



Project Name: 1600 Upper James Street, Hamilton
Planning and Economic Development
Growth Management Division
To: 6th Floor
71 Main Street W, Hamilton ON

MTE File No.: 52816-200

Date: August 1, 2023

cc: LJM Developments

From: Rosie Calogero,
MTE Consultants Inc.

RE: Servicing Technical Memo
Serviceability of 1600 Upper James Street, Hamilton

1.0 Introduction

MTE Consultants Inc. were retained by LJM Developments to prepare servicing and grading designs for the proposed mixed-used development located at 1600 Upper James Street in the City of Hamilton (see Key Plan in Dwg C2.2 attached). The proposed development will be completed on a 0.23ha site and will consist of a 21-storey mixed use building with 249 residential units. The ground floor will include a residential lobby/entrance from Rymal Road West, and residential amenity spaces. Four levels of underground parking are proposed and vehicular access from Rymal Road is proposed. As part of the Design Review Panel, the City of Hamilton requested a servicing memorandum outlining the serviceability of the site. This technical memorandum addresses that concern and should be read in conjunction with drawing 52816-200 C2.2 as attached.

2.0 Storm Servicing

2.1 Existing Conditions

As per City plan-and-profile drawings, the existing municipal storm infrastructure fronting the subject property is summarized as follows. On Upper James Street there is an existing 375mm \varnothing storm sewer at $\pm 0.5\%$ flowing south connected to a 450mm \varnothing storm sewer at $\pm 0.5\%$ flowing east perpendicular to the roadway, which ultimately outlets into a 1350mm \varnothing storm trunk sewer flowing north at $\pm 0.33\%$. On Rymal Road West there is an existing 900mm \varnothing storm sewer at $\pm 0.45\%$ flowing east, which connects at the storm sewer junction located at the intersection of Rymal Road West and Upper James Street, conveying flows to the 1350mm \varnothing storm trunk sewer within Upper James Street. City plan-and-profile records (Drawing no. 84-S-15 and 68-S-30) indicate there is an existing 150mm \varnothing storm service located mid-block on the east side of the site.

2.2 Proposed Conditions

Based on the layout of the underground parking level and location of the storm water management tank, a storm service connection is proposed to connect to the existing 900mm \varnothing storm sewer on Rymal Road West near the southwest corner of the site. The proposed storm service will cross under the existing 200mm \varnothing watermain with an approximate clearance of 0.8m and will be clear of standard depth utilities within the boulevard. The existing storm service for the subject site will be decommissioned per City standards.



3.0 Sanitary Servicing

3.1 Existing Conditions

As per City plan-and-profile drawings, the existing municipal sanitary infrastructure fronting the subject property is summarized as follows. On Upper James Street there is an existing 1050mmø trunk sanitary sewer at $\pm 0.68\%$ flowing north. On Rymal Road West there is an existing 300mmø sanitary sewer at $\pm 0.60\%$ flowing east. The 300mmø sanitary sewer connects at a sanitary sewer junction located at the intersection of Rymal Road West and Upper James Street, conveying flows to the 1050mmø sanitary trunk sewer within Upper James Street. City plan-and-profile records do not indicate where the existing sanitary service is located for the subject site. Locates are recommended prior to construction to ensure the existing service is decommissioned appropriately.

3.2 Proposed Conditions

Based on the layout of the underground parking level, a sanitary service connection is proposed to connect to the existing 300mmø sanitary sewer on Rymal Road West near the southwest corner of the site. The proposed sanitary service will cross under the existing 200mmø watermain with an approximate clearance of 1.5m and will be clear of standard depth utilities in the boulevard. The existing sanitary service for the subject site will be located and decommissioned per City standards.

4.0 Water Servicing

4.1 Existing Conditions

As per City plan-and-profile drawings, the existing municipal watermain infrastructure fronting the subject property is summarized as follows. On Upper James Street there is an existing 400mmø PVC watermain towards the north end of subject property and a 400mmø Ductile Iron watermain towards the south end of subject property. On Rymal Road West there is an existing 200mmø PVC watermain on the north side and a 400mmø Concrete watermain on the south side. City plan-and-profile records (Drawing no. 10-W-15) indicates there is an existing 20mmø soft copper water service connecting to Rymal Road West.

4.2 Proposed Conditions

Based on the layout of the underground parking level, a watermain service connection is proposed to connect to the existing 400mmø watermain on Upper James Street at approximately mid-block. According to City notes, this section of main might be PVC instead of Ductile Iron. This will be confirmed prior to construction. The proposed service at standard depth has no crossing conflicts and will be clear of standard depth utilities within the boulevard. The existing copper water service will be decommissioned per City standards. Prior to detailed design, a hydrant flow test will be completed to confirm available pressures in the existing system.

5.0 Conclusion

We trust the above meets with the City's requirement for a memorandum outlining the serviceability of the site. This technical memo displays that the subject site can be serviced with respect to the preliminary site plan and new connections to the existing municipal storm, sanitary and watermain infrastructure are possible to service the subject site.



Yours truly,

MTE Consultants Inc.

A handwritten signature in black ink that reads "Rosie Calogero".

Rosie Calogero, B.Eng.

Project Manager

905-639-2552 x2425

RCalogero@mte85.com

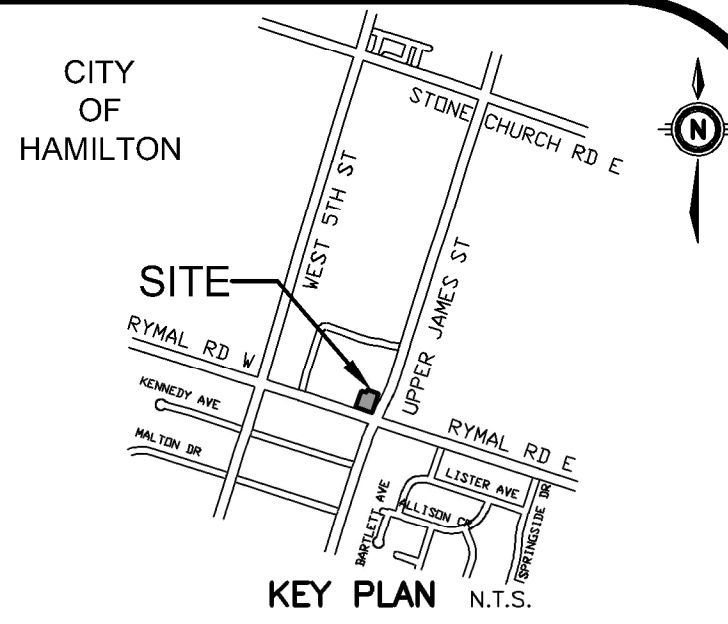
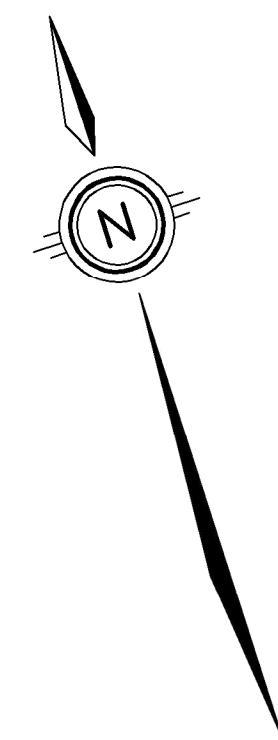
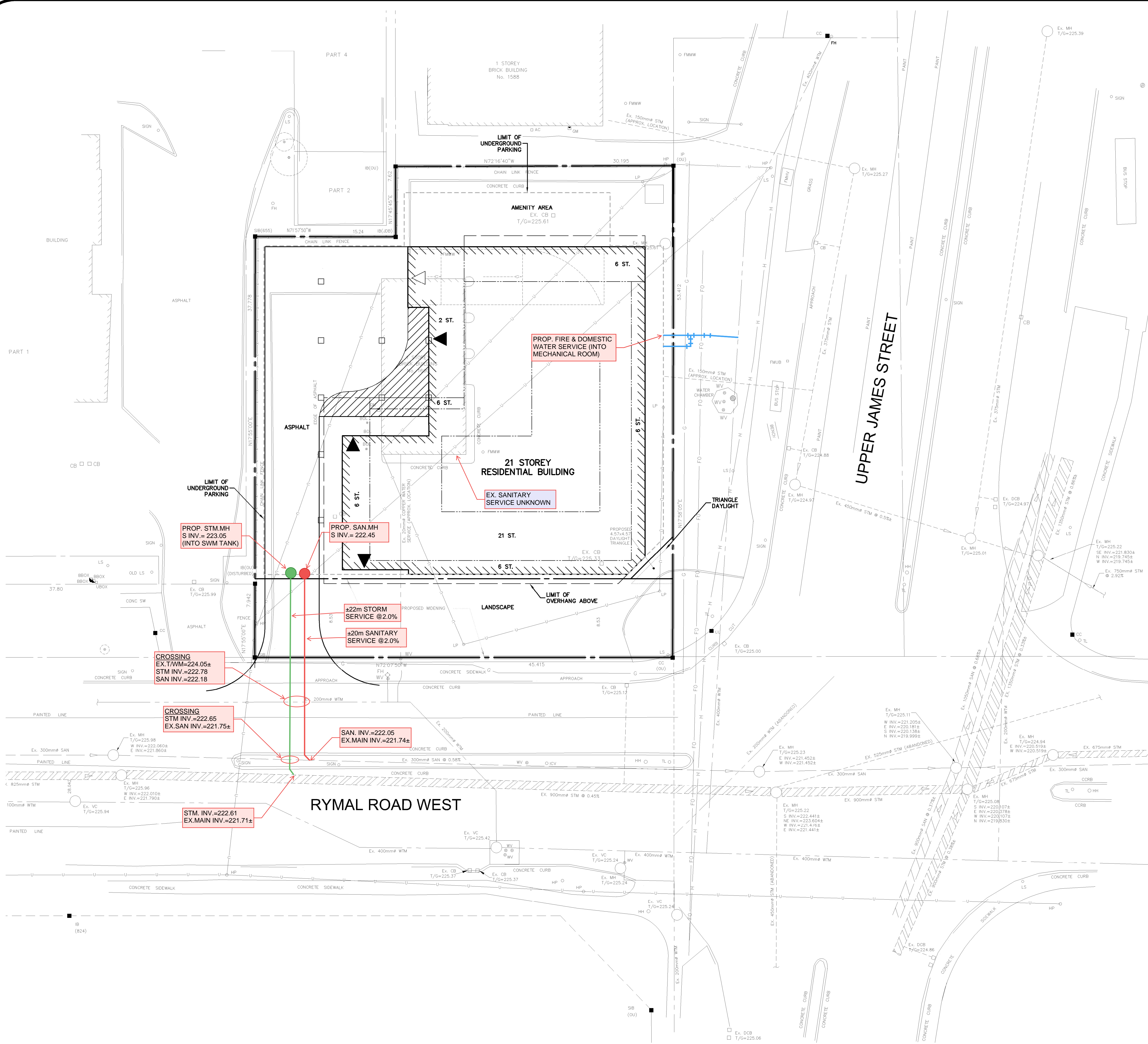
RNC:cnf

\\mte85.local\mte\Proj_Mgmt\52816\200\Reports\MTE\SERVICING TECH MEMO\52816-200 Servicing Tech.Memo.docx

Attachments.

Site Servicing Plan Markup C2.2

City Plan-and-Profile Drawings



GEODETTIC BM ELEV. = 229.005m
 ROUND IRON BAR WITH BRASS CAP LOCATED IN GLANBROOK
 10.0m EAST OF CENTRELINE OF WEST 5th STREET 25.0m
 NORTH OF CENTRELINE OF RYMAL ROAD 3.0m EAST OF SIDEWALK
 8.0m NORTHWEST OF TRAFFIC SWITCHBOX. MONUMENT 07720020068

SITE BENCHMARK ELEV. = 225.53m

NOTE TO CONTRACTOR :
 DO NOT SCALE DRAWINGS.
 CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
 ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE ENGINEER'S WRITTEN PERMISSION.
 THE OWNER/ARCHITECT/CONTRACTOR IS ADVISED THAT M.T.E. CONSULTANTS INC. CANNOT CERTIFY ANY COMPONENT OF THE SITE WORKS NOT INSPECTED DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY M.T.E. CONSULTANTS INC. PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR INSPECTION.

NOTE:
 1. PROPERTY-LINE IS APPROXIMATE ONLY.
 2. EXISTING TOPOGRAPHICAL INFORMATION PROVIDED BY A.T. McLAREN LIMITED, DATED MARCH 20th, 2023.
 3. INVERTS DENOTED WITH "+/-" ARE TAKEN FROM AS-RECORDED PLAN AND PROFILE DRAWINGS PROVIDED BY CITY OF HAMILTON AND ARE CONSIDERED APPROXIMATE ONLY. CONTRACTOR TO FIELD VERIFY AND REPORT ANY DISCREPANCIES TO ENGINEER.

LEGEND OF EXISTING FEATURES

- SITE BOUNDARY
- Ex. 300mm ϕ SAN --- Ex. MH --- EXISTING SANITARY SEWER
- Ex. 200mm ϕ WTM --- Ex. HYD. SET --- EXISTING WATERMAIN
- Ex. 375mm ϕ STM --- Ex. MH --- EXISTING STORM SEWER
- Ex. Drop Curb --- EXISTING CURB
- EXISTING BUILDING

LEGEND OF PROPOSED FEATURES

- MH 14.6m-200mm ϕ SAN @ 1.5% --- SANITARY SEWER
- MH 21.3m-300mm ϕ STM @ 1.3% --- STORM SEWER
- 200mm ϕ WTM --- WATERMAIN
- HYD. SET --- WATERMAIN
- PROPOSED BUILDING
- MAN DOOR
- LIMIT OF UNDERGROUND PARKING

| | |
|----|--|
| 8. | |
| 7. | |
| 6. | |
| 5. | |
| 4. | |
| 3. | |
| 2. | |
| 1. | |

No. REVISION BY YYYY-MM-DD



905-639-2552

NOT FOR CONSTRUCTION

CLIENT
LJM DEVELOPMENTS
 5-1900 APPLEBY LINE BURLINGTON, ON
 PROJECT
1600 UPPER JAMES ST MIXED-USED DEVELOPMENT
 1600 UPPER JAMES ST HAMILTON, ON

DRAWING
 MARKUP
PRELIMINARY SITE SERVICING PLAN

| | |
|-------------------------------|---------------------------------|
| Project Manager R.CALOGERO | Project No. 52816-200 |
| Design By RNC | Checked By |
| Drawn By LXQ | Checked By RNC |
| Surveyed By OTHERS | Drawing No. |
| Date Jun.19/23 | C2.2 |
| Scale 1:200 | Sheet 1 of 1 |

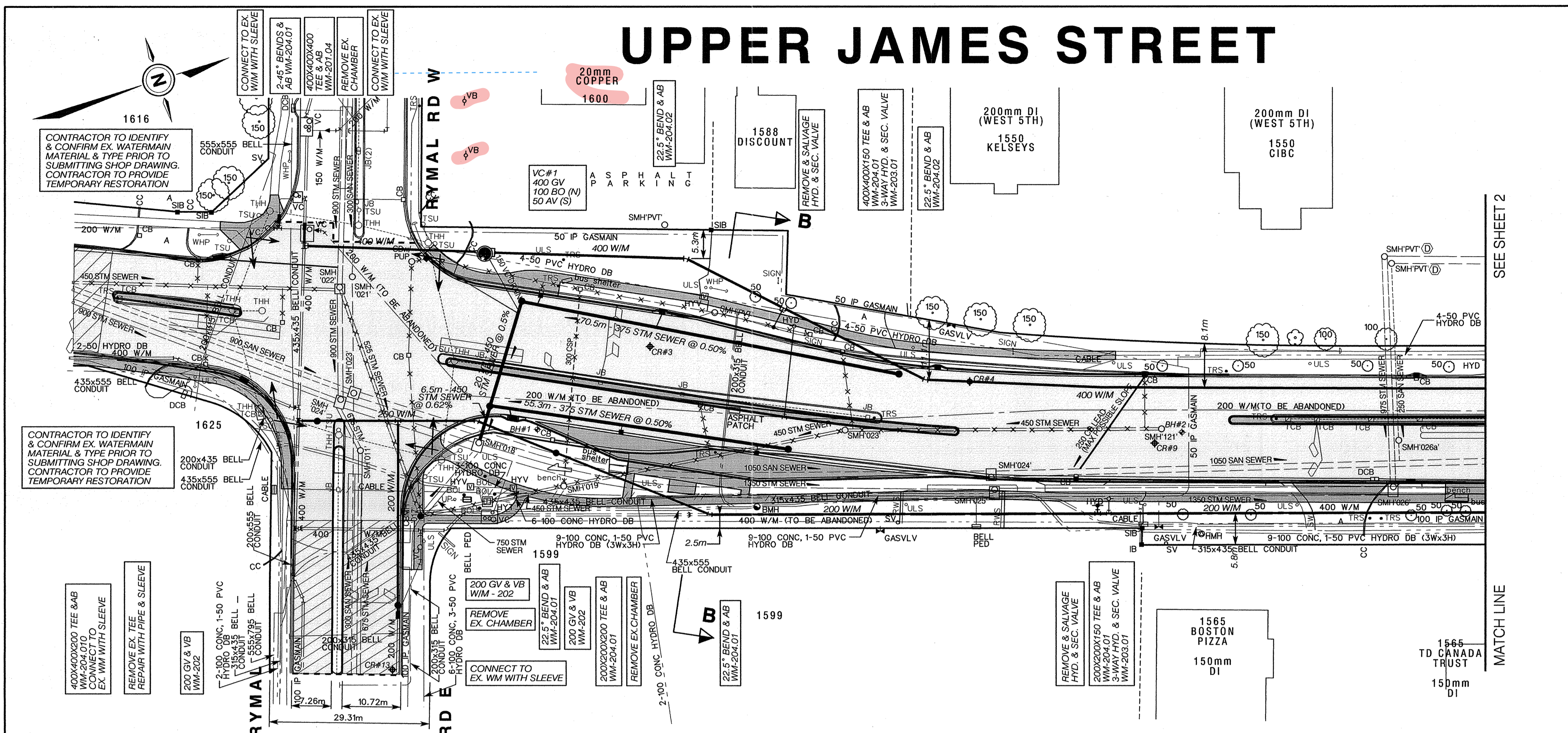
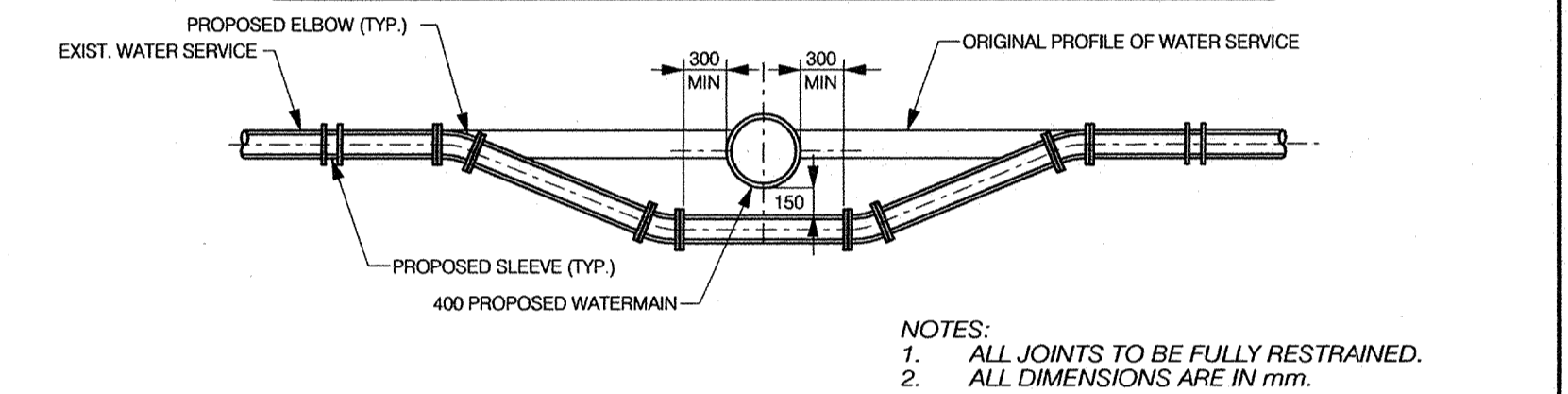
UPPER JAMES STREET

| | | |
|---|--|---------------------|
| FILE No. | CONTRACT No. PW-11-11 (HSW) DRAWING No. 10-W-15 | SHEET No. 1 OF 7 |
| DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED | | |
| | | |

SEE 08-H-14 SHEET 7 FOR TYPICAL ROAD SECTIONS
SEE 08-H-14 FOR ROAD DETAILS
SEE 10-S-21 FOR SEWER DETAILS

ABANDON EXISTING STM SEWER BY PRESSURE FILLING

NOTES:
ALL APPROACHES TO BE COMMERCIAL DEPTH.
MINIMUM 1.8m COVER ON 200mm WATERMAINS
ALL PIPE TRENCHES WITHIN ROAD TO BE BACKFILLED WITH GRANULAR 'A' ONLY.
CONTRACTOR TO MAINTAIN THREE LANES OF TRAFFIC AT ALL TIMES. ONE LANE IN EACH DIRECTION AND ONE TURNING LANE. ALL TRAVELLED LANES TO BE RESTORED WITH ASPHALT. CONTRACTOR TO MAINTAIN ALL TURNING MOVEMENTS AND ACCESS TO PROPERTIES.
SEE SP 13 FOR WATERMAIN STAGING
WATERMAINS TO BE ABANDONED ARE TO BE ABANDONED BY PRESSURE FILLING



| | | | | | | | | | | | | | | | | | | |
|-----|--|-------------------------|--------------------------|-----------------|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------------------|--|
| 230 | | | | | | | | | | | | | | | | 230 | | |
| 225 | | | | | | | | | | | | | | | | 225 | | |
| 220 | | | | | | | | | | | | | | | | 220 | | |
| | PROPOSED 400mm WATERMAIN | 8.0m of 400 W/M @ 1.86% | 23.0m of 400 W/M @ 0.65% | VC | 182.0m of 400 W/M @ 0.65% | | | | | | | | | | | | PROPOSED 400mm WATERMAIN | |
| | PROPOSED 400mm WATERMAIN INVERT ELEVATIONS | 0+008 222.45 | 0+100 222.60 | 0+103 222.75 | 0+108 222.75 | 0+123 222.75 | 0+138 222.75 | 0+153 222.75 | 0+168 222.75 | 0+183 222.75 | 0+198 222.75 | 0+213 222.75 | 0+228 222.75 | 0+243 222.75 | 0+258 222.75 | 0+273 222.75 | 0+288 222.75 | PROPOSED 400mm WATERMAIN INVERT ELEVATIONS |
| | EXISTING C OF ROAD PROFILE ELEVATIONS | 0+15 225.21 | 0+40 225.20 | 0+15 225.13 | 0+30 225.28 | 0+45 225.43 | 0+60 225.54 | 0+75 225.64 | 0+90 225.73 | 0+105 225.83 | 0+120 225.95 | 0+135 226.00 | 0+150 226.04 | 0+165 226.13 | 0+180 226.16 | 0+195 226.23 | 0+210 226.34 | EXISTING C OF ROAD PROFILE ELEVATIONS |
| | EXISTING C OF ROADWAY CHAINAGE | 0+15 | 0+40 | 0+15 | 0+30 | 0+45 | 0+60 | 0+75 | 0+90 | 0+105 | 0+120 | 0+135 | 0+150 | 0+165 | 0+180 | 0+195 | 0+210 | EXISTING C OF ROADWAY CHAINAGE |

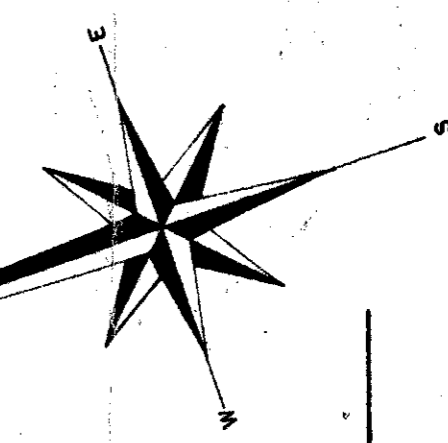
| SEWER REPAIRS and OVERFLOWS | EXISTING SEWER MANHOLES |
|-----------------------------|---|
| | SMH '022' S-INV=222.441 NE-INV=223.604 W-INV=221.476 E-INV=221.441 HG21B022 CHAINAGE=0+02.4 TOP OF GRATE=225.32 |
| | SMH '021' E-INV=221.452 W-INV=221.452 HG21A021 CHAINAGE=0+00.4 TOP OF GRATE=225.34 |
| | SMH '024' S-INV=220.107 E-INV=220.378 W-INV=220.107 N-INV=219.830 HG21B024 CHAINAGE=0+00.7 TOP OF GRATE=225.15 |
| | SMH '023' W-INV=221.205 E-INV=220.181 S-INV=220.138 N-INV=219.999 HG21A023 CHAINAGE=0+02.9 TOP OF GRATE=225.12 |
| | SMH '017' E-INV=222.637 SW-INV=222.340 NW-INV=222.295 W-INV=222.575 HH21B017 CHAINAGE=0+17.9 TOP OF GRATE=224.65 |
| | SMH '018' SE-INV=221.830 N-INV=219.745 W-INV=219.745 HH21B018 CHAINAGE=0+26.7 TOP OF GRATE=225.36 |
| | SMH '019' S-INV=222.770 N-INV=222.762 W-INV=222.760 HH21B019 CHAINAGE=0+43.4 TOP OF GRATE=225.21 |
| | SMH '023' N-INV=223.121 S-INV=223.067 HH21B023 CHAINAGE=0+92.9 TOP OF GRATE=225.75 |
| | SMH '024' N-INV=219.200 S-INV=219.200 HH21A024 CHAINAGE=1+19.8 TOP OF GRATE=225.95 |
| | SMH '025' S-INV=218.841 N-INV=218.938 HH21B025 CHAINAGE=1+20.5 TOP OF GRATE=226.00 |
| | SMH '121' S-INV=223.314 HH21B121 CHAINAGE=1+50.7 TOP OF GRATE=226.05 |
| | SMH '026' W-INV=219.957 S-INV=218.617 N-INV=218.612 HH21B026 CHAINAGE=1+93.2 TOP OF GRATE=226.06 |
| | SMH '026a' E-INV=222.175 W-INV=222.175 HH21A026a CHAINAGE=1+94.1 TOP OF GRATE=226.23 |

| | | | | | |
|--|---|--|--|--|---|
| No. REVISIONS INITIAL DATE DRAWN BY: RCP / FR DATE: FEBRUARY, 2011 REFERENCE MATERIAL: Surveyed By: B. Martin Sewer Plans: 65-S-30, 84-S-15, 96-S-7, 87-S-9, 89-S-40, 91-S-49 Sewer Sheets: J-6, 06-W-46 Road Plans: 87-H-45, 94-H-64, 98-H-42, 06-H-49 Geodetic Bench Mark Index No. 21-03 Borehole Report - GTR_1326, GTR_1480 Elevation=222.730m | SCALES 0 5m 10m 20m HORIZONTAL 1:500 0 1m 2m 4m VERTICAL 1:100 | | Project Manager (Design) Andrew Feliczak, C.E.T. Manager of Design Susan Jacob, P. Eng. | CITY OF HAMILTON Public Works Department | UPPER JAMES STREET 200mm & 400mm Watermain Replacement From : Rydal Road To : Stone Church Road |
|--|---|--|--|--|---|

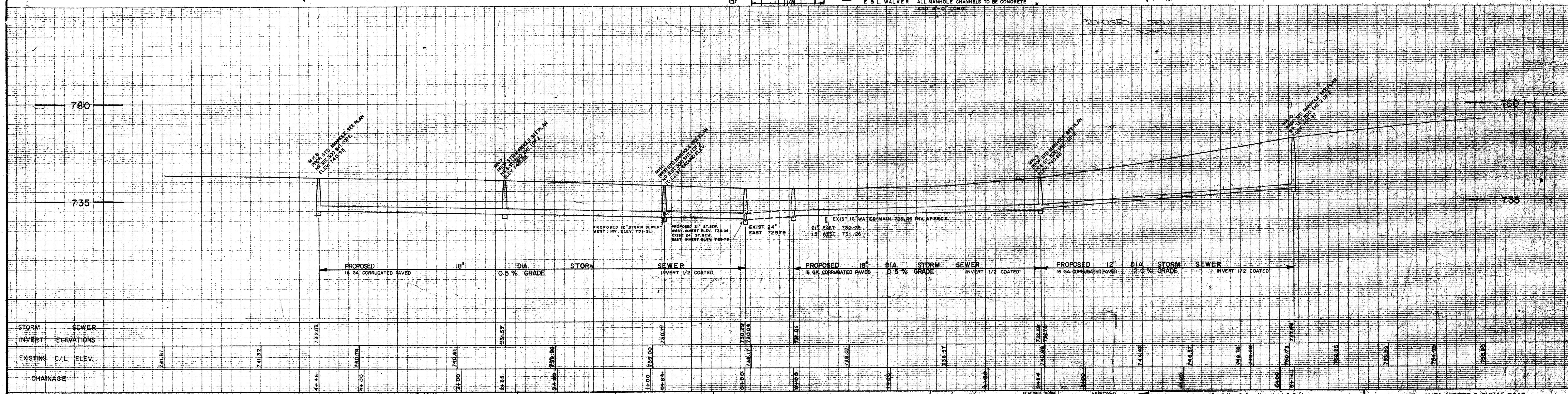
LOBLAWS GROCERIA CO. LTD.

UPPER JAMES STREET

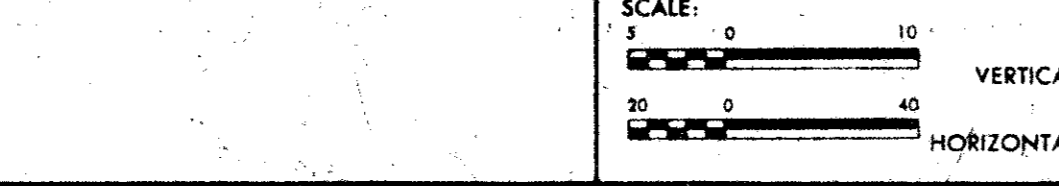
MATCH LINE
(SEE SHEET 3 OF 5)



| | | |
|--------------|------------------------|-------------------|
| STORM SEWER | 16 GA CORRUGATED PAVED | INVERT 1/2 COATED |
| INVERT ELEV. | 731.21 | 731.82 |
| CHAINAGES | 0+00 | 24+00 |



NOTES
 (1) CITY INSPECTOR TO CHECK OFFICE COPY PRIOR TO CONSTRUCTION FOR STUBS AND OTHER DATA.
 (2) SEE DETAIL OF DROPPED CURBS ON SHEET 3 OF 5.
 (3) SEE DETAIL OF C.C.B.G. ON SHEET 3 OF 5.
 (4) CURB INSERT 1 1/2" PIPE. (10)



REVISIONS:
 REF. DWG'S
 U-42 RDWYS, RDU.6
 TD-982

SURVEY BY: F. RYSANEK, R. PORRITT
 FIELD BOOKS: R 683, S 626, S 531
 DATE: FEBRUARY, 1967
 BENCH MARK: S.W. CORNER, RYMAL RD. @ U. JAMES ST. x but in easterly end of Sunoco gas island - 740.06

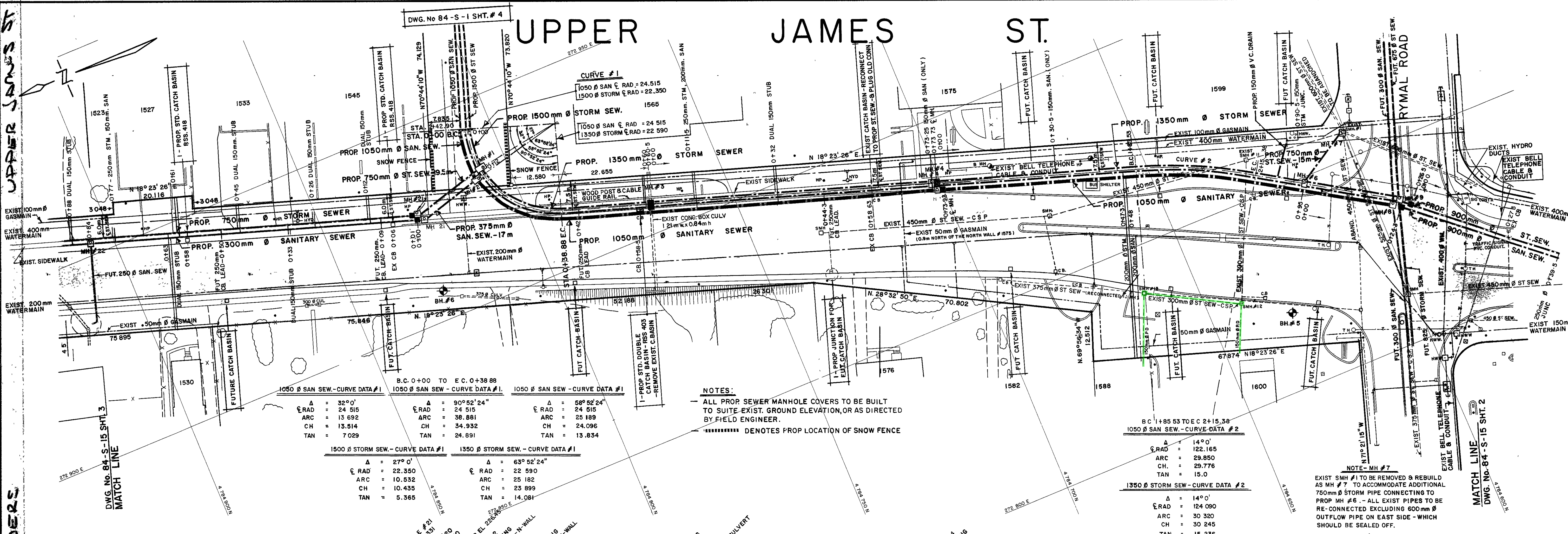
DRAWN BY: A. GLAZEBROOK, G.B.
 CHECKED BY:
 DEPUTY CITY ENGR. *[Signature]*
 CITY ENGINEER AND MANAGER OF WATER WORKS *[Signature]*

CITY OF HAMILTON
 DEPARTMENT OF ENGINEERING
 SEWER SECTION
 PROJECT No. ER-67-37
 ACCOUNT No.

UPPER JAMES STREET & RYMAL ROAD
 DRAINAGE AND UNDERGROUND
 PLAN No. 13728
 SHEET 2 OF 5

UPPER JAMES ST.

DWG. No 84 - S - I SHT. # 4



| STORM SEWER | SANITARY SEW. | EXIST. ROAD ELEVATION | CHAINAGE |
|---|---|-----------------------|----------|
| PROP. 750mm Ø STORM SEWER - GRADE 0.50% - ASTM C-76 CL IV | PROP. 375mm Ø SAN. SEW - GR. 0.50% - ASTM C-76 CL IV | 226.82 | 0+40.150 |
| PROP. 300mm Ø SANITARY SEWER - GR. 0.50% - ASTM C-76 CL IV | PROP. 1050mm Ø SANITARY SEWER - GRADE 0.50% - ASTM C-76 CL V | 226.77 | 0+40.150 |
| PROP. 1500mm Ø STORM SEWER - GRADE 0.50% - ASTM C-655 D-2500 | PROP. 1500mm Ø STORM SEWER - GRADE 0.50% - ASTM C-655 D-2500 | 226.69 | 0+40.150 |
| PROP. 1350mm Ø STORM SEWER - GRADE 0.35% - ASTM C-655 D-2500 | PROP. 1350mm Ø STORM SEWER - GRADE 0.35% - ASTM C-655 D-2500 | 226.63 | 0+40.150 |
| PROP. 1050mm Ø SANITARY SEWER - GRADE 0.35% - ASTM C-76 CL V | PROP. 1050mm Ø SANITARY SEWER - GRADE 0.35% - ASTM C-76 CL V | 226.58 | 0+40.150 |
| PROP. 900mm Ø SAN. SEW. GRADE 0.80% - ASTM C-76 CL IV | PROP. 900mm Ø SAN. SEW. GRADE 0.80% - ASTM C-76 CL IV | 226.54 | 0+40.150 |
| PROP. 750mm Ø STORM SEW. GRADE 0.80% - ASTM C-76 CL IV | PROP. 750mm Ø STORM SEW. GRADE 0.80% - ASTM C-76 CL IV | 226.50 | 0+40.150 |
| PROP. 406mm x 406mm BULKHEAD IN W-WALL BOTTOM ELEV. 221.544 | PROP. 406mm x 406mm BULKHEAD IN W-WALL BOTTOM ELEV. 221.544 | 226.46 | 0+40.150 |
| PROP. 250 Ø DROP PIPE - TOP ELEV. 221.544 | PROP. 250 Ø DROP PIPE - TOP ELEV. 221.544 | 226.42 | 0+40.150 |
| PROP. 1050mm x 1050mm BULKHEAD IN E-WALL BOTTOM ELEV. 221.037 | PROP. 1050mm x 1050mm BULKHEAD IN E-WALL BOTTOM ELEV. 221.037 | 226.38 | 0+40.150 |
| PROP. 250 Ø DROP PIPE - TOP ELEV. 221.037 | PROP. 250 Ø DROP PIPE - TOP ELEV. 221.037 | 226.34 | 0+40.150 |
| PROP. 1050mm x 1050mm BULKHEAD IN E-WALL BOTTOM ELEV. 220.630 | PROP. 1050mm x 1050mm BULKHEAD IN E-WALL BOTTOM ELEV. 220.630 | 226.30 | 0+40.150 |
| PROP. 250 Ø DROP PIPE - TOP ELEV. 220.630 | PROP. 250 Ø DROP PIPE - TOP ELEV. 220.630 | 226.26 | 0+40.150 |
| PROP. 750 Ø STORM SEW. INV. ELEV. 220.088 | PROP. 750 Ø STORM SEW. INV. ELEV. 220.088 | 226.22 | 0+40.150 |
| PROP. 300 Ø SAN. SEW. INV. ELEV. 220.088 | PROP. 300 Ø SAN. SEW. INV. ELEV. 220.088 | 226.18 | 0+40.150 |
| PROP. 1050mm x 1050mm BULKHEAD IN W-WALL BOTTOM ELEV. 220.375 | PROP. 1050mm x 1050mm BULKHEAD IN W-WALL BOTTOM ELEV. 220.375 | 226.14 | 0+40.150 |
| PROP. 250 Ø DROP PIPE - TOP ELEV. 220.375 | PROP. 250 Ø DROP PIPE - TOP ELEV. 220.375 | 226.10 | 0+40.150 |
| PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | 226.06 | 0+40.150 |
| PROP. 1050mm x 1050mm BULKHEAD IN E-WALL BOTTOM ELEV. 220.530 | PROP. 1050mm x 1050mm BULKHEAD IN E-WALL BOTTOM ELEV. 220.530 | 226.02 | 0+40.150 |
| PROP. 250 Ø DROP PIPE - TOP ELEV. 220.530 | PROP. 250 Ø DROP PIPE - TOP ELEV. 220.530 | 225.98 | 0+40.150 |
| PROP. 750 Ø STORM SEW. INV. ELEV. 221.750 | PROP. 750 Ø STORM SEW. INV. ELEV. 221.750 | 225.94 | 0+40.150 |
| PROP. 1050mm x 1050mm BULKHEAD IN W-WALL BOTTOM ELEV. 221.544 | PROP. 1050mm x 1050mm BULKHEAD IN W-WALL BOTTOM ELEV. 221.544 | 225.90 | 0+40.150 |
| PROP. 250 Ø DROP PIPE - TOP ELEV. 221.544 | PROP. 250 Ø DROP PIPE - TOP ELEV. 221.544 | 225.86 | 0+40.150 |
| PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | 225.82 | 0+40.150 |
| PROP. 1050mm x 1050mm BULKHEAD IN E-WALL BOTTOM ELEV. 220.630 | PROP. 1050mm x 1050mm BULKHEAD IN E-WALL BOTTOM ELEV. 220.630 | 225.78 | 0+40.150 |
| PROP. 250 Ø DROP PIPE - TOP ELEV. 220.630 | PROP. 250 Ø DROP PIPE - TOP ELEV. 220.630 | 225.74 | 0+40.150 |
| PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | 225.70 | 0+40.150 |
| PROP. 1050mm x 1050mm BULKHEAD IN W-WALL BOTTOM ELEV. 221.544 | PROP. 1050mm x 1050mm BULKHEAD IN W-WALL BOTTOM ELEV. 221.544 | 225.66 | 0+40.150 |
| PROP. 250 Ø DROP PIPE - TOP ELEV. 221.544 | PROP. 250 Ø DROP PIPE - TOP ELEV. 221.544 | 225.62 | 0+40.150 |
| PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | 225.58 | 0+40.150 |
| PROP. 1050mm x 1050mm BULKHEAD IN E-WALL BOTTOM ELEV. 220.630 | PROP. 1050mm x 1050mm BULKHEAD IN E-WALL BOTTOM ELEV. 220.630 | 225.54 | 0+40.150 |
| PROP. 250 Ø DROP PIPE - TOP ELEV. 220.630 | PROP. 250 Ø DROP PIPE - TOP ELEV. 220.630 | 225.50 | 0+40.150 |
| PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | 225.46 | 0+40.150 |
| PROP. 1050mm x 1050mm BULKHEAD IN W-WALL BOTTOM ELEV. 221.544 | PROP. 1050mm x 1050mm BULKHEAD IN W-WALL BOTTOM ELEV. 221.544 | 225.42 | 0+40.150 |
| PROP. 250 Ø DROP PIPE - TOP ELEV. 221.544 | PROP. 250 Ø DROP PIPE - TOP ELEV. 221.544 | 225.38 | 0+40.150 |
| PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | PROP. 750 Ø STORM SEW. INV. ELEV. 221.070 | 225.34 | 0+40.150 |

84 S 15

AS CONSTRUCTED REPLOTED 90-06-25 J.J.R. NOTES:

APPROVED: *[Signature]* DIRECTOR

THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH
 DEPARTMENT OF ENGINEERING

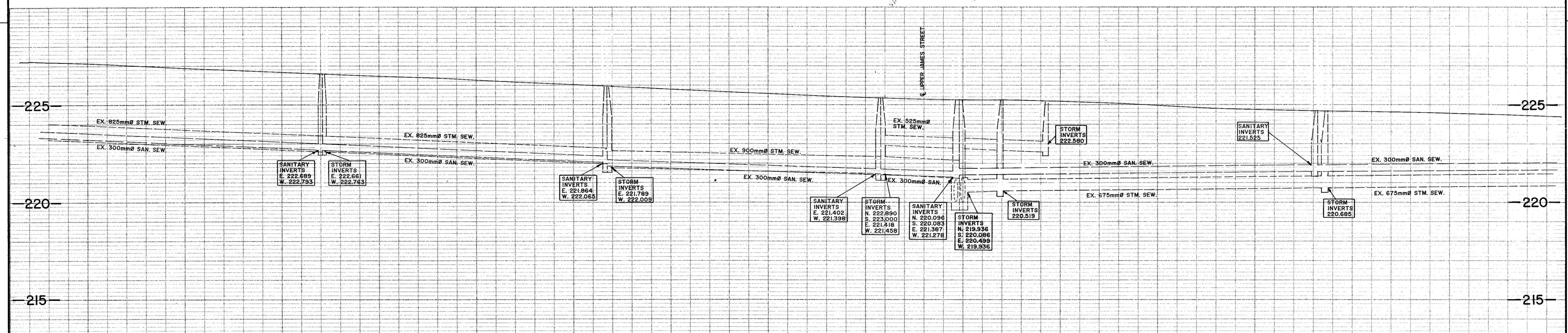
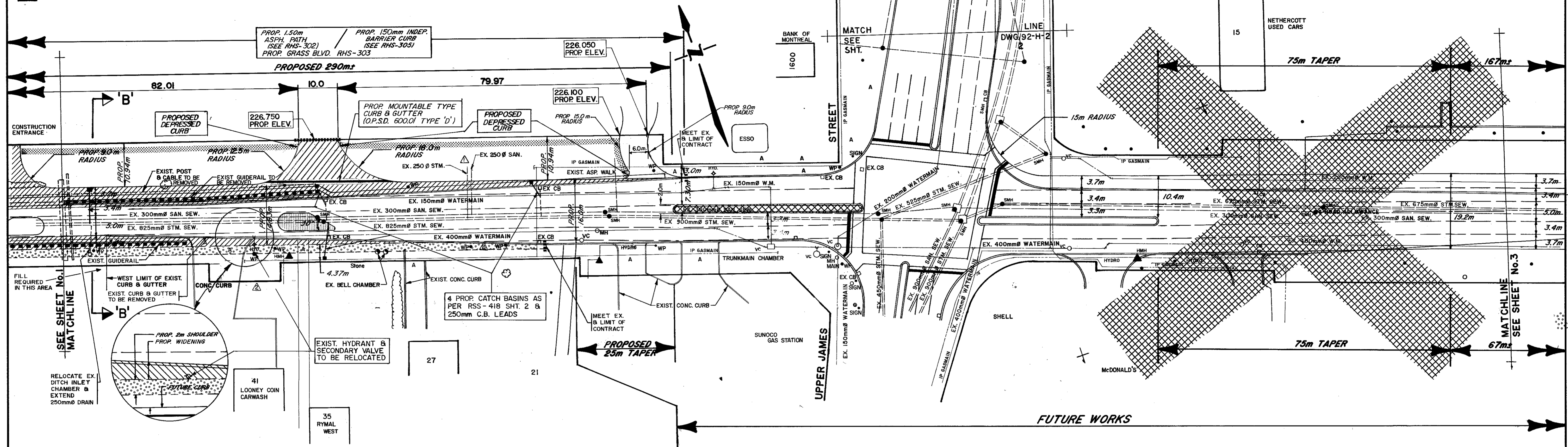
UPPER JAMES STREET
 STORM AND SANITARY SEWERS
 FROM: APPROX. 100 m SOUTH OF MALTON DRIVE
 TO: APPROX. 455 m NORTH OF RYMAL ROAD

DATE 84 03 15 PROJECT No. 821 - 42 DRAWING No. 84 - S - 15 SHEET 1 OF 4

RYMAL RD.

RYMAL ROAD WEST

- EXISTING ROAD
- EXISTING CONCRETE ISLAND
- PROPOSED CONCRETE ISLAND - RHS - 800
- PROPOSED WIDENING
- PROPOSED SHOULDER

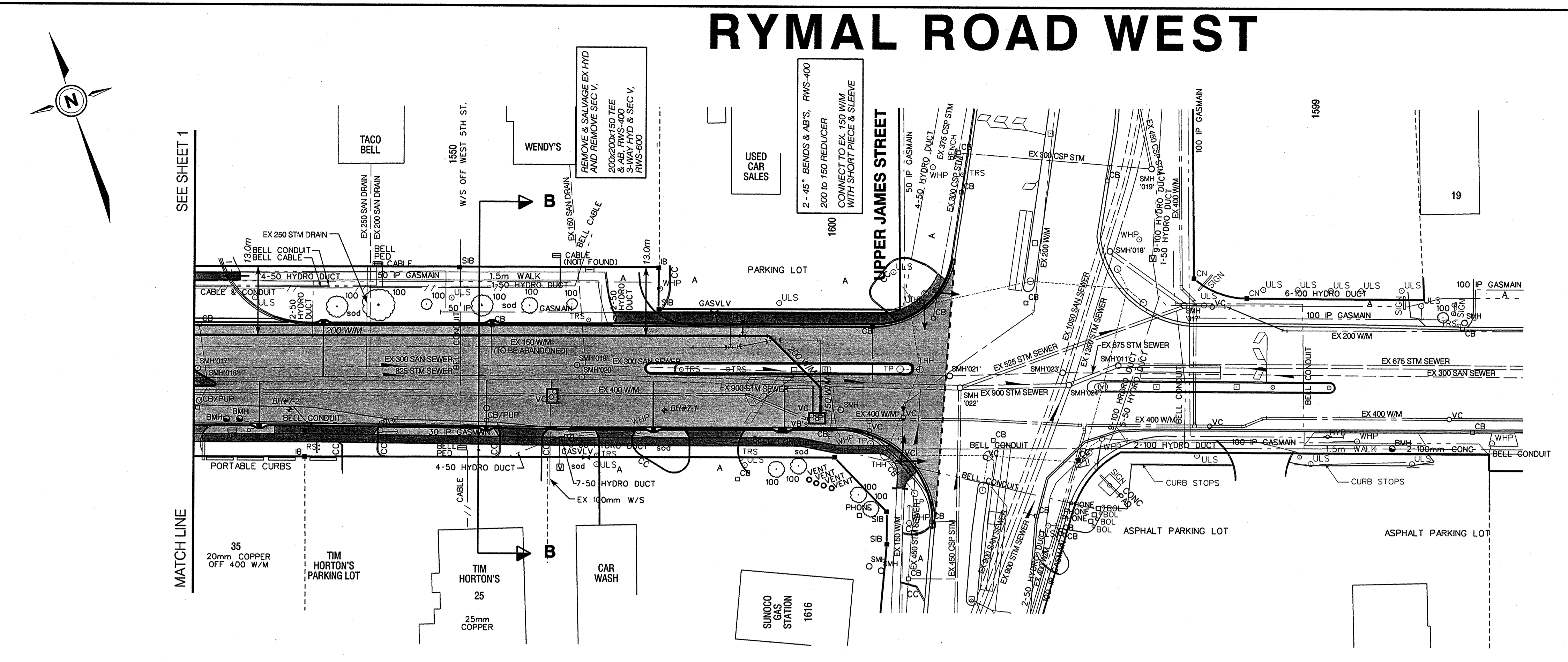


| Stationing | 227.71 | 227.12 | 227.02 | 226.89 | 226.78 | 226.63 | 226.53 | 226.35 | 226.19 | 226.03 | 225.91 | 225.99 | 225.83 | 225.66 | EXIST. ϕ OF ROAD ELEVATIONS |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------------------------------|
| Stationing | 3+15 | 3+30 | 3+45 | 3+60 | 3+75 | 3+90 | 4+05 | 4+20 | 4+35 | 4+50 | 4+65 | 4+80 | 4+95 | 5+10 | ϕ CHAINAGE |

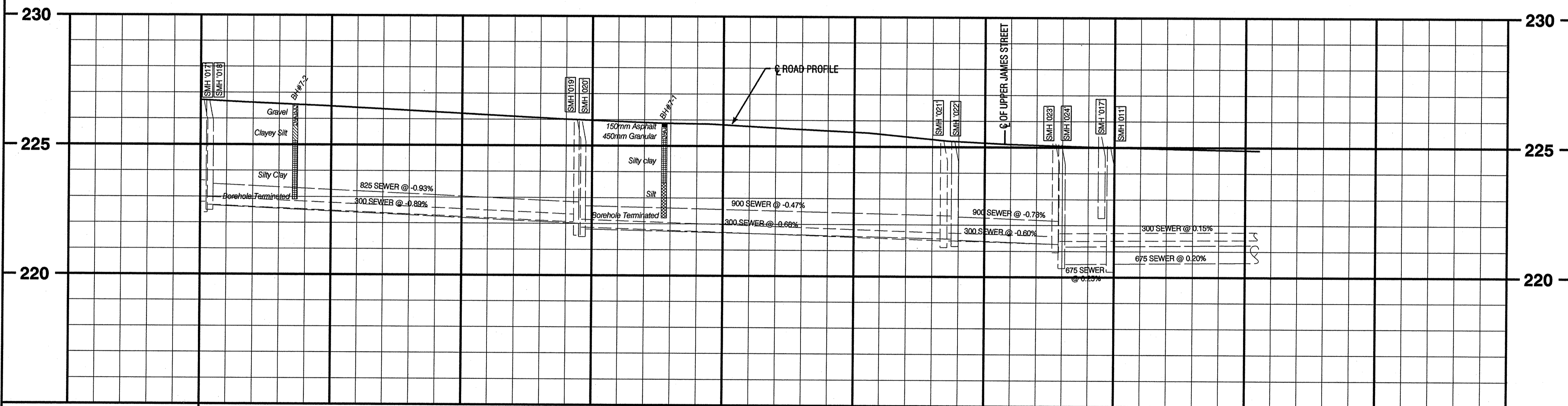
| | | | | | | | | |
|--|----------------------|----------------------------------|--------------------------------|---|--|---|--|--|
| SEWER SERVICED ADDED POLE & PROPERTY CHANGE | MAY 07, 92 G.A.L. | CHECKED BY <i>[Signature]</i> | DRAWN BY <i>[Signature]</i> | SCALES 0 10m 20m HORIZONTAL 1:500 0 1m 2m 4m VERTICAL 1:100 | APPROVED <i>[Signature]</i> DIRECTOR | APPROVED <i>[Signature]</i> COMMISSIONER OF ENGINEERING | THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH DEPARTMENT OF ENGINEERING | RYMAL ROAD WEST PROPOSED ROAD WIDENING & CHANNELIZATION FROM: UPPER JAMES STREET TO: 165m WEST OF WEST 5th STREET |
| No. REVISIONS | DATE | INITIAL | DATE: APRIL 6, 1992 | PROJECT No. | DRAWING No. 92-H-9 | SHEET 2 OF 3 | | |

RYMAL ROAD WEST

| | | |
|---|---|---------------------|
| FILE No. | CONTRACT No. PW-06-27 (HW) DRAWING No. 06-W-46 | SHEET No. 2 OF 3 |
| DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED | | |
| | | |



SEE 03-H-23 SHEET 3
FOR TYPICAL SECTIONS AND DETAILS
SEE 03-H-23 SHEET 2
FOR ROAD AND SIDEWALK CONSTRUCTION



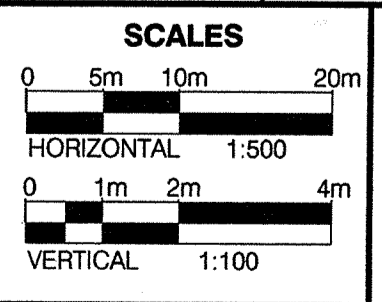
| C.B. REMOVALS/REPLACEMENTS | |
|----------------------------|--|
| SEE 03-H-23 SHEET-2 | |

| EXISTING SEWER MANHOLES | |
|--|--|
| SMH 018' W-INV=222.76 E-INV=222.66 TOP OF GRATE=226.66 | 'HG21B018' CHAINAGE= 2+01.7 TOP OF GRATE=226.66 |
| SMH 020' W-INV=222.01 E-INV=221.79 | 'HG21B020' CHAINAGE= 2+78.1 TOP OF GRATE=225.95 |
| SMH 022' N-INV=222.89 S-INV=223.00 W-INV=221.46 E-INV=221.42 | 'HG21B022' CHAINAGE= 3+44.27 TOP OF GRATE=225.23 |
| SMH 024' N-INV=219.94 S-INV=220.08 W-INV=221.27 E-INV=220.50 | 'HG21B024' CHAINAGE= 3+64.91 TOP OF GRATE=225.13 |
| SMH 011' W-INV=220.52 E-INV=220.52 | 'HG21B011' CHAINAGE= 3+74.26 TOP OF GRATE=225.06 |
| SMH 017' W-INV=222.58 S-INV=222.58 | 'HG21B017' CHAINAGE= 3+72.6 TOP OF GRATE=225.35 |
| SMH 017' W-INV=222.79 E-INV=222.69 | 'HG21A017' CHAINAGE= 2+00.71 TOP OF GRATE=226.68 |
| SMH 010' W-INV=222.06 E-INV=221.86 | 'HG21A010' CHAINAGE= 2+72.22 TOP OF GRATE=225.95 |
| SMH 021' W-INV=221.43 E-INV=221.40 | 'HG21A021' CHAINAGE= 3+42.4 TOP OF GRATE=225.24 |
| SMH 023' W-INV=221.28 E-INV=221.39 N-INV=220.09 S-INV=220.08 | 'HG21A023' CHAINAGE= 3+42.4 TOP OF GRATE=225.24 |

| | | | | | | | | | | | | | | | | |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| EXISTING C. OF ROAD PROFILE ELEVATIONS | 226.72 | 226.62 | 226.49 | 226.34 | 226.17 | 226.02 | 225.89 | 225.82 | 225.65 | 225.49 | 225.21 | 225.13 | 225.08 | 224.99 | 224.93 | 224.88 |
| EXISTING C. OF ROAD ALLOWANCE CHAINAGE | 2+00 | 2+10 | 2+25 | 2+40 | 2+55 | 2+70 | 2+85 | 3+00 | 3+15 | 3+30 | 3+45 | 3+53.8 | 3+60 | 3+75 | 3+90 | 4+02.75 |

| No. | REVISIONS | INITIAL | DATE | DRAWN BY: IM / DJP | DATE: MAY 30, 2006 |
|-----|-----------|---------|------|--------------------|--------------------|
| | | | | | |

REFERENCE MATERIAL:
 Surveyed By: B. Martin, M. Bettencourt
 Sewer Plans: 92-S-32, 86-S-7, 84-S-15, 68-S-30
 Water Plans: U-8, Z-47, 72-W-335
 Road Plans: 98-H-9, 87-H-45, 92-H-9, U-62, ER-67-37
 Survey Plan:
 Geodetic Bench Mark Index No. 21-03 Elevation=222.730m
 Borehole Report- GTR-1031C



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 Fax: (905) 525-5710
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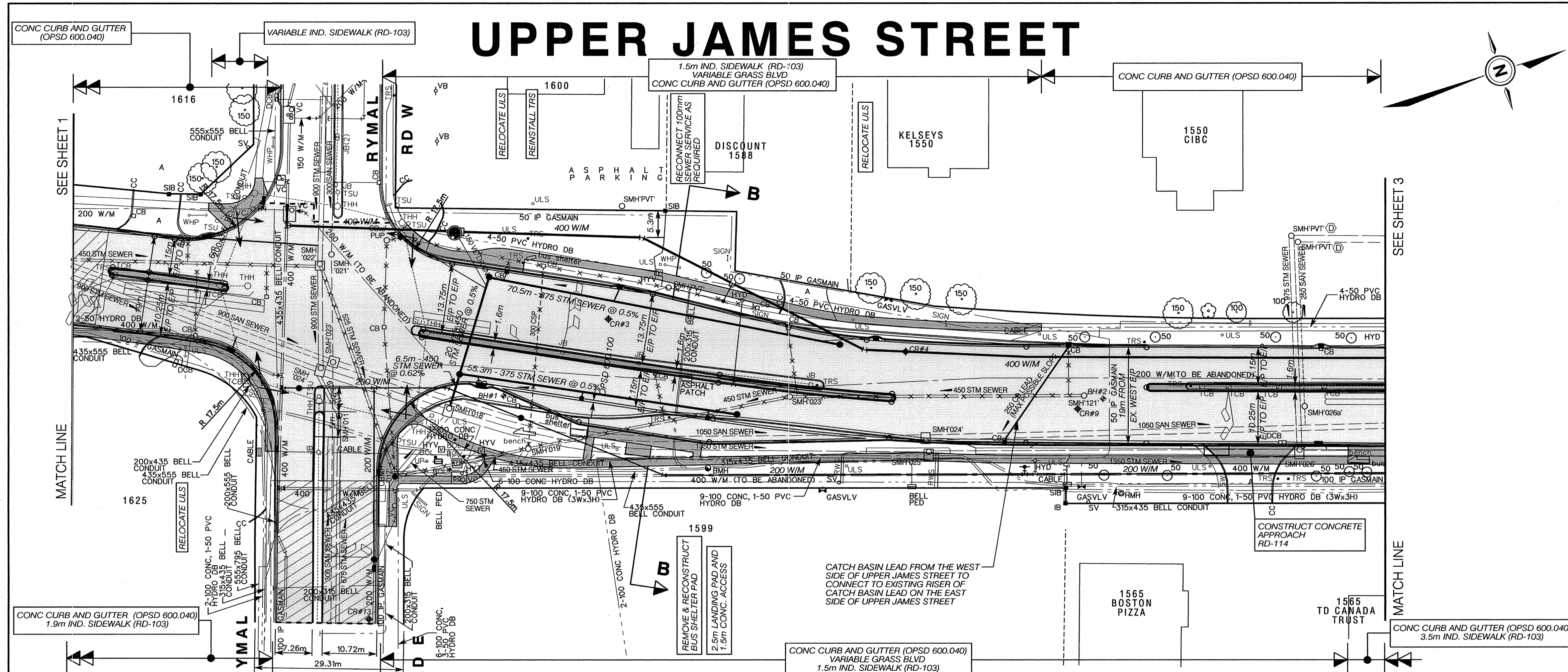
R. J. BOWER
 REGISTERED PROFESSIONAL ENGINEER
 177100
 PROVINCE OF ONTARIO

Manager of Construction
Jerry Parisotto
 Jerry Parisotto, P. Eng.
 Manager of Design
Gary Mogyre
 Gary Mogyre, P. Eng.

CITY OF HAMILTON
 Public Works Department

RYMAL ROAD WEST
 200mm Watermain Replacement
 From: West 5th Street
 To: Upper James Street

UPPER JAMES STREET



FILE No. _____ CONTRACT No. PW-11-11 (HSW) SHEET No. 2 OF 13
 DRAWING No. 08-H-14

DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

SEE SHEET 7 FOR TYPICAL ROAD SECTIONS
 SEE SHEET T1 FOR TREE PRESERVATION / REMOVAL
 SEE 10-W-15 FOR WATERMAIN DETAILS
 SEE 10-S-21 FOR SEWER DETAILS

LEGEND

MILL ASPHALT TO AN AVERAGE DEPTH OF 50mm. SUPPLY AND PLACE AVERAGE OF 50mm OF ASPHALT.

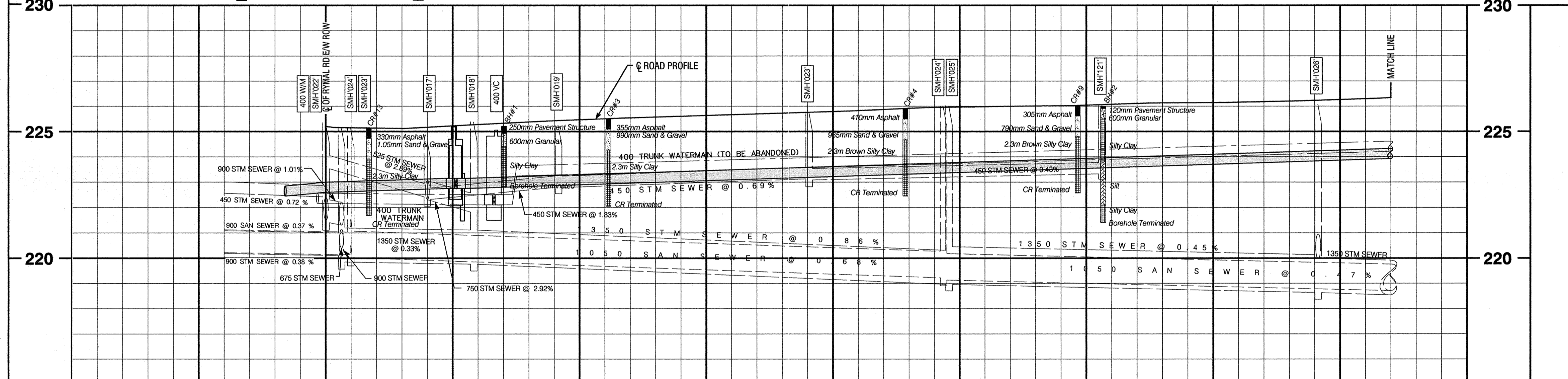
MILL / STRIP ASPHALT TO GRANULAR BASE (TO AN AVERAGE DEPTH OF 200mm). SEE GEOTECHNICAL INFORMATION FOR FURTHER DETAILS. GRADE AND COMPACT GRANULAR BASE. SUPPLY AND PLACE ASPHALT PAVEMENT.

NOTES:
 ALL APPROACHES TO BE COMMERCIAL DEPTH.
 ALL PIPE TRENCHES WITHIN ROAD TO BE BACKFILLED WITH GRANULAR FILL ONLY.
 CONTRACTOR TO MAINTAIN THREE LANES OF TRAFFIC AT ALL TIMES. ONE LANE IN EACH DIRECTION AND ONE TURNING LANE. ALL TRAVELLED LANES TO BE RESTORED WITH ASPHALT. CONTRACTOR TO MAINTAIN ALL TURNING MOVEMENTS AND ACCESS TO PROPERTIES.
 SHOWN COORDINATES ARE AT EDGE OF PAVEMENT

PROPOSED ROAD STRUCTURE

50mm SURFACE ASPHALT
 110mm BINDER ASPHALT

SURFACE COURSE = SP 12.5 FC2 SURFACE COURSE ASPHALT, CATEGORY 'D', PG 64-28
 BINDER COURSE = SP 19.0 BINDER COURSE ASPHALT, CATEGORY 'D', PG 64-28



SEWER REPAIRS and OVERFLOWS

C.B. REMOVALS/REPLACEMENTS

0+27.0, 0+11.9, 0+42.9, 0+85.1, 0+91.1 west, 0+25.6, 0+11.6, 0+11.4, 0+37.8, 0+85.0, 1+88.6 east. Remove Existing Catchbasin & Abandon Lead by Pressure Filling

1+96.2 west
 Remove Existing Catchbasin
 Construct Catchbasin (RD-110.01, OPSD 705.010) & Reuse Existing Lead

0+58.0, 1+46.5 West
 Remove Existing Catchbasin & Abandon Lead by Pressure Filling
 Construct Catchbasin (RD-110.01, OPSD 705.010) & 250 Lead

0+50.5, 0+75.2 east. Construct Catchbasin (OPSD 705.010) & 250 CB Lead

1+08.5 west. Construct Catchbasin (RD-110.01, OPSD 705.010) & 250 CB Lead

0+23.4 west, 0+30.7 east
 Construct Double Catchbasin (RD-110.02, OPSD 705.020) & 250 CB Lead

0+14.7, 0+35.9 west
 Remove Existing Catchbasin & Abandon Lead by Pressure Filling
 Construct Catchbasin (OPSD 705.010) & 250 CB Lead

1+33.9 east
 Remove Existing Catchbasin
 Construct Catchbasin (OPSD 705.010)

0+18.8, 1+55.7 east
 Construct Double Catchbasin (OPSD 705.020) & 250 CB Lead

EXISTING SEWER MANHOLES

| | |
|--|---|
| SMH 022 S-INV=222.441 NE-INV=223.804 W-INV=221.476 E-INV=221.441 | HG21B022 CHAINAGE=0+02.4 TOP OF GRATE=225.32 |
| SMH 021 S-INV=221.452 W-INV=221.452 | HG21A021 CHAINAGE=0+00.4 TOP OF GRATE=225.34 |
| SMH 024 S-INV=220.107 W-INV=220.107 N-INV=219.830 | HG21B024 CHAINAGE=0+00.7 TOP OF GRATE=225.15 |
| SMH 023 W-INV=221.205 S-INV=220.181 N-INV=220.138 E-INV=219.999 | HG21A023 CHAINAGE=0+02.9 TOP OF GRATE=225.12 |
| SMH 017 E-INV=222.637 S-INV=222.340 W-INV=222.295 N-INV=222.575 | HH21B017 CHAINAGE=0+17.9 TOP OF GRATE=224.65 |
| SMH 018 SE-INV=221.830 N-INV=219.745 W-INV=219.745 | HH21B018 CHAINAGE=0+26.7 TOP OF GRATE=225.36 |
| SMH 019 S-INV=222.770 N-INV=222.782 W-INV=222.760 | HH21B019 CHAINAGE=0+43.4 TOP OF GRATE=225.21 |
| SMH 023 N-INV=223.121 S-INV=223.067 | HH21B023 CHAINAGE=0+92.9 TOP OF GRATE=225.75 |
| SMH 024 N-INV=219.200 S-INV=219.200 | HH21A024 CHAINAGE=0+19.8 TOP OF GRATE=225.95 |
| SMH 025 S-INV=218.941 N-INV=218.938 | HH21B025 CHAINAGE=0+20.5 TOP OF GRATE=226.00 |
| SMH 121 S-INV=223.314 | HH21B121 CHAINAGE=0+50.7 TOP OF GRATE=226.05 |
| SMH 026 W-INV=219.957 S-INV=218.617 N-INV=218.612 | HH21B026 CHAINAGE=0+93.2 TOP OF GRATE=226.06 |
| SMH 026a E-INV=222.175 W-INV=222.175 | HH21A026a CHAINAGE=0+94.1 TOP OF GRATE=226.23 |

| | | | | | | | | | | | | | | | | |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| EXISTING C. OF ROAD PROFILE ELEVATIONS | 225.21 | 225.20 | 225.13 | 225.28 | 225.43 | 225.54 | 225.64 | 225.73 | 225.83 | 225.95 | 226.00 | 226.04 | 226.13 | 226.16 | 226.23 | 226.34 |
| EXISTING C. OF ROADWAY CHAINAGE | 0+15 | 0+40 | 0+45 | 0+80 | 0+45 | 0+60 | 0+75 | 0+80 | 1+05 | 1+20 | 1+35 | 1+50 | 1+65 | 1+80 | 1+95 | 2+10 |

| | | | | | |
|-------|-------------------------|---------|----------|--|----------------------|
| No. 1 | REVISIONS | INITIAL | DATE | DRAWN BY: RCP / BEM / FR | DATE: FEBRUARY, 2011 |
| 1 | ISSUED FOR CONSTRUCTION | DV | 04/04/11 | REFERENCE MATERIAL: Surveyed By: S. Martin Sewer Plans: 68-S-30, 84-S-15, 86-S-7, 87-S-9, 89-S-40, 91-S-49 Water Plans: U-5, 06-W-46 Road Plans: 87-H-45, 94-H-64, 98-H-42, 06-H-49 Geodetic Bench Mark Index No. 21-03 Elevation=222.730m Borehole Report - GTR_1326, GTR_1480 | |

SCALES

HORIZONTAL 1:500
VERTICAL 1:100

DILLON CONSULTING
5 CHERRY BLOSSOM ROAD, UNIT 1
CAMBRIE, ONTARIO
N6M 4W7

O. Y. ONISHI
LICENSED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

Project Manager (Design)
Andrew Felinczak, C.E.T.
Manager of Design
Susan Jacob, P. Eng.

CITY OF HAMILTON
Public Works Department

UPPER JAMES STREET
Road & Sidewalk Reconstruction
From: Kennedy Avenue
To: Stone Church Road