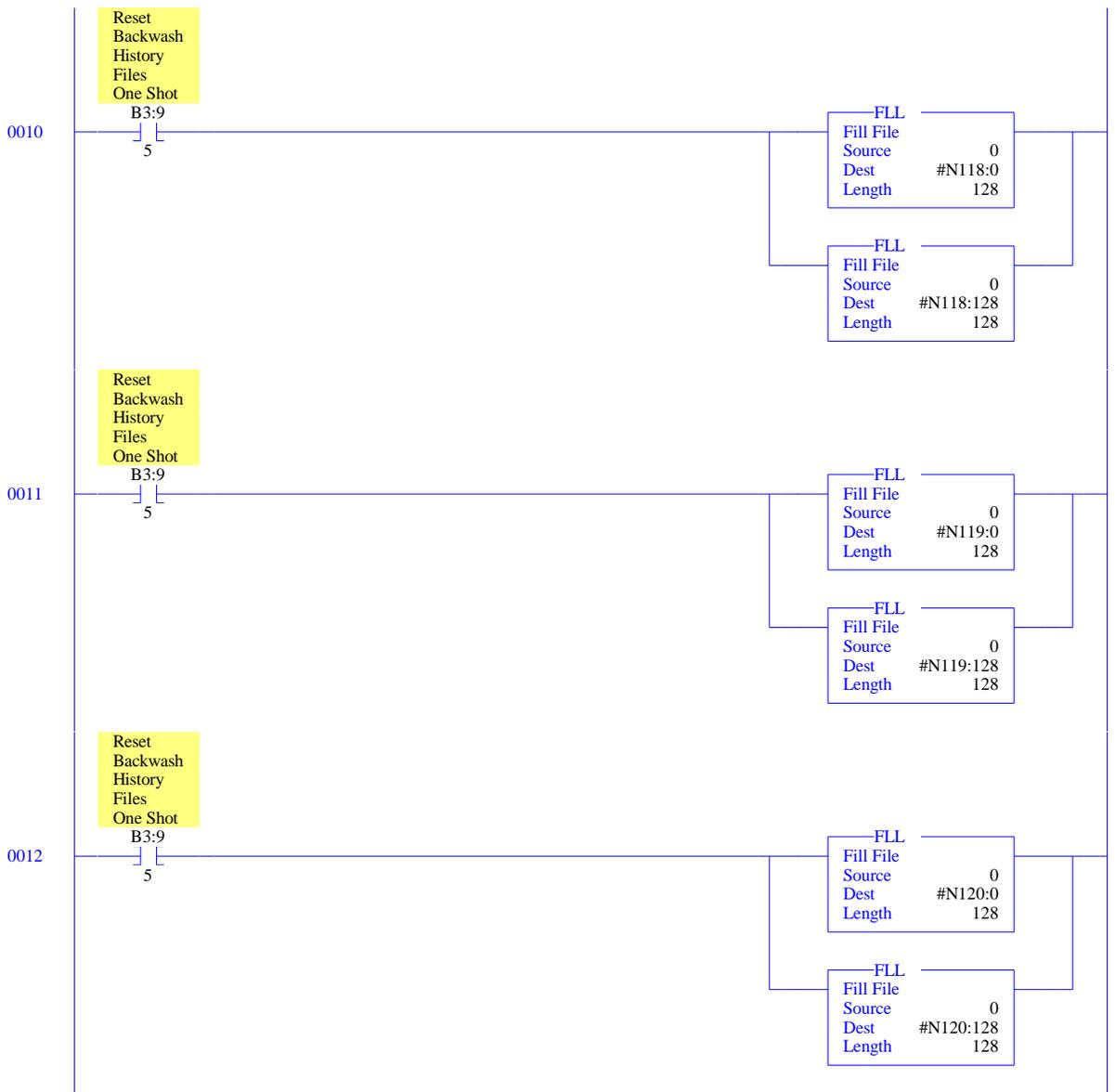


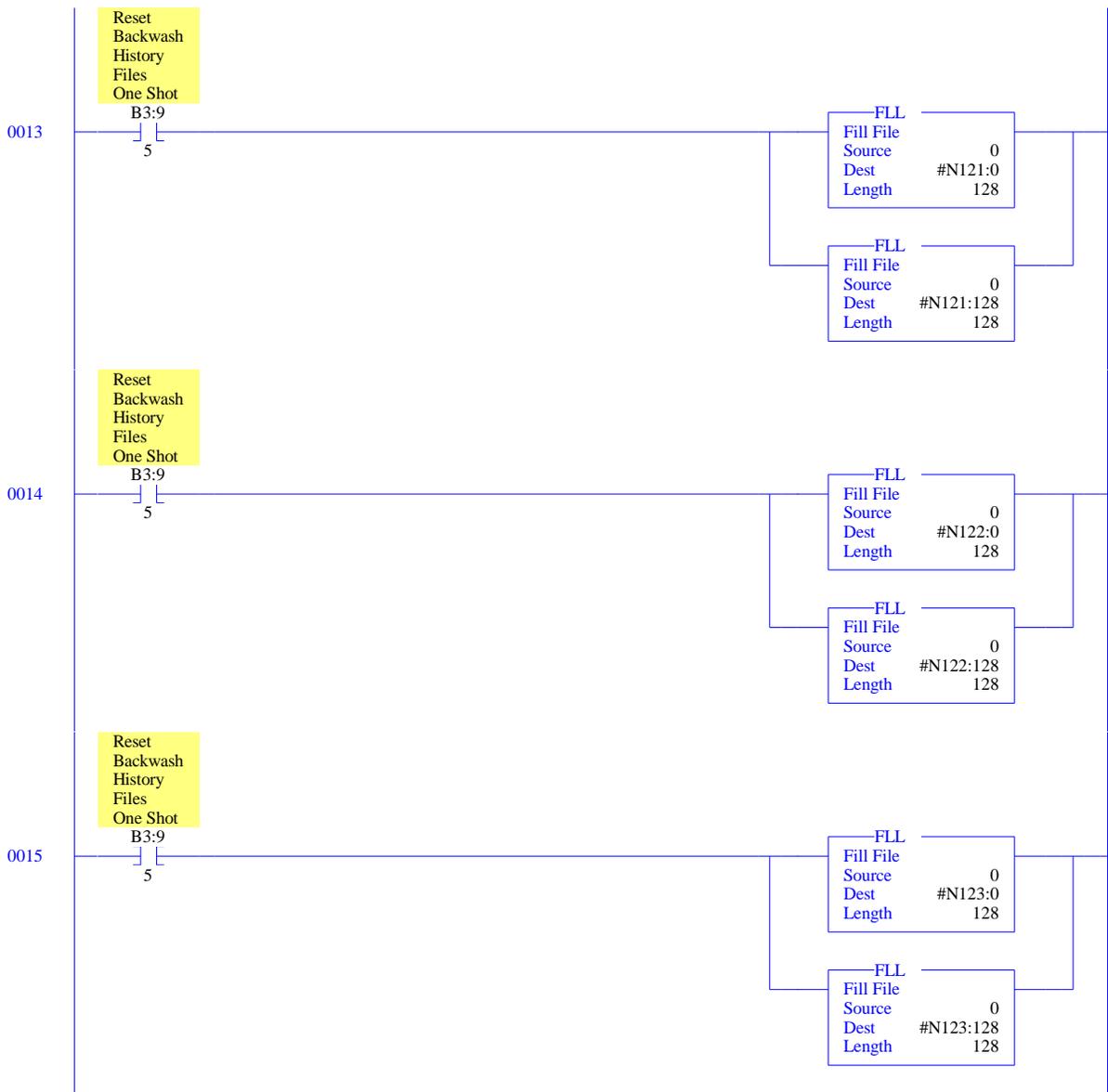


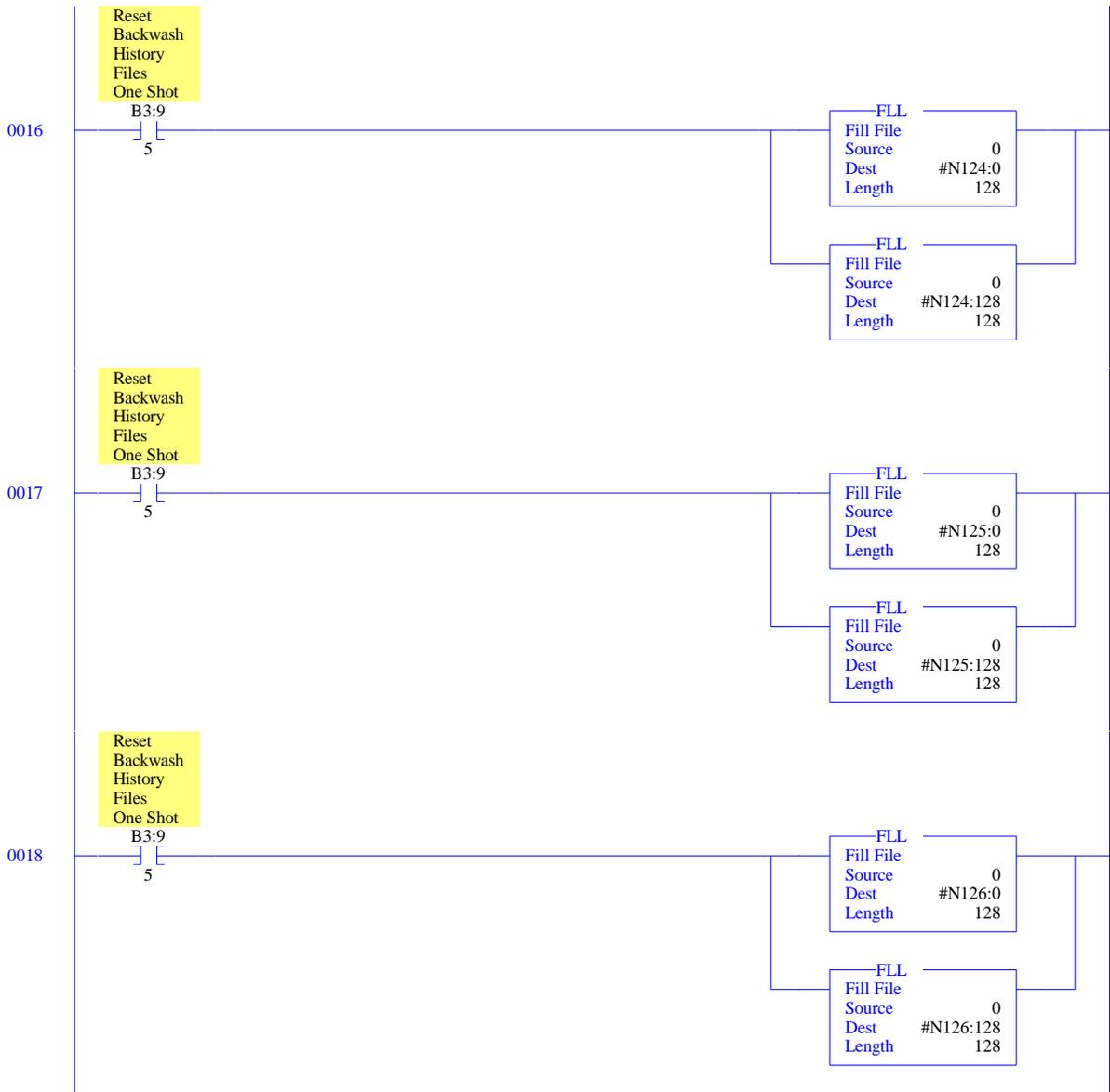


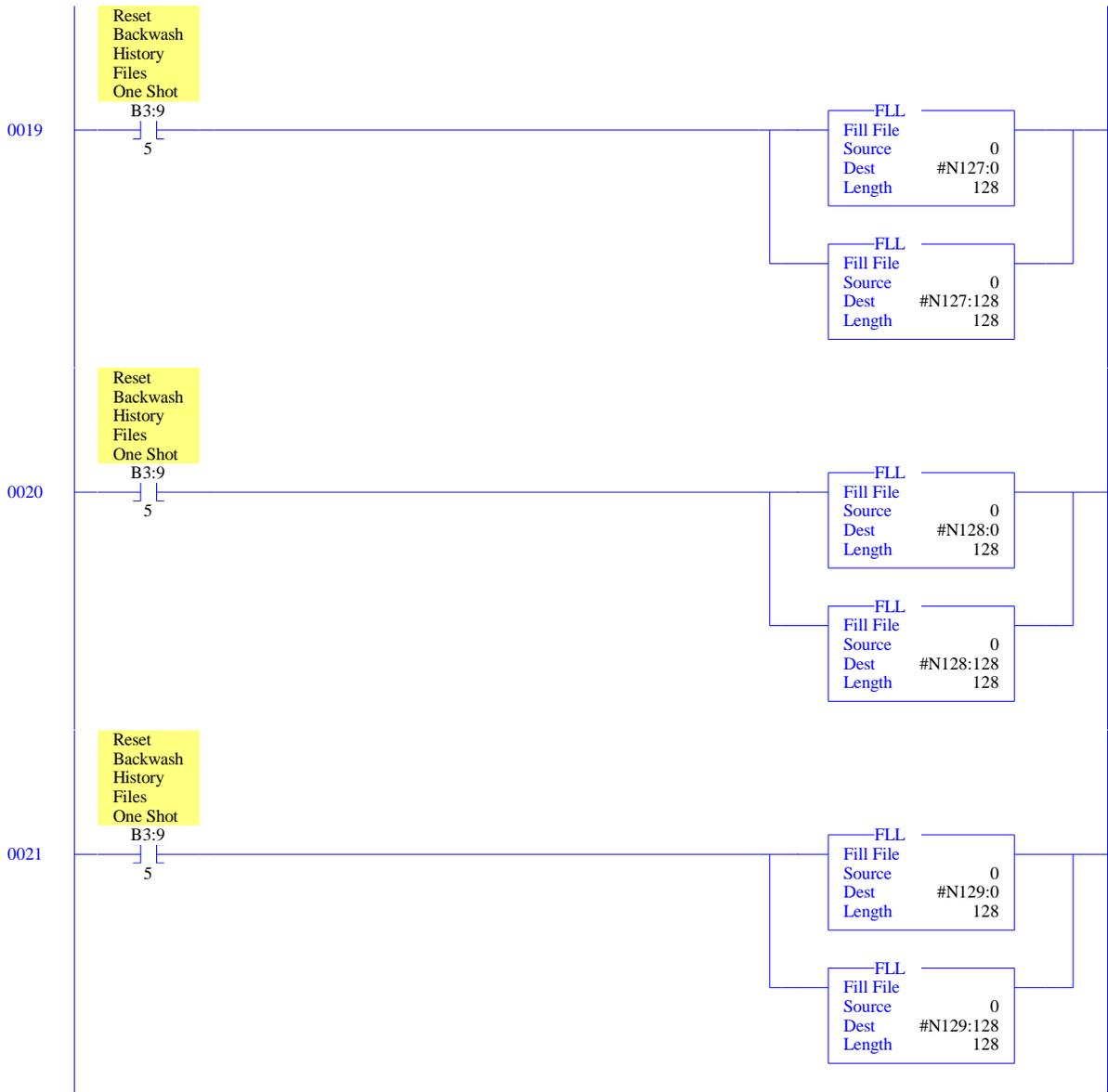


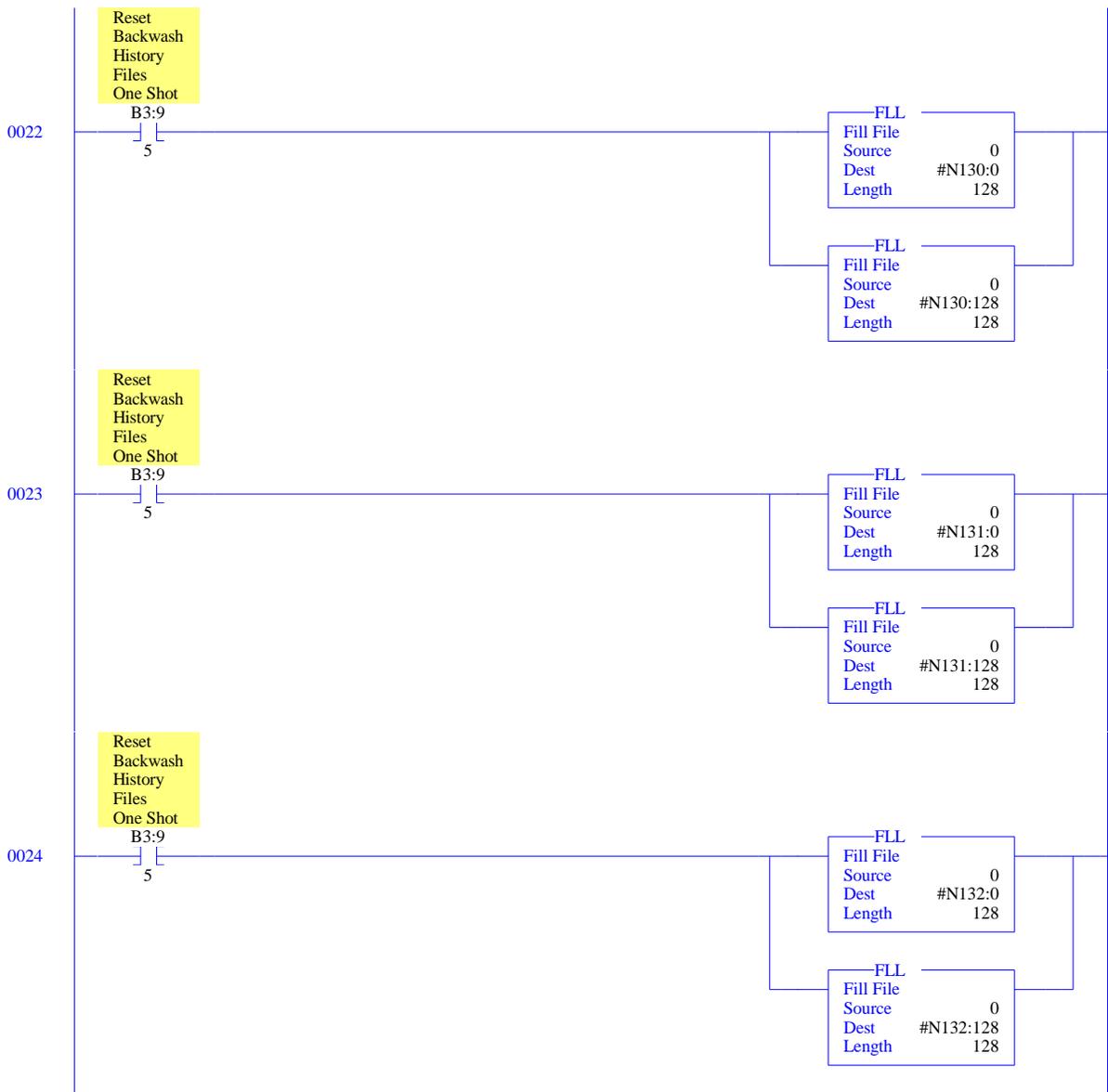


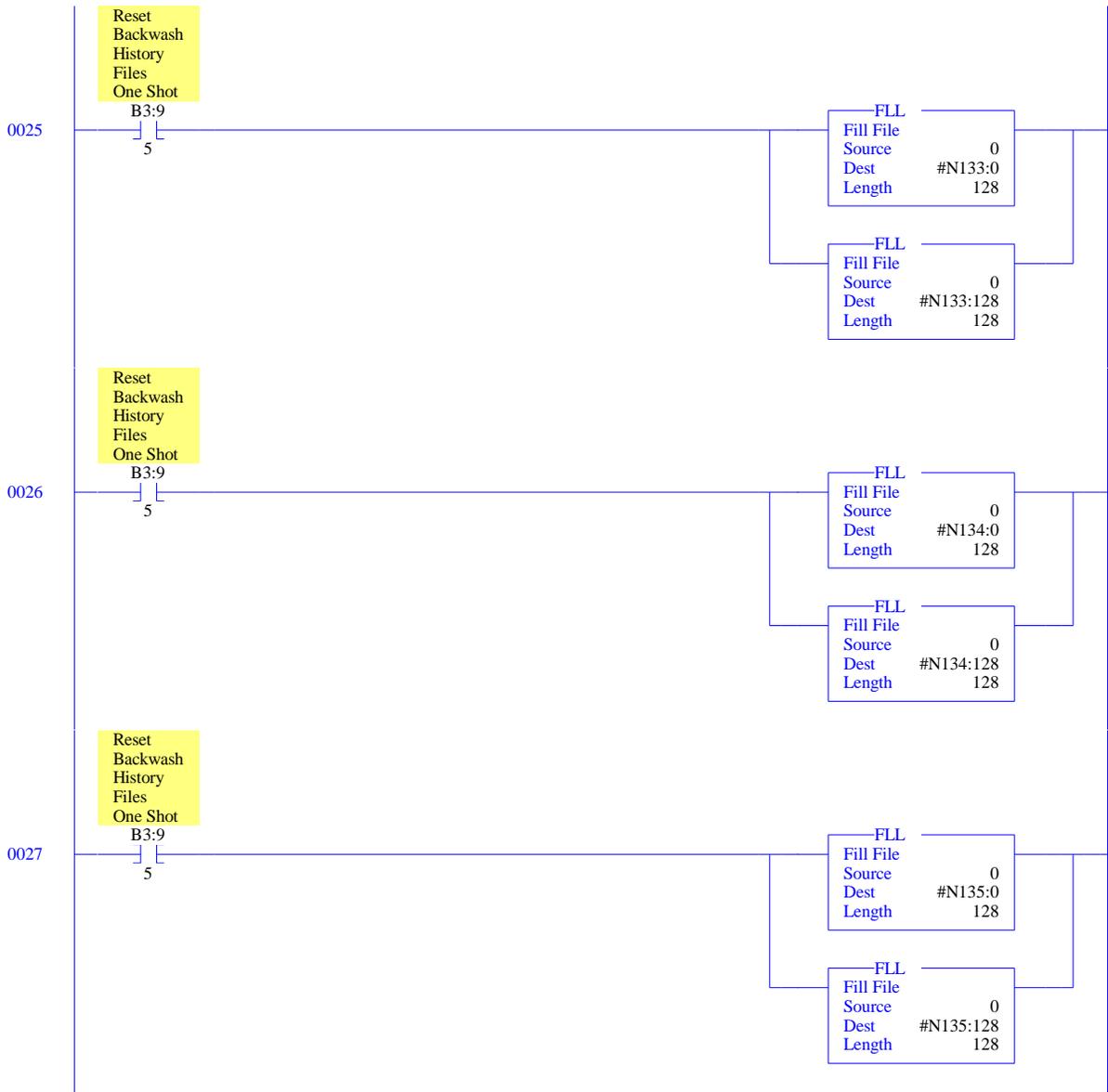


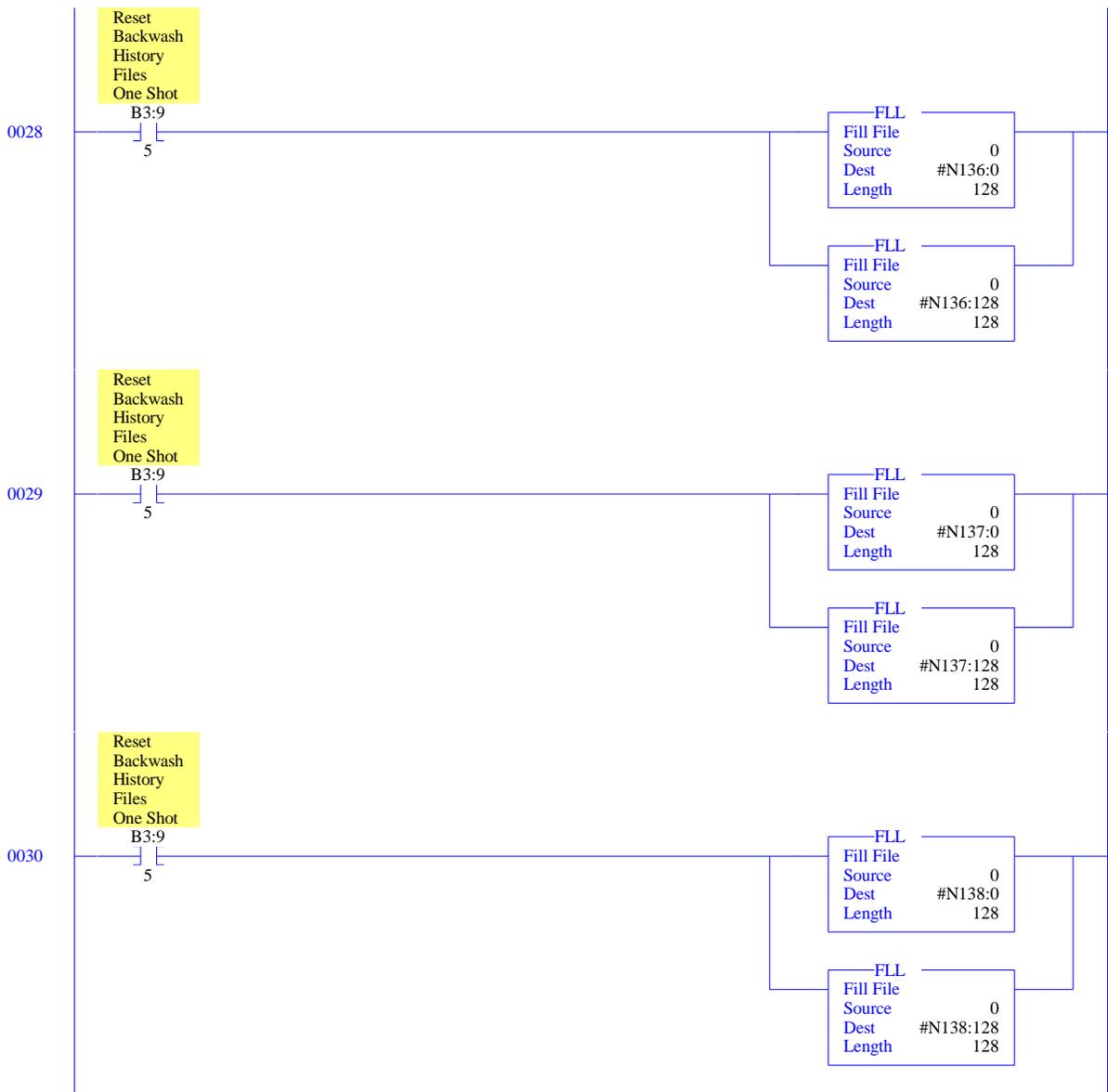


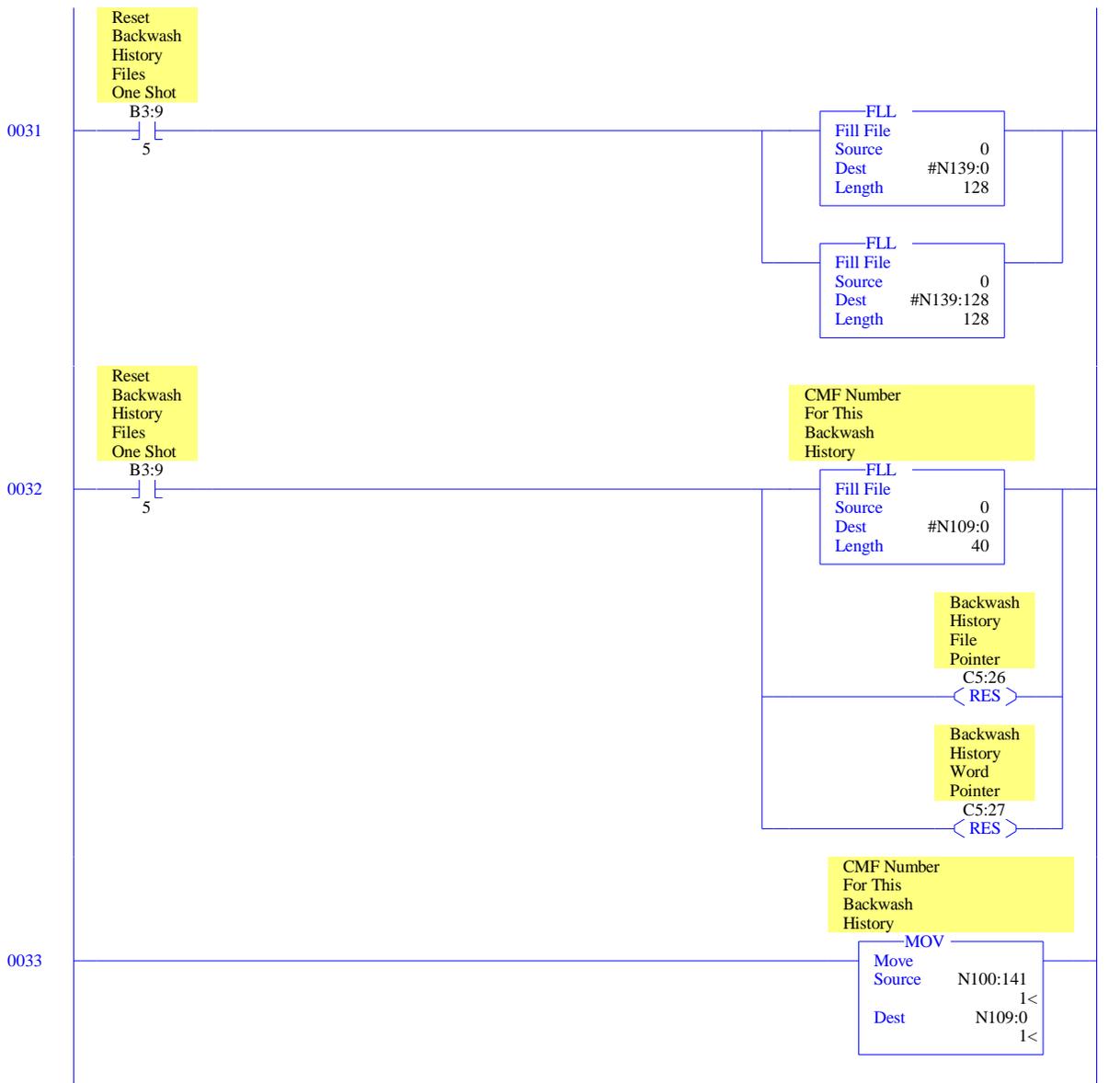


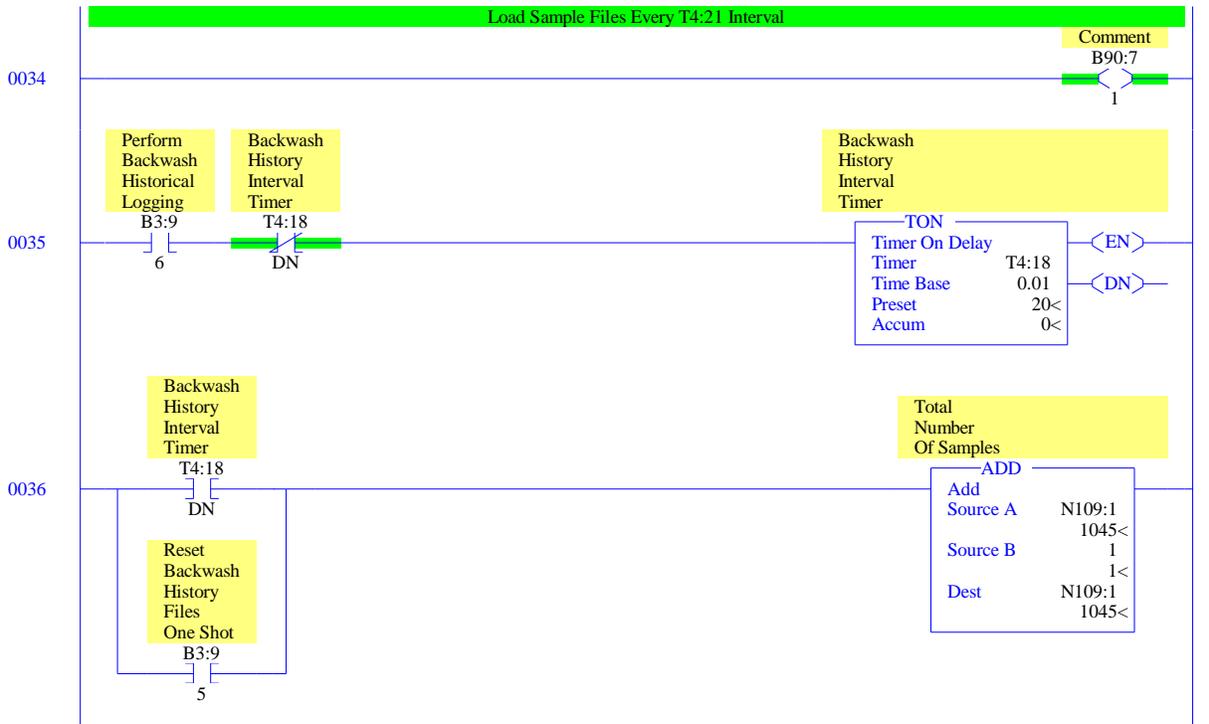












0037

Backwash
Feed Press.
File Pointer

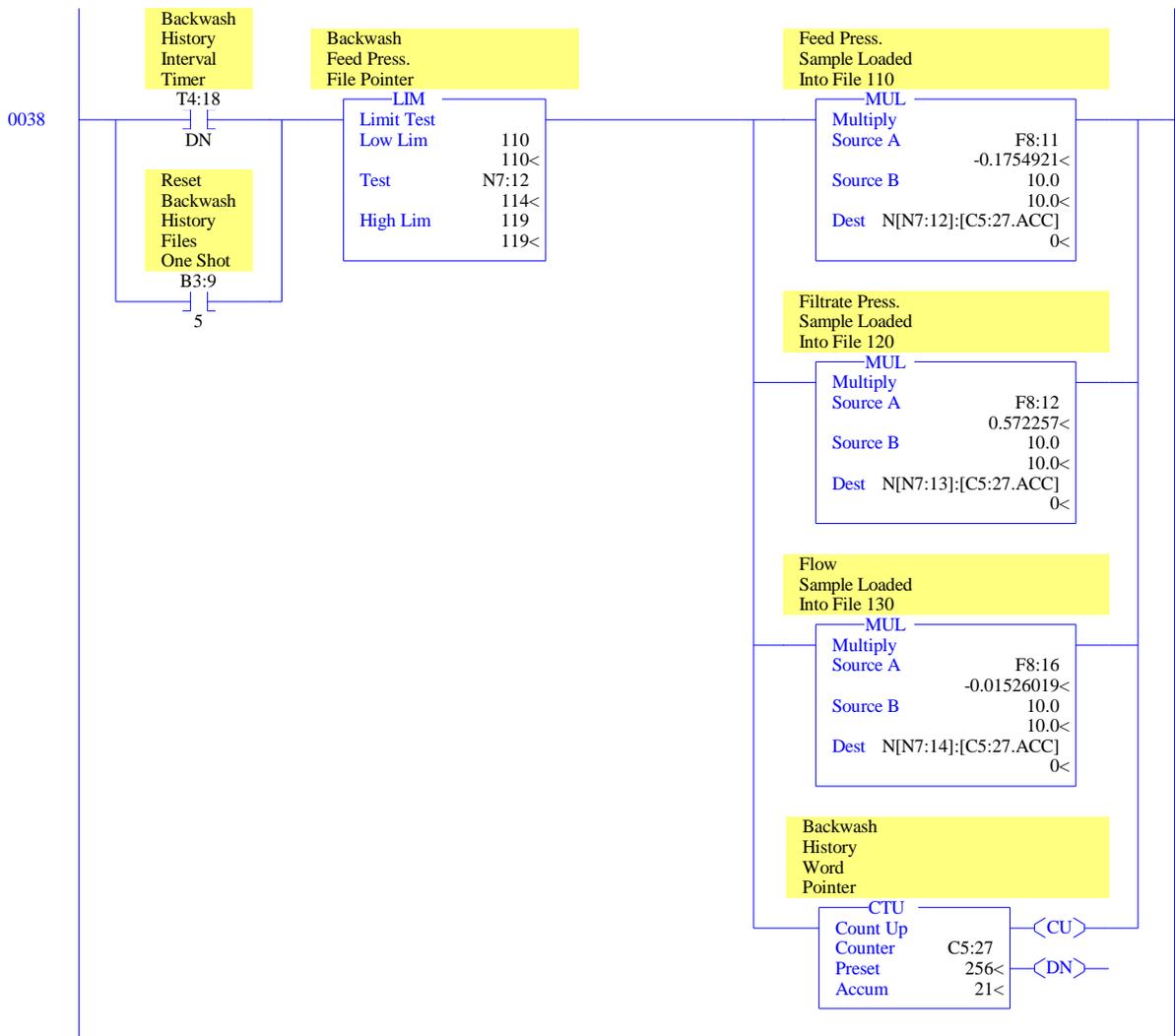
—ADD—
Add
Source A C5:26.ACC
4<
Source B 110
110<
Dest N7:12
114<

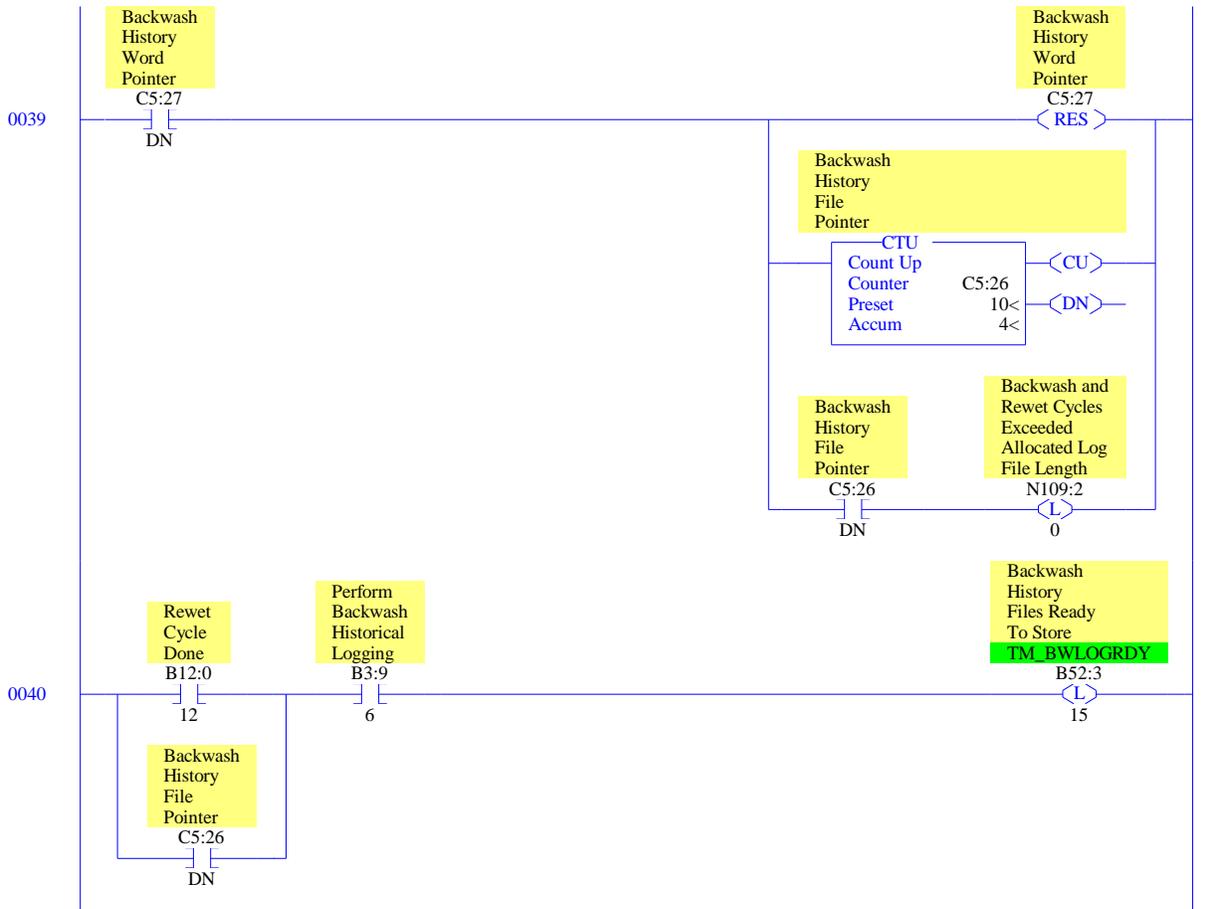
Backwash
Filtrate Press.
File Pointer

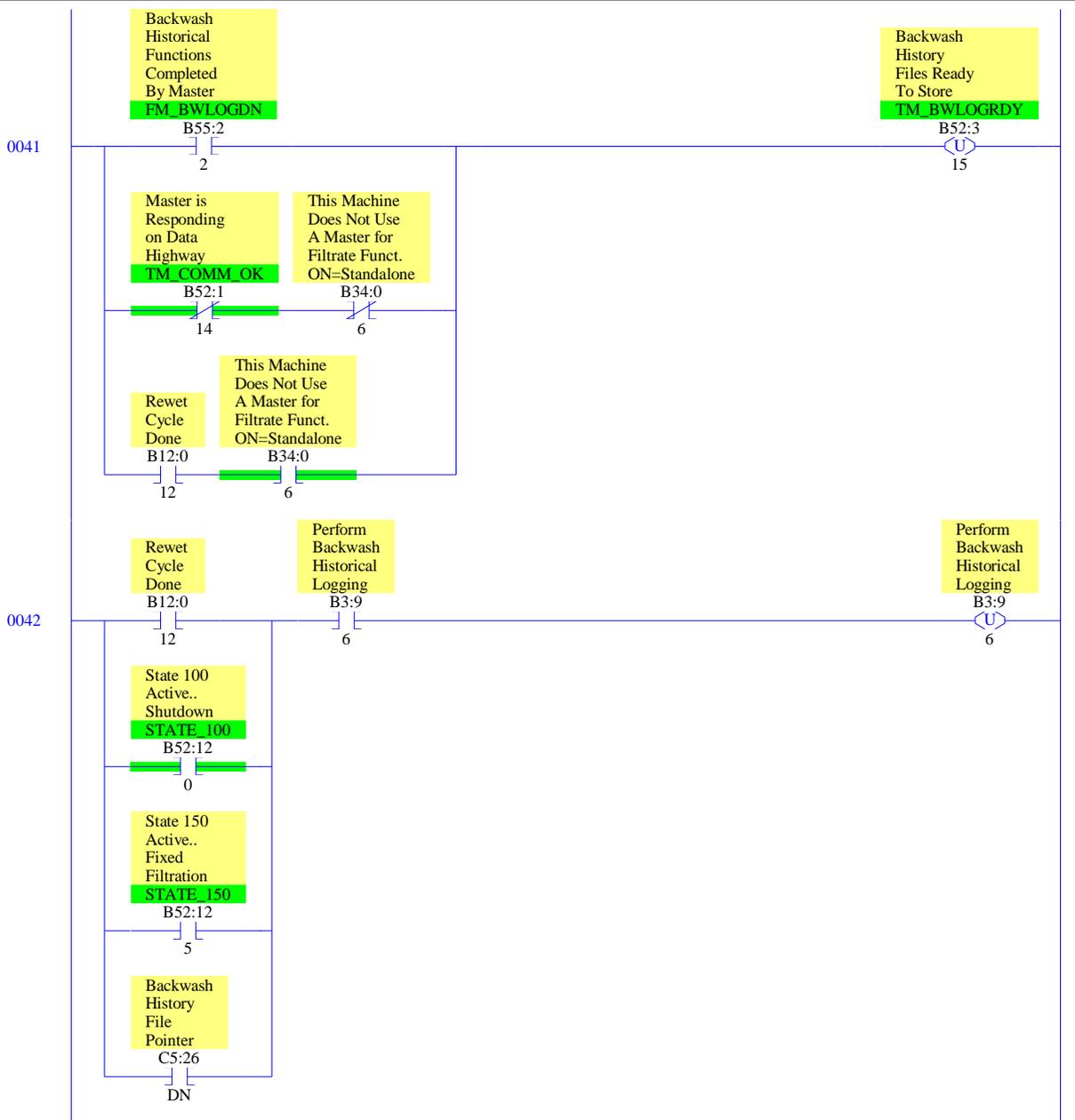
—ADD—
Add
Source A C5:26.ACC
4<
Source B 120
120<
Dest N7:13
124<

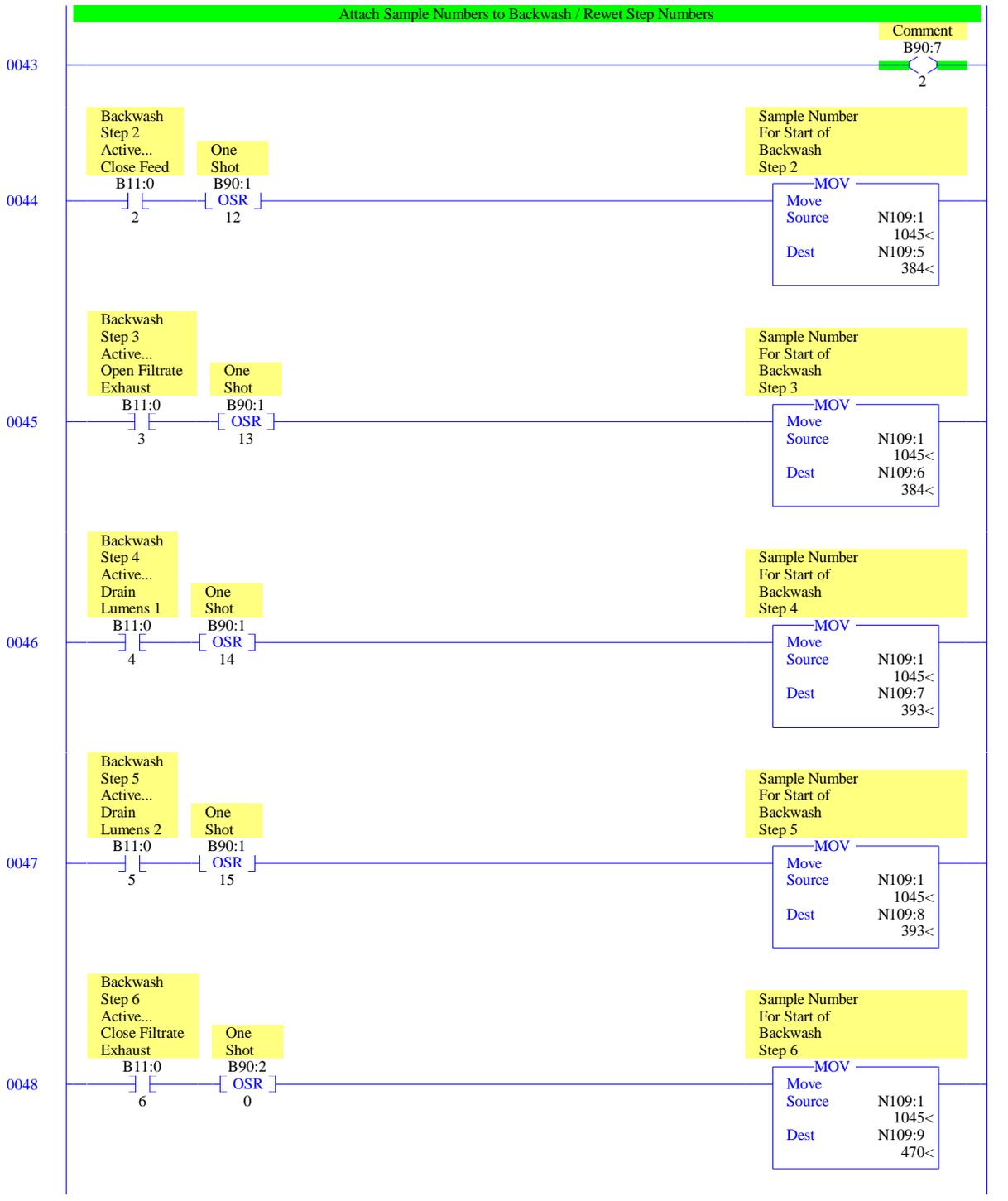
Backwash
Flow Rate
File Pointer

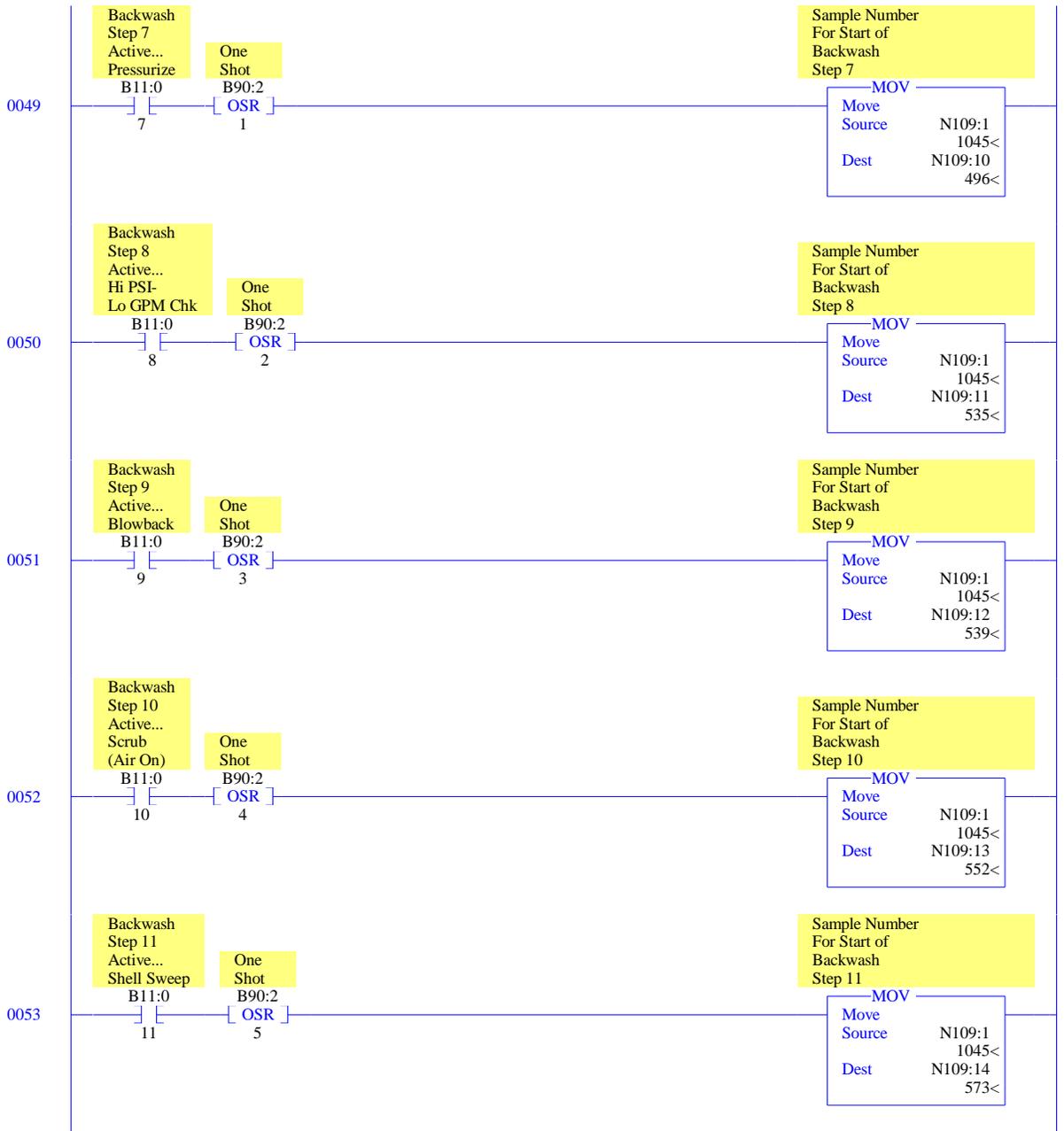
—ADD—
Add
Source A C5:26.ACC
4<
Source B 130
130<
Dest N7:14
134<

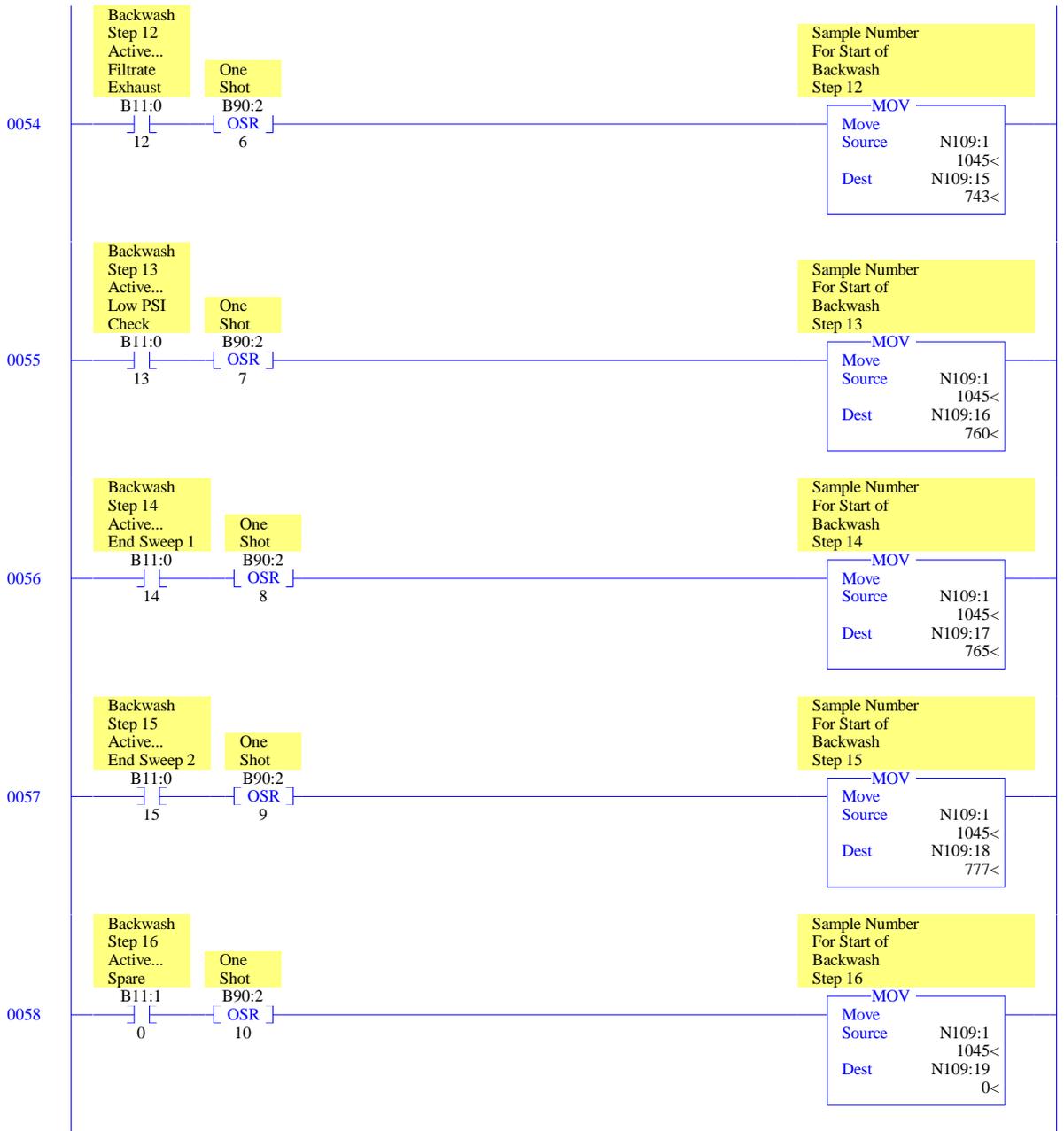


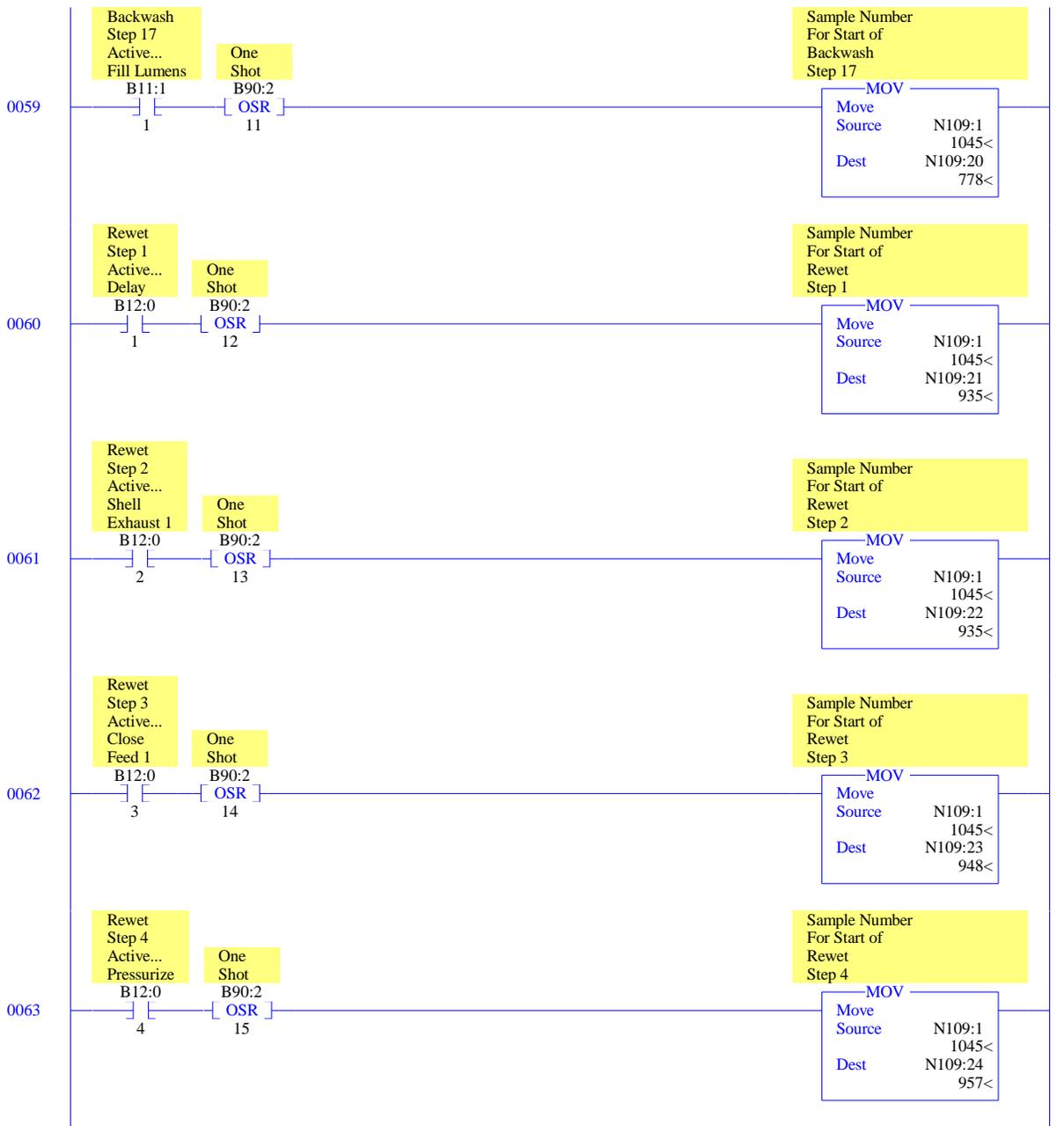


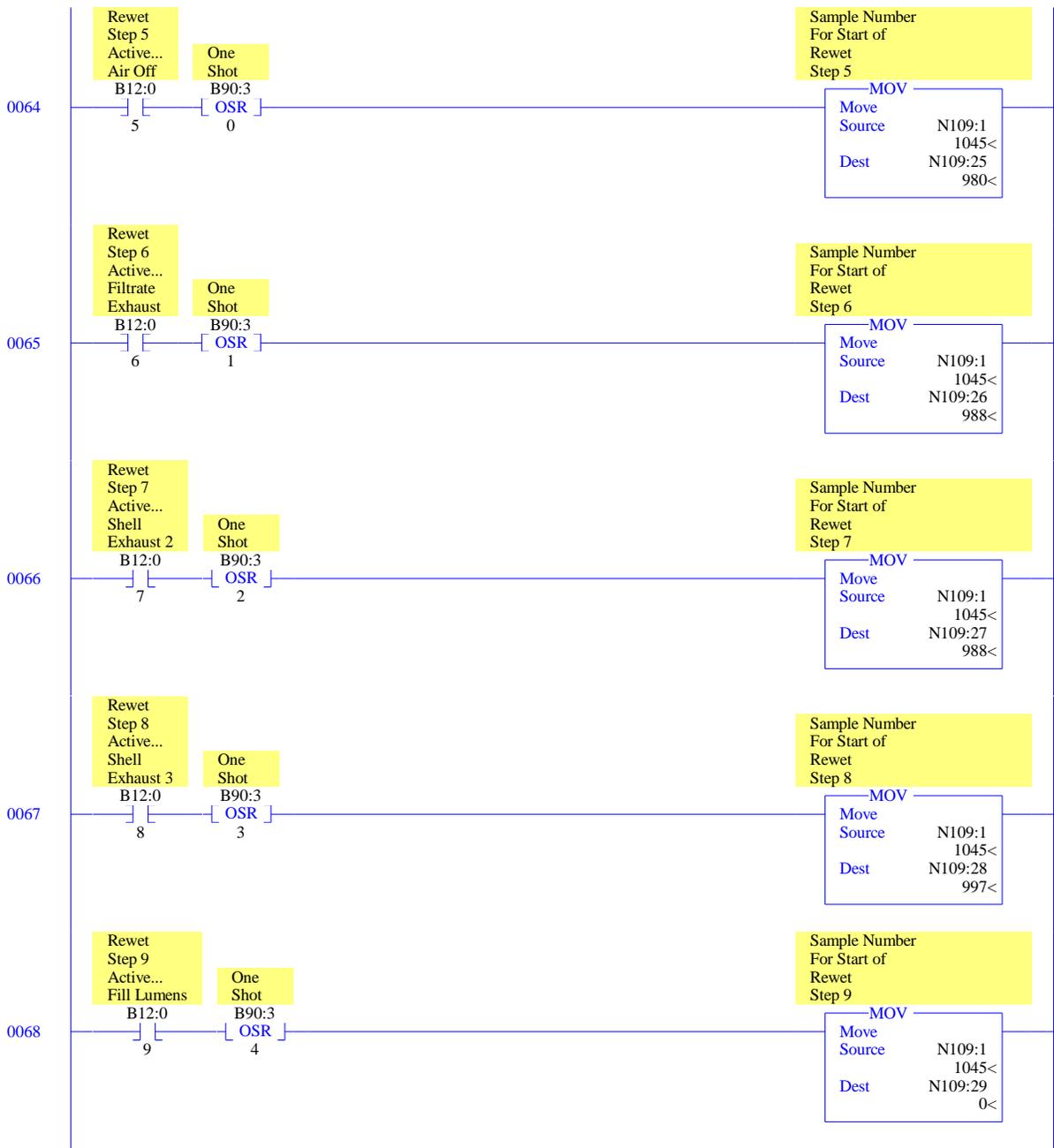


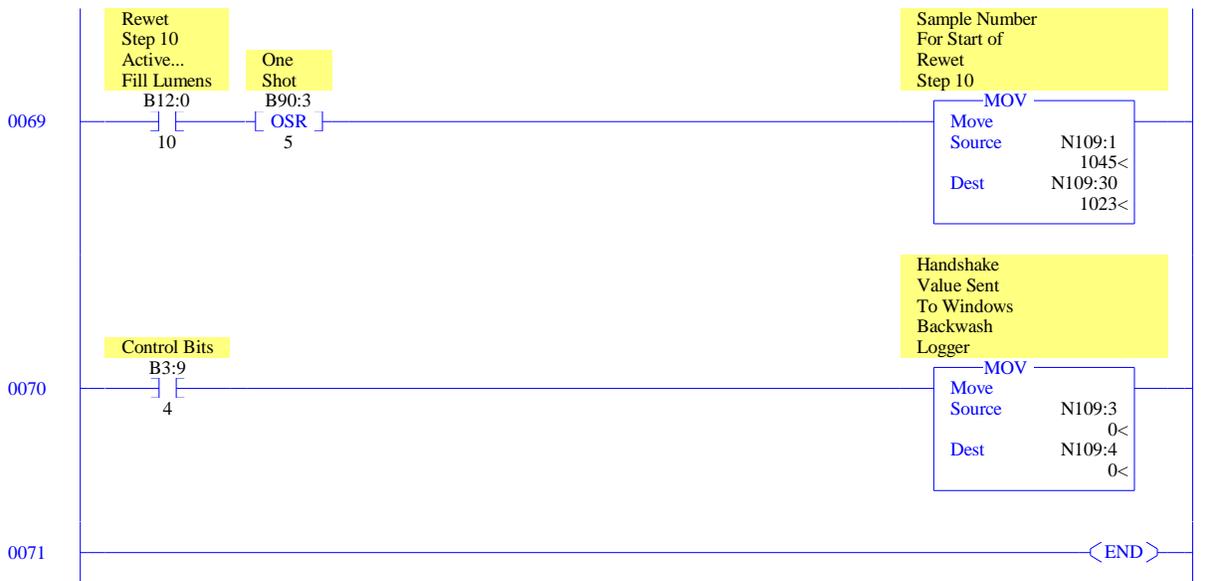












WASKASU.RSS

Data File 00 (bin) -- OUTPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
0:2.0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1746-OW16 - 16-Output (RLY) 240 VAC

WASKASU.RSS

Data File I1 (bin) -- INPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
I:1.0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1746-IB16 - 16-Input (SINK) 24 VDC
I:4.0	0	0	0	0	1	1	0	0	1	0	1	1	0	1	1	0	1746-NI4 - Analog 4 Channel Input Module
I:4.1	0	0	0	0	1	1	0	1	0	0	0	1	1	0	0	0	1746-NI4 - Analog 4 Channel Input Module
I:4.2	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1	1746-NI4 - Analog 4 Channel Input Module
I:4.3	0	0	0	0	1	1	0	0	1	1	0	0	1	0	1	1	1746-NI4 - Analog 4 Channel Input Module
I:5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1746-NI4 - Analog 4 Channel Input Module
I:5.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1746-NI4 - Analog 4 Channel Input Module
I:5.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1746-NI4 - Analog 4 Channel Input Module
I:5.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1746-NI4 - Analog 4 Channel Input Module

WASKASU.RSS

Data File S2 (hex) -- STATUS

Main

First Pass S:1/15 = No
Index Register S:24 = 0
Free Running Clock S:4 = 1110-0111-1100-1110
Index Across Data Files S:2/3 = No
CIF Addressing Mode S:2/8 = 0
Online Edits S:33/11 - S:33/12 = No online edits exist

DD / MM / YYYY
Date S:39-37 = 26 / 3 / 2009
HH : MM : SS
Time S:40-42 = 18 : 10 : 43

Proc

OS Catalog Number S:57 = 302
OS Series S:58 = B
OS FRS S:59 = 10
Processor Catalog Number S:60 = 532
Processor Series S:61 = D
Processor FRN S:62 = 4

User Program Type S:63 = 1
User Program Functionality Index S:64 = 65
User RAM Size S:66 = 16
OS Memory Size S:66 = 480

Scan Times

Maximum (x10 ms) S:22 = 4
Average (x10 ms) S:23 = 2
Current (x10 ms) S:3 (low byte) = 2
Watchdog (x10 ms) S:3 (high byte) = 10
Last lms Scan Time S:35 = 16
Scan Toggle Bit S:33/9 = 0
Time Base Selection S:33/13 = 0

Math

Math Overflow Selected S:2/14 = 0
Overflow Trap S:5/0 = 0
Carry S:0/0 = 0
Overflow S:0/1 = 0
Zero Bit S:0/2 = 0
Sign Bit S:0/3 = 0

Math Register (lo word) S:13 = -32768
Math Register (high word) S:14-S:13 = 0
Math Register (32 Bit) S:14-S:13 = 32768

IO

I/O Interrupt Executing S:32 = 0
Interrupt Latency Control S:33/8 = 0
Event Interrupt 10 uS Time Stamp S:44 = 0

I/O Slot Enables: S:11 _S:12
0 10 20 30
11111111 00000000 00000000 00000000

I/O Slot Interrupt Enables: S:27 _S:28
0 10 20 30
11111111 11111111 11111111 11111111

I/O Slot Interrupt Pending: S:25 _S:26
0 10 20 30
00000000 00000000 00000000 00000000

Chan 0

Processor Mode S:1/0- S:1/4 = Remote Run
Channel Mode S:33/3 = 1
Comms Active S:33/4 = 1
Incoming Cmd Pending S:33/0 = 0
Msg Reply Pending S:33/1 = 0

DTR Control Bit S:33/14 = 0
DTR Force Bit S:33/15 = 0
Outgoing Msg Cmd Pending S:33/2 = 0
Comms Servicing Sel S:33/5 = 0
Msg Servicing Sel S:33/6 = 0
Modem Lost S:5/14 = 0

WASKASU.RSS

Data File S2 (hex) -- STATUS

Ch 0 Nodes

DF1 Half-Duplex Master Channel 0 Active Node Table (S:67-S:82):

Node 0	16
0 0010-0000-0001-0000	0000-0000-0000-0000
32 0000-0000-0000-0000	0000-0000-0000-0000
64 0000-0000-0000-0000	0000-0000-0000-0000
96 0000-0000-0000-0000	0000-0000-0000-0000
128 0000-0000-0000-0000	0000-0000-0000-0000
160 0000-0000-0000-0000	0000-0000-0000-0000
192 0000-0000-0000-0000	0000-0000-0000-0000
224 0000-0000-0000-0000	0000-0000-0000-0000

Chan 1

Processor Mode S:1/0- S:1/4 = Remote Run
Node Address S:15 (low byte) = 5 Outgoing Msg Cmd Pending S:2/7 = 0
Baud Rate S:15 (high byte) = 19200 Comms Servicing Sel S:2/15 = 0
Comms Active S:1/7 = 1 Msg Servicing Sel S:33/7 = 0
Incoming Cmd Pending S:2/5 = 0
Msg Reply Pending S:2/6 = 0

Active Nodes: S:9 _S:10

0	10	20	30
11111110	11000000	00000000	00000000

Debug

Suspend Code S:7 = 0 Test Single Step Breakpoint
Suspend File S:8 = 0 Rung # S:18 = 0
Compiled For Single Step S:2/4 = Yes File # S:19 = 0

Fault/Powerdown Test Single Step
Fault/Powerdown (Rung #) S:20 = 0 Rung # S:16 = 0
(File #) S:21 = 2 File # S:17 = 2

Errors

Fault Override At Power Up S:1/8 = 0 ASCII String Manipulation error S:5/15 = 0
Startup Protection Fault S:1/9 = 0 Fault Routine S:29 = 0
Major Error Halt S:1/13 = 0 Major Error S:6 = 0h
Overflow Trap S:5/0 = 0
Control Register Error S:5/2 = 0 Error Description:
Major Error Executing User
Fault Rtn. S:5/3 = 0
M0/M1 Referenced On Disabled
Slot S:5/4 = 0
Battery Low S:5/11 = 0
Fault/Powerdown (Rung #) S:20 = 0
(File #) S:21 = 2

STI

Setpoint (x10ms) S:30 = 0 Resolution Select Bit S:2/10 = 1
File Number S:31 = 0 Executing Bit S:2/2 = 0
10 uS Time Stamp S:43 = 22722 Overflow Bit S:5/10 = 0
Pending Bit S:2/0 = 0 Lost S:36/9 = 0
Enable Bit S:2/1 = 0 Interrupt Latency Control S:33/8 = 0

DII

Preset S:50 = 0 File Number S:46 = 0
Accumulator S:52 = 0 Slot Number S:47 = 0
Pending Bit S:2/11 = 0 Bit Mask S:48 = 0h
Enable Bit S:2/12 = 0 Compare Value S:49 = 0h
Executing Bit S:2/13 = 0 Return Mask S:51 = 0h
Reconfiguration Bit S:33/10 = 0 Last Scan Time (x1 ms) S:55 = 0
Overflow Bit S:5/12 = 0 Max Observed Scan Time (x1 ms) S:56 = 0
Lost S:36/8 = 0 Interrupt Latency Control S:33/8 = 0
10 uS Time Stamp S:45 = 0

WASKASU.RSS

Data File S2 (hex) -- STATUS

Protection

Deny Future Access S:1/14 = No

Mem Module

Memory Module Loaded On Boot S:5/8 = 0
Password Mismatch S:5/9 = 0
Load Memory Module On Memory Error S:1/10 = 0
Load Memory Module Always S:1/11 = 0
Load Memory Module and RUN S:1/12 = 0
Program Compare S:2/9 = 0
Data File Overwrite Protection Lost S:36/10 = 0

Forces

Forces Enabled S:1/5 = No
Forces Installed S:1/6 = No

WASKASU.RSS

Data File B3 (bin) -- General Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	Control Bits Reset on Power Up
B3:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Control Bits Reset on Power Up
B3:2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	Control Bits Reset on Power Up
B3:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Control Bits Reset on Power Up
B3:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Backwash Request Bits
B3:5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Backwash Resource Bits
B3:6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CIP Request Bits
B3:7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CIP Resource Bits
B3:8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Control Bits NOT Reset on Power Up
B3:9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Control Bits
B3:10	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	

WASKASU.RSS

Data File T4 -- General Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T4:0	1	1	0	.01 sec	100	2	One Second Pulse
T4:1	0	0	0	1.0 sec	20	0	Master Comms Failed Shutdown Delay
T4:2	0	0	0	.01 sec	200	0	Data Highway Update Timer
T4:3	0	0	0	.01 sec	700	0	Master Data Highway Heartbeat Failure Timer
T4:4	0	0	0	1.0 sec	32400	0	Backwash Request Duration Timer
T4:5	1	1	0	.01 sec	10	8	Average Update Timer
T4:6	1	0	1	1.0 sec	5	5	Filtrate Manifold Filled Delay
T4:7	1	0	1	1.0 sec	30	30	Control Air Pressure Low Delay (Done=Low)
T4:8	0	0	0	1.0 sec	5	0	Feed Pressure High Shutdown Delay
T4:9	0	0	0	1.0 sec	10	0	Feed Tank Level Low Shutdown Delay
T4:10	0	0	0	1.0 sec	10	0	Filtrate Flow High Warning Delay
T4:11	0	0	0	1.0 sec	120	0	Drain Tank Failure Delay
T4:12	0	0	0	.01 sec	20	0	AV16 Ramp To Fixed Position Interval Timer
T4:13	0	0	0	1.0 sec	10	0	Filtrate Flow Low Warning Delay
T4:14	1	1	0	.01 sec	75	11	Indicator Flash Timer #1
T4:15	0	0	0	.01 sec	75	0	Indicator Flash Timer #2
T4:16	0	0	0	1.0 sec	10	0	Keep Filtration Interval Bit ON For 10 Sec.
T4:17	0	0	0	1.0 sec	32400	30	Time in Filtration Since Last Backwash (total seconds)
T4:18	0	0	0	.01 sec	20	0	Backwash History Interval Timer
T4:19	0	0	0	1.0 sec	300	0	In Normal Filtration Delay
T4:20	0	0	0	1.0 sec	10	0	Filtrate Flow is At or Near Setpoint.. Delay
T4:21	1	0	1	1.0 sec	10	10	Feed Tank Below Low Level
T4:22	0	0	0	1.0 sec	3	0	Feed Tank At or Above Mid Level
T4:23	0	0	0	1.0 sec	3	0	Feed Tank At or Above High Level
T4:24	1	0	1	1.0 sec	5	5	Feed Tank Below High Level
T4:25	0	0	0	.01 sec	500	0	
T4:26	0	0	0	.01 sec	0	0	
T4:27	0	0	0	.01 sec	0	0	
T4:28	0	0	0	.01 sec	0	0	
T4:29	0	0	0	.01 sec	0	0	
T4:30	0	0	0	.01 sec	0	0	

WASKASU.RSS

Data File C5 -- General Counters

Offset	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol)	Description
C5:0	0	0	0	0	0	0	5	0		Heartbeat Transistion Counter
C5:1	0	0	0	0	0	0	10000	0		Number of Controlled Filtration Intervals
C5:2	0	0	0	0	0	0	2	0		Rewet Repeat Counter
C5:3	0	0	0	0	0	0	2	0		Rinse Counter During CIP
C5:4	0	0	0	0	0	0	3	0		DH Heartbeat Counter.. Ensures data Is MOVED before setting
C5:5	0	0	0	0	0	0	5	0		Consecutive Times TMP has Risen above Maximum Allowable TMP
C5:6	0	0	0	0	0	0	5	0		Consecutive Times TMP has Risen above CIP Request Value
C5:7	0	0	0	0	0	0	60	57		Seconds Since Last CIP
C5:8	0	0	0	0	0	0	60	34		Minutes Since Last CIP
C5:9	0	0	0	0	0	0	999	174		Hours Since Last CIP
C5:10	0	0	0	0	0	0	65	58		Warning Bit Counter
C5:11	0	0	0	0	0	0	2	0		Clears Warning Message When Done
C5:12	0	0	0	0	0	0	999	0		
C5:13	0	0	0	0	0	0	60	8		Seconds Since Last Membrane Test
C5:14	0	0	0	0	0	0	60	45		Minutes Since Last Membrane Test
C5:15	0	0	0	0	0	0	999	12		Hours Since Last Membrane Test
C5:16	0	0	1	0	0	0	0	0		
C5:17	0	0	0	0	0	0	3	0		DH Heartbeat Counter for New Day Totals
C5:18	0	0	0	0	0	0	0	0		
C5:19	0	0	0	0	0	0	0	0		
C5:20	0	0	0	0	0	0	33	2		Shutdown Bit Counter
C5:21	0	0	0	0	0	0	0	0		
C5:22	0	0	0	0	0	0	0	0		
C5:23	0	0	0	0	0	0	60	38		Seconds of Filtration Time
C5:24	0	0	0	0	0	0	60	28		Minutes of Filtration Time
C5:25	0	0	0	0	0	0	10000	2440		Hours of Filtration Time
C5:26	0	0	0	0	0	0	10	4		Backwash History File Pointer
C5:27	0	0	0	0	0	0	256	21		Backwash History Word Pointer
C5:28	0	0	0	0	0	0	0	0		
C5:29	0	0	0	0	0	0	0	0		
C5:30	0	0	0	0	0	0	5	0		Consecutive Times Resis. Has Risen Above Delta Setpoint
C5:31	0	0	0	0	0	0	5	0		Consecutive Times TMP Has Risen Above Delta Setpoint
C5:32	0	0	0	0	0	0	5	0		Consecutive Times TMP Has Risen Above High Setpoint
C5:33	0	0	0	0	0	0	60	0		Extended Soak Seconds
C5:34	0	0	0	0	0	0	60	0		Extended Soak Minutes
C5:35	0	0	0	0	0	0	32000	0		Extended Soak Hours

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Data File R6 -- CONTROL

Offset	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol) Description
R6:0	0	0	0	0	0	0	0	0	0	0	

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Data File N7 (dec) -- Internal Calculation Integers

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	0	16384	2	16383	0	1	2	1234	0	0
N7:10	218	222	114	124	134					

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Data File F8 -- Internal Calculation Floating Point

Offset	0	1	2	3	4
F8:0	0.9842815	0	0	10	5
F8:5	17.26277	0	0	0	0
F8:10	0	-0.1754921	0.572257	2.9	18
F8:15	-0.7477491	-0.01526019	0.3736202	0	0
F8:20	0.7988708	0	-3.359669	-6.480997e-06	90
F8:25	0.001	0	0	0	0
F8:30	-302.3702	-6.480998e-09	-3023702	-6.480998e-11	4.665489e+16
F8:35	0	16.4905	16.9905		

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Data File B10 (bin) -- Startup Cycle Control Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B10:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Startup Step Active Bits
B10:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Startup Step Active Bits
B10:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Startup Misc. Control Bits

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Data File B11 (bin) -- Backwash Cycle Control Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B11:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Backwash Step Active Bits
B11:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Backwash Step Active Bits
B11:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Backwash Misc. Control Bits

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Data File B12 (bin) -- Rewet Cycle Control Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B12:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Rewet Step Active Bits
B12:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Rewet Step Active Bits
B12:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Rewet Misc. Control Bits

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Data File B13 (bin) -- Membrane Test Cycle Control Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B13:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Mem.Test Step Active Bits
B13:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Mem.Test Step Active Bits
B13:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Mem.Test Misc. Control Bits

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Data File B14 (bin) -- Sonic Test Cycle Control Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B14:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Sonic Test Step Active Bits
B14:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Sonic Test Step Active Bits
B14:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Sonic Test Misc. Control Bits

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Data File B15 (bin) -- DAF Test Cycle Control Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B15:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	DAF Test Step Active Bits
B15:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	DAF Test Step Active Bits
B15:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	DAF Test Misc. Control Bits

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Data File B16 (bin) -- Integrity Test Cycle Control Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B16:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		Integrity Test Exhaust Step Active Bits
B16:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		Integrity Test Exhaust Step Active Bits
B16:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		Integrity Test Exhaust Misc. Control Bits

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Data File B17 (bin) -- CIP Cycle Control Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B17:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CIP Step	Active Bits
B17:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CIP Step	Active Bits
B17:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CIP Step	Active Bits
B17:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CIP Misc.	Control Bits

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Data File B18 (bin) -- Drain Down Cycle Control Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B18:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		DrainDown Step Active Bits
B18:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		DrainDown Step Active Bits
B18:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		DrainDown Misc. Control Bits

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Data File T20 -- Startup Cycle Control Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T20:0	0	0	0	.01 sec	0	0	
T20:1	0	0	0	1.0 sec	180	0	Startup Step 1 Timer... Wait for Tank Fill
T20:2	0	0	0	.01 sec	2000	0	Startup Step 2 Timer... Shell Fill #1
T20:3	0	0	0	.01 sec	500	0	Startup Step 3 Timer... Shell Fill #2
T20:4	0	0	0	.01 sec	2000	0	Startup Step 4 Timer... Fill Lumens

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Data File T21 -- Backwash Cycle Control Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T21:0	0	0	0	.01 sec	0	0		
T21:1	0	0	0	.01 sec	5	0	Backwash Step 1 Timer...	Wait for Feed Level
T21:2	0	0	0	.01 sec	5	0	Backwash Step 2 Timer...	Close Feed
T21:3	0	0	0	.01 sec	200	0	Backwash Step 3 Timer...	Open Filtrate Exhaust
T21:4	0	0	0	.01 sec	5	0	Backwash Step 4 Timer...	Drain Lumens 1
T21:5	0	0	0	.01 sec	1800	0	Backwash Step 5 Timer...	Drain Lumens 2
T21:6	0	0	0	.01 sec	600	0	Backwash Step 6 Timer...	Close Filtrate Exhaust
T21:7	0	0	0	.01 sec	900	0	Backwash Step 7 Timer...	Pressurize
T21:8	0	0	0	.01 sec	100	0	Backwash Step 8 Timer...	Hi PSI- Lo GPM Chk
T21:9	0	0	0	.01 sec	300	0	Backwash Step 9 Timer...	Blowback
T21:10	0	0	0	.01 sec	500	0	Backwash Step 10 Timer...	Scrub (Air On)
T21:11	0	0	0	.01 sec	4000	0	Backwash Step 11 Timer...	Shell Sweep
T21:12	0	0	0	.01 sec	400	0	Backwash Step 12 Timer...	Filtrate Exhaust
T21:13	0	0	0	.01 sec	100	0	Backwash Step 13 Timer...	Low PSI Check
T21:14	0	0	0	.01 sec	300	0	Backwash Step 14 Timer...	End Sweep 1
T21:15	0	0	0	.01 sec	5	0	Backwash Step 15 Timer...	End Sweep 2
T21:16	0	0	0	.01 sec	0	0	Backwash Step 16 Timer...	Spare
T21:17	0	0	0	1.0 sec	20	0	Backwash Step 17 Timer...	Fill Lumens

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Data File T22 -- Rewet Cycle Control Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T22:0	0	0	0	.01 sec	0	0	
T22:1	0	0	0	.01 sec	5	0	Rewet Step 1 Timer... Delay
T22:2	0	0	0	.01 sec	300	0	Rewet Step 2 Timer... Shell Exhaust 1
T22:3	0	0	0	.01 sec	200	0	Rewet Step 3 Timer... Close Feed 1
T22:4	0	0	0	.01 sec	550	0	Rewet Step 4 Timer... Pressurize
T22:5	0	0	0	.01 sec	200	0	Rewet Step 5 Timer... Air Off
T22:6	0	0	0	.01 sec	0	0	Rewet Step 6 Timer... Filtrate Exhaust
T22:7	0	0	0	.01 sec	200	0	Rewet Step 7 Timer... Shell Exhaust 2
T22:8	0	0	0	.01 sec	600	0	Rewet Step 8 Timer... Shell Exhaust 3
T22:9	0	0	0	1.0 sec	0	0	Rewet Step 8 Timer... Spare
T22:10	0	0	0	.01 sec	500	0	Rewet Step 10 Timer... Fill Lumens
T22:11	0	0	0	.01 sec	25	0	Rewet Step 11 Timer... Close Filt Exhaust

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Data File T23 -- Membrane Test Cycle Control Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T23:0	0	0	0	.01 sec	0	0		
T23:1	0	0	0	.01 sec	5	0	Mem.Test Step 1 Timer...	Close Filtrate
T23:2	0	0	0	.01 sec	300	0	Mem.Test Step 2 Timer...	Delay
T23:3	0	0	0	.01 sec	1800	0	Mem.Test Step 3 Timer...	Drain Lumens
T23:4	0	0	0	.01 sec	0	0	Mem.Test Step 4 Timer...	Spare
T23:5	0	0	0	.01 sec	1000	0	Mem.Test Step 5 Timer...	Pressurize
T23:6	0	0	0	1.0 sec	120	0	Mem.Test Step 6 Timer...	Stabilize
T23:7	0	0	0	.01 sec	25	0	Mem.Test Step 7 Timer...	Log Initial Test Data
T23:8	0	0	0	1.0 sec	120	0	Mem.Test Step 8 Timer...	Test Interval
T23:9	0	0	0	.01 sec	25	0	Mem.Test Step 9 Timer...	Log Final Test Data
T23:10	0	0	0	.01 sec	25	0	Mem.Test Step 10 Timer...	End of Test Delay

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Data File T24 -- Sonic Test Cycle Control Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T24:0	0	0	0	.01 sec	0	0	
T24:1	0	0	0	.01 sec	5	0	Sonic Test Step 1 Timer... Close Filtrate
T24:2	0	0	0	.01 sec	300	0	Sonic Test Step 2 Timer... Delay
T24:3	0	0	0	.01 sec	1500	0	Sonic Test Step 3 Timer... Drain Lumens
T24:4	0	0	0	.01 sec	0	0	Sonic Test Step 4 Timer... Spare
T24:5	0	0	0	.01 sec	1000	0	Sonic Test Step 5 Timer... Pressurize
T24:6	0	0	0	1.0 sec	0	0	Sonic Test Step 6 Timer... Test Interval
T24:7	0	0	0	.01 sec	200	0	Sonic Test Step 7 Timer... End of Test Delay

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Data File T25 -- DAF Test Cycle Control Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T25:0	0	0	0	.01 sec	0	0	
T25:1	0	0	0	.01 sec	300	0	DAF Test Step 1 Timer... Close Filtrate
T25:2	0	0	0	.01 sec	500	0	DAF Test Step 2 Timer... Delay
T25:3	0	0	0	.01 sec	2500	0	DAF Test Step 3 Timer... Drain Lumens
T25:4	0	0	0	.01 sec	100	0	DAF Test Step 4 Timer... Vent Shell
T25:5	0	0	0	1.0 sec	45	0	DAF Test Step 5 Timer... Pressurise
T25:6	0	0	0	1.0 sec	120	0	DAF Test Step 6 Timer... Bypass DAF Rig
T25:7	0	0	0	1.0 sec	300	0	DAF Test Step 7 Timer... Measure Time to LSH2
T25:8	0	0	0	1.0 sec	600	0	DAF Test Step 8 Timer... Measure Time to LSH3
T25:9	0	0	0	.01 sec	0	0	DAF Test Step 9 Timer... Log DAF Data
T25:10	0	0	0	.01 sec	1000	0	DAF Test Step 10 Timer... Drain DAF Rig
T25:11	0	0	0	.01 sec	200	0	DAF Test Step 11 Timer... DAF Test End

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Data File T26 -- Integrity Test Cycle Control Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T26:0	0	0	0	.01 sec	0	0		
T26:1	0	0	0	.01 sec	200	0	Integrity Test Exhaust Step 1 Timer...	Vent
T26:2	0	0	0	.01 sec	600	0	Integrity Test Exhaust Step 2 Timer...	Shell Fill 1
T26:3	0	0	0	.01 sec	200	0	Integrity Test Exhaust Step 3 Timer...	Shell Fill 2
T26:4	0	0	0	1.0 sec	20	0	Integrity Test Exhaust Step 4 Active...	Lumen Fill

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Data File T27 -- CIP Cycle Control Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T27:0	0	0	0	.01 sec	0	0		
T27:1	0	0	0	1.0 sec	600	0	CIP Step 1 Timer...	Fill Tank and Recirculate
T27:2	0	0	0	.01 sec	0	0	CIP Step 2 Timer...	Spare
T27:3	0	0	0	.01 sec	0	0	CIP Step 3 Timer...	Request CIP Backwash
T27:4	0	0	0	1.0 sec	5	0	CIP Step 4 Timer...	Perform CIP Backwash
T27:5	0	0	0	.01 sec	0	0	CIP Step 5 Timer...	Add Chemical
T27:6	0	0	0	1.0 sec	45	0	CIP Step 6 Timer...	Spare
T27:7	0	0	0	1.0 sec	1800	0	CIP Step 7 Timer...	Recirculate Filtrate
T27:8	0	0	0	1.0 sec	1800	0	CIP Step 8 Timer...	Soak
T27:9	0	0	0	1.0 sec	5	0	CIP Step 9 Timer...	Extended Soak
T27:10	0	0	0	1.0 sec	3600	0	CIP Step 10 Timer...	Recirculate Shell
T27:11	0	0	0	1.0 sec	60	0	CIP Step 11 Timer...	Wait for CIP Start
T27:12	0	0	0	1.0 sec	10	0	CIP Step 12 Timer...	Drain Solution
T27:13	0	0	0	1.0 sec	120	0	CIP Step 13 Timer...	Fill Tank For Rinse to Waste
T27:14	0	0	0	1.0 sec	20	0	CIP Step 14 Timer...	Rinse to Waste
T27:15	0	0	0	1.0 sec	300	0	CIP Step 15 Timer...	Spare
T27:16	0	0	0	1.0 sec	120	0	CIP Step 16 Timer...	Fill Tank For Backwash Rinse
T27:17	0	0	0	1.0 sec	1800	0	CIP Step 17 Timer...	Backwash Rinse
T27:18	0	0	0	.01 sec	0	0	CIP Step 18 Timer...	Drain
T27:19	0	0	0	.01 sec	0	0	CIP Step 19 Timer...	Repeat Starting At Step 13
T27:20	0	0	0	1.0 sec	5	0	CIP Step 20 Timer...	End of CIP
T27:21	0	0	0	1.0 sec	30	0		
T27:22	0	0	0	1.0 sec	90	0		
T27:23	0	0	0	1.0 sec	10	0		
T27:24	0	0	0	1.0 sec	5	0		
T27:25	0	0	0	1.0 sec	5	0		
T27:26	0	0	0	1.0 sec	120	0		
T27:27	0	0	0	.01 sec	0	0		
T27:28	0	0	0	.01 sec	0	0		
T27:29	0	0	0	.01 sec	0	0		
T27:30	0	0	0	.01 sec	0	0		
T27:31	0	0	0	.01 sec	6000	0		
T27:32	0	0	0	.01 sec	0	0		
T27:33	0	0	0	1.0 sec	59	0		

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Data File T28 -- Drain Down Cycle Control Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol)	Description
T28:0	0	0	0	.01 sec	0	0		
T28:1	0	0	0	.01 sec	2000	0	DrainDown Step 1 Timer...	Drain Lumens
T28:2	0	0	0	.01 sec	0	0	DrainDown Step 2 Timer...	Spare
T28:3	0	0	0	.01 sec	5	0	DrainDown Step 3 Timer...	Drain Shell
T28:4	0	0	0	.01 sec	4000	0	DrainDown Step 4 Timer...	Drain Tank
T28:5	0	0	0	.01 sec	0	0	DrainDown Step 5 Timer...	Spare
T28:6	0	0	0	.01 sec	200	0	DrainDown Step 6 Timer...	Air Off
T28:7	0	0	0	.01 sec	500	0	DrainDown Step 7 Timer...	Exhaust

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Data File N30 (dec) -- Analog Output Data File

Offset	0	1	2	3	4	5	6	7	8	9
N30:0	10742	0	0							

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Data File N31 (dec) -- Analog Input Data File

Offset	0	1	2	3	4	5	6	7	8	9
N31:0	3255	3352	3277	3275	-1	-1	0	0	0	0
N31:10	546	21	0	0	0	-100	0	0	0	0
N31:20	0	3277	3277	3277	3277	200	100	200	200	200
N31:30	0	0	0	0	0	-50	0	0	0	0

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Data File F32 -- Setup Floating Point Values

Offset	0	1	2	3	4
F32:0	0	10	60	80	10
F32:5	30	30	45	30	0.5
F32:10	1	0	80	80	6.136387
F32:15	10	18	1	2.5	0
F32:20	0	0	40	25	0
F32:25	17	0	0	0	0
F32:30	5	10	67	60	20
F32:35	0	0	0	45	0
F32:40	0	0	0	0	0

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Data File N33 (dec) -- Setup Integer Words

Offset	0	1	2	3	4	5	6	7	8	9
N33:0	0	30	900	2	12	1000	5	2	0	23
N33:10	30	0	2	0	5	0	0	6	0	0
N33:20	0	0	0	0	0	0	0	0	0	0

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Data File B34 (bin) -- Setup Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B34:0	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	

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Data File T37 -- Filtration Control Timers

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T37:0	0	0	0	1.0 sec	15	0	Fixed Filtration Interval Timer
T37:1	0	0	0	1.0 sec	15	0	Controlled Filtration Initialization Timer
T37:2	0	0	0	1.0 sec	15	0	Controlled Filtration Interval Timer
T37:3	0	0	0	1.0 sec	15	0	Filtrate Exhaust Timer
T37:4	0	0	0	1.0 sec	60	0	Filtrate To CIP Outlet.. Max Time
T37:5	0	0	0	1.0 sec	60	0	Max time AV16 Open More than 98%
T37:6	0	0	0	.01 sec	60	0	Feed Temperature High Delay
T37:7	0	0	0	1.0 sec	60	0	Manual Valves Not set for CIP Alarm Delay
T37:8	0	0	0	1.0 sec	60	0	Manual Valves Not set for Filtration Alarm Delay

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Data File N38 (dec) -- PID Control File for Modulating Valve

Offset	0	1	2	3	4	5	6	7	8	9
N38:0	-24552	0	220	100	8	2	0	1000	0	0
N38:10	0	100	0	12	218	2	18	2911	10596	0
N38:20	-8160	13910	220	0	0	0	0	0	0	0
N38:30	-2	2912								

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Data File F40 -- Flow Control Valve Averaging Table

Offset	0	1	2	3	4
F40:0	18	18	18	18	18
F40:5	18	18	18	18	18
F40:10	18	18	18	18	18
F40:15	18	18	18	18	18
F40:20	18	18	18	18	18
F40:25	18	18	18	18	18
F40:30	18	540			

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Data File F41 -- Filtrate Flow Averaging Table

Offset	0	1	2	3	4
F41:0	-0.01526019	-0.01526019	-0.01526019	-0.01526019	-0.01526019
F41:5	-0.01526019	-0.01526019	-0.01526019	-0.01526019	-0.01526019
F41:10	-0.01526019	-0.01526019	-0.01526019	-0.01526019	-0.01526019
F41:15	-0.01526019	-0.01526019	-0.01526019	-0.01526019	-0.01526019
F41:20	-0.01526019	-0.01526019	-0.01526019	-0.01526019	-0.01526019
F41:25	-0.01526019	-0.01526019	-0.01526019	-0.01526019	-0.01526019
F41:30	-0.01526019	-0.5450796			

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Data File F42 -- Feed Pressure Averaging Table

Offset	0	1	2	3	4
F42:0	-0.167862	-0.167862	-0.167862	-0.167862	-0.167862
F42:5	-0.167862	-0.167862	-0.1754921	-0.1754921	-0.167862
F42:10	-0.167862	-0.167862	-0.1754921	-0.167862	-0.167862
F42:15	-0.1754921	-0.1754921	-0.1754921	-0.167862	-0.1754921
F42:20	-0.167862	-0.167862	-0.167862	-0.167862	-0.1754921
F42:25	-0.1754921	-0.1754921	-0.1754921	-0.1754921	-0.167862
F42:30	-0.167862	-5.454703			

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Data File F43 -- Filtrate Pressure Averaging Table

Offset	0	1	2	3	4
F43:0	0.572257	0.572257	0.572257	0.572257	0.572257
F43:5	0.572257	0.572257	0.572257	0.572257	0.572257
F43:10	0.572257	0.572257	0.572257	0.572257	0.572257
F43:15	0.572257	0.572257	0.572257	0.5646269	0.5646269
F43:20	0.5798871	0.572257	0.572257	0.572257	0.572257
F43:25	0.5646269	0.572257	0.572257	0.572257	0.572257
F43:30	0.572257	24.58526			

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Data File F44 -- Feed Flow Averaging Table

Offset	0	1	2	3	4
F44:0	0	0	0	0	0
F44:5	0	0	0	0	0
F44:10	0	0	0	0	0
F44:15	0	0	0	0	0
F44:20	0	0	0	0	0
F44:25	0	0	0	0	0
F44:30	0	0.00404267			

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Data File F45 -- Resistance and Backwash Efficiency Table

Offset	0	1	2	3	4
F45:0	-0.004068924	-6.900476	20	33.521	0
F45:5	0	0	998.33	0.0008763075	1.00202
F45:10	0.00100202	-6900.476	-1.130257e-06	0	0
F45:15	1.225445e+15	3069.468			

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Data File F46 -- Flux Calculation Table

Offset	0	1	2	3	4
F46:0	0				

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Data File F50 -- Floating Point Values To Master

Offset	0	1	2	3	4
F50:0	220.062	-0.1805517	0.8195086	-0.01791499	18
F50:5	-1.00006	18.26938	0	0	11.78849
F50:10	10.80421	0.4921408	0	0	33
F50:15	34.6	4196394	0.0001347557	1224.822	0
F50:20	0	0			

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Data File N51 (dec) -- Integer Values To Master

Offset	0	1	2	3	4	5	6	7	8	9
N51:0	0	0	0	0	0	0	0	0	0	100
N51:10	0	30	0	0	174	34	57	60	18	0
N51:20	0	0	0	0	0	0	12	45	23	30
N51:30	0	0	0	0	123	0	0	0	0	0
N51:40	0	0	0							

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Data File B52 (bin) -- Bit Status To Master

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B52:0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	CMF Cycle And Mode Status Sent To Master
B52:1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	CMF Machine Status and Requests Sent to Mast
B52:2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	Spare Bit Word to Master
B52:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Command Handshaking Bits..Word 1
B52:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Command Handshaking Bits..Word 2
B52:5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	Shutdown Alarm Word 1
B52:6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Shutdown Alarm Word 2
B52:7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Warning Alarm Word 1
B52:8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Warning Alarm Word 2
B52:9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Warning Alarm Word 3
B52:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Warning Alarm Word 4
B52:11	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	PanelView Indicators (Replace Pilot Lights)
B52:12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Current State Bits Word 1
B52:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Current State Bits Word 2
B52:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Current State Bits Word 3
B52:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Slot 2 Discrete Output Image
B52:16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Slot 3 Discrete Output Image
B52:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B52:18	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	Slot 1 Discrete Input Image

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Data File F53 -- Floating Point Values From Master

Offset	0	1	2	3	4
F53:0	220.062	0	19	33	0

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Data File N54 (dec) -- Integer Values From Master

Offset	0	1	2	3	4	5	6	7	8	9
N54:0	97	2	18	21	29					

WASKASU.RSS

Data File B55 (bin) -- Bit Status From Master

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B55:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Bit Status From Master
B55:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Commands and Buttons From Master
B55:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Spare and Data Highway eartbeat Bits From Ma

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Data File N56 (dec) -- Converted Float Values for PanelView

Offset	0	1	2	3	4	5	6	7	8	9
N56:0	-2	8	0	0	-100	32767	0	0	0	30
N56:10	30	50	183	10	100	0	12	45	23	118
N56:20	108	49	0	0	174	34	1000	0	0	0
N56:30	0	150	100	6	50	10	25	170	200	45
N56:40	0	0	0	0	0	0	0	2440	40	1
N56:50	0	81	0							

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Data File N57 (dec) -- Integers Values FROM PanelView

Offset	0	1	2	3	4	5	6	7	8	9
N57:0	0	0	0	0	0	10	0	0	10	0
N57:10	0	0	0	0	0	0	150	100	6	0

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Data File N58 (dec) -- PV-METRIC

Offset	0	1	2	3	4	5	6	7	8	9
N58:0	0	0	0	0	0	0	0	0	0	0
N58:10	0	0	0	0	0	0	0	0	0	0
N58:20	0	0	0	0	0	0	0	0	0	0
N58:30	0	0	0	0	0	0	0	0	0	0
N58:40	0	0	0	0	0	0	0	0	0	0
N58:50	0	0	0	0	0	0	0	0	0	0
N58:60	0	0	0	0	0	0	0	0	0	0
N58:70	0	0	0	0	0	0	0	0	0	0
N58:80	0	0	0	0	0	0	0	0	0	0
N58:90	0	0	0	0	0	0	0	0	0	0

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Data File B61 (bin) -- Cycle Step Number Calculation Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol)	Description
B61:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		Image for Steps 1 to 15
B61:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		Image for Steps 16 to 31
B61:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		Image for Steps 32 to 47

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Data File B62 (bin) -- Valve Control Cascade Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B62:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AV1 Control Bits
B62:1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AV2 Control Bits
B62:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AV3 Control Bits
B62:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AV4 Control Bits
B62:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AV5 Control Bits
B62:5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AV6 Control Bits
B62:6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AV7 Control Bits
B62:7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AV8 Control Bits
B62:8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	AV9 Control Bits
B62:9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	SV10 Control Bits
B62:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	SV11 Control Bits
B62:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B62:12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B62:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B62:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B62:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B62:16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B62:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B62:18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Pump Request Control Bits
B62:19	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	
B62:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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Data File N63 (dec) -- State History File

Offset	0	1	2	3	4	5	6	7	8	9
N63:0	100	100	100	100	100	100	100	100	100	100
N63:10	100									

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Data File B90 (bin) -- One Shot and Comment Bits

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B90:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
B90:1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
B90:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B90:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B90:4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
B90:5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
B90:6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
B90:7	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1

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Data File N100 (dec) -- Data Highway Message Control

Offset	0	1	2	3	4	5	6	7	8	9
N100:0	0	10	20	110	138	0	0	0	5	0
N100:10	0	80	0	0	0	0	0	0	0	0
N100:20	0	10	1	111	137	9	0	0	5	0
N100:30	0	2	0	0	0	0	0	0	0	0
N100:40	0	10	5	112	133	0	0	0	5	0
N100:50	0	10	0	0	0	0	0	0	0	0
N100:60	0	10	5	113	138	0	0	0	5	0
N100:70	0	20	0	0	0	0	0	0	0	0
N100:80	0	10	5	114	137	0	0	0	5	0
N100:90	0	10	0	0	0	0	0	0	0	0
N100:100	0	10	3	115	133	0	0	0	5	0
N100:110	0	6	0	0	0	0	0	0	0	0
N100:120	0	0	0	0	0	0	0	0	0	0
N100:130	0	0	0	0	0	0	0	0	0	0
N100:140	11	1	0	0	0	0	0	0	0	0

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Data File N109 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N109:0	1	1045	0	0	0	384	384	393	393	470
N109:10	496	535	539	552	573	743	760	765	777	0
N109:20	778	935	935	948	957	980	988	988	997	0
N109:30	1023	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N110 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N110:0	280	240	129	61	33	18	12	9	9	9
N110:10	8	7	6	5	5	5	5	5	4	4
N110:20	4	4	4	4	4	4	4	4	4	4
N110:30	4	4	4	4	4	4	4	4	4	4
N110:40	4	4	4	4	4	4	4	4	4	4
N110:50	4	4	4	4	4	4	4	4	4	4
N110:60	4	4	4	4	4	4	4	4	4	4
N110:70	4	4	4	4	4	4	4	4	4	4
N110:80	4	4	4	4	4	4	4	4	4	4
N110:90	4	4	4	4	4	4	4	4	4	4
N110:100	4	4	4	4	4	4	4	4	4	4
N110:110	4	4	4	4	4	4	4	4	4	4
N110:120	4	4	4	4	4	4	4	4	4	4
N110:130	4	4	4	4	4	4	4	4	4	4
N110:140	4	4	4	4	4	4	4	4	4	4
N110:150	4	4	4	4	4	4	4	4	4	4
N110:160	4	4	4	4	4	4	4	4	4	4
N110:170	4	4	4	4	4	4	4	4	4	4
N110:180	4	4	4	4	4	4	4	4	4	4
N110:190	4	4	4	4	4	4	4	4	4	4
N110:200	4	4	4	4	4	4	4	4	4	4
N110:210	4	4	4	4	4	4	4	4	4	4
N110:220	4	4	4	4	4	4	4	4	4	4
N110:230	4	4	4	4	4	4	4	4	4	4
N110:240	4	4	4	4	4	4	4	4	4	4
N110:250	4	4	4	4	4	4				

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Data File N111 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N111:0	4	4	4	4	4	4	4	4	4	4
N111:10	4	4	4	4	4	4	4	4	4	4
N111:20	4	4	4	4	4	4	4	4	4	4
N111:30	4	4	4	4	4	4	4	4	4	4
N111:40	4	4	4	4	4	4	4	4	4	4
N111:50	4	4	4	4	4	4	4	4	4	4
N111:60	4	4	4	4	4	4	4	4	4	4
N111:70	4	4	4	4	4	4	4	4	4	4
N111:80	4	4	4	4	4	4	4	4	4	4
N111:90	4	4	4	4	4	4	4	4	4	4
N111:100	4	4	4	4	4	4	4	4	4	4
N111:110	4	4	4	4	4	4	4	4	4	4
N111:120	4	4	4	4	4	4	4	4	4	4
N111:130	4	4	4	4	4	4	4	4	30	49
N111:140	58	61	61	62	62	63	63	63	63	63
N111:150	63	63	63	63	62	62	62	62	62	62
N111:160	62	62	62	62	62	62	61	61	61	62
N111:170	62	62	61	61	61	61	61	61	61	61
N111:180	61	61	61	62	63	65	66	66	66	65
N111:190	65	64	64	63	62	61	61	60	60	60
N111:200	59	59	59	59	59	59	59	59	58	58
N111:210	58	58	58	58	58	58	58	57	59	63
N111:220	66	69	71	73	75	77	79	81	82	84
N111:230	85	87	88	89	90	91	92	93	94	94
N111:240	95	250	469	627	726	771	786	791	794	797
N111:250	799	801	802	804	805	806				

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Data File N112 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N112:0	807	808	809	809	810	811	812	812	813	813
N112:10	814	814	815	816	816	816	817	817	818	818
N112:20	818	819	819	819	819	820	820	820	820	679
N112:30	132	98	99	103	105	103	99	96	89	87
N112:40	79	76	70	63	57	48	41	37	31	24
N112:50	22	18	16	14	12	11	11	9	9	15
N112:60	20	28	32	22	9	3	2	2	2	2
N112:70	2	2	2	2	2	2	2	5	7	6
N112:80	7	8	9	9	9	9	9	9	10	10
N112:90	10	10	10	10	10	10	10	10	10	10
N112:100	10	10	10	10	10	10	11	11	10	10
N112:110	10	10	10	10	10	10	11	10	10	10
N112:120	10	9	10	11	10	9	10	10	10	9
N112:130	10	10	9	10	10	10	11	10	10	10
N112:140	9	10	10	11	11	10	10	10	10	10
N112:150	9	9	10	10	10	9	9	10	9	9
N112:160	10	10	9	10	9	10	9	9	10	9
N112:170	10	10	11	10	10	10	9	9	9	9
N112:180	11	10	10	9	10	10	9	10	10	9
N112:190	10	9	9	9	10	9	10	10	9	10
N112:200	9	10	10	9	9	10	9	10	9	9
N112:210	9	9	11	9	9	9	9	10	10	10
N112:220	10	9	10	10	9	10	10	10	10	10
N112:230	9	10	10	9	7	5	10	8	9	8
N112:240	10	10	11	9	10	9	8	9	9	9
N112:250	9	9	9	9	10	28				

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Data File N113 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N113:0	21	25	24	22	24	25	21	24	23	21
N113:10	23	25	60	206	250	254	258	262	264	265
N113:20	265	267	267	268	267	268	268	266	269	268
N113:30	268	268	269	269	270	269	270	271	271	271
N113:40	271	270	270	272	271	270	269	271	271	270
N113:50	271	270	269	270	269	271	269	270	261	180
N113:60	22	4	10	8	10	10	10	10	9	9
N113:70	10	-15	5	5	4	3	3	3	3	142
N113:80	396	657	777	805	812	816	819	821	823	824
N113:90	826	827	829	830	831	832	833	834	834	835
N113:100	835	836	836	834	833	831	830	829	828	826
N113:110	825	824	823	238	9	-2	2	0	3	1
N113:120	3	14	10	6	9	9	8	9	8	8
N113:130	9	8	8	9	9	9	9	8	9	8
N113:140	9	9	10	9	9	9	12	48	154	195
N113:150	207	212	211	212	212	216	218	219	223	227
N113:160	225	226	227	226	226	227	226	133	147	178
N113:170	21	7	9	8	10	10	10	10	9	9
N113:180	10	-10	5	4	3	2	2	2	2	110
N113:190	488	746	801	810	814	816	818	820	822	825
N113:200	827	829	830	832	833	834	835	835	836	837
N113:210	837	838	838	836	835	834	833	831	830	829
N113:220	828	827	768	85	-6	1	1	1	2	2
N113:230	2	19	6	9	7	7	9	9	9	10
N113:240	9	10	9	9	10	9	9	8	10	9
N113:250	9	9	9	9	9	8				

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Data File N114 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N114:0	11	39	144	189	205	211	213	212	215	218
N114:10	222	223	226	227	227	225	227	226	227	226
N114:20	225	0	0	0	0	0	0	0	0	0
N114:30	0	0	0	0	0	0	0	0	0	0
N114:40	0	0	0	0	0	0	0	0	0	0
N114:50	0	0	0	0	0	0	0	0	0	0
N114:60	0	0	0	0	0	0	0	0	0	0
N114:70	0	0	0	0	0	0	0	0	0	0
N114:80	0	0	0	0	0	0	0	0	0	0
N114:90	0	0	0	0	0	0	0	0	0	0
N114:100	0	0	0	0	0	0	0	0	0	0
N114:110	0	0	0	0	0	0	0	0	0	0
N114:120	0	0	0	0	0	0	0	0	0	0
N114:130	0	0	0	0	0	0	0	0	0	0
N114:140	0	0	0	0	0	0	0	0	0	0
N114:150	0	0	0	0	0	0	0	0	0	0
N114:160	0	0	0	0	0	0	0	0	0	0
N114:170	0	0	0	0	0	0	0	0	0	0
N114:180	0	0	0	0	0	0	0	0	0	0
N114:190	0	0	0	0	0	0	0	0	0	0
N114:200	0	0	0	0	0	0	0	0	0	0
N114:210	0	0	0	0	0	0	0	0	0	0
N114:220	0	0	0	0	0	0	0	0	0	0
N114:230	0	0	0	0	0	0	0	0	0	0
N114:240	0	0	0	0	0	0	0	0	0	0
N114:250	0	0	0	0	0	0	0	0	0	0

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Data File N115 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N115:0	0	0	0	0	0	0	0	0	0	0
N115:10	0	0	0	0	0	0	0	0	0	0
N115:20	0	0	0	0	0	0	0	0	0	0
N115:30	0	0	0	0	0	0	0	0	0	0
N115:40	0	0	0	0	0	0	0	0	0	0
N115:50	0	0	0	0	0	0	0	0	0	0
N115:60	0	0	0	0	0	0	0	0	0	0
N115:70	0	0	0	0	0	0	0	0	0	0
N115:80	0	0	0	0	0	0	0	0	0	0
N115:90	0	0	0	0	0	0	0	0	0	0
N115:100	0	0	0	0	0	0	0	0	0	0
N115:110	0	0	0	0	0	0	0	0	0	0
N115:120	0	0	0	0	0	0	0	0	0	0
N115:130	0	0	0	0	0	0	0	0	0	0
N115:140	0	0	0	0	0	0	0	0	0	0
N115:150	0	0	0	0	0	0	0	0	0	0
N115:160	0	0	0	0	0	0	0	0	0	0
N115:170	0	0	0	0	0	0	0	0	0	0
N115:180	0	0	0	0	0	0	0	0	0	0
N115:190	0	0	0	0	0	0	0	0	0	0
N115:200	0	0	0	0	0	0	0	0	0	0
N115:210	0	0	0	0	0	0	0	0	0	0
N115:220	0	0	0	0	0	0	0	0	0	0
N115:230	0	0	0	0	0	0	0	0	0	0
N115:240	0	0	0	0	0	0	0	0	0	0
N115:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N116 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N116:0	0	0	0	0	0	0	0	0	0	0
N116:10	0	0	0	0	0	0	0	0	0	0
N116:20	0	0	0	0	0	0	0	0	0	0
N116:30	0	0	0	0	0	0	0	0	0	0
N116:40	0	0	0	0	0	0	0	0	0	0
N116:50	0	0	0	0	0	0	0	0	0	0
N116:60	0	0	0	0	0	0	0	0	0	0
N116:70	0	0	0	0	0	0	0	0	0	0
N116:80	0	0	0	0	0	0	0	0	0	0
N116:90	0	0	0	0	0	0	0	0	0	0
N116:100	0	0	0	0	0	0	0	0	0	0
N116:110	0	0	0	0	0	0	0	0	0	0
N116:120	0	0	0	0	0	0	0	0	0	0
N116:130	0	0	0	0	0	0	0	0	0	0
N116:140	0	0	0	0	0	0	0	0	0	0
N116:150	0	0	0	0	0	0	0	0	0	0
N116:160	0	0	0	0	0	0	0	0	0	0
N116:170	0	0	0	0	0	0	0	0	0	0
N116:180	0	0	0	0	0	0	0	0	0	0
N116:190	0	0	0	0	0	0	0	0	0	0
N116:200	0	0	0	0	0	0	0	0	0	0
N116:210	0	0	0	0	0	0	0	0	0	0
N116:220	0	0	0	0	0	0	0	0	0	0
N116:230	0	0	0	0	0	0	0	0	0	0
N116:240	0	0	0	0	0	0	0	0	0	0
N116:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N117 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N117:0	0	0	0	0	0	0	0	0	0	0
N117:10	0	0	0	0	0	0	0	0	0	0
N117:20	0	0	0	0	0	0	0	0	0	0
N117:30	0	0	0	0	0	0	0	0	0	0
N117:40	0	0	0	0	0	0	0	0	0	0
N117:50	0	0	0	0	0	0	0	0	0	0
N117:60	0	0	0	0	0	0	0	0	0	0
N117:70	0	0	0	0	0	0	0	0	0	0
N117:80	0	0	0	0	0	0	0	0	0	0
N117:90	0	0	0	0	0	0	0	0	0	0
N117:100	0	0	0	0	0	0	0	0	0	0
N117:110	0	0	0	0	0	0	0	0	0	0
N117:120	0	0	0	0	0	0	0	0	0	0
N117:130	0	0	0	0	0	0	0	0	0	0
N117:140	0	0	0	0	0	0	0	0	0	0
N117:150	0	0	0	0	0	0	0	0	0	0
N117:160	0	0	0	0	0	0	0	0	0	0
N117:170	0	0	0	0	0	0	0	0	0	0
N117:180	0	0	0	0	0	0	0	0	0	0
N117:190	0	0	0	0	0	0	0	0	0	0
N117:200	0	0	0	0	0	0	0	0	0	0
N117:210	0	0	0	0	0	0	0	0	0	0
N117:220	0	0	0	0	0	0	0	0	0	0
N117:230	0	0	0	0	0	0	0	0	0	0
N117:240	0	0	0	0	0	0	0	0	0	0
N117:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N118 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N118:0	0	0	0	0	0	0	0	0	0	0
N118:10	0	0	0	0	0	0	0	0	0	0
N118:20	0	0	0	0	0	0	0	0	0	0
N118:30	0	0	0	0	0	0	0	0	0	0
N118:40	0	0	0	0	0	0	0	0	0	0
N118:50	0	0	0	0	0	0	0	0	0	0
N118:60	0	0	0	0	0	0	0	0	0	0
N118:70	0	0	0	0	0	0	0	0	0	0
N118:80	0	0	0	0	0	0	0	0	0	0
N118:90	0	0	0	0	0	0	0	0	0	0
N118:100	0	0	0	0	0	0	0	0	0	0
N118:110	0	0	0	0	0	0	0	0	0	0
N118:120	0	0	0	0	0	0	0	0	0	0
N118:130	0	0	0	0	0	0	0	0	0	0
N118:140	0	0	0	0	0	0	0	0	0	0
N118:150	0	0	0	0	0	0	0	0	0	0
N118:160	0	0	0	0	0	0	0	0	0	0
N118:170	0	0	0	0	0	0	0	0	0	0
N118:180	0	0	0	0	0	0	0	0	0	0
N118:190	0	0	0	0	0	0	0	0	0	0
N118:200	0	0	0	0	0	0	0	0	0	0
N118:210	0	0	0	0	0	0	0	0	0	0
N118:220	0	0	0	0	0	0	0	0	0	0
N118:230	0	0	0	0	0	0	0	0	0	0
N118:240	0	0	0	0	0	0	0	0	0	0
N118:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N119 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N119:0	0	0	0	0	0	0	0	0	0	0
N119:10	0	0	0	0	0	0	0	0	0	0
N119:20	0	0	0	0	0	0	0	0	0	0
N119:30	0	0	0	0	0	0	0	0	0	0
N119:40	0	0	0	0	0	0	0	0	0	0
N119:50	0	0	0	0	0	0	0	0	0	0
N119:60	0	0	0	0	0	0	0	0	0	0
N119:70	0	0	0	0	0	0	0	0	0	0
N119:80	0	0	0	0	0	0	0	0	0	0
N119:90	0	0	0	0	0	0	0	0	0	0
N119:100	0	0	0	0	0	0	0	0	0	0
N119:110	0	0	0	0	0	0	0	0	0	0
N119:120	0	0	0	0	0	0	0	0	0	0
N119:130	0	0	0	0	0	0	0	0	0	0
N119:140	0	0	0	0	0	0	0	0	0	0
N119:150	0	0	0	0	0	0	0	0	0	0
N119:160	0	0	0	0	0	0	0	0	0	0
N119:170	0	0	0	0	0	0	0	0	0	0
N119:180	0	0	0	0	0	0	0	0	0	0
N119:190	0	0	0	0	0	0	0	0	0	0
N119:200	0	0	0	0	0	0	0	0	0	0
N119:210	0	0	0	0	0	0	0	0	0	0
N119:220	0	0	0	0	0	0	0	0	0	0
N119:230	0	0	0	0	0	0	0	0	0	0
N119:240	0	0	0	0	0	0	0	0	0	0
N119:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N120 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N120:0	106	95	63	23	18	16	16	17	18	18
N120:10	18	17	17	17	18	18	17	17	17	17
N120:20	17	17	17	17	17	17	17	17	17	17
N120:30	17	17	17	17	17	17	17	17	17	17
N120:40	17	17	17	17	17	17	17	17	17	17
N120:50	17	17	17	17	17	17	17	17	17	17
N120:60	17	17	17	17	17	17	17	17	17	17
N120:70	17	17	17	17	17	17	17	17	17	17
N120:80	17	17	17	17	17	17	17	17	17	17
N120:90	17	17	17	17	17	17	17	17	17	17
N120:100	17	17	17	17	17	17	17	17	17	17
N120:110	17	17	17	17	17	17	17	17	17	17
N120:120	17	17	17	17	17	17	17	17	17	17
N120:130	17	17	17	17	17	17	17	17	17	17
N120:140	17	17	17	17	17	17	17	17	17	17
N120:150	17	17	17	17	17	17	17	17	17	17
N120:160	17	17	17	17	17	17	17	17	17	17
N120:170	17	17	17	17	17	17	17	17	17	17
N120:180	17	17	17	17	17	17	17	17	17	17
N120:190	17	17	17	17	17	17	17	17	17	17
N120:200	17	17	17	17	17	17	17	17	17	17
N120:210	17	17	17	17	17	17	17	17	17	17
N120:220	17	17	17	17	17	17	17	17	17	17
N120:230	17	17	17	17	17	17	17	17	17	17
N120:240	17	17	17	17	17	17	17	17	17	17
N120:250	17	17	17	17	17	17	17	17	17	17

WASKASU.RSS

Data File N121 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N121:0	17	17	17	17	17	17	17	17	17	17
N121:10	17	17	17	17	17	17	17	17	17	17
N121:20	17	17	17	17	17	17	17	17	17	17
N121:30	17	17	17	17	17	17	17	17	17	17
N121:40	17	17	17	17	17	17	17	17	17	17
N121:50	17	17	17	17	17	17	17	17	17	17
N121:60	17	17	17	17	17	17	17	17	17	17
N121:70	17	17	17	17	17	17	17	17	17	17
N121:80	17	17	17	17	17	17	17	17	17	17
N121:90	17	17	17	17	17	17	17	17	17	17
N121:100	17	17	17	17	17	17	17	17	17	17
N121:110	17	17	17	17	17	17	17	17	17	17
N121:120	17	17	17	17	17	17	17	17	17	17
N121:130	17	17	17	17	17	17	17	17	18	18
N121:140	18	18	18	18	18	18	18	18	18	18
N121:150	18	18	18	18	18	18	18	18	18	18
N121:160	18	18	18	18	18	18	18	18	18	18
N121:170	18	18	18	18	18	18	18	18	18	18
N121:180	18	18	18	18	18	18	18	18	18	18
N121:190	18	18	18	18	18	18	18	18	18	18
N121:200	18	18	18	18	18	18	18	18	18	18
N121:210	18	18	18	19	19	20	25	90	88	92
N121:220	95	98	100	103	105	107	109	111	112	114
N121:230	115	116	118	119	120	120	121	122	123	123
N121:240	138	356	544	685	771	807	818	822	825	828
N121:250	830	831	833	834	835	836				

WASKASU.RSS

Data File N122 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N122:0	837	838	838	839	840	840	841	842	842	843
N122:10	843	844	844	845	845	846	846	846	847	847
N122:20	847	848	848	848	849	849	849	849	850	843
N122:30	706	653	641	636	633	632	627	623	617	612
N122:40	608	600	595	592	585	580	573	566	559	552
N122:50	548	544	540	538	534	533	532	533	534	536
N122:60	538	543	501	453	422	399	382	371	362	355
N122:70	350	345	341	338	335	332	330	328	326	325
N122:80	323	322	320	319	318	317	316	315	314	313
N122:90	312	311	310	309	308	308	307	306	305	305
N122:100	304	303	303	302	301	300	300	299	299	298
N122:110	298	297	296	296	295	295	294	294	293	293
N122:120	292	292	291	291	290	290	289	289	289	288
N122:130	288	287	287	286	286	286	285	285	284	284
N122:140	284	283	283	282	282	282	281	281	281	280
N122:150	280	280	279	279	279	278	278	278	277	277
N122:160	277	276	276	276	276	275	275	275	274	274
N122:170	274	274	273	273	273	272	272	272	272	271
N122:180	271	271	271	270	270	270	270	269	269	269
N122:190	269	268	268	268	268	267	267	267	267	266
N122:200	266	266	266	266	265	265	265	265	264	264
N122:210	264	264	264	263	263	263	263	262	262	262
N122:220	262	262	261	261	261	261	261	260	260	260
N122:230	260	260	259	259	89	28	28	19	16	15
N122:240	14	14	14	14	14	14	14	14	14	14
N122:250	14	14	14	14	14	14				

WASKASU.RSS

Data File N123 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N123:0	14	14	14	14	14	14	14	14	14	14
N123:10	14	14	14	14	14	14	14	14	18	19
N123:20	18	14	18	18	19	21	22	22	20	23
N123:30	24	23	24	24	24	24	23	24	24	25
N123:40	23	24	23	22	23	22	21	22	22	23
N123:50	21	22	22	22	22	22	22	22	21	16
N123:60	8	8	6	8	9	11	13	13	12	12
N123:70	12	11	14	8	14	14	14	14	75	501
N123:80	598	731	813	830	835	838	839	841	843	844
N123:90	845	846	847	848	848	849	849	850	851	851
N123:100	851	852	851	849	848	846	845	843	842	841
N123:110	840	838	837	279	120	59	40	15	14	16
N123:120	18	15	17	18	15	14	15	14	14	14
N123:130	14	14	14	14	14	14	14	14	15	14
N123:140	15	16	16	16	15	14	15	17	15	20
N123:150	17	25	19	15	14	15	17	17	19	23
N123:160	25	24	25	25	25	24	26	21	18	23
N123:170	13	10	12	11	11	12	12	13	14	14
N123:180	14	14	14	15	13	14	16	15	14	490
N123:190	583	788	826	832	835	836	838	840	842	844
N123:200	846	847	848	849	850	850	851	851	852	852
N123:210	853	853	852	851	850	848	847	846	845	843
N123:220	842	841	763	154	79	36	30	28	16	15
N123:230	16	14	17	15	16	16	15	15	16	16
N123:240	16	17	17	17	14	14	14	14	14	15
N123:250	17	16	17	17	19	16				

WASKASU.RSS

Data File N124 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N124:0	15	15	17	20	17	21	28	16	15	16
N124:10	18	23	24	23	26	26	26	27	24	24
N124:20	24	0	0	0	0	0	0	0	0	0
N124:30	0	0	0	0	0	0	0	0	0	0
N124:40	0	0	0	0	0	0	0	0	0	0
N124:50	0	0	0	0	0	0	0	0	0	0
N124:60	0	0	0	0	0	0	0	0	0	0
N124:70	0	0	0	0	0	0	0	0	0	0
N124:80	0	0	0	0	0	0	0	0	0	0
N124:90	0	0	0	0	0	0	0	0	0	0
N124:100	0	0	0	0	0	0	0	0	0	0
N124:110	0	0	0	0	0	0	0	0	0	0
N124:120	0	0	0	0	0	0	0	0	0	0
N124:130	0	0	0	0	0	0	0	0	0	0
N124:140	0	0	0	0	0	0	0	0	0	0
N124:150	0	0	0	0	0	0	0	0	0	0
N124:160	0	0	0	0	0	0	0	0	0	0
N124:170	0	0	0	0	0	0	0	0	0	0
N124:180	0	0	0	0	0	0	0	0	0	0
N124:190	0	0	0	0	0	0	0	0	0	0
N124:200	0	0	0	0	0	0	0	0	0	0
N124:210	0	0	0	0	0	0	0	0	0	0
N124:220	0	0	0	0	0	0	0	0	0	0
N124:230	0	0	0	0	0	0	0	0	0	0
N124:240	0	0	0	0	0	0	0	0	0	0
N124:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N125 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N125:0	0	0	0	0	0	0	0	0	0	0
N125:10	0	0	0	0	0	0	0	0	0	0
N125:20	0	0	0	0	0	0	0	0	0	0
N125:30	0	0	0	0	0	0	0	0	0	0
N125:40	0	0	0	0	0	0	0	0	0	0
N125:50	0	0	0	0	0	0	0	0	0	0
N125:60	0	0	0	0	0	0	0	0	0	0
N125:70	0	0	0	0	0	0	0	0	0	0
N125:80	0	0	0	0	0	0	0	0	0	0
N125:90	0	0	0	0	0	0	0	0	0	0
N125:100	0	0	0	0	0	0	0	0	0	0
N125:110	0	0	0	0	0	0	0	0	0	0
N125:120	0	0	0	0	0	0	0	0	0	0
N125:130	0	0	0	0	0	0	0	0	0	0
N125:140	0	0	0	0	0	0	0	0	0	0
N125:150	0	0	0	0	0	0	0	0	0	0
N125:160	0	0	0	0	0	0	0	0	0	0
N125:170	0	0	0	0	0	0	0	0	0	0
N125:180	0	0	0	0	0	0	0	0	0	0
N125:190	0	0	0	0	0	0	0	0	0	0
N125:200	0	0	0	0	0	0	0	0	0	0
N125:210	0	0	0	0	0	0	0	0	0	0
N125:220	0	0	0	0	0	0	0	0	0	0
N125:230	0	0	0	0	0	0	0	0	0	0
N125:240	0	0	0	0	0	0	0	0	0	0
N125:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N126 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N126:0	0	0	0	0	0	0	0	0	0	0
N126:10	0	0	0	0	0	0	0	0	0	0
N126:20	0	0	0	0	0	0	0	0	0	0
N126:30	0	0	0	0	0	0	0	0	0	0
N126:40	0	0	0	0	0	0	0	0	0	0
N126:50	0	0	0	0	0	0	0	0	0	0
N126:60	0	0	0	0	0	0	0	0	0	0
N126:70	0	0	0	0	0	0	0	0	0	0
N126:80	0	0	0	0	0	0	0	0	0	0
N126:90	0	0	0	0	0	0	0	0	0	0
N126:100	0	0	0	0	0	0	0	0	0	0
N126:110	0	0	0	0	0	0	0	0	0	0
N126:120	0	0	0	0	0	0	0	0	0	0
N126:130	0	0	0	0	0	0	0	0	0	0
N126:140	0	0	0	0	0	0	0	0	0	0
N126:150	0	0	0	0	0	0	0	0	0	0
N126:160	0	0	0	0	0	0	0	0	0	0
N126:170	0	0	0	0	0	0	0	0	0	0
N126:180	0	0	0	0	0	0	0	0	0	0
N126:190	0	0	0	0	0	0	0	0	0	0
N126:200	0	0	0	0	0	0	0	0	0	0
N126:210	0	0	0	0	0	0	0	0	0	0
N126:220	0	0	0	0	0	0	0	0	0	0
N126:230	0	0	0	0	0	0	0	0	0	0
N126:240	0	0	0	0	0	0	0	0	0	0
N126:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N127 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N127:0	0	0	0	0	0	0	0	0	0	0
N127:10	0	0	0	0	0	0	0	0	0	0
N127:20	0	0	0	0	0	0	0	0	0	0
N127:30	0	0	0	0	0	0	0	0	0	0
N127:40	0	0	0	0	0	0	0	0	0	0
N127:50	0	0	0	0	0	0	0	0	0	0
N127:60	0	0	0	0	0	0	0	0	0	0
N127:70	0	0	0	0	0	0	0	0	0	0
N127:80	0	0	0	0	0	0	0	0	0	0
N127:90	0	0	0	0	0	0	0	0	0	0
N127:100	0	0	0	0	0	0	0	0	0	0
N127:110	0	0	0	0	0	0	0	0	0	0
N127:120	0	0	0	0	0	0	0	0	0	0
N127:130	0	0	0	0	0	0	0	0	0	0
N127:140	0	0	0	0	0	0	0	0	0	0
N127:150	0	0	0	0	0	0	0	0	0	0
N127:160	0	0	0	0	0	0	0	0	0	0
N127:170	0	0	0	0	0	0	0	0	0	0
N127:180	0	0	0	0	0	0	0	0	0	0
N127:190	0	0	0	0	0	0	0	0	0	0
N127:200	0	0	0	0	0	0	0	0	0	0
N127:210	0	0	0	0	0	0	0	0	0	0
N127:220	0	0	0	0	0	0	0	0	0	0
N127:230	0	0	0	0	0	0	0	0	0	0
N127:240	0	0	0	0	0	0	0	0	0	0
N127:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N128 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N128:0	0	0	0	0	0	0	0	0	0	0
N128:10	0	0	0	0	0	0	0	0	0	0
N128:20	0	0	0	0	0	0	0	0	0	0
N128:30	0	0	0	0	0	0	0	0	0	0
N128:40	0	0	0	0	0	0	0	0	0	0
N128:50	0	0	0	0	0	0	0	0	0	0
N128:60	0	0	0	0	0	0	0	0	0	0
N128:70	0	0	0	0	0	0	0	0	0	0
N128:80	0	0	0	0	0	0	0	0	0	0
N128:90	0	0	0	0	0	0	0	0	0	0
N128:100	0	0	0	0	0	0	0	0	0	0
N128:110	0	0	0	0	0	0	0	0	0	0
N128:120	0	0	0	0	0	0	0	0	0	0
N128:130	0	0	0	0	0	0	0	0	0	0
N128:140	0	0	0	0	0	0	0	0	0	0
N128:150	0	0	0	0	0	0	0	0	0	0
N128:160	0	0	0	0	0	0	0	0	0	0
N128:170	0	0	0	0	0	0	0	0	0	0
N128:180	0	0	0	0	0	0	0	0	0	0
N128:190	0	0	0	0	0	0	0	0	0	0
N128:200	0	0	0	0	0	0	0	0	0	0
N128:210	0	0	0	0	0	0	0	0	0	0
N128:220	0	0	0	0	0	0	0	0	0	0
N128:230	0	0	0	0	0	0	0	0	0	0
N128:240	0	0	0	0	0	0	0	0	0	0
N128:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N129 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N129:0	0	0	0	0	0	0	0	0	0	0
N129:10	0	0	0	0	0	0	0	0	0	0
N129:20	0	0	0	0	0	0	0	0	0	0
N129:30	0	0	0	0	0	0	0	0	0	0
N129:40	0	0	0	0	0	0	0	0	0	0
N129:50	0	0	0	0	0	0	0	0	0	0
N129:60	0	0	0	0	0	0	0	0	0	0
N129:70	0	0	0	0	0	0	0	0	0	0
N129:80	0	0	0	0	0	0	0	0	0	0
N129:90	0	0	0	0	0	0	0	0	0	0
N129:100	0	0	0	0	0	0	0	0	0	0
N129:110	0	0	0	0	0	0	0	0	0	0
N129:120	0	0	0	0	0	0	0	0	0	0
N129:130	0	0	0	0	0	0	0	0	0	0
N129:140	0	0	0	0	0	0	0	0	0	0
N129:150	0	0	0	0	0	0	0	0	0	0
N129:160	0	0	0	0	0	0	0	0	0	0
N129:170	0	0	0	0	0	0	0	0	0	0
N129:180	0	0	0	0	0	0	0	0	0	0
N129:190	0	0	0	0	0	0	0	0	0	0
N129:200	0	0	0	0	0	0	0	0	0	0
N129:210	0	0	0	0	0	0	0	0	0	0
N129:220	0	0	0	0	0	0	0	0	0	0
N129:230	0	0	0	0	0	0	0	0	0	0
N129:240	0	0	0	0	0	0	0	0	0	0
N129:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N130 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N130:0	218	218	218	206	191	168	32	14	9	5
N130:10	4	4	3	2	2	0	0	0	0	0
N130:20	0	0	0	0	0	0	0	0	0	0
N130:30	0	0	0	0	0	0	0	0	0	0
N130:40	0	0	0	0	0	0	0	0	0	0
N130:50	0	0	0	0	0	0	0	0	0	0
N130:60	0	0	0	0	0	0	0	0	0	0
N130:70	0	0	0	0	0	0	0	0	0	0
N130:80	0	0	0	0	0	0	0	0	0	0
N130:90	0	0	0	0	0	0	0	0	0	0
N130:100	0	0	0	0	0	0	0	0	0	0
N130:110	0	0	0	0	0	0	0	0	0	0
N130:120	0	0	0	0	0	0	0	0	0	0
N130:130	0	0	0	0	0	0	0	0	0	0
N130:140	0	0	0	0	0	0	0	0	0	0
N130:150	0	0	0	0	0	0	0	0	0	0
N130:160	0	0	0	0	0	0	0	0	0	0
N130:170	0	0	0	0	0	0	0	0	0	0
N130:180	0	0	0	0	0	0	0	0	0	0
N130:190	0	0	0	0	0	0	0	0	0	0
N130:200	0	0	0	0	0	0	0	0	0	0
N130:210	0	0	0	0	0	0	0	0	0	0
N130:220	0	0	0	0	0	0	0	0	0	0
N130:230	0	0	0	0	0	0	0	0	0	0
N130:240	0	0	0	0	0	0	0	0	0	0
N130:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N131 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N131:0	0	0	0	0	0	0	0	0	0	0
N131:10	0	0	0	0	0	0	0	0	0	0
N131:20	0	0	0	0	0	0	0	0	0	0
N131:30	0	0	0	0	0	0	0	0	0	0
N131:40	0	0	0	0	0	0	0	0	0	0
N131:50	0	0	0	0	0	0	0	0	0	0
N131:60	0	0	0	0	0	0	0	0	0	0
N131:70	0	0	0	0	0	0	0	0	0	0
N131:80	0	0	0	0	0	0	0	0	0	0
N131:90	0	0	0	0	0	0	0	0	0	0
N131:100	0	0	0	0	0	0	0	0	0	0
N131:110	0	0	0	0	0	0	0	0	0	0
N131:120	0	0	0	0	0	0	0	0	0	0
N131:130	0	0	0	0	0	0	0	0	0	0
N131:140	0	0	0	0	0	0	0	0	0	0
N131:150	0	0	0	0	0	0	0	0	0	0
N131:160	0	0	0	0	0	0	0	0	0	0
N131:170	0	0	0	0	0	0	0	0	0	0
N131:180	0	0	0	0	0	0	0	0	0	0
N131:190	0	0	0	0	0	0	0	0	0	0
N131:200	0	0	0	0	0	0	0	0	0	0
N131:210	0	0	0	0	0	0	0	0	0	0
N131:220	0	0	0	0	0	0	0	0	0	0
N131:230	0	0	0	0	0	0	0	0	0	0
N131:240	0	0	0	0	0	0	0	0	0	0
N131:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N132 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N132:0	0	0	0	0	0	0	0	0	0	0
N132:10	0	0	0	0	0	0	0	0	0	0
N132:20	0	0	0	0	0	0	0	0	0	0
N132:30	0	0	0	0	0	0	0	0	0	0
N132:40	0	0	0	0	0	0	0	0	0	0
N132:50	0	0	0	0	0	0	0	0	0	0
N132:60	0	0	0	0	0	0	0	0	0	0
N132:70	0	0	0	0	0	0	0	0	0	0
N132:80	0	0	0	0	0	0	0	0	0	0
N132:90	0	0	0	0	0	0	0	0	0	0
N132:100	0	0	0	0	0	0	0	0	0	0
N132:110	0	0	0	0	0	0	0	0	0	0
N132:120	0	0	0	0	0	0	0	0	0	0
N132:130	0	0	0	0	0	0	0	0	0	0
N132:140	0	0	0	0	0	0	0	0	0	0
N132:150	0	0	0	0	0	0	0	0	0	0
N132:160	0	0	0	0	0	0	0	0	0	0
N132:170	0	0	0	0	0	0	0	0	0	0
N132:180	0	0	0	0	0	0	0	0	0	0
N132:190	0	0	0	0	0	0	0	0	0	0
N132:200	0	0	0	0	0	0	0	0	0	0
N132:210	0	0	0	0	0	0	0	0	0	0
N132:220	0	0	0	0	0	0	0	0	0	0
N132:230	0	0	0	0	0	0	0	0	0	0
N132:240	0	0	0	0	0	0	0	0	0	0
N132:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N133 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N133:0	0	0	0	0	0	0	0	0	0	0
N133:10	0	0	0	0	0	0	0	0	0	0
N133:20	0	0	0	0	0	0	0	0	0	0
N133:30	0	0	0	0	0	0	0	0	0	0
N133:40	0	0	0	0	0	0	0	0	0	0
N133:50	0	0	0	0	0	0	0	0	0	0
N133:60	0	0	0	0	0	0	0	0	0	0
N133:70	0	0	0	0	0	0	0	0	0	0
N133:80	0	0	0	0	0	0	0	0	0	0
N133:90	0	0	0	0	0	0	0	0	0	0
N133:100	0	0	0	0	0	0	0	0	0	0
N133:110	0	0	0	0	0	0	0	0	0	0
N133:120	0	0	0	0	0	0	0	0	0	0
N133:130	0	0	0	0	0	0	0	0	0	0
N133:140	0	0	0	0	0	0	0	0	0	0
N133:150	0	0	0	0	0	0	0	0	0	0
N133:160	0	0	0	0	0	0	0	0	0	0
N133:170	0	0	0	0	0	0	0	0	0	0
N133:180	0	0	0	0	0	0	0	0	0	0
N133:190	380	30	14	8	5	4	4	3	3	1
N133:200	0	0	0	0	0	0	0	0	0	0
N133:210	0	0	0	0	0	0	0	0	0	0
N133:220	0	0	0	0	0	0	0	0	0	0
N133:230	0	0	0	0	0	0	0	0	0	0
N133:240	0	0	0	0	0	0	0	0	0	0
N133:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N134 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N134:0	0	0	0	0	0	0	0	0	0	0
N134:10	0	0	0	0	0	0	0	0	0	0
N134:20	0	0	0	0	0	0	0	0	0	0
N134:30	0	0	0	0	0	0	0	0	0	0
N134:40	0	0	0	0	0	0	0	0	0	0
N134:50	0	0	0	0	0	0	0	0	0	0
N134:60	0	0	0	0	0	0	0	0	0	0
N134:70	0	0	0	0	0	0	0	0	0	0
N134:80	0	0	0	0	0	0	0	0	0	0
N134:90	0	0	0	0	0	0	0	0	0	0
N134:100	0	0	0	0	0	0	0	0	0	0
N134:110	0	0	0	0	0	0	0	0	0	0
N134:120	0	0	0	0	0	0	0	0	0	0
N134:130	0	0	0	0	0	0	0	0	0	0
N134:140	0	0	0	0	0	0	0	0	0	0
N134:150	0	0	0	0	0	0	0	0	0	0
N134:160	0	0	0	0	0	0	0	0	0	0
N134:170	0	0	0	0	0	0	0	0	0	0
N134:180	0	0	0	0	0	0	0	0	0	0
N134:190	0	0	0	0	0	0	0	0	0	0
N134:200	0	0	0	0	0	0	0	0	0	0
N134:210	0	0	0	0	0	0	0	0	0	0
N134:220	0	0	0	0	0	0	0	0	0	0
N134:230	0	0	0	0	0	0	0	0	0	0
N134:240	0	0	0	0	0	0	0	0	0	0
N134:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N135 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N135:0	0	0	0	0	0	0	0	0	0	0
N135:10	0	0	0	0	0	0	0	0	0	0
N135:20	0	0	0	0	0	0	0	0	0	0
N135:30	0	0	0	0	0	0	0	0	0	0
N135:40	0	0	0	0	0	0	0	0	0	0
N135:50	0	0	0	0	0	0	0	0	0	0
N135:60	0	0	0	0	0	0	0	0	0	0
N135:70	0	0	0	0	0	0	0	0	0	0
N135:80	0	0	0	0	0	0	0	0	0	0
N135:90	0	0	0	0	0	0	0	0	0	0
N135:100	0	0	0	0	0	0	0	0	0	0
N135:110	0	0	0	0	0	0	0	0	0	0
N135:120	0	0	0	0	0	0	0	0	0	0
N135:130	0	0	0	0	0	0	0	0	0	0
N135:140	0	0	0	0	0	0	0	0	0	0
N135:150	0	0	0	0	0	0	0	0	0	0
N135:160	0	0	0	0	0	0	0	0	0	0
N135:170	0	0	0	0	0	0	0	0	0	0
N135:180	0	0	0	0	0	0	0	0	0	0
N135:190	0	0	0	0	0	0	0	0	0	0
N135:200	0	0	0	0	0	0	0	0	0	0
N135:210	0	0	0	0	0	0	0	0	0	0
N135:220	0	0	0	0	0	0	0	0	0	0
N135:230	0	0	0	0	0	0	0	0	0	0
N135:240	0	0	0	0	0	0	0	0	0	0
N135:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N136 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N136:0	0	0	0	0	0	0	0	0	0	0
N136:10	0	0	0	0	0	0	0	0	0	0
N136:20	0	0	0	0	0	0	0	0	0	0
N136:30	0	0	0	0	0	0	0	0	0	0
N136:40	0	0	0	0	0	0	0	0	0	0
N136:50	0	0	0	0	0	0	0	0	0	0
N136:60	0	0	0	0	0	0	0	0	0	0
N136:70	0	0	0	0	0	0	0	0	0	0
N136:80	0	0	0	0	0	0	0	0	0	0
N136:90	0	0	0	0	0	0	0	0	0	0
N136:100	0	0	0	0	0	0	0	0	0	0
N136:110	0	0	0	0	0	0	0	0	0	0
N136:120	0	0	0	0	0	0	0	0	0	0
N136:130	0	0	0	0	0	0	0	0	0	0
N136:140	0	0	0	0	0	0	0	0	0	0
N136:150	0	0	0	0	0	0	0	0	0	0
N136:160	0	0	0	0	0	0	0	0	0	0
N136:170	0	0	0	0	0	0	0	0	0	0
N136:180	0	0	0	0	0	0	0	0	0	0
N136:190	0	0	0	0	0	0	0	0	0	0
N136:200	0	0	0	0	0	0	0	0	0	0
N136:210	0	0	0	0	0	0	0	0	0	0
N136:220	0	0	0	0	0	0	0	0	0	0
N136:230	0	0	0	0	0	0	0	0	0	0
N136:240	0	0	0	0	0	0	0	0	0	0
N136:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N137 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N137:0	0	0	0	0	0	0	0	0	0	0
N137:10	0	0	0	0	0	0	0	0	0	0
N137:20	0	0	0	0	0	0	0	0	0	0
N137:30	0	0	0	0	0	0	0	0	0	0
N137:40	0	0	0	0	0	0	0	0	0	0
N137:50	0	0	0	0	0	0	0	0	0	0
N137:60	0	0	0	0	0	0	0	0	0	0
N137:70	0	0	0	0	0	0	0	0	0	0
N137:80	0	0	0	0	0	0	0	0	0	0
N137:90	0	0	0	0	0	0	0	0	0	0
N137:100	0	0	0	0	0	0	0	0	0	0
N137:110	0	0	0	0	0	0	0	0	0	0
N137:120	0	0	0	0	0	0	0	0	0	0
N137:130	0	0	0	0	0	0	0	0	0	0
N137:140	0	0	0	0	0	0	0	0	0	0
N137:150	0	0	0	0	0	0	0	0	0	0
N137:160	0	0	0	0	0	0	0	0	0	0
N137:170	0	0	0	0	0	0	0	0	0	0
N137:180	0	0	0	0	0	0	0	0	0	0
N137:190	0	0	0	0	0	0	0	0	0	0
N137:200	0	0	0	0	0	0	0	0	0	0
N137:210	0	0	0	0	0	0	0	0	0	0
N137:220	0	0	0	0	0	0	0	0	0	0
N137:230	0	0	0	0	0	0	0	0	0	0
N137:240	0	0	0	0	0	0	0	0	0	0
N137:250	0	0	0	0	0	0	0	0	0	0

WASKASU.RSS

Data File N138 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N138:0	0	0	0	0	0	0	0	0	0	0
N138:10	0	0	0	0	0	0	0	0	0	0
N138:20	0	0	0	0	0	0	0	0	0	0
N138:30	0	0	0	0	0	0	0	0	0	0
N138:40	0	0	0	0	0	0	0	0	0	0
N138:50	0	0	0	0	0	0	0	0	0	0
N138:60	0	0	0	0	0	0	0	0	0	0
N138:70	0	0	0	0	0	0	0	0	0	0
N138:80	0	0	0	0	0	0	0	0	0	0
N138:90	0	0	0	0	0	0	0	0	0	0
N138:100	0	0	0	0	0	0	0	0	0	0
N138:110	0	0	0	0	0	0	0	0	0	0
N138:120	0	0	0	0	0	0	0	0	0	0
N138:130	0	0	0	0	0	0	0	0	0	0
N138:140	0	0	0	0	0	0	0	0	0	0
N138:150	0	0	0	0	0	0	0	0	0	0
N138:160	0	0	0	0	0	0	0	0	0	0
N138:170	0	0	0	0	0	0	0	0	0	0
N138:180	0	0	0	0	0	0	0	0	0	0
N138:190	0	0	0	0	0	0	0	0	0	0
N138:200	0	0	0	0	0	0	0	0	0	0
N138:210	0	0	0	0	0	0	0	0	0	0
N138:220	0	0	0	0	0	0	0	0	0	0
N138:230	0	0	0	0	0	0	0	0	0	0
N138:240	0	0	0	0	0	0	0	0	0	0
N138:250	0	0	0	0	0	0	0	0	0	0

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Data File N139 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N139:0	0	0	0	0	0	0	0	0	0	0
N139:10	0	0	0	0	0	0	0	0	0	0
N139:20	0	0	0	0	0	0	0	0	0	0
N139:30	0	0	0	0	0	0	0	0	0	0
N139:40	0	0	0	0	0	0	0	0	0	0
N139:50	0	0	0	0	0	0	0	0	0	0
N139:60	0	0	0	0	0	0	0	0	0	0
N139:70	0	0	0	0	0	0	0	0	0	0
N139:80	0	0	0	0	0	0	0	0	0	0
N139:90	0	0	0	0	0	0	0	0	0	0
N139:100	0	0	0	0	0	0	0	0	0	0
N139:110	0	0	0	0	0	0	0	0	0	0
N139:120	0	0	0	0	0	0	0	0	0	0
N139:130	0	0	0	0	0	0	0	0	0	0
N139:140	0	0	0	0	0	0	0	0	0	0
N139:150	0	0	0	0	0	0	0	0	0	0
N139:160	0	0	0	0	0	0	0	0	0	0
N139:170	0	0	0	0	0	0	0	0	0	0
N139:180	0	0	0	0	0	0	0	0	0	0
N139:190	0	0	0	0	0	0	0	0	0	0
N139:200	0	0	0	0	0	0	0	0	0	0
N139:210	0	0	0	0	0	0	0	0	0	0
N139:220	0	0	0	0	0	0	0	0	0	0
N139:230	0	0	0	0	0	0	0	0	0	0
N139:240	0	0	0	0	0	0	0	0	0	0
N139:250	0	0	0	0	0	0	0	0	0	0

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Data File N140 (dec)

Offset	0	1	2	3	4	5	6	7	8	9
N140:0	100	-50	2	0	0	0	0	0	0	0
N140:10	0	0	0	0	0	0	0	0	0	0
N140:20	0	0	0	0	0	0	0	0	0	0

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CDM 0 - Untitled

Address (Symbol) = Value [Description]

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RSLogix 500 Cross Reference Report - Sorted by Address

```

O:2.0      - Slot 2 Discrete Outputs
            MOV - File #2 - 37
O:2/0      - {AV1} Open Feed Tank Fill
            OTL - File #20 - 1
            OTU - File #20 - 2
O:2/1      - {AV2} Open Lower Feed
            OTE - File #20 - 3
O:2/2      - {AV3} Open Upper Feed
            OTE - File #20 - 4
O:2/3      - {AV4} Open Upper Backwash
            OTE - File #20 - 5
O:2/4      - {AV5} Open Lower Backwash
            OTE - File #20 - 6
O:2/5      - {AV6} Open Shell Recirculation
            OTE - File #20 - 7
O:2/6      - {AV7_NO} Close Filtrate Upper Isolation
            OTE - File #20 - 8
O:2/7      - {AV8} Open Filtrate
            OTE - File #20 - 9
O:2/8      - {AV9_NO} Close Filtrate Exhaust
            OTE - File #20 - 10
O:2/9      - {SV11} Open High Pressure Air
            OTE - File #20 - 12
O:2/10     - {SV10} Open Low Pressure Air
            OTE - File #20 - 11
O:2/14     - Alarm Indicator On Front Panel
            OTE - File #2 - 13
O:2/15     - Feed Pump Contactor
            OTE - File #20 - 13
            XIC - File #20 - 14
I:1.0      - Slot 1 Discrete Inputs
            MOV - File #2 - 1
I:1/0      - {LS1} Feed Tank Low Level Switch (Make on Rise)
            XIO - File #2 - 6
I:1/1      - {LS2} Feed Tank Mid Level Switch (Make on Rise)
            XIC - File #2 - 7
I:1/2      - {LS3} Feed Tank High Level Switch (Break on Rise)
            XIC - File #2 - 8
            XIO - File #2 - 8
I:1/3      - {PB1} E-Stop Button
            XIO - File #2 - 4
            File #6 - 2
I:1/4      - {PS1} Control Air Pressure Switch
            XIO - File #2 - 9, 10
I:1/5      - Filtrate Demand
            XIC - File #4 - 29
            XIO - File #4 - 23
I:1/10     - {REMOTE} Remote Switch
            XIO - File #4 - 36
I:1/15     - Feed Pump Running
            XIO - File #20 - 14
I:4.0      - Feed Pressure Transducer Input
            COP - File #2 - 2
FILE I:4.0 LEN:4 - COP - File #2 - 2
I:5.0      - MOV - File #5 - 6
            GRT - File #5 - 6
I:5.1      - MOV - File #5 - 7
            GRT - File #5 - 7
I:5.2      - MOV - File #5 - 8
            GRT - File #5 - 8
I:5.3      - MOV - File #5 - 9
            GRT - File #5 - 9
S:1/15     - First Scan
            XIC - File #3 - 2, 3, 5, 6
            File #4 - 16, 27
            File #5 - 5
            File #6 - 1, 2
            File #7 - 1, 4, 5, 6, 7, 9
            File #19 - 30, 39

```

WASKASU.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

```

XIO - File #4 - 1, 12, 13
      File #7 - 3
S:5/0 - Overflow Trap
      OTU - File #2 - 35
S:13 - Math Register
      MOV - File #11 - 17, 22
S:14 - Math Register
      MOV - File #11 - 17, 22
S:15 - Node Address/ Baud Rate
      MVM - File #4 - 1
S:37 - Clock Calendar Year
      ADD - File #4 - 21
S:38 - Clock Calendar Month
      COP - File #4 - 21
FILE S:38 LEN:4 - COP - File #4 - 21
S:40 - Clock Calendar Hours
      EQU - File #9 - 40
FILE S:40 LEN:2 - COP - File #4 - 21
S:41 - Clock Calendar Minutes
      EQU - File #9 - 40
FILE S:41 LEN:1 - COP - File #4 - 21
B3:0 - Control Bits Reset on Power Up
      FLL - File #3 - 4, 5
FILE B3:0 LEN:8 - FLL - File #3 - 4, 5
B3:0/2 - Valid Data Highway Station Number
      OTE - File #4 - 1
      XIC - File #4 - 2, 3, 4
      XIO - File #4 - 11
FILE B3:0/2 LEN:8 - FLL - File #3 - 4, 5
B3:0/3 - Master Heartbeat ON One Shot
      OTE - File #4 - 12
      XIC - File #4 - 17
      XIO - File #4 - 15
FILE B3:0/3 LEN:8 - FLL - File #3 - 4, 5
B3:0/4 - Master Heartbeat OFF One Shot
      OTE - File #4 - 13
      XIC - File #4 - 17
      XIO - File #4 - 15
FILE B3:0/4 LEN:8 - FLL - File #3 - 4, 5
B3:0/5 - There are NO Backwash Requests or Resources Present
      OTE - File #11 - 28
      XIC - File #11 - 1, 6, 10, 13, 19
      File #13 - 4
      File #17 - 10, 21, 26, 44
      XIO - File #11 - 29
FILE B3:0/5 LEN:8 - FLL - File #3 - 4, 5
B3:0/7 - Feed Pressure Is OK in Step 8 During Backwash
      OTL - File #11 - 42
      OTU - File #11 - 43
      XIO - File #11 - 43
FILE B3:0/7 LEN:8 - FLL - File #3 - 4, 5
B3:0/8 - Filtrate Pressure Is OK in Step 8 During Backwash
      OTL - File #11 - 42
      OTU - File #11 - 43
      XIO - File #11 - 43
FILE B3:0/8 LEN:8 - FLL - File #3 - 4, 5
B3:0/9 - Feed Pressure Is OK During Rewet Step 4
      OTL - File #12 - 6
      OTU - File #12 - 7
      XIO - File #12 - 7
FILE B3:0/9 LEN:8 - FLL - File #3 - 4, 5
B3:0/10 - Filtrate Pressure Is OK During Rewet Step 4
      OTL - File #12 - 6
      OTU - File #12 - 7
      XIO - File #12 - 7
FILE B3:0/10 LEN:8 - FLL - File #3 - 4, 5
B3:0/12 - Integrity Test Exhaust Ind. Cascade.. Steady ON
      OTE - File #20 - 20
      XIC - File #20 - 22

```

RSLogix 500 Cross Reference Report - Sorted by Address

```

FILE B3:0/12 LEN:8 - FLL - File #3 - 4, 5
B3:0/13 - Integrity Test Exhaust Ind. Cascade.. Flash
      OTE - File #20 - 21
      XIC - File #20 - 22
FILE B3:0/13 LEN:8 - FLL - File #3 - 4, 5
B3:0/15 - There are NO CIP Requests or Resources Present
      OTE - File #17 - 17
      XIC - File #11 - 1, 6, 10, 13, 19
          File #13 - 4
          File #17 - 10
      XIO - File #11 - 1, 6, 10, 13, 19
FILE B3:0/15 LEN:8 - FLL - File #3 - 4, 5
B3:1/0 - End of Fixed Filtration Pulse
      OTE - File #9 - 2
FILE B3:1/0 LEN:7 - FLL - File #3 - 4, 5
B3:1/1 - End of Filtration Initalization Pulse
      OTE - File #9 - 6
FILE B3:1/1 LEN:7 - FLL - File #3 - 4, 5
B3:1/2 - End of EACH Controlled Period Pulse
      OTE - File #9 - 9
      XIC - File #9 - 14
          File #11 - 5, 9, 12, 23, 24
FILE B3:1/2 LEN:7 - FLL - File #3 - 4, 5
B3:1/3 - End of FIRST Controlled Period Pulse
      OTE - File #9 - 10
      XIC - File #17 - 1, 2, 3
FILE B3:1/3 LEN:7 - FLL - File #3 - 4, 5
B3:1/4 - Stop Command by Master One Shot
      OTE - File #4 - 23
      XIC - File #3 - 2, 3, 4
          File #6 - 2
FILE B3:1/4 LEN:7 - FLL - File #3 - 4, 5
B3:1/5 - Standby Command by Master One Shot
      OTE - File #4 - 24
      XIC - File #6 - 15
FILE B3:1/5 LEN:7 - FLL - File #3 - 4, 5
B3:1/6 - Start Command by Master One Shot
      OTE - File #4 - 29
      XIC - File #6 - 4, 10, 15
          File #17 - 10
FILE B3:1/6 LEN:7 - FLL - File #3 - 4, 5
B3:1/7 - Backwash Button Pressed One Shot
      OTE - File #4 - 30
      XIC - File #11 - 1
FILE B3:1/7 LEN:7 - FLL - File #3 - 4, 5
B3:1/8 - Rewet Button Pressed One Shot
      OTE - File #4 - 31
      XIC - File #6 - 9
FILE B3:1/8 LEN:7 - FLL - File #3 - 4, 5
B3:1/9 - Membrane Test Button Pressed One Shot
      OTE - File #4 - 32
      XIC - File #6 - 19
FILE B3:1/9 LEN:7 - FLL - File #3 - 4, 5
B3:1/10 - Sonic Test Button Pressed One Shot
      OTE - File #4 - 33
      XIC - File #6 - 20
FILE B3:1/10 LEN:7 - FLL - File #3 - 4, 5
B3:1/11 - Sonic Reset Button Pressed One Shot
      OTE - File #4 - 34
      XIC - File #14 - 8
FILE B3:1/11 LEN:7 - FLL - File #3 - 4, 5
B3:1/12 - Spare Button-1 Pressed One Shot
      OTE - File #4 - 35
FILE B3:1/12 LEN:7 - FLL - File #3 - 4, 5
B3:1/13 - CIP Button Pressed One Shot
      OTE - File #4 - 36
      XIC - File #17 - 10, 29, 40
FILE B3:1/13 LEN:7 - FLL - File #3 - 4, 5
B3:1/14 - Halt CIP Button Pressed One Shot

```

RSLogix 500 Cross Reference Report - Sorted by Address

```

      OTE - File #4 - 37
FILE B3:1/14 LEN:7 - FLL - File #3 - 4, 5
B3:1/15 - Cancel CIP Command One Shot
      OTE - File #4 - 38
      XIC - File #17 - 3, 13
FILE B3:1/15 LEN:7 - FLL - File #3 - 4, 5
B3:2/0 - Drain Down Button Pressed One Shot
      OTE - File #4 - 39
      XIC - File #6 - 22
FILE B3:2/0 LEN:6 - FLL - File #3 - 4, 5
B3:2/1 - Reset Alarms Button Pressed One Shot
      OTE - File #4 - 40
      XIC - File #3 - 6
      File #19 - 35
FILE B3:2/1 LEN:6 - FLL - File #3 - 4, 5
B3:2/3 - Perform Standby When Backwash Is Requested While CIP is Also
      Requested
      OTL - File #11 - 1, 6, 10, 13, 19
      OTU - File #6 - 15
      XIC - File #6 - 15
FILE B3:2/3 LEN:6 - FLL - File #3 - 4, 5
B3:2/4 - Standby Performed Due to Low Control Air Pressure
      OTL - File #6 - 17
      OTU - File #6 - 1, 11
      XIC - File #6 - 11
FILE B3:2/4 LEN:6 - FLL - File #3 - 4, 5
B3:2/5 - Perform Automatic (Timed) Membrane Test
      OTE - File #13 - 4
      XIC - File #6 - 19
FILE B3:2/5 LEN:6 - FLL - File #3 - 4, 5
B3:2/7 - Shutdown One Shot
      OTE - File #3 - 1
      XIC - File #3 - 2, 3
FILE B3:2/7 LEN:6 - FLL - File #3 - 4, 5
B3:2/8 - Alarm Found In Bit List.. Hold Scanning
      OTL - File #19 - 43
      OTU - File #19 - 39, 44
      XIC - File #19 - 44
      XIO - File #19 - 43, 44
FILE B3:2/8 LEN:6 - FLL - File #3 - 4, 5
B3:2/9 - First Time In Filtration That Flow is At or Near Setpoint
      OTL - File #9 - 11
      OTU - File #9 - 11
      XIC - File #11 - 9, 12
      XIO - File #11 - 4, 8
FILE B3:2/9 LEN:6 - FLL - File #3 - 4, 5
B3:2/12 - Enable CIP Extended Soak Button Pressed One Shot
      OTE - File #4 - 41
      XIC - File #17 - 32
FILE B3:2/12 LEN:6 - FLL - File #3 - 4, 5
B3:2/13 - Disable CIP Extended Soak Button Pressed One Shot
      OTE - File #4 - 42
      XIO - File #17 - 32
FILE B3:2/13 LEN:6 - FLL - File #3 - 4, 5
B3:3/4 - Perform 140 (Rewet).. From 170 (Filtration)
      OTL - File #6 - 9
FILE B3:3/4 LEN:5 - FLL - File #3 - 4, 5
B3:3/5 - Perform 200 (Standby).. From 170 (Filtration) Manual Standby
      OTL - File #6 - 15
      OTU - File #6 - 10
      XIC - File #6 - 10
FILE B3:3/5 LEN:5 - FLL - File #3 - 4, 5
B3:3/6 - Perform 200 (Standby).. From 170 (Filtration) Bwash Req/TMP
      OTL - File #6 - 16
      OTU - File #6 - 10
      XIC - File #6 - 10
FILE B3:3/6 LEN:5 - FLL - File #3 - 4, 5
B3:3/8 - Perform Shutdown After Start With CIP Active
      OTE - File #17 - 19

```

```
XIC - File #6 - 3
      File #17 - 20
FILE B3:3/8 LEN:5 - FLL - File #3 - 4, 5
B3:3/9 - Start CIP At Step 5... Add Chemical
      OTE - File #17 - 19
      XIC - File #6 - 26
      File #17 - 28
FILE B3:3/9 LEN:5 - FLL - File #3 - 4, 5
B3:3/10 - Start CIP At Step 11... Press Start To Continue Draindown
      OTE - File #17 - 19
      XIC - File #6 - 26
      File #17 - 39
FILE B3:3/10 LEN:5 - FLL - File #3 - 4, 5
B3:3/11 - Start CIP At Step 13... Rinse
      OTE - File #17 - 19
      XIC - File #6 - 26
      File #17 - 41
FILE B3:3/11 LEN:5 - FLL - File #3 - 4, 5
B3:3/13 - Alarm Found In Bit List.. Hold Scanning For More
      OTL - File #19 - 34
      OTU - File #19 - 30, 36
      XIC - File #19 - 36
      XIO - File #19 - 34, 36
FILE B3:3/13 LEN:5 - FLL - File #3 - 4, 5
B3:3/14 - Warning Message Scroll Button Pressed One Shot
      OTE - File #19 - 35
      XIC - File #19 - 36
FILE B3:3/14 LEN:5 - FLL - File #3 - 4, 5
B3:3/15 - New Day Bit From This CMF
      OTE - File #9 - 40
      XIC - File #9 - 41, 42
FILE B3:3/15 LEN:5 - FLL - File #3 - 4, 5
B3:4 - Backwash Request Bits
      CLR - File #11 - 26
      NEQ - File #11 - 21
FILE B3:4 LEN:4 - FLL - File #3 - 4, 5
B3:4/1 - {BWREQ_CIP4} Backwash Request... Used for CIP Step 4
      OTL - File #17 - 26
      XIC - File #17 - 27
FILE B3:4/1 LEN:4 - FLL - File #3 - 4, 5
B3:4/2 - {BWREQ_CIP16} Backwash Request... Used for CIP Step 16
      OTL - File #17 - 44
      XIC - File #17 - 45
FILE B3:4/2 LEN:4 - FLL - File #3 - 4, 5
B3:4/3 - {BWREQ_MANUAL} Backwash Request... Manual PB
      OTL - File #11 - 1
      XIC - File #11 - 2, 3
FILE B3:4/3 LEN:4 - FLL - File #3 - 4, 5
B3:4/4 - {BWREQ_DELRES} Backwash Request... Delta Resistance
      OTL - File #11 - 6
      XIC - File #11 - 7, 30
FILE B3:4/4 LEN:4 - FLL - File #3 - 4, 5
B3:4/5 - {BWREQ_DELTMP} Backwash Request... Delta TMP
      OTL - File #11 - 10
      XIC - File #11 - 11, 30
FILE B3:4/5 LEN:4 - FLL - File #3 - 4, 5
B3:4/6 - {BWREQ_HITMP} Backwash Request... High TMP
      OTL - File #11 - 13
      XIC - File #11 - 14
FILE B3:4/6 LEN:4 - FLL - File #3 - 4, 5
B3:4/7 - {BWREQ_TIME} Backwash Request... Backwash Time Interval
      OTL - File #11 - 19
      XIC - File #11 - 20
FILE B3:4/7 LEN:4 - FLL - File #3 - 4, 5
B3:5 - Backwash Resource Bits
      CLR - File #6 - 8
      File #11 - 27
      File #17 - 28
      NEQ - File #6 - 10
```

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RSLogix 500 Cross Reference Report - Sorted by Address

```

      File #11 - 25
FILE B3:5 LEN:3 - FLL - File #3 - 4, 5
B3:5/1 - {BWRSC_CIP4} Backwash Resource Taken... CIP Step 4
      OTL - File #17 - 27
FILE B3:5/1 LEN:3 - FLL - File #3 - 4, 5
B3:5/2 - {BWRSC_CIP16} Backwash Resource Taken... CIP Step 16
      OTL - File #17 - 45
FILE B3:5/2 LEN:3 - FLL - File #3 - 4, 5
B3:5/3 - {BWRSC_MANUAL} Backwash Resource Taken... Manual PB
      OTL - File #11 - 3
      XIC - File #6 - 6
FILE B3:5/3 LEN:3 - FLL - File #3 - 4, 5
B3:5/4 - {BWRSC_DELRES} Backwash Resource Taken... Delta Resistance
      OTL - File #11 - 7
      XIC - File #6 - 6
FILE B3:5/4 LEN:3 - FLL - File #3 - 4, 5
B3:5/5 - {BWRSC_DELTMP} Backwash Resource Taken... Delta TMP
      OTL - File #11 - 11
      XIC - File #6 - 6
FILE B3:5/5 LEN:3 - FLL - File #3 - 4, 5
B3:5/6 - {BWRSC_HITMP} Backwash Resource Taken... High TMP
      OTL - File #11 - 14
      XIC - File #6 - 6
FILE B3:5/6 LEN:3 - FLL - File #3 - 4, 5
B3:5/7 - {BWRSC_TIME} Backwash Resource Taken... Backwash Time
      Interval
      OTL - File #11 - 20
      XIC - File #6 - 6
FILE B3:5/7 LEN:3 - FLL - File #3 - 4, 5
B3:6/0 - {CIPREQ1} CIP Request.. Max TMP Counter
      OTL - File #17 - 4
      OTU - File #17 - 4, 5, 13
      XIC - File #17 - 5, 15
FILE B3:6/0 LEN:2 - FLL - File #3 - 4, 5
B3:6/1 - {CIPREQ2} CIP Request.. Timed Interval
      OTU - File #17 - 13
      XIC - File #17 - 15
FILE B3:6/1 LEN:2 - FLL - File #3 - 4, 5
B3:6/2 - {CIPREQ3} CIP Request.. Manual PB
      OTL - File #17 - 10
      OTU - File #17 - 12, 13
      XIC - File #17 - 11, 12, 15
FILE B3:6/2 LEN:2 - FLL - File #3 - 4, 5
B3:7/0 - {CIPRSC1} CIP Resource Taken... Max TMP Counter
      OTL - File #17 - 5
      OTU - File #17 - 14
      XIC - File #6 - 24
      File #17 - 16
FILE B3:7/0 LEN:1 - FLL - File #3 - 4, 5
B3:7/1 - {CIPRSC2} CIP Resource Taken... Timed Interval
      OTU - File #17 - 14
      XIC - File #6 - 24
      File #17 - 16
FILE B3:7/1 LEN:1 - FLL - File #3 - 4, 5
B3:7/2 - {CIPRSC3} CIP Resource Taken... Manual PB
      OTL - File #17 - 12
      OTU - File #17 - 14
      XIC - File #6 - 24
      File #17 - 16
FILE B3:7/2 LEN:1 - FLL - File #3 - 4, 5
B3:8/0 - CMF is in CIP Cycle.. Read on Power up
      OTL - File #17 - 22, 24
      OTU - File #17 - 20, 49
      XIC - File #6 - 15
      File #17 - 10, 19
      XIO - File #6 - 4, 10, 22
      File #17 - 22, 24
B3:9/1 - Button Pressed To Latch
      OTE - File #4 - 43

```

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RSLogix 500 Cross Reference Report - Sorted by Address

B3:9/4 - XIO - File #4 - 43
 - XIC - File #26 - 70
 B3:9/5 - Reset Backwash History Files One Shot
 OTE - File #26 - 1
 XIC - File #26 - 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27
 28, 29, 30, 31, 32, 36, 38
 B3:9/6 - Perform Backwash Historical Logging
 OTL - File #26 - 1
 OTU - File #26 - 42
 XIC - File #26 - 35, 40, 42
 B3:10/3 - CMF Enabled to Run
 OTL - File #4 - 25
 OTU - File #4 - 26
 XIC - File #4 - 27
 XIO - File #4 - 28
 B3:10/4 - SHOW USA DATA
 XIC - File #19 - 2, 4, 6, 13, 17, 28
 XIO - File #19 - 1, 3, 5, 12, 16, 27
 B3:10/5 - One Shot Relay
 OSR - File #4 - 27
 B3:10/6 - One Shot Relay
 OSR - File #4 - 28
 B3:10/7 - CMF to Run Latch
 OTL - File #4 - 27
 OTU - File #4 - 28
 XIC - File #4 - 29
 T4:0 - One Second Pulse
 TON - File #2 - 5
 RES - File #2 - 5
 T4:0/DN - XIC - File #2 - 5
 File #9 - 37, 38, 45
 File #13 - 1
 File #17 - 6, 34
 XIO - File #2 - 5
 T4:1 - Master Comms Failed Shutdown Delay
 TON - File #4 - 18
 T4:1/DN - XIC - File #4 - 18
 T4:2 - Data Highway Update Timer
 RTO - File #4 - 4
 RES - File #4 - 11
 T4:2/DN - XIC - File #4 - 5, 6
 T4:2.PRE - ADD - File #4 - 14
 T4:3 - Master Data Highway Heartbeat Failure Timer
 TON - File #4 - 15
 T4:3/DN - XIC - File #4 - 16, 19
 XIO - File #4 - 15
 T4:3.PRE - ADD - File #4 - 14
 T4:4 - Backwash Request Duration Timer
 TON - File #11 - 21
 T4:4.ACC - MUL - File #11 - 22
 GRT - File #6 - 16
 T4:5 - Average Update Timer
 TON - File #7 - 3
 T4:5/DN - XIC - File #7 - 4, 5, 6, 7, 9
 XIO - File #7 - 3
 T4:5.PRE - MOV - File #7 - 2
 T4:6/DN - XIC - File #11 - 56
 File #16 - 7
 T4:7 - Control Air Pressure Low Delay (Done=Low)
 TON - File #2 - 9
 T4:7/DN - XIC - File #2 - 9
 XIO - File #6 - 4, 22
 File #11 - 26
 File #17 - 13
 T4:7.PRE - MOV - File #3 - 8
 T4:8 - Feed Pressure High Shutdown Delay
 TON - File #9 - 31
 T4:8/DN - XIC - File #9 - 31

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T4:10 - Filtrate Flow High Warning Delay
TON - File #9 - 34

T4:10/DN - XIC - File #9 - 35

T4:11 - Drain Tank Failure Delay
TON - File #18 - 5

T4:11/DN - XIC - File #18 - 5

T4:13 - Filtrate Flow Low Warning Delay
TON - File #9 - 32

T4:13/DN - XIC - File #9 - 33

T4:14 - Indicator Flash Timer #1
TON - File #20 - 16

T4:14/DN - XIC - File #20 - 16

T4:14/TT - XIC - File #20 - 17, 18, 19, 22, 24

T4:15 - Indicator Flash Timer #2
TON - File #20 - 16

T4:15/DN - XIO - File #20 - 16

T4:15/TT - XIC - File #20 - 23

T4:16 - Keep Filtration Interval Bit ON For 10 Sec.
TON - File #9 - 14

T4:16/TT - XIC - File #9 - 14, 15, 16
XIO - File #9 - 15

T4:17 - Time in Filtration Since Last Backwash (total seconds)
RTO - File #11 - 16
RES - File #11 - 15

T4:17.ACC - MUL - File #11 - 17

T4:18 - Backwash History Interval Timer
TON - File #26 - 35

T4:18/DN - XIC - File #26 - 36, 38
XIO - File #26 - 35

T4:19 - In Normal Filtration Delay
TON - File #19 - 62

T4:19/DN - In Normal Filtration Delay Done
XIC - File #19 - 63

T4:20 - Filtrate Flow is At or Near Setpoint.. Delay
TON - File #9 - 12

T4:20/DN - XIC - File #9 - 11
File #11 - 4, 8

T4:21 - Feed Tank Below Low Level
TON - File #2 - 6

T4:21/DN - XIC - File #6 - 18
File #18 - 6

T4:22 - Feed Tank At or Above Mid Level
TON - File #2 - 7

T4:22/DN - XIC - File #6 - 11
File #17 - 29
XIO - File #17 - 28
File #20 - 1

T4:23 - Feed Tank At or Above High Level
TON - File #2 - 8

T4:23/DN - XIC - File #6 - 5
File #11 - 33
File #17 - 25, 42, 45
File #20 - 2
XIO - File #10 - 1

T4:24 - Feed Tank Below High Level
TON - File #2 - 8

T4:25 - TON - File #20 - 14

T4:25/DN - XIC - File #20 - 14

C5:0 - Heartbeat Transistion Counter
CTU - File #4 - 17
RES - File #4 - 16

C5:0/DN - XIC - File #4 - 17

C5:1 - Number of Controlled Filtration Intervals
CTU - File #9 - 9
RES - File #9 - 13

C5:1.ACC - EQU - File #9 - 10

C5:2 - Rewet Repeat Counter
CTU - File #12 - 15
RES - File #12 - 15

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C5:2/DN - XIC - File #12 - 16
C5:2.PRE - MOV - File #3 - 11
EQU - File #12 - 16
GRT - File #12 - 2
C5:3 - Rinse Counter During CIP
CTU - File #17 - 48
RES - File #17 - 47
C5:3/DN - XIC - File #17 - 49
XIO - File #17 - 48
C5:3.PRE - MOV - File #3 - 12
C5:4 - DH Heartbeat Counter.. Ensures data Is MOVED before setting
bit!
CTU - File #9 - 15
RES - File #9 - 15
C5:4/DN - XIC - File #9 - 16
C5:5 - Consecutive Times TMP has Risen above Maximum Allowable TMP
CTU - File #11 - 23
RES - File #11 - 24
C5:5/DN - XIC - File #11 - 23
XIO - File #11 - 24
C5:5.PRE - MOV - File #3 - 10
C5:6 - Consecutive Times TMP has Risen above CIP Request Value
CTU - File #17 - 2
RES - File #17 - 3, 4
C5:6/DN - XIC - File #17 - 4
C5:6.PRE - MOV - File #3 - 9
C5:7 - Seconds Since Last CIP
CTU - File #17 - 6
RES - File #17 - 6, 8
C5:7/DN - XIC - File #17 - 6
C5:7.ACC - MOV - File #17 - 7
C5:8 - Minutes Since Last CIP
CTU - File #17 - 6
RES - File #17 - 6, 8
C5:8/DN - XIC - File #17 - 6
C5:8.ACC - MOV - File #17 - 7
C5:9 - Hours Since Last CIP
CTU - File #17 - 6
RES - File #17 - 8
C5:9.ACC - MOV - File #17 - 7
C5:10 - Warning Bit Counter
CTU - File #19 - 36
RES - File #19 - 30
C5:10/DN - XIC - File #19 - 30
C5:10/CU - OTU - File #19 - 36
C5:10.ACC - MOV - File #19 - 30
ADD - File #19 - 34
EQU - File #19 - 31
LIM - File #19 - 33
C5:13 - Seconds Since Last Membrane Test
CTU - File #13 - 1
RES - File #13 - 1, 3
C5:13/DN - XIC - File #13 - 1
C5:14 - Minutes Since Last Membrane Test
CTU - File #13 - 1
RES - File #13 - 1, 3
C5:14/DN - XIC - File #13 - 1
C5:14.ACC - MOV - File #13 - 2
C5:15 - Hours Since Last Membrane Test
CTU - File #13 - 1
RES - File #13 - 3
C5:15.ACC - MOV - File #13 - 2
C5:17 - DH Heartbeat Counter for New Day Totals
CTU - File #9 - 43
RES - File #9 - 43
C5:17/DN - XIC - File #9 - 44
C5:20 - Shutdown Bit Counter
CTU - File #19 - 44
RES - File #19 - 39

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```

C5:20/DN - XIC - File #19 - 39
C5:20/CU - OTU - File #19 - 44
C5:20.ACC - MOV - File #19 - 39
          - ADD - File #19 - 43
          - EQU - File #19 - 40
          - LIM - File #19 - 42
C5:23 - Seconds of Filtration Time
      - CTU - File #9 - 45
      - RES - File #9 - 45
C5:23/DN - XIC - File #9 - 45
C5:24 - Minutes of Filtration Time
      - CTU - File #9 - 45
      - RES - File #9 - 45
C5:24/DN - XIC - File #9 - 45
C5:25 - Hours of Filtration Time
      - CTU - File #9 - 45
      - RES - File #9 - 46
C5:25/DN - XIC - File #9 - 46
C5:25.ACC - MOV - File #9 - 47
C5:26 - Backwash History File Pointer
      - CTU - File #26 - 39
      - RES - File #26 - 32
C5:26/DN - XIC - File #26 - 39, 40, 42
C5:26.ACC - ADD - File #26 - 37
C5:27 - Backwash History Word Pointer
      - CTU - File #26 - 38
      - RES - File #26 - 32, 39
C5:27/DN - XIC - File #26 - 39
C5:27.ACC - MUL - File #26 - 38
C5:30 - Consecutive Times Resis. Has Risen Above Delta Setpoint
      - CTU - File #11 - 5
      - RES - File #11 - 5, 29
C5:30/DN - XIC - File #11 - 6
C5:31 - Consecutive Times TMP Has Risen Above Delta Setpoint
      - CTU - File #11 - 9
      - RES - File #11 - 9, 29
C5:31/DN - XIC - File #11 - 10
C5:32 - Consecutive Times TMP Has Risen Above High Setpoint
      - CTU - File #11 - 12
      - RES - File #11 - 12, 29
C5:32/DN - XIC - File #11 - 13
C5:33 - Extended Soak Seconds
      - CTU - File #17 - 34
      - RES - File #17 - 34, 36
C5:33/DN - XIC - File #17 - 34
C5:34 - Extended Soak Minutes
      - CTU - File #17 - 34
      - RES - File #17 - 34, 36
C5:34/DN - XIC - File #17 - 34
C5:34.ACC - MOV - File #17 - 35
C5:35 - Extended Soak Hours
      - CTU - File #17 - 34
      - RES - File #17 - 36
C5:35.ACC - MOV - File #17 - 35
N7:0 - Trash Integer for Calculations
      - DDV - File #11 - 17, 22
      - ADD - File #4 - 3
      - MUL - File #4 - 3
N7:1 - {MASK_WARN} Mask Value For Scrolling Warning Messages
      - MOV - File #19 - 31, 36
      - MVM - File #19 - 33
      - MUL - File #19 - 36
      - EQU - File #19 - 36
N7:2 - Destination Word after MVM For Warning and Shutdown Alarms
      - CLR - File #19 - 32, 41
      - MVM - File #19 - 33, 42
      - NEQ - File #19 - 34, 43
N7:4 - Step Number Returned From SUB 21
      - MOV - File #10 - 8

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```

File #11 - 57
File #12 - 17
File #13 - 22
File #14 - 10
File #16 - 8
File #17 - 52
File #18 - 9
File #21 - 1, 18
N7:5  - ADD - File #21 - 19, 20
      - Temporary Word to Calculate Step Number
      MOV - File #21 - 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
          15, 16, 17, 18
N7:6  - ADD - File #21 - 19, 20
      - Mask Value For Scrolling Shutdown Messages
      MOV - File #19 - 40, 44
      MVM - File #19 - 42
      MUL - File #19 - 44
      EQU - File #19 - 44
N7:7  - EQU - File #19 - 51
N7:12 - Backwash Feed Press. File Pointer
      ADD - File #26 - 37
      MUL - File #26 - 38
      LIM - File #26 - 38
N7:13 - Backwash Filtrate Press. File Pointer
      ADD - File #26 - 37
      MUL - File #26 - 38
N7:14 - Backwash Flow Rate File Pointer
      ADD - File #26 - 37
      MUL - File #26 - 38
F8:0  - Trash Floating Point for Calculations
      SUB - File #13 - 17
      DIV - File #13 - 17
F8:1  - {FEEDFLOW} Feed Flow (GPM)
      MOV - File #7 - 9
      DIV - File #9 - 38
      SCP - File #5 - 3
      GRT - File #9 - 38
      LES - File #11 - 48
          File #17 - 30, 38
F8:5  - TMP Value After Filtration Initialization
      MOV - File #11 - 8
          File #17 - 1
      ADD - File #11 - 8
      GRT - File #17 - 2
      LEQ - File #17 - 3
F8:11 - {FEEDPR} Feed Pressure (PSI)
      MOV - File #7 - 6
      SUB - File #7 - 8
      MUL - File #26 - 38
      SCP - File #5 - 1
      GRT - File #11 - 42, 51
          File #12 - 6
F8:12 - {FILTPR} Filtrate Pressure (PSI)
      MOV - File #7 - 7
          File #13 - 13, 17
      SUB - File #7 - 8
      MUL - File #26 - 38
      SCP - File #5 - 2
      GRT - File #11 - 42, 51
          File #12 - 6
      LIM - File #13 - 14
          File #14 - 7
F8:14 - {FCVPOS} Filtrate Valve Position (Percent)
      MOV - File #7 - 4
F8:15 - {TMPACT} TMP Actual Value (PSI)
      SUB - File #7 - 8
F8:16 - {FILTFLOW} Filtrate Flow (GPM)
      MOV - File #7 - 5
      MUL - File #26 - 38

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```

      DIV - File #9 - 37
      SCP - File #5 - 4
      GRT - File #9 - 37
      File #11 - 44
F8:17  - Calculated Filtrate Flow For 1 Second
      ADD - File #9 - 37
      DIV - File #9 - 37
F8:18  - Todays Total Flow As Floating Point
      CLR - File #9 - 41
      ADD - File #9 - 37
      DIV - File #9 - 37
F8:20  - Calculated Feed Flow For 1 Second
      ADD - File #9 - 38
      DIV - File #9 - 38
F8:21  - Todays Total Feed Flow As Floating Point
      CLR - File #9 - 42
      ADD - File #9 - 38
      DIV - File #9 - 38
F8:36  - Resistance Value Stored At Begining Of Filtration
      MOV - File #11 - 4
      ADD - File #11 - 4
F8:37  - Resistance Value to Request Backwash
      ADD - File #11 - 4
      GEQ - File #11 - 5
      LES - File #11 - 5
B10:0  - Startup Step Active Bits
      COP - File #10 - 8
FILE B10:0 LEN:2 - COP - File #10 - 8
B10:0/1 - Startup Step 1 Active... Wait for Tank Fill
      OTE - File #10 - 2
      XIC - File #10 - 10
FILE B10:0/1 LEN:2 - COP - File #10 - 8
B10:0/2 - Startup Step 2 Active... Shell Fill #1
      OTE - File #10 - 5
      XIC - File #10 - 10
FILE B10:0/2 LEN:2 - COP - File #10 - 8
B10:0/4 - Startup Fill Cycle Active.. Fill Lumens
      OTE - File #10 - 6
FILE B10:0/4 LEN:2 - COP - File #10 - 8
B10:0/5 - Startup Cycle Done
      OTE - File #10 - 7
      XIC - File #6 - 12
FILE B10:0/5 LEN:2 - COP - File #10 - 8
B11:0  - Backwash Step Active Bits
      FLL - File #3 - 2
      File #17 - 28
      COP - File #11 - 57
FILE B11:0 LEN:3 - FLL - File #3 - 2
      File #17 - - 28
      COP - File #11 - 57
B11:0/1 - Backwash Step 1 Active... Log Data
      OTL - File #11 - 34
      OTU - File #11 - 35
      XIC - File #20 - 1
FILE B11:0/1 LEN:3 - FLL - File #3 - 2
      File #17 - - 28
      COP - File #11 - 57
B11:0/2 - Backwash Step 2 Active... Close Feed
      OTE - File #11 - 35
      XIC - File #26 - 44
FILE B11:0/2 LEN:3 - FLL - File #3 - 2
      File #17 - - 28
      COP - File #11 - 57
B11:0/3 - Backwash Step 3 Active... Open Filtrate Exhaust
      OTE - File #11 - 36
      XIC - File #26 - 45
FILE B11:0/3 LEN:3 - FLL - File #3 - 2
      File #17 - - 28
      COP - File #11 - 57

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B11:0/4 - Backwash Step 4 Active... Drain Lumens 1
OTE - File #11 - 37
XIC - File #26 - 46
FILE B11:0/4 LEN:3 - FLL - File #3 - 2
File #17 - - 28
COP - File #11 - 57
B11:0/5 - Backwash Step 5 Active... Drain Lumens 2
OTE - File #11 - 38
XIC - File #26 - 47
FILE B11:0/5 LEN:3 - FLL - File #3 - 2
File #17 - - 28
COP - File #11 - 57
B11:0/6 - Backwash Step 6 Active... Close Filtrate Exhaust
OTE - File #11 - 39
XIC - File #26 - 48
FILE B11:0/6 LEN:3 - FLL - File #3 - 2
File #17 - - 28
COP - File #11 - 57
B11:0/7 - Backwash Step 7 Active... Pressurize
OTE - File #11 - 40
XIC - File #26 - 49
FILE B11:0/7 LEN:3 - FLL - File #3 - 2
File #17 - - 28
COP - File #11 - 57
B11:0/8 - Backwash Step 8 Active... Hi PSI- Lo GPM Chk
OTE - File #11 - 41
XIC - File #11 - 42
File #26 - 50
FILE B11:0/8 LEN:3 - FLL - File #3 - 2
File #17 - - 28
COP - File #11 - 57
B11:0/9 - Backwash Step 9 Active... Blowback
OTE - File #11 - 45
XIC - File #11 - 62
File #26 - 51
FILE B11:0/9 LEN:3 - FLL - File #3 - 2
File #17 - - 28
COP - File #11 - 57
B11:0/10 - Backwash Step 10 Active... Scrub (Air On)
OTE - File #11 - 46
XIC - File #26 - 52
FILE B11:0/10 LEN:3 - FLL - File #3 - 2
File #17 - - 28
COP - File #11 - 57
B11:0/11 - Backwash Step 11 Active... Shell Sweep
OTE - File #11 - 47
XIC - File #11 - 48
File #17 - 28
File #26 - 53
FILE B11:0/11 LEN:3 - FLL - File #3 - 2
File #17 - - 28
COP - File #11 - 57
B11:0/12 - Backwash Step 12 Active... Filtrate Exhaust
OTE - File #11 - 49
XIC - File #26 - 54
FILE B11:0/12 LEN:3 - FLL - File #3 - 2
File #17 - - 28
COP - File #11 - 57
B11:0/13 - Backwash Step 13 Active... Low PSI Check
OTE - File #11 - 50
XIC - File #26 - 55
FILE B11:0/13 LEN:3 - FLL - File #3 - 2
File #17 - - 28
COP - File #11 - 57
B11:0/14 - Backwash Step 14 Active... End Sweep 1
OTE - File #11 - 52
XIC - File #26 - 56
FILE B11:0/14 LEN:3 - FLL - File #3 - 2
File #17 - - 28

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B11:0/15      - COP - File #11 - 57
               - Backwash Step 15 Active... End Sweep 2
               OTE - File #11 - 53
               XIC - File #26 - 57
FILE B11:0/15 LEN:3 - FLL - File #3 - 2
               File #17 - - 28
               COP - File #11 - 57
B11:1/0      - Backwash Step 16 Active... Spare
               XIC - File #26 - 58
FILE B11:1/0 LEN:2 - FLL - File #3 - 2
               File #17 - - 28
               COP - File #11 - 57
B11:1/1      - Backwash Step 17 Active... Fill Lumens
               OTL - File #11 - 54
               OTU - File #11 - 56
               XIC - File #11 - 55, 56
               File #26 - 59
FILE B11:1/1 LEN:2 - FLL - File #3 - 2
               File #17 - - 28
               COP - File #11 - 57
B11:1/2      - Backwash Cycle Done One Shot
               OTE - File #11 - 56
               XIC - File #6 - 8
               File #11 - 15
               XIO - File #11 - 34
FILE B11:1/2 LEN:2 - FLL - File #3 - 2
               File #17 - - 28
               COP - File #11 - 57
B11:2/0      - Feed Tank Level High To Begin Backwash
               OTL - File #11 - 33
               OTU - File #11 - 33
               XIC - File #11 - 35
FILE B11:2/0 LEN:1 - FLL - File #3 - 2
               File #17 - - 28
B12:0        - Rewet Step Active Bits
               FLL - File #3 - 2
               COP - File #12 - 17
FILE B12:0 LEN:3 - FLL - File #3 - 2
               COP - File #12 - 17
B12:0/1      - Rewet Step 1 Active... Delay
               OTE - File #12 - 2
               XIC - File #26 - 60
FILE B12:0/1 LEN:3 - FLL - File #3 - 2
               COP - File #12 - 17
B12:0/2      - Rewet Step 2 Active... Shell Exhaust 1
               OTE - File #12 - 3
               XIC - File #12 - 19, 20
               File #26 - 61
FILE B12:0/2 LEN:3 - FLL - File #3 - 2
               COP - File #12 - 17
B12:0/3      - Rewet Step 3 Active... Close Feed 1
               OTE - File #12 - 4
               XIC - File #12 - 21
               File #26 - 62
FILE B12:0/3 LEN:3 - FLL - File #3 - 2
               COP - File #12 - 17
B12:0/4      - Rewet Step 4 Active... Pressurize
               OTE - File #12 - 5
               XIC - File #12 - 6, 21, 22
               File #26 - 63
FILE B12:0/4 LEN:3 - FLL - File #3 - 2
               COP - File #12 - 17
B12:0/5      - Rewet Step 5 Active... Air Off
               OTE - File #12 - 8
               XIC - File #12 - 21
               File #26 - 64
FILE B12:0/5 LEN:3 - FLL - File #3 - 2
               COP - File #12 - 17
B12:0/6      - Rewet Step 6 Active... Filtrate Exhaust

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      OTE - File #12 - 9
      XIC - File #26 - 65
FILE B12:0/6 LEN:3 - FLL - File #3 - 2
      COP - File #12 - 17
B12:0/7 - Rewet Step 7 Active... Shell Exhaust 2
      OTE - File #12 - 10
      XIC - File #12 - 20
           File #26 - 66
FILE B12:0/7 LEN:3 - FLL - File #3 - 2
      COP - File #12 - 17
B12:0/8 - Rewet Step 8 Active... Shell Exhaust 3
      OTE - File #12 - 11
      XIC - File #12 - 19, 20
           File #26 - 67
FILE B12:0/8 LEN:3 - FLL - File #3 - 2
      COP - File #12 - 17
B12:0/9 - Rewet Step 9 Active... Fill Lumens
      XIC - File #26 - 68
FILE B12:0/9 LEN:3 - FLL - File #3 - 2
      COP - File #12 - 17
B12:0/10 - Rewet Step 10 Active... Fill Lumens
      OTL - File #12 - 12
      OTU - File #12 - 14
      XIC - File #12 - 13, 19
           File #26 - 69
FILE B12:0/10 LEN:3 - FLL - File #3 - 2
      COP - File #12 - 17
B12:0/11 - Rewet Step 11 Active... Close Filt Exhaust
      OTE - File #12 - 14
      XIO - File #12 - 2
FILE B12:0/11 LEN:3 - FLL - File #3 - 2
      COP - File #12 - 17
B12:0/12 - Rewet Cycle Done
      OTE - File #12 - 16
      XIC - File #6 - 14
           File #26 - 40, 41, 42
FILE B12:0/12 LEN:3 - FLL - File #3 - 2
      COP - File #12 - 17
B13:0 - Mem.Test Step Active Bits
      FLL - File #3 - 2
      COP - File #13 - 22
FILE B13:0 LEN:3 - FLL - File #3 - 2
      COP - File #13 - 22
B13:0/1 - Mem.Test Step 1 Active... Close Filtrate
      OTE - File #13 - 7
FILE B13:0/1 LEN:3 - FLL - File #3 - 2
      COP - File #13 - 22
B13:0/2 - Mem.Test Step 2 Active... Delay
      OTE - File #13 - 8
FILE B13:0/2 LEN:3 - FLL - File #3 - 2
      COP - File #13 - 22
B13:0/3 - Mem.Test Step 3 Active... Drain Lumens
      OTE - File #13 - 9
FILE B13:0/3 LEN:3 - FLL - File #3 - 2
      COP - File #13 - 22
B13:0/5 - Mem.Test Step 5 Active... Pressurize
      OTE - File #13 - 10
FILE B13:0/5 LEN:3 - FLL - File #3 - 2
      COP - File #13 - 22
B13:0/6 - Mem.Test Step 6 Active... Stabilize
      OTE - File #13 - 11
FILE B13:0/6 LEN:3 - FLL - File #3 - 2
      COP - File #13 - 22
B13:0/7 - Mem.Test Step 7 Active... Log Initial Test Data
      OTL - File #13 - 12
      OTU - File #13 - 15
      XIC - File #13 - 13, 14, 15, 29
FILE B13:0/7 LEN:3 - FLL - File #3 - 2
      COP - File #13 - 22

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B13:0/8 - Mem.Test Step 8 Active... Test Interval
OTE - File #13 - 15
XIC - File #13 - 29
FILE B13:0/8 LEN:3 - FLL - File #3 - 2
COP - File #13 - 22
B13:0/9 - Mem.Test Step 9 Active... Log Final Test Data
OTL - File #13 - 16
OTU - File #13 - 18
XIC - File #13 - 17, 18, 29
FILE B13:0/9 LEN:3 - FLL - File #3 - 2
COP - File #13 - 22
B13:0/10 - Mem.Test Step 10 Active... End of Test Delay
OTE - File #13 - 18
XIC - File #13 - 28
FILE B13:0/10 LEN:3 - FLL - File #3 - 2
COP - File #13 - 22
B13:0/11 - Mem.Test Done
OTE - File #13 - 19
XIC - File #6 - 21
File #13 - 3, 20, 21
FILE B13:0/11 LEN:3 - FLL - File #3 - 2
COP - File #13 - 22
B14:0 - Sonic Test Step Active Bits
FLL - File #3 - 2
COP - File #14 - 10
FILE B14:0 LEN:3 - FLL - File #3 - 2
COP - File #14 - 10
B14:0/1 - Sonic Test Step 1 Active... Close Filtrate
OTE - File #14 - 2
FILE B14:0/1 LEN:3 - FLL - File #3 - 2
COP - File #14 - 10
B14:0/2 - Sonic Test Step 2 Active... Delay
OTE - File #14 - 3
FILE B14:0/2 LEN:3 - FLL - File #3 - 2
COP - File #14 - 10
B14:0/3 - Sonic Test Step 3 Active... Drain Lumens
OTE - File #14 - 4
XIC - File #14 - 14
FILE B14:0/3 LEN:3 - FLL - File #3 - 2
COP - File #14 - 10
B14:0/5 - Sonic Test Step 5 Active... Pressurize
OTE - File #14 - 5
XIC - File #14 - 14
FILE B14:0/5 LEN:3 - FLL - File #3 - 2
COP - File #14 - 10
B14:0/6 - Sonic Test Step 6 Active... Test Interval
OTL - File #14 - 6
OTU - File #14 - 8
XIC - File #14 - 7, 14, 16
FILE B14:0/6 LEN:3 - FLL - File #3 - 2
COP - File #14 - 10
B14:0/7 - Sonic Test Step 7 Active... End of Test Delay
OTE - File #14 - 8
XIC - File #14 - 15
XIO - File #14 - 6
FILE B14:0/7 LEN:3 - FLL - File #3 - 2
COP - File #14 - 10
B14:0/8 - Sonic Test Done
OTE - File #14 - 9
XIC - File #6 - 21
FILE B14:0/8 LEN:3 - FLL - File #3 - 2
COP - File #14 - 10
B16:0 - Integrity Test Exhaust Step Active Bits
FLL - File #3 - 3
COP - File #16 - 8
FILE B16:0 LEN:3 - FLL - File #3 - 3
COP - File #16 - 8
B16:0/1 - Integrity Test Exhaust Step 1 Active... Vent
OTE - File #16 - 2

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FILE B16:0/1 LEN:3 - FLL - File #3 - 3
                COP - File #16 - 8
B16:0/2        - Integrity Test Exhaust Step 2 Active... Shell Fill 1
                OTE - File #16 - 3
FILE B16:0/2 LEN:3 - FLL - File #3 - 3
                COP - File #16 - 8
B16:0/3        - Integrity Test Exhaust Step 3 Active... Shell Fill 2
                OTE - File #16 - 4
FILE B16:0/3 LEN:3 - FLL - File #3 - 3
                COP - File #16 - 8
B16:0/4        - Integrity Test Exhaust Step 3 Active... Lumen Fill
                OTL - File #16 - 5
                OTU - File #16 - 7
                XIC - File #16 - 6, 7
FILE B16:0/4 LEN:3 - FLL - File #3 - 3
                COP - File #16 - 8
B16:0/5        - Integrity Test Exhaust Done
                OTE - File #16 - 7
                XIC - File #6 - 11
FILE B16:0/5 LEN:3 - FLL - File #3 - 3
                COP - File #16 - 8
B17:0          - CIP Step Active Bits
                FLL - File #3 - 3
                COP - File #17 - 52
FILE B17:0 LEN:3 - FLL - File #3 - 3
                COP - File #17 - 52
B17:0/1        - CIP Step 1 Active... Fill Tank and Recirculate
                OTL - File #17 - 22
                OTU - File #17 - 25
                XIC - File #17 - 23, 53, 54, 55, 58, 59, 60
FILE B17:0/1 LEN:3 - FLL - File #3 - 3
                COP - File #17 - 52
B17:0/2        - CIP Step 2 Active... DrainDown (if Ext.CIP)
                OTL - File #17 - 24
                OTU - File #17 - 28
                XIC - File #6 - 23
FILE B17:0/2 LEN:3 - FLL - File #3 - 3
                COP - File #17 - 52
B17:0/3        - CIP Step 3 Active... Request CIP Backwash
                OTL - File #17 - 25
                OTU - File #17 - 27
                XIC - File #17 - 26, 27, 54, 55, 58, 59, 60
FILE B17:0/3 LEN:3 - FLL - File #3 - 3
                COP - File #17 - 52
B17:0/4        - CIP Step 4 Active... Perform CIP Backwash
                OTL - File #17 - 27
                OTU - File #17 - 28
                XIC - File #6 - 7
                    File #11 - 47
                    File #17 - 28
                XIO - File #11 - 49
FILE B17:0/4 LEN:3 - FLL - File #3 - 3
                COP - File #17 - 52
B17:0/5        - CIP Step 5 Active... Add Chemical
                OTL - File #17 - 28
                OTU - File #17 - 29
                XIC - File #6 - 25
                    File #17 - 29, 59
FILE B17:0/5 LEN:3 - FLL - File #3 - 3
                COP - File #17 - 52
B17:0/7        - CIP Step 7 Active... Recirculate Filtrate
                OTE - File #17 - 29
                XIC - File #17 - 30, 54, 57, 58, 59, 60
FILE B17:0/7 LEN:3 - FLL - File #3 - 3
                COP - File #17 - 52
B17:0/8        - CIP Step 8 Active... Soak
                OTE - File #17 - 31
                XIC - File #17 - 59
FILE B17:0/8 LEN:3 - FLL - File #3 - 3

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B17:0/9      - COP - File #17 - 52
              - CIP Step 9 Active... Extended Soak
              OTE - File #17 - 33
              XIC - File #17 - 34
              XIO - File #17 - 36
FILE B17:0/9 LEN:3 - FLL - File #3 - 3
              COP - File #17 - 52
B17:0/10     - CIP Step 10 Active... Recirculate Shell
              OTE - File #17 - 37
              XIC - File #17 - 38, 54, 57, 59, 60
FILE B17:0/10 LEN:3 - FLL - File #3 - 3
              COP - File #17 - 52
B17:0/11     - CIP Step 11 Active... Wait for CIP Start
              OTL - File #17 - 39
              OTU - File #17 - 40
              XIC - File #17 - 40
FILE B17:0/11 LEN:3 - FLL - File #3 - 3
              COP - File #17 - 52
B17:0/12     - CIP Step 12 Active... Drain Solution
              OTL - File #17 - 40
              OTU - File #17 - 41
              XIC - File #6 - 23
                  File #17 - 41
FILE B17:0/12 LEN:3 - FLL - File #3 - 3
              COP - File #17 - 52
B17:0/13     - CIP Step 13 Active... Fill Tank For Rinse to Waste
              OTL - File #17 - 41
              OTU - File #17 - 42
              XIC - File #6 - 25
                  File #17 - 42, 53
FILE B17:0/13 LEN:3 - FLL - File #3 - 3
              COP - File #17 - 52
B17:0/14     - CIP Step 14 Active... Rinse to Waste
              OTE - File #17 - 42
              OTU - File #17 - 43
              XIC - File #17 - 54, 56, 60
FILE B17:0/14 LEN:3 - FLL - File #3 - 3
              COP - File #17 - 52
B17:1/0      - CIP Step 16 Active... Fill Tank For Backwash Rinse
              OTL - File #17 - 43
              OTU - File #17 - 45
              XIC - File #17 - 44, 45, 53
FILE B17:1/0 LEN:2 - FLL - File #3 - 3
              COP - File #17 - 52
B17:1/1      - CIP Step 17 Active... Backwash Rinse
              OTL - File #17 - 45
              OTU - File #17 - 46
              XIC - File #6 - 7
                  File #17 - 46
FILE B17:1/1 LEN:2 - FLL - File #3 - 3
              COP - File #17 - 52
B17:1/2      - CIP Step 18 Active... Drain
              OTL - File #17 - 46
              OTU - File #17 - 48
              XIC - File #6 - 23
                  File #17 - 48
FILE B17:1/2 LEN:2 - FLL - File #3 - 3
              COP - File #17 - 52
B17:1/3      - CIP Step 19 Active... Repeat At Step 13
              OTE - File #17 - 48
              XIC - File #6 - 25
                  File #17 - 41
              XIO - File #17 - 42
FILE B17:1/3 LEN:2 - FLL - File #3 - 3
              COP - File #17 - 52
B17:1/4      - CIP Step 20 Active... End of CIP
              OTE - File #17 - 49
              XIC - File #6 - 3
                  File #17 - 8

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FILE B17:1/4 LEN:2 - FLL - File #3 - 3
                  COP - File #17 - 52
B18:0             - DrainDown Step Active Bits
                  FLL - File #3 - 3
                  COP - File #18 - 9
FILE B18:0 LEN:3 - FLL - File #3 - 3
                  COP - File #18 - 9
B18:0/1          - DrainDown Step 1 Active... Drain Lumens
                  OTE - File #18 - 2
                  XIC - File #18 - 14
FILE B18:0/1 LEN:3 - FLL - File #3 - 3
                  COP - File #18 - 9
B18:0/3          - DrainDown Step 3 Active... Drain Shell
                  OTE - File #18 - 3
FILE B18:0/3 LEN:3 - FLL - File #3 - 3
                  COP - File #18 - 9
B18:0/4          - DrainDown Step 4 Active... Drain Tank
                  OTL - File #18 - 4
                  OTU - File #18 - 6
                  XIC - File #18 - 5, 6, 10, 14, 15
FILE B18:0/4 LEN:3 - FLL - File #3 - 3
                  COP - File #18 - 9
B18:0/6          - DrainDown Step 6 Active... Air Off
                  OTE - File #18 - 6
FILE B18:0/6 LEN:3 - FLL - File #3 - 3
                  COP - File #18 - 9
B18:0/7          - DrainDown Step 7 Active... Exhaust
                  OTE - File #18 - 7
FILE B18:0/7 LEN:3 - FLL - File #3 - 3
                  COP - File #18 - 9
B18:0/8          - DrainDown Cycle Done
                  OTE - File #18 - 8
                  XIC - File #6 - 3
                  File #17 - 28, 41, 48
FILE B18:0/8 LEN:3 - FLL - File #3 - 3
                  COP - File #18 - 9
T20:1            - Startup Step 1 Timer... Wait for Tank Fill
                  TON - File #10 - 2
T20:2            - Startup Step 2 Timer... Shell Fill #1
                  TON - File #10 - 5
T20:2/DN         - XIC - File #10 - 6
T20:2/TT         - XIC - File #10 - 5
T20:4            - Startup Step 4 Timer... Fill Lumens
                  TON - File #10 - 6
T20:4/DN         - XIC - File #10 - 7
T20:4/TT         - XIC - File #10 - 6
T21:1            - Backwash Step 1 Timer... Wait for Feed Level
                  TON - File #11 - 34
T21:1/DN         - XIC - File #11 - 35
T21:1/TT         - XIC - File #11 - 34
T21:2            - Backwash Step 2 Timer... Close Feed
                  TON - File #11 - 35
T21:2/DN         - XIC - File #11 - 36
T21:2/TT         - XIC - File #11 - 35
T21:3            - Backwash Step 3 Timer... Open Filtrate Exhaust
                  TON - File #11 - 36
T21:3/DN         - XIC - File #11 - 37
T21:3/TT         - XIC - File #11 - 36
T21:4            - Backwash Step 4 Timer... Drain Lumens 1
                  TON - File #11 - 37
T21:4/DN         - XIC - File #11 - 38
T21:4/TT         - XIC - File #11 - 37
T21:5            - Backwash Step 5 Timer... Drain Lumens 2
                  TON - File #11 - 38
T21:5/DN         - XIC - File #11 - 39
T21:5/TT         - XIC - File #11 - 38
T21:6            - Backwash Step 6 Timer... Close Filtrate Exhaust
                  TON - File #11 - 39
T21:6/DN         - XIC - File #11 - 40

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T21:6/TT	- XIC - File #11 - 39
T21:7	- Backwash Step 7 Timer... Pressurize
	TON - File #11 - 40
T21:7/DN	- XIC - File #11 - 41
T21:7/TT	- XIC - File #11 - 40
T21:8	- Backwash Step 8 Timer... Hi PSI- Lo GPM Chk
	TON - File #11 - 41
T21:8/DN	- XIC - File #11 - 43, 44, 45
T21:8/TT	- XIC - File #11 - 41
T21:9	- Backwash Step 9 Timer... Blowback
	TON - File #11 - 45
T21:9/DN	- XIC - File #11 - 46
T21:9/TT	- XIC - File #11 - 45
T21:10	- Backwash Step 10 Timer... Scrub (Air On)
	TON - File #11 - 46
T21:10/DN	- XIC - File #11 - 47
T21:10/TT	- XIC - File #11 - 46
T21:11	- Backwash Step 11 Timer... Shell Sweep
	TON - File #11 - 47
T21:11/DN	- XIC - File #11 - 49
T21:11/TT	- XIC - File #11 - 47
T21:11.ACC	- GRT - File #11 - 48
T21:12	- Backwash Step 12 Timer... Filtrate Exhaust
	TON - File #11 - 49
T21:12/DN	- XIC - File #11 - 50
T21:12/TT	- XIC - File #11 - 49
T21:13	- Backwash Step 13 Timer... Low PSI Check
	TON - File #11 - 50
T21:13/DN	- XIC - File #11 - 51, 52
T21:13/TT	- XIC - File #11 - 50
T21:14	- Backwash Step 14 Timer... End Sweep 1
	TON - File #11 - 52
T21:14/DN	- XIC - File #11 - 53
T21:14/TT	- XIC - File #11 - 52
T21:15	- Backwash Step 15 Timer... End Sweep 2
	TON - File #11 - 53
T21:15/DN	- XIC - File #11 - 54
T21:15/TT	- XIC - File #11 - 53
T21:17	- Backwash Step 17 Timer... Fill Lumens
	TON - File #11 - 55
T21:17/DN	- XIC - File #11 - 55, 56
T21:17.ACC	- GRT - File #11 - 56
T22:1	- Rewet Step 1 Timer... Delay
	TON - File #12 - 2
T22:1/DN	- XIC - File #12 - 3
T22:1/TT	- XIC - File #12 - 2
T22:2	- Rewet Step 2 Timer... Shell Exhaust 1
	TON - File #12 - 3
T22:2/DN	- XIC - File #12 - 4
T22:2/TT	- XIC - File #12 - 3
T22:3	- Rewet Step 3 Timer... Close Feed 1
	TON - File #12 - 4
T22:3/DN	- XIC - File #12 - 5
T22:3/TT	- XIC - File #12 - 4
T22:4	- Rewet Step 4 Timer... Pressurize
	TON - File #12 - 5
T22:4/DN	- XIC - File #12 - 7, 8
T22:4/TT	- XIC - File #12 - 5
T22:5	- Rewet Step 5 Timer... Air Off
	TON - File #12 - 8
T22:5/DN	- XIC - File #12 - 9
T22:5/TT	- XIC - File #12 - 8
T22:6	- Rewet Step 6 Timer... Filtrate Exhaust
	TON - File #12 - 9
T22:6/DN	- XIC - File #12 - 10
T22:6/TT	- XIC - File #12 - 9
T22:7	- Rewet Step 7 Timer... Shell Exhaust 2
	TON - File #12 - 10
T22:7/DN	- XIC - File #12 - 11

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T22:7/TT	- XIC - File #12 - 10
T22:8	- Rewet Step 8 Timer... Shell Exhaust 3
	TON - File #12 - 11
T22:8/DN	- XIC - File #12 - 12
T22:8/TT	- XIC - File #12 - 11
T22:10	- Rewet Step 10 Timer... Fill Lumens
	TON - File #12 - 13
T22:10/DN	- XIC - File #12 - 14
T22:11	- Rewet Step 11 Timer... Close Filt Exhaust
	TON - File #12 - 14
T22:11/DN	- XIC - File #12 - 15, 16
T22:11/TT	- XIC - File #12 - 14
T23:1	- Mem.Test Step 1 Timer... Close Filtrate
	TON - File #13 - 7
T23:1/DN	- XIC - File #13 - 8
T23:1/TT	- XIC - File #13 - 7
T23:2	- Mem.Test Step 2 Timer... Delay
	TON - File #13 - 8
T23:2/DN	- XIC - File #13 - 9
T23:2/TT	- XIC - File #13 - 8
T23:3	- Mem.Test Step 3 Timer... Drain Lumens
	TON - File #13 - 9
T23:3/DN	- XIC - File #13 - 10
T23:3/TT	- XIC - File #13 - 9
T23:5	- Mem.Test Step 5 Timer... Pressurize
	TON - File #13 - 10
T23:5/DN	- XIC - File #13 - 11
T23:5/TT	- XIC - File #13 - 10
T23:6	- Mem.Test Step 6 Timer... Stabilize
	TON - File #13 - 11
T23:6/DN	- XIC - File #13 - 12
T23:6/TT	- XIC - File #13 - 11
T23:8	- Mem.Test Step 8 Timer... Test Interval
	TON - File #13 - 15
T23:8/DN	- XIC - File #13 - 16
T23:8/TT	- XIC - File #13 - 15
T23:10	- Mem.Test Step 10 Timer... End of Test Delay
	TON - File #13 - 18
T23:10/DN	- XIC - File #13 - 19
T23:10/TT	- XIC - File #13 - 18
T24:1	- Sonic Test Step 1 Timer... Close Filtrate
	TON - File #14 - 2
T24:1/DN	- XIC - File #14 - 3
T24:1/TT	- XIC - File #14 - 2
T24:2	- Sonic Test Step 2 Timer... Delay
	TON - File #14 - 3
T24:2/DN	- XIC - File #14 - 4
T24:2/TT	- XIC - File #14 - 3
T24:3	- Sonic Test Step 3 Timer... Drain Lumens
	TON - File #14 - 4
T24:3/DN	- XIC - File #14 - 5
T24:3/TT	- XIC - File #14 - 4
T24:5	- Sonic Test Step 5 Timer... Pressurize
	TON - File #14 - 5
T24:5/DN	- XIC - File #14 - 6
T24:5/TT	- XIC - File #14 - 5
T24:7	- Sonic Test Step 7 Timer... End of Test Delay
	TON - File #14 - 8
T24:7/DN	- XIC - File #14 - 9
T24:7/TT	- XIC - File #14 - 8
T26:1	- Integrity Test Exhaust Step 1 Timer... Vent
	TON - File #16 - 2
T26:1/DN	- XIC - File #16 - 3
T26:1/TT	- XIC - File #16 - 2
T26:2	- Integrity Test Exhaust Step 2 Timer... Shell Fill 1
	TON - File #16 - 3
T26:2/DN	- XIC - File #16 - 4
T26:2/TT	- XIC - File #16 - 3
T26:3	- Integrity Test Exhaust Step 3 Timer... Shell Fill 2

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TON - File #16 - 4
T26:3/DN - XIC - File #16 - 5
T26:3/TT - XIC - File #16 - 4
T26:4 - Integrity Test Exhaust Step 4 Active... Lumen Fill
          TON - File #16 - 6
T26:4/DN - XIC - File #16 - 6, 7
T26:4.ACC - GRT - File #16 - 7
T27:1 - CIP Step 1 Timer... Fill Tank and Recirculate
          TON - File #17 - 23
T27:1/DN - XIC - File #17 - 25
T27:7 - CIP Step 7 Timer... Recirculate Filtrate
          TON - File #17 - 29
T27:7/DN - XIC - File #17 - 31
T27:7/TT - XIC - File #17 - 29
T27:7/EN - XIC - File #17 - 29
T27:7.ACC - GRT - File #17 - 30
T27:8 - CIP Step 8 Timer... Soak
          TON - File #17 - 31
T27:8/DN - XIC - File #17 - 33, 37
T27:8/TT - XIC - File #17 - 31
T27:10 - CIP Step 10 Timer... Recirculate Shell
          TON - File #17 - 37
T27:10/DN - XIC - File #17 - 39
T27:10/TT - XIC - File #17 - 37
T27:10.ACC - GRT - File #17 - 38
T27:14 - CIP Step 14 Timer... Rinse to Waste
          TON - File #17 - 42
T27:14/DN - XIC - File #17 - 43
T27:14/TT - XIC - File #17 - 42
T27:14/EN - XIC - File #17 - 42
T28:1 - DrainDown Step 1 Timer... Drain Lumens
          TON - File #18 - 2
T28:1/DN - XIC - File #18 - 3
T28:1/TT - XIC - File #18 - 2
T28:3 - DrainDown Step 3 Timer... Drain Shell
          TON - File #18 - 3
T28:3/DN - XIC - File #18 - 4
T28:3/TT - XIC - File #18 - 3
T28:6 - DrainDown Step 6 Timer... Air Off
          TON - File #18 - 6
T28:6/DN - XIC - File #18 - 7
T28:6/TT - XIC - File #18 - 6
T28:6/EN - XIC - File #18 - 6
T28:7 - DrainDown Step 7 Timer... Exhaust
          TON - File #18 - 7
T28:7/DN - XIC - File #18 - 8
T28:7/TT - XIC - File #18 - 7
N31:0 - {PT1_RAW} Feed Pressure Transducer Input
          COP - File #2 - 2
          SCP - File #5 - 1
FILE N31:0 LEN:4 - COP - File #2 - 2
N31:1 - {PT2_RAW} Filtrate Pressure Transducer Input
          SCP - File #5 - 2
FILE N31:1 LEN:3 - COP - File #2 - 2
N31:2 - Feed Flow Transducer Input
          SCP - File #5 - 3
FILE N31:2 LEN:2 - COP - File #2 - 2
N31:3 - {FT1_RAW} Filtrate Flow Transducer Input
          SCL - File #5 - 4
          SCP - File #5 - 4
FILE N31:3 LEN:1 - COP - File #2 - 2
N31:15 - TMP Value For PanelView
          MUL - File #7 - 8
N31:21 - Second Analogue Card, First Input
          MOV - File #5 - 5, 6
          SCP - File #5 - 10
N31:22 - MOV - File #5 - 5, 7
          SCP - File #5 - 11
N31:23 - MOV - File #5 - 5, 8

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N31:24      - SCP - File #5 - 12
              - MOV - File #5 - 5, 9
              SCP - File #5 - 13
N31:25      - Particle Counter Max Scale Setup
              SCP - File #5 - 10
N31:27      - SCP - File #5 - 11
N31:28      - SCP - File #5 - 12
N31:29      - SCP - File #5 - 13
N31:31      - Particle Counter Scaled Value
              MOV - File #19 - 63
              SCP - File #5 - 10
N31:32      - Spare Scaled Analogue Input
              SCP - File #5 - 11
N31:33      - Spare Scaled Analogue Input
              SCP - File #5 - 12
N31:34      - Spare Scaled Analogue Input
              SCP - File #5 - 13
N31:35      - Particle Counter to Panelview after set time in Filtration
              MOV - File #19 - 63, 65
F32:2       - GRT - File #11 - 42
F32:3       - GRT - File #11 - 42
F32:4       - GRT - File #11 - 44
F32:5       - GRT - File #11 - 51
F32:6       - GRT - File #11 - 51
F32:7       - Sweep Feed Flow Warning Setpoint
              MOV - File #19 - 26, 59
              SUB - File #19 - 59
              LES - File #11 - 48
F32:8       - Sweep Feed Flow Shutdown Setpoint
              SUB - File #19 - 59
              LES - File #11 - 48
F32:9       - Delta Resistance Setpoint for Backwash Request
              ADD - File #11 - 4
              MUL - File #19 - 10
              DIV - File #19 - 53
F32:10      - {TMPBWREQ} Delta TMP Setpoint for Backwash Request
              ADD - File #11 - 8
              MUL - File #19 - 12, 13
              DIV - File #19 - 54
F32:12      - GRT - File #12 - 6
F32:13      - GRT - File #12 - 6
F32:14      - {ATMPBWSP} High TMP Setpoint For Backwash Request
              GEQ - File #11 - 12
              LES - File #11 - 12
F32:15      - LIM - File #13 - 14
              File #14 - 7
F32:16      - LIM - File #13 - 14
              File #14 - 7
F32:17      - {PDTESTWARN} Membrane Test Warning Setpoint (PSI/min)
              MUL - File #19 - 23
              DIV - File #19 - 55
              LIM - File #13 - 20
F32:18      - {PDTESTALRM} Membrane Test Shutdown Setpoint (PSI/min)
              MUL - File #19 - 23
              DIV - File #19 - 56
              GRT - File #13 - 20
              LIM - File #13 - 20
F32:22      - Sweep Feed Flow Warning Setpoint From CIP Recirc.
              MOV - File #19 - 26, 60
              SUB - File #19 - 60
              LES - File #17 - 30, 38
F32:23      - Sweep Feed Flow Shutdown Setpoint From CIP Recirc.
              SUB - File #19 - 60
              LES - File #17 - 30, 38
F32:25      - {TMPCIPREQ} TMP Setpoint for CIP Request (PSI)
              MUL - File #19 - 24
              DIV - File #19 - 57
              GRT - File #17 - 2
              LEQ - File #17 - 3

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F32:30 - LES - File #9 - 33
F32:31 - LES - File #9 - 32
F32:32 - GRT - File #9 - 34
F32:33 - GRT - File #9 - 35
F32:34 - {TMPMAX} TMP Maximum Allowable Value (PSI)
      MUL - File #19 - 25
      DIV - File #19 - 58
      GRT - File #11 - 23
      LEQ - File #11 - 24
F32:38 - GRT - File #9 - 31
N33:1 - {BWTIMEINT} Maximum Filtration Time for Auto. Backwash
      (minutes)
      MOV - File #4 - 20
           File #11 - 18
           File #19 - 47
      GRT - File #11 - 18
      GEQ - File #11 - 19
      LES - File #11 - 18
N33:2 - {BWREQMAXTIME} Maximum Backwash Request Time Setpoint
      (seconds)
      GRT - File #6 - 16
N33:3 - {RWNUM} Number of Rewets to Perform After Backwash
      (setpoint)
      MOV - File #3 - 11
N33:4 - {BWREQMINTIME} Filtration Time Setpoint For Backwash Too
      Early Bit (minutes)
      LES - File #11 - 30
N33:5 - {CIPTIMEINT} Maximum Time In Filtration For a CIP Request
      (hours)
      MOV - File #19 - 19, 49
      GEQ - File #17 - 9
N33:6 - {TMPCIPCNTSP} Number of Consecutive High TMP Values For CIP
      Request Setpoint
      MOV - File #3 - 9
N33:7 - {CIPRINSE} Number of Rinse Cycles To Perform During CIP
      (setpoint)
      MOV - File #3 - 12
N33:9 - {PDTESTINTVL} Time Between Automatic Membrane Tests (hours)
      MOV - File #4 - 20
           File #19 - 48
      GEQ - File #13 - 4
N33:10 - {LOWAIRTIME} Control Air Pressure Low Alarm Delay Setpoint
      (seconds)
      MOV - File #3 - 8
N33:12 - Minimum Flow Rate To Enable Totalizing
      GRT - File #9 - 37, 38
N33:14 - {TMPMAXCNTSP} Number of Consecutive High TMP Values For
      Standby Setpoint
      MOV - File #3 - 10
B34:0/1 - Enable Data Highway Message (ON=Enable)
      XIC - File #4 - 5, 6, 8, 9, 18
B34:0/2 - Enable Floating Point Write to Master
      XIC - File #4 - 5
      XIO - File #4 - 6
B34:0/3 - Enable Floating Point Read From Master
      XIC - File #4 - 8
      XIO - File #4 - 9
B34:0/4 - This Machine Does Not Use A Master for Backwash Perm.
      ON=Standalone
      XIC - File #11 - 3, 7, 11, 14, 20
           File #17 - 27, 45
      XIO - File #3 - 2, 3, 4
           File #4 - 1, 12, 13, 15, 18
           File #6 - 2
B34:0/5 - This Machine Does Not Use A Master for CIP Permission
      ON=Standalone
      XIC - File #17 - 5, 12
      XIO - File #3 - 2, 3, 4
           File #4 - 1, 12, 13, 15, 18

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RSLogix 500 Cross Reference Report - Sorted by Address

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      File #6 - 2
      File #17 - 15
B34:0/6  - This Machine Does Not Use A Master for Filtrate Funct.
          ON=Standalone
          XIC - File #9 - 16, 40
          File #26 - 41
          XIO - File #3 - 2, 3, 4
          File #4 - 1, 12, 13, 15, 18, 21
          File #6 - 2
          File #26 - 41
B34:0/8  - Enable Backwash On Delta Resistance
          XIC - File #11 - 6
B34:0/9  - Enable Backwash On Delta TMP
          XIC - File #11 - 10
B34:0/10 - Enable Backwash Request On High TMP
          XIC - File #11 - 12, 13
T37:0    - Fixed Filtration Interval Timer
          TON - File #9 - 1
T37:0/DN - XIC - File #9 - 2
T37:1    - Controlled Filtration Initialization Timer
          TON - File #9 - 5
T37:1/DN - XIC - File #6 - 13
          File #9 - 6
T37:2    - Controlled Filtration Interval Timer
          TON - File #9 - 8
T37:2/DN - XIC - File #9 - 9
          XIO - File #9 - 8
T37:3    - Filtrate Exhaust Timer
          TON - File #9 - 19
T37:3/DN - XIC - File #6 - 12
          File #17 - 46
N38:30   - Scaled Flow For PID (0-16383)
          SCL - File #5 - 4
F40:0    - Oldest Valve Position Sample Shifted Out
          FLL - File #7 - 1
          COP - File #7 - 4
          SUB - File #7 - 4
FILE F40:0 LEN:32 - FLL - File #7 - 1
          COP - File #7 - 4
F40:1    - Oldest Filtrate Valve Position Sample
          COP - File #7 - 4
FILE F40:1 LEN:31 - FLL - File #7 - 1
          COP - File #7 - 4
F40:30   - Newest Filtrate Valve Position Sample
          MOV - File #7 - 4
          ADD - File #7 - 4
FILE F40:30 LEN:2 - FLL - File #7 - 1
          COP - File #7 - 4
F40:31   - Total of Filtrate Valve Position Samples
          ADD - File #7 - 4
          SUB - File #7 - 4
          DIV - File #7 - 4
FILE F40:31 LEN:1 - FLL - File #7 - 1
F41:0    - Oldest Filtrate Flow Sample Shifted Out
          FLL - File #7 - 1
          COP - File #7 - 5
          SUB - File #7 - 5
FILE F41:0 LEN:32 - FLL - File #7 - 1
          COP - File #7 - 5
F41:1    - Oldest Filtrate Flow Sample
          COP - File #7 - 5
FILE F41:1 LEN:31 - FLL - File #7 - 1
          COP - File #7 - 5
F41:30   - Newest Filtrate Flow Sample
          MOV - File #7 - 5
          ADD - File #7 - 5
FILE F41:30 LEN:2 - FLL - File #7 - 1
          COP - File #7 - 5
F41:31   - Total of Filtrate Flow Samples

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      ADD - File #7 - 5
      SUB - File #7 - 5
      DIV - File #7 - 5
FILE F41:31 LEN:1 - FLL - File #7 - 1
F42:0      - Oldest Feed Pressure Sample Shifted Out
      FLL - File #7 - 1
      COP - File #7 - 6
      SUB - File #7 - 6
FILE F42:0 LEN:32 - FLL - File #7 - 1
      COP - File #7 - 6
F42:1      - Oldest Feed Pressure Sample
      COP - File #7 - 6
FILE F42:1 LEN:31 - FLL - File #7 - 1
      COP - File #7 - 6
F42:30      - Newest Feed Pressure Sample
      MOV - File #7 - 6
      ADD - File #7 - 6
FILE F42:30 LEN:2 - FLL - File #7 - 1
      COP - File #7 - 6
F42:31      - Total of Feed Pressure Samples
      ADD - File #7 - 6
      SUB - File #7 - 6
      DIV - File #7 - 6
FILE F42:31 LEN:1 - FLL - File #7 - 1
F43:0      - Oldest Filtrate Pressure Sample Shifted Out
      FLL - File #7 - 1
      COP - File #7 - 7
      SUB - File #7 - 7
FILE F43:0 LEN:32 - FLL - File #7 - 1
      COP - File #7 - 7
F43:1      - Oldest Filtrate Pressure Sample
      COP - File #7 - 7
FILE F43:1 LEN:31 - FLL - File #7 - 1
      COP - File #7 - 7
F43:30      - Newest Filtrate Pressure Sample
      MOV - File #7 - 7
      ADD - File #7 - 7
FILE F43:30 LEN:2 - FLL - File #7 - 1
      COP - File #7 - 7
F43:31      - Total of Filtrate Pressure Samples
      ADD - File #7 - 7
      SUB - File #7 - 7
      DIV - File #7 - 7
FILE F43:31 LEN:1 - FLL - File #7 - 1
F44:0      - Oldest Feed Flow Sample Shifted Out
      FLL - File #7 - 1
      COP - File #7 - 9
      SUB - File #7 - 9
FILE F44:0 LEN:32 - FLL - File #7 - 1
      COP - File #7 - 9
F44:1      - Oldest Feed Flow Sample
      COP - File #7 - 9
FILE F44:1 LEN:31 - FLL - File #7 - 1
      COP - File #7 - 9
F44:30      - Newest Feed Flow Sample
      MOV - File #7 - 9
      ADD - File #7 - 9
FILE F44:30 LEN:2 - FLL - File #7 - 1
      COP - File #7 - 9
F44:31      - Total of Feed Flow Samples
      ADD - File #7 - 9
      SUB - File #7 - 9
      DIV - File #7 - 9
FILE F44:31 LEN:1 - FLL - File #7 - 1
F45:0      - Flow From Main Program (kL/h)
      DIV - File #8 - 1, 2
F45:1      - TMP From Main Program (kPa)
      MUL - File #8 - 2
      DIV - File #8 - 1

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F45:2 - Current Temperature From Main Program (DegC)
SUB - File #8 - 3

F45:3 - Surface Area per Module for This CMF
CPT - File #8 - 6

F45:5 - Current Temperature Less 20 (DegC)
SUB - File #8 - 3
MUL - File #8 - 3
CPT - File #8 - 4

F45:6 - Current Temperature Less 20.. Quantity SQRD
MUL - File #8 - 3
CPT - File #8 - 4

F45:7 - {R_VISC1} Viscosity Calculation Step 1
CPT - File #8 - 4
NEQ - File #8 - 4

F45:8 - {R_LOG_VISC} Log(Viscosity)
CPT - File #8 - 4
XPY - File #8 - 5

F45:9 - {R_VISC_CP} Viscosity (centipoise)
MUL - File #8 - 5
XPY - File #8 - 5

F45:10 - {R_VISCOSITY} Viscosity (Pa.s)
MUL - File #8 - 5
CPT - File #8 - 6
NEQ - File #8 - 6

F45:11 - {R_TMP} TMP for Resistance Calculation (Pa)
MUL - File #8 - 2
CPT - File #8 - 6

F45:12 - {R_FLOW} Flow for Resistance Calculation (m3/s)
DIV - File #8 - 2
CPT - File #8 - 6
NEQ - File #8 - 6

F45:15 - {R_RESISTANCE} Resistance
DIV - File #8 - 6
CPT - File #8 - 6

F50:0 - {FILTFLOWSP} Current Flow Setpoint Used by CMF (GPM)
MSG - File #4 - 5

F50:1 - {FEEDPRAV} Current Feed Pressure Average
SUB - File #7 - 8
MUL - File #19 - 1, 2
DIV - File #7 - 6
GRT - File #9 - 31

F50:2 - {FILTPRAV} Current Filtrate Pressure Average
SUB - File #7 - 8
MUL - File #19 - 1, 2
DIV - File #7 - 7

F50:3 - {FILTFLOWAV} Current Filtrate Flow Average
MOV - File #9 - 39
MUL - File #19 - 3, 4
DIV - File #7 - 5
File #8 - 1
GRT - File #9 - 34, 35, 39
LES - File #9 - 32, 33

F50:4 - {FCVPOSAV} Current Filtrate Valve Position Average
DIV - File #7 - 4

F50:5 - {TMPAV} Current TMP Average
MOV - File #11 - 8
File #17 - 1
SUB - File #7 - 8
MUL - File #7 - 8
File #19 - 5, 6
DIV - File #8 - 1
GRT - File #11 - 23
GEQ - File #11 - 9, 12
LES - File #11 - 9, 12
LEQ - File #11 - 24

F50:6 - {TMPBWSP} Current TMP Setpoint For Backwash Request
Calculated)
ADD - File #11 - 8
MUL - File #19 - 11

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```

F50:9      GEQ - File #11 - 9
          LES - File #11 - 9
          - {PDSTARTPSI} Start Pressure For Membrane Test
          MOV - File #13 - 13
          SUB - File #13 - 17
          MUL - File #19 - 16, 17
F50:10     - {PDENDPSI} End Pressure For Membrane Test
          MOV - File #13 - 17
          SUB - File #13 - 17
          MUL - File #19 - 16, 17
F50:11     - {PDDECAY} Pressure Decay for Membrane Test (PSI/Min)
          MUL - File #19 - 16, 17
          DIV - File #13 - 17
          GRT - File #13 - 20
          LIM - File #13 - 20
F50:16     - {TOTALFLOMCH} Total Flow For this Machine (Gallons)
          ADD - File #9 - 37
F50:17     - Feed Flow Average
          MUL - File #19 - 3, 4
          DIV - File #7 - 9
F50:18     - Current Resistance Value
          MOV - File #11 - 4
          MUL - File #19 - 7
          DIV - File #8 - 6
          GEQ - File #11 - 5
          LES - File #11 - 5
N51:0      - {STSTEPNUM} Startup Step Number
          MOV - File #10 - 8
          LIM - File #10 - 9, 11
N51:1      - {BWSTEPNUM} Backwash Step Number
          MOV - File #11 - 57
          LIM - File #11 - 59, 60, 61, 63, 64, 65, 66, 67
N51:2      - {RWSTEPNUM} Rewet Step Number
          MOV - File #12 - 17
N51:3      - {PDSTEPNUM} Membrane Test Step Number
          MOV - File #13 - 22
          LIM - File #13 - 24, 25, 26, 27, 28
N51:4      - {SONSTEPNUM} Sonic Test Step Number
          MOV - File #14 - 10
          LIM - File #14 - 12, 13, 15
N51:6      - {INTEXSTEPNUM} Integrity Test Exhaust Step Number
          MOV - File #16 - 8
          LIM - File #16 - 10, 11, 12
N51:7      - {CIPSTEPNUM} CIP Step Number
          MOV - File #17 - 51, 52
          File #19 - 21
          LES - File #17 - 32
N51:8      - {DDSTEPNUM} Drain Down Step Number
          MOV - File #18 - 9
          LIM - File #18 - 11, 13
N51:9      - {STATENUM} Current State Number
          MOV - File #6 - 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
          15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26
          File #19 - 14, 64
          File #22 - 32
          MSG - File #4 - 6
          EQU - File #22 - 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
          15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27
          28, 29, 30, 31
          LIM - File #2 - 14
N51:10     - {BWFILTTIMEM} Time Since Last Backwash (Minutes)
          MOV - File #11 - 17
          COP - File #19 - 8
          GEQ - File #11 - 19
          LES - File #11 - 30
FILE N51:10 LEN:2 - COP - File #19 - 8
N51:11     - {BWFILTTIMES} Time Since Last Backwash (Seconds)
          MOV - File #11 - 17
FILE N51:11 LEN:1 - COP - File #19 - 8

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N51:12      - {BWREQTIMEM} Time Since Backwash was Requested (Minutes)
             MOV - File #11 - 22
N51:13      - {BWREQTIMES} Time Since Backwash was Requested (Seconds)
             MOV - File #11 - 22
N51:14      - {CIPFILTTIMEH} Time Since Last CIP (Hours)
             MOV - File #17 - 7
             COP - File #19 - 18
             GEQ - File #17 - 9
FILE N51:14 LEN:2 - COP - File #19 - 18
N51:15      - {CIPFILTTIMEM} Time Since Last CIP (Minutes)
             MOV - File #17 - 7
FILE N51:15 LEN:1 - COP - File #19 - 18
N51:16      - {CIPFILTTIMES} Time Since Last CIP (Seconds)
             MOV - File #17 - 7
N51:18      - {CIPIMG} CIP Step Number Image
             MOV - File #17 - 51
             LIM - File #17 - 19
N51:26      - {PDFILTTIMEH} Time Since Last Membrane Test (Hours)
             MOV - File #13 - 2
             COP - File #19 - 15
             GEQ - File #13 - 4
FILE N51:26 LEN:3 - COP - File #19 - 15
N51:27      - {PDFILTTIMEM} Time Since Last Membrane Test (Minutes)
             MOV - File #13 - 2
FILE N51:27 LEN:2 - COP - File #19 - 15
N51:28      - {PDINTERVAL} Membrane Test Interval (Hours)
             MOV - File #4 - 20
FILE N51:28 LEN:1 - COP - File #19 - 15
N51:29      - {BWMAXTIME} Maximum Time Between Backwashes (Minutes)
             MOV - File #4 - 20
             File #19 - 9
N51:30      - {FLOWTOTALPRV} Previous Day Total Filtrate Flow (Gal X 10)
             MOV - File #9 - 41
             COP - File #19 - 28
             DIV - File #19 - 27
FILE N51:30 LEN:2 - COP - File #19 - 28
N51:31      - {FLOWTOTALTDY} Current Day Total Filtrate Flow (Gal x 10)
             CLR - File #9 - 41
             MOV - File #9 - 41
             DIV - File #9 - 37
             File #19 - 27
FILE N51:31 LEN:1 - COP - File #19 - 28
N51:32      - {FLOWMAXPRV} Previous Day Maximum Flow In Filtration (GPM)
             MOV - File #9 - 41
N51:33      - {FLOWMAXTDY} Current Day Maximum Flow In Filtration (GPM)
             CLR - File #9 - 41
             MOV - File #9 - 39, 41
             GRT - File #9 - 39
N51:35      - Previous Day Total Feed Flow (Gal x 10)
             MOV - File #9 - 42
             COP - File #19 - 28
             DIV - File #19 - 27
FILE N51:35 LEN:2 - COP - File #19 - 28
N51:36      - Current Day Total Feed Flow (Gal x 10)
             CLR - File #9 - 42
             MOV - File #9 - 42
             DIV - File #9 - 38
             File #19 - 27
FILE N51:36 LEN:1 - COP - File #19 - 28
N51:40      - Extended Soak Hours
             MOV - File #17 - 35
             COP - File #19 - 20
FILE N51:40 LEN:3 - COP - File #19 - 20
N51:41      - Extended Soak Minutes
             MOV - File #17 - 35
FILE N51:41 LEN:2 - COP - File #19 - 20
B52:0       - CMF Cycle And Mode Status Sent To Master
             PLL - File #3 - 5
             MSG - File #4 - 7

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FILE B52:0 LEN:5 - FLL - File #3 - 5
B52:0/0 - {TM_STARTUP} CMF is in Startup Cycle
      OTE - File #10 - 3
FILE B52:0/0 LEN:5 - FLL - File #3 - 5
B52:0/1 - {TM_BACKWASH} CMF is in Backwash Cycle
      OTE - File #11 - 32
FILE B52:0/1 LEN:5 - FLL - File #3 - 5
B52:0/2 - {TM_REWET} CMF is in Rewet Cycle
      OTE - File #12 - 1
FILE B52:0/2 LEN:5 - FLL - File #3 - 5
B52:0/3 - {TM_MEMTEST} CMF is in Membrane Test Cycle
      OTE - File #13 - 6
FILE B52:0/3 LEN:5 - FLL - File #3 - 5
B52:0/4 - {TM_SONIC} CMF is in Sonic Test Cycle
      OTE - File #14 - 1
FILE B52:0/4 LEN:5 - FLL - File #3 - 5
B52:0/6 - {TM_INTEKH} CMF is in Integrity Test Exhaust Cycle Exhaust
      OTE - File #16 - 1
FILE B52:0/6 LEN:5 - FLL - File #3 - 5
B52:0/7 - {TM_CIP} CMF is in CIP Cycle
      OTL - File #17 - 21
      OTU - File #17 - 20, 49, 50
      XIC - File #17 - 29, 32, 42, 51, 61
      XIO - File #6 - 3, 12
           File #17 - 47
           File #18 - 16
FILE B52:0/7 LEN:5 - FLL - File #3 - 5
B52:0/8 - {TM_DRAIN} CMF is in Drain Down Cycle
      OTE - File #18 - 1
      XIC - File #18 - 6
FILE B52:0/8 LEN:5 - FLL - File #3 - 5
B52:0/9 - {TM_FIXFILT} CMF is in Fixed Filtration
      OTE - File #9 - 3
FILE B52:0/9 LEN:5 - FLL - File #3 - 5
B52:0/10 - {TM_MODULATE} CMF is in Controlled Filtration
      OTE - File #9 - 17
FILE B52:0/10 LEN:5 - FLL - File #3 - 5
B52:0/14 - {TM_STANDBY} CMF is in Standby
      OTE - File #9 - 21
FILE B52:0/14 LEN:5 - FLL - File #3 - 5
B52:0/15 - {TM_SHUTDOWN} CMF is Shutdown
      OTE - File #9 - 22
FILE B52:0/15 LEN:5 - FLL - File #3 - 5
B52:1/0 - {TM_BWREQ} Any Backwash Request Sent To Master
      OTE - File #11 - 21
      XIO - File #11 - 28
FILE B52:1/0 LEN:4 - FLL - File #3 - 5
B52:1/1 - {TM_BWRSC} CMF Has Backwash Resource
      OTE - File #11 - 25
      XIC - File #11 - 26, 32
      XIO - File #11 - 28
FILE B52:1/1 LEN:4 - FLL - File #3 - 5
B52:1/2 - {TM_CIPREQ} Any CIP Request Sent To Master
      OTE - File #17 - 15
      XIO - File #17 - 17
FILE B52:1/2 LEN:4 - FLL - File #3 - 5
B52:1/3 - {TM_CIPRSC} CMF Has CIP Resource
      OTE - File #17 - 16
      XIC - File #17 - 13, 19
      XIO - File #17 - 17
FILE B52:1/3 LEN:4 - FLL - File #3 - 5
B52:1/7 - {TM_ENDINTERVAL} End of Filtration Period.. Set each
      Interval
      OTE - File #9 - 16
FILE B52:1/7 LEN:4 - FLL - File #3 - 5
B52:1/8 - {TM_MANBWASH} CMF has Requested A Manual Backwash
      OTE - File #11 - 2
FILE B52:1/8 LEN:4 - FLL - File #3 - 5
B52:1/9 - {BWREQEARLY} Backwash Has Been Requested Too Early

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      OTE - File #11 - 30
FILE B52:1/9 LEN:4 - FLL - File #3 - 5
B52:1/11 - {TM_MANCIP} CMF has Requested A Manual CIP
      OTE - File #17 - 11
FILE B52:1/11 LEN:4 - FLL - File #3 - 5
B52:1/12 - {TM_WRNINGALM} Any Warning Alarm is Present
      OTE - File #2 - 11
      XIC - File #2 - 13
      File #19 - 66
      XIO - File #19 - 37
FILE B52:1/12 LEN:4 - FLL - File #3 - 5
B52:1/13 - {TM_SHUTDNALM} Any Shutdown Alarm is Present
      OTE - File #2 - 12
      XIC - File #2 - 13
      File #6 - 2
      File #19 - 67
      XIO - File #4 - 29
      File #19 - 45
FILE B52:1/13 LEN:4 - FLL - File #3 - 5
B52:1/14 - {TM_COMM_OK} Master is Responding on Data Highway
      OTL - File #4 - 17
      OTU - File #4 - 16
      XIC - File #4 - 21
      XIO - File #3 - 2, 3, 4
      File #4 - 17, 18
      File #6 - 2
      File #26 - 41
FILE B52:1/14 LEN:4 - FLL - File #3 - 5
B52:1/15 - {TM_HEARTBEAT} Heartbeat Written To Master
      OTL - File #4 - 12
      OTU - File #4 - 13
      XIC - File #9 - 15, 43
FILE B52:1/15 LEN:4 - FLL - File #3 - 5
B52:2/0 - This CMF Is Available For Filtration
      OTE - File #2 - 14
FILE B52:2/0 LEN:3 - FLL - File #3 - 5
B52:2/3 - Log Membrane Test Results.. Read by Trend Software
      OTL - File #13 - 21
      OTU - File #13 - 21
FILE B52:2/3 LEN:3 - FLL - File #3 - 5
B52:2/8 - CMF is Filtering To Plant Filtrate
      OTE - File #2 - 15
FILE B52:2/8 LEN:3 - FLL - File #3 - 5
B52:2/9 - CIP Extended Soak Enabled
      OTE - File #17 - 32
      XIC - File #17 - 32, 33
      XIO - File #17 - 37
FILE B52:2/9 LEN:3 - FLL - File #3 - 5
B52:2/10 - CIP External Feed Is Enabled
      OTL - File #4 - 43
      OTU - File #4 - 43
      XIC - File #17 - 24, 28, 29
      XIO - File #4 - 43
      File #17 - 22, 29
FILE B52:2/10 LEN:3 - FLL - File #3 - 5
B52:2/11 - State 100 Active.. Shutdown Used by Master
      OTE - File #22 - 2
FILE B52:2/11 LEN:3 - FLL - File #3 - 5
B52:2/12 - State 170 Active.. Normal Filtration Used by Master
      OTE - File #22 - 9
FILE B52:2/12 LEN:3 - FLL - File #3 - 5
B52:3/0 - Stop Command by Master Handshake
      OTL - File #4 - 23
      OTU - File #4 - 23
      XIO - File #4 - 23
FILE B52:3/0 LEN:2 - FLL - File #3 - 5
B52:3/1 - Standby Command by Master Handshake
      OTL - File #4 - 24
      OTU - File #4 - 24

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XIO - File #4 - 24
FILE B52:3/1 LEN:2 - FLL - File #3 - 5
B52:3/2 - Start Command by Master Handshake
      OTL - File #4 - 29
      OTU - File #4 - 29
      XIO - File #4 - 29
FILE B52:3/2 LEN:2 - FLL - File #3 - 5
B52:3/3 - Backwash Button Handshake
      OTL - File #4 - 30
      OTU - File #4 - 30
      XIO - File #4 - 30
FILE B52:3/3 LEN:2 - FLL - File #3 - 5
B52:3/4 - Rewet Button Handshake
      OTL - File #4 - 31
      OTU - File #4 - 31
      XIO - File #4 - 31
FILE B52:3/4 LEN:2 - FLL - File #3 - 5
B52:3/5 - Membrane Test Button Handshake
      OTL - File #4 - 32
      OTU - File #4 - 32
      XIO - File #4 - 32
FILE B52:3/5 LEN:2 - FLL - File #3 - 5
B52:3/6 - Sonic Test Button Handshake
      OTL - File #4 - 33
      OTU - File #4 - 33
      XIO - File #4 - 33
FILE B52:3/6 LEN:2 - FLL - File #3 - 5
B52:3/7 - Sonic Reset Button Handshake
      OTL - File #4 - 34
      OTU - File #4 - 34
      XIO - File #4 - 34
FILE B52:3/7 LEN:2 - FLL - File #3 - 5
B52:3/8 - Spare Button-1 Handshake
      OTL - File #4 - 35
      OTU - File #4 - 35
      XIO - File #4 - 35
FILE B52:3/8 LEN:2 - FLL - File #3 - 5
B52:3/9 - CIP Button Handshake
      OTL - File #4 - 36
      OTU - File #4 - 36
      XIO - File #4 - 36
FILE B52:3/9 LEN:2 - FLL - File #3 - 5
B52:3/10 - Halt CIP Button Handshake
      OTL - File #4 - 37
      OTU - File #4 - 37
      XIO - File #4 - 37
FILE B52:3/10 LEN:2 - FLL - File #3 - 5
B52:3/11 - Cancel CIP Command Handshake
      OTL - File #4 - 38
      OTU - File #4 - 38
      XIO - File #4 - 38
FILE B52:3/11 LEN:2 - FLL - File #3 - 5
B52:3/12 - Drain Down Button Handshake
      OTL - File #4 - 39
      OTU - File #4 - 39
      XIO - File #4 - 39
FILE B52:3/12 LEN:2 - FLL - File #3 - 5
B52:3/13 - Reset Alarms Button Handshake
      OTL - File #4 - 40
      OTU - File #4 - 40
      XIO - File #4 - 40
FILE B52:3/13 LEN:2 - FLL - File #3 - 5
B52:3/14 - New Day Handshake Bit
      OTE - File #9 - 44
FILE B52:3/14 LEN:2 - FLL - File #3 - 5
B52:3/15 - {TM_BWLOGRDY} Backwash History Files Ready To Store
      OTL - File #26 - 40
      OTU - File #26 - 41
FILE B52:3/15 LEN:2 - FLL - File #3 - 5

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B52:4/0      - Enable CIP Extended Soak Button Handshake
              OTL - File #4 - 41
              OTU - File #4 - 41
              XIO - File #4 - 41
FILE B52:4/0 LEN:1 - FLL - File #3 - 5
B52:4/1      - Disable CIP Extended Soak Button Handshake
              OTL - File #4 - 42
              OTU - File #4 - 42
              XIO - File #4 - 42
FILE B52:4/1 LEN:1 - FLL - File #3 - 5
B52:5        - Shutdown Alarm Word 1
              FLL - File #3 - 6
              MVM - File #19 - 42
              EQU - File #19 - 39
              NEQ - File #2 - 12
FILE B52:5 LEN:6 - FLL - File #3 - 6
B52:5/0      - E-Stop Shutdown Alarm
              OTE - File #2 - 4
              XIC - File #19 - 68
FILE B52:5/0 LEN:6 - FLL - File #3 - 6
B52:5/1      - {AIRLOALRM} Control Air Pressure Low Shutdown Alarm
              OTL - File #2 - 9
FILE B52:5/1 LEN:6 - FLL - File #3 - 6
B52:5/4      - Feed Pump Fault Shutdown Alarm
              OTL - File #20 - 14
              XIC - File #19 - 69
FILE B52:5/4 LEN:6 - FLL - File #3 - 6
B52:5/5      - Feed Pressure High Shutdown Alarm
              OTL - File #9 - 31
              XIC - File #19 - 70
FILE B52:5/5 LEN:6 - FLL - File #3 - 6
B52:5/9      - Master Comms Failed Shutdown Alarm
              OTL - File #4 - 18
FILE B52:5/9 LEN:6 - FLL - File #3 - 6
B52:5/11     - Filtrate Flow Rate Low-Low Shutdown
              OTL - File #9 - 33
FILE B52:5/11 LEN:6 - FLL - File #3 - 6
B52:5/12     - Filtrate Flow Rate High-High Shutdown Alarm
              OTL - File #9 - 35
FILE B52:5/12 LEN:6 - FLL - File #3 - 6
B52:6        - Shutdown Alarm Word 2
              MVM - File #19 - 42
              EQU - File #19 - 39
              NEQ - File #2 - 12
FILE B52:6 LEN:5 - FLL - File #3 - 6
B52:6/0      - {BW11LODFLOW_SH} Sweep Feed Flow Low Shutdown During BW11
              OTL - File #11 - 48
FILE B52:6/0 LEN:5 - FLL - File #3 - 6
B52:6/1      - {PDTALARM} Pressure Decay Exceeded Shutdown
              OTL - File #13 - 20
FILE B52:6/1 LEN:5 - FLL - File #3 - 6
B52:6/2      - CIP Recirc. Feed Flow Low Shutdown During CIP7 or CIP10
              OTL - File #17 - 30, 38
FILE B52:6/2 LEN:5 - FLL - File #3 - 6
B52:6/4      - Shutdown Caused by TMP Exceeding Maximum Allowed
              OTL - File #11 - 23
FILE B52:6/4 LEN:5 - FLL - File #3 - 6
B52:6/5      - Shutdown Caused by Auto CIP Request
              OTL - File #17 - 4
FILE B52:6/5 LEN:5 - FLL - File #3 - 6
B52:7        - Warning Alarm Word 1
              MVM - File #19 - 33
              NEQ - File #2 - 11
FILE B52:7 LEN:4 - FLL - File #3 - 6
B52:7/1      - {BW8HIPT1FAIL} High Feed Pressure Fail During Backwash
              Step 8
              OTL - File #11 - 43
FILE B52:7/1 LEN:4 - FLL - File #3 - 6
B52:7/2      - {BW8HIPT2FAIL} High Filtrate Pressure Fail During

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      Backwash Step 8
      OTL - File #11 - 43
FILE B52:7/2 LEN:4 - FLL - File #3 - 6
B52:7/3 - {BW8LOFLOFAIL} Low Filtrate Flow Warning During Backwash
      Step 8
      OTL - File #11 - 44
FILE B52:7/3 LEN:4 - FLL - File #3 - 6
B52:7/4 - {BW13LOPT1FAIL} Low Feed Pressure Failure During Backwash
      Step 13
      OTL - File #11 - 51
FILE B52:7/4 LEN:4 - FLL - File #3 - 6
B52:7/5 - {BW13LOPT2FAIL} Low Filtrate Pressure Failure During
      Backwash Step 13
      OTL - File #11 - 51
FILE B52:7/5 LEN:4 - FLL - File #3 - 6
B52:7/6 - {BW11LODFLOW} Sweep Feed Flow Low Warning During BW11
      OTL - File #11 - 48
FILE B52:7/6 LEN:4 - FLL - File #3 - 6
B52:7/9 - Control Air Pressure Low.... Perform Standby
      OTE - File #2 - 10
      XIC - File #6 - 17
      XIO - File #6 - 11
FILE B52:7/9 LEN:4 - FLL - File #3 - 6
B52:7/10 - Feed Pressure High Failed Warning Alarm During RW4
      OTL - File #12 - 7
FILE B52:7/10 LEN:4 - FLL - File #3 - 6
B52:7/11 - Filtrate Pressure High Failed Warning Alarm During RW4
      OTL - File #11 - 55
      File #12 - 7
FILE B52:7/11 LEN:4 - FLL - File #3 - 6
B52:7/13 - {PDINITPRFAIL} Initial Pressure For Membrane Test is Out
      Of Range
      OTL - File #13 - 14
FILE B52:7/13 LEN:4 - FLL - File #3 - 6
B52:7/14 - {PDTWARNING} Pressure Decay Exceeded Warning
      OTL - File #13 - 20
      File #16 - 6
FILE B52:7/14 LEN:4 - FLL - File #3 - 6
B52:7/15 - {SONPRFAIL} Pressure for Sonic Test Is Out Of Range
      OTL - File #14 - 7
FILE B52:7/15 LEN:4 - FLL - File #3 - 6
B52:8 - Warning Alarm Word 2
      MVM - File #19 - 33
      NEQ - File #2 - 11
FILE B52:8 LEN:3 - FLL - File #3 - 6
B52:8/1 - Tank Not Drained Alarm During DrainDown Step 4
      OTL - File #18 - 5
FILE B52:8/1 LEN:3 - FLL - File #3 - 6
B52:8/3 - CIP Recirc. Feed Flow Low Warning During CIP7 or CIP10
      OTL - File #17 - 30, 38
FILE B52:8/3 LEN:3 - FLL - File #3 - 6
B52:8/7 - {FILTFLOWLO} Filtrate Flow Rate Low Warning
      OTL - File #9 - 33
FILE B52:8/7 LEN:3 - FLL - File #3 - 6
B52:8/8 - Filtrate Flow Rate High Warning Alarm
      OTL - File #9 - 35
FILE B52:8/8 LEN:3 - FLL - File #3 - 6
B52:8/9 - Timed CIP Warning Alarm
      OTE - File #17 - 9
FILE B52:8/9 LEN:3 - FLL - File #3 - 6
B52:9 - Warning Alarm Word 3
      MVM - File #19 - 33
      NEQ - File #2 - 11
FILE B52:9 LEN:2 - FLL - File #3 - 6
B52:10 - Warning Alarm Word 4
      MVM - File #19 - 33
      NEQ - File #2 - 11
FILE B52:10 LEN:1 - FLL - File #3 - 6
B52:11/1 - Filtration Indicator

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```
B52:11/2 - OTE - File #20 - 17
          - Backwash Indicator
          OTE - File #20 - 19
B52:11/3 - Mtest Indicator
          OTE - File #20 - 22
B52:11/4 - CIP Indicator
          OTE - File #20 - 23
B52:11/5 - Standby Indicator
          OTE - File #20 - 18
B52:11/6 - Shutdown Indicator
          OTE - File #20 - 24
B52:12 - Current State Bits Word 1
          FLL - File #22 - 1
FILE B52:12 LEN:3 - FLL - File #22 - 1
B52:12/0 - {STATE_100} State 100 Active.. Shutdown
          OTE - File #22 - 2
          XIC - File #3 - 1
          File #4 - 29
          File #6 - 4, 15, 22
          File #9 - 22
          File #10 - 12
          File #11 - 26, 27, 29
          File #17 - 13, 14, 50
          File #26 - 42
          XIO - File #17 - 10
FILE B52:12/0 LEN:3 - FLL - File #22 - 1
B52:12/1 - {STATE_110} State 110 Active.. Startup-Wait
          OTE - File #22 - 3
          XIC - File #6 - 5
          File #10 - 1, 2, 3, 13
FILE B52:12/1 LEN:3 - FLL - File #22 - 1
B52:12/2 - {STATE_120} State 120 Active.. Begin Startup
          OTE - File #22 - 4
          XIC - File #6 - 12
          File #10 - 3, 5, 13
FILE B52:12/2 LEN:3 - FLL - File #22 - 1
B52:12/3 - {STATE_130} State 130 Active.. Backwash
          OTE - File #22 - 5
          XIC - File #6 - 8
          File #11 - 33, 34, 58, 68
          File #26 - 1
          XIO - File #11 - 33
FILE B52:12/3 LEN:3 - FLL - File #22 - 1
B52:12/4 - {STATE_140} State 140 Active.. Rewet
          OTE - File #22 - 6
          XIC - File #6 - 14
          File #12 - 1, 2, 16, 18, 23, 24
          XIO - File #12 - 15
FILE B52:12/4 LEN:3 - FLL - File #22 - 1
B52:12/5 - {STATE_150} State 150 Active.. Fixed Filtration
          OTE - File #22 - 7
          XIC - File #2 - 10, 15
          File #6 - 18
          File #9 - 1, 3, 24, 25, 26, 27, 31, 32, 34, 37, 38, 45
          File #26 - 42
FILE B52:12/5 LEN:3 - FLL - File #22 - 1
B52:12/6 - {STATE_160} State 160 Active.. Initialize Filtration
          OTE - File #22 - 8
          XIC - File #2 - 10, 15
          File #6 - 13, 18
          File #9 - 5, 17, 24, 25, 26, 27, 31, 32, 34, 37, 38, 45
          File #11 - 16, 19
          File #17 - 6
FILE B52:12/6 LEN:3 - FLL - File #22 - 1
B52:12/7 - {STATE_170} State 170 Active.. Normal Filtration
          OTE - File #22 - 9
          XIC - File #2 - 10, 15
          File #4 - 23, 24, 28
          File #6 - 6, 9, 15, 16, 17, 18, 19, 20, 22, 24
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```
File #7 - 2
File #9 - 8, 12, 17, 24, 25, 26, 27, 31, 32, 34, 37, 38
  39, 45
File #11 - 1, 16, 19
File #13 - 1
File #17 - 6
File #19 - 62
XIO - File #7 - 2
      File #9 - 11, 13
      File #11 - 24
FILE B52:12/7 LEN:3 - FLL - File #22 - 1
B52:12/8 - {STATE_180} State 180 Active.. Filtrate Exhaust
          OTE - File #22 - 10
          XIC - File #6 - 12
            File #9 - 19, 24, 28
FILE B52:12/8 LEN:3 - FLL - File #22 - 1
B52:12/9 - {STATE_190} State 190 Active.. Filtrate to CIP Outlet
          OTE - File #22 - 11
FILE B52:12/9 LEN:3 - FLL - File #22 - 1
B52:12/10 - {STATE_200} State 200 Active.. Standby
          OTE - File #22 - 12
          XIC - File #2 - 10
            File #6 - 10, 11, 22, 24
            File #9 - 21, 26, 29
            File #17 - 10, 19
FILE B52:12/10 LEN:3 - FLL - File #22 - 1
B52:12/11 - {STATE_210} State 210 Active.. Membrane Test
          OTE - File #22 - 13
          XIC - File #6 - 21
            File #13 - 6, 7, 23
FILE B52:12/11 LEN:3 - FLL - File #22 - 1
B52:12/12 - {STATE_220} State 220 Active.. Sonic Test
          OTE - File #22 - 14
          XIC - File #6 - 21
            File #14 - 1, 2, 11
FILE B52:12/12 LEN:3 - FLL - File #22 - 1
B52:12/13 - {STATE_230} State 230 Active.. DAF Test
          OTE - File #22 - 15
FILE B52:12/13 LEN:3 - FLL - File #22 - 1
B52:12/14 - {STATE_240} State 240 Active.. Integrity Test Exhaust
          OTE - File #22 - 16
          XIC - File #6 - 11
            File #16 - 1, 2, 9, 13
FILE B52:12/14 LEN:3 - FLL - File #22 - 1
B52:12/15 - {STATE_250} State 250 Active.. Drain Down
          OTE - File #22 - 17
          XIC - File #18 - 1, 2, 12, 16
FILE B52:12/15 LEN:3 - FLL - File #22 - 1
B52:13/0 - {STATE_300} State 300 Active.. Begin CIP
          OTE - File #22 - 18
          XIC - File #6 - 7
            File #17 - 21, 22, 24
FILE B52:13/0 LEN:2 - FLL - File #22 - 1
B52:13/1 - {STATE_310} State 310 Active.. Perform CIP Backwashes
          OTE - File #22 - 19
FILE B52:13/1 LEN:2 - FLL - File #22 - 1
B52:13/2 - {STATE_320} State 320 Active.. Start CIP Cycle
          OTE - File #22 - 20
FILE B52:13/2 LEN:2 - FLL - File #22 - 1
B52:13/3 - {STATE_330} State 330 Active.. Purge CIP Line to Waste
          OTE - File #22 - 21
FILE B52:13/3 LEN:2 - FLL - File #22 - 1
B52:13/4 - {STATE_340} State 340 Active.. CIP Fill
          OTE - File #22 - 22
FILE B52:13/4 LEN:2 - FLL - File #22 - 1
B52:13/5 - {STATE_350} State 350 Active.. CIP Recirc. Filtrate Open
          OTE - File #22 - 23
FILE B52:13/5 LEN:2 - FLL - File #22 - 1
B52:13/6 - {STATE_360} State 360 Active.. CIP Soak
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      OTE - File #22 - 24
FILE B52:13/6 LEN:2 - FLL - File #22 - 1
B52:13/7 - {STATE_370} State 370 Active.. CIP Recirc. Filtrate Close
      OTE - File #22 - 25
FILE B52:13/7 LEN:2 - FLL - File #22 - 1
B52:13/8 - {STATE_380} State 380 Active.. Drain to CIP Tank
      OTE - File #22 - 26
FILE B52:13/8 LEN:2 - FLL - File #22 - 1
B52:13/9 - {STATE_390} State 390 Active.. CIP Rinse- Fill Shell
      OTE - File #22 - 27
FILE B52:13/9 LEN:2 - FLL - File #22 - 1
B52:13/10 - {STATE_400} State 400 Active.. Request Rinse Backwashes
      OTE - File #22 - 28
FILE B52:13/10 LEN:2 - FLL - File #22 - 1
B52:13/11 - {STATE_410} State 410 Active.. Perform Rinse Backwashes
      OTE - File #22 - 29
FILE B52:13/11 LEN:2 - FLL - File #22 - 1
B52:13/12 - {STATE_420} State 420 Active.. Rinse and Low Cond. Check
      OTE - File #22 - 30
FILE B52:13/12 LEN:2 - FLL - File #22 - 1
B52:13/13 - {STATE_430} State 430 Active.. End of CIP
      OTE - File #22 - 31
FILE B52:13/13 LEN:2 - FLL - File #22 - 1
B52:15 - Slot 2 Discrete Output Image
      MOV - File #2 - 37
B52:18 - Slot 1 Discrete Input Image
      MOV - File #2 - 1
F53:0 - Flow Setpoint From Master (GPM)
      MSG - File #4 - 8
N54:0 - Year From Master
      ADD - File #4 - 21
      MSG - File #4 - 9
      LIM - File #4 - 21
N54:1 - Month From Master
      COP - File #4 - 21
FILE N54:1 LEN:4 - COP - File #4 - 21
B55:0 - Bit Status From Master
      MSG - File #4 - 10
B55:0/0 - {FM_BWRSC} Backwash Resource Given to This CMF By Master
      XIC - File #11 - 3, 7, 11, 14, 20
      File #17 - 27, 45
B55:0/1 - {FM_CIPRSC} CIP Resource Given to This CMF By Master
      XIC - File #17 - 5, 12
B55:0/4 - New Day Bit From Master
      XIC - File #9 - 41, 42, 43
      XIO - File #9 - 43
B55:0/10 - New Stop Command by Master
      XIC - File #4 - 23
      XIO - File #4 - 23
B55:0/11 - New Start Command by Master
      XIC - File #4 - 29
      XIO - File #4 - 29
B55:1/0 - {FM_STOPCMD} Stop Command By PV550
      XIC - File #4 - 23, 26
      XIO - File #4 - 23
B55:1/1 - {FM_STANDBYCMD} Standby Command by Master
      XIC - File #4 - 24
      XIO - File #4 - 24
B55:1/2 - {FM_STARTCMD} Start Command By PV550
      XIC - File #4 - 25, 27, 29
      XIO - File #4 - 29
B55:1/3 - {FM_BWASH_PB} Backwash Button Pressed
      XIC - File #4 - 30
      XIO - File #4 - 30
B55:1/4 - {FM_REWET_PB} Rewet Button Pressed
      XIC - File #4 - 31
      XIO - File #4 - 31
B55:1/5 - {FM_MTEST_PB} Membrane Test Button Pressed
      XIC - File #4 - 32

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B55:1/6   - XIO - File #4 - 32
           - {FM_STEST_PB} Sonic Test Button Pressed
           - XIC - File #4 - 33
           - XIO - File #4 - 33
B55:1/7   - {FM_SONRST_PB} Sonic Reset Button Pressed
           - XIC - File #4 - 34
           - XIO - File #4 - 34
B55:1/8   - {FM_SPARE1_PB} Spare Button-1 Pressed
           - XIC - File #4 - 35
           - XIO - File #4 - 35
B55:1/9   - {FM_CIP_PB} CIP Button Pressed
           - XIC - File #4 - 36
           - XIO - File #4 - 36
B55:1/10  - {FM_CIPHALT_PB} Halt CIP Button Pressed
           - XIC - File #4 - 37
           - XIO - File #4 - 37
B55:1/11  - {FM_CANCEL_CIP} Cancel CIP Command by Master
           - XIC - File #4 - 38
           - XIO - File #4 - 38
B55:1/12  - {FM_DRAIN_PB} Drain Down Button Pressed
           - XIC - File #4 - 39
           - XIO - File #4 - 39
B55:1/13  - {FM_RESET} Reset Alarms Button Pressed
           - XIC - File #4 - 40
           - File #19 - 44
           - XIO - File #4 - 40
B55:1/14  - {FM_ENSOAK_PB} Enable CIP Extended Soak Button Pressed
           - XIC - File #4 - 41
           - XIO - File #4 - 41
B55:1/15  - {FM_DISSOAK_PB} Disable CIP Extended Soak Button Pressed
           - XIC - File #4 - 42
           - XIO - File #4 - 42
B55:2/0   - Warning Message Scroll Button
           - XIC - File #19 - 35
B55:2/1   - CIP External Feed Enable/ Disable Button
           - XIC - File #4 - 43
B55:2/2   - {FM_BWLOGDN} Backwash Historical Functions Completed By
           - Master
           - XIC - File #26 - 41
B55:2/3   - Trend Software Has Logged Membrane Test Results
           - XIC - File #13 - 21
B55:2/15  - {FM_HEARTBEAT} Heartbeat Read From Master
           - XIC - File #4 - 12
           - XIO - File #4 - 13
N56:0     - Current Feed Pressure Average
           - MUL - File #19 - 1, 2
N56:1     - Current Filtrate Pressure Average
           - MUL - File #19 - 1, 2
N56:2     - Feed Flow Average
           - MUL - File #19 - 3, 4
N56:3     - Current Filtrate Flow Average
           - MUL - File #19 - 3, 4
N56:4     - Current TMP Average
           - MUL - File #19 - 5, 6
N56:5     - Current Resistance Value
           - MUL - File #19 - 7
N56:8     - Time Since Last Backwash (Minutes)
           - COP - File #19 - 8
FILE N56:8 LEN:2 - COP - File #19 - 8
N56:10    - Maximum Time Between Backwashes (Minutes)
           - MOV - File #19 - 9
N56:11    - Delta Resistance Setpoint for Backwash Request
           - MOV - File #19 - 22
           - MUL - File #19 - 10
N56:12    - Delta Resistance Setpoint for Backwash Request
           - MUL - File #19 - 11
N56:13    - Delta TMP Setpoint for Backwash Request
           - MUL - File #19 - 12, 13
N56:14    - Current State Number

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N56:15      - MOV - File #19 - 14
             - PanelView Screen Number to Display
             CLR - File #19 - 52
             MOV - File #19 - 51
N56:16      - Time Since Last Membrane Test (Hours)
             COP - File #19 - 15
FILE N56:16 LEN:3 - COP - File #19 - 15
N56:19      - Start Pressure For Membrane Test
             MUL - File #19 - 16, 17
N56:20      - End Pressure For Membrane Test
             MUL - File #19 - 16, 17
N56:21      - Pressure Decay for Membrane Test (PSI/Min)
             MUL - File #19 - 16, 17
N56:24      - Time Since Last CIP (Hours)
             COP - File #19 - 18
FILE N56:24 LEN:2 - COP - File #19 - 18
N56:26      - Maximum Time In Filtration For a CIP Request (hours)
             MOV - File #19 - 19
N56:27      - Extended Soak Hours
             COP - File #19 - 20
FILE N56:27 LEN:3 - COP - File #19 - 20
N56:30      - CIP Step Number
             MOV - File #19 - 21
N56:31      - Feed Flow Meter Max Scaled Value to PV550
             MOV - File #19 - 61
N56:32      - Filtrate Flow Meter Max Scaled Value to PV550
             MOV - File #19 - 61
N56:33      - Number of Modules to PV550
             MOV - File #19 - 61
N56:34      - Delta Resistance Setpoint for Backwash Request
             MOV - File #19 - 22
N56:35      - Delta Resistance Setpoint for Backwash Request
             MUL - File #19 - 23
N56:36      - Delta Resistance Setpoint for Backwash Request
             MUL - File #19 - 23
N56:37      - TMP Setpoint for CIP Request (PSI)
             MUL - File #19 - 24
N56:38      - TMP Maximum Allowable Value (PSI)
             MUL - File #19 - 25
N56:39      - Sweep Feed Flow Warning Setpoint
             MOV - File #19 - 26
N56:43      - Previous Day Total Feed Flow (Gal x 10)
             COP - File #19 - 28
             DIV - File #19 - 27
FILE N56:43 LEN:2 - COP - File #19 - 28
N56:44      - Current Day Total Feed Flow (Gal x 10)
             DIV - File #19 - 27
FILE N56:44 LEN:1 - COP - File #19 - 28
N56:45      - Current Day Total Feed Flow (Gal x 10)
             COP - File #19 - 28
             DIV - File #19 - 27
FILE N56:45 LEN:2 - COP - File #19 - 28
N56:46      - Current Day Total Filtrate Flow (Gal x 10)
             DIV - File #19 - 27
FILE N56:46 LEN:1 - COP - File #19 - 28
N56:47      - Total Filtration Time (0-9999)
             MOV - File #9 - 47
N56:48      - Sweep Feed Flow Warning Setpoint From CIP Recirc.
             MOV - File #19 - 26
N56:49      - Total Filtration Time (10000s)
             ADD - File #9 - 46
N56:51      - Shutdown Message to Display on PanelView
             CLR - File #19 - 45
             ADD - File #19 - 43
N56:52      - Warning Message to Display on PanelView
             CLR - File #19 - 37
             ADD - File #19 - 34
N57:0       - From PV550... Auto Backwash Time Setpoint
             CLR - File #19 - 47

```

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RSLogix 500 Cross Reference Report - Sorted by Address

```

MOV - File #19 - 47
NEQ - File #19 - 47
N57:1 - From PV550... Auto Pressure Decay Test Time Setpoint
      CLR - File #19 - 48
      MOV - File #19 - 48
      NEQ - File #19 - 48
N57:2 - From PV 550... Auto CIP Time Setpoint
      CLR - File #19 - 49
      MOV - File #19 - 49
      NEQ - File #19 - 49
N57:5 - Screen Number Displayed On PanelView
      EQU - File #19 - 52
N57:6 - From PV550... Service Screen Password
      CLR - File #19 - 51
      EQU - File #19 - 51
      NEQ - File #19 - 51
N57:7 - From PV550... Delta R Value For Backwash Request
      CLR - File #19 - 53, 54
      DIV - File #19 - 53
      NEQ - File #19 - 53
N57:8 - From PV550... Delta TMP Backwash Request Setpoint
      DIV - File #19 - 54
      NEQ - File #19 - 54
N57:9 - From PV550... Pressure Decay Warning Setpoint
      CLR - File #19 - 55
      DIV - File #19 - 55
      NEQ - File #19 - 55
N57:10 - From PV550... Pressure Decay Shutdown Setpoint
      CLR - File #19 - 56
      DIV - File #19 - 56
      NEQ - File #19 - 56
N57:11 - From PV550... TMP For CIP Request
      CLR - File #19 - 57
      DIV - File #19 - 57
      NEQ - File #19 - 57
N57:12 - From PV550... TMP Shutdown Setpoint
      CLR - File #19 - 58
      DIV - File #19 - 58
      NEQ - File #19 - 58
N57:13 - From PV550... Minimum Feed Flow During Backwash
      CLR - File #19 - 59
      MOV - File #19 - 59
      NEQ - File #19 - 59
N57:14 - From PV550... Minimum Feed Flow During CIP Recirc.
      CLR - File #19 - 60
      MOV - File #19 - 60
      NEQ - File #19 - 60
N57:16 - Feed Flow Meter Max Scaled Value
      MOV - File #19 - 61
      SCP - File #5 - 3
N57:17 - Filtrate Flow Meter Max Scaled Value
      MOV - File #19 - 61
      SCP - File #5 - 4
N57:18 - Number of Modules from PV550
      MOV - File #19 - 61
      CPT - File #8 - 6
B61:0 - Image for Steps 1 to 15
      FLL - File #21 - 21
      COP - File #10 - 8
           File #11 - 57
           File #12 - 17
           File #13 - 22
           File #14 - 10
           File #16 - 8
           File #17 - 52
           File #18 - 9
      EQU - File #21 - 1
      NEQ - File #21 - 18
FILE B61:0 LEN:3 - FLL - File #21 - 21

```

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RSLogix 500 Cross Reference Report - Sorted by Address

```

COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:0/1 - XIC - File #21 - 2
FILE B61:0/1 LEN:3 - FLL - File #21 - 21
      COP - File #10 - 8
            File #11 - - 57
            File #12 - - 17
            File #13 - - 22
            File #14 - - 10
            File #16 - - 8
            File #17 - - 52
            File #18 - - 9
B61:0/2 - XIC - File #21 - 3
FILE B61:0/2 LEN:3 - FLL - File #21 - 21
      COP - File #10 - 8
            File #11 - - 57
            File #12 - - 17
            File #13 - - 22
            File #14 - - 10
            File #16 - - 8
            File #17 - - 52
            File #18 - - 9
B61:0/3 - XIC - File #21 - 4
FILE B61:0/3 LEN:3 - FLL - File #21 - 21
      COP - File #10 - 8
            File #11 - - 57
            File #12 - - 17
            File #13 - - 22
            File #14 - - 10
            File #16 - - 8
            File #17 - - 52
            File #18 - - 9
B61:0/4 - XIC - File #21 - 5
FILE B61:0/4 LEN:3 - FLL - File #21 - 21
      COP - File #10 - 8
            File #11 - - 57
            File #12 - - 17
            File #13 - - 22
            File #14 - - 10
            File #16 - - 8
            File #17 - - 52
            File #18 - - 9
B61:0/5 - XIC - File #21 - 6
FILE B61:0/5 LEN:3 - FLL - File #21 - 21
      COP - File #10 - 8
            File #11 - - 57
            File #12 - - 17
            File #13 - - 22
            File #14 - - 10
            File #16 - - 8
            File #17 - - 52
            File #18 - - 9
B61:0/6 - XIC - File #21 - 7
FILE B61:0/6 LEN:3 - FLL - File #21 - 21
      COP - File #10 - 8
            File #11 - - 57
            File #12 - - 17
            File #13 - - 22
            File #14 - - 10
            File #16 - - 8
            File #17 - - 52
            File #18 - - 9
B61:0/7 - XIC - File #21 - 8

```

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```
FILE B61:0/7 LEN:3 - FLL - File #21 - 21
  COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:0/8      - XIC - File #21 - 9
FILE B61:0/8 LEN:3 - FLL - File #21 - 21
  COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:0/9      - XIC - File #21 - 10
FILE B61:0/9 LEN:3 - FLL - File #21 - 21
  COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:0/10     - XIC - File #21 - 11
FILE B61:0/10 LEN:3 - FLL - File #21 - 21
  COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:0/11     - XIC - File #21 - 12
FILE B61:0/11 LEN:3 - FLL - File #21 - 21
  COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:0/12     - XIC - File #21 - 13
FILE B61:0/12 LEN:3 - FLL - File #21 - 21
  COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:0/13     - XIC - File #21 - 14
FILE B61:0/13 LEN:3 - FLL - File #21 - 21
  COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
```

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RSLogix 500 Cross Reference Report - Sorted by Address

B61:0/14 - XIC - File #21 - 15
FILE B61:0/14 LEN:3 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9

B61:0/15 - XIC - File #21 - 16
FILE B61:0/15 LEN:3 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9

B61:1 - Image for Steps 16 to 31
EQU - File #21 - 1
NEQ - File #21 - 19
FILE B61:1 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9

B61:1/0 - XIC - File #21 - 2
FILE B61:1/0 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9

B61:1/1 - XIC - File #21 - 3
FILE B61:1/1 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9

B61:1/2 - XIC - File #21 - 4
FILE B61:1/2 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9

B61:1/3 - XIC - File #21 - 5
FILE B61:1/3 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10

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RSLogix 500 Cross Reference Report - Sorted by Address

```
File #16 - - 8
File #17 - - 52
File #18 - - 9
B61:1/4 - XIC - File #21 - 6
FILE B61:1/4 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9
B61:1/5 - XIC - File #21 - 7
FILE B61:1/5 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9
B61:1/6 - XIC - File #21 - 8
FILE B61:1/6 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9
B61:1/7 - XIC - File #21 - 9
FILE B61:1/7 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9
B61:1/8 - XIC - File #21 - 10
FILE B61:1/8 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9
B61:1/9 - XIC - File #21 - 11
FILE B61:1/9 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
File #14 - - 10
File #16 - - 8
File #17 - - 52
File #18 - - 9
B61:1/10 - XIC - File #21 - 12
FILE B61:1/10 LEN:2 - FLL - File #21 - 21
COP - File #10 - 8
File #11 - - 57
File #12 - - 17
File #13 - - 22
```

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RSLogix 500 Cross Reference Report - Sorted by Address

```

      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:1/11 - XIC - File #21 - 13
FILE B61:1/11 LEN:2 - FLL - File #21 - 21
      COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:1/12 - XIC - File #21 - 14
FILE B61:1/12 LEN:2 - FLL - File #21 - 21
      COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:1/13 - XIC - File #21 - 15
FILE B61:1/13 LEN:2 - FLL - File #21 - 21
      COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:1/14 - XIC - File #21 - 16
FILE B61:1/14 LEN:2 - FLL - File #21 - 21
      COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:1/15 - XIC - File #21 - 17
FILE B61:1/15 LEN:2 - FLL - File #21 - 21
      COP - File #10 - 8
      File #11 - - 57
      File #12 - - 17
      File #13 - - 22
      File #14 - - 10
      File #16 - - 8
      File #17 - - 52
      File #18 - - 9
B61:2 - Image for Steps 32 to 47
      EQU - File #21 - 1
      NEQ - File #21 - 20
FILE B61:2 LEN:1 - FLL - File #21 - 21
      COP - File #17 - 52
B61:2/0 - XIC - File #21 - 2
FILE B61:2/0 LEN:1 - FLL - File #21 - 21
      COP - File #17 - 52
B61:2/1 - XIC - File #21 - 3
FILE B61:2/1 LEN:1 - FLL - File #21 - 21
      COP - File #17 - 52
B61:2/2 - XIC - File #21 - 4
FILE B61:2/2 LEN:1 - FLL - File #21 - 21
      COP - File #17 - 52
B61:2/3 - XIC - File #21 - 5

```

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RSLogix 500 Cross Reference Report - Sorted by Address

```

FILE B61:2/3 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/4          - XIC - File #21 - 6
FILE B61:2/4 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/5          - XIC - File #21 - 7
FILE B61:2/5 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/6          - XIC - File #21 - 8
FILE B61:2/6 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/7          - XIC - File #21 - 9
FILE B61:2/7 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/8          - XIC - File #21 - 10
FILE B61:2/8 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/9          - XIC - File #21 - 11
FILE B61:2/9 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/10         - XIC - File #21 - 12
FILE B61:2/10 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/11         - XIC - File #21 - 13
FILE B61:2/11 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/12         - XIC - File #21 - 14
FILE B61:2/12 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/13         - XIC - File #21 - 15
FILE B61:2/13 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/14         - XIC - File #21 - 16
FILE B61:2/14 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B61:2/15         - XIC - File #21 - 17
FILE B61:2/15 LEN:1 - FLL - File #21 - 21
                  COP - File #17 - 52
B62:0           - AV1 Control Bits
                  EQU - File #20 - 2
                  NEQ - File #20 - 1
B62:0/0         - {SU_AV1} Startup Cycle.. Allow AV1 Control
                  OTE - File #10 - 1
                  XIC - File #20 - 1
B62:0/1         - {BW_AV1} Backwash Cycle.. Allow AV1 Control
                  OTE - File #11 - 58
B62:0/2         - {RW_AV1} Rewet Cycle.. Allow AV1 Control
                  OTE - File #12 - 18
B62:0/3         - {MT_AV1} Mem.Test Cycle.. Allow AV1 Control
                  OTE - File #13 - 23
B62:0/4         - {SON_AV1} Sonic Test Cycle.. Allow AV1 Control
                  OTE - File #14 - 11
B62:0/6         - {MX_AV1} Integrity Test Exhaust Cycle.. Allow AV1 Control
                  OTE - File #16 - 9
B62:0/7         - {CIP_AV1} CIP Cycle.. Allow AV1 Control
                  OTE - File #17 - 53
                  XIC - File #20 - 1
B62:0/9         - {FILT_AV1} Filtration Cycle(s).. Allow AV1 Control
                  OTE - File #9 - 24
B62:0/10        - Standby Performed Due to Low Feed Tank
                  OTL - File #6 - 18
                  OTU - File #6 - 1, 11
                  XIC - File #6 - 11
B62:1           - AV2 Control Bits
                  NEQ - File #20 - 3
B62:1/0         - {SU_AV2} Startup Cycle.. Open AV2
                  OTE - File #10 - 9
B62:1/1         - {BW_AV2} Backwash Cycle.. Open AV2
                  OTE - File #11 - 59

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B62:1/2	- {RW_AV2} Rewet Cycle.. Open AV2 OTE - File #12 - 19
B62:1/6	- {MX_AV2} Integrity Test Exhaust Cycle.. Open AV2 OTE - File #16 - 10
B62:1/7	- {CIP_AV2} CIP Cycle.. Open AV2 OTE - File #17 - 54
B62:1/8	- {DD_AV2} Drain Down Cycle.. Open AV2 OTE - File #18 - 10
B62:1/9	- {FILT_AV2} Filtration Cycle(s).. Open AV2 OTE - File #9 - 24
B62:2	- AV3 Control Bits NEQ - File #20 - 4
B62:2/1	- {BW_AV3} Backwash Cycle.. Open AV3 OTE - File #11 - 60
B62:2/6	- {MX_AV3} Integrity Test Exhaust Cycle.. Open AV3 OTE - File #16 - 11
B62:2/7	- {CIP_AV3} CIP Cycle.. Open AV3 OTE - File #17 - 55
B62:2/9	- {FILT_AV3} Filtration Cycle(s).. Open AV3 OTE - File #9 - 24
B62:3	- AV4 Control Bits NEQ - File #20 - 5
B62:3/0	- {SU_AV4} Startup Cycle.. Open AV4 OTE - File #10 - 10
B62:3/1	- {BW_AV4} Backwash Cycle.. Open AV4 OTE - File #11 - 61
B62:3/2	- {RW_AV4} Rewet Cycle.. Open AV4 OTE - File #12 - 20
B62:3/3	- {MT_AV4} Mem.Test Cycle.. Open AV4 OTE - File #13 - 24
B62:3/6	- {MX_AV4} Integrity Test Exhaust Cycle.. Open AV4 OTE - File #16 - 12
B62:3/7	- {CIP_AV4} CIP Cycle.. Open AV4 OTE - File #17 - 56
B62:3/8	- {DD_AV4} Drain Down Cycle.. Open AV4 OTE - File #18 - 11
B62:4	- AV5 Control Bits NEQ - File #20 - 6
B62:4/1	- {BW_AV5} Backwash Cycle.. Open AV5 OTE - File #11 - 62
B62:5	- AV6 Control Bits NEQ - File #20 - 7
B62:5/7	- {CIP_AV6} CIP Cycle.. Open AV6 OTE - File #17 - 57
B62:6	- AV7 Control Bits NEQ - File #20 - 8
B62:6/1	- {BW_AV7} Backwash Cycle.. Close AV7 OTE - File #11 - 63
B62:6/3	- {MT_AV7} Mem.Test Cycle.. Close AV7 OTE - File #13 - 25
B62:6/4	- {SON_AV7} Sonic Test Cycle.. Close AV7 OTE - File #14 - 12
B62:6/8	- {DD_AV7} Drain Down Cycle.. Close AV7 OTE - File #18 - 12
B62:7	- AV8 Control Bits NEQ - File #20 - 9
B62:7/7	- {CIP_AV8} CIP Cycle.. Open AV8 OTE - File #17 - 58
B62:7/9	- {FILT_AV8} Filtration Cycle(s).. Open AV8 OTE - File #9 - 25
B62:8	- AV9 Control Bits NEQ - File #20 - 10
B62:8/1	- {BW_AV9} Backwash Cycle.. Close AV9 OTE - File #11 - 64
B62:8/2	- {RW_AV9} Rewet Cycle.. Close AV9 OTE - File #12 - 21
B62:8/3	- {MT_AV9} Mem.Test Cycle.. Close AV9 OTE - File #13 - 26
B62:8/4	- {SON_AV9} Sonic Test Cycle.. Close AV9

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B62:8/7 - OTE - File #14 - 13
        - {CIP_AV9} CIP Cycle.. Close AV9
        OTE - File #17 - 59
B62:8/8 - {DD_AV9} Drain Down Cycle.. Close AV9
        OTE - File #18 - 13
B62:8/9 - {FILT_AV9} Filtration Cycle(s).. Close AV9
        OTE - File #9 - 26
B62:9 - SV10 Control Bits
        NEQ - File #20 - 11
B62:9/1 - {BW_AV10} Backwash Cycle.. Open AV10
        OTE - File #11 - 65
B62:9/3 - {MT_AV10} Mem.Test Cycle.. Open AV10
        OTE - File #13 - 27
B62:9/4 - {SON_AV10} Sonic Test Cycle.. Open AV10
        OTE - File #14 - 14
B62:9/8 - {DD_AV10} Drain Down Cycle.. Open AV10
        OTE - File #18 - 14
B62:10 - SV11 Control Bits
        NEQ - File #20 - 12
B62:10/1 - {BW_AV11} Backwash Cycle.. Open AV11
        OTE - File #11 - 66
B62:10/2 - {RW_AV11} Rewet Cycle.. Open AV11
        OTE - File #12 - 22
B62:18 - Pump Request Control Bits
        NEQ - File #20 - 13
B62:18/0 - {SU_FDPUMP} Startup Cycle.. Feed Pump Request
        OTE - File #10 - 11
B62:18/1 - {BW_FDPUMP} Backwash Cycle.. Feed Pump Request
        OTE - File #11 - 67
B62:18/2 - {RW_FDPUMP} Rewet Cycle.. Feed Pump Request
        OTE - File #12 - 23
B62:18/6 - {MX_FDPUMP} Integrity Test Exhaust Cycle.. Feed Pump Request
        OTE - File #16 - 13
B62:18/7 - {CIP_FDPUMP} CIP Cycle.. Feed Pump Request
        OTE - File #17 - 60
B62:18/8 - {DD_FDPUMP} Drain Down Cycle.. Feed Pump Request
        OTE - File #18 - 15
B62:18/9 - {FILT_FDPUMP} Filtration Cycle(s).. Feed Pump Request
        OTE - File #9 - 24
B62:19/0 - {FILT_FILTIND_ON} Filtration Cycle(s).. Filtration Indicator
        Steady ON
        OTE - File #9 - 27
        XIC - File #20 - 17
B62:19/1 - {FILT_STBYIND_ON} Filtration Cycle(s).. Standby Indicator
        Steady ON
        OTE - File #9 - 29
        XIC - File #20 - 18
B62:19/2 - {BW_BWSHIND_ON} Backwash Cycle.. Backwash Indicator Steady
        ON
        OTE - File #11 - 68
        XIC - File #20 - 19
B62:19/3 - {MT_INTEIND_ON} Mem.Test Cycle.. Integrity Test
        Exh.Indicator Steady ON
        OTE - File #13 - 28
        XIC - File #20 - 20
B62:19/4 - {SON_INTEIND_ON} Sonic Test Cycle.. Integrity Test
        Exh.Indicator Steady ON
        OTE - File #14 - 15
        XIC - File #20 - 20
B62:19/7 - {CIP_CIPIND_ON} CIP Cycle.. CIP Indicator Steady ON
        OTE - File #17 - 61
        XIC - File #20 - 23
B62:19/8 - {SU_SHDNIND_ON} Startup Cycle.. Shutdown Indicator Steady ON
        OTE - File #10 - 12
        XIC - File #20 - 24
B62:20/0 - {SU_FILTIND_FL} Startup Cycle.. Filtration Indicator Flash
        OTE - File #10 - 13
        XIC - File #20 - 17
B62:20/1 - {MX_FILTIND_FL} Integrity Test Exhaust Cycle.. Filtration

```

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Indicator Flash
B62:20/2 - {XIC - File #20 - 17} Filtration Cycle(s).. Filtration Indicator
Flash
OTE - File #9 - 28
XIC - File #20 - 17
B62:20/3 - {CIP_STBYIND_FL} CIP Cycle.. Standby Indicator Flash
XIC - File #20 - 18
B62:20/4 - {RW_BWSHIND_FL} Rewet Cycle.. Backwash Indicator Flash
OTE - File #12 - 24
XIC - File #20 - 19
B62:20/5 - {MT_INTEIND_FL} Mem.Test Cycle.. Integrity Test
Exh.Indicator Flash
OTE - File #13 - 29
XIC - File #20 - 21
B62:20/6 - {SON_INTEIND_FL} Sonic Test Cycle.. Integrity Test
Exh.Indicator Flash
OTE - File #14 - 16
XIC - File #20 - 21
B62:20/8 - {CIP_CIPIND_FL} CIP Cycle.. CIP Indicator Flash
XIC - File #20 - 23
B62:20/9 - {DD_SHDNIND_FL} Drain Down Cycle.. Shutdown Indicator Flash
OTE - File #18 - 16
XIC - File #20 - 24
N63:0 - Oldest State Number Shifted Out
COP - File #22 - 32
FILE N63:0 LEN:10 - COP - File #22 - 32
N63:1 - COP - File #22 - 32
FILE N63:1 LEN:10 - COP - File #22 - 32
N63:10 - Current State Number For State History File
MOV - File #22 - 32
FILE N63:10 LEN:1 - COP - File #22 - 32
B90:0/0 - One Shot
OSR - File #3 - 1
B90:0/1 - One Shot
OSR - File #4 - 11
B90:0/2 - One Shot
OSR - File #4 - 12
B90:0/3 - One Shot
OSR - File #4 - 13
B90:0/4 - One Shot
OSR - File #9 - 10
B90:0/5 - One Shot
OSR - File #9 - 11
B90:0/6 - One Shot
OSR - File #9 - 42
B90:0/8 - One Shot
OSR - File #11 - 43
B90:0/9 - One Shot
OSR - File #11 - 44
B90:0/10 - One Shot
OSR - File #11 - 51
B90:0/11 - One Shot
OSR - File #11 - 54
B90:0/12 - One Shot
OSR - File #12 - 12
B90:0/13 - One Shot
OSR - File #13 - 4
B90:0/14 - One Shot
OSR - File #13 - 12
B90:0/15 - One Shot
OSR - File #13 - 16
B90:1/0 - One Shot
OSR - File #16 - 5
B90:1/1 - One Shot
OSR - File #17 - 4
B90:1/3 - One Shot
OSR - File #17 - 39
B90:1/4 - One Shot

```

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RSLogix 500 Cross Reference Report - Sorted by Address

B90:1/5	- OSR - File #17 - 43
	- One Shot
B90:1/6	- OSR - File #18 - 4
	- One Shot
B90:1/7	- OSR - File #19 - 35
	- One Shot
B90:1/8	- OSR - File #12 - 7
	- One Shot
B90:1/10	- OSR - File #9 - 41
	- One Shot
B90:1/11	- OSR - File #4 - 43
	- One Shot
B90:1/12	- OSR - File #26 - 1
	- One Shot
B90:1/13	- OSR - File #26 - 44
	- One Shot
B90:1/14	- OSR - File #26 - 45
	- One Shot
B90:1/15	- OSR - File #26 - 46
	- One Shot
B90:2/0	- OSR - File #26 - 47
	- One Shot
B90:2/1	- OSR - File #26 - 48
	- One Shot
B90:2/2	- OSR - File #26 - 49
	- One Shot
B90:2/3	- OSR - File #26 - 50
	- One Shot
B90:2/4	- OSR - File #26 - 51
	- One Shot
B90:2/5	- OSR - File #26 - 52
	- One Shot
B90:2/6	- OSR - File #26 - 53
	- One Shot
B90:2/7	- OSR - File #26 - 54
	- One Shot
B90:2/8	- OSR - File #26 - 55
	- One Shot
B90:2/9	- OSR - File #26 - 56
	- One Shot
B90:2/10	- OSR - File #26 - 57
	- One Shot
B90:2/11	- OSR - File #26 - 58
	- One Shot
B90:2/12	- OSR - File #26 - 59
	- One Shot
B90:2/13	- OSR - File #26 - 60
	- One Shot
B90:2/14	- OSR - File #26 - 61
	- One Shot
B90:2/15	- OSR - File #26 - 62
	- One Shot
B90:3/0	- OSR - File #26 - 63
	- One Shot
B90:3/1	- OSR - File #26 - 64
	- One Shot
B90:3/2	- OSR - File #26 - 65
	- One Shot
B90:3/3	- OSR - File #26 - 66
	- One Shot
B90:3/4	- OSR - File #26 - 67
	- One Shot
B90:3/5	- OSR - File #26 - 68
	- One Shot
B90:4/0	- OSR - File #26 - 69
	- Comment
B90:4/1	- OTE - File #4 - 0
	- Comment
	- OTE - File #11 - 0

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RSLogix 500 Cross Reference Report - Sorted by Address

B90:4/2 - Comment
OTE - File #13 - 0
B90:4/3 - Comment
OTE - File #2 - 0
B90:4/4 - Comment
OTE - File #7 - 0
B90:4/5 - Comment
OTE - File #9 - 0
B90:4/6 - Comment
OTE - File #11 - 31
B90:4/7 - Comment
OTE - File #17 - 0
B90:4/8 - Comment
OTE - File #10 - 0
B90:4/9 - Comment
OTE - File #21 - 0
B90:4/10 - Comment
OTE - File #12 - 0
B90:4/11 - Comment
OTE - File #17 - 18
B90:4/12 - Comment
OTE - File #9 - 4
B90:4/13 - Comment
OTE - File #9 - 7
B90:4/14 - Comment
OTE - File #9 - 18
B90:5/0 - Comment
OTE - File #9 - 20
B90:5/1 - Comment
OTE - File #9 - 23
B90:5/2 - Comment
OTE - File #10 - 4
B90:5/3 - Comment
OTE - File #13 - 5
B90:5/4 - Comment
OTE - File #14 - 0
B90:5/6 - Comment
OTE - File #16 - 0
B90:5/7 - Comment
OTE - File #18 - 0
B90:5/8 - Comment
OTE - File #4 - 22
B90:5/9 - Comment
OTE - File #6 - 0
B90:5/10 - Comment
OTE - File #22 - 0
B90:5/14 - Comment
OTE - File #9 - 30
B90:5/15 - Comment
OTE - File #20 - 0
B90:6/0 - Comment
OTE - File #20 - 15
B90:6/1 - Comment
OTE - File #5 - 0
B90:6/3 - Comment
OTE - File #8 - 0
B90:6/4 - Comment
OTE - File #2 - 16
B90:6/5 - Comment
OTE - File #3 - 7
B90:6/6 - Comment
OTE - File #3 - 0
B90:6/7 - Comment
OTE - File #9 - 36
B90:6/8 - Comment
OTE - File #2 - 3
B90:6/9 - Comment
OTE - File #2 - 36
B90:6/11 - Comment

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RSLogix 500 Cross Reference Report - Sorted by Address

B90:6/12 - OTE - File #19 - 0
- Comment
OTE - File #19 - 29

B90:6/13 - Comment
OTE - File #19 - 38

B90:6/14 - Comment
OTE - File #19 - 46

B90:6/15 - Comment
OTE - File #19 - 50

B90:7/0 - Comment
OTE - File #26 - 0

B90:7/1 - Comment
OTE - File #26 - 34

B90:7/2 - Comment
OTE - File #26 - 43

N100:0 - Floating Point Message Write To Master
CLR - File #4 - 19
MSG - File #4 - 5

FILE N100:0 LEN:14 - MSG - File #4 - 5

N100:0/13 - Floating Point Message Write To Master Done
XIC - File #4 - 6

FILE N100:0/13 LEN:14 - MSG - File #4 - 5

N100:3 - Floating Point File Number Written To In Master For This CMF
ADD - File #4 - 3

FILE N100:3 LEN:11 - MSG - File #4 - 5

N100:20 - Integer Message Write To Master
CLR - File #4 - 19
MSG - File #4 - 6

FILE N100:20 LEN:14 - MSG - File #4 - 6

N100:20/13 - Integer Message Write To Master Done
XIC - File #4 - 7

FILE N100:20/13 LEN:14 - MSG - File #4 - 6

N100:23 - Integer File Number Written To In Master For This CMF
ADD - File #4 - 3

FILE N100:23 LEN:11 - MSG - File #4 - 6

N100:40 - Bit Status Message Write To Master
CLR - File #4 - 19
MSG - File #4 - 7

FILE N100:40 LEN:14 - MSG - File #4 - 7

N100:40/13 - Bit Status Message Write To Master Done
XIC - File #4 - 8, 9

FILE N100:40/13 LEN:14 - MSG - File #4 - 7

N100:43 - Bit Status File Number Written To In Master For This CMF
ADD - File #4 - 3

FILE N100:43 LEN:11 - MSG - File #4 - 7

N100:60 - Floating Point Message Read From Master
CLR - File #4 - 19
MSG - File #4 - 8

FILE N100:60 LEN:14 - MSG - File #4 - 8

N100:60/13 - Floating Point Message Read From Master Done
XIC - File #4 - 9

FILE N100:60/13 LEN:14 - MSG - File #4 - 8

N100:63 - Floating Point File Number Read From In Master For This CMF
ADD - File #4 - 3

FILE N100:63 LEN:11 - MSG - File #4 - 8

N100:80 - Integer Message Read From Master
CLR - File #4 - 19
MSG - File #4 - 9

FILE N100:80 LEN:14 - MSG - File #4 - 9

N100:80/13 - Integer Message Read From Master Done
XIC - File #4 - 10

FILE N100:80/13 LEN:14 - MSG - File #4 - 9

N100:83 - Integer File Number Read From In Master For This CMF
ADD - File #4 - 3

FILE N100:83 LEN:11 - MSG - File #4 - 9

N100:100 - Bit Status Message Read From Master
CLR - File #4 - 19
MSG - File #4 - 10

FILE N100:100 LEN:14 - MSG - File #4 - 10

N100:100/13 - Bit Status Message Read From Master Done
XIC - File #4 - 11
FILE N100:100/13 LEN:14 - MSG - File #4 - 10
N100:103 - Bit Status File Number Read From In Master For This CMF
ADD - File #4 - 3
FILE N100:103 LEN:11 - MSG - File #4 - 10
N100:140 - Data Highway Station Number for This CMF
MVM - File #4 - 1
SUB - File #4 - 2
LIM - File #4 - 1
N100:141 - Multiplication Offset to Calculate Destination File Numbers
MOV - File #26 - 33
SUB - File #4 - 2
MUL - File #4 - 3
N109:0 - CMF Number For This Backwash History
MOV - File #26 - 33
FLL - File #26 - 32
FILE N109:0 LEN:40 - FLL - File #26 - 32
N109:1 - Total Number Of Samples
MOV - File #26 - 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54
55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67
68, 69
ADD - File #26 - 36
FILE N109:1 LEN:39 - FLL - File #26 - 32
N109:2/0 - Backwash and Rewet Cycles Exceeded Allocated Log File Length
OTL - File #26 - 39
FILE N109:2/0 LEN:38 - FLL - File #26 - 32
N109:3 - Handshake Value Received From Windows Backwash Logger
MOV - File #26 - 70
FILE N109:3 LEN:37 - FLL - File #26 - 32
N109:4 - Handshake Value Sent To Windows Backwash Logger
MOV - File #26 - 70
FILE N109:4 LEN:36 - FLL - File #26 - 32
N109:5 - Sample Number For Start of Backwash Step 2
MOV - File #26 - 44
FILE N109:5 LEN:35 - FLL - File #26 - 32
N109:6 - Sample Number For Start of Backwash Step 3
MOV - File #26 - 45
FILE N109:6 LEN:34 - FLL - File #26 - 32
N109:7 - Sample Number For Start of Backwash Step 4
MOV - File #26 - 46
FILE N109:7 LEN:33 - FLL - File #26 - 32
N109:8 - Sample Number For Start of Backwash Step 5
MOV - File #26 - 47
FILE N109:8 LEN:32 - FLL - File #26 - 32
N109:9 - Sample Number For Start of Backwash Step 6
MOV - File #26 - 48
FILE N109:9 LEN:31 - FLL - File #26 - 32
N109:10 - Sample Number For Start of Backwash Step 7
MOV - File #26 - 49
FILE N109:10 LEN:30 - FLL - File #26 - 32
N109:11 - Sample Number For Start of Backwash Step 8
MOV - File #26 - 50
FILE N109:11 LEN:29 - FLL - File #26 - 32
N109:12 - Sample Number For Start of Backwash Step 9
MOV - File #26 - 51
FILE N109:12 LEN:28 - FLL - File #26 - 32
N109:13 - Sample Number For Start of Backwash Step 10
MOV - File #26 - 52
FILE N109:13 LEN:27 - FLL - File #26 - 32
N109:14 - Sample Number For Start of Backwash Step 11
MOV - File #26 - 53
FILE N109:14 LEN:26 - FLL - File #26 - 32
N109:15 - Sample Number For Start of Backwash Step 12
MOV - File #26 - 54
FILE N109:15 LEN:25 - FLL - File #26 - 32
N109:16 - Sample Number For Start of Backwash Step 13
MOV - File #26 - 55
FILE N109:16 LEN:24 - FLL - File #26 - 32

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RSLogix 500 Cross Reference Report - Sorted by Address

N109:17 - Sample Number For Start of Backwash Step 14
MOV - File #26 - 56
FILE N109:17 LEN:23 - FLL - File #26 - 32
N109:18 - Sample Number For Start of Backwash Step 15
MOV - File #26 - 57
FILE N109:18 LEN:22 - FLL - File #26 - 32
N109:19 - Sample Number For Start of Backwash Step 16
MOV - File #26 - 58
FILE N109:19 LEN:21 - FLL - File #26 - 32
N109:20 - Sample Number For Start of Backwash Step 17
MOV - File #26 - 59
FILE N109:20 LEN:20 - FLL - File #26 - 32
N109:21 - Sample Number For Start of Rewet Step 1
MOV - File #26 - 60
FILE N109:21 LEN:19 - FLL - File #26 - 32
N109:22 - Sample Number For Start of Rewet Step 2
MOV - File #26 - 61
FILE N109:22 LEN:18 - FLL - File #26 - 32
N109:23 - Sample Number For Start of Rewet Step 3
MOV - File #26 - 62
FILE N109:23 LEN:17 - FLL - File #26 - 32
N109:24 - Sample Number For Start of Rewet Step 4
MOV - File #26 - 63
FILE N109:24 LEN:16 - FLL - File #26 - 32
N109:25 - Sample Number For Start of Rewet Step 5
MOV - File #26 - 64
FILE N109:25 LEN:15 - FLL - File #26 - 32
N109:26 - Sample Number For Start of Rewet Step 6
MOV - File #26 - 65
FILE N109:26 LEN:14 - FLL - File #26 - 32
N109:27 - Sample Number For Start of Rewet Step 7
MOV - File #26 - 66
FILE N109:27 LEN:13 - FLL - File #26 - 32
N109:28 - Sample Number For Start of Rewet Step 8
MOV - File #26 - 67
FILE N109:28 LEN:12 - FLL - File #26 - 32
N109:29 - Sample Number For Start of Rewet Step 9
MOV - File #26 - 68
FILE N109:29 LEN:11 - FLL - File #26 - 32
N109:30 - Sample Number For Start of Rewet Step 10
MOV - File #26 - 69
FILE N109:30 LEN:10 - FLL - File #26 - 32
N110:0 - FLL - File #26 - 2
FILE N110:0 LEN:128 - FLL - File #26 - 2
N110:128 - FLL - File #26 - 2
FILE N110:128 LEN:128 - FLL - File #26 - 2
N111:0 - FLL - File #26 - 3
FILE N111:0 LEN:128 - FLL - File #26 - 3
N111:128 - FLL - File #26 - 3
FILE N111:128 LEN:128 - FLL - File #26 - 3
N112:0 - FLL - File #26 - 4
FILE N112:0 LEN:128 - FLL - File #26 - 4
N112:128 - FLL - File #26 - 4
FILE N112:128 LEN:128 - FLL - File #26 - 4
N113:0 - FLL - File #26 - 5
FILE N113:0 LEN:128 - FLL - File #26 - 5
N113:128 - FLL - File #26 - 5
FILE N113:128 LEN:128 - FLL - File #26 - 5
N114:0 - FLL - File #26 - 6
FILE N114:0 LEN:128 - FLL - File #26 - 6
N114:128 - FLL - File #26 - 6
FILE N114:128 LEN:128 - FLL - File #26 - 6
N115:0 - FLL - File #26 - 7
FILE N115:0 LEN:128 - FLL - File #26 - 7
N115:128 - FLL - File #26 - 7
FILE N115:128 LEN:128 - FLL - File #26 - 7
N116:0 - FLL - File #26 - 8
FILE N116:0 LEN:128 - FLL - File #26 - 8
N116:128 - FLL - File #26 - 8

FILE N116:128 LEN:128 - FLL - File #26 - 8
N117:0 - FLL - File #26 - 9
FILE N117:0 LEN:128 - FLL - File #26 - 9
N117:128 - FLL - File #26 - 9
FILE N117:128 LEN:128 - FLL - File #26 - 9
N118:0 - FLL - File #26 - 10
FILE N118:0 LEN:128 - FLL - File #26 - 10
N118:128 - FLL - File #26 - 10
FILE N118:128 LEN:128 - FLL - File #26 - 10
N119:0 - FLL - File #26 - 11
FILE N119:0 LEN:128 - FLL - File #26 - 11
N119:128 - FLL - File #26 - 11
FILE N119:128 LEN:128 - FLL - File #26 - 11
N120:0 - FLL - File #26 - 12
FILE N120:0 LEN:128 - FLL - File #26 - 12
N120:128 - FLL - File #26 - 12
FILE N120:128 LEN:128 - FLL - File #26 - 12
N121:0 - FLL - File #26 - 13
FILE N121:0 LEN:128 - FLL - File #26 - 13
N121:128 - FLL - File #26 - 13
FILE N121:128 LEN:128 - FLL - File #26 - 13
N122:0 - FLL - File #26 - 14
FILE N122:0 LEN:128 - FLL - File #26 - 14
N122:128 - FLL - File #26 - 14
FILE N122:128 LEN:128 - FLL - File #26 - 14
N123:0 - FLL - File #26 - 15
FILE N123:0 LEN:128 - FLL - File #26 - 15
N123:128 - FLL - File #26 - 15
FILE N123:128 LEN:128 - FLL - File #26 - 15
N124:0 - FLL - File #26 - 16
FILE N124:0 LEN:128 - FLL - File #26 - 16
N124:128 - FLL - File #26 - 16
FILE N124:128 LEN:128 - FLL - File #26 - 16
N125:0 - FLL - File #26 - 17
FILE N125:0 LEN:128 - FLL - File #26 - 17
N125:128 - FLL - File #26 - 17
FILE N125:128 LEN:128 - FLL - File #26 - 17
N126:0 - FLL - File #26 - 18
FILE N126:0 LEN:128 - FLL - File #26 - 18
N126:128 - FLL - File #26 - 18
FILE N126:128 LEN:128 - FLL - File #26 - 18
N127:0 - FLL - File #26 - 19
FILE N127:0 LEN:128 - FLL - File #26 - 19
N127:128 - FLL - File #26 - 19
FILE N127:128 LEN:128 - FLL - File #26 - 19
N128:0 - FLL - File #26 - 20
FILE N128:0 LEN:128 - FLL - File #26 - 20
N128:128 - FLL - File #26 - 20
FILE N128:128 LEN:128 - FLL - File #26 - 20
N129:0 - FLL - File #26 - 21
FILE N129:0 LEN:128 - FLL - File #26 - 21
N129:128 - FLL - File #26 - 21
FILE N129:128 LEN:128 - FLL - File #26 - 21
N130:0 - FLL - File #26 - 22
FILE N130:0 LEN:128 - FLL - File #26 - 22
N130:128 - FLL - File #26 - 22
FILE N130:128 LEN:128 - FLL - File #26 - 22
N131:0 - FLL - File #26 - 23
FILE N131:0 LEN:128 - FLL - File #26 - 23
N131:128 - FLL - File #26 - 23
FILE N131:128 LEN:128 - FLL - File #26 - 23
N132:0 - FLL - File #26 - 24
FILE N132:0 LEN:128 - FLL - File #26 - 24
N132:128 - FLL - File #26 - 24
FILE N132:128 LEN:128 - FLL - File #26 - 24
N133:0 - FLL - File #26 - 25
FILE N133:0 LEN:128 - FLL - File #26 - 25
N133:128 - FLL - File #26 - 25
FILE N133:128 LEN:128 - FLL - File #26 - 25

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N134:0 - FLL - File #26 - 26
FILE N134:0 LEN:128 - FLL - File #26 - 26
N134:128 - FLL - File #26 - 26
FILE N134:128 LEN:128 - FLL - File #26 - 26
N135:0 - FLL - File #26 - 27
FILE N135:0 LEN:128 - FLL - File #26 - 27
N135:128 - FLL - File #26 - 27
FILE N135:128 LEN:128 - FLL - File #26 - 27
N136:0 - FLL - File #26 - 28
FILE N136:0 LEN:128 - FLL - File #26 - 28
N136:128 - FLL - File #26 - 28
FILE N136:128 LEN:128 - FLL - File #26 - 28
N137:0 - FLL - File #26 - 29
FILE N137:0 LEN:128 - FLL - File #26 - 29
N137:128 - FLL - File #26 - 29
FILE N137:128 LEN:128 - FLL - File #26 - 29
N138:0 - FLL - File #26 - 30
FILE N138:0 LEN:128 - FLL - File #26 - 30
N138:128 - FLL - File #26 - 30
FILE N138:128 LEN:128 - FLL - File #26 - 30
N139:0 - FLL - File #26 - 31
FILE N139:0 LEN:128 - FLL - File #26 - 31
N139:128 - FLL - File #26 - 31
FILE N139:128 LEN:128 - FLL - File #26 - 31
N140:0 - CMF State to Other PLC
MOV - File #19 - 64
N140:1 - Particle Counter to Other PLC
MOV - File #19 - 65
N140:2/0 - Any Warning Alarm is Present to other PLC
OTE - File #19 - 66
N140:2/1 - Any Shutdown Alarm is Present to other PLC
OTE - File #19 - 67
N140:2/2 - E-Stop Shutdown Alarm to other PLC
OTE - File #19 - 68
N140:2/3 - Feed Pump Fault Shutdown Alarm to other PLC
OTE - File #19 - 69
N140:2/4 - Feed Pressure High Shutdown Alarm to other PLC
OTE - File #19 - 70
N140:10/0 - Remote Stop From SCADA
XIC - File #4 - 23, 28
N140:10/1 - Remote Start From SCADA
XIC - File #4 - 27
N[N7:12]:[C5:27.ACC] - Feed Press. Sample Loaded Into File 110
MUL - File #26 - 38
N[N7:13]:[C5:27.ACC] - Filtrate Press. Sample Loaded Into File 120
MUL - File #26 - 38
N[N7:14]:[C5:27.ACC] - Flow Sample Loaded Into File 130
MUL - File #26 - 38
U:3 - Reset Control Bits
JSR - File #2 - 17
U:4 - Update Data Highway and Command Buttons
JSR - File #2 - 18
U:5 - Update Inputs From Modules to Buffers
JSR - File #2 - 19
U:6 - Update State Logic
JSR - File #2 - 20
U:7 - Calculate Running and Interval Averages
JSR - File #2 - 21
U:8 - Perform TMP and Resistance Logic
JSR - File #2 - 22
U:9 - Filtration Subroutine
JSR - File #2 - 23
U:10 - Update Startup Logic
JSR - File #2 - 24
U:11 - Update Backwash Logic
JSR - File #2 - 25
U:12 - Update Rewet Logic
JSR - File #2 - 26
U:13 - Update Membrane Test Logic

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U:14 JSR - File #2 - 27
- Update Sonic Test Logic
JSR - File #2 - 28
U:16 - Update Integrity Test Logic
JSR - File #2 - 29
U:17 - Update CIP Logic
JSR - File #2 - 30
U:18 - Update Drain Down Logic
JSR - File #2 - 31
U:19 - Update PanelView Logic
JSR - File #2 - 32
U:20 - Update Outputs For Valves and Indicators
JSR - File #2 - 33
U:21 - Return Current Step Number For this cycle
JSR - File #10 - 8
File #11 - 57
File #12 - 17
File #13 - 22
File #14 - 10
File #16 - 8
File #17 - 52
File #18 - 9
U:22 - Set Current State Bit
JSR - File #6 - 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26
U:26 - Update Backwash History
JSR - File #2 - 34

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
B3:0			Control Bits Reset on Power Up	
B3:0/0				
B3:0/1				
B3:0/2			Valid Data Highway Station Number	
B3:0/3			Master Heartbeat ON One Shot	
B3:0/4			Master Heartbeat OFF One Shot	
B3:0/5			There are NO Backwash Requests or Resources Present	
B3:0/6			Filtration Flow OK for Step 4 of Backwash	
B3:0/7			Feed Pressure Is OK in Step 8 During Backwash	
B3:0/8			Filtrate Pressure Is OK in Step 8 During Backwash	
B3:0/9			Feed Pressure Is OK During Rewet Step 4	
B3:0/10			Filtrate Pressure Is OK During Rewet Step 4	
B3:0/11			AV16 at Fixed Position	
B3:0/12			Integrity Test Exhaust Ind. Cascade.. Steady ON	
B3:0/13			Integrity Test Exhaust Ind. Cascade.. Flash	
B3:0/14			Delta Res. Setpoint Reached with Filtrate Settled	
B3:0/15			There are NO CIP Requests or Resources Present	
B3:1			Control Bits Reset on Power Up	
B3:1/0			End of Fixed Filtration Pulse	
B3:1/1			End of Filtration Initialization Pulse	
B3:1/2			End of EACH Controlled Period Pulse	
B3:1/3			End of FIRST Controlled Period Pulse	
B3:1/4			Stop Command by Master One Shot	
B3:1/5			Standby Command by Master One Shot	
B3:1/6			Start Command by Master One Shot	
B3:1/7			Backwash Button Pressed One Shot	
B3:1/8			Rewet Button Pressed One Shot	
B3:1/9			Membrane Test Button Pressed One Shot	
B3:1/10			Sonic Test Button Pressed One Shot	
B3:1/11			Sonic Reset Button Pressed One Shot	
B3:1/12			Spare Button-1 Pressed One Shot	
B3:1/13			CIP Button Pressed One Shot	
B3:1/14			Halt CIP Button Pressed One Shot	
B3:1/15			Cancel CIP Command One Shot	
B3:2			Control Bits Reset on Power Up	
B3:2/0			Drain Down Button Pressed One Shot	
B3:2/1			Reset Alarms Button Pressed One Shot	
B3:2/2			CMF Requires That Manual Valves be Set to CIP	
B3:2/3			Perform Standby When Backwash Is Requested While CIP is Also Requested	
B3:2/4			Standby Performed Due to Low Control Air Pressure	
B3:2/5			Perform Automatic (Timed) Membrane Test	
B3:2/6			CMF Has Started Modulated Filtration One Shot	
B3:2/7			Shutdown One Shot	
B3:2/8			Alarm Found In Bit List.. Hold Scanning	
B3:2/9			First Time In Filtration That Flow is At or Near Setpoint	
B3:2/10			Delta TMP Setpoint Reached with Filtrate Settled	
B3:2/11				
B3:2/12			Enable CIP Extended Soak Button Pressed One Shot	
B3:2/13			Disable CIP Extended Soak Button Pressed One Shot	
B3:2/14				
B3:2/15				
B3:3			Control Bits Reset on Power Up	
B3:3/0			Perform 120 (Startup).. From 110 (Startup-Wait)	
B3:3/1			Perform 130 (Backwash).. From 170 (Filtration)	
B3:3/2			Perform Backwash From 310 (CIP)	
B3:3/3			Perform Backwash From 410 (CIP)	
B3:3/4			Perform 140 (Rewet).. From 170 (Filtration)	
B3:3/5			Perform 200 (Standby).. From 170 (Filtration) Manual Standby	
B3:3/6			Perform 200 (Standby).. From 170 (Filtration) Bwash Req/TMP	
B3:3/7				
B3:3/8			Perform Shutdown After Start With CIP Active	
B3:3/9			Start CIP At Step 5... Add Chemical	
B3:3/10			Start CIP At Step 11... Press Start To Continue Draindown	
B3:3/11			Start CIP At Step 13... Rinse	
B3:3/12			Start CIP At State 390.. Step # CIP10 (CIP Rinse)	
B3:3/13			Alarm Found In Bit List.. Hold Scanning For More	
B3:3/14			Warning Message Scroll Button Pressed One Shot	
B3:3/15			New Day Bit From This CMF	
B3:4			Backwash Request Bits	
B3:4/0	BWREQ_110	Global	Backwash Request... Wait for Bwash Resource for Startup	
B3:4/1	BWREQ_CIP4	Global	Backwash Request... Used for CIP Step 4	
B3:4/2	BWREQ_CIP16	Global	Backwash Request... Used for CIP Step 16	
B3:4/3	BWREQ_MANUAL	Global	Backwash Request... Manual PB	
B3:4/4	BWREQ_DELTRES	Global	Backwash Request... Delta Resistance	
B3:4/5	BWREQ_DELTMP	Global	Backwash Request... Delta TMP	
B3:4/6	BWREQ_HITMP	Global	Backwash Request... High TMP	
B3:4/7	BWREQ_TIME	Global	Backwash Request... Backwash Time Interval	
B3:4/8				
B3:4/9				
B3:4/10				
B3:4/11				
B3:4/12				
B3:4/13				
B3:4/14				
B3:4/15				
B3:5			Backwash Resource Bits	
B3:5/0	BWRSC_110	Global	Backwash Resource Taken... Startup	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
B3:5/1	BWRSC_CIP4	Global	Backwash Resource Taken... CIP Step 4	
B3:5/2	BWRSC_CIP16	Global	Backwash Resource Taken... CIP Step 16	
B3:5/3	BWRSC_MANUAL	Global	Backwash Resource Taken... Manual PB	
B3:5/4	BWRSC_DELTRES	Global	Backwash Resource Taken... Delta Resistance	
B3:5/5	BWRSC_DELTMP	Global	Backwash Resource Taken... Delta TMP	
B3:5/6	BWRSC_HITMP	Global	Backwash Resource Taken... High TMP	
B3:5/7	BWRSC_TIME	Global	Backwash Resource Taken... Backwash Time Interval	
B3:5/8				
B3:5/9				
B3:5/10				
B3:5/11				
B3:5/12				
B3:5/13				
B3:5/14				
B3:5/15				
B3:6			CIP Request Bits	
B3:6/0	CIPREQ1	Global	CIP Request.. Max TMP Counter	
B3:6/1	CIPREQ2	Global	CIP Request.. Timed Interval	
B3:6/2	CIPREQ3	Global	CIP Request.. Manual PB	
B3:7			CIP Resource Bits	
B3:7/0	CIPRSC1	Global	CIP Resource Taken... Max TMP Counter	
B3:7/1	CIPRSC2	Global	CIP Resource Taken... Timed Interval	
B3:7/2	CIPRSC3	Global	CIP Resource Taken... Manual PB	
B3:7/3				
B3:7/4				
B3:7/5				
B3:7/6				
B3:7/7				
B3:7/8				
B3:7/9				
B3:7/10				
B3:7/11				
B3:7/12				
B3:7/13				
B3:7/14				
B3:7/15				
B3:8			Control Bits NOT Reset on Power Up	
B3:8/0			CMF is in CIP Cycle.. Read on Power up	
B3:8/13			PID Loop Tuning Bit.. ON=Tune	
B3:9			Control Bits	
B3:9/1			Button Pressed To Latch	
B3:9/4				
B3:9/5			Reset Backwash History Files One Shot	
B3:9/6			Perform Backwash Historical Logging	
B3:10/3			CMF Enabled to Run	
B3:10/4			SHOW USA DATA	
B3:10/5			One Shot Relay	
B3:10/6			One Shot Relay	
B3:10/7			CMF to Run Latch	
B10:0			Startup Step Active Bits	
B10:0/1			Startup Step 1 Active... Wait for Tank Fill	
B10:0/2			Startup Step 2 Active... Shell Fill #1	
B10:0/3			Startup Step 3 Active... Shell Fill #2	
B10:0/4			Startup Fill Cycle Active.. Fill Lumens	
B10:0/5			Startup Cycle Done	
B10:1			Startup Step Active Bits	
B10:2			Startup Misc. Control Bits	
B11:0			Backwash Step Active Bits	
B11:0/1			Backwash Step 1 Active... Log Data	
B11:0/2			Backwash Step 2 Active... Close Feed	
B11:0/3			Backwash Step 3 Active... Open Filtrate Exhaust	
B11:0/4			Backwash Step 4 Active... Drain Lumens 1	
B11:0/5			Backwash Step 5 Active... Drain Lumens 2	
B11:0/6			Backwash Step 6 Active... Close Filtrate Exhaust	
B11:0/7			Backwash Step 7 Active... Pressurize	
B11:0/8			Backwash Step 8 Active... Hi PSI- Lo GPM Chk	
B11:0/9			Backwash Step 9 Active... Blowback	
B11:0/10			Backwash Step 10 Active... Scrub (Air On)	
B11:0/11			Backwash Step 11 Active... Shell Sweep	
B11:0/12			Backwash Step 12 Active... Filtrate Exhaust	
B11:0/13			Backwash Step 13 Active... Low PSI Check	
B11:0/14			Backwash Step 14 Active... End Sweep 1	
B11:0/15			Backwash Step 15 Active... End Sweep 2	
B11:1			Backwash Step Active Bits	
B11:1/0			Backwash Step 16 Active... Spare	
B11:1/1			Backwash Step 17 Active... Fill Lumens	
B11:1/2			Backwash Cycle Done One Shot	
B11:2			Backwash Misc. Control Bits	
B11:2/0			Feed Tank Level High To Begin Backwash	
B12:0			Rewet Step Active Bits	
B12:0/1			Rewet Step 1 Active... Delay	
B12:0/2			Rewet Step 2 Active... Shell Exhaust 1	
B12:0/3			Rewet Step 3 Active... Close Feed 1	
B12:0/4			Rewet Step 4 Active... Pressurize	
B12:0/5			Rewet Step 5 Active... Air Off	
B12:0/6			Rewet Step 6 Active... Filtrate Exhaust	
B12:0/7			Rewet Step 7 Active... Shell Exhaust 2	
B12:0/8			Rewet Step 8 Active... Shell Exhaust 3	
B12:0/9			Rewet Step 9 Active... Fill Lumens	
B12:0/10			Rewet Step 10 Active... Fill Lumens	
B12:0/11			Rewet Step 11 Active... Close Filt Exhaust	
B12:0/12			Rewet Cycle Done	
B12:1			Rewet Step Active Bits	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
B12:2			Rewet Misc. Control Bits	
B12:2/15			All Rewet Cycles Done One Shot	
B13:0			Mem.Test Step Active Bits	
B13:0/1			Mem.Test Step 1 Active... Close Filtrate	
B13:0/2			Mem.Test Step 2 Active... Delay	
B13:0/3			Mem.Test Step 3 Active... Drain Lumens	
B13:0/4			Mem.Test Step 4 Active... Spare	
B13:0/5			Mem.Test Step 5 Active... Pressurize	
B13:0/6			Mem.Test Step 6 Active... Stabilize	
B13:0/7			Mem.Test Step 7 Active... Log Initial Test Data	
B13:0/8			Mem.Test Step 8 Active... Test Interval	
B13:0/9			Mem.Test Step 9 Active... Log Final Test Data	
B13:0/10			Mem.Test Step 10 Active... End of Test Delay	
B13:0/11			Mem.Test Done	
B13:1			Mem.Test Step Active Bits	
B13:2			Mem.Test Misc. Control Bits	
B14:0			Sonic Test Step Active Bits	
B14:0/1			Sonic Test Step 1 Active... Close Filtrate	
B14:0/2			Sonic Test Step 2 Active... Delay	
B14:0/3			Sonic Test Step 3 Active... Drain Lumens	
B14:0/4			Sonic Test Step 4 Active... Spare	
B14:0/5			Sonic Test Step 5 Active... Pressurize	
B14:0/6			Sonic Test Step 6 Active... Test Interval	
B14:0/7			Sonic Test Step 7 Active... End of Test Delay	
B14:0/8			Sonic Test Done	
B14:1			Sonic Test Step Active Bits	
B14:2			Sonic Test Misc. Control Bits	
B15:0			DAF Test Step Active Bits	
B15:0/1			DAF Test Step 1 Active... Close Filtrate	
B15:0/2			DAF Test Step 2 Active... Delay	
B15:0/3			DAF Test Step 3 Active... Drain Lumens	
B15:0/4			DAF Test Step 4 Active... Vent Shell	
B15:0/5			DAF Test Step 5 Active... Pressurize	
B15:0/6			DAF Test Step 6 Active... Bypass DAF Rig	
B15:0/7			DAF Test Step 7 Active... Measure Time to LSH2	
B15:0/8			DAF Test Step 8 Active... Measure Time to LSH3	
B15:0/9			DAF Test Step 9 Active... Log DAF Data	
B15:0/10			DAF Test Step 10 Active... Drain DAF Rig	
B15:0/11			DAF Test Step 11 Active... DAF Test End	
B15:0/12			DAF Test Cycle Done	
B15:1			DAF Test Step Active Bits	
B15:2			DAF Test Misc. Control Bits	
B15:2/8			Pulse AV22 During Step 6-8	
B16:0			Integrity Test Exhaust Step Active Bits	
B16:0/1			Integrity Test Exhaust Step 1 Active... Vent	
B16:0/2			Integrity Test Exhaust Step 2 Active... Shell Fill 1	
B16:0/3			Integrity Test Exhaust Step 3 Active... Shell Fill 2	
B16:0/4			Integrity Test Exhaust Step 3 Active... Lumen Fill	
B16:0/5			Integrity Test Exhaust Done	
B16:0/11			Test Exhaust Cycle Done	
B16:1			Integrity Test Exhaust Step Active Bits	
B16:2			Integrity Test Exhaust Misc. Control Bits	
B17:0			CIP Step Active Bits	
B17:0/1			CIP Step 1 Active... Fill Tank and Recirculate	
B17:0/2			CIP Step 2 Active... DrainDown (if Ext.CIP)	
B17:0/3			CIP Step 3 Active... Request CIP Backwash	
B17:0/4			CIP Step 4 Active... Perform CIP Backwash	
B17:0/5			CIP Step 5 Active... Add Chemical	
B17:0/6			CIP Step 6 Active... Spare	
B17:0/7			CIP Step 7 Active... Recirculate Filtrate	
B17:0/8			CIP Step 8 Active... Soak	
B17:0/9			CIP Step 9 Active... Extended Soak	
B17:0/10			CIP Step 10 Active... Recirculate Shell	
B17:0/11			CIP Step 11 Active... Wait for CIP Start	
B17:0/12			CIP Step 12 Active... Drain Solution	
B17:0/13			CIP Step 13 Active... Fill Tank For Rinse to Waste	
B17:0/14			CIP Step 14 Active... Rinse to Waste	
B17:0/15			CIP Step 15 Active... Spare	
B17:1			CIP Step Active Bits	
B17:1/0			CIP Step 16 Active... Fill Tank For Backwash Rinse	
B17:1/1			CIP Step 17 Active... Backwash Rinse	
B17:1/2			CIP Step 18 Active... Drain	
B17:1/3			CIP Step 19 Active... Repeat At Step 13	
B17:1/4			CIP Step 20 Active... End of CIP	
B17:2			CIP Step Active Bits	
B17:3			CIP Misc. Control Bits	
B17:3/0			CIP Cycle.. AV8 Cascade #1	
B17:3/1			CIP Cycle.. AV8 Cascade #2	
B17:3/2			CIP Cycle.. AV9 Cascade #1	
B17:3/3			CIP Cycle.. AV15 Cascade #1	
B17:3/4			CIP Cycle.. AV15 Cascade #2	
B18:0			DrainDown Step Active Bits	
B18:0/1			DrainDown Step 1 Active... Drain Lumens	
B18:0/2			DrainDown Step 2 Active... Spare	
B18:0/3			DrainDown Step 3 Active... Drain Shell	
B18:0/4			DrainDown Step 4 Active... Drain Tank	
B18:0/5			DrainDown Step 5 Active... Spare	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
B18:0/6			DrainDown Step 6 Active... Air Off	
B18:0/7			DrainDown Step 7 Active... Exhaust	
B18:0/8			DrainDown Cycle Done	
B18:1			DrainDown Step Active Bits	
B18:2			DrainDown Misc. Control Bits	
B34:0/0				
B34:0/1			Enable Data Highway Message (ON=Enable)	
B34:0/2			Enable Floating Point Write to Master	
B34:0/3			Enable Floating Point Read From Master	
B34:0/4			This Machine Does Not Use A Master for Backwash Perm. ON=Standalone	
B34:0/5			This Machine Does Not Use A Master for CIP Permission ON=Standalone	
B34:0/6			This Machine Does Not Use A Master for Filtrate Funct. ON=Standalone	
B34:0/8			Enable Backwash On Delta Resistance	
B34:0/9			Enable Backwash On Delta TMP	
B34:0/10			Enable Backwash Request On High TMP	
B52:0			CMF Cycle And Mode Status Sent To Master	
B52:0/0				
B52:0/1	TM_STARTUP	Global	CMF is in Startup Cycle	
B52:0/2	TM_BACKWASH	Global	CMF is in Backwash Cycle	
B52:0/3	TM_REWET	Global	CMF is in Rewet Cycle	
B52:0/4	TM_MEMTEST	Global	CMF is in Membrane Test Cycle	
B52:0/5	TM_SONIC	Global	CMF is in Sonic Test Cycle	
B52:0/6	TM_DAF	Global	CMF is in DAF Test Cycle	
B52:0/7	TM_INTFXH	Global	CMF is in Integrity Test Exhaust Cycle Exhaust	
B52:0/8	TM_CIP	Global	CMF is in CIP Cycle	
B52:0/9	TM_DRAIN	Global	CMF is in Drain Down Cycle	
B52:0/10	TM_FIXFILT	Global	CMF is in Fixed Filtration	
B52:0/11	TM_MODULATE	Global	CMF is in Controlled Filtration	
B52:0/12	TM_FILTWASTE	Global	CMF is Filtering To Waste	
B52:0/13	TM_CIP_LTSOAK	Global	CIP Long Term Soak Now Permitted	
B52:0/14	TM_CIP_TNKFILL	Global	CMF is being Used to fill CIP Tank	
B52:0/15	TM_STANDBY	Global	CMF is in Standby	
B52:1	TM_SHUTDOWN	Global	CMF is Shutdown	
B52:1/0			CMF Machine Status and Requests Sent to Master	
B52:1/1	TM_BWREQ	Global	Any Backwash Request Sent To Master	
B52:1/2	TM_BWRSC	Global	CMF Has Backwash Resource	
B52:1/3	TM_CIPREQ	Global	Any CIP Request Sent To Master	
B52:1/4	TM_CIPRSC	Global	CMF Has CIP Resource	
B52:1/5	TM_ISOL_CIP	Global	Manual Isolation Valves Set for CIP	
B52:1/6	TM_ISOL_FILT	Global	Manual Isolation Valves Set for Filtration	
B52:1/7	TM_FDPUMP	Global	Feed Pump Request to Master	
B52:1/8	TM_ENDINTERVAL	Global	End of Filtration Period.. Set each Interval	
B52:1/9	TM_MANBWASH	Global	CMF has Requested A Manual Backwash	
B52:1/10	BWREQEARLY	Global	Backwash Has Been Requested Too Early	
B52:1/11	TM_FIXEDINT	Global	This CMF Is Performing Timed CIP and Backwashes	
B52:1/12	TM_MANCIP	Global	CMF has Requested A Manual CIP	
B52:1/13	TM_WRNINGALM	Global	Any Warning Alarm is Present	
B52:1/14	TM_SHUTDNALM	Global	Any Shutdown Alarm is Present	
B52:1/15	TM_COMM_OK	Global	Master is Responding on Data Highway	
B52:2	TM_HEARTBEAT	Global	Heartbeat Written To Master	
B52:2/0			Spare Bit Word to Master	
B52:2/1			This CMF Is Available For Filtration	
B52:2/2			Enable Message At Operator Interface.. Manual Valves For CIP	
B52:2/3			Enable Message At Operator Interface.. Manual Valves For Filtration	
B52:2/4			Log Membrane Test Results.. Read by Trend Software	
B52:2/5			Log CIP Results.. Read by Trend Software	
B52:2/6				
B52:2/7				
B52:2/8			CMF is Filtering To Plant Filtrate	
B52:2/9			CIP Extended Soak Enabled	
B52:2/10			CIP External Feed Is Enabled	
B52:2/11			State 100 Active.. Shutdown Used by Master	
B52:2/12			State 170 Active.. Normal Filtration Used by Master	
B52:2/13				
B52:2/14				
B52:2/15				
B52:3			Command Handshaking Bits..Word 1	
B52:3/0			Stop Command by Master Handshake	
B52:3/1			Standby Command by Master Handshake	
B52:3/2			Start Command by Master Handshake	
B52:3/3			Backwash Button Handshake	
B52:3/4			Rewet Button Handshake	
B52:3/5			Membrane Test Button Handshake	
B52:3/6			Sonic Test Button Handshake	
B52:3/7			Sonic Reset Button Handshake	
B52:3/8			Spare Button-1 Handshake	
B52:3/9			CIP Button Handshake	
B52:3/10			Halt CIP Button Handshake	
B52:3/11			Cancel CIP Command Handshake	
B52:3/12			Drain Down Button Handshake	
B52:3/13			Reset Alarms Button Handshake	
B52:3/14			New Day Handshake Bit	
B52:3/15	TM_BWLOGRDY	Global	Backwash History Files Ready To Store	
B52:4			Command Handshaking Bits..Word 2	
B52:4/0			Enable CIP Extended Soak Button Handshake	
B52:4/1			Disable CIP Extended Soak Button Handshake	
B52:4/2				

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
B52:4/3				
B52:4/4				
B52:4/5				
B52:4/6				
B52:4/7				
B52:4/8				
B52:4/9				
B52:4/10				
B52:4/11				
B52:4/12				
B52:4/13				
B52:4/14				
B52:4/15				
B52:5			Shutdown Alarm Word 1	
B52:5/0			E-Stop Shutdown Alarm	
B52:5/1	AIRLOALRM	Global	Control Air Pressure Low Shutdown Alarm	
B52:5/2			Process Air Process Low Shutdown Alarm	
B52:5/3				
B52:5/4			Feed Pump Fault Shutdown Alarm	
B52:5/5			Feed Pressure High Shutdown Alarm	
B52:5/6			Feed Tank Level Low Shutdown Alarm	
B52:5/7				
B52:5/8				
B52:5/9			Master Comms Failed Shutdown Alarm	
B52:5/10				
B52:5/11			Filtrate Flow Rate Low-Low Shutdown	
B52:5/12			Filtrate Flow Rate High-High Shutdown Alarm	
B52:5/13			FFI High Shutdown Alarm	
B52:5/14				
B52:5/15				
B52:6			Shutdown Alarm Word 2	
B52:6/0	BW11LODFLOW_SH	Global	Sweep Feed Flow Low Shutdown During BW11	
B52:6/1	PDTALARM	Global	Pressure Decay Exceeded Shutdown	
B52:6/2			CIP Recirc. Feed Flow Low Shutdown During CIP7 or CIP10	
B52:6/3				
B52:6/4			Shutdown Caused by TMP Exceeding Maximum Allowed	
B52:6/5			Shutdown Caused by Auto CIP Request	
B52:6/6				
B52:6/7				
B52:6/8				
B52:6/9				
B52:6/10				
B52:6/11				
B52:6/12				
B52:6/13				
B52:6/14				
B52:6/15				
B52:7			Warning Alarm Word 1	
B52:7/0	BW4HIFLOFAIL	Global	High Filtrate Flow Failure During Backwash Step 4	
B52:7/1	BW8HIPT1FAIL	Global	High Feed Pressure Fail During Backwash Step 8	
B52:7/2	BW8HIPT2FAIL	Global	High Filtrate Pressure Fail During Backwash Step 8	
B52:7/3	BW8LOFLOFAIL	Global	Low Filtrate Flow Warning During Backwash Step 8	
B52:7/4	BW13LOPT1FAIL	Global	Low Feed Pressure Failure During Backwash Step 13	
B52:7/5	BW13LOPT2FAIL	Global	Low Filtrate Pressure Failure During Backwash Step 13	
B52:7/6	BW11LODFLOW	Global	Sweep Feed Flow Low Warning During BW11	
B52:7/7				
B52:7/8				
B52:7/9			Control Air Pressure Low... Perform Standby	
B52:7/10			Feed Pressure High Failed Warning Alarm During RW4	
B52:7/11			Filtrate Pressure High Failed Warning Alarm During RW4	
B52:7/12				
B52:7/13	PDINITPRFAIL	Global	Initial Pressure For Membrane Test is Out Of Range	
B52:7/14	PDTWARNING	Global	Pressure Decay Exceeded Warning	
B52:7/15	SONPRFAIL	Global	Pressure for Sonic Test Is Out Of Range	
B52:8			Warning Alarm Word 2	
B52:8/0				
B52:8/1			Tank Not Drained Alarm During DrainDown Step 4	
B52:8/2				
B52:8/3			CIP Recirc. Feed Flow Low Warning During CIP7 or CIP10	
B52:8/4				
B52:8/5				
B52:8/6				
B52:8/7	FILTFLOWLO	Global	Filtrate Flow Rate Low Warning	
B52:8/8			Filtrate Flow Rate High Warning Alarm	
B52:8/9			Timed CIP Warning Alarm	
B52:8/10			FFI During Filtration High Warning	
B52:8/11				
B52:8/12				
B52:8/13				
B52:8/14				
B52:8/15				
B52:9			Warning Alarm Word 3	
B52:9/0				
B52:9/1				
B52:9/2				
B52:9/3				
B52:9/4				

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
B52:9/5				
B52:9/6				
B52:9/7				
B52:9/8				
B52:9/9				
B52:9/10				
B52:9/11				
B52:9/12				
B52:9/13				
B52:9/14				
B52:9/15				
B52:10			Warning Alarm Word 4	
B52:10/0				
B52:10/1				
B52:10/2				
B52:10/3				
B52:10/4				
B52:10/5				
B52:10/6				
B52:10/7				
B52:10/8				
B52:10/9				
B52:10/10				
B52:10/11				
B52:10/12				
B52:10/13				
B52:10/14				
B52:10/15				
B52:11			PanelView Indicators (Replace Pilot Lights)	
B52:11/0			Hour Meter	
B52:11/1			Filtration Indicator	
B52:11/2			Backwash Indicator	
B52:11/3			Mtest Indicator	
B52:11/4			CIP Indicator	
B52:11/5			Standby Indicator	
B52:11/6			Shutdown Indicator	
B52:11/8				
B52:11/9			Data Highway Heartbeat Indication	
B52:11/10				
B52:11/11				
B52:11/12				
B52:11/13				
B52:11/14				
B52:11/15				
B52:12			Current State Bits Word 1	
B52:12/0	STATE_100	Global	State 100 Active.. Shutdown	
B52:12/1	STATE_110	Global	State 110 Active.. Startup-Wait	
B52:12/2	STATE_120	Global	State 120 Active.. Begin Startup	
B52:12/3	STATE_130	Global	State 130 Active.. Backwash	
B52:12/4	STATE_140	Global	State 140 Active.. Rewet	
B52:12/5	STATE_150	Global	State 150 Active.. Fixed Filtration	
B52:12/6	STATE_160	Global	State 160 Active.. Initialize Filtration	
B52:12/7	STATE_170	Global	State 170 Active.. Normal Filtration	
B52:12/8	STATE_180	Global	State 180 Active.. Filtrate Exhaust	
B52:12/9	STATE_190	Global	State 190 Active.. Filtrate to CIP Outlet	
B52:12/10	STATE_200	Global	State 200 Active.. Standby	
B52:12/11	STATE_210	Global	State 210 Active.. Membrane Test	
B52:12/12	STATE_220	Global	State 220 Active.. Sonic Test	
B52:12/13	STATE_230	Global	State 230 Active.. DAF Test	
B52:12/14	STATE_240	Global	State 240 Active.. Integrity Test Exhaust	
B52:12/15	STATE_250	Global	State 250 Active.. Drain Down	
B52:13			Current State Bits Word 2	
B52:13/0	STATE_300	Global	State 300 Active.. Begin CIP	
B52:13/1	STATE_310	Global	State 310 Active.. Perform CIP Backwashes	
B52:13/2	STATE_320	Global	State 320 Active.. Start CIP Cycle	
B52:13/3	STATE_330	Global	State 330 Active.. Purge CIP Line to Waste	
B52:13/4	STATE_340	Global	State 340 Active.. CIP Fill	
B52:13/5	STATE_350	Global	State 350 Active.. CIP Recirc. Filtrate Open	
B52:13/6	STATE_360	Global	State 360 Active.. CIP Soak	
B52:13/7	STATE_370	Global	State 370 Active.. CIP Recirc. Filtrate Close	
B52:13/8	STATE_380	Global	State 380 Active.. Drain to CIP Tank	
B52:13/9	STATE_390	Global	State 390 Active.. CIP Rinse- Fill Shell	
B52:13/10	STATE_400	Global	State 400 Active.. Request Rinse Backwashes	
B52:13/11	STATE_410	Global	State 410 Active.. Perform Rinse Backwashes	
B52:13/12	STATE_420	Global	State 420 Active.. Rinse and Low Cond. Check	
B52:13/13	STATE_430	Global	State 430 Active.. End of CIP	
B52:13/14				
B52:13/15				
B52:14			Current State Bits Word 3	
B52:14/0				
B52:14/1				
B52:14/2				
B52:14/3				
B52:14/4				
B52:14/5				
B52:14/6				
B52:14/7				

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
B52:14/8				
B52:14/9				
B52:14/10				
B52:14/11				
B52:14/12				
B52:14/13				
B52:14/14				
B52:14/15				
B52:15			Slot 2 Discrete Output Image	
B52:16			Slot 3 Discrete Output Image	
B52:18			Slot 1 Discrete Input Image	
B55:0			Bit Status From Master	
B55:0/0	FM_BWRSC	Global	Backwash Resource Given to This CMF By Master	
B55:0/1	FM_CIPRSC	Global	CIP Resource Given to This CMF By Master	
B55:0/2	FM_PLANTSTART	Global	Master is Performing Sequenced Plant Startup	
B55:0/3	FM_CIPTNKFILL	Global	CMF is Requested to Fill CIP Tank	
B55:0/4			New Day Bit From Master	
B55:0/5				
B55:0/6			Allow Continuation Of CIP to Step 9G From Master	
B55:0/7			Any Feed Pump Is Running With Flow From Master	
B55:0/8				
B55:0/9				
B55:0/10			New Stop Command by Master	
B55:0/11			New Start Command by Master	
B55:0/12				
B55:0/13				
B55:0/14				
B55:0/15				
B55:1			Commands and Buttons From Master	
B55:1/0	FM_STOPCMD	Global	Stop Command By PV550	
B55:1/1	FM_STANDBYCMD	Global	Standby Command by Master	
B55:1/2	FM_STARTCMD	Global	Start Command By PV550	
B55:1/3	FM_BWASH_PB	Global	Backwash Button Pressed	
B55:1/4	FM_REWET_PB	Global	Rewet Button Pressed	
B55:1/5	FM_MTEST_PB	Global	Membrane Test Button Pressed	
B55:1/6	FM_STEST_PB	Global	Sonic Test Button Pressed	
B55:1/7	FM_SONRST_PB	Global	Sonic Reset Button Pressed	
B55:1/8	FM_SPARE1_PB	Global	Spare Button-1 Pressed	
B55:1/9	FM_CIP_PB	Global	CIP Button Pressed	
B55:1/10	FM_CIPHALT_PB	Global	Halt CIP Button Pressed	
B55:1/11	FM_CANCEL_CIP	Global	Cancel CIP Command by Master	
B55:1/12	FM_DRAIN_PB	Global	Drain Down Button Pressed	
B55:1/13	FM_RESET	Global	Reset Alarms Button Pressed	
B55:1/14	FM_ENSOAK_PB	Global	Enable CIP Extended Soak Button Pressed	
B55:1/15	FM_DISSOAK_PB	Global	Disable CIP Extended Soak Button Pressed	
B55:2			Spare and Data Highway heartbeat Bits From Master	
B55:2/0			Warning Message Scroll Button	
B55:2/1			CIP External Feed Enable/ Disable Button	
B55:2/2	FM_BWLOGDN	Global	Backwash Historical Functions Completed By Master	
B55:2/3			Trend Software Has Logged Membrane Test Results	
B55:2/4			Trend Software Has Logged CIP Results	
B55:2/5				
B55:2/6				
B55:2/7				
B55:2/8				
B55:2/9				
B55:2/10				
B55:2/11				
B55:2/12				
B55:2/13				
B55:2/14				
B55:2/15	FM_HEARTBEAT	Global	Heartbeat Read From Master	
B61:0			Image for Steps 1 to 15	
B61:1			Image for Steps 16 to 31	
B61:2			Image for Steps 32 to 47	
B62:0			AV1 Control Bits	
B62:0/0	SU_AV1	Global	Startup Cycle.. Allow AV1 Control	
B62:0/1	BW_AV1	Global	Backwash Cycle.. Allow AV1 Control	
B62:0/2	RW_AV1	Global	Rewet Cycle.. Allow AV1 Control	
B62:0/3	MT_AV1	Global	Mem.Test Cycle.. Allow AV1 Control	
B62:0/4	SON_AV1	Global	Sonic Test Cycle.. Allow AV1 Control	
B62:0/5				
B62:0/6	MX_AV1	Global	Integrity Test Exhaust Cycle.. Allow AV1 Control	
B62:0/7	CIP_AV1	Global	CIP Cycle.. Allow AV1 Control	
B62:0/8	DD_AV1	Global	Drain Down Cycle.. Allow AV1 Control	
B62:0/9	FILT_AV1	Global	Filtration Cycle(s).. Allow AV1 Control	
B62:0/10			Standby Performed Due to Low Feed Tank	
B62:1			AV2 Control Bits	
B62:1/0	SU_AV2	Global	Startup Cycle.. Open AV2	
B62:1/1	BW_AV2	Global	Backwash Cycle.. Open AV2	
B62:1/2	RW_AV2	Global	Rewet Cycle.. Open AV2	
B62:1/3	MT_AV2	Global	Mem.Test Cycle.. Open AV2	
B62:1/4	SON_AV2	Global	Sonic Test Cycle.. Open AV2	
B62:1/5				
B62:1/6	MX_AV2	Global	Integrity Test Exhaust Cycle.. Open AV2	
B62:1/7	CIP_AV2	Global	CIP Cycle.. Open AV2	
B62:1/8	DD_AV2	Global	Drain Down Cycle.. Open AV2	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
B62:1/9	FILT_AV2	Global	Filtration Cycle(s).. Open AV2	
B62:2			AV3 Control Bits	
B62:2/0	SU_AV3	Global	Startup Cycle.. Open AV3	
B62:2/1	BW_AV3	Global	Backwash Cycle.. Open AV3	
B62:2/2	RW_AV3	Global	Rewet Cycle.. Open AV3	
B62:2/3	MT_AV3	Global	Mem.Test Cycle.. Open AV3	
B62:2/4	SON_AV3	Global	Sonic Test Cycle.. Open AV3	
B62:2/5				
B62:2/6	MX_AV3	Global	Integrity Test Exhaust Cycle.. Open AV3	
B62:2/7	CIP_AV3	Global	CIP Cycle.. Open AV3	
B62:2/8	DD_AV3	Global	Drain Down Cycle.. Open AV3	
B62:2/9	FILT_AV3	Global	Filtration Cycle(s).. Open AV3	
B62:3			AV4 Control Bits	
B62:3/0	SU_AV4	Global	Startup Cycle.. Open AV4	
B62:3/1	BW_AV4	Global	Backwash Cycle.. Open AV4	
B62:3/2	RW_AV4	Global	Rewet Cycle.. Open AV4	
B62:3/3	MT_AV4	Global	Mem.Test Cycle.. Open AV4	
B62:3/4	SON_AV4	Global	Sonic Test Cycle.. Open AV4	
B62:3/5				
B62:3/6	MX_AV4	Global	Integrity Test Exhaust Cycle.. Open AV4	
B62:3/7	CIP_AV4	Global	CIP Cycle.. Open AV4	
B62:3/8	DD_AV4	Global	Drain Down Cycle.. Open AV4	
B62:3/9	FILT_AV4	Global	Filtration Cycle(s).. Open AV4	
B62:4			AV5 Control Bits	
B62:4/0	SU_AV5	Global	Startup Cycle.. Open AV5	
B62:4/1	BW_AV5	Global	Backwash Cycle.. Open AV5	
B62:4/2	RW_AV5	Global	Rewet Cycle.. Open AV5	
B62:4/3	MT_AV5	Global	Mem.Test Cycle.. Open AV5	
B62:4/4	SON_AV5	Global	Sonic Test Cycle.. Open AV5	
B62:4/5				
B62:4/6	MX_AV5	Global	Integrity Test Exhaust Cycle.. Open AV5	
B62:4/7	CIP_AV5	Global	CIP Cycle.. Open AV5	
B62:4/8	DD_AV5	Global	Drain Down Cycle.. Open AV5	
B62:4/9	FILT_AV5	Global	Filtration Cycle(s).. Open AV5	
B62:5			AV6 Control Bits	
B62:5/0	SU_AV6	Global	Startup Cycle.. Open AV6	
B62:5/1	BW_AV6	Global	Backwash Cycle.. Open AV6	
B62:5/2	RW_AV6	Global	Rewet Cycle.. Open AV6	
B62:5/3	MT_AV6	Global	Mem.Test Cycle.. Open AV6	
B62:5/4	SON_AV6	Global	Sonic Test Cycle.. Open AV6	
B62:5/5				
B62:5/6	MX_AV6	Global	Integrity Test Exhaust Cycle.. Open AV6	
B62:5/7	CIP_AV6	Global	CIP Cycle.. Open AV6	
B62:5/8	DD_AV6	Global	Drain Down Cycle.. Open AV6	
B62:5/9	FILT_AV6	Global	Filtration Cycle(s).. Open AV6	
B62:6			AV7 Control Bits	
B62:6/0	SU_AV7	Global	Startup Cycle.. Close AV7	
B62:6/1	BW_AV7	Global	Backwash Cycle.. Close AV7	
B62:6/2	RW_AV7	Global	Rewet Cycle.. Close AV7	
B62:6/3	MT_AV7	Global	Mem.Test Cycle.. Close AV7	
B62:6/4	SON_AV7	Global	Sonic Test Cycle.. Close AV7	
B62:6/5				
B62:6/6	MX_AV7	Global	Integrity Test Exhaust Cycle.. Close AV7	
B62:6/7	CIP_AV7	Global	CIP Cycle.. Close AV7	
B62:6/8	DD_AV7	Global	Drain Down Cycle.. Close AV7	
B62:6/9	FILT_AV7	Global	Filtration Cycle(s).. Close AV7	
B62:7			AV8 Control Bits	
B62:7/0	SU_AV8	Global	Startup Cycle.. Open AV8	
B62:7/1	BW_AV8	Global	Backwash Cycle.. Open AV8	
B62:7/2	RW_AV8	Global	Rewet Cycle.. Open AV8	
B62:7/3	MT_AV8	Global	Mem.Test Cycle.. Open AV8	
B62:7/4	SON_AV8	Global	Sonic Test Cycle.. Open AV8	
B62:7/5				
B62:7/6	MX_AV8	Global	Integrity Test Exhaust Cycle.. Open AV8	
B62:7/7	CIP_AV8	Global	CIP Cycle.. Open AV8	
B62:7/8	DD_AV8	Global	Drain Down Cycle.. Open AV8	
B62:7/9	FILT_AV8	Global	Filtration Cycle(s).. Open AV8	
B62:8			AV9 Control Bits	
B62:8/0	SU_AV9	Global	Startup Cycle.. Close AV9	
B62:8/1	BW_AV9	Global	Backwash Cycle.. Close AV9	
B62:8/2	RW_AV9	Global	Rewet Cycle.. Close AV9	
B62:8/3	MT_AV9	Global	Mem.Test Cycle.. Close AV9	
B62:8/4	SON_AV9	Global	Sonic Test Cycle.. Close AV9	
B62:8/5				
B62:8/6	MX_AV9	Global	Integrity Test Exhaust Cycle.. Close AV9	
B62:8/7	CIP_AV9	Global	CIP Cycle.. Close AV9	
B62:8/8	DD_AV9	Global	Drain Down Cycle.. Close AV9	
B62:8/9	FILT_AV9	Global	Filtration Cycle(s).. Close AV9	
B62:9			SV10 Control Bits	
B62:9/0	SU_AV10	Global	Startup Cycle.. Open AV10	
B62:9/1	BW_AV10	Global	Backwash Cycle.. Open AV10	
B62:9/2	RW_AV10	Global	Rewet Cycle.. Open AV10	
B62:9/3	MT_AV10	Global	Mem.Test Cycle.. Open AV10	
B62:9/4	SON_AV10	Global	Sonic Test Cycle.. Open AV10	
B62:9/5				
B62:9/6	MX_AV10	Global	Integrity Test Exhaust Cycle.. Open AV10	
B62:9/7	CIP_AV10	Global	CIP Cycle.. Open AV10	

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Address	Symbol	Scope	Description	Sym Gr
B62:9/8	DD_AV10	Global	Drain Down Cycle.. Open AV10	
B62:9/9	FILT_AV10	Global	Filtration Cycle(s).. Open AV10	
B62:10			SV11 Control Bits	
B62:10/0	SU_AV11	Global	Startup Cycle.. Open AV11	
B62:10/1	BW_AV11	Global	Backwash Cycle.. Open AV11	
B62:10/2	RW_AV11	Global	Rewet Cycle.. Open AV11	
B62:10/3	MT_AV11	Global	Mem.Test Cycle.. Open AV11	
B62:10/4	SON_AV11	Global	Sonic Test Cycle.. Open AV11	
B62:10/5				
B62:10/6	MX_AV11	Global	Integrity Test Exhaust Cycle.. Open AV11	
B62:10/7	CIP_AV11	Global	CIP Cycle.. Open AV11	
B62:10/8	DD_AV11	Global	Drain Down Cycle.. Open AV11	
B62:10/9	FILT_AV11	Global	Filtration Cycle(s).. Open AV11	
B62:11/0	SU_AV12	Global	Startup Cycle.. Open AV12	
B62:11/1	BW_AV12	Global	Backwash Cycle.. Open AV12	
B62:11/2	RW_AV12	Global	Rewet Cycle.. Open AV12	
B62:11/3	MT_AV12	Global	Mem.Test Cycle.. Open AV12	
B62:11/4	SON_AV12	Global	Sonic Test Cycle.. Open AV12	
B62:11/5				
B62:11/6	MX_AV12	Global	Integrity Test Exhaust Cycle.. Open AV12	
B62:11/7	CIP_AV12	Global	CIP Cycle.. Open AV12	
B62:11/8	DD_AV12	Global	Drain Down Cycle.. Open AV12	
B62:11/9	FILT_AV12	Global	Filtration Cycle(s).. Open AV12	
B62:12/0	SU_AV13	Global	Startup Cycle.. Open AV13	
B62:12/1	BW_AV13	Global	Backwash Cycle.. Open AV13	
B62:12/2	RW_AV13	Global	Rewet Cycle.. Open AV13	
B62:12/3	MT_AV13	Global	Mem.Test Cycle.. Open AV13	
B62:12/4	SON_AV13	Global	Sonic Test Cycle.. Open AV13	
B62:12/5				
B62:12/6	MX_AV13	Global	Integrity Test Exhaust Cycle.. Open AV13	
B62:12/7	CIP_AV13	Global	CIP Cycle.. Open AV13	
B62:12/8	DD_AV13	Global	Drain Down Cycle.. Open AV13	
B62:12/9	FILT_AV13	Global	Filtration Cycle(s).. Open AV13	
B62:13/0	SU_AV14	Global	Startup Cycle.. Close AV14	
B62:13/1	BW_AV14	Global	Backwash Cycle.. Close AV14	
B62:13/2	RW_AV14	Global	Rewet Cycle.. Close AV14	
B62:13/3	MT_AV14	Global	Mem.Test Cycle.. Close AV14	
B62:13/4	SON_AV14	Global	Sonic Test Cycle.. Close AV14	
B62:13/5				
B62:13/6	MX_AV14	Global	Integrity Test Exhaust Cycle.. Close AV14	
B62:13/7	CIP_AV14	Global	CIP Cycle.. Close AV14	
B62:13/8	DD_AV14	Global	Drain Down Cycle.. Close AV14	
B62:13/9	FILT_AV14	Global	Filtration Cycle(s).. Close AV14	
B62:14/0	SU_AV15	Global	Startup Cycle.. Close AV15	
B62:14/1	BW_AV15	Global	Backwash Cycle.. Close AV15	
B62:14/2	RW_AV15	Global	Rewet Cycle.. Close AV15	
B62:14/3	MT_AV15	Global	Mem.Test Cycle.. Close AV15	
B62:14/4	SON_AV15	Global	Sonic Test Cycle.. Close AV15	
B62:14/5				
B62:14/6	MX_AV15	Global	Integrity Test Exhaust Cycle.. Close AV15	
B62:14/7	CIP_AV15	Global	CIP Cycle.. Close AV15	
B62:14/8	DD_AV15	Global	Drain Down Cycle.. Close AV15	
B62:14/9	FILT_AV15	Global	Filtration Cycle(s).. Close AV15	
B62:15/0	SU_AV16_CLOSE	Global	Startup Cycle.. Close AV16	
B62:15/1	BW_AV16_CLOSE	Global	Backwash Cycle.. Close AV16	
B62:15/2	RW_AV16_CLOSE	Global	Rewet Cycle.. Close AV16	
B62:15/3	MT_AV16_CLOSE	Global	Mem.Test Cycle.. Close AV16	
B62:15/4	SON_AV16_CLOSE	Global	Sonic Test Cycle.. Close AV16	
B62:15/5				
B62:15/6	MX_AV16_CLOSE	Global	Integrity Test Exhaust Cycle.. Close AV16	
B62:15/7	CIP_AV16_CLOSE	Global	CIP Cycle.. Close AV16	
B62:15/8	DD_AV16_CLOSE	Global	DrainDown Cycle.. Close AV16	
B62:15/9	FILT_AV16_CLOSE	Global	Filtration Cycles.. Close AV16	
B62:16/0	BW_AV16_OPEN	Global	Backwash Cycle.. Open AV16 (Full Open)	
B62:16/8	FILT_AV16_FIX	Global	Filtration Cycles.. Fixed AV16	
B62:17/0	DAF_AV20	Global	DAF Test Cycle.. Open AV20	
B62:17/1	CP_AV20	Global	CIP Cycle.. Open AV20	
B62:17/4	DAF_AV21	Global	DAF Test Cycle.. Open AV21	
B62:17/5	CP_AV21	Global	CIP Cycle.. Open AV21	
B62:17/8	DAF_AV22	Global	DAF Test Cycle.. Open AV22	
B62:18			Pump Request Control Bits	
B62:18/0	SU_FDPUMP	Global	Startup Cycle.. Feed Pump Request	
B62:18/1	BW_FDPUMP	Global	Backwash Cycle.. Feed Pump Request	
B62:18/2	RW_FDPUMP	Global	Rewet Cycle.. Feed Pump Request	
B62:18/3	MT_FDPUMP	Global	Mem.Test Cycle.. Feed Pump Request	
B62:18/4	SON_FDPUMP	Global	Sonic Test Cycle.. Feed Pump Request	
B62:18/5			Request	
B62:18/6	MX_FDPUMP	Global	Integrity Test Exhaust Cycle.. Feed Pump Request	
B62:18/7	CIP_FDPUMP	Global	CIP Cycle.. Feed Pump Request	
B62:18/8	DD_FDPUMP	Global	Drain Down Cycle.. Feed Pump Request	
B62:18/9	FILT_FDPUMP	Global	Filtration Cycle(s).. Feed Pump Request	
B62:19/0	FILT_FILTIND_ON	Global	Filtration Cycle(s).. Filtration Indicator Steady ON	
B62:19/1	FILT_STBYIND_ON	Global	Filtration Cycle(s).. Standby Indicator Steady ON	
B62:19/2	BW_BWSHIND_ON	Global	Backwash Cycle.. Backwash Indicator Steady ON	
B62:19/3	MT_INTEIND_ON	Global	Mem.Test Cycle.. Integrity Test Exh.Indicator Steady ON	
B62:19/4	SON_INTEIND_ON	Global	Sonic Test Cycle.. Integrity Test Exh.Indicator Steady ON	
B62:19/5			Exh.Indicator Steady ON	

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Address	Symbol	Scope	Description	Sym Gr
B62:19/6	MX_INTEIND_ON	Global	Integrity Test Exhaust Cycle.. Integrity Test Exh.Indicator Steady ON	
B62:19/7	CIP_CIPIND_ON	Global	CIP Cycle.. CIP Indicator Steady ON	
B62:19/8	SU_SHDNIND_ON	Global	Startup Cycle.. Shutdown Indicator Steady ON	
B62:20/0	SU_FILTIND_FL	Global	Startup Cycle.. Filtration Indicator Flash	
B62:20/1	MX_FILTIND_FL	Global	Integrity Test Exhaust Cycle.. Filtration Indicator Flash	
B62:20/2	FILT_FILTIND_FL	Global	Filtration Cycle(s).. Filtration Indicator Flash	
B62:20/3	CIP_STBYIND_FL	Global	CIP Cycle.. Standby Indicator Flash	
B62:20/4	RW_BWSHIND_FL	Global	Rewet Cycle.. Backwash Indicator Flash	
B62:20/5	MT_INTEIND_FL	Global	Mem.Test Cycle.. Integrity Test Exh.Indicator Flash	
B62:20/6	SON_INTEIND_FL	Global	Sonic Test Cycle.. Integrity Test Exh.Indicator Flash	
B62:20/7				
B62:20/8	CIP_CIPIND_FL	Global	CIP Cycle.. CIP Indicator Flash	
B62:20/9	DD_SHDNIND_FL	Global	Drain Down Cycle.. Shutdown Indicator Flash	
B90:0/0			One Shot	
B90:0/1			One Shot	
B90:0/2			One Shot	
B90:0/3			One Shot	
B90:0/4			One Shot	
B90:0/5			One Shot	
B90:0/6			One Shot	
B90:0/7			One Shot	
B90:0/8			One Shot	
B90:0/9			One Shot	
B90:0/10			One Shot	
B90:0/11			One Shot	
B90:0/12			One Shot	
B90:0/13			One Shot	
B90:0/14			One Shot	
B90:0/15			One Shot	
B90:1/0			One Shot	
B90:1/1			One Shot	
B90:1/2			One Shot	
B90:1/3			One Shot	
B90:1/4			One Shot	
B90:1/5			One Shot	
B90:1/6			One Shot	
B90:1/7			One Shot	
B90:1/8			One Shot	
B90:1/9			One Shot	
B90:1/10			One Shot	
B90:1/11			One Shot	
B90:1/12			One Shot	
B90:1/13			One Shot	
B90:1/14			One Shot	
B90:1/15			One Shot	
B90:2/0			One Shot	
B90:2/1			One Shot	
B90:2/2			One Shot	
B90:2/3			One Shot	
B90:2/4			One Shot	
B90:2/5			One Shot	
B90:2/6			One Shot	
B90:2/7			One Shot	
B90:2/8			One Shot	
B90:2/9			One Shot	
B90:2/10			One Shot	
B90:2/11			One Shot	
B90:2/12			One Shot	
B90:2/13			One Shot	
B90:2/14			One Shot	
B90:2/15			One Shot	
B90:3/0			One Shot	
B90:3/1			One Shot	
B90:3/2			One Shot	
B90:3/3			One Shot	
B90:3/4			One Shot	
B90:3/5			One Shot	
B90:4/0			Comment	
B90:4/1			Comment	
B90:4/2			Comment	
B90:4/3			Comment	
B90:4/4			Comment	
B90:4/5			Comment	
B90:4/6			Comment	
B90:4/7			Comment	
B90:4/8			Comment	
B90:4/9			Comment	
B90:4/10			Comment	
B90:4/11			Comment	
B90:4/12			Comment	
B90:4/13			Comment	
B90:4/14			Comment	
B90:4/15				
B90:5/0			Comment	
B90:5/1			Comment	
B90:5/2			Comment	
B90:5/3			Comment	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
B90:5/4			Comment	
B90:5/5				
B90:5/6			Comment	
B90:5/7			Comment	
B90:5/8			Comment	
B90:5/9			Comment	
B90:5/10			Comment	
B90:5/11				
B90:5/12				
B90:5/13				
B90:5/14			Comment	
B90:5/15			Comment	
B90:6/0			Comment	
B90:6/1			Comment	
B90:6/2				
B90:6/3			Comment	
B90:6/4			Comment	
B90:6/5			Comment	
B90:6/6			Comment	
B90:6/7			Comment	
B90:6/8			Comment	
B90:6/9			Comment	
B90:6/10				
B90:6/11			Comment	
B90:6/12			Comment	
B90:6/13			Comment	
B90:6/14			Comment	
B90:6/15			Comment	
B90:7/0			Comment	
B90:7/1			Comment	
B90:7/2			Comment	
C5:0			Heartbeat Transistion Counter	
C5:1			Number of Controlled Filtration Intervals	
C5:2			Rewet Repeat Counter	
C5:3			Rinse Counter During CIP	
C5:4			DH Heartbeat Counter.. Ensures data Is MOVED before setting bit!	
C5:5			Consecutive Times TMP Has Risen above Maximum Allowable TMP	
C5:6			Consecutive Times TMP Has Risen above CIP Request Value	
C5:7			Seconds Since Last CIP	
C5:8			Minutes Since Last CIP	
C5:9			Hours Since Last CIP	
C5:10			Warning Bit Counter	
C5:11			Clears Warning Message When Done	
C5:13			Seconds Since Last Membrane Test	
C5:14			Minutes Since Last Membrane Test	
C5:15			Hours Since Last Membrane Test	
C5:17			DH Heartbeat Counter for New Day Totals	
C5:20			Shutdown Bit Counter	
C5:21				
C5:23			Seconds of Filtration Time	
C5:24			Minutes of Filtration Time	
C5:25			Hours of Filtration Time	
C5:26			Backwash History File Pointer	
C5:27			Backwash History Word Pointer	
C5:30			Consecutive Times Resis. Has Risen Above Delta Setpoint	
C5:31			Consecutive Times TMP Has Risen Above Delta Setpoint	
C5:32			Consecutive Times TMP Has Risen Above High Setpoint	
C5:33			Extended Soak Seconds	
C5:34			Extended Soak Minutes	
C5:35			Extended Soak Hours	
F8:0			Trash Floating Point for Calculations	
F8:1	FEEDFLOW	Global	Feed Flow (GPM)	
F8:2			Total Hours Of Filtration Time	
F8:3			Low Filtrate Flow Warning Setpoint	
F8:4			Low-Low Filtrate Flow Shutdown Setpoint	
F8:5			TMP Value After Filtration Initialization	
F8:11	FEEDPR	Global	Feed Pressure (PSI)	
F8:12	FILTPR	Global	Filtrate Pressure (PSI)	
F8:14	FCVPOS	Global	Filtrate Valve Position (Percent)	
F8:15	TMPACT	Global	TMP Actual Value (PSI)	
F8:16	FILTFLOW	Global	Filtrate Flow (GPM)	
F8:17			Calculated Filtrate Flow For 1 Second	
F8:18			Todays Total Flow As Floating Point	
F8:20			Calculated Feed Flow For 1 Second	
F8:21			Todays Total Feed Flow As Floating Point	
F8:22			Current Average TMP in Kpa	
F8:23			Average Current Flow in liters/sec	
F8:24			Filtration Area meters2	
F8:25			Viscosity From Lookup Table	
F8:30			TMP * Area	
F8:31			Flow * Visc	
F8:32			TMP * Area * 1000	
F8:33			Flow * Visc * .01	
F8:34			Resistance * 10E12	
F8:35				
F8:36			Resistance Value Stored At Begining Of Filtration	
F8:37			Resistance Value to Request Backwash	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
F32:7			Sweep Feed Flow Warning Setpoint	
F32:8			Sweep Feed Flow Shutdown Setpoint	
F32:9			Delta Resistance Setpoint for Backwash Request	
F32:10	TMPBWREQ	Global	Delta TMP Setpoint for Backwash Request	
F32:14	ATMPBWSP	Global	High TMP Setpoint For Backwash Request	
F32:17	PDTESTWARN	Global	Membrane Test Warning Setpoint (PSI/min)	
F32:18	PDTESTALRM	Global	Membrane Test Shutdown Setpoint (PSI/min)	
F32:22			Sweep Feed Flow Warning Setpoint From CIP Recirc.	
F32:23			Sweep Feed Flow Shutdown Setpoint From CIP Recirc.	
F32:25	TMPCIPREQ	Global	TMP Setpoint for CIP Request (PSI)	
F32:34	TMPMAX	Global	TMP Maximum Allowable Value (PSI)	
F40:0			Oldest Valve Position Sample Shifted Out	
F40:1			Oldest Filtrate Valve Position Sample	
F40:30			Newest Filtrate Valve Position Sample	
F40:31			Total of Filtrate Valve Position Samples	
F41:0			Oldest Filtrate Flow Sample Shifted Out	
F41:1			Oldest Filtrate Flow Sample	
F41:30			Newest Filtrate Flow Sample	
F41:31			Total of Filtrate Flow Samples	
F42:0			Oldest Feed Pressure Sample Shifted Out	
F42:1			Oldest Feed Pressure Sample	
F42:30			Newest Feed Pressure Sample	
F42:31			Total of Feed Pressure Samples	
F43:0			Oldest Filtrate Pressure Sample Shifted Out	
F43:1			Oldest Filtrate Pressure Sample	
F43:30			Newest Filtrate Pressure Sample	
F43:31			Total of Filtrate Pressure Samples	
F44:0			Oldest Feed Flow Sample Shifted Out	
F44:1			Oldest Feed Flow Sample	
F44:30			Newest Feed Flow Sample	
F44:31			Total of Feed Flow Samples	
F45:0			Flow From Main Program (kL/h)	
F45:1			TMP From Main Program (kPa)	
F45:2			Current Temperature From Main Program (DegC)	
F45:3			Surface Area per Module for This CMF	
F45:5			Current Temperature Less 20 (DegC)	
F45:6			Current Temperature Less 20.. Quantity SQRD	
F45:7	R_VISC1	Global	Viscosity Calculation Step 1	
F45:8	R_LOG_VISC	Global	Log(Viscosity)	
F45:9	R_VISC_CP	Global	Viscosity (centipoise)	
F45:10	R_VISCOSITY	Global	Viscosity (Pa.s)	
F45:11	R_TMP	Global	TMP for Resistance Calculation (Pa)	
F45:12	R_FLOW	Global	Flow for Resistance Calculation (m3/s)	
F45:15	R_RESISTANCE	Global	Resistance	
F45:16			Resistance With 10-12 Order Removed	
F50:0	FILTFLOWSP	Global	Current Flow Setpoint Used by CMF (GPM)	
F50:1	FEEDPRAV	Global	Current Feed Pressure Average	
F50:2	FILTPRAV	Global	Current Filtrate Pressure Average	
F50:3	FILTFLOWAV	Global	Current Filtrate Flow Average	
F50:4	FCVPOSAV	Global	Current Filtrate Valve Position Average	
F50:5	TMPAV	Global	Current TMP Average	
F50:6	TMPBWSP	Global	Current TMP Setpoint For Backwash Request Calculated)	
F50:7	TMPMAXPRV	Global	Maximum TMP for Previous Day	
F50:8	TMPMAXCUR	Global	Maximum TMP for Current Day	
F50:9	PDSTARTPSI	Global	Start Pressure For Membrane Test	
F50:10	PDENDPSI	Global	End Pressure For Membrane Test	
F50:11	PDDECAY	Global	Pressure Decay for Membrane Test (PSI/Min)	
F50:12	DAF7PT1	Global	Feed Pressure At the end Of Step 7 of DAF Test	
F50:13	DAF7PT2	Global	Filtrate Pressure At the end Of Step 7 of DAF Test	
F50:14	CIP9ATEMP	Global	CIP Temperature Logged at the Start of CIP Step 9A	
F50:15	CIP9ACOND	Global	Conductivity Logged at the Start of CIP Step 9A	
F50:16	TOTALFLOMCH	Global	Total Flow For this Machine (Gallons)	
F50:17			Feed Flow Average	
F50:18			Current Resistance Value	
F50:19			Previous Resistance Value	
F50:21				
F53:0			Flow Setpoint From Master (GPM)	
F53:1	FM_FEEDTEMP	Global	Feed Temperature From Master	
F53:2	FM_CIPTEMP	Global	CIP Temperature From Master	
F53:3	FM_COND	Global	Conductivity From Master	
I:1.0			Slot 1 Discrete Inputs	
I:1/0	LS1	Global	Feed Tank Low Level Switch (Make on Rise)	
I:1/1	LS2	Global	Feed Tank Mid Level Switch (Make on Rise)	
I:1/2	LS3	Global	Feed Tank High Level Switch (Break on Rise)	
I:1/3	PB1	Global	E-Stop Button	
I:1/4	PS1	Global	Control Air Pressure Switch	
I:1/5			Filtrate Demand	
I:1/10	REMOTE	Global	Remote Switch	
I:1/11	FILT_DMD	Global	Filtrate Demand	
I:1/12				
I:1/15			Feed Pump Running	
I:4.0			Feed Pressure Transducer Input	
I:4.1			Filtrate Pressure Transducer Input	
I:4.2			Feed Flow Transducer Input	
I:4.3			Filtrate Flow Transducer Input	
N7:0			Trash Integer for Calculations	
N7:1	MASK_WARN	Global	Mask Value For Scrolling Warning Messages	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
N7:2			Destination Word after MVM For Warning and Shutdown Alarms	
N7:3			Maximum Value Allowed for Analog Output	
N7:4			Step Number Returned From SUB 21	
N7:5			Temporary Word to Calculate Step Number	
N7:6			Mask Value For Scrolling Shutdown Messages	
N7:8				
N7:10			Filtrate Flow Setpoint Less 2 gpm	
N7:11			Filtrate Flow Setpoint Plus 2 gpm	
N7:12			Backwash Feed Press. File Pointer	
N7:13			Backwash Filtrate Press. File Pointer	
N7:14			Backwash Flow Rate File Pointer	
N30:0	AV16	Global	Analog Output Flow valve	
N30:1			Spare Analog Output Slot 5	
N31:0	PT1_RAW	Global	Feed Pressure Transducer Input	
N31:1	PT2_RAW	Global	Filtrate Pressure Transducer Input	
N31:2			Feed Flow Transducer Input	
N31:3	FT1_RAW	Global	Filtrate Flow Transducer Input	
N31:10			Scaled Feed Pressure (0-100.00)	
N31:11			Scaled Filtrate Pressure (0-100.00)	
N31:12			Scaled Feed Flow (0-150.0)	
N31:13			Scaled Filtrate Flow (0-100.0)	
N31:15			TMP Value For PanelView	
N31:21			Second Analogue Card, First Input	
N31:22				
N31:23				
N31:24				
N31:25			Particle Counter Max Scale Setup	
N31:31			Particle Counter Scaled Value	
N31:32			Spare Scaled Analogue Input	
N31:33			Spare Scaled Analogue Input	
N31:34			Spare Scaled Analogue Input	
N31:35			Particle Counter to Panelview after set time in Filtration	
N33:1	BWTIMEINT	Global	Maximum Filtration Time for Auto. Backwash (minutes)	
N33:2	BWREQMAXTIME	Global	Maximum Backwash Request Time Setpoint (seconds)	
N33:3	RWNUM	Global	Number of Rewets to Perform After Backwash (setpoint)	
N33:4	BWREQMINTIME	Global	Filtration Time Setpoint For Backwash Too Early Bit (minutes)	
N33:5	CIPTIMEINT	Global	Maximum Time In Filtration For a CIP Request (hours)	
N33:6	TMPICPCNTSP	Global	Number of Consecutive High TMP Values For CIP Request Setpoint	
N33:7	CIPRINSE	Global	Number of Rinse Cycles To Perform During CIP (setpoint)	
N33:9	PDTESTINTVL	Global	Time Between Automatic Membrane Tests (hours)	
N33:10	LOWAIRTIME	Global	Control Air Pressure Low Alarm Delay Setpoint (seconds)	
N33:12			Minimum Flow Rate To Enable Totalizing	
N33:14	TMPMAXCNTSP	Global	Number of Consecutive High TMP Values For Standby Setpoint	
N38:0			PID Control Block for AV16	
N38:0/1			PID Manual Mode	
N38:2			Current Flow Setpoint (PID Integer)	
N38:11			Output Limit for Flow Valve PID (PERECNT)	
N38:16			PID Output Percent Value	
N38:30			Scaled Flow For PID (0-16383)	
N38:31			AV16 PID Output (0-16383)	
N51:0	STSTEPNUM	Global	Startup Step Number	
N51:1	BWSTEPNUM	Global	Backwash Step Number	
N51:2	RWSTEPNUM	Global	Rewet Step Number	
N51:3	PDSTEPNUM	Global	Membrane Test Step Number	
N51:4	SONSTEPNUM	Global	Sonic Test Step Number	
N51:5	DAFSTEPNUM	Global	DAF Test Step Number	
N51:6	INTEXSTEPNUM	Global	Integrity Test Exhaust Step Number	
N51:7	CIPSTEPNUM	Global	CIP Step Number	
N51:8	DDSTEPNUM	Global	Drain Down Step Number	
N51:9	STATENUM	Global	Current State Number	
N51:10	BWFILTTIMEH	Global	Time Since Last Backwash (Minutes)	
N51:11	BWFILTTIMES	Global	Time Since Last Backwash (Seconds)	
N51:12	BWREQTIMEM	Global	Time Since Backwash was Requested (Minutes)	
N51:13	BWREQTIMES	Global	Time Since Backwash was Requested (Seconds)	
N51:14	CIPFILTTIMEH	Global	Time Since Last CIP (Hours)	
N51:15	CIPFILTTIMEM	Global	Time Since Last CIP (Minutes)	
N51:16	CIPFILTTIMES	Global	Time Since Last CIP (Seconds)	
N51:17	CIPFILLTIME	Global	Current Time CIP Tank has Been Filling (Seconds)	
N51:18	CIPIMG	Global	CIP Step Number Image	
N51:19				
N51:20	DAFFILTTIMEH	Global	Time Since Last DAF Test (Hours)	
N51:21	DAFFILTTIMEM	Global	Time Since Last DAF Test (Minutes)	
N51:22	DAFFILTTIMES	Global	Time Since Last DAF Test (Seconds)	
N51:23	DAF7LSH2TIME	Global	Time to reach LSH2 in Step 7 Of DAF Test	
N51:24	DAF8DLTALSH23	Global	Time elapsed Between LSH2 and LSH3 Of DAF Test	
N51:25	DAF8LSH3TIME	Global	Time to reach LSH3 in Step 8 Of DAF Test	
N51:26	PDFILTTIMEH	Global	Time Since Last Membrane Test (Hours)	
N51:27	PDFILTTIMEM	Global	Time Since Last Membrane Test (Minutes)	
N51:28	PDINTERVAL	Global	Membrane Test Interval (Hours)	
N51:29	BWMAXTIME	Global	Maximum Time Between Backwashes (Minutes)	
N51:30	FLOWTOTALPRV	Global	Previous Day Total Filtrate Flow (Gal X 10)	
N51:31	FLOWTOTALTDY	Global	Current Day Total Filtrate Flow (Gal x 10)	
N51:32	FLOWMAXPRV	Global	Previous Day Maximum Flow In Filtration (GPM)	
N51:33	FLOWMAXTDY	Global	Current Day Maximum Flow In Filtration (GPM)	
N51:34			Delta R For Backwash Request to PanelView	
N51:35			Previous Day Total Feed Flow (Gal x 10)	
N51:36			Current Day Total Feed Flow (Gal x 10)	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
N51:37				
N51:38				
N51:39				
N51:40			Extended Soak Hours	
N51:41			Extended Soak Minutes	
N54:0			Year From Master	
N54:1			Month From Master	
N54:2			Day From Master	
N54:3			Hours From Master	
N54:4			Minutes From Master	
N56:0			Current Feed Pressure Average	
N56:1			Current Filtrate Pressure Average	
N56:2			Feed Flow Average	
N56:3			Current Filtrate Flow Average	
N56:4			Current TMP Average	
N56:5			Current Resistance Value	
N56:8			Time Since Last Backwash (Minutes)	
N56:9			Time Since Last Backwash (Seconds)	
N56:10			Maximum Time Between Backwashes (Minutes)	
N56:11			Delta Resistance Setpoint for Backwash Request	
N56:12			Delta Resistance Setpoint for Backwash Request	
N56:13			Delta TMP Setpoint for Backwash Request	
N56:14			Current State Number	
N56:15			PanelView Screen Number to Display	
N56:16			Time Since Last Membrane Test (Hours)	
N56:17			Time Since Last Membrane Test (Minutes)	
N56:18			Membrane Test Interval (Hours)	
N56:19			Start Pressure For Membrane Test	
N56:20			End Pressure For Membrane Test	
N56:21			Pressure Decay for Membrane Test (PSI/Min)	
N56:24			Time Since Last CIP (Hours)	
N56:25			Time Since Last CIP (Minutes)	
N56:26			Maximum Time In Filtration For a CIP Request (hours)	
N56:27			Extended Soak Hours	
N56:28			Extended Soak Minutes	
N56:30			CIP Step Number	
N56:31			Feed Flow Meter Max Scaled Value to PV550	
N56:32			Filtrate Flow Meter Max Scaled Value to PV550	
N56:33			Number of Modules to PV550	
N56:34			Delta Resistance Setpoint for Backwash Request	
N56:35			Delta Resistance Setpoint for Backwash Request	
N56:36			Delta Resistance Setpoint for Backwash Request	
N56:37			TMP Setpoint for CIP Request (PSI)	
N56:38			TMP Maximum Allowable Value (PSI)	
N56:39			Sweep Feed Flow Warning Setpoint	
N56:43			Previous Day Total Feed Flow (Gal x 10)	
N56:44			Current Day Total Feed Flow (Gal x 10)	
N56:45			Current Day Total Feed Flow (Gal x 10)	
N56:46			Current Day Total Filtrate Flow (Gal x 10)	
N56:47			Total Filtration Time (0-9999)	
N56:48			Sweep Feed Flow Warning Setpoint From CIP Recirc.	
N56:49			Total Filtration Time (10000s)	
N56:51			Shutdown Message to Display on PanelView	
N56:52			Warning Message to Display on PanelView	
N57:0			From PV550... Auto Backwash Time Setpoint	
N57:1			From PV550... Auto Pressure Decay Test Time Setpoint	
N57:2			From PV 550... Auto CIP Time Setpoint	
N57:5			Screen Number Displayed On PanelView	
N57:6			From PV550... Service Screen Password	
N57:7			From PV550... Delta R Value For Backwash Request	
N57:8			From PV550... Delta TMP Backwash Request Setpoint	
N57:9			From PV550... Pressure Decay Warning Setpoint	
N57:10			From PV550... Pressure Decay Shutdown Setpoint	
N57:11			From PV550... TMP For CIP Request	
N57:12			From PV550... TMP Shutdown Setpoint	
N57:13			From PV550... Minimum Feed Flow During Backwash	
N57:14			From PV550... Minimum Feed Flow During CIP Recirc.	
N57:15				
N57:16			Feed Flow Meter Max Scaled Value	
N57:17			Filtrate Flow Meter Max Scaled Value	
N57:18			Number of Modules from PV550	
N63:0			Oldest State Number Shifted Out	
N63:10			Current State Number For State History File	
N100:0			Floating Point Message Write To Master	
N100:0/8			Floating Point Message Write To Master Timed Out	
N100:0/12			Floating Point Message Write To Master Error	
N100:0/13			Floating Point Message Write To Master Done	
N100:0/15			Floating Point Message Write To Master Enabled	
N100:3			Floating Point File Number Written To In Master For This CMF	
N100:20			Integer Message Write To Master	
N100:20/8			Integer Message Write To Master Timed Out	
N100:20/12			Integer Message Write To Master Error	
N100:20/13			Integer Message Write To Master Done	
N100:20/15			Integer Message Write To Master Enabled	
N100:23			Integer File Number Written To In Master For This CMF	
N100:40			Bit Status Message Write To Master	
N100:40/8			Bit Status Message Write To Master Timed Out	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
N100:40/12			Bit Status Message Write To Master Error	
N100:40/13			Bit Status Message Write To Master Done	
N100:40/15			Bit Status Message Write To Master Enabled	
N100:43			Bit Status File Number Written To In Master For This CMF	
N100:60			Floating Point Message Read From Master	
N100:60/8			Floating Point Message Read From Master Timed Out	
N100:60/12			Floating Point Message Read From Master Error	
N100:60/13			Floating Point Message Read From Master Done	
N100:60/15			Floating Point Message Read From Master Enabled	
N100:63			Floating Point File Number Read From In Master For This CMF	
N100:80			Integer Message Read From Master	
N100:80/8			Integer Message Read From Master Timed Out	
N100:80/12			Integer Message Read From Master Error	
N100:80/13			Integer Message Read From Master Done	
N100:80/15			Integer Message Read From Master Enabled	
N100:83			Integer File Number Read From In Master For This CMF	
N100:100			Bit Status Message Read From Master	
N100:100/8			Bit Status Message Read From Master Timed Out	
N100:100/12			Bit Status Message Read From Master Error	
N100:100/13			Bit Status Message Read From Master Done	
N100:100/15			Bit Status Message Read From Master Enabled	
N100:103			Bit Status File Number Read From In Master For This CMF	
N100:120			User Setpoints Message Read From Master	
N100:120/8			User Setpoints Message Read From Master Timed Out	
N100:120/12			User Setpoints Message Read From Master Error	
N100:120/13			User Setpoints Message Read From Master Done	
N100:120/15			User Setpoints Message Read From Master Done	
N100:140			Data Highway Station Number for This CMF	
N100:141			Multiplication Offset to Calculate Destination File Numbers	
N109:0			CMF Number For This Backwash History	
N109:1			Total Number Of Samples	
N109:2			Backwash History Status Word.. See Bit Descs.	
N109:2/0			Backwash and Rewet Cycles Exceeded Allocated Log File Length	
N109:3			Handshake Value Received From Windows Backwash Logger	
N109:4			Handshake Value Sent To Windows Backwash Logger	
N109:5			Sample Number For Start of Backwash Step 2	
N109:6			Sample Number For Start of Backwash Step 3	
N109:7			Sample Number For Start of Backwash Step 4	
N109:8			Sample Number For Start of Backwash Step 5	
N109:9			Sample Number For Start of Backwash Step 6	
N109:10			Sample Number For Start of Backwash Step 7	
N109:11			Sample Number For Start of Backwash Step 8	
N109:12			Sample Number For Start of Backwash Step 9	
N109:13			Sample Number For Start of Backwash Step 10	
N109:14			Sample Number For Start of Backwash Step 11	
N109:15			Sample Number For Start of Backwash Step 12	
N109:16			Sample Number For Start of Backwash Step 13	
N109:17			Sample Number For Start of Backwash Step 14	
N109:18			Sample Number For Start of Backwash Step 15	
N109:19			Sample Number For Start of Backwash Step 16	
N109:20			Sample Number For Start of Backwash Step 17	
N109:21			Sample Number For Start of Rewet Step 1	
N109:22			Sample Number For Start of Rewet Step 2	
N109:23			Sample Number For Start of Rewet Step 3	
N109:24			Sample Number For Start of Rewet Step 4	
N109:25			Sample Number For Start of Rewet Step 5	
N109:26			Sample Number For Start of Rewet Step 6	
N109:27			Sample Number For Start of Rewet Step 7	
N109:28			Sample Number For Start of Rewet Step 8	
N109:29			Sample Number For Start of Rewet Step 9	
N109:30			Sample Number For Start of Rewet Step 10	
N140:0			CMF State to Other PLC	
N140:1			Particle Counter to Other PLC	
N140:2/0			Any Warning Alarm is Present to other PLC	
N140:2/1			Any Shutdown Alarm is Present to other PLC	
N140:2/2			E-Stop Shutdown Alarm to other PLC	
N140:2/3			Feed Pump Fault Shutdown Alarm to other PLC	
N140:2/4			Feed Pressure High Shutdown Alarm to other PLC	
N140:10/0			Remote Stop From SCADA	
N140:10/1			Remote Start From SCADA	
N[7:6]:[C5:21.ACC]			Feed Press. Sample Loaded Into File 110	
N[7:7]:[C5:21.ACC]			Filtrate Press. Sample Loaded Into File 120	
N[7:8]:[C5:21.ACC]			Flow Sample Loaded Into File 130	
N[7:12]:[C5:27.ACC]			Feed Press. Sample Loaded Into File 110	
N[7:13]:[C5:27.ACC]			Filtrate Press. Sample Loaded Into File 120	
N[7:14]:[C5:27.ACC]			Flow Sample Loaded Into File 130	
O:2.0			Slot 2 Discrete Outputs	
O:2/0			Open Feed Tank Fill	
O:2/1	AV1	Global	Open Lower Feed	
O:2/2	AV2	Global	Open Upper Feed	
O:2/3	AV3	Global	Open Upper Backwash	
O:2/4	AV4	Global	Open Lower Backwash	
O:2/5	AV5	Global	Open Shell Recirculation	
O:2/6	AV6	Global	Close Filtrate Upper Isolation	
O:2/7	AV7_NO	Global	Open Filtrate	
O:2/8	AV8	Global	Close Filtrate Exhaust	
O:2/9	AV9_NO	Global	Open High Pressure Air	
	SV11	Global		

WASKASU.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
O:2/10	SV10	Global	Open Low Pressure Air	
O:2/11				
O:2/12				
O:2/13			Backwash Indicator To RTU	
O:2/14			Alarm Indicator On Front Panel	
O:2/15			Feed Pump Contactor	
O:3.0			Slot 3 Discrete Outputs	
O:3/11				
O:3/12				
O:3/13				
O:3/14				
O:5.0			Analog Output Flow Valve	
S:0			Arithmetic Flags	
S:0/0			Processor Arithmetic Carry Flag	
S:0/1			Processor Arithmetic Underflow/ Overflow Flag	
S:0/2			Processor Arithmetic Zero Flag	
S:0/3			Processor Arithmetic Sign Flag	
S:0/10			Primary Protocol Bit 0=DF1 1=DH-485	
S:0/11			Active Protocol Bit 0=DF1 1=DH-485	
S:1			Processor Mode Status/ Control	
S:1/0			Processor Mode Bit 0	
S:1/1			Processor Mode Bit 1	
S:1/2			Processor Mode Bit 2	
S:1/3			Processor Mode Bit 3	
S:1/4			Processor Mode Bit 4	
S:1/5			Forces Enabled	
S:1/6			Forces Present	
S:1/7			Comms Active	
S:1/8			Fault Override at Powerup	
S:1/9			Startup Protection Fault	
S:1/10			Load Memory Module on Memory Error	
S:1/11			Load Memory Module Always	
S:1/12			Load Memory Module and RUN	
S:1/13			Major Error Halted	
S:1/14			Access Denied	
S:1/15			First Scan	
S:2/0			STI Pending	
S:2/1			STI Enabled	
S:2/2			STI Executing	
S:2/3			Index Addressing File Range	
S:2/4			Saved with Debug Single Step	
S:2/5			DH-485 Incoming Command Pending	
S:2/6			DH-485 Message Reply Pending	
S:2/7			DH-485 Outgoing Message Command Pending	
S:2/15			Comms Servicing Selection	
S:3			Current Scan Time/ Watchdog Scan Time	
S:4			Time Base	
S:5/0			Overflow Trap	
S:5/2			Control Register Error	
S:5/3			Major Err Detected Executing UserFault Routine	
S:5/4			M0-M1 Referenced on Disabled Slot	
S:5/8			Memory Module Boot	
S:5/9			Memory Module Password Mismatch	
S:5/10			STI Overflow	
S:5/11			Battery Low	
S:6			Major Error Fault Code	
S:7			Suspend Code	
S:8			Suspend File	
S:9			Active Nodes	
S:10			Active Nodes	
S:11			I/O Slot Enables	
S:12			I/O Slot Enables	
S:13			Math Register	
S:14			Math Register	
S:15			Node Address/ Baud Rate	
S:16			Debug Single Step Rung	
S:17			Debug Single Step File	
S:18			Debug Single Step Breakpoint Rung	
S:19			Debug Single Step Breakpoint File	
S:20			Debug Fault/ Powerdown Rung	
S:21			Debug Fault/ Powerdown File	
S:22			Maximum Observed Scan Time	
S:23			Average Scan Time	
S:24			Index Register	
S:25			I/O Interrupt Pending	
S:26			I/O Interrupt Pending	
S:27			I/O Interrupt Enabled	
S:28			I/O Interrupt Enabled	
S:29			User Fault Routine File Number	
S:30			STI Setpoint	
S:31			STI File Number	
S:32			I/O Interrupt Executing	
S:33			Extended Proc Status Control Word	
S:33/0			Incoming Command Pending	
S:33/1			Message Reply Pending	
S:33/2			Outgoing Message Command Pending	
S:33/3			Selection Status User/DF1	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
S:33/4			Communicat Active	
S:33/5			Communicat Servicing Selection	
S:33/6			Message Servicing Selection Channel 0	
S:33/7			Message Servicing Selection Channel 1	
S:33/8			Interrupt Latency Control Flag	
S:33/9			Scan Toggle Flag	
S:33/10			Discrete Input Interrupt Reconfigur Flag	
S:33/11			Online Edit Status	
S:33/12			Online Edit Status	
S:33/13			Scan Time Timebase Selection	
S:33/14			DTR Control Bit	
S:33/15			DTR Force Bit	
S:34			Pass-thru Disabled	
S:34/0			Pass-Thru Disabled Flag	
S:34/1			DH+ Active Node Table Enable Flag	
S:34/2			Floating Point Math Flag	
S:35			Last 1 ms Scan Time	
S:36			Extended Minor Error Bits	
S:36/8			Dll Lost	
S:36/9			STI Lost	
S:36/10			Memory Module Data File Overwrite Protection	
S:37			Clock Calendar Year	
S:38			Clock Calendar Month	
S:39			Clock Calendar Day	
S:40			Clock Calendar Hours	
S:41			Clock Calendar Minutes	
S:42			Clock Calendar Seconds	
S:43			STI Interrupt Time	
S:44			I/O Event Interrupt Time	
S:45			Dll Interrupt Time	
S:46			Discrete Input Interrupt- File Number	
S:47			Discrete Input Interrupt- Slot Number	
S:48			Discrete Input Interrupt- Bit Mask	
S:49			Discrete Input Interrupt- Compare Value	
S:50			Discrete Input Interrupt- Preset	
S:51			Discrete Input Interrupt- Return Number	
S:52			Discrete Input Interrupt- Accumulat	
S:53			Discrete Input Interrupt- Timer	
S:54			Discrete Input Interrupt- Timer	
S:55			Last Dll Scan Time	
S:56			Maximum Observed Dll Scan Time	
S:57			Operating System Catalog Number	
S:58			Operating System Series	
S:59			Operating System FRN	
S:61			Processor Series	
S:62			Processor Revision	
S:63			User Program Type	
S:64			User Program Functional Index	
S:65			User RAM Size	
S:66			Flash EEPROM Size	
S:67			Channel 0 Active Nodes	
S:68			Channel 0 Active Nodes	
S:69			Channel 0 Active Nodes	
S:70			Channel 0 Active Nodes	
S:71			Channel 0 Active Nodes	
S:72			Channel 0 Active Nodes	
S:73			Channel 0 Active Nodes	
S:74			Channel 0 Active Nodes	
S:75			Channel 0 Active Nodes	
S:76			Channel 0 Active Nodes	
S:77			Channel 0 Active Nodes	
S:78			Channel 0 Active Nodes	
S:79			Channel 0 Active Nodes	
S:80			Channel 0 Active Nodes	
S:81			Channel 0 Active Nodes	
S:82			Channel 0 Active Nodes	
S:83			DH+ Active Nodes	
S:84			DH+ Active Nodes	
S:85			DH+ Active Nodes	
S:86			DH+ Active Nodes	
T4:0			One Second Pulse	
T4:1			Master Comms Failed Shutdown Delay	
T4:2			Data Highway Update Timer	
T4:3			Master Data Highway Heartbeat Failure Timer	
T4:4			Backwash Request Duration Timer	
T4:5			Average Update Timer	
T4:6			Filtrate Manifold Filled Delay	
T4:7			Control Air Pressure Low Delay (Done=Low)	
T4:8			Feed Pressure High Shutdown Delay	
T4:9			Feed Tank Level Low Shutdown Delay	
T4:10			Filtrate Flow High Warning Delay	
T4:11			Drain Tank Failure Delay	
T4:12			AV16 Ramp To Fixed Position Interval Timer	
T4:13			Filtrate Flow Low Warning Delay	
T4:14			Indicator Flash Timer #1	
T4:15			Indicator Flash Timer #2	
T4:16			Keep Filtration Interval Bit ON For 10 Sec.	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
T4:17			Time in Filtration Since Last Backwash (total seconds)	
T4:18			Backwash History Interval Timer	
T4:19			In Normal Filtration Delay	
T4:19/DN			In Normal Filtration Delay Done	
T4:20			Filtrate Flow is At or Near Setpoint.. Delay	
T4:21			Feed Tank Below Low Level	
T4:22			Feed Tank At or Above Mid Level	
T4:23			Feed Tank At or Above High Level	
T4:24			Feed Tank Below High Level	
T4:25				
T20:1			Startup Step 1 Timer... Wait for Tank Fill	
T20:2			Startup Step 2 Timer... Shell Fill #1	
T20:3			Startup Step 3 Timer... Shell Fill #2	
T20:4			Startup Step 4 Timer... Fill Lumens	
T21:1			Backwash Step 1 Timer... Wait for Feed Level	
T21:2			Backwash Step 2 Timer... Close Feed	
T21:3			Backwash Step 3 Timer... Open Filtrate Exhaust	
T21:4			Backwash Step 4 Timer... Drain Lumens 1	
T21:5			Backwash Step 5 Timer... Drain Lumens 2	
T21:6			Backwash Step 6 Timer... Close Filtrate Exhaust	
T21:7			Backwash Step 7 Timer... Pressurize	
T21:8			Backwash Step 8 Timer... HI PSI- Lo GPM Chk	
T21:9			Backwash Step 9 Timer... Blowback	
T21:10			Backwash Step 10 Timer... Scrub (Air On)	
T21:11			Backwash Step 11 Timer... Shell Sweep	
T21:12			Backwash Step 12 Timer... Filtrate Exhaust	
T21:13			Backwash Step 13 Timer... Low PSI Check	
T21:14			Backwash Step 14 Timer... End Sweep 1	
T21:15			Backwash Step 15 Timer... End Sweep 2	
T21:16			Backwash Step 16 Timer... Spare	
T21:17			Backwash Step 17 Timer... Fill Lumens	
T22:1			Rewet Step 1 Timer... Delay	
T22:2			Rewet Step 2 Timer... Shell Exhaust 1	
T22:3			Rewet Step 3 Timer... Close Feed 1	
T22:4			Rewet Step 4 Timer... Pressurize	
T22:5			Rewet Step 5 Timer... Air Off	
T22:6			Rewet Step 6 Timer... Filtrate Exhaust	
T22:7			Rewet Step 7 Timer... Shell Exhaust 2	
T22:8			Rewet Step 8 Timer... Shell Exhaust 3	
T22:9			Rewet Step 8 Timer... Spare	
T22:10			Rewet Step 10 Timer... Fill Lumens	
T22:11			Rewet Step 11 Timer... Close Filt Exhaust	
T23:1			Mem.Test Step 1 Timer... Close Filtrate	
T23:2			Mem.Test Step 2 Timer... Delay	
T23:3			Mem.Test Step 3 Timer... Drain Lumens	
T23:4			Mem.Test Step 4 Timer... Spare	
T23:5			Mem.Test Step 5 Timer... Pressurize	
T23:6			Mem.Test Step 6 Timer... Stabilize	
T23:7			Mem.Test Step 7 Timer... Log Initial Test Data	
T23:8			Mem.Test Step 8 Timer... Test Interval	
T23:9			Mem.Test Step 9 Timer... Log Final Test Data	
T23:10			Mem.Test Step 10 Timer... End of Test Delay	
T24:1			Sonic Test Step 1 Timer... Close Filtrate	
T24:2			Sonic Test Step 2 Timer... Delay	
T24:3			Sonic Test Step 3 Timer... Drain Lumens	
T24:4			Sonic Test Step 4 Timer... Spare	
T24:5			Sonic Test Step 5 Timer... Pressurize	
T24:6			Sonic Test Step 6 Timer... Test Interval	
T24:7			Sonic Test Step 7 Timer... End of Test Delay	
T25:1			DAF Test Step 1 Timer... Close Filtrate	
T25:2			DAF Test Step 2 Timer... Delay	
T25:3			DAF Test Step 3 Timer... Drain Lumens	
T25:4			DAF Test Step 4 Timer... Vent Shell	
T25:5			DAF Test Step 5 Timer... Pressurise	
T25:6			DAF Test Step 6 Timer... Bypass DAF Rig	
T25:7			DAF Test Step 7 Timer... Measure Time to LSH2	
T25:8			DAF Test Step 8 Timer... Measure Time to LSH3	
T25:9			DAF Test Step 9 Timer... Log DAF Data	
T25:10			DAF Test Step 10 Timer... Drain DAF Rig	
T25:11			DAF Test Step 11 Timer... DAF Test End	
T26:1			Integrity Test Exhaust Step 1 Timer... Vent	
T26:2			Integrity Test Exhaust Step 2 Timer... Shell Fill 1	
T26:3			Integrity Test Exhaust Step 3 Timer... Shell Fill 2	
T26:4			Integrity Test Exhaust Step 4 Active... Lumen Fill	
T27:1			CIP Step 1 Timer... Fill Tank and Recirculate	
T27:2			CIP Step 2 Timer... Spare	
T27:3			CIP Step 3 Timer... Request CIP Backwash	
T27:4			CIP Step 4 Timer... Perform CIP Backwash	
T27:5			CIP Step 5 Timer... Add Chemical	
T27:6			CIP Step 6 Timer... Spare	
T27:7			CIP Step 7 Timer... Recirculate Filtrate	
T27:8			CIP Step 8 Timer... Soak	
T27:9			CIP Step 9 Timer... Extended Soak	
T27:10			CIP Step 10 Timer... Recirculate Shell	
T27:11			CIP Step 11 Timer... Wait for CIP Start	
T27:12			CIP Step 12 Timer... Drain Solution	
T27:13			CIP Step 13 Timer... Fill Tank For Rinse to Waste	

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Address/Symbol Database

Address	Symbol	Scope	Description	Sym Gr
T27:14			CIP Step 14 Timer... Rinse to Waste	
T27:15			CIP Step 15 Timer... Spare	
T27:16			CIP Step 16 Timer... Fill Tank For Backwash Rinse	
T27:17			CIP Step 17 Timer... Backwash Rinse	
T27:18			CIP Step 18 Timer... Drain	
T27:19			CIP Step 19 Timer... Repeat Starting At Step 13	
T27:20			CIP Step 20 Timer... End of CIP	
T28:1			DrainDown Step 1 Timer... Drain Lumens	
T28:2			DrainDown Step 2 Timer... Spare	
T28:3			DrainDown Step 3 Timer... Drain Shell	
T28:4			DrainDown Step 4 Timer... Drain Tank	
T28:5			DrainDown Step 5 Timer... Spare	
T28:6			DrainDown Step 6 Timer... Air Off	
T28:7			DrainDown Step 7 Timer... Exhaust	
T37:0			Fixed Filtration Interval Timer	
T37:1			Controlled Filtration Initialization Timer	
T37:2			Controlled Filtration Interval Timer	
T37:3			Filtrate Exhaust Timer	
T37:4			Filtrate To CIP Outlet... Max Time	
T37:5			Max time AV16 Open More than 98%	
T37:6			Feed Temperature High Delay	
T37:6/DN				
T37:7			Manual Valves Not set for CIP Alarm Delay	
T37:8			Manual Valves Not set for Filtration Alarm Delay	
U:3			Reset Control Bits	
U:4			Update Data Highway and Command Buttons	
U:5			Update Inputs From Modules to Buffers	
U:6			Update State Logic	
U:7			Calculate Running and Interval Averages	
U:8			Perform TMP and Resistance Logic	
U:9			Filtration Subroutine	
U:10			Update Startup Logic	
U:11			Update Backwash Logic	
U:12			Update Rewet Logic	
U:13			Update Membrane Test Logic	
U:14			Update Sonic Test Logic	
U:15			Update DAF Test Logic	
U:16			Update Integrity Test Logic	
U:17			Update CIP Logic	
U:18			Update Drain Down Logic	
U:19			Update PanelView Logic	
U:20			Update Outputs For Valves and Indicators	
U:21			Return Current Step Number For this cycle	
U:22			Set Current State Bit	
U:26			Update Backwash History	

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Instruction Comment Database

Address Instruction Description

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Symbol Group Database

Group_Name Description

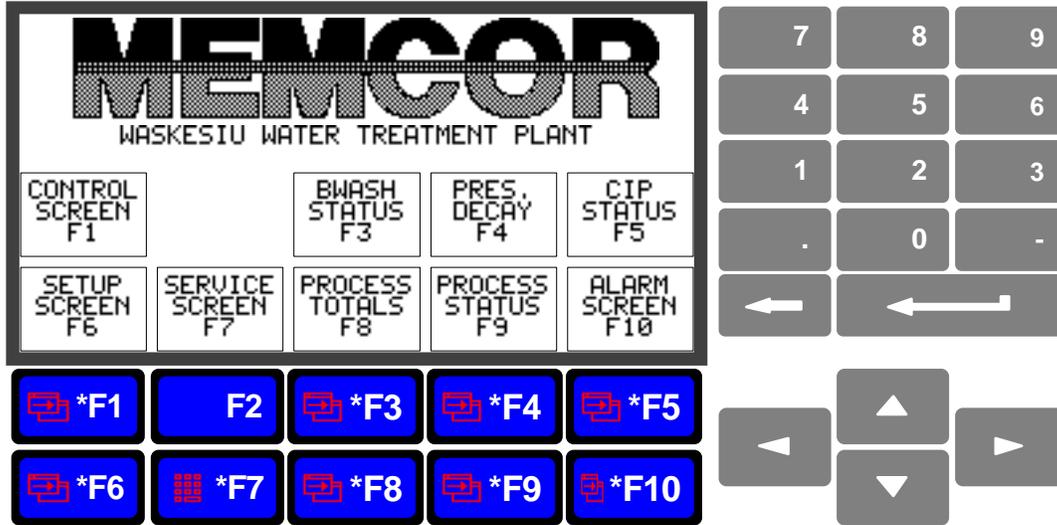
PanelBuilder32 Application Report

File Name: E:\PANP_Water_AUTO\programs\WASK2.PVA
Application Version 100 - Last Saved 2017/01/13 15:34:16

2017/01/13 15:34:53

Screen List Report

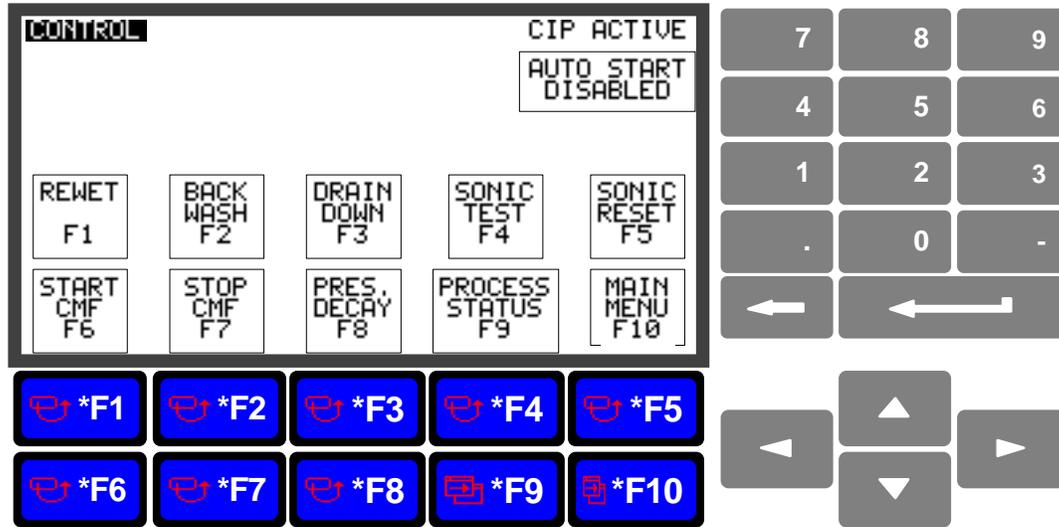
Screen No.	Screen Description
1,	Main
2,	Control
3,	Process Status
4,	Backwash Status
5,	CIP Status
6,	Process Totals
7,	Setup
8,	Service
9,	Pressure Decay
10,	Alarms
11,	CIP Service
12,	CMF Setup



Screen 1 - Main
Screen Summary Report

Screen 1 - Main

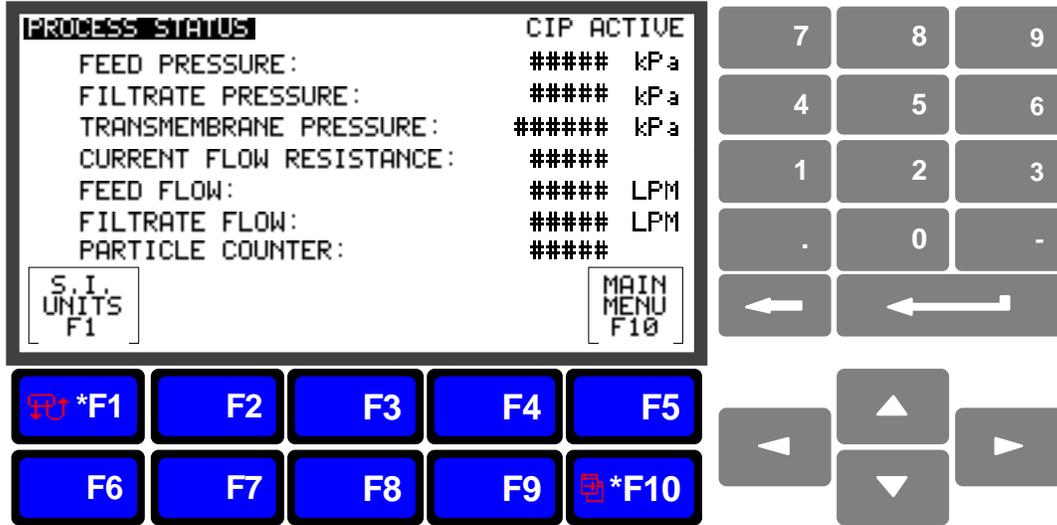
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
82,	CONTROL|SCREEN|F1,	Goto Screen Selector,	(0, 60), (48, 32),	On	, Off	, F1	
87,	PROCESS|STATUS|F9,	Goto Screen Selector,	(156, 96), (48, 32),	On	, Off	, F9	
91,	BWASH|STATUS|F3,	Goto Screen Selector,	(104, 60), (48, 32),	On	, Off	, F3	
95,	PRES.|DECAY|F4,	Goto Screen Selector,	(156, 60), (48, 32),	On	, Off	, F4	
99,	CIP|STATUS|F5,	Goto Screen Selector,	(208, 60), (48, 32),	On	, Off	, F5	
107,	SETUP|SCREEN|F6,	Goto Screen Selector,	(0, 96), (48, 32),	On	, Off	, F6	
111,	PROCESS|TOTALS|F8,	Goto Screen Selector,	(104, 96), (48, 32),	On	, Off	, F8	
119,	ALARM|SCREEN|F10,	Goto Screen Selector,	(208, 96), (48, 32),	On	, Off	, F10	
979,	servicepassword,	Numeric Entry Keypad Enable,	(0, 0), (16, 16),	Off	, Off	, F7	
994,	None,	Rectangle Drawing,	(52, 96), (48, 32),	On	, Off	,	
996,	None,	Text,	(52, 96), (48, 32),	On	, Off	,	
1365,	None,	Graphic Image,	(19, 1), (224, 39),	On	, Off	,	
2404,	None,	Text,	(3, 41), (250, 13),	On	, Off	,	



Screen 2 - Control
Screen Summary Report

Screen 2 - Control

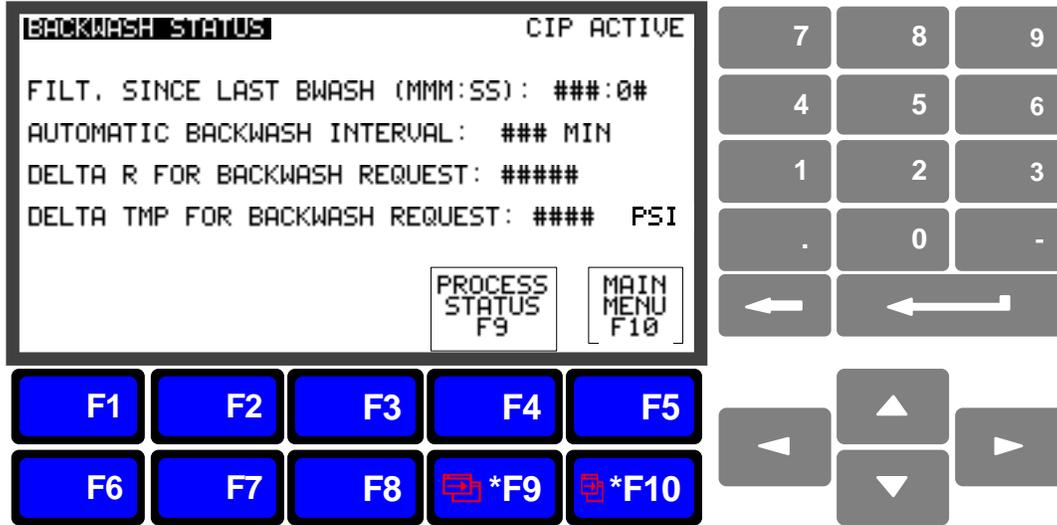
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
16,	None,	Text,	(0, 0),	(48, 12),	On	, Off	,
20,	PB_START,	Momentary Push Button,	(4, 96),	(36, 32),	On	, Off	, F6
29,	PB_STOP,	Momentary Push Button,	(56, 96),	(36, 32),	On	, Off	, F7
36,	PB_MEMTEST,	Momentary Push Button,	(108, 96),	(36, 32),	On	, Off	, F8
57,	PB_REWET,	Momentary Push Button,	(4, 60),	(36, 32),	On	, Off	, F1
50,	PB_BACKWASH,	Momentary Push Button,	(56, 60),	(36, 32),	On	, Off	, F2
43,	PB_DRAINDOWN,	Momentary Push Button,	(108, 60),	(36, 32),	On	, Off	, F3
70,	MAIN|MENU|F10,	Goto Screen Selector,	(216, 96),	(36, 29),	On	, Off	, F10
375,	statenumber,	Message Display,	(112, 0),	(144, 12),	On	, Off	,
87,	PROCESS|STATUS|F9,	Goto Screen Selector,	(156, 96),	(48, 32),	On	, Off	, F9
1351,	pb_sonic,	Momentary Push Button,	(162, 60),	(36, 32),	On	, Off	, F4
1358,	pb_sonicreset,	Momentary Push Button,	(216, 60),	(36, 32),	On	, Off	, F5
2104,	CMF_AUTO_START,	Multistate Indicator,	(189, 13),	(67, 23),	On	, Off	,



Screen 3 - Process Status
Screen Summary Report

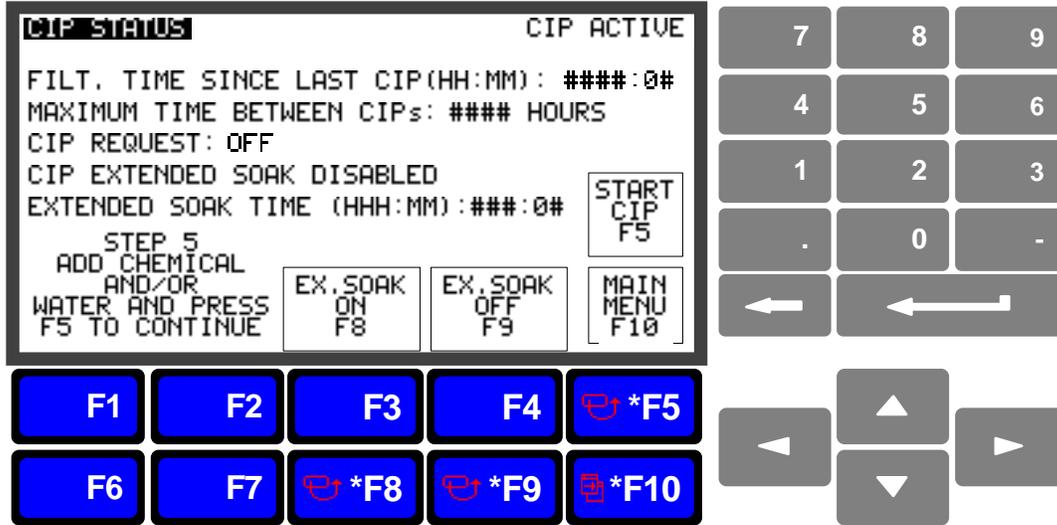
Screen 3 - Process Status

ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
3087,	None,	Text,	(20, 85),	(142, 12),	On	, Off	,
3077,	part_count,	Numeric Data Display,	(189, 85),	(38, 12),	On	, Off	,
70,	MAIN|MENU|F10,	Goto Screen Selector,	(216, 96),	(36, 29),	On	, Off	, F10
131,	None,	Text,	(0, 0),	(92, 12),	On	, Off	,
135,	None,	Text,	(20, 14),	(124, 12),	On	, Off	,
140,	None,	Text,	(20, 26),	(124, 12),	On	, Off	,
144,	None,	Text,	(20, 38),	(144, 12),	On	, Off	,
148,	None,	Text,	(20, 50),	(152, 12),	On	, Off	,
152,	None,	Text,	(20, 62),	(68, 12),	On	, Off	,
156,	None,	Text,	(20, 74),	(92, 12),	On	, Off	,
160,	feedpsi,	Numeric Data Display,	(190, 13),	(37, 12),	On	, Off	,
170,	filtpsi,	Numeric Data Display,	(189, 25),	(38, 12),	On	, Off	,
175,	tmp,	Numeric Data Display,	(184, 38),	(43, 12),	On	, Off	,
180,	resistance,	Numeric Data Display,	(191, 50),	(36, 10),	On	, Off	,
185,	feedflow,	Numeric Data Display,	(191, 62),	(36, 12),	On	, Off	,
198,	filtflow,	Numeric Data Display,	(189, 74),	(38, 12),	On	, Off	,
375,	statenumber,	Message Display,	(112, 0),	(144, 12),	On	, Off	,
2173,	METRIC_USA,	Multistate Indicator,	(227, 13),	(29, 12),	On	, Off	,
2202,	METRIC_USA,	Multistate Indicator,	(227, 26),	(29, 12),	On	, Off	,
2213,	METRIC_USA,	Multistate Indicator,	(227, 38),	(29, 12),	On	, Off	,
2224,	METRIC_USA,	Multistate Indicator,	(227, 62),	(29, 10),	On	, Off	,
2235,	METRIC_USA,	Multistate Indicator,	(227, 74),	(29, 10),	On	, Off	,
2359,	METRIC_USA,	Maintained Push Button,	(3, 96),	(42, 29),	On	, Off	, F1



Screen 4 - Backwash Status
Screen Summary Report

ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
70,	MAIN|MENU|F10,	Goto Screen Selector,	(216, 96), (36, 29),	On	, Off	, F10	
202,	None,	Text,	(0, 0), (96, 12),	On	, Off	,	
206,	None,	Text,	(0, 24), (228, 12),	On	, Off	,	
210,	lastbwashmin,	Numeric Data Display,	(200, 24), (48, 12),	On	, Off	,	
223,	None,	Text,	(0, 40), (176, 12),	On	, Off	,	
228,	autobwashmin,	Numeric Data Display,	(180, 40), (48, 10),	On	, Off	,	
238,	None,	Text,	(0, 56), (180, 12),	On	, Off	,	
242,	bwashdeltarl,	Numeric Data Display,	(180, 56), (36, 10),	On	, Off	,	
375,	statenumber,	Message Display,	(112, 0), (144, 12),	On	, Off	,	
87,	PROCESS|STATUS|F9,	Goto Screen Selector,	(156, 96), (48, 32),	On	, Off	, F9	
1161,	bwashdeltatmpreq,	Numeric Data Display,	(0, 72), (222, 10),	On	, Off	,	
2250,	METRIC_USA,	Multistate Indicator,	(227, 72), (29, 10),	On	, Off	,	



Screen 5 - CIP Status
Screen Summary Report

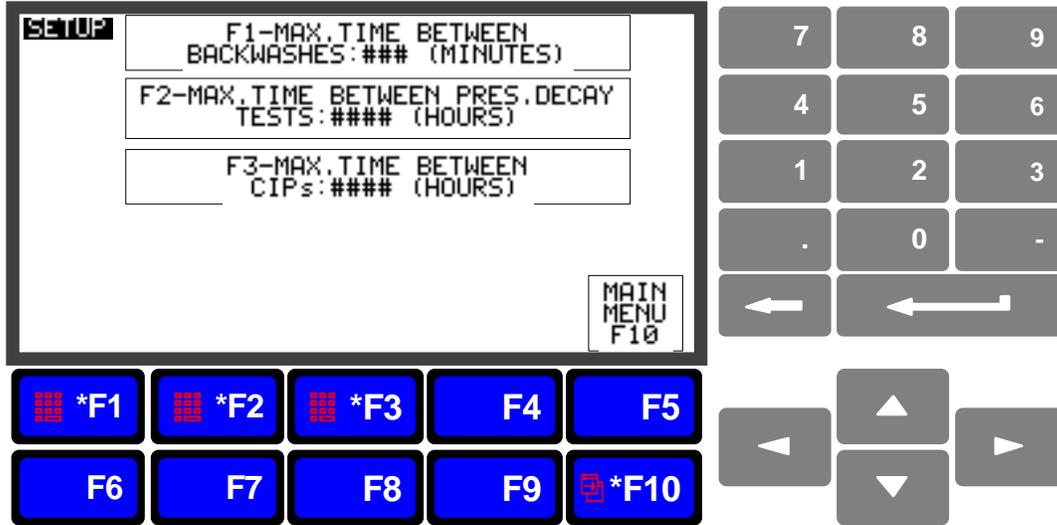
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
70,	MAIN|MENU|F10,	Goto Screen Selector,	(216, 96), (36, 29),	On	, Off	, F10	
258,	None,	Text,	(0, 0), (68, 10),	On	, Off	,	
262,	None,	Text,	(0, 20), (204, 12),	On	, Off	,	
266,	LASTCIPHOURL,	Numeric Data Display,	(204, 20), (51, 10),	On	, Off	,	
281,	None,	Text,	(0, 32), (164, 12),	On	, Off	,	
284,	autociphours,	Numeric Data Display,	(160, 32), (71, 12),	On	, Off	,	
293,	None,	Text,	(0, 44), (80, 12),	On	, Off	,	
296,	CIPREQUEST,	Multistate Indicator,	(76, 44), (24, 12),	On	, Off	,	
314,	None,	Text,	(0, 56), (108, 12),	On	, Off	,	
317,	CIPEXTSOAK,	Multistate Indicator,	(108, 56), (64, 12),	On	, Off	,	
353,	PB_CIPSTART,	Momentary Push Button,	(216, 60), (36, 32),	On	, Off	, F5	
362,	PB_CIPEXTENDON,	Momentary Push Button,	(100, 96), (52, 32),	On	, Off	, F8	
369,	PB_CIPEXTENDOFF,	Momentary Push Button,	(156, 96), (52, 32),	On	, Off	, F9	
375,	statenumber,	Message Display,	(112, 0), (144, 12),	On	, Off	,	
1185,	cipstepnumber,	Message Display,	(2, 80), (96, 48),	On	, Off	,	
1204,	cipextsoakhours,	Numeric Data Display,	(0, 68), (216, 12),	On	, Off	,	



Screen 6 - Process Totals
Screen Summary Report

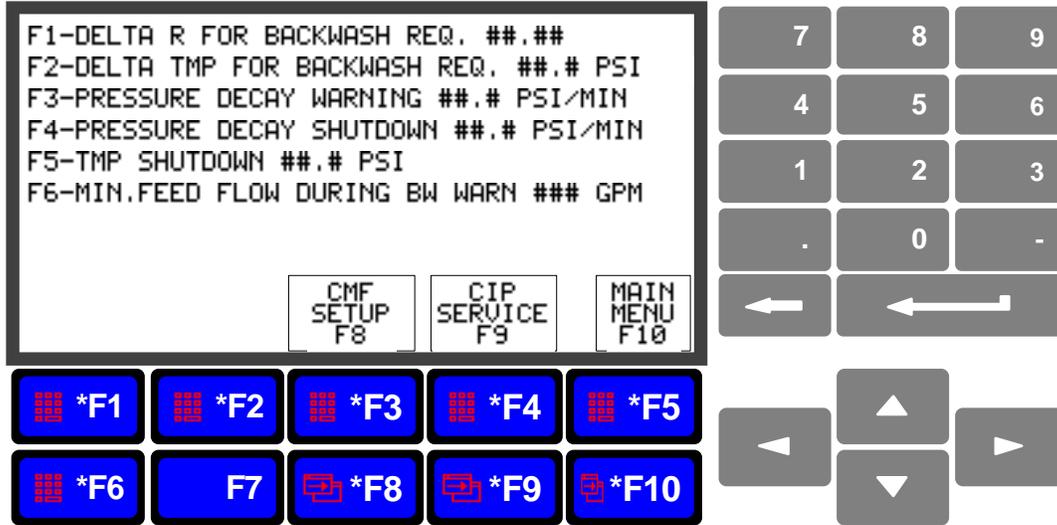
Screen 6 - Process Totals

ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
70,	MAIN|MENU|F10,	Goto Screen Selector,	(216, 96),	(36, 29),	On	, Off	, F10
446,	None,	Text,	(0, 0),	(96, 10),	On	, Off	,
450,	None,	Text,	(0, 12),	(140, 10),	On	, Off	,
455,	None,	Text,	(0, 24),	(164, 12),	On	, Off	,
459,	None,	Text,	(0, 36),	(164, 12),	On	, Off	,
463,	None,	Text,	(0, 48),	(188, 12),	On	, Off	,
467,	feedflowtotaltoday,	Numeric Data Display,	(184, 12),	(37, 11),	On	, Off	,
474,	feedflowtotalyes,	Numeric Data Display,	(184, 24),	(37, 10),	On	, Off	,
479,	filtflowtotaltoday,	Numeric Data Display,	(184, 36),	(37, 10),	On	, Off	,
484,	filtflowtotalyes,	Numeric Data Display,	(184, 48),	(39, 11),	On	, Off	,
488,	None,	Text,	(12, 80),	(212, 12),	On	, Off	,
1818,	None,	Text,	(0, 60),	(246, 12),	On	, Off	,
2283,	METRIC_USA,	Multistate Indicator,	(218, 24),	(38, 11),	On	, Off	,
2294,	METRIC_USA,	Multistate Indicator,	(218, 12),	(38, 10),	On	, Off	,
2383,	METRIC_USA,	Multistate Indicator,	(218, 36),	(38, 11),	On	, Off	,
2394,	METRIC_USA,	Multistate Indicator,	(218, 47),	(38, 11),	On	, Off	,



Screen 7 - Setup
Screen Summary Report

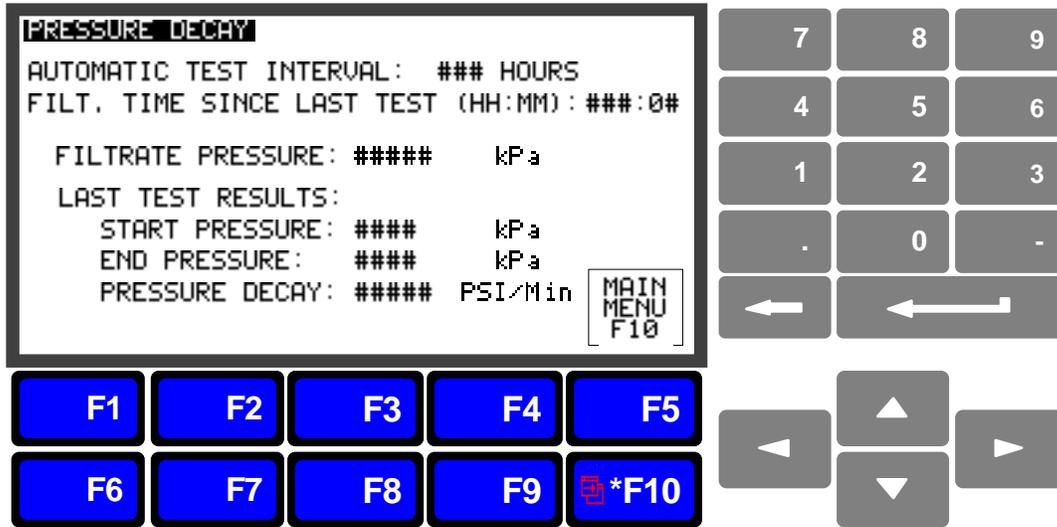
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
70,	MAIN|MENU|F10,	Goto Screen Selector,	(216, 99), (36, 29),	On	, Off	, F10	
497,	autobwashsetpoint,	Numeric Entry Keypad Enable,	(40, 0), (192, 21),	On	, Off	, F1	
539,	autocipsetpoint,	Numeric Entry Keypad Enable,	(40, 51), (192, 21),	On	, Off	, F3	
560,	None,	Text,	(0, 0), (40, 10),	On	, Off	,	
520,	automtestsetpoint,	Numeric Entry Keypad Enable,	(40, 24), (192, 23),	On	, Off	, F2	



Screen 8 - Service
Screen Summary Report

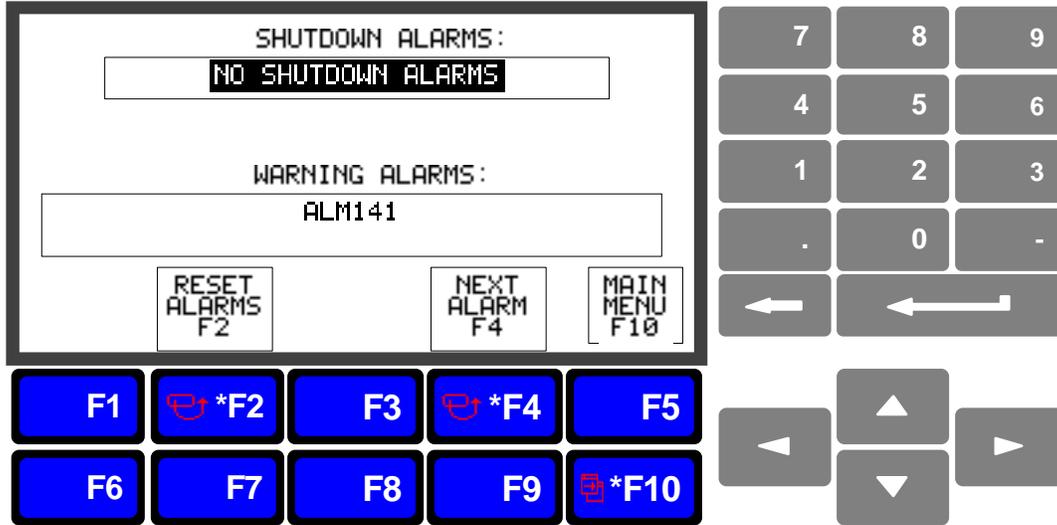
Screen 8 - Service

ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
70,	MAIN|MENU|F10,	Goto Screen Selector,	(219, 99), (36, 29),	On	Off		F10
962,	bwashdeltarsetpoint,	Numeric Entry Keypad Enable,	(0, 3), (240, 12),	On	Off		F1
1021,	bwashdeltatmpsetpoint,	Numeric Entry Keypad Enable,	(0, 15), (256, 12),	On	Off		F2
1026,	mtestwarningsetpoint,	Numeric Entry Keypad Enable,	(0, 27), (252, 12),	On	Off		F3
1041,	tmpshutdownsetpoint,	Numeric Entry Keypad Enable,	(0, 51), (240, 12),	On	Off		F5
1046,	bwashminfeedflowsetpoint,	Numeric Entry Keypad Enable,	(0, 63), (252, 12),	On	Off		F6
1081,	mtestshutdownsetpoint,	Numeric Entry Keypad Enable,	(0, 39), (252, 12),	On	Off		F4
1446,	CIP|SERVICE|F9,	Goto Screen Selector,	(156, 99), (48, 29),	On	Off		F9
1520,	CMF|SETUP|F8,	Goto Screen Selector,	(102, 99), (48, 29),	On	Off		F8



Screen 9 - Pressure Decay
Screen Summary Report

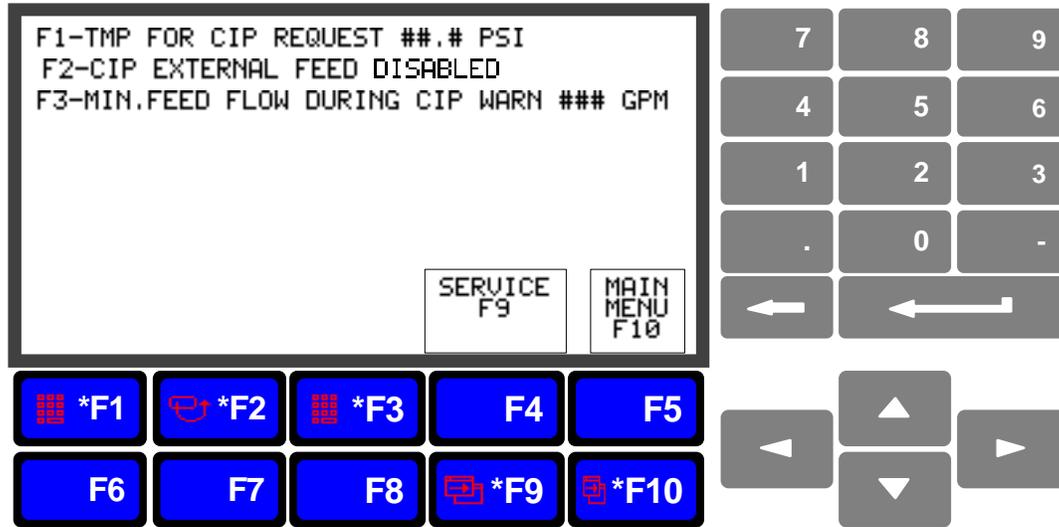
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
70,	MAIN|MENU|F10,	Goto Screen Selector,	(216, 96),	(36, 29),	On	, Off	, F10
600,	None,	Text,	(0, 0),	(92, 10),	On	, Off	,
604,	None,	Text,	(0, 16),	(152, 10),	On	, Off	,
608,	autmtesthours,	Numeric Data Display,	(152, 16),	(68, 10),	On	, Off	,
617,	None,	Text,	(0, 28),	(216, 12),	On	, Off	,
621,	lastmtesthour,	Numeric Data Display,	(212, 28),	(44, 12),	On	, Off	,
630,	None,	Text,	(12, 64),	(116, 10),	On	, Off	,
634,	None,	Text,	(28, 76),	(132, 12),	On	, Off	,
649,	None,	Text,	(28, 88),	(127, 12),	On	, Off	,
654,	None,	Text,	(28,100),	(133, 12),	On	, Off	,
2327,	METRIC_USA,	Multistate Indicator,	(164, 76),	(50, 10),	On	, Off	,
2338,	METRIC_USA,	Multistate Indicator,	(164, 88),	(50, 10),	On	, Off	,
2349,	METRIC_USA,	Multistate Indicator,	(164,100),	(50, 10),	On	, Off	,
2430,	None,	Text,	(11, 48),	(114, 12),	On	, Off	,
2425,	filtpsi,	Numeric Data Display,	(124, 48),	(38, 12),	On	, Off	,
2414,	METRIC_USA,	Multistate Indicator,	(174, 48),	(29, 12),	On	, Off	,



Screen 10 - Alarms
Screen Summary Report

Screen 10 - Alarms

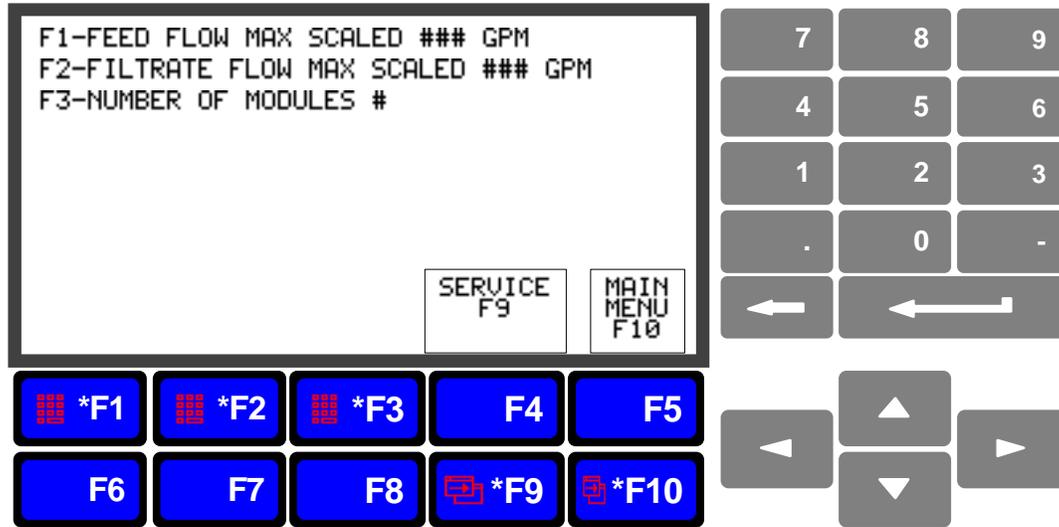
ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
70,	MAIN|MENU|F10,	Goto Screen Selector,	(216, 96), (36, 29),	On	Off	, F10	
694,	alarmmessageshut,	Message Display,	(32, 16), (192, 16),	On	Off	,	
798,	alarmmessagewarn,	Message Display,	(8, 68), (236, 24),	On	Off	,	
938,	None,	Text,	(76, 4), (124, 10),	On	Off	,	
943,	None,	Text,	(72, 56), (124, 10),	On	Off	,	
948,	resetalarms,	Momentary Push Button,	(52, 96), (44, 32),	On	Off	, F2	
955,	scrollwarning,	Momentary Push Button,	(156, 96), (44, 32),	On	Off	, F4	



Screen 11 - CIP Service
Screen Summary Report

Screen 11 - CIP Service

ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
1389,	MAIN|MENU|F10,	Goto Screen Selector,	(216, 96), (36, 32),	On	Off		F10
1423,	tmpciprequestsetpoint,	Numeric Entry Keypad Enable,	(3, 3), (252, 12),	On	Off		F1
1428,	pb_cipextfeed,	Momentary Push Button,	(5, 15), (126, 12),	On	Off		F2
1436,	cipextfeedstatus,	Multistate Indicator,	(131, 15), (64, 12),	On	Off		
1455,	SERVICE|F9,	Goto Screen Selector,	(153, 96), (54, 32),	On	Off		F9
1461,	cipminfeedflowsetpoint,	Numeric Entry Keypad Enable,	(3, 27), (252, 12),	On	Off		F3



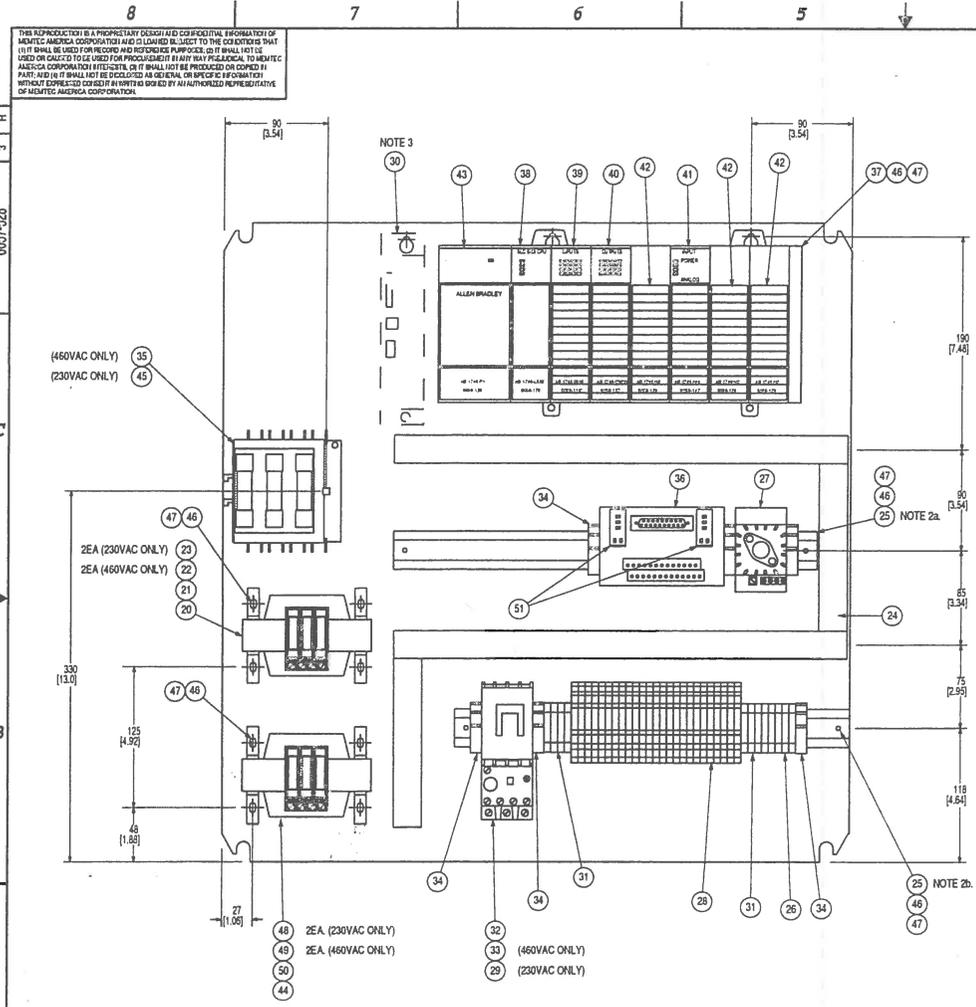
Screen 12 - CMF Setup
Screen Summary Report

Screen 12 - CMF Setup

ID,	Tag Name,	Object Name,	Position,	Outline,	View,	Touch,	FKey
1526,	MAIN|MENU|F10,	Goto Screen Selector,	(216, 96), (36, 32),	On	, Off	, F10	
1554,	SERVICE|F9,	Goto Screen Selector,	(153, 96), (54, 32),	On	, Off	, F9	
1558,	feedflowscaledsetpoint,	Numeric Entry Keypad Enable,	(4, 3), (252, 12),	On	, Off	, F1	
1609,	filtflowscaledsetpoint,	Numeric Entry Keypad Enable,	(4, 15), (252, 12),	On	, Off	, F2	
1628,	numbermodulesp,	Numeric Entry Keypad Enable,	(4, 27), (252, 12),	On	, Off	, F3	

DRAWING RELEASE	
CHECKED	BY <i>JB</i> DATE 5-27-97
APPROVED	BY <i>CJP</i> DATE 5/27/97

ZONE	REV	DESCRIPTION	BY	DATE	EQD	CHD	APPD
ALL	A	PRELIMINARY ISSUE	EM	08-11-96	---	WDG	CLP
ALL	B	CONSTRUCTION ISSUE	JKB	05-14-97	---	WDG	CLP
ALL	C	AS BUILT ISSUE	JKB	05-14-97	---	---	---
SHT 5	D	NO CHANGES THIS SHEET	JKB	05-14-97	---	SJM	CLP
SHT 5	E	RELOCATED D-CONNECTOR TO SUIT METALLOG UNIT	JKB	05-14-97	---	SJM	CLP
-	F	REVISED TOLERANCES	ADG	05-14-97	---	---	---
ALL	G	ADDED ALIS PART NO. CHANGED ITEM #24 FROM 1/8" X 3/8"	---	---	---	SJM	CLP
A7	G	CORRECT WIRE GAUGE NOTE C-17 FROM #14 TO #12	---	---	---	SJM	CLP
ALL	H	CHANGES TO SUIT NEW METALLOG D CONNECTOR	JKB	05-14-97	---	---	---



INTERIOR PANEL LAYOUT

- NOTES:**
- ITEM #25 (DIN RAIL 6053-001) WILL INCLUDE AT LEAST 2 EACH OF (SCREW 6404-401) & (WASHER 6402-104)
 - LISTED ARE THE APPROXIMATE LENGTHS OF ITEM #25 a. D CONNECTOR / POWER SUPPLY - 375MM b. TERMINAL BLOCK, CONTACTOR/OVERLOAD - 375MM
 - A/C MODULE IS OPTIONAL. NOTE THE DOTTED LOCATION.
 - PANEL IS TO BE CONSTRUCTED TO SUIT 480V SUPPLY. TO CONVERT PANEL TO SUIT 230V SUPPLY, USE ALTERNATIVE COMPONENTS SHOWN.

ITEM NUMBER	QTY.	LTG. PART NUMBER	MAC PART NUMBER	DESCRIPTION	MATERIAL
51	2	N/A	6306-030	RELAY, MINATURE OMRON	N/A
50	1	156008	6061-103	TRANSFORMER, 110 VAC 275 VA	N/A
49	2	156001	6059-120	FUSE, FNO-R 2.0 AMP	N/A
48	2	155491	6059-121	FUSE, FNO-R 5 AMP	N/A
47	24	130434	6402-104	WASHER, FLAT 4MM	304SS
46	24	130535	6404-401	SCREW, PAN HEAD M4 X 10	304SS
45	3	156003	6059-104	FUSE, LPJ 20 AMP	N/A
44	1	156004	6059-119	FUSE, FNO 4 AMP	N/A
43	1	156913	6056-138	POWER SUPPLY, 2A SLC500 P1	N/A
42	3	156183	6056-129	SLDT FILLER, SLC 500	N/A
41	1	156212	6056-147	ANALOG INPUT, SLC 500	N/A
40	1	156213	6056-137	OUTPUT, RELAY 16 SLC 500	N/A
39	1	156220	6056-119	INPUT, DC SINK, 16 SLC 500	N/A
38	1	156343	6056-176	SLC 500 PROCESSOR, 12K	N/A
37	1	156227	6056-103	RACK, 7 SLOT MODULAR HARDWARE	N/A
36	1	156362	6053-060	D CONNECTOR, MEMLOG TEST PORT	N/A
35	3	155774	6059-101	FUSE, LPJ 10 AMP	N/A
34	6	157497	6053-038	END ANCHOR, DIN MOUNTED	N/A
33	1	156006	6056-205	OVERLOAD, IEC 24A, 24 VAC	N/A
32	1	156007	6056-205	CONTACTOR, IEC 24A, 24 VAC	N/A
31	10	157599	6053-010	TERMINAL BLOCK, DIN MOUNTED #22 - #12	N/A
30	1	156228	6056-180	SLC 500 A/C LINK COUPLER (OPTIONAL)	N/A
29	1	156005	6056-206	OVERLOAD, IEC 24 AMP	N/A
28	25	156682	6053-100	CONTACT BLOCK, 3 LEVEL	N/A
27	1	156070	6062-022	VOLTAGE REGULATOR, 24 VOLT	N/A
26	2	155773	6053-015	GROUNDING BLOCK, DIN MOUNTED	N/A
25	250MM	156187	6053-001	RAIL, DIN R3	ZINC PLT STL
24	48 IN	N/A	6056-122	WIRE DUCT WITH COVER, 1 1/2" X 2"	PVC
23	2	156002	6059-118	FUSE, FNO-R 3.5 AMP	N/A
22	2	157434	6059-115	FUSE, FNO-R 1.8 AMP	N/A
21	1	157435	6059-116	FUSE, FNO 12 AMP	N/A
20	1	155531	6061-003	TRANSFORMER, 24 VAC 180 VA	N/A

BILL OF MATERIALS

APPROVAL		DATE
S. MILYAN		09.18.95
DROGG		09.18.95
G.PAGE		09.18.95

MEMTEC MEMTEC AMERICA CORP
233 COMMERCE DRIVE
TOWSON, MD 21286

ELECTRICAL PANEL LAYOUT
40/60M10 - 4/6M10C

D05430 DRAWING NO. 6057-528

SCALE: HALF SHEET 3 OF 5

TOLERANCES	
Linear: ± .15mm (1/16")	
Angular: ± 1.0 DEG	UNLESS NOTED OTHERWISE

Tue May 27 1997 15:56:56 Impo:memtech23d

DRAWING RELEASED

CHECKED	BY <i>JB</i>	DATE 5-27-97
APPROVED	BY <i>CJP</i>	DATE 5/27/97

ZONE REV	DESCRIPTION	BY	DATE	ECL	CHK D	APP'D
ALL A	PRELIMINARY ISSUE	S.M.	09/19/95	—	—	—
ALL B	CONSTRUCTION ISSUE	JWB	05/24/97	—	—	—
ALL C	AS BUILT ISSUE	JWB	05/24/97	—	—	—
SH1 F1	D NO CHANGES TO THIS SHEET	JWB	05/24/97	—	—	—
SH1 F1	E NO CHANGES TO THIS SHEET	JWB	05/24/97	—	—	—
SH1 F1	F NO CHANGES TO THIS SHEET	AGE	05/24/97	—	—	—
—	G NO CHANGES TO THIS SHEET	—	—	—	—	—
—	H NO CHANGES TO THIS SHEET	—	—	—	—	—
B2 H	CHANGES TO SUIT NEW MEMLOO D CONNECTOR	JWS	05/27/97	—	—	—

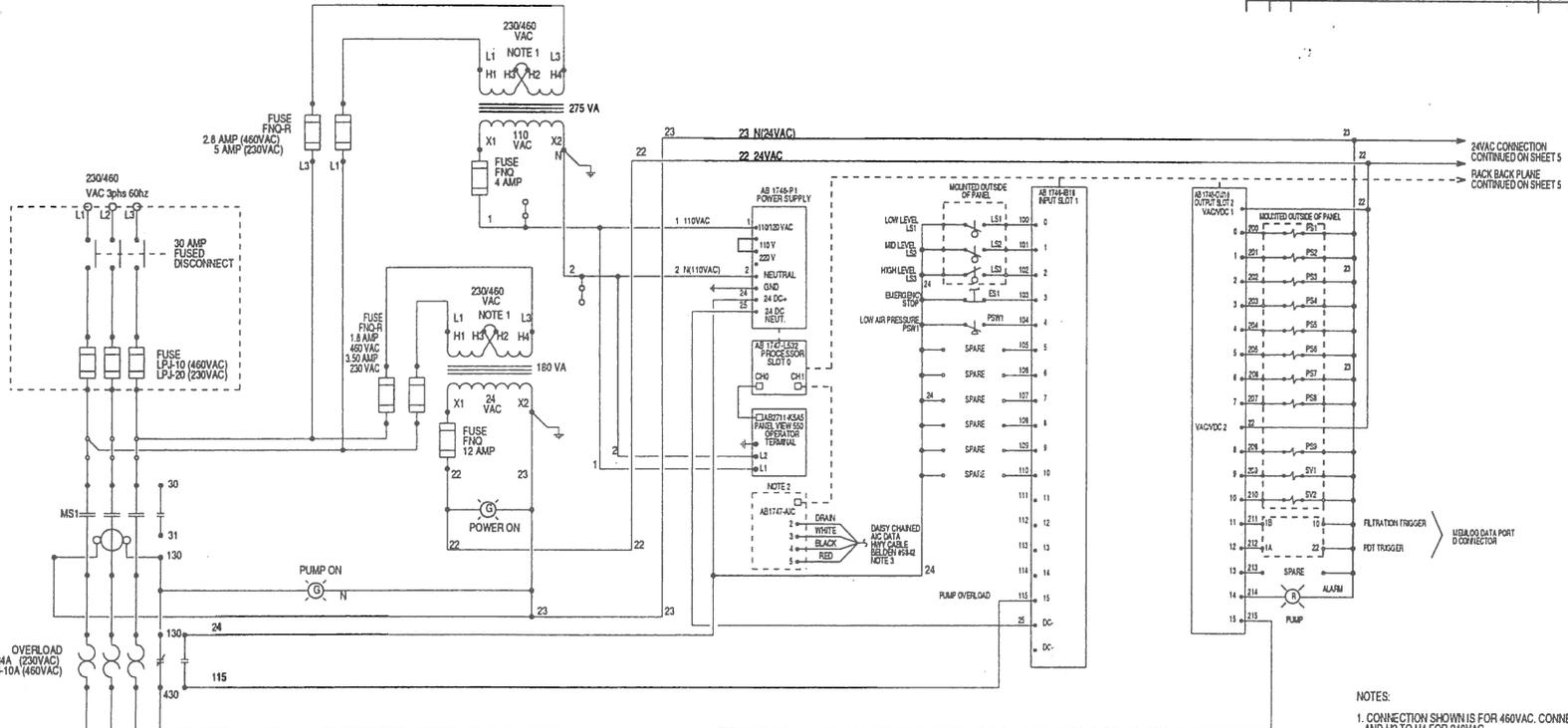
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6057-528

C

B

A



WIRE COLORS:
 GROUND - GREEN, GNVE
 24 VAC - VIOLET
 110 VAC - BLACK
 230/460 VAC - BLACK
 230/460 VAC - GRN
 GRN NEUTRAL 110 VAC - WHITE
 24 VAC PLC OUTPUTS - ORANGE
 24 VDC INPUTS - RED
 24 VDC (POSITIVE) - RED
 24 VDC (NEGATIVE) - D. BLUE

SLOT 0	SLOT 1	SLOT 2	SLOT 3	SLOT 4	SLOT 5	SLOT 6
AB1746-P1 POWER SUPPLY	AB1746-S132 SINK PROCESSOR	AB1746-B16 RELAY OUTPUT	SPARE	AB1746-N4 ANALOG INPUT	SPARE	SPARE
INPUTS: 1:1.00-1:1.015		OUTPUTS: O:2.00- O:2.015		INPUTS: I:4.0- I:4.3		

PLC CONFIGURATION TABLE
 ALLEN BRADLEY SLC503
 7 SLOT RACK AB1746-A7

- NOTES:
1. CONNECTION SHOWN IS FOR 460VAC. CONNECT H1 TO H3 AND H2 TO H4 FOR 240VAC.
 2. OPTIONAL AIC ISOLATED LINK COUPLER IS INSTALLED ONLY IN MULTIPLE CNF INSTALLATIONS WHERE COMMUNICATION BETWEEN CNF UNITS IS REQUIRED.
 3. DHAS DATA HIGHWAY CABLE IS INSTALLED BY THE CONTRACTOR.

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APPROVALS	DATE	ELECTRICAL PANEL LAYOUT			
S. MILVAIN	09.19.95	40/60M10 - 4/6M10C			
W. GROOM	09.19.95	DRAWING NO. 6057-528			
APPROVED	DATE	D 05430		SCALE NONE	
C. PAGE	09.19.95	SHEET 4		OF 5	

Title 07.1997 160051 mentecmcp0001

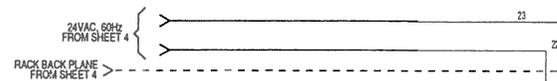
DRAWING RELEASE

CHECKED	BY <i>JB</i>	DATE 5-27-97
APPROVED	BY <i>GJP</i>	DATE 5/27/97

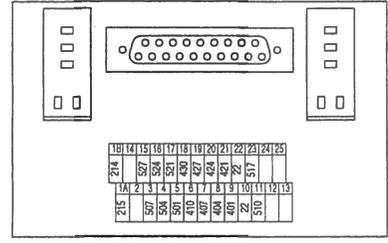
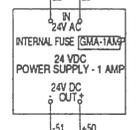
ZONE	REV	DESCRIPTION	BY	DATE	EOL	CHKD	APPD
ALL	A	PRELIMINARY ISSUE					
ALL	B	CONSTRUCTION ISSUE	JMS	09/19/95		WGO	GJP
ALL	C	AS BUILT ISSUE	JMS	05/14/97		WGO	GJP
08	D	CHANGED DATA PORT CHANNELS TO CONFORM TO MEMLOG	JMS	05/24/97		SJM	GJP
08	E	ADDED WIRE #50 TO PH13 OF DATA COLLECTION PORT	JMS	05/24/97		SJM	GJP
	F	NO CHANGES TO THIS SHEET	AJC	05/21/97		SJM	GJP
ALL	G	MODIFICATIONS TO TERMINAL STRIP	JMS	05/24/97		SJM	GJP
03	H	NO CHANGES TO THIS SHEET	SJT	05/14/97		SJM	GJP
07	I	CHANGES TO SUIT NEW MEMLOG D CONNECTOR	JMS	05/14/97		SJM	GJP

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6057-528



WIRE COLORS:
 GROUND - GREEN, GN/YE
 24 VAC - VIOLET
 110 VAC - BLACK
 230/480 VAC - BLACK
 GRN NEUTRAL 24 VAC - GRAY
 GRN NEUTRAL 110 VAC - WHITE
 24 VAC PLC OUTPUTS - ORANGE
 24 VDC INPUTS - RED
 24 VDC (POSITIVE) - RED
 24 VDC (NEGATIVE) - D, BLUE



MEMLOG DATA COLLECTION PORT

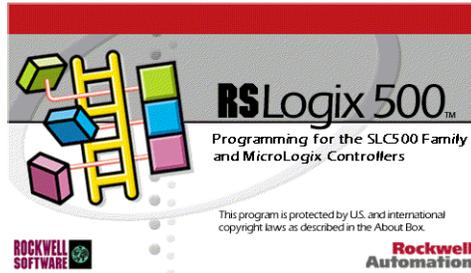
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24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100
24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100
24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100
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24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100
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24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100	24	100
24	100	24	100	24																					

CONTRACT DOCUMENTS



Appendix F - Water Tower - PLC Listing and Control Panel Drawings

RSLogix500 Project Report



TOWER.RSS

Processor Information

Processor Type: Bul.1761 MicroLogix 1000 Analog

Processor Name: TOWER

Total Memory Used: 378 Instruction Words Used - 440 Data Table Words Used

Total Memory Left: 557 Instruction Words Left

Program Files: 17

Data Files: 8

Program ID: fe50

TOWER.RSS

I/O Configuration

0	Bul.1761	MicroLogix 1000 Analog
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TOWER.RSS

Channel Configuration

DF1 Baud: 9600
DF1 Node : 3 (decimal)
DH485 Baud: 9600
DH485 Node : 3 (decimal)
Primary Protocol: DF1
DF1: DF1 Full Duplex

TOWER.RSS

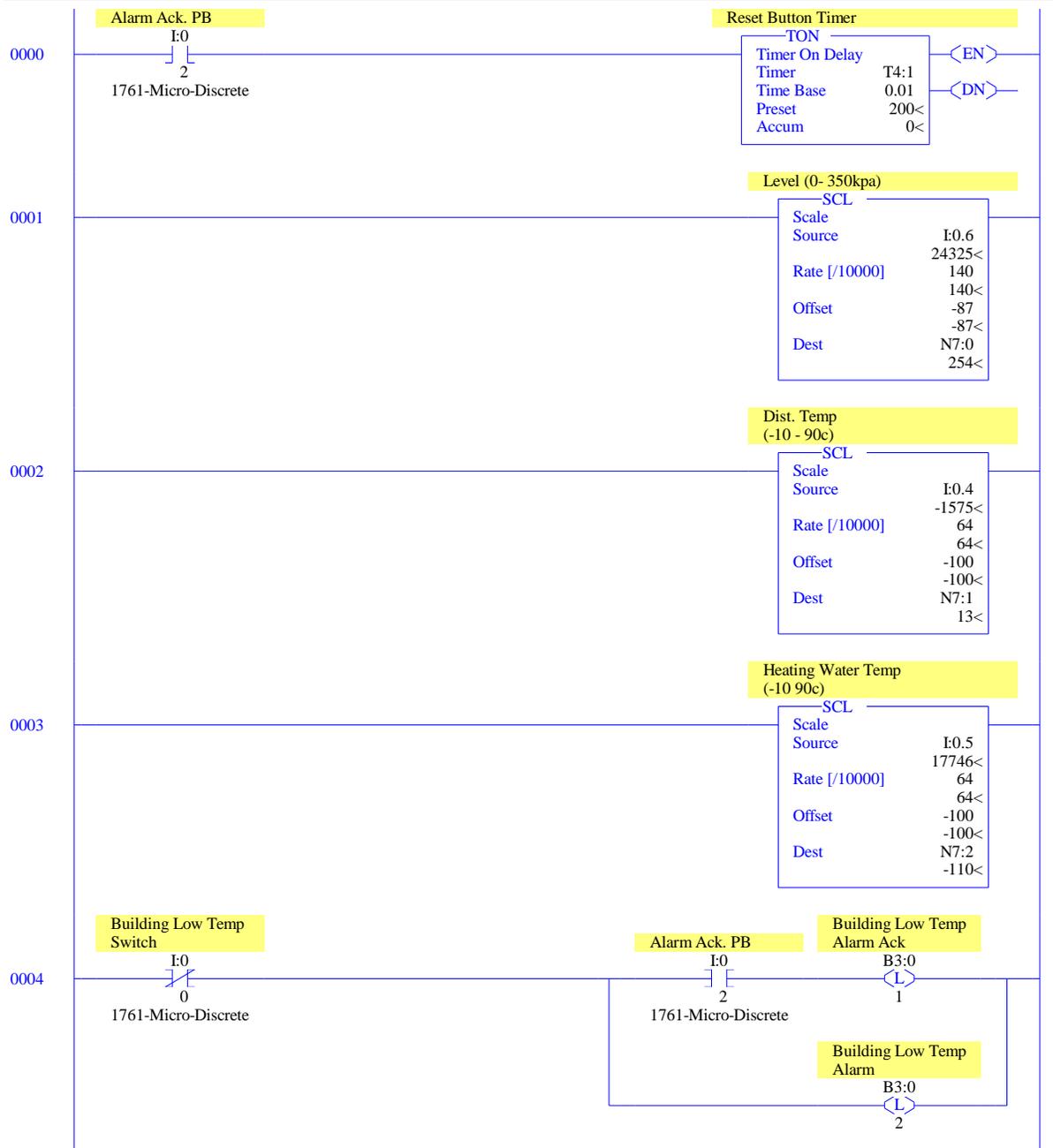
Program File List

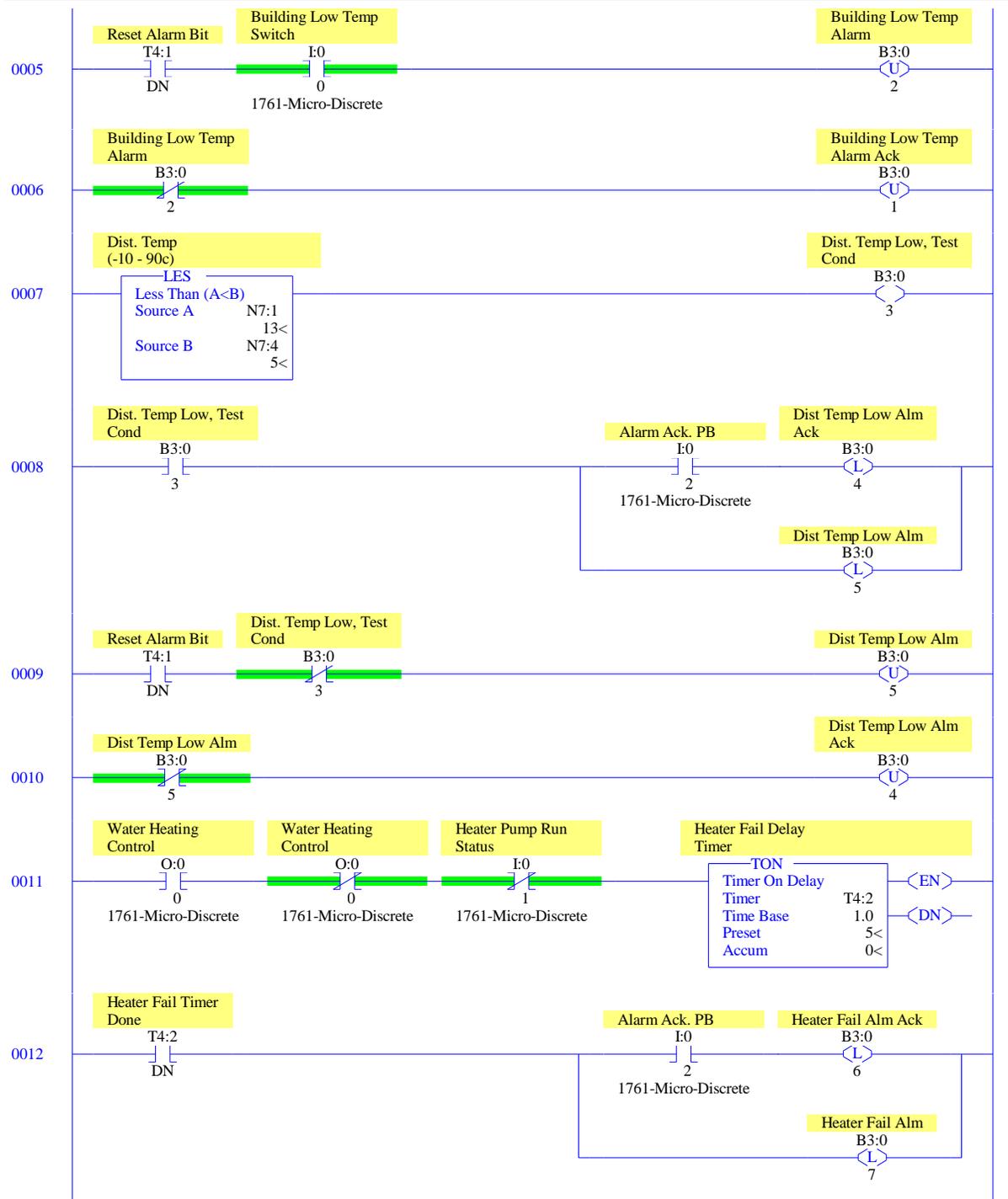
Name	Number	Type	Rungs	Debug	Bytes
[SYSTEM]	0	SYS	0	No	0
	1	SYS	0	No	0
MAIN_PROG	2	LADDER	47	No	1172
USER_FAULT	3	LADDER	5	No	34
	4	LADDER	1	No	3
	5	LADDER	1	No	3
	6	LADDER	1	No	3
	7	LADDER	1	No	3
	8	LADDER	1	No	3
	9	LADDER	1	No	3
	10	LADDER	1	No	3
	11	LADDER	1	No	3
	12	LADDER	1	No	3
	13	LADDER	1	No	3
	14	LADDER	1	No	3
	15	LADDER	1	No	3
	16	LADDER	1	Yes	3

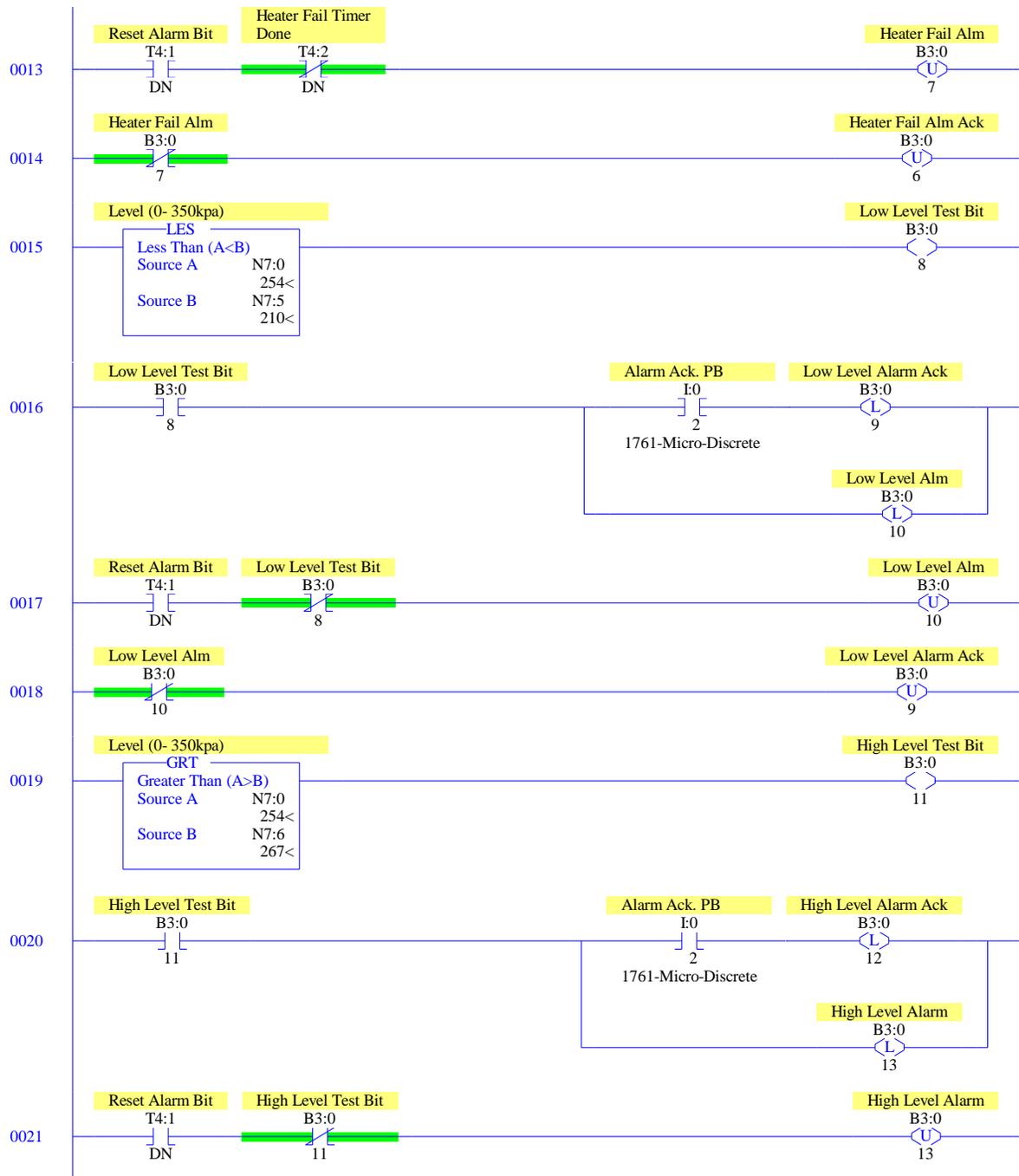
TOWER.RSS

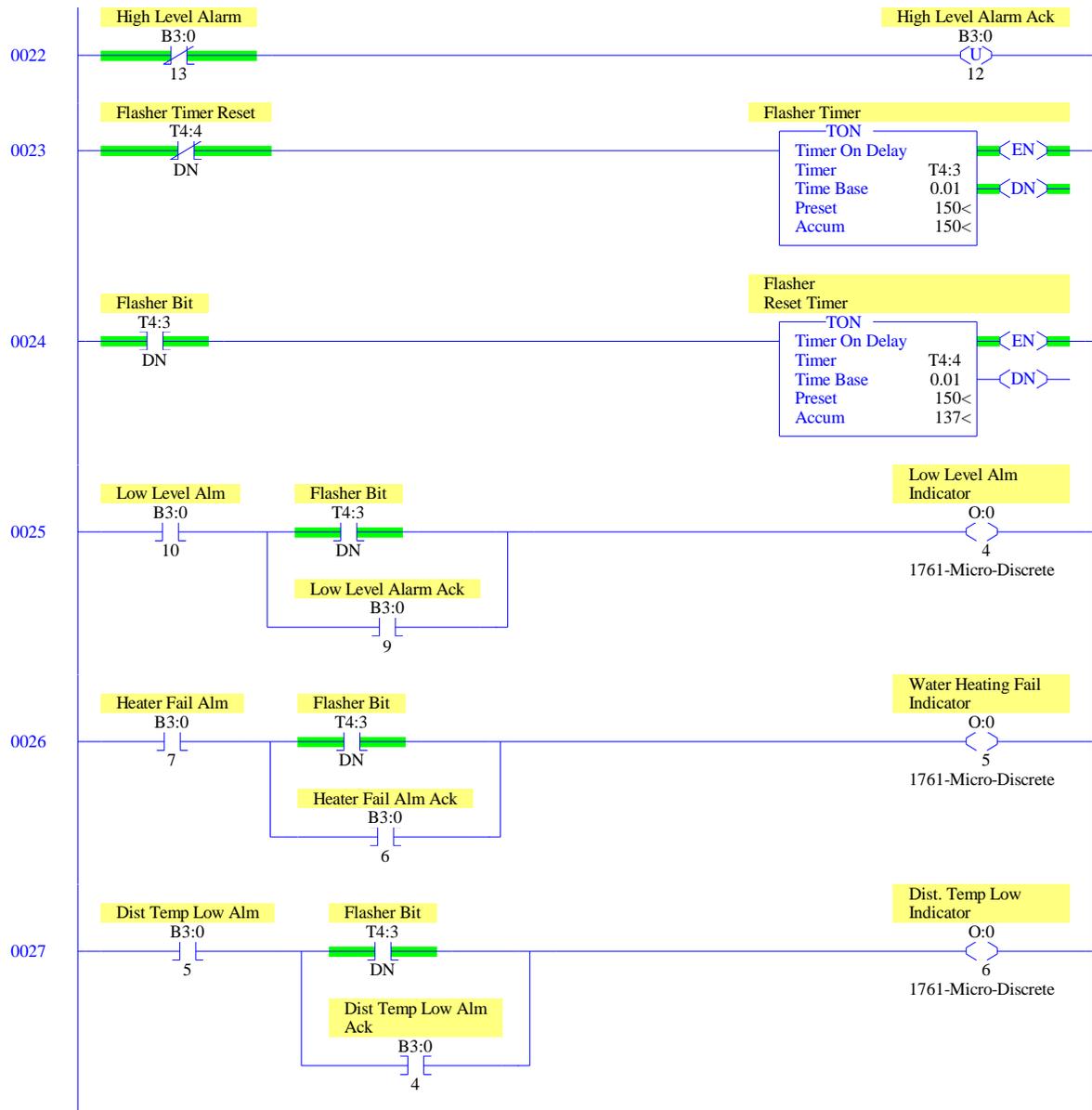
Data File List

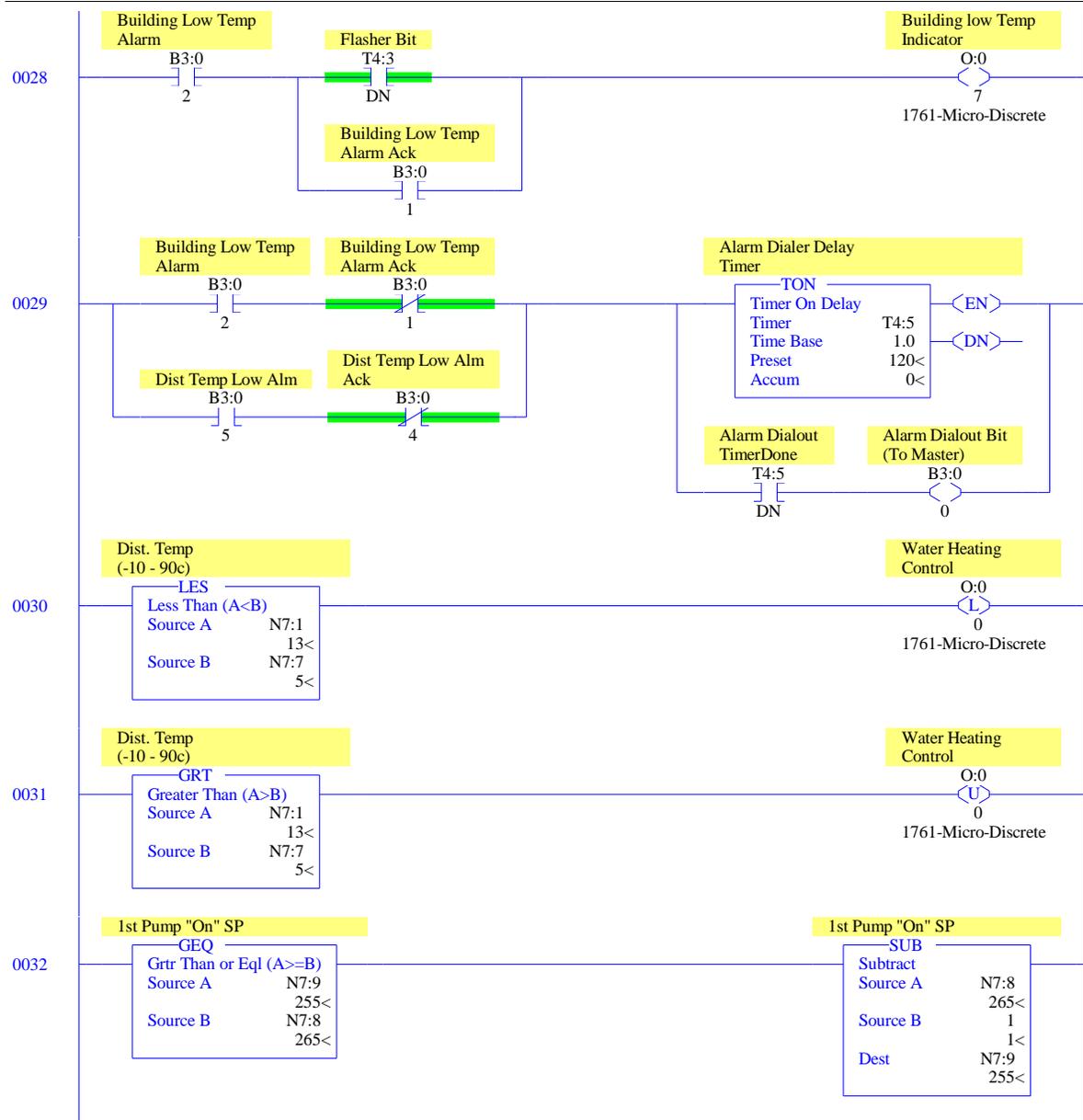
Name	Number	Type	Scope	Debug	Words	Elements	Last
OUTPUT	0	O	Global	No	15	5	O:4
INPUT	1	I	Global	No	24	8	I:7
STATUS	2	S	Global	No	0	33	S:32
BINARY	3	B	Global	No	32	32	B3:31
TIMER	4	T	Global	No	120	40	T4:39
COUNTER	5	C	Global	No	96	32	C5:31
CONTROL	6	R	Global	No	48	16	R6:15
INTEGER	7	N	Global	No	105	105	N7:104

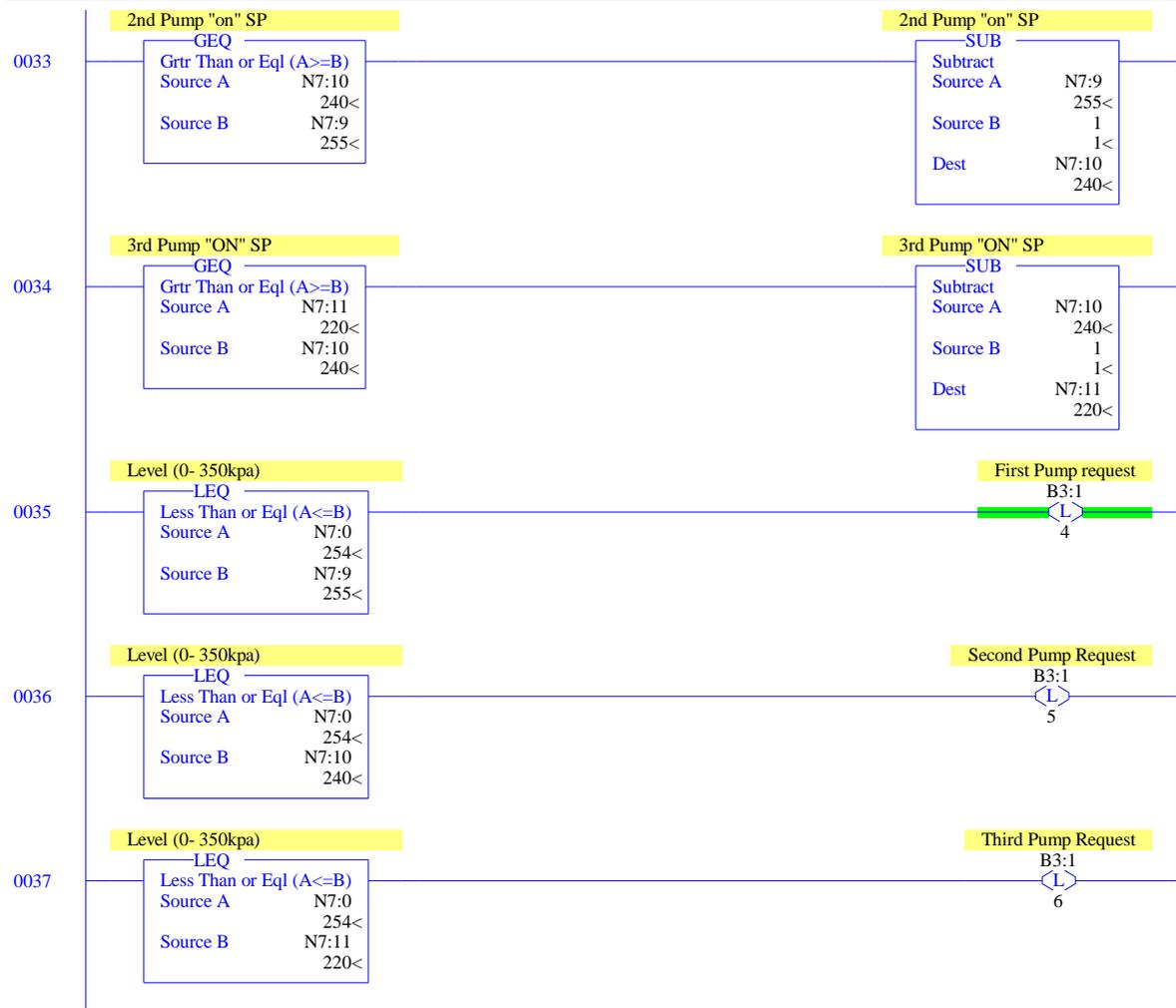


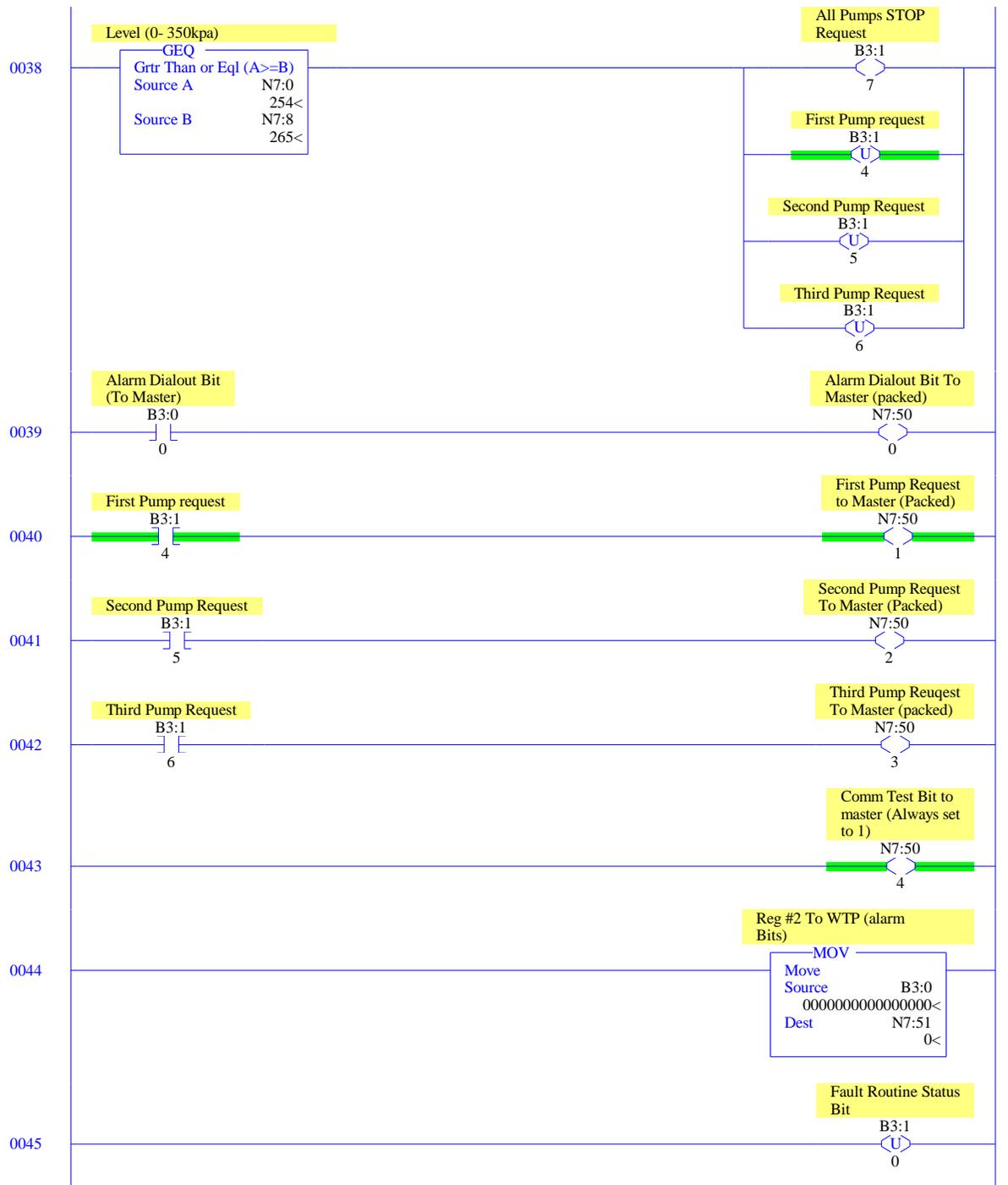












TOWER.RSS

LAD 2 - MAIN_PROG --- Total Rungs in File = 47

0046

⟨END⟩

TOWER.RSS

LAD 3 - USER_FAULT --- Total Rungs in File = 5



TOWER.RSS

Data File 00 (bin) -- OUTPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
O:0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1761-Micro-Discrete
O:0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1761-Micro-(RESERVED)
O:0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1761-Micro-(RESERVED)
O:0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1761-Micro-(RESERVED)
O:0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1761-Micro-Analog Out

TOWER.RSS

Data File I1 (bin) -- INPUT

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
I:0.0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1761-Micro-Discrete
I:0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1761-Micro-Discrete
I:0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1761-Micro-(RESERVED)
I:0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1761-Micro-(RESERVED)
I:0.4	1	1	1	1	1	0	0	1	1	1	0	1	1	0	0	1	1761-Micro-Analog Inp 0
I:0.5	0	1	0	0	0	1	0	1	0	1	0	1	0	0	1	0	1761-Micro-Analog Inp 1
I:0.6	0	1	0	1	1	1	1	1	0	0	0	0	0	1	0	1	1761-Micro-Analog Inp 2
I:0.7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1761-Micro-Analog Inp 3

Main

First Pass S:1/15 = No
Index Register S:24 = 0
Free Running Clock S:4 = 1011-1111-1110-0011

Scan Times

Maximum (x10 ms) S:22 = 1
Current (x10 ms) S:3 (low byte) = 0
Watchdog (x10 ms) S:3 (high byte) = 50

Math

Math Overflow Selected S:2/14 = 0
Overflow Trap S:5/0 = 0
Carry S:0/0 = 0
Overflow S:0/1 = 0
Zero Bit S:0/2 = 1
Sign Bit S:0/3 = 0

Math Register (lo word) S:13 = 0
Math Register (high word) S:14-S:13 = 0
Math Register (32 Bit) S:14-S:13 = 0

Debug

Suspend Code S:7 = 0

Errors

Extend I/O Configuration S:0/8 = 0
Fault Override At Power Up S:1/8 = 1
Startup Protection Fault S:1/9 = 0
Major Error Halt S:1/13 = 0
Overflow Trap S:5/0 = 0
Control Register Error S:5/2 = 0
Major Error Executing User
Fault Rtn. S:5/3 = 0
Retentive Data Lost S:5/8 = 0
Input Filter Selection Modified S:5/13 = 0

Major Error S:6 = 0h
Error Description:

STI

Pending Bit S:2/0 = 0
Enable Bit S:2/1 = 0
Executing Bit S:2/2 = 0
Overflow Bit S:5/10 = 0
Setpoint (x10ms) S:30 = 0

Protection

RUN Aways S:1/12 = No
Deny Future Access S:1/14 = No

Forces

Forces Enabled S:1/5 = Yes
Forces Installed S:1/6 = No

TOWER.RSS

Data File B3 (bin) -- BINARY

Offset	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
B3:2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
B3:31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

TOWER.RSS

Data File T4 -- TIMER

Offset	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T4:0	0	0	0	.01 sec	0	0	
T4:1	0	0	0	.01 sec	200	0	Reset Button Timer
T4:2	0	0	0	1.0 sec	5	0	Heater Fail Delay Timer
T4:3	1	0	1	.01 sec	150	150	Flasher Timer
T4:4	1	1	0	.01 sec	150	137	Flasher Reset Timer
T4:5	0	0	0	1.0 sec	120	0	Alarm Dialer Delay Timer
T4:6	0	0	0	.01 sec	0	0	
T4:7	0	0	0	.01 sec	0	0	
T4:8	0	0	0	.01 sec	0	0	
T4:9	0	0	0	.01 sec	0	0	
T4:10	0	0	0	.01 sec	0	0	
T4:11	0	0	0	.01 sec	0	0	
T4:12	0	0	0	.01 sec	0	0	
T4:13	0	0	0	.01 sec	0	0	
T4:14	0	0	0	.01 sec	0	0	
T4:15	0	0	0	.01 sec	0	0	
T4:16	0	0	0	.01 sec	0	0	
T4:17	0	0	0	.01 sec	0	0	
T4:18	0	0	0	.01 sec	0	0	
T4:19	0	0	0	.01 sec	0	0	
T4:20	0	0	0	.01 sec	0	0	
T4:21	0	0	0	.01 sec	0	0	
T4:22	0	0	0	.01 sec	0	0	
T4:23	0	0	0	.01 sec	0	0	
T4:24	0	0	0	.01 sec	0	0	
T4:25	0	0	0	.01 sec	0	0	
T4:26	0	0	0	.01 sec	0	0	
T4:27	0	0	0	.01 sec	0	0	
T4:28	0	0	0	.01 sec	0	0	
T4:29	0	0	0	.01 sec	0	0	
T4:30	0	0	0	.01 sec	0	0	
T4:31	0	0	0	.01 sec	0	0	
T4:32	0	0	0	.01 sec	0	0	
T4:33	0	0	0	.01 sec	0	0	
T4:34	0	0	0	.01 sec	0	0	
T4:35	0	0	0	.01 sec	0	0	
T4:36	0	0	0	.01 sec	0	0	
T4:37	0	0	0	.01 sec	0	0	
T4:38	0	0	0	.01 sec	0	0	
T4:39	0	0	0	.01 sec	0	0	

TOWER.RSS

Data File C5 -- COUNTER

Offset	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol) Description
C5:0	0	0	0	0	0	0	0	0	
C5:1	0	0	0	0	0	0	0	0	
C5:2	0	0	0	0	0	0	0	0	
C5:3	0	0	0	0	0	0	0	0	
C5:4	0	0	0	0	0	0	0	0	
C5:5	0	0	0	0	0	0	0	0	
C5:6	0	0	0	0	0	0	0	0	
C5:7	0	0	0	0	0	0	0	0	
C5:8	0	0	0	0	0	0	0	0	
C5:9	0	0	0	0	0	0	0	0	
C5:10	0	0	0	0	0	0	0	0	
C5:11	0	0	0	0	0	0	0	0	
C5:12	0	0	0	0	0	0	0	0	
C5:13	0	0	0	0	0	0	0	0	
C5:14	0	0	0	0	0	0	0	0	
C5:15	0	0	0	0	0	0	0	0	
C5:16	0	0	0	0	0	0	0	0	
C5:17	0	0	0	0	0	0	0	0	
C5:18	0	0	0	0	0	0	0	0	
C5:19	0	0	0	0	0	0	0	0	
C5:20	0	0	0	0	0	0	0	0	
C5:21	0	0	0	0	0	0	0	0	
C5:22	0	0	0	0	0	0	0	0	
C5:23	0	0	0	0	0	0	0	0	
C5:24	0	0	0	0	0	0	0	0	
C5:25	0	0	0	0	0	0	0	0	
C5:26	0	0	0	0	0	0	0	0	
C5:27	0	0	0	0	0	0	0	0	
C5:28	0	0	0	0	0	0	0	0	
C5:29	0	0	0	0	0	0	0	0	
C5:30	0	0	0	0	0	0	0	0	
C5:31	0	0	0	0	0	0	0	0	

TOWER.RSS

Data File R6 -- CONTROL

Offset	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol) Description
R6:0	0	0	0	0	0	0	0	0	0	0	
R6:1	0	0	0	0	0	0	0	0	0	0	
R6:2	0	0	0	0	0	0	0	0	0	0	
R6:3	0	0	0	0	0	0	0	0	0	0	
R6:4	0	0	0	0	0	0	0	0	0	0	
R6:5	0	0	0	0	0	0	0	0	0	0	
R6:6	0	0	0	0	0	0	0	0	0	0	
R6:7	0	0	0	0	0	0	0	0	0	0	
R6:8	0	0	0	0	0	0	0	0	0	0	
R6:9	0	0	0	0	0	0	0	0	0	0	
R6:10	0	0	0	0	0	0	0	0	0	0	
R6:11	0	0	0	0	0	0	0	0	0	0	
R6:12	0	0	0	0	0	0	0	0	0	0	
R6:13	0	0	0	0	0	0	0	0	0	0	
R6:14	0	0	0	0	0	0	0	0	0	0	
R6:15	0	0	0	0	0	0	0	0	0	0	

TOWER.RSS

Data File N7 (dec) -- INTEGER

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	254	13	-110	0	5	210	267	5	265	255
N7:10	240	220	0	0	0	0	0	0	0	0
N7:20	0	0	0	0	0	0	0	0	0	0
N7:30	0	0	0	0	0	0	0	0	0	0
N7:40	0	0	0	0	0	0	0	0	0	0
N7:50	18	0	0	0	0	0	0	0	0	0
N7:60	0	0	0	0	0	0	0	0	0	0
N7:70	0	0	0	0	0	0	0	0	0	0
N7:80	0	0	0	0	0	0	0	0	0	0
N7:90	0	0	0	0	0	0	0	0	0	0
N7:100	0	0	0	0	0	0	0	0	0	0

TOWER.RSS

CDM 0 - Untitled

Address (Symbol) = Value [Description]

TOWER.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

```

O:0/0      - Water Heating Control
            OTL - File #2 MAIN_PROG - 30
            OTU - File #2 MAIN_PROG - 31
            XIC - File #2 MAIN_PROG - 11
            XIO - File #2 MAIN_PROG - 11
O:0/4      - Low Level Alm Indicator
            OTE - File #2 MAIN_PROG - 25
O:0/5      - Water Heating Fail Indicator
            OTE - File #2 MAIN_PROG - 26
O:0/6      - Dist. Temp Low Indicator
            OTE - File #2 MAIN_PROG - 27
O:0/7      - Building low Temp Indicator
            OTE - File #2 MAIN_PROG - 28
I:0/0      - Building Low Temp Switch
            XIC - File #2 MAIN_PROG - 5
            XIO - File #2 MAIN_PROG - 4
I:0/1      - Heater Pump Run Status
            XIO - File #2 MAIN_PROG - 11
I:0/2      - Alarm Ack. PB
            XIC - File #2 MAIN_PROG - 0, 4, 8, 12, 16, 20
I:0.4      - Heating temp counts
            SCL - File #2 MAIN_PROG - 2
I:0.5      - Dist. Temp Counts
            SCL - File #2 MAIN_PROG - 3
I:0.6      - Pressuer counts
            SCL - File #2 MAIN_PROG - 1
S:1/13     - Major Error Halted
            OTU - File #3 USER_FAULT - 2
S:5/0      - Overflow Trap
            OTU - File #3 USER_FAULT - 1
B3:0       - MOV - File #2 MAIN_PROG - 44
B3:0/0     - Alarm Dialout Bit (To Master)
            OTE - File #2 MAIN_PROG - 29
            XIC - File #2 MAIN_PROG - 39
B3:0/1     - Building Low Temp Alarm Ack
            OTL - File #2 MAIN_PROG - 4
            OTU - File #2 MAIN_PROG - 6
            XIC - File #2 MAIN_PROG - 28
            XIO - File #2 MAIN_PROG - 29
B3:0/2     - Building Low Temp Alarm
            OTL - File #2 MAIN_PROG - 4
            OTU - File #2 MAIN_PROG - 5
            XIC - File #2 MAIN_PROG - 28, 29
            XIO - File #2 MAIN_PROG - 6
B3:0/3     - Dist. Temp Low, Test Cond
            OTE - File #2 MAIN_PROG - 7
            XIC - File #2 MAIN_PROG - 8
            XIO - File #2 MAIN_PROG - 9
B3:0/4     - Dist Temp Low Alm Ack
            OTL - File #2 MAIN_PROG - 8
            OTU - File #2 MAIN_PROG - 10
            XIC - File #2 MAIN_PROG - 27
            XIO - File #2 MAIN_PROG - 29
B3:0/5     - Dist Temp Low Alm
            OTL - File #2 MAIN_PROG - 8
            OTU - File #2 MAIN_PROG - 9
            XIC - File #2 MAIN_PROG - 27, 29
            XIO - File #2 MAIN_PROG - 10
B3:0/6     - Heater Fail Alm Ack
            OTL - File #2 MAIN_PROG - 12
            OTU - File #2 MAIN_PROG - 14
            XIC - File #2 MAIN_PROG - 26
B3:0/7     - Heater Fail Alm
            OTL - File #2 MAIN_PROG - 12
            OTU - File #2 MAIN_PROG - 13
            XIC - File #2 MAIN_PROG - 26
            XIO - File #2 MAIN_PROG - 14
B3:0/8     - Low Level Test Bit

```

TOWER.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

```

      OTE - File #2 MAIN_PROG - 15
      XIC - File #2 MAIN_PROG - 16
      XIO - File #2 MAIN_PROG - 17
B3:0/9  - Low Level Alarm Ack
      OTL - File #2 MAIN_PROG - 16
      OTU - File #2 MAIN_PROG - 18
      XIC - File #2 MAIN_PROG - 25
B3:0/10 - Low Level Alm
      OTL - File #2 MAIN_PROG - 16
      OTU - File #2 MAIN_PROG - 17
      XIC - File #2 MAIN_PROG - 25
      XIO - File #2 MAIN_PROG - 18
B3:0/11 - High Level Test Bit
      OTE - File #2 MAIN_PROG - 19
      XIC - File #2 MAIN_PROG - 20
      XIO - File #2 MAIN_PROG - 21
B3:0/12 - High Level Alarm Ack
      OTL - File #2 MAIN_PROG - 20
      OTU - File #2 MAIN_PROG - 22
B3:0/13 - High Level Alarm
      OTL - File #2 MAIN_PROG - 20
      OTU - File #2 MAIN_PROG - 21
      XIO - File #2 MAIN_PROG - 22
B3:1/0  - Fault Routine Status Bit
      OTE - File #3 USER_FAULT - 0
      OTU - File #2 MAIN_PROG - 45
B3:1/4  - First Pump request
      OTL - File #2 MAIN_PROG - 35
      OTU - File #2 MAIN_PROG - 38
      XIC - File #2 MAIN_PROG - 40
B3:1/5  - Second Pump Request
      OTL - File #2 MAIN_PROG - 36
      OTU - File #2 MAIN_PROG - 38
      XIC - File #2 MAIN_PROG - 41
B3:1/6  - Third Pump Request
      OTL - File #2 MAIN_PROG - 37
      OTU - File #2 MAIN_PROG - 38
      XIC - File #2 MAIN_PROG - 42
B3:1/7  - All Pumps STOP Request
      OTE - File #2 MAIN_PROG - 38
T4:1    - Reset Button Timer
      TON - File #2 MAIN_PROG - 0
T4:1/DN - Reset Alarm Bit
      XIC - File #2 MAIN_PROG - 5, 9, 13, 17, 21
T4:2    - Heater Fail Delay Timer
      TON - File #2 MAIN_PROG - 11
T4:2/DN - Heater Fail Timer Done
      XIC - File #2 MAIN_PROG - 12
      XIO - File #2 MAIN_PROG - 13
T4:3    - Flasher Timer
      TON - File #2 MAIN_PROG - 23
T4:3/DN - Flasher Bit
      XIC - File #2 MAIN_PROG - 24, 25, 26, 27, 28
T4:4    - Flasher Reset Timer
      TON - File #2 MAIN_PROG - 24
T4:4/DN - Flasher Timer Reset
      XIO - File #2 MAIN_PROG - 23
T4:5    - Alarm Dialer Delay Timer
      TON - File #2 MAIN_PROG - 29
T4:5/DN - Alarm Dialout TimerDone
      XIC - File #2 MAIN_PROG - 29
N7:0    - Level (0- 350kpa)
      SCL - File #2 MAIN_PROG - 1
      GRT - File #2 MAIN_PROG - 19
      GEQ - File #2 MAIN_PROG - 38
      LES - File #2 MAIN_PROG - 15
      LEQ - File #2 MAIN_PROG - 35, 36, 37
N7:1    - Dist. Temp (-10 - 90c)

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TOWER.RSS

RSLogix 500 Cross Reference Report - Sorted by Address

	SCL - File #2 MAIN_PROG - 2
	GRT - File #2 MAIN_PROG - 31
	LES - File #2 MAIN_PROG - 7, 30
N7:2	- Heating Water Temp (-10 90c)
	SCL - File #2 MAIN_PROG - 3
N7:4	- Low Dist Water Temp SP
	LES - File #2 MAIN_PROG - 7
N7:5	- Low Level Alarm SP
	LES - File #2 MAIN_PROG - 15
N7:6	- High Level Alarm SP
	GRT - File #2 MAIN_PROG - 19
N7:7	- Water Heater "on" SP
	GRT - File #2 MAIN_PROG - 31
	LES - File #2 MAIN_PROG - 30
N7:8	- WTP Pumps STOP SP
	SUB - File #2 MAIN_PROG - 32
	GEQ - File #2 MAIN_PROG - 32, 38
N7:9	- 1st Pump "On" SP
	SUB - File #2 MAIN_PROG - 32, 33
	GEQ - File #2 MAIN_PROG - 32, 33
	LEQ - File #2 MAIN_PROG - 35
N7:10	- 2nd Pump "on" SP
	SUB - File #2 MAIN_PROG - 33, 34
	GEQ - File #2 MAIN_PROG - 33, 34
	LEQ - File #2 MAIN_PROG - 36
N7:11	- 3rd Pump "ON" SP
	SUB - File #2 MAIN_PROG - 34
	GEQ - File #2 MAIN_PROG - 34
	LEQ - File #2 MAIN_PROG - 37
N7:50/0	- Alarm Dialout Bit To Master (packed)
	OTE - File #2 MAIN_PROG - 39
N7:50/1	- First Pump Request to Master (Packed)
	OTE - File #2 MAIN_PROG - 40
N7:50/2	- Second Pump Request To Master (Packed)
	OTE - File #2 MAIN_PROG - 41
N7:50/3	- Third Pump Reuquest To Master (packed)
	OTE - File #2 MAIN_PROG - 42
N7:50/4	- Comm Test Bit to master (Always set to 1)
	OTE - File #2 MAIN_PROG - 43
N7:51	- Reg #2 To WTP (alarm Bits)
	MOV - File #2 MAIN_PROG - 44

TOWER.RSS

Data File 00 -- OUTPUT Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
O:0.0		X	X	X	X	.	.	.	X	1761-Micro-Discrete
O:0.1		1761-Micro-(RESERVED)
O:0.2		1761-Micro-(RESERVED)
O:0.3		1761-Micro-(RESERVED)
O:0.4		1761-Micro-Analog Out

TOWER.RSS

Data File I1 -- INPUT Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
I:0.0		.	.	.	.	.	.	.	.	.	.	.	.	.	X	X	X	1761-Micro-Discrete
I:0.1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1761-Micro-Discrete
I:0.2		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1761-Micro-(RESERVED)
I:0.3		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1761-Micro-(RESERVED)
I:0.4	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1761-Micro-Analog Inp 0
I:0.5	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1761-Micro-Analog Inp 1
I:0.6	W	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1761-Micro-Analog Inp 2
I:0.7		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1761-Micro-Analog Inp 3

TOWER.RSS

Data File S2 -- STATUS Usage

Offset	0	1	2	3	4	5	6	7	8	9
S:0	.	X	.	.	.	X	.	.	.	.
S:10
S:20
S:30

TOWER.RSS

Data File B3 -- BINARY Usage

Offset	FW	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	(Symbol) Description
B3:0	W	.	.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
B3:1		.	.	.	.	.	.	.	.	X	X	X	X	.	.	.	X	
B3:2		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:3		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:4		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:5		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:6		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:7		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:8		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:9		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:10		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:11		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:12		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:13		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:14		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:15		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:16		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:17		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:18		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:19		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:20		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:21		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:22		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:23		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:24		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:25		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:26		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:27		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:28		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:29		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:30		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B3:31		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TOWER.RSS

Data File T4 -- TIMER Usage

Offset	FW	EN	TT	DN	BASE	PRE	ACC	(Symbol) Description
T4:0	
T4:1	W	.	.	X	.	.	.	Reset Button Timer
T4:2	W	.	.	X	.	.	.	Heater Fail Delay Timer
T4:3	W	.	.	X	.	.	.	Flasher Timer
T4:4	W	.	.	X	.	.	.	Flasher Reset Timer
T4:5	W	.	.	X	.	.	.	Alarm Dialer Delay Timer
T4:6	
T4:7	
T4:8	
T4:9	
T4:10	
T4:11	
T4:12	
T4:13	
T4:14	
T4:15	
T4:16	
T4:17	
T4:18	
T4:19	
T4:20	
T4:21	
T4:22	
T4:23	
T4:24	
T4:25	
T4:26	
T4:27	
T4:28	
T4:29	
T4:30	
T4:31	
T4:32	
T4:33	
T4:34	
T4:35	
T4:36	
T4:37	
T4:38	
T4:39	

TOWER.RSS

Data File C5 -- COUNTER Usage

Offset	FW	CU	CD	DN	OV	UN	UA	PRE	ACC	(Symbol) Description
C5:0	
C5:1	
C5:2	
C5:3	
C5:4	
C5:5	
C5:6	
C5:7	
C5:8	
C5:9	
C5:10	
C5:11	
C5:12	
C5:13	
C5:14	
C5:15	
C5:16	
C5:17	
C5:18	
C5:19	
C5:20	
C5:21	
C5:22	
C5:23	
C5:24	
C5:25	
C5:26	
C5:27	
C5:28	
C5:29	
C5:30	
C5:31	

TOWER.RSS

Data File R6 -- CONTROL Usage

Offset	FW	EN	EU	DN	EM	ER	UL	IN	FD	LEN	POS	(Symbol) Description
R6:0
R6:1
R6:2
R6:3
R6:4
R6:5
R6:6
R6:7
R6:8
R6:9
R6:10
R6:11
R6:12
R6:13
R6:14
R6:15

TOWER.RSS

Data File N7 -- INTEGER Usage

Offset	0	1	2	3	4	5	6	7	8	9
N7:0	X	X	X	.	X	X	X	X	X	X
N7:10	X	X	.	.	.	.	.	.	.	.
N7:20	.	.	.	.	.	.	.	.	.	.
N7:30	.	.	.	.	.	.	.	.	.	.
N7:40	.	.	.	.	.	.	.	.	.	.
N7:50	X	X	.	.	.	.	.	.	.	.
N7:60	.	.	.	.	.	.	.	.	.	.
N7:70	.	.	.	.	.	.	.	.	.	.
N7:80	.	.	.	.	.	.	.	.	.	.
N7:90	.	.	.	.	.	.	.	.	.	.
N7:100	.	.	.	.	.	.	.	.	.	.

TOWER.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV	BLW
B3:0/0			Alarm Dialout Bit (To Master)				
B3:0/1			Building Low Temp Alarm Ack				
B3:0/2			Building Low Temp Alarm				
B3:0/3			Dist. Temp Low, Test Cond				
B3:0/4			Dist Temp Low Alm Ack				
B3:0/5			Dist Temp Low Alm				
B3:0/6			Heater Fail Alm Ack				
B3:0/7			Heater Fail Alm				
B3:0/8			Low Level Test Bit				
B3:0/9			Low Level Alarm Ack				
B3:0/10			Low Level Alm				
B3:0/11			High Level Test Bit				
B3:0/12			High Level Alarm Ack				
B3:0/13			High Level Alarm				
B3:1/0			Fault Routine Status Bit				
B3:1/4			First Pump request				
B3:1/5			Second Pump Request				
B3:1/6			Third Pump Request				
B3:1/7			All Pumps STOP Request				
I:0/0			Building Low Temp Switch				
I:0/1			Heater Pump Run Status				
I:0/2			Alarm Ack. PB				
I:0.4			Heating temp counts				
I:0.5			Dist. Temp Counts				
I:0.6			Pressuer counts				
N7:0			Level (0- 350kpa)				
N7:1			Dist. Temp (-10 - 90c)				
N7:2			Heating Water Temp (-10 90c)				
N7:4			Low Dist Water Temp SP				
N7:5			Low Level Alarm SP				
N7:6			High Level Alarm SP				
N7:7			Water Heater "on" SP				
N7:8			WTP Pumps STOP SP				
N7:9			1st Pump "On" SP				
N7:10			2nd Pump "on" SP				
N7:11			3rd Pump "ON" SP				
N7:50			Reg#1 To WTP (Packed Bits)				
N7:50/0			Alarm Dialout Bit To Master (packed)				
N7:50/1			First Pump Request to Master (Packed)				
N7:50/2			Second Pump Request To Master (Packed)				
N7:50/3			Third Pump Reuquest To Master (packed)				
N7:50/4			Comm Test Bit to master (Always set to 1)				
N7:51			Reg #2 To WTP (alarm Bits)				
N7:52			Reg 3 To WTP (Alarm Bits)				
N7:53			Reg 4 To WTP				
N7:54			Reg 5 To WTP				
N7:55			Reg 6 To WTP				
N7:56			Reg 7 To WTP				
N7:57			Reg 8 To WTP				
N7:58			Reg 9 To WTP				
N7:59			Reg 10 To WTP				
N7:60			Reg 1 From WTP				
N7:61			Reg 2 From WTP				
N7:62			Reg 3 From WTP				
N7:63			Reg 4 From WTP				
N7:64			Reg 5 From WTP				
N7:65			Reg 6 From WTP				
N7:66			Reg 7 From WTP				
N7:67			Reg 8 From WTP				
N7:68			Reg 9 From WTP				
N7:69			Reg 10 From WTP				
O:0/0			Water Heating Control				
O:0/1			Spare				
O:0/2			Spare				
O:0/3			Spare				
O:0/4			Low Level Alm Indicator				
O:0/5			Water Heating Fail Indicator				
O:0/6			Dist. Temp Low Indicator				
O:0/7			Building low Temp Indicator				
O:0.4			Spare				
S:0			Arithmetic Flags				
S:0/0			Processor Arithmetic Carry Flag				
S:0/1			Processor Arithmetic Underflow/ Overflow Flag				
S:0/2			Processor Arithmetic Zero Flag				
S:0/3			Processor Arithmetic Sign Flag				
S:1			Processor Mode Status/ Control				
S:1/0			Processor Mode Bit 0				
S:1/1			Processor Mode Bit 1				
S:1/2			Processor Mode Bit 2				
S:1/3			Processor Mode Bit 3				
S:1/4			Processor Mode Bit 4				
S:1/5			Forces Enabled				
S:1/6			Forces Present				
S:1/7			Comms Active				
S:1/8			Fault Override at Powerup				

TOWER.RSS

Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV	BLW
S:1/9			Startup Protection Fault				
S:1/10			Load Memory Module on Memory Error				
S:1/11			Load Memory Module Always				
S:1/12			Load Memory Module and RUN				
S:1/13			Major Error Halted				
S:1/14			Access Denied				
S:1/15			First Pass				
S:2/0			STI Pending				
S:2/1			STI Enabled				
S:2/2			STI Executing				
S:2/3			Index Addressing File Range				
S:2/4			Saved with Debug Single Step				
S:2/5			DH-485 Incoming Command Pending				
S:2/6			DH-485 Message Reply Pending				
S:2/7			DH-485 Outgoing Message Command Pending				
S:2/15			Comms Servicing Selection				
S:3			Current Scan Time/ Watchdog Scan Time				
S:4			Time Base				
S:5/0			Overflow Trap				
S:5/2			Control Register Error				
S:5/3			Major Err Detected Executing UserFault Routine				
S:5/4			M0-M1 Referenced on Disabled Slot				
S:5/8			Memory Module Boot				
S:5/9			Memory Module Password Mismatch				
S:5/10			STI Overflow				
S:5/11			Battery Low				
S:6			Major Error Fault Code				
S:7			Suspend Code				
S:8			Suspend File				
S:9			Active Nodes				
S:10			Active Nodes				
S:11			I/O Slot Enables				
S:12			I/O Slot Enables				
S:13			Math Register				
S:14			Math Register				
S:15			Node Address/ Baud Rate				
S:16			Debug Single Step Rung				
S:17			Debug Single Step File				
S:18			Debug Single Step Breakpoint Rung				
S:19			Debug Single Step Breakpoint File				
S:20			Debug Fault/ Powerdown Rung				
S:21			Debug Fault/ Powerdown File				
S:22			Maximum Observed Scan Time				
S:23			Average Scan Time				
S:24			Index Register				
S:25			I/O Interrupt Pending				
S:26			I/O Interrupt Pending				
S:27			I/O Interrupt Enabled				
S:28			I/O Interrupt Enabled				
S:29			User Fault Routine File Number				
S:30			STI Setpoint				
S:31			STI File Number				
S:32			I/O Interrupt Executing				
S:33			Extended Proc Status Control Word				
S:33/0			Incoming Command Pending				
S:33/1			Message Reply Pending				
S:33/2			Outgoing Message Command Pending				
S:33/3			Selection Status User/DF1				
S:33/4			Communicat Active				
S:33/5			Communicat Servicing Selection				
S:33/6			Message Servicing Selection Channel 0				
S:33/7			Message Servicing Selection Channel 1				
S:33/8			Interrupt Latency Control Flag				
S:33/9			Scan Toggle Flag				
S:33/10			Discrete Input Interrupt Reconfigur Flag				
S:33/11			Online Edit Status				
S:33/12			Online Edit Status				
S:33/13			Scan Time Timebase Selection				
S:33/14			DTR Control Bit				
S:33/15			DTR Force Bit				
S:34			Pass-thru Disabled				
S:34/0			Pass-Thru Disabled Flag				
S:34/1			DH+ Active Node Table Enable Flag				
S:34/2			Floating Point Math Flag				
S:35			Last 1 ms Scan Time				
S:36			Extended Minor Error Bits				
S:36/8			Dll Lost				
S:36/9			STI Lost				
S:36/10			Memory Module Data File Overwrite Protection				
S:37			Clock Calendar Year				
S:38			Clock Calendar Month				
S:39			Clock Calendar Day				
S:40			Clock Calendar Hours				
S:41			Clock Calendar Minutes				
S:42			Clock Calendar Seconds				

TOWER.RSS

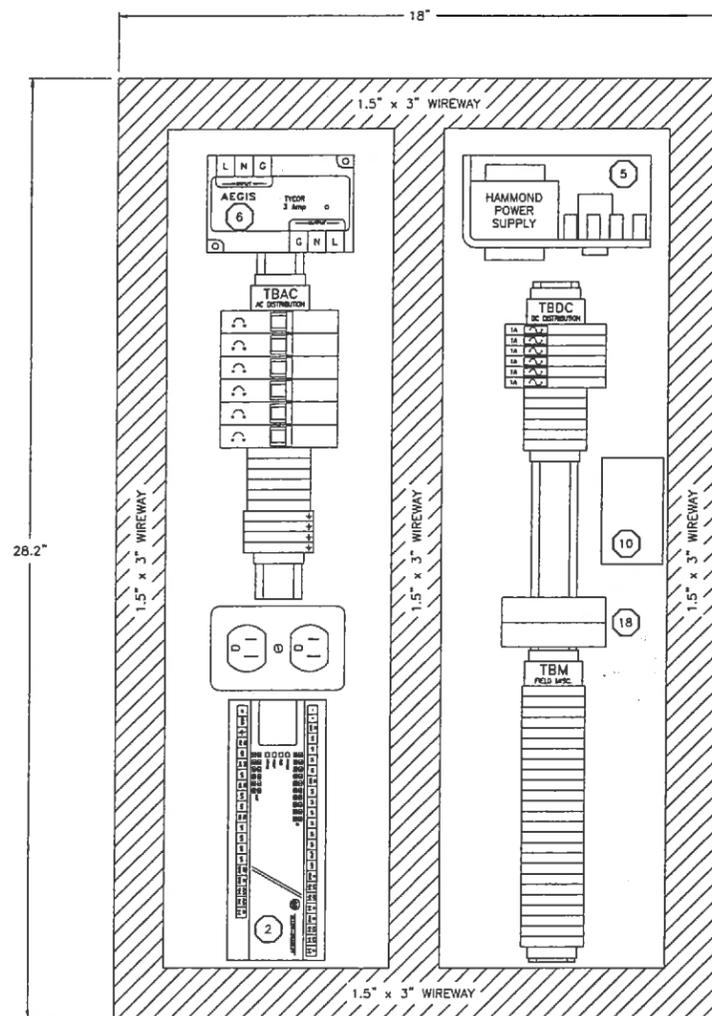
Address/Symbol Database

Address	Symbol	Scope	Description	Sym Group	Dev. Code	ABV	BLW
S:43			STI Interrupt Time				
S:44			I/O Event Interrupt Time				
S:45			Dll Interrupt Time				
S:46			Discrete Input Interrupt- File Number				
S:47			Discrete Input Interrupt- Slot Number				
S:48			Discrete Input Interrupt- Bit Mask				
S:49			Discrete Input Interrupt- Compare Value				
S:50			Processor Catalog Interrupt- Preset				
S:51			Discrete Input Interrupt- Return Number				
S:52			Discrete Input Interrupt- Accumulat				
S:53			Discrete Input Interrupt- Timer				
S:54			Discrete Input Interrupt- Timer				
S:55			Last Dll Scan Time				
S:56			Maximum Observed Dll Scan Time				
S:57			Operating System Catalog Number				
S:58			Operating System Series				
S:59			Operating System FRN				
S:61			Processor Series				
S:62			Processor Revision				
S:63			User Program Type				
S:64			User Program Functional Index				
S:65			User RAM Size				
S:66			Flash EEPROM Size				
S:67			Channel 0 Active Nodes				
S:68			Channel 0 Active Nodes				
S:69			Channel 0 Active Nodes				
S:70			Channel 0 Active Nodes				
S:71			Channel 0 Active Nodes				
S:72			Channel 0 Active Nodes				
S:73			Channel 0 Active Nodes				
S:74			Channel 0 Active Nodes				
S:75			Channel 0 Active Nodes				
S:76			Channel 0 Active Nodes				
S:77			Channel 0 Active Nodes				
S:78			Channel 0 Active Nodes				
S:79			Channel 0 Active Nodes				
S:80			Channel 0 Active Nodes				
S:81			Channel 0 Active Nodes				
S:82			Channel 0 Active Nodes				
S:83			DH+ Active Nodes				
S:84			DH+ Active Nodes				
S:85			DH+ Active Nodes				
S:86			DH+ Active Nodes				
T4:1			Reset Button Timer				
T4:1/DN			Reset Alarm Bit				
T4:2			Heater Fail Delay Timer				
T4:2/DN			Heater Fail Timer Done				
T4:3			Flasher Timer				
T4:3/DN			Flasher Bit				
T4:4			Flasher Reset Timer				
T4:4/DN			Flasher Timer Reset				
T4:5			Alarm Dialer Delay Timer				
T4:5/DN			Alarm Dialout TimerDone				

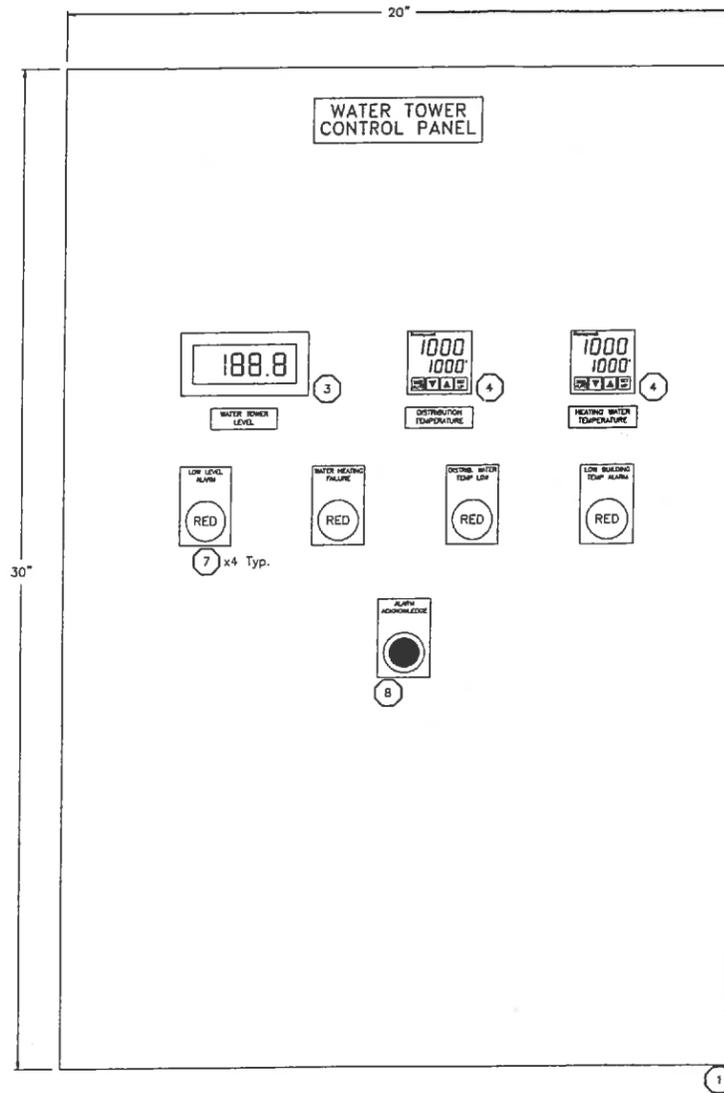
TOWER.RSS

Instruction Comment Database

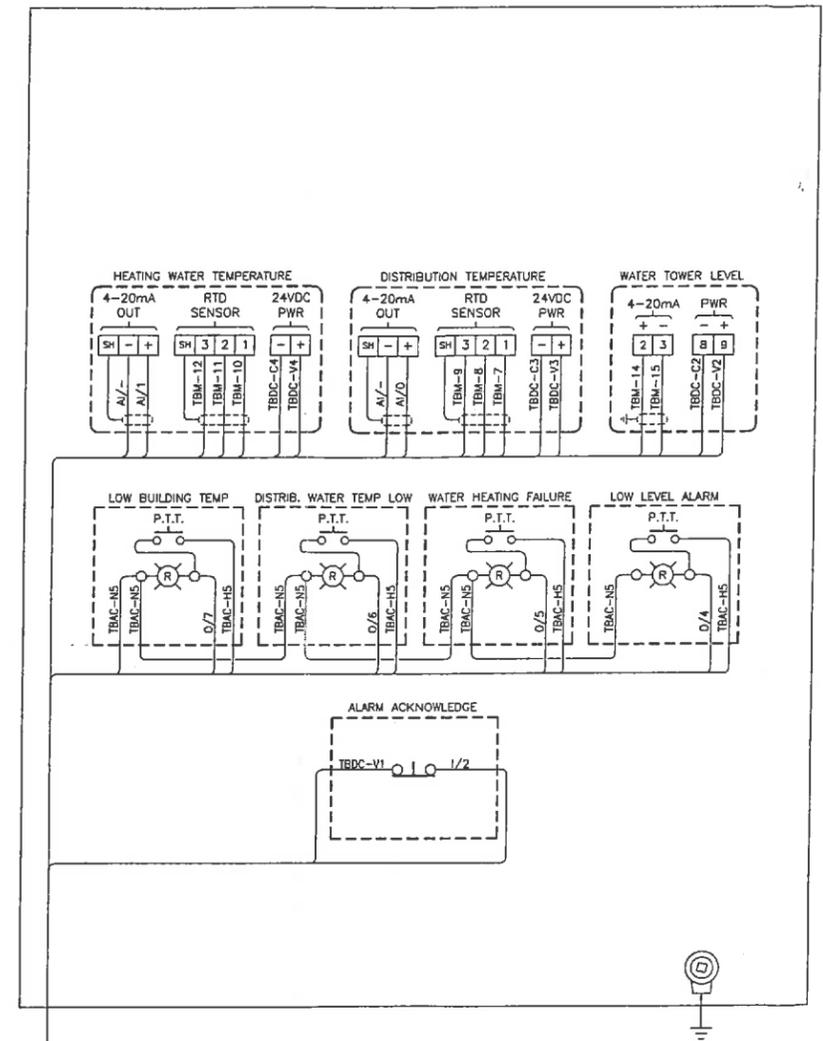
Address Instruction Description



WATER TOWER PANEL BACKPLATE LAYOUT



WATER TOWER PANEL DOOR LAYOUT



FROM PANEL BACKPLATE
SEE DWG 8051-16
FOR FURTHER DETAILS

CONTROL PANEL DOOR WIRING
SHOWN AS IF LOOKING AT BACK OF DOOR
LAYOUT MODIFIED SLIGHTLY FOR CLARITY

LEGEND:

- - DENOTES INTERNAL WIRING (BY DELCO)
- - - - - DENOTES FIELD WIRING (BY DIV. 16)
- (X) - BILL OF MATERIALS SYMBOL

NOTES:

1. ALL INTERNAL CABINET WIRING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
120 VAC LINE - BLACK #14 TEW
120 VAC NEUTRAL - WHITE #14 TEW
CONTROL - RED #16 TEW
2. ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
3. ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.
4. POWER DISTRIBUTION SHOWN ON DWG 8051-16. DETAILS SHOWN ON DWGS 8051-16. MICROLOGIX CONTROL WIRING SHOWN ON DWG 8051-17.
5. BILL OF MATERIALS SHOWN ON DWG 8051-16.

NO.	DESCRIPTION	DATE	BY	NO.	DESCRIPTION	DATE	BY
0	AS BUILT	08/24/99	D.D.				
B	RE-ISSUE FOR APPROVAL	12/09/98	B.R.				
A	ISSUE FOR APPROVAL	9/11/98	B.R.				

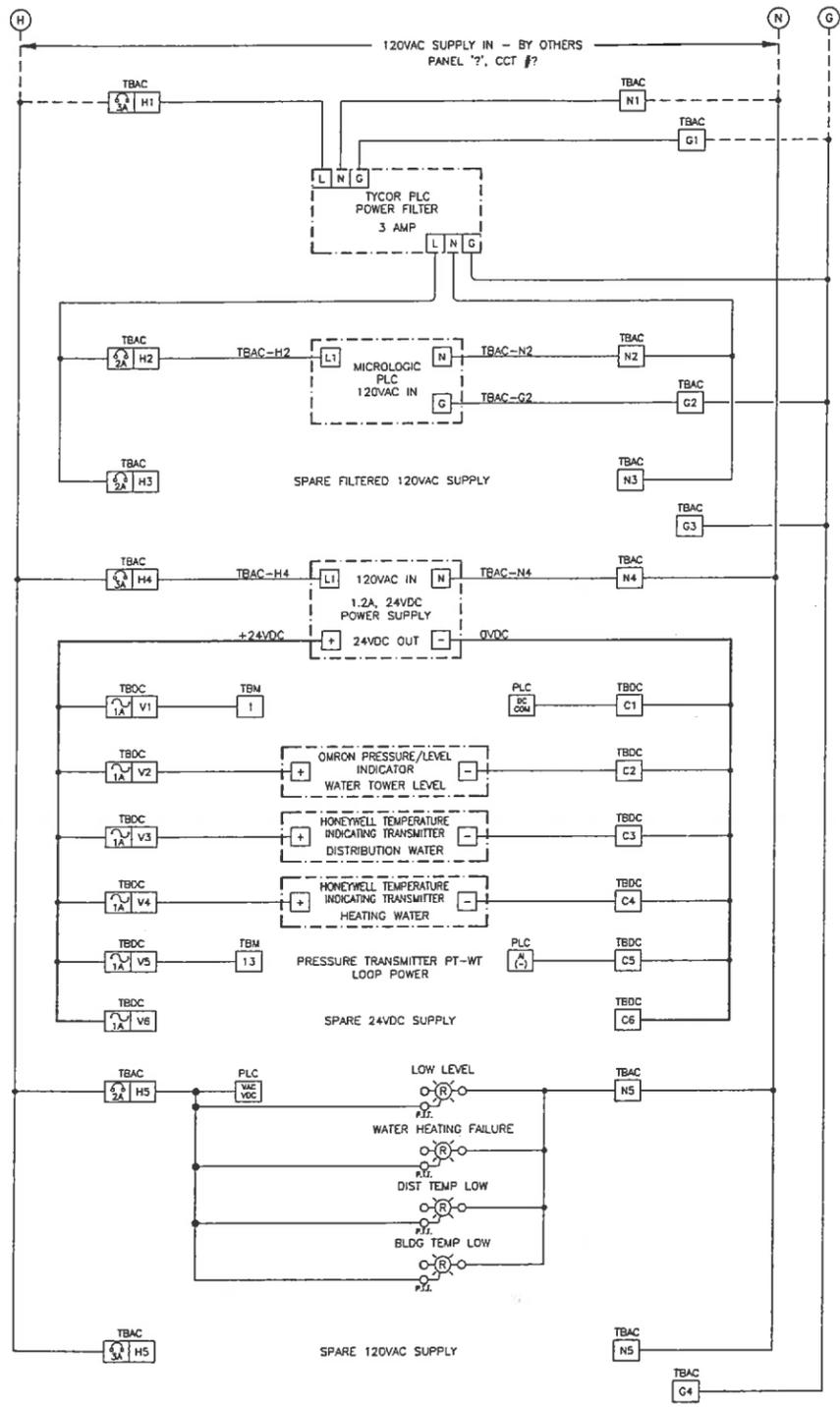
WASKESIU NATIONAL PARK
PRINCE ALBERT, SASK.
WATER TREATMENT PLANT
AND PUMPING STATION

SECTION:	
AREA:	
SCALE:	As Noted
DATE:	
DESIGNED BY:	BPR
DRAWN BY:	SON
CHECKED BY:	BPR
APPROVED BY:	

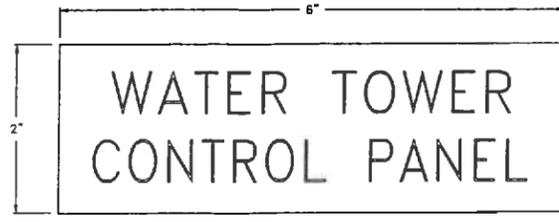


CLIENT:	PUBLIC WORKS CANADA	PROJECT NO.:	8051
TITLE:	PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT AND PUMPING STATION	DRAWING NO.:	8051-15
	WATER TOWER CONTROL PANEL LAYOUTS	REVISION NO.:	0

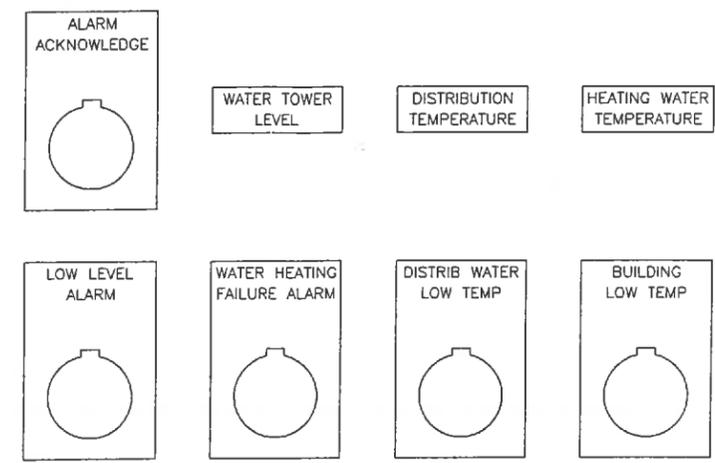
BILL OF MATERIALS			
No.	Qty.	DESCRIPTION	CAT. NO.
1	1	HOFFMAN CONCEPT ENCLOSURE - 30"x20"x8"	C-SD3020B
2	1	A-B MICROLOGIC - 12 INS, 6 OUTS, 4 ANL IN, 1 OUT	1761-L20BWA-5A
3	1	OMRON PRESSURE/LEVEL INDICATOR	K3TJ-A116C
4	2	HONEYWELL TEMPERATURE INDICATING CONTROLLER - RTD INPUT, 4-20mA OUTPUT, 24VDC POWERED	UDC-1001-70002
5	1	TYCOR 3 AMP PLC POWER FILTER	ACS-120-XS
6	1	TECTROL 1.2 AMP, 24VDC POWER SUPPLY	GHOF 1-24
7	4	A-B RED INDICATING LIGHT	800T-PL16R
8	1	A-B MOMENTARY PUSHBUTTON	800T-A2A
9	1	WEIDMULLER MARKING STAND OFF	Sch T 5
10	1	DATAFORTH SHORThAUL MODEM	LDM70
11	LOT	AEG E80 SERIES 240V BREAKERS, 3 AMP	EB15 C3
12	LOT	WIELAND FLIP-TOP FUSED TERMINALS	WK 4/TH S15...U
13	LOT	WEIDMULLER FEED-THRU TERMINALS	SAK 4/EN
14	LOT	WIELAND CLAMP-ON GROUND TERMINALS	WK 4 SL/U
15	1	NULL MODEM ADAPTOR	-
16	1	SERIAL-DIN COMMUNICATION INTERFACE CABLE	1761-CBL-PM02
17	1	TYCOR RS-485 DATA LINE FILTER (HARD WIRED)	DLSP4WHWRJ11
18	2	ENTRELEC 4-20mA TO 0-10VDC SIGNAL CONVERTER	011.115.01



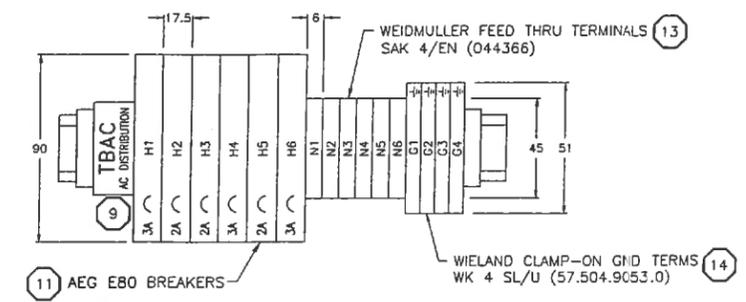
CONTROL PANEL POWER & EQUIPMENT WIRING SCHEMATIC



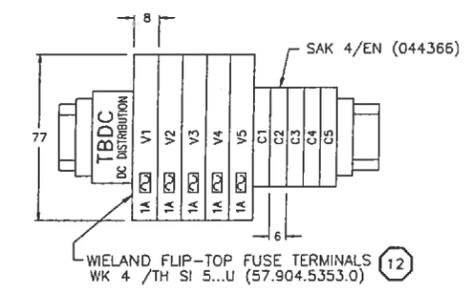
TYPICAL CONTROL PANEL LEGEND PLATE



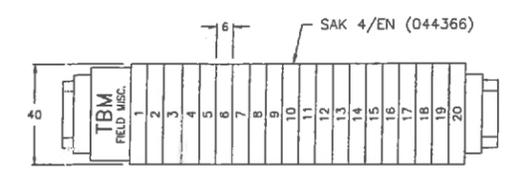
TYPICAL CONTROL PANEL DOOR LAMACOID



TBAC DISTRIBUTION BLOCK



TBDC DISTRIBUTION BLOCK



MISCELLANEOUS TB DETAIL

LEGEND:

- — — — — DENOTES INTERNAL WIRING (BY DELCO)
- - - - - DENOTES FIELD WIRING (BY DIV. 16)
- DENOTES INTERNAL PLC CONNECTION
- ⊗ DENOTES CONTROL PANEL TERMINAL
- ⊙ DENOTES STARTER TERMINAL

NOTES:

1. ALL INTERNAL CABINET WIRING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
120 VAC LINE - BLACK #14 TEW
120 VAC NEUTRAL - WHITE #14 TEW
CONTROL - RED #16 TEW
2. ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
3. ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.
4. PANEL AND DOOR LAYOUTS SHOWN ON DWG 8051-15, MICROLOGIX CONTROL WIRING SHOWN ON DWG 8051-17.

NO.	DESCRIPTION	DATE	BY	NO.	DESCRIPTION	DATE	BY
0	AS BUILT	08/24/99	D.D.				
B	RE-ISSUE FOR APPROVAL	12/09/98	B.R.				
A	ISSUE FOR APPROVAL	9/11/98	BR				

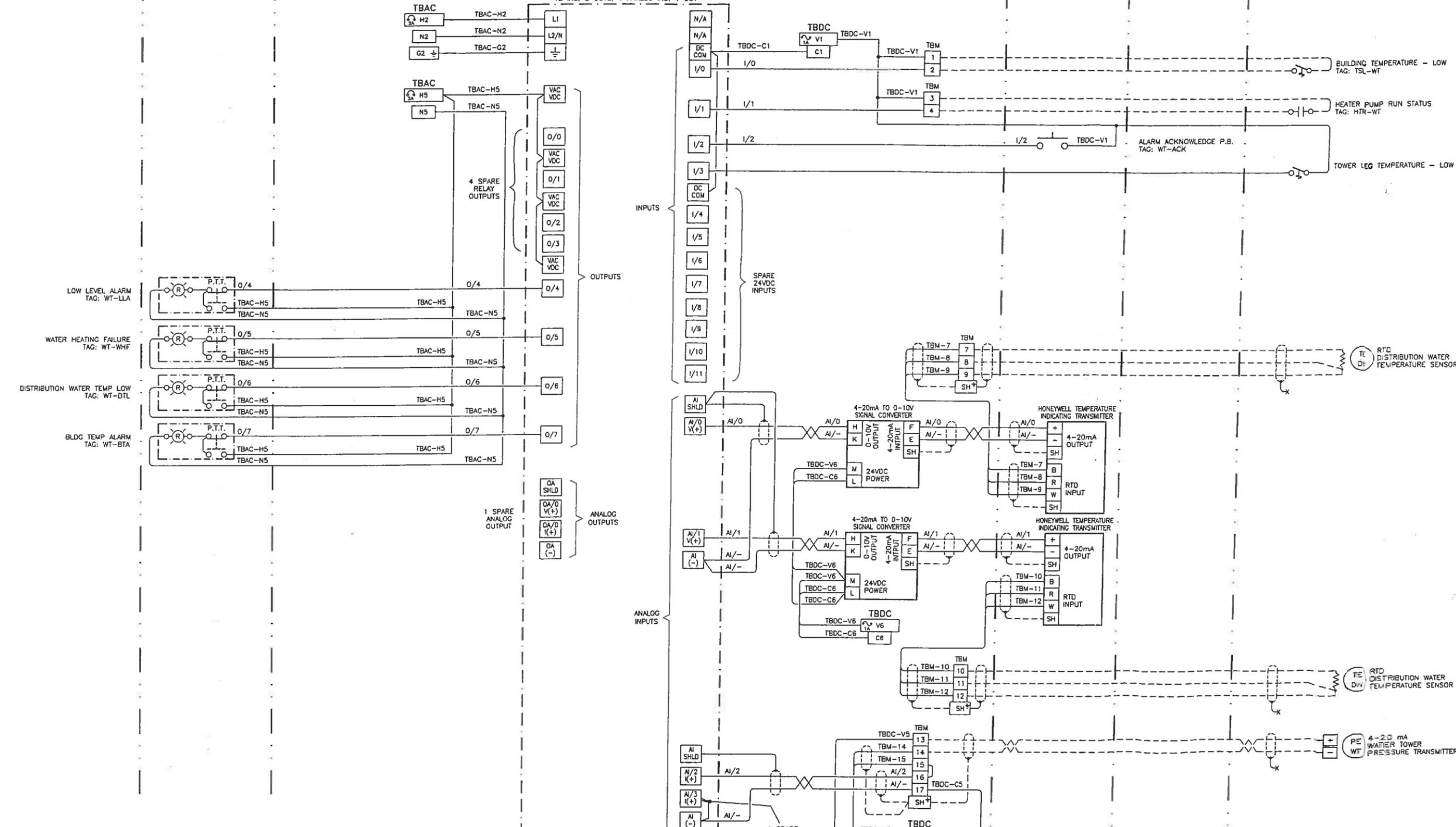
WASKESIU NATIONAL PARK
PRINCE ALBERT, SASK.
WATER TREATMENT PLANT
AND PUMPING STATION

SECTION:	
AREA:	
SCALE:	As Noted
DATE:	
DESIGNED BY:	BPR
DRAWN BY:	SON
CHECKED BY:	BPR
APPROVED BY:	



CUSTOMER:	PUBLIC WORKS CANADA	PROJECT NO.:	8051
TITLE:	PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT & PUMPING STATION WATER TOWER CONTROL PANEL POWER DISTRIBUTION & MISC DETAILS	DRAWING NO.:	8051-16
		REVISION NO.:	0

1761-L20BWA-5A
A-B MICROLOGIX 1000
PROGRAMMABLE CONTROLLER
12 INS, 6 OUTS, 4 ANALOG INS, 1 OUT



LEGEND:

- DENOTES INTERNAL WIRING (BY DELCO)
- - - DENOTES FIELD WIRING (BY DW. 16)
- DENOTES INTERNAL PLC CONNECTION
- X — CONTROL PANEL TERMINAL
- ⊗ — STARTER TERMINAL

NOTES:

1. ALL INTERNAL CABINET WIRING SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
120 VAC LINE — BLACK #14 TEW
120 VAC NEUTRAL — WHITE #14 TEW
CONTROL — RED #16 TEW
2. ALL INTERNAL WIRING IS BY DELCO. ANY EXTERNAL WIRING BY OTHERS.
3. ALL WIRE TAGS SHALL BE THE SAME AT BOTH ENDS OF THE WIRES.
4. PANEL AND DOOR LAYOUTS SHOWN ON DWG 8051-15. POWER DISTRIBUTION & MISC DETAILS SHOWN ON DWG 8051-16.

NO.	DESCRIPTION	DATE	BY	NO.	DESCRIPTION	DATE	BY
0	AS BUILT	08/25/99	D.D.				
B	RE-ISSUE FOR APPROVAL	12/09/98	B.R.				
A	ISSUE FOR APPROVAL	9/11/98	B.R.				

WASKESIU NATIONAL PARK
PRINCE ALBERT, SASK.
WATER TREATMENT PLANT
AND PUMPING STATION

SECTION:	
AREA:	
SCALE:	As Noted
DATE:	
DESIGNED BY:	BPR
DRAWN BY:	SON
CHECKED BY:	BPR
APPROVED BY:	

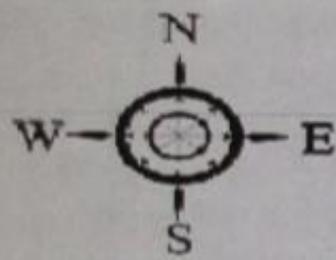


CLIENT:	PUBLIC WORKS CANADA	PROJECT NO.:	8051
TITLE:	PRINCE ALBERT NATIONAL PARK WATER TREATMENT PLANT & PUMPING STATION WATER TOWER MICROLOGIX CONTROL WIRING	DRAWING NO.:	8051-17
		REVISION NO.:	0

CONTRACT DOCUMENTS



Appendix G - SCADA Screenshots



WASKESIU LAKE

Intake Pump Station



Water Treatment Plant



Sewage Lift Station #1



Sewage Lift Station #2



Sewage Lift Station #3



Water Tower



Alarm Summary

Report Gen.

Comm. Status

WTP:	Good
Intake:	Good
Tower:	Good
WTU:	Good
uFilt.:	Good
SLS#1:	Bad
SLS#2:	Good
SLS#3:	Good

PRINCE ALBERT NATIONAL PARK WATER TREATMENT SYSTEM

'DTE//wtp\nres_alm_group' - Expression Evaluation error - The value of tag 'wtp\north_res_hi_alm' is in error.

Clear

Clear All

North **South**



Sensor Select

WATER TREATMENT PLANT

Trending

Alarm Summary

Map

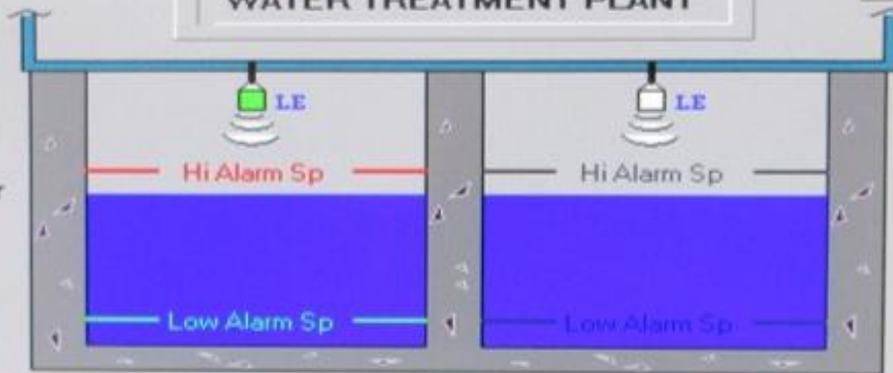
North Reservoir

3166 mm

Calling for raw water: **Yes**

South Reservoir

3170 mm



Chlorine Analyser

0.82 mg / litre

Turbidity

Raw: 0.93 NTU
Treated: 2.31 NTU

Flow

Raw: 20.3 L/s
Dist: 0 L/s

Dist. Pressure

443 kPa

Transfer Switch:

Utility

Chlorine
56 kg

TSL

CS

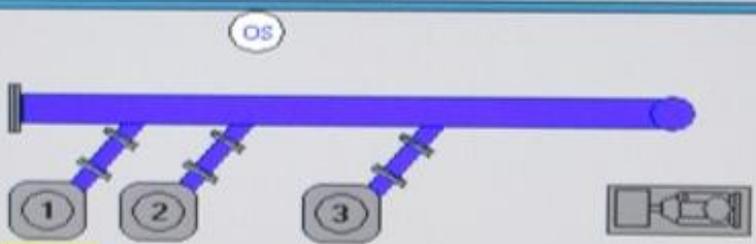
Chlorinator Vlv:
Open

TSL

Pump Alternation

Auto

1 Is Lead



Ultra-Violet
Disinfection

UV Trending

Water Treatment Unit
Selected

Propane Level

138 mm

Micro-Filtration Unit

'DTE//wtp\res_alm_group' - Expression Evaluation error - The value of tag 'wtp\north_res_hi_alm' is in error.

Clear

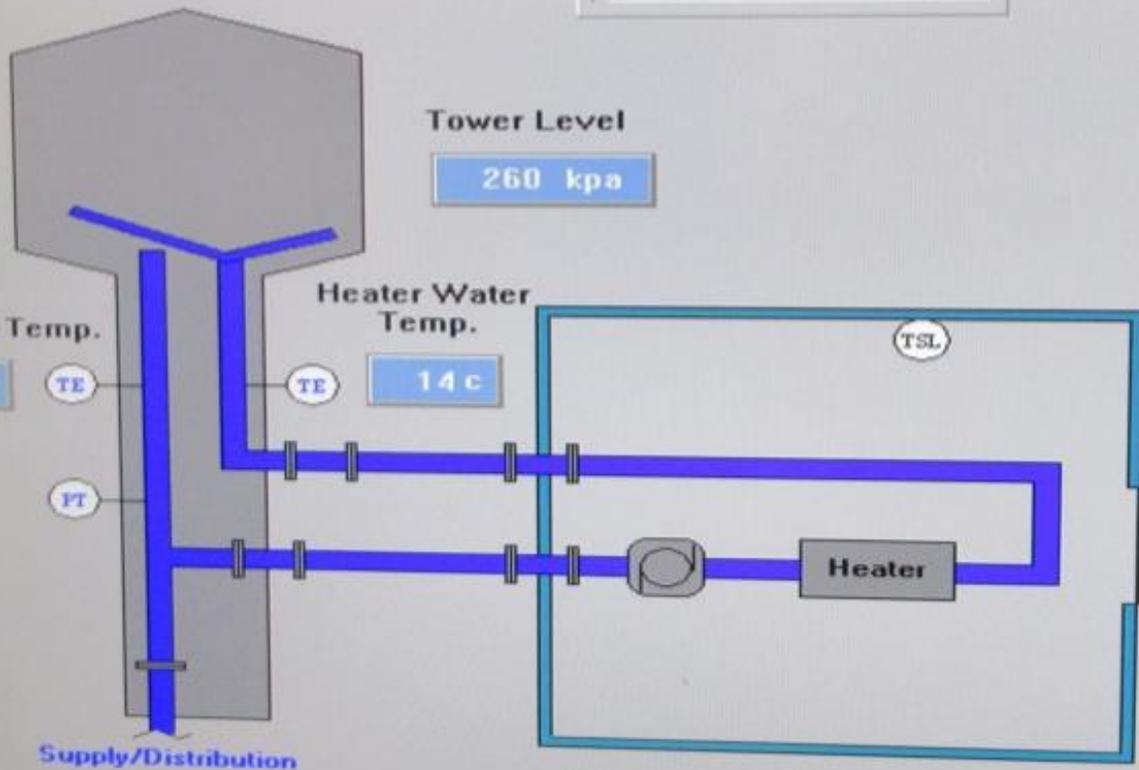
Clear All

WASKESIU TOWER

Trending

Alarm Summary

Map



Tower Level
260 kpa

PUMP CALLS

All Pumps Off
1st Pump
2nd Pump
3rd Pump

ALARMS PANEL

Low Bldg. Temp	Ack	Rst.
Low Dist. Temp	Ack	Rst.
Heater Pump	Ack	Rst.
High Level	Ack	Rst.
Low Level	Ack	Rst.

'DTE//wtp/nres_alm_group' - Expression Evaluation error - The value of tag 'wtp/north_res_hi_alm' is in error.

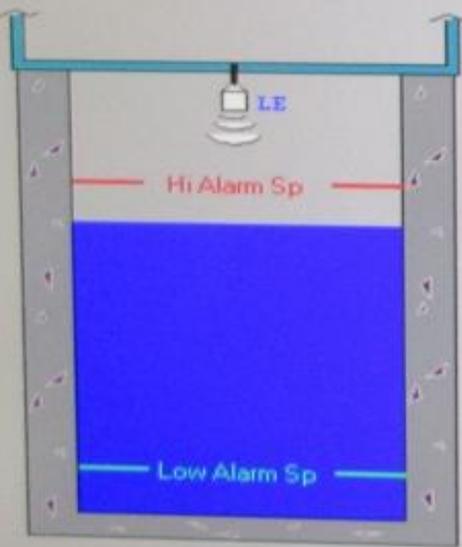
Clear Clear All

INTAKE PUMPHOUSE

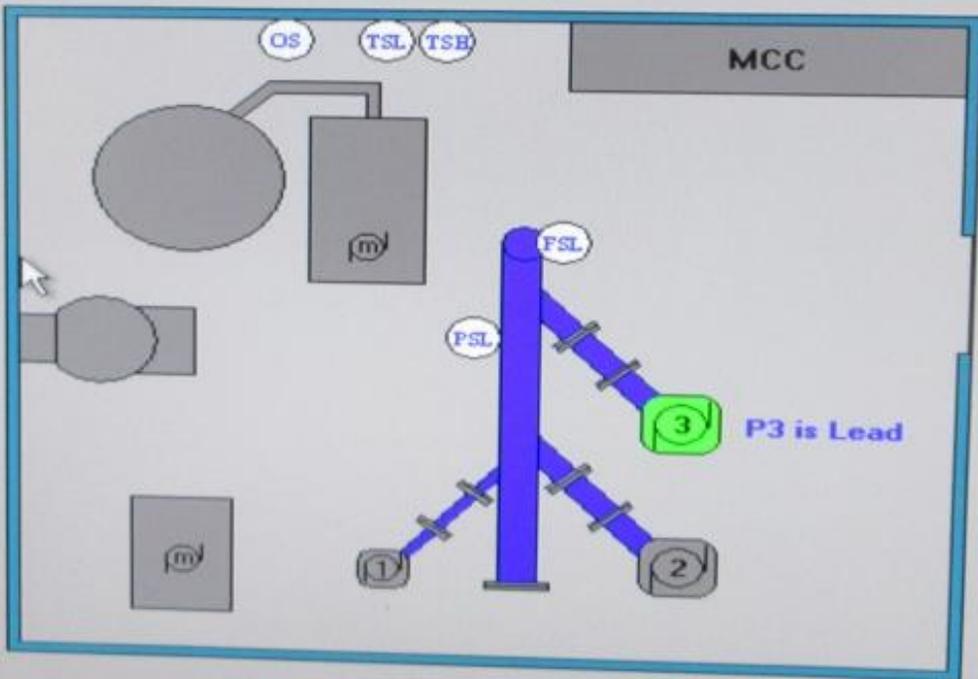
Trending

Alarm Summary

Map



Reservoir Level:
3116 mm



HI/LO Rate Switch Pos.: **Hi Rate**

ALARMS PANEL

Low Flow	Ack	Rst.
Low Press.	Ack	Rst.
Floor Flood	Ack	Rst.
High Level	Ack	Rst.
Low Level	Ack	Rst.
MCC Filter	Ack	Rst.
Low Temp.	Ack	Rst.
High Temp.	Ack	Rst.
Pump #1	Ack	Rst.
Pump #2	Ack	Rst.
Pump #3	Ack	Rst.

'DTE//wtp\nres_alm_group' - Expression Evaluation error - The value of tag 'wtp\north_res_hi_alm' is in error.

North South



Sensor Select

WATER TREATMENT PLANT

Trending

Alarm Summary

M

North Reservoir
318 mm

Calling for raw water: Yes

South Reservoir
3189 mm

UV_system - Display

ULTRAVIOLET DISINFECTION SYSTEM

UV-OFF

AUTO **HAND**

UV REACTOR A

DOSE
mJ/cm²
4.4

INTENSITY
W/m²

REMOTE ON

UV REACTOR B

DOSE
mJ/cm²
2.0

INTENSITY
W/m²

REMOTE ON

Done

Chlorine Analyser

0.81 mg / litre

Turbidity

Raw: 1.00 NTU
Treated: 2.31 NTU

Flow

Raw: 20.4 L/s
Dist: 0 L/s

Dist. Pressure

441 kPa

Transfer Switch:

Utility

Chlorine
56 kg

Chlorinator Vlv:
Open

'DTE//wtp/res_alm_group' - Expression Evaluation error - The value of tag 'wtp\north_res_hi_alm' is in error.

ULTRA-VIOLET TRENDING

Done

Scroll Y-Axis
▲
▼
Reset Y-Axis

Zoom Y-Axis
- x5
-0
- x1/5



Reset X-Axis

◀ Scroll Backward **Resumed** Scroll Forward ▶ Newest Data

Time Range (Hours)
0.5 [Slider] 12

! DTE://wtp/nres_alm_group - Expression Evaluation error - The value of tag 'wtp\north_res_hi_alm' is in error.

Clear Clear All

North **South**



Sensor Select

WATER TREATMENT PLANT

Trending

Alarm Summary

Map

wtu - Display

WATER TREATMENT UNIT

Timer Name	Preset Value	Accumulated
Flush Interval	400 min	153
B.W. Interval	650 min	153
Fluidize Duration	60 sec	0
Flush Duration	150 sec	0
Rinse Duration	330 sec	0
High Rate B.W.	450 sec	0
Filter to Waste	10 min	0
Initialize Waste	5 min	5

Statuses

Unit Start
B.W. Allow
Feed Chem.

Common Alarm Failed To Run

Alarms

A/C Over Press
B.W. Alarm
Blower Trip
B.W. Pump Trip
Filter Pump Trip

Headloss B/W Request **ON** [Clear]

[Ack] [Rst] [Ack] [Rst]

[Done]

Calling for raw water: **Yes**

North Reservoir
3194 mm

h Reservoir
3197 mm

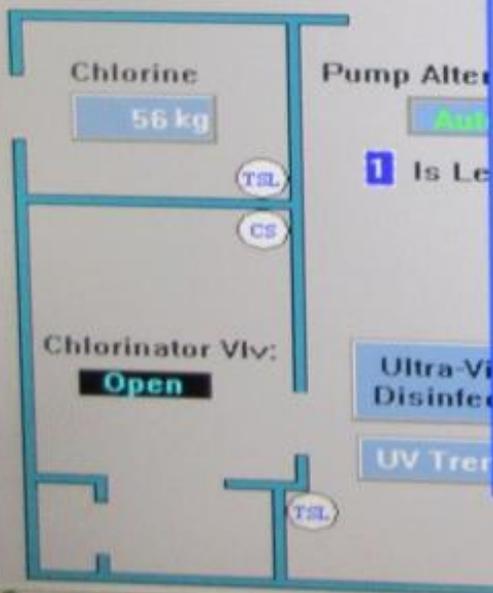
Chlorine Analyser
0.81 mg / litre

Turbidity
Raw: 0.97 NTU
Treated: 2.31 NTU

Flow
Raw: 20.4 L/s
Dist: 0 L/s

Dist. Pressure
435 kPa

Transfer Switch:
Utility



'DTE//wtp/pres_alm_group' - Expression Evaluation error - The value of tag 'wtp\north_res_hi_alm' is in error.

MICRO-FILTRATION UNIT

Current State:

Shutdown Alarms

- E-Stop
- Feed Pump Fault
- Feed Pressure High
- Feed Tank Low
- Filtrate Flow Low
- Filtrate Flow High
- Sweep Feed Flow Low
- Pressure Decay Exceeded
- CIP Recirc Flow Low
- TMP Exceeding MAX
- CIP Request Auto

Warning Alarms

- Sweep Flow Low
- Initial Press. For Membrane Out of Range
- Pressure Decay Exceeded
- Press. For Sonic Test Out of Range
- Filtrate Flow Rate Low
- Filtrate Flow Rate High

Particle Counter

Size 2-5 um	<input type="text"/>	counts
Size 5-10 um	<input type="text"/>	counts
Size 10-15 um	<input type="text"/>	counts
Total Normalized	<input type="text"/>	counts
Flow Rate	0	ml/min

Common Alarm
Failed To Run

High Flow Alarm
Low Flow Alarm
High Particle Count Alarm

Trending

Alarm Summary

Map

North

South

Sensor Select



WATER TREATMENT PLANT

wtp_propane_alm - Display

WTP PROPANE

Level: 138 mm

Low Alarm SP: 100 mm

Low Level

Ack

Rst

Done

Calling for raw water: **Yes**

South Reservoir

3195 mm

North Reservoir

3197 mm

Chlorine Analyser

0.81 mg / litre

Turbidity

Raw: 0.88 NTU

Treated: 2.31 NTU

Flow

Raw: 20.3 L/s

Dist: 0 L/s

Dist. Pressure

436 kPa

Transfer Switch:

Utility

Chlorine

56 kg

TSL

CS

Chlorinator Vlv:

Open

Pump Alternation

Auto

1 Is Lead

1

2

3

P1

Ultra-Violet Disinfection

UV Trending

Water Treatment Unit Selected

Micro-Filtration Unit

Propane Level

138 mm

LSB

LIT

'DTE://wtp/res_alm_group' - Expression Evaluation error - The value of tag 'wtp/north_res_hi_alm' is in error.

Clear

Clear All

North

South wtp_res - Display

WTP NORTH RES.

WTP SOUTH RES.

Level: 3198 mm
 High Alarm SP: 3600 mm
 Low Alarm SP: 500 mm

Level: 3203 mm
 High Alarm SP: 3600 mm
 Low Alarm SP: 500 mm

High Level [Ack] [Rst]
 Low Level [Ack] [Rst]

High Level [Ack] [Rst]
 Low Level [Ack] [Rst]

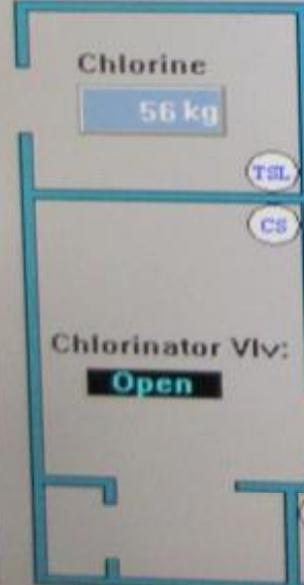
CLEARWELL LEVEL CONTROL

Call Pumps Off SP: 3400 mm
 Call Lead Pump On SP: 3050 mm
 Call Lag Pump On SP: 2300 mm

CLEARWELL CALLING TOTALIZER

[Reset Totalizer] 28320 Hours 31 Min

[Done]



[Disinfection]
 [UV Trending]

[Water Treatment Unit Selected]

[Micro-Filtration Unit]

[Propane Level 138 mm]

Alarm Summary

ing for raw water: Yes

Reservoir

mm

Chlorine Analyser

0.81 mg / litre

Turbidity

Raw: 0.93 NTU
 Treated: 2.31 NTU

Flow

Raw: 20.4 L/s
 Dist: 0 L/s

Dist. Pressure

448 kPa

Transfer Switch:

Utility

Clear Clear All

'DTE//wtp\nres_alta_group' - Expression Evaluation error - The value of tag 'wtp\north_res_hi_alm' is in error.

North **South**



Sensor Select

North Reservoir
3200 mm

WATER TREATMENT PLANT

wtp_cl_analyser_alm - Display

CHLORINE ANALYSER

Free Chlorine Residual: 0.81 mg/L
 High Alarm SP: 4.00 mg/L
 Low Alarm SP: 0.20 mg/L

High Chlorine Residual
 Low Chlorine Residual
 Chlorine Analyser Warning
 Chlorine Analyser System Alarm

Ack Rst
 Ack Rst
 Ack Rst
 Ack Rst

Done

Chlorine
56 kg

Chlorinator Vlv:
Open

Ultra-Violet Disinfection
UV Trending

Pump Alternation
Auto

1 Is Lead

1
P1

Water Treatment Unit
Selected

Micro-Filtration Unit

Propane Level
138 mm

raw water: **Yes**

Chlorine Analyser
8 mg / litre

Turbidity
w: 0.95 NTU
d: 2.31 NTU

Flow
now: 20.3 L/s
Dist: 0 L/s

Dist. Pressure
439 kPa

Transfer Switch:
Utility

'DTE//wtp/res_alm_group' - Expression Evaluation error - The value of tag 'wtp/north_res_hi_alm' is in error.

South

Sensor Select

WATER TREATMENT PLANT

Trending

Alarm Summary

wtp_turb_alm - Display

DISTRIBUTION TURBIDITY

Dist. Turbidity: 2.31 NTU
High Alarm SP: 4.00 NTU

High Dist. Turbidity Ack Rst.

Done

North Reservoir
3200 mm

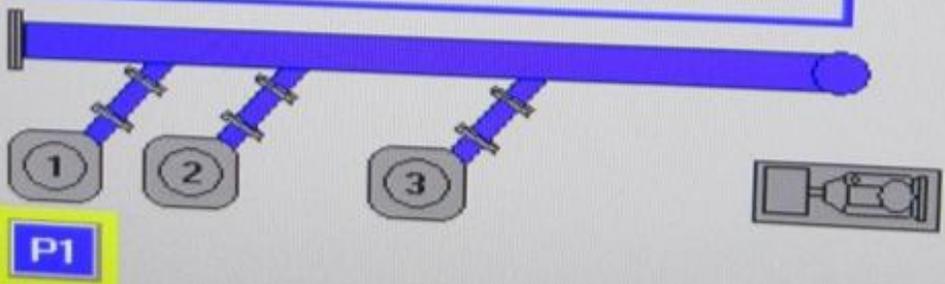
Calling for raw wa
South Reservoir
3209 mm

Chlorine Ana
0.81 mg /

Pump Alternation

Auto

1 Is Lead



Turbidity

Raw: 1.00
Treated: 2.31

ator Vlv:
en

Ultra-Violet Disinfection

UV Trending

Water Treatment Unit
Selected

Propane Level
138 mm

Flow

Raw: 20.4L
Dist: 0L

Micro-Filtration Unit

Dist. Pressu
438 kPa

North **South**

Sensor Select

WATER TREATMENT PLANT

Trending

Alarm Summa

North Reservoir
3206 mm

South Reservoir
3209 mm

wtp_flow_alm - Display

WTP FLOW

Raw Water Flow: 21 L/s
 Low Alarm SP: 2 L/s
 Dist Water Flow: 0 L/s
 Low Alarm SP: 0 L/s

Low Raw Flow [Ack] [Rst.]
 Low Dist. Flow [Ack] [Rst.]

DISTRIBUTION FLOW TOTAL
 [Reset Totalizer] **2335634** m³

[Done]

Water Treatment Unit Selected

Micro-Filtration Unit

Calling for raw wa

Chlorine 56 kg

Chlorinator Vlv: **Open**

Chlorine sensors: TSL, CS, TSL

Pump Alternation **Auto**

1 Is Lead

Ultra-Violet Disinfection

UV Trending

Water Treatment Unit Selected

Micro-Filtration Unit

Propane Level
138 mm

Chlorine Analy
0.81 mg / l

Turbidity
Raw: 0.91
Treated: 2.31

Flow
Raw: 20.3 L/s
Dist: 0 L/s

Dist. Pressure
441 kPa

Transfer Switch
Utility

'DIE//wtp\pres_alm_group' - Expression Evaluation error - The value of tag 'wtp\north_res_hi_alm' is in error.

Clear

North **South**



Sensor Select

WATER TREATMENT PLANT

Trending Alarm Summary Map

North Reservoir
3204 mm

South Reservoir
3209 mm

wtp_press_alm - Display

DISTRIBUTION PRESSURE

Pressure: 437 kPa
Low Alarm SP: 200 kPa

Low Pressure [Ack] [Rst.]

[Done]

Calling for raw water: **Yes**

Chlorine
56 kg

Chlorine Analyser
0.81 mg / litre

Pump Alternation
[Auto]

1 Is Lead

Turbidity
Raw: 0.97 NTU
Treated: 2.31 NTU



Chlorinator Vlv:
Open

Ultra-Violet Disinfection
UV Trending

Flow
Raw: 20.3L/s
Dist: 0 L/s

Water Treatment Unit
Selected

Propane Level
138 mm

Dist. Pressure
437 kPa

Micro-Filtration Unit

Transfer Switch:
Utility

TE[/wtp/press_alm_group] - Expression Evaluation error - The value of tag 'wtp\north_res_hi_alm' is in error.

[Clear] [Clear Δ]

North **South**



Sensor Select

WATER TREATMENT PLANT

Trending Alarm Summary

North Reservoir
3207 mm

Calling for raw water: 
South Reservoir
3214 mm

wtp_cl_alm - Display

WTP CHLORINE

Weight: 56 kg
Low Alarm SP: 2 kg

Low Temp.	Ack	Rst.
Leak	Ack	Rst.
Low Weight	Ack	Rst.

Done

Chlorine
56 kg

Pump Alternation
Auto
1 Is Lead

Chlorine Analyser
0.81 mg / litre

Turbidity
Raw: 0.97 NTU
Treated: 2.30 NTU

Chlorinator Vlv:
Open

Ultra-Violet Disinfection
UV Trending

Water Treatment Unit Selected

Propane Level
138 mm

Micro-Filtration Unit

Flow
Raw: 20.3 L/s
Dist: 0 L/s

Dist. Pressure
441 kPa

Transfer Switch:
Utility

North **South**

Sensor Select

North Reservoir
3218 mm

WATER TREATMENT PLANT

wtp_pumps - Display

WTP PUMPS

Pump #1	Ack	Rst.
Pump #2	Ack	Rst.
Pump #3	Ack	Rst.

Done

Calling for raw water: **Yes**

South Reservoir
3221 mm

Chlorine Analyser
0.81 mg / litre

Turbidity
Raw: 0.94 NTU
Treated: 2.32 NTU

Flow
Raw: 20.4 L/s
Dist: 0 L/s

Dist. Pressure
442 kPa

Transfer Switch:
Utility

Chlorine
56 kg

Chlorinator Vlv:
Open

Ultra-Violet Disinfection

UV Trending

Pump Alternation
Auto

1 Is Lead

1 2 3

P1

Water Treatment Unit
Selected

Micro-Filtration Unit

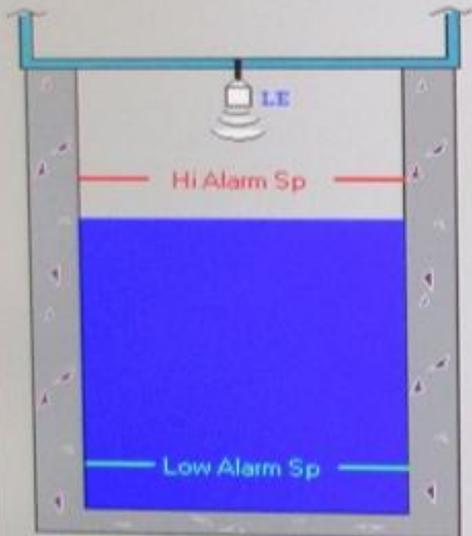
Propane Level
138 mm

INTAKE PUMPHOUSE

Trending

Alarm Summary

Map



Reservoir Level:

3112 mm

intake_res - Display

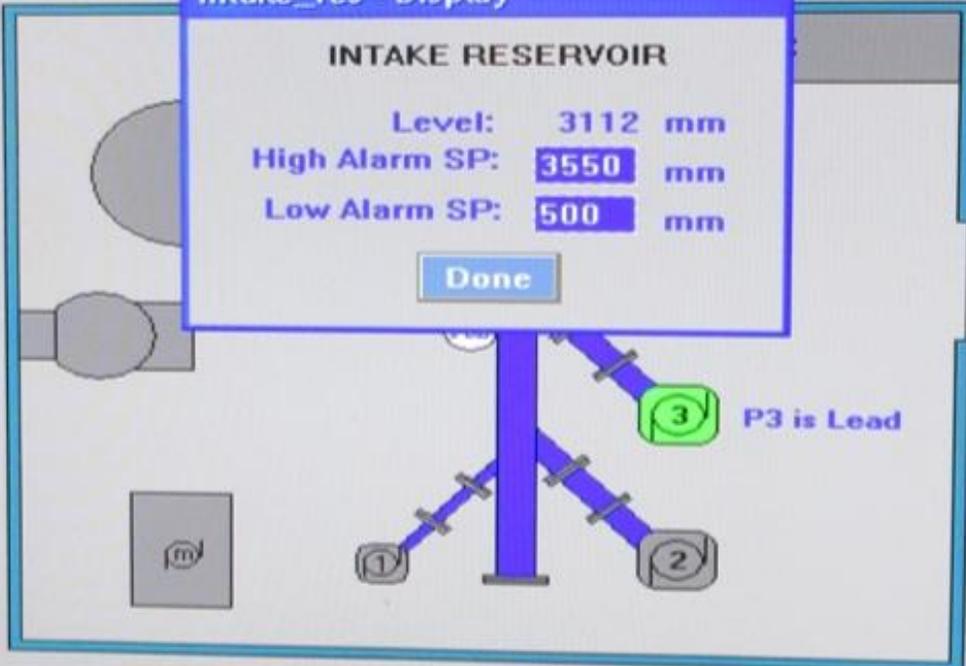
INTAKE RESERVOIR

Level: 3112 mm

High Alarm SP: 3550 mm

Low Alarm SP: 500 mm

Done



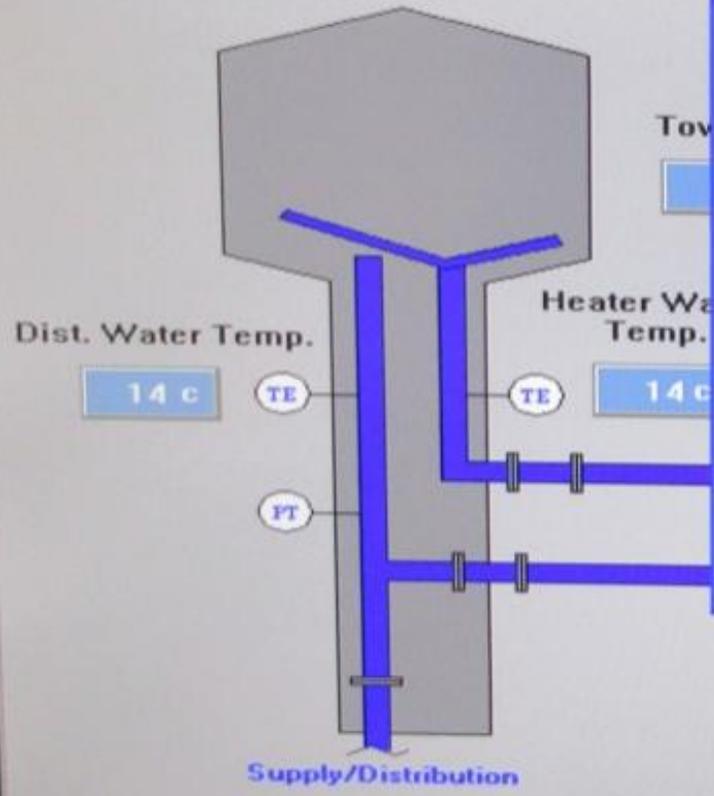
HI/LO Rate Switch Pos.: **Hi Rate**

ALARMS PANEL

Low Flow	Ack	Rst
Low Press.	Ack	Rst
Floor Flood	Ack	Rst
High Level	Ack	Rst
Low Level	Ack	Rst
MCC Filter	Ack	Rst
Low Temp.	Ack	Rst
High Temp.	Ack	Rst
Pump #1	Ack	Rst
Pump #2	Ack	Rst
Pump #3	Ack	Rst

'DTE://wtp/nres_alm_group' - Expression Evaluation error - The value of tag 'wtp\north_res_hi_alm' is in error.

Clear Clear All



tower_res - Display

TOWER RESERVOIR

Pressure:	256 kpa
High Alarm SP:	268 kpa
Low Alarm SP:	210 kpa
Pumps Off SP:	265 kpa
1st Pump Call SP:	255 kpa
2nd Pump Call SP:	240 kpa
3rd Pump Call SP:	220 kpa
Dist. Temp Low SP:	3 °c
Heater ON SP:	5 °c

Done

PUMP CALLS

All Pumps Off
1st Pump
2nd Pump
3rd Pump

ALARMS PANEL

Low Bldg. Temp	Ack	Rst
Low Dist. Temp	Ack	Rst
Heater Pump	Ack	Rst
High Level	Ack	Rst
Low Level	Ack	Rst