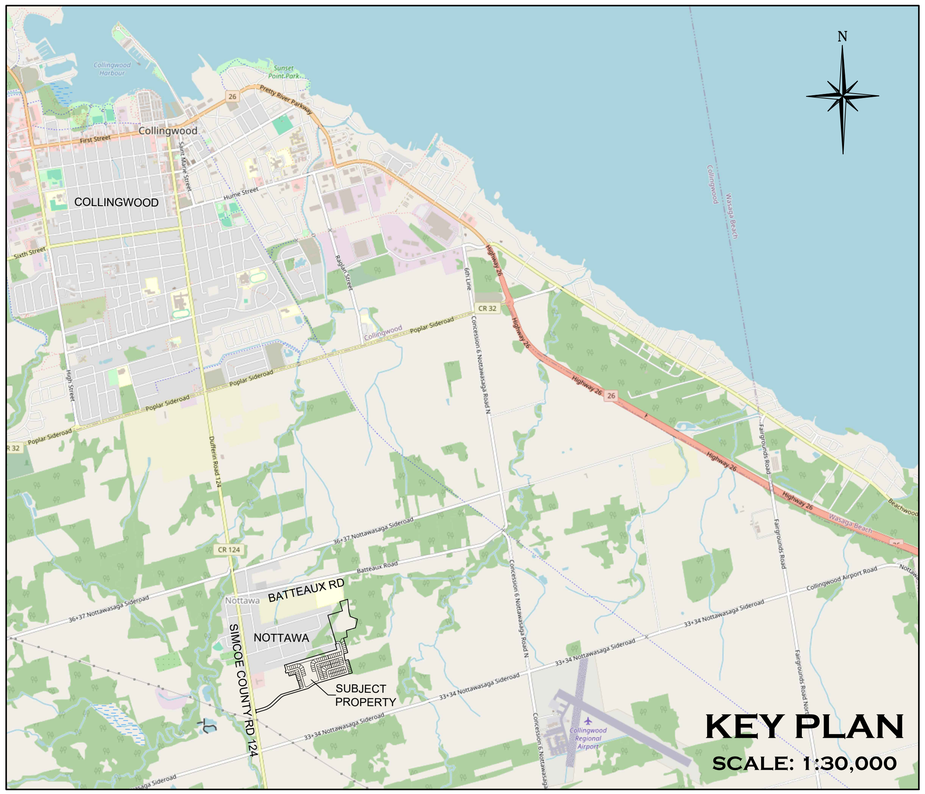
NOTTAWA DEVELOPMENT

TOWNSHIP OF CLEARVIEW

COUNTY OF SIMCOE



MUNICIPALITY

TOWNSHIP OF CLEARVIEW
217 GIDEON STREET
STAYNER, ONTARIO, L0M 1S0

DEVELOPER

NOTTAWA LIMITED PARTNERSHIP
55 MULCASTER STREET, SUITE 800
BARRIE, ON L4M 0J4

DEVELOPER'S ENGINEER

CROZIER
CONSULTING ENGINEERS

70 HURON STREET, SUITE 201
COLLINGWOOD, ON, L9Y 4L4
705-446-3510 T
705-446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

PROJECT No.: 1953-6040
1ST SUBMISSION

DRAWING TITLE

DRAWING	TITLE
	TITLE SHEET
C100	INDEX SHEET

CIVIL DRAWINGS:

DRAWING	TITLE
C101A	GENERAL SERVICING PLAN NORTH PART
C101B	GENERAL SERVICING PLAN CENTRAL PART
C101C	GENERAL SERVICING PLAN SOUTH–WEST PART
C102A	SITE GRADING PLAN SOUTH–WEST PART
C102B	SITE GRADING PLAN CENTRAL WEST PART
C102C	SITE GRADING PLAN CENTRAL PART
C102D	SITE GRADING PLAN CENTRAL EAST PART
C102E	SITE GRADING PLAN CENTRAL NORTH PART
C102F	SITE GRADING PLAN NORTH–EAST PART
C102G	SITE GRADING PLAN NORTH–WEST PART
C102H	SITE GRADING PLAN CENTRAL SOUTH PART
C102I	CHANNELS CROSS–SECTIONS A–A – D–D
C103A1	PLAN AND PROFILE STREET A (STA. 0+000 TO STA. 0+320)
C103A2	PLAN AND PROFILE STREET A (STA. 0+320 TO STA. 0+560)
C103A3	PLAN AND PROFILE STREET A (STA. 0+560 TO STA. 0+720)
C103A4	PLAN AND PROFILE STREET A (STA. 0+720 TO STA. 0+940)
C103A5	PLAN AND PROFILE STREET A (STA. 0+940 TO STA. 1+080)
C103A6	PLAN AND PROFILE STREET A (STA. 1+080 TO STA. 1+420)
C103B3	PLAN AND PROFILE STREET B (STA. 0+440 TO STA. 0+540)
C103B4	PLAN AND PROFILE STREET B (STA. 0+540 TO STA. 0+745)
C103E1	PLAN AND PROFILE STREET E (STA. 0+000 TO STA. 0+200)
C103E2	PLAN AND PROFILE STREET E (STA. 0+200 TO STA. 0+380)
C103E3	PLAN AND PROFILE STREET E (STA. 0+380 TO STA. 0+489)
C103F1	PLAN AND PROFILE STREET F (STA. 0+000 TO STA. 0+120)
C103F2	PLAN AND PROFILE STREET F (STA. 0+120 TO STA. 0+295)
C103H	PLAN AND PROFILE WAGNER ROAD (STA. 0+000 TO STA. 0+092)
C103I	PLAN AND PROFILE STREET G (STA. 0+000 TO STA. 0+202)

DRAWING	TITLE
C104A	EROSION AND SEDIMENT
C104B	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS
C106A	SWM FACILITY PLAN
C106B	SWM POND SECTION 1–1 (STA 0+000 TO 0+574)
C106C	SWM POND SECTION 2–2 (STA 0+000 TO 0+265)
C106D	SWM POND SECTION 3–3 (STA 0+000 TO 0+100)
C106E	SWM POND SECTION 4–4 (STA 0+000 TO 0+099)
C106F	SWMF OUTLET CONTROL STRUCTURE CROSS–SECTIONS & DETAILS
C107	SWM BY–PASS (STA 0+000 TO STA 0+045)
C108A	SANITARY DRAINAGE PLAN NORTH PART
C108B	SANITARY DRAINAGE PLAN CENTRAL PART
C108C	SANITARY DRAINAGE PLAN SOUTH–WEST PART
C109A	STORM DRAINAGE PLAN NORTH PART
C109B	STORM DRAINAGE PLAN CENTRAL PART
C109C	STORM DRAINAGE PLAN SOUTH–WEST PART
C110A	CONSTRUCTION NOTES & DETAILS
C110B	TYPICAL ROAD CROSS–SECTIONS
C111A	ONTARIO PROVINCIAL STANDARD DRAWINGS
C111B	MUNICIPAL STANDARD DRAWINGS
C111C	DETAILS
C112A	STREET A CULVERT DETAILED PLAN CROSS–SECTIONS 1–1, 2–2

MASTER LEGEND

EXISTING FEATURES (EX.)

- EX. CONTOUR
- EX. GRADE
- EX. TREELINE
- EX. WATERCOURSE
- EX. DITCH
- EX. WATERMAIN
- EX. WATER SERVICE
- EX. FIRE HYDRANT & VALVE
- EX. SANITARY SEWER & MANHOLE
- EX. SANITARY FORCEMAIN
- EX. SANITARY SERVICE
- EX. STORM SEWER & MANHOLE
- EX. STORM CATCHBASIN
- EX. STORM DOUBLE CATCHBASIN
- EX. STORM CATCHBASIN MANHOLE
- EX. STORM DOUBLE CATCHBASIN MANHOLE
- EX. GAS MAIN
- EX. BELL LINE
- EX. BELL PEDESTAL
- EX. CABLE TELEVISION PEDESTAL
- EX. HYDRO POLE
- EX. LIGHT STANDARD
- EX. SIGN
- EX. BUILDING
- EX. BENCHMARK NUMBER & LOCATION
- EX. BOREHOLE NUMBER & LOCATION

PROPOSED FEATURES (PR.)

- PR. PROPERTY LIMITS
- PR. ELEVATION
- PR. ELEVATION (MATCH EX. ELEVATION)
- PR. SWALE & SLOPE
- PR. DITCH DRAINAGE
- PR. WATERMAIN & VALVE
- PR. WATER SERVICE
- PR. FIRE HYDRANT & VALVE
- PR. WATER VALVE CHAMBER
- PR. WATER QUALITY TESTING STATION
- PR. SANITARY SEWER & MANHOLE
- PR. SANITARY FORCEMAIN
- PR. SANITARY SERVICE
- PR. SANITARY CATCHMENT
- CATCHMENT AREA ID (11)
- AREA (ha) (0.14)
- POPULATION (3.5 p.p.u.) (0)
- PR. STORM SEWER & MANHOLE
- PR. CATCHBASIN
- PR. DOUBLE CATCHBASIN
- PR. CATCHBASIN MANHOLE
- PR. DOUBLE CATCHBASIN MANHOLE
- PR. STORM CATCHMENT
- CATCHMENT AREA ID (102)
- RUNOFF COEFFICIENT (0.78)
- DRAINAGE AREA (ha) (0.23)
- PR. CURB CUT
- PR. CANADA POST COMMUNITY MAIL BOX
- PR. TRANSFORMER
- PR. STOP SIGN
- PR. NAME SIGN
- PR. NO PARKING SIGN
- PR. FENCE
- PR. BUILDING ENVELOPE
- PR. LIGHT DUTY SILT FENCE
- PR. HEAVY DUTY SILT FENCE
- PR. STRAW BALE CHECK FLOW
- PR. ROCK CHECK DAM
- PR. SLOPE (3:1 MAX.)
- PR. TREE PRESERVATION AREA
- PR. TOPSOIL STOCKPILE LOCATION

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Town

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Engineer

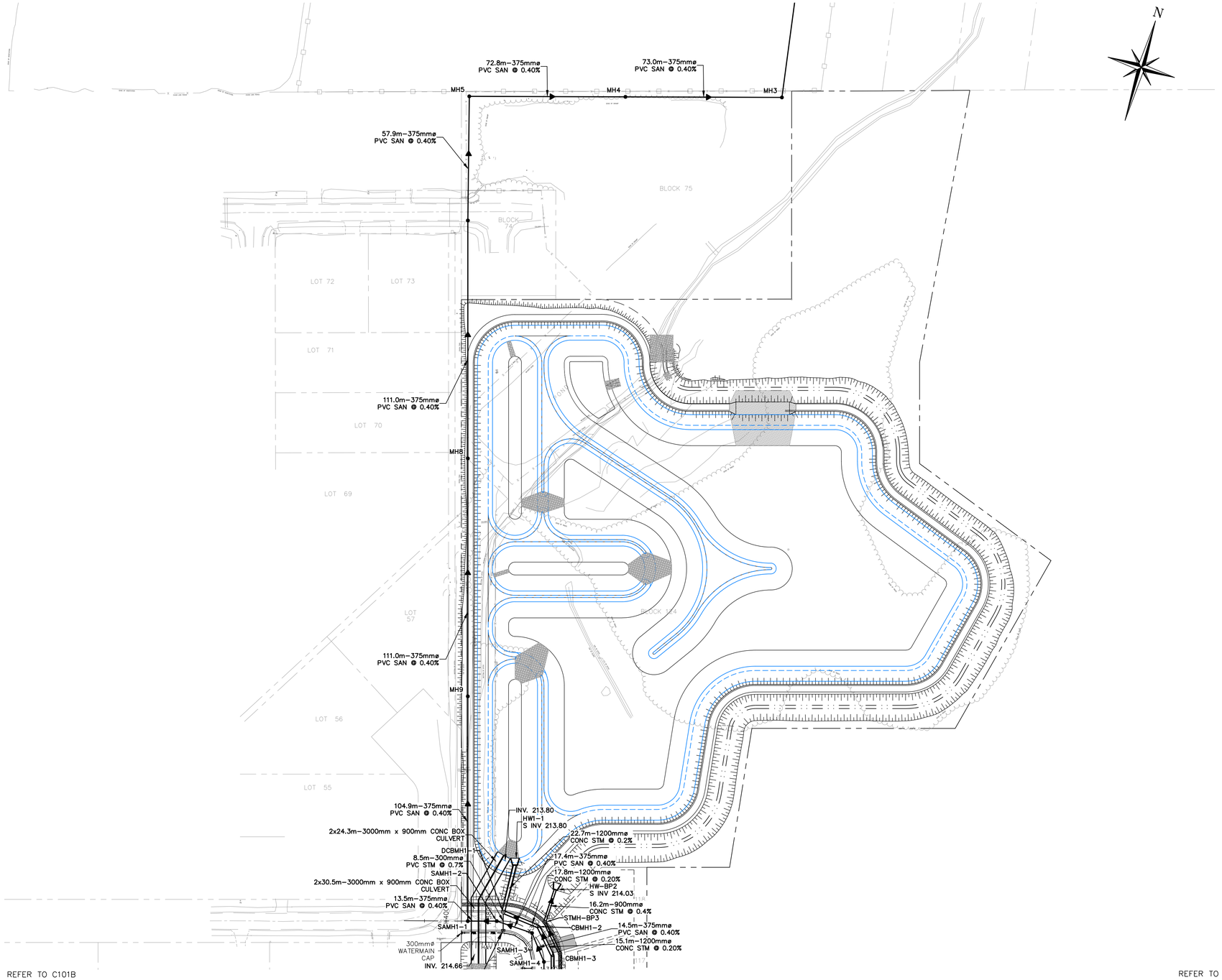
Engineer

Project: NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing: INDEX SHEET

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C100



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Engineer

Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
GENERAL SERVICING PLAN
NORTH PART

CROZIER CONSULTING ENGINEERS

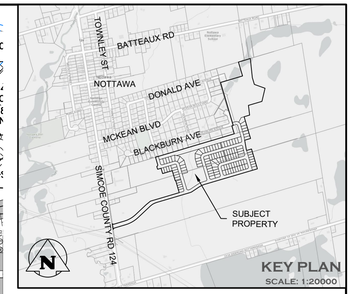
Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C101A

REFER TO C101A

REFER TO C101A

REFER TO C101C

REFER TO C101B



N

SCALE: 1:1000

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Engineer

Engineer

Project

NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing

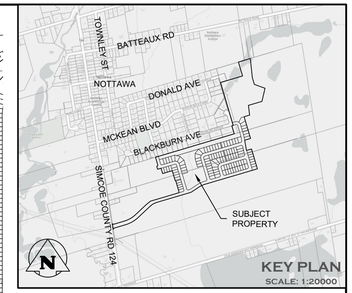
GENERAL SERVICING PLAN
CENTRAL PART

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C101B

REFER TO C101B

REFER TO C101B



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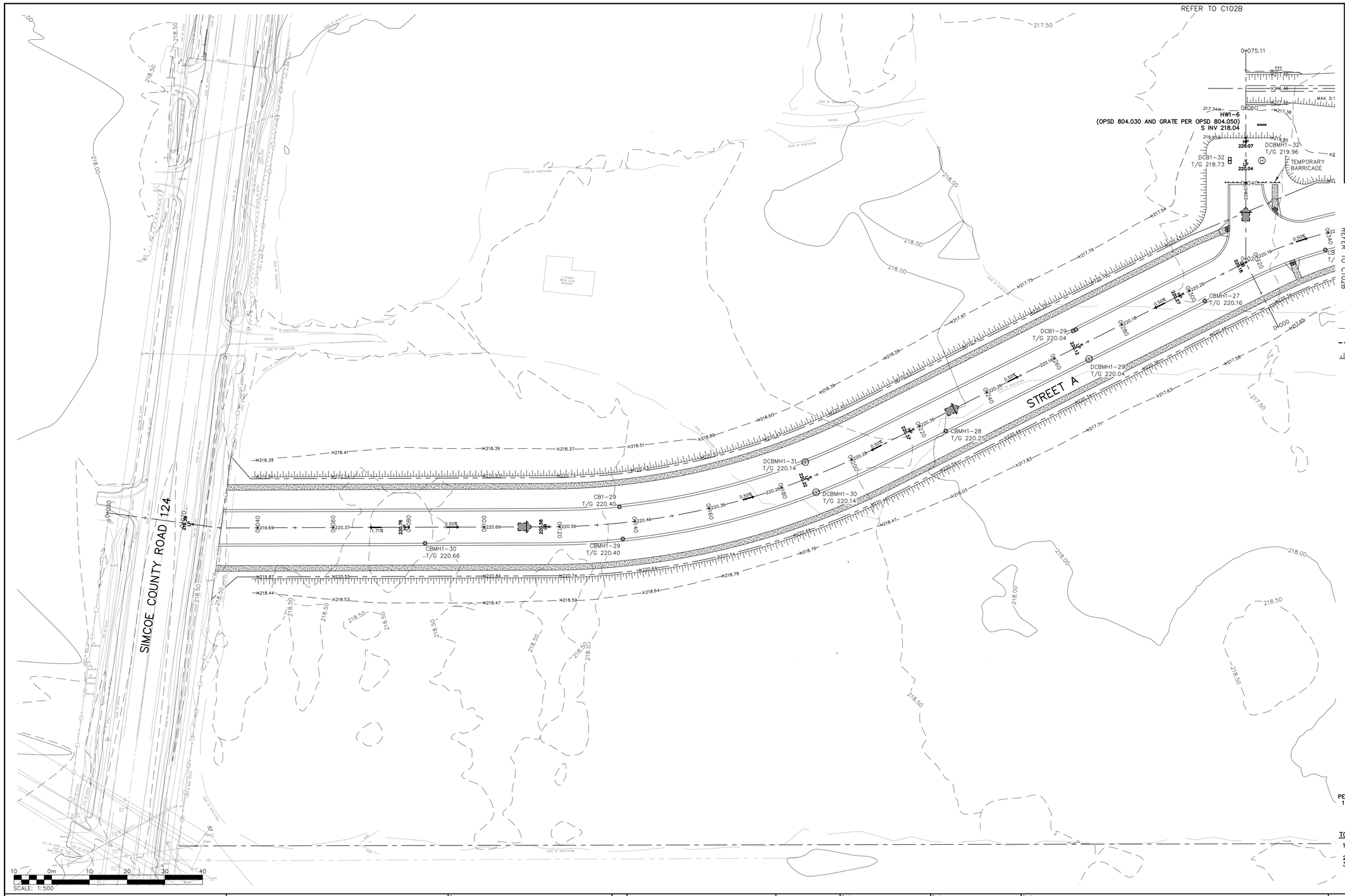
Engineer

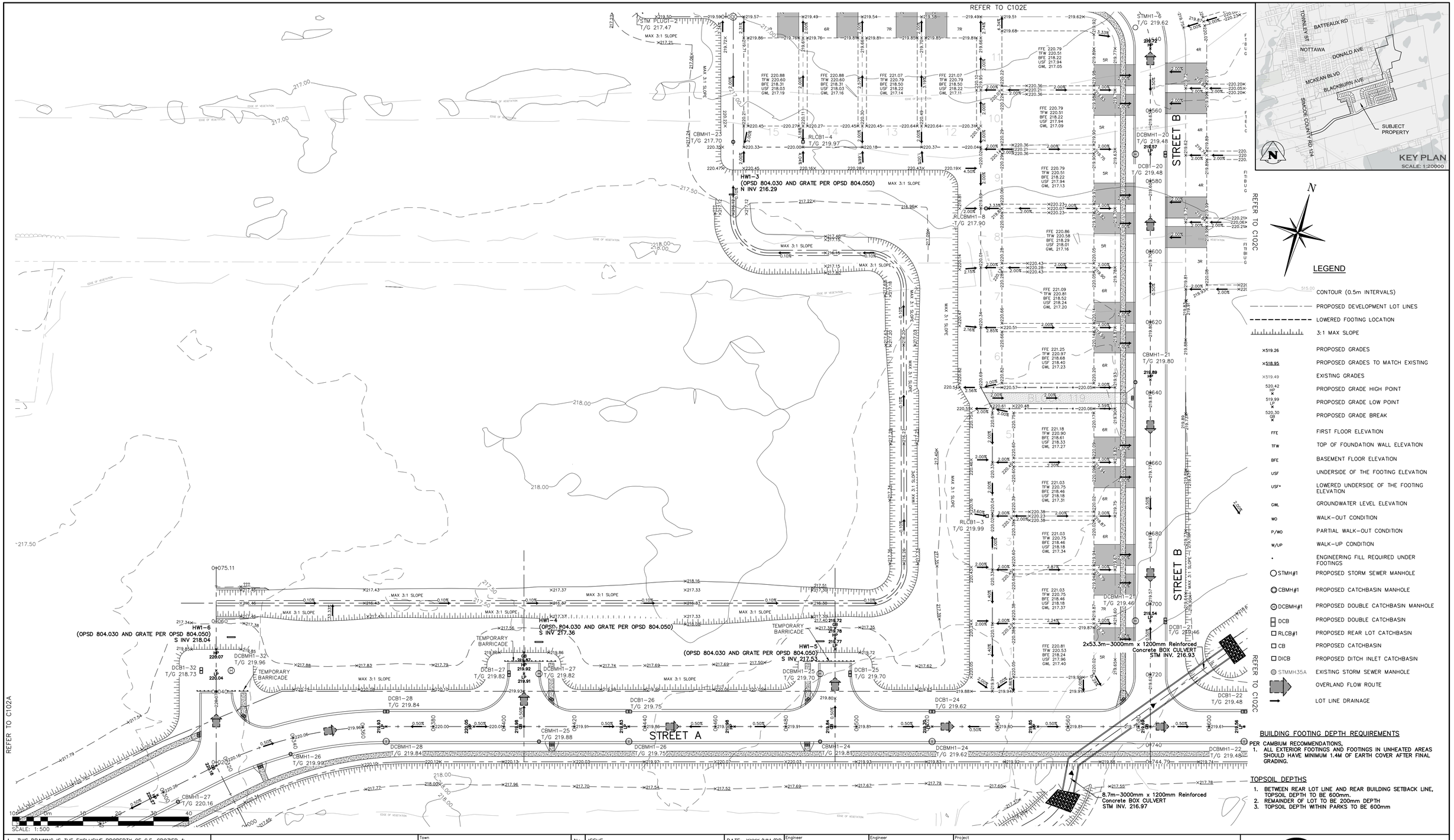
Project: NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing: GENERAL SERVICING PLAN
SOUTH-WEST PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C101C


REFER TO C102B
REFER TO C102B
STREET A
SIMCOE COUNTY ROAD 124
HW1-6
(OPSD 804.030 AND GRATE PER OPSD 804.050)
S INV 218.04
DCB1-32
T/G 218.73
DCBMH1-32
T/G 219.96
TEMPORARY
BARRICADE
DCB1-29
T/G 220.04
DCBMH1-27
T/G 220.16
DCBMH1-29
T/G 220.04
CBMH1-28
T/G 220.25
DCBMH1-31
T/G 220.14
DCBMH1-30
T/G 220.14
CB1-29
T/G 220.40
CBMH1-29
T/G 220.40
CBMH1-30
T/G 220.66
MAX 3:1
0+075.11
0+060
0+040
0+020
0+000
0+080
0+100
0+120
0+140
0+160
0+180
0+200
0+220
0+240
0+260
0+280
0+300
0+320
0+340
0+360
0+380
0+400
0+420
0+440
0+460
0+480
0+500
0+520
0+540
0+560
0+580
0+600
0+620
0+640
0+660
0+680
0+700
0+720
0+740
0+760
0+780
0+800
0+820
0+840
0+860



LEGEND

- CONTOUR (0.5m INTERVALS)
- PROPOSED DEVELOPMENT LOT LINES
- LOWERED FOOTING LOCATION
- 3:1 MAX SLOPE
- PROPOSED GRADES
- PROPOSED GRADES TO MATCH EXISTING
- EXISTING GRADES
- PROPOSED GRADE HIGH POINT
- PROPOSED GRADE LOW POINT
- PROPOSED GRADE BREAK
- FFE — FIRST FLOOR ELEVATION
- TFW — TOP OF FOUNDATION WALL ELEVATION
- BFE — BASEMENT FLOOR ELEVATION
- USF — UNDERSIDE OF THE FOOTING ELEVATION
- USF* — LOWERED UNDERSIDE OF THE FOOTING ELEVATION
- GWL — GROUNDWATER LEVEL ELEVATION
- WO — WALK-OUT CONDITION
- P/WO — PARTIAL WALK-OUT CONDITION
- W/UP — WALK-UP CONDITION
- * — ENGINEERING FILL REQUIRED UNDER FOOTINGS
- STMH#1 — PROPOSED STORM SEWER MANHOLE
- CBMH#1 — PROPOSED CATCHBASIN MANHOLE
- DCBMH#1 — PROPOSED DOUBLE CATCHBASIN MANHOLE
- DCB — PROPOSED DOUBLE CATCHBASIN
- RLCB#1 — PROPOSED REAR LOT CATCHBASIN
- CB — PROPOSED CATCHBASIN
- DICB — PROPOSED DITCH INLET CATCHBASIN
- STMMH35A — EXISTING STORM SEWER MANHOLE
- OVERLAND FLOW ROUTE
- LOT LINE DRAINAGE

BUILDING FOOTING DEPTH REQUIREMENTS

PER CAMBIUM RECOMMENDATIONS,

1. ALL EXTERIOR FOOTINGS AND FOOTINGS IN UNHEATED AREAS SHOULD HAVE MINIMUM 1.4M OF EARTH COVER AFTER FINAL GRADING.

TOPSOIL DEPTHS

1. BETWEEN REAR LOT LINE AND REAR BUILDING SETBACK LINE, TOPSOIL DEPTH TO BE 600mm.
2. REMAINDER OF LOT TO BE 200mm DEPTH
3. TOPSOIL DEPTH WITHIN PARKS TO BE 600mm

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Engineer

Engineer

Project

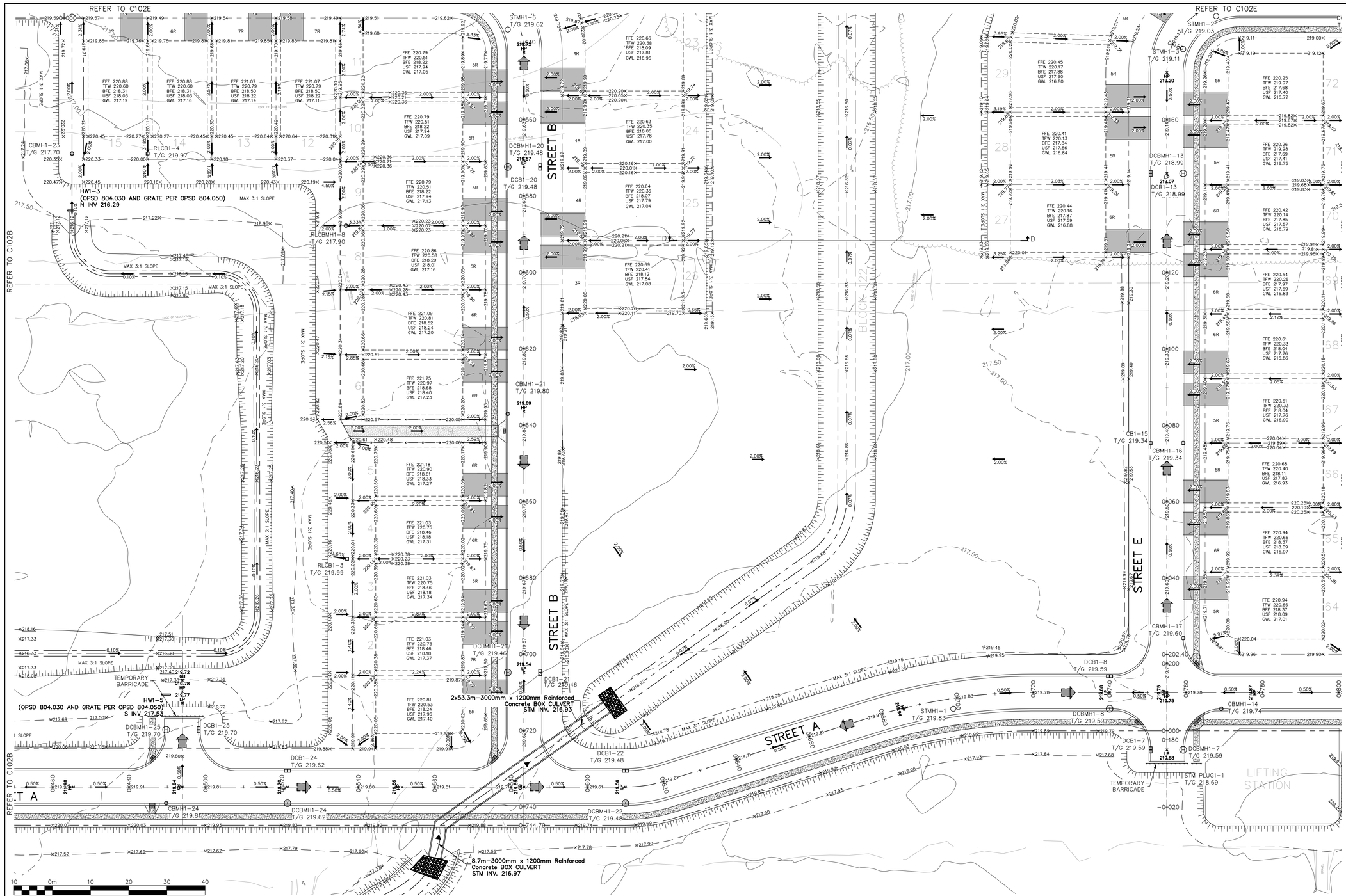
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

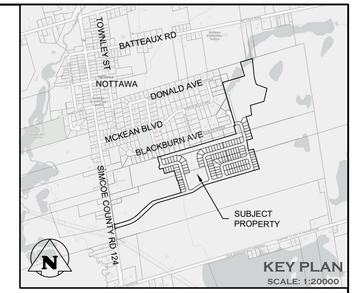
Drawing

SITE GRADING PLAN
CENTRAL WEST PART

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C102B





LEGEND

- CONTOUR (0.5m INTERVALS)
- PROPOSED DEVELOPMENT LOT LINES
- LOWERED FOOTING LOCATION
- 3:1 MAX SLOPE
- ×519.26 — PROPOSED GRADES
- ×518.95 — PROPOSED GRADES TO MATCH EXISTING
- ×519.49 — EXISTING GRADES
- 520.42 HP — PROPOSED GRADE HIGH POINT
- 519.99 LP — PROPOSED GRADE LOW POINT
- 520.30 GB — PROPOSED GRADE BREAK
- FFE — FIRST FLOOR ELEVATION
- TFW — TOP OF FOUNDATION WALL ELEVATION
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- OVERLAND FLOW ROUTE
- LOT LINE DRAINAGE

BUILDING FOOTING DEPTH REQUIREMENTS

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3. TOPSOIL DEPTH WITHIN PARKS TO BE 600mm

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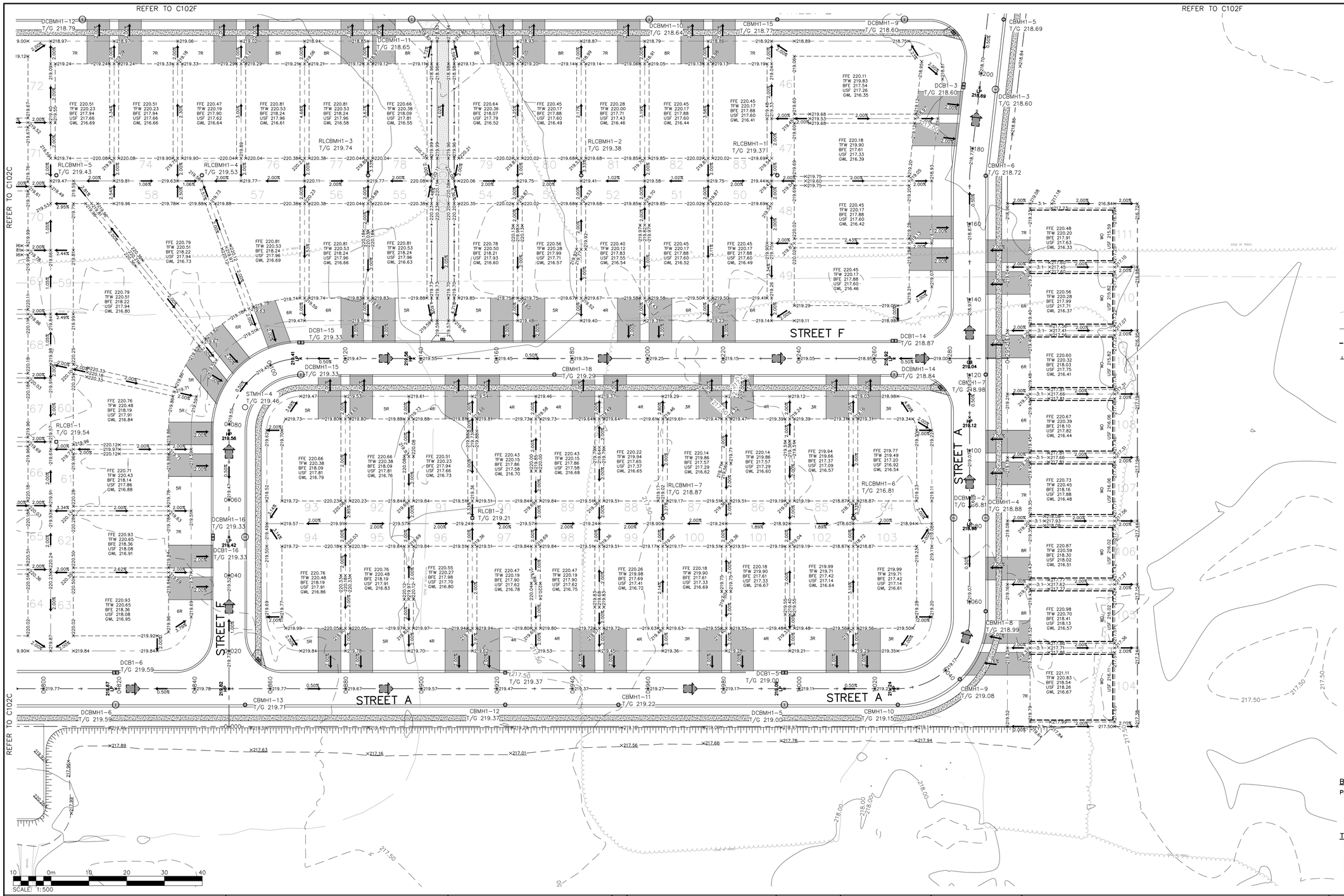
Engineer

Project: NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing: SITE GRADING PLAN
CENTRAL PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C102C



BUILDING FOOTING DEPTH REQUIREMENTS

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2024/04/12

Engineer

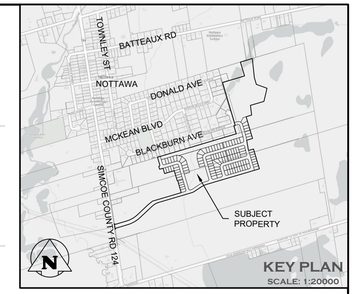
Engineer

Project: NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing: SITE GRADING PLAN
CENTRAL EAST PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C102D



KEY PLAN
SCALE: 1:20000

N

REFER TO C102F

LEGEND

- CONTOUR (0.5m INTERVALS)
- PROPOSED DEVELOPMENT LOT LINES
- LOWERED FOOTING LOCATION
- 3:1 MAX SLOPE
- PROPOSED GRADES
- PROPOSED GRADES TO MATCH EXISTING
- EXISTING GRADES
- PROPOSED GRADE HIGH POINT
- PROPOSED GRADE LOW POINT
- PROPOSED GRADE BREAK
- FFE — FIRST FLOOR ELEVATION
- TFW — TOP OF FOUNDATION WALL ELEVATION
- BFE — BASEMENT FLOOR ELEVATION
- USF — UNDERSIDE OF THE FOOTING ELEVATION
- USF* — LOWERED UNDERSIDE OF THE FOOTING ELEVATION
- GWL — GROUNDWATER LEVEL ELEVATION
- WO — WALK-OUT CONDITION
- P/WO — PARTIAL WALK-OUT CONDITION
- W/UP — WALK-UP CONDITION
- * — ENGINEERING FILL REQUIRED UNDER FOOTINGS
- STMH#1 — PROPOSED STORM SEWER MANHOLE
- CBMH#1 — PROPOSED CATCHBASIN MANHOLE
- DCBMH#1 — PROPOSED DOUBLE CATCHBASIN MANHOLE
- DCB — PROPOSED DOUBLE CATCHBASIN
- RLCB#1 — PROPOSED REAR LOT CATCHBASIN
- CB — PROPOSED CATCHBASIN
- DICB — PROPOSED DITCH INLET CATCHBASIN
- STMMH35A — EXISTING STORM SEWER MANHOLE
- OVERLAND FLOW ROUTE
- LOT LINE DRAINAGE

BUILDING FOOTING DEPTH REQUIREMENTS

PER CAMBIUM RECOMMENDATIONS,

1. ALL EXTERIOR FOOTINGS AND FOOTINGS IN UNHEATED AREAS SHOULD HAVE MINIMUM 1.4M OF EARTH COVER AFTER FINAL GRADING.

TOPSOIL DEPTHS

1. BETWEEN REAR LOT LINE AND REAR BUILDING SETBACK LINE, TOPSOIL DEPTH TO BE 600mm.
2. REMAINDER OF LOT TO BE 200mm DEPTH
3. TOPSOIL DEPTH WITHIN PARKS TO BE 600mm

SCALE: 1:500

REFER TO C102B

REFER TO C102C

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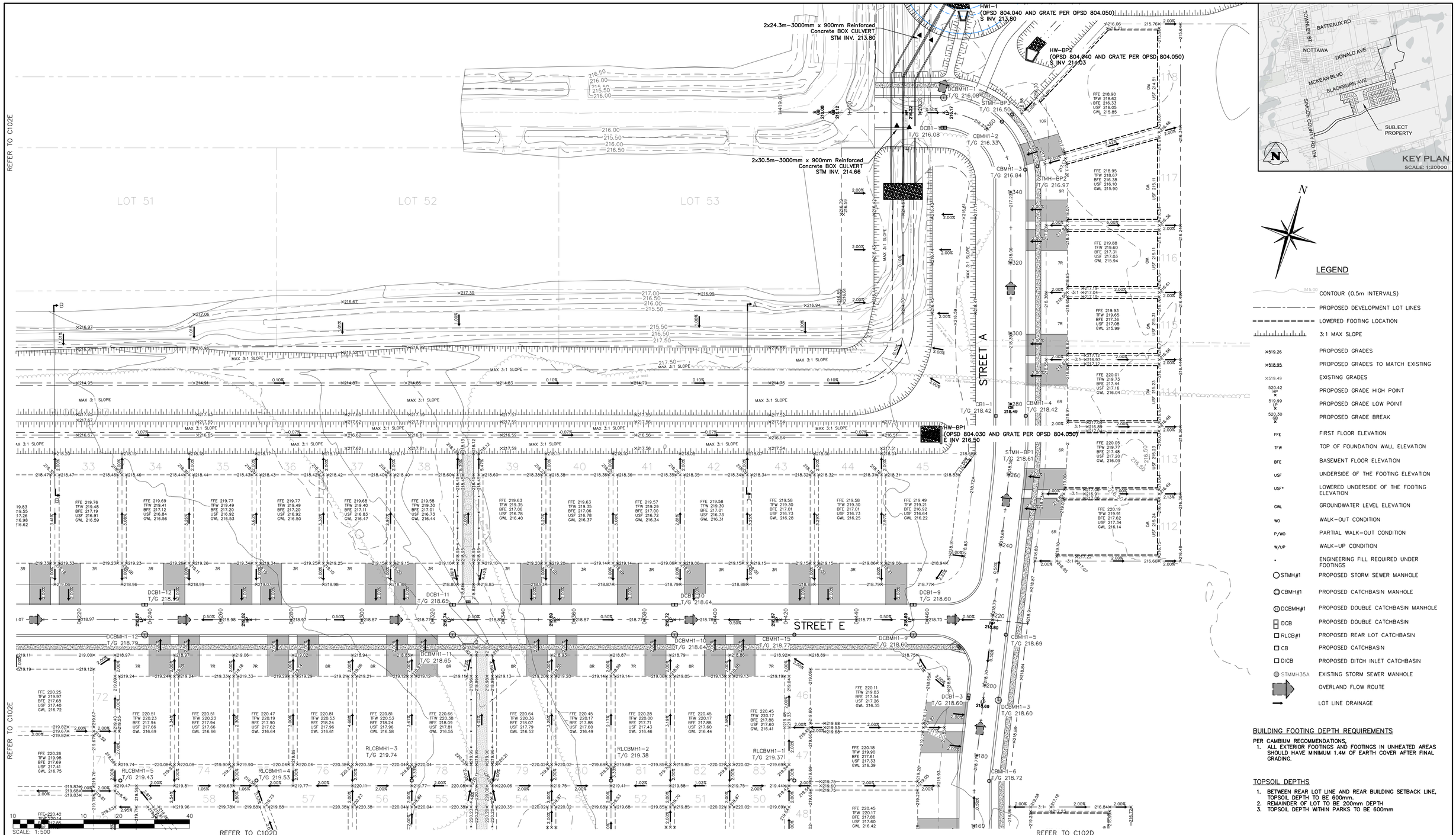
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
SITE GRADING PLAN
CENTRAL NORTH PART

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C102E



BUILDING FOOTING DEPTH REQUIREMENTS

PER CAMBIUM RECOMMENDATIONS,

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TOPSOIL DEPTHS

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Engineer

Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
SITE GRADING PLAN
NORTH-EAST PART

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C102F

LEGEND

515.00	CONTOUR (0.5m INTERVALS)
	PROPOSED DEVELOPMENT LOT LINES
	LOWERED FOOTING LOCATION
	3:1 MAX SLOPE
×519.26	PROPOSED GRADES
×518.95	PROPOSED GRADES TO MATCH EXISTING
×519.49	EXISTING GRADES
520.42 HP	PROPOSED GRADE HIGH POINT
519.99 LP	PROPOSED GRADE LOW POINT
520.30 GB	PROPOSED GRADE BREAK
FFE	FIRST FLOOR ELEVATION
TFW	TOP OF FOUNDATION WALL ELEVATION
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WO	WALK-OUT CONDITION
P/WO	PARTIAL WALK-OUT CONDITION
W/UP	WALK-UP CONDITION
*	ENGINEERING FILL REQUIRED UNDER FOOTINGS

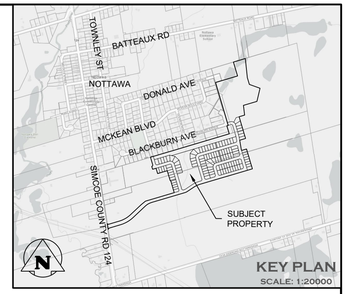
STMH#1	PROPOSED STORM SEWER MANHOLE
CBMH#1	PROPOSED CATCHBASIN MANHOLE
DCBMH#1	PROPOSED DOUBLE CATCHBASIN MANHOLE
DCB	PROPOSED DOUBLE CATCHBASIN
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DICB	PROPOSED DITCH INLET CATCHBASIN
STMMH.35A	EXISTING STORM SEWER MANHOLE
	OVERLAND FLOW ROUTE
	LOT LINE DRAINAGE

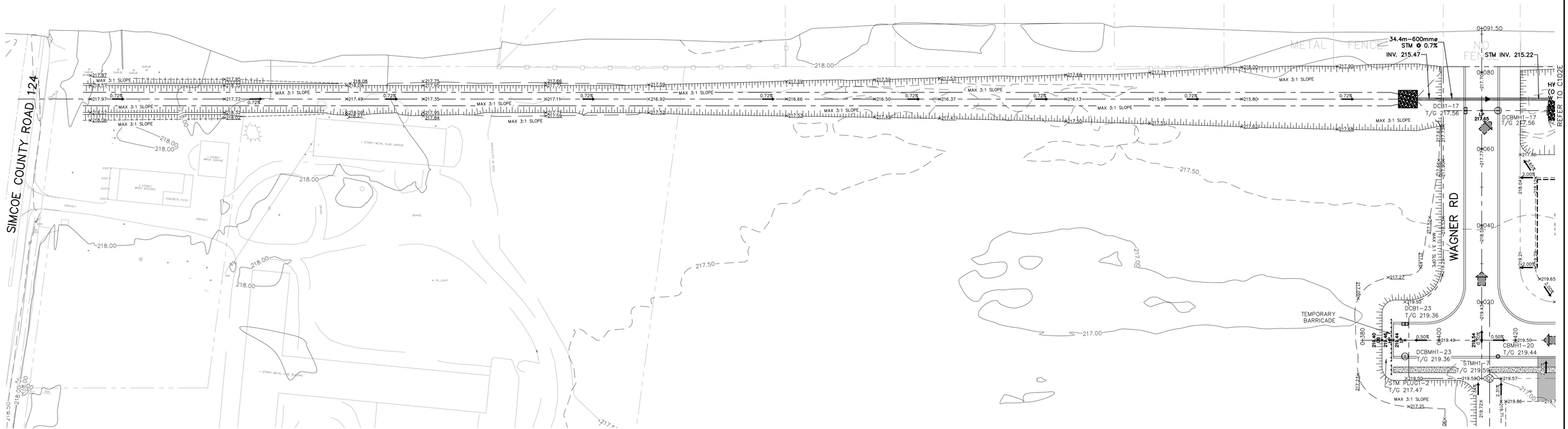
BUILDING FOOTING DEPTH REQUIREMENTS

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10 0m 10 20 30 40
SCALE: 1:500

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Town

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Engineer

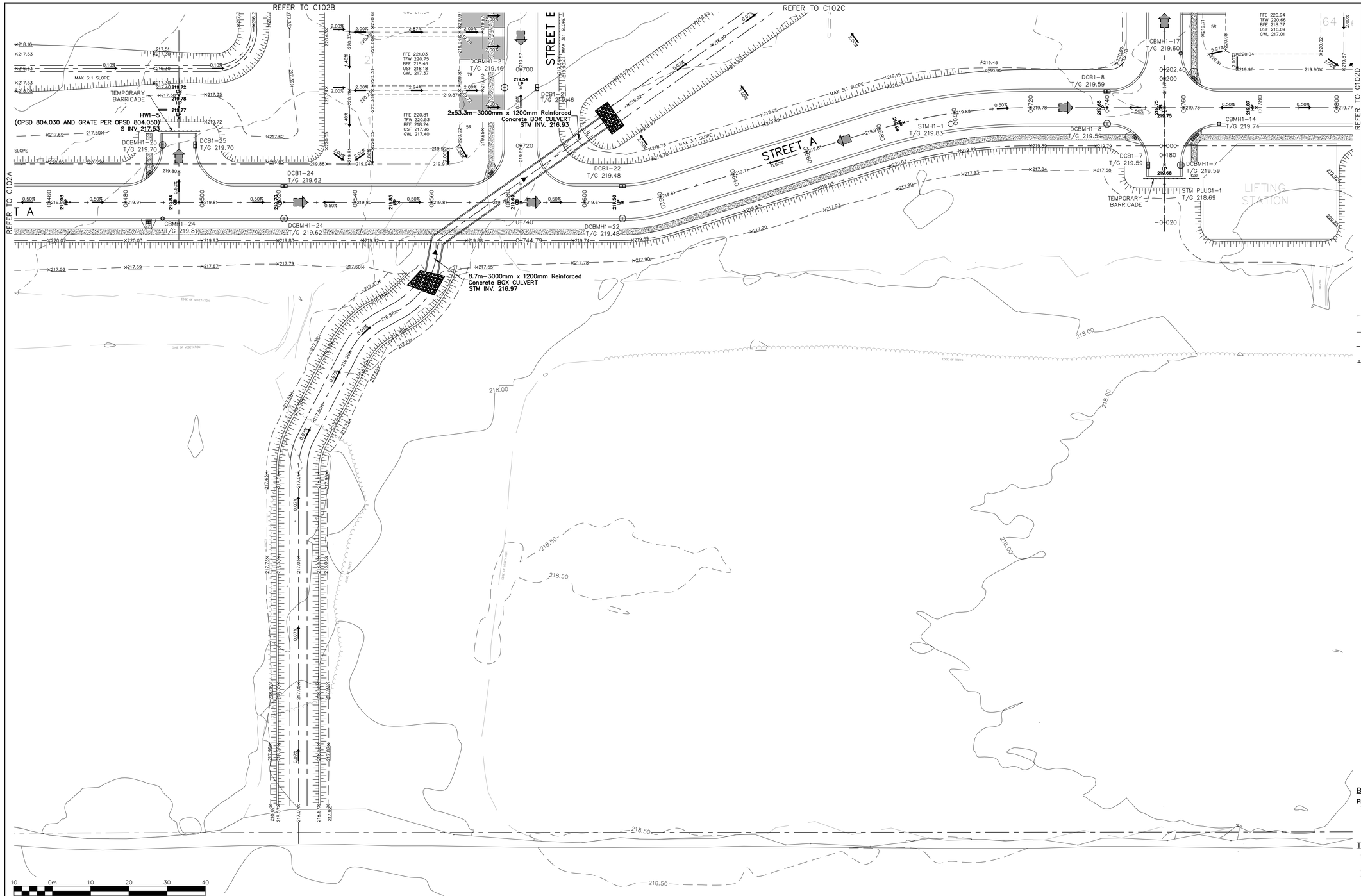
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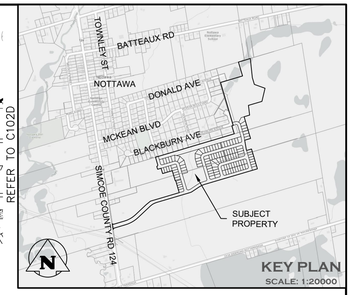
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
SITE GRADING PLAN
NORTH-WEST PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C102G





N

LEGEND

515.00	CONTOUR (0.5m INTERVALS)
	PROPOSED DEVELOPMENT LOT LINES
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10 0m 10 20 30 40
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Engineer

Engineer

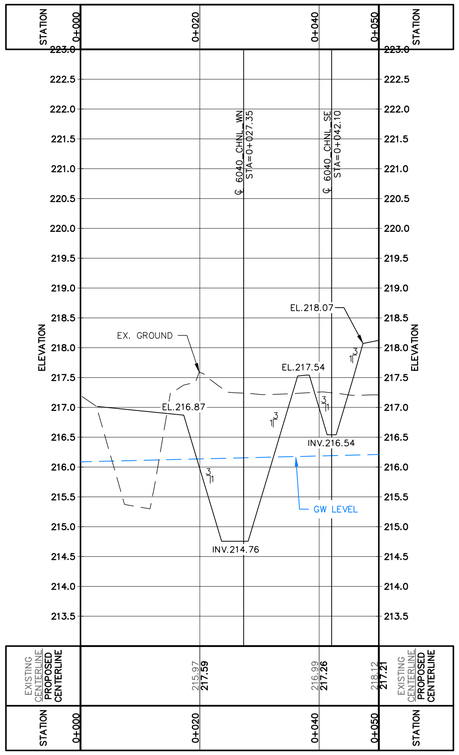
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
SITE GRADING PLAN
CENTRAL SOUTH PART

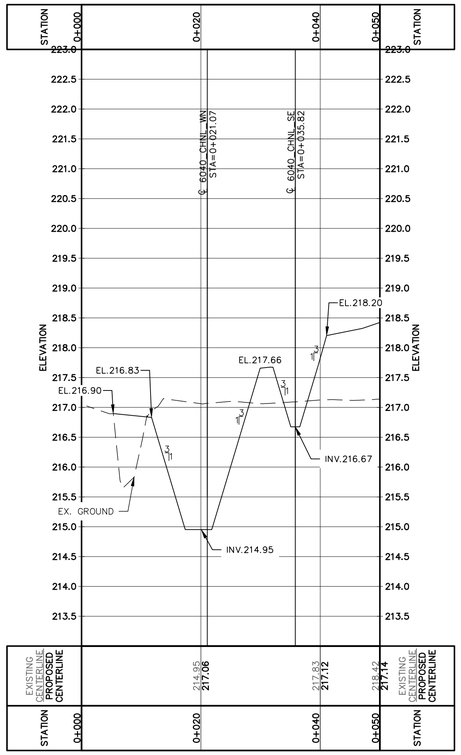
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C102H

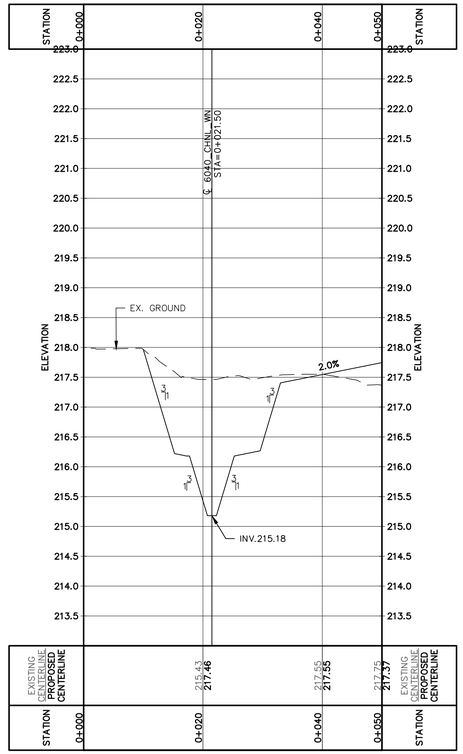
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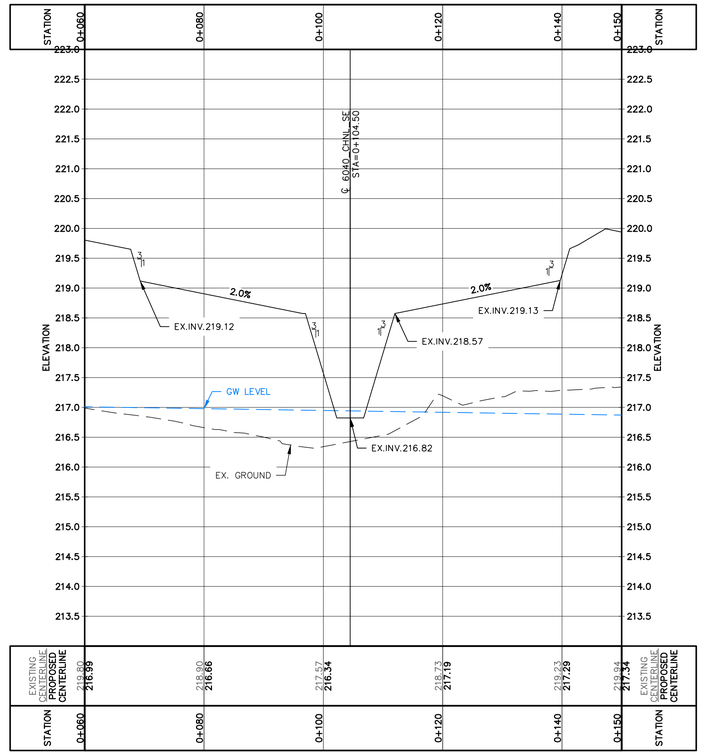
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XSEC C–C
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XSEC D–D
SCALE V 1:50, H 1:500



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SCALE: 1:500

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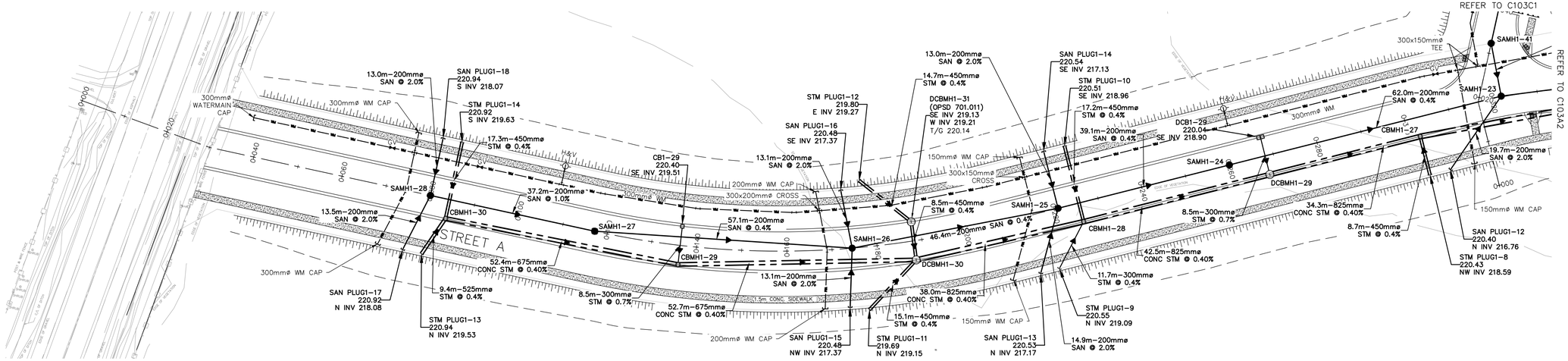
Engineer

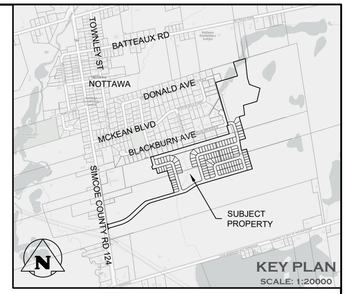
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
CHANNELS CROSS–SECTIONS A–A – D–D

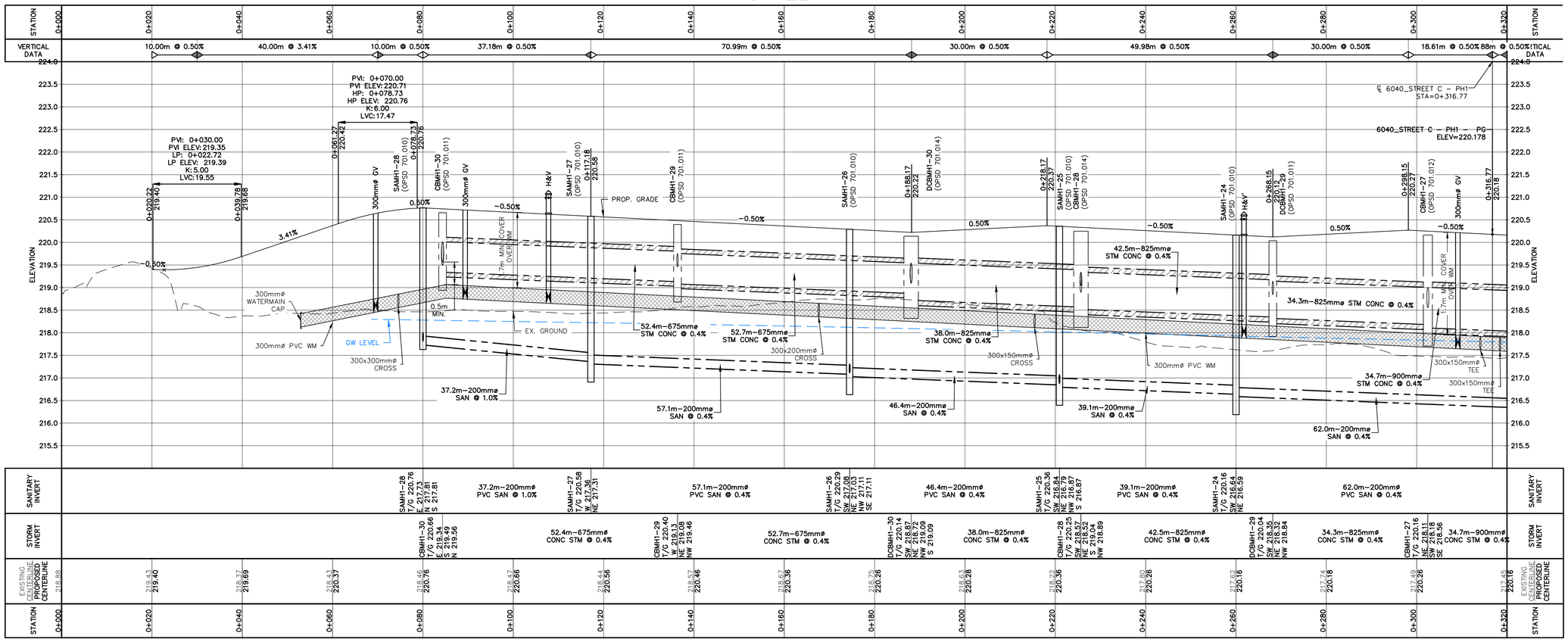
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C102I









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SCALE: 1:500

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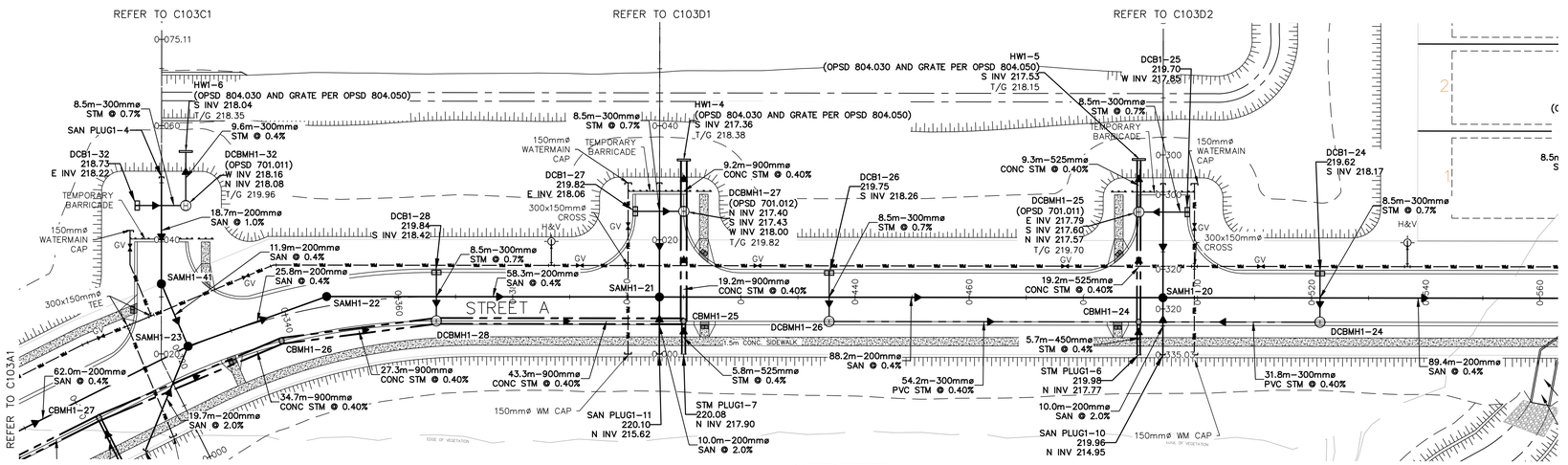
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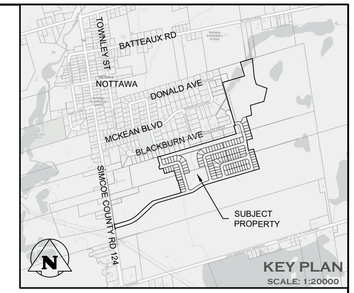
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
PLAN AND PROFILE
STREET A
STA. 0+000 TO STA. 0+320

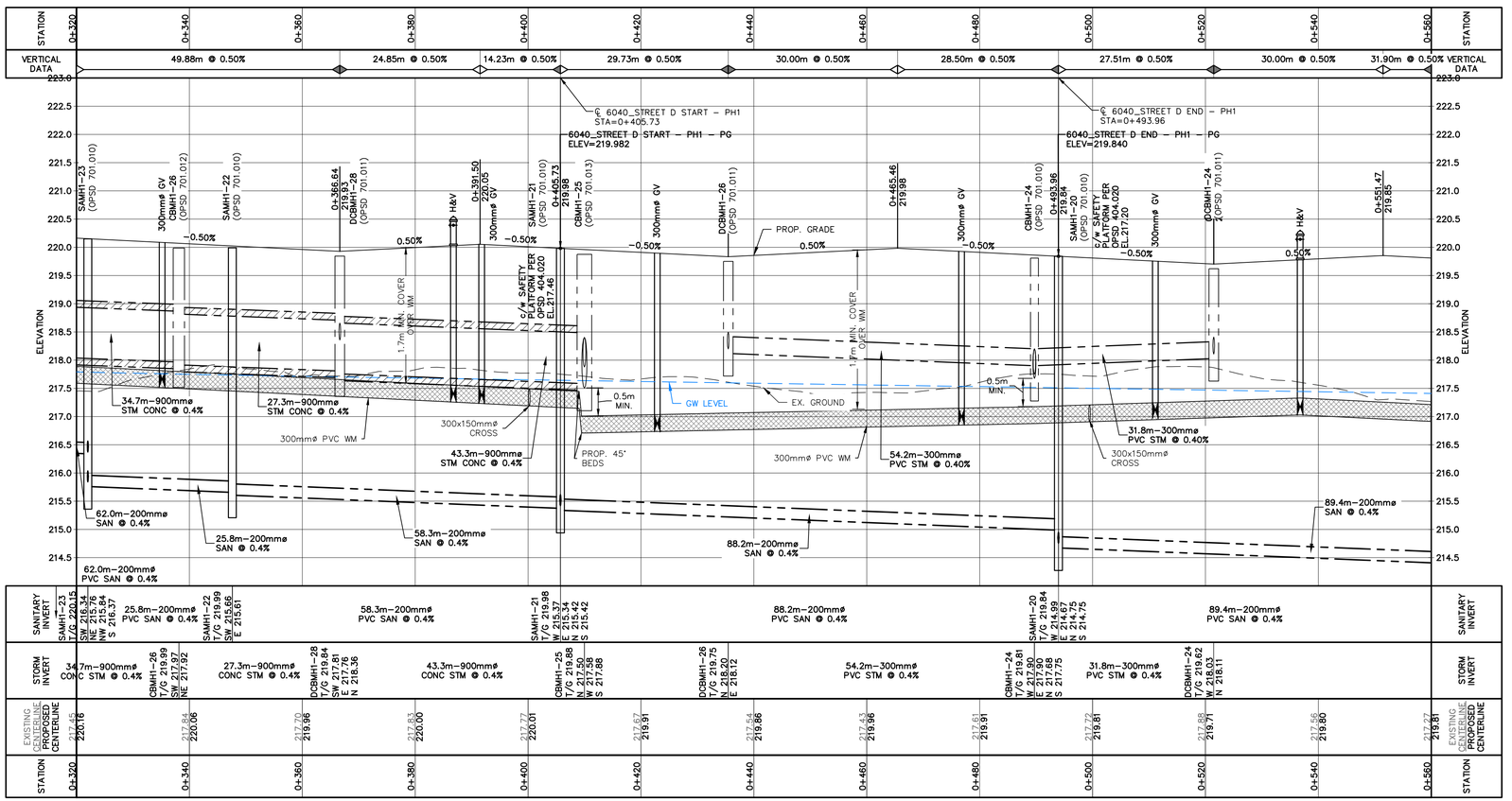
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103A1









10 0m 10 20 30 40
SCALE: 1:500

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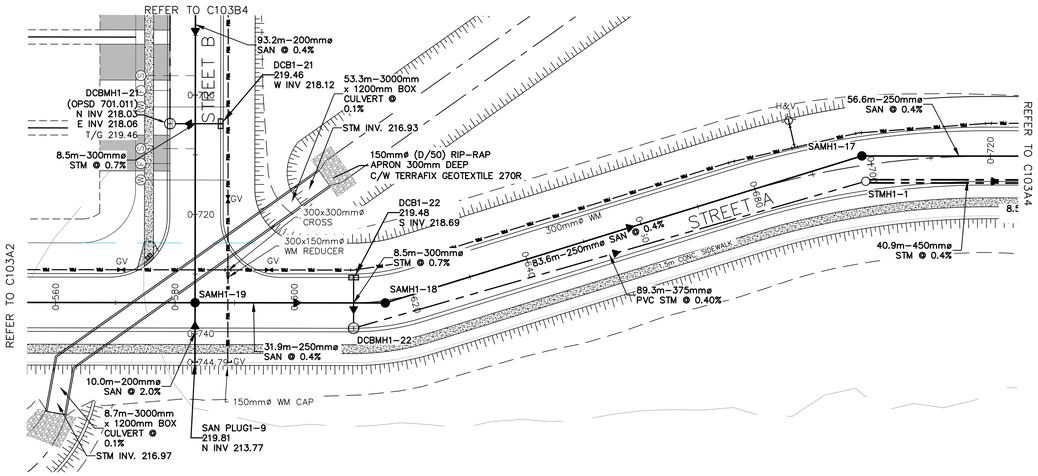
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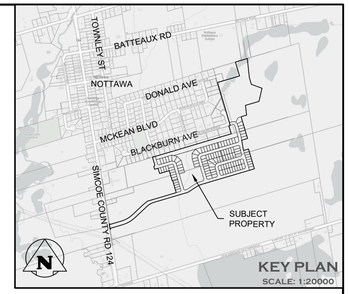
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
PLAN AND PROFILE
STREET A
STA. 0+320 TO STA. 0+560

CROZIER CONSULTING ENGINEERS

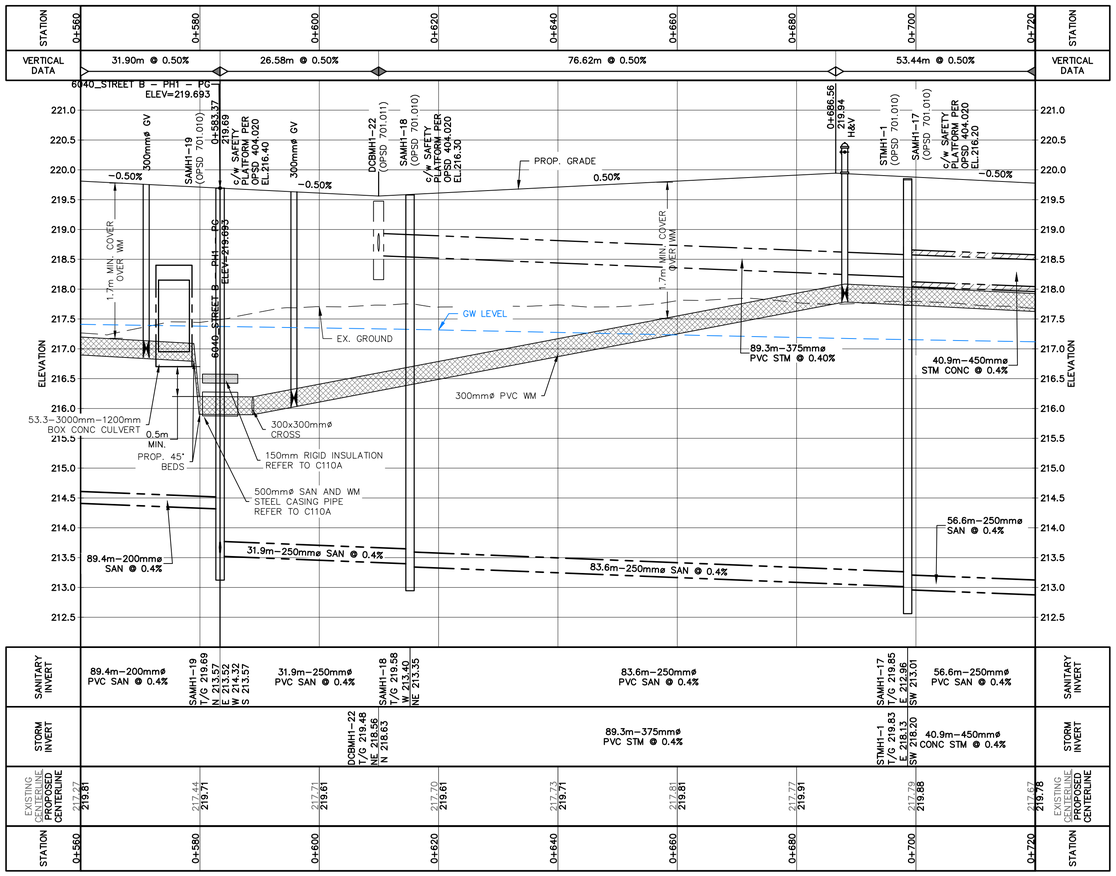
Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103A2







STREET A



10 0m 10 20 30 40
SCALE: 1:500

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Town

No.	ISSUE	DATE: YYYY/MM/DD
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Engineer

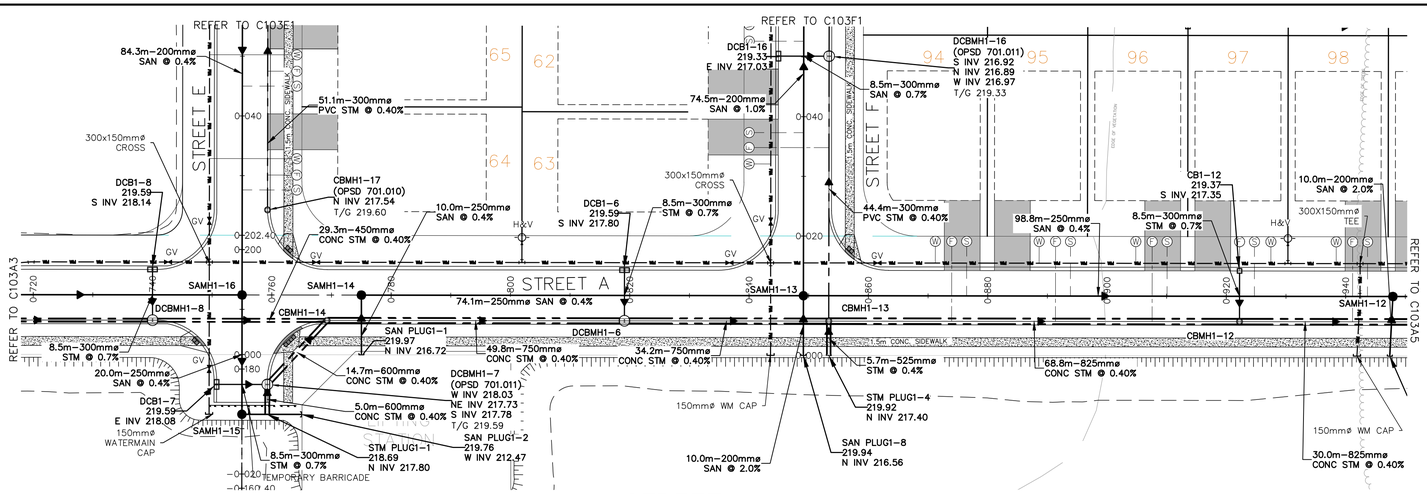
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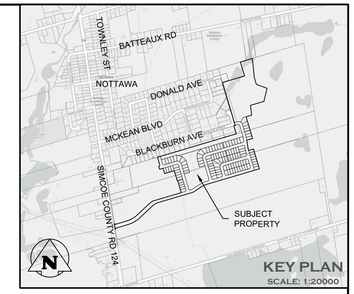
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
PLAN AND PROFILE
STREET A
STA. 0+560 TO STA. 0+720

CROZIER CONSULTING ENGINEERS

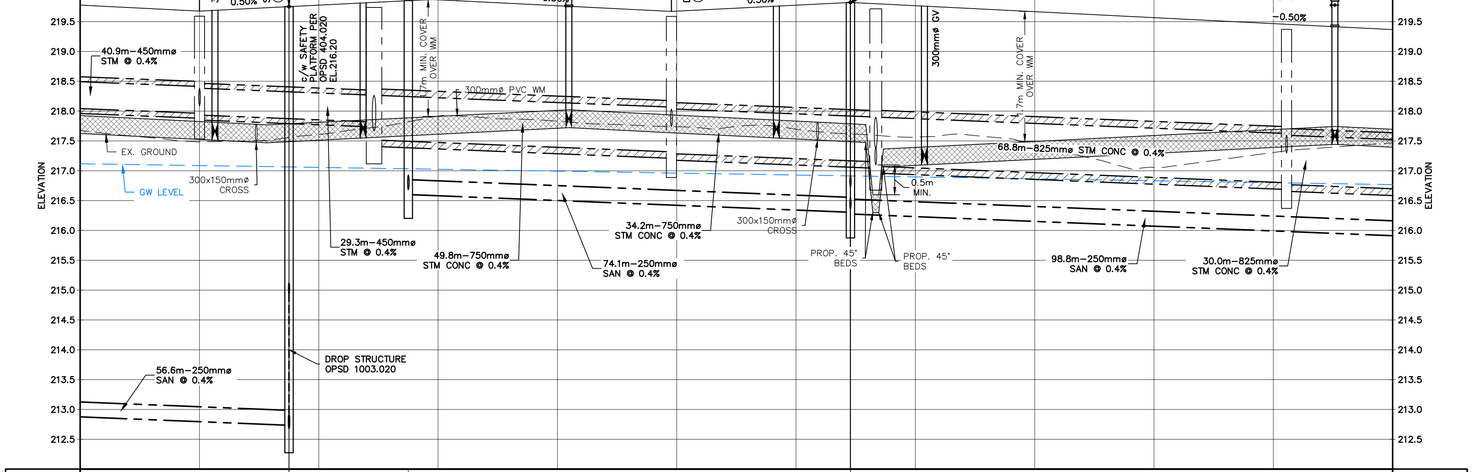
Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103A3





STREET A

STATION	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	STATION
VERTICAL DATA		53.44m @ 0.50%	15.02m @ 0.50%	23.99m @ 0.50%	40.11m @ 0.50%	30.00m @ 0.50%		147.00m @ 0.50%					VERTICAL DATA
SANITARY INVERT		56.6m–250mmø PVC SAN @ 0.4%	SAMH1–16 T/G 219.75 N 212.87 S 212.83 W 212.73	SAMH1–14 T/G 219.85 S 216.68 E 216.60	74.1m–250mmø PVC SAN @ 0.4%		SAMH1–13 T/G 219.82 W 216.91 E 216.86 N 216.72 S 216.36	98.8m–250mmø PVC SAN @ 0.4%					SANITARY INVERT
STORM INVERT		40.9m–450mmø CONC STM @ 0.4% DCBMH1–8 T/G 219.59 W 217.96 E 217.93 N 218.08	29.3m–450mmø CONC STM @ 0.4% CBMH1–14 T/G 219.74 W 217.62 E 217.52 SW 217.67	49.8m–750mmø CONC STM @ 0.4%		DCBMH1–6 T/G 219.59 W 217.32 E 217.39 N 217.24	34.2m–750mmø CONC STM @ 0.4%	CBMH1–13 T/G 219.71 W 217.26 E 217.08 N 217.10 S 217.38	68.8m–825mmø CONC STM @ 0.4%		CBMH1–12 T/G 219.37 W 216.80 E 217.17 N 217.29	30.0m–825mmø CONC STM @ 0.4%	STORM INVERT
EXISTING CENTERLINE	217.47	217.48	217.61	217.92	217.93	217.74	217.76	217.56	217.43	217.06	217.31	217.42	EXISTING CENTERLINE
PROPOSED CENTERLINE	219.78	219.68	219.78	219.87	219.77	219.68	219.78	219.77	219.87	219.57	219.47	219.37	PROPOSED CENTERLINE
STATION	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	STATION



10 0m 10 20 30 40
SCALE: 1:500

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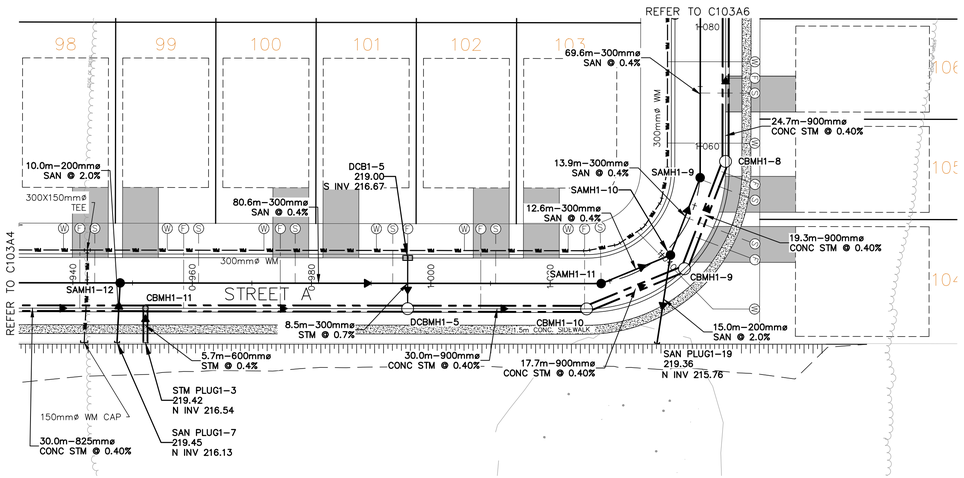
Engineer

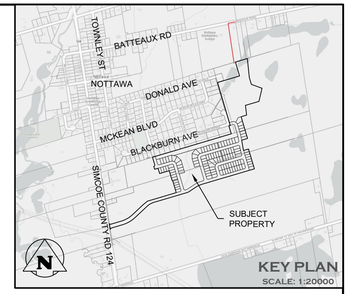
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
PLAN AND PROFILE
STREET A
STA. 0+720 TO STA. 0+940

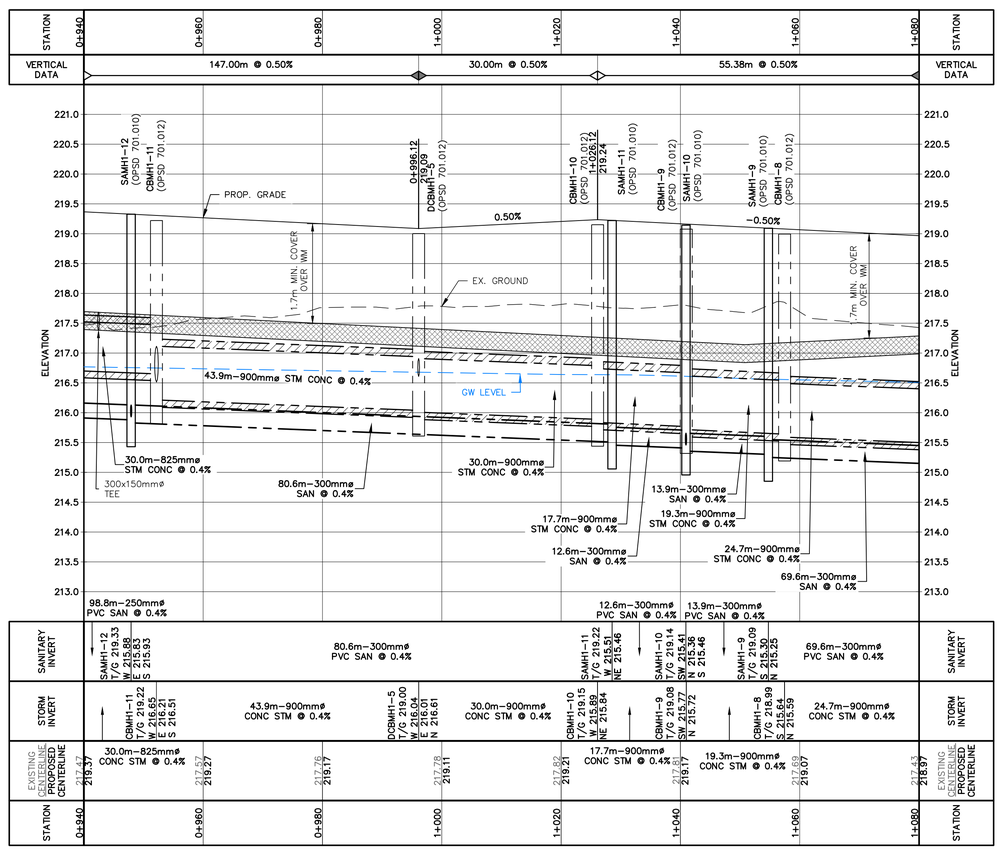
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103A4





STREET A



10 0m 10 20 30 40
SCALE: 1:500

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Engineer

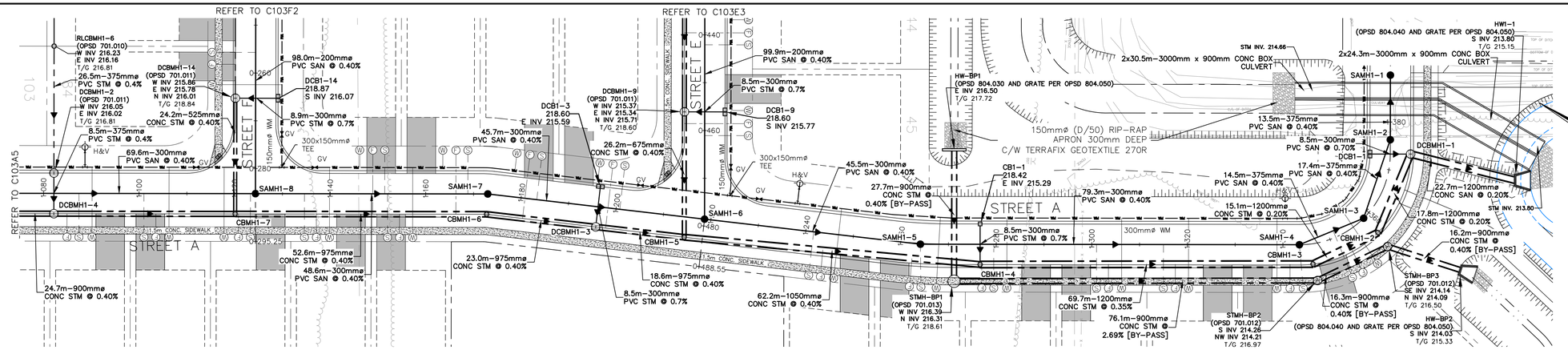
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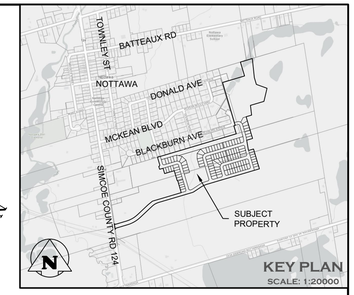
Project: NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing: PLAN AND PROFILE
STREET A
STA. 0+940 TO STA. 1+080

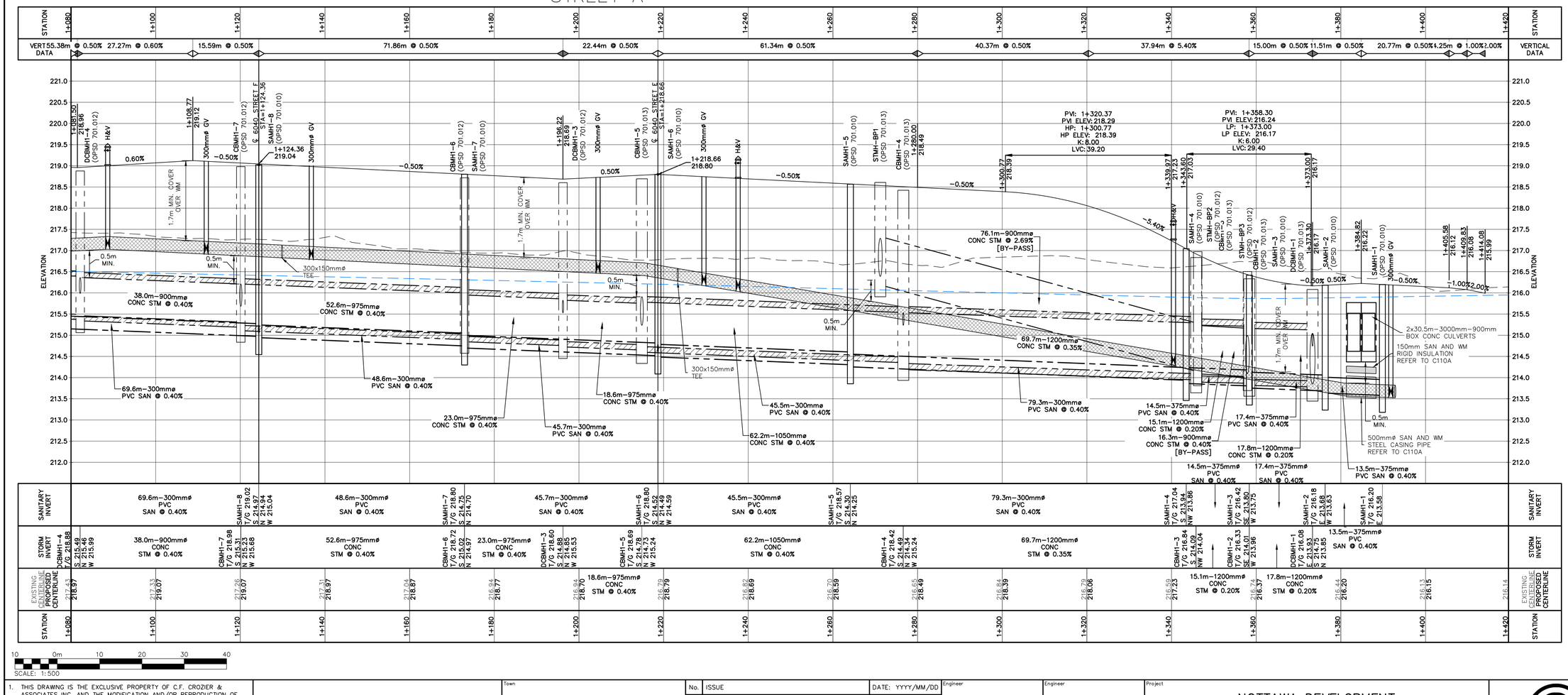
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103A5





STREET A



SCALE: 1:500

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Town

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Engineer

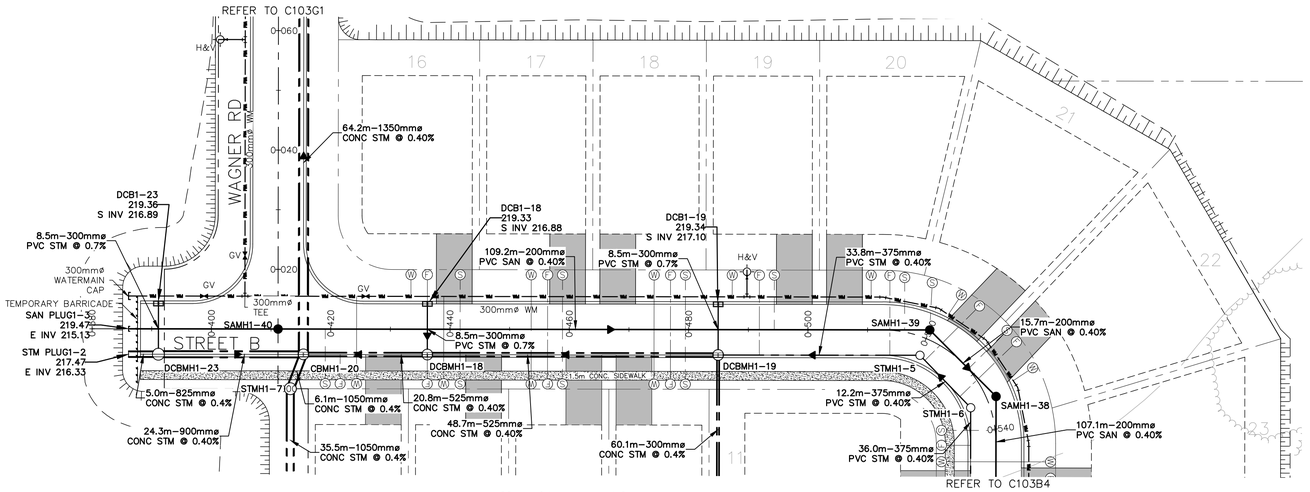
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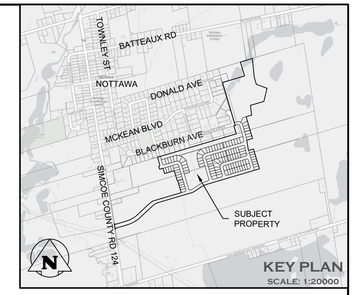
Project: NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

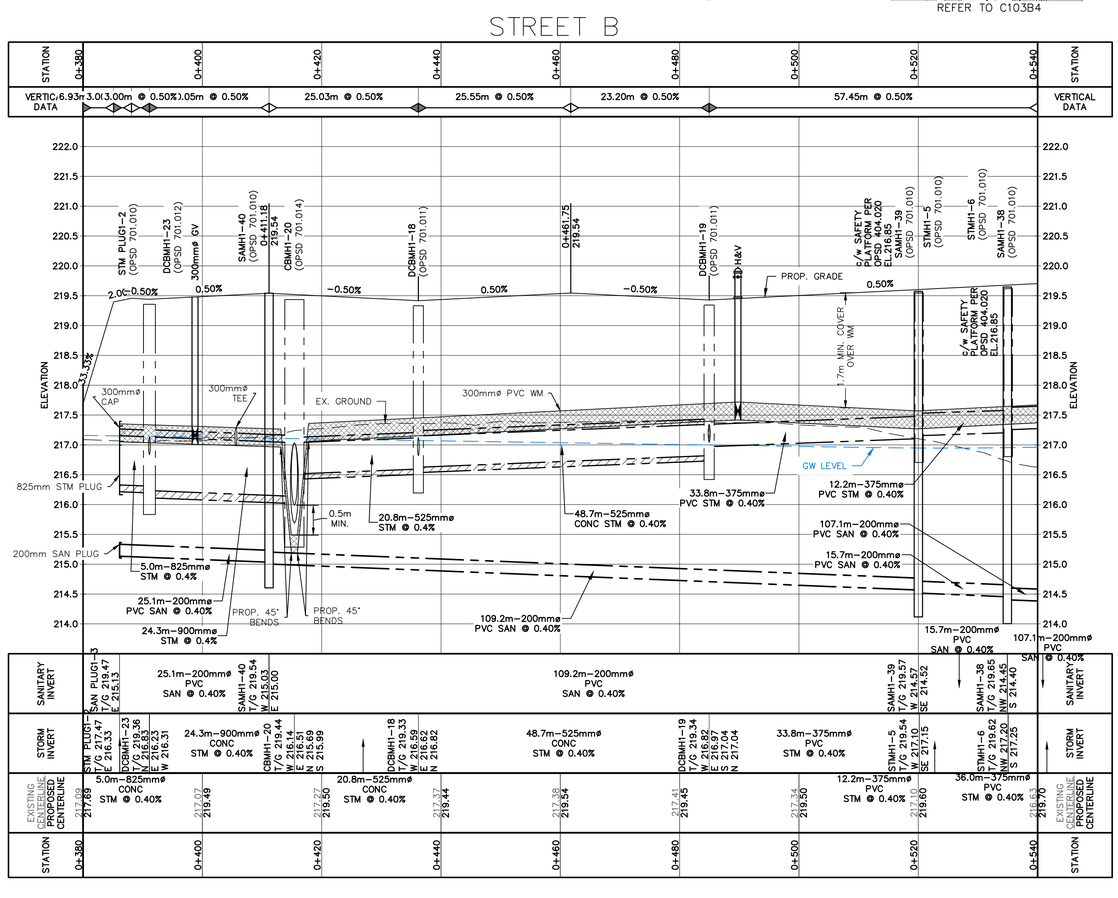
Drawing: PLAN AND PROFILE
STREET A
STA. 1+080 TO STA. 1+420

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103A6







10 0m 10 20 30 40
SCALE: 1:500

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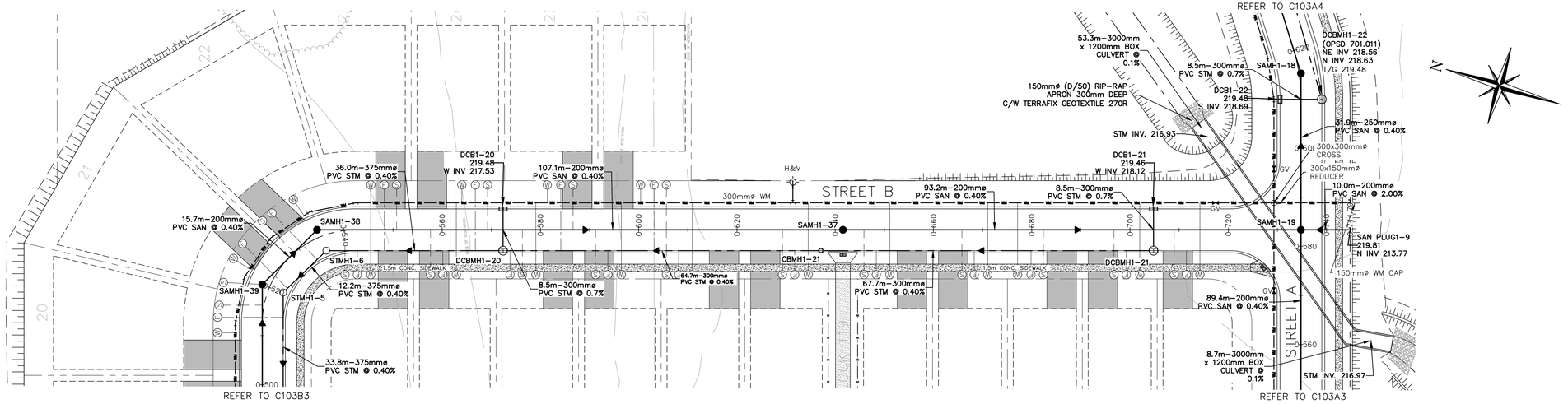
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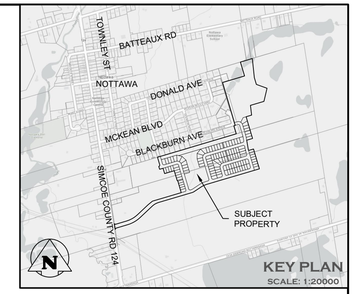
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
PLAN AND PROFILE
STREET B
STA. 0+440 TO STA. 0+540

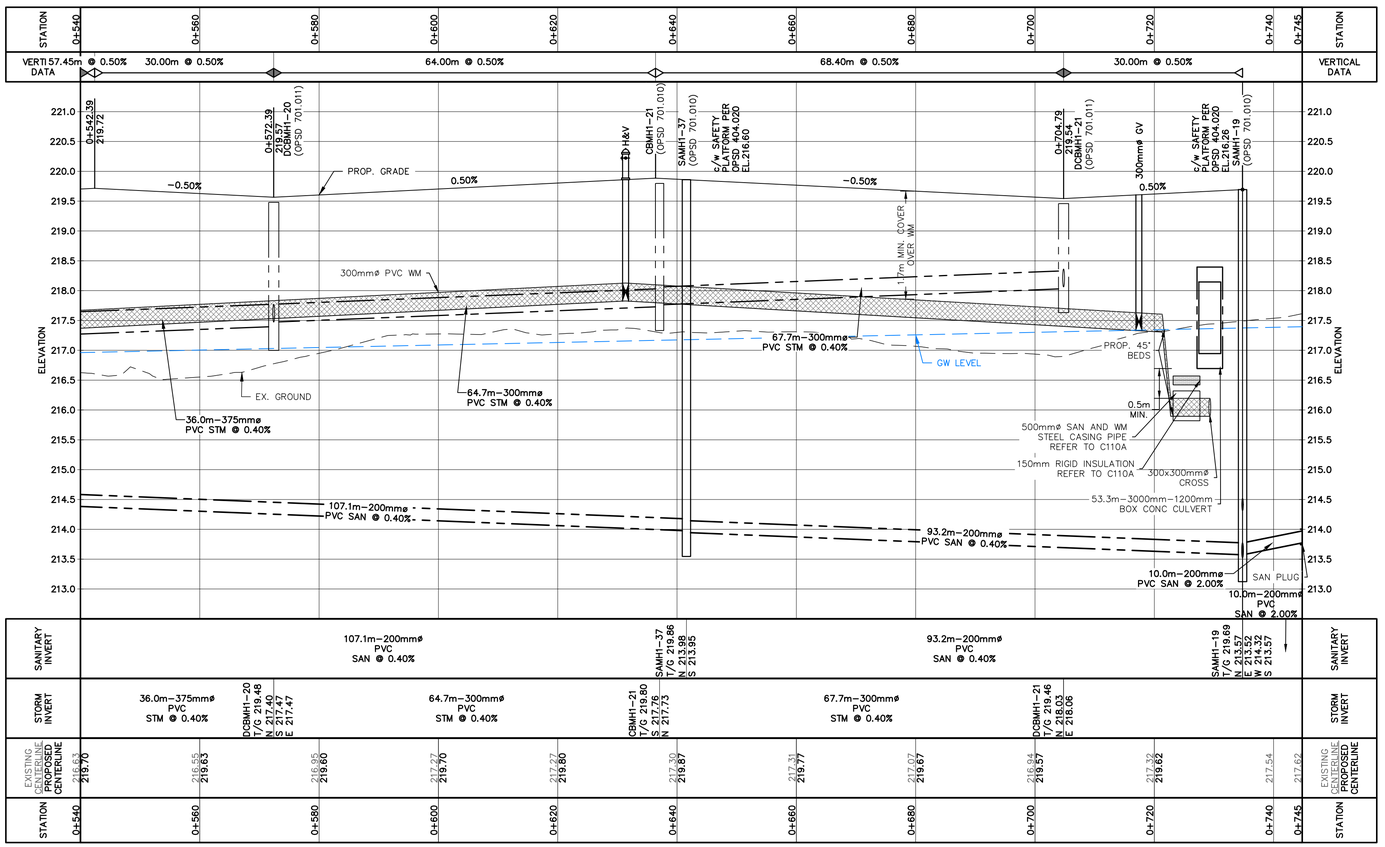
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103B3





STREET B



10 0m 10 20 30 40
SCALE: 1:500

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Engineer

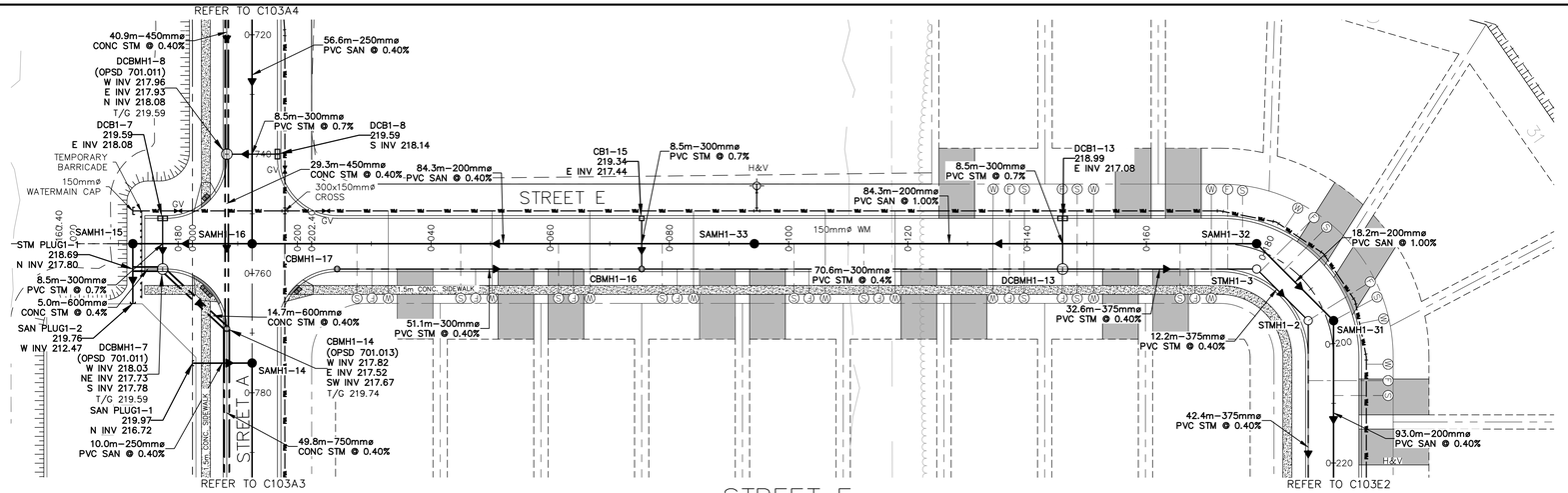
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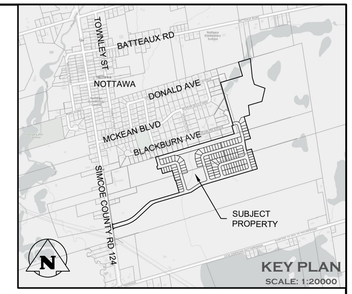
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

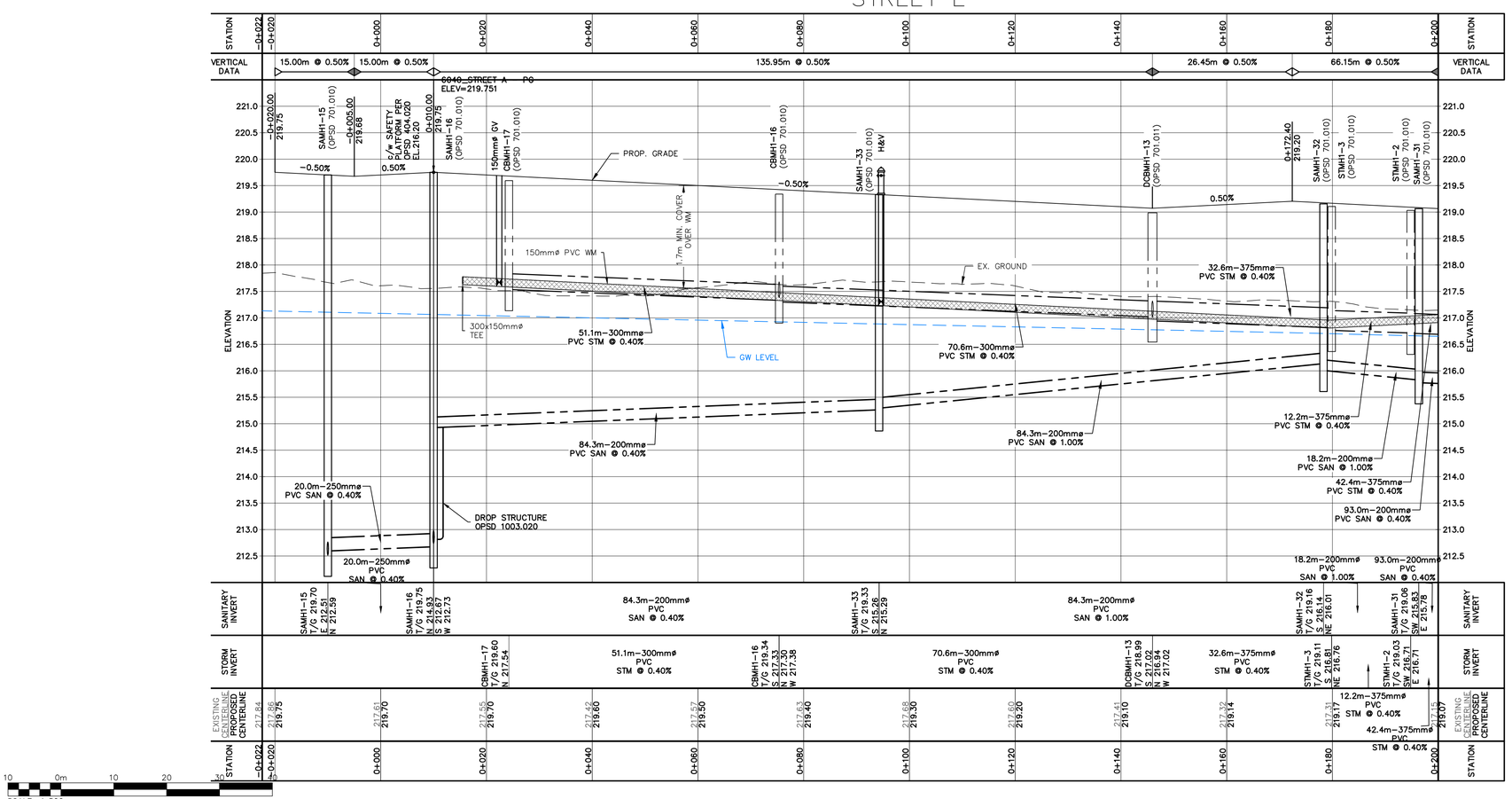
Drawing
PLAN AND PROFILE
STREET B
STA. 0+540 TO STA. 0+745

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103B4







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Engineer

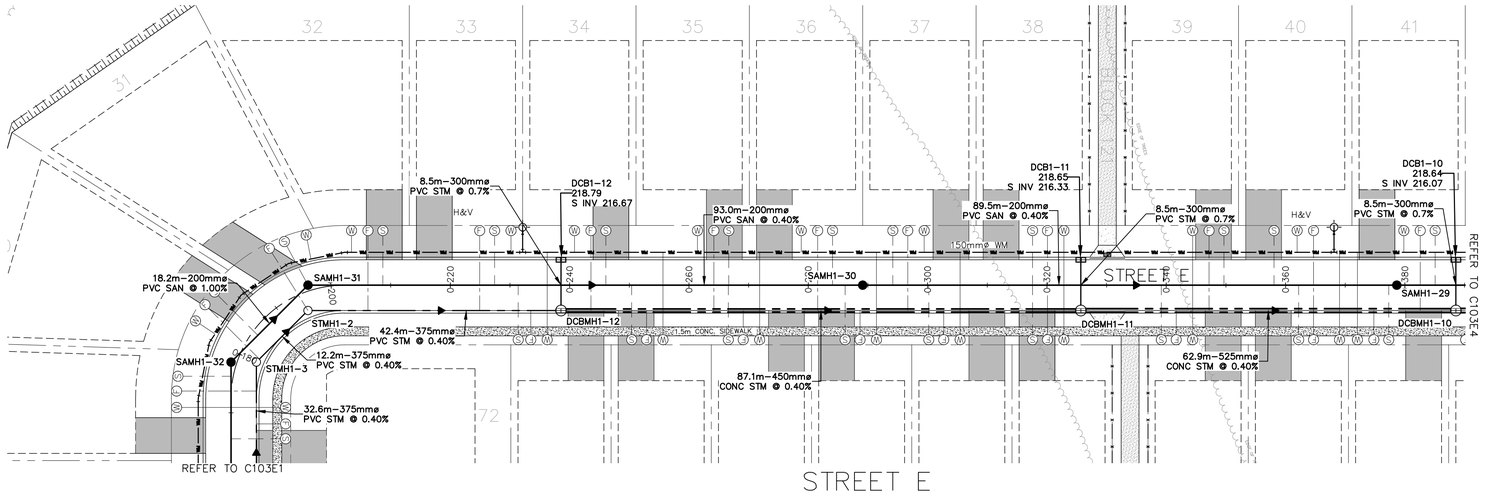
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

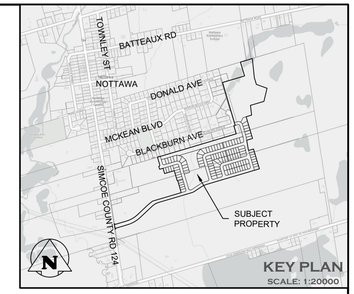
Drawing
PLAN AND PROFILE
STREET E
STA. 0+000 TO STA. 0+200

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103E1

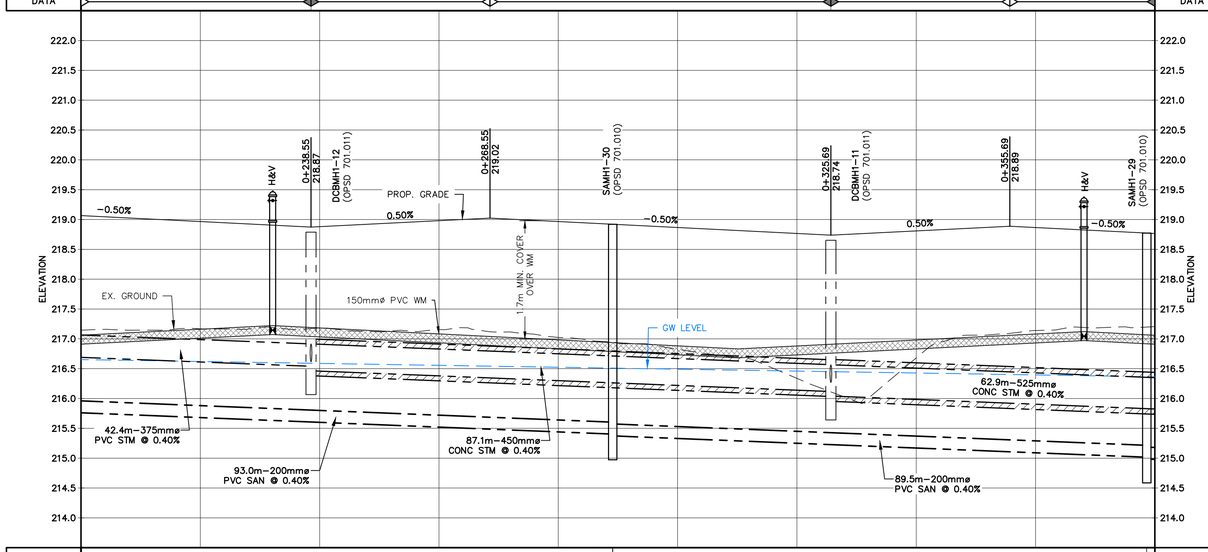






STREET E

STATION	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	STATION
VERTICAL DATA		66.15m @ 0.50%		30.00m @ 0.50%		57.14m @ 0.50%		30.00m @ 0.50%		32.86m @ 0.50%	VERTICAL DATA



SANITARY INVERT		93.0m–200mmø PVC SAN @ 0.40%			SAMH1–30 T/G 218.92 W 215.50 E 215.37		89.5m–200mmø PVC SAN @ 0.40%			SAMH1–29 T/G 218.77 W 215.02 E 214.88	SANITARY INVERT
STORM INVERT		42.4m–375mmø PVC STM @ 0.40%	DCBMH1–12 T/G 218.79 W 216.54 E 216.47 N 216.62	87.1m–450mmø CONC STM @ 0.40%			DCBMH1–11 T/G 218.65 W 216.12 E 216.04 N 216.27	62.9m–525mmø CONC STM @ 0.40%			STORM INVERT
EXISTING CENTERLINE	217.45	217.17	217.18	217.16	217.02	216.82	216.74	216.68	217.34	217.21	EXISTING CENTERLINE
PROPOSED CENTERLINE	219.07	218.97	218.88	218.98	218.87	218.87	218.77	218.81	218.87	218.77	PROPOSED CENTERLINE
STATION	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	STATION

10 0m 10 20 30 40
SCALE: 1:500

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Town

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Engineer

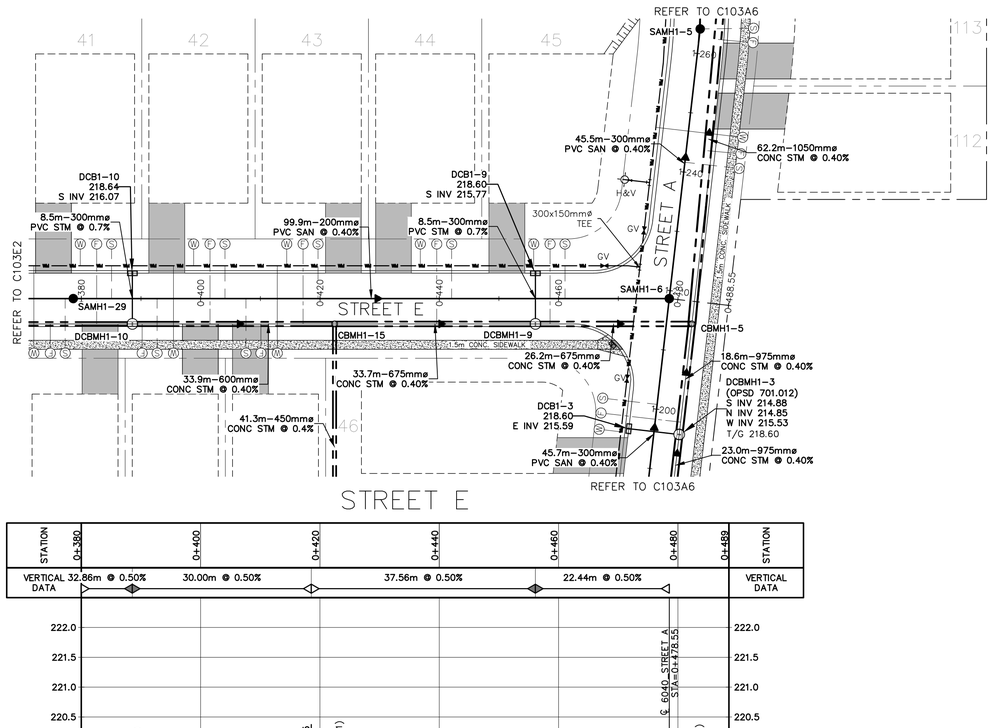
Engineer

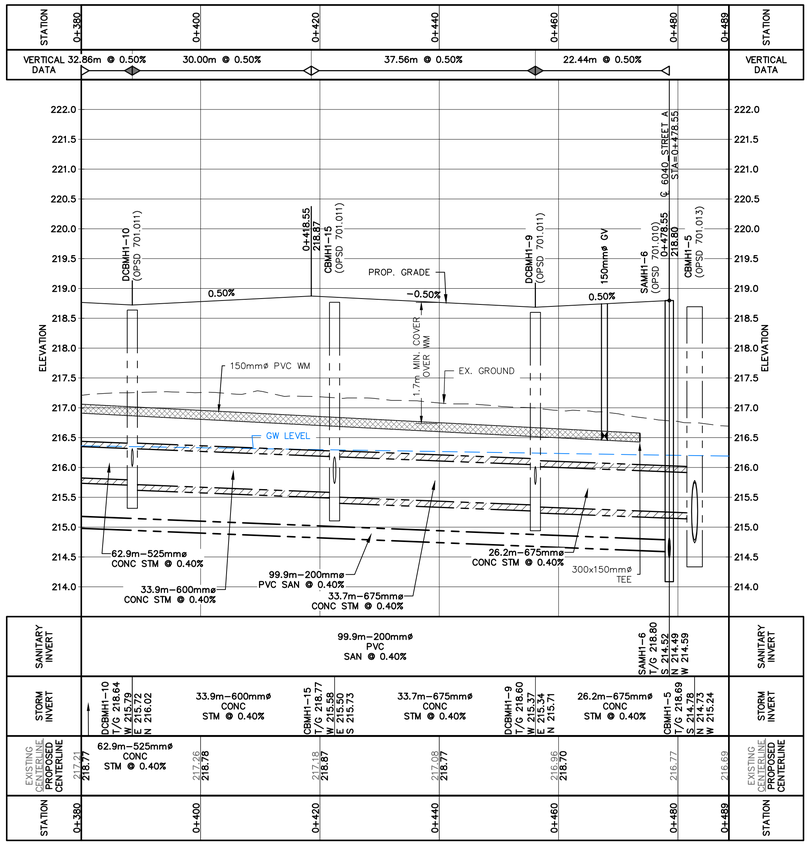
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
PLAN AND PROFILE
STREET E
STA. 0+200 TO STA. 0+380

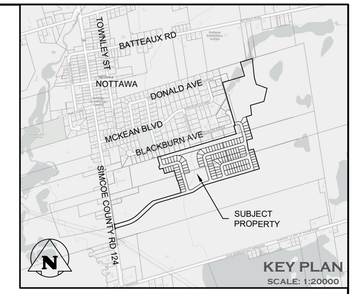
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103E2









10 0m 10 20 30 40
SCALE: 1:500

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2024/04/12

Engineer

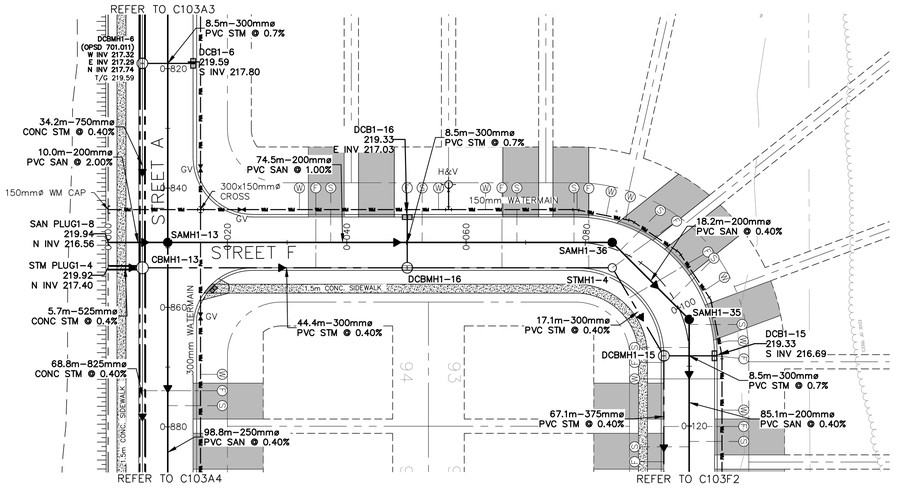
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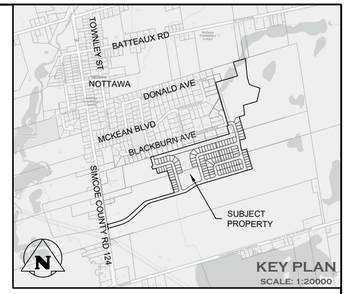
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

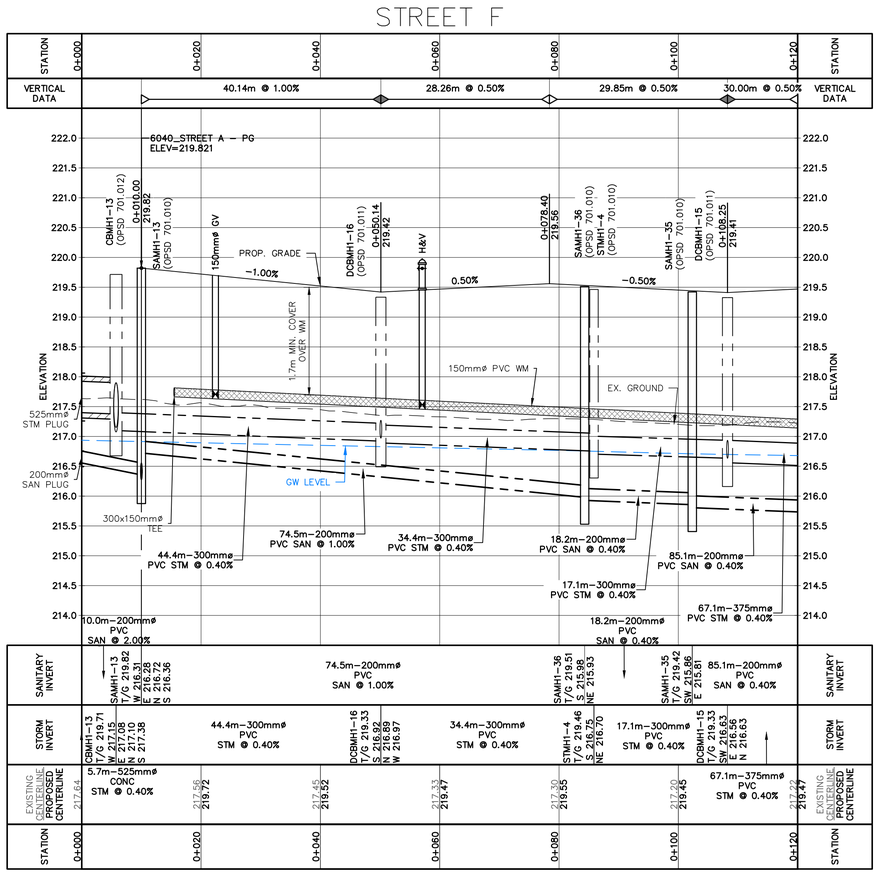
Drawing
PLAN AND PROFILE
STREET E
STA. 0+380 TO STA. 0+489

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103E3







10 0m 10 20 30 40
SCALE: 1:500

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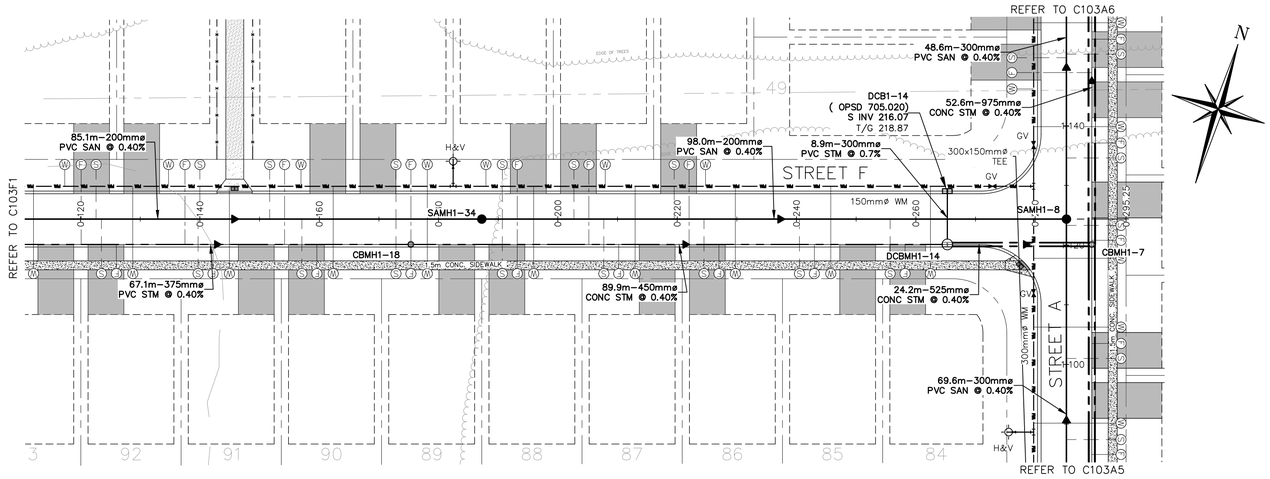
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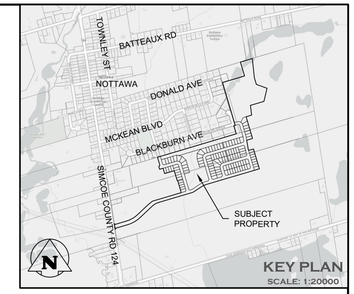
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
PLAN AND PROFILE
STREET F
STA. 0+000 TO STA. 0+120

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103F1





STREET F

10 0m 10 20 30 40
SCALE: 1:500

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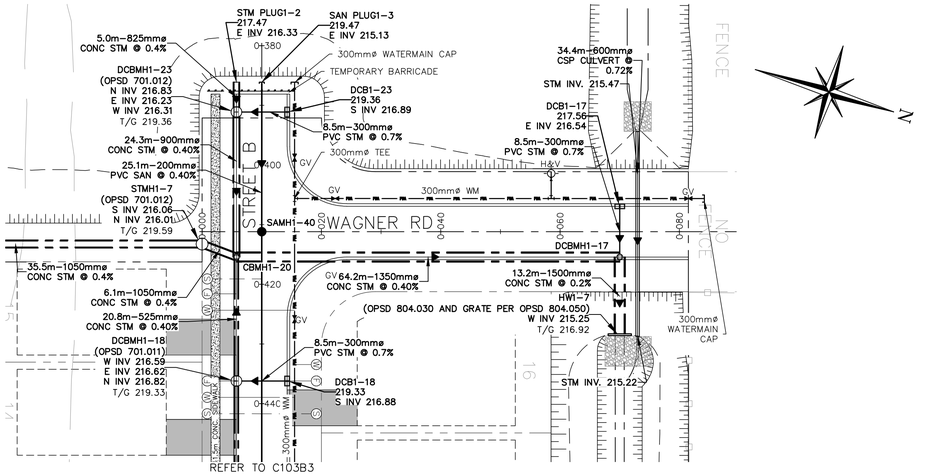
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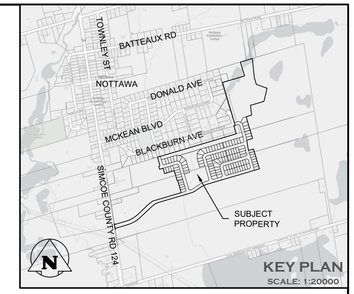
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TOWNSHIP OF CLEARVIEW

Drawing
PLAN AND PROFILE
STREET F
STA. 0+120 TO STA. 0+295

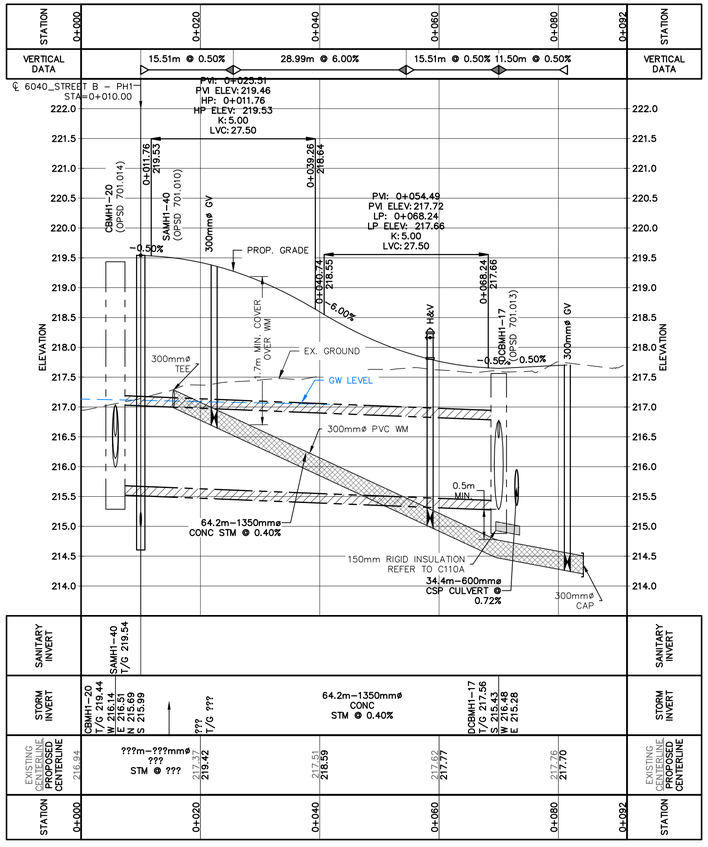
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103F2





WAGNER ROAD



10 0m 10 20 30 40
SCALE: 1:500

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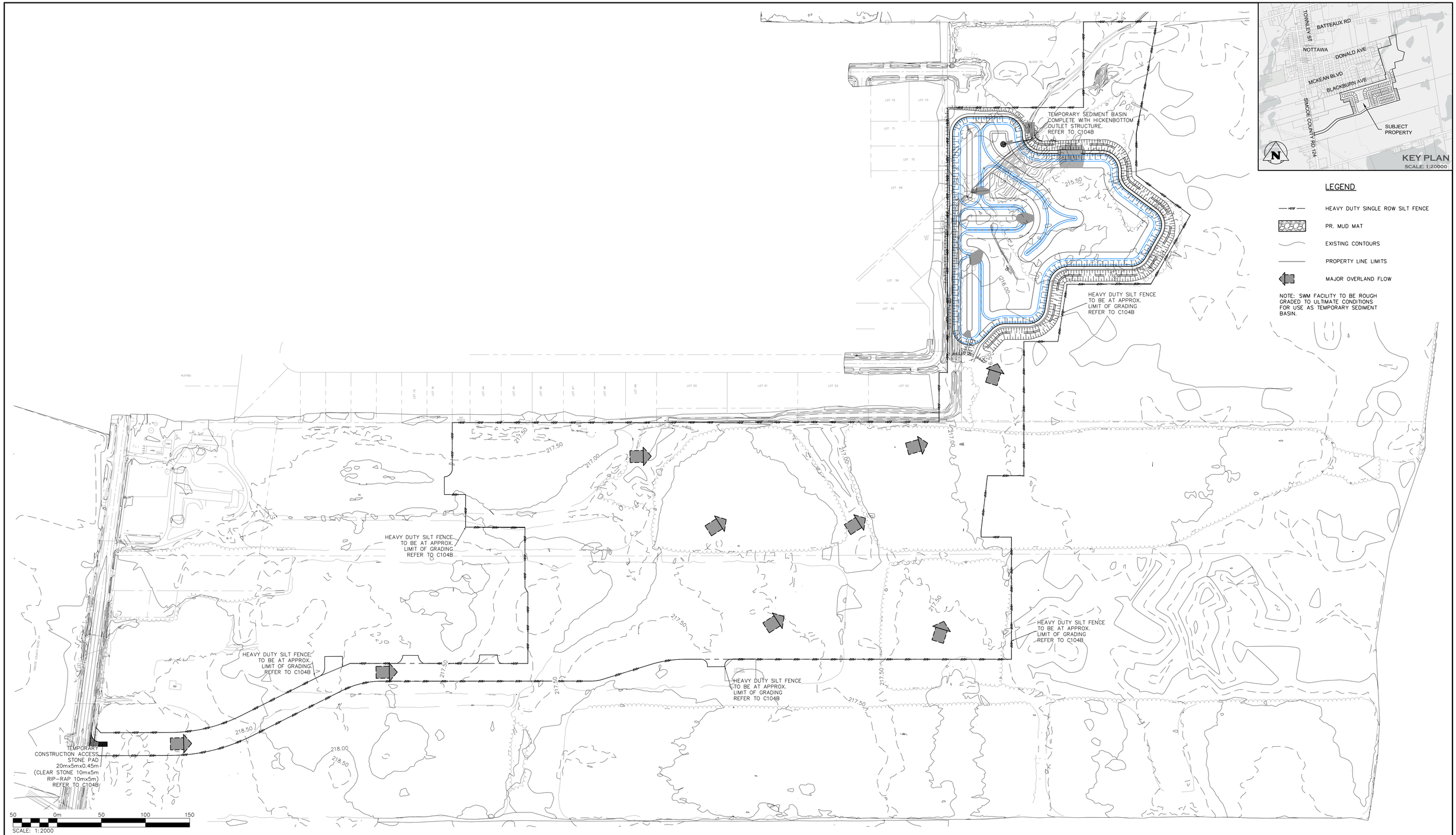
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
PLAN AND PROFILE
WAGNER ROAD
STA. 0+000 TO STA. 0+092

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C103H1



LEGEND

- HEAVY DUTY SINGLE ROW SILT FENCE
- PR. MUD MAT
- EXISTING CONTOURS
- PROPERTY LINE LIMITS
- MAJOR OVERLAND FLOW

NOTE: SWM FACILITY TO BE ROUGH GRADED TO ULTIMATE CONDITIONS FOR USE AS TEMPORARY SEDIMENT BASIN.

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Engineer

Engineer

Project

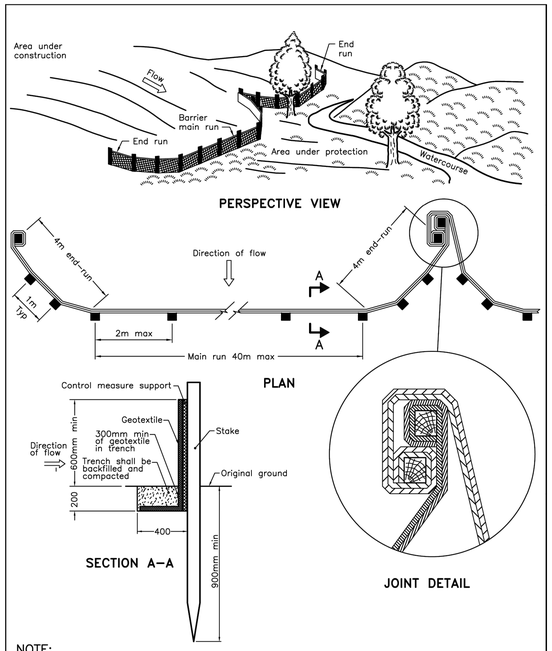
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing

EROSION AND SEDIMENT CONTROL PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C104A

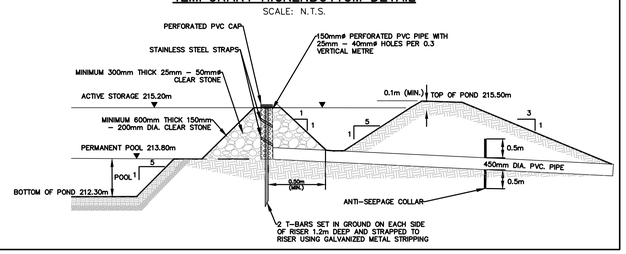


NOTE:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2021	Rev 3
HEAVY–DUTY SILT FENCE BARRIER		OPSD 219.130

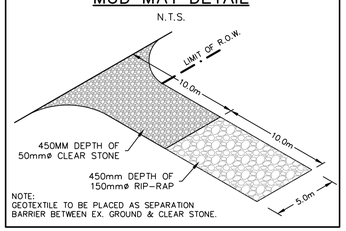
TEMPORARY HICKENBOTTOM DETAIL

SCALE: N.T.S.



MUD MAT DETAIL

N.T.S.



NOTE:
GEOTEXTILE TO BE PLACED AS SEPARATION BARRIER BETWEEN EX. GROUND & CLEAR STONE.

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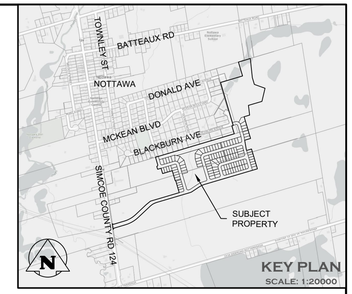
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
EROSION AND SEDIMENT CONTROL
NOTES AND DETAILS

CROZIER CONSULTING ENGINEERS

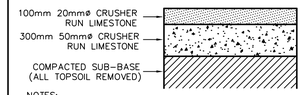
Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C104B



KEY PLAN
SCALE: 1:20000

3.0m WIDE ACCESS ROAD STRUCTURE DETAIL

SCALE: N.T.S.



NOTES:

REFER TO CONSTRUCTION NOTES FOR DETAILS ON PLACEMENT OF MATERIALS.

SCALE: 1:750

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Engineer

Engineer

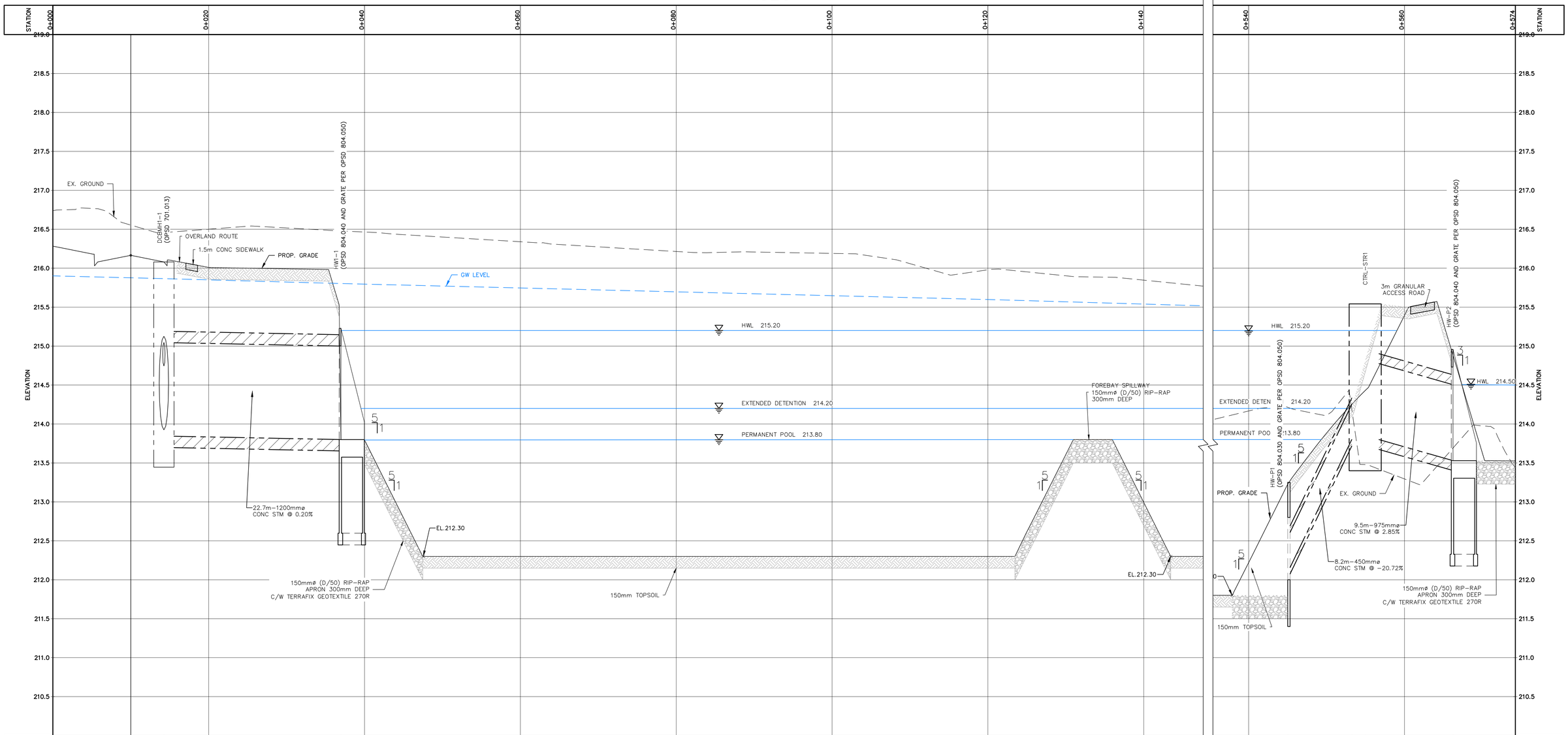
Project: NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing: SWM FACILITY PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C106A

XSEC 1-1



STORM INVERT		DCBMH1-1 T/G 216.08 E 213.43 S 213.35 N 213.85	22.7m-1200mmø CONC STM @ 0.20%	HWI-1 T/G 215.15 S 213.80					HW-P1 T/G 212.83 E 212.10	8.2m-450mmø CONC STM @ 20.72%	CTRL-STR1 T/G 215.54	9.5m-975mmø CONC STM @ 2.85%	HW-P2 T/G 214.83 SW 213.33	STORM INVERT
EXISTING CENTERLINE	216.74	216.50		216.46	216.36	216.21	216.19	215.98	214.17		213.29		213.44	EXISTING CENTERLINE
PROPOSED CENTERLINE				213.79	212.30	212.30	212.30	212.99	212.22		215.39		213.53	PROPOSED CENTERLINE
STATION	0+000	0+020		0+040	0+060	0+080	0+100	0+120	0+140		0+540		0+574	STATION

5 0m 5 10 15 20
SCALE: 1:250

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Engineer

Engineer

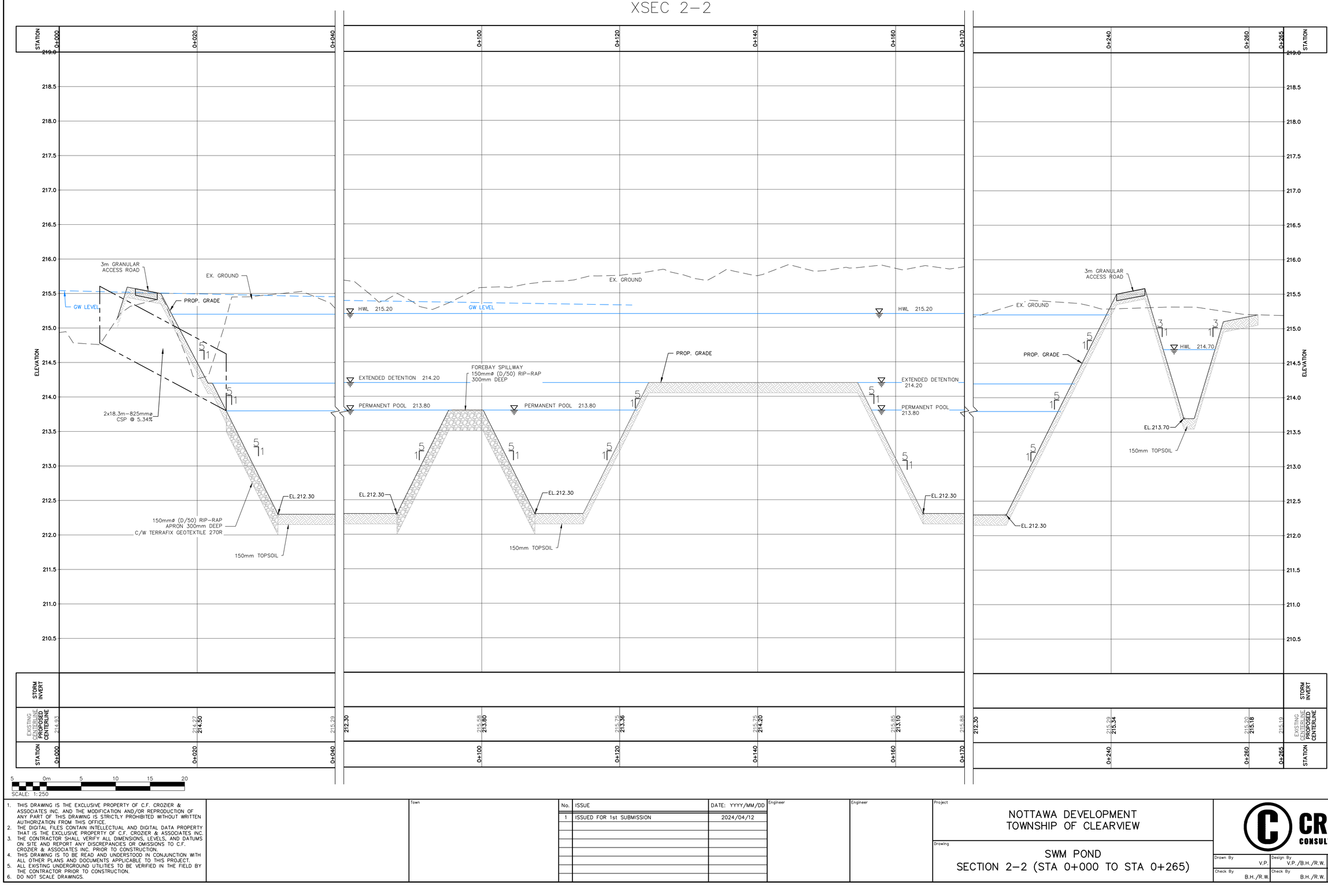
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
SWM POND
SECTION 1-1 (STA 0+000 TO STA 0+574)

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C106B

XSEC 2-2



5 0m 5 10 15 20

SCALE: 1:250

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Engineer

Engineer

Project

NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

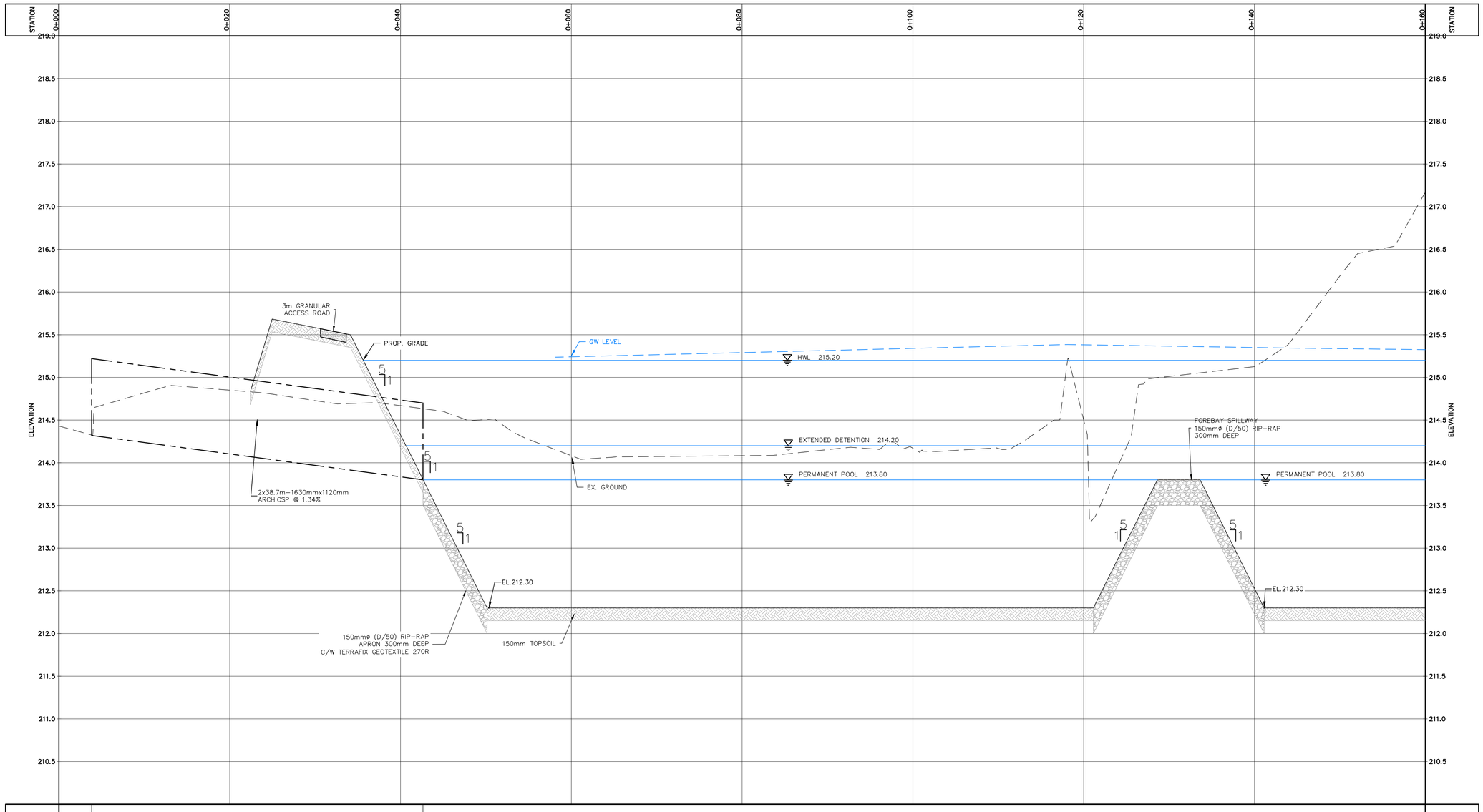
Drawing

SWM POND
SECTION 2-2 (STA 0+000 TO STA 0+265)

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C106C

XSEC 3-3



STORM INVERT		38.7m-900mmø Reinforced Concrete S1M @ 1.34%							STORM INVERT
EXISTING CENTERLINE	214.43	214.85	214.67	214.08	214.08	214.17	214.50	215.13	217.17	EXISTING CENTERLINE
PROPOSED CENTERLINE			214.33	212.30	212.30	212.30	212.30	212.53	212.30	PROPOSED CENTERLINE
STATION	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	STATION

5 0m 5 10 15 20
SCALE: 1:250

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Engineer

Engineer

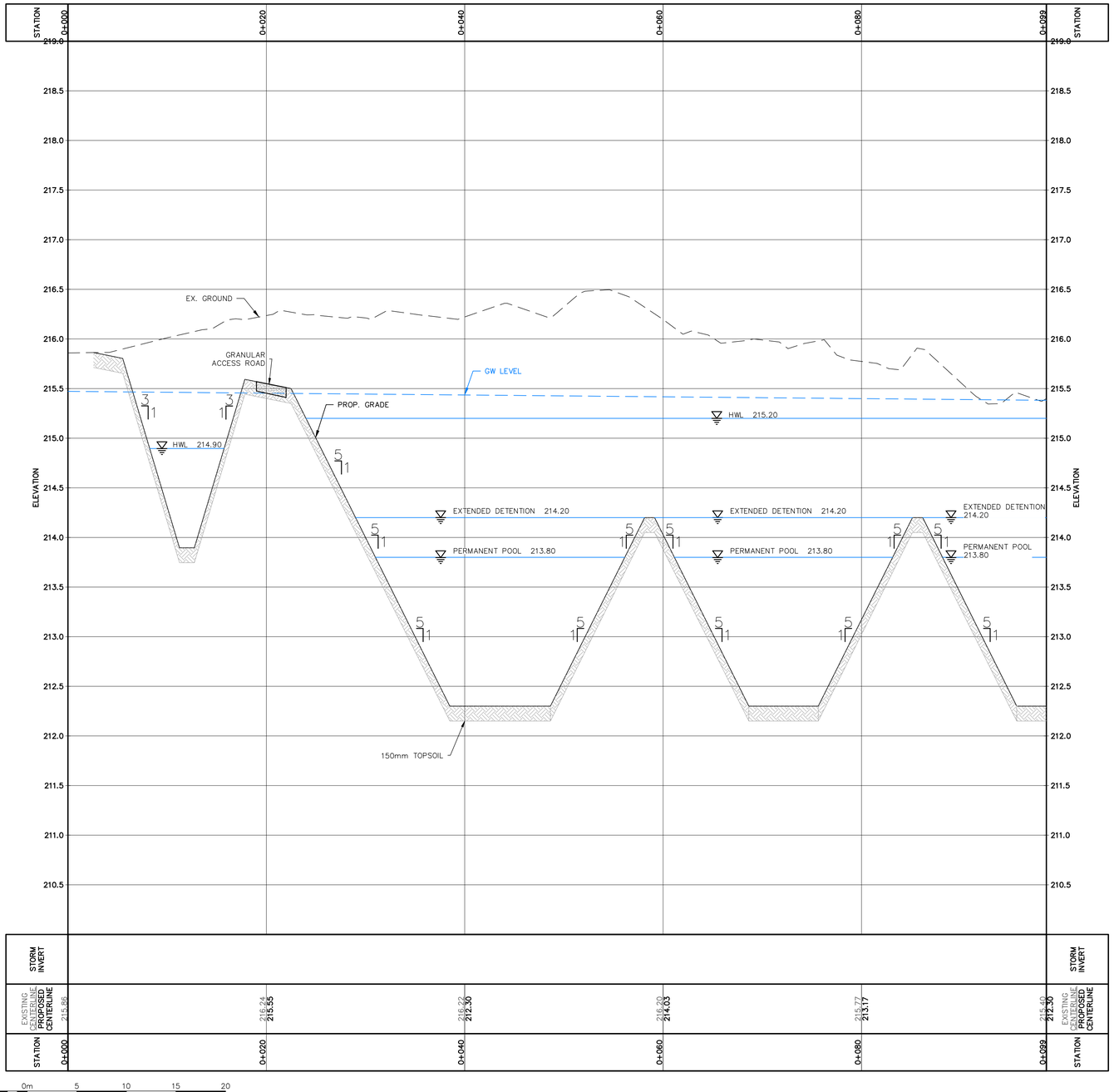
Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
SWM POND
SECTION 3-3 (STA 0+000 TO STA 0+100)

CROZIER CONSULTING ENGINEERS

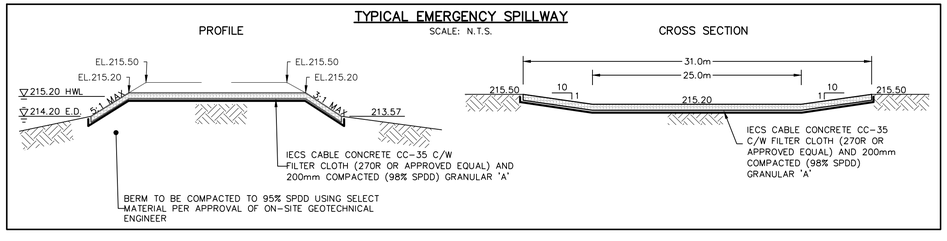
Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C106D

XSEC 4–4



TYPICAL EMERGENCY SPILLWAY

SCALE: N.T.S.



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6. DO NOT SCALE DRAWINGS.

Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2024/04/12

Engineer

Engineer

Project

NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

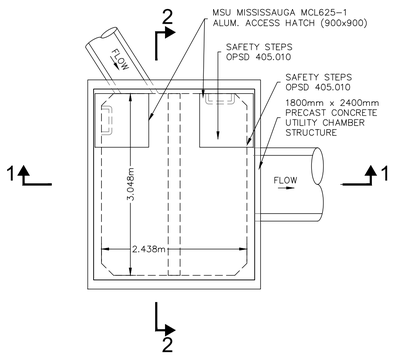
Drawing

SWM POND
SECTION 4–4 (STA 0+000 TO STA 0+099)

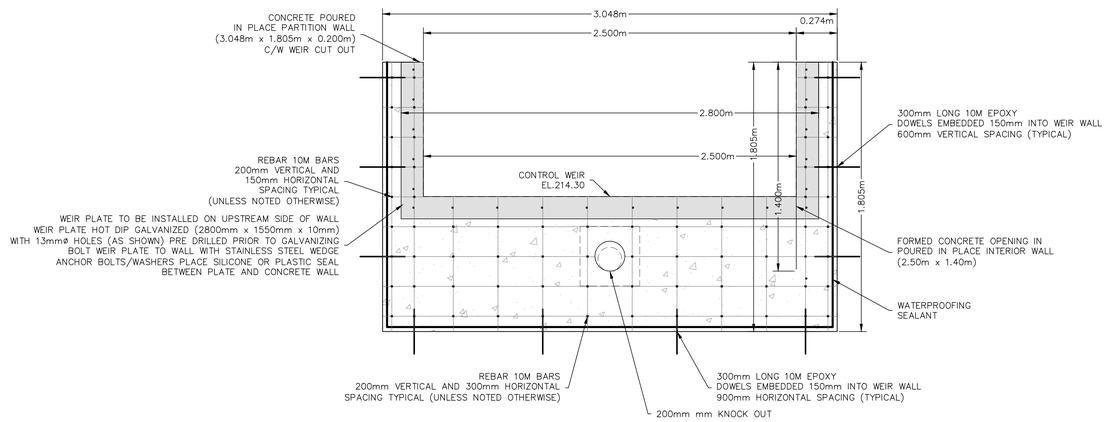
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C106E

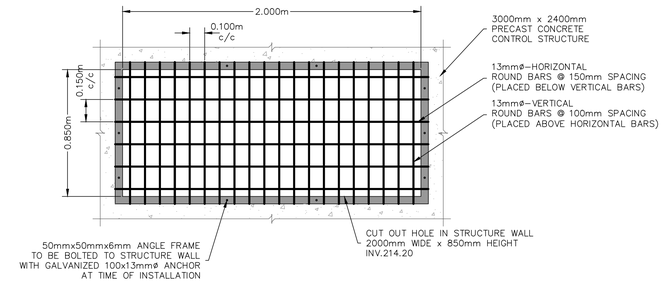
SWMF OUTLET STRUCTURE
SCALE 1:50



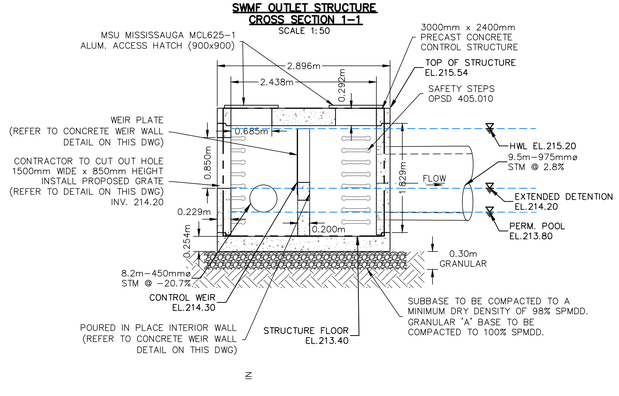
CONCRETE WEIR WALL DETAIL
SCALE 1:20



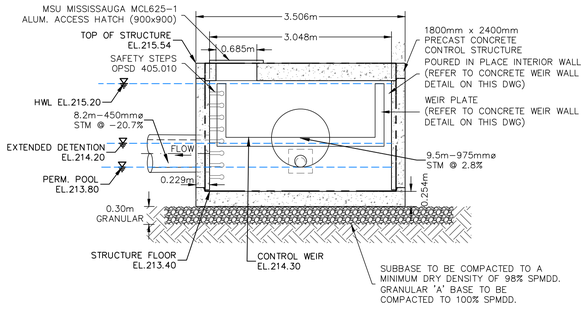
CUT-OUT IN CONTROL STRUCTURE WALL
SCALE 1:20



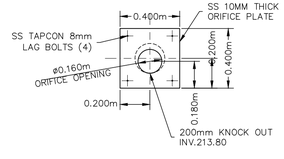
SWMF OUTLET STRUCTURE CROSS SECTION 1-1
SCALE 1:50



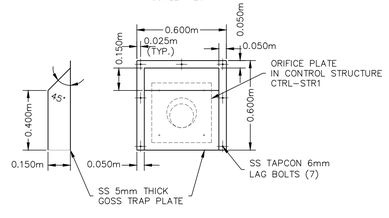
SWMF OUTLET STRUCTURE CROSS SECTION 2-2
SCALE 1:50



ORIFICE PLATE IN CONTROL STRUCTURE CTRL-STR1
SCALE 1:20



GOSS TRAP IN CONTROL STRUCTURE CTRL-STR1
SCALE 1:20



10 0m 10 20 30 40
SCALE: 1:500

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Town

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Engineer

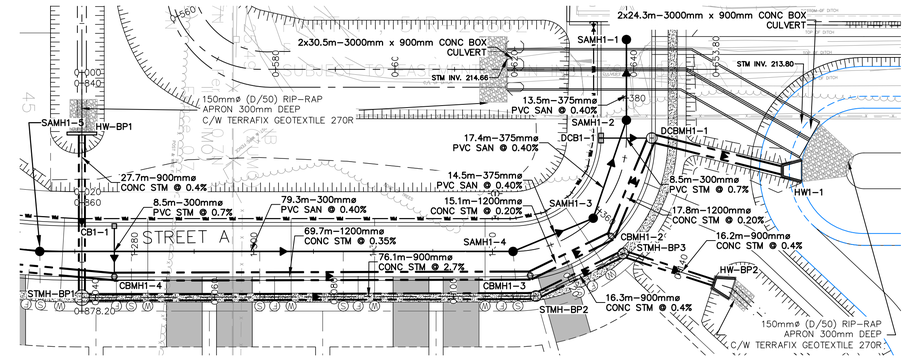
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

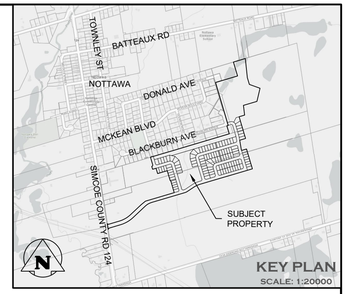
Drawing
SWMF OUTLET CONTROL STRUCTURE
CROSS-SECTIONS & DETAILS

CROZIER CONSULTING ENGINEERS

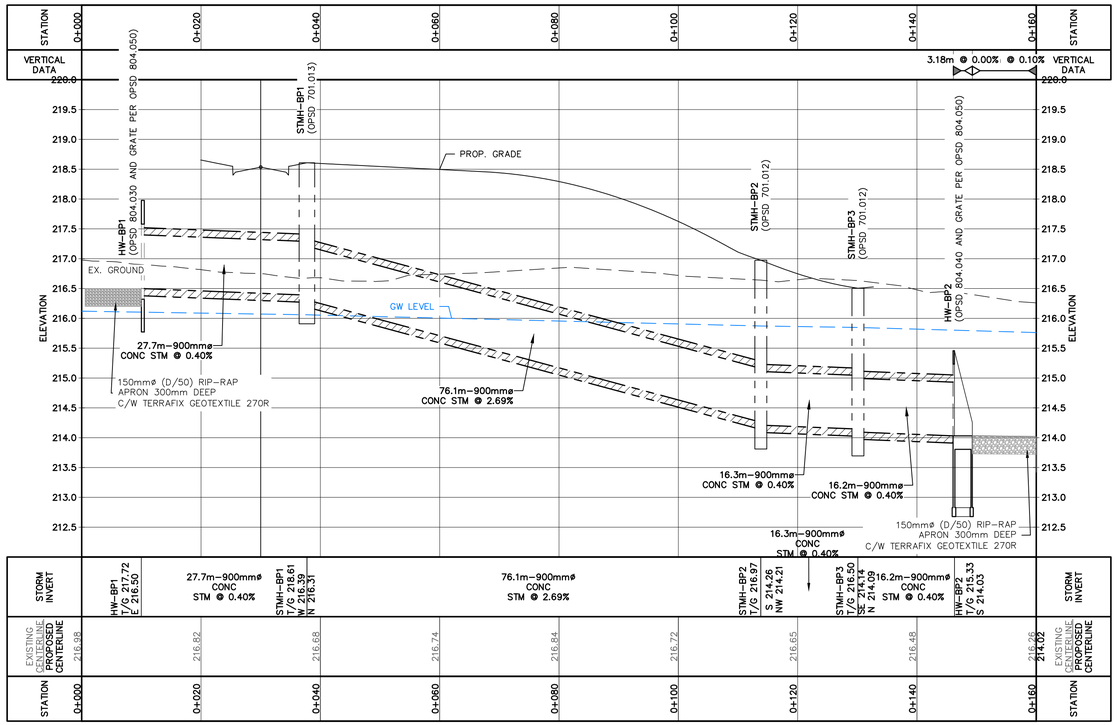
Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C106F







SWM BY–PASS



10 0m 10 20 30 40
SCALE: 1:500

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Engineer

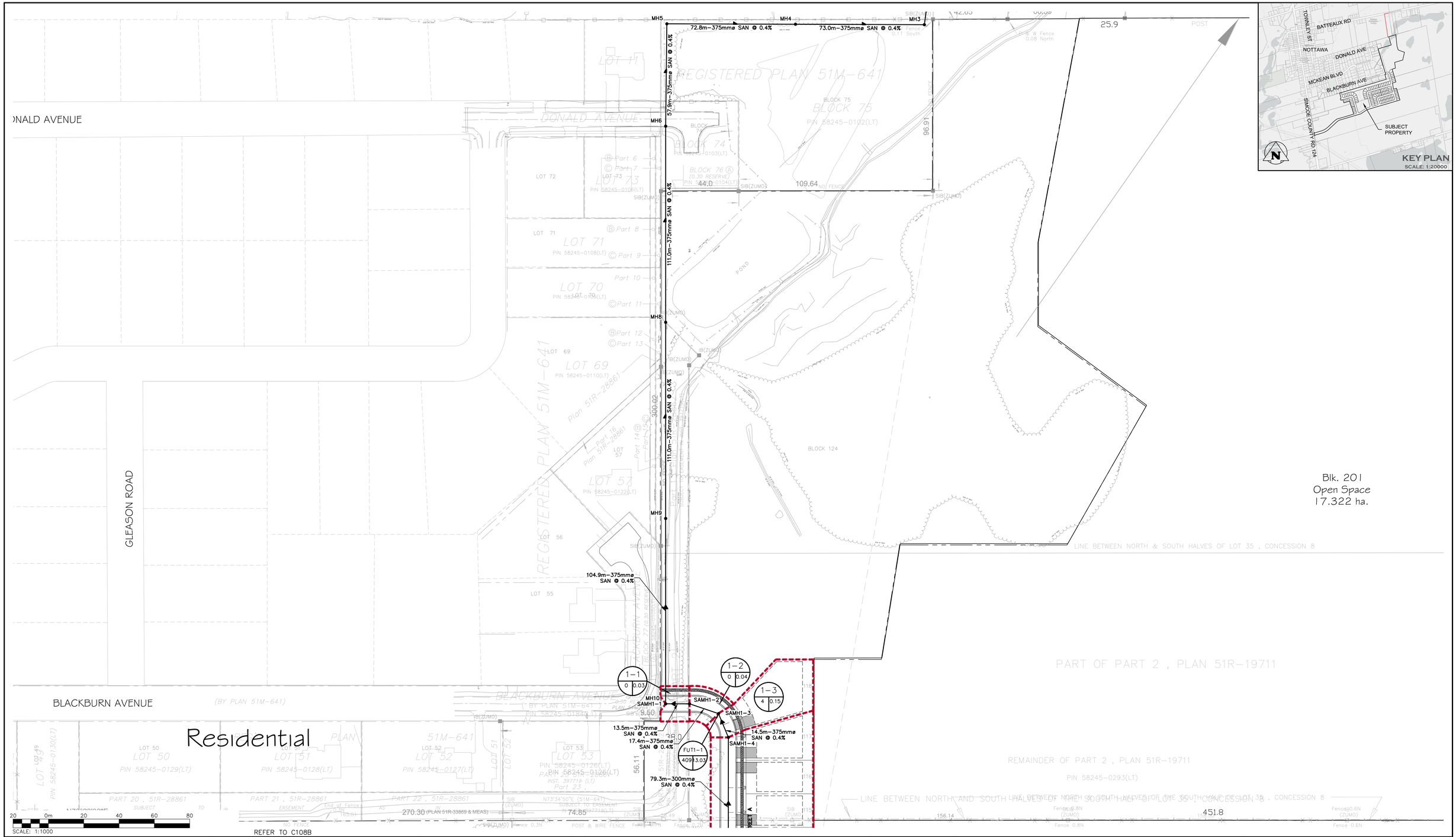
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
PLAN AND PROFILE
SWM BY–PASS
STA. 0+000 TO STA. 0+045

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C107



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Engineer

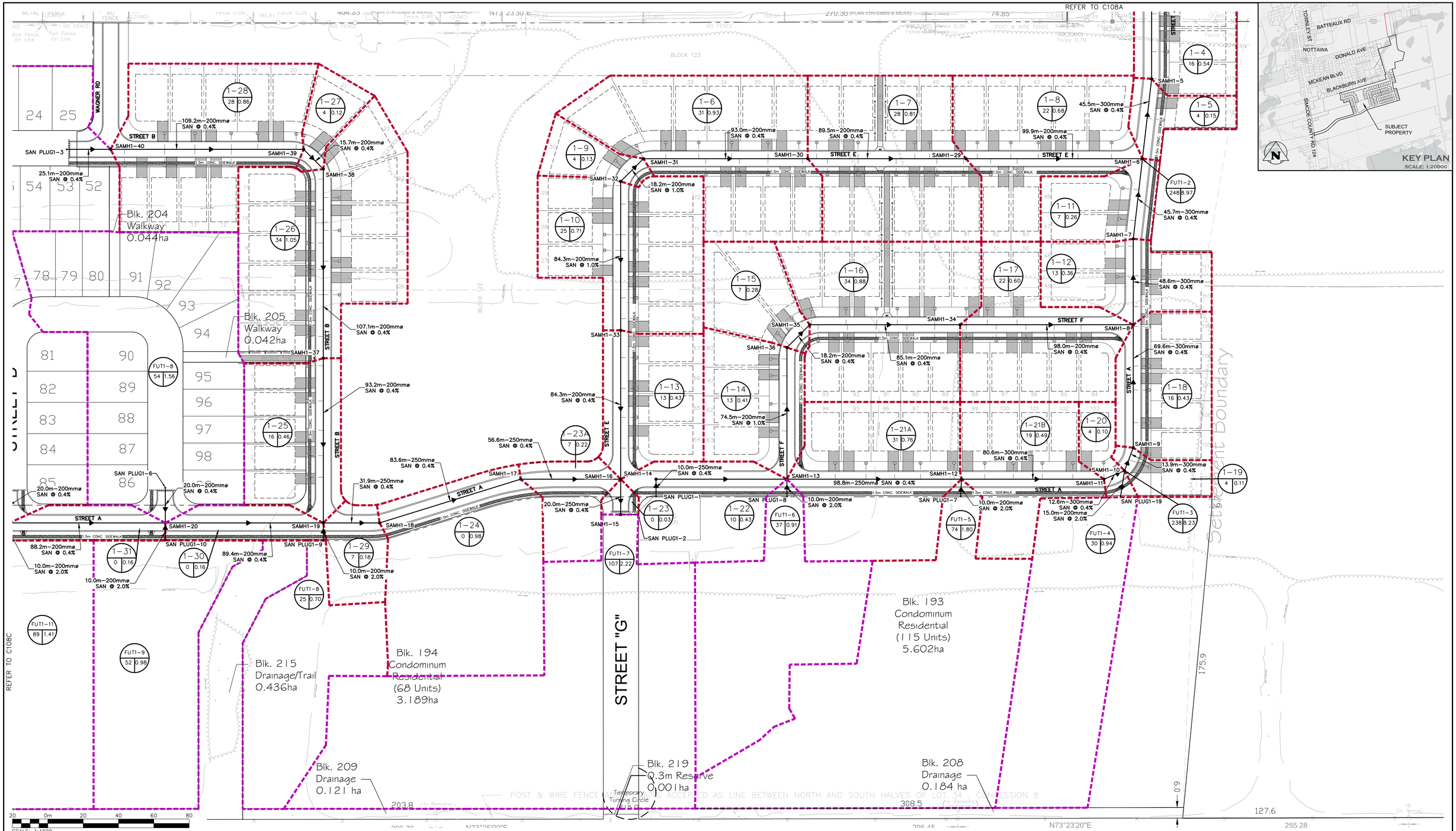
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
SANITARY DRAINAGE PLAN
NORTH PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C108A



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Engineer

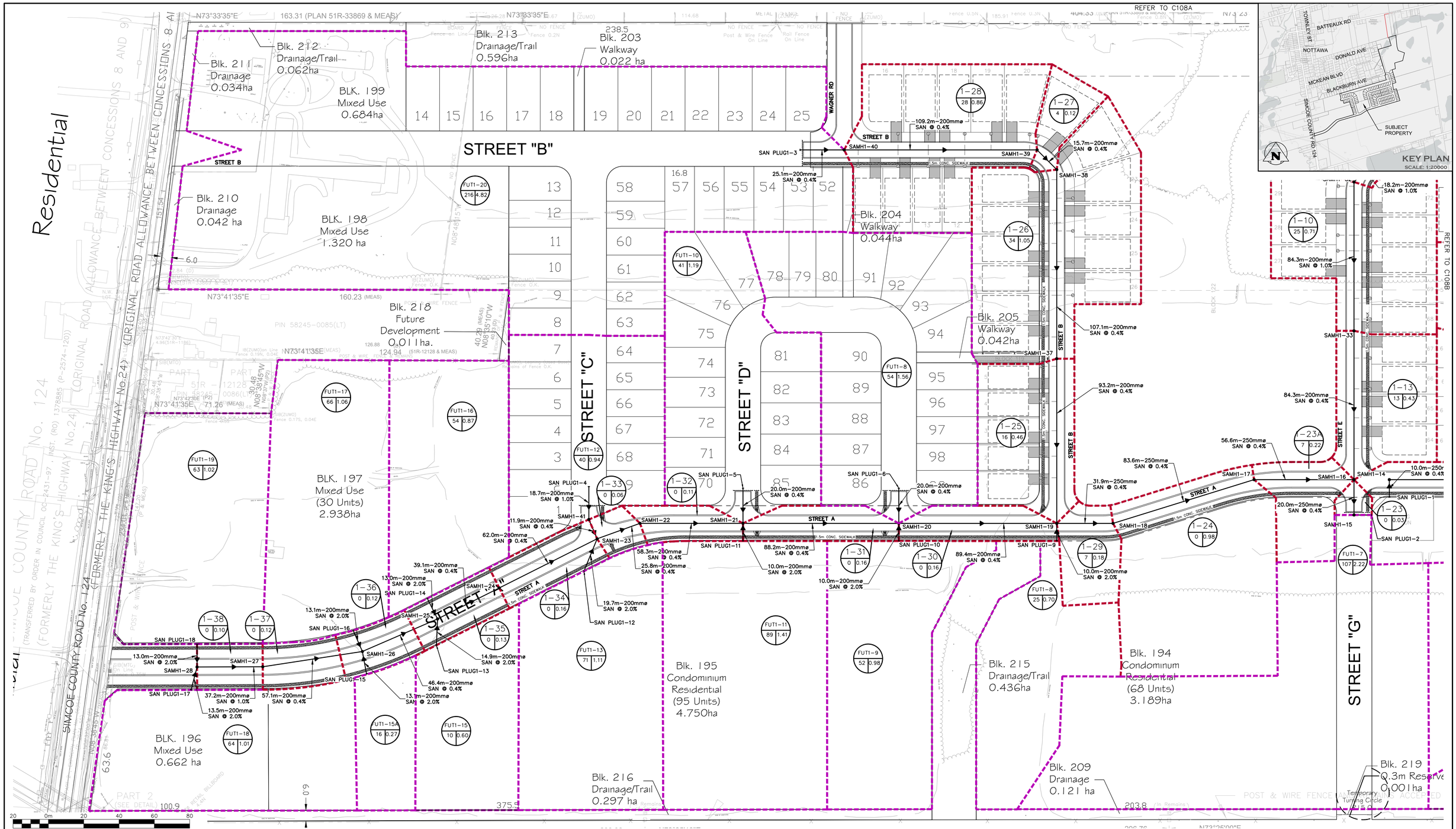
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
SANITARY DRAINAGE PLAN
CENTRAL PART

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C108B



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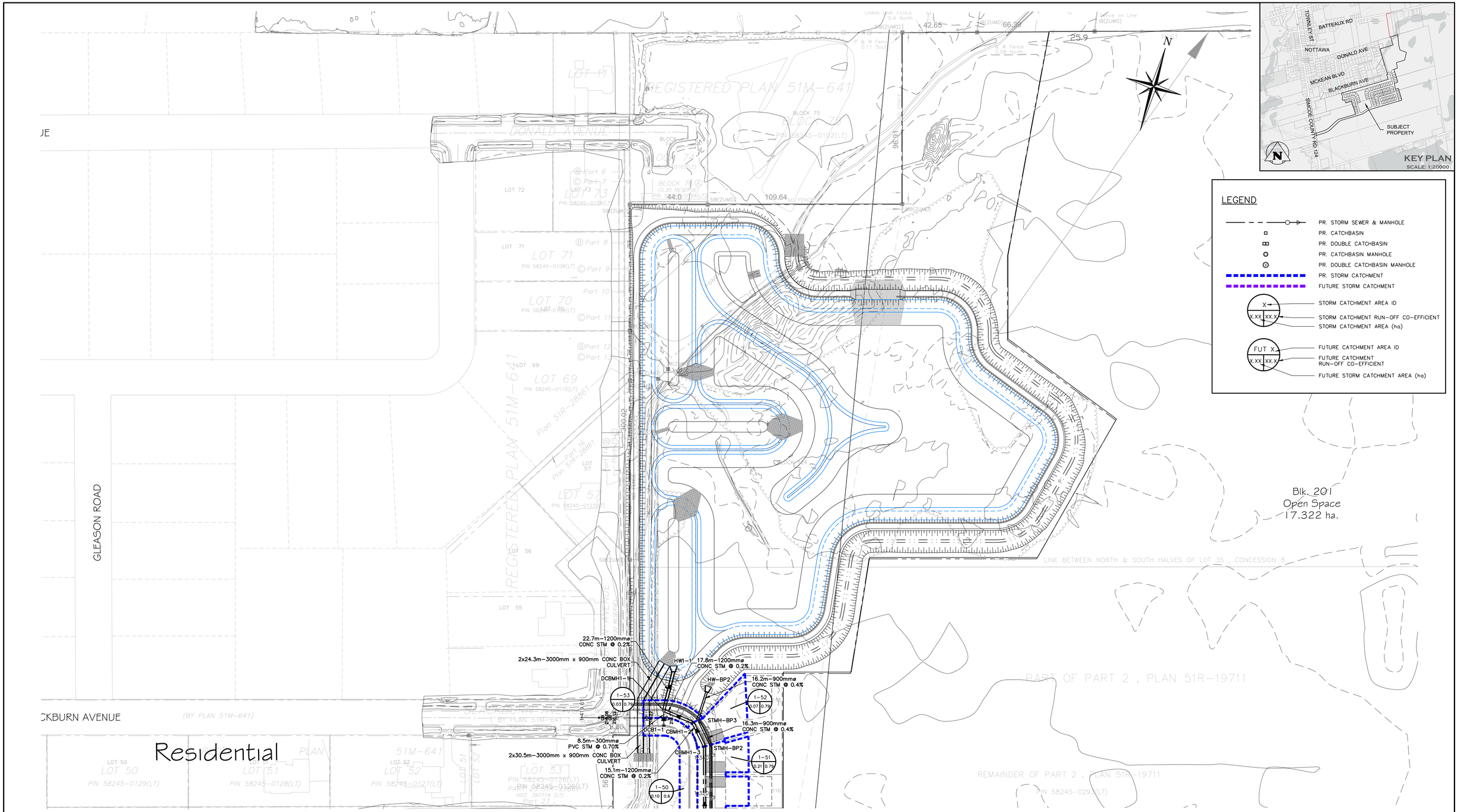
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
SANITARY SERVICING PLAN
SOUTH-WEST PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C108C



LEGEND

- PR. STORM SEWER & MANHOLE
- PR. CATCHBASIN
- PR. DOUBLE CATCHBASIN
- PR. CATCHBASIN MANHOLE
- PR. DOUBLE CATCHBASIN MANHOLE
- PR. STORM CATCHMENT
- FUTURE STORM CATCHMENT
- X — STORM CATCHMENT AREA ID
- X.XX | XX.X — STORM CATCHMENT RUN-OFF CO-EFFICIENT / STORM CATCHMENT AREA (ha)
- FUT X — FUTURE CATCHMENT AREA ID
- X.XX | XX.X — FUTURE CATCHMENT RUN-OFF CO-EFFICIENT / FUTURE STORM CATCHMENT AREA (ha)

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Engineer

Engineer

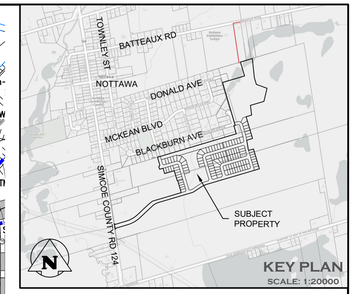
Project: NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing: STORM DRAINAGE PLAN
NORTH PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C109A

REFER TO C109A



BLACKBURN AVENUE

Residential

REFER TO C109C

REFFER TO C109C

Blk 205 Walkway 0.04±ha

STREET "D"

WAGNER RD

STREET A

STREET B

STREET E

STREET F

22.7m–1200mmø CONC STM @ 0.2%
2x24.3m–3000mm x 900mm CONC BOX CULVERT
HW1–1 17.8m– CONC
DCBMH1–1
DCB1–1
CBMH1–2
8.5m–300mmø PVC STM @ 0.70%
2x30.5m–3000mm x 900mm CONC BOX CULVERT
15.1m–1200mmø CONC STM @ 0.2%
69.7m–1200mmø CONC STM @ 0.3%
76.1m–900mmø CONC STM @ 2.7%
8.5m–300mmø PVC STM @ 0.7%
27.7m–900mmø CONC STM @ 0.4%
CB1–11
CBMH1–4
HW–BP1
STMH–BP1
62.9m–525mmø CONC STM @ 0.4%
8.5m–300mmø PVC STM @ 0.7%
33.9m–600mmø CONC STM @ 0.4%
33.7m–675mmø CONC STM @ 0.4%
26.2m–675mmø CONC STM @ 0.4%
62.2m–1050mmø CONC STM @ 0.4%
DCB1–9
DCB1–10
CBMH1–5
18.6m–975mmø CONC STM @ 0.4%
8.5m–300mmø PVC STM @ 0.7%
DCBMH1–3
DCB1–3
41.3m–450mmø CONC STM @ 0.4%
CBMH1–15
DCBMH1–9
CBMH1–6
23.0m–975mmø CONC STM @ 0.4%
52.6m–975mmø CONC STM @ 0.4%
CBMH1–7
38.0m–900mmø CONC STM @ 0.4%
DCB1–14
8.9m–300mmø
DCBMH1–14
24.2m–525mmø CONC STM @ 0.4%
DCBMH1–2
26.5m–375mmø CONC STM @ 0.4%
DCBMH1–4
24.7m–900mmø CONC STM @ 0.4%
CBMH1–8
19.3m–900mmø CONC STM @ 0.4%
CBMH1–9
17.7m–900mmø CONC STM @ 0.4%
DCBMH1–15
CBMH1–18
DCBMH1–16
RLCB1–2
RLCBMH1–7
RLCBMH1–6
8.5m–375mmø PVC STM @ 0.4%
44.4m–300mmø PVC STM @ 0.4%
50.4m–300mmø PVC STM @ 0.4%
50.4m–300mmø PVC STM @ 0.4%
43.9m–900mmø CONC STM @ 0.4%
8.5m–300mmø PVC STM @ 0.7%
DCB1–5
CB1–12
CBMH1–10
CBMH1–11
DCBMH1–5
CBMH1–12
CBMH1–13
5.7m–600mmø CONC STM @ 0.4%
STM PLUG1–3
30.0m–825mmø CONC STM @ 0.4%
30.0m–900mmø CONC STM @ 0.4%
68.8m–825mmø CONC STM @ 0.4%
8.5m–300mmø PVC STM @ 0.7%
5.7m–525mmø CONC STM @ 0.4%
STM PLUG1–4
DCB1–6
CBMH1–14
14.7m–600mmø CONC STM @ 0.4%
DCBMH1–7
5.0m–600mmø CONC STM @ 0.4%
34.2m–750mmø CONC STM @ 0.4%
49.8m–750mmø CONC STM @ 0.4%
STM PLUG1–1
DCB1–7
40.9m–450mmø CONC STM @ 0.4%
29.3m–450mmø CONC STM @ 0.4%
8.5m–300mmø PVC STM @ 0.7%
DCBMH1–8
DCB1–8
8.5m–300mmø PVC STM @ 0.7%
STMH1–1
DCB1–22
8.5m–300mmø PVC STM @ 0.7%
DCB1–21
53.3m–3000mm x 1200mm BOX CULVERT @ 0.1%
DCBMH1–21
8.5m–300mmø PVC STM @ 0.7%
CBMH1–21
64.7m–300mmø PVC STM @ 0.40%
8.7m–3000mm x 1200mm BOX CULVERT @ 0.1%
87.3m–300mmø PVC STM @ 0.4%
67.7m–300mmø PVC STM @ 0.4%
51.1m–300mmø PVC STM @ 0.4%
CBMH1–16
CB1–15
RLCB1–1
34.4m–300mmø PVC STM @ 0.4%
17.1m–300mmø PVC STM @ 0.4%
70.6m–300mmø PVC STM @ 0.4%
CBMH1–17
DCB1–16
DCBMH1–15
8.5m–300mmø PVC STM @ 0.7%
CBMH1–18
67.1m–375mmø PVC STM @ 0.4%
89.9m–450mmø CONC STM @ 0.4%
DCB1–15
8.5m–300mmø PVC STM @ 0.7%
DCBMH1–6
DCB1–6
8.5m–300mmø PVC STM @ 0.7%
CBMH1–17
DCBMH1–12
DCB1–12
42.4m–375mmø PVC STM @ 0.4%
87.1m–450mmø CONC STM @ 0.4%
DCB1–11
DCBMH1–11
DCB1–10
DCBMH1–10
8.5m–300mmø PVC STM @ 0.7%
41.3m–450mmø CONC STM @ 0.4%
DCBMH1–9
DCB1–3
DCBMH1–3
CBMH1–6
DCBMH1–13
DCB1–13
8.5m–300mmø PVC STM @ 0.4%
32.6m–375mmø PVC STM @ 0.4%
38.5m–300mmø PVC STM @ 0.4%
44.0m–375mmø PVC STM @ 0.4%
56.4m–375mmø PVC STM @ 0.4%
51.9m–450mmø PVC STM @ 0.4%
RLCBMH1–5
RLCBMH1–4
RLCBMH1–3
RLCBMH1–2
RLCBMH1–1
DCBMH1–20
DCB1–20
8.5m–300mmø PVC STM @ 0.7%
36.0m–375mmø PVC STM @ 0.4%
DCB1–19
DCBMH1–19
48.7m–525mmø CONC STM @ 0.4%
12.2m–375mmø PVC STM @ 0.4%
STMH1–6
STMH1–5
DCB1–18
8.5m–300mmø PVC STM @ 0.7%
DCB1–19
8.5m–300mmø PVC STM @ 0.7%
33.8m–375mmø PVC STM @ 0.4%
DCB1–23
24.3m–900mmø CONC STM @ 0.4%
8.5m–300mmø PVC STM @ 0.7%
STM PLUG1–2
DCBMH1–23
CBMH1–20
DCBMH1–18
STMH1–7
20.8m–525mmø CONC STM @ 0.40%
6.1m–1050mmø CONC STM @ 0.4%
35.5m–1050mmø CONC STM @ 0.4%
CBMH1–23
RLCB1–4
19.8m–300mmø PVC STM @ 0.4%
15.1m–1050mmø CONC STM @ 0.4%
RLCBMH1–8
HW1–3
FUT2–1
FUT2–11
64.2m–1350mmø CONC STM @ 0.40%
DCB1–17
DCBMH1–17
13.2m–1500mmø CONC STM @ 0.2%
HW1–7
8.5m–300mmø PVC STM @ 0.7%
34.4m–600mmø CSP @ 0.72%
DCBMH1–27
19.2m–900mmø CONC STM @ 0.4%
9.2m–900mmø CONC STM @ 0.4%
8.5m–300mmø PVC STM @ 0.7%
HW1–4
HW1–5
DCB1–27
DCB1–25
19.2m–525mmø CONC STM @ 0.4%
9.3m–525mmø CONC STM @ 0.4%
DCB1–26
DCB1–28
DCBMH1–25
CBMH1–24
DCBMH1–24
DCBMH1–26
8.5m–300mmø PVC STM @ 0.7%
31.8m–300mmø PVC STM @ 0.4%
5.7m–450mmø CONC STM @ 0.4%
54.2m–300mmø PVC STM @ 0.4%
STM PLUG1–6
FUT2–7
FUT2–8
FUT2–12
FUT2–13
8.5m–300mmø PVC STM @ 0.7%
89.3m–375mmø PVC STM @ 0.4%
FUT1–1
FUT1–2
FUT1–3
FUT1–4
SUBJECT PROPERTY
Basement boundary

20 0m 20 40 60 80
SCALE: 1:1000

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5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
6. DO NOT SCALE DRAWINGS.

Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2024/04/12

Engineer

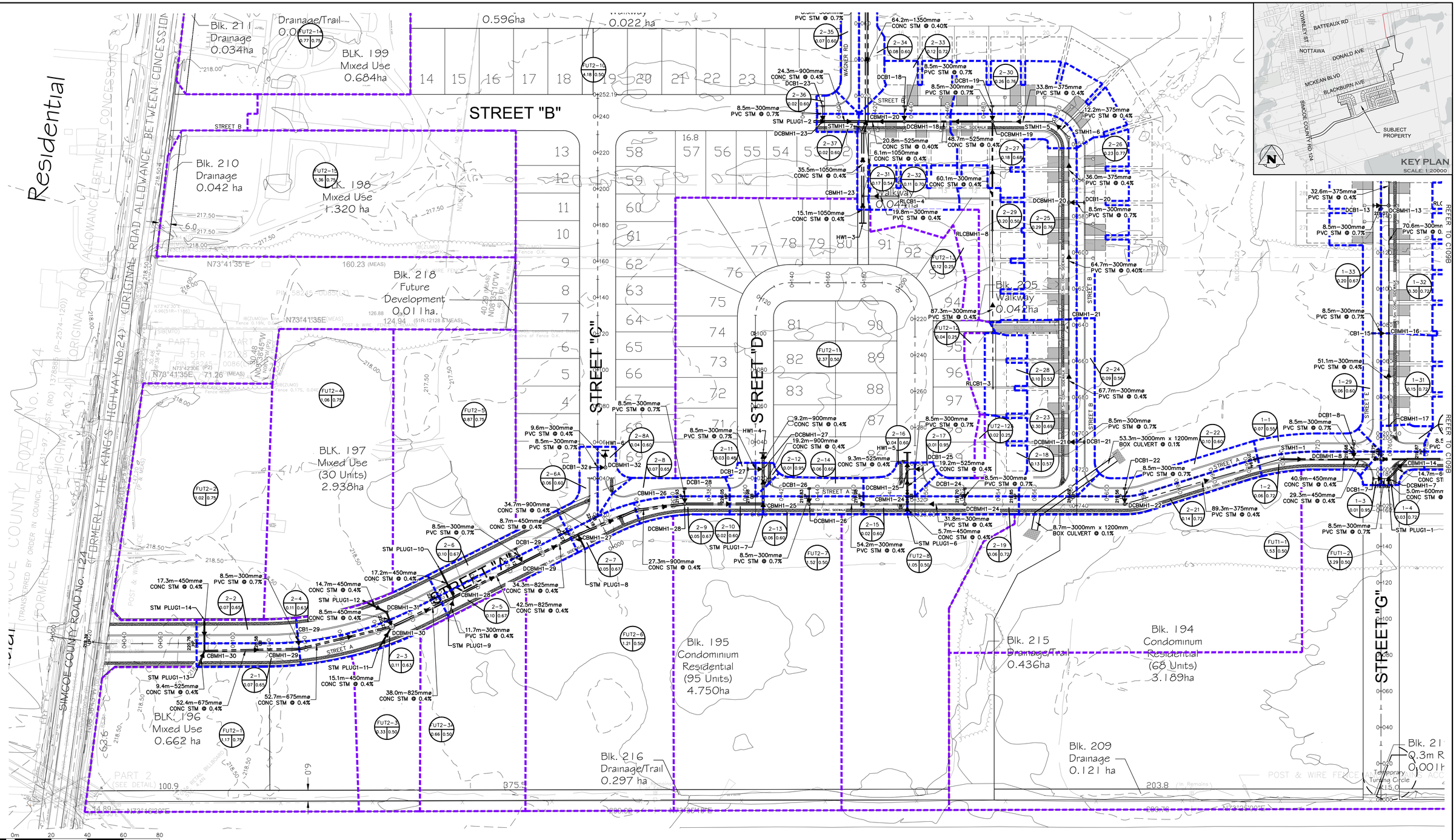
Engineer

Project: NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing: STORM DRAINAGE PLAN
CENTRAL PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By B.H./R.W.	Check By B.H./R.W.	Drawing C109B


Residential
STREET "B"
STREET "C"
STREET "D"
STREET "E"
STREET "F"
STREET "G"
STREET A
Blk. 211 Drainage 0.034ha
Drainage/Trail 0.0
0.596ha
0.022 ha
BLK. 199 Mixed Use 0.684ha
Blk. 210 Drainage 0.042 ha
BLK. 198 Mixed Use 1.320 ha
Blk. 218 Future Development 0.011ha.
BLK. 197 Mixed Use (30 Units) 2.938ha
BLK. 196 Mixed Use 0.662 ha
Blk. 195 Condominium Residential (95 Units) 4.750ha
Blk. 216 Drainage/Trail 0.297 ha
Blk. 205 Walkway 0.042ha
Blk. 215 Drainage/Trail 0.436ha
Blk. 194 Condominum Residential (68 Units) 3.189ha
Blk. 209 Drainage 0.121 ha
Blk. 21 0.3m R 0.001h
Temporary Turning Circle
WAGNER RD
SIMCOE COUNTY ROAD No. 124 (FORMERLY THE KING'S HIGHWAY No.24) (ORIGINAL ROAD ALLOWANCE BETWEEN CONCESSIONS I & A)
(TRANSFERRED BY ORDER IN COUNCIL OC-2431-97)
ORIGINAL ROAD ALLOWANCE BETWEEN CONCESSION I & A
POST & WIRE FENCE
PART 2 (SEE DETAIL)
PART 1 51R-12128 & 51R-38748
PIN 58245 - 0086(LT)
PIN 58246 - 0087(LT)
PIN 58247 - 0088(LT)
PIN 58248 - 0089(LT)
PIN 58249 - 0090(LT)
PIN 58250 - 0091(LT)
PIN 58251 - 0092(LT)
PIN 58252 - 0093(LT)
PIN 58253 - 0094(LT)
PIN 58254 - 0095(LT)
PIN

CONSTRUCTION NOTES

1. GENERAL

1.1 ALL MEASUREMENTS ARE IN METERS, PIPE SIZES IN MILLIMETERS, UNLESS OTHERWISE NOTED.
1.2 ALL EXISTING UTILITIES AND SERVICES TO BE LOCATED ON SITE BY THE CONTRACTOR PRIOR TO CONSTRUCTION. LOCATION OF EXISTING SERVICES ARE NOT GUARANTEED. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
1.3 ALL RELEVANT ONTARIO PROVINCIAL STANDARDS SPECIFICATIONS (OPSS), ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD), AND THE TOWNSHIP OF CLEARVIEW'S STANDARDS SHALL APPLY TO THIS CONTRACT.
1.4 THE ORDER OF PRECEDENCE OF STANDARD DRAWINGS IS FIRSTLY TOWNSHIP OF CLEARVIEW STANDARD DRAWINGS (STD), AND SECONDLY ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD).
1.5 MAINTENANCE HOLE SAFETY PLATFORMS SHALL CONFORM TO OPSD 404.020.
1.6 MAINTENANCE HOLE TOPS (FRAMES) AND CATCHBASIN (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT GRADE AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED. (SEE ROAD NOTES 10, 11, 12, 13 & 14).
1.7 A ROAD OCCUPANCY PERMIT IS REQUIRED FROM THE ENGINEERING DEPARTMENT PRIOR TO THE COMMENCEMENT OF WORK WITHIN ANY TOWNSHIP RIGHT-OF-WAY.
1.8 NATIVE MATERIAL SUITABLE FOR BACKFILL SHALL BE COMPACTED TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY, UNLESS OTHERWISE NOTED. ENGINEERING FILL (ON LOTS), SHALL BE COMPACTED TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY.
1.9 GRANULAR MATERIAL AND BEDDING MATERIAL SHALL BE PLACED IN LAYERS 150mm IN DEPTH AND COMPACTED TO 100% (ROAD GRAN 'A' & GRAN 'B') OR 100% (PIPE BEDDING AND COVER) STANDARD PROCTOR MAXIMUM DRY DENSITY OR AS DIRECTED BY THE GEOTECHNICAL CONSULTANT.
1.10 UTILITY CROSSING, WHERE REQUIRED, AND ANY EXISTING STRUCTURES SHALL BE PROPERLY SUPPORTED. ALL UTILITY CROSSINGS TO BE REVIEWED BY THE TOWNSHIP OF CLEARVIEW.
1.11 DRIVEWAY ACCESS TO OCCUPIED RESIDENCES SHALL BE RESTORED AT THE END OF EACH WORKING DAY.
1.12 CONTRACTOR SHALL COORDINATE THEIR WORK SUCH THAT HE DOES NOT INTERFERE WITH WORK BEING UNDERTAKEN BY A UTILITY COMPANY.
1.13 ALL GRADING MUST CONFORM TO THE TOWNSHIP OF CLEARVIEW LOT GRADING POLICIES CURRENTLY IN EFFECT.

2. ROADS AND PARKING LOTS

2.1. CURB AND GUTTER TO BE MOUNTABLE CURB AS PER OPSD-600.100 (COMMERCIAL, RESIDENTIAL, MULTI-RESIDENTIAL), OR MOUNTABLE AS PER OPSD-600.100 (RESIDENTIAL) IN ALL ROADS. CURBS TO BE SINGLE STAGE ONLY.
2.2. ROAD WORKS TO CONFORM TO STD-R3 OR STD-R1 FOR 20m R.O.W OR STD-R4 FOR 26.0m R.O.W.
2.3. ROADS SHALL BE KEPT CLEAN DURING CONSTRUCTION AT THE CONTRACTOR'S EXPENSE.
2.4. SIDEWALKS TO COMPLY WITH OPSD 310.010 AND ARE TO BE MINIMUM 1.5 METERS WIDE. MINIMUM THICKNESS AS FOLLOWS:

- RESIDENTIAL DRIVEWAY 150mm
- COMMERCIAL/INDUSTRIAL DRIVEWAY 200mm (REINFORCEMENT AS PER OPSS IF REQUIRED)
- WHEN NO DRIVEWAY IS PRESENT, 125mm

2.5. NATIVE SUBGRADE SHALL HAVE A CROSSFALL OF 3% AND THE MATERIAL SHALL BE APPROVED BY A GEOTECHNICAL CONSULTANT WITH THE REVIEW OF A PROOF ROLL WITH A LOADED TANDEM AXLE DUMP TRUCK AND IS SUBJECT TO APPROVAL BY THE TOWNSHIP OF CLEARVIEW.
2.6. ALL CURB RADII TO BE MINIMUM OF 10.0 METERS AT THE EDGE OF ASPHALT.
2.7. NATIVE SUBGRADE TO BE COMPACTED TO MINIMUM 98% STANDARD PROCTOR MAXIMUM DRY DENSITY AND SHALL BE TESTED BY THE GEOTECHNICAL CONSULTANT.
2.8. THE ROAD AND CROSS SECTION SHALL INCORPORATE 150mm DIA. SUBDRAIN WITH FACTORY INSTALLED FILTER FABRIC (OPSD 216.021) AS REQUIRED.
2.9. GRADE AND CROSS FALL ADJUSTMENT OF MAINTENANCE HOLE AND CATCHBASIN FRAMES SHALL BE MADE USING PRODUCTS SPECIFICALLY MANUFACTURED' FOR THAT PURPOSE. CAST IRON ADJUSTMENT UNITS SHALL BE USED FOR ALL MAINTENANCE HOLE AND CATCH BASIN GRATES TO BE SET AT PROPER GRADES FOR BASE COURSE ASPHALT ONLY. ALL OTHER ADJUSTMENTS UNITS FOR ALL MAINTENANCE AND CATCH BASIN FRAME AND GRATES SHALL BE CONCRETE (PER OPSD 704.010). ALL MAINTENANCE, CATCH BASINS, ETC SHALL HAVE MINIMUM OF 150mm TO A MAXIMUM OF 300mm OF ADJUSTMENT TO ALLOW FOR FUTURE ADJUSTMENT UP OR DOWN.
2.10. ADJUSTMENT UNITS SHALL BE CERTIFIED TO MEET ALL PERTINENT OPS, CSA, ASTM, AND MTO-DSM LIST, OR OTHER INDUSTRY GUIDELINES FOR MATERIALS, PERFORMANCE AND USE AS APPLICABLE.
2.11. ADJUSTMENT UNITS AND JOINTS SHALL BE SEALED AND OR PARGED IN COMPLIANCE WITH MANUFACTURERS SPECIFICATIONS AND GUIDELINES.
2.12. MORTAR SHALL BE USED FOR LEVELING OF PRECAST UNITS ONLY, THE THICKNESS OF MORTAR SHALL BE 10mm TO FILL ALL VOIDS CREATED BY IRREGULARITIES IN THE PRECAST UNITS TO ENSURE AN EVEN SURFACE ONLY.
2.13. NON-COMPRESSIBLE BACKFILL SHALL BE USED DURING REBUILDING, ADJUSTING, OR ANY OTHER APPLICABLE CATCHBASIN OR MAINTENANCE HOLES WORKS.
2.14. DRIVEWAY APRONS TO BE CONSTRUCTED

i) RESIDENTIAL – MIN. 50mm HL3 ON MIN. 200mm GRAN 'A'
ii) COMMERCIAL – MIN. 50mm HL3 ON MIN. 250mm GRAN 'A' AND MIN. 300 GRANULAR B

2.15. UNDERGROUND CONDUIT:
THE CONTRACTOR SHALL SUPPLY AND INSTALL 100mm "HEAVY-WALLED" RIGID PVC CONDUIT, SCEDTRE/CANRON TYPE 2 OR APPROVED EQUIVALENT AS PER CSA STANDARDS C22. NO.212.2 ALL COUPLINGS, ELBOWS, ETC. SHALL BE BONDED WITH ADHESIVES RECOMMENDED BY THE CONDUIT MANUFACTURER IN A MANNER THAT PREVENTS THE ENTRY OF MOISTURE AND BACKFILL MATERIAL, ETC. THE CONDUIT SHALL BE INSTALLED IN LOCATIONS, AS NOTED ON THE CONTRACT DRAWINGS, AT A MINIMUM DEPTH OF 0.6m BELOW FINISHED GRADE. BACKFILL SHALL CONFORM TO THE REQUIREMENTS OF O.P.S.S. FORM 1010, GRANULAR 'A' AND GRANULAR 'B' TYPE 1 AND SHALL BE COMPACTED TO 100% MAXIMUM DRY DENSITY. EARTH BACKFILL SHALL BE COMPACTED TO 98% MAXIMUM DRY DENSITY.
2.16. A 400N TEST STRENGTH NYLON ROPE "FISH LINE" SHALL BE PLACED WITHIN EACH RUN OF CONDUIT WITH 1.5m OF EXCESS ROPE LEFT COILED WITHIN THE CHAMBERS AT EACH END OF THE CONDUIT.
2.17. CONCRETE ELECTRICAL HANDHOLES:
HANDHOLES SHALL MANUFACTURE CAST IRON COVERS, SONO TUBES AND CONCRETE. THE INSIDE DIAMETER SHALL BE 0.46m. OAKS PRECAST OR APPROVED EQUIVALENT HANDHOLES THAT CONFORM TO OPSD 2112.02 MAY DE USED. CAST IN PLACE HANDHOLES MUST HAVE INSIDE CHAMBER SONO TUBE REMOVED WHEN CONCRETE HAS HARDENED. THE NUMBER AND ORIENTATION OF CHAMBER ENTRY SLEEVES SHALL BE IN ACCORDANCE WITH THE CONTRACT DRAWINGS. THE TOP OF THE JUNCTION BOX SHALL BE SET TO AN ELEVATION THAT CONFORMS TO THE SURROUNDING ELEMENTS (E.G. CURBS, SIDEWALK, ETC.). ALL HANDHOLES SHALL HAVE LIDS FASTENED AND LIFT RINGS REMOVED.
2.18. EACH CHAMBER SHALL PROVIDE FOUR (4) SPARE AND CAPPED ENTRY SLEEVES SPACED EVENLY AT NINETY DEGREE INTERVALS AROUND THE CIRCUMFERENCE OF THE CHAMBER IN ADDITION TO THE ENTRY POINTS FOR THE ROAD CROSSING CONDUITS.
2.19. DURING INSTALLATION OF UNDERGROUND CONDUIT AND CONCRETE ELECTRICAL HANDHOLES FOR THE TRAFFIC SIGNALS, A REPRESENTATIVE FROM THE TOWNSHIP OF CLEARVIEW PUBLIC WORKS DEPARTMENT IS TO BE PRESENT.

3. SANITARY SEWERS

3.1. SANITARY GRAVITY SEWER SHALL BE PVC (CLASS DR35 OR DR28) OR CONCRETE PIPE, WITH RUBBER GASKET JOINTS WHICH CONFORM TO C.S.A. B-182.2,3,4. CONCRETE SANITARY SEWERS SHALL HAVE A MINIMUM STRENGTH OF 65 N/m/mm CONFORMING TO C.S.A. STANDARD A257.2-1982, CLASS 50-D (PREVIOUSLY C.S.A. STANDARD A257.2-1974, CLASS II).
3.2. SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD-802.010, (GRAN. 'A' OR HIGH-PERFORMANCE EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD-802.030 OR 802.031 CLASS B (GRAN. 'A' OR HIGH-PERFORMANCE BEDDING MATERIAL) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE TOWNSHIP OF CLEARVIEW.
3.3. PRECAST SANITARY MAINTENANCE HOLES SHALL CONFORM WITH OPSD 701.010 (1200mm), OR 701.011 (1500mm), WITH FRAME & COVER OPSD 401.010 TYPE 'A' AND SOLID RECTANGULAR RUNGS, OPSD 405.020.
3.4. SANITARY MAINTENANCE HOLE BENCHING AS PER OPSD 701.021.
3.5. SANITARY SERVICE CONNECTIONS (SEE TOWNSHIP OF CLEARVIEW STANDARD STD-SAN1).

A) SANITARY LATERAL CONNECTION TO BE LOCATED 2.5m RIGHT OF ℄ OF LOT..

B) LOCATION OF LATERAL TO BE MARKED AT PROPERTY LINE WITH A 60x100mm WOOD MARKER, PAINTED GREEN, AND EXTENDING FROM THE SERVICE INVERT TO 300mm ABOVE GROUND LEVEL.

C) PIPE TO BE MINIMUM 125mm PVC DR28, RUBBER GASKET TYPE JOINTS AND SHALL CONFORM TO CSA (B-182.2,3,4) (COLOURED) FOR A RESIDENTIAL HOUSE AND MINIMUM 150mm PVC DR28 FOR INDUSTRIAL, AND COMMERCIAL DEVELOPMENT.

D) MINIMUM DEPTH OF LATERAL AT PROPERTY LINE SHALL BE 2.7m MEASURED FROM THE SEWER OBVERT TO FINISHED GROUND SURFACE ELEVATION UNLESS OTHERWISE NOTED.

E) ALL CONNECTIONS TO NEW SANITARY MAINS SHALL BE PRE-MANUFACTURED, FABRICATED TEES, CONNECTIONS TO EXISTING SANITARY SEWER SHALL BE MADE WITH APPROVED FACTORY MADE TEES OR INSERT-A-TEES IN STRICT ACCORDANCE TO MANUFACTURERS GUIDELINES.

F) MINIMUM PIPE SLOPE ON SANITARY SERVICES TO BE 2.0%, MAXIMUM 8.0%, AS PER OPSD-1006.020.

3.6. MAXIMUM DEFLECTION FROM COMBINED LIVE AND DEAD LOADING SHALL NOT EXCEED C.S.A, O.P.S. OR MANUFACTURERS RECOMMENDED SPECIFICATIONS.
3.7. MAINTENANCE HOLE TOPS (FRAMES) AND CATCH BASIN (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT GRADE AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED. A MINIMUM OF 150mm TO A MAXIMUM OF 300mm OF ADJUSTMENT UNITS SHALL BE PROVIDED. ALL ADJUSTMENT SHALL BE IN ACCORDANCE WITH STANDARD DETAIL. REFER TO ROAD NOTES 10, 11, 12, 13, & 14.
3.8. MINIMUM COVER 2.8m OVER TRUNK AND LOCAL SEWERS,

4. STORM SEWERS

4.1. STORM SEWER TO BE PVC (CLASS DR35 OR DR28) PIPE OR REINFORCED CONCRETE PIPE (MIN. CLASS 65-D). PIPE MATERIAL FOR REINFORCED CONCRETE TO HAVE A MINIMUM STRENGTH OF 65 N/m/mm AND BE CERTIFIED TO C.S.A. STANDARD A247.2-1982M CLASS 65-D (PREVIOUSLY C.S.A. STANDARD A257.2-1974, CLASS II). PVC MATERIAL TO BE CERTIFIED TO C.S.A. STANDARDS 182.2 AND 182.4, UNLESS OTHERWISE NOTED.
4.2. STORM SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD-802.010 (GRAN 'A' OR HIGH-PERFORMANCE EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD-802.030 OR 802.031 CLASS B (GRAN 'A' OR HIGH-PERFORMANCE BEDDING MATERIAL) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE TOWNSHIP.
4.3. PRECAST STORM MAINTENANCE HOLES SHALL CONFORM WITH OPSD 701.010 (1200mm), OR 701.011 (1500mm) WITH FRAME & COVER OPSD 401.010 TYPE 'A' AND SOLID RECTANGULAR RUNGS, OPSD 405.020.
4.4. CATCHBASIN LEADS TO BE 0.7% MIN. GRADE, 250mm FOR SINGLE CATCHBASIN AND 300mm FOR DOUBLE CATCHBASIN.
4.5. ALL REAR YARD CATCHBASIN LEADS TO HAVE:

A) GRANULAR "A" BEDDING TO OBVERT OF SEWER.

B) 100mm THICK 10MPa CONCRETE SLAB TO BE PLACED 300mm ABOVE OF SEWER AND OVER FULL WIDTH OF SEWER ALONG SIDE LOT LINE.

4.6. MAINTENANCE HOLE BENCHING SHALL CONFORM WITH OPSD 701.021.
4.7. CATCHBASIN MAINTENANCE HOLES SHALL SHALL HAVE A 300mm SUMP AND NO BENCHING.
4.8. PIPE JOINTS TO CONFORM TO CSA STANDARDS (B-182.2,3,4 AND A257.3).
4.9. MAINTENANCE HOLE TOPS (FRAMES) AND CATCHBASIN (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT GRADE AND THEN ADJUSTED TO FINAL GRADE WHEN THE LIFT OF ASPHALT IS PLACED. A MINIMUM OF 150mm TO A MAXIMUM OF 300mm OF ADJUSTMENT UNITS SHALL BE PROVIDED. ALL ADJUSTMENT SHALL BE IN ACCORDANCE WITH STANDARD DETAIL. REFER TO ROAD NOTES 10, 11, 12, 13, & 14.
4.10. ALL CONNECTIONS TO THE STORM MAIN SHALL BE MADE WITH A STORM MAINTENANCE HOLE OR APPROVED FACTORY TEE CONNECTION AS PER OPSD-708.01 OR 708.03.
4.11. STORM SEWER TO BE MINIMUM 300mm DIAMETER WITH JOINTS CONFORMING TO C.S.A. STANDARD A257.3.
4.12. NO FLEXIBLE PIPE SEWERS WILL BE INSTALLED WITH A DEPTH OF COVER GREATER THAN 6 METERS UNLESS SPECIFICALLY APPROVED BY THE TOWNSHIP PUBLIC WORKS DEPARTMENT.
4.13. ALL PIPE HANDLING INSTALLATIONS SHALL BE IN STRICT COMPLIANCE WITH MANUFACTURERS INSTALLATION GUIDES AND THE O.C.P.A. OR UNIBELL GUIDELINES.
4.14. WHERE FROST SUSCEPTIBLE SOILS ARE ENCOUNTERED AND THE OBVERT OF THE STORM SEWER IS LESS THAN A DEPTH OF 1.5m FROM THE FINISHED ASPHALT SURFACE, THE FOLLOWING MEASURES ARE TO BE APPLIED:

A) WHERE THE SUBGRADE CONSISTS OF HIGHLY FROST SUSCEPTIBLE SOILS THE SUBGRADE SHALL BE REPLACED WITH NON-FROST SUSCEPTIBLE SOILS TO A DEPTH OF 1.2m OVER THE ENTIRE ROAD PLATFORM.

B) WHERE THE SUBGRADE CONSISTS OF MODERATELY FROST SUSCEPTIBLE SOILS THE SUBGRADE REPLACEMENT SHALL BE TAPERED AT A SLOPE OF 10 HORIZONTAL: 1 VERTICAL, FROM THE STORM SEWER TRENCH TO THE EDGE OF THE ROAD PLATFORM.

5. WATERMAINS

5.1. A) WATER MAIN MATERIAL TO BE PVC (CLASS 235, DR-18) AND, SHALL SATISFY AWWA C900-16 SPECIFICATION. DIAMETER TO BE AS INDICATED ON THE DRAWINGS. ALL FITTINGS TO BE DUCTILE IRON, MECHANICAL JOINT WITH SACRIFICIAL NUTS ON EVERY OTHER BOLT.

B) MINIMUM RESIDENTIAL SERVICE TO BE 25mm PE IPEX GOLD 901.

5.2. A) WATER MAIN SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD 802.010 (GRANULAR 'A' OR HIGH PERFORMANCE EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AS OPSD 802.030 OR 802.031 CLASS 'B' (GRANULAR 'A' OR HIGH PERFORMANCE EMBEDMENT MATERIAL, GRANULAR 'A' OR SELECT NATIVE COVER MATERIAL) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE TOWNSHIP OF CLEARVIEW.

B) SERVICES 25mm TO 50mm IN DIAMETER SHALL BE EMBEDDED IN SAND OR 'A' GRAVEL 100mm ABOVE AND BELOW TO CONFORM TO OPSS 1004.05.

5.3. CONTRACTOR SHALL INFORM THE TOWNSHIP OF CLEARVIEW A MINIMUM OF 48 HOURS IN ADVANCE OF THEIR INTENTIONS TO COMMENCE WORK.
5.4. CONTRACTOR TO BE RESPONSIBLE FOR INSTALLATION AND MATERIALS TO INSTALL ONE INITIAL TIE-IN REQUIRED TO FACILITATE THE TESTING OF THE NEWLY INSTALLED DISTRIBUTION SYSTEM PRIOR TO CONNECTION TO THE EXISTING SYSTEM. WATER MAIN TO BE PRESSURE TESTED, SWABBED AND CHLORINATED BY THE CONTRACTOR, UPON SUCCESSFUL TEST RESULTS, THE FINAL TIE-IN TO BE COMPLETED BY CONTRACTOR WITH TOWNSHIP OF CLEARVIEW SUPERVISION AND ASSISTANCE WITH OPERATING THE EXISTING WATER SYSTEM FOR A WATER SYSTEM SHUT OFF. RISER PIPES ARE TO BE INSTALLED AS PER STANDARD, AND REMOVED AS DIRECTED. SWABBING / TESTING SCHEDULE TO BE SUPPLIED BY THE CONTRACTOR TO THE TOWNSHIP OF CLEARVIEW TO REVIEW AND APPROVE.
5.5. THE CONTRACTOR IS RESPONSIBLE FOR THE SWABBING, PRESSURE TESTING, CHLORINATION AND FLUSHING OF THE NEW WATER MAINS. ANY ADDITIONAL SWABBING, PRESSURE TESTING, CHLORINATION AND FLUSHING BEYOND THE INITIAL PROCEDURE WILL BE AT THE CONTRACTORS EXPENSE AND AT THE DISCRETION OF THE TOWNSHIP OF CLEARVIEW, THE CONTRACTOR SHALL MAKE ALL CONNECTIONS TO THE EXISTING WATER MAINS INCLUDING EXCAVATION, BACKFILLING, AND MATERIALS AS REQUIRED, UNDER TOWNSHIP OF CLEARVIEW SUPERVISION. CONTRACTOR TO USE TOWNSHIP WATER MAIN COMMISSIONING PROCEDURE.
5.6. ALL NEW SERVICE BOXES TO BE LOCATED ON PROPERTY LINE AND OUT OF THE DRIVEWAYS AND SIDEWALKS.
5.7. NO WATER MAIN IS TO BE LAID ON FILL UNTIL THE DENSITY REPORT HAS BEEN SUBMITTED TO AND APPROVED BY THE ENGINEER. FILL TO BE PLACED TO 0.6m MINIMUM ABOVE THE TOP OF THE WATER MAIN GRADED AND COMPACTED AS PER OPSS 501. TESTS SHALL BE TAKEN ALONG THE CENTER LINE OF THE WATER MAIN AND 2.5m EITHER SIDE OF THE WATER MAIN AT A MAXIMUM INTERVAL OF 30m FOR EACH 0.6m LIFT. ALL TEES, HORIZONTAL BENDS, AND BRANCH VALVES IN FILL AREAS TO BE TIED WITH RODS IN ADDITION TO CONCRETE BLOCKING ACCORDING TO NOTE 8.
5.8. A) THRUST BLOCKING: CONCRETE THRUST BLOCKS ARE TO BE INSTALLED AT ALL TEES, BENDS, ENDS OF MAINS AND CONNECTIONS 100mm AND LARGER AS PER OPSD 1103.010 AND 1103.020 AND TOWNSHIP STANDARD DRAWING STD-W4. AT ALL THRUST BLOCK LOCATIONS RESTRAINING DEVICES ARE REQUIRED IN ADDITION TO STANDARD CONCRETE THRUST BLOCKING.

B) ALL SEGMENTS OF THE FITTING AND WATER MAIN AT THE THRUST BLOCK LOCATION SHALL BE RESTRAINED AT LEAST 10m EACH SIDE OF THE THRUST BLOCK WHERE THE DEFLECTION ANGLE AT THE THRUST BLOCK IS MORE THAN 11 ¼ . TIE RODS AND CLAMPS SHALL BE GIVEN TWO COATS OF BITUMASTIC PAINT.

C) IMPORTED GRANULAR FILL (OPSD GRANULAR 'A' OR EQUIVALENT) IS TO BE USED BEHIND THE THRUST BLOCK AND FORM A MINIMUM DISTANCE OF 2m EACH SIDE OF THE THRUST BLOCK. THIS IMPORTED GRANULAR FILL IS TO BE COMPACTED TO A MINIMUM OF 100% STANDARD PROCTOR MAXIMUM DRY DENSITY. PRIOR TO CONSTRUCTION OF THE THRUST BLOCKS THE CONTRACTOR SHALL OBTAIN THE WRITTEN APPROVAL OF THE BLACKFILL FROM A QUAUFIED GEOTECHNICAL ENGINEER

5.9. CONTRACTOR TO PERFORM CONSTRUCTION SUCH THAT WATER SERVICE IS MAINTAINED AT ALL TIMES.
5.10. TRACING WIRE TO BE INSTALLED ON TOTAL LENGTH OF PVC WATER MAIN (#12 TWU STRANDED COPPER FOR OPEN CUT CONSTRUCTION OR #8 TWU FOR DIRECTIONAL BORING INSTALLATION), BROUGHT TO SURFACE AT ALL WATER VALVE BOXES AND COILED UNDER THE VALVE CAPS.
5.11. WHERE WATER SERVICES CONFLICT WITH OTHER UTILITIES, DEFLECT SERVICE SO AS TO PROVIDE A MIN. 0.5m CLEARANCE. MAINTAIN MIN. DEPTH OF COVER AT ALL TIMES.
5.12. SERVICE CONNECTIONS SHALL BE PLACED AT A MINIMUM SEPARATION OF 1.0m AND A MINIMUM OF 0.6m FROM JOINTS. (ENDS OF PIPE).
5.13. A) FIRE HYDRANTS TO BE CANADA VALVE CENTURY PREMIER TYPE WITH STORZ PUMPER TO THE TOWNSHIP OF CLEARVIEW SPECIFICATIONS. ALL PIPE FITTINGS, TEES, ETC. TO BE DUCTILE IRON CEMENT LINED MECHANICAL JOINT FITTINGS FOR PVC WATER MAINS 150mm TO 200mm DIAMETER. RESTRAINING AND THRUST BLOCK PROTECTION WILL BE REQUIRED ON ALL MECHANICAL JOINTS. HYDRANTS TO BE RESTRAINED TO MAINLINE TEE.

B) FIRE HYDRANTS TO BE OFFSET 0.3m FROM ANY PROPERTY LINE, AND 1.5m FROM ANY DRIVEWAY.

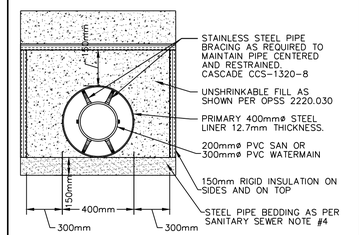
5.14. MINIMUM DEPTH OF COVER ON WATER MAIN TO BE 1.7 METERS.
5.15. WHERE 25mm SERVICE CANNOT MAINTAIN 1.7m DUE TO ELEVATIONS OF UTILITIES, THE CONTRACTOR SHALL INSTALL 4.0m OF 100mm PVC SDR28 LINER A MINIMUM OF 0.5m BELOW THE UTILITY.
5.16. WHERE WATER MAIN CONFLICTS WITH SEWER PIPES, DEFLECT WATER MAIN OVER SEWERS, DO NOT USE BENDS IF POSSIBLE. PROVIDE A MINIMUM OF 0.5 METERS CLEARANCE BETWEEN WATER MAIN AND SEWERS. MAINTAIN MINIMUM DEPTH OF COVER OF 1.7m AT ALL TIMES.
5.17. MINIMUM HORIZONTAL SEPARATION BETWEEN WATER MAIN AND SEWERS TO BE 2.5 METERS.
5.18. ALL VALVES TO BE RESILIENT CLOW CANADA F6100 SEAT GATE VALVES.
5.19. VALVES IN EXCESS OF 1.7m IN DEPTH SHALL REQUIRE A VALVE STEM EXTENSION.
5.20. RISER PIPES ARE TO BE INSTALLED AS PER STANDARD, AND REMOVED AS DIRECTED.

6. EROSION AND SEDIMENT CONTROL

6.1. PRIOR TO CONSTRUCTION ADVISE TOWNSHIP AND CONSERVATION AUTHORITY OF STAFF RESPONSIBLE FOR SITE SEDIMENT CONTROL SUPERVISION, INSPECTION AND MAINTENANCE, INCLUDING AFTER HOUR CONTACTS AND PROVIDE WRITTEN INSPECTION AND MAINTENANCE SCHEDULE OF SEDIMENT CONTROL DEVICES.
6.2. INSTALL ALL SEDIMENT CONTROL DEVICES AS IDENTIFIED ON THE APPROVED EROSION CONTROL PLAN PRIOR TO COMMENCEMENT OF TOPSOIL STRIPPING OR EARTHWORKS OPERATIONS.
6.3. ENSURE TOPSOIL, STRIPPING, GRADING AND UNDERGROUND WORKS CONFORM TO APPROVED GRADING, SERVICING AND EROSION CONTROL PLAN.
6.4. CONTRACTOR TO CONDUCT REQUIRED WEEKLY INSPECTION, MAINTENANCE AND REPORTING OF SEDIMENT CONTROLS TO THE TOWNSHIP AND CONSERVATION AUTHORITY AND STABILIZE SITE AS REQUIRED THROUGHOUT SITE CONSTRUCTION SCHEDULE.
6.5. CONSTRUCTION AREAS THAT EXCEED 30 DAYS OF INACTIVITY SHALL BE STABILIZED BY SEEDING. THIS IS TO INCLUDE STOCKPILES OF FILL AND TOPSOIL.
6.6. EROSION AND SEDIMENT CONTROLS TO BE DESIGNED IN ACCORDANCE WITH TOWNSHIP AND CONSERVATION AUTHORITY STANDARDS.
6.7. ALL SEDIMENT CONTROL BASINS SHALL BE IN ACCORDANCE WITH NVCA DRAWING BSD – 23A.
6.8. ALL SEDIMENT CONTROL FENCES SHALL BE IN ACCORDANCE WITH NVCA DRAWING BSD – 23 DRAFT.
6.9. ROCK CHECK DAMS SHALL BE IN ACCORDANCE WITH NVCA DRAWING BSD – 24 DRAFT.
6.10. MUD MATS TO BE USED AT ALL CONSTRUCTION ENTRANCES AND EXIT LOCATIONS AND BE A MINIMUM 20M IN LENGTH AND 5M IN WIDTH. THE PAD SHALL BE A MINIMUM OF 450MM THICK, CONSTRUCTED WITH 50MM DIAMETER CLEAR STONE IN THE FIRST 10M OF THE PAD EXTENDED FROM THE STREET. THE REMAINDER OF THE PAD SHALL BE CONSTRUCTED WITH 150MM DIAMETER STONE.
6.11. CONTRACTOR TO MAINTAIN ALL ROADS AFFECTED BY CONSTRUCTION FREE OF SEDIMENT BY SWEEPING AS NECESSARY OR AS DIRECTED BY THE CONTRACT ADMINISTRATOR OR TOWNSHIP.
6.12. CONTRACTOR TO IMPLEMENT APPROPRIATE DUST CONTROL MEASURES TO PREVENT EXCESSIVE DUST ON SITE OR MIGRATION OF DUST TO ADJACENT PROPERTIES.
6.13. ALL DISTURBED AREAS ARE TO BE REINSTATED TO THEIR ORIGINAL CONDITION OR BETTER AS DETERMINED BY THE TOWNSHIP OF CLEARVIEW.
6.14. ALL SILT CONTROL AND EROSION PROTECTION DEVICES ARE TO BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL CONSTRUCTION IS COMPLETE, AND THE GRASS HAS ESTABLISHED GROWTH; SUBJECT TO APPROVAL BY THE TOWNSHIP OF CLEARVIEW.

STEEL LINER DETAIL

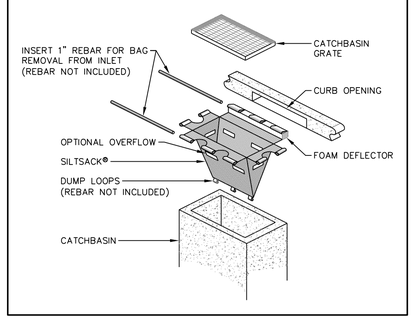
N.T.S.

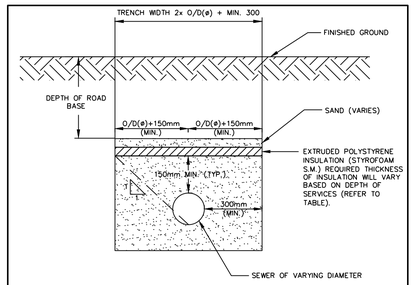


NOTES:
1. STEEL PIPE CASING TO MEET OPSS 1802 REQUIREMENTS.
2. STEEL PIPE TO HAVE CATHODIC PROTECTION.
3. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF MATERIALS FOR REVIEW.

'SILTSACK' DETAIL

SCALE: N.T.S.





NOTES:
1. AS PER O.B.C. A.7.3.5.4:
COVER OVER THE INSULATION IS BETWEEN 0.6 TO 0.9m – USE 50mm INSULATION
COVER OVER THE INSULATION IS BETWEEN 0.9 TO 1.2m – USE 40mm INSULATION
COVER OVER THE INSULATION IS BETWEEN 1.2 TO 1.8m – USE 25mm INSULATION
2. INSULATION SHALL BE PLACED WITH ENDS CLOSELY LOCATED TOGETHER.
3. ALL JOINTS SHALL BE STAGGERED WHEN MORE THAN ONE LAYER OF INSULATION IS BEING INSTALLED.

INSULATION FOR VARIOUS INFRASTRUCTURE

N.T.S.

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2024/04/12

Engineer

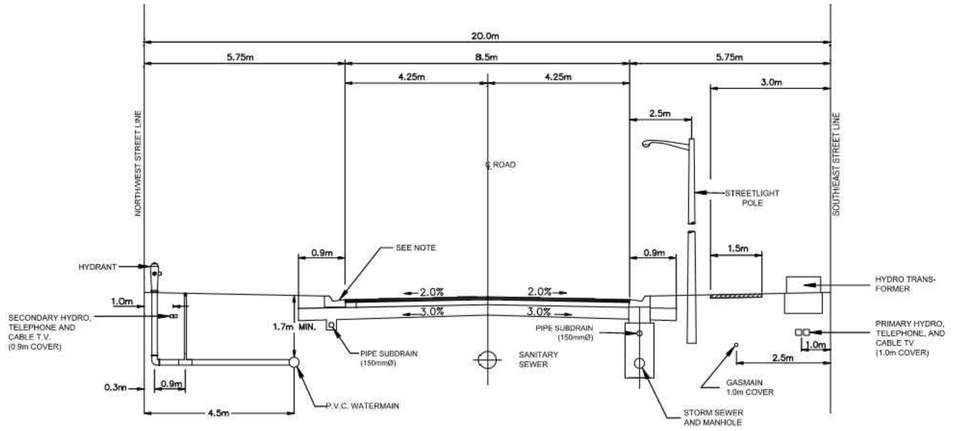
Engineer

Project: NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing: CONSTRUCTION NOTES & DETAILS

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C110A



NOTES:

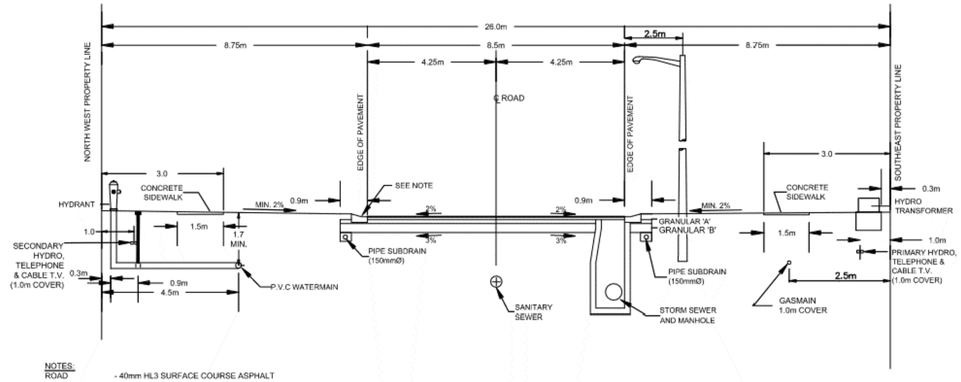
ROAD	-40mm HL3 SURFACE COURSE ASPHALT -40mm HL4 BASE COURSE ASPHALT -150mm GRANULAR 'A' -300mm GRANULAR 'B' (MIN) OR AS PER GEOTECHNICAL RECOMMENDATIONS
SIDEWALKS	- 150MM GRANULAR 'A' BASE - 125MM CONCRETE 30 MPA (150MM AT DRIVEWAYS)
BOULEVARD	-75MM TOPSOIL AND NURSERY SOD
MINIMUM RADII	-CUL DE SAC 13.0m -RETURN 10.0m
CURB	-600.100 RESIDENTIAL -600.010 COMMERCIAL, INDUSTRIAL, MULTI-RESIDENTIAL

TOWNSHIP OF CLEARVIEW

Figure Title
STANDARD 8.5m ROAD - 20m R.O.W.
(CURB & GUTTER)
WITH SERVICE LOCATIONS

No.	Issue / Revision	Date	Auth.

Drawn: R.J. BURNSIDE | Approved: | DWG. No. **STD-R3**
Scale: N.T.S. | Date: 16/12/12



NOTES:

ROAD	- 40mm HL3 SURFACE COURSE ASPHALT - 40mm HL4 BASE COURSE ASPHALT - 150mm GRANULAR 'A' - 300mm GRANULAR 'B' (MIN) OR AS PER GEOTECHNICAL RECOMMENDATIONS
SIDEWALKS	- 150mm GRANULAR 'A' BASE - 125mm CONCRETE 30 MPa (150mm AT DRIVEWAYS)
BOULEVARDS	- 75mm TOPSOIL & NURSERY SOD
MINIMUM RADII	- CUL DE SAC 13.0m - RETURN 10.0m
CURB	-600.100 RESIDENTIAL -600.010 COMMERCIAL, INDUSTRIAL, MULTI-RESIDENTIAL

ROAD SECTION APPLIES TO:
BASED ON TOWNSHIP OF CLEARVIEW
STANDARD (STD-R3)

TOWNSHIP OF CLEARVIEW

Figure Title
STANDARD 8.5m ROAD - 26m R.O.W.
(CURB & GUTTER)
WITH SERVICE LOCATIONS

No.	Issue / Revision	Date	Auth.

Drawn: R.J. BURNSIDE | Approved: | DWG. No. **STD-R4**
Scale: N.T.S. | Date: 16/12/12

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Engineer

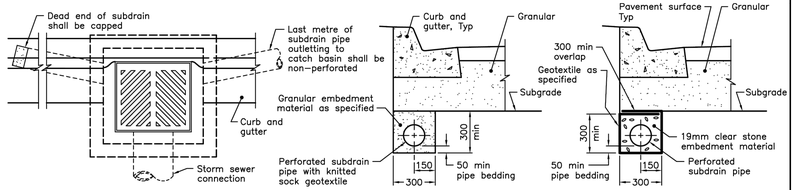
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
TYPICAL ROAD CROSS-SECTIONS & DETAILS

CROZIER CONSULTING ENGINEERS

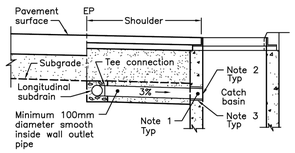
Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C110B



LONGITUDINAL SUBDRAIN CONNECTION TO CATCH BASIN

UNWRAPPED TRENCH

WRAPPED TRENCH

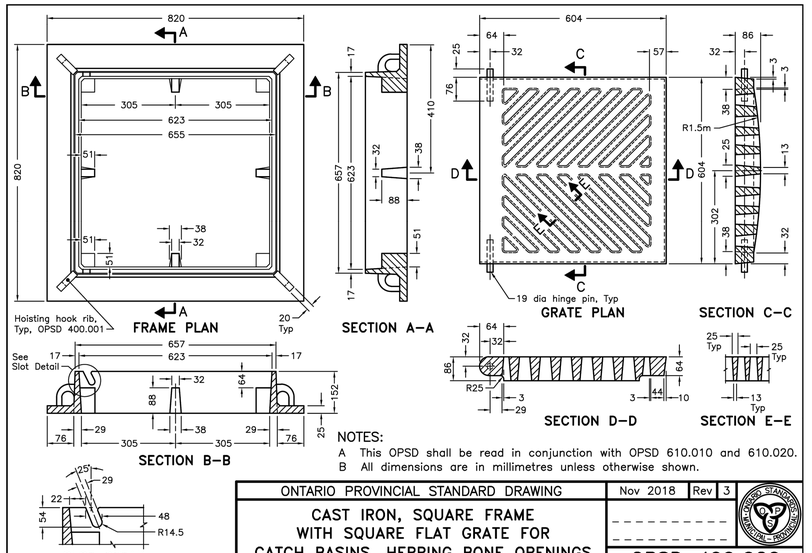


LATERAL SUBDRAIN OUTLET PIPE CONNECTION TO CATCH BASIN

NOTES:
1 Core hole diameter to allow outlet pipe into structure.
2 Install outlet pipe flush with inside face of catch basin.
3 Annular space around pipe shall be filled with non-shrink grout.

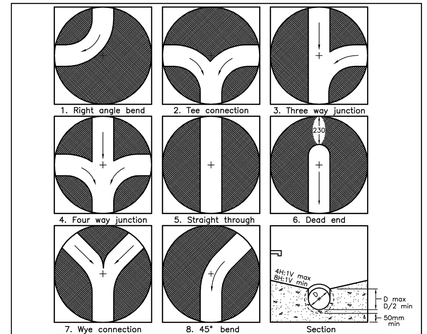
A Use compatible manufactured fittings for all connectors, couplings, and caps.
B Trench dimensions shown to accommodate 100 or 150mm diameter subdrain pipe.
C Longitudinal subdrain pipe shall be installed parallel to the grade of the gutter.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2017	Rev 3
SUBDRAIN PIPE CONNECTION AND OUTLET URBAN SECTION		
	OPSD 216.021	



NOTES:
A This OPSD shall be read in conjunction with OPSD 610.010 and 610.020.
B All dimensions are in millimetres unless otherwise shown.

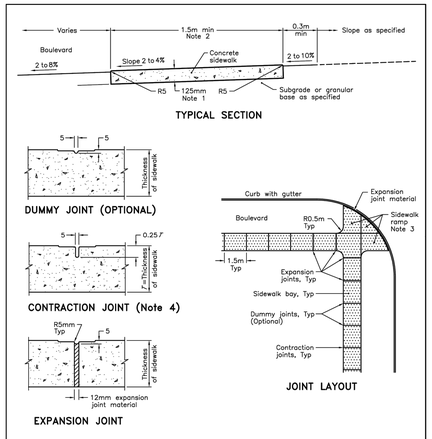
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 3
CAST IRON, SQUARE FRAME WITH SQUARE FLAT GRATE FOR CATCH BASINS, HERRING BONE OPENINGS		
	OPSD 400.020	



MAXIMUM SIZE HOLE IN THE WALL IN PRECAST RISER SECTIONS					
Maintenance Hole Diameter	No. 1–4	No. 5 and 6	No. 8	No.7	
				Inlet Hole	Outlet Hole
1200	700	860	780	700	860
1500	860	1220	960	860	1170
1800	1220	1485	1220	1220	1485
2400	1485	2020	1760	1485	2020
3000	1930	2450	2300	1930	2450
3600	2470	3085	2730	2470	3085

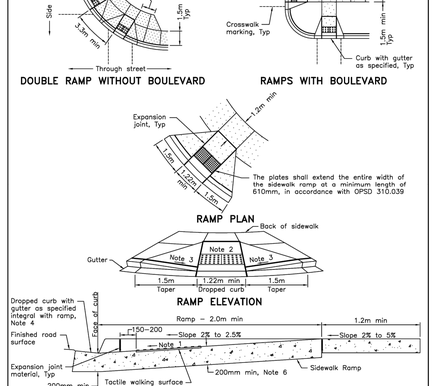
NOTES:
1 Slopes shall be maintained from the outlet hole opening for top of benching.
A Concrete for benching shall be 30MPa.
B When benching is hand-finished, it shall be given wood float finish, channel shall be given steel trowel finish.
C Benching slope and height shall be as specified.
D When specified, maintenance holes that are 1200mm in diameter with a uniform channel for 200 or 250mm pipe may be prebenched at the manufacturer with standardized benching slope and channel orientation.
E All dimensions are nominal.
F All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 4
MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES		
	OPSD 701.021	



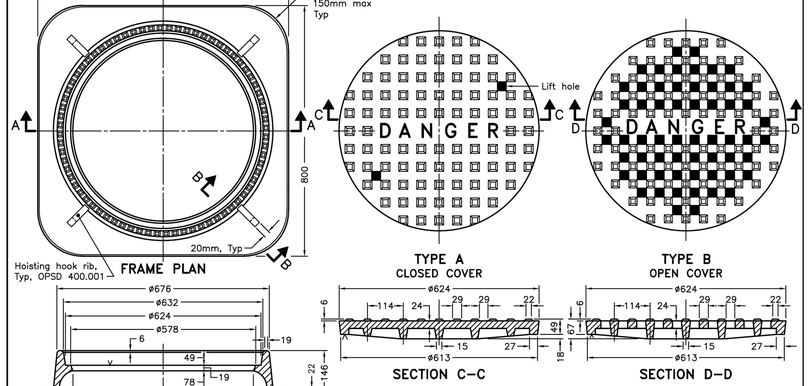
NOTES:
1 Sidewalk thickness at residential driveways and adjacent to curb shall be 150mm. At commercial and industrial driveways, the thickness shall be 200mm.
2 Sidewalk width shall be wider when specified.
3 This OPSD shall be read in conjunction with OPSD 310.030, 310.031, 310.033, and 310.039.
4 Contraction Joint may be tooled or sawcut.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2019	Rev 3
CONCRETE SIDEWALK		
	OPSD 310.010	



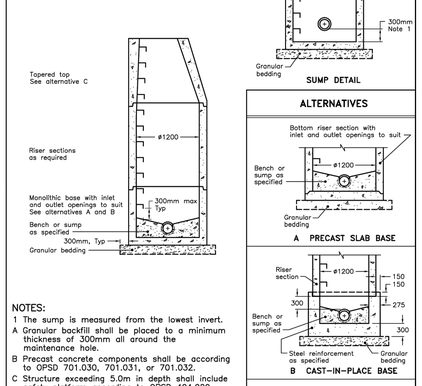
NOTES:
1 Slope of ramp shall not exceed 8%.
2 Cross slope of ramp shall not exceed 2% in either direction.
3 Cross slope of flared side of ramp shall not exceed 8%.
4 Dropped curb at ramp shall be modified to eliminate 30 mm step at gutter line.
5 Minimum thickness of ramp is 200mm. Minimum thickness of sidewalk and flared sides adjacent to ramp is 150mm.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2019	Rev 1
CONCRETE SIDEWALK RAMPS AT UNSIGNALIZED INTERSECTIONS		
	OPSD 310.033	



NOTES:
A Covers shall be Type A or Type B, as specified.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 4
CAST IRON, SQUARE FRAME WITH CIRCULAR CLOSED OR OPEN COVER FOR MAINTENANCE HOLES		
	OPSD 401.010	



NOTES:
1 The sump is measured from the lowest invert.
A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
B Precast concrete components shall be according to OPSD 701.030, 701.031, or 701.032.
C Structure exceeding 5.0m in depth shall include safety platform according to OPSD 404.020.
D Pipe support according to OPSD 708.020.
E For benching and pipe opening details, see OPSD 701.021.
F For adjustment unit and frame installation, see OPSD 704.010.
G All dimensions are nominal.
H All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 5
PRECAST CONCRETE MAINTENANCE HOLE 1200mm DIAMETER		
	OPSD 701.010	

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Engineer

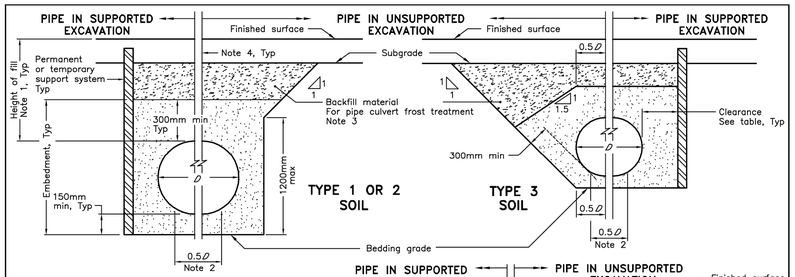
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
ONTARIO PROVINCIAL STANDARD DRAWINGS

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C111A



LEGEND:

D – Inside diameter

NOTES:

1 Height of fill is measured from the finished surface to top of pipe.
2 The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
3 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
4 Condition of excavation is symmetrical about centreline of pipe.

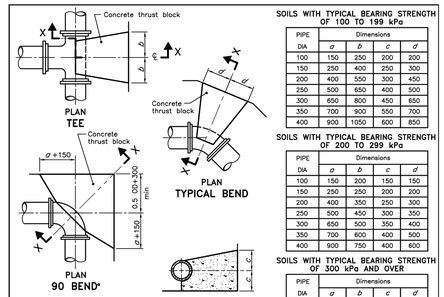
A Granular material placed in the haunch area shall be compacted prior to placing and compacting the remainder of the embedment material.

B Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.

C All dimensions are in metres unless otherwise shown.

CLEARANCE TABLE	
Pipe Inside Diameter mm	Clearance mm
900 or less	300
Over 900	500

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 3
FLEXIBLE PIPE EMBEDMENT AND BACKFILL EARTH EXCAVATION		
	OPSD 802.010	



SOILS WITH TYPICAL BEARING STRENGTH OF 100 TO 199 kPa

PIPE	Dimensions			
DIA	a	b	c	d
100	150	250	200	200
150	250	400	250	300
200	400	550	300	450
250	500	650	400	500
300	650	800	450	650
350	700	900	550	700
400	900	1050	600	850

SOILS WITH TYPICAL BEARING STRENGTH OF 200 TO 299 kPa

PIPE	Dimensions			
DIA	a	b	c	d
100	150	200	150	150
150	250	250	200	200
200	400	350	250	300
250	500	450	300	350
300	650	500	350	400
350	700	600	400	500
400	900	750	400	600

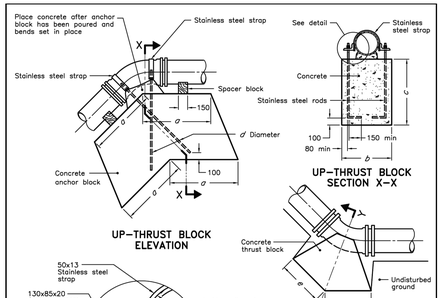
SOILS WITH TYPICAL BEARING STRENGTH OF 300 kPa AND OVER

PIPE	Dimensions			
DIA	a	b	c	d
100	150	150	150	150
150	250	200	200	200
200	400	300	200	250
250	500	400	250	300
300	650	450	300	300
350	700	550	350	350
400	900	650	350	450

NOTES:

A Concrete shall be placed to within 50mm of the face of the bell.
B Bond breaker shall be used between concrete and fittings.
C The above thrust block dimensions meet or exceed the MECP Watermain Design Criteria for Future Alterations Authorized Under a Drinking Water Works Permit.
D The assumptions made for the above calculations are:
– Maximum operating pressure of 690 kPa,
– Maximum surge pressure with a flow velocity change of 0.6 m/s of 790 kPa for Class 52 DI pipe and 240 kPa for PVC pipe.
E The tables apply to both ductile iron and PVC pipe. When one length exceeded the other, the longer length was used.
F All dimensions are in millimetres unless otherwise shown.

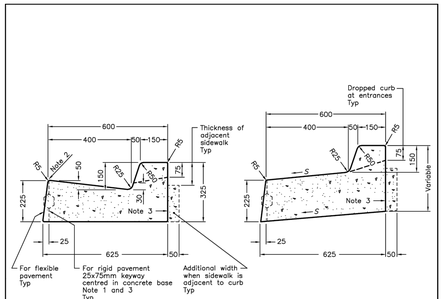
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 3
CONCRETE THRUST BLOCKS FOR TEES, PLUGS, AND HORIZONTAL BENDS		
	OPSD 1103.010	



NOTES:

A Concrete shall be placed to within 50mm of the face of the bell.
B Bond breaker shall be used between concrete and fittings.
C This blocking is for bends up to 45° for up–thrust and 90° for down–thrust.
D This OPSD shall be read in conjunction with OPSD 1103.021.
E All stainless steel to be type 316.
F Stainless steel rods and nuts to be designed based on actual watermain diameter and surge pressure.
G All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 4
CONCRETE THRUST BLOCKS FOR VERTICAL BENDS		
	OPSD 1103.020	



LEGEND:

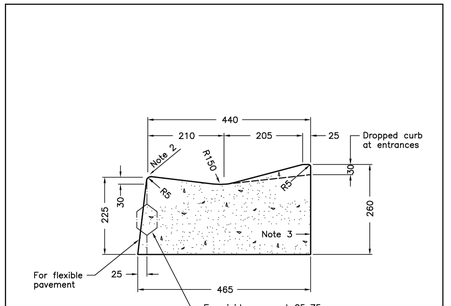
S – Rate of pavement superelevation in percent, %.

NOTES:

1 When curb and gutter is adjacent to concrete pavement or base, this drawing shall be used in conjunction with OPSD 552.010 and 552.020.
2 Flexible and composite pavement shall be placed 5mm above the adjacent edge of gutter.
3 For slipforming procedure a 5% batter is acceptable.

A Treatment at entrances shall be according to OPSD 351.010.
B Outlet treatment shall be according to the OPSD 610 Series.
C The transition from one curb type to another shall be a minimum length of 3.0m, except in conjunction with guide rail where it shall be according to the OPSD 900 Series.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev 2
CONCRETE BARRIER CURB WITH WIDE GUTTER		
	OPSD 600.010	



NOTES:

1 When curb and gutter is adjacent to concrete pavement or base, this drawing shall be used in conjunction with OPSD 552.010 and 552.020.
2 Flexible and composite pavement shall be placed 5mm above the adjacent edge of gutter.
3 For slipforming procedure a 5% batter is acceptable.

A Treatment at entrances shall be according to OPSD 351.010.
B Outlet treatment shall be according to the OPSD 610 Series.
C The transition from one curb type to another shall be a minimum length of 3.0m, except in conjunction with guide rail where it shall be according to the OPSD 900 Series.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev 2
CONCRETE MOUNTABLE CURB WITH NARROW GUTTER		
	OPSD 600.100	

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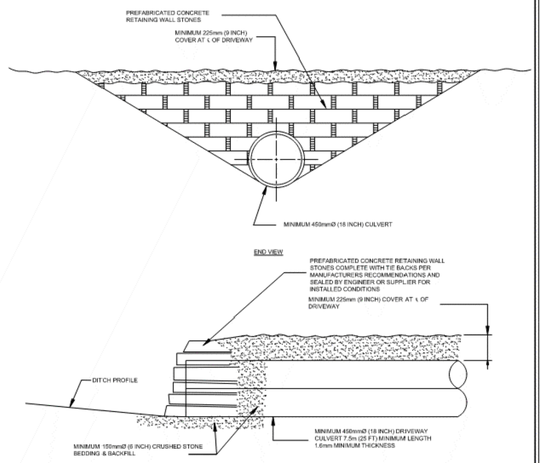
Engineer

Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
ONTARIO PROVINCIAL STANDARD DRAWINGS

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953–6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C111B



NOTES:

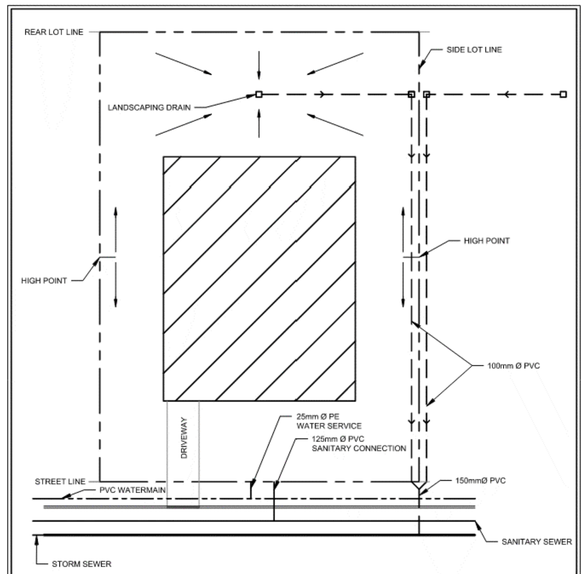
1. NO DRIVEWAY OR CULVERT SHALL BE LOCATED CLOSER THAN 1.5m TO ANY WATER VALVE, CURB STOP, LOT LINE, TRANSFORMER OR STREET LIGHT.
2. RETAINING WALLS GREATER THAN 1 METER IN HEIGHT, ABOVE INVERT OF PIPE SHALL HAVE TIE-BACKS

No.	Issue / Revision	Date	Auth.

TOWNSHIP OF CLEARVIEW

Figure Title: **CULVERT END WALL DETAIL (50 KPH ZONE OR LESS)**

Drawn	Approved	DWG. No.
R.J. BURNSIDE		**STD-D1**
Scale: N.T.S.	Date: 16/12/12	

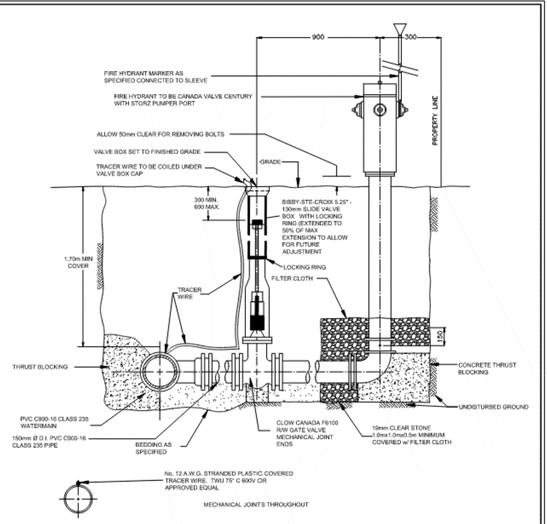


No.	Issue / Revision	Date	Auth.

TOWNSHIP OF CLEARVIEW

Figure Title: **SPLIT LOT DRAINAGE**

Drawn	Approved	DWG. No.
R.J. BURNSIDE		**STD-STM1**
Scale: N.T.S.	Date: 16/12/12	



TRACER WIRE INSTALLATION FOR NON-METALLIC WATER MAIN

1. ALL CONNECTIONS MUST BE WATERPROOFED.
2. SPLICING OF TRACING WIRE IS NOT ALLOWED UNLESS SPECIFIED OR APPROVED BY THE ENGINEER AND SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS
3. TRACER WIRE CONTINUITY OF CURRENT MUST BE TESTED AND VERIFIED BY THE ENGINEER BETWEEN CADWELD LOCATIONS.

NOTE:

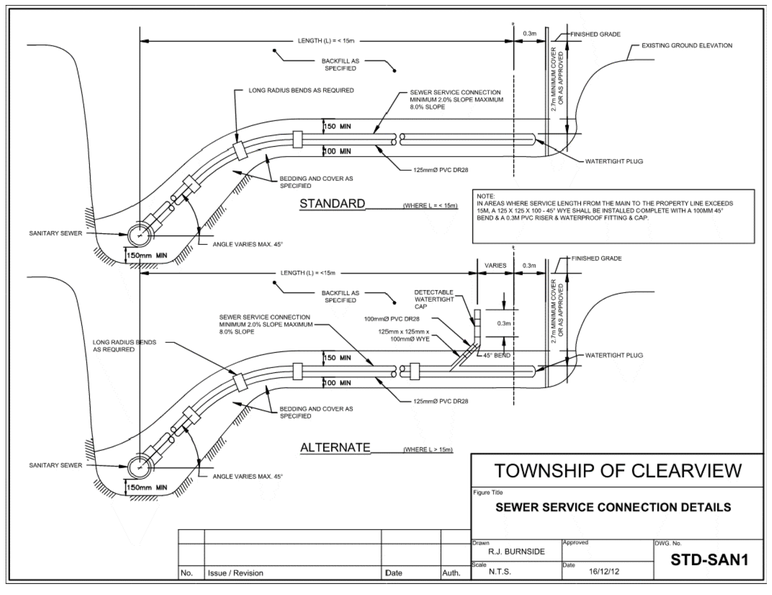
1. VALVE EXTENSION REQUIRED WHEN DISTANCE FROM TOP OF VALVE TO FINISHED GRADE IS GREATER THAN 1.70m.
2. THRUST BLOCKS SHALL BE 20 MPa CONCRETE AS PER O.P.S.D. 1103.010. AND O.P.S.D. 1103.020.
3. ALL HYDRANTS ARE SELF-DRAINING UNLESS OTHERWISE SPECIFIED.
4. HYDRANT LATERALS SHALL BE PVC C900-16 CLASS 235.
5. RESTRAINER CLAMPS TO BE PROVIDED ON BOTH SIDES OF ALL MECHANICAL JOINTS.

No.	Issue / Revision	Date	Auth.

TOWNSHIP OF CLEARVIEW

Figure Title: **VALVE AND HYDRANT DETAIL**

Drawn	Approved	DWG. No.
R.J. BURNSIDE		**STD-W5**
Scale: N.T.S.	Date: 16/12/12	



No.	Issue / Revision	Date	Auth.

TOWNSHIP OF CLEARVIEW

Figure Title: **SEWER SERVICE CONNECTION DETAILS**

Drawn	Approved	DWG. No.
R.J. BURNSIDE		**STD-SAN1**
Scale: N.T.S.	Date: 16/12/12	

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Project: NOTTAWA DEVELOPMENT TOWNSHIP OF CLEARVIEW

Drawing: MUNICIPAL STANDARD DRAWINGS

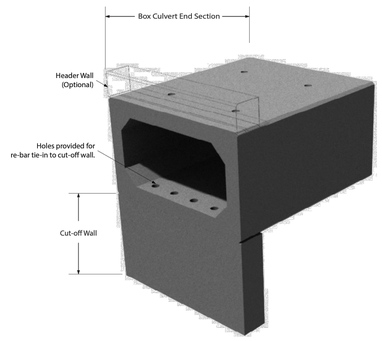
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./B.H./R.W.	1953-6040
Check By: B.H./R.W.	Check By: B.H./R.W.	Drawing: C111C

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See Note 3

Special Box Sections (Optional Cut-off Wall)

Notes
1. Contact our engineering department for special design concrete box culvert applications.
2. All dimensions are in millimeters unless otherwise shown.
3. Precast cut-off wall available for all box section end treatment types



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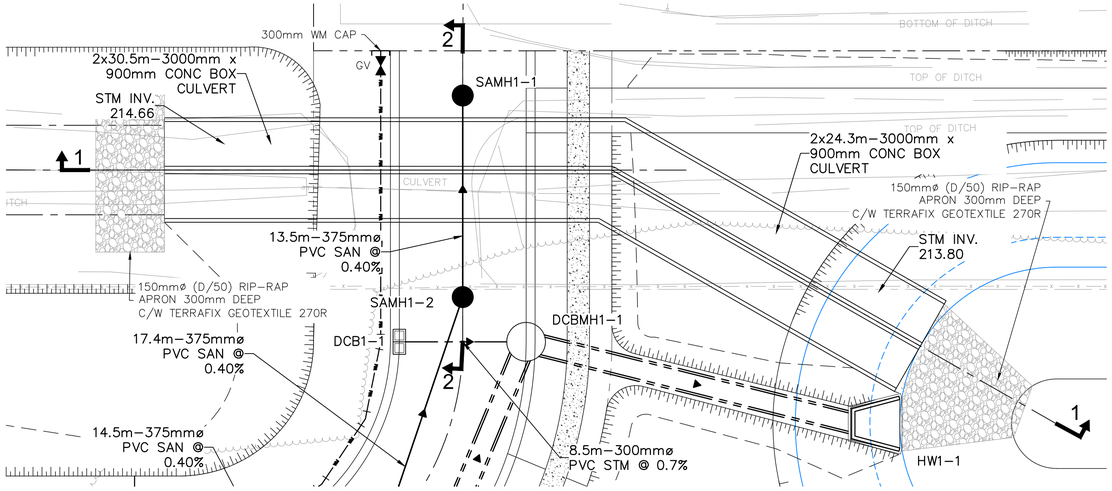
Project
NOTTAWA DEVELOPMENT
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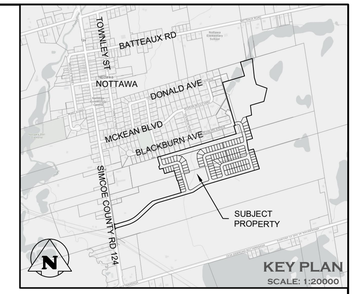
Drawing
DETAILS

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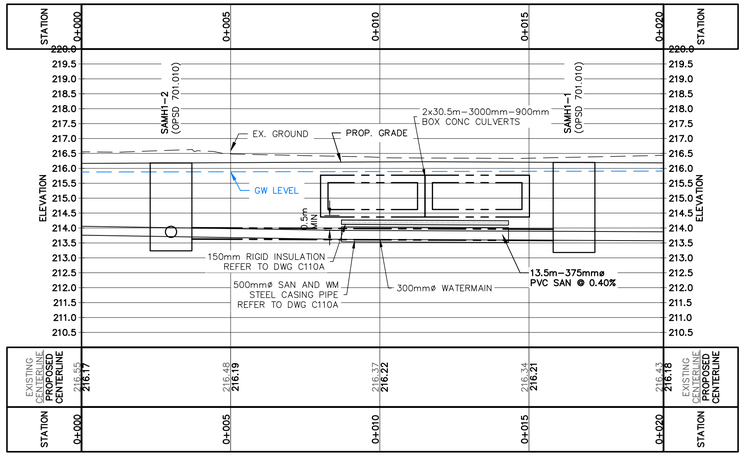
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V.P.	V.P./B.H./R.W.	1953-6040
Check By	Check By	Drawing
B.H./R.W.	B.H./R.W.	C111D

STREET A CULVERT
SCALE 1:200

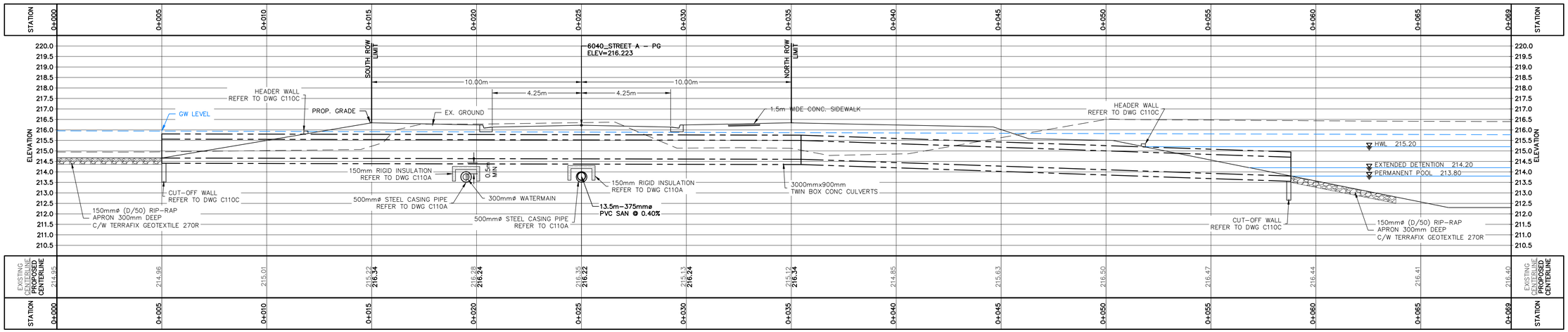




STREET A CULVERT XSEC 2–2
SCALE 1:100



STREET A CULVERT XSEC 1–1
SCALE 1:100



5 0m 5 10 15
SCALE: 1:200

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Project
NOTTAWA DEVELOPMENT
TOWNSHIP OF CLEARVIEW

Drawing
STREET A CULVERT DETAILED PLAN
STREET A CULVERT XSEC 1–1
STREET A CULVERT XSEC 2–2

CROZIER CONSULTING ENGINEERS

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