St. Catharines
stcatharines.ca

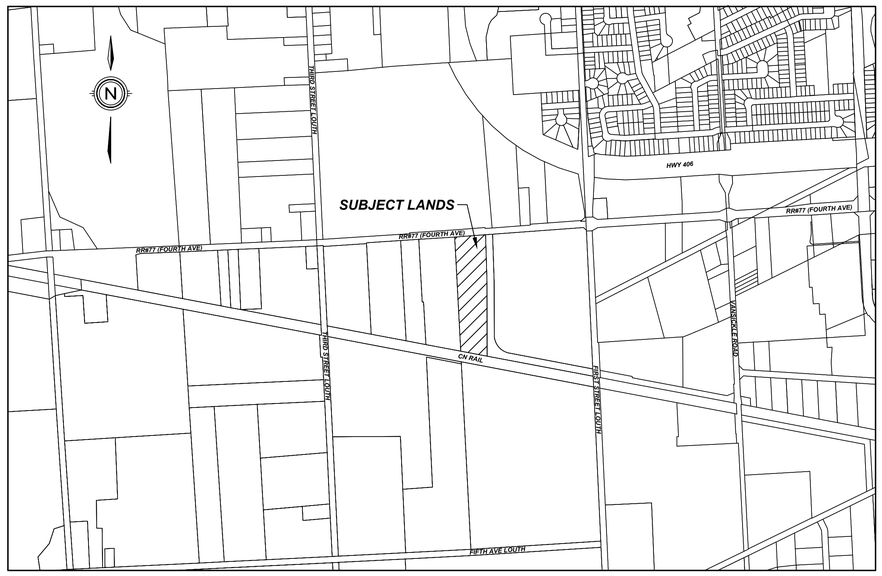
CONTRACT NO. SCS 17-006

1242 4TH AVE
NIAGARA HEALTH SYSTEM

AUGUST 2018

DAN DILLON, P.ENG.
DIRECTOR OF TRANSPORTATION AND ENVIRONMENTAL SERVICES

WALTER SENDZIK
MAYOR



LOCATION PLAN (NTS)

SHEET LIST TABLE		
SHEET NUMBER	**SHEET TITLE**	**STATION**
	COVER	
1731-GND	GENERAL NOTES AND DETAILS	
1731-GSP	GENERAL SERVICING PLAN	
1731-PP1	PLAN & PROFILE - PP1	from RR#77 (FOURTH AVE) to 0+080
1731-PP2	PLAN & PROFILE - PP2	from STA 0+080 to 0+160
1731-GP	GRADING PLAN	
1731-SS	STREET SCAPING PLAN	
SL-1	MUNICIPAL STREET LIGHTING SYSTEM	

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UCC PROJECT #1731

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SCS 17-006

1731

1242 FOURTH AVE, NIAGARA HEALTH SYSTEM
CITY OF ST.CATHARINES

#	REVISION	DATE	INIT
4	ISSUED FOR CONSTRUCTION	2018-08-24	AK
3	ISSUED FOR TENDER	2018-04-12	AK
2	REVISED PER CITY COMMENTS	2018-01-23	AK
1	ISSUED FOR DEVELOPMENT AGREEMENT	2017-10-16	AK
0	ISSUED FOR DEVELOPMENT AGREEMENT	2017-10-11	AK

OWNER'S NAME

SIGNATURE

THE CORPORATION OF THE CITY OF ST. CATHARINES

CLERK MAYOR

DATE: 20__

NOTE: THE DIMENSIONS, AREAS AND LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE AND MAY BE SLIGHTLY ALTERED IN THE FINAL DESIGN, PROVIDING THE INTENT AND PURPOSE OF THE ORIGINAL PLAN IS MAINTAINED AND ALL RELEVANT ZONING PROVISIONS COMPLIED WITH. FURTHER, AND NOT WITHSTANDING ANYTHING SHOWN ON THIS PLAN TO THE CONTRARY, ALL SITE SERVICING, GRADING AND DRAINAGE SHALL BE IN ACCORDANCE WITH PLANS APPROVED BY THE ENGINEER.

GENERAL

1. ALL DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION, IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION. GAS, HYDRO, TELEPHONE OR ANY OTHER UTILITIES THAT MAY EXIST ON THE SITE OR WITHIN THE STREET LINES MUST BE LOCATED BY ITS OWN UTILITIES AND VERIFIED PRIOR TO CONSTRUCTION. WHERE SHOWN THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR PERMITS AND COSTS REQUIRED TO SUPPORT EXISTING UTILITY POLES TO THE SATISFACTION OF THE REQUIREMENT OF THE RESPECTIVE UTILITIES.
2. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED.
3. ALL GRASSED AREAS, OUTSIDE THE LIMITS OF THE SITE, DISTURBED BY THE CONTRACTOR SHALL BE REINSTATED WITH 100mm TOPSOIL AND SOD.
4. FINISHED LOT GRADING WILL NOT ADVERSELY AFFECT DRAINAGE PATTERNS OF ADJACENT LANDS.
5. ALL GRADES TO BE WITHIN 33% MAX. SLOPE AT PROPERTY LINE AND WITHIN THE SITE. ALL WORKS WITHIN THE MUNICIPAL R.O.W REQUIRES A ROAD OCCUPANCY PERMIT.
6. ALL ABOVE GROUND WORKS AND UNDERGROUND SERVICES, MATERIALS AND INSTALLATIONS ARE TO BE IN ACCORDANCE WITH THE LATEST OPSS & OPSD STANDARDS AND THE NIAGARA PENINSULA STANDARD CONTRACT DOCUMENT AND THE REQUIREMENTS OF THE CITY OF ST. CATHARINES.
7. SIDEWALKS AND CURBS TO BE MAINTAINED AND RESTORED TO MUNICIPAL STANDARDS.
8. CITY SIDEWALK RECONSTRUCTION TO BE CO-ORDINATED WITH CITY SUPERVISOR OF CONSTRUCTION. EXISTING SIDEWALKS ARE TO BE REMOVED PER THE REQUIREMENT OF THE CITY OF ST. CATHARINES AND ARE TO COMPLY WITH THE REQUIREMENTS OF THE ONTARIANS WITH DISABILITIES ACT.
9. CONCRETE SIDEWALKS TO BE 125mm THICK ON 100mm COMPACTED GRANULAR 'A' EXCEPT WHERE SIDEWALKS CROSS ASPHALT DRIVEWAYS, SIDEWALK TO BE 150mm THICK WITH 9ga WIRE MESH.
10. ALL UNSUITABLE MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED OFF-SITE UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR OWNER.
11. THE CONTRACTOR IS RESPONSIBLE FOR IMPORTING ALL FILL MATERIAL AS REQUIRED TO BACKFILL THE PARKING AREAS, BEHIND THE PROPOSED CURBS AND IN LANDSCAPE AREAS WITHIN THE PROJECT LIMITS.
12. THE CONTRACTOR IS RESPONSIBLE FOR IMPORTING TOPSOIL TO BE PLACED TO A MINIMUM DEPTH AS SPECIFIED ON THE LANDSCAPE PLAN.
13. THE CONTRACTOR MAY REUSE ANY SUITABLE ON-SITE TOPSOIL AS APPROVED BY THE ENGINEER OR LANDSCAPE ARCHITECT.
14. LINE PAINTING FOR PARKING STALLS SHALL BE 100mm WIDE ORGANIC PAINT (YELLOW OR WHITE), TURN AND ACCESSIBILITY SYMBOLS SHALL BE PER M.T.O. AND ONTARIO TRAFFIC MANUAL BOOK 11.

WATERMAINS

1. ALL WATER SERVICE MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO CURRENT CITY OF ST. CATHARINES SPECIFICATIONS.
2. WATER SERVICE TO HAVE A MINIMUM COVER OF 1.7m WITH A MINIMUM HORIZONTAL SPACING OF 0.5m FROM THEMSELVES AND 2.5m FROM OTHER UTILITIES.
3. ALL WATER SERVICES TO HAVE A MINIMUM 0.5m VERTICAL SEPARATION FROM OUTSIDE OF PIPE TO OUTSIDE OF ANY SEWER.
4. WATER SERVICE TO BE PVC DR18 CL235 CSA 137.3, INCLUDING TRACER WIRE.
5. BEDDING FOR WATER SERVICE AS PER OPSD 802.010.
6. CONNECTIONS TO THE MUNICIPAL WATERMAIN SHALL BE EXCAVATED AND SECURED BY THE CONTRACTOR, MATERIAL SUPPLIED BY THE CONTRACTOR AND INSTALLATION OF ALL FITTINGS WITNESSED BY A MUNICIPAL WATER OPERATOR.
7. FIRE HYDRANTS ARE TO INCLUDE A SECONDARY VALVE AS PER CITY OF ST. CATHARINES STANDARDS.
8. WATER SERVICES SMALLER THAN 75mm SHALL BE TYPE 'K' COPPER OR APPROVED EQUAL.

SANITARY SEWERS

1. ALL SANITARY SEWER MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO CURRENT MUNICIPAL STANDARDS AND SPECIFICATIONS, AND OPSD.
2. SANITARY MAINTENANCE HOLE SHALL BE PER OPSD 701.010, INCLUDING BENCHING PER OPSD 701.021, LADDER RUNGS, AND FRAME AND GRATE PER OPSD 401.010. INCLUDING KOR-N-SEAL BOOTS FOR SEWER CONNECTIONS.
3. SANITARY SEWER TO BE PVC DR35, CSA 182.2, BEDDING PER OPSD 802.010.
4. STRUCTURES TO INCLUDE PROVISIONS FOR 2 ADJUSTMENT UNITS PER OPSD 704.011.
5. SANITARY SEWER TO BE FLUSHED, MANDREL AND VIDEO INSPECTION PRIOR TO PLACEMENT OF ASPHALT AND 2 REPORTS PROVIDED TO THE ENGINEER.

STORM SEWERS

1. ALL STORM SEWER MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO CURRENT MUNICIPAL STANDARDS AND SPECIFICATIONS, AND OPSD.
2. STORM SEWERS TO BE PVC RIBBED CSA B182.4. UP TO 450mm DIAMETER, OR CONCRETE CL 65-D FOR SIZES GREATER THAN 450MM DIAMETER. BEDDING FOR STORM SEWER AS PER OPSD 802.010.
3. CATCH BASIN TO BE PRECAST CONCRETE PER OPSD 705.010 AND 705.020, FRAME & GRATE PER OPSD 400.100.
4. ALL CATCH BASINS TO BE PROVIDED WITH 2-3.0m LONG 100mm SUBDRAINS TO PROVIDE THE SUBGRADE WITH DRAINAGE INTO THE CATCHBASIN.
5. SINGLE CATCH BASIN LEADS TO BE 250mmø, DCB LEADS TO BE 300ø UNLESS OTHERWISE SPECIFIED.
6. STORM MAINTENANCE HOLES TO BE PRECAST CONCRETE PER OPSD 701.010, 701.011, 701.012 INCLUDING BENCHING PER OPSD 701.021, FRAME & GRATES PER OPSD 401.010 'TYPE B', OR OPSD 400.100 FOR CBMH STRUCTURES.
7. ADJUSTMENT UNITS FOR STORM STRUCTURES PER OPSD 704.011.
8. STORM SEWERS TO BE FLUSHED AND VIDEO INSPECTED PRIOR TO ASPHALT BEING PLACED AND 2 REPORTS PROVIDED TO THE ENGINEER.
9. STORMWATER QUALITY UNIT TO BE CONTECH STORMWATER SOLUTIONS CDS MODEL PMSU20_25m AND CAN BE ORDERED FROM ECHELON ENVIRONMENTAL (905) 948-0000.

EXCAVATION AND GRADING

1. ALL EXCAVATION SHALL BE PER THE RECOMMENDATION OF THE SITE GEOTECHNICAL REPORT PREPARED BY LANDTEK LTD.
2. EXCAVATION OF AREAS WITHIN THE BUILDING FOOTPRINT, THE CONTRACTOR SHALL REMOVE ALL UNSUITABLE MATERIAL, TOPSOIL, CLAY AND ASPHALT AND PLACE SUITABLE MATERIAL PER OPSS 1010 COMPACTED TO A MINIMUM 95% STANDARD DRY PROCTOR DENSITY.

PARKING AREAS AND ROAD WORKS

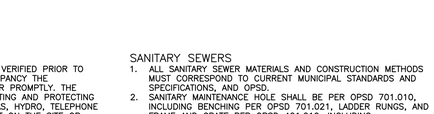
1. ALL ASPHALT PARKING LOT AREAS TO BE GRADED AT A MINIMUM OF 1.0%.
2. ALL DRIVEWAY AND PARKING LOT GRADES REFER TO BOTTOM OF CURB/FINISHED ASPHALT GRADE UNLESS OTHERWISE SHOWN OFF ASPHALT.
3. THE UNIT PRICE FOR CURB AND GUTTER TO INCLUDE BACK FILL AT 3:1 SLOPE.
4. BOULEVARD GRADES SHALL BE BETWEEN 2% MIN. AND 8% MAX.
5. ANY CHANGES IN GRADE AND/OR CATCH BASINS REQUIRE THE APPROVAL OF THE ENGINEER AND CITY OF ST. CATHARINES.
6. SITE CONCRETE CURB TO BE OPSD 600.110 INCLUDING KEY WHEN ADJACENT TO SIDEWALKS.
7. SIDEWALK RAMPS TO BE 2.4m LONG WITH SLOPES OF 5% AND TO INCLUDE DIRECTIONAL LINES AS PROVIDED IN OPSD 310.030.
8. ACCESSIBLE PARKING SPACES SHALL BE GRADES PER THE REQUIREMENTS OF THE CITY OF ST. CATHARINES FAD STANDARDS. MAX 1% CROSS SLOPE, 1.5% RUNNING SLOPE.

ADDITIONAL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL CONCRETE SIDEWALK AND CURBING, INCLUDING THE DISPOSAL OFFSITE.

LEGEND

WV ⊗	EX WATER VALVE
WV ●	PROP WATER VALVE
WVC ○	EX WATER VALVE CHAMBER
WMC ○	PROP WATER METER CHAMBER
HYD ⊸	EX HYDRANT
HYD ⊸●	PROP HYDRANT
CB □	EX CATCHBASIN
CB ■	PROP CATCHBASIN
DCB □□	EX DOUBLE CATCHBASIN
DCB ■■	PROP DOUBLE CATCHBASIN
CBMH ○	EX CATCHBASIN MANHOLE
CBMH ◎	PROP CATCHBASIN MANHOLE
STM ○	EX STORM MANHOLE
MH ●	PROP STORM MANHOLE
SAN ○	EX SANITARY MANHOLE
MH ●	PROP SANITARY MANHOLE
PLUG ⊏	EX PLUG
PLUG ■	PROP PLUG
HP ○	EX HYDRO POLE
LS ⊸	EX LIGHT STANDARD
⊸●	PROP LIGHT POLE
◀	DOOR
◀	FIRE EXIT
——	EX WATERMAIN
——	PROP WATERMAIN
——	EX STORM SEWER
——	PROP STORM SEWER
——	EX SANITARY SEWER
——	PROP SANITARY SEWER
——	PROP CURB
——	PROP DEPRESSED CURB



NOTE:

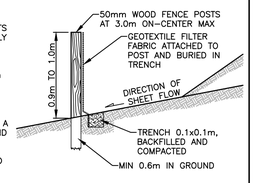
ALL CURB TO BE BACKFILLED WITH NATIVE MATERIAL COMPACTED TO 95% SPD. THIS WORK IS TO BE INCLUDED IN THE UNIT PRICE OF THE CURB. WHERE THE CURB IS HIGHER THAN EXISTING GROUND BACKFILL TO BE GRADED TO A MAXIMUM 3:1 SLOPE.

TYPICAL BARRIER CURB, SIDEWALK, AND ASPHALT CROSS SECTION

NTS

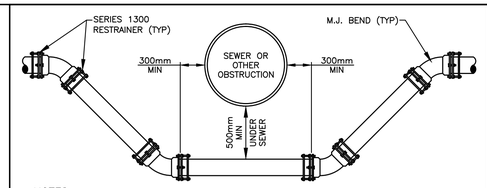
NOTES:

1. THIS TYPE OF FILTER BARRIER CONSISTS OF GEOTEXTILE FILTER FABRIC SECURELY ATTACHED ON THE UPSTREAM SIDE.
2. SILT FENCES SHOULD BE USED ONLY FOR INTERCEPTING SHEET FLOWS OF DRAINAGE AREA NO LONGER THAN 30m AND NO STEEPER THAN 2:1.
3. THE FENCE HEIGHT SHOULD BE 0.9m TO 1.0m AND THE LENGTH APPROX. 30m PER 1000m² OF DRAINAGE AREA.
4. THE FABRIC IS TO BE RECESSED INTO A TRENCH 0.1m x 0.1m, BACKFILLED, AND COMPACTED.
5. FENCE POST SHOULD BE SPACED NO MORE THAN 3.0m APART AND SET INTO THE GROUND AT LEAST 0.6m.



SILT FENCE DETAIL

NTS

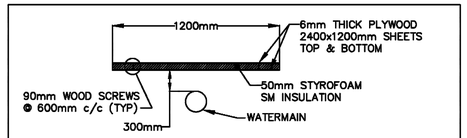


NOTES:

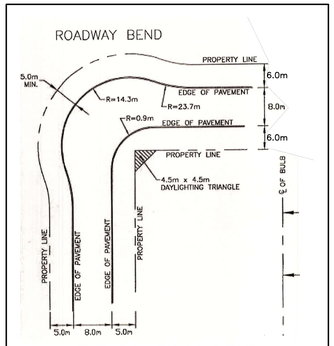
1. THE VERTICAL SEPARATION BETWEEN THE INVERT OF THE SEWER AND THE CROWN OF THE WATERMAIN SHOULD BE 500mm MINIMUM.
2. SUPPORT THE SEWER WITH CONCRETE ENCASEMENT.
3. NO PIPE JOINT SHALL BE LOCATED DIRECTLY UNDER THE SEWER. ENSURE THERE IS A FULL PIPE LENGTH CENTERED UNDER THE SEWER.

WATERMAIN VERTICAL DEFLECTION DETAIL

N.T.S.

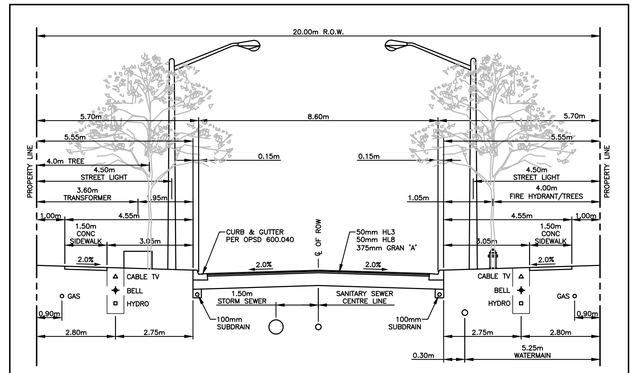


WATERMAIN INSULATION DETAIL NTS



TYPICAL ROAD BEND

N.T.S.



TYPICAL CROSS-SECTION - 20.0m R.O.W.

1:100

4	ISSUED FOR CONSTRUCTION	2018-08-24	AK
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2	REVISED PER CITY COMMENTS	2018-01-23	AK
1	ISSUED FOR DEVELOPMENT AGREEMENT	2017-10-16	AK
0	ISSUED FOR DEVELOPMENT AGREEMENT	2017-10-11	AK
#	REVISION	DATE	INIT

NOTES:

1. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWER, AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
2. PROPERTY LINES WERE PLOTTED USING REGISTERED PLANS AND BARS LOCATED IN THE FIELD. TO VERIFY THE ACCURACY OF THESE PROPERTY LINES, A LEGAL SURVEY SHOULD BE PERFORMED PRIOR TO CONSTRUCTION.
3. ALL CONSTRUCTION MUST COMPLY WITH THE NIAGARA PENINSULA STANDARD CONTRACT DOCUMENT.

DRAFTING	TO
DESIGN	AK
CHECKED BY	AK
APPROVED BY	AK

LICENSED PROFESSIONAL ENGINEER — A. S. KEANE — 100109861 — Aug 24/18 — PROVINCE OF ONTARIO

St. Catharines
stcatharines.ca

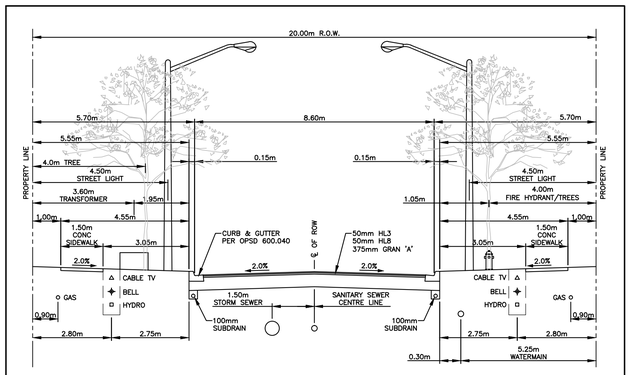
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CONTRACT NO. SCS 17-006
1242 FOURTH AVE, NIAGARA HEALTH SYSTEM

CITY OF ST.CATHARINES
GENERAL NOTES AND DETAILS

CONSULTANT FILE No.	1731
DATE	2018-08-24
PRINTED	2018-08-24
SCALE	
REF No.	----
DWG No.	1731-GND
REV	4

DRAWING FILE: F:\1731\Engineering\1731-BASE.dwg PLOTTED: Aug 24, 2018 - 11:36am PLOTTED BY: Stephanie



TYPICAL CROSS-SECTION - 20.0m R.O.W.

1:100

LEGEND

WV⊗	EX WATER VALVE
WV ●	PROP WATER VALVE
WVC ○	EX WATER VALVE CHAMBER
WMC ◯	PROP WATER METER CHAMBER
HYD	EX HYDRANT
HYD	PROP HYDRANT
CB □	EX CATCHBASIN
CB ■	PROP CATCHBASIN
DCB □□	EX DOUBLE CATCHBASIN
DCB ■■	PROP DOUBLE CATCHBASIN
CBMH ◯	EX CATCHBASIN MANHOLE
CBMH ◉	PROP CATCHBASIN MANHOLE
STM ○	EX STORM MANHOLE
MH ●	PROP STORM MANHOLE
SAN ○	EX SANITARY MANHOLE
MH ●	PROP SANITARY MANHOLE
PLUG ⊂	EX PLUG
PLUG ⊂	PROP PLUG
CMB	PROP COMMUNITY MAILBOX
HP ○	EX HYDRO POLE
TRANS HV	PROP HYDRO TRANSFORMER
SL PED	PROP STREET LIGHT PEDESTAL
LS	EX LIGHT STANDARD
LS	PROP LIGHT POLE
	PROP TACTILE WARNING PLATE
• 100.00	EXISTING ELEVATION
100.00	PROPOSED ELEVATION
	EX WATERMAIN
WAT	PROP WATER LATERAL WITH CURBSTOP
	PROP WATERMAIN
	EX STORM SEWER
STM	PROPOSED STORM LATERAL
	PROP STORM SEWER
	EX SANITARY SEWER
SAN	PROP SANITARY LATERAL WITH CLEANOUT
	PROP SANITARY SEWER
	PROP CURB
	PROP DEPRESSED CURB
	SILT FENCE
	PROP CHAIN-LINK FENCE
	PROP WOOD FENCE

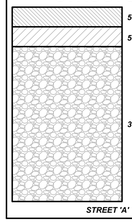
LEGEND

	REMOVAL OF EXISTING ITEM (HYDRANT, TREE, ETC.)
	COMMERCIAL ASPHALT DW REINSTATEMENT NATIVE BACKFILL, 300mm GRAN 'A', 50mm HL8, 40mm HL3
	ASPHALT DW REINSTATEMENT NATIVE BACKFILL, 225mm GRAN 'A', 50mm HL8, 25mm HL3A
	PROP CONC SIDEWALK, 100mm GRAN 'A', 100mm CONC, 150mm CONC ACROSS DW'S, 200mm CONC AT INTERSECTION RAMPS
	BOULEVARD REINSTATEMENT 100mm TOPSOIL AND SOD
	BOULEVARD REINSTATEMENT 100mm TOPSOIL AND SEED
	PROP CONCRETE CURB AND GUTTER PER OPSD 600.040
	DEPRESSED CURB

NOTES

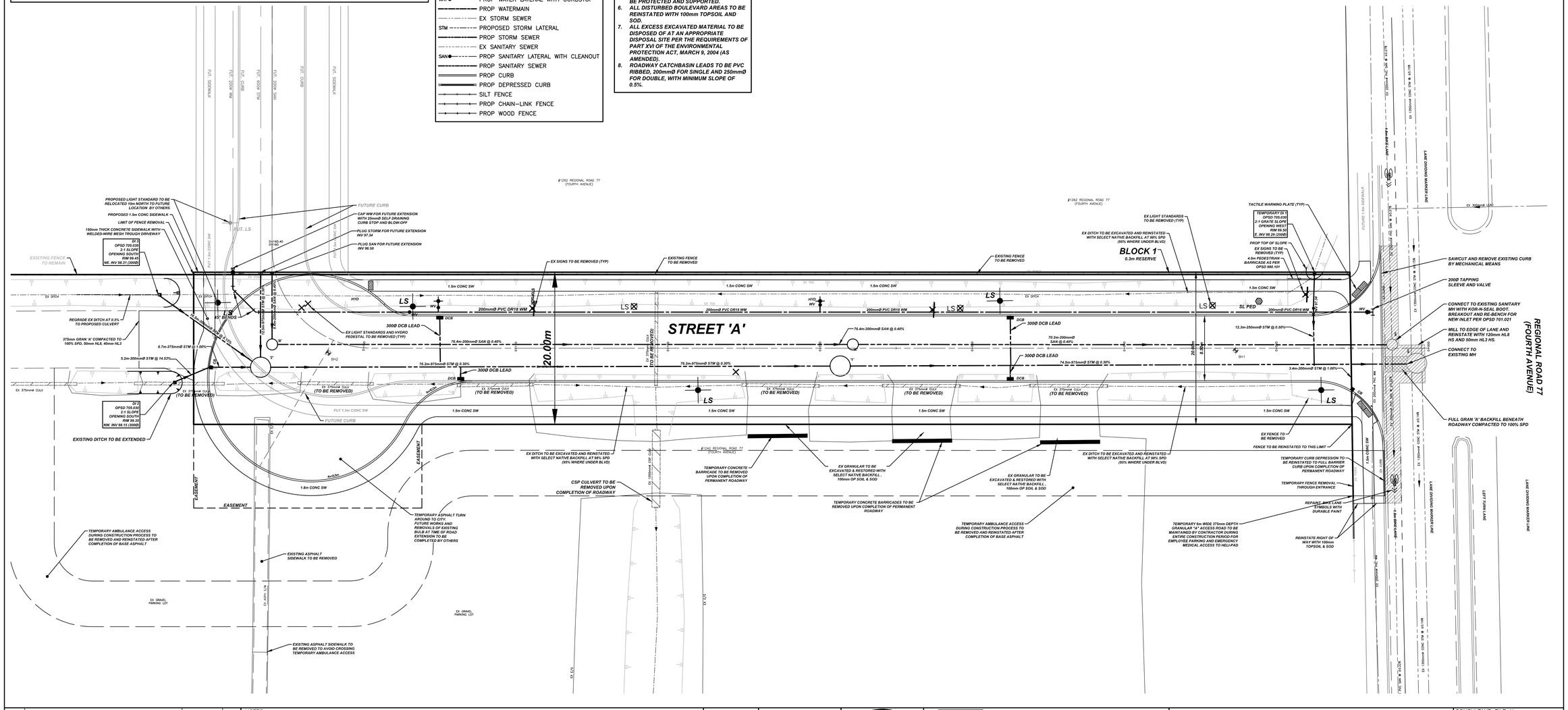
1. ALL AFFECTED SIGNS TO BE REMOVED, SALVAGED, AND REINSTALLED.
2. ALL CURB AND GUTTER TO BE PER OPSD 600.040 AND INCLUDE 100mmØ SUBDRAIN.
3. ALL DISTURBED DRIVEWAYS TO BE REINSTATED WITH ORIGINAL TYPE OF MATERIAL TO ORIGINAL OR BETTER CONDITION.
4. ALL CONNECTIONS OR BENDS SHALL BE MECHANICALLY RESTRAINED.
5. ALL EXISTING HYDRO AND LIGHT POLES TO BE PROTECTED AND SUPPORTED.
6. ALL DISTURBED BOULEVARD AREAS TO BE REINSTATED WITH 100mm TOPSOIL AND SOD.
7. ALL EXCESS EXCAVATED MATERIAL TO BE DISPOSED OF AT AN APPROPRIATE DISPOSAL SITE PER THE REQUIREMENTS OF PART XVI OF THE ENVIRONMENTAL PROTECTION ACT, MARCH 9, 2004 (AS AMENDED).
8. ROADWAY CATCHBASIN LEADS TO BE PVC RIBBED, 200mmØ FOR SINGLE AND 250mmØ FOR DOUBLE, WITH MINIMUM SLOPE OF 0.5%.

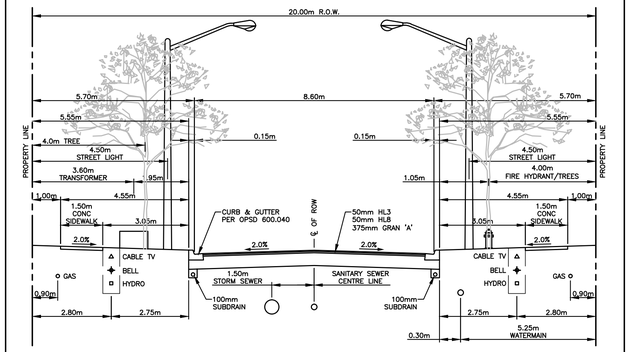
TYPICAL PAVEMENT STRUCTURE



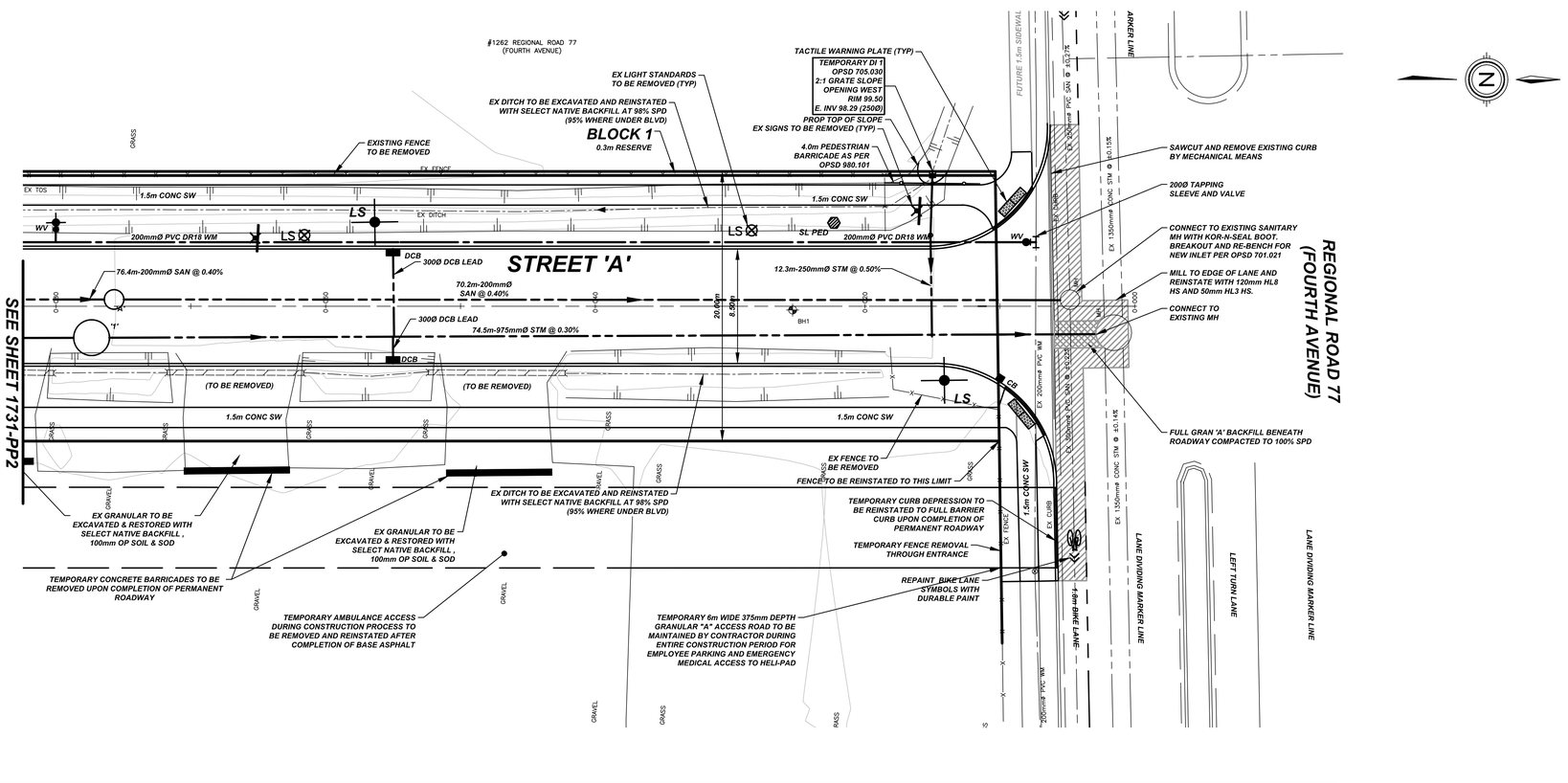
STREET 'A'

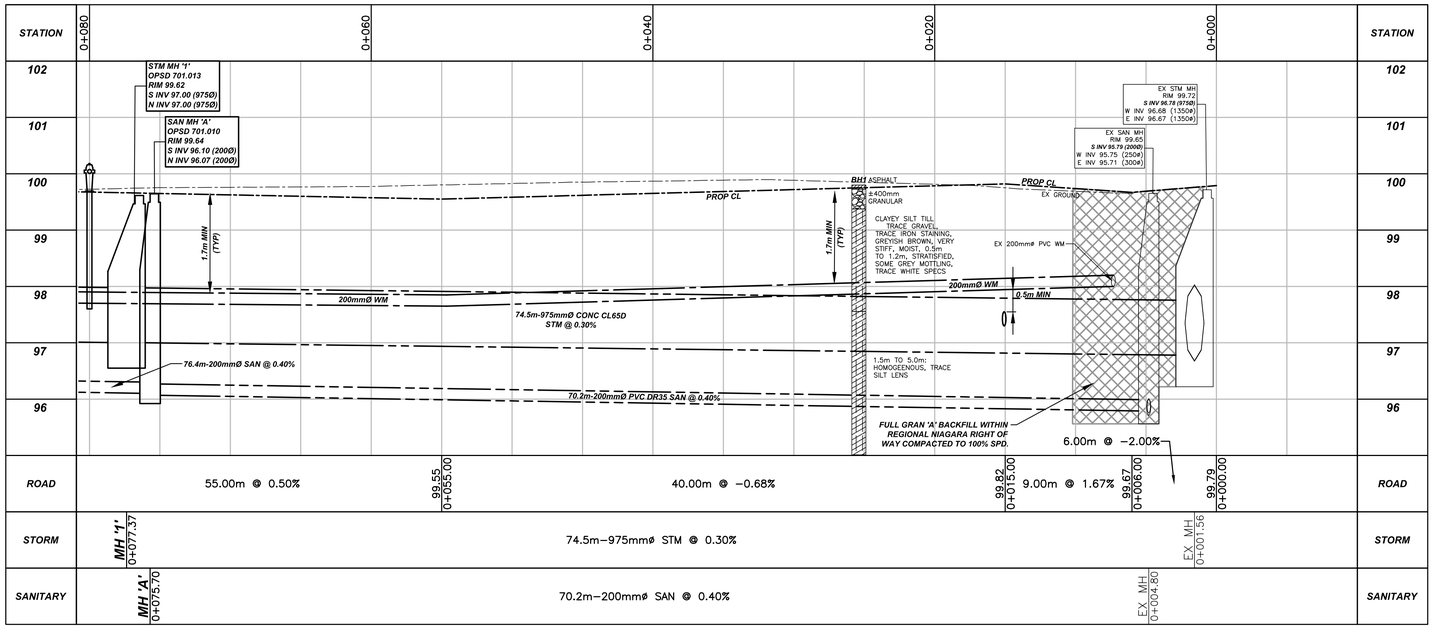



#1262 REGIONAL ROAD 77 (FOURTH AVENUE)
PROPOSED LIGHT STANDARD TO BE RELOCATED 10m NORTH TO FUTURE LOCATION BY OTHERS
PROPOSED 1.5m CONC SIDEWALK
LIMIT OF FENCE REMOVAL
150mm THICK CONCRETE SIDEWALK WITH WELDED-WIRE MESH THROUGH DRIVEWAY
DI 2 OPSD 705.030 2:1 SLOPE OPENING SOUTH RIM 99.45 NE. INV 98.31 (300Ø)
EXISTING FENCE TO REMAIN
FUTURE CURB
CAP WM FOR FUTURE EXTENSION WITH 25mmØ SELF DRAINING CURB STOP AND BLOW-OFF
PLUG STORM FOR FUTURE EXTENSION INV 97.34
PLUG SAN FOR FUTURE EXTENSION INV 96.50
EX SIGNS TO BE REMOVED (TYP)
EXISTING FENCE TO BE REMOVED
EX LIGHT STANDARDS TO BE REMOVED (TYP)
EX DITCH TO BE EXCAVATED AND REINSTATED WITH SELECT NATIVE BACKFILL AT 98% SPD (95% WHERE UNDER BLVD)
BLOCK 1
0.3m RESERVE
TACTILE WARNING PLATE (TYP)
TEMPORARY DI 1 OPSD 705.030 2:1 GRATE SLOPE OPENING WEST RIM 99.50 E. INV 98.39 (250Ø)
PROP TOP OF SLOPE
EX SIGNS TO BE REMOVED (TYP)
4.0m PEDESTRIAN BARRICADE AS PER OPSD 980.101
SAWCUT AND REMOVE EXISTING CURB BY MECHANICAL MEANS
200Ø TAPPING SLEEVE AND VALVE
CONNECT TO EXISTING SANITARY MH WITH KOR-N-SEAL BOOT, BREAKOUT AND RE-BENCH FOR NEW INLET PER OPSD 701.021
MILL TO EDGE OF LANE AND REINSTATE WITH 120mm HL8 HS AND 50mm HL3 HS.
CONNECT TO EXISTING MH
FULL GRAN 'A' BACKFILL BENEATH ROADWAY COMPACTED TO 100% SPD
REGIONAL ROAD 77 (FOURTH AVENUE)
REGRADE EX DITCH AT 0.5% TO PROPOSED CULVERT
375mm GRAN 'A' COMPACTED TO 100% SPD, 50mm HL8, 40mm HL3
EX 375mm CULV
EX 375mm CULV (TO BE REMOVED)
DI 2 OPSD 705.030 2:1 SLOPE OPENING SOUTH RIM 99.35 NW. INV 98.15 (300Ø)
EXISTING DITCH TO BE EXTENDED
6.7m-375mmØ STM @ 1.00%
5.2m-300mmØ STM @ 14.53%
76.2m-975mmØ STM @ 0.30%
76.4m-200mmØ SAN @ 0.40%
70.2m-200mmØ SAN @ 0.40%
74.5m-975mmØ STM @ 0.30%
12.3m-250mmØ STM @ 0.50%
3.4m-200mmØ STM @ 1.00%
300Ø DCB LEAD
EX LIGHT STANDARDS AND HYDRO PEDESTAL TO BE REMOVED (TYP)
STREET 'A'
20.00m
EX 375mm CULV (TO BE REMOVED)
EX 1050mm CSP (TO BE REMOVED)
EX 1200mm CSP (TO BE REMOVED)
EX 1500mm CSP (TO BE REMOVED)
EX 1500mm CSP (TO BE REMOVED)
EX 1500mm CSP (TO BE REMOVED)
1.5m CONC SW
1.8m CONC SW
FUT 1.5m CONC SW
FUTURE CURB
EASEMENT
EASEMENT
TEMPORARY ASPHALT TURN AROUND TO CITY STANDARDS AND REMOVAL OF EXISTING BULB AT TIME OF ROAD EXTENSION TO BE COMPLETED BY OTHERS
CSP CULVERT TO BE REMOVED UPON COMPLETION OF ROADWAY
EX DITCH TO BE EXCAVATED AND REINSTATED WITH SELECT NATIVE BACKFILL AT 98% SPD (95% WHERE UNDER BLVD)
TEMPORARY CONCRETE BARRICADE TO BE REMOVED UPON COMPLETION OF PERMANENT ROADWAY
EX GRANULAR TO BE EXCAVATED & RESTORED WITH SELECT NATIVE BACKFILL, 100mm OF SOIL & SOD
TEMPORARY CONCRETE BARRICADES TO BE REMOVED UPON COMPLETION OF PERMANENT ROADWAY
EX GRANULAR TO BE EXCAVATED & RESTORED WITH SELECT NATIVE BACKFILL, 100mm OF SOIL & SOD
TEMPORARY AMBULANCE ACCESS DURING CONSTRUCTION PROCESS TO BE REMOVED AND REINSTATED AFTER COMPLETION OF BASE ASPHALT
EX DITCH TO BE EXCAVATED AND REINSTATED WITH SELECT NATIVE BACKFILL AT 98% SPD (95% WHERE UNDER BLVD)
TEMPORARY 6m WIDE 375mm DEPTH GRANULAR 'A' ACCESS ROAD TO BE MAINTAINED BY CONTRACTOR DURING ENTIRE CONSTRUCTION PERIOD FOR EMPLOYEE PARKING AND EMERGENCY MEDICAL ACCESS TO HELI-PAD
EX FENCE TO BE REMOVED
FENCE TO BE REINSTATED TO THIS LIMIT
TEMPORARY CURB DEPRESSION TO BE REINSTATED TO FULL BARRIER CURB UPON COMPLETION OF PERMANENT ROADWAY
TEMPORARY FENCE REMOVAL THROUGH ENTRANCE
REPAINT 3M'S LANE SYMBOLS WITH DURABLE PAINT
REINSTATE RIGHT OF WAY WITH 150mm TOPSOIL & SOD
EXISTING ASPHALT SIDEWALK TO BE REMOVED
EXISTING ASPHALT SIDEWALK TO BE REMOVED TO AVOID CROSSING TEMPORARY AMBULANCE ACCESS
EX GRAVEL PARKING LOT
EX GRAVEL PARKING LOT
EX ASPH SLAB
EX CATV
EX 1050mm CSP
EX 1200mm CSP
EX 1500mm CSP
EX 1500mm CSP
EX 1500



TYPICAL CROSS-SECTION - 20.0m R.O.W.
1:100





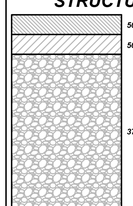
LEGEND

- REMOVAL OF EXISTING ITEM (HYDRANT, TREE, ETC.)
- COMMERCIAL ASPHALT DW REINSTATEMENT NATIVE BACKFILL, 300mm GRAN 'A', 50mm HL8, 40mm HL3
- ASPHALT DW REINSTATEMENT NATIVE BACKFILL, 225mm GRAN 'A', 50mm HL8, 25mm HL3A
- PROP CONC SIDEWALK, 100mm GRAN 'A', 100mm CONC. 150mm CONC ACROSS DW'S, 200mm CONC AT INTERSECTION RAMPS
- BOULEVARD REINSTATEMENT 100mm TOPSOIL AND SOD
- BOULEVARD REINSTATEMENT 100mm TOPSOIL AND SEED
- PROP CONCRETE CURB AND GUTTER PER OPSD 600.040
- DEPRESSED CURB

NOTES

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8. ROADWAY CATCHBASIN LEADS TO BE PVC RIBBED, 250mmØ FOR SINGLE AND 300mmØ FOR DOUBLE, WITH MINIMUM SLOPE OF 0.5%.

TYPICAL PAVEMENT STRUCTURE



STREET 'A'

#	REVISION	DATE	INIT
4	ISSUED FOR CONSTRUCTION	2018-08-24	AK
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3. ALL CONSTRUCTION MUST COMPLY WITH THE NIAGARA PENINSULA STANDARD CONTRACT DOCUMENT.

DRAFTING: M.C./J.C.
DESIGN: A.K.
CHECKED BY: A.K.
APPROVED BY: .

LICENCED PROFESSIONAL ENGINEER A. S. KEANE 100109861 PROVINCE OF ONTARIO 08/24/18

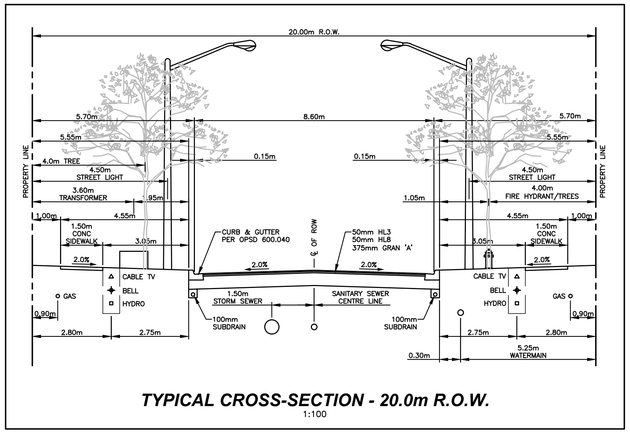
St. Catharines
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UPPER CANADA CONSULTANTS
ENGINEERS / PLANNERS
261 Martindale Road Unit #1
St. Catharines, ON L2W 1A1
Phone: (905)688-9400
Fax: (905)688-5274

CONTRACT NO. SCS 17-006
1242 FOURTH AVE, NIAGARA HEALTH SYSTEM
from RR#77 (FOURTH AVE) to 0+080
CITY OF ST.CATHARINES
PLAN & PROFILE - PP1

CONSULTANT FILE No. 1731
DATE 2018-08-24
PRINTED 2018-08-24
SCALE Hor : 1:200 m, Ver : 1:50 m
REF No. P***
DWG No. 1731-PP1
REV 4

DRAWING FILE: F:\1731\Engineering\1731-BASE.dwg PLOTTED: Aug 24, 2018 - 11:36am PLOTTED BY: Stephanie



TYPICAL CROSS-SECTION - 20.0m R.O.W.
1:100

LEGEND

- REMOVAL OF EXISTING ITEM (HYDRANT, TREE, ETC.)
- COMMERCIAL ASPHALT DW REINSTATEMENT NATIVE BACKFILL, 300mm GRAN 'A', 50mm HL8, 40mm HL3
- ASPHALT DW REINSTATEMENT NATIVE BACKFILL, 225mm GRAN 'A', 50mm HL8, 25mm HL3A
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- BOULEVARD REINSTATEMENT 100mm TOPSOIL AND SOD
- BOULEVARD REINSTATEMENT 100mm TOPSOIL AND SEED
- PROP CONCRETE CURB AND GUTTER PER OPSD 600.040
- DEPRESSED CURB

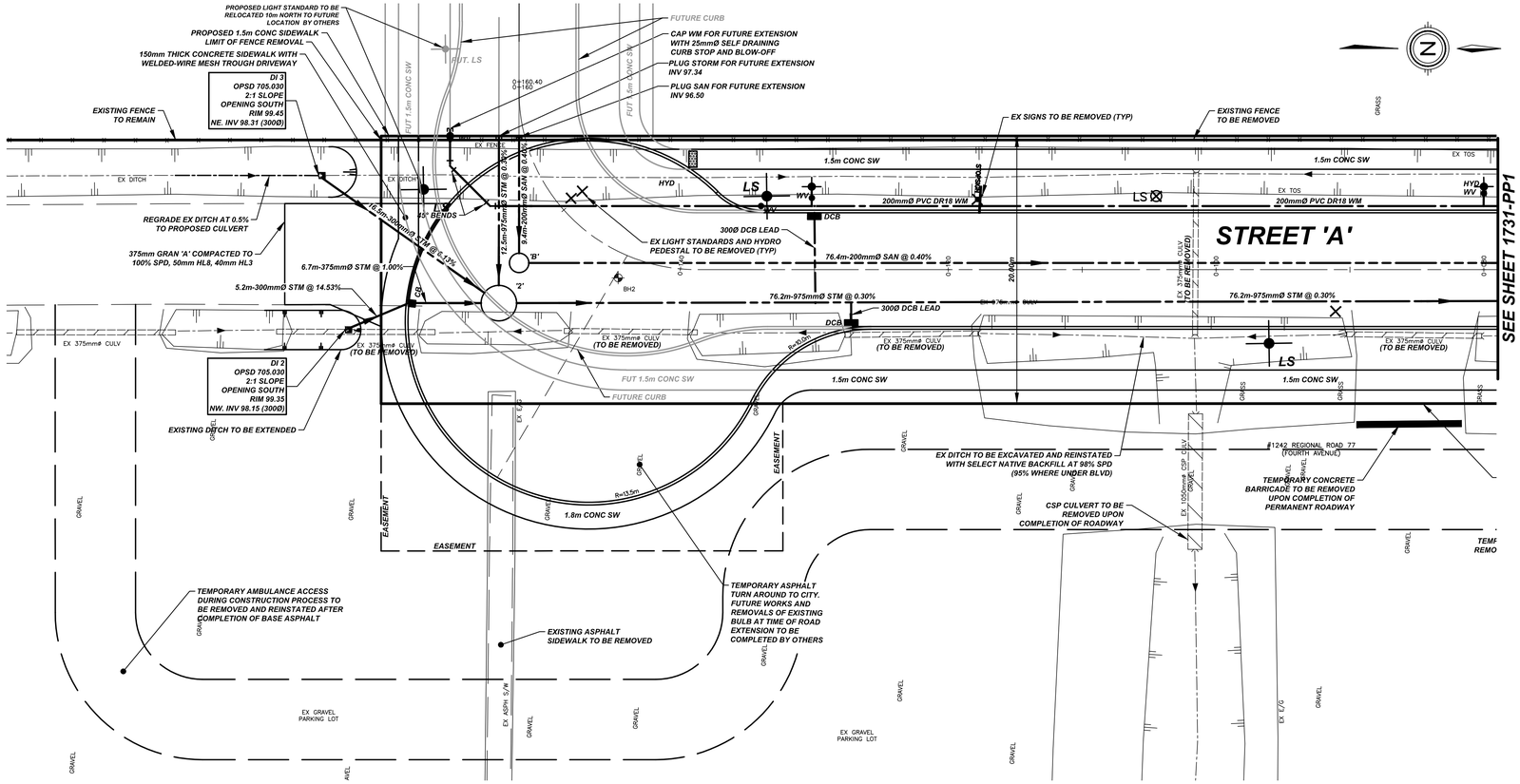
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TYPICAL PAVEMENT STRUCTURE



STREET 'A'



STATION	0+160	0+140	0+120	0+100	0+080	STATION
102						102
101						101
100						100
99						99
98						98
97						97
96						96
ROAD	99.95 0+160.15	30.15m @ 0.80%	99.70 0+130.00	20.00m @ −0.60%	99.82 0+110.00	55.00m @ 0.50%	ROAD
STORM		12.5m−975mmØ STM @ 0.30% MH '2' 0+148.78		76.2m−975mmØ STM @ 0.30%			STORM
SANITARY		9.4m 200mmØ SAN @ 0.40% MH 'B' 0+149.46		76.4m−200mmØ SAN @ 0.40%			SANITARY

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DRAFTING	M.C./J.C.
DESIGN	A.K.
CHECKED BY	A.K.
APPROVED BY	.

L'ORDRE PROFESSIONNEL DES INGÉNIEURS DE L'ONTARIO
A. S. KEANE
100109861
Aug 24/18
PROVINCE OF ONTARIO

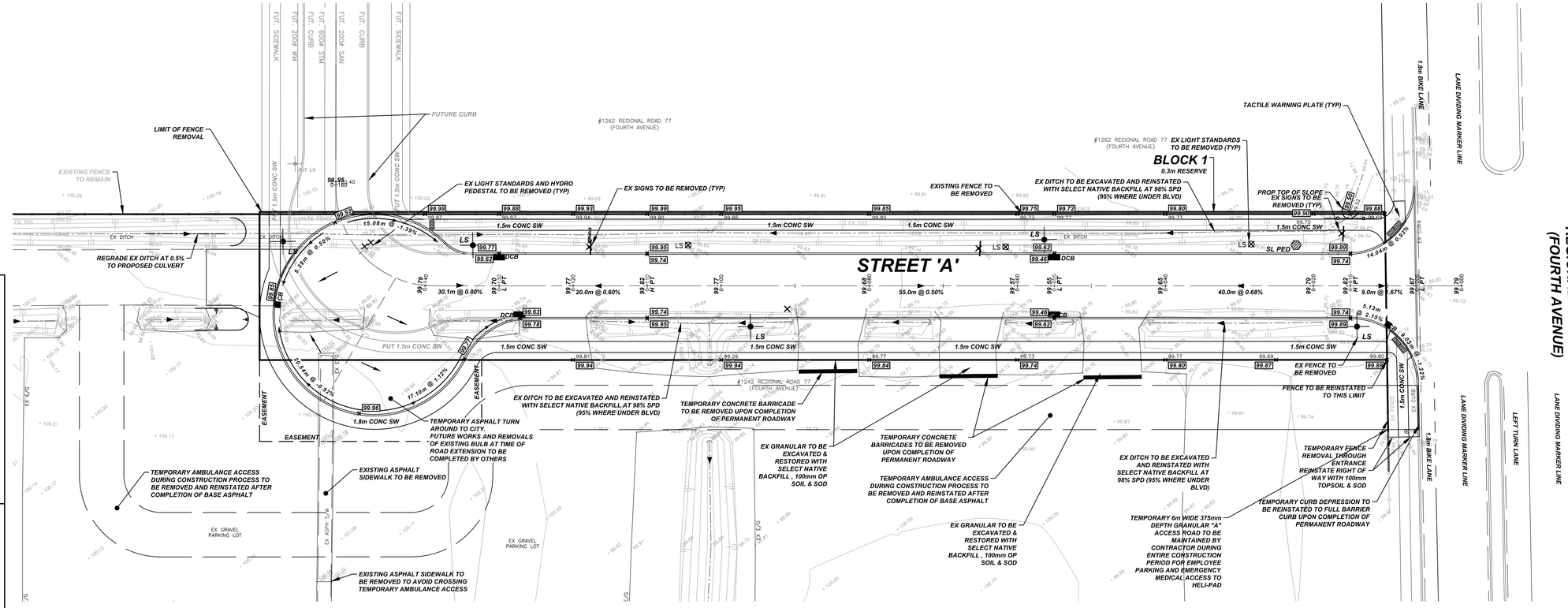
St. Catharines
stcatharines.ca

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ENGINEERS / PLANNERS
261 Martindale Road Unit #1
St. Catharines, ON L2W 1A1
Phone: (905)688-9400
Fax: (905)688-5274

CONTRACT NO. SCS 17-006
1242 FOURTH AVE, NIAGARA HEALTH SYSTEM
from STA 0+080 to 0+160
CITY OF ST.CATHARINES
PLAN & PROFILE - PP2

CONSULTANT FILE No.	1731
DATE	2018-08-24
PRINTED	2018-08-24
SCALE	Hor : 1:200 m Ver : 1:50 m
REF No.	P****
DWG No.	1731-PP2
REV	4

REGIONAL ROAD 77 (FOURTH AVENUE)



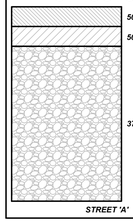
LEGEND

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- COMMERCIAL ASPHALT DW REINSTATEMENT NATIVE BACKFILL, 300mm GRAN 'A', 50mm HL8, 40mm HL3
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- DEPRESSED CURB

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TYPICAL PAVEMENT STRUCTURE



STREET 'A'

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DRAFTING	M.C./J.C.
DESIGN	A.K.
CHECKED BY	A.K.
APPROVED BY	.

LICENSED PROFESSIONAL ENGINEER — A. S. KEANE — 100109861 — 2018/24/18 — PROVINCE OF ONTARIO

St. Catharines
stcatharines.ca

UPPER CANADA CONSULTANTS
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CONTRACT NO. SCS 17-006
1242 FOURTH AVE, NIAGARA HEALTH SYSTEM

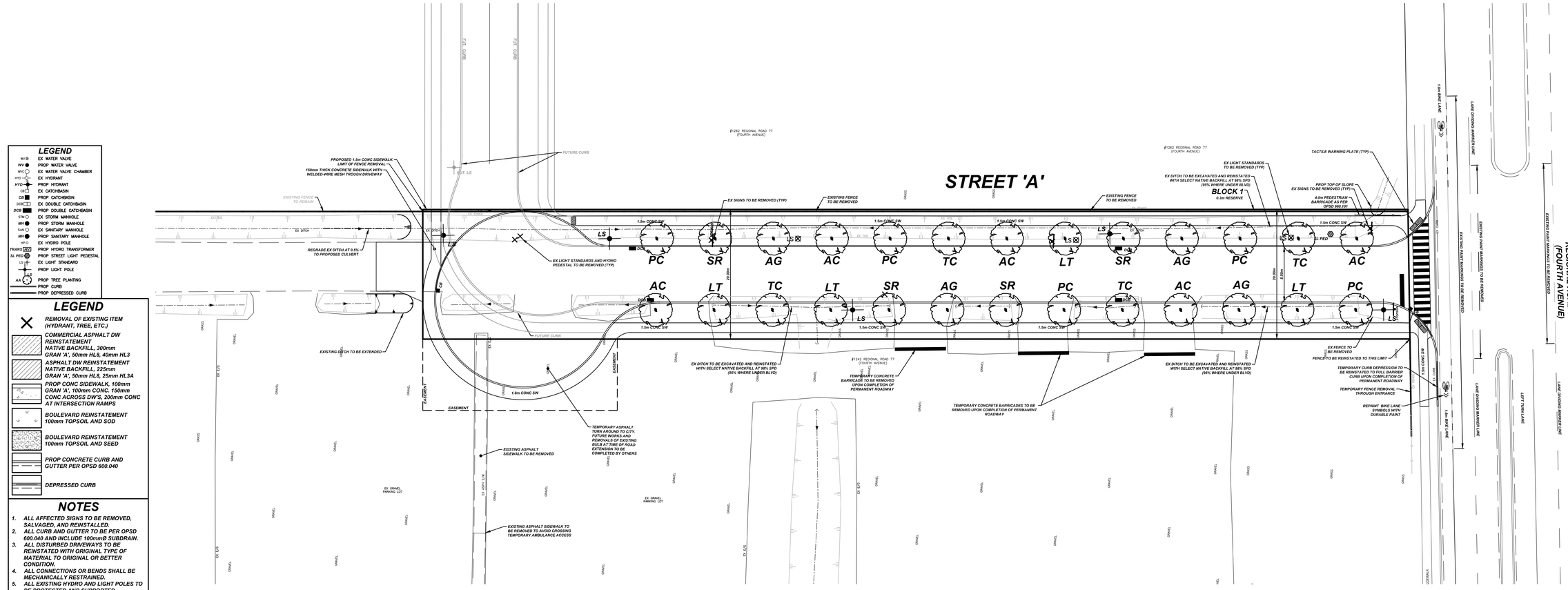
CITY OF ST.CATHARINES
GRADING PLAN

CONSULTANT FILE No.	1731
DATE	2018-08-24
PRINTED	2018-08-24
SCALE	1:300 m
REF No.	----
DWG No.	1731-GP
REV	4

DRAWING FILE: F:\1731\Engineering\1731-BASE.dwg PLOTTED: Aug 24, 2018 - 11:36am PLOTTED BY: Stephanie

PLANTING SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	QTY	SIZE	CONDITION
TREES:					
TC	TILIA CORDATA	LITTLE-LEAF LINDEN	4	60mm CAL	W.B.
LT	LIRIODENDRON TULIPIFERA	TULIP TREE	4	60mm CAL	W.B.
SR	SYRINGA RETICULATA 'IVORY SILK'	IVORY SILK LILAC	4	60mm CAL	W.B.
AG	ACER GINNALA	AMUR MAPLE	4	60mm CAL	W.B.
PC	PYRUS CALLERYANA	ORNAMENTAL PEAR	5	60mm CAL	W.B.
AC	AMELANCHIER CANADENSIS 'BALLERINA'	BALLERINA SERVICEBERRY	5	60mm CAL	W.B.



LEGEND

- EX WATER VALVE
- PROP WATER VALVE
- EX WATER VALVE CHAMBER
- EX HYDRANT
- PROP HYDRANT
- EX CATCHBASIN
- PROP CATCHBASIN
- EX DOUBLE CATCHBASIN
- PROP DOUBLE CATCHBASIN
- EX STORM MANHOLE
- PROP STORM MANHOLE
- EX SANITARY MANHOLE
- PROP SANITARY MANHOLE
- EX HYDRO POLE
- PROP HYDRO TRANSFORMER
- PROP STREET LIGHT PEDESTAL
- EX LIGHT STANDARD
- PROP LIGHT POLE
- PROP TREE PLANTING
- PROP CURB
- PROP DEPRESSED CURB

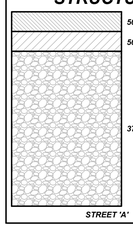
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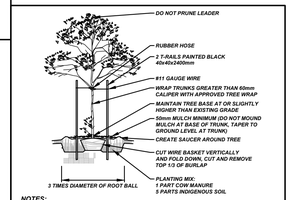
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TYPICAL PAVEMENT STRUCTURE



STREET 'A'



NOTES:

1. ALL TREES SHALL BE STAKED USING TWO NEW T-RAIL STAKES PAINTED BLACK. GUYS SHALL BE LOOSE ENOUGH TO PROVIDE ONE FINGER WIDTH OF SPACE. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE CONDITION OF STAKES AND GUYS A MINIMUM OF THREE TIMES PER YEAR. STAKES AND GUYS THAT ARE NOT CORRECTLY INSTALLED SHALL BE REPLACED/TIGHTENED. ALL STAKES TO BE REMOVED AFTER ONE YEAR.
2. ONLY NURSERY GROWN STOCK FREE OF DISEASE, INSECT INFESTATION, ABNORMAL GROWTH, AND PHYSICAL INJURY SHALL BE USED. ALL PLANT MATERIAL TO CONFORM TO CANADIAN NURSERY TRADES ASSOCIATION STANDARDS. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR TWO YEARS TO BE HEALTHY, VIGOROUS GROWING CONDITION AS PER SPECIFICATIONS. WARRANTY SHALL BE EXTENDED ON REPLACEMENT MATERIAL FOR A PERIOD EQUAL TO THE ORIGINAL WARRANTY.

DECIDUOUS TREE PLANTING DETAIL

NTS

#	REVISION	DATE	INIT
4	ISSUED FOR CONSTRUCTION	2018-08-24	AK
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DESIGN	A.K.
CHECKED BY	A.K.
APPROVED BY	.

LICENSED PROFESSIONAL ENGINEER — A. S. KEANE — 100109861 — Aug 24/18 — PROVINCE OF ONTARIO

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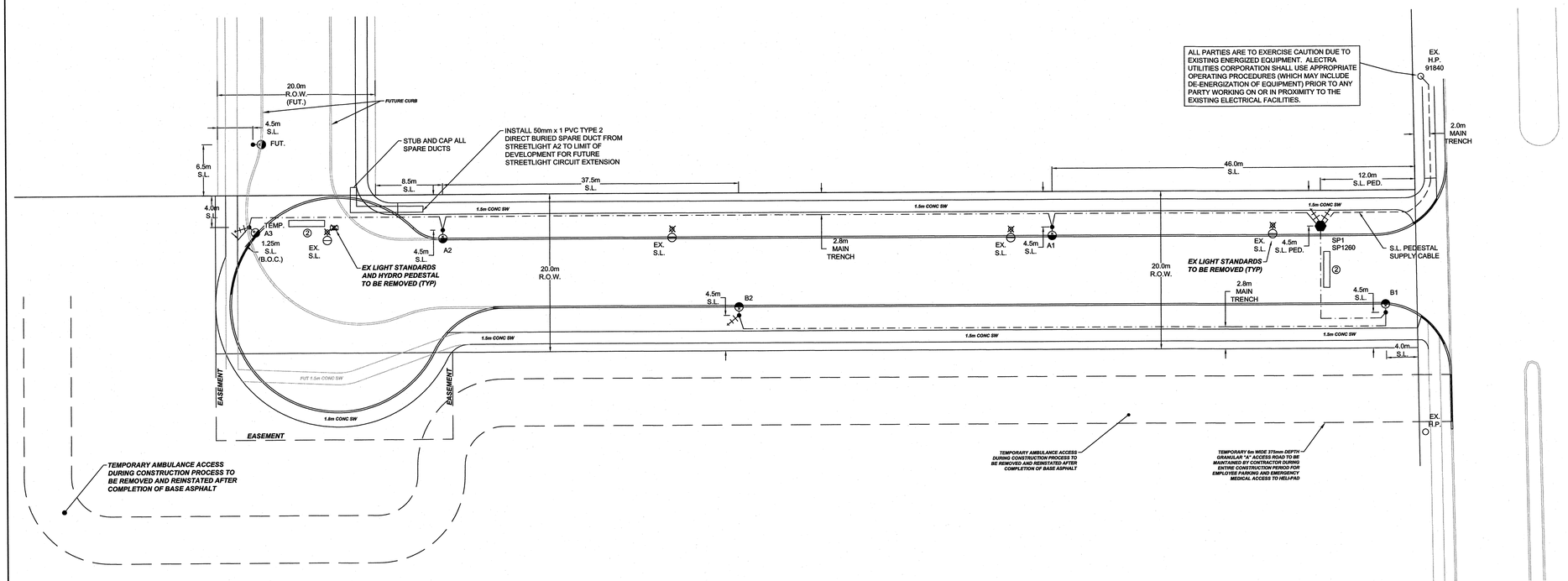
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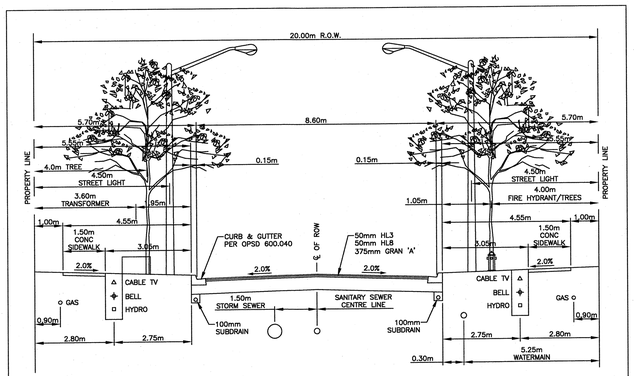
CONTRACT NO. SCS 17-006
1242 FOURTH AVE, NIAGARA HEALTH SYSTEM

CITY OF ST.CATHARINES
STREET SCAPING PLAN

CONSULTANT FILE No.	1731
DATE	2018-08-24
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SCALE	1:300 m
REF No.	----
DWG No.	1731-SS
REV	4

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TYPICAL CROSS-SECTION - 20.0m R.O.W.
N.T.S.



LEGEND

- TRANSFORMER FOR ALECTRA UTILITIES CORPORATION (SEE ALECTRA UTILITIES CORPORATION DRAWINGS FOR EXACT LOCATION).
- STREETLIGHT PEDESTAL SUPPLY CABLE: 3-#2 Cu. RWU-90 C/W JACKETED GND IN CONTINUOUS 50mm PVC TYPE 2 DUCT IN COMPLETE ACCORDANCE WITH E.S.A. STANDARDS & SPECIFICATIONS.
- STREETLIGHT CABLE: 2-#6 Cu. RWU-90 C/W JACKETED GND IN CONTINUOUS 50mm PVC TYPE 2 DUCT IN COMPLETE ACCORDANCE WITH E.S.A. STANDARDS & SPECIFICATIONS
- STREETLIGHT POWER SUPPLY PEDESTAL TO BE MANUFACTURED BY PEDESTAL SOLUTIONS INC. (PSI), YORK, ONTARIO. CAT.# SLS1-6-15, 60A 2 POLE MAIN BREAKER, 6-15A BRANCH BREAKERS. WEATHER PROOF, TAMPER PROOF CABINET, DARK GREEN, PROVISIONS FOR PADLOCKING, MOUNT ON PRECAST CONCRETE FOUNDATION (PEDESTAL SOLUTIONS INC. #UP1420).
- 41W LED STREETLIGHT: GE ERL1 LED COBRA HEAD STYLE LUMINAIRE G.E. CAT. #ERL1-0-04-A1-40-A-GRAY-RL-10YR WARRANTY TO MATCH IES CURVE ERL1_05A140 -120-277V_TCM201-277V_TCM201-104021.IES C/W INDIVIDUAL INTEGRAL PHOTO CELL. ALUMINUM TAPERED ELLIPTICAL ARM TO BE 2.44m (8') MANUFACTURED BY ALUMINOUS CAT.# RE6MA OR APPROVED EQUIVALENT. POLE TO BE 9.91m (32.5') ROUND GREY CONCRETE BY STRESS-CRETE CAT.# E-325-BPR-G-MOO-CSA s/f STYLE 120 OR APPROVED EQUIVALENT.
- ① 100mm PVC CONCRETE ENCASED AND STEEL REINFORCED DUCT AT ALECTRA UTILITIES CORPORATION CROSSING LOCATION FOR STREETLIGHTING SYSTEM. DUCT QUANTITIES SHOWN ON THIS PLAN ARE EXCLUSIVELY FOR THE STREETLIGHTING SYSTEM.
- D PROPOSED DRIVEWAY LOCATION
- GROUND ROD TO BE INSTALLED AT LAST LIGHT ON EACH CIRCUIT PER E.S.A.
- EX. S.L. EXISTING STREETLIGHT
- EX. ① EXISTING 100mm PVC RIGID DUCT
- EXISTING STREETLIGHT POWER PEDESTAL AS ABOVE.
- EX. H.P. EXISTING HYDRO POLE
- #25 MUNICIPAL ADDRESS NUMBER

STREETLIGHTING NOTES:

1. PHOTOCELLS SHALL BE FISHER-PIERCE INSTANT RESPONSE TRS SERIES OR SELC 8483.
2. INSTALLATION OF STREET LIGHTING SHALL BE TO E.S.A. AND SHALL BE INSPECTED PRIOR ENERGIZATION.

STREETLIGHT POWER SUPPLY PEDESTAL		
SP1	SPXXXX	CONNECTED TO EXISTING POLE PXXXX

CERTIFICATE OF APPROVAL
THE INSTALLATION WORK COVERED BY THIS DOCUMENT MEETS THE SAFETY REQUIREMENTS OF SECTION 4 OF REGULATION 22 / 04

STEPHEN C. GAYOWSKY, P.ENG. — NAME
2018/02/20 — DATE
PROFESSIONAL ENGINEER
SIGNATURE & PROFESSIONAL DESIGNATION

REV	YYYY.MM.DD	DESCRIPTION	BY	CHECKED
R3	2018.02.20	REV PER UPDATED CIVIL BASE RECEIVED 2018.02.20	K.V.L.	
R2	2018.01.08	REV PER ALECTRA COMMENTS RECEIVED 2017.01.08	N.S.J.	
R1	2017.10.06	REV PER UPDATED TYPICAL CROSS-SECTION RECEIVED 2017.10.06	K.V.L.	

REVISIONS

LICENSED PROFESSIONAL ENGINEER — S. C. GAYOWSKY — 2018/02/20 — PROVINCE OF ONTARIO

RTG SYSTEMS INC.
ELECTRICAL CONSULTING ENGINEERS
3518 Mainway Dr., Suite 201
BURLINGTON ON L7M 1A8
E-MAIL: general@rtgsystems.com
Office: (905) 335-4470
Toronto: (905) 827-7887

CITY OF ST. CATHARINES

NEW FOURTH AVENUE ROAD MUNICIPAL STREETLIGHTING SYSTEM

DWG BY	DATE	CK'D BY	DATE
K.V.L.	2017.09.29		

SCALE 1:300 EXCEPT FOR SYMBOLS | DRAWING NO. SL-1 | SHEET 1 OF 1

04534-00