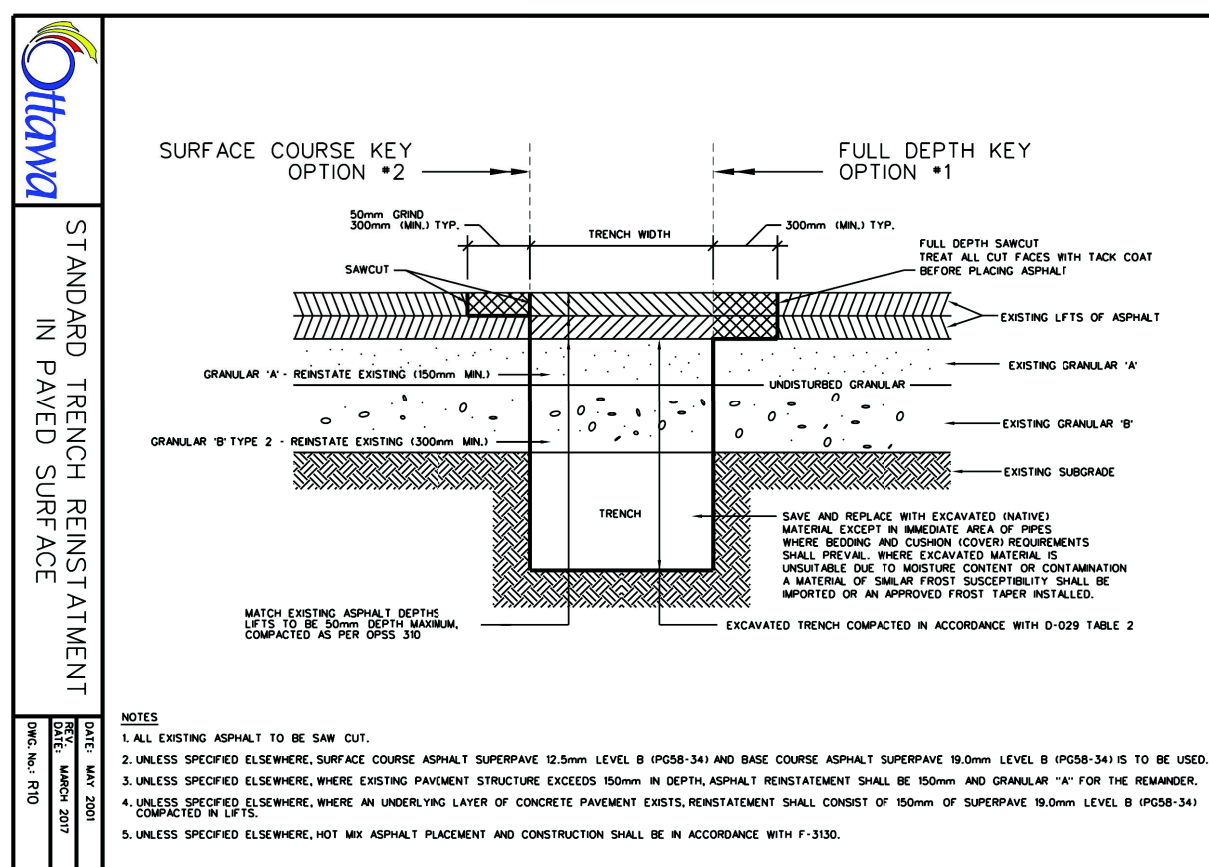
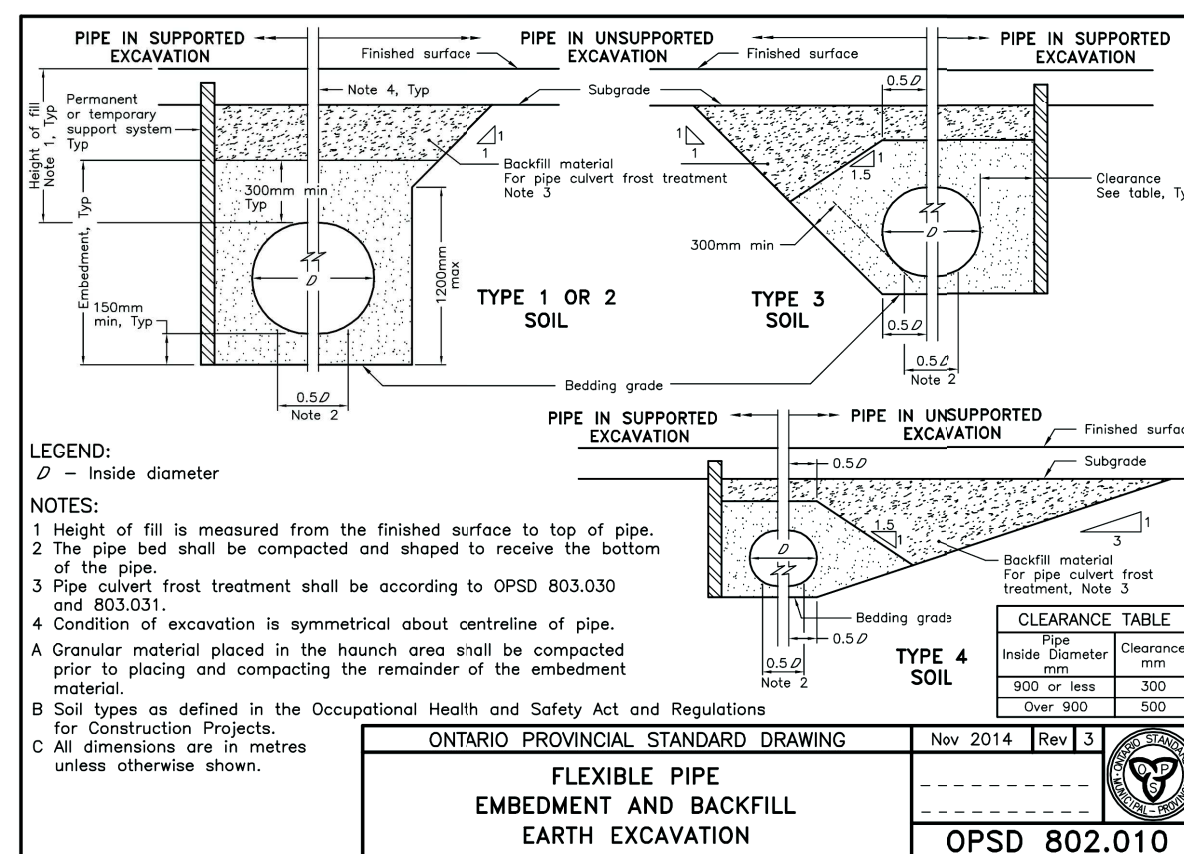


NOTES:  
 -FOR STORM INSULATION USE AN X VALUE OF 2000 IN THE ABOVE "TI" EQUATION.  
 -FOR SANITARY INSULATION USE AN X VALUE OF 2500 IN THE ABOVE "TI" EQUATION.  
 -FOR WATERMAIN INSULATION USE AN X VALUE OF 2400 IN THE ABOVE "TI" EQUATION.  
 -INCREMENTS OF INSULATION THICKNESS SHALL BE ADJUSTABLE TO 25mm.  
 -STAGGER JOINTS OF MULTIPLE SHEETS.  
 -ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.

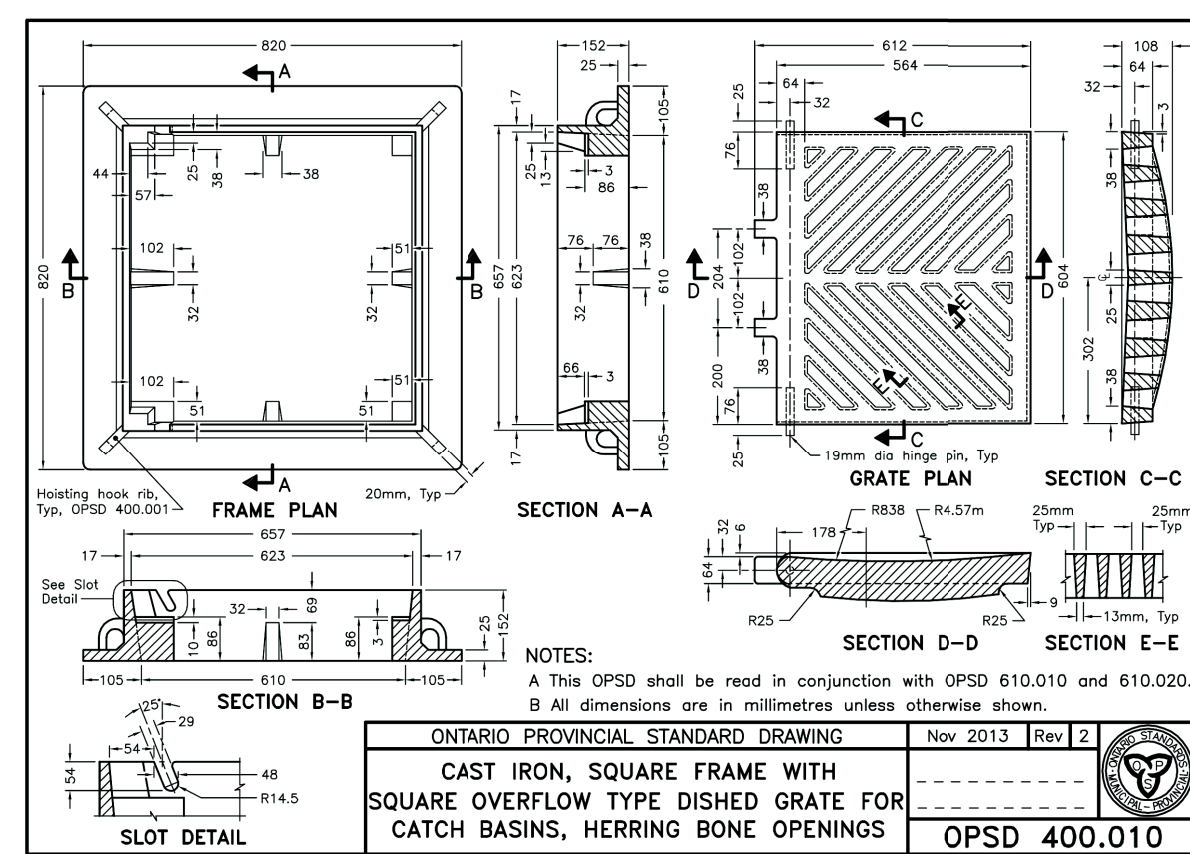
## TYPICAL STORM AND SANITARYSEWER AND WATERMAIN INSULATION DETAIL (N.T.S.)



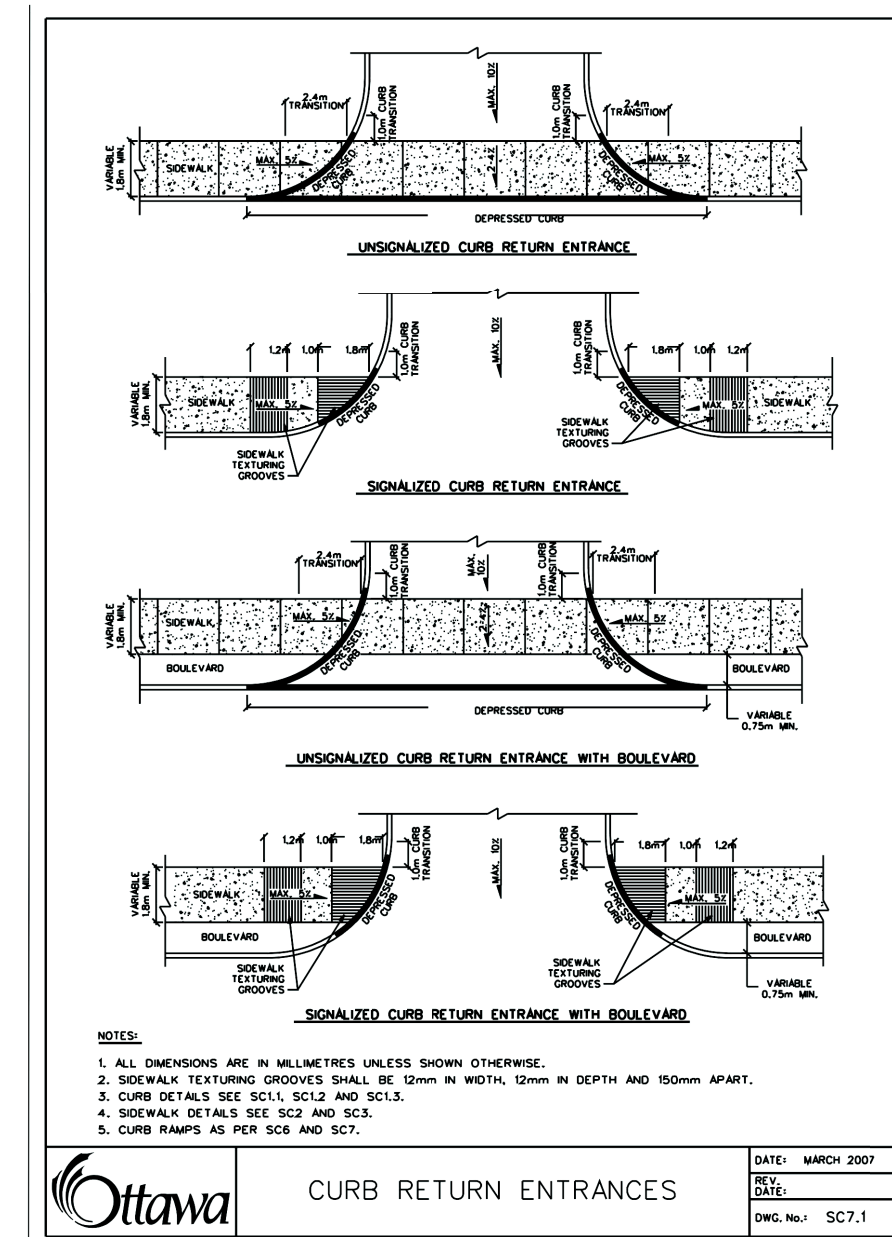
NOTES:  
 1. ALL EXISTING ASPHALT TO BE SAW CUT.  
 2. UNLESS SPECIFIED ELSEWHERE, SURFACE COURSE ASPHALT SURFACE 125mm LEVEL B (PSD-34) AND BASE COURSE ASPHALT SURFACE 150mm LEVEL B (PSD-34) IS TO BE USED.  
 3. UNLESS SPECIFIED ELSEWHERE, WHERE EXISTING PAVEMENT STRUCTURE EXCEEDS 150mm IN DEPTH, ASPHALT REINSTATEMENT SHALL BE 100mm AND GRANULAR "X" FOR THE REMAINDER.  
 4. UNLESS SPECIFIED ELSEWHERE, WHERE AN UNDERLAY LAYER OF CONCRETE PAVEMENT EXIST, REINSTATEMENT SHALL CONSIST OF 100mm OF SURFACE 150mm LEVEL B (PSD-34) AND 100mm OF 150mm LEVEL C (PSD-34).  
 5. UNLESS SPECIFIED ELSEWHERE, ASPHALT PLACEMENT AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH F-330.



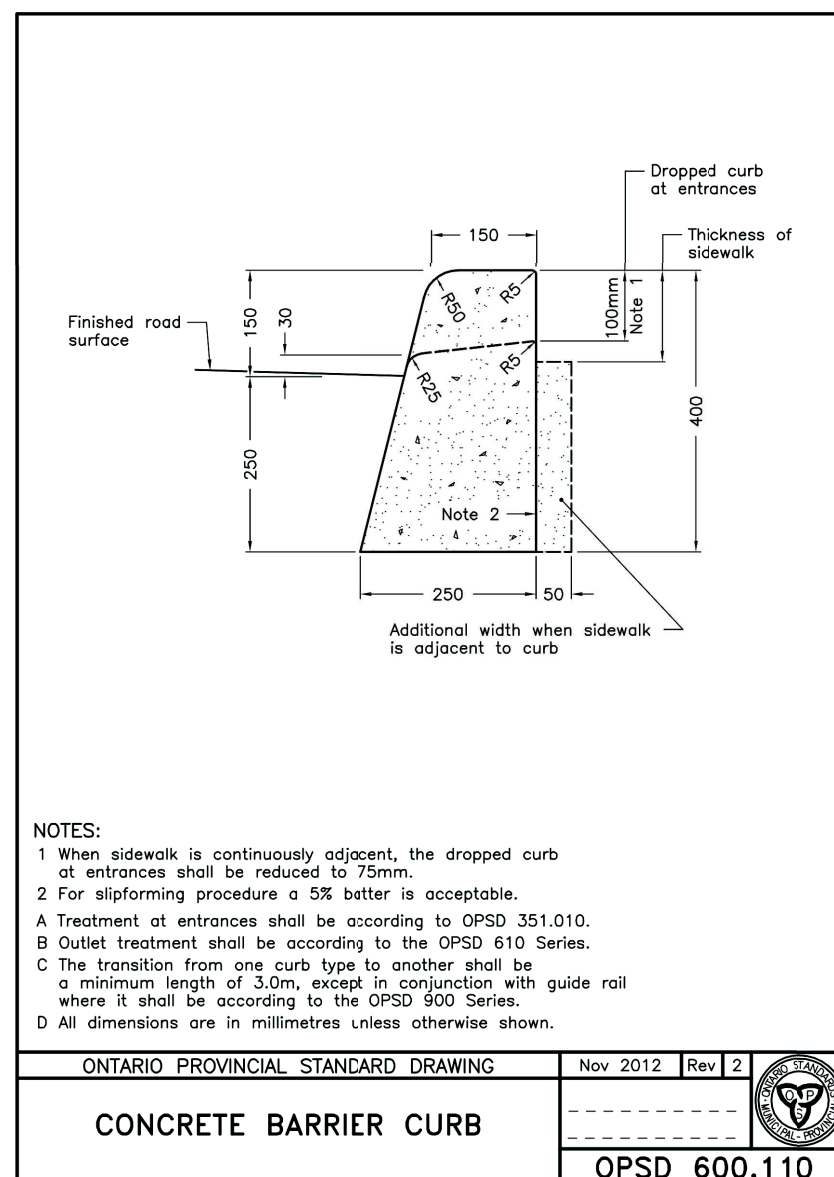
LEGEND:  
 Ø = Inside diameter  
 NOTES:  
 1. Height of fill is measured from the finished surface to top of pipe.  
 2. The pipe bed shall be compacted and shaped to receive the bottom of the pipe.  
 3. Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.  
 4. Condition of excavation is symmetrical about centreline of pipe.  
 A Granular material placed in the haunch area shall be compacted prior to placing and compacting the remainder of the embedment material.  
 B Soil types as defined in the Occupational Health and Safety Act and Regulations.  
 C All dimensions are in metres unless otherwise shown.



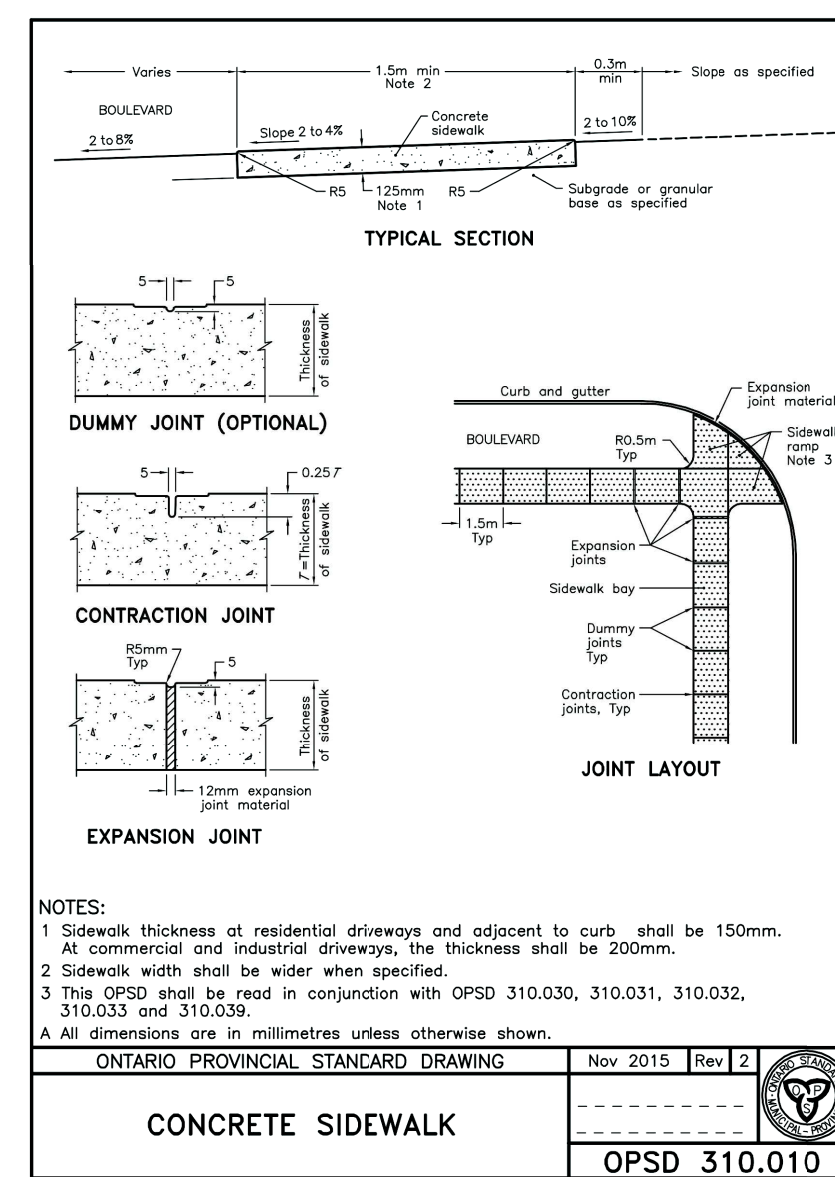
NOTES:  
 A This OPSD shall be read in conjunction with OPSD 610.010 and 610.020.  
 B All dimensions are in millimetres unless otherwise shown.



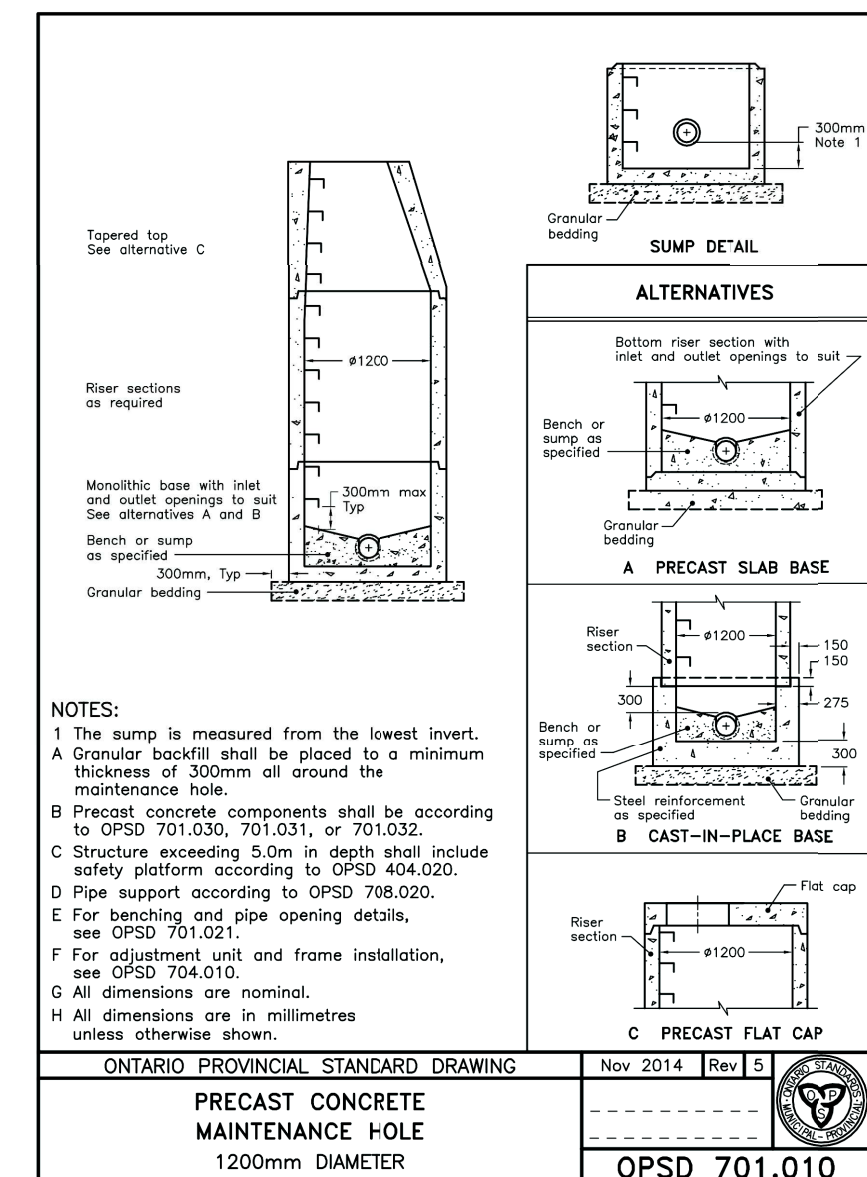
NOTES:  
 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.  
 2. SIDEWALK TEXTURING GROOVES SHALL BE 10mm IN WIDTH, 2mm IN DEPTH AND 150mm APART.  
 3. CURB DETAILS SEE SCL, SCL2 AND SCL3.  
 4. SIDEWALK DETAILS SEE SCL2 AND SCL3.  
 5. CURB RAMP AS PER SCL2 AND SCL3.



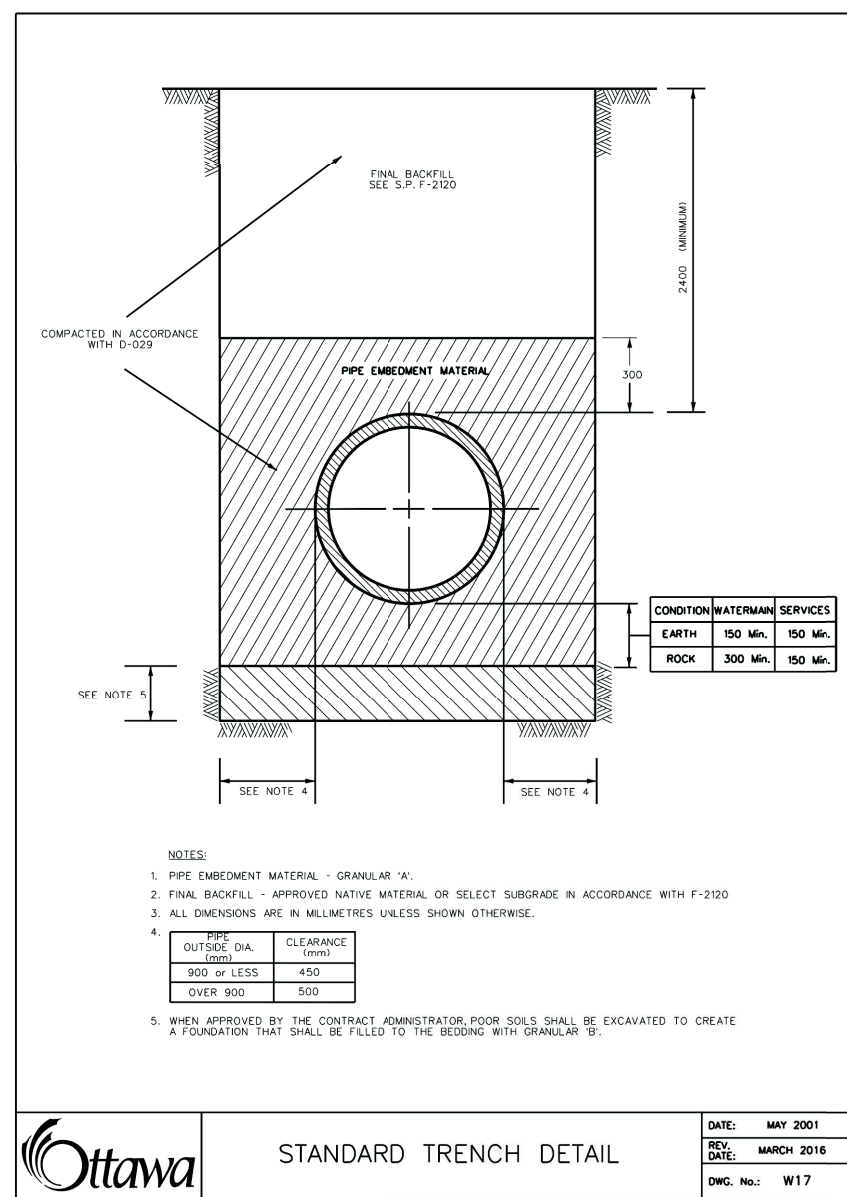
NOTES:  
 1. When sidewalk is continuously adjacent, the dropped curb at entrances shall be reduced to 75mm.  
 2. For sloping procedure a 5% better is acceptable.  
 A Treatment at entrances shall be according to OPSD 351.010.  
 B Outlet treatment shall be according to the OPSD 610 Series.  
 C The transition from one curb type to another shall be a minimum length of 3.0m, except in conjunction with guide rail where it shall be according to the OPSD 400 Series.  
 D All dimensions are in millimetres unless otherwise shown.



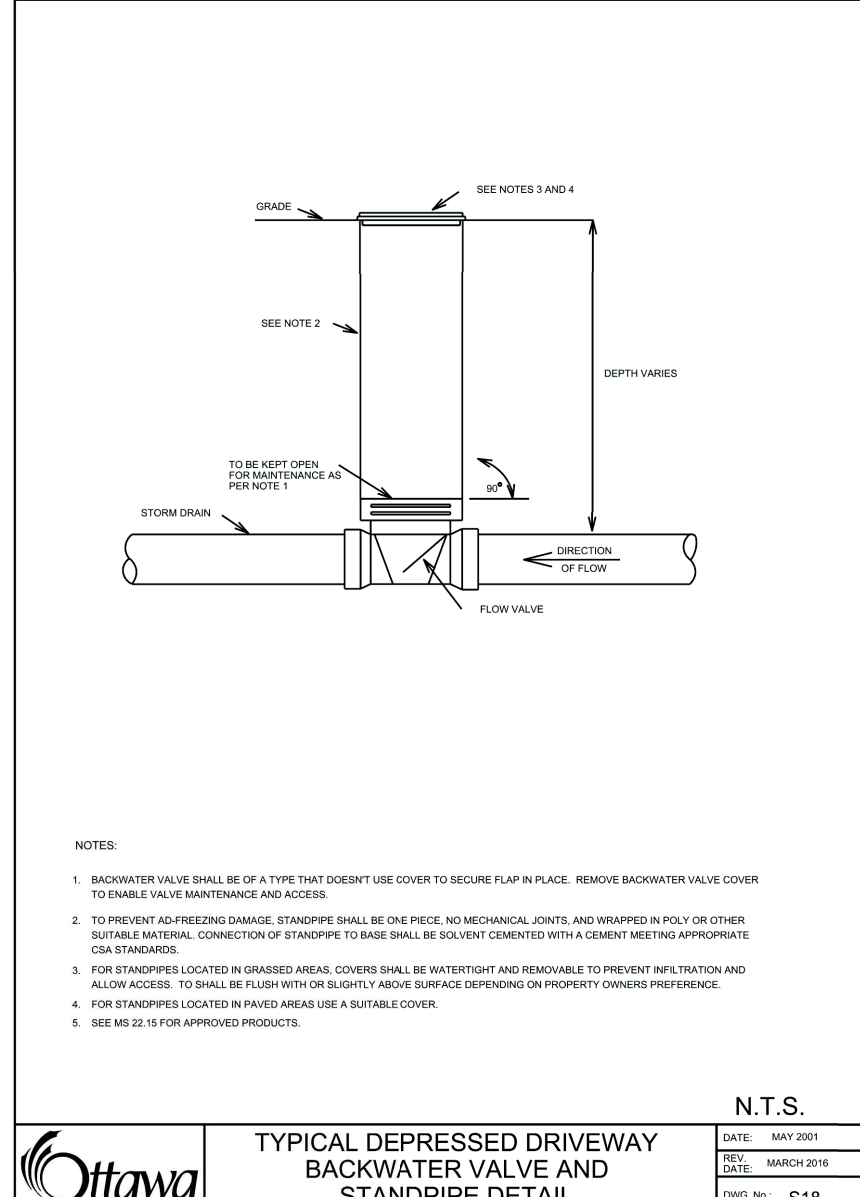
NOTES:  
 1. Sidewalk thickness at residential driveways and adjacent to curb, shall be 150mm.  
 A Commercial and industrial driveways, the thickness shall be 200mm.  
 2. Sidewalk width shall be wider when specified.  
 3. This OPSD shall be read in conjunction with OPSD 310.030, 310.031, 310.032, 310.033 and 310.039.  
 A All dimensions are in millimetres unless otherwise shown.



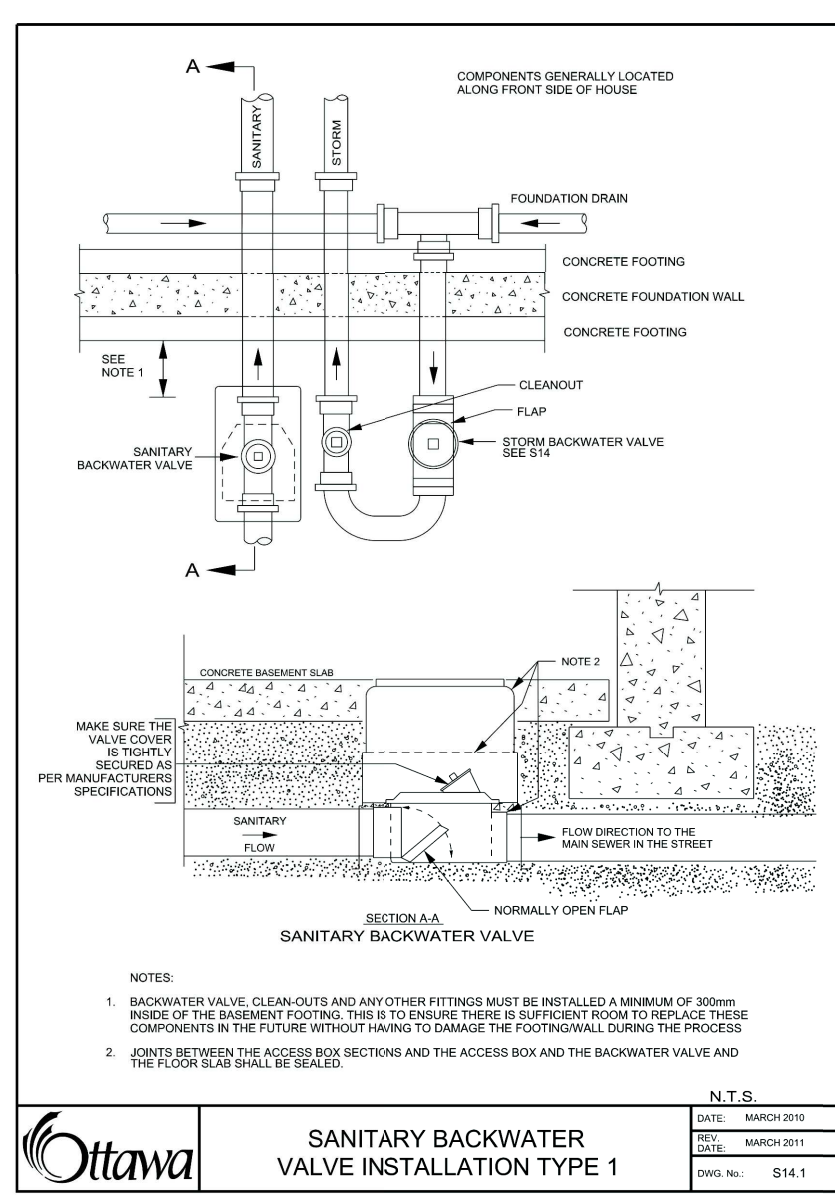
NOTES:  
 1. The sump is measured from the lowest invert.  
 A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.  
 B Precast concrete components shall be according to OPSD 701.030, 701.031, or 701.032.  
 C Structure exceeding 5.0m in depth shall include safety platform according to OPSD 404.020.  
 D Pipe support according to OPSD 708.020.  
 E For benching and pipe opening details, see OPSD 701.021.  
 F For adjustment unit and frame installation, see OPSD 704.010.  
 G All dimensions are nominal.  
 H All dimensions are in millimetres unless otherwise shown.



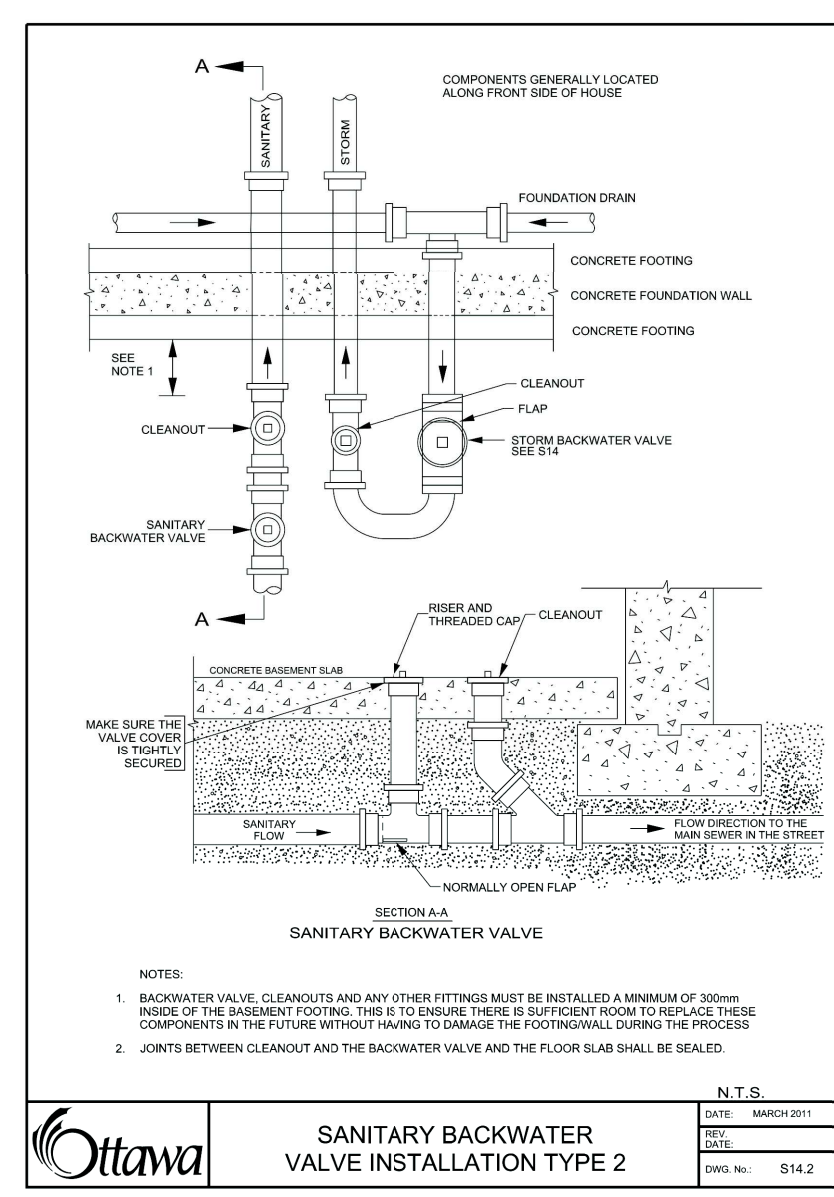
NOTES:  
 1. PIPE EMBEDMENT MATERIAL - GRANULAR "X".  
 2. FIN. BACKFILL - APPROVED NATURAL MATERIAL, OR SELECT SUBGRADE IN ACCORDANCE WITH F-330.  
 3. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.  
 4. OUTSIDE DIA. CLEARANCE 100mm  
 5. WHEN APPROVED BY THE CONTRACT ADMINISTRATOR, PIPE JOINTS SHALL BE EXCAVATED TO CREATE A FOUNDATION THAT SHALL BE FILLED TO THE BEDDING WITH GRANULAR "X".



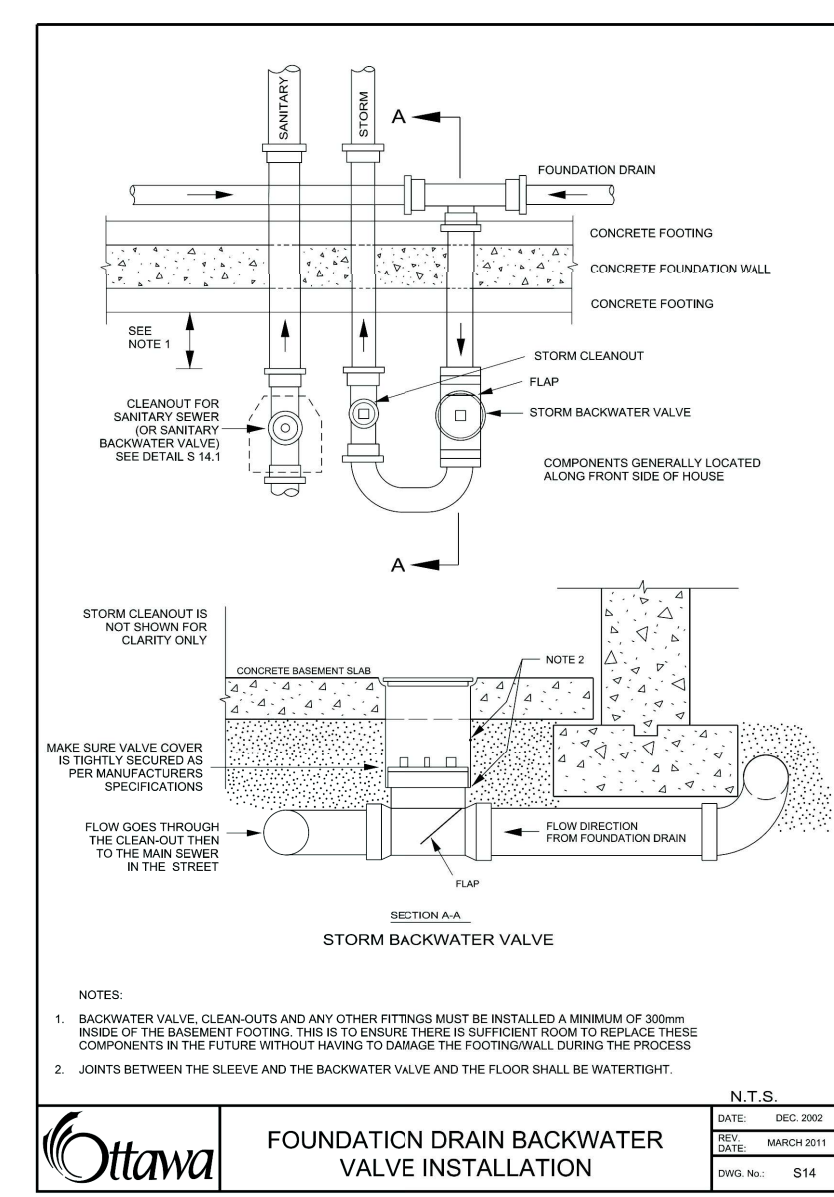
NOTES:  
 1. BACKWATER VALVE SHALL BE OF A TYPE THAT DOES NOT REQUIRE FLAP IN PLACE. REMOVE BACKWATER VALVE COVER TO ENABLE VALVE MAINTENANCE AND ACCESS.  
 2. TO PREVENT AIRLOCKING/CHOKING, STANDPIPE SHALL BE DRILLED WITH NO MECHANICAL JOINTS, AND WRAPPED IN POLY OR OTHER SUITABLE MATERIAL. CONNECTION OF STANDPIPE TO BASE SHALL BE SOLVENT CEMENTED WITH A CEMENT MEETING APPROPRIATE FOR END-USE.  
 3. FOR STANDPIPES LOCATED IN ADJACENT AREAS, COVERS SHALL BE WATERPROOF AND REMOVABLE TO PREVENT INFILTRATION AND ALLOW ACCESS. TO SHALL BE LIFTED WITHIN 60 SECONDS AND AVOID SURFACE DEPENDENCY ON PROPERTY OWNER'S PREFERENCE.  
 4. FOR STANDPIPES LOCATED IN PAVED AREAS USE A SUITABLE COVER.  
 5. SEE ALSO S104-APPROVED PRODUCTS.



NOTES:  
 1. BACKWATER VALVE, CLEAN-OUTS AND ANY OTHER FITTINGS MUST BE INSTALLED A MINIMUM OF 300mm ABOVE THE BASEMENT FLOORING. THIS IS TO INSURE THERE IS SUFFICIENT ROOM TO REPLACE THESE COMPONENTS IN THE FUTURE WITHOUT HAVING TO DAMAGE THE FLOORING DURING THE PROCESS.  
 2. JOINTS BETWEEN THE ACCESS BOX SECTIONS AND THE ACCESS BOX AND THE BACKWATER VALVE AND THE FLOOR SLAB SHALL BE SEALED.



NOTES:  
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NOTES:  
 1. BACKWATER VALVE, CLEAN-OUTS AND ANY OTHER FITTINGS MUST BE INSTALLED A MINIMUM OF 300mm ABOVE THE BASEMENT FLOORING. THIS IS TO INSURE THERE IS SUFFICIENT ROOM TO REPLACE THESE COMPONENTS IN THE FUTURE WITHOUT HAVING TO DAMAGE THE FLOORING DURING THE PROCESS.  
 2. JOINTS BETWEEN THE ELEVATE AND THE BACKWATER VALVE AND THE FLOOR SHALL BE WATERPROOF.

USE AND INTERPRETATION OF DRAWINGS  
 GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DISCREET USE AND INTENT OF THE DRAWING. THE CONTRACT DOCUMENTS INCLUDE NOT ONLY THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ANY ONE SHALL BE BINDING AS REQUIRED BY ALL. WORK NOT COMPLETELY DELINEATED HEREON SHALL BE CONSTRUCTED OF THE SAME MATERIALS AND DETAIL SIMILARLY AS WORK SHOWN MORE COMPLETELY ELSEWHERE IN THE CONTRACT DOCUMENTS.  
 BY USE OF THE DRAWINGS FOR CONSTRUCTION OF THE PROJECT, THE OWNER CONFIRMS THAT HE HAS REVIEWED AND APPROVED THE DRAWINGS. THE CONTRACTOR CONFIRMS THAT HE HAS VISITED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS, VERIFIED FIELD DIMENSIONS AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.  
 AS INSTRUMENTS OF SERVICE, ALL DRAWINGS, SPECIFICATIONS, CAD FILES OR OTHER ELECTRONIC MEDIA AND COPIES THERE OF FURNISHED BY THE ENGINEER ARE HIS PROPERTY. THEY ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE USED ON ANY OTHER PROJECT, INCLUDING REPEATS OF THE PROJECT. CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ENGINEER.  
 UNLESS THE REVISION TITLE IS "ISSUED FOR CONSTRUCTION", THESE DRAWINGS SHALL BE CONSIDERED PRELIMINARY AND SHALL NOT BE USED AS A CONSTRUCTION DOCUMENT.  
 THESE DRAWINGS ILLUSTRATES THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF CONSTRUCTION, AND NOTHING ON THESE DRAWINGS EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT THE SITE AND SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS A KNOWLEDGE OF THE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK, AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORTHCOMING.  
 UNAUTHORIZED CHANGES:  
 IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRI ASSOCIATES LTD. (LRI) WITHOUT OBTAINING LRI'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRI AND TO RELEASE LRI FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.  
 IN ADDITION, THE CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRI FROM ANY DAMAGES, LIABILITIES OR COST, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.  
 EXISTING SERVICES AND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST AVAILABLE RECORDS, BUT MAY NOT BE COMPLETE OR TO DATE. CONTRACTOR SHALL VERIFY IN FIELD FOR LOCATION AND ELEVATION OF PIPES AND CHECK WITH THE UTILITY COMPANIES BEFORE DIGGING OR PERFORMING WORK.  
 CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS BEFORE START OF CONSTRUCTION.  
 THE ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.  
 CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.

09	RE-ISSUED FOR APPROVAL	M.L.	08 JUL 2020
08	RE-ISSUED FOR APPROVAL	M.L.	28 MAY 2020
07	RE-ISSUED FOR APPROVAL	M.L.	22 MAY 2020
06	RE-ISSUED FOR APPROVAL	M.L.	12 MAY 2020
05	RE-ISSUED FOR APPROVAL	M.L.	08 MAY 2020
04	RE-ISSUED FOR APPROVAL	M.L.	29 APR 2020
03	RE-ISSUED FOR APPROVAL	M.L.	21 FEB 2020
02	ISSUED FOR APPROVAL	M.L.	05 NOV 2019
01	ISSUED FOR COORDINATION	M.L.	01 NOV 2019

No.	REVISIONS	BY	DATE
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NOT AUTHENTIC UNLESS SIGNED AND DATED

**LRJ**  
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 5430 Canotek Road | Ottawa, ON K1J 9G2  
 www.lri.ca | (613) 842-3434

CLIENT  
**UPSCALE HOMES INC.**

DESIGNED BY: M.L. DRAWN BY: M.L. APPROVED BY: V.J.

PROJECT  
**3.5 STORY RESIDENTIAL BUILDING**  
**261-265 COLUMBUS AVE**  
**OTTAWA, ON**

DRAWING TITLE  
**CONSTRUCTION DETAIL PLAN**

PROJECT NO.  
**190377**

DATE  
**07/08/2019**

C901

#18141

D07-12-19-0192