



**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



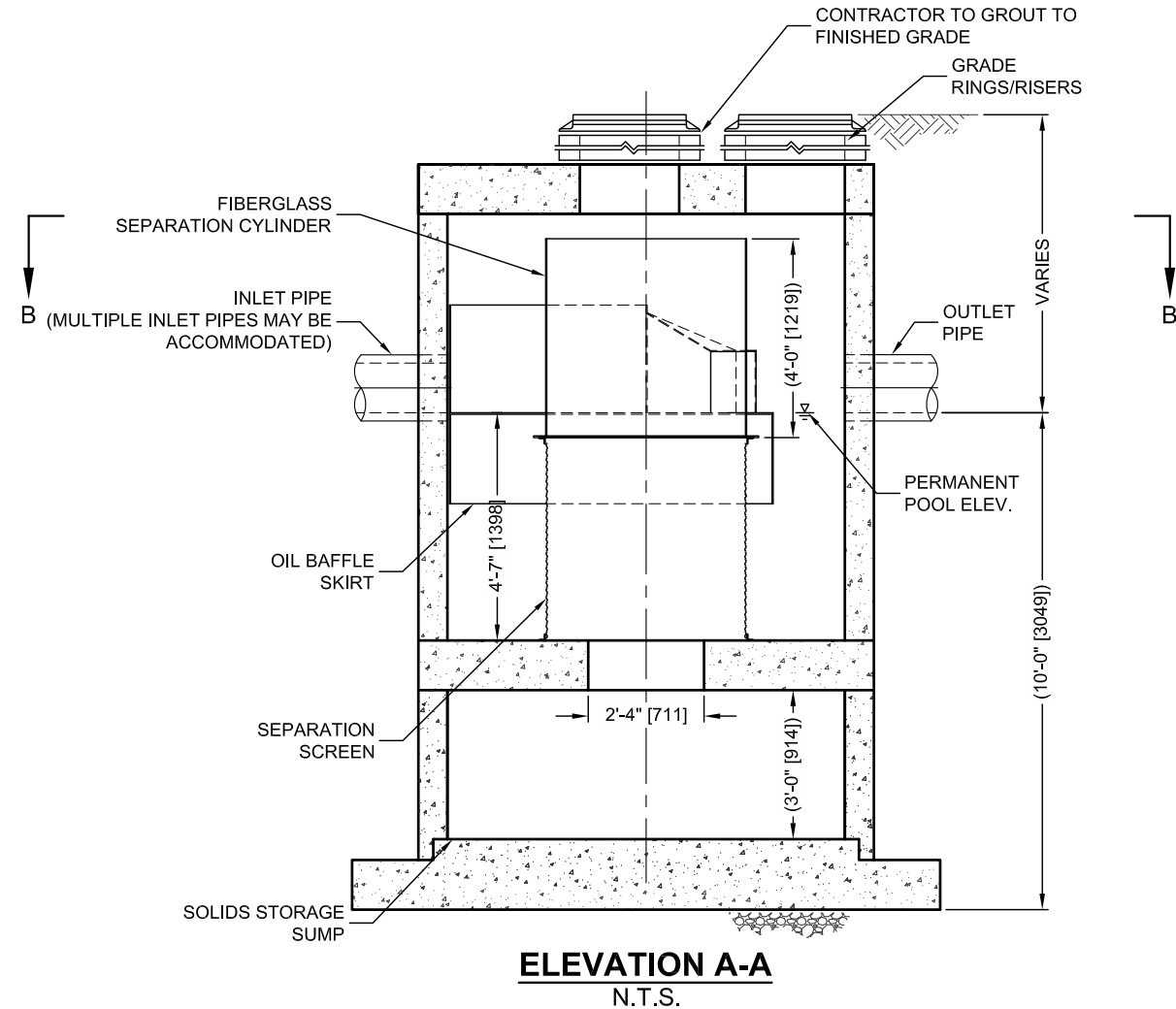
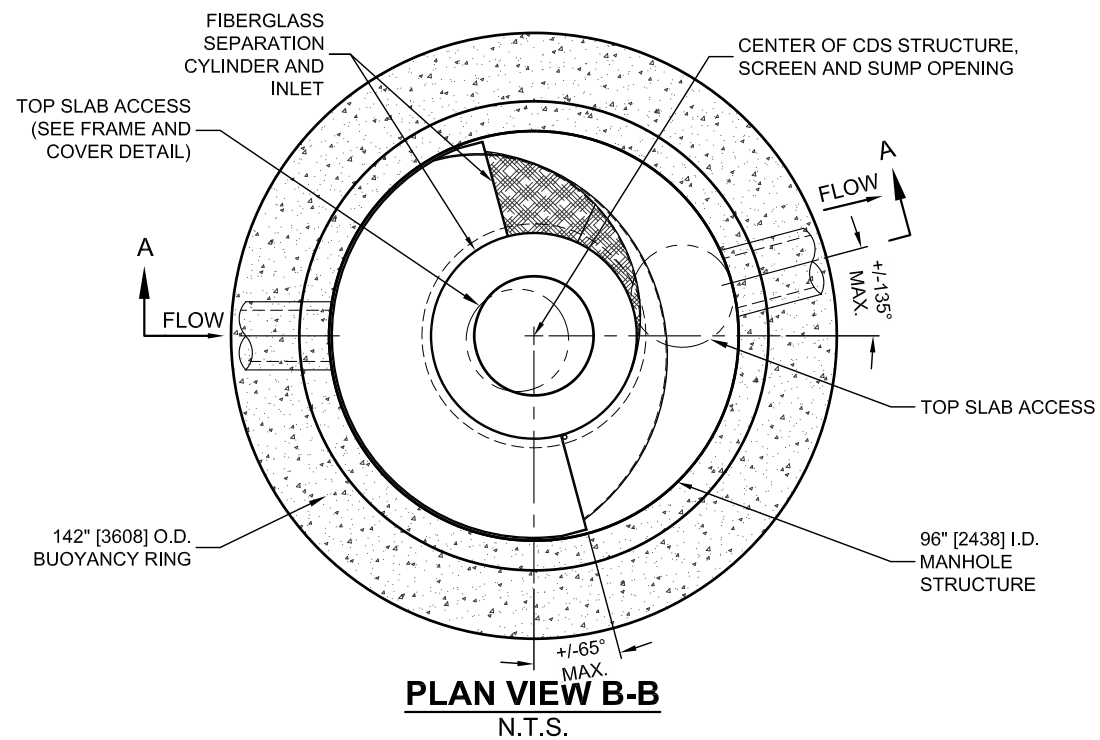
Project Name: Conservancy West	Engineer: DSEL
Location: Ottawa, ON	Contact: Peter Mott
OGS #: OGS 1	Report Date: 8-Mar-24
Area 5.45 ha	Rainfall Station # 215
Weighted C 0.66	Particle Size Distribution FINE
CDS Model 4040 (OFFLINE)	CDS Treatment Capacity 170 l/s

<u>Rainfall Intensity¹</u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume¹</u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	10.0	10.0	5.9	97.2	10.3
1.5	9.9%	29.7%	15.0	15.0	8.8	96.3	9.5
2.0	8.4%	38.1%	20.0	20.0	11.8	95.5	8.0
2.5	7.7%	45.8%	25.0	25.0	14.7	94.6	7.3
3.0	5.9%	51.7%	30.0	30.0	17.7	93.8	5.6
3.5	4.4%	56.1%	35.0	35.0	20.6	93.0	4.0
4.0	4.7%	60.7%	40.0	40.0	23.5	92.1	4.3
4.5	3.3%	64.0%	45.0	45.0	26.5	91.3	3.0
5.0	3.0%	67.1%	50.0	50.0	29.4	90.4	2.7
6.0	5.4%	72.4%	60.0	60.0	35.3	88.7	4.8
7.0	4.4%	76.8%	70.0	70.0	41.2	87.0	3.8
8.0	3.5%	80.3%	80.0	80.0	47.1	85.4	3.0
9.0	2.8%	83.2%	90.0	90.0	53.0	83.7	2.4
10.0	2.2%	85.3%	100.0	100.0	58.8	82.0	1.8
15.0	7.0%	92.3%	150.0	150.0	88.3	73.6	5.1
20.0	4.5%	96.9%	200.0	169.9	100.0	59.6	2.7
25.0	1.4%	98.3%	250.0	169.9	100.0	47.7	0.7
30.0	0.7%	99.0%	300.0	169.9	100.0	39.8	0.3
35.0	0.5%	99.5%	350.0	169.9	100.0	34.1	0.2
40.0	0.5%	100.0%	400.0	169.9	100.0	29.8	0.2
							88.7

Removal Efficiency Adjustment² = 6.5%
Predicted Net Annual Load Removal Efficiency = 82.2%
Predicted Annual Rainfall Treated = 98.0%

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.
 3 - CDS Efficiency based on testing conducted at the University of Central Florida
 4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications

Z:\4.0 MANUFACTURERS\CONTECH PRODUCT INFO\TREATMENT\CDS\DRAWINGS ECHELOMIN LINE-PDF\2022 - PMSU UPDATED CONTECH DRAWINGS - HUDA\8\CDS4040-8-C-DTL.DWG 6/2/2022 12:44 PM

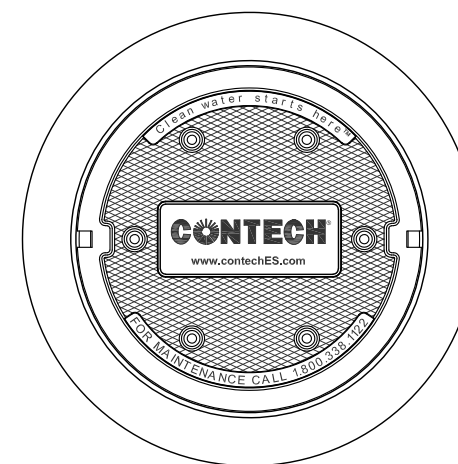


CDS PMSU4040-8-C DESIGN NOTES

THE STANDARD CDS PMSU4040-8-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

- GRATED INLET ONLY (NO INLET PIPE)
- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- CURB INLET WITH INLET PIPE OR PIPES
- SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
- SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (CFS OR L/s)	*
PEAK FLOW RATE (CFS OR L/s)	*
RETURN PERIOD OF PEAK FLOW (YRS)	*
SCREEN APERTURE (2400 OR 4700)	*
PIPE DATA:	I.E. MATERIAL DIAMETER
INLET PIPE 1	* * *
INLET PIPE 2	* * *
OUTLET PIPE	* * *
RIM ELEVATION	*
ANTI-FLOTATION BALLAST	WIDTH HEIGHT
	* *
NOTES/SPECIAL REQUIREMENTS:	
* PER ENGINEER OF RECORD	

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
- D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.



www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
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CDS PMSU4040-8-C
INLINE CDS
STANDARD DETAIL



THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 6,788,848; 6,841,722; 6,911,502; 6,981,783; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.



**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



Project Name: Conservancy West	Engineer: DSEL
Location: Ottawa, ON	Contact: Peter Mott
OGS #: OGS 2	Report Date: 8-Mar-24
Area 8.51 ha	Rainfall Station # 215
Weighted C 0.62	Particle Size Distribution FINE
CDS Model 4045 (OFFLINE)	CDS Treatment Capacity 212 l/s

<u>Rainfall Intensity¹</u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume¹</u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	14.7	14.7	6.9	96.9	10.3
1.5	9.9%	29.7%	22.0	22.0	10.4	95.9	9.5
2.0	8.4%	38.1%	29.3	29.3	13.8	94.9	8.0
2.5	7.7%	45.8%	36.7	36.7	17.3	93.9	7.2
3.0	5.9%	51.7%	44.0	44.0	20.7	92.9	5.5
3.5	4.4%	56.1%	51.3	51.3	24.2	91.9	4.0
4.0	4.7%	60.7%	58.7	58.7	27.6	90.9	4.2
4.5	3.3%	64.0%	66.0	66.0	31.1	89.9	3.0
5.0	3.0%	67.1%	73.3	73.3	34.5	89.0	2.7
6.0	5.4%	72.4%	88.0	88.0	41.4	87.0	4.7
7.0	4.4%	76.8%	102.7	102.7	48.3	85.0	3.7
8.0	3.5%	80.3%	117.3	117.3	55.2	83.0	2.9
9.0	2.8%	83.2%	132.0	132.0	62.2	81.0	2.3
10.0	2.2%	85.3%	146.7	146.7	69.1	79.1	1.7
15.0	7.0%	92.3%	220.0	212.4	100.0	67.8	4.7
20.0	4.5%	96.9%	293.4	212.4	100.0	50.8	2.3
25.0	1.4%	98.3%	366.7	212.4	100.0	40.7	0.6
30.0	0.7%	99.0%	440.0	212.4	100.0	33.9	0.2
35.0	0.5%	99.5%	513.4	212.4	100.0	29.0	0.1
40.0	0.5%	100.0%	586.7	212.4	100.0	25.4	0.1
							86.8
							Removal Efficiency Adjustment ² = 6.5%
							Predicted Net Annual Load Removal Efficiency = 80.3%
							Predicted Annual Rainfall Treated = 96.9%

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.
 3 - CDS Efficiency based on testing conducted at the University of Central Florida
 4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications

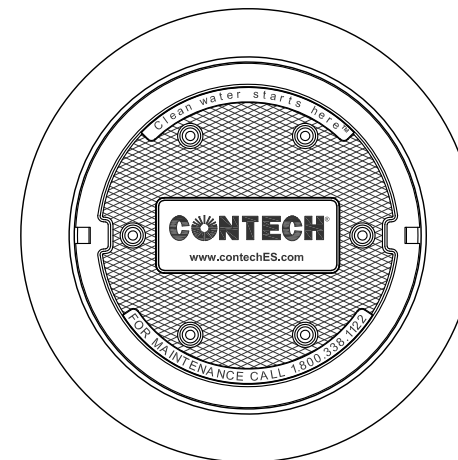
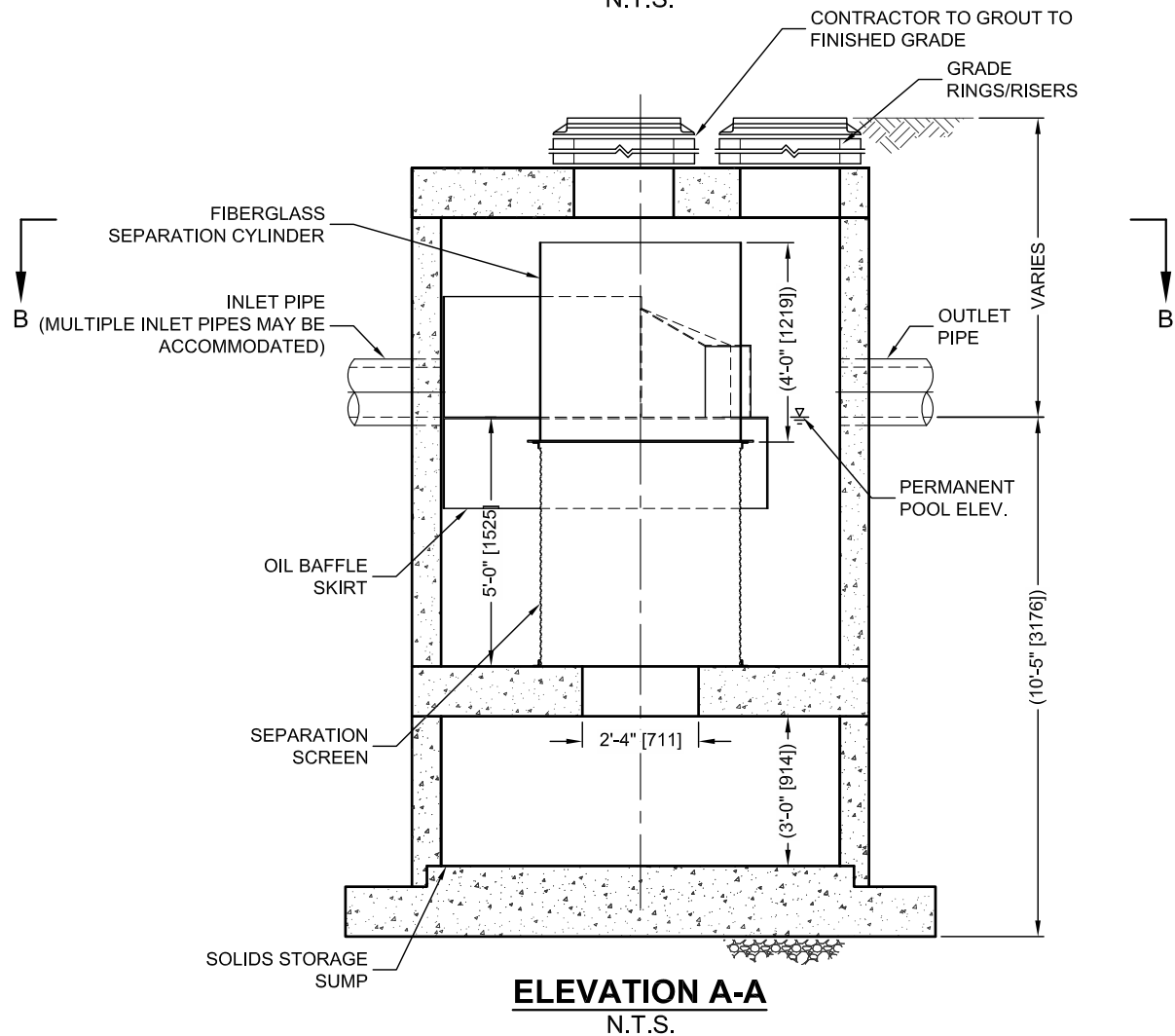
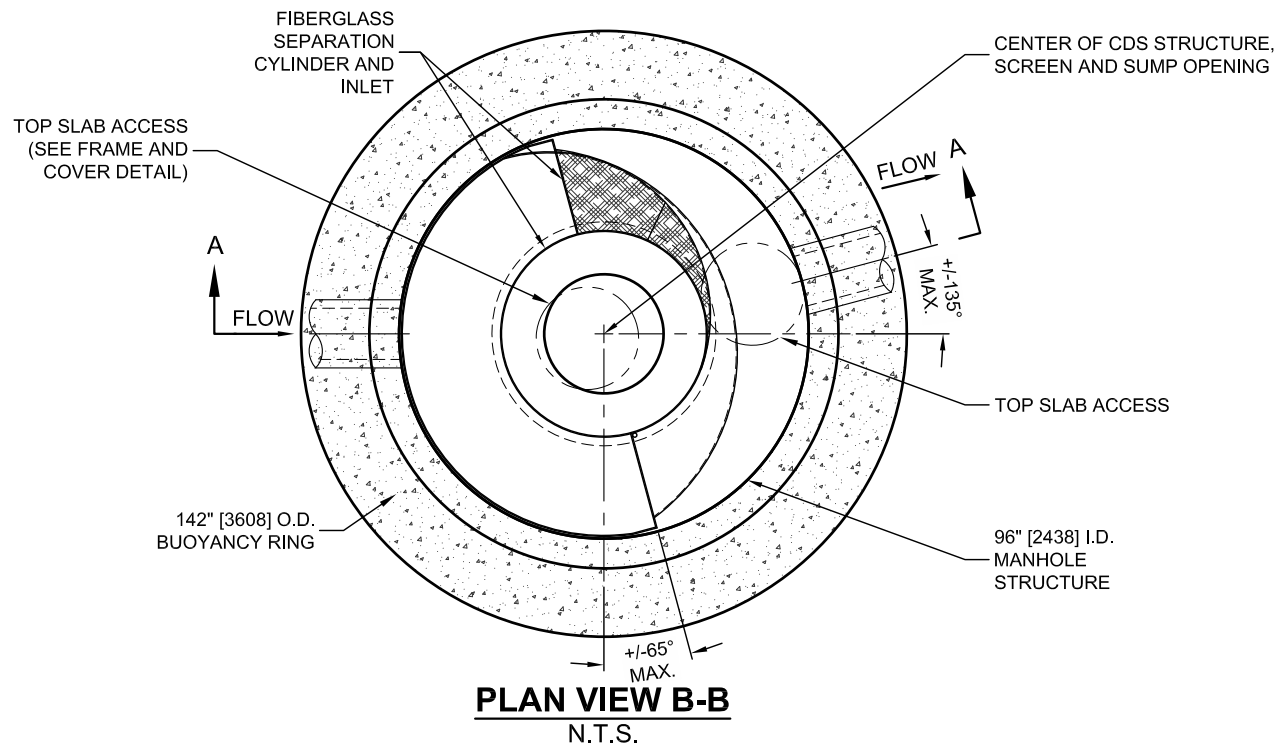
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CDS PMSU4045-8-C DESIGN NOTES

THE STANDARD CDS PMSU4045-8-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

- GRATED INLET ONLY (NO INLET PIPE)
- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- CURB INLET WITH INLET PIPE OR PIPES
- CUSTOMIZABLE SUMP DEPTH AVAILABLE
- ANTI-FLOTATION DESIGN AVAILABLE UPON REQUEST



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID				
WATER QUALITY FLOW RATE (CFS OR L/s)				*
PEAK FLOW RATE (CFS OR L/s)				*
RETURN PERIOD OF PEAK FLOW (YRS)				*
SCREEN APERTURE (2400 OR 4700)				*
PIPE DATA:	I.E.	MATERIAL	DIAMETER	
INLET PIPE 1	*	*	*	
INLET PIPE 2	*	*	*	
OUTLET PIPE	*	*	*	
RIM ELEVATION				*
ANTI-FLOTATION BALLAST	*	*	WIDTH	HEIGHT
NOTES/SPECIAL REQUIREMENTS:				
* PER ENGINEER OF RECORD				

GENERAL NOTES

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4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
- D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.



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CDS PMSU4045-8-C
INLINE CDS
STANDARD DETAIL



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**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



Project Name: Conservancy West	Engineer: DSEL
Location: Ottawa, ON	Contact: Peter Mott
OGS #: OGS 3	Report Date: 8-Mar-24
Area 10.03 ha	Rainfall Station # 215
Weighted C 0.73	Particle Size Distribution FINE
CDS Model 5653 (OFFLINE)	CDS Treatment Capacity 396 l/s

<u>Rainfall Intensity¹</u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume¹</u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	20.4	20.4	5.1	97.4	10.3
1.5	9.9%	29.7%	30.5	30.5	7.7	96.6	9.6
2.0	8.4%	38.1%	40.7	40.7	10.3	95.9	8.0
2.5	7.7%	45.8%	50.9	50.9	12.8	95.2	7.3
3.0	5.9%	51.7%	61.1	61.1	15.4	94.4	5.6
3.5	4.4%	56.1%	71.2	71.2	18.0	93.7	4.1
4.0	4.7%	60.7%	81.4	81.4	20.5	93.0	4.3
4.5	3.3%	64.0%	91.6	91.6	23.1	92.2	3.1
5.0	3.0%	67.1%	101.8	101.8	25.7	91.5	2.8
6.0	5.4%	72.4%	122.1	122.1	30.8	90.0	4.8
7.0	4.4%	76.8%	142.5	142.5	35.9	88.6	3.9
8.0	3.5%	80.3%	162.8	162.8	41.1	87.1	3.1
9.0	2.8%	83.2%	183.2	183.2	46.2	85.6	2.4
10.0	2.2%	85.3%	203.5	203.5	51.3	84.1	1.8
15.0	7.0%	92.3%	305.3	305.3	77.0	76.8	5.4
20.0	4.5%	96.9%	407.1	396.5	100.0	68.4	3.1
25.0	1.4%	98.3%	508.9	396.5	100.0	54.7	0.8
30.0	0.7%	99.0%	610.6	396.5	100.0	45.6	0.3
35.0	0.5%	99.5%	712.4	396.5	100.0	39.1	0.2
40.0	0.5%	100.0%	814.2	396.5	100.0	34.2	0.2
							90.1

Removal Efficiency Adjustment² = 6.5%
Predicted Net Annual Load Removal Efficiency = 83.6%
Predicted Annual Rainfall Treated = 98.8%

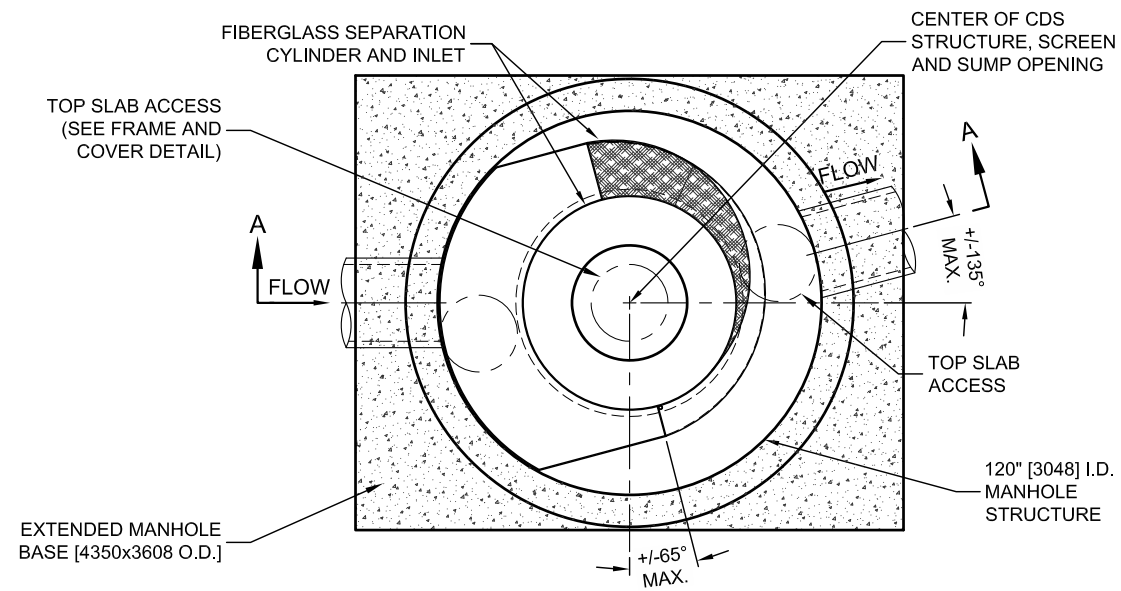
1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON
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CDS PMSU5653-10-C DESIGN NOTES

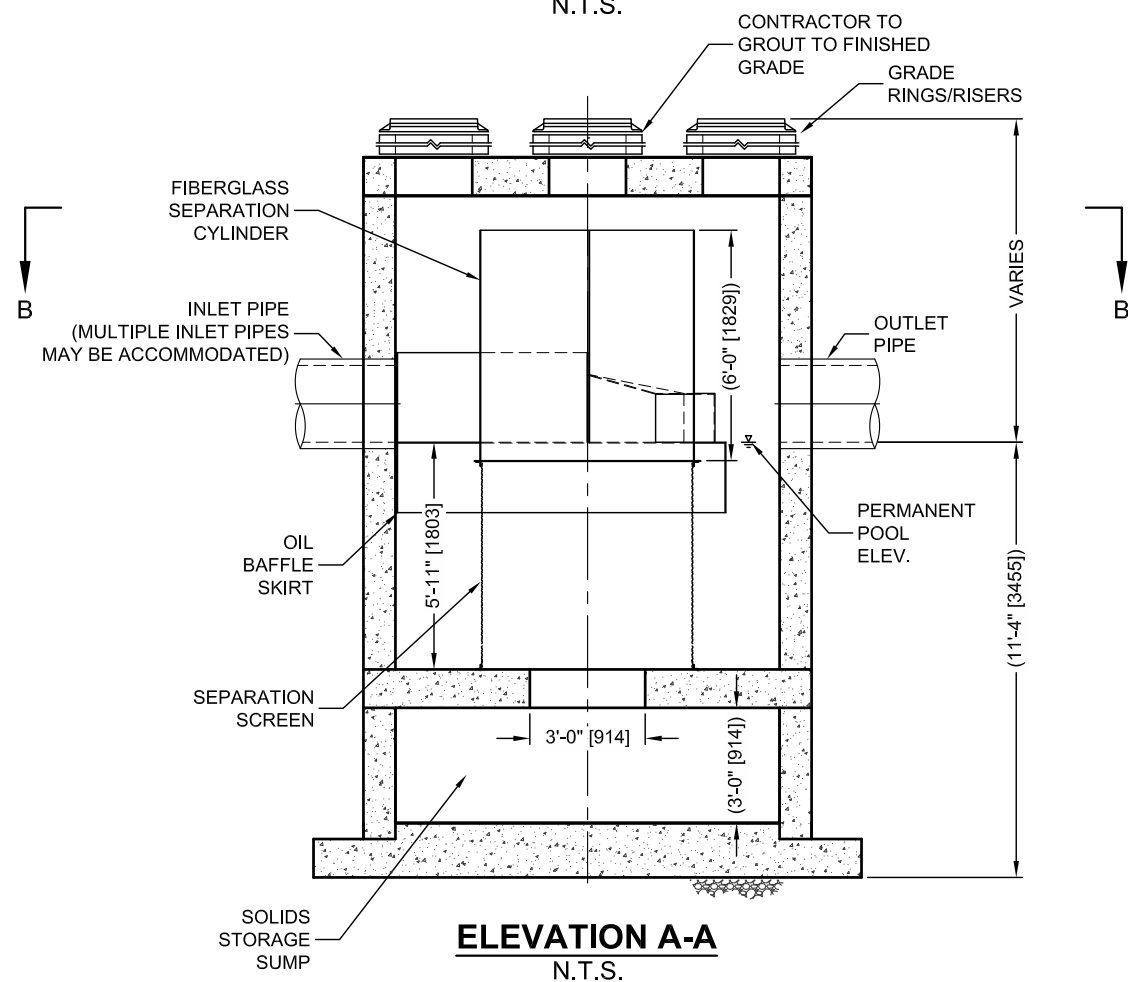
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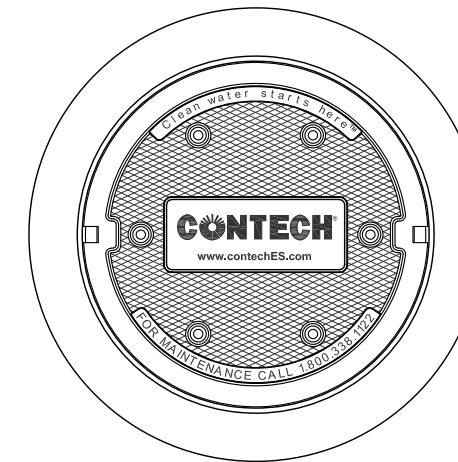
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- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- CURB INLET WITH INLET PIPE OR PIPES
- CUSTOMIZABLE SUMP DEPTH AVAILABLE
- ANTI-FLOTATION DESIGN AVAILABLE UPON REQUEST



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID				
WATER QUALITY FLOW RATE (CFS OR L/s)				*
PEAK FLOW RATE (CFS OR L/s)				*
RETURN PERIOD OF PEAK FLOW (YRS)				*
SCREEN APERTURE (2400 OR 4700)				*
PIPE DATA:		I.E.	MATERIAL	DIAMETER
INLET PIPE 1		*	*	*
INLET PIPE 2		*	*	*
OUTLET PIPE		*	*	*
RIM ELEVATION				*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT	
		*	*	
NOTES/SPECIAL REQUIREMENTS:				
* PER ENGINEER OF RECORD				

GENERAL NOTES

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4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET HS20 (AASHTO M 306) AND BE CAST WITH THE CONTECH LOGO.
6. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
- D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH
ENGINEERED SOLUTIONS LLC

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BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



Project Name: Conservancy West

Engineer: DSEL

Location: Ottawa, ON

Contact: Peter Mott

OGS #: OGS 4

Report Date: 8-Mar-24

Area 10.11 ha
Weighted C 0.69
CDS Model 5653 (OFFLINE)

Rainfall Station # 215
Particle Size Distribution FINE
CDS Treatment Capacity 396 l/s

<u>Rainfall Intensity¹</u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume¹</u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
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2.0	8.4%	38.1%	38.8	38.8	9.8	96.1	8.0
2.5	7.7%	45.8%	48.5	48.5	12.2	95.4	7.3
3.0	5.9%	51.7%	58.2	58.2	14.7	94.7	5.6
3.5	4.4%	56.1%	67.9	67.9	17.1	93.9	4.1
4.0	4.7%	60.7%	77.6	77.6	19.6	93.2	4.3
4.5	3.3%	64.0%	87.3	87.3	22.0	92.5	3.1
5.0	3.0%	67.1%	97.0	97.0	24.5	91.8	2.8
6.0	5.4%	72.4%	116.4	116.4	29.3	90.4	4.9
7.0	4.4%	76.8%	135.8	135.8	34.2	89.0	3.9
8.0	3.5%	80.3%	155.1	155.1	39.1	87.6	3.1
9.0	2.8%	83.2%	174.5	174.5	44.0	86.2	2.4
10.0	2.2%	85.3%	193.9	193.9	48.9	84.8	1.9
15.0	7.0%	92.3%	290.9	290.9	73.4	77.8	5.4
20.0	4.5%	96.9%	387.9	387.9	97.8	70.8	3.2
25.0	1.4%	98.3%	484.8	396.5	100.0	57.4	0.8
30.0	0.7%	99.0%	581.8	396.5	100.0	47.8	0.3
35.0	0.5%	99.5%	678.8	396.5	100.0	41.0	0.2
40.0	0.5%	100.0%	775.7	396.5	100.0	35.9	0.2
							90.5

Removal Efficiency Adjustment² = 6.5%

Predicted Net Annual Load Removal Efficiency = 84.0%

Predicted Annual Rainfall Treated = 99.1%

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON

2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

3 - CDS Efficiency based on testing conducted at the University of Central Florida

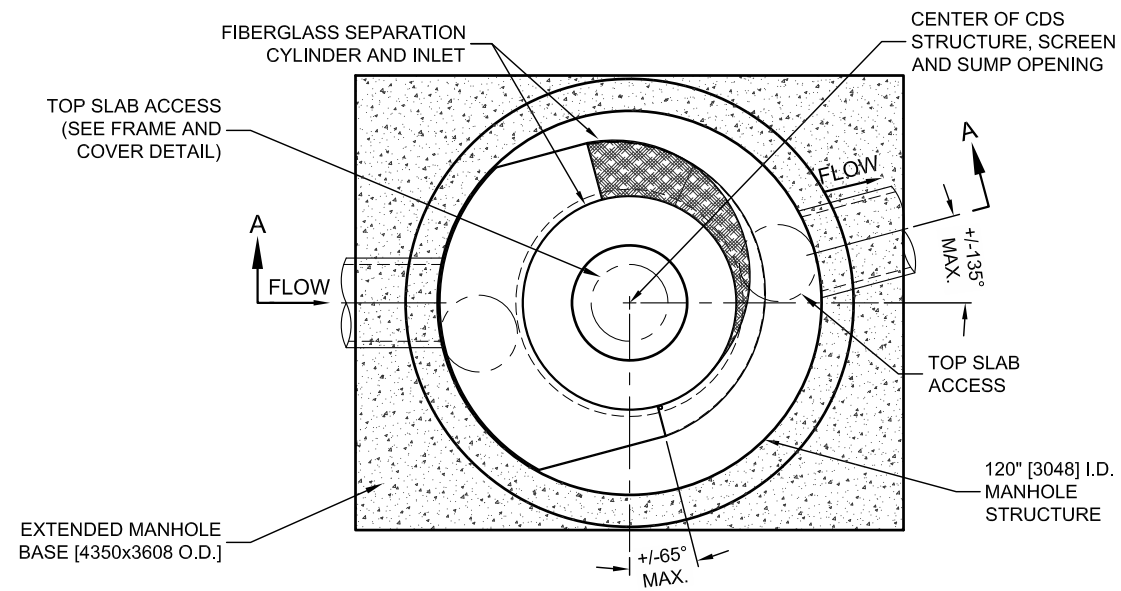
4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications

CDS PMSU5653-10-C DESIGN NOTES

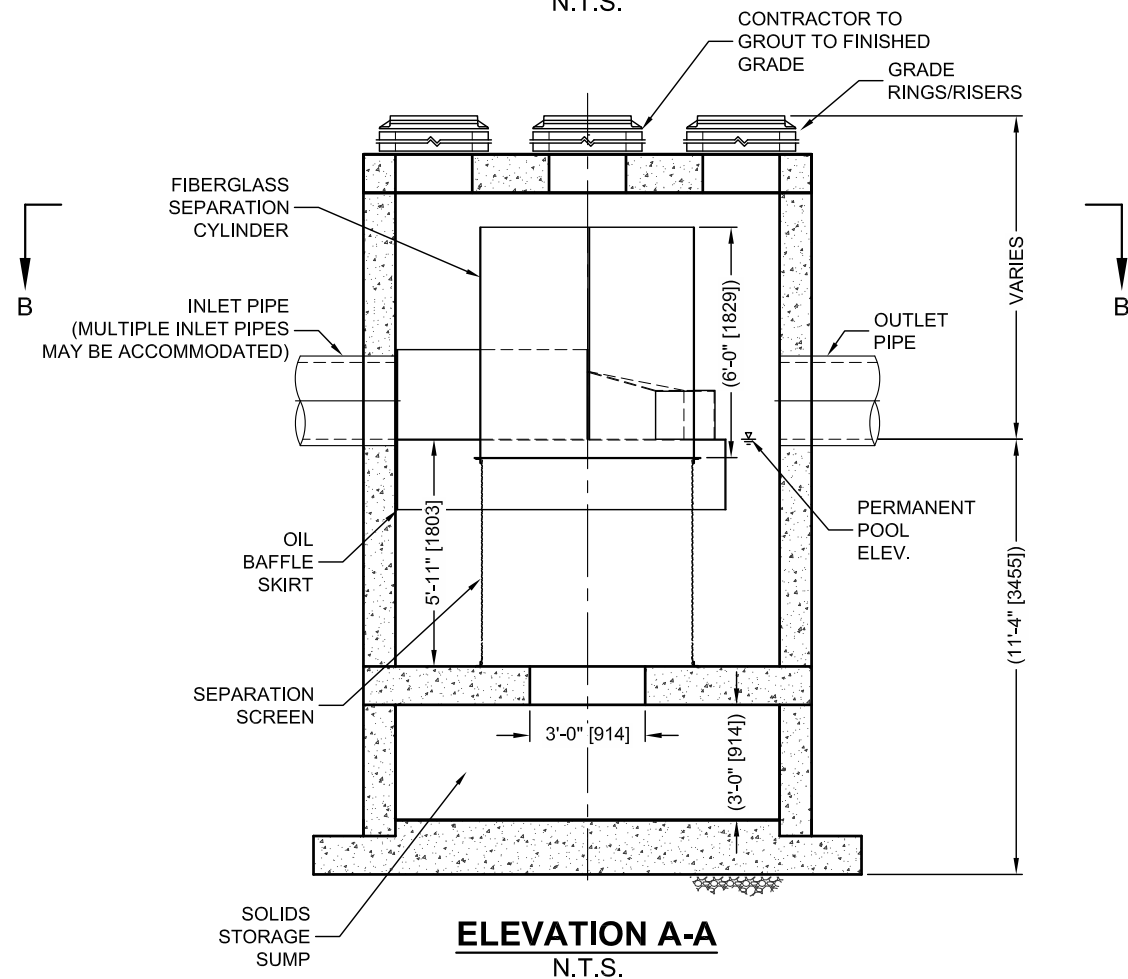
THE STANDARD CDS PMSU5653-10-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

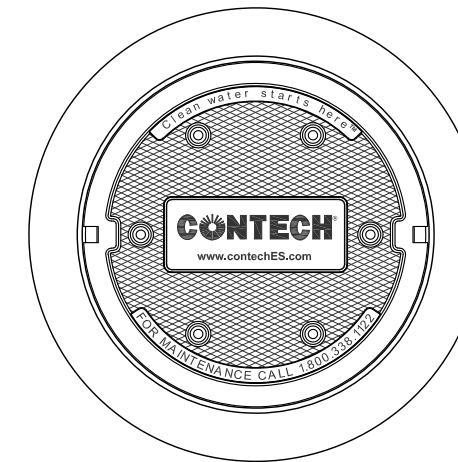
- GRATED INLET ONLY (NO INLET PIPE)
- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- CURB INLET WITH INLET PIPE OR PIPES
- CUSTOMIZABLE SUMP DEPTH AVAILABLE
- ANTI-FLOTATION DESIGN AVAILABLE UPON REQUEST



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID				
WATER QUALITY FLOW RATE (CFS OR L/s)				*
PEAK FLOW RATE (CFS OR L/s)				*
RETURN PERIOD OF PEAK FLOW (YRS)				*
SCREEN APERTURE (2400 OR 4700)				*
PIPE DATA:		I.E.	MATERIAL	DIAMETER
INLET PIPE 1		*	*	*
INLET PIPE 2		*	*	*
OUTLET PIPE		*	*	*
RIM ELEVATION				*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT	
		*	*	
NOTES/SPECIAL REQUIREMENTS:				
* PER ENGINEER OF RECORD				

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET HS20 (AASHTO M 306) AND BE CAST WITH THE CONTECH LOGO.
6. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
- D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH
ENGINEERED SOLUTIONS LLC

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CDS PMSU5653-10-C
INLINE CDS
STANDARD DETAIL



THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 8,788,848; 8,641,722; 8,311,002; 8,581,782. RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.



**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



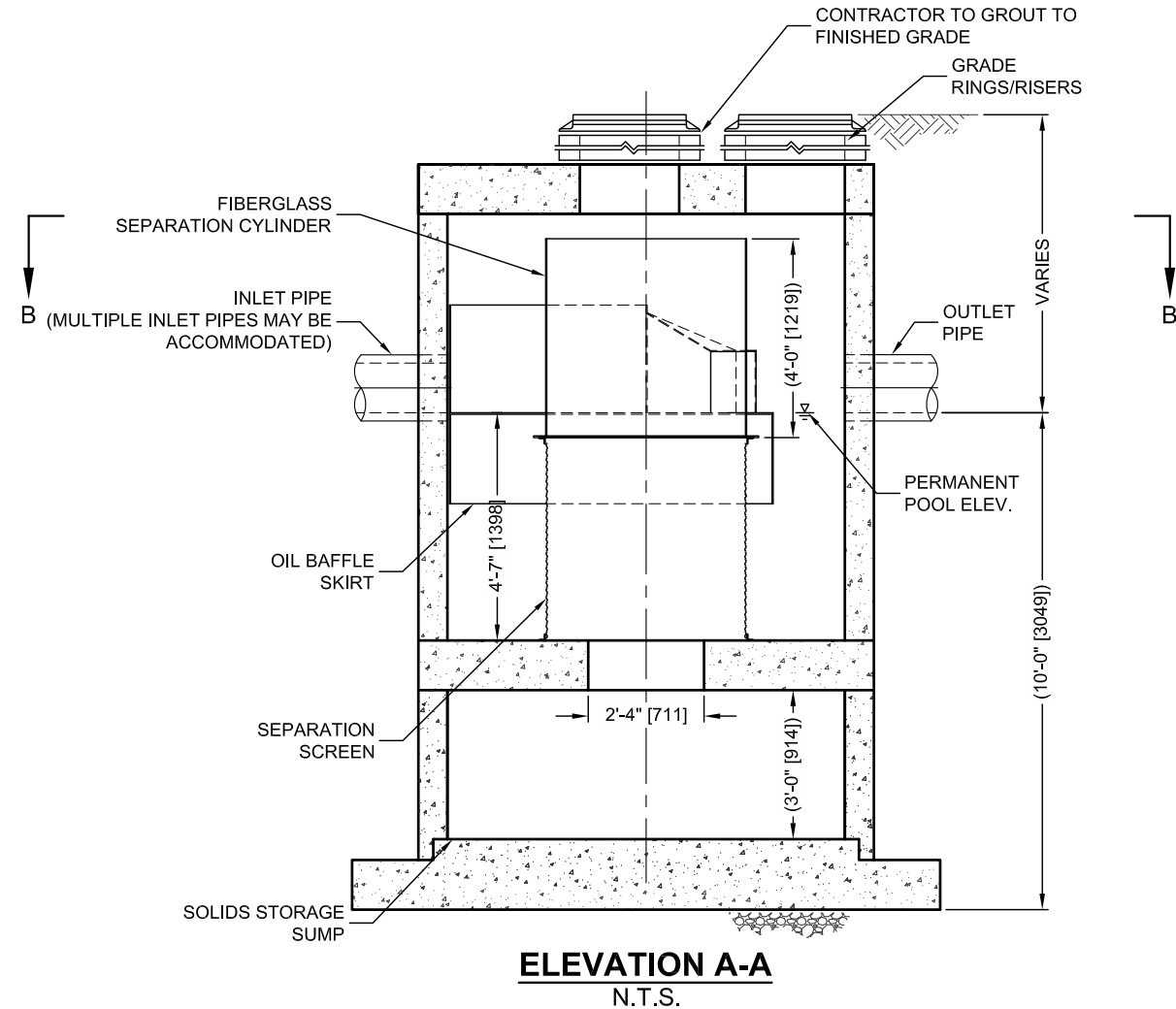
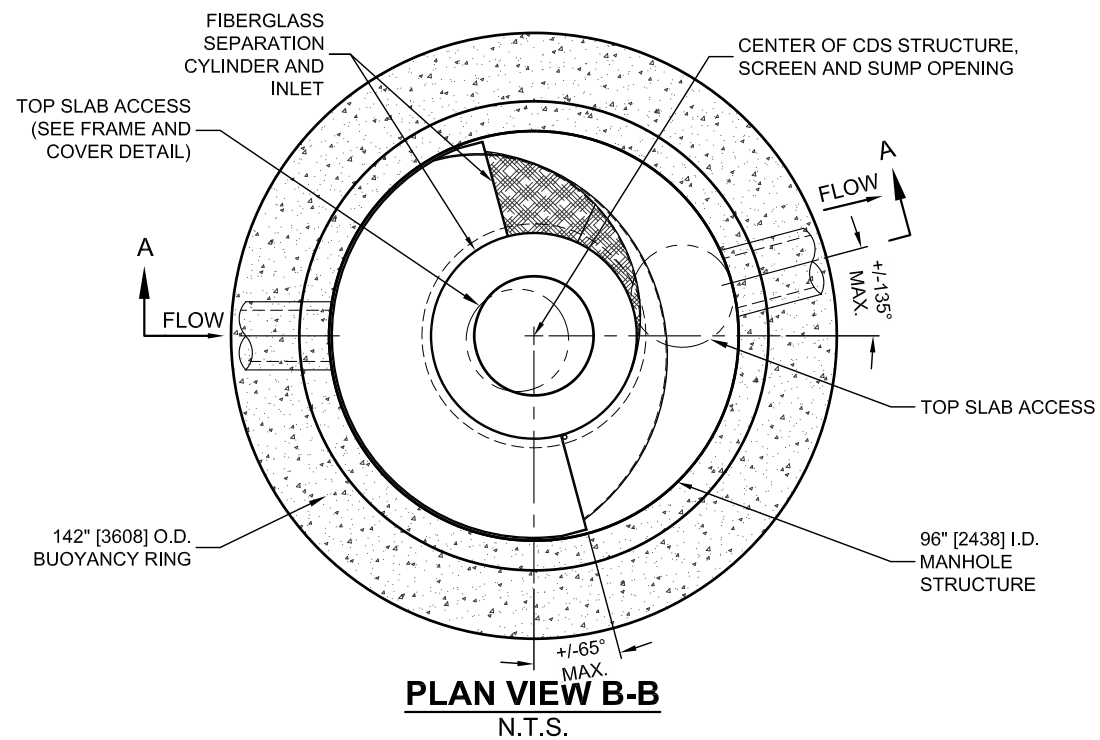
Project Name: 891 Conservancy East	Engineer: DSEL
Location: Ottawa, ON	Contact: Peter Mott
OGS #: OGS 5	Report Date: 8-Mar-24
Area 6.20 ha	Rainfall Station # 215
Weighted C 0.67	Particle Size Distribution FINE
CDS Model 4040 (OFFLINE)	CDS Treatment Capacity 170 l/s

<u>Rainfall Intensity¹</u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume¹</u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	11.5	11.5	6.8	96.9	10.3
1.5	9.9%	29.7%	17.3	17.3	10.2	95.9	9.5
2.0	8.4%	38.1%	23.1	23.1	13.6	95.0	8.0
2.5	7.7%	45.8%	28.9	28.9	17.0	94.0	7.2
3.0	5.9%	51.7%	34.6	34.6	20.4	93.0	5.5
3.5	4.4%	56.1%	40.4	40.4	23.8	92.0	4.0
4.0	4.7%	60.7%	46.2	46.2	27.2	91.1	4.2
4.5	3.3%	64.0%	52.0	52.0	30.6	90.1	3.0
5.0	3.0%	67.1%	57.7	57.7	34.0	89.1	2.7
6.0	5.4%	72.4%	69.3	69.3	40.8	87.2	4.7
7.0	4.4%	76.8%	80.8	80.8	47.6	85.2	3.7
8.0	3.5%	80.3%	92.4	92.4	54.4	83.3	2.9
9.0	2.8%	83.2%	103.9	103.9	61.2	81.3	2.3
10.0	2.2%	85.3%	115.5	115.5	68.0	79.4	1.7
15.0	7.0%	92.3%	173.2	169.9	100.0	68.9	4.8
20.0	4.5%	96.9%	231.0	169.9	100.0	51.6	2.3
25.0	1.4%	98.3%	288.7	169.9	100.0	41.3	0.6
30.0	0.7%	99.0%	346.4	169.9	100.0	34.4	0.2
35.0	0.5%	99.5%	404.2	169.9	100.0	29.5	0.1
40.0	0.5%	100.0%	461.9	169.9	100.0	25.8	0.1
							87.1

Removal Efficiency Adjustment² = 6.5%
Predicted Net Annual Load Removal Efficiency = 80.6%
Predicted Annual Rainfall Treated = 97.1%

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.
3 - CDS Efficiency based on testing conducted at the University of Central Florida
4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications

Z:\4.0 MANUFACTURERS\CONTECH PRODUCT INFO\TREATMENT\CDS\DRAWINGS ECHELOMIN LINE-PDF\2022 - PMSU UPDATED CONTECH DRAWINGS - HUDA\8\CDS4040-8-C-DTL.DWG 6/2/2022 12:44 PM

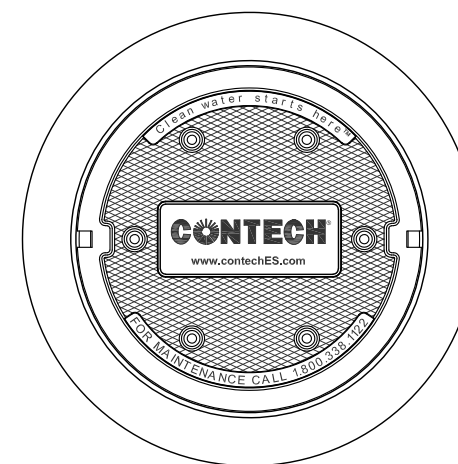


CDS PMSU4040-8-C DESIGN NOTES

THE STANDARD CDS PMSU4040-8-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

- GRATED INLET ONLY (NO INLET PIPE)
- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- CURB INLET WITH INLET PIPE OR PIPES
- SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
- SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID				
WATER QUALITY FLOW RATE (CFS OR L/s)				*
PEAK FLOW RATE (CFS OR L/s)				*
RETURN PERIOD OF PEAK FLOW (YRS)				*
SCREEN APERTURE (2400 OR 4700)				*
PIPE DATA:	I.E.	MATERIAL	DIAMETER	
INLET PIPE 1	*	*	*	
INLET PIPE 2	*	*	*	
OUTLET PIPE	*	*	*	
RIM ELEVATION				*
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT		
	*	*		
NOTES/SPECIAL REQUIREMENTS:				
* PER ENGINEER OF RECORD				

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
- D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.



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CDS PMSU4040-8-C
INLINE CDS
STANDARD DETAIL



THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 6,788,848; 6,841,722; 6,911,502; 6,981,783; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.



**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION**



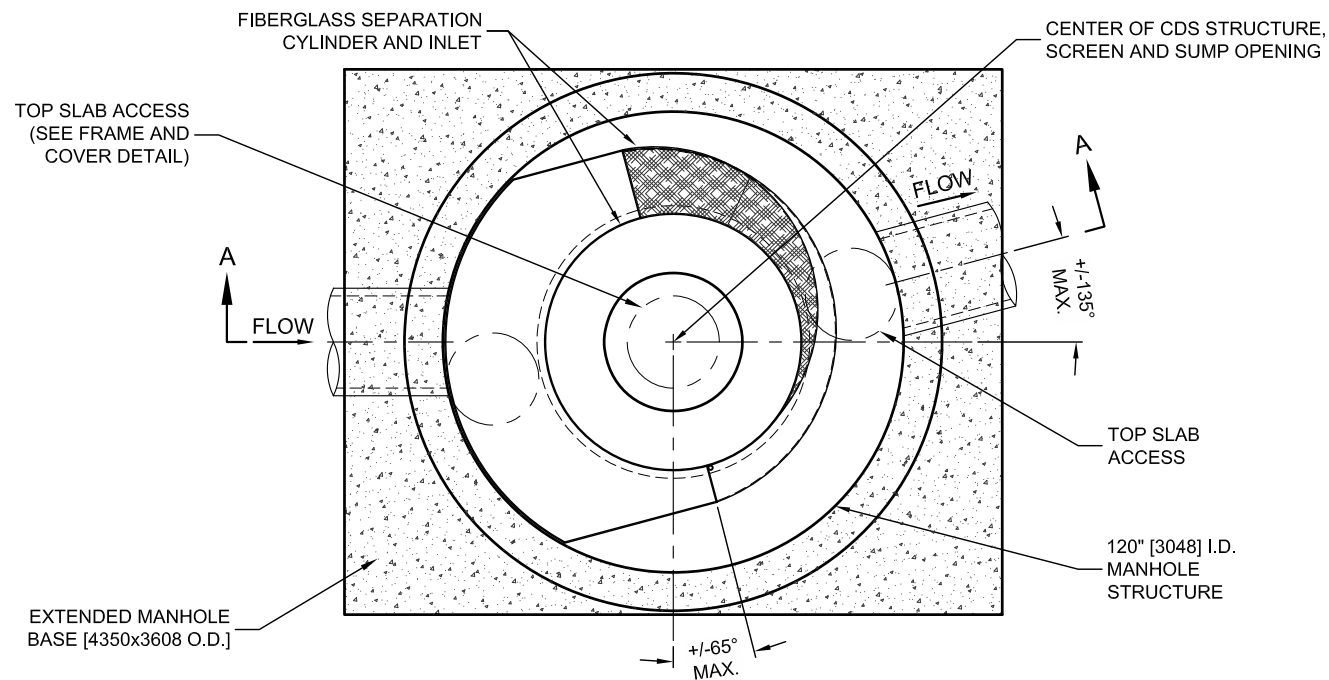
Project Name: 891 Conservancy East	Engineer: DSEL
Location: Ottawa, ON	Contact: Peter Mott
OGS #: OGS 6	Report Date: 8-Mar-24
Area 7.81 ha	Rainfall Station # 215
Weighted C 0.77	Particle Size Distribution FINE
CDS Model 5640 (OFFLINE)	CDS Treatment Capacity 255 l/s

<u>Rainfall Intensity¹</u> <u>(mm/hr)</u>	<u>Percent Rainfall Volume¹</u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (l/s)</u>	<u>Treated Flowrate (l/s)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
1.0	10.6%	19.8%	16.7	16.7	6.6	97.0	10.3
1.5	9.9%	29.7%	25.1	25.1	9.8	96.0	9.5
2.0	8.4%	38.1%	33.4	33.4	13.1	95.1	8.0
2.5	7.7%	45.8%	41.8	41.8	16.4	94.2	7.2
3.0	5.9%	51.7%	50.2	50.2	19.7	93.2	5.5
3.5	4.4%	56.1%	58.5	58.5	23.0	92.3	4.0
4.0	4.7%	60.7%	66.9	66.9	26.2	91.3	4.3
4.5	3.3%	64.0%	75.2	75.2	29.5	90.4	3.0
5.0	3.0%	67.1%	83.6	83.6	32.8	89.5	2.7
6.0	5.4%	72.4%	100.3	100.3	39.4	87.6	4.7
7.0	4.4%	76.8%	117.0	117.0	45.9	85.7	3.7
8.0	3.5%	80.3%	133.7	133.7	52.5	83.8	3.0
9.0	2.8%	83.2%	150.5	150.5	59.0	81.9	2.3
10.0	2.2%	85.3%	167.2	167.2	65.6	80.1	1.7
15.0	7.0%	92.3%	250.8	250.8	98.4	70.7	4.9
20.0	4.5%	96.9%	334.4	254.9	100.0	53.5	2.4
25.0	1.4%	98.3%	418.0	254.9	100.0	42.8	0.6
30.0	0.7%	99.0%	501.5	254.9	100.0	35.7	0.2
35.0	0.5%	99.5%	585.1	254.9	100.0	30.6	0.1
40.0	0.5%	100.0%	668.7	254.9	100.0	26.8	0.1
							87.5

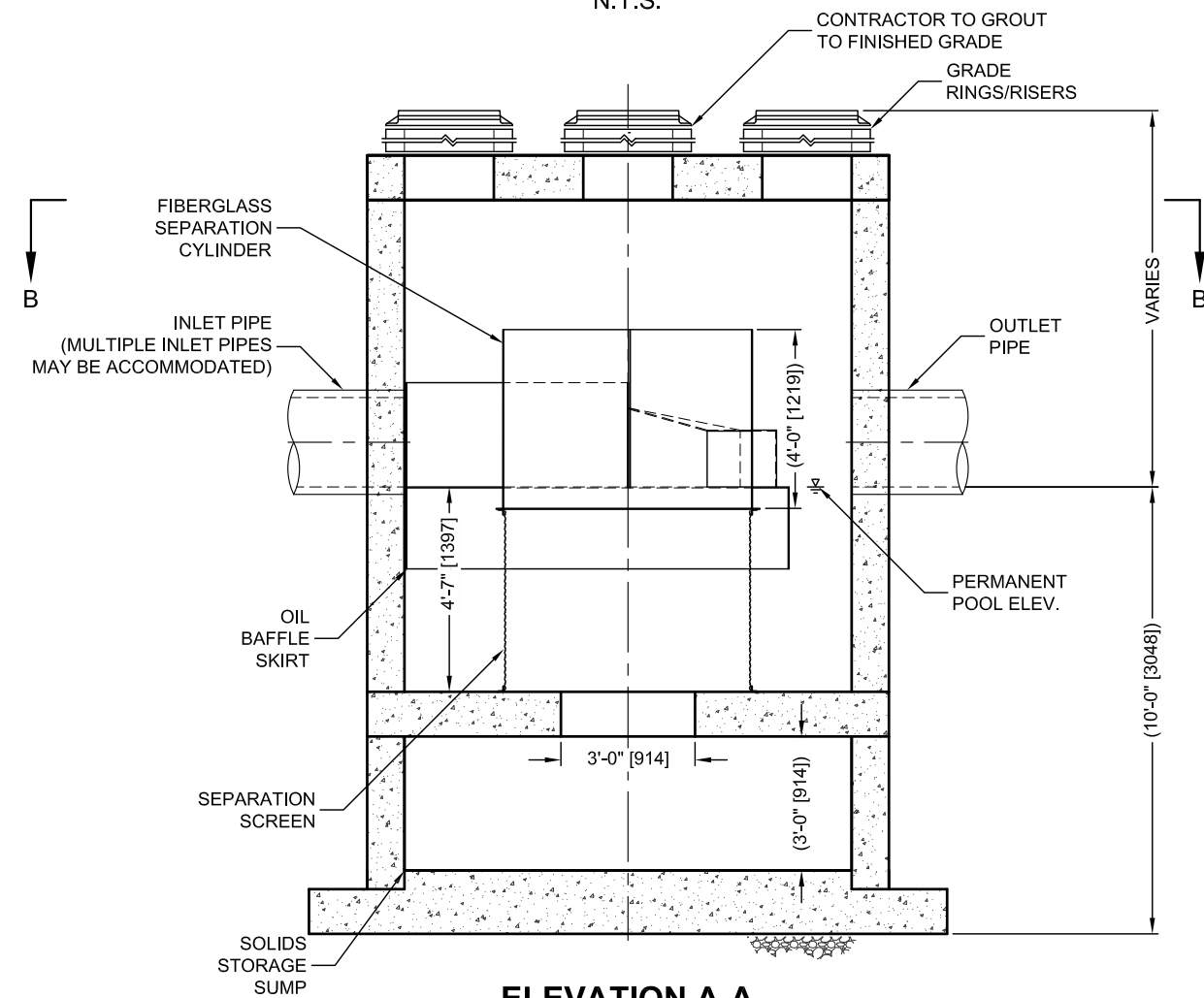
Removal Efficiency Adjustment² = 6.5%
Predicted Net Annual Load Removal Efficiency = 81.0%
Predicted Annual Rainfall Treated = 97.4%

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.
 3 - CDS Efficiency based on testing conducted at the University of Central Florida
 4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications

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PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



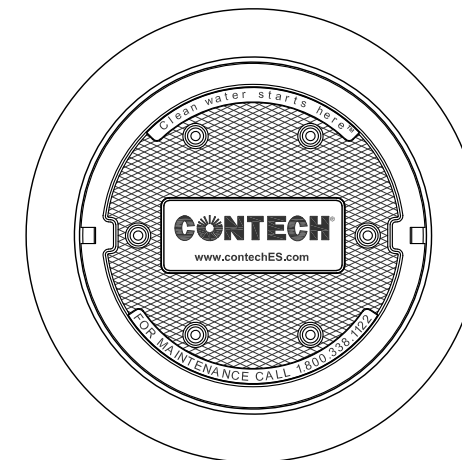
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 6,788,848; 6,841,722; 6,911,502; 6,981,783; RELATED FOREIGN PATENTS, OR OTHER PATENTS FROM TIME TO TIME.

CDS PMSU5640-10-C DESIGN NOTES

THE STANDARD CDS PMSU5640-10-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

- GRATED INLET ONLY (NO INLET PIPE)
- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- CURB INLET WITH INLET PIPE OR PIPES
- CUSTOMIZABLE SUMP DEPTH AVAILABLE
- ANTI-FLOTATION DESIGN AVAILABLE UPON REQUEST



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID				
WATER QUALITY FLOW RATE (CFS OR L/s)				*
PEAK FLOW RATE (CFS OR L/s)				*
RETURN PERIOD OF PEAK FLOW (YRS)				*
SCREEN APERTURE (2400 OR 4700)				*
PIPE DATA:	I.E.	MATERIAL	DIAMETER	
INLET PIPE 1	*	*	*	
INLET PIPE 2	*	*	*	
OUTLET PIPE	*	*	*	
RIM ELEVATION				*
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT		
	*	*		
NOTES/SPECIAL REQUIREMENTS:				
* PER ENGINEER OF RECORD				

GENERAL NOTES

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4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
- D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.



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CDS PMSU5640-10-C
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STANDARD DETAIL