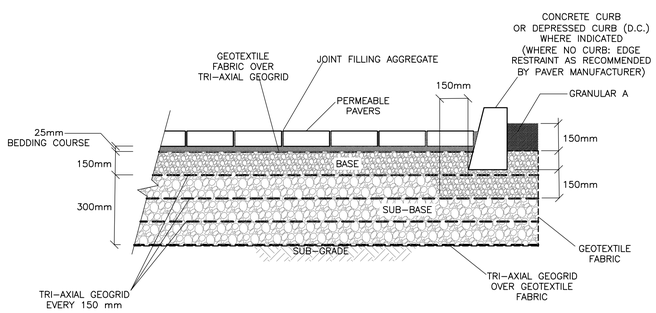


REMOVE ALL MATERIALS TO THE SUB-GRADE LEVEL. REMOVE ORGANIC OR UNSUITABLE MATERIAL FROM SUB-GRADE WHERE ENCOUNTERED. FILL OVER-EXCAVATED SUB-GRADE WITH SUB-BASE MATERIAL. SUB-GRADE TO BE FREE FROM DEBRIS, SNOW, ICE, WATER AND FROZEN GROUND. COMPACT SUB-GRADE TO 95%.

PERMEABLE PAVERS
N.T.S

PERMEABLE PAVERS:
- UNILOCK ECO-PRIORA OR APPROVED EQUAL;
- SHALL BE INTERLOCKING AND SHALL MEET THE MINIMUM MATERIAL AND PHYSICAL PROPERTIES SET FORTH IN CAN 3-A231.2, STANDARD SPECIFICATION FOR PRECAST CONCRETE PAVERS;
- MINIMUM 60 mm PAVER THICKNESS FOR PEDESTRIAN APPLICATIONS;
- MINIMUM 80 mm PAVER; AND
- JOINT WIDTHS SHALL NOT BE GREATER THAN 15 mm.

JOINT FILLING AGGREGATE & 25 mm BEDDING COURSE;
- SHALL MEET ASTM NO. 8 (5 mm DIA.) CLEAR (OPEN-GRADED) CRUSHED AGGREGATE.

GRANULAR BASE:
- CLEAR CRUSHED 20 mm DIAMETER STONE CONFORMING TO ASTM C 33 NO 57; AND
- MINIMUM 150 mm THICKNESS.

GRANULAR SUBBASE:
- CLEAR (OPEN GRADED) CRUSHED STONE 50 MM DIAMETER STONE GRADED IN ACCORDANCE WITH ASTM D 2940; OR
- OPSS GRANULAR O; AND
- MINIMUM 450 mm THICKNESS.

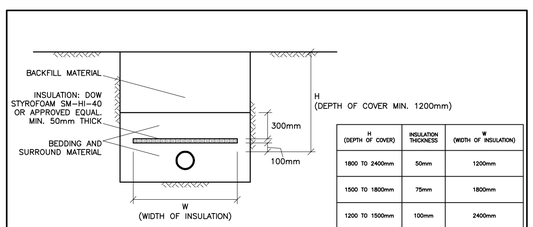
ALL AGGREGATES SHALL MEET THE FOLLOWING CRITERIA:
- MAXIMUM WASH LOSS OF 0.5%;
- MINIMUM DURABILITY INDEX OF 35; AND
- MAXIMUM ABRASION OF 10% FOR 100 REVOLUTIONS AND MAXIMUM OF 50% FOR 500 REVOLUTIONS.

EDGE RESTRAINT:
- A CONCRETE CURB FOR VEHICLE APPLICATIONS.

GEOTEXTILE FABRIC:
- WOVEN MONOFILAMENT OR NON-WOVEN NEEDLE PUNCHED SHALL MEET OPSS 1860 FOR CLASS II GEOTEXTILE FABRICS. SUBGRADE:
- DO NOT COMPACT.
- SCARIFY SUBGRADE IF THE UNDERLYING SOIL HAS AN INFILTRATION RATE OF LESS THAN 15 mm/hr.

PERFORATED SUBDRAIN:
- 100 mm DIAMETER, PERFORATED SUB-DRAINS; HDPE C/W FILTER FABRIC SOCK (BOSS 2000 OR APPROVED EQUAL).
- LOCATE NEAR THE BOTTOM OF THE SUB-BASE LAYER.

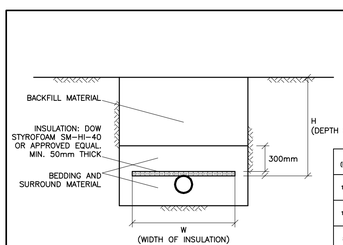
REINFORCING GRIDS:
- TRI-AXIAL GEOGRID, UNILOCK DRIVE GRID OR APPROVED EQUAL.
- AT SUB-GRADE LEVEL, EVERY 150 mm IN SUB-BASE, BETWEEN BASE AND SUB-BASE LAYER AND TOP OF BASE LAYER.



H (DEPTH OF COVER)	INSULATION THICKNESS	W (WIDTH OF INSULATION)
1800 TO 2400mm	50mm	1200mm
1500 TO 1800mm	75mm	1800mm
1200 TO 1500mm	100mm	2400mm

INSULATE WATERMAIN AS INDICATED AND WHERE DEPTH OF COVER IS LESS THAN 2400mm. PROVIDE A MINIMUM 1200mm COVER. CENTER INSULATION OVER PIPE.
JOINTS BETWEEN SHEETS OF INSULATION SHALL BE STAGGERED.

INSULATION OF WATERMAINS & WATER SERVICE CONNECTIONS IN SHALLOW TRENCHES
N.T.S



H (DEPTH OF COVER)	INSULATION THICKNESS	W (WIDTH OF INSULATION)
1400 TO 2000mm	50mm	1200mm + DIAMETER OF PIPE
1100 TO 1400mm	75mm	1800mm + DIAMETER OF PIPE
800 TO 1100mm	100mm	2400mm + DIAMETER OF PIPE
LESS THAN 800mm	125mm	3000mm + DIAMETER OF PIPE

INSULATE SEWER AS INDICATED AND WHERE DEPTH OF COVER IS LESS THAN 2400mm. CENTER INSULATION OVER PIPE.
JOINTS BETWEEN SHEETS OF INSULATION SHALL BE STAGGERED.

INSULATION OF SEWERS IN SHALLOW TRENCHES
N.T.S

WATER SERVICE PROFILE TABLE

MATERIAL: 150mm PVC PRESSURE CLASS 150 DR18

STATION	DESCRIPTION	GRADE ELEVATION	TOP OF PIPE	DEPTH OF COVER	NOTES
A+00.0	150mm x 150mm TEE CONNECTION IN 150mm MUNICIPAL WATERMAIN TO CITY OF OTTAWA STANDARDS	±93.15	±90.95	±2.20	START OF 50mm THICK, 1200mm WIDE INSULATION
A+01.0	11.25° VERTICAL BEND DOWN TO CITY OF OTTAWA STANDARDS	±93.18	±90.95	±2.23	–
A+02.7	11.25° VERTICAL BEND UP TO CITY OF OTTAWA STANDARDS	±93.16	90.61	2.55	END OF 50mm THICK, 1200mm WIDE INSULATION
A+07.4	–	±93.01	90.61	2.40	BOTTOM OF CURB
A+08.0	–	93.08	90.61	2.47	CROSSING 525 ST INV 92.25 WM TOP 90.61 – 1640mm CLEARANCE (MIN. 500mm REQ'D)
A+11.3	150mm VALVE & VALVE BOX TO CITY OF OTTAWA STANDARDS	93.22	90.61	2.61	ON PROPERTY LINE
A+11.8 B+00.0	150mm x 150mm TEE (TO FIRE HYDRANT) TO CITY OF OTTAWA STANDARDS	93.25	90.61	2.64	–
A+13.8	–	94.21	90.61	3.60	ENTRY INTO BUILDING
B+00.0 A+11.8	150mm x 150mm TEE (TO FIRE HYDRANT) TO CITY OF OTTAWA STANDARDS	93.23	90.61	2.62	–
B+3.7	150mm VALVE & VALVE BOX TO CITY OF OTTAWA STANDARDS	93.14	90.61	2.53	–
B+11.8	FIRE HYDRANT TO CITY OF OTTAWA STANDARDS	93.18	90.61	2.57	–

CATCH BASIN SCHEDULE

(SUBMIT SHOP DRAWINGS OF ALL CATCH BASINS & MANHOLES TO ENGINEER FOR APPROVAL)

REF	TOP	SIZE	TYPE	INVERT AT INLET	INVERT AT OUTLET	NOTES
STORM SEWER						
CB/MH-1	92.32	CDS PMSU2015-4	PRECAST CONCRETE CATCH-BASIN/MANHOLE	–	90.07	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS EXCEPT WITH A DEEP SUMP AS REQUIRED BY CDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
MH-2	92.91	1200mm	PRECAST CONCRETE MANHOLE	89.99(NW)	89.99(NE)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S24.1 OR OPSD 401.010

KEY PLAN

No.	DATE	REVISION
2	DEC 2-24	RE-ISSUED FOR APPROVAL
1	APR 26-24	ISSUED FOR APPROVAL

D. B. GRAY ENGINEERING INC.
Stormwater Management · Grading & Drainage · Storm & Sanitary Sewers · Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

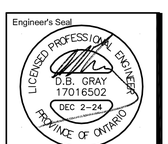
Project

PROPOSED 4-STOREY APARTMENT BUILDING
2928 BANK STREET
OTTAWA, ONTARIO

Drawing Title

DETAILS & SCHEDULES

Engineer's Seal



NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	
V. Scale	
Date	MAR 22-24
Job No.	23019

Drawing No.

C-7
of 8