

## FLEXX NETWORK

- F – Flexibility in system design
  - L – Latitude to meet Client expectations
  - E – Engineering outstanding performance
  - X – eXecution unmatched in our industry
  - X – eXcellence in equipment and local service

Presented By:	_____
Company:	_____
Address:	_____
	_____
Phone:	_____
Facsimile:	_____
Email:	_____

## FLEXX NETWORK PROCESS WATER SYSTEM DISCOVERY TOOL

### System Features

- √ **LET – LOW ENTRY TECHNOLOGY** Ensures valuable water quality is not degraded through CO<sub>2</sub> absorption by supplying / returning water to the low sidewall of tank.
- √ **TFD – TURBULENT FLOW DESIGN** Orientation of system components to ensure they are placed a turbulent pathway and not a bypass pathway to improve biological control and improved sanitization rinse up.
- √ **DESIGN CRITERIA DATA** Simple data on quality requirements and a usage profile is all that is required for us to design a balanced system.
- √ **FLEXXIBILITY** Each aspect of the system permits complete freedom to customize anything such as materials of construction or selection of specific component manufacturers; cost effective default standards are also offered.
- √ **PROCESS PREFERENCES** A variety of methods to achieve the same results are well known in the water treatment industry, we offer all alternatives.
- √ **MULTIPLE SKID VS. SINGLE SKID DESIGN** Space limitations may dictate a multiple skid configuration whereas some installations may benefit from a single skid design, either approach can be applied to any design.
- √ **BUILDING BLOCKS** All equipment is offered as individual packages permitting the FLEXXibility to use locally supplied or existing equipment for new systems, to increase capacity of existing systems, or for systems of increased complexity.
- √ **CONTROLS FLEXXIBILITY** Digital, analog, complex PLC's with HMI, data acquisition, and remote monitoring on varying platforms permit the FLEXXibility to provide system control solutions as simple or complex as is appropriate for the specific application.
- √ **RAPID RESPONSE** Quick and thorough design change responses permit FLEXXibility to make design alterations throughout the fabrication process without affecting delivery that is equal to, or exceeds, competitive "Standard Packages".
- √ **LEAK DETECTION** Designs that consider the importance of potential property and/or equipment damage in the event of system component failure.
- √ **CUSTOM O&M MANUALS** Each system is shipped with a comprehensive, project tailored, electronic, and hard copy, Operation and Maintenance Manual.

**As a Client, when was the last time you felt you had FLEXXibility with your water projects? NOW YOU DO.**

# FLEX System Quality Design Criteria

## Client Industry

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Pharmaceutical | <input type="checkbox"/> Biotechnology   | <input type="checkbox"/> Medical Device Manufacturer   |
| <input type="checkbox"/> Cosmetics      | <input type="checkbox"/> Food & Beverage | <input type="checkbox"/> Industrial                    |
| <input type="checkbox"/> Commercial     | <input type="checkbox"/> Laboratory      | <input type="checkbox"/> Other (please describe below) |

## Feed Source (Please attach analysis if available)

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> County Water District | <input type="checkbox"/> City Water District | <input type="checkbox"/> Spring Water       |
| <input type="checkbox"/> County Well Supply    | <input type="checkbox"/> City Well Supply    | <input type="checkbox"/> On-site Well Water |
| <input type="checkbox"/> County Surface Supply | <input type="checkbox"/> City Surface Supply | <input type="checkbox"/>                    |

Is there Client treatment prior to the system being considered (e.g.: chlorine injection, softeners, etc.)? Please list below.

## Feed Water Summary

Conductivity in $\mu\text{S}/\text{cm}$ _____	Hardness in GPG as $\text{CaCO}_3$ _____
Total Organic Carbon (TOC) in ppm _____	On-site chlorine in ppm _____
Silt Density Index (SDI) _____	Pressure in psig _____
Temperature (blend valve not inc.) $^{\circ}\text{F}$ _____	Maximum available flowing GPM _____

## Desired Final Product Water Specification

- |  |  |
|--|--|
| <p><b>Industrial / Commercial</b></p> <p><input type="checkbox"/> Boiler Feed</p> <p><input type="checkbox"/> Cooling Tower</p> <p><input type="checkbox"/> RO Product Water</p> <p><b>Laboratory Grade</b></p> <p><input type="checkbox"/> CLSI</p> <p><input type="checkbox"/> ASTM I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/></p> <p>Type A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/></p> | <p><b>Food &amp; Beverage</b></p> <p><input type="checkbox"/> Drinking Water (IBWA)</p> <p><input type="checkbox"/> Spring Water (IBWA)</p> <p><input type="checkbox"/> Purified Water</p> <p><b>Biopharm</b></p> <p><input type="checkbox"/> (Current) USP Purified</p> <p>Conductivity Stage I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/></p> <p><input type="checkbox"/> Water for Injection (WFI)</p> |
|--|--|

## Additional Purity Requirements

Conductivity / Resistivity ( <input type="checkbox"/> $\mu\text{S}/\text{cm}$ <input type="checkbox"/> $\text{M}\Omega\text{-cm}$ ) _____	Bacteria specification (cfu/ml) _____
Total Organic Carbon (TOC) (ppb) _____	Endotoxin specification EU/ml) _____
Particles _____ (Type) _____	(Limit) _____

Other (e.g.: pseudomonas free, RNA / DNA free, etc.); please list below

\_\_\_\_\_

Will the water purification system be validated?  YES  NO

# FLEXX System Quality Design Criteria

## Water Usage

1. How much water will be used in an eight-hour shift? \_\_\_\_\_
2. How many shifts per day? \_\_\_\_\_
3. How many days per week? \_\_\_\_\_
4. If there were to be an interruption in make-up water (city feed issue or pre-treatment service) how much reserve water for production would the Client like? \_\_\_\_\_
5. What is the Peak Instantaneous Demand? \_\_\_\_\_
6. How long does the Peak Instantaneous Demand last (specify minutes or hours)? \_\_\_\_\_

## Client's Facility

1. Does the customer understand that they will bring feed water pipe to the inlet connection of the system through a code required backflow preventer installed by a licensed plumber? Yes  No
2. Please indicate facilities power platform  
a. Single Phase V \_\_\_\_\_ HZ \_\_\_\_\_  
b. Three Phase V \_\_\_\_\_ HZ \_\_\_\_\_
3. Are there drains in the area? Yes  No
4. Is there a "no discharge" or "discharge quality" requirement? Yes  No
5. Is there a source of clean, dry, oil-free air available for controls operations? Yes  No
6. Are there any limitations to door openings, obstructions, or obstacles in place at the Client's location? Please describe dimensional challenges below: Yes  No   
\_\_\_\_\_
7. Please provide dimensional data of area or room where the equipment will be installed:  
Length (inches) \_\_\_\_\_ Width (inches) \_\_\_\_\_ Height (inches) \_\_\_\_\_
8. Are there any special facility conditions (e.g.: explosion proof, Seismic requirements, etc.)? Please describe below:  
\_\_\_\_\_

## Capital vs. Operating Cost

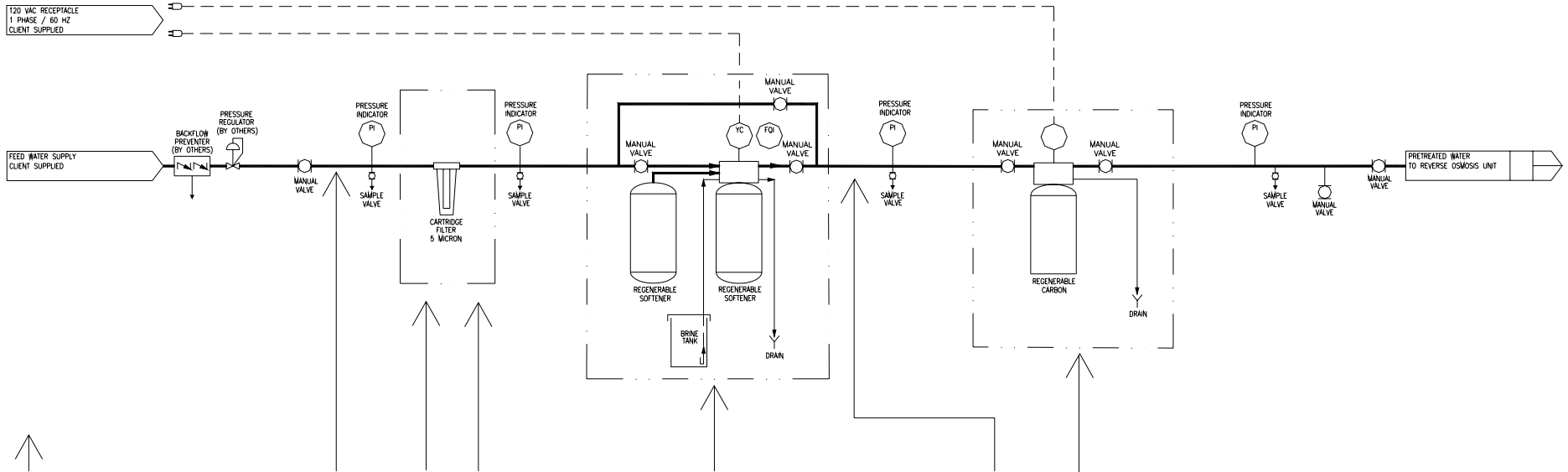
1. Is the Client primarily concerned with Capital Cost  or Operating Cost  based on a three-year payback of operating costs in place of higher capital costs?
2. Where applicable, is there a preference for:  
Exchange DI (XDI)  Cont. Electro-deionization (CEDI)  Filter Cartridge Deionization (FCDI)   
(Note: if TOC is greater than 2.0 ppm, straight SDI system will not work, must employ a Reverse Osmosis system.)

## Utility Costs

1. Is the cost of power at this facility known? (Cost per kilowatt) \$ \_\_\_\_\_
2. Is the cost of city feed water known? (Cost per 1,000 USG) \$ \_\_\_\_\_
3. Is the cost of wastewater disposal known? (Cost per 1,000 USG) \$ \_\_\_\_\_

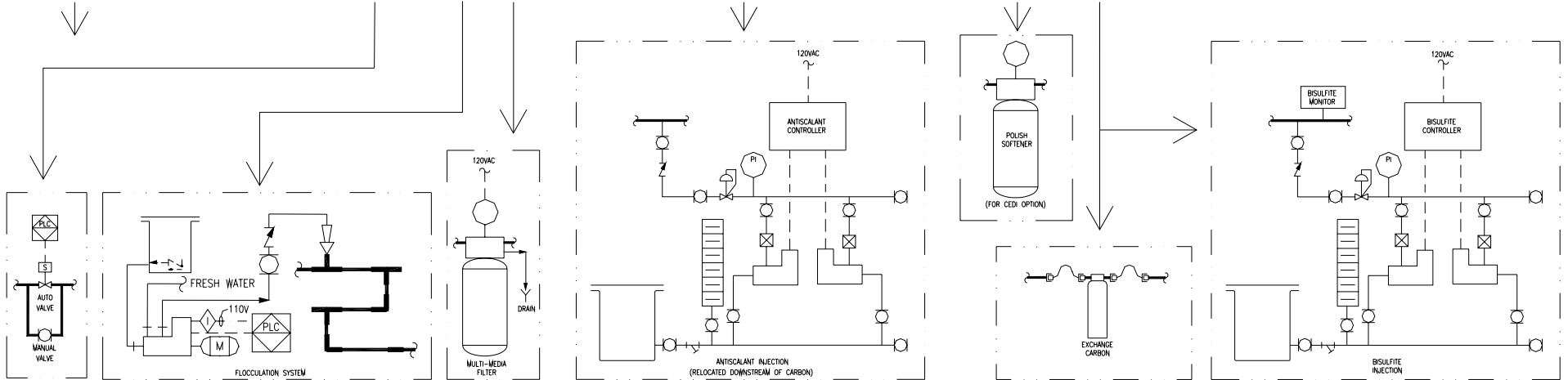
# Pretreatment P&ID

(SELECT CHOICES FROM "ALTERNATE TREATMENT TECHNOLOGIES / OPTIONS" IN TABLE BELOW)



TRADITIONAL OFFERING

ALTERNATE TECHNOLOGIES



# Pretreatment System Selection

## Cost Effective Defaults

Powder-coated Carbon Steel Skids, Multi-skid Design, PVC Schedule 80 Piping, Ball Valves, Threaded Brass Gauges, Pet-cock Sample Valves, Twin Alternating Softeners with regeneration based on gallonage, Chemically Sanitized, with Drainage by mechanical disassembly.

## Alternate Material Options

- |                |  |   |
|----------------|--|---|
| Skid Materials | <input type="checkbox"/> Stainless Steel                         |   |
| Pipe Materials | <input type="checkbox"/> Polypro Socket Fusion (minimum threads) | <input type="checkbox"/> PVDF BCF (sanitary connections only)                 |
|                | <input type="checkbox"/> Polypro Butt Fusion (no threads)        | <input type="checkbox"/> Sanitary Stainless Steel (sanitary connections only) |
|                | <input type="checkbox"/> Industrial Stainless Steel (threads)    | <input type="checkbox"/> Schedule 80 CPVC (minimum threads)                   |

## Alternate Treatment Technologies/Options

- |                         |  |   |  |
|-------------------------|--|---|--|
| Electronic Pretreatment | <input type="checkbox"/> Electronic Treatment heads (in place of electro-mechanical controllers) |   |  |
| Treatment Tanks         | <input type="checkbox"/> Softener off-site regeneration  | <input type="checkbox"/> Carbon off-site regeneration               |  |
| Treatment Technologies  | <input type="checkbox"/> Automated Feed Water Valve  | <input type="checkbox"/> Multi-media (in place of filter cartridge) | <input type="checkbox"/> Multi-media & Flocculation System |
|                         | <input type="checkbox"/> Polish Softener (for CEDI)  | <input type="checkbox"/> Antiscalant (in place of softeners)        | <input type="checkbox"/> Bisulfite (in place of carbon)    |
| Sanitization Method     | <input type="checkbox"/> Chemical Sanitization   | <input type="checkbox"/> Heat Sanitization                          |  |
| Pretreatment Break Tank | <input type="checkbox"/> Polyethylene  | <input type="checkbox"/> Stainless Steel                            |  |
| Pretreatment UV         | <input type="checkbox"/> Include UV  |   |  |

## Component Options and Brand

- |                     |  |  |
|---------------------|--|--|
| Main Valves         | <input type="checkbox"/> Diaphragm (in place of ball valves) |  |
| Diaphragm Selection | <input type="checkbox"/> EPDM                                | <input type="checkbox"/> Other (please specify): |
| Sample Valves       | <input type="checkbox"/> Sanitary (in place of ball design)  |  |

List any specific manufacturer of piping materials you want to have incorporated.

List any specific manufacturer of any system component you want to have incorporated.

## Equipment Configurations

The water flow path on the this equipment will be "inlet" on the left and "outlet" on the right and the skid will be a stand alone frame with piping required from this skid to the next unit operation. Please indicate if you would like to alter:

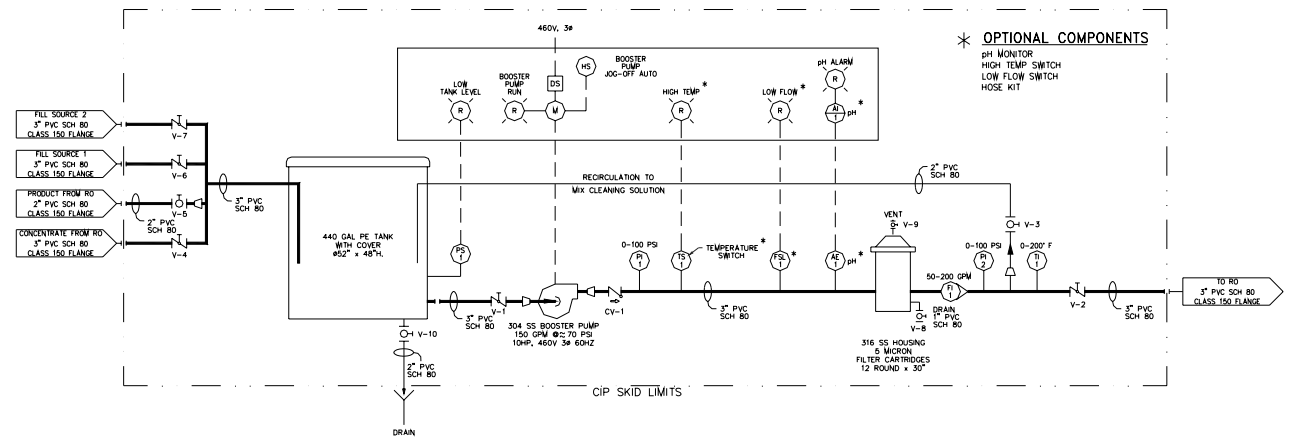
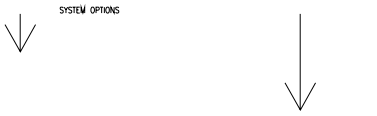
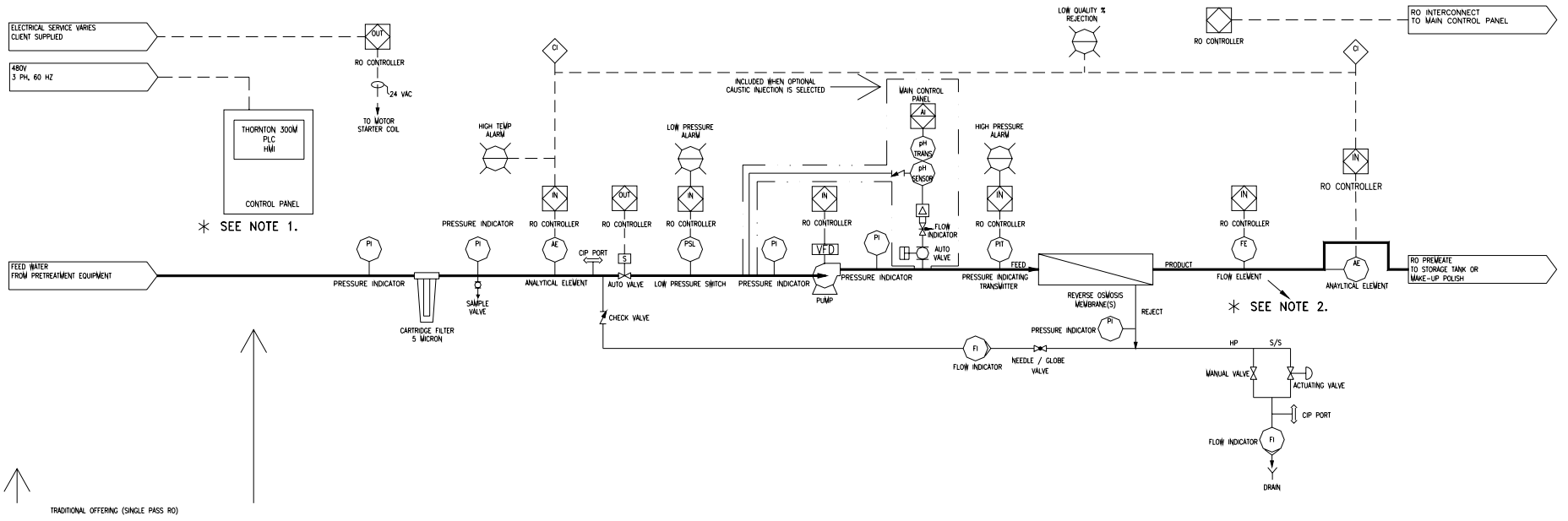
Skid Design  You would prefer this skid be combined into a single system skid (Pre-treatment, RO, Distribution all on one skid)

Water Flow through equipment  You would prefer the water flows from right (inlet) to left (outlet)

Walls We have presumed the back of the equipment will be against a wall. Please provide details of any limitations below:

# Reverse Osmosis P&ID

(SELECT CHOICES FROM "ALTERNATE TREATMENT TECHNOLOGIES / OPTIONS" IN TABLE BELOW)



- \*NOTES
1. FLOW RATE TO BE SET BY OPERATOR THROUGH HMI.
  2. TO CONTROL PUMP VFD WITH PRESSURE SWITCH.

# Reverse Osmosis System Selection

## Cost Effective Defaults

Powder-coated Carbon Steel Skids, Multi-skid Design, Single Pass, PVC Schedule 80 Piping, Ball Valves, Threaded Brass Gauges, Pet-cock Sample Valves, VFD Pumps (where available), Fiberglass RO Vessels, Threaded Permeate End caps on Vessels (unless Sanitary SS option is selected) Chemically Sanitized, with Drainage by mechanical disassembly.

## Alternate Material Options

Skid Materials	<input type="checkbox"/> Stainless Steel	
Feed Piping Pipe Materials	<input type="checkbox"/> Polypro Socket Fusion (minimum threads)	<input type="checkbox"/> Sanitary Stainless Steel (sanitary connections only)
	<input type="checkbox"/> Polypro Butt Fusion (no threads)	<input type="checkbox"/> 180 Grit ID <span style="margin-left: 100px;"><input type="checkbox"/> 32 RA EP ID</span>
	<input type="checkbox"/> Industrial Stainless Steel (threads)	<input type="checkbox"/> Schedule 80 CPVC (minimum threads)
Permeate Piping Pipe Materials	<input type="checkbox"/> Polypro Socket Fusion (minimum threads)	<input type="checkbox"/> Sanitary Stainless Steel (sanitary connections only)
	<input type="checkbox"/> Polypro Butt Fusion (no threads)	<input type="checkbox"/> 180 Grit ID <span style="margin-left: 100px;"><input type="checkbox"/> 32 RA EP ID</span>
	<input type="checkbox"/> Industrial Stainless Steel (threads)	<input type="checkbox"/> Schedule 80 CPVC (minimum threads)

## Alternate Treatment Technologies/Options

RO Design	<input type="checkbox"/> Two-pass (in place of single pass)*	<input type="checkbox"/> VFD Controlled Pump
Sanitization Method	<input type="checkbox"/> Chemical Sanitization	<input type="checkbox"/> Heat Sanitization
pH Adjust Option	<input type="checkbox"/> Include pH Adjust	
CIP Option	<input type="checkbox"/> Include CIP Skid	

\*NOTE: two-pass RO may be required based on water quality previously stated

## Component Options and Brand

Permeate Sample Valves	<input type="checkbox"/> Sanitary (in place of ball design) (Note: this is automatic on Polypro Butt Fusion and Sanitary SS)
List any specific manufacturer of piping materials you want to have incorporated.	
List any specific manufacturer of any system component you want to have incorporated.	

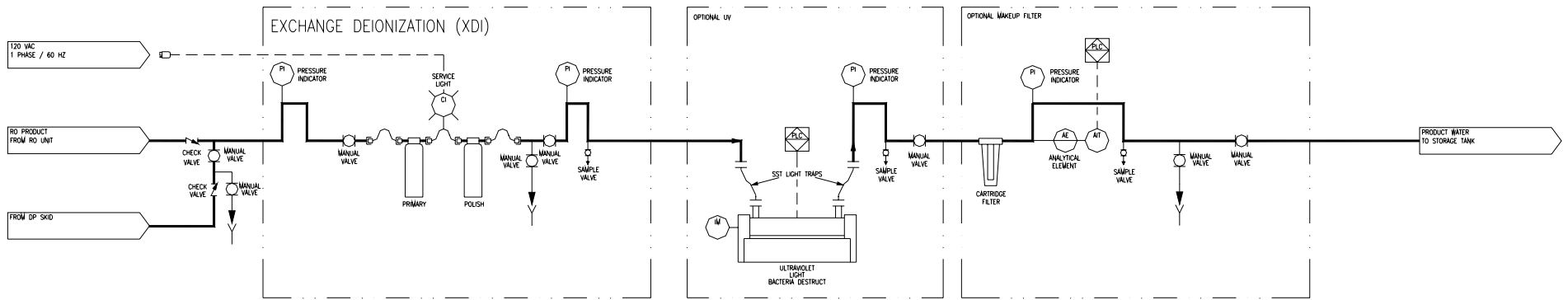
## Equipment Configurations

The water flow path on the this equipment will be "inlet" on the left and "outlet" on the right and the skid will be a stand alone frame with piping required from this skid to the next unit operation. Please indicate if you would like to alter:

Skid Design	<input type="checkbox"/> You would prefer this skid be combined into a single system skid (Pre-treatment, RO, Distribution all on one skid)
Water Flow through equipment	<input type="checkbox"/> You would prefer the water flows from right (inlet) to left (outlet)
Walls	We have presumed the back of the equipment will be against a wall. Please provide details of any limitations below:

# Make-up Polish P&ID

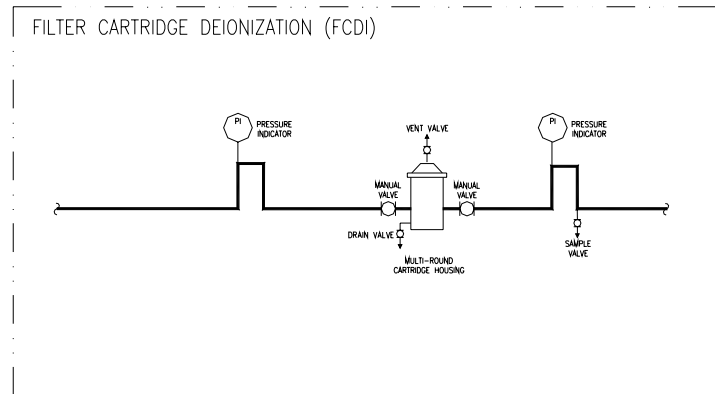
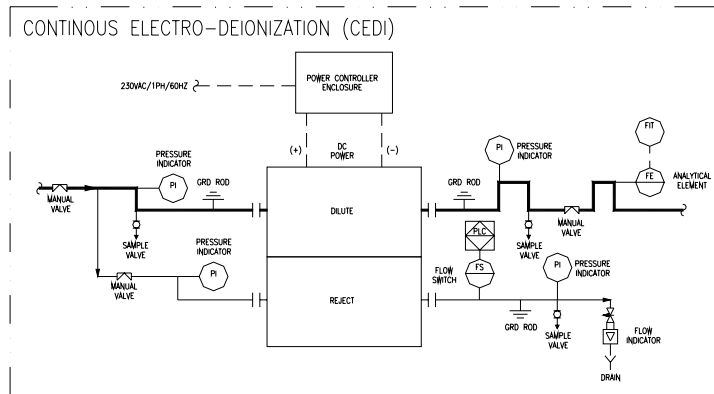
(SELECT CHOICES FROM "ALTERNATE TREATMENT TECHNOLOGIES / OPTIONS" IN TABLE BELOW)



TRADITIONAL OFFERING



ALTERNATE TECHNOLOGIES





# Make-up Polish System Selection

## Cost Effective Defaults

Powder-coated Carbon Steel Skids, Multi-skid Design, PVC Schedule 80 Piping, Ball Valves, Threaded Stainless Steel Gauges, Pet-Cock Sample Valves, Chemically Sanitized, with Drainage by mechanical disassembly.

## Alternate Material Options

Skid Materials	<input type="checkbox"/> Stainless Steel		
Feed Piping Pipe Materials	<input type="checkbox"/> Polypro Socket Fusion (minimum threads)	<input type="checkbox"/> Sanitary Stainless Steel (sanitary connections only)	
	<input type="checkbox"/> Polypro Butt Fusion (no threads)	<input type="checkbox"/> 180 Grit ID	<input type="checkbox"/> 32 RA EP ID
	<input type="checkbox"/> Industrial Stainless Steel (threads)	<input type="checkbox"/> PVDF BCF (sanitary connections)	
Product Piping Pipe Materials	<input type="checkbox"/> Polypro Socket Fusion (minimum threads)	<input type="checkbox"/> Sanitary Stainless Steel (sanitary connections only)	
	<input type="checkbox"/> Polypro Butt Fusion (no threads)	<input type="checkbox"/> 180 Grit ID	<input type="checkbox"/> 32 RA EP ID
	<input type="checkbox"/> Industrial Stainless Steel (threads)	<input type="checkbox"/> PVDF BCF (sanitary connections)	

## Alternate Treatment Technologies/Options

Polish Design	<input type="checkbox"/> Exchange Deionization (XDI)	<input type="checkbox"/> Cont Electro-deionization (CEDI)	<input type="checkbox"/> Filter Cartridge Deionization (FCDI)
Optional Treatments	<input type="checkbox"/> Include UV	<input type="checkbox"/> Include Cartridge Filter	
Sanitization Method	<input type="checkbox"/> Chemical Sanitization	<input type="checkbox"/> Heat Sanitization	

## Component Options and Brand

Main Valves	<input type="checkbox"/> Diaphragm (in place of ball valves) (Note this is automatic on Polypro Butt Fusion, PVDF BCF, and Sanitary SS)		
Diaphragm Selection	<input type="checkbox"/> EPDM	<input type="checkbox"/> Other (please specify):	
Sample Valves	<input type="checkbox"/> Sanitary (in place of ball design) (Note: this is automatic on Polypro Butt Fusion, PVDF BCF, and Sanitary SS)		
List any specific manufacturer of piping materials you want to have incorporated.			
List any specific manufacturer of any system component you want to have incorporated.			

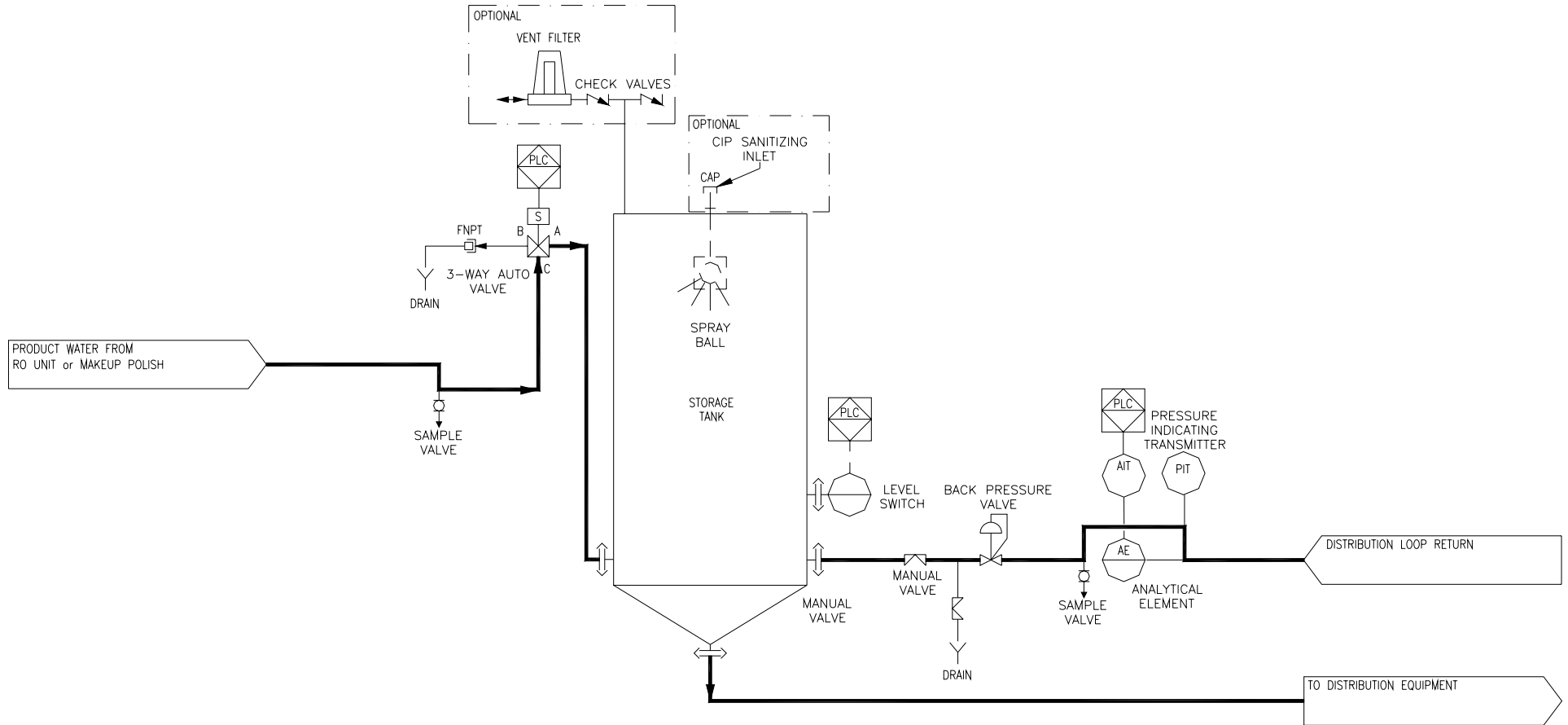
## Equipment Configurations

The water flow path on the this equipment will be "inlet" on the left and "outlet" on the right and the skid will be a stand alone frame with piping required from this skid to the next unit operation. Please indicate if you would like to alter:

Skid Design	<input type="checkbox"/> You would prefer this skid be combined into a single system skid (Pre-treatment, RO, Distribution all on one skid)
Water Flow through equipment	<input type="checkbox"/> You would prefer the water flows from right (inlet) to left (outlet)
Walls	We have presumed the back of the equipment will be against a wall. Please provide details of any limitations below:

# Storage Tank/Accessories P&ID

(SELECT CHOICES FROM "ALTERNATE TREATMENT TECHNOLOGIES / OPTIONS" IN TABLE BELOW)



# Storage Tank/Accessories System Selection

## Cost Effective Defaults

Polyethylene Tank (with Stand), Multi-skid Design, PVC Schedule 80 PVC Piping, Ball Valves, Threaded Stainless Steel Gauges, Pet-Cock Sample Valves, Chemically Sanitized, Pressure Transmitter for Tank Level Control, Low Entry Tank Design.

## Alternate Material Options

Tank Materials / Volume	<input type="checkbox"/>	Stainless Steel (in place of polyethylene - select ID/OD finishes below)				Volume (gallons)					
ID Finish	<input type="checkbox"/>	Mill	<input type="checkbox"/>	Bead Blast	<input type="checkbox"/>	180 Grit	<input type="checkbox"/>	Electropolished	<input type="checkbox"/>	32 RA	
OD Finish	<input type="checkbox"/>	Mill	<input type="checkbox"/>	Bead Blast	<input type="checkbox"/>	180 Grit	<input type="checkbox"/>	Electropolished			
Inlet Piping Pipe Materials	<input type="checkbox"/>	Polypro Socket Fusion (minimum threads)			<input type="checkbox"/>	Sanitary Stainless Steel (sanitary connections only)					
	<input type="checkbox"/>	Polypro Butt Fusion (no threads)			<input type="checkbox"/>	180 Grit ID	<input type="checkbox"/>				32 RA EP ID
	<input type="checkbox"/>	Industrial Stainless Steel (threads)			<input type="checkbox"/>	PVDF BCF (sanitary connections)					
Outlet and Return Piping Pipe Materials	<input type="checkbox"/>	Polypro Socket Fusion (minimum threads)			<input type="checkbox"/>	Sanitary Stainless Steel (sanitary connections only)					
	<input type="checkbox"/>	Polypro Butt Fusion (no threads)			<input type="checkbox"/>	180 Grit ID	<input type="checkbox"/>				32 RA EP ID
	<input type="checkbox"/>	Industrial Stainless Steel (threads)			<input type="checkbox"/>	PVDF BCF (sanitary connections)					

## Alternate Treatment Technologies/Options

Sanitization Method	<input type="checkbox"/>	Chemical Sanitization	<input type="checkbox"/>	Heat Sanitization	<input type="checkbox"/>	Ozone Sanitization
Traditional Tank Inlet/Outlet	<input type="checkbox"/>	(In place of Low Entry Tank Design)				
Options	<input type="checkbox"/>	Nitrogen Blanket	<input type="checkbox"/>	Vent Filter	<input type="checkbox"/>	Sanitization Inlet Port

## Component Options and Brand

Main Valves	<input type="checkbox"/>	Diaphragm (in place of ball valves) (Note: this is automatic on Polypro Butt Fusion, PVDF BCF, and Sanitary SS)				
Diaphragm Selection	<input type="checkbox"/>	EPDM	<input type="checkbox"/>	Other (please specify):		
Sample Valves	<input type="checkbox"/>	Sanitary (in place of ball design) (Note: this is automatic on Polypro Butt Fusion, PVDF BCF, and Sanitary SS)				
List any specific manufacturer of piping materials you want to have incorporated.						
List any specific manufacturer of any system component you want to have incorporated.						

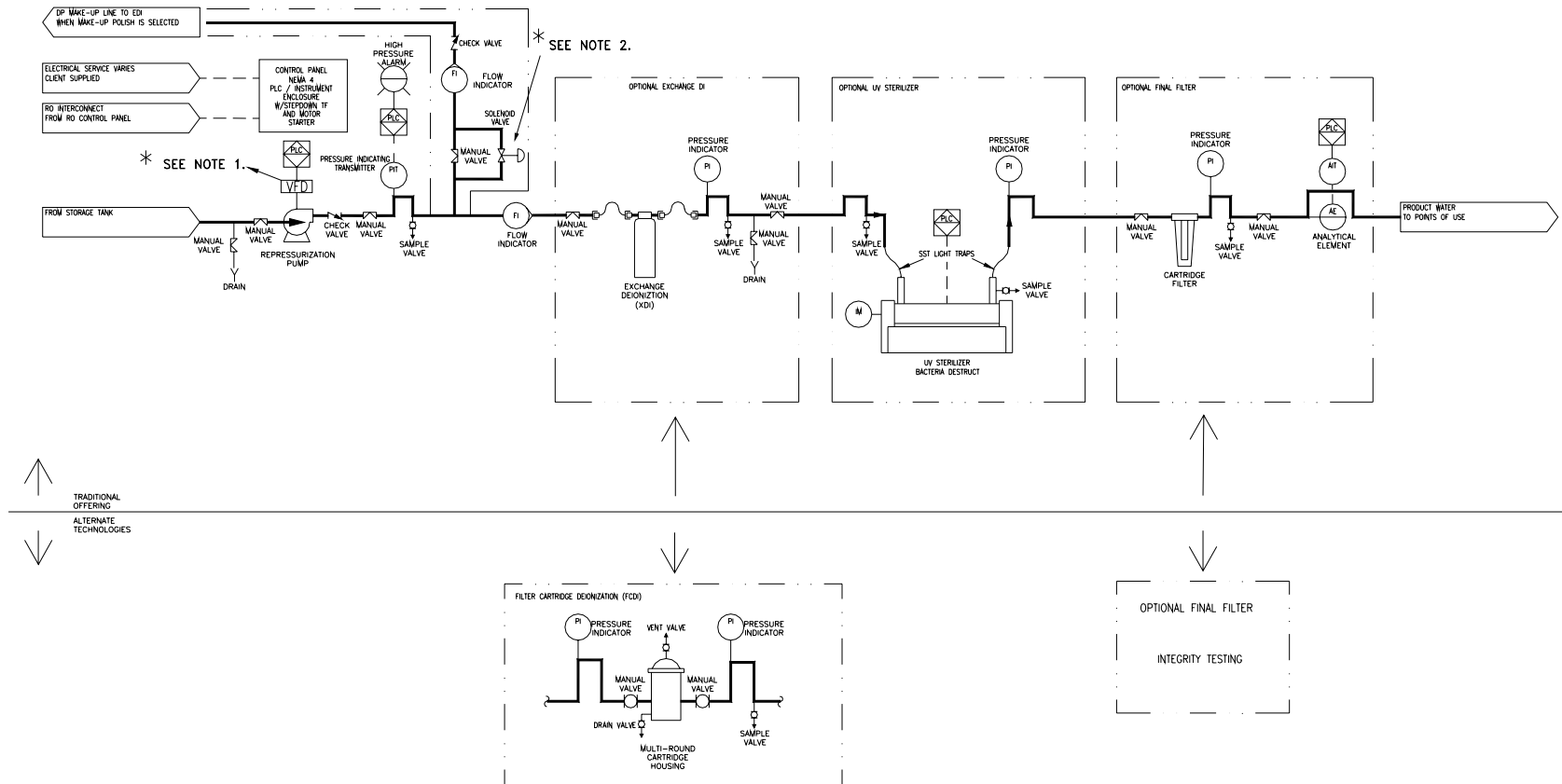
## Equipment Configurations

The water flow path on the this equipment will be "inlet" on the left and "outlet" on the right and this tank will be stand alone with piping required from this tank to the next unit operation. Please indicate if you would like to alter:

Skid Design	<input type="checkbox"/>	You would prefer this tank to be skid mounted vs. free standing on the floor
Water Flow through equipment	<input type="checkbox"/>	You would prefer the water flows from right (inlet) to left (outlet)
Walls	We have presumed the back of the equipment will be against a wall. Please provide details of any limitations below:	

# Distribution and Final Polish P&ID

(SELECT CHOICES FROM "ALTERNATE TREATMENT TECHNOLOGIES / OPTIONS" IN TABLE BELOW)



**\*NOTES**

1. PUMP CONTROLLED BY LOOP RETURN PRESSURE AND PRESSURE TRANSMITTER PRIOR TO DI INLET. DI INLET SHOULD NOT EXCEED 100 PSI.
2. WHEN RO IS OFF: FULL FLOW THROUGH SOLENOID VALVE  
WHEN RO IS ON: MINIMAL FLOW THROUGH MANUAL VALVE (SOLENOID VALVE CLOSED)

# Distribution and Final Polish System Selection

## Cost Effective Defaults

Powder-coated Carbon Steel Skids, Multi-skid Design, PVC Schedule 80 Piping, Ball Valves, Threaded Stainless Steel Gauges, Pet-Cock Sample Valves, Chemically Sanitized, with Drainage by mechanical disassembly.

## Alternate Material Options

Skid Materials	<input type="checkbox"/> Stainless Steel		
Feed Piping Pipe Materials	<input type="checkbox"/> Polypro Socket Fusion (minimum threads)	<input type="checkbox"/> Sanitary Stainless Steel (sanitary connections only)	
	<input type="checkbox"/> Polypro Butt Fusion (no threads)	<input type="checkbox"/> 180 Grit ID	<input type="checkbox"/> 32 RA EP ID
	<input type="checkbox"/> Industrial Stainless Steel (threads)	<input type="checkbox"/> PVDF BCF (sanitary connections)	
Product Piping Pipe Materials	<input type="checkbox"/> Polypro Socket Fusion (minimum threads)	<input type="checkbox"/> Sanitary Stainless Steel (sanitary connections only)	
	<input type="checkbox"/> Polypro Butt Fusion (no threads)	<input type="checkbox"/> 180 Grit ID	<input type="checkbox"/> 32 RA EP ID
	<input type="checkbox"/> Industrial Stainless Steel (threads)	<input type="checkbox"/> PVDF BCF (sanitary connections)	

## Alternate Treatment Technologies/Options

In-Loop Polish Design	<input type="checkbox"/> Exchange Deionization (XDI)	<input type="checkbox"/> Filter Cartridge Deionization (FCDI)				
Sanitization Method	<input type="checkbox"/> Chemical Sanitization	<input type="checkbox"/> Heat Sanitization	<input type="checkbox"/> Ozone Sanitization			
Final Filter	<input type="checkbox"/> .45 µm	<input type="checkbox"/> 0.2 µm	<input type="checkbox"/> 0.1 µm	<input type="checkbox"/> .05 µm (UF)	<input type="checkbox"/> .02 µm (UF)	<input type="checkbox"/> Integrity Test Option
UV Option (254 nm)	<input type="checkbox"/> Include UV					

## Component Options and Brand

Main Valves	<input type="checkbox"/> Diaphragm (in place of ball valves) (Note this is automatic on Polypro Butt Fusion, PVDF BCF, and Sanitary SS)	
Diaphragm Selection	<input type="checkbox"/> EPDM	<input type="checkbox"/> Other (please specify):
Sample Valves	<input type="checkbox"/> Sanitary (in place of ball design) (Note: this is automatic on Polypro Butt Fusion, PVDF BCF, and Sanitary SS)	
List any specific manufacturer of piping materials you want to have incorporated.		
List any specific manufacturer of any system component you want to have incorporated.		

## Equipment Configurations

The water flow path on the this equipment will be "inlet" on the left and "outlet" on the right and the skid will be a stand alone frame with piping required from this skid to the next unit operation. Please indicate if you would like to alter:

Skid Design	<input type="checkbox"/> You would prefer this skid be combined into a single system skid (Pre-treatment, RO, Distribution all on one skid)
Water Flow through equipment	<input type="checkbox"/> You would prefer the water flows from right (inlet) to left (outlet)
Walls	We have presumed the back of the equipment will be against a wall. Please provide details of any limitations below:

# Controls

Controls packages may range from simple lights and switches designed to permit safe operation of the equipment or, more complex packages that utilize Programmable Logic Controllers (PLC), HMI (Human Machine Interface), data acquisition, and remote communication. Design of the controls package can be custom tailored to suit each Client's specific requirements. All controls packages are available as either Siemens or Allen Bradley based platforms.

## Cost Effective Defaults

A majority of systems can be controlled effectively with a lower tier PLC offering. This is both cost effective and simple to implement. Commonly used is a Siemens S7 200 based PLC with panel mounted lights and switches in UL, NEMA 4/12, electrical enclosures.

## Alternate Material Options

- |                          |   |   |                          |                          |                          |     |
|--------------------------|---|---|--------------------------|--------------------------|--------------------------|-----|
| Enclosure                | <input type="checkbox"/>  | Stainless Steel NEMA 4X                                   | <input type="checkbox"/> | Plastic NEMA 4X          | <input type="checkbox"/> | EXP |
| Hardware                 | <input type="checkbox"/>  | Allen Bradley (in place of Siemens)                       |                          |                          |                          |     |
| HMI                      | <input type="checkbox"/>  | Small (used for "soft" switches)                          |                          |                          |                          |     |
|                          | <input type="checkbox"/>  | Large (used to view P&ID operations and unit values)      |                          |                          |                          |     |
|                          | <input type="checkbox"/>  | Color (for either of above)                               |                          |                          |                          |     |
|                          | <input type="checkbox"/>  | Monochrome (for either of above)                          |                          |                          |                          |     |
| Ethernet                 | <input type="checkbox"/>  | Controls to offer connectivity to Client Ethernet network |                          |                          |                          |     |
| Remote Access Monitoring | <input type="checkbox"/>  | Through Client Firewall                                   | <input type="checkbox"/> | Through Cellular Service |                          |     |
| Client Standards         | List Client preferences not shown above (e.g.: larger processors, specific control components, standard platforms, etc.) below: |   |                          |                          |                          |     |

\_\_\_\_\_

## Additional Requirements

Standards                      Such as cUL, CE, etc. Please list below:

\_\_\_\_\_

## Additional Options

Additional options to complement the equipment being considered are listed below. Although these are typically related to service offerings for water equipment, they are important aspects to consider at the equipment design phase.

- |  |                          |   |
|--|--------------------------|---|
| Validation   | <input type="checkbox"/> | Interested in Validation Documents with system                                    |
|  | <input type="checkbox"/> | Interested in option to field execute the Validation Documents                    |
| Instrument Calibration                                 | <input type="checkbox"/> | Interested in critical instruments being calibrated by factory                    |
|  | <input type="checkbox"/> | Interested in on-going calibration as an aspect of local service offering         |
| Build-Own-Operate                                      | <input type="checkbox"/> | Client is interested in no capital outlay and 3 to 5 year rental or lease program |
| Extended Warranty and<br>Emergency Part<br>Replacement | <input type="checkbox"/> | Multi-year warranty and next day parts shipment                                   |