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Legend

Notes

ROADWORKS

1. ALL TOPSOIL AND ORGANIC MATERIAL TO BE STRIPPED FROM WITHIN THE FULL RIGHT OF WAY PRIOR TO CONSTRUCTION.
2. SUB-EXCAVATE SOFT AREAS & FILL WITH GRANULAR 'B' COMPACTED IN 0.30m LAYERS.
3. ALL GRANULAR FOR ROADS SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMD).
4. ROAD SUBDRAINS SHALL BE CONSTRUCTED AS PER CITY OF OTTAWA STANDARD R1.
5. ASPHALT WEAR COURSE SHALL NOT BE PLACED UNTIL THE VIDEO INSPECTION OF SEWERS & NECESSARY REPAIRS HAVE BEEN CARRIED OUT TO THE SATISFACTION OF THE CONSULTANT.
6. CONTRACTOR TO OBTAIN A ROAD OCCUPANCY PERMIT 48 HOURS PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL ROAD ALLOWANCE IF REQUIRED BY THE MUNICIPALITY. ALL WORK ON THE MUNICIPAL RIGHT OF WAY AND EASEMENTS TO BE INSPECTED BY THE MUNICIPALITY PRIOR TO BACKFILLING.
7. PAVEMENT REINSTATEMENT FOR SERVICE AND UTILITY CUTS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD R10 AND OPS5 509.010, AND OPS5 310.
8. CONCRETE CURBS SHALL BE CONSTRUCTED AS PER CITY STANDARD SC1.1 AND SC1.3 (BARRIER OR MOUNTABLE CURBS AS SHOWN ON DRAWINGS).
9. CONCRETE SIDEWALKS SHALL BE CONSTRUCTED AS PER CITY STANDARDS SC1 AND SC1.4.
10. PAVEMENT CONSTRUCTION AS PER GEOTECHNICAL INVESTIGATION PREPARED BY HOULE CHEVRIER ENGINEERING LTD. DATED MAY 2010.

AREAS WITH NO BUS TRAFFIC AND WHERE SUBGRADE OF PEAT AND REPLACEMENT WITH BLAST ROCK HAS BEEN CARRIED OUT (MIN. 300mm SUITABLE BLAST ROCK MATERIAL)

40mm SUPERPAVE 12.5  
50mm SUPERPAVE 19.0  
150mm OPSS GRANULAR A BASE  
150mm OPSS GRANULAR B TYPE II SUBBASE

AREAS WITH NO BUS TRAFFIC AND WHERE NATIVE SOILS EXIST AT ROADWAY SUBGRADE ELEVATION

40mm SUPERPAVE 12.5  
50mm SUPERPAVE 19.0  
100mm SUPERPAVE 19.0  
150mm OPSS GRANULAR A BASE  
450mm OPSS GRANULAR B TYPE II SUBBASE

AREAS WITH BUS/STREET TRAFFIC AND WHERE NATIVE SOILS EXIST AT ROADWAY SUBGRADE ELEVATION

40mm SUPERPAVE 12.5  
50mm SUPERPAVE 19.0  
100mm SUPERPAVE 19.0  
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WATER SUPPLY SERVICING

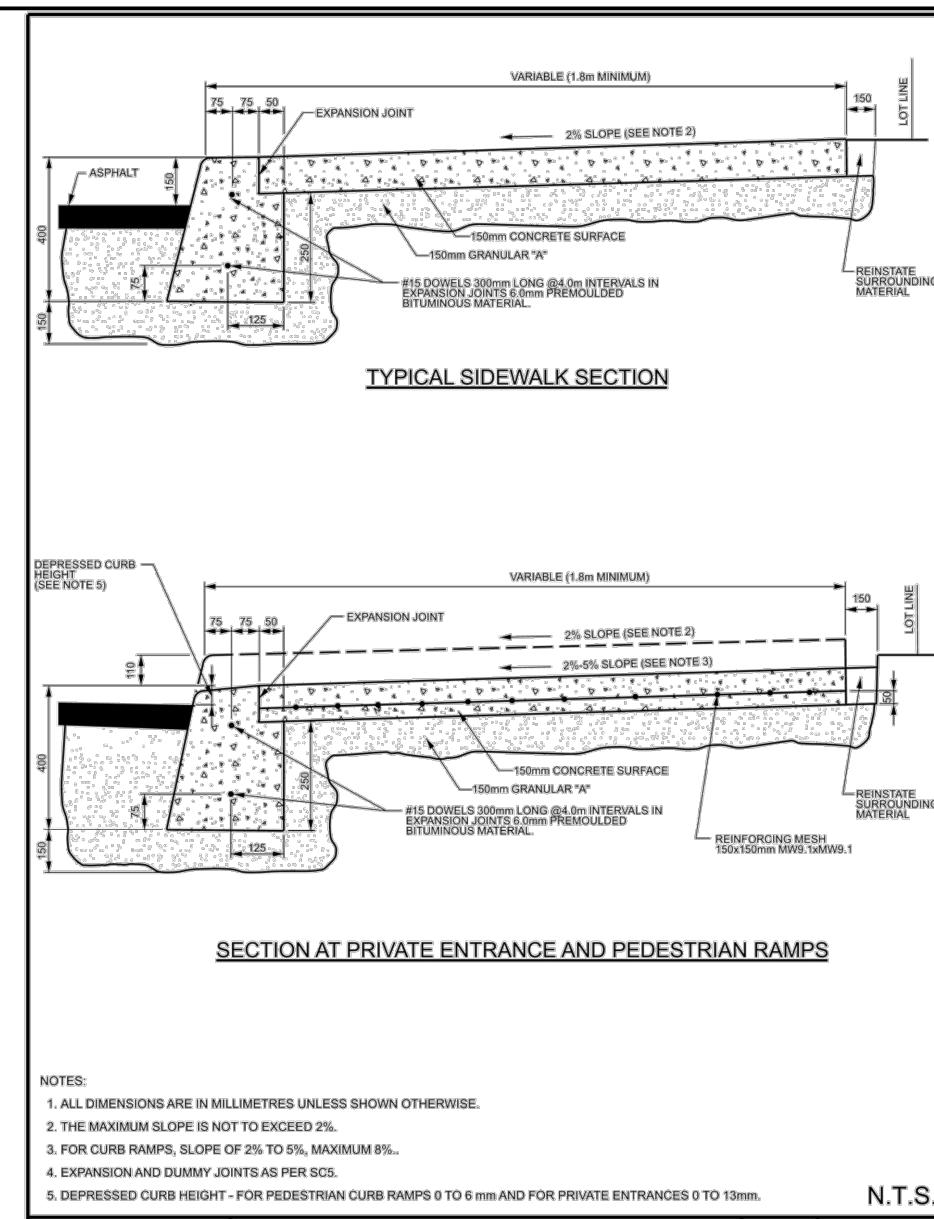
1. THE CONTRACTOR SHALL CONSTRUCT WATERMAIN, WATER SERVICES, CONNECTIONS & APPURTENANCES AS PER CITY OF OTTAWA SPECIFICATIONS & SHALL CO-ORDINATE AND PAY ALL RELATED COSTS INCLUDING THE COST OF CONNECTION, INSPECTION & DISINFECTION BY CITY RESIDENTS.
2. WATERMAIN PIPE MATERIAL SHALL BE PVC CL-150 DR16. DEPTH OF WATERMAIN PIPE IS NOT TO EXCEED 10% OF THAT SPECIFIED BY THE MANUFACTURER. PVC WATERMANS TO BE INSTALLED WITH TRACER WIRE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W36.
3. WATER SERVICES TO BE TYPE K SOFT COPPER AS PER CITY OF OTTAWA STANDARD W28 (UNLESS OTHERWISE NOTED); WATER SERVICES WITHIN RIGHT OF WAYS TO EXTEND 2.0m BEYOND PROPERTY LINE. STAND POST TO BE INSTALLED AT PROPERTY LINE. WATER SERVICES WITHIN PRIVATE BLOCKS TO EXTEND TO 1.5m FROM PROPOSED FOUNDATIONS. STAND POST TO BE INSTALLED AS SHOWN ON THE SITE SERVICING PLAN (CROSS-SECTION TO BE CONFIRMED PRIOR TO CONSTRUCTION).
4. FIRE HYDRANTS TO BE INSTALLED AS PER CITY OF OTTAWA STANDARDS W18 AND W19.
5. WATER VALVES TO BE INSTALLED AS PER CITY OF OTTAWA STANDARD W4.
6. WATERMAIN TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. W17 UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL TO BE SPECIFIED BY PROJECT GEOTECHNICAL CONSULTANT.
7. SERVICE CONNECTIONS SHALL BE INSTALLED A MINIMUM OF 340mm FROM ANY CATCH-BASIN, MANHOLE, OR OBJECT THAT MAY CONTRIBUTE TO FREEZING. THERMAL INSULATION SHALL BE INSTALLED ON ALL PROPOSED CBS ON THE W/M STREET SIDE WHERE 240mm SEPARATION CANNOT BE ACHIEVED (AS PER CITY OF OTTAWA W22 & W23).
8. CATHODIC PROTECTION TO BE SUPPLIED ON METALLIC FITTINGS AS PER CITY OF OTTAWA W40 AND W42.
9. THRUST BLOCKS TO BE INSTALLED AS PER CITY OF OTTAWA STANDARDS W25.3 AND W25.4.
10. WATERMAIN TO HAVE MIN. 2.4m COVER. WHERE WATERMAIN COVER IS LESS THAN 2.4m, INSULATION TO BE SUPPLIED IN ACCORDANCE WITH CITY STANDARD W22.
11. WATERMAIN CROSSINGS ABOVE AND BELOW SEWERS TO BE INSTALLED AS PER CITY OF OTTAWA STANDARD W25 AND W25.2.
12. PRESSURE REDUCING VALVES (PRVs) TO BE INSTALLED AS PER ONTARIO PLUMBING CODE.
13. CONNECTIONS TO EXISTING WATERMAIN ARE TO BE DONE BY CITY FORCES. EXCAVATION AND BACKFILL ARE TO BE PROVIDED BY CONTRACTOR.

STORM AND SANITARY SEWERS

1. SANITARY SEWERS 375mm DIA. OR SMALLER SHALL BE PVC SDR35. SANITARY SEWERS LARGER THAN 375mm SHALL BE CONCRETE CSA A 257.2 CLASS 1000 AS PER OPS5 807.010.
2. STORM SEWERS 375mm DIA. OR SMALLER SHALL BE PVC SDR 35. STORM SEWERS LARGER THAN 375mm DIA. SHALL BE CONCRETE CSA A 257.2 CLASS 1000 AS PER OPS5 807.010.
3. ALL STORM AND SANITARY SEWER BEDDING SHALL BE INSTALLED AS PER CITY OF OTTAWA STANDARDS S6 AND S7, CLASS 'B' BEDDING, UNLESS OTHERWISE NOTED. SUITABLE BEDDING AND COVER MATERIAL TO BE SPECIFIED BY GEOTECHNICAL CONSULTANT.
4. STORM AND SANITARY MANHOLES SHALL BE 1200mm DIAMETER IN ACCORDANCE WITH OPSD-701.01 (UNLESS OTHERWISE NOTED) w/ FRAME AND COVER AS PER CITY OF OTTAWA S24 AND S25. ALL STORM MANHOLES WITH SEWERS 800mm DIA. SEWERS AND OVER IN GRANULAR SHALL BE BENCH MARKED. ALL OTHER STORM MANHOLES SHALL BE COMPLETED WITH 300mm SUMPS AS PER CITY STANDARDS. SANITARY MANHOLES SHALL NOT HAVE SUMPS.
5. ALL SEWERS CONSTRUCTED WITH GRADES 0.50% OR LESS, TO BE INSTALLED WITH LASER AND CHECKED WITH LEVEL INSTRUMENT PRIOR TO BACKFILLING.
6. FOR STORM SEWER INSTALLATION (EXCLUDING GB LEADS) THE MINIMUM DEPTH OF COVER OVER THE CROWN OF THE SEWER IS 2.0m. FOR SANITARY SEWERS THE MINIMUM DEPTH OF COVER IS 2.5m OVER PIPE OBVERT.
7. SAFETY PLATFORMS SHALL BE INSTALLED IN ACCORDANCE WITH OPSD 404.02.
8. DROP STRUCTURES TO BE INSTALLED AS PER CITY OF OTTAWA SPECIFICATIONS AND OPSD 1003.01
9. ALL STORM AND SANITARY SERVICES TO BE EQUIPPED WITH APPROVED BACKWATER VALVES.
10. STORM AND SANITARY SERVICE LATERALS TO BE SDR 28 INSTALLED AT MIN. 1.0% SLOPE. SINGLE STORM SERVICES TO BE 100mm. SINGLE SANITARY SERVICES TO BE 150mm. (SERVICES WITHIN RIGHT OF WAYS TO EXTEND 2.0m BEYOND PROPERTY LINE. SERVICES WITHIN PRIVATE BLOCKS TO EXTEND TO 1.5m FROM PROPOSED FOUNDATIONS).
11. CATCH BASINS SHALL BE IN ACCORDANCE WITH CITY STANDARDS w/ FRAME AND GRATE AS PER S30, AND S21 FOR REAR YARDS, AND S3 FOR STREET CBS. PROVIDE 150mm ADJUSTED SPACERS. ALL CATCH BASINS SHALL HAVE SUMPS (600mm DEEP). STREET CATCH BASIN LEADS SHALL BE 200mm DIA (MM) PVC SDR 35 AT 1.0% GRADE WHERE NOT OTHERWISE SHOWN ON PLAN. CATCH BASINS WILL BE INSTALLED WITH INLET CONTROL DEVICES (ICD) AS PER ICD SCHEDULE ON STORM DRAINAGE PLAN.
12. STREET CATCH BASINS TO BE INSTALLED w/ SUBDRAINS 3m LONG IN FOUR OBVIOUS DIRECTIONS OR LONGITUDINALLY WHEN PLACED ALONG A CURB, AND AT AN ELEVATION OF 300mm BELOW SUBGRADE LEVEL.
13. REAR LOT PERFORATED PIPE TO BE INSTALLED AS PER CITY OF OTTAWA STANDARDS S29. REAR LOT STRUCTURES TO BE INSTALLED AS PER CITY OF OTTAWA STANDARD W30 AND W31.
14. SEEPAGE BARRIERS (AS PER S8) SHOULD BE INSTALLED ALONG THE SERVICE TRENCHES AT STRATEGIC LOCATIONS. THE SEEPAGE BARRIERS SHOULD BEGIN AT SUBGRADE LEVEL AND EXTEND VERTICALLY THROUGH THE GRANULAR PIPE BEDDING AND GRANULAR SURROUND TO WITHIN THE NATIVE BACKFILL MATERIALS AND HORIZONTALLY ACROSS THE FULL WIDTH OF THE SERVICE TRENCH EXCAVATION. THE SEEPAGE BARRIERS SHOULD CONSIST OF 1.5m DEEP DYKES OF COMPACTED SILTY CLAY. THE SILTY CLAY SHOULD BE COMPACTED IN MAXIMUM 300mm THICK LIFTS TO AT LEAST 95% OF THE MATERIALS SPREAD. THE CLAY SEAL SHOULD BE PLACED AT THE SITE BOUNDARIES AND AT STRATEGIC LOCATIONS AT NO MORE THAN 60m INTERVALS IN THE SERVICE TRENCHES. FOR DETAILS REFER TO GEOTECHNICAL INVESTIGATION.
15. GRANULAR 'A' SHALL BE PLACED TO A MINIMUM THICKNESS OF 300mm AROUND ALL STRUCTURES WITHIN PAVEMENT AREA AND COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY.
16. CONTRACTOR SHALL PERFORM LEAKAGE TESTING, IN THE PRESENCE OF THE CONSULTANT, FOR SANITARY SEWERS IN ACCORDANCE WITH OPS5 410 AND OPS5 407. CONTRACTOR SHALL PERFORM VIDEO INSPECTION OF ALL STORM AND SANITARY SEWERS. A COPY OF THE VIDEO AND INSPECTION REPORT SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW.

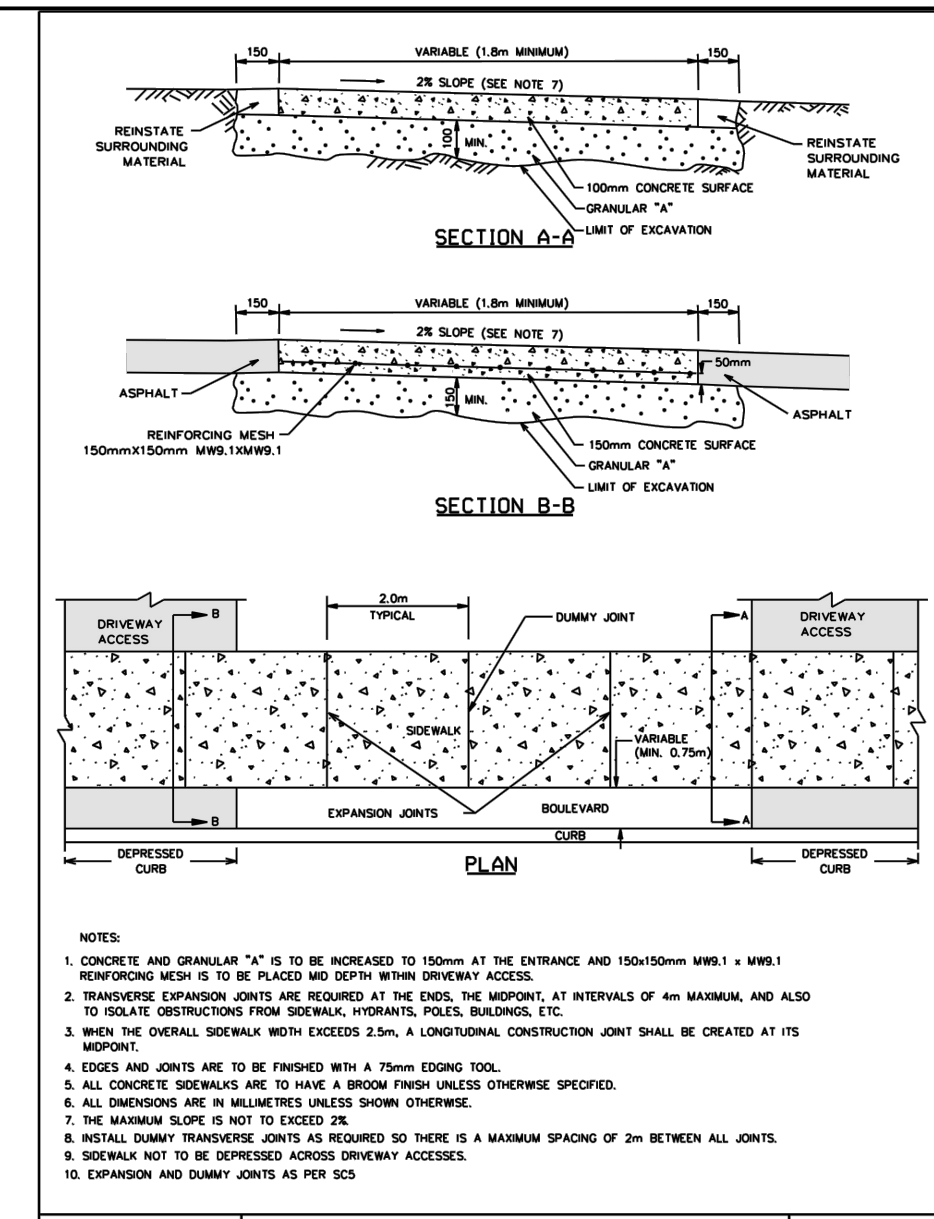
GRADING

1. ALL GRANULAR BASE & SUB BASE COURSE MATERIALS SHALL BE COMPACTED TO 98% STANDARD PROCTOR MAX DRY DENSITY.
2. SUB-EXCAVATE SOFT AREAS & FILL WITH GRANULAR 'B' COMPACTED IN 0.15m LAYERS.
3. ALL DISTURBED GRASSED AREAS SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER, WITH SOD ON MIN. 100mm TOPSOIL. THE RELOCATION OF TREES AND SHRUBS SHALL BE SUBJECT TO APPROVAL BY THE PROJECT LANDSCAPE ARCHITECT OR ENGINEER.
4. 100 YEAR PONDING DEPTH TO BE 0.30m (MAXIMUM).
5. EMBANKMENTS TO BE SLOPED AT MIN. 3:1, UNLESS OTHERWISE SPECIFIED.
6. ALL SWALES TO BE MIN. 0.15m DEEP WITH MAX. 3:1 SIDE SLOPES UNLESS OTHERWISE NOTED. THE MINIMUM LONGITUDINAL SLOPE TO BE 1.5% OR 1.0% WHEN PERFORATED SUBDRAIN IS INSTALLED.
7. ALL ROOF DOWNSPOUTS TO DISCHARGE TO THE GROUND ONTO SPLASH PADS AND SHALL NOT BE DIRECTED TO THE STORM SEWER, OR THE BUILDING FOUNDATION DRAIN.
8. TOP OF GRATE (T.O.G.) ELEVATIONS FOR ALL STREET CATCHBASINS SHOWN ON PLANS REFER TO THE ELEVATION AT EDGE OF PAVEMENT, OR OUTLINE WHERE APPLICABLE.
9. ALL RETAINING WALLS GREATER THAN 1.0m IN HEIGHT ARE TO BE DESIGNED, APPROVED, AND STAMPED BY STRUCTURAL ENGINEER.
10. FENCES OR RAILINGS ARE REQUIRED FOR RETAINING WALLS GREATER THAN 0.60m IN HEIGHT.
11. EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE.
12. ALL NECESSARY CLEARING AND GRUBBING SHALL BE COMPLETED BY THE CONTRACTOR. REVIEW WITH CONTRACT ADMINISTRATOR AND THE CITY OF OTTAWA PRIOR TO TREE CUTTING.
13. REFER TO DRAWING EC-1 FOR EROSION AND SEDIMENT CONTROL DETAILS.
14. FROST PROTECTION TO BE PROVIDED FOR FOUNDATIONS WHERE DEPTH OF COVER IS LESS THAN 1.5m AS PER GEOTECHNICAL RECOMMENDATIONS.

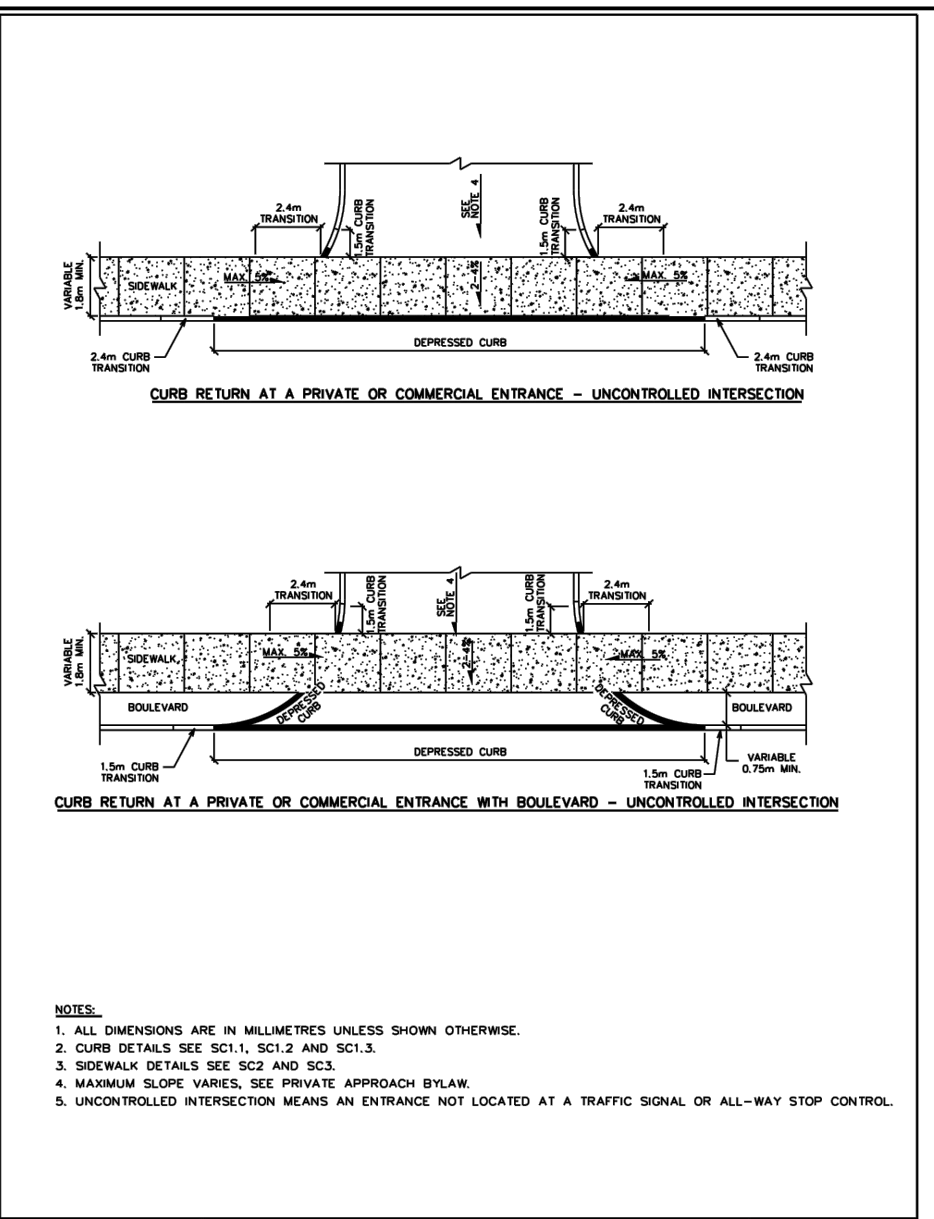


CONCRETE BARRIER CURB WITH SIDEWALK

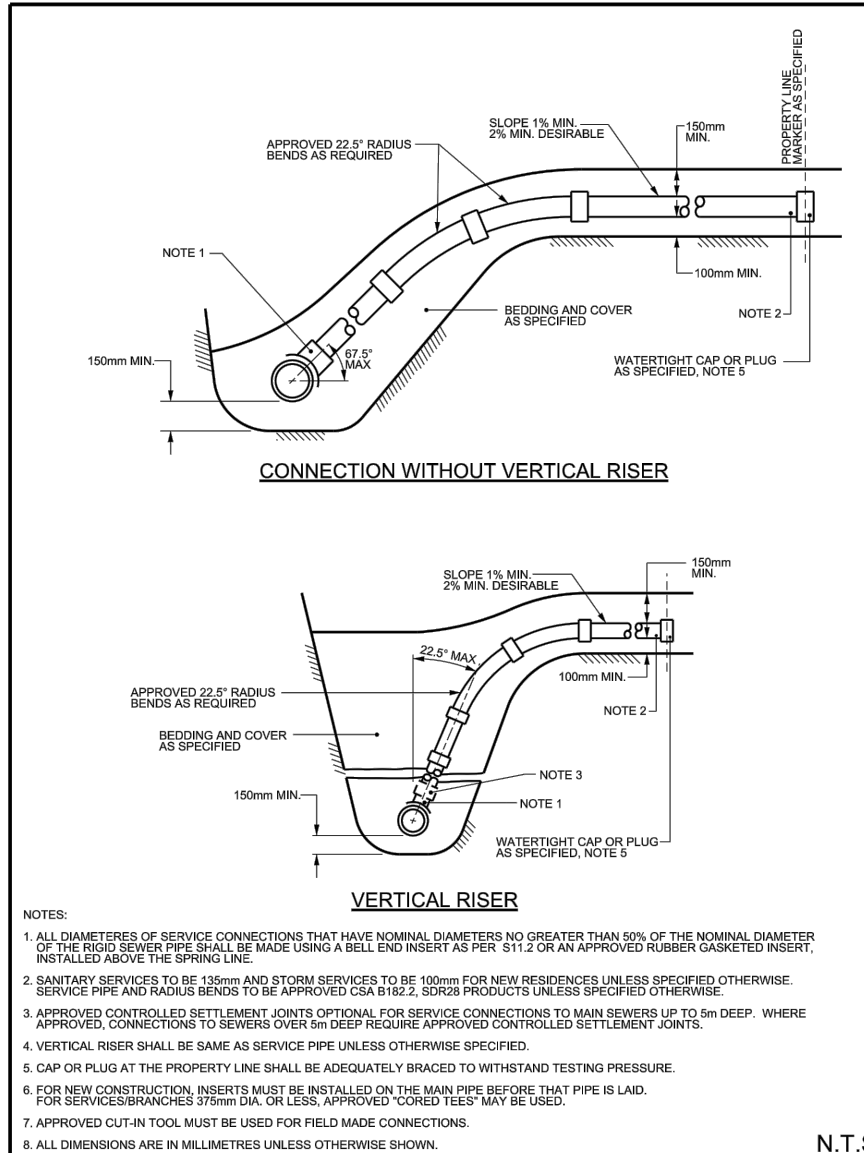
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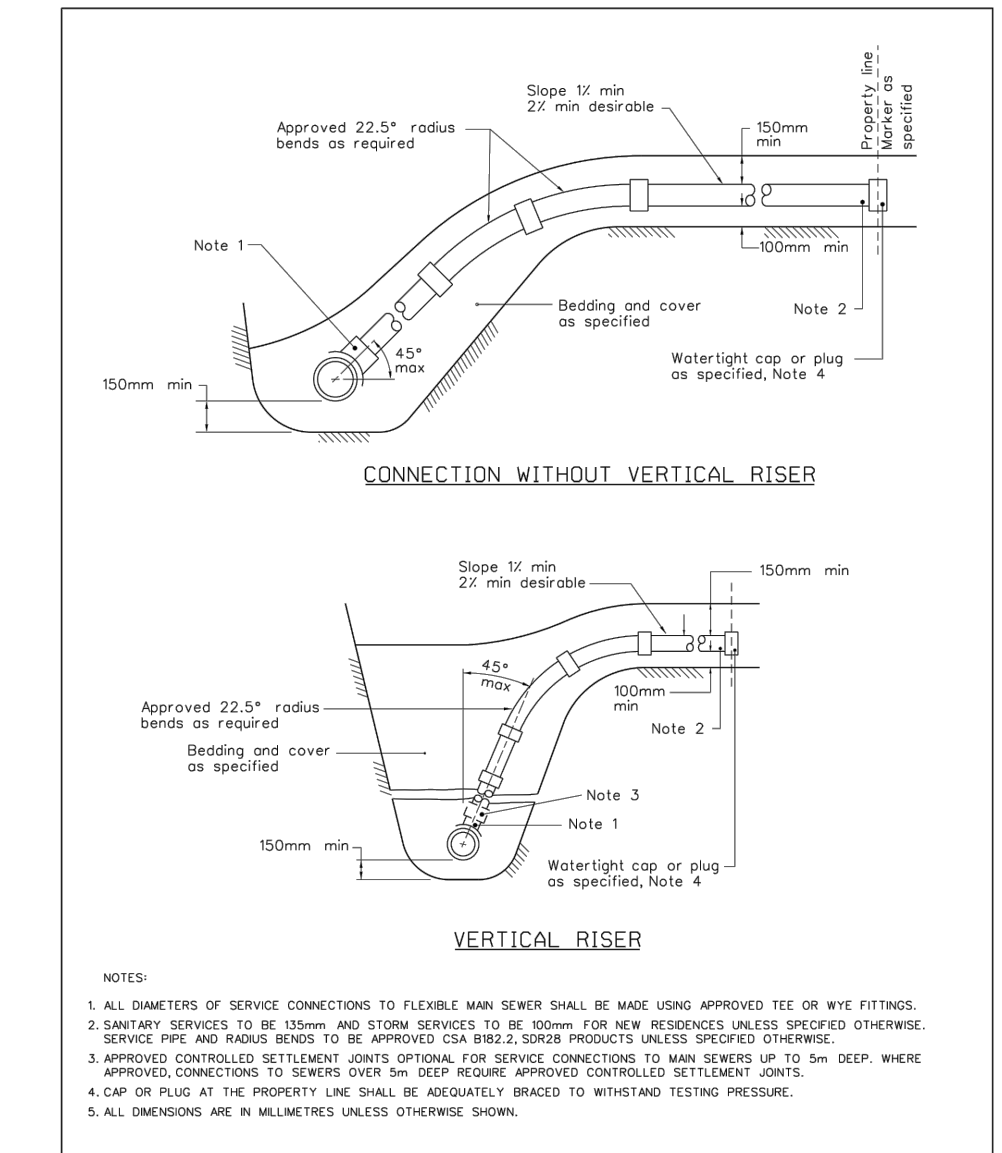
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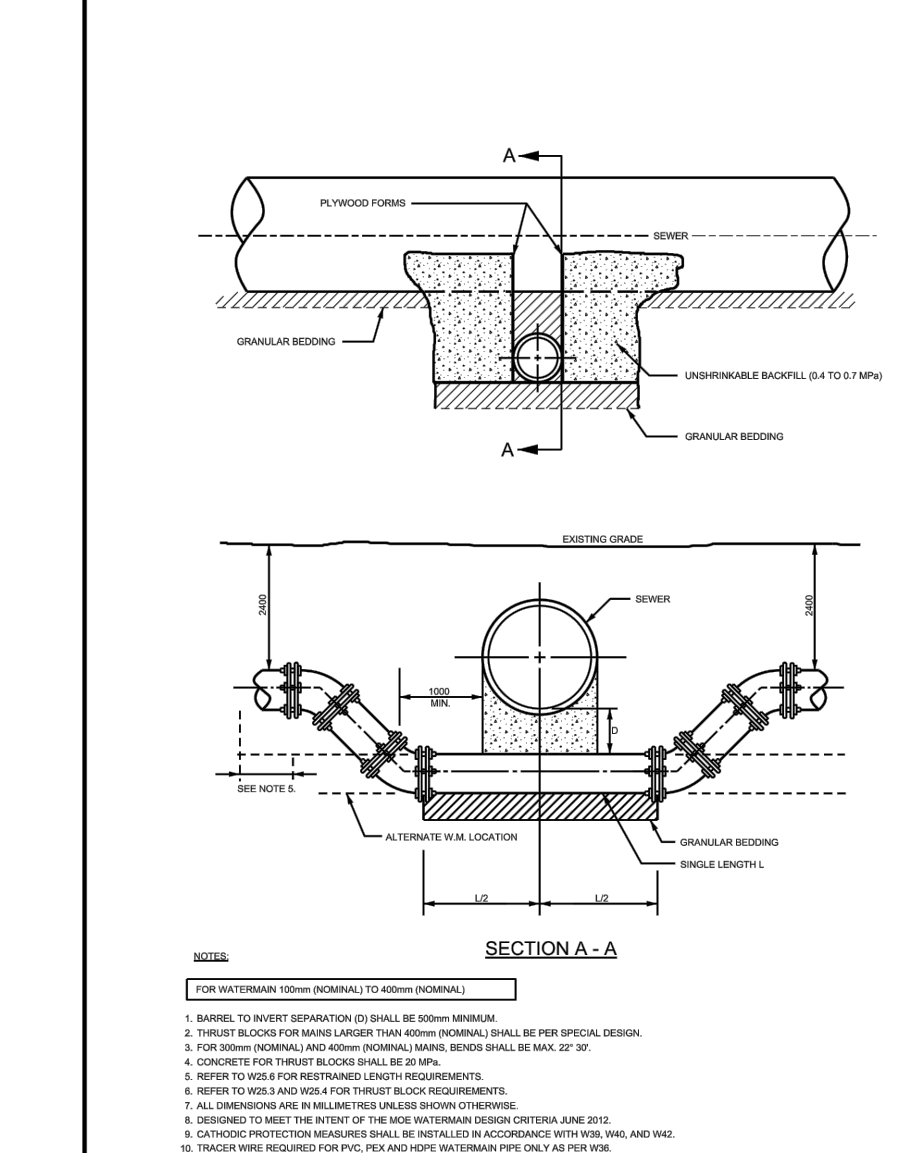
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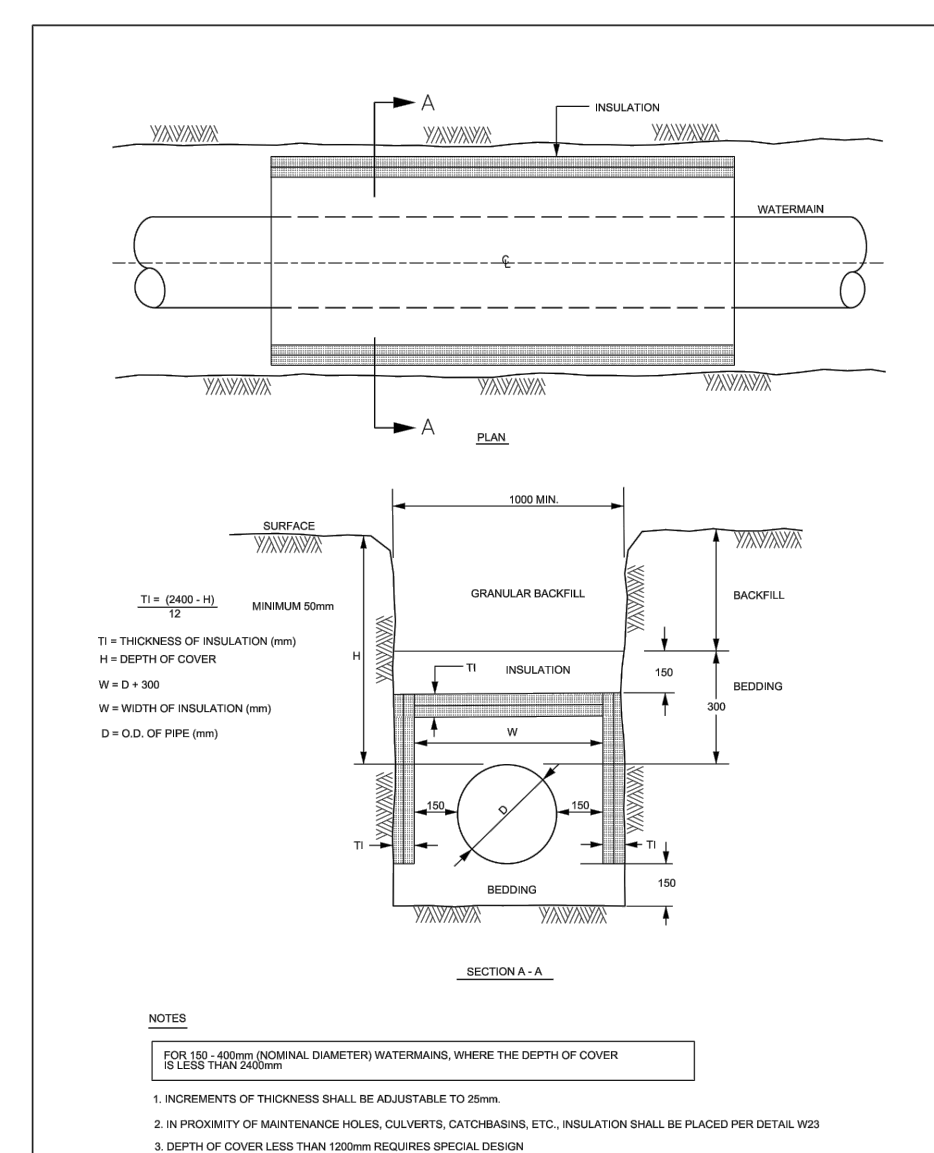
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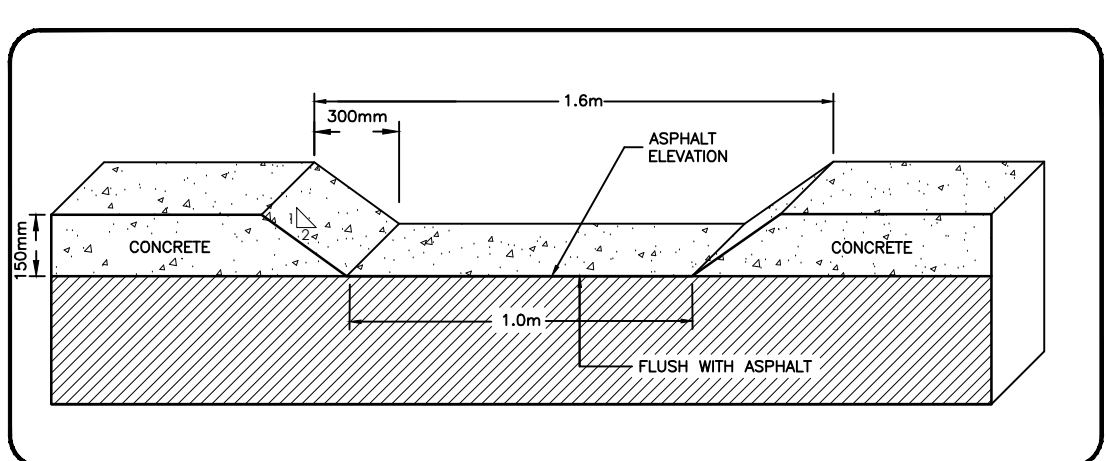
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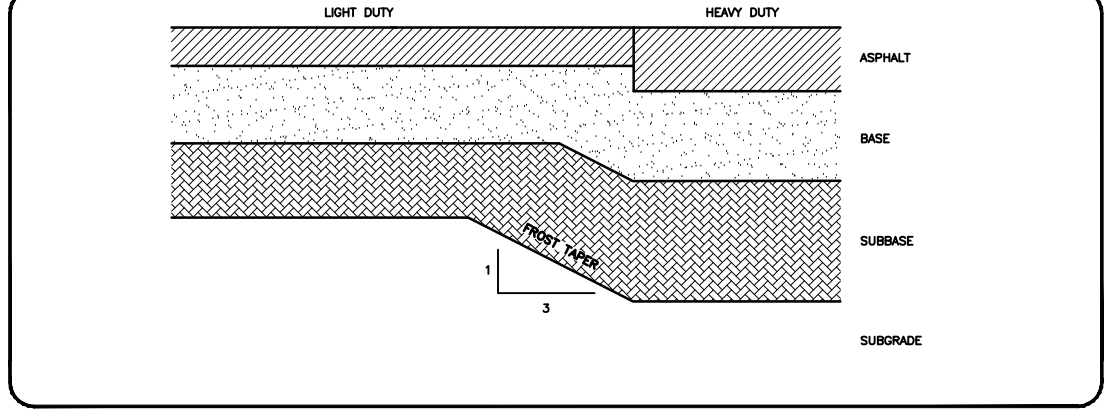
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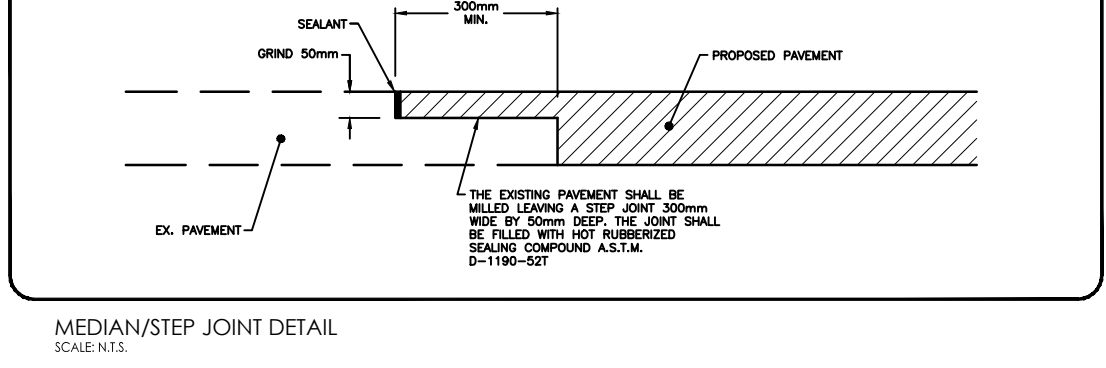
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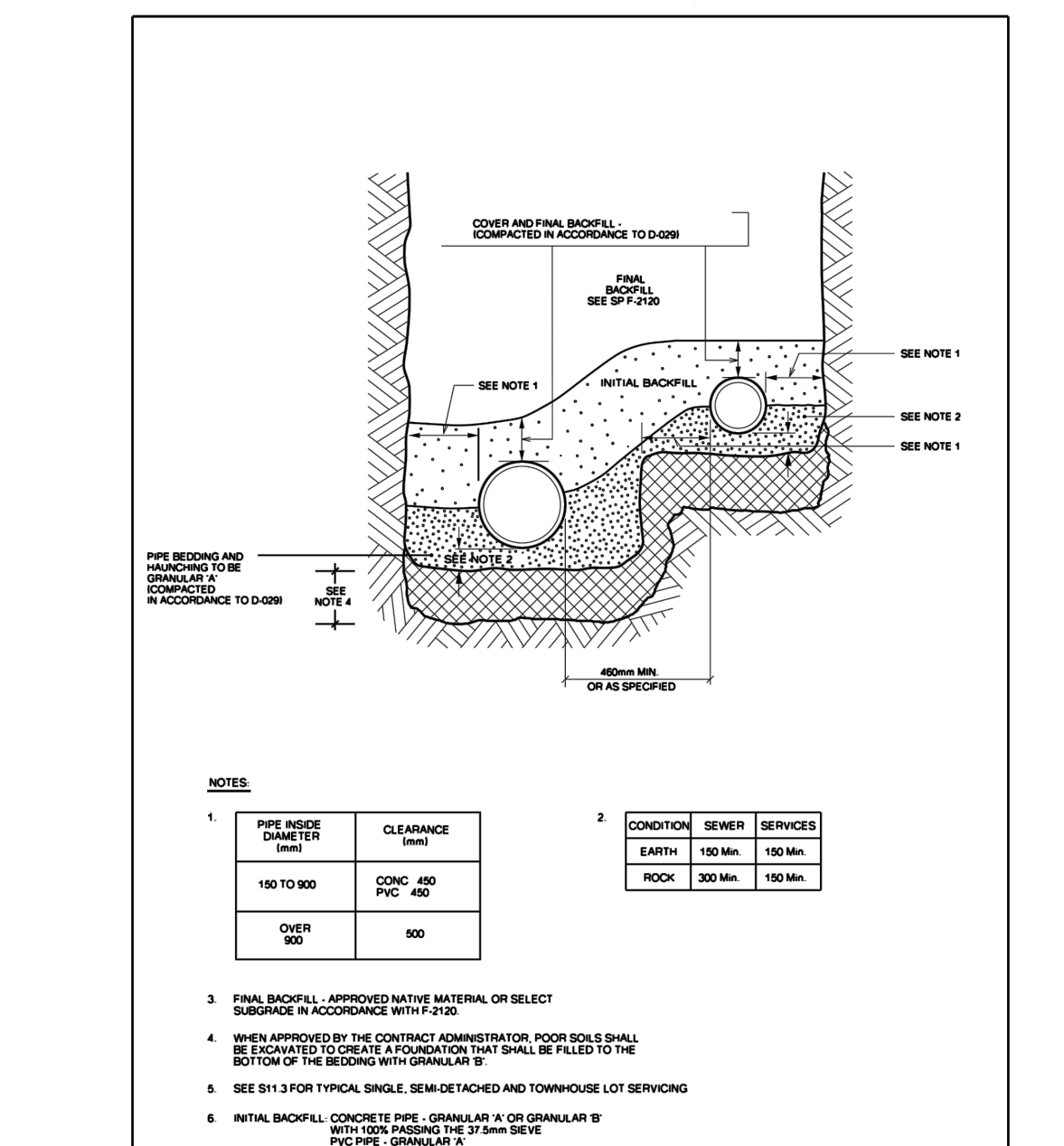
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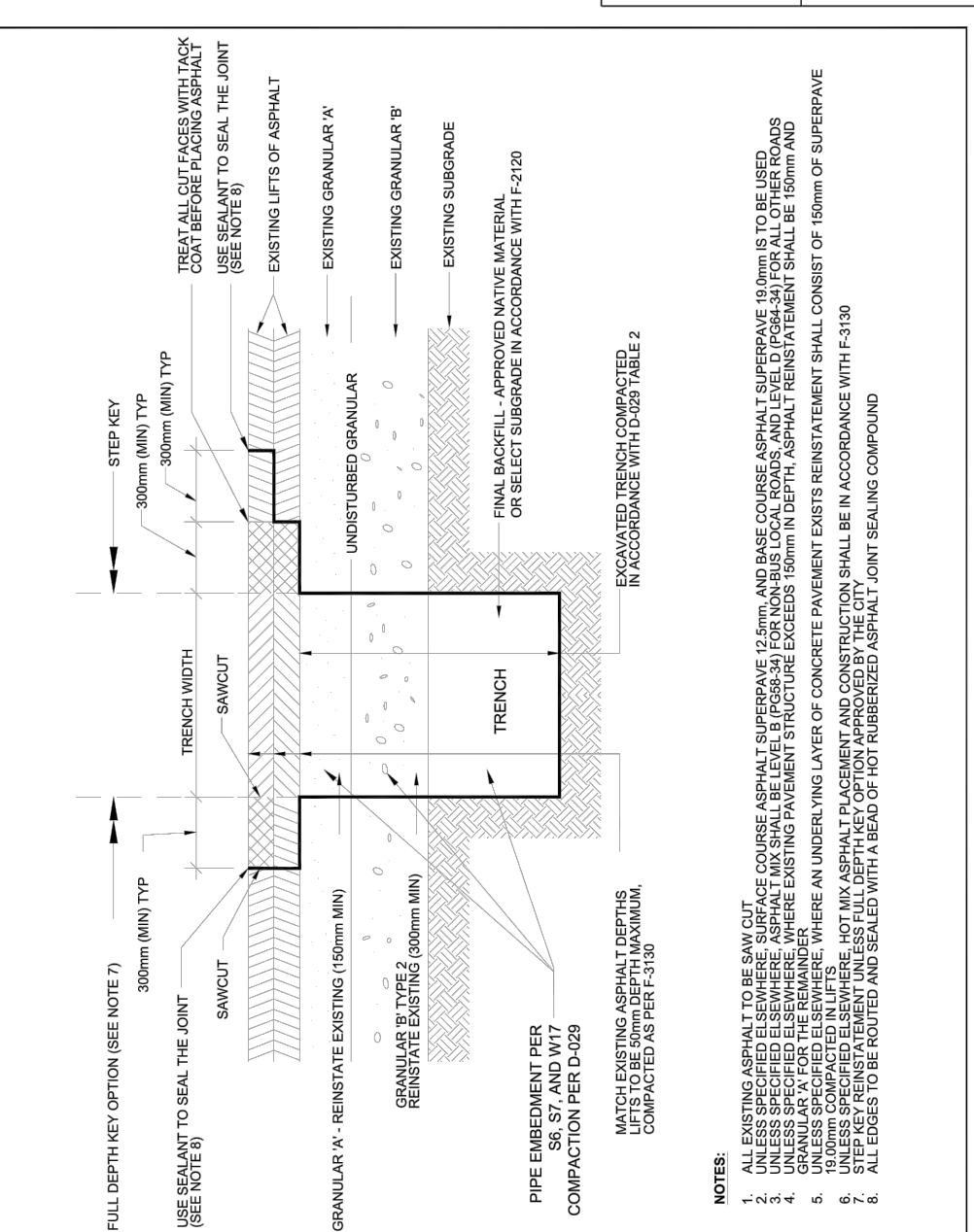
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DATE: MAY 2001  
REV. DATE: MARCH 2003  
REV. DATE: MARCH 2003  
DWG. NO.: R10

GENERAL NOTES AND SPECIFICATIONS

1. ALL MATERIALS AND CONSTRUCTION METHODS TO BE IN ACCORDANCE WITH OPS AND CITY OF OTTAWA STANDARD SPECIFICATIONS AND DRAWINGS AND OPS SUPPLEMENT. ONTARIO PROVINCIAL STANDARDS WILL APPLY WHERE NO CITY STANDARDS ARE AVAILABLE.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED AND BEAR COST OF SAME INCLUDING WATER PERMIT AND ASSOCIATED COSTS.
3. SERVICE AND UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY LOCATION AND ELEVATION OF EXISTING SERVICES AND UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATES FROM ALL UTILITY COMPANIES TO LOCATE EXISTING UTILITIES PRIOR TO EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTION AND REINSTATEMENT.
4. ALL DISTURBED AREAS SHALL BE REINSTATED TO EQUAL OR BETTER CONDITION TO THE SATISFACTION OF THE ENGINEER & THE CITY. PAVEMENT REINSTATEMENT FOR SERVICE AND UTILITY CUTS SHALL BE IN ACCORDANCE WITH OPSD 509.010 AND OPS5 310.
5. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATION FOR CONSTRUCTION PROJECTS". THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE CONTRACTOR AS DEFINED IN THE ACT.
6. THE CONTRACTOR SHALL SUBMIT AN EROSION AND SEDIMENTATION CONTROL PLAN THAT WILL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE PROTECTION FOR RECEIVING STORM SEWERS OR DRAINAGE DURING CONSTRUCTION ACTIVITIES. THIS PLAN SHALL INCLUDE BUT NOT LIMITED TO FILTER CLOTH ON CATCH BASINS, STRAW BALE CHECK DAMS AND TRAP-CONTROLLED CONTROLS AROUND ALL DISTURBED AREAS. DEWATERING SHALL BE PUMPED INTO SEDIMENT TRAPS.
7. SITE PLAN PREPARED BY DAVID BLAKELY ARCHITECT, INC.
8. TOPOGRAPHIC SURVEY SUPPLIED BY ANNIS, O'SULLIVAN, VOLLEBECK LTD.
9. LANDSCAPE ARCHITECTURE PLAN PREPARED BY OTHERS. REFER TO ORIGINAL LANDSCAPE ARCHITECTURE PLAN FOR ALL LANDSCAPING FEATURES (i.e. TREES, WALKWAYS, PARK DETAILS, NOISE BARRIERS, FENCES, ETC.).
10. GEOTECHNICAL INVESTIGATION 06-124-3 PREPARED BY HOULE CHEVRIER ENGINEERING DATED MAY 2010 AND GEOTECHNICAL MEMO 1021003 PREPARED BY CENTEC DATED MAY 23, 2003. GEOTECHNICAL INFORMATION PRESENTED ON THESE DRAWINGS MAY BE INTERPOLATED FROM THE ORIGINAL REPORT. REFER TO ORIGINAL GEOTECHNICAL REPORT FOR ADDITIONAL DETAILS AND TO VERIFY ASSUMPTIONS MADE HEREIN.
11. STREET LIGHTING TO CITY OF OTTAWA STANDARDS.
12. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED. DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES TO BE REPORTED IMMEDIATELY TO ENGINEER.
13. THERE WILL BE NO SUBSTITUTION OF MATERIALS UNLESS PRIOR WRITTEN APPROVAL BY THE CONTRACT ADMINISTRATOR AND DIRECTOR OF ENGINEERING HAS BEEN OBTAINED.
14. HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE TO BE NOTIFIED IF DEEPLY BURIED ARCHEOLOGICAL REMAINS ARE FOUND ON THE PROPERTY DURING CONSTRUCTION ACTIVITIES.

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Client/Project  
**CAVANAGH CONSTRUCTION LTD.**

TRAILS WEST

Ottawa ON Canada

Title  
**COPE DRIVE UNITS  
DETAIL SHEET**

Project No. 16401718  
Drawing No. DS-1

Scale AS NOTED  
Sheet

Revision 1

