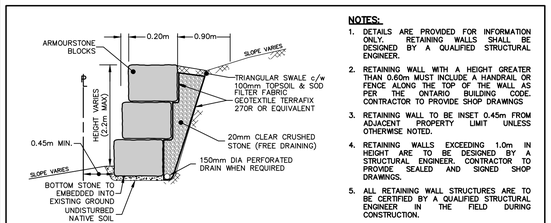
DWG No.: 22054 –C101

PRELIMINARY SITE GRADING AND EROSION CONTROL PLAN

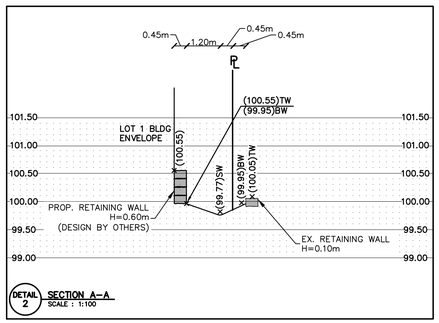
S:\22054\Working\Current\22054 – Grading and Servicing plan.dwg



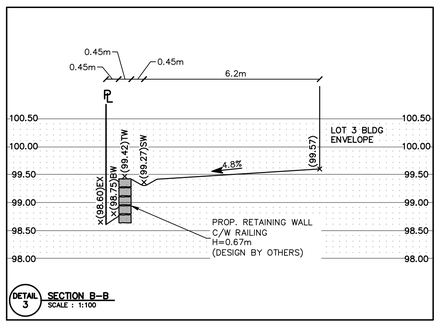
NOTES:

1. DETAILS ARE PROVIDED FOR INFORMATION ONLY. RETAINING WALLS SHALL BE DESIGNED BY A QUALIFIED STRUCTURAL ENGINEER.
2. RETAINING WALL WITH A HEIGHT GREATER THAN 0.60m MUST INCLUDE A HANDRAIL OR FENCE ALONG THE TOP OF THE WALL AS PER THE ONTARIO BUILDING CODE. CONTRACTOR TO PROVIDE SHOP DRAWINGS
3. RETAINING WALL TO BE INSET 0.45m FROM ADJACENT PROPERTY LIMIT UNLESS OTHERWISE NOTED.
4. RETAINING WALLS EXCEEDING 1.0m IN HEIGHT ARE TO BE DESIGNED BY A STRUCTURAL ENGINEER. CONTRACTOR TO PROVIDE SEALED AND SIGNED SHOP DRAWINGS.
5. ALL RETAINING WALL STRUCTURES ARE TO BE CERTIFIED BY A QUALIFIED STRUCTURAL ENGINEER IN THE FIELD DURING CONSTRUCTION.

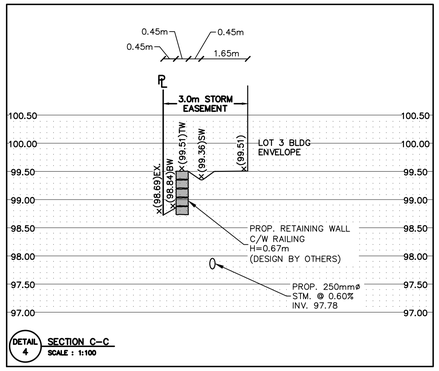
DETAIL 1 **ARMOURSTONE RETAINING WALL – TYPICAL SECTION**
SCALE: N.T.S.



DETAIL 2 **SECTION A–A**
SCALE : 1:100



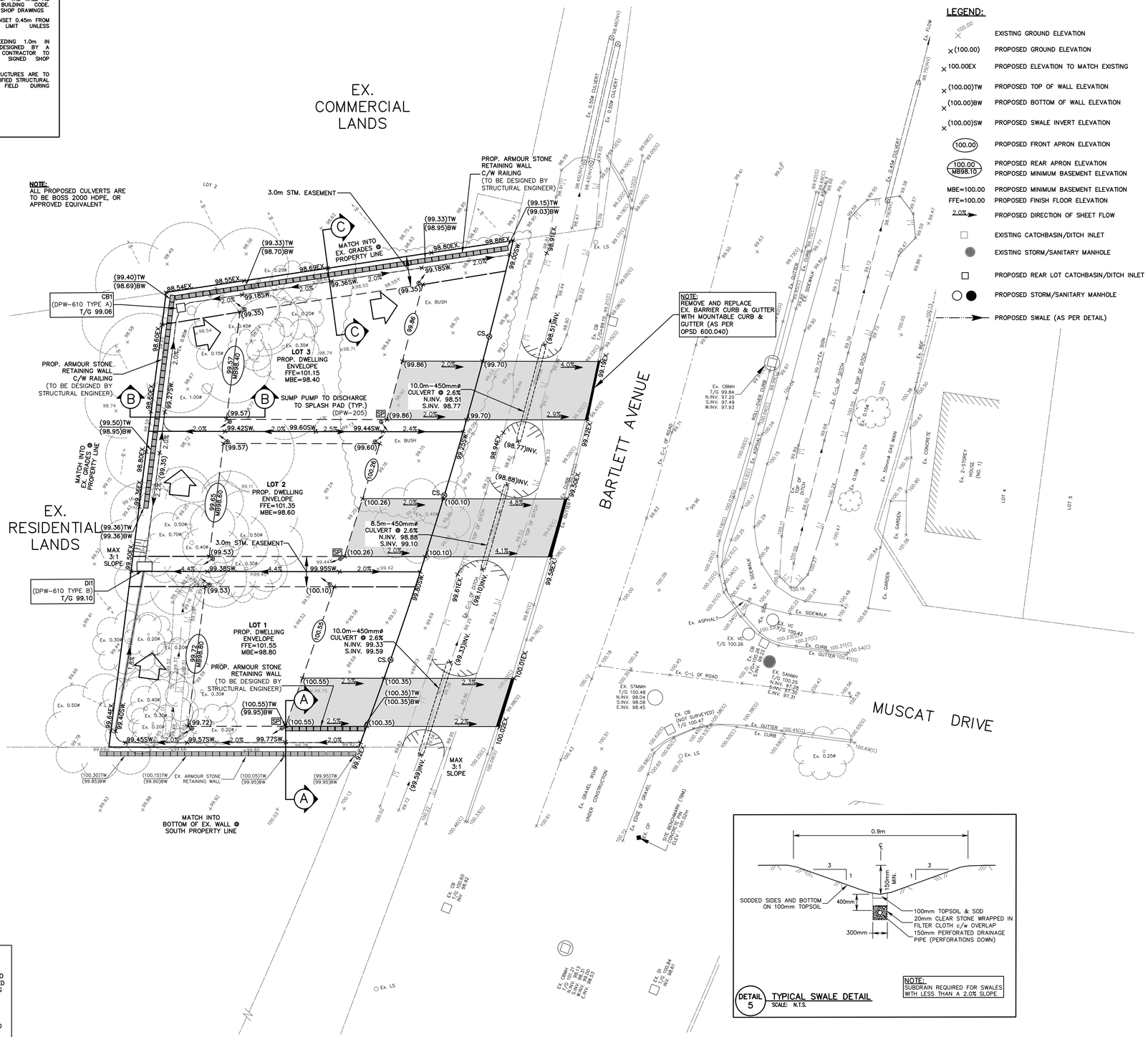
DETAIL 3 **SECTION B–B**
SCALE : 1:100



DETAIL 4 **SECTION C–C**
SCALE : 1:100

NOTES TO CONTRACTOR:

1. INSPECTION
   CONTRACTOR IS RESPONSIBLE FOR CONTACTING ENGINEER 48 HRS PRIOR TO COMMENCING WORK TO ARRANGE FOR INSPECTION. ENGINEER TO DETERMINE DEGREE OF INSPECTION AND TESTING REQUIRED FOR CERTIFICATION OF UNDERGROUND SERVICE INSTALLATION AS MANDATED BY ONTARIO BUILDING CODE DIVISION C, PART 1, SECTION 1.2.2, GENERAL REVIEW. FAILURE TO NOTIFY ENGINEER WILL RESULT IN EXTENSIVE POST CONSTRUCTION INSPECTION AT CONTRACTORS EXPENSE.
2. CONFIRMATION OF EXISTING INVERTS
   72 HOURS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS TO LOCATE, EXPOSE AND VERIFY INVERTS OF EXISTING UTILITES AND EXISTING SEWERS AT CONNECTION POINTS. SHOULD THE CONTRACTOR PROCEED WITHOUT COMPLETING THESE LOCATES, EXTRA COSTS RESULTING FROM DELAYS AND STANDBY TIME WILL NOT BE CONSIDERED.

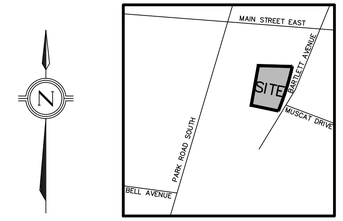


DETAIL 5 **TYPICAL SWALE DETAIL**
SCALE: N.T.S.

NOTE: SUBDRAIN REQUIRED FOR SWALES WITH LESS THAN A 2.0% SLOPE

LEGEND:

- EXISTING GROUND ELEVATION
- (100.00) PROPOSED GROUND ELEVATION
- 100.00EX PROPOSED ELEVATION TO MATCH EXISTING
- (100.00)TW PROPOSED TOP OF WALL ELEVATION
- (100.00)BW PROPOSED BOTTOM OF WALL ELEVATION
- (100.00)SW PROPOSED SWALE INVERT ELEVATION
- 100.00 PROPOSED FRONT APRON ELEVATION
- 100.00 PROPOSED REAR APRON ELEVATION
- MBE98.10 PROPOSED MINIMUM BASEMENT ELEVATION
- MBE=100.00 PROPOSED MINIMUM BASEMENT ELEVATION
- FFE=100.00 PROPOSED FINISH FLOOR ELEVATION
- 2.0% PROPOSED DIRECTION OF SHEET FLOW
- EXISTING CATCHBASIN/DITCH INLET
- EXISTING STORM/SANITARY MANHOLE
- PROPOSED REAR LOT CATCHBASIN/DITCH INLET
- PROPOSED STORM/SANITARY MANHOLE
- PROPOSED SWALE (AS PER DETAIL)
- EMERGENCY OVERLAND FLOW ROUTE
- CS, V, B/O PROPOSED CURB STOP/GATEVALVE/BLOWOFF
- PROPOSED HYDRANT (DPW–801)
- PROPOSED MOUNTABLE CURB & GUTTER (DPW–500)
- PROPOSED BARRIER CURB & STANDARD GUTTER (OPSD 600.040)
- PROPOSED DOWNSPOUT
- SP PROPOSED SUMP PUMP (AS PER DETAIL)
- (TOP) 3:1 MAX (BOTTOM) EMBANKMENT (SLOPE AS NOTED)



KEY MAP
N.T.S.

BENCH MARK NOTE:

ELEVATIONS ARE GEODETIC, DERIVED BY GPS OBSERVATIONS, REFERRED TO GEODETIC SURVEY OF CANADA BENCHMARK 0011963UJ3506 9AKA 63UJ3506) HAVING AN ELEVATION OF 97.088m (CGVD–1928:1978)

LOCATION: GRIMSBY PARK SCHOOL NO.215, ON NORTH SIDE OF HIGHWAY NO. 8, 2.4KM EAST OF POST OFFICE, TABLET IN SOUTH OF FRONT STONE FOUNDATION WALL, IN FIRST COURSE OF STONE ABOVE SIDEWALK, 1.57M WEST OF SOUTHEAST CORNER, 74CM FROM A BASEMENT WINDOW, 1.63M BELOW RED BRICK SIDING, 42CM ABOVE SIDEWALK.

ALL FUTURE GRADE WORK ON SITE TO BE BASED ON SITE BENCHMARK. ANY ELEVATION DISCREPANCIES TO BE REPORTED TO RASCH & HYDE LTD.

NO.	DATE	BY	REVISIONS

NOTES TO CONTRACTOR:

1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
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DESIGN	YM	CHK'D	SL
DRAWN	YM	CHK'D	SL

DATE: Oct. 11, 22

SCALE 1:200 (0, 5, 10, 20)

APPROVALS

STAMP

BRANDON WARTMAN, C.E.T. DIRECTOR OF PUBLIC WORKS — DATE:

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
Tel. (905) 631–6978
Website: www.sla.on.ca
email: info@sla.on.ca
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

CLIENT

LARRY THORNLEY ENTERPRISES LTD.
3 WINDWARD DRIVE, GRIMSBY, ON

PROJECT NAME

BARTLETT AVENUE IN THE TOWN OF GRIMSBY
GRIMSBY, ON

TITLE

PRELIMINARY SITE GRADING AND EROSION CONTROL PLAN

PROJECT No.	DRAWING No.
22054	C101

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Plotted: October 12, 2022 3:51:56 PM By: Yagnik Moradiya

DWG No.: 22054-C102
SITE SERVICING PLAN
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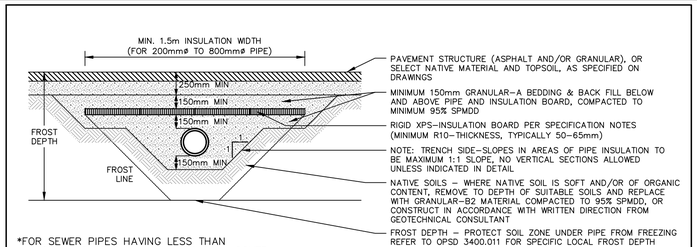
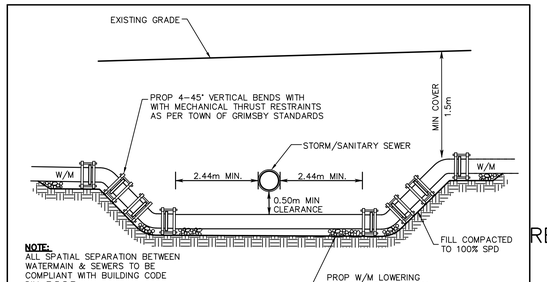


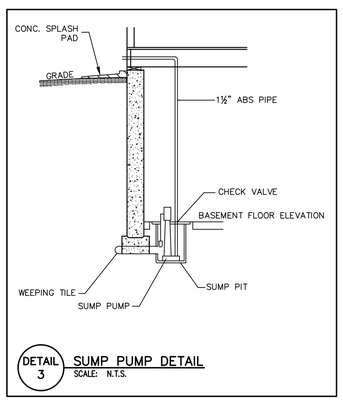
*FOR SEWER PIPES HAVING LESS THAN 1200mm COVER AND MINIMUM 615mm COVER

DETAIL 1 **SEWER PIPE INSULATION DETAIL**
SCALE: N.T.S.



NOTE:
ALL SPATIAL SEPARATION BETWEEN WATERMAIN & SEWERS TO BE COMPLIANT WITH BUILDING CODE DIV. 7.3.5.7

DETAIL 2 **WATERMAIN LOWERING DETAIL**
TO BE USED AT SEWER/WTM. CROSSINGS WHERE A MINIMUM OF 0.5m VERTICAL CLEARANCE CAN NOT BE ACHIEVED
SCALE: N.T.S.



DETAIL 3 **SUMP PUMP DETAIL**
SCALE: N.T.S.

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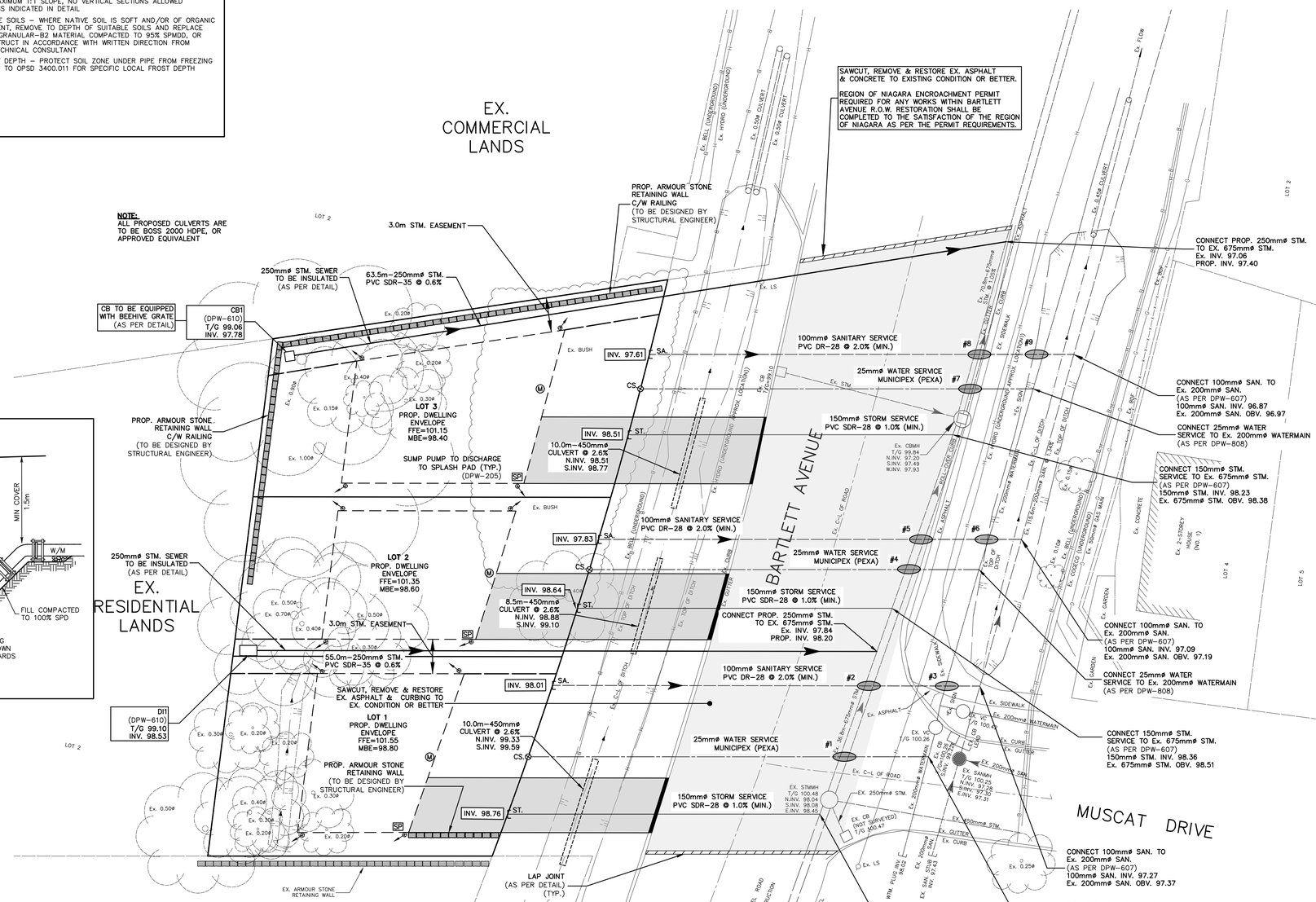
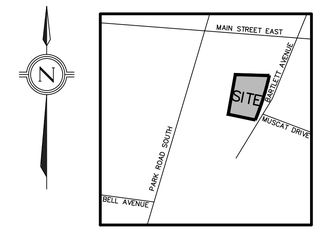
SEWER & WATER CROSSING CHART

#1 Ex. STM.INV.=97.95 WTM.OBV.=97.45 SEPARATION=0.50m	#6 Ex. WTM.INV.=97.63 SAN.OBV.=97.38 SEPARATION=0.25m
#2 Ex. STM.INV.=97.89 SAN.OBV.=97.56 SEPARATION=0.33m	#7 WTM.INV.=98.20 Ex. STM.OBV.=97.88 SEPARATION=0.32m
#3 Ex. STM.INV.=97.80 SAN.OBV.=97.42 SEPARATION=0.38m	#8 Ex. STM.INV.=97.17 SAN.OBV.=97.02 SEPARATION=0.15m
#4 Ex. STM.INV.=97.80 WTM.OBV.=97.30 SEPARATION=0.50m	#9 Ex. WTM.INV.=97.28 SAN.OBV.=96.93 SEPARATION=0.35m
#5 Ex. STM.INV.=97.78 SAN.OBV.=97.53 SEPARATION=0.25m	





KEY MAP
N.T.S.

LEGEND:

- EXISTING CATCHBASIN/DITCH INLET
- EXISTING STORM/SANITARY MANHOLE
- PROPOSED REAR LOT CATCHBASIN/DITCH INLET
- PROPOSED STORM/SANITARY MANHOLE
- CS, V, B/O — PROPOSED CURB STOP/GATE VALVE/BLOW OFF
- (M) — PROPOSED WATER METER
- PROPOSED HYDRANT (DPW-801)
- SP — PROPOSED SUMP PUMP (AS PER DETAIL)
- PROPOSED ROAD RESTORATION
- PROPOSED DEPRESSED CURB & GUTTER (DPW-500)
- #1 — SEWER CROSSING
- MBE=100.00 — PROPOSED MINIMUM BASEMENT ELEVATION
- FFE=100.00 — PROPOSED FINISH FLOOR ELEVATION

BENCH MARK NOTE:
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NO.	DATE	BY	REVISIONS

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DESIGN	YM	CHK'D	SL	DATE
DRAWN	YM	CHK'D	SL	Oct. 11, 22
SCALE 1:200	0 5 10 20			

APPROVALS

STAMP

BRANDON WARTMAN, C.E.T. DATE:
DIRECTOR OF PUBLIC WORKS

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
Tel. (905) 631-6978
Website: www.sla.on.ca
email: info@sla.on.ca
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

CLIENT
LARRY THORNLEY ENTERPRISES LTD.
3 WINDWARD DRIVE, GRIMSBY, ON

PROJECT NAME
BARTLETT AVENUE IN THE TOWN OF GRIMSBY
GRIMSBY, ON

TITLE
PRELIMINARY SITE SERVICING PLAN

PROJECT No. 22054
DRAWING No. C102

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Plotted: October 12, 2022 3:52:28 PM By: Yoyok Morodya

DWG No: 22054 -C103
DETAILS PLAN
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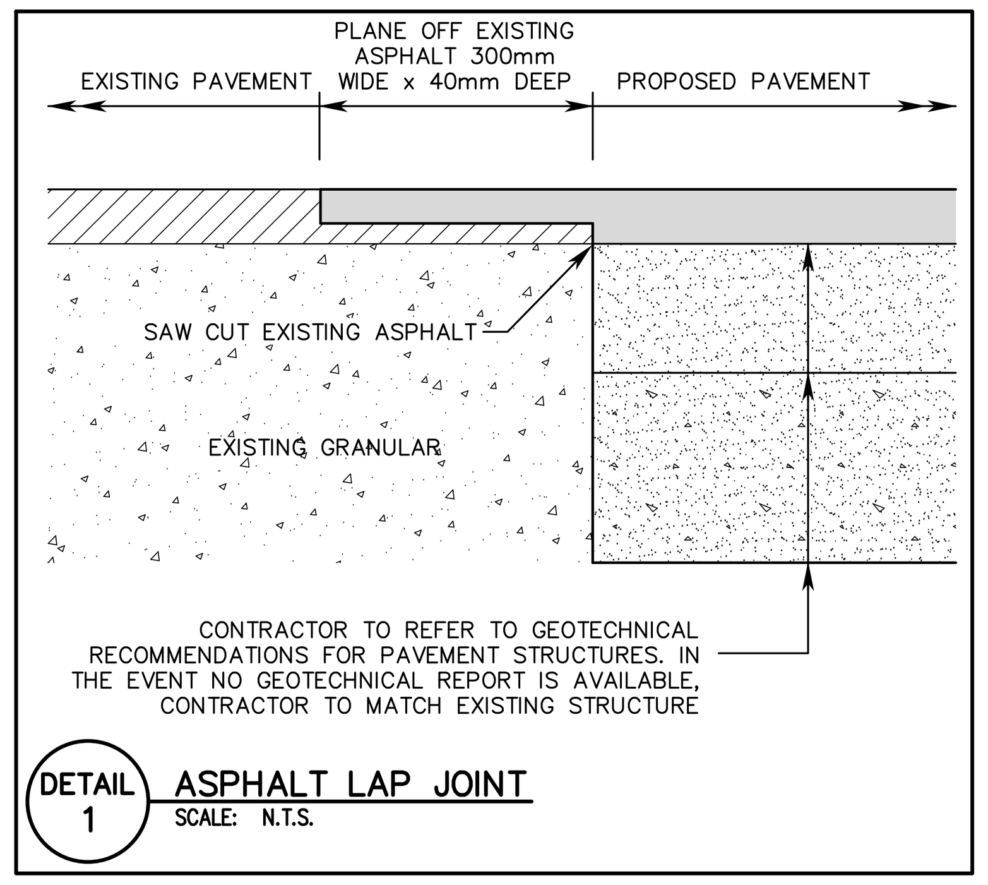
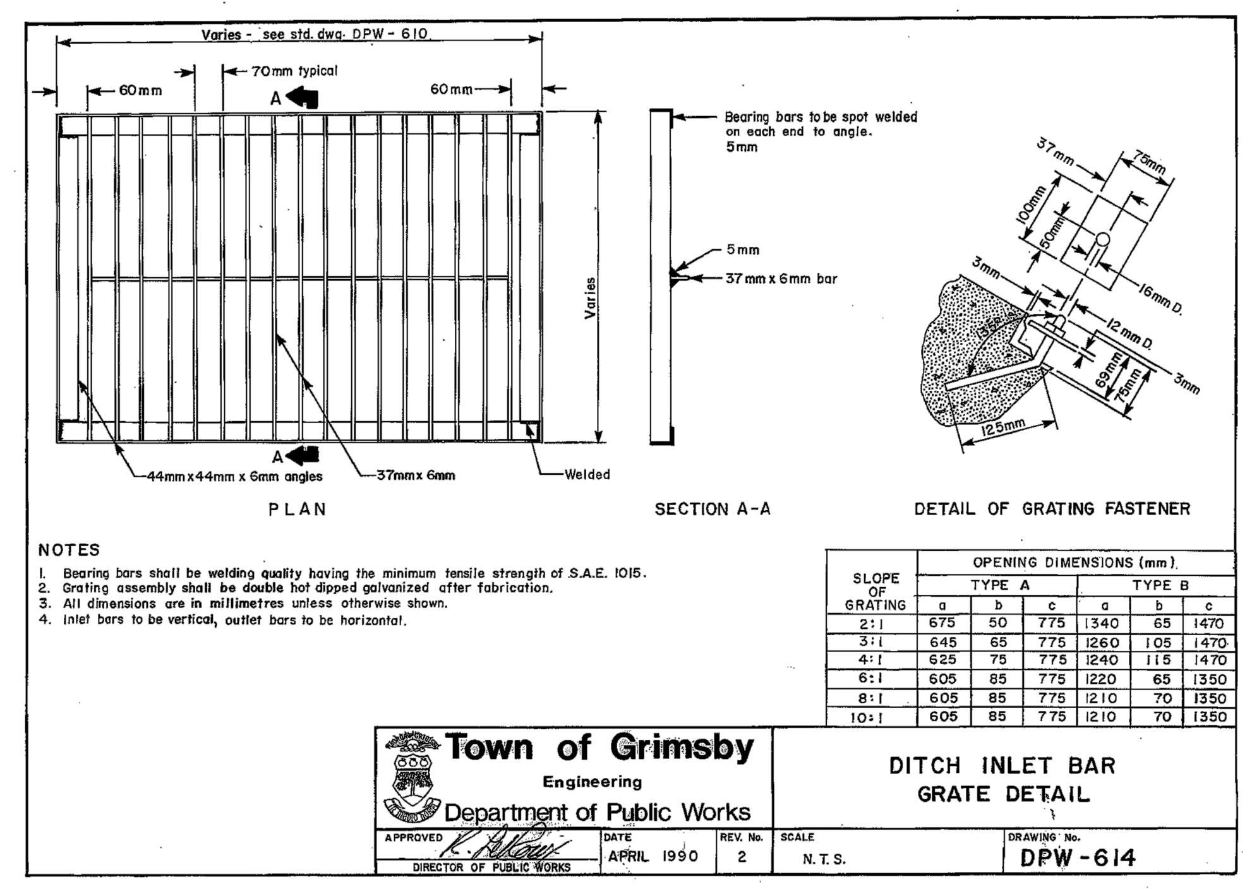
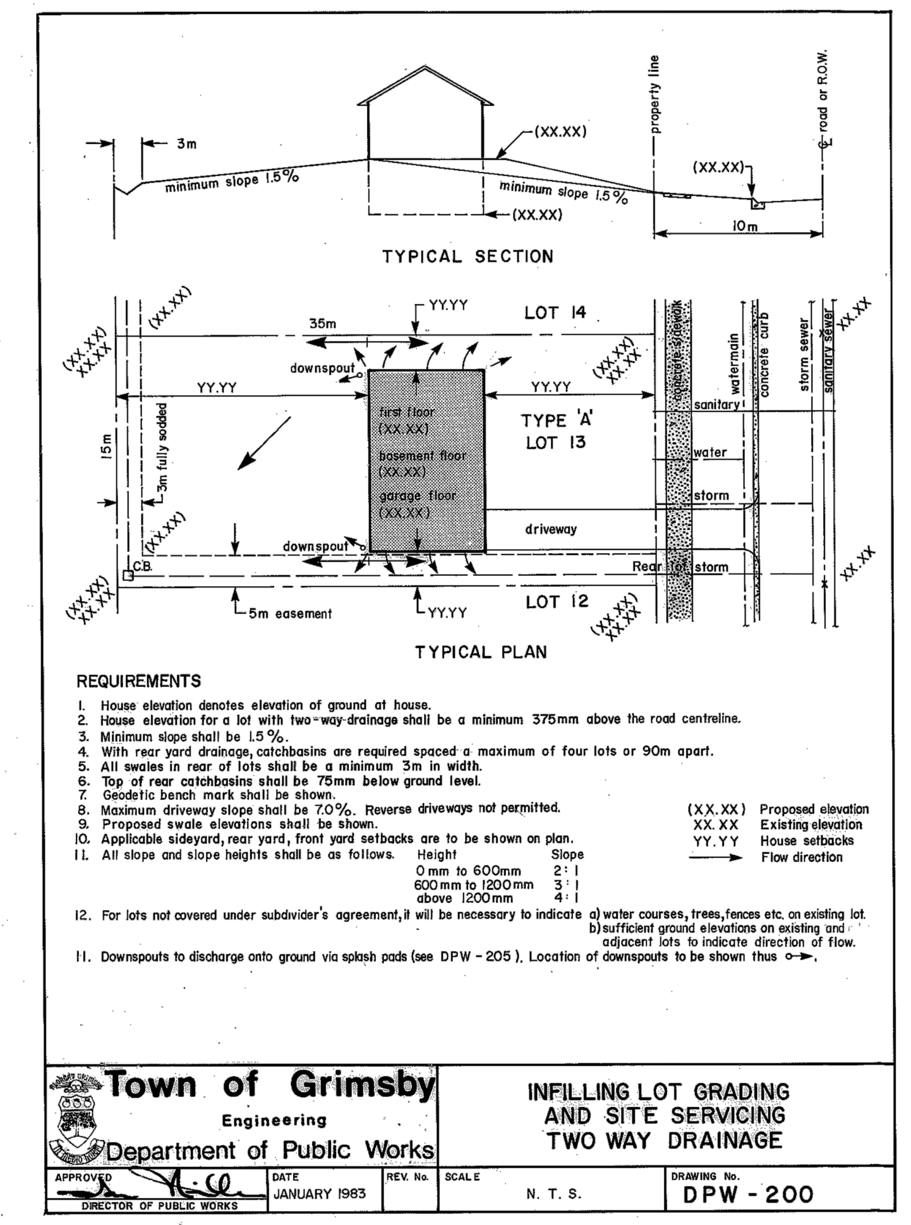
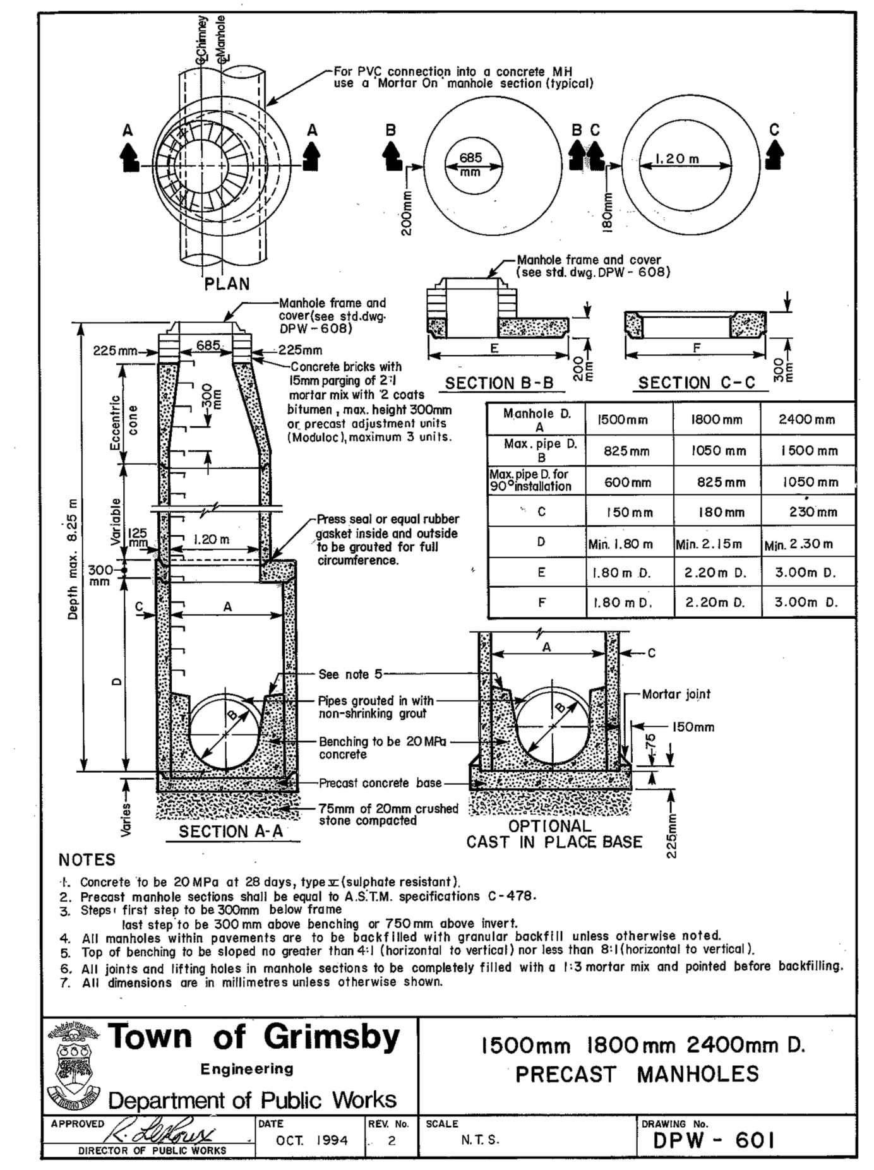
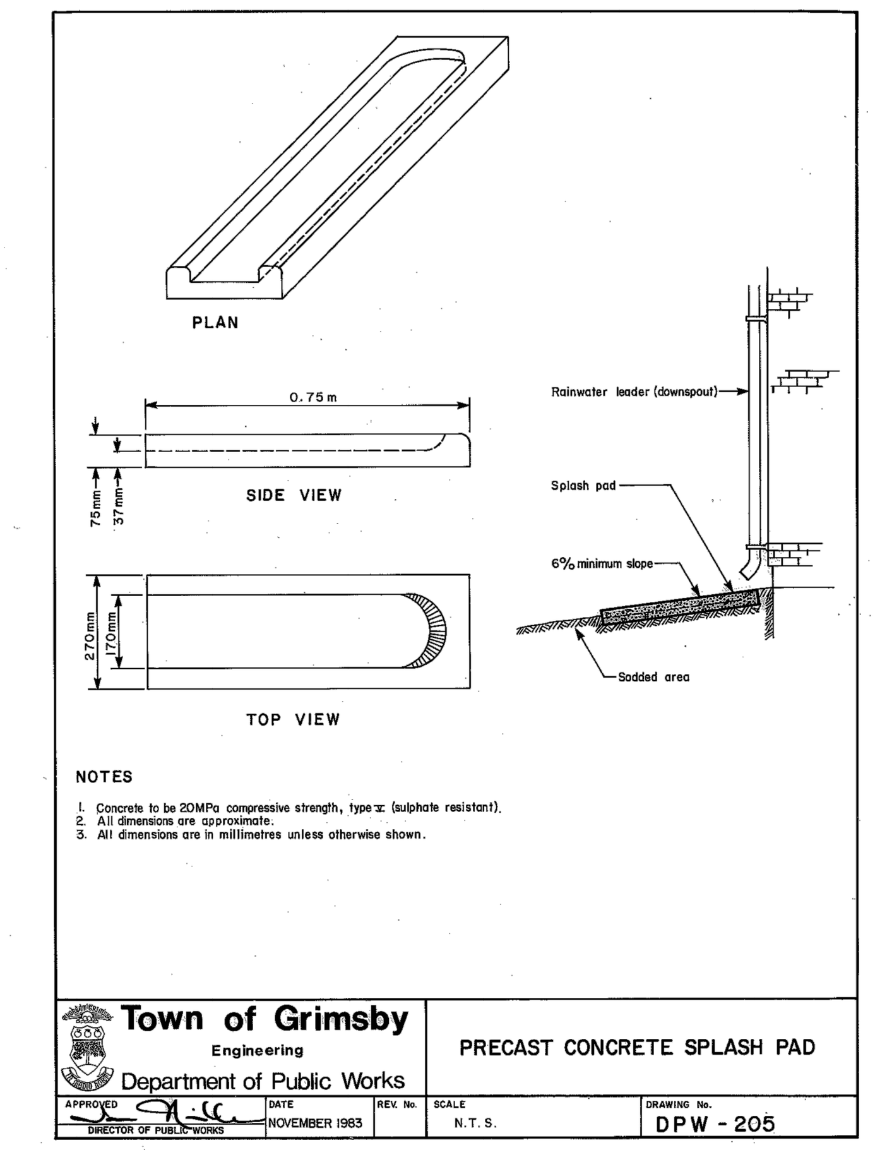
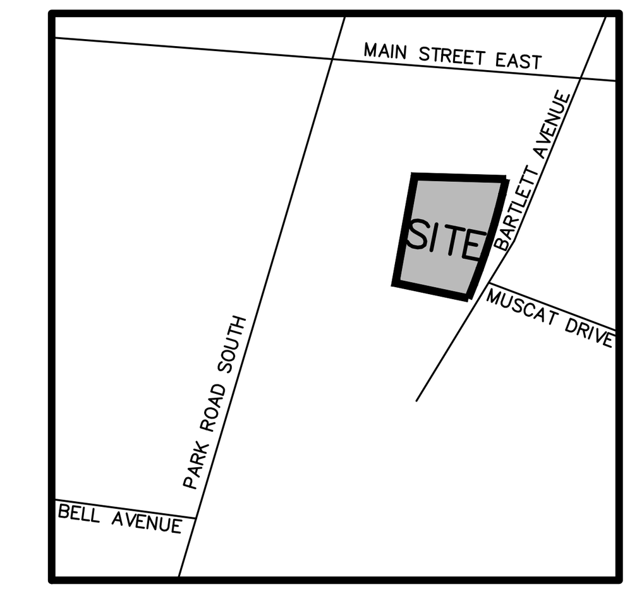




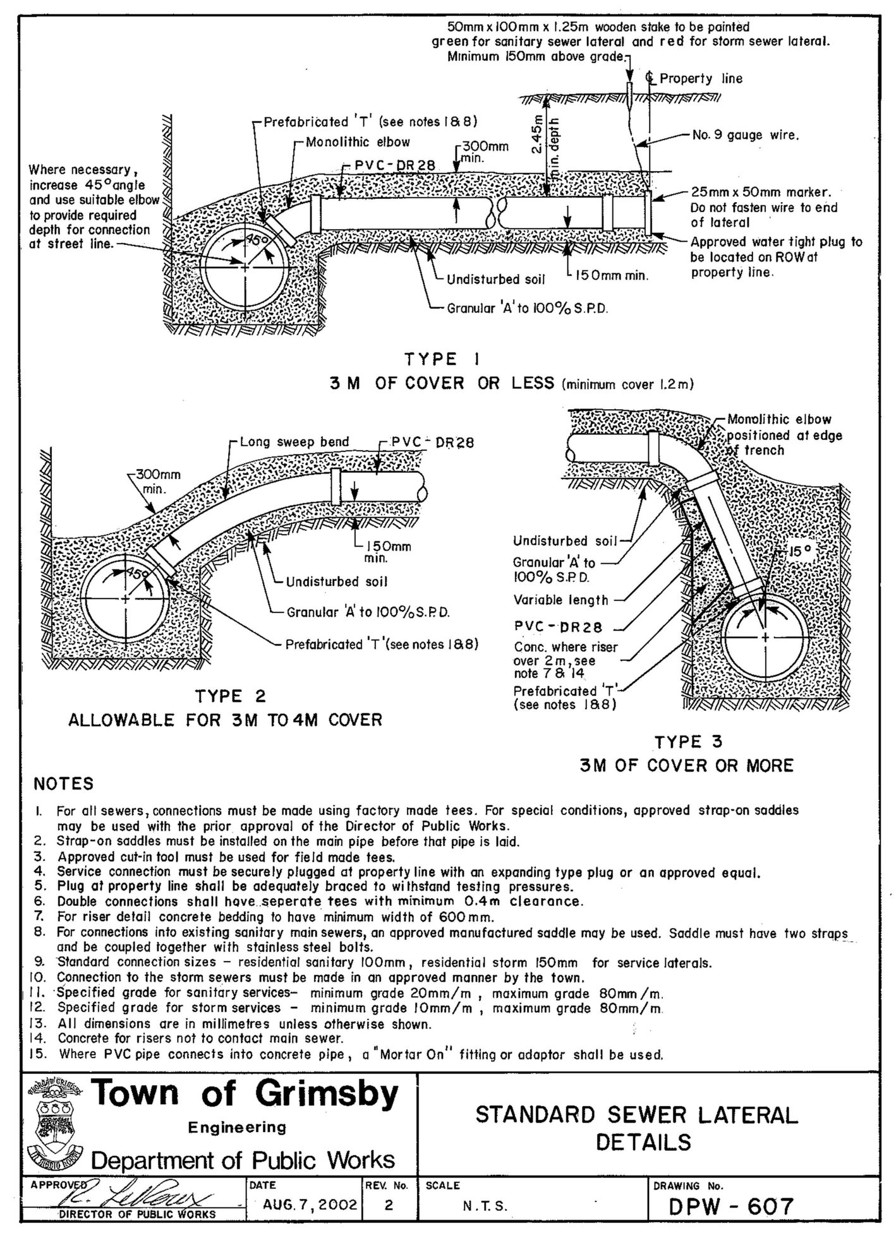


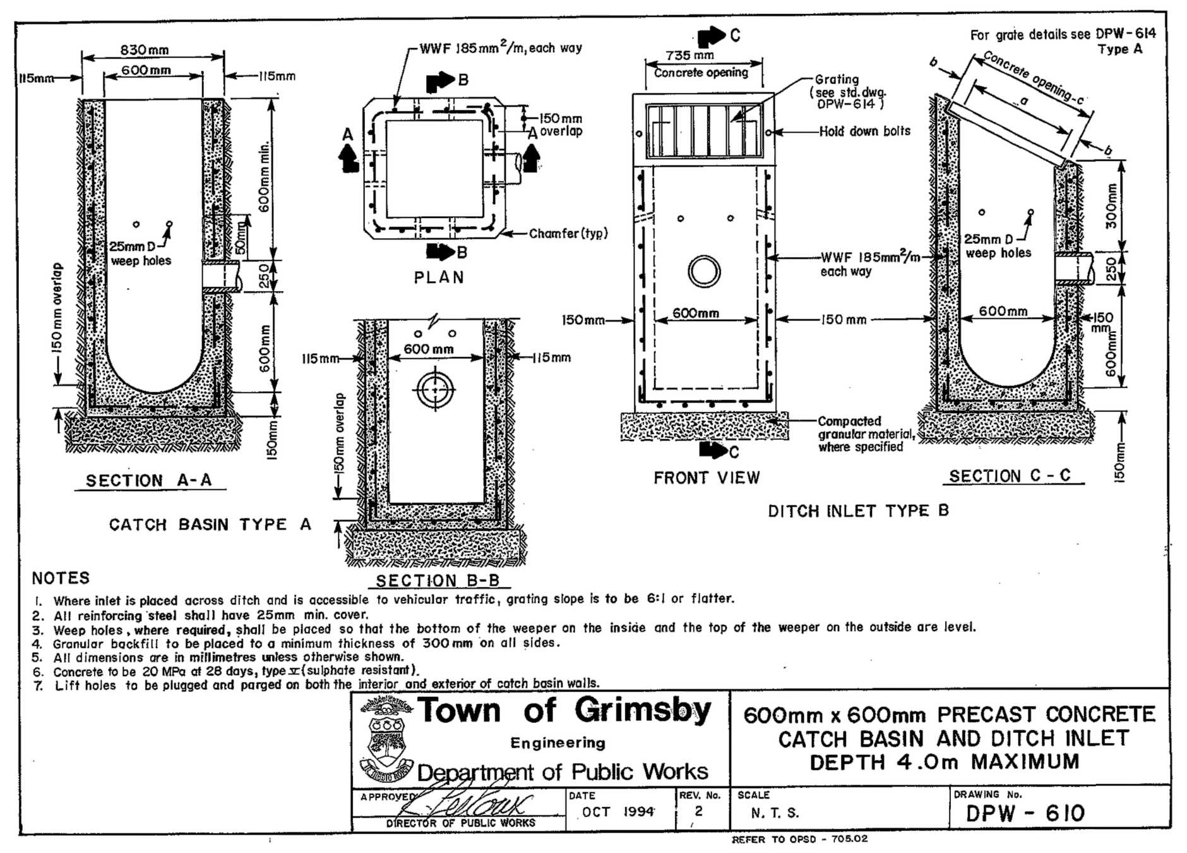


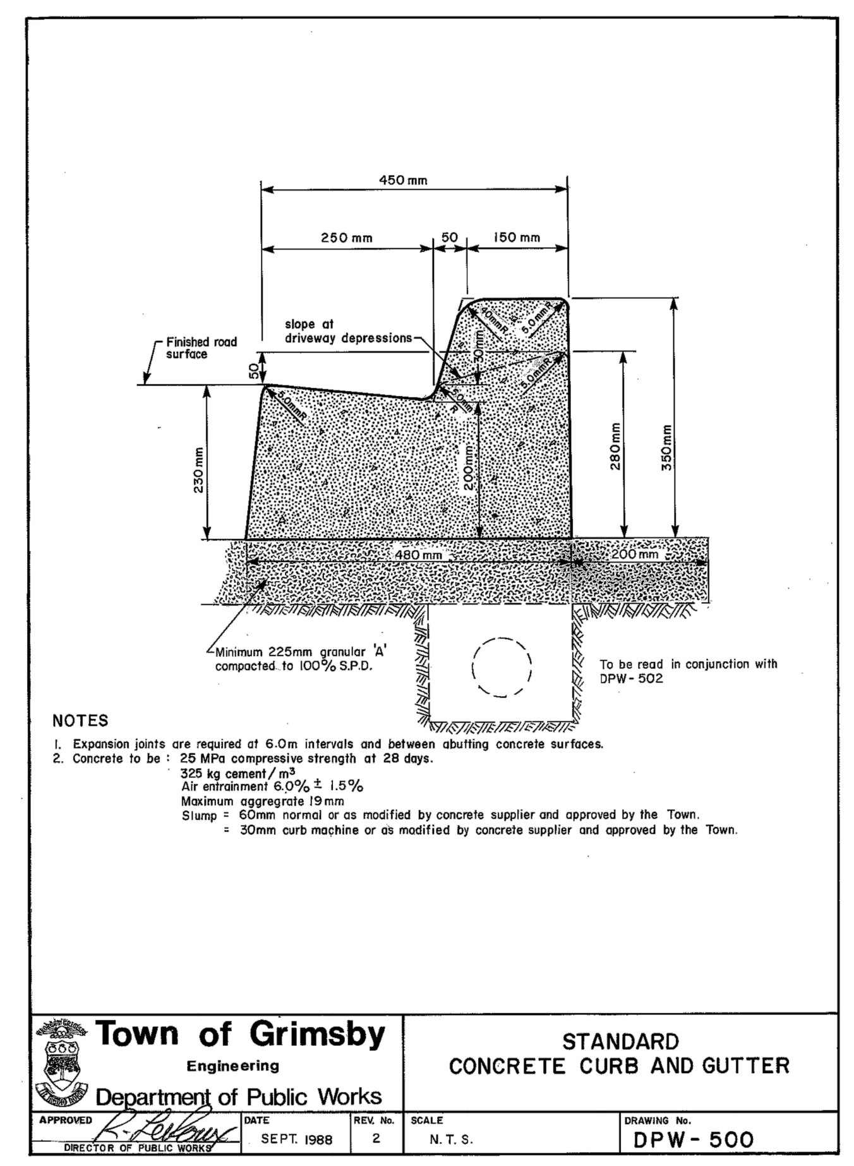


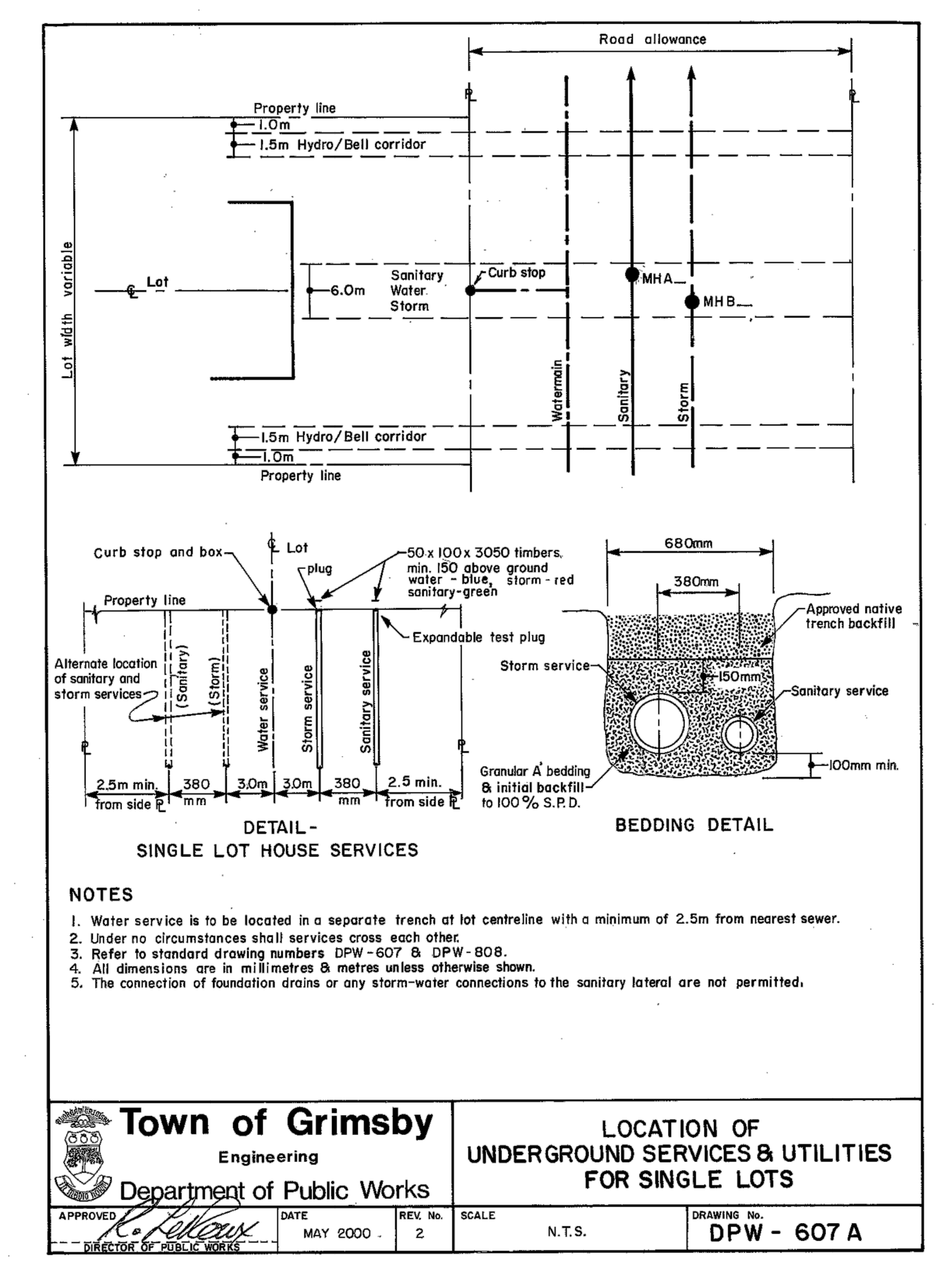


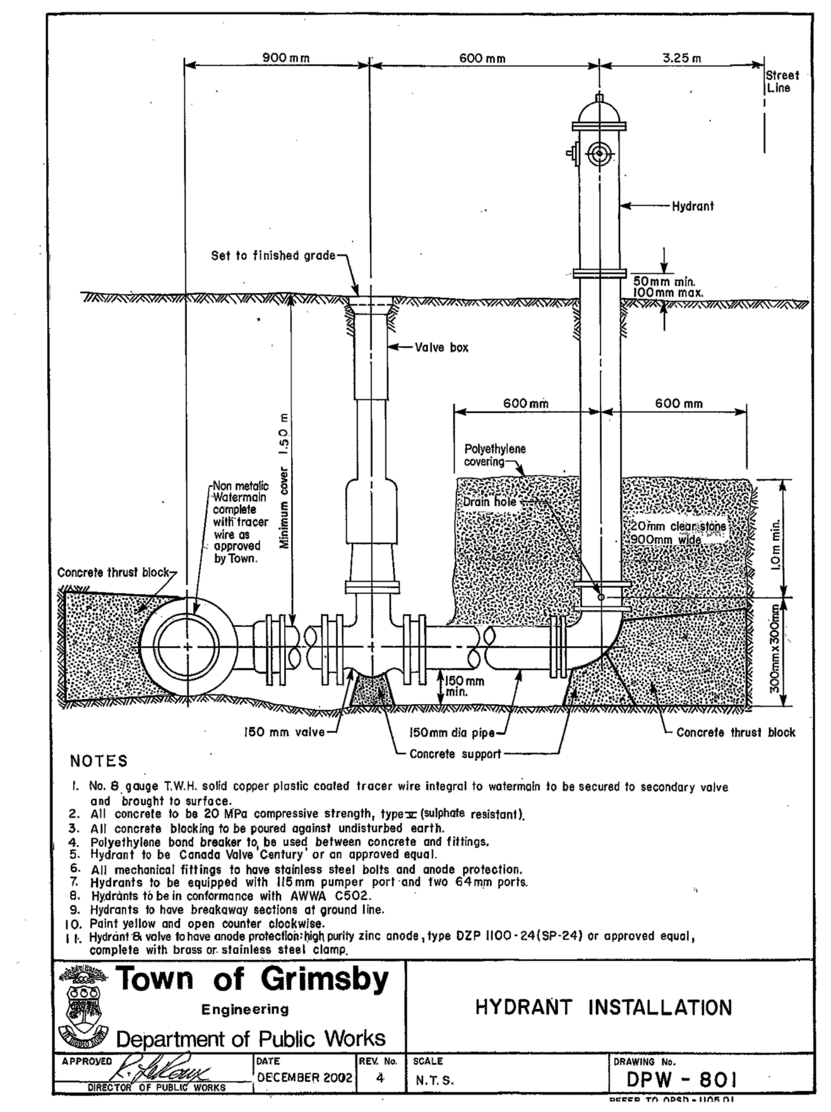
KEY MAP
N.T.S.

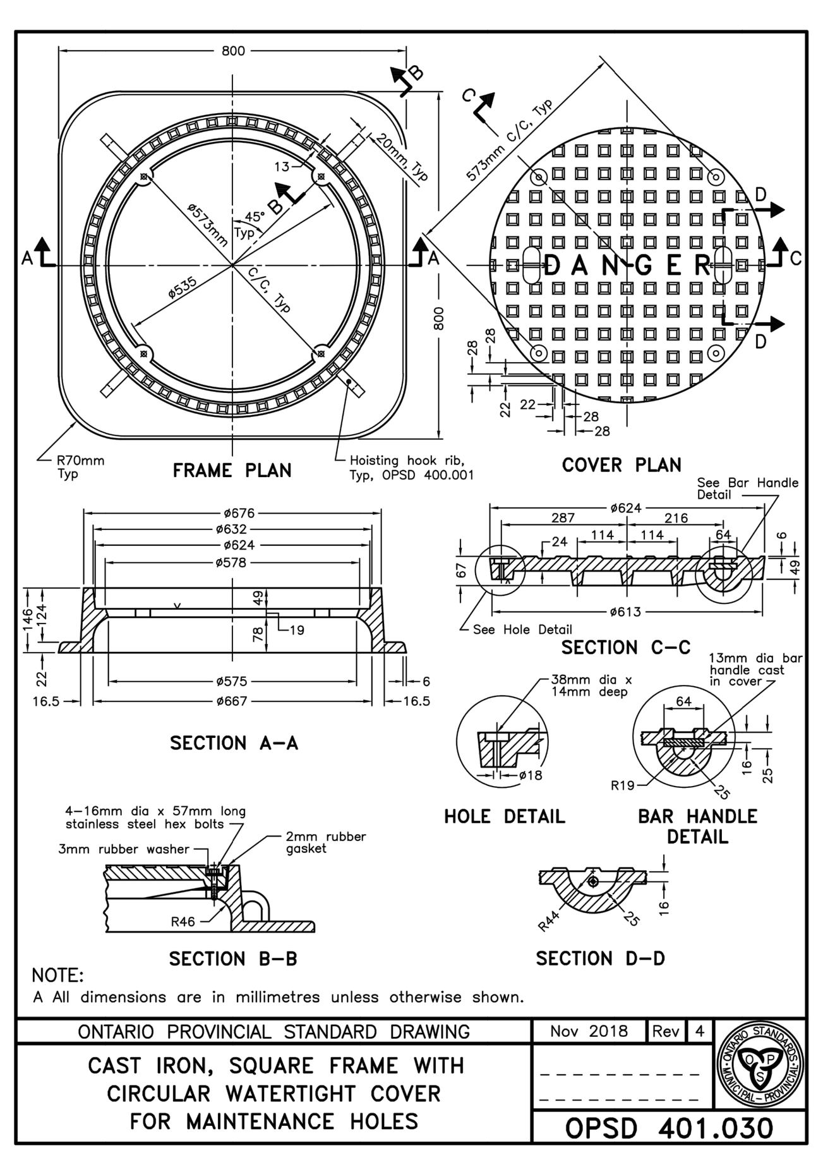


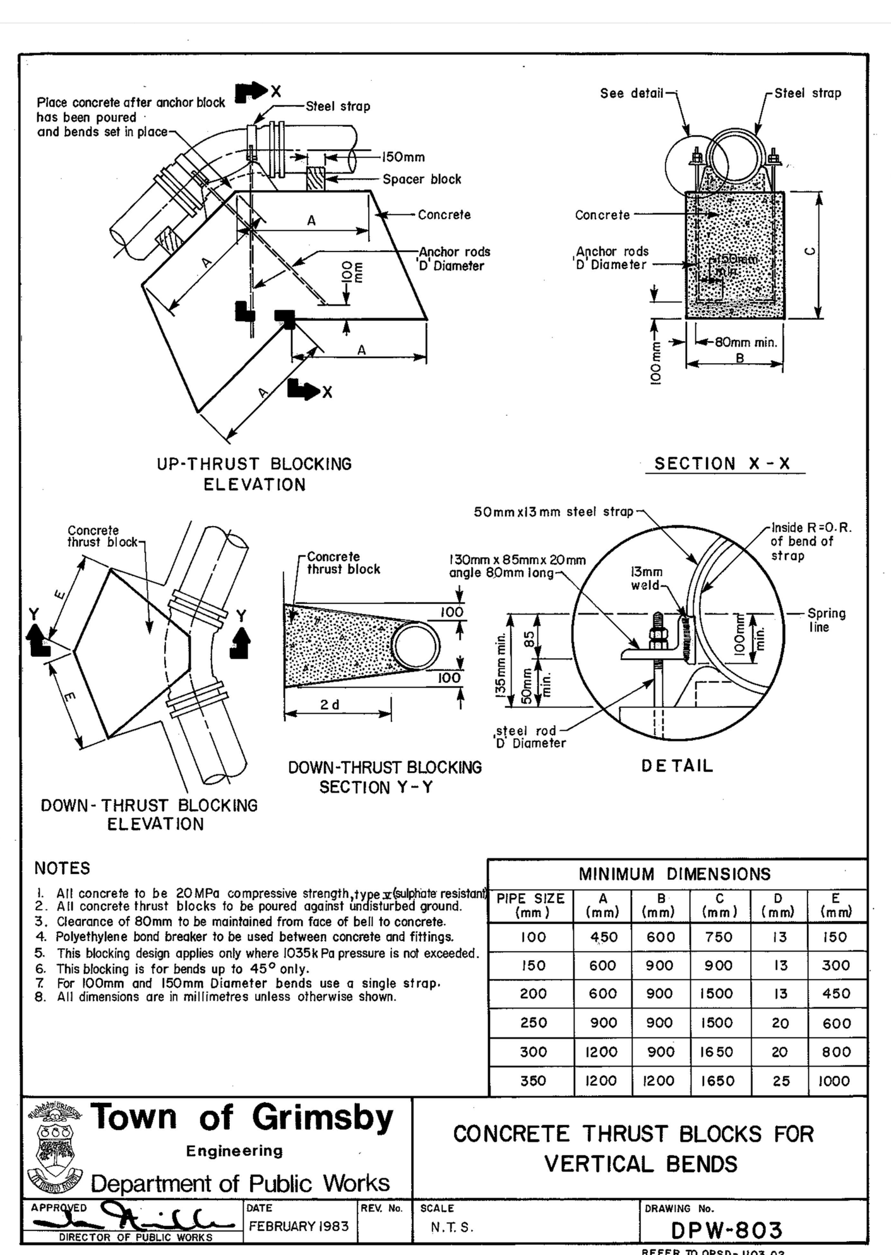


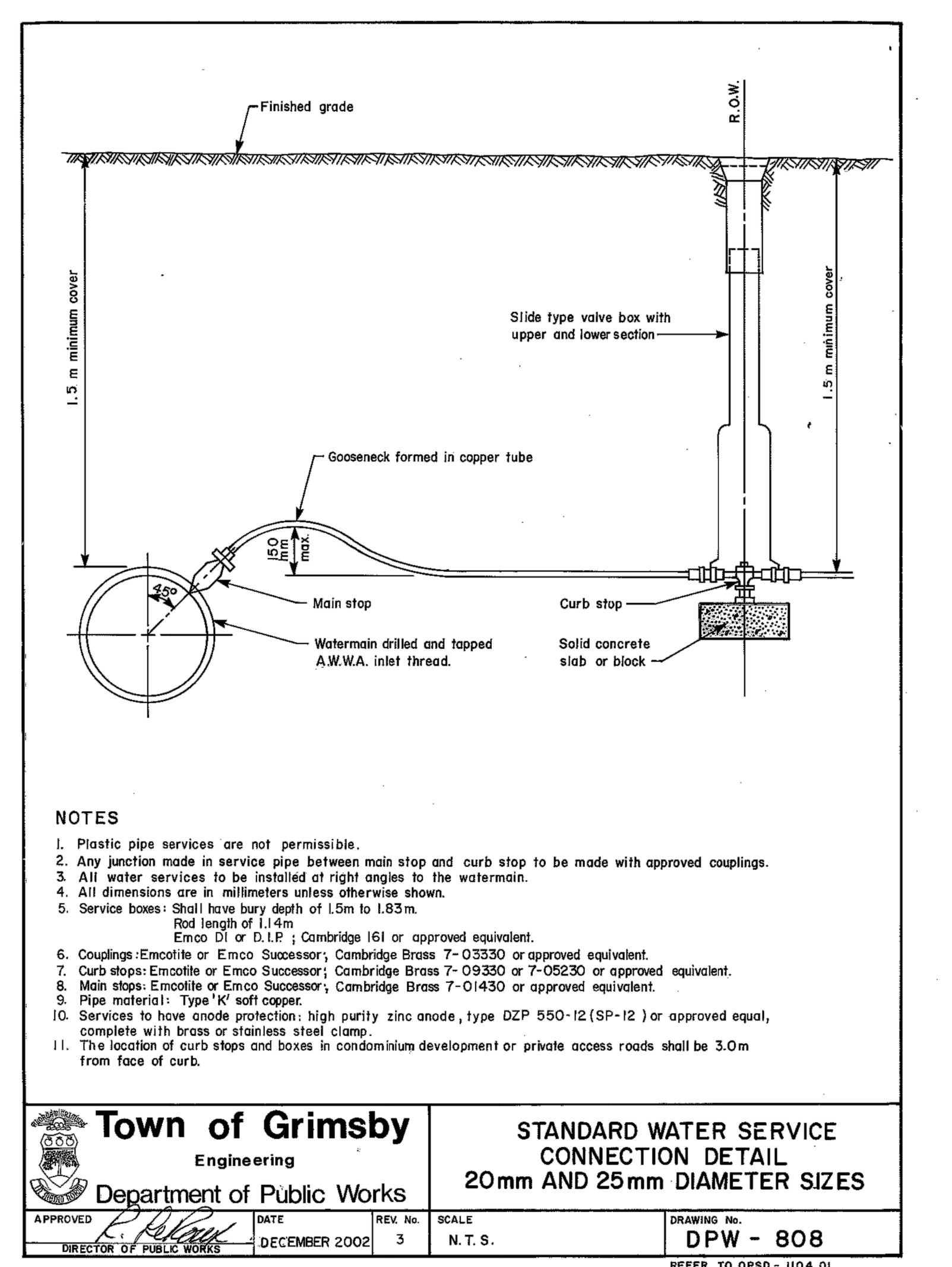


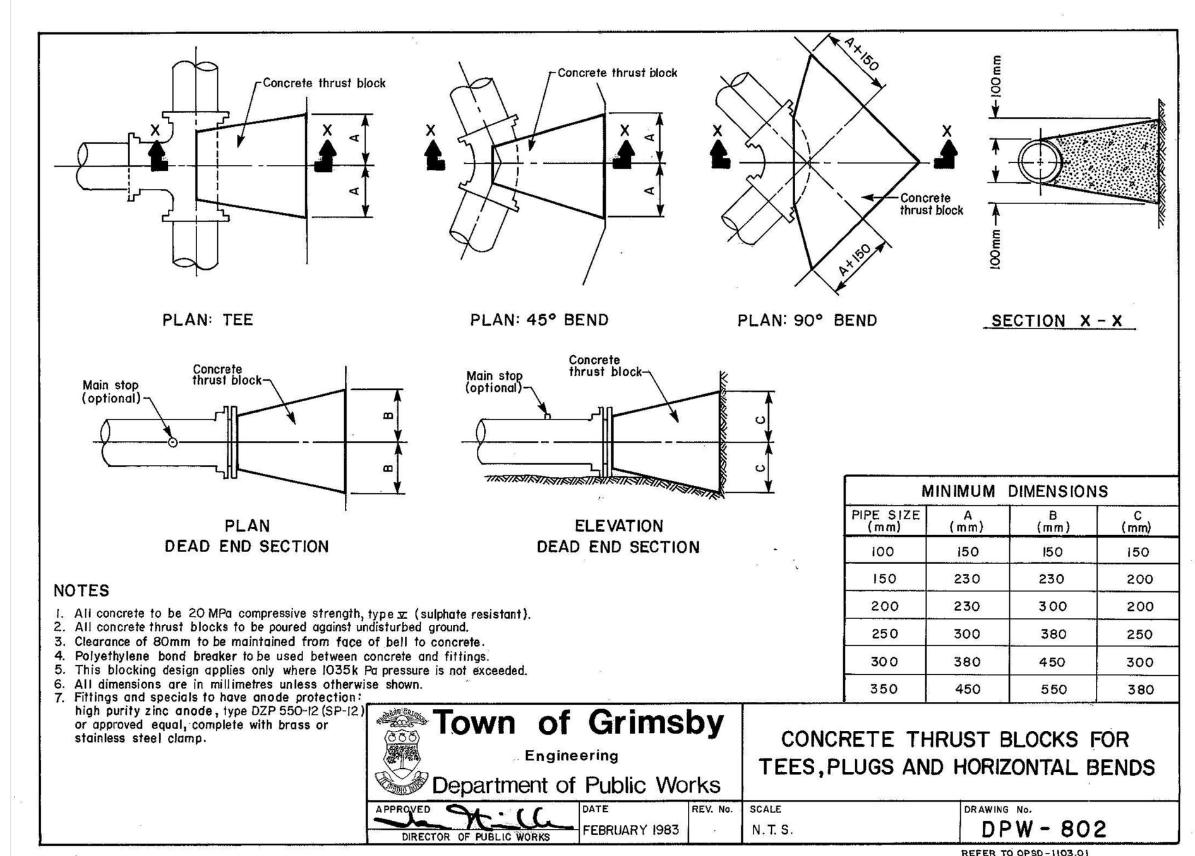


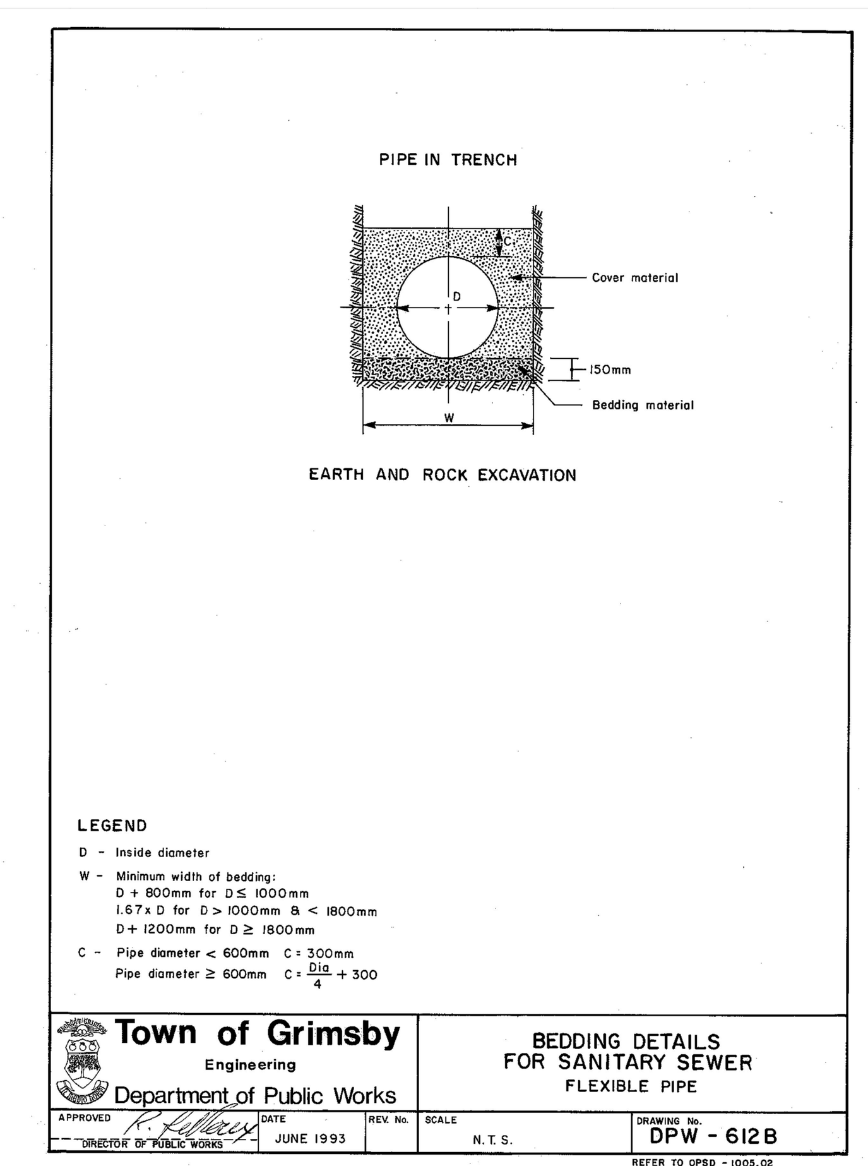












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NO.	DATE	BY	REVISIONS
.	.	.	.

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DESIGN	YM	CHK'D	SL	DATE
DRAWN	YM	CHK'D	SL	Oct. 11, 22

SCALE 1:200 (0 5 10 20)

APPROVALS

BRANDON WARTMAN, C.E.T. DATE:
DIRECTOR OF PUBLIC WORKS

STAMP

S. LLEWELLYN & ASSOCIATES LIMITED
CONSULTING ENGINEERS
Tel. (905) 631–6978
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3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

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BARTLETT AVENUE IN THE TOWN OF GRIMSBY
GRIMSBY, ON

TITLE

DETAILS PLAN

PROJECT No. 22054
DRAWING No. C103

S:\22054\Working\Current\22054 – Grading and Servicing plan.dwg
Plotted: October 12, 2022 3:53:05 PM By: Yagnik Moradiya

GENERAL NOTES:

1. CONSTRUCTION OF ROAD WORKS, SEWERS, WATERMAINS AND RELATED APPURTENANCES SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE LATEST REVISIONS OF THE TOWN OF GRIMSBY DEPARTMENT OF PUBLIC WORKS STANDARD DRAWINGS MANUAL AND ONTARIO PROVINCIAL STANDARDS.
2. INFORMATION REGARDING ANY EXISTING SERVICES AND/OR UTILITIES SHOWN ON THE APPROVED SET OF CONSTRUCTION DRAWINGS IS FURNISHED AS THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL INTERPRET THIS INFORMATION AS HE SEES FIT WITH THE UNDERSTANDING THAT THE OWNERS AND HIS AGENTS DISCLAIM ALL RESPONSIBILITY FOR ITS ACCURACY AND/OR SUFFICIENCY.
3. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION AND HE SHALL REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
4. RELOCATION OF EXISTING SERVICES AND/OR UTILITIES SHALL BE CONSTRUCTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
5. THE CONTRACTOR SHALL OBTAIN ALL PERMITS FOR CONSTRUCTION.
6. FOR ALL SEWERS AND WATERMAIN IN FILL SECTIONS, THE COMPACTION SHALL BE VERIFIED PRIOR TO LAYING OF PIPE.
7. NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE REGIONAL ENGINEER, TOWN OF GRIMSBY OR THE ENGINEER.
8. NO BLASTING WILL BE PERMITTED.
9. ALL EXCAVATIONS TO BE BACKFILLED WITH SELECT NATIVE MATERIAL, APPROVED BY THE ENGINEER, TO 100% SPD, UNLESS OTHERWISE NOTED.
10. TREE PROTECTION PROCEDURES TO BE IMPLEMENTED IN ACCORDANCE WITH THE TOWN OF GRIMSBY STANDARDS.
11. ALL UNDERGROUND POURED CONCRETE AND ALL UNDERGROUND CONCRETE PRODUCTS ARE TO BE MANUFACTURED WITH TYPE 50 SULPHATE RESISTANT CEMENT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF NECESSARY SIGNALS, DELINEATORS, MARKERS AND BARRIERS. ALL SIGNS ETC. SHALL CONFORM TO THE STANDARDS OF THE ONTARIO TRAFFIC MANUAL – BOOK 7.
13. ABANDONED ACCESSES SHALL BE REMOVED, COMPLETE WITH THE REMOVAL AND REPLACEMENT OF THE CURB AND GUTTER. ALL RESTORATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE TOWN OF GRIMSBY POLICY AND SPECIFICATIONS FOR REINSTATEMENT ON PUBLIC ROAD ALLOWANCES AND TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS.

ROADWORKS:

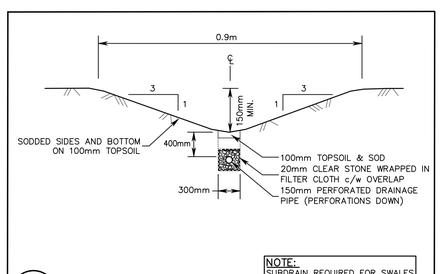
1. FOLLOWNG THE INSTALLATION OF SEWERS, ALL ROADWAYS SHALL BE ROUGH GRADED TO SUBGRADE FOR THE INSTALLATION OF WATERMAINS AND UTILITIES.
2. NO PRELIMINARY ROADS ARE TO BE BUILT.
3. FINAL ROADWAY CROSS–FALL TO BE 2.0%
4. PAVEMENT STRUCTURE (40MM HL3 FINE, 50MM HL8, 375MM GRANULAR "A" – ALL DEPTHS SHOWN ARE MINIMUM COMPACTED THICKNESS).
5. MANHOLES ARE SET TO BINDER ASPHALT AND LATER ADJUSTED TO MATCH SURFACE ASPHALT ELEVATION PRIOR TO PLACEMENT OF SURFACE ASPHALT.
6. CATCH BASIN ADJUSTMENT AND PAVING TO COMPLY WITH TOWN OF GRIMSBY STANDARDS
7. FINAL ASPHALT COURSE (HL3 FINE) SHALL BE PLACED A MIN. OF 1 YEAR AFTER THE INSTALLATION OF ASPHALT BINDER COURSE (HL8) AS DIRECTED BY THE ENGINEER AND APPROVED BY THE TOWN OF GRIMSBY.
8. FOR MANHOLE AND CATCH BASIN TOP ADJUSTMENTS, ALL PERMANENT ADJUSTMENTS SHALL BE POURED IN PLACE OR MAXIMUM THREE (3) MODULOC ADJUSTMENT RING UNITS.
9. 100MM FILTER WRAPPED CORRUGATED PLASTIC SUB–DRAINS TO BE INSTALLED CONTINUOUSLY BELOW THE CURB AS PER DPW–502.
10. ALL BEDDING AND BACKFILL MATERIAL, ROAD SUB–GRADES, GRANULAR ROAD BASES AND GENERALLY ALL MATERIAL USED FOR LOT GRADING AND FILL SECTIONS, ETC., SHALL BE COMPACTED TO MIN 100% SPD UNLESS OTHERWISE SPECIFIED.
11. FOR ALL SEWERS AND WATERMAINS IN FILL SECTIONS, THE COMPACTION SHALL BE VERIFIED PRIOR TO LAYING OF PIPE.
12. ALL MUNICIPAL CURB AND GUTTER SHALL BE IN ACCORDANCE WITH OPSD 600.040.
13. SIDEWALK RAMPS AS PER DPW–302 AND DPW–303. DETECTABLE WARNING PLATES SHALL BE PLACED IN THE SIDEWALK AT ALL PEDESTRIAN CROSSINGS.
14. DRIVEWAYS TO BE CONSTRUCTED AS PER DPW–301, WITH TWO LIFTS OF ASPHALT.

RESTORATION:

1. ALL TRENCH EXCAVATIONS WITHIN EXISTING ROAD ALLOWANCES SHALL BE BACKFILLED WITH GRANULAR "A" COMPACTED TO 100% SPD. PAVEMENT RESTORATION SHALL CONSIST OF FULL DEPTH GRANULAR "A", 50MM OF HL8 BASE ASPHALT AND 40MM OF HL3 FINE TOP COURSE ASPHALT, ALL BEING COMPACTED DEPTH THICKNESS AS PER TOWN OF GRIMSBY SPECIFICATIONS.
2. DISTURBED BOULEVARDS TO BE RESTORED WITH #1 NURSERY SOD ON A MINIMUM 150MM OF SELECT TOPSOIL TO ORIGINAL CONDITION OR BETTER.
3. DISTURBED DRIVEWAYS SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER.
4. ALL RESTORATION WORKS WITHIN TOWN RIGHT OF WAYS SHALL BE IN ACCORDANCE WITH "THE POLICY AND SPECIFICATIONS FOR REINSTATEMENT ON PUBLIC ROAD ALLOWANCE".

RESTORATION OF REGIONAL ROADS SHALL BE COMPLETED IN ACCORDANCE WITH THE REGION OF NIAGARA RESTORATION POLICY:

5. PERMANENT PAVING RESTORATION SHALL NOT BE UNDERTAKEN EARLIER THAN TWO WEEKS AFTER TEMPORARY RESTORATION. DURING WINTER MONTHS, PERMANENT RESTORATION SHALL DEPEND UPON WEATHER CONDITIONS AND THE AVAILABILITY OF APPROPRIATE MATERIALS. HOT MIX ASPHALT MAY BE USED FOR PERMANENT RESTORATION DURING WINTER MONTHS WITH THE PRIOR WRITTEN APPROVAL OF THE ROAD AUTHORITY.
6. TRENCHES SHOULD BE REINSTATED WITH 120mm HL8 SL BASE ASPHALT (IN 2 LIFTS) AND 50mm HL3 HS TOP ASPHALT WITH FULL DEPTH GRANULAR BACKFILL. TACK COAT PRIOR TO EACH LIFT. THE REMAINDER OF THE ROAD TO BE MILLED SHALL BE 50mm DEPTH. TOP ASPHALT TO BE PAVER–LAID.



NOTE:
SUBDRAIN REQUIRED FOR SWALES WITH LESS THAN A 2.0% SLOPE

DETAIL 1 TYPICAL SWALE DETAIL
SCALE: N.T.S.

GRADING:

1. ALONG ADJOINING PROPERTIES GRADE TO MEET EXISTING OR PROPOSED ELEVATIONS WITH SODDED SLOPES (MIN. 3H TO 1V) AND/OR RETAINING WALLS AS SPECIFIED.
2. ALL RETAINING WALLS, WALKWAYS, CURBS ETC., SHALL BE PLACED A MIN. OF 0.45m OFF THE PROPERTY LINE. ALL WALLS 1.0m OR HIGHER SHALL BE DESIGNED BY A P.ENG.
3. SHOULD A RETAINING WALL BE REQUIRED, THE TOP OF WALL ELEVATIONS SHALL BE SET 150mm ABOVE THE PROPOSED SIDE YARD SWALES.
4. RETAINING WALLS 0.6m IN HEIGHT OR GREATER REQUIRE CONSTRUCTION OF A FENCE OR GUARD RAIL AT THE TOP OF THE REAR OF THE WALL. GUARDS FOR RETAINING WALLS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF EXTERIOR GUARDS AS CONTAINED IN THE ONTARIO BUILDING CODE.
5. SLOPES OF SWALES FOR BOTH "BACK TO FRONT" AND "SPLIT" DRAINAGE SHALL BE NO LESS THAN 1.5% GRADE AND NO GREATER THAN 33% GRADE (3:1 SLOPES).
6. WHEN MATCHING TO EXISTING PROPERTIES WHERE A 1.5% GRADE CANNOT BE ACHIEVED, A GRADE LESS THAN 1.5% IS PERMITTED PROVIDED A 150mm SUB–DRAIN IS INSTALLED BELOW THE BOTTOM OF THE SWALE AND DRAINED TO A SUITABLE OUTLET, (WITH A MINIMUM 0.3m COVER OVER THE SUB–DRAIN), OR OTHER MITIGATION MEASURES.
7. MINIMUM GRADE FOR WRAP–AROUND SWALE IN THE BACKYARD SHALL BE 1.0%
8. UNLESS OTHERWISE NOTED, THE GROUND ELEVATION BETWEEN THE PROPOSED ELEVATIONS ON SIDE LOTS SHALL BE GRADED AS A STRAIGHT LINE.
9. TOP OF FOUNDATION WALLS FOR BUILDINGS SHALL BE 150mm (MIN.) ABOVE FINISHED GRADE.
10. DRIVEWAY SLOPES SHALL NOT BE LESS THAN 2.0% AND NOT MORE THAN 7.0% REVERSED SLOPED DRIVEWAYS IN NEW DEVELOPMENTS ARE NOT PERMITTED.
11. GARAGE FLOOR ELEVATION TO BE SET 0.3m HIGHER THAN BACK OF WALK, UNLESS OTHERWISE SPECIFIED.
12. ALL FILL PLACED ON LOTS SHALL BE COMPACTED TO A MINIMUM 95% SPD (UNLESS OTHERWISE RECOMMENDED BY THE GEOTECHNICAL ENGINEER). ALL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 300mm LIFTS.
13. FOR DELINEATION OF TREE PROTECTION ZONES, BUFFERS, REMOVALS AND PROTECTION SCHEMATICS, ETC., REFER TO TREE PROTECTION PLAN.
14. LOT GRADING FOR ALL LOTS IN THE SUBDIVISION SHALL CONFORM STRICTLY WITH THIS PLAN. ANY CHANGES, UNLESS APPROVED PRIOR TO CONSTRUCTION BY THE CITY, SHALL RESULT IN NON ACCEPTANCE OF SUBDIVISION BY THE TOWN.
15. IF GRADING IS REQUIRED ON LANDS ADJACENT TO THE DEVELOPMENT WHICH ARE NOT OWNED BY THE DEVELOPER, THEN THE DEVELOPER MUST OBTAIN WRITTEN PERMISSION FROM THE ADJACENT PROPERTY OWNER TO ALLOW THE DEVELOPER TO GRADE ON ADJACENT LANDS, OTHERWISE RETAINING WALLS MUST BE USED.
16. THE WRITTEN PERMISSION REQUIRED FROM THE ADJACENT LANDOWNER SHALL BE OBTAINED PRIOR TO ENTERING THE LANDS. SHALL PERMISSION NOT BE OBTAINED OR IS WITHDRAWN PRIOR TO COMMENCING THE WORK, THEN THE DEVELOPER SHALL LIMIT HIS ACTIVITIES TO THE LIMITS OF THE DEVELOPMENT SITE.
17. DRIVEWAY AND DRIVEWAY APPROACHES SHALL BE LOCATED SUCH THAT HYDRO VAULTS AND OTHER STREET FURNITURE ARE MIN. OF 1.2m FROM THE PROJECTIONS OF THE OUTSIDE GARAGE WALLS.

BACKYARD GRADING NOTES:

1. DEFINITION: "REQUIRED BACK YARD" SHALL MEAN THE GREATER OF THE DISTANCE REGULATED BY THE ZONING BY–LAW OR 7.5m.
2. THE MAXIMUM SLOPE IN THE BACK YARD ADJACENT TO THE BUILDING FOR A DISTANCE EQUAL TO THE REQUIRED BACK YARD SHALL BE 5% EXCEPT AS SET OUT IN ITEMS BELOW.
3. THE 5% RESTRICTION SHALL NOT APPLY TO THE SIDES OF A SWALE ALONG THE SIDES OR BACK OF THE LOT, PROVIDING THE TOTAL WIDTH OF THE SWALE SHALL NOT EXCEED ONE (1) METRE ON EACH LOT.
4. WHERE THE 5% RESTRICTION ON THE BACKYARD GRADES RESULTS IN ELEVATION DIFFERENCES BETWEEN THE DIFFERENT PROPERTIES, RETAINING WALLS SHALL BE CONSTRUCTED ALONG THE SIDES AND THE BACK OF THE LOT. SLOPES WITH A MAXIMUM OF THE THREE HORIZONTAL TO ONE VERTICAL MAY REPLACE THE WALLS WHERE THE DIFFERENCE IN ELEVATION IS LESS THAN 3.0m.
5. GENERALLY, SLOPES SHALL BE PLACED ON THE LOWER LOT, WHEREAS RETAINING WALLS SHALL BE PLACED ON THE HIGHER LANDS.
6. THE 5% RESTRICTION DOES NOT PRECLUDE RETAINING WALLS IN THE REQUIRED BACKYARDS PROVIDING THE TERRACES ARE MAINTAINED TO THE 5% GRADE AS SET OUT IN ITEM 2) ABOVE. THE INTENTION OF THIS PROVISION IS TO PROVIDE FOR FLEXIBILITY OF HOUSE CONSTRUCTION.
7. THERE IS NO CONTROL ON THE STEEPNESS OF THE SLOPES IN SIDE YARDS, FRONT YARDS, AND BACK YARDS, OUTSIDE THE AREA DEFINED IN 1) ABOVE, PROVIDING THE SLOPES ARE STABLE FOR THE SOILS OF THE AREA (MIN. 3H:1V).

ROOF WATER LEADERS

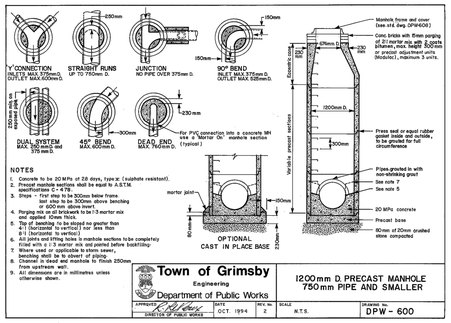
1. ALL ROOFWATER LEADERS SHALL DISCHARGE ONTO SPLASH PADS THEN TO GRASSED OR LANDSCAPED AREAS A MIN. OF 0.6m FROM THE BUILDING FACE

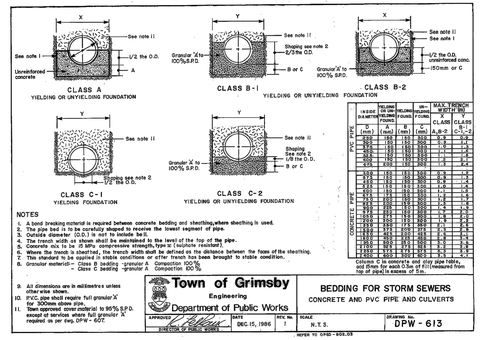
WATERMAINS AND WATER SERVICES:

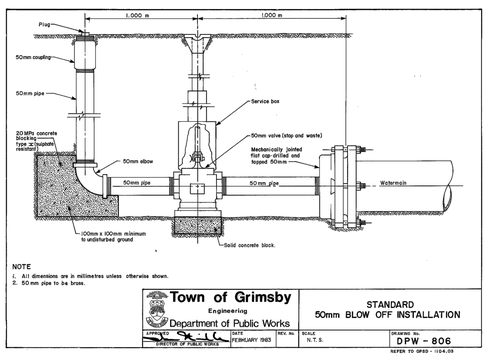
1. COMMISSIONING OF NEW WATERMAIN SHALL CONFORM TO THE TOWN OF GRIMSBY STANDARD OPERATING GUIDELINES (DISINFECTION AND TESTING) AS PER DOCUMENT NO. PW–ES–WD–SOG–012–013.
2. ALL 50MM DIA WATERMAINS SHALL BE PLASTIC MUNICIPEX (PEXA) WATER SERVICE LINE AS MANUFACTURED BY REHAU IN ACCORDANCE WITH CSA B137.5, PER AWWA C904. ALL PVC WATERMAINS 100MM AND GREATER SHALL BE DR18– 1620 KPA IN ACCORDANCE WITH CSA 137.3, PER AWWA C900. ALL SHALL BE INSTALLED WITH NO. 8 PLASTIC COATED TRACING WIRE CONTINUOUS AND WRAPPED AROUND THE PIPE AT 6.0M INTERVALS AND WITH BELL AND SPIGOT JOINTS AND RUBBER RINGS CONFORMING TO ASTM D3139.FITTINGS SHALL BE DUCTILE IRON CONFORMING TO AWWA C110/A21.10 INSTALLED WITH ANODE TYPE DZP 550–12.
3. ALL WATER SERVICE CONNECTIONS TO BE PLASTIC MUNICIPEX (PEXA) WATER SERVICE LINE AS MANUFACTURED BY REHAU. TRACER WIRE TO BE INSTALLED BY REHAU. TRACER WIRE SHALL BE INSTALLED ALONG WATER SERVICE AND BROUGHT TO SURFACE AT CURB STOP, USING DRYCONN WATER PROOF CONNECTIONS AT TRACER WIRE JOINTS.
4. CONSTRUCTION OF WATERMAINS AND PRIVATE SERVICES SHALL BE IN ACCORDANCE WITH TOWN OF GRIMSBY REQUIREMENTS.
5. WATERMAINS TO BE INSTALLED WITH A MINIMUM DEPTH OF COVER OF 1.5M BELOW PROPOSED GROUND ELEVATION AT WATERMAIN.
6. BEDDING FOR WATERMAINS AND WATER SERVICES AS PER DPW–805 TYPE B.
7. FOR WATERMAIN DEFLECTION:
   – MAXIMUM ALLOWABLE DEFLECTION OF 3 DEGREES PER JOINT SHALL NOT BE EXCEEDED
   – EACH JOINT SHALL BE DEFLECTED AN EQUAL AMOUNT.
8. ALL NEW WATERMAINS ARE TO BE SWABBED IN ACCORDANCE WITH TOWN REQUIREMENTS.
9. A REDUCED PRESSURE ZONE BACKFLOW PREVENTER (WATTS SERIES 909 OR APPROVED EQUAL) IS REQUIRED ON THE TEMPORARY SUPPLY LINES USED FOR FILLING AND FLUSHING/SWABBING OF WATERMAINS.
10. UPON COMPLETION OF INSTALLATION, THE CONTRACTOR SHALL PERFORM A PRESSURE TEST ON THE WATERMAINS AS PER OPSS MUNI 441. TWO SEPARATE WATER SAMPLES, (24HR APART) TO BE TAKEN BY TOWN STAFF FOR BACTERIA TESTING PRIOR TO CONNECTION TO EXISTING WATERMAINS. DISINFECTION OF THE NEW WATERMAIN INCLUDING BACTERIOLOGICAL TEST SAMPLES TO BE IN ACCORDANCE WITH AWWA C651. PIPE END COVERS ARE TO BE SUPPLIED BY THE CONTRACTOR. THE CONTRACTOR WILL ALSO SUPPLY AND INSTALL ALL ADAPTOR PIECES IN ORDER TO CONNECT EXISTING WATERMAINS USING TEMPORARY CAPS OR PLUGS.
11. WATER SERVICES TO BE LOCATED AS PER DPW–607A, DPW–607B AND DPW–607C.
12. ALL VALVE CHAMBER COVERS TO BE SET TO PROPOSED GRADES.
13. VALVE CHAMBERS FOR GATE VALVES AS PER DPW–800A. VALVE CHAMBERS TO BE FITTED WITH 150MM DIA STORM SEWER DRAINS WHERE SHOWN ON DRAWINGS.
14. THRUST BLOCKS FOR 100MM TO 300MM DIAMETER WATERMAINS TO BE STANDARD POURED CONCRETE BLOCKS AS PER DPW–802 AND DPW–803.
15. HYDRANTS TO BE INSTALLED AS PER DPW–801 AS DETAILED.
16. ALL FIRE HYDRANTS SHALL CONFORM TO THE TOWN OF GRIMSBY FIRE DEPARTMENT'S REQUIREMENTS. ALL HYDRANTS WITHIN SUBDIVISION SHALL BE SUPPLIED BY THE SAME MANUFACTURER.

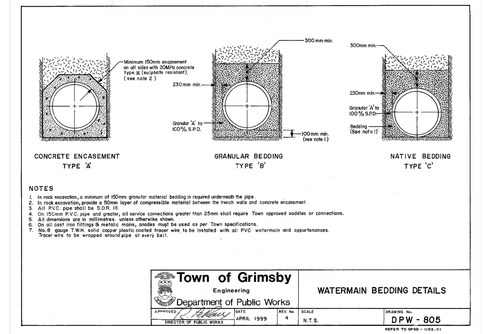
STORM & SANITARY SEWERS:

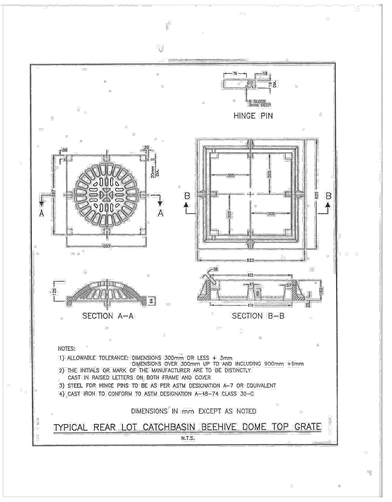
1. ALL CONCRETE PIPE IS TO BE FROM PLANTS APPROVED BY THE MINISTRY OF THE ENVIRONMENT.
2. ALL NON–REINFORCED CONCRETE PIPE SHALL BE IN ACCORDANCE WITH CSA A257.1–M92 WITH RUBBER GASKET JOINTS PER CSA A257.3 M92.
3. ALL REINFORCED CONCRETE PIPE, CLASSES 50–D, 65–D, 100–D AND 140–D, SHALL BE IN ACCORDANCE WITH CSA A257.2–M92 WITH RUBBER GASKET JOINTS PER CSA A257.3 M92.
4. ALL 150MM DIA STORM DRAINS AND 100MM DIA SANITARY DRAINS SHALL BE IN ACCORDANCE WITH CSA B182.1 DR–28 WITH BELL AND SPIGOT JOINTS AND RUBBER GASKETS. CONNECTIONS TO PROPOSED SEWERS SHALL BE MADE WITH FACTORY TEES.
5. SANITARY SEWER BEDDING AS PER DPW–612.
6. STORM SEWER BEDDING AS PER DPW–613 CLASS B.
7. STORM AND SANITARY SERVICE LATERALS TO BE INSTALLED AS PER DPW–607, DPW–607A, DPW–607B AND DPW–607C. ALL LOTS TO BE SERVICED WITH 1 – 150MM DIA STORM SERVICE LATERAL AND 1 – 100MM DIA SANITARY SERVICE LATERAL AS SHOWN ON THE SITE SERVICING PLAN.
8. SINGLE CATCH BASINS AS PER DPW–610. FRAMES AND COVERS AS PER DPW–615.
9. DOUBLE CATCH BASINS AS PER DPW–611. FRAMES AND COVERS AS PER DPW–615.
10. CATCHBASINS LEADS TO BE 250MM DIA PVC DR–35.
11. ALL SANITARY SEWERS TO BE TESTED BY INFILTRATION/EXFILTRATION TEST AND T.V. INSPECTED PRIOR TO START OF MAINTENANCE PERIOD.
12. ALL MANHOLES AND CATCHBASINS SHALL BE BACKFILLED WITH 300MM GRANULAR 'A' COMPACTED TO 100% S.P.D.
13. CONCRETE HEADWALL FOR SEWER OR CULVERT PIPE AS PER DPW–621/622 AND DPW–623.
14. ALL RLCB'S ARE TO BE CONSTRUCTED WITH BEEHIVE GRATES AND FRAMES.

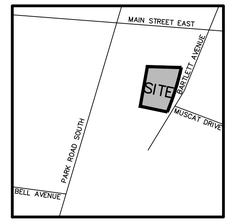












KEY MAP
N.T.S.

BENCH MARK NOTE:

ELEVATIONS ARE GEODETIC, DERIVED BY GPS OBSERVATIONS, REFERRED TO GEODETIC SURVEY OF CANADA BENCHMARK 0011963U3506 9AKA 63U3506) HAVING AN ELEVATION OF 97.088m (CGVD–1928:1978)

LOCATION: GRIMSBY PARK SCHOOL NO.215, ON NORTH SIDE OF HIGHWAY NO. 8, 2.4KM EAST OF POST OFFICE, TABLET IN SOUTH OF FRONT STONE FOUNDATION WALL, IN FIRST COURSE OF STONE ABOVE SIDEWALK, 1.57M WEST OF SOUTHEAST CORNER, 74CM FROM A BASEMENT WINDOW, 1.63M BELOW RED BRICK SIDING, 42CM ABOVE SIDEWALK.

ALL FUTURE GRADE WORK ON SITE TO BE BASED ON SITE BENCHMARK. ANY ELEVATION DISCREPANCIES TO BE REPORTED TO RASCH & HYDE LTD.

NO.	DATE	BY	REVISIONS

NOTES TO CONTRACTOR:

1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
3. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND REPORT ALL FINDINGS TO THE ENGINEER. ONCE CONSTRUCTION HAS COMMENCED, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS.
4. THE POSITIONS OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVER–GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWING, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
5. ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REUSED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.

DESIGN	YM	CHK'D	SL	DATE: Oct. 11, 22
DRAWN	YM	CHK'D	SL	

SCALE 1:200 (0, 5, 10, 20)

APPROVALS

STAMP

BRANDON WARTMAN, C.E.T.
DIRECTOR OF PUBLIC WORKS

DATE:

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CLIENT
LARRY THORNLEY ENTERPRISES LTD.
3 WINDWARD DRIVE, GRIMSBY, ON

PROJECT NAME
BARTLETT AVENUE IN THE TOWN OF GRIMSBY
GRIMSBY, ON

TITLE
NOTES AND DETAILS PLAN

PROJECT No. 22054
DRAWING No. C104