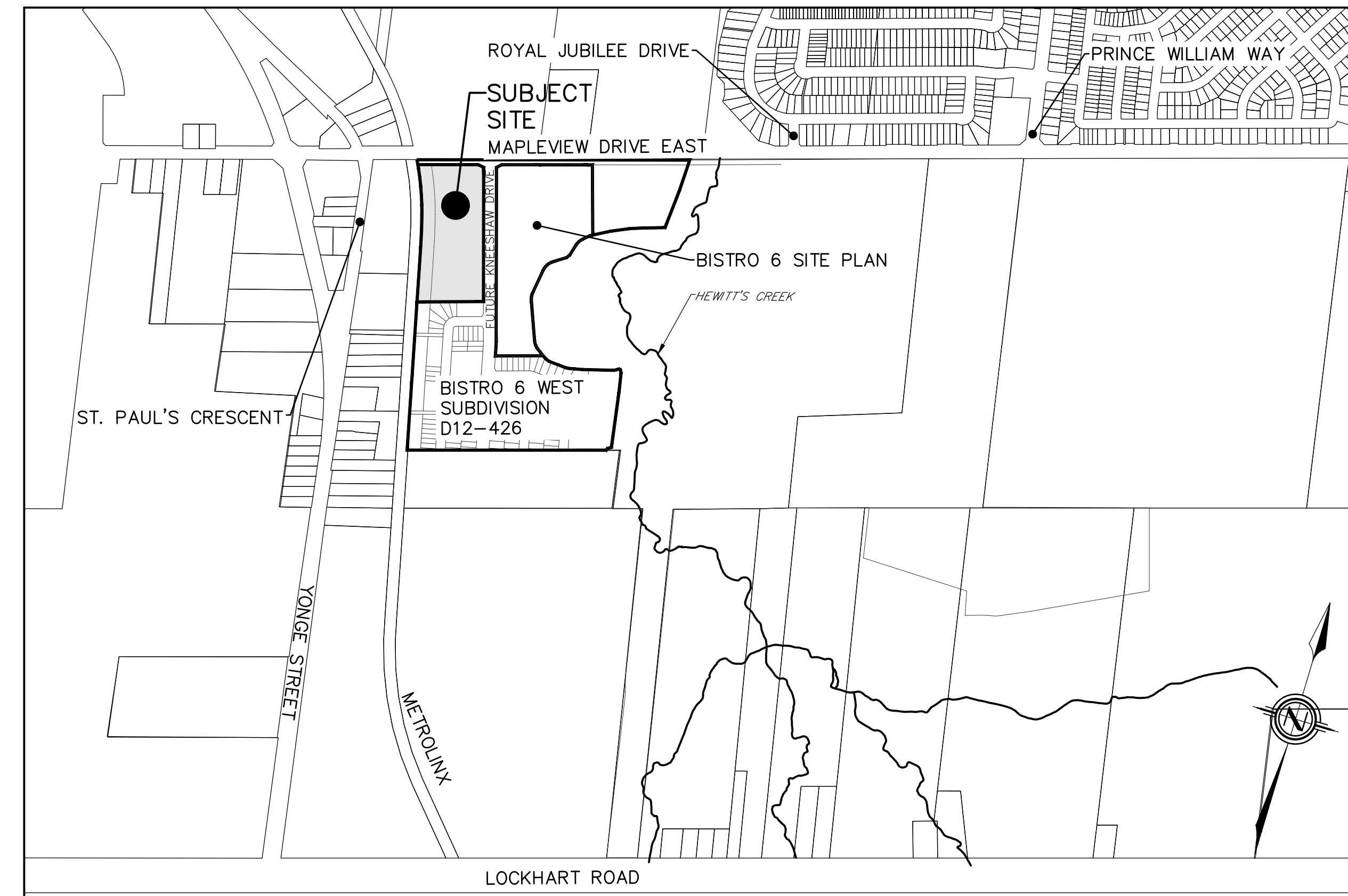


ELEMENTS SITE PLAN CITY OF BARRIE

DRAWING LEGEND

N-1	GENERAL NOTES
ESC-1	EROSION AND SEDIMENT CONTROL PLAN
ESC-2	EROSION AND SEDIMENT CONTROL DETAILS
SG-1	SITE GRADING PLAN WITH EXISTING CONDITIONS
SG-2	SITE GRADING PLAN WITH PROPOSED CONDITIONS
SG-3	RAILWAY BERM SECTIONS
SG-4	RAILWAY BERM SECTIONS
SS-1	SITE SERVICING PLAN
SS-2	SEWER DESIGN SHEETS AND PIPE CLEARANCE TABLE
SWM-1	STORMWATER MANAGEMENT PLAN PRE-DEVELOPMENT CONDITIONS
SWM-2	STORMWATER MANAGEMENT PLAN POST-DEVELOPMENT CONDITIONS LID MODEL CATCHMENT AREAS
LID-1	RAIN GARDENS, LID SECTIONS & DETAILS
STM-1	STORM DRAINAGE PLAN
SAN-1	SANITARY DRAINAGE PLAN
WM-1	WATERMAIN SWABBING PLAN
PM-1	PAVEMENT MARKING AND SIGNAGE PLAN
CUP-1	COMPOSITE UTILITY PLAN REFER TO RUNGE ENGINEERING UTILITY DESIGN
DET-1	STANDARD DETAILS
DET-2	STANDARD DETAILS
DET-3	STANDARD DETAILS
DET-4	STANDARD DETAILS
DET-5	STANDARD DETAILS



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- GRADE AND CROSSFALL ADJUSTMENT OF MAINTENANCE HOLE AND CATCHBASIN FRAMES WILL BE MADE USING PRODUCTS SPECIFICALLY MANUFACTURED FOR THAT PURPOSE.
- ADJUSTMENT UNITS MUST BE CERTIFIED TO MEET ALL PERTINENT OPS, CSA, ASTM AND IMO-SDM LISTS, OR OTHER INDUSTRY GUIDELINES FOR MATERIALS, PERFORMANCE AND USE AS APPLICABLE.
- ADJUSTMENT UNITS AND JOINTS WILL BE SEALED AND/OR PARGED IN COMPLIANCE WITH MANUFACTURERS SPECIFICATIONS AND GUIDELINES.
- MORTAR IS USED FOR LEVELING OF PRECAST UNITS ONLY. THE THICKNESS OF MORTAR WILL BE 10mm TO FILL ALL VOIDS CREATED BY IRREGULARITIES IN THE PRECAST UNITS TO ENSURE AN EVEN SURFACE ONLY.



GENERAL NOTES ROADWORKS

REV No. 1	DATE: OCT 2017	APPROVED
SCALE: N.T.S.	DATE: Oct 2017	<i>[Signature]</i>
BSD-N2		ENGINEER

GENERAL NOTES - STORM SEWER

- STORM SEWER**
- STORM SEWER TO BE PROVIDED ON ALL ROADS WITH CURB AND GUTTER.
 - PLACE ALL CATCH BASIN LATERALS AT 2% GRADE UNLESS OTHERWISE NOTED. PIPE SIZE MINIMUM 150mm DIA. SINGLE < 300mm DIA. DOUBLE.
 - STORM SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD-802.010 (GRAN. 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD-802.030 OR 802.031 CLASS B (GRAN. 'A' BEDDING MATERIAL) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF ENGINEERING.
 - MAINTENANCE HOLE TOPS (FRAMES) AND CATCH BASIN (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT GRADE AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED. ALL ADJUSTMENT WILL BE ACCORDANCE WITH BSD-N2.
 - STORM SEWER TO BE LOCATED OFFSET 3.0m SOUTH OR EAST OF CENTRELINE UNLESS OTHERWISE SPECIFIED.
 - ALL CONNECTIONS TO THE STORM MAIN SHALL BE MADE WITH A STORM MANHOLE OR APPROVED FACTORY TEE CONNECTION AS PER OPSD-708.01 OR 708.03.
 - PIPE MATERIAL TO BE REINFORCED CONCRETE WITH A MINIMUM STRENGTH OF 50 N/mm² CONFORMING TO C.S.A. STANDARD A247.2-1982, CLASS 50-D (PREVIOUSLY C.S.A. STANDARD A257.2-1974, CLASS 5) OR PVC CERTIFIED TO C.S.A. STANDARDS 182.2 AND 182.4.
 - STORM SEWER TO BE MINIMUM 300mm DIAMETER WITH JOINTS CONFORMING TO C.S.A. STANDARD A257.3.
 - ALL PIPE BEDDING MUST CONFORM TO OPSD, MAXIMUM COVER TABLE. NO FLEXIBLE PIPE SEWERS WILL BE INSTALLED WITH A DEPTH OF COVER GREATER THAN 6 METRES UNLESS SPECIFICALLY APPROVED BY THE DIRECTOR OF ENGINEERING.
 - ALL PIPE HANDLING INSTALLATIONS MUST BE IN STRICT COMPLIANCE WITH MANUFACTURERS INSTALLATION GUIDES AND THE C.I.P.A. OR UNSELL GUIDELINES.
 - SUMP PUMP DISCHARGE PIPING IN BOULEVARD: IN THE EVENT OF OVERACTIVE SUMP PUMP ACTIVITY, A 150mm DIAMETER PVC DR-28 SEWER MAY BE INSTALLED, WHEN SO DIRECTED BY THE DIRECTOR OF ENGINEERING, ALONG THE FRONTSIDES OF DESIGNATED LOTS, WITH AN OFFSET OF 0.6m FROM BACK OF CURB. THIS SEWER IS TO BE CARPED AT THE UPSTREAM END AND IS TO OUTLET INTO THE NEAREST CATCHBASIN DOWNSTREAM. DEPTH OF SEWER IS TO BE EQUAL TO SUBDRAIN DEPTH. NOT TO BE DIRECTLY CONNECTED TO FOUNDATION DRAINS.

CITY OF BARRIE STANDARD GENERAL NOTES STORM SEWERS

4. NOTE 'X' - SUMP PUMP DISCHARGE PIPING	B.R.	2003.01.07	APPR'D	R.G.N.	DATE: 92.05.15
3. NOTE 'Y' & 'Z' - "DIRECTOR OF ENGINEERING"	B.R.	2012.10.28			
2. NOTE 'C' OPSD NUMBER REVISION	K.C.	2000.03.16	DRAWN	L.A.J.	SCALE: N.T.S.
1. NOTE 'D' CHANGED	K.C.	98.03.30			
NO.	REVISION	APPR'D	DATE		BSD-N5

GENERAL NOTES - SANITARY SEWER

- SANITARY SEWERS**
- SANITARY SEWER TO BE LOCATED AT THE CENTRELINE OF THE ROAD.
 - SEWERS SHALL BE CONSTRUCTED WITH BEDDINGS AS PER OPSD-802.010 (GRAN. 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD-802.030 OR 802.031 CLASS B (GRAN. 'A' BEDDING MATERIAL) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF ENGINEERING.
 - MAXIMUM DEFLECTION FROM COMBINED LIVE AND DEAD LOADING SHALL NOT EXCEED ANY C.S.A., O.P.S. OR MANUFACTURERS RECOMMENDED SPECIFICATIONS.
 - PVC, CONCRETE AND PROFILE WALL PVC SEWERS SHALL HAVE RUBBER GASKET TYPE JOINTS AND SHALL BE CERTIFIED TO CONFORM TO ALL APPLICABLE CURRENT C.S.A. SPECIFICATIONS.
 - CONCRETE SANITARY SEWERS SHALL HAVE A MINIMUM STRENGTH OF 50 N/mm² CONFORMING TO CSA STANDARD A257.2-1982, CLASS 50-D (PREVIOUSLY C.S.A. STANDARD A257.2-1974, CLASS 5).
 - MAINTENANCE HOLE TOPS (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT GRADE AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED. ALL ADJUSTMENT WILL BE ACCORDANCE WITH BSD-N2.
 - ALL CONNECTIONS TO NEW SANITARY MAINS SHALL BE PRE-MANUFACTURED, FABRICATED TEES. CONNECTIONS TO EXISTING SANITARY SEWER SHALL BE MADE WITH APPROVED FACTORY MADE TEES OR INSERT-A-TEES IN STRICT ACCORDANCE TO MANUFACTURERS GUIDELINES.

CITY OF BARRIE STANDARD GENERAL NOTES SANITARY SEWERS

4. NOTE 'B' - "ENGINEERING"	B.R.	2002.10.28	APPR'D	R.G.N.	DATE: 92.05.15
3. NOTE 'B' OPSD NUMBER REVISION	K.C.	2000.03.16			
2. NOTE 'F' CHANGED	K.C.	98.03.30	DRAWN	L.A.J.	SCALE: N.T.S.
1. CHANGES TO B. TO G.	K.C.	95.04.24			
NO.	REVISION	APPR'D	DATE		BSD-N3

GENERAL NOTES

- DRAWINGS**
 - ALL DRAWINGS SHALL BE PRODUCED IN ACCORDANCE WITH CURRENT CITY OF BARRIE STANDARDS & SYMBOLS FOR PLAN & PROFILE DRAWINGS, GENERAL SERVICE PLANS AND LOT GRADING PLANS.
- MEASUREMENTS**
 - ALL DIMENSIONS ARE IN METRES, EXCEPT PIPE DIAMETERS, WHICH ARE IN MILLIMETRES, UNLESS SPECIFIED OTHERWISE.
- GENERAL**
 - ALL WORK SHALL BE IN ACCORDANCE WITH CURRENT CITY OF BARRIE STANDARD DRAWINGS (BSD) AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD).
 - ORDER OF PRECEDENCE OF STANDARD DRAWINGS IS FIRSTLY CITY OF BARRIE STANDARD DRAWINGS (BSD) AND SECONDLY ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD).
 - LOCATION OF EXISTING SERVICES ARE NOT GUARANTEED. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
 - A ROAD OCCUPANCY PERMIT IS REQUIRED FROM THE ROADS AND PARKS OPERATIONS BRANCH PRIOR TO THE COMMENCEMENT OF WORK WITHIN ANY CITY RIGHT-OF-WAY.
 - A SITE ALTERATION PERMIT IS REQUIRED FROM THE ENGINEERING DEPARTMENT PRIOR TO THE COMMENCEMENT OF ANY EARTH WORKS ON THE SITE.
 - NATIVE MATERIAL, SUITABLE FOR BACKFILL, SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.
 - GRANULAR MATERIAL, USED FOR BACKFILL, SHALL BE PLACED IN LAYERS 150mm IN DEPTH MAXIMUM AND COMPACTED TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY.
 - ALL DISTURBED AREAS ARE TO BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER, AS DETERMINED BY THE CITY ENGINEERING DEPARTMENT.
 - ALL SILT CONTROL AND EROSION PROTECTION DEVICES ARE TO BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL CONSTRUCTION IS COMPLETE AND THE GRASS HAS ESTABLISHED GROWTH, SUBJECT TO APPROVAL BY THE CITY ENGINEERING DEPARTMENT.

CITY OF BARRIE STANDARD GENERAL NOTES

3. NOTE: 3.E. REVISED & 3.I. ADDED	J.S.	05.01.10	APPR'D	R.G.N.	DATE: 92.05.15
2. 3.D. - "ENGINEERING DEPARTMENT"	B.R.	02.10.28	DRAWN	L.A.J.	SCALE: N.T.S.
1. 3.E. TOPSOIL PERMIT		01.12.06			
NO.	REVISION	APPR'D	DATE		BSD-N6

GENERAL NOTES - SANITARY SEWER

- SANITARY SERVICE LATERALS**
- SANITARY LATERAL CONNECTION TO BE LOCATED AT THE CENTRELINE OF THE LOT AND CARPED.
 - LOCATION OF LATERAL TO BE MARKED 2.0m PAST PROPERTY LINE WITH A 50 x 100mm WOOD MARKER, PAINTED GREEN, EXTENDING FROM SERVICE INVERT TO 300mm ABOVE GROUND LEVEL.
 - PIPE TO BE MINIMUM 100 mm DIA. PVC SDR28, RUBBER GASKET TYPE JOINTS AND SHALL CONFORM TO C.S.A. (B-182.2.3.4) (COLOURED) FOR A RESIDENTIAL HOUSE AND 150mm MINIMUM DIA. PVC SDR28 FOR INDUSTRIAL/COMMERCIAL DEVELOPMENT.
 - MINIMUM DEPTH OF LATERAL AT PROPERTY LINE SHALL BE 2.4m MEASURED FROM THE SEWER OVERTOP TO FINISHED GROUND SURFACE ELEVATION UNLESS NOTED OTHERWISE.
 - ALL CONNECTIONS TO NEW SANITARY MAINS SHALL BE PRE-MANUFACTURED, FABRICATED TEES. CONNECTIONS TO EXISTING SANITARY SEWER SHALL BE MADE WITH APPROVED FACTORY MADE TEES OR INSERT-A-TEES IN STRICT ACCORDANCE TO MANUFACTURERS GUIDELINES.
 - MINIMUM PIPE SLOPE TO BE 2.0X, MAXIMUM 8.0X (SEE OPSD-1006.010, 1006.020).

CITY OF BARRIE STANDARD GENERAL NOTES SANITARY SEWERS

2. OPSD NUMBERS REVISED	K.C.	2000.08.17	DRAWN	L.A.J.	SCALE: N.T.S.
1. CHANGES TO B. TO G.	K.C.	95.04.24			
NO.	REVISION	APPR'D	DATE		BSD-N4

GENERAL NOTES - WATERMAIN

- CONTRACTORS SHALL INFORM THE CITY OF BARRIE WATER OPERATIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THEIR INTENTIONS TO PERFORM WORK ON WATER INFRASTRUCTURE.
- OPERATION OF HYDRANTS AND VALVES ON THE POTABLE WATER SYSTEM BY OTHER THAN QUALIFIED WATER OPERATIONS STAFF IS PROHIBITED BY CURRENT BY-LAW. CITY SERVICE FEES ARE FOR THE CURRENT FEES BY-LAW. THE CITY'S WATER OPERATIONS STAFF WILL SWAB, PRESSURE TEST, CORRODATE AND TEST ALL NEW WATERMANS.
- MINIMUM COVER OVER WATERMAIN SHALL BE 1.7m. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE 2.5m WHERE WATERMAIN CONFLICTS WITH SEWER PIPES, DEFLECT WATERMAIN HORIZONTALLY OR VERTICALLY WHILE PROVIDING A MINIMUM OF 0.5m CLEARANCE BETWEEN WATERMAIN AND SEWERS. MAINTAIN MINIMUM DEPTH OF COVER AT ALL TIMES.
- WATERMAIN SHALL BE INSTALLED IN BEDDING AS PER OPSD 802.010 (GRANULAR 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD 802.030 OR 802.031 CLASS B (GRANULAR 'A' BEDDING MATERIAL, GRANULAR 'A' OR SELECT NATIVE COVER MATERIAL FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF ENGINEERING). ALTERNATIVE EMBEDMENT MATERIAL, SAND MEETING GRADATION REQUIREMENTS OF OPSD MINUM 100 (AS OF 07) COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY IS PERMISSIBLE WHERE NOTED IN STANDARD DETAILS. GEOTECHNICAL CERTIFICATION OF MATERIAL AND COMPACTION TESTING MUST BE PROVIDED EVERY 10 METRES. THE COMPACTION TESTING MUST INCLUDE THE ENTIRE EMBEDMENT ENVELOPE (HAUNCHES, BEDDING, TOP OF PIPE AND COVER).
- COPPER WATER MAINS AND SERVICES 25mm TO 50mm IN DIAMETER SHALL BE EMBEDDED IN SAND 100mm ABOVE AND BELOW TO CONFORM TO OPSD MIN 100.05.07.
- RESTRAINING WALLS WILL BE REQUIRED ON ALL HYDRANTS, THRUST BLOCKS, AS PER OPSD 1183.010 AND 1183.020. RESTRAINING DEVICES MAY BE REQUIRED IN ADDITION TO STANDARD CONCRETE THRUST BLOCKS WHERE SOIL CONDITIONS WARRANT AT THE CITY'S DISCRETION.
- NEW WATERMANS TO BE PVC DR18 CL150 MINIMUM DUCTILE IRON CL15 AS PER THE APPROVED MANUFACTURERS PRODUCTS FOR LINEAR WATER SYSTEMS LIST.
- TRACING WIRE SHALL BE #12 AWG HIGH STRENGTH COPPER CLAP (P.C.S.S.) AND SHALL BE INSTALLED ON THE TOTAL LENGTH OF ALL WATERMAIN AND BROUGHT UP AT EACH HYDRANT AND CONNECTED TO FLANGE BOLT. ALL SPIGOTS TO UTILIZE CONNECTORS AS PER THE APPROVED MANUFACTURERS PRODUCTS FOR LINEAR WATER SYSTEMS LIST.
- ALL WATER SERVICES SHALL BE MINIMUM 25mm TYPE 'K' COPPER OR 25mm CROSS-LINKED POLYETHYLENE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF WATER OPERATIONS. WATER SERVICE GASKETS SHALL BE USED WHEN TAPPING INTO PVC WATERMAIN.
- SEWER TAPPINGS SHALL BE PLACED AT A MINIMUM SEPARATION OF 1.0m AND A MINIMUM OF 0.6m FROM JOINTS. ENDS OF PIPE
- RIGID SERVICES ARE TO BE INSTALLED AS PER BSD-1010 AND REMOVED AS DIRECTED. SWABING SCHEDULE TO BE SUPPLIED BY A WATER OPERATIONS FIELD REPRESENTATIVE. ALL USERS ARE TO BE RESTRAINED OR THRUST BLOCKED.
- ALL NEW CURBS STOPS AND BOXES TO BE LOCATED AT PROPERTY LINE AND OUT OF DRIVEWAYS AND SIDEWALKS.



GENERAL NOTES - WATERMAIN

REV No. 2	DATE: MAY 2015	APPROVED
SCALE: N.T.S.	DATE: May 2015	<i>[Signature]</i>
BSD-500		ENGINEER

EROSION CONTROL NOTES

- ALL TEMPORARY SILT CONTROL AND EROSION PROTECTION DEVICES (I.E. SILT FENCING, DRAINAGE SWALES, ROCK CHECK DAMS, SEDIMENT TRAPS, GRAVEL ACCESS PAD, ETC.) SHALL BE CONSTRUCTED PRIOR TO COMMENCEMENT OF SITE WORKS AND SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL CONSTRUCTION IS COMPLETE AND THE GRASS HAS ESTABLISHED GROWTH, SUBJECT TO APPROVAL BY THE CITY ENGINEERING DEPARTMENT.
- ALL SEDIMENTATION CONTROL MEASURES ARE TO BE INSPECTED REGULARLY (MINIMUM WEEKLY), AS WELL AS AFTER EVERY RAINFALL EVENT AND ANY DAMAGED SILT CONTROL AND EROSION PROTECTION DEVICES SHALL BE PROMPTLY REPAIRED OR REPLACED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE PREPARED FOR UNEXPECTED CONDITIONS AND ACCORDINGLY HAVE STOCKPILED MATERIALS ON SITE FOR NECESSARY REPAIRS AS A RESULT OF FAILED OR INADEQUATE CONTROL MEASURES.
- AREAS WITHOUT STABLE GROUND COVER SHALL BE PROTECTED WITH SILTATION CONTROL FENCING, STRAW MULCH, ETC. AND MAINTAINED BY THE CONTRACTOR THROUGHOUT THE SUBSEQUENT GROWING SEASON.
- ALL DISTURBED GROUND LEFT INACTIVE FOR MORE THAN 30 DAYS SHALL BE STABILIZED BY SEEDING. (IF SEEDING IS APPROPRIATE DURING CURRENT SEASON)
- ALL SITE DRAINAGE IS TO BE DIRECTED TO THE TEMPORARY SEDIMENT TRAPS AND OTHER CHECK DAMS VIA SHEET DRAINAGE, BERMS OR SWALES (AS NECESSARY) TO FACILITATE THE COMPLETION OF GRADING WORKS. THE CONTRACTOR SHALL CONSTRUCT ANY ADDITIONAL SWALES OR BERMS THAT MAY BE NECESSARY TO DIRECT RUN-OFF TO THE SEDIMENT TRAPS.
- ALL CONSTRUCTION VEHICLES SHALL ENTER AND EXIT THE SITE FROM PROPOSED CONSTRUCTION ACCESS VIA THE GRAVEL ACCESS PAD.
- ANY DEWATERING WASTE SHALL BE DISCHARGED TO A VEGETATED AREA AT LEAST 30m FROM ANY WATERCOURSE AND FILTERED. FILTERING METHODS MUST BE APPROVED BY THE SITE INSPECTOR.
- THE CONTRACTOR SHALL OBTAIN A CURRENT COPY AND BECOME FAMILIAR WITH OPSD 805. CONSTRUCTION SPECIFICATION FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, AS WELL AS APPLICABLE MUNICIPAL STANDARDS AND/OR APPROVAL AGENCY STANDARDS.
- THE CONTRACTOR SHALL CONSIDER ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES, SUCH MEASURES MUST BE PRESENTED IN WRITING FOR APPROVAL BY THE CONTRACT ADMINISTRATOR AND MUST BE APPROVED IN WRITING BY THE APPLICABLE APPROVAL AGENCIES.

GRADING NOTES

- ALL DISTURBED AREAS TO BE RESTORED TO EXISTING CONDITIONS OR BETTER WITH A MIN. 200mm DEPTH OF TOPSOIL AND SOO IMMEDIATELY FOLLOWING COMPLETION OF GRADING.
- ALL SLOPES SHALL BE RESTORED WITH A MIN. 200mm DEPTH OF TOPSOIL AND SOO IMMEDIATELY FOLLOWING COMPLETION OF GRADING.
- ALL SLOPES ALONG BERMS AND DITCHES TO BE MAXIMUM SLOPES OF 3:1.

WATER SERVICING NOTES, AS REQUIRED BY THE CITY OF BARRIE GENERAL

- ALL REQUIRED PERMITS SHALL BE IN PLACE PRIOR TO INSTALLATION OF WATERMAIN AND SEWER.
- A ROAD OCCUPANCY PERMIT IS REQUIRED, AND CAN BE OBTAINED AT THE OPERATION CENTRE.
- MINIMUM COVER OVER WATER MAIN TO BE 1.7m. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATER MAIN AND SEWER TO BE 2.5m WHERE WATER MAINS CONFLICT WITH SEWERS. MAINTAIN MINIMUM DEPTH OF COVER AT ALL TIMES.
- ALL BERMS AND TIES SHALL BE RESTRAINED IN ADDITION TO THRUST BLOCKS.
- ALL CONSTRUCTION VEHICLES SHALL ENTER AND EXIT THE SITE FROM PROPOSED CONSTRUCTION ACCESS VIA THE GRAVEL ACCESS PAD.
- SERVICES INSTALLED UNDER FLOORS SHALL BE FULLY RESTRAINED.
- HYDRANTS SHALL BE INSTALLED AS PER BSD-507. ON SITE HYDRANTS SHALL BE CONSIDERED PRIVATE (PAINTED RED), AND ARE TO BE MAINTAINED BY THE OWNER.
- ALL FIRE SERVICES SHALL CONFORM TO THE MOST CURRENT BUILDING CODE AND NATIONAL FIRE PROTECTION ACT. THE REQUIREMENT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/OWNER. INFORMATION MAY BE OBTAINED FROM THE INSURANCE UNDERWRITER, CITY OF BARRIE PLANNING AND DEVELOPMENT AND THE CITY OF BARRIE FIRE DEPARTMENT.
- ALL NEW CURBS STOPS AND BOXES TO BE LOCATED OUT OF DRIVEWAYS AND SIDEWALKS.
- COPPER WATER SERVICES 19mm TO 50mm IN DIAMETER SHALL BE EMBEDDED IN SAND 100mm ABOVE AND BELOW.
- ALL COPPER WATER SERVICE FITTINGS SHALL BE COMPRESSION STYLE IF A CONDITION ARISES WHERE A COPPER SERVICE MUST BE JOINED UNDER THE FLOOR. THE COPPER SHALL BE JOINTED BY SILVER SOLDER CONNECTION ONLY.
- CONTRACTOR SHALL INFORM THE CITY OF BARRIE OPERATIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THEIR INTENTIONS TO WORK.
- THE CITY WILL FLUSH THE NEW SERVICE AND CONTRACTOR WILL PERFORM PRESSURE TEST WITNESSED BY THE WATER FIELD COORDINATOR.
- WATER WILL NOT BE AVAILABLE UNTIL SERVICES HAVE BEEN SAMPLED AND PASSES FOR BACTERIOLOGICAL COMPLIANCE, A CHECK VALVE SHALL BE INSTALLED FOR TEMPORARY WATER.
- REFER TO DRAWING WM-1, WATERMAIN TESTING AND DISINFECTION NOTES.
- A FLAT RATE CONNECTION FEE (\$2600.00) WILL BE REQUIRED FOR EACH OF THE 300mm WATER SERVICE CONNECTIONS.
- AN ANNUAL CHARGE FOR EACH PRIVATE CONNECTION MADE TO THE MUNICIPAL WATER DISTRIBUTION SYSTEM WILL APPLY.
- AN ANNUAL CHARGE FOR EACH PRIVATE FIRE HYDRANT SUPPLIED WITH WATER FROM THE MUNICIPAL WATER DISTRIBUTION SYSTEM WILL APPLY.
- WATER SERVICES TO BE MECHANICALLY RESTRAINED. WATERMAIN TO BE MECHANICALLY RESTRAINED IN AREAS OF FILL.
- PIPE WORK REQUIREMENTS ARE OUTLINED IN THE INFOWATER MODELING BRIEF WATER SUPPLY SCHEME FOR BISTRO 6 WEST SITE (BLOCK 598) BY SCHAEFFER'S CONSULTING ENGINEERS, DATED FEBRUARY 8, 2021. BUILDING DESIGN PARAMETERS RELATED TO FIRE FLOW REQUIREMENTS TO BE STRICTLY ADHERED TO.

100mm DOMESTIC AND 150mm FIRE SERVICES - BUILDINGS A, B, AND C

- DOMESTIC AND FIRE SERVICE VALVES SHALL BE LOCATED IN THE BOULEVARD, UNLESS OTHERWISE NOTED.
- DOMESTIC AND FIRE SERVICES SHALL BE MECHANICALLY RESTRAINED FROM THE TEE TO THE BUILDINGS.
- DOMESTIC AND FIRE SERVICES ENTERING EACH BUILDING SHALL BE INSTALLED AS PER BSD-505.
- DOMESTIC AND FIRE SERVICE TO BE HAND SWABBED OR A SWAB IS TO BE PLACED IN SERVICE AND REMOVED FROM RISERS.
- THE 100mm DOMESTIC WATER SERVICE WILL REQUIRE A 100mm WATER METER (SUPPLIED AND INSTALLED BY THE OWNER) COMPLETE WITH A BYPASS ASSEMBLY AS PER BSD-533. SHALL BE LOCATED IN AN APPROPRIATELY SIZED MECHANICAL ROOM.
- BACKFLOW PREVENTION SHALL BE PROVIDED ON ALL DOMESTIC AND FIRE SERVICES AS PER CITY OF BARRIE BYLAW 2017-121.

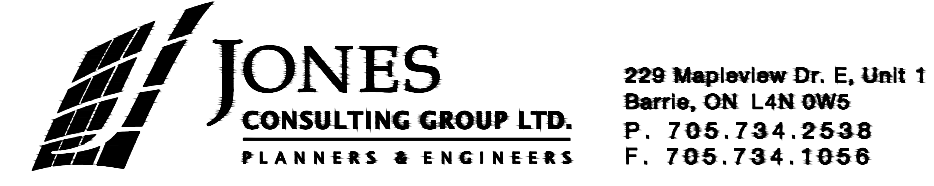
ENGINEERING NOTES

- UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE FOLLOWING REQUIREMENTS SHALL APPLY TO THE WORKS.
- ALL MEASUREMENTS FOR THIS PROJECT ARE IN METRES, EXCEPT PIPE DIAMETERS WHICH IS IN MILLIMETRES, UNLESS OTHERWISE NOTED. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF ANY CONSTRUCTION. ANY DISCREPANCY SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
 - ALL MECHANICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, RULES AND REGULATIONS, TO MEET THE REQUIREMENTS OF ALL JURISDICTIONS AND TO MEET THE DESIGN INTENT.
 - ALL WORK AND MATERIALS WITHIN THE PROPERTY BOUNDARIES SHALL CONFORM TO THE LATEST EDITION OF THE ONTARIO BUILDING CODE, WHERE THERE IS A CONFLICT BETWEEN THE FOLLOWING NOTES AND SPECIFICATIONS AND THE ONTARIO BUILDING CODE, THE DECISION OF THE CHIEF BUILDING OFFICIAL WILL GOVERN.
 - INFORMATION ON EXISTING SERVICES AND UTILITIES SHOWN ON THESE DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY UTILITY LOCATES PRIOR TO COMMENCING CONSTRUCTION.
 - ALL CORRUGATED STEEL PIPE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS AND AS PER O.P.S.D. 701.010. ALL CSP TO BE 2.0mm THICKNESS GRADE 50.
 - CONTRACTOR SHALL INFORM THE SITE (PROJECT) MANAGER A MINIMUM 24 HOURS IN ADVANCE OF HIS INTENTION TO COMMENCE WORK. CONTRACTOR SHALL AT ALL TIMES, PROVIDE SUITABLE BARRICADES AND FLAGGING PROTECTION IN ACCORDANCE WITH THE MANAGER'S LABOR PROTECTION AND OCCUPATIONAL HEALTH AND SAFETY ACT.
 - THESE NOTES ARE GENERAL IN NATURE. FOR SPECIFIC DETAILS REFER TO CITY OF BARRIE AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS.
 - SEWER MATERIAL (IF APPLICABLE): -POLYVINYL CHLORIDE PIPE SHALL CONFORM TO CSA-B-182.1 AND CSA-B-182.2 WITH BELL AND SPOUT RUBBER GASKET JOINTS COMPLYING WITH CSA-B182.2 AND CSA-B182.3. SANITARY PIPE SHALL BE SDR-35 AND ALL SANITARY SERVICE LATERALS TO BE SDR-28.
 - SEWER BEDDING WILL CONFORM TO O.P.S.D. 802.030 FOR RIGID PIPE INSTALLATION AND O.P.S.D. 802.010 FOR FLEXIBLE PIPE INSTALLATION. NATIVE MATERIAL USED FOR BACKFILL SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.
 - ALL TRENCHES ARE TO BE BACKFILLED WITH NATIVE MATERIAL AND COMPACTED TO AT LEAST 95% STANDARD PROCTOR DENSITY OR AS PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. IN ADDITION, ALL STRUCTURES WITHIN TRAVELLED PORTION OF THE ROAD & PARKING AREAS SHALL HAVE NATIVE 4:1 FROST TARPERS FROM FROST LINE TO SUBGRADE.
 - MAINTENANCE HOLES:
 - STEPS SHALL BE ALUMINUM ALLOY O.P.S.D. 405.010 SOLID CIRCULAR ALUMINUM OR APPROVED EQUAL.
 - FRAMES AND COVERS SHALL BE DOMINION WHEEL FOUNDRIES DESIGN STD. 578 OR APPROVED EQUAL AND SELF LEVELLING FRAME AND GRATE/COVER SHALL BE USED FOR ALL NEW MAINTENANCE HOLES WITHIN ASPHALT ROADWAYS AS PER BSD-41 (OCTOBER 2017) O.P.S.D. 401.010 TYPE 'A'.
 - SANITARY MAINTENANCE HOLES ARE TO HAVE CORE AND SEAL GASKETS ON ALL PIPE CONNECTIONS. 1200 DIAMETER MAINTENANCE HOLES - O.P.S.D. 701.010
 - STORM MAINTENANCE HOLES TO BE 1200mm DIAMETER PER OPSD 701.010 UNLESS OTHERWISE NOTED. 1800mm DIAMETER MAINTENANCE HOLES - O.P.S.D. 701.012
 - MAINTENANCE HOLE BENCHING SHALL EXTEND TO PIPE OVERTOP AND SHALL BE IN ACCORDANCE WITH DETAILS SHOWN AS PER OPSD 701.021.
 - TEMPORARY ACCESS ROAD MAKE-UP: (REFER TO GEOTECHNICAL INVESTIGATION REPORT)
 - 10mm H.B BINDER ASPHALT
 - 150mm OPSD GRANULAR 'A'
 - 400mm OPSD GRANULAR 'B'
 - INTERNAL ROAD & PARKING MAKE-UP:
 - 40mm H.B BINDER ASPHALT
 - 10mm H.B BINDER ASPHALT
 - 150mm OPSD GRANULAR 'A'
 - 450mm OPSD GRANULAR 'B'
 - BARRIER CURB TO COMPLY WITH OPSD 600.110.
 - CATCHBASIN STRUCTURES LOCATED IN THE VICINITY OF THE SNOW STORAGE AREAS TO HAVE MIN. 900mm SUMP DEPTH PER OPSD 705.010 AND BE FITTED WITH CATCHBASIN SHIELDS OR APPROVED EQUIVALENT. DETAIL PROVIDED ON DWG. NO. DET-5.

METROLINK NOTES

- THE PROPOSED DESIGN IS IN COMPLIANCE WITH FOM'S/RAC'S "GUIDELINES FOR NEW DEVELOPMENT IN PROXIMITY TO RAILWAY OPERATIONS".
- MATERIALS/EQUIPMENT (OF ANY KIND) WILL NOT BE STORED/STOCKPILED WITHIN METROLINK RIGHT-OF-WAY.
- ANY SPILLS/WASTE/DEBRIS WILL NOT BE DIRECTED TOWARD OR WITHIN THE METROLINK RIGHT-OF-WAY.
- TRACK STRUCTURE WILL NOT BE DISTURBED OR CONTACTED AT ANY TIME DURING THE PROPOSED WORK.
- CONSTRUCTION LIGHTING ON OR AROUND THE WORK AREA SHALL NOT IMPERE RAILWAY OPERATIONS, OR IMPACT THE SIGHTLINES/VISIBILITY OF TRAIN CREWS OPERATING.
- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE ADEQUATE PROTECTION OF ALL EXISTING INFRASTRUCTURE (I.E. UTILITIES, SERVICES, STRUCTURES, ROADWAYS, TRACKS, ETC.) DURING CONSTRUCTION OPERATIONS.
- ALL DRAINAGE, DURING THE ENTIRE PROPOSED WORK, WILL BE DIRECTED AWAY FROM THE METROLINK DRAINAGE DITCHES AND ROW. THE PROJECT AND ITS CONSTRUCTION SHALL HAVE NO ADVERSE EFFECTS ON THE EXISTING AND FUTURE METROLINK DRAINAGE FACILITIES/DITCHES/GRADING. POSITIVE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES, AND EXISTING DRAINAGE WITHIN METROLINK ROW SHALL NOT BE ALTERED.
- PROTECTION OF THE INTEGRITY OF METROLINK ROW AND ALL ADJACENT RAILWAY INFRASTRUCTURE WILL BE PRIORITIZED.
- ANYONE ENTERING METROLINK RIGHT-OF-WAY MUST COMPLETE THE PITS ONLINE TRAINING.
- CONSTRUCTION, MAINTENANCE AND OPERATION OF THE LINE SHALL BE IN ACCORDANCE WITH THE LATEST TRANSPORT CANADA GENERAL ORDERS E-11 and E-12 and THE LATEST CANADIAN STANDARDS ASSOCIATION C22.3 No. 1-15 AND/OR C22.3 No. 7-15, AREMA AND MX 12 ELECTRIFICATION GUIDELINES AS APPLICABLE.
- PRIOR TO COMMENCING ANY WORK WITHIN OR ADJACENT TO THE METROLINK ROW, THE CONTRACTOR SHALL APPLY FOR AND RECEIVE A METROLINK WORK PERMIT APPLICATION (WPA), WHEN SUBMITTING THE WPA(S), THE CONTRACTOR SHALL ALLOW FOR SUFFICIENT TIME FOR THE REVIEW, REVISION, AND COORDINATION WITH METROLINK INTERNAL STAKEHOLDERS. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT THE FOLLOWING (BUT NOT LIMITED) TO AECOM/METROLINK:
 - (i) DETAILED WORK PLAN METHODOLOGY FOR THE PROPOSED UTILITY INSTALLATION;
 - (ii) METHODOLOGY FOR ANY TRENCH/EXCAVATION;
 - (iii) ANY DE-WATERING SCHEMES OR ADJACENT TO METROLINK RIGHT-OF-WAY, IF REQUIRED;
 - (iv) ENVIRONMENTAL AND METROLINK RIGHT-OF-WAY IMPACT MITIGATION REQUIREMENTS FOR THE PROPOSED TRENCHLESS INSTALLATION;
 - (v) FLAGGING REQUEST FORM;
 - (vi) PITS TRAINING AND OTHER DOCUMENTS. THE CONTRACTOR SHOULD CONTACT AECOM/METROLINK FOR FURTHER DETAILS.

PRATT HANSEN GROUP INC. ELEMENTS SITE PLAN CITY OF BARRIE



DESIGN	MF	SCALE: N/A	DATE	JANUARY 2021
DRAWN	KS	PROJECT	PRA-19078	DWG. NO
CHECKED	DR			N-1

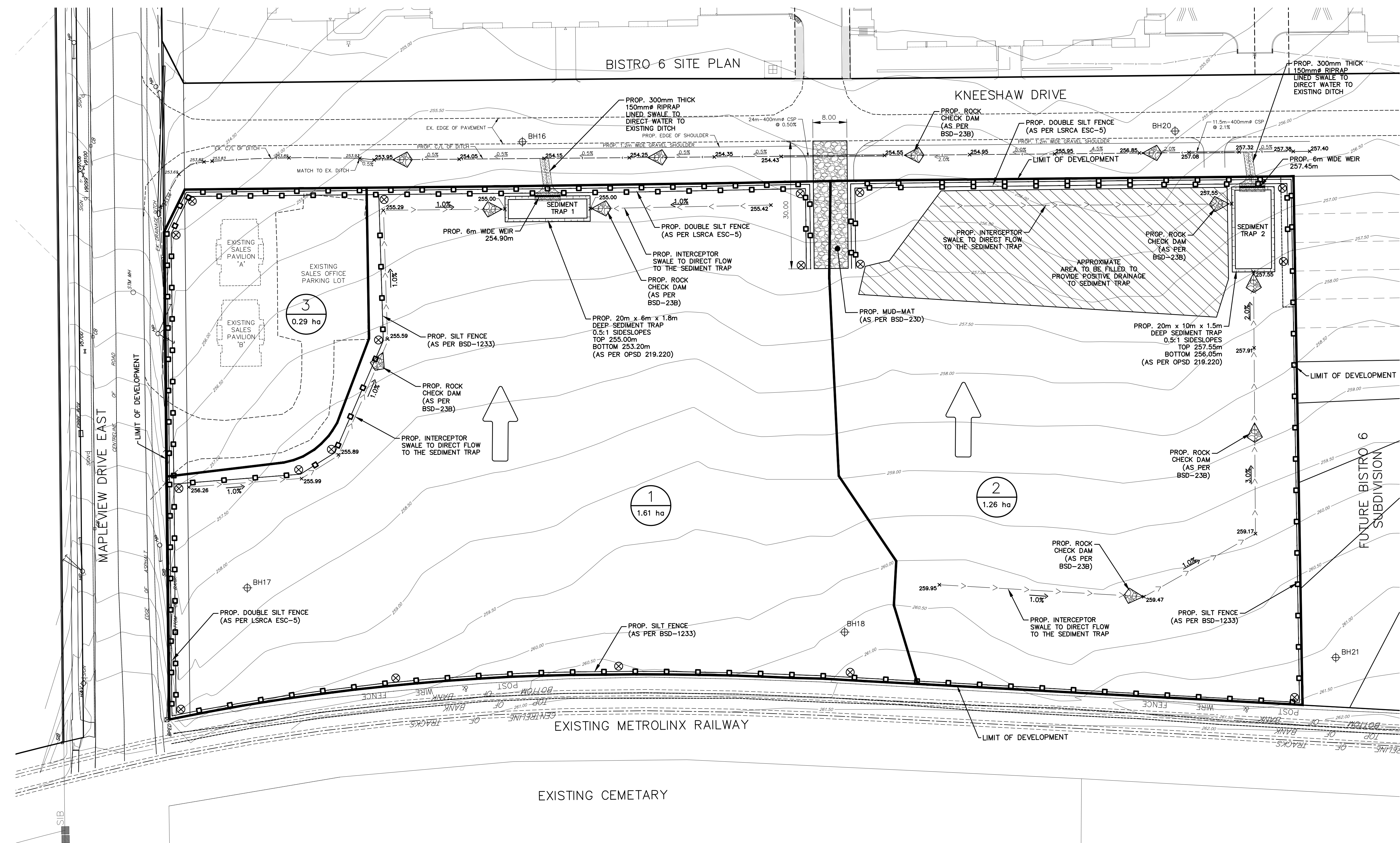
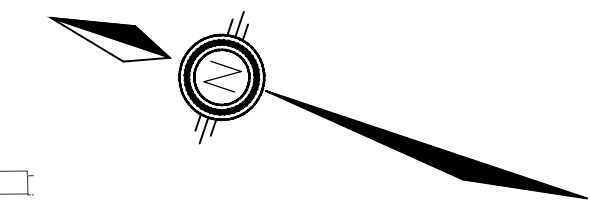
GENERAL NOTES

NO.	REVISIONS	DATE	INITIAL
5	ISSUED FOR REGISTRATION	MAY 2022	DR
4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF



- BENCHMARK:**
- BENCHMARK NO. 01019885454 LOCATED ON CONCRETE BRIDGE CARRYING MAPLEVIEW DRIVE E OVER LOVELY CREEK, 0.85M EAST OF HURONIA ROAD. TABLE IS SET HORIZONTALLY IN THE NORTH FACE, 5.45M NORTH OF CENTRELINE OF ROAD, 282M WEST OF THE NORTHEAST END OF BRIDGE, 19m TOP OF CORNER. N4910788.989 E807284.100 ELEV 241.861
 - BENCHMARK NO. 03120030029 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE VERTICAL MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.7m SOUTH FROM THE SOUTHWEST CORNER OF THE MAIN ENTRANCE TO SCHOOL AND TABLE IS ON THE SURFACES OF FLAGPOLE BASE. N4911610 E807799 ELEV 250.550
 - BENCHMARK NO. 03100800034 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 1km EAST OF HURONIA ROAD, N4910878.122 E807801.062 ELEV 248.996
 - BENCHMARK NO. 03120110013 LOCATED ON LOOCHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.02km WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909870.251 E808733.950 ELEV 252.807

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LEGEND	
	EX. BUSH LINE
	EX. BORE HOLE
	DIRECTION OF SURFACE DRAINAGE
	PROP. SILTATION CONTROL FENCE AS PER BSD-1233
	EXISTING CONTOUR LINES
	PROP. CEDAR POST
	PROP. ROCK CHECK DAM AS PER BSD-23B DRAINAGE BOUNDARY
	MUD MAT (AS PER BSD-23D)
	PROP. CUT-OFF SWALE (MIN 0.5m DEPTH)
	AREA NO.
	AREA IN HECTARE
	EXTERNAL WORKS BY OTHERS

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I HAVE REVIEWED THE PLANS FOR THE CONSTRUCTION OF PART OF THE PROPOSED HEWITT'S GATE SUBDIVISION SITE LOCATED AT 793 MAPLEVIEW DRIVE EAST AND HAVE PREPARED THIS PLAN TO INDICATE THE COMPATIBILITY OF THE PROPOSAL TO EXISTING ADJACENT PROPERTIES AND MUNICIPAL SERVICES. IT IS MY BELIEF THAT ADHERENCE TO THE PROPOSED GRADES AS SHOWN WILL PRODUCE ADEQUATE SURFACE DRAINAGE AND PROPER FACILITY OF MUNICIPAL SERVICES WITHOUT ANY DETRIMENTAL EFFECT TO THE EXISTING DRAINAGE PATTERNS OR ADJACENT PROPERTIES.

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 BENCHMARK NO. 03120030229 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE VERTICAL MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.7M SOUTH FROM THE SOUTHWEST CORNER OF THE MAIN ENTRANCE TO SCHOOL AND TABLET IS ON THE SOUTHSIDE OF THE FLAGPOLE BASE. N4911610 E607799 ELEV 250.500
 BENCHMARK NO. 03120080094 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 1km EAST OF HURONIA ROAD, N4910878.122 E807801.062 ELEV 248.096
 BENCHMARK NO. 03120110013 LOCATED ON LOUGHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.02km WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909870.257 E806733.590 ELEV 232.807

NO.	REVISIONS	DATE	INITIAL
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3	ISSUED FOR SAP APPLICATION	21-09-09	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF



PRATT HANSEN GROUP INC.
 ELEMENTS SITE PLAN
 CITY OF BARRIE
 EROSION AND SEDIMENT CONTROL PLAN

DESIGN MF
 DRAWN KS
 CHECKED DR

JONES CONSULTING GROUP LTD.
 PLANNERS & ENGINEERS

229 Mapleview Dr. E. Unit 1
 Barrie, ON L4N 0W5
 P. 705.734.2538
 F. 705.734.1058

SCALE: 1:500
 DATE: FEB. 2021
 PROJECT: PRA-19078
 DWG. NO: ESC-1

GENERAL NOTES

1. DRAWINGS

A. ALL DRAWINGS SHALL BE PRODUCED IN ACCORDANCE WITH CURRENT CITY OF BARRIE STANDARDS & SPECIFICATIONS FOR PLANS & PROFILE DRAWINGS, GENERAL SERVICE PLANS AND LOT GRADING PLANS.

2. MEASUREMENTS

A. ALL DIMENSIONS ARE IN METRES, EXCEPT PIPE DIAMETERS, WHICH ARE IN MILLIMETRES, UNLESS SPECIFIED OTHERWISE.

3. GENERAL

A. ALL WORK SHALL BE IN ACCORDANCE WITH CURRENT CITY OF BARRIE STANDARD DRAWINGS (BSD) AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD).

B. ORDER OF PRECEDENCE OF STANDARD DRAWINGS IS STRICTLY CITY OF BARRIE STANDARD DRAWINGS (BSD) AND SECONDLY ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD).

C. LOCATION OF EXISTING SERVICES ARE NOT GUARANTEED. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.

D. A ROAD OCCUPANCY PERMIT IS REQUIRED FROM THE ROADS AND PARKS OPERATIONS BRANCH PRIOR TO THE COMMENCEMENT OF ANY WORK WITHIN ANY CITY RIGHT-OF-WAY.

E. A SITE ALTERATION PERMIT IS REQUIRED FROM THE ENGINEERING DEPARTMENT PRIOR TO THE COMMENCEMENT OF ANY EARTH WORKS ON THE SITE.

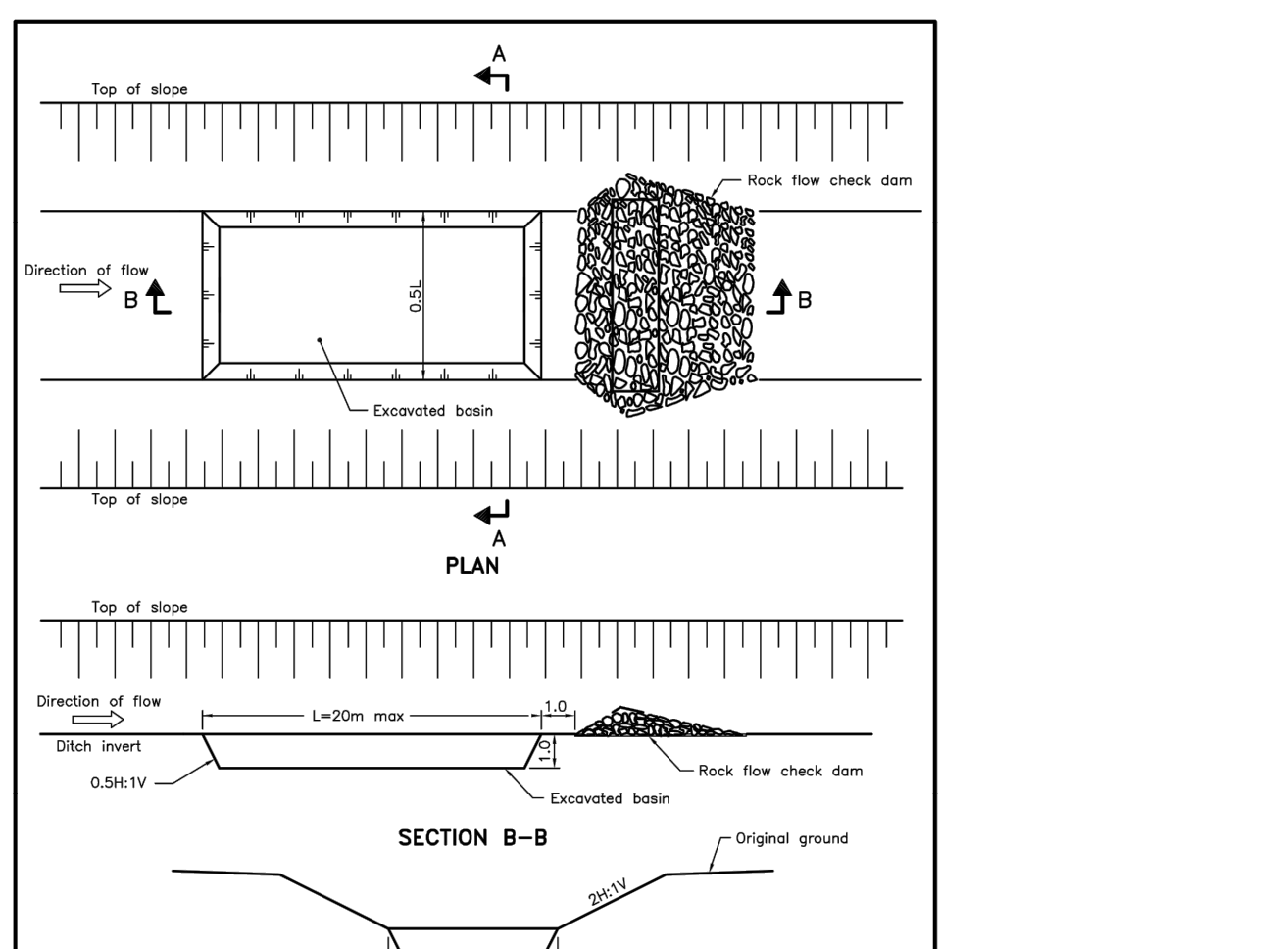
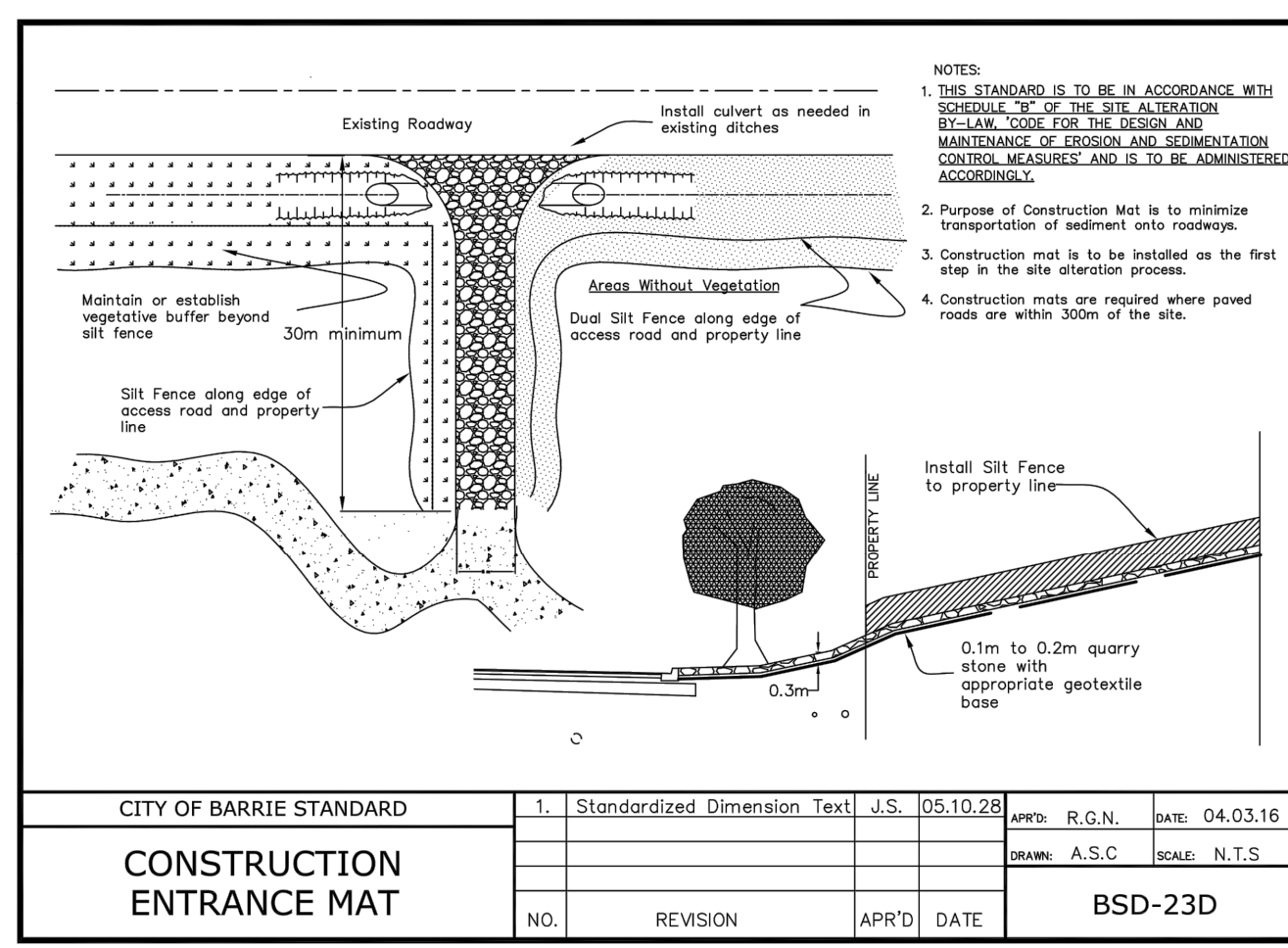
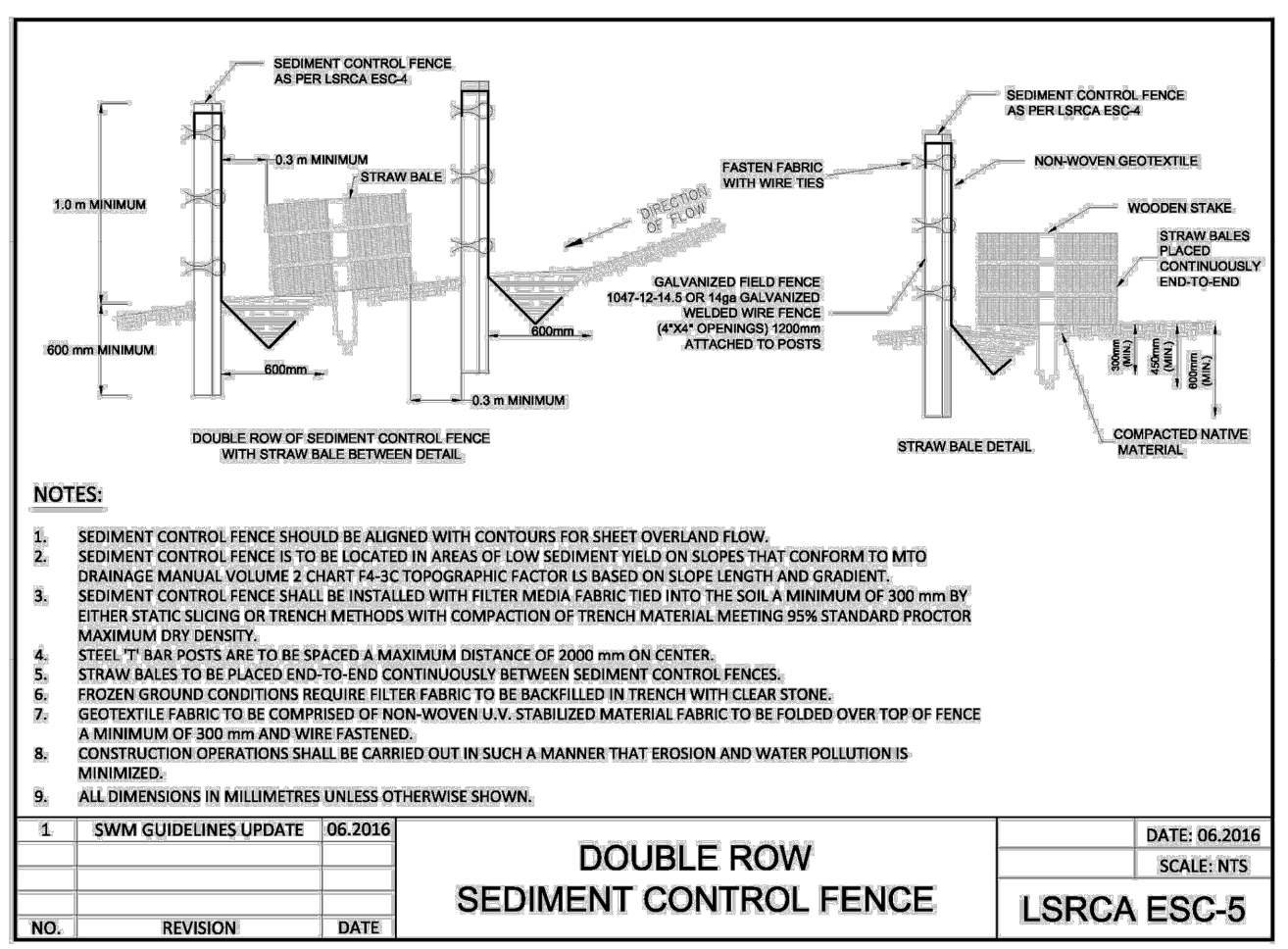
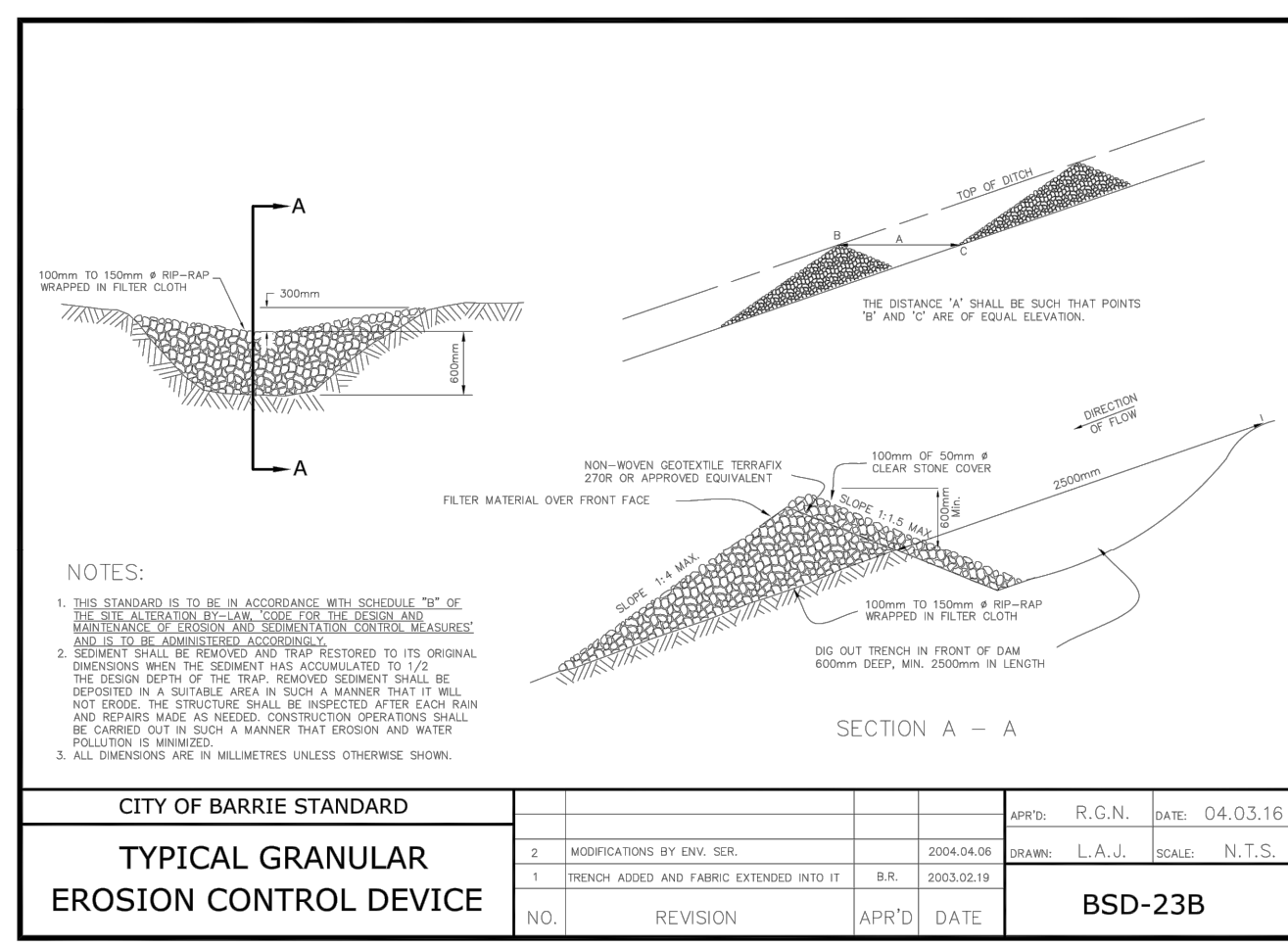
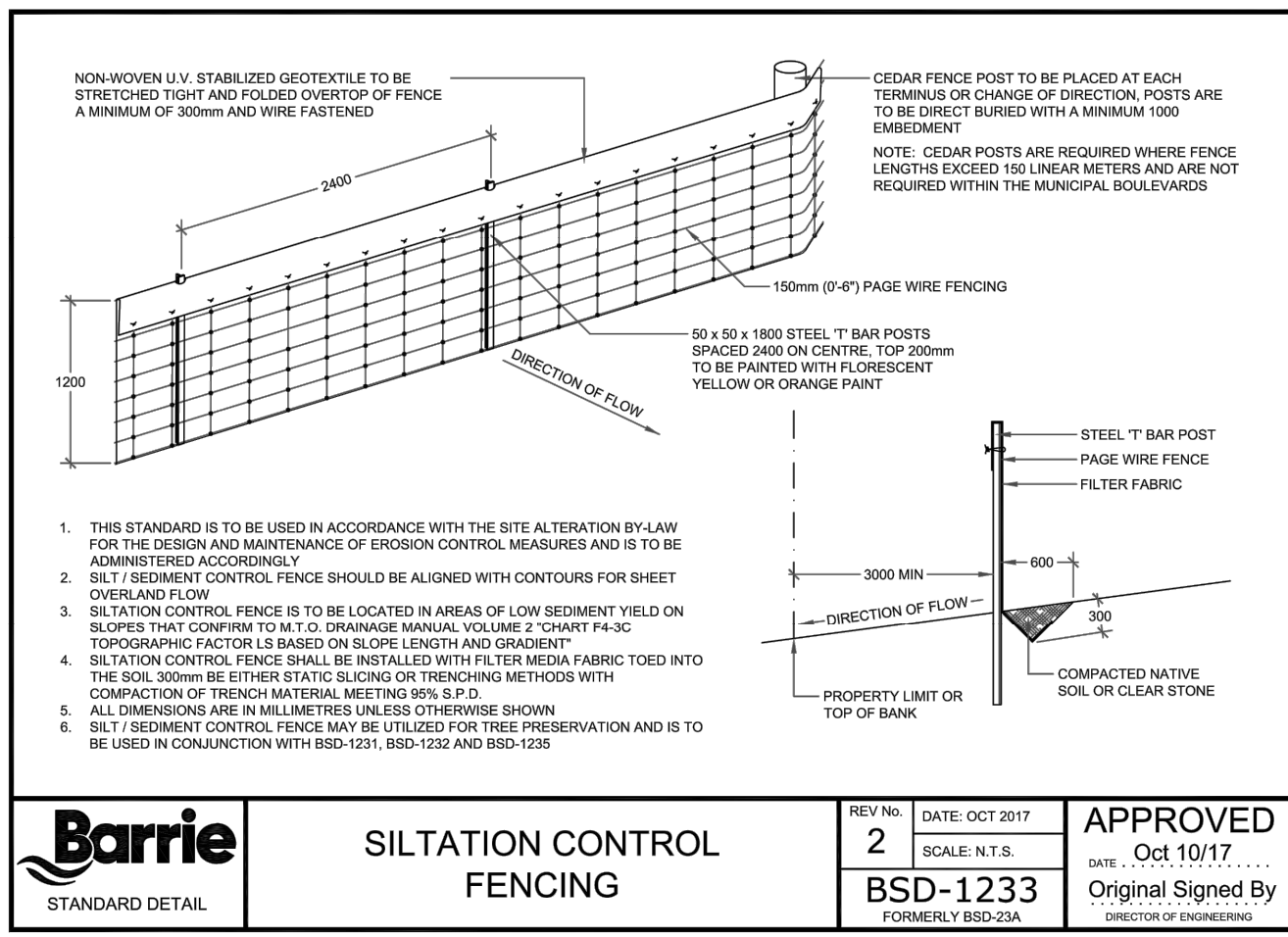
F. NATIVE MATERIAL, SUITABLE FOR BACKFILL, SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.

G. GRANULAR MATERIAL, USED FOR BACKFILL, SHALL BE PLACED IN LAYERS 150mm IN DEPTH MAXIMUM AND COMPACTED TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY.

H. ALL DISTURBED AREAS ARE TO BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER, AS DETERMINED BY THE CITY ENGINEERING DEPARTMENT.

I. ALL SILT CONTROL AND EROSION PROTECTION DEVICES ARE TO BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL CONSTRUCTION IS COMPLETE AND THE GRASS HAS ESTABLISHED GROWTH, SUBJECT TO APPROVAL BY THE CITY ENGINEERING DEPARTMENT.

CITY OF BARRIE STANDARD		3. S. NOTE 3.E. REVISED & 3.J. ADDED	J.S.	05.01.10	APPROVED	R.G.N.	DATE	92.05.15
GENERAL NOTES		2. S.D. - "ENGINEERING DEPARTMENT"	B.R.	02.10.28	SCALE	L.A.U.	SCALE	N.T.S.
		1. S.E. TOPSOIL PERMIT		01.12.06				
NO.	REVISION	APPROVED	DATE	BSD-N6				



EROSION CONTROL NOTES

1. THE ACCOMPANYING PLANS SET OUT THE MEASURES THAT WILL BE TAKEN BY THE DEVELOPER AND ITS CONTRACTORS TO CONTROL DOWNSTREAM SEDIMENT TO THE LOWEST LEVEL PRACTICALLY ACHIEVABLE. THE CONDITIONS AND TECHNIQUES SET OUT ARE TO BE FOLLOWED UNLESS APPROVED OTHERWISE BY THE CONTRACT ADMINISTRATOR, CONSERVATION AUTHORITY AND/OR MUNICIPALITY.
2. ALL TEMPORARY SILT CONTROL AND EROSION PROTECTION DEVICES (I.E. SILT FENCING, DRAINAGE SWALES, ROCK CHECK DAMS, SEDIMENT TRAPS, GRAVEL ACCESS PAD, ETC.) SHALL BE CONSTRUCTED PRIOR TO COMMENCEMENT OF SITE WORKS AND SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL CONSTRUCTION IS COMPLETE AND THE GRASS HAS ESTABLISHED GROWTH, SUBJECT TO APPROVAL BY THE CITY ENGINEERING DEPARTMENT.
3. ALL SEDIMENTATION CONTROL MEASURES ARE TO BE INSPECTED REGULARLY (MINIMUM WEEKLY), AS WELL AS AFTER EVERY RAINFALL EVENT AND ANY DAMAGED SILT CONTROL AND EROSION PROTECTION DEVICES SHALL BE PROMPTLY REPAIRED OR REPLACED BY THE CONTRACTOR.
4. THE CONTRACTOR MUST USE MATERIALS, CONSTRUCTION PRACTICES, AND MITIGATION TECHNIQUES IN ORDER TO PREVENT THE UNAUTHORIZED HARMFUL ALTERATION, DISRUPTION OR DESTRUCTION OF VEGETATION OR THE IMPAIRMENT OF WATER QUALITY.
5. THE CONTRACTOR SHALL BE PREPARED FOR UNEXPECTED CONDITIONS AND ACCORDINGLY HAVE STOCKPILED MATERIALS ON SITE FOR NECESSARY REPAIRS AS A RESULT OF FAILED OR INADEQUATE CONTROL MEASURES.
6. AREAS WITHOUT STABLE GROUND COVER SHALL BE PROTECTED WITH SILTATION CONTROL FENCING, STRAW MULCH, ETC. AND MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION HAS BECOME ESTABLISHED IN THE SUBSEQUENT GROWING SEASON.
7. ALL EXPOSED SOIL MUST BE GRADED TO A STABLE SLOPE AND TREATED AS QUICKLY AS POSSIBLE TO PREVENT EROSION AND SEDIMENT FROM LEAVING THE SITE. ALL AREA STRIPPED OF VEGETATIVE COVER FOR LONGER THAN 30 DAYS SHALL BE TOPSOILED AND SEEDED AT THE DIRECTION OF THE ENGINEER.
8. ALL SITE DRAINAGE TO BE DIRECTED TO THE TEMPORARY SEDIMENT TRAPS AND OTHER CHECK DAMS VIA SHEET DRAINAGE, BERMS OR SWALES (AS NECESSARY) TO FACILITATE THE COMPLETION OF GRADING WORKS. THE CONTRACTOR SHALL CONSTRUCT ANY ADDITIONAL SWALES OR BERMS THAT MAY BE NECESSARY TO DIRECT RUN-OFF IN A CONTROLLED MANNER OF SUITABLE QUALITY.
9. ALL CONSTRUCTION VEHICLES SHALL ENTER AND EXIT THE SITE FROM PROPOSED CONSTRUCTION ACCESS VIA THE GRAVEL ACCESS PAD.
10. ANY DEWATERING WASTE SHALL BE DISCHARGED TO A VEGETATED AREA AT LEAST 30m FROM ANY WATERCOURSE AND FILTERED. FILTERING METHODS MUST BE APPROVED BY THE SITE INSPECTOR.
11. TECHNIQUES FOR EROSION AND SEDIMENT CONTROLS ARE TO ADHERE TO ACCEPTED ENGINEERING PRACTICE AND MUNICIPAL CONSERVATION AUTHORITY AND ONTARIO PROVINCIAL STANDARD SPECIFICATIONS AND DRAWINGS. THE CONTRACTOR SHALL OBTAIN A CURRENT COPY AND BECOME FAMILIAR WITH OPSS 805; CONSTRUCTION SPECIFICATION FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, AS WELL AS APPLICABLE MUNICIPAL STANDARDS AND/OR APPROVAL AGENCY STANDARDS.
12. THE CONTRACTOR MAY CONSIDER ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES, SUCH MEASURES MUST BE PRESENTED IN WRITING FOR APPROVAL BY THE CONTRACT ADMINISTRATOR AND MUST BE APPROVED IN WRITING BY THE APPLICABLE APPROVAL AGENCIES.

CONSTRUCTION SEQUENCE

- THE FOLLOWING CONSTRUCTION SEQUENCE IS PROVIDED FOR CONTRACTOR GUIDANCE:
1. CONSTRUCT ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES INCLUDING SILT FENCE, TREE PRESERVATION FENCE, MUD MATS, CHECK DAMS, SWALES/BERMS, ETC.
 2. CONSTRUCT TEMPORARY SEDIMENT TRAPS, STRIPPING AND REMOVAL OF TOPSOIL. TOPSOIL TO BE REMOVED FROM SITE.
 3. PROCEED WITH EARTH EXCAVATION AND PRE-GRADING. PROCEED WITH SEEDING OF RESTORATION OF ALL DISTURBED AREAS AS DIRECTED BY ENGINEER. ALL AREAS STRIPPED OF VEGETATIVE COVER FOR LONGER THAN 15 DAYS SHALL BE HYDROSEED AT THE DIRECTION OF THE ENGINEER. HYDROSEED WITH FIBRETAC AT 100KG/HA. HYDROSEED MIXTURE OF 48% ANNUAL RYE GRASS, 48% FALL RYE, 4% RED CLOVER WILL NEED TO BE APPLIED TO ANY EXPOSED AREAS FOLLOWING TOPSOIL STRIPPING.
 4. PROCEED WITH SITE WORKS I.E. SITE SERVICING AND SURFACE WORKS INSTALLATIONS.
 5. REMOVE TEMPORARY SEDIMENT TRAPS. CONSTRUCT RETAINING WALLS AND LID MEASURES AT EAST PROPERTY LIMIT.
 6. RESTORATION OF DISTURBED AREAS.
 7. REMOVAL OF REMAINING SEDIMENT AND EROSION CONTROLS.
- **NOTE**** SILTATION AND EROSION CONTROL MEASURES ARE TO BE MONITORED AND MAINTAINED THROUGHOUT CONSTRUCTION AND NECESSARY REPAIRS TO BE PROMPTLY COMPLETED AS REQUIRED.

CONTINGENCY PLAN

IF UNFORESEEN EVENTS CAUSE THE STRATEGIES SET OUT IN THIS PLAN TO BE INSUFFICIENT OR INAPPROPRIATE TO MEET THE OBJECTIVE, THE CONTRACTOR IS EXPECTED TO RESPOND IN A TIMELY MANNER WITH ALL REASONABLE MEASURES CONSISTENT WITH SAFETY, TO PREVENT, COUNTERACT OR REMEDY DOWNSTREAM SEDIMENTATION AND EROSION.

IF A SPILL OCCURS IT SHALL BE REPORTED TO THE MINISTRY OF ENVIRONMENT & CLIMATE CHANGE & THE MINISTRY OF NATURAL RESOURCES AND FORESTRY. THE ON CALL CITY OF BARRIE ENVIRONMENTAL OFFICER SHOULD ALSO BE NOTIFIED VIA CELL PHONE (705) 725-3374.

IF APPROVAL AGENCIES DETERMINE THAT LONG TERM DAMAGE TO THE NATURAL ENVIRONMENT HAS OCCURRED DUE TO FAILURE OF THIS PLAN TO CONTROL SEDIMENTS, A RESTORATION PLAN WILL BE DEVELOPED BY THE CONTRACTOR IN CONSULTATION WITH AND APPROVAL FROM THE APPROPRIATE AGENCIES FOR IMPLEMENTATION BY THE CONTRACTOR.

SITE DATA		
OVERALL SITE AREA	3.16 Ha	
EXISTING LAND USE	(VACANT) AGRICULTURAL FIELD	
PREDOMINANT SOIL TYPE	SANDY LOAM	
	SEDIMENT TRAP 1	SEDIMENT TRAP 2
BOTTOM ELEVATION	253.20	256.05
TOP ELEVATION	255.00	257.55
OVERFLOW WEIR ELEVATION	254.90	257.45
DIMENSIONS (LxWxD)	20m x 6m x 1.8m	20m x 10m x 1.5m
STORAGE VOLUME	216m ³	300m ³
CATCHMENT AREA	1.61 Ha	1.26 Ha
REQUIRED STORAGE VOLUME BASED ON 125m ³ /HA OF DRAINAGE AREA TO POND	201.25m ³	157.50m ³

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I HAVE REVIEWED THE PLANS FOR THE CONSTRUCTION OF PART OF THE PROPOSED HEWITTS GATE SUBDIVISION SITE LOCATED AT 793 MAPLEVIEW DRIVE EAST AND HAVE PREPARED THIS PLAN TO INDICATE THE COMPATIBILITY OF THE PROPOSAL TO EXISTING ADJACENT PROPERTIES AND MUNICIPAL SERVICES. IT IS MY BELIEF THAT ADHERENCE TO THE PROPOSED GRADES AS SHOWN WILL PRODUCE ADEQUATE SURFACE DRAINAGE AND PROPER FACILITY OF MUNICIPAL SERVICES WITHOUT ANY DETRIMENTAL EFFECT TO THE EXISTING DRAINAGE PATTERNS OR ADJACENT PROPERTIES.

BENCHMARK:

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BENCHMARK NO. 03120030229 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE VERTICAL MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.76 SOUTH FROM THE SOUTHWEST CORNER OF THE MAIN ENTRANCE TO SCHOOL, AND TABLET IS ON THE SOUTH SIDE OF THE FLAGPOLE BASE. N4911610 E807799 ELEV 250.550

BENCHMARK NO. 03100800044 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 1km EAST OF HURONIA ROAD, N4910878.122 E807801.062 ELEV 248.096

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NO.	REVISIONS	DATE	INITIAL

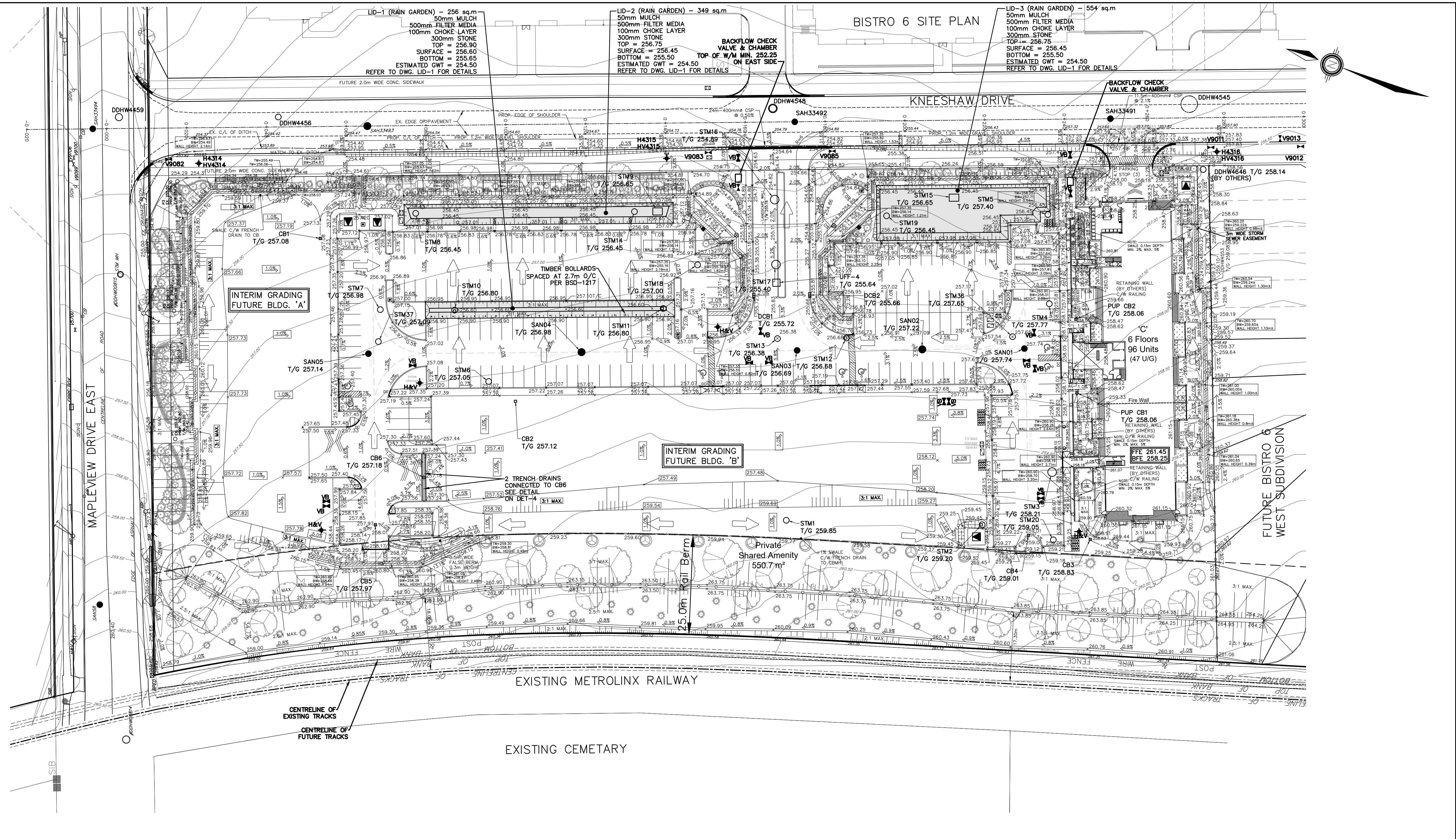


PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE
EROSION AND SEDIMENT CONTROL DETAILS

JONES CONSULTING GROUP LTD.
PLANNERS & ENGINEERS

229 Mapleview Dr. E. Unit 1
Barrie, ON L4N 0W5
P. 705.734.2538
F. 705.734.1056

DESIGN	MF	SCALE	N/A	DATE	FEB. 2021
DRAWN	KS	PROJECT	PRA-19078	DWG. NO	ESC-2
CHECKED	DR				



LEGEND

	INTERIM GROUND ELEVATION		PROPOSED CURB STOP
	INTERIM GRADIENT AND DIRECTION		PROPOSED LIGHT STANDARD
	PROPOSED GROUND ELEVATION		PROPOSED POWER PEDESTAL & VAULT
	EXISTING GROUND ELEVATION		PROPOSED PULLBOX/HANDHOLE
	PROPOSED GRADIENT AND DIRECTION		PROPOSED PEDESTAL FOR ENTRANCE FEATURES
	PROPOSED 3:1 SLOPE (MAX)		PROPOSED BELL GRADE LEVEL BOX
	PROPOSED STORM MAINTENANCE HOLE		PROPOSED ROGERS GRADE LEVEL BOX
	PROPOSED CATCHBASIN MAINTENANCE HOLE		PROPOSED HYDRO TRANSFORMER
	PROPOSED CATCHBASIN		PROPOSED EV CHARGER STATION
	PROPOSED DOUBLE CATCHBASIN		PROPOSED EMERGENCY OVERLAND FLOW ROUTE
	PROPOSED SANITARY MAINTENANCE HOLE		
	PROPOSED HYDRANT		
	PROPOSED VALVE BOX		

BENCHMARK:

BENCHMARK NO. 01019885454 LOCATED ON CONCRETE BRIDGE CARRYING MAPLEVIEW DRIVE OVER LOWER'S CREEK, 0.83M EAST OF HURONIA ROAD. TABLET IS SET HORIZONTALLY IN THE NORTH FACE, 5.45M NORTH OF CENTRELINE OF ROAD, 28CM WEST OF THE NORTHEAST END OF BRIDGE, 19CM TOP OF CORNER. N4910788.889 E507254.100 ELEV 241.861

BENCHMARK NO. 03120030229 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE VERTICAL MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.76 SOUTH FROM THE SOUTHWEST CORNER OF THE MAIN ENTRANCE TO SCHOOL AND TABLET IS ON THE SOUTHWEST FACE OF FLAGPOLE BASE. N4911610 E607799 ELEV 250.500

BENCHMARK NO. 03120080094 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 14m EAST OF HURONIA ROAD, N4910878.122 E607801.062 ELEV 248.096

BENCHMARK NO. 03120110013 LOCATED ON LOCHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.02km WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909876.257 E608733.590 ELEV 252.807

NO.	REVISIONS	DATE	INITIAL
5	ISSUED FOR REGISTRATION	MAY 2022	DR
4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF



PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE

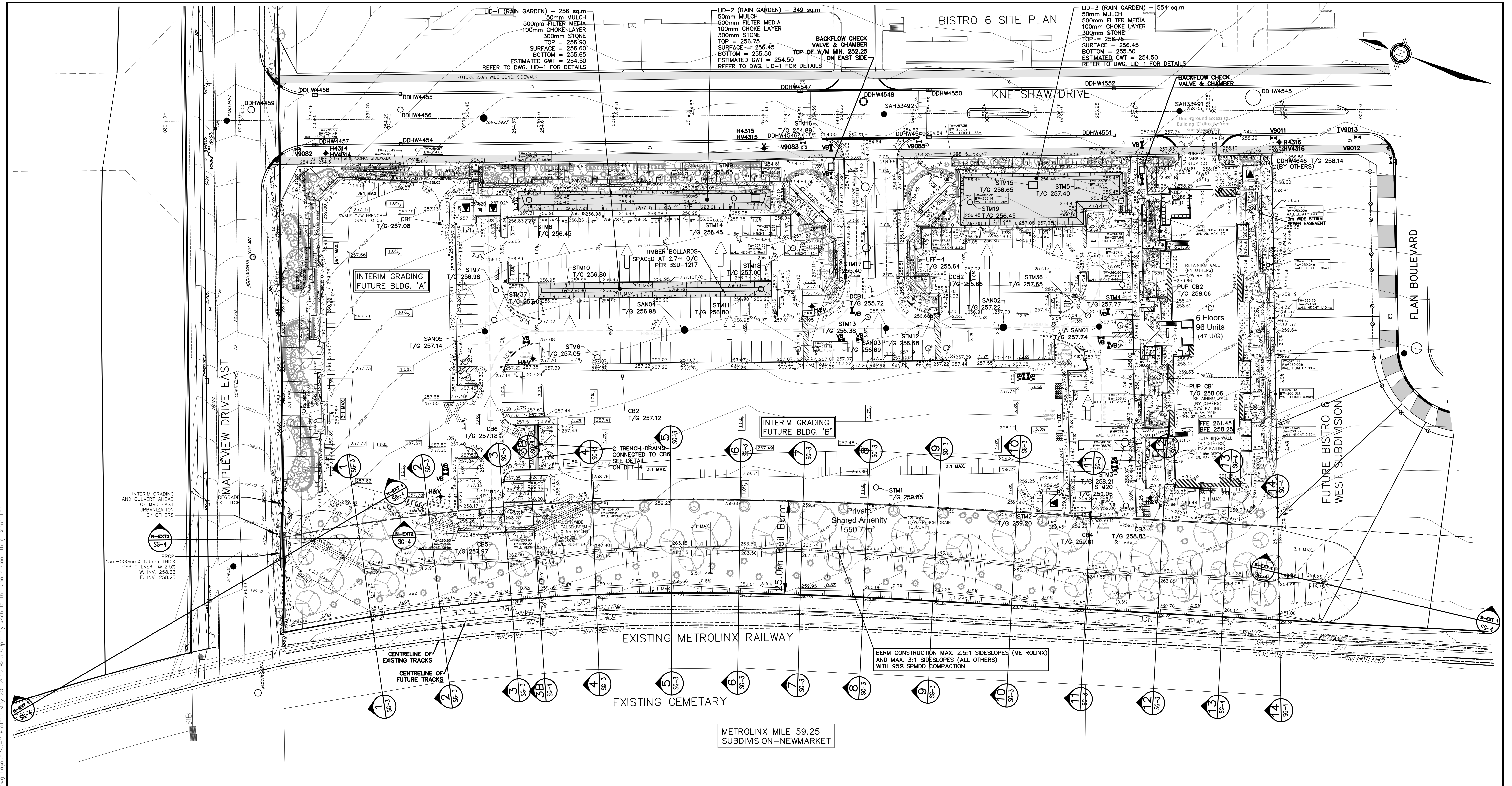
**SITE GRADING PLAN
WITH EXISTING CONDITIONS**

JONES
CONSULTING GROUP LTD.
PLANNERS & ENGINEERS

229 Mapleview Dr. E. Unit 1
Barrie, ON L4N 0W5
P. 705.734.2538
F. 705.734.1056

DESIGN MF	SCALE: 1:500	DATE JANUARY 2021
DRAWN KS	PROJECT	DWG. NO
CHECKED DR	PRA-19078	SG-1

G:\Eng_3D\VPRA-19078_02\Drawings\VPRA-19078_DESIGNBASE (BLDGS A & B REMOVED).dwg Layout:SG-1 Plotted: May 20, 2022 @ 2:58pm by kschuz The Jones Consulting Group Ltd.

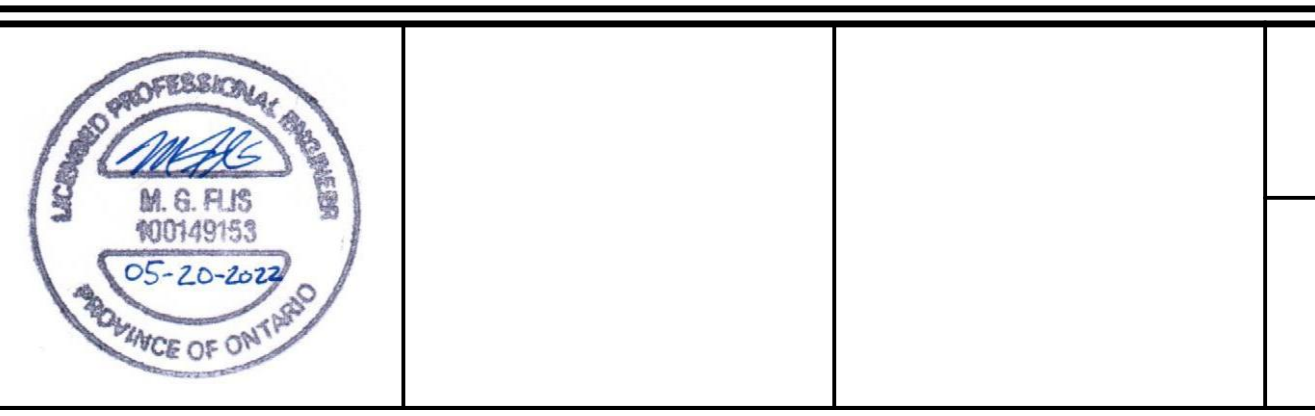


LEGEND

	INTERIM GROUND ELEVATION		PROPOSED CURB STOP
	INTERIM GRADIENT AND DIRECTION		PROPOSED LIGHT STANDARD
	PROPOSED GROUND ELEVATION		PROPOSED POWER PEDESTAL & VAULT
	EXISTING GROUND ELEVATION		PROPOSED PULLBOX/HANDHOLE
	PROPOSED GRADIENT AND DIRECTION		PROPOSED PEDESTAL FOR ENTRANCE FEATURES
	PROPOSED 3:1 SLOPE (MAX)		PROPOSED BELL GRADE LEVEL BOX
	PROPOSED STORM MAINTENANCE HOLE		PROPOSED ROGERS GRADE LEVEL BOX
	PROPOSED CATCHBASIN MAINTENANCE HOLE		PROPOSED HYDRO TRANSFORMER
	PROPOSED CATCHBASIN		PROPOSED EV CHARGER STATION
	PROPOSED DOUBLE CATCHBASIN		PROPOSED EMERGENCY OVERLAND FLOW ROUTE
	PROPOSED SANITARY MAINTENANCE HOLE		
	PROPOSED HYDRANT		
	PROPOSED VALVE BOX		

BENCHMARK:
 BENCHMARK NO. 01019885454 LOCATED ON CONCRETE BRIDGE CARRYING MAPLEVIEW DRIVE OVER LOWER'S CREEK, 0.82M EAST OF HURONIA ROAD. TABLET IS SET HORIZONTALLY IN THE NORTH FACE, 5.45M NORTH OF CENTRELINE OF ROAD, 28CM WEST OF THE NORTHEAST END OF BRIDGE, 19CM TOP OF CORNER. N491078.889 E507254.100 ELEV 241.861
 BENCHMARK NO. 03120030229 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE VERTICAL MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.76 SOUTH FROM THE SOUTHWEST CORNER OF THE MAIN ENTRANCE TO SCHOOL AND TABLET IS ON THE SOUTHWEST SIDE OF THE FLAGPOLE BASE. N4911610 E607799 ELEV 250.500
 BENCHMARK NO. 03100800894 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 14M EAST OF HURONIA ROAD, N4910878.122 E607801.062 ELEV 248.096
 BENCHMARK NO. 03120110013 LOCATED ON LOUGHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.020M WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909876.257 E608733.690 ELEV 252.807

NO.	REVISIONS	DATE	INITIAL
5	ISSUED FOR REGISTRATION	MAY 2022	DR
4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF



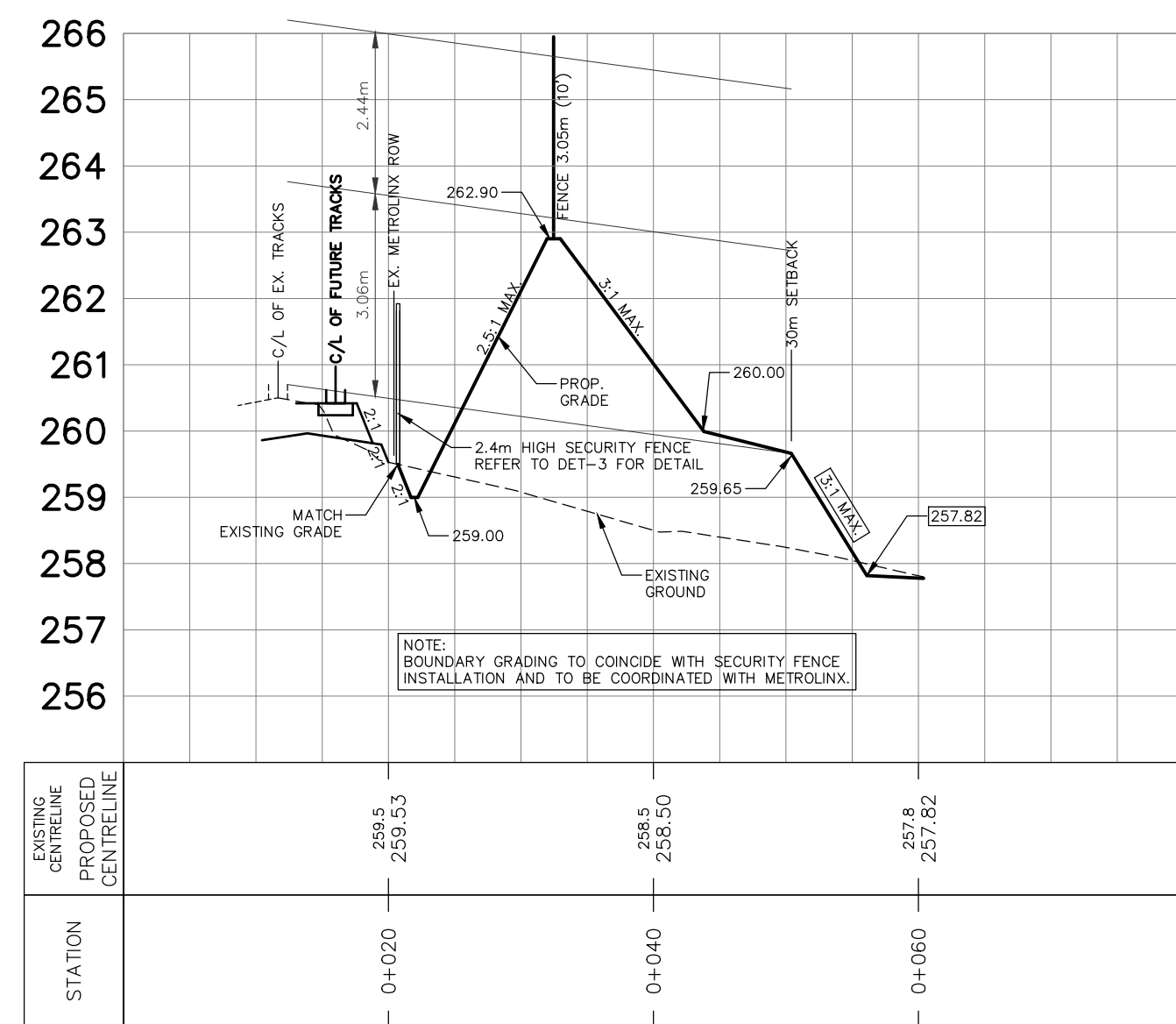
PRATT HANSEN GROUP INC.
 ELEMENTS SITE PLAN
 CITY OF BARRIE
 SITE GRADING PLAN
 WITH PROPOSED CONDITIONS

JONES CONSULTING GROUP LTD.
 PLANNERS & ENGINEERS
 229 Mapleview Dr. E. Unit 1
 Barrie, ON L4N 0W5
 P. 705.734.2538
 F. 705.734.1056

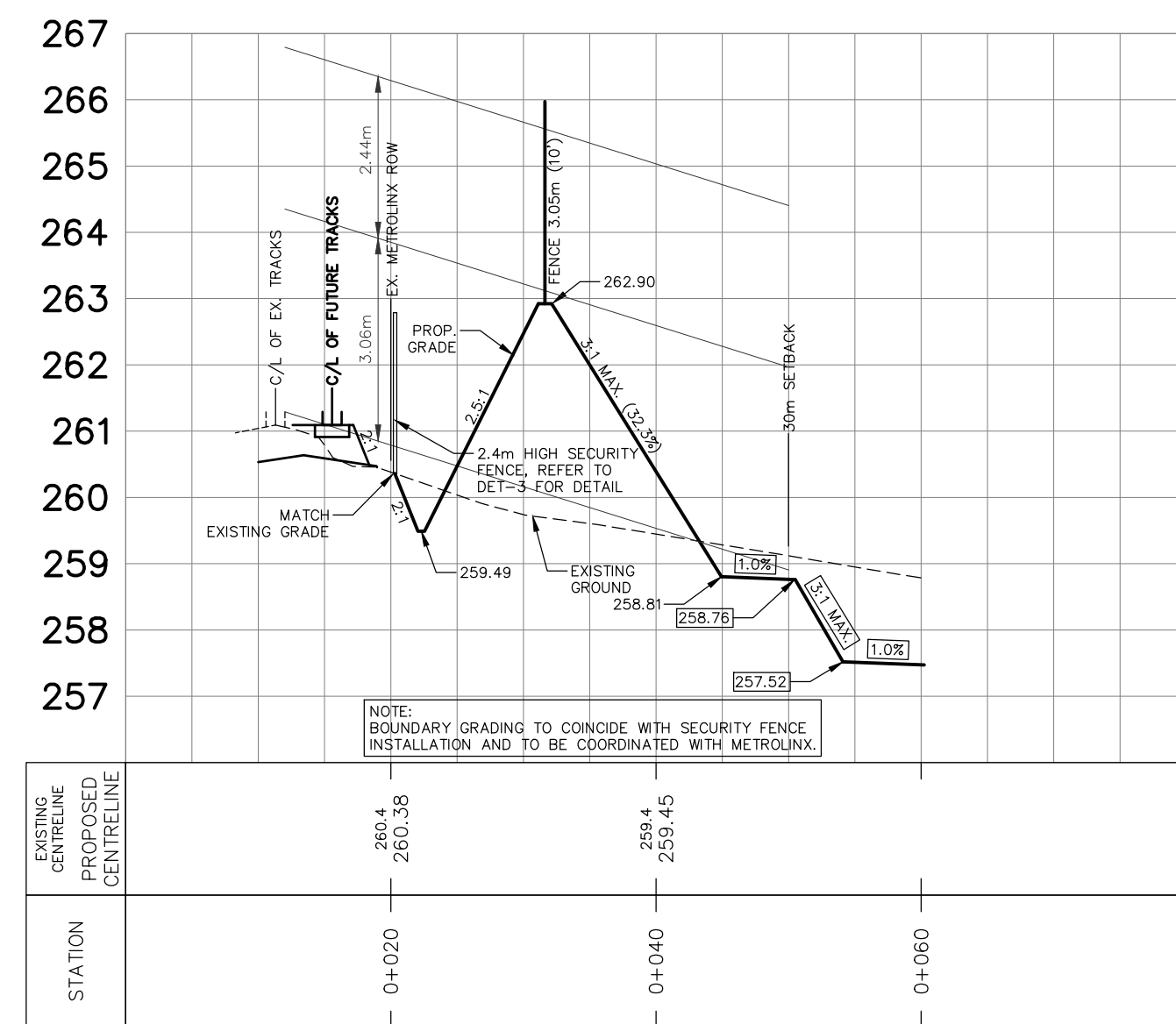
DESIGN MF	SCALE: 1:500	DATE JANUARY 2021
DRAWN KS	PROJECT	DWG. NO
CHECKED DR	PRA-19078	SG-2

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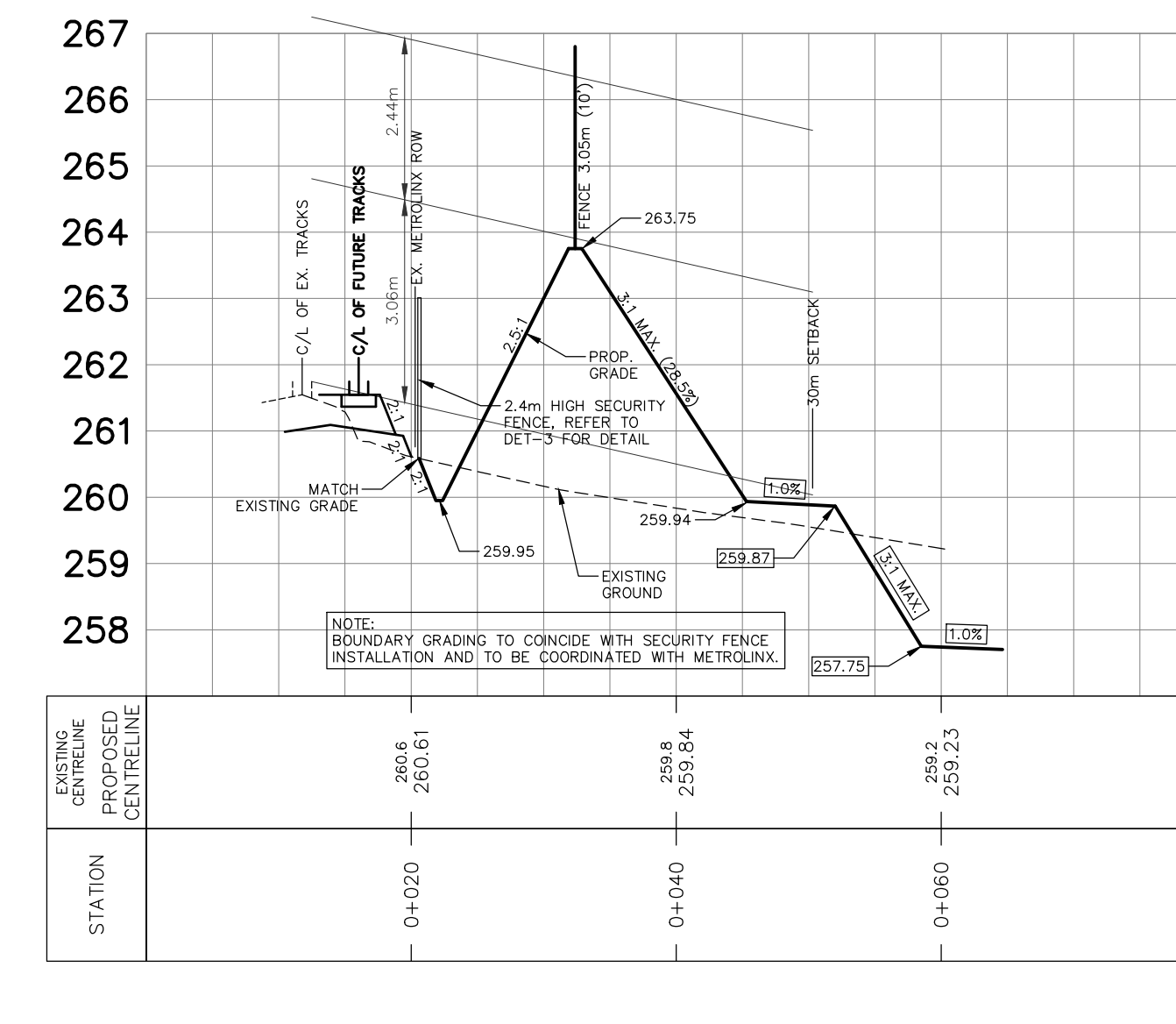
BERM XS 1



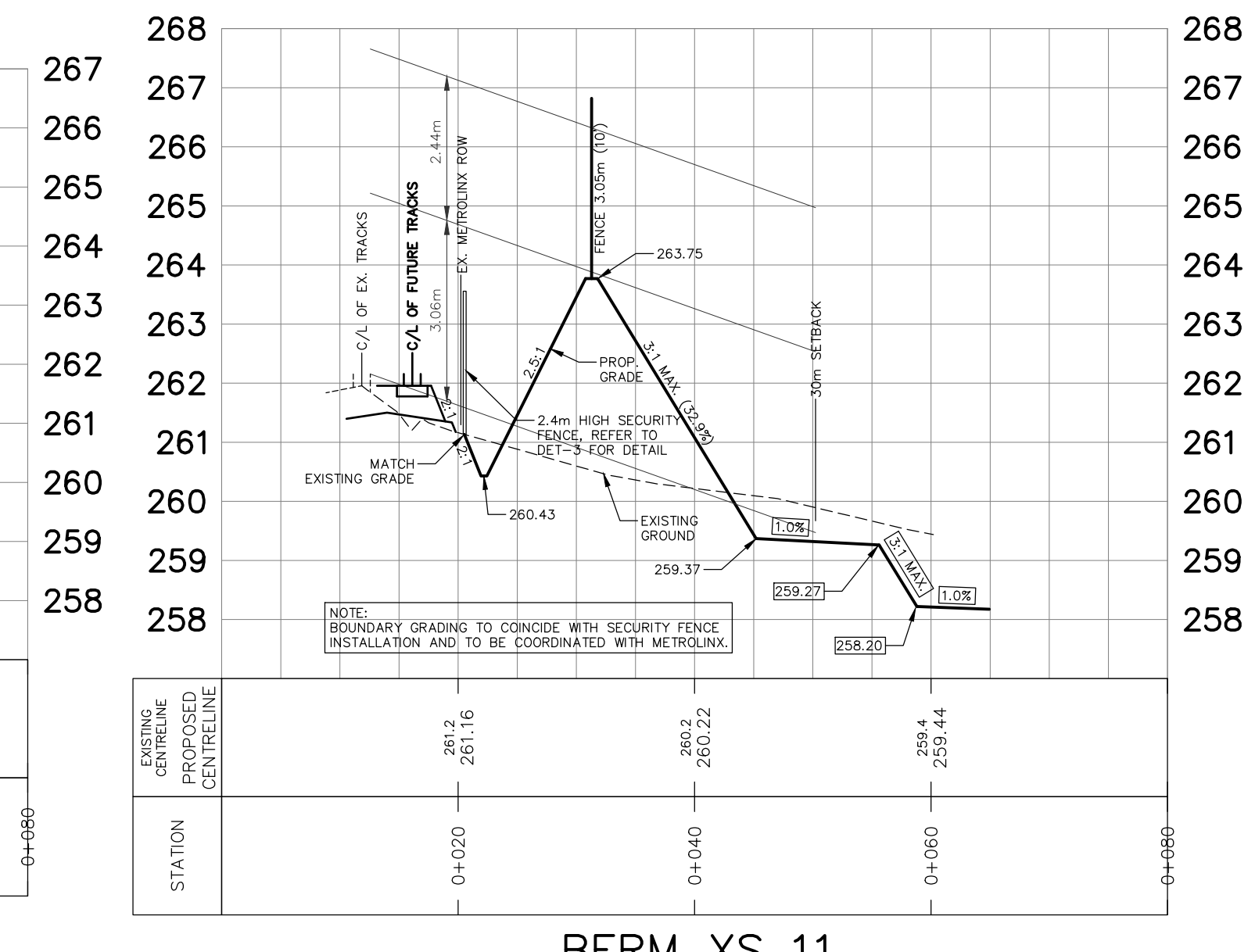
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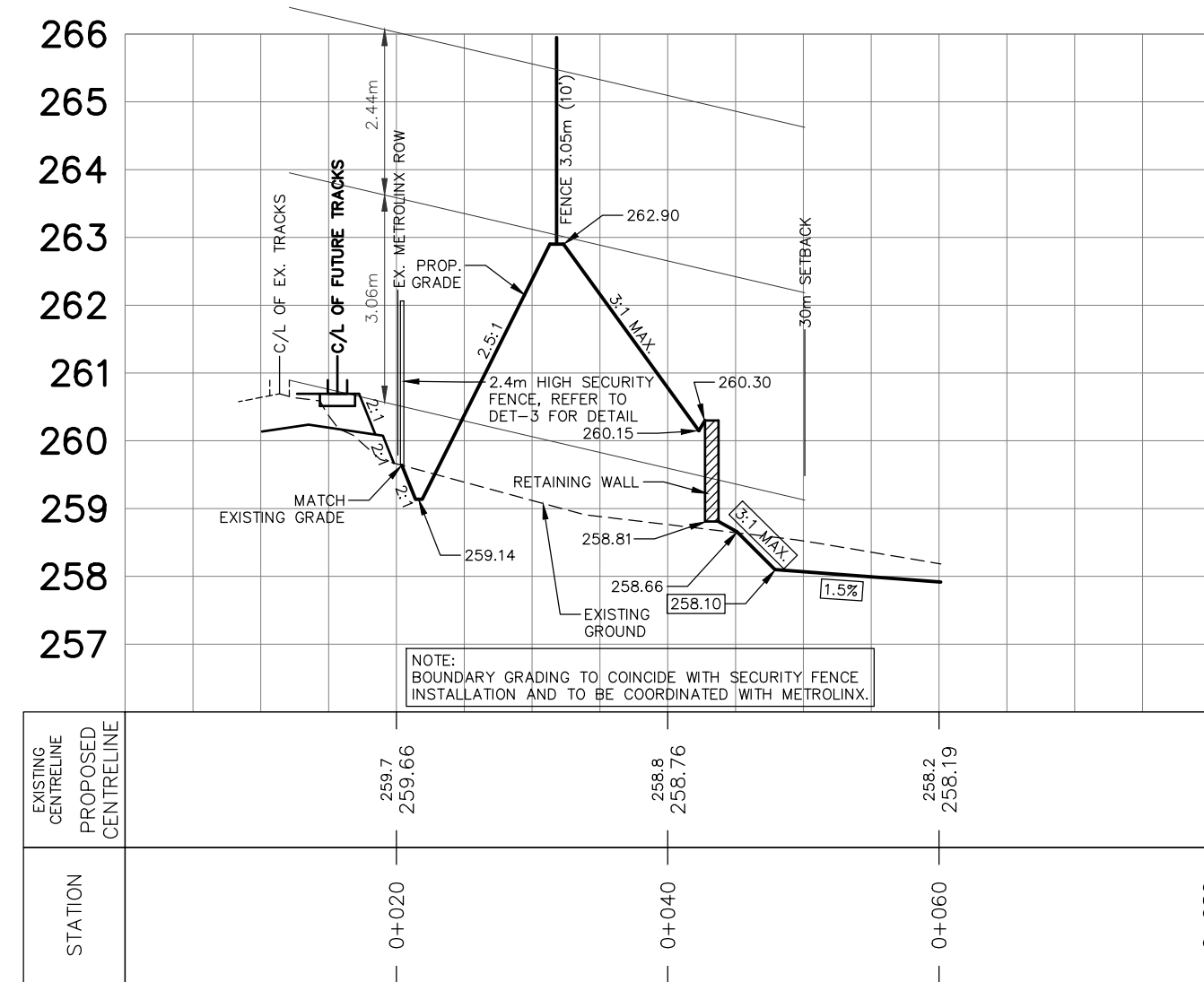
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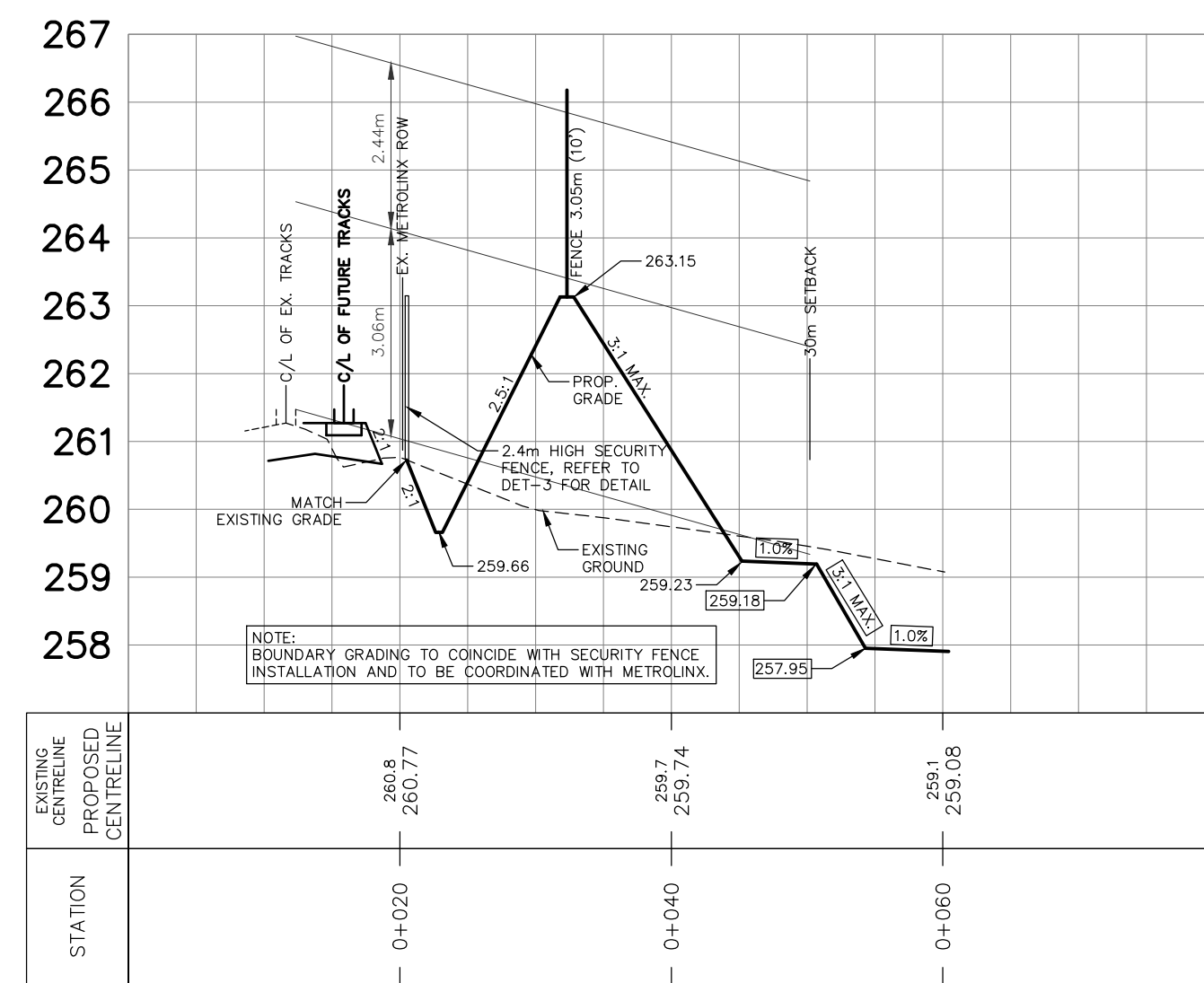
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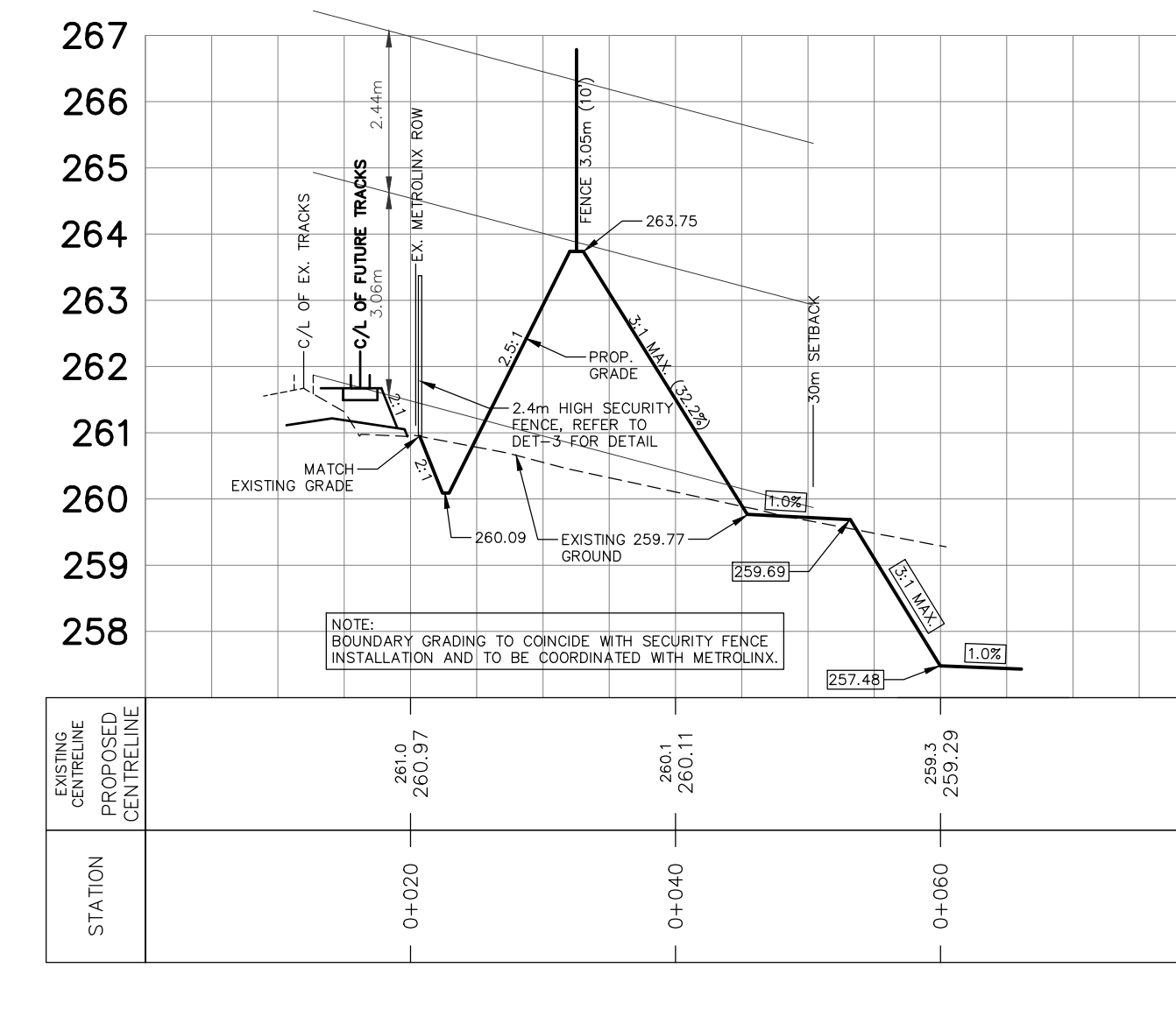
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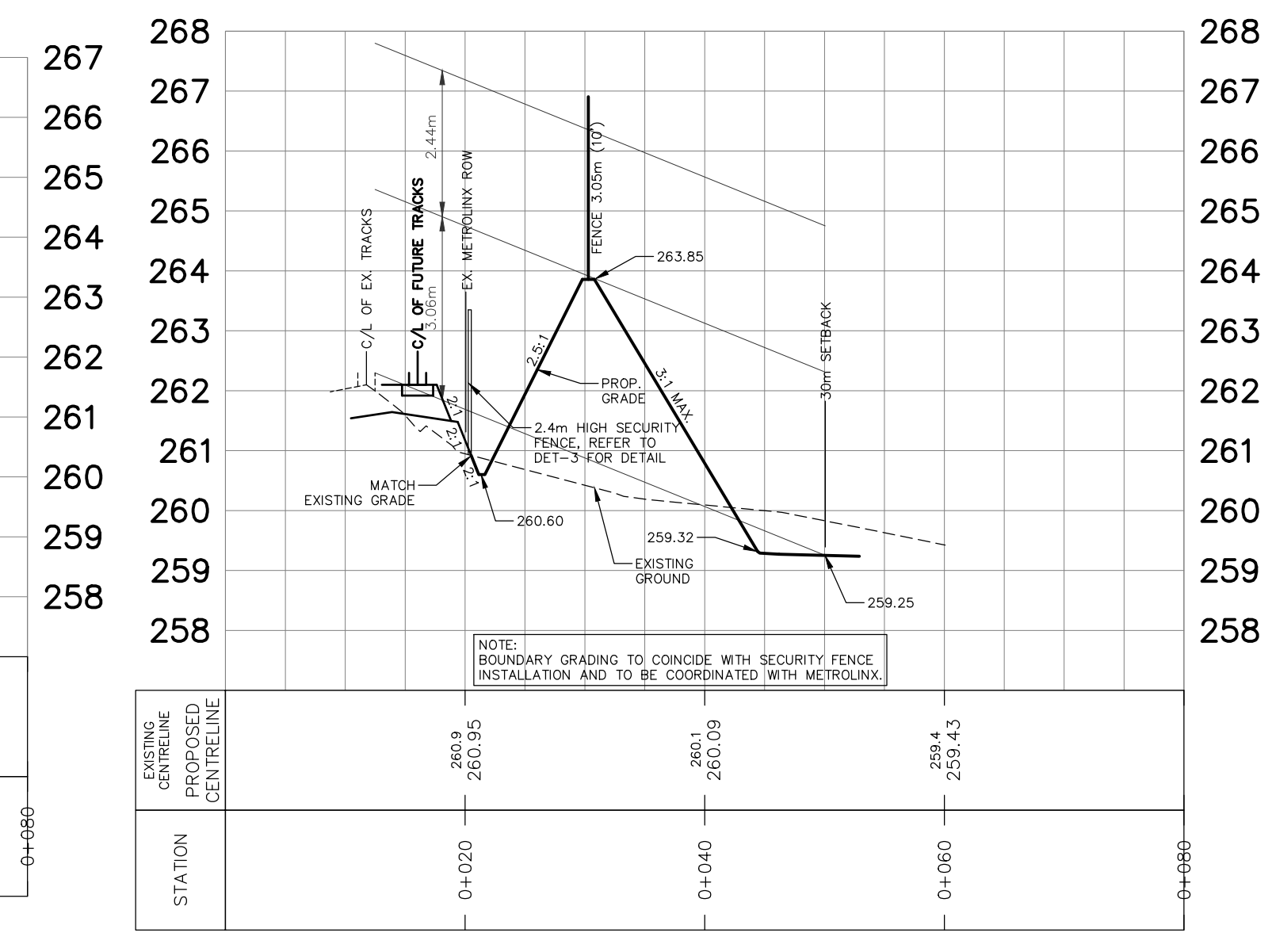
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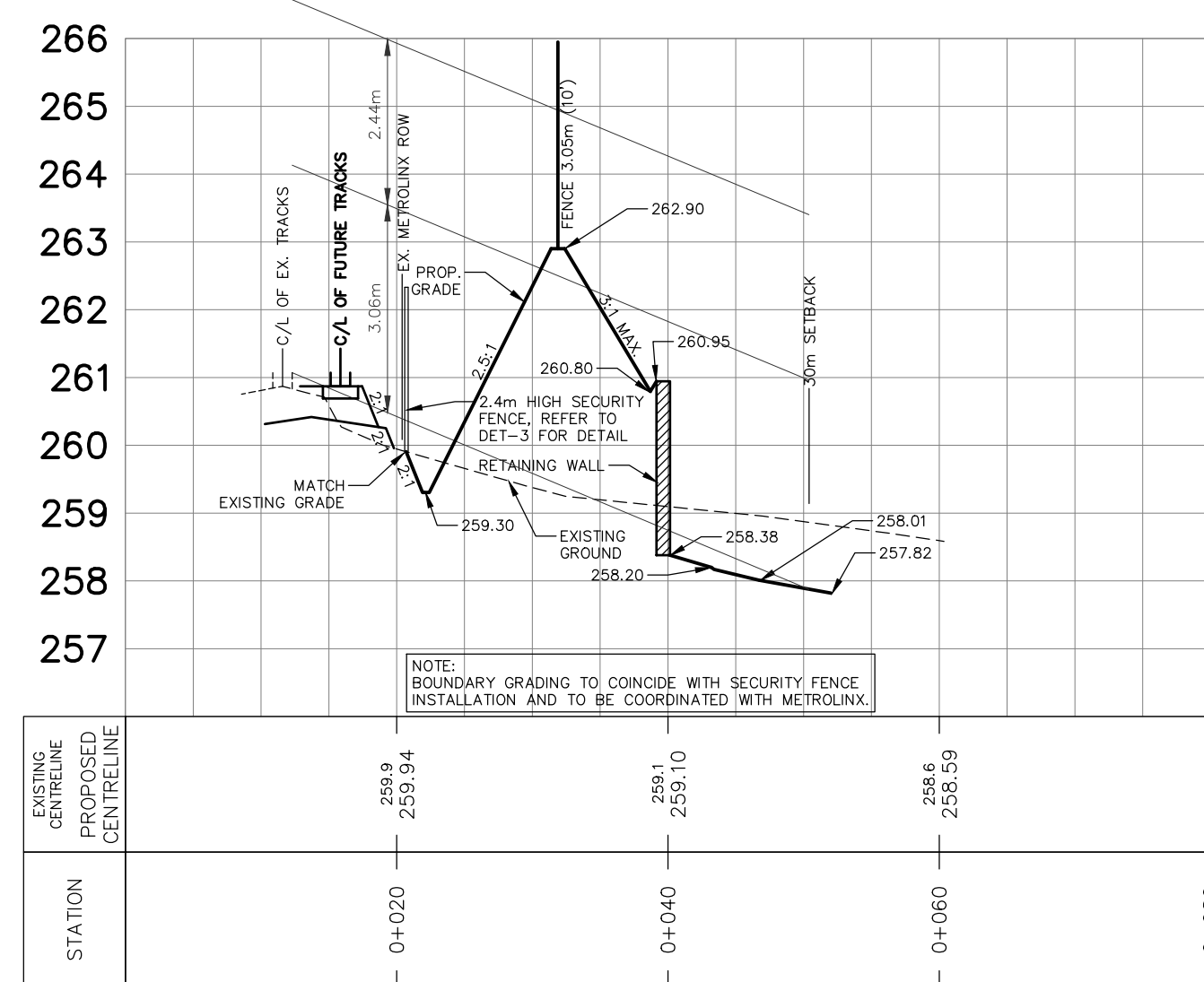
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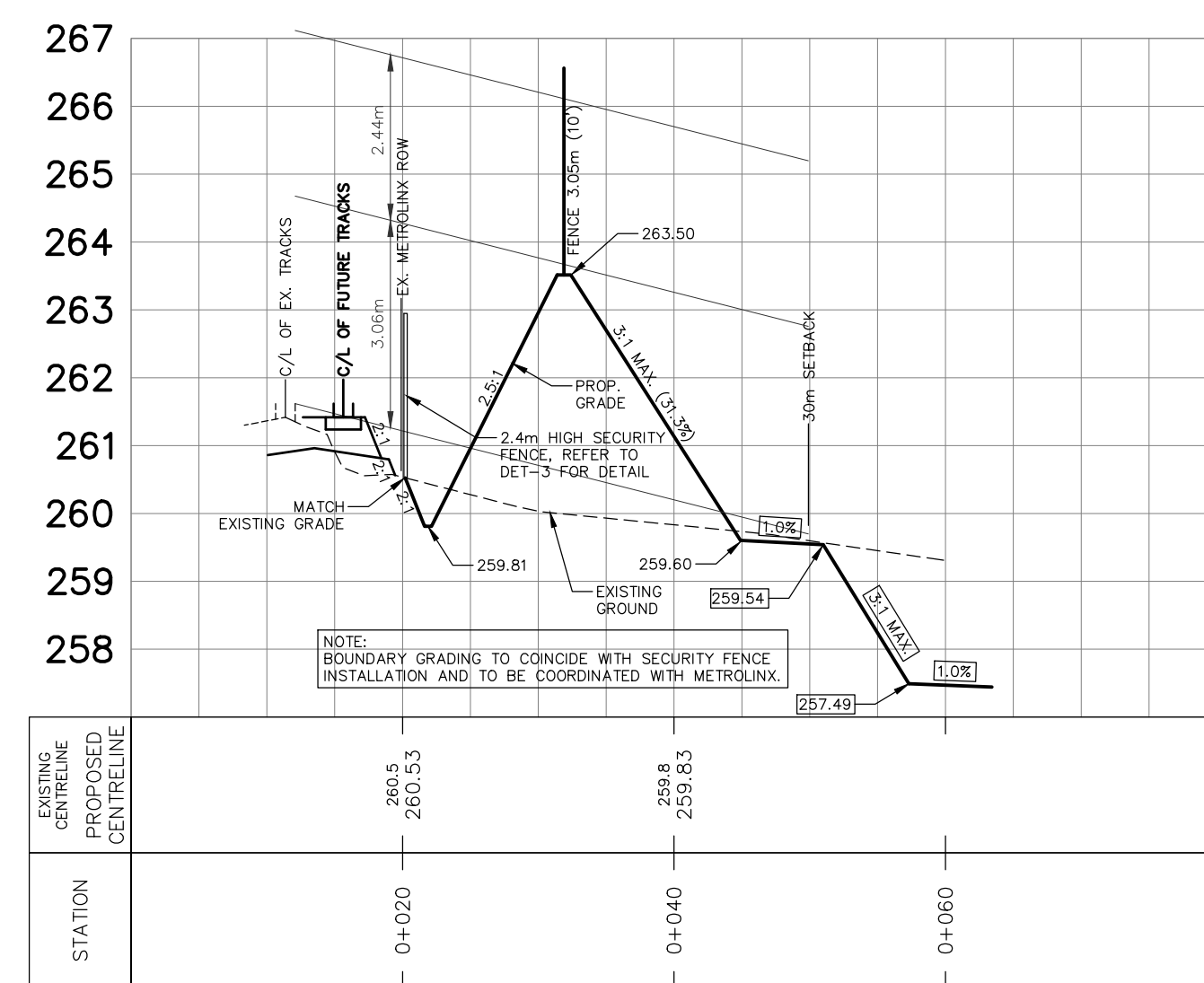
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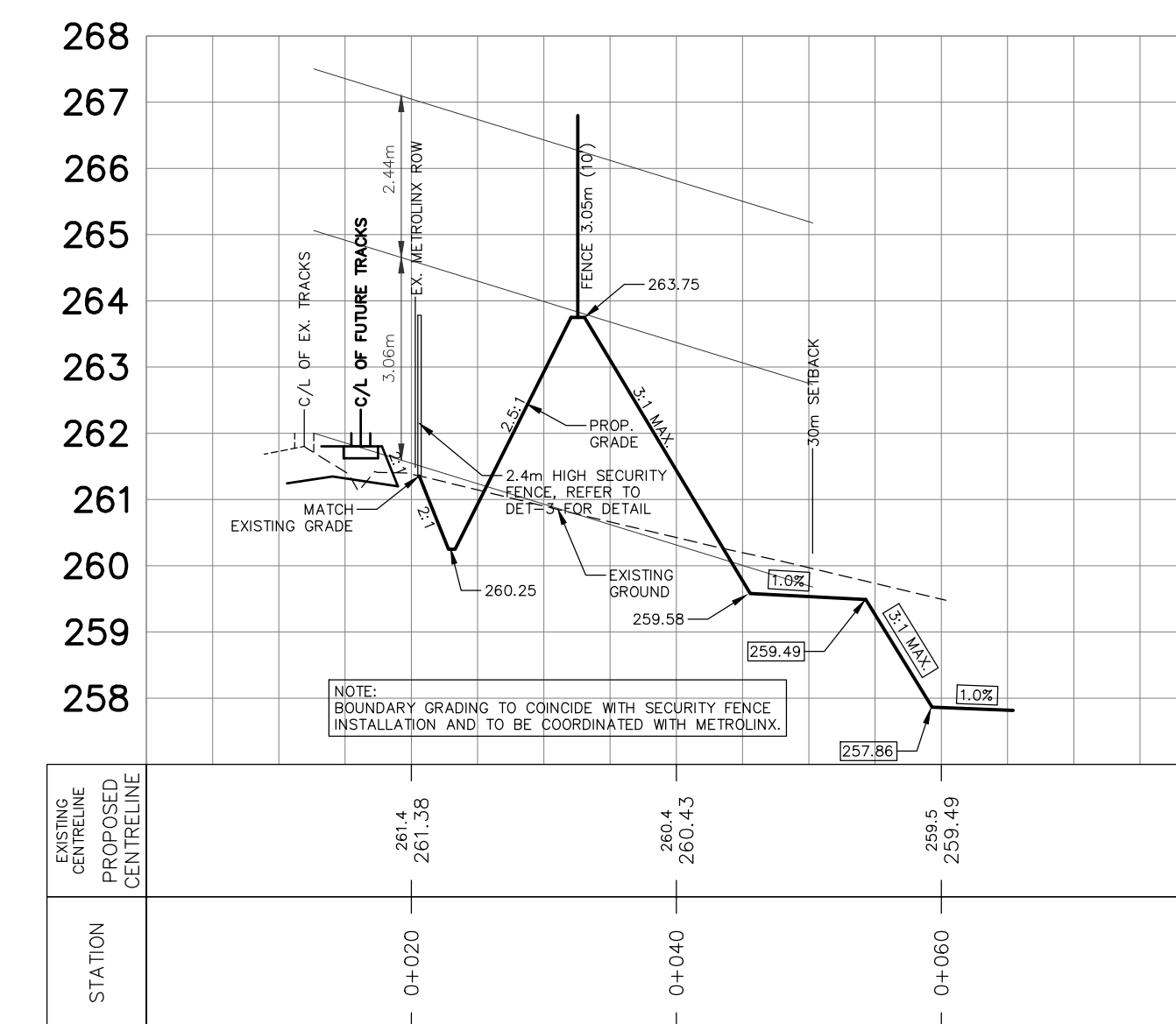
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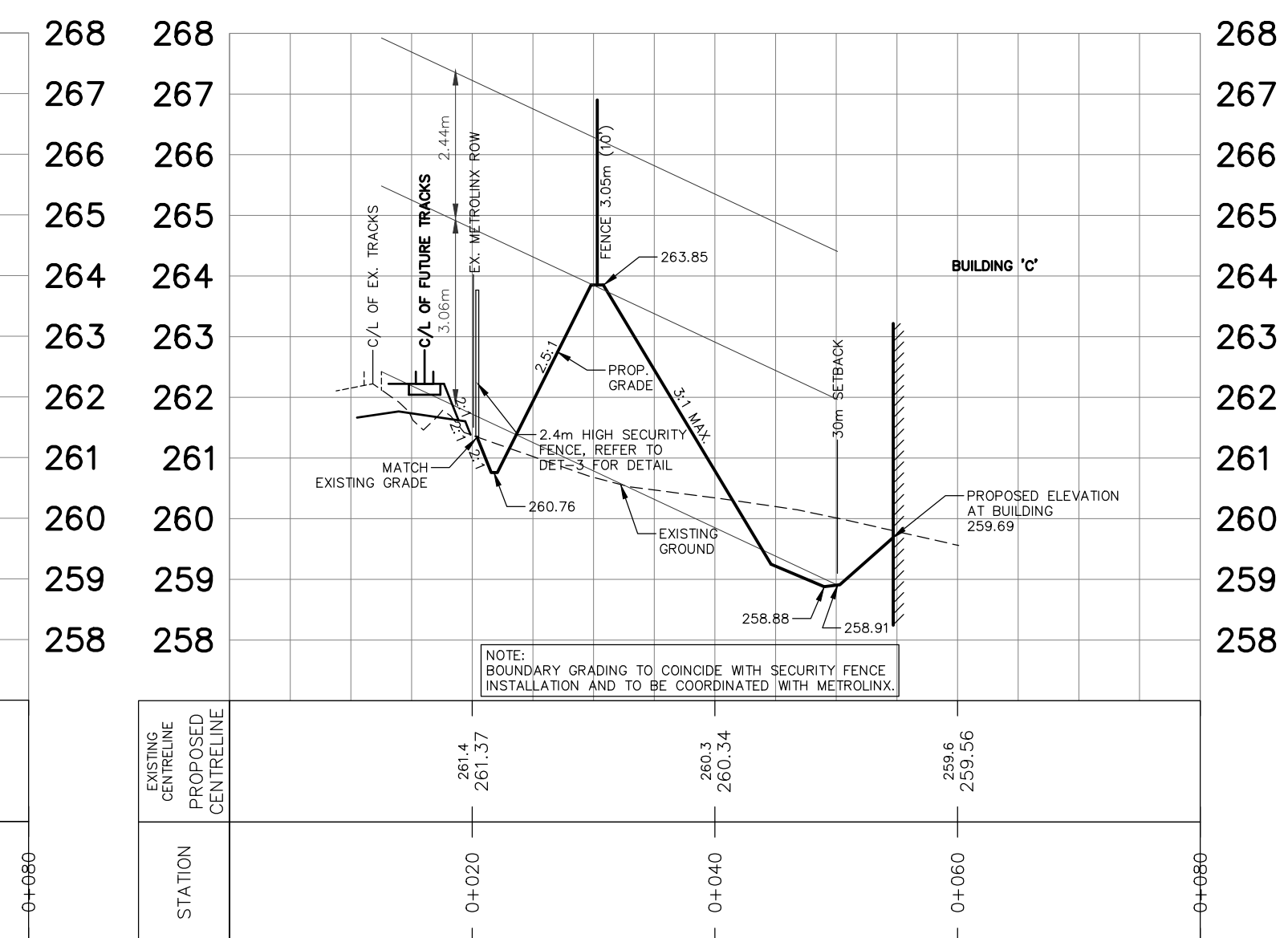
BERM XS 6



BERM XS 9



BERM XS 12



BENCHMARK:

BENCHMARK NO: 0101985454 LOCATED ON CONCRETE BRIDGE CARRYING MAPLEVIEW DRIVE E OVER LOWERS CREEK, 0.25KM EAST OF HURONIA ROAD. TABLET IS SET HORIZONTALLY IN THE NORTH FACE, 5.45M NORTH OF CENTRELINE OF ROAD, 28CM WEST OF THE NORTHEAST END OF BRIDGE, 19CM TOP OF CORNER. N4910785.889 E507254.100 ELEV 241.861

BENCHMARK NO: 0312003029 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE METAL MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.76 SOUTH FROM THE SOUTHWEST CORNER OF THE MAIN ENTRANCE TO SCHOOL AND TABLET IS ON THE SOUTHWEST FACE OF THE FLAGPOLE BASE. N4911610 E607799 ELEV 250.509

BENCHMARK NO: 0310000004 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 1km EAST OF HURONIA ROAD, N4910878.122 E607601.062 ELEV 248.096

BENCHMARK NO: 03120110013 LOCATED ON LOCHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.02km WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909870.251 E60723.590 ELEV 252.807

NO.	REVISIONS	DATE	INITIAL
6	ISSUED FOR REGISTRATION	MAY 2022	DR
5	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
4	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
3	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
2	ISSUED FOR METROLINK REVIEW	21-06-14	DR



PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE

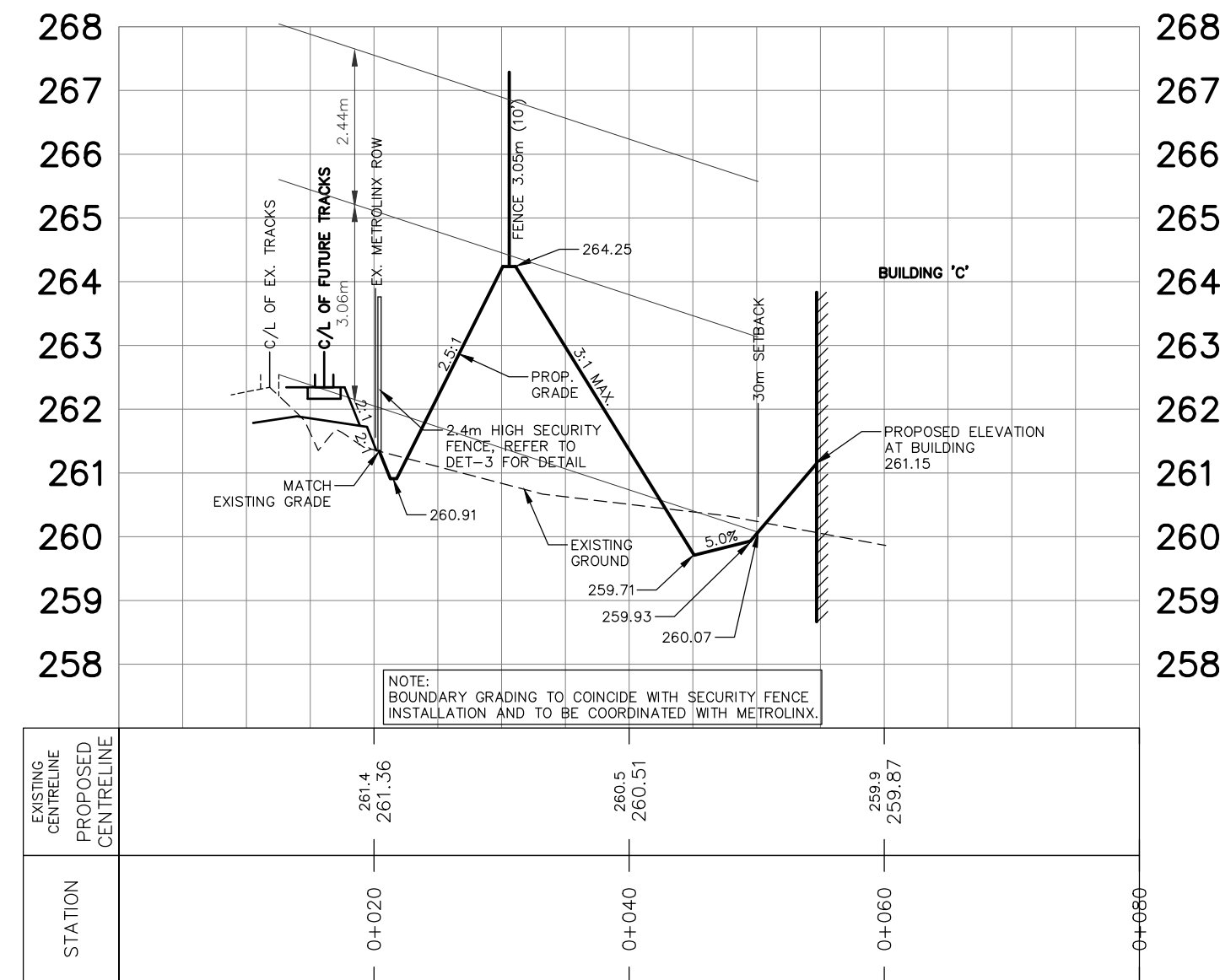


229 Mapleview Dr. E. Unit 1
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P. 705.734.2538
F. 705.734.1056

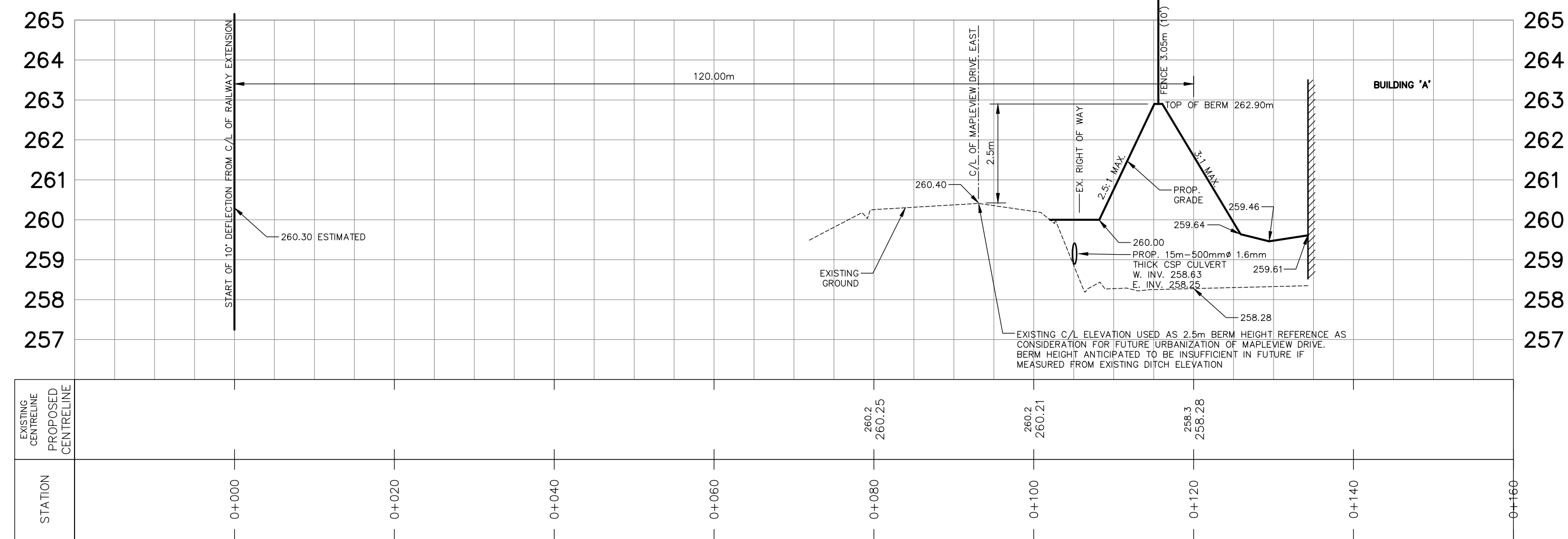
RAILWAY BERM SECTIONS

DESIGN MF	SCALE: H:1: 500 V:1:100	DATE JANUARY 2021
DRAWN KS	PROJECT PRA-19078	DWG. NO SG-3
CHECKED DR		

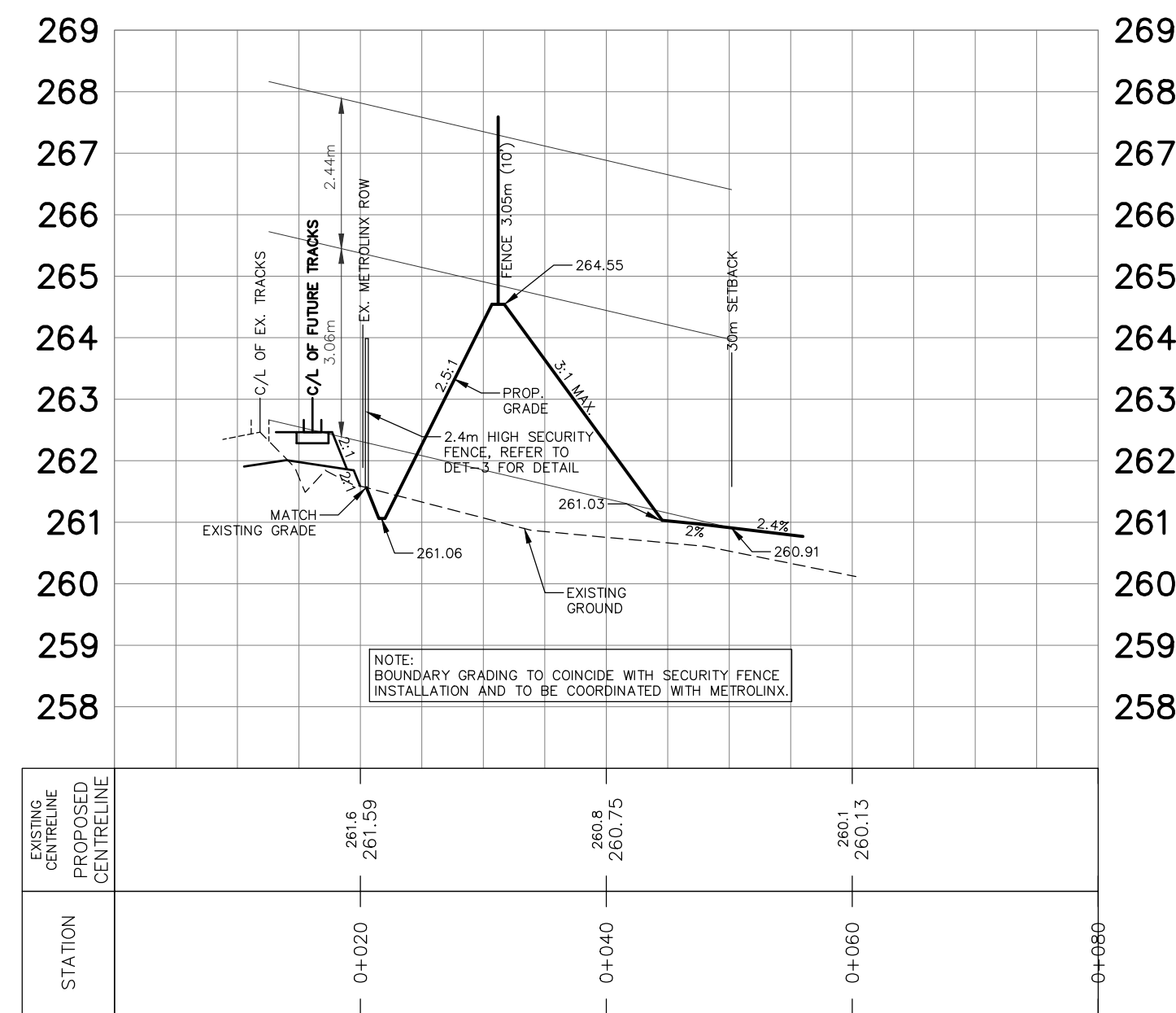
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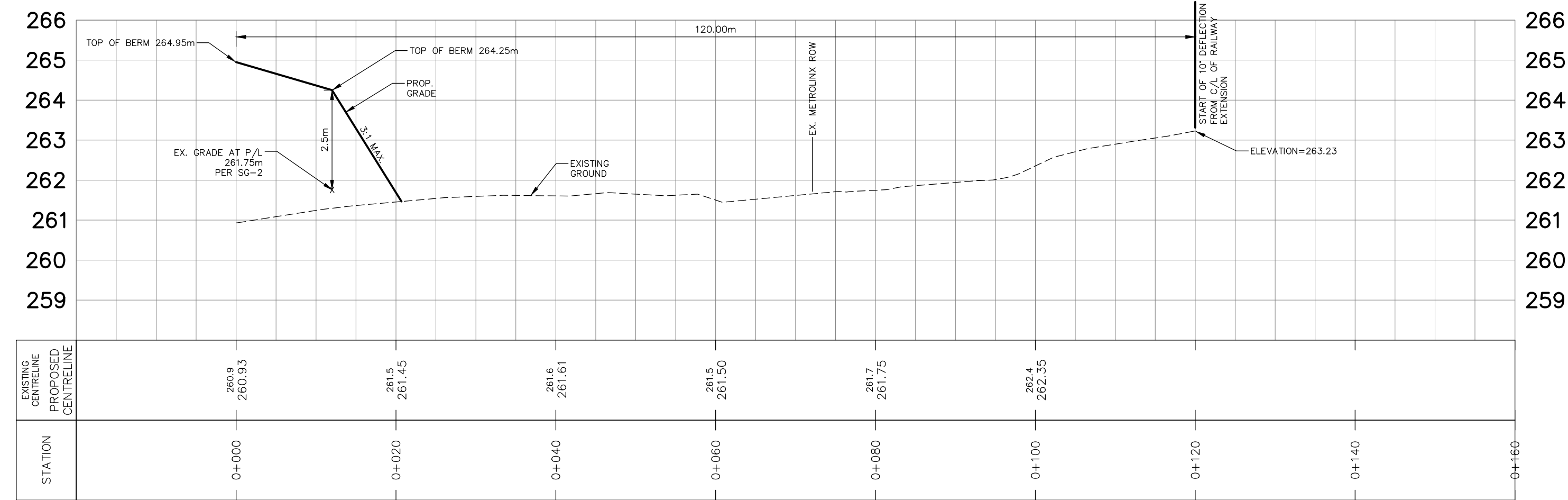
N-EXT 1



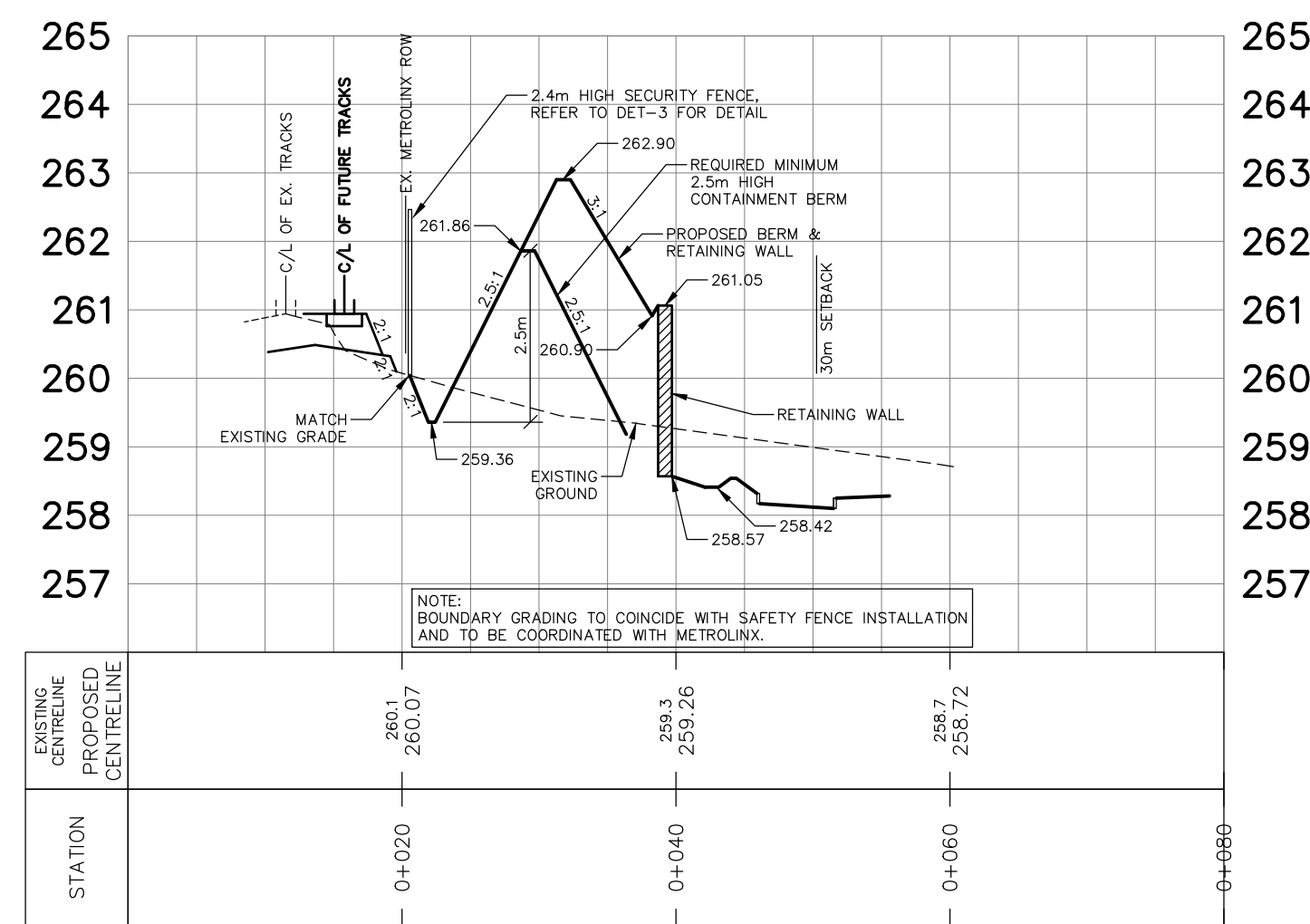
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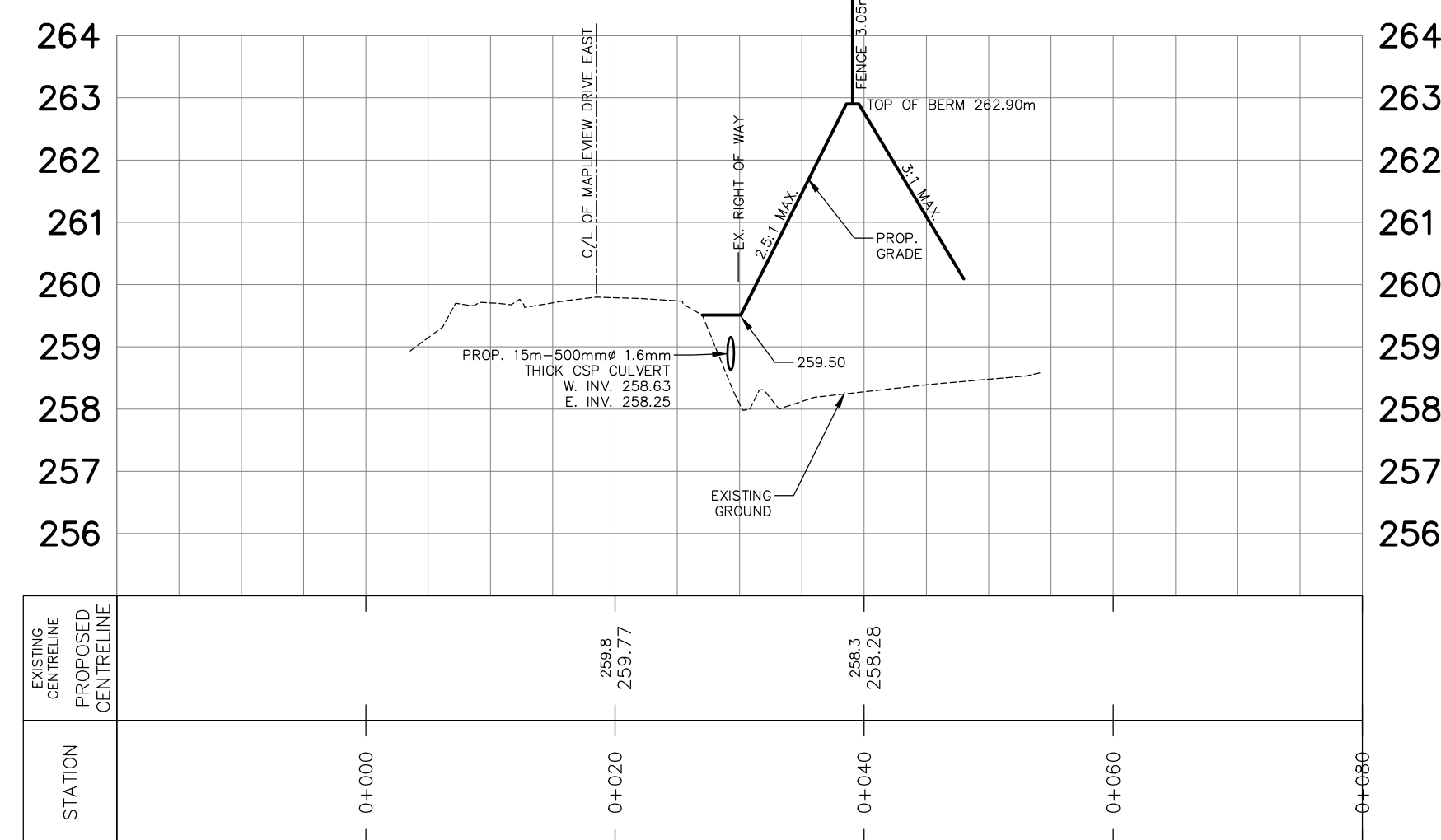
S-EXT 1



BERM XS 3B



N-EXT2



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BENCHMARK:

BENCHMARK NO: 0101985454 LOCATED ON CONCRETE BRIDGE CARRYING MAPLEVIEW DRIVE E OVER LOWERS CREEK, 0.82KM EAST OF HURONIA ROAD. TABLET IS SET HORIZONTALLY IN THE NORTH FACE, 5.45M NORTH OF CENTRELINE OF ROAD, 28CM WEST OF THE NORTHEAST END OF BRIDGE, 19CM TOP OF CORNER. N4910785.889 E507254.100 ELEV 241.861

BENCHMARK NO: 0320200229 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE METROLINK MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.7M SOUTH FROM THE SOUTHWEST CORNER OF THE MAIN ENTRANCE TO SCHOOL AND TABLET IS ON THE SOUTHWEST FACE OF THE FLAGPOLE BASE. N4911610 E607799 ELEV 250.509

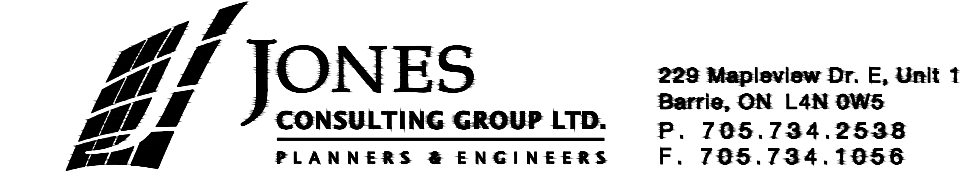
BENCHMARK NO: 0320000004 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 1km EAST OF HURONIA ROAD, N4910878.122 E607601.062 ELEV 248.096

BENCHMARK NO: 0321011013 LOCATED ON LOCHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.02km WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909870.257 E606733.690 ELEV 252.807

NO.	REVISIONS	DATE	INITIAL
6	ISSUED FOR REGISTRATION	MAY 2022	DR
5	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
4	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
3	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
2	ISSUED FOR METROLINK REVIEW	21-06-14	DR

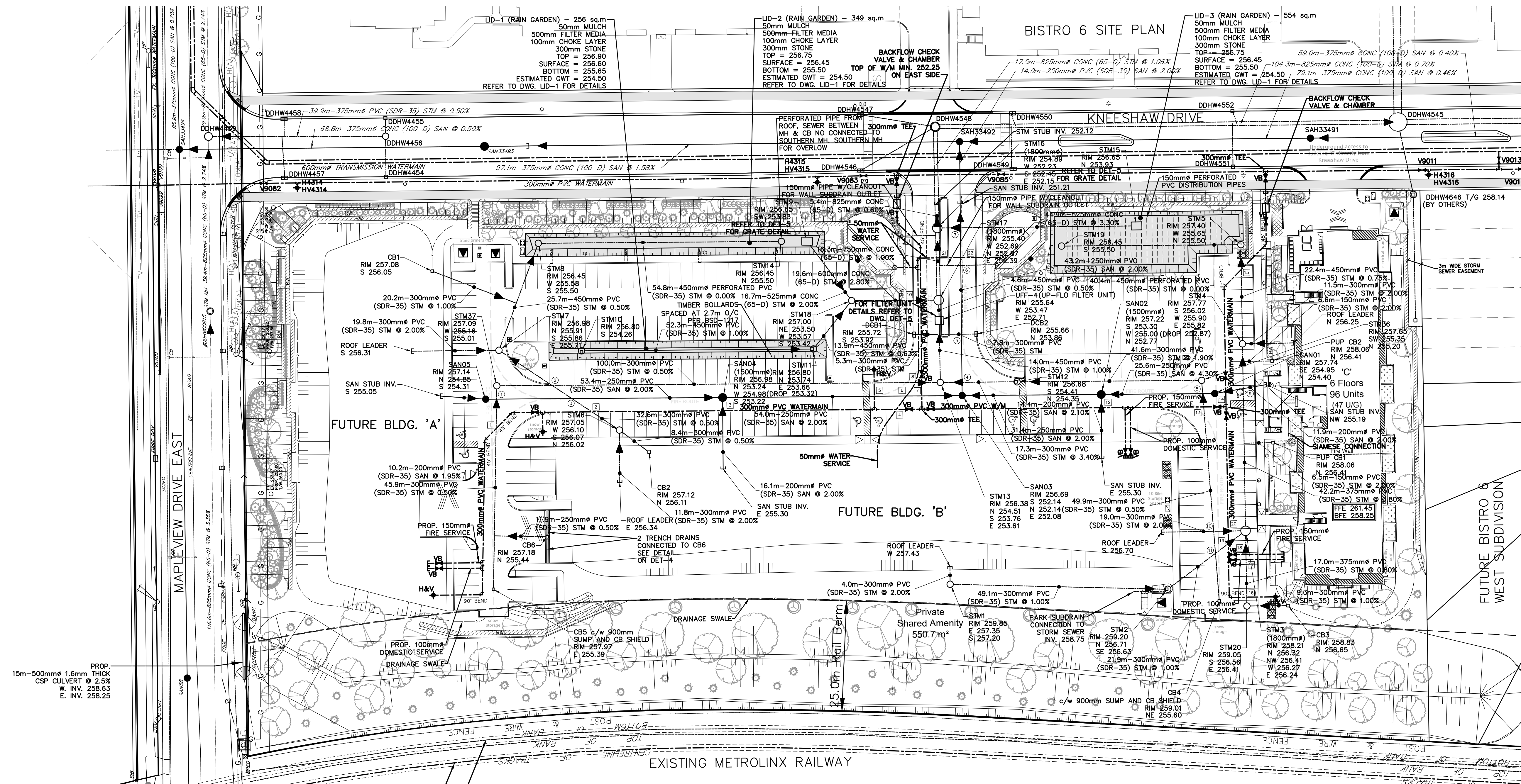
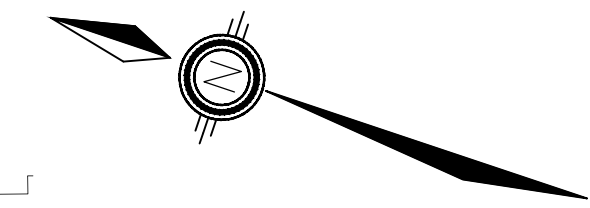


PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE



RAILWAY BERM SECTIONS

DESIGN	MF	SCALE: H:1:500 V:1:100	DATE	JANUARY 2021
DRAWN	KS	PROJECT	PRA-19078	DWG. NO
CHECKED	DR			SG-4



NOTE
REFER TO PIPE INTERFERENCE TABLES ON DWG. SS-2
 [1] STORM AND SANITARY PIPE CLEARANCE LABEL
 [2] WATERMAIN AND STORM OR SANITARY PIPE CLEARANCE LABEL

NOTE
 1. DOMESTIC AND FIRE SERVICE VALVES SHALL BE LOCATED IN THE BOULEVARD, UNLESS OTHERWISE NOTED.
 2. DOMESTIC AND FIRE SERVICES SHALL BE MECHANICALLY RESTRAINED FROM THE TEE TO THE BUILDINGS.
 3. DOMESTIC AND FIRE SERVICE RISERS ENTERING EACH BUILDING SHALL BE INSTALLED AS PER BSD-505.
 4. DOMESTIC AND FIRE SERVICE TO BE HAND SWABBED OR A SWAB IS TO BE PLACED IN SERVICE AND REMOVED FROM RISERS.
 5. THE 100mm DOMESTIC WATER SERVICE WILL REQUIRE A 100mm WATER METER (SUPPLIED) AND INSTALLED BY THE OWNER) COMPLETE WITH A BYPASS ASSEMBLY AS PER BSD-533 AND SHALL BE LOCATED IN AN APPROPRIATELY SIZED MECHANICAL ROOM.
 6. BACKFLOW PREVENTION SHALL BE PROVIDED ON ALL DOMESTIC AND FIRE SERVICES AS PER CITY OF BARRIE BYLAW 2017-121.

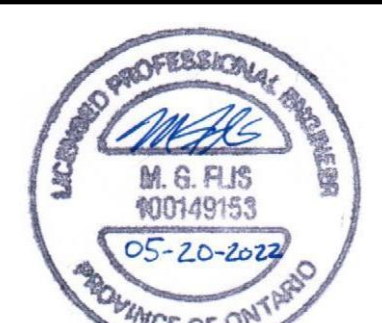
LEGEND

○ STM1	PROPOSED STORM MAINTENANCE HOLE
○ STM2	PROPOSED CATCHBASIN MAINTENANCE HOLE
□ CB1	PROPOSED CATCHBASIN
□ DCB1	PROPOSED DOUBLE CATCHBASIN
● SAN01	PROPOSED SANITARY MAINTENANCE HOLE
⊕ H&V	PROPOSED HYDRANT
⊕ VB	PROPOSED VALVE BOX
⊕	PROPOSED CURB STOP
⊕	PROPOSED LIGHT STANDARD
⊕	PROPOSED POWER PEDESTAL & VAULT
⊕	PROPOSED PULLBOX/HANDHOLE
⊕	PROPOSED PEDESTAL FOR ENTRANCE FEATURES
⊕	PROPOSED BELL GRADE LEVEL BOX
⊕	PROPOSED ROGERS GRADE LEVEL BOX
⊕	PROPOSED HYDRO TRANSFORMER
⊕	PROPOSED EV CHARGER STATION
⊕	LANDSCAPE TREE

PROP. 150mm CSP CULVERT @ 2.5%
W. INV. 256.63
E. INV. 258.25

BENCHMARK:

5	ISSUED FOR REGISTRATION	MAY 2022	DR
4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF
NO.	REVISIONS	DATE	INITIAL



PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE



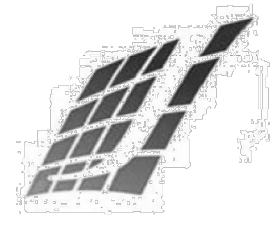
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DRAWN	KS	PROJECT	PRA-19078	DWG. NO
CHECKED	DR	PROJECT	PRA-19078	SS-1

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**Elements Condominium
100-Year Storm Sewer Design Sheet**

CLIENT: Pratt Hansen Group Inc.
PROJECT: Elements Condominium Site Plan
FILE: PRA-19078 (50)

DATE: February 2022
DESIGN: MG
CHECKED: DR



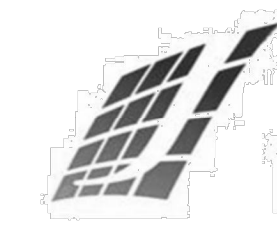
AREAS	MANHOLE		LENGTH (m)	INCREMENT			TOTAL CA	FLOW TIME (min)		I (mm/h)	TOTAL Q (cms)	S (%)	D (mm)	Q FULL (cms)	V FULL (m/s)	% FULL
	FROM	TO		C	A	CA		TO	IN							
Storm water directed to LID-1																
401	STM10	STM11	52.3	0.99	0.26	0.25	0.25	10.00	0.49	180	0.126	1.00	450	0.285	1.8	44.3
						0.00	0.25	10.00	0.49	180	0.126	1.00	450	0.285	1.8	44.3
						0.00	0.26	10.49	0.16	176	0.1251	0.63	450	0.226	1.4	55.3
Storm water directed to LID-2																
402	CB2	STM6	8.4	0.39	0.04	0.01	0.01	10.00	0.14	180	0.007	0.50	300	0.068	1.0	10.2
						0.00	0.01	10.14	0.56	179	0.052	0.50	300	0.068	1.0	78.4
403	STUB	STM6	11.8	1.00	0.09	0.09	0.09	10.00	0.10	180	0.045	2.00	300	0.137	1.9	32.9
						0.00	0.10	10.14	0.56	179	0.052	0.50	300	0.068	1.0	78.4
404	STUB	STM7	19.8	1.00	0.17	0.17	0.17	10.00	0.17	180	0.086	2.00	300	0.137	1.9	62.6
						0.00	0.17	10.17	0.34	174	0.087	1.00	300	0.097	1.4	7.1
405	CB1	STM7	25.7	0.30	0.05	0.01	0.01	10.00	0.25	180	0.007	1.00	300	0.097	1.4	7.1
						0.00	0.29	10.71	0.34	174	0.040	0.50	450	0.202	1.3	69.2
406	STM9**	STM18	16.7	0.93	0.32	0.30	0.92	11.04	0.10	171	0.4399	2.00	525	0.608	2.8	72.3
Storm Water Directed to LID-3																
407	STUB	STM1	4.0	1.00	0.10	0.10	0.10	10.00	0.03	180	0.050	2.00	300	0.137	1.9	36.6
						0.00	0.10	10.03	0.60	180	0.050	1.00	300	0.097	1.4	51.6
408	STM2	STM3	21.9	0.34	0.16	0.05	0.15	10.63	0.27	175	0.075	1.00	300	0.097	1.4	77.6
						0.00	0.16	10.63	0.27	175	0.075	1.00	300	0.097	1.4	77.6
409	STUB	STM3	19.0	1.00	0.08	0.08	0.08	10.00	0.16	180	0.042	2.00	300	0.137	1.9	30.6
410	CB3	STM20	9.3	0.24	0.11	0.03	0.03	10.00	0.11	180	0.013	1.00	300	0.097	1.4	13.5
						0.00	0.03	10.11	0.20	179	0.013	0.80	375	0.157	1.4	8.3
411	PUP CB1	TEE	6.5	0.38	0.01	0.00	0.00	10.00	0.09	180	0.002	2.00	150	0.022	1.2	11.3
						0.01	0.01	10.00	0.09	180	0.003	2.00	150	0.022	1.2	13.8
412	PUP CB2	TEE	6.6	0.49	0.01	0.00	0.28	10.90	0.50	172	0.132	0.80	375	0.157	1.4	84.0
						0.00	0.28	10.90	0.50	172	0.132	0.80	375	0.157	1.4	84.0
413	STUB	STM4	11.5	1.00	0.17	0.17	0.17	10.00	0.10	180	0.084	2.00	300	0.137	1.9	61.7
						0.00	0.44	11.39	0.24	169	0.208	0.75	450	0.247	1.6	84.2
414	STM15***	STM16	44.9	0.93	0.37	0.34	1.03	11.64	0.21	167	0.4781	3.30	525	0.781	3.6	61.2
Storm Water Directed to 100-Year Trunk Storm Sewer																
	UFF-4	STM17	4.6			0.00	0.26	12.64	0.06	96	0.068	0.50	450	0.202	1.3	33.8
						0.00	1.18	11.14	0.09	171	0.559	2.80	600	1.027	3.6	54.4
	STM18****	STM17	19.6			0.00	1.44	12.70	0.11	169	0.635	1.00	750	1.113	2.5	87.0
						0.00	1.44	12.70	0.11	169	0.635	1.00	750	1.113	2.5	87.0
	STM17****	STM16	16.3			0.00	2.47	12.81	0.18	158	1.086	0.60	825	1.112	2.1	97.7
						0.00	2.47	12.81	0.18	158	1.086	0.60	825	1.112	2.1	97.7

Note: All runoff coefficients for sizing the 100-year storm sewer have been increased by 25% in accordance with Table 3.3 of the City of Barrie Storm Drainage and Stormwater Management Policies and Design Guidelines.
 *Total CA has been adjusted so the flow matches the peak flow release rate experienced during the governing 100yr 6hr SCS LID PCSWMM model for LID-1. $Q_p = 0.1251 \text{ m}^3/\text{s}$
 ** Total CA has been adjusted so the flow matches the peak flow release rate experienced during the governing 100yr 4hr Chicago LID PCSWMM model for LID-2. $Q_p = 0.4399 \text{ m}^3/\text{s}$
 ***Total CA has been adjusted so the flow matches the peak flow release rate experienced during the governing 100yr 4hr Chicago LID PCSWMM model for LID-3. $Q_p = 0.4781 \text{ m}^3/\text{s}$
 ****Adjusted total CA values from LIDs have been carried forward through the design sheet.
 $Q = 0.0028 \cdot C \cdot A \cdot I$ (cms) C=RUNOFF COEFFICIENT I=RAINFALL INTENSITY (100-Year) = 1426.408(I.C. + 5.273) * 0.759 A=AREA (ha)

**Elements Condominium
5-Year Storm Sewer Design Sheet**

CLIENT: Pratt Hansen Group Inc.
PROJECT: Elements Condominium Site Plan
FILE: PRA-19078 (50)

DATE: February 2022
DESIGN: MG
CHECKED: DR



AREAS	MANHOLE		LENGTH (m)	INCREMENT			TOTAL CA	FLOW TIME (min)		I (mm/h)	TOTAL Q (cms)	S (%)	D (mm)	Q FULL (cms)	V FULL (m/s)	% FULL
	FROM	TO		C	A	CA		TO	IN							
Storm water directed to UFF-4 bypassing all LIDs																
501	CB5	STM37	45.9	0.35	0.31	0.11	0.11	10.00	0.79	109	0.033	0.50	300	0.068	1.0	48.0
						0.00	0.11	10.79	1.72	105	0.032	0.50	300	0.068	1.0	46.1
502	CB4	STM36	49.9	0.25	0.04	0.01	0.01	10.00	0.86	109	0.003	0.50	300	0.068	1.0	4.1
						0.00	0.01	10.86	0.72	104	0.003	0.50	300	0.068	1.0	4.0
503	STM12	STM13	17.3	0.78	0.05	0.04	0.05	11.58	0.11	101	0.015	3.40	300	0.178	2.5	8.2
						0.00	0.05	11.58	0.11	101	0.015	3.40	300	0.178	2.5	8.2
504	STM13	UFF-4	14.0	0.86	0.11	0.09	0.26	12.51	0.13	97	0.068	1.00	450	0.285	1.8	24.0
						0.00	0.26	12.64	0.06	96	0.068	0.50	450	0.202	1.3	33.8

$Q = 0.0028 \cdot C \cdot A \cdot I$ (cms) C=RUNOFF COEFFICIENT I=RAINFALL INTENSITY (5-Year) = 853.608(I.C. + 4.699) * 0.766 A=AREA (ha)



**SANITARY SEWER DESIGN - LOCAL SEWER
Development Details Basis**

DESIGN SHEET 1 of 1
FILE NO PRA-19078
CONTRACT / PROJECT Elements Condominium Plan - Pratt Hansen Group Inc.

n ≥ 0.013
M = 5/P*0.2 Babbitt
M=1+1/[4+(P*0.5)] Harmon
 $Q_p = P \cdot q \cdot M / 86.4$
 $Q_e = I \cdot A$
 $Q_{tot} = Q_p + Q_e$

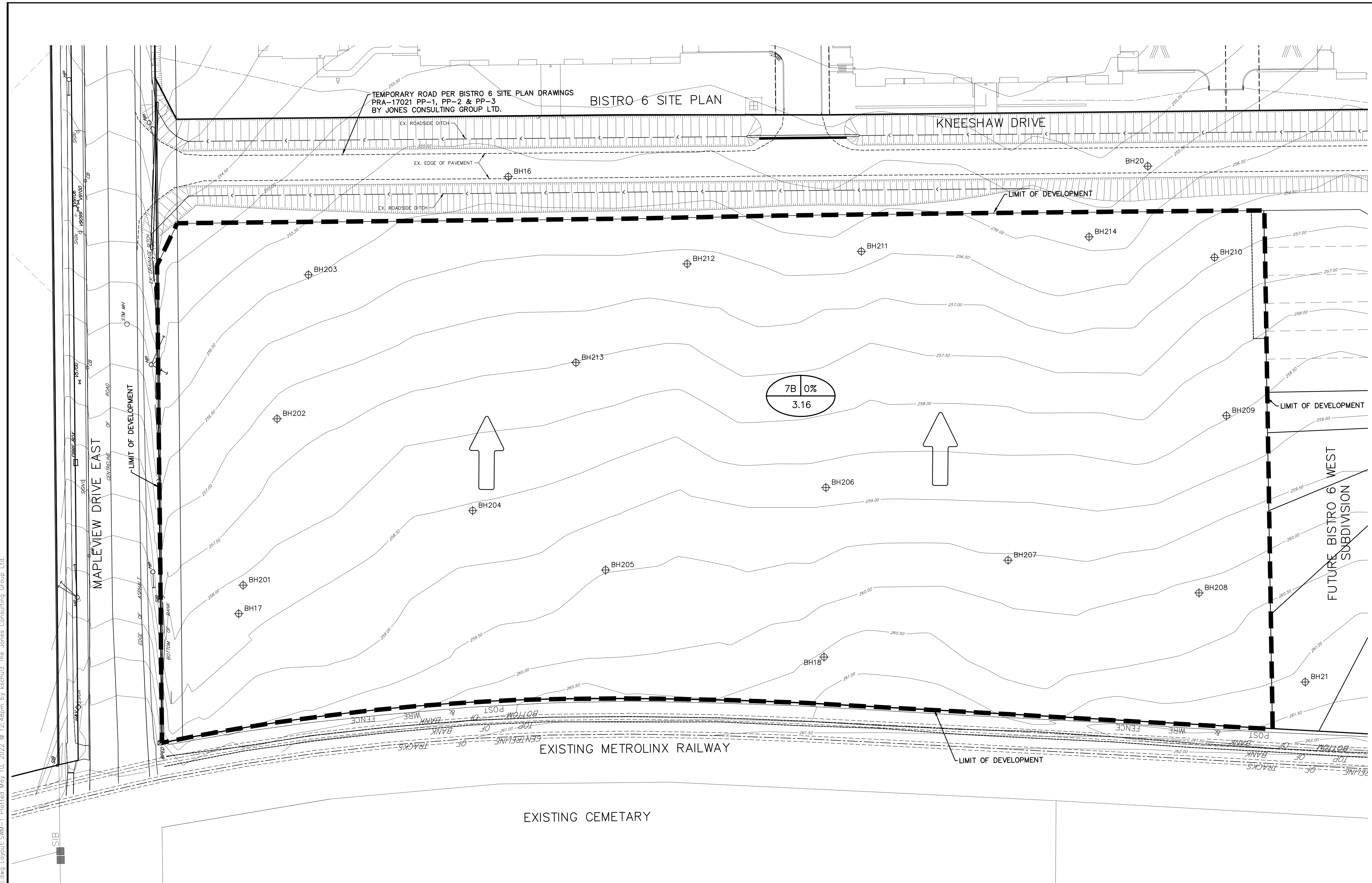
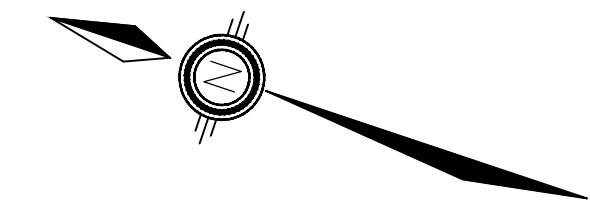
Numbers in blue or text in red are equations
(Harmon or Babbitt peaking factor where; M ≥ 2), the greater of the two is used in the spreadsheet. Please refer to Section 3.3.1.1 of the Barrie Sanitary Design Guidelines for additional guidance on which peaking factor to use.
(Peak population flow where; q = 225 L/day/person; P = population in thousands) 225 litres/person/day
(Peak extraneous flow; I = 0.1 L/s/ha over development area)
(Total peak flow as the sum of peak population flow and peak extraneous flow)

STREET / AREA	MAINTENANCE HOLE		DWELL UNITS	DWELL (ACC) UNITS	DENSITY P.P.U.	POP. (P)	POP. (ACC)	M PEAKING FACTOR BABBITT	M PEAKING FACTOR HARMON	Max PEAKING FACTOR	Q _p (l/s)	AREA (ha)	AREA (ACC) (ha)	Q _e (l/s)	Q _{tot} (l/s)	L (m)	D (mm)	S (%)	Q _F FULL (l/s)	d/D ^{0.5}	d/D ^{0.5} >0.5 or >0.7	Velocity FULL (m/s)	Velocity Partial ⁽¹⁾ (m/s)	Velocity ⁽²⁾ > 0.6 (m/s)
	FROM	TO																						
Area 1 - Building C	BUILDING C	SAN01	96	96	1.67	160	160	7.211	4.182	7.211	3.010	0.17	0.17	0.017	3.027	11.9	200	2.00%	46.384	0.173	Ok	1.476	0.829	Ok
Area 2	SAN01	SAN02	0	96	0	0	160	7.211	4.182	7.211	3.010	0.16	0.33	0.033	3.044	25.6	250	4.30%	123.314	0.108	Ok	2.512	1.052	Ok
Area 3 - Building B (southern half)	BUILDING B	SAN02	78	78	1.67	130	130	7.516	4.210	7.516	2.550	0.14	0.14	0.014	2.564	14.4	200	2.10%	47.529	0.157	Ok	1.513	0.804	Ok
Area 4	SAN02	SAN03	0	174	0	0	291	6.402	4.084	6.402	4.845	0.09	0.56	0.056	4.901	31.4	250	2.00%	84.100	0.163	Ok	1.713	0.928	Ok
Area 5 - Building A	BUILDING A	SAN05	94	94	1.67	157	157	7.241	4.185	7.241	2.960	0.17	0.17	0.017	2.977	10.2	200	1.95%	45.801	0.172	Ok	1.458	0.819	Ok
Area 6	SAN05	SAN04	0	94	0	0	157	7.241	4.185	7.241	2.960	0.17	0.34	0.034	2.994	53.4	250	2.00%	84.100	0.129	Ok	1.713	0.803	Ok
Area 7 - Building B (northern half)	BUILDING B	SAN04	78	78	1.67	130	130	7.516	4.210	7.516	2.550	0.13	0.13	0.013	2.563	16.1	200	2.00%	46.384	0.159	Ok	1.476	0.791	Ok
Area 8	SAN04	SAN03	0	172	0	0	287	6.417	4.086	6.417	4.800	0.09	0.56	0.056	4.856	54.0	250	2.00%	84.100	0.163	Ok	1.713	0.928	Ok
Area 9	SAN03	SAH33492	0	346	0	0	578	5.580	3.941	5.580	8.396	0.13	1.25	0.125	8.521	57.2	250	2.00%	84.100	0.214	Ok	1.713	1.094	Ok

DATE: February 28th, 2022 CALCULATED BY: MG CHECKED BY: MF
 *For sizing of the 375mm Trunk Sewer on Kneeshaw Drive, refer to Sanitary Sewer Design - Trunk Sewer worksheet.

- (1) without extraneous flow
- (2) with extraneous flow
- (3) d/D>0.5 for pipes 375 and less, d/D>0.85 for pipes greater than 375
- (4) Velocity check based on the lesser of full flow or partial velocity

Crossing No.	PIPE 1	PIPE 2	Clearance
1	WM Top 254.71	STM Bottom 255.21	0.50m
2	WM Top 254.60	STM Bottom 255.98	1.38m
3	WM Top 254.40	SAN Bottom 255.03	0.63m
4	50mm WM Bottom 255.00	300mm WM Top 254.20	0.80m
5	WM Bottom 253.29	SAN Top 252.79	0.50m
6	WM Bottom 253.14	SAN Top 252.64	0.50m
7	WM Bottom 253.80	SAN Top 252.57	1.23m
8	WM Top 254.00	STM Bottom 254.53	0.53m
9	WM Top 253.39	STM Bottom 253.89	0.50m
10	WM Top 252.49	STM Bottom 252.99	0.50m
11	WM Top 252.35	STM Bottom 253.33	0.50m
12	WM Top 254.00	SAN Bottom 255.05	1.05m
13	WM Top 254.40	STM Bottom 255.38	0.98m
14	WM Top 254.45	STM Bottom 255.00	0.55m
15	WM Top 254.25	STM Bottom 255.69	1.44m
16	WM Top 255.89	STM Bottom 256.39	0.50m
17	WM Top 255.83	STM Bottom 256.33	0.50m
18	WM Top 255.82	STM Bottom 256.32	0.50m
19	WM Top 255.96	STM Bottom 256.46	0.50m
20	WM Top 255.90	STM Bottom 256.40	0.50m
21	WM Top 251.80	STM Bottom 252.30	0.50m
22			



LEGEND

- STORM CATCHMENT AREA
- EX. BORE HOLE
- OVERLAND FLOW DIRECTION
- CATCHMENT AREA ID NUMBER, IMPERVIOUS %, AREA IN HECTARES (ha)

G:\Eng_3D\PRAs-19078\Production\DWG\PRAs-19078-SWM-1 (BIDS) A & B REMOVED.dwg, Layout: SWM-1 Plotted May 10, 2022 @ 12:48pm by Ishtuiz The Jones Consulting Group Ltd.

NO.	REVISIONS	DATE	INITIAL
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4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF



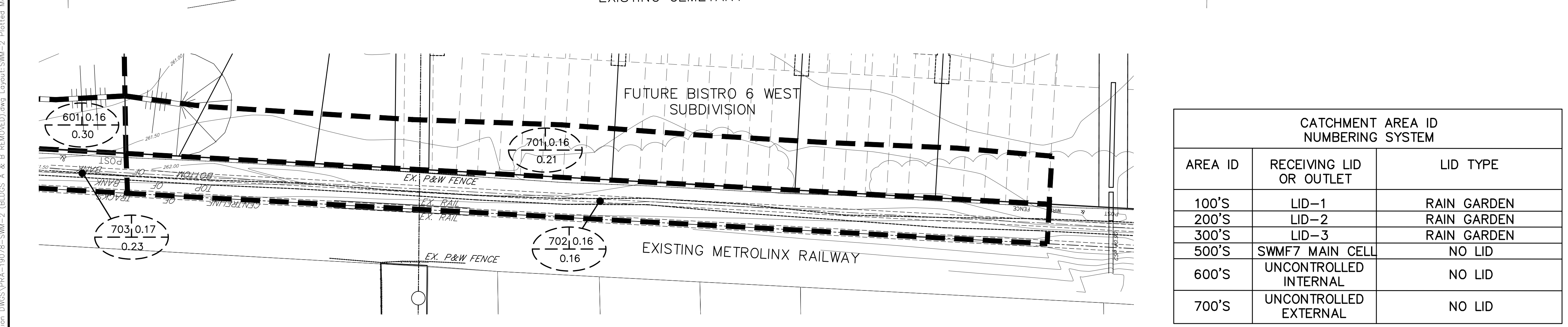
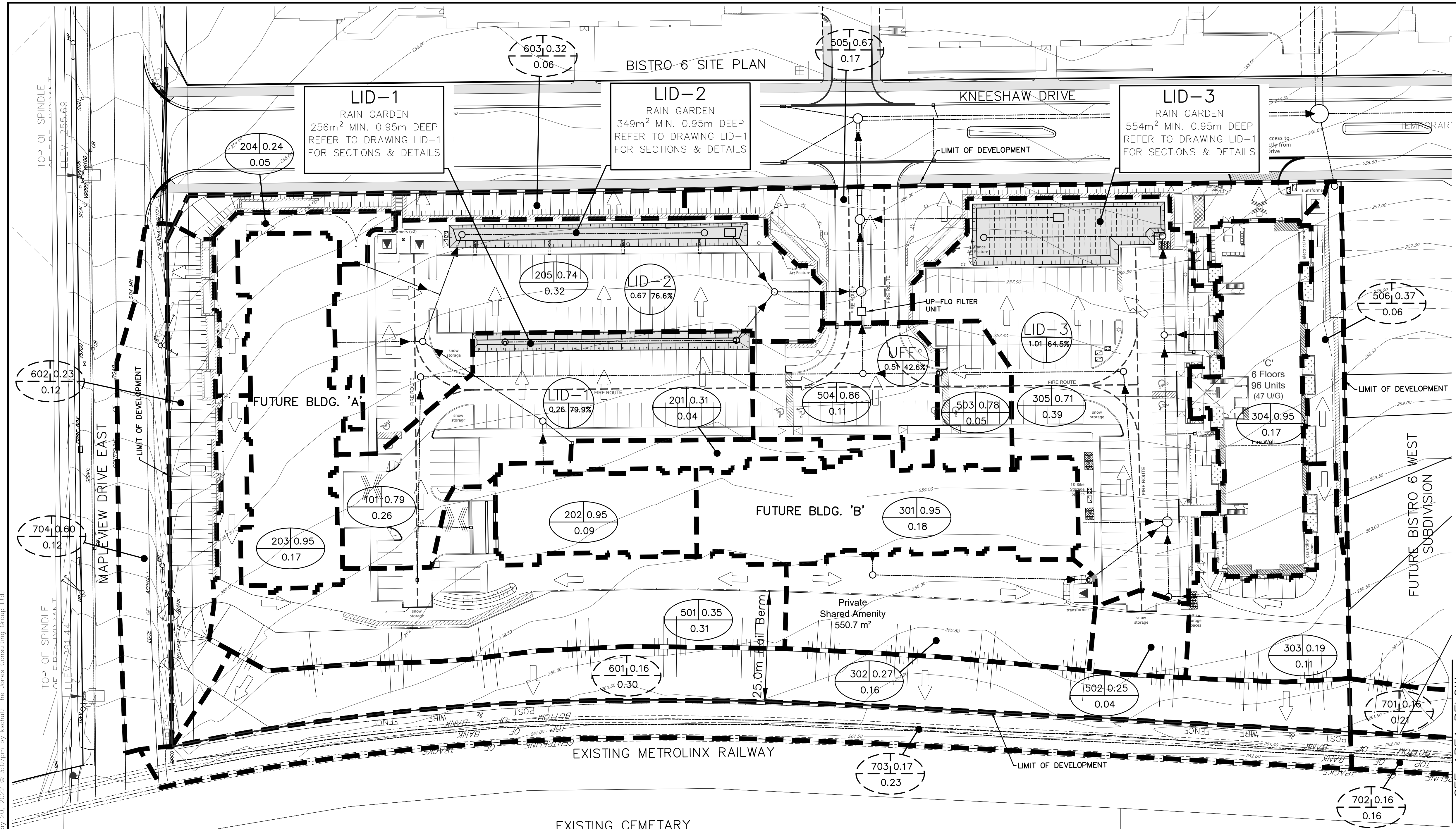
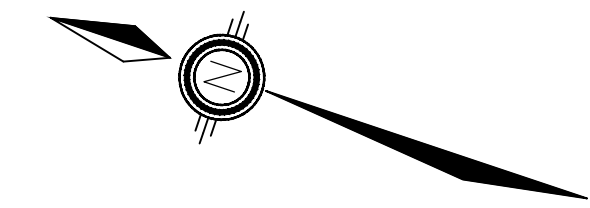
PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE

STORMWATER MANAGEMENT PLAN
PRE-DEVELOPMENT CONDITIONS

JONES CONSULTING GROUP LTD.
PLANNERS & ENGINEERS

229 Mapleview Dr. E. Unit 1
Barrie, ON L4N 0W5
P. 705.734.2538
F. 705.734.1056

DESIGN	MF	SCALE: 1:500	DATE	FEB. 2021
DRAWN	KS	PROJECT	DWG. NO	
CHECKED	DR	PRAs-19078	SWM-1	



LEGEND

- PROPOSED 100 YR STORM SEWER, FLOW DIRECTION AND MAINTENANCE HOLE
- PROPOSED INTERNAL LOCAL STORM SEWER, FLOW DIRECTION AND MAINTENANCE HOLE
- PROPOSED CATCH BASIN
- PROPOSED DOUBLE CATCH BASIN
- PROPOSED LID FOOTPRINT
- PROPOSED SWALE/DITCH
- STORM SUB-CATCHMENT AREA
- PROPOSED OVERLAND DRAINAGE FLOW DIRECTION

CATCHMENT AREA ID NUMBERING SYSTEM

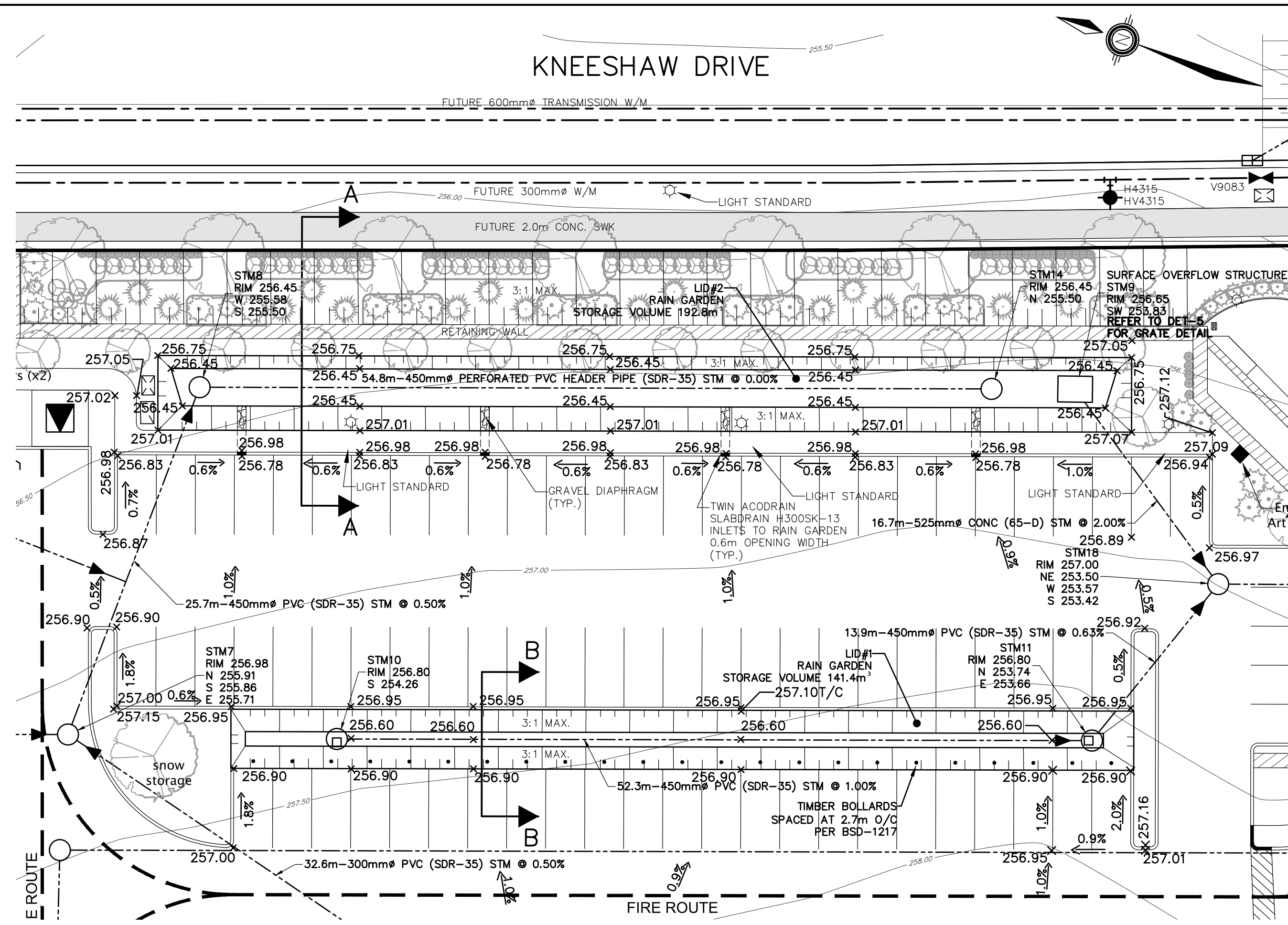
AREA ID	RECEIVING LID OR OUTLET	LID TYPE
100'S	LID-1	RAIN GARDEN
200'S	LID-2	RAIN GARDEN
300'S	LID-3	RAIN GARDEN
500'S	SWMF7 MAIN CELL	NO LID
600'S	UNCONTROLLED INTERNAL	NO LID
700'S	UNCONTROLLED EXTERNAL	NO LID

INTERNAL CATCHMENT AREA NUMBER: 401 0.15 RUNOFF COEFFICIENT, 0.27 AREA (ha)

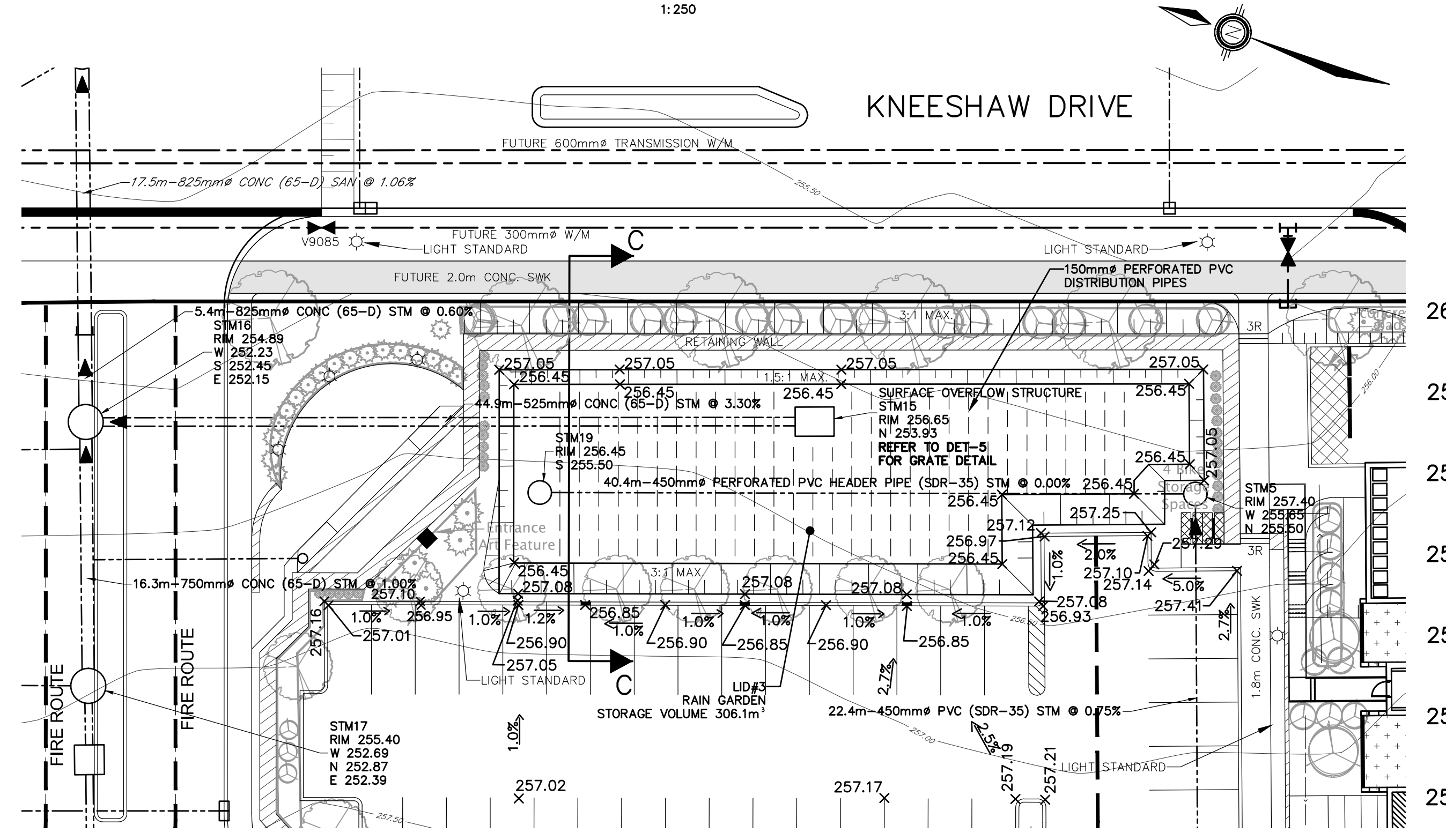
EXTERNAL CATCHMENT AREA NUMBER: 502 0.32 RUNOFF COEFFICIENT, 0.07 AREA (ha)

AREA (ha) LID-1 0.26 79.9% IMPERVIOUS PERCENTAGE

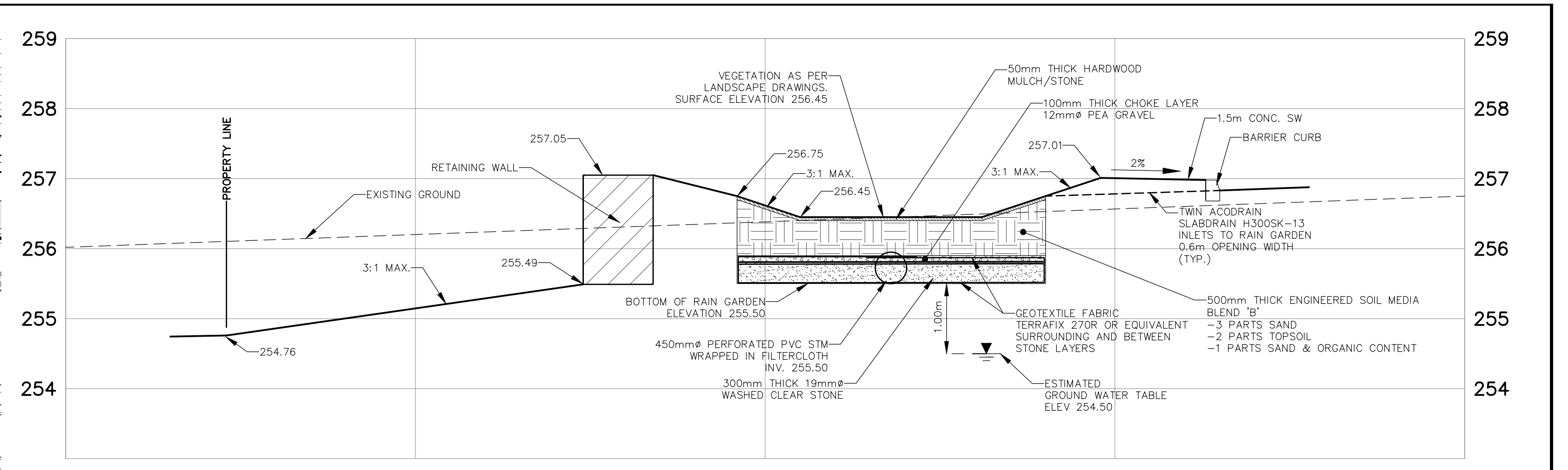
G:\Eng_3D\PRAs-19078\Production\DWG\PRAs-19078-SWM-2 (BLDGS A & B REMOVED).dwg, Layout: SWM-2, Plotted May 20, 2022 @ 3:07pm by espinuz. The Jones Consulting Group Ltd. BENCHMARK: 0101985454 LOCATED ON CONCRETE BRIDGE CARRYING MAPLEVIEW DRIVE OVER LOKEY'S CREEK, 0.85M EAST OF HURONIA ROAD. TABLE IS SET HORIZONTALLY IN THE NORTH FACE, 5.45M NORTH OF CENTRELINE OF ROAD, 28CM WEST OF THE NORTHEAST END OF BRIDGE, 19CM TOP OF CORNER. N491078.559 E807294.100 ELEV 241.861 BENCHMARK: 0312003029 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE VERTICAL MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.7M SOUTH FROM THE SOUTHWEST CORNER OF THE MAIN ENTRANCE TO SCHOOL AND TABLE IS ON THE SOUTHWEST SIDE OF THE FLAGPOLE BASE. N4911610 E807799 ELEV 250.550 BENCHMARK: 0310080084 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 1km EAST OF HURONIA ROAD, N4910878.122 E807801.062 ELEV 248.896 BENCHMARK: 0312011003 LOCATED ON LOCHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.02km WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909876.251 E808743.590 ELEV 252.807	5	ISSUED FOR REGISTRATION	MAY 2022	DR		PRATT HANSEN GROUP INC. ELEMENTS SITE PLAN CITY OF BARRIE STORMWATER MANAGEMENT PLAN POST-DEVELOPMENT CONDITIONS LID MODEL CATCHMENT AREAS		229 Mapleview Dr. E. Unit 1 Barrie, ON L4N 0W5 P. 705.734.2538 F. 705.734.1058
	4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR				
	3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF				
	2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF				
	1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF				
NO.	REVISIONS	DATE	INITIAL				DESIGN MF DRAWN KS CHECKED DR	SCALE: 1:500 PROJECT PRA-19078 DATE FEB. 2021 DWG. NO SWM-2



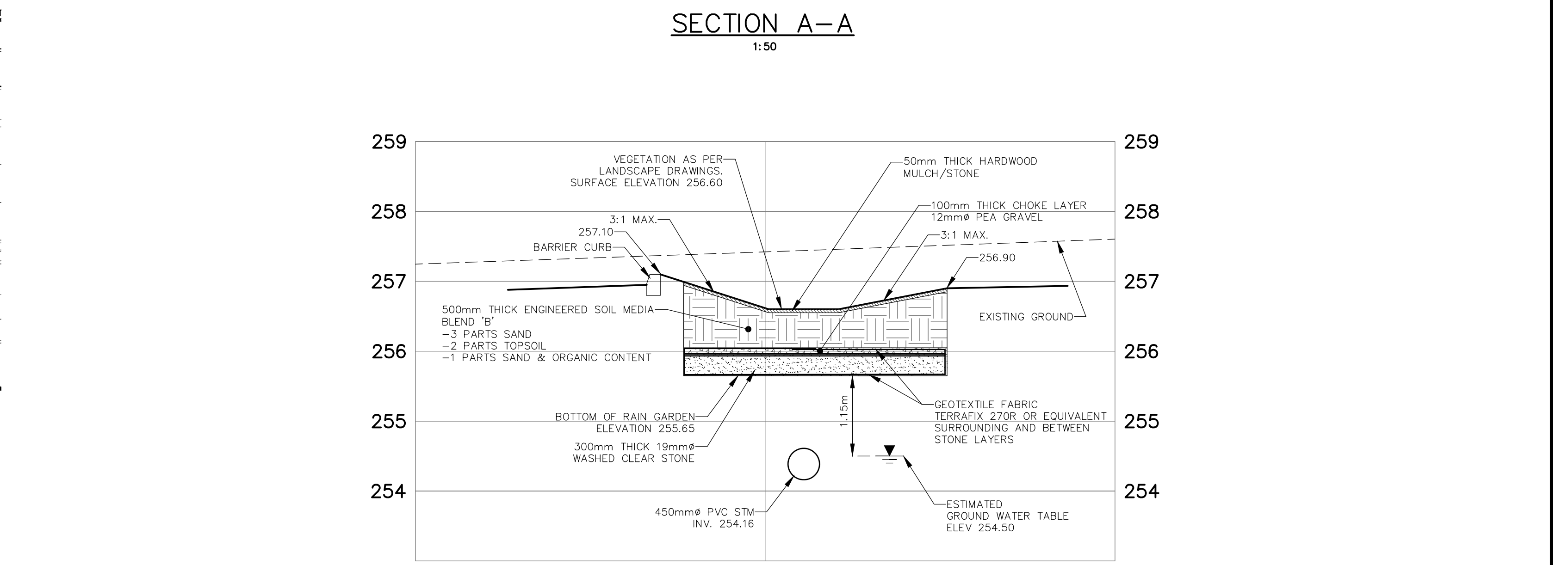
LID#1 & LID#2 RAIN GARDENS
PLAN VIEW
1:250



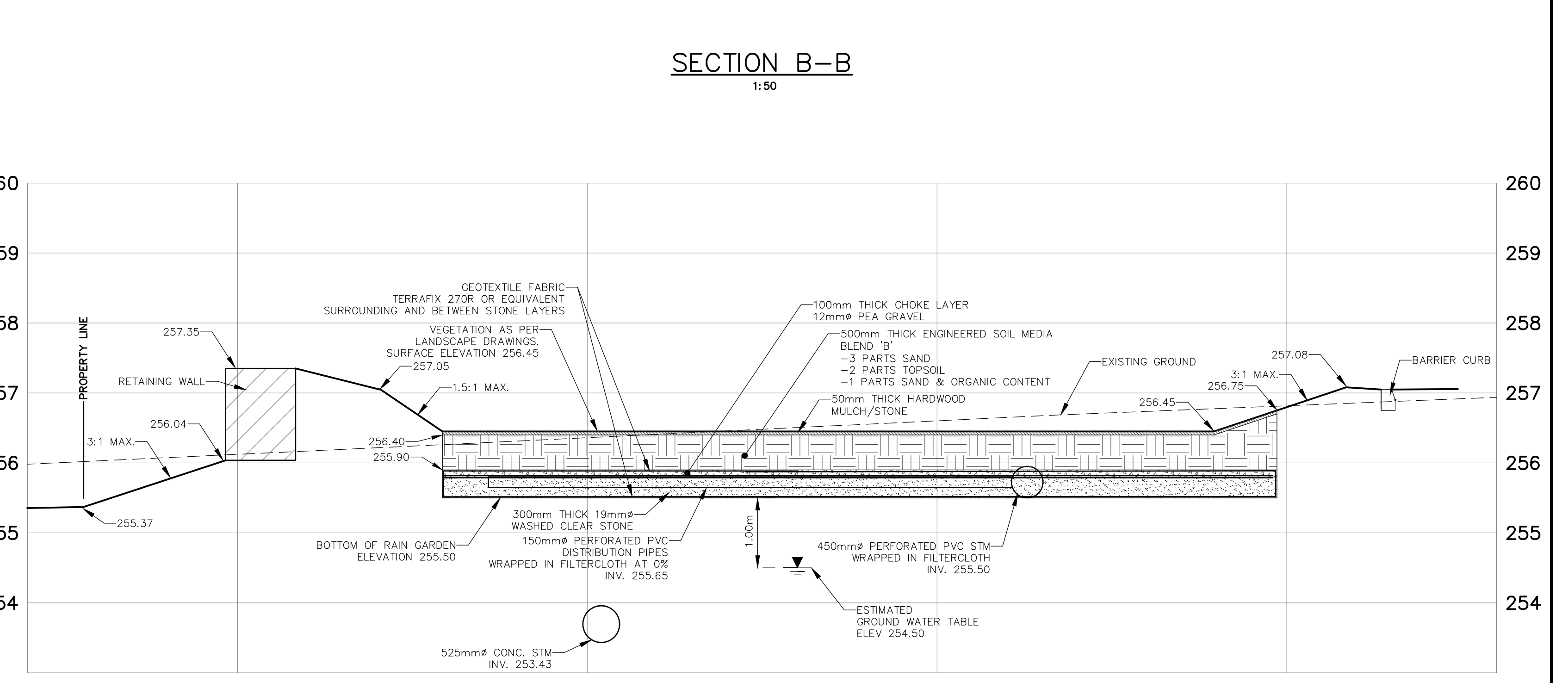
LID#3 RAIN GARDEN
PLAN VIEW
1:250



SECTION A-A
1:50



SECTION B-B
1:50



SECTION C-C
1:50

NO.	REVISIONS	DATE	INITIAL
5	ISSUED FOR REGISTRATION	MAY 2022	DR
4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF



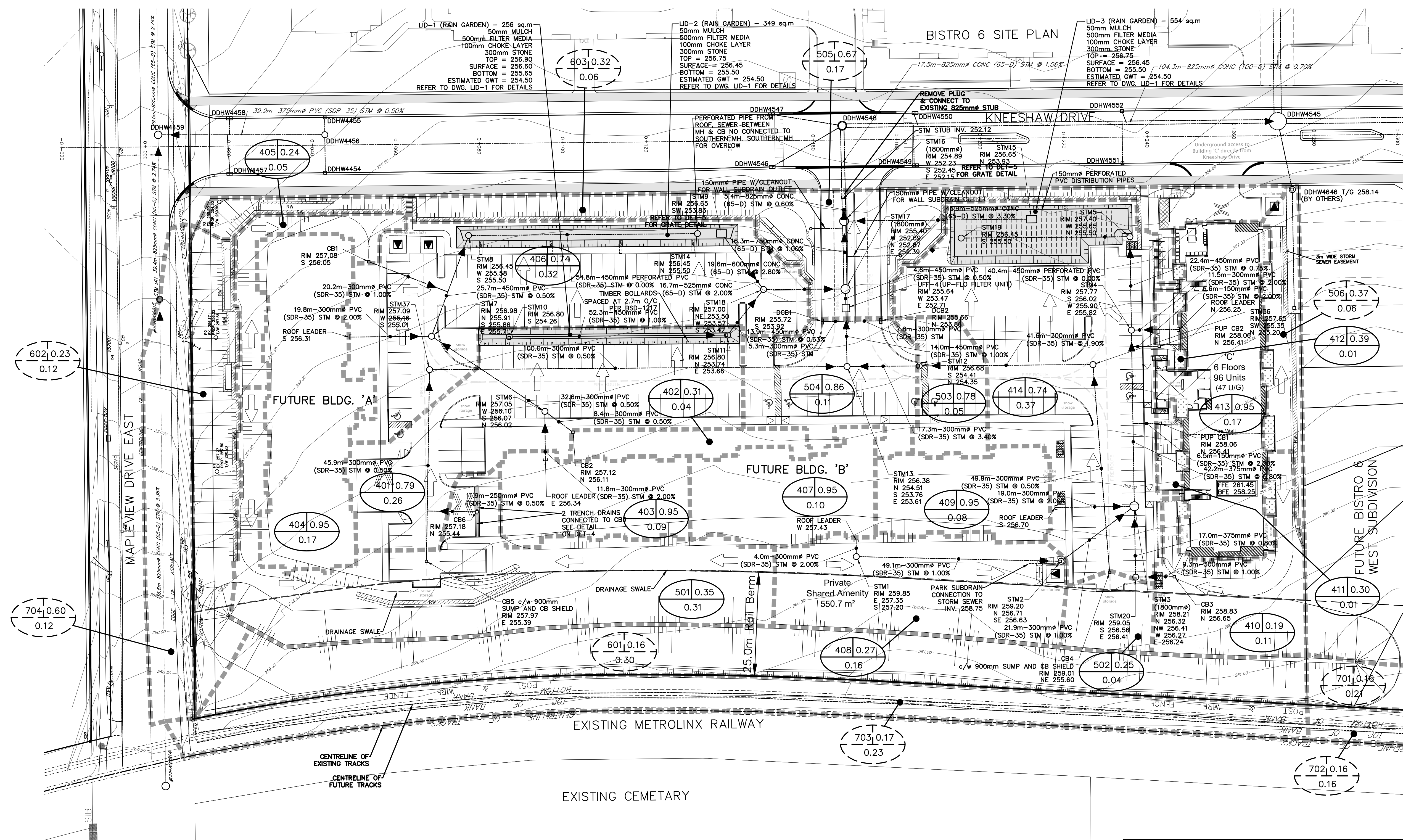
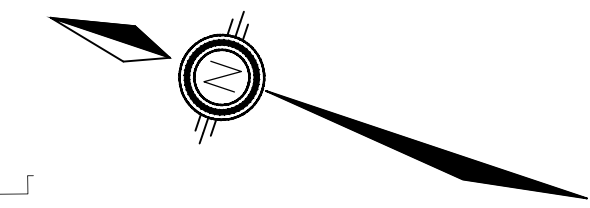
PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE

RAIN GARDENS
LID SECTIONS & DETAILS

JONES CONSULTING GROUP LTD.
PLANNERS & ENGINEERS
229 Mapleview Dr. E. Unit 1
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F. 705.734.1056

DESIGN	MF	SCALE:	AS NOTED	DATE	FEB. 2021
DRAWN	KS	PROJECT	PRA-19078	DWG. NO	LID-1
CHECKED	DR				

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REFER TO DESIGN SHEET ON DRAWING SS-2

LEGEND

- PROPOSED STORM DRAINAGE BOUNDARY
- PROPOSED STORM MAINTENANCE HOLE
- PROPOSED CATCHBASIN MAINTENANCE HOLE
- PROPOSED DOUBLE CATCHBASIN
- PROPOSED CATCHBASIN
- PROPOSED STORM SEWER INSULATION PER DETAIL ON DWG. DET-1
- PROPOSED OVERLAND DRAINAGE FLOW DIRECTION

INTERNAL CATCHMENT
AREA NUMBER $\frac{401}{0.15}$ RUNOFF COEFFICIENT
AREA (ha)

EXTERNAL CATCHMENT
AREA NUMBER $\frac{502}{0.32}$ RUNOFF COEFFICIENT
AREA (ha)

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NO.	REVISIONS	DATE	INITIAL
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4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF

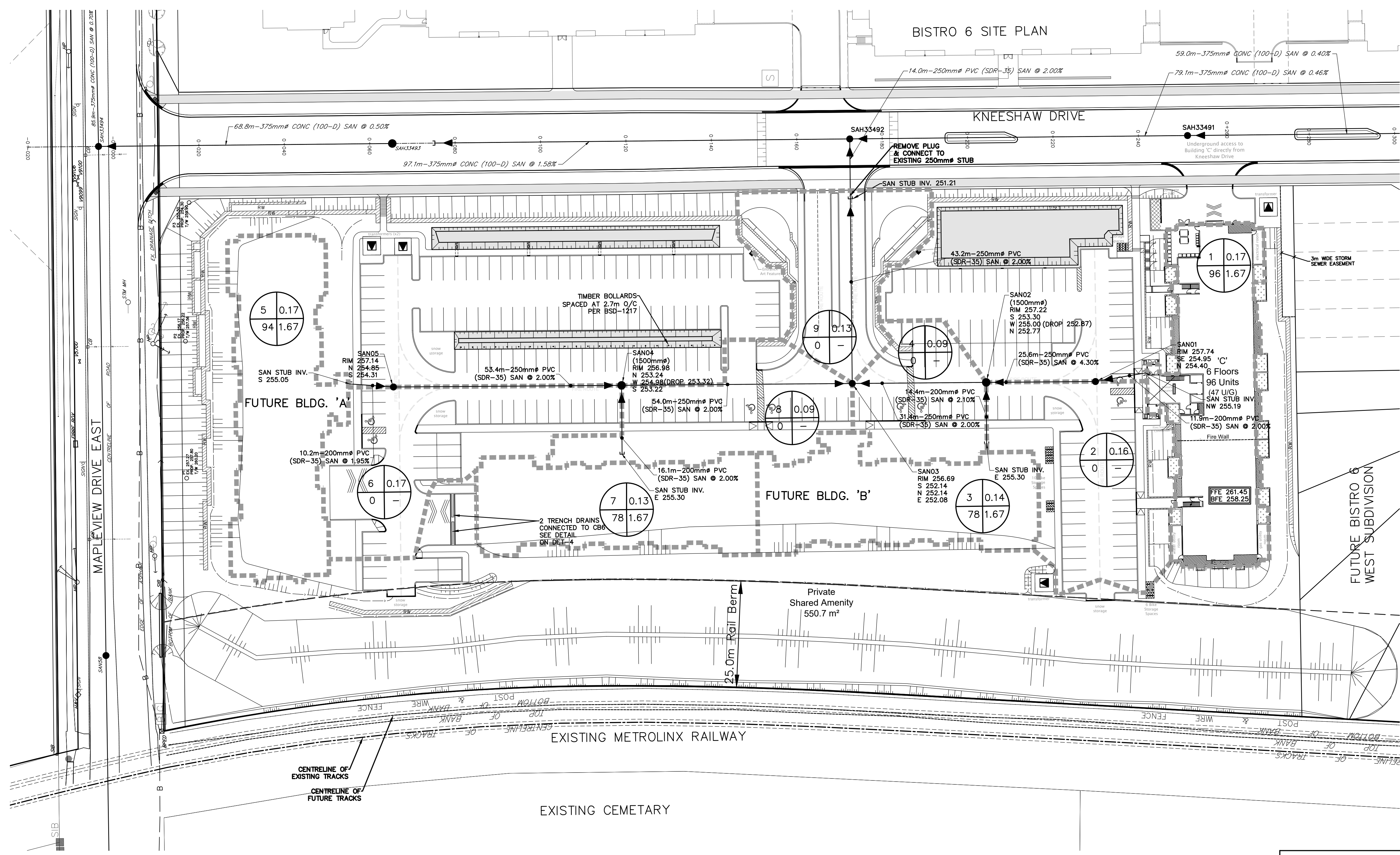


PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE



STORM DRAINAGE PLAN

DESIGN MF	SCALE: 1:500	DATE JANUARY 2021
DRAWN KS	PROJECT PRA-19078	DWG. NO. STM-1
CHECKED DR		



LEGEND

- PROPOSED SANITARY DRAINAGE BOUNDARY
- PROPOSED SANITARY DRAINAGE DIRECTION

SANITARY CATCHMENT AREA ID No. **201 0.32** AREA (ha)

NO. OF UNITS **2 3.13** PERSONS PER UNIT

● SAN01 PROPOSED SANITARY MAINTENANCE HOLE

REFER TO DESIGN SHEET ON DRAWING SS-2

NO.	REVISIONS	DATE	INITIAL
5	ISSUED FOR REGISTRATION	MAY 2022	DR
4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF



PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE

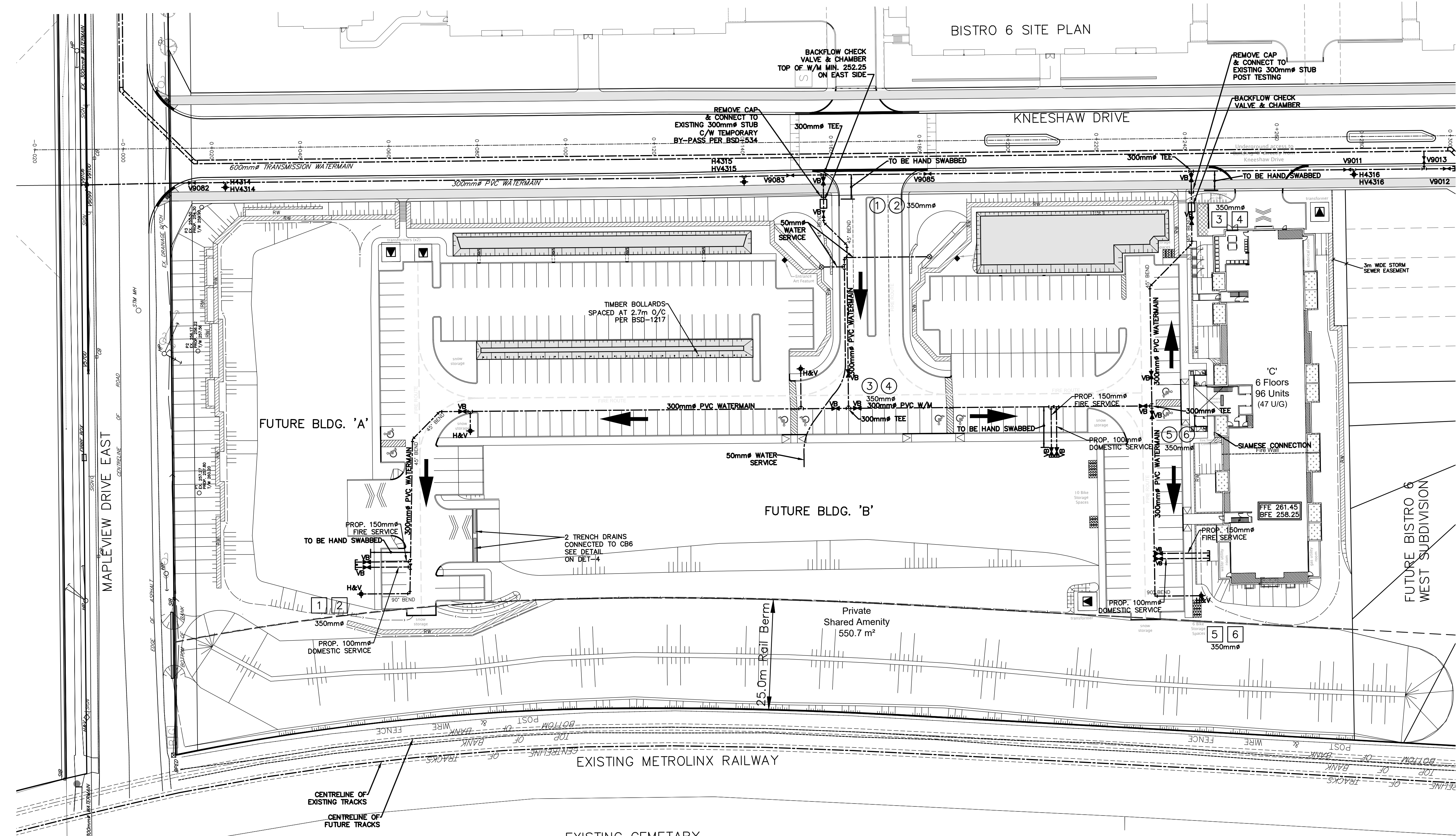
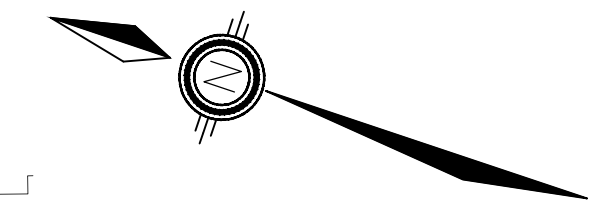
SANITARY DRAINAGE PLAN

JONES CONSULTING GROUP LTD.
PLANNERS & ENGINEERS

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DESIGN MF	SCALE: 1:500	DATE JANUARY 2021
DRAWN KS	PROJECT	DWG. NO
CHECKED DR	PRA-19078	SAN-1

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WATERMAIN TESTING AND DISINFECTION NOTES

1. THE FOLLOWING SEQUENCE WILL BE UTILIZED IN THE COMMISSIONING OF THE WATER SYSTEM: SWAB AND CHANGE THE WATERMAIN, PRESSURE TEST, CHLORINATE, FLUSHING AND SAMPLING.
2. ALL PROCEDURES ARE TO BE COMPLETED THROUGH A BYPASS CONNECTION TO THE EXISTING WATERMAIN, c/w BACKFLOW PREVENTION VALVE.
3. THE VALVES ARE TO BE OPERATED BY CITY REPRESENTATIVES ONLY.
4. THE FINAL CONNECTION TO THE EXISTING SYSTEM WILL NOT BE PERMITTED UNTIL ALL COMPONENTS OF THE TESTING AND DISINFECTION PROCEDURE HAVE BEEN COMPLETED TO THE SATISFACTION OF THE CITY.
5. HYDROSTATIC TESTING SHALL BE PERFORMED ON THE COMPLETED DISTRIBUTION SYSTEM IN SECTIONS NOT EXCEEDING 500 METRES IN LENGTH IN ACCORDANCE WITH AWWA C600. FOR POLYETHYLENE PIPE THE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 701. TESTING OF SECTIONS THAT CONSIST OF VARYING PIPE MATERIALS WILL NOT BE PERMITTED. ALL SECONDARY MAIN VALVES MUST BE OPEN DURING TESTING WITH THE EXCEPTION OF THOSE BEING USED TO DIVIDE THE SYSTEM INTO SECTIONS FOR THE PURPOSE OF TESTING.
6. THE SYSTEM SHALL BE DISINFECTED USING THE "CONTINUOUS FEED" METHOD IN ACCORDANCE WITH AWWA C651. FOLLOWING THE REQUIRED 24 HOUR CONTACT TIME, THE SYSTEM IS TO BE FLUSHED. THE CHLORINATED WATER MUST BE NEUTRALIZED USING AN APPROPRIATE CHEMICAL SUCH AS SODIUM THIOSULPHATE. THE DISCHARGED WATER WILL DRAIN TO THE ON-SITE STORM SEWER.
7. SAMPLES FOR BACTERIOLOGICAL TESTING SHALL BE COLLECTED BY THE CITY A MINIMUM OF 24 HOURS AFTER FLUSHING IS COMPLETED IN ACCORDANCE WITH AWWA C651. SAMPLES SHALL BE COLLECTED FROM EVERY 350 METRES OF NEW WATERMAIN PLUS ONE SAMPLE FROM THE END OF EACH OF THE LINES AND AT LEAST ONE SAMPLE FROM EACH BRANCH (OPSS 441.07.25). FOLLOWING THE RECEIPT OF TWO CONSECUTIVE SETS OF ACCEPTABLE TEST RESULTS THE CITY WILL PROVIDE WRITTEN NOTIFICATION THAT A FINAL CONNECTION CAN BE MADE TO THE EXISTING DISTRIBUTION SYSTEM.
8. A CONTINUITY TEST OF THE TRACER WIRE SHALL BE COMPLETED WITH POINT TO POINT READINGS RECORDED AND APPROVED BY THE CITY.
9. THE FINAL CONNECTION SHALL NOT BE MADE UNTIL ALL OF THE ABOVE TESTING REQUIREMENTS HAVE BEEN SATISFACTORILY COMPLETED AND THE CITY HAS PROVIDED WRITTEN NOTIFICATION TO PROCEED. THE LENGTH OF PIPE REQUIRED TO CONNECT THE NEW WATER SYSTEM TO THE EXISTING DISTRIBUTION SYSTEM SHALL NOT EXCEED 5.5 METRES AND SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651.

NOTE

1. DOMESTIC AND FIRE SERVICE VALVES SHALL BE LOCATED IN THE BOULEVARD, UNLESS OTHERWISE NOTED.
2. DOMESTIC AND FIRE SERVICES SHALL BE MECHANICALLY RESTRAINED FROM THE TEE TO THE BUILDINGS.
3. DOMESTIC AND FIRE SERVICE RISERS ENTERING EACH BUILDING SHALL BE INSTALLED AS PER BSD-505.
4. DOMESTIC AND FIRE SERVICE TO BE HAND SWABBED OR A SWAB IS TO BE PLACED IN SERVICE AND REMOVED FROM RISERS.
5. THE 100mm DOMESTIC WATER SERVICE WILL REQUIRE A 100mm WATER METER (SUPPLIED AND INSTALLED BY THE OWNER) COMPLETE WITH A BYPASS ASSEMBLY AS PER BSD-533 AND SHALL BE LOCATED IN AN APPROPRIATELY SIZED MECHANICAL ROOM.
6. BACKFLOW PREVENTION SHALL BE PROVIDED ON ALL DOMESTIC AND FIRE SERVICES AS PER CITY OF BARRIE BYLAW 2017-121.

LEGEND

	PROPOSED HYDRANT
	PROPOSED VALVE BOX
	PROPOSED CURB STOP
	SWAB NUMBER, INSERTION LOCATION & SIZE
	SWAB NUMBER, REMOVAL LOCATION & SIZE
	SWAB TRAVEL DIRECTION

G:\Eng_3D\PRAs-19078_Users\Jones\PRAs-19078_DESIGNBASE (B)DGS A & B REMOVED.dwg Layout:WM-1 Printed: May 19, 2022 @ 10:31am by eschnitz The Jones Consulting Group Ltd. Barrie, ON LAN OWS P. 705.734.2538 F. 705.734.1056

NO.	REVISIONS	DATE	INITIAL
5	ISSUED FOR REGISTRATION	MAY 2022	DR
4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF

BENCHMARK:	DESCRIPTION	DATE	INITIAL
BENCHMARK NO: 0101985454 LOCATED ON CONCRETE BRIDGE CARRYING MAPLEVIEW DRIVE E OVER LOWERY CREEK, 0.83M EAST OF HURONIA ROAD. TABLET IS SET HORIZONTALLY IN THE NORTH FACE, 5.45M NORTH OF CENTRELINE OF ROAD, 28CM WEST OF THE NORTHEAST END OF BRIDGE, 19CM TOP OF CORNER. N4910788.889 E507294.100 ELEV 241.861			
BENCHMARK NO: 03120030229 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE VERTICAL MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.7M SOUTH FROM THE SOUTHEAST CORNER OF THE MAIN ENTRANCE TO SCHOOL AND TABLET IS ON THE SOUTHWEST OF THE FLAGPOLE BASE. N4911610 E607799 ELEV 250.509			
BENCHMARK NO: 03100000084 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 1km EAST OF HURONIA ROAD, N4910878.122 E607801.062 ELEV 248.896			
BENCHMARK NO: 03120110013 LOCATED ON LOCKHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.02km WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909870.257 E606733.690 ELEV 252.807			



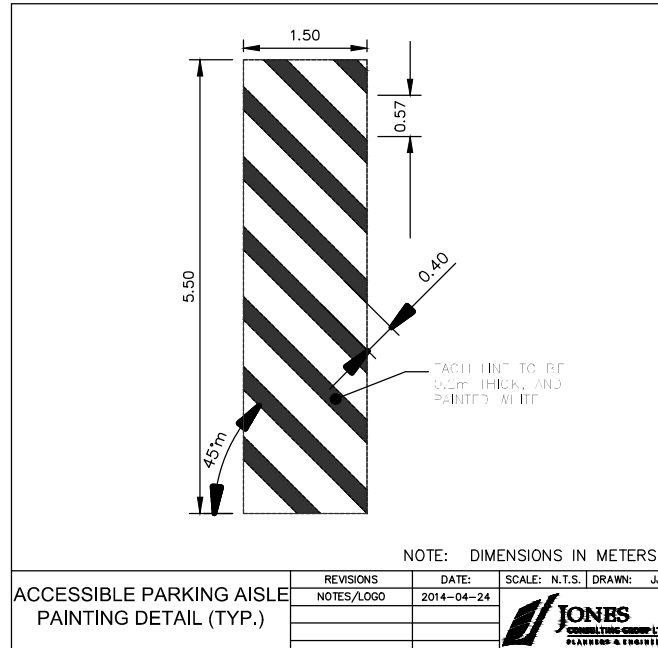
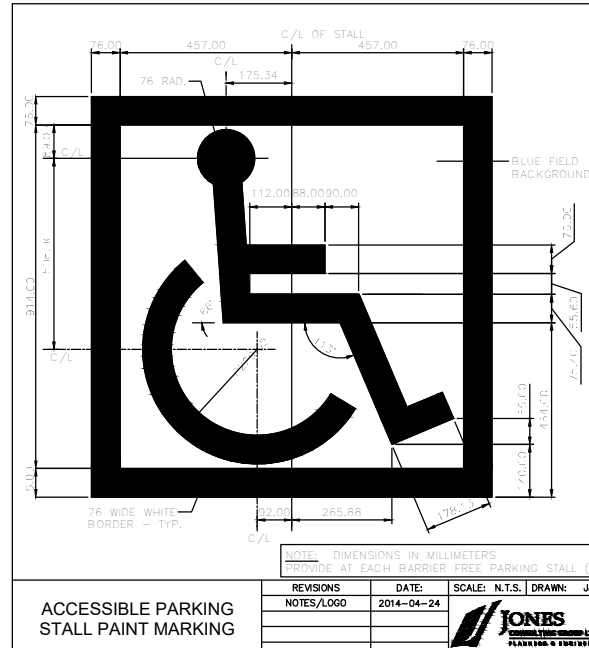
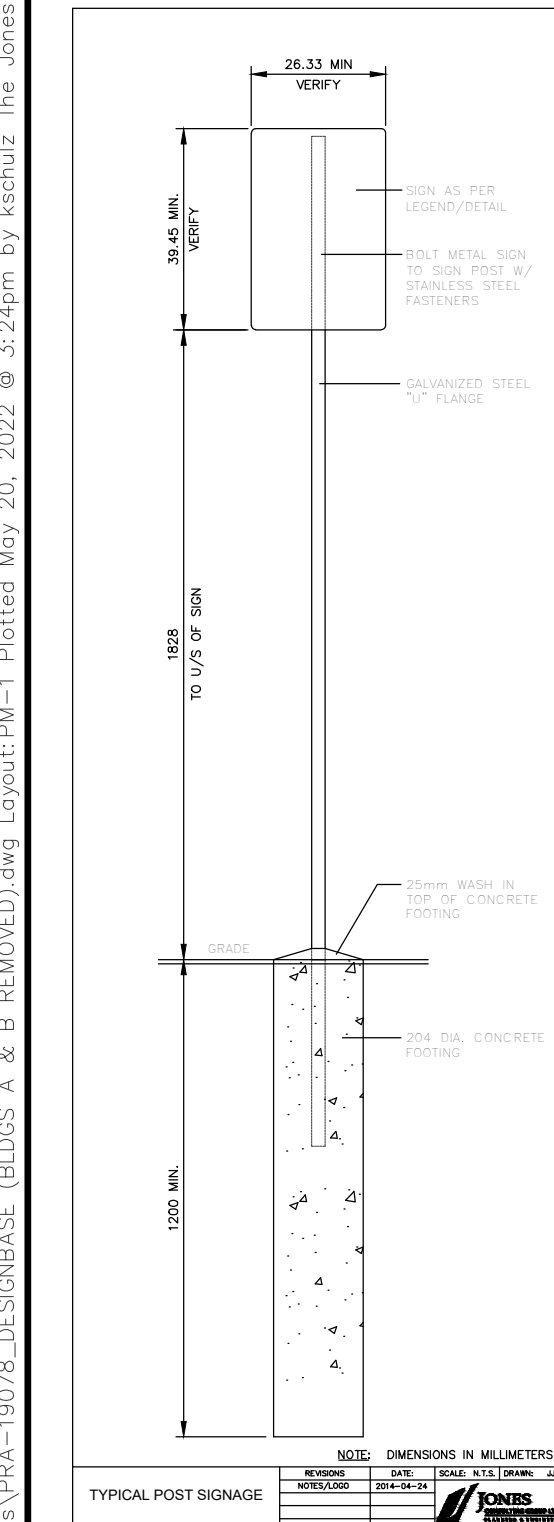
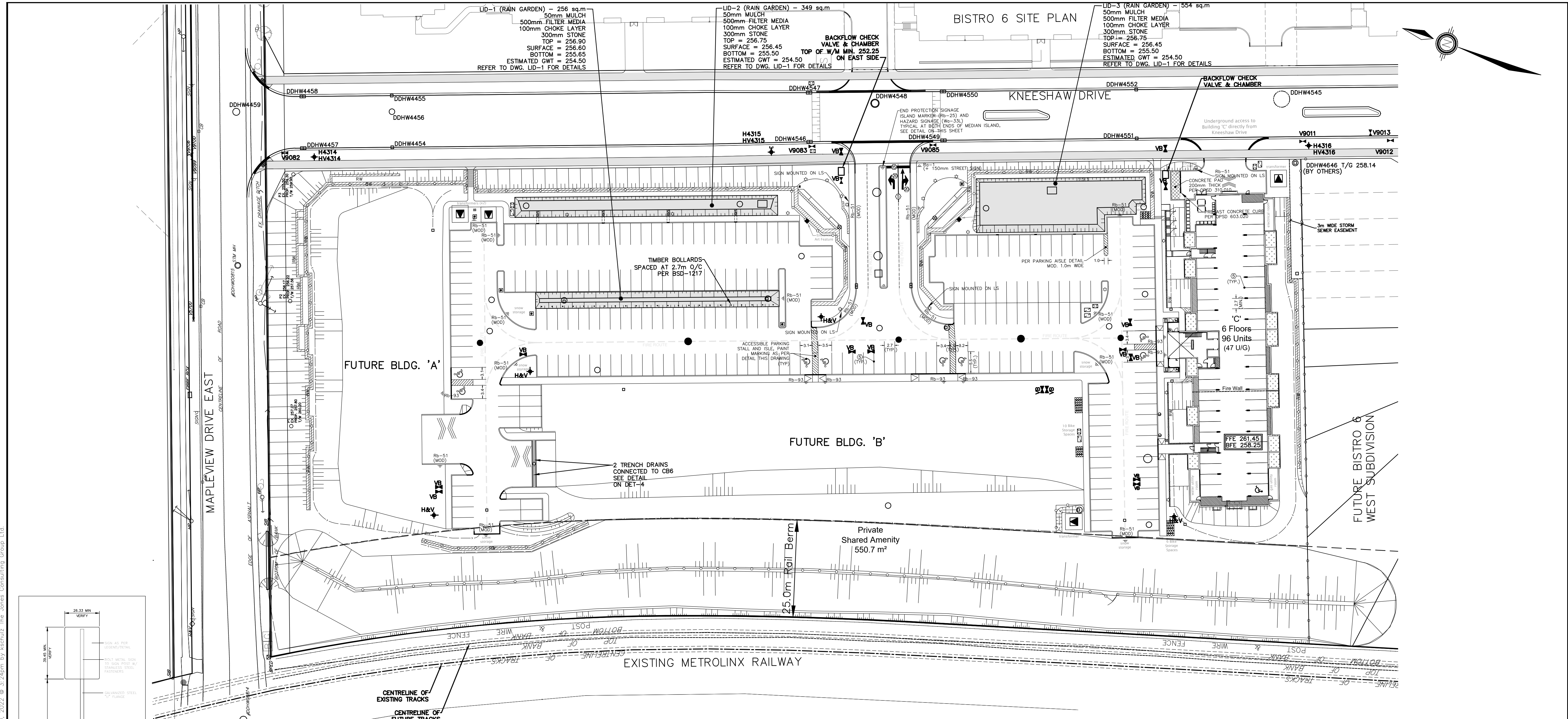
PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE

WATERMAIN SWABBING PLAN

JONES CONSULTING GROUP LTD.
PLANNERS & ENGINEERS

229 Mapleview Dr. E. Unit 1
Barrie, ON L4N 0W5
P. 705.734.2538
F. 705.734.1056

DESIGN MF	SCALE: 1:500	DATE JANUARY 2021
DRAWN KS	PROJECT	DWG. NO
CHECKED DR	PRA-19078	WM-1



PAVEMENT MARKINGS LEGEND

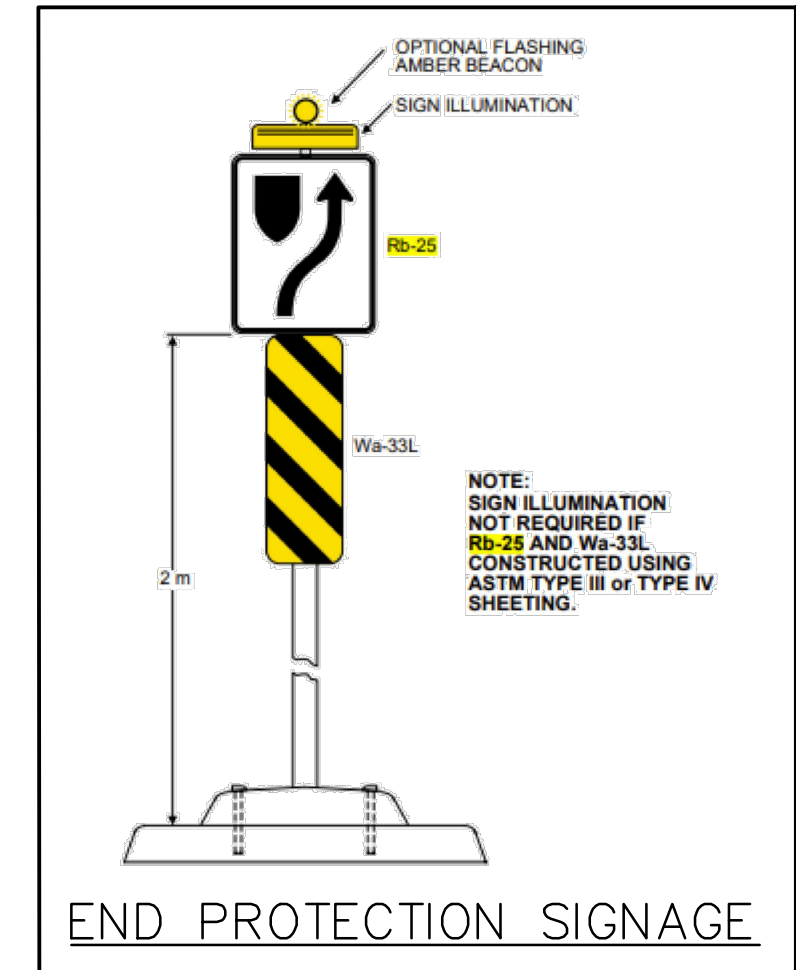
1	SOLID YELLOW, 10cm
2	SOLID DOUBLE YELLOW, 10cm
3	363 BROKEN YELLOW, 10cm
4	SOLID YELLOW, 20cm
5	SOLID WHITE, 10cm
6	333 BROKEN WHITE, 10cm
7	363 BROKEN WHITE, 10cm
8	393 BROKEN WHITE, 10cm
9	SOLID WHITE, 20cm
10	111 BROKEN WHITE, 10cm
11	333 BROKEN WHITE, 10cm
12	333 BROKEN WHITE, 30cm
13	SOLID WHITE, 30 cm
14	SOLID WHITE, 45 cm
15	SOLID WHITE, 60cm
20	SYMBOLS
[]	LIMITS OF MARKING

NOTES:

- 333, 363, 393, DENOTES PAVEMENT MARKING SPACING (ie., 3m LINE, 3m GAP, 3m LINE)
- USE [] TO DENOTE PAVEMENT MARKING
- USE [] TO DENOTE PAVEMENT MARKING, TEMPORARY
- USE [] TO DENOTE PAVEMENT MARKING, TEMPORARY-REMOVABLE
- USE [] TO DENOTE PAVEMENT MARKING, DURABLE

A BROKEN WHITE, 40cmx40cm

B BROKEN WHITE, 250cmx60cm



NOTE:

- ALL PAVEMENT MARKINGS AND TRAFFIC SIGNS SHALL CONFORM TO THE ONTARIO TRAFFIC MANUAL.
- PAVEMENT MARKINGS FOR PARKING STALLS SHALL BE PAINTED WHITE AND CONFORM TO OPS 1712.
- PAINT COLOR SPECIFIED ON DRAWING, PAINT TO BE QUICK DRYING WATER BASED LATEX PAINT (WITHOUT GLASS BEADS)

LEGEND

[Symbol]	CURB DROP	[Symbol]	PROPOSED HYDRANT
[Symbol]	CATCH BASIN	[Symbol]	PROPOSED VALVE
[Symbol]	DOUBLE CATCH BASIN	[Symbol]	PROPOSED CURB STOP
[Symbol]	STORM MAINTENANCE HOLE	[Symbol]	PROPOSED LIGHT STANDARD
[Symbol]	CATCH BASIN MAINTENANCE HOLE	[Symbol]	PROPOSED POWER PEDESTAL & VAULT
[Symbol]	DOUBLE CATCH BASIN MAINTENANCE HOLE	[Symbol]	PROPOSED PULLBOX/HANDHOLE
[Symbol]	SANITARY MAINTENANCE HOLE	[Symbol]	PROPOSED PEDESTAL FOR ENTRANCE FEATURES
[Symbol]	MAXIMUM GRADING SLOPE UNLESS OTHERWISE NOTED	[Symbol]	PROPOSED BELL GRADE LEVEL BOX
[Symbol]	PROPOSED SIGN & DESIGNATION	[Symbol]	PROPOSED ROGERS GRADE LEVEL BOX
[Symbol]		[Symbol]	PROPOSED HYDRO TRANSFORMER
[Symbol]		[Symbol]	PROPOSED EV CHARGER STATION

BENCHMARK:

BENCHMARK NO: 0101988454 LOCATED ON CONCRETE BRIDGE CARRYING MAPLEVIEW DRIVE OVER LOWER CREEK, 0.83M EAST OF HURONIA ROAD. TABLET IS SET HORIZONTALLY IN THE NORTH FACE, 5.45M NORTH OF CENTRELINE OF ROAD, 28CM WEST OF THE NORTHEAST END OF BRIDGE, 19CM TOP OF CORNER. N4910788.889 E507284.100 ELEV 241.861

BENCHMARK NO: 0312003029 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE VERTICAL MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.76 SOUTH FROM THE SOUTHWEST CORNER OF THE MAIN ENTRANCE TO SCHOOL, AND TABLET IS ON THE SOUTHWEST FACE OF THE FLAGPOLE BASE. N4911610 E607799 ELEV 250.509

BENCHMARK NO: 0312008004 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 1km EAST OF HURONIA ROAD, N4910878.122 E607801.062 ELEV 248.896

BENCHMARK NO: 0312011003 LOCATED ON LOOCHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.02km WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909870.251 E608733.590 ELEV 252.807

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1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF



PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE

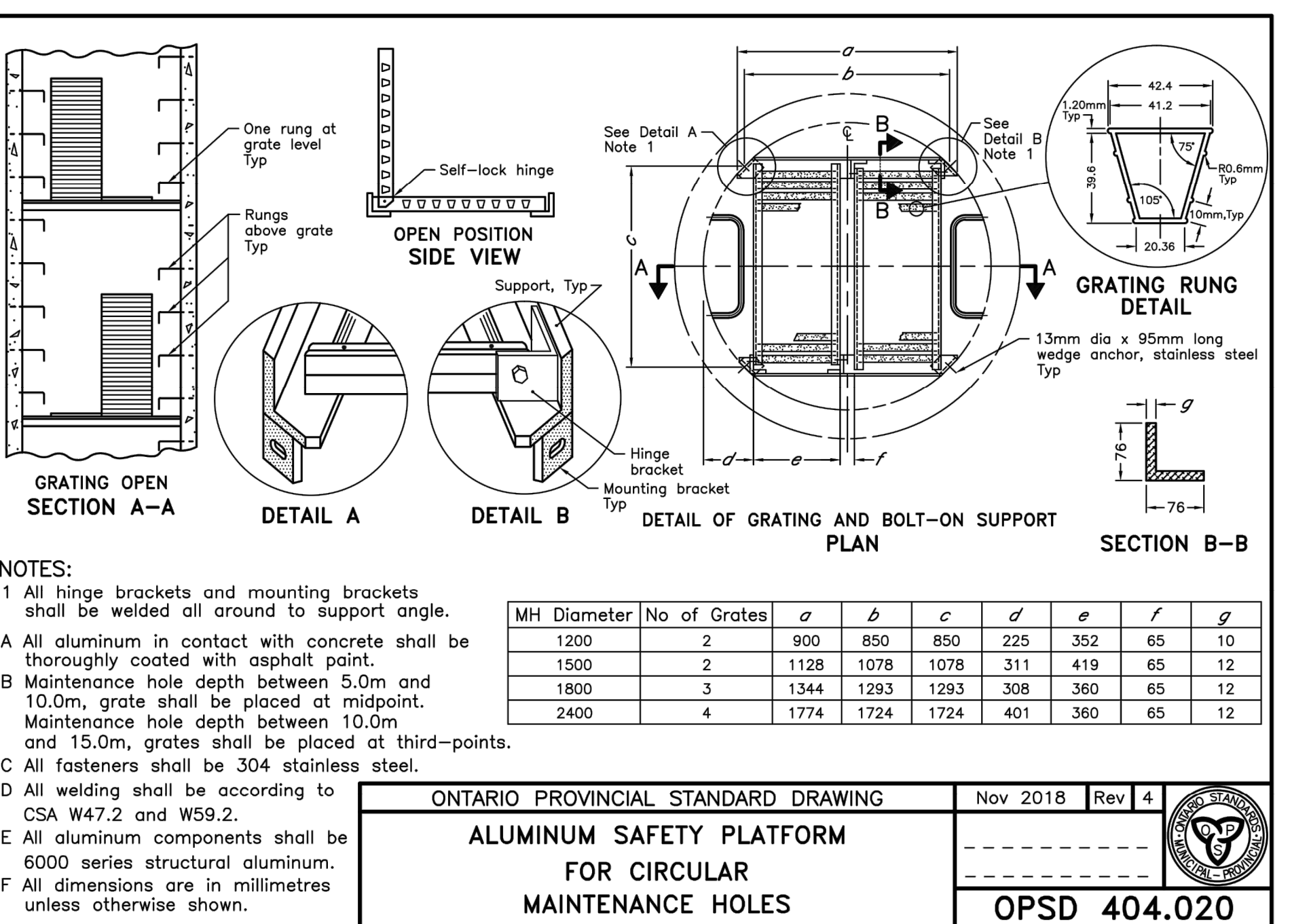
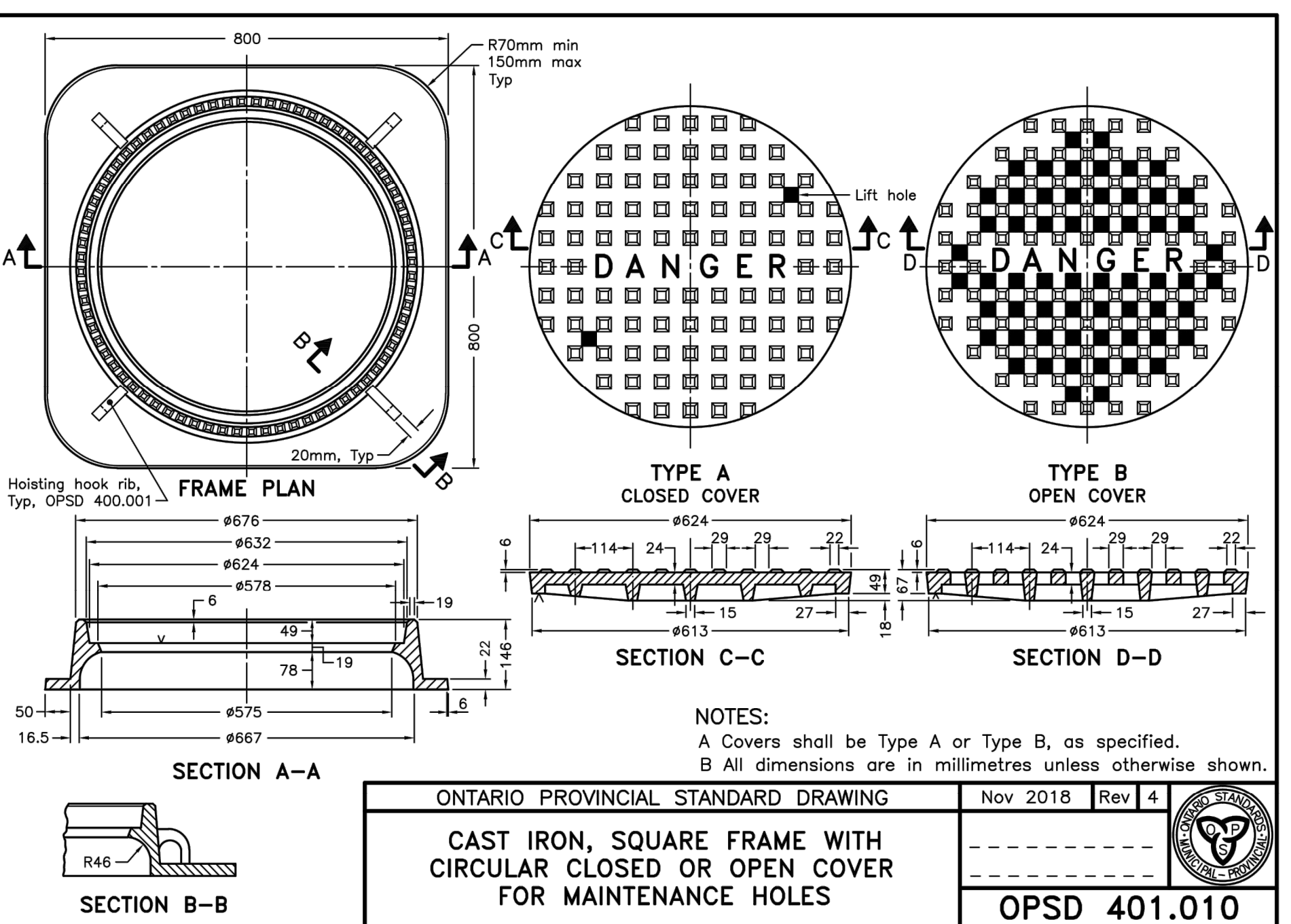
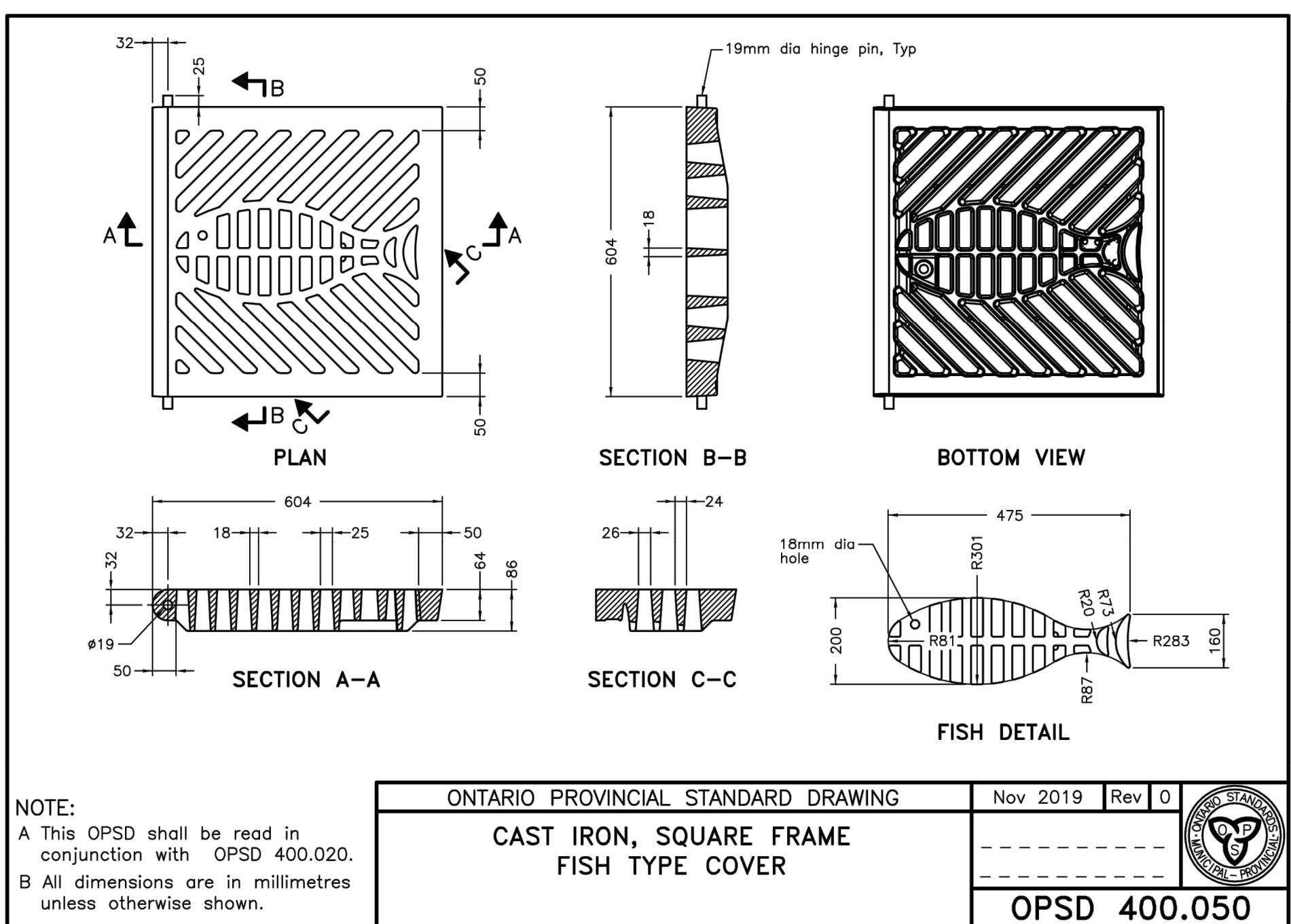
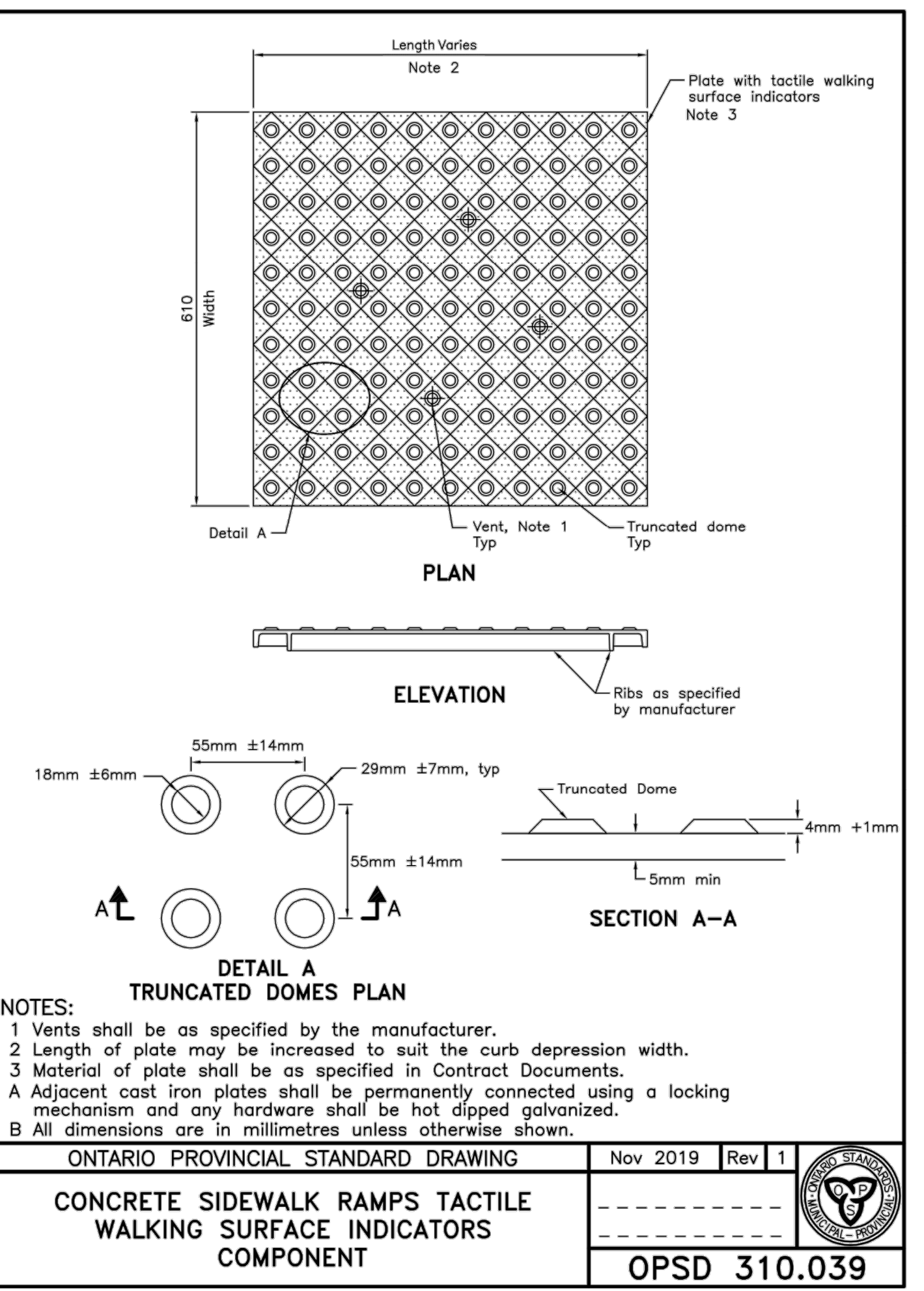
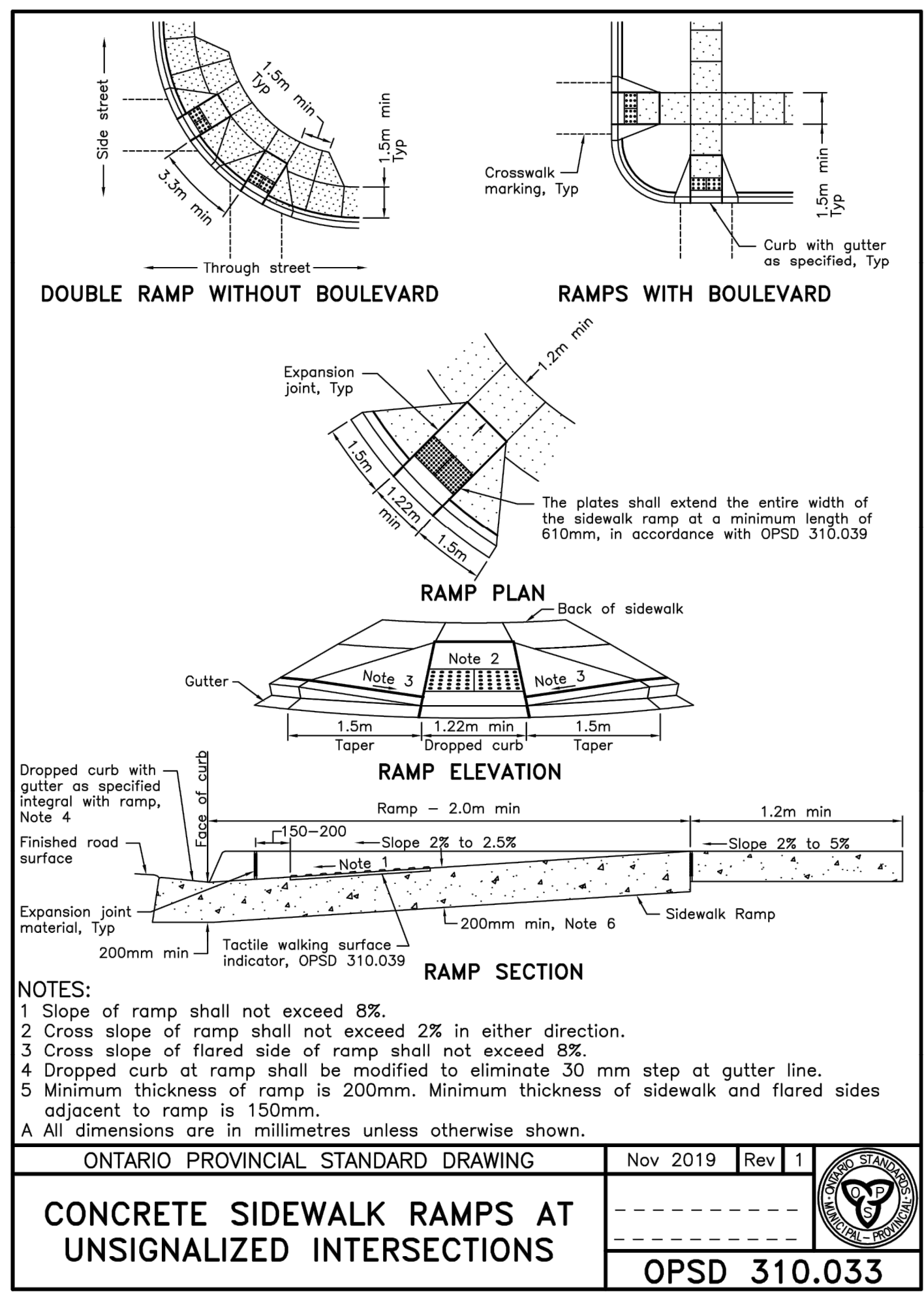
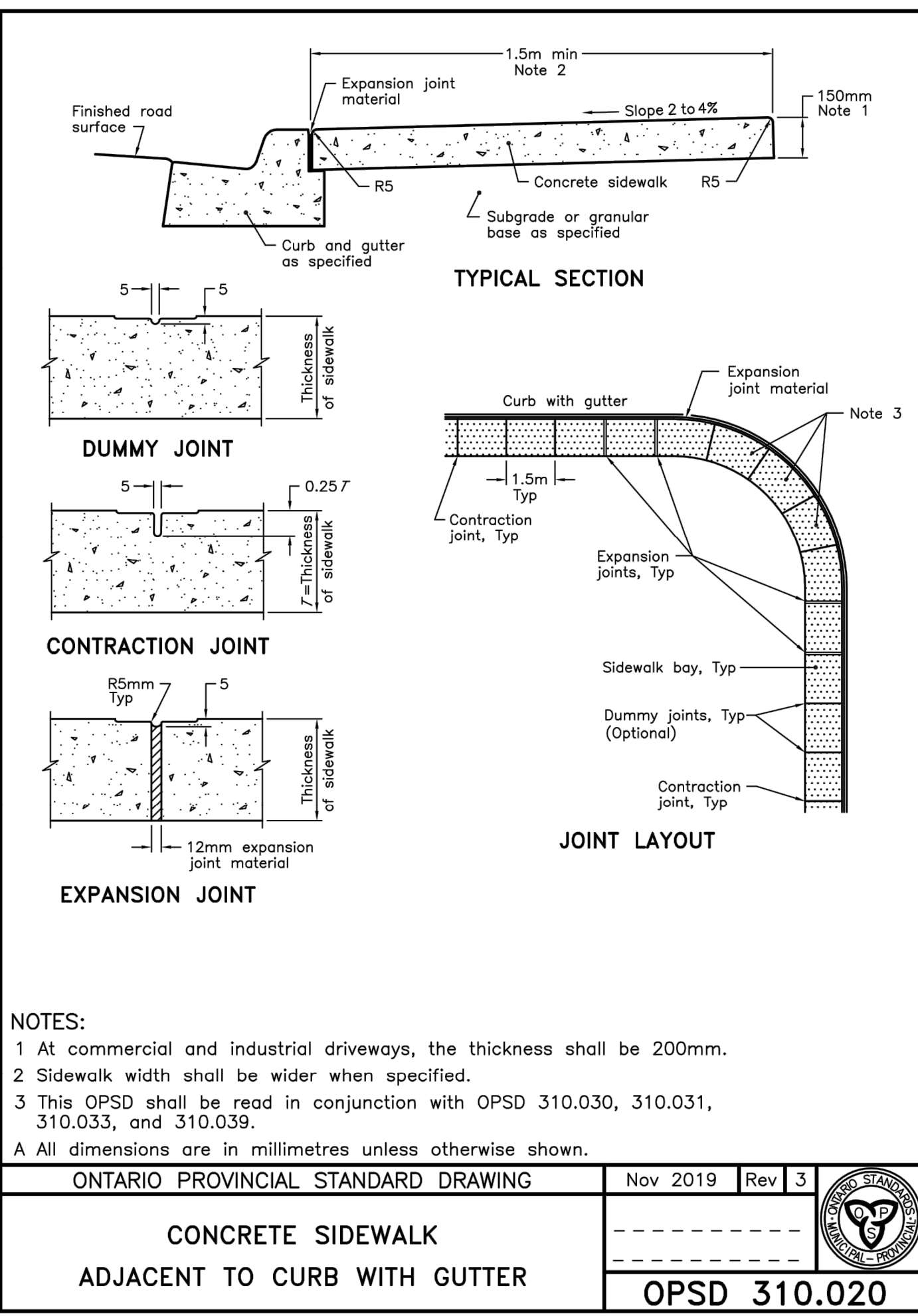
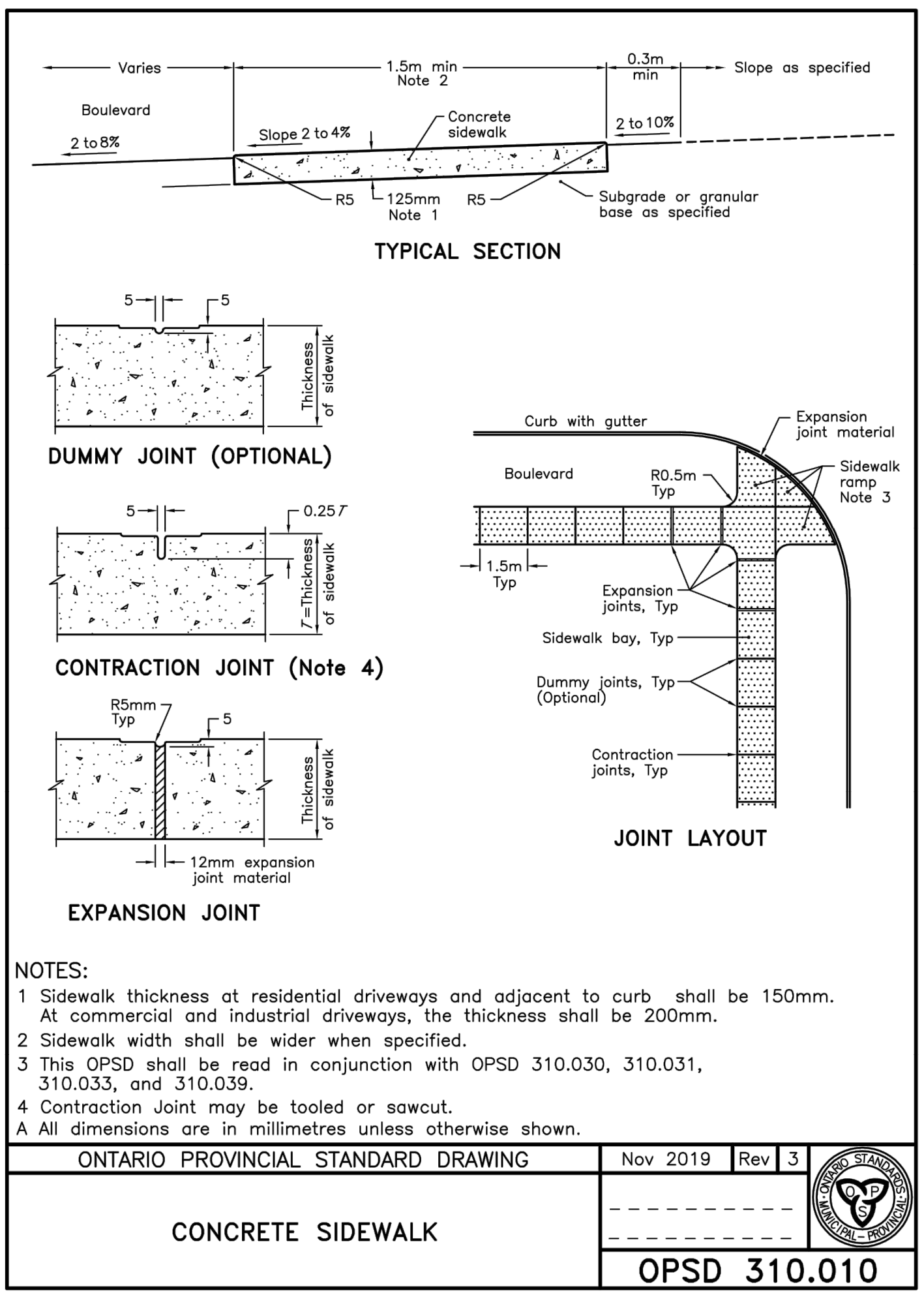
PAVEMENT MARKING AND SIGNAGE PLAN

JONES CONSULTING GROUP LTD.
 PLANNERS & ENGINEERS

229 Mapleview Dr. E. Unit 1
 Barrie, ON L4N 0W5
 P. 705.734.2638
 F. 705.734.1058

DESIGN MF SCALE: 1:500 DATE JANUARY 2021
 DRAWN KS PROJECT DWG. NO
 CHECKED DR PRA-19078 PM-1

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BENCHMARK:

BENCHMARK NO: 0101985454 LOCATED ON CONCRETE BRIDGE CARRYING MAPLEVIEW DRIVE E OVER LOVELY'S CREEK, 0.55km EAST OF HURONIA ROAD. TABLET IS SET HORIZONTALLY IN THE NORTH FACE, 5.45m NORTH OF CENTRELINE OF ROAD, 28cm WEST OF THE NORTHEAST END OF BRIDGE, 18cm TOP OF CORNER. N4910788.989 E807294.100 ELEV 241.661

BENCHMARK NO: 0312003029 MAPLEVIEW HEIGHTS ELEMENTARY SCHOOL - 180 ESTHER DR. THE VERTICAL MONUMENT IS SET FLUSH IN CONCRETE FLAGPOLE BASE 4.76 SOUTH FROM THE SOUTHWEST CORNER OF THE MAIN ENTRANCE TO SCHOOL AND TABLET IS ON THE SOUTHWEST FACE OF THE FLAGPOLE BASE. N4911610 E807799 ELEV 250.500

BENCHMARK NO: 0310080804 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 1km EAST OF HURONIA ROAD, N4910878.122 E807601.062 ELEV 248.896

BENCHMARK NO: 0312011013 LOCATED ON LOUGHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.02km WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909870.257 E806733.690 ELEV 232.807

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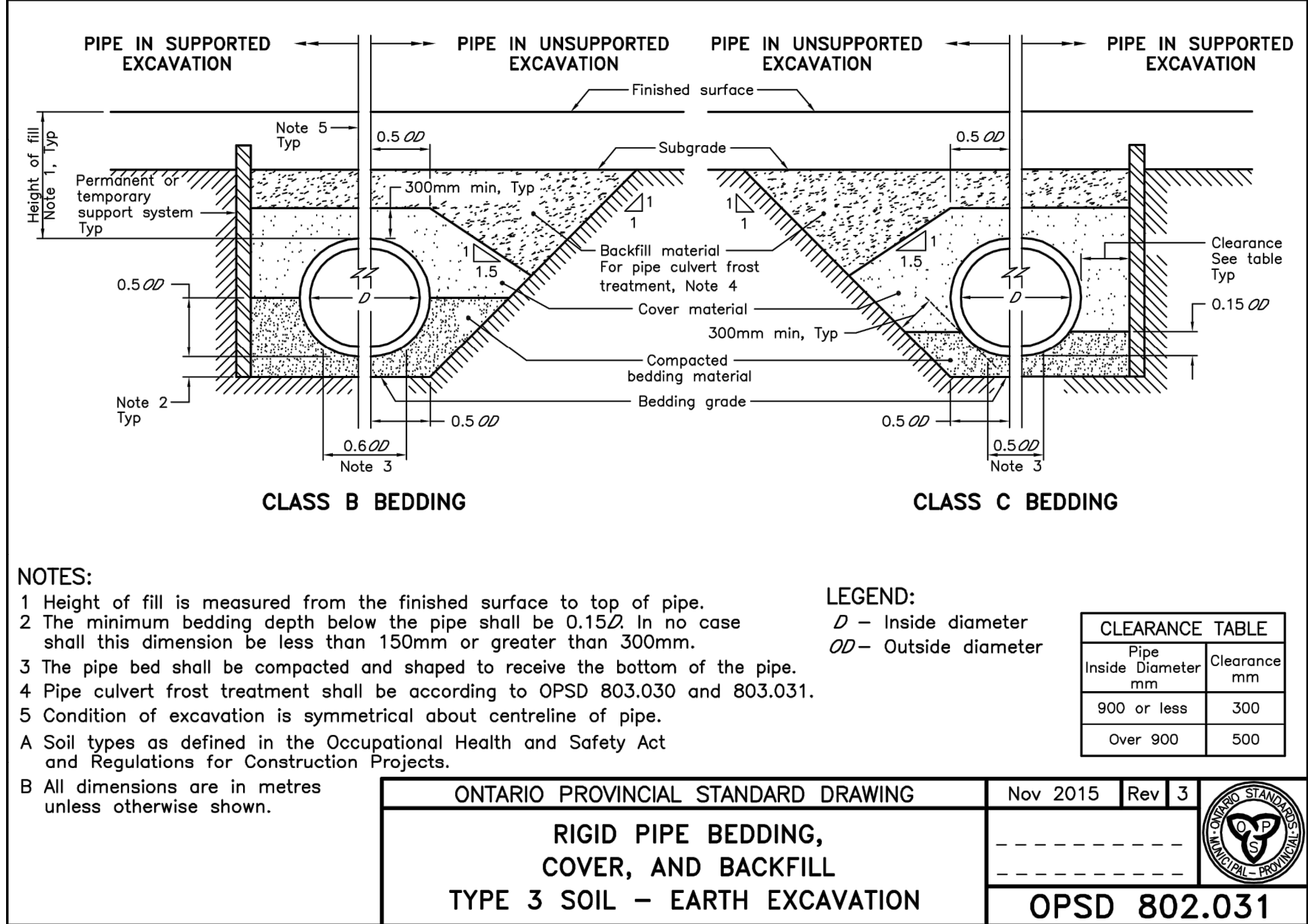
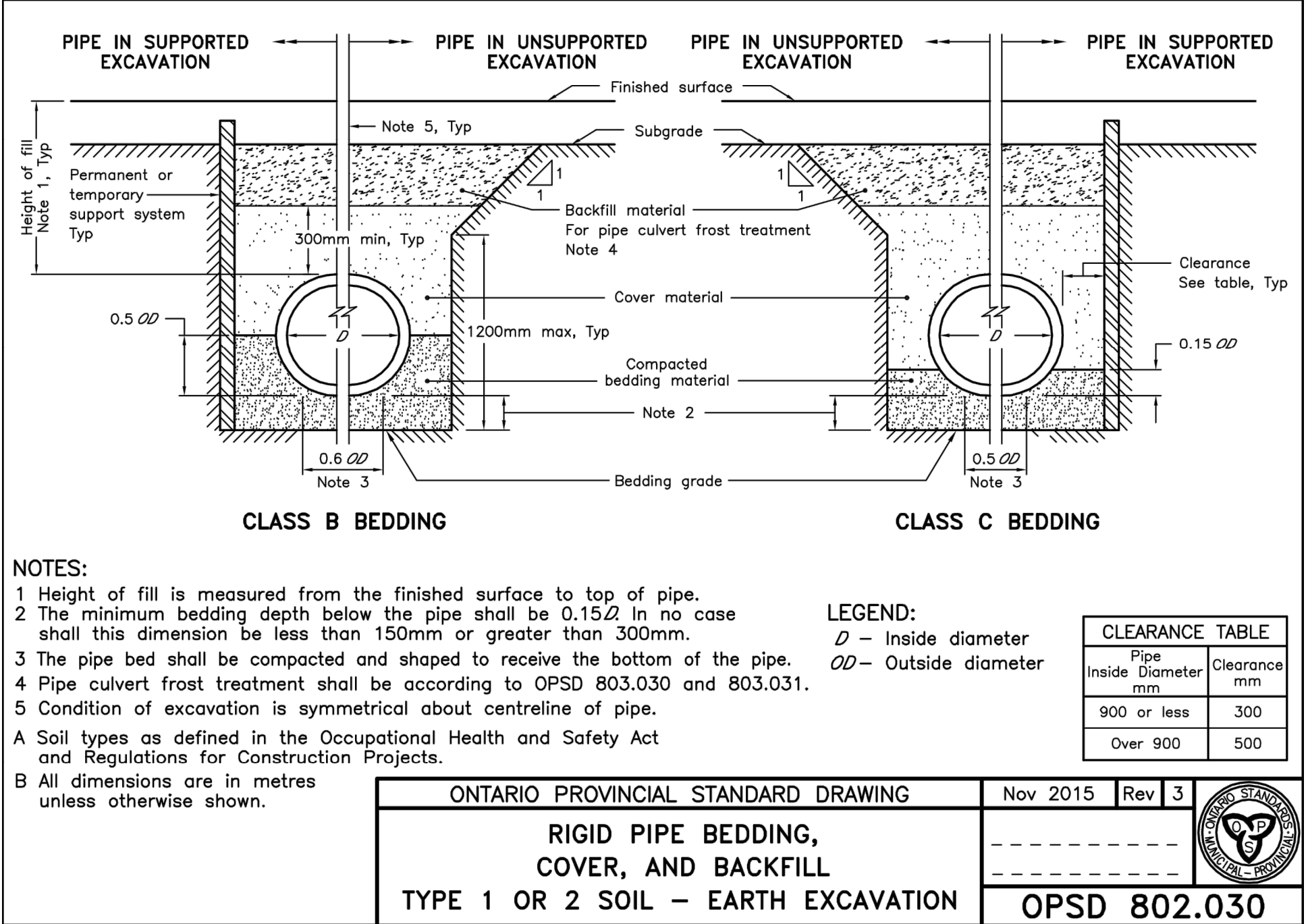
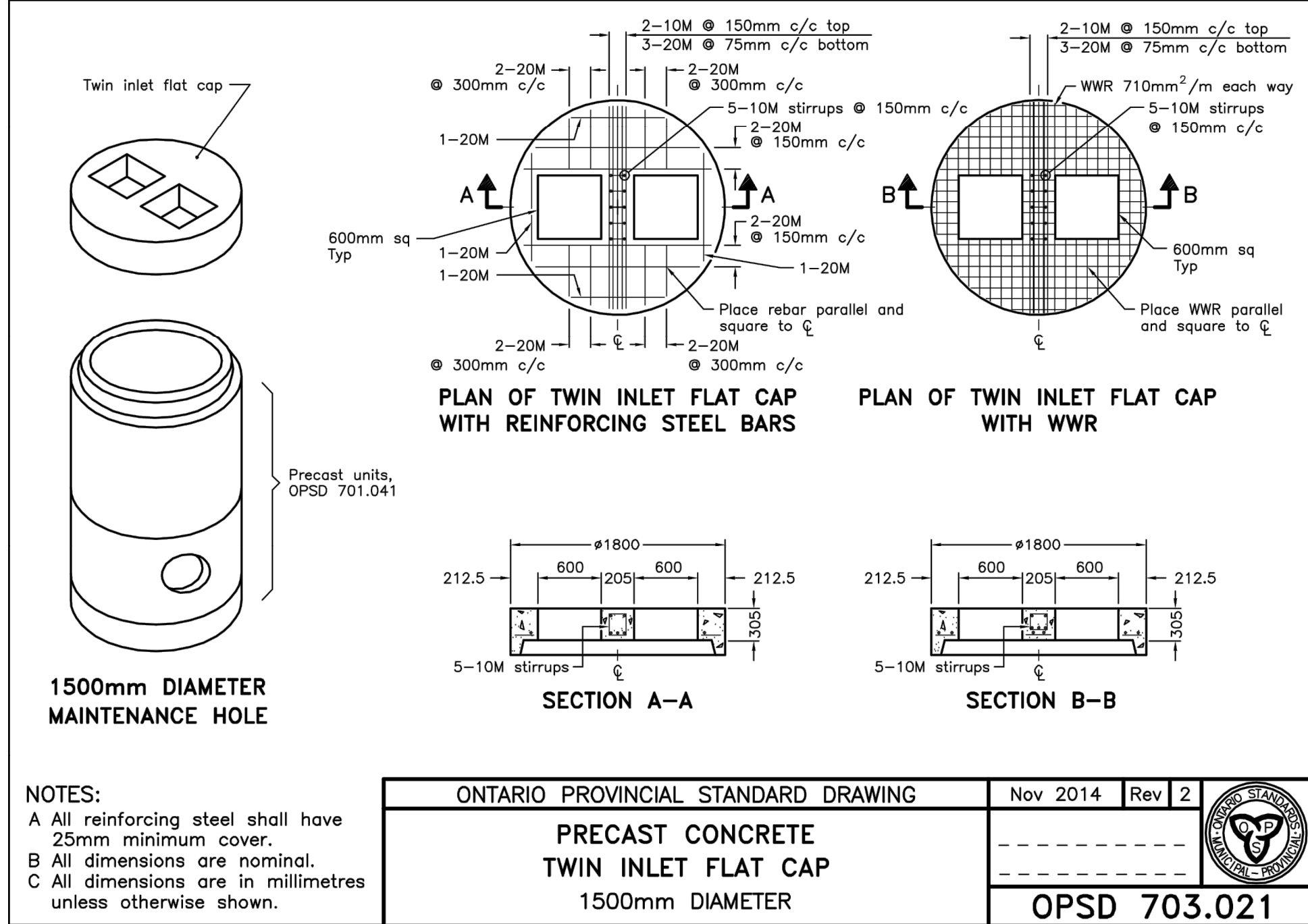
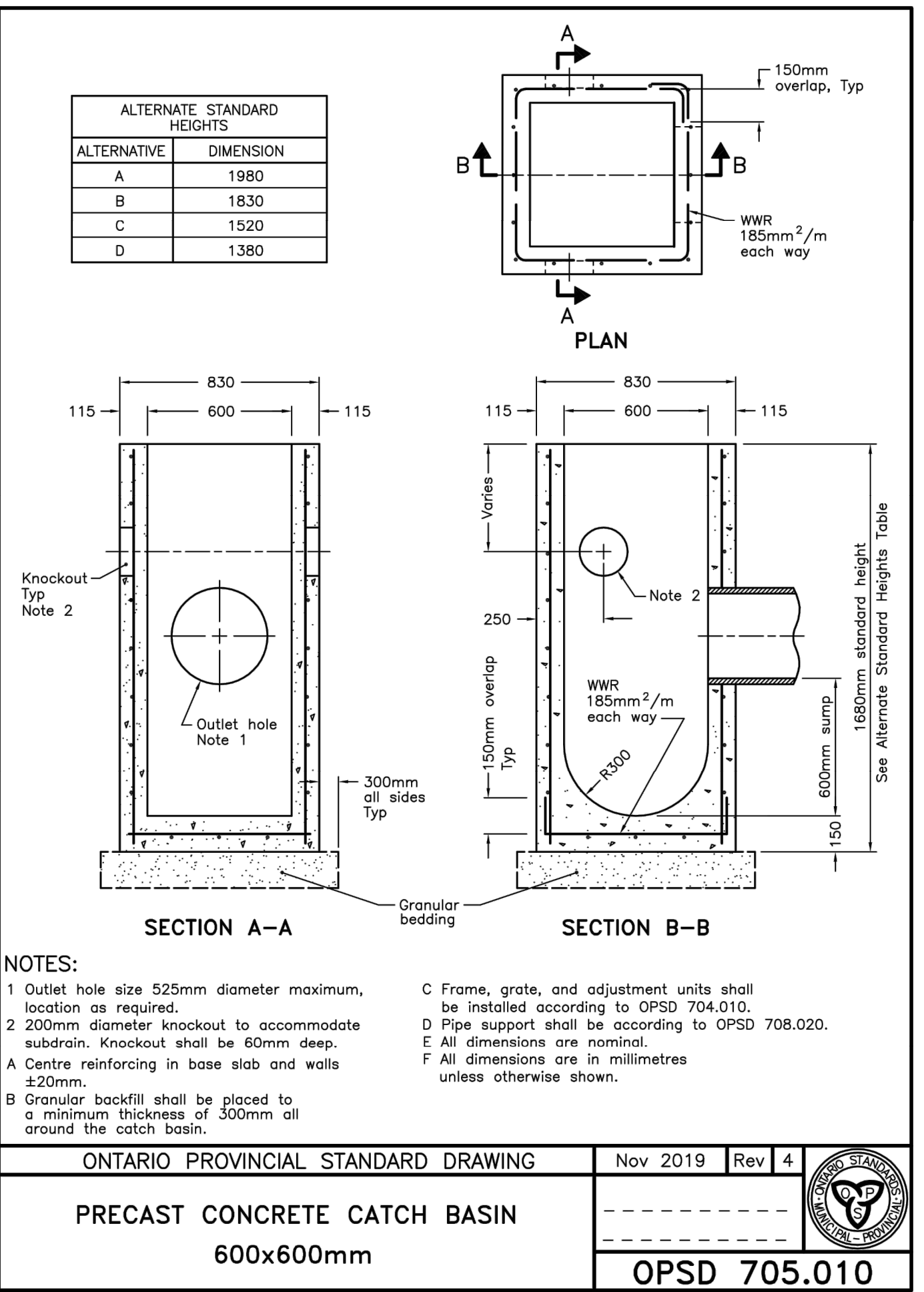
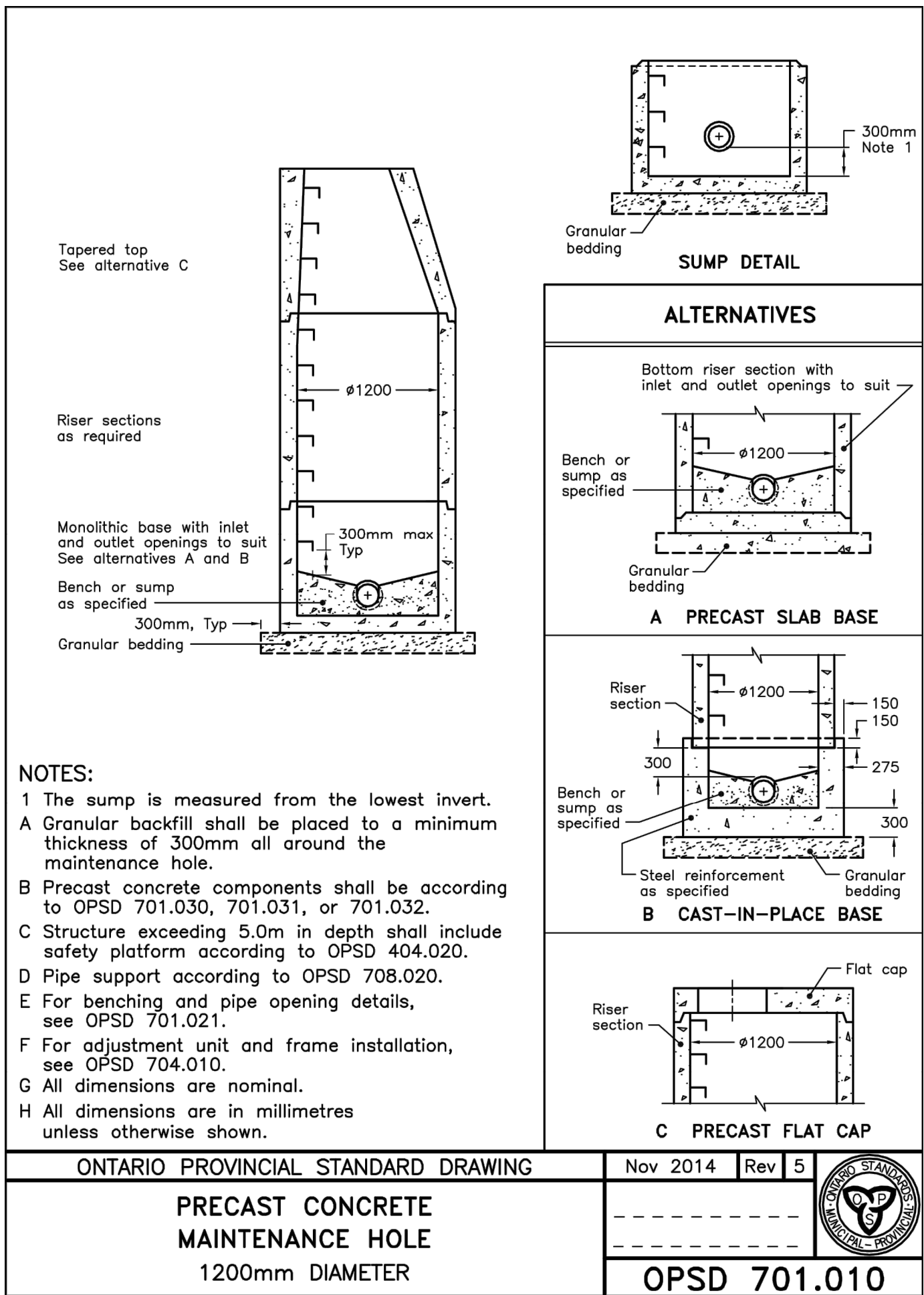
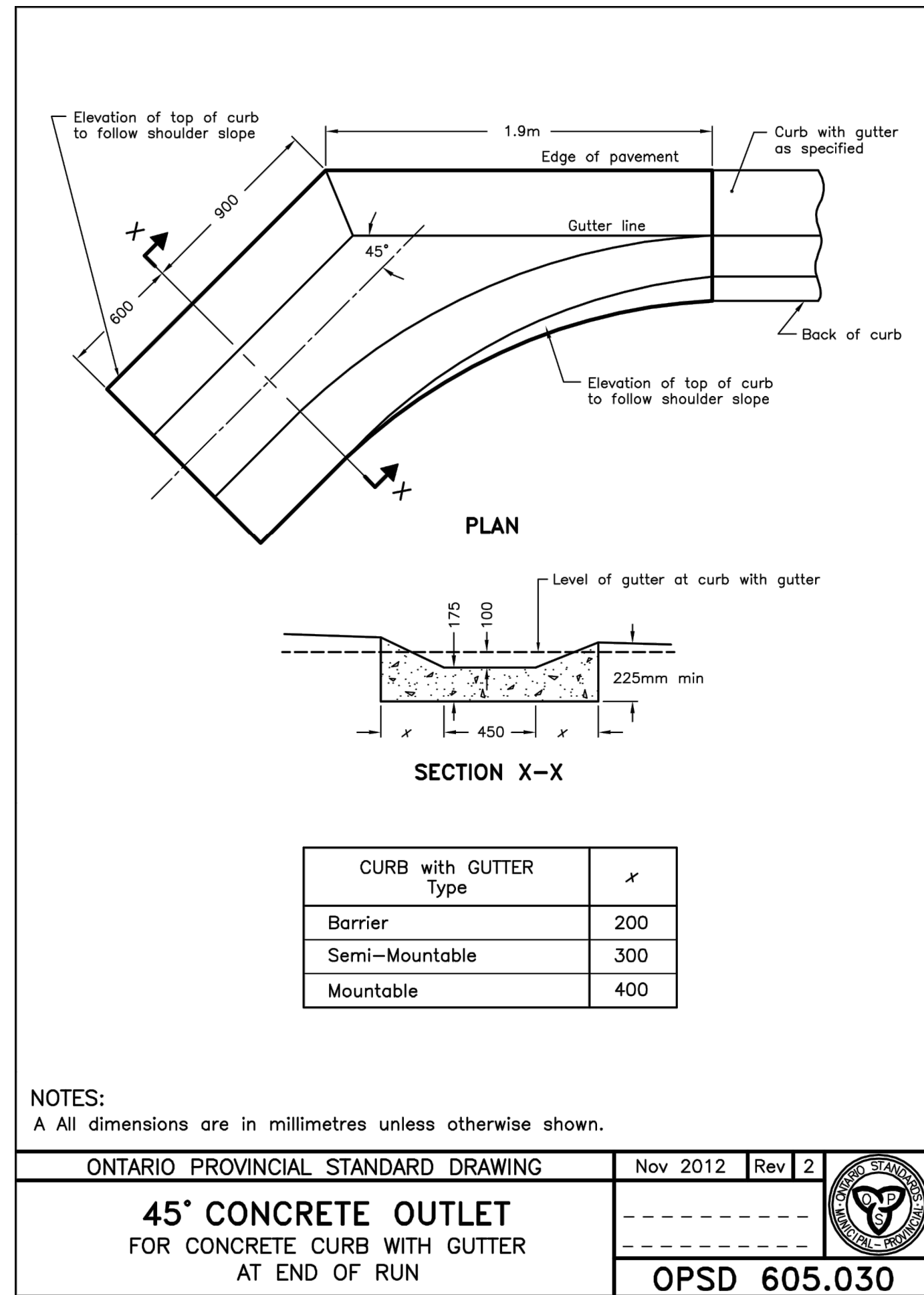
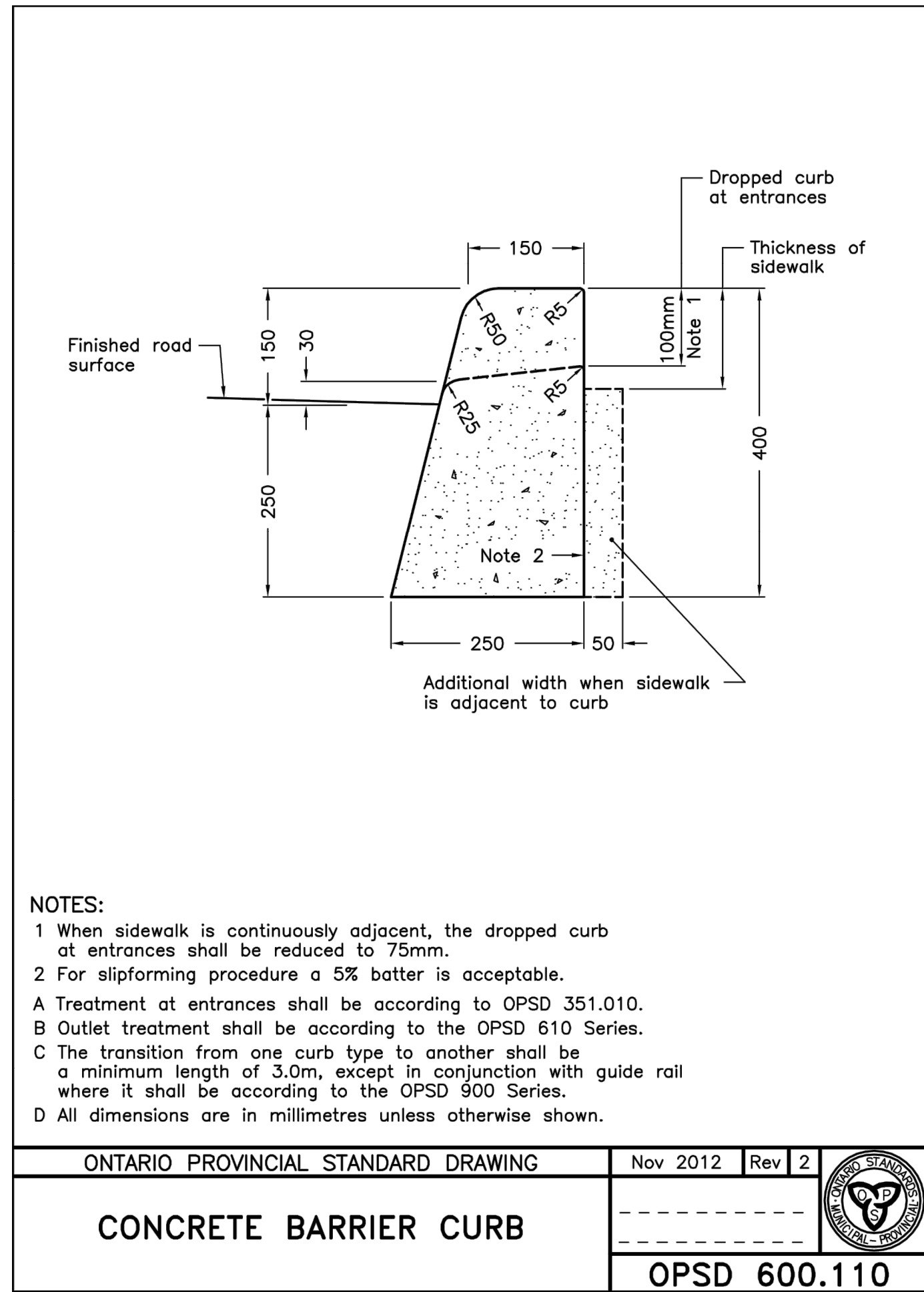
PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE

JONES CONSULTING GROUP LTD.
PLANNERS & ENGINEERS

229 Mapleview Dr. E. Unit 1
Barrie, ON L4N 0W6
P. 705.734.2538
F. 705.734.1056

DESIGN MF SCALE: N/A DATE: JANUARY 2021
DRAWN KS PROJECT DWG. NO
CHECKED DR PRA-19078 DET-1

STANDARD DETAILS



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1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF

PROFESSIONAL ENGINEER
 M. G. F. J.S.
 900149153
 05-20-2022
 PROVINCE OF ONTARIO

PRATT HANSEN GROUP INC.
 ELEMENTS SITE PLAN
 CITY OF BARRIE

JONES CONSULTING GROUP LTD.
 PLANNERS & ENGINEERS

229 Mapleview Dr. E. Unit 1
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 P. 705.734.2538
 F. 705.734.1058

DESIGN MF SCALE: N/A DATE: JANUARY 2021
 DRAWN KS PROJECT DWG. NO
 CHECKED DR PRA-19078 DET-2

High Security Fencing
The high security fence height above ground shall be 2.4 m.

The panel mesh shall consist of a minimum 4mm diameter high tensile wire, with aperture sizes (openings) 76.2mm x 12.7mm on centre or smaller fastened to suitable posts that allow for a minimum foundation depth of 1200 mm. The fence panels shall be strengthened with factory formed undulations within each mesh panel. Mechanical Fasteners shall be tamper proof and factory galvanized. Fastening hardware shall be concealed from the face of each panel and post. The mesh, posts, clamps and associated hardware are to be galvanized with an exterior finish coating capable of withstanding repeat climate variances within Southern Ontario.

1.1 High Security Fence

(a) When directed by Metrolinx the Contractor shall install high security fencing at ROW limits, at layover yards and at other locations instructed by Metrolinx. The manufacturer and product name of approved High Security fencing are listed below. Proposed equivalents recommended by the contractor will be subject to approval by Metrolinx prior to installation.

(i) Cochrane-ClearVu
(ii) BETA FENCE- Securifor 3D
(iii) CLD- Securus Profiled
(iv) Bear Mountain - Bear Securi Mesh Barrier

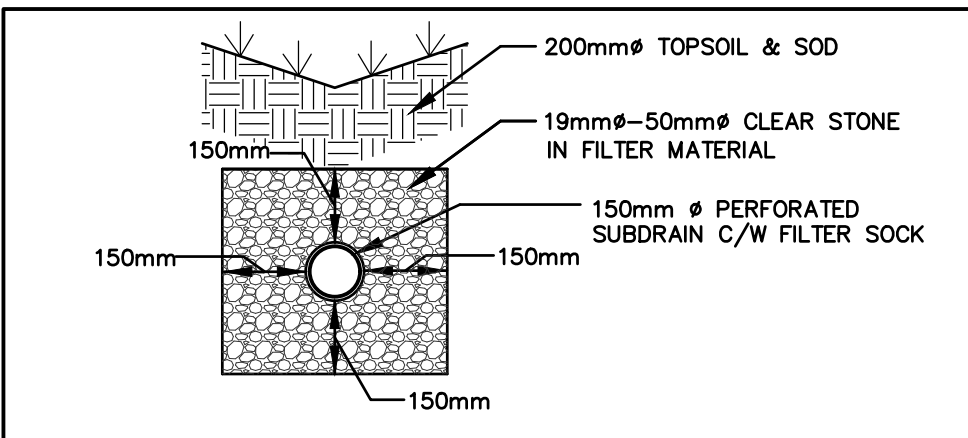
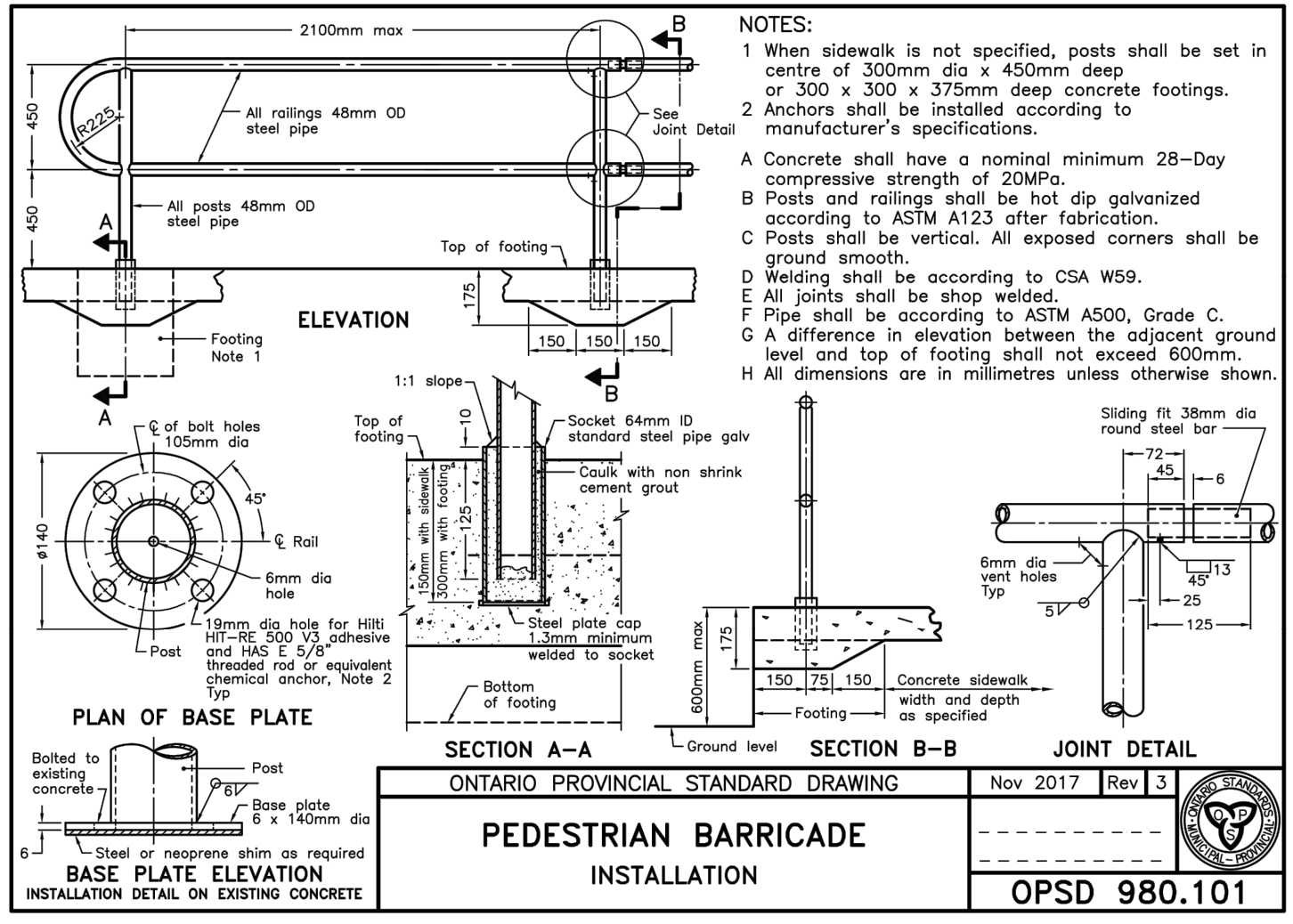
(b) The high security fence height above ground shall be 2.4 m.

(c) The panel mesh shall consist of a minimum 4mm diameter high tensile wire, with aperture sizes (openings) 76.2 x 12.7 mm centers or smaller fastened to suitable posts that allow for a minimum foundation depth of 1200 mm.

(d) The fence panels shall be strengthened with factory formed undulations within each mesh panel. Mechanical Fasteners - Shall be tamper proof and mechanically galvanized. Fastening Hardware shall be concealed from the non-rail side of each panel and post.

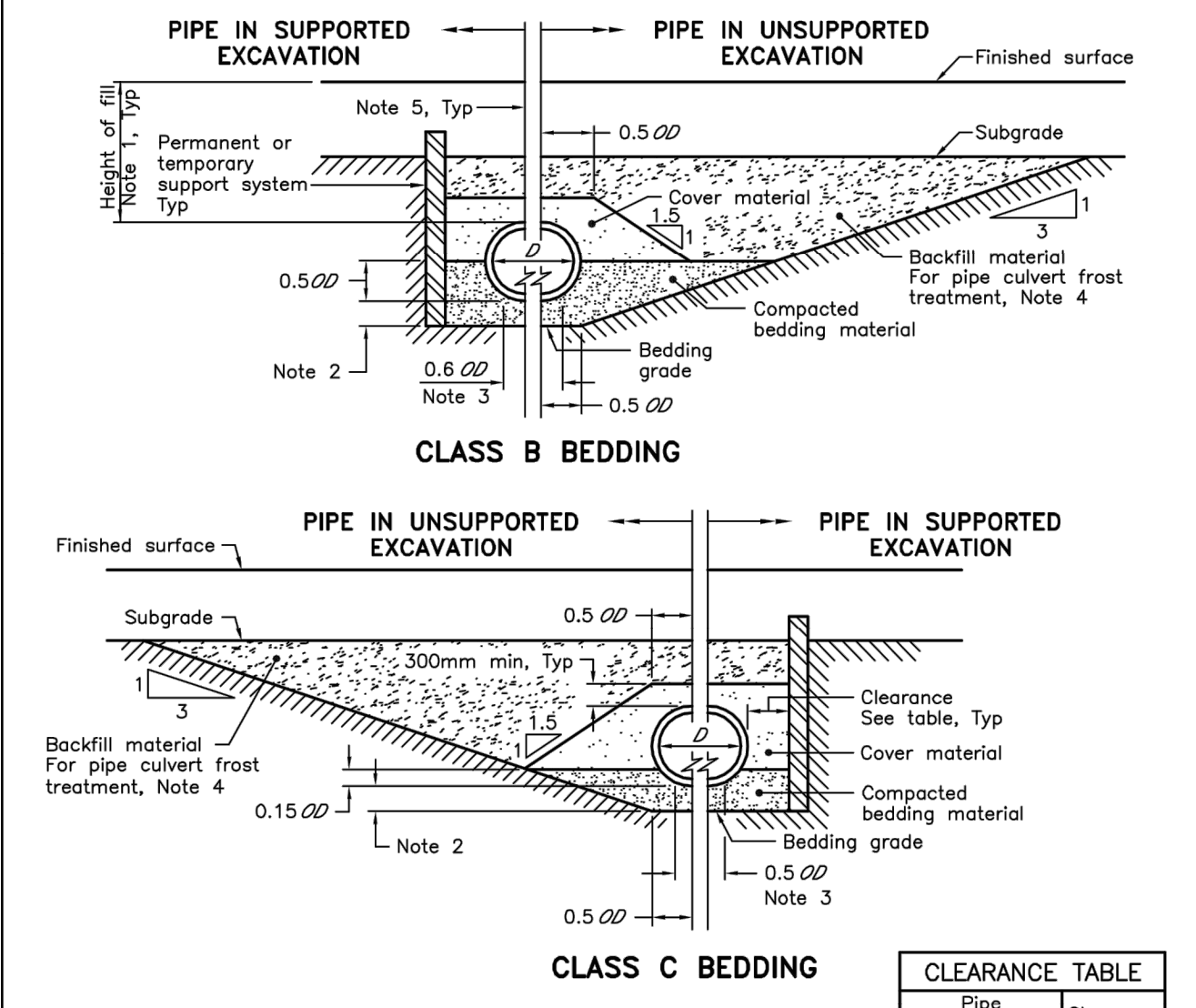
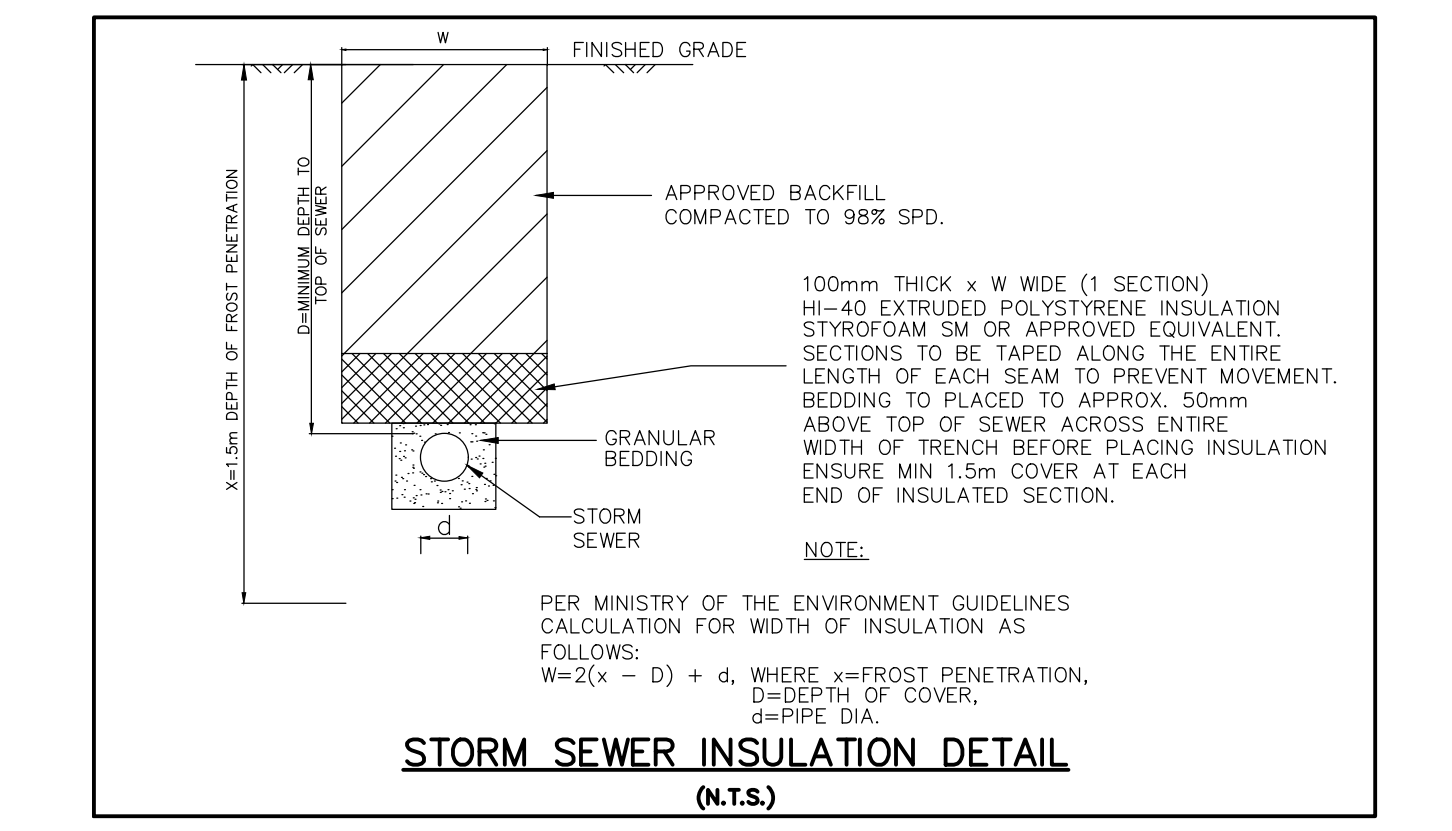
(e) Mesh to be galvanized with an exterior finish coating capable of withstanding typical climate variances within Southern Ontario.

(f) Specification sheets and breach testing results for any proposed alternate products and materials shall be submitted to Metrolinx staff for approval.



REVISIONS	DATE	SCALE	N.T.S.

JONES CONSULTING GROUP LTD.

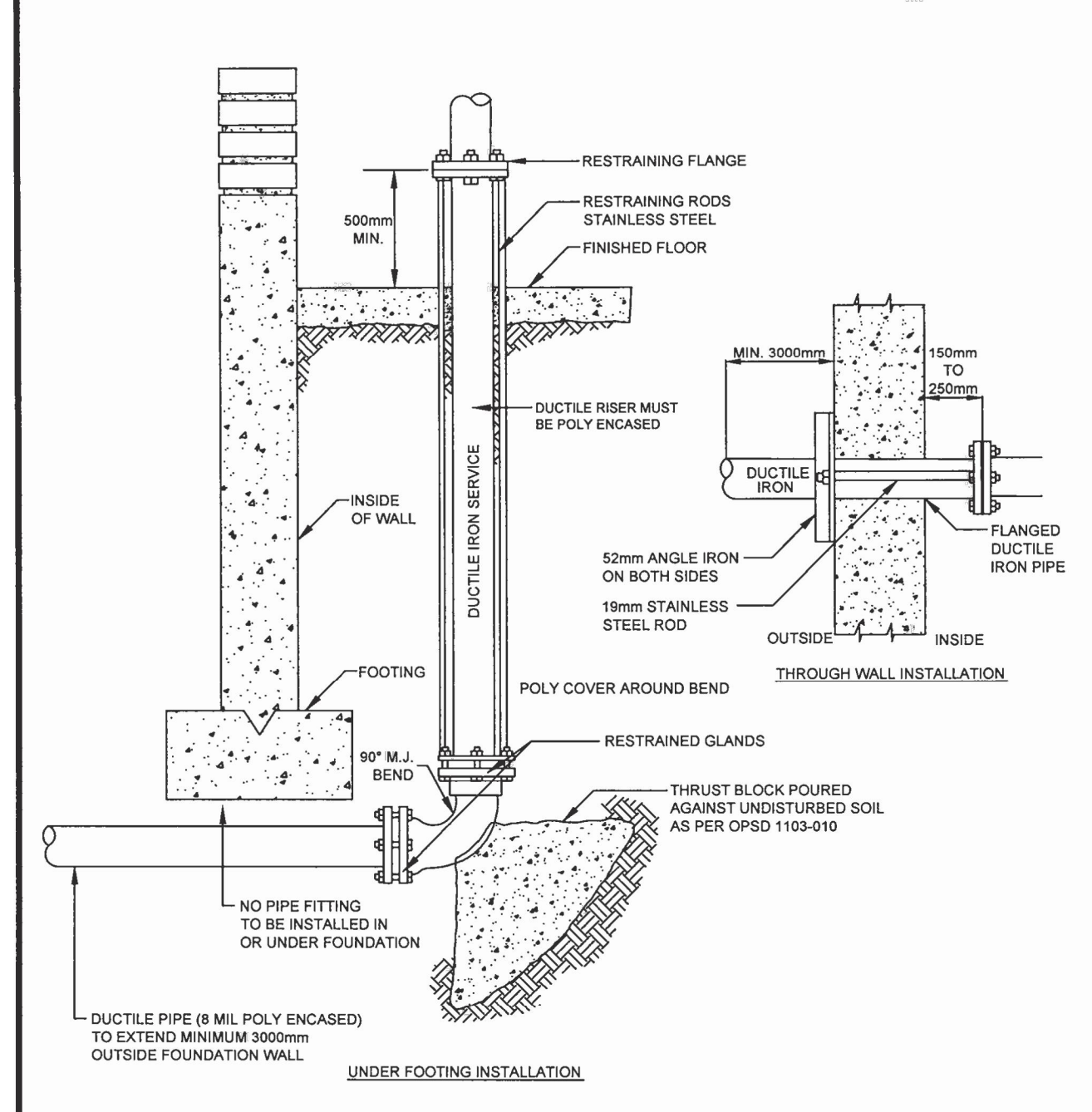


RIGID PIPE BEDDING, COVER, AND BACKFILL
TYPE 4 SOIL - EARTH EXCAVATION

ONTPSD 802.032

LEGEND:
D - Inside diameter
OD - Outside diameter

NOTES:
1 Height of fill is measured from the finished surface to top of pipe.
2 The minimum bedding depth below the pipe shall be 0.15D. In no case shall this dimension be less than 150mm or greater than 300mm.
3 The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
4 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
5 Condition of excavation is symmetrical about centreline of pipe.
A Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
B All dimensions are in metres unless otherwise shown.

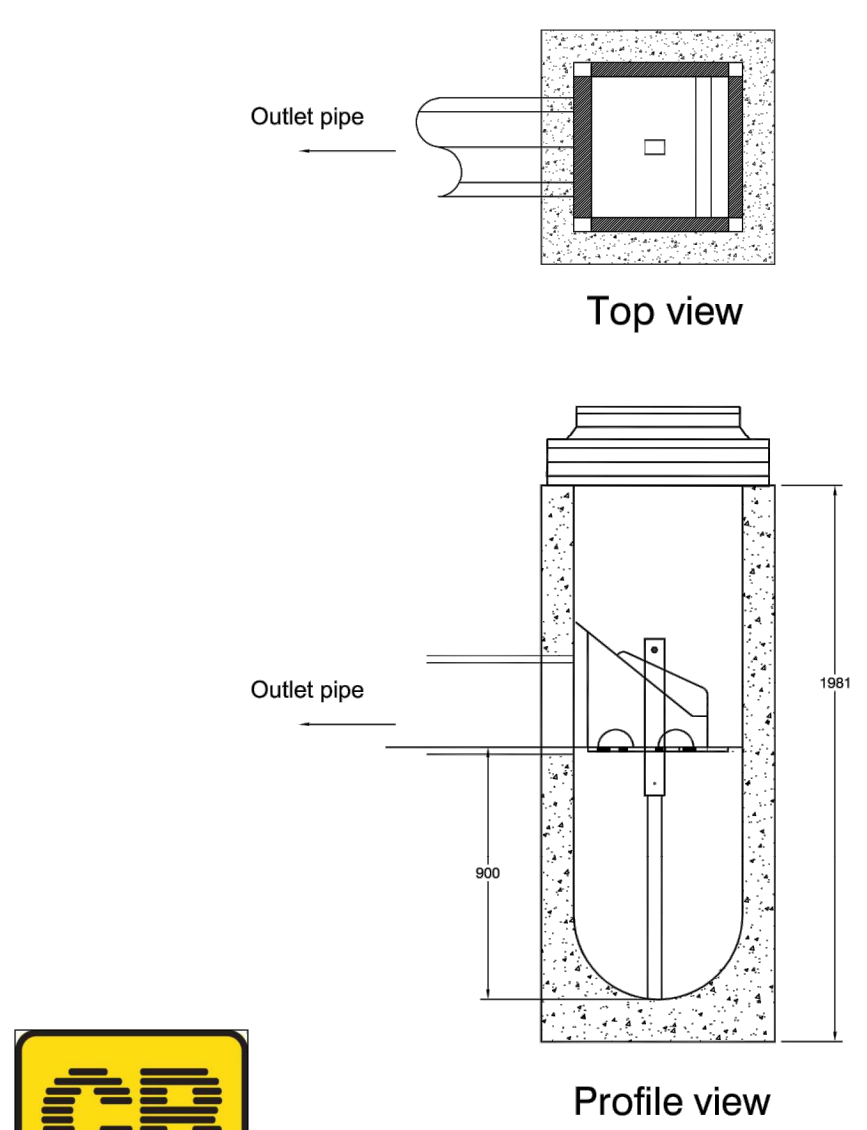


City of Barrie
APPROVED
DATE: 6 Feb 2015
M. G. F. J.S.
REGISTERED PROFESSIONAL ENGINEER

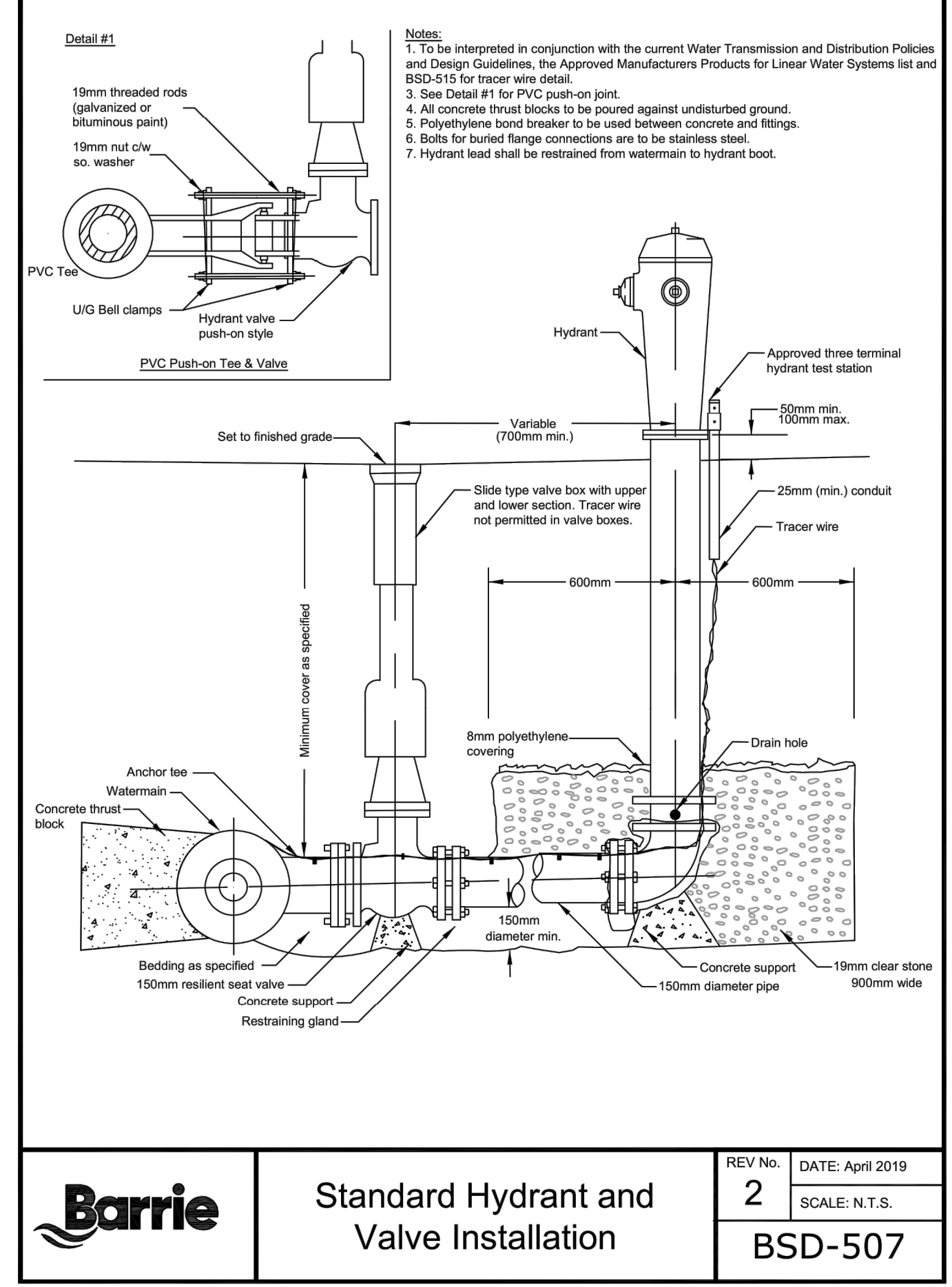
1
DATE: FEB 2015
SCALE: N.T.S.
BSD-505 (PREVIOUSLY BSD-61)

Notes

1. CB Shield can be installed at any time. In a non frozen condition.
2. The frame and cover **MUST BE** well aligned with the catchbasin for proper installation.
3. The catchbasin sump must be clean before installation
4. The grate should be at the same level as the standing water in the sump.

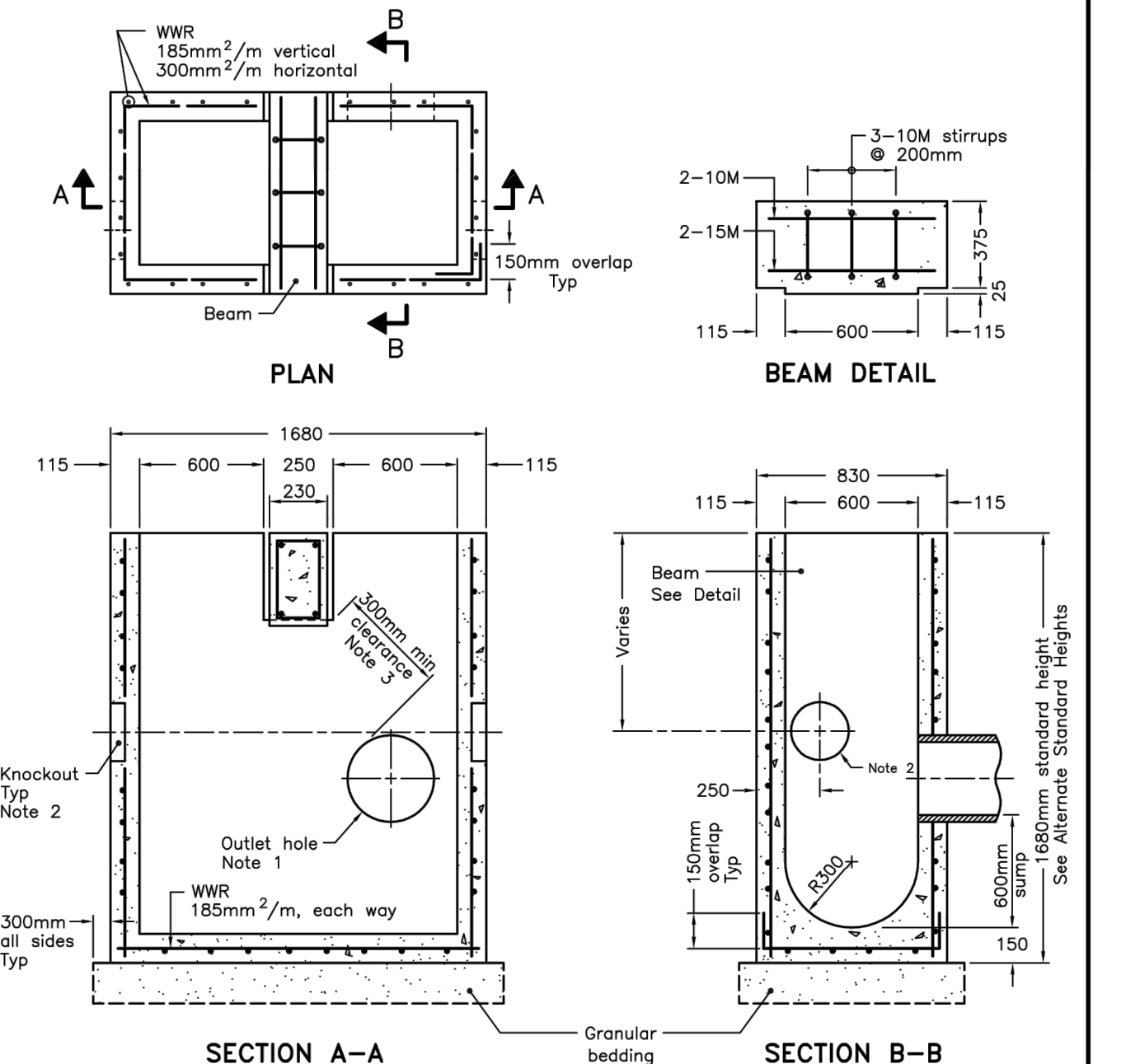
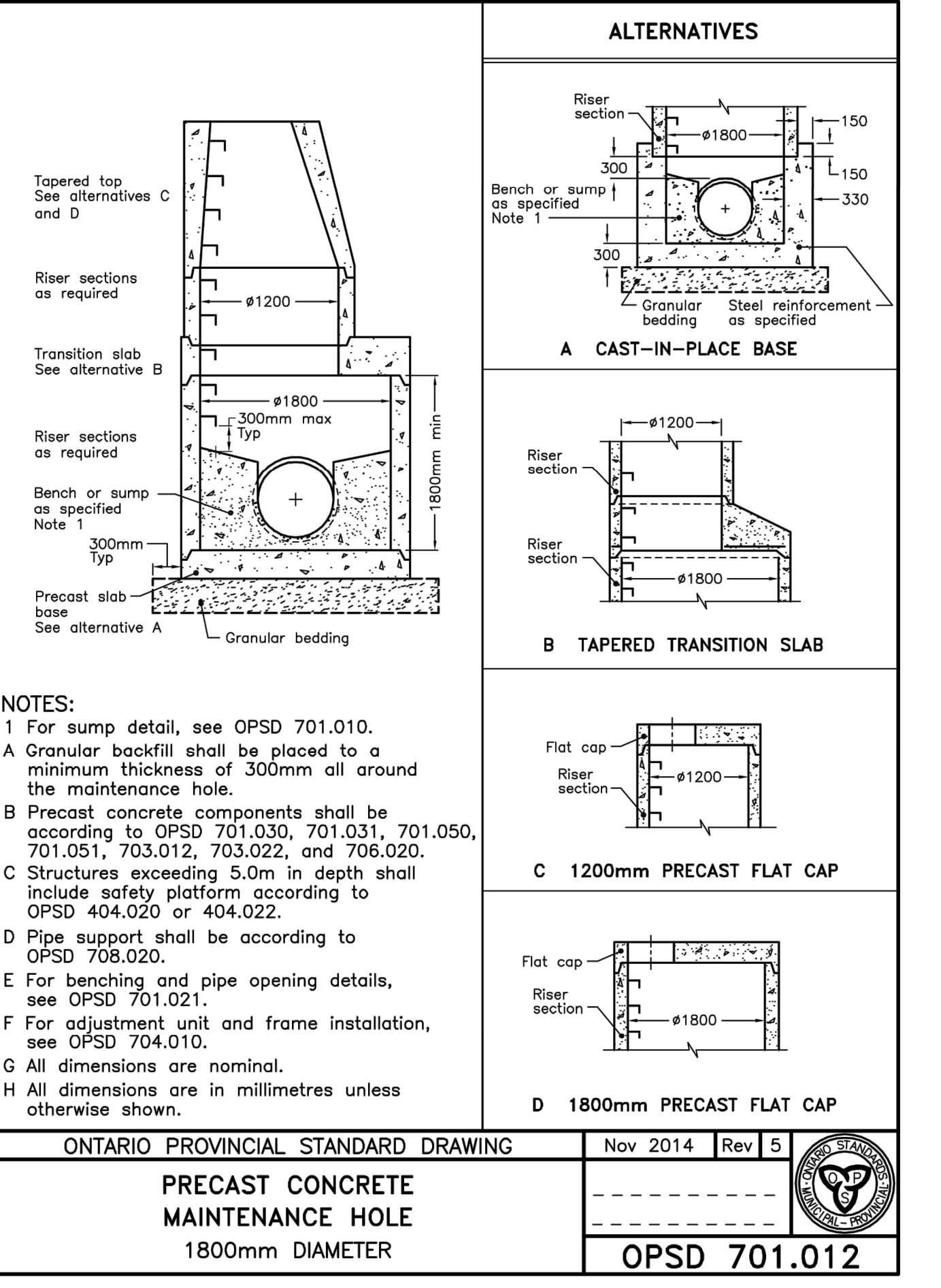


CB SHIELD
CB Shield (900mm Sump)



Barrie
Standard Hydrant and Valve Installation

REV No. 2
DATE: April 2019
SCALE: N.T.S.
BSD-507



PRECAST CONCRETE TWIN INLET CATCH BASIN
600 x 1450mm

ONTPSD 705.020

NOTES:
1 Outlet hole size 525mm diameter maximum, location as required.
2 200mm diameter knockout shall be provided. Knockout shall be 60mm deep.
3 Minimum clearance between beam recess and hole for pipe shall be 300mm or minimum clearance can be 150mm with addition of two 15M size rebar on 45 degree diagonal.
A Centre reinforcing in base slab and walls ±20mm.
B Granular backfill shall be placed to a minimum thickness of 300mm all around the catch basin.
C Frame, grate, and adjustment units shall be installed according to OPSD 704.010.
D Pipe support shall be according to OPSD 708.020.
E All dimensions are nominal.
F All dimensions are in millimetres unless otherwise shown.

ALTERNATE STANDARD HEIGHTS	ALTERNATE DIMENSION
A	1980
B	1830
C	1680

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BENCHMARK:

BENCHMARK NO: 0101985454 LOCATED ON CONCRETE BRIDGE CARRYING MAPLEVIEW DRIVE E OVER LOVELL'S CREEK, 0.65km EAST OF HURONIA ROAD. TABLE IS SET HORIZONTALLY IN THE NORTH FACE, 0.45m NORTH OF CENTRELINE OF ROAD, 282m WEST OF THE NORTHEAST END OF BRIDGE, 18cm TOP OF CORNER. N4910788.939 E807294.100 ELEV 241.661

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BENCHMARK NO: 0302000804 LOCATED ON THE SOUTH LIMIT OF MAPLEVIEW DRIVE WEST APPROXIMATELY 1km EAST OF HURONIA ROAD, N4910878.122 E807601.062 ELEV 248.996

BENCHMARK NO: 0312011013 LOCATED ON LOOCHART ROAD ON THE NORTH SIDE OF THE BOULEVARD, APPROXIMATELY 1.02km WEST OF THE YONGE STREET AND HURONIA ROAD INTERSECTION. N4909870.257 E806733.990 ELEV 252.807

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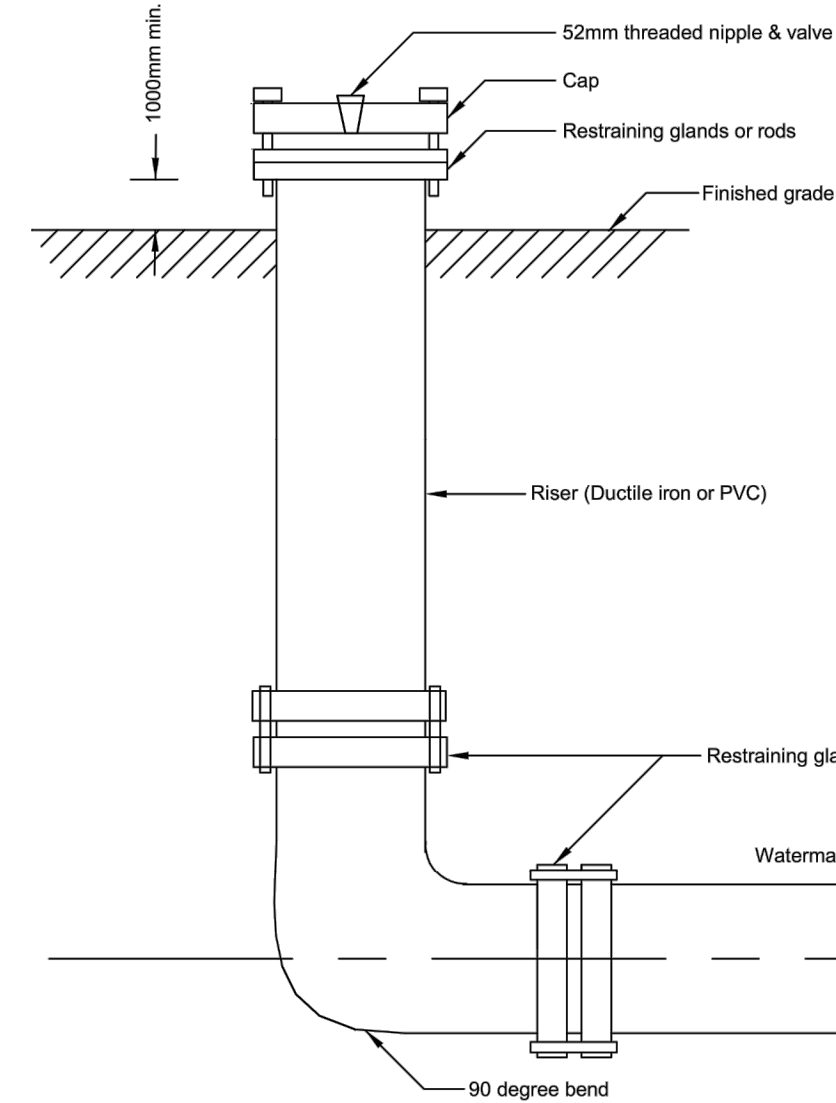
PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE

JONES CONSULTING GROUP LTD.
PLANNERS & ENGINEERS
229 Mapleview Dr. E. Unit 1
Barrie, ON L4N 0W5
P. 705.734.2538
F. 705.734.1058

DESIGN MF
SCALE: N/A
DATE: JANUARY 2021

DRAWN KS
PROJECT
PRA-19078
DWG. NO
DET-3

CHECKED DR

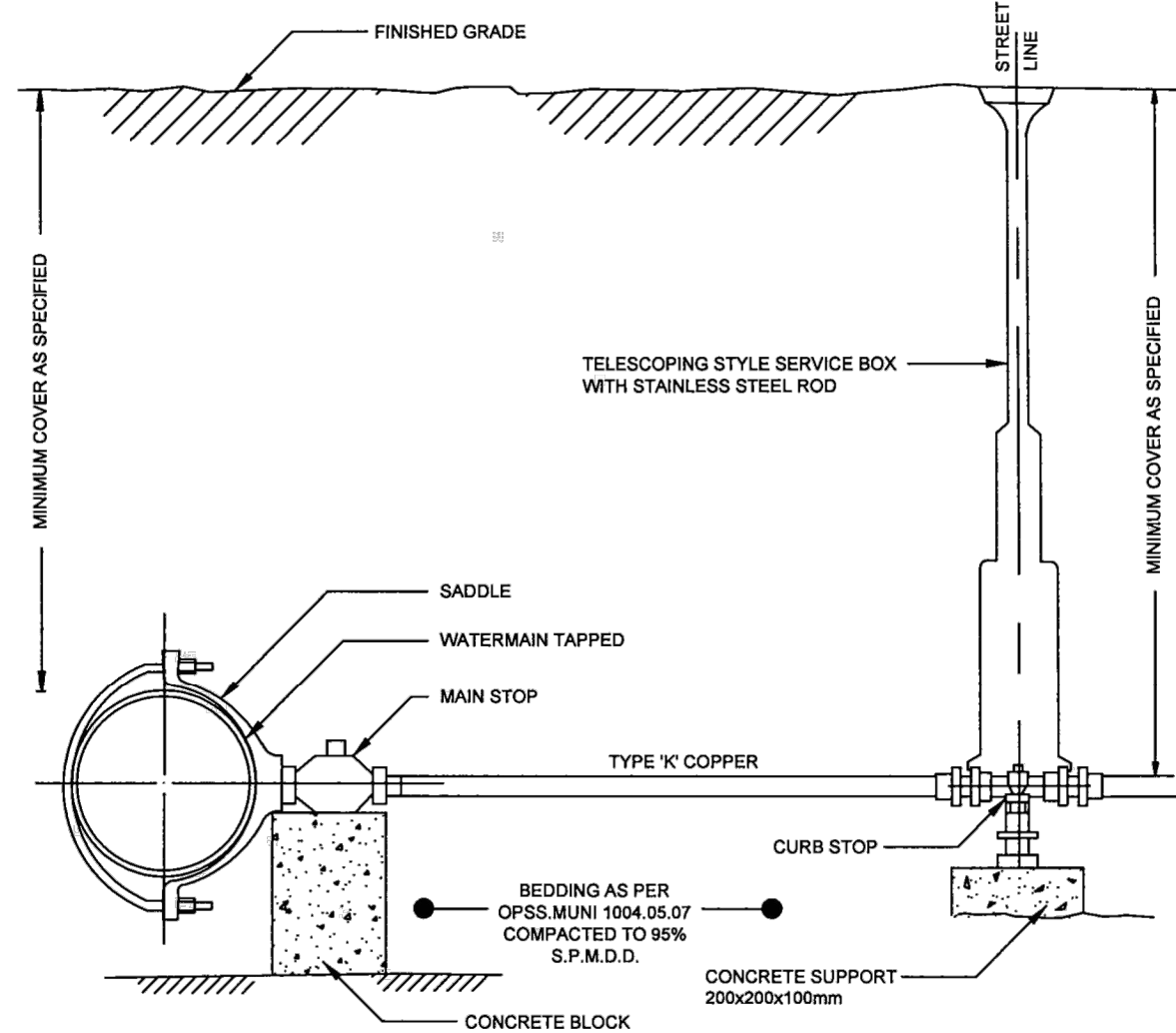


- NOTES:
- All dimensions are in millimeters unless otherwise shown.
 - Restraining glands or rods to be used for restraint.

Barrie Temporary Riser Installation

REV No. **2** DATE: May 2019
SCALE: N.T.S.

BSD-510



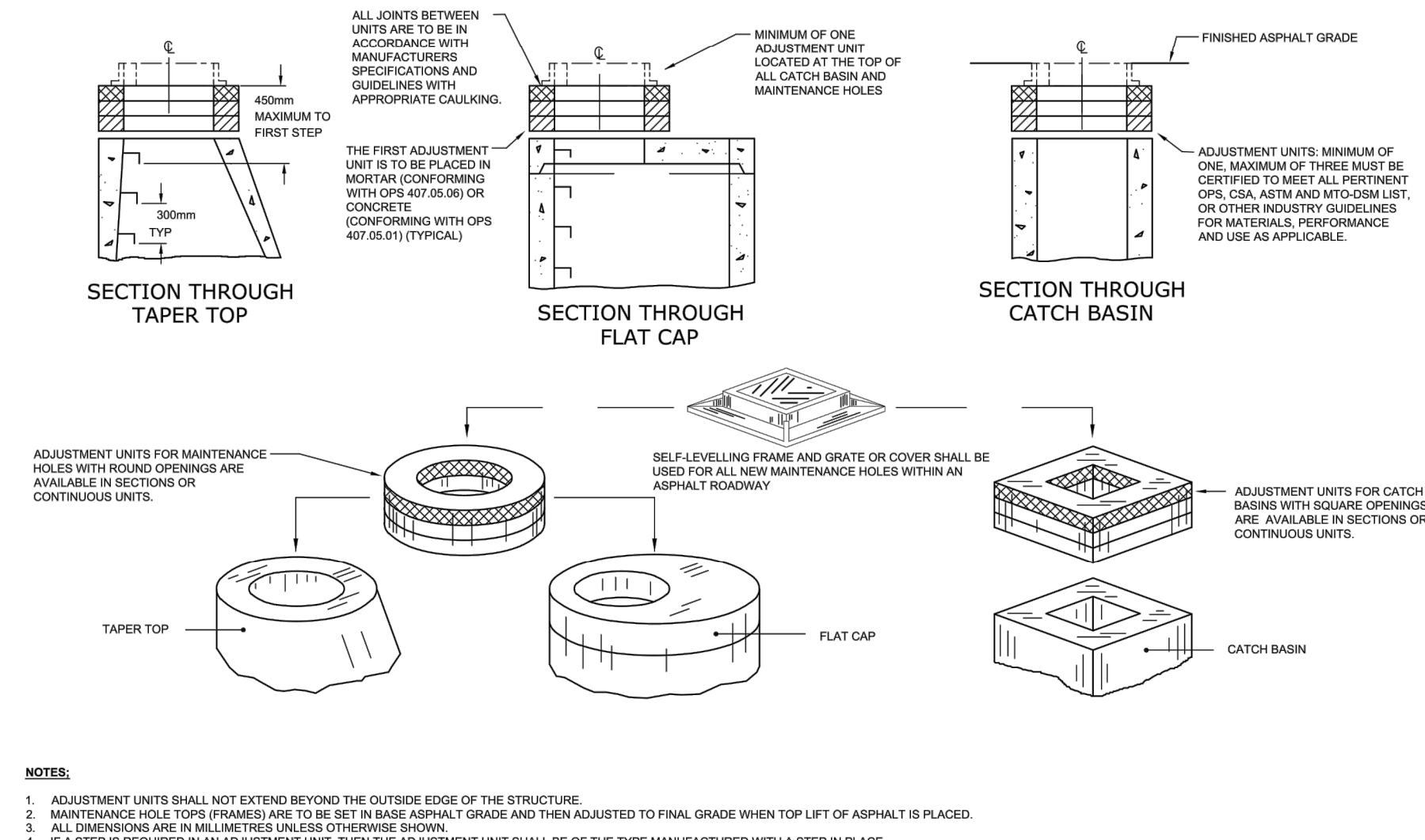
- NOTES:
- ANY JUNCTION MADE IN SERVICE PIPE BETWEEN MAIN STOP AND CURB STOP TO BE MADE WITH APPROVED COUPLINGS. (FOR 50mm ONLY)
 - ALL WATER SERVICES TO BE INSTALLED AT RIGHT ANGLE TO THE WATERMAIN.
 - ALL TAPPINGS TO BE AT 3 OR 9 O'CLOCK POSITION ONLY.
 - 85mm (Ø) STAINLESS STEEL SERVICE BOX ROD.
 - SEE BSD-524 FOR 38mm AND 50mm NON-COPPER WATER SERVICES.
 - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

City of Barrie STANDARD DETAIL

COPPER WATER SERVICE CONNECTION DETAIL 38mm AND 50mm DIAMETER SIZES

REV No. **1** DATE: FEB 2015
SCALE: N.T.S.

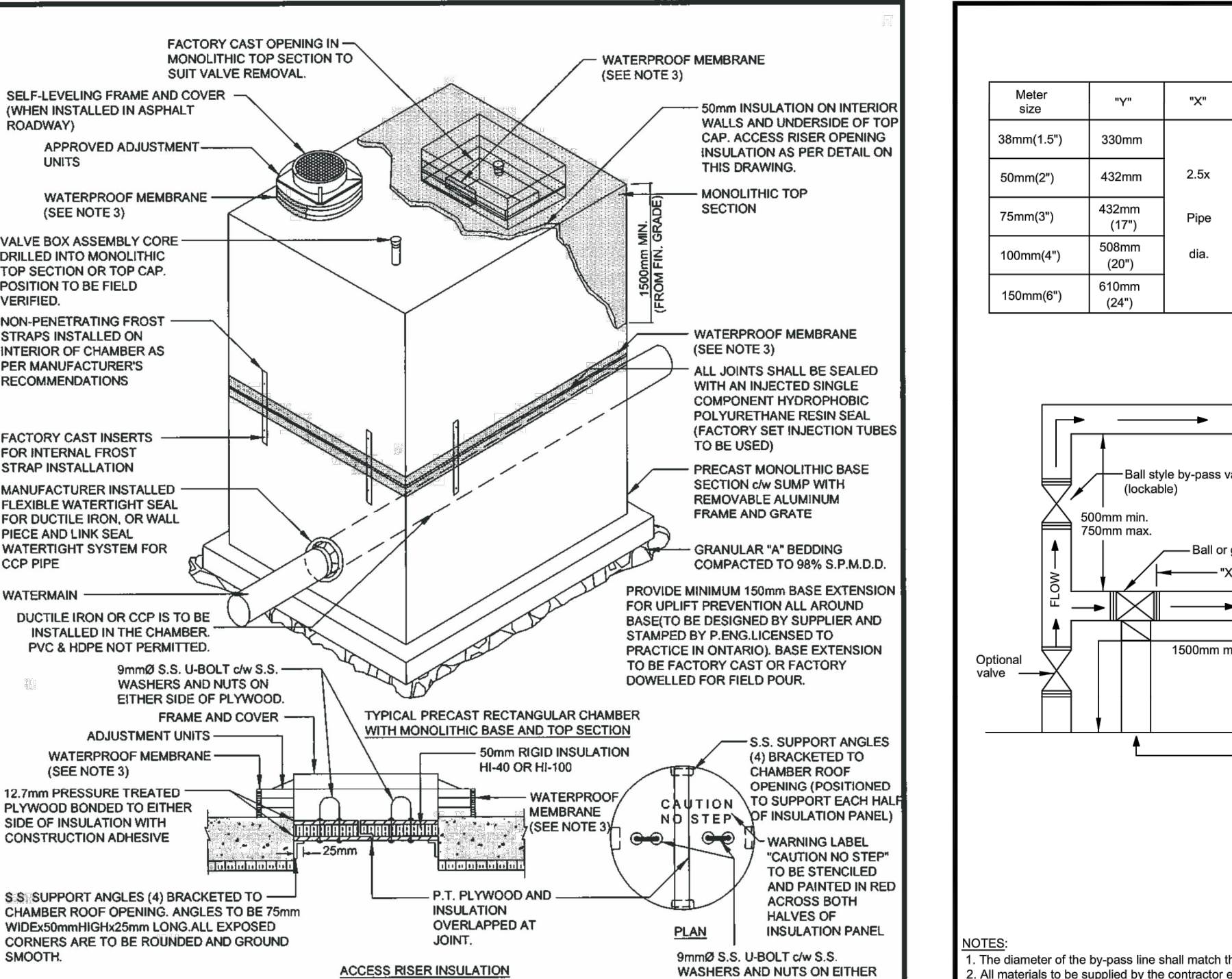
BSD-503
(PREVIOUSLY BSD-49)



Barrie MAINTENANCE HOLE AND CATCH BASIN ADJUSTMENT UNITS

REV No. **3** DATE: Nov 2019
SCALE: N.T.S.

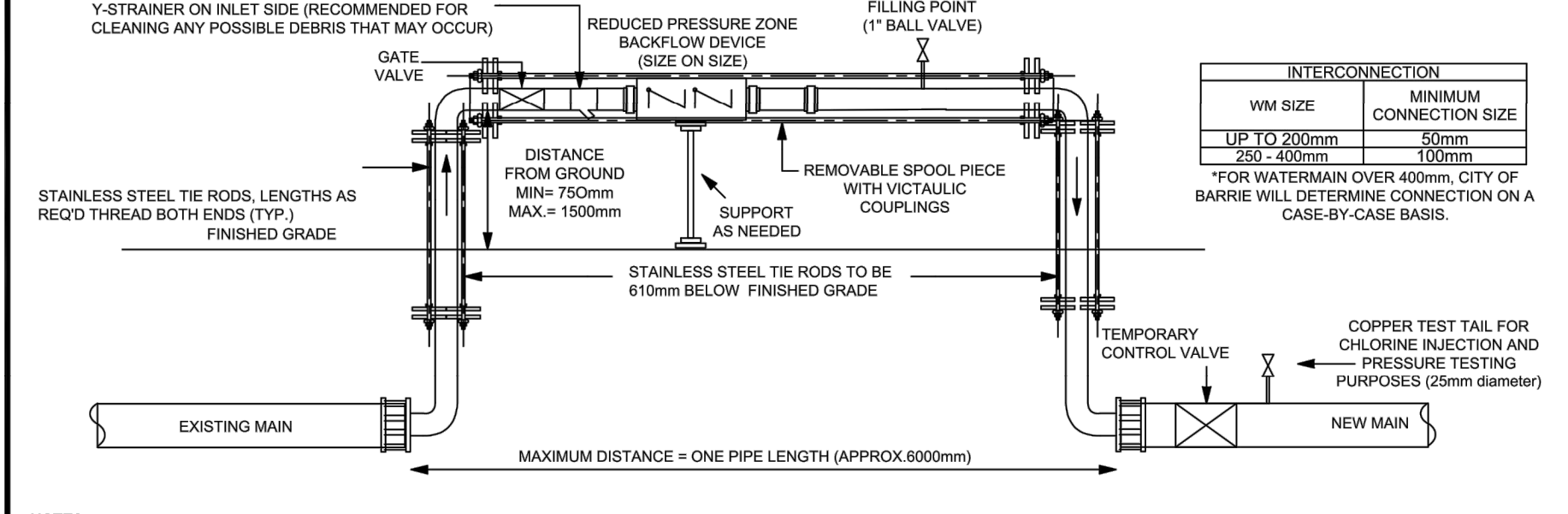
BSD-41



Barrie TYPICAL TWO PIECE PRECAST RECTANGULAR CHAMBER DETAILS FOR WATERMAINS

REV No. **2** DATE: OCT 2017
SCALE: N.T.S.

BSD-525

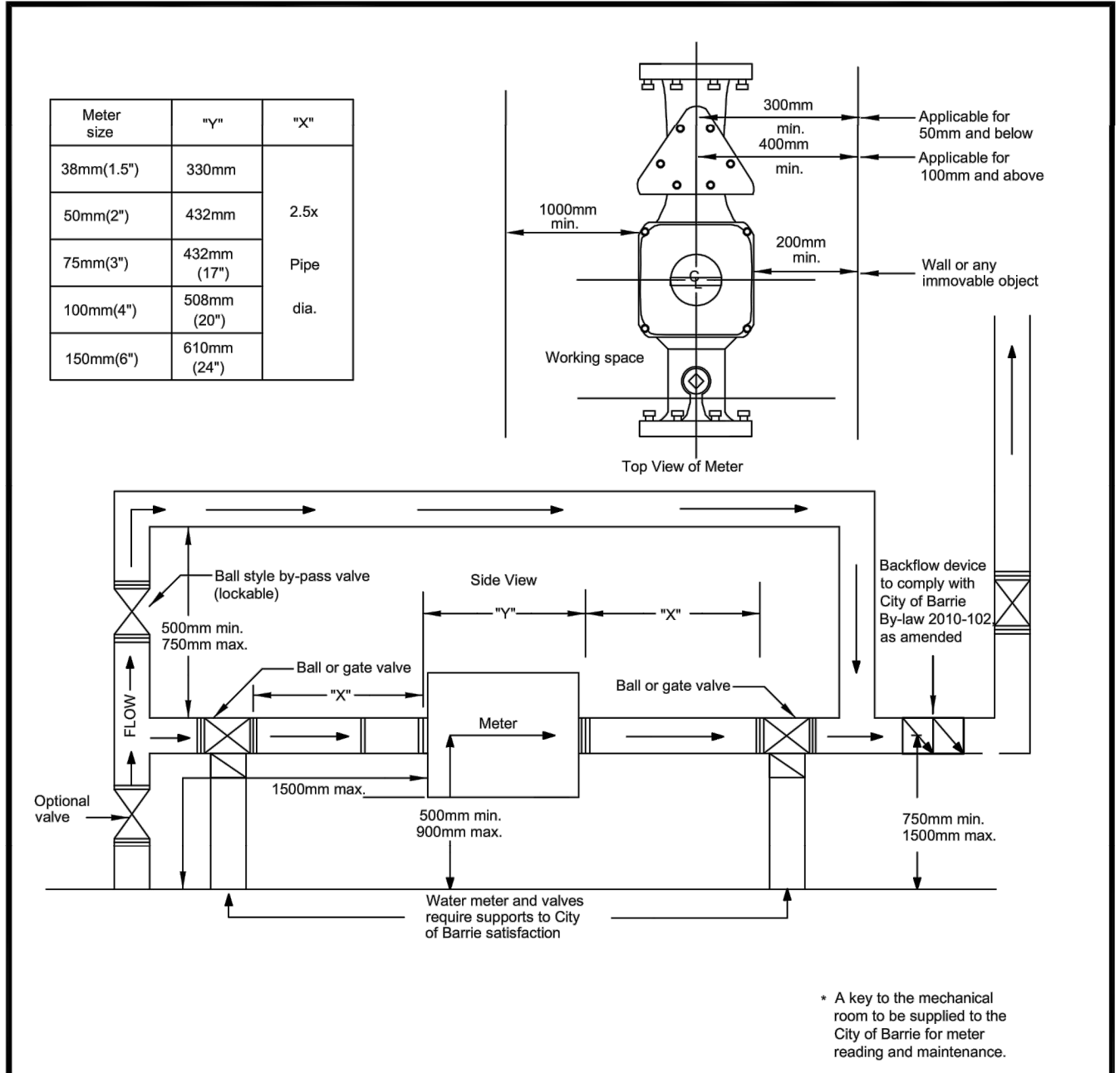


- NOTES:
- THE REDUCED PRESSURE ZONE BACKFLOW PREVENTER MUST BE PROVIDED BY THE CONTRACTOR, IN GOOD WORKING ORDER, AND TESTED AS PER CSA B64.10-01 (AS AMENDED) WITHIN THE SAME DAY.
 - THE BACKFLOW PREVENTION ASSEMBLY AND THE BACKFLOW PREVENTION VALVE ASSEMBLY SHALL BE PHYSICALLY SEPARATED FROM THE NEW MAIN DURING WATERMAIN PRESSURE TESTS.
 - THE FINAL CONNECTION OF THE WATERMAIN SHALL BE COMPLETED ONLY AFTER AUTHORIZATION BY THE CITY OF BARRIE.
 - THE WATERMAIN SHALL BE DRAINED BY CONTROLLED MEANS, DE-CHLORINATED AS REQUIRED AS PER AWWA AND TEMPORARY CAPS OR PLUGS INSTALLED AS REQUIRED. SUFFICIENT TRENCH DRAINING CAPACITY SHALL BE USED WHEN THE EXISTING AND NEW WATERMAIN ARE DRAINED PRIOR TO THE FINAL CONNECTION TO ENSURE NO BACKFLOW OF TRENCH WATER INTO EITHER WATERMAIN.
 - THE WATERMAIN SHALL BE CUT BACK TO REMOVE THE TAPPING POINTS OF THE TEMPORARY WATERMAIN BY-PASS ASSEMBLY. ENSURE COMPLETION VALVE IS LESS THAN 5m AND DISINFECTING ACCORDING TO AWWA C651 (AS AMENDED).
 - ONLY CITY OF BARRIE WATER OPERATIONS SHALL OPERATE VALVES AND/OR OTHER APPURTENANCES WITHIN THE NEW SYSTEM ONCE COMMISSIONING PROCEDURES ARE INITIATED. FAILURE TO COMPLY WITH THIS REQUIREMENT WILL RESULT IN A CHARGE, AS OUTLINED IN THE CITY OF BARRIE FEES BY-LAW (AS AMENDED).
 - ALL NEW PIPING AND APPURTENANCES PLACED IN THE CONNECTION SHALL BE THOROUGHLY DISINFECTED AS PER AWWA C651-DISINFECTING WATERMAN (AS AMENDED).
 - A PHYSICAL SEPARATION MUST BE MAINTAINED AT ALL CONNECTION POINTS OF NEW WATERMAINS TO THE EXISTING SYSTEM UNTIL BACTERIOLOGICAL SAMPLES CONFIRM SATISFACTORY RESULTS. A SAMPLING TAP MUST BE PROVIDED AT THE END OF EACH BRANCH OR STUB.
 - THE ACTUAL CONFIGURATION USED MUST SATISFY THE INTENT OF THIS DRAWING AND AT THE DISCRETION OF THE CITY REPRESENTATIVE (THE CITY OF BARRIE WATER OPERATIONS BRANCH MUST BE CONSULTED PRIOR TO ANY CONNECTION TO THE EXISTING DRINKING WATER SYSTEM).
 - WINTER PROTECTION MUST BE PROVIDED WHEN APPLICABLE.
 - ALL TEMPORARY CAPS TO BE RESTRAINED. ALL RESTRAINED JOINTS AS PER PIPE MANUFACTURER'S SPECIFICATION.
 - CITY OF BARRIE WATER OPERATIONS MAINTAINS THE RIGHT TO REQUEST ALTERNATIVE BY-PASS ASSEMBLY SIZING IN AREAS WHERE PRESSURE AND FLOW RATES MAY BE AN ISSUE.
 - 100mm AND ABOVE STAINLESS STEEL RODS AS REQUIRED THROUGH BOTH ENDS AND APPROVED RESTRAINER CLAMP ASSEMBLY (PER BSD-519).
 - 50mm ALL JOINTS TO USE A NON-LEAD COUPLING WITH INTEGRATED CLAMP SCREW.

Barrie TEMPORARY BY-PASS CONNECTION FOR WATERMAINS (UP TO 400mm)

REV No. **2** DATE: NOV 2019
SCALE: N.T.S.

BSD-534



Barrie Typical Meter Installation for Domestic Services Requiring By-passes

REV No. **3** DATE: May 2019
SCALE: N.T.S.

BSD-533

ACO DRAIN
SlabDrain - H300SK-13 iron edged channel system with slotted grate

Product	Outlet size (Sch. 40)	Invert Depth	GPM	CFS
H300SK-13 channel	6" round	4.00	243	0.54
H300SK-13 channel	8" round	4.00	432	0.96

Apr 13/1 www.ACODrain.us

ACO Specification Information

G:\Eng_3D\PRAs-19078\Production\DWG\PRAs-19078-Details (BLD)\OS A & B REMOVED.dwg Layout:DET-4 Printed: May 10, 2022 @ 11:21pm by kschulz The Jones Consulting Group, Ltd.

BENCHMARK:

NO.	REVISIONS	DATE	INITIAL
5	ISSUED FOR REGISTRATION	MAY 2022	DR
4	4TH DETAILED DESIGN SUBMISSION	22-02-28	DR
3	3RD DETAILED DESIGN SUBMISSION	21-12-20	MF
2	2ND DETAILED DESIGN SUBMISSION	21-09-03	MF
1	1ST DETAILED DESIGN SUBMISSION	21-02-12	MF

PROFESSIONAL ENGINEER
M. G. F. J.S.
00149153
05-20-2022
PROVINCE OF ONTARIO

PRATT HANSEN GROUP INC.
ELEMENTS SITE PLAN
CITY OF BARRIE

JONES CONSULTING GROUP LTD.
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F. 705.734.1056

DESIGN MF SCALE: N/A DATE: JANUARY 2021
DRAWN KS PROJECT DWG. NO
CHECKED DR PRA-19078 DET-4

