EXISTING CHAIN LINK FENCE TO BE REMOVED

EXISTING TREES AND VEGETATION TO BE REMOVED

EXISTING BOARD FENCE TO BE REMOVED

EXISTING CHAIN LINK FENCE TO BE REMOVED

EXISTING CONCRETE PAD TO BE REMOVED

EXISTING TREE TO BE REMOVED

EXISTING STRUCTURES TO BE DEMOLISHED (BY OTHERS)

EXISTING BOARD FENCE TO BE REMOVED

EXISTING GRAVEL PAD AND PARKING LOT TO BE REMOVED

EXISTING DOMESTIC WATER SERVICE CONNECTION AND GAS MAIN SERVICE TO BE REMOVED AND CAPPED AT PROPERTY LINE (BY OTHERS). EXISTING SANITARY SERVICE CONNECTION TO BE REMOVED AND CAPPED AT PROPERTY LINE.

EXISTING TREE TO BE RELOCATED (BY OTHERS)

EXISTING SOFT LANDSCAPING TO BE REMOVED AND MADE NEW

EXISTING FIRE HYDRANT AND LEAD PIPE TO BE REMOVED AND RELOCATED. LEAD PIPE TO BE PLUGGED AT WATERMAIN

EXISTING CONCRETE CURB TO BE REMOVED AND REPLACED

EXISTING ASPHALT ROAD TO BE REMOVED

EXISTING WATERMAIN PIPE TO BE REMOVED AND CAPPED AT PROPERTY LINE (BY OTHERS). EXISTING SANITARY SERVICE CONNECTION TO BE REMOVED AND CAPPED AT PROPERTY LINE.

EXISTING CHAIN LINK FENCE TO BE REMOVED

EXISTING ASPHALT PARKING LOT AND PARKING CURB TO BE REMOVED

EXISTING VEGETATION TO BE REMOVED

EXISTING STRUCTURES TO BE DEMOLISHED (BY OTHERS)

EXISTING GAS MAIN TO BE REMOVED AND CAPPED AT PROPERTY LINE (BY OTHERS). EXISTING SANITARY SERVICE CONNECTION TO BE REMOVED AND CAPPED AT PROPERTY LINE.

EXISTING CONCRETE WALKWAY TO BE REMOVED

EXISTING WATERMAIN PIPE TO BE REMOVED AND CAPPED AT PROPERTY LINE (BY OTHERS). EXISTING SANITARY SERVICE CONNECTION TO BE REMOVED AND CAPPED AT PROPERTY LINE.

EXISTING CONCRETE SIDEWALK TO BE REMOVED AND REPLACED

EXISTING ASPHALT ROAD TO BE REMOVED

EXISTING CONCRETE CURB TO BE REMOVED AND REPLACED

EXISTING SIGN TO BE REMOVED

EXISTING FLOWER BOX TO BE REMOVED

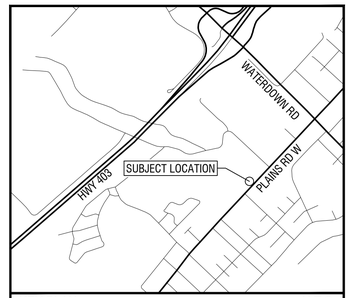
EXISTING ASPHALT ROAD TO BE REMOVED

EXISTING SOFT LANDSCAPE TO BE REMOVED AND MADE NEW. SEE LANDSCAPE PLAN AND GRADING PLAN.

EXISTING WATERMAIN PIPE TO BE REMOVED AND CAPPED AT PROPERTY LINE (BY OTHERS). EXISTING SANITARY SERVICE CONNECTION TO BE REMOVED AND CAPPED AT PROPERTY LINE.

EXISTING TREE AND SOFT LANDSCAPING TO BE REMOVED BY OTHERS)

0m 2 4 6 8 10
1:200



KEY PLAN N.T.S.

BENCHMARK

A SPIKE SET ON PLAINS ROAD WEST LOCATED APPROXIMATELY 10.2 METERS NORTH FROM THE CENTRELINE OF ROAD, 1.1 METERS NORTH OF THE BACK OF CURB, AS SHOWN ON THE FACE OF PLAN.
ELEVATION=102.64m

ELEVATION

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE CITY OF BURLINGTON BENCHMARKS:
No. 463 ELEVATION=90.035m
No. 467 ELEVATION=107.625m

LEGEND

- DENOTES PROPERTY LINE
- DENOTES EXISTING MATERIALS TO BE RELOCATED
- DENOTES EXISTING MATERIALS TO BE REMOVED
- DENOTES EXISTING ASPHALT PAVEMENT TO BE REMOVED
- DENOTES EXISTING STRUCTURE TO BE DEMOLISHED
- DENOTES EXISTING TREES AND VEGETATION TO BE REMOVED
- DENOTES EXISTING CONCRETE PAD AND WALKWAY BE REMOVED
- DENOTES EXISTING GRAVEL PAD AND PARKING LOT BE REMOVED
- CLF — DENOTES EXISTING CHAIN LINK FENCE
- OW — DENOTES EXISTING OVERHEAD WIRE
- ELEC — DENOTES EXISTING BURIED ELECTRICAL CONDUIT
- H — DENOTES EXISTING HYDRO SERVICE
- SAN — DENOTES EXISTING SANITARY SERVICE
- FM — DENOTES EXISTING FIREMAIN SERVICE
- STM — DENOTES EXISTING STORM SERVICE
- WM — DENOTES EXISTING WATERMAIN SERVICE
- G — DENOTES EXISTING GASMAIN SERVICE
- T — DENOTES EXISTING TELECOMMUNICATIONS SERVICE
- 3.0% — DENOTES EXISTING DRAINAGE
- 187 — DENOTES EXISTING CONTOURS
- DENOTES EXISTING CATCHBASIN
- DENOTES EXISTING DOUBLE CATCHBASIN
- SAN MH — DENOTES EXISTING MANHOLE
- DENOTES EXISTING SANITARY MANHOLE
- DENOTES EXISTING ASPHALT BIKE PATH
- DENOTES PROPOSED ASPHALT BIKE PATH
- DENOTES EXISTING STAMPED CONCRETE
- DENOTES PROPOSED STAMPED CONCRETE

No.	Date	Description	By	Ck.
3.	SEP. 13/24	3rd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	F.S.	F.S.
2.	JAN. 19/24	2nd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	M.M.
1.	APR. 28/23	1st SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	B.S.

Revisions

Stamp

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MIXED-USE DEVELOPMENT

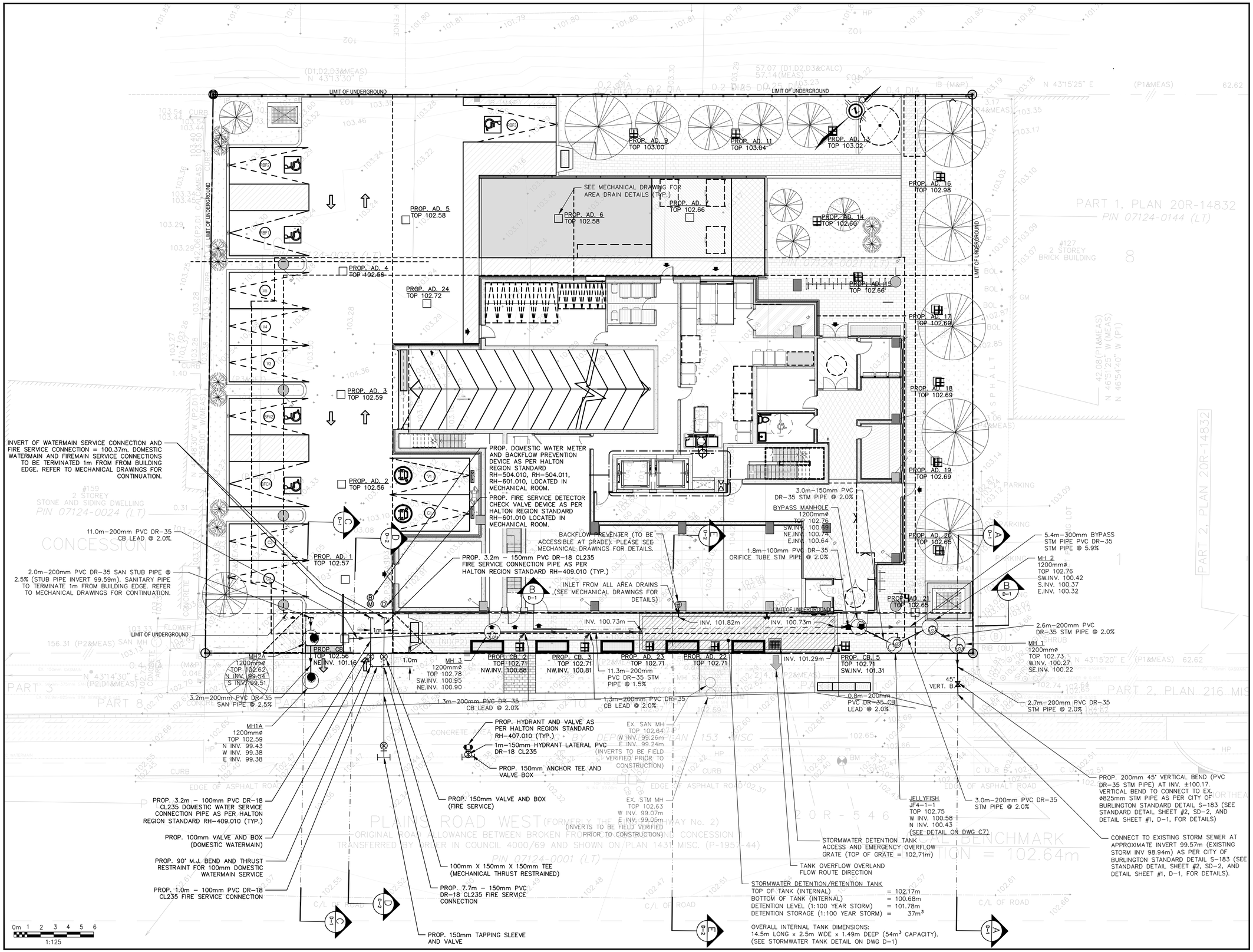
141-153 PLAINS RD WEST

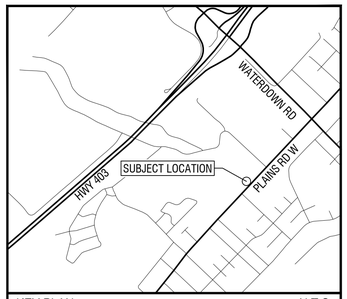
BURLINGTON, ONTARIO

Title

REMOVALS PLAN

Scale:	1:200		
Designed:	S.S.	Checked:	F.S.
Drawn:	M.S.	Date:	SEPTEMBER 2024
Job No.		Drawing No.	
2024-S400		C1	





KEY PLAN N.T.S.

BENCHMARK

A SPIKE SET ON PLAINS ROAD WEST LOCATED APPROXIMATELY 10.2 METERS NORTH FROM THE CENTRELINE OF ROAD, 1.1 METERS NORTH OF THE BACK OF CURB, AS SHOWN ON THE FACE OF PLAN.
ELEVATION=102.64m

ELEVATION

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE CITY OF BURLINGTON BENCHMARKS:
No. 463 ELEVATION=90.035m
No. 467 ELEVATION=107.625m

LEGEND

CB	DENOTES EXISTING CATCHBASIN
HJB	DENOTES HYDRO JUNCTION BOX
MH	DENOTES EXISTING MANHOLE
SAN MH	DENOTES EXISTING SANITARY MANHOLE
BOL	DENOTES EXISTING BOLLARD
HP	DENOTES HYDRO POLE
H	DENOTES FIRE HYDRANT
WM	DENOTES WATER METER
WV	DENOTES WATER VALVE
BM	DENOTES LOCAL BENCH MARK
E	DENOTES OVERHEAD HYDRO CABLE
200.00	DENOTES EXISTING CONTOUR ELEVATION
	DENOTES PROPOSED WATERMAIN
	DENOTES PROPOSED STORM SEWER
	DENOTES PROPOSED SANITARY SEWER
	DENOTES PROPOSED CATCHBASIN LEAD
	DENOTES PROPOSED SANITARY (SAN) MANHOLE
	DENOTES PROPOSED STORM (STM) MANHOLE
	DENOTES PROPOSED JELLYFISH FILTER
AD. 1 TOP 100.00	DENOTES PROPOSED AREA DRAIN
CB. 1 TOP 100.00	DENOTES PROPOSED CATCHBASIN
	DENOTES PROPOSED SWM TANK OVERFLOW GRATE
	DENOTES PROPOSED HYDRANT AND VALVE LOCATION
	DENOTES PROPOSED SIAMESE CONNECTION (FIRE DEPARTMENT CONNECTION)
45° VERT. B.	DENOTES STM PIPE 45° VERTICAL BEND
	DENOTES PROPERTY LINE
	DENOTES EASEMENT LINE
	DENOTES LIMIT OF UNDERGROUND PARKING
	DENOTES BUILDING OUTLINE ABOVE
	DENOTES TANK OVERFLOW OVERLAND FLOW ROUTE DIRECTION

No.	Date	Description	By	Ck.
3.	SEP. 13/24	3rd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	F.S.	F.S.
2.	JAN. 19/24	2nd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	M.M.
1.	APR. 28/23	1st SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	B.S.

Revisions

Stamp

LICENSED PROFESSIONAL ENGINEER F. SHI 100065602 PROVINCE OF ONTARIO

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MIXED-USE DEVELOPMENT

141-153 PLAINS RD WEST

BURLINGTON, ONTARIO

Title

SERVICING PLAN

Scale:	1:125		
Designed:	S.S.	Checked:	F.S
Drawn:	M.S.	Date:	SEPTEMBER 2024
Job No.		Drawing No.	
2024-S400		C2	

ROAD CONSTRUCTION

1. RECONSTRUCTION OF DRIVEWAY SHALL BE ACCORDING TO CITY OF BURLINGTON STANDARD DRAWING S-112.
2. LIMITS OF SIDEWALK / CURB RECONSTRUCTION ARE APPROXIMATE, ACTUAL LIMITS ARE TO BE CONFIRMED IN THE FIELD BY THE CONTRACT ADMINISTRATOR.
3. CHAINAGE IS ESTABLISHED FROM THE CENTRELINE OF CONSTRUCTION AND GUTTER GRADES ARE CALCULATED ALONG THE GUTTER LINE.
4. HEIGHT OF CURB FACES MAY VARY ALONG LENGTH OF GUTTER, AS SHOWN ON PROFILE, OR TO BE CONFIRMED IN THE FIELD.
5. ADJUST ALL STRUCTURES (MAINTENANCE HOLES, CATCH BASINS, ETC..) TO SUIT NEW DESIGN ELEVATIONS INCLUDING BREAKING DOWN AND REMOVAL OF PORTION OF TOP STRUCTURES TO ALLOW FOR MINIMUM 150mm ADJUSTMENTS.
6. ALL CURB SHALL BE CONSTRUCTED WITH A LEDGE AT THE BACK OF THE CURB TO FACILITATE FUTURE SIDEWALK CONSTRUCTION.
7. FULL DEPTH SAW-CUTS ARE REQUIRED AT CONSTRUCTION LIMITS OF EXISTING CURB, SIDEWALK AND PAVEMENT UNLESS OTHERWISE SHOWN.
8. SAW CUT EXISTING PAVEMENT, SIDEWALK, CURB, GUTTER DRIVEWAYS, WALKWAYS ETC. AT CONSTRUCTION LIMITS TO PROVIDE A CLEAN JOINT FOR THE PROPOSED WORK.
9. EXPANSION JOINTS, SIDEWALK RAMPS WITH TACTILE WALKING SURFACE INDICATORS ACCORDING TO CITY OF BURLINGTON STANDARD DRAWINGS S-123 & S-123A.
10. EXISTING ENTRANCE RAMPS TO BE DEMOLISHED AND REMOVED AND DISPOSED FROM SITE. VEHICULAR SIDEWALK RAMP SHALL BE ACCORDING TO CITY OF BURLINGTON STANDARD DRAWING S-125A.
11. ADJUSTMENT OF APPROACHES, WALKWAYS AND STEPS MAY BE REQUIRED. LIMITS ARE TO BE DETERMINED IN THE FIELD BY THE CONTRACT ADMINISTRATOR.
12. EXISTING ASPHALT THICKNESS MAY VARY, TAPER TO MATCH EXISTING AT CONSTRUCTION LIMITS (MINIMUM 2.0m)
13. FILTER FABRIC 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 AND THE BOULEVARDS ARE SODDED OR BACKYARDS GRADED AND SODDED. FILTER FABRIC FOR SILT CONTROL TO BE TERRA FIX 270R OR APPROVED EQUIVALENT.

PROPOSED BARRIER CURB AS PER OPSD 600.110

PROPOSED BARRIER CURB AS PER OPSD 600.110

LANDSCAPING RETENTION STORAGE BASIN AREA = 48m²; DEPTH = 0.03m

ASPHALT PAVEMENT THICKNESS SHALL BE A MINIMUM OF:
SURFACE COARSE: 40mm HL3
BASE COARSE: 50mm HL8
*SUB-BASE: 150mm GRANULAR 'A'
*BASE: 300mm GRANULAR 'B' TYPE II

*GRANULAR MATERIALS AS PER OPSS 1010

PROPOSED TACTILE SURFACE INDICATOR AND SIDEWALK RAMP AS PER CITY OF BURLINGTON STANDARD DRAWING S-123A (SEE DETAIL SHEET D-2 FOR DETAILS)

PROPOSED BARRIER CURB AS PER OPSD 600.110

PROPOSED BARRIER CURB AS PER OPSD 600.110

PROPOSED BARRIER CURB AS PER OPSD 600.110

NEW 1.5m WIDE SIDEWALK

NEW 1.8m ASPHALT BIKE PATH

NEW 1.5m WIDE SIDEWALK

NEW 1.6m ASPHALT BIKE PATH

NEW 1.5m WIDE SIDEWALK

NEW 1.8m ASPHALT BIKE PATH

0.60m

0.90m

2.56m

PROPOSED CONCRETE CURB AND GUTTER AS PER OPSD 600.040

16.11m

PROPOSED DROPPED CONCRETE CURB AND GUTTER AS PER OPSD 600.040

38.33m

PROPOSED CONCRETE CURB AND GUTTER AS PER OPSD 600.040

0.90m 0.60m

57.01m

NEW ENTRANCE DRIVEWAY, CURB, AND CONCRETE TO BE INSTALLED AS PER CITY OF BURLINGTON STANDARD DRAWING S-112 (SEE DETAIL SHEET D-2 FOR DETAILS).
ASPHALT PAVEMENT THICKNESS SHALL BE A MINIMUM OF:
SURFACE COARSE: 40mm HL3
BASE COARSE: 50mm HL8
*SUB-BASE: 150mm GRANULAR 'A'
*BASE: 300mm GRANULAR 'B' TYPE II

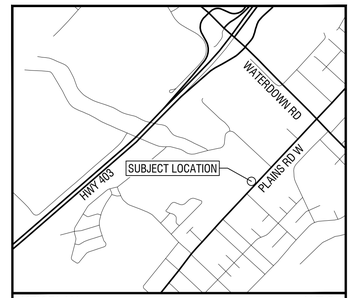
*GRANULAR MATERIALS AS PER OPSS 1010

SAW CUT, REMOVE AND REPLACE EX. ASPHALT AS PER LAP JOINT DETAIL (SEE DETAIL SHEET D-2).

SAW CUT, REMOVE AND REPLACE EX. ASPHALT AS PER LAP JOINT DETAIL (SEE DETAIL SHEET D-2).

PROPOSED BARRIER CURB AS PER OPSD 600.110

0m 1 2 3 4 5 6
1:125



KEY PLAN N.T.S.

BENCHMARK

A SPIKE SET ON PLAINS ROAD WEST LOCATED APPROXIMATELY 10.2 METERS NORTH FROM THE CENTRELINE OF ROAD, 1.1 METERS NORTH OF THE BACK OF CURB, AS SHOWN ON THE FACE OF PLAN.
ELEVATION=102.64m

ELEVATION

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE CITY OF BURLINGTON BENCHMARKS:
No. 463 ELEVATION=90.035m
No. 467 ELEVATION=107.525m

LEGEND

EX.100.00	DENOTES EXISTING GRADE ELEVATION TO BE MAINTAINED
EX.SW.100.00	DENOTES EXISTING SIDEWALK GRADE ELEVATION TO BE MAINTAINED
EX.CB TOP 100.00	DENOTES EXISTING TOP OF CATCH BASIN GRADE ELEVATION TO BE MAINTAINED
EX.BC.100.00	DENOTES EXISTING BOTTOM OF CURB GRADE ELEVATION TO BE MAINTAINED
EX.TC.100.00	DENOTES EXISTING TOP OF CURB GRADE ELEVATION TO BE MAINTAINED
100.00	DENOTES PROPOSED GRADE ELEVATION
BC.100.00	DENOTES PROPOSED BOTTOM OF CURB GRADE ELEVATION
TC.100.00	DENOTES PROPOSED TOP OF CURB GRADE ELEVATION
TW.100.00	DENOTES PROPOSED TOP OF WALL GRADE ELEVATION
BW.100.00	DENOTES PROPOSED BOTTOM OF WALL GRADE ELEVATION
SW.100.00	DENOTES PROPOSED CONCRETE SIDEWALK GRADE ELEVATION
HP.100.00	DENOTES PROPOSED HIGH POINT GRADE ELEVATION
TG.100.00	DENOTES PROPOSED TOP OF GRATE GRADE ELEVATION
F.F.E. 100.00	DENOTES PROPOSED FINISHED FLOOR ELEVATION
AD. 4 TOP 100.00	DENOTES PROPOSED TOP OF AREA DRAIN ELEVATION
CB. 4 TOP 100.00	DENOTES PROPOSED TOP OF CATCHBASIN ELEVATION
C&G	DENOTES PROPOSED CURB AND GUTTER
	DENOTES PROPOSED BARRIER CURB
1.6%	DENOTES PROPOSED SLOPE OF GRADE
	DENOTES PROPOSED CURB TRANSITION
	DENOTES PROPOSED LAP JOINT ASPHALT REPAIRS
	DENOTES EXISTING ASPHALT SAW CUT
	DENOTES PROPERTY LINE
	DENOTES EASEMENT LINE
	DENOTES LIMIT OF UNDERGROUND PARKING
	DENOTES LIMIT OF ROOF ABOVE
	DENOTES PROPOSED BUILDING EXIT LOCATIONS
	DENOTES PROPOSED EMERGENCY OVERLAND FLOW ROUTE
	DENOTES PROPOSED SWM TANK OVERFLOW FLOW ROUTE
	DENOTES EXISTING ASPHALT BIKE PATH
	DENOTES PROPOSED ASPHALT BIKE PATH
	DENOTES EXISTING STAMPED CONCRETE
	DENOTES PROPOSED STAMPED CONCRETE

No.	Date	Description	By	Ck.
3.	SEP. 13/24	3rd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	F.S.	F.S.
2.	JAN. 19/24	2nd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	M.M.
1.	APR. 28/23	1st SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	B.S.

Revisions

Stamp

LICENSED PROFESSIONAL ENGINEER F. SHI 100065502 2024/6/11 PROVINCE OF ONTARIO

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MIXED-USE DEVELOPMENT

141-153 PLAINS RD WEST

BURLINGTON, ONTARIO

Title

GRADING PLAN

Scale:	1:125		
Designed:	S.S.	Checked:	F.S.
Drawn:	M.S.	Date:	SEPTEMBER 2024
Job No.		Drawing No.	
2024-S400		C3	

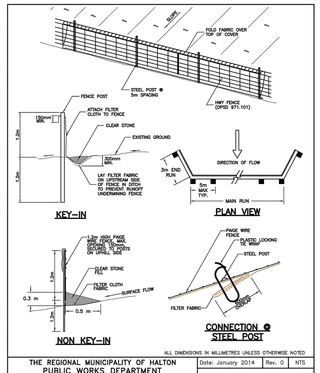
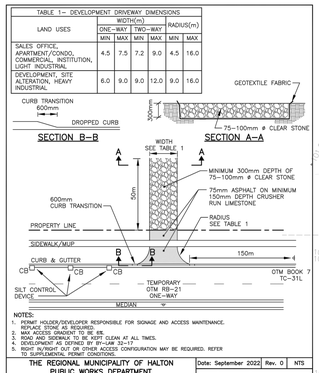
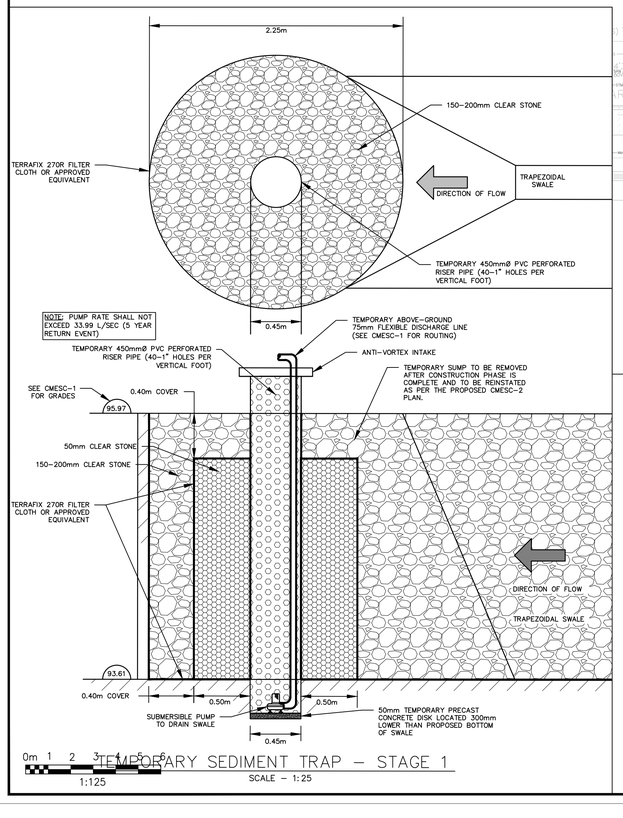


TABLE 1– DEVELOPMENT DRIVEWAY DIMENSIONS						
LAND USES	WIDTH(m) ONE–WAY		WIDTH(m) TWO–WAY		RADIUS(m)	
	MIN	MAX	MIN	MAX	MIN	MAX
SALES OFFICE, APARTMENT/CONDO, COMMERCIAL, INSTITUTION, LIGHT INDUSTRIAL	4.5	7.5	7.2	9.0	4.5	16.0
DEVELOPMENT, SITE ALTERATION, HEAVY INDUSTRIAL	6.0	9.0	9.0	12.0	9.0	16.0

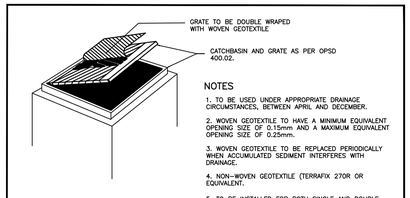


EROSION AND SEDIMENT CONTROL

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. ALL DAMAGED EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE REPAIRED OR REPLACED WITHIN 48 HOURS OF INSPECTION OR BOTH.
2. ALL DISTURBED AREAS WILL BE MINIMIZED TO THE EXTENT POSSIBLE, TEMPORARILY STABILIZED OR RESTORED AS THE WORK PROGRESSES.
3. 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 AREA. IF THE PRESCRIBED MEASURES ON THE PLANS ARE NOT EFFECTIVE IN PREVENTING THE RELEASE OF A DELETERIOUS SUBSTANCE, THEN ALTERNATIVE MEASURES MUST BE IMPLEMENTED IMMEDIATELY TO MINIMIZE POTENTIAL ECOLOGICAL IMPACTS AND HALTON REGION CONSERVATION AUTHORITY ENFORCEMENT OFFICE SHOULD BE IMMEDIATELY CONTACTED. ADDITIONAL ESC MEASURES TO BE KEPT ON SITE AND USES AS NECESSARY.
4. 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 AND REFUELING WILL BE CONDUCTED A MINIMUM OF 30m FROM THE WATER.
5. ALL GRADES WITHIN THE REGULATORY FLOOD PLAN WILL BE MAINTAINED OR MATCHED.



TEMPORARY SEDIMENT TRAP – STAGE 1



NOTES

1. TO BE USED UNDER APPROPRIATE DRAINAGE CIRCUMSTANCES, BETWEEN APRIL AND DECEMBER.
2. WOVEN GEOTEXTILE TO HAVE A MINIMUM EQUIVALENT OPENING SIZE OF 0.15mm AND A MAXIMUM EQUIVALENT OPENING SIZE OF 0.25mm.
3. WOVEN GEOTEXTILE TO BE REPLACED PERIODICALLY WHEN ACCUMULATED SEDIMENT INTERFERES WITH DRAINAGE.
4. NON–WOVEN GEOTEXTILE (TERRAFIX 270R OR EQUIVALENT.
5. TO BE INSTALLED FOR BOTH SINGLE AND DOUBLE CATCHBASINS.

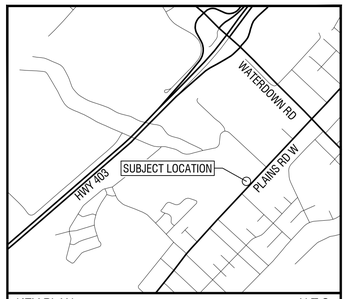
CATCHBASIN SEDIMENT PROTECTION
N.T.S.

GENERAL NOTES

1. EXISTING UNDERGROUND SERVICES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. THE EXACT LOCATION OF UNDERGROUND SERVICES MUST BE FIELD VERIFIED BY THE CONTRACTOR WITH THE RESPECTIVE UTILITY COMPANIES.
2. PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL RIGHT OF WAY THE CONTRACTOR, DEVELOPER OR CONSULTANT WILL OBTAIN ALL NECESSARY ROAD OCCUPANCY PERMITS FROM THE CITY'S RIGHT–OF–WAY MANAGEMENT UNIT
3. ALL WORK WITHIN THE CITY RIGHT–OF–WAY SHALL CONFIRM TO THE LATEST CITY OF BURLINGTON/HALTON REGION STANDARD DRAWING AND SPECIFICATIONS OR ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS, WHEREVER THERE IS NO CITY OF BURLINGTON/HALTON REGION STANDARD.
4. LOCATION OF THE WATER METER SHALL BE TO THE SATISFACTION OF THE CITY OF BURLINGTON/HALTON REGION.
5. THE BUILDING'S STORM AND SANITARY SYSTEM IS TO BE DESIGNED TO BE ABLE TO OPERATE UNDER MUNICIPAL SEWER SURCHARGE CONDITION
6. THE METHOD OF INSTALLATION FOR THE PROPOSED SERVICE CONNECTIONS WILL BE AT THE DIRECTION OF CITY OF BURLINGTON/HALTON REGION.
7. THE OWNER IS REQUIRED TO INSTALL AND MAINTAIN A PREMISE ISOLATION DEVICE FOR ALL APPLICABLE WATER SERVICES IN ACCORDANCE WITH THE REGIONAL MUNICIPALITY OF HALTON STANDARD DRAWING RH–601.010, THE BUILDING CODE, AND CSA B64.10 SERIES STANDARDS.
8. ALL EXISTING SERVICE CONNECTIONS WITHIN THE MUNICIPAL RIGHT–OF–WAY WILL BE DISCONNECTED/ABANDONED BY THE CITY OF BURLINGTON AT OWNER'S EXPENSE.
9. THE OWNER MUST CONTACT ALL UTILITIES (GAS, BELL, ROGERS, HYDRO, ETC.) TO MAKE ARRANGEMENTS FOR THE RELOCATION OF EXISTING UTILITIES PRIOR TO THE INSTALLATION OF SANITARY, STORM AND WATER SERVICE CONNECTIONS.

CONSTRUCTION NOTES

1. ALL MATERIAL FOR SEWER, FORCE MAIN, WATERMAIN, HYDRANTS AND APPURTENANCES, SHALL BE IN ACCORDANCE TO THE REGIONAL MUNICIPALITY OF HALTON WATER AND WASTEWATER LINEAR DESIGN MANUAL SECTION 2.1.1–2.1.2, APPLICABLE REGION OF HALTON (RH) STANDARD DRAWINGS AND SPECIFICATIONS, REGION OF HALTON DRINKING WATER SYSTEM BY–LAW (71–19), CURRENT OPSS AND OPSD AS AMMENDED BY HALTON REGION, AND MECP DESIGN GUIDELINES FOR DRINKING WATER SYSTEMS.
2. UTILITY SEPARATION SHALL BE IN ACCORDANCE TO SECTION 2.6.6 OF THE THE REGIONAL MUNICIPALITY OF HALTON WATER AND WASTEWATER LINEAR DESIGN MANUAL.
3. ALL AREAS DISTURBED DURING CONSTRUCTION WITHIN THE CITY'S RIGHT–OF–WAY SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AND TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR. GRASS AREAS SHALL BE TREATED WITH 100MM OF TOPSOIL AND SHALL BE SODDED.
4. ALL EXISTING UTILITIES SHOWN ON DRAWINGS (PLAN & PROFILE) ARE FOR REFERENCE PURPOSES ONLY. THE CONTRACTOR SHALL SATISFY THEMSELVES AS TO THE ACTUAL LOCATION AND DEPTH OF ANY UTILITY AND SHALL BE LIABLE FOR ALL OR ANY DAMAGE.
5. ANY DISCREPANCIES BETWEEN SITE CONDITIONS AND CONSTRUCTION DRAWINGS MUST BE REPORTED TO THE CITY PRIOR TO COMMENCEMENT OF CONSTRUCTION AND APPROPRIATE ACTION TAKEN TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.
6. ALL SURVEYS STAKE LAYOUT POINTS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE LAYOUT SHALL BE IMMEDIATELY REPORTED TO THE CITY.
7. ATTENTION IS DIRECTED TO THE POSSIBILITY OF EXISTING PRIVATE SPRINKLERS AND LIGHTING SYSTEMS WITHIN THE RIGHT–OF–WAY, WHICH ARE NOT SHOWN ON THE PLANS, LOCATING, WORKING AROUND AND PROTECTING THESE SYSTEMS SHALL BE COMPLETED AT NO EXTRA COST TO THE CITY.
8. AT ALL LOCATIONS WHERE THE PROPOSED WATERMAIN CROSSES UNDER OR ABOVE THE EXISTING SEWERS, OR UTILITIES, GRANULAR A BEDDING MATERIAL IS TO EXTEND FROM THE LOWER PIPE TO THE TOP OF THE UPPER PIPE. GRANULAR A TO BE COMPACTED TO MINIMUM 98% OF MAXIMUM DRY DENSITY.
9. CONTRACTOR TO PROVIDE ADEQUATE SUPPORT DURING CONSTRUCTION BETWEEN THE NEW WATERMAIN AND EXISTING GAS MAINS. MAINTAIN 300mm MINIMUM VERTICAL CLEARANCE BETWEEN THE NEW WATERMAIN AND EXISTING GASMAIN(S) LESS THAN 300mm IN DIAMETER. MAINTAIN 600mm MINIMUM VERTICAL CLEARANCE BETWEEN THE NEW WATERMAIN AND EXISTING GASMAIN(S) EQUAL TO OR GREATER THAN 300mm IN DIAMETER.
10. ALL DIMENSIONS ARE EXPRESSED IN METERS (m) AND PIPE SIZES ARE EXPRESSED IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.



KEY PLAN N.T.S.

BENCHMARK

A SPIKE SET ON PLAINS ROAD WEST LOCATED APPROXIMATELY 10.2 METERS NORTH FROM THE CENTRELINE OF ROAD, 1.1 METERS NORTH OF THE BACK OF CURB, AS SHOWN ON THE FACE OF PLAN.
ELEVATION=102.64m

ELEVATION

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE CITY OF BURLINGTON BENCHMARKS:
No. 463 ELEVATION=90.035m
No. 467 ELEVATION=107.625m

LEGEND

- EX. STORM MANHOLE
- EX. SANITARY MANHOLE
- EX. CB
- CATCHMENT SEDIMENT PROTECTION (SEE DETAIL THIS DRAWING)
- PROPERTY LINE
- LOT LINE
- EASEMENT LINE
- PROPOSED SILT FENCE LOCATION
- EXISTING EMERGENCY OVERLAND FLOW ROUTE
- DENOTES EXISTING ASPHALT BIKE PATH
- DENOTES PROPOSED ASPHALT BIKE PATH
- DENOTES EXISTING STAMPED CONCRETE
- DENOTES PROPOSED STAMPED CONCRETE

No.	Date	Description	By	Ck.
3.	SEP. 13/24	3rd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	F.S.	F.S.
2.	JAN. 19/24	2nd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	M.M.
1.	APR. 28/23	1st SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	B.S.

Revisions

Stamp

LICENSED PROFESSIONAL ENGINEER F. SHI 100065502 PROVINCE OF ONTARIO

Engineer

LUBAN
7373 LIONSHEAD AVENUE, NIAGARA FALLS, ONTARIO, L2G7S4
TEL. 226-688-7928, EMAIL: FENG.SHI@LUBAN.CA

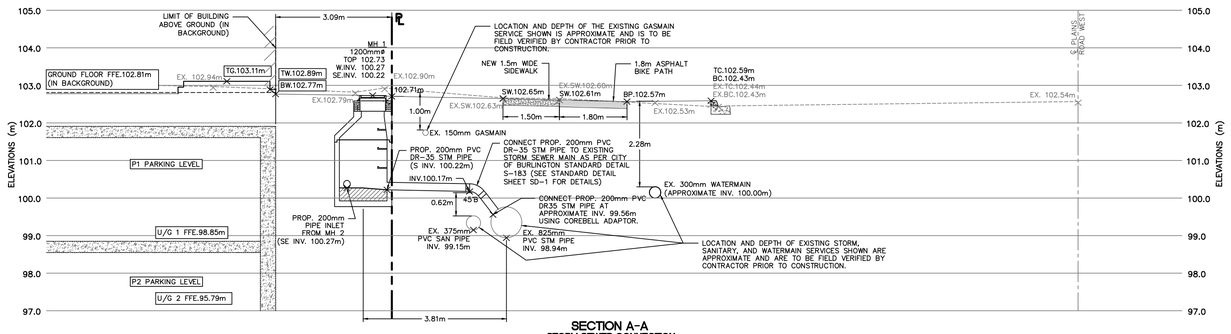
MIXED-USE DEVELOPMENT

141-153 PLAINS RD WEST

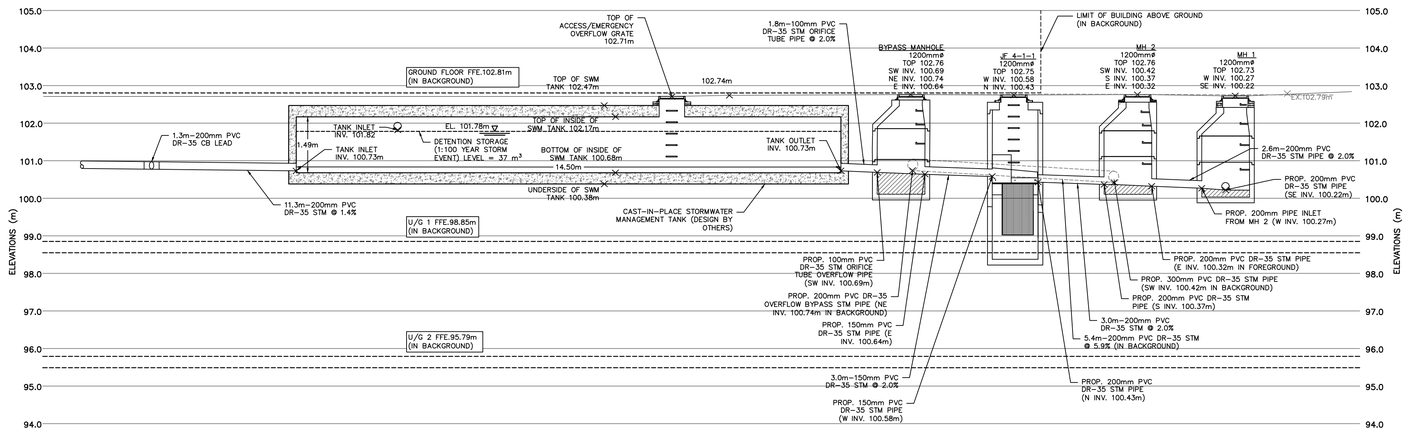
BURLINGTON, ONTARIO

Title: CONSTRUCTION MANAGEMENT AND EROSION SEDIMENTATION PLAN - STAGE 1 (P2 LEVEL)

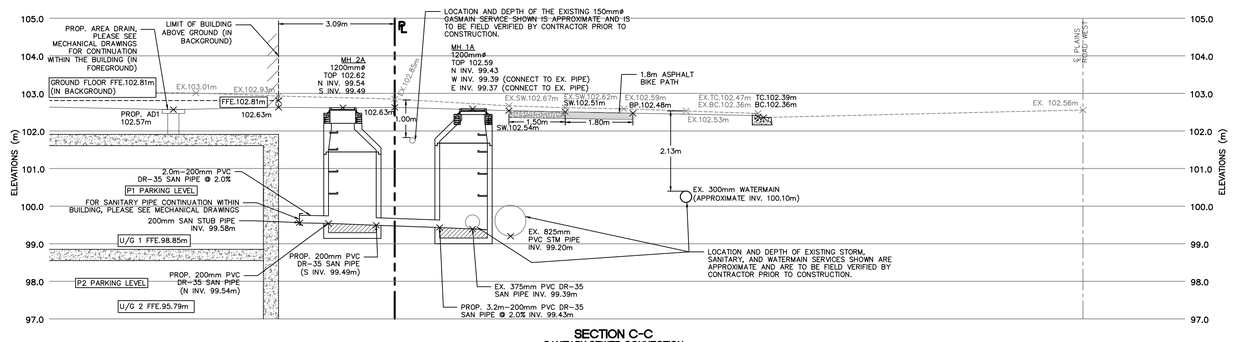
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Designed:	S.S.	Checked:	F.S.
Drawn:	M.S.	Date:	SEPTEMBER 2024
Job No.		Drawing No.	
2024-S400		C4	



SECTION A-A
STORM SEWER CONNECTION
SCALE: HORIZONTAL 1:75
VERTICAL 1:75



SECTION B-B
STORM WATER DETENTION CONNECTION
SCALE: HORIZONTAL 1:75
VERTICAL 1:75



SECTION C-C
SANITARY SEWER CONNECTION
SCALE: HORIZONTAL 1:75
VERTICAL 1:75



KEY PLAN N.T.S.

BENCHMARK

A SPIKE SET ON PLAINS ROAD WEST LOCATED APPROXIMATELY 10.2 METERS NORTH FROM THE CENTRELINE OF ROAD, 1.1 METERS NORTH OF THE BACK OF CURB, AS SHOWN ON THE FACE OF PLAN.
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2.	JAN. 19/24	2nd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	M.M.
1.	APR. 28/23	1st SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	B.S.

Revisions

Stamp

LICENSED PROFESSIONAL ENGINEER
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100065502
2024/09/13
PROVINCE OF ONTARIO

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MIXED-USE DEVELOPMENT

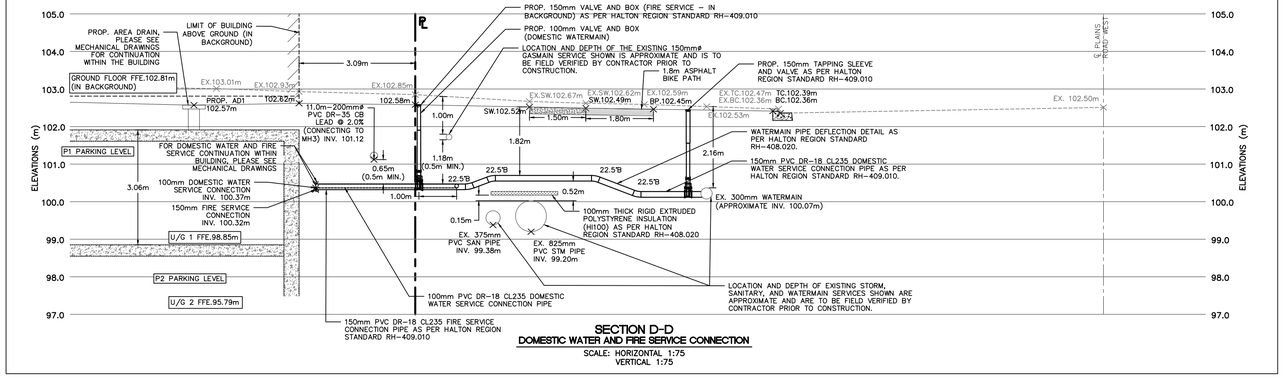
141-153 PLAINS RD WEST

BURLINGTON, ONTARIO

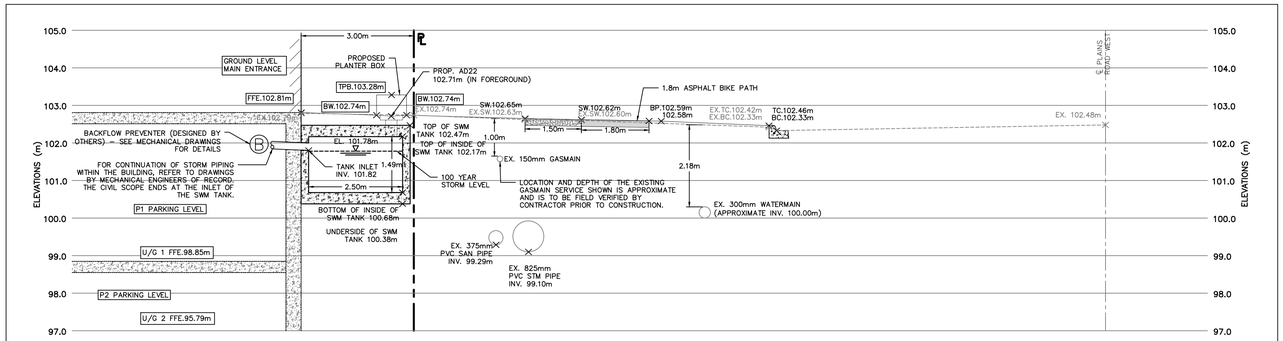
Title

DETAIL SHEET #1

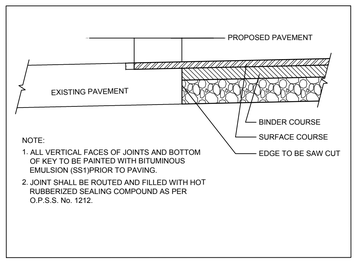
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Designed:	S.S.	Checked:	F.S.
Drawn:	M.S.	Date:	SEPTEMBER 2024
Job No.		Drawing No.	
22-45		C5	



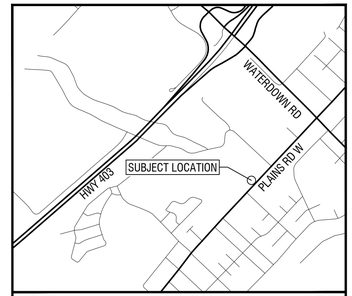
SECTION D-D
DOMESTIC WATER AND FIRE SERVICE CONNECTION
SCALE: HORIZONTAL 1:75
VERTICAL 1:75



SECTION E-E
STORM WATER DETENTION TANK
SCALE: HORIZONTAL 1:75
VERTICAL 1:75



1 DETAIL - LAP JOINT
N.T.S.



KEY PLAN N.T.S.

BENCHMARK

A SPIKE SET ON PLAINS ROAD WEST LOCATED APPROXIMATELY 10.2 METERS NORTH FROM THE CENTRELINE OF ROAD, 1.1 METERS NORTH OF THE BACK OF CURB, AS SHOWN ON THE FACE OF PLAN.
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No.	Date	Description	By	Ck.
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1.	APR. 28/23	1st SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	B.S.

Revisions

Stamp

LICENSED PROFESSIONAL ENGINEER
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MIXED-USE DEVELOPMENT

141-153 PLAINS RD WEST

BURLINGTON, ONTARIO

Title

DETAIL SHEET #2

Scale:	AS SHOWN		
Designed:	S.S.	Checked:	F.S.
Drawn:	M.S.	Date:	SEPTEMBER 2024
Job No.		Drawing No.	
22-45		C6	

I:\IMBRIUM\PRODUCTS\JELLYFISH FILTER\40 DRAWINGS & DETAILS\STANDARD DETAILS\JELLYFISH FILTER - ONLINE\JELLYFISH FILTER JF4 - PEAK DIVERSION.DWG 7/17/2024 1:09 PM

GENERAL NOTES:
1. ALL DIMENSIONS INDICATED ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SPECIFIED.
2. JELLYFISH STRUCTURE INLET AND OUTLET PIPE SIZE AND ORIENTATION SHOWN FOR INFORMATIONAL PURPOSES ONLY.
3. UNLESS OTHERWISE NOTED, BYPASS INFRASTRUCTURE, SUCH AS ALL UPSTREAM DIVERSION STRUCTURES, CONNECTING STRUCTURES, OR PIPE CONDUITS CONNECTING TO COMPLETE THE JELLYFISH SYSTEM SHALL BE PROVIDED AND ADDRESSED SEPARATELY.
4. DRAWING FOR INFORMATION PURPOSES ONLY. REFER TO ENGINEER'S SITE/UTILITY PLAN FOR STRUCTURE ORIENTATION.
5. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

JELLYFISH STRUCTURE & DESIGN NOTES:
1. 457 MM Ø (18") MAINTENANCE ACCESS WALL TO BE USED FOR CLEANOUT AND ACCESS BELOW CARTRIDGE DECK.
2. CASTINGS OR DOORS OF THE JELLYFISH MANHOLE STRUCTURE TO EXTEND TO DESIGN FINISH GRADE. DEPTHS IN EXCESS OF 3.65 M (12') MAY REQUIRE THE DESIGN AND INSTALLATION OF INTERMEDIATE SAFETY GRATES OR OTHER STRUCTURAL ELEMENTS.
3. CASTINGS AND GRADE RINGS, OR DOORS AND DOOR RISERS, OR BOTH, SHALL BE GROUTED FOR WATERTIGHTNESS.
STRUCTURE SHALL MEET AASHTO HS-20, ASSUMING EARTH COVER OF 0' - 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE IMBRIUM LOGO.
4. ALL STRUCTURAL SECTIONS AND PARTS TO MEET OR EXCEED ASTM C-478, ASTM C-443, AND ASTM D-4097 CORRESPONDING TO AASHTO SPECIFICATIONS, AND ANY OTHER SITE OR LOCAL STANDARDS.
5. CONCRETE RISER SECTIONS FROM BOTTOM TO TOP WILL BE ADDED AS REQUIRED INCLUDING TRANSITION PIECES TO SMALLER DIAMETER RISERS FOR SURFACE ACCESSES WHERE WARRANTED BY SERVICING DEPTH.
6. IF MINIMUM DEPTH FROM TOP OF CARTRIDGE DECK TO BOTTOM OF STRUCTURAL TOP SLAB CANNOT BE ACHIEVED DUE TO PIPING INVERT ELEVATIONS OR OTHER SITE CONSTRAINTS. ALTERNATIVE HATCH CONFIGURATIONS MAY BE AVAILABLE. HATCH DOORS SHOULD BE SIZED TO PROVIDE FULL ACCESS ABOVE THE CARTRIDGES TO ACCOMMODATE MAINTENANCE.
7. STEPS TO BE APPROXIMATELY 330 MM (13") APART AND DIMENSIONS MUST MEET LOCAL STANDARDS. STEPS MUST BE INSTALLED AFTER CARTRIDGE DECK IS IN PLACE.
8. CONFIGURATION OF INLET AND OUTLET PIPE CAN VARY TO MEET SITE'S NEEDS.
9. IT IS THE RESPONSIBILITY OF OTHERS TO PROPERLY PROTECT THE TREATMENT DEVICE, AND KEEP THE DEVICE OFFLINE DURING CONSTRUCTION. FILTER CARTRIDGES SHALL NOT BE INSTALLED UNTIL THE PROJECT SITE IS CLEAN AND FREE OF DEBRIS, BY OTHERS. THE PROJECT SITE INCLUDES ANY SURFACE THAT CONTRIBUTES STORM DRAINAGE TO THE TREATMENT DEVICE. CARTRIDGES SHALL BE FURNISHED NEW, AT THE TIME OF FINAL ACCEPTANCE.
10. THIS DRAWING MUST BE VIEWED IN CONJUNCTION WITH THE STANDARD JELLYFISH SPECIFICATION, AND STORMWATER QUALITY FILTER TREATMENT JELLYFISH DOCUMENTS.

PEAK DIVERSION JELLYFISH DESIGN NOTES:
1. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS; WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE IMBRIUM LOGO.
2. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
3. INLET HGL NOT TO EXCEED 6" BELOW THE TOP OF THE M.A.W. DURING THE PEAK DESIGN STORM, OR 10-YEAR STORM (WHICHEVER IS GREATER).
4. INLET PIPE INVERT ELEVATION VARIES FROM 1" TO 6" MAXIMUM ABOVE THE OUTLET PIPE INVERT.
5. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
6. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
7. THE DIFFERENCE IN THE INLET AND OUTLET PIPE ELEVATIONS FOR RETROFIT INSTALLATIONS TO EXISTING STORM DRAIN PIPES SHALL BE EQUAL TO THE SLOPE OVER THE DIAMETER OF THE MANHOLE; NOT THE EXCEED 6" IN VERTICAL DIFFERENTIAL BETWEEN INLET AND OUTLET PIPES.

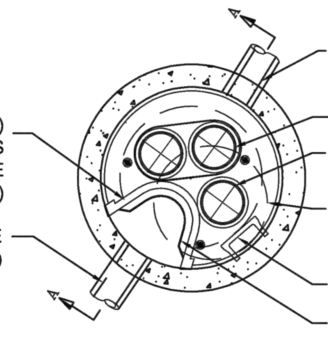
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY IMBRIUM, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT IMBRIUM TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

PEAK DIVERSION JELLYFISH RECOMMENDED PIPE DIAMETERS

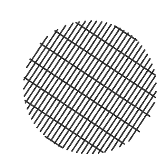
MODEL DIAMETER (m)	MINIMUM ANGLE INLET/OUTLET PIPES	MINIMUM INLET PIPE DIAMETER (mm)	MAXIMUM INLET PIPE DIAMETER (mm)
1.2	62	150	300
1.8	59	200	300
2.4	52	250	375
3.0	48	300	450
3.6	40	300	450
CONTACT IMBRIUM SYSTEMS FOR ALTERNATE PIPE DIAMETERS			

FOR SITE SPECIFIC DRAWINGS PLEASE CONTACT YOUR LOCAL JELLYFISH FILTER REPRESENTATIVE. SITE SPECIFIC DRAWINGS ARE BASED ON THE BEST AVAILABLE INFORMATION AT THE TIME. SOME FIELD REVISIONS TO THE SYSTEM LOCATION OR CONNECTION PIPING MAY BE NECESSARY BASED ON AVAILABLE SPACE OR SITE CONFIGURATION REVISIONS. ELEVATIONS SHOULD BE MAINTAINED EXCEPT WHERE NOTED ON BYPASS STRUCTURE.

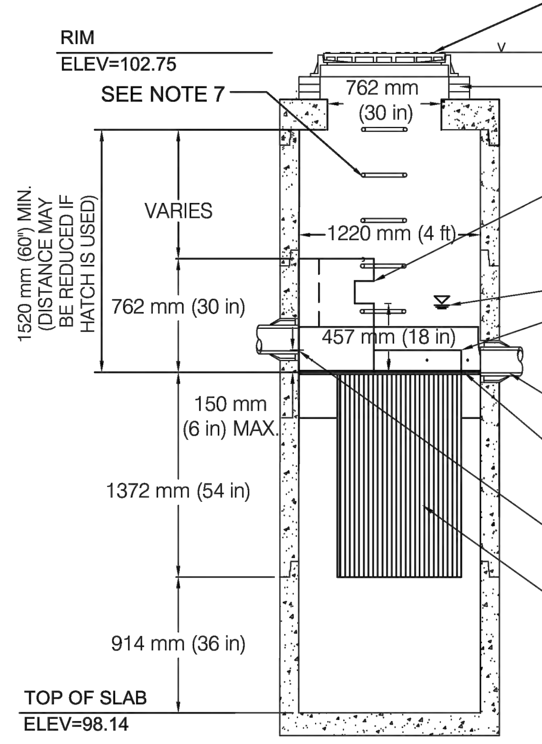
DRAWING NOT TO BE USED FOR CONSTRUCTION



JF4 (ONLINE) PLAN VIEW



INVERT INFORMATION TO BE SUPPLIED BY ENGINEER OF RECORD



JELLYFISH CROSS SECTION A-A

JELLYFISH DESIGN NOTES

JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN. Ø1220 mm (48") MANHOLE JELLYFISH PEAK TREATMENT CAPACITY IS 12.7 L/s (0.54 CFS), AND MAXIMUM BYPASS CAPACITY IS 70.8 L/s (2.50 CFS). IF THE SITE CONDITIONS EXCEED TOTAL CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED. TREATMENT FLOW RATE IS BASED ON 457 mm (18") OF HEAD PRESSURE.

CARTRIDGE SELECTION				
CARTRIDGE DEPTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE BASE SLAB	90"	76"	63"	51"
FLOW RATE HIGH-FLO / DRAINDOWN (L/s) (per cart)	5.09 / 2.55	3.68 / 1.84	2.55 / 1.27	1.41 / 0.71
SEDIMENT CAPACITY HIGH-FLO / DRAINDOWN (kg) (per cart)	57 / 28	42 / 21	28 / 14	16 / 8
MAX. CARTS HIGH-FLO/DRAINDOWN	2 / 1			
MAX. BYPASS (L/s)	70.8			
MAX. SEDIMENT CAPACITY (kg)	142	105	70	40
MAX. TREATMENT (L/s)	12.7	9.3	6.2	3.4
MAX. TREATMENT AND BYPASS (L/s) (PEAK CAPACITY)	83.5	80.1	77.0	74.2

SITE SPECIFIC DATA REQUIREMENTS

JELLYFISH MODEL	*
STRUCTURE ID	*
WATER QUALITY FLOW RATE (L/s)	*
BYPASS FLOW RATE (L/s)	*
PEAK FLOW RATE (L/s)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
# OF CARTRIDGES REQUIRED (HF / DD)	*
CARTRIDGE SIZE (inches)	*
MAX ALLOWABLE BYPASS FLOW RATE (L/s)	70.8

PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	*	*	*	*	*
INLET #2	*	*	*	*	*
OUTLET	*	*	*	*	*

* PER ENGINEER OF RECORD

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#	#	#	#
#	#	#	#
#	#	#	#
0	04/15/2015	INTIAL RELEASE	BSF

Jellyfish®
JF4 ONLINE
Scale = 1:50
www.imbriumsystems.com info@imbriumsystems.com

imbrium®
407 FAIRVIEW DRIVE, WHITBY, ON L1N 3A9
Jellyfish® Filter

DATE: #####	
DESIGNED:	DRAWN: BSF
CHECKED: BW	APPROVED: SP
IMBRIUM PROJECT #: #####	
SHEET: 1 OF 2	

I:\IMBRIUM\PRODUCTS\JELLYFISH FILTER\40 DRAWINGS & DETAILS\STANDARD DETAILS\JELLYFISH FILTER - PEAK DIVERSION MANHOLE\JELLYFISH FILTER JF4 - PEAK DIVERSION.DWG 4/15/2019 9:35 AM

JELLYFISH® FILTER - SPECIFICATIONS

GENERAL
A. WORK INCLUDED: SPECIFIES REQUIREMENTS FOR CONSTRUCTION AND PERFORMANCE OF AN UNDERGROUND STORMWATER QUALITY, MEMBRANE FILTRATION, AND TREATMENT DEVICE THAT REMOVES POLLUTANTS FROM STORMWATER RUNOFF THROUGH THE UNIT OPERATIONS OF SEDIMENTATION, FLOATATION, AND MEMBRANE FILTRATION.

B. REFERENCE STANDARDS:
ASTM C 891: SPECIFICATION FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES
ASTM C 478: SPECIFICATION FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS
ASTM C 990: SPECIFICATION FOR JOINTS FOR CONCRETE MANHOLES USING PREFORMED FLEXIBLE JOINT SEALANTS
ASTM D 4101: SPECIFICATION FOR COPOLYMER STEPS CONSTRUCTION

C. SHOP DRAWINGS: SHOP DRAWINGS FOR THE STRUCTURE AND PERFORMANCE ARE TO BE SUBMITTED WITH EACH ORDER TO THE CONTRACTOR. CONTRACTOR SHALL FORWARD SHOP DRAWING SUBMITTAL TO THE CONSULTING ENGINEER FOR APPROVAL. SHOP DRAWINGS ARE TO DETAIL THE STRUCTURE PRECAST CONCRETE AND CALL OUT OR NOTE THE FIBERGLASS (FRP) INTERNALS/COMPONENTS.

D. PRODUCT SUBSTITUTIONS: NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD. SUBMISSIONS FOR SUBSTITUTIONS REQUIRE REVIEW AND APPROVAL BY THE ENGINEER OF RECORD, FOR HYDRAULIC PERFORMANCE, IMPACT TO PROJECT DESIGNS, EQUIVALENT TREATMENT PERFORMANCE, AND ANY REQUIRED PROJECT PLAN AND REPORT (HYDROLOGY/HYDRAULIC, WATER QUALITY, STORMWATER POLLUTION) MODIFICATIONS THAT WOULD BE REQUIRED BY THE APPROVING JURISDICTIONS/AGENCIES. CONTRACTOR TO COORDINATE WITH THE ENGINEER OF RECORD ANY APPLICABLE MODIFICATIONS TO THE PROJECT ESTIMATES OF COST, BONDING AMOUNT DETERMINATIONS, PLAN CHECK FEES FOR CHANGES TO APPROVED DOCUMENTS, AND/OR ANY OTHER REGULATORY REQUIREMENTS RESULTING FROM THE PRODUCT SUBSTITUTION.

E. HANDLING AND STORAGE: PREVENT DAMAGE TO MATERIALS DURING STORAGE AND HANDLING.

PRODUCTS
A. THE DEVICE SHALL BE A CYLINDRICAL OR RECTANGULAR, ALL CONCRETE STRUCTURE (INCLUDING RISERS), CONSTRUCTED FROM PRECAST CONCRETE RISER AND SLAB COMPONENTS OR MONOLITHIC PRECAST STRUCTURE(S), INSTALLED TO CONFORM TO ASTM C 891 AND TO ANY REQUIRED STATE HIGHWAY, MUNICIPAL OR LOCAL SPECIFICATIONS; WHICHEVER IS MORE STRINGENT. THE DEVICE SHALL BE WATERTIGHT.

B. THE CYLINDRICAL CONCRETE DEVICE SHALL INCLUDE A FIBERGLASS CARTRIDGE DECK INSERT. THE RECTANGULAR CONCRETE DEVICE SHALL INCLUDE A COATED ALUMINUM INSERT. IN EITHER INSTANCE, THE INSERT SHALL BE BOLTED AND SEALED WATERTIGHT INSIDE THE PRECAST CONCRETE CHAMBER. THE INSERT SHALL SERVE AS: (A) A HORIZONTAL DIVIDER BETWEEN THE LOWER TREATMENT ZONE AND THE UPPER TREATED EFFLUENT ZONE; (B) A DECK FOR ATTACHMENT OF FILTER CARTRIDGES SUCH THAT THE MEMBRANE FILTER ELEMENTS OF EACH CARTRIDGE EXTEND INTO THE LOWER TREATMENT ZONE; (C) A PLATFORM FOR MAINTENANCE WORKERS TO SERVICE THE FILTER CARTRIDGES (MAXIMUM MANNED WEIGHT = 450 POUNDS); (D) A CONDUIT FOR CONVEYANCE OF TREATED WATER TO THE EFFLUENT PIPE.

C. MEMBRANE FILTER CARTRIDGES SHALL BE COMPRISED OF REUSABLE CYLINDRICAL MEMBRANE FILTER ELEMENTS CONNECTED TO A PERFORATED HEAD PLATE. THE NUMBER OF MEMBRANE FILTER ELEMENTS PER CARTRIDGE SHALL BE A MINIMUM OF ELEVEN 2.75-INCH (70-MM) OR GREATER DIAMETER ELEMENTS. THE LENGTH OF EACH FILTER ELEMENT SHALL BE A MINIMUM 15 INCHES (381 MM). EACH CARTRIDGE SHALL BE FITTED INTO THE CARTRIDGE DECK BY INSERTION INTO A CARTRIDGE RECEPTACLE THAT IS PERMANENTLY MOUNTED INTO THE CARTRIDGE DECK. EACH CARTRIDGE SHALL BE SECURED BY A CARTRIDGE LID THAT IS THREADED ONTO THE RECEPTACLE, OR SIMILAR MECHANISM TO SECURE THE CARTRIDGE INTO THE DECK. THE MAXIMUM TREATMENT FLOW RATE OF A FILTER CARTRIDGE SHALL BE CONTROLLED BY AN ORIFICE IN THE CARTRIDGE LID, OR ON THE INDIVIDUAL CARTRIDGE ITSELF, AND BASED ON A DESIGN FLUX RATE (SURFACE LOADING RATE) DETERMINED BY THE MAXIMUM TREATMENT FLOW RATE PER UNIT OF FILTRATION MEMBRANE SURFACE AREA. THE MAXIMUM FLUX RATE SHALL BE 0.21 GPM/FT2 (0.142 LPS/M2). EACH MEMBRANE FILTER CARTRIDGE SHALL ALLOW FOR MANUAL INSTALLATION AND REMOVAL.

D. ALL FILTER CARTRIDGES AND MEMBRANES SHALL BE REUSABLE AND ALLOW FOR THE USE OF FILTRATION MEMBRANE RINSING PROCEDURES TO RESTORE FLOW CAPACITY AND SEDIMENT CAPACITY; EXTENDING CARTRIDGE SERVICE LIFE.

E. ACCESS SHALL HAVE A MINIMUM CLEAR HEIGHT OF 60" OVER ALL OF THE FILTER CARTRIDGES, OR BE ACCESSIBLE BY A HATCH OR OTHER MECHANISM THAT PROVIDES MINIMUM 60" VERTICAL CLEAR SPACE OVER ALL OF THE FILTER CARTRIDGES. FILTER CARTRIDGES SHALL BE ABLE TO BE LIFTED STRAIGHT VERTICALLY OUT OF THE RECEPTACLES AND DECK FOR THE ENTIRE LENGTH OF THE CARTRIDGE.

F. THE DEVICE SHALL INCLUDE A MINIMUM 24 INCHES (610 MM) OF SUMP BELOW THE BOTTOM OF THE CARTRIDGES FOR SEDIMENT ACCUMULATION, UNLESS OTHERWISE SPECIFIED BY THE DESIGN ENGINEER. DEPTHS LESS THAN 24" MAY HAVE AN IMPACT ON THE TOTAL PERFORMANCE AND/OR LONGEVITY BETWEEN CARTRIDGE MAINTENANCE/REPLACEMENT OF THE DEVICE.

G. ALL PRECAST CONCRETE COMPONENTS SHALL BE MANUFACTURED TO A MINIMUM LIVE LOAD OF HS-20 TRUCK LOADING OR GREATER BASED ON LOCAL REGULATORY SPECIFICATIONS, UNLESS OTHERWISE MODIFIED OR SPECIFIED BY THE DESIGN ENGINEER, AND SHALL BE WATERTIGHT.

H. GASKETS AND/OR SEALANTS TO PROVIDE WATER TIGHT SEAL BETWEEN CONCRETE JOINTS. JOINTS SHALL BE SEALED WITH PREFORMED JOINT SEALING COMPOUND CONFORMING TO ASTM C 990.

I. FRAME AND COVERS MUST BE MANUFACTURED FROM CAST-IRON OR OTHER COMPOSITE MATERIAL TESTED TO WITHSTAND H-20 OR GREATER DESIGN LOADS, AND AS APPROVED BY THE LOCAL REGULATORY BODY. FRAMES AND COVERS MUST BE EMBOSSED WITH THE NAME OF THE DEVICE MANUFACTURER OR THE DEVICE BRAND NAME.

J. DOOR AND HATCHES, IF PROVIDED SHALL MEET DESIGNATED LOADING REQUIREMENTS OR AT A MINIMUM FOR INCIDENTAL VEHICULAR TRAFFIC.

K. ALL CONCRETE COMPONENTS SHALL BE MANUFACTURED ACCORDING TO LOCAL SPECIFICATIONS AND SHALL MEET THE REQUIREMENTS OF ASTM C 478.

L. THE FIBERGLASS PORTION OF THE FILTER DEVICE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING STANDARD: ASTM D-4097: CONTACT MOLDED GLASS FIBER REINFORCED CHEMICAL RESISTANT TANKS.

M. STEPS SHALL BE CONSTRUCTED ACCORDING TO ASTM D4101 OF COPOLYMER POLYPROPYLENE, AND BE DRIVEN INTO PREFORMED OR PRE-DRILLED HOLES AFTER THE CONCRETE HAS CURED, INSTALLED TO CONFORM TO APPLICABLE SECTIONS OF STATE, PROVINCIAL AND MUNICIPAL BUILDING CODES, HIGHWAY, MUNICIPAL OR LOCAL SPECIFICATIONS FOR THE CONSTRUCTION OF SUCH DEVICES.

N. ALL PRECAST CONCRETE SECTIONS SHALL BE INSPECTED TO ENSURE THAT DIMENSIONS, APPEARANCE AND QUALITY OF THE PRODUCT MEET LOCAL MUNICIPAL SPECIFICATIONS AND ASTM C 478.

PERFORMANCE
A. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL FUNCTION TO REMOVE POLLUTANTS BY THE FOLLOWING UNIT TREATMENT PROCESSES; SEDIMENTATION, FLOATATION, AND MEMBRANE FILTRATION.

B. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL REMOVE OIL, DEBRIS, TRASH, COARSE AND FINE PARTICULATES, PARTICULATE-BOUND POLLUTANTS, METALS AND NUTRIENTS FROM STORMWATER DURING RUNOFF EVENTS.

C. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL TYPICALLY UTILIZE AN EXTERNAL BYPASS TO DIVERT EXCESSIVE FLOWS. INTERNAL BYPASS SYSTEMS SHALL BE EQUIPPED WITH A FLOATABLES BAFFLE, AND MUST PASS WATER OVER THE CARTRIDGE DECK, AND AVOID PASSAGE THROUGH THE SUMP AND/OR CARTRIDGE FILTRATION ZONE.

D. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL TREAT 100% OF THE REQUIRED WATER QUALITY TREATMENT FLOW BASED ON A MAXIMUM TREATMENT FLUX RATE (SURFACE LOADING RATE) ACROSS THE MEMBRANE FILTER CARTRIDGES NOT TO EXCEED 0.21 GPM/FT2 (0.142 LPS/M2).

E. AT A MINIMUM, THE STORMWATER QUALITY FILTER DEVICE SHALL HAVE BEEN FIELD TESTED AND VERIFIED WITH A MINIMUM 25 QUALIFYING STORM EVENTS AND FIELD MONITORING CONDUCTED ACCORDING TO THE TARP TIER II OR TAPE FIELD TEST PROTOCOL, AND HAVE RECEIVED NJCAT VERIFICATION.

F. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL HAVE DEMONSTRATED A MINIMUM MEDIAN TSS REMOVAL EFFICIENCY OF 85% AND A MINIMUM MEDIAN SSC REMOVAL EFFICIENCY OF 95%.

G. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL HAVE DEMONSTRATED THE ABILITY TO CAPTURE FINE PARTICLES AS INDICATED BY A MINIMUM MEDIAN REMOVAL EFFICIENCY OF 75% FOR THE PARTICLE FRACTION LESS THAN 25 MICRONS, AN EFFLUENT D50 OF 15 MICRONS OR LOWER FOR ALL MONITORED STORM EVENTS, AND AN EFFLUENT TURBIDITY OF 15 NTUS OR LOWER.

H. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL HAVE DEMONSTRATED A MINIMUM MEDIAN TOTAL PHOSPHORUS REMOVAL OF 55%, AND A MINIMUM MEDIAN TOTAL NITROGEN REMOVAL OF 50%.

I. THE STORMWATER QUALITY FILTER TREATMENT DEVICE SHALL HAVE DEMONSTRATED A MINIMUM MEDIAN TOTAL ZINC REMOVAL OF 50%, AND A MINIMUM MEDIAN TOTAL COPPER REMOVAL OF 75%.

INSPECTION AND MAINTENANCE
A. DURABILITY OF MEMBRANES ARE SUBJECT TO GOOD HANDLING PRACTICES DURING INSPECTION AND MAINTENANCE (REMOVAL, RINSING, AND REINSERTION) EVENTS, AND SITE SPECIFIC CONDITIONS THAT MAY HAVE HEAVIER OR LIGHTER LOADING ONTO THE CARTRIDGES, AND POLLUTANT VARIABILITY THAT MAY IMPACT THE MEMBRANE STRUCTURAL INTEGRITY. MEMBRANE MAINTENANCE AND REPLACEMENT SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B. INSPECTION WHICH INCLUDES TRASH AND FLOATABLES COLLECTION, SEDIMENT DEPTH DETERMINATION, AND VISIBLE DETERMINATION OF BACKWASH POOL DEPTH SHALL BE EASILY CONDUCTED FROM GRADE (OUTSIDE THE STRUCTURE).

C. MANUAL RINSING OF THE REUSABLE FILTER CARTRIDGES SHALL PROMOTE RESTORATION OF THE FLOW CAPACITY AND SEDIMENT CAPACITY OF THE FILTER CARTRIDGES, EXTENDING CARTRIDGE SERVICE LIFE.

D. SEDIMENT REMOVAL FROM THE FILTER TREATMENT DEVICE SHALL BE ABLE TO BE CONDUCTED USING A STANDARD MAINTENANCE TRUCK AND VACUUM APPARATUS, AND A MINIMUM ONE POINT OF ENTRY TO THE SUMP THAT IS UNOBSTRUCTED BY FILTER CARTRIDGES.

E. MAINTENANCE ACCESS SHALL HAVE A MINIMUM CLEAR HEIGHT OF 60" OVER ALL OF THE FILTER CARTRIDGES, OR BE ACCESSIBLE BY A HATCH OR OTHER MECHANISM THAT PROVIDES MINIMUM 60" VERTICAL CLEAR SPACE OVER ALL OF THE FILTER CARTRIDGES. FILTER CARTRIDGES SHALL BE ABLE TO BE LIFTED STRAIGHT VERTICALLY OUT OF THE RECEPTACLES AND DECK FOR THE ENTIRE LENGTH OF THE CARTRIDGE.

F. FILTER CARTRIDGES SHALL BE ABLE TO BE MAINTAINED WITHOUT THE USE OF ADDITIONAL LIFTING EQUIPMENT.

EXECUTION
A. THE INSTALLATION OF A WATERTIGHT PRECAST CONCRETE DEVICE SHOULD CONFORM TO ASTM C 891 AND TO ANY STATE HIGHWAY, MUNICIPAL OR LOCAL SPECIFICATIONS FOR THE CONSTRUCTION OF MANHOLES, WHICHEVER IS MORE STRINGENT. SELECTED SECTIONS OF A GENERAL SPECIFICATION THAT ARE APPLICABLE ARE SUMMARIZED BELOW.

B. THE WATERTIGHT PRECAST CONCRETE DEVICE IS INSTALLED IN SECTIONS IN THE FOLLOWING SEQUENCE:
- AGGREGATE BASE
- BASE SLAB
- TREATMENT CHAMBER AND CARTRIDGE DECK RISER SECTION(S)
- BYPASS SECTION
- CONNECT INLET AND OUTLET PIPES
- CONCRETE RISER SECTION(S) AND/OR TRANSITION SLAB (IF REQUIRED)
- MAINTENANCE RISER SECTION(S) (IF REQUIRED)
- FRAME AND ACCESS COVER

C. INLET AND OUTLET PIPES SHOULD BE SECURELY SET INTO THE DEVICE USING APPROVED PIPE SEALS (FLEXIBLE BOOT CONNECTIONS, WHERE APPLICABLE) SO THAT THE STRUCTURE IS WATERTIGHT, AND SUCH THAT ANY PIPE INTRUSION INTO THE DEVICE DOES NOT IMPACT THE DEVICE FUNCTIONALITY.

D. ADJUSTMENT UNITS (E.G. GRADE RINGS) SHOULD BE INSTALLED TO SET THE FRAME AND COVER AT THE REQUIRED ELEVATION. THE ADJUSTMENT UNITS SHOULD BE LAID IN A FULL BED OF MORTAR WITH SUCCESSIVE UNITS BEING JOINED USING SEALANT RECOMMENDED BY THE MANUFACTURER. FRAMES FOR THE COVER SHOULD BE SET IN A FULL BED OF MORTAR AT THE ELEVATION SPECIFIED.

E. IN SOME INSTANCES THE MAINTENANCE ACCESS WALL, IF PROVIDED, SHALL REQUIRE AN EXTENSION ATTACHMENT AND SEALING TO THE PRECAST WALL AND CARTRIDGE DECK AT THE JOB SITE, RATHER THAN AT THE PRECAST FACILITY. IN THIS INSTANCE, INSTALLATION OF THESE COMPONENTS SHALL BE PERFORMED ACCORDING TO INSTRUCTIONS PROVIDED BY THE MANUFACTURER.

F. FILTER CARTRIDGES SHALL BE INSTALLED IN THE CARTRIDGE DECK AFTER THE CONSTRUCTION SITE IS FULLY STABILIZED AND IN ACCORDANCE WITH THE MANUFACTURERS GUIDELINES AND RECOMMENDATIONS. CONTRACTOR TO CONTACT THE MANUFACTURER TO SCHEDULE CARTRIDGE DELIVERY AND REVIEW PROCEDURES/REQUIREMENTS TO BE COMPLETED TO THE DEVICE PRIOR TO INSTALLATION OF THE CARTRIDGES AND ACTIVATION OF THE SYSTEM.

G. MANUFACTURER SHALL COORDINATE DELIVERY OF FILTER CARTRIDGES AND OTHER INTERNAL COMPONENTS WITH CONTRACTOR. FILTER CARTRIDGES SHALL BE DELIVERED AND INSTALLED COMPLETE AFTER SITE IS STABILIZED AND UNIT IS READY TO ACCEPT CARTRIDGES. UNIT IS READY TO ACCEPT CARTRIDGES AFTER IS HAS BEEN CLEANED OUT AND ANY STANDING WATER, DEBRIS, AND OTHER MATERIALS HAVE BEEN REMOVED. CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO PROTECT THE FILTER CARTRIDGE RECEPTACLES AND FILTER CARTRIDGES FROM DAMAGE DURING CONSTRUCTION, AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND GUIDANCE. FOR SYSTEMS WITH CARTRIDGES INSTALLED PRIOR TO FULL SITE STABILIZATION AND PRIOR TO SYSTEM ACTIVATION, THE CONTRACTOR CAN PLUG INLET AND OUTLET PIPES TO PREVENT STORMWATER AND OTHER INFLUENT FROM ENTERING THE DEVICE. PLUGS MUST BE REMOVED DURING THE ACTIVATION PROCESS.

H. THE MANUFACTURER SHALL PROVIDE AN OWNER'S MANUAL UPON REQUEST.

I. AFTER CONSTRUCTION AND INSTALLATION, AND DURING OPERATION, THE DEVICE SHALL BE INSPECTED AND CLEANED AS NECESSARY BASED ON THE MANUFACTURER'S RECOMMENDED INSPECTION AND MAINTENANCE GUIDELINES AND THE LOCAL REGULATORY AGENCY/BODY.

J. WHEN REPLACEMENT MEMBRANE FILTER ELEMENTS AND/OR OTHER PARTS ARE REQUIRED, ONLY MEMBRANE FILTER ELEMENTS AND PARTS APPROVED BY THE MANUFACTURER FOR USE WITH THE STORMWATER QUALITY FILTER DEVICE SHALL BE INSTALLED.

END OF SECTION

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JELLYFISH FILTER SPECIFICATIONS
Jellyfish®
JF4 ONLINE
Scale = 1:50
www.imbriumsystems.com info@imbriumsystems.com

imbrium®
407 FAIRVIEW DRIVE, WHITBY, ON L1N 3A9
Jellyfish® Filter

DATE: #####	
DESIGNED:	DRAWN: BSF
CHECKED: BW	APPROVED: SP
IMBRIUM PROJECT #: #####	
SHEET: 2 OF 2	



KEY PLAN N.T.S.

BENCHMARK

A SPIKE SET ON PLAINS ROAD WEST LOCATED APPROXIMATELY 10.2 METERS NORTH FROM THE CENTRELINE OF ROAD, 1.1 METERS NORTH OF THE BACK OF CURB, AS SHOWN ON THE FACE OF PLAN.
ELEVATION=102.64m

ELEVATION

ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM AND ARE DERIVED FROM THE CITY OF BURLINGTON BENCHMARKS:
No. 463 ELEVATION=90.035m
No. 467 ELEVATION=107.625m

LEGEND

No.	Date	Description	By	Ck.
3.	SEP. 13/24	3rd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	F.S.	F.S.
2.	JAN. 19/24	2nd SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	M.M.
1.	APR. 28/23	1st SUBMISSION TO HALTON REGION AND CITY OF BURLINGTON	S.S.	B.S.

Revisions

Stamp



Engineer

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MIXED-USE DEVELOPMENT

141-153 PLAINS RD WEST

BURLINGTON, ONTARIO

Title

DETAIL SHEET #3

Scale:	AS SHOWN		
Designed:	S.S.	Checked:	F.S.
Drawn:	M.S.	Date:	SEPTEMBER 2024
Job No.	22-45	Drawing No.	C7