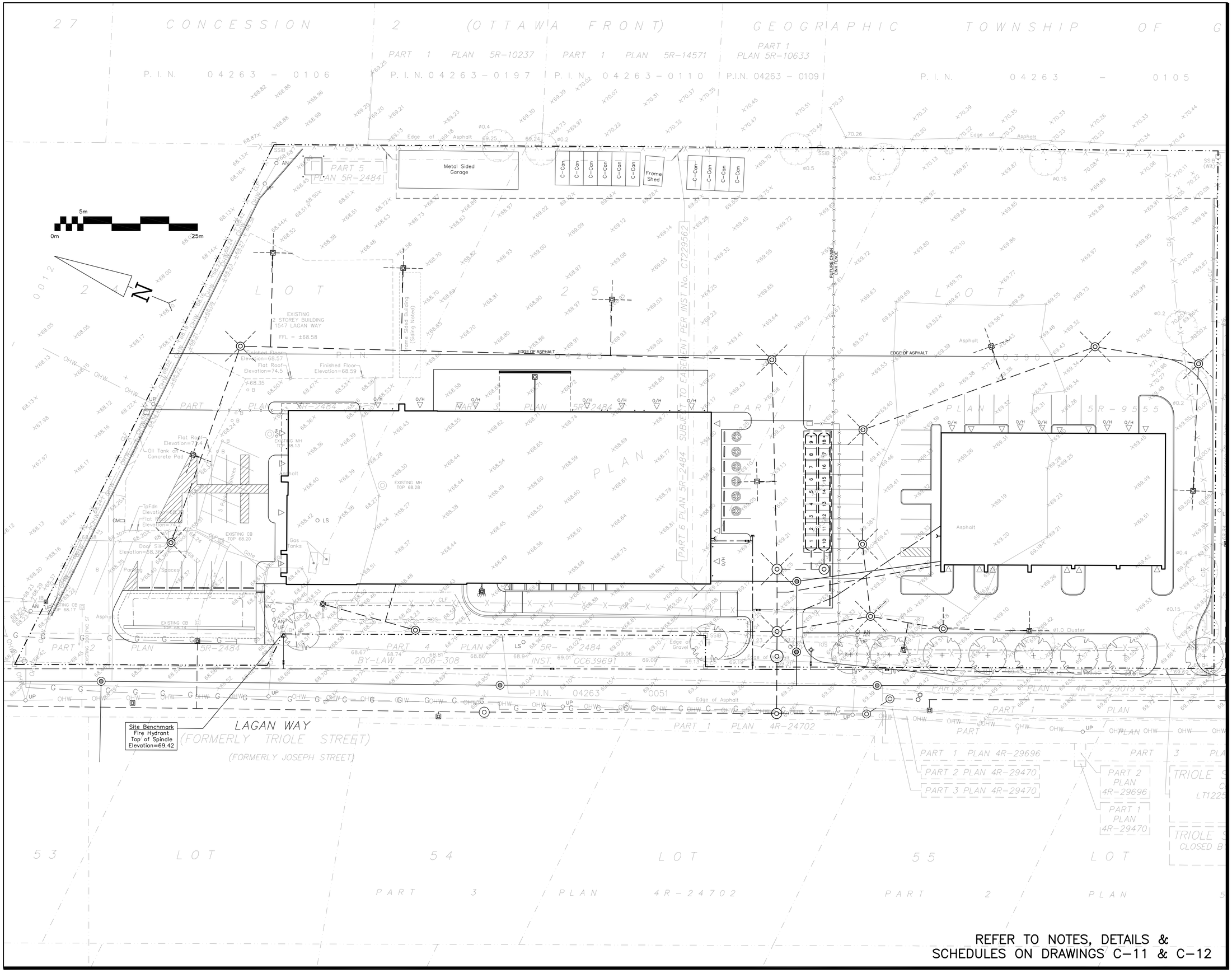


REFER TO NOTES, DETAILS & SCHEDULES ON DRAWINGS C-11 & C-12

LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
MH	SANITARY MANHOLE
FH	FIRE HYDRANT
FDC	FIRE DEPARTMENT CONNECTION
CS	CURB STOP & STANDPOST
VB	VALVE & VALVE BOX
M	WATER METER
R	REMOTE WATER METER
SAN	SANITARY SEWER
ST	STORM SEWER
WS/WM	WATER SERVICE/WATERMAIN
SPL	SPRINGLINE OF PIPE
INV	INVERT OF PIPE
	CENTERLINE OF SWALE
	150mm BARRIER CURB
D.C	DEPRESSED CURB
	ROAD CUT REINSTATEMENT

KEY PLAN

No.	DATE	REVISION
2	DEC 16-25	ISSUED FOR APPROVAL
1	NOV 13-25	ISSUED FOR COORDINATION

D. B. GRAY ENGINEERING INC.

Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

700 Long Point Circle 613-425-8044

Ottawa, Ontario d.gray@dbgrayengineering.com

Project

PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title

SITE OVERVIEW

Engineer's Seal

LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
DEC 16-25
PROVINCE OF ONTARIO

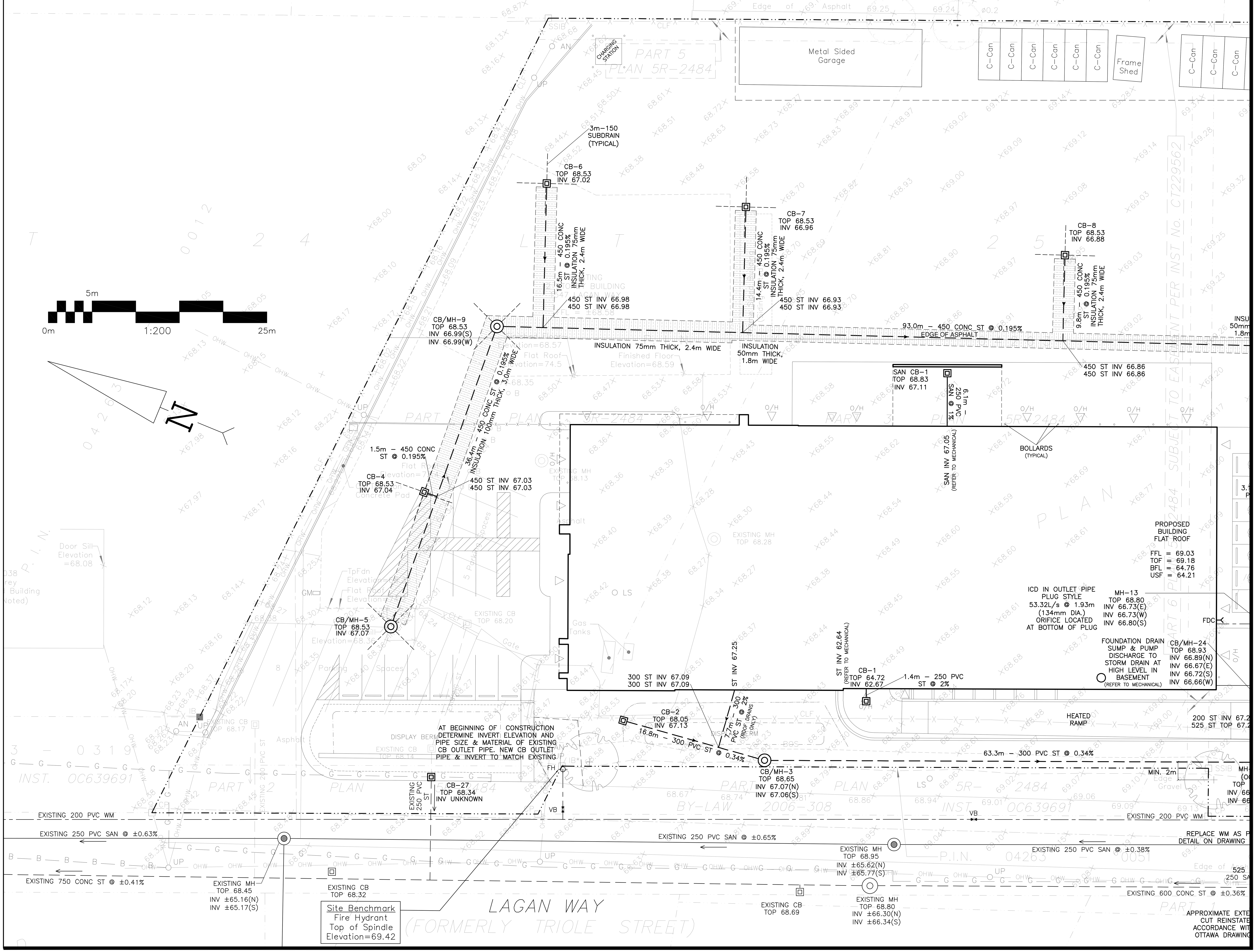
NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:300
V. Scale	
Date	NOV 13-25
Job No.	24022

Drawing No.

C-1
of 13

REFER TO NOTES, DETAILS &
SCHEDULES ON DRAWINGS C-11 & C-12

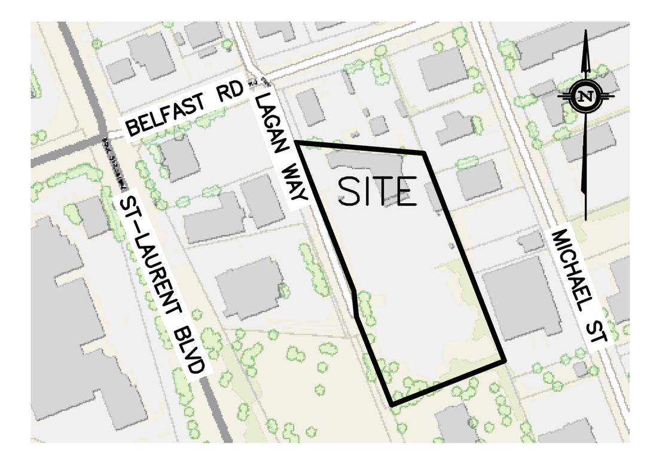


5m
0m 1:200 25m
N
Metal Sided Garage
PART 5 PLAN 5R-2484
CHARGING STATION
C-Can
Frame Shed
3m-150 SUBDRAIN (TYPICAL)
CB-6 TOP 68.53 INV 67.02
16.5m - 450 CONC ST @ 0.195% INSULATION 75mm THICK, 2.4m WIDE
450 ST INV 66.98
450 ST INV 66.98
CB-7 TOP 68.53 INV 66.96
14.4m - 450 CONC ST @ 0.195% INSULATION 75mm THICK, 2.4m WIDE
450 ST INV 66.93
450 ST INV 66.93
CB-8 TOP 68.53 INV 66.88
9.8m - 450 CONC ST @ 0.195% INSULATION 75mm THICK, 2.4m WIDE
93.0m - 450 CONC ST @ 0.195%
EDGE OF ASPHALT
450 ST INV 66.86
450 ST INV 66.86
CB/MH-9 TOP 68.53 INV 66.99(S) INV 66.99(W)
INSULATION 75mm THICK, 2.4m WIDE
INSULATION 50mm THICK, 1.8m WIDE
36.4m - 450 CONC ST @ 0.195% INSULATION 100mm THICK, 3.0m WIDE
1.5m - 450 CONC ST @ 0.195%
CB-4 TOP 68.53 INV 67.04
450 ST INV 67.03
450 ST INV 67.03
CB/MH-5 TOP 68.53 INV 67.07
SAN CB-1 TOP 68.83 INV 67.11
6.1m - 250 PVC SAN @ 1%
SAN INV 67.05 (REFER TO MECHANICAL)
BOLLARDS (TYPICAL)
EXISTING MH TOP 68.28
PROPOSED BUILDING FLAT ROOF
FFL = 69.03
TOF = 69.18
BFL = 64.76
USF = 64.21
ICD IN OUTLET PIPE PLUG STYLE 53.32L/s @ 1.93m (134mm DIA.) ORIFICE LOCATED AT BOTTOM OF PLUG
MH-13 TOP 68.80 INV 66.73(E) INV 66.73(W) INV 66.80(S)
FOUNDATION DRAIN SUMP & PUMP DISCHARGE TO STORM DRAIN AT HIGH LEVEL IN BASEMENT (REFER TO MECHANICAL)
CB/MH-24 TOP 68.93 INV 66.89(N) INV 66.67(E) INV 66.72(S) INV 66.66(W)
FDC
ST INV 62.64 (REFER TO MECHANICAL)
CB-1 TOP 64.72 INV 62.67
1.4m - 250 PVC ST @ 2%
300 ST INV 67.09
300 ST INV 67.09
ST INV 67.25
CB-2 TOP 68.05 INV 67.13
16.8m - 300 PVC ST @ 0.34%
7.7m - 300 PVC ST @ 2% (ROOF DRAINS ONLY)
CB/MH-3 TOP 68.65 INV 67.07(N) INV 67.06(S)
63.3m - 300 PVC ST @ 0.34%
HEATED RAMP
200 ST INV 67.2
525 ST TOP 67.2
MIN. 2m
AT BEGINNING OF CONSTRUCTION DETERMINE INVERT ELEVATION AND PIPE SIZE & MATERIAL OF EXISTING CB OUTLET PIPE. NEW CB OUTLET PIPE & INVERT TO MATCH EXISTING
CB-27 TOP 68.34 INV UNKNOWN
EXISTING 250 PVC ST
FH
VB
EXISTING 200 PVC WM
EXISTING 250 PVC SAN @ ±0.63%
EXISTING 250 PVC SAN @ ±0.65%
EXISTING 250 PVC SAN @ ±0.38%
EXISTING 750 CONC ST @ ±0.41%
EXISTING 600 CONC ST @ ±0.36%
EXISTING MH TOP 68.45 INV ±65.16(N) INV ±65.17(S)
EXISTING CB TOP 68.32
EXISTING MH TOP 68.95 INV ±65.62(N) INV ±65.77(S)
EXISTING MH TOP 68.80 INV ±66.30(N) INV ±66.34(S)
EXISTING CB TOP 68.69
REPLACE WM AS PER DETAIL ON DRAWING
APPROXIMATE EXTENT OF CUT REINSTATEMENT IN ACCORDANCE WITH OTTAWA DRAWING
Site Benchmark
Fire Hydrant
Top of Spindle
Elevation=69.42
LAGAN WAY
(FORMERLY TRIOLE STREET)
PART 2 PLAN 5R-2484
BY-LAW 2006-308
INST. OC639691
P.I.N. 04263-0051

LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
MH	SANITARY MANHOLE
FH	FIRE HYDRANT
FDC	FIRE DEPARTMENT CONNECTION
CS	CURB STOP & STANDPOST
VB	VALVE & VALVE BOX
Ⓜ	WATER METER
Ⓡ	REMOTE WATER METER
SAN	SANITARY SEWER
ST	STORM SEWER
WS/WM	WATER SERVICE/WATERMAIN
SPL	SPRINGLINE OF PIPE
INV	INVERT OF PIPE
	CENTERLINE OF SWALE
	150mm BARRIER CURB
D.C	DEPRESSED CURB
	ROAD CUT REINSTATEMENT

KEY PLAN



No.	DATE	REVISION
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1	NOV 13-25	ISSUED FOR COORDINATION

D. B. GRAY ENGINEERING INC.
Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

Project
PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title
SITE SERVICING PLAN
(NORTH AREA STORM)

Engineer's Seal
LICENSED PROFESSIONAL ENGINEER D.B. GRAY 17016502 DEC 16-25 PROVINCE OF ONTARIO
NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:200
V. Scale	
Date	NOV 13-25
Job No.	24022

Drawing No.
C-2
of 13

REFER TO NOTES, DETAILS & SCHEDULES ON DRAWINGS C–11 & C–12

5m
0m 1:200 25m

N

LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
MH	SANITARY MANHOLE
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M	WATER METER
R	REMOTE WATER METER
SAN	SANITARY SEWER
ST	STORM SEWER
WS/WM	WATER SERVICE/WATERMAIN
SPL	SPRINGLINE OF PIPE
INV	INVERT OF PIPE
	CENTERLINE OF SWALE
	150mm BARRIER CURB
D.C	DEPRESSED CURB
	ROAD CUT REINSTATEMENT

KEY PLAN

No.	DATE	REVISION
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D. B. GRAY ENGINEERING INC.
Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

Project
PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title
SITE SERVICING PLAN
(SOUTH AREA STORM)

Engineer's Seal
LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
DEC 16–25
PROVINCE OF ONTARIO
NOT VALID UNLESS SIGNED & DATED

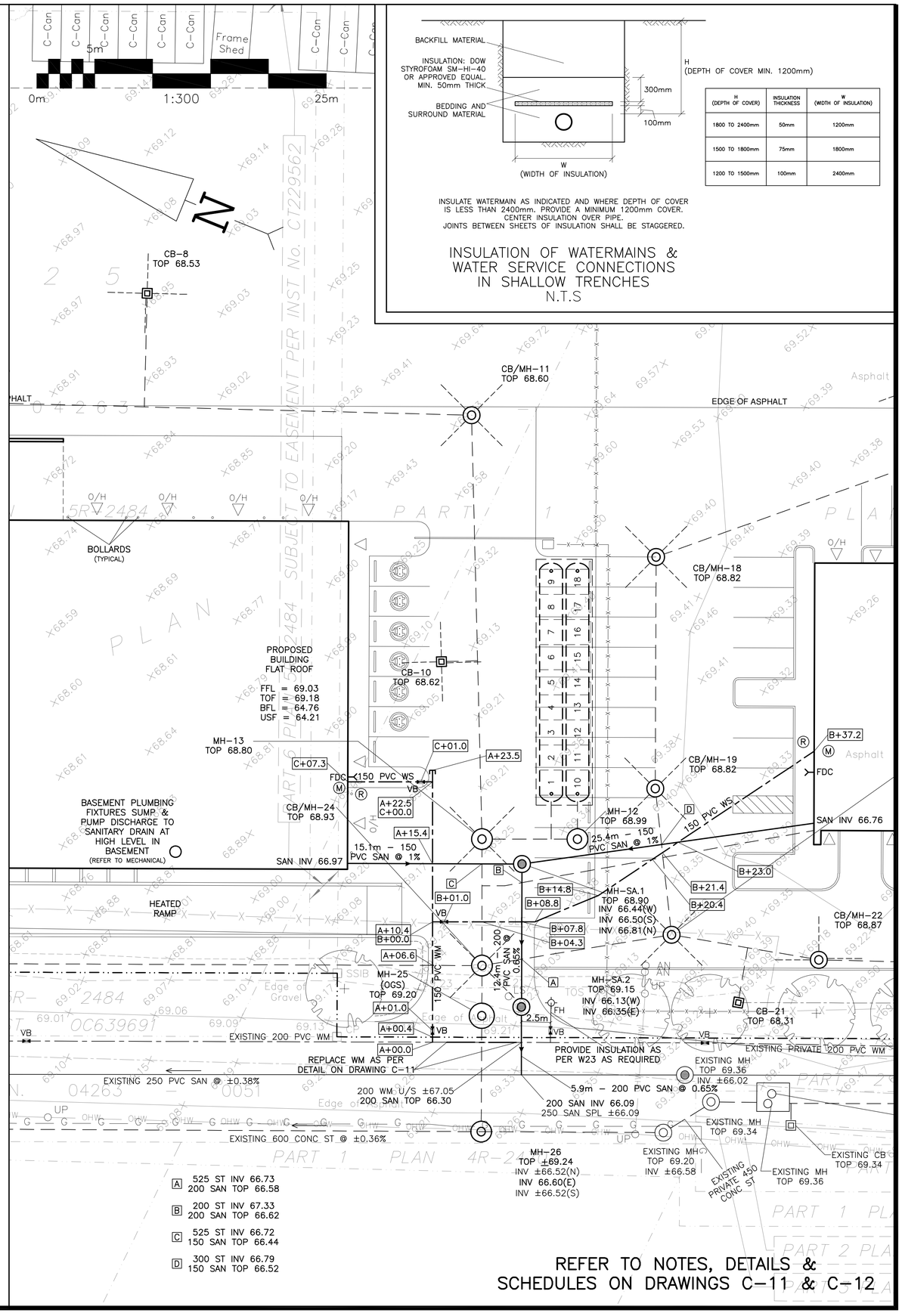
Drawn	D.B.G
H. Scale	1:200
V. Scale	
Date	NOV 13–25
Job No.	24022

Drawing No.
C–3
of 13

WATER SERVICE/WATERMAIN PROFILE TABLE

DIAMETER/MATERIAL: 150mm/PVC DR18

STATION	DESCRIPTION	GRADE ELEVATION	TOP OF PIPE	DEPTH OF COVER	NOTES
A+00.0	200mm x 150mm TEE CONNECTION IN 200mm MUNICIPAL WATERMAIN TO CITY OF OTTAWA STANDARDS	±69.24	±66.88	±2.36	START OF 50mm THICK INSULATION AS PER CITY OF OTTAWA DRAWING No. W22
A+00.4	–	±69.23	66.88	±2.35	ON PROPERTY LINE
A+01.0	150mm VALVE & VALVE BOX TO CITY OF OTTAWA STANDARDS	±69.21	66.88	±2.33	–
A+02.0	22.5° VERTICAL BEND DOWN TO CITY OF OTTAWA STANDARDS	69.17	66.88	2.29	–
A+03.2	22.5° VERTICAL BEND UP TO CITY OF OTTAWA STANDARDS	69.14	66.39	2.75	END OF 50mm THICK INSULATION AS PER CITY OF OTTAWA DRAWING No. W22
A+06.6	–	69.07	66.39	2.68	CROSSING 300 ST INV 66.90 WM TOP 66.39 – 510mm CLEARANCE (MIN. 500mm REQ'D)
A+10.4 (B+00.0)	150mm x 150mm TEE TO CITY OF OTTAWA STANDARDS	68.98	66.39	2.59	–
A+15.4	–	68.88	66.39	2.49	CROSSING 150 SAN INV 66.89 WM TOP 66.39 – 500mm CLEARANCE (MIN. 500mm REQ'D)
A+22.5 (C+00.0)	150mm x 150mm TEE TO CITY OF OTTAWA STANDARDS	68.82	66.39	2.43	–
A+23.5	150mm END CAP TO CITY OF OTTAWA STANDARDS	68.79	66.39	2.40	–
C+00.0 (A+22.5)	150mm x 150mm TEE TO CITY OF OTTAWA STANDARDS	68.82	66.39	2.43	–
C+01.0	150mm VALVE & VALVE BOX TO CITY OF OTTAWA STANDARDS	68.85	66.39	2.46	–
C+07.3	–	69.02	66.39	2.63	ENTRY INTO BUILDING
B+00.0 (A+10.4)	150mm x 150mm TEE TO CITY OF OTTAWA STANDARDS	68.98	66.39	2.59	–
B+01.0	150mm VALVE & VALVE BOX TO CITY OF OTTAWA STANDARDS	68.99	66.39	2.60	–
B+02.0	22.5° VERTICAL BEND DOWN TO CITY OF OTTAWA STANDARDS	68.99	66.39	2.60	–
B+03.2	22.5° VERTICAL BEND UP TO CITY OF OTTAWA STANDARDS	69.00	65.91	3.09	–
B+04.3	–	69.00	65.91	3.09	CROSSING 525 ST INV 66.69 WM TOP 65.91 – 780mm CLEARANCE (MIN. 500mm REQ'D)
B+07.7	–	69.02	65.91	3.11	CROSSING 200 SAN INV 66.41 WM TOP 65.91 – 500mm CLEARANCE (MIN. 500mm REQ'D)
B+08.8	22.5° HORIZONTAL BEND TO CITY OF OTTAWA STANDARDS	69.02	65.91	3.11	–
B+14.8	11.25° HORIZONTAL BEND TO CITY OF OTTAWA STANDARDS	69.02	65.96	3.06	–
B+20.4	–	68.94	66.00	2.94	CROSSING 200 ST INV 66.50 WM TOP 66.00 – 500mm CLEARANCE (MIN. 500mm REQ'D)
B+21.4	–	68.94	66.03	2.91	CROSSING 150 SAN INV 66.62 WM TOP 66.03 – 590mm CLEARANCE (MIN. 500mm REQ'D)
B+23.0	–	68.90	66.04	2.86	CROSSING 300 ST INV 66.79 WM TOP 66.04 – 750mm CLEARANCE (MIN. 500mm REQ'D)
B+37.2	–	69.32	66.19	3.13	ENTRY INTO BUILDING



H (DEPTH OF COVER)	INSULATION THICKNESS	W (WIDTH OF INSULATION)
1800 TO 2400mm	50mm	1200mm
1500 TO 1800mm	75mm	1800mm
1200 TO 1500mm	100mm	2400mm

INSULATE WATERMAIN AS INDICATED AND WHERE DEPTH OF COVER IS LESS THAN 2400mm. PROVIDE A MINIMUM 1200mm COVER. CENTER INSULATION OVER PIPE.
JOINTS BETWEEN SHEETS OF INSULATION SHALL BE STAGGERED.

INSULATION OF WATERMAINS & WATER SERVICE CONNECTIONS IN SHALLOW TRENCHES
N.T.S

A 525 ST INV 66.73
200 SAN TOP 66.58

B 200 ST INV 67.33
200 SAN TOP 66.62

C 525 ST INV 66.72
150 SAN TOP 66.44

D 300 ST INV 66.79
150 SAN TOP 66.52

REFER TO NOTES, DETAILS & SCHEDULES ON DRAWINGS C-11 & C-12

LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
MH	SANITARY MANHOLE
FH	FIRE HYDRANT
FDC	FIRE DEPARTMENT CONNECTION
CS	CURB STOP & STANDPOST
VB	VALVE & VALVE BOX
M	WATER METER
R	REMOTE WATER METER
SAN	SANITARY SEWER
ST	STORM SEWER
WS/WM	WATER SERVICE/WATERMAIN
SPL	SPRINGLINE OF PIPE
INV	INVERT OF PIPE
	CENTERLINE OF SWALE
	150mm BARRIER CURB
D.C	DEPRESSED CURB
	ROAD CUT REINSTATEMENT

KEY PLAN

No.	DATE	REVISION
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D. B. GRAY ENGINEERING INC.
Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

Project
PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title
SITE SERVICING PLAN
(SANITARY AND WATER)

Engineer's Seal
LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
DEC 16-25
PROVINCE OF ONTARIO
NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:200
V. Scale	
Date	NOV 13-25
Job No.	24022

Drawing No.
C-4
of 13

REFER TO NOTES, DETAILS & SCHEDULES ON DRAWINGS C–11 & C–12

5m
0m 1:200 25m

N

Edge of Asphalt

Metal Sided Garage

C-Can C-Can C-Can C-Can C-Can C-Can

Frame Shed

C-Can C-Can C-Can

PART 5 PLAN 5R–2484

PART 1 PLAN 5R–2484

PART 3 PLAN 5R–2484

PART 4 PLAN BY-LAW 2006–308

PART 6 PLAN 5R–2484

SUBJECT TO EASEMENT PER INST No. CT229562

EXISTING 2 STOREY BUILDING 1547 LAGAN WAY

FFL = ±68.58

Frame Sided Building (Siding Noted)

Finished Floor Elevation=68.57

Flat Roof Elevation=74.5

Finished Floor Elevation=68.59

Flat Roof Elevation=73.4

Oil Tank on Concrete Pad

Asphalt

5 parking Spaces

TpFdn Elevation=68.32

Flat Roof Elevation=74.2

Door Sill Elevation =68.08

Door Sill Elevation=68.36

Gas Tanks

Gate

40 Spaces

REMOVE EXISTING MH TOP 68.13

REMOVE EXISTING MH TOP 68.28

REMOVE EXISTING CB TOP 68.20

REMOVE EXISTING CB TOP 68.17

REMOVE EXISTING CB TOP 68.14

ABANDON ALL EXISTING SEWERS IN ACCORDANCE WITH CITY OF OTTAWA DRAWING No. S11.4

CAP OPEN ENDS OF ANY ABANDONED SEWER. MAKE CAP WATERTIGHT

DECOMMISSION EXISTING WATER SERVICE (APPROXIMATE LOCATION)

ABANDON EXISTING SEWER IN ACCORDANCE WITH CITY OF OTTAWA DRAWING No. S11.4

ABANDON EXISTING SEWER IN ACCORDANCE WITH CITY OF OTTAWA DRAWING No. S11.4

REMOVE EXISTING CURB STOP (APPROXIMATE LOCATION)

BLANK WATER SERVICE AT CITY WATERMAIN BY CITY FORCES

EXISTING 200 PVC ST

EXISTING 250 PVC ST

EXISTING 200 PVC WM

EXISTING 250 PVC SAN @ ±0.63%

EXISTING 750 CONC ST @ ±0.41%

EXISTING 250 PVC SAN @ ±0.65%

EXISTING 250 PVC SAN @ ±0.38%

EXISTING 600 CONC ST @ ±0.36%

APPROXIMATE EXTENT OF ROAD CUT REINSTATEMENT IN ACCORDANCE WITH CITY OF OTTAWA DRAWING No. R10

EXISTING MH TOP 68.45 INV ±65.16(N) INV ±65.17(S)

EXISTING CB TOP 68.32

EXISTING CB TOP 68.69

EXISTING MH TOP 68.95 INV ±65.62(N) INV ±65.77(S)

EXISTING MH TOP 68.80 INV ±66.30(N) INV ±66.34(S)

Site Benchmark
Fire Hydrant
Top of Spindle
Elevation=69.42

LAGAN WAY (FORMERLY TRIOLE STREET)

P.I.N. 04263 – 0051

INST. OC639691

LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
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FH	FIRE HYDRANT
FDC	FIRE DEPARTMENT CONNECTION
CS	CURB STOP & STANDPOST
VB	VALVE & VALVE BOX
M	WATER METER
R	REMOTE WATER METER
SAN	SANITARY SEWER
ST	STORM SEWER
WS/WM	WATER SERVICE/WATERMAIN
SPL	SPRINGLINE OF PIPE
INV	INVERT OF PIPE
	CENTERLINE OF SWALE
	150mm BARRIER CURB
D.C	DEPRESSED CURB
	ROAD CUT REINSTATEMENT

KEY PLAN

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700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

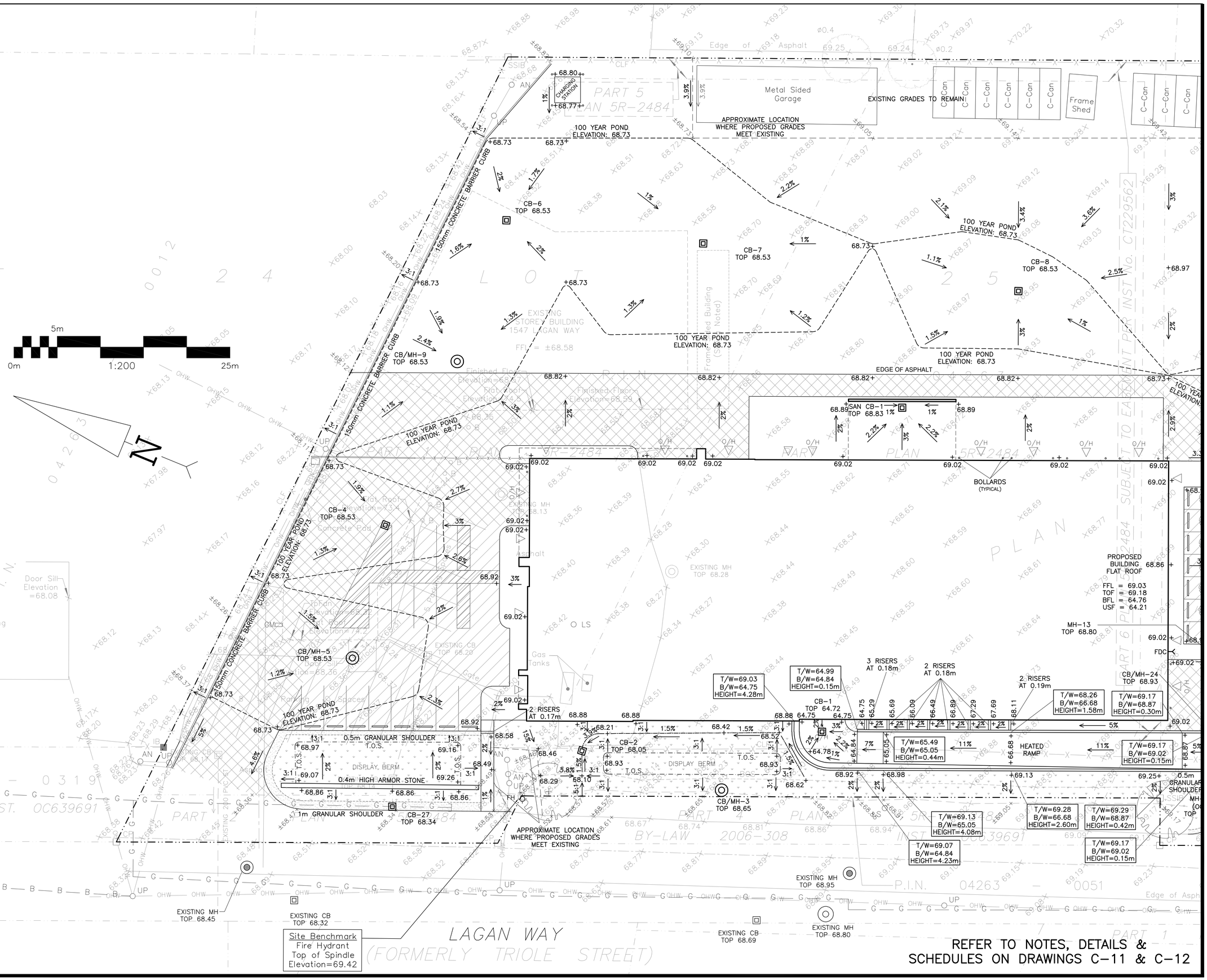
Project
PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title
EXISTING CONDITIONS, REMOVALS & DECOMMISSIONING PLAN
(NORTH AREA)

Engineer's Seal
LICENCED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
DEC 16–25
PROVINCE OF ONTARIO
NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:200
V. Scale	
Date	NOV 13–25
Job No.	24022

Drawing No.
C–5
of 13



LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
MH	SANITARY MANHOLE
FH	FIRE HYDRANT
FDC	FIRE DEPARTMENT CONNECTION
x99.99	EXISTING GRADE ELEVATION
+99.99	PROPOSED GRADE ELEVATION
2%	EXISTING SLOPE OF GRADE
2%	PROPOSED SLOPE OF GRADE
	EMERGENCY OVERLAND FLOW
	CENTERLINE OF SWALE
	150mm BARRIER CURB
D.C	DEPRESSED CURB
	SILT FENCE BARRIER
	GRANULAR PAVEMENT
	LIGHT-DUTY PAVEMENT
	HEAVY-DUTY PAVEMENT
	LANDSCAPE

KEY PLAN

No.	DATE	REVISION
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D. B. GRAY ENGINEERING INC.

Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains

700 Long Point Circle 613-425-8044

Ottawa, Ontario d.gray@dbgrayengineering.com

Project

PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title

GRADING PLAN
(NORTH AREA)

Engineer's Seal

LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
DEC 16-25
PROVINCE OF ONTARIO

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Drawn	D.B.G
H. Scale	1:200
V. Scale	
Date	NOV 13-25
Job No.	24022

Drawing No.

C-6
of 13

EXISTING GRADES TO REMAIN

APPROXIMATE LOCATION WHERE PROPOSED GRADES MEET EXISTING

APPROXIMATE LOCATION WHERE PROPOSED GRADES MEET EXISTING

FUTURE CHAIN LINK FENCE

EDGE OF ASPHALT

100 YEAR POND ELEVATION: 69.02

5 YEAR POND ELEVATION: 68.91

CB/MH-11 TOP 68.60

CB-16 TOP 68.90

CB/MH-17 TOP 68.90

CB/MH-15 TOP 68.90

CB/MH-18 TOP 68.82

CB/MH-19 TOP 68.82

CB/MH-23 TOP 68.93

CB-10 TOP 68.62

CB-14 TOP 68.88

CB/MH-24 TOP 68.93

MH-12 TOP 68.99

MH-SA.1 TOP 68.90

CB/MH-22 TOP 68.87

CB-20 TOP 68.87

MH-SA.2 TOP 69.15

MH-25 (OGS) TOP 69.20

CB-21 TOP 68.31

MH-26 TOP ±69.24

PROPOSED BUILDING FLAT ROOF 68.86

FFL = 69.03
TOF = 69.18
BFL = 64.76
USF = 64.21

FUTURE BUILDING FLAT ROOF

FFL = 69.33
TOF = 69.48
USF = 67.63

T/W=70.23
B/W=±70.08
HEIGHT=±0.15m

T/W=±69.91
B/W=69.32
HEIGHT=±0.59m

T/W=±70.00
B/W=68.95
HEIGHT=±1.05m

T/W=±70.02
B/W=69.02
HEIGHT=±1.00m

T/W=±69.98
B/W=68.95
HEIGHT=±1.03m

T/W=±69.82
B/W=69.14
HEIGHT=±0.68m

T/W=±69.82
B/W=69.27
HEIGHT=±0.55m

T/W=±69.87
B/W=69.87
HEIGHT=±0.00m

T/W=69.17
B/W=68.87
HEIGHT=0.30m

T/W=69.17
B/W=69.02
HEIGHT=0.15m

T/W=69.29
B/W=68.87
HEIGHT=0.42m

T/W=69.17
B/W=69.02
HEIGHT=0.15m

0.5m GRANULAR SHOULDER

150mm CONCRETE BARRIER CURB

150mm CONCRETE BARRIER CURB

EXISTING CB TOP 69.80

EXISTING CB TOP 69.86

EXISTING MH TOP 69.36

EXISTING MH TOP 69.34

EXISTING MH TOP 69.39

EXISTING CB TOP 69.34

EXISTING MH TOP 69.36

EXISTING MH TOP 69.20

EXISTING MH TOP 70.06

EXISTING MH TOP 70.07

TpFdn Elevation=71.29

No. 1599 'Apex Motor Express' 2 Storey Metal Sided Building / (Siding Noted)

Concrete Ramp, Porch & Steps

Roof Peak Elevation=78.1

Edge of Asphalt

LAGAN WAY

REFER TO NOTES, DETAILS & SCHEDULES ON DRAWINGS C-11 & C-12

LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
MH	SANITARY MANHOLE
FH	FIRE HYDRANT
FDC	FIRE DEPARTMENT CONNECTION
x99.99	EXISTING GRADE ELEVATION
+99.99	PROPOSED GRADE ELEVATION
2%	EXISTING SLOPE OF GRADE
2%	PROPOSED SLOPE OF GRADE
	EMERGENCY OVERLAND FLOW
	CENTERLINE OF SWALE
	150mm BARRIER CURB
D.C	DEPRESSED CURB
	SILT FENCE BARRIER
	GRANULAR PAVEMENT
	LIGHT-DUTY PAVEMENT
	HEAVY-DUTY PAVEMENT
	LANDSCAPE

5m
0m 1:200 25m

N

KEY PLAN

No.	DATE	REVISION
2	DEC 16-25	ISSUED FOR APPROVAL
1	NOV 13-25	ISSUED FOR COORDINATION

D. B. GRAY ENGINEERING INC.
Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

Project

PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title

GRADING PLAN
(SOUTH AREA)

Engineer's Seal

LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
DEC 16-25
PROVINCE OF ONTARIO

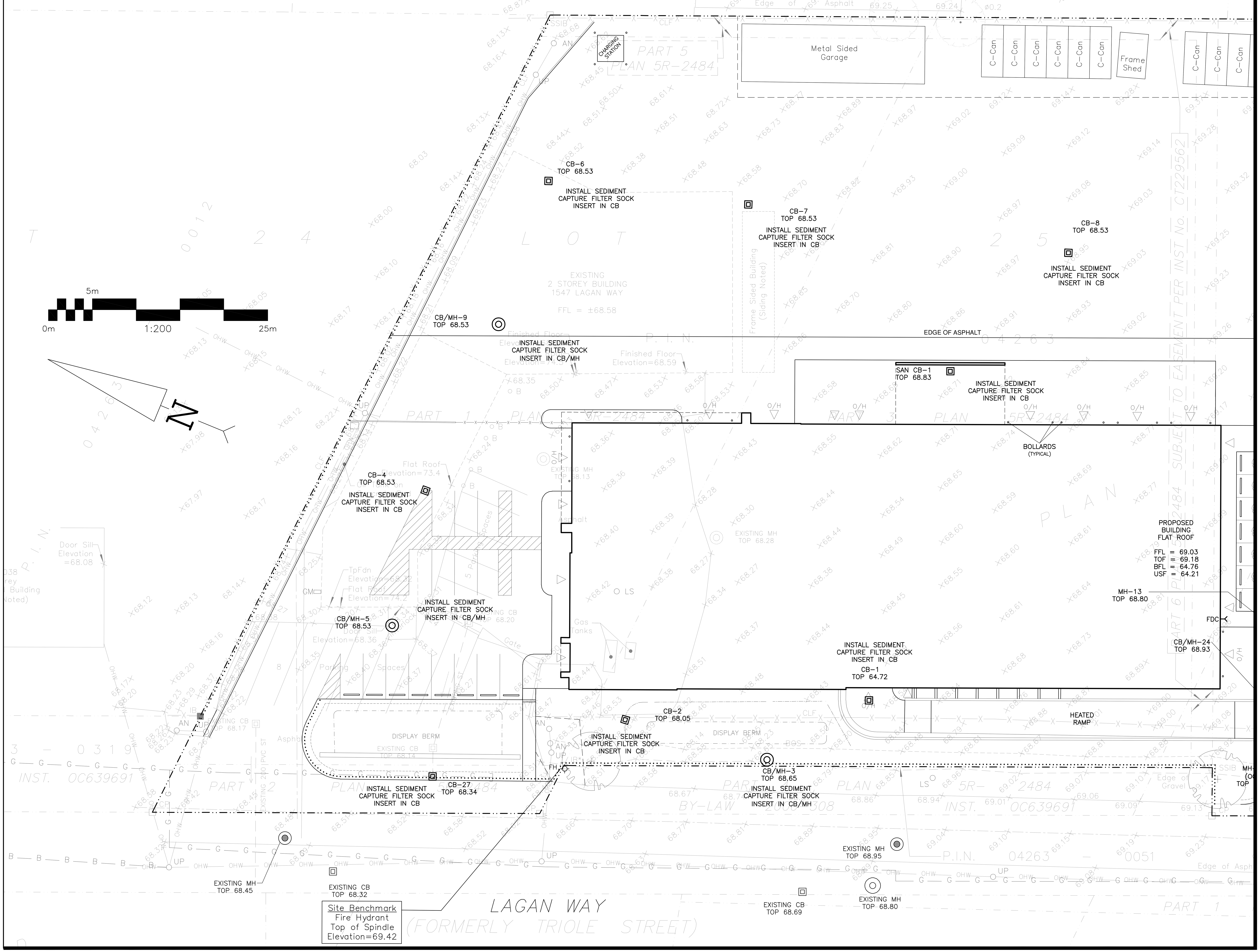
NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:200
V. Scale	
Date	NOV 13-25
Job No.	24022

Drawing No.

C-7
of 13

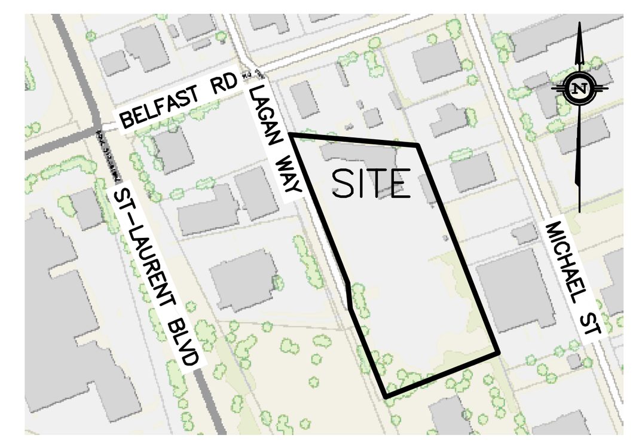
REFER TO NOTES, DETAILS & SCHEDULES ON DRAWINGS C–11 & C–12



LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
MH	SANITARY MANHOLE
FH	FIRE HYDRANT
FDC	FIRE DEPARTMENT CONNECTION
x99.99	EXISTING GRADE ELEVATION
+99.99	PROPOSED GRADE ELEVATION
2%	EXISTING SLOPE OF GRADE
2%	PROPOSED SLOPE OF GRADE
	EMERGENCY OVERLAND FLOW
	CENTERLINE OF SWALE
	150mm BARRIER CURB
D.C	DEPRESSED CURB
	SILT FENCE BARRIER
	GRANULAR PAVEMENT
	LIGHT–DUTY PAVEMENT
	HEAVY–DUTY PAVEMENT
	LANDSCAPE

KEY PLAN



No.	DATE	REVISION
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D. B. GRAY ENGINEERING INC.
Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

Project
PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

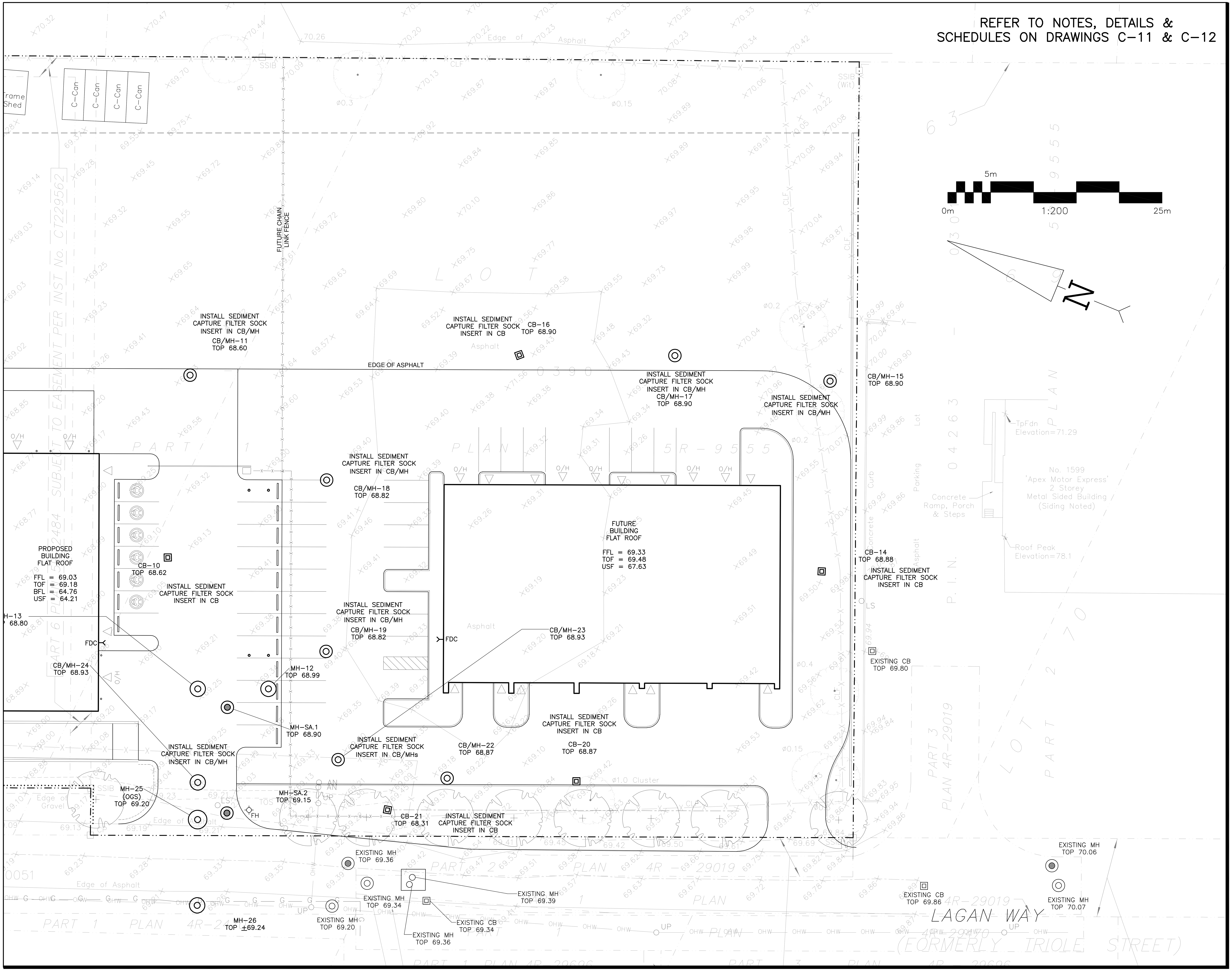
Drawing Title
EROSION & SEDIMENT CONTROL PLAN
(NORTH AREA)

Engineer's Seal
LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
DEC 16–25
PROVINCE OF ONTARIO
NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:200
V. Scale	
Date	NOV 13–25
Job No.	24022

Drawing No.
C–8
of 13

REFER TO NOTES, DETAILS & SCHEDULES ON DRAWINGS C-11 & C-12

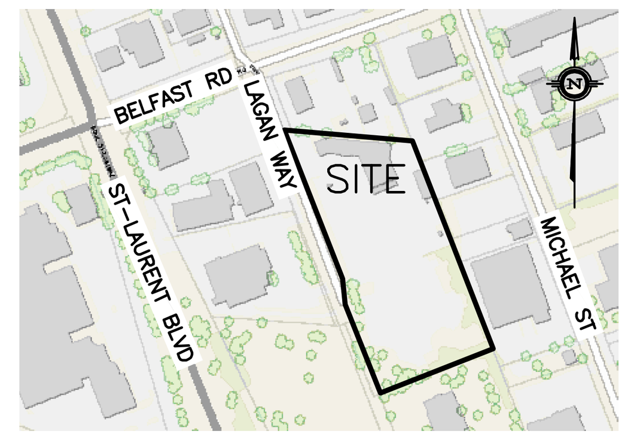


5m
0m
1:200
25m
N
FUTURE CHAIN LINK FENCE
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB/MH
CB/MH-11 TOP 68.60
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB
CB-16 TOP 68.90
EDGE OF ASPHALT
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB/MH
CB/MH-17 TOP 68.90
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB/MH
CB/MH-15 TOP 68.90
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB/MH
CB/MH-18 TOP 68.82
FUTURE BUILDING FLAT ROOF
FFL = 69.33
TOF = 69.48
USF = 67.63
PROPOSED BUILDING FLAT ROOF
FFL = 69.03
TOF = 69.18
BFL = 64.76
USF = 64.21
CB-10 TOP 68.62
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB/MH
CB/MH-19 TOP 68.82
CB/MH-23 TOP 68.93
CB-14 TOP 68.88
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB
MH-13 TOP 68.80
FDC
CB/MH-24 TOP 68.93
MH-12 TOP 68.99
MH-SA.1 TOP 68.90
EXISTING CB TOP 69.80
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB
CB-20 TOP 68.87
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB/MHs
CB/MH-22 TOP 68.87
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB/MH
MH-25 (OGS) TOP 69.20
MH-SA.2 TOP 69.15
CB-21 TOP 68.31
INSTALL SEDIMENT CAPTURE FILTER SOCK INSERT IN CB
EXISTING MH TOP 69.36
EXISTING MH TOP 69.34
EXISTING MH TOP 69.39
EXISTING CB TOP 69.34
EXISTING MH TOP 69.36
EXISTING MH TOP 69.20
MH-26 TOP ±69.24
EXISTING CB TOP 69.86
EXISTING MH TOP 70.06
EXISTING MH TOP 70.07
LAGAN WAY
(FORMERLY TRIOLE STREET)
No. 1599 'Apex Motor Express' 2 Storey Metal Sided Building (Siding Noted)
TpFdn Elevation=71.29
Roof Peak Elevation=78.1
Concrete Ramp, Porch & Steps

LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
MH	SANITARY MANHOLE
FH	FIRE HYDRANT
FDC	FIRE DEPARTMENT CONNECTION
+99.99	EXISTING GRADE ELEVATION
+99.99	PROPOSED GRADE ELEVATION
2%	EXISTING SLOPE OF GRADE
2%	PROPOSED SLOPE OF GRADE
	EMERGENCY OVERLAND FLOW
	CENTERLINE OF SWALE
	150mm BARRIER CURB
D.C	DEPRESSED CURB
	SILT FENCE BARRIER
	GRANULAR PAVEMENT
	LIGHT-DUTY PAVEMENT
	HEAVY-DUTY PAVEMENT
	LANDSCAPE

KEY PLAN



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700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

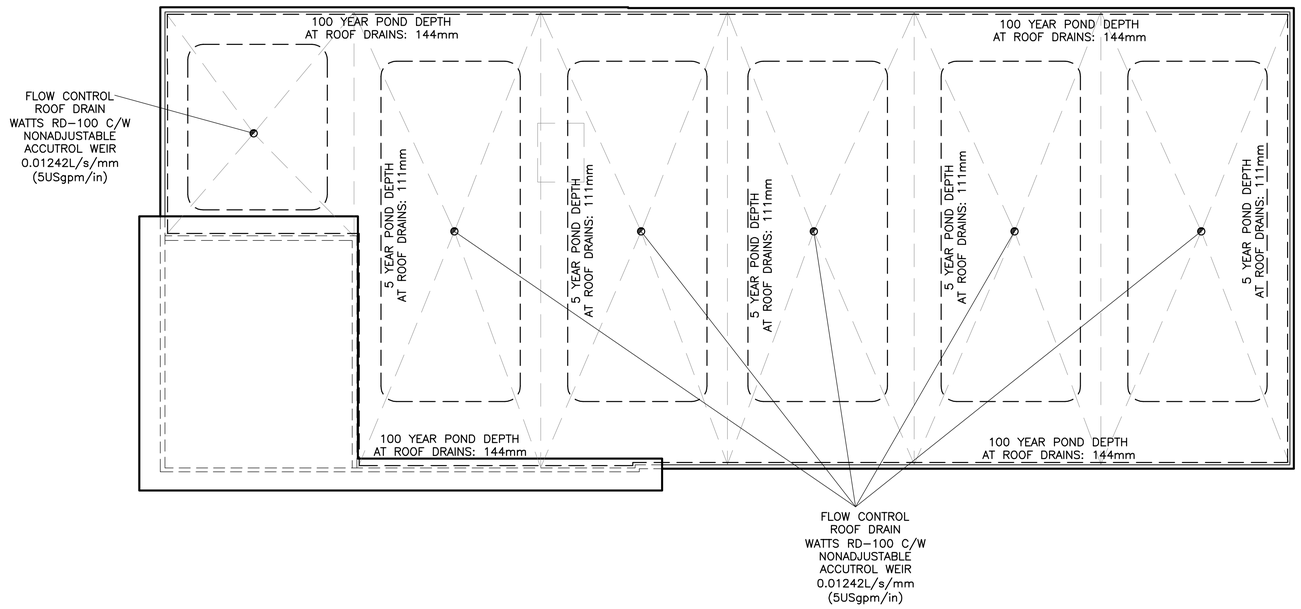
Project
PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

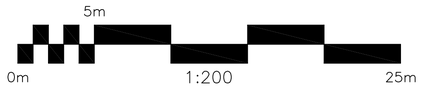
Drawing Title
EROSION & SEDIMENT CONTROL PLAN
(SOUTH AREA)

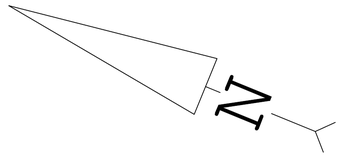
Engineer's Seal
LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
DEC 16-25
PROVINCE OF ONTARIO
NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:200
V. Scale	
Date	NOV 13-25
Job No.	24022

Drawing No.
C-9
of 13



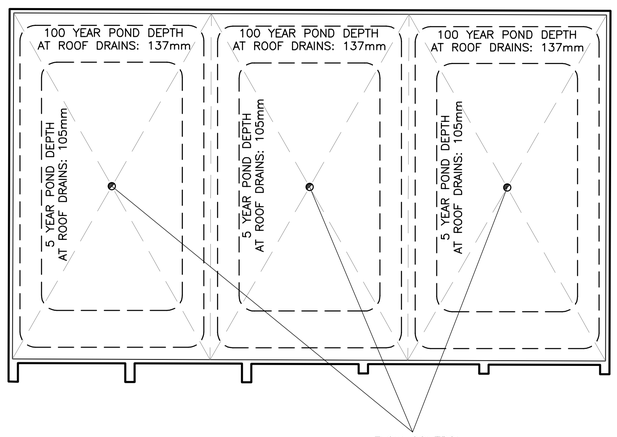


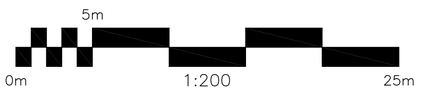


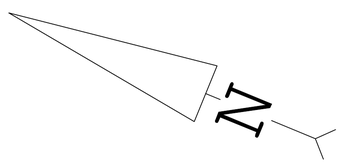
INSTALL A MINIMUM OF 12 SCUPPERS EACH A MINIMUM 550mm WIDE. BOTTOM OF SCUPPERS SHALL BE 150mm ABOVE ROOF DRAINS. REFER TO ARCHITECTURAL FOR EXACT LOCATIONS AND DETAILS. ROOF SHALL BE DESIGNED TO CARRY THE LOAD OF WATER HAVING A 50mm DEPTH AT SCUPPERS (i.e. 200mm DEPTH AT ROOF DRAINS). REFER TO STRUCTURAL.

RAINWATER LEADERS (RWL) INSIDE BUILDING SHALL BE CONSTRUCTED TO WITHSTAND THE PRESSURE FROM A WATER COLUMN THE HEIGHT OF THE RWL. CONDUCT A PRESSURE TEST ON THE SYSTEM AS PER THE MECHANICAL ENGINEER'S INSTRUCTIONS (SEE MECHANICAL).

PROPOSED BUILDING ROOF DRAINAGE PLAN







INSTALL A MINIMUM OF 6 SCUPPERS EACH A MINIMUM 450mm WIDE. BOTTOM OF SCUPPERS SHALL BE 150mm ABOVE ROOF DRAINS. REFER TO ARCHITECTURAL FOR EXACT LOCATIONS AND DETAILS. ROOF SHALL BE DESIGNED TO CARRY THE LOAD OF WATER HAVING A 50mm DEPTH AT SCUPPERS (i.e. 200mm DEPTH AT ROOF DRAINS). REFER TO STRUCTURAL.

RAINWATER LEADERS (RWL) INSIDE BUILDING SHALL BE CONSTRUCTED TO WITHSTAND THE PRESSURE FROM A WATER COLUMN THE HEIGHT OF THE RWL. CONDUCT A PRESSURE TEST ON THE SYSTEM AS PER THE MECHANICAL ENGINEER'S INSTRUCTIONS (SEE MECHANICAL).

FUTURE BUILDING ROOF DRAINAGE PLAN

REFER TO NOTES, DETAILS & SCHEDULES ON DRAWINGS C-11 & C-12

KEY PLAN

No.	DATE	REVISION
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1	NOV 13-25	ISSUED FOR COORDINATION

D. B. GRAY ENGINEERING INC.
Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

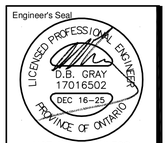
Project

PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title

ROOF PLANS

Engineer's Seal



NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:200
V. Scale	
Date	NOV 13-25
Job No.	24022

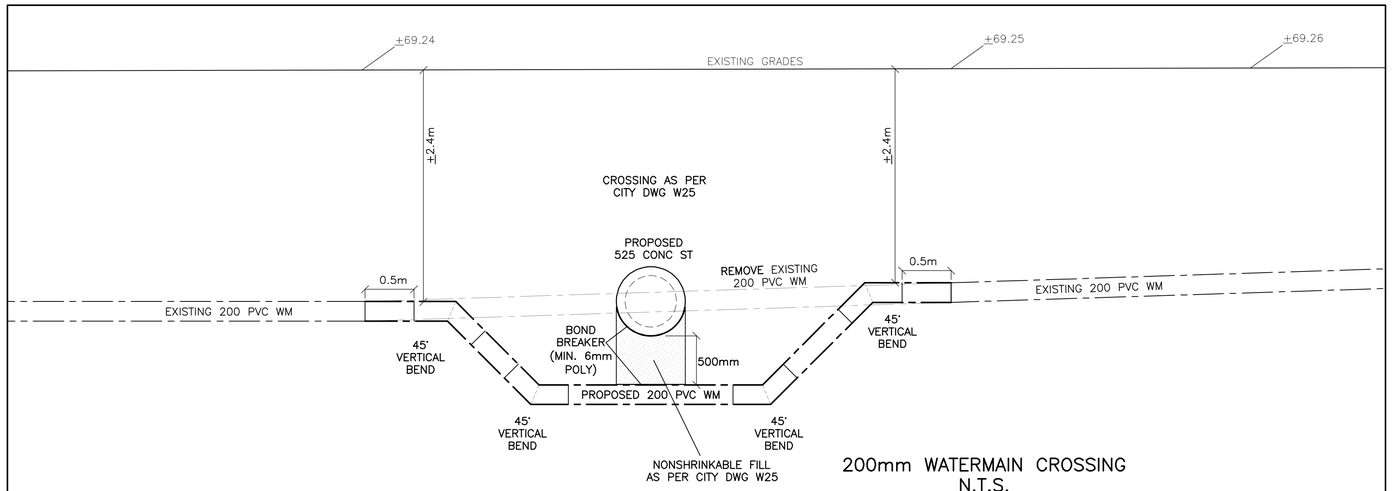
Drawing No.

C-10
of 13

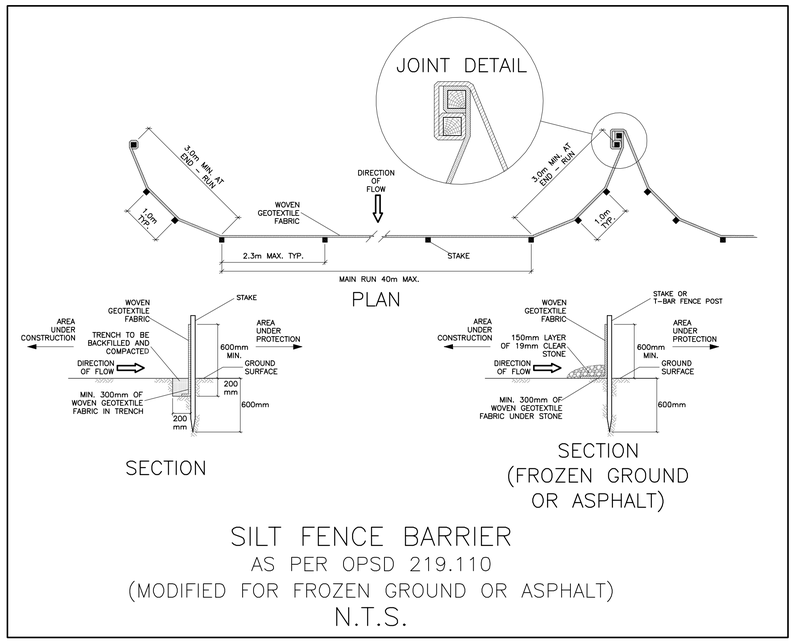
CATCH BASIN & MANHOLE SCHEDULE

(SUBMIT SHOP DRAWINGS OF ALL CATCH BASINS & MANHOLES TO ENGINEER FOR APPROVAL)

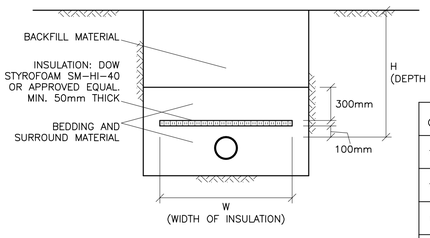
REF	TOP	SIZE	TYPE	INVERT AT INLET	INVERT AT OUTLET	NOTES
STORM SEWER						
CB–1	64.72	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	62.67	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–2	68.05	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	67.13	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–3	68.65	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	67.06(N)	67.06(S)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–4	68.53	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	67.04	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–5	68.53	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	–	67.07	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–6	68.53	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	67.02	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–7	68.53	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	66.96	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–8	68.53	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	66.88	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–9	68.53	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	66.99(W)	66.99(S)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–10	68.62	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	66.77	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–11	68.60	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	66.80(N)	66.80(W)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
MH–12	68.99	1500mm	PRECAST CONCRETE MANHOLE	66.80(E)	66.80(N)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S24.1 OR OPSD 401.010
MH–13	68.80	1500mm	PRECAST CONCRETE MANHOLE	66.73(E) 66.80(S)	66.73(W)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S24.1 OR OPSD 401.010 INSTALL ICD IN OUTLET PIPE
CB–14	68.88	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	67.21	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–15	68.90	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	67.11(W)	67.11(N)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–16	68.90	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	67.15	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–17	68.90	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	67.03(S)	67.03(NW)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB/MH–18	68.82	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	66.88(SE)	66.88(W)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB/MH–19	68.82	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	66.81(E)	66.81(W)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–20	68.87	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	66.89	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–21	68.31	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	66.82	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–22	68.87	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	66.82(S)	66.82(N)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB/MH–23	68.93	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	66.79(E) 66.79(S)	66.79(N)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010 INSTALL ICD IN OUTLET PIPE
CB/MH–24	68.93	1500mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	66.89(N) 66.67(E) 66.72(S)	66.66(W)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
MH–25	69.20	CDS PMSU3020–6	PRECAST CONCRETE MANHOLE	66.64(E)	66.63(W)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS EXCEPT WITH A DEEP SUMP AS REQUIRED BY CDS
MH–26	±69.24	1500mm	PRECAST CONCRETE MANHOLE	±66.52(S) 66.60(E)	±66.52(N)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S24.1 OR OPSD 401.010
CB–27	68.34	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	UNKNOWN	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
SANITARY SEWER						
MH–SA.1	68.90	1200mm	PRECAST CONCRETE MANHOLE	66.40(N) 66.40(S)	66.34(W)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S24 OR OPSD 401.010
MH–SA.2	69.15	1200mm	PRECAST CONCRETE MANHOLE	66.25(E)	66.13(W)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S24 OR OPSD 401.010



200mm WATERMAIN CROSSING
N.T.S.



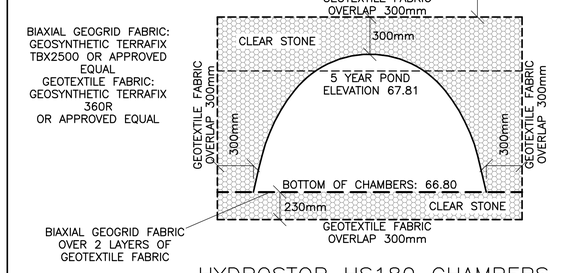
SILT FENCE BARRIER
AS PER OPSD 219.110
(MODIFIED FOR FROZEN GROUND OR ASPHALT)
N.T.S.



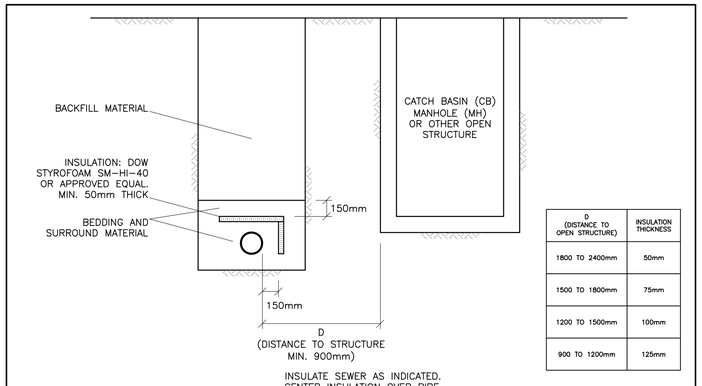
H (DEPTH OF COVER)	INSULATION THICKNESS	W (WIDTH OF INSULATION)
1400 TO 2000mm	50mm	1200mm + DIAMETER OF PIPE
1100 TO 1400mm	75mm	1800mm + DIAMETER OF PIPE
800 TO 1100mm	100mm	2400mm + DIAMETER OF PIPE
LESS THAN 800mm	125mm	3000mm + DIAMETER OF PIPE

INSULATE SEWER AS INDICATED AND WHERE DEPTH OF COVER IS LESS THAN 2000mm.
CENTER INSULATION OVER PIPE.
JOINTS BETWEEN SHEETS OF INSULATION SHALL BE STAGGERED.

INSULATION OF SEWERS
IN SHALLOW TRENCHES
AS PER CITY OF OTTAWA DRAWING No. S35
N.T.S



HYDROSTOR HS180 CHAMBERS
N.T.S



D (DISTANCE TO OPEN STRUCTURE)	INSULATION THICKNESS
1800 TO 2400mm	50mm
1500 TO 1800mm	75mm
1200 TO 1500mm	100mm
900 TO 1200mm	125mm

INSULATE SEWER AS INDICATED.
CENTER INSULATION OVER PIPE.
JOINTS BETWEEN SHEETS OF INSULATION SHALL BE STAGGERED.

INSULATION OF WATERMAINS &
WATER SERVICE CONNECTIONS
AT OPEN STRUCTURES
AS PER CITY OF OTTAWA DRAWING No. W23
N.T.S

KEY PLAN

No.	DATE	REVISION
2	DEC 16–25	ISSUED FOR APPROVAL
1	NOV 13–25	ISSUED FOR COORDINATION

D. B. GRAY ENGINEERING INC.
Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

Project
PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title
DETAILS & SCHEDULES

Engineer's Seal
LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
DEC 16–25
PROVINCE OF ONTARIO
NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	
V. Scale	
Date	NOV 13–25
Job No.	24022

Drawing No.
C–11
of 13

1. GENERAL

1.1 USE BAR SCALE TO CONFIRM ACTUAL PLOT SCALE. EXISTING AND NEW ELEVATIONS AND INVERTS SHOWN ARE GEODETIC AND ARE IN METERS. ALL PIPE DIMENSIONS ARE NOMINAL AND IN MILLIMETERS UNLESS OTHERWISE NOTED.
1.2 UNLESS OTHERWISE STATED "ENGINEER" REFERS TO D. B. GRAY ENGINEERING INC.
1.3 SITE BOUNDARIES AND EXISTING GRADES AND OTHER FEATURES DERIVED FROM TOPOGRAPHIC SURVEY PREPARED BY FARLEY, SMITH & DENIS SURVEYING LTD. JOB No. 149–24. IT IS THE RESPONSIBILITY OF THE USER OF THE SURVEY PLAN AND THESE DRAWINGS TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREE WITH THE INFORMATION SHOWN ON SURVEY PLAN AND THESE DRAWINGS.
1.4 REFER TO ARCHITECTURAL AND LANDSCAPE SITE PLANS FOR EXACT LOCATIONS OF BUILDINGS, PAVED AREAS, SIDEWALKS, PLANTERS ETC. LAYOUT SHALL BE COMPLETED BY THE CONTRACTOR AND SHALL BE REVIEWED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION. AT ALL TIMES THE CONTRACTOR IS RESPONSIBLE FOR THE ACCURACY OF THE LAYOUT INCLUDING LINES AND GRADES.
1.5 REFER TO TREE CONSERVATION REPORT FOR TREE PROTECTION REQUIREMENTS.
1.6 REFERENCE THE LATEST REVISION AND ALL ADDENDUMS OF THE GEOTECHNICAL INVESTIGATION BY PATERSON GROUP INC. FILE: PG7133–1. CONSTRUCTION SHALL CONFORM TO THE GEOTECHNICAL INVESTIGATION TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER INCLUDING: SUB–GRADE PREPARATION AND CONSTRUCTION OF THE PAVEMENT STRUCTURE; EXCAVATION AND BACKFILLING; SERVICE TRENCH EXCAVATION AND PIPE BEDDING AND BACKFILL; AND THE COMPACTION OF MATERIALS.
1.7 DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SITE SERVICING STUDY & STORMWATER MANAGEMENT REPORT No. 20069 PREPARED BY D. B. GRAY ENGINEERING INC.
1.8 CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND CURRENT CITY OF OTTAWA STANDARD SPECIFICATIONS AND DRAWINGS.
1.9 ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND DRAWINGS SHALL APPLY WHERE NO CITY OF OTTAWA STANDARD SPECIFICATIONS OR DRAWINGS ARE AVAILABLE.
1.10 REINSTATE AREAS DISTURBED BY CONSTRUCTION TO PRE–CONSTRUCTION CONDITIONS.
1.11 REINSTATE CITY PROPERTIES TO CITY STANDARDS AND TO CITY OF OTTAWA'S SATISFACTION.

2. EROSION AND SEDIMENT CONTROL PLAN

2.1 THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATER COURSE DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, USING SEDIMENT CAPTURE FILTER SOCK INSERTS IN CATCH BASINS AND MANHOLES AND INSTALLING SILT FENCES AND OTHER EFFECTIVE SEDIMENT TRAPS. LOG DAILY EROSION AND SEDIMENT CONTROL MEASURES. DO NOT REMOVE UNTIL CONSTRUCTION IS COMPLETE.
2.2 PRIOR TO COMMENCEMENT OF CONSTRUCTION AT ALL MUNICIPAL CATCH BASINS ADJACENT TO THE SITE AND AT ANY MANHOLES OR CATCH BASINS THAT WILL RECEIVE DISCHARGE FROM DE–WATERING OPERATIONS AND ALL NEW CATCH BASINS AS THEY ARE INSTALLED: INSTALL SEDIMENT CAPTURE FILTER SOCK INSERTS (TERRAFIX GEOSYNTHETICS INC SILTSACK OR APPROVED EQUAL). INSPECT AT THE END OF EACH DAY AND AFTER EACH RAINFALL. REMOVE SEDIMENT AS RECOMMENDED BY THE MANUFACTURER. IMMEDIATELY REPAIR OR REPLACE ANY DAMAGED FILTER SOCK INSERTS. DO NOT REMOVE UNTIL CONSTRUCTION IS COMPLETE.
2.3 INSTALL A SILT FENCE BARRIER AROUND STOCKPILED SEDIMENT OR SOIL. PRIOR TO COMMENCEMENT OF CONSTRUCTION INSTALL A SILT FENCE BARRIER AS SHOWN ON PLANS. INSPECT ALL SILT FENCES AT THE END OF EACH DAY AND AFTER EACH RAINFALL. REMOVE SEDIMENT DEPOSITS WHEN THE LEVEL OF DEPOSITS REACHES ONE THIRD THE HEIGHT OF THE FENCE. IMMEDIATELY REPAIR OR REPLACE ANY DAMAGED SECTIONS OF FENCE. DO NOT REMOVE ANY SILT FENCES IN ANY PHASE UNTIL CONSTRUCTION IS COMPLETE.
2.4 ANY MATERIAL DEPOSITED ON A PUBLIC ROAD SHALL BE REMOVED BY SWEEPING AND SHOVELING OR VACUUMING AND DISPOSING SEDIMENT IN A CONTROLLED AREA. DO NOT SWEEP OR HOSE MATERIAL INTO ANY STORMWATER CONVEYANCE SYSTEM.
2.5 CONSTRUCTION IS CONSIDERED COMPLETE WHEN THE FOLLOWING CONDITIONS HAVE BEEN MET:
  A. ALL STRUCTURES HAVE BEEN BUILT.
  B. ALL HARD SURFACES HAVE BEEN CONSTRUCTED.
  C. ALL PROPOSED GRASSED AREAS ARE EITHER SODDED OR HAVE A FULL COVERAGE OF WELL ESTABLISHED TURF AND HAVE HAD A MINIMUM OF ONE FULL GROWING SEASON (MAY 15TH TO SEPTEMBER 15TH).
  D. THERE ARE NO AREAS OF EXPOSED EARTH.
  E. ALL STOCKPILED MATERIALS HAVE BEEN REMOVED.
2.6 REMOVE EROSION AND SEDIMENT CONTROL MEASURES WHEN CONSTRUCTION IS COMPLETE.

3. GRADING & DRAINAGE

3.1 NEW GRADES TO MATCH EXISTING AT PROPERTY LINE. NO EXCESS DRAINAGE WILL BE DIRECTED TOWARDS THE ADJACENT PROPERTIES DURING OR AFTER CONSTRUCTION. THERE WILL BE NO ALTERATION TO EXISTING GRADE AND DRAINAGE PATTERNS ON PROPERTY LINE.
3.2 ALL AREAS SHALL BE GRADED TO ENSURE ADEQUATE DRAINAGE AWAY FROM BUILDINGS TO CATCH BASINS, SWALES, DITCHES AND OTHER APPROVED DISPOSAL AREAS. GRADING SHALL BE GRADUAL BETWEEN FINISHED SPOT ELEVATIONS SHOWN ON DRAWINGS TO PREVENT PONDING (OTHER THAN PONDING REQUIRED FOR STORMWATER MANAGEMENT).
3.3 WHETHER RESULT OF POOR WORKMANSHIP OR DAMAGE: DEFECTIVE GRADING SHALL BE CORRECTED.
3.4 CONCRETE CURBS SHALL BE CONSTRUCTED TO CITY OF OTTAWA DRAWING NO. SC1.1. CONCRETE SIDEWALK SHALL BE CONSTRUCTED TO CITY OF OTTAWA DRAWING NO. SC4. CONCRETE CURBS WITH CONCRETE SIDEWALK SHALL BE CONSTRUCTED TO CITY OF OTTAWA DRAWING NO. SC1.4. MONOLITHIC CONCRETE CURB AND SIDEWALK SHALL BE CONSTRUCTED TO CITY OF OTTAWA DRAWING NO. SC2. DEPRESSED CONCRETE CURBS FOR PEDESTRIAN TRAFFIC SHALL BE 0 mm. CONCRETE CURBS SHALL BE TO CITY OTTAWA SPECIFICATION SECTION F–3531. CONCRETE SIDEWALKS SHALL BE TO CITY OF OTTAWA SPECIFICATION SECTION F–3511. CONCRETE SHALL BE CSA 32 MPa, CLASS C–2, THE AIR ENTRAINMENT SHALL BE 5% TO 8% PRIOR TO PLACEMENT AND THE SLUMP SHALL BE LESS THAN 40 mm ± 20 mm FOR EXTRUDED CONCRETE CURBS AND LESS THAN 90 mm FOR PLACED CONCRETE CURBS AND SIDEWALK.
3.5 WHETHER RESULT OF POOR WORKMANSHIP, USE OF DEFECTIVE PRODUCTS OR DAMAGE: DEFECTIVE PORTIONS OF CURBS, SIDEWALK AND ASPHALT SHALL BE CORRECTED OR REMOVED AND REPLACED.

4. SITE SERVICES

4.1 EXISTING WATER SERVICE CONNECTIONS TO BE ABANDONED SHALL BE BLANKED AT CITY WATERMAIN BY CITY FORCES. CONTRACTOR SHALL PROVIDED EXCAVATION, BEDDING AND REINSTATEMENT. EXISTING SEWER SERVICE CONNECTIONS SHALL BE ABANDONED AS PER CITY OF OTTAWA STANDARDS AND CITY DRAWING S11.4. CONNECTION TO WATERMAIN BY CITY OF OTTAWA FORCES, CONTRACTOR SHALL PROVIDE EXCAVATION, BACKFILL AND REINSTATEMENT.
4.2 WATER METER SHALL BE INSTALLED AS PER CITY OF OTTAWA DWG. No. W30 W31 (40 & 50mm). WATER SERVICE LINE SHALL BE INSTALLED AS PER CITY OF OTTAWA DWG. No. W33 (38 & 50mm).
4.3 ALL WATERMAINS AND WATER SERVICE MATERIALS AND CONSTRUCTION METHODS TO CITY OF OTTAWA STANDARDS AND ONTARIO PROVINCIAL STANDARDS SPECIFICATIONS (OPSS & OPSD). WATERMAINS AND WATER SERVICES MATERIALS SHALL BE PVC DR18 TO AWWA C–900, CSA B137.3 & CITY OF OTTAWA STANDARDS. METALLIC WARNING TAPE SHALL BE INSTALLED OVER ALL WATERMAINS. ROVIDE THRUST BLOCKS AS PER CITY OF OTTAWA DWG. No. W25.3 & W25.4 AT ALL VALVES, TEES, CAPS, BENDS, REDUCERS AND HYDRANTS OR OTHER FITTINGS WHERE CHANGES OCCUR IN PIPE DIAMETER OR DIRECTION. RESTRAINING AS PER AS PER CITY OF OTTAWA DWG. No W25.5 & W25.6.ALL CONNECTIONS, RESTRAINT RODS AND VALVE BOLTS TO BE STAINLESS STEEL. CATHODIC PROTECTION & ANODE INSTALLATION AS PER CITY OF OTTAWA DWG. No W40, W42, W44 & W47.
4.4 PROVIDE A MINIMUM 2.4 m COVER OVER WATER SERVICES AND WATERMAIN. WHERE THE MINIMUM COVER IS NOT POSSIBLE INSULATE AS PER CITY OF OTTAWA DWG. No. W21 (IN DITCHED AREAS) OR No. W22. WHERE LESS THAN 2.4 m CLEARANCE FROM AN OPEN STRUCTURE (EG. MANHOLES, CATCH BASINS & WINDOW WELLS) PLACE INSULATION AROUND WATERMAIN AND WATER SERVICE CONNECTIONS AS PER CITY OF OTTAWA DWG. No. W23.
4.5 WATERMAINS AND WATER SERVICE CONNECTIONS INSTALLED PARALLEL TO A SEWER SHALL BE LAID WITH A MINIMUM 2.5m BARREL TO BARREL HORIZONTAL SEPARATION FROM SEWERS AND SEWER MANHOLES.
4.6 WATERMAINS AND WATER SERVICES SHALL CROSS ABOVE A SEWER AS PER CITY OF OTTAWA DRAWING No. W25.2: PROVIDE A MINIMUM 250mm BARRELL TO BARRELL VERTICAL SEPARATION. IF IT IS NOT POSSIBLE FOR THE WATERMAIN OR WATEE SERVICE TO CROSS ABOVE A SEWER THE WATERMAIN SHALL CROSS BELOW A SEWER AS PER CITY OF OTTAWA DRAWING No. W25: PROVIDE A MINIMUM 500m BARREL TO BARREL VERTICAL SEPARATION AND ENSURE THAT THE WATER PIPE IS CENTERED AT THE POINT OF CROSSING SO JOINTS ARE AS FAR AS POSSIBLE FROM THE SEWER.
4.7 ALL SEWER MATERIALS AND CONSTRUCTION METHODS TO CITY OF OTTAWA STANDARDS AND ONTARIO PROVINCIAL STANDARDS SPECIFICATIONS (OPSS & OPSD). SEWER MATERIAL SHALL BE PVC OR REINFORCED CONCRETE. PVC SEWERS SHALL BE SDR–35 (SDR–28 FOR DIAMETERS 150mm OR LESS) AND SHALL CONFORM TO CSA B182.2 AND SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS. REINFORCED CONCRETE SEWERS SHALL CONFORM TO CSA 257.2 CL 50–D WITH RUBBER GASKETS TO CSA A–257.3.
4.8 SEWERS SHALL HAVE A MINIMUM 2.0m OF COVER OR SHALL BE INSULATED AS PER DETAIL AND CITY OF OTTAWA STANDARD DRAWING S35.
4.9 THE SANITARY BUILDING DRAIN SHALL BE INSTALLED WITH A NORMALLY OPEN FULL–PORT BACKWATER VALVE TO CITY OF OTTAWA STANDARDS AND TO CITY OF OTTAWA DWG. NO. S14.1 OR S14.2. THE BACKWATER VALVE SHALL BE INSTALLED SO THAT ALL PLUMBING FIXTURES ABOVE THE EXTERIOR GRADE ELEVATION DRAINS TO THE DOWNSTREAM SIDE OF THE VALVE AND ALL FIXTURES BELOW THE EXTERIOR GRADE ELEVATION DRAINS TO THE UPSTREAM SIDE OF THE VALVE.
4.10 THE STORM DRAIN SERVING THE FOUNDATION DRAINS SHALL BE INSTALLED WITH A NORMALLY CLOSED BACKWATER VALVE TO CITY OF OTTAWA STANDARDS AND TO CITY OF OTTAWA DWG. NO. S14.
4.11 CONNECT PROPOSED SANITARY SEWER SERVICE CONNECTION TO EXISTING MUNICIPAL SANITARY SEWER AS PER CITY OF OTTAWA DWG No. S11.1 (FLEXIBLE MAIN SEWER).
4.12 MANHOLES & CATCH BASINS:
  A. PRECAST MANHOLE UNITS: TO OPSS 1351 AND OPSD 701.010 WITH BASE SLAB OR MONOLITHIC BASE. TOP SECTIONS ECCENTRIC CONE OR FLAT LAB TOP TYPE WITH OPENING OFFSET FOR VERTICAL LADDER INSTALLATION.
  B. MANHOLE STEPS: TO OPSD 405.01
  C. ADJUSTING RINGS: TO ASTM C 478M.
  D. ALUMINUM SURFACES IN CONTACT WITH OR CAST INTO CONCRETE SHALL HAVE POLYETHYLENE ANCHOR INSULATING SLEEVES.
  E. PRECAST CATCH BASIN SECTIONS: TO OPSS 1351.
  F. JOINTS: SHALL BE MADE WATERTIGHT USING BUTYL BASED, FLEXIBLE WATERSTOP/JOINT SEALANT MATERIAL.
  G. SANITARY SEWERS: BENCH TO PROVIDE A SMOOTH U–SHAPED CHANNEL PER OPSD 701.021. SLOPE INVERT TO ESTABLISH SEWER GRADE.
  H. STORM SEWERS: MANHOLES SHALL HAVE A 300mm SUMP AND CATCH BASINS AND DITCH INLETS SHALL HAVE A 600mm SUMP.
  I. FRAMES, GRATES AND COVERS TO CITY OF OTTAWA DRAWINGS OR OPSD (AS PER CATCH BASIN & MANHOLE SCHEDULE). GRATES AND COVERS TO BEAR EVENLY ON FRAMES.
  J. GRANULAR BEDDING AND BACKFILL: OPSS GRANULAR A. RE–CYLCLED GRANULAR MATERIALS ARE NOT PERMITTED.
  G. PRIOR TO INSTALLATION SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW.
4.13 AS INDICATED ON PLANS: AT ALL CATCH BASINS AND CATCH BASIN MANHOLES PROVIDE MINIMUM 3m LONG, 150mm DIAMETER, PERFORATED SUB–DRAINS AT THE SUB–GRADE LEVEL; HDPE C/W FILTER FABRIC SOCK & END PLUG (BOSS 1000 OR APPROVED EQUAL).
4.14 ROOF DRAINS SHALL BE FLOW CONTROL TYPE EACH INSTALLED WITH A WEIR WITH A PARABOLIC SLOTS EACH SLOT SHALL RELEASE 5 USgpm/inch. OPENING AT TOP OF FLOW CONTROL WEIR SHALL BE A MINIMUM 50mm IN DIAMETER: WATTS ROOF DRAIN WITH WATTS ACCUTROL WEIR RD–100–A1 OR APPROVED EQUAL. PRIOR TO INSTALLATION SUBMIT SHOP DRAWING TO ENGINEER FOR REVIEW.
4.15 RAINWATER LEADERS (RWL) INSIDE BUILDING SHALL BE CONSTRUCTED TO WITHSTAND THE PRESSURE FROM A WATER COLUMN THE HEIGHT OF THE RWL. CONDUCT A PRESSURE TEST ON THE SYSTEM AS PER THE MECHANICAL ENGINEER'S INSTRUCTIONS (SEE MECHANICAL).
4.16 THE INLET CONTROL DEVICES (ICDs) LOCATED AT THE OUTLET PIPE OF MANHOLE MH–13 AND CATCH BASIN/MANHOLE CB/MH–23 SHALL BE A PLUG STYLE WITH A ROUND ORIFICE (WITH THE ORIFICE LOCATED AT THE BOTTOM OF THE PLUG) MANUFACTURED BY PEDRO PLASTICS (OR APPROVED EQUAL) AND SIZED BY THE MANUFACTURER FOR A DISCHARGE RATE AS INDICATED ON PLAN. PRIOR TO INSTALLATION SUBMIT SHOP DRAWING TO ENGINEER FOR APPROVAL.

5. CONSTRUCTION:

5.1 PRIOR TO COMMENCING WORK:
  A. OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES.
  B. SIZE, DEPTH AND LOCATION OF EXISTING INFRASTRUCTURE (SERVICES, UTILITIES, AND STRUCTURES) AND ARE NOT NECESSARILY SHOWN ON DRAWINGS AND THOSE INDICATED ON THE DRAWINGS ARE DERIVED FROM AVAILABLE INFORMATION AND ARE FOR GUIDANCE ONLY AND MUST BE CONFIRMED ON SITE BEFORE COMMENCING ANY WORK. COMPLETENESS AND ACCURACY ARE NOT GUARANTEED. NOTIFY ALL APPLICABLE OWNERS, UTILITY COMPANIES AND AUTHORITIES HAVING JURISDICTION OF PROPOSED WORK AND LOCATE AND CLEARLY IDENTIFY ALL EXISTING INFRASTRUCTURE ON THE SITE AND ADJACENT TO THE SITE. UNDERGROUND LOCATES (INCLUDING BUT NOT LIMITED TO ONTARIO ONE CALL: 1–800–400–2255) SHALL BE CONDUCTED PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION. CONFIRM LOCATIONS OF BURIED INFRASTRUCTURE BY CAREFULLY EXCAVATING TEST PITS AND REPORT ANY DIFFERENCES TO THE ENGINEER. ANY ISSUES ARISING FROM FAILURE OF CONTRACTOR TO DETERMINE THE SIZE, DEPTH AND LOCATION ALL EXISTING INFRASTRUCTURE WILL BE AT THE CONTRACTOR'S EXPENSE.
  C. EXISTING GRADE ELEVATIONS SHOWN ON DRAWINGS ARE DERIVED FROM AVAILABLE INFORMATION AND ARE FOR GUIDANCE ONLY AND MUST BE CONFIRMED ON SITE BEFORE COMMENCING CONSTRUCTION. COMPLETENESS AND ACCURACY ARE NOT GUARANTEED. REPORT ANY DIFFERENCES TO ENGINEER.
  D. COORDINATE AND SCHEDULE WORK WITH THE OWNER, AUTHORITIES AND OTHER TRADES.
  E. SCHEDULE WORK TO PROVIDE THE MINIMUM DISRUPTION TO SERVICES.
  F. INSTALL CONSTRUCTION FENCING AROUND THE AREA OF WORK. DO NOT REMOVE FENCING UNTIL WORK IS COMPLETE.
5.2 MAINTAIN AND PROTECT FROM DAMAGE, SERVICES, UTILITIES AND STRUCTURES ENCOUNTERED.
5.3 PROTECT EXISTING BUILDINGS, TREES AND OTHER PLANTS, LAWNS, FENCING, SERVICE POLES, WIRES, PAVEMENT, SURVEY BENCH MARKS AND MONUMENTS AND OTHER SURFACE FEATURES FROM DAMAGE WHILE WORK IS IN PROGRESS. DO NOT DISTURB SOIL WITHIN BRANCH SPREAD OF TREES OR SHRUBS THAT ARE TO REMAIN.
5.4 PROVIDE TRAFFIC CONTROL AND SAFETY MEASURES AS REQUIRED BY THE AUTHORITIES, INCLUDING ANY NECESSARY PERSONNEL AND THE SUPPLY, INSTALLATION, REMOVAL AND REPLACEMENT OF ALL NECESSARY SIGNAGE AND BARRIERS. IF APPLICABLE, PROVIDE TRAFFIC MANAGEMENT PLAN AS PER CITY OF OTTAWA REQUIREMENTS.
5.5 FENCE OFF ALL OPEN EXCAVATIONS AT THE END OF EACH WORK DAY. FENCES SHALL BE INSTALLED AND MAINTAINED A GOOD AND EFFECTIVE CONDITION.
5.6 REMOVE OBSTRUCTIONS, ICE AND SNOW, FROM SURFACES TO BE EXCAVATED.
5.7 CUT PAVEMENT AND / OR SIDEWALK NEATLY ALONG LIMITS OF PROPOSED EXCAVATION IN ORDER THAT SURFACE MAY BREAK EVENLY AND CLEANLY.
5.8 COORDINATE AND PAY FOR GEOTECHNICAL INSPECTIONS AND COMPACTION TESTS OF; SERVICING TRENCHES (SUB–GRADE, PIPE BEDDING AND EACH LAYER OF SURROUND MATERIAL, AND BACKFILL); AND PAVEMENT STRUCTURES (SUB–GRADE, SUB–BASE, BASE AND ASPHALT); TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT AND ENGINEER. SUBMIT GEOTECHNICAL INSPECTIONS AND COMPACTION REPORTS TO ENGINEER FOR REVIEW. A MINIMUM ON ONE SET OF INSPECTIONS AND COMPACTION TESTS SHALL BE COMPLETED ON EACH PIPE SEGMENT GREATER THAN 15 m IN LENGTH. A MINIMUM ONE SET OF INSPECTION AND COMPACTION TESTS SHALL BE COMPLETED FOR EVERY 500 m^2 OF PAVEMENT AREA.
5.9 CUT AND FILL AS NECESSARY TO ACHIEVE THE PROPOSED GRADE ELEVATIONS. DISPOSE OF SURPLUS AND UNSUITABLE EXCAVATED MATERIAL OFF SITE. ANY REQUIRED FILL SHALL BE CLEAN WELL GRADED SAND TO OPSS 1004 UNLESS OTHERWISE DIRECTED BY GEOTECHNICAL ENGINEER. FILL SHALL BE COMPACTED TO NOT LESS THAN 95% OF CORRECTED MAXIMUM DRY DENSITY. FILL MATERIAL AND THE PLACEMENT AND COMPACTION OF THE FILL MATERIAL AS PER THE GEOTECHNICAL REPORT AND TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT. PLACE MATERIAL IN UNIFORM LAYERS NOT EXCEEDING 300mm COMPACTED THICKNESS.
5.10 PROTECT WORK AREA AGAINST FLOODING AND DAMAGE DUE TO SURFACE RUN–OFF. DEWATER AS REQUIRED TO KEEP WORK AREA FREE OF WATER. DISCHARGE FROM DEWATERING OPERATIONS SHALL BE DIRECTED TO A SEDIMENT CONTROL MEASURE AND/OR A VEGETATED DISCHARGE AREA. ENSURE THAT THE DISCHARGED WATER DOES NOT CAUSE EROSION OR OTHER DAMAGE TO ADJACENT LANDS.
5.11 EXCAVATION, TRENCHING, & BACKFILL:
  A. SHORE AND BRACE EXCAVATIONS, PROTECT SLOPES AND BANKS AND PERFORM ALL WORK IN ACCORDANCE WITH ONTARIO REGULATION 213/91 UNDER THE ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT AND OTHER AUTHORITIES HAVING JURISDICTION.
  B. KEEP EXCAVATIONS FREE OF WATER WHILE WORK IS IN PROGRESS. PROTECT OPEN EXCAVATIONS AGAINST FLOODING AND DAMAGE DUE TO SURFACE RUN–OFF.
  C. EXCAVATION SHALL NOT INTERFERE WITH BEARING CAPACITY OF ADJACENT FOUNDATIONS.
  D. DO NOT OBSTRUCT FLOW OF SURFACE DRAINAGE OR NATURAL WATERCOURSES.
  E. EXCAVATE TO LINES, GRADES, ELEVATIONS AND DIMENSIONS AS INDICATED.
  F. EARTH BOTTOMS OF EXCAVATIONS TO BE UNDISTURBED SOIL, LEVEL, FREE FROM LOOSE, SOFT OR ORGANIC MATTER.
  G. ALL STRUCTURES WITHIN PAVED AREAS SHALL HAVE 4:1 FROST TAPERS FROM FROST LINE TO SUB–GRADE.
  H. CORRECT OVER–EXCAVATION WITH GRANULAR A COMPACTED TO NOT LESS THAN 95% OF CORRECTED MAXIMUM DRY DENSITY.
  I. SUB–GRADE AND AREAS TO BE BACKFILLED TO BE FREE FROM DEBRIS, SNOW, ICE, WATER AND FROZEN GROUND.
  J. DO NOT USE BACKFILL MATERIAL WHICH IS FROZEN OR CONTAINS ICE, SNOW OR DEBRIS.
  K. PIPE BEDDING AND SURROUND MATERIAL SHALL BE OPSS GRANULAR A. RE–CYLCLED GRANULAR MATERIALS ARE NOT PERMITTED.
  L. DO NOT USE BEDDING, SURROUND OR BACKFILL MATERIAL WHICH IS FROZEN OR CONTAINS ICE, SNOW OR DEBRIS.
  M. PIPE BEDDING SHALL BE 150mm THICK. SHAPE BED TRUE TO GRADE AND TO PROVIDE CONTINUOUS, UNIFORM BEARING SURFACE FOR PIPE.
  N. PLACE SURROUND MATERIAL AROUND PIPES TO FULL WIDTH OF TRENCH AND TO 300mm ABOVE PIPES.
  O. PLACE BEDDING AND SURROUND MATERIAL IN UNIFORM LAYERS NOT EXCEEDING 150mm COMPACTED THICKNESS. PLACE FILL AND BACKFILL MATERIAL IN UNIFORM LAYERS NOT EXCEEDING 300mm COMPACTED THICKNESS.
  P. COMPACT EACH LAYER TO 95% OF CORRECTED DRY DENSITY BEFORE PLACING SUCCEEDING LAYER.
  Q. DO NOT BACKFILL AROUND OR OVER CAST–IN–PLACE CONCRETE WITHIN 24 HOURS AFTER PLACING OF CONCRETE.
  R. BACKFILL MATERIALS WITHIN 1.8m OF PROPOSED GRADE SHALL MATCH THE MATERIALS EXPOSED ON THE TRENCH WALLS. BACKFILL BELOW 1.8m OF THE PROPOSED CAN CONSIST OF EITHER ACCEPTABLE NATIVE MATERIAL; ROCK; OR IMPORTED GRANULAR MATERIAL CONFORMING TO OPSS GRANULAR B TYPE I OR II. ANY ORGANIC SOILS OR TOPSOIL, IF ENCOUNTERED, SHALL BE REMOVED FROM THE EXCAVATION. IF ROCK IS USED AS BACKFILL IT SHALL BE WELL SHATTERED AND GRADED AND 200mm OR SMALLER IN DIAMETER. TO PREVENT INGRESS OF FINE MATERIAL INTO VOIDS IN THE ROCK FILL, THE UPPER SURFACE OF THE ROCK FILL SHALL BE COVERED WITH 150mm LAYER OF COMPACTED, WELL GRADED CRUSHED STONE PLACED ON GEOTEXTILE FABRIC.
5.12 PIPES:
  A. HANDLE PIPE USING METHODS APPROVED BY MANUFACTURER.
  B. LAY, CUT AND JOIN PIPES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  C. USE ONLY FITTINGS AS RECOMMENDED BY PIPE MANUFACTURER.
  D. LAY PIPES ON PREPARED BED, TRUE TO LINE AND GRADE AND ENSURE BARREL OF EACH PIPE IS IN CONTACT WITH SHAPED BED THROUGHOUT ITS FULL LENGTH, FREE OF SAGS OR HIGH POINTS.
  E. DO NOT EXCEED MAXIMUM JOINT DEFLECTION RECOMMENDED BY PIPE MANUFACTURER.
  F. WHENEVER WORK IS SUSPENDED, INSTALL REMOVABLE WATERTIGHT BULKHEAD AT OPEN END OF LAST PIPE LAID TO PREVENT ENTRY OF FOREIGN MATERIALS.
  G. WHEN STOPPAGE OF WORK OCCURS, BLOCK PIPES TO PREVENT CREEP DURING DOWN TIME. MAKE WATERTIGHT CONNECTIONS TO MANHOLES.
  H. JOINTS SHALL BE STRUCTURALLY SOUND AND WATERTIGHT.
  I. REPAIR OR REPLACE PIPE, PIPE JOINT OR BEDDING FOUND DEFECTIVE.
5.13 SEWERS AND SEWER SERVICE CONNECTIONS:
  A. CONSTRUCT TRENCHES AS PER CITY DWG S6 & S7.
  B. INSTALL PIPE JOINTS NOT MORE THAN 1.2 m FROM SIDE OF RIGID STRUCTURES.
  C. MAINTAIN EXISTING SEWAGE FLOWS DURING CONSTRUCTION.
  D. PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. SPECIFICALLY, THE LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 410. REPAIR AND RETEST SEWER LINE AS REQUIRED. REPAIR VISIBLE LEAKS REGARDLESS OF TEST RESULTS.
  E. CONDUCT TWO CCTV INSPECTIONS OF SEWERS. FIRST INSPECTION AFTER COMPLETION OF CONSTRUCTION. SECOND INSPECTION IMMEDIATELY PRIOR TO END OF WARRANTY PERIOD. A PAN AND TILT CAMERA SHALL BE USED. REPAIR SEWER LINE AS REQUIRED. SUBMIT REPORTS AND DVDS TO ENGINEER.
  F. CONDUCT TWO CCTV INSPECTIONS OF THE MUNICIPAL STORM SEWER FROM THE FIRST MANHOLE UPSTREAM OF THE STORM SEWER CONNECTION TO THE FIRST MANHOLE DOWNSTREAM; AND TWO CCTV INSPECTIONS OF THE MUNICIPAL SANITARY SEWER FROM THE FIRST MANHOLE UPSTREAM OF THE SANITARY SEWER CONNECTION TO THE FIRST MANHOLE DOWNSTREAM. THE FIRST CCTV INSPECTIONS SHALL BE COMPLETED PRIOR TO COMMENCEMENT OF CONSTRUCTION AND THE SECOND CCTV INSPECTION SHALL BE COMPLETED AFTER THE COMPLETION OF CONSTRUCTION. A PAN AND TILT CAMERA SHALL BE USED. SUBMIT REPORTS AND VIDEOS TO THE ENGINEER.
  G. CONDUCT DYE TEST OF SANITARY SEWERS AND COORDINATE WITH ENGINEER. DYE TEST SHALL BE WITNESSED BY ENGINEER.
5.14 WATERMAINS AND WATER SERVICE CONNECTIONS:
  A. CONSTRUCT TRENCHES AS PER CITY DWG W17.
5.15 WATERMAIN AND WATER SERVICE:
  A. INSTALL AND TEST TRACER WIRE ON THE WATER SERVICE CONNECTION AS PER 4.3.12 OF THE CITY OF OTTAWA WATER DISTRIBUTION DESIGN GUIDELINES AND DRAWING W36.
  B. PRESSURE TESTING AS PER AWWA C–605–5 AND CITY OF OTTAWA DESIGN GUIDELINES – WATER DISTRIBUTION SECTION 4.6.13.
  C. CHLORINATION AS PER AWWA C–651–05 AND CITY OF OTTAWA DESIGN GUIDELINES – WATER DISTRIBUTION SECTION 4.6.13 & CITY DWG. W46.
5.16 MANHOLES & CATCH BASINS:
  A. JOINTS: SHALL BE MADE WATERTIGHT.
  B. SET PRECAST CONCRETE BASE ON 150mm MINIMUM OF GRANULAR BEDDING COMPACTED TO 100% CORRECTED MAXIMUM DRY DENSITY.
  C. MAKE EACH JOINT WATERTIGHT WITH RUBBER RING GASKETS.
  D. PLACE GRANULAR BACKFILL MATERIALS IN A UNIFORM LAYERS TO COMPACTED THICKNESS OF 150mm, COMPACT TO 95% CORRECTED MAXIMUM DRY DENSITY.
  E. PLACE FRAME AND COVER ON TOP SECTION TO ELEVATION AS INDICATED. IF ADJUSTMENT REQUIRED USE CONCRETE RINGS TO A MAXIMUM OF 300mm.
  F. CLEAN UNITS OF DEBRIS, FOREIGN AND SURPLUS MATERIALS. REMOVE FINS AND SHARP PROJECTIONS. PREVENT DEBRIS FROM ENTERING SYSTEM.
  G. PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. SPECIFICALLY, THE LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 407.
5.17 MAINTAIN RECORD DRAWINGS AND ACCURATELY RECORD DEVIATIONS FROM THE ORIGINAL CONTRACT DOCUMENTS CAUSED BY SITE CONDITIONS AND CHANGES MADE BY CHANGE ORDER OR ADDITIONAL INSTRUCTIONS. UPDATE DAILY AND MAKE AVAILABLE ON–SITE FOR REVIEW THROUGHOUT THE CONSTRUCTION PERIOD. RECORD DRAWINGS SHALL INCLUDE BUT NOT NECESSARILY LIMITED TO CHANGES OF DIMENSION AND DETAIL; CHANGES TO GRADE ELEVATIONS; AND HORIZONTAL AND VERTICAL LOCATIONS OF UNDERGROUND SERVICES, UTILITIES AND APPURTENANCES REFERENCED TO A PERMANENT SURFACE STRUCTURE. SUBMIT DRAWINGS TO ENGINEER AT THE END OF CONSTRUCTION. SUBMIT A RECORD DRAWING OF "AS–BUILT" GRADE ELEVATIONS, PREPARED BY AN OLS SURVEYOR, TO THE ENGINEER AT THE END OF CONSTRUCTION.
5.18 REINSTATE ALL AREAS DISTURBED BY CONSTRUCTION. REINSTATE PAVEMENTS, CURBS AND SIDEWALKS, TO THICKNESS, STRUCTURE AND ELEVATION WHICH EXISTED BEFORE CONSTRUCTION. REINSTATE LANDSCAPED AREAS TO THE CONDITION AND ELEVATION WHICH EXISTED BEFORE CONSTRUCTION.
5.19 CLEAN AND REINSTATE AREAS AFFECTED BY THE WORK.

6. PAVEMENT

6.1 PAVEMENT STRUCTURE (AS RECOMMENDED BY THE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY PATERSON GROUP):

LIGHT DUTY PAVEMENT:

50mm	HL–3 OR SUPERPAVE 12.5 ASPHALTIC CONCRETE
150mm	OPSS GRANULAR A BASE
300mm	OPSS GRANULAR B TYPE II SUB–BASE

HEAVY DUTY PAVEMENT:

40mm	HL–3 OR SUPERPAVE 12.5 ASPHALTIC CONCRETE
50mm	HL–8 OR SUPERPAVE 19.0 ASPHALTIC CONCRETE
150mm	OPSS GRANULAR A BASE
450mm	OPSS GRANULAR B TYPE II SUB–BASE

RE–CYLCLED GRANULAR MATERIALS ARE NOT PERMITTED.
ASPHALTIC CONCRETE SHALL BE PERFORMANCE GRADE PG58–34.
HOT MIX ASPHALT MATERIALS SHALL BE ACCORDING TO OPSS 1150 OR 1151.
CONSTRUCTION OF HOT MIX ASPHALT PAVEMENT SHALL BE ACCORDING TO OPSS 310.

6.2 PAVEMENT SUB–GRADE PREPARATION AND CONSTRUCTION OF THE PAVEMENT STRUCTURE SHALL CONFORM TO THE GEOTECHNICAL INVESTIGATION TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
6.3 ALL EXISTING ASPHALT TO BE REMOVED SHALL BE HAULED TO A FACILITY APPROVED FOR ACCEPTING SUCH MATERIALS. REMOVE ALL MATERIALS TO THE SUB–GRADE LEVEL. REMOVE ORGANIC OR UNSUITABLE MATERIAL FROM SUB–GRADE WHERE ENCOUNTERED TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER. SUB–GRADE TO BE FREE FROM DEBRIS, SNOW, ICE, WATER AND FROZEN GROUND. COMPACT SUB–GRADE TO 95%.
6.4 CONSTRUCT GRANULAR BASE AND SUB–BASE TO DEPTH AND GRADE IN AREAS INDICATED.CONSTRUCT A 5H:1V FROST TAPER IN SUB–GRADE SURFACE AS A TRANSITION BETWEEN DIFFERING PAVEMENT STRUCTURES AND BETWEEN PAVEMENT AND CURBS AND SIDEWALKS.
6.5 ENSURE NO FROZEN MATERIAL IS PLACED. PLACE MATERIAL ONLY ON CLEAN UNFROZEN SURFACE, FREE FROM SNOW OR ICE.
6.6 PLACE MATERIAL TO FULL WIDTH IN UNIFORM LAYERS NOT EXCEEDING 300mm COMPACTED THICKNESS. SHAPE EACH LAYER TO SMOOTH CONTOUR AND COMPACT TO SPECIFIED DENSITY BEFORE SUCCEEDING LAYER IS PLACED.
6.7 COMPACT SUB–BASE MATERIAL TO DENSITY OF NOT LESS THAN 98% CORRECTED MAXIMUM DRY DENSITY. FILL OVER–EXCAVATED SUB–GRADE WITH SUB–BASE MATERIAL, COMPACT TO 98%. COMPACT BASE AND SHOULDER MATERIAL TO DENSITY NOT LESS THAN 100% CORRECTED MAXIMUM DRY DENSITY.
6.8 IN AREAS NOT ACCESSIBLE TO ROLLING EQUIPMENT, COMPACT TO SPECIFIED DENSITY WITH MECHANICAL TAMPERS.
6.9 REPLACE PAVEMENT DISTURBED BY CONSTRUCTION AND REPLACE WITH PAVEMENT STRUCTURE ABOVE.
6.10 WHERE NEW ASPHALT COMES IN CONTACT WITH EXISTING PAVEMENT: SAWCUT EXISTING ASPHALT LAYER TO CREATE A CLEAN STRAIGHT EDGE. TACK COAT SHALL BE APPLIED TO ASPHALT SURFACES AT WHICH JOINTS ARE TO BE MADE INCLUDING EXISTING PAVEMENT SURFACES THAT HAVE BEEN CUT, GROUND OR MILLED. TACK COAT THE SURFACE OF ALL BINDER COURSES AND BUTTING CONCRETE SURFACES. SURFACES TO BE TACK COATED SHALL BE FREE OF STANDING WATER AND CONTAMINATION, SUCH AS MUD, LOOSE AGGREGATE OR DEBRIS AND SHALL BE DRY AND CLEAN WHEN THE TACK COAT IS APPLIED. TACK COAT SHALL BE PLACED SUFFICIENTLY AHEAD OF THE PAVING OPERATION TO ALLOW FOR CURING. PAVING AND CONSTRUCTION EQUIPMENT SHALL NOT BE PERMITTED ONTO THE TACK COAT UNTIL IT HAS SET. TACK COAT MATERIAL SHALL CONSIST OF SS–1 EMULSIFIED ASPHALT DILUTED WITH AN EQUAL VOLUME OF WATER. THE UNDILUTED MATERIAL SHALL BE ACCORDING TO OPSS 1103.
6.11 SHAPE BASE TO SMOOTH CONTOUR AND COMPACT TO NOT LESS THAN 100% CORRECTED MAXIMUM DRY DENSITY BEFORE BEGINNING PAVING OPERATIONS.
6.12 APPLY ASPHALTIC CONCRETE ONLY WHEN BASE OR PREVIOUS COURSE IS DRY AND AIR TEMPERATURE IS ABOVE 5 DEG.C
6.13 ROLL UNTIL ROLLER MARKS ARE ELIMINATED AND COMPACTED TO NOT LESS THAN 95% OF DENSITY. COMPACT WITH HOT TAMPERS IN AREAS INACCESSIBLE TO A ROLLER. BEVEL EDGES ADJACENT TO GRANULAR SURFACES.
6.14 FINISH SURFACE SMOOTH, TRUE TO GRADE.
6.15 KEEP VEHICULAR TRAFFIC AND OTHER LOADS OFF NEWLY PAVED AREAS UNTIL 24 HOURS AFTER PAVING.
6.16 DIVERT UNUSED AND WASTE ASPHALT TO A FACILITY APPROVED FOR ACCEPTING SUCH MATERIALS.
6.17 APPLY TRAFFIC PAINT AS IDENTIFIED ON PLAN. TRAFFIC PAINT: NON–DARKENING, HOMOGENEOUS, UNIFORM AND SMOOTH, FREE FROM SKIN, DIRT AND OTHER FOREIGN PARTICLES. APPLY TO DRY PAVEMENT SURFACE FREE FROM FROST, ICE, DUST, OIL, GREASE AND OTHER FOREIGN MATERIALS. PROTECT PAVEMENT MARKINGS UNTIL DRY.

KEY PLAN

No.	DATE	REVISION
2	DEC 16–25	ISSUED FOR APPROVAL
1	NOV 13–25	ISSUED FOR COORDINATION

D. B. GRAY ENGINEERING INC.
Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

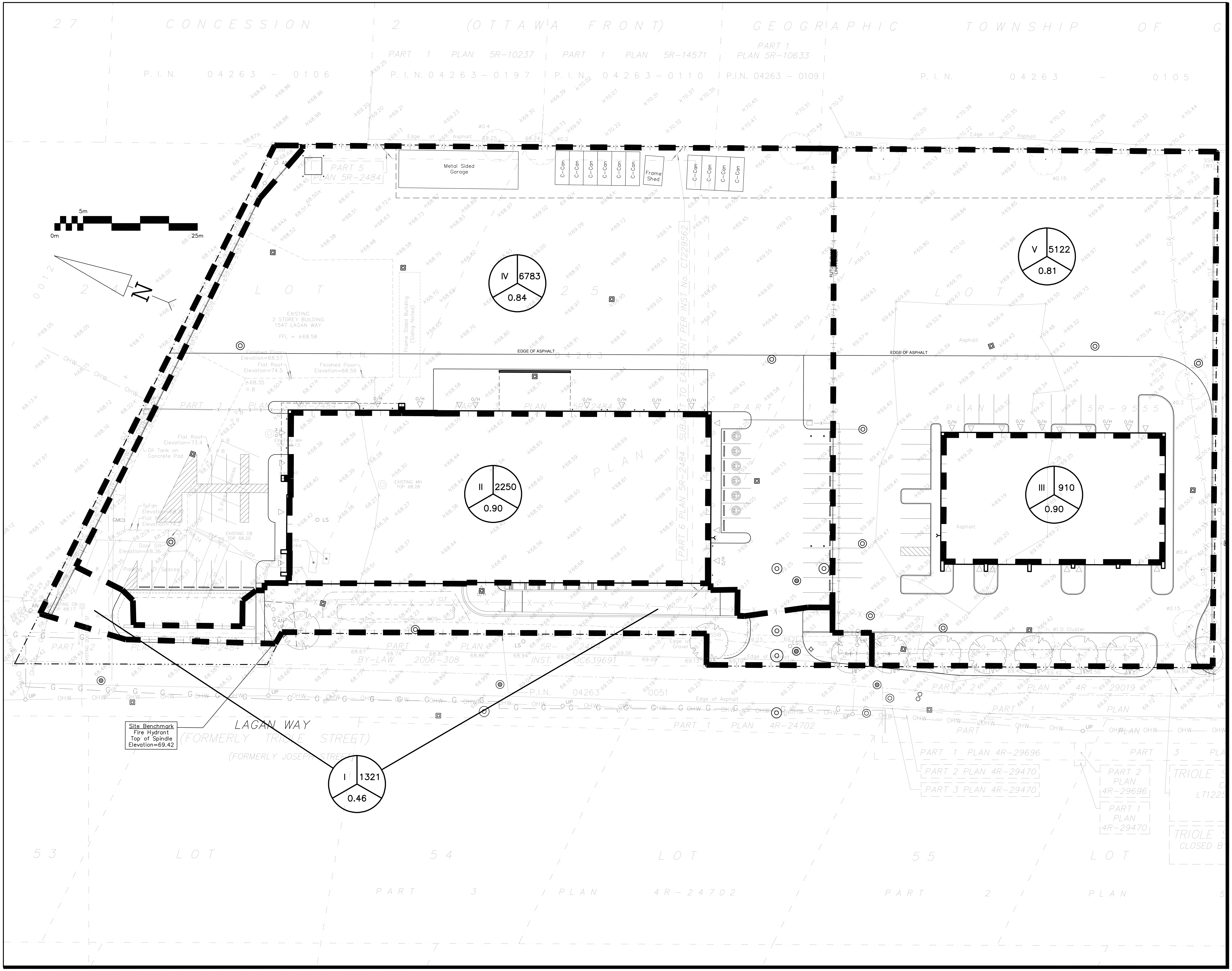
Project
PROPOSED DICKIE MOORE
RENTALS PROPERTY
REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title
NOTES

Engineer's Seal
D.B. GRAY
17016502
DEC 16–25
NOT VALID UNLESS SIGNED & DATED

Drawn D.B.G
H. Scale
V. Scale
Date NOV 13–25
Job No. 24022

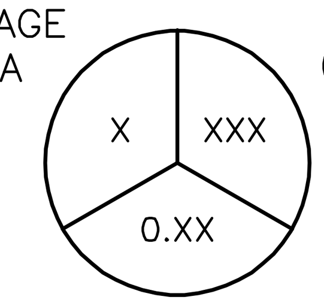
Drawing No.
C–12
of 13



LEGEND

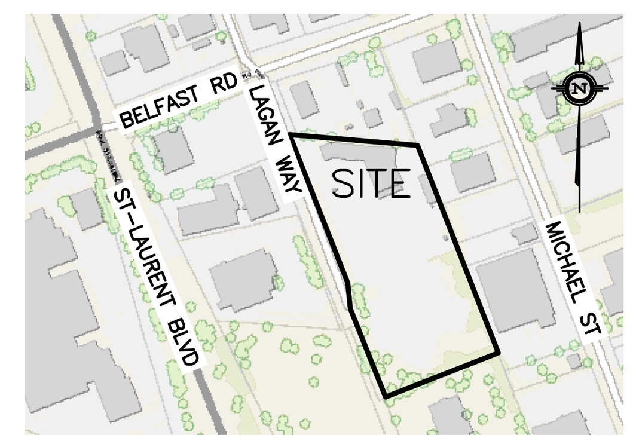
DRAINAGE AREA

AREA (sq.m)



5 YEAR RUNOFF COEFFICIENT

KEY PLAN



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D. B. GRAY ENGINEERING INC.

Stormwater Management · Grading & Drainage · Storm & Sanitary Sewers · Watermains

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Project

PROPOSED DICKIE MOORE RENTALS PROPERTY REDEVELOPMENT
1547 LAGAN WAY
OTTAWA, ONTARIO

Drawing Title

POST–DEVELOPMENT DRAINAGE PLANS

Engineer's Seal

LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
DEC 16–25
PROVINCE OF ONTARIO

NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:300
V. Scale	
Date	NOV 13–25
Job No.	24022

Drawing No.
C–13