

Appendix D
Reference Drawings



THE CITY OF WINNIPEG

WATER AND WASTE DEPARTMENT

DEACON BOOSTER PUMPING STATION

ULTRAVIOLET DISINFECTION SYSTEM UPGRADES

APPENDIX D - REFERENCE DRAWINGS

REFERENCE DRAWINGS

CITY DRAWING NUMBER

DESCRIPTION

CIVIL

| | |
|-----------------------------|---|
| 60516883-SHT-30-PH00-C-1001 | SITE - EXISTING UNDERGROUND SITE SERVICES WATER TREATMENT PLANT/DEACON BOOSTER PUMPING STATION PLAN |
| 60516883-SHT-30-PH00-C-1002 | SITE - EXISTING UNDERGROUND SITE SERVICES DEWATERING CELLS PLAN |

PROCESS

| | |
|-------------------|---|
| 1-0601M-P0001-001 | PROCESS AND INSTRUMENTATION - LEGEND AND ABBREVIATION |
| 1-0601D-P0003-001 | PROCESS - DEACON BOOSTER PUMPS 1 & 2 PROCESS AND INSTRUMENTATION DIAGRAM |
| 1-0601D-P0003-002 | PROCESS - DEACON BOOSTER PUMPS 1 & 2 PROCESS AND INSTRUMENTATION DIAGRAM |
| 1-0601D-P0012-001 | PROCESS - BRANCH I AND BRANCH II VALVE CHAMBERS PROCESS AND INSTRUMENTATION DIAGRAM |
| 1-0601D-P0013-001 | PROCESS - SUCTION HEADER PROCESS AND INSTRUMENTATION DIAGRAM |
| 1-0601D-P0014-001 | PROCESS - PUMP P-D003 PROCESS AND INSTRUMENTATION DIAGRAM |
| 1-0601D-P0015-001 | PROCESS - PUMP P-D004 PROCESS AND INSTRUMENTATION DIAGRAM |
| 1-0601D-P0016-001 | PROCESS - PUMP P-D005 PROCESS AND INSTRUMENTATION DIAGRAM |
| 1-0601T-P0001-001 | PROCESS - PROCESS AND INSTRUMENTATION DIAGRAM |
| D-8399 | PROCESS - UV INSTALLATION PROCESS AND INSTRUMENTATION DIAGRAM BRANCH I |

PROCESS MECHANICAL

| | |
|-------------------|--|
| 1-0601D-M0005-001 | PROCESS MECHANICAL - BRANCH I SECTION |
| 1-0601D-M0005-002 | PROCESS MECHANICAL - BRANCH I SECTION |
| 1-0601D-M0005-003 | PROCESS MECHANICAL - BRANCH I SECTION |
| 1-0601D-M0005-004 | PROCESS MECHANICAL - BRANCH I SECTION |
| 1-0601D-M0006-001 | PROCESS MECHANICAL - BRANCH II SECTION |

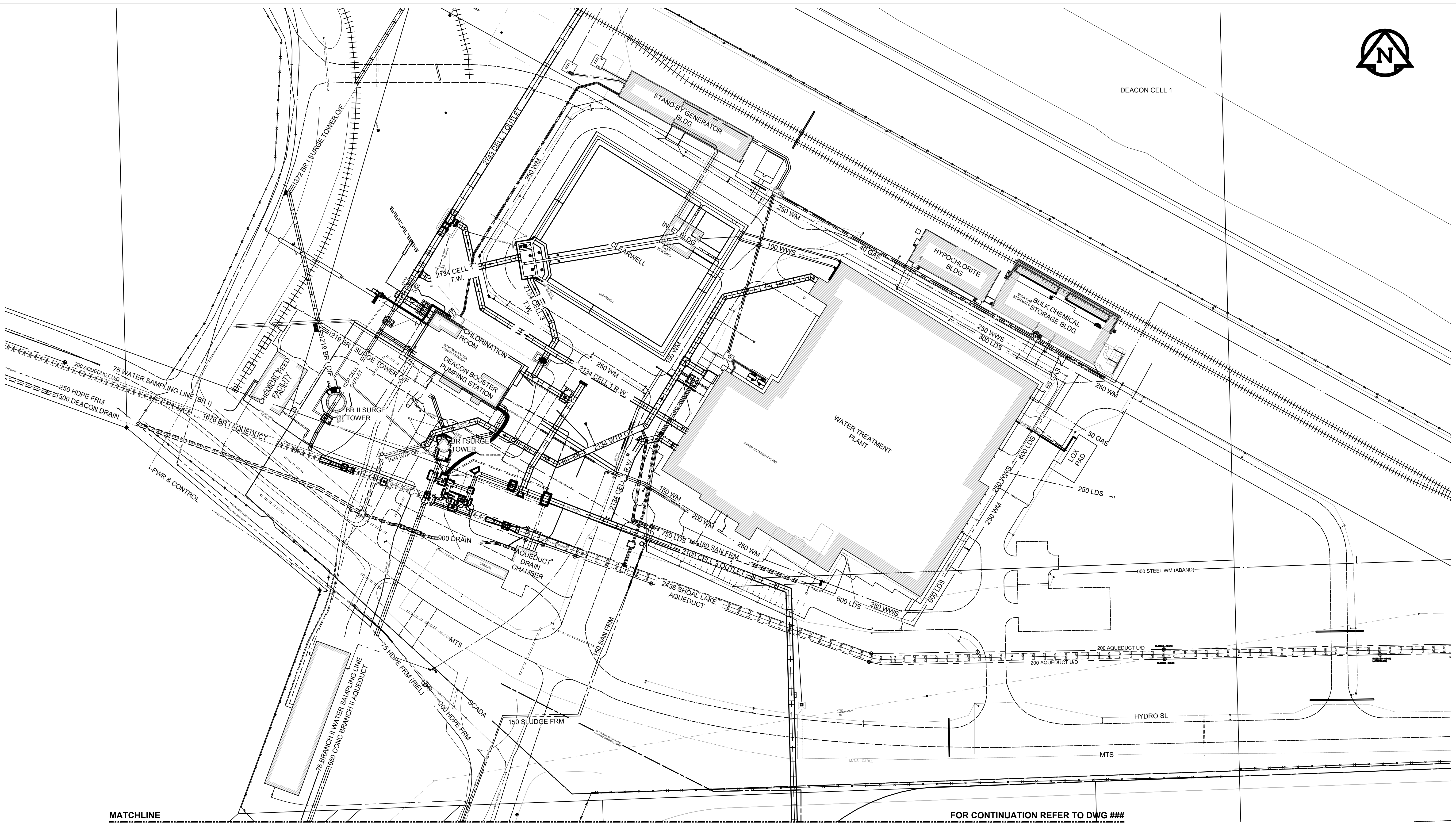
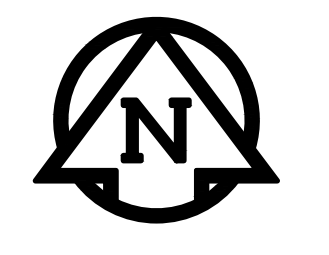
AECOM

ISSUE DATE: 2022/05/02

D SIZE 22" x 34" (559mm x 864mm)

PLOT: 4/21/2022 4:31:33 PM

AECOM REVIEW DRAFT CHK AECOM FILE NAME: 60516883-SHT-30-PH00-C-1001.dwg Saved By: paul.altoos



MATCHLINE

FOR CONTINUATION REFER TO DWG ###

BID OPPORTUNITY NO. XXX-XXXX

| | | | | | | | |
|----------|---------------------|---------|----------|---------------|---------|---------------------|------------------|
| 150 WM | WATERMAIN | 150 WM | ♂ | CURB STOP | 150 WM | WATERMAIN | 150 WM |
| ⊕ | HYDRANT | ⊕ | --- | REDUCER | + | HYDRANT | + |
| ⊙ | VALVE | ⊙ | --- | COUPLING | X | VALVE | X |
| 300 LDS | LAND DRAINAGE SEWER | 300 LDS | --- | ANODE | 300 LDS | LAND DRAINAGE SEWER | 300 LDS |
| 250 WWS | WASTE WATER SEWER | 250 WWS | --- | HYDRO | 250 WWS | WASTE WATER SEWER | 250 WWS |
| ○ | MANHOLE | ● | --- | MTS | --- | PAVEMENT CROWN | --- |
| □ | CATCH BASIN | ■ | --- | GAS | --- | N/W PROPERTY LINE | --- |
| △ | CURB INLET | ▲ | --- | TESTHOLE | --- | S/E PROPERTY LINE | --- |
| --- | CULVERT | --- | --- | LAMP STANDARD | --- | N/W GUTTER | --- |
| --- | PIPE ABANDONMENTS | --- | --- | TREE | --- | S/E GUTTER | --- |
| + | SURVEY BAR | + | --- | | | | |
| EXISTING | LEGEND - PLAN | NEW | EXISTING | LEGEND - PLAN | NEW | EXISTING | LEGEND - PROFILE |

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPR. U/G STRUCTURES DATE COMMITTEE

NOTE:
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

| | | |
|---------------------|--------|-----|
| ISSUED FOR XXXXXXXX | 1/1 | XXX |
| NO. REVISIONS | YYMMDD | BY |

AECOM

DESIGNED BY: XXX
DRAWN BY: XXX
HOR. SCALE: 1:750
VERT. SCALE: -

CHECKED BY: _____
APPROVED BY: _____
RELEASED FOR CONSTRUCTION: _____

DATE: _____

PROFESSIONAL'S SEAL

CONSULTANT DRAWING NO.
60516883-SHT-30-PH00-C-1001

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

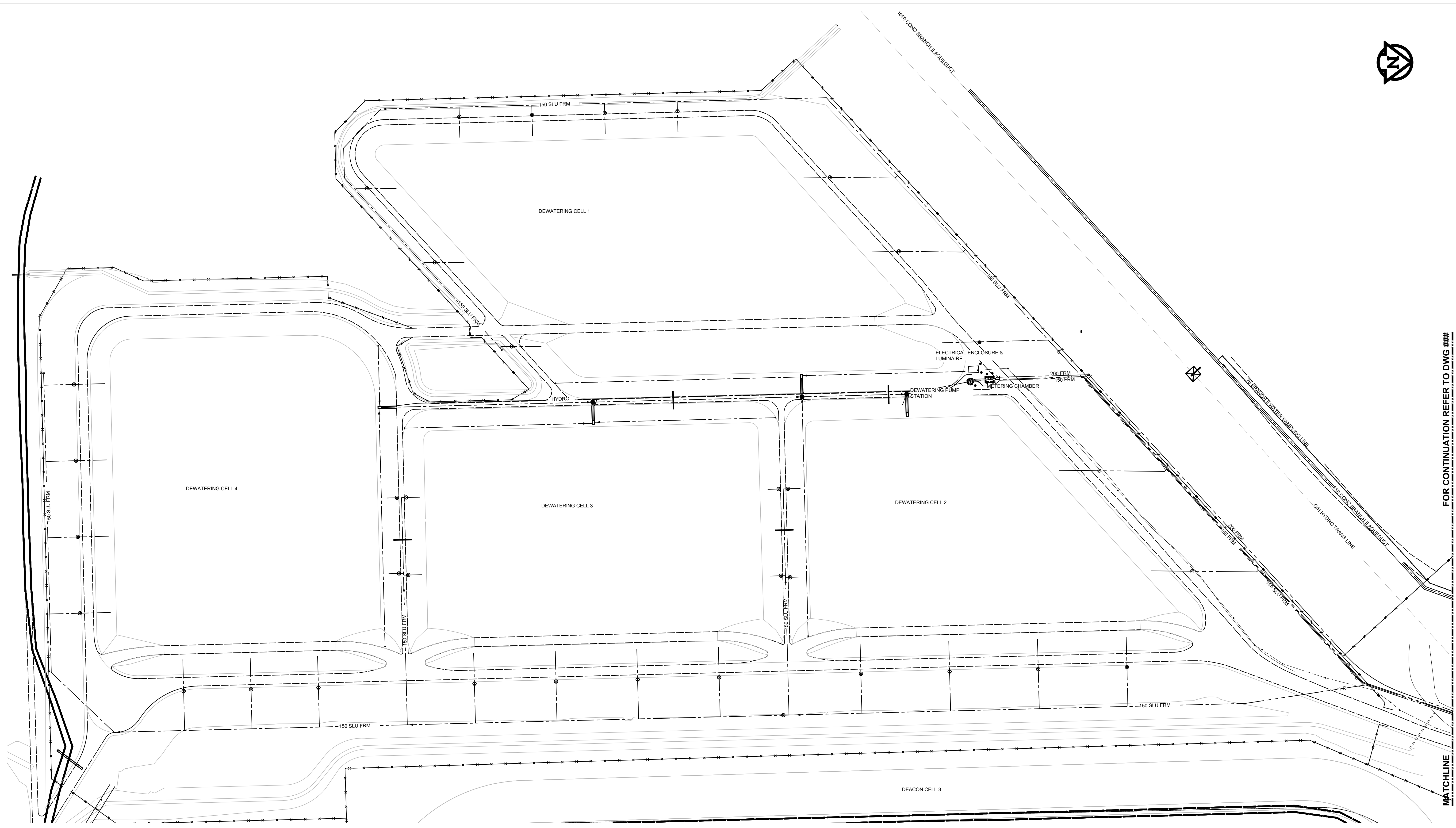
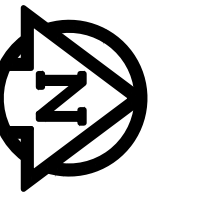
WATER TREATMENT PLANT & DEACON BOOSTER PUMPING STATION
SITE
EXISTING UNDERGROUND SITE SERVICES
WATER TREATMENT PLANT/DEACON BOOSTER PUMPING STATION PLAN

SHEET 1 OF 2
CITY DRAWING NUMBER
XXXXXXX

D SIZE 22" x 34" (559mm x 864mm)

PLOT: 4/21/2022 4:31:19 PM

AECOM FILE NAME: 60516883-SHT-30-PH00-C-1002.dwg Saved By: paul.altoos



FOR CONTINUATION REFER TO DWG ###

MATCHLINE

BID OPPORTUNITY NO. XXX-XXXX

AECOM REVIEW DRFT CHK

| | | | | | | | | | | |
|----------|---------------------|---------|----------|---------------|-----|----------|---------------------|--------|---|--|
| 150 WM | WATERMAIN | 150 WM | ♂ | CURB STOP | + | 150 WM | WATERMAIN | 150 WM | + | LOCATION APPROVED |
| ⊕ | HYDRANT | ⊕ | ♂ | REDUCER | + | + | HYDRANT | + | + | UNDERGROUND STRUCTURES |
| ⊕ | VALVE | ⊕ | ♂ | COUPLING | + | + | VALVE | + | + | SUPR. U/G STRUCTURES DATE COMMITTEE |
| 300 LDS | LAND DRAINAGE SEWER | 300 LDS | ♂ | ANODE | + | + | LAND DRAINAGE SEWER | + | + | NOTE: |
| 250 WWS | WASTE WATER SEWER | 250 WWS | ♂ | HYDRO | + | + | WASTE WATER SEWER | + | + | LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION. |
| ○ | MANHOLE | ● | ♂ | MTS | + | + | PAVEMENT CROWN | + | + | |
| □ | CATCH BASIN | ■ | ♂ | GAS | + | + | N/W PROPERTY LINE | + | + | |
| △ | CURB INLET | ▲ | ♂ | TESTHOLE | + | + | S/E PROPERTY LINE | + | + | |
| ⊔ | CULVERT | ⊔ | ♂ | LAMP STANDARD | + | + | N/W GUTTER | + | + | |
| — | PIPE ABANDONMENTS | — | ♂ | TREE | + | + | S/E GUTTER | + | + | |
| + | SURVEY BAR | + | ♂ | | | | | | | |
| EXISTING | LEGEND - PLAN | NEW | EXISTING | LEGEND - PLAN | NEW | EXISTING | LEGEND - PROFILE | NEW | | |

ISSUED FOR XXXXXXXX / / XXX
 NO. REVISIONS YYMMDD BY

| | | | |
|-------------|--------|---------------------------|--|
| DESIGNED BY | XXX | CHECKED BY | |
| DRAWN BY | XXX | APPROVED BY | |
| HOR. SCALE | 1:1000 | RELEASED FOR CONSTRUCTION | |
| VERT. SCALE | - | DATE | |

CONSULTANT DRAWING NO.
60516883-SHT-30-PH00-C-1002

PROFESSIONAL'S SEAL

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

WATER TREATMENT PLANT & DEACON BOOSTER PUMPING STATION SITE
EXISTING UNDERGROUND SITE SERVICES
 DEWATERING CELLS PLAN

SHEET 2 OF 2
 CITY DRAWING NUMBER XXXXXXXX
 REV

INSTRUMENT IDENTIFICATION TABLE. Table with columns: FIRST-LETTER, SUCCEEDING-LETTERS, MEASURED OR INITIATING VARIABLE, READOUT OR PASSIVE FUNCTION, OUTPUT FUNCTION.

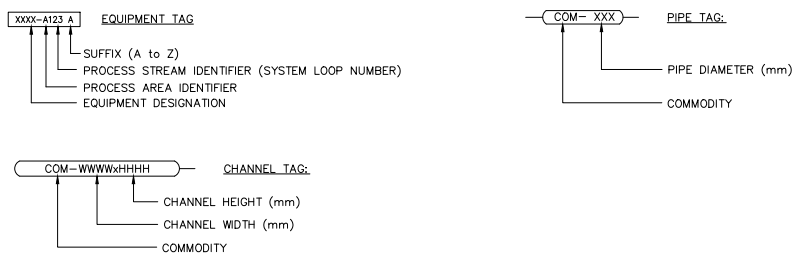
NOTES:

- 1. IT IS EXPECTED THAT THE TYPE OF ANALYSIS BE DEFINED OUTSIDE THE TAGGING BUBBLE.
2. FIRST LETTER Y IS INTENDED FOR USE WHEN CONTROL OR MONITORING RESPONSES ARE EVENT DRIVEN AS OPPOSED TO TIME OR TIME-SCHEDULE DRIVEN.
3. IT IS EXPECTED THAT THE FUNCTIONS ASSOCIATED WITH THE USE OF SUCCEEDING LETTER Y WILL BE DEFINED OUTSIDE THE TAGGING BUBBLE.

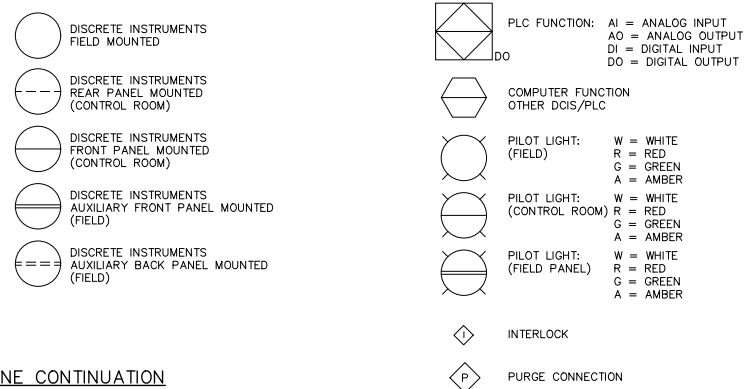
COMMON INSTRUMENT / DEVICE IDENTIFIERS

Table with columns: ISA IDENTIFIER, INITIATING VARIABLE AND FUNCTION, ISA IDENTIFIER, INITIATING VARIABLE AND FUNCTION. Lists various instrument codes like AS, AE, AT, CS, CT, etc.

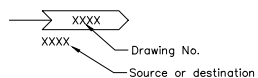
EQUIPMENT IDENTIFICATION AND TAGGING



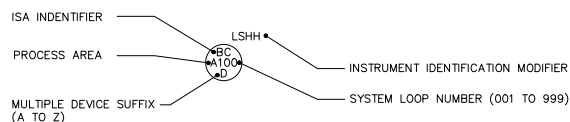
INSTRUMENT SYMBOLS



LINE CONTINUATION



INSTRUMENT DESIGNATION NUMBER



POSITION FORMATS

PROCESS AREA IDENTIFIER

Table listing process area identifiers: CHEMICAL FEED, DEACON BOOSTER PUMP STATION, ELECTRICAL DISTRIBUTION FILTRATION, PLANT UTILITIES, etc.

PROCESS STREAM IDENTIFIER (LOOP NUMBER)

Table listing process stream identifiers (loop numbers): C 001 - 999, D 001 - 999, E 001 - 999, F 001 - 999, H 000 - 100, etc.

INSTRUMENT IDENTIFICATION MODIFIER

Table of instrument identification modifiers: CAH CONDUCTIVITY ALARM HIGH, COH COMPUTER/OFF/HAND, DO DISSOLVED OXYGEN, etc.

PROCESS LINE CODES

COMMODITY

Table of commodity codes: AA AQUA AMMONIA, AGA ATOMIZING AIR, AS AIR SCOUR (FILTERS), etc.

PIPE EXPOSURE

Table of pipe exposure codes: BUR BURIED, EXP EXPOSED, SUB SUBMERGED, ENC CONCRETE ENCASED.

PIPE MATERIAL

Table of pipe material codes: GISP CAST IRON SOIL PIPE, CLDI CEMENT LINED DUCTILE IRON, CMP CORRUGATED METAL PIPE, etc.

PRESSURE TESTING

Table of pressure testing codes: H HYDROSTATIC, I IN SERVICE, P PNEUMATIC, NA NOT APPLICABLE.

ABBREVIATIONS

Table of abbreviations: ACK ACKNOWLEDGE, A/M AUTO/MANUAL, A/S AIR SUPPLY, etc.

EQUIPMENT DESIGNATIONS

Table of equipment designations: ARV AIR RELEASE VALVE, ACU AIR CONDITIONING UNIT, ACR ACCESS CARD READER, etc.

AECOM

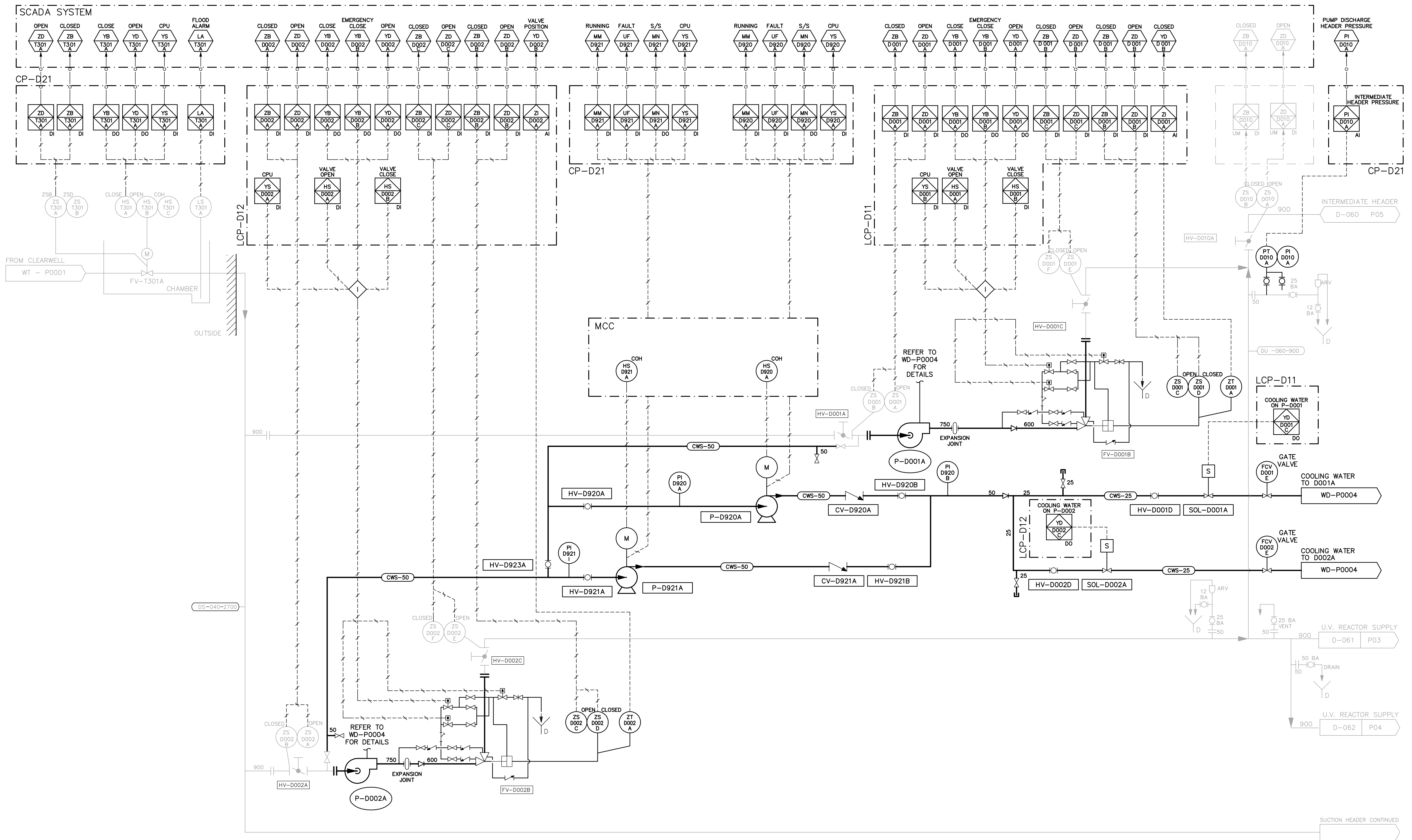
As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED

SIG..... DATE.....

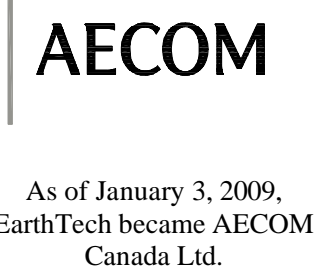
Project information and authorization block including logos for AECOM, CH2MHILL, Earth Tech, and a revision table with columns for NO., REVISIONS, DATE, BY, and DATE.

City of Winnipeg Water and Waste Department Engineering Division project information block, including project name, date, and drawing number.



NOTE:

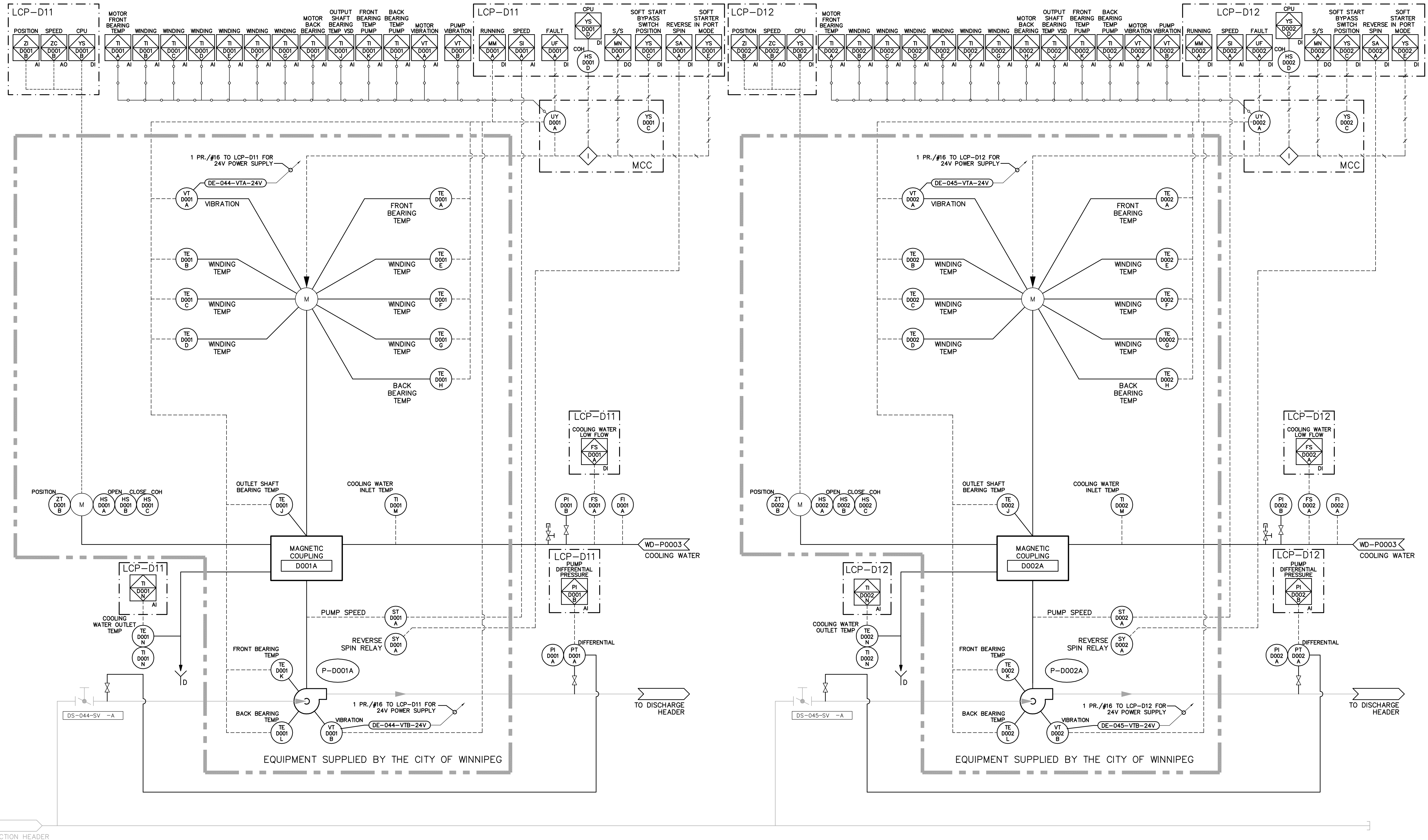
1. BRANCH I PUMPS, MOTORS, VSD'S AND PUMP DISCHARGE VALVES ARE SUPPLIED BY THE CITY OF WINNIPEG.



As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED
 SIG..... DATE.....

| | | | | | | | | | | | | |
|--|----------------------------|----------|------------------------------------|------|-------------|--|------------------------------------|--|--|--|---|--|
| Certificate of Authorization AECOM Canada Ltd. Original dated on: No. 4671 Date: 2007/03/19 | B.M. ELEV. | | Frederickson Cooper ARCHITECTS | | | ENGINEER'S SEAL ORIGINAL SIGNED BY S.B. WILLIAMSON 2007/03/19 | | THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION | | | | |
| | 05 AS CONSTRUCTED | 10/02/01 | | DEP | DESIGNED BY | SBW | CHECKED BY | NT | WATER TREATMENT PLANT DEACON BOOSTER PUMP STATION UPGRADE PROCESS AND INSTRUMENTATION DIAGRAM PROCESS DEACON BOOSTER PUMPS 1 & 2 PROCESS AND INSTRUMENTATION DIAGRAM | | | |
| | 04 TAG NUMBERS REVISED | 09/05/15 | | RJH | DRAWN BY | GLG | APPROVED BY | AHL | | | CITY FILE NUMBER SHEET 1 OF 2 | |
| | 03 ISSUED FOR CONSTRUCTION | 07/09/14 | | GLG | SCALE: | NTS | RELEASED FOR CONSTRUCTION BY: | R. SOROKOWSKI | | | CITY DRAWING NUMBER 1-0601D-P0003-001-05 | |
| 02 35-2006 ADDENDUM 4 | 07/08/09 | LAE | NO. REVISIONS | DATE | DATE | DATE | CONSULTANT DRAWING NO. WD-P0003 | | | | | |

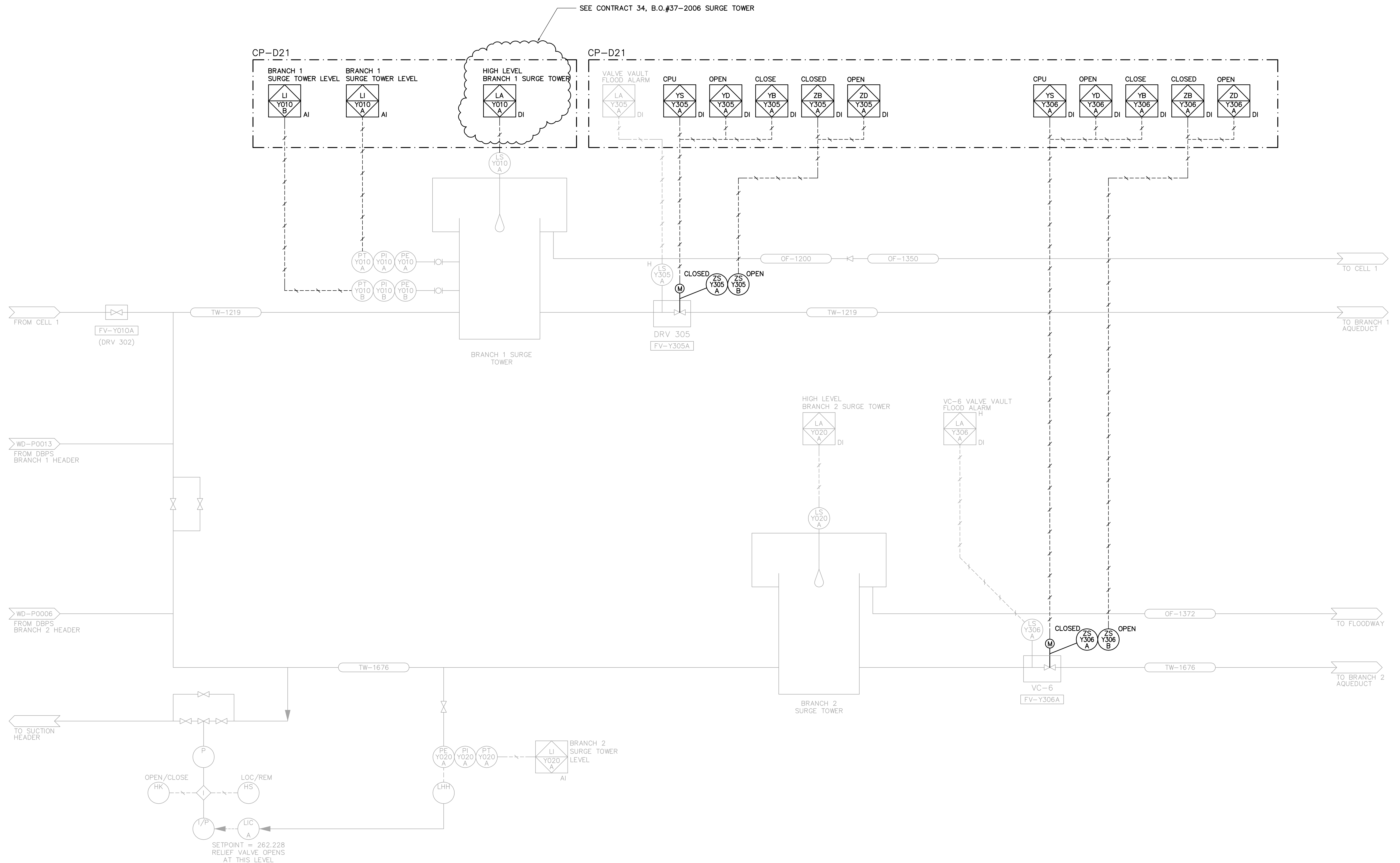


- NOTES:**
- BRANCH I PUMPS, MOTORS AND VSD'S ARE SUPPLIED BY THE CITY OF WINNIPEG.
 - PIPING TO AND FROM CITY SUPPLIED EQUIPMENT TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.

AECOM
As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED
SIG..... DATE.....

| | | | | | | |
|---|---|--|------------------------------------|--|---|---|
| Certificate of Authorization AECOM Canada Ltd. Original dated on: No. 4671 Date: 2007/03/19 | B.M. ELEV. | | Frederickson Cooper ARCHITECTS | ENGINEER'S SEAL ORIGINAL SIGNED BY S.B. WILLIAMSON 2007/03/19 | WATER AND WASTE DEPARTMENT ENGINEERING DIVISION WATER TREATMENT PLANT DEACON BOOSTER PUMP STATION UPGRADE | CITY FILE NUMBER SHEET 2 OF 2 CITY DRAWING NUMBER 1-0601D-P0003-002-04 |
| | DESIGNED BY: NT DRAWN BY: GLG SCALE: NTS | CHECKED BY: SBW APPROVED BY: AHL RELEASED FOR CONSTRUCTION BY: R. SOROKOWSKI | | | | |
| NO. REVISIONS DATE BY | 04 AS CONSTRUCTED 10/02/01 DEP 03 TAG NUMBERS REVISED 09/05/15 RJH 02 ISSUED FOR CONSTRUCTION 07/09/14 GLG 01 35-2006 ADDENDUM 3 07/07/31 LAE 00 ISSUED FOR TENDER 07/03/19 SRP | DATE: 2006/06/28 DATE: 2007/03/19 | DATE: 2007/03/19 | PROCESS DEACON BOOSTER PUMPS 1 & 2 PROCESS AND INSTRUMENTATION DIAGRAM | | |



OPEN/CLOSE (HK) → I → LOC/REM (HS)
 LIC (A) ← I ← 1/P
 SETPOINT = 262.228
 RELIEF VALVE OPENS AT THIS LEVEL

AECOM

As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED
 SIG..... DATE.....

AECOM
 Certificate of Authorization
 AECOM Canada Ltd.
 Original dated on: No. 4671 Date: 2007/03/19

| NO. | REVISIONS | DATE | BY |
|-----|-------------------------|----------|-----|
| 03 | AS CONSTRUCTED | 10/02/01 | DEP |
| 02 | TAG NUMBERS REVISED | 09/02/05 | CRD |
| 01 | ISSUED FOR CONSTRUCTION | 07/09/14 | GLG |
| 00 | ISSUED FOR TENDER | 07/03/19 | LAE |

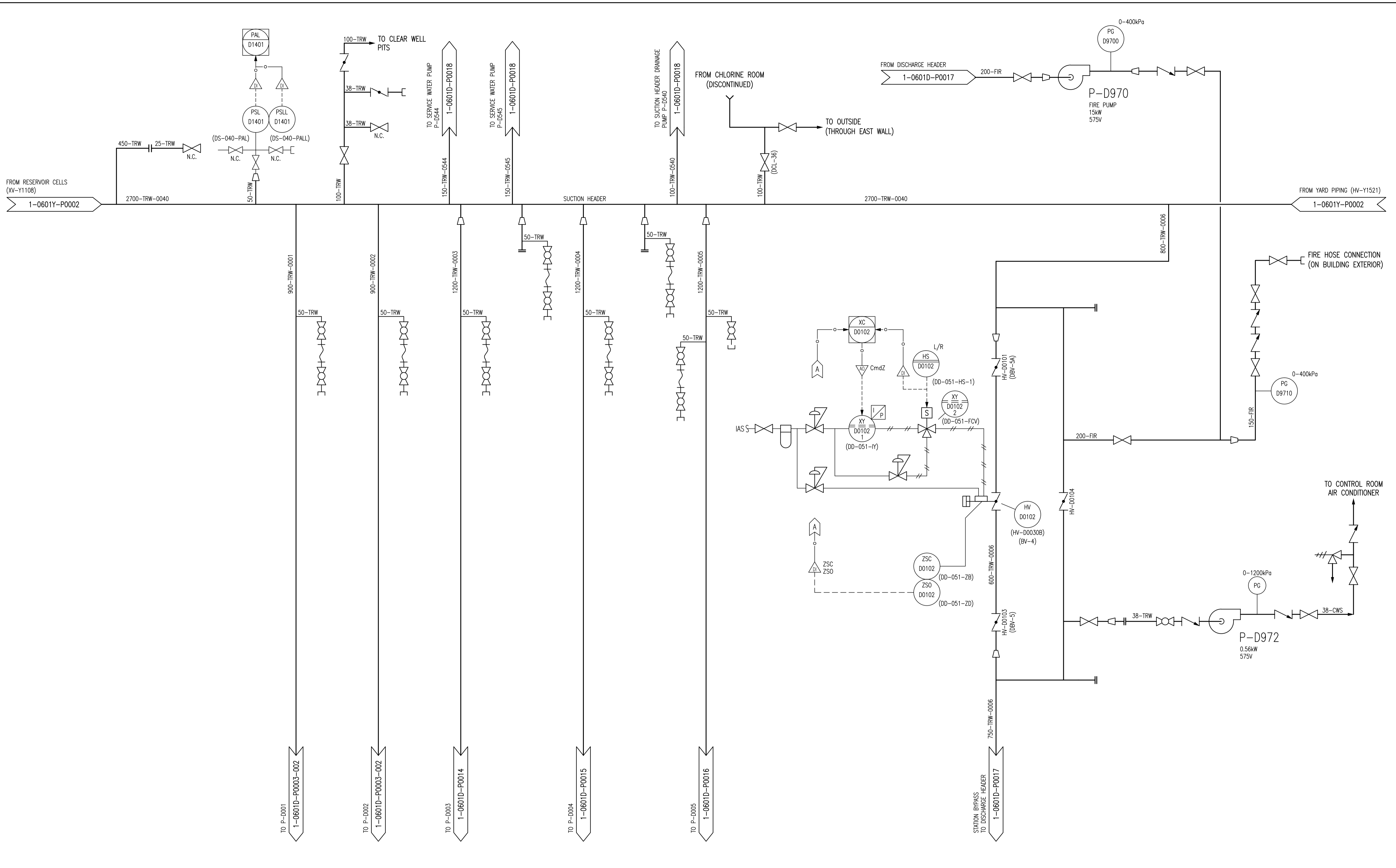
CH2M HILL
 Frederickson Cooper ARCHITECTS

| | | | |
|-------------|------------|-------------------------------|---------------|
| DESIGNED BY | SBW | CHECKED BY | B.L.M. |
| DRAWN BY | LAE | APPROVED BY | AHL |
| SCALE: | NONE | RELEASED FOR CONSTRUCTION BY: | R. SOROKOWSKI |
| DATE | 2006/12/12 | DATE | 2007/03/19 |

ENGINEER'S SEAL
 ORIGINAL SIGNED BY
 S.B. WILLIAMSON
 2007/03/19
 CONSULTANT DRAWING NO.
 WD-P0014

THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT
 ENGINEERING DIVISION


WATER TREATMENT PLANT DEACON BOOSTER PUMP STATION UPGRADE
 PROCESS AND INSTRUMENTATION RECORD
 BRANCH I AND BRANCH II VALVE CHAMBERS
 CITY FILE NUMBER: 1-0601D-P0012-001-03
 SHEET OF: 03
 CITY DRAWING NUMBER: 1-0601D-P0012-001-03D.DWG



| | |
|----------------|--|
| 1-0601A-P0001 | PROCESS & INSTRUMENTATION DIAGRAM LEGEND & DETAILS |
| DRAWING NUMBER | REFERENCE DRAWINGS |


NOTES:
 1. DRAWINGS D-1895 AND 1-0601D-P0001-001 REPRESENT THE PREVIOUS P&IDS. MOST EXISTING DOCUMENTATION IS BASED ON THE IDENTIFICATION SHOWN IN PREVIOUS P&IDS.

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| 00 | ISSUED FOR CITY USE | 2013/11/29 | EFB | TMC | |
| NO. | REVISIONS | DATE | DESIGN | CHECK | |


SNC-LAVALIN INC.
 148 Nature Park Way
 Winnipeg, MB, Canada R3P 0X7
 204-786-8080

| | |
|--------------------------|-----------------------------------|
| DESIGNED BY: EXISTING | CHECKED BY: T. CHURCH |
| DRAWN BY: E. BOHNCKE | APPROVED BY: E. RYCZKOWSKI |
| SCALE: NTS | RELEASED FOR CONSTRUCTION BY: |
| DATE: 2013/04/23 | DATE: |

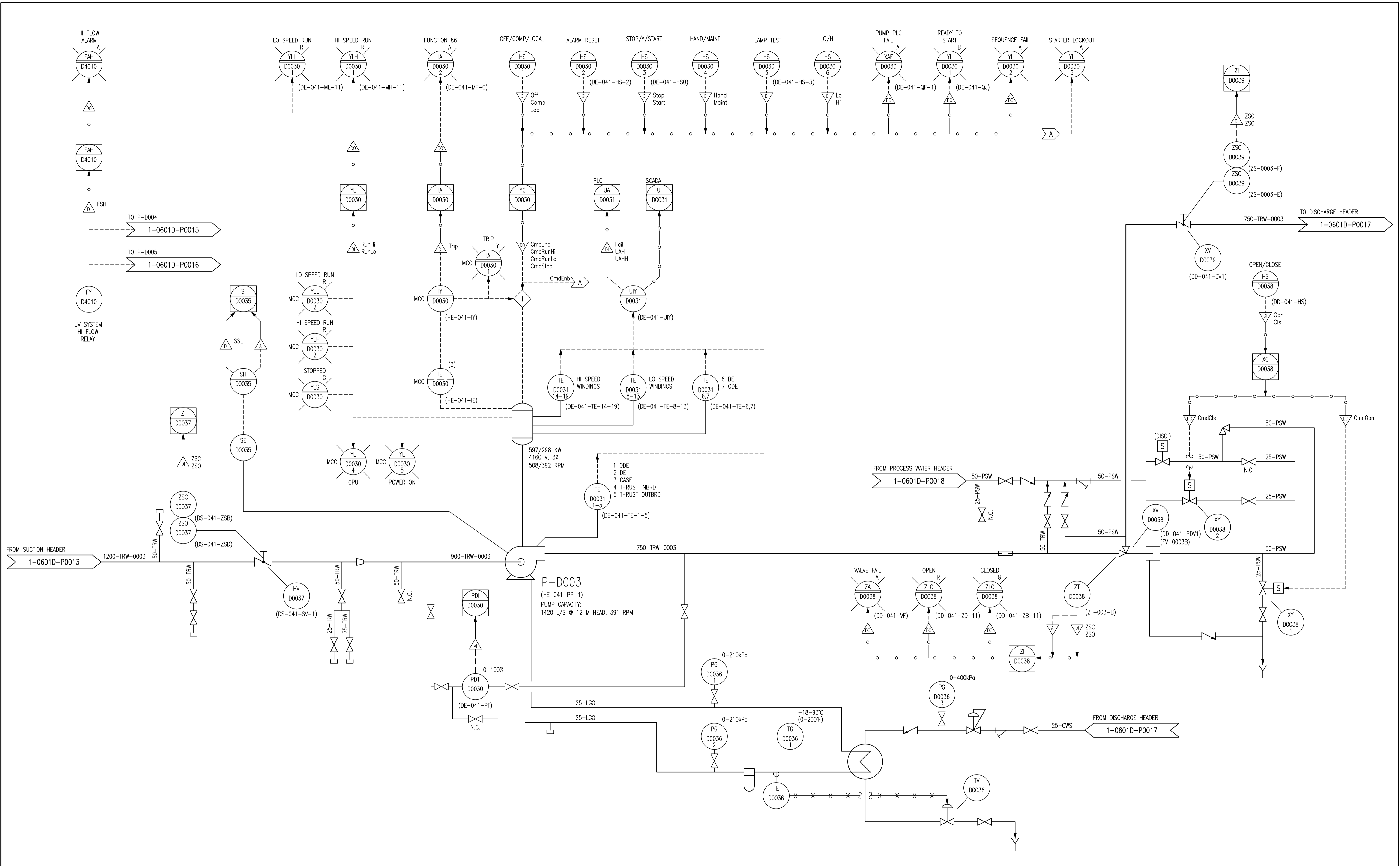
CONSULTANT NO.: 611003-0000-470DD-00XX


THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT

DEACON BOOSTER PUMPING STATION
 WATER TREATMENT PLANT
 PROCESS & INSTRUMENTATION DIAGRAM
 SUCTION HEADER

| | | | |
|---------------------|-------|------|------|
| CITY DRAWING NUMBER | SHEET | REV. | SIZE |
| 1-0601D-P0013 | 001 | 00 | A1 |

1-0601D-P0013-001-00.dwg



NOTES:

1. ALL INSTRUMENTS SHOWN IN AN AUXILIARY LOCATION ARE IN THE LOCAL PUMP CONTROL PANEL, UNLESS OTHERWISE DESIGNATED.
2. DRAWINGS D-1894 AND 1-0601D-P0003-003 REPRESENT THE PREVIOUS P&IDS. MOST EXISTING DOCUMENTATION IS BASED ON THE IDENTIFICATION SHOWN IN PREVIOUS P&IDS.

| NO. | REVISIONS | DATE | DESIGN | CHECK |
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| 00 | ISSUED FOR CITY USE | 2013/11/29 | EFB | TMC |

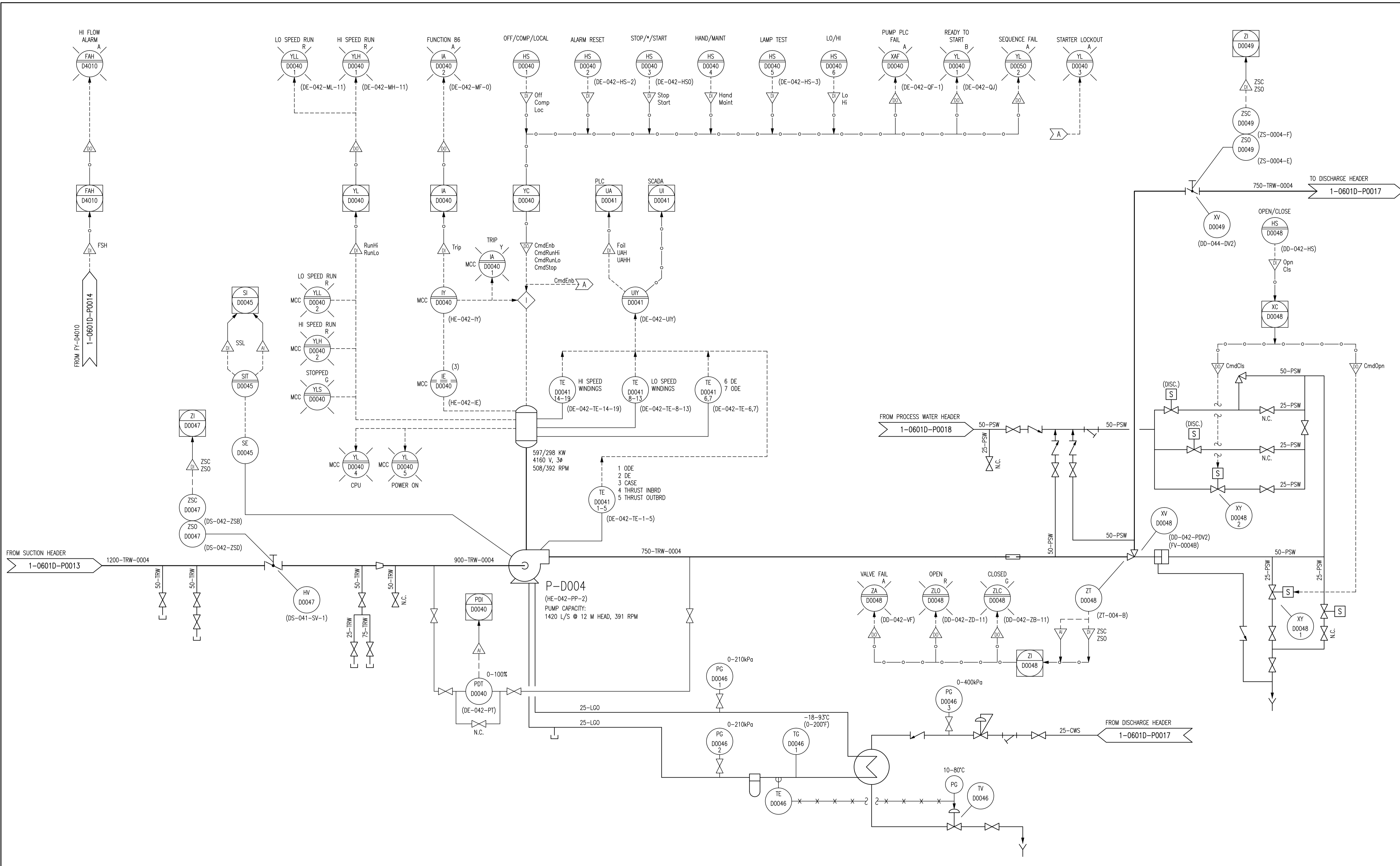
| | | | |
|-----------------|------------|---|---------------|
| | | SNC-LAVALIN INC. 148 Nature Park Way Winnipeg, MB, Canada R3P 0X7 204-786-8080 | |
| DESIGNED BY: | EXISTING | CHECKED BY: | T. CHURCH |
| DRAWN BY: | E. BOHNCKE | APPROVED BY: | E. RYCZKOWSKI |
| SCALE: | NTS | RELEASED FOR CONSTRUCTION BY: | |
| DATE: | 2013/04/18 | DATE: | |
| CONSULTANT NO.: | | 611003-0000-49DD-XXXX | |

ENGINEER'S SEAL

THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT

DEACON BOOSTER PUMPING STATION
 WATER TREATMENT PLANT
 PROCESS & INSTRUMENTATION DIAGRAM
 PUMP P-D003

| | | | |
|---------------------|-------|------|------|
| CITY DRAWING NUMBER | SHEET | REV. | SIZE |
| 1-0601D-P0014 | 001 | 00 | A1 |



NOTES:

- ALL INSTRUMENTS SHOWN IN AN AUXILIARY LOCATION ARE IN THE LOCAL PUMP CONTROL PANEL, UNLESS OTHERWISE DESIGNATED.
- DRAWINGS D-1894 AND 1-0601D-P0003-003 REPRESENT THE PREVIOUS P&IDs. MOST EXISTING DOCUMENTATION IS BASED ON THE IDENTIFICATION SHOWN IN PREVIOUS P&IDs.

| | |
|----------------|--|
| 1-0601A-P0001 | PROCESS & INSTRUMENTATION DIAGRAM LEGEND & DETAILS |
| DRAWING NUMBER | REFERENCE DRAWINGS |

| | | | |
|---------------------|------------|-------------------------------|---------------|
| DESIGNED BY: | EXISTING | CHECKED BY: | T. CHURCH |
| DRAWN BY: | E. BOHNCKE | APPROVED BY: | E. RYCZKOWSKI |
| SCALE: | NTS | RELEASED FOR CONSTRUCTION BY: | |
| DATE: | 2013/04/18 | DATE: | |
| ISSUED FOR CITY USE | 2013/11/29 | DESIGN | EFB |
| NO. REVISIONS | | CHECK | TMC |

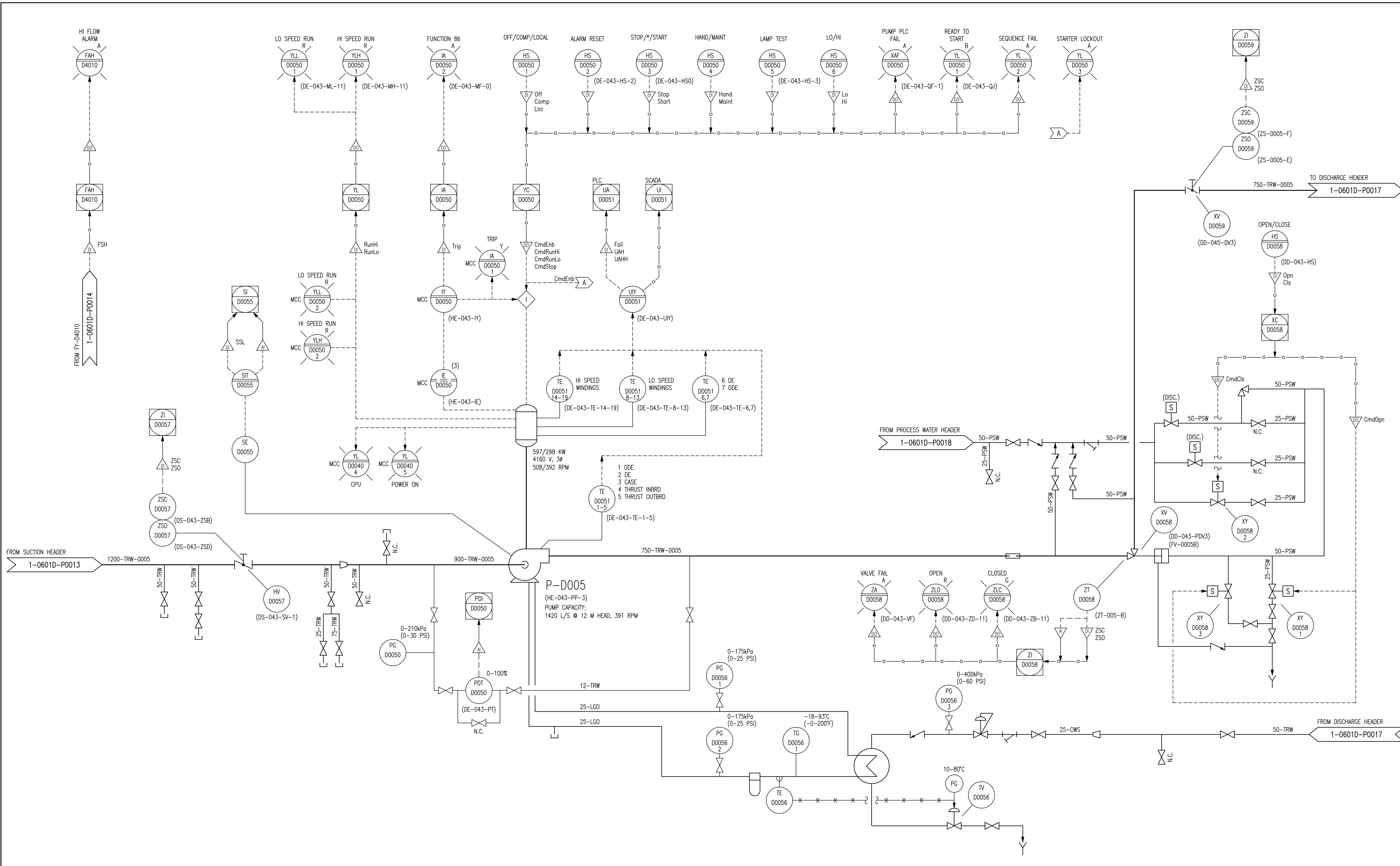
SNC-LAVALIN INC.
148 Nature Park Way
Winnipeg, MB, Canada R3P 0X7
204-786-8080

CONSULTANT NO.: 611003-0000-49DD-XXXX

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

DEACON BOOSTER PUMPING STATION
WATER TREATMENT PLANT
PROCESS & INSTRUMENTATION DIAGRAM
PUMP P-D004

CITY DRAWING NUMBER: 1-0601D-P0015
SHEET: 001
REV: 00
SIZE: A1



- NOTES:**
- ALL INSTRUMENTS SHOWN IN AN AUXILIARY LOCATION ARE IN THE LOCAL PUMP CONTROL PANEL, UNLESS OTHERWISE DESIGNATED.
 - DRAWINGS D-1895 AND 1-0601D-P0003-003 REPRESENT THE PREVIOUS P&IDS. MOST EXISTING DOCUMENTATION IS BASED ON THE IDENTIFICATION SHOWN IN PREVIOUS P&IDS.

| NO. | REVISIONS | DATE | DESIGN | CHECK |
|-----|---------------------|------------|--------|-------|
| 00 | ISSUED FOR CITY USE | 2013/11/29 | EFB | TMC |

SNC-LAVALIN

SNC-LAVALIN INC.
148 Nature Park Way
Winnipeg, MB, Canada R3P 0X7
204-786-8080

| | |
|---------------------------------------|--|
| DESIGNED BY: EXISTING | CHECKED BY: T. CHURCH |
| DRAWN BY: E. BOHNCKE | APPROVED BY: E. RYCZKOWSKI |
| SCALE: NTS | RELEASED FOR CONSTRUCTION BY: DATE: |
| DATE: 2013/04/18 | DATE: |
| CONSULTANT NO.: 611003-0000-49DD-XXXX | |

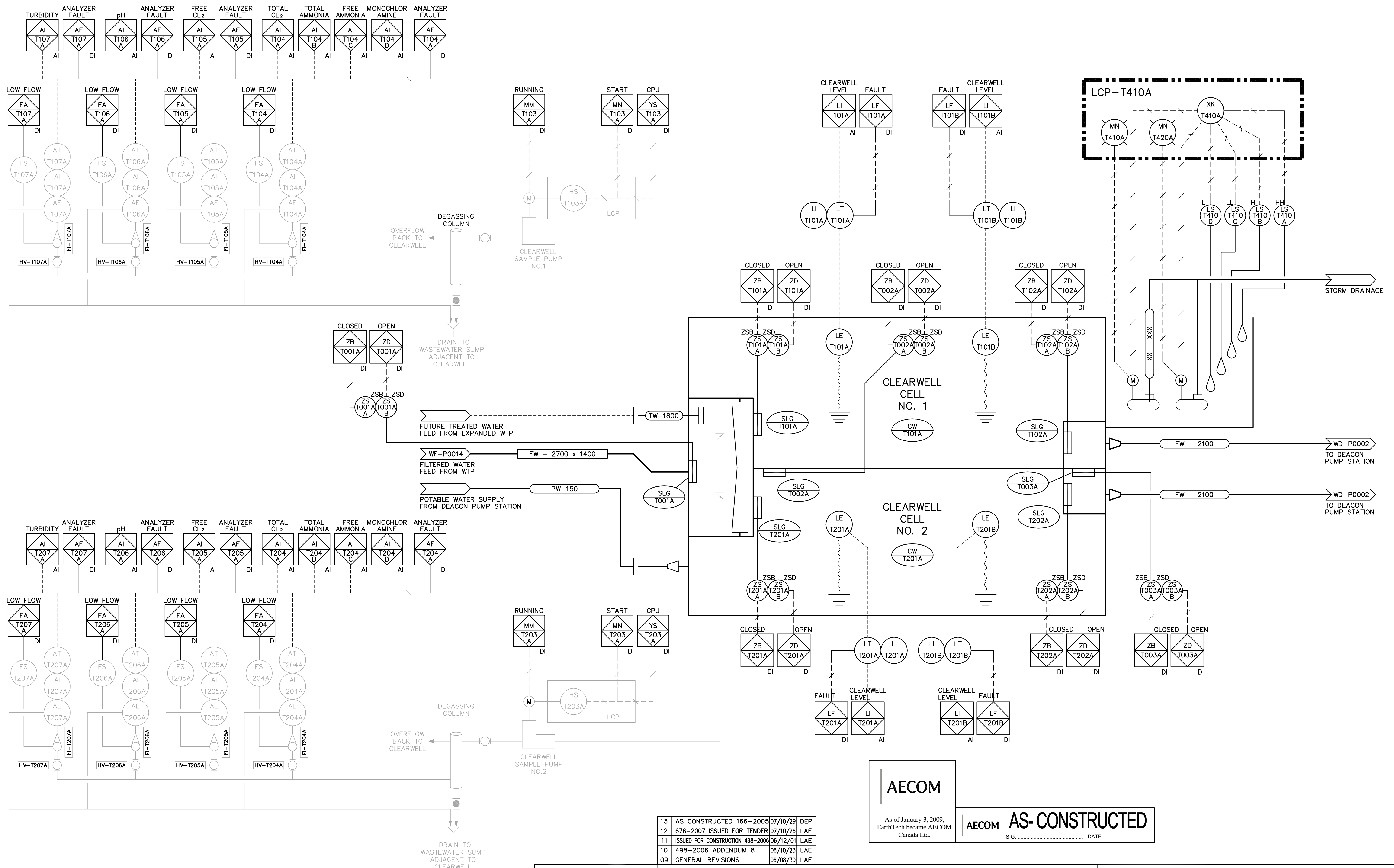
ENGINEER'S SEAL

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

DEACON BOOSTER PUMPING STATION
WATER TREATMENT PLANT
PROCESS & INSTRUMENTATION DIAGRAM
PUMP P-D005

| | | | |
|--------------------------------------|--------------|------------|------------|
| CITY DRAWING NUMBER 1-0601D-P0016 | SHEET 001 | REV. 00 | SIZE A1 |
|--------------------------------------|--------------|------------|------------|

1-0601D-P0016-001-00.dwg



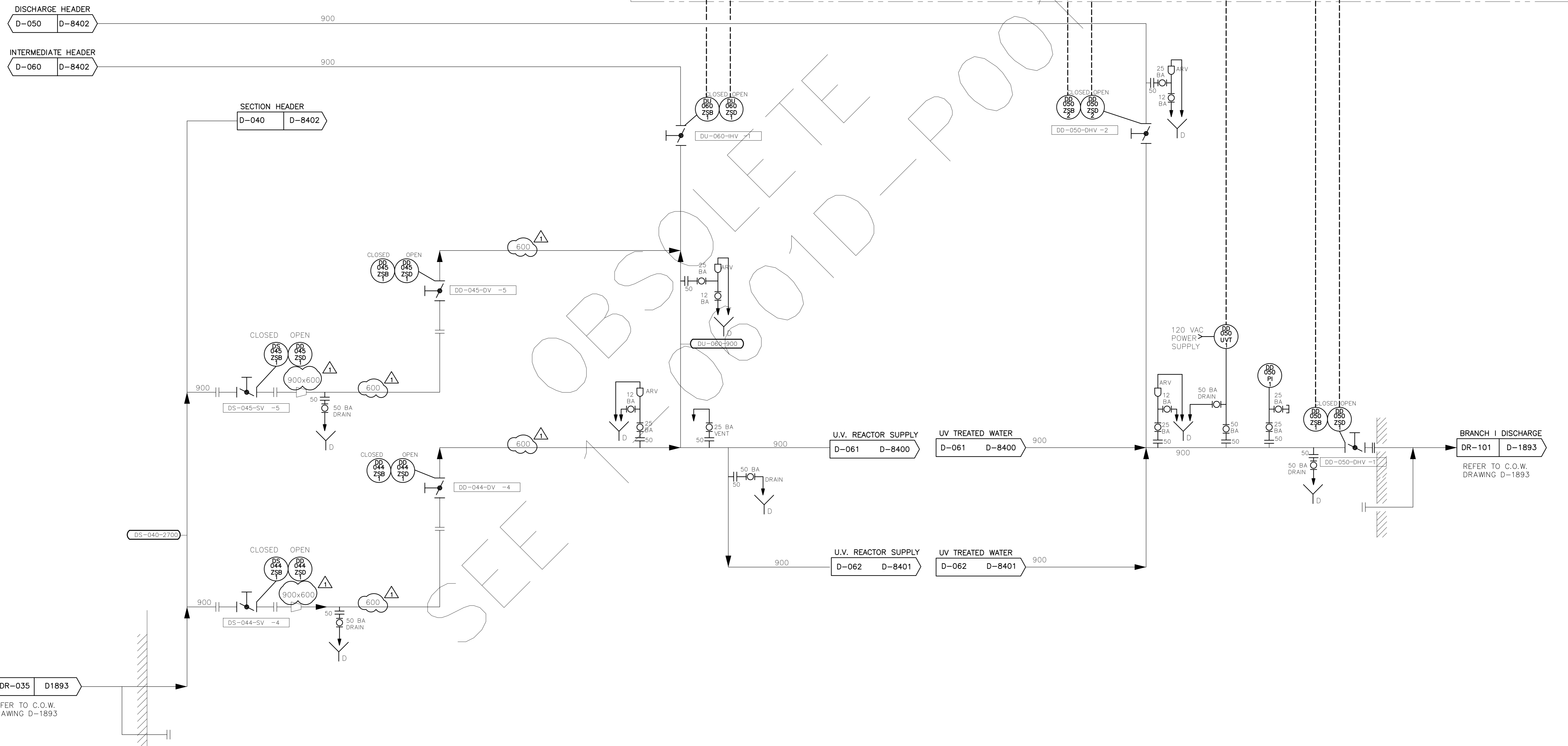
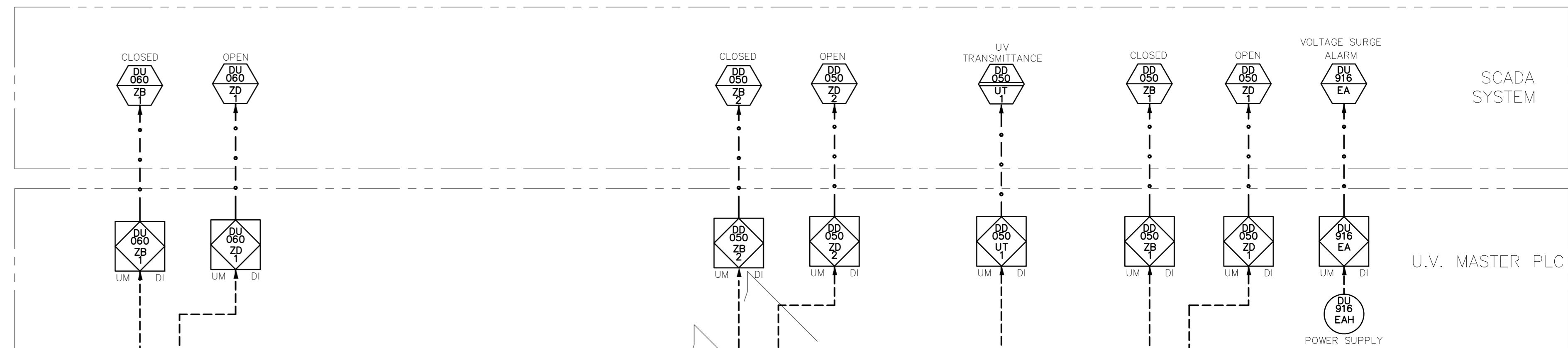
- NOTES:**
- DELETED
 - ALL SLUICE GATES AND LIMIT SWITCHES ARE SUPPLIED AND INSTALLED UNDER BID OPPORTUNITY No. 166-2005.
 - WIRING TO LIMIT SWITCHES IS SUPPLIED AND INSTALLED UNDER BID OPPORTUNITY No. 498-2006.

| NO. | REVISIONS | DATE | BY |
|-----|----------------------------------|----------|-----|
| 13 | AS CONSTRUCTED 166-2005 | 07/10/29 | DEP |
| 12 | 676-2007 ISSUED FOR TENDER | 07/10/26 | LAE |
| 11 | ISSUED FOR CONSTRUCTION 498-2006 | 06/12/01 | LAE |
| 10 | 498-2006 ADDENDUM B | 06/10/23 | LAE |
| 09 | GENERAL REVISIONS | 06/08/30 | LAE |
| 08 | GENERAL REVISIONS | 06/07/10 | SRP |
| 07 | GENERAL REVISIONS | 06/06/16 | SRP |
| 06 | GENERAL REVISIONS | 06/05/17 | SRP |
| 05 | GENERAL REVISIONS | 06/03/29 | LAE |
| 04 | GENERAL REVISIONS | 05/12/21 | LAE |
| 03 | GENERAL REVISIONS | 05/10/25 | JBC |
| 02 | ISSUED FOR CONSTRUCTION | 05/06/08 | JBC |
| 01 | 166-2005 ADDENDUM 1 | 05/05/06 | LAE |
| 00 | ISSUED FOR TENDER | 05/04/17 | ERC |

AECOM
As of January 3, 2009, EarthTech became AECOM Canada Ltd.

AECOM AS-CONSTRUCTED
SIG: _____ DATE: _____

| | | | |
|--|--|--|--|
| Certificate of Authorization AECOM Canada Ltd. Original dated on: No. 4671 Date: 2005/04/15 | Frederickson Cooper ARCHITECTS | ENGINEER'S SEAL ORIGINAL SIGNED BY S.R. BILEVICIUS 2005/04/15 | THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION |
| | DESIGNED BY: BLM CHECKED BY: SRB DRAWN BY: ERC APPROVED BY: AHL SCALE: NTS RELEASED FOR CONSTRUCTION BY: R. SOROKOWSKI DATE: 2005/3/31 DATE: 2005/04/17 | CONSULTANT DRAWING NO. WT-P001 | WATER TREATMENT PLANT CLEARWELL CONSTRUCTION CITY FILE NUMBER SHEET OF CITY DRAWING NUMBER 1-0601T-P0001-001-13 |



DR-035 D1893
REFER TO C.O.W. DRAWING D-1893

RECORD DRAWING

APEGM
Certificate of Authorization
Earth Tech Canada Inc.
No. 730 Expiry: April 30, 2004

| NO. | REVISIONS | DATE | BY |
|-----|-------------------------|----------|-----|
| 3 | RECORD DRAWING | 07/01/03 | SRP |
| 2 | AS BUILT | 05/01/13 | NH |
| 1 | ISSUED FOR CONSTRUCTION | 04/02/27 | JD |
| 0 | ISSUED FOR TENDER | 03/12/12 | TL |

| | | | |
|------------------------|-----|--------------------------------------|------------|
| DESIGNED BY | BL | CHECKED BY | SWT |
| DRAWN BY | DS | APPROVED BY | DT |
| HOR. SCALE: | NTS | RELEASED FOR CONSTRUCTION BY: | |
| VERTICAL SCALE: | | DATE | 2003/09/11 |

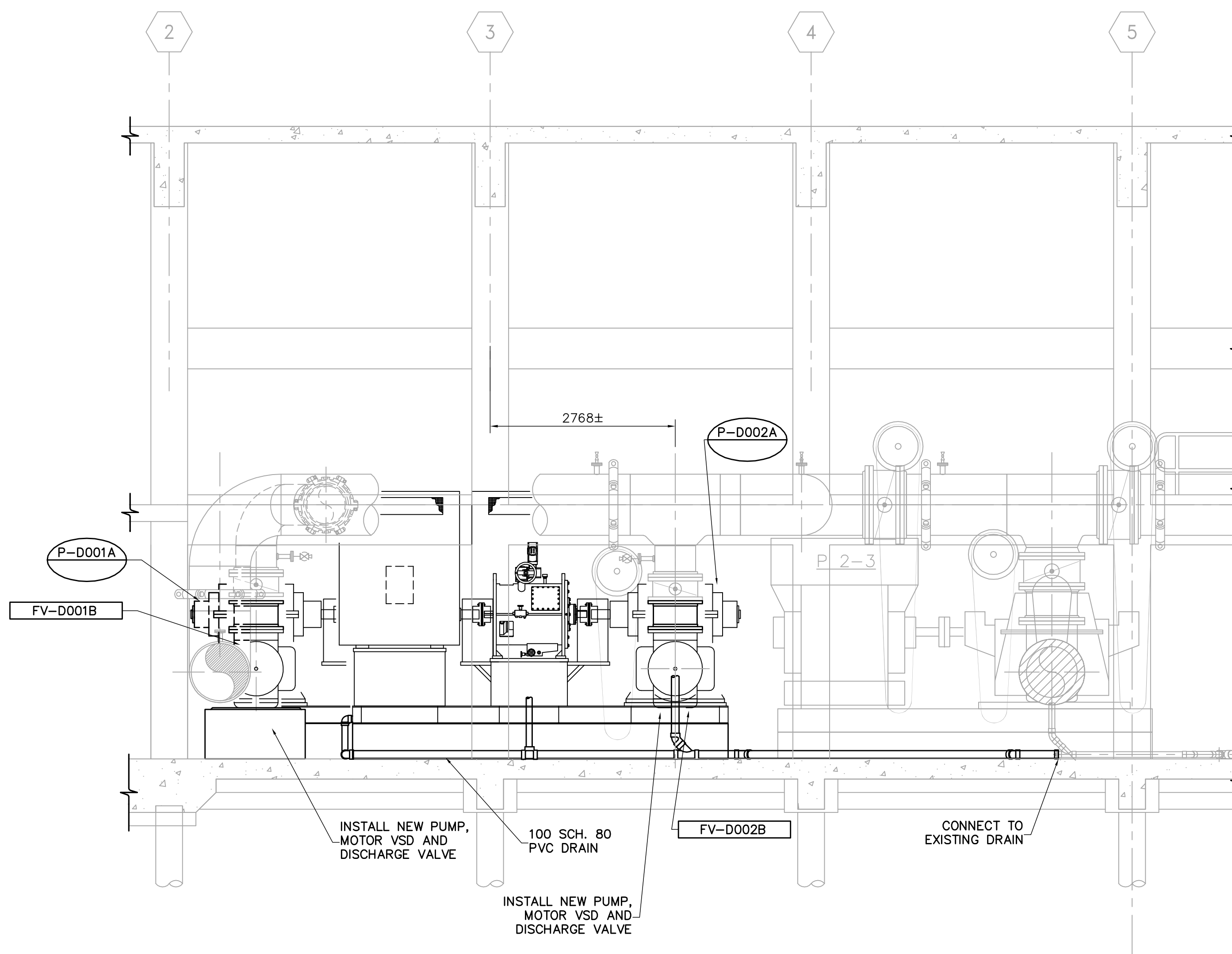
ENGINEER'S SEAL
ORIGINAL SIGNED BY
S.W. TORMEY
03/12/16
CONSULTANT DRAWING NO.
63672-C5-P02

THE CITY OF WINNIPEG
Winnipeg WATER AND WASTE DEPARTMENT

DEACON ULTRAVIOLET (UV) LIGHT DISINFECTION PROJECT

PROCESS - UV INSTALLATION
PROCESS AND INSTRUMENTATION
BRANCH I

CITY FILE NUMBER
SHEET 2 OF 21
CITY DRAWING NUMBER
D-8399



NOTES:

1. DIMENSIONS ARE APPROXIMATE. EXACT EQUIPMENT LOCATION AND PIPING MODIFICATIONS TO BE FIELD DETERMINED.
2. BRANCH I PUMPS, VSD'S, MOTORS, AND DISCHARGE VALVE ARE SUPPLIED BY THE CITY OF WINNIPEG. ALL OTHER PIPING AND MECHANICAL MODIFICATIONS TO BE SUPPLIED AND INSTALLED UNDER THIS CONTRACT.
3. SEE STRUCTURAL DRAWINGS FOR NEW AND MODIFIED CONCRETE EQUIPMENT PADS.
4. VSD COOLING WATER SUPPLY AND DRAINS NOT SHOWN FOR CLARITY.
5. PUMP BEARING COOLING WATER AND DRAINS NOT SHOWN FOR CLARITY.

A SECTION
WD-M0102 1:50

AECOM

As of January 3, 2009,
EarthTech became AECOM
Canada Ltd.

AECOM AS-CONSTRUCTED

SIG. _____ DATE _____

AECOM
Certificate of Authorization
AECOM Canada Ltd.
Original dated on:
No. 4671 Date: 2007/03/19

B.M.
ELEV.

| NO. | REVISIONS | DATE | BY |
|-----|-------------------------|----------|-----|
| 03 | AS CONSTRUCTED | 10/02/01 | DEP |
| 02 | ISSUED FOR CONSTRUCTION | 07/09/14 | GLG |
| 01 | 35-2006 ADDENDUM 3 | 07/08/01 | JBC |
| 00 | ISSUED FOR TENDER | 07/03/19 | SRP |

CH2M HILL
Frederickson Cooper
ARCHITECTS

EarthTech
A Tyco International Ltd. Company

| | | | |
|-------------|------------|-------------------------------|---------------|
| DESIGNED BY | SBW | CHECKED BY | NT |
| DRAWN BY | JBC | APPROVED BY | AHL |
| SCALE: | AS NOTED | RELEASED FOR CONSTRUCTION BY: | R. SOROKOWSKI |
| DATE | 2006/02/06 | DATE | 2007/03/19 |

ENGINEER'S SEAL

ORIGINAL SIGNED BY
S.B. WILLIAMSON
2007/03/19

CONSULTANT DRAWING NO.
WD-M0201

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

WATER TREATMENT PLANT
DEACON BOOSTER PUMP STATION
UPGRADE

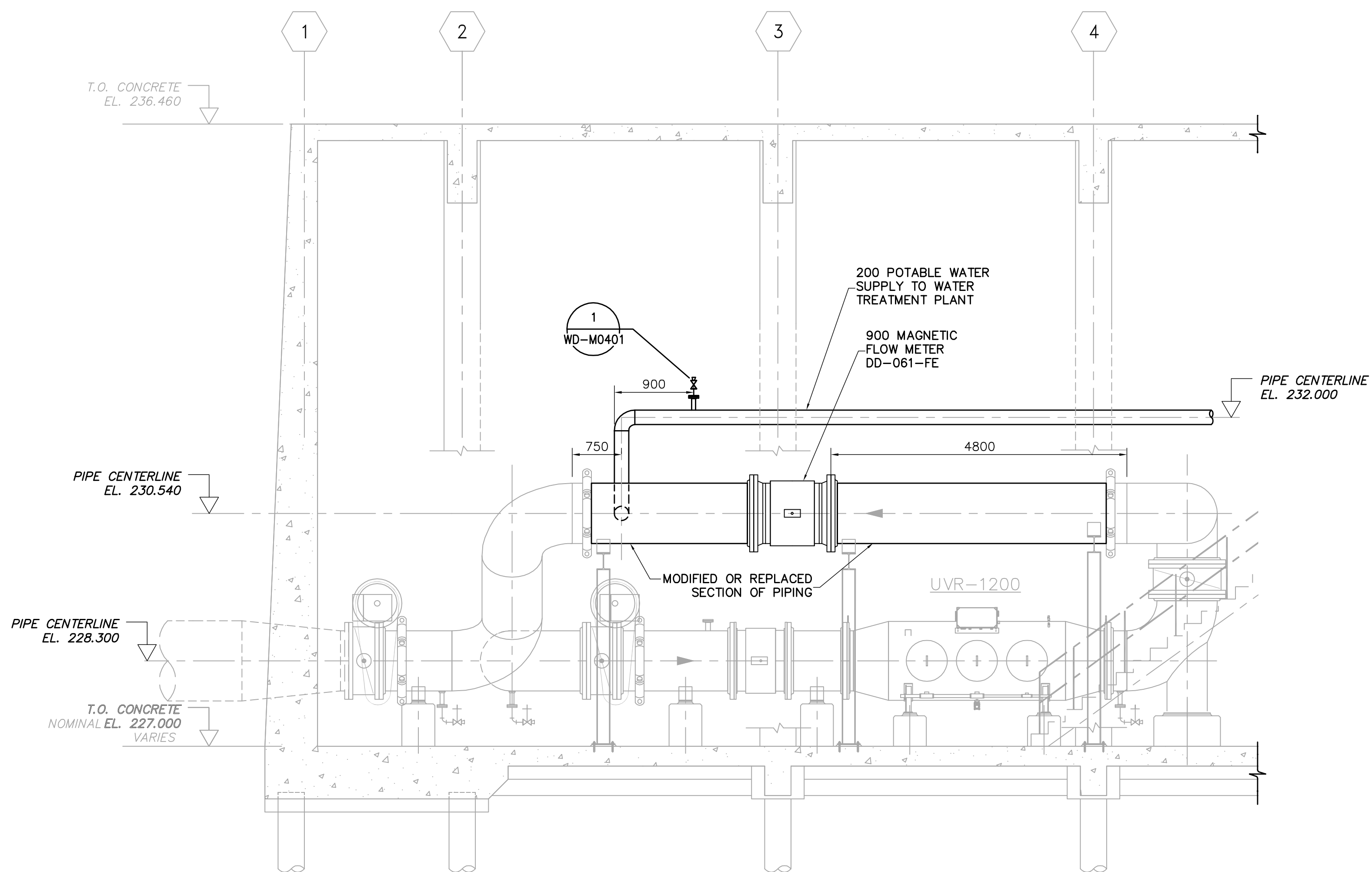
PROCESS MECHANICAL
BRANCH 1
SECTION

CITY FILE NUMBER

SHEET 1 OF 4

CITY DRAWING NUMBER

1-0601D-M0005-001-03



B SECTION
WD-M0101 1:50

NOTES:

1. DIMENSIONS ARE APPROXIMATE. EXACT EQUIPMENT LOCATION AND PIPING MODIFICATIONS TO BE FIELD DETERMINED.
2. BRANCH 1 PUMPS, VSD'S, MOTORS, AND DISCHARGE VALVE ARE SUPPLIED BY THE CITY OF WINNIPEG. ALL OTHER PIPING AND MECHANICAL MODIFICATIONS TO BE SUPPLIED AND INSTALLED UNDER THIS CONTRACT.

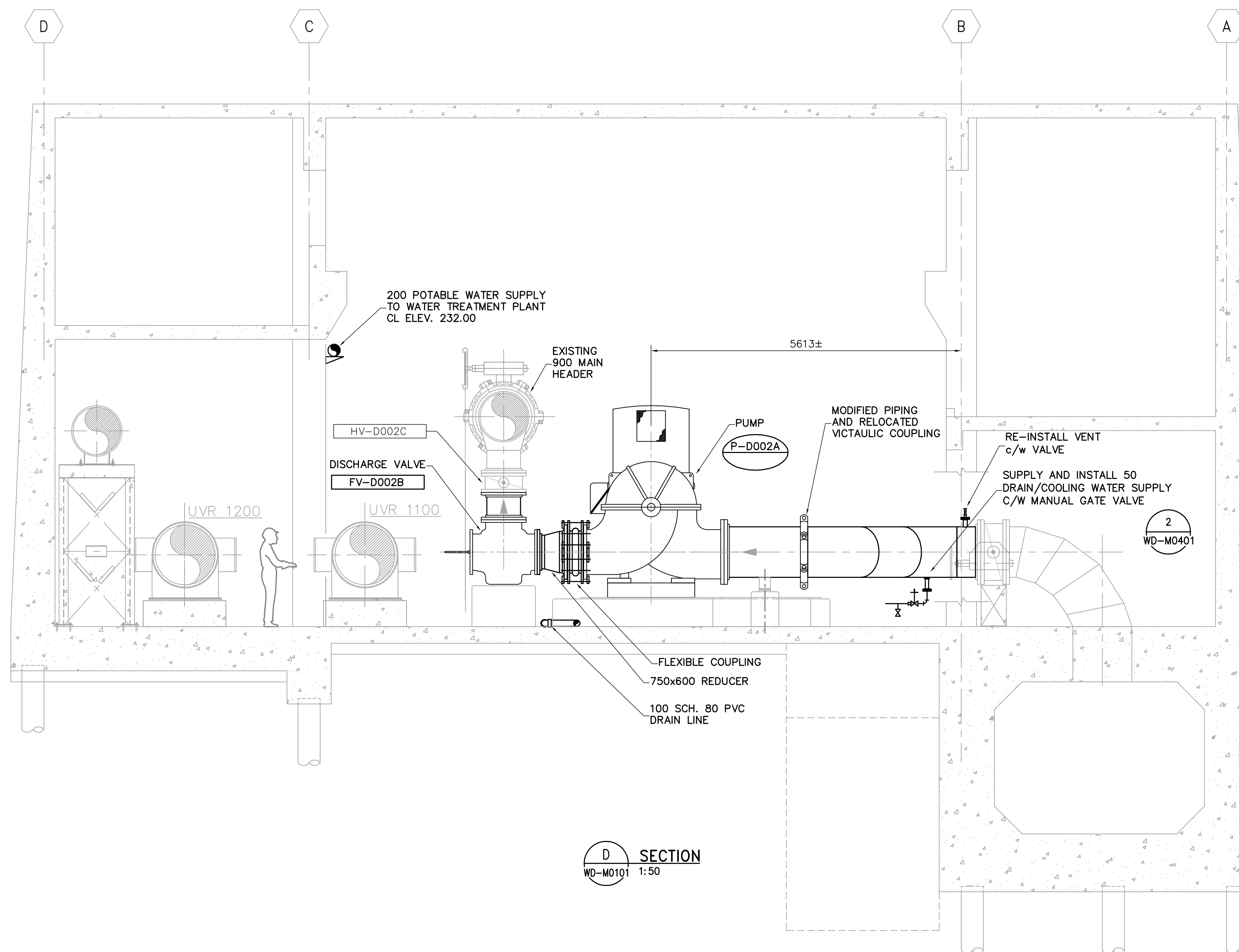
| | | | | | | | | | | | |
|--|-----------------|--------------|------------------------------------|------------|---------------------------------------|------|--|------------|--|------|--|
| Certificate of Authorization AECOM Canada Ltd. Original dated on: No. 4671 Date: 2007/03/19 | B.M. ELEV. | | Frederickson Cooper ARCHITECTS | | A Tyco International Ltd. Company | | ENGINEER'S SEAL ORIGINAL SIGNED BY S.B. WILLIAMSON 2007/03/19 | | THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION | | |
| | DESIGNED BY SBW | | CHECKED BY NT | | CONSULTANT DRAWING NO. WD-M0202 | | WATER TREATMENT PLANT DEACON BOOSTER PUMP STATION UPGRADE | | CITY FILE NUMBER | | |
| | DRAWN BY JBC | | APPROVED BY AHL | | SCALE: AS NOTED | | RELEASED FOR CONSTRUCTION BY: R. SOROKOWSKI | | SHEET 2 OF 4 | | |
| | NO. REVISIONS | | DATE BY | | DATE | | PROCESS MECHANICAL BRANCH 1 SECTION | | CITY DRAWING NUMBER 1-0601D-M0005-002-02 | | |
| 02 AS CONSTRUCTED | | 10/02/01 DEP | | 2006/02/06 | | DATE | | 2007/03/19 | | DATE | |
| 01 ISSUED FOR CONSTRUCTION | | 07/09/14 GLG | | 2006/02/06 | | DATE | | 2007/03/19 | | DATE | |
| 00 ISSUED FOR TENDER | | 07/03/19 SRP | | 2006/02/06 | | DATE | | 2007/03/19 | | DATE | |

AECOM

As of January 3, 2009,
EarthTech became AECOM
Canada Ltd.

AECOM AS-CONSTRUCTED

SIG..... DATE.....



NOTES:

1. DIMENSIONS ARE APPROXIMATE. EXACT EQUIPMENT LOCATION AND PIPING MODIFICATIONS TO BE FIELD DETERMINED.
2. BRANCH 1 PUMPS, VSD'S, MOTORS, AND DISCHARGE VALVE ARE SUPPLIED BY THE CITY OF WINNIPEG. ALL OTHER PIPING AND MECHANICAL MODIFICATIONS TO BE SUPPLIED AND INSTALLED UNDER THIS CONTRACT.
3. SEE STRUCTURAL DRAWINGS FOR NEW AND MODIFIED CONCRETE EQUIPMENT PADS.
4. VSD COOLING WATER SUPPLY AND DRAINS NOT SHOWN FOR CLARITY.
5. PUMP BEARING COOLING WATER AND DRAINS NOT SHOWN FOR CLARITY.

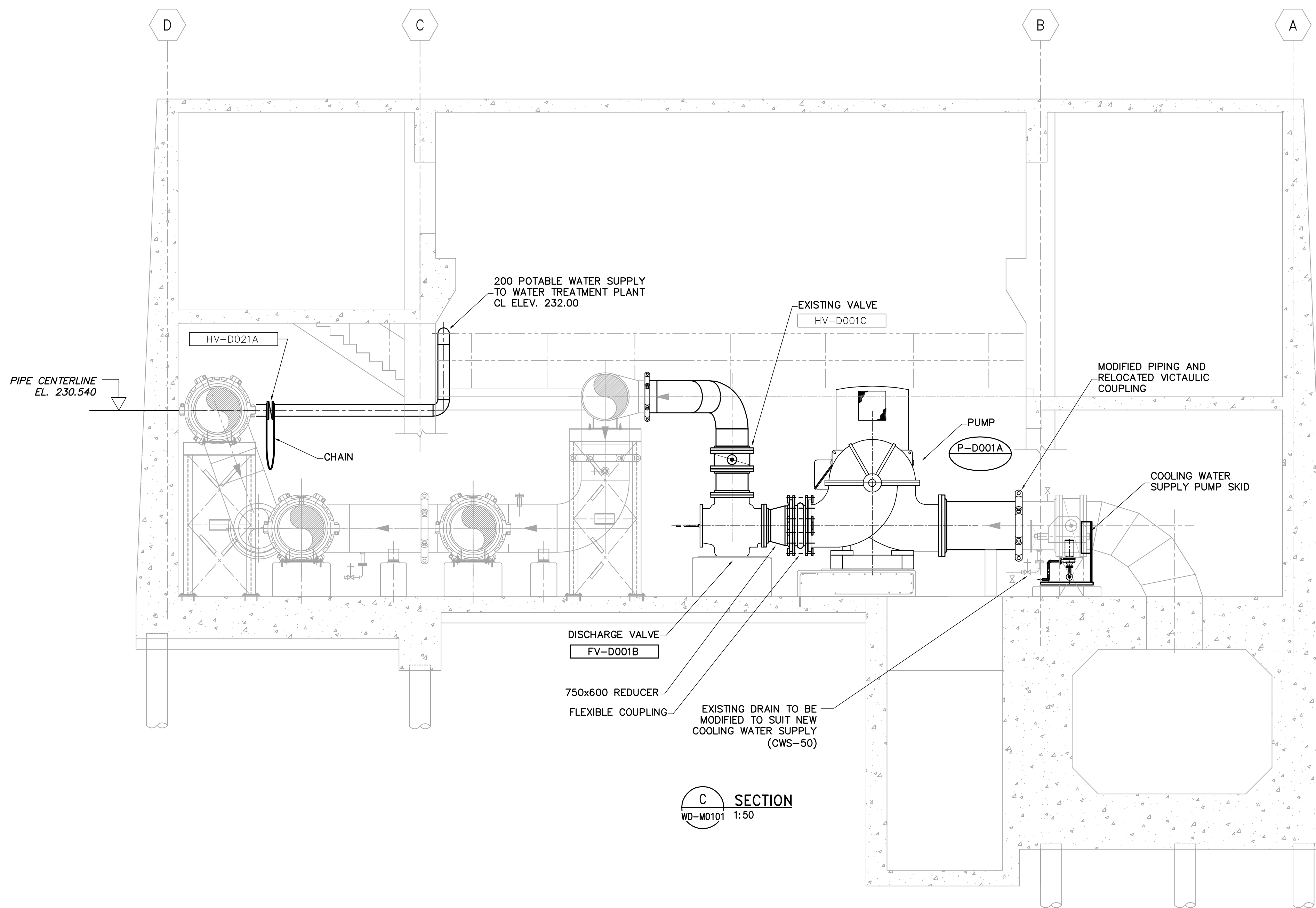
AECOM

As of January 3, 2009,
EarthTech became AECOM
Canada Ltd.

AECOM AS-CONSTRUCTED

SIG..... DATE.....

| | | | | | | | | | | |
|--|-------------|-----------|---------------------------------------|-----|---------------------------------------|------------|--|------------|---|--|
| Certificate of Authorization AECOM Canada Ltd. Original dated on: No. 4671 Date: 2007/03/19 | B.M. ELEV. | | Frederickson Cooper ARCHITECTS | | A Tyco International Ltd. Company | | ENGINEER'S SEAL ORIGINAL SIGNED BY S.B. WILLIAMSON 2007/03/19 | | THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION | |
| | DESIGNED BY | SBW | CHECKED BY | NT | CONSULTANT DRAWING NO. | | WD-M0203 | | CITY FILE NUMBER | |
| | DRAWN BY | JBC | APPROVED BY | AHL | SCALE: AS NOTED | | RELEASED FOR CONSTRUCTION BY: R. SOROKOWSKI | | SHEET 3 OF 4 | |
| | NO. | REVISIONS | DATE | BY | DATE | 2006/02/06 | DATE | 2007/03/19 | CITY DRAWING NUMBER 1-0601D-M0005-003-03 | |



C SECTION
WD-M0101 1:50

NOTES:

1. DIMENSIONS ARE APPROXIMATE. EXACT EQUIPMENT LOCATION AND PIPING MODIFICATIONS TO BE FIELD DETERMINED.
2. BRANCH 1 PUMPS, VSD'S, MOTORS, AND DISCHARGE VALVE ARE SUPPLIED BY THE CITY OF WINNIPEG. ALL OTHER PIPING AND MECHANICAL MODIFICATIONS TO BE SUPPLIED AND INSTALLED UNDER THIS CONTRACT.
3. SEE STRUCTURAL DRAWINGS FOR NEW AND MODIFIED CONCRETE EQUIPMENT PADS.
4. VSD COOLING WATER SUPPLY AND DRAINS NOT SHOWN FOR CLARITY.
5. PUMP BEARING COOLING WATER AND DRAINS NOT SHOWN FOR CLARITY.

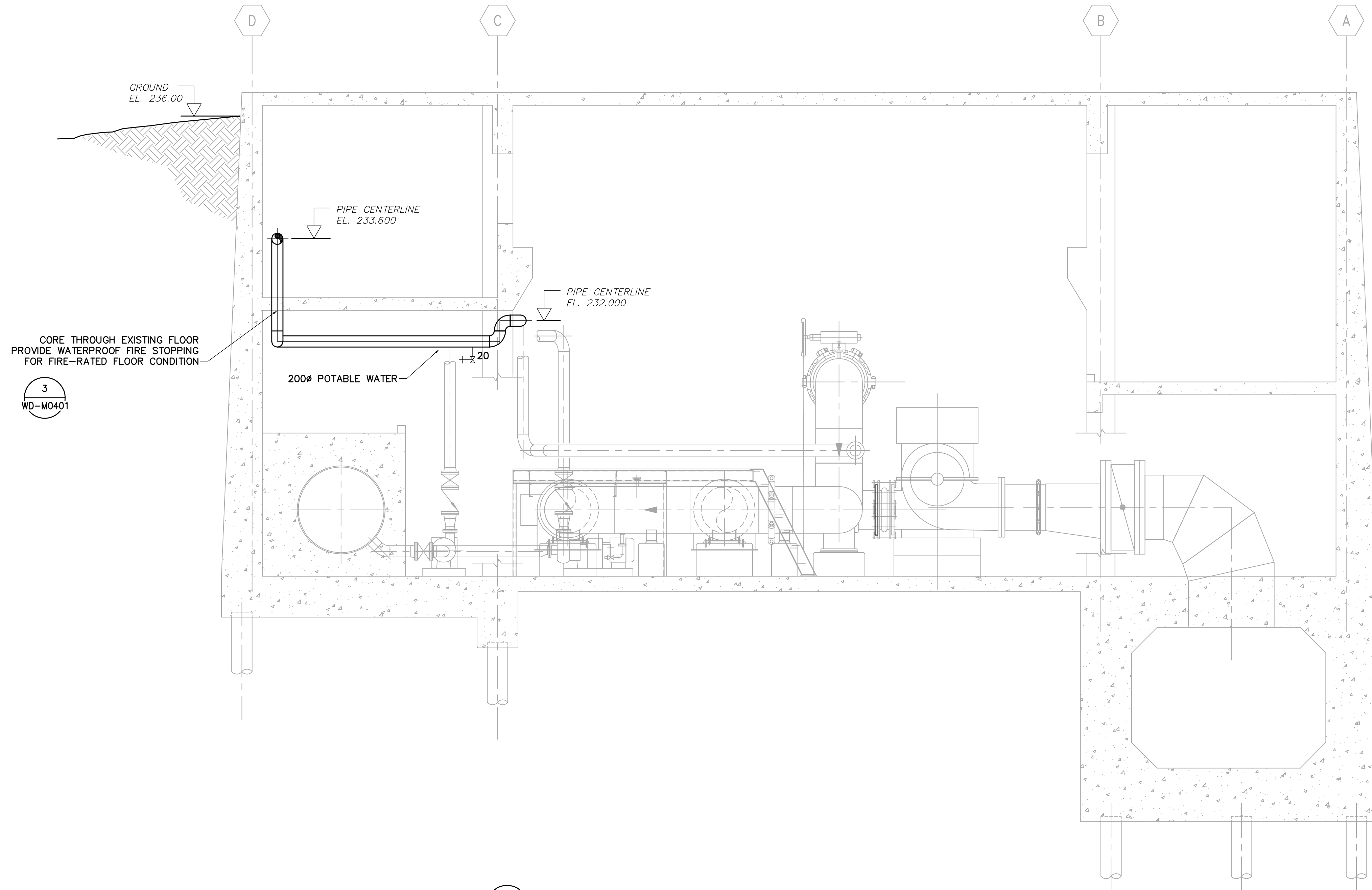
AECOM

As of January 3, 2009,
EarthTech became AECOM
Canada Ltd.

AECOM AS-CONSTRUCTED

SIG..... DATE.....

| | | | | | | | | |
|--|---------------|---------------------------------------|---------------------------------------|-----------------|---|---|------------------------------------|--|
| Certificate of Authorization AECOM Canada Ltd. Original dated on: No. 4671 Date: 2007/03/19 | B.M. ELEV. | Frederickson Cooper ARCHITECTS | A Tyco International Ltd. Company | ENGINEER'S SEAL | THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION | CITY FILE NUMBER | | |
| | | | | DESIGNED BY SBW | | CHECKED BY NT | ORIGINAL SIGNED BY S.B. WILLIAMSON | SHEET 4 OF 4 |
| | | | | DRAWN BY JBC | | APPROVED BY AHL | 2007/03/19 | |
| | | | | SCALE: AS NOTED | | RELEASED FOR CONSTRUCTION BY: R. SOROKOWSKI | CONSULTANT DRAWING NO. WD-M0204 | CITY DRAWING NUMBER 1-0601D-M0005-004-03 |
| | NO. REVISIONS | DATE | BY | DATE | PROCESS MECHANICAL BRANCH 1 SECTION | | | |



CORE THROUGH EXISTING FLOOR
PROVIDE WATERPROOF FIRE STOPPING
FOR FIRE-RATED FLOOR CONDITION

3
WD-M0401

200Ø POTABLE WATER

E SECTION
WD-M0101 1:50

| | | | | | | | | |
|--|----------------------------|---------------------------------------|---------------------------------------|-----------------|--|---|--------------------|----------|
| Certificate of Authorization AECOM Canada Ltd. Original dated on: No. 4671 Date: 2007/03/19 | B.M. ELEV. | Frederickson Cooper ARCHITECTS | A Tyco International Ltd. Company | ENGINEER'S SEAL | THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION | CITY FILE NUMBER | | |
| | | | | DESIGNED BY SBW | | CHECKED BY NT | ORIGINAL SIGNED BY | SHEET OF |
| | | | | DRAWN BY JBC | | APPROVED BY AHL | S.B. WILLIAMSON | |
| | | | | SCALE: AS NOTED | | RELEASED FOR CONSTRUCTION BY: R. SOROKOWSKI | 2007/03/19 | |
| | NO. REVISIONS | DATE | BY | DATE | CONSULTANT DRAWING NO. WD-M0205 | CITY DRAWING NUMBER 1-0601D-M0006-001-02 | | |
| | 02 AS CONSTRUCTED | 10/02/01 | DEP | | | | | |
| | 01 ISSUED FOR CONSTRUCTION | 07/09/14 | GLG | | | | | |
| | 00 ISSUED FOR TENDER | 07/03/19 | JBC | | | | | |

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As of January 3, 2009,
EarthTech became AECOM
Canada Ltd.

AECOM AS-CONSTRUCTED
SIG..... DATE.....