

209806 HIGHWAY 26

TOWN OF THE BLUE MOUNTAINS



KEY PLAN

NTS

INDEX

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LEGEND

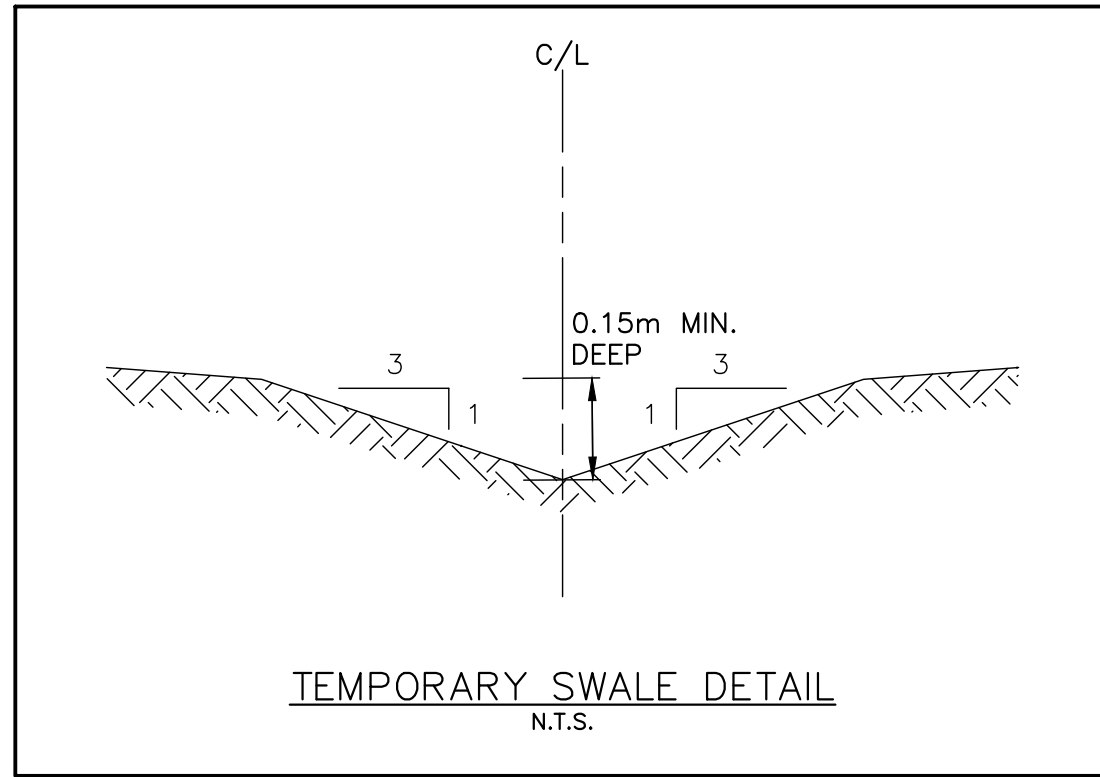
PROPERTY LINE	=====	EXISTING HYDRO SERVICE	-----
EXISTING CENTERLINE	=====	PROPOSED HYDRO SERVICE	-----
PROPOSED CENTRELINE	=====	EXISTING HYDRO TRANSFORMER	⊞
EXISTING EDGE OF ASPHALT	=====	EXISTING CABLE PEDESTAL	⊞
PROPOSED EDGE OF ASPHALT	=====	EXISTING BELL PEDESTAL	⊞
EXISTING DITCH/DIRECTION OF FLOW	----->	EXISTING BELL MAINTENANCE HOLE	○ BELL MH
EXISTING SANITARY SEWER/SIZE/DIRECTION OF FLOW	-----> 200ø SAN	EXISTING BELL POLE	○ BP
PROPOSED SANITARY SEWER/SIZE/DIRECTION OF FLOW	-----> 200ø SAN	EXISTING HYDRO POLE	○ HP
PROPOSED SANITARY SERVICE	-----	EXISTING HYDRO GUY WIRE	---
EXISTING WATERMAIN/SIZE	----- 150ø W/M	PROPOSED LIGHT STANDARD	•LS
PROPOSED WATERMAIN/SIZE	----- 150ø W/M	PROPOSED WALL MOUNTED LIGHT	⊞
PROPOSED WATER SERVICE	-----	EXISTING TRAFFIC SIGN	⊞ TS
PROPOSED STORM SEWER/SIZE/DIRECTION OF FLOW	-----> 375ø STM	PROPOSED TRAFFIC SIGN	⊞ TS
EXISTING CULVERT	=====	PROPOSED STOP SIGN	⊞ STOP SIGN
PROPOSED CULVERT	=====	EXISTING DECIDUOUS TREE	⊞
EXISTING GAS MAIN	-----	EXISTING CONIFEROUS TREE	⊞
PROPOSED GAS MAIN	-----	EXISTING SANITARY MAINTENANCE HOLE/NUMBER	○ SAN MH 17
PROPOSED FENCELINE	-----	PROPOSED SANITARY MAINTENANCE HOLE/NUMBER	● SAN MH17
EXISTING BUSHLINE	-----	EXISTING HYDRANT AND VALVE	⊞ HYD & WV
EXISTING CONTOUR	----- 179.00	PROPOSED HYDRANT AND VALVE	⊞ HYD & WV
EXISTING SPOT ELEVATION	× 179.00	EXISTING WATER VALVE	⊞ WV
PROPOSED SPOT ELEVATION	× 179.00	PROPOSED WATER VALVE	⊞ WV
EXISTING GRADING DIRECTION	----->	PROPOSED CURB STOP VALVE	⊞ CSV
PROPOSED GRADING DIRECTION	-----> 2.0%	PROPOSED STORM MAINTENANCE HOLE/NUMBER	● STM MH9
PROPOSED OVERFLOW ROUTE	----->	PROPOSED STORM OIL GRIT SEPARATOR	● OGS1
PROPOSED SWALE LOCATION	----->	PROPOSED CATCH BASIN	■ CB
EXISTING TEMPORARY BENCHMARK	⊞ TBM	PROPOSED CATCH BASIN MAINTENANCE HOLE/NUMBER	○ CBMH12
EXISTING STANDARD IRON BAR	⊞ SIB	PROPOSED RIP-RAP	⊞
EXISTING BOREHOLE/NUMBER	⊞ BHP	PROPOSED DOWNSPOUT	⊞
PROPOSED BUILDING ENTRY POINT	⊞	PROPOSED BOLLARD LOCATION	•
		PROPOSED DOWNSPOUT LOCATION	⊞



1ST SUBMISSION
Contract No. 121258

SILTATION & EROSION CONTROL:

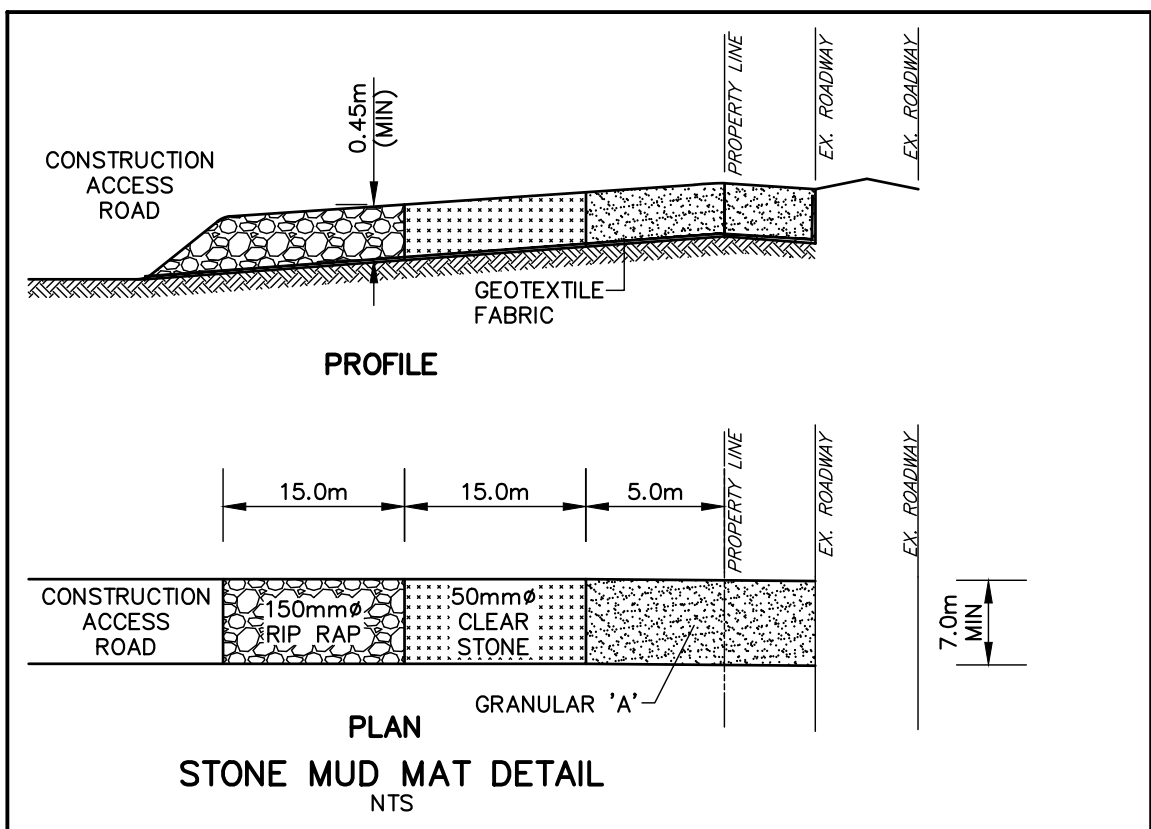
- ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED. SEDIMENT AND EROSION CONTROL MEASURES THAT ARE DESIGNED TO CONTROL RUNOFF FROM SPECIFIC AREAS MUST BE INSTALLED PRIOR TO ANY DISTURBANCE OF THAT PART OF THE SITE. THE LOCATION OF ALL SILTATION AND EROSION CONTROL WORKS TO BE REVIEWED ON SITE AND MAY BE REVISED AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR MAY CONSIDER ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES. SUCH MEASURES MUST BE PRESENTED IN WRITING TO THE ENGINEER FOR APPROVAL FROM THE TOWN OF COLLINGWOOD.
- THE CONTRACTOR SHALL HAVE MATERIALS AVAILABLE ON-SITE TO REPAIR SEDIMENT AND EROSION CONTROL MEASURES IN THE EVENT OF UNFORESEEN CONDITIONS: HIGH WATER, EXTREME RAINFALL EVENTS, ETC.
- ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED, CLEANED AND MAINTAINED BY THE CONTRACTOR AFTER EACH STORM EVENT. ALL WORKS WILL BE INSPECTED BY THE ENGINEER BI-WEEKLY AND AFTER EACH MAJOR STORM EVENT.
- CONSTRUCTION OF ALL SILTATION AND EROSION CONTROL WORKS ARE TO BE IN ACCORDANCE WITH THE FOLLOWING STEPS:
 - INSTALL STONE MUD MAT AS PER DETAIL
 - INSTALL SILT FENCE IN ACCORDANCE WITH NVCA BSD-23 DRAFT
 - INSTALL STRAW BALE DAMS IN ACCORDANCE WITH 219.180
 - INSTALL TEMPORARY CATCHBASIN SEDIMENT TRAPS ON ALL NEW AND EXISTING CATCHBASIN STRUCTURES. SEDIMENT TRAPS TO BE RECTANGULAR CBST BY LAYFIELD OR APPROVED EQUAL. ALL CATCHBASINS TO REMAIN SCREENED UNTIL BASE COURSE ASPHALT IS PLACED AND LOT GRADING IS COMPLETE
 - ALL CONSTRUCTION VEHICLES TO ACCESS SITE USING THE DESIGNATED CONSTRUCTION ENTRANCE.
 - EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED BY THE CONTRACTOR ONCE GROUND COVER IS ESTABLISHED AND LANDSCAPING IS COMPLETE AND AS APPROVED BY THE ENGINEER.
 - STOCKPILE LOCATIONS ARE TO BE APPROVED BY THE ENGINEER.
 - PROVIDE SNOW FENCE OR APPROVED EQUAL ACROSS ALL CONSTRUCTION ENTRANCES DURING PERIODS OF INACTIVITY.
 - CONSTRUCTION AREAS THAT EXCEED 30 DAYS OF INACTIVITY SHALL BE STABILIZED BY SEEDING AS DIRECTED BY THE TOWN. THIS IS TO INCLUDE STOCKPILES OF FILL AND TOPSOIL.



KEYPLAN

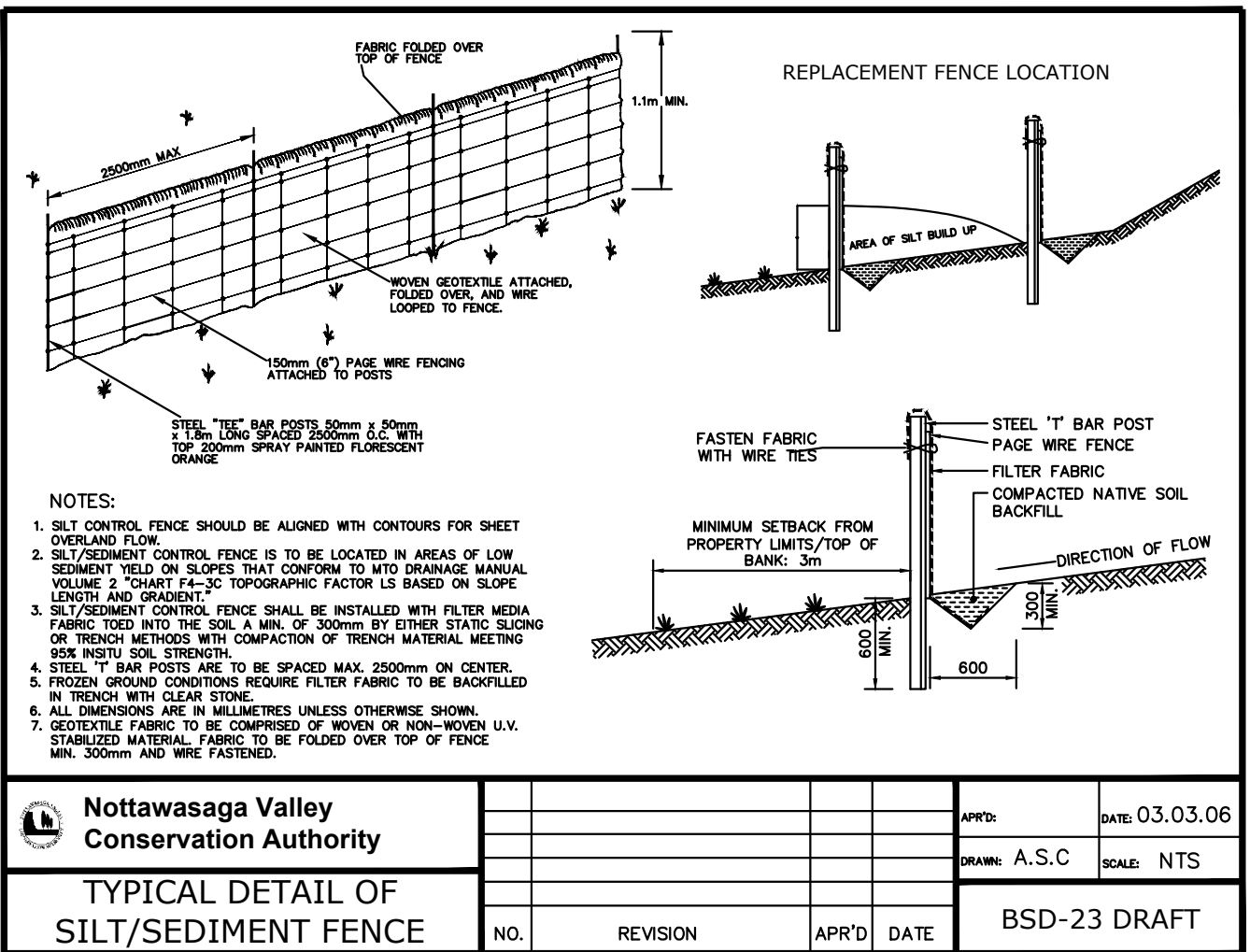
LEGEND

- PROPOSED STRAW BALE FLOW CHECK DAM
- PROPOSED HEAVY DUTY SILT FENCE
- PROPOSED SWALE / DITCH
- PROPOSED OVERLAND FLOW
- SBCD



NOTES

- STONE SIZE - THE STONE PAD SHALL BE A MIN. 450 mm THICK. USE GRANULAR 'A' FOR THE FIRST 5 m FROM THE PROPERTY LINE. 50 mm ϕ CLEAR STONE FOR NEXT 15 m AND 150 mm ϕ RIP RAP FOR THE REMAINING 15 m. GRANULAR 'A' BETWEEN PROPERTY LINE AND EDGE OF PAVEMENT.
- LENGTH - AS REQUIRED BUT NOT LESS THAN 35 m.
- WIDTH - 7.0 m MIN. BUT NOT LESS THAN THE WIDTH AT POINTS WHERE INGRESS AND EGRESS OCCURS.
- GEOTEXTILE FABRIC - TERRAFIX 270R OR APPROVED EQUAL TO BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
- SURFACE WATER - ALL SURFACE WATER FLOWING OR DIRECTED TOWARD CONSTRUCTION ACCESS SHALL BE DIRECTED ACROSS THE ACCESS THROUGH A TEMPORARY CULVERT.
- MAINTENANCE - THE CONTRACTOR SHALL MAINTAIN THE MUD MAT IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO THE PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
- WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ACCESS ONTO THE PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- INSPECTION & MAINTENANCE - REQUIRED MAINTENANCE AFTER EACH RAIN EVENT SHALL BE PROVIDED BY THE CONTRACTOR.
- REMOVAL - STONE MUD MAT TO REMAIN IN PLACE UNTIL COMMENCEMENT OF ROAD CONSTRUCTION



DISCLAIMER AND COPYRIGHT

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

TATHAM ENGINEERING LIMITED CLAIMS COPYRIGHT TO THIS DRAWING WHICH MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT PROVIDED IN THE CONTRACT BETWEEN THE OWNER/CLIENT AND THE ENGINEER WITHOUT THE EXPRESS CONSENT OF TATHAM ENGINEERING LIMITED.

BENCHMARKS

TBM1 - ELEVATION 180.32m ELEVATIONS ARE GEODETIC AND REFER TO THE TOP OF MOST NORTH-WEST BOTH ON NORTH SIGN POST FOR ESSO GAS STATION SIGN.

TBM2 - ELEVATION 180.21m ELEVATIONS ARE GEODETIC AND REFER TO THE DOUBLE NAIL SPIKE IN SOUTH FACE OF HYDRO POLE ON WEST SIDE OF EXISTING PAVED DRIVEWAY ENTRANCE TO SITE.

NOTES

LEGAL SURVEY INFORMATION AND LOT DIMENSIONS SHOWN ON THIS PLAN ARE TAKEN FROM A SURVEY PLAN PREPARED BY ZUBEK, EMO AND PATTEN LTD. DATED JULY 28, 1982 WHICH MAY NOT BE FINAL AND ARE NOT GUARANTEED. THE FINAL REGISTERED PLAN OF SUBDIVISION SHALL BE REFERRED TO FOR CONFIRMATION OF THE DATA.

TOPOGRAPHIC INFORMATION SHOWN ON THIS PLAN FROM SURVEY PREPARED BY TATHAM ENGINEERING LIMITED DATED JAN 24, 2022.

No.	REVISION DESCRIPTION	DATE
1.	1ST SUBMISSION	2022-09-13

ENGINEER STAMP



209806 HIGHWAY 26
TOWN OF THE BLUE MOUNTAINS

SILTATION AND EROSION
CONTROL AND REMOVAL PLAN

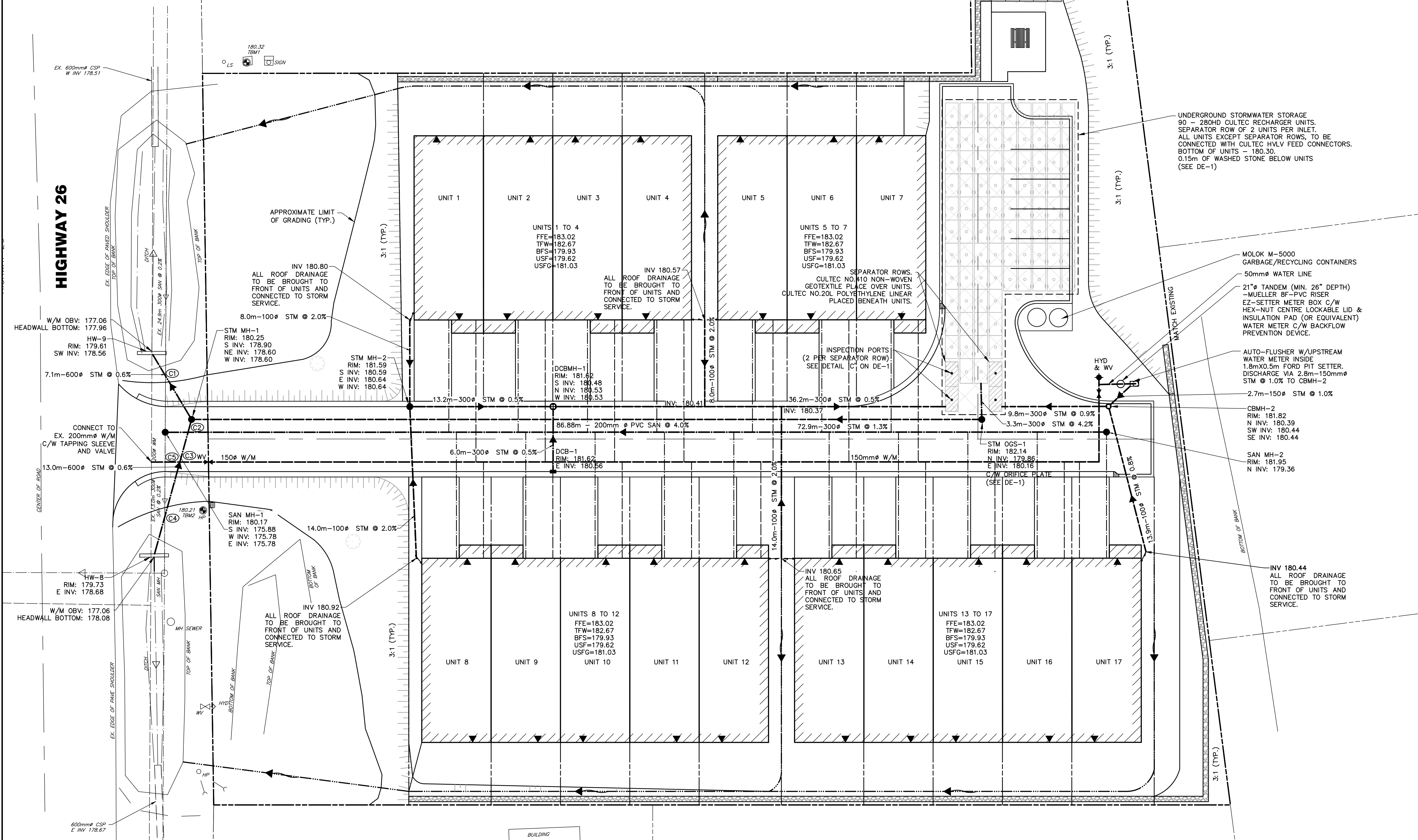


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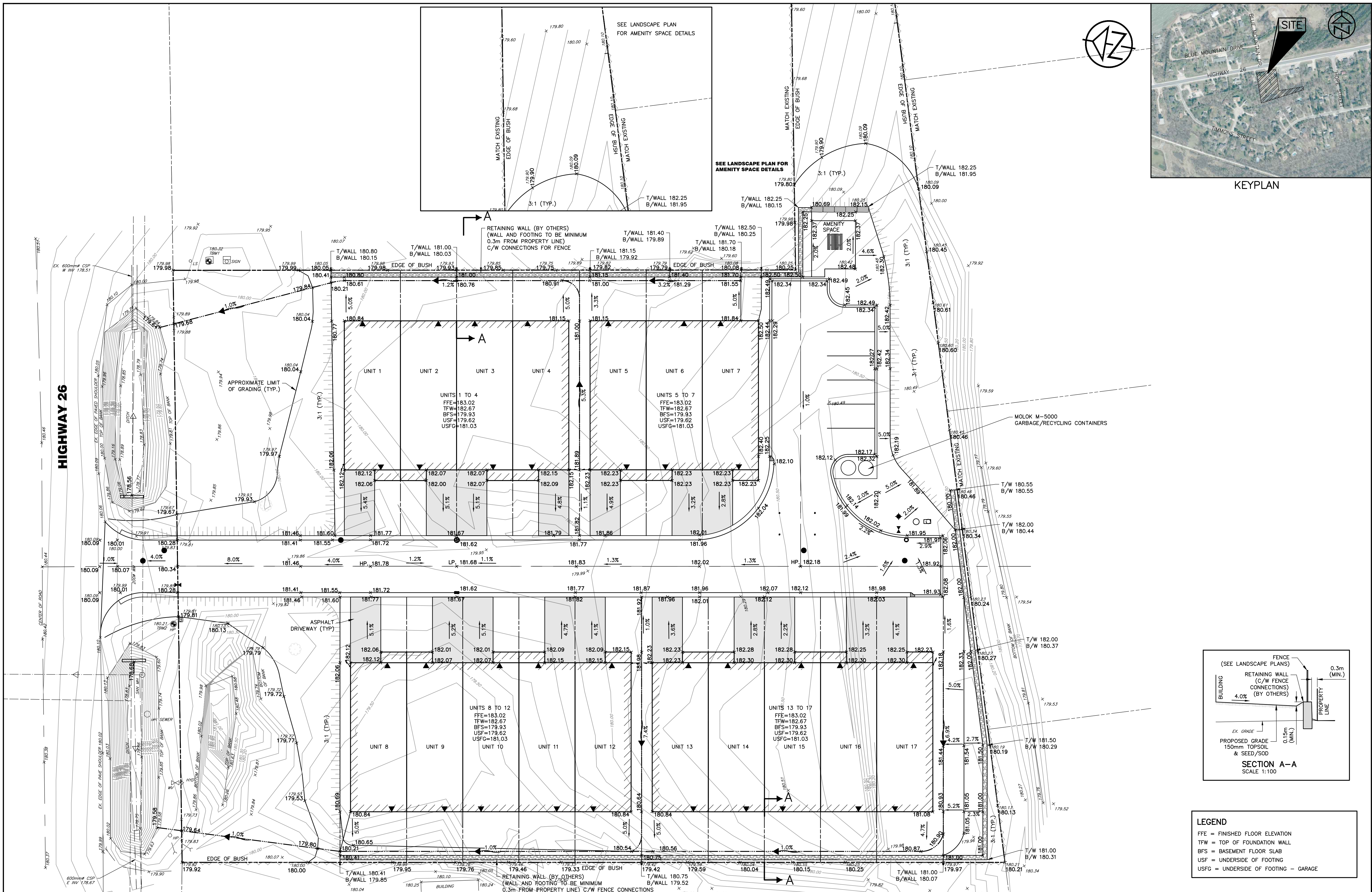
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C2	OBV: 176.17	INV: 178.61		2.44m
C3		INV: 178.62	OBV: 177.80	0.82m
C4	OBV: 176.06	INV: 178.66		2.60m
C5	OBV: 176.07		INV: 176.86	0.79m



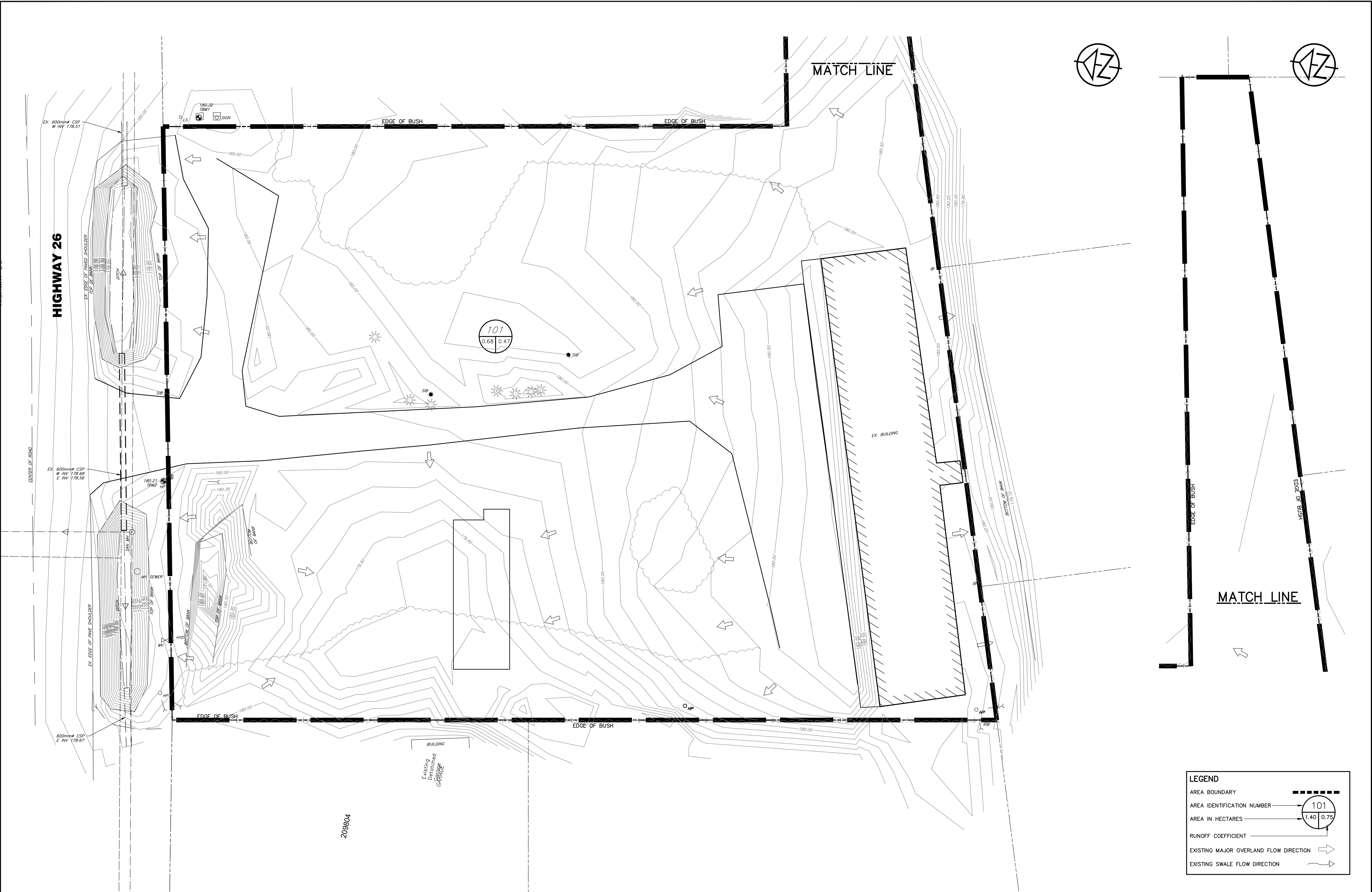
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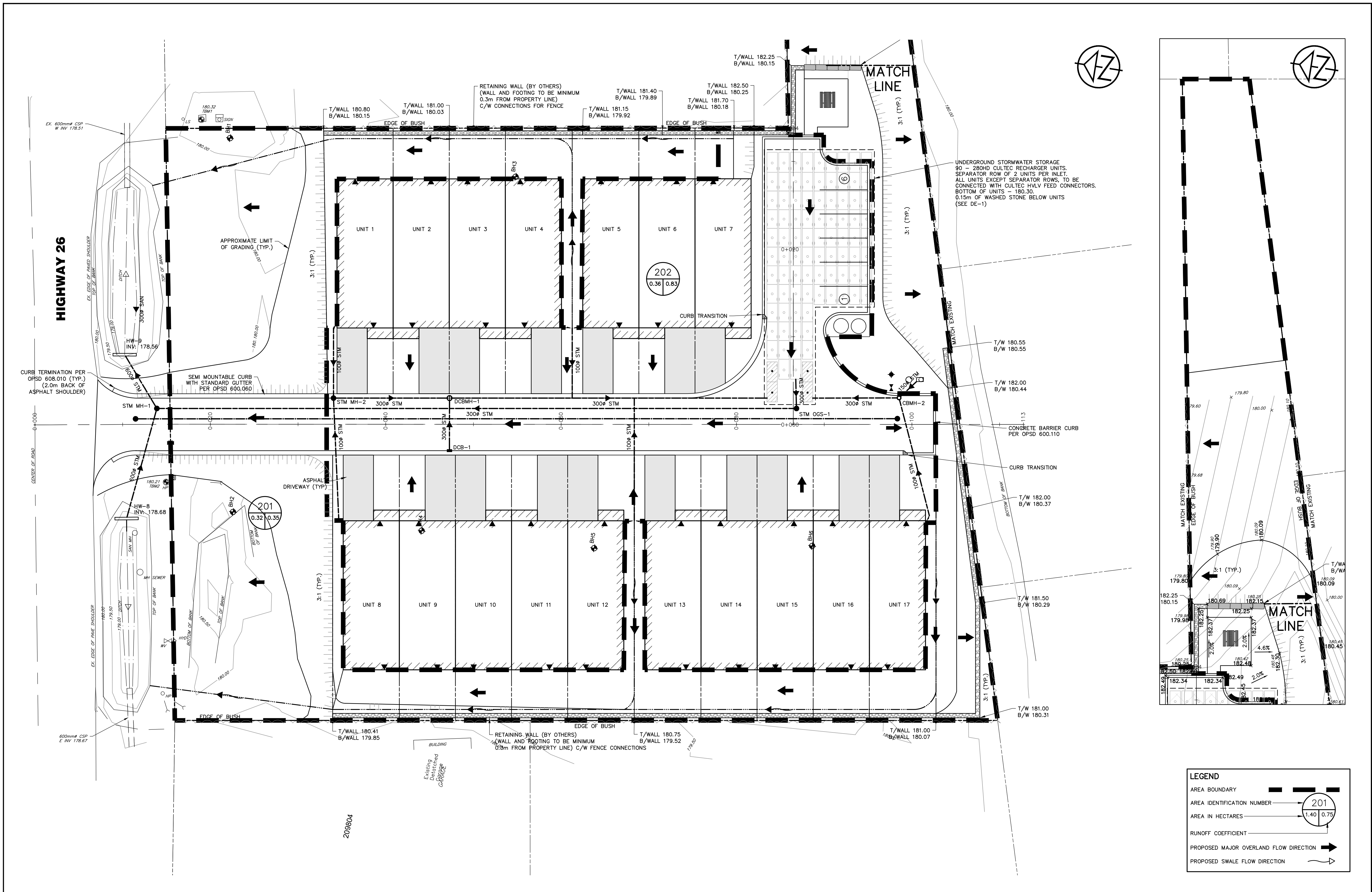
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DESIGN: MM	FILE: 121258	DWG:															
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1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH TOWN OF THE BLUE MOUNTAINS STANDARDS AND OPS STANDARDS, WHERE CONFLICT OCCURS, TOWN STANDARDS TO GOVERN.
2. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE IN MILLIMETERS AND ALL ELEVATIONS ARE IN METER.
3. THE CONTRACTOR MUST OBTAIN A ROAD OCCUPANCY PERMIT FROM PUBLIC WORKS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
4. THE DIMENSION ENGINEER SHALL PROVIDE BENCHMARK ELEVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DETAILED LAYOUT OF THE WORK.
5. ALL PROPERTY BARS TO BE PRESERVED AND REPLACED BY QLS AT CONTRACTOR'S EXPENSE IF REMOVED/DAMAGED DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE SUPPLY OF TEMPORARY WATER AND POWER.
7. Dewatering to BE CARRIED OUT IN ACCORDANCE WITH OPSS-MUM 517 AND OPSS-MUM 518. MAINTAIN ALL TRENCHES IN A DRY CONDITION. A MSCP PERMIT TO TAKE WATER (PTTW) WILL BE OBTAINED IF REQUIRED. THE CONTRACTOR SHALL ENSURE THAT ALL DEWATERING WORKS ARE IN ACCORDANCE WITH DRAINAGE WORKS ACT.
8. ALL TOPSOIL SHALL BE STRIPPED AND STOCKPILED AT A LOCATION APPROVED BY THE ENGINEER. ALL LOTS TO BE ROUGH GRADED AND COMPACTED TO 95% STANDARD PROCTOR DENSITY PRIOR TO PAVING AND ROADWORK.
9. ALL ENGINE DRIVEN PUMPS TO BE ADEQUATELY SILENCED, SUITABLE FOR OPERATION IN A RESIDENTIAL DISTRICT.
10. GENERAL INSTALLATION AND TESTING OF SEWERS, WATERMAIN AND APPURTENANCES TO BE IN ACCORDANCE WITH LOCALITY STANDARDS AND FURTHER SUPPORTED AS NECESSARY BY OPS 407, OPS5 408, OPSS-MUM 409, OPSS-MUM 410, OPSS-MUM 421, AND OPSS-MUM 441 AND ALL SPECIFICATIONS REFERENCED WITHIN THESE SECTIONS.
11. ALL MAINTENANCE HOLES ARE 1200 mm DIAMETER, UNLESS OTHERWISE SPECIFIED.
12. ALL STRUCTURES TO BE INSTALLED WITH FROST DEPTHS TO OPS 701.100.
13. PIPE SUPPORT AT ALL STRUCTURES TO OPMD 708.020.
14. ALL MAINTENANCE HOLE AND CATCH BASIN FRAME AND GRATES TO BE SET TO BASE COURSE ASPHALT ELEVATION IN ACCORDANCE WITH OPS 802.010. FRAME AND GRATES TO BE RAISED TO FINISHED GRADE PRIOR TO ANY SURFACING. ALL STRUCTURES TO BE CONCRETE.
15. ADJUSTMENT UNITS, MAXIMUM COMBINED HEIGHT OF ADJUSTMENT UNITS SHALL BE 300 mm. TRENCH BACKFILL TO BE SELECT NATIVE MATERIAL OR IMPORTED SELECT SUBGRADE MATERIAL TO BE DENSEM. MINIMUM DRY PACKED MAXIMUM 200 mm THICK LIFTS (OR AS OTHERWISE DETERMINED BY THE GEOTECHNICAL CONSULTANT) TO BE SECURED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMD).
16. PIPE EMBEDMENT TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S SPMD. BACKFILL AND EMBEDMENT TO OPS 802.010 (FLEXIBLE PIPE), GRANULAR "A" EMBEDMENT OR OPS 802.031 (RIGID PIPE) CLASS "B", GRANULAR "A" BEDDING, GRANULAR "B" COVER (MAX. 150mm SIZE) AND 150mm MIN. BEDDING. IF BEDDING OR COVER DEPTHS ARE ENCOUNTERED ON ALL PIPES, WHERE EXCESSIVELY WET OR POOR SUBGRADE IS ENCOUNTERED AT THE INVERT LEVEL, IT MAY BE NECESSARY TO INCREASE THE BEDDING THICKNESS.
17. CLEAR STONE COMPLETELY WRAPPED IN FILTER FABRIC MAY BE SUBSTITUTED FOR EMBEDMENT WATER MAINS.
18. DISTURBED AREAS TO BE REINSTATED TO PREVIOUS CONDITION OR BETTER.
19. REINSTATEMENT OF ALL DISTURBED BOULEVARDES AND DITCHES TO INCLUDE REGRADEING, PLACEMENT OF TOPSOIL AND SOD/SEED IN ACCORDANCE WITH OPS 802, OPSS-MUM 803 AND OPSS-MUM 804. ALL GRASS TO BE RESEED AND SOLO PLANTED.
20. LOCATIONS OF EXISTING UTILITIES ARE NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL EXISTING INFRASTRUCTURE/FACILITIES AS WELL AS NOTIFYING ALL UTILITY COMPANIES PRIOR TO COMMENCING WORK AND CO-ORDINATE CONSTRUCTION ACCORDINGLY.
21. ALL ON-SITE MATERIALS AND EQUIPMENT TO BE STORED IN A CLEAN AND COVERED AS REQUIRED. SPECIFICALLY, ALL PVC PIPE SHALL BE COVERED WHILE STORED ON-SITE.

1. SUBGRADE AND BOULEVARD MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S SPMD. SUBGRADE TO BE PROOF ROLLED AND CERTIFIED PRIOR TO PLACING GRANULAR 'B'.
2. GRANULAR 'A' AND 'B' TO BE COMPACTED TO A DRY DENSITY OF 100% OF THE MATERIAL'S RESPECTIVE SPMD.
3. ASPHALT TO BE COMPACTED TO A MINIMUM OF 97% OF THE MARSHALL BULK DENSITY.
4. ROADWAYS TO BE CONSTRUCTED WITH MIN. 450 mm GRANULAR 'B', 150 mm GRANULAR 'A', 80 mm HL3 ASPHALT, AND 40 mm HL3 ASPHALT.
5. JOINTS WITH EXISTING ASPHALT TO BE SAW CUT STRAIGHT PRIOR TO PLACING NEW DEEP LAP. WHERE EXISTING ASPHALT IS THICKER THAN 75 mm, A 500 mm WIDE BY 40 mm DEEP LAP JOINT SHALL BE GROUND INTO EXISTING ASPHALT PRIOR TO THE PLACEMENT OF SURFACE COURSE ASPHALT.
6. ALL GRANULAR AND ASPHALT MATERIAL TO BE PLACED IN ACCORDANCE WITH OPSS.MUNI 310 AND OPSS.MUNI 314.
7. STOP SIGNS AND STREET SIGNS TO BE INSTALLED PER TOWN STANDARDS AND ONTARIO TRAFFIC MANUAL BOOK 7.
8. ALL SIGNAGE TO COMPLY WITH THE TOWN OF THE BLUE MOUNTAINS SIGN BY-LAW.
9. TRAFFIC MARKERS AND SIGNS ARE TO BE INSTALLED IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL BOOK 7.
10. TACK COAT TO BE APPLIED AT THE DIRECTION OF THE ENGINEER.
11. CONCRETE CURB TO OPSS 600.600 AND OPSS 600.110 (AS SPECIFIED) AND OPSS.MUNI 353. CURB DEPRESSIONS AT DRIVEWAY CROSSINGS IN ACCORDANCE WITH OPSS 310.033.
12. CURB DEPRESSIONS AT SIDEWALKS IN ACCORDANCE WITH OPSS 351.010.
13. CONCRETE CURB DIMENSIONS TO BE CONSTRUCTED IN ACCORDANCE WITH OPSS 608.010.
14. ASPHALT DRIVEWAYS TO BE CONSTRUCTED WITH A MINIMUM OF 65 mm OF HL3A ASPHALT AND 200 mm GRANULAR 'A'.
15. 100 mm DIAMETER PIPE SUBDRAINS SHALL BE PROVIDED AS INDICATED ON DRAWINGS IN ACCORDANCE WITH OPSS.MUNI 405 AND OPSS 216.021, UNWRAPPED TRENCH, GRANULAR 'A' EMBEDMENT.

1. TOWN MAINTENANCE HOLES AND CATCH BASIN MAINTENANCE HOLES IN ACCORDANCE WITH OPSD 70.10.10 AND 70.10.11.
2. CATCH BASIN MAINTENANCE HOLES TO HAVE A SUMP PER OPSD 70.10.10.
3. MAINTENANCE HOLES AND CATCH BASIN MAINTENANCE HOLE STEPS TO OPSD 405.010.
4. MAINTENANCE HOLE FRAMES AND GRATES TO OPSD 401.010, TYPE "A" CLOSED COVER.
5. CATCH BASINS TO OPSD 705.010 C/W 600 mm SUMP. CATCH BASIN FRAMES AND GRATES TO OPSD 400.020. FRAME AND GRATES WITHIN ROOM TO BE INSTALLED IN THE CURB LINE TO OPSD 60.10.10.
6. CATCH BASIN LEADS ~ 300 mm DIA. CONNECTIONS TO OPSD 708.010 AND OPSD 708.030.
7. RESIDENTIAL TOWN SERVICE CONNECTIONS TO TOWN STD. DRAWING ST-STD-SUMP, 100 mm DIAMETER, GRANULAR 'A' EMBEDMENT (MIN. 150 mm BEDDING AND 300 mm COVER), USING PRE-MANUFACTURED CONNECTIONS TO THE MAIN. TERMINATE WHERE SHOWN C/W A CAP/PLUG AND 150 mm DIA. 80 mm DIA. COVER. ALL CONNECTIONS TO BE PAINTED WHITE. MINIMUM GRADE TO BE 1.0%. TERMINATE AT AN OVERT LAPPING ON AT LEAST 1.4 m BELOW PROPOSED GRADE AND BE EXTENDED TO FRONT OF HOUSES AS SHOWN ON DRAWINGS.
8. DOWN SPOUTS TO DISCHARGE INTO 100mm RESIDENTIAL TOWN SERVICE.
9. NEW SEWER DRAINING WITHIN 1.5 m OF COVER REQUIRE 50 mm OF INSULATION INSTALLED PER THE DETAIL DRAWINGS.

1. SANITARY MAINTENANCE HOLES TO OPSD 701.010.
2. SANITARY MAINTENANCE HOLES TO BE BENCHMARKED TO OPSD 701.021 ALL CONNECTIONS TO MAINTENANCE HOLES TO INCLUDE A KOR-N-SEAL RUBBER BOOT OR APPROVED EQUIVALENT PIPE CONNECTION.
3. MAINTENANCE HOLE STEPS TO OPSD 405.010.
4. TRANSMAN AND COVER TO OPSD 401.010, 'TYPE 'A' CLOSED COVER.
5. MAINTENANCE HOLE STRUCTURES EXCEEDING 5.0m IN DEPTH TO INCLUDE SAFETY PLATFORM TO OPSD 404.020.
6. DROP STRUCTURES AT MAINTENANCE HOLES TO OPSD 1003.020.
7. RESIDENTIAL SERVICE CONNECTIONS TO OPSD 1006.010, WITH AN APPROVED MANUFACTURED TEE AT THE MAIN, 125 mm DIAMETER, GRANULAR 'A' EMBEDMENT (MIN. 150mm BEDDING AND 300 mm COVER).
8. RADUS BENDS TO BE USED ON ALL SEWER CONNECTIONS WHERE THE ANGLE OF CONNECTION BETWEEN THE SERVICE AND SEWER EXCEEDS 90'.

1. ALL WORK ON EXISTING WATERMAIN TO BE COORDINATED WITH THE TOWN.
2. MINIMUM GROUND COVER OVER WATERMAIN, SERVICE LATERALS AND HYDRANT LEADS TO BE 1.7m AT ALL POINTS.
 - 3. MAXIMUM GROUND COVER OVER WATERMAIN SHALL BE 2.0m
4. WHERE SPECIFIED, INSULATION TO BE INSTALLED OVER WATERMAIN OR SERVICES WITH LESS THAN 1.7m DEPTH OF COVER.
 - 3.1 DEPTH OF COVER BETWEEN 1.4 TO 1.7m REQUIRES 50mm INSULATION.
 - 3.2 DEPTH OF COVER BETWEEN 1.2 TO 1.4m REQUIRES 100mm INSULATION.
5. WATERMANS TO BE INSTALLED WITH LESS THAN 1.2 METRES DEPTH OF COVER:
 - 4.1 THRUST BLOCKS OR PIPE RESTRAINTS TO BE PROVIDED AT ALL CHANGES IN PIPE DIRECTION, TERMINATIONS AND ANY OTHER SITUATION WHERE THERE IS A CHANGE IN DIRECTION OF FLOW. RESTRAINTS MUST BE EITHER CAST IN PLACE OR PRECAST CONCRETE BLOCKS. IF PRECAST BLOCKS ARE USED, THEY MUST BE SET IN BEDDED SAND OR GRAVEL TO FORM ONE UNIT WITH THE SAME STANDARD THAT A DEAD END WOULD BE. WHERE SOIL CONDITIONS ARE SUSPECT SUCH AS IN DISTURBED SOILS OR SOILS WITH BEARING STRENGTH OF LESS THAN 200 kPa, PIPE RESTRAINTERS SHALL BE USED. IN LIQUID OR SATURATED SOILS, BURIED THRUST BLOCKS SHALL NOT BE USED.
 - 4.2 MANUFACTURER'S SPECIFICATIONS. THREADED ROD IN JOINT RESTRAINT IS NOT PERMISSIBLE. THRUST BLOCKS TO OPSD 1103.010 AND 1103.020.
6. CATHODIC PROTECTION OF ALL WATERMAIN FITTINGS AND APPURTENANCES TO BE PROVIDED AS PER TOWN STANDARD (SEE CHART).
7. RESIDENTIAL SERVICE CONNECTIONS TO OPSD 1104.01, 25mm DIAMETER, 300mm DEPTH DUCT GRANULAR 'A' (SEE CHART).
8. CATHODIC PROTECTION OF ALL WATERMAIN FITTINGS AND APPURTENANCES TO BE PROVIDED AS PER TOWN STANDARD (SEE CHART).
9. RESIDENTIAL SERVICE CONNECTIONS TO HAVE CURB STOP INSTALLED 2.0m BEHIND BACK OF CURB. SERVICE ON CURB TO BE INSTALLED TO THE TOP OF CURB. CURB TO BE 300mm HIGH. CURB TO BE SET IN BEDDED SAND OR GRAVEL TO FORM ONE UNIT WITH THE SAME STANDARD THAT A DEAD END WOULD BE. WHERE SOIL CONDITIONS ARE SUSPECT SUCH AS IN DISTURBED SOILS OR SOILS WITH BEARING STRENGTH OF LESS THAN 200 kPa, CURB SHALL BE USED. IN LIQUID OR SATURATED SOILS, BURIED CURBS SHALL NOT BE USED.
10. CURB EMBEDMENT THEN TESTING TAIL SHALL BE EXTENDED TO SURFACE CAPPED OR CRIMPED AND A 30mm x

CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. ANY DISCREPANCIES MUST BE REPORTED TO THE ENGINEER BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

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TBM1 - ELEVATION 180.32m
ELEVATIONS ARE GEODETIC AND REFER TO THE TOP OF
MOST NORTH-WEST BOTH ON NORTH SIGN POST FOR
ESSO GAS STATION SIGN.

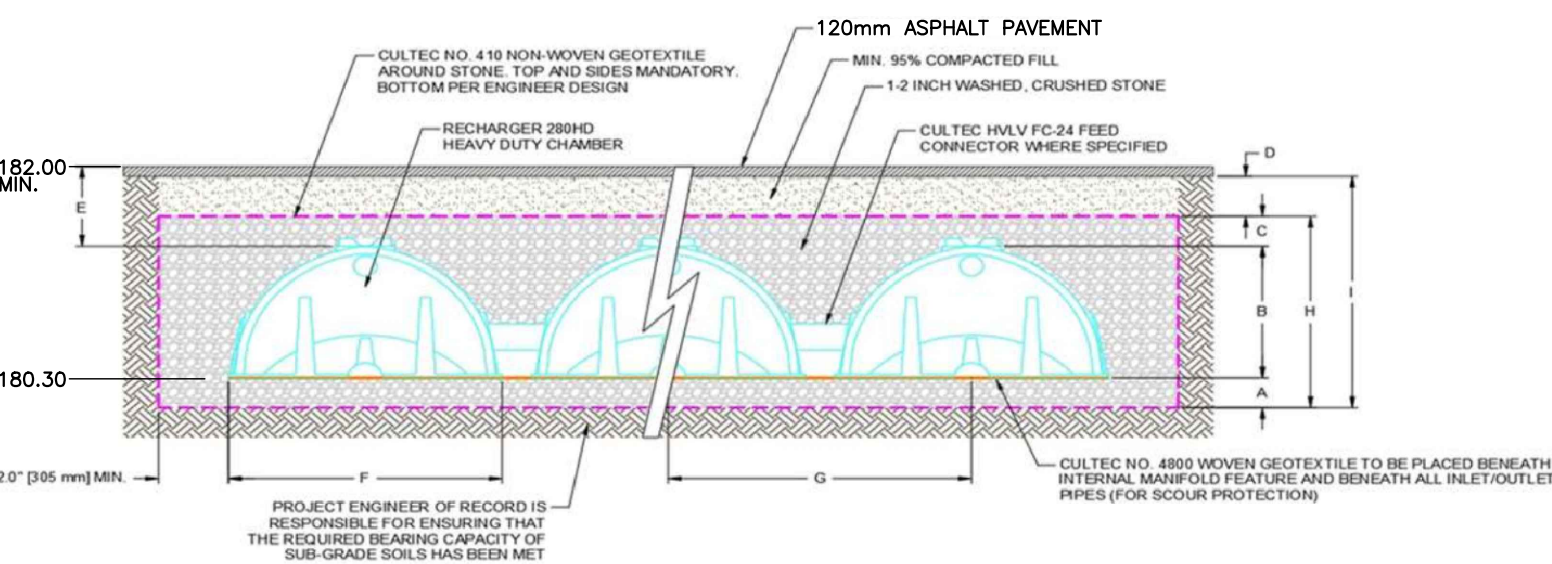
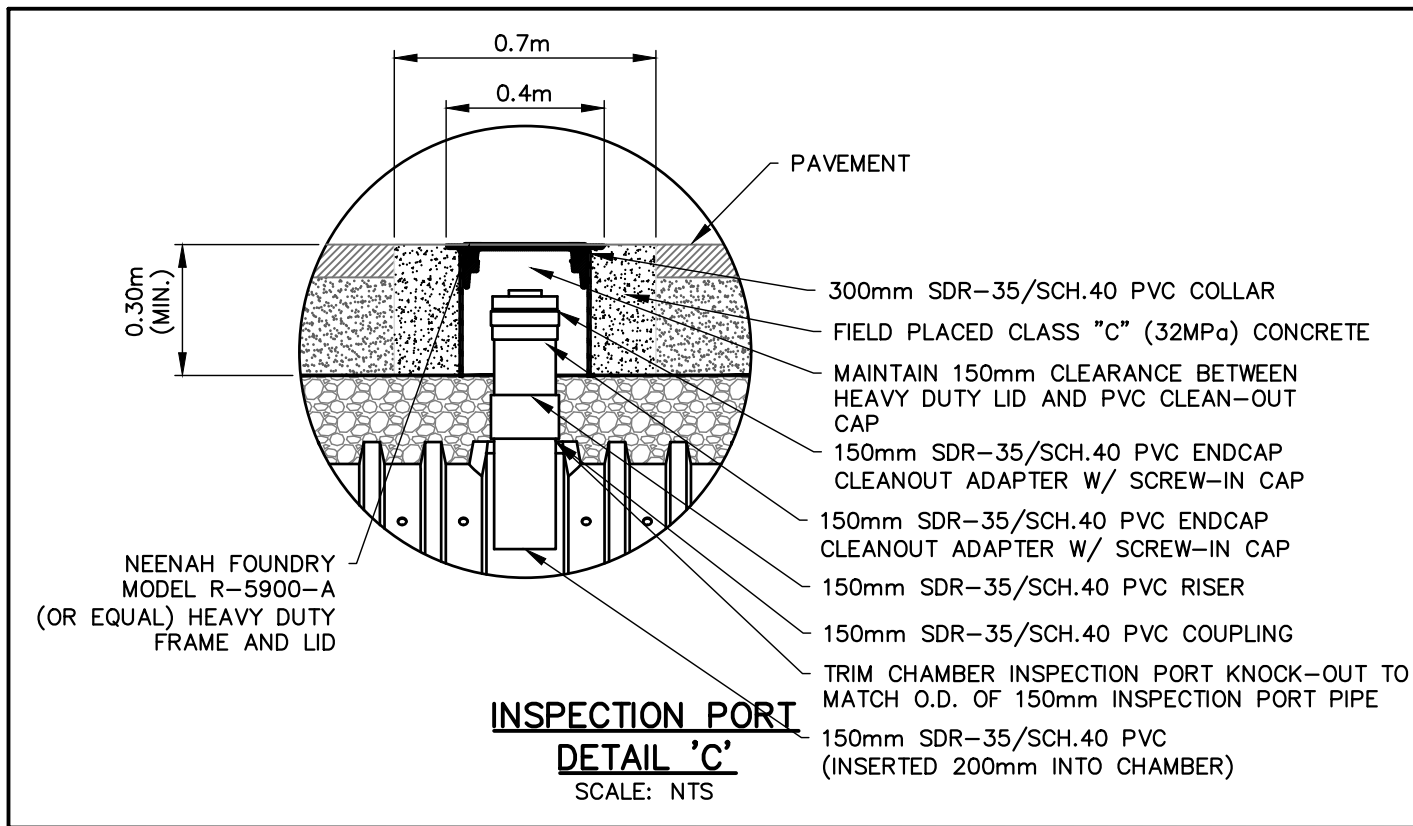
TBM2 - ELEVATION 180.21m
ELEVATIONS ARE GEODETIC AND REFER TO THE DOUBLE
NAIL SPIKE IN SOUTH FACE OF HYDRO POLE ON WEST
SIDE OF EXISTING PAVED DRIVEWAY ENTRANCE TO SITE

LEGAL SURVEY INFORMATION AND LOT DIMENSIONS
SHOWN ON THIS PLAN ARE TAKEN FROM A SURVEY
PLAN PREPARED BY ZUBEK, EMO AND PATTEN LTD.
DATED JULY 28, 1982 WHICH MAY NOT BE FINAL
AND ARE NOT GUARANTEED. THE FINAL REGISTERED PLAN
OF SUBDIVISION SHALL BE REFERRED TO FOR
CONFIRMATION OF THE DATA.

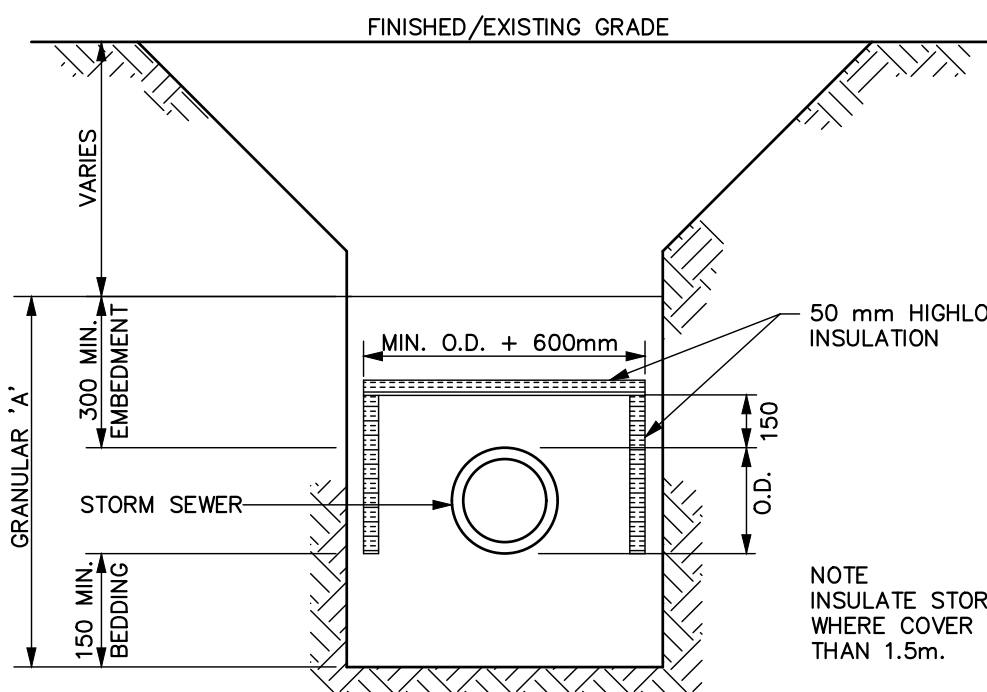
TOPOGRAPHIC INFORMATION SHOWN ON THIS PLAN
FROM SURVEY PREPARED BY TATHAM ENGINEERING
LIMITED DATED JAN 24, 2022.

8. 89mm MARKER FROM INVERT OF SERVICE TO 600 mm ABOVE GRADE PAINTED BLUE. THE TESTING TAIL SHALL INCLUDE MINIMUM 3 m LENGTH OF SERVICE PIPE ABOVE GRADE.
9. HYDRANTS TO BE INSTALLED TO GPSD 1105.0110.
10. HYDRANTS TO BE PAINTED CHROME YELLOW. INCLUDE A FLEXSTEAK HYDRANT MARKER MODEL FH90A, 1.2 m LONG, COLOUR YELLOW WITH REFLECTIVE GRAPHIC ON BOTH SIDES AT THE TOP OF THE MARKER. MARKER TO BE POSITIONED ON THE RIGHT PORT AS VIEWED FROM THE STREET. A FIRE HYDRANT MARKER POST AND SIGN SHALL BE MOUNTED TO THE HYDRANT. THE HYDRANT SHALL BE SETTING WITHIN 1.5 m OF THE SERVICE TAIL ON A WHITE BACKGROUND AND MEASURE 0.3 x 0.3 m. THE SIGN SHALL BE MOUNTED 1.5 m ABOVE GRADE.
11. ALL P.V. WATERMAIN AND PE RESIDENTIAL SERVICES TO HAVE TRACER WIRE BETWEEN HYDRANTS AND OTHER TRACING DEVICES. THE TRACER WIRE SHALL BE PLACED ON TOP OF THE SERVICE TAIL.
12. TRACER WIRE TO BE 10 GAUGE, MULTI-STRAND SHALL BE PLACED ON TOP AND ATTACHED IN TWO PLACES ON EACH LENGTH OF PVC OR PE PIPE. ALL CONNECTIONS SHALL BE MADE WITH "DRYCONED WATERPROOF CONNECTORS" OR EQUIVALENT.
13. VERTICAL CLEARANCE BETWEEN WATERMANS AND SEWERS TO BE A MINIMUM OF 0.5m when WATERMAIN IS BELOW THE SEWERS. HORIZONTAL CLEARANCE BETWEEN WATERMANS AND SEWERS TO BE A MINIMUM OF 2.5m.
14. WATERMANS TO BE INSTALLED TO THE SERVICE TAIL. WATERMANS TO BE INSTALLED TO SERVICE VALVE AND HYDRANTS SHALL BE TESTED IN ACCORDANCE WITH THE TOWN'S WATERMAIN COMMISSIONING PROTOCOL. CONTRACTOR TO PROVIDE DETAILED WRITTEN WATERMAIN COMMISSIONING PROTOCOL FOR APPROVAL PRIOR TO COMMENCING TESTING AND COMMISSIONING. EXISTING MAINS SHALL NOT BE MADE UNTIL WRITTEN AUTHORIZATION IS PROVIDED BY THE ENGINEER AND THE TOWN.
15. FOLLOWING TESTING, CONTRACTOR SHALL OPERATE EACH SERVICE TO VERIFY FULL FLOW AND PRESSURE AT CURB TO BE SUBMITTED TO THE ENGINEER.
16. WATER VALVES TO BE OPERATED BY TOWN STAFF ONLY.

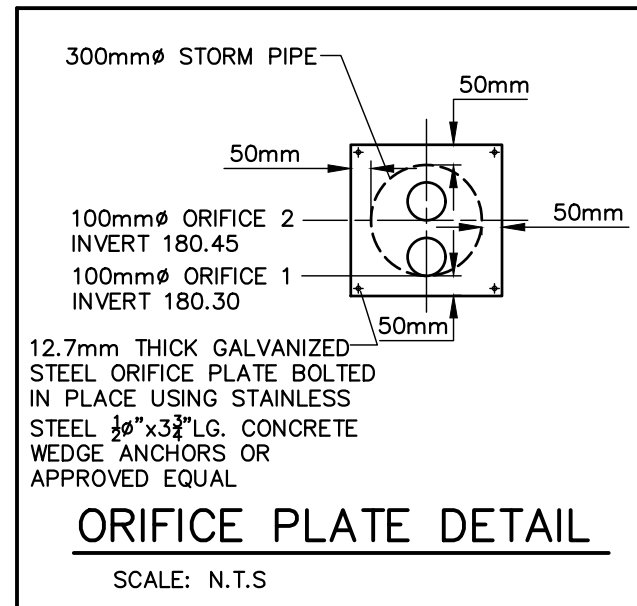
1. ALL MATERIAL TO COMPLY WITH CSA, OPVCS AND TOWN STANDARDS.
2. SANITARY SEWER - PVC DR 35.
3. SANITARY SERVICE CONNECTIONS - PVC SDR 28.
4. STORM SEWER - PVC SDR 35 OR CONCRETE 65-D. ALL SEWERS TO BE JOINED WITH A GASKETED BELL AND SPIGOT SYSTEM. NON-REINFORCED CONCRETE PIPE MAY BE USED FOR SIZES UP TO AND INCLUDING 375 mm DIA. REINFORCED CONCRETE PIPE MAY BE USED FOR ALL SIZES OR SEWER.
5. STORM SERVICE CONNECTIONS - PVC SDR 28, COLOUR WHITE.
6. OIL AND GRIT SEPARATOR TO BE STORMCORDER EF04.
7. PERFORATED SUBDRAIN - BIG 'O' WITH GEOTEXTILE FILTER SOCK OR APPROVED EQUIVALENT.
8. ALL CHEMICALS TO BE USED IN THE ALTERATION OR OPERATION OF THE DRAINAGE WATER SYSTEM THAT COMES IN CONTACT WITH WATER WITHIN THE SYSTEM SHALL MEET ALL APPLICABLE STANDARDS SET BY BOTH THE AMERICAN WATER WORKS ASSOCIATION ("AWWA") AND THE AMERICAN NATIONAL STANDARDS INSTITUTE ("ANSI") SAFETY CRITERIA STANDARDS NSF/60, NSF/61 AND NSF372.
9. WATERMAIN - PVC DR 18.
10. WATER SERVICE CONNECTIONS TO BE 25 mm DIA. TYPE 'K' COPPER PIPE OR REHAU'S MUNICIPLEX (BLUE) POLYETHYLENE MEETING ANSI/AWWA C904.
11. WATER SERVICE FITTINGS SHALL BE:
 - 11.1. MAIN STOP - MUELLER B25009 OR CAMBRIDGE BRASS SERIES 301NL.
 - 11.2. CURB STOP - MUELLER B25209 OR CAMBRIDGE BRASS SERIES 202NL.
 - 11.3. SERVICE SADDLE - ROBAR 2626 DOUBLE STRAP OR CAMBRIDGE BRASS 8403 DOUBLE BOLT.
 - 11.4. TAPPING SLEEVE - ROBAR 2626 DOUBLE STRAP OR CAMBRIDGE BRASS 8403 DOUBLE BOLT.
 - 11.5. SERVICE BOXES - MUELLER A-726, STAINLESS STEEL RODS
 - 11.6. PIPE RESTRAINERS - SIGMA C-900.
12. HYDRANTS - MUELLER CENTURY OR AVK 2780 SERIES NOSTALGIC STYLE YR BARREL, OPEN LEFT, WITH STORMCORDER EF04 AS THE USER'S CHOICE. HYDRANT VALVES SHALL BE INSTALLED NOT LESS THAN 0.9 m FROM THE CENTER OF THE VALVE TO THE CENTER OF THE HYDRANT. A HYDRANT SIGN AND YELLOW FLEX MARKER SHALL BE INSTALLED 1m BEHIND THE HYDRANT. TRACER WIRE SHALL BE ATTACHED TO THE OUTSIDE OF THE VALVE BOX AND WIRE BROUGHT INTO VALVE BOX UNDER BOX.
13. LIVE TAP SADDLES TO BE EPOXY COATED COMPLETE WITH STAINLESS STEEL BOLTS.
14. MECHANICAL JOINT DUCTILE FITTINGS TO AWWA/ANSI C153/A21.53. INCLUDING PROTECTO-COUNTS, CAT NO. 10090 OR APPROVED EQUIVALENT.
15. RISING MAIN VALVES TO BE PRESSURE RATED GATE VALVES WITH MECHANICAL JOINTS, OPEN/CLOSED, CLOW OR MUELLER. VALVE BOXES TO BE BIBBY OR STAR PIPE SUE TYPE UPPER AND LOWER MB COMPOSITE COMPLETE WITH GUIDE PLATE AND DUCTILE ADJUSTABLE TOP AND LID OR APPROVED EQUAL. CAPS TO BE 100.
16. ALL WATERMAIN FITTINGS TO HAVE ZINC NUTS.
17. ALL SPECIFIED AGGREGATES TO OPSS.MUNI 10.10.
18. FILTER FABRIC - TERRAFIX 270R OR APPROVED EQUIVALENT.
19. INSULATION - STYROFOAM HIGLOW 40 EXTRUDED POLYSTYRENE FOAM INSULATION, 50mm THICK SHEETS.



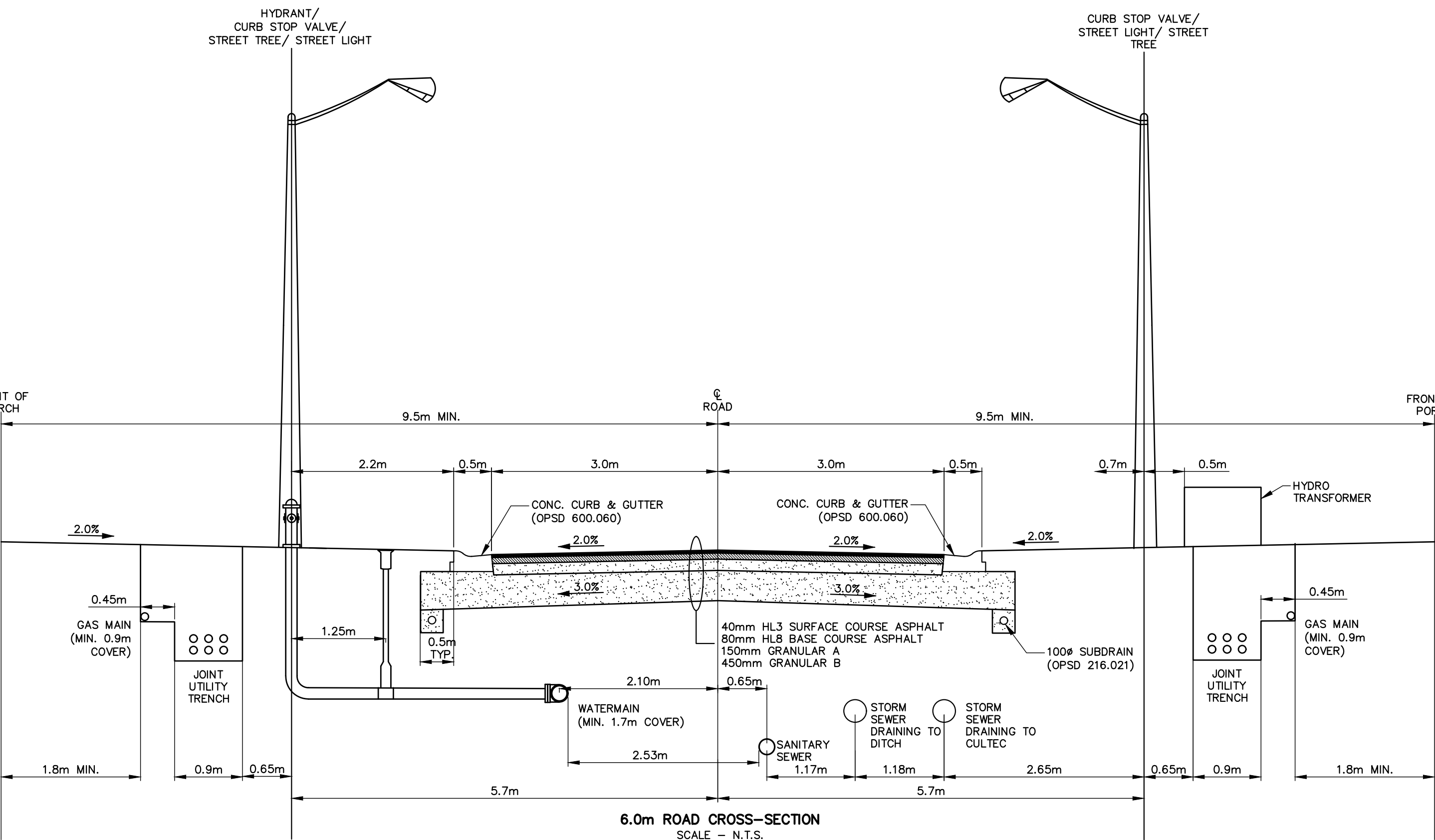
Cross Section Table Reference			
A	Depth of Stone Base	152	mm
B	Chamber Height	673	mm
C	Depth of Stone Above Units	152	mm
D	Depth of 95% Compacted Fill	600	mm
E	Max. Depth Allowed Above the Chamber	3.66	meters
F	Chamber Width	1194	mm
G	Center to Center Spacing	1.35	meters
H	Effective Depth	0.98	meters
I	Bed Depth	1.23	meters



TYPICAL STORM SEWER INSULATION DETAIL
NOT TO SCALE



WIM/FITTING	ANODE SIZE (kg)	SPACING
100 mm	2.3	PER LENGTH OVER 3.0 m OR FITTING OF SIMILAR SIZE
150 mm	2.3	PER LENGTH OVER 3.0 m OR FITTING OF SIMILAR SIZE
200 mm	5.5	PER LENGTH OVER 3.0 m OR FITTING OF SIMILAR SIZE
250 mm	5.5	PER LENGTH OVER 3.0 m OR FITTING OF SIMILAR SIZE
300 mm	11	PER LENGTH OVER 3.0 m OR FITTING OF SIMILAR SIZE
COPPER SERVICE	2.3	AT EACH CURBPOST
HYDRANT	2.3	AT HYDRANT BASE
VALVE	2.3	AT EACH VALVE
SERVICE SADDLE	2.3	AT EACH SERVICE SADDLE (CONNECT WIRE TO BOLT ON SADDLE TIGHT BETWEEN 2 NUTS)
TEES, ELBOWS ETC.	2.3	ON EACH FITTING FOR 100 mm – 150 mm PIPE
TEES, ELBOWS ETC.	2.3	ON EACH FITTING FOR 200 mm – 300 mm PIPE



PIPE MATERIAL:	PVC
SOIL TYPE:	ML (SILTS, VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS)
SAFETY FACTOR:	1.5 TO 1
TRENCH TYPE:	5 (PIPE BEDDED IN COMPACT GRANULAR MATERIAL)
DEPTH OF BURY:	1.8m (6 ft)
TEST PRESSURE:	1035 kPa (150 p.s.i.)
PROGRAM:	SIGMA IRON - RESTRAINT LENGTH CALCULATOR 1.0

(ALL JOINTS AND BELLS LOCATED WITHIN THE CALCULATED RESTRAINT LENGTH SHALL BE RESTRAINED WITH APPROVED BELL AND JOINT RESTRAINTS)

TEES			
NOMINAL PIPE DIA.	BRANCH PIPE DIA.	RESTRAINT LENGTH (m)	RESTRAINT 2 LENGTH (m)
150	150	4.6	3.0
200	150	2.4	3.0
150	200	9.8	3.0
200	200	7.9	3.0
300	150	0.3	3.0
300	200	4.0	3.0
300	300	14.3	3.0

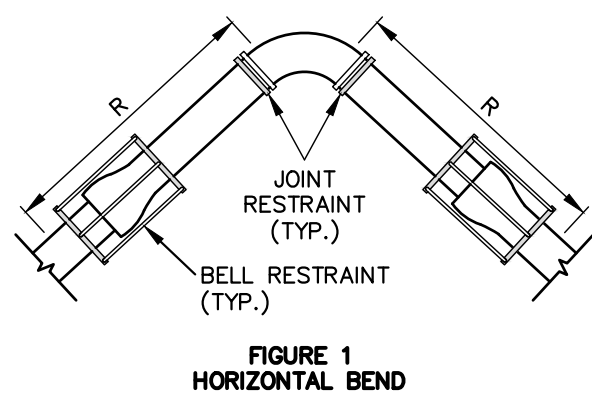


FIGURE 1
HORIZONTAL BEND

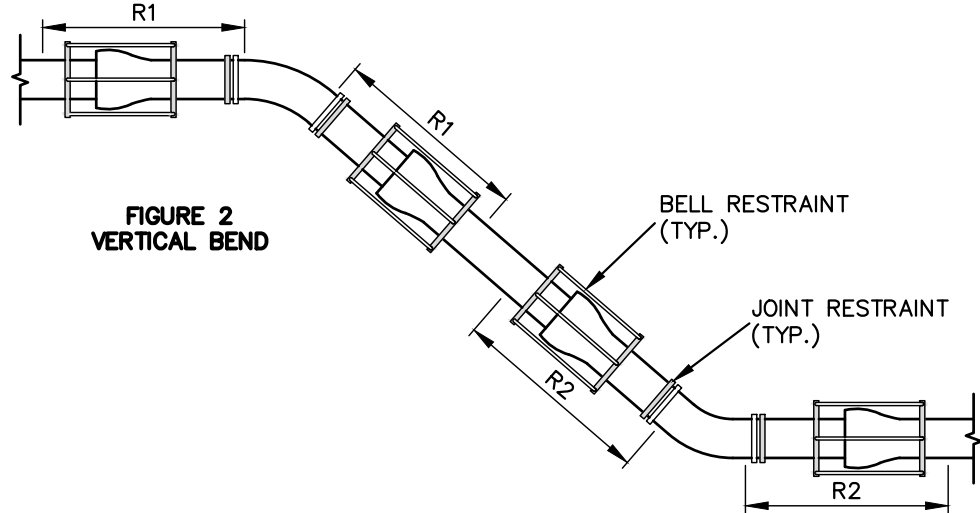
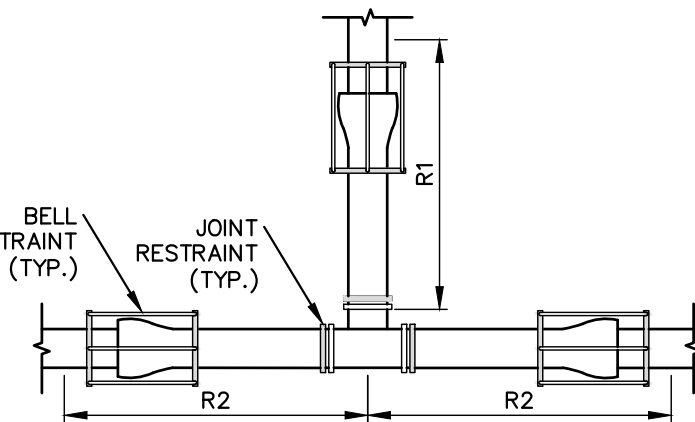


FIGURE 2
VERTICAL BEND



**FIGURE
TEE**

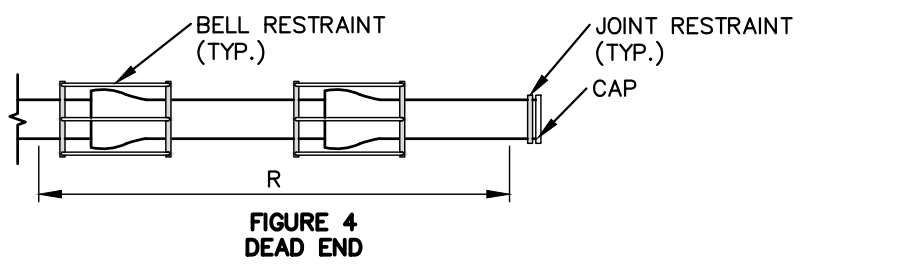


FIGURE 4
DEAD END

TABLE 1: PIPE RESTRAINT SCHEDULE FOR PVC PIPE
(ALL JOINTS AND BELLS LOCATED WITHIN THE CALCULATED
RESTRAINT LENGTH SHALL BE RESTRAINED WITH APPROVED
BELL AND JOINT RESTRAINTS)

		HORIZONTAL BEND		VERTICAL BEND		DEAD END (NO BEND ANGLE)
PIPE DIA.	BEND ANGLE	RESTRAINT LENGTH (m)	RESTRAINT LENGTH (m)	RESTRAINT 2 LENGTH (m)	RESTRAINT LENGTH (m)	
150ø	90°	3.7	—	—		
	45°	1.6	4.9	1.5		
	22.5°	0.9	2.5	0.9	11.6	
	11°	0.6	1.3	0.6		
200ø	90°	4.6	—	—		
	45°	2.2	6.1	2.2		
	22.5°	0.9	3.1	1.0	15.0	
	11°	0.6	1.6	0.6		
300ø	90°	6.4	—	—		
	45°	2.8	8.9	2.8		
	22.5°	1.5	4.3	1.5	21.4	
	11°	0.9	3.4	0.9		

1. CHANGES TO SOIL OR SITE CHARACTERISTIC THAT MAY ALTER THE PIPE RESTRAINT CALCULATION.
2. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THRUST RESTRAINT REQUIREMENTS WITH THE PIPE AND RESTRAINT MANUFACTURERS.
3. VALVES TO BE RESTRAINED AS IF THEY ARE DEAD ENDS.