

Project Setup

Worksheet Title  
Company Name  
Date

Autodesk Fabrication Service Template (Pipe Class) Schedule  
Client

10/1/2018



**MODERN**  
CONSTRUCTION SERVICES

**Autodesk Fabrication Service Template (Pipe Class) Schedule**

| Client |                                      | 10/1/2018 |               |            |
|--------|--------------------------------------|-----------|---------------|------------|
| Tag    | Service Template (Pipe Class)        | Phase     | Initial Build | Final Pass |
| 1      | MG - CU K Brz Clean                  |           |               |            |
| 2      | MG - CU L Brz Clean                  |           |               |            |
| 3      | MG - CU L Swt Vacuum                 |           |               |            |
| 4      | MP - 304L S10 BW (Exhaust)           |           |               |            |
| 5      | MP - 304L S40 BW (Exhaust)           |           |               |            |
| 6      | MP - A53 300 SW (2) BW (Hyd)         |           |               |            |
| 7      | MP - A53 300 SW (2) BW (Stm)         |           |               |            |
| 8      | MP - A53 300 Thd (2) BW (Hyd)        |           |               |            |
| 9      | MP - A53 300 Thd (2) BW (Stm)        |           |               |            |
| 10     | MP - A53 300 Thd (2) XH BW (Stm)     |           |               |            |
| 11     | MP - A53 S40 BW (Exhaust)            |           |               |            |
| 12     | MP - A53 S80 300 Thd (2) XH BW (Stm) |           |               |            |
| 13     | MP - A53 S80 BW                      |           |               |            |
| 14     | MP - A53 S80 SW (2) BW (Cond)        |           |               |            |
| 15     | MP - A53 S80 SW (2) BW (Hyd)         |           |               |            |
| 16     | MP - A53 S80 SW (2) BW (Stm)         |           |               |            |
| 17     | MP - A53 S80 Thd (2) BW (Cond)       |           |               |            |
| 18     | MP - A53 S80 Thd (2) BW (Hyd)        |           |               |            |
| 19     | MP - A53 S80 Thd (2) BW (Stm)        |           |               |            |
| 20     | MP - A53 SW (1.5) Grv                |           |               |            |
| 21     | MP - A53 SW (2) BW (Gas)             |           |               |            |
| 22     | MP - A53 SW (2) BW (Hyd)             |           |               |            |
| 23     | MP - A53 SW (2) BW (Stm)             |           |               |            |
| 24     | MP - A53 SW (2) Grv                  |           |               |            |
| 25     | MP - A53 Thd (1.5) Grv               |           |               |            |
| 26     | MP - A53 Thd (2) BW (Gas)            |           |               |            |
| 27     | MP - A53 Thd (2) BW (Hyd)            |           |               |            |
| 28     | MP - A53 Thd (2) BW (Stm)            |           |               |            |
| 29     | MP - A53 Thd (2) Grv                 |           |               |            |
| 30     | MP - CU DWV Swt                      |           |               |            |
| 31     | MP - CU L Brz ACR                    |           |               |            |
| 32     | MP - CU L Press (2) A53 BW           |           |               |            |
| 33     | MP - CU L Press (2) A53 Grv          |           |               |            |
| 34     | MP - CU L Swt (1.5) A53 Grv          |           |               |            |
| 35     | MP - CU L Swt (2) A53 BW             |           |               |            |
| 36     | MP - CU L Swt (2) A53 Grv            |           |               |            |
| 37     | MP - CU L Swt (2) SS304 S10 Grv      |           |               |            |
| 38     | MP - CU L Swt (2) SS304 S40 Grv      |           |               |            |
| 39     | MP - HDPE SDR 11 SF (2) BF           |           |               |            |
| 40     | MP - HDPE SDR 17 SF (2) BF           |           |               |            |
| 41     | MP - HDPE SDR 9 SF (2) BF            |           |               |            |
| 42     | MP - SS304 S40 Thd (2) Grv           |           |               |            |
| 43     | PL - CI Hub And Spigot               |           |               |            |
| 44     | PL - CI NH-Hvy Coup                  |           |               |            |
| 45     | PL - CI NH-Std Coup                  |           |               |            |
| 46     | PL - CPVC CTS x Sch 80               |           |               |            |
| 47     | PL - CPVC Sch 80                     |           |               |            |
| 48     | PL - CPVC Solv Sch 40                |           |               |            |
| 49     | PL - CU K Brz (2) DI MJ              |           |               |            |
| 50     | PL - CU L Press (2) Grv              |           |               |            |
| 51     | PL - CU L Press (2) SS304 S10 BW     |           |               |            |
| 52     | PL - CU L Press (2) SS304 S10 Grv    |           |               |            |
| 53     | PL - CU L Swt (2) Grv                |           |               |            |
| 54     | PL - CU L Swt (2) SS304 S10 Grv      |           |               |            |
| 55     | PL - CU L Swt (2) SS304 S40 Grv      |           |               |            |
| 56     | PL - DI MJ                           |           |               |            |
| 57     | PL - Duriron                         |           |               |            |
| 58     | PL - PEX                             |           |               |            |
| 59     | PL - PolyPro Fuse Sch 40             |           |               |            |
| 60     | PL - PolyPro Mech Sch 40             |           |               |            |
| 61     | PL - PVC DWV Sch 40                  |           |               |            |
| 62     | PL - PVC Sch 80                      |           |               |            |
| 63     | PL - SS304 S40 Thd (2) Grv           |           |               |            |
| 64     | PL - Temp Glass                      |           |               |            |

Plumbing - Pressure

| Tag | Service Group | Service Name (Flow Stream) | Service Template (Pipe Class)     | Complete |
|-----|---------------|----------------------------|-----------------------------------|----------|
| 24  | PL            | Deionized Water            | PL - PVC Sch 80                   |          |
| 25  | PL            | Domestic CW                | PL - CPVC CTS x Sch 80            |          |
| 26  | PL            | Domestic CW                | PL - CPVC Sch 80                  |          |
| 27  | PL            | Domestic CW                | PL - CU Press (2) Grv*            |          |
| 28  | PL            | Domestic CW                | PL - CU L Press (2) SS304 S10 BW  |          |
| 29  | PL            | Domestic CW                | PL - CU L Press (2) SS304 S10 Grv |          |
| 30  | PL            | Domestic CW                | PL - CU Swt (2) Grv               |          |
| 31  | PL            | Domestic CW                | PL - CU Swt (2) SS304 S10 Grv     |          |
| 32  | PL            | Domestic CW                | PL - CU Swt (2) SS304 S40 Grv     |          |
| 33  | PL            | Domestic CW                | PL - SS304 S40 Thd (2) Grv        |          |
| 34  | PL            | Domestic CW UG             | PL - CU K Brz (2) DI MJ           |          |
| 35  | PL            | Domestic CW UG             | PL - DI MJ                        |          |
| 36  | PL            | Domestic HW                | PL - CPVC CTS x Sch 80            |          |
| 37  | PL            | Domestic HW                | PL - CPVC Sch 80                  |          |
| 38  | PL            | Domestic HW                | PL - CU Press (2) Grv*            |          |
| 39  | PL            | Domestic HW                | PL - CU L Press (2) SS304 S10 BW  |          |
| 40  | PL            | Domestic HW                | PL - CU L Press (2) SS304 S10 Grv |          |
| 41  | PL            | Domestic HW                | PL - CU Swt (2) Grv               |          |
| 42  | PL            | Domestic HW                | PL - CU Swt (2) SS304 S10 Grv     |          |
| 43  | PL            | Domestic HW                | PL - CU Swt (2) SS304 S40 Grv     |          |
| 44  | PL            | Domestic HW                | PL - SS304 S40 Thd (2) Grv        |          |
| 45  | PL            | Domestic HWC               | PL - CPVC CTS x Sch 80            |          |
| 46  | PL            | Domestic HWC               | PL - CPVC Sch 80                  |          |
| 47  | PL            | Domestic HWC               | PL - CU Press (2) Grv*            |          |
| 48  | PL            | Domestic HWC               | PL - CU L Press (2) SS304 S10 BW  |          |
| 49  | PL            | Domestic HWC               | PL - CU L Press (2) SS304 S10 Grv |          |
| 50  | PL            | Domestic HWC               | PL - CU Swt (2) Grv               |          |
| 51  | PL            | Domestic HWC               | PL - CU Swt (2) SS304 S10 Grv     |          |
| 52  | PL            | Domestic HWC               | PL - CU Swt (2) SS304 S40 Grv     |          |
| 53  | PL            | Domestic HWC               | PL - SS304 S40 Thd (2) Grv        |          |
| 54  | PL            | Industrial CW              | PL - CU Swt (2) SS304 S10 Grv     |          |
| 55  | PL            | Industrial CW              | PL - CU Swt (2) SS304 S40 Grv     |          |
| 56  | PL            | Industrial CW              | PL - PVC Sch 80                   |          |
| 57  | PL            | Industrial CW              | PL - SS304 S40 Thd (2) Grv        |          |
| 58  | PL            | Laboratory CW              | PL - CU Press (2) Grv*            |          |
| 59  | PL            | Laboratory CW              | PL - CU Swt (2) Grv               |          |
| 60  | PL            | Laboratory HW              | PL - CU Press (2) Grv*            |          |
| 61  | PL            | Laboratory HW              | PL - CU Swt (2) Grv               |          |
| 62  | PL            | Laboratory HWC             | PL - CU Press (2) Grv*            |          |
| 63  | PL            | Laboratory HWC             | PL - CU Swt (2) Grv               |          |
| 64  | PL            | Trap Primer                | PL - PEX                          |          |

Plumbing - DWV

| Tag | Service Group | Service Name (Flow Stream) | Service Template (Pipe Class) | Complete |
|-----|---------------|----------------------------|-------------------------------|----------|
| 65  | PL            | Acid Vent AG               | PL - CPVC Solv Sch 40         |          |
| 66  | PL            | Acid Vent AG               | PL - Duriron*                 |          |
| 67  | PL            | Acid Vent AG               | PL - PolyPro Fuse Sch 40      |          |
| 68  | PL            | Acid Vent AG               | PL - PolyPro Mech Sch 40      |          |
| 69  | PL            | Acid Vent AG               | PL - Temp Glass*              |          |
| 70  | PL            | Acid Vent UG               | PL - CPVC Solv Sch 40         |          |
| 71  | PL            | Acid Vent UG               | PL - Duriron*                 |          |
| 72  | PL            | Acid Vent UG               | PL - PolyPro Fuse Sch 40      |          |
| 73  | PL            | Acid Vent UG               | PL - PolyPro Mech Sch 40      |          |
| 74  | PL            | Acid Waste AG              | PL - CPVC Solv Sch 40         |          |
| 75  | PL            | Acid Waste AG              | PL - Duriron*                 |          |
| 76  | PL            | Acid Waste AG              | PL - PolyPro Fuse Sch 40      |          |
| 77  | PL            | Acid Waste AG              | PL - PolyPro Mech Sch 40      |          |
| 78  | PL            | Acid Waste AG              | PL - Temp Glass*              |          |
| 79  | PL            | Acid Waste UG              | PL - CPVC Solv Sch 40         |          |
| 80  | PL            | Acid Waste UG              | PL - Duriron*                 |          |
| 81  | PL            | Acid Waste UG              | PL - PolyPro Fuse Sch 40      |          |
| 82  | PL            | Acid Waste UG              | PL - PolyPro Mech Sch 40      |          |
| 83  | PL            | Garage Waste AG            | PL - CI Hub And Spigot        |          |
| 84  | PL            | Garage Waste AG            | PL - CI NH-Hvy Coup           |          |
| 85  | PL            | Garage Waste AG            | PL - CI NH-Std Coup           |          |
| 86  | PL            | Garage Waste AG            | PL - PVC DWV Sch 40           |          |
| 87  | PL            | Garage Waste UG            | PL - CI Hub And Spigot        |          |
| 88  | PL            | Garage Waste UG            | PL - CI NH-Hvy Coup           |          |
| 89  | PL            | Garage Waste UG            | PL - CI NH-Std Coup           |          |
| 90  | PL            | Garage Waste UG            | PL - PVC DWV Sch 40           |          |
| 91  | PL            | Grease Waste AG            | PL - CI Hub And Spigot        |          |
| 92  | PL            | Grease Waste AG            | PL - CI NH-Hvy Coup           |          |
| 93  | PL            | Grease Waste AG            | PL - CI NH-Std Coup           |          |
| 94  | PL            | Grease Waste AG            | PL - Duriron*                 |          |
| 95  | PL            | Grease Waste AG            | PL - PVC DWV Sch 40           |          |
| 96  | PL            | Grease Waste UG            | PL - CI Hub And Spigot        |          |
| 97  | PL            | Grease Waste UG            | PL - CI NH-Hvy Coup           |          |
| 98  | PL            | Grease Waste UG            | PL - CI NH-Std Coup           |          |
| 99  | PL            | Grease Waste UG            | PL - Duriron*                 |          |
| 100 | PL            | Grease Waste UG            | PL - PVC DWV Sch 40           |          |
| 101 | PL            | Industrial Waste AG        | PL - CI NH-Hvy Coup           |          |
| 102 | PL            | Industrial Waste UG        | PL - CI NH-Hvy Coup           |          |
| 103 | PL            | ORL AG                     | PL - CI Hub And Spigot        |          |
| 104 | PL            | ORL AG                     | PL - CI NH-Hvy Coup           |          |
| 105 | PL            | ORL AG                     | PL - CI NH-Std Coup           |          |
| 106 | PL            | ORL AG                     | PL - PVC DWV Sch 40           |          |

Plumbing - DWV

| Tag | Service Group | Service Name (Flow Stream) | Service Template (Pipe Class) | Complete |
|-----|---------------|----------------------------|-------------------------------|----------|
| 107 | PL            | RWL AG                     | PL - CI Hub And Spigot        |          |
| 108 | PL            | RWL AG                     | PL - CI NH-Hvy Coup           |          |
| 109 | PL            | RWL AG                     | PL - CI NH-Std Coup           |          |
| 110 | PL            | RWL AG                     | PL - PVC DWV Sch 40           |          |
| 111 | PL            | RWL UG                     | PL - CI Hub And Spigot        |          |
| 112 | PL            | RWL UG                     | PL - CI NH-Hvy Coup           |          |
| 113 | PL            | RWL UG                     | PL - CI NH-Std Coup           |          |
| 114 | PL            | RWL UG                     | PL - PVC DWV Sch 40           |          |
| 115 | PL            | San Vent AG                | PL - CI Hub And Spigot        |          |
| 116 | PL            | San Vent AG                | PL - CI NH-Hvy Coup           |          |
| 117 | PL            | San Vent AG                | PL - CI NH-Std Coup           |          |
| 118 | PL            | San Vent AG                | PL - PVC DWV Sch 40           |          |
| 119 | PL            | San Vent UG                | PL - CI Hub And Spigot        |          |
| 120 | PL            | San Vent UG                | PL - CI NH-Hvy Coup           |          |
| 121 | PL            | San Vent UG                | PL - CI NH-Std Coup           |          |
| 122 | PL            | San Vent UG                | PL - PVC DWV Sch 40           |          |
| 123 | PL            | San Waste AG               | PL - CI Hub And Spigot        |          |
| 124 | PL            | San Waste AG               | PL - CI NH-Hvy Coup           |          |
| 125 | PL            | San Waste AG               | PL - CI NH-Std Coup           |          |
| 126 | PL            | San Waste AG               | PL - PVC DWV Sch 40           |          |
| 127 | PL            | San Waste UG               | PL - CI Hub And Spigot        |          |
| 128 | PL            | San Waste UG               | PL - CI NH-Hvy Coup           |          |
| 129 | PL            | San Waste UG               | PL - CI NH-Std Coup           |          |
| 130 | PL            | San Waste UG               | PL - PVC DWV Sch 40           |          |

| Mechanical Piping |               |                            |                                 |          |
|-------------------|---------------|----------------------------|---------------------------------|----------|
| Tag               | Service Group | Service Name (Flow Stream) | Service Template (Pipe Class)   | Complete |
| 131               | MP            | Boiler Chem Feedwater      | MP - A53 SW (2) BW (Hyd)        |          |
| 132               | MP            | Boiler Chem Feedwater      | MP - A53 Thd (2) BW (Hyd)       |          |
| 133               | MP            | Boiler Feedwater           | MP - A53 SW (2) BW (Hyd)        |          |
| 134               | MP            | Boiler Feedwater           | MP - A53 Thd (2) BW (Hyd)       |          |
| 135               | MP            | Chilled Water Return       | MP - A53 300 SW (2) BW (Hyd)*   |          |
| 136               | MP            | Chilled Water Return       | MP - A53 300 Thd (2) BW (Hyd)*  |          |
| 137               | MP            | Chilled Water Return       | MP - A53 S80 SW (2) BW (Hyd)    |          |
| 138               | MP            | Chilled Water Return       | MP - A53 S80 Thd (2) BW (Hyd)   |          |
| 139               | MP            | Chilled Water Return       | MP - A53 SW (1.5) Grv*          |          |
| 140               | MP            | Chilled Water Return       | MP - A53 SW (2) BW (Hyd)        |          |
| 141               | MP            | Chilled Water Return       | MP - A53 SW (2) Grv             |          |
| 142               | MP            | Chilled Water Return       | MP - A53 Thd (1.5) Grv*         |          |
| 143               | MP            | Chilled Water Return       | MP - A53 Thd (2) BW (Hyd)       |          |
| 144               | MP            | Chilled Water Return       | MP - A53 Thd (2) Grv            |          |
| 145               | MP            | Chilled Water Return       | MP - CU L Press (2) A53 BW      |          |
| 146               | MP            | Chilled Water Return       | MP - CU L Press (2) A53 Grv     |          |
| 147               | MP            | Chilled Water Return       | MP - CU L Swt (1.5) A53 Grv*    |          |
| 148               | MP            | Chilled Water Return       | MP - CU L Swt (2) A53 BW        |          |
| 149               | MP            | Chilled Water Return       | MP - CU L Swt (2) A53 Grv       |          |
| 150               | MP            | Chilled Water Return       | MP - CU L Swt (2) SS304 S10 Grv |          |
| 151               | MP            | Chilled Water Return       | MP - CU L Swt (2) SS304 S40 Grv |          |
| 152               | MP            | Chilled Water Return       | MP - SS304 S40 Thd (2) Grv      |          |
| 153               | MP            | Chilled Water Return UG    | MP - HDPE SDR 11 SF (2) BF*     |          |
| 154               | MP            | Chilled Water Return UG    | MP - HDPE SDR 17 SF (2) BF*     |          |
| 155               | MP            | Chilled Water Return UG    | MP - HDPE SDR 9 SF (2) BF*      |          |
| 156               | MP            | Chilled Water Supply       | MP - A53 300 SW (2) BW (Hyd)*   |          |
| 157               | MP            | Chilled Water Supply       | MP - A53 300 Thd (2) BW (Hyd)*  |          |
| 158               | MP            | Chilled Water Supply       | MP - A53 S80 SW (2) BW (Hyd)    |          |
| 159               | MP            | Chilled Water Supply       | MP - A53 S80 Thd (2) BW (Hyd)   |          |
| 160               | MP            | Chilled Water Supply       | MP - A53 SW (1.5) Grv*          |          |
| 161               | MP            | Chilled Water Supply       | MP - A53 SW (2) BW (Hyd)        |          |
| 162               | MP            | Chilled Water Supply       | MP - A53 SW (2) Grv             |          |
| 163               | MP            | Chilled Water Supply       | MP - A53 Thd (1.5) Grv*         |          |
| 164               | MP            | Chilled Water Supply       | MP - A53 Thd (2) BW (Hyd)       |          |
| 165               | MP            | Chilled Water Supply       | MP - A53 Thd (2) Grv            |          |
| 166               | MP            | Chilled Water Supply       | MP - CU L Press (2) A53 BW      |          |
| 167               | MP            | Chilled Water Supply       | MP - CU L Press (2) A53 Grv     |          |
| 168               | MP            | Chilled Water Supply       | MP - CU L Swt (1.5) A53 Grv*    |          |
| 169               | MP            | Chilled Water Supply       | MP - CU L Swt (2) A53 BW        |          |
| 170               | MP            | Chilled Water Supply       | MP - CU L Swt (2) A53 Grv       |          |
| 171               | MP            | Chilled Water Supply       | MP - CU L Swt (2) SS304 S10 Grv |          |
| 172               | MP            | Chilled Water Supply       | MP - CU L Swt (2) SS304 S40 Grv |          |
| 173               | MP            | Chilled Water Supply       | MP - SS304 S40 Thd (2) Grv      |          |
| 174               | MP            | Chilled Water Supply UG    | MP - HDPE SDR 11 SF (2) BF*     |          |
| 175               | MP            | Chilled Water Supply UG    | MP - HDPE SDR 17 SF (2) BF*     |          |
| 176               | MP            | Chilled Water Supply UG    | MP - HDPE SDR 9 SF (2) BF*      |          |
| 177               | MP            | Clean Steam                | MP - A53 SW (2) BW (Stm)        |          |

Mechanical Piping

| Tag | Service Group | Service Name (Flow Stream) | Service Template (Pipe Class)   | Complete |
|-----|---------------|----------------------------|---------------------------------|----------|
| 178 | MP            | Compressed Air Plant       | MP - A53 Thd (2) BW (Gas)       |          |
| 179 | MP            | Condensate Drain           | MP - CU DWV Swt                 |          |
| 180 | MP            | Condensate Drain           | PL - CU Press (2) Grv*          |          |
| 181 | MP            | Condensate Drain           | PL - CU Swt (2) Grv             |          |
| 182 | MP            | Condenser Water Return     | MP - A53 300 SW (2) BW (Hyd)*   |          |
| 183 | MP            | Condenser Water Return     | MP - A53 300 Thd (2) BW (Hyd)*  |          |
| 184 | MP            | Condenser Water Return     | MP - A53 S80 SW (2) BW (Hyd)    |          |
| 185 | MP            | Condenser Water Return     | MP - A53 S80 Thd (2) BW (Hyd)   |          |
| 186 | MP            | Condenser Water Return     | MP - A53 SW (1.5) Grv*          |          |
| 187 | MP            | Condenser Water Return     | MP - A53 SW (2) BW (Hyd)        |          |
| 188 | MP            | Condenser Water Return     | MP - A53 SW (2) Grv             |          |
| 189 | MP            | Condenser Water Return     | MP - A53 Thd (1.5) Grv*         |          |
| 190 | MP            | Condenser Water Return     | MP - A53 Thd (2) BW (Hyd)       |          |
| 191 | MP            | Condenser Water Return     | MP - A53 Thd (2) Grv            |          |
| 192 | MP            | Condenser Water Return     | MP - CU L Press (2) A53 BW      |          |
| 193 | MP            | Condenser Water Return     | MP - CU L Swt (1.5) A53 Grv*    |          |
| 194 | MP            | Condenser Water Return     | MP - CU L Swt (2) A53 BW        |          |
| 195 | MP            | Condenser Water Return     | MP - CU L Swt (2) A53 Grv       |          |
| 196 | MP            | Condenser Water Return     | MP - CU L Swt (2) SS304 S10 Grv |          |
| 197 | MP            | Condenser Water Return     | MP - CU L Swt (2) SS304 S40 Grv |          |
| 198 | MP            | Condenser Water Return     | MP - SS304 S40 Thd (2) Grv      |          |
| 199 | MP            | Condenser Water Supply     | MP - A53 300 SW (2) BW (Hyd)*   |          |
| 200 | MP            | Condenser Water Supply     | MP - A53 300 Thd (2) BW (Hyd)*  |          |
| 201 | MP            | Condenser Water Supply     | MP - A53 S80 SW (2) BW (Hyd)    |          |
| 202 | MP            | Condenser Water Supply     | MP - A53 S80 Thd (2) BW (Hyd)   |          |
| 203 | MP            | Condenser Water Supply     | MP - A53 SW (1.5) Grv*          |          |
| 204 | MP            | Condenser Water Supply     | MP - A53 SW (2) BW (Hyd)        |          |
| 205 | MP            | Condenser Water Supply     | MP - A53 SW (2) Grv             |          |
| 206 | MP            | Condenser Water Supply     | MP - A53 Thd (1.5) Grv*         |          |
| 207 | MP            | Condenser Water Supply     | MP - A53 Thd (2) BW (Hyd)       |          |
| 208 | MP            | Condenser Water Supply     | MP - A53 Thd (2) Grv            |          |
| 209 | MP            | Condenser Water Supply     | MP - CU L Press (2) A53 BW      |          |
| 210 | MP            | Condenser Water Supply     | MP - CU L Swt (1.5) A53 Grv*    |          |
| 211 | MP            | Condenser Water Supply     | MP - CU L Swt (2) A53 BW        |          |
| 212 | MP            | Condenser Water Supply     | MP - CU L Swt (2) A53 Grv       |          |
| 213 | MP            | Condenser Water Supply     | MP - CU L Swt (2) SS304 S10 Grv |          |
| 214 | MP            | Condenser Water Supply     | MP - CU L Swt (2) SS304 S40 Grv |          |
| 215 | MP            | Condenser Water Supply     | MP - SS304 S40 Thd (2) Grv      |          |
| 216 | MP            | Engine Exhaust             | MP - 304L S10 BW (Exhaust)*     |          |
| 217 | MP            | Engine Exhaust             | MP - 304L S40 BW (Exhaust)*     |          |
| 218 | MP            | Engine Exhaust             | MP - A53 S40 BW (Exhaust)*      |          |
| 219 | MP            | Engine Exhaust             | MP - A53 S80 BW                 |          |
| 220 | MP            | Fuel Oil Fill              | MP - A53 SW (2) BW (Gas)        |          |
| 221 | MP            | Fuel Oil Fill              | MP - A53 Thd (2) BW (Gas)       |          |
| 222 | MP            | Fuel Oil Return            | MP - A53 SW (2) BW (Gas)        |          |
| 223 | MP            | Fuel Oil Return            | MP - A53 Thd (2) BW (Gas)       |          |
| 224 | MP            | Fuel Oil Supply            | MP - A53 SW (2) BW (Gas)        |          |
| 225 | MP            | Fuel Oil Supply            | MP - A53 Thd (2) BW (Gas)       |          |
| 226 | MP            | Fuel Oil Vent              | MP - A53 SW (2) BW (Gas)        |          |
| 227 | MP            | Fuel Oil Vent              | MP - A53 Thd (2) BW (Gas)       |          |

Mechanical Piping

| Tag | Service Group | Service Name (Flow Stream) | Service Template (Pipe Class)  | Complete |
|-----|---------------|----------------------------|--------------------------------|----------|
| 228 | MP            | Heat Pump Loop Return      | MP - A53 300 SW (2) BW (Hyd)*  |          |
| 229 | MP            | Heat Pump Loop Return      | MP - A53 300 Thd (2) BW (Hyd)* |          |
| 230 | MP            | Heat Pump Loop Return      | MP - A53 S80 SW (2) BW (Hyd)   |          |
| 231 | MP            | Heat Pump Loop Return      | MP - A53 S80 Thd (2) BW (Hyd)  |          |
| 232 | MP            | Heat Pump Loop Return      | MP - A53 SW (1.5) Grv*         |          |
| 233 | MP            | Heat Pump Loop Return      | MP - A53 SW (2) BW (Hyd)       |          |
| 234 | MP            | Heat Pump Loop Return      | MP - A53 SW (2) Grv            |          |
| 235 | MP            | Heat Pump Loop Return      | MP - A53 Thd (1.5) Grv*        |          |
| 236 | MP            | Heat Pump Loop Return      | MP - A53 Thd (2) BW (Hyd)      |          |
| 237 | MP            | Heat Pump Loop Return      | MP - A53 Thd (2) Grv           |          |
| 238 | MP            | Heat Pump Loop Return      | MP - CU L Press (2) A53 BW     |          |
| 239 | MP            | Heat Pump Loop Return      | MP - CU L Swt (1.5) A53 Grv*   |          |
| 240 | MP            | Heat Pump Loop Return      | MP - CU L Swt (2) A53 BW       |          |
| 241 | MP            | Heat Pump Loop Return      | MP - CU L Swt (2) A53 Grv      |          |
|     |               |                            |                                |          |
| 242 | MP            | Heat Pump Loop Return UG   | MP - HDPE SDR 11 SF (2) BF*    |          |
| 243 | MP            | Heat Pump Loop Return UG   | MP - HDPE SDR 17 SF (2) BF*    |          |
| 244 | MP            | Heat Pump Loop Return UG   | MP - HDPE SDR 9 SF (2) BF*     |          |
|     |               |                            |                                |          |
| 245 | MP            | Heat Pump Loop Supply      | MP - A53 300 SW (2) BW (Hyd)*  |          |
| 246 | MP            | Heat Pump Loop Supply      | MP - A53 300 Thd (2) BW (Hyd)* |          |
| 247 | MP            | Heat Pump Loop Supply      | MP - A53 S80 SW (2) BW (Hyd)   |          |
| 248 | MP            | Heat Pump Loop Supply      | MP - A53 S80 Thd (2) BW (Hyd)  |          |
| 249 | MP            | Heat Pump Loop Supply      | MP - A53 SW (1.5) Grv*         |          |
| 250 | MP            | Heat Pump Loop Supply      | MP - A53 SW (2) BW (Hyd)       |          |
| 251 | MP            | Heat Pump Loop Supply      | MP - A53 SW (2) Grv            |          |
| 252 | MP            | Heat Pump Loop Supply      | MP - A53 Thd (1.5) Grv*        |          |
| 253 | MP            | Heat Pump Loop Supply      | MP - A53 Thd (2) BW (Hyd)      |          |
| 254 | MP            | Heat Pump Loop Supply      | MP - A53 Thd (2) Grv           |          |
| 255 | MP            | Heat Pump Loop Supply      | MP - CU L Press (2) A53 BW     |          |
| 256 | MP            | Heat Pump Loop Supply      | MP - CU L Swt (1.5) A53 Grv*   |          |
| 257 | MP            | Heat Pump Loop Supply      | MP - CU L Swt (2) A53 BW       |          |
| 258 | MP            | Heat Pump Loop Supply      | MP - CU L Swt (2) A53 Grv      |          |
|     |               |                            |                                |          |
| 259 | MP            | Heat Pump Loop Supply UG   | MP - HDPE SDR 11 SF (2) BF*    |          |
| 260 | MP            | Heat Pump Loop Supply UG   | MP - HDPE SDR 17 SF (2) BF*    |          |
| 261 | MP            | Heat Pump Loop Supply UG   | MP - HDPE SDR 9 SF (2) BF*     |          |
|     |               |                            |                                |          |
| 262 | MP            | Heating Water Return       | MP - A53 300 SW (2) BW (Hyd)*  |          |
| 263 | MP            | Heating Water Return       | MP - A53 300 Thd (2) BW (Hyd)* |          |
| 264 | MP            | Heating Water Return       | MP - A53 S80 SW (2) BW (Hyd)   |          |
| 265 | MP            | Heating Water Return       | MP - A53 S80 Thd (2) BW (Hyd)  |          |
| 266 | MP            | Heating Water Return       | MP - A53 SW (1.5) Grv*         |          |
| 267 | MP            | Heating Water Return       | MP - A53 SW (2) BW (Hyd)       |          |
| 268 | MP            | Heating Water Return       | MP - A53 SW (2) Grv            |          |
| 269 | MP            | Heating Water Return       | MP - A53 Thd (1.5) Grv*        |          |
| 270 | MP            | Heating Water Return       | MP - A53 Thd (2) BW (Hyd)      |          |
| 271 | MP            | Heating Water Return       | MP - A53 Thd (2) Grv           |          |
| 272 | MP            | Heating Water Return       | MP - CU L Press (2) A53 BW     |          |
| 273 | MP            | Heating Water Return       | MP - CU L Press (2) A53 Grv    |          |
| 274 | MP            | Heating Water Return       | MP - CU L Swt (1.5) A53 Grv*   |          |
| 275 | MP            | Heating Water Return       | MP - CU L Swt (2) A53 BW       |          |
| 276 | MP            | Heating Water Return       | MP - CU L Swt (2) A53 Grv      |          |
|     |               |                            |                                |          |



| Mechanical Piping |               |                            |                                      |          |
|-------------------|---------------|----------------------------|--------------------------------------|----------|
| Tag               | Service Group | Service Name (Flow Stream) | Service Template (Pipe Class)        | Complete |
| 277               | MP            | Heating Water Supply       | MP - A53 300 SW (2) BW (Hyd)*        |          |
| 278               | MP            | Heating Water Supply       | MP - A53 300 Thd (2) BW (Hyd)*       |          |
| 279               | MP            | Heating Water Supply       | MP - A53 S80 SW (2) BW (Hyd)         |          |
| 280               | MP            | Heating Water Supply       | MP - A53 S80 Thd (2) BW (Hyd)        |          |
| 281               | MP            | Heating Water Supply       | MP - A53 SW (1.5) Grv*               |          |
| 282               | MP            | Heating Water Supply       | MP - A53 SW (2) BW (Hyd)             |          |
| 283               | MP            | Heating Water Supply       | MP - A53 SW (2) Grv                  |          |
| 284               | MP            | Heating Water Supply       | MP - A53 Thd (1.5) Grv*              |          |
| 285               | MP            | Heating Water Supply       | MP - A53 Thd (2) BW (Hyd)            |          |
| 286               | MP            | Heating Water Supply       | MP - A53 Thd (2) Grv                 |          |
| 287               | MP            | Heating Water Supply       | MP - CU L Press (2) A53 BW           |          |
| 288               | MP            | Heating Water Supply       | MP - CU L Press (2) A53 Grv          |          |
| 289               | MP            | Heating Water Supply       | MP - CU L Swt (1.5) A53 Grv*         |          |
| 290               | MP            | Heating Water Supply       | MP - CU L Swt (2) A53 BW             |          |
| 291               | MP            | Heating Water Supply       | MP - CU L Swt (2) A53 Grv            |          |
| 292               | MP            | High Pressure Condensate   | MP - A53 S80 300 Thd (2) XH BW (Stm) |          |
| 293               | MP            | High Pressure Condensate   | MP - A53 S80 SW (2) BW (Cond)*       |          |
| 294               | MP            | High Pressure Condensate   | MP - A53 S80 Thd (2) BW (Cond)*      |          |
| 295               | MP            | High Pressure Steam        | MP - A53 300 SW (2) BW (Stm)*        |          |
| 296               | MP            | High Pressure Steam        | MP - A53 300 Thd (2) BW (Stm)*       |          |
| 297               | MP            | High Pressure Steam        | MP - A53 300 Thd (2) XH BW (Stm)     |          |
| 298               | MP            | High Pressure Steam        | MP - A53 S80 SW (2) BW (Stm)         |          |
| 299               | MP            | High Pressure Steam        | MP - A53 S80 Thd (2) BW (Stm)        |          |
| 300               | MP            | High Pressure Steam        | MP - A53 SW (2) BW (Stm)*            |          |
| 301               | MP            | High Pressure Steam        | MP - A53 Thd (2) BW (Stm)*           |          |
| 302               | MP            | Low Pressure Condensate    | MP - A53 S80 SW (2) BW (Cond)*       |          |
| 303               | MP            | Low Pressure Condensate    | MP - A53 S80 Thd (2) BW (Cond)*      |          |
| 304               | MP            | Low Pressure Steam         | MP - A53 300 Thd (2) BW (Stm)*       |          |
| 305               | MP            | Low Pressure Steam         | MP - A53 300 Thd (2) XH BW (Stm)     |          |
| 306               | MP            | Low Pressure Steam         | MP - A53 S80 SW (2) BW (Stm)         |          |
| 307               | MP            | Low Pressure Steam         | MP - A53 S80 Thd (2) BW (Stm)        |          |
| 308               | MP            | Low Pressure Steam         | MP - A53 SW (2) BW (Stm)*            |          |
| 309               | MP            | Low Pressure Steam         | MP - A53 Thd (2) BW (Stm)*           |          |
| 310               | MP            | Make-Up Water              | PL - CU Press (2) Grv*               |          |
| 311               | MP            | Make-Up Water              | PL - CU Swt (2) Grv                  |          |
| 312               | MP            | Make-Up Water UG           | PL - CU K Brz (2) DI MJ              |          |
| 313               | MP            | Medium Pressure Condensate | MP - A53 S80 SW (2) BW (Cond)*       |          |
| 314               | MP            | Medium Pressure Condensate | MP - A53 S80 Thd (2) BW (Cond)*      |          |
| 315               | MP            | Medium Pressure Steam      | MP - A53 300 Thd (2) BW (Stm)*       |          |
| 316               | MP            | Medium Pressure Steam      | MP - A53 300 Thd (2) XH BW (Stm)     |          |
| 317               | MP            | Medium Pressure Steam      | MP - A53 S80 SW (2) BW (Stm)         |          |
| 318               | MP            | Medium Pressure Steam      | MP - A53 S80 Thd (2) BW (Stm)        |          |
| 319               | MP            | Medium Pressure Steam      | MP - A53 SW (2) BW (Stm)*            |          |
| 320               | MP            | Medium Pressure Steam      | MP - A53 Thd (2) BW (Stm)*           |          |

| Mechanical Piping |               |                            |                                 |          |
|-------------------|---------------|----------------------------|---------------------------------|----------|
| Tag               | Service Group | Service Name (Flow Stream) | Service Template (Pipe Class)   | Complete |
| 321               | MP            | Natural Gas                | MP - A53 SW (2) BW (Gas)        |          |
| 322               | MP            | Natural Gas                | MP - A53 Thd (2) BW (Gas)       |          |
| 323               | MP            | Natural Gas UG             | MP - A53 SW (2) BW (Gas)        |          |
| 324               | MP            | Natural Gas Vent           | MP - A53 SW (2) BW (Gas)        |          |
| 325               | MP            | Natural Gas Vent           | MP - A53 Thd (2) BW (Gas)       |          |
| 326               | MP            | Non-Potable CW             | PL - CU Press (2) Grv*          |          |
| 327               | MP            | Non-Potable CW             | PL - CU Swt (2) Grv             |          |
| 328               | MP            | Non-Potable HW             | PL - CU Press (2) Grv*          |          |
| 329               | MP            | Non-Potable HW             | PL - CU Swt (2) Grv             |          |
| 330               | MP            | Pumped Condensate          | MP - A53 S80 SW (2) BW (Cond)*  |          |
| 331               | MP            | Pumped Condensate          | MP - A53 S80 Thd (2) BW (Cond)* |          |
| 332               | MP            | Refrigerant Liquid         | MP - CU L Brz ACR               |          |
| 333               | MP            | Refrigerant Suction        | MP - CU L Brz ACR               |          |
| 334               | MP            | Refrigerant Vent           | MP - CU L Brz ACR               |          |
| 335               | MP            | Steam Vent                 | MP - A53 SW (2) BW (Stm)*       |          |
| 336               | MP            | Steam Vent                 | MP - A53 Thd (2) BW (Stm)*      |          |

**Autodesk Fabrication Service Template (Pipe Class) Schedule**

Client

10/1/2018

Med Gas

| Tag | Service Group | Service Name (Flow Stream) | Service Template (Pipe Class) | Complete |
|-----|---------------|----------------------------|-------------------------------|----------|
| 1   | MG            | Air Compressor Intake      | MG - CU K Brz Clean           |          |
| 2   | MG            | Carbon Dioxide             | MG - CU K Brz Clean           |          |
| 3   | MG            | Compressed Air             | MG - CU K Brz Clean           |          |
| 4   | MG            | Lab Air                    | MG - CU K Brz Clean           |          |
| 5   | MG            | Medical Vacuum             | MG - CU K Brz Clean           |          |
| 6   | MG            | Medical Vacuum Exhaust     | MG - CU K Brz Clean           |          |
| 7   | MG            | Nitrogen                   | MG - CU K Brz Clean           |          |
| 8   | MG            | Nitrous Oxide              | MG - CU K Brz Clean           |          |
| 9   | MG            | Oxygen                     | MG - CU K Brz Clean           |          |
| 10  | MG            | Air Compressor Intake      | MG - CU L Brz Clean           |          |
| 11  | MG            | Carbon Dioxide             | MG - CU L Brz Clean           |          |
| 12  | MG            | Compressed Air             | MG - CU L Brz Clean           |          |
| 13  | MG            | Lab Air                    | MG - CU L Brz Clean           |          |
| 14  | MG            | Medical Air                | MG - CU L Brz Clean           |          |
| 15  | MG            | Medical Vacuum             | MG - CU L Brz Clean           |          |
| 16  | MG            | Medical Vacuum Exhaust     | MG - CU L Brz Clean           |          |
| 17  | MG            | Nitrogen                   | MG - CU L Brz Clean           |          |
| 18  | MG            | Nitrous Oxide              | MG - CU L Brz Clean           |          |
| 19  | MG            | Oxygen                     | MG - CU L Brz Clean           |          |
| 20  | MG            | Emergency Vacuum           | MG - CU L Swt Vacuum*         |          |
| 21  | MG            | Lab Vacuum                 | MG - CU L Swt Vacuum*         |          |
| 22  | MG            | Medical Vacuum             | MG - CU L Swt Vacuum*         |          |
| 23  | MG            | WAGD Vacuum                | MG - CU L Swt Vacuum*         |          |

**MAP Service Template (Pipe Class)**

Client

**Customer Approval:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**MG (Cu L Brz Clean)**

| Service Description  |  | ≤ 3" |
|----------------------|--|------|
| Pipe Materials       | ASTM-B88 Type L Cu (Cleaned & Capped)    |      |
| Standard Pipe Length | 20'-0"                                   |      |
| Joint Type           | Med-silver (5%) PhosCopper Brazing Alloy |      |
| Fitting Material     | Wrought Cu (Cleaned & Bagged)            |      |
| Default 90 Bend Type | SR 90                                    |      |
| Default Branch Type  | Fitting                                  |      |
| Flanges              | N/A                                      |      |
| Flange Face Type     | Raised Face (Flat Face at equipment)     |      |
| Gaskets              | N/A                                      |      |
| Bolt Type            | N/A                                      |      |

| Test / Inspection        |          | ≤ 3" |
|--------------------------|----------|------|
| Weld Procedure           | N/A      |      |
| Weld Inspection          | N/A      |      |
| Media                    | Nitrogen |      |
| Duration                 | 4 hours  |      |
| Pressure (psi / ft head) | 150 psig |      |
| Responsibility           |          |      |

| Valves     |                     | ≤ 3" |
|------------|---------------------|------|
| Ball (Brz) | Beacon Medaes 6-211 |      |
|            |                     |      |
|            |                     |      |
|            |                     |      |

| Specialties            |  | ≤ 3" |
|------------------------|--|------|
| Pressure Gauge, 0-100# |  |      |
| Zone Valve Box         |  |      |
|                        |  |      |
|                        |  |      |

| Pipe Size | Hanger   |         | Insul. Thick. |
|-----------|----------|---------|---------------|
|           | Type     | Spacing |               |
| 1/4"      | Autogrip |         | Various       |
| 3/8"      | Autogrip |         | Various       |
| 1/2"      | Autogrip |         | Various       |
| 3/4"      | Autogrip |         | Various       |
| 1"        | Autogrip |         | Various       |
| 1 1/4"    | Autogrip |         | Various       |
| 1 1/2"    | Autogrip |         | Various       |
| 2"        | Autogrip |         | Various       |
| 2 1/2"    | Clevis   |         | Various       |
| 3"        | Clevis   |         | Various       |
| 4"        | Clevis   |         | Various       |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |

| Services Using Template | Abbrv | Layer  | Color | Level Block | Complete |
|-------------------------|-------|--------|-------|-------------|----------|
| Lab Air                 | LA    | MG_LA  | 156   | CL-ELEV     | X        |
| Medical Air             | MA    | MG_MA  | 237   | CL-ELEV     | X        |
| Carbon Dioxide          | CO2   | MG_CO2 | 133   | CL-ELEV     | X        |
| Oxygen                  | O2    | MG_O2  | 203   | CL-ELEV     | X        |
| Nitrogen                | N2    | MG_N2  | 176   | CL-ELEV     | X        |
| Nitrous Oxide           | N2O   | MG_N2O | 123   | CL-ELEV     | X        |
|                         |       |        |       |             |          |
|                         |       |        |       |             |          |
|                         |       |        |       |             |          |
|                         |       |        |       |             |          |
|                         |       |        |       |             |          |

**MAP Service Template (Pipe Class)**

Client

**Customer Approval:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**MP (A53 300 SW (2) BW (Hyd))**

| Service Description  | ≤ 2"                                 | > 2"                                 |
|----------------------|--------------------------------------|--------------------------------------|
| Pipe Materials       | ASTM-A53 Black Steel                 | ASTM-A53 Black Steel                 |
| Standard Pipe Length | 20'-0"                               | 20'-0"                               |
| Joint Type           | Socket Weld                          | Butt Weld                            |
| Fitting Material     | 3000 psi                             | Standard Weight                      |
| Default 90 Bend Type | SR 90                                | LR 90                                |
| Default Branch Type  | Fitting                              | Fitting, SOL                         |
| Flanges              | Weldneck / Class 300                 | Weldneck / Class 300                 |
| Flange Face Type     | Raised Face (Flat Face at equipment) | Raised Face (Flat Face at equipment) |
| Gaskets              | Spiral Wound Metallic                | Spiral Wound Metallic                |
| Bolt Type            | ASTM-HBTS7                           | ASTM-HBTS7                           |

| Test / Inspection        | ≤ 2"                           | > 2"                           |
|--------------------------|--------------------------------|--------------------------------|
| Weld Procedure           | N/A                            |                                |
| Weld Inspection          | N/A                            |                                |
| Media                    | Air                            | Air                            |
| Duration                 | 4 hours                        | 4 hours                        |
| Pressure (psi / ft head) | 1.5 x Pump Head (Min. 150 psi) | 1.5 x Pump Head (Min. 150 psi) |
| Responsibility           |                                |                                |

| Valves                   | ≤ 2"                   | > 2"                        |
|--------------------------|------------------------|-----------------------------|
| Ball (Thd)               | Milwaukee 20BBOR-03-LL | N/A                         |
| Butterfly (Flg)          | N/A                    | Milwaukee HL-223E / HL-323E |
| Globe (Thd/Flg)          | Milwaukee 572          | Milwaukee F-2983-M          |
| Gate (Thd/Flg)           | Milwaukee 1182         | Milwaukee F-2894-M          |
| Swing Check (Thd/Flg)    | Milwaukee 507          | Milwaukee F-2970-M          |
| Wafer Check              | Milwaukee 1400         | Milwaukee 1400              |
| Circuit Setter (Thd/Flg) | B&G CB Series          | Flow Design WS              |

| Specialties            | ≤ 2"                    | > 2"                    |
|------------------------|-------------------------|-------------------------|
| Wye Strainer, 125#     | Mueller 352M            | Mueller 752             |
| Dielectric Nipple      | N/A                     | N/A                     |
| Dielectric Union       | N/A                     | N/A                     |
| Pressure Gauge, 0-100# | Weiss 4PGE1             | Weiss 4PGE1             |
| Thermometer            | Weiss TL5A2-240         | Weiss TL5A2-240         |
| Pressure Relief Valve  | Watts 374A / 174A / 740 | Watts 374A / 174A / 740 |
| Air Vent               | B&G 107A                | B&G 107A                |

| Pipe Size | Hanger   |         | Insul. Thick. |
|-----------|----------|---------|---------------|
|           | Type     | Spacing |               |
| 1/4"      | Autogrip |         | Various       |
| 3/8"      | Autogrip |         | Various       |
| 1/2"      | Autogrip |         | Various       |
| 3/4"      | Autogrip |         | Various       |
| 1"        | Autogrip |         | Various       |
| 1 1/4"    | Autogrip |         | Various       |
| 1 1/2"    | Autogrip |         | Various       |
| 2"        | Autogrip |         | Various       |
| 2 1/2"    | Clevis   |         | Various       |
| 3"        | Clevis   |         | Various       |
| 4"        | Clevis   |         | Various       |
| 5"        | Clevis   |         | Various       |
| 6"        | Clevis   |         | Various       |
| 8"        | Clevis   |         | Various       |
| 10"       | Clevis   |         | Various       |
| 12"       | Clevis   |         | Various       |
| 14"       | Clevis   |         | Various       |
| 16"       | Clevis   |         | Various       |
| 18"       | Clevis   |         | Various       |
| 20"       | Clevis   |         | Various       |

| Services Using Template     | Abbrev | Layer   | Color | Level Block | Complete |
|-----------------------------|--------|---------|-------|-------------|----------|
| CHWS: Chilled Water Supply  | CHWS   | MP_CHWS | 153   | CL-ELEV     | X        |
| CHWR: Chilled Water Return  | CHWR   | MP_CHWR | 142   | CL-ELEV     | X        |
| CWS: Condenser Water Supply | CWS    | MP_CWS  | 97    | CL-ELEV     | X        |
| CWR: Condenser Water Return | CWR    | MP_CWR  | 77    | CL-ELEV     | X        |
| HPLS: Heat Pump Loop Supply | HPLS   | MP_HPLS | 177   | CL-ELEV     | X        |
| HPLR: Heat Pump Loop Return | HPLR   | MP_HPLR | 143   | CL-ELEV     | X        |
| HWS: Heating Water Supply   | HWS    | MP_HWS  | 233   | CL-ELEV     | X        |
| HWR: Heating Water Return   | HWR    | MP_HWR  | 222   | CL-ELEV     | X        |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |





**MAP Service Template (Pipe Class)**

Client

**Customer Approval:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**MP (A53 SW (1.5) Grv)**

| Service Description  | ≤ 1.5"                               | > 1.5"                                |
|----------------------|--------------------------------------|---------------------------------------|
| Pipe Materials       | ASTM-A53 Black Steel                 | ASTM-A53 Black Steel                  |
| Standard Pipe Length | 20'-0"                               | 20'-0"                                |
| Joint Type           | Socket Weld                          | Grooved                               |
| Fitting Material     | 3000 psi                             | Ductile Iron                          |
| Default 90 Bend Type | SR 90                                | SR 90 (Victaulic SR is LR equivalent) |
| Default Branch Type  | Fitting                              | Fitting, SOL                          |
| Flanges              | Weldneck / Class 150                 | Weldneck / Class 150                  |
| Flange Face Type     | Raised Face (Flat Face at equipment) | Raised Face (Flat Face at equipment)  |
| Gaskets              | Spiral Wound Metallic                | Spiral Wound Metallic                 |
| Bolt Type            | ASTM-HBTS7                           | ASTM-HBTS7                            |

| Test / Inspection        | ≤ 1.5"                         | > 1.5"                         |
|--------------------------|--------------------------------|--------------------------------|
| Weld Procedure           | N/A                            |                                |
| Weld Inspection          | N/A                            |                                |
| Media                    | Air                            | Air                            |
| Duration                 | 4 hours                        | 4 hours                        |
| Pressure (psi / ft head) | 1.5 x Pump Head (Min. 150 psi) | 1.5 x Pump Head (Min. 150 psi) |
| Responsibility           |                                |                                |

| Valves                   | ≤ 1.5"            | > 1.5"                      |
|--------------------------|-------------------|-----------------------------|
| Ball (Thd)               | Milwaukee BA-475B | N/A                         |
| Butterfly (Flg)          | N/A               | Milwaukee CL-223E / CL-323E |
| Globe (Thd/Flg)          | Milwaukee 1590T   | Milwaukee F-2981-M          |
| Gate (Thd/Flg)           | Milwaukee 1150    | Milwaukee F-2885-M          |
| Swing Check (Thd/Flg)    | Milwaukee 1509T   | Milwaukee F-2974-M          |
| Wafer Check              | Milwaukee 1400    | Milwaukee 1400              |
| Circuit Setter (Thd/Flg) | B&G CB Series     | B&G CB Series               |

| Specialties            | ≤ 1.5"                  | > 1.5"                  |
|------------------------|-------------------------|-------------------------|
| Wye Strainer, 125#     | Mueller 351M            | Mueller 758             |
| Dielectric Nipple      | N/A                     | N/A                     |
| Dielectric Union       | N/A                     | N/A                     |
| Pressure Gauge, 0-100# | Weiss 4PGE1             | Weiss 4PGE1             |
| Thermometer            | Weiss TL5A2-240         | Weiss TL5A2-240         |
| Pressure Relief Valve  | Watts 374A / 174A / 740 | Watts 374A / 174A / 740 |
| Air Vent               | B&G 107A                | B&G 107A                |

| Pipe Size | Hanger   |         | Insul. Thick. |
|-----------|----------|---------|---------------|
|           | Type     | Spacing |               |
| 1/4"      | Autogrip |         | Various       |
| 3/8"      | Autogrip |         | Various       |
| 1/2"      | Autogrip |         | Various       |
| 3/4"      | Autogrip |         | Various       |
| 1"        | Autogrip |         | Various       |
| 1 1/4"    | Autogrip |         | Various       |
| 1 1/2"    | Autogrip |         | Various       |
| 2"        | Autogrip |         | Various       |
| 2 1/2"    | Clevis   |         | Various       |
| 3"        | Clevis   |         | Various       |
| 4"        | Clevis   |         | Various       |
| 5"        | Clevis   |         | Various       |
| 6"        | Clevis   |         | Various       |
| 8"        | Clevis   |         | Various       |
| 10"       | Clevis   |         | Various       |
| 12"       | Clevis   |         | Various       |
| 14"       | Clevis   |         | Various       |
| 16"       | Clevis   |         | Various       |
| 18"       | Clevis   |         | Various       |
| 20"       | Clevis   |         | Various       |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |

| Services Using Template     | Abbrev | Layer   | Color | Level Block | Complete |
|-----------------------------|--------|---------|-------|-------------|----------|
| CHWS: Chilled Water Supply  | CHWS   | MP_CHWS | 153   | CL-ELEV     | X        |
| CHWR: Chilled Water Return  | CHWR   | MP_CHWR | 142   | CL-ELEV     | X        |
| CWS: Condenser Water Supply | CWS    | MP_CWS  | 97    | CL-ELEV     | X        |
| CWR: Condenser Water Return | CWR    | MP_CWR  | 77    | CL-ELEV     | X        |
| HPLS: Heat Pump Loop Supply | HPLS   | MP_HPLS | 177   | CL-ELEV     | X        |
| HPLR: Heat Pump Loop Return | HPLR   | MP_HPLR | 143   | CL-ELEV     | X        |
| HWS: Heating Water Supply   | HWS    | MP_HWS  | 233   | CL-ELEV     | X        |
| HWR: Heating Water Return   | HWR    | MP_HWR  | 222   | CL-ELEV     | X        |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |



**MAP Service Template (Pipe Class)**

Client

**Customer Approval:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**MP (A53 SW (2) BW (Hyd))**

| Service Description  | ≤ 2"                                 | > 2"                                 |
|----------------------|--------------------------------------|--------------------------------------|
| Pipe Materials       | ASTM-A53 Black Steel                 | ASTM-A53 Black Steel                 |
| Standard Pipe Length | 20'-0"                               | 20'-0"                               |
| Joint Type           | Socket Weld                          | Butt Weld                            |
| Fitting Material     | 3000 psi                             | Standard Weight                      |
| Default 90 Bend Type | SR 90                                | LR 90                                |
| Default Branch Type  | Fitting                              | Fitting, SOL                         |
| Flanges              | Weldneck / Class 150                 | Weldneck / Class 150                 |
| Flange Face Type     | Raised Face (Flat Face at equipment) | Raised Face (Flat Face at equipment) |
| Gaskets              | Spiral Wound Metallic                | Spiral Wound Metallic                |
| Bolt Type            | ASTM-HBTS7                           | ASTM-HBTS7                           |

| Test / Inspection        | ≤ 2"                           | > 2"                           |
|--------------------------|--------------------------------|--------------------------------|
| Weld Procedure           | N/A                            |                                |
| Weld Inspection          | N/A                            |                                |
| Media                    | Air                            | Air                            |
| Duration                 | 4 hours                        | 4 hours                        |
| Pressure (psi / ft head) | 1.5 x Pump Head (Min. 150 psi) | 1.5 x Pump Head (Min. 150 psi) |
| Responsibility           |                                |                                |

| Valves                   | ≤ 2"              | > 2"                        |
|--------------------------|-------------------|-----------------------------|
| Ball (Thd)               | Milwaukee BA-475B | N/A                         |
| Butterfly (Flg)          | N/A               | Milwaukee CL-223E / CL-323E |
| Globe (Thd/Flg)          | Milwaukee 590T    | Milwaukee F-2981-M          |
| Gate (Thd/Flg)           | Milwaukee 1150    | Milwaukee F-2885-M          |
| Swing Check (Thd/Flg)    | Milwaukee 509T    | Milwaukee F-2974-M          |
| Wafer Check              | Milwaukee 1400    | Milwaukee 1400              |
| Circuit Setter (Thd/Flg) | B&G CB Series     | B&G CB Series               |

| Specialties            | ≤ 2"                    | > 2"                    |
|------------------------|-------------------------|-------------------------|
| Wye Strainer, 125#     | Mueller 351M            | Mueller 758             |
| Dielectric Nipple      | N/A                     | N/A                     |
| Dielectric Union       | N/A                     | N/A                     |
| Pressure Gauge, 0-100# | Weiss 4PGE1             | Weiss 4PGE1             |
| Thermometer            | Weiss TL5A2-240         | Weiss TL5A2-240         |
| Pressure Relief Valve  | Watts 374A / 174A / 740 | Watts 374A / 174A / 740 |
| Air Vent               | B&G 107A                | B&G 107A                |

| Pipe Size | Hanger   |         | Insul. Thick. |
|-----------|----------|---------|---------------|
|           | Type     | Spacing |               |
| 1/4"      | Autogrip |         | Various       |
| 3/8"      | Autogrip |         | Various       |
| 1/2"      | Autogrip |         | Various       |
| 3/4"      | Autogrip |         | Various       |
| 1"        | Autogrip |         | Various       |
| 1 1/4"    | Autogrip |         | Various       |
| 1 1/2"    | Autogrip |         | Various       |
| 2"        | Autogrip |         | Various       |
| 2 1/2"    | Clevis   |         | Various       |
| 3"        | Clevis   |         | Various       |
| 4"        | Clevis   |         | Various       |
| 5"        | Clevis   |         | Various       |
| 6"        | Clevis   |         | Various       |
| 8"        | Clevis   |         | Various       |
| 10"       | Clevis   |         | Various       |
| 12"       | Clevis   |         | Various       |
| 14"       | Clevis   |         | Various       |
| 16"       | Clevis   |         | Various       |
| 18"       | Clevis   |         | Various       |
| 20"       | Clevis   |         | Various       |

| Services Using Template     | Abbrev | Layer   | Color | Level Block | Complete |
|-----------------------------|--------|---------|-------|-------------|----------|
| CHWS: Chilled Water Supply  | CHWS   | MP_CHWS | 153   | CL-ELEV     | X        |
| CHWR: Chilled Water Return  | CHWR   | MP_CHWR | 142   | CL-ELEV     | X        |
| CWS: Condenser Water Supply | CWS    | MP_CWS  | 97    | CL-ELEV     | X        |
| CWR: Condenser Water Return | CWR    | MP_CWR  | 77    | CL-ELEV     | X        |
| HPLS: Heat Pump Loop Supply | HPLS   | MP_HPLS | 177   | CL-ELEV     | X        |
| HPLR: Heat Pump Loop Return | HPLR   | MP_HPLR | 143   | CL-ELEV     | X        |
| HWS: Heating Water Supply   | HWS    | MP_HWS  | 233   | CL-ELEV     | X        |
| HWR: Heating Water Return   | HWR    | MP_HWR  | 222   | CL-ELEV     | X        |
| Boiler Feedwater            | BFW    | MP_BFW  | 167   | CL-ELEV     | X        |
| Boiler Chem Feedwater       | BFCW   | MP_BFCW | 147   | CL-ELEV     | X        |

**MAP Service Template (Pipe Class)**

Client \_\_\_\_\_

**Customer Approval:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**MP (A53 Thd (1.5) Grv)**

| Service Description  | ≤ 1.5"                               | > 1.5"                                |
|----------------------|--------------------------------------|---------------------------------------|
| Pipe Materials       | ASTM-A53 Black Steel                 | ASTM-A53 Black Steel                  |
| Standard Pipe Length | 20'-0"                               | 20'-0"                                |
| Joint Type           | Threaded                             | Grooved                               |
| Fitting Material     | Malleable Iron                       | Ductile Iron                          |
| Default 90 Bend Type | SR 90                                | SR 90 (Victaulic SR is LR equivalent) |
| Default Branch Type  | Fitting                              | Fitting, TOL                          |
| Flanges              | Weldneck / Class 150                 | Weldneck / Class 150                  |
| Flange Face Type     | Raised Face (Flat Face at equipment) | Raised Face (Flat Face at equipment)  |
| Gaskets              | Spiral Wound Metallic                | Spiral Wound Metallic                 |
| Bolt Type            | ASTM-HBTS7                           | ASTM-HBTS7                            |

| Test / Inspection        | ≤ 1.5"                         | > 1.5"                         |
|--------------------------|--------------------------------|--------------------------------|
| Weld Procedure           | N/A                            |                                |
| Weld Inspection          | N/A                            |                                |
| Media                    | Air                            | Air                            |
| Duration                 | 4 hours                        | 4 hours                        |
| Pressure (psi / ft head) | 1.5 x Pump Head (Min. 150 psi) | 1.5 x Pump Head (Min. 150 psi) |
| Responsibility           |                                |                                |

| Valves                   | ≤ 1.5"            | > 1.5"                      |
|--------------------------|-------------------|-----------------------------|
| Ball (Thd)               | Milwaukee BA-475B | N/A                         |
| Butterfly (Flg)          | N/A               | Milwaukee CL-223E / CL-323E |
| Globe (Thd/Flg)          | Milwaukee 1590T   | Milwaukee F-2981-M          |
| Gate (Thd/Flg)           | Milwaukee 1150    | Milwaukee F-2885-M          |
| Swing Check (Thd/Flg)    | Milwaukee 1509T   | Milwaukee F-2974-M          |
| Wafer Check              | Milwaukee 1400    | Milwaukee 1400              |
| Circuit Setter (Thd/Flg) | B&G CB Series     | B&G CB Series               |

| Specialties            | ≤ 1.5"                  | > 1.5"                  |
|------------------------|-------------------------|-------------------------|
| Wye Strainer, 125#     | Mueller 351M            | Mueller 758             |
| Dielectric Nipple      | N/A                     | N/A                     |
| Dielectric Union       | N/A                     | N/A                     |
| Pressure Gauge, 0-100# | Weiss 4PGE1             | Weiss 4PGE1             |
| Thermometer            | Weiss TL5A2-240         | Weiss TL5A2-240         |
| Pressure Relief Valve  | Watts 374A / 174A / 740 | Watts 374A / 174A / 740 |
| Air Vent               | B&G 107A                | B&G 107A                |

| Pipe Size | Hanger   |         | Insul. Thick. |
|-----------|----------|---------|---------------|
|           | Type     | Spacing |               |
| 1/4"      | Autogrip |         | Various       |
| 3/8"      | Autogrip |         | Various       |
| 1/2"      | Autogrip |         | Various       |
| 3/4"      | Autogrip |         | Various       |
| 1"        | Autogrip |         | Various       |
| 1 1/4"    | Autogrip |         | Various       |
| 1 1/2"    | Autogrip |         | Various       |
| 2"        | Autogrip |         | Various       |
| 2 1/2"    | Clevis   |         | Various       |
| 3"        | Clevis   |         | Various       |
| 4"        | Clevis   |         | Various       |
| 5"        | Clevis   |         | Various       |
| 6"        | Clevis   |         | Various       |
| 8"        | Clevis   |         | Various       |
| 10"       | Clevis   |         | Various       |
| 12"       | Clevis   |         | Various       |
| 14"       | Clevis   |         | Various       |
| 16"       | Clevis   |         | Various       |
| 18"       | Clevis   |         | Various       |
| 20"       | Clevis   |         | Various       |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |

| Services Using Template     | Abbrev | Layer   | Color | Level Block | Complete |
|-----------------------------|--------|---------|-------|-------------|----------|
| CHWS: Chilled Water Supply  | CHWS   | MP_CHWS | 153   | CL-ELEV     | X        |
| CHWR: Chilled Water Return  | CHWR   | MP_CHWR | 142   | CL-ELEV     | X        |
| CWS: Condenser Water Supply | CWS    | MP_CWS  | 97    | CL-ELEV     | X        |
| CWR: Condenser Water Return | CWR    | MP_CWR  | 77    | CL-ELEV     | X        |
| HPLS: Heat Pump Loop Supply | HPLS   | MP_HPLS | 177   | CL-ELEV     | X        |
| HPLR: Heat Pump Loop Return | HPLR   | MP_HPLR | 143   | CL-ELEV     | X        |
| HWS: Heating Water Supply   | HWS    | MP_HWS  | 233   | CL-ELEV     | X        |
| HWR: Heating Water Return   | HWR    | MP_HWR  | 222   | CL-ELEV     | X        |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |

**MAP Service Template (Pipe Class)**

Client

**Customer Approval:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**MP (A53 Thd (2) BW (Hyd))**

| Service Description  | ≤ 2"                                 | > 2"                                 |
|----------------------|--------------------------------------|--------------------------------------|
| Pipe Materials       | ASTM-A53 Black Steel                 | ASTM-A53 Black Steel                 |
| Standard Pipe Length | 20'-0"                               | 20'-0"                               |
| Joint Type           | Threaded                             | Butt Weld                            |
| Fitting Material     | Malleable Iron                       | Standard Weight                      |
| Default 90 Bend Type | SR 90                                | LR 90                                |
| Default Branch Type  | Fitting                              | Fitting, TOL                         |
| Flanges              | Weldneck / Class 150                 | Weldneck / Class 150                 |
| Flange Face Type     | Raised Face (Flat Face at equipment) | Raised Face (Flat Face at equipment) |
| Gaskets              | Spiral Wound Metallic                | Spiral Wound Metallic                |
| Bolt Type            | ASTM-HBTS7                           | ASTM-HBTS7                           |

| Test / Inspection        | ≤ 2"                           | > 2"                           |
|--------------------------|--------------------------------|--------------------------------|
| Weld Procedure           | N/A                            |                                |
| Weld Inspection          | N/A                            |                                |
| Media                    | Air                            | Air                            |
| Duration                 | 4 hours                        | 4 hours                        |
| Pressure (psi / ft head) | 1.5 x Pump Head (Min. 150 psi) | 1.5 x Pump Head (Min. 150 psi) |
| Responsibility           |                                |                                |

| Valves                   | ≤ 2"              | > 2"                        |
|--------------------------|-------------------|-----------------------------|
| Ball (Thd)               | Milwaukee BA-475B | N/A                         |
| Butterfly (Flg)          | N/A               | Milwaukee CL-223E / CL-323E |
| Globe (Thd/Flg)          | Milwaukee 590T    | Milwaukee F-2981-M          |
| Gate (Thd/Flg)           | Milwaukee 1150    | Milwaukee F-2885-M          |
| Swing Check (Thd/Flg)    | Milwaukee 509T    | Milwaukee F-2974-M          |
| Wafer Check              | Milwaukee 1400    | Milwaukee 1400              |
| Circuit Setter (Thd/Flg) | B&G CB Series     | B&G CB Series               |

| Specialties            | ≤ 2"                    | > 2"                    |
|------------------------|-------------------------|-------------------------|
| Wye Strainer, 125#     | Mueller 351M            | Mueller 758             |
| Dielectric Nipple      | N/A                     | N/A                     |
| Dielectric Union       | N/A                     | N/A                     |
| Pressure Gauge, 0-100# | Weiss 4PGE1             | Weiss 4PGE1             |
| Thermometer            | Weiss TLSA2-240         | Weiss TLSA2-240         |
| Pressure Relief Valve  | Watts 374A / 174A / 740 | Watts 374A / 174A / 740 |
| Air Vent               | B&G 107A                | B&G 107A                |

| Pipe Size | Hanger   |         | Insul. Thick. |
|-----------|----------|---------|---------------|
|           | Type     | Spacing |               |
| 1/4"      | Autogrip |         | Various       |
| 3/8"      | Autogrip |         | Various       |
| 1/2"      | Autogrip |         | Various       |
| 3/4"      | Autogrip |         | Various       |
| 1"        | Autogrip |         | Various       |
| 1 1/4"    | Autogrip |         | Various       |
| 1 1/2"    | Autogrip |         | Various       |
| 2"        | Autogrip |         | Various       |
| 2 1/2"    | Clevis   |         | Various       |
| 3"        | Clevis   |         | Various       |
| 4"        | Clevis   |         | Various       |
| 5"        | Clevis   |         | Various       |
| 6"        | Clevis   |         | Various       |
| 8"        | Clevis   |         | Various       |
| 10"       | Clevis   |         | Various       |
| 12"       | Clevis   |         | Various       |
| 14"       | Clevis   |         | Various       |
| 16"       | Clevis   |         | Various       |
| 18"       | Clevis   |         | Various       |
| 20"       | Clevis   |         | Various       |
|           |          |         |               |
|           |          |         |               |
|           |          |         |               |

| Services Using Template     | Abbrev | Layer   | Color | Level Block | Complete |
|-----------------------------|--------|---------|-------|-------------|----------|
| CHWS: Chilled Water Supply  | CHWS   | MP_CHWS | 153   | CL-ELEV     | X        |
| CHWR: Chilled Water Return  | CHWR   | MP_CHWR | 142   | CL-ELEV     | X        |
| CWS: Condenser Water Supply | CWS    | MP_CWS  | 97    | CL-ELEV     | X        |
| CWR: Condenser Water Return | CWR    | MP_CWR  | 77    | CL-ELEV     | X        |
| HPLS: Heat Pump Loop Supply | HPLS   | MP_HPLS | 177   | CL-ELEV     | X        |
| HPLR: Heat Pump Loop Return | HPLR   | MP_HPLR | 143   | CL-ELEV     | X        |
| HWS: Heating Water Supply   | HWS    | MP_HWS  | 233   | CL-ELEV     | X        |
| HWR: Heating Water Return   | HWR    | MP_HWR  | 222   | CL-ELEV     | X        |
| Boiler Feedwater            | BFW    | MP_BFW  | 167   | CL-ELEV     | X        |
| Boiler Chem Feedwater       | BFCW   | MP_BFCW | 147   | CL-ELEV     | X        |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |
|                             |        |         |       |             |          |

**MAP Service Template (Pipe Class)**

Client \_\_\_\_\_

**Customer Approval:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**MP (Cu L Swt (1.5) A53 Grv)**

| Service Description   | ≤ 1.5"                               | > 1.5"                                |
|-----------------------|--------------------------------------|---------------------------------------|
| Pipe Materials        | ASTM-B88 Type L Cu                   | ASTM-A53 Black Steel                  |
| Standard Pipe Length  | 20'-0"                               | 20'-0"                                |
| Joint Type            | 95% Tin / 5% Antimony Solder         | Grooved                               |
| Fitting Material      | Wrought Cu                           | Ductile Iron                          |
| Default 90 Bend Type  | SR 90                                | SR 90 (Victaulic SR is LR equivalent) |
| Default Branch Type   | Fitting                              | Fitting, TOL                          |
| Flanges               | Cast Companion / Class 150           | Weldneck / Class 150                  |
| Flange Face Type      | Raised Face (Flat Face at equipment) | Raised Face (Flat Face at equipment)  |
| Gaskets (Flanges)     | Spiral Wound Metallic                | Spiral Wound Metallic                 |
| Bolt Type (Flanges)   | ASTM-HBTS7                           | ASTM-HBTS7                            |
| Gaskets (Couplings)   | N/A                                  | EPDM Grade E / ASTM-D2000             |
| Bolt Type (Couplings) | N/A                                  | ASTM-A183                             |

| Test / Inspection        | ≤ 1.5"                         | > 1.5"                         |
|--------------------------|--------------------------------|--------------------------------|
| Weld Procedure           | N/A                            |                                |
| Weld Inspection          | N/A                            |                                |
| Media                    | Air                            | Air                            |
| Duration                 | 4 hours                        | 4 hours                        |
| Pressure (psi / ft head) | 1.5 x Pump Head (Min. 150 psi) | 1.5 x Pump Head (Min. 150 psi) |
| Responsibility           |                                |                                |

| Valves                   | ≤ 1.5"            | > 1.5"                      |
|--------------------------|-------------------|-----------------------------|
| Ball (Swt)               | Milwaukee BA-150S | N/A                         |
| Butterfly (Flg)          | N/A               | Milwaukee CL-223E / CL-323E |
| Globe (Swt/Flg)          | Milwaukee 1590T   | Milwaukee F-2981-M          |
| Gate (Swt/Flg)           | N/A               | Milwaukee F-2885-M          |
| Swing Check (Swt/Flg)    | Milwaukee 1509T   | Milwaukee F-2974-M          |
| Wafer Check              | Milwaukee 1400    | Milwaukee 1400              |
| Circuit Setter (Swt/Flg) | B&G CB Series     | B&G CB Series               |

| Specialties            | ≤ 1.5"                        | > 1.5"                  |
|------------------------|-------------------------------|-------------------------|
| Wye Strainer, 125#     | Mueller 353-1/2MM             | Mueller 758             |
| Dielectric Nipple      | Victaulic Style 47-TT / 47-GT | N/A                     |
| Dielectric Union       | Watts 3001A                   | N/A                     |
| Pressure Gauge, 0-100# | Weiss 4PGE1                   | Weiss 4PGE1             |
| Thermometer            | Weiss TL5A2-240               | Weiss TL5A2-240         |
| Pressure Relief Valve  | Watts 374A / 174A / 740       | Watts 374A / 174A / 740 |
| Air Vent               | B&G 107A                      | B&G 107A                |

| Pipe Size | Hanger   |         | Insul. Thick. |
|-----------|----------|---------|---------------|
|           | Type     | Spacing |               |
| 1/4"      | Autogrip |         | Various       |
| 3/8"      | Autogrip |         | Various       |
| 1/2"      | Autogrip |         | Various       |
| 3/4"      | Autogrip |         | Various       |
| 1"        | Autogrip |         | Various       |
| 1 1/4"    | Autogrip |         | Various       |
| 1 1/2"    | Autogrip |         | Various       |
| 2"        | Autogrip |         | Various       |
| 2 1/2"    | Clevis   |         | Various       |
| 3"        | Clevis   |         | Various       |
| 4"        | Clevis   |         | Various       |
| 5"        | Clevis   |         | Various       |
| 6"        | Clevis   |         | Various       |
| 8"        | Clevis   |         | Various       |
| 10"       | Clevis   |         | Various       |
| 12"       | Clevis   |         | Various       |
| 14"       | Clevis   |         | Various       |
| 16"       | Clevis   |         | Various       |
| 18"       | Clevis   |         | Various       |
| 20"       | Clevis   |         | Various       |

| Services Using Template     | Abbrv | Layer   | Color | Level Block | Complete |
|-----------------------------|-------|---------|-------|-------------|----------|
| CHWS: Chilled Water Supply  | CHWS  | MP_CHWS | 153   | CL-ELEV     | X        |
| CHWR: Chilled Water Return  | CHWR  | MP_CHWR | 142   | CL-ELEV     | X        |
| CWS: Condenser Water Supply | CWS   | MP_CWS  | 97    | CL-ELEV     | X        |
| CWR: Condenser Water Return | CWR   | MP_CWR  | 77    | CL-ELEV     | X        |
| HPLS: Heat Pump Loop Supply | HPLS  | MP_HPLS | 177   | CL-ELEV     | X        |
| HPLR: Heat Pump Loop Return | HPLR  | MP_HPLR | 143   | CL-ELEV     | X        |
| HWS: Heating Water Supply   | HWS   | MP_HWS  | 233   | CL-ELEV     | X        |
| HWR: Heating Water Return   | HWR   | MP_HWR  | 222   | CL-ELEV     | X        |



**MAP Service Template (Pipe Class)**

Client

**Customer Approval:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**PL (Cu L Swt (2) Grv)**

| Service Description  | ≤ 2"                                 | > 2"                                  |
|----------------------|--------------------------------------|---------------------------------------|
| Pipe Materials       | ASTM-B88 Type L Cu                   | ASTM-B88 Type L Cu                    |
| Standard Pipe Length | 20'-0"                               | 20'-0"                                |
| Joint Type           | 95% Tin / 5% Antimony Solder         | Grooved                               |
| Fitting Material     | Wrought Cu                           | Wrought Cu                            |
| Default 90 Bend Type | SR 90                                | SR 90 (Victaulic SR is LR equivalent) |
| Default Branch Type  | Fitting                              | Fitting                               |
| Flanges              | Cast Companion / Class 150           | Cast Companion / Class 150            |
| Flange Face Type     | Raised Face (Flat Face at equipment) | Raised Face (Flat Face at equipment)  |
| Gaskets              | Spiral Wound Metallic                | Spiral Wound Metallic                 |
| Bolt Type            | ASTM-HBTS7                           | ASTM-HBTS7                            |

| Test / Inspection        | ≤ 2"                           | > 2"                           |
|--------------------------|--------------------------------|--------------------------------|
| Weld Procedure           | N/A                            | N/A                            |
| Weld Inspection          | N/A                            | N/A                            |
| Media                    | Air                            | Air                            |
| Duration                 | 4 hours                        | 4 hours                        |
| Pressure (psi / ft head) | 1.5 x Pump Head (Min. 150 psi) | 1.5 x Pump Head (Min. 150 psi) |
| Responsibility           |                                |                                |

| Valves                      | ≤ 2"             | > 2"                                   |
|-----------------------------|------------------|--|
| Ball (Swt)                  | Nibco S-595-Y-LF | N/A                                    |
| Butterfly (Grv)             | N/A              | Victaulic 608 / Nibco F-515-CS-F-66-FS |
| Globe (Swt/Flg)             | Milwaukee 1590T  | Milwaukee F-2981-M                     |
| Swing Check (Swt/Flg)       | Milwaukee 1509T  | Milwaukee F-2974-M                     |
| Wafer Check                 | Milwaukee 1400   | N/A                                    |
| Circuit Setter (Swt/Flg)    | B&G CB Series    | N/A                                    |
| Pressure Reducing (Swt/Flg) | Watts 25AUB-Z3   | Watts F115                             |
| Solenoid Valve              | ASCO 8210/8221   | ASCO 8210/8221                         |

| Specialties            | ≤ 2"                              | > 2"           |
|------------------------|-----------------------------------|----------------|
| Backflow Prevention    | Wilkins 975XL (½"-¾") / Watts 909 | Watts 909      |
| Wye Strainer, 125#     | Mueller 353-1/2MM                 | Mueller 758    |
| Pressure Gauge, 0-100# | Weiss 4PGE1                       | Weiss 4PGE1    |
| Thermometer            | Weiss TLA2-240                    | Weiss TLA2-240 |
| Water Hammer Arrester  | Wilkins 1250                      | Wilkins 1250   |

| Pipe Size | Hanger   |         | Insul. Thick. |
|-----------|----------|---------|---------------|
|           | Type     | Spacing |               |
| 1/4"      | Autogrip |         | Various       |
| 3/8"      | Autogrip |         | Various       |
| 1/2"      | Autogrip |         | Various       |
| 3/4"      | Autogrip |         | Various       |
| 1"        | Autogrip |         | Various       |
| 1 1/4"    | Autogrip |         | Various       |
| 1 1/2"    | Autogrip |         | Various       |
| 2"        | Autogrip |         | Various       |
| 2 1/2"    | Clevis   |         | Various       |
| 3"        | Clevis   |         | Various       |
| 4"        | Clevis   |         | Various       |
| 5"        | Clevis   |         | Various       |
| 6"        | Clevis   |         | Various       |

| Services Using Template | Abbrv | Layer   | Color | Level Block | Complete |
|-------------------------|-------|---------|-------|-------------|----------|
| Domestic CW             | CW    | PL_CW   | 152   | CL-ELEV     | X        |
| Domestic HW             | HW    | PL_HW   | 232   | CL-ELEV     | X        |
| Domestic HWC            | HWC   | PL_HWC  | 236   | CL-ELEV     | X        |
| Laboratory CW           | LCW   | PL_LCW  | 172   | CL-ELEV     | X        |
| Laboratory HW           | LHW   | PL_LHW  | 223   | CL-ELEV     | X        |
| Laboratory HWC          | LHWC  | PL_LHWC | 217   | CL-ELEV     | X        |
| Make-Up Water           | MPW   | MP_MPW  | 173   | CL-ELEV     | X        |
| Non-Potable CW          | NPCW  | MP_NPCW | 102   | CL-ELEV     | X        |
| Non-Potable HW          | NPHW  | MP_NPHW | 122   | CL-ELEV     | X        |
| Compressed Air Plant    | CA    | MP_CA   | 72    | CL-ELEV     | X        |
| Condensate Drain        | CD    | MP_CD   | 67    | CL-ELEV     | X        |