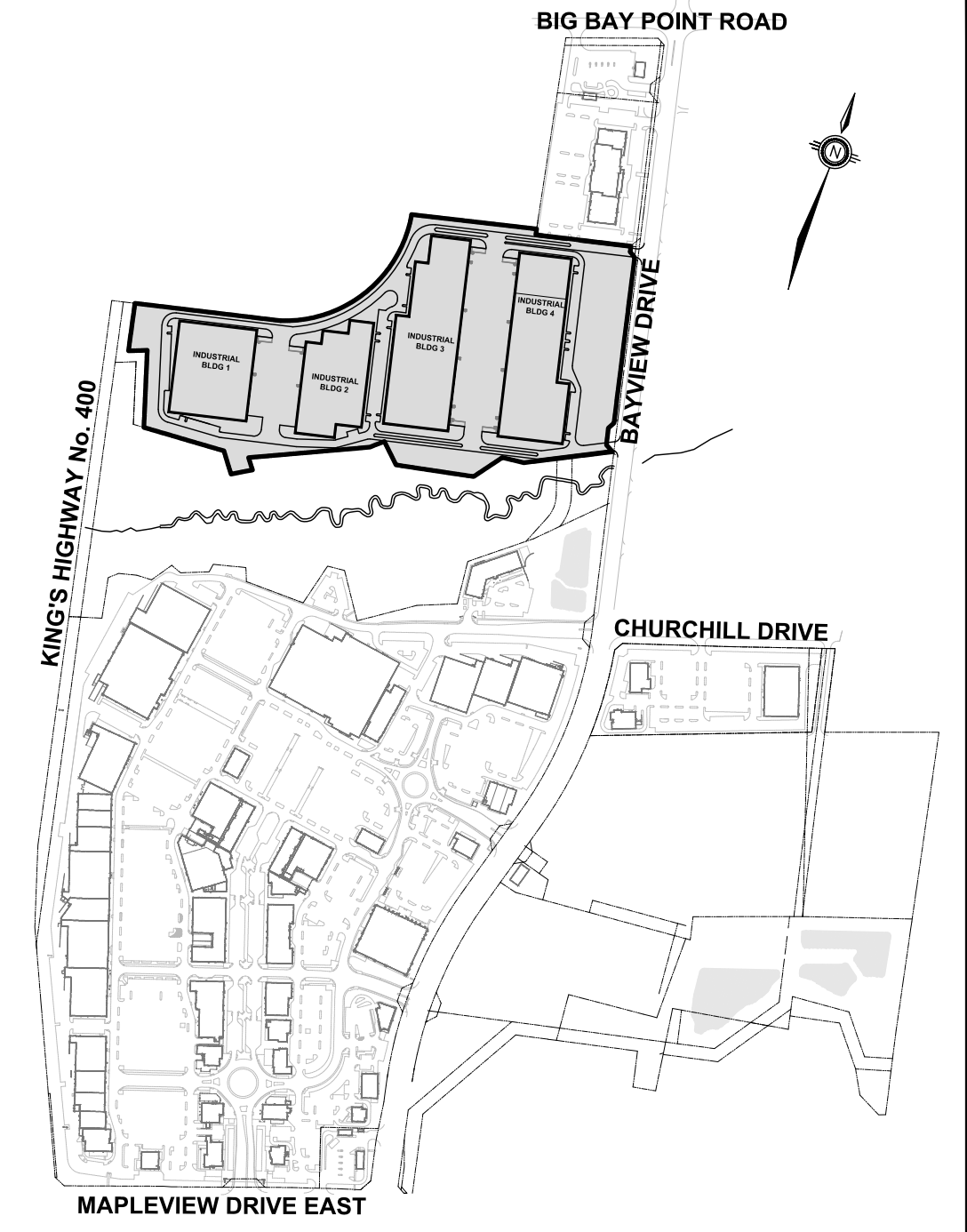
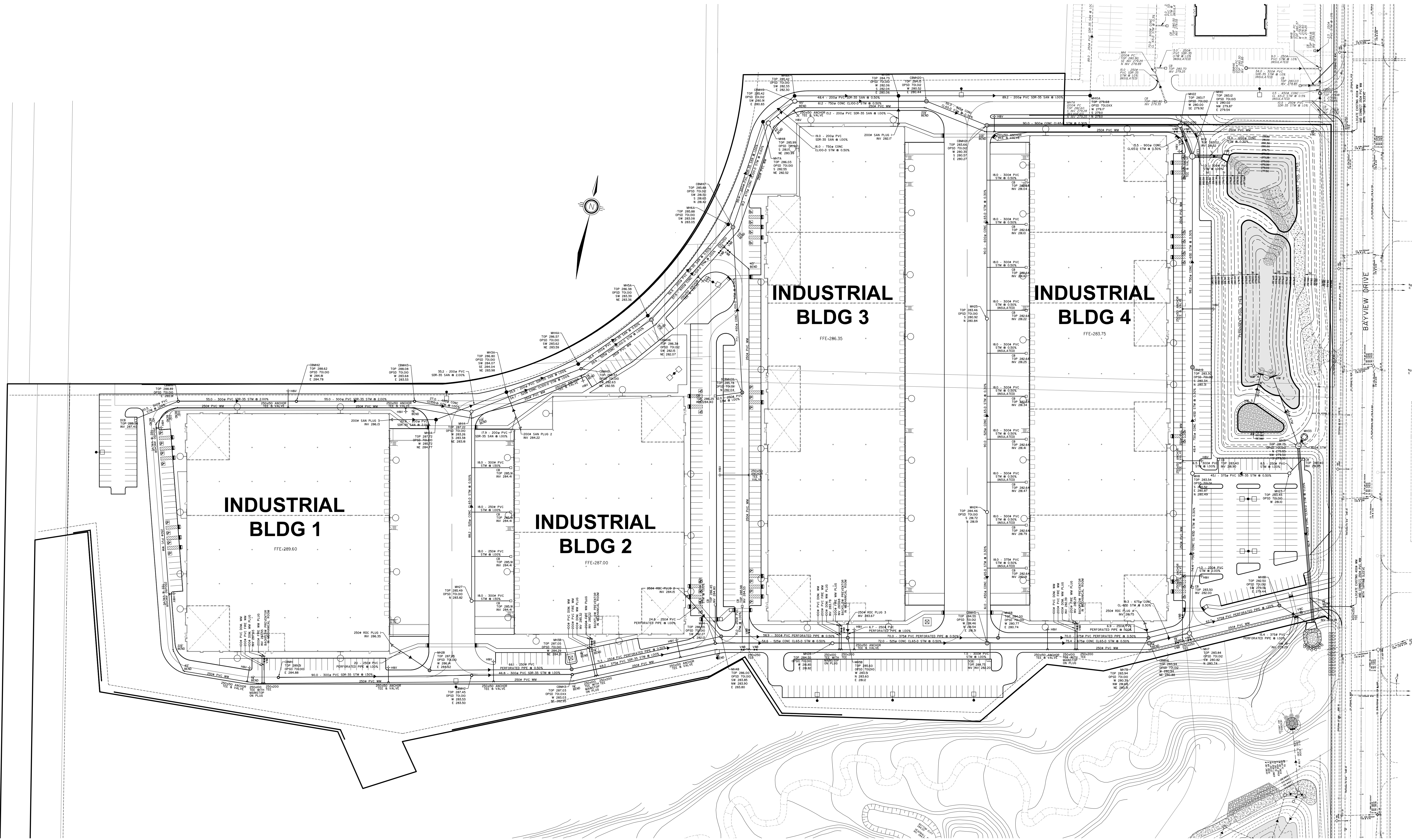




KEYMAP

- LEGEND:**
- CATCHBASIN
 - DOUBLE CATCHBASIN
 - CATCHBASIN MANHOLE
 - DOUBLE CATCHBASIN MANHOLE
 - STORM MANHOLE
 - SANITARY MANHOLE
 - RDC MANHOLE
 - HYDRANT AND VALVE
 - EX HYDRANT
 - EXISTING SERVICES
 - PROPOSED SERVICES
 - CROSSING DATA

GENERAL NOTES

- 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 ENGINEERING DEPARTMENT PRIOR TO THE COMMENCEMENT OF WORK WITHIN ANY CITY RIGHT-OF-WAY.
 - A TOPSOIL 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 50MM 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.
- ROADS
 - BARRIER CURB TO COMPLY WITH OPSD 600.02.
 - SIDEWALKS TO COMPLY WITH OPSD-30.010 AND ARE TO BE 1.5 METRES WIDE. MINIMUM THICKNESS AS FOLLOWS:
 - RESIDENTIAL DRIVEWAY 125MM
 - COMMERCIAL/INDUSTRIAL DRIVEWAY 200MM (REINFORCEMENT AS PER OPSD IF REQUIRED)
 - WHEN NO DRIVEWAY IS PRESENT, 125MM.
 - NATIVE SUBGRADE SHALL HAVE A CROSSFALL OF 3% AND THE MATERIAL SHALL BE APPROVED BY A SOILS CONSULTANT AND IS SUBJECT TO APPROVAL BY THE DIRECTOR OF ENGINEERING.
 - NATIVE SUBGRADE TO BE COMPACTED TO MINIMUM 95% STANDARD PROCTOR MAXIMUM DRY DENSITY AND SHALL BE PROOF ROLLED.
 - GRADE AND CROSS FALL ADJUSTMENT OF MAINTENANCE HOLE AND CATCH BASIN FRAMES WILL BE MADE USING PRODUCTS SPECIFICALLY MANUFACTURED FOR THAT PURPOSE. THE TOP ADJUSTMENT UNIT OF ALL CATCH BASIN AND MAINTENANCE HOLES SHALL BE RUBBER.
 - ADJUSTMENT UNITS MUST BE CERTIFIED TO MEET ALL PERTINENT OPSD, CSA, ASTM AND MTO/MSM LIST, OR OTHER INDUSTRY GUIDELINES FOR MATERIALS, PERFORMANCE AND USE AS APPLICABLE.
 - ADJUSTMENT UNITS AND JOINTS WILL BE SEALED AND OR PARDED IN CONFORMANCE 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.
 - NON-COMPRESSIBLE BACK FILL WILL BE USED DURING REBUILDING, ADJUSTING, OR ANY OTHER APPLICABLE CATCH BASIN OR MAINTENANCE HOLE WORKS.
- PAVEMENT STRUCTURES
 - PARKING LOT PAVEMENT STRUCTURE:
 - 40MM H-3 SURFACE COURSE ASPHALTIC CONCRETE
 - 100MM H-8 BASE COURSE ASPHALTIC CONCRETE
 - 100MM GRANULAR 'A' OR 9MM CRUSHER RUN LIMESTONE AS BASE COURSE
 - 200MM GRANULAR 'B' OR 50MM CRUSHER RUN LIMESTONE AS SUBBASE COURSE
 - DRIVEWAY/FEED ROUTE PAVEMENT STRUCTURE:
 - 40MM H-3 SURFACE COURSE ASPHALTIC CONCRETE
 - 65MM H-8 BASE COURSE ASPHALTIC CONCRETE
 - 100MM GRANULAR 'A' OR 19MM CRUSHER RUN LIMESTONE AS BASE COURSE
 - 150MM H-8 BASE COURSE ASPHALTIC CONCRETE
 - 100MM GRANULAR 'B' OR 50MM CRUSHER RUN LIMESTONE AS SUBBASE COURSE

SANITARY SEWERS

- 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 A207.2-1982, CLASS 50-D (PREVIOUSLY C.S.A. STANDARD A207.2-1974, CLASS 50).
- MAINTENANCE HOLES TOPS (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LEFT OF ASPHALT IS PLACED. ALL ADJUSTMENT WILL BE ACCORDANCE WITH B50.02.
- 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 INSERTS. TEES IN STRICT ACCORDANCE TO MANUFACTURERS GUIDELINES. SANITARY DROP STRUCTURES TO BE AS PER OPSD 1003.020.
- CONTRACTOR TO PROVIDE COMPLETE SANITARY SEWER VIDEO REPORT UPON COMPLETION.

STORM SEWERS

- ALL STORM SEWERS SHALL BE CONCRETE PIPE PER A.S.T.M. C76-IV OR C44-ES OR PVC PIPE PER A.S.T.M. D3034.74 SDR 35 SPEC. ALL STORM SEWERS SHALL BE CONSTRUCTED WITH 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) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF ENGINEERING. ALL MANHOLES SHALL BE 2000MM PRECAST CONCRETE AS PER OPSD STANDARD 701.01 UNLESS OTHERWISE NOTED. ALL CATCHBASIN AND CATCHBASIN MANHOLES SHALL HAVE A MINIMUM 0.30m SUMP AND BE PROVIDED WITH A FRAME AND COVER PER MUNICIPAL STANDARDS.
- THE SERVICE CONNECTION MANHOLES FOR STORM SEWER SERVICES INSTALLED BY THE CONTRACTOR SHALL BE BENCHMARKED BY THE CONTRACTOR TO THE SATISFACTION OF THE GOVERNING AUTHORITY.
- ALL DOUBLE AND SINGLE CATCHBASINS SHALL BE INSTALLED PER OPSD STANDARD 701.01 AND 701.02 RESPECTIVELY. ALL CONNECTIONS TO THE MAINLINE SEWERS SHALL BE MADE PER OPSD 705.01 (OPTIONAL SUB DRAINS) THREE (3) LONG SUB DRAINS SHALL BE INSTALLED PARALLEL AT ALL SITE CATCHBASINS, DOUBLE CATCHBASINS AND CATCHBASIN MANHOLES. SUBDRAINS SHALL BE PRE-WRAPPED WITH GEOTEXTILE FILTER FABRIC AND INSTALLED 0.30m BELOW SUBGRADE ELEVATION SURROUNDED BY ACCEPTABLE GRANULAR FILTER MEDIA.
- ALL CATCHBASINS AND MANHOLES TO RECEIVE GRANULAR BACKFILL TO A MINIMUM THICKNESS OF 300mm. GRANULARS TO BE WRAPPED IN GEOTEXTILE FABRIC TO A DEPTH OF 100mm FROM THE SURFACE OF ASPHALT SURFACE DOWNWARDS TO PREVENT INFILTRATION OF FINE SOIL INTO GRANULAR BACKFILL.
- CONTRACTOR TO PROVIDE COMPLETE STORM SEWER VIDEO REPORT UPON COMPLETION.

STORM MANAGEMENT LINER SPECIFICATIONS

- THE EARTH FILL SOILS TO BE USED FOR THE CONSTRUCTION OF THE LINER MUST CONTAIN MINIMUM OF 40 PERCENT OF THE MATERIAL FINER THAN 0.075MM (CLAY SIZE) PARTICLES BY WEIGHT. THE EARTH FILL SOILS MUST BE PRE-EMBEDDED WITH TOPSOIL AND TOPSOIL SHOULD BE TESTED DURING EXCAVATION OF THE POND BASE. PERIODICALLY SAMPLED AND TESTED DURING EXCAVATION OF THE POND BASE.
- THE AREAS BENEATH SLOPE FILL OR POND BASE SHOULD BE STRIPPED TO REMOVE ALL ORGANIC SOILS AND VEGETATION. THE EXPOSED SUBGRADE SHOULD BE PROOF ROLLED AND INSPECTED BY A QUALIFIED GEOTECHNICAL ENGINEER TO CONFIRM THE FOUNDATION. SOILS OR OTHER MATERIALS THAT ARE OF A DELTERIOUS NATURE MUST BE REMOVED TO THEIR FULL EXTENT AND REPLACED WITH COMPACTED ENGINEERED FILL UNDER THE DIRECTION OF A QUALIFIED GEOTECHNICAL ENGINEER. THE SUBGRADE SURFACE SHOULD BE COMPACTED TO AT LEAST 98 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMD).
- ANY COBBLES OR BOULDERS GREATER THAN 50MM IN SIZE SHOULD BE EXCLUDED FROM THE LINER FILL AND 100MM FROM THE BEIRN FILL MATERIALS. AS SHOULD ANY EARTH FILL SOILS CONTAINING EXCESSIVE AMOUNTS OF SAND OR SILT.
- THE LINER FILL MATERIALS SHOULD BE PLACED IN LIFTS NOT EXCEEDING 150MM THICKNESS. THE TOTAL THICKNESS OF THE COMPACTED CLAY LINER MUST BE NO LESS THAN 1000MM. THE FILL SHOULD BE PLACED AND COMPACTED UNDER THE FULL-TIME SUPERVISION OF QUALIFIED GEOTECHNICAL PERSONNEL.

VERTICAL CONTROL MONUMENTS

- BENCHMARK NO. 0320030030 DESCRIPTION: BARRIE MOLSOM CENTRE, 555 BAYVIEW DRIVE. THE VERTICAL CONTROL MONUMENT IS SET FLUSH IN THE CONCRETE FOUNDATION TO BUILDING VENTILATION SHAFT AT THE SOUTHEAST CORNER OF THE BARRIE MOLSOM CENTRE. THE TABLE IS 200mm BELOW THE TOP OF THE FOUNDATION SHAFT WALL AND 100mm WEST OF THE EAST SIDE OF THE SOUTHEAST CORNER OF THE VENTILATION SHAFT WALL. ELEVATION: 287.040

WATERMAIN

- CONTRACTOR SHALL INFORM THE CITY OF BARRIE ENGINEERING DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THEIR INTENTIONS TO WORK.
- OPERATION OF FIRE HYDRANTS AND VALVES ON POTABLE WATER BY OTHER THAN ENGINEERING DEPARTMENT IS PROHIBITED BY BY-LAW 1-88 AS AMENDED BY BY-LAW 99-020. THE CITY WILL SWAB, PRESSURE TEST, CHLORINATE AND FLUSH ALL NEW WATERMANS.
- MINIMUM COVER OVER WATERMAIN TO BE 1.7M. THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATERMAIN AND SEWERS TO 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.
- IF WATERMAIN SHALL BE CONSTRUCTED WITH BEDDINGS 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, OR ALTERNATIVE EMBEDMENT MATERIALS AND MEETING GRADATION REQUIREMENTS OF OPS 1004.0505 COMPACTED TO 95% PROCTOR DENSITY. GEOTECHNICAL CERTIFICATION OF MATERIAL AND COMPACTION TESTING MUST BE PROVIDED EVERY 50 METRES. THE COMPACTION TESTING MUST INCLUDE THE ENTIRE EMBEDMENT ENVELOPE, HAUNDRES, BEDDING AND TOP OF PIPE.
- 21 COPPER WATER MAINS AND SERVICES 100MM TO 500MM IN DIAMETER SHALL BE EMBEDDED IN SAND 100MM ABOVE AND BELOW TO CONFORM TO OPSD 1004.0505.
- CONCRETE THRUST BLOCKS ARE TO BE INSTALLED AT ALL TEES, BENDS, HYDRANTS, END OF MAINS AND CONNECTIONS 100MM AND LARGER AS PER OPSD 802.010 AND 802.020. RESTRAINING DEVICES MAY BE REQUIRED IN ADDITION TO STANDARD CONCRETE THRUST BLOCKING WHERE SOIL CONDITIONS WARRANT.
- RESTRAINING WILL BE REQUIRED ON ALL FIRE HYDRANTS.
- NEW WATERMANS TO BE PVC DRIB CL50, OR DUCTILE IRN CL52.
- TRACING WIRE (12 TWO STRANDED COPPER) TO BE INSTALLED ON THE TOTAL LENGTH OF ALL NON-METALLIC WATERMAIN AND BROUGHT UP AT EACH HYDRANT AND CONNECTED TO FLANGE BOLT.
- CONTRACTOR TO INSTALL CHLORINATION TAIL JUNT BEHIND TAPPING VALVE TO FACILITATE CHLORINATION SERVICE. TO BE REMOVED AFTER TESTING.
- ALL SERVICE PIPE MATERIAL MUST BE DUCTILE IRON FROM THE RESTRAINING FLANGE TO A MINIMUM OF 3 METRES OUTSIDE THE FOUNDATION REFER TO OPSD 40.
- WATER WILL NOT BE AVAILABLE UNTIL SERVICES HAVE BEEN SAMPLED AND PASSES FOR BACTERIOLOGICAL COMPLIANCE.
- WATERMETER TO BE PLACED WITHIN THE MECHANICAL ROOM AS PER CITY OF BARRIE STANDARD B50.05.
- FIRE HYDRANT TO BE INSTALLED AS PER CITY OF BARRIE STANDARD B50-50, REVISED ON 01/05/08.
- FIRE HYDRANT WITHIN THE SITE TO BE COLOURED AS RED.
- 1500MM DIAMETER WATER VALVE CHAMBER TO BE PLACED AT THE PROPERTY LINE AS PER OPSD 1010.01 AND OPSD 1010.01.
- ALL DOMESTIC WATER SERVICES TO BUILDINGS TO HAVE CURB STOP AND BOX OUTSIDE EACH BUILDING.

PIPE INSULATION DETAIL

NTS

COVER MATERIAL AS PER SPECIFICATION
1000MM CLEARANCE BETWEEN PIPE AND INSULATION

CONCRETE CAP
IF SPECIFIED
300MM POLYSTYRENE FOAM INSULATION

TYPICAL SEWER OR WATERMAIN TO BE INSULATED

BEDDING AS PER SPECIFICATION

PERFORATED PIPE BEDDING DETAIL

NTS

100MM CLEAR STONE

WRAP ENTIRE PERIMETER WITH TERRAFIX 270R FILTER FABRIC

PERFORATED PIPE

SITE SERVICING PLAN

SCALE: 1:750

PARK PLACE NORTH LANDS
HWY 400 & MAPLEVIEW DRIVE E.
BARRIE, ONTARIO
FOR: NORTH AMERICAN

SITE SERVICING & SITE GRADING BY:

SKA SAUBOURIN KIMBLE & ASSOCIATES LTD.
CONSULTING ENGINEERS

110 OLD KINGSTON ROAD
AJAX, ONTARIO L1T 2Z9

SKA PROJECT NO: **02:999**

DRAWN BY: RAV
CHECKED BY: MAG
DATE: APRIL 29, 2022
ISSUED: APRIL 29, 2022

PROJECT NO: **02138.44**

DWG. NO: **SS**