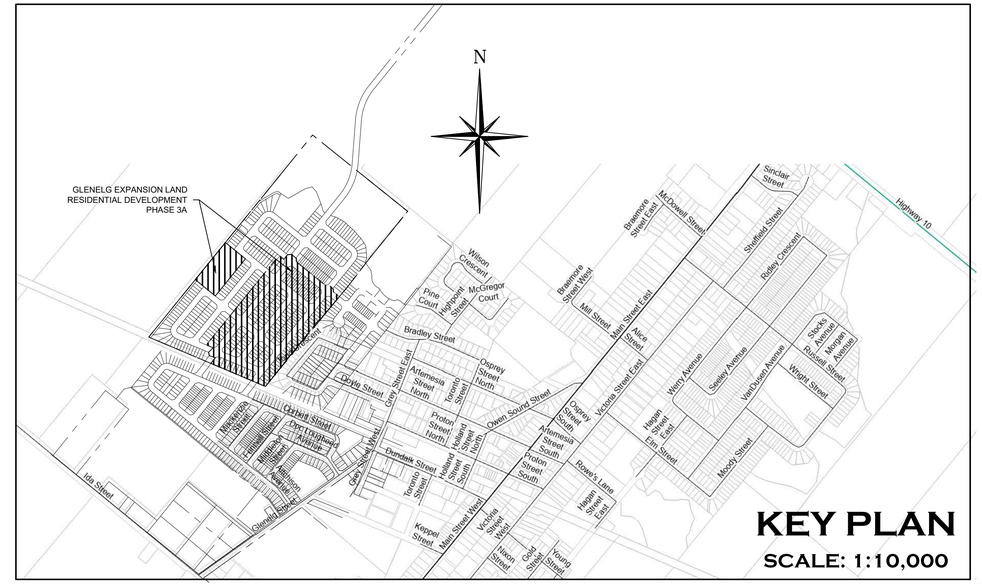
FLATO GLENELG EXPANSION LANDS PHASE 3A

COMMUNITY OF DUNDALK
TOWN OF SOUTHGATE
COUNTY OF GREY



MUNICIPALITY

TOWNSHIP OF SOUTHGATE
185667 GREY COUNTY ROAD 9,
DUNDALK, ONTARIO, N0C 1B0

DEVELOPER

FLATO INC.
3621 HIGHWAY 7 EAST, SUITE 503
MARKHAM, ONTARIO, L3R 0G6

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

LANDSCAPE ARCHITECT

PROJECT No.: 1060-6220
1ST SUBMISSION

DRAWING TITLE

	TITLE SHEET
C100	INDEX SHEET

CIVIL DRAWINGS:

DRAWING	TITLE
C101	TITLE SHEET
C101	GENERAL SITE SERVICING PLAN
C102A	GRADING SERVICING PLAN (NORTH –WEST PART)
C102B	GRADING SERVICING PLAN (NORTH –EAST PART)
C102C	GRADING SERVICING PLAN (SOUTH –WEST PART)
C102D	GRADING SERVICING PLAN (SOUTH –EAST PART)
C102E	SIDE YARD STORM SEWER CROSS–SECTION
C103A1	PLAN & PROFILE STREET A (STA. 0+000 TO 0+300)
C103A2	PLAN & PROFILE STREET A (STA. 0+300 TO 0+580)
C103C1	PLAN & PROFILE STREET C (STA. 0+000 TO 0+280)
C103C2	PLAN & PROFILE STREET C (STA. 0+280 TO 0+480)
C103D	PLAN & PROFILE STREET D (STA. 0+000 TO 0+140)
C103E1	PLAN & PROFILE STREET E (STA. 0+030 TO 0+200)
C103E2	PLAN & PROFILE STREET E (STA. 0+660 TO 0+830)
C103H1	PLAN & PROFILE BRADLEY STREET (STA. 5+960 TO 6+220)
C104A	SITE ALTERATION PLAN STAGE 1
C104B	SITE ALTERATION PLAN STAGE 2
C104C	SITE ALTERATION DETAILS
C106A	STORM WATER MANAGEMENT FACILITY PLAN
C106B	STORM WATER MANAGEMENT SECTION 1–1
C106C	STORM WATER MANAGEMENT SECTION 2–2
C106D	STORM WATER MANAGEMENT SECTION 3–3
C106E	STORM WATER MANAGEMENT SECTION 4–4
C106F	SWMF OUTLET CONTROL STRUCTURE CROSS–SECTIONS & DETAILS
C107	SANITARY DRAINAGE PLAN
C108A	STORM DRAINAGE PLAN (NORTH–WEST PART)
C108B	STORM DRAINAGE PLAN (NORTH–EAST PART)
C108C	STORM DRAINAGE PLAN (SOUTH–WEST PART)
C108D	STORM DRAINAGE PLAN (SOUTH–EAST PART)
C109	CONSTRUCTION NOTES & DETAILS
C110A	ONTARIO PROVINCIAL STANDARD DRAWINGS
C110B	ONTARIO PROVINCIAL STANDARD DRAWINGS
C110C	ONTARIO PROVINCIAL STANDARD DRAWINGS
C110D	MUNICIPAL STANDARD DRAWINGS
C110E	CANADA POST COMMUNITY SUPERBOX DETAILS

CIVIL ULTIMATE DRAWINGS:

DRAWING	TITLE
GEN	ULTIMATE GENERAL SERVICING PLAN
GR	ULTIMATE GRADING PLAN
SAN	ULTIMATE SANITARY DRAINAGE PLAN
STM	ULTIMATE STORM DRAINAGE PLAN

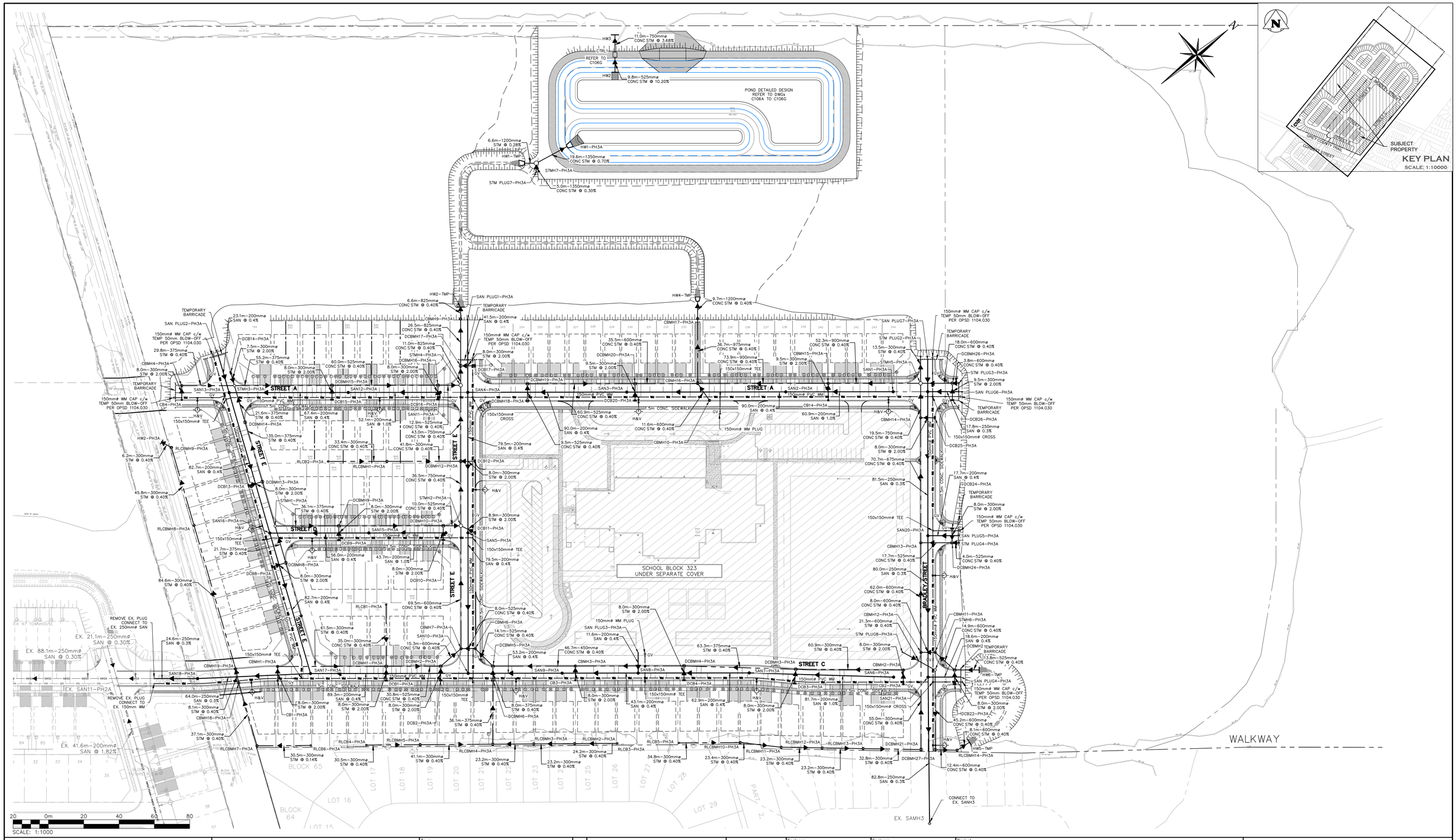
MASTER LEGEND

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
- AREA (ha)
- POPULATION (3.5 p.p.u.)
- PR. STORM SEWER & MANHOLE
- PR. CATCHBASIN
- PR. DOUBLE CATCHBASIN
- PR. CATCHBASIN MANHOLE
- PR. DOUBLE CATCHBASIN MANHOLE
- PR. STORM CATCHMENT
- CATCHMENT AREA ID
- RUNOFF COEFFICIENT
- DRAINAGE AREA (ha)
- 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
- PR. SWM FACILITY ACCESS ROAD



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6. DO NOT SCALE DRAWINGS.

BENCHMARKS

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY BENCHMARK No. 00820048005 HAVING A PUBLISHED ELEVATION OF 525.163 METRES

Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

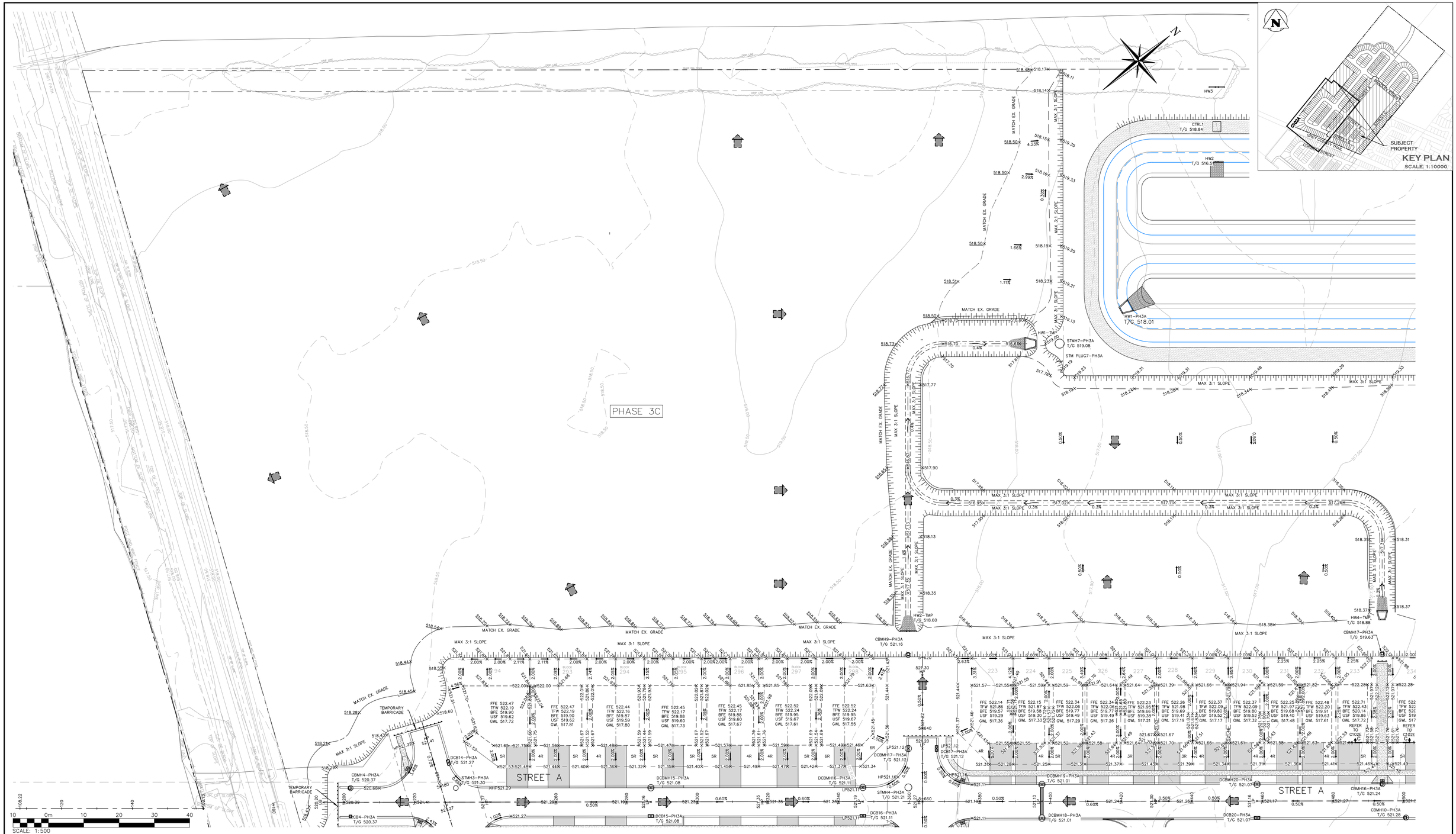
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

GENERAL SERVICING PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C101



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Town

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1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SITE GRADING PLAN
NORTH –WEST PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C102A

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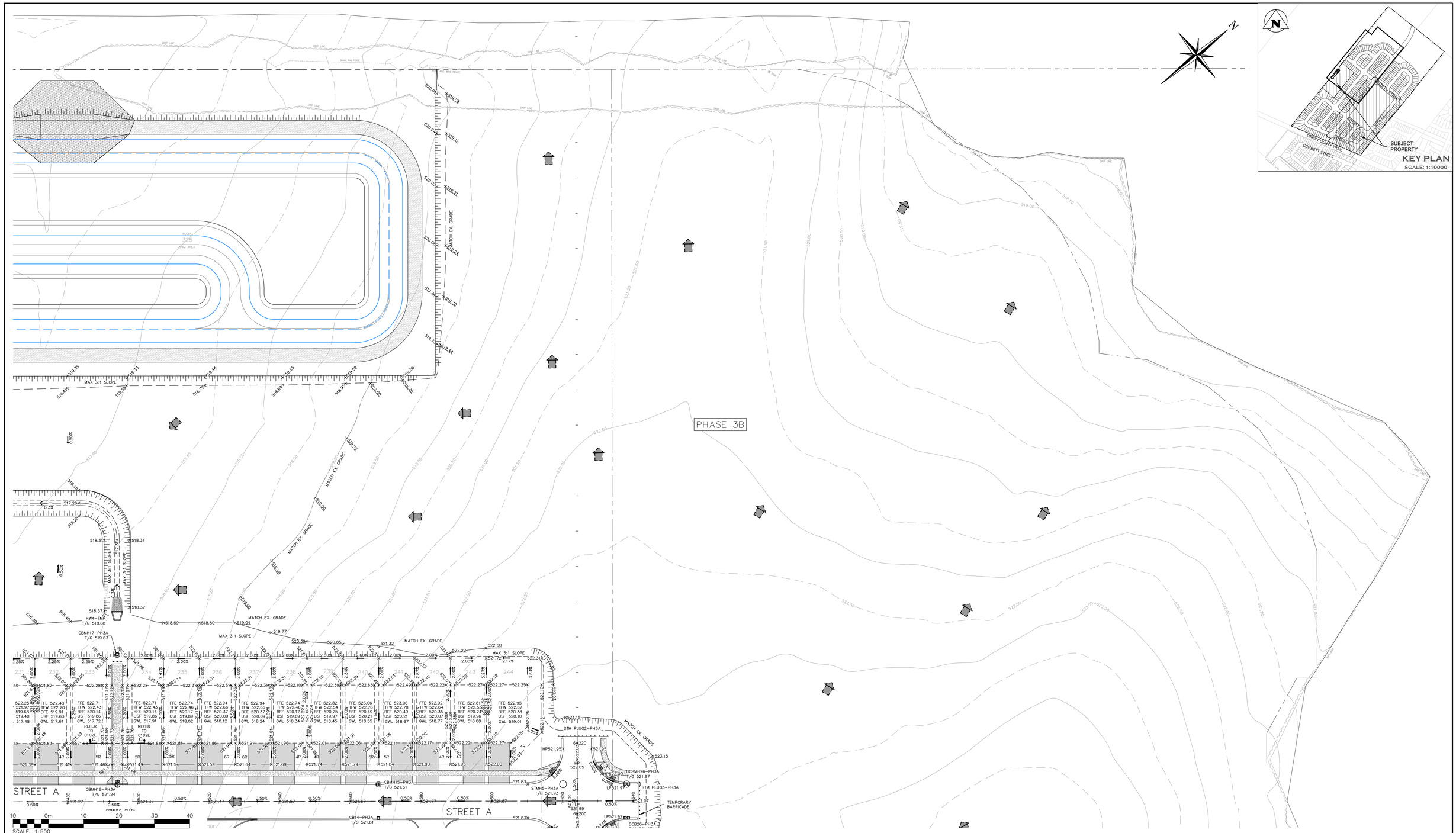

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SITE GRADING PLAN
NORTH–EAST PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C102B

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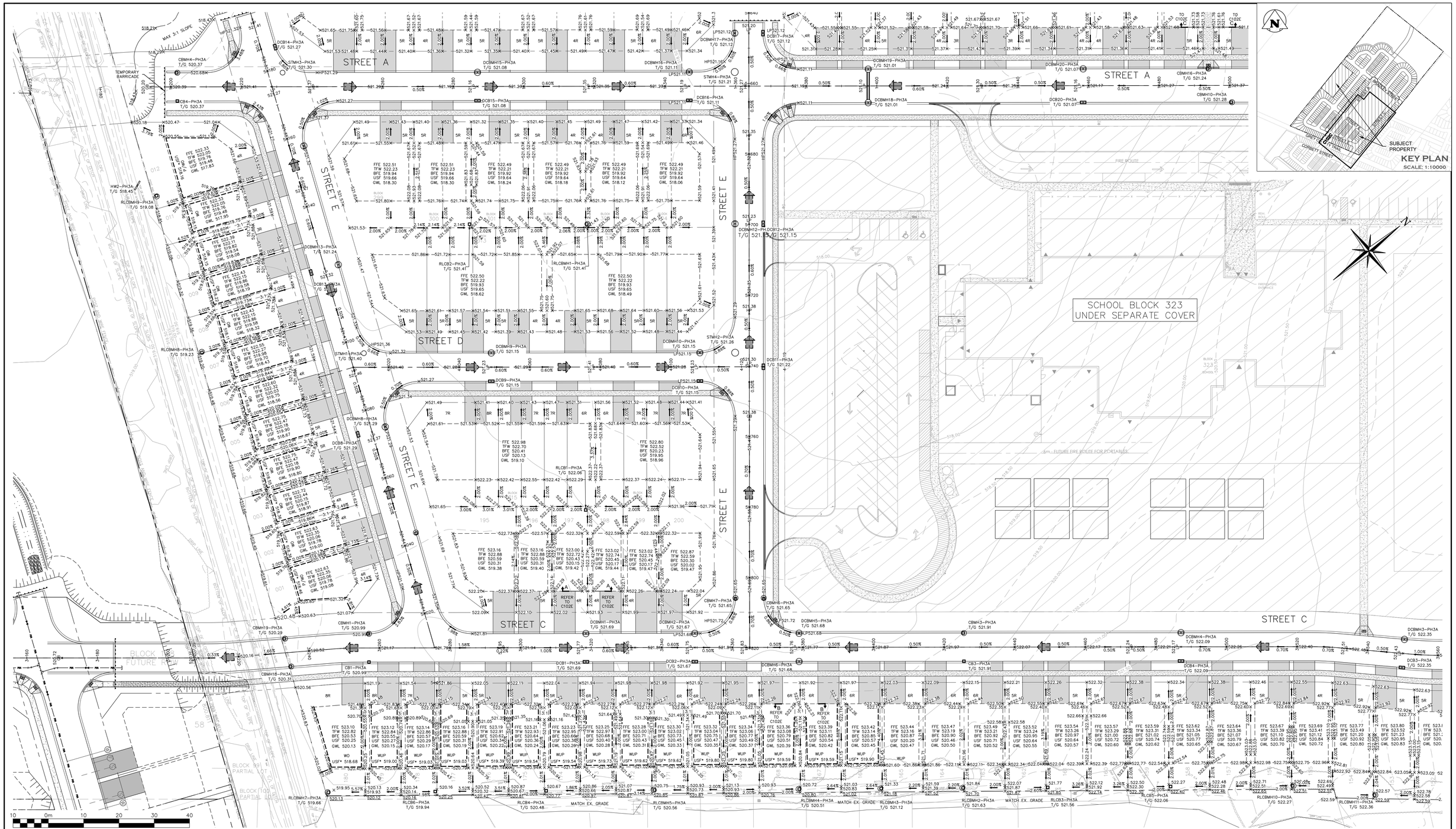

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Engineer

Engineer

Project

GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SITE GRADING PLAN
SOUTH–WEST PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C102C

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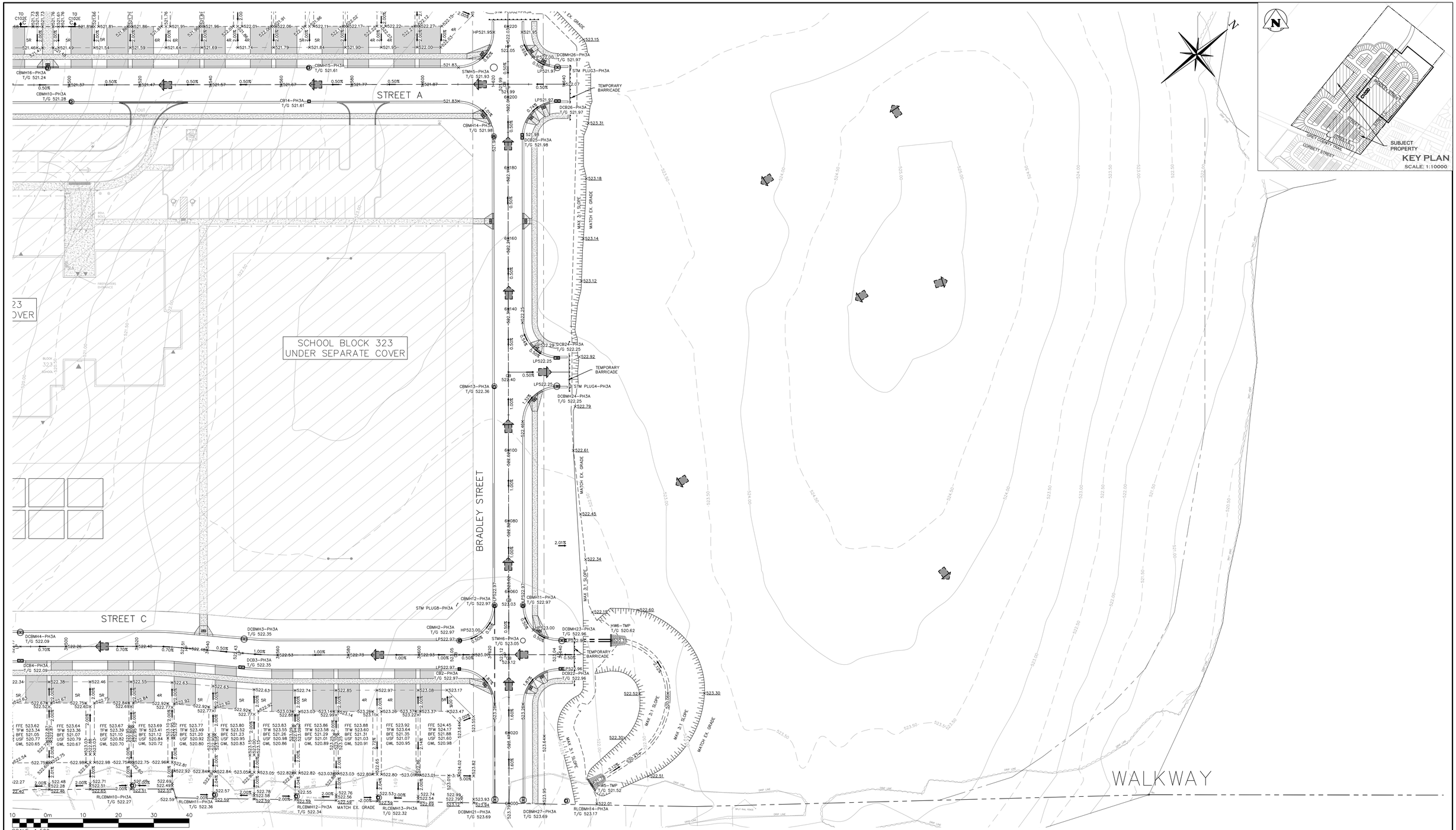

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Engineer

Engineer

Project

GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SITE GRADING PLAN
SOUTH-EAST PART

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060-6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C102D

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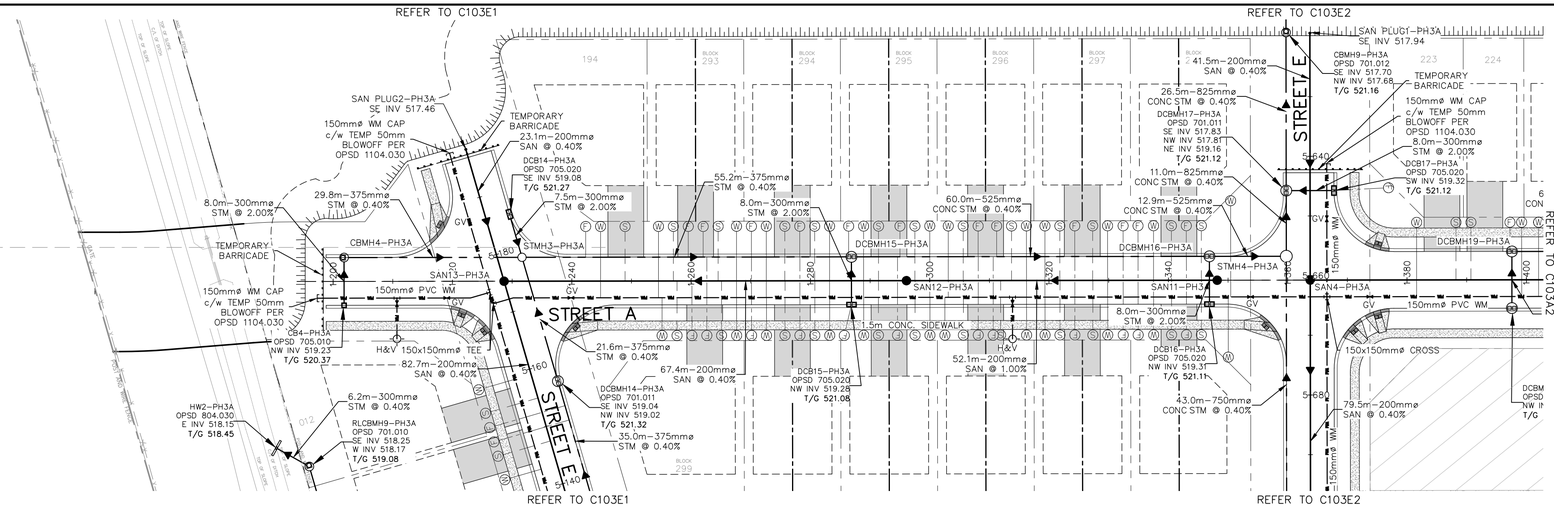
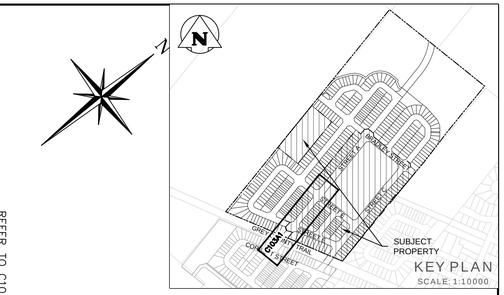
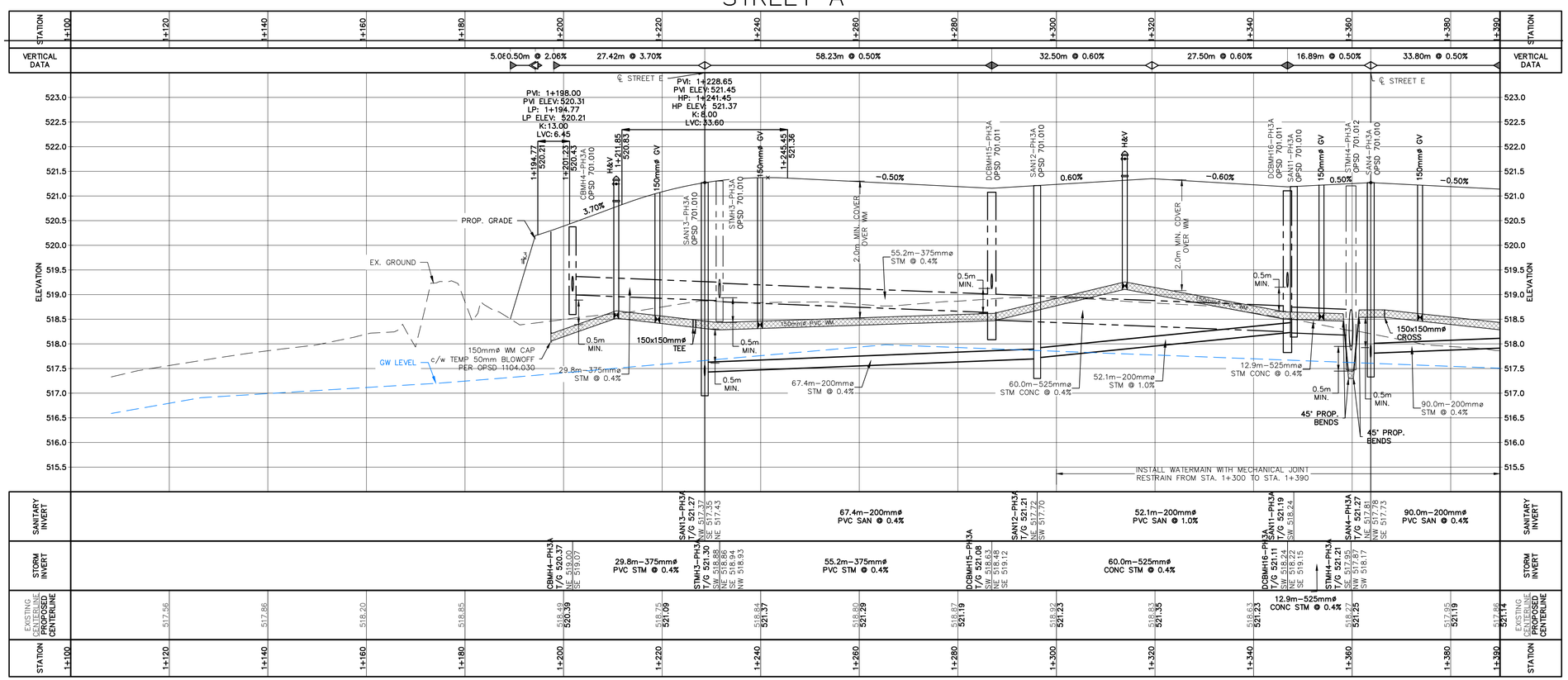




NOTE:

FOR THE STORM AND SANITARY MAINLINE CAN NOT HAVE VERTICAL SEPARATION LOCATION, HOUSES ARE RAISED TO HAVE SANITARY SERVICING PIPE GO THROUGH ABOVE STORM PIPE WITH MINIMUM 0.3M TO CONNECT WITH SANITARY MAINLINE.

STREET A



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Engineer

Engineer

Project

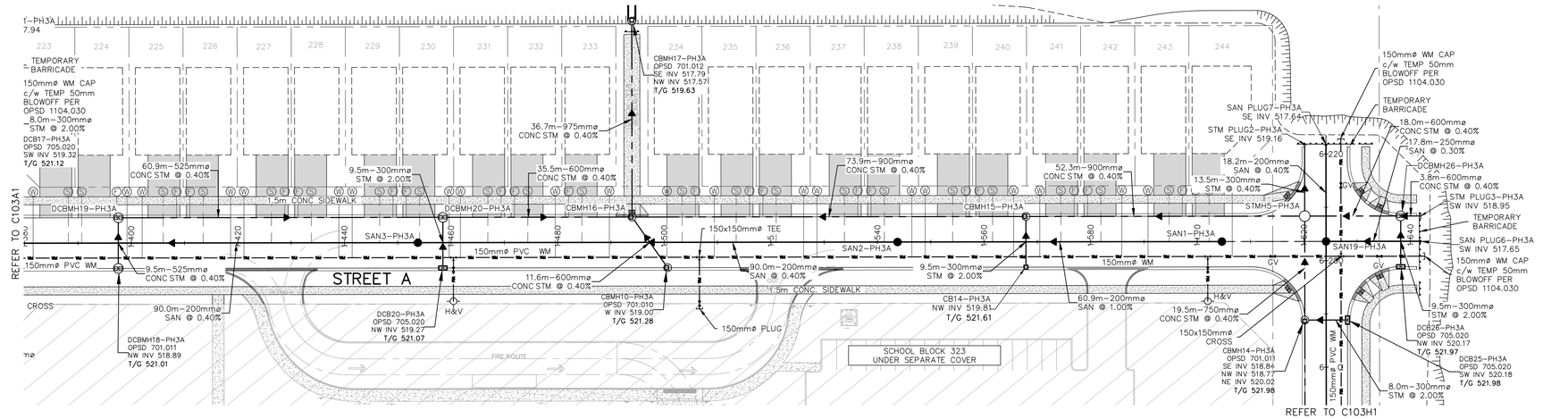
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

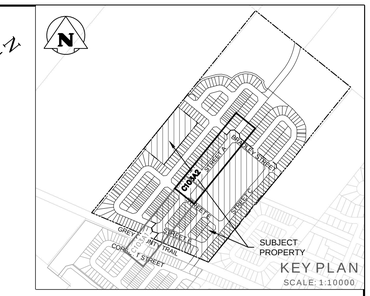
Drawing

PLAN AND PROFILE
STREET A
STA. 1+108 TO STA. 1+390

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C103A1





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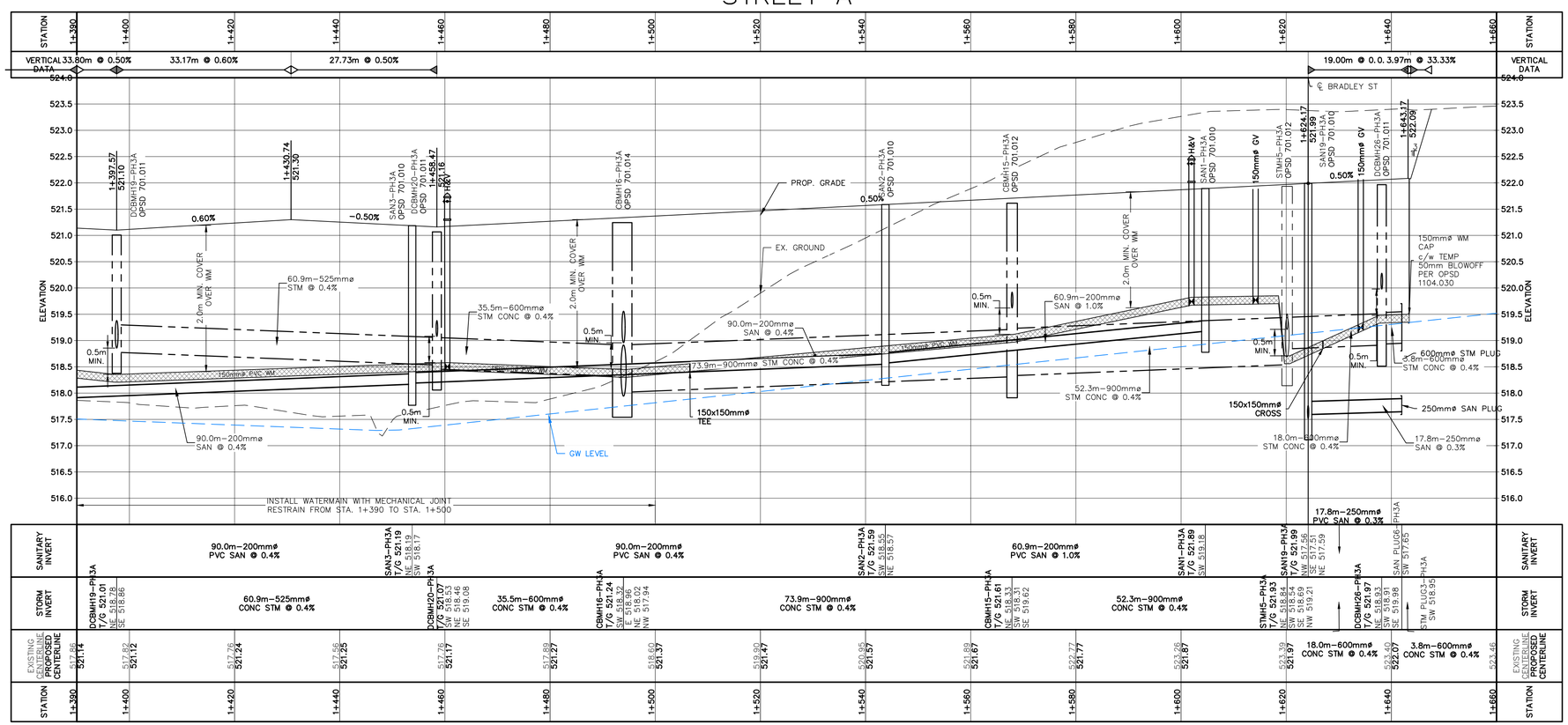
STREET A



SCALE: 1:500

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

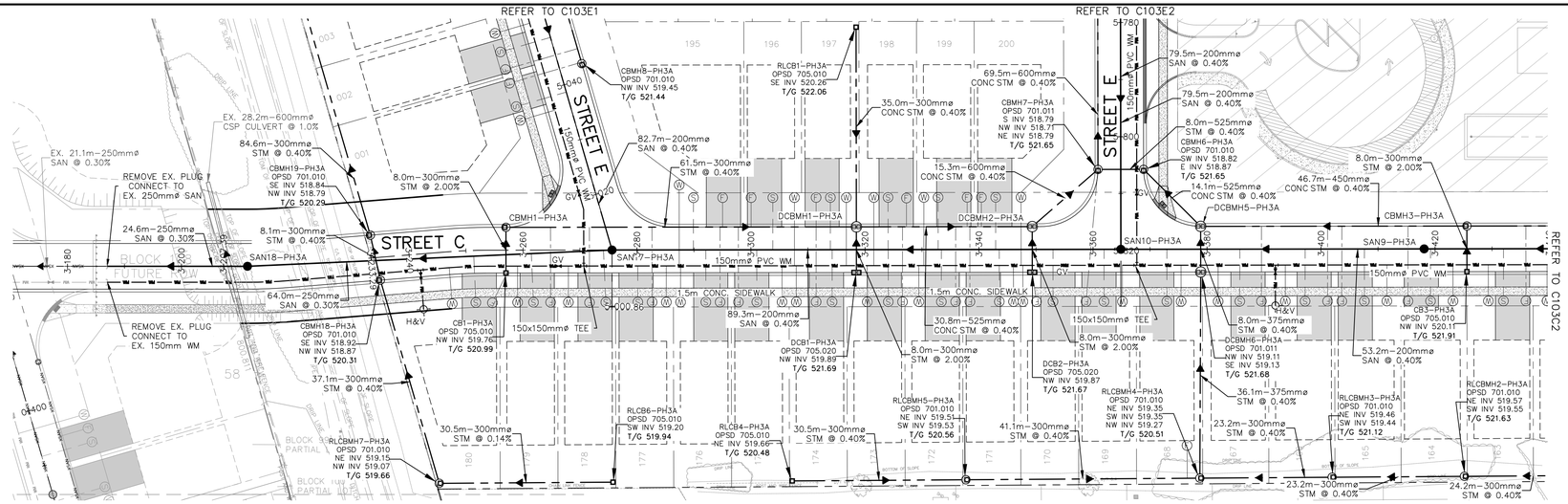
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

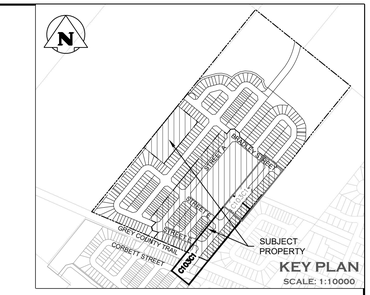
Drawing

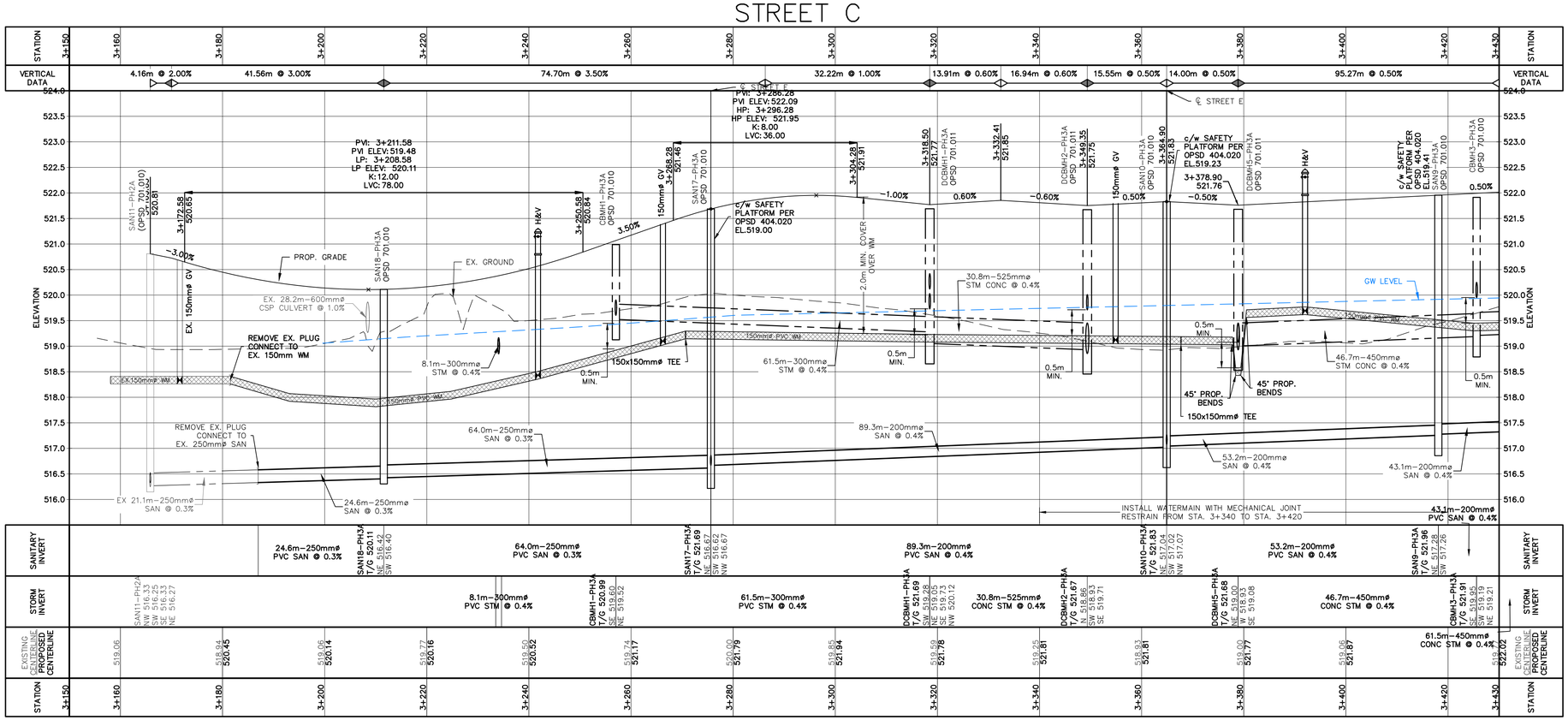
PLAN AND PROFILE
STREET A
STA. 1+390 TO STA. 1+660

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C103A2







SCALE: 1:500

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BENCHMARKS

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY BENCHMARK No. 00820048005 HAVING A PUBLISHED ELEVATION OF 525.163 METRES

Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

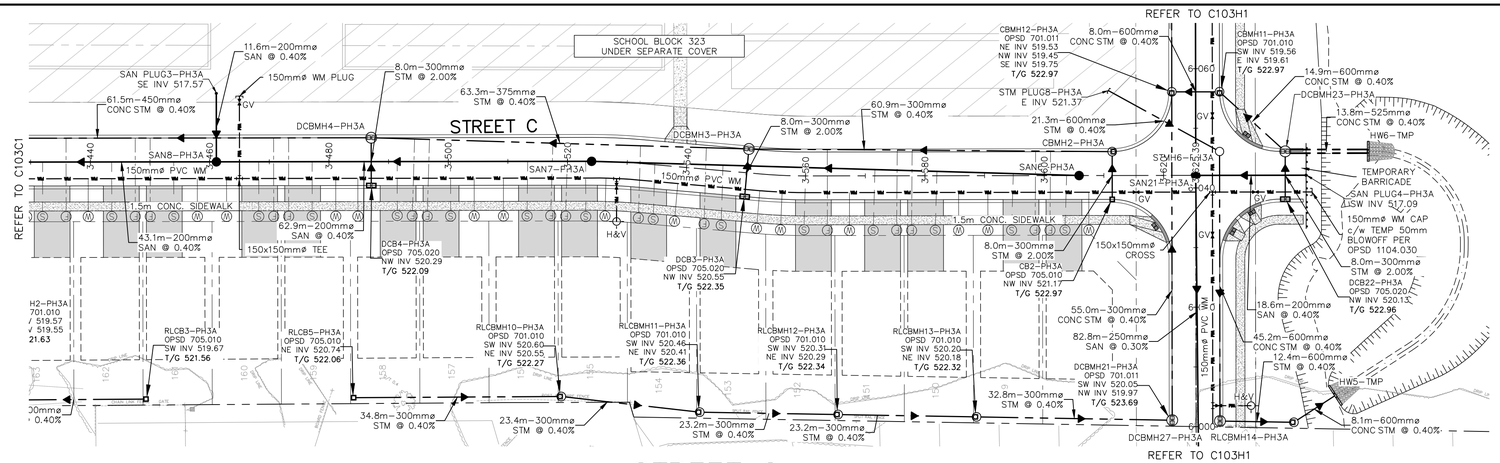
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

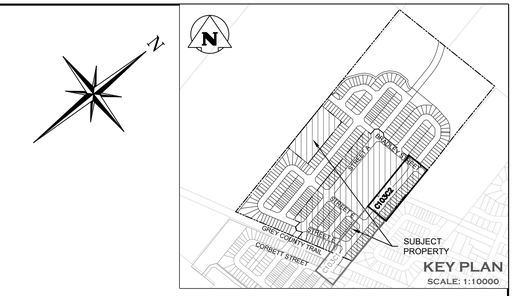
Drawing

PLAN AND PROFILE
STREET C
STA. 3+155 TO STA. 3+430

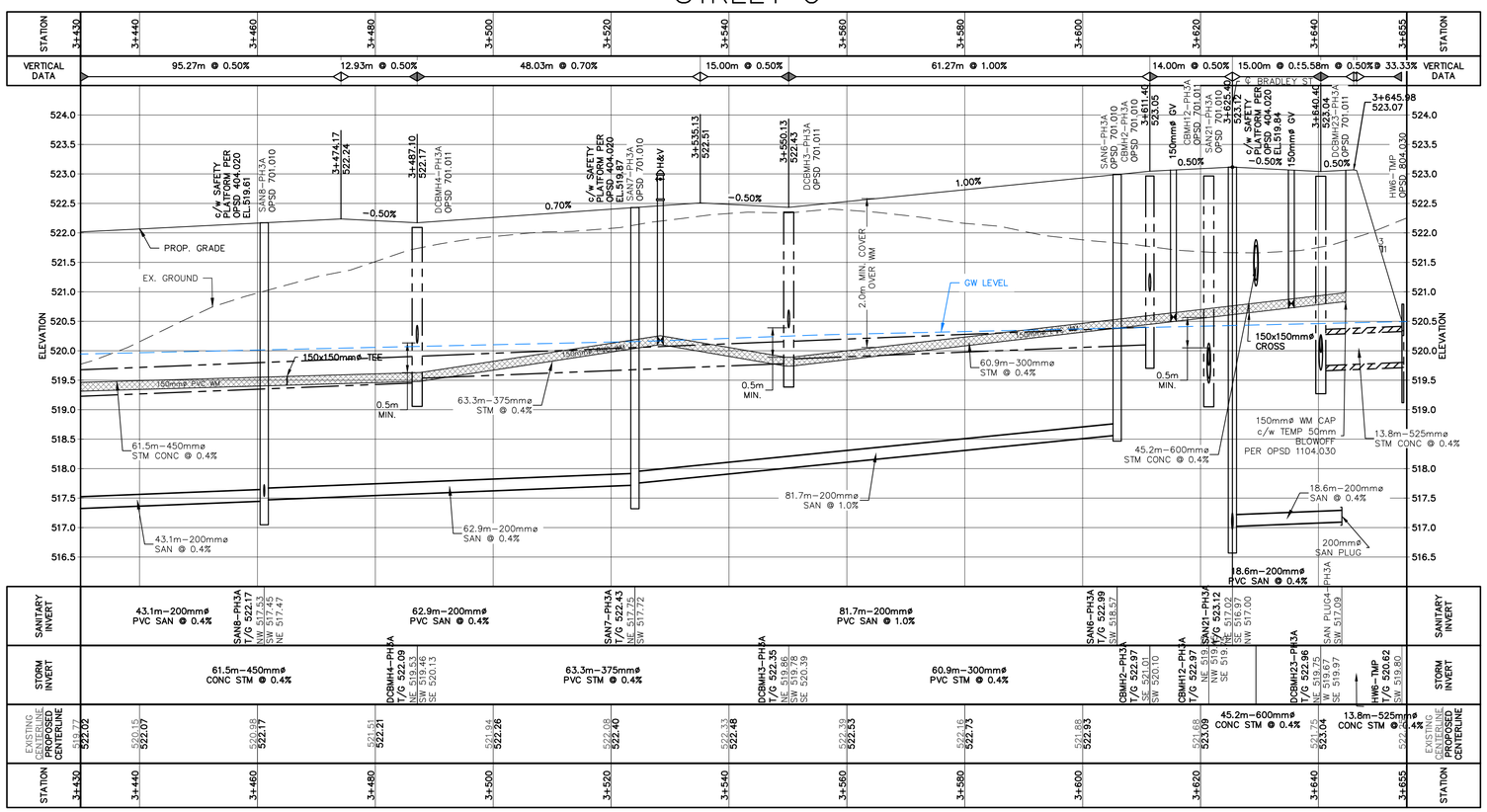
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C103C1





STREET C



SCALE: 1:500

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BENCHMARKS

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

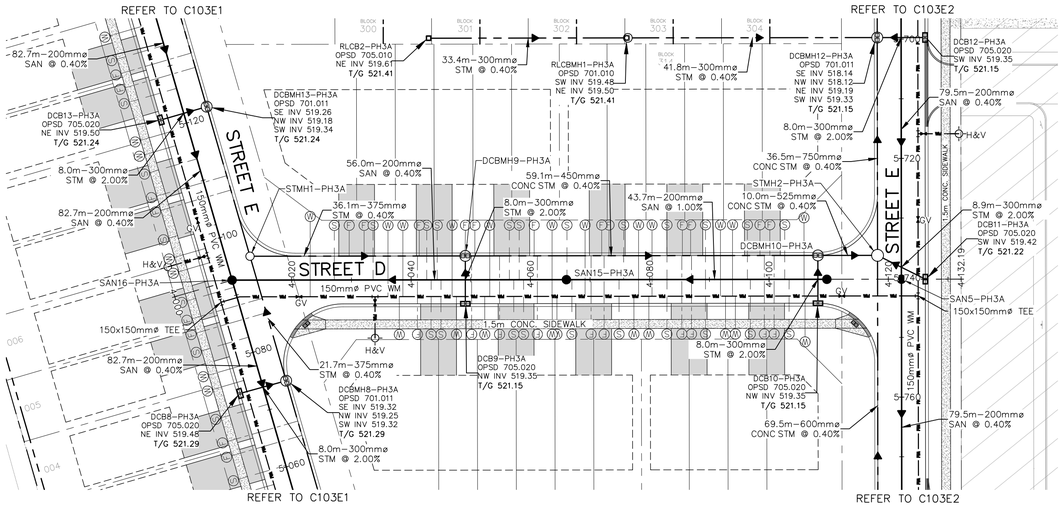
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

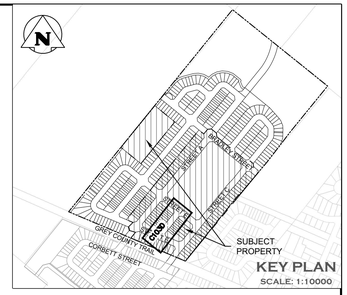
Drawing

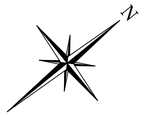
PLAN AND PROFILE
STREET C
STA. 3+430 TO STA. 3+655

CROZIER CONSULTING ENGINEERS

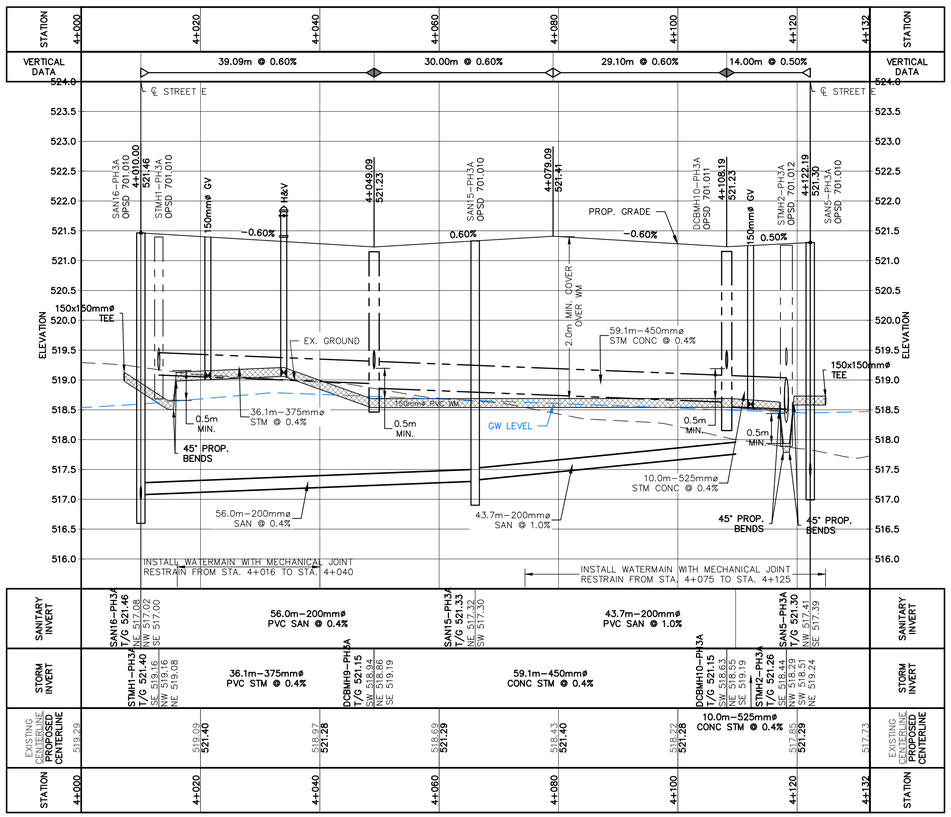
Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C103C2







STREET D



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	2025/05/05

Engineer

Engineer

Project

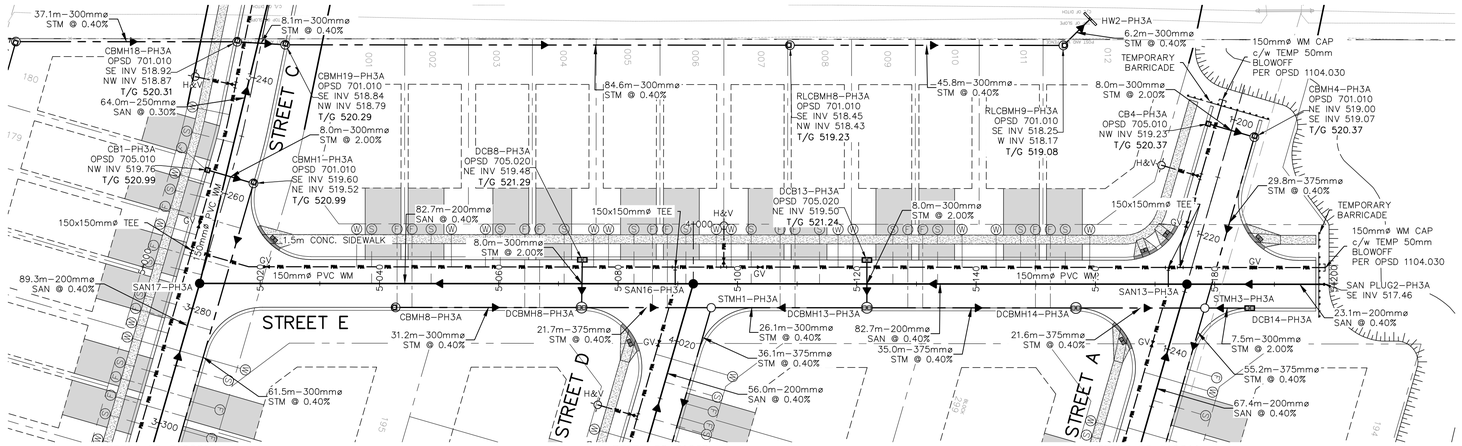
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

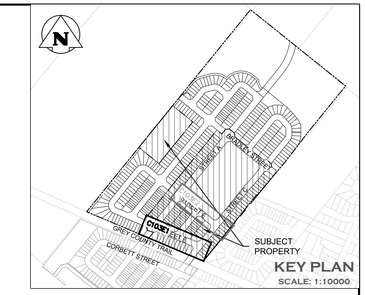
Drawing

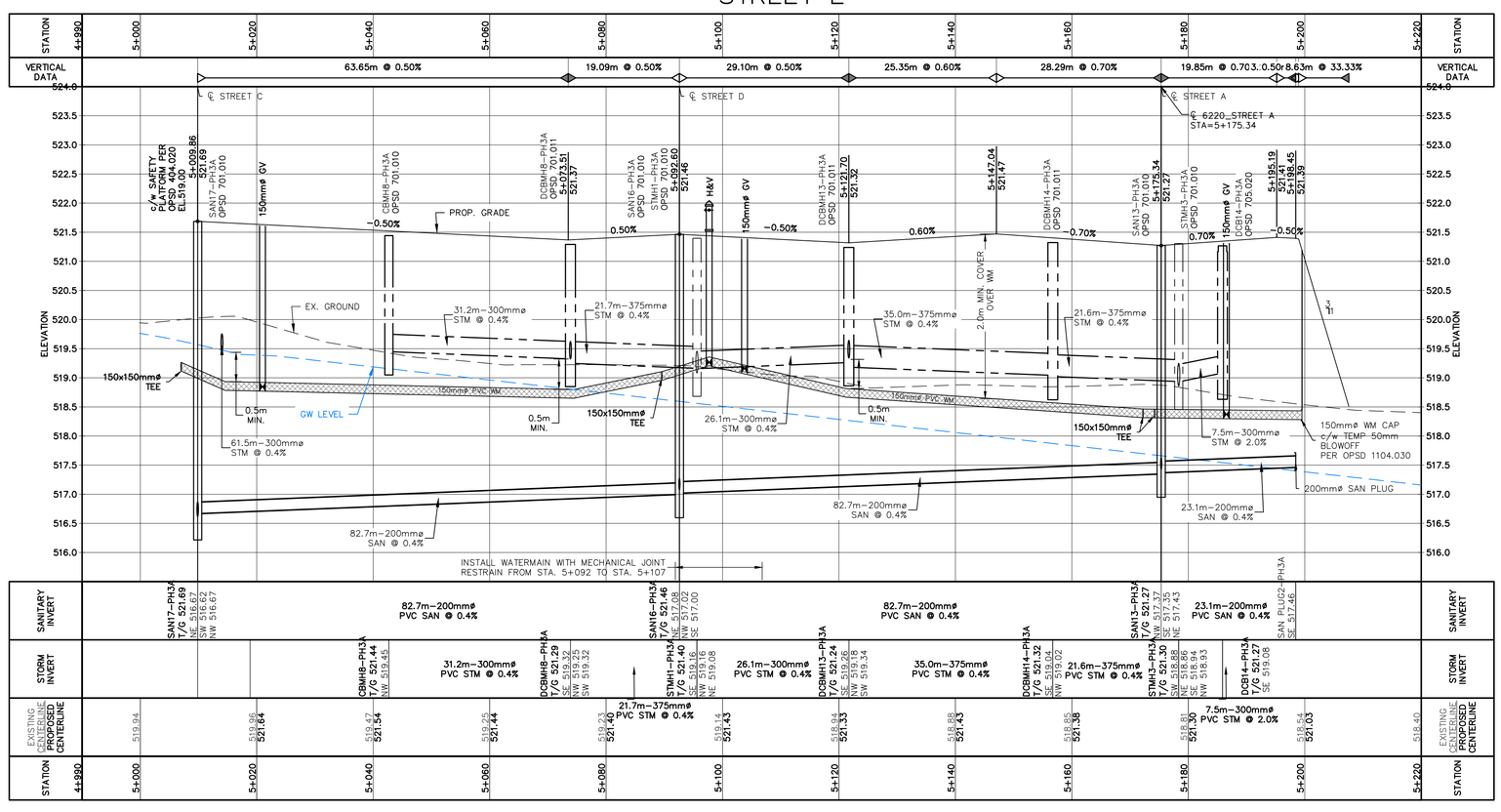
PLAN AND PROFILE
STREET D
STA. 4+000 TO STA. 4+132

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C103D







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BENCHMARKS

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

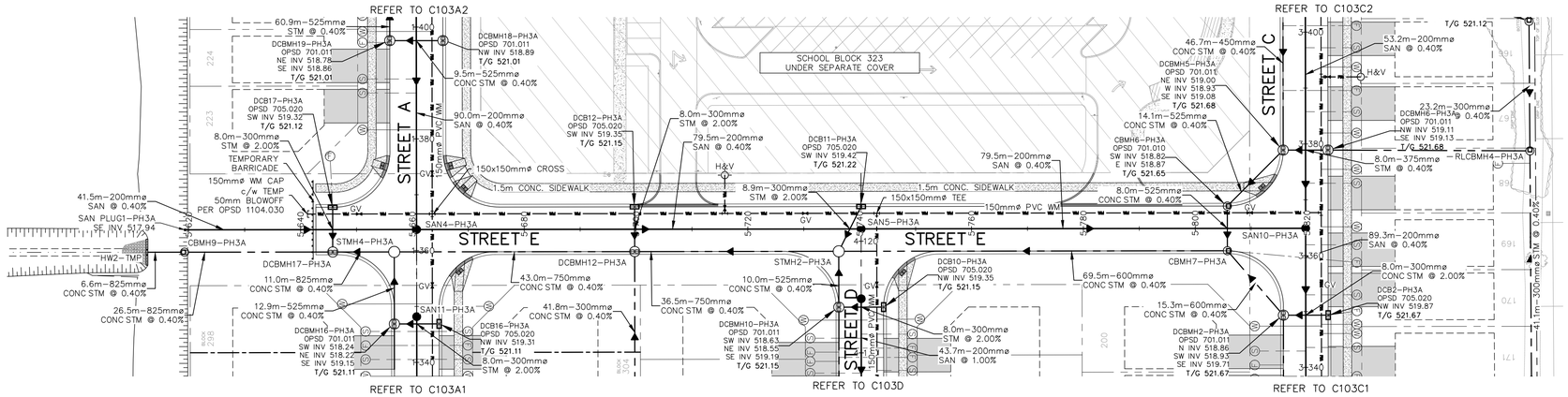
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

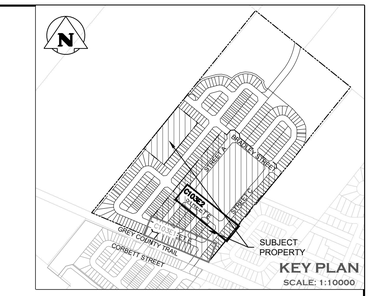
Drawing

PLAN AND PROFILE
STREET E
STA. 0+030 TO STA. 0+200

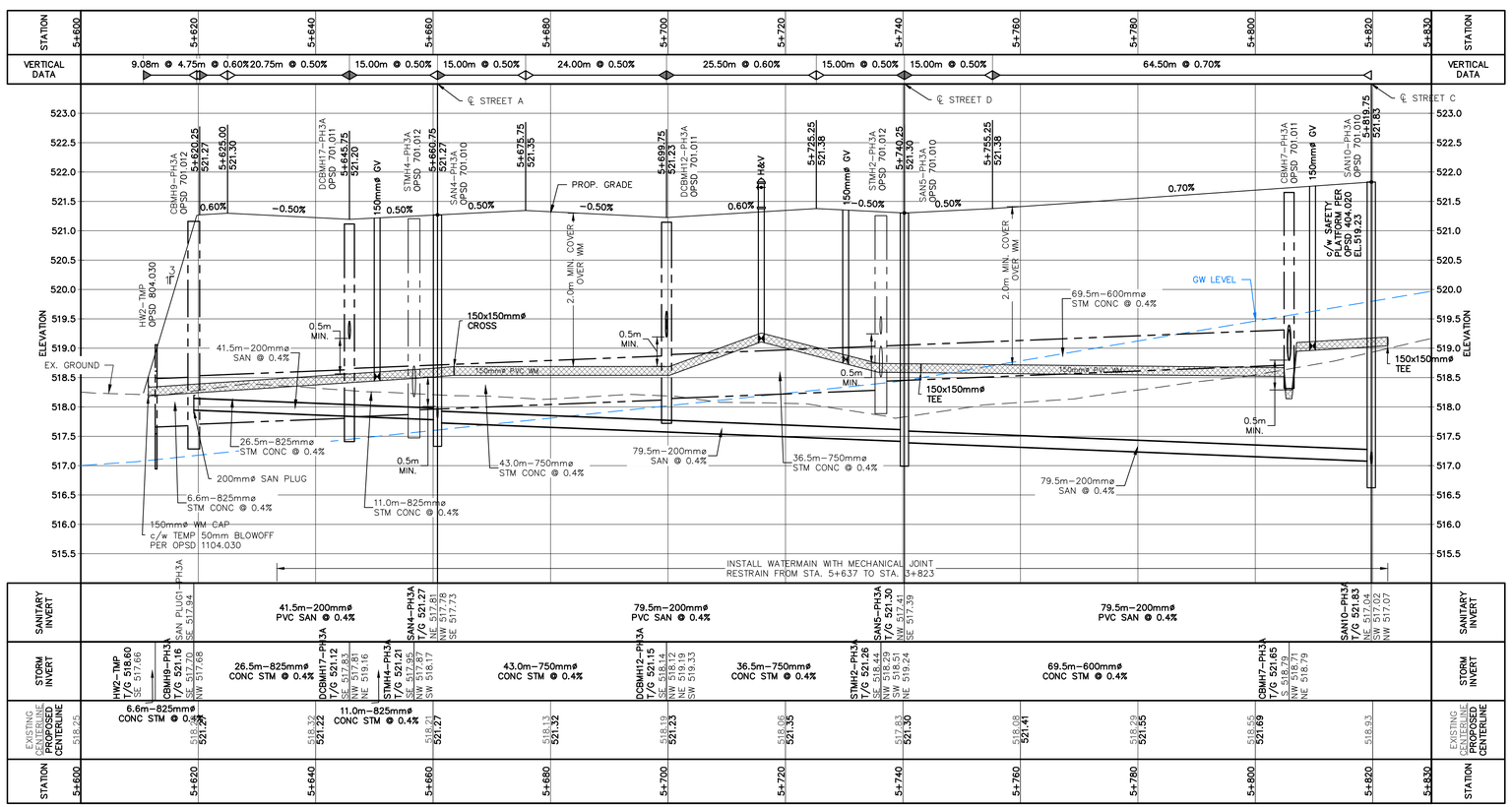
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C103E1





STREET E



SCALE: 1:500

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BENCHMARKS

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

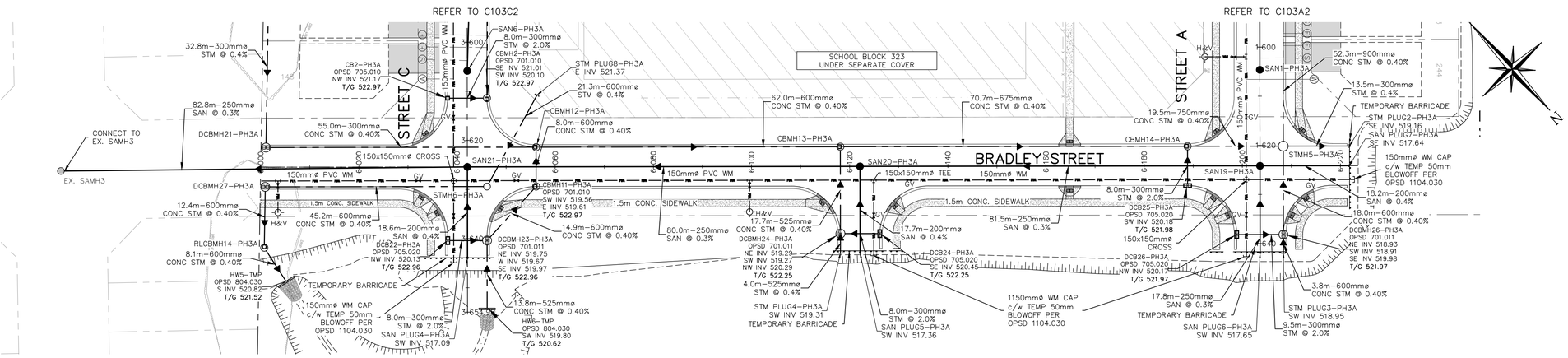
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

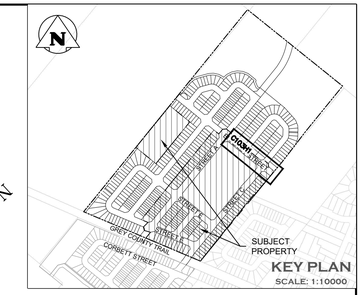
Drawing

PLAN AND PROFILE
STREET E
STA. 5+580 TO STA. 5+820

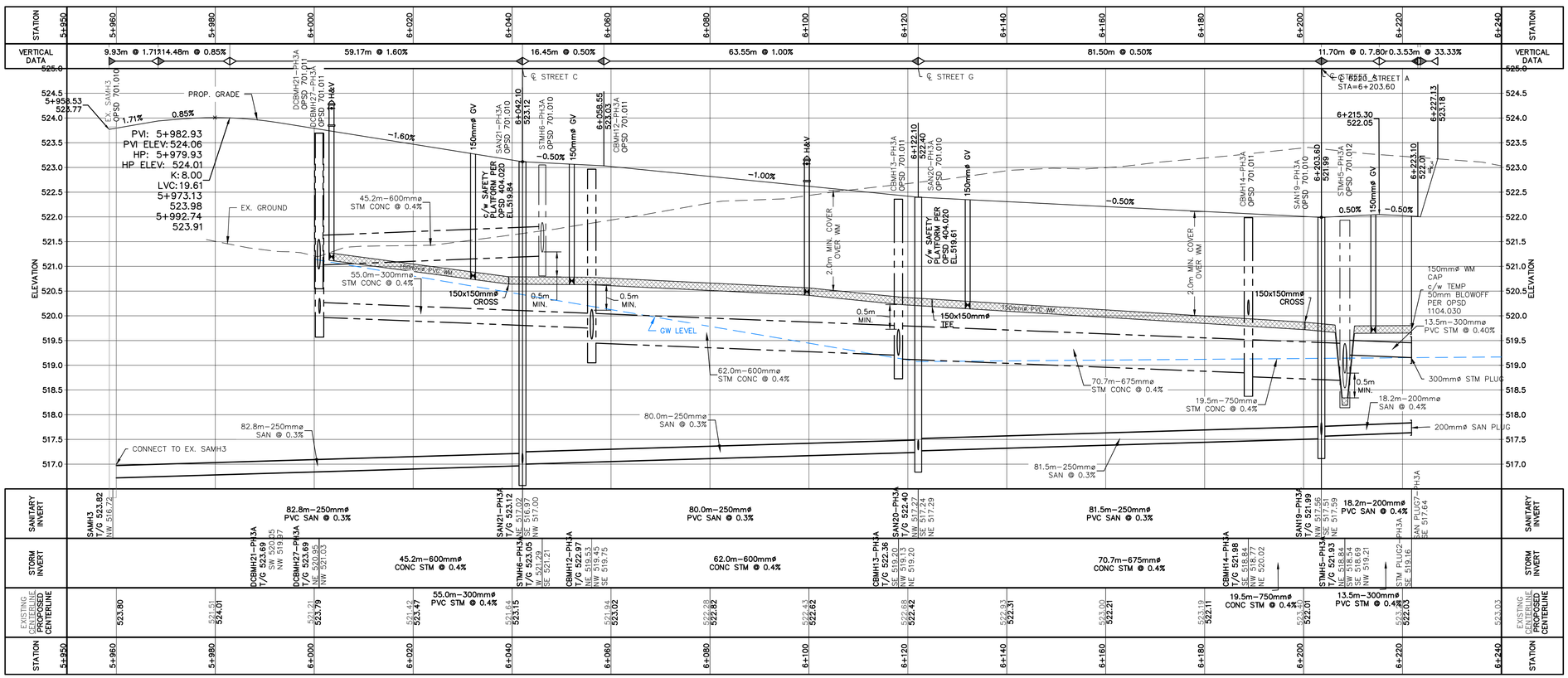
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C103E2





BRADLEY STREET



SCALE: 1:500

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BENCHMARKS

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

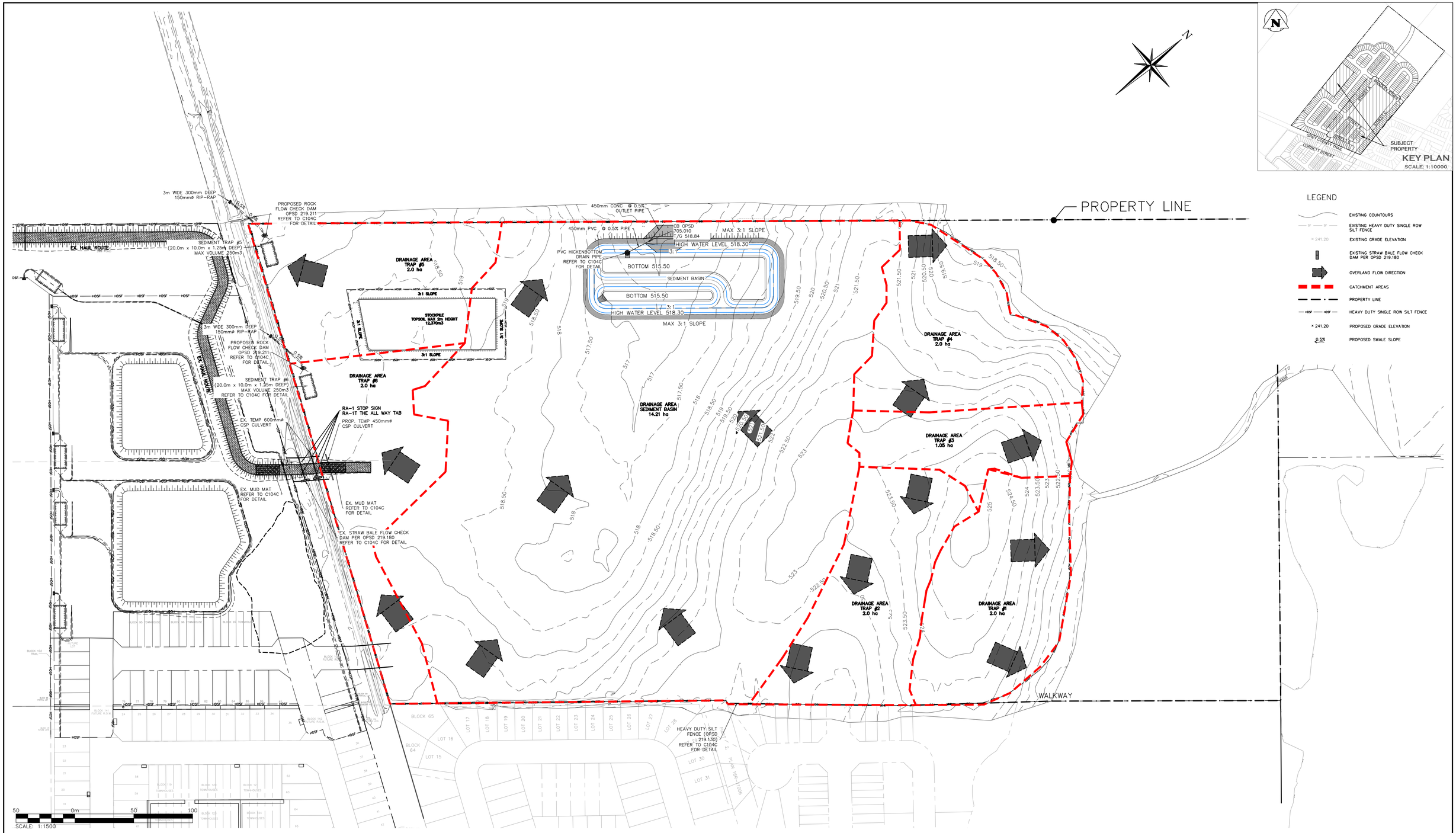
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

PLAN AND PROFILE
BRADLEY STREET
STA. 5+960 TO STA. 6+220

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C103H1



LEGEND

- EXISTING COUNTOURS
- EXISTING HEAVY DUTY SINGLE ROW SILT FENCE
- × 241.20 EXISTING GRADE ELEVATION
- EXISTING STRAW BALE FLOW CHECK DAM PER OPSD 219.180
- OVERLAND FLOW DIRECTION
- CATCHMENT AREAS
- PROPERTY LINE
- HDSF HDSF HEAVY DUTY SINGLE ROW SILT FENCE
- × 241.20 PROPOSED GRADE ELEVATION
- 0.5% PROPOSED SWALE SLOPE

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Engineer

Engineer

Project

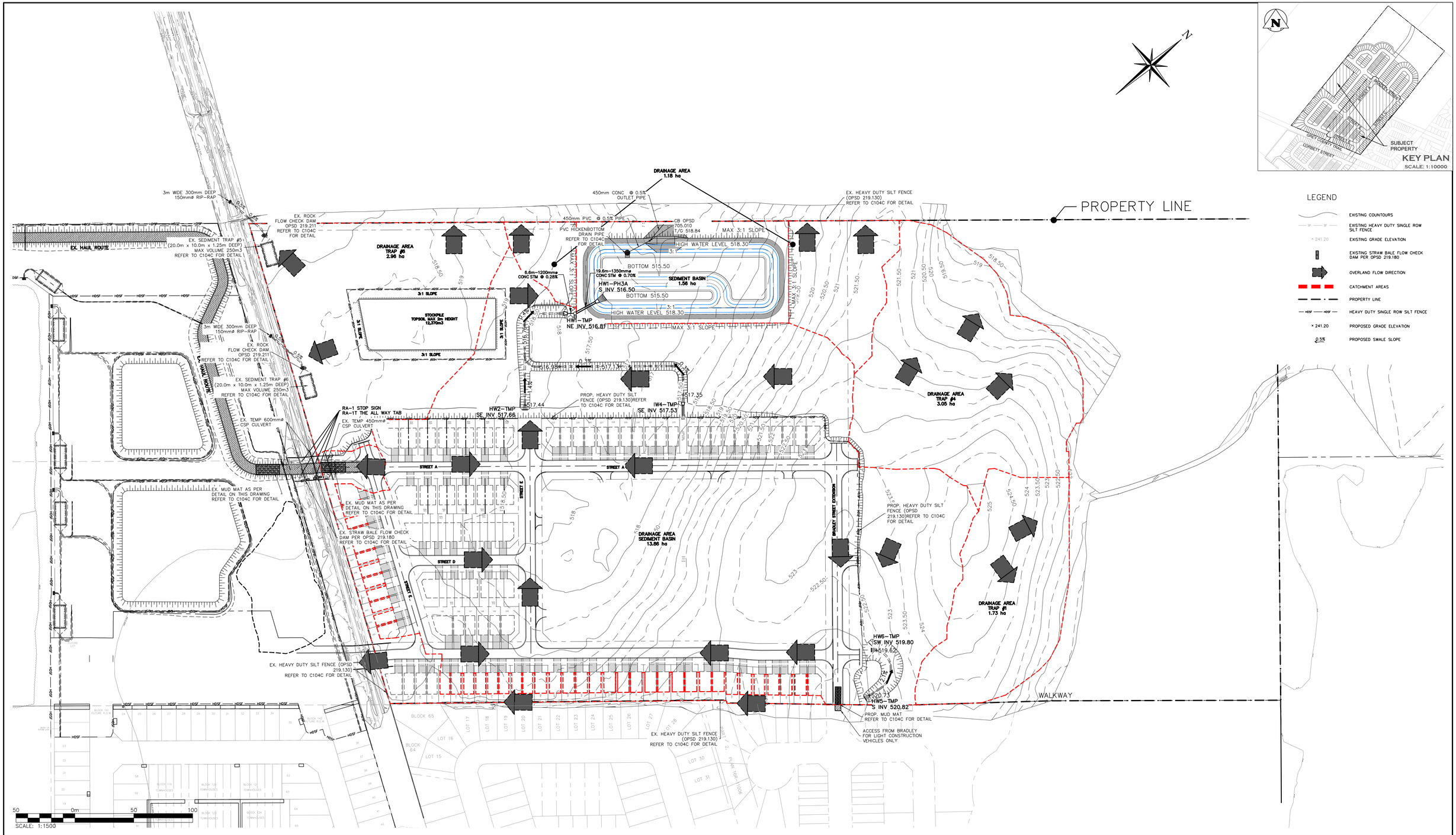
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SITE ALTERATION PLAN STAGE 1

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060-6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C104A



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Town

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1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

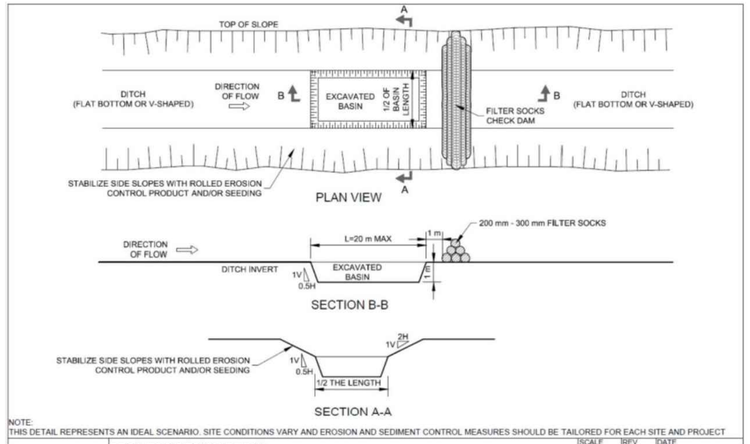
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SITE ALTERATION PLAN STAGE 2

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C104B

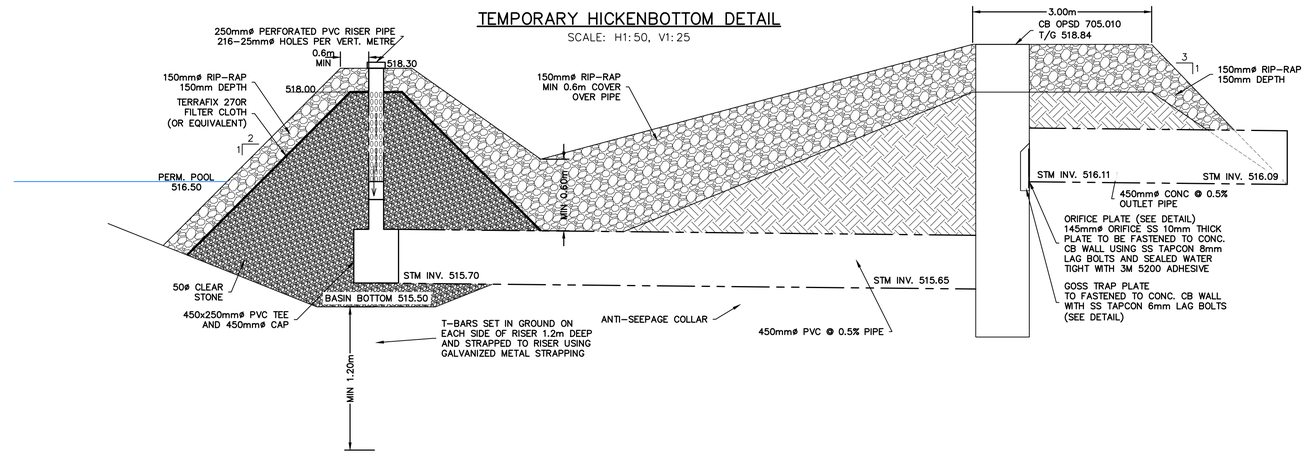


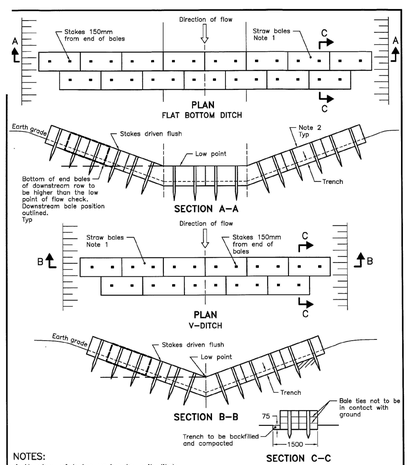
NOTE:
THIS DETAIL REPRESENTS AN IDEAL SCENARIO. SITE CONDITIONS VARY AND EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE TAILORED FOR EACH SITE AND PROJECT

Toronto and Region Conservation Authority	TRCA ESC DESIGN DETAIL	SCALE N.T.S. / REV 1	DATE MARCH 2019
	DRAWING TITLE: SEDIMENT TRAP IN EARTHEN DITCH		DWG NO 06

TEMPORARY HICKENBOTTOM DETAIL

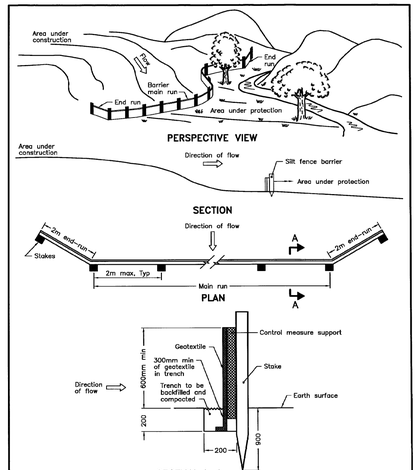
SCALE: H1:50, V1:25





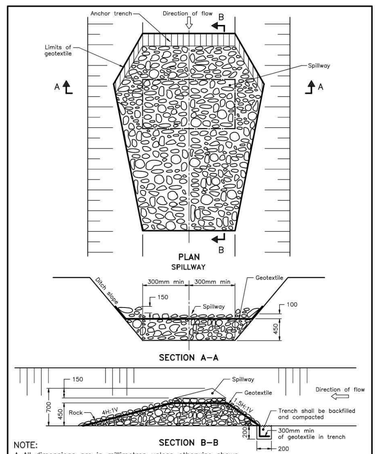
NOTES:
1 Number of bales varies to suit ditch.
2 Straw bales to be butted tightly against adjoining bales and shaped to conform to the sides of the ditch to prevent water flow through barrier.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2006	Rev 1
STRAW BALE FLOW CHECK DAM		OPSD 219.180



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

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2006	Rev 1
HEAVY-DUTY SILT FENCE BARRIER		OPSD 219.130

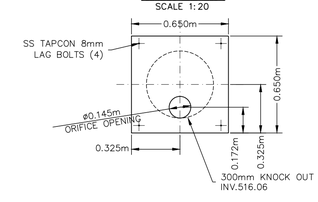


NOTE:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2021	Rev 3
TEMPORARY ROCK FLOW CHECK DAM FLAT BOTTOM DITCH		OPSD 219.211

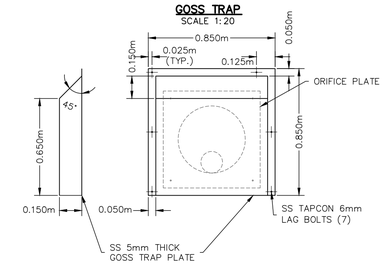
ORIFICE PLATE

SCALE 1:20



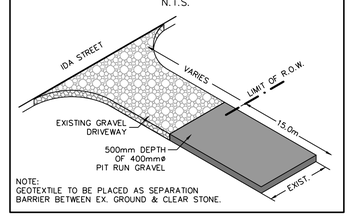
GOSS TRAP

SCALE 1:20



MUD MAT DETAIL

N.T.S.



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

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6. DO NOT SCALE DRAWINGS.

BENCHMARKS

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY BENCHMARK No. 00820048005 HAVING A PUBLISHED ELEVATION OF 525.163 METRES

Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

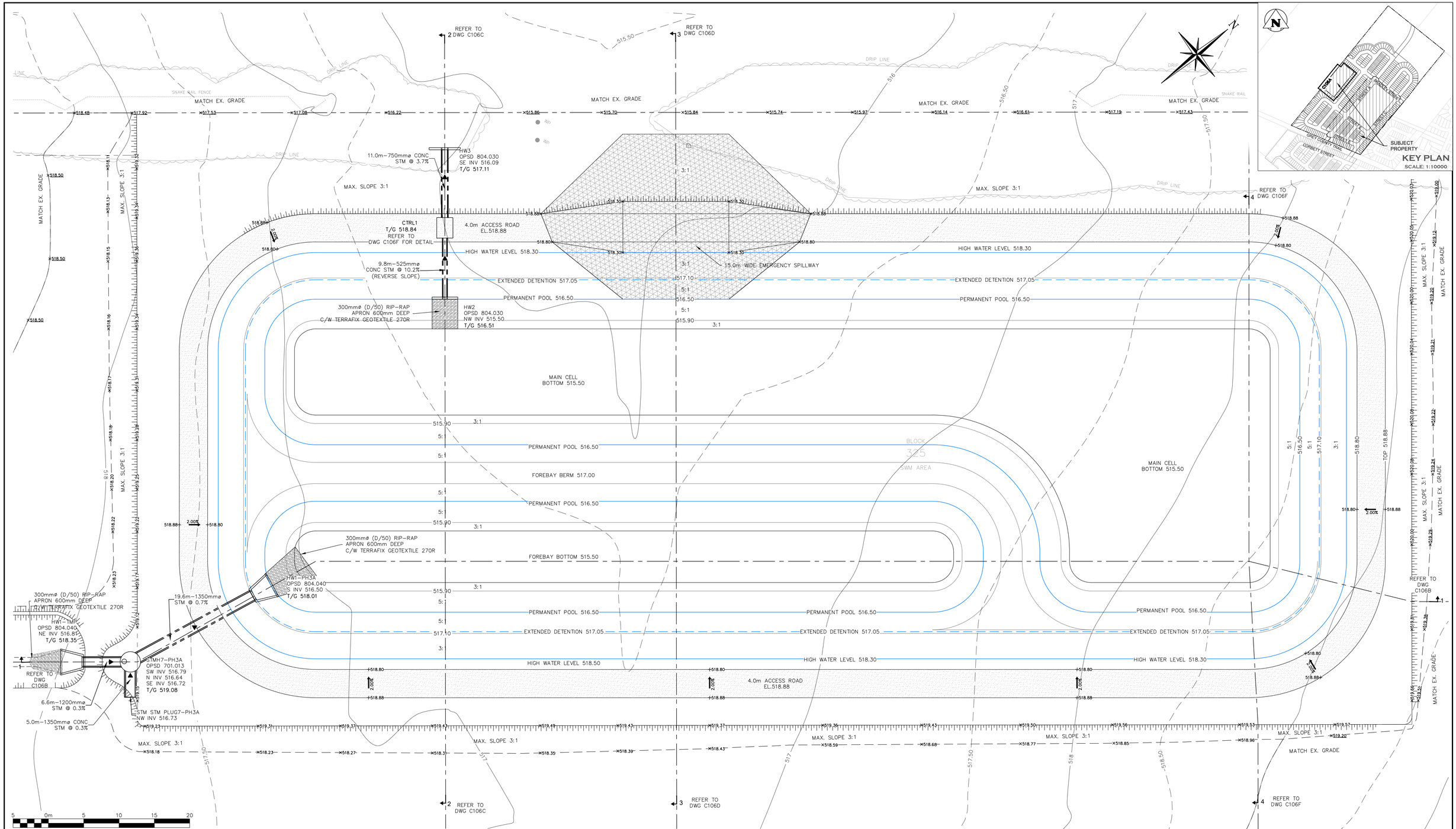
Engineer

Project: GLENELG EXPANSION LANDS TOWNSHIP OF SOUTHGATE

Drawing: SITE ALTERATION DETAILS

CROZIER CONSULTING ENGINEERS

Drawn By V.P.	Design By V.P./A.W./R.W.	Project 1060-6220	
Check By A.W./R.W.	Check By A.W./R.W.	Drawing C104C	



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BENCHMARKS

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SWM FACILITY PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060-6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C106A

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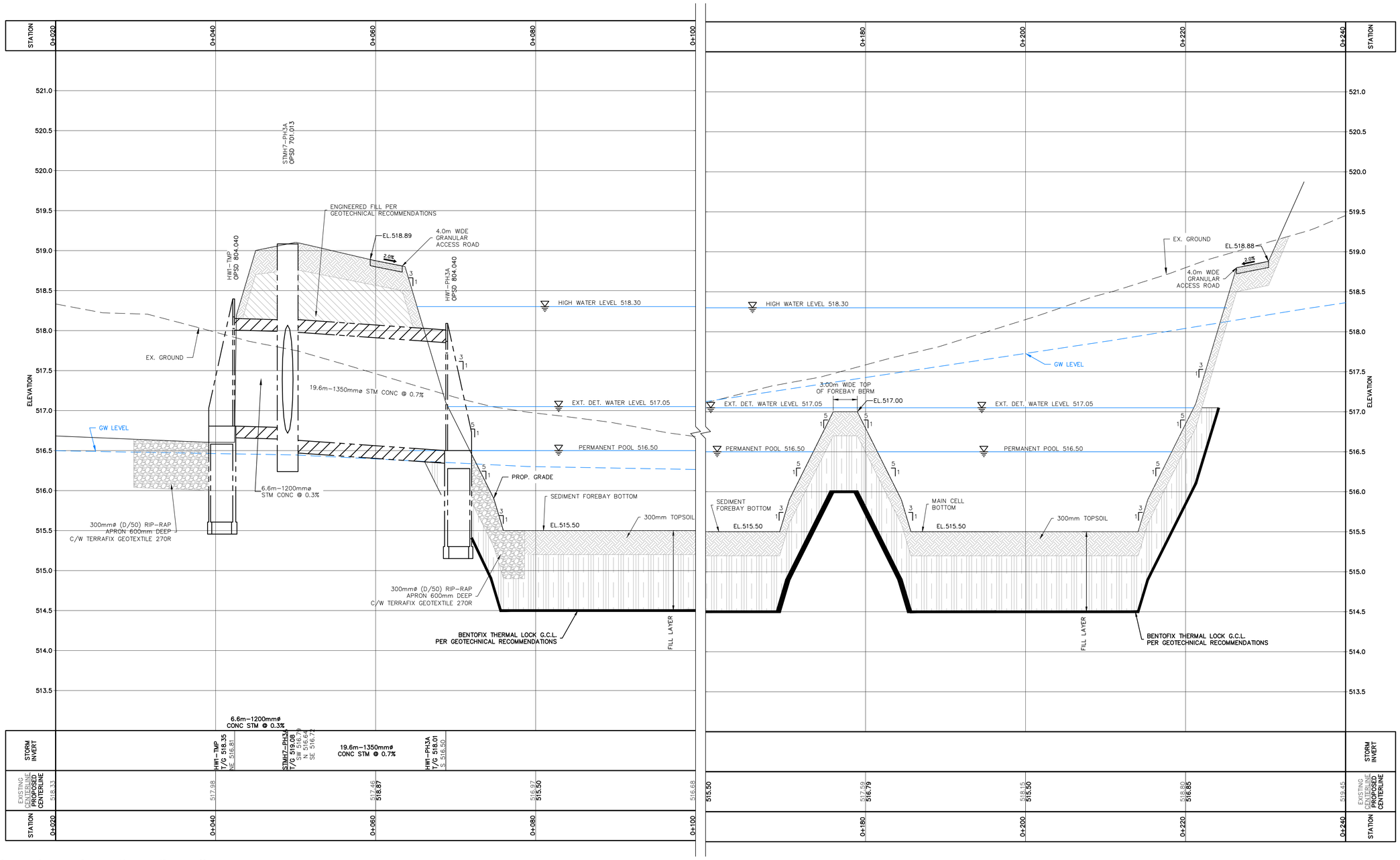
POND – SEC 1–1



SCALE: 1:250

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BENCHMARKS

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SWM FACILITY
SECTION 1–1 (STA 0+020 TO STA 0+240)

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C106B

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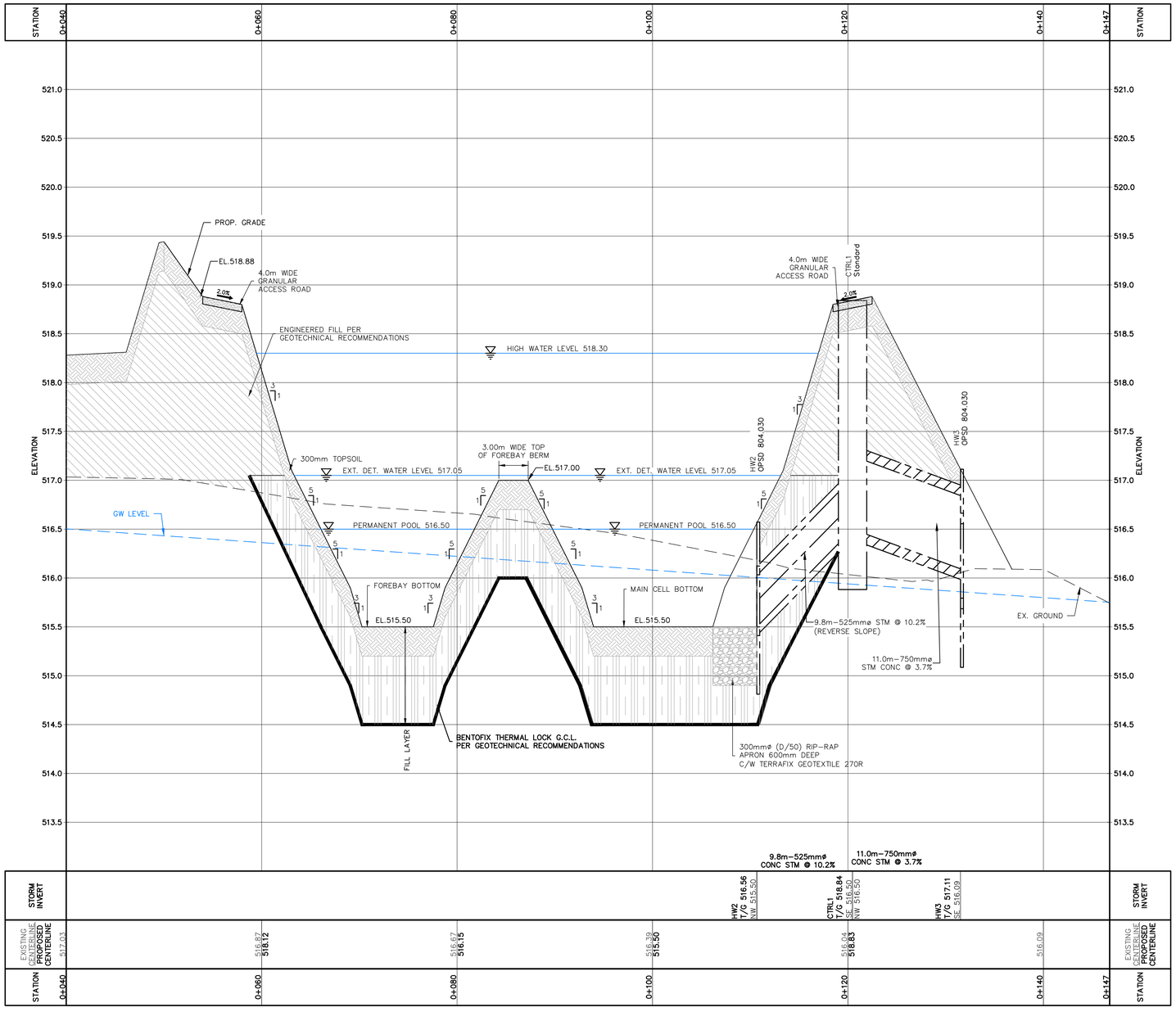
POND – SEC 2–2



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SCALE: 1:250

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Town

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Engineer

Engineer

Project
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing
SWM FACILITY
SECTION 2–2 (STA 0+040 TO STA 0+147)

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C106C

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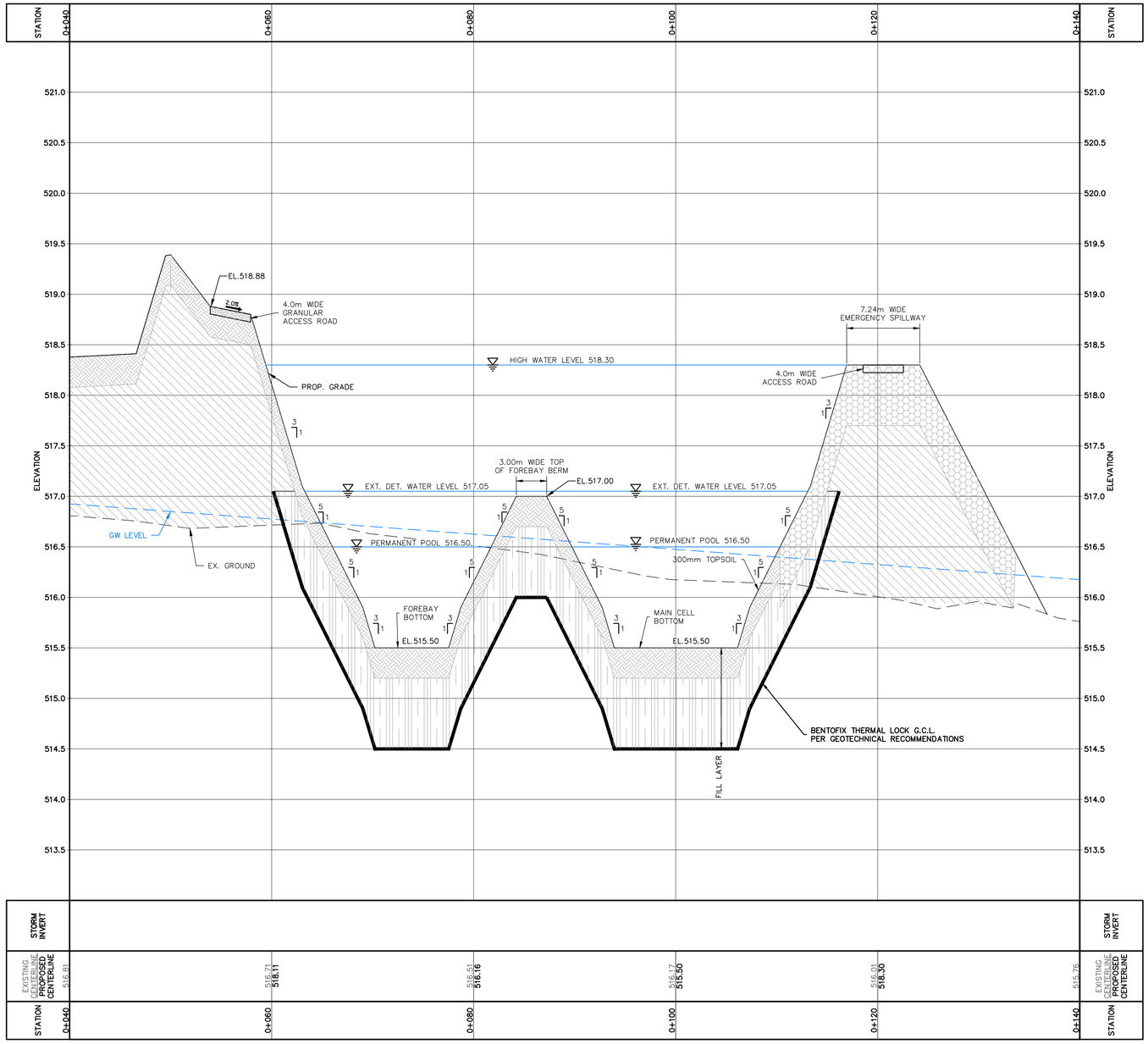
POND – SEC 3–3



SCALE: 1:250

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Town

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Engineer

Engineer

Project

GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SWM FACILITY
SECTION 3–3 (STA 0+040 TO STA 0+140)

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C106D

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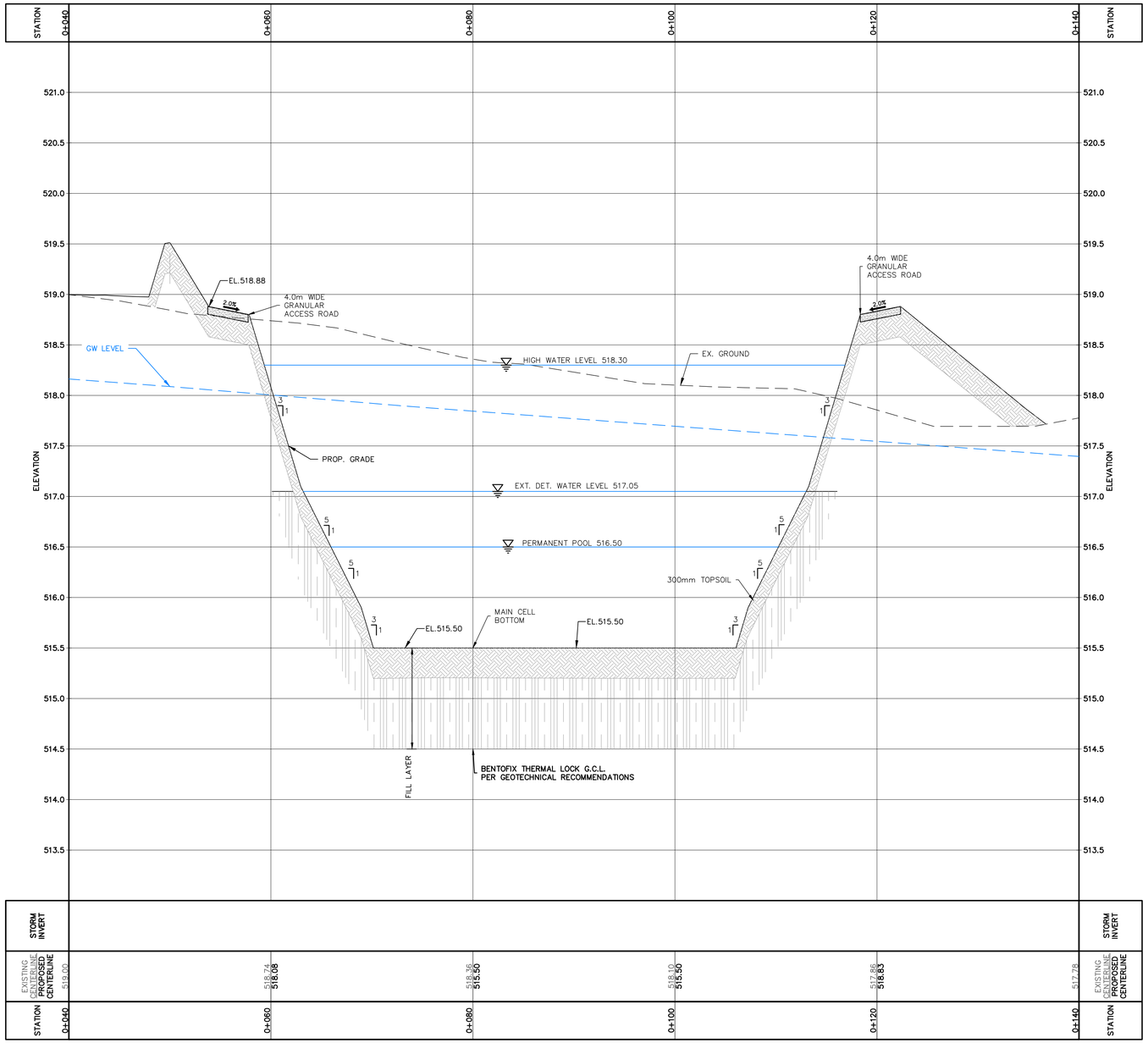
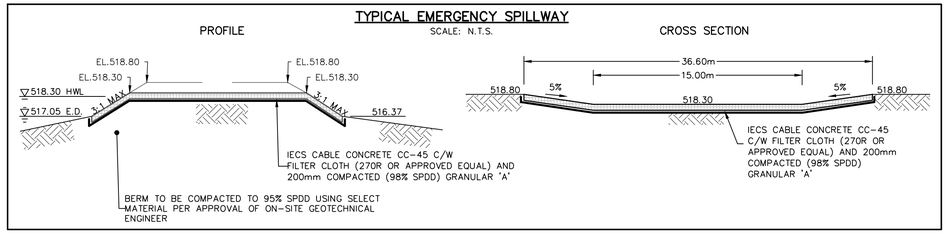
POND – SEC 4–4



TYPICAL EMERGENCY SPILLWAY

SCALE: N.T.S.



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Engineer

Engineer

Project

GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SWM FACILITY
SECTION 4–4 (STA 0+040 TO STA 0+140)

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C106E

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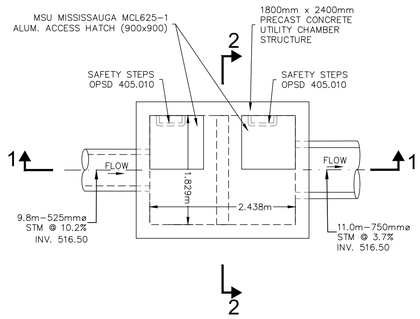
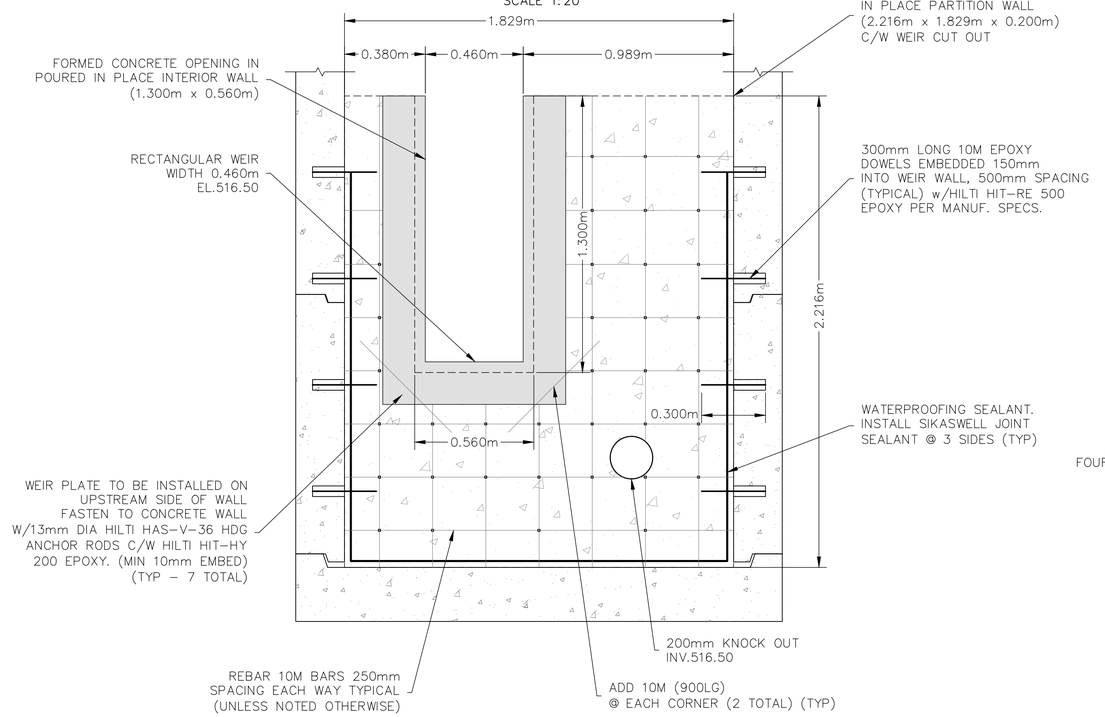
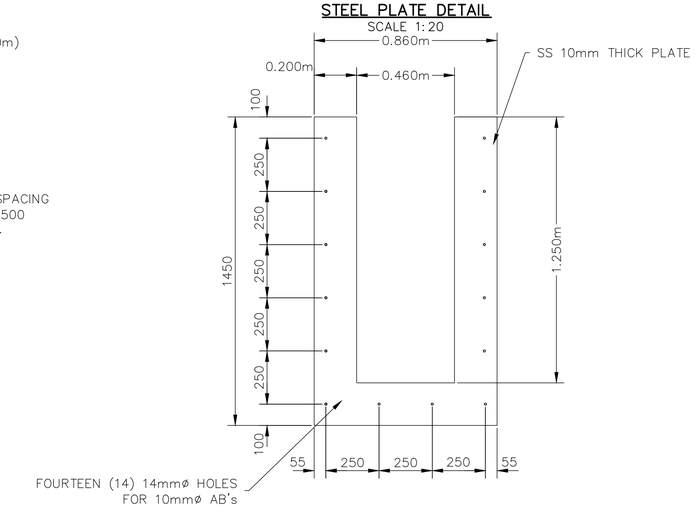
SWMF OUTLET STRUCTURE
SCALE 1:50



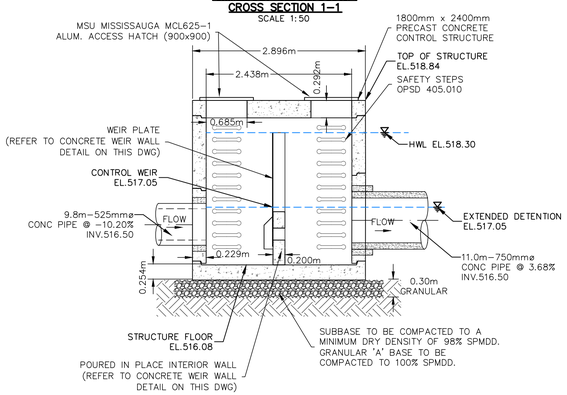
POND OUTLET STRUCTURE
CONCRETE WEIR WALL DETAIL
SCALE 1:20



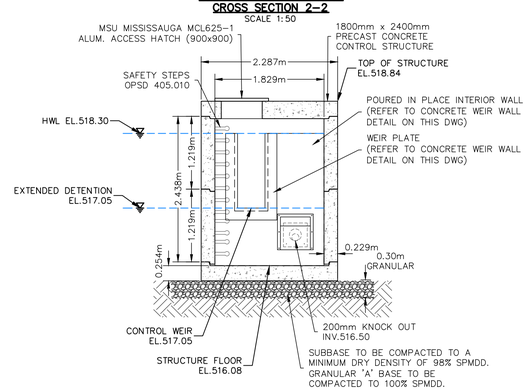
STEEL PLATE DETAIL
SCALE 1:20



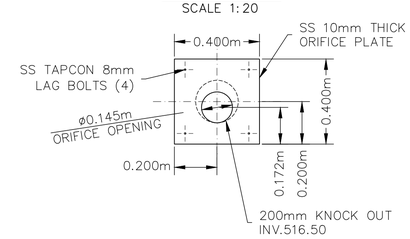
SWMF OUTLET STRUCTURE
CROSS SECTION 1-1
SCALE 1:50



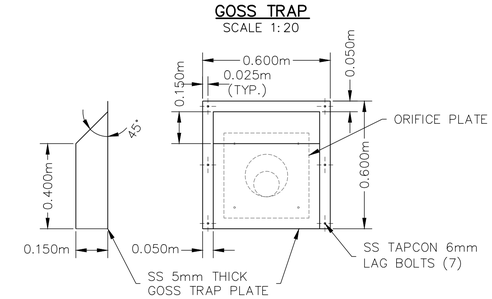
SWMF OUTLET STRUCTURE
CROSS SECTION 2-2
SCALE 1:50



ORIFICE PLATE
SCALE 1:20



GOSS TRAP
SCALE 1:20



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

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing
SWMF OUTLET CONTROL STRUCTURE
CROSS-SECTIONS & DETAILS

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060-6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C106F

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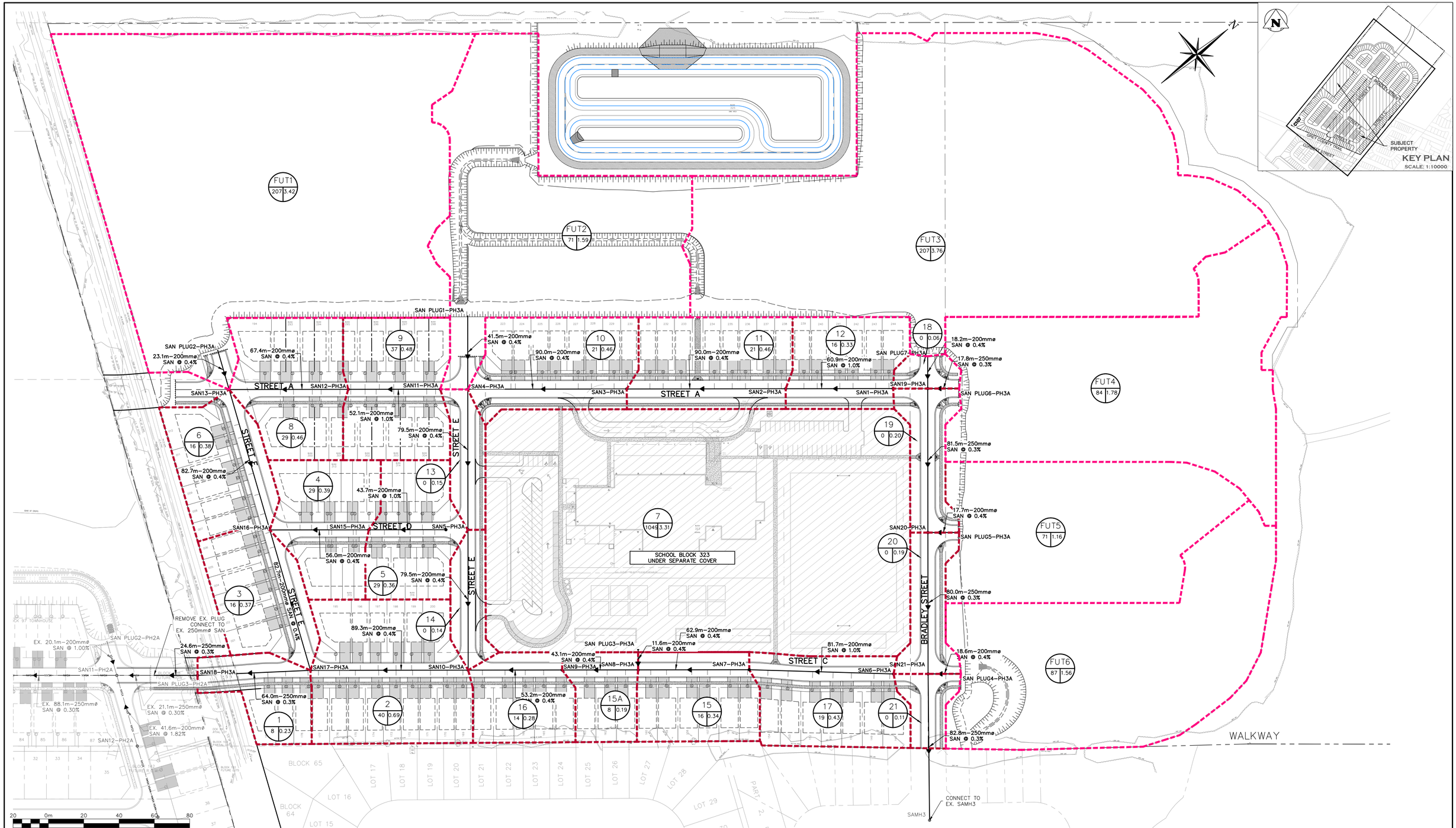

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Town

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Engineer

Engineer

Project

GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

SANITARY DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C107

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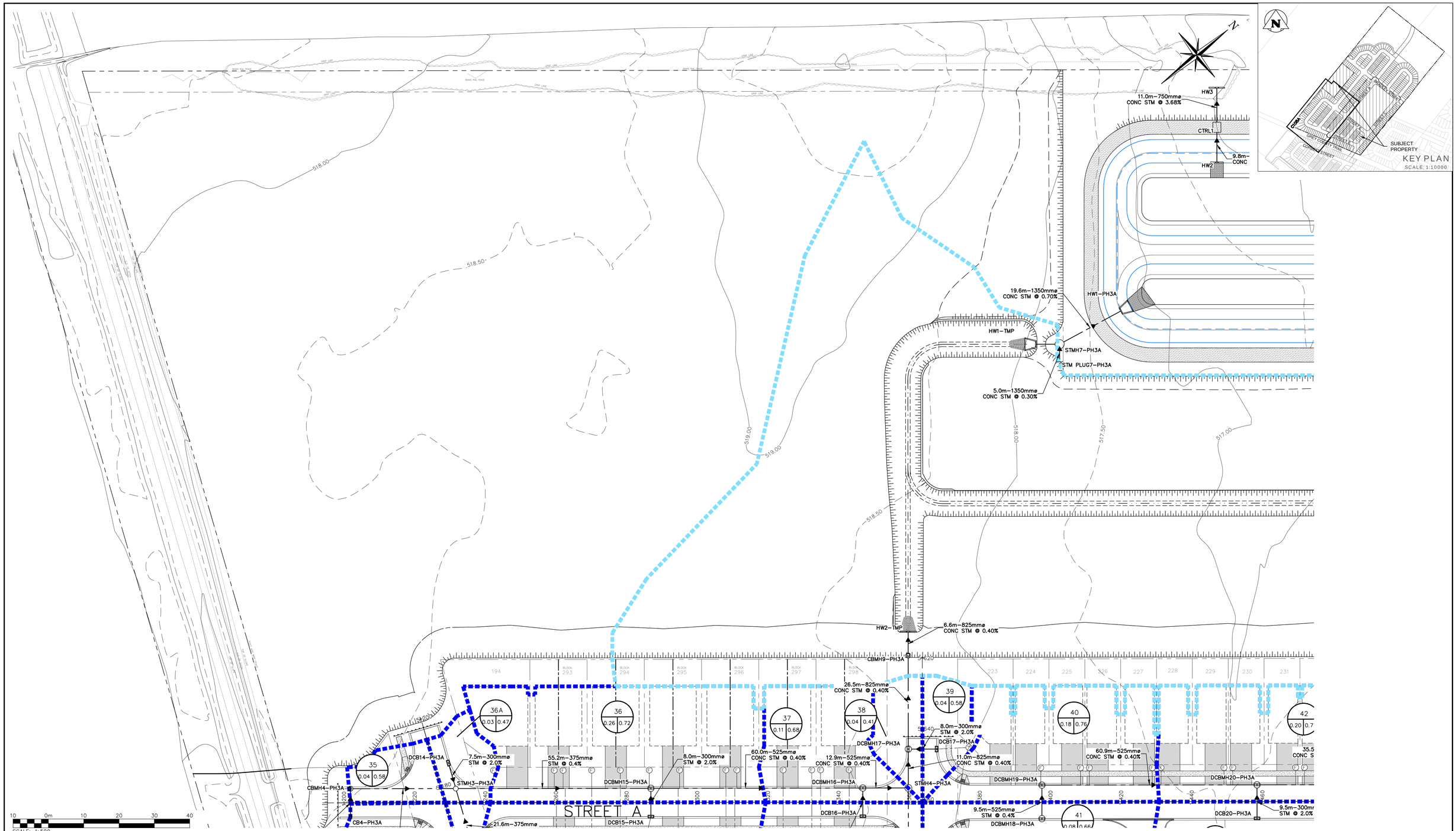

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BENCHMARKS

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY BENCHMARK No. 00820048005 HAVING A PUBLISHED ELEVATION OF 525.163 METRES

Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

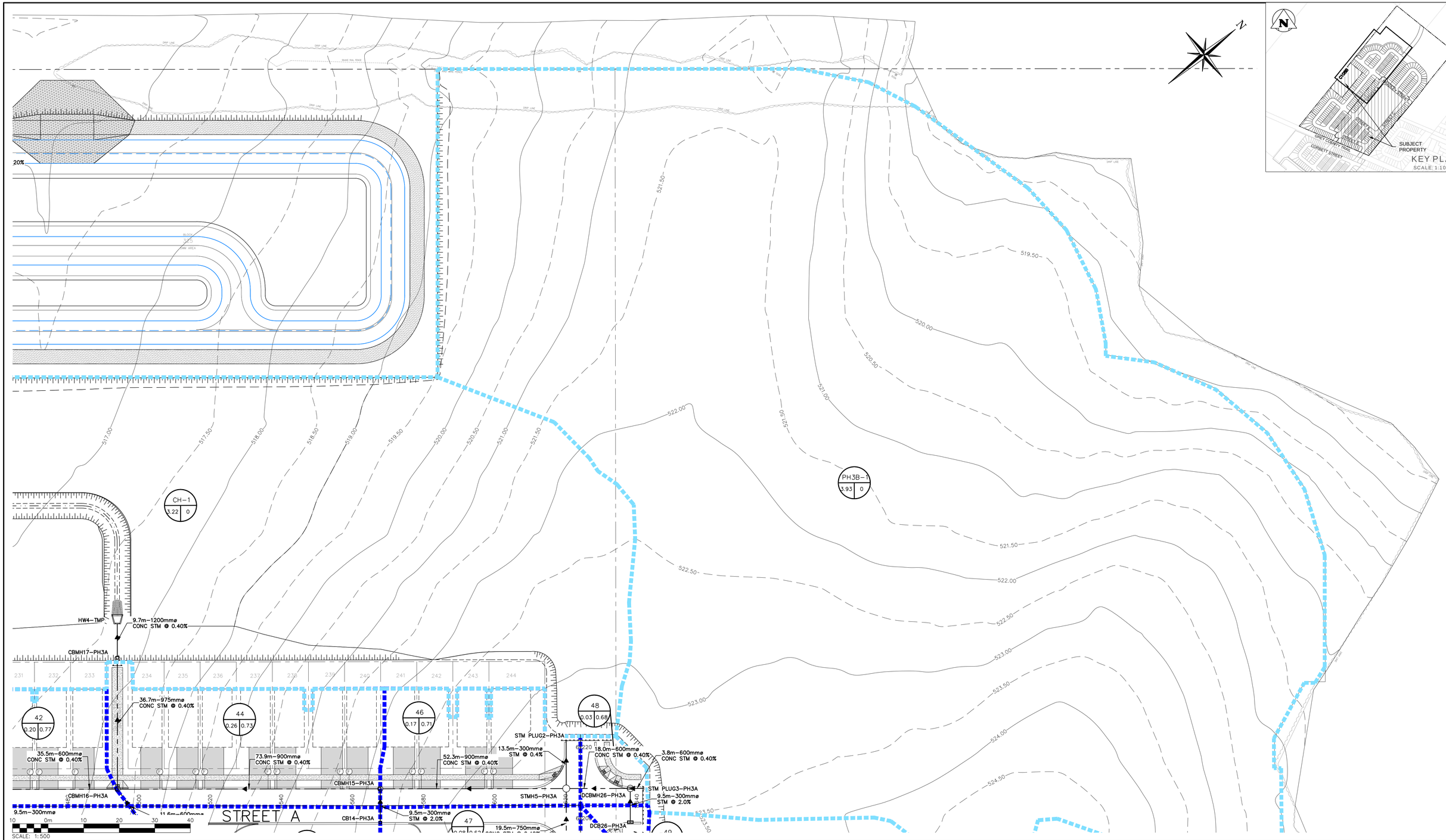
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

STORM DRAINAGE PLAN (NORTH–WEST PART)

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C108A



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STORM DRAINAGE PLAN (NORTH-EAST PART)

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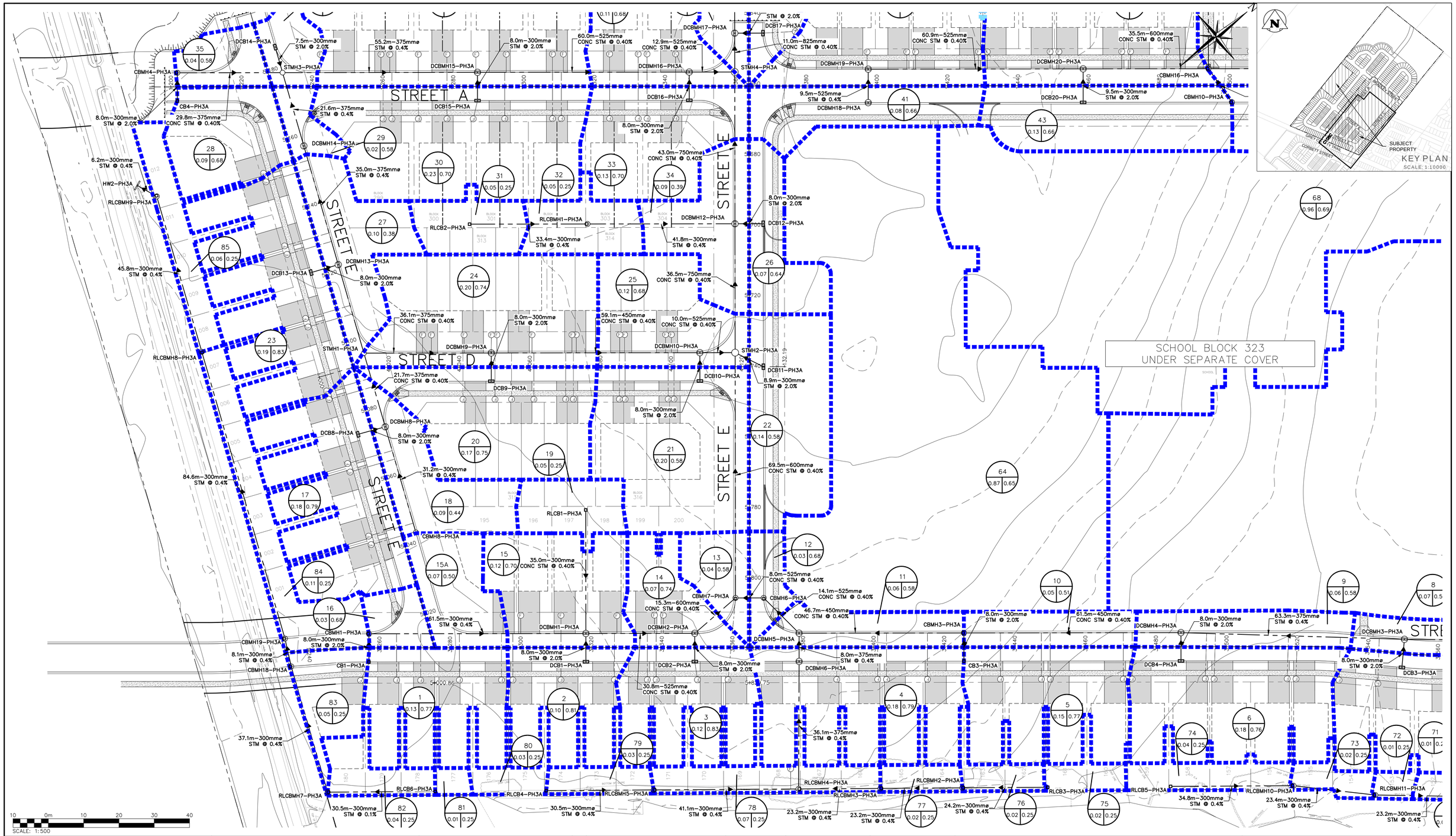

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TOWNSHIP OF SOUTHGATE

Drawing

STORM DRAINAGE PLAN (SOUTH-WEST PART)

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
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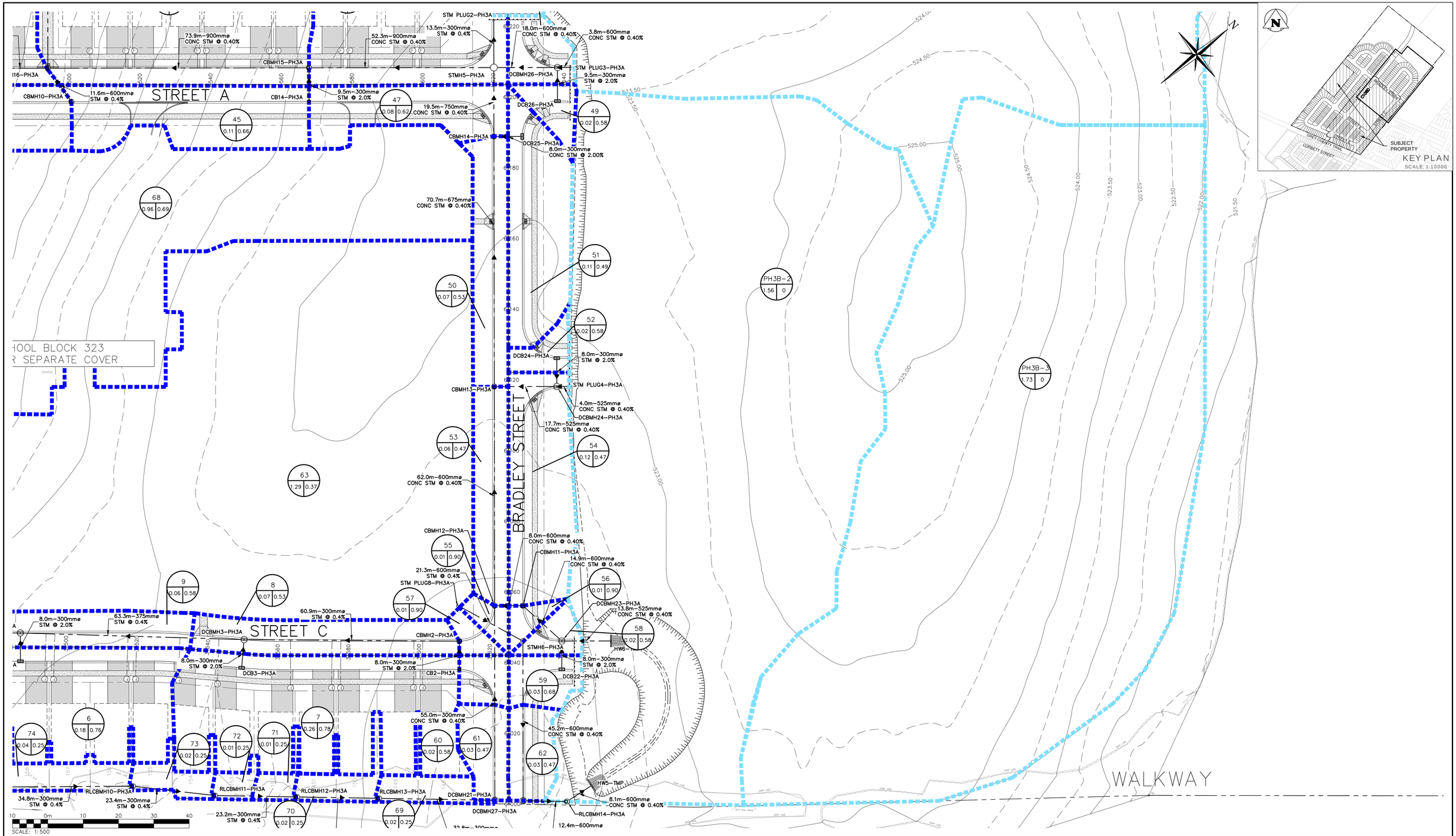

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CROZIER CONSULTING ENGINEERS

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Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C108D

CONSTRUCTION NOTES:

A) GENERAL – CONSTRUCTION

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH TOWNSHIP OF SOUTHGATE STANDARDS, OPSD AND OPSS. WHERE CONFLICT OCCURS, TOWNSHIP OF SOUTHGATE TO GOVERN.
2. TRENCH BACKFILL (OPSD 802.010 & 802.013) TO BE SELECT NATIVE MATERIAL OR IMPORTED SELECT SUBGRADE TO OPSS 1010. BACKFILL TO BE PLACED IN MAXIMUM 200mm THICK LIFTS AND COMPACTED TO 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
3. PIPE COVER AND BEDDING TO BE CLASS 'B' COMPOSED OF COMPACTED GRANULAR IF EXTENSIVE DEWATERING IS REQUIRED CLASS 'A'.
4. ALL TOPSOIL AND EARTH EXCAVATION TO BE STOCK PILED OR REMOVED TO AN APPROVED SITE AS DIRECTED BY ENGINEER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DETAILED LAYOUT OF THE WORK. THE DEVELOPER'S ENGINEER WILL CONFIRM ALL BENCH MARK ELEVATIONS AND HORIZONTAL ALIGNMENT FOR THE CONTRACTOR.
6. ALL PROPERTY BARS TO BE PRESERVED AND REPLACED BY O.L.S. AT CONTRACTOR'S EXPENSE IF REMOVED DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR THE SUPPLY OF TEMPORARY WATER AND POWER.
8. DEWATERING TO BE CARRIED OUT IN ACCORDANCE WITH OPSS-517 AND 518 TO MAINTAIN ALL TRENCHES IN A DRY CONDITION. CONTRACTOR RESPONSIBLE FOR OBTAINING MECP PERMIT IF REQUIRED.
9. ALL ENGINE DRIVEN PUMPS TO BE ADEQUATELY SILENCED, SUITABLE FOR OPERATION IN A RESIDENTIAL DISTRICT.
10. DISTURBED AREAS OUTSIDE THE DEVELOPABLE LANDS TO BE REINSTATED TO PREVIOUS CONDITION OR BETTER.
11. THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL UTILITY COMPANIES PRIOR TO COMMENCING WORK AND CO-ORDINATE CONSTRUCTION ACCORDINGLY.
12. ALL EXCAVATION MUST BE CARRIED OUT IN FULL COMPLIANCE WITH MOST RECENT GUIDELINES OF OHSA. NATIVE SOILS ARE CLASSIFIED AS TYPE 2, 3 & 4 SOIL AS PER GEOTECHNICAL REPORT (SIRATI & PARTNERS CONSULTANTS LIMITED, JANUARY 2017)

B) ROADS

1. ALL EXCAVATION SHALL CONFORM TO THE CURRENT ONTARIO PROVINCIAL SPECIFICATION FOR GRADING OPSS 206
2. THE DEVELOPER SHALL RETAIN A QUALIFIED SOILS CONSULTANT TO CARRY OUT COMPACTION TESTS ON THE COMPLETED SUBGRADE AND SUBSEQUENT LIFTS OF GRANULAR BASE MATERIAL BEFORE PLACEMENT OF NEXT GRANULAR OR ASPHALT LIFT.
3. ALL VEGETATION, BOULDERS OVER 150mmø, TOPSOIL AND ORGANIC OR FROST-SUSCEPTABLE MATERIALS SHALL BE REMOVED FROM THE ROAD BASE TO A DEPTH OF AT LEAST 1.2m BELOW FINISHED GRADE AND REPLACED WITH SUITABLE MATERIAL.
4. BOULEVARD MATERIAL TO BE COMPACTED TO A MINIMUM DRY DENSITY OF AT LEAST 95% SPMDD. IN THE ZONE WITHIN 1.0m BELOW THE PAVEMENT SUBGRADE, THE BACKFILL SHOULD BE COMPACTED TO AT LEAST 98% SPMDD WITH THE WATER CONTENT 2% TO 3% DRIER THAN THE OPTIMUM. IN THE LOWER ZONE, A 95% OR GREATER COMPACTION IS ADEQUATE.
5. GRANULAR 'A' AND 'B' ROAD BASE TO BE COMPACTED TO 100% OF THE MATERIAL'S RESPECTIVE SPMDD AND PLACED IN MAX. 150mm LIFTS. REFER TO GEOTECHNICAL REPORT FOR FURTHER DETAILS.
6. PROPOSED SUBDIVISION ROADWAYS TO BE CONSTRUCTED WITH MINIMUM 450mm GRANULAR 'B' TYPE 1, 150mm GRANULAR 'A', 50mm HL4 BASE COURSE ASPHALT, & 40mm HL3 SURFACE COURSE ASPHALT. BOULEVARD FROM PROPERTY LINE TO THE BACK OF CURB TO BE TREATED WITH A TOPSOIL DEPTH OF 200mm AND SOD.
7. SELECT SUBGRADE MATERIAL, OR IMPORTED GRANULAR MATERIAL APPROVED BY THE ENGINEER, COMPACTED TO 98% SPMDD TO BE USED AS FILL IN ALL AREAS WHERE PROPOSED PIPE INVERTS ARE HIGHER THAN EXISTING GRADE OR AS INSTRUCTED BY THE ENGINEER.
8. ALL GRANULARS AND ASPHALT MATERIALS AND PLACEMENT TO BE IN ACCORDANCE WITH OPSS 314 AND OPSS 310.
9. JOINTS WITH EXISTING ASPHALT TO BE SAW CUT STRAIGHT WITH MIN. 0.3m LAP JOINT PRIOR TO PLACING NEW ASPHALT AND TACK COAT APPLIED TO EXISTING ASPHALT.
10. STOP SIGNS AND STREET SIGNS TO TOWNSHIP STANDARDS.
11. REINSTATEMENT OF ALL DISTURBED BOULEVARDS TO INCLUDE REGRADING, 200mm TOPSOIL AND SOD TO OPSS 570 AND 571.
12. 100mm ø PIPE SUBDRAINS SHALL BE PROVIDED UNDER EDGE OF PAVEMENT ON LOWER (GUTTER) SIDE OF THE ROAD.
13. ALL SUBDRAINS TO BE CONSTRUCTED IN ACCORDANCE WITH OPSS 405. SUBDRAIN TO BE INSTALLED IN GRANULAR 'A' TRENCH AND CONNECTED TO EACH CB OR CBMH.
14. SUBDRAINS TO BE PERFORATED OTHER THAN THE 2m SECTION IMMEDIATELY UPSTREAM OF ALL STRUCTURES WHICH SHALL BE NON-PERFORATED.
15. ALL CONCRETE SIDEWALKS TO BE CONSTRUCTED AS PER OPSD 310.010. ALL SIDEWALK RAMPS SHALL CONFORM WITH OPSD 310.030, 033, 039 AND COMPLETE WITH TACTILE PLATES.

C) SANITARY SEWERS

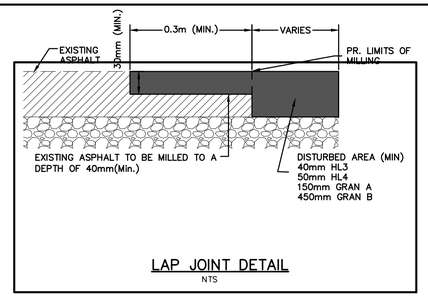
1. M.H.'S TO OPSD – 701.010, 701.030, & 704.010.
2. BENCHING TO OPSD – 701.021.
3. STEPS TO OPSD – 405.010.
4. BACKFILL AND EMBEDMENT TO OPSD – 802.010 CLASS 'B', GRANULAR 'A' BEDDING. IF EXTENSIVE DEWATERING IS REQUIRED, A CLASS 'A' BEDDING MAY BE REQUIRED (SUBJECT TO GEOTECHNICAL RECOMMENDATIONS.)
5. TRENCH BACKFILL TO BE SELECT NATIVE MATERIAL AS APPROVED BY ENGINEER OR IMPORTED GRANULAR MATERIAL.
6. FRAMES AND COVERS TO OPSD – 401.01 TYPE 'A' (CLOSED COVER).
7. SERVICE CONNECTIONS TO OPSD – 1006.020 (125mm), GRANULAR 'A' BEDDING, TERMINATE AT SERVICING CORRIDOR LIMITS WITH A TEST FITTING, PLUG AND 2x4 MARKER POST PAINTED GREEN REFER TO TOWNSHIP STANDARD S3. MINIMUM GRADE TO BE 2.0% SERVICE CONNECTIONS TO TOWNHIP STD S4.
8. RADIUS BENDS TO BE USED ON SANITARY SEWER CONNECTIONS WHERE THE ANGLE OF CONNECTION BETWEEN THE SERVICE AND SEWER EXCEEDS 90°.
9. BACKFILL AND EMBEDMENT MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
10. MANHOLES FRAMES TO BE SET TO BASE COURSE ASPHALT ELEVATION AND RAISED BY ADDING RISER RINGS PRIOR TO PLACING SURFACE COURSE ASPHALT.
11. PIPE SUPPORT AT MAINTENANCE HOLES AS PER OPSD 708.020.
12. ALL MAINTENANCE HOLES, UNLESS EXPRESSLY IDENTIFIED ARE 1200mm ø. SANITARY MANHOLE JOINTS TO BE SEALED WITH "MEL-ROL" AS PER MUNICIPAL STANDARD.
13. GENERAL INSTALLATION AND TESTING OF SEWERS AND APPURTENANCES TO BE IN ACCORDANCE WITH OPSS 407, 408, 409 (CCTV), 410, 421 AND ALL SPECIFICATIONS REFERENCED WITHIN THESE SECTIONS.
14. SANITARY SEWER – SDR 35 PVC.
15. SANITARY SERVICE – SDR 28 PVC – 125mm.
16. FROST STRAPS PER OPSD 701.100.
17. ALL PIPE JOINTS MUST BE LEAK-PROOF AND /OR ALL JOINTS SHOULD BE WRAPPED IN A WATERPROOF MEMBRANE (SUBJECT TO GEOTECHNICAL RECOMMENDATIONS). ALL MANHOLE JOINTS ARE TO BE SEALED USING MEL-ROL OR RISE-WRAP.

D) WATERMAINS

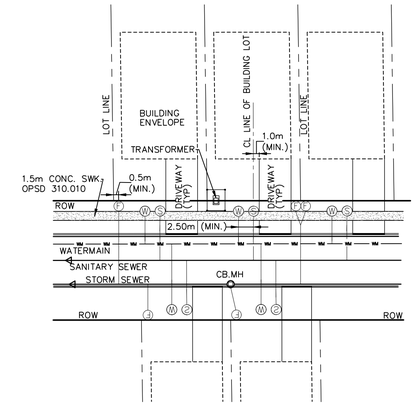
1. BACKFILL AND EMBEDMENT TO OPSD – 802.010 CLASS 'B', GRANULAR 'A' EMBEDMENT. REFER TO GENERAL NOTES.
2. TRENCH BACKFILL TO BE SELECT NATIVE MATERIAL AS APPROVED BY ENGINEER OR IMPORTED GRANULAR MATERIAL.
3. THRUST BLOCKS TO OPSD – 1103.010 AND 1103.020 WHERE SUITABLE SOILS ARE ENCOUNTERED.
4. SERVICE CONNECTIONS TO OPSD – 1104.010, 100mm GRANULAR 'A' EMBEDMENT AND COVER OVER PIPE. TERMINATE AT SERVICING CORRIDOR LIMITS C/W CURB STOP AND BOX.
5. HYDRANTS AS PER OPSD 1105.010 ARE TO BE EQUIPPED WITH ANCHOR TEE's & VALVES. DRAIN PLUGS SHALL BE INSTALLED WHERE HIGH WATER TABLE IS ENCOUNTERED. ANCHOR TEE AND VALVE TO BE USED AT HYDRANTS
6. BACKFILL AND EMBEDMENT MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
7. MINIMUM COVER ON WATERMAIN AND SERVICES TO BE 2.0m.
8. GATE VALVES, BENDS AND HYDRANT LEADS AND FITTINGS TO BE CONNECTED WITH ROLMAC GRIPPER RING RESTRAINING GLANDS. MECHANICAL RESTRAINTS ARE TO BE ONE OF THE FOLLOWING:
   a. UNI-FLANGE SERIES 1300 MANUFACTURED BY FORD METER BOX COMPANY INC.
   b. MEGALUG SERIES 1100 FOR DUCTILE IRON PIPE
   c. MEGALUG SERIES 2000 PV FOR PVC C900 PIPE
   d. STARGRIP SERIES 3000 FOR DUCTILE IRON PIPE
   e. PVC STARGRIP SERIES 4000 FOR PVC C900 PIPE
9. ALL SERVICES TO BE DIRECT TAPPED.
10. FOLLOWING TESTING, CONTRACTOR SHALL OPERATE EACH WATER SERVICE TO VERIFY FULL FLOW AND PRESSURE AT THE CURB STOP TO THE SATISFACTION OF THE ENGINEER.
11. GENERAL INSTALLATION AND TESTING OF WATERMAIN AND APPURTENANCES TO BE IN ACCORDANCE WITH OPSS 701 AND ALL SPECIFICATIONS REFERENCED WITHIN THESE SECTIONS. COMPLETE WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH REQUIREMENTS OF AWWA STANDARD C651-99. REFER TO DETAIL ON DWG 113D FOR TYPICAL TEMPORARY CONNECTION. ALL WATERMAIN TESTING & CHLORINATION WILL BE CONDUCTED BY THE TOWNSHIP AT CONTRACTORS COST. WATERMAINS ARE NOT TO BE CONNECTED TO EXISTING WATERMAINS UNTIL BACTERIOLOGICAL TESTING HAS BEEN SUCCESSFULLY COMPLETED & CERTIFIED BY CPU.
12. COMPLETE WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH REQUIREMENTS OF O. REG. 459/00 & SATISFACTION OF THE TOWNSHIP.
13. WATERMAIN – C900 PVC CLASS 235 (DR 18), B 137.3 WITH RING-TITE JOINTS AND TRACER WIRE. TRACER WIRE IS TO BE #12 AWG CLAD STEEL, HIGH STRENGTH WITH MINIMUM 450LB BREAK BURIAL AND COLOR CODED BLUE. DIRECT BURY WIRE SHOULD HAVE 3-WAY LOCABLE CONNECTORS. ABOVE GROUND TRACER WIRE ACCESS BOXES SHALL BE ATTACHED TO UNDERSIDE OF BOTTOM FLANGE OF FIRE HYDRANTS.
14. SINGLE WATERMAIN SERVICES (25mmø) – COPPER SEAMLESS TYPE 'K' FOR SERVICES LESS THAN OR EQUAL TO 20.0m IN LENGTH. CROSS-LINKED POLYETHYLENE ("MUNICIPEX" BY REHAU AND "BLUE 904" BY IPEX) FOR SERVICES GREATER THAN 20.0m IN LENGTH.
15. MAIN STOPS ARE TO BE ONE OF THE FOLLOWING:
   a. CAMBRIDGE BRASS, BALL STYLE, SERIES 301NL (NO LEAD), AWWA X CB COMPRESSION ASSEMBLY
   b. MUELLER CANADA, MUELLER 300, BALL TYPE, NO LEAD, B-25008, AWWA X MUELLER "CC" COMPRESSION ASSEMBLY
   c. FORD METER BOX COMPANY, BALL STYLE, FB-1000-NL, NO LEAD, AWWA X "CC" COMPRESSION ASSEMBLY
17. CURB STOPS TO 203-H3H3, BALL STYLE WITH DRAIN. BLOW OFFS AS PER TOWNSHIP STD W1.
   CURB STOPS ARE TO BE ONE OF THE FOLLOWING:
   a. CAMBRIDGE BRASS, BALL STYLE, SERIES 202NL (NO LEAD), CB COMPRESSION X CB COMPRESSION ASSEMBLY
   b. MUELLER CANADA, MUELLER 300, BALL TYPE, NO LEAD, MUELLER "CC" X MUELLER "CC" COMPRESSION ASSEMBLY
   c. FORD METER BOX COMPANY, BALL STYLE, B44 SERIES, NO LEAD, "CC" COMPRESSION ASSEMBLY
18. A CURB STOP & EXTENSION SERVICE BOX & MAIN STOP MUST BE INSTALLED ON EACH SERVICE USING COMPRESSION JOINT FITTINGS.
19. ALL CURB STOPS FOR SERVICES WITHIN ASPHALT TO BE LOCATED IN VALVE BOXES INSTALLED FLUSH TO FINISHED GRADE OF ASPHALT. CAP FOR VALVE BOX TO BE MARKED WITH 'W' & PAINTED BLUE.
20. SERVICE BOXES TO NUMBER 7, D-I CLOW OR MUELLER, 24" BLACK ROADS STRAIGHT C/W CAP PAINTED BLUE.
21. ALL SERVICES SHALL BE METERED AS PER TOWNSHIP STD W7. METERS TO BE COMPLETE WITH REMOTE READOUT OR RADIO READ AS DETERMINED BY THE TOWNSHIP.
22. HYDRANTS – CENTURY NUMBER 1, OPEN LEFT (O/L), 2 HOSE, 33B PLUMBER PORT. 6" MJ BASE, SELF-DRAINING RED WITH RED STORZ CAP. CANADA VALVE CENTURY COMPRESSION TYPE VALVE SEALS OR CLOW CANADA BRIGADIER HERITAGE STYLE HYDRANT WITH MCAVITY M59M SHAPE. BOTH WITH STORZ PUMPER CONNECTION.
23. VALVES – RESILIENT SEATED, RSGV MECHANICAL JOINT, OPEN LEFT CLOW OR MUELLER WITH 5-SL-48 SLIDING VALVE BOX C/W CAP PAINTED BLUE. VALVE AND VALVE BOX PER TOWNSHIP STD W2.
24. MECHANICAL JOINT DUCTILE FITTINGS – AWWA/ANSI C153/A21.53.
25. HYDRANTS TO BE INSTALLED C/W HYDRANT MARKER STAKES PER TOWN & CPU STANDARD "FLEX STAKE HYDRANT MARKER MODEL FHV804, 48" LONG, COLOUR YELLOW WITH REFLECTIVE HYDRANT GRAPHIC ON BOTH SIDES". MARKER TO BE POSITIONED ON THE RIGHT PORT AS VIEWED FROM STREET.
26. ALL VALVES TO BE OPERATED BY THE TOWNSHIP (IF REQUIRED). CONTRACTOR TO PROVIDE MIN. 48hr NOTIFICATION FOR REQUEST.
27. HYDRANTS ARE TO BE 1.67m (5'6") LONG. MAKE-UP PIECES, IF REQUIRED, ARE TO BE INSTALLED BELOW THE HYDRANT.
28. ALL WATERMAIN FITTINGS TO BE LEAD FREE.
29. MECHANICAL JOINT RESTRAINTS TO BE USED DURING TRANSITION OF WATERMAIN INSTALLATION IN NATIVE SOILS TO ENGINEERED FILL. MECHANICAL JOINT RESTRAINTS TO BE UNI-FLANGE SERIES 1300, MANUFACTURED BY FORD METER BOX COMPANY INC. OR APPROVED EQUAL. FINAL LIMITS TO BE FIELD DECISION.
30. MECHANICAL JOINTS ARE REQUIRED ON ALL FITTINGS AND BENDS.
31. WATER SAMPLING STATION – THE KUPFERLE FOUNDRY COMPANY ECLIPSE #88 FOR FREEZING CLIMATES ON A PEDESTAL.
32. CATHODIC PROTECTION REQUIRED ON ALL METALLIC FITTING AND PIPE AS PER OPSS 702 & TOWNSHIP STANDARDS
33. THE PVC PIPE INSTALLATION SHALL INCLUDE TRACER WIRE. TRACER WIRE TO BE 12 GAUGE, MULTI-STRAND SHALL BE PLACED ON TOP & ATTACHED IN TWO PLACES ON EACH LENGTH OF PVC WATERMAIN. ALL CONNECTIONS SHALL BE MADE WITH "DRYCONN WATERPROOF CONNECTORS" OR APPROVED EQUAL. MUNICIPALITY MUST BE ON SITE DURING ANY TRACER WIRE CONTINUITY TESTING. ABOVE GROUND TRACER WIRE ACCESS BOXES SHALL BE ATTACHED TO UNDERSIDE OF BOTTOM FLANGE OF FIRE HYDRANTS.
34. CLEARANCE BETWEEN WATERMAINS AND SEWER TO BE AS PER MOE GUIDELINES. THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE WATER MAIN AND ANY SEWER SHALL BE 2.5m. A MINIMUM VERTICAL SEPARATION OF 0.5m MUST BE MAINTAINED BETWEEN WATER MAIN AND SEWERS. CLEARANCES ARE MEASURED FROM OUTSIDE EDGES OF PIPES.
35. 75mm PVC SLEEVES SHALL BE PROVIDED WHERE CURB-STOPS ARE LOCATED IN DRIVEWAYS.

E) STORM SEWERS

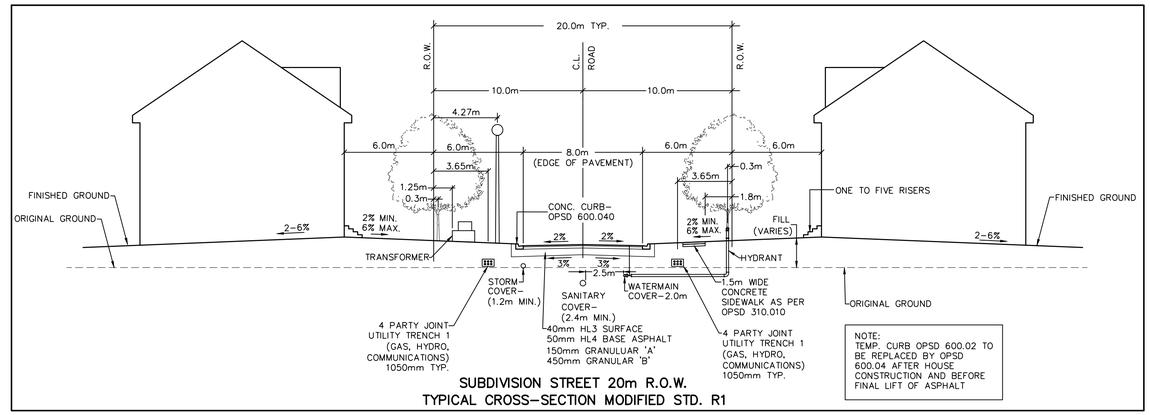
1. MH TO OPSD 701.010 AND DCBMH TO OPSD – 701.011, 701.012, 701.013.
2. SUMPS – 450mm PIPES AND UNDER REQUIRE 600mm SUMP IN CATCHBASINS AND MAINTENANCE HOLES
3. BENCHING – REQUIRED FOR PIPES OVER 450mm DIAMETER.
4. STEPS TO OPSD 405.010.
5. M.H. FRAMES AND GRATES TO OPSD – 401.01 OPEN COVER.
6. DICB'S TO OPSD – 705.030, 705.040 (TYPE A).
7. DCBMH FRAMES AND GRATES TO BE OPSD – 400.100, & OPSD-400.110 (SQUARE)
8. PIPE SUPPORT AT DCBMH'S TO OPSD – 708.020.
9. DCB LEADS MINIMUM 300mm ø CONNECTION FOR RIGID & FLEXIBLE MAIN PIPE SEWER AS PER OPSD – 708.010, 708.030.
10. PROTECTION DURING CONSTRUCTION AS PER OPSD – 808.01.
11. BACKFILL AND EMBEDMENT TO OPSD – 802.010 (FLEXIBLE PIPE) CLASS 'B', GRANULAR 'A' EMBEDMENT OR OPSD – 802.030, 802.031 AND 802.032 (RIGID PIPE) GRANULAR 'A' EMBEDMENT. REFER TO GENERAL NOTES.
12. BACKFILL AND EMBEDMENT MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S SPMDD.
13. FROST STRAPS PER OPSD 701.100.
14. STORM SEWERS 375mmø OR LESS TO BE PVC DR35. STORM SEWERS 450mm OR MORE TO BE CONCRETE CL-65D UNLESS OTHERWISE NOTED.
15. STORM SERVICES TO BE 100mmø PVC DR28 COLORED WHITE, WHERE SHARED STORM SERVICES ARE USED, SERVICE BETWEEN STORM SEWER CONNECTION AND PIPE TO BE 125mmø. MINIMUM SLOPE TO BE 1% AND MINIMUM COVER 1.2m.
16. CATCHBASIN LEADS TO REAR YARD CATCHBASINS TO BE CONCRETE CL-1000.
17. INLINE AREA DRAINS (AD) TO BE NYLOPLAST 15" (DWG No. 7003-110-026)



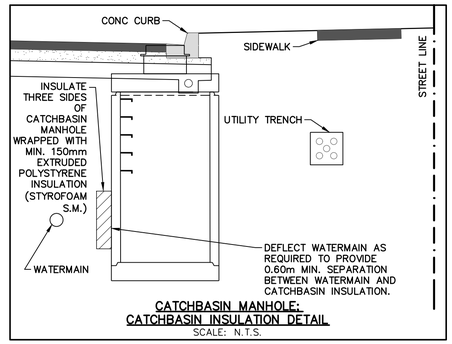
LAP JOINT DETAIL
NTS



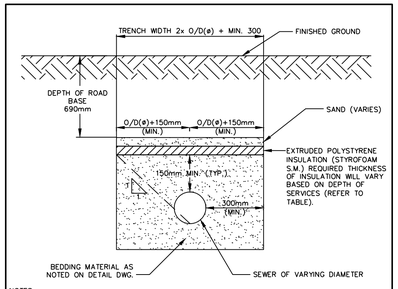
TYPICAL SINGLE FAMILY SERVICING LAYOUT
MODIFIED STD. S1
NTS



SUBDIVISION STREET 20m R.O.W.
TYPICAL CROSS-SECTION MODIFIED STD. R1



CATCHBASIN MANHOLE:
CATCHBASIN INSULATION 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. MIN. COVER REQUIREMENTS:
   STORM SEWER – 1.2m (TO CROWN)
   WATERMAINS – 2.0m (TO CROWN)
   SANITARY SEWER – 2.4m (TO CROWN OF PIPE)
3. INSULATION SHALL BE PLACED WITH ENDS CLOSELY LOCATED TOGETHER.
4. 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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6. DO NOT SCALE DRAWINGS.

BENCHMARKS

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY BENCHMARK No. 00820048005 HAVING A PUBLISHED ELEVATION OF 525.163 METRES

Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

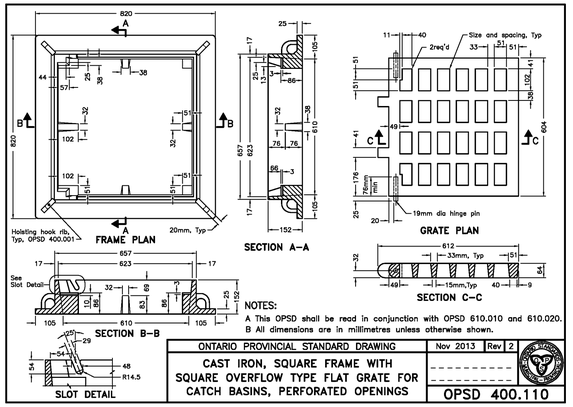
Engineer

Project
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing
CONSTRUCTION NOTES & DETAILS

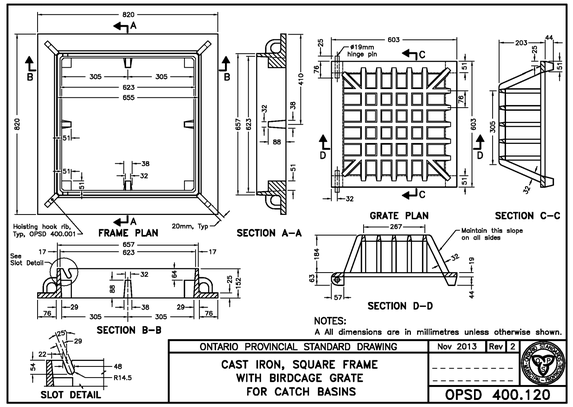
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060-6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C109



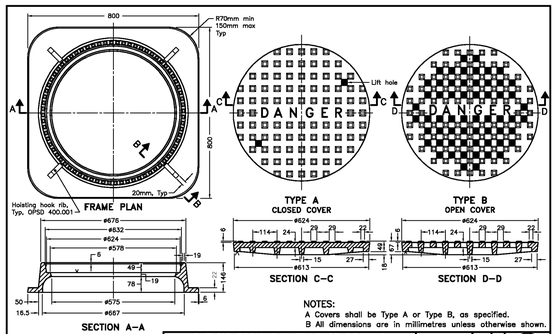
NOTES:
A This OPSD shall be read in conjunction with OPSD 610.010 and 610.020.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev 2
CAST IRON, SQUARE FRAME WITH SQUARE OVERFLOW TYPE FLAT GRATE FOR CATCH BASINS, PERFORATED OPENINGS		OPSD 400.110



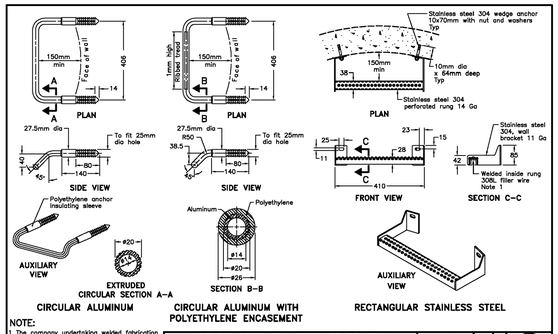
NOTES:
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev 2
CAST IRON, SQUARE FRAME WITH BIRDCAGE GRATE FOR CATCH BASINS		OPSD 400.120



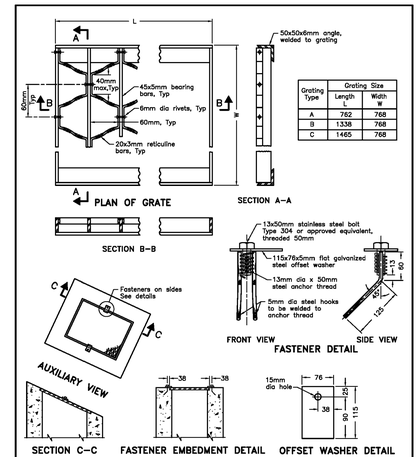
NOTES:
A Covers shall be Type A or Type B, as specified.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev 3
CAST IRON, SQUARE FRAME WITH CIRCULAR CLOSED OR OPEN COVER FOR MAINTENANCE HOLES		OPSD 401.010



NOTE:
1 The company undertaking welded fabrication shall be certified according to CSA W47.1. All welding shall be according to CSA W59.
A All aluminum components shall be 6000 series structural aluminum.
B All dimensions are in millimetres unless otherwise shown.

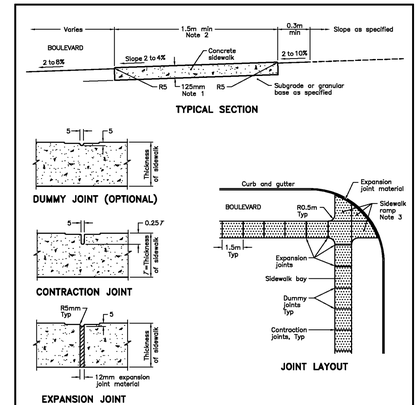
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev 3
MAINTENANCE HOLE STEPS HOLLOW		OPSD 405.010



Grating Type	Grating Size Length L	Width W
A	762	768
B	1338	768
C	1465	768

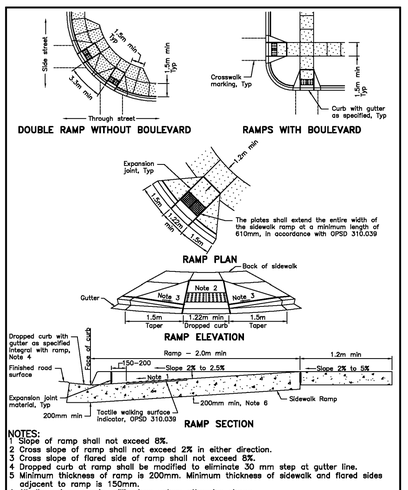
NOTES:
A Fastener to be inserted to maintain minimum concrete cover requirements.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2001	Rev 0
GALVANIZED STEEL HONEY COMB GRATING FOR DITCH INLET		OPSD – 403.010



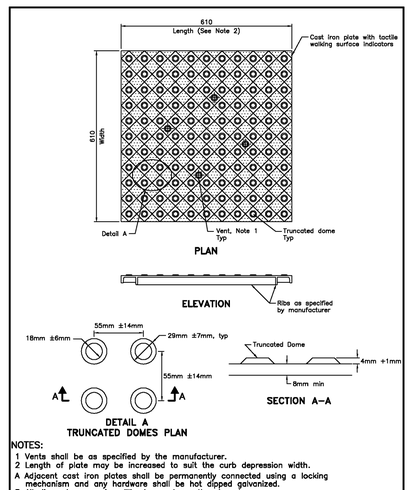
NOTES:
1 Sidewalk thickness at residential driveways and adjacent to curb shall be 150mm. At commercial and industrial driveways, the thickness shall be 200mm.
2 Sidewalk width shall be wider when specified.
3 This OPSD shall be read in conjunction with OPSD 310.030, 310.031, 310.032, 310.033 and 310.039.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
CONCRETE SIDEWALK		OPSD 310.010



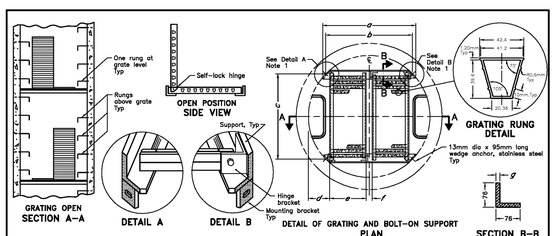
NOTES:
1 Slope of ramp shall not exceed 8%.
2 Cross slope of ramp shall not exceed 2% in either direction.
3 Cross slope of flared side of ramp shall not exceed 8%.
4 Dropped curb at ramp shall be modified to eliminate 30 mm step at gutter line.
5 Minimum thickness of ramp is 200mm. Minimum thickness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

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 0
CONCRETE SIDEWALK RAMPS AT UNSIGNALIZED INTERSECTIONS		OPSD 310.033



NOTES:
1 Vents shall be as specified by the manufacturer.
2 Length of plate may be increased to suit the curb depression width.
A Adjacent cast iron plates shall be permanently connected using a locking mechanism and any hardware shall be hot dipped galvanized.
B All dimensions are in millimetres unless otherwise shown.

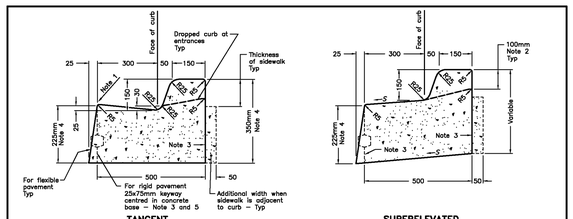
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 0
CONCRETE SIDEWALK RAMPS TACTILE WALKING SURFACE INDICATORS COMPONENT		OPSD 310.039



NOTES:
1 All hinge brackets and mounting brackets shall be welded all around to support angle.
A All aluminum in contact with concrete shall be thoroughly coated with asphalt paint.
B Maintenance hole depth between 5.0m and 10.0m, grate shall be placed at midpoint. Maintenance hole depth between 10.0m and 15.0m, grates shall be placed at third–points.
C All fasteners shall be 304 stainless steel.
D All welding shall be according to CSA W47.2 and W59.2.
E All aluminum components shall be 6000 series structural aluminum.
F All dimensions are in millimetres unless otherwise shown.

MH Diameter	No of Grates	a	b	c	d	e	f	g
1200	2	900	850	850	225	352	65	10
1500	2	1128	1078	1078	311	419	65	12
1800	3	1344	1293	1293	308	360	65	12
2400	4	1774	1724	1724	401	360	65	12

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev 3
ALUMINUM SAFETY PLATFORM FOR CIRCULAR MAINTENANCE HOLES		OPSD 404.020



LEGEND:
S – Rate of pavement superelevation in percent, %.

NOTES:
1 Flexible and composite pavement shall be placed 5mm above the adjacent edge of gutter.
2 When sidewalk is continuously adjacent, the dropped curb at entrances shall be reduced to 75mm.
3 For slipforming procedure a 5% batter is acceptable.
4 For composite pavement the depth of concrete curb shall be adjusted to depth of concrete pavement.
5 When tie bars are specified, refer to OPSD 552.010 and 552.020 for details.
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 STANDARD GUTTER		OPSD 600.040

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BENCHMARKS

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

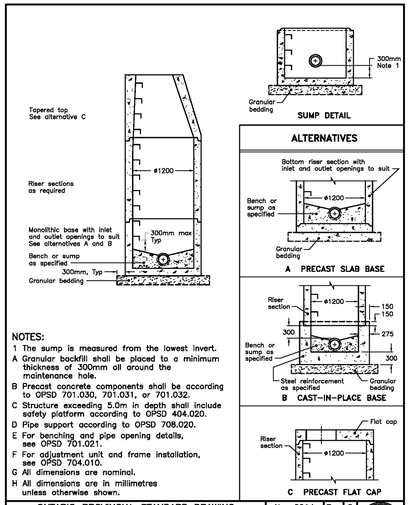
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

ONTARIO PROVINCIAL STANDARD DRAWINGS

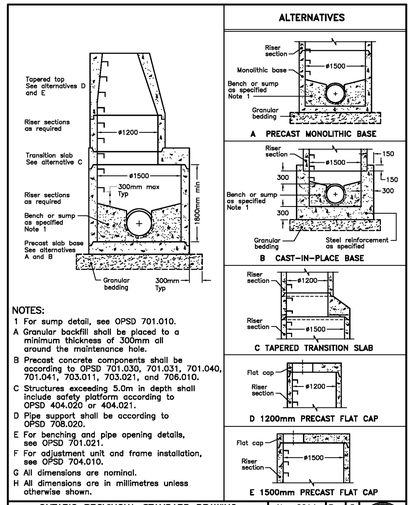
CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By A.W./R.W.	Check By A.W./R.W.	Drawing C110A



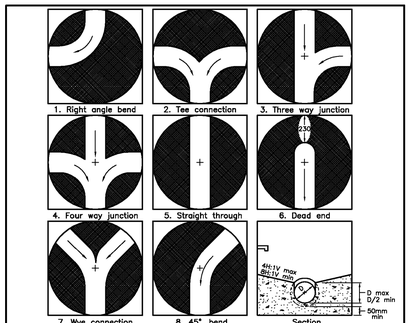
NOTES:
1 The sump is measured from the lowest invert.
A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
B Precast concrete components shall be according to OPSD 701.030, 701.031, or 701.032.
C Structure exceeding 5.0m in depth shall include safety platform 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



NOTES:
1 For sump detail, see OPSD 701.010.
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, 701.040, 701.041, 703.011, 703.021, and 706.010.
C Structures exceeding 5.0m in depth shall include safety platform according to OPSD 404.020 or 404.021.
D Pipe support shall be 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 1500mm DIAMETER		OPSD 701.011

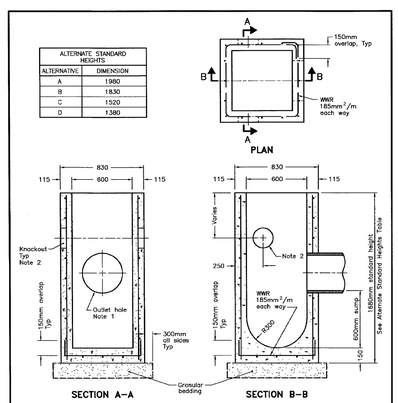


Maintenance Hole Diameter	No. 1–4	No. 5 and 6	No. 8	No.7 Inlet Hole	No.7 Outlet Hole
1200	700	860	780	700	860
1500	860	1220	960	860	1170
1800	1220	1485	1220	1220	1485
2400	1485	2020	1760	1485	2020
3000	1930	2450	2300	1930	2450
3600	2470	3085	2730	2470	3085

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

ALTERNATE STANDARD HEIGHTS	
ALTERNATIVE	DIMENSION
A	1980
B	1830
C	1520
D	1380



NOTES:
1 Outlet hole size 525mm diameter maximum, location as required.
2 200mm diameter knockout to accommodate subdrain. Knockout shall be 60mm deep.
A Centre reinforcing in base slab and walls ±20mm.
B Granular backfill shall be placed to a minimum thickness of 300mm all around the catch basin.
C Frame, grate, and adjustment units shall be installed according to OPSD 704.010.
D Pipe support shall be according to OPSD 708.020.
E All dimensions are nominal.
F All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 3
PRECAST CONCRETE CATCH BASIN 600x600mm		OPSD 705.010

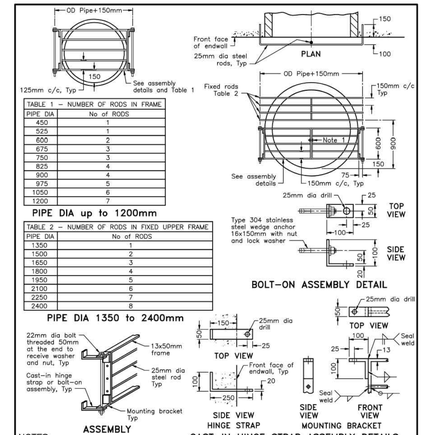


TABLE 1 – NUMBER OF RODS IN FRAME	
PIPE DIA	No of RODS
450	1
525	1
600	2
675	3
750	3
825	4
900	4
975	5
1050	6
1200	7

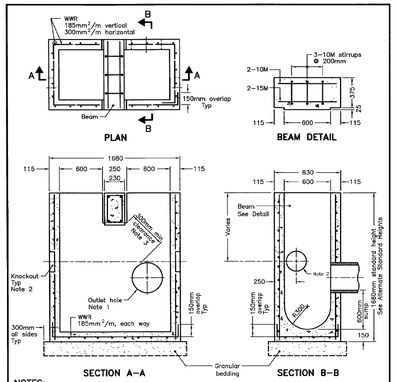
PIPE DIA up to 1200mm

TABLE 2 – NUMBER OF RODS IN FIXED UPPER FRAME	
PIPE DIA	No of RODS
1350	1
1500	2
1650	3
1800	4
1950	5
2100	6
2250	7
2400	8

PIPE DIA 1350 to 2400mm

NOTES:
1 Grates shall be secured by either a bolt and nut or a locking device as specified.
A Metal surfaces shall be either painted with 2 coats of self priming abrasion resistant immersion grade epoxy or hot dip galvanized, as specified.
B Frame, hinge strap, mounting bracket, and steel rods shall be medium grade steel.
C All welding shall be according to CSA W59 and W47.1.
D All dimensions are in millimetres unless otherwise shown.

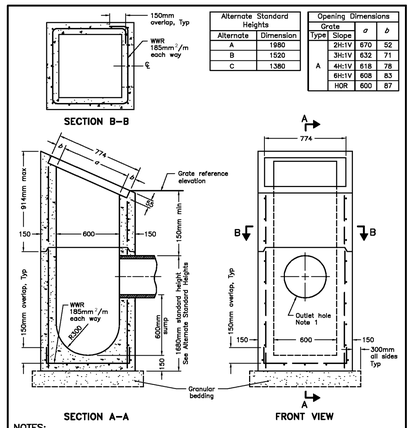
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 2
GRATING FOR CONCRETE ENDWALL		OPSD 804.050



NOTES:
1 Outlet hole size 525mm diameter maximum, location as required.
2 200mm diameter knockout to accommodate subdrain. Knockout shall be 60mm deep.
3 Minimum clearance between beam recess and hole for pipe shall be 300mm or minimum clearance can be 150mm with addition of two 15M size rebar on 45 degree diagonal.
A Centre reinforcing in base slab and walls ±20mm.
B Granular backfill shall be placed to a minimum thickness of 300mm all around the catch basin.
C Frame, grate, and adjustment units shall be installed according to OPSD 704.010.
D Pipe support shall be according to OPSD 708.020.
E All dimensions are nominal.
F All dimensions are in millimetres unless otherwise shown.

ALTERNATE STANDARD HEIGHTS	
ALTERNATIVE	DIMENSION
A	1980
B	1830
C	1680

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 3
PRECAST CONCRETE TWIN INLET CATCH BASIN 600 x 1450mm		OPSD 705.020

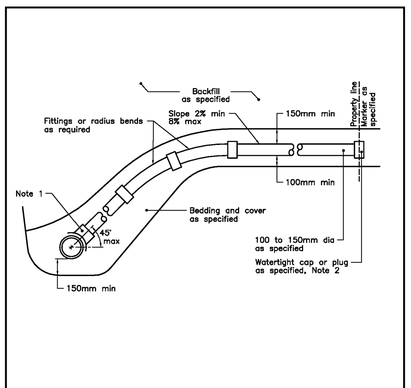


Alternate Standard Heights	
Alternate	Dimension
A	1980
B	1520
C	1380

Opening Dimensions			
Grate			
Type	Slope	a	b
A	2H:1V	670	52
	3H:1V	632	71
	4H:1V	618	78
	6H:1V	608	83
	HOR	600	87

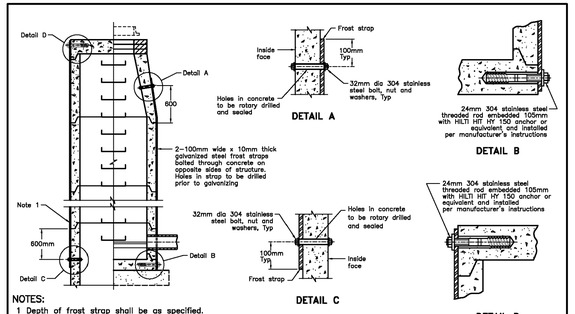
NOTES:
1 Outlet hole size 525mm maximum diameter, location as required.
A Where inlet is placed across ditch and is accessible to vehicular traffic, grating slope shall be 6H:1V or flatter.
B Center reinforcing in wall and slab ±25mm.
C Granular backfill shall be placed to a minimum thickness of 300mm all around the ditch inlet.
D Grating shall be according to OPSD 403.010.
E Pipe support shall be according to OPSD 708.020.
F All dimensions are nominal.
G All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 3
PRECAST CONCRETE DITCH INLET 600 x 600mm		OPSD 705.030



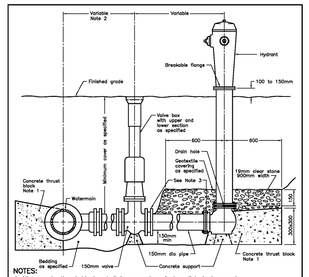
NOTES:
1 Sewer service connections to the main pipe sewer shall be made using factory made tees or wyes, strap–on–saddles, or other approved saddles.
2 Cap or plug at property line shall be adequately braced.
A Maintenance holes shall be used at the main sewer to connect service connections greater than or equal to 200mm.
B For new construction, saddles shall be installed on the main pipe before that pipe is laid.
C Approved cut–in tool shall be used for field made connections.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2011	Rev 2
SEWER SERVICE CONNECTIONS FOR FLEXIBLE MAIN PIPE SEWER		OPSD 1006.020



NOTES:
1 Depth of frost strap shall be as specified.
A Frost straps shall be placed so they do not interfere with sewer pipe openings and the steps.
B Frost straps shall be placed when specified.
C Galvanizing shall be according to CAN/CSA G164.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2010	Rev 2
FROST STRAP INSTALLATION		OPSD 701.100



NOTES:
1 All concrete thrust blocks shall be poured against undisturbed ground.
2 When specified, for watermains 400mm and less, locate valve within 1.0m of centreline of watermain. Retaining and restraining devices shall be utilized. For watermains 600mm and over, bolt valve with flanged end directly to flanged tee.
3 When specified, retaining and restraining devices shall be utilized, in addition to thrust blocks.
A Bond breaker shall be used between the concrete and the fittings and appurtenances.
B Bolts and nuts for buried flange to flange connections shall be stainless steel.
C When required, flange of standpipe extensions shall not be in frost zone.
D This OPSD shall be read in conjunction with OPSD 1103.010 and 1103.020.
E Backfill material within 500mm of service box shall be native or imported, as specified.
F All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev 2
HYDRANT INSTALLATION (MODIFIED PER TWSP STANDARD W3)		OPSD 1105.010

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4. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
6. DO NOT SCALE DRAWINGS.

BENCHMARKS

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY BENCHMARK No. 00820048005 HAVING A PUBLISHED ELEVATION OF 525.163 METRES

Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

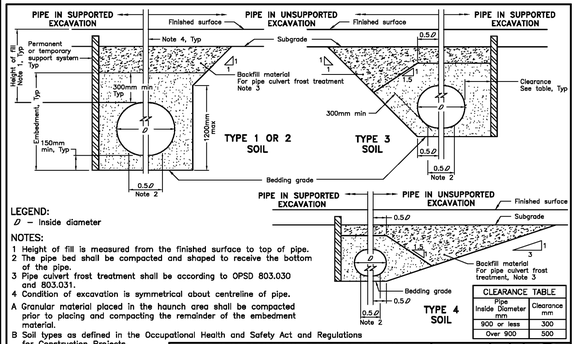
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

ONTARIO PROVINCIAL STANDARD DRAWINGS

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C110B

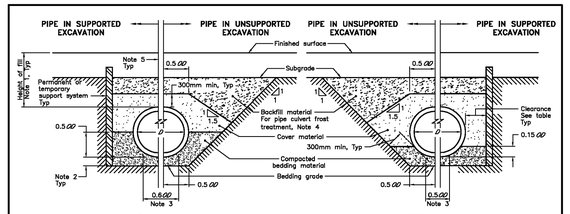


LEGEND:
Ø – Inside diameter

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

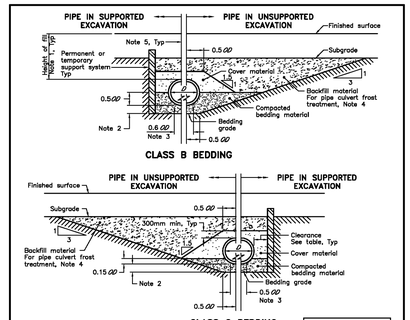


NOTES:
1 Height of fill is measured from the finished surface to top of pipe.
2 The minimum bedding depth below the pipe shall be 0.15Ø. In no case shall this dimension be less than 150mm or greater than 300mm.
3 The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
4 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
5 Condition of excavation is symmetrical about centreline of pipe.
A Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
B All dimensions are in metres unless otherwise shown.

LEGEND:
Ø – Inside diameter
OØ – Outside diameter

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

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 3
RIGID PIPE BEDDING, COVER, AND BACKFILL TYPE 3 SOIL – EARTH EXCAVATION		OPSD 802.031



LEGEND:
Ø – Inside diameter
OØ – Outside diameter

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

NOTES:
1 Height of fill is measured from the finished surface to top of pipe.
2 The minimum bedding depth below the pipe shall be 0.15Ø. In no case shall this dimension be less than 150mm or greater than 300mm.
3 The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
4 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
5 Condition of excavation is symmetrical about centreline of pipe.
A Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
B All dimensions are in metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 3
RIGID PIPE BEDDING, COVER, AND BACKFILL TYPE 4 SOIL – EARTH EXCAVATION		OPSD 802.032

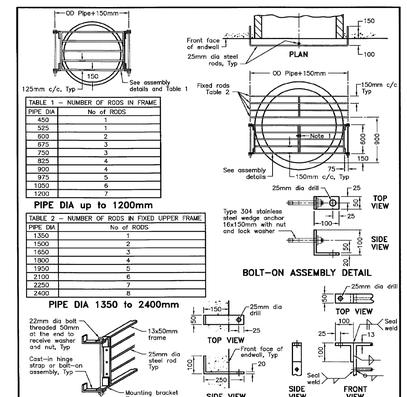


TABLE 1 – NUMBER OF RODS IN FRAME	
PIPE DIA	No of RODS
450	1
525	1
600	2
675	3
750	3
825	4
900	4
975	5
1050	6
1200	7

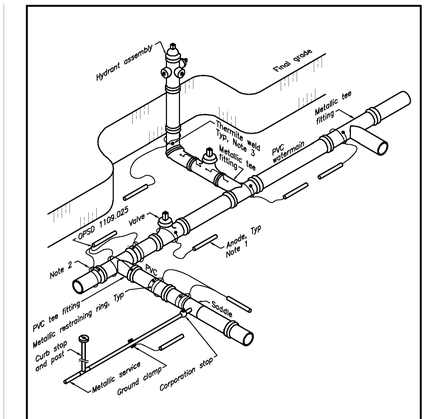
PIPE DIA up to 1200mm

TABLE 2 – NUMBER OF RODS IN FIXED UPPER FRAME	
PIPE DIA	No of RODS
1350	1
1500	2
1650	3
1800	4
1950	5
2100	6
2250	7
2400	8

PIPE DIA 1350 to 2400mm

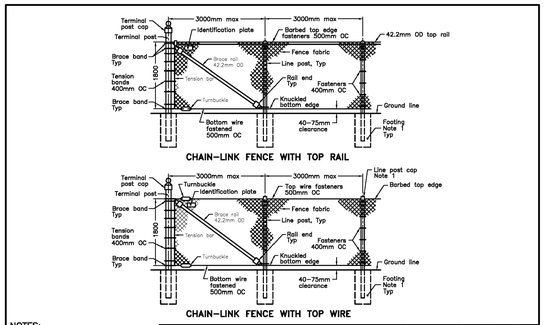
NOTES:
1 Grates shall be secured by either a bolt and nut or a locking device as specified.
A Metal surfaces shall be either painted with 2 coats of self priming abrasion resistant immersion grade epoxy or hot dip galvanized, as specified.
B Frame, hinge strap, mounting bracket, and steel rods shall be medium grade steel.
C All welding shall be according to CSA W59 and W47.1.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev 1
GRATING FOR CONCRETE ENDWALL		OPSD 804.050



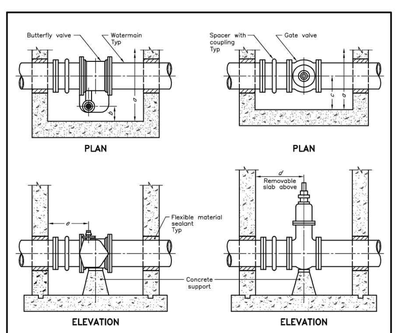
NOTES:
1 Anode shall be placed at least 1.0m away from the water system pipe and appurtenances and as deep as the bottom of the pipe and appurtenances. Minimum distance between anodes shall be 1.0m.
2 Anode connecting wire shall be loosely wrapped around pipes and fittings and knotted.
3 Protective coating shall be applied to all thermite welds.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev 2
CATHODIC PROTECTION FOR PVC WATERMAIN SYSTEMS		OPSD 1109.011



NOTES:
1 For footing details and line post cap detail refer to OPSD 972.132.
A Fence as viewed from the roadway.
B All dimensions are in millimetres unless otherwise shown.

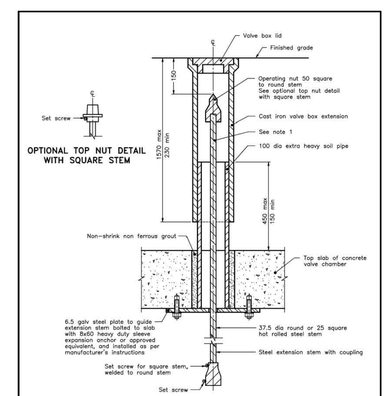
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev 2
FENCE, CHAIN–LINK INSTALLATION – ROADWAY		OPSD 972.130



	Pipe Diameter	
	100 to 250mm	300 to 350mm
a – Chamber Width	1100	1300
b	300	300
c	550	650
d	450	450
e	550	550

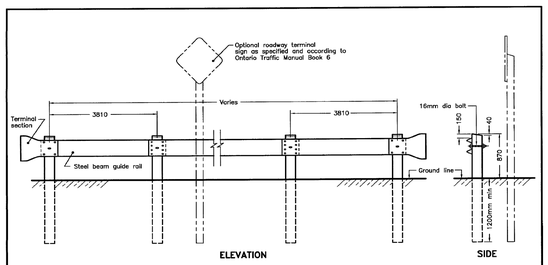
NOTES:
A Bond breaker shall be used between the concrete and the fittings and appurtenances.
B Concrete support shall be minimum 200mm high.
C This OPSD shall be read in conjunction with OPSD 1100.010.
D All joints shall be restrained.
E All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev 2
PIPING LAYOUT FOR BUTTERFLY AND GATE VALVES UP TO 350mm DIAMETER IN CAST–IN–PLACE CHAMBERS		OPSD 1100.011



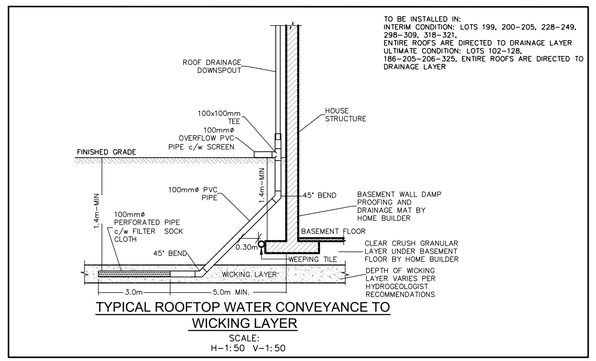
NOTES:
1 Either the square or round stem shall be used with specified connections.
A Valve stem and valve shall be placed plumb.
B Stem guide is required if the unsupported length exceeds 2.0m.
C All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 4
VALVE OPERATOR		OPSD 1101.020



NOTES:
A Steel beam guide rail mounting heights shall be as specified.
B This OPSD to be read in conjunction with OPSD 912.101.
C Posts: Size 200x200mm nominal, 190x190mm ±1.5mm dressed, tops to have 25mm chamfer.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2008	Rev 1
GUIDE RAIL SYSTEM, STEEL BEAM BARRICADE INSTALLATION		OPSD 912.532



TYPICAL ROOFTOP WATER CONVEYANCE TO WICKING LAYER
SCALE:
H–1:50 V–1:50

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BENCHMARKS
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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer
Engineer

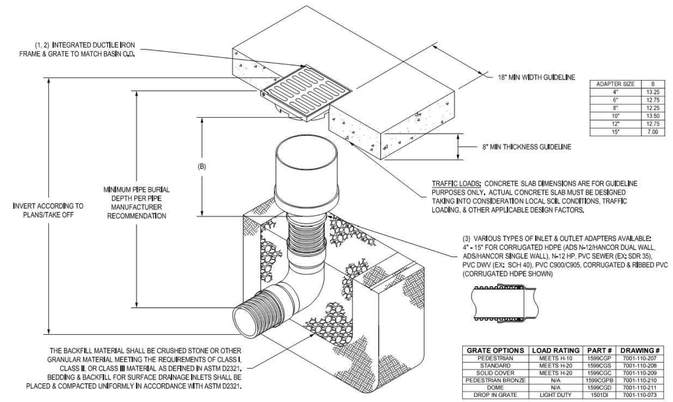
Project
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing
ONTARIO PROVINCIAL STANDARD DRAWINGS

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C110C

NYLOPLAST 15" INLINE DRAIN: 2715AG _ _ X



ADAPTER SIZE	B
4"	13.25
6"	12.75
8"	12.25
10"	13.50
12"	12.75
15"	7.00

GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	1599CGF	7001-110-207
STANDARD	MEETS H-20	1599CGS	7001-110-208
SOLID COVER	MEETS H-20	1599CGC	7001-110-209
PEDESTRIAN BRONZE	N/A	1599CGPB	7001-110-210
DOME	N/A	1599CGD	7001-110-211
DROP IN GRATE	LIGHT DUTY	15010I	7001-110-073

1 - GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE BRONZE GRATE.
2 - FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER.
4 - DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS MAY VARY.
5 - DIMENSIONS ARE IN INCHES.
6 - SEE DRAWING NO. 7001-110-275 FOR ADS N-12 & HANCOR DUAL WALL BELL INFORMATION & DRAWING NO. 7001-110-364 FOR N-12 HP BELL INFORMATION.

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DRAWN BY EBC MATERIAL
DATE 04-03-06
REVISED BY MHH PROJECT NO./NAME
DATE 03-15-16
DWG SIZE A SCALE 1:20 SHEET 1 OF 1

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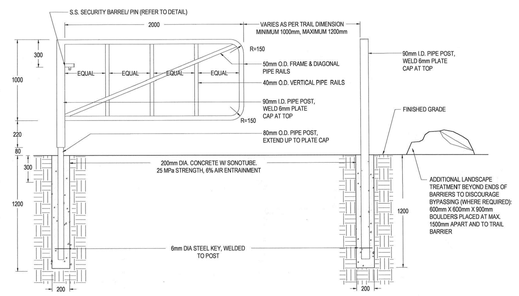
3128 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2486
www.nyloplastusa.com

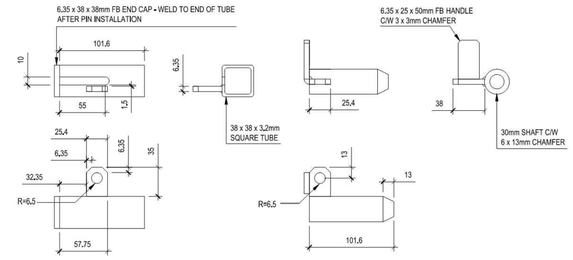
TITLE
15 IN INLINE DRAIN QUICK SPEC INSTALLATION DETAIL
DWG NO. 7001-110-026 REV E



NOTES:
- ALL GATE METAL EXCEPT S.S. SECURITY BARREL/PIN TO BE SCHEDULE 40 STEEL PIPE, HOT DIP GALVANIZED TO MEET CSA-G164-M1981 AFTER FABRICATION. ALL WELDS TO MEET CSA W59-M1989 AND BE GROUND SMOOTH. TOUCH UP ALL MINOR DAMAGED AREAS WITH ZINC BASED PAINT AFTER INSTALLATION. POSITION DRAINAGE HOLES TO MINIMIZE WATER INGRESS. FILL HOLES IF DIRECTED BY TOWNSHIP REPRESENTATIVE.
- EXACT LOCATION OF GATE AND ANY ADDITIONAL LANDSCAPE TREATMENTS TO BE AS DIRECTED ON SITE BY TOWNSHIP REPRESENTATIVE.
- THIS DRAWING MUST BE READ IN CONJUNCTION WITH DRAWING L4, STAINLESS STEEL SECURITY BARREL/PIN FOR TRAIL BARRIER GATE.

TOWNSHIP OF SOUTHGATE	DATE JAN. 2016	REV. 0
TRAIL BARRIER GATE	STD. **L3**	

TRITON ENGINEERING SERVICES LIMITED



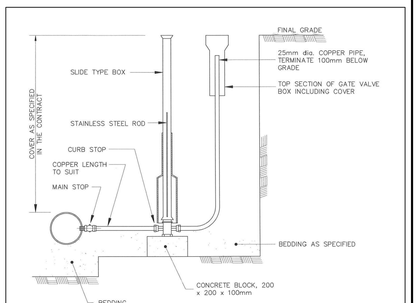
BARREL DETAIL

PIN DETAIL

NOTES:
- REMOVE GALVANIZING FROM GATE AT BARREL/PIN WELD AREA AND FULLY COAT WELD SURFACE WITH ZINC BASED PAINT OVERLAPPING ONTO STAINLESS STEEL.

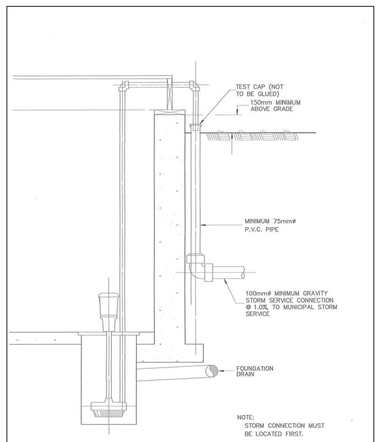
TOWNSHIP OF SOUTHGATE	DATE JAN. 2016	REV. 0
STAINLESS STEEL SECURITY BARREL/PIN FOR TRAIL BARRIER GATE & MAINTENANCE ACCESS GATE	STD. **L4**	

TRITON ENGINEERING SERVICES LIMITED

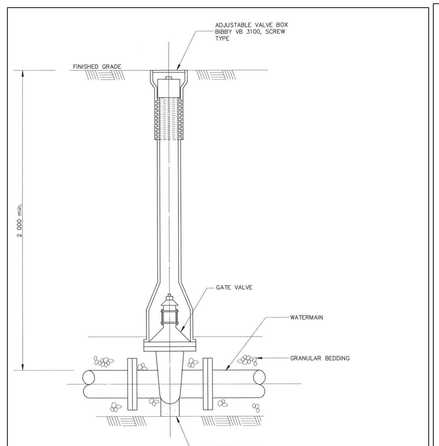


NOTES:
1. SADDLES SHALL BE USED FOR PLASTIC PIPE.
2. ALL DIMENSIONS ARE IN MILLIMETRES OR METRES UNLESS OTHERWISE SHOWN.

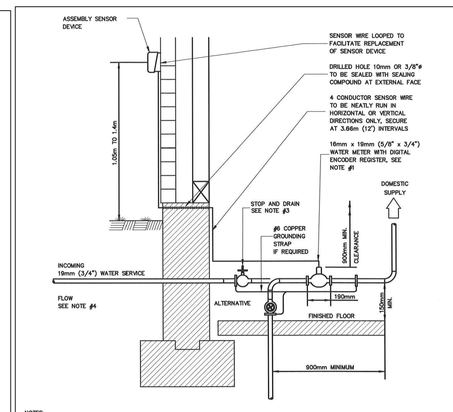
TOWNSHIP OF SOUTHGATE	DATE APRIL, 2001	REV. 0
25mm BLOW OFF INSTALLATION	STD. **W1**	



TOWNSHIP OF SOUTHGATE	DATE APRIL, 2001	REV. 0
SUMP PUMP TO STORM SEWER CONNECTION	STD. **S2**	

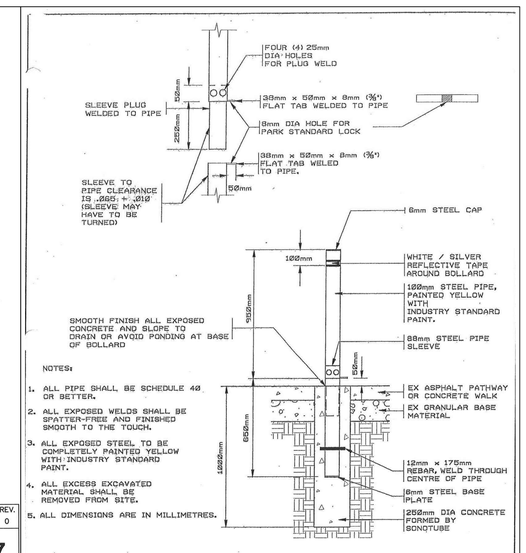


TOWNSHIP OF SOUTHGATE	DATE APRIL, 2001	REV. 0
VALVE AND VALVE BOX	STD. **W2**	



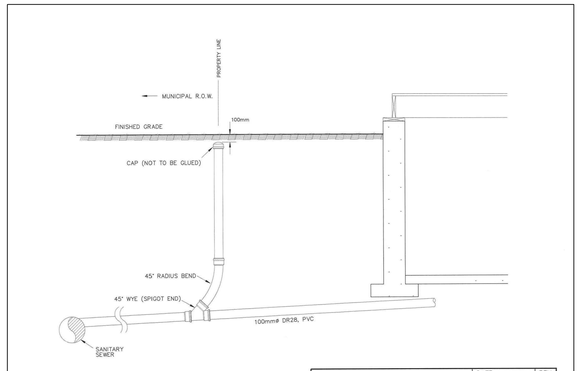
NOTES:
1. – METER SHALL BE 16mm (5/8") METER. REGISTRATION IN CUBIC METRES. 19mm (3/4") THREADED CONNECTIONS.
2. – SUPPLY AND INSTALL REMOTE READOUT DEVICE ON OUTSIDE WALL WITHIN 2.0m OF THE FRONT WALL AND ON THE SAME SIDE AS THE HYDRO METER. REMOTE READOUT DEVICE SHALL BE SUITABLE FOR TOUCH READ AUTOMATED READING AND BILLING SYSTEM.
3. – STOP AND DRAIN VALVE TO BE THE SAME SIZE AS INCOMING PIPE.
4. – IF HOT WATER TANK IS WITHIN 3.0m OF THE METER, A CHECK VALVE IS REQUIRED BETWEEN THE METER AND THE HOT WATER TANK.
5. – METER SHALL BE INSTALLED USING THREADED CONNECTIONS ONLY.

TOWNSHIP OF SOUTHGATE	DATE NOVEMBER, 2004	REV. 0
TYPICAL WATER METER INSTALLATION	STD. **W7**	



NOTES:
1. ALL PIPE SHALL BE SCHEDULE 40 OR BETTER.
2. ALL EXPOSED WELDS SHALL BE SPATTER-FREE AND FINISHED SMOOTH TO THE TOUCH.
3. ALL EXPOSED STEEL TO BE COMPLETELY PAINTED YELLOW WITH INDUSTRY STANDARD PAINT.
4. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM SITE.
5. ALL DIMENSIONS ARE IN MILLIMETRES.

REMOVABLE BOLLARD



TOWNSHIP OF SOUTHGATE	DATE SEPTEMBER,2004	REV. 0
SANITARY SERVICE CONNECTION WITH CLEAN-OUT	STD. **S3**	

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6. DO NOT SCALE DRAWINGS.

BENCHMARKS

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY BENCHMARK No. 00820048005 HAVING A PUBLISHED ELEVATION OF 525.163 METRES

Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing
MUNICIPAL STANDARD DRAWINGS

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060-6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C110D

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4. CONCRETE SLAB SHALL BE PLACED ON 150 mm MINIMUM THICK BASE OF GRANULAR MATERIAL (OPSS GRANULAR 'A' OR EQUIVALENT) COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.

5. GRANULAR BASE SHALL BE PLACED ON SOIL CAPABLE OF SAFELY SUSTAINING A BEARING PRESSURE OF NOT LESS THAN 30 kPa.

6. CONCRETE CONSTRUCTION SHALL CONFORM TO CSA A23.1.

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- MAXIMUM COARSE AGGREGATE SIZE: 20 mm
- MAXIMUM SLUMP: 90 mm
- AIR CONTENT: 5% TO 8%

9. SURFACE OF SLAB TO BE SLOPED 2% -0/+4 % TO THE NEAREST PLUVIAL DRAIN.

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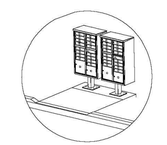
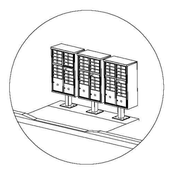


COMMUNITY MAILBOX SHOWN WITH PEDESTAL INSTALALTION.
PRECAST CONCRETE BASE COULD ALSO BE USED.



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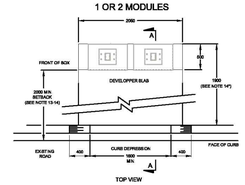
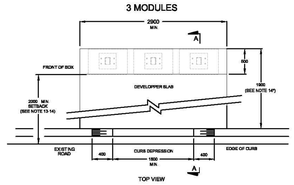
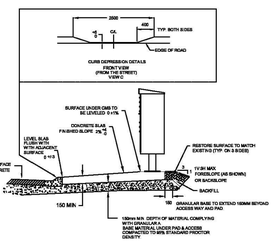
1 OR 2 MODULES



3 MODULES



ROAD FACING



SECTION A-A

REV # / # RÉV	DATE	BY / PAR.	CHKD / VÉR.	EA / RG	DCC / CCD
	DESCRIPTION				

CANADA POST / POSTES CANADA

ENGINEERING SERVICES / SERVICES D'INGÉNIERIE		DATE DD-MM-YYYY JJ-MM-AAAA
CREATED BY / CRÉÉ PAR	M ALLARD	20-06-2014
CHECKED BY / VÉRIFIÉ PAR	P. BENOIT	20-06-2014
ENGINEERING AUTH. / SERP DU GÉNIE	T. MACGILLIVRAY	20-06-2014
PROJECT / PROJET		
CPC ID	E10X-ENG-06	
TITLE / TITRE	DEVELOPER PROVIDED CONCRETE SLAB SPECIFICATION ROAD FACING	
SCALE / ÉCHELLE	NTS	SHEET / FEUILLE 1 OF / DE 1

TO CANADA POST
LOLIER OFFICIAL SPECIFICALL CHANGING AND IS VALIDATION
SALT & SPECIFICATION CERTIFICAL CHANGING DATE OR VALIDATION

BY / PAR: V.P.
DATE: 2014 - 6 - 20
A.M. / R.W.
JOBJOB: V.P.
CROSSING TO CROSSING 1 TO 2
TO 2

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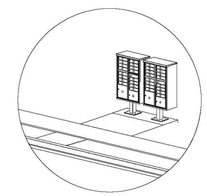

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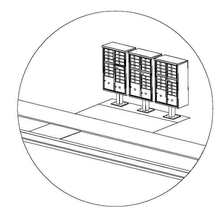

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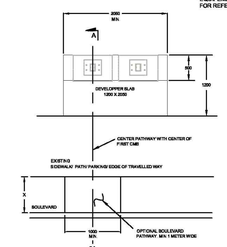

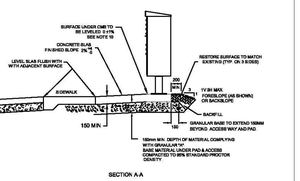

SECTION A-A

SIDEWALK ROAD FACING

REV # / # RÉV	DATE	BY / PAR.	CHKD / VÉR.	EA / RG	DCC / CCD
	DESCRIPTION				

CANADA POST / POSTES CANADA

ENGINEERING SERVICES / SERVICES D'INGÉNIERIE		DATE DD-MM-YYYY JJ-MM-AAAA
CREATED BY / CRÉÉ PAR	M ALLARD	20-06-2014
CHECKED BY / VÉRIFIÉ PAR	P. BENOIT	20-06-2014
ENGINEERING AUTH. / SERP DU GÉNIE	T. MACGILLIVRAY	20-06-2014
PROJECT / PROJET		
CPC ID	E10X-ENG-07	
TITLE / TITRE	DEVELOPER PROVIDED CONCRETE SLAB SPECIFICATION SIDEWALK ROAD FACING	
SCALE / ÉCHELLE	NTS	SHEET / FEUILLE 1 OF / DE 1

TO CANADA POST
LOLIER OFFICIAL SPECIFICALL CHANGING AND IS VALIDATION
SALT & SPECIFICATION CERTIFICAL CHANGING DATE OR VALIDATION

BY / PAR: V.P.
DATE: 2014 - 6 - 20
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BENCHMARKS

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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

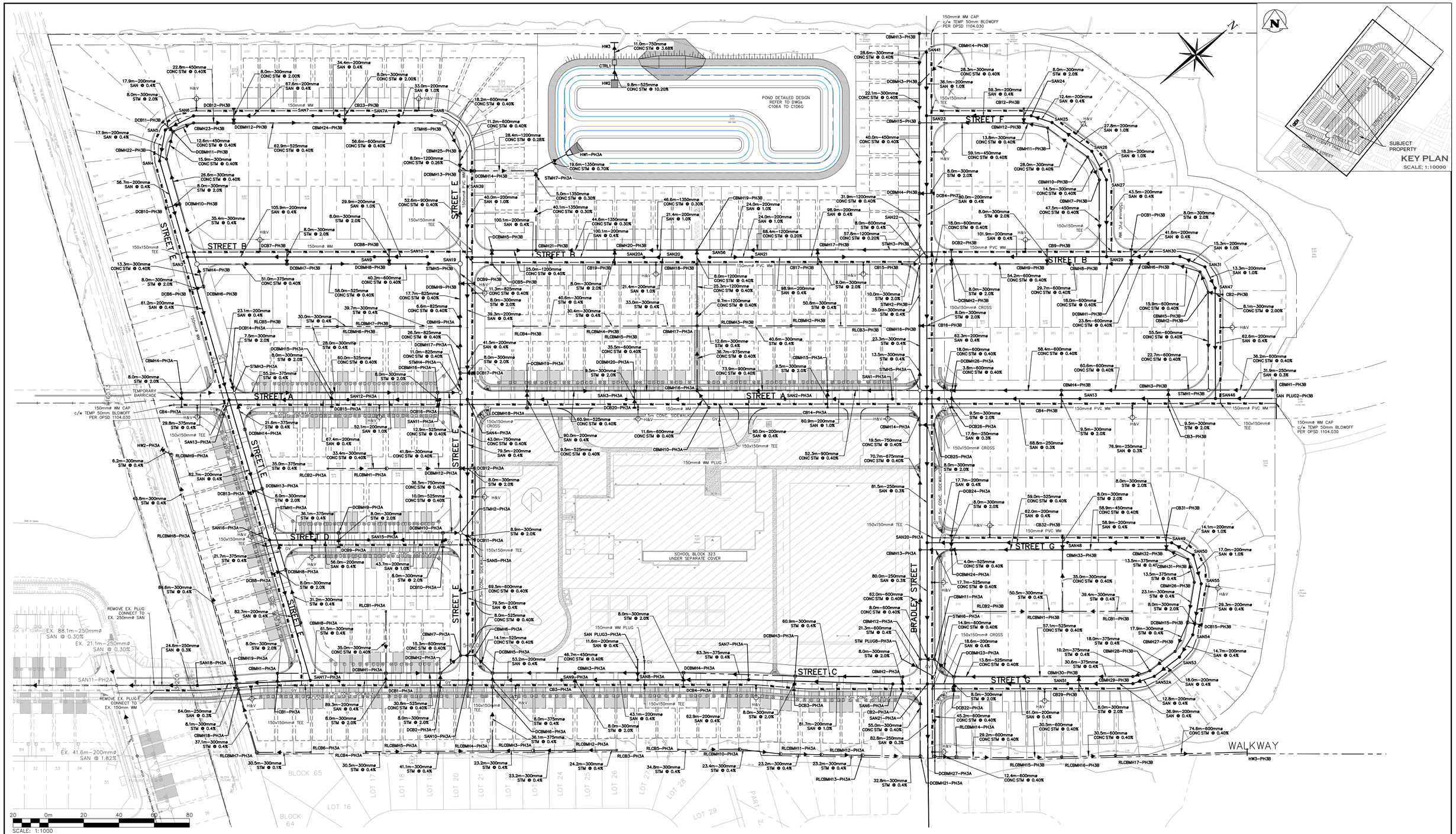
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

CANADA POST COMMUNITY SUPERBOX DETAILS

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	C110E



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Engineer

Engineer

Project

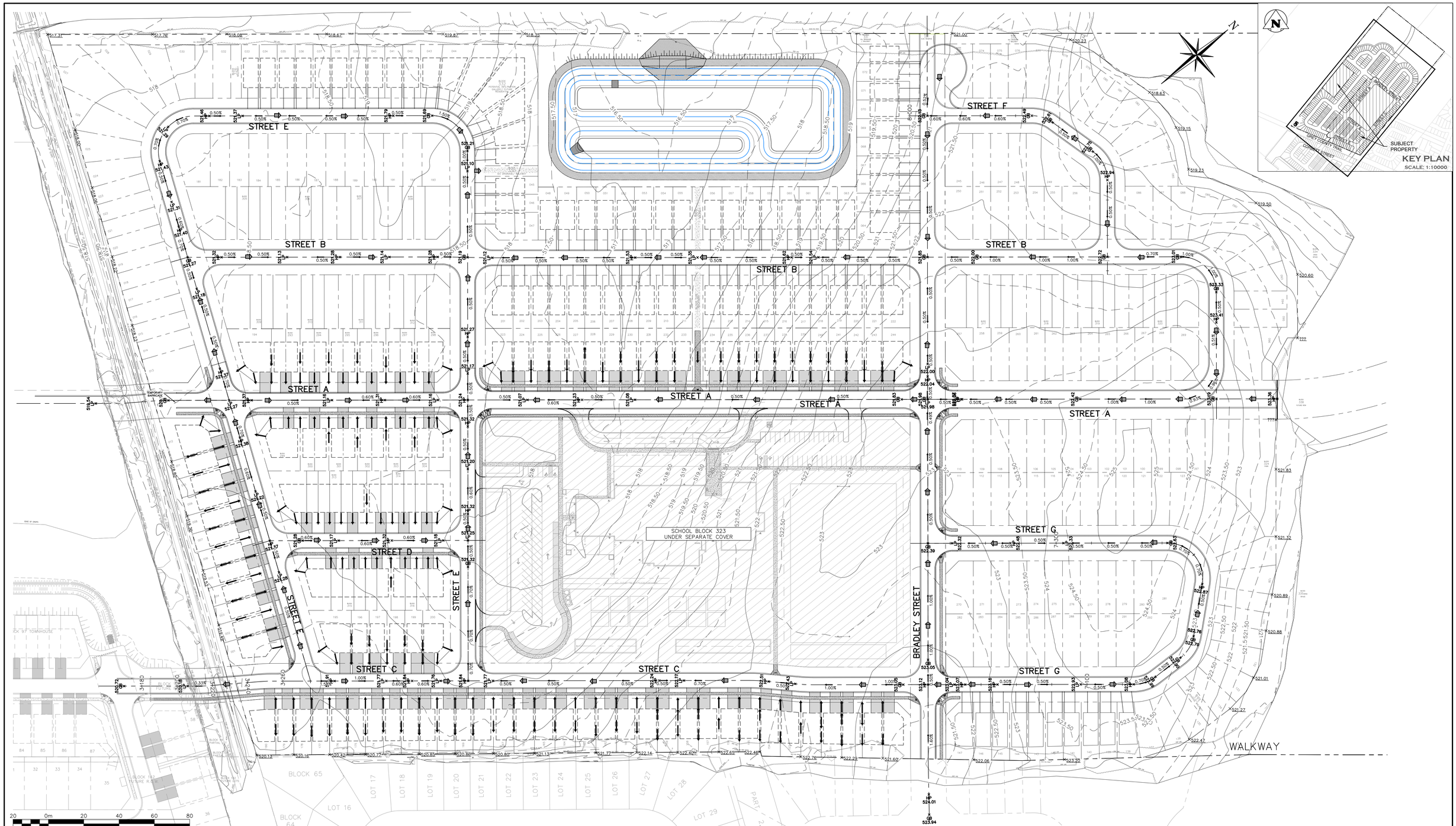
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

ULTIMATE GENERAL SERVICING PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060-6220
Check By	**Check By**	**Drawing**
A.W./R.W.	A.W./R.W.	GEN



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Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

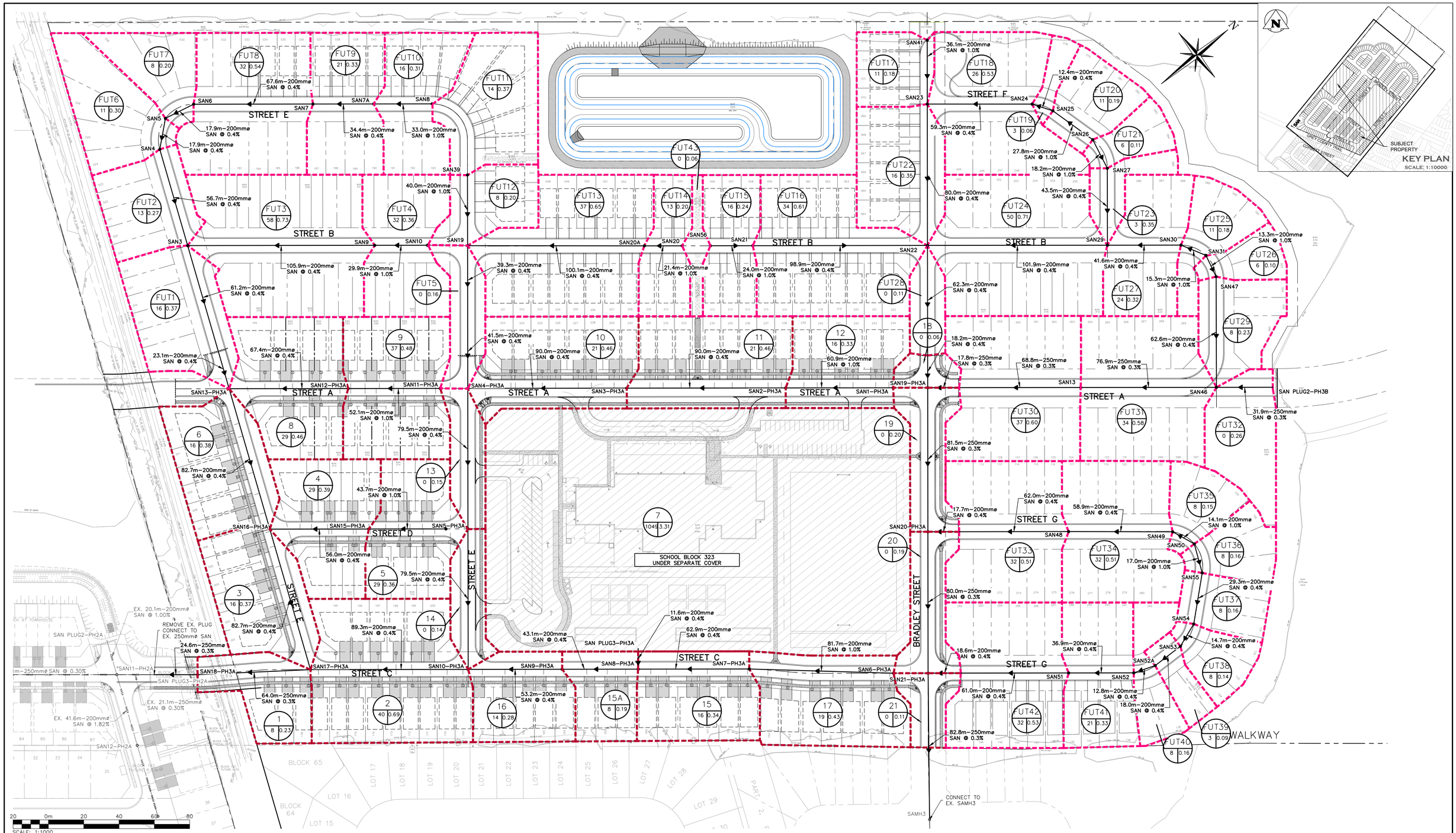
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

ULTIMATE GRADING PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	GR



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Engineer

Engineer

Project

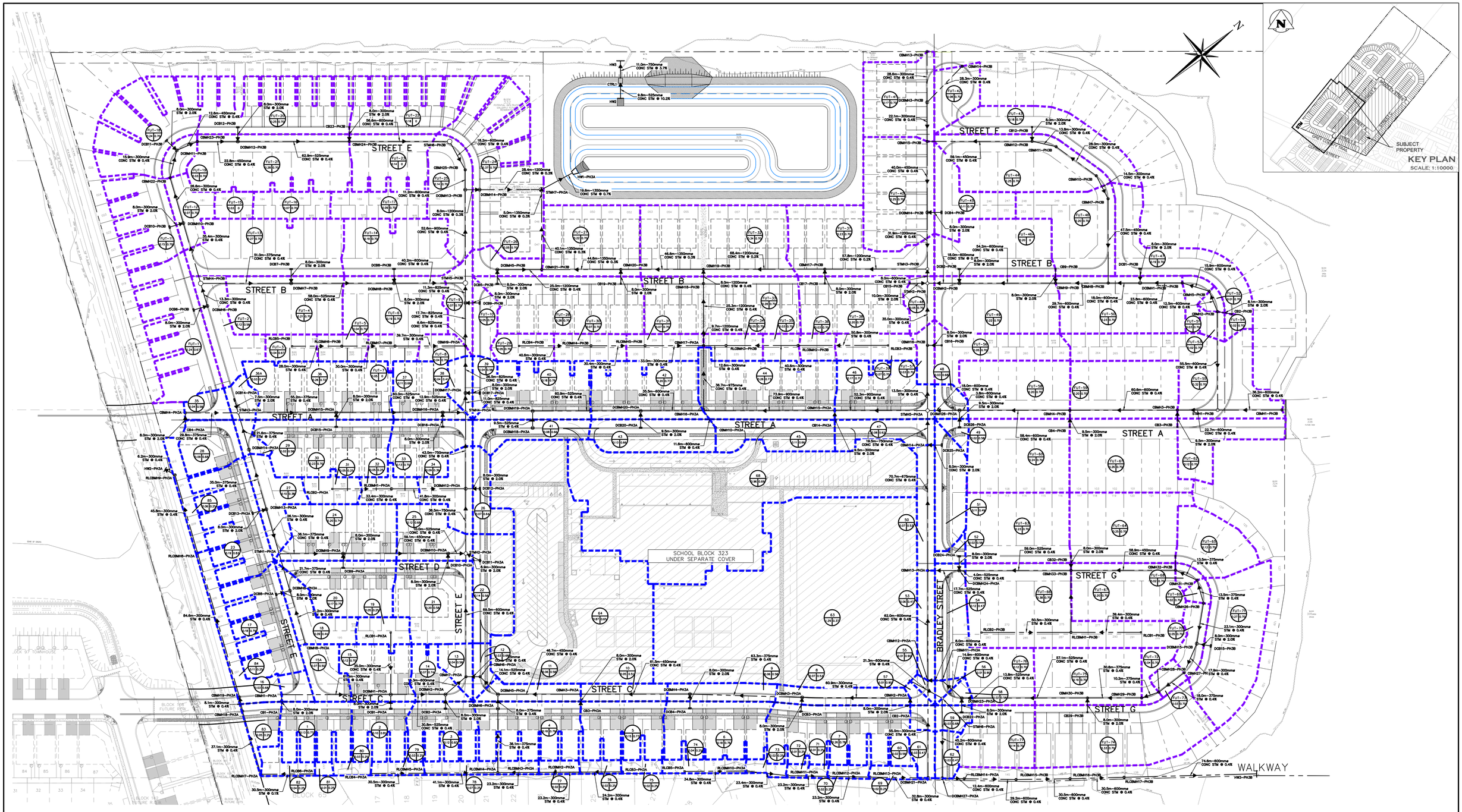
GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

ULTIMATE SANITARY DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060-6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	SAN



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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.

BENCHMARKS

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO ONTARIO MINISTRY OF NATURAL RESOURCES AND FORESTRY BENCHMARK No. 00820048005 HAVING A PUBLISHED ELEVATION OF 525.163 METRES

Town

No.	ISSUE	DATE: YYYY/MM/DD
1	ISSUED FOR 1st SUBMISSION	2025/05/05

Engineer

Engineer

Project

GLENELG EXPANSION LANDS
TOWNSHIP OF SOUTHGATE

Drawing

ULTIMATE STORM DRAINAGE PLAN

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
V.P.	V.P./A.W./R.W.	1060–6220
Check By	Check By	Drawing
A.W./R.W.	A.W./R.W.	STM