

memorandum

GEOCRES No.
30M14-327



Tel: 235-3731

To: F.M. Conforti
Utility Co-ordinator
District 6, Toronto

Date: 1988 05 18

From: Foundation Design Section
Room 315, Central Building

RE: Summerfield Park Subdivision
Town of Whitchurch - Stouffville
Proposed Storm Sewer Crossing
FDS WO 88-11004
Hwy. 47, District 6, Toronto

As requested, we have reviewed the PMG Consulting Engineers proposal to install a storm sewer across Hwy. 47.

We have received several drawings and have assumed that you refer to the 24 m long, 1200 mm diameter pipe detailed in Section A-A on PMG Dwg. B-8520-9 dated January, 1987.

Based on our review, it appears that the 1.2 m sewer has a minimum cover of 0.8 m above the crown. In order to develop adequate arching a minimum cover of 1.5 X to 2 X diameter is usually required for tunnelling operations. If the sewer can not be redesigned to provide adequate cover, consideration should be given to open excavation methods. However, settlement within the backfill material for the cut will occur. These settlements can be minimized by using granular backfill and ensuring proper compaction.

Regardless of which installation method is adopted, the type of subsurface material and the elevation of the groundwater are important considerations for design and construction.

If there are any questions, please advise.

D. H. Dundas

D.H. Dundas, P. Eng.
Sr. Foundations Engineer

for

M. Devata, P. Eng.
Chief Foundations Engineer
(East)

DHD/mmj



R.V. Anderson Associates Limited

consulting engineers and architect

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September 1, 1988

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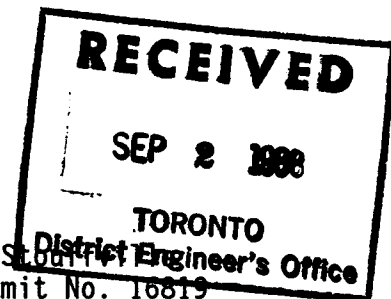
Ministry of Transportation
and Communications
District No. 6
5000 Yonge Street
Willowdale, Ontario
M2N 6E9

RVA 2929

Attention: Mr. F.M. Conforti

Dear Sir:

Re: Summerfield Park - Town of Whitchurch, Storm Sewer Crossing - Encroachment Permit No. 16819



On August 16, we met with Mr. B. Kimberley on site to discuss the construction of the storm sewer crossing. As a result of our meeting, we decided to approach MTO to reconsider installing the storm sewer by means of open cutting a trench across the highway.

Subsequent to our meeting, two test pits were excavated; one in the shoulder on the north side of the highway and one in the shoulder on the south side. The underlying material was noted as follows:

1. North Side:

0 - 0.3 m - gravel
0.3 - 1.5 m - sand (wet)
1.5 - 1.9 m - topsoil
1.9 - - - sand (test excavation ended at 2.5 m)

2. South Side:

0 - 0.4 m - gravel
0.4 - 0.5 m - topsoil
0.5 - - - sand (percolating water)
- branches/stumps (test pit excavation ended at 2.0 m)

It is our belief that due to the nature of the material under the highway as evidenced by the test pits and the relative shallowness of the crossing, that it is probable that the highway will subside during construction if boring and jacking or tunneling is used as the construction method.

Foundation
Traffic
Interference

Summerfield Park
September 1, 1988
Ministry of Transportation
and Communications

We request that MTO reconsider approving the installation of the storm sewer crossing by the open cut method of construction. To support our request, we have prepared a detour drawing (a copy is enclosed) showing a concept which we feel will minimize any disruption to traffic.

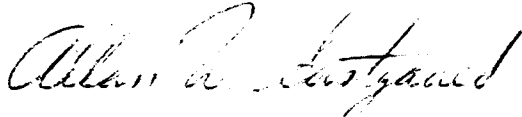
As shown on the drawing, the construction will be undertaken in two phases. Phase I will consist of installation of the sewer from the outfall to the centre line of the highway and Phase 2 will consist of construction from the centre line to the manhole. The portion of the detour on the shoulder will be compacted and calcium chloride applied as required to suppress dust.

We anticipate that construction of the crossing will be completed in two days.

In closing, we would like to reiterate that we believe that open cut is the most appropriate method of construction and that we request MTO's approval to use this method.

Yours very truly,

R.V. ANDERSON ASSOCIATES LIMITED



Allan Eastgaard, P.Eng.

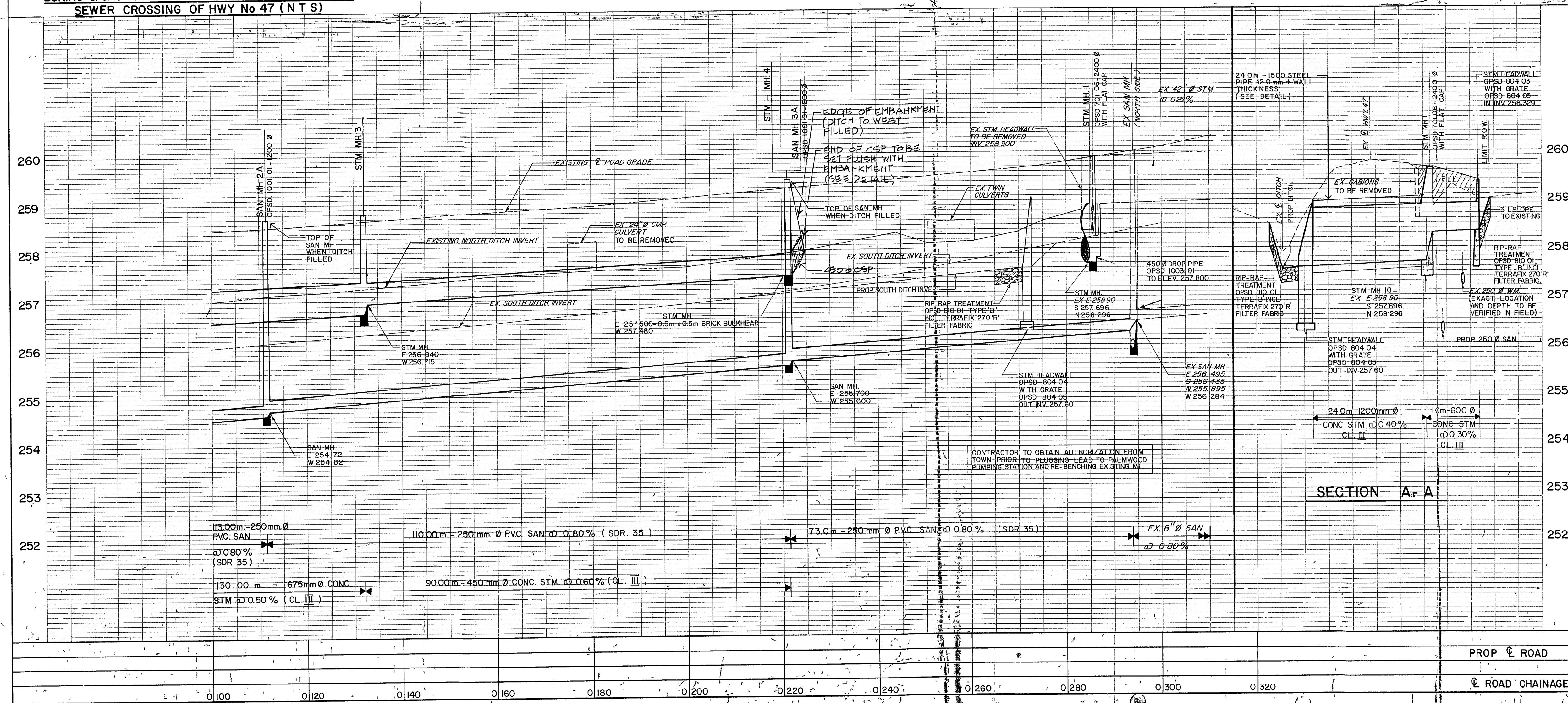
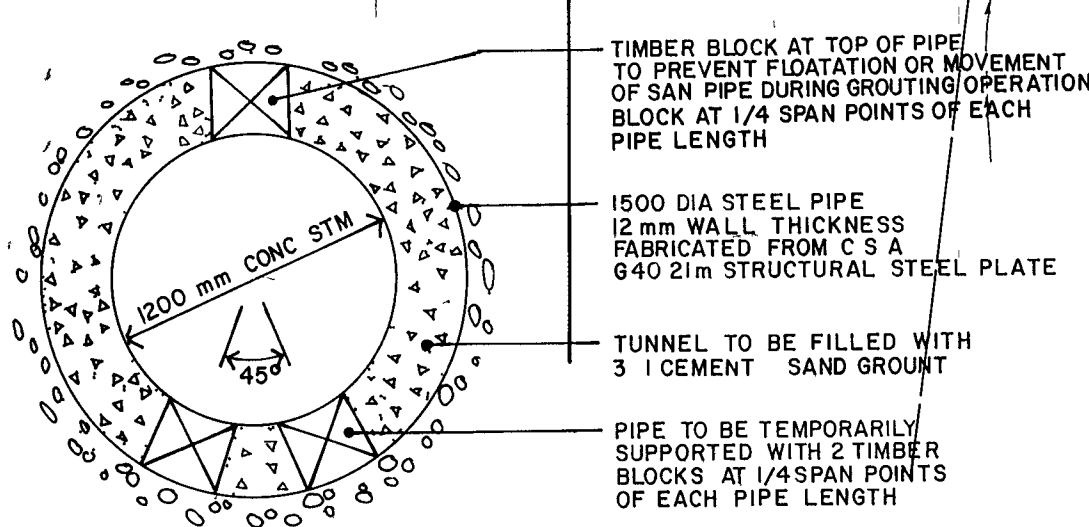
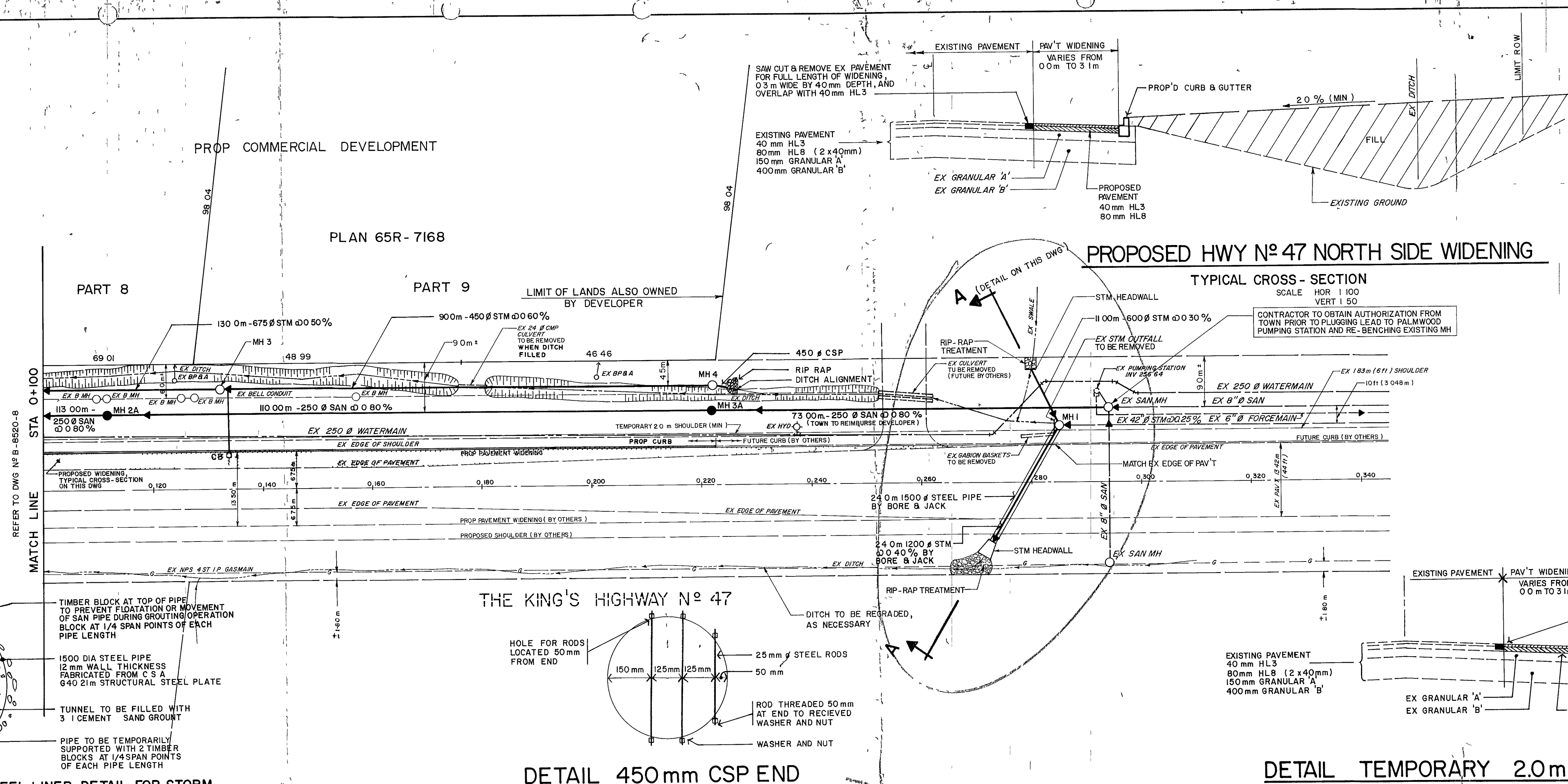
AWE/sej
Encs.

cc: Mr. B. Kimberley

SERVICE DATA					
SERVICE	DATE	INIT	SERVICE	DATE	INIT
SAN SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATERMANS			HYDRO U/G CABLE		

REVISIONS		
DATE	DETAILS	INIT
APRIL	STORM SEWER REVISED FROM FUT TO PROP	A W E
APRIL	WIDENING TYP CROSS SECTION REVISED	A W E

KEY PLAN	
SCALE 1:12000	



REGISTERED PROFESSIONAL ENGINEER

E. RIMON

24 Feb 88

DESIGNED BY

CHKD

DATE

PMG CONSULTING ENGINEERS

95 Bridgeland Avenue Toronto Canada M6A 2V3

Telephone (416) 797 0348

SUMMERFIELD PARK SUBDIVISION

DASTE INVESTMENTS LIMITED

TOWN OF WHITCHURCH - STOUFFVILLE

ENGINEERING DEPARTMENT

THE KING'S HIGHWAY N° 47

SCALE: HOR 1:500, VERT 1:50

AREA

PROJECT No 8520

PLAN No B-8520-9

DATE JANUARY 1987, SHEET 2 OF 2

CHD

DATE

REVIEWED FOR THE TOWN OF WHITCHURCH - STOUFFVILLE

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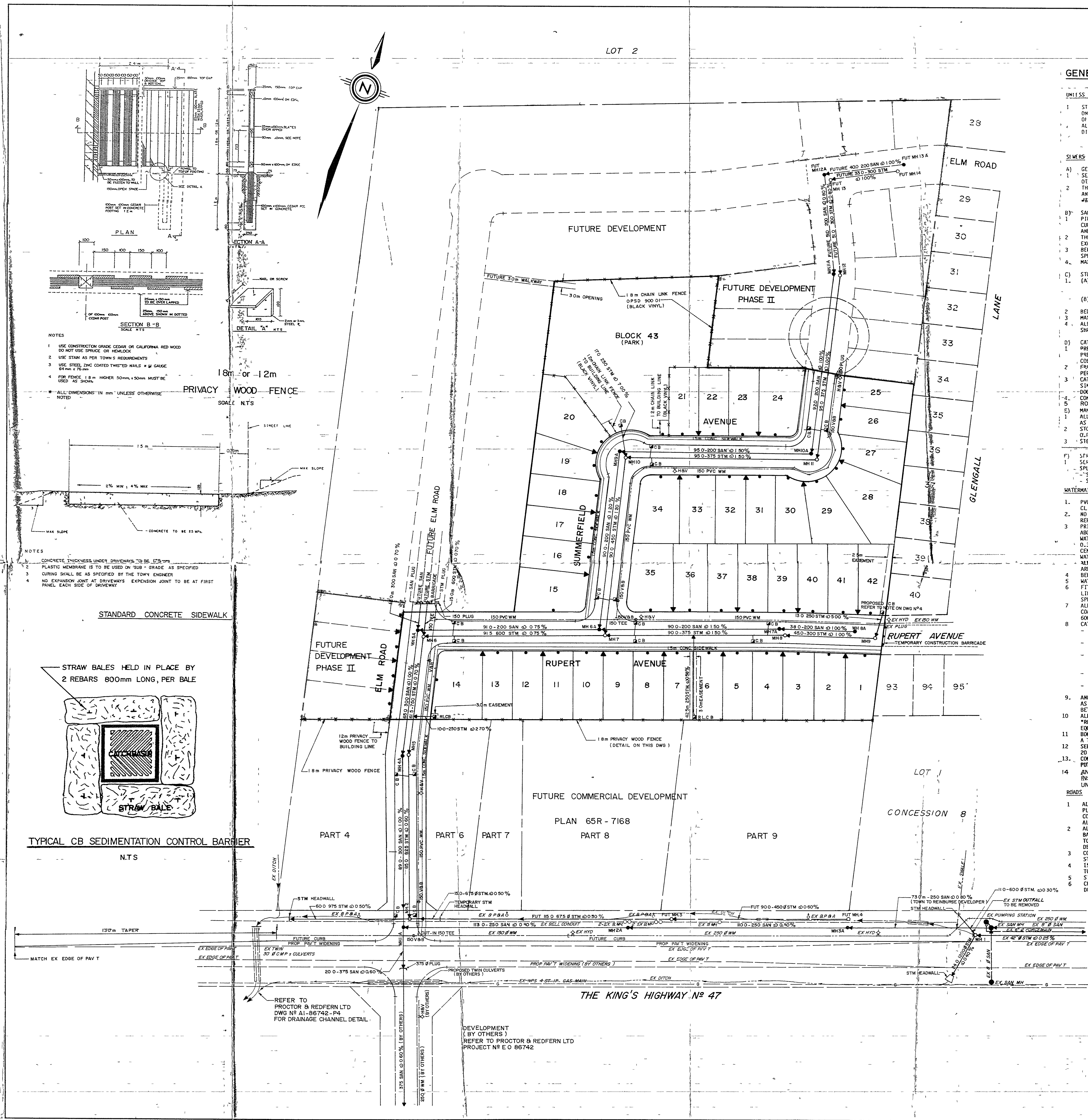
SUMMERFIELD PARK SUBDIVISION

DASTE INVESTMENTS LIMITED

TOWN OF WHITCHURCH - STOUFFVILLE

ENGINEERING DEPARTMENT

THE KING'S HIGHWAY N° 47



GENERAL NOTES

- UNLESS OTHERWISE NOTED ON DRAWINGS
1. STANDARD TOWN OF WHITCHURCH-STOUFFVILLE REGION OF YORK AND ONTARIO PROVINCIAL STANDARD DRAWINGS TO BE CONSIDERED AS PART OF THIS CONTRACT.
2. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE SITE AND ANY DISCREPANCIES REPORTED TO THE ENGINEER.
3. DIMENSIONS
- A) GENERAL
1. SEPARATE TRENCH SPACING 3.0 m CENTRE TO CENTRE UNLESS OTHERWISE INDICATED.
2. THE CONTRACTOR TO BE RESPONSIBLE FOR SUPPLYING EXTRA BEDDING AND/OR STRONGER PIPE IF ACTUAL TRENCH WIDTH EXCEEDS THE DESIGN WIDTH.
- B) SANITARY
1. PIPES 200 mm Ø TO 375 mm Ø INCLUSIVE SHALL BE P.V.C. SDR 35 CURRENT A.S.T.M. SPECIFICATION D 3034. JOINTS SHALL BE BELL AND SPIGOT WITH PRELUBRICATED RUBBER GASKETS.
2. THE CONTRACTOR SHALL INSTALL THE P.V.C. DEFLECTION DOES NOT EXCEED 5 PERCENT.
3. BEDDING TO BE CLASS 1 PER P.S.D. 1005.01 OR AS SPECIFIED.
4. MAXIMUM TRENCH WIDTH AND/OR PIPE AS PER REGION STD.
- C) STORM
- (A) PIPES SHALLER THAN 300 mm Ø SHALL BE CONCRETE CONFORMING WITH CURRENT A.S.T.M. SPEC. C-14-E 5 UNLESS OTHERWISE NOTED.
- (B) PIPES 450 mm Ø AND LARGER SHALL BE CONCRETE CONFORMING WITH CURRENT A.S.T.M. SPEC. C-76 - CL. BT TO CL. V. BEDDING TO BE CLASS 1 PER P.S.D. 802.03 OR AS SPECIFIED.
2. MAXIMUM TRENCH WIDTH AND/OR PIPE AS PER P.S.D. 802.03.
3. ALL STORM SEWER MAINS, HOUSE CONNECTIONS AND CATCHBASIN LEADS SHALL BE FITTED WITH APPROVED RUBBER GASKET JOINTS.
- D) CATCHBASINS
1. PRECAST SINGLE C.B. AND DITCH INLETS AS PER P.S.D. 705.02.
2. PRECAST 1/4" INLET Ø 600 mm PER P.S.D. 705.01 MODULAR COLLARS OR APPROVED EQUIVALENT TO BE USED IN LIEU OF BRICK COURSES.
3. FRAME AND GRATE AS PER P.S.D. 400.01 DITCH INLET GRATING AS PER P.S.D. 400.01.
4. CATCHBASIN LEADS
1. SINGLE - 750 mm Ø MIN. PER P.S.D. 305.35.
2. DOUBLE - 300 mm Ø MIN. PER P.S.D. 305.35.
3. CONNECTIONS TO MAIN SEWER AS PER P.S.D. 708.01.
4. ROOF LEADERS TO DISCHARGE ABOVE GROUND.
5. MANHOLES
1. ALL MANHOLES TO BE PRECAST CONCRETE UNLESS OTHERWISE NOTED AND AS PER STD.
2. STORM AND SANITARY MANHOLE FRAME AND CLOSED COVER AS PER P.S.D. - 401.01.
3. STEPS AS PER P.S.D. 1005.01. SOLID RECTANGULAR ALUMINUM.
- F) SERVICE CONNECTIONS
1. SERVICE CONNECTIONS TO BE P.V.C. CONFORMING WITH CURRENT C.S.A. S.P.C. - 1408-1M SUBMIT UNLESS OTHERWISE NOTED.
2. STORM 150 mm Ø.
3. SANITARY 125 mm Ø.

WATERMAINS

1. P.V.C. PIPE TO BE CURRENT A.W.W.A. SPECIFICATION C900-81 CL 150 WITH PUSH ON JOINTS.
2. NO WATERMAIN TO BE Laid ON FILL UNTIL THE FILL DENSITY TEST REPORT HAS BEEN SUBMITTED TO AND APPROVED BY THE REGION.
3. PRIOR TO LAYING OF WATERMAIN, FILL TO BE PLACED 0.61 m MIN. ABOVE TOP OF WATERMAIN COARSE AND 1.00 m MIN. EITHER SIDE OF WATERMAIN COMPACTED TO MIN. 95% STANDARD PROCTOR DENSITY IN 0.300 m LIFTS. COMPACTION TEST SHALL BE TAKEN ALONG THE CENTRE LINE OF THE WATERMAIN AND 1.50 m EITHER SIDE OF THE WATERMAIN AT INTERVALS OF 30.0 m MAX. AND AT EACH 0.61 m LIFT.
4. ALL TESTS - HORIZONTAL, BEND, HYDRANTS AND SHOWN WIREMAN ON FILL ARE TO BE Laid WITH ROADS IN ADDITION TO CONDUIT BLOCKING BEDDING TO BE AS PER P.S.D. 1102.01 GRANULAR.
5. WATER SERVICE CONNECTION TO BE 20 mm Ø COPPER TYPE 'K'.
6. FITTINGS TO BE ONE OF EITHER CAST IRON OR DUCTILE IRON CEMENT-LINED FITTINGS IN ACCORDANCE WITH CURRENT A.W.W.A. SPECIFICATION C110.
7. ALL NON-FERROUS WATERMAINS TO HAVE TRACER WIRE. WIRE TO BE COATED NO. 12 GAUGE CANADA WIRE STRANDED TYPE T.W.U. 75 C, 600 V OR EQUAL.
8. CATHODIC PROTECTION
- ONE 2.3 kg ZINC ANODE IS TO BE INSTALLED FOR EVERY 1,000 m OF TRACER WIRE.
- ONE 2.3 kg ZINC ANODE IS TO BE INSTALLED ON EVERY VALVE HYDRANT AND FITTING CONNECTED TO A NON-FERROUS WATERMAIN.
- ONE 14.5 kg MAGNESIUM ANODE IS TO BE INSTALLED ON ALL VALVES AND FITTINGS INSTALLED ON EXISTING FERROUS WATERMAINS.
- ONE 14.5 kg MAGNESIUM ANODE IS TO BE INSTALLED ON ALL FERROUS WATERMAINS CONNECTING TO NON-FERROUS WATERMAINS.
- ONE 2.3 kg ZINC ANODE IS TO BE INSTALLED ON EACH COPPER SERVICE CONNECTION.
9. ANODE TO BE PLACED AT LEAST 1.0 m AWAY FROM THE FITTINGS AND AS DEEP AS THE BOTTOM OF THE FITTINGS. MINIMUM DISTANCE BETWEEN ANODES TO BE 0.3 m.
10. ALL THERMITE WELD (C.WELD) CONNECTIONS TO BE COATED WITH 'ROYDON 747' PRIMER AND ROYSTON 'HARDY CAP' OR APPROVED EQUAL.
11. BONDING CABLE TO BE NO. 6, SEVEN STRAND COATED COPPER WIRE BY A THERMITE WELD.
12. SERVICE CONNECTOR TO BE A 'BURNEDY SERVIT', TYPE K.S., MODEL KS 20 COPPER OR APPROVED EQUAL.
13. CONNECTOR SPLICE TO BE WRAPPED WITH 'SCOTCH FILL' ELECTRICAL PUTTY OR APPROVED EQUAL.
14. ANTI-TAMPERING DEVICES, AS APPROVED BY TOWN, TO BE INSTALLED ON ALL HYDRANTS AND REMAIN IN PLACE UNTIL FINAL ACCEPTANCE.

ROADS

1. ALL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES SHOWN ON PLAN OR PROFILE ARE FOR REFERENCE PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES PRIOR TO AND DURING CONSTRUCTION.
2. ALL SERVICE CONNECTIONS WITHIN AN EXISTING PAVED ROADWAY TO BE BACKFILLED WITH GRANULAR MATERIAL OR AS PER LATEST REGION OR TOWN SPECIFICATIONS.
3. NO COMPACTED TO 95% STANDARD PROCTOR DENSITY.
4. CONCRETE BARRIER CURB & GUTTER AS PER TOWN OF WHITCHURCH-STOUFFVILLE STANDARD (TWO-STAGE).
5. 150 mm Ø P.V.C. SUBURBAN UNDERNEATH ALL CURBS, INSTALLED AS PER TOWN OF WHITCHURCH-STOUFFVILLE STANDARD.
6. SIDEWALKS 1.5 m WIDE. REFER TO DETAIL ON THIS DWG.
7. CB SEDIMENTATION CONTROL BARRIER TO BE INSTALLED AT ALL CB, DURING CONSTRUCTION.

DRAWING INDEX

- 8-8520-1 GENERAL PLAN
- 2 STORM DRAINAGE PLAN
- 3 SANITARY DRAINAGE PLAN
- 4 GRADING PLAN
- 5 ELM ROAD STN 0+000 TO STN 0+152 872
- 6 RUPERT AVENUE STN 0+000 TO STN 0+231 308
- 7 SUMMERFIELD AVENUE STN 0+000 TO STN 0+219 677
- 8 THE KING'S HIGHWAY NO. 47
- 9 THE KING'S HIGHWAY NO. 47
- 10 STREET LIGHTING

SERVICE DATA					
SERVICE	DATE	INIT	SERVICE	DATE	INIT
SAN. SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATERMAINS			HYDRO U/G CABLE		

REVISIONS		
DATE	DETAILS	INIT

KEY PLAN

SCALE 1:12000

PROPOSED DEVELOPMENT

FUTURE DEVELOPMENT

LEGEND

- LOCATION OF STORM AND SANITARY SEWER LATERALS
- LOCATION OF WATER SERVICE CONNECTION

BENCHMARK

M.C. PRECISE BN 768488 111V 755 290 m

LAT 43-57 18' LONG 79-16 8'

ONE AND ONE HALF STOREY WHITE ALUMINUM SIDING HOUSE ON THE SOUTH-EAST CORNER OF THE JCT. OF HWYS 47 AND 47 AT PINGWOOD 96.7 m EAST OF CENTRELINE OF HWY 47 AND 16.8 m SOUTH OF CENTRELINE OF HWY 47. TABLET IS SET HORIZONTALLY IN WEST FACE OF CONCRETE FOUNDATION 3.5 m SOUTH OF NORTH-WEST CORNER 60 cm BELOW ALUMINUM SIDING AND 30 cm ABOVE GROUND LEVEL.

M.T.C. PRECISE BN 77 81 74 111V 268 917 m

LAT 43-58 18' LONG 79-15 6'

TWO STOREY BROWN BRICK CANADIAN FIRE STORE ON SOUTH SIDE OF HWY 47 1.9 km EAST OF JCT. OF HWYS 47 AND 47 164.6 m WEST OF NINTH LINE SOUTH IN TOWN OF STOUFFVILLE AND 64.0 m SOUTH OF CENTRELINE OF HWY 47. TABLET IS SET HORIZONTALLY IN WEST FACE OF CONCRETE FOUNDATION 2.4 m NORTH OF SOUTH-WEST CORNER 9 cm BELOW BLOCK WORK AND 9 cm ABOVE ASPHALT PAVEMENT.

REGISTERED PROFESSIONAL ENGINEER

E. RIMON

28 Feb 88

DESIGNED BY

CHKO

REVIEWED FOR THE TOWN OF WHITCHURCH - STOUFFVILLE

DATE

PMG CONSULTING ENGINEERS

95 Bridgeland Avenue Toronto Canada, M6A 2V4

Telephone (416) 441-0115

SUMMERFIELD PARK SUBDIVISION

DASTE INVESTMENTS LIMITED

TOWN OF WHITCHURCH - STOUFFVILLE

ENGINEERING DEPARTMENT

GENERAL PLAN

SCALE 1:1000

AREA

PROJECT No 8520

DRAWN BY L.J.K.

CHECKED BY I.S.

PLAN No B-8520-1

DATE JANUARY 1987

SHEET OF