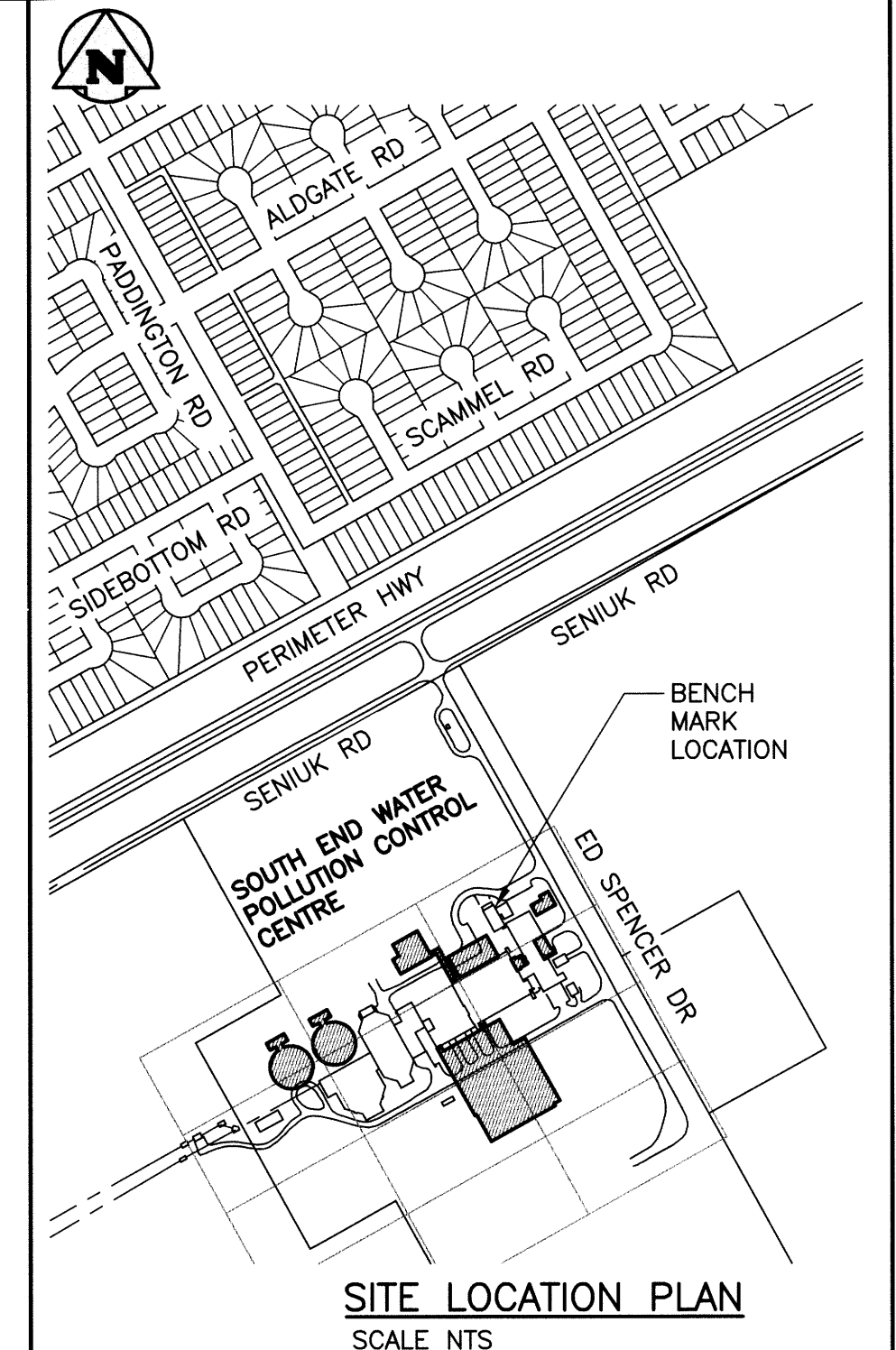
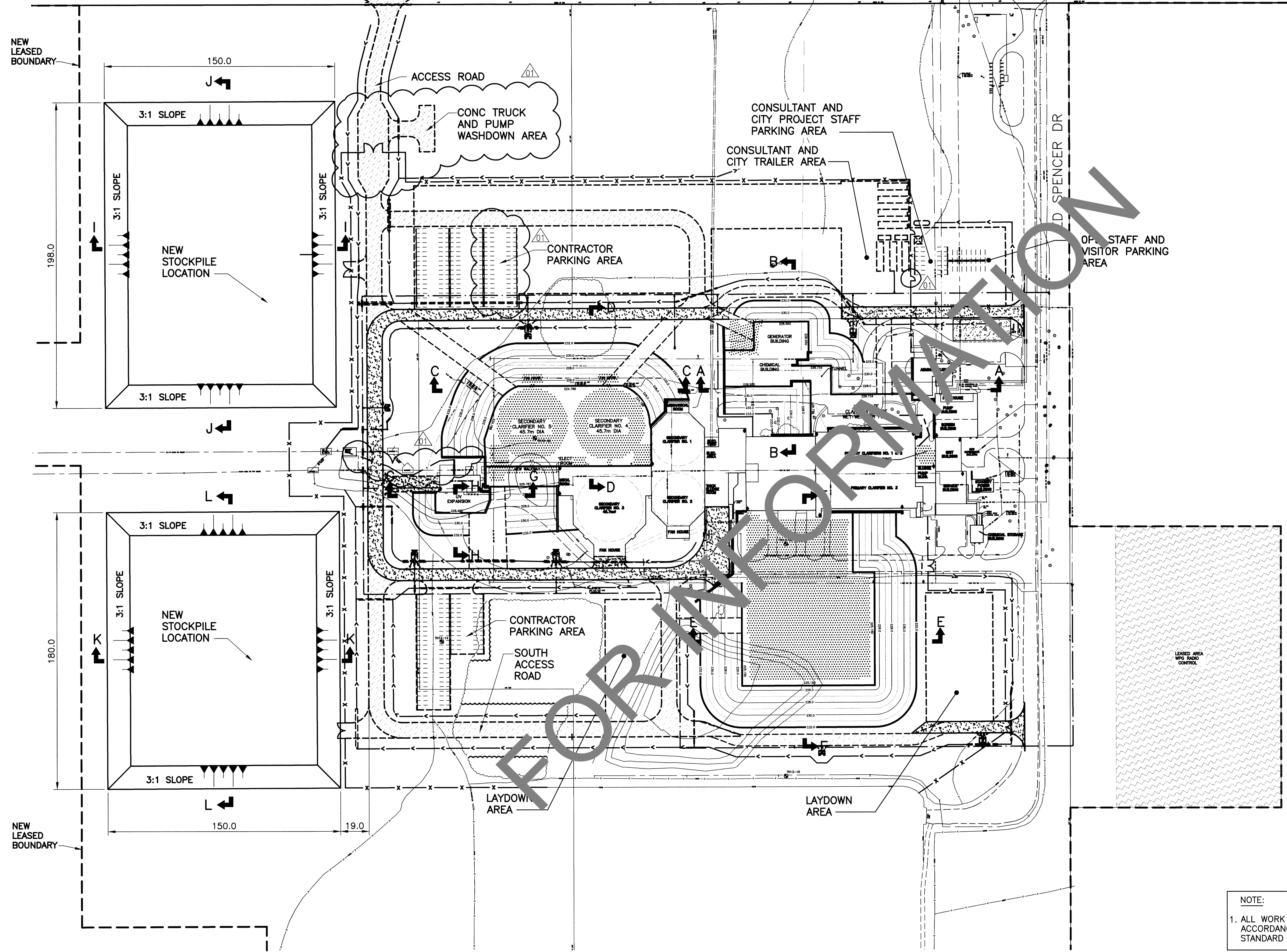


PERIMETER 100 HWY

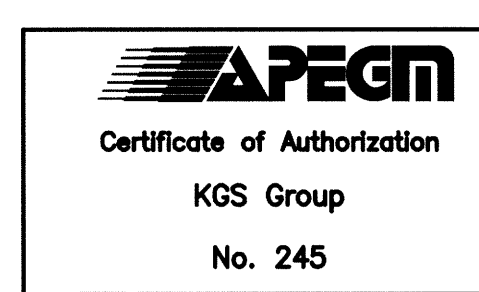
SENIUK RD

OLD SPENCER DR



LEGEND	EXISTING	NEW
SEWER	—	—
SEWER MH	○	●
SEWER PLUG	—	—
SEWER CB	□	□
SEWER STRUCT	□	□
WM	—	—
WM VALVE	⊙	⊙
WM HYDRANT	⊙	⊙
GAS	—	—
HYDRO	—	—
HYDRO POLE	●HP	●HP
HYDRO STR	□	□
HYDRO POLE	●H	●H
STREET LIGHT	⊙	⊙
HYDRO TRANSFORMER	⊙	⊙
BOLLARD	⊙	⊙
TREE	⊙	⊙
SHRUBS/BUSH	⊙	⊙
CULVERT	—	—
DITCH	—	—
ROAD	—	—
FENCE	—	—
LEASED LAND UNDER CULTIVATION	—	—
EXIST STRUCTURE TO BE MODIFIED	▨	▨
NEW STRUCTURE	▨	▨
NEW ROAD	▨	▨
CONSTRUCTION ROAD	▨	▨
REVCLOUD	☁	☁

NOTE:  
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF WINNIPEG STANDARD CONSTRUCTION SPECIFICATIONS



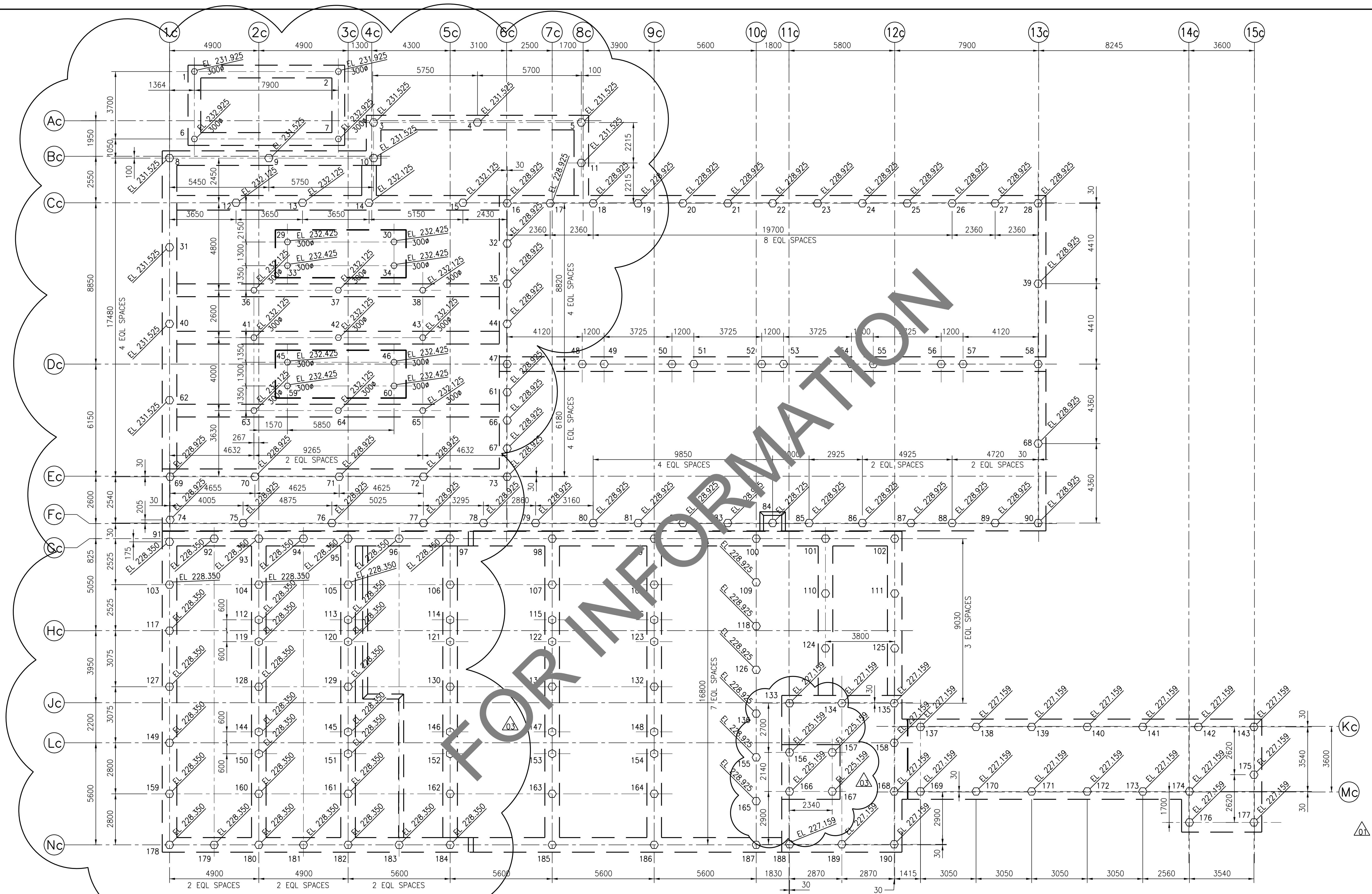
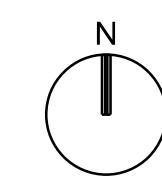
B.M. ELEV.	BRASS PLATE LOCATED IN GRADE BEAM OF ADMINSTRATON BUILDING 234.059		
DESIGNED BY:	EMS	CHECKED BY:	BJM
DRAWN BY:	DMW	APPROVED BY:	RJH
SCALE:	AS NOTED		
DATE:	2014/06/27	RELEASED FOR CONSTRUCTION BY:	T. TURZAK
DATE:	2014/08/14	DATE:	2014/08/14
CONSULTANT NO.:	13-0338-002		
NO. REVISIONS	DATE	DESIGN	CHECK

**CH2MHILL.**  
SNC-LAVALIN  
KGS GROUP  
PROVINCE OF MANITOBA  
B.J. MIKOLAYENKO  
REGISTERED PROFESSIONAL ENGINEER  
Member 24688  
AUG 13 2014

**THE CITY OF WINNIPEG**  
Winnipeg WATER AND WASTE DEPARTMENT  
SOUTH END WATER POLLUTION CONTROL CENTRE  
SEWPPC UPGRADE/EXPANSION PROJECT  
CIVIL  
OVERALL SITE EXCAVATION AND STOCKPILE LOCATION PLAN

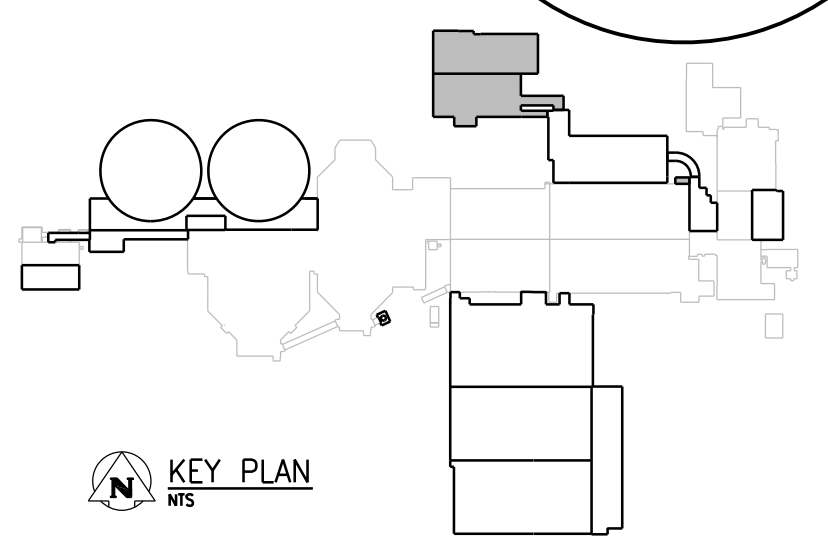
CITY DRAWING NUMBER	SHEET	REV.	SIZE
1-0102-CGAD-A003	001	02	A1





**PILING PLAN**  
1:100

- NOTES:
- REFER TO DWG 1-0102-SGAD-A001 FOR GENERAL NOTES.
  - REFER TO DWG 1-0102-SGAD-A002 FOR OVERALL SITE PLAN AND SEQUENCING.
  - PILE DIAMETER (D) = 400mm UNLESS NOTED OTHERWISE.
  - PILES CUT-OFF ELEVATION = 228.625 UNLESS NOTED OTHERWISE.
  - ESTIMATED PILE REFUSAL EL 212.000



NO.	REVISIONS	DATE	DESIGN	CHECK
03	ISSUED FOR FIELD INSTRUCTION NO. 64	07/2015	G.O. B.W.	
02	ISSUED FOR CONSTRUCTION	08/2014	G.O. B.W.	
01	ISSUED FOR ADDENDUM NO. 1	07/2014	G.O. B.W.	
00	ISSUED FOR TENDER	06/2014	G.O. B.W.	

**CH2MHILL**  
SNC-LAVALIN

DESIGNED BY: E. LUI  
CHECKED BY: B. WILLIAMSON

DRAWN BY: G. OMORI  
APPROVED BY: E. LUI

SCALE: 1:100  
DATE: 2014/06/27

ISSUED FOR CONSTRUCTION  
DATE:

CONSULTANT NO.: 474248

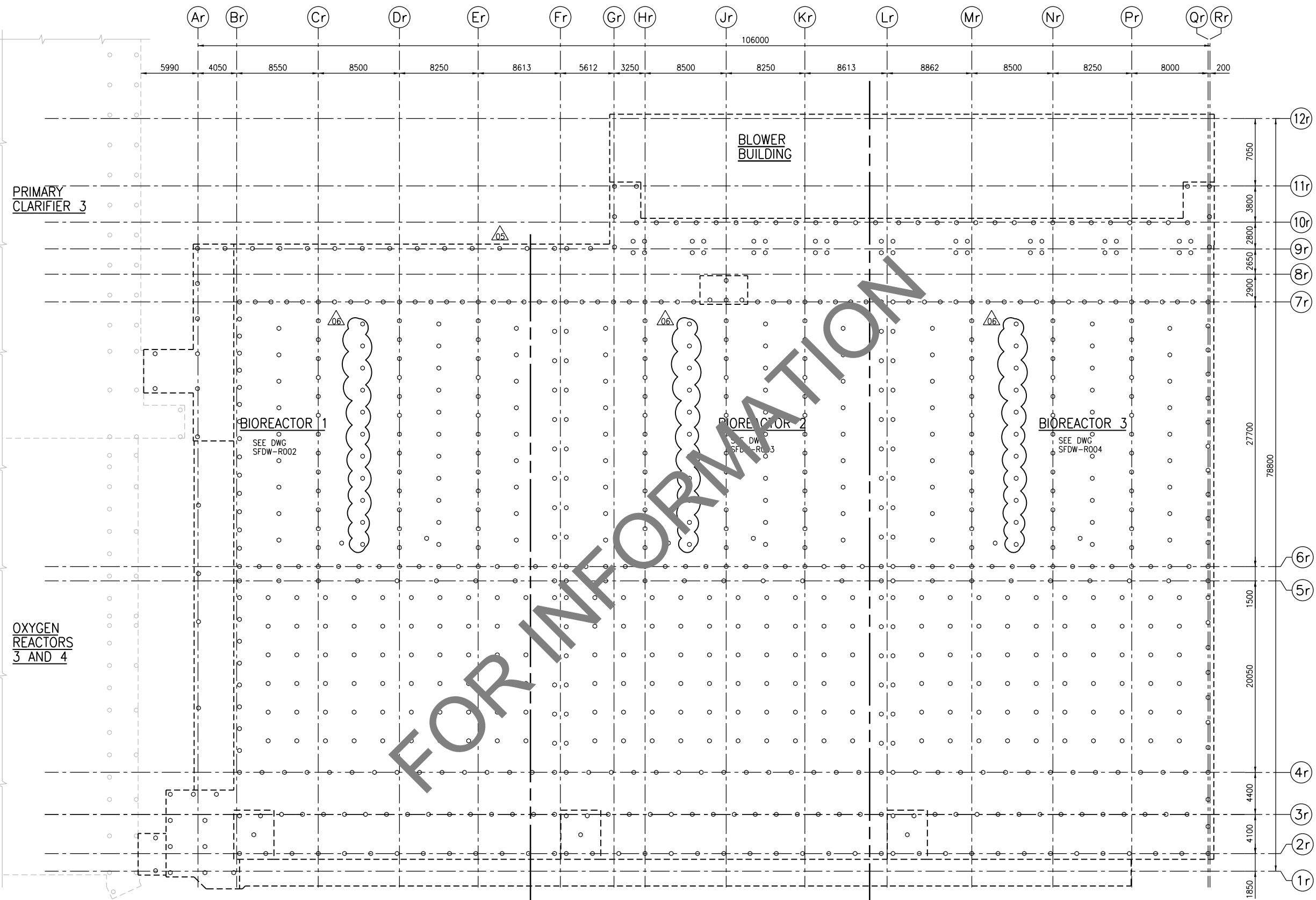


**THE CITY OF WINNIPEG**  
Winnipeg WATER AND WASTE DEPARTMENT

SOUTH END WATER POLLUTION CONTROL CENTRE  
SEWPCU UPGRADING/EXPANSION PROJECT

STRUCTURAL  
CHEMICAL/ELECTRICAL BUILDING  
PILING PLAN

CITY DRAWING NUMBER: 1-0102-SFDW-C001  
SHEET: 001  
REV: 03  
SIZE: A1



FOR INFORMATION

**NOTES:**

1. REFER TO DWG 1-0102-SGAD-A001 FOR GENERAL NOTES.
2. REFER TO DWG 1-0102-SGAD-A002 FOR OVERALL SITE PLAN AND SEQUENCING.
3. PILE DIAMETER (D) = 400mm
4. ESTIMATED PILE REFUSAL EL 210.000
5. TOTAL NUMBER OF PILES IS 908. PILE NUMBER 393 HAS BEEN DELETED.

**OVERALL PILING PLAN**  
1:200



NO.	REVISIONS	DATE	DESIGN	CHECK
06	ISSUED FOR FIELD INSTRUCTION NO. 104	09/2015	C.R.	B.W.
05	ISSUED FOR FIELD INSTRUCTION NO. 97	08/2015	G.O.	B.W.
04	ISSUED FOR FIELD INSTRUCTION NO. 87	08/2015	C.R.	B.W.
03	ISSUED FOR FIELD INSTRUCTION NO. 43	05/2015	G.O.	B.W.
02	ISSUED FOR CONSTRUCTION	08/2014	G.O.	B.W.
01	ISSUED FOR ADDENDUM NO. 1	07/2014	G.O.	B.W.
00	ISSUED FOR TENDER	06/2014	G.O.	B.W.

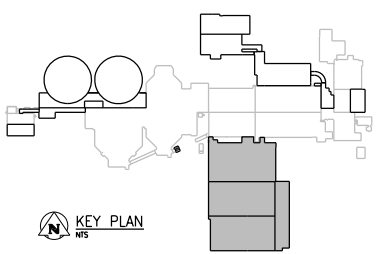
<b>CH2MHILL</b> SNC-LAVALIN		<b>KGS GROUP</b>	
DESIGNED BY: E. LUI	CHECKED BY: B. WILLIAMSON	DRAWN BY: G. OMORI	APPROVED BY: E. LUI
SCALE: 1:200		ISSUED FOR CONSTRUCTION	
DATE: 2014/06/27		BY:	
CONSULTANT NO.: 474248		DATE:	

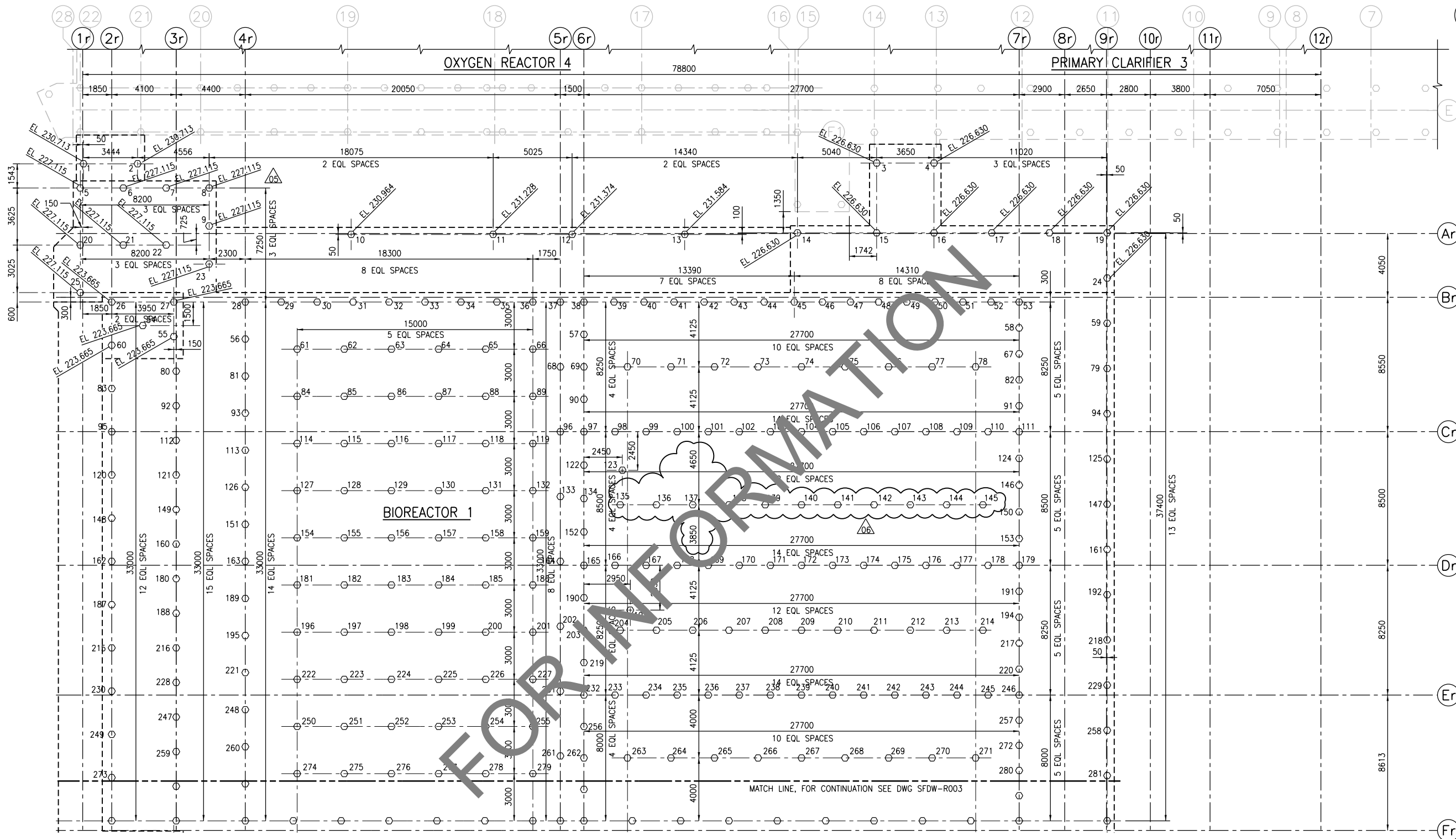
ENGINEER'S SEAL

**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT

SOUTH END WATER POLLUTION CONTROL CENTRE  
SEWPPC UPGRADING/EXPANSION PROJECT  
STRUCTURAL  
BIOREACTORS/BLOWER BUILDING  
OVERALL PILING PLAN

CITY DRAWING NUMBER	SHEET	REV.	SIZE
1-0102-SFDW-R001	001	05	A1



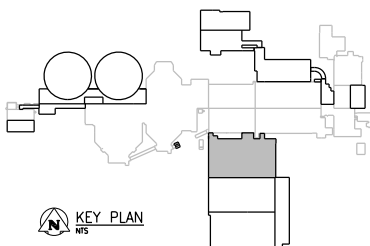


**PART PILING PLAN**

1:125

**NOTES:**

- REFER TO DWG 1-0102-SGAD-A001 FOR GENERAL NOTES.
- REFER TO DWG 1-0102-SGAD-A002 FOR OVERALL SITE PLAN AND SEQUENCING.
- PILE DIAMETER (D) = 400mm
- PILE CUT-OFF ELEVATION = 225.475 UNLESS NOTED OTHERWISE.
- ESTIMATED PILE REFUSAL EL 210.000
- TOTAL NUMBER OF PILES IS 908. PILE NUMBER 393 HAS BEEN DELETED.



NO.	REVISIONS	DATE	DESIGN	CHECK
06	ISSUED FOR FIELD INSTRUCTION NO. 104	09/2015	C.R. B.W.	
05	ISSUED FOR FIELD INSTRUCTION NO. 97	08/2015	G.O. B.W.	
04	ISSUED FOR FIELD INSTRUCTION NO. 87	08/2015	C.R. B.W.	
03	ISSUED FOR FIELD INSTRUCTION NO. 43	05/2015	G.O. B.W.	
02	ISSUED FOR CONSTRUCTION	08/2014	G.O. B.W.	
01	ISSUED FOR ADDENDUM NO. 1	07/2014	G.O. B.W.	
00	ISSUED FOR TENDER	06/2014	G.O. B.W.	

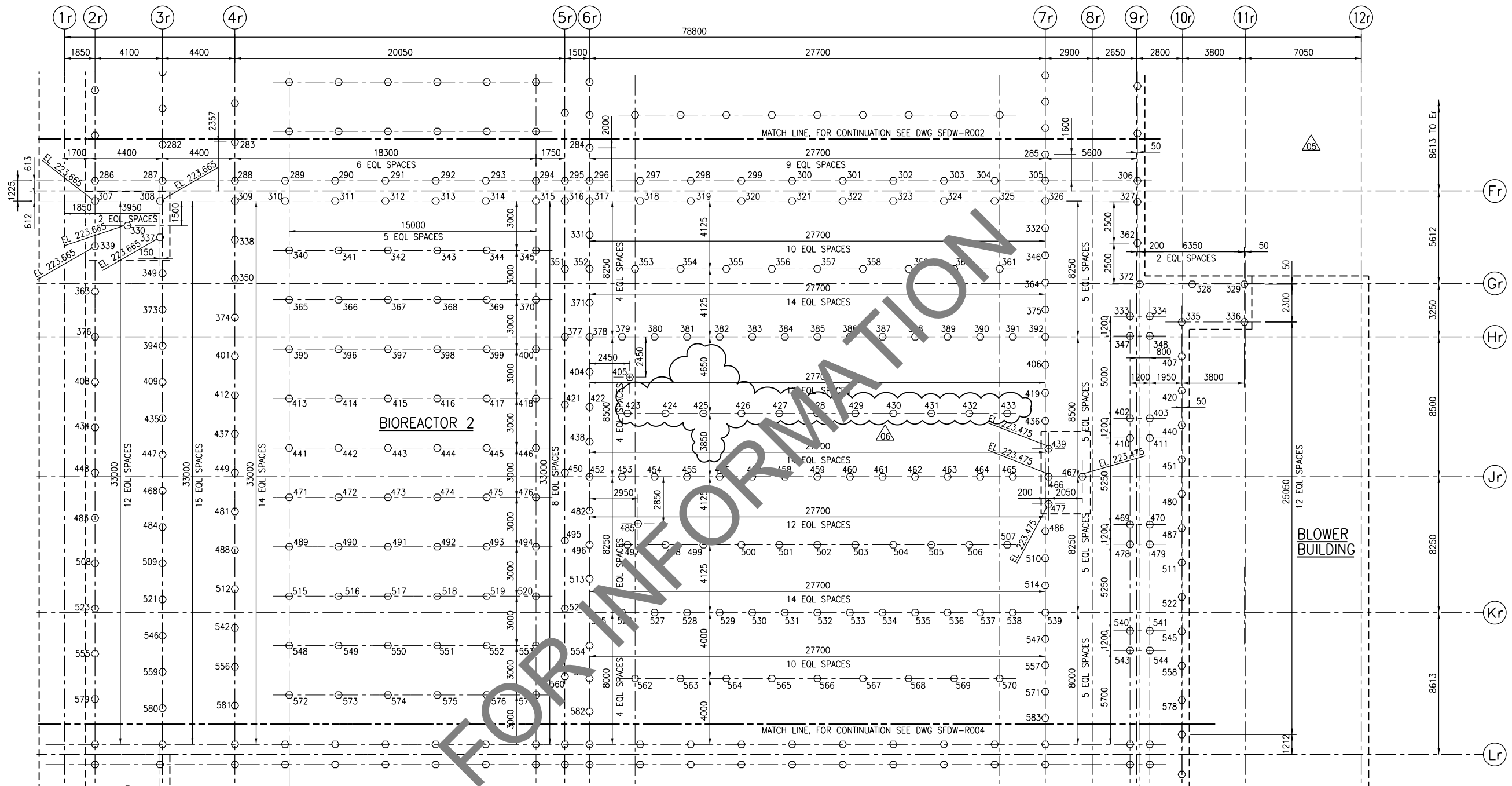
<b>CH2MHILL</b> SNC-LAVALIN		<b>KGS GROUP</b>	
DESIGNED BY: E. LUI	CHECKED BY: B. WILLIAMSON	ENGINEER'S SEAL	
DRAWN BY: G. OMORI	APPROVED BY: E. LUI		
SCALE: 1:125	ISSUED FOR CONSTRUCTION		
DATE: 2014/06/27	BY:		
CONSULTANT NO.: 474248	DATE:		

**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT

SOUTH END WATER POLLUTION CONTROL CENTRE  
SEWPPC UPGRADING/EXPANSION PROJECT  
STRUCTURAL  
BIOREACTORS/BLOWER BUILDING  
PART PILING PLAN (1)

CITY DRAWING NUMBER: 1-0102-SFDW-R002  
SHEET: 001  
REV: 05  
SIZE: A1

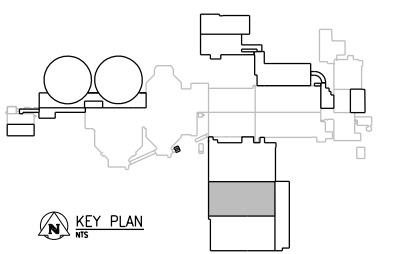




**PART PILING PLAN**

1:125

- NOTES:**
- REFER TO DWG 1-0102-SGAD-A001 FOR GENERAL NOTES.
  - REFER TO DWG 1-0102-SGAD-A002 FOR OVERALL SITE PLAN AND SEQUENCING.
  - PILE DIAMETER (D) = 400mm
  - PILE CUT-OFF ELEVATION = 225.475 UNLESS NOTED OTHERWISE.
  - ESTIMATED PILE REFUSAL EL 210.000
  - TOTAL NUMBER OF PILES IS 908. PILE NUMBER 393 HAS BEEN DELETED.



NO.		REVISIONS		DATE	DESIGN	CHECK
06	ISSUED FOR FIELD INSTRUCTION NO. 104	09/2015	C.R. B.W.			
05	ISSUED FOR FIELD INSTRUCTION NO. 97	08/2015	G.O. B.W.			
04	ISSUED FOR FIELD INSTRUCTION NO. 87	08/2015	C.R. B.W.			
03	ISSUED FOR FIELD INSTRUCTION NO. 43	05/2015	G.O. B.W.			
02	ISSUED FOR CONSTRUCTION	08/2014	G.O. B.W.			
01	ISSUED FOR ADDENDUM NO. 1	07/2014	G.O. B.W.			
00	ISSUED FOR TENDER	06/2014	G.O. B.W.			

**CH2MHILL**  
SNC-LAVALIN  
KGS GROUP

DESIGNED BY: E. LUI  
CHECKED BY: B. WILLIAMSON

DRAWN BY: G. OMORI  
APPROVED BY: E. LUI

SCALE: 1:125  
DATE: 2014/06/27

ISSUED FOR CONSTRUCTION  
BY: DATE:

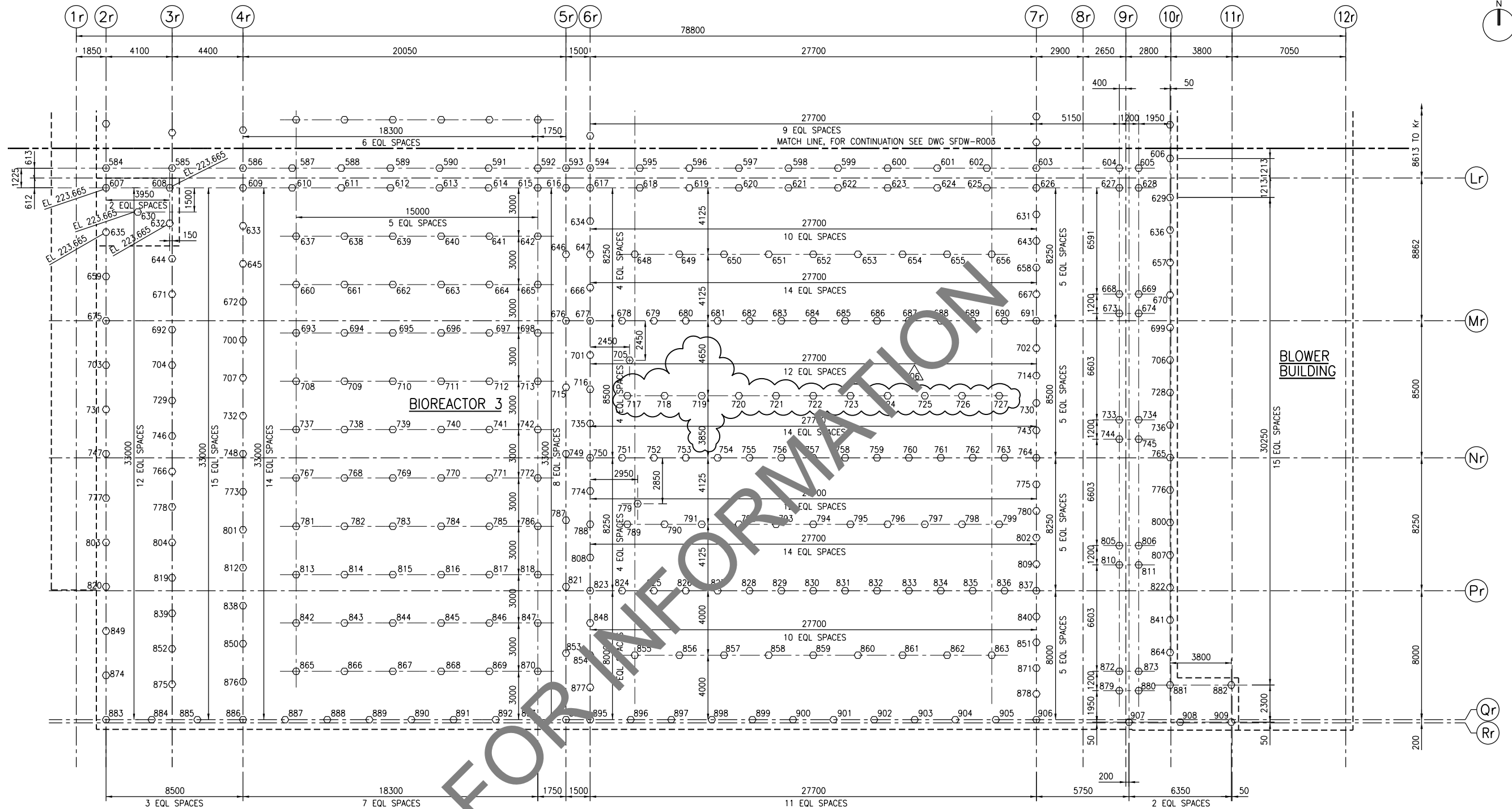
CONSULTANT NO.: 474248

ENGINEER'S SEAL

**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT

SOUTH END WATER POLLUTION CONTROL CENTRE  
SEWPPC UPGRADING/EXPANSION PROJECT  
STRUCTURAL  
BIOREACTORS/BLOWER BUILDING  
PART PILING PLAN (2)

CITY DRAWING NUMBER: 1-0102-SFDW-R003  
SHEET: 001  
REV: 05  
SIZE: A1

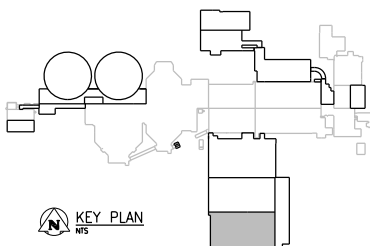


**PART PILING PLAN**

1:125

**NOTES:**

1. REFER TO DWG 1-0102-SGAD-A001 FOR GENERAL NOTES.
2. REFER TO DWG 1-0102-SGAD-A002 FOR OVERALL SITE PLAN AND SEQUENCING.
3. PILE DIAMETER (D) = 400mm
4. PILE CUT-OFF ELEVATION = 225.475 UNLESS NOTED OTHERWISE.
5. ESTIMATED PILE REFUSAL EL 210.000
6. TOTAL NUMBER OF PILES IS 908. PILE NUMBER 393 HAS BEEN DELETED.



NO.	REVISIONS	DATE	DESIGN	CHECK
06	ISSUED FOR FIELD INSTRUCTION NO. 104	09/2015	C.R.	B.W.
05	ISSUED FOR FIELD INSTRUCTION NO. 97	08/2015	G.O.	B.W.
04	ISSUED FOR FIELD INSTRUCTION NO. 87	08/2015	C.R.	B.W.
03	ISSUED FOR FIELD INSTRUCTION NO. 43	05/2015	G.O.	B.W.
02	ISSUED FOR CONSTRUCTION	08/2014	G.O.	B.W.
01	ISSUED FOR ADDENDUM NO. 1	07/2014	G.O.	B.W.
00	ISSUED FOR TENDER	06/2014	G.O.	B.W.

<b>CH2MHILL</b> SNC-LAVALIN		<b>KGS GROUP</b>	
DESIGNED BY: E. LUI	CHECKED BY: B. WILLIAMSON	ENGINEER'S SEAL	
DRAWN BY: G. OMORI	APPROVED BY: E. LUI	SCALE: 1:125	
DATE: 2014/06/27	ISSUED FOR CONSTRUCTION	BY:	
CONSULTANT NO.: 474248	DATE:	DATE:	

**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT

SOUTH END WATER POLLUTION CONTROL CENTRE  
SEWPPC UPGRADING/EXPANSION PROJECT  
STRUCTURAL  
BIOREACTORS/BLOWER BUILDING  
PART PILING PLAN (3)

CITY DRAWING NUMBER: 1-0102-SFDW-R004  
SHEET: 001  
REV: 05  
SIZE: A1

PILE CIRCLE	RADIUS (mm)	NUMBER OF PILES	CUT OFF ELEVATION (m)
1	1100	3	N/A SEE NOTE 5
2	4250	8	225.191
3	7400	15	225.256
4	10550	18	225.321
5	13700	24	225.386
6	16850	30	225.451
7	20000	36	225.516
8	22812	19	225.575
9	23125	41	225.575
10	24012	19	225.575

SECONDARY CLARIFIER 5

SECONDARY CLARIFIER 1

PUMP ROOM

SECONDARY CLARIFIER 4

MECHANICAL ROOM

NOTES:

- REFER TO DWG 1-0102-SGAD-A001 FOR GENERAL NOTES.
- REFER TO DWG 1-0102-SGAD-A002 FOR OVERALL SITE PLAN AND SEQUENCING.
- PILE DIAMETER (D) = 400mm
- ESTIMATED PILE REFUSAL EL 213.000
- DO NOT CUT OFF PILES IN PILE CIRCLE 1. TOP OF PILE ELEVATION AFTER DRIVING EL 225.100 MIN.

PILING PLAN  
1:125



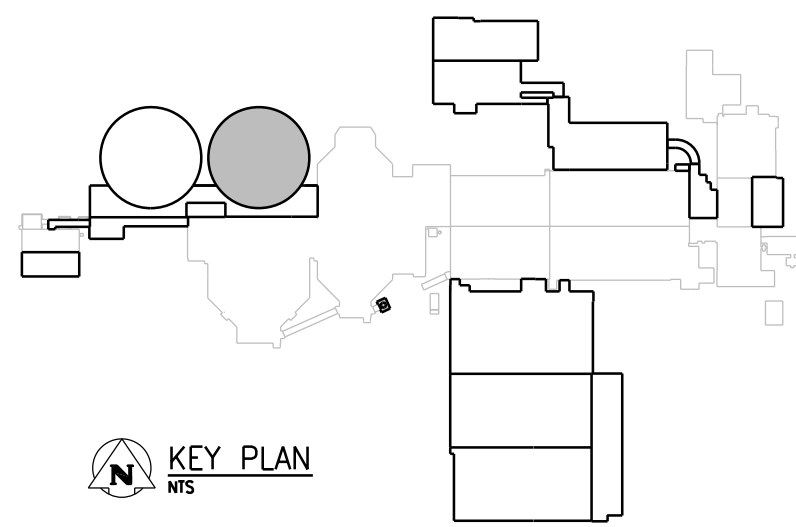
NO.	REVISIONS	DATE	DESIGN	CHECK
02	ISSUED FOR FIELD INSTRUCTION NO. 40	04/2015	G.O.	B.W.
01	ISSUED FOR CONSTRUCTION	08/2014	G.O.	B.W.
00	ISSUED FOR TENDER	06/2014	G.O.	B.W.

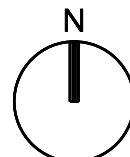
<b>CH2MHILL</b>		ENGINEER'S SEAL	
SNC-LAVALIN		KCS GROUP CONSULTING ENGINEERS	
DESIGNED BY: E. LUI	CHECKED BY: J. CHENG		
DRAWN BY: B. WILLIAMSON	APPROVED BY: E. LUI		
SCALE: 1:125	ISSUED FOR CONSTRUCTION DATE: 2014/06/27		
CONSULTANT NO.: 474248			

**THE CITY OF WINNIPEG**  
Winnipeg WATER AND WASTE DEPARTMENT

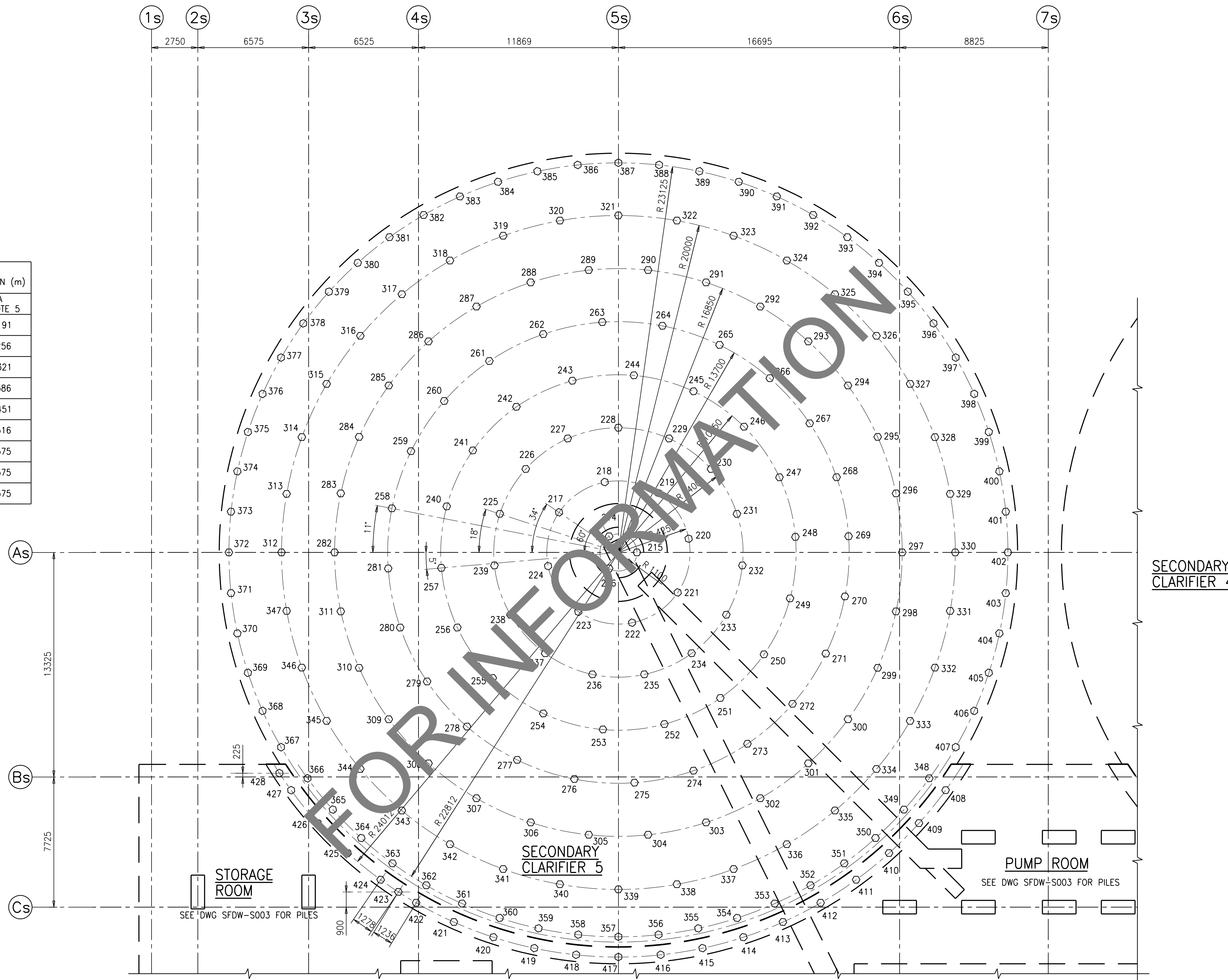
SOUTH END WATER POLLUTION CONTROL CENTRE  
SEWPC UPGRADING/EXPANSION PROJECT  
STRUCTURAL  
SECONDARY CLARIFIER 4  
PILING PLAN

CITY DRAWING NUMBER: 1-0102-SFDW-S001  
SHEET: 001  
REV: 02  
SIZE: A1





PILE CIRCLE	RADIUS (mm)	NUMBER OF PILES	CUT OFF ELEVATION (m)
1	1100	3	N/A SEE NOTE 5
2	4250	8	225.191
3	7400	15	225.256
4	10550	18	225.321
5	13700	24	225.386
6	16850	30	225.451
7	20000	36	225.516
8	22812	19	225.575
9	23125	41	225.575
10	24012	21	225.575



SECONDARY CLARIFIER 4

STORAGE ROOM  
SEE DWG SFDW-S003 FOR PILES

SECONDARY CLARIFIER 5

PUMP ROOM  
SEE DWG SFDW-S003 FOR PILES

**NOTES:**

- REFER TO DWG 1-0102-SGAD-A001 FOR GENERAL NOTES.
- REFER TO DWG 1-0102-SGAD-A002 FOR OVERALL SITE PLAN AND SEQUENCING.
- PILE DIAMETER (D) = 400mm
- ESTIMATED PILE REFUSAL EL 213.000
- DO NOT CUT OFF PILES IN PILE CIRCLE 1. TOP OF PILE ELEVATION AFTER DRIVING EL 225.100 MIN.

**PILING PLAN**  
1:125



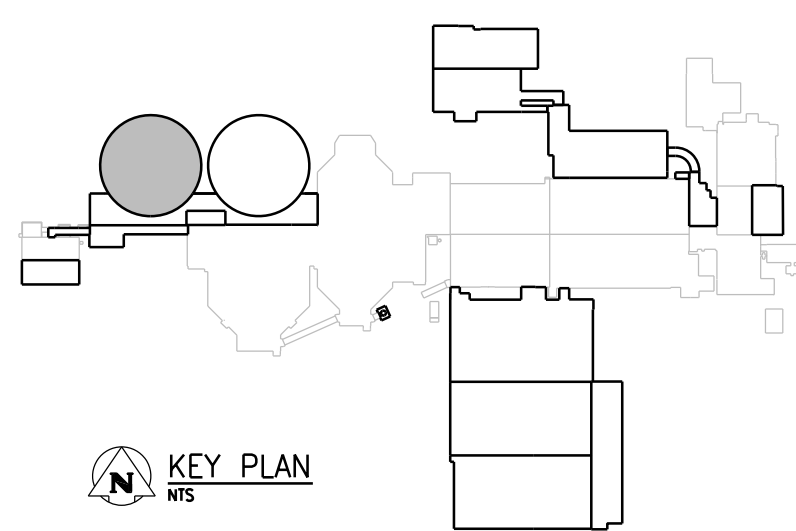
NO.	REVISIONS	DATE	DESIGN	CHECK
02	ISSUED FOR FIELD INSTRUCTION NO. 40	04/2015	G.O.	B.W.
01	ISSUED FOR CONSTRUCTION	08/2014	G.O.	B.W.
00	ISSUED FOR TENDER	06/2014	G.O.	B.W.

<b>CH2MHILL</b>		<b>KCS GROUP</b>	
SNC-LAVALIN		CONSULTING ENGINEERS	
DESIGNED BY: E. LUI	CHECKED BY: B. WILLIAMSON	ENGINEER'S SEAL	
DRAWN BY: G. OMORI	APPROVED BY: E. LUI	DATE: 2014/06/27	
SCALE: 1:125		ISSUED FOR CONSTRUCTION	
CONSULTANT NO.: 474248		DATE:	

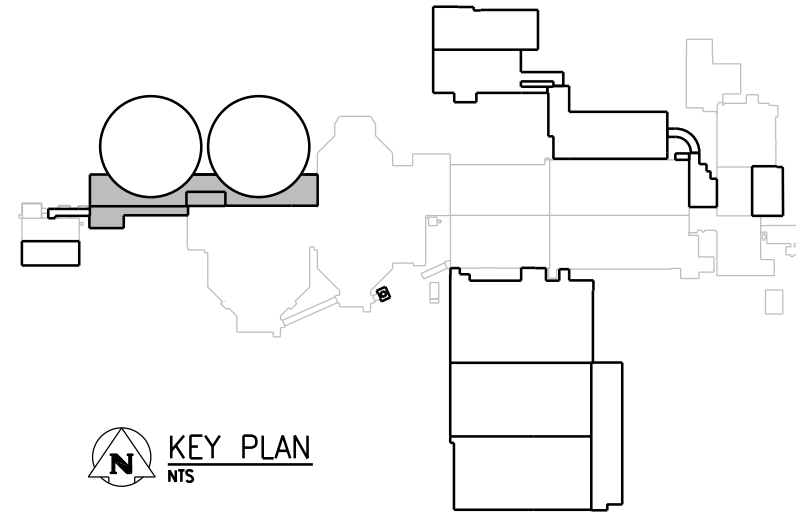
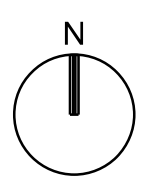
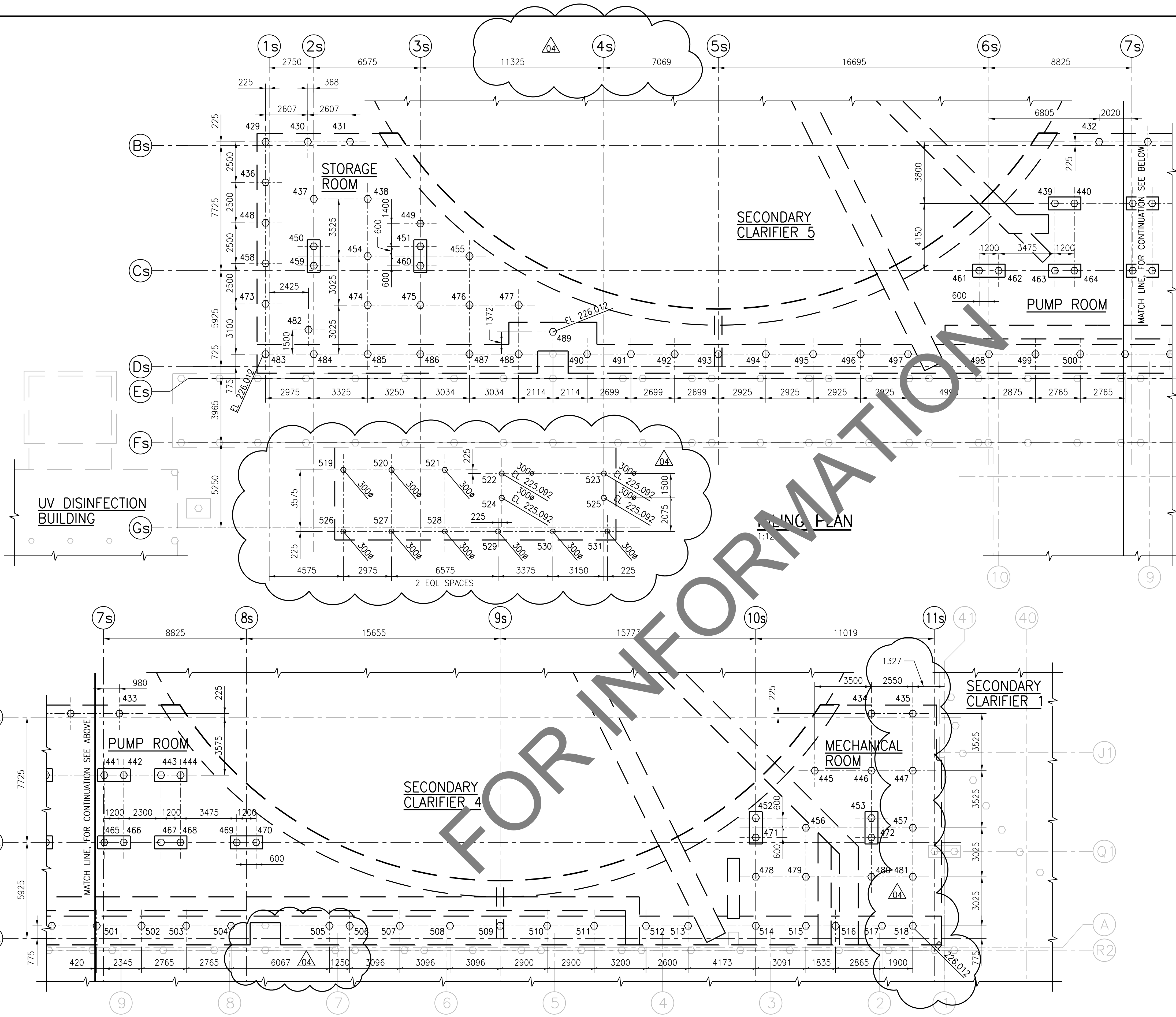
**THE CITY OF WINNIPEG**  
Winnipeg WATER AND WASTE DEPARTMENT

SOUTH END WATER POLLUTION CONTROL CENTRE  
SEWPC UPGRADING/EXPANSION PROJECT  
STRUCTURAL  
SECONDARY CLARIFIER 5  
PILING PLAN

CITY DRAWING NUMBER: 1-0102-SFDW-S002  
SHEET: 001  
REV: 02  
SIZE: A1







**PILING PLAN**  
1:125

**APEGM**  
Certificate of Authorization  
CH2M HILL Canada Ltd.  
No. 1441

NO.	REVISIONS	DATE	DESIGN	CHECK
04	ISSUED FOR FIELD INSTRUCTION NO. 44	05/2015	G.O. B.W.	
03	ISSUED FOR FIELD INSTRUCTION NO. 40	04/2015	G.O. B.W.	
02	ISSUED FOR CONSTRUCTION	08/2014	G.O. B.W.	
01	ISSUED FOR ADDENDUM NO. 1	07/2014	G.O. B.W.	
00	ISSUED FOR TENDER	06/2014	G.O. B.W.	

<b>CH2MHILL</b>		<b>KCS</b> GROUP OF COMPANIES CONSULTANTS	
DESIGNED BY: E. LUI	CHECKED BY: B. WILLIAMSON	DRAWN BY: G. OMORI	APPROVED BY: E. LUI
SCALE: 1:125		ISSUED FOR CONSTRUCTION	
DATE: 2014/06/27		DATE:	
CONSULTANT NO.: 474248			



**THE CITY OF WINNIPEG**  
Winnipeg  
WATER AND WASTE DEPARTMENT

SOUTH END WATER POLLUTION CONTROL CENTRE  
SEWPPC UPGRADING/EXPANSION PROJECT  
STRUCTURAL  
SECONDARY CLARIFIERS  
STORAGE, PUMP AND MECHANICAL ROOM - PILING PLAN

CITY DRAWING NUMBER: 1-0102-SFDW-S003  
SHEET: 001  
REV: 04  
SIZE: A1

- NOTES:**
- REFER TO DWG 1-0102-SGAD-A001 FOR GENERAL NOTES.
  - REFER TO DWG 1-0102-SGAD-A002 FOR OVERALL SITE PLAN AND SEQUENCING.
  - PILE DIAMETER (D) = 400mm UNLESS NOTED OTHERWISE.
  - PILE CUT-OFF ELEVATION = 226.162 UNLESS NOTED OTHERWISE.
  - PILE CUT-OFF ELEVATION = 226.012 FOR PILES NO. 483 TO 518 775mm NORTH OF GRID Ds
  - PILES UNDER PILE CAP CUT-OFF ELEVATION = 225.562.
  - ESTIMATED PILE REFUSAL EL 213.000.