

SECTION 01 11 00 (R1)

SUMMARY OF WORK

PART 1 GENERAL

1.1 SUMMARY

- A. This section outlines in general the work to be done under the Contract at the South End Sewage Treatment Plant (SEWPCC).
- B. Recognize that the Work is an expansion of an existing wastewater treatment plant that must be kept in continuous uninterrupted operation. Plan and schedule the Work consistent with specified operational constraints and with the objective of uninterrupted operation of the existing plant.
- C. Construct and test foundations, structures, tanks, and other facilities shown on the Contract Drawings and specified herein.
- D. Supervise, organize, coordinate and direct construction operations of Sub-trades and Suppliers.
- E. In addition to constructing the works shown on the Drawings, design, construct, and maintain, unless otherwise specified or shown on the Contract drawings, temporary works and facilities required for the construction of the works. Remove temporary works and facilities when construction is completed unless otherwise requested. Temporary works and facilities include, but are not limited to the following:
  - 1. Excavation dewatering systems
  - 2. Groundwater depressurization
  - 3. Formwork for concrete
  - 4. Falsework and bracing for formwork or for other parts of the works while under construction
  - 5. Bracing and shoring for partially completed masonry, steelwork, precast concrete, or other assembly
  - 6. Scaffolding
  - 7. Electrical, instrumentation, and water services
  - 8. Snow removal
  - 9. Blind flanges, valves, plugs necessary for water leak testing of tanks
  - 10. Temporary Contractor trailers, including servicing (sewer, water, power, communications)
  - 11. Temporary vehicular access and parking development, maintenance, and restoration
  - 12. Erosion control measures
  - 13. Ramps and railings for access to facility exit doors impacted by the Work as shown on the Drawings
  - 14. Dewatering of excavations
  - 15. Traffic control and signs

## 1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The completed Work will provide the City with concrete tanks and superstructures complete with necessary concrete encased piping for the Bioreactors, Blower Building, Secondary Clarifiers, by-pass pipe and chambers, and other miscellaneous areas, ready for future fit up (by others) of mechanical and electrical equipment and architectural works.
- B. The Contract includes but is not limited to the following work:
1. Localized excavation as necessary in the Bioreactor area, Blower Building, and Secondary Clarifiers building areas to accommodate drain pipe, process pipe, bedding, and void form.
  2. Backfill and rough grading for the Secondary Clarifiers 4 & 5, Bioreactors, and Blower Building. Backfill elevation for north and west of Secondary Clarifiers 4 & 5 shall be to 231.637. Backfill elevation for south of Secondary Clarifiers 4 & 5 shall be to 233.277. Backfill elevation for Bioreactors/Blower Building shall be to 232.400. Backfill elevation for the area between existing HPO Reactors and new Bioreactors tanks shall be to 232.600. See Appendix E – 899-2015 Sketch No 1 Backfill Limits.
  3. Supply and Install precast concrete piles in the Bioreactor and Blower Building areas.
  4. Cut-off of existing piles in areas requiring localized excavation, including BNR piles 439A, 439C, 466, 467 and Secondary Clarifier piles 1, 2, 3, 214, 215, and 216 located in the centres of each Clarifier.
  5. Supply and Install Bioreactors concrete structures
  6. Supply and Install Blower Building concrete structure
  7. Supply and Install Secondary Clarifiers concrete structure
  8. Supply and Install precast double 'T' Blower Building roof.
  9. Supply and Install grating, checker plate hatches/covers and handrails as shown on the drawings
  10. Supply and Install piping embeds and all concrete openings as shown on the drawings
  11. Supply and Install concrete encased piping
  12. For roof membranes, Supply and Install the vapour retardant only as per clause 2.1.F in Specification 07 52 16 – SBS Modified Bituminous Membrane Roofing. Extend vapour retardant 400mm up sides of temporary wood blocking around openings, and 400mm down exterior concrete wall around building perimeter.
  13. Installation of City Supplied Slide and Flap Gates in the land drainage system as shown on the drawings.
  14. Installation of block-outs for gates and stop-logs as shown on the drawings
  15. Removal of shoring to facilitate construction of Bioreactors, Blower Building, Secondary Clarifiers, By-pass and Chambers and other miscellaneous structures. Shoring shall be removed as backfilling is completed and as approved by the Contract Administrator.
  16. Supply and Install heating and hording as necessary in performing the Work, including frost removal at locations requiring localized excavation and or concrete work

17. Provide survey layout of the Work and periodic survey monitoring of existing shoring and structures for movement
18. Water leak testing and backfill of Bioreactors, Blower building, Secondary Clarifiers, by-pass and chambers, other miscellaneous structures including all water retaining tanks and channels.
19. Supply and Install 2 (two) temporary generators (duty / standby) to power the deep well dewatering pumps (supplied by others)
20. Provide groundwater monitoring and operations services during the dates specified in the Contract
21. Dewatering of Bid Op 899-2015 work areas during construction as per specification 31 23 19 Dewatering and monitoring. Maintain existing roads used during construction and leave these roads in as good a condition as they were prior to site work
22. Provide miscellaneous road maintenance during the performance of the work to maintain 24/7 access for operations staff and sludge haul trucks
23. Submittal of all documentation including shop drawings, as-builts complete with survey in UTM (Northing, Easting, Elevation) coordinates, manuals, and other specific documentation as detailed by the Contract documents and required by the Contract Administrator.
24. Supply and Install temporary covers for roof and floor openings in the areas of the Work. Covers shall address safety hazards and water ingress. Supply and Install barriers and signage as required to make the areas safe. Temporary covers, signage, and barriers shall remain in place at the completion of the Work.
25. Maintain new and existing material stock piles
26. Environmental protection during the construction period
27. Supply of all materials, equipment, tools, implements, and labour necessary to perform the Work
28. Cleaning up on completion of the Work
29. Warranty.

C. Some Contract Drawings show items that are not included in the Work. The following table shall be read in conjunction with the Contract Drawings and is part of the Work. Items included in the Work may only be identified once and may not be identified in all drawings where the Work appears.

Drawing Reference	Description of Work
<i>1-0102-BGAD-S050</i>	<i>The Contractor shall:</i> <ul style="list-style-type: none"> <li>• <i>Demolish/remove existing Tyndal stone facing, air barrier insulation, stone anchors, insulation retainers and parapet coping and flashing, at north wall and part of west wall; of walkway, at existing Secondary Clarifiers Facility, and as shown on the drawing. (A2)</i></li> </ul>
1-0102-CUTY-Y001 SHT-001	Supply and Install 2100 dia. Concrete by-pass and chambers as shown on the drawings.
1-0102-CUTY-Y001 SHT-002	Supply and Install 2100 dia. Concrete by-pass and chambers as shown on the drawings. Electrical duct bank is by others.
1-0102-CUTY-Y001 SHT-003	Supply and Install 2100 dia. Concrete by-pass and chambers as shown on the drawings. By-pass east of Chamber No. 10 is by

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<b>Drawing Reference</b>	<b>Description of Work</b>
	others.
1-0102-CUTY-Y003 SHT-001	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-CUTY-Y004	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-CGAD-R001	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-CGAD-S001	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SDTL-A001	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SFDW-R001	Supply and Install piles as shown in the clouded area of the drawing. All existing piles locations and elevations to be verified by Contractor.
1-0102-SFDW-R002	Supply and Install piles as shown in the clouded area of the drawing. All existing piles locations and elevations to be verified by Contractor.
1-0102-SFDW-R003	Supply and Install piles as shown in the clouded area of the drawing. All existing piles locations and elevations to be verified by Contractor.
1-0102-SFDW-R004	Supply and Install piles as shown in the clouded area of the drawing. All existing piles locations and elevations to be verified by Contractor.
1-0102-SFDW-R005	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SFDW-R006	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R001	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R002	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Supply and Install of Concrete equipment pads by others. Supply and Install of ladders by others.
1-0102-SGAD-R003	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others. Supply and Install of ladders by others.
1-0102-SGAD-R004	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Supply and Install of ladders by others.
1-0102-SGAD-R005	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R006	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Supply and Install of ladders by others.
1-0102-SGAD-R007	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Supply and Install of ladders by

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Drawing Reference	Description of Work
	others.
1-0102-SGAD-R008	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Supply and Install of ladders by others.
1-0102-SGAD-R009	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R010	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R011	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R012	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R013	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others.
1-0102-SGAD-R014	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. <b>Monorail by others. (A2)</b>
1-0102-SGAD-R015	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R016	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R017	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R018	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R019	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R020	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R021	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Supply and Install of ladders by others.
1-0102-SGAD-R022	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Supply and Install of ladders by OTHERS. Concrete equipment pads are by others.
1-0102-SGAD-R023	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others.
1-0102-SGAD-R024	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others. <b>Monorail is by others. (A2)</b>
1-0102-SGAD-R025	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others. Supply and Install of ladders by others. <b>CMU wall by others. (A2)</b>
1-0102-SGAD-R026	All Work as shown on the drawing is to be Supplied and

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<b>Drawing Reference</b>	<b>Description of Work</b>
	Installed in Bid Op 899-2015.
1-0102-SGAD-R027	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R028	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R029	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others.
1-0102-SGAD-R030	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others.
1-0102-SGAD-R031	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R032	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R033	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others.
1-0102-SGAD-R034	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Supply and Install of ladders by others.
1-0102-SGAD-R035	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Supply and Install of ladders by others.
1-0102-SGAD-R036	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-R037	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others.
1-0102-SGAD-R038	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SDTL-R001	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-R002	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-R003	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-R004	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-R005	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-R006	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-R007	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
<b><i>1-0102-SDTL-R008</i></b>	<b><i>All Work as shown on the drawing is to be Supplied and</i></b>

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Drawing Reference	Description of Work
	<b><i>Installed in Bid Op 899-2015. (A2)</i></b>
1-0102-SSCH-R001	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-S001	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others.
1-0102-SGAD-S002	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. 50mm concrete topping by others.
1-0102-SGAD-S003	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. 50mm concrete topping by others. Concrete equipment pads are by others.
1-0102-SGAD-S004	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others. <b><i>FRP grating by others. (A2)</i></b>
1-0102-SGAD-S005	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others.
1-0102-SGAD-S006	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others.
1-0102-SGAD-S007	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. FRP covers by others. Confirm FRP cover details with Contract Administrator prior to construction of launder.
1-0102-SGAD-S008	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. FRP covers by OTHERS. Confirm FRP cover details with Contract Administrator prior to construction of launder.
1-0102-SGAD-S009	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Precast concrete electrical trench by others.
1-0102-SGAD-S010	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-S011	Overall Plan: See referenced plans and sections for description of work.
1-0102-SGAD-S012	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Metal walkway bridge is by others.
1-0102-SGAD-S013	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Metal walkway bridge is by others. <b><i>Aluminum railing around clarifier is by others. (A2)</i></b>
1-0102-SGAD-S014	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. CMU walls are by others. Precast concrete electrical trench by others. Walkway B west of Gridline 1s by others. Concrete equipment pads are by others. <b><i>Exterior aluminum open grating stair and slab on grade under stair are by others. Geofam, wearing slabs, and insulation under</i></b>

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Drawing Reference	Description of Work
	<i>wearing slabs are by others. (A2)</i>
1-0102-SGAD-S015	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others. <i>Exterior aluminum open grating stair and slab on grade under stair are by others. Geofoam, wearing slabs, and insulation under wearing slabs are by others. (A2)</i>
1-0102-SGAD-S016	Overall Plan: See referenced plans and sections for description of work.
1-0102-SGAD-S017	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. CMU walls are by others.
1-0102-SGAD-S018	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. CMU walls are by others.
1-0102-SGAD-S019	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete topping by others.
1-0102-SGAD-S020	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete topping by others.
1-0102-SGAD-S021	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others. 300mm thick geofoam, 300mm earth cover, and PVC sheet per Note 5 is by others.
1-0102-SGAD-S022	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads and concrete pipe supports are by others. 300mm thick geofoam, 300mm earth cover, and PVC sheet per Note 5 is by others.
1-0102-SGAD-S023	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. 300mm thick geofoam, 300mm earth cover, and PVC sheet is by others.
1-0102-SGAD-S024	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Walkway B west of Gridline 1s by others.
1-0102-SGAD-S025	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-S026	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-S027	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others. 300mm thick geofoam, 300mm earth cover, and PVC sheet per Note 1 is by others.
1-0102-SGAD-S028	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by others. 300mm thick geofoam, 300mm earth cover, and PVC sheet per Note 5 is by others.
1-0102-SGAD-S029	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. 300mm thick geofoam, 300mm earth cover, and PVC sheet per Note 5 is by others.
1-0102-SGAD-S030	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. Concrete equipment pads are by



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<b>Drawing Reference</b>	<b>Description of Work</b>
	others. 300mm thick geofoam, 300mm earth cover, and PVC sheet per Note 5 is by others.
1-0102-SGAD-S031	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-S032	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-S033	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
1-0102-SGAD-S050	Removal of existing drop shaft between gridlines 3 and 4 and north of gridline A shall be part of the Work. Demolition work shown at gridline 10 between gridlines A and B is by others.
1-0102-SGAD-S051	Removal of existing stair and landing, including burn back exposed rebar 25mm and dry pack with non-shrink grout, shall be part of the Work. Demolition shown north of gridline A between gridlines 7 and 8 shall be part of the Work. Demolition shown on gridline A between gridline 3 and 4 is by others.
1-0102-SGAD-S052	For information. Demolition is by others.
1-0102-SGAD-S053	Demolition near gridline A and 8, Plan at Effluent Conduit, shall be part of the Work. Demolition near gridline A and 4, Plan at Stop Gates, is by others.
1-0102-SGAD-S054	Demolition shown in section 7, near gridline 10 between elevations 231.036 and 233.477, shall be part of the Work. Demolition shown in section 1, near gridline A and near elevation 232.277, is by others.
1-0102-SDTL-S001	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
<i>1-0102-SDTL-S002</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S003</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S004</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S005</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S006</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S007</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S008</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S009</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S010</i>	<i>All Work as shown on the drawing is to be Supplied and</i>

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<b>Drawing Reference</b>	<b>Description of Work</b>
	<i>Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S011</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S012</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S013</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S014</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
<i>1-0102-SDTL-S015</i>	<i>All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015. (A2)</i>
1-0102-SSCH-S001	All Work as shown on the drawing is to be Supplied and Installed in Bid Op 899-2015.
SEP-334	All Work as shown in the clouded area of the drawing is to be Supplied and Installed in Bid Op 899-2015.
SEP-339	Perform required demolition for installation of walkway connecting roof of Bioreactors to roof of Biofilters. Demolition of channel connections is by others.
1-0102-SDTL-A002	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A003	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A004	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A005	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A006	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A007	Standard details for applicable work as shown on the drawings and as detailed in the specifications. <b><i>Stair nosings are by others. Provide recess and fill with wood blocking. Stair nosing is 75 mm wide, 12 mm thick, and 300 mm shorter than width of stair, centered. (A2)</i></b>
1-0102-SDTL-A008	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A009	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A010	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A011	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A012	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A013	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A014	Standard details for applicable work as shown on the drawings

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Drawing Reference	Description of Work
	and as detailed in the specifications.
1-0102-SDTL-A016	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-SDTL-A017	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-PDTL-A001	Legends for applicable work as shown on the drawings and as detailed in the specifications.
<b><i>1-0102-PDTL-R001</i></b>	<b><i>Details for applicable work as shown on the drawings and as detailed in specifications. (A2)</i></b>
1-0102-PGAD-R001	Overall Plan: See referenced plans and sections for description of work.
1-0102-PGAD-R002	<p>Supply and Install:</p> <ul style="list-style-type: none"> <li>• 900-ML-SS01 from east of gridline 3r to tank TK-R103</li> <li>• Embeds in WAS Sump TK-R300</li> <li>• Embedded pipe for WAS Sump Mixing Pump</li> <li>• 900 dia access hatch between tanks TK-R101 and TK-R102 located on gridline Cr</li> <li>• 900 dia access hatch between tanks TK-R102 and TK-R103 located on gridline Dr</li> <li>• 900 dia access manway between tank TK-R103 and Pipe gallery on gridline 7r</li> <li>• Embeds along gridline 7r</li> <li>• Concrete encased 250-PD-SS01 Pipe in Pipe gallery 8 and north of Ar</li> <li>• <b><i>Concrete encased 150-PD-SS01, 200-PD-SS01, mud valve, and flexible connection located north of Fr between 2r and 8r (A1)</i></b></li> <li>• Concrete encased 250-PD-SS01 north of gridline Fr All mixers, manual slide gates, pumps, aeration piping, and IFAS cylindrical sieves is by others.</li> </ul>
1-0102-PGAD-R003	<p>Supply and Install:</p> <ul style="list-style-type: none"> <li>• 900-ML-SS01 from east of gridline 3r to tank TK-R113</li> <li>• 900 dia access hatch between tanks TK-R111 and TK-R112 located on gridline Hr</li> <li>• 900 dia access hatch between tanks TK-R112 and TK-R113 located on gridline Jr</li> <li>• 900 dia access manway between tank TK-R113 and Pipe gallery on gridline 7r</li> <li>• Embeds along gridline 7r</li> <li>• Concrete encased 250-PD-SS01 Pipe in Pipe gallery 8A between gridlines 7r and 9r</li> <li>• <b><i>Concrete encased 200-PD-SS01, mud valve, and flexible connection located north of Lr between 2r and 8r (A1)</i></b></li> </ul> <p>All mixers, manual slide gates, pumps, and aeration piping is by others.</p>

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1-0102-PGAD-R004	<p>Supply and Install:</p> <ul style="list-style-type: none"> <li>• 900-ML-SS01 from east of gridline 3r to tank TK-R123</li> <li>• 900 dia access hatch between tanks TK-R121 and TK-R122 located on gridline Mr</li> <li>• 900 dia access hatch between tanks TK-R122 and TK-R123 located on gridline Nr</li> <li>• 900 dia access manway between tank TK-R123 and Pipe gallery on gridline 7r</li> <li>• Embeds along gridline 7r</li> <li>• Concrete Encased 250-PD-SS01 Pipe in Pipe gallery 8 between gridlines 7r and 9r</li> <li>• Concrete encased 250-PD-SS01 north of gridline Qr</li> <li>• <b>Concrete encased 200-PD-SS01, mud valve, and flexible connection located north of Qr between 2r and 8r. (A1)</b></li> </ul> <p>All mixers, manual slide gates, pumps, and aeration piping is by others.</p>
1-0102-PGAD-R005	<p>Overall Plan: See referenced plans and sections for description of work.</p>
1-0102-PGAD-R006	<p>Supply and Install:</p> <ul style="list-style-type: none"> <li>• Encased 150-SC-SS01 Scum Pipe on exterior from existing system to new WAS Sump located left gridline 1r and north of gridline Ar.</li> <li>• 150-SC-SS01 embeds and pipe along gridline Ar west of gridline 3r</li> <li>• 150-WAS-SS01, 250-WAS-SS01 Embeds in WAS Sump TK-R300</li> <li>• 100-FSW-SS01 embed near gridline Br and east of 4r</li> <li>• 50-VTA-SS01 embeds near gridline Br and west of 7r</li> <li>• 350-PE-SS01 embeds between gridline 7r and 8r north of Cr</li> <li>• 600-RAS-SS01 and 250-WAS-SS01 embeds between gridline 8r and 9r north of Cr</li> <li>• 750-RAS-SS01 embeds between gridline 8r and 9r south of Br</li> <li>• OF embeds (<b>shown as 350-RAS-SS01</b>) near gridline 8r, between Er and Fr. (A2)</li> </ul> <p>All scum transfer grating, sieves in IFAS zone, slide gates, aeration manifolds are by others.</p>

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1-0102-PGAD-R007	Supply and Install: <ul style="list-style-type: none"> <li>• 350-PE-SS01 embeds between gridline 7r and 8r south of Gr</li> <li>• 600-RAS-SS01 embeds between gridline 8r and 9r north of Hr</li> <li>• OF embeds (<i>shown as 350-RAS-SS01</i>) near gridline 8r, between Jr and K. (A2)</li> </ul> All scum transfer grating, sieves in IFAS zone, slide gates, aeration manifolds are by others.
1-0102-PGAD-R008	Supply and Install: <ul style="list-style-type: none"> <li>• 350-PE-SS01 embeds between gridline 7r and 8r north of Mr</li> <li>• 600-RAS-SS01 embeds between gridline 8r and 9r north of Mr</li> <li>• 250-WAS-SS01 embeds between gridline 8r and 9r north of Qr</li> <li>• 50-PD-SS01 embeds between gridline 7r and 8r north of Qr</li> <li>• OF embeds (<i>shown as 350-RAS-SS01</i>) between near gridline 8r between Nr and Pr. (A2)</li> </ul> All scum transfer grating, sieves in IFAS zone, slide gates, aeration manifolds are by others.
1-0102-PGAD-R009	Overall Plan: See referenced plans and sections for description of work.
1-0102-PGAD-R010	Supply and Install: <ul style="list-style-type: none"> <li>• Confined space entry davit embeds</li> </ul> All scum transfer grating, sieves in IFAS zone, slide gates, aeration manifolds, coarse bubble are by others.
1-0102-PGAD-R011	All scum transfer grating, sieves in IFAS zone, slide gates, aeration manifolds, coarse bubble are by others.
1-0102-PGAD-R012	All scum transfer grating, sieves in IFAS zone, slide gates, aeration manifolds, coarse bubble are by others.
1-0102-PGAD-R013	Supply and Install: <ul style="list-style-type: none"> <li>• ALP embeds to air plenum near gridline 12r</li> <li>• ALP embeds along gridline 8r.</li> </ul>
1-0102-PGAD-R014	section A Supply and Install: <ul style="list-style-type: none"> <li>• Encased 150-SC-SS01 Scum Pipe on exterior from existing system to new WAS Sump</li> <li>• 150-SC-SS01 embeds west of 3r below EL. 234.400 (2 places)</li> <li>• Level transmitter embed west of 1r at EL 234.400</li> <li>• Embeds for 150-WAS-SS01 in Sump TK-R300 between 4r and 5r</li> <li>• 150-WAS-SS01, 200-WAS-SS01 located between</li> </ul>

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	<p>gridlines 4r and 5r.</p> <ul style="list-style-type: none"> <li>• Embed for 50-PD-SS01 located between gridlines 4r and 5r.</li> <li>• Embed for LIT-R3002-1 and LIT-R3002-2 located between gridlines 4r and 5r.</li> <li>• Concrete 250-PD-SS01 encased pipe between 6r and 8r</li> </ul> <p>section A1            Supply and Install</p> <ul style="list-style-type: none"> <li>• 100-FSW-SS01 embeds near gridline 4r including the vertical section of the pipe inside the channel</li> <li>• Three 75 mm diameter stainless steel sleeves for the 25-FC-PV03 pipes WAS embed near gridline 4r</li> </ul> <p>section B            Supply and Install:</p> <ul style="list-style-type: none"> <li>• 900-ML-SS01 from gridline 3r to 6r</li> <li>• 350-PE-SS01, 600-RAS-SS01, embeds along gridline 7r</li> <li>• 250-PD-SS01 with valve between gridlines 7r and 8r 600-RAS-SS01, 350-PE-SS01 embeds between gridlines 7r and 9r at EL. 232.105</li> <li>• 750-RAS-SS01 embed between gridlines 8r and 9r</li> <li>• Concrete encased 250-PD-SS01 between gridlines 7r and 9r</li> <li>• LT embed pipe between gridline 4r and 5r, at EL 234.400.</li> </ul> <p>All gates, mixers, actuators, pumps, valves are by others.</p>
1-0102-PGAD-R015	<p>section C            Supply and Install:</p> <ul style="list-style-type: none"> <li>• 350-RAS-SS01 embed near gridlines 8r, and elevation 233.300</li> <li>• Embedded 250-PD-SS01 process drain between gridlines 9r and 7r and concrete encased to near gridline 1r</li> <li>• 900 dia access manway along gridline 7r</li> <li>• LT embed pipe between gridline 4r and 5r, at EL 234.400.</li> </ul> <p>section D            Supply and Install:</p> <ul style="list-style-type: none"> <li>• 900-ML-SS01 from gridline 5r to 6r</li> <li>• 900 dia access hatch between gridlines 6r and 7r</li> <li>• 100-FSF embeds along gridline 7r</li> <li>• 350-RAS-SS01 embed near gridlines 8r, and elevation 233.300</li> <li>• Concrete encased 250-PD-SS01 between gridlines 9r and 7r</li> </ul>

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	<ul style="list-style-type: none"> <li>• 250-PD-SS01 with valve between gridlines 7r and 8r</li> </ul>
1-0102-PGAD-R016	<p>section E            Supply and Install:</p> <ul style="list-style-type: none"> <li>• 900-ML-SS01 from gridline 3r to 6r</li> <li>• 900 dia access hatch between tanks</li> <li>• 75-FSF-SS01, 250-PD-SS01 embeds along gridline 7r</li> <li>• ALP embeds between 9r and 10r at EL. 232.105</li> <li>• Embedded 250-PD-SS01 process drain between gridlines 9r and 7r</li> <li>• ALP embeds to air plenum near gridline 12r</li> </ul> <p>section F            Supply and Install:</p> <ul style="list-style-type: none"> <li>• 250-WAS-SS01 floor embed between 8r and 9r</li> <li>• Embedded process drain between gridlines 8r and 7r</li> <li>• 250-PD-SS01 Wall embeds along gridline 7r and concrete encased to near gridline 4r</li> <li>• 900 dia access hatch along gridline 7r</li> <li>• LT embed pipe between gridlines 4r, 5r at elevation 234.400</li> <li>• ALP embed between right of gridlines 2r at 234.400</li> </ul>
1-0102-PGAD-R017	<p>section G            Supply and Install:</p> <ul style="list-style-type: none"> <li>• All ALP embeds to air intake plenum</li> </ul> <p>section H</p> <p><b><i>section H1</i></b>  <b><i>Supply and Install:</i></b>  <b><i>ALP and IAS floor embeds at elevation 232.650 (A1)</i></b></p> <p>section J            Supply and Install:</p> <ul style="list-style-type: none"> <li>• ALP floor embeds at elevation 232.650</li> </ul> <p>All pipe and blowers is by others.</p>
1-0102-PGAD-R018	<p>section J (Part A and B)            Supply and Install</p> <ul style="list-style-type: none"> <li>• Concrete encased 250-PD SS01 between gridline Rr and Ar</li> <li>• All 250-WAS-SS01, 350-PE-SS01, 600-RAS-SS01, 200-PD-SS01, <b><i>750-RAS-SS01</i></b> embeds at EL. 232.105 (A1)</li> </ul> <p>All piping, valves, instrumentation is by others.</p>
1-0102-PGAD-R019	<p>section K (Part A and B)            For information, See other drawings for scope of work.</p>
1-0102-PGAD-R020	<p>section L (Part A and B)</p>

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	For information, See other drawings for scope of work.
1-0102-PGAD-R021	section M (Part 1 and part 2) For information, See other drawings for scope of work.
1-0102-PGAD-R022	section N For information, See other drawings for scope of work.
1-0102-PGAD-R023	section P For information, See other drawings for scope of work.
1-0102-PGAD-R024	section Q For information, See other drawings for scope of work.
1-0102-PGAD-S001	Overall Plan: See referenced plans and sections for description of work.
1-0102-PGAD-S002	All pumps, piping, valve are by others. Supply and Install 150-FE-SS01 and 200-FE-SS01 located at gridline 1s.
1-0102-PGAD-S003	Supply and Install: <ul style="list-style-type: none"> <li>• Concrete encased 900-ML-SS01, 350-RAS-SS01, 600-RAS-SS01,</li> <li>• Concrete encased 300-PD-SS01 and pipe embed in clarifier wall including interconnecting pipe spool with valve HV-S150C and flexible coupling.</li> <li>• 250-SC-SS01 embeds located at gridlines Bs in tank TK-S140 and TK-S150</li> </ul>
1-0102-PGAD-S004	Supply and Install: <ul style="list-style-type: none"> <li>• Concrete encased 900-ML-SS01, 350-RAS-SS01, 600-RAS-SS01</li> <li>• Concrete encased 300-PD-SS01 and pipe embed in clarifier wall including interconnecting pipe spool with valve HV-S140C and flexible coupling.</li> <li>•</li> <li>• 300-PD-SS01 encased and complete connection to existing process drain through a Tee between gridline 9s and 10s</li> <li>• 300-PD-SS01 encased and complete connection to existing process drain between gridline 9s and 10s</li> </ul>
1-0102-PGAD-S005	Supply and Install: <ul style="list-style-type: none"> <li>• Concrete encased 600-RAS-SS01, 350-RAS-SS01, 300-PD-SS01</li> </ul> All piping is by others.
1-0102-PGAD-S006	Overall Plan: See referenced plans and sections for description of work.
1-0102-PGAD-S007	Supply and Install: <ul style="list-style-type: none"> <li>• 900-ML-SS01 embeds north of Ds near gridlines 6s and 10s</li> <li>• 400-PD-SS01 within the mixed liquor channel including the wall embed located gridline Fs.</li> </ul>



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	<ul style="list-style-type: none"> <li>• Stop logs SL-S140A and SL-150B</li> <li>• Manual slide Gates SG-S150A and SG-S140A</li> </ul> All other manual slide gates, stop logs, and piping is by others.
1-0102-PGAD-S008	Overall Plan: See referenced plans and sections for description of work.
1-0102-PGAD-S009	For information. Slide gates, and clarifier bridge, mechanism and feedwell is by others.
1-0102-PGAD-S010	Supply and Install: <ul style="list-style-type: none"> <li>• Concrete encased 900-ML-SS01, 600-RAS-SS01.</li> </ul> All clarifier lighting, scum through and mechanism is by others.
1-0102-PGAD-S011	section C Supply and Install: <ul style="list-style-type: none"> <li>• 400-PD-SS01 within the mixed liquor channel and embeds at gridline Fs and EL. 232.601</li> </ul> section B Supply and Install <ul style="list-style-type: none"> <li>• 250-SC-SS01, 100-SC-SS01, 150-SC-SS01, 100-VENT-SS01 embeds at scum tank V-S315</li> <li>• 750 manway at scum tank V-S315. <b><i>The 750 mm manway shall be per detail 1 on drawing PGAD-R017 modified for 750 mm diameter. (A2)</i></b></li> <li>• Concrete encased 300-PD-SS01</li> </ul> All gates, pumps, piping, valves are by others.
1-0102-PGAD-S012	section D Supply and Install: <ul style="list-style-type: none"> <li>• Concrete encased 900-ML-SS01, 600-RAS-SS01, 300-RAS-SS01</li> </ul> Walkway bridge and clarifier mechanism is by others.
1-0102-PGAD-S013	For information, all piping is by others.
1-0102-PGAD-S014	section F Supply and Install: <ul style="list-style-type: none"> <li>• Concrete encased 900-ML-SS01</li> <li>• 1050x900 concentric reducer embed complete with blind flange. Align with 900-ML-SS01 and demonstrate alignment to contract administrator using high precision tools.</li> </ul> section G Supply and Install: <ul style="list-style-type: none"> <li>• Concrete encased 900-ML-SS01</li> <li>• 1050x900 concentric reducer embed complete with blind flange. Align with 900-ML-SS01 and demonstrate alignment to contract administrator using high precision tools.</li> </ul>

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	All stop logs, valves, flow elements, launder covers, effluent launders are by others.
1-0102-PDTL-A004	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-MDTL-A001 SHT-001	Legends for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-MDTL-A001 SHT-002	Legends for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-MGAD-R501	Overall Plan: See referenced plans and sections for description of work.
1-0102-MGAD-R502	Supply and Install all (gutter drains, funnel drains, cleanouts, floor drains) drains and encased piping as shown on the drawing including trap primer lines.
1-0102-MGAD-R503	Supply and Install all (gutter drains, funnel drains, cleanouts, floor drains) drains and encased piping as shown on the drawing including trap primer lines.
1-0102-MGAD-R504	Supply and Install all (gutter drains, funnel drains, cleanouts, floor drains) drains and encased piping as shown on the drawing including trap primer lines. Piping not encased in concrete and Sump Pumps is by others.
1-0102-MGAD-R505	Supply and Install all (gutter drains, funnel drains, cleanouts, floor drains) drains and encased piping as shown on the drawing including trap primer lines. Piping not encased in concrete is by others.
1-0102-MGAD-R506	Overall Plan: See referenced plans and sections for description of work.
1-0102-MGAD-R507	Supply and Install: <ul style="list-style-type: none"> <li>• All (gutter drains, funnel drains, cleanouts, floor drains) drains and encased piping as shown on the drawing including trap primers lines.</li> <li>• Horizontal section of Rain water leader piping (RW) encased in concrete from roof drain to exterior located between on gridline 12r between gridline Hr and Jr.</li> </ul> Washroom fixtures, janitor room fixtures, 100-VTA-CI01 not encased in concrete is by others.
1-0102-MGAD-R508	Supply and Install: <ul style="list-style-type: none"> <li>• All (gutter drains, funnel drains, cleanouts, floor drains) drains and encased piping as shown on the drawing including trap primer lines</li> <li>• Horizontal section of Rain water leader piping (RW) encased in concrete from roof drain to exterior located on gridline 12r and left of Mr</li> </ul> Equipment pads are by others.
1-0102-MGAD-R509	Supply and Install: <ul style="list-style-type: none"> <li>• All roof drains (RD and OD) and encased piping as shown on the drawing</li> </ul>

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	<ul style="list-style-type: none"> <li>• Provide covers for roof drains to prevent water from entering the building</li> </ul>
<b><i>1-0102-MGAD-R510</i></b>	<p><b><i>Supply and Install:</i></b></p> <ul style="list-style-type: none"> <li>• <b><i>Concrete encased pipe and pipe embeds</i></b></li> </ul> <p><b><i>All pumps, fabricated metal pump supports, ladders, piping not encased in concrete, controls are by others. (A2)</i></b></p>
1-0102-MGAD-R602	For information, HVAC ducting and heaters shown on the drawing are by others.
1-0102-MGAD-R603	Supply and Install: <ul style="list-style-type: none"> <li>• Fire dampers FD-R610-3 and FD-R611-1</li> </ul> HVAC ducting and equipment shown on the drawing are by others.
1-0102-MGAD-R604	Supply and Install: <ul style="list-style-type: none"> <li>• Fire damper FD-R610-2</li> </ul> HVAC ducting and equipment shown on the drawing are by others.
1-0102-MGAD-R605	For information. Blockout for SA duct near gridline 10r between gridlines Lr and Mr. HVAC ducting and equipment shown on the drawing is by others.
1-0102-MGAD-R606	Supply and Install: <ul style="list-style-type: none"> <li>• Fire damper FD-R612-1</li> </ul>
1-0102-MGAD-R607	Overall Plan: See referenced plans and sections for description of work.
1-0102-MGAD-R608	For information, NG piping shown is by others.
1-0102-MGAD-R609	<p>Supply and Install:</p> <ul style="list-style-type: none"> <li>• Fire dampers FD-R610-1, FD-R620-1, FD-R620-2, FD-R640-1, FD-R640-2, FD-R640-3, FD-R652-1, <b><i>FD-R653-1</i></b>, FD-R653-2. <b>(A2)</b></li> </ul> <p>For information:</p> <ul style="list-style-type: none"> <li>• Blockouts along gridline 9r for EA, EF, and SA (3 places)</li> <li>• Blockouts SA and EA (6 places) in area between gridlines Hr, Jr, 9r, and 12r.</li> <li>• Blockouts for SA and RA between gridlines Kr and Lr (2 places)</li> <li>• Blockouts for SA south of Lr (2 places)</li> <li>• Blockout for SA near gridline 10r, south of gridline Lr</li> <li>• Blockout for intake louvres near gridlines Lr and 12r</li> </ul> <p>HVAC ducting and equipment shown on the drawing is by others.</p>
1-0102-MGAD-R610	Supply and Install: <ul style="list-style-type: none"> <li>• Fire dampers FD-R610-1, FD-R620-1, FD-R620-2</li> </ul> <p>For information,</p> <ul style="list-style-type: none"> <li>• Blockouts for SA, RA between gridlines Lr and Mr (2 places)</li> <li>• Blockouts along gridline 9r for EF, and EA (4 places)</li> </ul>

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	<ul style="list-style-type: none"> <li>• Blockout for EA between gridlines 11r, 12r, Pr and Qr.</li> <li>• Blockout for Back Draft Damper near gridline Pr and Mr, West of gridline 12r (2 places).</li> <li>• Blockout for intake louvres along gridlines 12r</li> <li>• Blockouts for SR to air intake plenum west of gridline 12r</li> </ul> HVAC ducting and equipment shown on the drawing is by others.
1-102-MGAD-R611	For information, coordinate opening locations with the Contract Administrator.
1-102-MGAD-R612	Supply and Install: <ul style="list-style-type: none"> <li>• Fire damper FD-R610-1</li> </ul> For information, <ul style="list-style-type: none"> <li>• Blockouts for Exhaust Louvers gridline 9r</li> <li>• Blockout for SA between gridlines 9r and 10r</li> <li>• Blockouts in double tee roof</li> </ul> HVAC ducting and equipment shown on the drawing is by others.
1-102-MGAD-R613	Supply and Install: <ul style="list-style-type: none"> <li>• Fire dampers FD-R620-1, FD-R620-2</li> <li>• For information,Blockout for SA between gridlines Lr and Mr</li> <li>• Blockouts for SA and RA north of gridline Lr</li> <li>• Blockouts for SA and RA between gridlines Lr and Mr</li> <li>• Blockouts in double tee roof</li> </ul> HVAC ducting and equipment shown on the drawing is by others.
1-0102-MGAD-R621	Overall Plan: See referenced plans and sections for description of work.
1-0102-MGAD-R622	Supply and Install <ul style="list-style-type: none"> <li>• Embeds for FOA (9 places)</li> </ul> All piping, gates and mixer are by others.
1-0102-MGAD-S501	Overall Plan: See referenced plans and sections for description of work.
1-0102-MGAD-S502	Supply and Install <ul style="list-style-type: none"> <li>• All (gutter drains, funnel drains, cleanouts, floor drains) drains and encased piping as shown on the drawing including trap primer lines.</li> <li>• Wall sleeves for SPD pipe near gridline 4s (2 places).</li> <li>• Wall sleeve for SPD at gridline 5s.</li> </ul> Sump pumps and piping is by others.
1-0102-MGAD-S503	Supply and Install <ul style="list-style-type: none"> <li>• All (gutter drains, funnel drains, cleanouts, floor drains) drains and encased piping as shown on the drawing including trap primer lines.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Embeds for SPD (2 places) into the mixed liquor channel.</li> <li>• Embeds for sump pit.</li> </ul> Sump pumps and piping is by others.
1-0102-MGAD-S504	Supply and Install <ul style="list-style-type: none"> <li>• All (gutter drains, funnel drains, cleanouts, floor drains) drains and encased piping as shown on the drawing.</li> </ul> Sump pumps and piping is by others.
1-0102-MGAD-S505	Supply and Install <ul style="list-style-type: none"> <li>• Concrete encased 100-RW-CI01 between gridline 6s and 8s.</li> <li>• Rain water leader piping (RW) from roof drain to exterior located between gridline 2s and 3s and gridline Gs.</li> <li>• All (gutter drains, funnel drains, cleanouts, floor drains) drains and encased piping as shown on the drawing including trap primer lines.</li> </ul>
1-0102-MGAD-S506	Supply and Install <ul style="list-style-type: none"> <li>• All roof drains and drain pipes encased in concrete</li> <li>• Provide covers for roof drains to prevent water from entering the building</li> </ul>
<b><i>1-0102-MGAD-S508</i></b>	<b><i>Supply and Install:</i></b> <ul style="list-style-type: none"> <li>• <b><i>Concrete encased pipe and pipe embeds</i></b></li> </ul> <b><i>All pumps, fabricated metal pump supports, ladders, piping not encased in concrete, controls are by others. (A2)</i></b>
1-0102-MGAD-S601	Overall Plan: See referenced plans and sections for description of work.
1-0102-MGAD-S602	Supply and Install: <ul style="list-style-type: none"> <li>• Fire dampers FD-R630-1, FD-S640-1, FD-S640-2, FD-S650-1, FD-S650-3, FD-S650-7</li> <li>• For information: Wall Blockouts for SA and EA on gridlines Ds and Fs, between 3s and 4s (3 places)</li> <li>• Wall Blockouts for SA, RA, TG on gridline 5s, between Cs and Ds.</li> </ul> HVAC ducting and equipment shown on the drawing is by others.
1-0102-MGAD-S603	For information. HVAC ducting and equipment shown on the drawing is by others.
1-0102-MGAD-S604	Supply and Install: <ul style="list-style-type: none"> <li>• Fire dampers FD-S650-4, FD-S650-5</li> </ul> For information. Wall breakout for SA near gridlines 9s, between Cs and Ds
1-0102-MGAD-S605	Overall Plan: See referenced plans and sections for description of work.
1-0102-MGAD-S606	Supply and Install: <ul style="list-style-type: none"> <li>• Fire dampers FD-S650-2, FD-S650-6, <b><i>FD-S650-8</i></b>, FD-S651-</li> </ul>

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Drawing Reference	Description of Work
	1, <i>FD-S651-2, FD-S651-3 (A2)</i> For information: <ul style="list-style-type: none"> <li>• Wall blackout for SA and EA along gridline Fs, between 3s and 4s.</li> <li>• Wall blackout for SA near gridline 5s and Es</li> </ul> HVAC ducting and equipment shown on the drawing is by others.
1-0102-MGAD-S607	Supply and Install: <ul style="list-style-type: none"> <li>• Fire dampers FD-S640-3, <i>FD-S640-4</i>, FD-S640-5 (A2)</li> </ul> For information: <ul style="list-style-type: none"> <li>• Wall blackout for EA near gridline Es and 6s</li> <li>• Wall blackout for SA near gridline Ds, between 7s and 8s</li> <li>• Wall blackout for EF at gridline 8s, between Cs and Ds</li> <li>• Wall blockouts for RA and SA near gridline Ds, between 6s and 7s</li> </ul> HVAC ducting and equipment shown on the drawing is by others.
1-0102-MGAD-S608	<ul style="list-style-type: none"> <li>• For information: Floor blackout for SA near gridline 9s and Ds</li> </ul> HVAC ducting and equipment shown on the drawing is by others.
<i>1-0102-MGAD-S609</i>	<i>Fire Damper Schedule.            All ducting, fans, heaters, and screens shown on Ground Floor Plan – Part D and E are by others. (A2)</i>
1-0102-MGAD-S610	Overall Plan: See referenced plans and sections for description of work.
1-0102-MGAD-S611	For information.
1-0102-MGAD-S612	For information.
1-0102-MDTL-A002	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-MDTL-A003	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-MDTL-A008	Standard details for applicable work as shown on the drawings and as detailed in the specifications.
1-0102-ECBD-R005	The Contractor shall provide: <ul style="list-style-type: none"> <li>• Concrete duct bank into into SGR-R701 and SGR-R702 complete with cover over top of the trench. Cover to seal off the entire concrete duct (to prevent dust and debris from entering the duct), and shall be rigid to allow for the safe support of personnel and equipment. Cover to be removable.</li> </ul>
1-0102-ECRT-R001	The Contractor shall provide: <ul style="list-style-type: none"> <li>• Concrete trench from the exterior wall into the switchgear concrete pad (for future installation of the main service cabling).</li> </ul>

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Drawing Reference	Description of Work
	<ul style="list-style-type: none"> <li>• Metal cover overtop of trench (inside the building).</li> <li>• Roxtec wall seals for entry of the main service power cables in accordance with 1-0102-ECRT-R002 Detail 1. Note that this installation requires 2 complete Roxtec cable seal assemblies (ie/ 2 times the requirements shown on Detail 1). Ensure a complete and sealed wall system to prevent water ingress. The installation must be reviewed and certified by a Roxtec factory representative.</li> </ul>
1-0102-ECRT-R002	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Wall penetration and Roxtec wall seals in accordance with 1-0102-ECRT-R002 detail 1. Ensure a complete and sealed wall system to prevent water ingress.</li> </ul>
1-0102-ECTR-R001 SHT-001	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Exterior wall penetration Blockouts along gridline 9r (4 places). Provide wall penetration, and temporarily seal to prevent ingress of moisture. A Roxtec cable seal system will be installed in these wall penetration by others. Size the penetration according to the drawings, to allow for the Roxtec seal.</li> <li>• Blockouts between gridlines Hr, Mr, 10r and 12r (5 places) for wall penetration through to the mechanical room, automation room.</li> <li>• Blockouts for floor penetrations in the Electrical Room R-105 (1 place for tray, 1 place for conduits) and the Automation Room R109 (1 place) for penetrations to the Galleries below.</li> </ul> <p>All cable tray is by others.</p>
1-0102-ECTR-R001 SHT-002	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Blockouts between gridlines Lr, Mr, 10r and 11r (2 places) for penetrations through the mechanical room.</li> </ul> <p>All cable tray is by others.</p>
1-0102-ECTR-R001 SHT-003	<p>For Information:</p> <ul style="list-style-type: none"> <li>• Blockouts between gridline Kr and Lr (2 trays) through the electrical room wall.</li> </ul> <p>All cable tray is by others.</p>
1-0102-ECTR-R001 SHT-004	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Blockouts between gridline Lr and Mr (2 trays) through the mechanical room wall.</li> </ul> <p>All cable tray is by others.</p>
1-0102- ECTR -R002 SHT-001	<p>For Information. All cable tray is by others.</p>
1-0102-ECTR-R002 SHT-002	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Blockouts between gridlines 9r, 10r, Hr and Lr (Vertical penetrations 2 places – 1 in the electrical room, 1 in the automation room). Note that there is a second penetration through the electrical room floor required for</li> </ul>

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Drawing Reference	Description of Work
	conduits adjacent to MCC-R710. <ul style="list-style-type: none"> <li>• Blockout between gridlines 7r, 9r and Er, Fr – 2 tray penetrations through the pipe gallery walls (between Pipe Gallery 2 and Pipe Gallery 3).</li> </ul> All cable tray is by others.
1-0102-ECTR -R002 SHT-003	For Information. All cable tray is by others.
1-0102-ECTR-R002 SHT-004	The Contractor shall provide: Blockout between gridline 6r, 7r and Ar, Br for 2 tray penetrations through the pipe gallery walls. All cable tray is by others.
1-0102-ECTR-R003 SHT-002	For Information. All cable tray is by others.
1-0102-ECTR-R004 SHT-001	This drawing is included for coordination purposes, and indicates the cable tray sections for coordination of the wall penetrations. The penetrations through the walls to allow for cable tray to pass shall be pre-fabricated / formed and included as part of this contract.
1-0102-ECTR-R004 SHT-002	This drawing is included for coordination purposes, and indicates the cable tray sections for coordination of the wall penetrations. The penetrations through the walls to allow for cable tray to pass shall be pre-fabricated / formed and included as part of this contract.
1-0102-EGAD-R001 SHT-001	The Contractor shall provide: <ul style="list-style-type: none"> <li>• Penetrations through the electrical room floor for vertical cable tray and wiring runs.</li> <li>• Penetrations through the electrical room walls for cable tray runs.</li> <li>• Concrete trench and wall penetration and Roxtec seal for interior portion of the main service cables into SGR-R701 and SGR-R702. Portions of the duct bank exterior to the building (except for the Roxtec system – which is included in C3) will be by others.</li> </ul>
1-0102-EGAD-R003 SHT-001, 002, 003	The Contractor shall <i>provide</i> : <ul style="list-style-type: none"> <li>• <i>Penetrations and conduit sleeves through the bioreactor deck/cover for cable runs into the bioreactor tanks from the disconnect switches (refer to Specific Note 1, 2 and 3) to the mixers. The Contractor shall coordinate the exact location of the penetrations on site with the Contract Administrator. (A2)</i></li> </ul>
1-0102-EGRD-R002 SHT-001, 002	The Contractor shall : <ul style="list-style-type: none"> <li>• Supply and install the Ufer ground system, wherever as shown on drawings, as part of the concrete work. Make electrical connections to the rebar re-enforcing steel, provide pigtail conductors for future connections to perimeter ground rod / conductors.</li> <li>• Provide ground cables routed internal to concrete, wherever as shown on drawings, for connection of</li> </ul>



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Drawing Reference	Description of Work
	structural steel members to perimeter ground. Provide pigtail conductors for future connections, when structural steel members and perimeter ground rods / conductors are installed.
1-0102-ECRT-S002 SHT-001	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Roxtec wall seals for entry of the main service power cables in accordance with 1-0102-ECRT-S002 and 1-0102-ECRT-S003 Detail 1. Note that this installation requires 2 complete Roxtec cable seal assemblies (ie/ 2 times the requirements shown on Detail 1). Ensure a complete and sealed wall system to prevent water ingress. The installation must be reviewed and certified by a Roxtec factory representative.</li> <li>• <del>Service ground cables and conduits into the electrical room. Provide ground cables into the electrical room, and route cables to the destination, and allow for a minimum of 4 meters of slack (coiled up).</del> (A2)</li> </ul>
1-0102-ECRT-S003 SHT-001	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Roxtec wall seals for entry of the main service power cables in accordance with 1-0102-ECRT-S002 and 1-0102-ECRT-S003 section C and Detail 1. Ensure a complete and sealed wall system to prevent water ingress.</li> <li>• Penetrations through the concrete floor of the electrical room for entry of main service cables into MCC-S740 and MCC-S730.</li> </ul>
1-0102-ECTR-S002 SHT-001	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Blockouts along gridline Es (Mechanical room penetrations) and near Fs, 4s (Sump Pump Area)</li> </ul> <p>All cable tray is by others.</p>
1-0102-ECTR-S002 SHT-002	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Blockouts along gridline Ds and Es (Pump Room penetration), and between Es and Fs (Gallery 3 and Service Tunnel penetration).</li> <li>• Two Blockouts in the Pump Room for vertical riser between the basement and the ground floor.</li> </ul> <p>All cable tray is by others.</p>
1-0102-ECTR-S003 SHT-001	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Blockouts along gridline 1s for cable penetrations (2 trays).</li> </ul> <p>All cable tray is by others.</p>
1-0102-ECTR-S003 SHT-002	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Blockouts along gridline Es and Ds for penetrations into the electrical room.</li> <li>• Two Blockouts in the Pump Room for vertical riser between the basement and the ground floor.</li> </ul>

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Drawing Reference	Description of Work
	<ul style="list-style-type: none"> <li>• Blockout adjacent to gridline 6s – 2 tray penetrations through the pipe walkway / clarifier wall.</li> <li>• Materials and labor to relocate any existing electrical equipment which interferes with the penetrations through the existing walls. <b><i>Contractor to field verify. (A2)</i></b></li> </ul> <p>All cable tray is by others.</p>
1-0102-ECTR-S004	<p>This drawing is included for coordination purposes, and indicates the cable tray sections for coordination of the wall penetrations. The penetrations through the walls to allow for cable tray to pass shall be pre-fabricated / formed and included as part of this contract.</p>
1-0102-EGAD-S002	<p>The Contractor shall provide:</p> <ul style="list-style-type: none"> <li>• Penetrations through the electrical room floor for vertical cable tray runs down into the pump room.</li> <li>• Prefabricated penetrations into the bottom of the MCCs to allow for cables to be brought into the MCCs from the bottom. Provide steel (rebar) reinforcing around the penetrations.</li> <li>• Penetrations through the electrical room walls for cable tray runs.</li> <li>• All cable tray is by others.</li> <li>• Electrical distribution equipment (MCCs, panels, transformers, etc) will be installed in the future under a separate contract.</li> </ul>
1-0102-EGRD-S002 SHT-001	<p>The Contractor shall:</p> <ul style="list-style-type: none"> <li>• <b><i>Supply and Install the Ufer ground system, wherever as shown on drawings, as part of the concrete work. Make electrical connections to the rebar re-enforcing steel, provide pigtail conductors for future connections to perimeter ground rod / conductors. (A2)</i></b></li> </ul>
1-0102-EGRD-S002 SHT-002	<p>The Contractor shall:</p> <ul style="list-style-type: none"> <li>• <b><i>Supply and Install the Ufer ground system, wherever as shown on drawings, as part of the concrete work. Make electrical connections to the rebar re-enforcing steel, provide pigtail conductors for future connections to perimeter ground rod / conductors. (A2)</i></b></li> </ul>
1-0102-EGRD-S002 SHT-003	<p>The Contractor shall:</p> <ul style="list-style-type: none"> <li>• <b><i>Supply and Install the Ufer ground system, wherever as shown on drawings, as part of the concrete work. Make electrical connections to the rebar re-enforcing steel, provide pigtail conductors for future connections to perimeter ground rod / conductors. (A2)</i></b></li> </ul>
1-0102-EGRD-A003	<p>The Contractor shall :</p> <ul style="list-style-type: none"> <li>• Detail C – Supply and install the Ufer ground system as part of the concrete work. Make electrical connections to the rebar re-enforcing steel, provide pigtail conductors</li> </ul>

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Drawing Reference	Description of Work
	for future connections to perimeter ground rod / conductors.
1-0102-ADTL-R001 SHT-001	For Information. Perforated pipe in IFAS tank by mechanical.
1-0102-ADTL-R001 SHT-002	<ul style="list-style-type: none"> <li>• Detail A - Provide embedded pipe as shown on the drawings and as detailed in the specifications.</li> <li>• Detail B - Provide embedded pipe as shown on the drawings and as detailed in the specifications.</li> </ul>
1-0102-ADTL-R002	For Information. Only checkerplate cover is part of contract. See structural drawings for details.
1-0102-ADTL-R003	<ul style="list-style-type: none"> <li>• Detail A - Provide embedded pipe for level transmitters as shown on the drawings and as detailed in the specifications.</li> <li>• Detail B - Perforated pipe in IFAS tank by mechanical.</li> </ul>
1-0102-AGAD-R004	For Information. Notes on the drawing specify the type of installation required for applicable instrument locations.
1-0102-AGAD-A007	For Information. Notes on the drawing specify the type of installation required for applicable instrument locations.
1-0102-AGAD-A008	For Information. Notes on the drawing specify the type of installation required for applicable instrument locations.
1-0102-AGAD-A009	For Information. Notes on the drawing specify the type of installation required for applicable instrument locations.
1-0102-ADTL-A005	<ul style="list-style-type: none"> <li>• Detail A – Not applicable.</li> <li>• Detail B - Provide embedded pipe for level transmitters as shown on the drawings and as detailed in the specifications.</li> <li>• Detail C - Provide embedded pipe for level transmitters as shown on the drawings and as detailed in the specifications.</li> </ul>

1.3 EQUIPMENT, MATERIAL, AND SERVICES PROVIDED BY THE CITY

- A. The Contract Documents allow for an area on-site for the Contractor's use. The boundary limits must be strictly adhered to in order to minimize the impact to the natural conditions. If additional space is required, obtain agreement in writing from the Contract Administrator.
- B. The supply and cost of electricity, telephone, gas, or other utilities, whether temporary or permanent, used for heating, lighting, power tools, testing, or other construction related purposes, fencing, security, and conveniences, will be the responsibility of the Contractor. No electrical connections will be provided by the City.

1.4 CONTRACT DRAWINGS

- A. The Drawings are prepared in SI metric units.
- B. Contract Drawings have been divided into General, Demolition, Civil, Structural, Architectural, Process Mechanical, Plumbing, and Electrical and laid out in ascending

numerical order by facility. Read the Drawings as a whole, since details applicable to one section may appear on the Drawings of another section or sections.

- C. Additional drawings showing details in accordance with which the Work is to be constructed may be supplied from time to time by the Contract Administrator. Such drawings are for the information of and assistance to the Contractor and will not become a basis for extra payment. The Contract Administrator may supply drawings covering additional work. These will be identified as additional work.

#### 1.5 CONTRACT SPECIFICATIONS

- A. The Contract Specifications are divided into divisions. Read the Specifications as a whole as details applicable to one division may appear in another division or divisions.
- B. Coordinate and be responsible for the work, acts, and omissions done by Subcontractors.

#### 1.6 WORK COMPLIANCE

- A. Provide Work conforming to the lines, levels and grades specified or shown on the Contract Drawings.
- B. Build Work in a thoroughly substantial and workmanlike manner, in accordance with the Contract Drawings and Specifications, subject to such modifications and additions as may be deemed necessary during its execution. In no case will payment be made for Work in excess of the requirements of the Drawings and Specifications, unless approved in writing by Contract Administrator.

#### 1.7 ENGINEER DESIGN

- A. Where specifications require work to be designed by an engineer, engage an engineer licensed in the Province of Manitoba to design such work.

#### 1.8 EXAMINATION OF EXISTING CONDITIONS

- A. The Contractor's attention is directed to the difficulty of work involved in the excavation near existing structures, tie-in to existing structures, and the construction on and around existing piles that were installed by others. The contract documents indicate the extent of work. However, it is the Contractor's responsibility to examine on site during the time of tendering the proposed Work to develop a full appreciation of the scope of work.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION