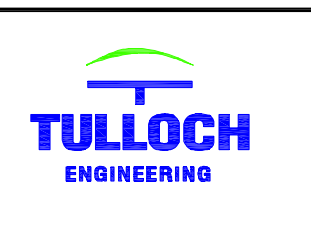


LEGEND

- 237.0 ——— EXIST. CONTOURS
- PROPERTY LINE
- PROP. SANITARY SEWER
- EXIST. STORM SEWER
- EXIST. WATERMAIN
- MAJOR FLOW DIRECTION
- PROPOSED FLOW DIRECTION
- 0.21 — IMPERVIOUSNESS
- 101B — CATCHMENT AREA DESIGNATION
- 0.39Ha. — CATCHMENT AREA IN HECTARES
- CATCHMENT AREA BOUNDARY

1	OCT. 14, 2021	T.M.	PRELIMINARY DESIGN FOR FSR REPORT
No.	DATE	BY	ISSUES / REVISIONS

PRELIMINARY
NOT FOR CONSTRUCTION
OCT. 14, 2021



DRAWING:
PRE-DEVELOPMENT PLAN

PROJECT:
WESTVIEW TOWNHOUSES
RAINEY DRIVE, GRAND VALLEY

DRAWN BY:
D.R.

DESIGNED BY:
D.R.

SCALE:
1:500

CHECKED BY:
T.M.

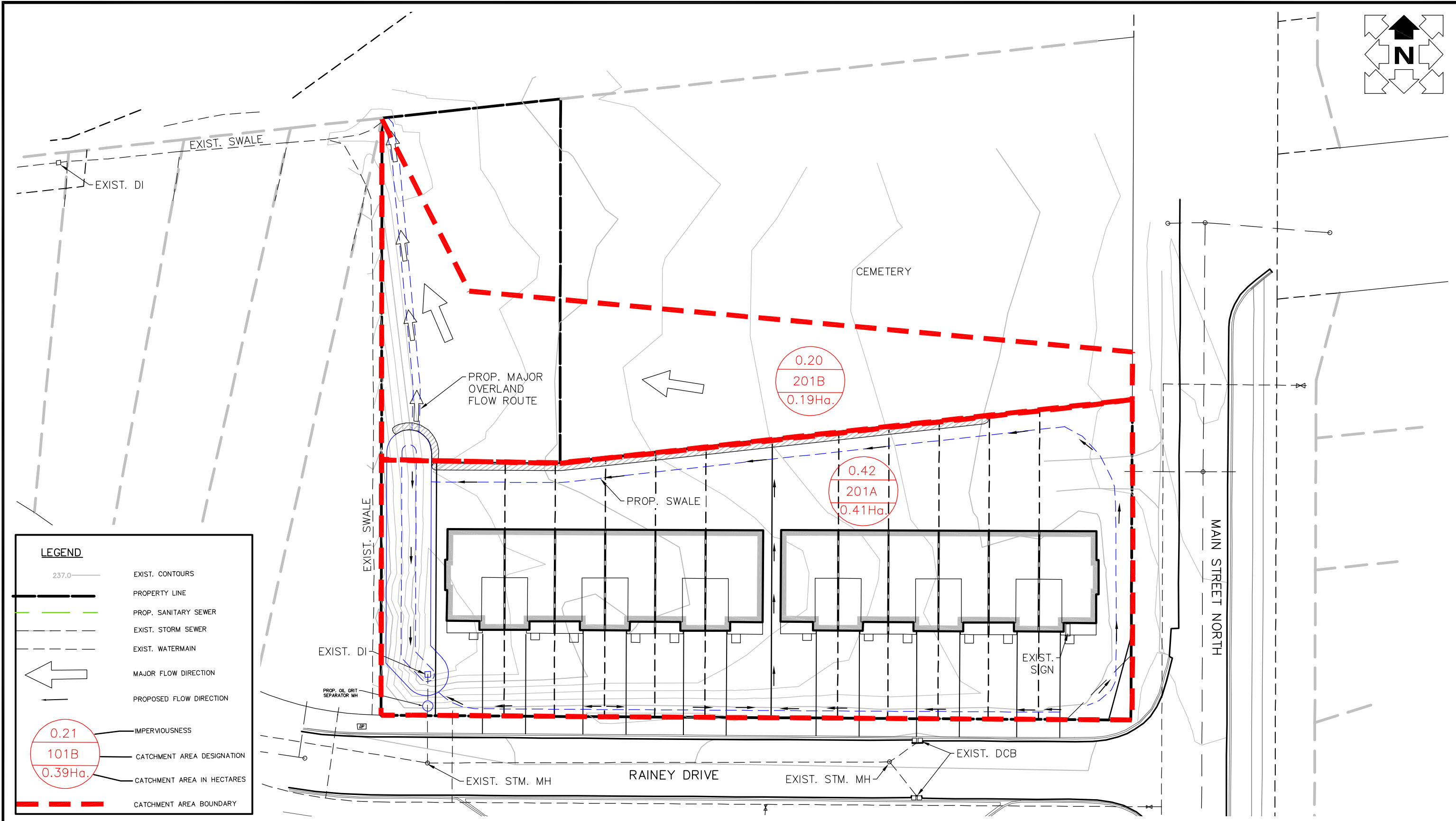
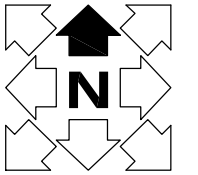
APPROVED BY:
--

DATE:
OCT. 14, 2021

PROJECT No.:
21-1531

DRAWING No.:
D1

REVISION No.:
0

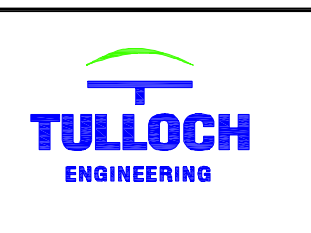


LEGEND

- 237.0 — EXIST. CONTOURS
- PROPERTY LINE
- PROP. SANITARY SEWER
- EXIST. STORM SEWER
- EXIST. WATERMAIN
- MAJOR FLOW DIRECTION
- PROPOSED FLOW DIRECTION
- 0.21 — IMPERVIOUSNESS
- 101B — CATCHMENT AREA DESIGNATION
- 0.39Ha. — CATCHMENT AREA IN HECTARES
- CATCHMENT AREA BOUNDARY

1	OCT. 14, 2021	T.M.	PRELIMINARY DESIGN FOR FSR REPORT
No.	DATE	BY	ISSUES / REVISIONS

PRELIMINARY
 NOT FOR CONSTRUCTION
 OCT. 14, 2021



DRAWING:
POST DEVELOPMENT PLAN

PROJECT:
WESTVIEW TOWNHOUSES
RAINEY DRIVE, GRAND VALLEY

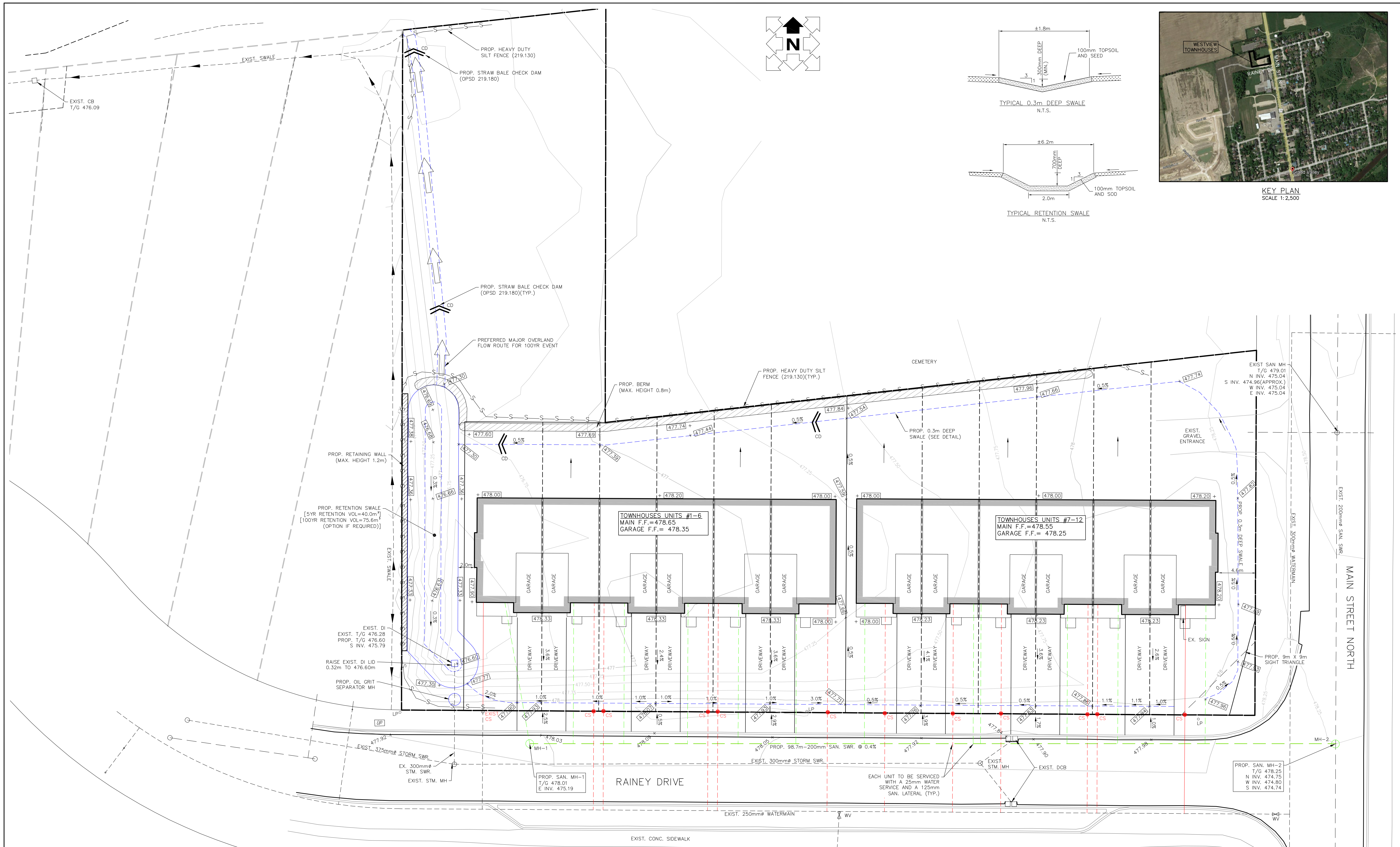
DRAWN BY:
 D.R.
 DESIGNED BY:
 D.R.
 SCALE:
 1:500

CHECKED BY:
 T.M.
 APPROVED BY:
 --
 DATE:
 OCT. 14, 2021

PROJECT No.:
 21-1531

DRAWING No.:
D2

REVISION No.:
0

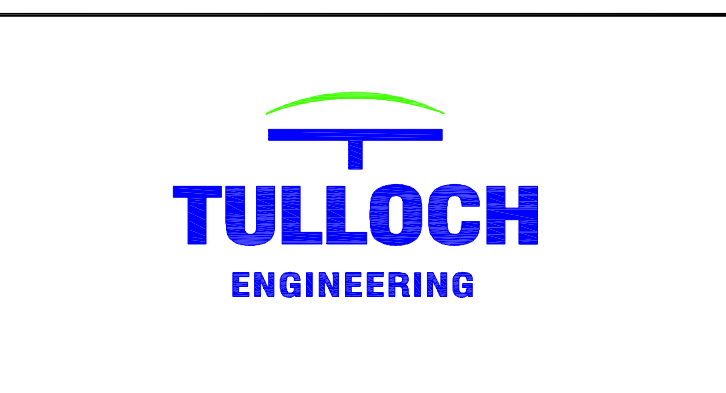


LEGEND

PROPERTY LINE	---	EXISTING CONTOURS	477
WATER MAIN	---	CURB STOP	CS
SANITARY SEWER	---	HEAVY DUTY SILT FENCE	S-S-S
STORM SEWER	---	STRAW BALE CHECK DAM	CD
FIRE HYDRANT	FH		
PROPOSED ELEVATION	+ 306.05		
EXISTING ELEVATION	+ 306.05		
PROPOSED GRADE	3.2%		

REVISION:	No.	DATE	BY
PRELIMINARY DESIGN FOR FSR REPORT	1	OCT. 14, 2021	T.M.

TULLOCH ENGINEERING
 PRELIMINARY
 NOT FOR CONSTRUCTION
 OCT. 14, 2021



WESTVIEW TOWNHOUSES
 RAINEY DRIVE, GRAND VALLEY

SERVICING PLAN / GRADING PLAN /
 STORMWATER MANAGEMENT PLAN

ENGINEER'S SEAL	SCALE	HORZ. 1:200
	DRAWN	VERT. 1:50
	CHECKED	TM
	DATE	OCT. 14, 2021
	PROJECT No.	21-1531
	SHEET	C1

GENERAL NOTES:

- DO NOT SCALE DRAWINGS.
- ALL STANDARDS SHALL BE IN ACCORDANCE WITH CURRENT ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) UNLESS OTHERWISE NOTED.
- NOTIFY ALL UTILITIES AND MUNICIPAL AUTHORITIES 72 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. UTILITY PERSONNEL TO BE ON SITE WHEN EXCAVATING ADJACENT TO UNDERGROUND UTILITIES. SUPPORT UTILITIES IN ACCORDANCE WITH THE DIRECTIONS AND GUIDELINES OF THE IMPACTED UTILITY.
- COMPLETE ALL TRENCHING IN ACCORDANCE WITH THE CURRENT OCCUPATIONAL HEALTH AND SAFETY ACT.
- THE LOCATION OF UTILITIES AND SERVICES SHOWN ON DRAWINGS IS APPROXIMATE AND MAY BE INCOMPLETE. CONFIRM EXACT LOCATION OF UTILITIES WITH MUNICIPALITY OR UTILITIES. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION AND WILL BE RESPONSIBLE FOR PROTECTING AGAINST DAMAGE. THE CONTRACTOR ASSUMES ALL LIABILITY FOR DAMAGE TO UTILITY AND ROAD WORKS.
- CONTRACTOR IS RESPONSIBLE TO COORDINATE ANY REQUIRED UTILITY (GAS, HYDRO, COMMUNICATIONS, ETC.) RELOCATIONS WITH LOCAL UTILITY AGENCIES. ANY REQUIRED RELOCATIONS MUST BE PERFORMED BY AN APPROVED SUB-CONTRACTOR RETAINED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL SUPPORT EXISTING UTILITIES AND SERVICES THAT REMAIN DURING CONSTRUCTION IN ACCORDANCE WITH LOCAL UTILITY AGENCY RECOMMENDATIONS. UTILITIES SHALL NOT BE DISRUPTED TO EXISTING BUILDINGS WITHOUT PRIOR WRITTEN NOTIFICATION AND APPROVAL OF THE OWNER.
- COMPLY WITH THE REQUIREMENTS OF THE COUNTY OF DUFFERIN AND THE TOWN OF GRAND VALLEY IN REGARDS TO TRAFFIC FLOW ON MUNICIPAL STREETS.
- ALL INSTALLATIONS ARE TO BE COMPLETED TO THE SATISFACTION OF THE OWNERS ENGINEER AND THE COUNTY OF DUFFERIN IN ACCORDANCE WITH THE SERVICING DRAWINGS.
- ALL DIMENSIONS ARE IN METERS, EXCEPT PIPE DIAMETERS, WHICH ARE IN MILLIMETERS, UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DETAILED LAYOUT WORK AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR TO SUPPLY SHOP DRAWINGS TO OWNERS ENGINEER FOR ALL SANITARY MAINTENANCE HOLES PRIOR TO ORDERING OR MANUFACTURING ITEMS.
- TEMPORARY SEDIMENT AND EROSION CONTROL IN ACCORDANCE WITH OPSS 805 AND AS DIRECTED BY THE OWNERS ENGINEER. CONTROLS SHOWN ON DRAWING ARE MINIMUM. ALL SILTATION AND EROSION CONTROL MEASURES ARE TO BE IN PLACE PRIOR TO CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREAS ARE REINSTATED TO THE EXISTING CONDITION OR BETTER.
- ALL SILT CONTROL AND EROSION PROTECTION DEVICES ARE TO BE IN PLACE PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREAS ARE REVEGETATED AND STABLE AS DETERMINED BY THE OWNERS ENGINEER.
- TRENCH BACKFILL TO BE NATIVE MATERIAL OR IMPORTED SELECT SUBGRADE MATERIAL AS DIRECTED BY THE OWNERS ENGINEER. NATIVE MATERIAL SHALL BE PLACED IN 200mm LIFTS AND COMPACTED TO 95% OF THE MATERIALS STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD) AND WITHIN 500mm OF SUBGRADE IT SHALL BE COMPACTED TO 98% OF THE MATERIALS SPMDD. GRANULAR 'A' AND 'B' SHALL BE PLACED IN MAXIMUM 150mm LIFTS AND COMPACTED TO 100% OF THE MATERIALS SPMDD. UNSUITABLE MATERIALS SHALL BE REMOVED FROM THE SITE AS SPECIFIED BY THE OWNERS ENGINEER.
- CONTRACTOR IS RESPONSIBLE TO VERIFY ALL EXISTING WATER, SANITARY AND STORM SEWER THE CONNECTIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE CONFIRMED BY THE OWNERS ENGINEER PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DE-WATERING IN ACCORDANCE WITH OPSS 517.
- ALL PIPING AND THEIR APPURTENANCES ARE TO BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
- LATEST APPROVED DRAWINGS TO BE USED FOR CONSTRUCTION AND ALL DISCREPANCIES REPORTED TO THE ENGINEER.
- PIPE LENGTH AS LABELED IS MEASURED HORIZONTALLY ALONG PIPE CENTRE LINE AND MAY DIFFER FROM BASELINE CHAINAGE WHERE BASELINE IS NOT PARALLEL TO PIPE.
- CONTRACTOR IS RESPONSIBLE FOR MANAGEMENT OF ALL EXCESS MATERIALS IN ACCORDANCE WITH OPSS 180.

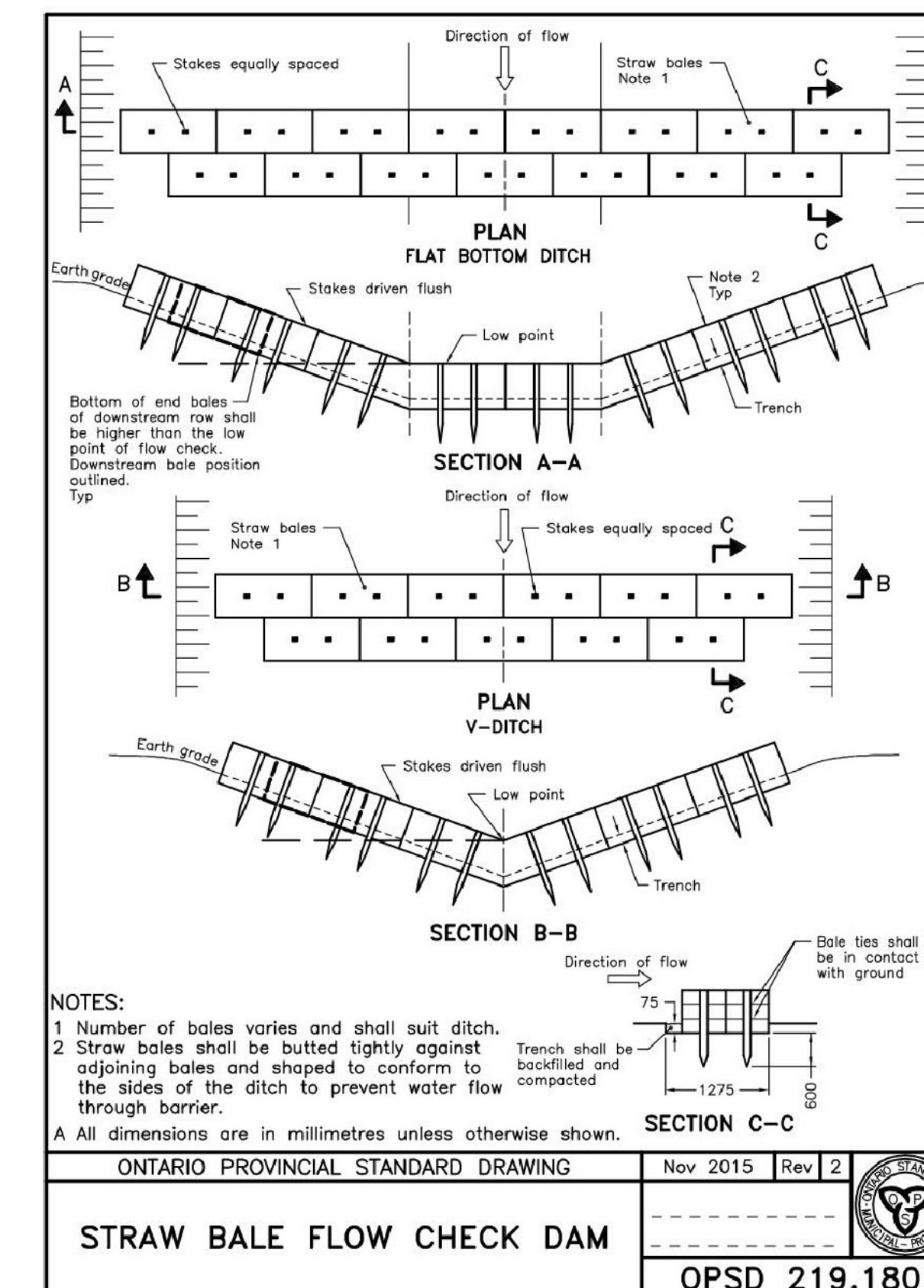
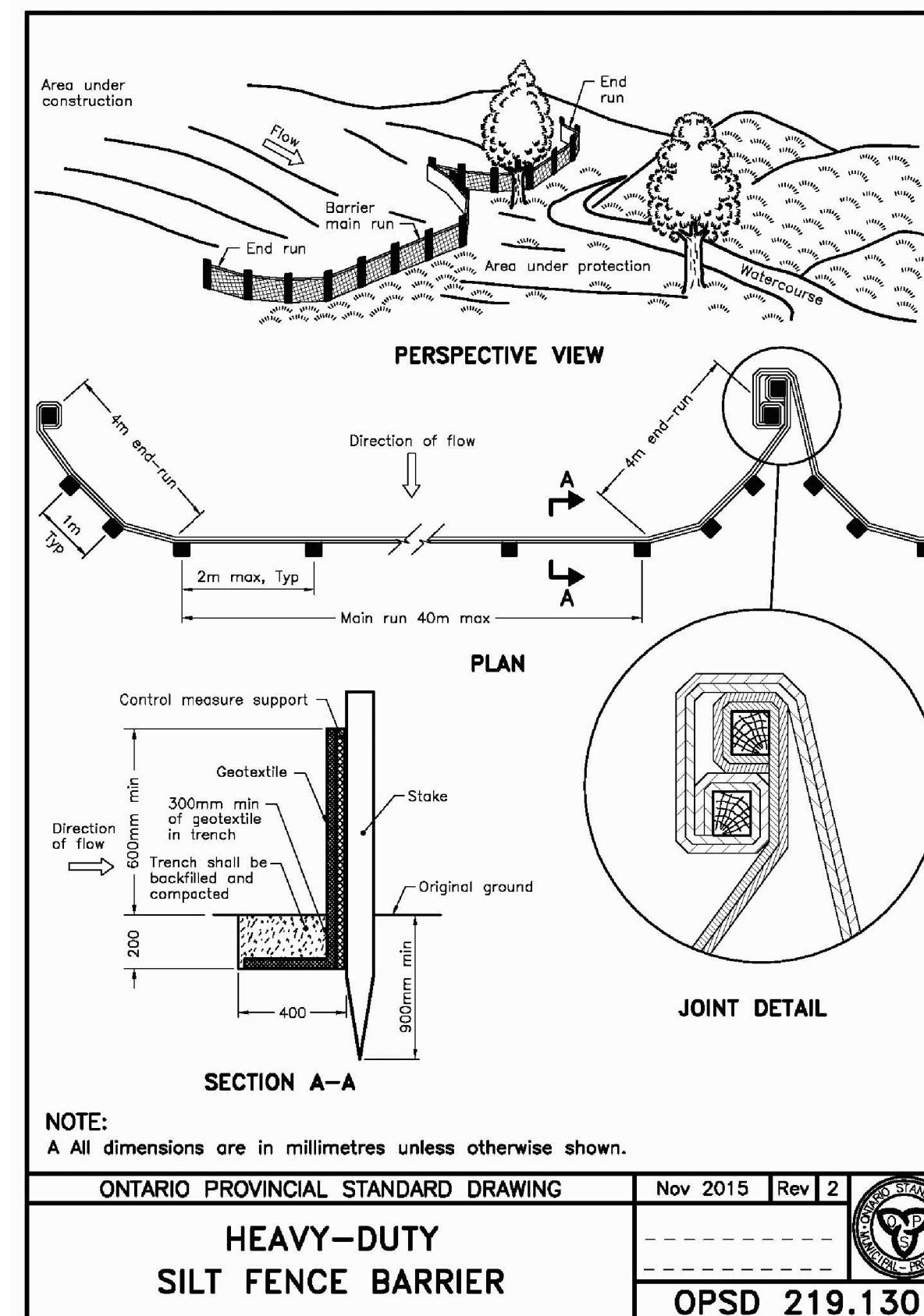
WATERMAIN NOTES:

- WATERMANS AND ALL APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH OPSS 401, 403, 404, 441, 442 AND, 490.
- WATER SERVICE FITTINGS TO BE AS FOLLOWS:
 - 25mm & 31mm MAIN STOP - MUELLER SERIES 300N, CAMBRIDGE BRASS 301NL OR FORD FB1000-X-NL.
 - 25mm & 31mm CURB STOP - MUELLER SERIES 300, CAMBRIDGE BRASS 202NL OR FORD B44 NL / BH 44-233C NL.
 - WATER SERVICE BOX - EPOXY COATED EXTENSION TYPE, BIBBY VS81/B2, CLOW D1/D2, MUELLER A726/A728, SIGMACORP #8 OR STAR SB-5001/5002, C/W STAINLESS STEEL RODS.
- TAPPING SLEEVES - STAINLESS STEEL MECHANICAL JOINT OUTLET, FULL SURROUND GIRDLED GASKET, SMITH BLAIR 663 SS, ROBAR 6606 OR FORD FAST TAP.
- TAPPING VALVES - DUCTILE IRON, EPOXY COATED INTERIOR / EXTERIOR, MECHANICAL JOINT, RESILIENT SEAT, CLOW 2639, MUELLER T-2360 MAXFL OR AWK TYPE 25/31.
- WHEN WATER SERVICES MUST BE INSTALLED BELOW A SANITARY SEWER, NO JOINTS IN THE WATER SERVICES WILL BE PERMITTED, BETWEEN THE MAIN AND THE PROPERTY LINE.
- ALL WATER SERVICES ARE TO BE 25mm DIA. SERIES 160 HDPE AS SHOWN ON PLANS IN ACCORDANCE WITH OPSS 1104.010 UNLESS OTHERWISE NOTED. PROVIDE 1.8m COVER FOR WATER SERVICES. PIPE EMBEDMENT AND BACKFILL SHALL BE IN ACCORDANCE WITH OPSS 802.010, 802.013 AND 802.014.
- ALL WATER SERVICE CONNECTIONS TO MAIN WITH ROBAR 2616 BOSS PAD, SMITH BLAIR 372 DB OR CAMBRIDGE BRASS 372 (DB) STAINLESS STEEL SADDLES.
- INSTALL MAIN STOPS AND CURB STOPS FOR ALL LATERALS AND INCLUDE A "GOOSE NECK" ORIENTED HORIZONTALLY TO ALLOW FOR EXPANSION AND CONTRACTION. DIRECT TAPPING OF PVC MAIN IS NOT ACCEPTABLE. DOUBLE STUDDED BROAD BAND STAINLESS STEEL SERVICE SADDLES SHALL BE USED FOR ALL SERVICE CONNECTIONS.
- PROVIDE INSULATION PROTECTION IN AREAS OF LESS THAN 1.8m COVER - 850mm WIDE OF EXTRUDED POLYSTYRENE INSULATION IN ACCORDANCE WITH OPSS 1605, PLACED 100mm ABOVE WATER PIPE 50mm THICK FOR EACH 300mm ABOVE MINIMUM COVER.

CONSTRUCTION MITIGATION:

FINAL MEASURES TO INCLUDE THE FOLLOWING:

- ALL SEDIMENT CONTROL FENCING IS TO BE INSTALLED PRIOR TO ANY GRADING OR EXCAVATION.
- EROSION CONTROL FENCING TO BE INSTALLED AROUND THE BASE OF ALL STOCKPILES.
- ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES, AS NEEDED.
- TULLOCH ENGINEERING INC. IS TO MONITOR EROSION CONTROL STRUCTURES TO ENSURE FENCING IS INSTALLED AND MAINTENANCE IS PERFORMED TO TOWN REQUIREMENTS.
- EROSION CONTROL STRUCTURES ARE TO BE MONITORED REGULARLY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENT IS TO BE REMOVED WHEN ACCUMULATIONS BUILD UP INSIDE THE CONTROL FENCE.
- ALL EROSION CONTROL STRUCTURES ARE TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND HAS BEEN RESTABILIZED EITHER BY GRAVEL OR RESTORATION OF VEGETATIVE GROUND COVER.
- NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER AND THE DEPARTMENT OF PUBLIC WORKS.
- THE CONTRACTOR IS RESPONSIBLE FOR MUNICIPAL ROADWAY AND SIDEWALKS TO BE CLEARED OF ALL SEDIMENT TRACKED BY VEHICLES AT THE END OF EACH DAY.
- THE CONTRACTOR IS RESPONSIBLE TO REMOVE ANY SEDIMENT THAT HAS TRACKED OFF SITE ONTO ADJACENT PROPERTY OWNED BY OTHERS. RESTORATION AND/OR MAINTENANCE TO ADJACENT PROPERTY MUST BE COMPLETED TO EQUAL OR BETTER CONDITION.



SANITARY SEWER NOTES:

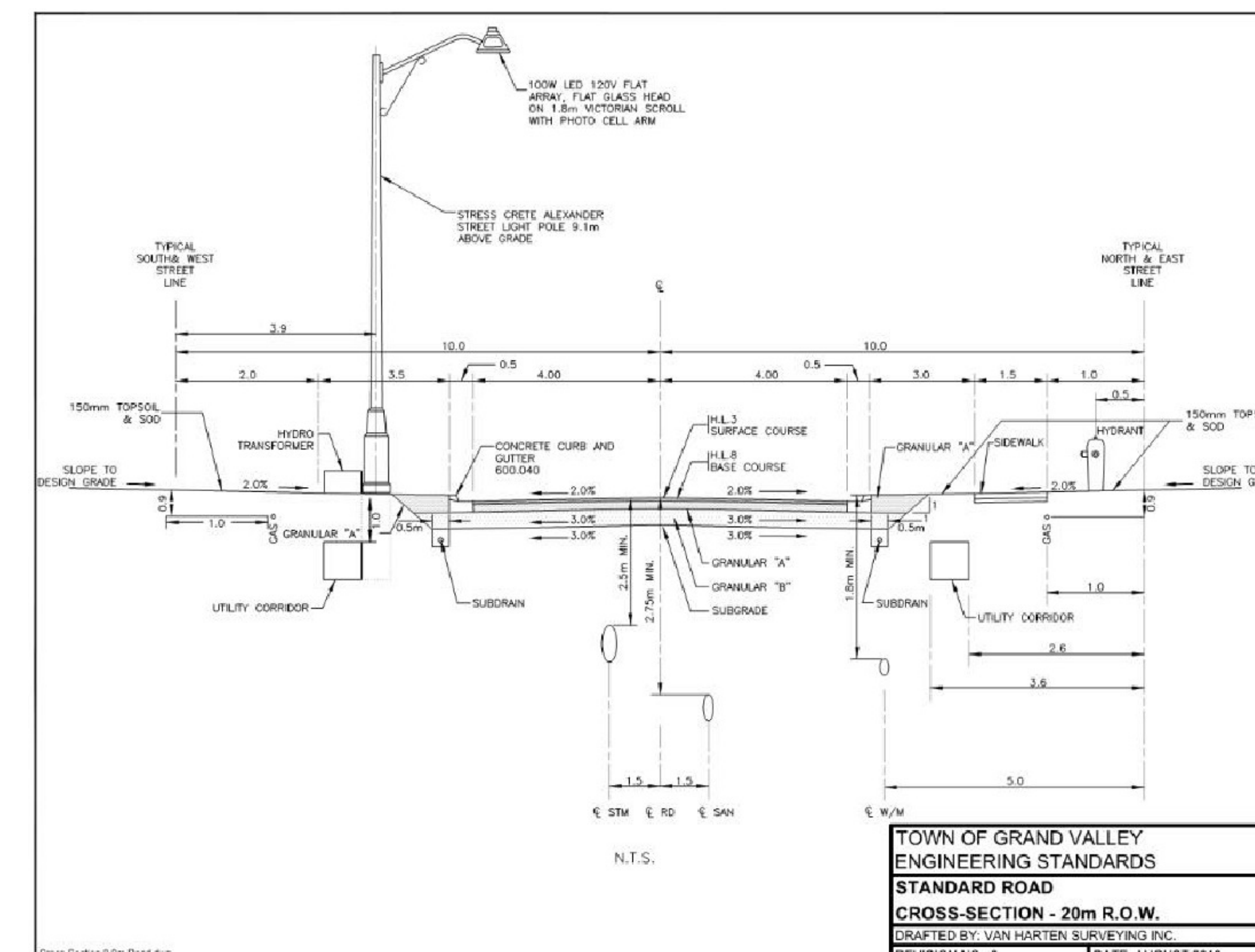
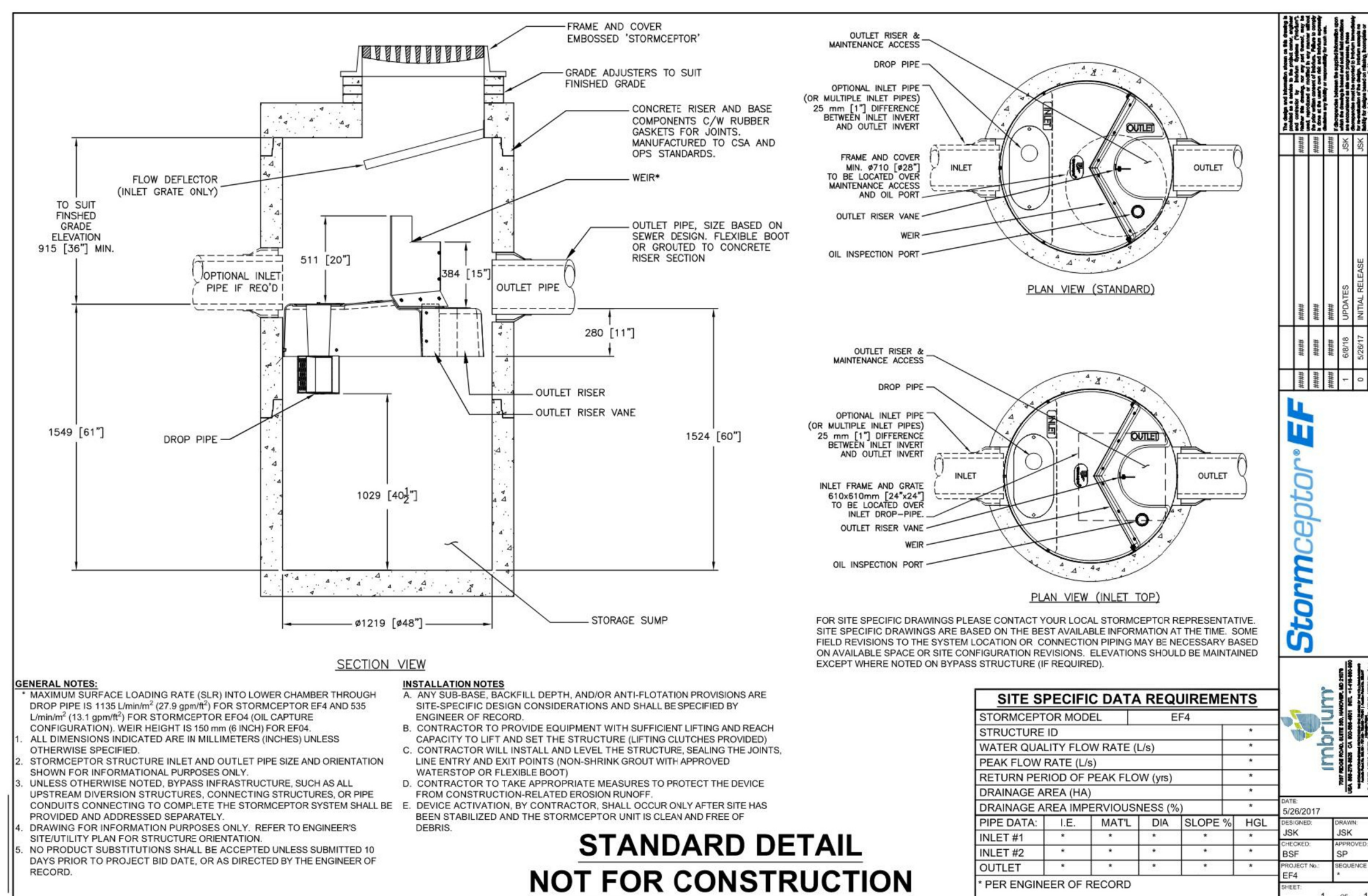
- SANITARY SEWERS SHALL BE INSTALLED AS PER OPSS 401, 402 AND 410.
- SANITARY SEWER PIPE SHALL BE SDR35 PVC PIPE - OPSS 1841.
- SANITARY SERVICE LATERALS (GRAVITY) - 125mm# SDR 28 PVC PIPE - OPSS 1006.020.
- MAINTENANCE HOLES SHALL BE 1200mm# - OPSS 701.010.
- EQUIP MAINTENANCE HOLES WITH STEPS - OPSS 405.020.
- COMPLETE BENCHING OF MAINTENANCE HOLES - OPSS 701.021.
- ALL MAINTENANCE HOLES SHALL HAVE KOR-N-SEAL BOOTS.
- ALL MAINTENANCE HOLES SHALL HAVE TYPE A-CLOSED COVER - (OPSS 401.010), MAINTENANCE HOLE STEPS (OPSS 405.020) AND FROST STRAPS (AS PER T.E. - 3 DETAIL).
- IF VERTICAL SEPARATION BETWEEN SANITARY SEWER AND OTHER STRUCTURES, PIPING OR UTILITIES IS LESS THAN 300mm, INSTALL MIN 50mm HI-60 INSULATION DIRECTED BY THE CONTRACT ADMINISTRATOR - OPSS 1605.
- MAINTAIN MINIMUM CLEAR SEPARATION OF 2.5m HORIZONTAL BETWEEN SANITARY SEWER AND WATERMAIN UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- WORK SHALL CONFORM TO OPSS 410. PIPE EMBEDMENT AND BACKFILL SHALL CONFORM TO OPSS 802.010 AND 802.013. PIPE EMBEDMENT MATERIAL TO SPRINGLINE SHALL CONSIST OF GRANULAR "A" OR 19mm DIAMETER CLEAR STONE. SPRINGLINE TO 300mm ABOVE PIPE SHALL CONSIST OF SAND. TRENCH BACKFILL TO ROAD SUBGRADE ELEVATION SHALL CONSIST OF APPROVED NATIVE MATERIAL COMPACTED TO 95% SPD.
- INSTALL COATED NO.12 GAUGE TRACER WIRE ON ALL LOW PRESSURE SEWERS AND SERVICES AS PER COUNTY OF DUFFERIN STANDARD.

MUNICIPAL ROAD RESTORATION NOTES:

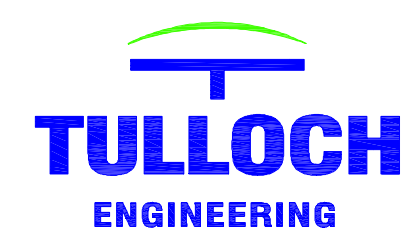
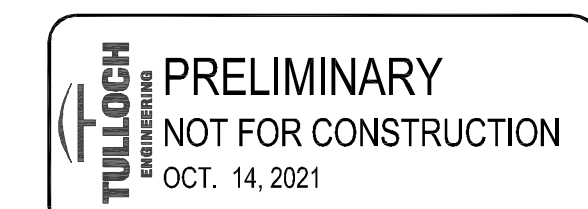
- REINSTATE ROADS TO PREVIOUS CONDITION OR BETTER WHEN DISTURBED.
- CONTRACTOR TO RESTORE DRIVEWAYS AND DITCH WORK IN AREAS DISTURBED BY CONSTRUCTION TO EQUAL OR BETTER CONDITIONS.
- ALL GRASSED AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED WITH 50MM TOPSOIL AND HYDRO SEED AND MULCHED AS PER OPSS 507. MAINTAIN UNTIL ESTABLISHED GROWTH.
- ALL RESTORATION WORK TO BE COMPLETED TO THE SATISFACTION OF THE OWNERS ENGINEER.
- PLACE 150MM DIA. RIP RAP AT ALL CULVERT INLETS AND OUTLETS PER OPSS 810.01.
- FROST TAPERS AT CULVERTS TO BE PER OPSS 803.030.

STORM SEWER NOTES:

- STORM SEWERS SHALL BE INSTALLED TO OPSS 410, 404, 401 AND 402.
- STORM SEWER SHALL BE IPEX ULTRA-RIB PVC PIPE WITH BELL AND SPIGOT JOINTS COMPLETE WITH GASKETS WITH MINIMUM PIPE STIFFNESS OF 320 kpa OR APPROVED EQUAL. PIPE SHALL BE INSTALLED AS PER OPSS 802.010.
- MAINTENANCE HOLES AND CATCH BASINS TO OPSS 705.010 AND OPSS 701.010 INCLUDING FROST STRAPS.
- EMBEDMENT AND COVER OF STORM SEWERS - OPSS 802.010. 19mm CLEARSTONE OR GRANULAR A BEDDING WITH EMBEDMENT TO SPRING LINE OF PIPE. COVER MATERIAL TO BE SAND WITH NO STONES >25mm.
- IF SEPARATION BETWEEN STORM SEWER AND OTHER STRUCTURES, PIPING OR UTILITIES IS LESS THAN 300mm, INSTALL MIN 100mm HI-60 INSULATION DIRECTED BY THE OWNERS ENGINEER - OPSS 316 & 1605.
- MAINTAIN MINIMUM CLEAR SEPARATION OF 2.5m HORIZONTAL BETWEEN STORM SEWER AND WATERMAIN UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- PROVIDE INSULATION PROTECTION AS REQUIRED - OPSS 316 & 1605 (SEE TRENCH INSULATION DETAIL).
- OIL GRIT SEPARATOR MANHOLE SHALL BE STORMCEPTER EF4 BY IMBRUM OR APPROVED EQUIVALENT.



REVISION:	No.	DATE	BY
PRELIMINARY DESIGN FOR FSR REPORT	1	OCT. 14, 2021	T.M.



WESTVIEW TOWNHOUSES
RAINEY DRIVE, GRAND VALLEY

DETAILS AND NOTES

ENGINEER'S SEAL	SCALE HORZ 1:200 VERT. 1:50
	DRAWN DR
	CHECKED TM
	DATE OCT. 14, 2021
	PROJECT No. 21-1531
	SHEET C1