VAUGHAN

Infrastructure Delivery

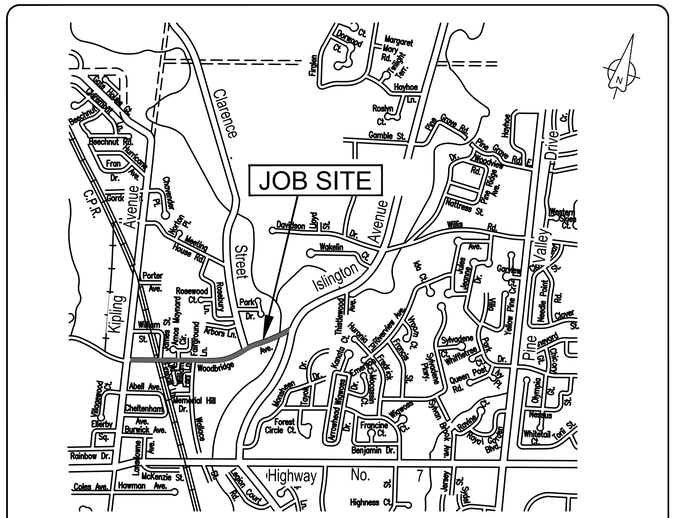
CONTRACT FOR :

WOODBRIDGE AVENUE IMPROVEMENTS

FROM KIPLING AVENUE TO ISLINGTON AVENUE

TENDER No. _____

PROJECT No. _____



LOCATION

TENDER No.

PROJECT No.

ATTACHMENT 5

Printed: Jul. 30, 2021

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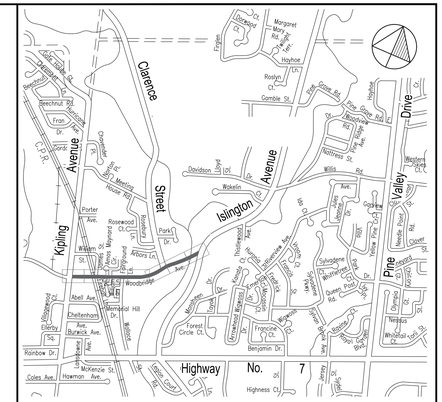

KEY PLAN

CONTRACTOR'S NOTES:

1. ALL DIMENSIONS ARE IN METRES AND / OR MILLIMETRES UNLESS OTHERWISE INDICATED.
2. DRAWINGS ARE NOT TO BE SCALED.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY UPON FINDING.
4. THE EXACT LOCATION OF UTILITIES SHALL BE DETERMINED BY CONSULTING THE UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
5. BENCHMARKS FOR LAYOUT ARE TO BE OBTAINED FROM THE CITY OF VAUGHAN ENGINEERING DEPARTMENT.

NOTE:

EVERY REASONABLE EFFORT HAS BEEN MADE TO ENSURE THAT THE INFORMATION APPEARING ON THIS PLAN IS ACCURATE AND CURRENT. WE BELIEVE THE INFORMATION TO BE RELIABLE, HOWEVER, THE CITY OF VAUGHAN ASSUMES NO RESPONSIBILITY OR LIABILITY DUE TO ERRORS OR OMISSIONS.

BENCH MARK:
MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALE:
HORIZONTAL: 0 5 10 25m
VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE

INDEX

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. IND

Printed: Jul. 30, 2021

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GENERAL NOTES

1. THE NOTES ON THESE DRAWINGS APPLY TO ALL WORKS UNDER THIS CONTRACT UNLESS OTHERWISE INDICATED ON THESE SETS OF PLANS
2. THE STANDARD DRAWINGS OF THE CITY OF VAUGHAN, THE REGIONAL MUNICIPALITY OF YORK AND THE ONTARIO MINISTRY OF TRANSPORTATION CONSTITUTE PART OF THIS SET OF PLANS AND SHALL BE THE REVISION IN EFFECT AS OF THE DATE OF APPROVAL OF THE CONSTRUCTION DRAWINGS.
3. ALL CONSTRUCTION WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS".
4. INFORMATION REGARDING ANY EXISTING SERVICES AND/OR UTILITIES SHOWN ON THIS SET OF PLANS IS FURNISHED AS THE BEST AVAILABLE INFORMATION AT THE TIME OF PREPARATION. THE CONTRACTOR SHALL INTERPRET THIS INFORMATION AS HE/SHE SEES FIT WITH THE UNDERSTANDING THAT THE OWNER, THE CITY AND ENGINEER DISCLAIM ALL RESPONSIBILITY FOR ITS ACCURACY AND/OR SUFFICIENCY.
5. THE CONTRACTOR SHALL NOTE THAT THERE MAY BE OVERHEAD AND UNDERGROUND UTILITIES WHICH ARE NOT SHOWN ON THESE DRAWINGS. SOME, OR ALL OF THESE UTILITIES MAY REQUIRE SHIELDING OR OTHER APPROPRIATE FORM OF PROTECTION AS SPECIFIED BY THE RESPECTIVE UTILITY COMPANIES, OR ANY OTHER APPLICABLE LEGISLATION IN FORCE. CONTRACTORS SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH THE NUMBER OF LOCATIONS OF THE OVERHEAD UTILITY CABLES. ANY UTILITY DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE. THE COST OF THE SHIELDING WHERE REQUIRED SHALL BE DEEMED TO BE INCLUDED IN THE UNIT PRICES BID, WITH NO ADDITIONAL PAYMENT TO BE MADE TO THE CONTRACTOR.
6. ALL DIMENSIONS AND ELEVATIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION AND HE/SHE SHALL REPORT ANY DISCREPANCIES TO THE CITY IMMEDIATELY. DETAILS ARE NOT TO BE SCALED FROM THE DRAWINGS. ALL DIMENSIONS ARE SHOWN IN METRES UNLESS OTHERWISE NOTED.
7. ALL AREAS DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION OF THE WORKS SHOWN HEREON SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER. ALL GRASS AND VEGETATION COVERED AREAS SHALL BE RESTORED BY PLACING 150mm OF APPROVED TOPSOIL AND SOD TO ESTABLISH A GRASS COVER, UNLESS OTHERWISE NOTED ON THE PLANS, TO THE SATISFACTION OF THE CITY. CLEARING OF ANY VEGETATION OTHER THAN THAT DETAILED ON THE CONTRACT DRAWINGS, SHALL NOT BE UNDERTAKEN WITHOUT SPECIFIC WRITTEN DIRECTION BY THE ENGINEER. VERTICAL TRENCHING, HAND TRENCHING, AUGERING AND IMMEDIATE BACKFILLING OF ANY TRENCH SHALL BE UNDERTAKEN BY THE CONTRACTOR AS NECESSARY TO ENSURE THAT ALL REASONABLE PRECAUTIONS ARE TAKEN TO PROMOTE THE SURVIVAL OF ANY EXISTING VEGETATION.
8. THE CONTRACTOR SHALL PROTECT ALL EXISTING TREES WITHIN THE WORK AREAS. SHOULD ANY TREE CONFLICT WITH THE PROPOSED WORKS, THE CITY SHALL BE NOTIFIED IMMEDIATELY TO DETERMINE A COURSE OF ACTION. NO TREES SHALL BE REMOVED WITHOUT WRITTEN CONSENT FROM THE CITY.
9. VEHICULAR TRAFFIC AND ACCESS TO ALL DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES DURING THE WORK. SHOULD ACCESS TO ANY DRIVEWAYS BE TEMPORARILY CUT-OFF, THE CONTRACTOR SHALL NOTIFY THE OWNERS 24 HOURS IN ADVANCE AND ENSURE THAT THE DRIVEWAY ACCESS IS RESTORED AS QUICKLY AS POSSIBLE. THE CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL BY THE CITY PRIOR TO START OF CONSTRUCTION.
10. APPROVED FILL MATERIAL SHALL BE COMPACTED TO A DRY DENSITY AS PER THE SPECIFICATIONS. COMPACTION TESTS SHALL BE CONDUCTED BY A QUALIFIED SOIL ENGINEER TO ENSURE COMPACTION AND STABILITY OF THE FILL AND TEST RESULTS SHALL BE SUBMITTED TO THE CITY, THE CONTRACTOR AND THE CONSULTANT. ANY APPROVED FILL MATERIAL BROUGHT ON SITE SHALL BE CERTIFIED BY A QUALIFIED GEOTECHNICAL ENGINEER AND SHALL INCLUDE AN ENVIRONMENTAL ANALYSIS REPORT FOR METALS AND INORGANIC PARAMETERS.
11. SIDEWALK TO HAVE A CROSS-FALL SLOPE OF 2-4%. PROPOSED ASPHALT GRADE TO BE MAX. 8.0% AND MIN. 0.5%.
12. PROPOSED GROUND IN BOULEVARD TO BE MIN. 2.0% GRADE AND MAX. 3:1 SLOPE.
13. ALL GRADING TO HAVE POSITIVE SLOPING TO THE STREET CURB UNLESS NOTED OTHERWISE.
14. WHEN EXCAVATING WITHIN THE DRIP LINE OF THE EXISTING TREES TO REMAIN, HAND DIG WHERE NECESSARY.
15. ALL PRIVATE SIGNS – CONTRACTOR TO OBTAIN PERMISSION FROM LANDOWNER AS TO LOCATION OF RELOCATION OF SIGN AND INSTALL ACCORDINGLY.
16. ALL MUNICIPAL SIGNS REQUIRING RELOCATION TO BE MOVED A MINIMUM 0.5m FROM SIDEWALK.
17. TREE PROTECTION HOARDING TO BE INSTALLED AS REQUIRED.
18. TREES TO BE PRESERVED (IF POSSIBLE) AS DETERMINED IN THE FIELD BY THE CONTRACT ADMINISTRATOR.
19. ALL TRENCHING SHALL BE CARRIED OUT IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT, THE TRENCH EXCAVATORS PROTECTION ACT AND THE ONTARIO MINISTRY OF LABOUR ACT.

ROADWORKS

1. THE DATA INCLUDED IN THE REPORT PAVEMENT/GEOTECHNICAL REPORT IS NOT NECESSARILY COMPLETE AND SHALL BE CONSIDERED FOR GENERAL REFERENCE ONLY. THE CITY OF VAUGHAN ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE REPORT'S INFORMATION.
2. APPROVED GRANULAR MATERIAL TO BE COMPACTED TO A DRY DENSITY OF NOT LESS THAN 100% SPMDD. AFTER COMPACTION, SOIL DENSITY TESTS SHALL BE CONDUCTED TO ENSURE ADEQUATE COMPACTION.
3. ROAD CROSS-SECTION, INTERSECTION AND HORIZONTAL ALIGNMENT SHALL CONFORM TO THE STANDARD DRAWINGS OF THE CITY UNLESS OTHERWISE NOTED.
4. THE REQUIRED PAVEMENT STRUCTURE THICKNESS, WITHIN THE ROAD ALLOWANCE IS AS PER TYPICAL SECTIONS.
5. ALL DRIVEWAYS ARE TO BE REINSTATED AS PER CONTRACT SPECIFICATIONS OR AS SHOWN. ALL EXISTING DRIVEWAY CULVERTS AND RETAINING WALLS WITHIN THE RIGHT-OF-WAY ARE TO BE REMOVED AND DISPOSED OFF-SITE. ALL EXISTING TIMBER, PRECAST OR CAST IN PLACE DRIVEWAY CURBS DISTURBED BY DRIVEWAY RECONSTRUCTION SHALL BE RESTORED IN KIND AND EXTENDED TO MEET THE NEW ROADWAY CURB WHERE SHOWN ON THE DRAWINGS TO THE SATISFACTION OF THE CITY.
6. ALL CURB SHALL BE CAST-IN-PLACE FULL STAGE CONCRETE CURB AND GUTTER AS PER OPSD 600.040, CITY STANDARD F-1. THE MINIMUM SLOPE ALONG ANY GUTTER SHALL BE 0.50%.
7. 2 – 15m BARS SPACED 350mm APART SHALL BE PLACED WITHIN CURBS THROUGH ALL ENTRANCES AND DRIVEWAYS.
8. SUBDRAINS IF REQUIRED SHALL BE 150mm DIAMETER PERFORATED PVC PIPE AS PER OPSS FORM 405, PRE-WRAPPED BY THE MANUFACTURERS WITH GEOTEXTILE FILTER FABRIC MEETING OPSS FORM 1860 AND INSTALLED UNDER ALL CURBS IN ACCORDANCE WITH CITY STANDARD F-2. THE CONTRACTOR IS TO ENSURE THAT THE SUBGRADE IS GRADED TO PROVIDE POSITIVE DRAINAGE TO THE SUBDRAINS AND THAT THE SUBDRAINS OUTLET INTO CATCHBASINS.
9. ALL MANHOLE COVERS ARE TO BE ADJUSTED TO SUIT THE PROPOSED ROAD AND BOULEVARD GRADES. ANY UNSUITABLE BRICK RISERS ARE TO BE REMOVED AND REPLACED WITH PRE-CAST CONCRETE ADJUSTMENT UNITS. NEW FRAME AND COVERS ARE TO BE PROVIDED BY THE CONTRACTOR WHERE DEEMED NECESSARY BY THE CITY.
10. ALL PAVEMENT MARKINGS SHALL BE PLACED AS SPECIFIED IN THE CONTRACT DOCUMENT.
11. ALL CONCRETE CURB FROM EXISTING ROAD CURB TO STREET LINE SHALL BE BARRIER CURB PER OPSD 600.110. ALL CONCRETE CURB HEIGHTS SHALL BE 150mm UNLESS OTHERWISE NOTED. ENTRANCE DRIVEWAY CURBS TO BE DISCONTINUOUS AT SIDEWALK AND TAPERED BACK 600mm MINIMUM.

WATERMAINS

1. ALL WATERMAIN PIPE FROM 150mm – 400mm DIAMETER SHALL BE POLYVINYL CHLORIDE (PVC) PIPE CLASS 150, DR18 AND SHALL CONFORM TO CSA B137.6, AWWA C900-75 AND AWWA C901-78 SPECIFICATIONS, UNLESS OTHERWISE NOTED.

   JOINTS AND FITTINGS SHALL BE AS PER AWWA C907 SPECIFICATIONS. ALL FITTINGS SHALL BE CAST IRON, MECHANICAL JOINT CEMENT LINED, UNLESS OTHERWISE SPECIFIED.
2. WATERMAIN BEDDING TO BE MORTAR SAND CONFORMING TO OPSS MUNI 1004, GRANULAR D AND PLACED IN ACCORDANCE WITH APPLICABLE OPSD DRAWINGS. CONCRETE THRUST BLOCKS, WHERE REQUIRED TO CONFIRM TO OPSD 1103.010 & 1103.020.
3. TRACER WIRE (8 GAUGE) TO BE INSTALLED ON ALL WATERMAINS.
4. ALL VALVE CHAMBERS SHALL BE PRECAST CONCRETE IN ACCORDANCE WITH UP TO AND INCLUDING 400mm DIAMETER AWWA C500 SPECIFICATIONS. MULTIPLE VALVE CHAMBERS TO BE INSTALLED AT INTERSECTIONS IF INDICATED ON THE DRAWINGS AND AS PER CITY STANDARD DRAWING W-102.
5. ALL HYDRANTS SHALL BE IN ACCORDANCE WITH AWWA C502 SPECIFICATIONS AND INSTALLED IN ACCORDANCE WITH CITY STANDARD DRAWING W-104. FLANGE ELEVATIONS SHALL BE AS SHOWN ON THE PROFILE DRAWINGS.
6. THE CONTRACTOR SHALL NOTE THAT THE DEPTH OF THE PROPOSED WATERMAIN MAY VARY AND HE/SHE SHALL SATISFY HIMSELF AS TO THE REQUIRED HEIGHT OF THE HYDRANT RISER AND DEPTHS OF VALVE CHAMBERS.
7. CATHODIC PROTECTION IS REQUIRED ON ALL METALLIC FITTINGS AND VALVES UNLESS OTHERWISE RECOMMENDED IN THE APPROVED GEOTECHNICAL REPORT. SIZE AND INSTALLATION SHALL BE IN ACCORDANCE WITH CITY REQUIREMENTS OR AS RECOMMENDED BY THE SOIL ENGINEER.
8. CATHODIC PROTECTION IS REQUIRED ON ALL METALLIC FITTINGS UNLESS OTHERWISE RECOMMENDED IN THE APPROVED GEOTECHNICAL REPORT. SIZE AND INSTALLATION SHALL BE IN ACCORDANCE WITH CITY REQUIREMENTS OR AS RECOMMENDED BY GEOTECHNICAL ENGINEER. CITY MINIMUM REQUIREMENTS FOR SACRIFICIAL ANODES:
   A. METALLIC MECHANICAL JOINTS/FITTINGS/RESTRAINTS: 12LB EACH
   B. SERVICE CONNECTIONS (I.E., CURB STOPS): 6LB EACH
   C. HYDRANTS: 24LB EACH
   D. ON EXPOSED METALLIC PIPING OR FITTINGS WHEN CONNECTING TO NON-METALLIC PIPE AND/OR WHEN MAKING REPAIRS TO BREAKS AND/OR LEAKS: 12LB EACH
9. DOMESTIC WATER SERVICE CONNECTIONS TO BE 25mm DIAMETER TYPE "K" COPPER TUBING AND INSTALLED AS PER CITY STANDARD DRAWING C-101 AND OPSD 1104.010, UNLESS OTHERWISE SPECIFIED. SADDLES ARE REQUIRED FOR SERVICE CONNECTION SIZES FROM 25mm TO 50mm IN DIAMETER.
10. ALL INDUSTRIAL/COMMERCIAL/INSTITUTIONAL (ICI) CONNECTIONS SHALL BE IN ACCORDANCE WITH CITY STANDARD DRAWINGS C-102 AND C-103, UNLESS OTHERWISE NOTED.
11. NO WATERMAIN OR APPURTENANCE SHALL BE PLACED ON PREVIOUSLY EXCAVATED SOIL UNLESS PROPER ENGINEERED SUPPORT IS IN PLACE TO THE SATISFACTION OF THE SOIL ENGINEER AND THE CITY. FILL BELOW THE INVERT OF THE WATERMAIN, WHERE ENCOUNTERED, MUST BE REMOVED AND REPLACED WITH COMPACTED GRANULAR FILL AS PER THE RECOMMENDATIONS ON-SITE BY THE SOILS ENGINEER.
12. WATERMAIN WITHIN FILL AREAS ARE TO HAVE RESTRAINED JOINTS USING UNI-FLANGE SERIES 1390 RESTRAINER (OR APPROVED EQUIVALENT) FOR THREE JOINTS BEYOND THE FILL AREA AS INDICATED ON THE PROFILE DRAWINGS.
13. VALVES, BENDS AND TEES SHALL HAVE RESTRAINED JOINTS.
14. MINIMUM CURVATURE OF ANY WATERMAIN SHALL BE COMPLETED BY PIPE DEFLECTION IN ACCORDANCE WITH THE MANUFACTURERS RADIUS GUIDELINES.
15. THE EXISTING WATERMAIN SHALL REMAIN FULLY OPERATIONAL AT ALL TIMES (UNLESS TEMPORARY WATER SERVICE IS SPECIFIED) UNTIL THE NEW WATERMAIN IS SWABBED, FLUSHED AND SUCCESSFULLY PRESSURE TESTED AND CHLORINATED AND THE CITY CONFIRMS THAT THE WATER IS POTABLE.
16. THE EXISTING WATERMAIN IS TO BE ABANDONED WITH ALL OPEN ENDS TO BE PLUGGED WITH CONCRETE. ALL VALVE CHAMBERS, BOXES, ETC. ARE TO BE REMOVED AND DISPOSED AS PER THE SPECIFICATIONS. ALL EXISTING HYDRANTS SHALL BE SALVAGED AND RETURNED TO THE CITY OF VAUGHAN WORKS YARD.
17. ALL VALVES ABANDONED IN PLACE SHALL BE CLOSED. ALL ABANDONED VALVE CHAMBERS SHALL HAVE TOP SECTIONS REMOVED, BOTTOM SECTIONS SHALL BE FILLED WITH GRANULAR MATERIAL. REMOVED SECTIONS TO BE DISPOSED OF OFF SITE AT CONTRACTOR'S EXPENSE.
18. ALL RESIDENTS AFFECTED BY SHUTDOWNS MUST BE PROVIDED WITH MINIMUM 24 HOUR NOTICE BY THE CONTRACTOR PRIOR TO THE SHUTDOWN.
19. ALL AREAS DISTURBED BY THE WATERMAIN CONSTRUCTION SHALL BE RESTORED TO PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE CITY.
20. CONTRACTOR TO REVIEW THE CITY'S APPROVED WATERMAIN COMMISSIONING REQUIREMENTS (REV. 4.0) AND PROVIDE COMMISSIONING PLAN PRIOR TO COMMISSIONING NEW WATERMAINS. REFER TO CONTRACT DOCUMENTS APPENDIX ___ , CITY OPERATIONAL PROCEDURE (APPENDIX Q)
21. CONTRACTOR TO REVIEW THE CITY'S APPROVED WATER MAIN DISINFECTION PROCEDURE (AUG. 1. 2020) PRIOR TO DISINFECTING NEW WATERMAIN. REFER TO CONTRACT DOCUMENTS FOR APPENDIX ___ FOR ENTIRE DOCUMENT.

NEW WATERMAINS DISINFECTION PROCEDURE

1.1. FOR WATERMAINS, INCLUDING TEMPORARY WATERMAINS, THAT ARE ADDED TO, MODIFIED, RE-ALIGNED, REPLACED OR EXTENDED WITHIN A DRINKING WATER SYSTEM, OPERATING AUTHORITIES SHALL ENSURE THAT THE REQUIREMENTS OF ANSI/AWWA STANDARD C651 ARE FOLLOWED AS MODIFIED BY THIS PROCEDURE.

1.1.2. DISINFECTION OF NEW WATERMAINS
FOR PRELIMINARY FLUSHING PRIOR TO DISINFECTION REFERRED TO IN SECTIONS 4.4.2 AND 4.5.2 OF ANSI/AWWA STANDARD C651, IF THE REQUIREMENTS OF ANSI/AWWA STANDARD C651 FOR A VELOCITY OF 3.0 FT/SEC (0.91 M/SEC) ARE NOT PRACTICAL, ALTERNATIVE CLEANING CONSISTING OF SWABBING OR FLUSHING 2-3 PIPE VOLUMES CAN BE USED AT THE DISCRETION OF THE OPERATING AUTHORITY.
WHERE A NEWLY CONSTRUCTED WATERMAIN IS DISINFECTED USING THE TABLET, CONTINUOUS FEED, SLUG, OR SPRAY CHLORINATION METHOD (NOT LIMITED TO LARGE TRANSMISSION MAINS) AS PER THE PROCEDURES IN ANSI/AWWA STANDARD C651, THE MINIMUM CONTACT TIMES, INITIAL CHLORINE CONCENTRATIONS, AND MAXIMUM ALLOWABLE DECREASES IN CHLORINE CONCENTRATION AS LISTED IN TABLE 1 SHALL BE USED. THE DISINFECTION METHOD USED IS AT THE DISCRETION OF THE OPERATING AUTHORITY.
WHEN USING THE TABLET OR CONTINUOUS FEED DISINFECTION METHOD, IF THE MAXIMUM ALLOWABLE DECREASE IN CHLORINE CONCENTRATIONS IS EXCEEDED AT ANY OF THE SAMPLING POINTS, THE DISINFECTION PROCEDURE MUST BE REPEATED.

WHEN USING THE SLUG DISINFECTION METHOD, THE CHLORINE CONCENTRATION SHALL BE MEASURED IN THE SLUG AT THE BEGINNING OF THE DISINFECTION PROCESS, AS THE SLUG MOVES THROUGH THE WATERMAIN, AND AT THE POINT OF DISCHARGE. IF THE CHLORINE CONCENTRATION DECREASES BY MORE THAN 25 MG/L AT ANY OF THE SAMPLING POINTS, THE FLOW SHALL BE STOPPED AND ADDITIONAL CHLORINE SHALL BE ADDED TO RESTORE THE CHLORINE CONCENTRATION IN THE SLUG TO NOT LESS THAN ITS ORIGINAL CONCENTRATION.

TABLE 1: CHLORINE CONCENTRATIONS* AND CONTACT TIMES FOR DISINFECTING NEW WATERMAINS

Table 1: Chlorine Concentrations* and Contact Times for Disinfecting New Watermains

Disinfection Method	Minimum Contact Time	Initial Chlorine Concentration	Maximum Allowable Decrease in Chlorine Concentration
Tablet or Continuous Feed	24 hours	≥ 25 mg/L	40% of the Initial Chlorine Concentration to a maximum of 50 mg/L**
Slug	3 hours	≥ 100 mg/L	25 mg/L
Spray	30 minutes	≥ 200 mg/L	Measurement Not Required

* AT CONCENTRATIONS OVER 10 MG/L, MEASUREMENTS OF TOTAL CHLORINE AND FREE CHLORINE SHALL BE DEEMED EQUIVALENT.
** EXCEPTION: WHERE COPPER PIPE IS USED AS A WATERMAIN, DISINFECTION SHALL BE PERFORMED USING THE CONTINUOUS FEED METHOD, WITH AN INITIAL CHLORINE CONCENTRATION OF ? 50 MG/L AND A MINIMUM 24-HOUR CONTACT TIME. DUE TO THE CHLORINE DEMAND EXERTED BY THE COPPER, THE MAXIMUM ALLOWABLE DECREASE REQUIREMENT IN TABLE 1 DOES NOT APPLY, AND THE EFFECTIVENESS OF THE DISINFECTION PROCESS SHALL BE DEMONSTRATED BY THE MICROBIOLOGICAL SAMPLING REFERRED TO IN SECTION 1.1.3.

1.1.3. MICROBIOLOGICAL SAMPLES FOR NEW WATERMAINS
THE OPERATING AUTHORITY SHALL ENSURE THAT THE MICROBIOLOGICAL SAMPLES TAKEN IN ACCORDANCE WITH ANSI/AWWA STANDARD C651 INCLUDE AS A MINIMUM ESCHERICHIA COLI AND TOTAL COLIFORMS AND ARE TESTED BY A LICENSED AND ACCREDITED LABORATORY. WHEN MICROBIOLOGICAL SAMPLES ARE TAKEN FROM NEW WATERMAINS THAT HAVE NOT BEEN PLACED INTO SERVICE, OPERATING AUTHORITIES SHALL ENSURE THAT ADDITIONAL SAMPLES ARE TAKEN AT THE SAME TIME FROM THE SAME LOCATION AND ARE TESTED IMMEDIATELY FOR:

(A) FREE CHLORINE RESIDUAL, IF THE SYSTEM PROVIDES CHLORINATION AND DOES NOT PROVIDE CHLORAMINATION; OR

(B) COMBINED CHLORINE RESIDUAL, IF THE SYSTEM PROVIDES CHLORAMINATION.
THESE MICROBIOLOGICAL SAMPLES AND DISINFECTANT RESIDUAL TESTS ARE NOT CONSIDERED DRINKING WATER.

Table 1: Chlorine Concentrations* and Contact Times for Disinfecting New Watermains

Disinfection Method	Minimum Contact Time	Initial Chlorine Concentration	Maximum Allowable Decrease in Chlorine Concentration
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Slug	3 hours	≥ 100 mg/L	25 mg/L
Spray	30 minutes	≥ 200 mg/L	Measurement Not Required

* AT CONCENTRATIONS OVER 10 MG/L, MEASUREMENTS OF TOTAL CHLORINE AND FREE CHLORINE SHALL BE DEEMED EQUIVALENT.
** EXCEPTION: WHERE COPPER PIPE IS USED AS A WATERMAIN, DISINFECTION SHALL BE PERFORMED USING THE CONTINUOUS FEED METHOD, WITH AN INITIAL CHLORINE CONCENTRATION OF ≥ 50 MG/L AND A MINIMUM 24-HOUR CONTACT TIME. DUE TO THE CHLORINE DEMAND EXERTED BY THE COPPER, THE MAXIMUM ALLOWABLE DECREASE REQUIREMENT IN TABLE 1 DOES NOT APPLY, AND THE EFFECTIVENESS OF THE DISINFECTION PROCESS SHALL BE DEMONSTRATED BY THE MICROBIOLOGICAL SAMPLING REFERRED TO IN SECTION 1.1.3.

1.1.4. MICROBIOLOGICAL SAMPLES FOR NEW WATERMAINS
THE OPERATING AUTHORITY SHALL ENSURE THAT THE MICROBIOLOGICAL SAMPLES TAKEN IN ACCORDANCE WITH ANSI/AWWA STANDARD C651 INCLUDE AS A MINIMUM ESCHERICHIA COLI AND TOTAL COLIFORMS AND ARE TESTED BY A LICENSED AND ACCREDITED LABORATORY. WHEN MICROBIOLOGICAL SAMPLES ARE TAKEN FROM NEW WATERMAINS THAT HAVE NOT BEEN PLACED INTO SERVICE, OPERATING AUTHORITIES SHALL ENSURE THAT ADDITIONAL SAMPLES ARE TAKEN AT THE SAME TIME FROM THE SAME LOCATION AND ARE TESTED IMMEDIATELY FOR:

(A) FREE CHLORINE RESIDUAL, IF THE SYSTEM PROVIDES CHLORINATION AND DOES NOT PROVIDE CHLORAMINATION; OR
(B) COMBINED CHLORINE RESIDUAL, IF THE SYSTEM PROVIDES CHLORAMINATION.

THESE MICROBIOLOGICAL SAMPLES AND DISINFECTANT RESIDUAL TESTS ARE NOT CONSIDERED DRINKING WATER TESTS FOR THE PURPOSE OF THE SAFE DRINKING WATER ACT (SDWA), AND ARE, THEREFORE, NOT REPORTABLE. ANY PERSON AUTHORIZED BY THE OWNER OR OPERATING AUTHORITY CAN COLLECT MICROBIOLOGICAL SAMPLES FROM WATERMAINS THAT HAVE NOT BEEN PLACED INTO SERVICE AND PERFORM THE ASSOCIATED DISINFECTANT RESIDUAL TESTS.
FOR NEW WATERMAINS WITH LIMITED SAMPLING POINTS AVAILABLE, AN ALTERNATIVE METHOD OF TAKING MICROBIOLOGICAL SAMPLES IS CALLED STAGED SAMPLING. STAGED SAMPLING SHALL BE PERFORMED AS FOLLOWS:

- A FLOW METER SHALL BE INSTALLED TO MEASURE FLOW THROUGH THE NEW WATERMAIN;
- A SAMPLING POINT SHALL BE INSTALLED AT THE END OF THE NEW WATERMAIN (ADDITIONAL SAMPLING POINTS MAY ALSO BE INSTALLED ALONG THE LENGTH OF THE WATERMAIN); AND
- FLOW SHALL BE ESTABLISHED, AND SAMPLES SHALL BE TAKEN FROM THE SAMPLING POINT(S) AT INTERVALS THAT ARE CALCULATED TO REPRESENT THE LENGTHS OF THE WATERMAIN AS REQUIRED BY SECTIONS 5.1.1.2 AND 5.1.1.3 OF ANSI/AWWA STANDARD C651, BASED ON THE PIPE SIZE AND THE MEASURED FLOW RATE.

OPERATING AUTHORITIES SHALL ENDEAVOUR TO MAINTAIN AN ACCEPTABLE DISINFECTANT CONCENTRATION UNTIL THE NEW WATERMAIN IS PLACED INTO SERVICE. IF A CONCENTRATION OF 0.05 MG/L OF FREE CHLORINE RESIDUAL IN A CHLORINATED SYSTEM (OR 0.25 MG/L OF COMBINED CHLORINE RESIDUAL IN A CHLORAMINATED SYSTEM) IS NOT MAINTAINED PRIOR TO PLACING INTO SERVICE, THE MICROBIOLOGICAL SAMPLING SHALL BE REPEATED.

1.1.5 CONNECTING NEW WATERMAINS TO THE EXISTING SYSTEM
THE PROVISIONS OUTLINED IN SECTION 4.10 OF ANSI/AWWA STANDARD C651 ARE MANDATORY, ALONG WITH THE ADDITIONAL REQUIREMENTS PRESCRIBED BELOW. THE BACKFLOW PREVENTION PROVISIONS WITHIN SECTION 4.8.9 OF ANSI/AWWA STANDARD C651 ARE NOT MANDATORY FOR CONNECTIONS.

WHEN MICROBIOLOGICAL SAMPLES ARE TAKEN FROM CONNECTIONS, OPERATING AUTHORITIES SHALL ENSURE THAT ADDITIONAL SAMPLES ARE TAKEN AT THE SAME TIME FROM THE SAME LOCATION AND ARE TESTED IMMEDIATELY FOR:

(A) FREE CHLORINE RESIDUAL, IF THE SYSTEM PROVIDES CHLORINATION AND DOES NOT PROVIDE CHLORAMINATION; OR
(B) COMBINED CHLORINE RESIDUAL, IF THE SYSTEM PROVIDES CHLORAMINATION.

1.1.5.1 CONNECTIONS EQUAL TO OR LESS THAN ONE PIPE LENGTH (GENERALLY ≤ 6 M)
THE OPERATING AUTHORITY SHALL ENSURE THAT CONNECTIONS EQUAL TO OR LESS THAN ONE PIPE LENGTH (GENERALLY ≤ 6 M) ARE UNDERTAKEN IN ACCORDANCE WITH SECTION 4.10.1 OF ANSI/AWWA STANDARD C651 AND THAT THE CONNECTION REMAIN ISOLATED FROM THE EXISTING DRINKING WATER SYSTEM, EXCEPT WHILE BEING FLUSHED OR SAMPLED, UNTIL SATISFACTORY RESULTS ARE RECEIVED FROM ONE MICROBIOLOGICAL SAMPLE, TAKEN BY A CERTIFIED OPERATOR OR WATER QUALITY ANALYST, FROM WATER THAT HAS BEEN DIRECTED THROUGH THE CONNECTION.

EXCEPTION: IF A CERTIFIED OPERATOR IS PRESENT TO WITNESS THE INSTALLATION AND DISINFECTION OF THE CONNECTION TO ENSURE THAT THE SANITARY CONSTRUCTION PRACTICES AND DISINFECTION REQUIREMENTS OF SECTIONS 4.10 AND 4.10.1 OF ANSI/AWWA STANDARD C651 WERE MET, THEN THE CONNECTION CAN BE PLACED INTO SERVICE WITH NO MICROBIOLOGICAL SAMPLE REQUIRED.

1.1.5.2 CONNECTIONS GREATER THAN ONE PIPE LENGTH (GENERALLY > 6 M)
CONNECTIONS GREATER THAN ONE PIPE LENGTH (GENERALLY > 6 M) SHALL BE UNDERTAKEN IN ACCORDANCE WITH SECTION 4.10.2 OF ANSI/AWWA STANDARD C651.
EXCEPTION: THE PROCEDURE DESCRIBED BELOW MAY BE USED AT THE DISCRETION OF THE OPERATING AUTHORITY FOR THE INSTALLATION AND DISINFECTION OF CONNECTIONS GREATER THAN ONE PIPE LENGTH AND UP TO A TOTAL LENGTH OF 40 M IF THE CONNECTION:

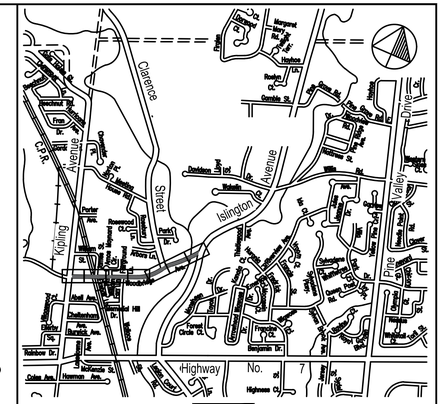
A. CROSSES A TRANSPORTATION CORRIDOR, THE EXTENDED CLOSURE OF WHICH COULD RESULT IN SIGNIFICANT COMMUNITY IMPACTS (E.G., TRAFFIC CONGESTION, LOSS OF EMERGENCY VEHICLE ACCESS, SAFETY CONCERNS), OR
B. CANNOT BE CONSTRUCTED TO WITHIN ONE PIPE LENGTH OF THE EXISTING WATERMAIN DUE TO THE POTENTIAL FOR DESTABILIZING AN EXISTING THRUST BLOCK.

PROCEDURE:

- THE NEW WATERMAIN AND APPURTENANCES FORMING THE CONNECTION SHALL BE SPRAYED OR HAND SWABBED WITH A MINIMUM 1% SODIUM HYPOCHLORITE SOLUTION, ABOVEGROUND OR IN THE EXCAVATION, IMMEDIATELY PRIOR TO INSTALLATION.
- A CERTIFIED OPERATOR IS REQUIRED TO WITNESS THE INSTALLATION OF THE CONNECTION TO ENSURE THAT SANITARY CONSTRUCTION PRACTICES ARE FOLLOWED, AND PROPER DISINFECTION IS PERFORMED.
- THE CONNECTION SHALL REMAIN ISOLATED FROM THE EXISTING DRINKING WATER SYSTEM, EXCEPT WHILE BEING FLUSHED OR SAMPLED, UNTIL SATISFACTORY RESULTS ARE RECEIVED FROM TWO MICROBIOLOGICAL SAMPLES TAKEN BY A CERTIFIED OPERATOR OR A WATER QUALITY ANALYST IN ACCORDANCE WITH SECTION 5.1.1.1 OF ANSI/AWWA STANDARD C651.
- WHERE REQUIRED BY THE OPERATING AUTHORITY, HYDROSTATIC TESTING OF THE CONNECTION SHALL NOT BE UNDERTAKEN AGAINST THE ISOLATING VALVE UNTIL SATISFACTORY RESULTS FROM THE MICROBIOLOGICAL SAMPLES REFERRED TO ABOVE ARE RECEIVED. DRINKING WATER SHALL BE USED FOR HYDROSTATIC TESTING.

FIGURE B-1 IN APPENDIX B PROVIDES AN EXAMPLE TO HELP UNDERSTAND THIS EXCEPTION.

1.1.5.3 PLACING NEW WATERMAINS INTO SERVICE
VALVES OPENED TO PLACE A NEW WATERMAIN INTO SERVICE SHALL, IN ALL CASES, BE OPERATED BY A CERTIFIED OPERATOR. AS PART OF PLACING A WATERMAIN INTO SERVICE, FLUSHING THROUGH THE CONNECTION SHALL BE PERFORMED UNTIL A CERTIFIED OPERATOR OR A WATER QUALITY ANALYST VERIFIES THAT AN ACCEPTABLE DISINFECTANT CONCENTRATION IS PRESENT IN THE NEW WATERMAIN. IF MICROBIOLOGICAL SAMPLES ARE TAKEN AND/OR DISINFECTANT RESIDUAL TESTS ARE PERFORMED AFTER A WATERMAIN IS PLACED INTO SERVICE, THEY ARE CONSIDERED AS DRINKING WATER TESTS FOR THE PURPOSE OF THE SDWA AND ADVERSE TEST RESULTS ARE REPORTABLE.



KEY PLAN

CONTRACTOR'S NOTES:

1. ALL DIMENSIONS

EROSION AND SEDIMENT CONTROL NOTES:

(GENERAL)

1. EROSION AND SEDIMENT CONTROL (ESC) MEASURES WILL BE IMPLEMENTED PRIOR TO, AND MAINTAINED DURING CONSTRUCTION PHASES, TO PREVENT ENTRY OF SEDIMENT INTO THE WATER. PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES ON THE SITE, INSTALL SILT FENCING BETWEEN THE CONSTRUCTION SITE AND ANY EXISTING DRAINAGE COURSES IN ACCORDANCE TO CITY OF VAUGHAN STANDARD DRAWINGS. AS PER TYPICAL DETAILS SILT FENCING MAY BE ATTACHED TO SNOW FENCING AS REQUIRED. THE ERECTED SNOW/SILT FENCE MUST BE KEPT IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED. THE EXACT LOCATION OF THE FENCING TO BE DETERMINED ON SITE. ALL DAMAGED EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE REPAIRED AND/OR REPLACED WITHIN 48 HOURS OF INSPECTION.
2. DISTURBED AREAS WILL BE MINIMIZED TO THE EXTENT POSSIBLE, AND TEMPORARILY OR PERMANENTLY STABILIZED OR RESTORED AS THE WORK PROGRESSES.
3. ALL DREDGED OR STOCKPILED MATERIAL MUST BE STABILIZED AND LOCATED A SAFE DISTANCE FROM ANY WATERCOURSE. DISTURBED AREAS WILL BE MINIMIZED TO THE EXTENT POSSIBLE AND TEMPORARILY OR PERMANENTLY STABILIZED OR RESTORED AS THE WORK PROGRESSES.
6. THE CONTRACTOR SHALL NOT ALLOW SILT–LADEN WATER TO FLOW INTO THE STORM DRAIN SYSTEM NOR TO BE DEPOSITED IN THE PUBLIC RIGHT–OF–WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING SUCH SILT MATERIAL FROM THE JOB SITE.
7. THE CONTRACTOR'S ENVIRONMENTAL MONITORING PERSONNEL SHALL HOLD CERTIFIED INSPECTOR OF SEDIMENT AND EROSION CONTROL (CISEC), CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC) OR SUITABLE EQUIVALENT QUALIFICATIONS, AND SHALL ATTEND THE SITE TO INSPECT ALL NEW CONTROLS, AS WELL AS ON A REGULAR BASIS, OR FOLLOWING RAIN/SNOWFALL EVENT, TO MONITOR ALL WORKS, AND IN PARTICULAR WORKS RELATED TO EROSION AND SEDIMENT CONTROL, DEWATERING OR UNWATERING, RESTORATION, AND/OR IN OR NEAR WATER WORKS. SHOULD CONCERNS ARISE ON SITE, THE ENVIRONMENTAL MONITOR WILL CONTACT THE TRCA REPRESENTATIVE, AS WELL AS THE ENGINEER.
8. DEWATERING SETUPS CAN BE MOVED AND USED AT MULTIPLE LOCATIONS AS CONSTRUCTION PROCESSES.
9. EXISTING GROUND COVER SHALL BE RETAINED WHENEVER POSSIBLE AND FOR AS LONG AS POSSIBLE DURING THE DURATION OF THE CONSTRUCTION.
10. TEMPORARY FILTER BAGS SHALL BE USED WHEN REMOVING WATER FROM EXCAVATIONS FOR DISCHARGE.
11. SILT TRAPS TO BE PLACED UNDER GRATES ON ALL CATCH BASINS TO TRAP SEDIMENT. SILT TRAPS ARE TO BE CLEANED REGULARLY AND ARE NOT TO BE REMOVED UNTIL SUCH TIME AS THE CURBS ARE CONSTRUCTED IF REQUIRED AND THE BOULEVARDS ARE SODDED. SILT TRAP TO BE TERRAFIX SILTSACK OR APPROVED EQUIVALENT.
12. SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT CONTROL DEVICES WHEN SEDIMENT HAS BUILT UP TO 30% OF THE RETENTION CAPACITY.
13. ROADS TO BE CLEANED DAILY OR AS INSTRUCTED BY THE ENGINEER. IT WILL NOT BE CONSIDERED ACCEPTABLE TO HAVE MUD AND DEBRIS ON THE ROADS.
14. ANY ADDITIONAL ENVIRONMENTAL CONTROLS ARE TO BE PLACED AS INSTRUCTED BY THE ENGINEER.
15. RESTORATION OF ANY DISTURBED VEGETATED AREAS TO BE EITHER TOPSOILED AND SODDED OR TOPSOILED AND HYDROSEEDED AS PER TYPICAL DETAIL AND AS DIRECTED BY THE ENGINEER.
16. ALL EXISTING TREES ARE TO BE PROTECTED AND MAINTAINED DURING THE COURSE OF THE CONSTRUCTION EXCEPT AS NOTED ON THE PLAN AND PROFILE DRAWINGS. TREE REMOVALS AND PRUNING SHALL BE CONDUCTED IN ACCORDANCE WITH THE CITY OF VAUGHAN, YORK REGION AND TRCA REQUIREMENTS.
17. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE GEOTECHNICAL AND HYDROGEOLOGICAL WORK UNDERTAKEN BY THE CONSULTANT AND INCLUDED IN THE CONTRACT DOCUMENTS AND SHALL FOLLOW THE SPECIFIC DEWATERING REQUIREMENTS, AS NECESSARY, REQUIRED FOR THE CONSTRUCTION OF THE WORKS.
18. THE CONTRACTOR SHALL MONITOR THE WEATHER SEVERAL DAYS IN ADVANCE TO ENSURE THAT WORKS ARE CONDUCTED DURING FAVORABLE WEATHER CONDITIONS. SHOULD AN UNEXPECTED STORM ARISE, THE CONTRACTOR SHALL IMPLEMENT THE FOLLOWING CONTINGENCY PLAN. PROTECT AND MONITOR THE CONSTRUCTION SITE TO PREVENT ANY SEDIMENT FROM ENTERING THE LOCAL WATERCOURSES AND STORM DRAINAGE SYSTEM.
19. NO EXCAVATED MATERIAL, WASTE OR SURPLUS ORGANIC MATERIALS, INCLUDING TOP SPOIL, IS TO BE STORED WITHIN 30m OF ANY WATERCOURSE. EXCESS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROPRIATE FACILITY.

CONTINGENCY - FRAC-OUT PLAN NOTES

1. CONTRACTOR TO ENSURE AN ORGANIZED, EFFECTIVE AND IMMEDIATE RESPONSE IN THE EVENT OF FRAC–OUT; AND PROTECT THE SURROUNDING AQUATIC AND TERRESTRIAL ENVIRONMENT FROM SOIL AND/OR WATER CONTAMINATION.
2. WHERE TRENCHLESS EXCAVATION IS UTILIZED, A FRAC–OUT CONTAINMENT KIT SHALL BE AVAILABLE ON SITE AT THE CROSSING LOCATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. DURING TUNNELING BETWEEN THE SPECIFIED REACH, THE CONTRACTOR MUST ENSURE THAT ALL OF THE FOLLOWING EMERGENCY EQUIPMENT IS IMMEDIATELY AVAILABLE ON–SITE IN THE EVENT OF A TUNNEL COLLAPSE OR UPWELLING OF SEDIMENT AND/OR ANY DELETERIOUS MATERIALS INTO THE WATERCOURSE: SUMP PUMP, BY–PASS PUMPS OF SUFFICIENT CAPACITY, Y–PASS HOSE, PEA–GRAVEL FILLED ENVIRO BAGS, IMPERMEABLE LINER/GEOTEXTILE MATERIAL, FILTER BAGS, SILT FENCING, RIGID IN–WATER CONTAINMENT UNITS, FRAC TRUCK.THESE SUPPLIES SHOULD BE LOCATED IN A TRAILER OR OTHER SUITABLE LOCATION THAT IS KEPT ON–SITE AND SHOULD BE STRICTLY FOR EMERGENCY USE. KEEP IN MIND THAT THE ABOVE LIST IS CONSIDERED A MINIMUM AND SO MAY NEED TO INCREASED AND/OR ADJUSTED TO SUIT CONDITIONS AT THE TIME OF CONSTRUCTION SUCH AS THE SIZE AND DISCHARGE OF THE WATERCOURSE.
3. CONTRACTOR SHALL OBEY TO FRAC–OUT RESPONSE PROCEDURES AS FALLOW:
   A. STOP ALL WORK IMMEDIATELY AS SOON AS A FRAC–OUT IS IDENTIFIED, INCLUDING THE RECYCLING OF DRILLING MUD/LUBRICANT;
   B. NOTIFY THE REGION OF YORK, TORONTO AND REGION CONSERVATION AUTHORITY, FISHERIES AND OCEANS CANADA AND THE MECP'S SPILLS ACTION CENTRE (1–800–268–6060), IF REQUIRED;
   C. MONITOR FRAC–OUT FOR 4 HOURS TO DETERMINE IF THE DRILLING MUD CONGEALS: IF DRILLING MUD CONGEALS, TAKE NO OTHER ACTION THAT WOULD SUSPEND SEDIMENTS IN THE WATER COLUMN; IF DRILLING MUD DOES NOT CONGEAL, ERECT ISOLATION/CONTAINMENT ENVIRONMENT (UNDERWATER BOOM AND CURTAIN);
   D. MONITOR CLEAN–UP PROCEDURES TO ENSURE THEY DO NOT RESULT IN GREATER DAMAGE THAN LEAVING THE MUD IN–PLACE;
   E. ENGAGE A SPILL RESPONSE TEAM TO CONTAIN AND CLEAN UP EXCESS DRILLING MUD IN THE WATER IF THE FRACTURE BECOMES EXCESSIVELY LARGE.
   F. INSERT RIGID IN–WATER CONTAINMENT UNITS INTO THE CHANNEL INVERT IN ORDER TO CONTAIN ANY SEDIMENTS AND/OR DELETERIOUS MATERIALS AND LEAVE IN PLACE UNTIL TUNNELING THROUGH THE SPECIFIED REACH IS COMPLETE IN THE EVENT OF A LOCALIZED UPWELLING(S) INTO THE WATERCOURSE: EXCESS MATERIAL IS TO BE PUMPED FROM THE UNIT(S) AS NECESSARY AND REMOVED FOR OFF–SITE DISPOSAL.
   G. ISOLATE AFFECTED WATERCOURSES USING A TEMPORARY DAM AND PUMP SYSTEM TO BY–PASS STREAMFLOWS AROUND THE SITE IN THE EVENT OF A TUNNEL COLLAPSE; THE PUMP INTAKE SHOULD HAVE AN APPROPRIATE SIZE SCREEN ON IT TO PREVENT FISH INTAKE: SURFACE WATER COLLECTED WITHIN THE ISOLATED WATERCOURSE REACH WILL BE DIRECTED THROUGH A FILTER BAG LOCATED A MINIMUM OF 30 M AWAY IN A VEGETATED AREA FROM THE WATERCOURSE; CAPTURE AND TRANSPORT ALL FISH WITHIN THE AFFECTED WATERCOURSE REACH TO A SUITABLE DOWNSTREAM LOCATION UNDER THE SUPERVISION OF A QUALIFIED BIOLOGIST.
4. CONTRACTOR SHALL OBEY TO FOLLOW–UP PROCEDURES
   A. RESTORE ALL AFFECTED AREAS TO PRE–CONSTRUCTION CONDITIONS IF THE SPILL CONTAMINATES AN AREA THAT IS VEGETATED; THE AREA WILL BE SEEDED AND/OR REPLANTED USING SPECIES SIMILAR TO THOSE IN THE ADJACENT AREA, OR ALLOWED TO RE–GROW FROM EXISTING VEGETATION BASED ON CONSULTATION WITH TRCA: EEVEGETATED AREAS WILL BE MONITORED TWICE PER YEAR FOR TWO YEARS SUBSEQUENT TO FRAC–OUT TO CONFIRM REVEGETATION IS SUCCESSFUL; AND,
   B. DEVELOP A CONTINGENCY CROSSING PLAN SHOULD AN ALTERNATE DRILLING LOCATION BE REQUIRED;
   C. DOCUMENT POST–CLEANUP CONDITIONS WITH PHOTOGRAPHS AND PREPARE FRAC–OUT INCIDENT REPORT DESCRIBING TIME, PLACE, ACTIONS TAKEN TO REMEDIATE FRAC–OUT AND MEASURES IMPLEMENTED TO PREVENT RECURRENCE.
   D. PROVIDE INCIDENT REPORT TO THE MECP WITHIN 30 DAYS OF THE INCIDENT.

TRCA STANDARD NOTES:

SECTION 1: SITE MANAGEMENT

1. EROSION AND SEDIMENT CONTROL (ESC) MEASURES WILL BE IMPLEMENTED PRIOR TO, AND MAINTAINED DURING THE CONSTRUCTION PHASES, TO PREVENT ENTRY OF SEDIMENT INTO THE WATER. ALL DAMAGED EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE REPAIRED AND/OR REPLACED WITHIN 48 HOURS OF THE INSPECTION.
2. DISTURBED AREAS WILL BE MINIMIZED TO THE EXTENT POSSIBLE, AND TEMPORARILY OR PERMANENTLY STABILIZED OR RESTORED AS THE WORK PROGRESSES.
3. ALL IN–WATER AND NEAR WATER WORKS WILL BE CONDUCTED IN THE DRY WITH APPROPRIATE EROSION AND SEDIMENT CONTROLS.
4. THE EROSION AND SEDIMENT CONTROL STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO MINIMIZE SEDIMENT LADEN RUNOFF FROM LEAVING THE WORK AREAS. IF THE PRESCRIBED MEASURES ON THE PLANS ARE NOT EFFECTIVE IN PREVENTING THE RELEASE OF A DELETERIOUS SUBSTANCE, INCLUDING SEDIMENT, THEN ALTERNATIVE MEASURES MUST BE IMPLEMENTED IMMEDIATELY TO MINIMIZE POTENTIAL ECOLOGICAL IMPACTS. TRCA ENFORCEMENT OFFICER SHOULD BE IMMEDIATELY CONTACTED. ADDITIONAL ESC MEASURES TO BE KEPT ON SITE AND USED AS NECESSARY.
5. AN ENVIRONMENTAL MONITOR WILL ATTEND THE SITE TO INSPECT ALL NEW CONTROLS, AS WELL AS ON A REGULAR BASIS, OR FOLLOWING RAIN/SNOWMELT EVENT, TO MONITOR ALL WORKS, AND IN PARTICULAR WORKS RELATED TO EROSION AND SEDIMENT CONTROLS, DEWATERING OR UNWATERING, RESTORATION AND IN– OR NEAR– WATER WORKS. SHOULD CONCERNS ARISE ON SITE THE ENVIRONMENTAL MONITOR WILL CONTACT THE TRCA ENFORCEMENT OFFICER AS WELL AS THE PROPONENT.
6. ALL ACTIVITIES, INCLUDING MAINTENANCE PROCEDURES, WILL BE CONTROLLED TO PREVENT THE ENTRY OF PETROLEUM PRODUCTS, DEBRIS, RUBBLE, CONCRETE OR OTHER DELETERIOUS SUBSTANCES INTO THE WATER. VEHICULAR REFUELING AND MAINTENANCE WILL BE CONDUCTED A MINIMUM OF 30 METRES FROM THE WATER.
7. ALL GRADES WITHIN THE REGULATORY FLOOD PLAIN WILL BE MAINTAINED OR MATCHED.
8. THE PROPONENT/CONTRACTOR SHALL MONITOR THE WEATHER SEVERAL DAYS IN ADVANCE OF THE ONSET OF THE PROJECT TO ENSURE THAT THE WORKS WILL BE CONDUCTED DURING FAVOURABLE WEATHER CONDITIONS. SHOULD AN UNEXPECTED STORM ARISE, THE CONTRACTOR WILL REMOVE ALL UNFIXED ITEMS FROM THE REGIONAL STORM FLOOD PLAIN THAT WOULD HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW, E.G., FUEL TANKS, PORTA–POTTIES, MACHINERY, EQUIPMENT, CONSTRUCTION MATERIALS, ETC.
9. ALL DEWATERING/UNWATERING SHALL BE TREATED AND RELEASED TO THE ENVIRONMENT AT LEAST 30 METRES FROM A WATERCOURSE OR WETLAND AND ALLOWED TO DRAIN THROUGH A WELL–VEGETATED AREA. NO DEWATERING EFFLUENT SHALL BE SENT DIRECTLY TO ANY WATERCOURSE, WETLAND OR FOREST, OR ALLOWED TO DRAIN ONTO DISTURBED SOILS WITHIN THE WORK AREA. THESE CONTROL MEASURES SHALL BE MONITORED FOR EFFECTIVENESS AND MAINTAINED OR REVISED TO MEET THE OBJECTIVE OF PREVENTING THE RELEASE OF SEDIMENT LADEN WATER.
10. ALL ACCESS TO THE WORK SITE SHALL BE FROM EITHER SIDE OF THE WATERCOURSE. NO EQUIPMENT OR VEHICLES ARE PERMITTED TO CROSS THROUGH THE WATERCOURSE UNLESS APPROVED BY TRCA."

SECTION 2: CONSTRUCTION TIMING

11. IN ORDER TO COMPLY WITH THE MIGRATORY BIRDS CONVECTION ACT, TRCA RECOMMENDS THAT TREE REMOVALS BE COMPLETED BETWEEN AUGUST 1 AND APRIL 1.
12. TO PROTECT LOCAL FISH POPULATIONS DURING THEIR SPAWNING, NURSERY AND MIGRATORY PERIODS, IN–WATER/NEAR–WATER ACTIVITIES, MAY ONLY OCCUR DURING THE FOLLOWING TIME PERIOD. THE REDSIDE DANCE CONSTRUCTION TIMING WINDOW JULY 1 TO SEPTEMBER 15 WILL BE APPLIED TO THIS PROJECT. [TRCA TO CONFIRM TIMING WINDOW DURING REVIEW OF FIRST SUBMISSION].

SECTION 3: FISH AND WILDLIFE RELOCATION

13. FISH AND WILDLIFE STRANDED WITHIN THE WORK AREA SHALL BE CAPTURED AND RELEASED LIVE IN SUITABLE HABITAT UPSTREAM OF THE WORK AREA UNDER THE SUPERVISION OF A QUALIFIED AQUATIC BIOLOGIST. A PERMIT FROM THE MINISTRY OF NATURAL RESOURCES IS REQUIRED.

SECTION 4: ENVIRONMENTAL COMPLIANCE

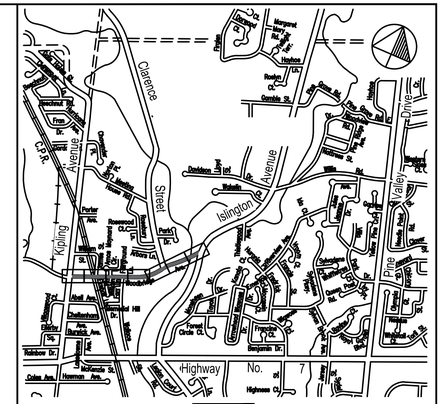
14. PLEASE NOTIFY TRCA ENFORCEMENT OFFICER xxxxx xxxxxx AT xxx–xxx–xxxx (CELL) 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
15. AN ENVIRONMENTAL MONITOR WILL BE ON SITE, AND PROVIDE ADVICE, TO ENSURE THAT ACTIVITIES THAT COULD HAVE A NEGATIVE IMPACT TO THE NATURAL ENVIRONMENT ARE EFFECTIVELY MITIGATED AS CONSTRUCTION PROCEEDS. THE ENVIRONMENTAL MONITOR SHALL NOTIFY THE TRCA ENFORCEMENT OFFICER AND PROJECT MANAGER IF AN ISSUE ARISES.

CONTINGENCY PLAN FOR TRENCHLESS CROSSING

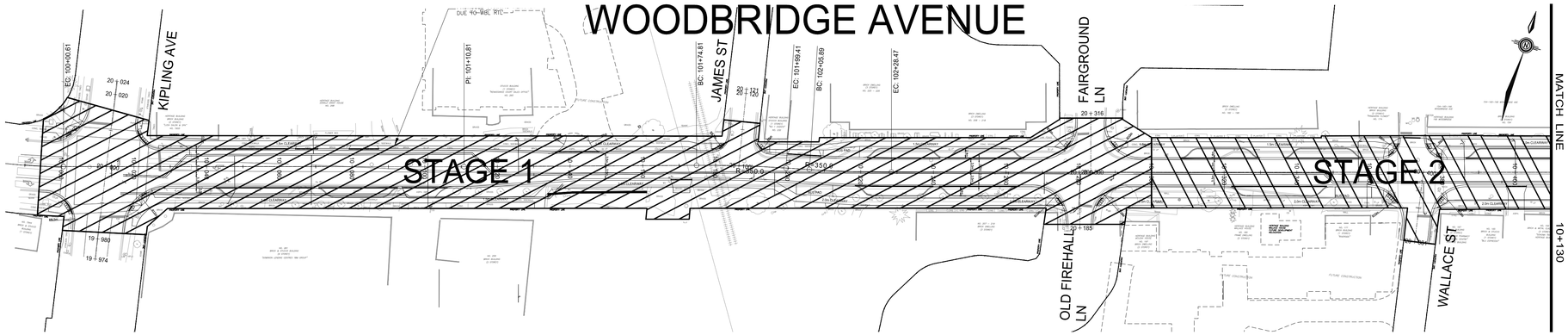
1. CONTRACTOR SHALL MONITOR THE WEATHER SEVERAL DAYS IN ADVANCE OF THE ONSET OF THE PROJECT TO ENSURE THAT THE WORKS WILL BE CONDUCTED DURING FAVOURABLE WEATHER CONDITIONS. SHOULD AN UNEXPECTED STORM ARISE, THE CONTRACTOR WILL REMOVE ALL UNFIXED ITEMS FROM THE REGIONAL STORM FLOOD PLAIN THAT WOULD HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW, E.G., FUEL TANKS, PORTA– POTTIES, MACHINERY, EQUIPMENT, CONSTRUCTION MATERIALS, ETC.
2. CONTRACTOR TO KEEP ADDITIONAL TRASH PUMP AND FILTER BAGS (LAYFIELD LP10 OR EQUIVALENT) ON HAND IN THE EVENT OF EQUIPMENT FAILURE.
3. SPILL KITS TO BE KEPT ON SITE, ACCESSIBLE TO EQUIPMENT OPERATORS, WITH SUFFICIENT MATERIALS TO CONTAIN AND CLEAN UP SPILLS.
4. ANY PUMPED WATER MUST BE DISCHARGED THROUGH A FILTER BAG AT A MINIMUM OF 30M FROM THE TOP OF BANK OF THE CREEK, IN NATURAL VEGETATION SUCH THAT WATER DOES NOT TRANSPORT SEDIMENT TOWARDS THE WATERCOURSE.
5. DEWATERING IS THE CONTRACTOR'S RESPONSIBILITY AND THE RATE AND VOLUME REQUIRED IS DEPENDENT ON THE CONSTRUCTION METHODS AND STAGING CHOSEN BY THE CONTRACTOR.
6. PASSIVE DEWATERING CONSISTING OF PUMPING FROM PROPERLY FILTERED SUMPS WILL LIKELY BE REQUIRED TO LOWER GROUNDWATER BELOW THE EXCAVATION BASED FOR LAUNCH AND RECEIVING SHAFTS. AN APPLICATION UNDER THE ENVIRONMENTAL ACTIVITY SECTION REGISTRY (EASR) OF THE ONTARIO MINISTRY OF ENVIRONMENT CONSERVATION AND PARKS (MECP) SHOULD BE SUBMITTED.
7. UNDER THE EASR, A PERMIT TO TAKE WATER (PTTW) IS NOT REQUIRED FOR WATER TAKING FOR CONSTRUCTION SITEDEWATERING FOR VOLUMES LESS THAN 400,000L/DAY. CONTRACTOR TO PROVIDE WATER TAKING RESULTS DAILY.

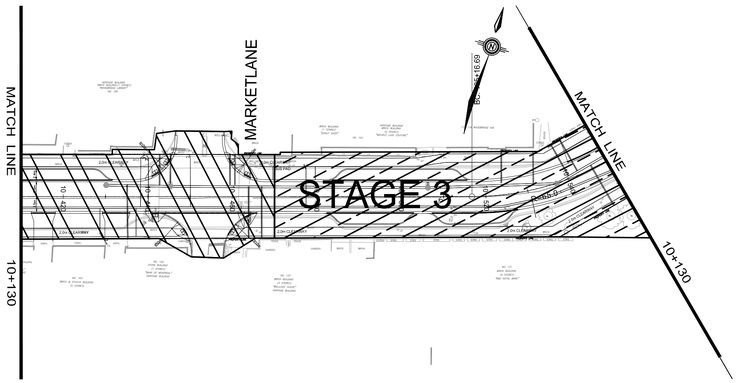
SANITARY SEWER

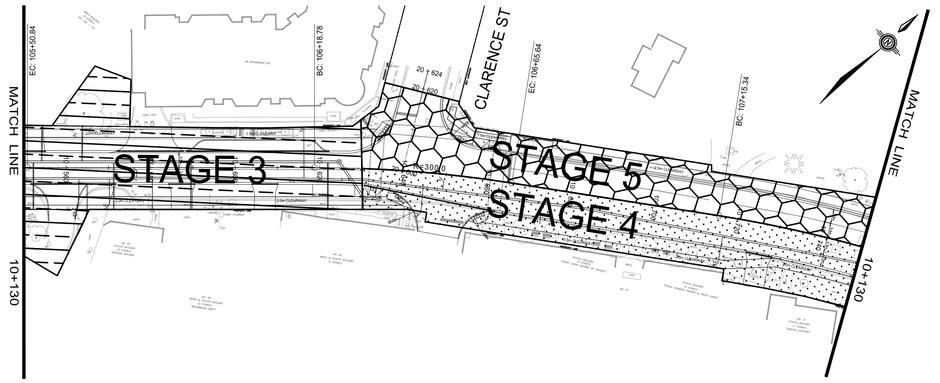
1. SANITARY MANHOLES SHALL BE IN ACCORDANCE WITH OPSD 701.010. FRAME AND COVER SHALL BE OPSD 401.010 TYPE A OR APPROVED EQUIVALENT. THE MANHOLE SHALL BE BENCHED TO THE OBVERT OF THE PIPES.
2. ALL SANITARY MANHOLES COVERS IN THE REGULATED AREAS SHALL BE WATER TIGHT SEALED COVERS.
3. POLYVINYL CHLORIDE (PVC) PIPE AND PIPE JOINTS SHALL CONFORM TO THE FOLLOWING STANDARDS:
   a) 100 mm TO 150 mm DIAMETER: CSA B182.1, ASTM D3034, MIN. DR 28
   b) 200 mm TO 375 mm DIAMETER: CSA B182.2, ASTM D3034, MIN. DR 35
   c) GREATER THAN 375 mm (MAX. 450 mm) DIAMETER: CSA B182.2, ASTM F679 (T–1), MIN. DR 35
5. CONCRETE PIPE AND PIPE JOINTS SHALL CONFORM TO THE LATEST REVISIONS OF OPSS 1820, CSA A257.2 AND A357.3, ASTM C76 AND C655.
6. BEDDING TYPE SHALL BE IN ACCORDANCE WITH OPSS AND OPSD.
   a) PVC PIPE: BEDDING AND COVER MATERIAL SHALL CONFORM TO OPSS 1010 GRANULAR A AND RECYCLED MATERIALS ARE NOT PERMITTED.
   b) CONCRETE PIPE: BEDDING MATERIAL SHALL CONFORM TO OPSS 1010 GRANULAR A AND RECYCLED MATERIALS ARE NOT PERMITTED. COVER MATERIAL SHALL BE MORTAR SAND CONFORMING TO OPSS 1010 TYPE II OF GRANULAR B.
7. THE MINIMUM SIZE OF SEWERS SHALL BE 200 mm DIAMETER IN RESIDENTIAL AREAS AND 250 mm DIAMETER IN INDUSTRIAL AREAS.
8. SERVICE CONNECTIONS FOR COMMERCIAL, INDUSTRIAL, INSTITUTIONAL OR MULTIPLE USE PROPERTIES ARE TO BE IN ACCORDANCE WITH CITY OF VAUGHAN STANDARD DRAWING C–102 AND OPSD 1006.010.
9. ALL NEWLY CONSTRUCTED SANITARY SEWERS, AND MAINTENANCE HOLES SHALL BE WATERTIGHT AND FREE FROM LEAKAGE. THE TESTING AND COMMISSIONING OF THE SANITARY SEWER SYSTEM SHALL CONFORM TO YORK REGION'S SANITARY SEWER SYSTEM INSPECTION, TESTING, AND ACCEPTANCE GUIDELINES IN EFFECT AT THE TIME OF CONSTRUCTION. A REPRESENTATIVE OF THE CITY IS REQUIRED TO BE PRESENT DURING ANY TESTING OF SERVICE.

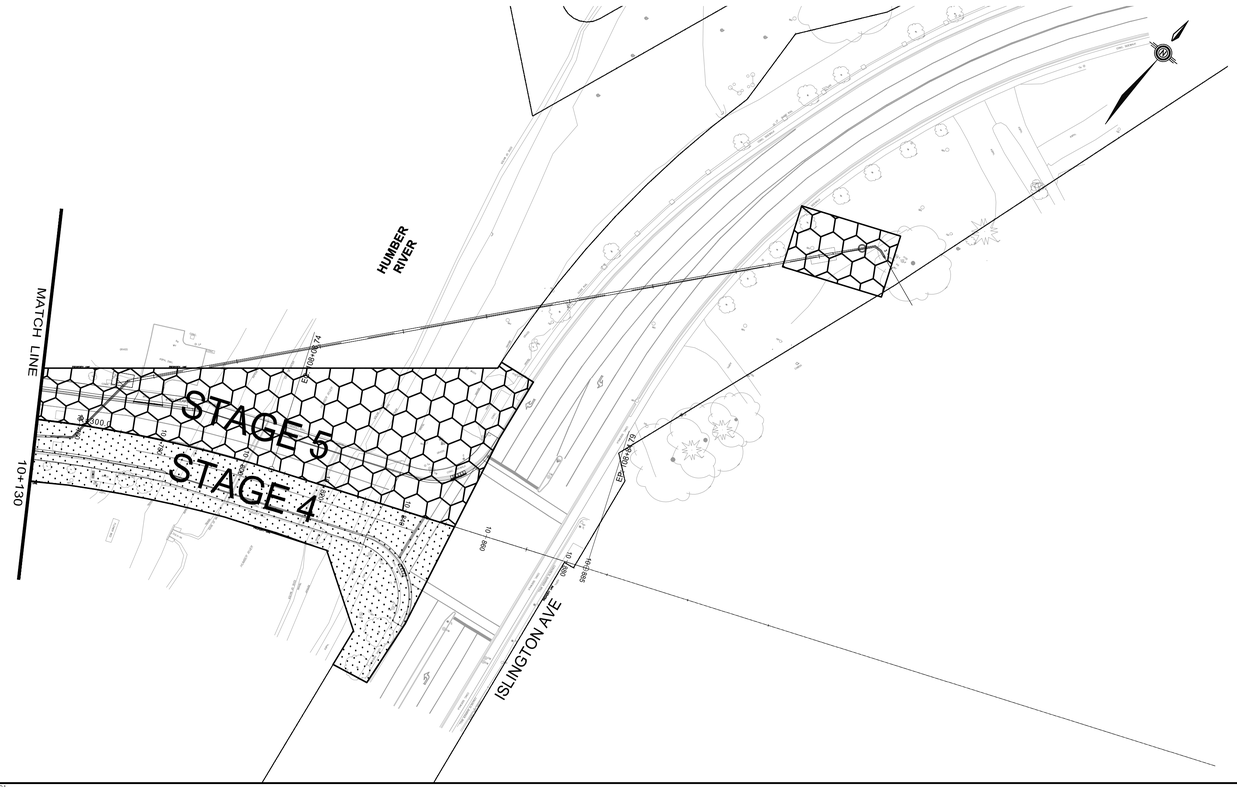

Clarence
Street
Islington
Avenue
Kipling
Avenue
Highway
No. 7
Valley
Pine
Highway No. 7
Clarence St
Islington Ave
Kipling Ave
Pine Valley Dr
Woodbridge Ave
Woodbridge Ave
Hwy 7
Hwy 7
Hwy 7

WOODBRIDGE AVENUE

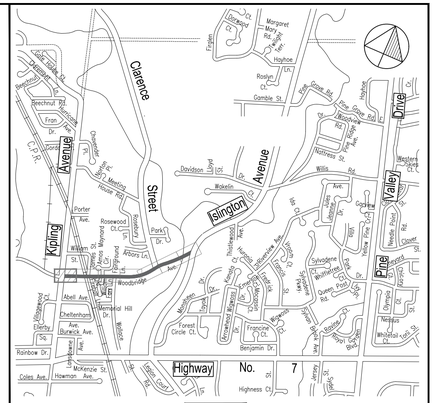








STAGE 1 - WEST LIMITS TO STA. 10+300
STAGE 2 - STA. 10+300 TO STA. 10+470
STAGE 3 - STA. 10+470 TO STA. 10+630
STAGE 4 - SOUTH HALF BETWEEN STA. 10+630 TO EAST LIMITS
STAGE 5 - NORTH HALF BETWEEN STA. 10+630 TO EAST LIMITS



KEY PLAN

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5. BENCHMARKS FOR LAYOUT ARE TO BE OBTAINED FROM THE CITY OF VAUGHAN ENGINEERING DEPARTMENT.

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BENCH MARK:

MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

DRAWING SCALES:

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
OVERALL STAGING PLAN

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. x

Printed: Jul. 30, 2021

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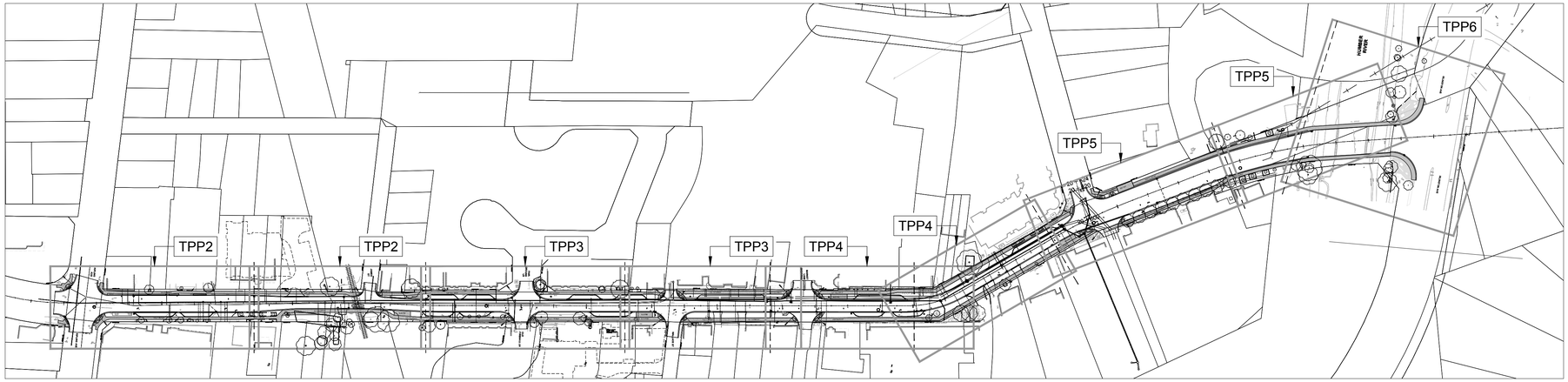


OVERVIEW PLAN

NOTES:

TREE PROTECTION FENCING

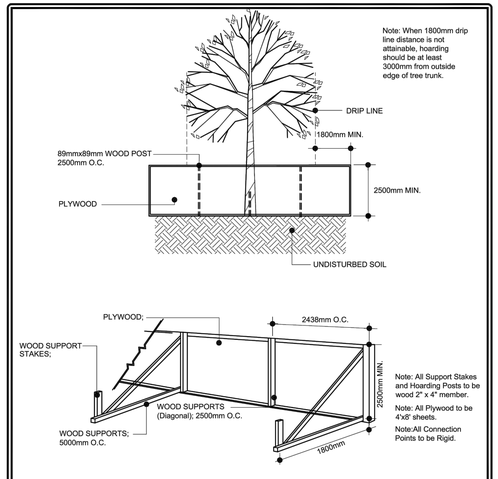
1. The Contractor shall install Tree Protection Fencing (TPF) to protect trees identified for preservation.
2. All TPF will conform with the detail(s) included on these plans. Where current governing Municipal/City standards differ, contact Project Arborist or Contract Administrator for direction.
3. No substitutions of materials, products or quantities will be accepted without the prior written permission of the Project Arborist.
4. Upon installation of the TPF, the Contractor shall contact the Project Arborist to review and approve the fencing and location(s) in writing prior to commencement of any site work.
5. The TPF shall remain in the approved locations throughout the duration of the site works and shall not be moved at any time to accommodate construction or site work.
6. The Contractor shall inspect TPF weekly and maintain as required through all stages of development/construction. The TPF shall be removed at the completion of all site works and disturbed areas shall be restored to original condition.

TREE PRESERVATION

1. The Tree Protection Zone (TPZ) is protected and delineated by the TPF or as otherwise defined in these drawings. The Contractor is not to proceed in uncertainty.
2. Any potential or incurred injury/damage to adjacent tree(s) identified to be preserved shall be immediately reported to the Project Arborist and reviewed on site. Injury/damage includes any required arboricultural treatment including but not limited to: limb pruning, trunk damage, root exposure or required cutting/removal or any other activity that has the potential to harm the tree.
3. The TPZ is not to be used for any type of storage including materials, equipment or stockpiles.
4. No trenching or tunneling for underground services shall occur within the TPZ.
5. Any equipment use within the TPZ will be restricted throughout all stages of development. This applies to TPZs within or outside of the project limit line.
6. Absolutely no alteration of grades or construction activity is permitted within the TPF and TPZ. Absolutely no flushing of contaminant shall be permitted towards or within the TPZ.
7. When working adjacent to trees to be preserved site preparation measures such as pruning for overhead clearance may be required. Preparatory pruning shall only be performed when completed by or under the direct supervision of an ISA Certified Arborist (or approved qualified person as approved by the Project Arborist).
8. All pruning work shall be performed by a qualified individual and shall be in accordance with current horticultural practices including but not limited to:
   a. Pruning cuts shall be made just beyond the branch collar and should be limited to thinning cuts. Heading cuts will only be accepted in specific cases as directed by an arborist and should be avoided where possible.
   b. Pruning of all stems greater than 50 mm in diameter should be made with a three-cut method to avoid tearing living bark tissue.
   c. No wound dressings shall be applied.
16. Where soil excavation/grading work is required within the rooting zone of a tree to be preserved (the rooting zone often extends beyond the identified TPZ and can be 3 times the dripline radius or more):
   a. Roots shall be cleanly severed before stripping and removing soil to avoid damage to the tree and the root system. Roots to be cut using appropriate equipment (i.e. trencher adapted to this specific use/chainsaw/root pruning machine). Roots may be severed using the clean edge of a straight excavator bucket under supervision of an ISA Certified Arborist.
   b. No attempts to cut existing roots with the digging bucket of any heavy machinery will be permitted as it can cause the roots to tear and pull and be harmful to root regeneration and recovery.
   c. Any exposed roots of a tree to be preserved with a diameter greater than 2.5cm (1 inch) shall be pruned back to the soil face.
   d. An excavation area within the TPZ shall be backfilled immediately and/or roots shall be kept constantly moist with burlap covered with white plastic and checked a minimum of 2 times a day, for a maximum of 48 hours. If roots are to be exposed for a period greater than 48 hours, the exposed area shall be covered with a minimum of 150 mm (6 inches) of mulch and maintained in a moist condition during construction until the area can be properly backfilled.
17. Trees shall not have any rigging cables, fencing, signage or hardware of any sort attached or wrapped around them.
18. No contaminants or toxic materials shall be dumped or flushed where they may come into contact with the feeder roots of trees to be preserved.
19. The Contractor will be held responsible for all avoidable damage to preserved trees during all stages of construction.
20. Watering or other maintenance of trees to be preserved may be required if construction activities are observed to be causing stress or impacting health as determined by the Project Arborist.

TREE REMOVALS

1. Prior to the commencement of tree removals, all trees designated for removal must be clearly identified in the field.
2. Where possible, removals, chipping, and/or brush removal is to be completed outside of migratory bird nesting season from April 1 to August 31. If removals are to occur within the restricted activity period, due diligence measures, including pre-clearing nest sweeps will be employed to reduce risk to nesting birds protected under the Migratory Birds Convention Act, 1994 and Migratory Birds Regulations. These surveys must be completed by a qualified biologist or ornithologist.
3. Trees shall always be felled away from adjacent preserved trees to prevent avoidable damage to the crowns and stems



NOTES:

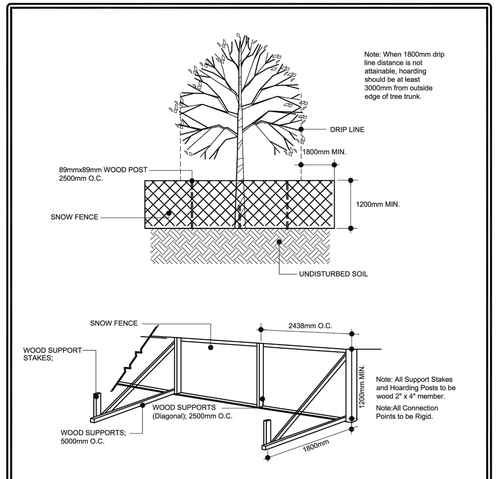
1. Attachment of fence to trees to be preserved is not allowed.
2. Ensure fence is continuous and is located beyond the drip line of trees to be preserved.
3. Fencing to be installed prior to start of construction.
4. All supports and bracing should be inside the Tree Protection Zone. All such supports should minimize damaging roots outside the Tree Protection Barrier.
5. No Construction activity, grade changes, surface treatment or excavations of any kind is permitted within the Tree Protection Zone.

VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

HEAVY DUTY TREE HOARDING PROTECTION DETAIL (PLYWOOD)

NOTE: THIS TYPICAL DETAIL IS INTENDED TO PROVIDE DESIGN DIRECTION AND IS FOR REFERENCE ONLY. IT MAY BE USED AS PART OF THE CONSTRUCTION PACKAGE OR SITE PLAN APPLICATION PROVIDED THE DETAIL IS CERTIFIED BY A REGISTERED LANDSCAPE ARCHITECT OR PROFESSIONAL ENGINEER AS APPLICABLE

DRAWN & DESIGNED: URBAN DESIGN	STD. DWG. NO.
NOT TO SCALE DATE: 04 / 07 / 2016	ULA 110A



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VAUGHAN
DEVELOPMENT PLANNING DEPT.
URBAN DESIGN DIVISION

LIGHT DUTY TREE HOARDING PROTECTION DETAIL (SNOW FENCE)

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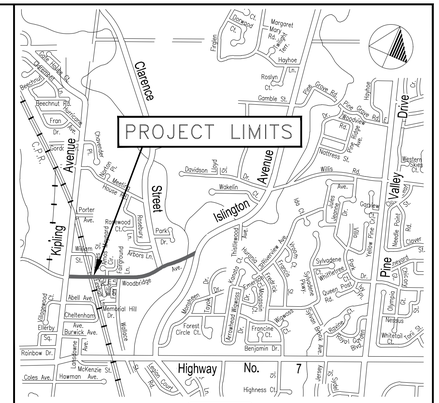
DRAWN & DESIGNED: URBAN DESIGN	STD. DWG. NO.
NOT TO SCALE DATE: 04 / 07 / 2016	ULA 110B



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2	30% RE-SUBMISSION	DG	2021/02/04
1	30% SUBMISSION	TM/DG	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
Unit 300 – 8133 Warden Avenue
Markham ON L6G 1B3 Canada
tel 905 763 2322 fax 905 763 9983
ibigroup.com

LANDSCAPE ARCHITECT'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALE:

WOODBRIDGE AVENUE IMPROVEMENTS

Tree Preservation Overview, Notes & Details Plan

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: DG	CHECKED BY: TM	TENDER No.	
SURVEYED BY: ___	APPROVED BY: TM	T21-XX	
SCALE:	PROJ. No.	DWG. No.	
HORIZONTAL: 1:1500	21-_____	TPP1	
VERTICAL: 1:100			

Printed: Jul. 29, 2021

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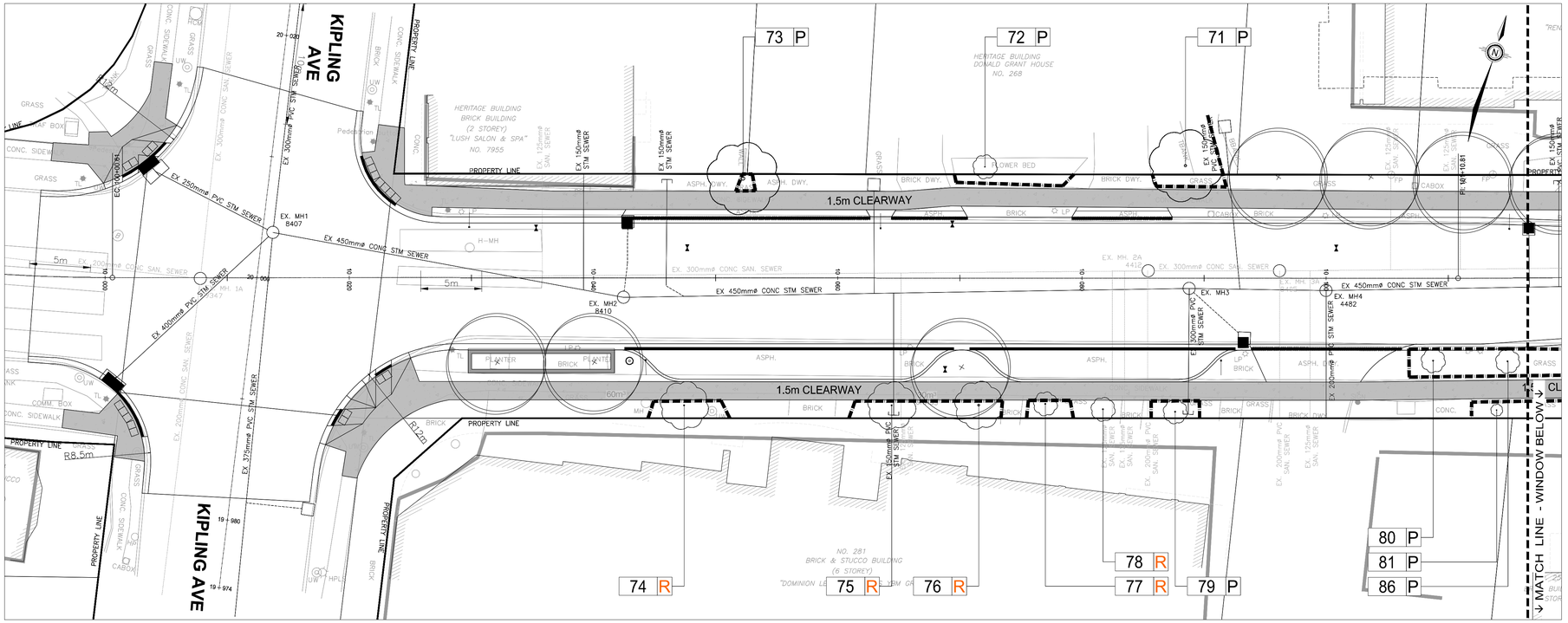
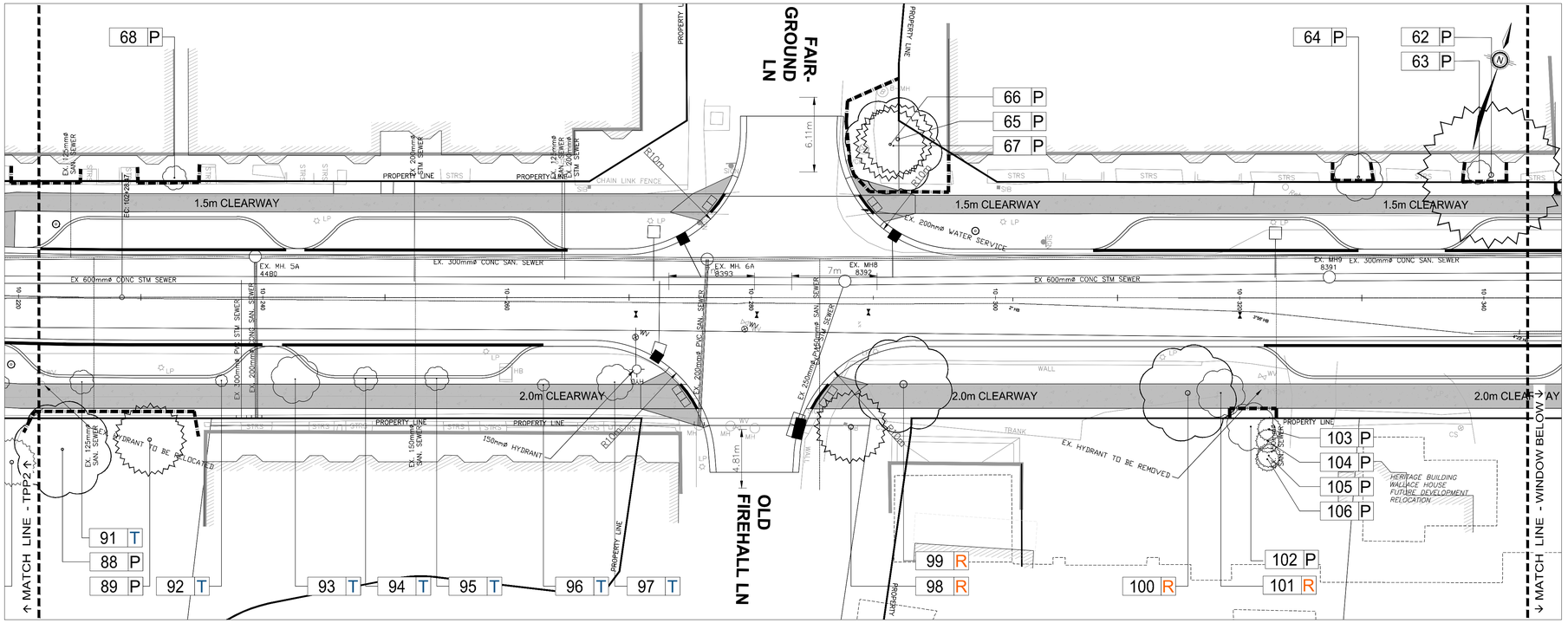
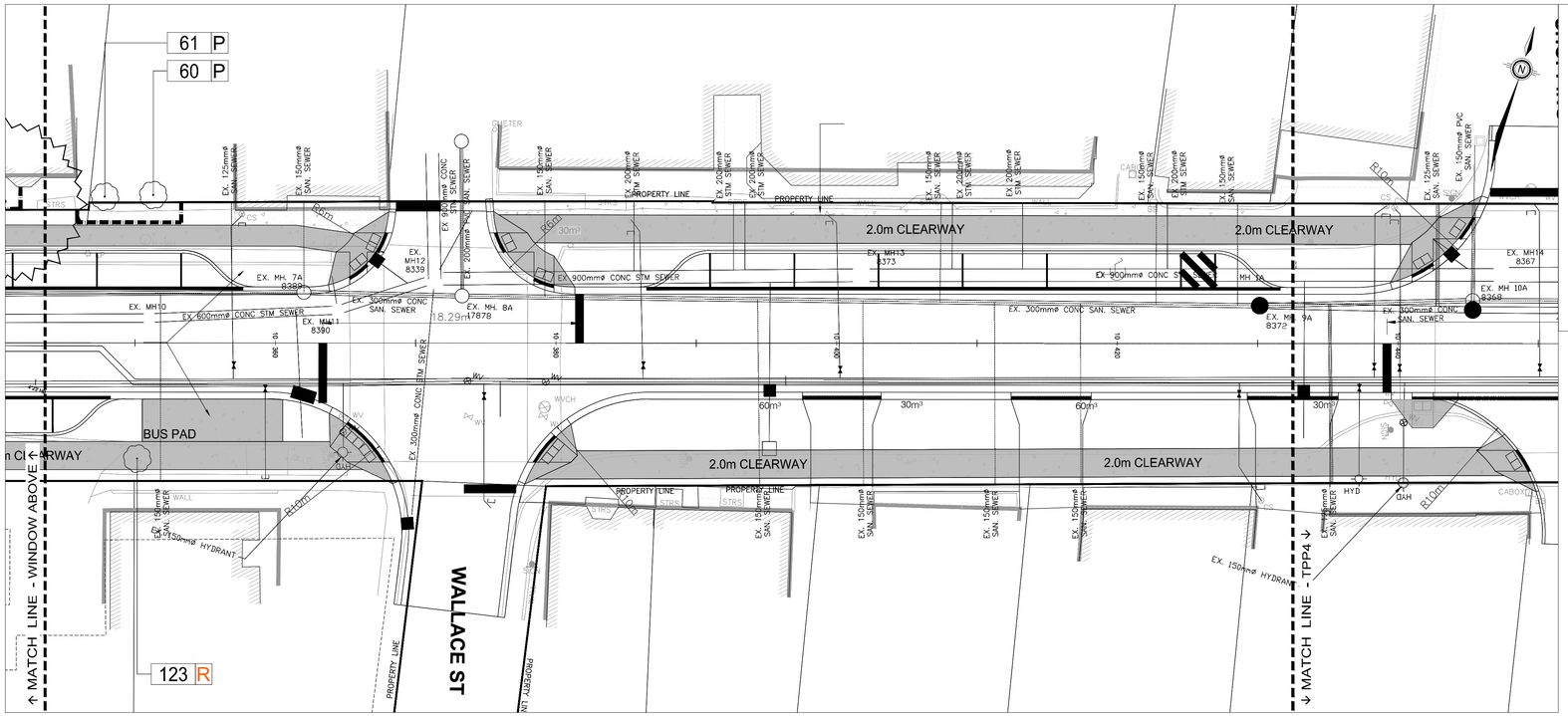

KIPLING AVE
JAMES ST
1.5m CLEARWAY
2.0m CLEARWAY
BUS PAD
PROPERTY LINE
HERITAGE BUILDING BRICK BUILDING (2 STOREY) "LUSH SALON & SPA" NO. 7955
HERITAGE BUILDING DONALD GRANT HOUSE NO. 268
NO. 281 BRICK & STUCCO BUILDING (6 STOREY) "DOMINION LENDING CENTRE"
STUCCO BUILDING (1 STOREY) "RENAISSANCE COURT SALES OFFICE" NO. 260
FUTURE CONSTRUCTION
HERITAGE BUILDING STUCCO BUILDING (1 STOREY) "NO 1 EVENTS" NO. 232
NO. 259 BRICK BUILDING (2 STOREY)
EX. MH1 8407
EX. MH2 8410
EX. MH3
EX. MH4 4482
EX. MH. 2A 4410
EX. MH. 4A 8234
EX. 450mmø CONC STM SEWER
EX. 300mmø CONC SAN. SEWER
EX. 250mmø PVC STM SEWER
EX. 375mmø PVC STM SEWER
EX. 200mmø PVC STM SEWER
EX. 150mmø STM SEWER
EX. 125mmø SAN. SEWER
EX. 200mmø CONC SAN. SEWER
EX. 300mmø PVC STM SEWER
EX. 200mmø PVC SAN. SEWER
EX. 200mmø PVC STM SEWER
EX. 150mmø PVC STM SEWER
EX. 125mmø SAN. SEWER
EX. 300mmø CONC STM SEWER
EX. 150mmø PVC SAN. SEWER
EX. 200mmø CONC SAN. SEWER
EX. 200mmø PVC SAN. SEWER
EX. 125mmø SAN. SEWER
EX. 150mmø PVC STM SEWER
EX. 125mmø SAN. SEWER
EX. 150mmø



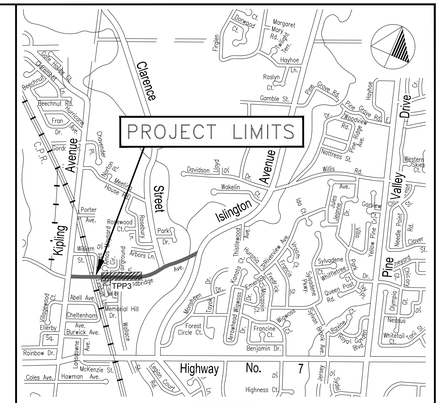


LEGEND:

- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE

TREE IDENTIFICATION TAGS

- 0 P — TREE TO BE PRESERVED
- 0 R — TREE TO BE REMOVED
- 0 T — TREE TO BE TRANSPLANTED
- LIGHT DUTY TREE PROTECTION FENCING
- HEAVY DUTY TREE PROTECTION FENCING



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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

ISSUED

WOODBRIDGE AVENUE IMPROVEMENTS

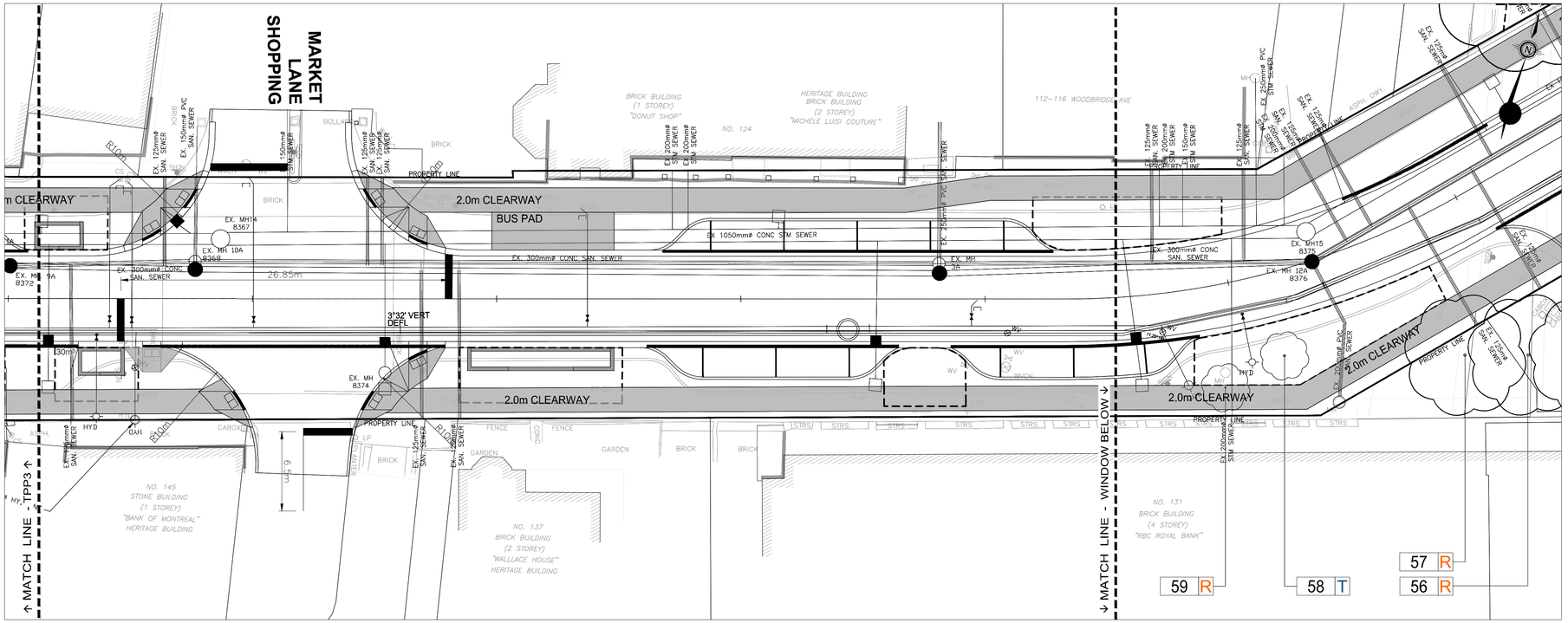
Tree Preservation Plan

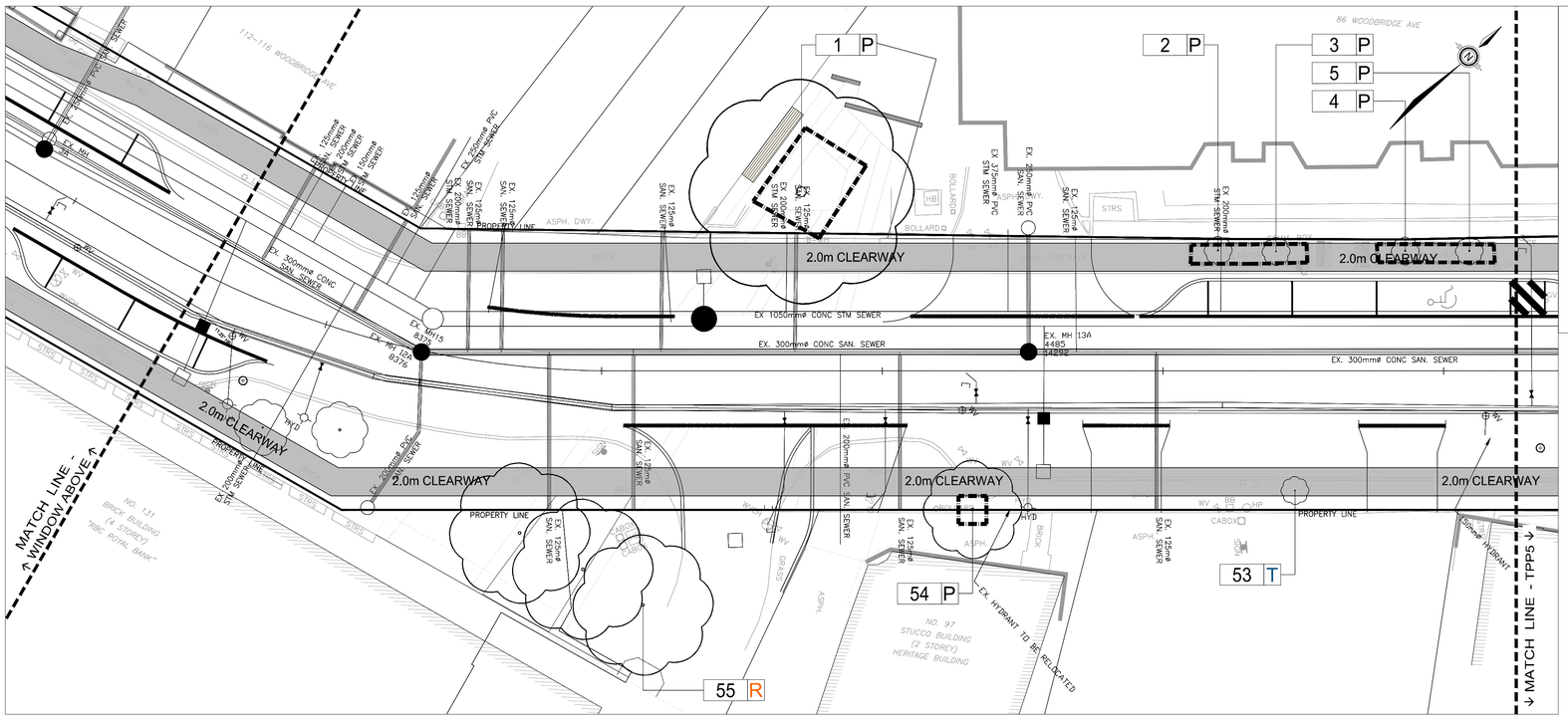
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: DG	CHECKED BY: TM	TENDER No. T21-XX
SURVEYED BY: ___	APPROVED BY: TM	
SCALE: HORIZONTAL: 1:200 VERTICAL: 1:100	PROJ. No. 21-_____	DWG. No. TPP3

Printed: Jul. 30, 2021

Acad File: 6\126670_Woodbridge_Ave\7.0_Production\7.05_Design\06_Landscape\Sheets\126670_TPP.dwg Layout: TPP3 Tree Preservation Plan





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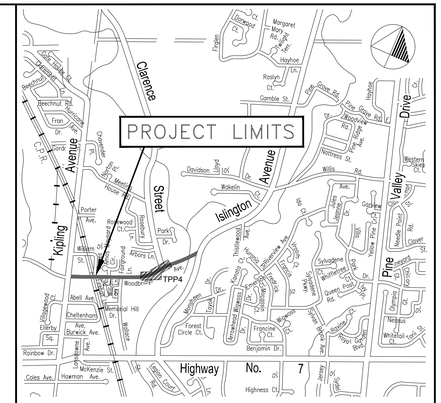

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SEAL

WOODBRIDGE AVENUE IMPROVEMENTS

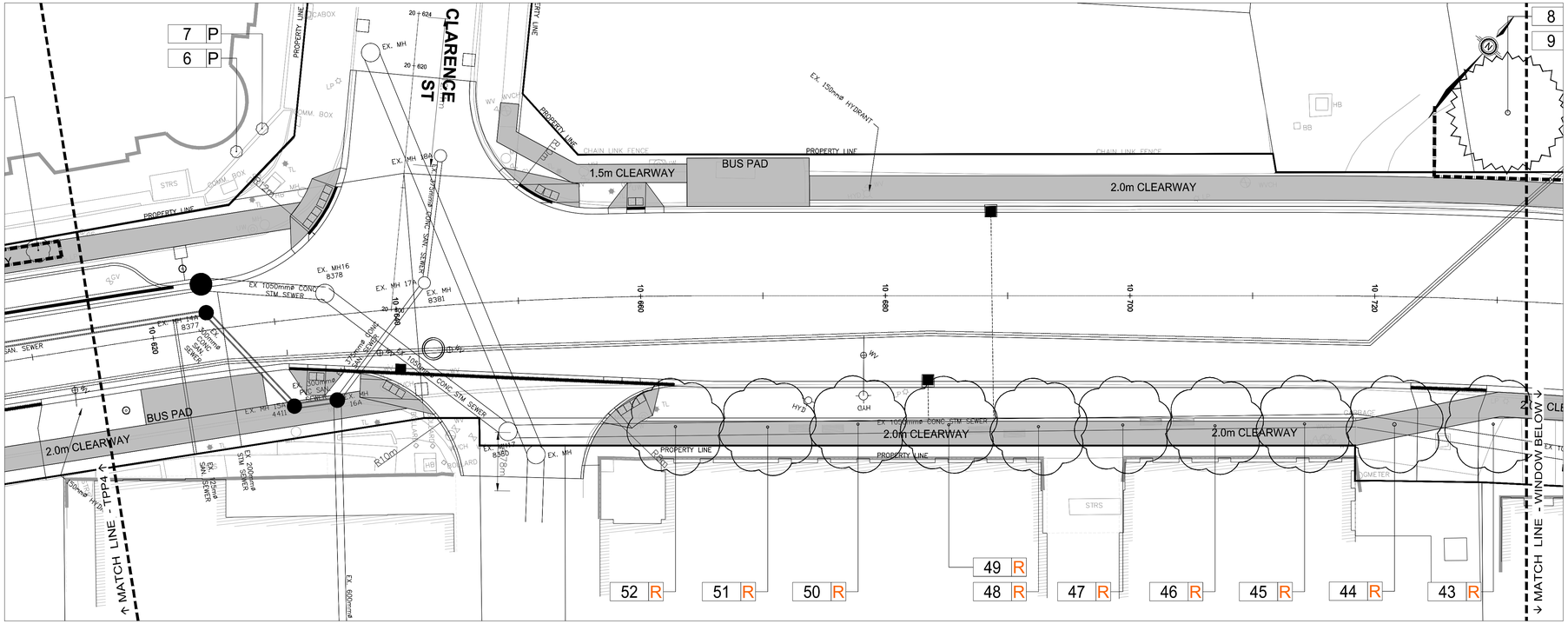
Tree Preservation Plan

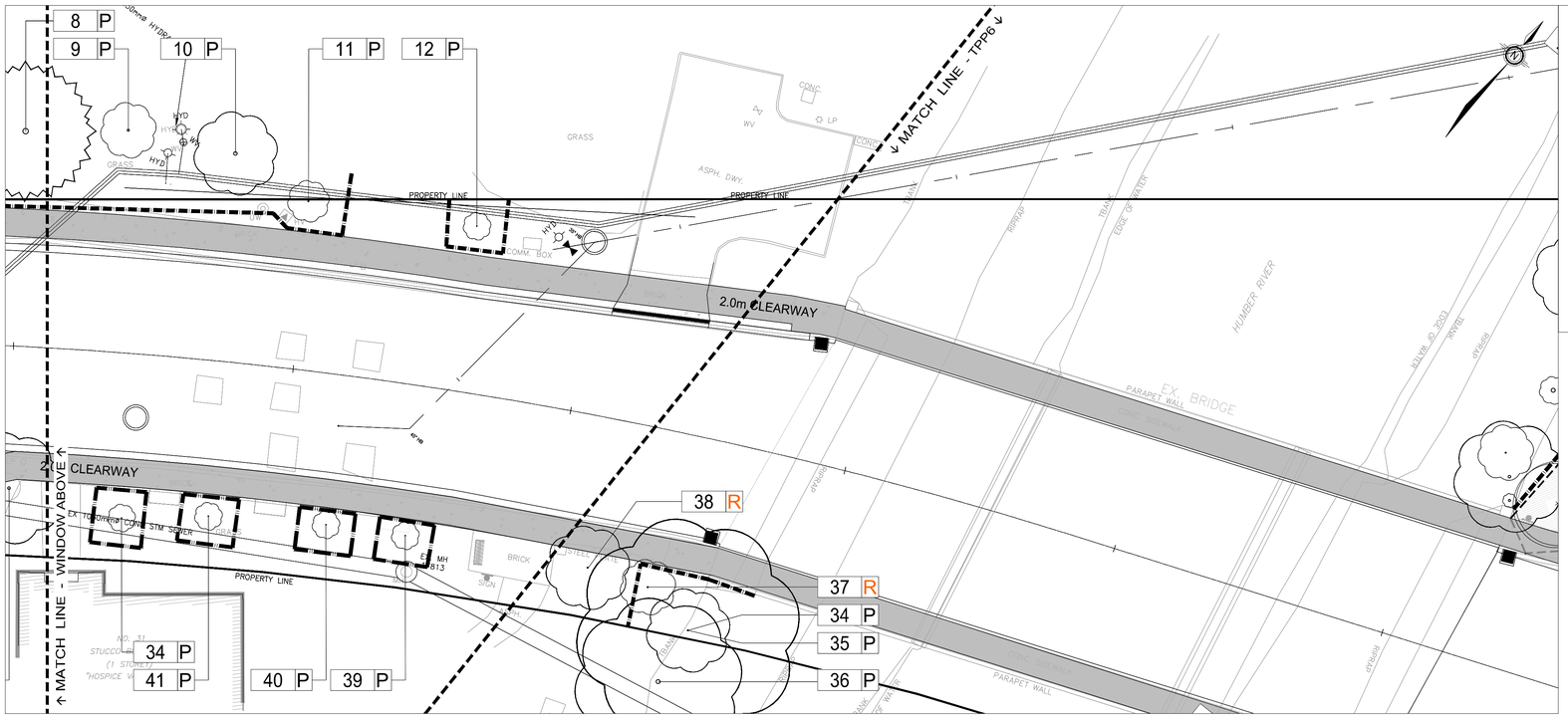
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: DG	CHECKED BY: TM	TENDER No. T21-XX
SURVEYED BY: ___	APPROVED BY: TM	
SCALE: HORIZONTAL: 1:200 VERTICAL: 1:100	PROJ. No. 21-_____	DWG. No. TPP4

Printed: Jul. 30, 2021

Autod File: 6\123670_Woodbridge_Ave\1.7.0_Production\1.7.05_Design\06_Landscape\Sheets\123670_TPP.dwg Layout: TPP4 Tree Preservation Plan



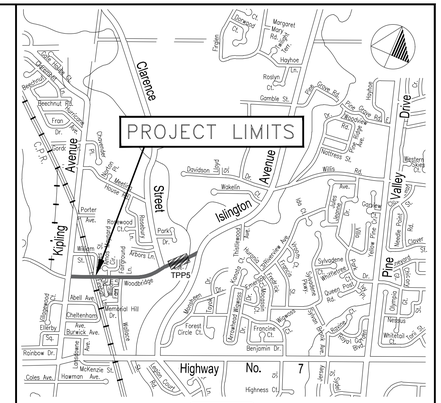


LEGEND:

- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE

TREE IDENTIFICATION TAGS

- 0 P — TREE TO BE PRESERVED
- 0 R — TREE TO BE REMOVED
- 0 T — TREE TO BE TRANSPLANTED
- LIGHT DUTY TREE PROTECTION FENCING
- HEAVY DUTY TREE PROTECTION FENCING



KEY PLAN

CONTRACTOR'S NOTES:

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2. DRAWINGS ARE NOT TO BE SCALED.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY UPON FINDING.
4. THE EXACT LOCATION OF UTILITIES SHALL BE DETERMINED BY CONSULTING THE UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
5. BENCHMARKS FOR LAYOUT ARE TO BE OBTAINED FROM THE CITY OF VAUGHAN ENGINEERING DEPARTMENT.

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UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
Unit 300 – 8133 Warden Avenue
Markham ON L6G 1B3 Canada
tel 905 763 2322 fax 905 763 9983
ibigroup.com

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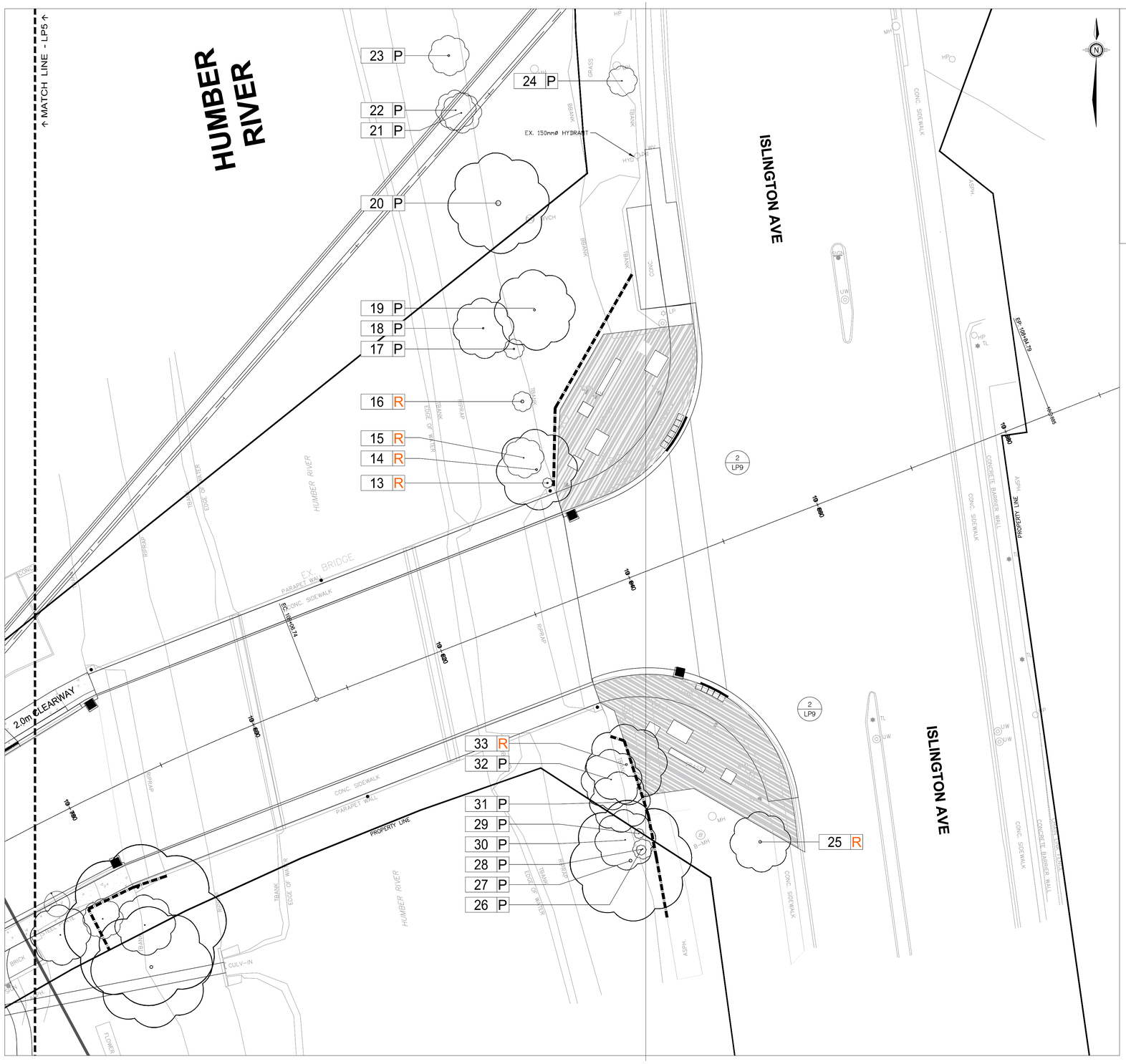

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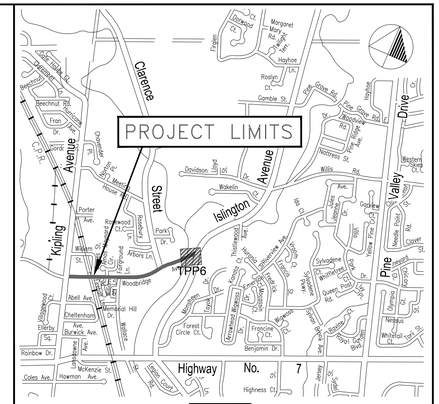

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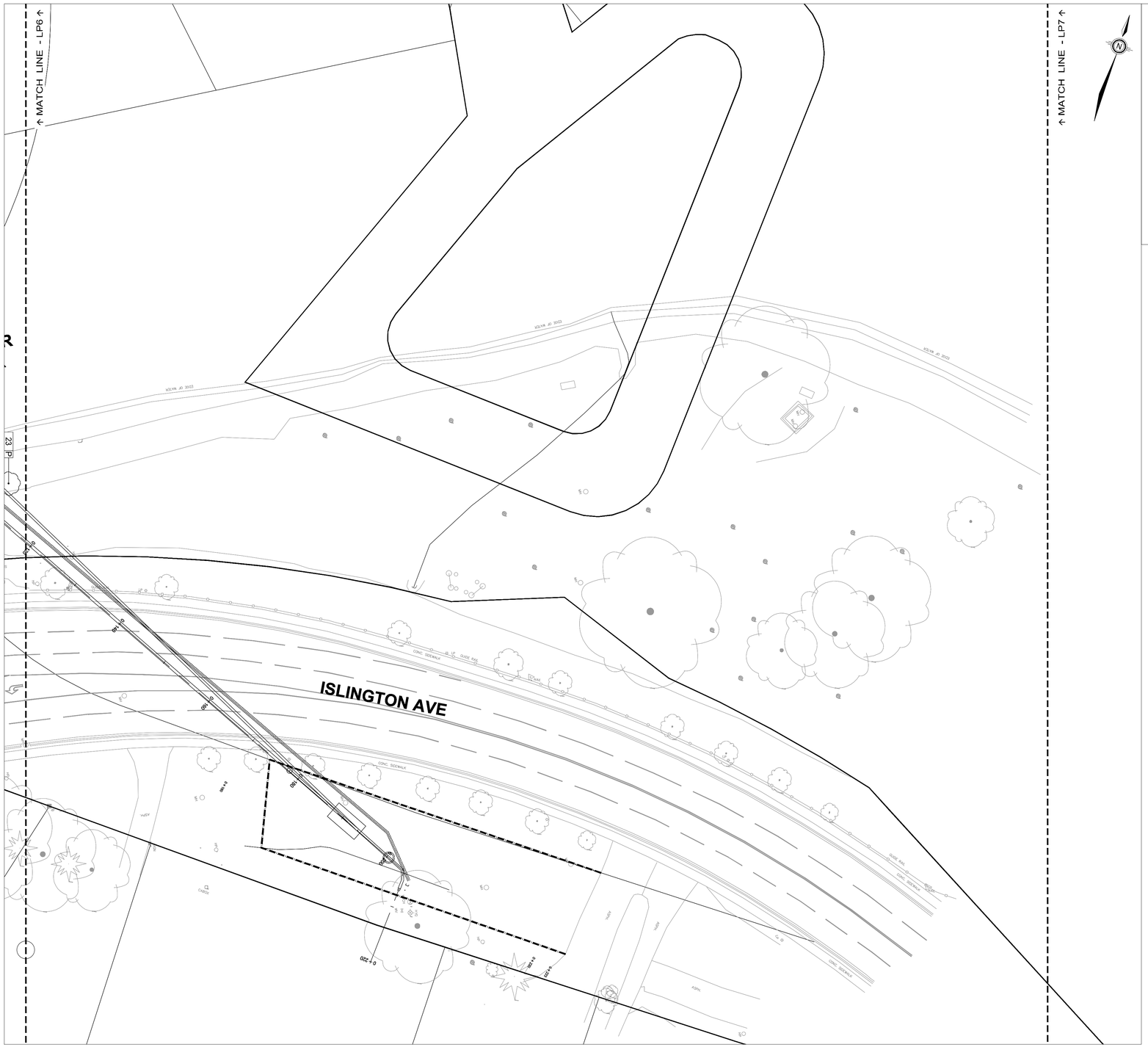

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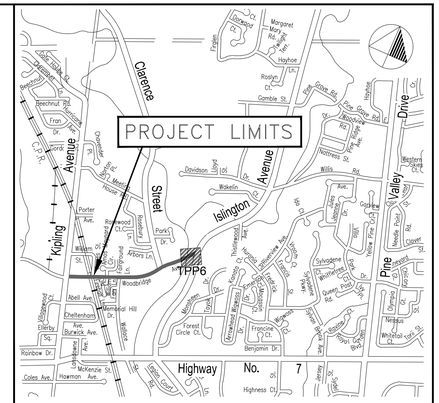

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Printed: Jul. 30, 2021

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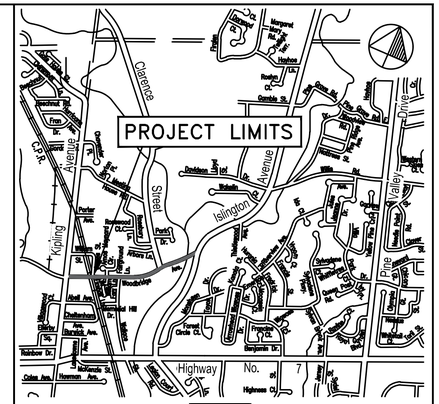
Table 1 - Existing Tree Inventory
Woodbridge Avenue, City of Vaughan
Kipling Avenue to Islington Avenue
Project #: 126679
Data collected on December 14, 2020.

Tag #	*Species*	Common Name	Diameter at Breast Height (DBH) cm or range (cm)	Drip Line Radius (m)	Condition				Recommended Action	Notes
					Trunk	Canopy	Vigour	Overall		
1	*Robinia pseudoacacia*	Black Locust	68	8	Fair	Good-Fair	Good	Good	Preserve and Protect	Two co-dominant stems, union in fair condition with included bark present.
2	*Acer freemanii*	Freeman Maple	8	1	Good	Good	Good	Good	Preserve and Protect	Potential girdling roots.
3	*Acer freemanii*	Freeman Maple	6	1	Good	Good	Good	Good	Preserve and Protect	
4	*Acer freemanii*	Freeman Maple	8	1	Good	Good	Good	Good	Preserve and Protect	Planted high.
5	*Acer freemanii*	Freeman Maple	8	1	Good	Good	Good	Good	Preserve and Protect	Planted high.
6	*Fagus sylvatica*	European Beech	3	0.5	Good	Good	Good	Good	Preserve and Protect	Pyramidal/columnar form.
7	*Fagus sylvatica*	European Beech	3	0.5	Good	Good	Good	Good	Preserve and Protect	Pyramidal/columnar form.
8	*Picea pungens var. Glauca*	Blue Colorado Spruce	37	5	Good	Good	Good	Good	Preserve and Protect	
9	*Ginkgo biloba*	Maidenhair Tree	16	2	Good	Good	Good	Good	Preserve and Protect	
10	*Tilia cordata*	Littleleaf Linden	25	3	Good	Good	Good	Good	Preserve and Protect	Exposed roots.
11	*Pyrus calleryana*	Ornamental Pear	10	1.5	Good	Good	Good	Good	Preserve and Protect	
12	*Pyrus calleryana*	Ornamental Pear	7	1	Poor	Good-Fair	Good-Fair	Fair-Poor	Preserve and Protect	Bark damaged and falling of stem.
13	*Juglans nigra*	Black Walnut	7	0.5	Fair-Poor	Poor	Fair	Fair-Poor	Remove	Topped.
14	*Acer negundo*	Manitoba Maple	19	4	Good-Fair	Good-Fair	Good-Fair	Good-Fair	Remove	Pruned; vines present in crown.
15	*Acer negundo*	Manitoba Maple	10, 7	2	Good-Fair	Good-Fair	Good-Fair	Good-Fair	Remove	Vines present in crown.
16	*N/A*	N/A	27	N/A	Dead	Dead	Dead	Dead	Remove	Dead; multi-stemmed; marked for removal.
17	*Juglans nigra*	Black Walnut	14	1	Good	Good-Fair	Good	Good	Preserve and Protect	
18	*Acer negundo*	Manitoba Maple	23, 21, 18, 12, 12, 11, 8, 5, 5	4	Fair-Poor	Fair	Good-Fair	Fair	Preserve and Protect	Multi-stemmed; gypsy moth egg sacs present on trunk; poor union at grade.
19	*Acer negundo*	Manitoba Maple	14	3	Fair	Fair	Good-Fair	Good-Fair	Preserve and Protect	Partially supressed by adjacent trees.
20	*Acer negundo*	Manitoba Maple	50, 36	5	Poor	Fair	Good-Fair	Fair-Poor	Preserve and Protect	Half of tree has structurally failed.
21	*Juglans species*	Black Walnut	13	2	Fair	Fair	Good-Fair	Fair	Preserve and Protect	
22	*Juglans nigra*	Black Walnut	11	2	Fair	Fair	Good-Fair	Good-Fair	Preserve and Protect	
23	*Juglans nigra*	Black Walnut	18	2	Good	Good	Good	Good	Preserve and Protect	
24	*Quercus rubra*	Red Oak	10	1.5	Fair	Fair	Good-Fair	Good-Fair	Preserve and Protect	Damage present at base of trunk.
25	*Catalpa speciosa*	Northern Catalpa	25	3	Good	Good	Good	Good	Remove	
26	*Acer negundo*	Manitoba Maple	27, 23	6	Fair	Fair	Good-Fair	Good-Fair	Preserve and Protect	
27	*Acer negundo*	Manitoba Maple	4	0.5	Good-Fair	Fair	Good-Fair	Good-Fair	Preserve and Protect	
28	*Juglans nigra*	Black Walnut	8	1	Good-Fair	Good-Fair	Good	Good-Fair	Preserve and Protect	
29	*Juglans nigra*	Black Walnut	5	0.5	Good-Fair	Good-Fair	Good-Fair	Good-Fair	Preserve and Protect	
30	*Acer negundo*	Manitoba Maple	10	3	Good-Fair	Good-Fair	Good-Fair	Good-Fair	Preserve and Protect	Partially supressed by adjacent trees.
31	*Juglans nigra*	Black Walnut	16	3	Good	Good	Good	Good	Preserve and Protect	
32	*Acer negundo*	Manitoba Maple	11 ,9, 7, 7, 5	3	Poor	Fair	Good	Fair	Preserve and Protect	Poor union/stem attachment.
33	*Acer saccharinum*	Silver Maple	22	4	Good	Fair	Good	Good	Remove	Gypsy moth egg sacs and beaver protection present on trunk.
34	*Acer negundo*	Manitoba Maple	10	8	Poor	Poor	Fair	Poor	Preserve and Protect	Leaning towards river; signs of rot present at union.
35	*Rhamnus cathartica*	Common Buckthorn	8	3	Fair	Fair	Good-Fair	Good-Fair	Preserve and Protect	Multi-stem clump.
36	*Acer negundo*	Manitoba Maple	26, 20, 12	6	Poor	Poor	Good-Fair	Poor	Preserve and Protect	Branch failure; signs of rot at union.
37	*Acer freemanii*	Freeman Maple	13	2	Poor	Poor	Poor	Poor	Remove	Dead leader; less than 25% live canopy; damage present on stem.
38	*Acer freemanii*	Freeman Maple	12	3	Fair	Good	Good-Fair	Good-Fair	Remove	Damage present on stem at base.
39	*Acer freemanii*	Freeman Maple	6	1	Good	Good	Good	Good	Preserve and Protect	Newly planted.
40	*Ginkgo biloba*	Maidenhair Tree	4	1	Good	Good	Good	Good	Preserve and Protect	Newly planted.
41	*Acersp.*	Acer species	4	1	Good	Good	Good	Good	Preserve and Protect	Newly planted; lacking center leader.
42	*Acer freemanii*	Freeman Maple	6	1	Good	Good	Good	Good	Preserve and Protect	Newly planted.
43	*Gleditsia tricanthos var. inermis*	Honey Locust	23	4	Good	Fair	Good	Good-Fair	Remove - TBD	Stem/root flare growing into tree grate.
44	*Gleditsia tricanthos var. inermis*	Honey Locust	26	4	Fair	Good	Good	Good-Fair	Remove - TBD	Stem/root flare growing into tree grate.
45	*Gleditsia tricanthos var. inermis*	Honey Locust	20	4	Good-Fair	Good-Fair	Good	Good-Fair	Remove - TBD	Pruned on building side; located in tree grate.
46	*Gleditsia tricanthos var. inermis*	Honey Locust	18	4	Good-Fair	Good-Fair	Good-Fair	Good-Fair	Remove - TBD	Pruned on building side; located in tree grate.
47	*Gleditsia tricanthos var. inermis*	Honey Locust	19	4	Fair	Good-Fair	Good-Fair	Good-Fair	Remove - TBD	Pruned on building side; located in tree grate; stem growing into tree guard.
48	*Gleditsia tricanthos var. inermis*	Honey Locust	18	4	Fair	Good-Fair	Good	Good-Fair	Remove - TBD	Pruned on building side; located in tree grate; stem growing into tree guard.
49	*Gleditsia tricanthos var. inermis*	Honey Locust	20	4	Fair	Good-Fair	Good	Good-Fair	Remove - TBD	Pruned on building side; located in tree grate; stem growing into tree guard.
50	*Gleditsia tricanthos var. inermis*	Honey Locust	19	4	Fair	Good-Fair	Good-Fair	Good-Fair	Remove - TBD	Pruned on building side; located in tree grate.
51	*Gleditsia tricanthos var. inermis*	Honey Locust	21	4	Fair	Good-Fair	Good-Fair	Good-Fair	Remove - TBD	Pruned on building side; located in tree grate.
52	*Gleditsia tricanthos var. inermis*	Honey Locust	22	4	Good-Fair	Good-Fair	Good-Fair	Good-Fair	Remove - TBD	Pruned on building side; located in tree grate; broken string lights in canopy.
53	*Quercus macrocarpa*	Bur Oak	7	1	Good	Good	Good	Good	Transplant	
54	*Gleditsia tricanthos var. inermis*	Honey Locust	18	3.5	Good	Good	Good	Good	Preserve and Protect	Tree grate buckled at grade.
55	*Fraxinus pennsylvanica*	Green Ash	20	5	Poor	Fair	Fair	Fair-Poor	Remove	Woodpecker damage on trunk; epicormic suckers present; signs of Emerald Ash Borer presenet.
56	*Fraxinus pennsylvanica*	Green Ash	25	5	Poor	Fair	Fair-Poor	Fair-Poor	Remove	Woodpecker damage on trunk; epicormic suckers present; signs of Emerald Ash Borer presenet.
57	*Fraxinus pennsylvanica*	Green Ash	24	5	Poor	Fair	Fair	Fair-Poor	Remove	Epicormic suckers present; signs of Emerald Ash Borer presenet.
58	*Quercus macrocarpa*	Bur Oak	14	2	Good	Good	Good	Good	Transplant	
59	*Syringa reticulata 'Ivory Silk'*	Ivory Silk Tree Lilac	10	2	Fair	Fair	Fair	Fair	Remove	
60	*Syringa reticulata 'Ivory Silk'*	Ivory Silk Tree Lilac	11	2	Fair	Good	Good	Good	Preserve and Protect	Callused wound at base, less than 10cm in length.
61	*Syringa reticulata 'Ivory Silk'*	Ivory Silk Tree Lilac	12	2	Good	Good	Good	Good	Preserve and Protect	
62	*Picea abies*	Norway Spruce	41	6	Good	Good	Good	Good	Preserve and Protect	Located in 0.5m height built up planter.
63	*Prunus species*	Cherry Species	4	1	Fair	Good	Good	Good-Fair	Preserve and Protect	Detailed to decorative metal stake.
64	*Morus alba*	Weeping Mulberry Standard	19	2	Fair-Poor	Good-Fair	Good	Fair	Preserve and Protect	Located in 0.5m built up planting bed, rot present at multiple pruning words, weeping form
65	*Thuja occidentalis*	Eastern White Cedar	28	3	Good	Good	Good	Good	Preserve and Protect	
66	*Thuja occidentalis*	Eastern White Cedar	22	3	Good	Good	Fair	Fair	Preserve and Protect	Suppressed growth due to sugar maple immediately adjacent trunk.
67	*Acer saccharum*	Sugar Maple	12	4	Fair	Good	Good	Good	Preserve and Protect	Growing immediately adjacent cedar; entangled canopies.
68	*Syringa reticulata 'Ivory Silk'*	Ivory Silk Tree Lilac	10	1	Good	Good-Fair	Good	Good	Preserve and Protect	
69	*Gleditsia tricanthos var. inermis*	Honey Locust	37	6	Good	Good	Good	Good	Preserve and Protect	
70	*Juglans nigra*	Black Walnut	17	6	Good	Good-Fair	Good	Good	Preserve and Protect	Codominant leader located 2 m from grade.
71	*Quercus bicolor*	Swamp White Oak	23	3	Good	Good	Good	Good	Preserve and Protect	
72	*Quercus robur 'Fastigiata'*	Pyramidal English Oak	6	1	Good	Good	Good	Good	Preserve and Protect	
73	*Quercus rubra*	Red Oak	28	3	Good	Good	Good	Good	Preserve and Protect	Minor damage to first branch from grade (callused wounds).
74	*Ginkgo biloba*	Maidenhair Tree	11	2	Good	Good-Fair	Good	Good	Remove	Mechanical damage to surface roots.
75	*Ginkgo biloba*	Maidenhair Tree	12	2	Good	Good	Good	Good	Remove	Mechanical damage to trunk at base.
76	*Ginkgo biloba*	Maidenhair Tree	13	2	Poor	Good	Good	Fair	Remove	Twisted trunk, 0.5m long callused wound located ~ 1 m from base of trunk.
77	*Ginkgo biloba*	Maidenhair Tree	5	1	Fair	Good	Good	Good-Fair	Remove	Mechanical damage to trunk at base of trunk; stem, leaning 45 degree east.
78	*Ginkgo biloba*	Maidenhair Tree	8	1	Good	Good	Good	Good	Remove	Mechanical damage at base of trunk.
79	*Ginkgo biloba*	Maidenhair Tree	11	2	Good	Good	Good	Good	Preserve and Protect	



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WOODBRIDGE AVENUE IMPROVEMENTS

Tree Preservation Plan - Schedule

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: DG	CHECKED BY: TM	TENDER No.	
SURVEYED BY: ___	APPROVED BY: TM	T21-XX	
SCALE: HORIZONTAL: NTS VERTICAL: NTS	PROJ. No. 21-_____	DWG. No. TPP8	

Printed: Jul. 30, 2021

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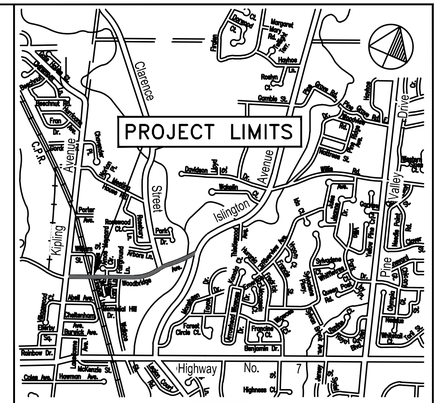
Tag #	*Species*	Common Name	Diameter at Breast Height (DBH) cm or range (cm)	Drip Line Radius (m)	Condition				Recommended Action	Notes
					Trunk	Canopy	Vigour	Overall		
80	*Ulmus species*	Elm Cultivar	6	1	Good	Good	Good	Good	Preserve and Protect	
81	*Ulmus species*	Elm Cultivar	7	1.5	Good	Good	Good	Good	Preserve and Protect	
82	*Ulmus species*	Elm Cultivar	7	1.5	Good	Good	Good	Good	Preserve and Protect	
83	*Ulmus species*	Elm Cultivar	7	1.5	Good	Good	Good	Good	Preserve and Protect	
84	*Betulus species*	Birch Species	4	0.5	Good	Good	Good	Good	Preserve and Protect	
85	*Betulus species*	Birch Species	4	0.5	Good	Good	Good	Good	Preserve and Protect	
86	*Betulus species*	Birch Species	4	0.5	Good	Good	Good	Good	Preserve and Protect	
87	*Picea pungens*	Blue Colorado Spruce	27	2	Good	Good	Good	Good	Preserve and Protect	Christmas lights in canopy.
88	*Gleditsia tricanthos var. inermis*	Honey Locust	21	4	Good	Good	Good	Good	Preserve and Protect	Christmas lights in canopy.
89	*Picea glauca*	White Spruce	26	3	Good	Good	Good	Good	Preserve and Protect	Christmas lights in canopy.
90	*Amelanchier species*	Serviceberry Sp.	4	0.5	Good	Good	Good	Good	Transplant	
91	*Acer campestre*	Hedge Maple	5	1	Good	Good	Good	Good	Transplant	
92	*Syringa reticulata 'Ivory Silk'*	Ivory Silk Tree Lilac	5	0.5	Good	Good-Fair	Good	Good	Transplant	
93	*Acer campestre*	Hedge Maple	6	2	Good	Good-Fair	Good	Good	Transplant	
94	*Amelanchier species*	Serviceberry Sp.	5	1	Good	Good	Good	Good	Transplant	
95	*Acer campestre*	Hedge Maple	6	1	Good	Good	Good	Good	Transplant	Mounded soil at base.
96	*Syringa reticulata 'Ivory Silk'*	Ivory Silk Tree Lilac	4	0.5	Good	Good	Good	Good	Transplant	Mounded soil at base.
97	*Acer campestre*	Hedge Maple	4	1.5	Good	Good	Good	Good	Transplant	
98	*Thuja occidentalis*	Eastern White Cedar	36	3	Fair	Poor	Fair	Fair-Poor	Remove	Damage present on on main stem; leader snapped 4.5m above grad.
99	*Acer saccharum*	Sugar Maple	63	4	Good-Fair	Fair	Good-Fair	Good-Fair	Remove	Pruned; located on top of wall.
100	*Acer rubrum*	Red Maple	40	3	Fair-Poor	Fair	Fair	Fair	Remove	Prunned; poor tree architecture/form.
101	*Acer saccharum*	Sugar Maple	12	2	Good	Good	Good	Good	Remove	
102	*Juglans nigra*	Black Walnut	12	2	Good	Good	Good	Good	Preserve and Protect	
103	*Thuja occidentalis 'Smaragd'*	Emerald Cedar	6	1	Good	Good	Good	Good	Preserve and Protect	Part of cedar hedge.
104	*Thuja occidentalis 'Smaragd'*	Emerald Cedar	6, 4	1	Good	Good	Good	Good	Preserve and Protect	Part of cedar hedge.
105	*Thuja occidentalis 'Smaragd'*	Emerald Cedar	6, 2	1	Good	Good	Good	Good	Preserve and Protect	Part of cedar hedge.
106	*Thuja occidentalis 'Smaragd'*	Emerald Cedar	4	1	Good	Good	Good	Good	Preserve and Protect	Part of cedar hedge.
107	*Malus sp.*	Apple Species	15	4	Fair	Fair	Good-Fair	Fair	Remove	One dead stem present.
108	*Acer platanoides*	Norway Maple	22, 19, 17, 14, 10, 8, 8	8	Fair	Fair	Good-Fair	Good-Fair	Remove	Multi-stem union located at grade; exposed roots on slope.
109	*Acer platanoides*	Norway Maple	22, 10	5	Good-Fair	Good-Fair	Good	Good-Fair	Remove	
110	*Acer saccharum*	Sugar Maple	14, 14	2	Fair	Good-Fair	Good-Fair	Good-Fair	Preserve and Protect	2 other stems previously removed
111	*Acer saccharum*	Sugar Maple	19	2	Good	Good	Good	Good	Preserve and Protect	
112	*Juglans nigra*	Black Walnut	20	4	Good	Good	Good	Good	Preserve and Protect	
113	*Prunus serotina*	Black Cherry	14 , 14	3	Fair-Poor	Fair	Good-Fair	Fair	Remove	Stem union located at grade; one stem dead.
114	*Picea glauca*	White Spruce	45	4	Good	Good	Good	Good	Preserve and Protect	
115	*Acer platanoides*	Norway Maple	24	4	Good	Good	Good	Good	Preserve and Protect	
116	*Acer platanoides*	Norway Maple	23	4	Fair	Fair-Poor	Good	Fair	Preserve and Protect	Fill present at base: poor tree architecture /form.
117	*Acer platanoides*	Norway Maple	23	4	Good	Good	Good	Good	Preserve and Protect	
118	*Acer platanoides*	Norway Maple	19	3	Good	Good	Good	Good	Preserve and Protect	
119	*Picea abies*	White Spruce	58	6	Good-Fair	Good	Good-Fair	Good-Fair	Preserve and Protect	Damage present on main stem; signs of stress/decline observed.
120	*Juglans nigra*	Black Walnut	10	1	Good	Good	Good	Good	Remove	
121	*Acer platanoides*	Norway Maple	7	1	Good	Good-Fair	Good	Good-Fair	Remove	
122	*Acer platanoides*	Norway Maple	5, 3, 2, 2, 2	1	Good-Fair	Good-Fair	Good	Good-Fair	Remove	
123	*Pyrus calleryana*	Ornamental Pear	8	1	Poor	Good-Fair	Good	Fair	Remove	Damage present on trunk.

Vegetation Groupings

Tag #	*Species, condition and DBH*	Recommended Action	Notes
Vegetation Grouping 1	Cluster of *Acer saccaharum* (Sugar Maple) in good to fair condition, with dripline of 2-3m, located approximately 0.3m apart with separate stems and DBH measuring: 16, 14, 11, 10, 8, 6, 5, 4, 3.	Preserve and Protect	Fill present in rootzone.
Vegetation Grouping 2	*Acer platanoides* (Norway Maple), ~12 stems <10cm DBH in fair to good condition, ~4 stems 10 to 20cm DBH in fair to good condition *Acer saccharum* (Sugar Maple), ~1 stem <10cm DBH in fair condition, ~1 stem 10 to 20cm DBH in good condition	Preserve and Protect	Tree grouping lines existing driveway access.
Vegetation Grouping 3	*Acer platanoides* (Norway Maple), ~15 stems <10cm DBH in fair to good condition, ~9 stems 10 to 20cm DBH in fair to good condition, *Acer saccharum* (Sugar Maple), ~17 stems <10cm DBH in fair to good condition, ~3 stems 10 to 20cm DBH in fair to good condition, *Fraxinus spp.* (Ash Species), ~3 stems <10cm DBH in poor to fair condition, ~6 stems <10cm DBH in fair to good condition, ~3 stems 10 to 20cm DBH in fair to good condition, *Juglans nigra* (Black Walnut), ~2 stems <10cm DBH in good condition, ~2 stems 10 to 20cm DBH in good condition, *Malus sp.* (Apple Species), ~3 stems <10cm DBH in fair to good condition, Other <10cm DBH species present: *Rhamnus cathartica* (Common Buckthorn), *Vitis sp.* (Grape Vine), *Rosa sp.* (Rose Sp.), *Syringa vulgaris* (Common Lilac.).	Remove	Tree grouping located on slope, parallel to Woodbridge Avenue.



CONTRACTOR'S NOTES:

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4. THE EXACT LOCATION OF UTILITIES SHALL BE DETERMINED BY CONSULTING THE UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
5. BENCHMARKS FOR LAYOUT ARE TO BE OBTAINED FROM THE CITY OF VAUGHAN ENGINEERING DEPARTMENT.

NOTE:

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NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3	60% SUBMISSION	EL	2021/07/16
2	30% RE–SUBMISSION	DG	2021/02/04
1	30% SUBMISSION	TM/DG	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
Unit 300 – 8133 Warden Avenue
Markham ON L6G 1B3 Canada
tel 905 763 2322 fax 905 763 9983
ibigroup.com

LANDSCAPE ARCHITECT'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

CITY-WIDE

WOODBRIDGE AVENUE IMPROVEMENTS

Tree Preservation Plan - Schedule

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: DG	CHECKED BY: TM	TENDER No. T21-XX
SURVEYED BY: ___	APPROVED BY: TM	
SCALE: HORIZONTAL: NTS VERTICAL: NTS	PROJ. No. 21-_____	DWG. No. TPP9

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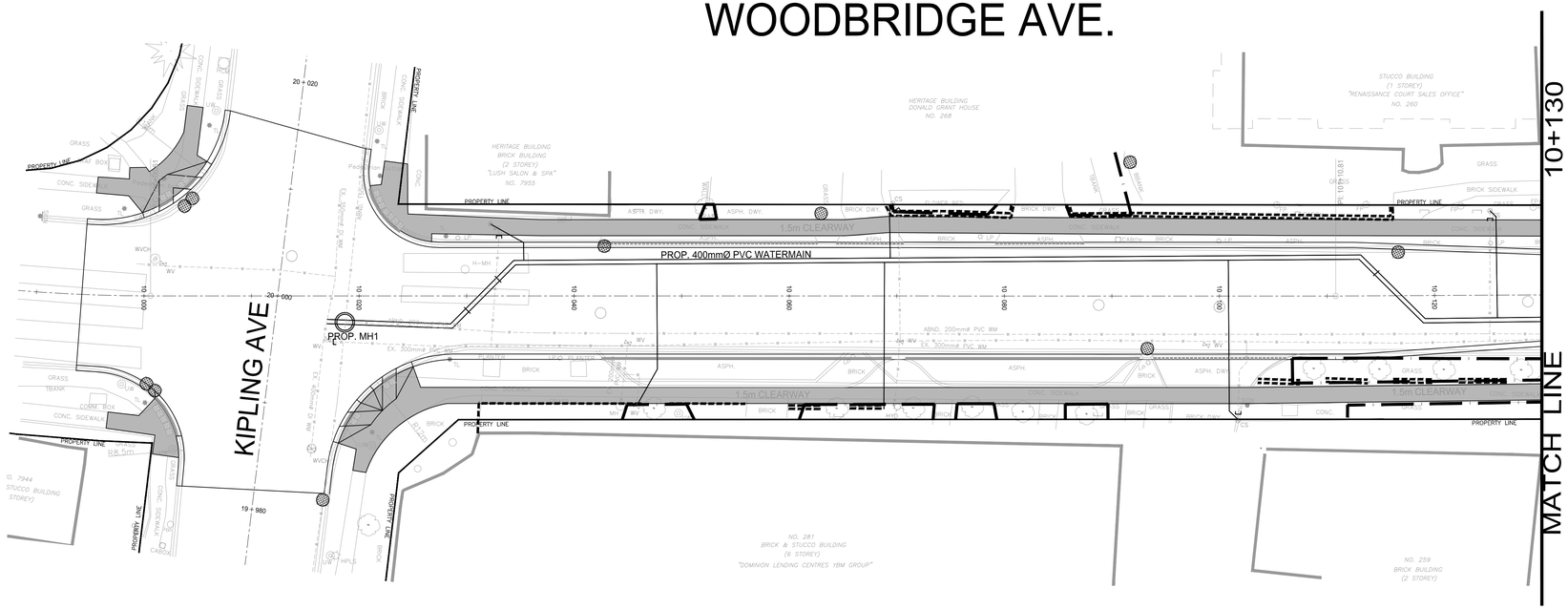
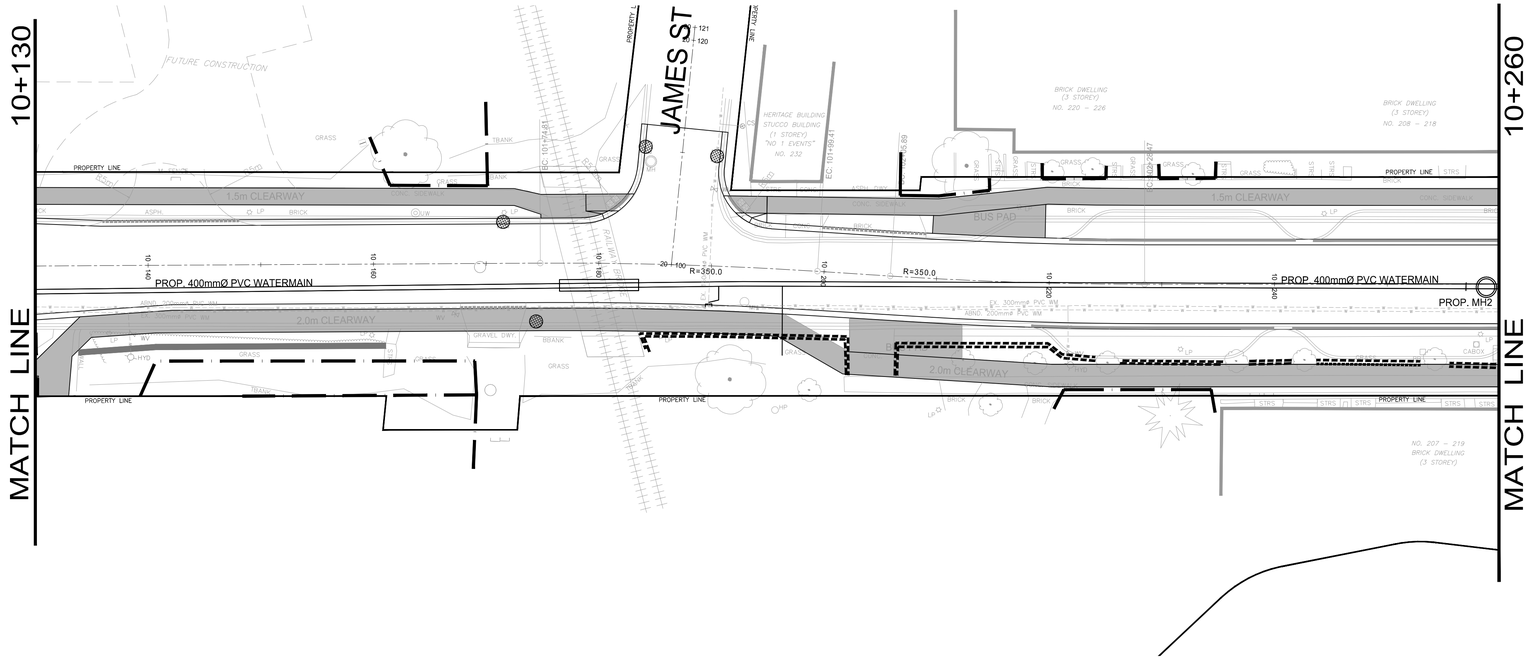
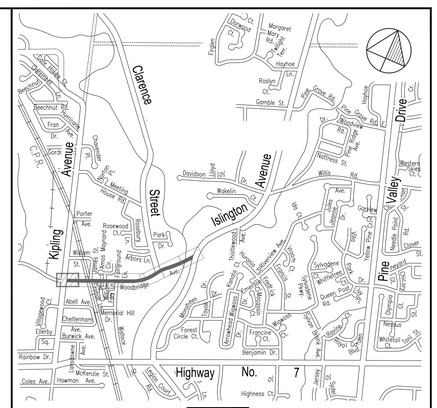
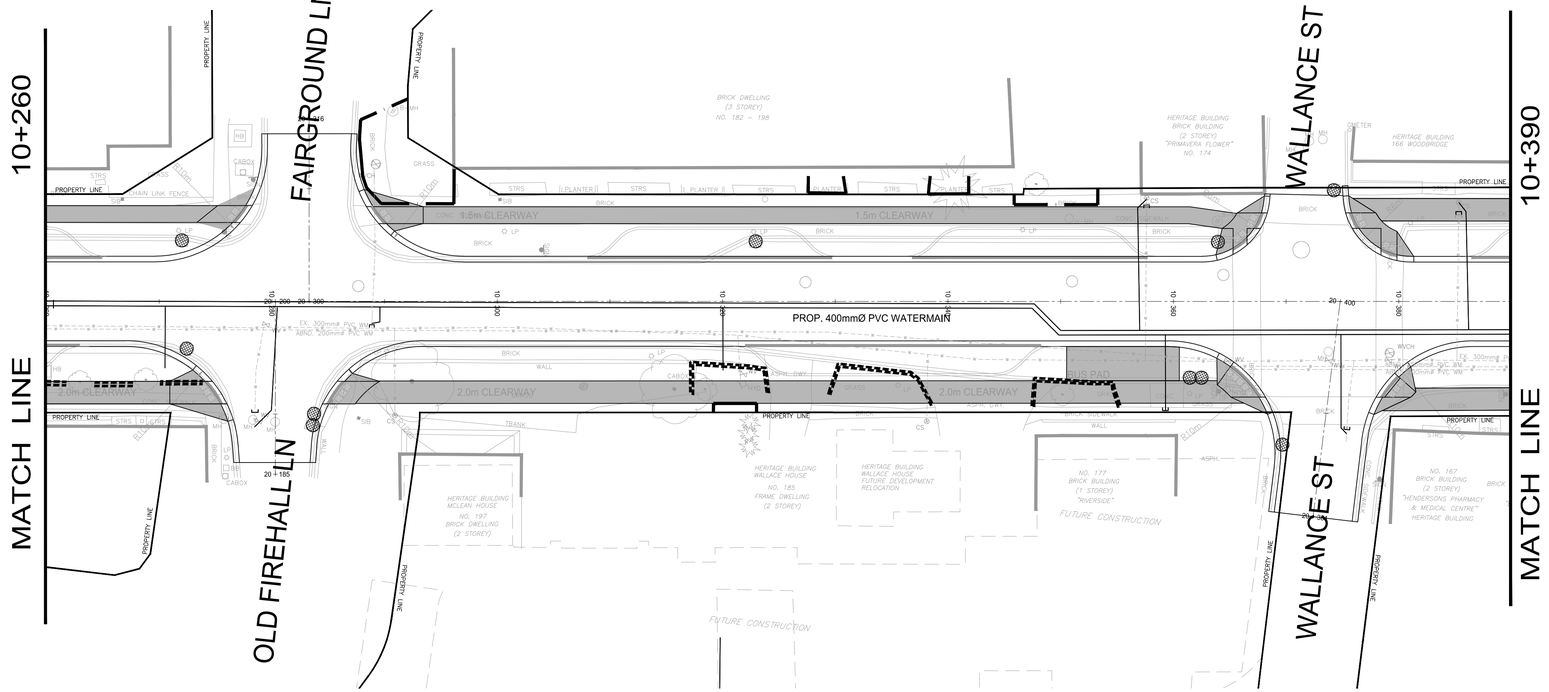
WOODBRIDGE AVE.

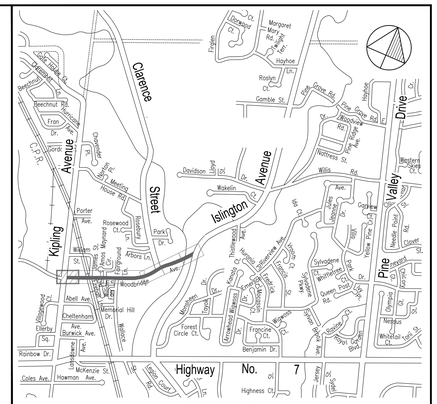


WOODBRIDGE AVE.




Clarence Street
Islington Avenue
Kipling Avenue
Prue Valley Drive
Highway No. 7
Highway 7
Woodbridge
Abell Ave
Cheltenham Dr.
Benjamin Dr.
Rainbow Dr.
Coles Ave.
Hoxman Ave.
Gamble St.
Hayhoe
Roslyn
Willis Rd.
Nashness St.
Davidson Laird Dr.
Rosewood Ct.
Arbors Ln.
Porter Rd.
Forest Circle Ct.
Francine Ct.
Mackenzie Ridge Dr.
Mackenzie Glen Dr.
Mackenzie Vaughan Blvd.
Vellore Park Ave.
Vellore Woods Blvd.
Vellore Woods Dr.
Vellore Village Blvd.
Vellore Village Dr.
Weston Rd.
Westcourt Rd.
Western Oak Cres.
Northview Blvd.
Northview Rd.
Northview Ct.
Cityview Blvd.
Cityview Dr.
Cityview Ct.
Creditstone Rd.
Creditstone Cres.
Creditstone Ct.
Creditview Rd.
Creditview Cres.
Creditview Ct.
Creditwood Ct.
Creditwood Dr.
Creditwood Rd.
Creditwood Cres





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BENCH MARK:
MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

LEGEND:

- SILT FENCE
- DOUBLE ROW HEAVY DUTY SILT FENCE
- TREE PROTECTION FENCING (LIGHT DUTY) (REFER TO TPP DRAWING FOR DETAILS)
- TREE PROTECTION FENCING (HEAVY DUTY) (REFER TO TPP DRAWING FOR DETAILS)
- SILTSACK FOR CATCHBASIN
- SILTSOXX (REFER TO DETAILS DRAWING)
- TEMPORARY PUMP WITH TEMPORARY DISCHARGE HOSE
- COFFER DAM (REFER TO DETAILS DRAWING)
- 7x7m GRANULAR SURFACE/ WORKING AREA

(UNITS — A1=1:X/A3=1:X/2)

HORIZONTAL: 0 5 10 25m
VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
EROSION AND SEDIMENT CONTROL PLAN

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. ESC2

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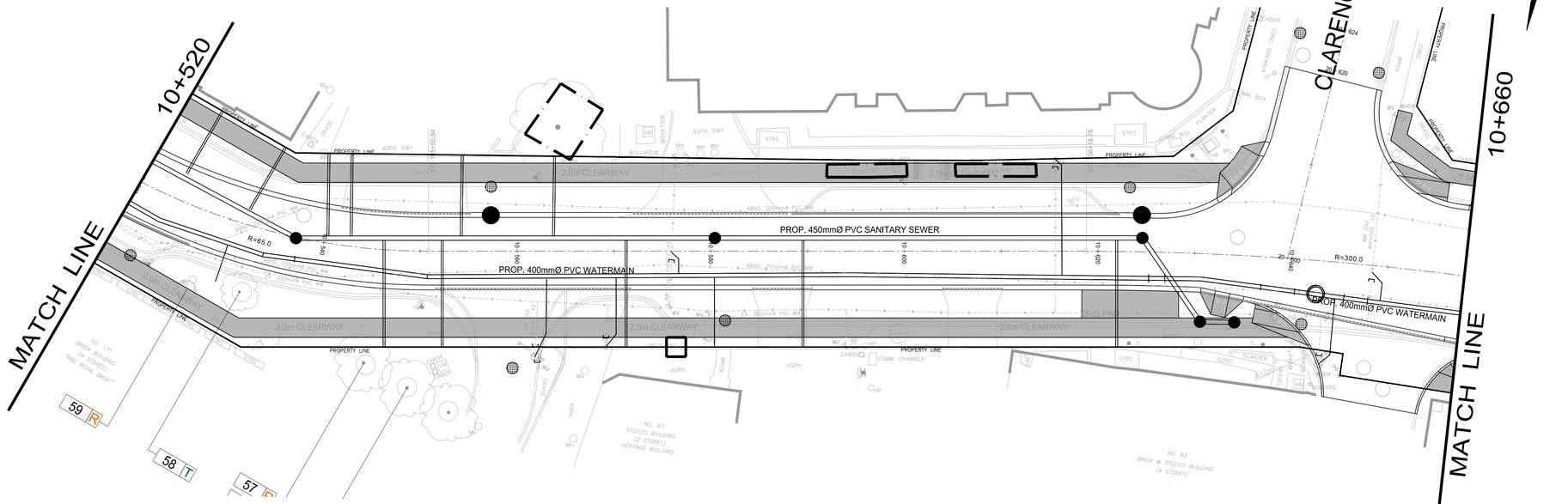
WOODBRIDGE AVE.



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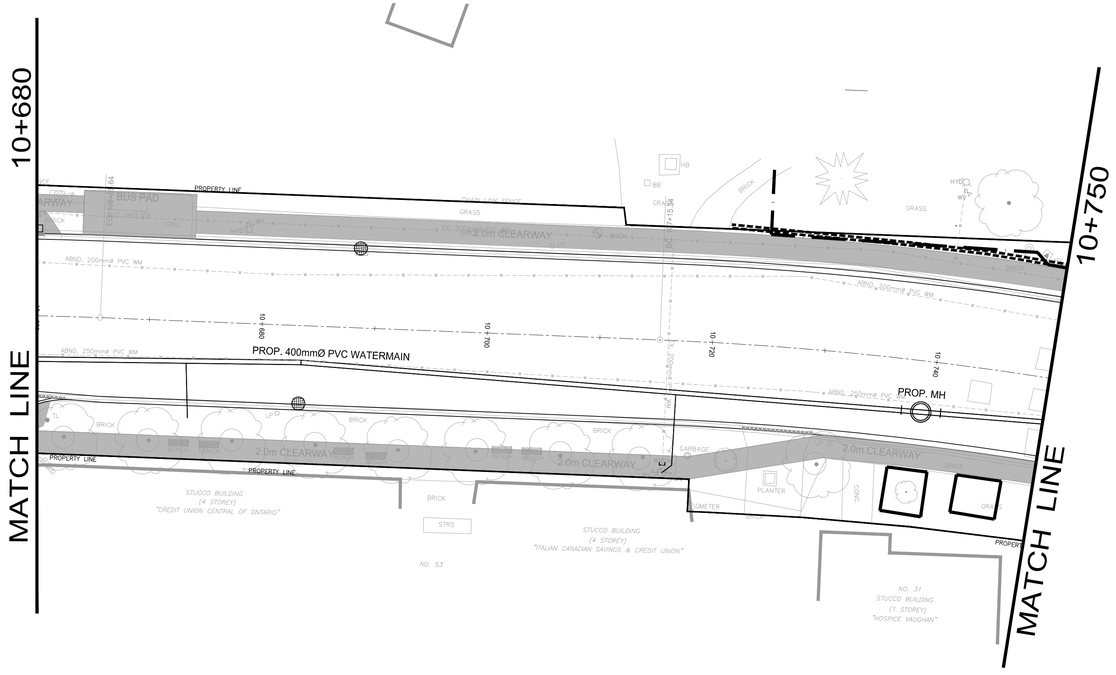

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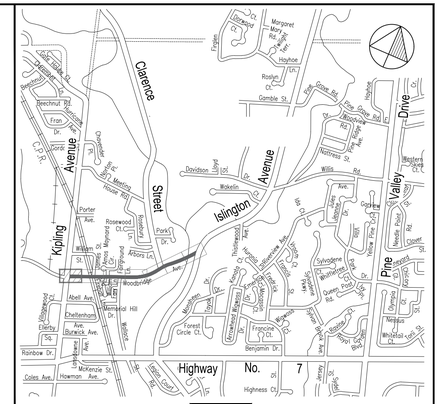

KEY PLAN

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MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
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3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

LOFTUS APOLLO
HORIZONTAL: 0 5 10 25m
VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
EROSION AND SEDIMENT CONTROL PLAN

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No.	
SURVEYED BY: JK	APPROVED BY: SY	T18-___	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. ESC3	

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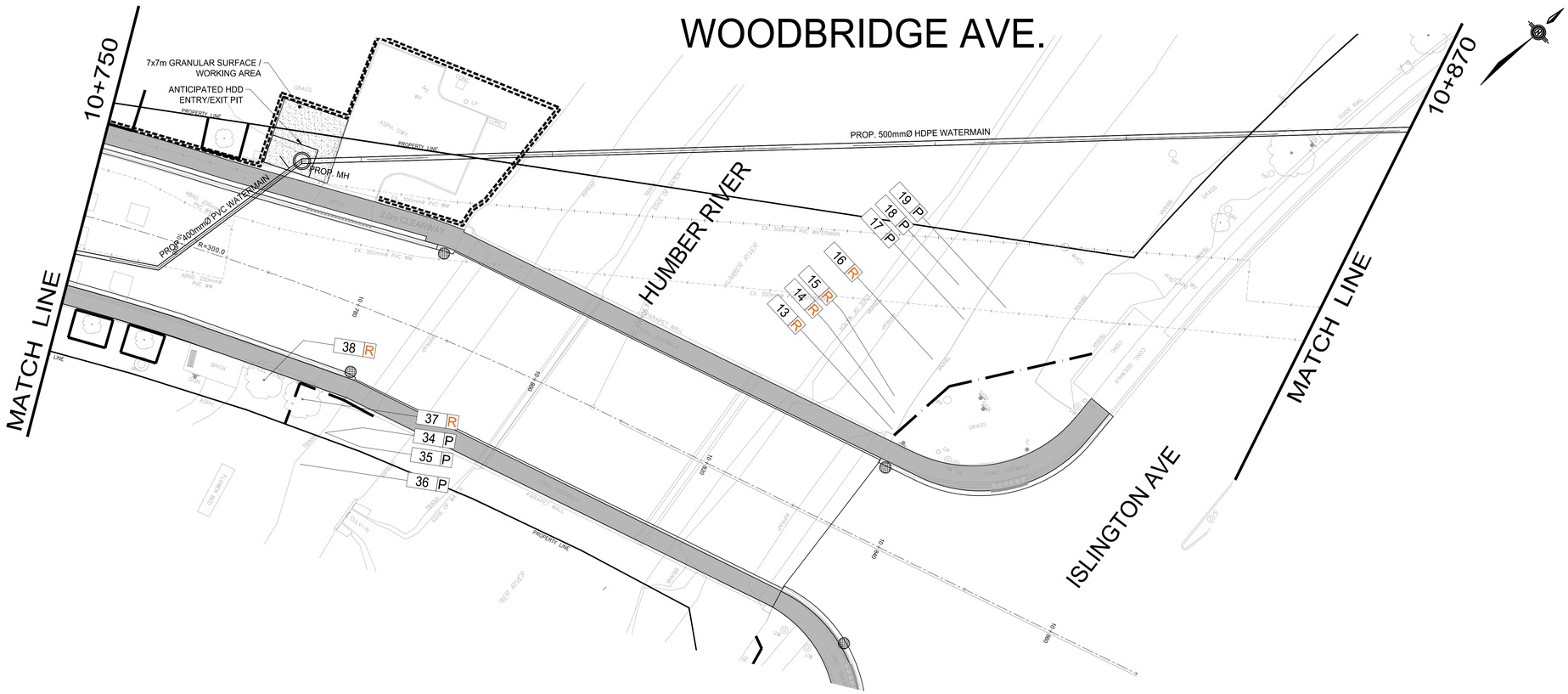
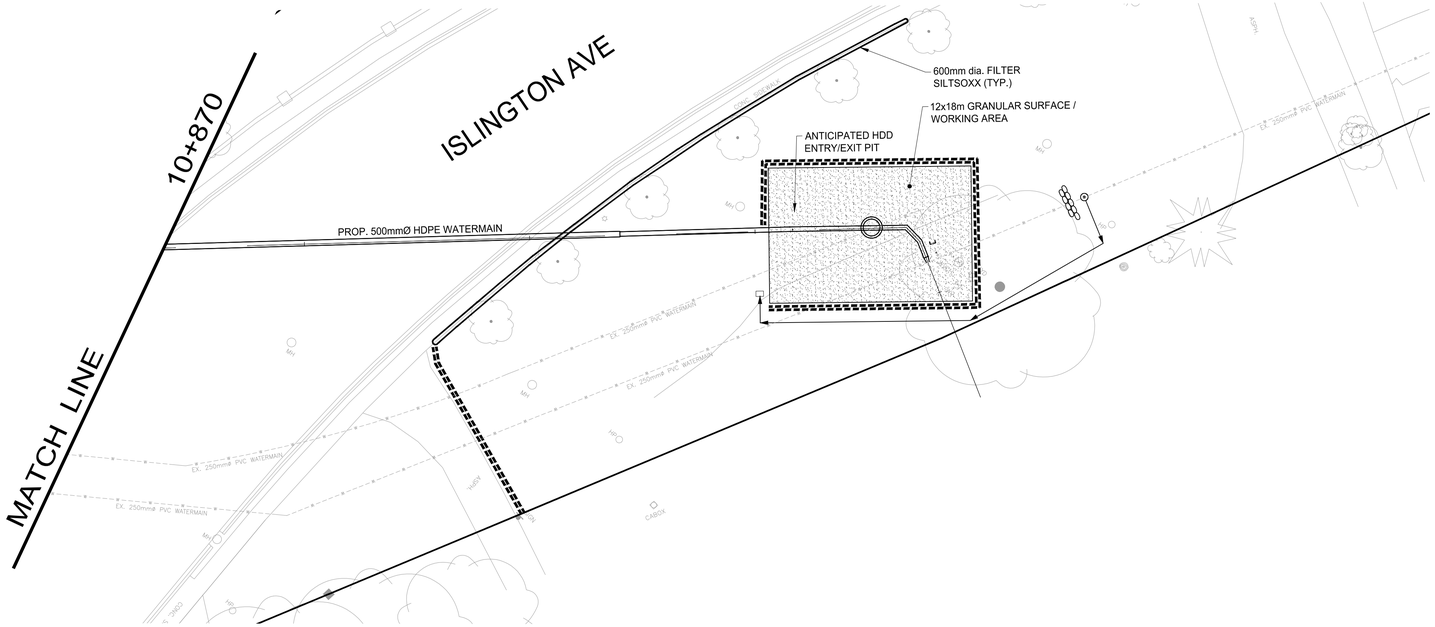
WOODBRIDGE AVE.





LEGEND:

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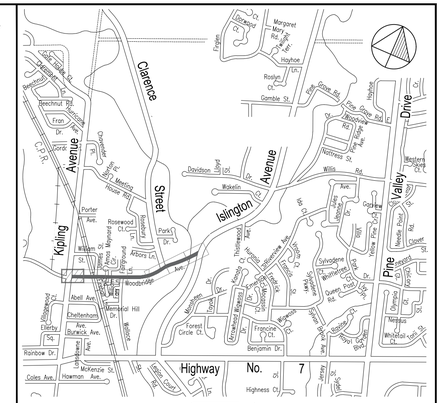

KEY PLAN

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UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI

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tel 905-763-2322
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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALE:

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE

EROSION AND SEDIMENT CONTROL PLAN

VAUGHAN
Infrastructure Delivery

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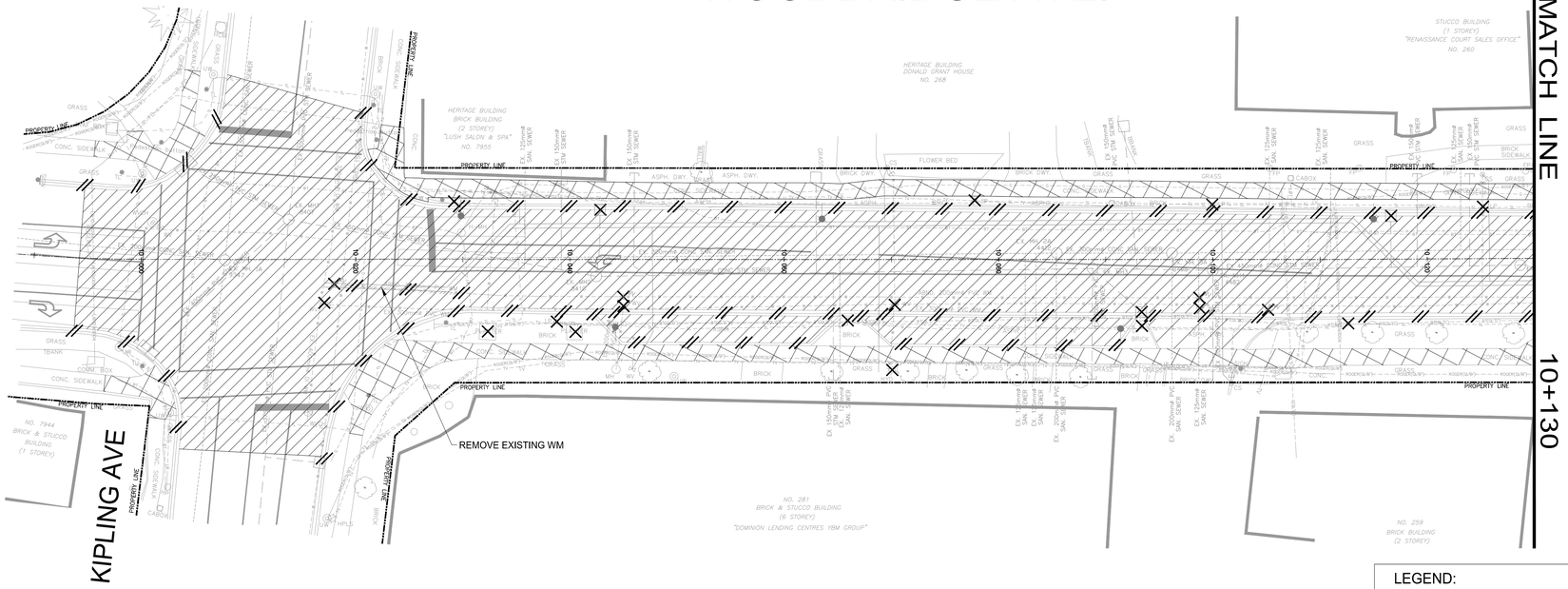
Xref File: \\connect.bigroup.com\VA01\12657_Woodbridge_Ave\70_Production\103_Design\04_Civil\Sheets\126879_ESC - Woodbridge.dwg Layout: ESC 4

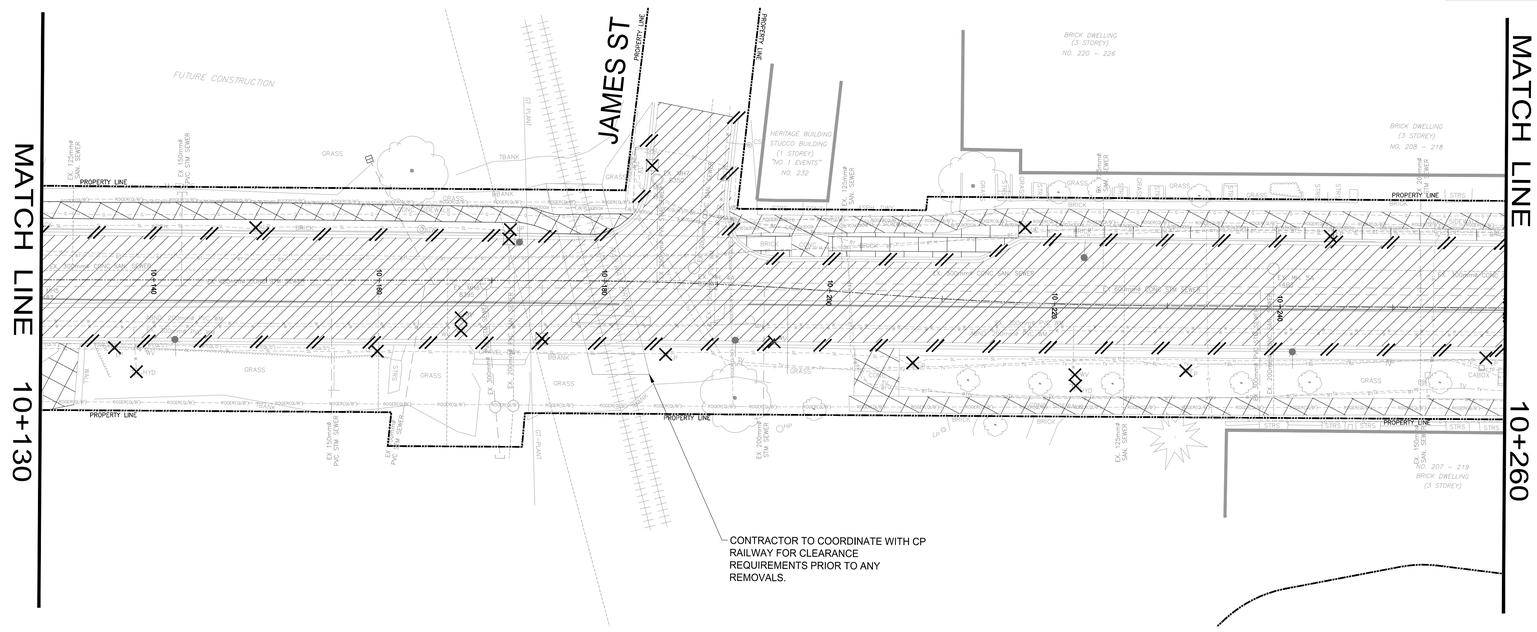
WOODBRIDGE AVE.

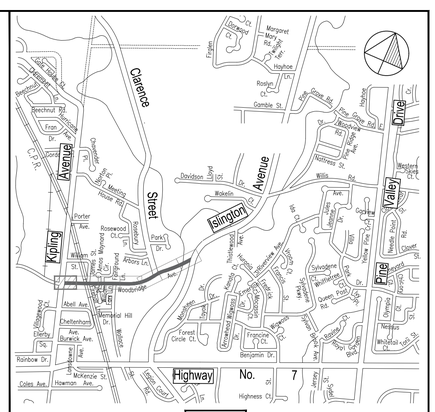


LEGEND:

- FULL DEPTH ASPHALT REMOVAL (ROAD REMOVAL)
- PARTIAL DEPTH ASPHALT REMOVAL (ROAD REMOVAL)
- CONCRETE REMOVAL
- UNIT PAVER REMOVAL (INCLUDING CONCRETE BASE)
- INDIVIDUAL ITEM REMOVAL
- LINEAR REMOVAL

WOODBRIDGE AVENUE





KEY PLAN

CONTRACTOR'S NOTES:

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NOTE:

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BENCH MARK:

MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALE: HORIZONTAL: 0 5 10 25m
VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
REMOVALS

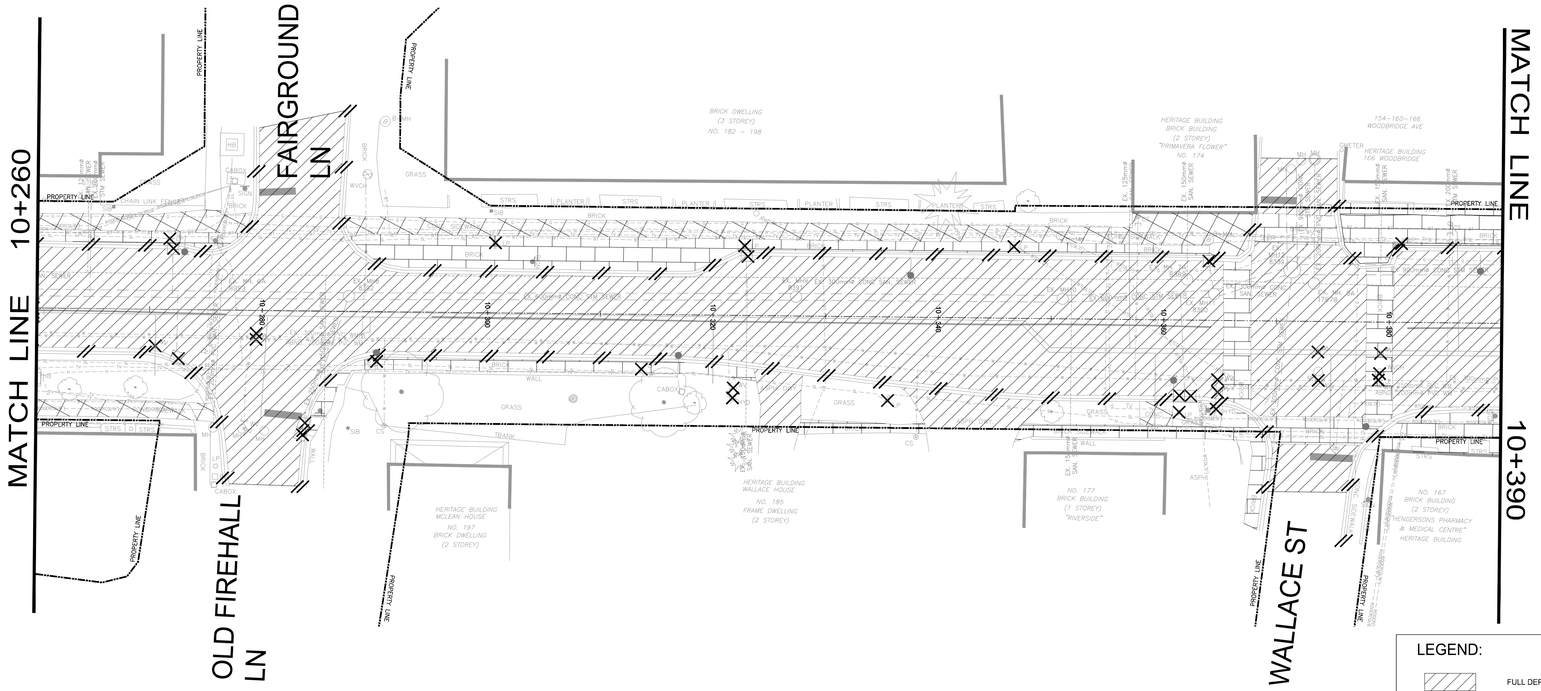
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. REM1

Printed: Jul. 30, 2021

Acad File: \\connect.bigroup.com\vf\T01\12697a_Woodbridge_Ave\1.0_Production\1.03_Design\04_Civil\Sheets\126973_REM.dwg Layout: REM 1

WOODBRIDGE AVENUE



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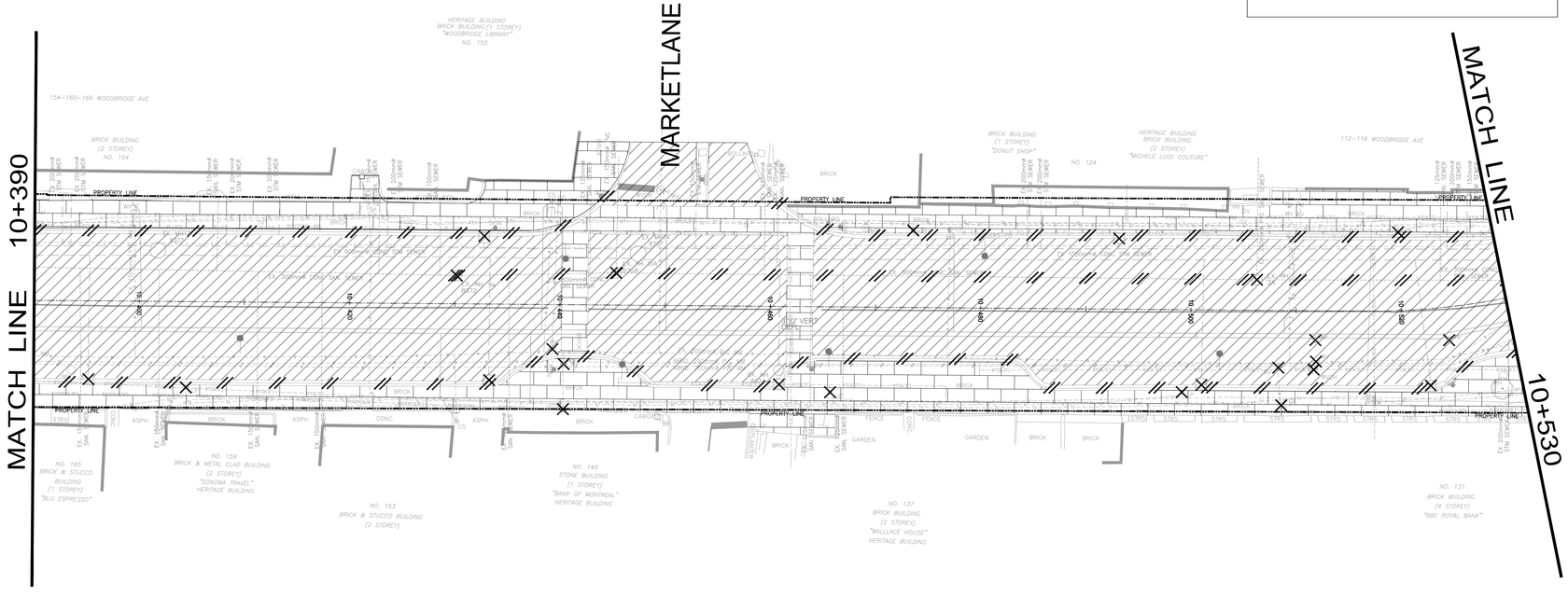
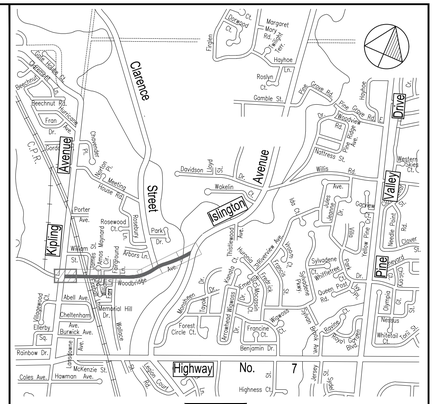
- INDIVIDUAL ITEM REMOVAL
- LINEAR REMOVAL

WOODBRIDGE AVENUE





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BENCH MARK:
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ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
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2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/01/15

UPDATES & REVISIONS

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALE (UNLESS NOTED OTHERWISE)
HORIZONTAL: 0 5 10 25m
VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
REMOVALS

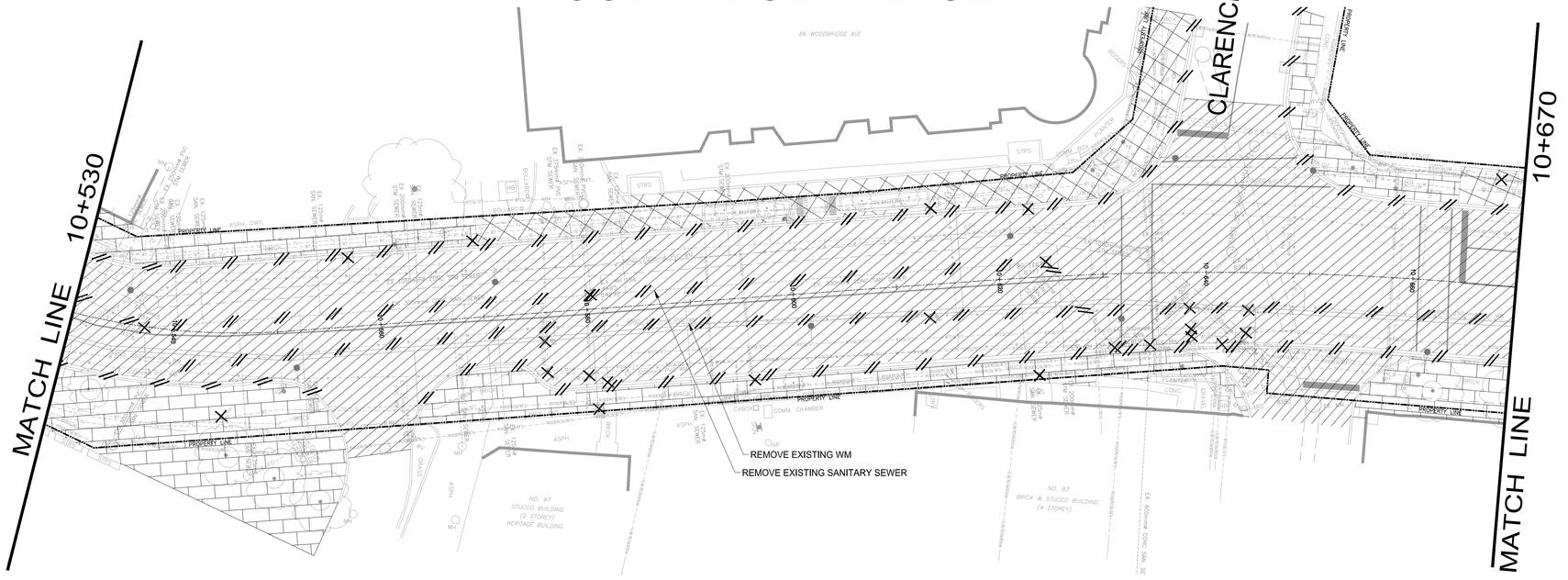
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. REM2

Printed: JUL 30, 2021

Xref File: \\vcenext.bigroup.com\VTD\12\6\79_Woodbridge_Ave\12_0_Production\Y-EG_Design\Y-R_Civil\Sheets\126079_REM.dwg Layout: REM 2

WOODBRIDGE AVENUE



LEGEND:

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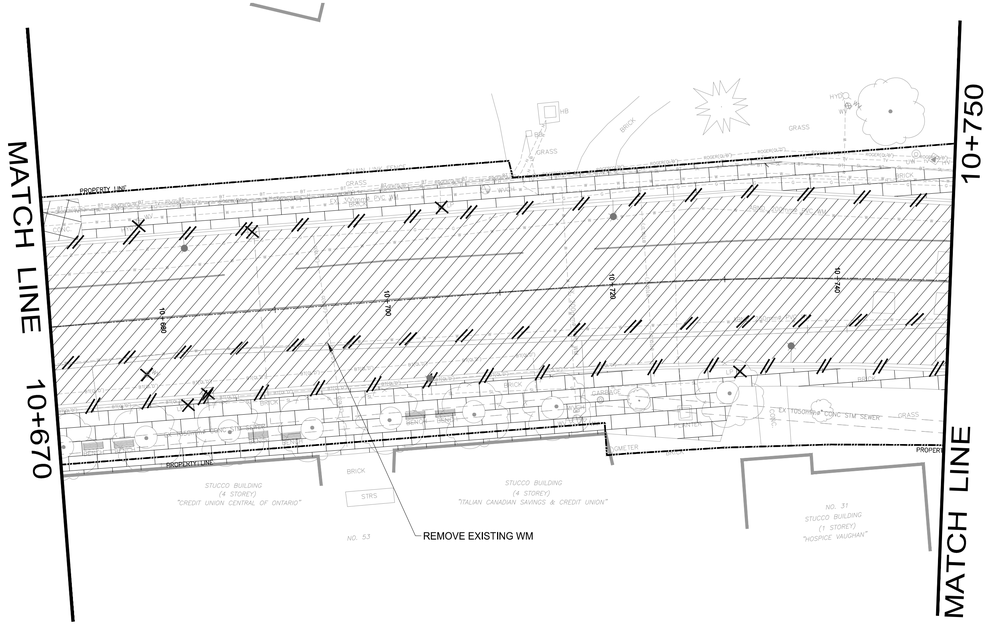
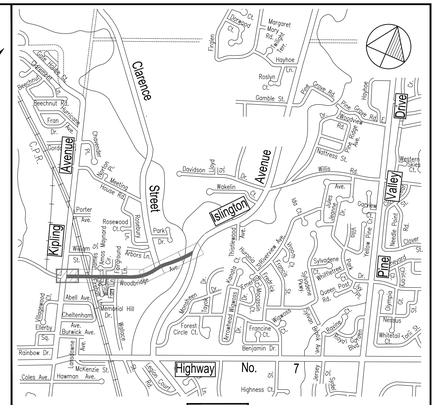
- LINEAR REMOVAL

WOODBRIDGE AVENUE





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BENCH MARK:
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ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
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UPDATES & REVISIONS

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

UNITS - SCALES

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
REMOVALS

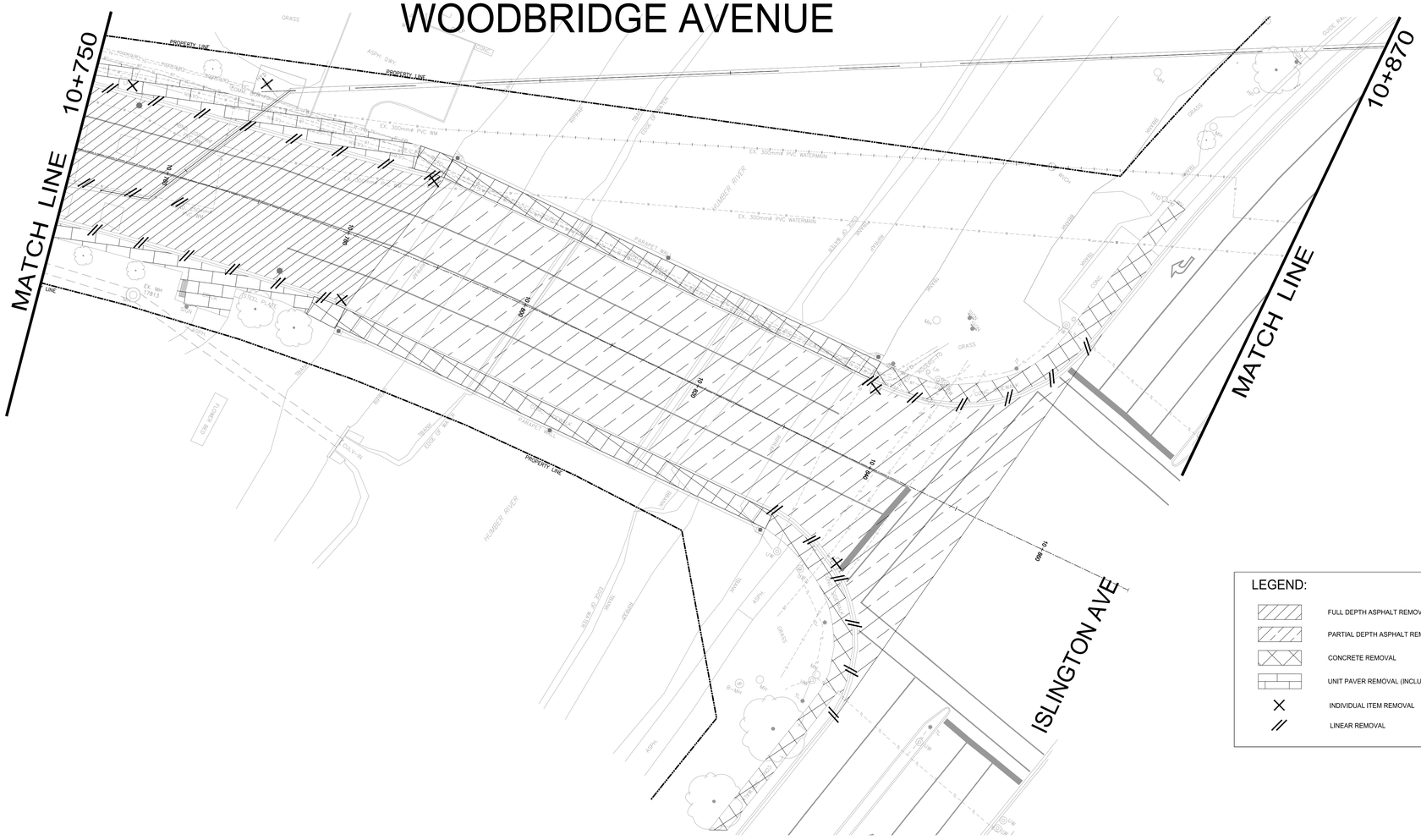
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. REM3

Printed: Jul. 30, 2021

Acad File: \\Vcontrast.bigroup.com\VA\01\18678_Woodbridge_Ave\1_FL_Production\1 FD_Design\04_Civil\Sheets\18678_REM.dwg Layout: REM 3

WOODBRIDGE AVENUE



LEGEND:

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- PARTIAL DEPTH ASPHALT REMOVAL (ROAD REMOVAL)
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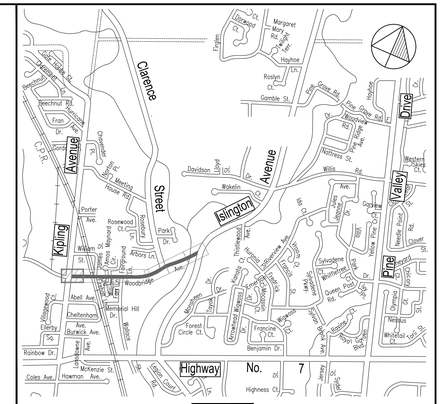

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NO.	DESCRIPTION	BY	DATE
8			
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2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/01/15

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

UNITS = SI

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
REMOVALS

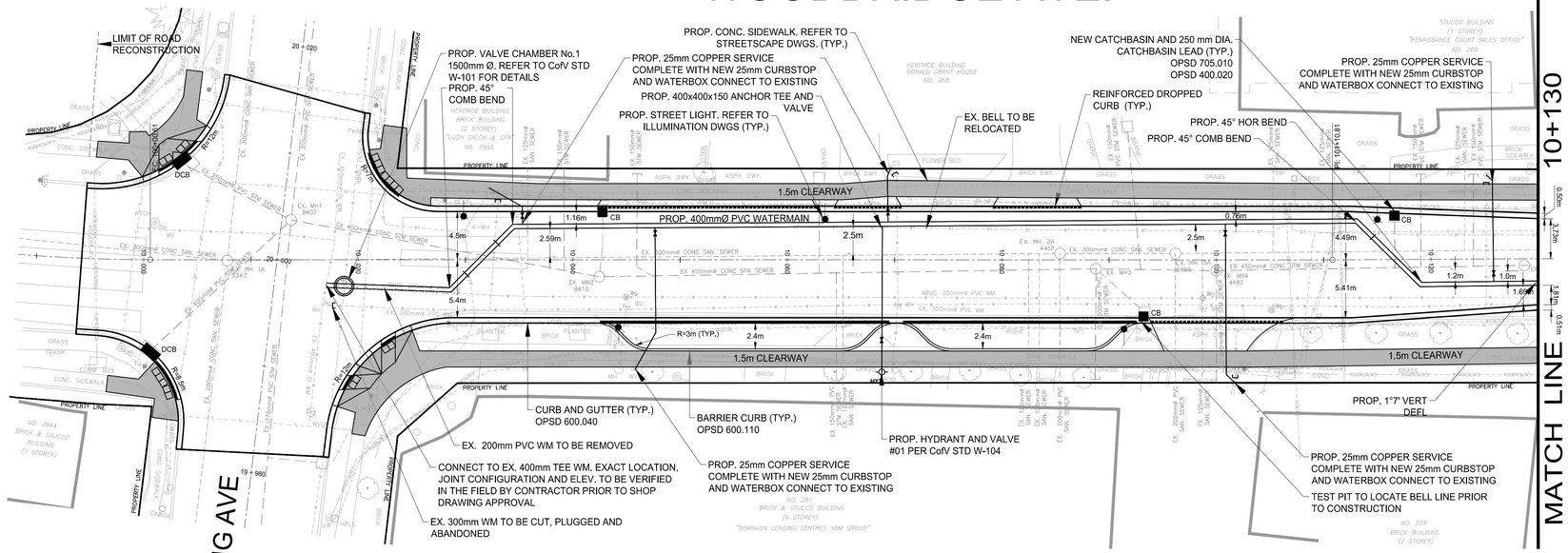
VAUGHAN
Infrastructure Delivery

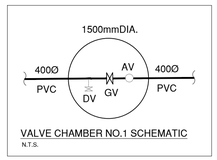
DESIGNED& DRAWN BY:MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. REM4

Printed: Jul. 30, 2021

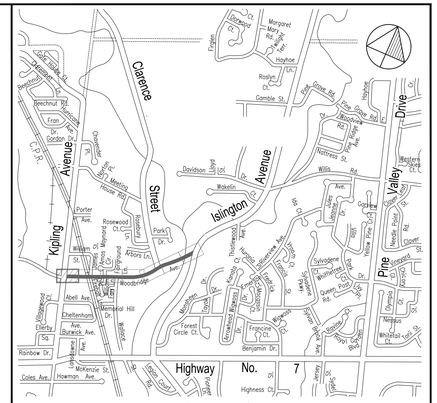
Acad File: \\Connect.ibigroup.com\VA10\124879_Woodbridge_Ave\12_Production\12.03_Design\04_Civil\Sheets\124879_REM.dwg Layout: RM 4

WOODBRIDGE AVE.





VALVE CHAMBER NO.1 SCHEMATIC
N.T.S.



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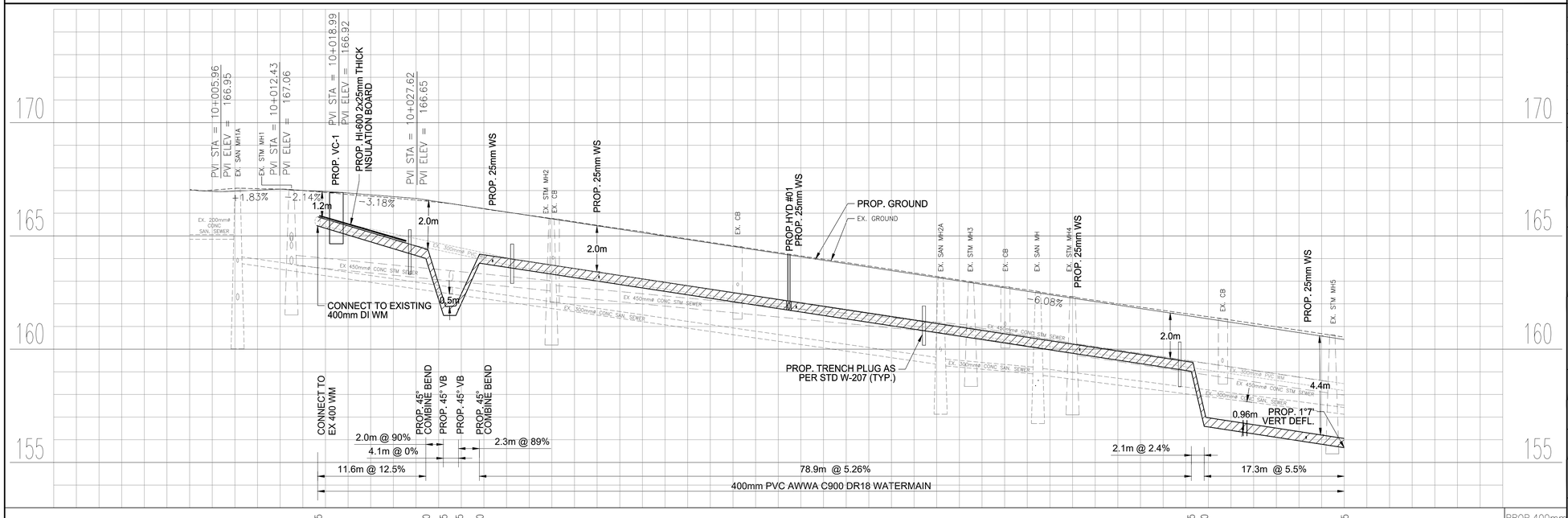
BENCH MARK:
MONUMENT IS LOCATED.....

ELEVATION:



PROP.400mm WATERMAIN INV. ELEV.	165.45	164.00 161.75 161.75 163.80	159.65 156.60 155.65
SANITARY SEWER	W.164.85 N.162.16 S.163.82 E.163.80	77.76–300ø CONC @ 5.8% W.159.31 E.159.28	10.76–300ø CONC @ 3.6% W.158.89 E.158.87
PROP. GRADE	167.03	166.86 166.67 166.44 166.19 165.90 165.59 165.29 164.98 164.68 164.38 164.07 163.77 163.46 163.16	162.86 162.55 162.25 161.94 161.64 161.34 161.03 160.73 160.42
C/L CHAINAGE	10+010	10+020 10+030 10+040 10+050 10+060 10+070 10+080	10+090 10+100 10+110 10+120 10+130

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
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2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/02/05

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

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8133 Warden Avenue, Unit 300
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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

LOTITLE-ACAD

HORIZONTAL: 0 5 10 25m
VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
PROPOSED WATERMAIN & SANITARY SEWER REPLACEMENT & ROAD REHABILITATION STA 10+010 TO STA 10+130

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: 1:250 VERTICAL: 1:100	PROJ. No. 18-07RW	DWG. No. PP1

Printed: Jul. 30, 2021

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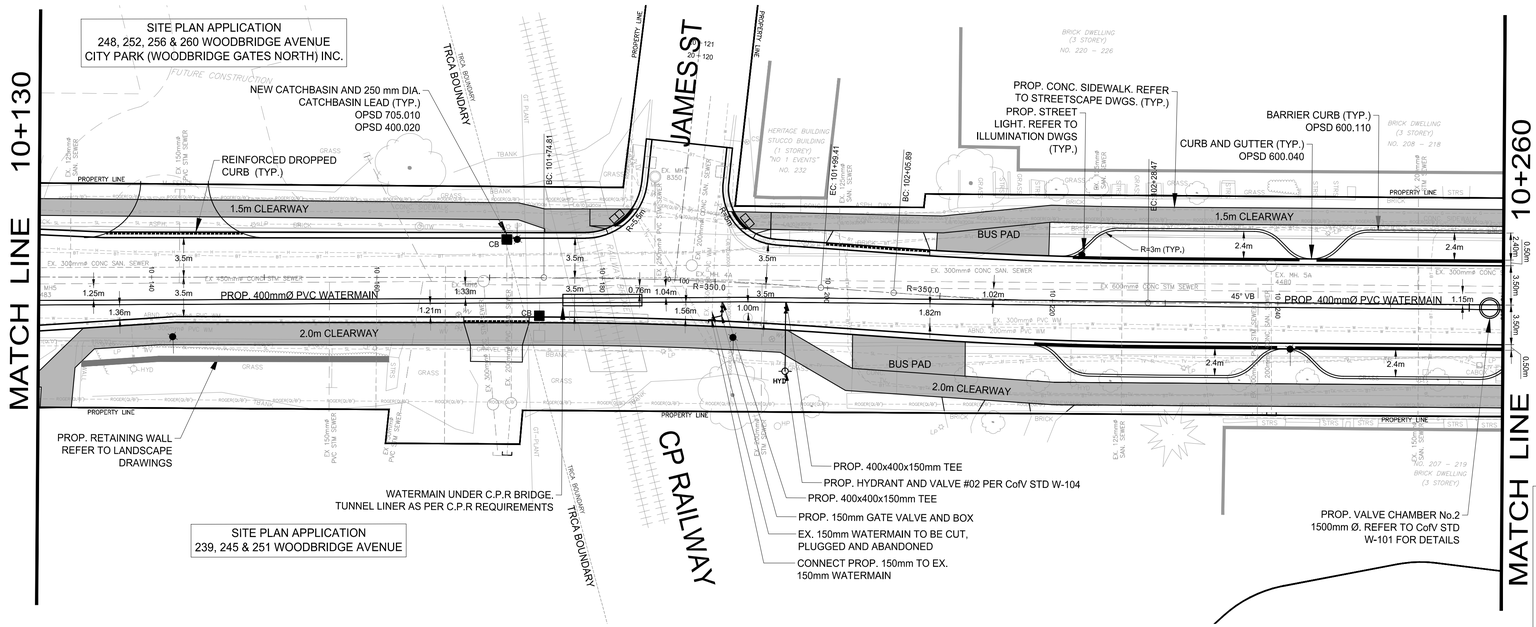
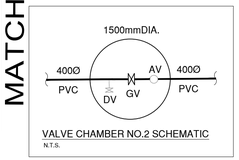
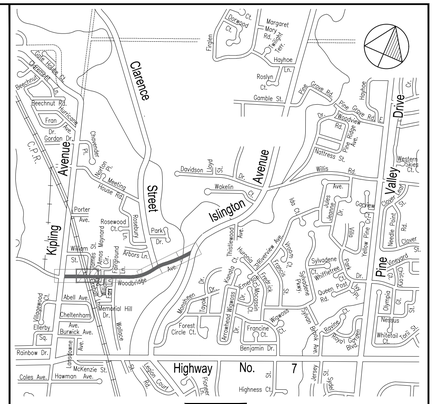
WOODBRIDGE AVENUE





VALVE CHAMBER NO.2 SCHEMATIC
N.T.S.



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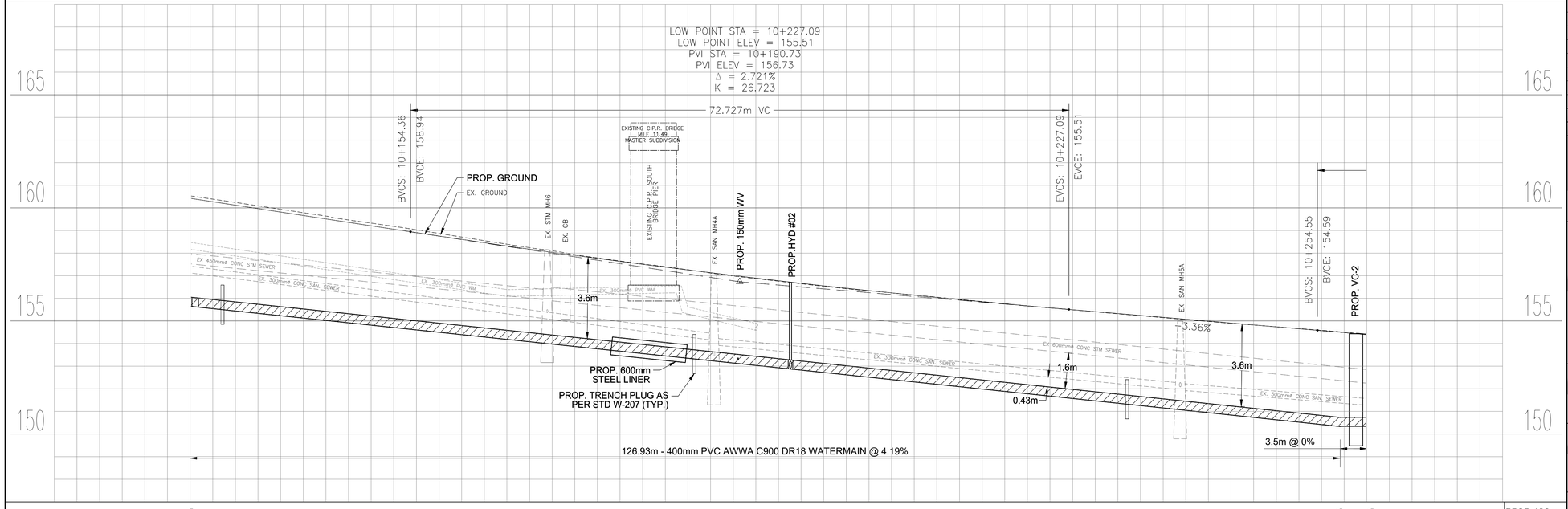
ELEVATION:



PROP.400mm WATERMAIN INV. ELEV.	155.65		150.33 150.33
SANITARY SEWER	91.87–300ø CONC @ 5.2%	W.154.14 N.153.44 E.153.94	51.46–300ø CONC @ 3.9% W.151.96 S.152.08 E.151.94	37.04–300ø CONC @ 3.2%
PROP. GRADE	160.42 160.12 159.81 159.51 159.21 158.90 158.60 158.32 158.04 157.77 157.51 157.25		157.01 156.78 156.56 156.34 156.14 155.94 155.76 155.58 155.41 155.24 155.07	154.91 154.74 154.57 154.39
C/L CHAINAGE	10+130 10+140 10+150 10+160 10+170 10+180		10+190 10+200 10+210 10+220 10+230 10+240	10+250 10+260

NO.	DESCRIPTION	BY	DATE
8			
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2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/02/05

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DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

USE THIS SCALE FOR PLOTTING

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE

PROPOSED WATERMAIN & SANITARY SEWER REPLACEMENT & ROAD REHABILITATION STA 10+130 TO STA 10+260

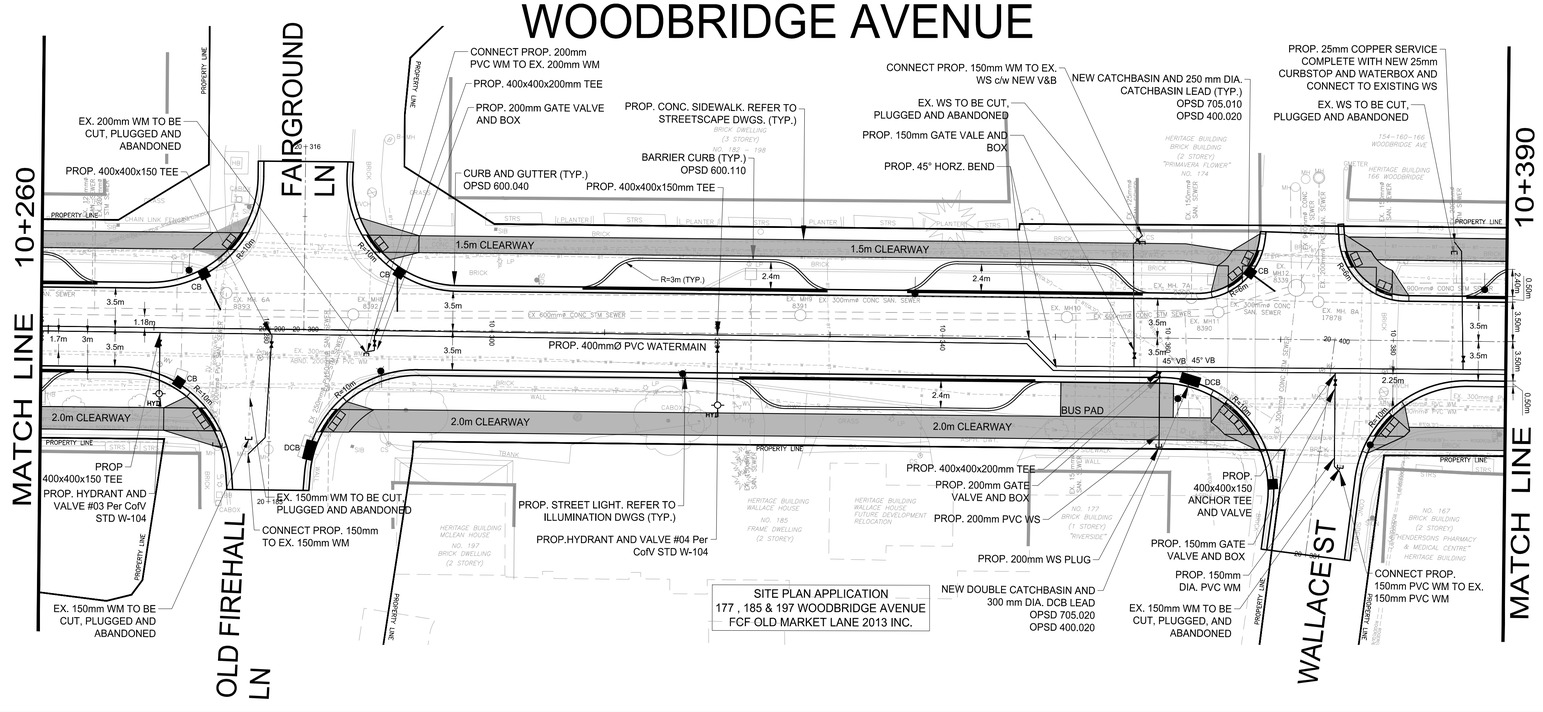
VAUGHAN
Infrastructure Delivery

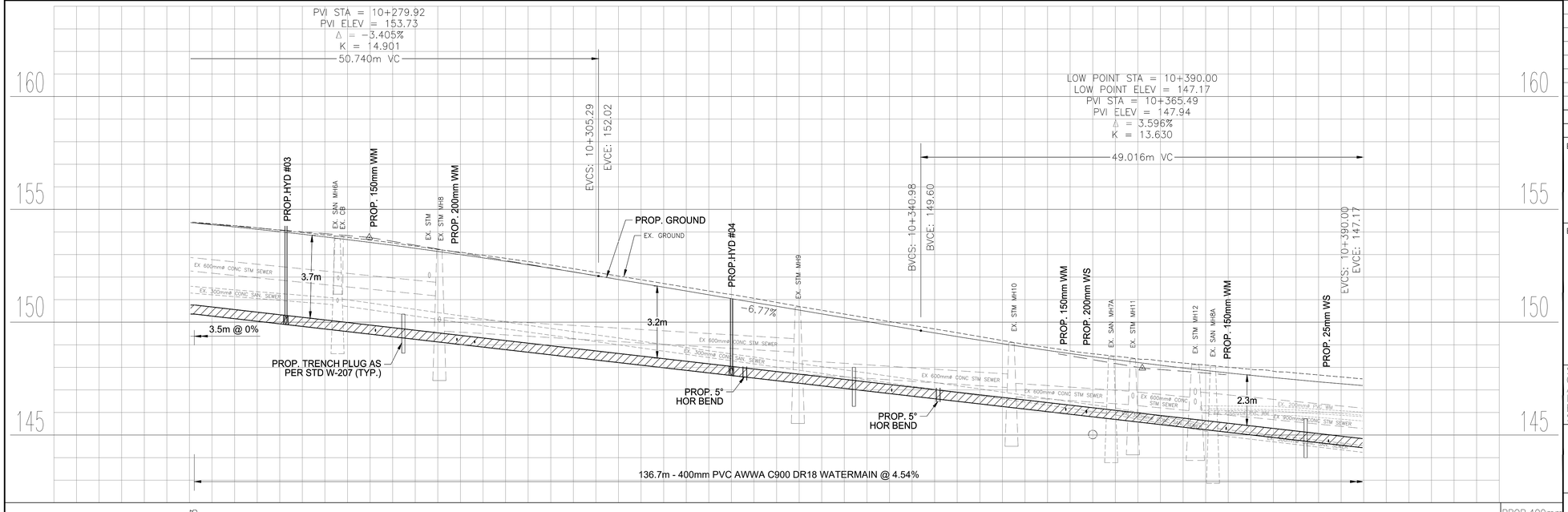
DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: 1:250 VERTICAL: 1:100	PROJ. No. 18-07RW	DWG. No. PP2

Printed: Jul. 30, 2021

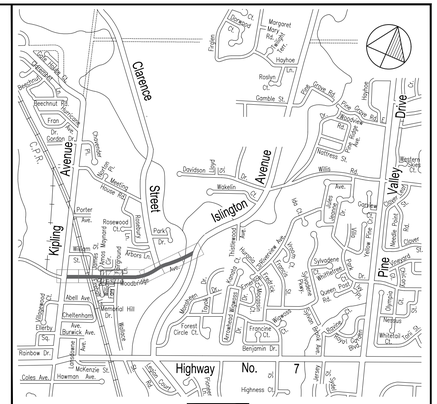
Acad File: \\vmeast.ibigroup.com\VUV\126679_Woodbridge_Ave\Y3_Production\Y3.03_Design\04_Civil\Sheets\126679_PP1 - Woodbridge.dwg Layout: P&P 2

WOODBRIDGE AVENUE





PROP.400mm WATERMAIN INV. ELEV.	150.33		
SANITARY SEWER	37.04–300ø CONC @ 3.2% W:150.74 S:150.85 E:150.73	85.78–300ø CONC @ 5.6% W:145.90 E:145.90	11.30–300ø CONC @ 7.2% W:145.09 N:145.00 E:144.99
PROP. GRADE	154.39 154.20 153.99 153.76 153.51 153.25 152.97 152.68 152.37 152.04 151.70 151.36 151.02 150.68 150.35 150.01 149.67 149.34 149.03 148.73 148.46 148.21 147.98 147.77 147.58 147.41 147.26		
C/L CHAINAGE	10+260 10+270 10+280 10+290 10+300 10+310 10+320 10+330 10+340 10+350 10+360 10+370 10+380 10+390		



CONTRACTOR'S NOTES:

1. ALL DIMENSIONS ARE IN METRES AND / OR MILLIMETRES UNLESS OTHERWISE INDICATED.
2. DRAWINGS ARE NOT TO BE SCALED.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY UPON FINDING.
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5. BENCHMARKS FOR LAYOUT ARE TO BE OBTAINED FROM THE CITY OF VAUGHAN ENGINEERING DEPARTMENT.

NOTE:

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BENCH MARK:
MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/02/05

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

PLOTTED AT 50%

HORIZONTAL: 0 5 10 25m
VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE

PROPOSED WATERMAIN & SANITARY SEWER
REPLACEMENT & ROAD REHABILITATION
STA 10+260 TO STA 10+390

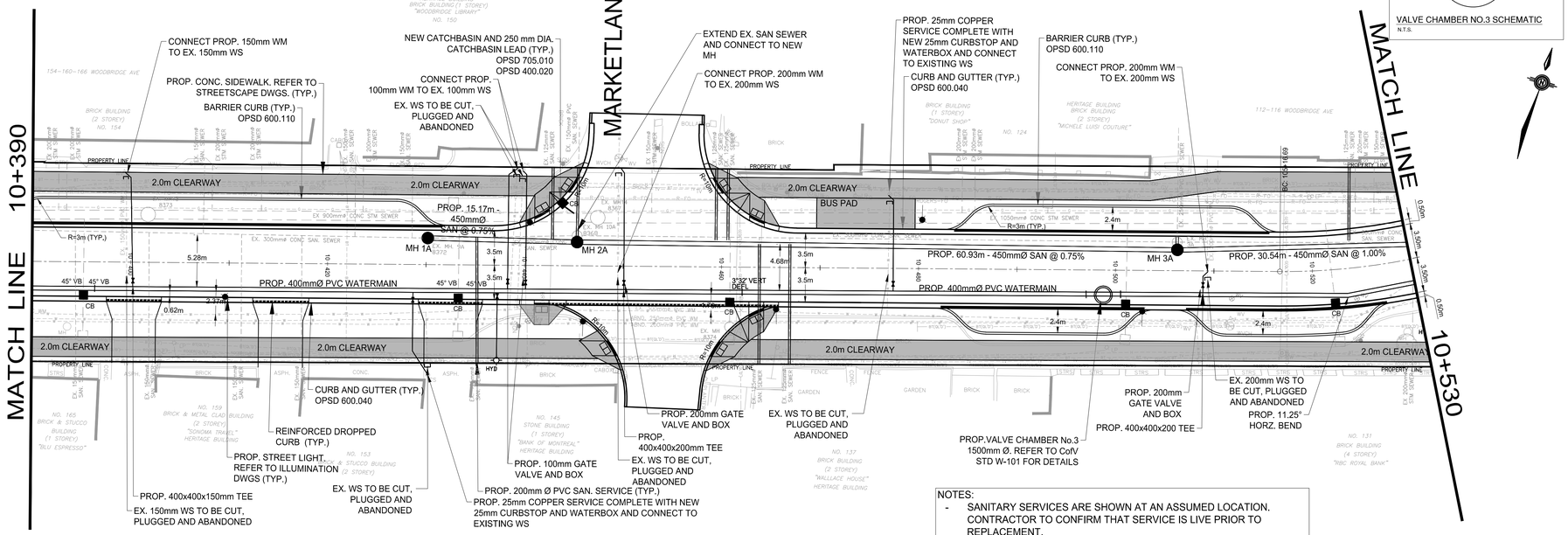
VAUGHAN
Infrastructure Delivery

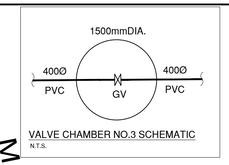
DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No.	
SURVEYED BY: JK	APPROVED BY: SY	T18-___	
SCALE: HORIZONTAL: 1:250 VERTICAL: 1:100	PROJ. No. 18-07RW	DWG. No. PP3	

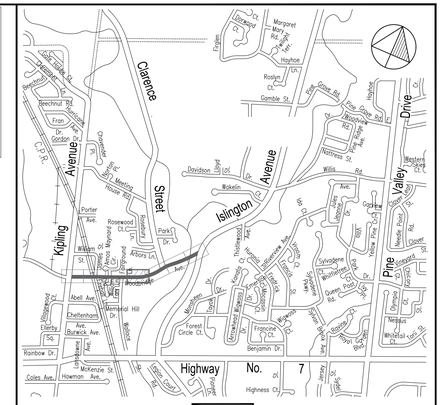
Printed: Jul. 30, 2021

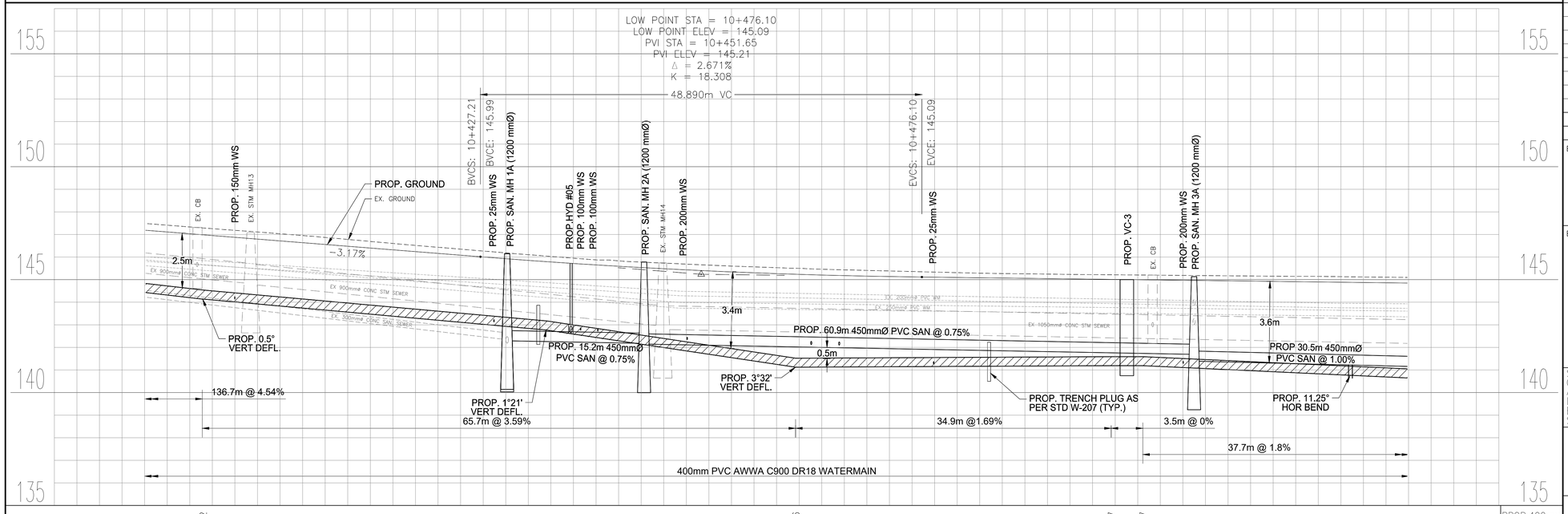
Acad File: \\vcnetaad.ibigroup.com\VOL1\16979_Woodbridge_Ave\7.0_Production\7.03_Design\7.04_Civil\Sheets\126679_PP_PP3 — Woodbridge Ave Layout: PAGE 3

WOODBRIDGE AVENUE









PROP.400mm WATERMAIN INV. ELEV.	144.12	141.76	141.17 141.17
SANITARY SEWER	56.92-300ø CONC @ 4.7%	W:142.32 E:142.27 PROP. 15.17m - 450mmØ CONC @ 0.75% W:142.16 E:142.13	PROP. 60.93m - 450mmØ PVC @ 0.75% W:141.67 E:141.37 PROP. 30.54m - 450mmØ PVC @ 1.00%
PROP. GRADE	147.26 147.12 146.98 146.84 146.69 146.55 146.41 146.27 146.13 145.99 145.85 145.72 145.59 145.48 145.38 145.29 145.21 145.15 145.09 145.05 145.02 145.00 144.97 144.95 144.92 144.90 144.87 144.85 144.82		
C/L CHAINAGE	10+390 10+400 10+410 10+420 10+430 10+440 10+450 10+460 10+470 10+480 10+490 10+500 10+510 10+520 10+530		

NOTES:
- SANITARY SERVICES ARE SHOWN AT AN ASSUMED LOCATION. CONTRACTOR TO CONFIRM THAT SERVICE IS LIVE PRIOR TO REPLACEMENT.
- PROPOSED SANITARY SERVICES SHALL BE 200mmØ PVC DR 28 AND CONNECTION TO EXISTING WILL BE AT THE PROPERTY LINE, UNLESS OTHERWISE DIRECTED.

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BENCH MARK:
MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/02/05

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

LOFTEN SCALES
HORIZONTAL: 0 5 10 25m
VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
PROPOSED WATERMAIN & SANITARY SEWER REPLACEMENT & ROAD REHABILITATION
STA 10+390 TO STA 10+530

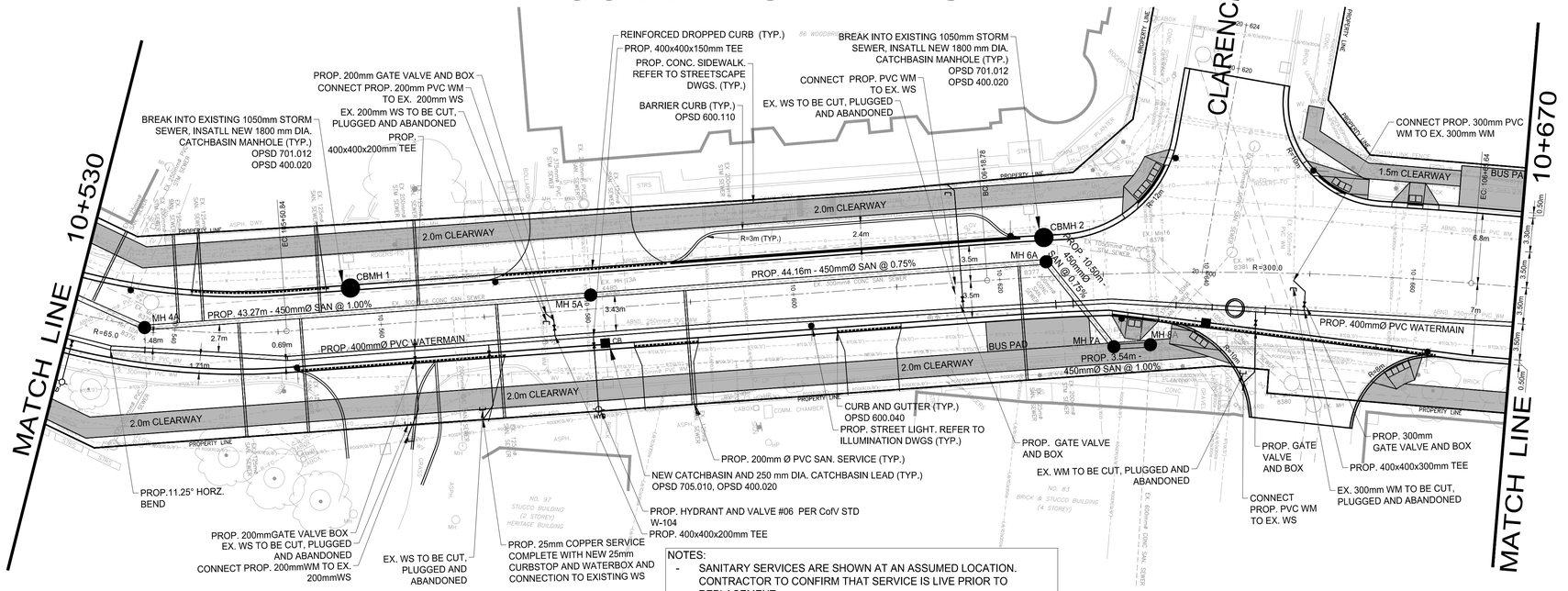
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No.	
SURVEYED BY: JK	APPROVED BY: SY	T18-___	
SCALE: HORIZONTAL: 1:250 VERTICAL: 1:100	PROJ. No. 18-07RW	DWG. No. PP4	

Printed: Jul. 30, 2021

Acad File: \\Vcanada.ibigroup.com\VDI\124978_Woodbridge_Ave\7.0_Production\7.03_Design\04_Civil\Sheets\124978_PP_PP1 - Woodbridge.dwg Layout: P&P 4

WOODBRIDGE AVENUE



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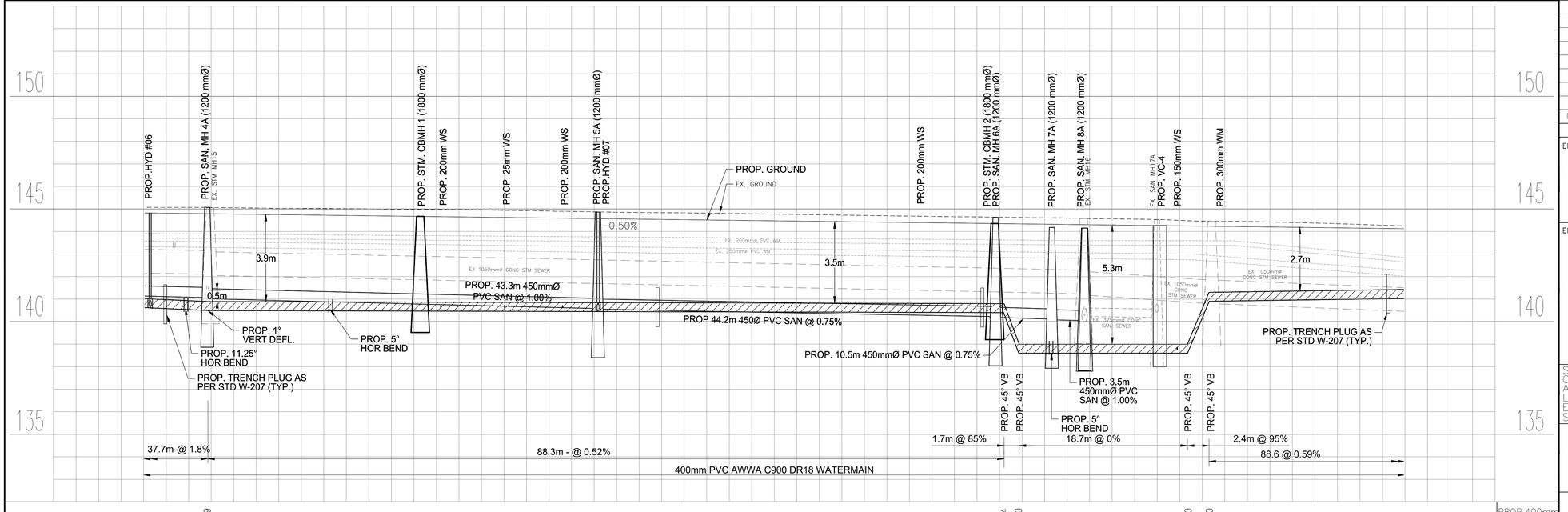
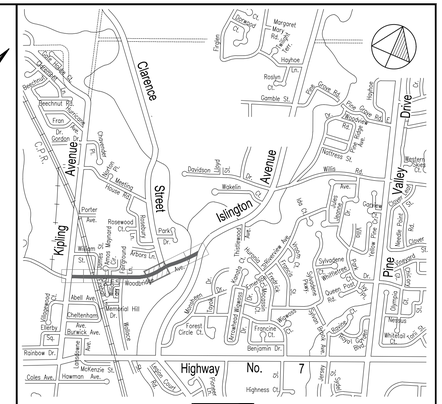


PROP.400mm WATERMAIN INV. ELEV.	140.49 · W:141.06 NE:141.01 · SW:140.58 NE:140.55 · 140.04 · 138.60 · SW:140.22 140.19 · W:140.11 NE:140.08 · SW:140.05 · 138.60 · 140.90
SANITARY SEWER	PROP. 43.27m - 450mmØ PVC @ 1.00% · PROP. 44.16m - 450mmØ PVC @ 0.75% · PROP. 3.54m - 450mmØ PVC @ 1.00% · PROP. 10.50m - 450mmØ PVC @ 0.75% · SE:139.98 N:140.23 11.93–375Ø CONC@0.4% S:140.18 NW:140.41
PROP. GRADE	144.82 144.80 144.77 144.75 144.72 144.70 144.67 144.65 144.62 144.60 144.57 144.55 144.52 144.50 144.47 144.45 144.42 144.40 144.37 144.35 144.33 144.30 144.28 144.25 144.23 144.20 144.18 144.15 144.13
C/L CHAINAGE	10+530 10+540 10+550 10+560 10+570 10+580 10+590 10+600 10+610 10+620 10+630 10+640 10+650 10+660 10+670



KEY PLAN

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BENCH MARK:
MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/02/05

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

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8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

(IF THIS PLOT IS NOT A CM, HORIZONTAL: 0 5 10 25m; VERTICAL: 0 1 5 10m)

WOODBRIDGE AVENUE
PROPOSED WATERMAIN & SANITARY SEWER REPLACEMENT & ROAD REHABILITATION STA 10+530 TO STA 10+670

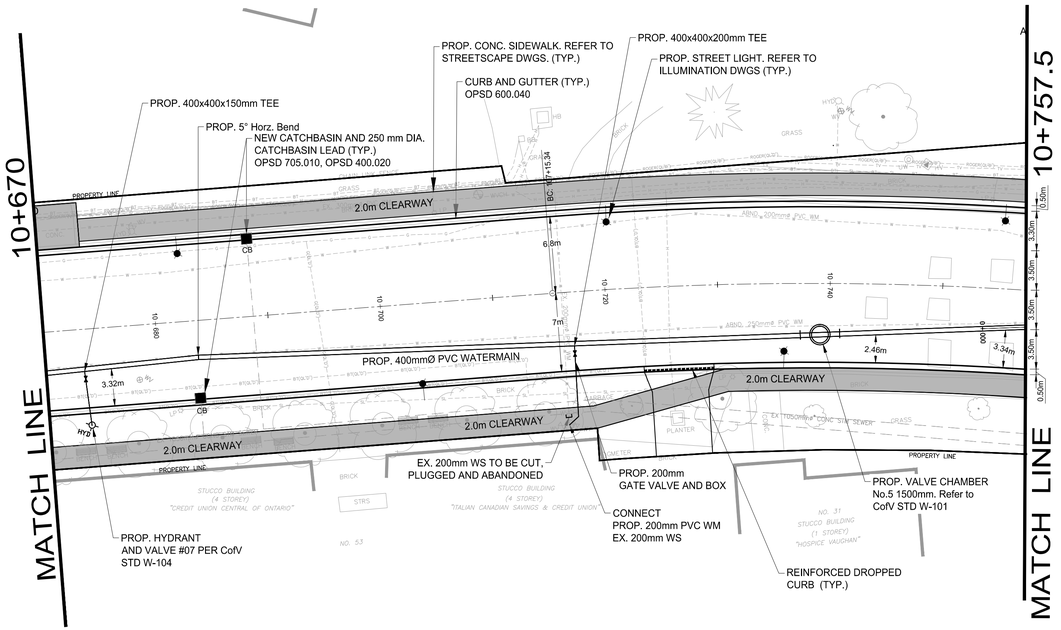
VAUGHAN
Infrastructure Delivery

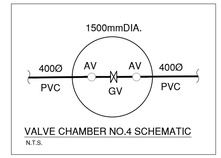
DESIGNED& DRAWN BY:MK/TL	CHECKED BY: KC	TENDER No.	
SURVEYED BY: JK	APPROVED BY: SY	T18-___	
SCALE: HORIZONTAL: 1:250 VERTICAL: 1:100	PROJ. No. 18-07RW	DWG. No. PP5	

Printed: Jul. 30, 2021

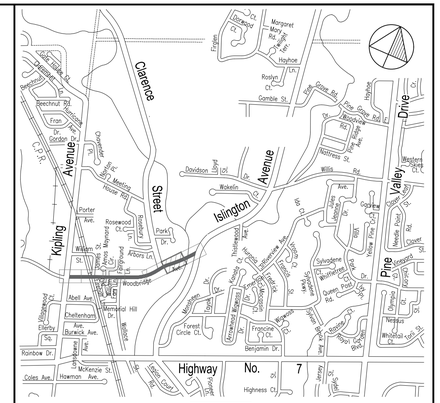
Xref File: \\vcenter2.bigmacdonnell.ca\VOL1\18979_Woodbridge_Ave\1.0_Production\1.00_Design\06_Civil\Sheets\126679_PP_PP1 — Woodbridge.dwg Layout: P&P 5

WOODBRIDGE AVENUE





VALVE CHAMBER NO.4 SCHEMATIC
N.T.S.



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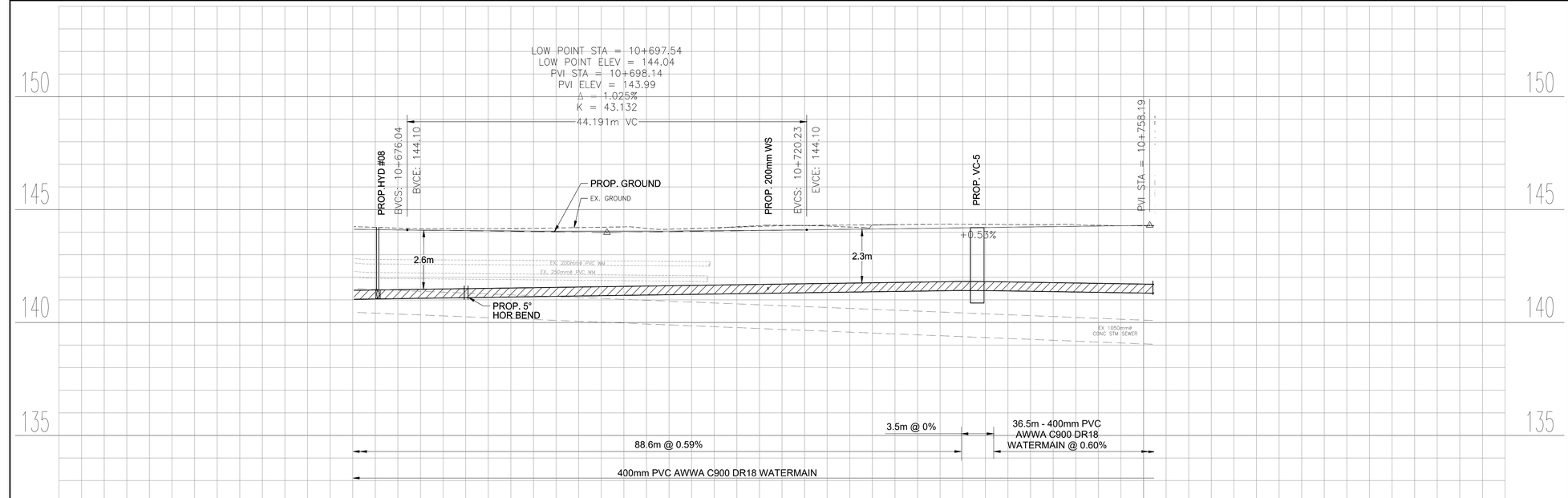
BENCH MARK:
MONUMENT IS LOCATED.....

ELEVATION:



8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/02/05
NO.	DESCRIPTION	BY	DATE

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

DATUM — NAD83 (CSRS) (2010.0)
HORIZONTAL: 0 5 10 25m
VERTICAL: 0 1 5 10m

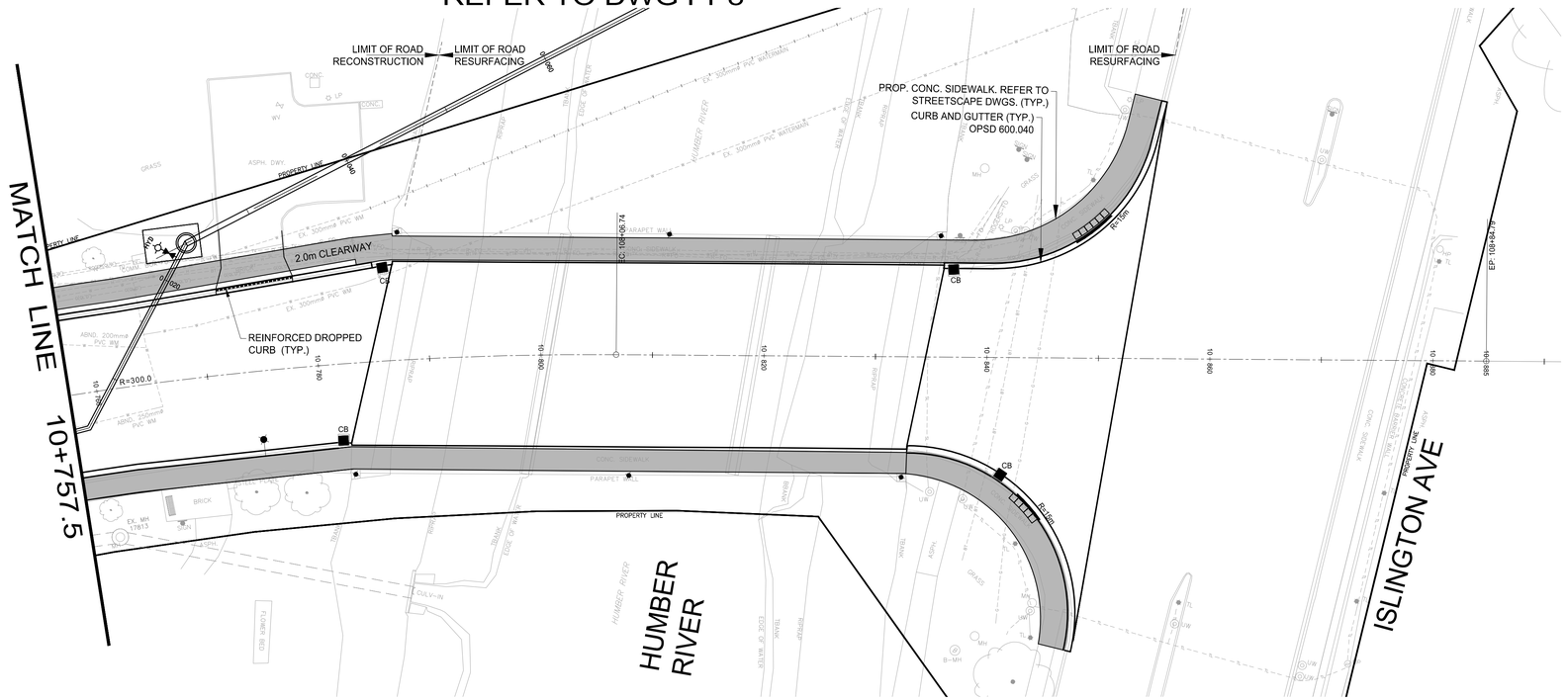
WOODBRIDGE AVENUE
PROPOSED WATERMAIN & SANITARY SEWER REPLACEMENT & ROAD REHABILITATION STA 10+670 TO STA 10+770

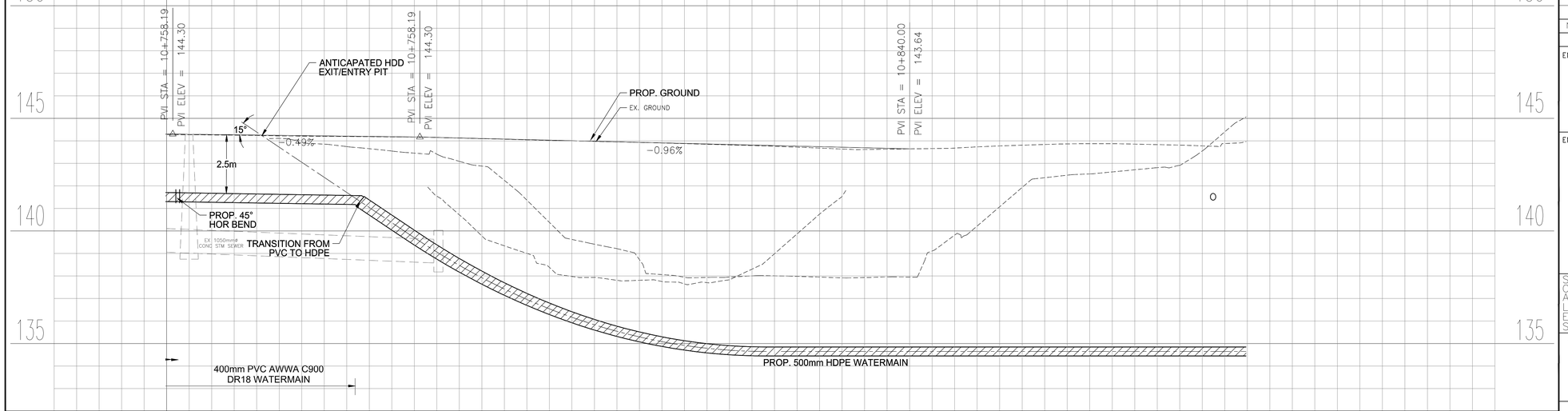
VAUGHAN
Infrastructure Delivery

| | | |

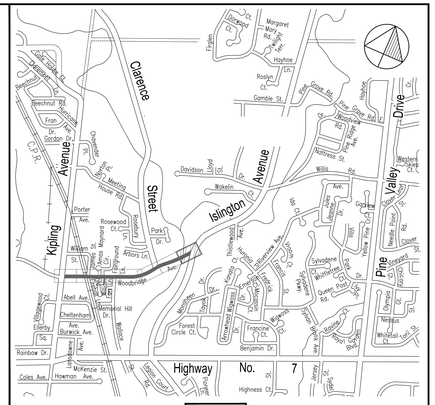
WOODBRIDGE AVENUE

REFER TO DWG PP8





PROP.400mm WATERMAIN INV. ELEV.	141.95 141.10
SANITARY SEWER	
PROP. GRADE	144.29 144.26 144.24 144.21 144.18 144.15 144.12 144.10 144.07 144.04 144.01 143.98 143.96 143.93 143.90 143.87 143.84 143.82 143.79 143.76 143.73 143.70 143.68
C/L CHAINAGE	10+760 10+770 10+780 10+790 10+800 10+810 10+820 10+830 10+840 10+850 10+860 10+870



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MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/02/05

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

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Markham ON L6G 1B3 Canada
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ibigroup.com

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

USE FOR LAYOUT ONLY

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE

PROPOSED WATERMAIN & SANITARY SEWER REPLACEMENT & ROAD REHABILITATION

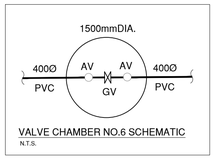
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No.	
SURVEYED BY: JK	APPROVED BY: SY	T18-___	
SCALE: HORIZONTAL: 1:250 VERTICAL: 1:100	PROJ. No. 18-07RW	DWG. No. PP7	

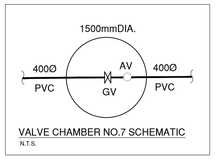
Printed: Jul. 30, 2021

Acad File: \\vonnasi.bcmaas.com\VOL1\26679_Woodbridge_Ave\1.0_Production\1.03_Design\04_Civil\Sheets\126679_R9_PP1 - Woodbridge.dwg Layout: P&P 7

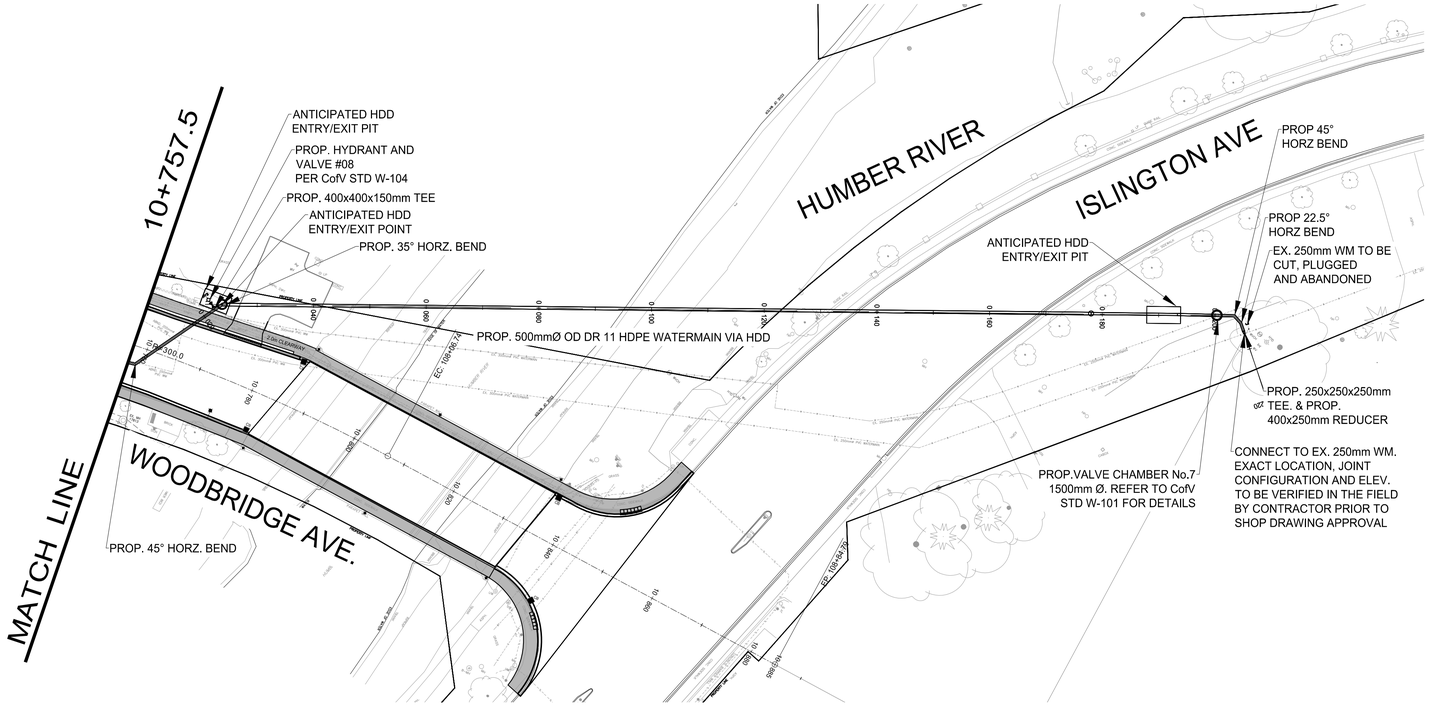
HUMBER RIVER WATERMAIN CROSSING

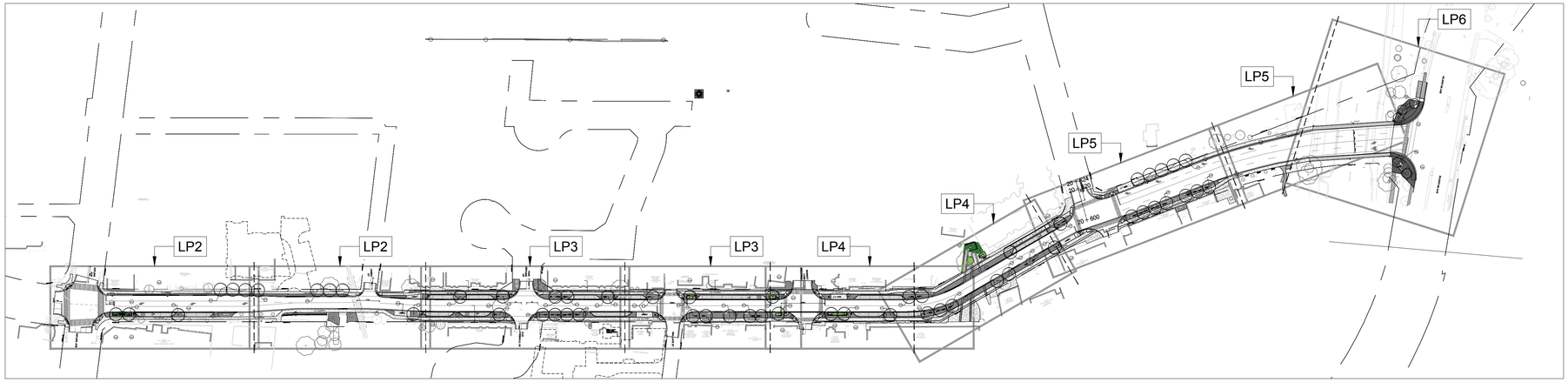


VALVE CHAMBER NO.6 SCHEMATIC
N.T.S.

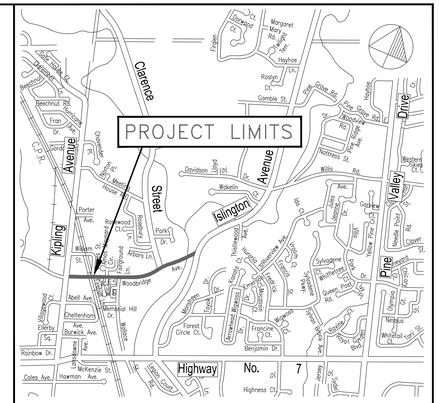


VALVE CHAMBER NO.7 SCHEMATIC
N.T.S.


MATCH LINE
10+757.5
WOODBRIDGE AVE.
HUMBER RIVER
ISLINGTON AVE
ANTICIPATED HDD ENTRY/EXIT PIT
PROP. HYDRANT AND VALVE #08 PER CofV STD W-104
PROP. 400x400x150mm TEE
ANTICIPATED HDD ENTRY/EXIT POINT
PROP. 35° HORZ. BEND
PROP. 500mmØ OD DR 11 HDPE WATERMAIN VIA HDD
PROP. 45° HORZ. BEND
ANTICIPATED HDD ENTRY/EXIT PIT
PROP 45° HORZ BEND
PROP 22.5° HORZ BEND
EX. 250mm WM TO BE CUT, PLUGGED AND ABANDONED
PROP. 250x250x250mm TEE. & PROP. 400x250mm REDUCER
CONNECT TO EX. 250mm WM. EXACT LOCATION, JOINT CONFIGURATION AND ELEV. TO BE VERIFIED IN THE FIELD BY CONTRACTOR PRIOR TO SHOP DRAWING APPROVAL
PROP.VALVE CHAMBER No.7 1500mm Ø. REFER TO CofV STD W-101 FOR DETAILS
EX. 1067mmØ CSP
EX. 1067mmØ CSP
EX. 1067mmØ CSP



OVERVIEW PLAN



NOTES:

GENERAL NOTES

1. Any ambiguity in the drawings, specifications or details are to be reported to the Landscape Architect for direction. These drawings shall not be used for construction unless stamped and signed by the Landscape Architect. The Contractor is not to proceed in uncertainty. The limits of work are to be clearly understood by the Contractor prior to any work taking place on the site.
2. All dimensions are in meters unless otherwise noted. The drawings may be scaled for approximate layout. The Contractor is to verify all dimensions on the drawing(s) and report any discrepancies to the Landscape Architect.
3. The Contractor is to locate and mark all infrastructure and utilities prior to any excavation work or planting on the site. Do not plant directly above underground utilities or infrastructure unless approved by the Landscape Architect. Dig all holes by hand when closer than 1.0m to any underground power, telephone or gas utility. The Contractor is responsible for the coordination and maintenance of all utility/infrastructure locates for the duration of the Contract.
4. The Contractor shall supply all materials in quantities sufficient to complete work shown on these drawings. The Contractor is not to substitute materials, products or quantities without prior written consent of the Landscape Architect.
5. The Contractor is to take all necessary precautions to protect all existing site features unless specified for removal/demolition. This includes all survey bars, stakes, monuments and sediment barriers. The Contractor is responsible for any damages incurred during construction and must make all necessary restorations and repairs to original or better condition.
6. All existing trees, shrubs, and herbaceous plants beyond the limit of work are to be protected from construction damage. This includes but is not limited to: not storing construction materials or fuel within the dripline of an existing tree, not altering existing grades or compacting soil around protected vegetation and taking care not to disturb or expose the roots of any existing trees. The Contractor is responsible for all protection or hoarding measures of all existing trees and vegetation to be preserved within or adjacent to construction work limits.
7. Contractor is responsible for the removal of all debris, garbage and surplus materials on site related to their contract or work and must keep the site in a clean, safe, useable condition at all times or as directed by the Contract Administrator.

PLANTING NOTES

1. The Contractor must notify the Landscape Architect prior to the commencement of any planting. The Contractor shall supply all plants and materials in quantities sufficient to complete the work shown on this drawing. Any discrepancies between quantities shall be reported to the Landscape Architect.
2. All landscape works will be warrantied for a period of two years following inspection and written notice of start of warranty period as determined and provided by the Landscape Architect. Plant material, which is not in a healthy, vigorous growing condition at the end of the warranty period, shall be replaced to the satisfaction of the Landscape Architect / Owner.
3. The Landscape Architect reserves the right to extend Contractor's warranty responsibilities for an additional year if, at the end of initial warranty period, leaf development and growth is not sufficient to ensure future survival as determined by the Landscape Architect.
4. The Contractor is to identify with Landscape Architect/Owner any maintenance requirements necessary for warranty purposes.
5. Plant materials specified for this project will conform to the Canadian Nursery Landscape Association (C.N.L.A.) for size, variety and condition as indicated on the plant schedule shown on these drawings. Any plant materials which do not conform will be promptly removed from the site and replaced by the Contractor at no additional cost to the project.
6. The Landscape Architect is to be contacted for inspection and written approval prior to plant material arriving on site. The Landscape Architect reserved the right to reject any plant materials that have not been inspected and approved.
7. The Landscape Architect reserves the right to refuse acceptance of any plant displaying poor growth habits, injury or disease. Any plant material that is rejected by the Landscape Architect will be promptly removed from the site and replaced with material of acceptable quality at no additional charge to the project.
8. Plant materials collected from wild sources will not be accepted without written approval of the Landscape Architect. The Landscape Architect reserves the right to require that supplier invoices be submitted for inspection and approval prior to acceptance.
9. On-site layout of the plant materials to be approved by the Landscape Architect prior to installation. Minor field adjustments to plant material locations may be necessary to respond to the locations of existing plants and site conditions. The Contractor to review with Landscape Architect where relocations are necessary. The Contractor must receive approval from Landscape Architect prior to installation.
10. Plants are not to be installed during extreme heat, drought, or other undesirable conditions. Thoroughly water all plants immediately after installation. The Contractor shall regularly monitor site conditions and water as required to ensure healthy growth conditions throughout the duration of the warranty period.
11. Do not plant directly in centerline of drainage swales or depression areas. Where proposed planting locations conflict with constructed swales or low-lying wet areas, contact Landscape Architect for direction.
12. All plants are to be planted in accordance with the planting details shown on this drawing. All plants are to be installed vertical and plumb, regardless of ground slope.
13. Topsoil: Each source of topsoil, imported or native to be approved by Landscape Architect prior to use. Submit topsoil analysis/test results to Landscape Architect prior to order or delivery to site. Testing to be in accordance with Contract specifications. Supply and place topsoil in accordance with OPSS 802 to a minimum depth of 150mm in seed/sod areas, 600mm depth in perennial/ shrub planting beds, and 1000mm depth where trees are supported, unless otherwise specified.
14. Shredded Hardwood Bark Mulch: to be spread uniformly around the base of trees and shrubs to a minimum depth of 100 mm. Do not place mulch in direct contact with trunk or stem(s). Allow a 100 mm mulch free zone at trunk/stems. Shrubs to be in continuously mulched planting beds unless otherwise specified.
15. Supply and place seed in accordance with OPSS 804 unless otherwise specified. All 5:1 or greater slopes to be seeded with tackifier. All slopes greater than 3:1 shall be matted with an erosion control blanket. Supply and place sod in accordance with OPSS 803 unless otherwise specified.
16. The Contractor is to remove dead or damaged branches on trees or shrubs. All pruning shall be performed in accordance with standard horticultural practices and appropriate timing for each species.
17. All stakes and associated ties are to be removed after the first full growing season. Rodent guards are to be removed at the conclusion of the warranty period. Gatorbags are to be removed for winter months.

SOD NOTES

1. Sod all disturbed areas unless otherwise specified on plan. Sod shall be Certified No. 1 grade one Kentucky Blue Grass grown froma minimum mixture of three (3) cultivars.
2. Any lawn areas disturbed by construction shall be re-sodded and repaired to original condition or better.
3. Sod and sodding operations to be in accordance with OPSS 803, except as noted below.
4. Sod to be delivered to project within 24 hours of being harvested and laid within 36 hours thereafter.
5. Rough graded and compacted soil shall be scarified to a minimum depth of 100 mm free of all stones, roots, branches, larger than 25 mm diameter. Topsoil to be spread at a minimum depth of 150 mm compacted to 85% S.P.D.
6. Place sod on prepared topsoil with staggered joints and butt tightly. Irrigate immediately to ensure moisture penetration into the upper 100 mm (4") of soil. Machine roll to ensure contact with topsoil. Repair minor grade deficiencies and irregularities.
7. Water sod immediately after laying to obtain moisture penetration to a minimum of 100 mm depth within topsoil. Maintain sod per OPSS 803. Sod must be cut a minimum of two times for Final Acceptance at the discretion of the Landscape Architect.

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1	30% SUBMISSION	TM/DG	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

ENGINEERING SEAL

WOODBRIDGE AVENUE IMPROVEMENTS

Landscape Overview & Notes Plan

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: DG	CHECKED BY: TM	TENDER No. T21-XX
SURVEYED BY: ___	APPROVED BY: TM	
SCALE: HORIZONTAL: 1:1500 VERTICAL: 1:100	PROJ. No. 21-_____	DWG. No. LP1

Printed: Jul. 29, 2021

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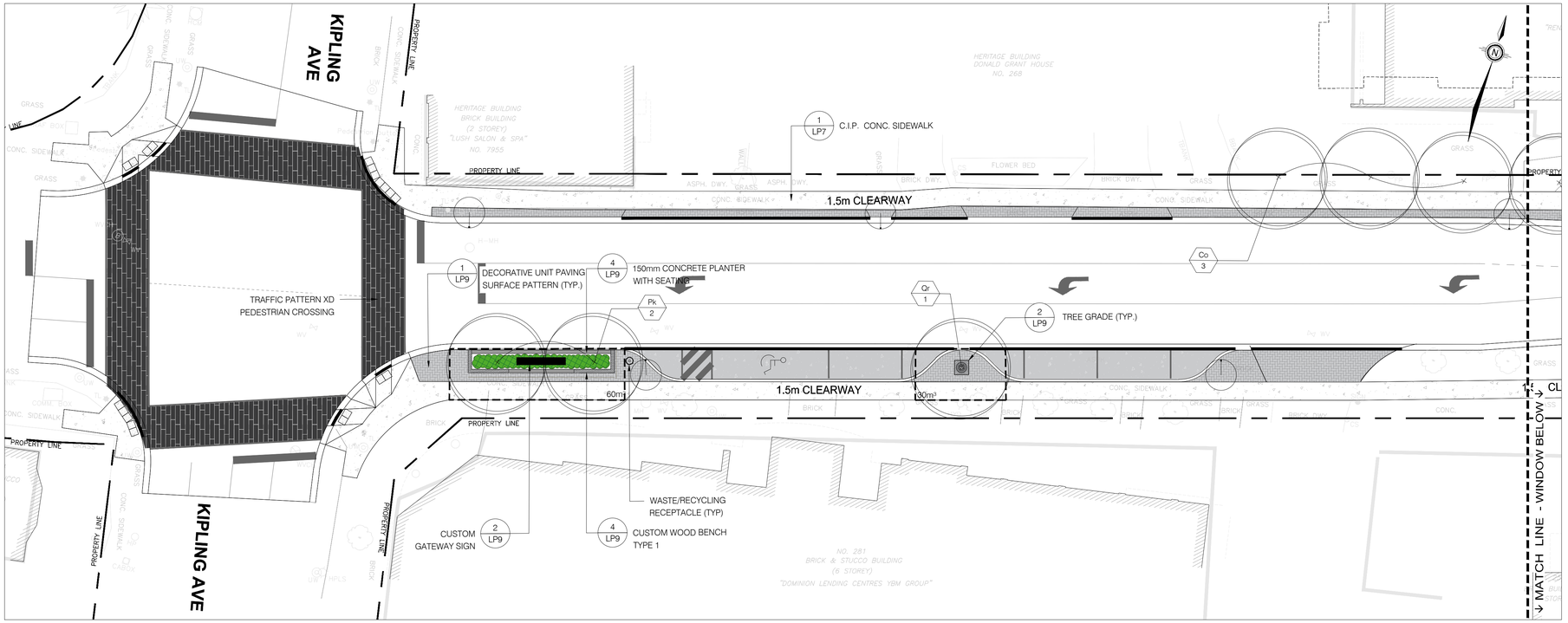

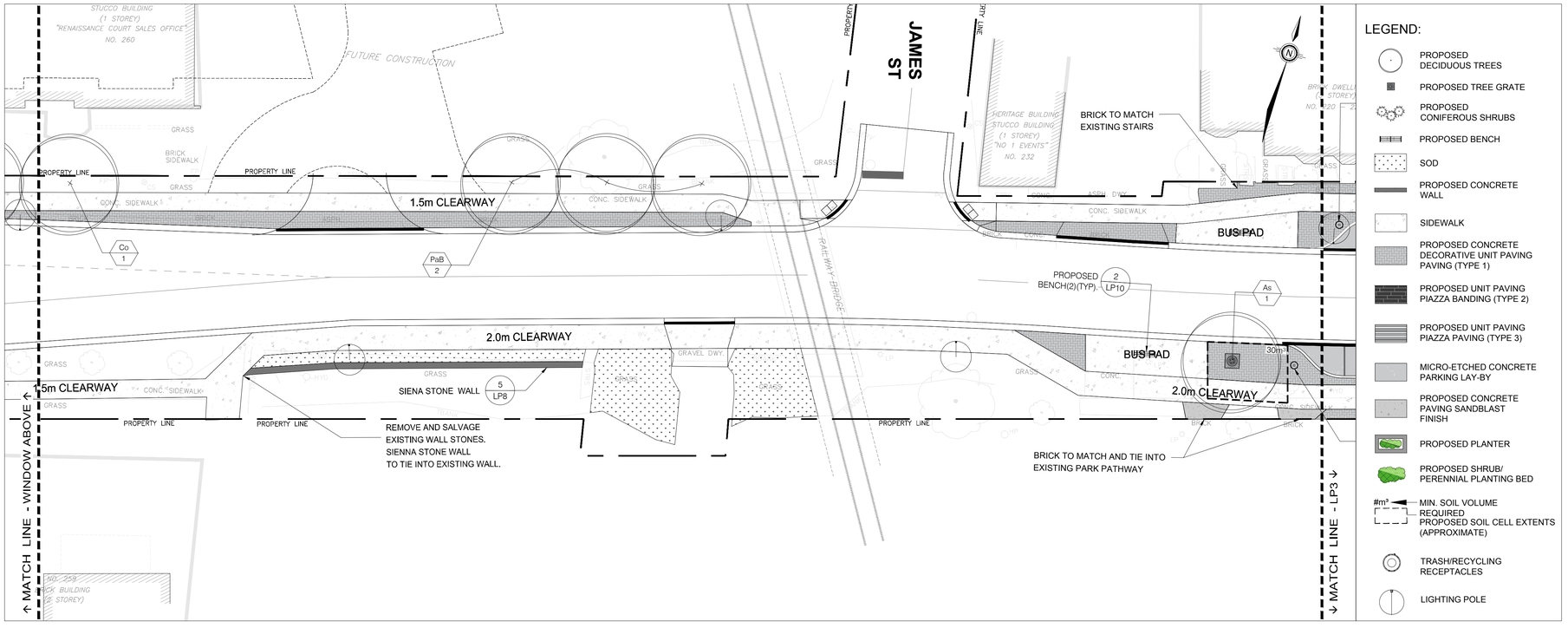

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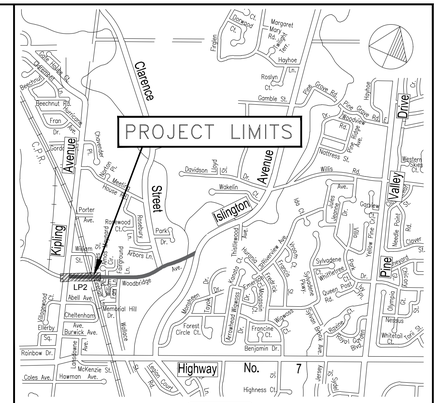

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

FOR APPROVAL

WOODBRIDGE AVENUE IMPROVEMENTS

Landscape Plan

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: DG	CHECKED BY: TM	TENDER No. T21-XX
SURVEYED BY: ___	APPROVED BY: TM	
SCALE: HORIZONTAL: 1:200 VERTICAL: 1:100	PROJ. No. 21-_____	DWG. No. LP2

Printed: Jul. 28, 2021

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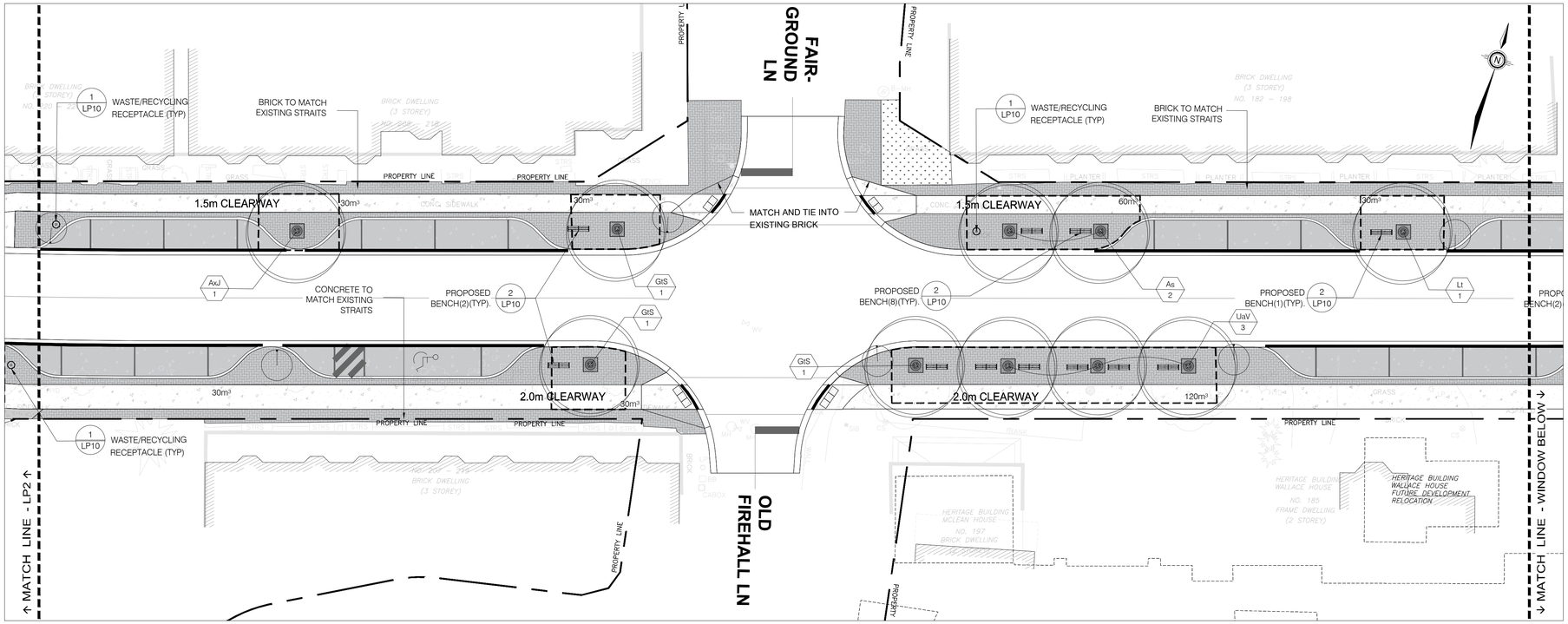

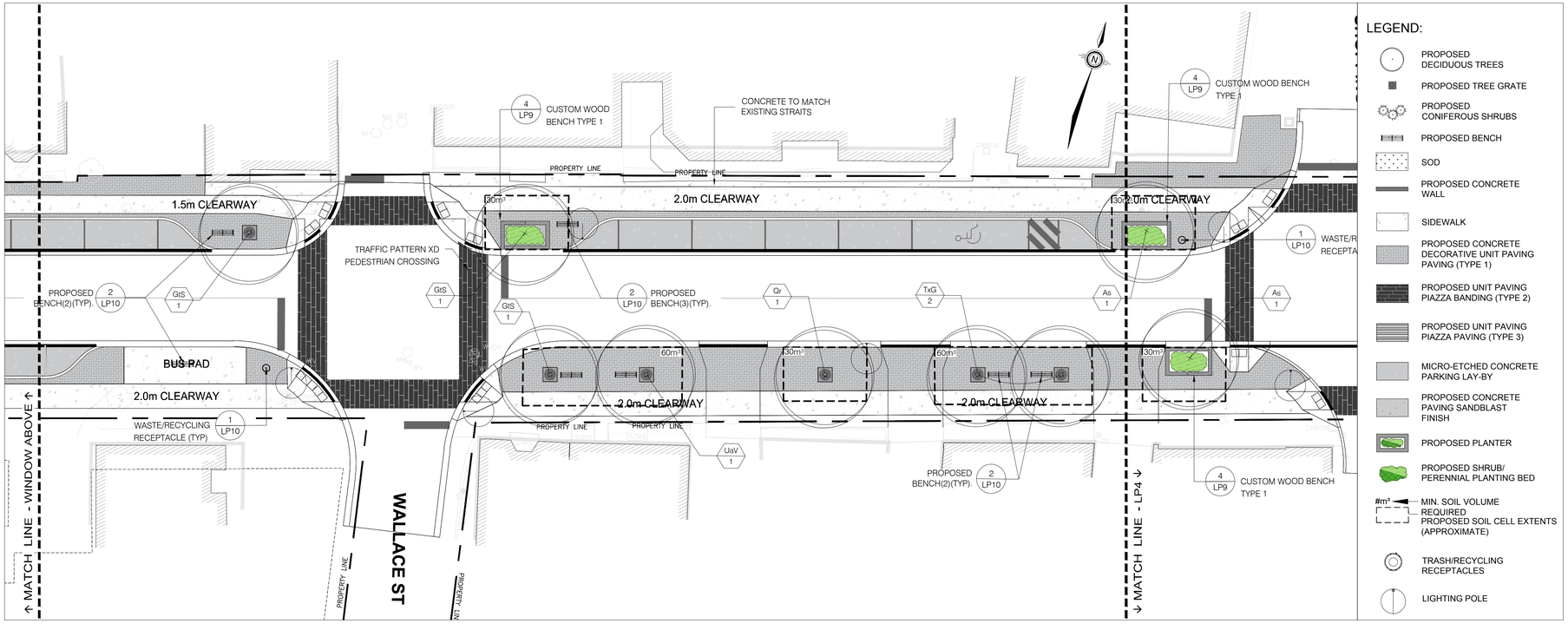

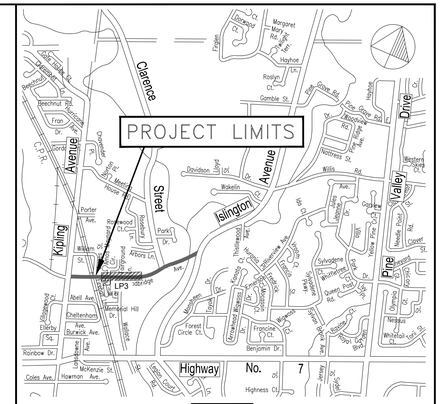

KEY PLAN

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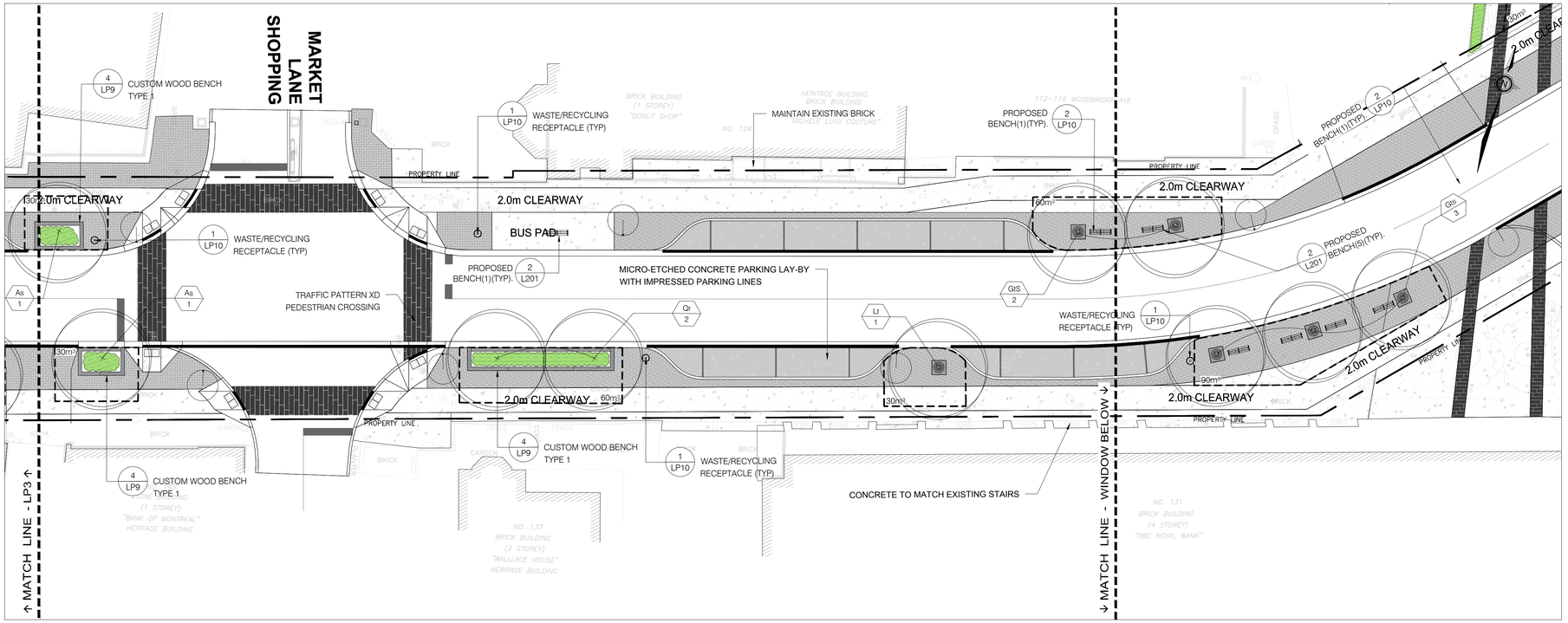

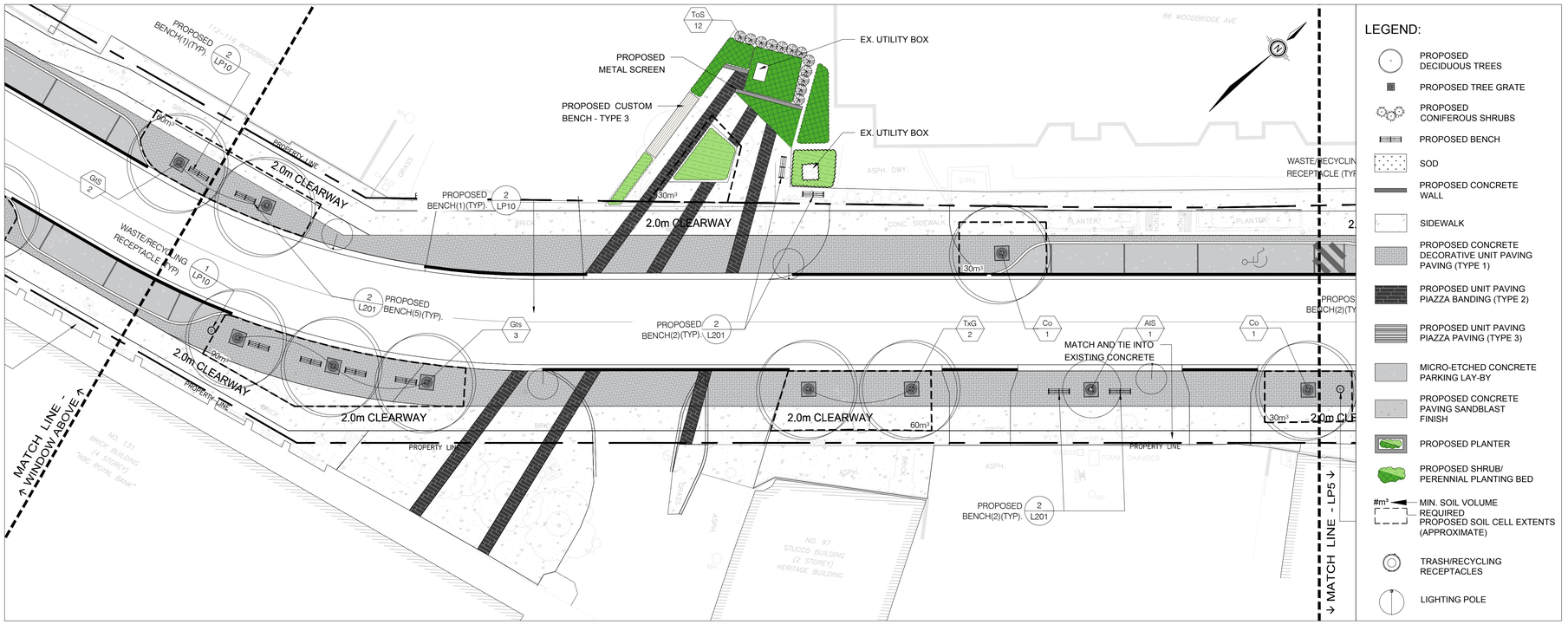

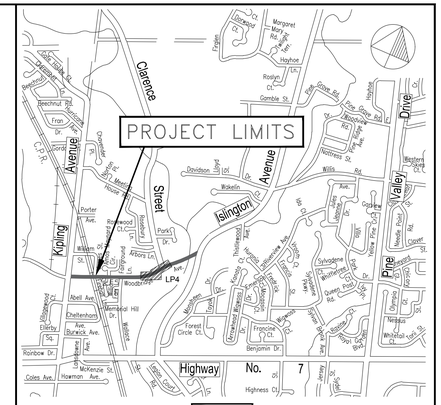

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PLOT SCALE

WOODBRIDGE AVENUE IMPROVEMENTS

Landscape Plan

VAUGHAN
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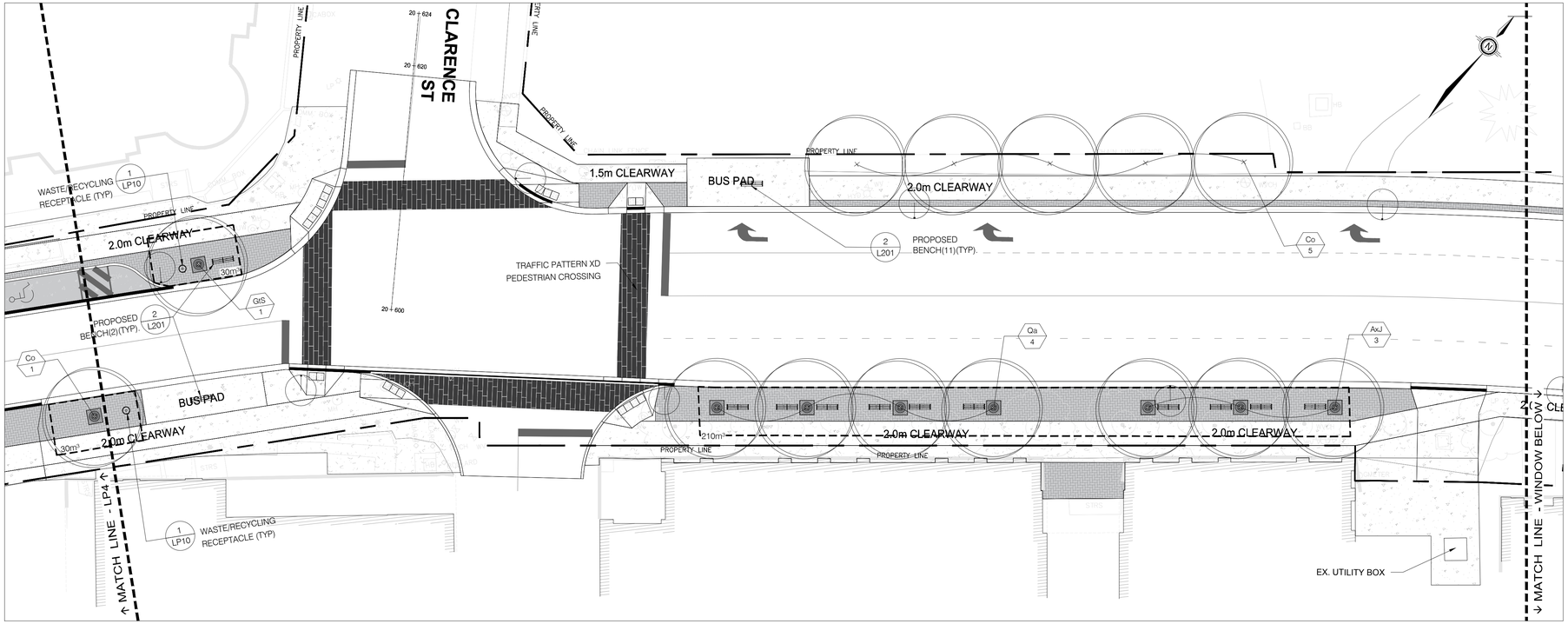
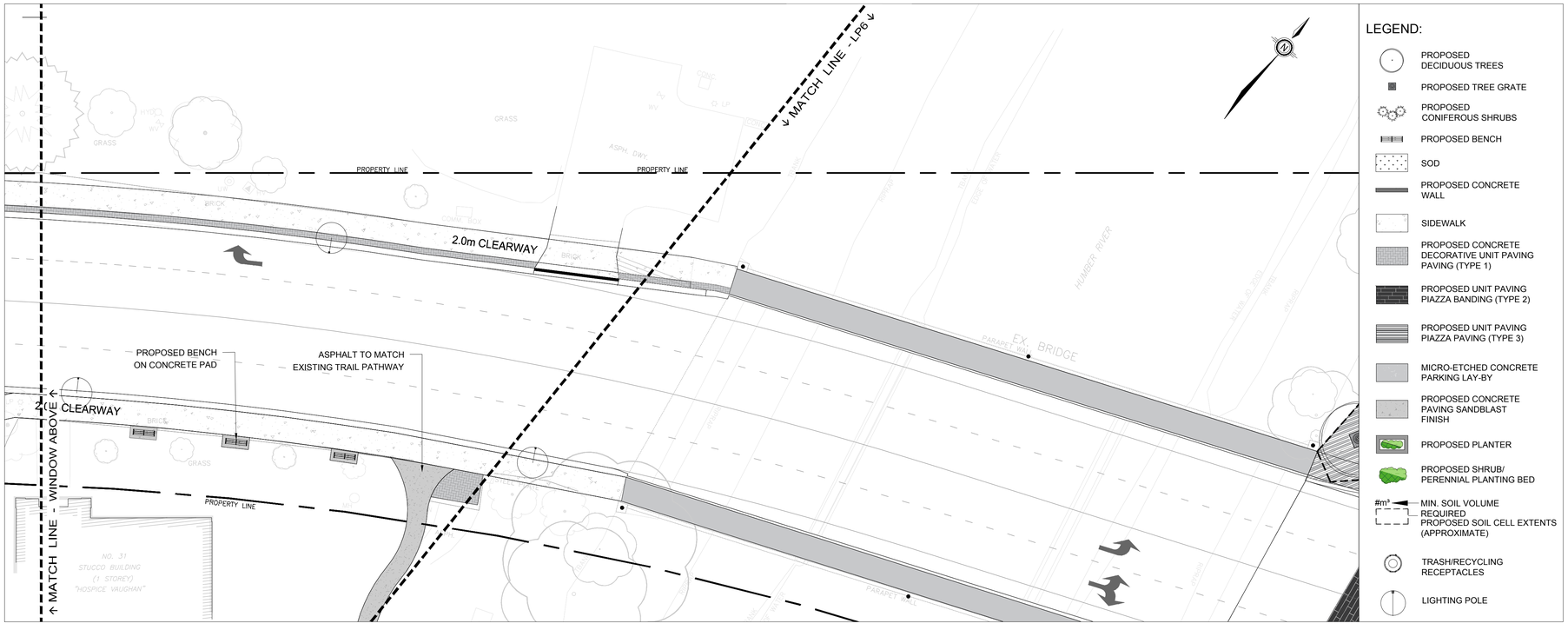
Printed: Jul. 29, 2021





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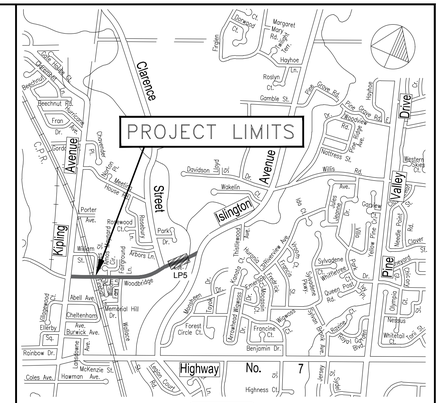

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FILE No. 21-XX

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Landscape Plan

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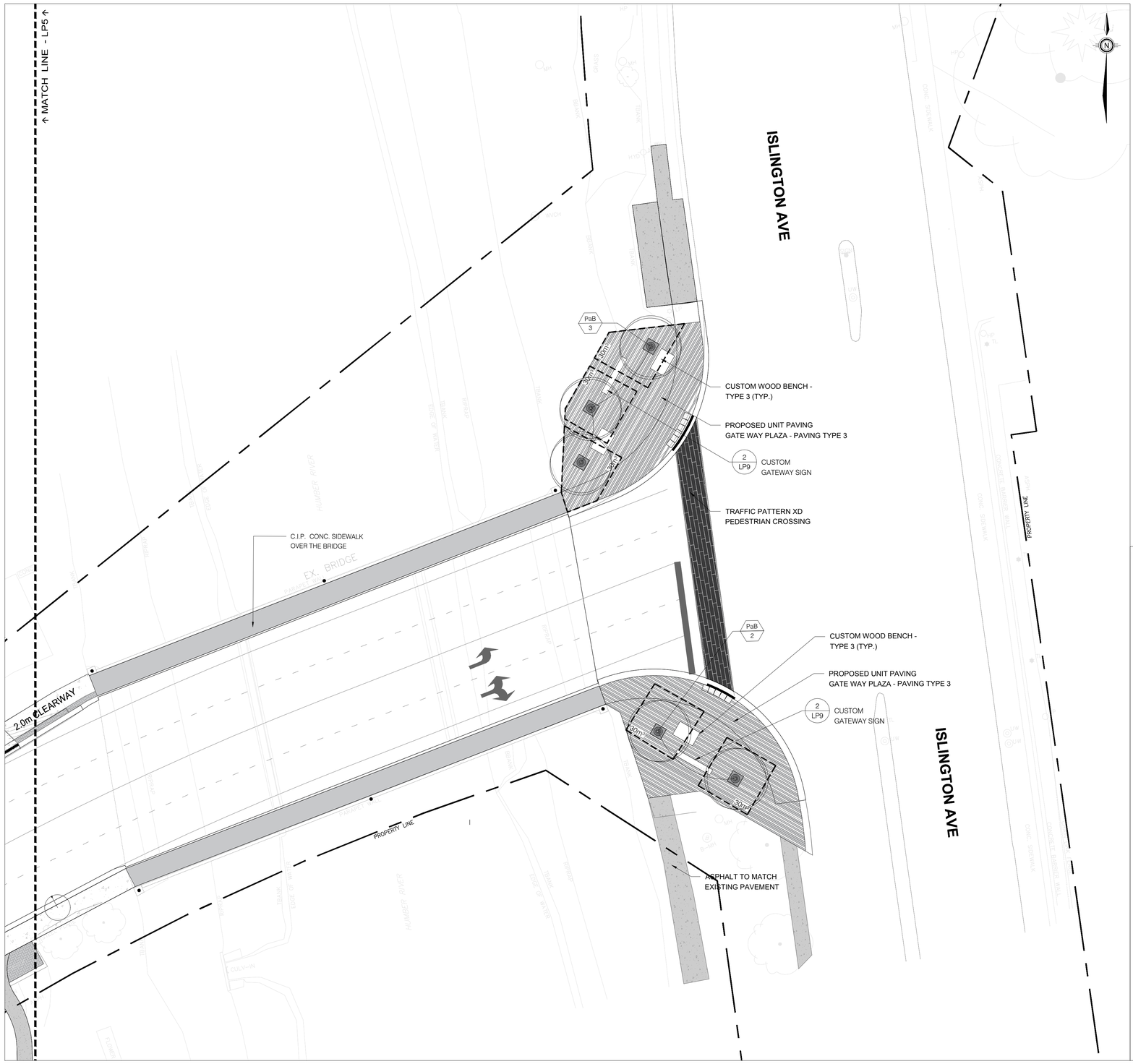
SCALE: HORIZONTAL: 1:200 VERTICAL: 1:100	PROJ. No. 21-_____	DWG. No. LP5

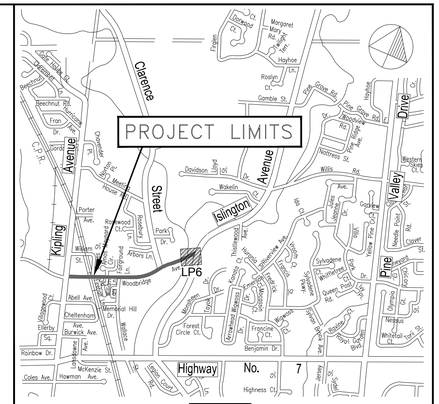
Printed: Jul. 29, 2021

AutoCAD File: G:\12670_Woodbridge_Ave\7.0_Production\7.03_Design\03_Landscape\Sheets\12670_LP .dwg Layout: LP5 Landscape Plan



LEGEND:

- PROPOSED DECIDUOUS TREES
- PROPOSED TREE GRATE
- PROPOSED CONIFEROUS SHRUBS
- PROPOSED BENCH
- PROPOSED CONCRETE WALL
- PROPOSED CONCRETE TO MATCH EXISTING STAIRS AND SIDEWALK
- PROPOSED ASPHALT PAVING (TYPE I)
- PROPOSED CONCRETE UNIT PAVING PROMENADE PLANK PAVER MIXED COLOURS (TYPE II)
- PROPOSED CONCRETE UNIT PAVING PROMENADE PLANK PAVER GRANITE COLOUR (TYPE III)
- PROPOSED CONCRETE PAVING SANDBLAST FINISH (TYPE IV)
- PROPOSED PLANTER
- #m³ MIN. SOIL VOLUME REQUIRED
  PROPOSED SOIL CELL EXTENTS (APPROXIMATE)
- TRASH/RECYCLING RECEPTACLES
- LIGHTING POLE



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UPDATES & REVISIONS

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tel 905 763 2322 fax 905 763 9983
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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

FOR APPROVAL

WOODBRIDGE AVENUE IMPROVEMENTS

Landscape Plan

VAUGHAN
Infrastructure Delivery

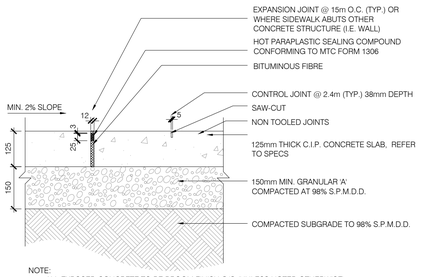
DESIGNED & DRAWN BY: DG	CHECKED BY: TM	TENDER No. T21-XX
SURVEYED BY: ___	APPROVED BY: TM	
SCALE: HORIZONTAL: 1:200 VERTICAL: 1:100	PROJ. No. 21-_____	DWG. No. LP6

Printed: Jul. 30, 2021

Autodesk Docs://21-XX_Woodbridge_Ave/VOL_Production/1_VOL_Design/VOL_Landscape/Sheets/LP6.dwg Layout: LP6 Landscape Plan

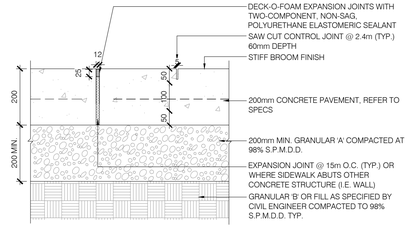
LANDSCAPE PLANTING SCHEDULE -WOODBRIDGE AVENUE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	CALIPER (mm)	SIZE (cm)	CONDITION/ FORM	MIN. O.C. SPACING (m)
DECIDUOUS TREES							
As	6	*Acer saccharum*	Sugar Maple	50		W.B.	12
AlS	1	*Amelanchier laevis 'Spring Flurry"*	Spring Flurry Serviceberry	50		W.B.	6
AxJ	4	*Acer x freemanii 'Jeffersred'*	Autumn Blaze Maple	50		W.B.	12
Co	11	*Celtis occidentalis*	Hackberry	50		W.B.	12
GtS	10	*Gleditsia triacanthos var. inermis 'Skycole'*	Skycole Honeylocust	50		W.B.	12
Lt	2	*Liriodendron tulipifera*	Tulip Tree	50		W.B.	12
PaB	8	*Platanus × acerifolia 'Bloodgood'*	Bloodgood London Plane Tree	50		W.B.	12
Pk	2	*Prunus 'Kwanzan'*	Kwanzan Ornamental Cherry	50		W.B.	12
Qa	4	*Quercus alba*	White Oak	50		W.B.	12
Qr	4	*Quercus rubra*	Red Oak	50		W.B.	12
TxG	4	*Tilia x flavescens 'Glenleven'*	Glenleven Linden	50		W.B.	12
UaV	4	*Ulmus americana 'Valley Forge'*	Valley Forge Elm	50		W.B.	12
TOTAL:	60						
BROADLEAF EVERGREENS							
ToS	12	*Thuja occidentalis 'Smaragd'*	Emerald Cedar		200	W.B.	5
TOTAL:	12						
GRASSES							
FgE	100	*Festuca glauca 'Elijah Blue'*	Elijah Blue Fescue			1 Gal.	1
HsS	100	*Helictotrichon sempervirens*	Blue Oat Grass			1 Gal.	1
PaH	100	*Pennisetum alopecuroides 'Hameln'*	Dwarf Fountain Grass			1 Gal.	1
Sc	100	*Schizachyrium scoparium*	Little Bluestem Grass			1 Gal.	1
TOTAL:	400						

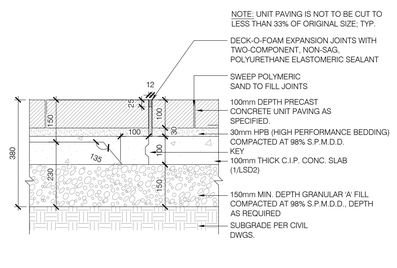


NOTE:
1. ALL EXPOSED CONCRETE TO BE BROOM FINISH O/C (UNLESS NOTED OTHERWISE)
2. FINISH EDGES NOT TO EXCEED 5mm RADIUS.

1 LP7 C.I.P. CONC. SIDEWALK
N.T.S

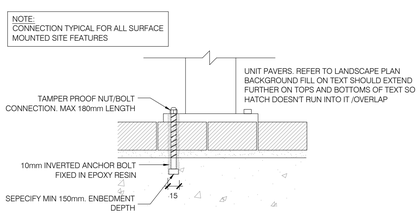


2 LP7 C.I.P. CONC. (VEHICULAR LOAD)
N.T.S



SEE 5/LSD1 FOR PATTERN

3 LP7 UNILOCK PAVESTONES ON CONCRETE BASE
N.T.S



4 LP7 FURNITURE SURFACE MOUNT (TYP.)
N.T.S

GENERAL NOTES

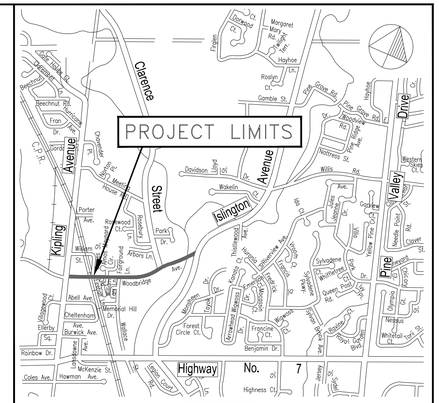
1. Any ambiguity in the drawings, specifications or details are to be reported to the Landscape Architect for direction. These drawings shall not be used for construction unless stamped and signed by the Landscape Architect. The Contractor is not to proceed in uncertainty. The limits of work are to be clearly understood by the Contractor prior to any work taking place on the site.
2. All dimensions are in meters unless otherwise noted. The drawings may be scaled for approximate layout. The Contractor is to verify all dimensions on the drawing(s) and report any discrepancies to the Landscape Architect.
3. The Contractor is to locate and mark all infrastructure and utilities prior to any excavation work or planting on the site. Do not plant directly above underground utilities or infrastructure unless approved by the Landscape Architect. Dig all holes by hand when closer than 1.0m to any underground power, telephone or gas utility. The Contractor is responsible for the coordination and maintenance of all utility/infrastructure locates for the duration of the Contract.
4. The Contractor shall supply all materials in quantities sufficient to complete work shown on these drawings. The Contractor is not to substitute materials, products or quantities without prior written consent of the Landscape Architect.
5. The Contractor is to take all necessary precautions to protect all existing site features unless specified for removal/demolition. This includes all survey bars, stakes, monuments and sediment barriers. The Contractor is responsible for any damages incurred during construction and must make all necessary restorations and repairs to original or better condition.
6. All existing trees, shrubs, and herbaceous plants beyond the limit of work are to be protected from construction damage. This includes but is not limited to: not storing construction materials or fuel within the dripline of an existing tree, not altering existing grades or compacting soil around protected vegetation and taking care not to disturb or expose the roots of any existing trees. The Contractor is responsible for all protection or hoarding measures of all existing trees and vegetation to be preserved within or adjacent to construction work limits.
7. Contractor is responsible for the removal of all debris, garbage and surplus materials on site related to their contract or work and must keep the site in a clean, safe, useable condition at all times or as directed by the Contract Administrator.

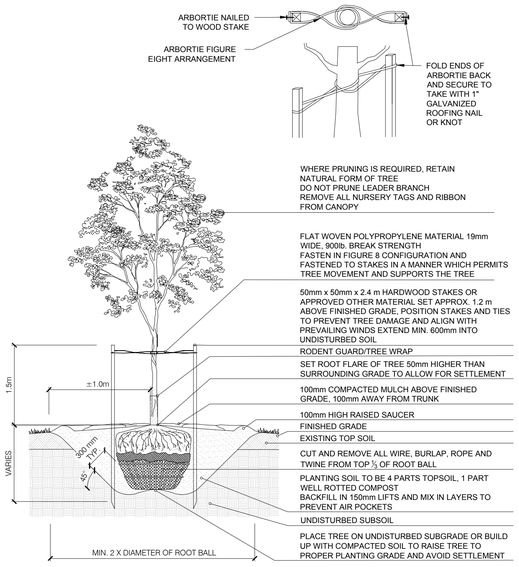
PLANTING NOTES

1. The Contractor must notify the Landscape Architect prior to the commencement of any planting. The Contractor shall supply all plants and materials in quantities sufficient to complete the work shown on this drawing. Any discrepancies between quantities shall be reported to the Landscape Architect.
2. All landscape works will be warrantied for a period of two years following inspection and written notice of start of warranty period as determined and provided by the Landscape Architect. Plant material, which is not in a healthy, vigorous growing condition at the end of the warranty period, shall be replaced to the satisfaction of the Landscape Architect / Owner.
3. The Landscape Architect reserves the right to extend Contractor's warranty responsibilities for an additional year if, at the end of initial warranty period, leaf development and growth is not sufficient to ensure future survival as determined by the Landscape Architect.
4. The Contractor is to identify with Landscape Architect/Owner any maintenance requirements necessary for warranty purposes.
5. Plant materials specified for this project will conform to the Canadian Nursery Landscape Association (C.N.L.A.) for size, variety and condition as indicated on the plant schedule shown on these drawings. Any plant materials which do not conform will be promptly removed from the site and replaced by the Contractor at no additional cost to the project.
6. The Landscape Architect is to be contacted for inspection and written approval prior to plant material arriving on site. The Landscape Architect reserved the right to reject any plant materials that have not been inspected and approved.
7. The Landscape Architect reserves the right to refuse acceptance of any plant displaying poor growth habits, injury or disease. Any plant material that is rejected by the Landscape Architect will be promptly removed from the site and replaced with material of acceptable quality at no additional charge to the project.
8. Plant materials collected from wild sources will not be accepted without written approval of the Landscape Architect. The Landscape Architect reserves the right to require that supplier invoices be submitted for inspection and approval prior to acceptance.
9. On-site layout of the plant materials to be approved by the Landscape Architect prior to installation. Minor field adjustments to plant material locations may be necessary to respond to the locations of existing plants and site conditions. The Contractor to review with Landscape Architect where relocations are necessary. The Contractor must receive approval from Landscape Architect prior to installation.
10. Plants are not to be installed during extreme heat, drought, or other undesirable conditions. Thoroughly water all plants immediately after installation. The Contractor shall regularly monitor site conditions and water as required to ensure healthy growth conditions throughout the duration of the warranty period.
11. Do not plant directly in centerline of drainage swales or depression areas. Where proposed planting locations conflict with constructed swales or low-lying wet areas, contact Landscape Architect for direction.
12. All plants are to be planted in accordance with the planting details shown on this drawing. All plants are to be installed vertical and plumb, regardless of ground slope.
13. Topsoil: Each source of topsoil, imported or native to be approved by Landscape Architect prior to use. Submit topsoil analysis/test results to Landscape Architect prior to order or delivery to site. Testing to be in accordance with Contract specifications. Supply and place topsoil in accordance with OPSS 802 to a minimum depth of 100mm in seed/sod areas, 600mm depth in perennial/ shrub planting beds, and 1000mm depth where trees are supported, unless otherwise specified.
14. Shredded Hardwood Bark Mulch: to be spread uniformly around the base of trees and shrubs to a minimum depth of 100 mm. Do not place mulch in direct contact with trunk or stem(s). Allow a 100 mm mulch free zone at trunk/stems. Shrubs to be in continuously mulched planting beds unless otherwise specified.
15. Supply and place seed in accordance with OPSS 804 unless otherwise specified. All 5:1 or greater slopes to be seeded with tackifier. All slopes greater than 3:1 shall be matted with an erosion control blanket. Supply and place sod in accordance with OPSS 803 unless otherwise specified.
16. The Contractor is to remove dead or damaged branches on trees or shrubs. All pruning shall be performed in accordance with standard horticultural practices and appropriate timing for each species.
17. All stakes and associated ties are to be removed after the first full growing season. Rodent guards are to be removed at the conclusion of the warranty period. Gatorbags are to be removed for winter months.

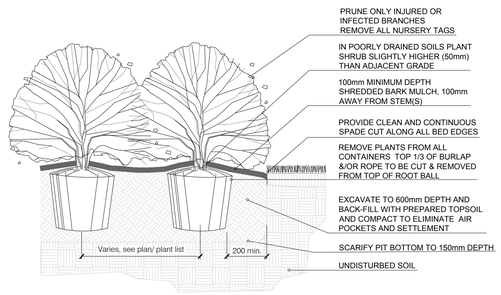
SOD NOTES

1. Any lawn areas disturbed by construction shall be re-sodded and repaired to original condition or better.
2. Sod and sodding operations to be in accordance with OPSS 803, except as noted below.
3. Sod to be delivered to project within 24 hours of being harvested and laid within 36 hours thereafter.
4. Rough graded and compacted soil shall be scarified to a minimum depth of 100 mm free of all stones, roots, branches, larger than 25 mm diameter. Topsoil to be spread at a minimum depth of 150 mm compacted to 85% S.P.D.
5. Place sod on prepared topsoil with staggered joints and butt tightly. Irrigate immediately to ensure moisture penetration into the upper 100 mm (4") of soil. Machine roll to ensure contact with topsoil. Repair minor grade deficiencies and irregularities.
6. Water sod immediately after laying to obtain moisture penetration to a minimum of 100 mm depth within topsoil. Maintain sod per OPSS 803. Sod must be cut a minimum of two times for Final Acceptance at the discretion of the Landscape Architect.

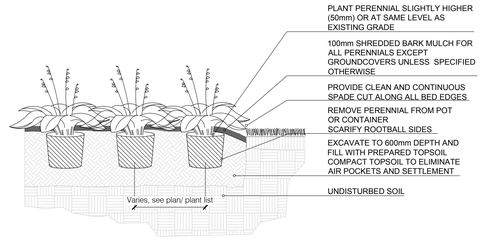

PROJECT LIMITS
Clarence Street
Islington Avenue
Valley Drive
Kipling Avenue
Highway No. 7
Woodbridge
Hoover Park Dr.
Abell Ave.
Chelthenham Ave.
Forest Circle Ct.
Benjamin Dr.
McKenzie St.
Thornton Ave.
Coles Ave.
Rainbow Dr.
Liberty Hill
Sylvestine Blvd.
Queen Mary Dr.
Margaret Mary Rd.
Hayhoe Dr.
Rosiley Ct.
Gamble St.
Fox Grove Rd.
Woodstone Rd.
Rainbow Creek Dr.
Davidson Ct.
Wakelin Dr.
Willis Rd.
Gardenia Ct.
Nevada Blvd.
Cabernet Ct.
Merlot Ct.
Zinfandel Ct.
Vellore Woods Blvd.
Vellore Park Ave.
Vellore Woods Ct.
Vellore Woods Dr.
Vellore Woods Cres



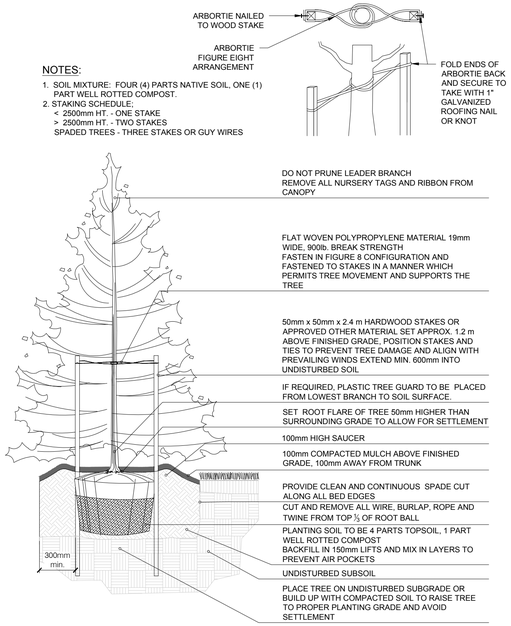
1 LP8 BALLED & BURLAPPED/WIRE BASKET DECIDUOUS TREE
N.T.S.



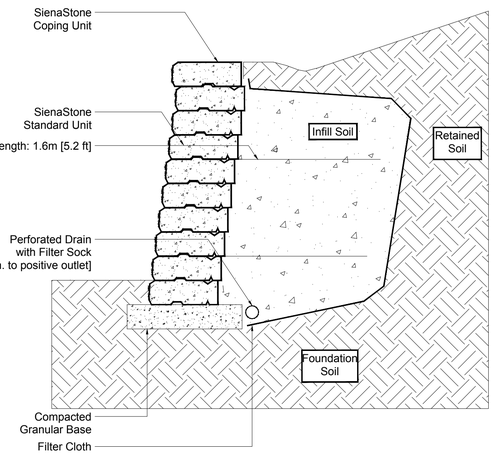
2 LP8 BALLED AND BURLAPPED/POTTED SHRUB
N.T.S.



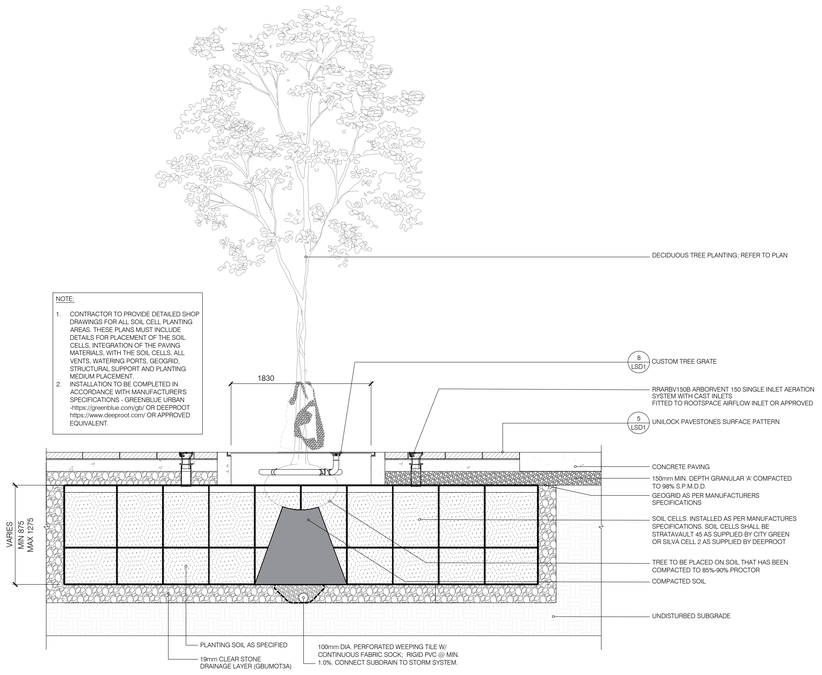
3 LP8 CONTAINER GROWN PERENNIAL/GRASS
N.T.S.



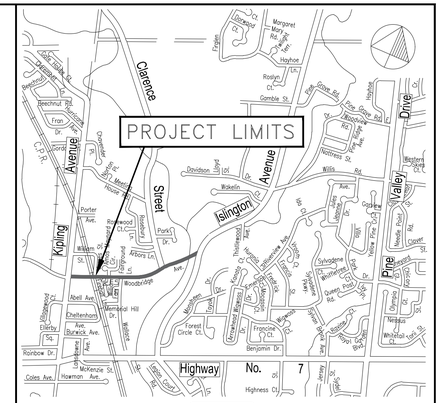
4 LP8 BALLED & BURLAPPED/WIRE BASKET CONIFEROUS TREE
N.T.S.



5 LP8 SIENA STONE RETAINING WALL
N.T.S.



1 LP8 DECIDUOUS STREET TREE PLANTING WITH SILVA CELL SOIL CELLS
N.T.S.



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WOODBRIDGE AVENUE IMPROVEMENTS

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VAUGHAN
Infrastructure Delivery

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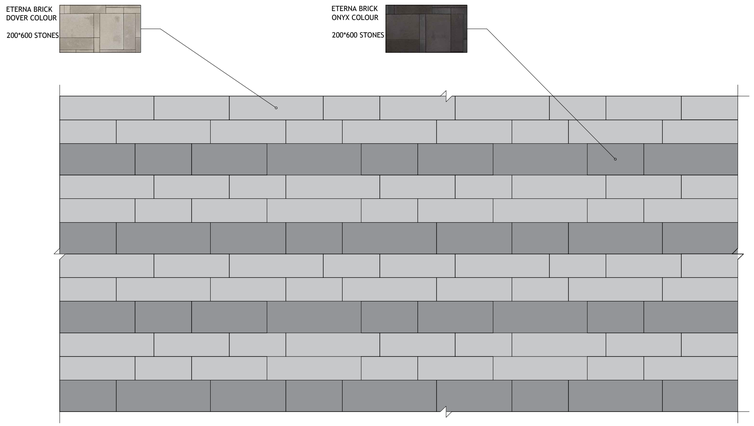
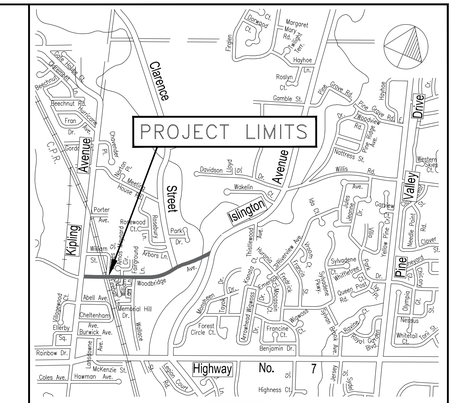
Printed: Jul. 28, 2021

Autodesk Docs://21268 City_Woodbridge_Ave\21268 City_Woodbridge_Ave_Production\100_Design\05_Landscape\Sheets\21268 City_Woodbridge_Ave_LP8 Landscape Details Plan.dwg, LP8 Landscape Details Plan, Layout: LP8



1 LP9 GATE WAY PLAZA UNIT PAVING PATTERN - PAVING TYPE 3
N.T.S

2 LP9 GATEWAY SIGN CONCEPT DESIGN



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DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

FILE PATH

WOODBRIDGE AVENUE IMPROVEMENTS

Landscape Details Plan

VAUGHAN
Infrastructure Delivery

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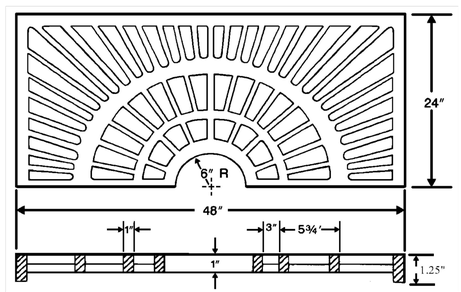
SURVEYED BY: ___	APPROVED BY: TM	T21-XX	
SCALE:	PROJ. No.	DWG. No.	
HORIZONTAL: NTS VERTICAL: NTS	21-_____	LP9	

TORONTO FABRICATING & MFG. CO.
1021 RANGEVIEW ROAD
MISSISSAUGA ONTARIO CANADA L5E-1H2
PHONE: 905 891-2516
WEBSITE: www.tfmc.com E-MAIL: sales@tfmc.com

STYLE #: B-8650 TREE GRATE
SIZE: TWO HALVES EACH AT 24" X 48"
MATERIAL: CAST IRON
INSTALLATION: MAY BE MOUNTED INTO
OPTIONAL STEEL FRAME
FRAME: 1" X 1" ANGLE IRON
FINISH: PRIMED AND PAINTED (SEE PAINT SPEC)
OPTIONAL: GALVANIZED AVAILABLE



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE. LINE ART TO BE USED AS A GUIDE ONLY. DRAWINGS MAY NOT BE TO SCALE.

3 LP9 TREE GRATE
N.T.S

4 LP9 C.I.P. CONCRETE PLANTER W/ WOOD BENCH (CONCEPTUAL)
NTS

Printed: Jul. 28, 2021

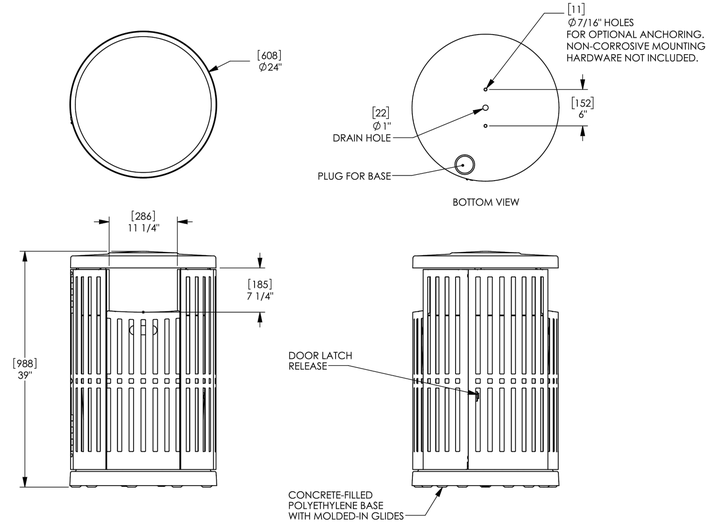
Last File: G:\13563_Woodbridge_Ave\7.0_Production\7.01_Design\05_Landscape\Sheets\13563_LP 2021.dwg Layout: LP9 Landscape Details Plan

Chase Park® Side Opening Litter Receptacle

Product Drawing

www.landscapeforms.com Phi: 800.521.2546

Date: 8/22/2019



landscapeforms Drawing: CP362-01
Dimensions are in inches [mm]

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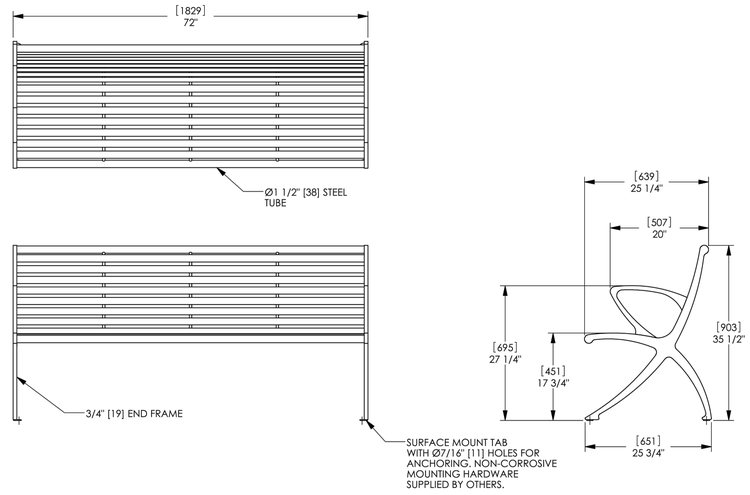
1 LP10 WASTE/RECYCLING RECEPTACLE (ALUMINUM)
N.T.S.

Parc Vue® Backed Bench, 72in, Surface Mount, with End Arms

Product Drawing

www.landscapeforms.com Phi: 800.521.2546

Date: 5/19/2010



landscapeforms Drawing: PV644-04
Dimensions are in inches [mm]
U.S. Patent Nos.: D532,630; D534,021; D528,831

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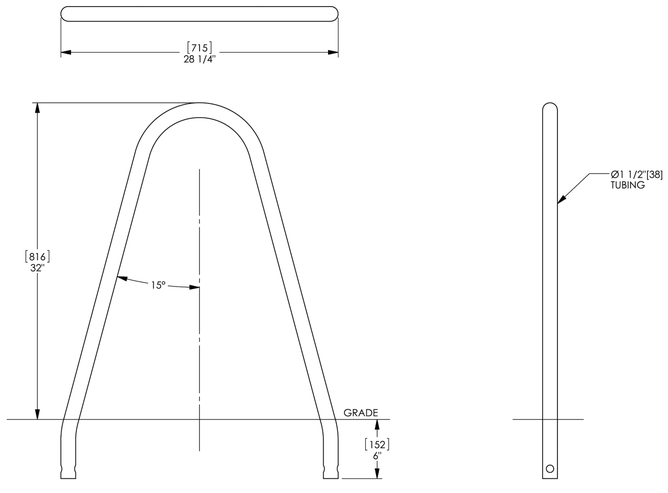
2 LP10 STEEL BENCH (STAINLESS)
N.T.S.

Bola® Bike Rack, Embedded

Product Drawing

www.landscapeforms.com Phi: 800.521.2546

Date: 11/5/2014



landscapeforms Drawing: BO661-01
Dimensions are in inches [mm]

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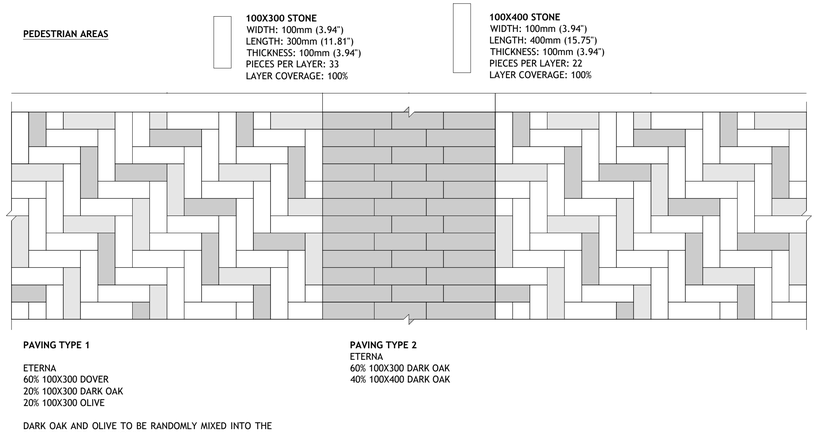
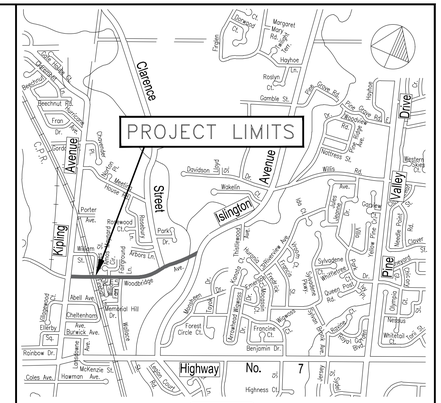
3 LP10 Bike Rack
N.T.S.



4 LP10 UNIT PAVING PATTERN FOR DECORATIVE PAVING AREAS AND PIAZZA BANDING - PAVING TYPE 1 AND TYPE 2
N.T.S



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NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3	60% SUBMISSION	EL	2021/07/16
2	30% RE-SUBMISSION	DG	2021/02/04
1	30% SUBMISSION	TM/DG	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
Unit 300 – 8133 Warden Avenue
Markham ON L6G 1B3 Canada
tel 905 763 2322 fax 905 763 9983
ibigroup.com

LANDSCAPE ARCHITECT'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

FILE PLAN

WOODBRIDGE AVENUE IMPROVEMENTS

Landscape Details Plan

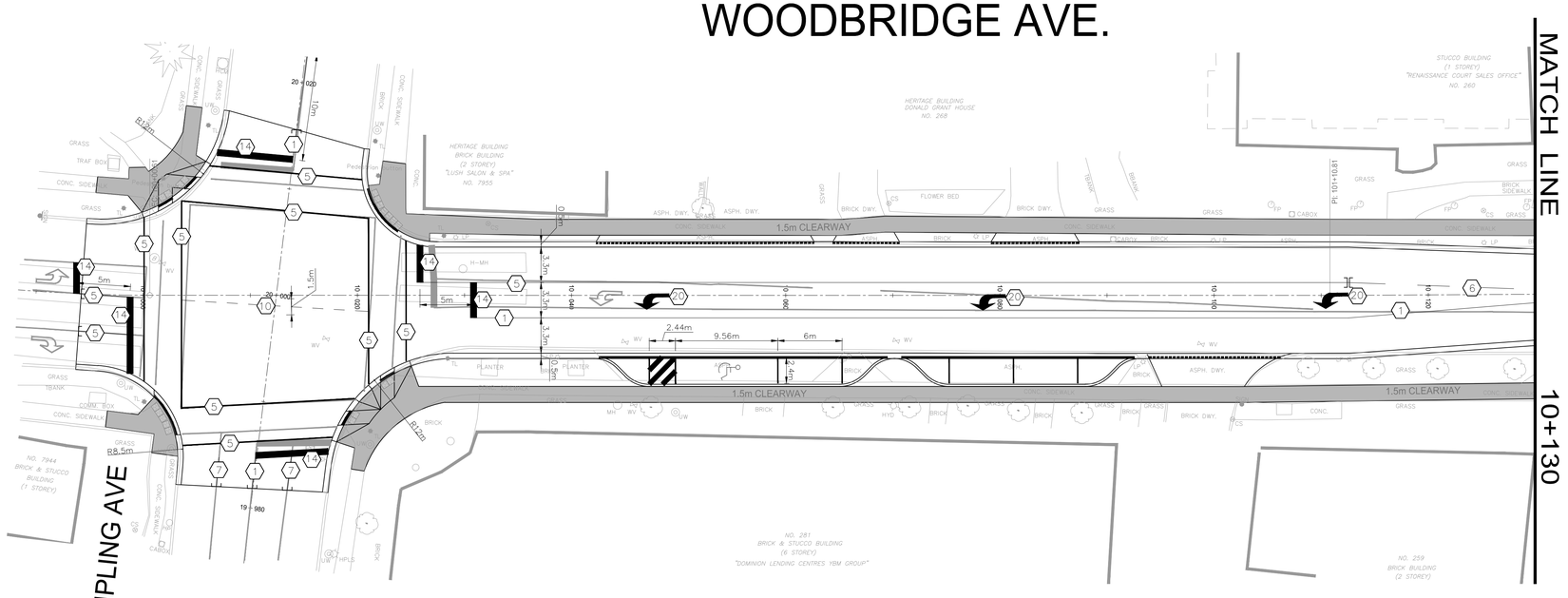
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: DG	CHECKED BY: TM	TENDER No.
SURVEYED BY: ____	APPROVED BY: TM	T21-XX
SCALE:	PROJ. No.	DWG. No.
HORIZONTAL: NTS	21-_____	LP10
VERTICAL: NTS		

Autodesk Docs://12669_Woodbridge_Ave\12_Production\12.02_Design\02_Landscape\Sheets\12669_LP - 2021.dwg Layout: LP10 Landscape Details Plan

Printed: Jul. 28, 2021

WOODBRIDGE AVE.



PAVEMENT MARKING LEGEND

IDENTIF.	TYPE	COLOUR	WIDTH (cm)
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5	SOLID	WHITE	10
6	3-3-3 BROKEN	WHITE	10
7	3-6-3 BROKEN	WHITE	10
10	1-1-1 BROKEN	WHITE	10
14	SOLID	WHITE	45
20	SYMBOLS	–	–
] OR [	LIMITS OF MARKINGS	–	–

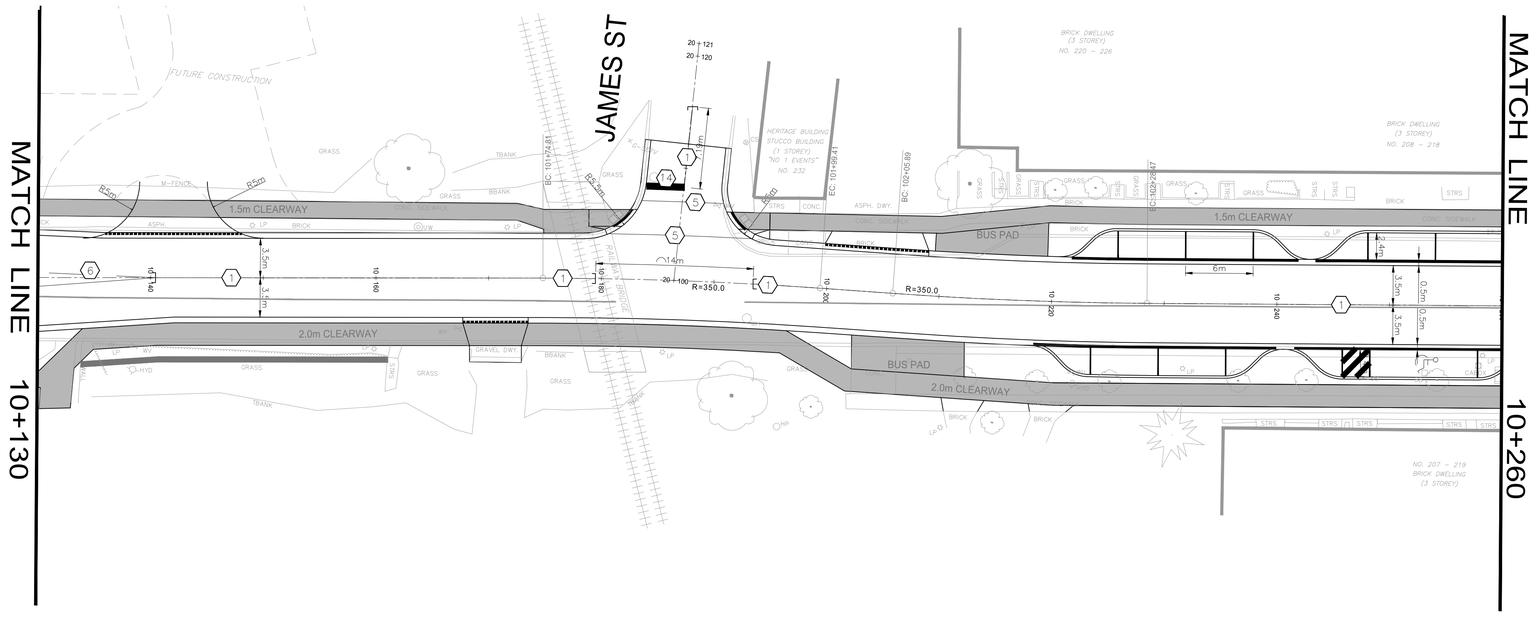
PAVEMENT MARKING DENOTATION:

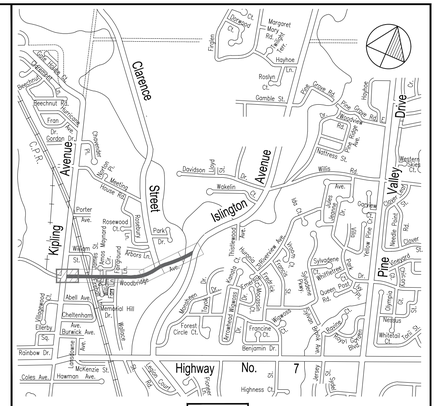
- 3-3-3, 3-6-3, 3-9-3; LINE-GAP-LINE SPACING IN METRES
- (1) PERMANENT
- (1) DURABLE
- ◇1◇ EXISTING MARKING TO BE REMOVED OR (TREATED?)

NOTES:

1. ALL MARKINGS SHALL CONFORM WITH THE ONTARIO TRAFFIC MANUAL (OTM), BOOK 11.
2. PROPOSED MARKINGS TO MATCH EXISTING AT ALL WORK AND/OR ROAD RECONSTRUCTION LIMITS.
3. LONGITUDINAL MARKINGS – PAINT ON BASE COURSE AND PLASTIC ON TOP COURSE.(TO BE DETERMINED BY TRAFFIC GROUP)
4. TRANSVERSE MARKINGS/SYMBOLS – PLASTIC ON BOTH BASE AND TOP COURSE.
5. SIGN MOUNTING HEIGHTS, AND LATERAL OFFSETS SHALL BE IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) BOOK 1B, SECTION 12.

WOODBRIDGE AVENUE




Clarence
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Islington Avenue
Kipling Avenue
Prince Valley Drive
Highway No. 7
Highway
Forsythia Ct.
Benjamin Dr.
Rosedale Rd.
Rosedale Ct.
Rosedale Dr.
Rosedale Cres.
Rosedale Gate
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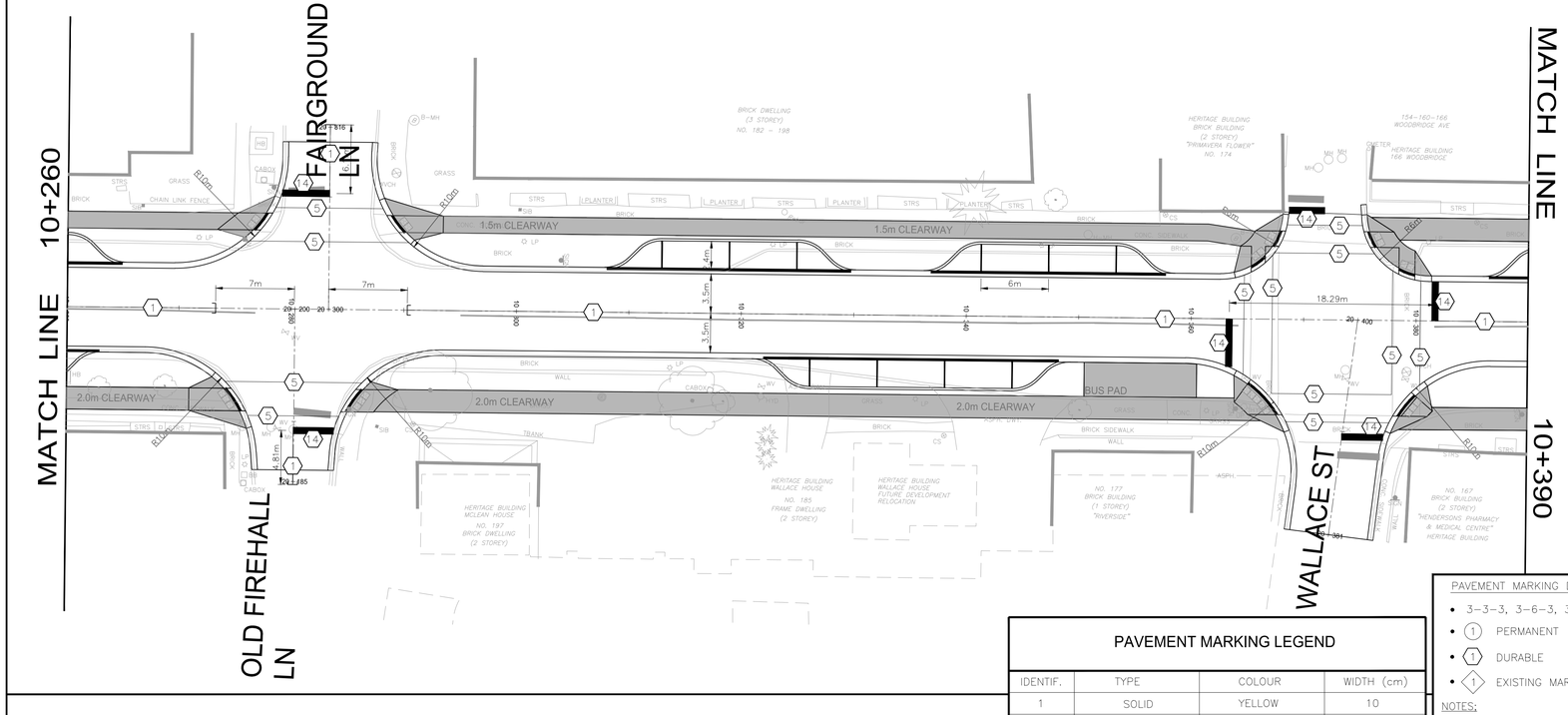
WOODBRIDGE AVENUE



PAVEMENT MARKING LEGEND

IDENTIF.	TYPE	COLOUR	WIDTH (cm)
1	SOLID	YELLOW	10
5	SOLID	WHITE	10
6	3-3-3 BROKEN	WHITE	10
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10	1-1-1 BROKEN	WHITE	10
14	SOLID	WHITE	45
20	SYMBOLS	–	–
] OR [	LIMITS OF MARKINGS	–	–

PAVEMENT MARKING DENOTATION:

- 3-3-3, 3-6-3, 3-9-3; LINE-GAP-LINE SPACING IN METRES
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- (1) DURABLE
- <1> EXISTING MARKING TO BE REMOVED OR (TREATED?)

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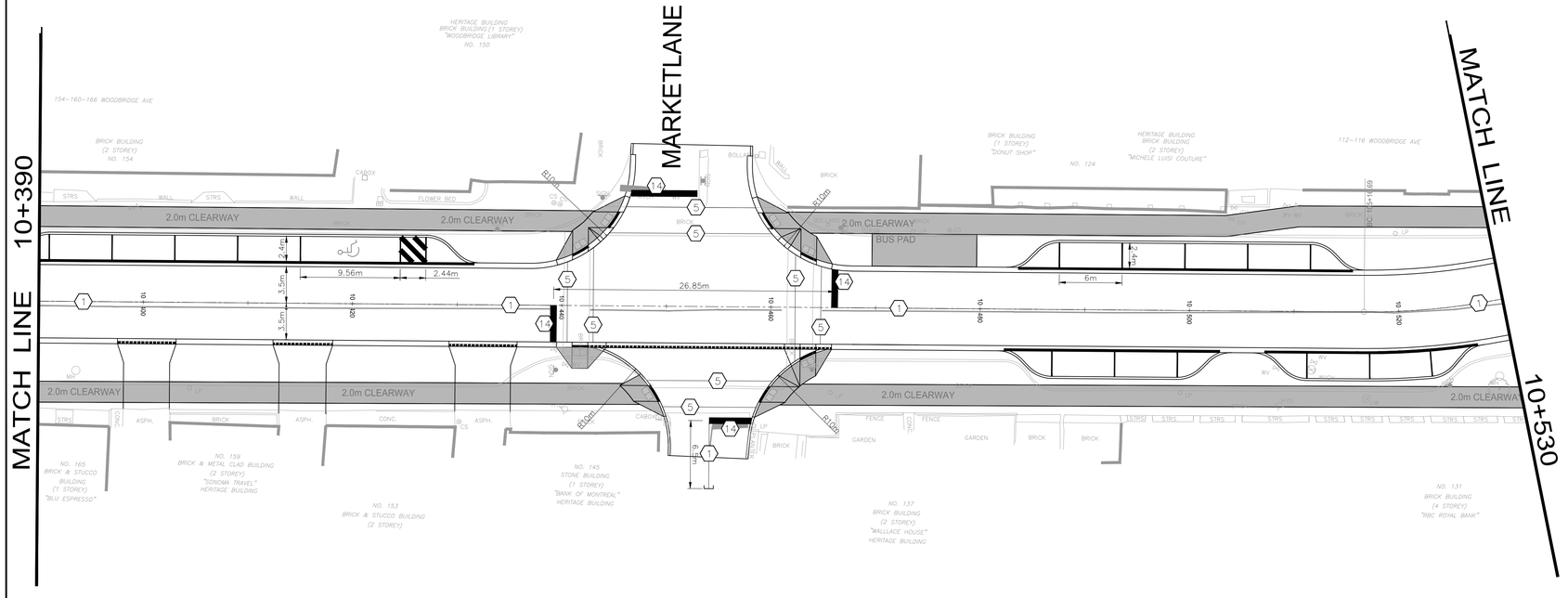
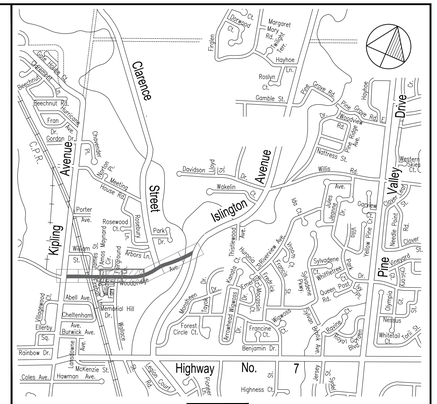
WOODBRIDGE AVENUE





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BENCH MARK:
MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/02/05

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

UNITS - SCALE

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
PAVEMENT MARKING PLAN

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: 1:250 VERTICAL: –	PROJ. No. 18-07RW	DWG. No. PVM2

Printed: Jul. 30, 2021

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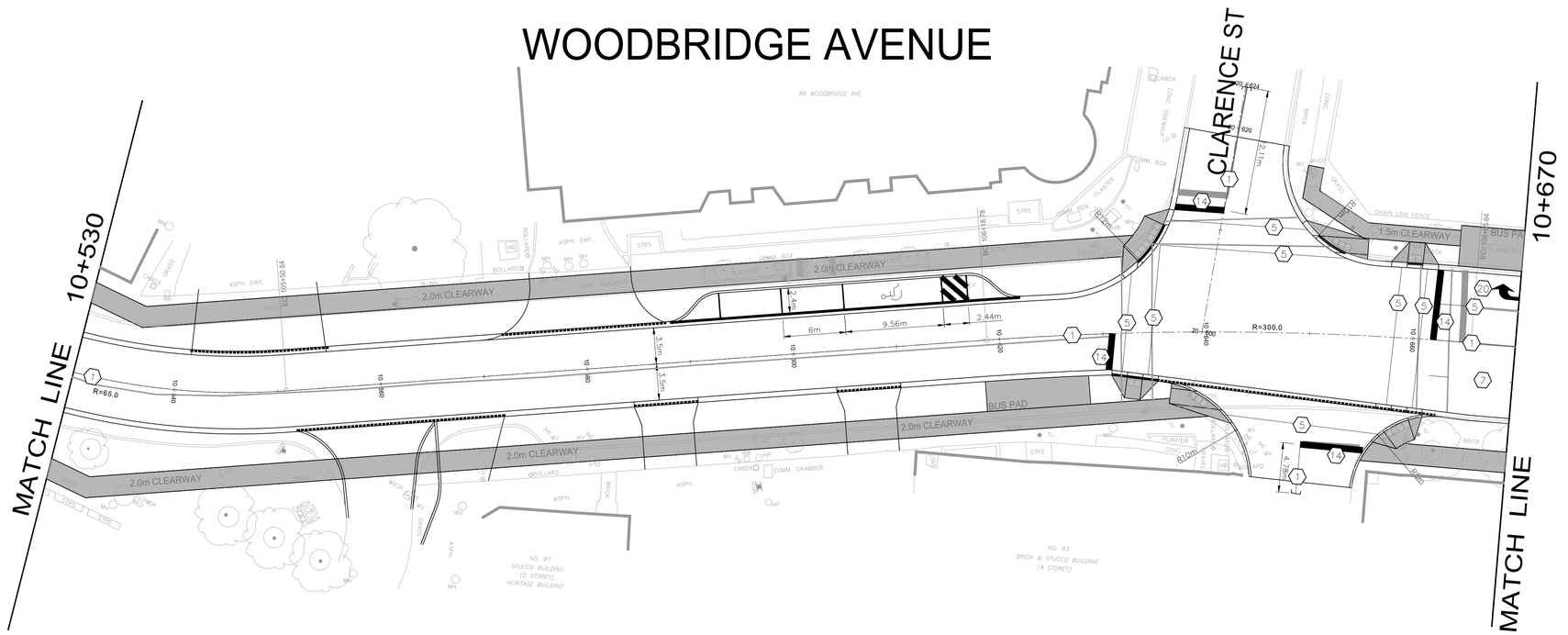
WOODBRIDGE AVENUE



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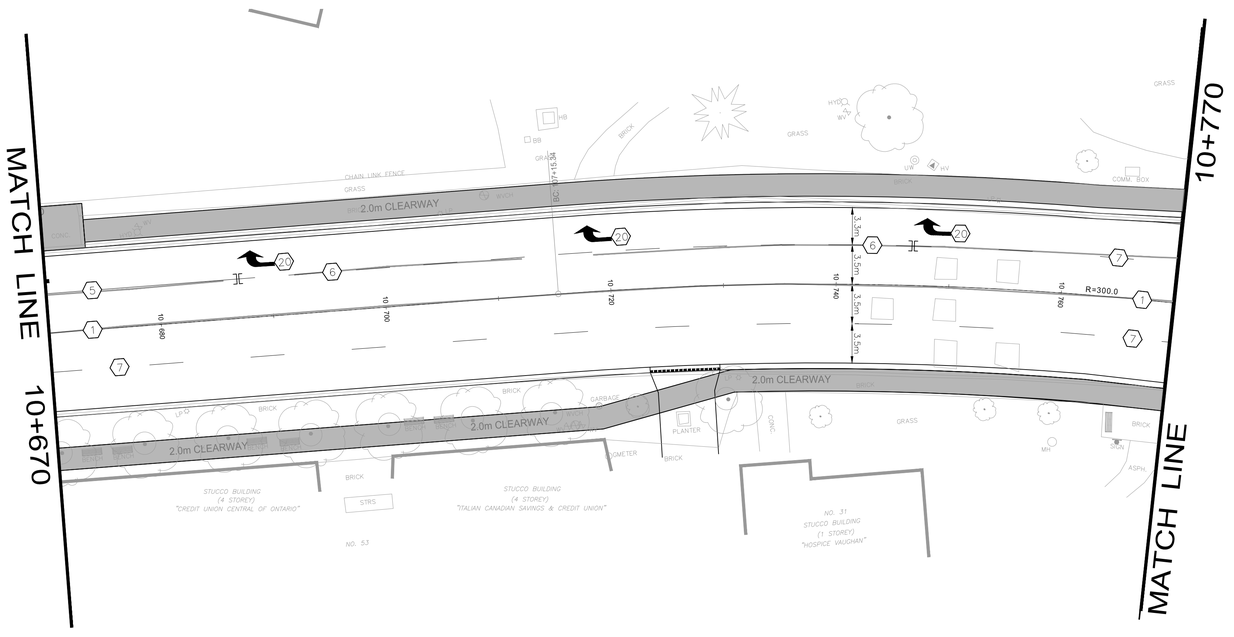

PAVEMENT MARKING LEGEND

IDENTIF.	TYPE	COLOUR	WIDTH (cm)
1	SOLID	YELLOW	10
5	SOLID	WHITE	10
6	3-3-3 BROKEN	WHITE	10
7	3-6-3 BROKEN	WHITE	10
10	1-1-1 BROKEN	WHITE	10
14	SOLID	WHITE	45
20	SYMBOLS	–	–
] OR [	LIMITS OF MARKINGS	–	–

PAVEMENT MARKING DENOTATION:

- 3-3-3, 3-6-3, 3-9-3; LINE-GAP-LINE SPACING IN METRES
- (1) PERMANENT
- ⟨1⟩ DURABLE
- ◇1◇ EXISTING MARKING TO BE REMOVED OR (TREATED?)

NOTES:

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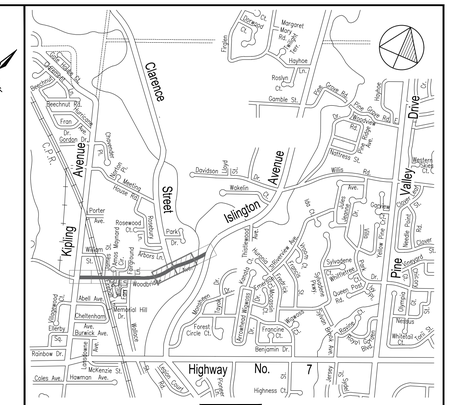

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BENCH MARK:
MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/02/05

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

DRAWING SCALE(S):

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
PAVEMENT MARKING PLAN

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: 1:250 VERTICAL: –	PROJ. No. 18-07RW	DWG. No. PVM3

Printed: Jul. 30, 2021

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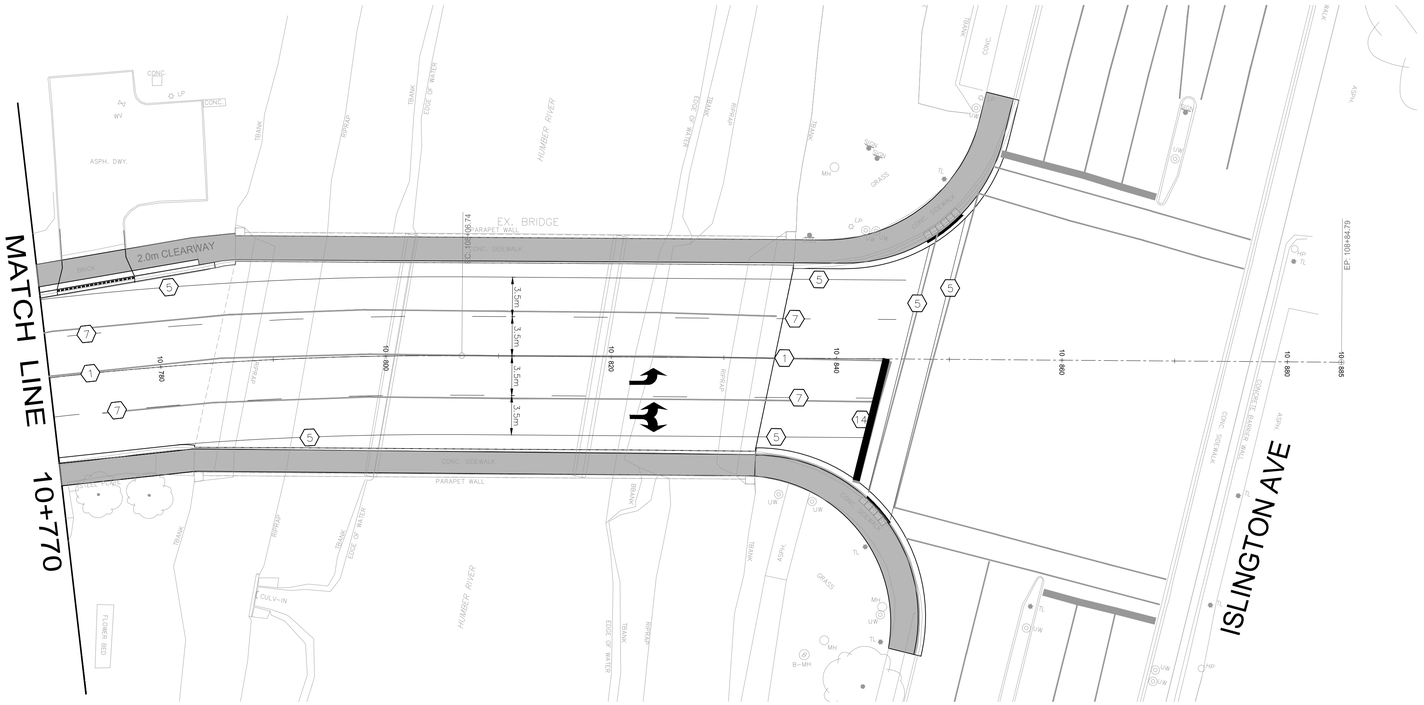
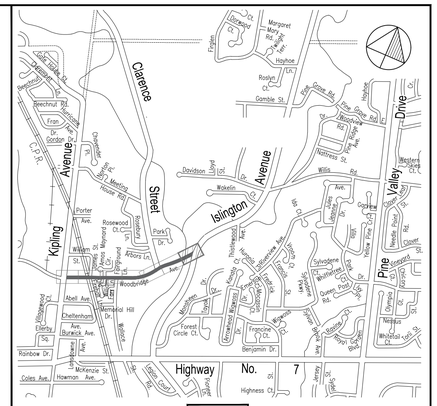
WOODBRIDGE AVENUE





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DIRECTOR OF INFRASTRUCTURE DELIVERY

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UNITS - ARCH/S

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
PAVEMENT MARKING PLAN

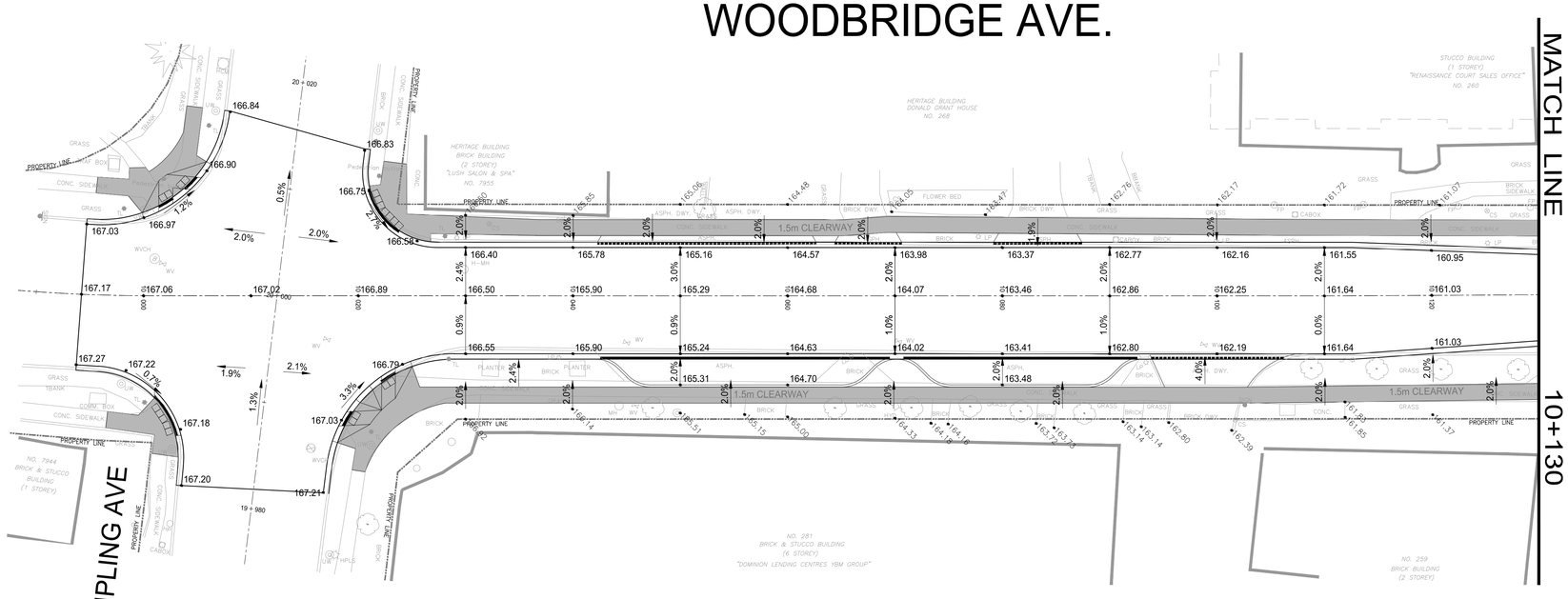
VAUGHAN
Infrastructure Delivery

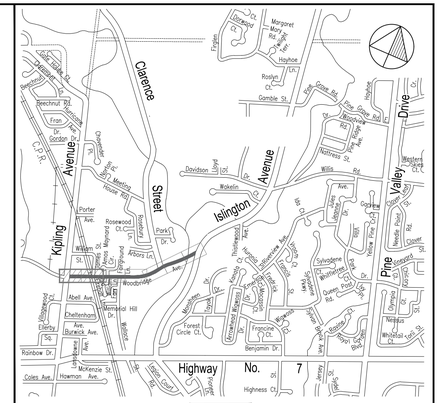
DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: 1:250 VERTICAL: –	PROJ. No. 18-07RW	DWG. No. PVM4

Printed: Jul. 30, 2021

Acad File: \\connect.ibigroup.com\V10\12\679_Woodbridge_Ave\12_Production\Y00_Design\04_Civil\Sheets\126679_PVM.dwg Layout: PVM4

WOODBRIDGE AVE.





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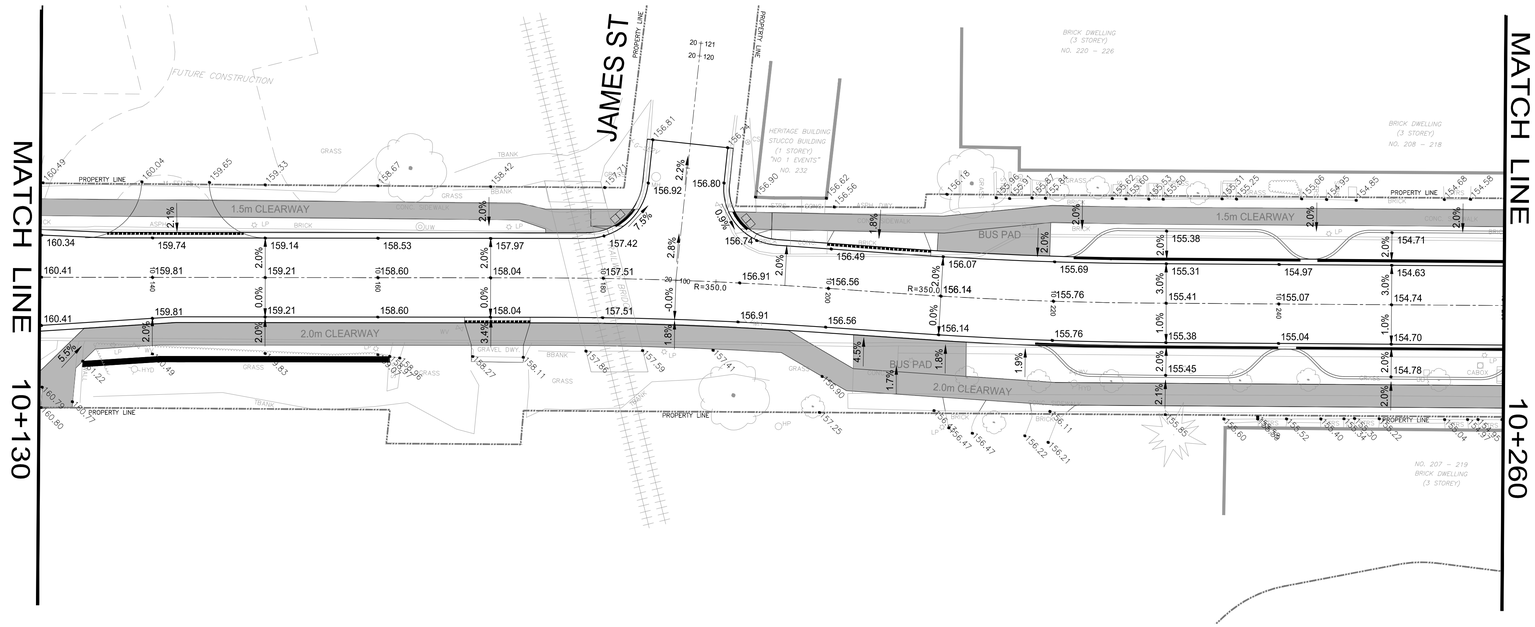
ELEVATION:

WOODBRIDGE AVENUE



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DATE

PLOTTING SCALE

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
PAVEMENT ELEVATIONS

VAUGHAN
Infrastructure Delivery

DESIGNED& DRAWN BY:MK/TL	CHECKED BY: KC	TENDER No. T18-___
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SCALE: HORIZONTAL: 1:250 VERTICAL: –	PROJ. No. 18-07RW	DWG. No. PE1

Printed: Jul. 30, 2021

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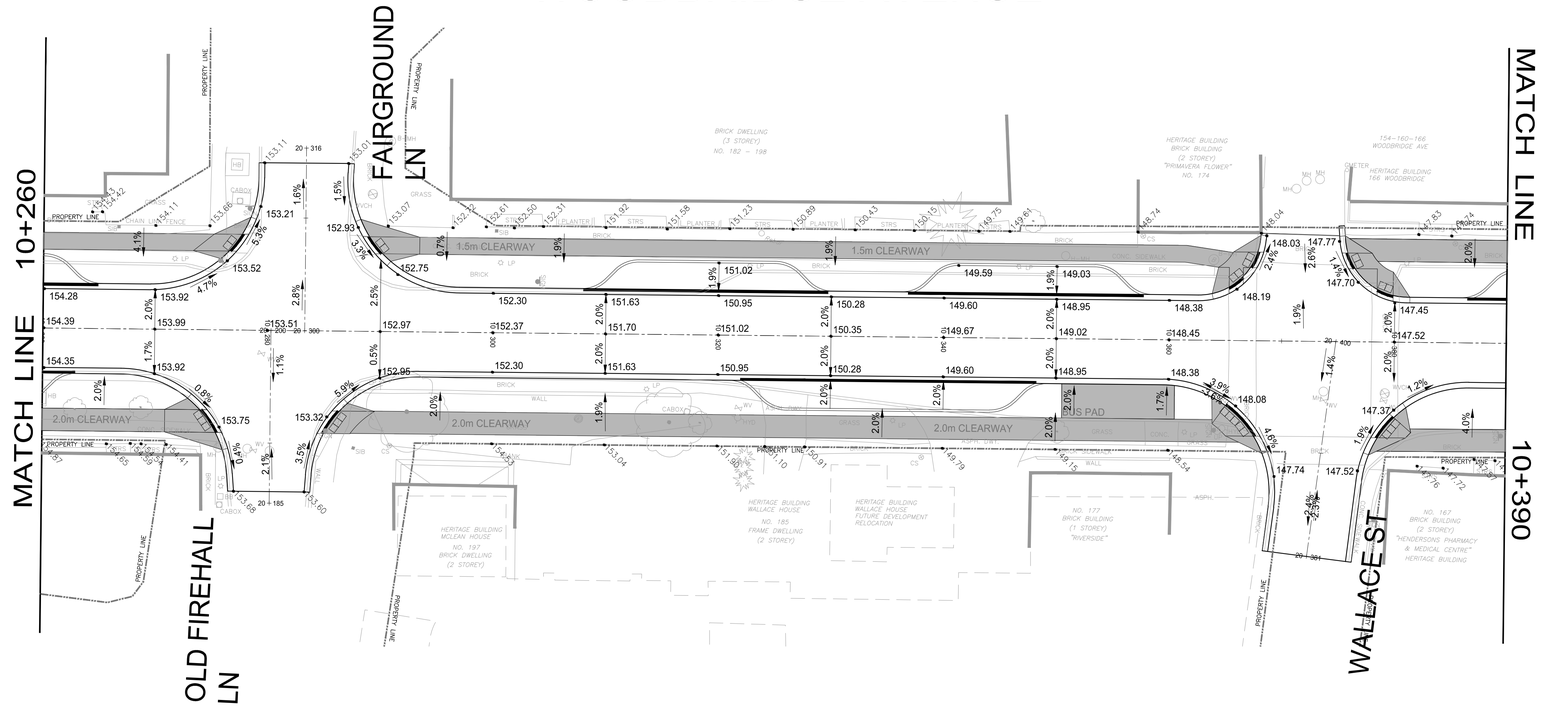
WOODBRIDGE AVENUE



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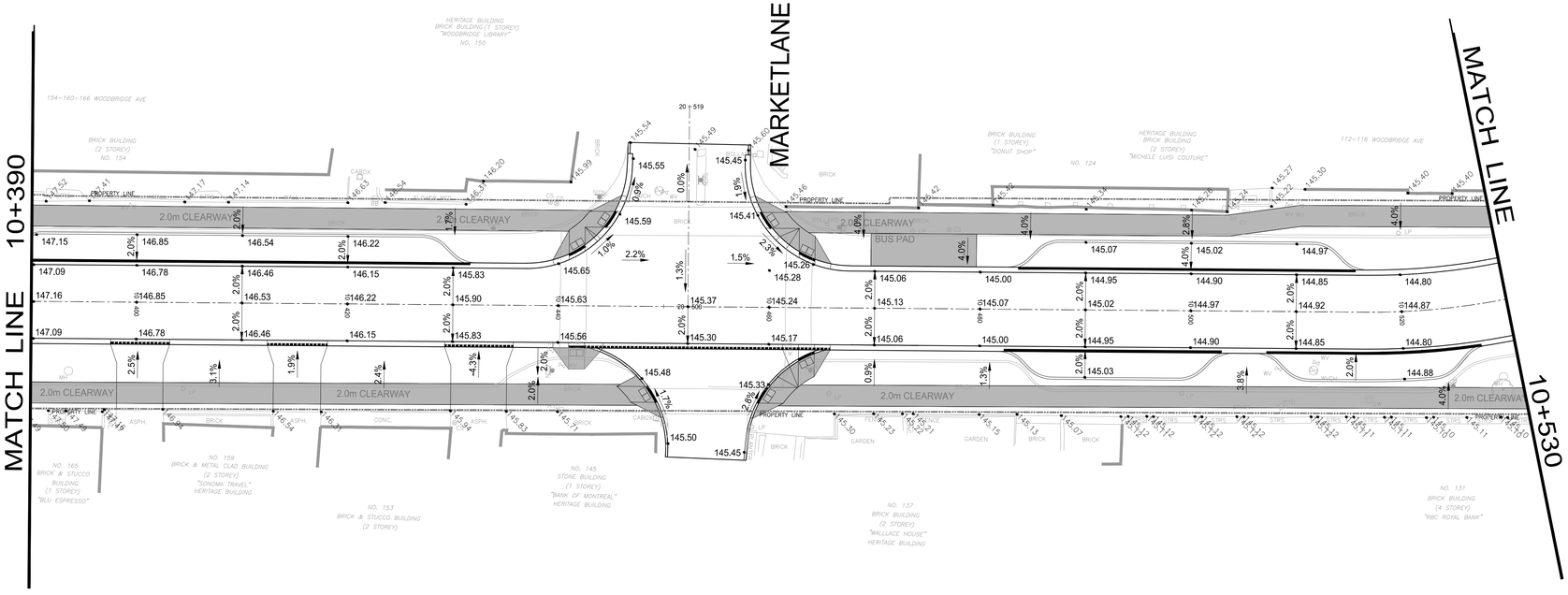

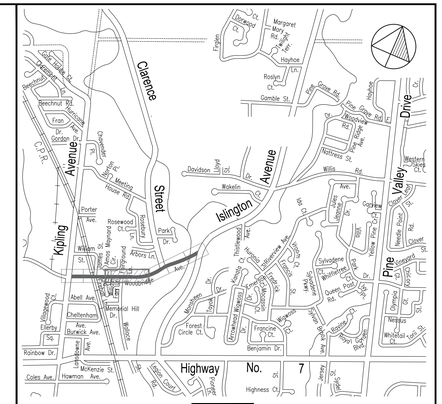

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PAVEMENT ELEVATIONS

VAUGHAN
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SCALE: HORIZONTAL: 1:250 VERTICAL: –	PROJ. No. 18-07RW	DWG. No. PE2

Printed: Jul. 30, 2021

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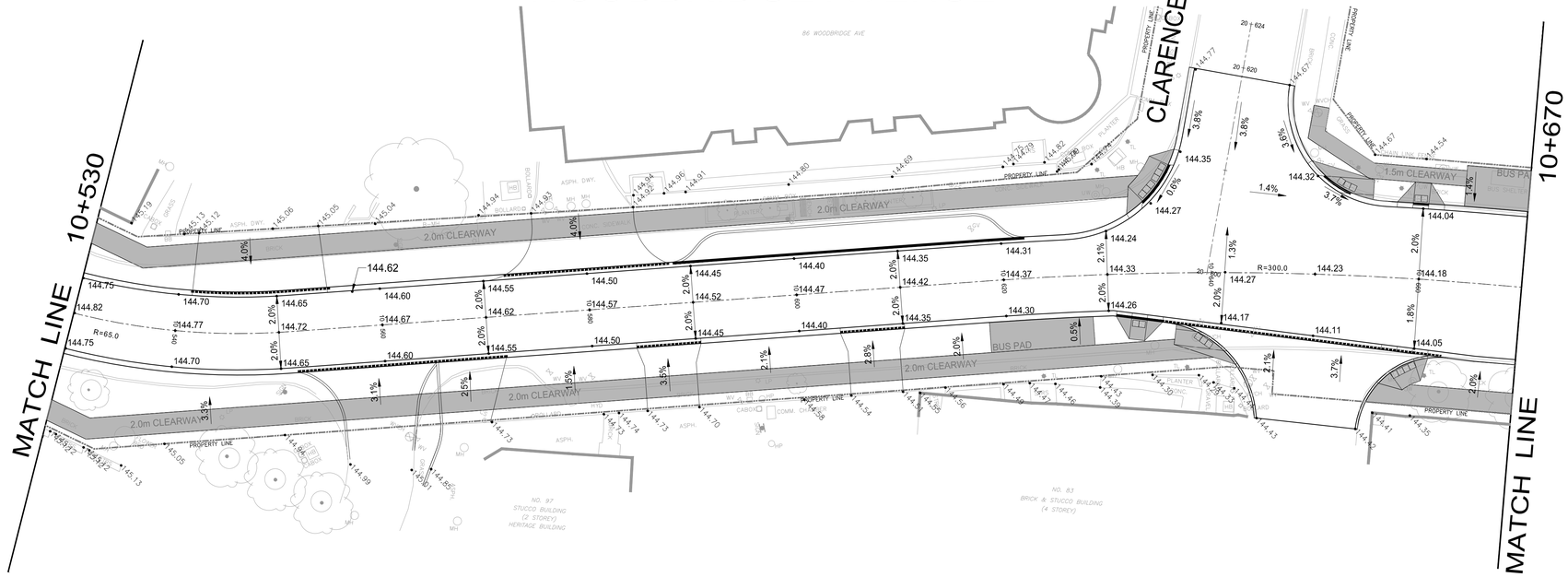
WOODBRIDGE AVENUE



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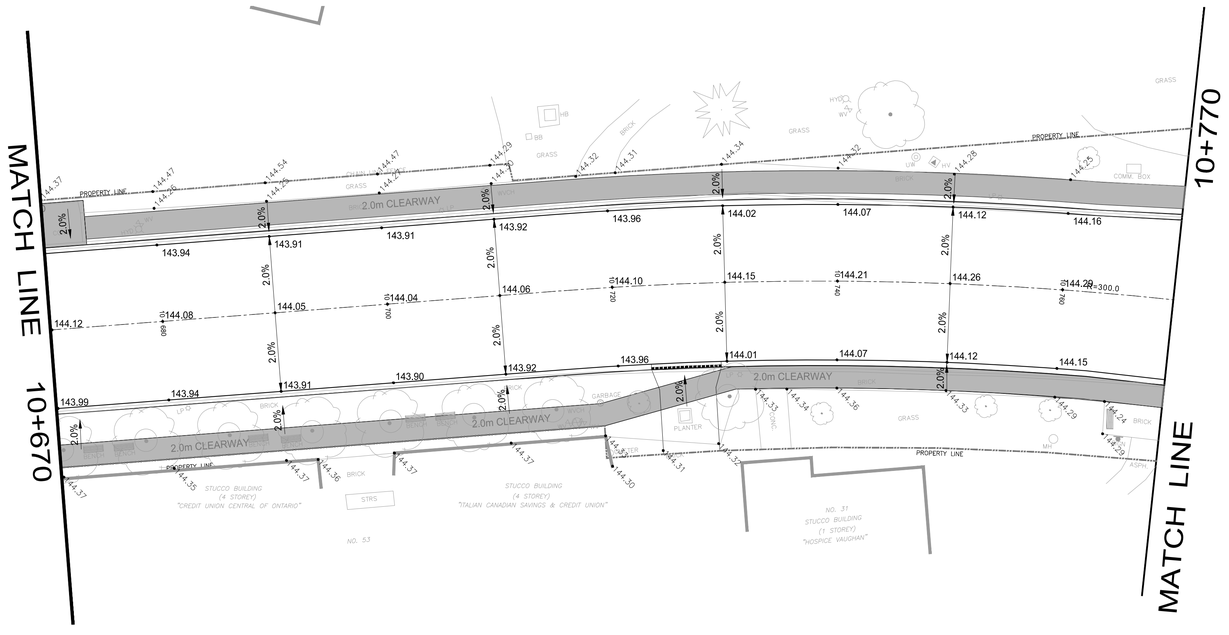

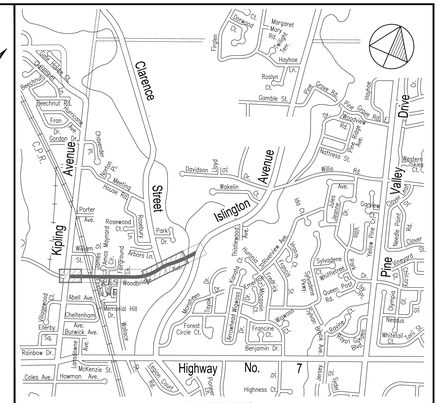

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WOODBRIDGE AVENUE
PAVEMENT ELEVATIONS

VAUGHAN
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DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
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SCALE: HORIZONTAL: 1:250 VERTICAL: –	PROJ. No. 18-07RW	DWG. No. PE3

Printed: Jul. 30, 2021

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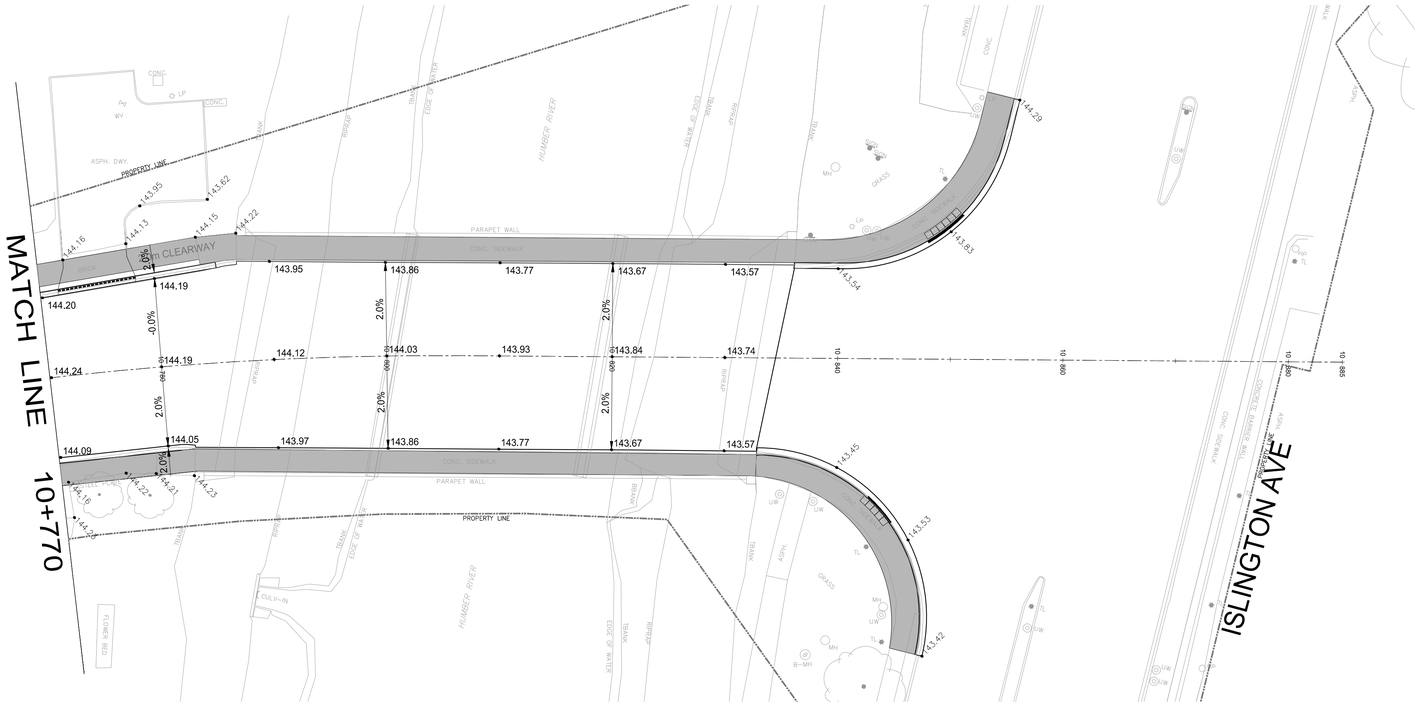
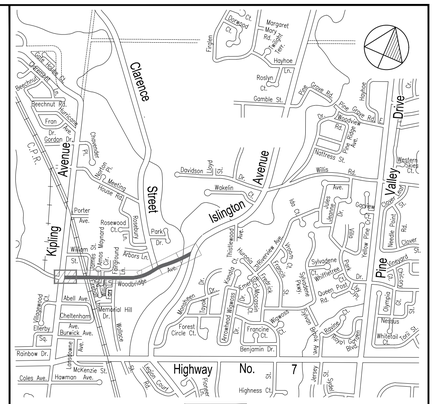
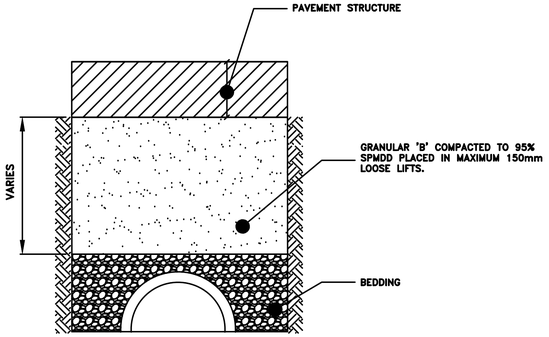
WOODBRIDGE AVENUE



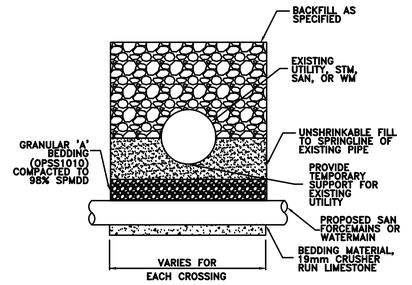

Clarence Street
Islington Avenue
Kipling Avenue
Valley Drive
Prince
Highway No. 7
Haynhurst Ct
Margaret Marie Cres
Haylone
Roslyn Ct
Gamble St
Bloomington Rd
Bowes Rd
Woodbridge Ave
Porter Ave
Rosewood Ct
Pleasant Dr
Arbors Ln
Abell Ave
Cheltenham Ave
Burbeck Ave
Rainbow Dr
Coles Ave
Hearnon Ave
McKenzie St
Memorial Hill Dr
Forest Circle Ct
Benjamin Dr
Tregrove Ct
Sunset Blvd
Sunset Ridge
Sunset Terrace
Sunset Ridge Ct
Sunset Ridge Rd
Sunset Ridge Cres
Sunset Ridge Dr



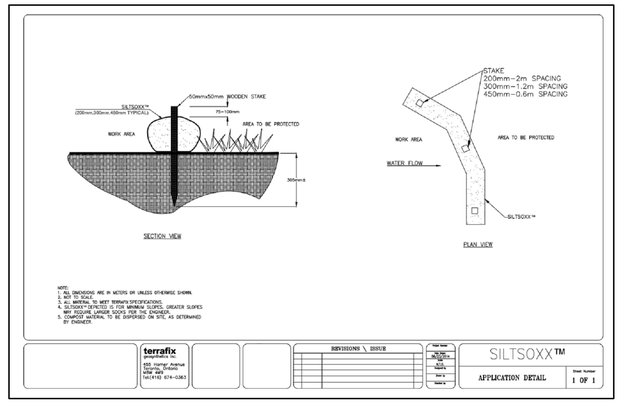
BACKFILL DETAIL
N.T.S.

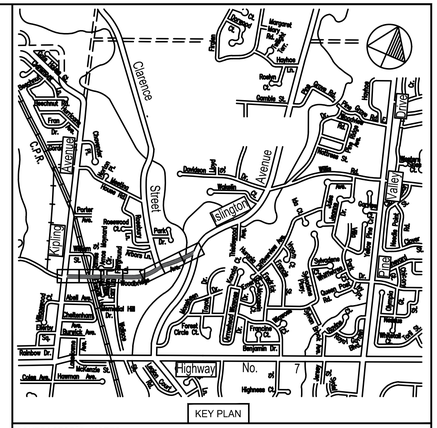
NOTE: THIS DETAIL APPLIES TO ALL THE LOCATIONS WHERE TRENCH BACKFILL IS TO BE GRANULAR B.

NOTES:
1. BACKFILL USING UNSHRINKABLE FILL TO SPRING LINE OF EXISTING UTILITY/SAN/STM/WM



TYPICAL UTILITY/SAN/STM/WM CROSSING SUPPORT DETAIL
N.T.S.





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BENCH MARK:
MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
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3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

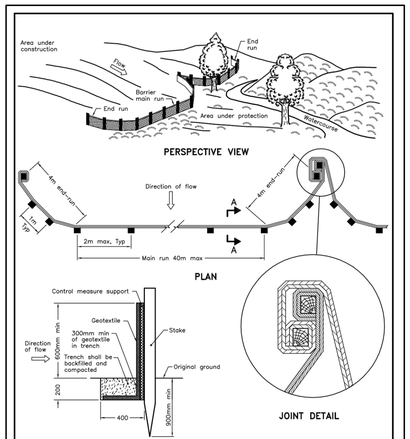
DATE

SCALES
HORIZONTAL: 0 5 10 25m
VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE
DETAILS

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. DET1



NOTE:
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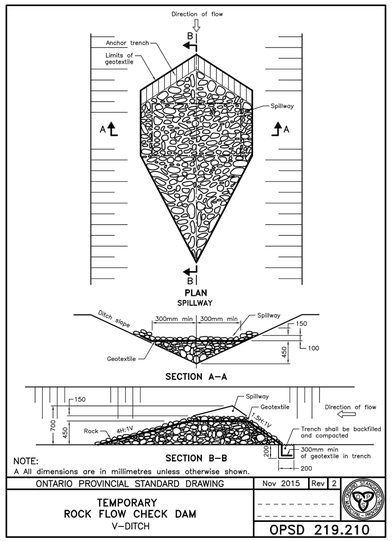
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev. 2
HEAVY–DUTY SILT FENCE BARRIER		OPSD 219.130



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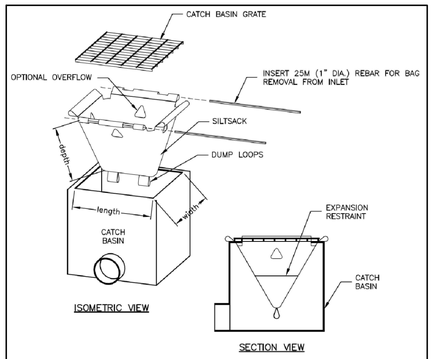
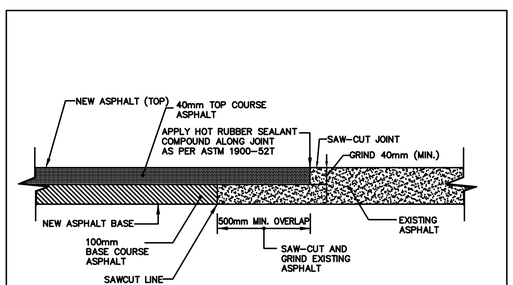
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2015	Rev. 2
TEMPORARY ROCK FLOW CHECK DAM V–DITCH		OPSD 219.210



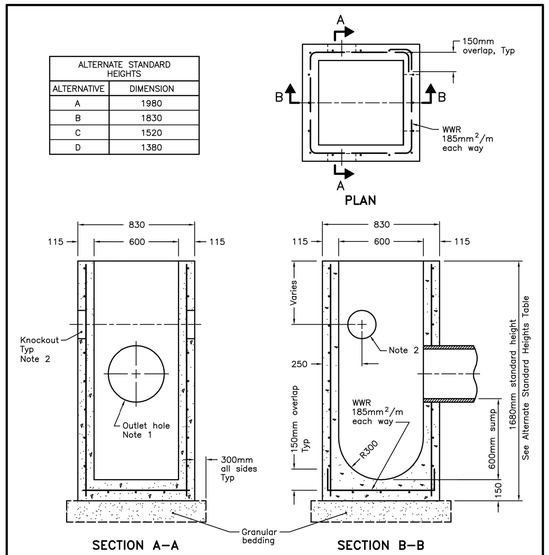
SILTSACK – TYPE B (NON–CURB INLET)
NTS



TYPICAL LAP JOINT DETAIL
N.T.S.

Printed: Jul. 30, 2021

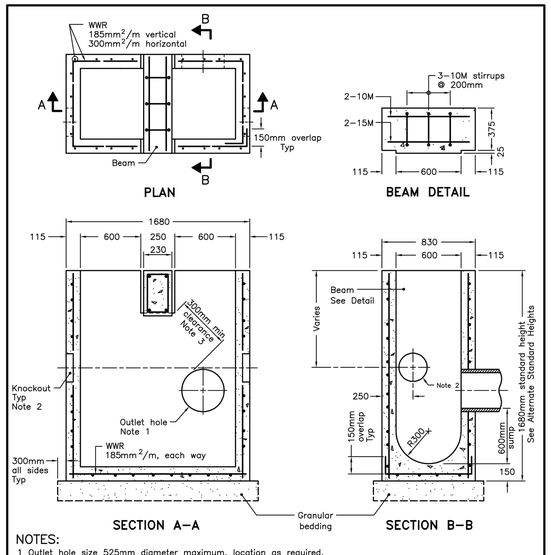
Xref File: \\connect.ibigroup.com\LV01\126979_Woodbridge_Ave\V2.0_Production\7.0 Design\04-Civil\Sheets\126979_STD_Details-Woodbridge.dwg Layout: DET1



NOTES:

1 Outlet hole size 525mm diameter maximum, location as required.
2 200mm diameter knockout to accommodate subdrain. Knockout shall be 60mm deep.
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.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2019	Rev 4
PRECAST CONCRETE CATCH BASIN 600x600mm		OPSD 705.010

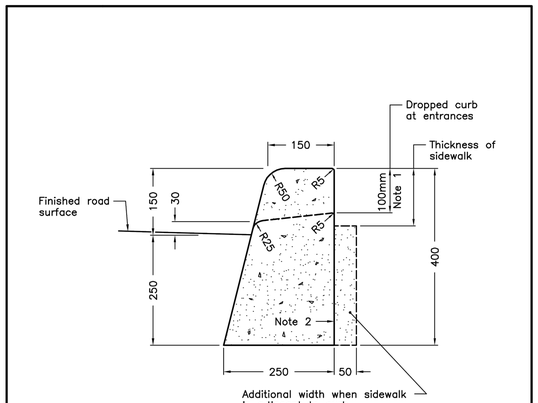


NOTES:

1 Outlet hole size 525mm diameter maximum, location as required.
2 200mm diameter knockout to accommodate subdrain. 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	
ALTERNATIVE	DIMENSION
A	1980
B	1830
C	1680

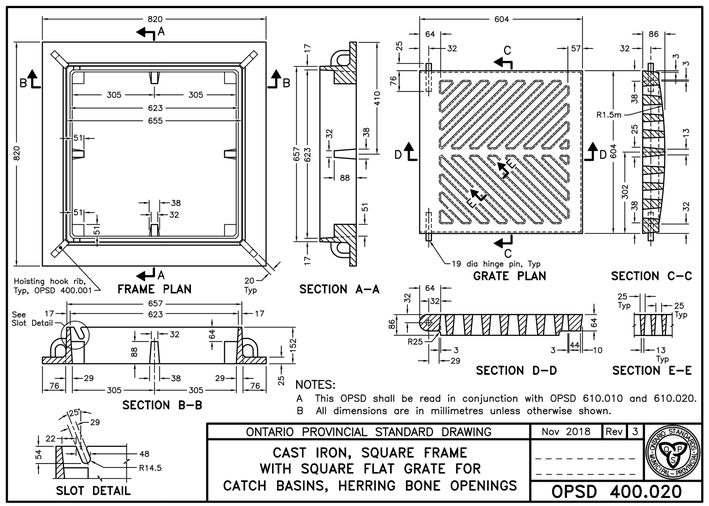
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2019	Rev 4
PRECAST CONCRETE TWIN INLET CATCH BASIN 600 x 1450mm		OPSD 705.020



NOTES:

1 When sidewalk is continuously adjacent, the dropped curb at entrances shall be reduced to 75mm.
2 For slipforming procedure a 5% batter 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 900 Series.
D All dimensions are in millimetres unless otherwise shown.

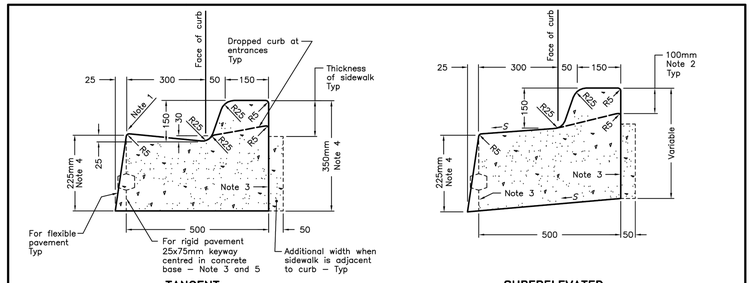
ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev 2
CONCRETE BARRIER CURB		OPSD 600.110



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.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 3
CAST IRON, SQUARE FRAME WITH SQUARE FLAT GRATE FOR CATCH BASINS, HERRING BONE OPENINGS		OPSD 400.020

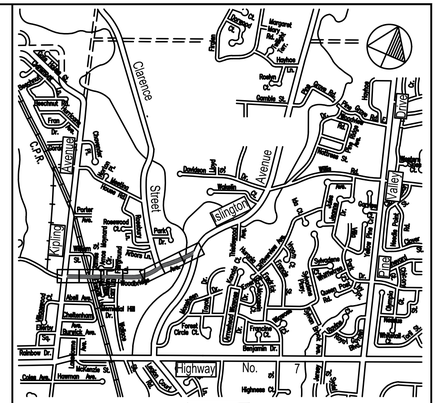


LEGEND:
S – Rate of pavement superelevation in percent, %.

NOTES:

1 Flexible and composite pavement shall be placed 5mm above the adjacent edge of gutter.
2 When sidewalk is continuously adjacent, the dropped curb at entrances shall be reduced to 75mm.
3 For slipforming procedure a 5% batter is acceptable.
4 For composite pavement the depth of concrete curb shall be adjusted to depth of concrete pavement.
5 When tie bars are specified, refer to OPSD 552.010 and 552.020 for details.
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 900 Series.
D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2012	Rev 2
CONCRETE BARRIER CURB WITH STANDARD GUTTER		OPSD 600.040



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WOODBRIDGE AVENUE
DETAILS

VAUGHAN
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SURVEYED BY: JK	APPROVED BY: SY	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. DET2

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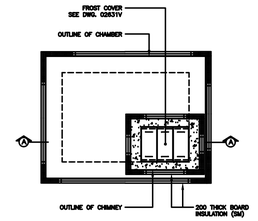
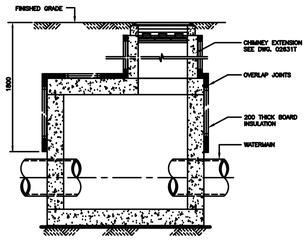
Printed: Jul. 30, 2021



PLAN ABOVE ROOF SLAB

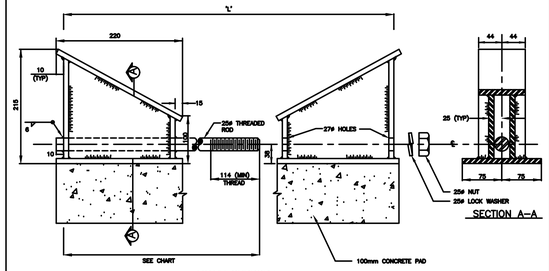


SECTION A–A

NOTES:

1. 100mm THICK INSULATION TO BE PROVIDED AS TWO LAYERS OF 50mm STYROFOAM SM. OR EQUIVALENT.
2. STAGGER INSULATION JOINTS
3. INSULATION TO BE INSTALLED ON ALL AIR RELEASE AND METER CHAMBERS.
3. INSULATION TO BE APPLIED WITH AIR BLOC 21 ADHESIVE OR APPROVED EQUAL.

CHAMBER INSULLATION DETAIL



SECTION A–A

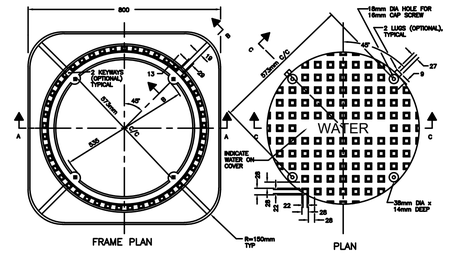
VALVE SUPPORT

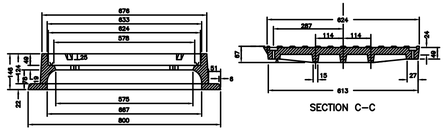
THREADED ROD LENGTHS	
VALVE SIZE	'L'
300	600
450	635
600	670

NOTES:

1. 10mm. THICK STEEL PLATE VALVE SUPPORTS.
2. CONTINUOUS WELDS AT ALL INTERSECTING JOINTS TO BE 6mm.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE VALVE CHAMBER DRAWING SHOWING POSITION OF SUPPORTS.
4. ALL PARTS TO BE HOT DIP GALVANIZED AFTER FABRICATION.
5. COAT UNDERSIDE OF PLATE WITH 2 COATS OF BITUMINOUS PAINT.

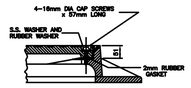
York Region	VALVE SUPPORT DETAILS	DWN	APPR
		DATE SEPT. 6, 2006	
	DRAWING NO. 02631GG	REV. 1	STANDARD NO. W–148





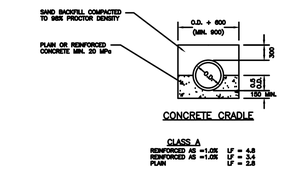
SECTION A–A

SECTION C–C



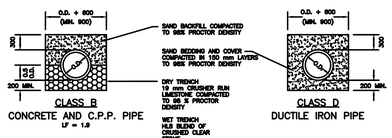
SECTION B–B

York Region	WATER MAINTENANCE HOLE, CAST IRON, COVER AND SQUARE FRAME	DWN	APPR
		DATE SEPT. 6, 2006	
	DRAWING NO. 02631R	REV. 1	STANDARD NO. W–132A



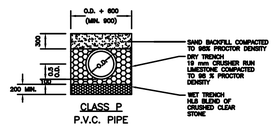
CONCRETE CRADLE

CLASS A
REINFORCED AS =1.0% LF = 4.8
REINFORCED AS =1.0% LF = 3.4
PLAIN LF = 2.8



CLASS B
CONCRETE AND C.P.P. PIPE
LF = 1.9

CLASS D
DUCTILE IRON PIPE



CLASS P
P.V.C. PIPE

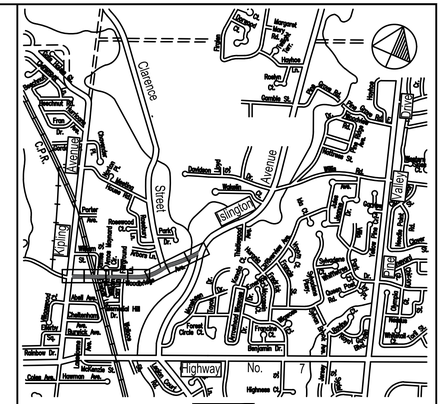
LEGEND

O.D. = OUTSIDE DIAMETER OF PIPE
LF = LOAD FACTOR
AS = AREA OF STEEL.

NOTES:

1. BEDDING MATERIALS SHALL BE FULLY EXTENDED AND COMPACTED AGAINST TRENCH WALLS AND UNDER HAUNCHES. BEDDING MATERIALS SHALL BE PLACED AND COMPACTED IN 150 mm LAYERS.
2. NO MECHANICAL COMPACTION EQUIPMENT SHALL BE USED ON TOP OF PIPE PRIOR TO PLACING A MINIMUM OF 300 mm COVER.
3. PIPE SHALL BE BEDDED TO PROPOSED LINE AND GRADE WITH UNIFORM AND CONTINUOUS SUPPORT FROM BEDDING. BLOCKING WITH ANY HARD OBJECT SHALL NOT BE USED TO BRING THE PIPE TO GRADE.
4. FILTER FABRIC SHALL BE USED IF GROUND WATER TABLE IS ABOVE THE TRENCH BED OR IF GROUND WATER IS FLOWING INTO TRENCH THROUGH THE EMBEDMENT ZONE.
5. BEDDING AS PER GEOTECHNICAL RECOMMENDATION.

York Region	SANITARY AND WATER TRENCH BEDDING DETAIL	DWN	APPR
		DATE SEPT. 6, 2006	
	DRAWING NO. 02315A	REV. 1	STANDARD NO. W–206



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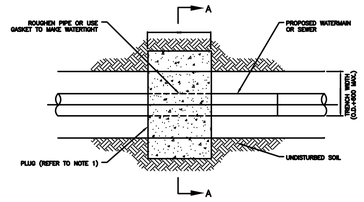
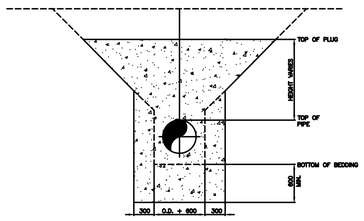
Printed: Jul. 30, 2021



PLAN

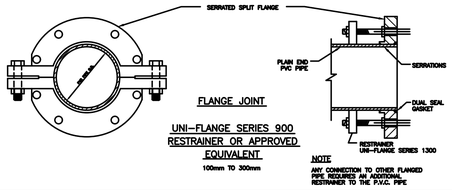


SECTION A–A

NOTES:

1. FOR ROCK PIPE, PLUG SHALL BE CONSTRUCTED OF NON-SHRINK OR GEOTECH APPROVED CLAY COMPACTED TO 100% STANDARD PROCTOR DENSITY. FOR PVC PIPE, PLUG MUST BE CONSTRUCTED OF GEOTECH APPROVED CLAY COMPACTED TO 100% STANDARD PROCTOR DENSITY.
2. SURFACE OF PIPE TO BE ROUGHENED OR GASKET USED TO MAKE WATERTIGHT.
3. PLUGS SHALL EXTEND 300mm INTO UNDISTURBED GROUND ON SIDES OF TRENCH WHETHER OPEN CUT OR VERTICAL TRENCH.
4. LOCATION OF PLUGS MAY BE ADJUSTED TO AVOID OBSTACLES.
5. PLUGS TO BE SPACED AND HEIGHT AS PER GEOTECHNICAL RECOMMENDATIONS.

York Region	WATERMAIN AND SEWER TRENCH PLUG	DWN	APPR
		DATE SEPT. 6, 2006	
	DRAWING NO. 02315B	REV. 1	STANDARD NO. W–207



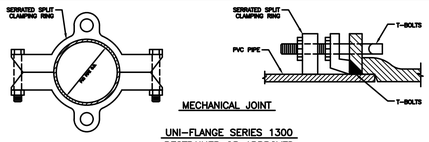
FLANGE JOINT

UNI–FLANGE SERIES 900 RESTRAINER OR APPROVED EQUIVALENT

100mm TO 300mm

NOTE

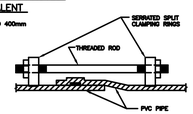
ANY CONNECTION TO OTHER FLANGED PIPE REQUIRES AN ADDITIONAL RESTRAINER TO THE P.V.C. PIPE



MECHANICAL JOINT

UNI–FLANGE SERIES 1300 RESTRAINER OR APPROVED EQUIVALENT

100mm TO 400mm



MECHANICAL JOINT

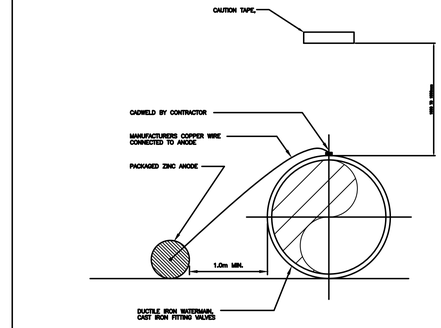
UNI–FLANGE SERIES 1300 RESTRAINER OR APPROVED EQUIVALENT

100mm TO 400mm

NOTES:

1. ALL BOLTS AND NUTS SHALL BE STAINLESS STEEL OR EQUIVALENT.
2. REFER TO CONTRACT DRAWINGS FOR LENGTH OF JOINTS TO BE RESTRAINED.
3. ONE 5.4kg ZINC ANODE IS TO BE INSTALLED ON EACH RESTRAINER.
4. ANODE WIRE TO BE FASTENED TO RESTRAINER WITH THERMITE WELD.
5. ALL THERMITE WELD CONNECTIONS TO BE COATED WITH "ROYSEAL 747" PRIMER AND ROYSTON "HANDY CAP" OR APPROVED EQUAL.
6. MINIMUM HORIZONTAL DISTANCE BETWEEN ACCESS ANODES 1.0m.

York Region	RESTRAINED JOINT DETAIL FOR PVC PIPE	DWN	APPR
		DATE SEPT. 6, 2006	
	DRAWING NO. 02531D	REV. 1	STANDARD NO. W–210



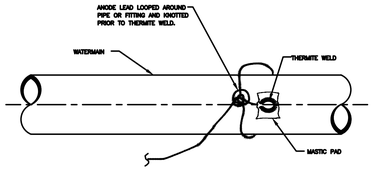
ANODE CONNECTION DETAIL

N.T.S.

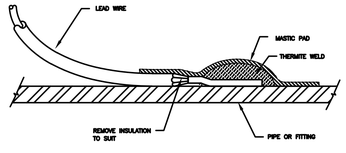
NOTES:

1. CONTRACTOR IS TO USE PROPER MOULD AND CARTRIDGES FOR THE CADWELD (CONFIGURATION OF MOULD VARIES WITH PIPE DIAMETER).
2. THE PIPE SURFACE AT THE POINT OF WELD MUST BE SCRAPED CLEAN OF BITUMINOUS COATING TO PROVIDE A GOOD CLEAN CONTACT.
3. AFTER THE WELD IS COMPLETED, A THICK COATING OF T. C. MASTIC (TAPECOAT OF CANADA) MUST BE APPLIED BY BRUSH TO ALL EXPOSED METAL AT THE WELD.
4. ALL DIRECT BURIED VALVES AND FITTINGS TO BE CATHODICALLY PROTECTED AS DETAILED ON THE CONTRACT DRAWINGS.
5. ALL SACRIFICIAL ANODES SHALL CONFORM TO ASTM B–418–73 TYPE II AND SHALL BE MADE OF HIGH GRADE ELECTROLYTE ZINC 99.85% PURE.

York Region	CATHODIC PROTECTION TRACER WIRE ARRANGEMENT ON WATERMAIN/FORCEMAIN	DWN	APPR
		DATE SEPT. 6, 2006	
	DRAWING NO. 02555A	REV. 1	STANDARD NO. W–213

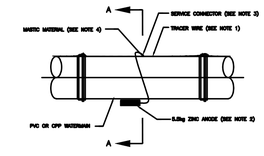


PLAN

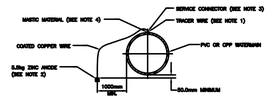


SECTION

York Region	TYPICAL THERMITE WELD	DWN	APPR
		DATE SEPT. 6, 2006	
	DRAWING NO. 02555B	REV. 1	STANDARD NO. W–214



ELEVATION

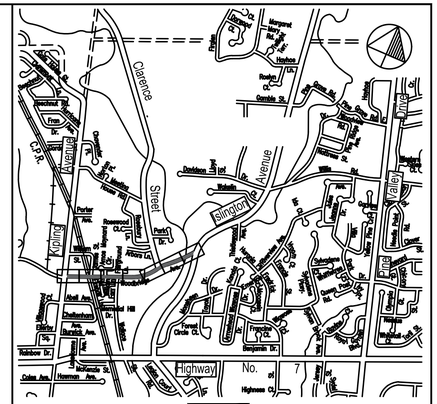


SECTION A–A

NOTES:

1. TRACER WIRE 7 STRAND, 9 GAUGE T975, THU 75 OR RWU90LPE WIRE RATED AT MINUS 40 C.
2. 5.0kg ZINC ANODE TO BE SUPPLIED AND INSTALLED IN A MANNER APPROVED BY THE REGION FOR EVERY 1000m OR 1 PER SECTION MIN. OF TRACER WIRE INSTALLED.
3. SERVICE CONNECTOR TO BE A "BARNEY BERMIT, TYPE K.S. MODEL 1550 COPPER OR APPROVED EQUAL.
4. CONNECTOR SPLICE TO BE WRAPPED WITH "SCOTCH FIL" ELECTRICAL PUTTY OR APPROVED EQUAL.

York Region	CORROSION PROTECTION FOR TRACER WIRE	DWN	APPR
		DATE SEPT. 6, 2006	
	DRAWING NO. 02555D	REV. 1	STANDARD NO. W–216



CONTRACTOR'S NOTES:

1. ALL DIMENSIONS ARE IN METRES AND / OR MILLIMETRES UNLESS OTHERWISE INDICATED.
2. DRAWINGS ARE NOT TO BE SCALED.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY UPON FINDING.
4. THE EXACT LOCATION OF UTILITIES SHALL BE DETERMINED BY CONSULTING THE UTILITY COMPANIES CONCERNED. THE CONTRACTOR SHALL PROVE THE LOCATION OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION FROM DAMAGE.
5. BENCHMARKS FOR LAYOUT ARE TO BE OBTAINED FROM THE CITY OF VAUGHAN ENGINEERING DEPARTMENT.

NOTE:

EVERY REASONABLE EFFORT HAS BEEN MADE TO ENSURE THAT THE INFORMATION APPEARING ON THIS PLAN IS ACCURATE AND CURRENT. WE BELIEVE THE INFORMATION TO BE RELIABLE, HOWEVER, THE CITY OF VAUGHAN ASSUMES NO RESPONSIBILITY OR LIABILITY DUE TO ERRORS OR OMISSIONS.

BENCH MARK:

MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2	60% SUBMISSION	SY	2021/07/30
1	30% SUBMISSION	SY	2021/01/15

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALES

HORIZONTAL: 0 5 10 25m

VERTICAL: 0 1 5 10m

WOODBRIDGE AVENUE

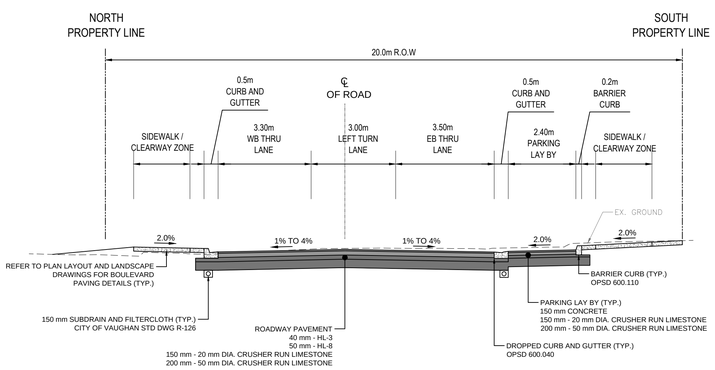
DETAILS

VAUGHAN
Infrastructure Delivery

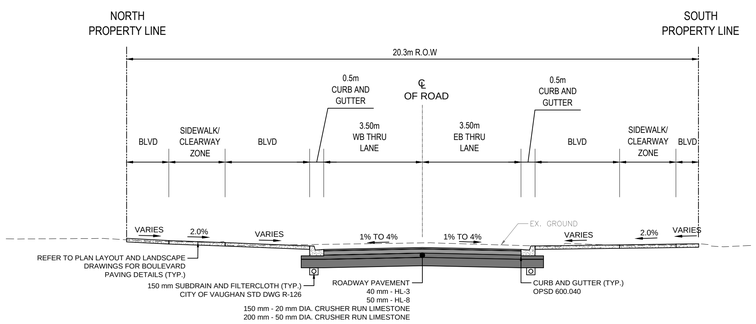
DESIGNED & DRAWN BY: MK/TL	CHECKED BY: KC	TENDER No.	
SURVEYED BY: JK	APPROVED BY: SY	T18-___	
SCALE: HORIZONTAL: AS SHOWN VERTICAL: AS SHOWN	PROJ. No. 18-07RW	DWG. No. DET4	

Acad File: \\vaxnasd.bigroup.com\VGR\12687RL_Woodbridge_Ave\VGL_Production\VGL_Design\On_Civil\Sheets\12687RL_RTL_Details_Woodbridge.dwg Layout: DET4

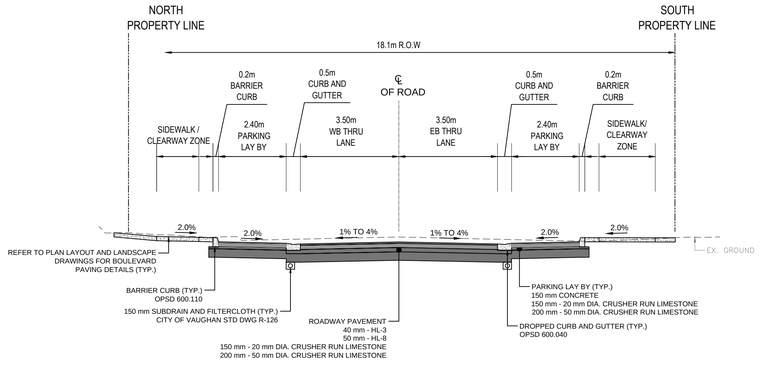
Printed: Jul. 30, 2021



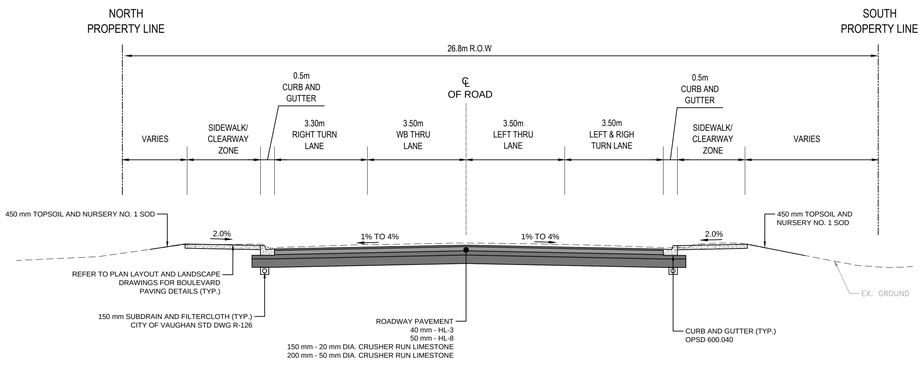
TYPICAL CROSS-SECTION (SCALE 1:100)
PARKING LAY BY ON ONE SIDE



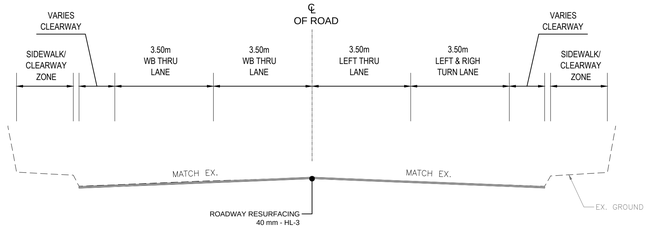
TYPICAL CROSS-SECTION (SCALE 1:100)
2 LANE ROADWAY



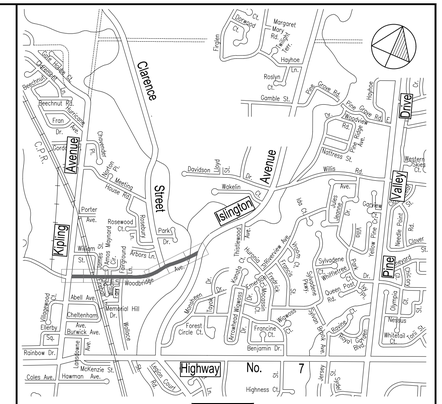
TYPICAL CROSS-SECTION (SCALE 1:100)
PARKING LAY-BY ON BOTH SIDES



TYPICAL CROSS-SECTION (SCALE 1:100)
4 LANE ROADWAY



TYPICAL CROSS-SECTION (SCALE 1:100)
BRIDGE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Islington Avenue
Valley Drive
Highway No. 7
Woodbridge
Rainbow Dr.
Coles Ave.
Hoarton Ave.
McKenzie St.
Abell Ave.
Cheltenham Ave.
Burrows Ave.
Forest Circle Ct.
Benjamin Dr.
Frogcove Ct.
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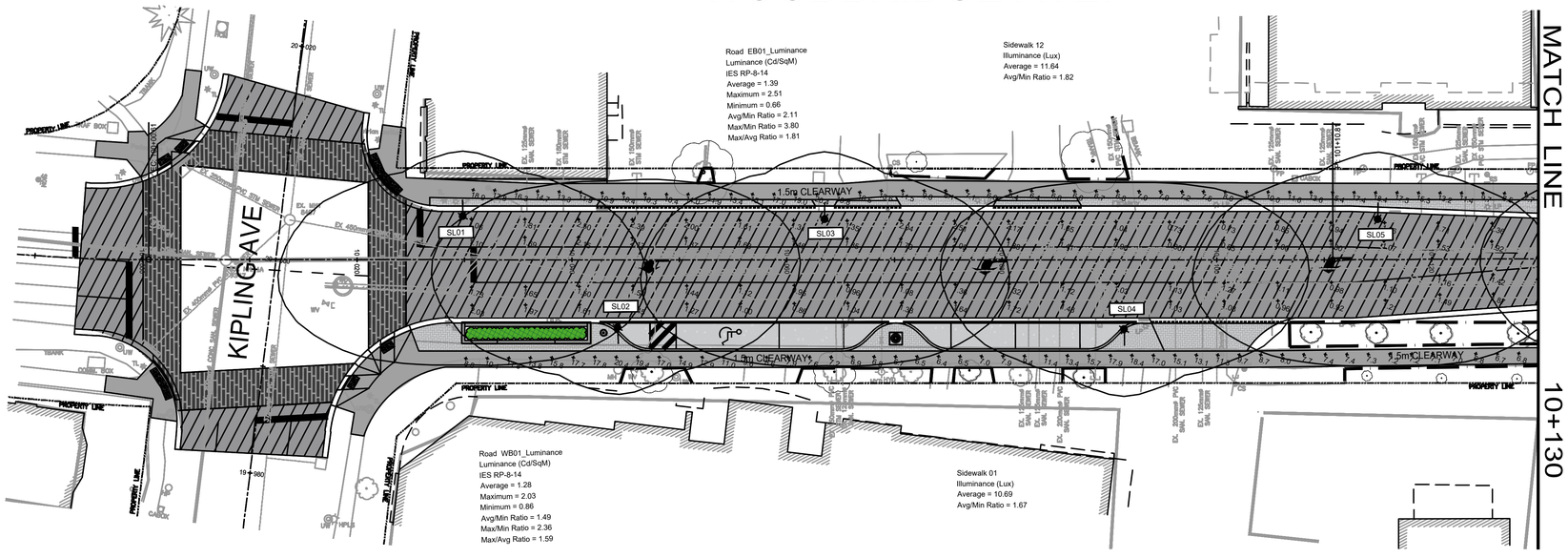
Meadowcrest Park

WOODBRIDGE AVE.



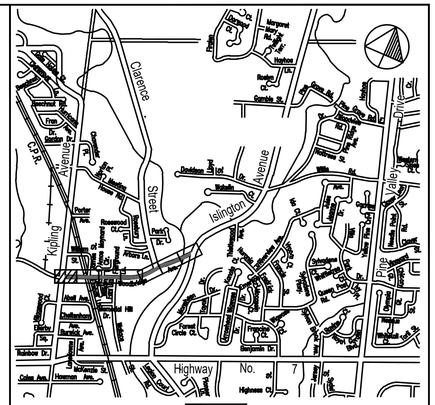
LEGEND:

SLXX

PROPOSED STREET LIGHT MOUNTED ON 7.62m
STRESSCRETE OCTAGONAL CONCRETE POLE
BRACKET:1.2m, TYPE AC4
LUMINAIRE: MSC URBANSCAPE LED PENDENT
DISTRIBUTION TYPE III,
WATTAGE: 108W
COLOR TEMPERATURE: 3000K

ESLXX

EXISTING KING LUMINARIE FIXTURE 52W



KEY PLAN

CONTRACTOR'S NOTES:

1. ALL DIMENSIONS ARE IN METRES AND / OR MILLIMETRES UNLESS OTHERWISE INDICATED.
2. DRAWINGS ARE NOT TO BE SCALED.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY UPON FINDING.
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5. BENCHMARKS FOR LAYOUT ARE TO BE OBTAINED FROM THE CITY OF VAUGHAN ENGINEERING DEPARTMENT.

NOTE:

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BENCH MARK:

MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2			
1	60% SUBMISSION	KB	30/07/2021

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE, UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALES
HORIZONTAL: 0 5 10 25m
VERTICAL: N/A

WOODBRIDGE AVENUE
IMPROVEMENTS
PHOTOMETRIC LAYOUT 1

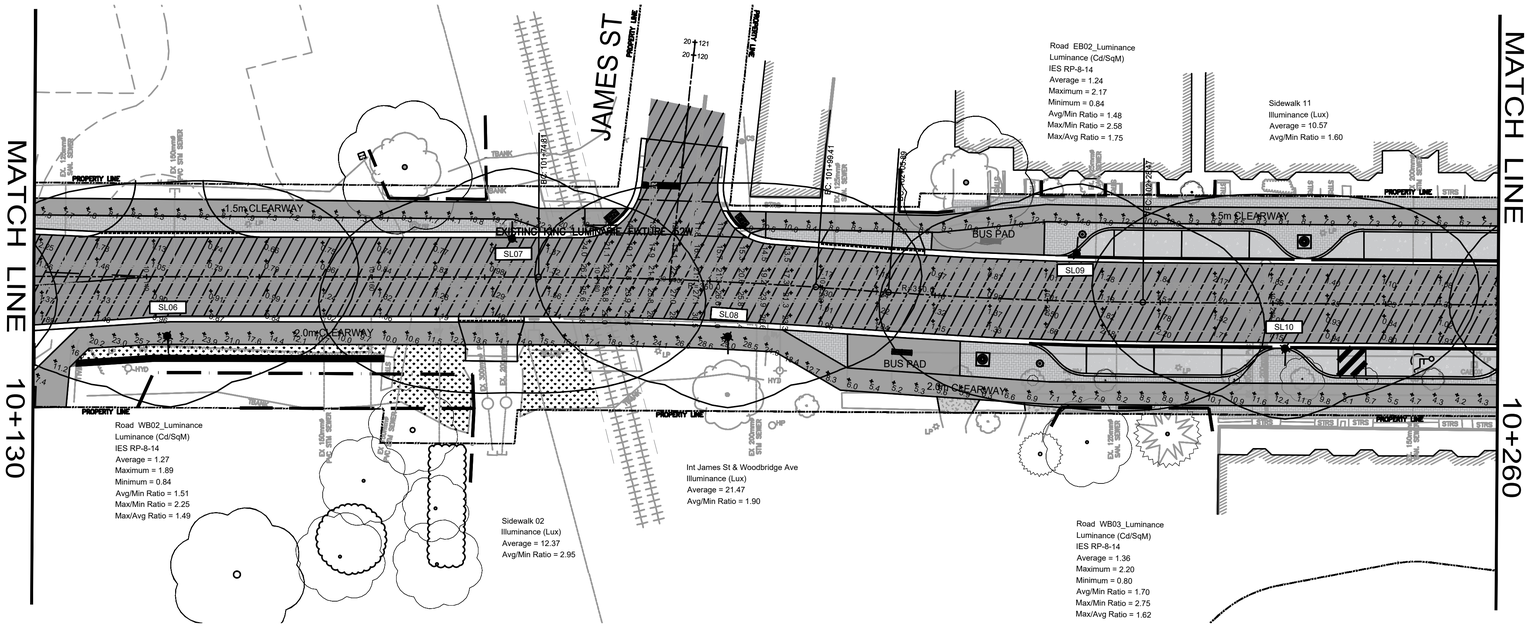
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: KB	CHECKED BY: OA	TENDER No. T18-____
SURVEYED BY: JK	APPROVED BY: OA	
SCALE: HORIZONTAL: 1:250 VERTICAL: N/A	PROJ. No. 18-07RW	DWG. No. E1

Printed: Jul. 30, 2021

Xref File: z:\12687\5_Woodbridge_Ave\7.0_Production\7.03_Design\14_Dec--Rel\Photometric layout\Layout1.dwg Layout: E1

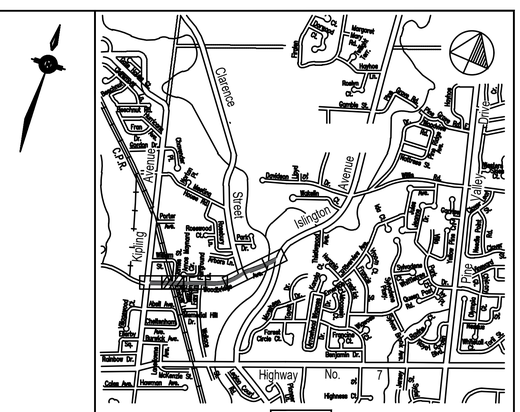
WOODBRIDGE AVENUE



LEGEND:

SLXX — PROPOSED STREET LIGHT MOUNTED ON 7.62m
STRESSCRETE OCTAGONAL CONCRETE POLE
BRACKET:1.2m, TYPE AC4
LUMINAIRE: MSC URBANSCAPE LED PENDENT
DISTRIBUTION TYPE III,
WATTAGE: 108W
COLOR TEMPERATURE: 3000K

ESLXX — EXISTING KING LUMINARIE FIXTURE 52W



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ELEVATION:

NO.	DESCRIPTION	BY	DATE
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4			
3			
2			
1	60% SUBMISSION	KB	30/07/2021

UPDATES & REVISIONS

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Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALES
HORIZONTAL: 0 5 10 25m
VERTICAL: N/A

WOODBRIDGE AVENUE

IMPROVEMENTS
PHOTOMETRIC LAYOUT 2

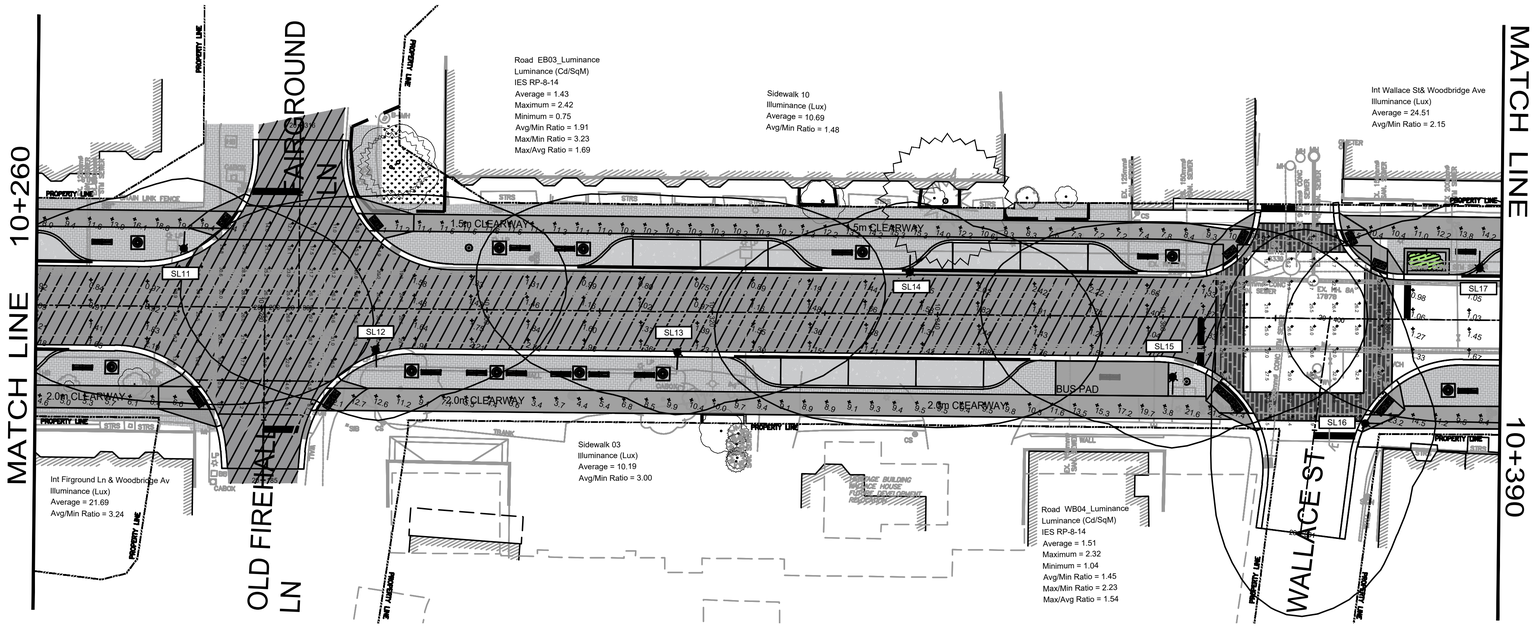
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: KB	CHECKED BY: OA	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: OA	
SCALE: HORIZONTAL: 1:250 VERTICAL: N/A	PROJ. No. 18-07RW	DWG. No. E2

Printed: Jul. 30, 2021

Acad File: X:\18RW\Woodbridge Ave\07d_Production\7.0d_Design\1.0_Doc-Brk\Photometric layout\18RW_Photometric layout.dwg Layout: E2

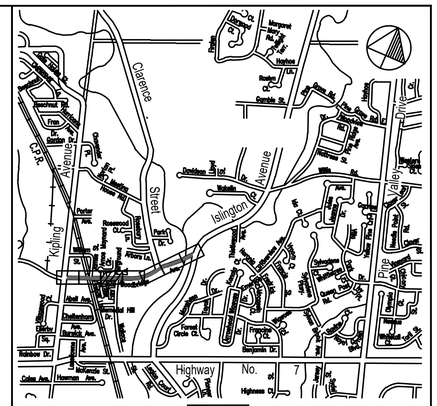
WOODBRIDGE AVENUE



LEGEND:

SLXX — PROPOSED STREET LIGHT MOUNTED ON 7.62m STRESSCRETE OCTAGONAL CONCRETE POLE
BRACKET:1.2m, TYPE AC4
LUMINAIRE: MSC URBANSCAPE LED PENDENT
DISTRIBUTION TYPE III,
WATTAGE: 108W
COLOR TEMPERATURE: 3000K

ESLXX — EXISTING KING LUMINARIE FIXTURE 52W



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ELEVATION:

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1	60% SUBMISSION	KB	30/07/2021

UPDATES & REVISIONS

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALES
HORIZONTAL: 0 5 10 25m
VERTICAL: N/A

WOODBRIDGE AVENUE
IMPROVEMENTS
PHOTOMETRIC LAYOUT 3

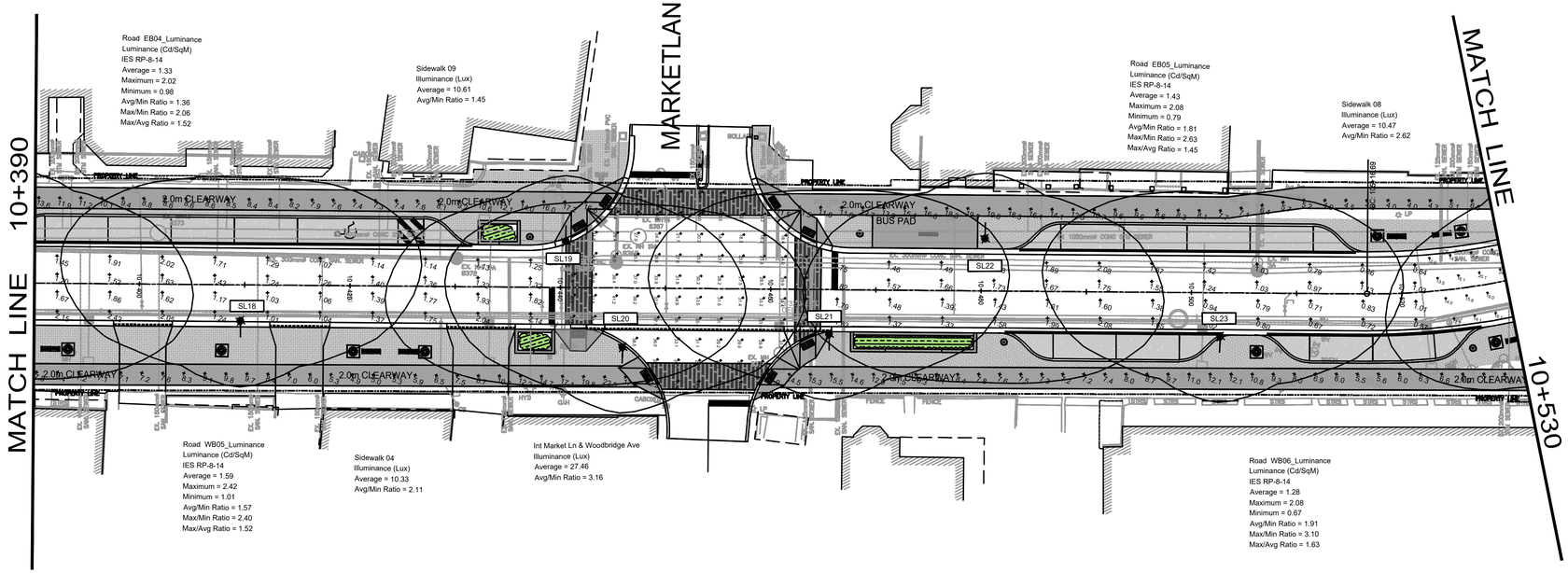
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: KB	CHECKED BY: OA	TENDER No.	
SURVEYED BY: JK	APPROVED BY: OA	T18-____	
SCALE: HORIZONTAL: 1:250 VERTICAL: N/A	PROJ. No. 18-07RW	DWG. No. E3	

Printed: Jul. 30, 2021

Acad File: a:\13967fl_WoodbridgeAve\VDA_Production\VDA_Design\1A_Elec-Bld\Photometric layout\13967fl_Photometric layout.dwg Layout: E3

WOODBRIDGE AVENUE



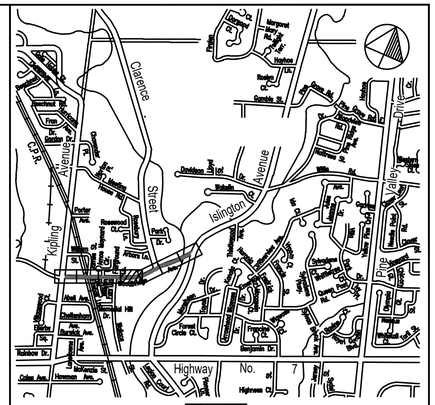
LEGEND:

SLXX

PROPOSED STREET LIGHT MOUNTED ON 7.62m
STRESSCRETE OCTAGONAL CONCRETE POLE
BRACKET:1.2m, TYPE AC4
LUMINAIRE: MSC URBANSCAPE LED PENDENT
DISTRIBUTION TYPE III,
WATTAGE: 108W
COLOR TEMPERATURE: 3000K

ESLXX

EXISTING KING LUMINARIE FIXTURE 52W



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2			
1	60% SUBMISSION	KB	30/07/2021

UPDATES & REVISIONS

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Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALES
HORIZONTAL: 0 5 10 25m
VERTICAL: N/A

WOODBRIDGE AVENUE

IMPROVEMENTS
PHOTOMETRIC LAYOUT 4

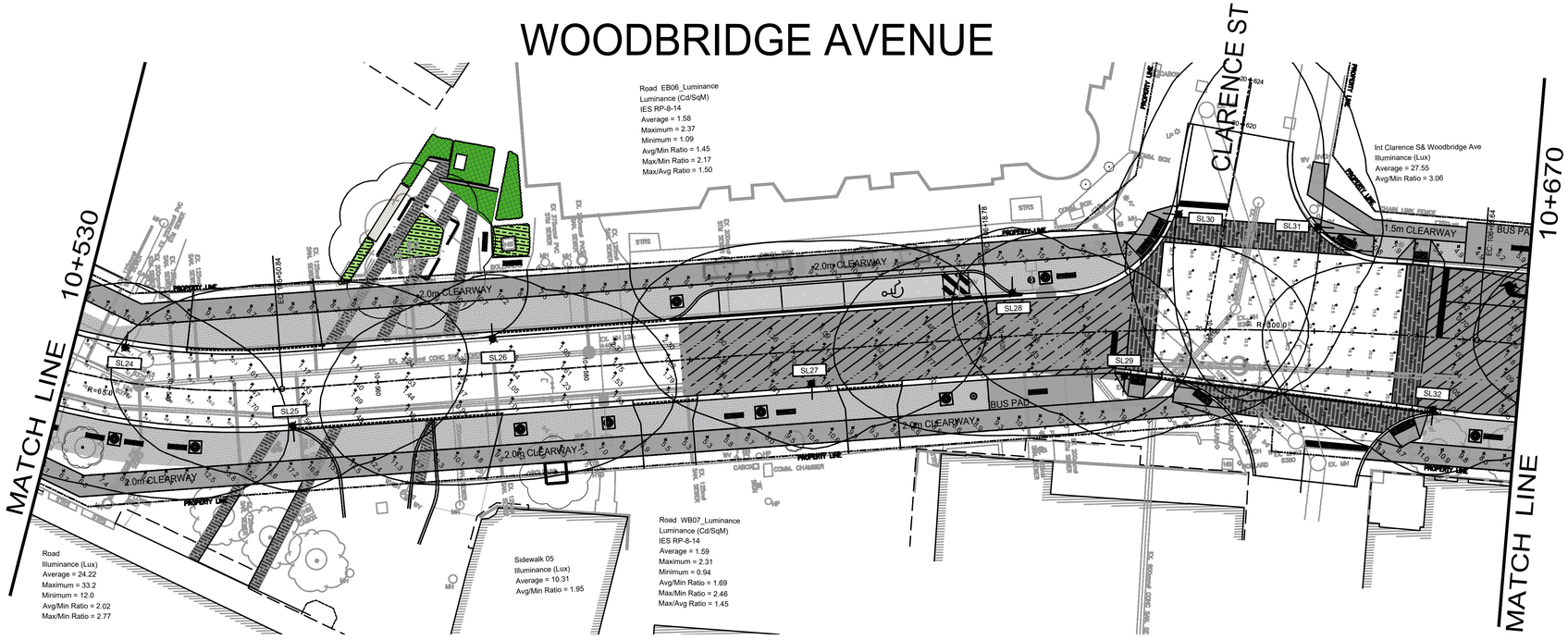
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: KB	CHECKED BY: OA	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: OA	
SCALE: HORIZONTAL: 1:250 VERTICAL: N/A	PROJ. No. 18-07RW	DWG. No. E4

Printed: Jul. 30, 2021

Autod File: J:\18RW_Woodbridge_Ave\07.0_Production\07.00_Drafting\11_Elec-Str\Photometric layout\18RW_Photometric layout.dwg Layout: E4

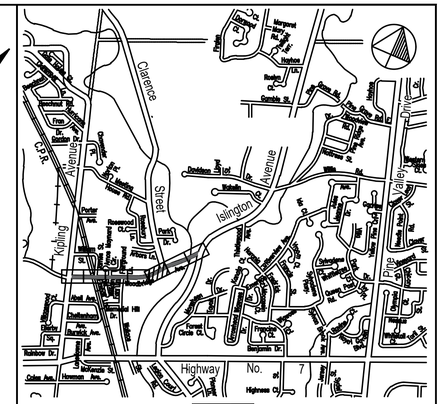
WOODBRIDGE AVENUE



LEGEND:

SLXX — PROPOSED STREET LIGHT MOUNTED ON 7.62m
STRESSCRETE OCTAGONAL CONCRETE POLE
BRACKET:1.2m, TYPE AC4
LUMINAIRE: MSC URBANSCAPE LED PENDENT
DISTRIBUTION TYPE III,
WATTAGE: 108W
COLOR TEMPERATURE: 3000K

ESLXX — EXISTING KING LUMINARIE FIXTURE 52W



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BENCH MARK:

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ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
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3			
2			
1	60% SUBMISSION	KB	30/07/2021

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

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Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALES
HORIZONTAL: 0 5 10 25m
VERTICAL: N/A

WOODBRIDGE AVENUE
IMPROVEMENTS
PHOTOMETRIC LAYOUT 5

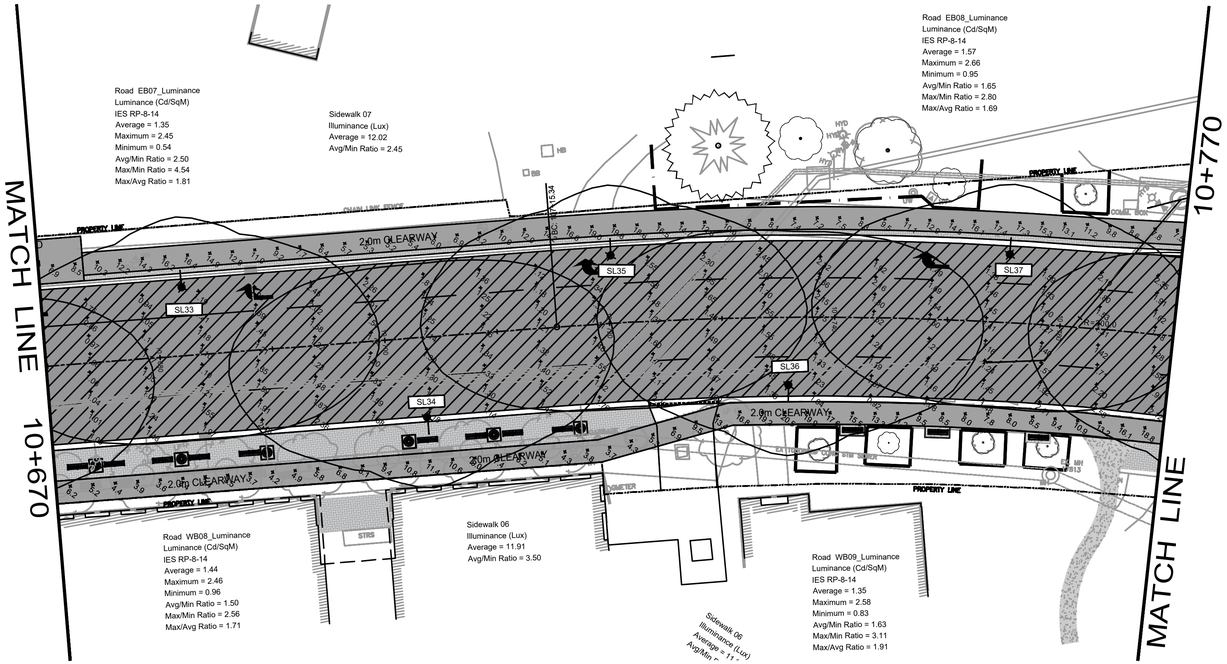
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: KB	CHECKED BY: OA	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: OA	
SCALE: HORIZONTAL: 1:250 VERTICAL: N/A	PROJ. No. 18-07RW	DWG. No. E5

Printed: Jul. 30, 2021

Xref File: z:\\13897L_Woodbridge_Ave\7.0_Production\7.05_Design\1-4_Dec-8x5_Photometric layout.dwg Layout: E5

WOODBRIDGE AVENUE



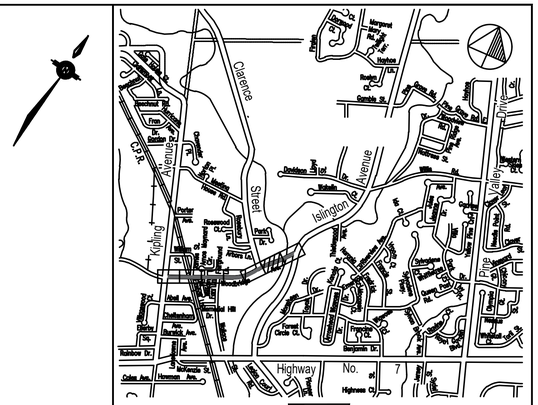
LEGEND:

SLXX

PROPOSED STREET LIGHT MOUNTED ON 7.62m
STRESSCRETE OCTAGONAL CONCRETE POLE
BRACKET:1.2m, TYPE AC4
LUMINAIRE: MSC URBANSCAPE LED PENDENT
DISTRIBUTION TYPE III,
WATTAGE: 108W
COLOR TEMPERATURE: 3000K

ESLXX

EXISTING KING LUMINARIE FIXTURE 52W



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2			
1	60% SUBMISSION	KB	30/07/2021

UPDATES & REVISIONS

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALES
HORIZONTAL: 0 5 10 25m
VERTICAL: N/A

WOODBRIDGE AVENUE
IMPROVEMENTS
PHOTOMETRIC LAYOUT 6

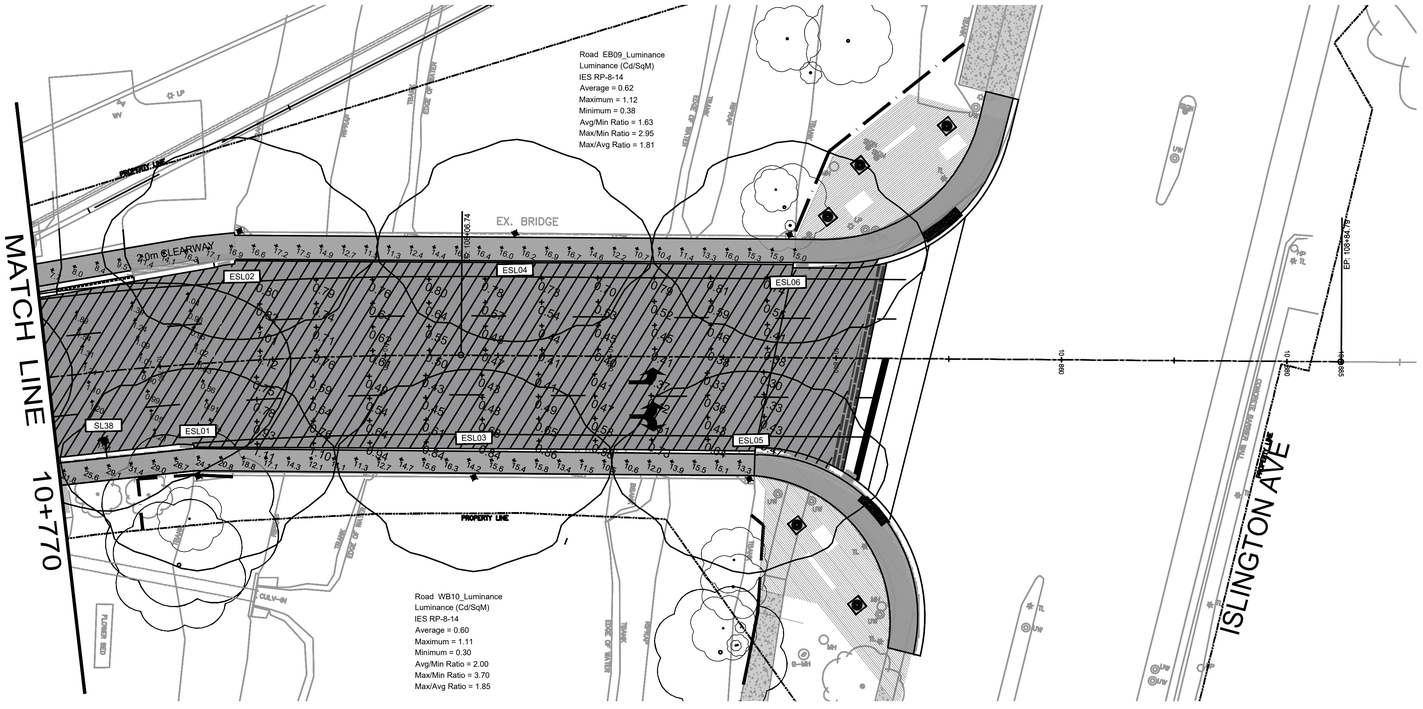
VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: KB	CHECKED BY: OA	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: OA	
SCALE: HORIZONTAL: 1:250 VERTICAL: N/A	PROJ. No. 18-07RW	DWG. No. E6

Printed: Jul. 30, 2021

Acad File: X:\13687FL_Woodbridge_Ave\V2_Production\7.0_Design\14_Elec--Bld\Photometric layout\13687FL_Photometric layout.dwg Layout: E6

WOODBRIDGE AVENUE



LEGEND:

SLXX

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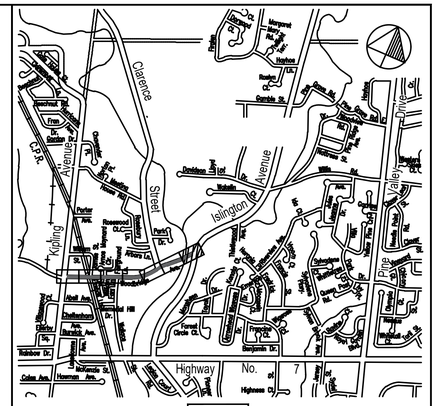
STRESSCRETE OCTAGONAL CONCRETE POLE
BRACKET:1.2m, TYPE AC4
LUMINAIRE: MSC URBANSCAPE LED PENDENT
DISTRIBUTION TYPE III,
WATTAGE: 108W
COLOR TEMPERATURE: 3000K

ESLXX

EXISTING KING LUMINARIE FIXTURE 52W



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1	60% SUBMISSION	KB	30/07/2021

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JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALES

HORIZONTAL: 0 5 10 25m

VERTICAL: N/A

WOODBRIDGE AVENUE

IMPROVEMENTS
PHOTOMETRIC LAYOUT 7

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: KB	CHECKED BY: OA	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: OA	
SCALE: HORIZONTAL: 1:250 VERTICAL: N/A	PROJ. No. 18-07RW	DWG. No. E7

Printed: Jul. 30, 2021

Xref File: z:\13987f_Woodbridge_Lum\7.0_Production\7.01_Design\1-4_Dec-_8x5_Photometric layout.dwg Layout: E7

Calculation Summary								
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Int Clarence S& Woodbridge Ave	Illuminance	Lux	27.55	N.A.	N.A.	3.06	N.A.	N.A.
Int Firground Ln & Woodbridge Av	Illuminance	Lux	21.69	N.A.	N.A.	3.24	N.A.	N.A.
Int James St & Woodbridge Ave	Illuminance	Lux	21.47	N.A.	N.A.	1.90	N.A.	N.A.
Int Market Ln & Woodbridge Ave	Illuminance	Lux	27.46	N.A.	N.A.	3.16	N.A.	N.A.
Int Wallace St& Woodbridge Ave	Illuminance	Lux	24.51	N.A.	N.A.	2.15	N.A.	N.A.
Road	Illuminance	Lux	24.22	33.2	12.0	2.02	2.77	N.A.
Road_EB01_Luminance	Luminance	Cd/Sq.m	1.39	2.51	0.66	2.11	3.80	N.A.
Road_EB01_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.23
Road_EB02_Luminance	Luminance	Cd/Sq.m	1.24	2.17	0.84	1.48	2.58	N.A.
Road_EB02_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.28
Road_EB03_Luminance	Luminance	Cd/Sq.m	1.43	2.42	0.75	1.91	3.23	N.A.
Road_EB03_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.22
Road_EB04_Luminance	Luminance	Cd/Sq.m	1.33	2.02	0.98	1.36	2.06	N.A.
Road_EB04_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.25
Road_EB05_Luminance	Luminance	Cd/Sq.m	1.43	2.08	0.79	1.81	2.63	N.A.
Road_EB05_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.27
Road_EB06_Luminance	Luminance	Cd/Sq.m	1.58	2.37	1.09	1.45	2.17	N.A.
Road_EB06_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.23
Road_EB07_Luminance	Luminance	Cd/Sq.m	1.35	2.45	0.54	2.50	4.54	N.A.
Road_EB07_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.19
Road_EB08_Luminance	Luminance	Cd/Sq.m	1.57	2.66	0.95	1.65	2.80	N.A.
Road_EB08_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.13
Road_EB09_Luminance	Luminance	Cd/Sq.m	0.62	1.12	0.38	1.63	2.95	N.A.
Road_EB09_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.03
Road_WB01_Luminance	Luminance	Cd/Sq.m	1.28	2.03	0.86	1.49	2.36	N.A.
Road_WB01_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.27
Road_WB02_Luminance	Luminance	Cd/Sq.m	1.27	1.89	0.84	1.51	2.25	N.A.
Road_WB02_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.26
Road_WB03_Luminance	Luminance	Cd/Sq.m	1.36	2.20	0.80	1.70	2.75	N.A.
Road_WB03_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.25
Road_WB04_Luminance	Luminance	Cd/Sq.m	1.51	2.32	1.04	1.45	2.23	N.A.
Road_WB04_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.23
Road_WB05_Luminance	Luminance	Cd/Sq.m	1.59	2.42	1.01	1.57	2.40	N.A.
Road_WB05_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.22
Road_WB06_Luminance	Luminance	Cd/Sq.m	1.28	2.08	0.67	1.91	3.10	N.A.
Road_WB06_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.33
Road_WB07_Luminance	Luminance	Cd/Sq.m	1.59	2.31	0.94	1.69	2.46	N.A.
Road_WB07_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.21
Road_WB08_Luminance	Luminance	Cd/Sq.m	1.44	2.46	0.96	1.50	2.56	N.A.
Road_WB08_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.28
Road_WB09_Luminance	Luminance	Cd/Sq.m	1.35	2.58	0.83	1.63	3.11	N.A.
Road_WB09_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.26
Road_WB10_Luminance	Luminance	Cd/Sq.m	0.60	1.11	0.30	2.00	3.70	N.A.
Road_WB10_Veil_Lum	Veiling Luminance	Cd/Sq.m	N.A.	N.A.	N.A.	N.A.	N.A.	0.55
Sidewalk 01	Illuminance	Lux	10.69	N.A.	N.A.	1.67	N.A.	N.A.
Sidewalk 02	Illuminance	Lux	12.37	N.A.	N.A.	2.95	N.A.	N.A.
Sidewalk 03	Illuminance	Lux	10.19	N.A.	N.A.	3.00	N.A.	N.A.
Sidewalk 04	Illuminance	Lux	10.33	N.A.	N.A.	2.11	N.A.	N.A.
Sidewalk 05	Illuminance	Lux	10.31	N.A.	N.A.	1.95	N.A.	N.A.
Sidewalk 06	Illuminance	Lux	11.91	N.A.	N.A.	3.50	N.A.	N.A.
Sidewalk 07	Illuminance	Lux	12.02	N.A.	N.A.	2.45	N.A.	N.A.
Sidewalk 08	Illuminance	Lux	10.47	N.A.	N.A.	2.62	N.A.	N.A.
Sidewalk 09	Illuminance	Lux	10.61	N.A.	N.A.	1.45	N.A.	N.A.
Sidewalk 10	Illuminance	Lux	10.69	N.A.	N.A.	1.48	N.A.	N.A.
Sidewalk 11	Illuminance	Lux	10.57	N.A.	N.A.	1.60	N.A.	N.A.
Sidewalk 12	Illuminance	Lux	11.64	N.A.	N.A.	1.82	N.A.	N.A.

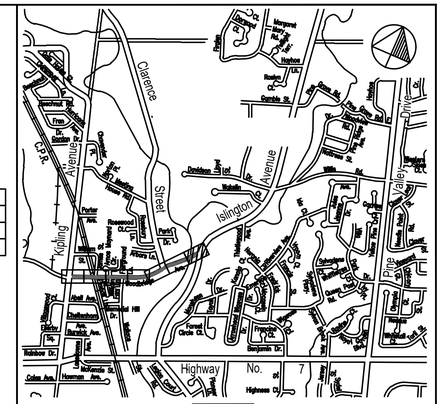
Luminaire Schedule							
Symbol	Qty	Label	Arrangement	LLF	Description	Arm	Lum. Watts
	6	601DSP4NL3B05030XXJ_1	SINGLE	0.850	Existing Post Top Street Light	0	51.5
	38	msc-108w48led3k-g2-le3wf	SINGLE	0.850	MSC-108W48LED3K-G2-LE3WF	1.2	105.325

DESIGN CRITERIA SUMMARY – INTERSECTIONS WOODBRIDGE AVE. & JAMES ST./ OLD FIREHALL LN./WALLACET ST./ MARKETLANE. RP-8-18 COLLECTOR/LOCAL-HIGH	
AVERAGE ILLUMINANCE (LUX)	Avg-TO-Min
>21.0	<4.0

DESIGN CRITERIA SUMMARY – INTERSECTIONS WOODBRIDGE AVE. & CLARENCE ST. RP-8-18 COLLECTOR/COLLECTOR-HIGH	
AVERAGE ILLUMINANCE (LUX)	Avg-TO-Min
>24.0	<4.0

LIGHTING DESIGN CRITERIA - MIDBLOCK WOODBRIDGE AVE. RP-8-18					
STREET CLASSIFICATION	PEDESTRIAN AREA CLASSIFICATION	AVG LUMINANCE L_{avg} cd/m^2	AVG UNIFORMITY RATIO L_{avg}/L_{min}	AVG UNIFORMITY RATIO L_{max}/L_{min}	MAX VEILING LUMINANCE RATIO LV_{max}/L_{avg}
COLLECTOR	HIGH	0.8	3.0	5.0	0.4

MAINTAINED ILLUMINANCE VALUES FOR SIDEWALK - WOODBRIDGE AVE. RP-8-18		
PEDESTRIAN AREA CLASSIFICATION	MINIMUM MAINTAINED AVERAGE HORIZONTAL E_{avg} LUX	E_{AVG}/E_{MIN}
HIGH	10.0	4.0



KEY PLAN

CONTRACTOR'S NOTES:

1. ALL DIMENSIONS ARE IN METRES AND / OR MILLIMETRES UNLESS OTHERWISE INDICATED.
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5. BENCHMARKS FOR LAYOUT ARE TO BE OBTAINED FROM THE CITY OF VAUGHAN ENGINEERING DEPARTMENT.

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BENCH MARK:

MONUMENT IS LOCATED.....

ELEVATION:

NO.	DESCRIPTION	BY	DATE
8			
7			
6			
5			
4			
3			
2			
1	60% SUBMISSION	KB	30/07/2021

UPDATES & REVISIONS

ENGINEERING COMPANY NAME:

IBI GROUP
8133 Warden Avenue, Unit 300
Markham ON L6G 1B3 Canada
tel 905-763-2322
ibigroup.com

ENGINEER'S STAMP:

APPROVED AS TO FORM IN RELIANCE UPON THE PROFESSIONAL SKILL AND ABILITY OF THE CONSULTING ENGINEERS AS TO DESIGN AND SPECIFICATIONS.

JACK GRAZIOSI, P.Eng., M.Eng.
DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALES
HORIZONTAL: 0 5 10 25m
VERTICAL: N/A

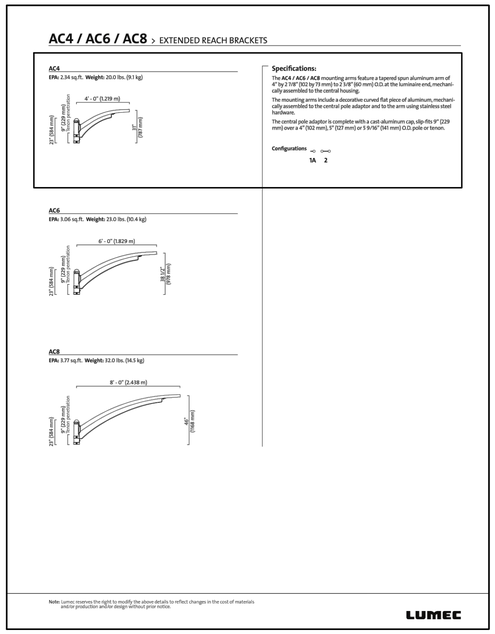
WOODBRIDGE AVENUE
IMPROVEMENTS
PHOTOMETRIC CALCULATION & STANDARDS

VAUGHAN
Infrastructure Delivery

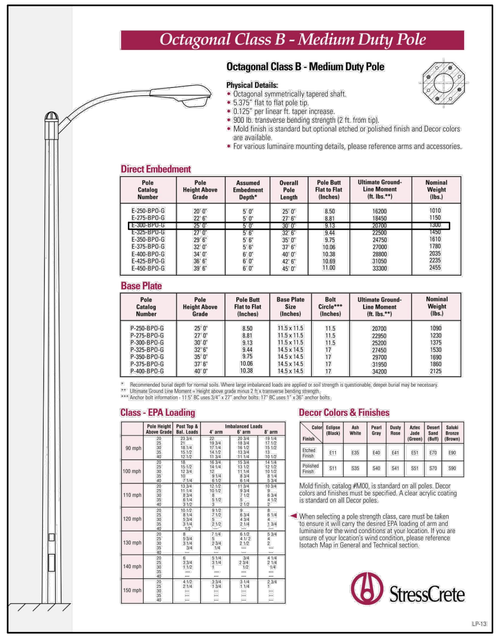
DESIGNED & DRAWN BY: KB	CHECKED BY: OA	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: OA	
SCALE: HORIZONTAL: 1:250 VERTICAL: N/A	PROJ. No. 18-07RW	DWG. No. E8

Printed: Jul. 30, 2021

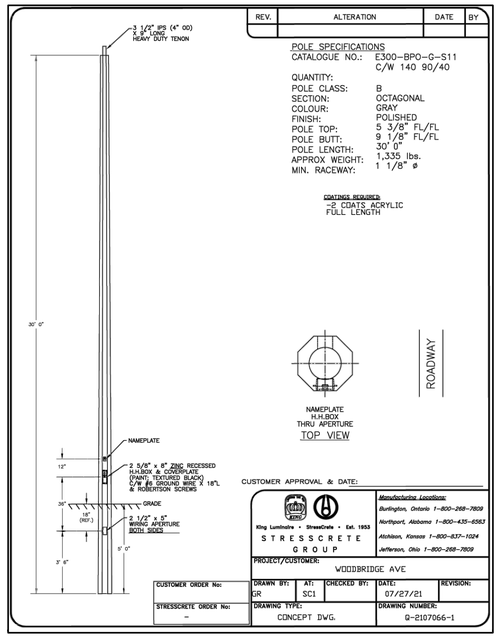
Acad File: #\\12987fl_Woodbridge_Ave\VOL\Production\VOL\Dwgs\VL-Doc-BM\Photometric layout.dwg Layout: E8

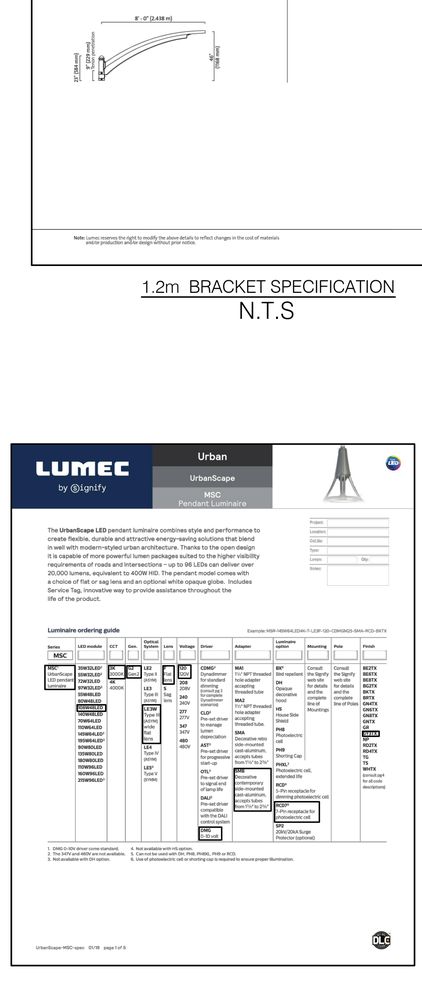


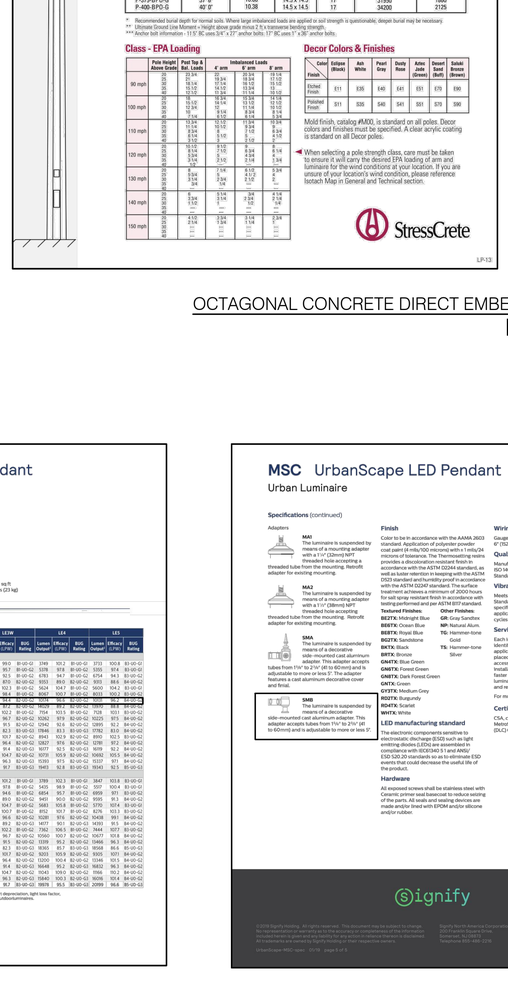
1.2m BRACKET SPECIFICATION
N.T.S

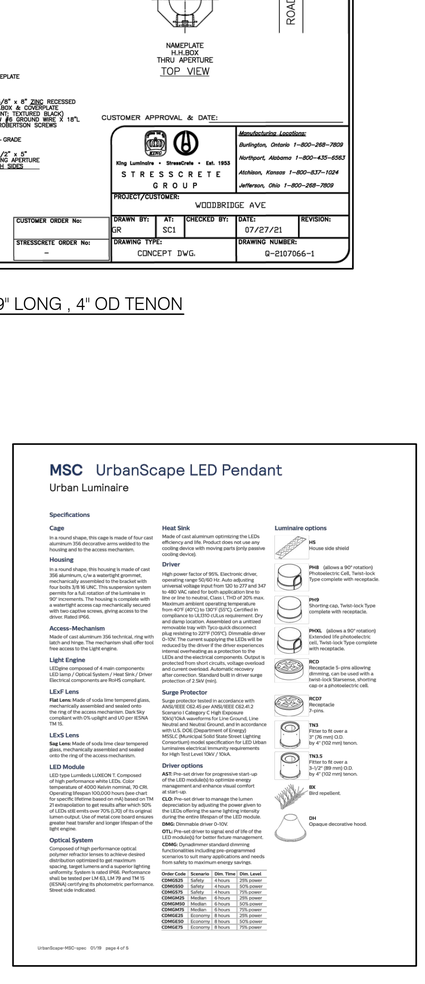


OCTAGONAL CONCRETE DIRECT EMBEDMENT POLE WITH A 9" LONG , 4" OD TENON
N.T.S

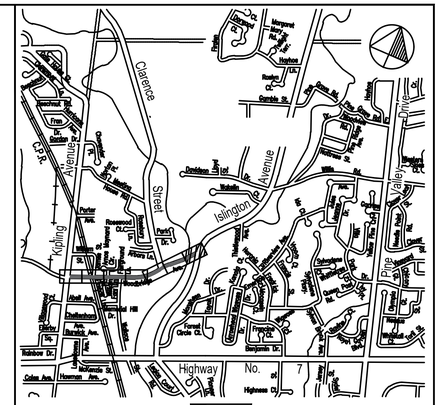








LUMINAIRE(108W) SPECIFICATION
N.T.S



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MONUMENT IS LOCATED.....

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NO.	DESCRIPTION	BY	DATE
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DIRECTOR OF INFRASTRUCTURE DELIVERY

DATE

SCALES:
HORIZONTAL: 0 5 10 25m
VERTICAL: N/A

WOODBRIDGE AVENUE
IMPROVEMENTS
ELECTRICAL DETAILS

VAUGHAN
Infrastructure Delivery

DESIGNED & DRAWN BY: KB	CHECKED BY: OA	TENDER No. T18-___
SURVEYED BY: JK	APPROVED BY: OA	
SCALE: HORIZONTAL: 1:250 VERTICAL: N/A	PROJ. No. 18-07RW	DWG. No. E9

Printed: Jul. 30, 2021

Last Plot: n:\12RW\1_Woodbridge_Ave\7.0_Production\7.01_Elec-Bnft\Photometric layout\Layout: E9