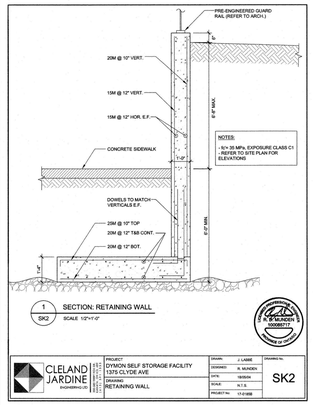
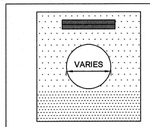


1 SK2 SECTION: RETAINING WALL
SCALE: 1/2"=1'-0"

CLELAND JARDINE ENGINEERING

PROJECT:	DYMON SELF STORAGE FACILITY 1375 CLYDE AVE
CITY:	OTTAWA
DESCRIPTION:	RETAINING WALL
DRAWN:	J. LABBE
DESIGNED:	R. MUNDEN
REVIEWED:	MARCH
SCALE:	N.T.S.
PROJECT No.	17-012-000
DRAWING No.	SK2

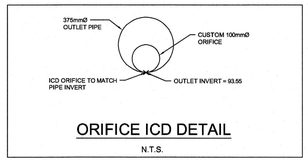


INSULATION REFERENCE TABLE	
EARTH COVER	REQUIRED INSULATION THICKNESS
2.0m - 1.8m	25mm
1.8m - 1.5m	50mm
1.5m - 1.2m	75mm
1.2m - 0.9m	100mm
0.9m - 0.6m	125mm

1. SEWER INSTALLATION (INCLUDING BEDDING AND COVER) TO BE PER CITY OF OTTAWA TRENCH DETAIL S6
2. INSULATION POINTS TO BE STAGGERED, WITH MINIMUM 0.3 OVERLAP
3. INSULATION TO BE CENTERED OVER PIPE WITH MINIMUM WIDTH OF 1.2m
4. INSULATION TO BE PROVIDED AT ALL SEWER LOCATIONS WHERE MINIMUM COVERAGE OF 2.0m IS NOT ACHIEVED.

INSULATION DETAIL

N.T.S.



ORIFICE ICD DETAIL

N.T.S.

ICD TABLE							
ICD #	OUTLET PIPE DIA. (mm)	Qr (L/s)	OUTLET INVERT (m)	TOP OF GRATE (m)	MAX PONDING (m)	DESIGN HEAD (m)	MODEL #
ICD 1 - CB 4	200	6.00	94.48	97.28	97.58	3.10	HYDROVEX 75 VHV-1
ICD 2 - CB 5	200	6.00	94.31	95.85	95.85	1.54	HYDROVEX 75 VHV-1
ICD 3 - STM H 2A	375	21.73	93.55	94.65	94.65	1.05	CUSTOM ICD (100mmø)

ROOF DRAIN TABLE					
BUILDING	ROOF DRAIN	WEIR OPENING	MAX PONDING DEPTH (mm)	ROOF DRAIN TYPE	RELEASE RATE (L/S)
BUILDING 1B	RD1	1/2	150	WATTS ADJUSTABLE ACCUTROL WEIR	1.262
	RD2	1/2	150	WATTS ADJUSTABLE ACCUTROL WEIR	1.262
	RD3	1/2	150	WATTS ADJUSTABLE ACCUTROL WEIR	1.262
	RD4	1/2	150	WATTS ADJUSTABLE ACCUTROL WEIR	1.262
				TOTAL FLOW RATE =	5.048
BUILDING 2	RD1	1/2	150	WATTS ADJUSTABLE ACCUTROL WEIR	1.262
	RD2	1/2	150	WATTS ADJUSTABLE ACCUTROL WEIR	1.262
	RD3	1/2	150	WATTS ADJUSTABLE ACCUTROL WEIR	1.262
	RD4	1/2	150	WATTS ADJUSTABLE ACCUTROL WEIR	1.262
				TOTAL FLOW RATE =	5.048
BUILDING 3	RD1	1/2	150	WATTS ADJUSTABLE ACCUTROL WEIR	1.262
	RD2	1/2	150	WATTS ADJUSTABLE ACCUTROL WEIR	1.262
				TOTAL FLOW RATE =	2.524

SEWER/WM CROSSING TABLE					
ID	OVER	INV (m)	UNDER	OBV (m)	CLEARANCE (m)
A	SAN	93.54	WM	93.2	0.34
B	ST	94.05	WM	93.2	0.85
C	SAN	93.8	WM	93.2	0.6
D	ST	94.22	WM	93.2	1.02
E	ST	94.29	WM	93.43	0.86
F	SAN	94	WM	93.57	0.43
G	ST	93.85	WM	93.59	0.26
H	ST	96.18	WM	95.92	0.26
I	ST	93.78	WM	93.08	0.7
J	ST	93.36	WM	93.08	0.3
K	ST	96.16	SAN	95.68	0.48
L	SAN	94.25	ST	94.15	0.1
M	ST	94.2	SAN	93.93	0.27
N	ST	94.03	SAN	93.74	0.29
O	ST	94.26	SAN	94.11	0.15
P	ST	94.51	ST	94.37	0.14
Q	ST	94.03	ST	93.73	0.3

WATERMAIN TABLE-Sta. 1+000.00 TO 1+158.00

PVC DR-18 CL.150

SIZE	STATION ALONG WM	DETAIL	FINISHED GRADE	TOP OF WM
200mmØ - 150mmØ	1+000	203 x 203 TEE CONNECTION TO EXISTING FOR BLDG 1A	95.89	93.20
	1+001.39	WM CROSSING UNDER SAN	95.86	93.20
	1+003.84	WM CROSSING UNDER ST	95.82	93.20
	1+010.00		95.82	93.20
	1+020.00		95.85	93.20
	1+030.00		95.80	93.20
	1+039.33	203 x 152 TEE FOR BLDG 1B	95.83	93.20
	1+040.66	45° BEND	95.83	93.20
	1+043.02	WM CROSSING UNDER SAN	95.79	93.20
	1+044.69	WM CROSSING UNDER ST	95.80	93.20
	1+053.18	203 x 152 TEE	95.61	93.20
	1+061.78	45° BEND	95.73	93.20
	1+070.00		95.90	93.28
	1+084.71	WM CROSSING UNDER ST	95.90	93.43
	1+092.58	203 x 152 TEE FOR BLDG 2	96.09	93.51
	1+100.00		96.34	93.84
	1+110.00		96.72	94.29
	1+120.00		97.19	94.74
	1+130.00		97.67	94.19
	1+140.00		98.15	95.64
	1+146.47	203 x 152 TEE FOR BLDG 3	98.49	95.93
	1+150.00	203 x 152 REDUCER	98.63	96.09
	1+158.21	45° BEND	98.99	96.46
	1+159.01	VALVE & VB	99.03	96.49
	1+162.58	HYDRANT	99.42	96.66

NOTE: ALL WM TO BE CONSTRUCTED AT 2.4m BELOW FINISHED GRADE.

WATERMAIN TABLE-Sta. 2+000.00 TO 2+029.00

PVC DR-18 CL.150

SIZE	STATION ALONG WM	DETAIL	FINISHED GRADE	TOP OF WM
150mmØ	2+000	152 x 152 TEE	95.81	93.08
	2+010.00		95.71	93.08
	2+022.88	WM CROSSING OVER ST	95.63	93.08
	2+028.07	VALVE & VB	95.73	93.08
	2+029.67	HYDRANT	96.00	93.08

NOTE: ALL WM TO BE CONSTRUCTED AT 2.4m BELOW FINISHED GRADE.

WATERMAIN TABLE-Sta. 3+000.00 TO 3+006.00

PVC DR-18 CL.150

SIZE	STATION ALONG WM	DETAIL	FINISHED GRADE	TOP OF WM
150mmØ	3+000	152 x 203 TEE	95.61	93.20
	3+002.87	VALVE & VB	95.69	93.20
	3+005.70	HYDRANT	95.93	93.20

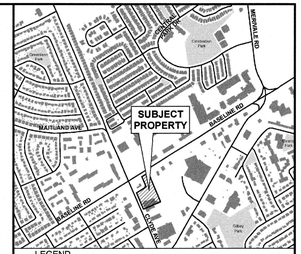
NOTE: ALL WM TO BE CONSTRUCTED AT 2.4m BELOW FINISHED GRADE.

WATERMAIN TABLE-Sta. 2+000.00 TO 2+029.00

PVC DR-18 CL.150

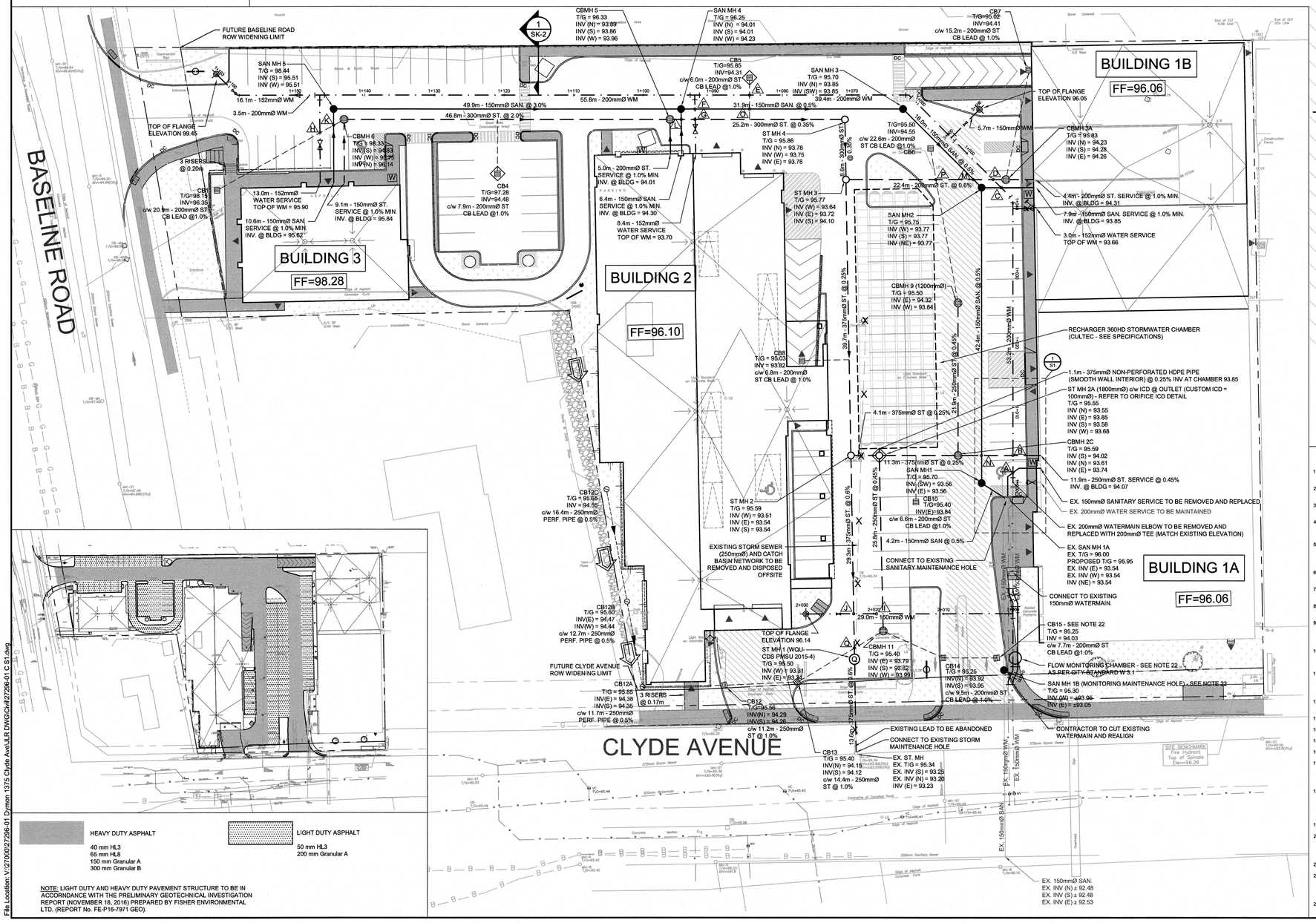
SIZE	STATION ALONG WM	DETAIL	FINISHED GRADE	TOP OF WM
150mmØ	0+000	22.5° BEND	95.37	92.97
	0+001.72	22.5° BEND	95.46	93.06
	0+003.50	WATER MONITORING CHAMBER	95.52	93.12
	0+009.85	152 x 152 TEE	95.81	93.41
	0+011.35	22.5° BEND	95.88	93.48
	0+013.10	22.5° BEND	95.92	93.52

NOTE: ALL WM TO BE CONSTRUCTED AT 2.4m BELOW FINISHED GRADE OR CONSTRUCTED IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W 22



LEGEND

- EXISTING CATCH BASIN
- CATCH BASIN c/w ICD
- PROPOSED CATCH BASIN & LEAD
- PROPOSED PERFORATED PIPE AND LANDSCAPE CATCH BASIN
- PROPOSED WATERMAIN, HYDRANT, VALVE & VALVE BOX AND REDUCER
- PROPOSED VALVE BOX
- EXISTING WATERMAIN, VALVE & HYDRANT
- PROPOSED STORM SEWER & MANHOLE
- WATER QUALITY UNIT (WQU) (OIL AND GRIT SEPARATOR)
- EXISTING STORM SEWER & MANHOLE
- PROPOSED SANITARY SEWER & MANHOLE
- EXISTING SANITARY SEWER & MANHOLE
- CONCRETE SURFACE
- DEPRESSED CURB
- RETAINING WALL c/w WOOD PRIVACY SCREEN
- RETAINING WALL c/w DECORATIVE METAL FENCE
- SIAMESE CONNECTION
- WATER METER AND REMOTE METER
- CROSSING ID (REFER TO UTILITY CROSSING TABLE)


FUTURE BASELINE ROAD ROW WIDENING LIMIT
BASELINE ROAD
CLYDE AVENUE
FUTURE CLYDE AVENUE ROW WIDENING LIMIT
BUILDING 1B
FF=96.06
BUILDING 3
FF=98.28
BUILDING 2
FF=96.10
BUILDING 1A
FF=96.06
CBMH 5 T/G = 96.33 INV (N) = 93.89 INV (S) = 93.86 INV (W) = 93.96
SAN MH 4 T/G = 96.25 INV (N) = 94.01 INV (S) = 94.01 INV (W) = 94.23
CB7 T/G=95.02 INV=94.41 c/w 15.2m - 200mmØ ST CB LEAD @ 1.0%
CB5 T/G=95.85 INV=94.31 c/w 6.0m - 200mmØ ST CB LEAD @1.0%
SAN MH 3 T/G = 95.70 INV (N) = 93.85 INV (SW) = 93.85 INV (E) = 93.85
SAN MH 5 T/G = 98.44 INV (S) = 96.51 INV (W) = 96.51
16.1m - 152mmØ WM
49.9m - 150mmØ SAN. @ 3.0%
46.8m - 300mmØ ST @ 2.0%
55.8m - 200mmØ WM
31.9m - 150mmØ SAN. @ 0.5%
39.4m - 200mmØ WM
25.2m - 300mmØ ST. @ 0.35%
3.5m - 200mmØ WM
TOP OF FLANGE ELEVATION 99.45
TOP OF FLANGE ELEVATION 96.05
3 RISERS @ 0.20m
CBMH 6 T/G = 98.33 INV (S) = 94.83 INV (W) = 94.79 INV (N) = 96.14
CB6 T/G=98.15 INV=96.39 c/w 20.9m - 200mmØ ST CB LEAD @1.0%
13.0m - 152mmØ WATER SERVICE TOP OF WM = 95.90
9.1m - 150mmØ ST SERVICE @ 1.0% MIN. INV. @ BLDG = 95.84
10.6m - 150mmØ SAN. SERVICE @ 1.0% MIN. INV. @ BLDG = 95.62
CB4 T/G=97.28 INV=94.48 c/w 7.9m - 200mmØ ST CB LEAD @1.0%
ST MH 4 T/G = 95.86 INV (N) = 93.78 INV (W) = 93.75 INV (E) = 93.78
ST MH 3 T/G = 95.77 INV (W) = 93.64 INV (E) = 93.72 INV (S) = 94.10
5.0m - 200mmØ ST. SERVICE @ 1.0% MIN. INV. @ BLDG = 94.01
6.4m - 150mmØ SAN. SERVICE @ 1.0% MIN. INV. @ BLDG = 94.30
8.4m - 152mmØ WATER SERVICE TOP OF WM = 93.70
22.4m - 200mmØ ST. @ 0.6%
T/G=95.50 INV=94.55 c/w 22.6m - 200mmØ ST CB LEAD @1.0% CB6
5.7m - 150mmØ WM
16.0m - 150mmØ SAN. @ 0.5%
TOP OF FLANGE ELEVATION 96.05
CBMH 3A T/G = 95.83 INV (N) = 94.23 INV (S) = 94.28 INV (E) = 94.26
4.4m - 200mmØ ST. SERVICE @ 1.0% MIN. INV. @ BLDG = 94.31
7.9m - 150mmØ SAN. SERVICE @ 1.0% MIN. INV. @ BLDG = 93.85
3.0m - 152mmØ WATER SERVICE TOP OF WM = 93.66
SAN MH2 T/G = 95.75 INV (W) = 93.77 INV (S) = 93.77 INV (NE) = 93.77
CBMH 9 (1200mmØ) T/G = 95.50 INV (E) = 94.32 INV (W) = 93.84
39.7m - 375mmØ ST @ 0.25%
4.1m - 375mmØ ST @ 0.25%
CBMH 2C T/G = 95.59 INV (S) = 94.02 INV (N) = 93.61 INV (E) = 93.74
11.3m - 375mmØ ST @ 0.25%
SAN MH1 T/G = 95.70 INV (SW) = 93.56 INV (E) = 93.56
CB10 T/G=95.40 INV(E)=93.84 c/w 6.6m - 200mmØ ST CB LEAD @1.0%
11.9m - 250mmØ ST. SERVICE @ 0.45% INV. @ BLDG = 94.07
EX. 150mmØ SANITARY SERVICE TO BE REMOVED AND REPLACED
EX. 200mmØ WATER SERVICE TO BE MAINTAINED
EX. 200mmØ WATERMAIN ELBOW TO BE REMOVED AND REPLACED WITH 200mmØ TEE (MATCH EXISTING ELEVATION)
EX. SAN MH 1A EX. T/G = 96.00 PROPOSED T/G = 95.95 EX. INV (E) = 93.54 EX. INV (W) = 93.54 INV (NE) = 93.54
CONNECT TO EXISTING 150mmØ WATERMAIN.
CB12C T/G = 95.59 INV = 94.55 c/w 16.4m - 250mmØ PERF. PIPE @ 0.5%
CB12B T/G = 95.67 INV(E) = 94.47 INW(W) = 94.44 c/w 12.7m - 250mmØ PERF. PIPE @ 0.5%
CB12A T/G = 95.85 INV(E) = 94.38 INV(S) = 94.36 c/w 11.7m - 250mmØ PERF. PIPE @ 0.5%
3 RISERS @ 0.17m
ST MH 2 T/G = 95.59 INV (W) = 93.51 INV (E) = 93.54 INV (S) = 93.54
EXISTING STORM SEWER (250mmØ) AND CATCH BASIN NETWORK TO BE REMOVED AND DISPOSED OFFSITE
CONNECT TO EXISTING SANITARY MAINTENANCE HOLE
ST MH 1 (WQU-CDS PMSU 2015-4) T/G = 95.50 INV (W) = 93.31 INV (E) = 93.31
CBMH 11 T/G = 95.40 INV (E) = 93.79 INV (S) = 93.62 INV (W) = 93.29
CB14 T/G = 95.25 INV(N) = 93.92 INV(S) = 93.95 c/w 9.5m - 200mmØ ST CB LEAD @ 1.0%
CB15 - SEE NOTE 22 T/G = 95.25 INV = 94.03 c/w 7.7m - 200mmØ ST CB LEAD @1.0%
FLOW MONITORING CHAMBER - SEE NOTE 22 AS PER CITY STANDARD W 3.1
SAN MH 1B (MONITORING MAINTENANCE HOLE) - SEE NOTE 22 T/G = 95.30 INV (W) = 93.95 INV (E) = 93.95
CONTRACTOR TO CUT EXISTING WATERMAIN AND REALIGN
RECHARGER 360HD STORMWATER CHAMBER (CULTEC - SEE SPECIFICATIONS)
1.1m - 375mmØ NON-PERFORATED HDPE PIPE (SMOOTH WALL INTERIOR) @ 0.25% INV AT CHAMBER 93.85
ST MH 2A (1800mmØ) c/w ICD @ OUTLET (CUSTOM ICD = 100mmØ) - REFER TO ORIFICE ICD DETAIL T/G = 95.55 INV (N) = 93.55 INV (E) = 93.85 INV (S) = 93.58 INV (W) = 93.68
CB8 T/G = 95.03 INV = 93.92 c/w 6.8m - 200mmØ ST CB LEAD @ 1.0%
CB13 T/G = 95.40 INV(N) = 94.15 INV(S) = 94.12 c/w 14.4m - 250mmØ ST @ 1.0%
EXISTING LEAD TO BE ABANDONED
CONNECT TO EXISTING STORM MAINTENANCE HOLE
EX. ST. MH EX. T/G = 95.34 EX. INV (S) = 93.25 EX. INV (N) = 93.20 INV (E) = 93.23
EX. 150mmØ SAN. EX. INV (N) ± 92.48 EX. INV (S) ± 92.48 EX. INV (E) ± 92.53
SITE BENCHMARK Fire Hydrant Top of Spindle Elev=96.26
TOP OF FLANGE ELEVATION 96.14
CB1 - SEE NOTE 22 T/G = 95.25 INV = 94.03 c/w 7.7m - 200mmØ ST CB LEAD @1.0%
EX. 150mmØ WM
EX. 150mmØ SAN
EX. 150mmØ WM
EX. 200mmØ WM
EX. 150mmØ SAN
EX. 150mmØ WM
EX. 150mmØ SAN
EX. 150mmØ WM
EX. 150mmØ SAN
EX. 150