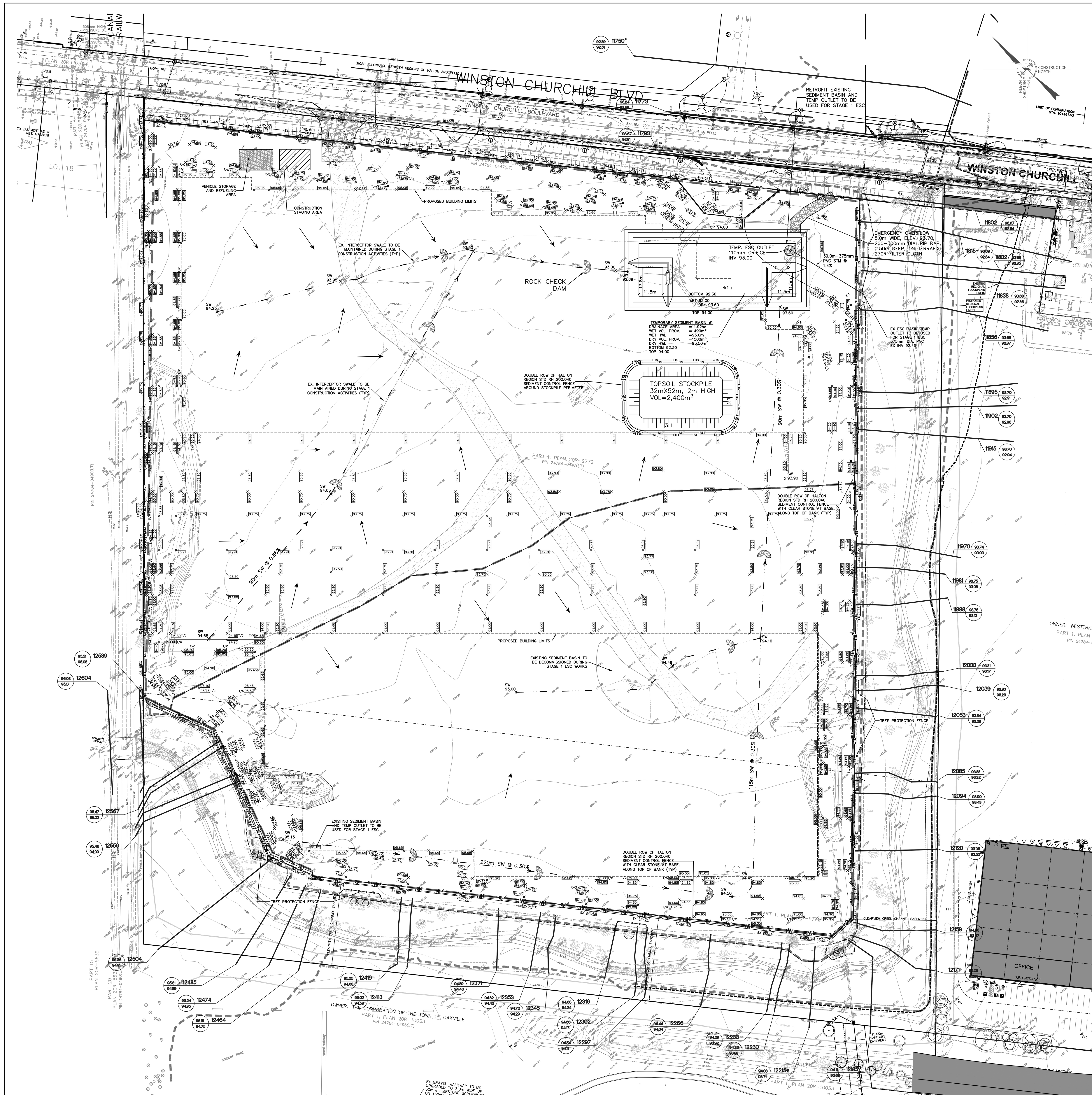
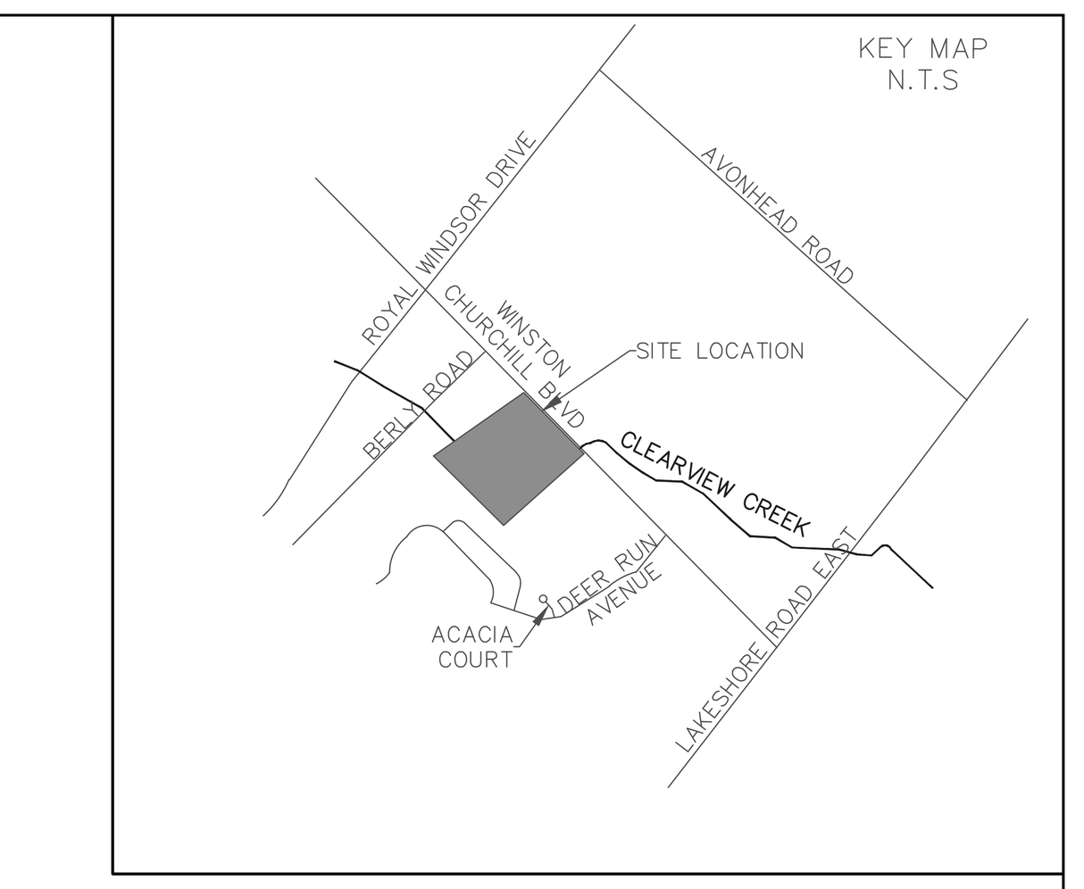




KEY MAP
N.T.S

CONSTRUCTION PHASING SCHEDULE

PHASE 1 – "CUT & FILL" WORKS :

STAGE 1: SEDIMENT AND EROSION CONTROL WORKS

1. INSTALL CONSTRUCTION ACCESS/STONE MUD MAT AT WINSTON CHURCHILL BOULEVARD AS SHOWN ON PLAN ESC–1.
2. INSTALL PERIMETER SILT FENCES AS SHOWN ON PLAN ESC–1.
3. INSTALL THE TEMPORARY EROSION AND SEDIMENT POND AS PER DETAIL ON PLAN ESC–1.

STAGE 2: EARTHWORKS

4. COMPLETE SITE CLEARING (CLEARING AND GRUBBING). TREE REMOVALS WITHIN THE OCTOBER 1ST TO MARCH 30TH TIMING WINDOW.
5. STRIP TOPSOIL AND STOCKPILE.
6. COMPLETE 'CUT & FILL' WORKS.
7. CONSTRUCT THE TEMPORARY INTERCEPTOR SWALES AND ESC SWM OUTLET TO WATERCOURSE
8. STABILIZE AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE IMMEDIATELY AS WORK PROGRESSES.

SEDIMENT AND EROSION CONTROL GENERAL NOTES:

1. CONTRACTOR/OWNER TO COMPLY WITH SEDIMENT AND EROSION CONTROL By–law #46–2019
2. CONTRACTOR/OWNER TO COMPLY WITH MUD TRACKING BY–LAW #69–2002.
3. BEFORE PROCEEDING ANY AREA GRADING THE FOLLOWING MUST BE CONSTRUCTED:
   A. MUD MAT WHERE INDICATED,
   B. TEMPORARY SWALES WITH ROCK FLOW CHECK DAMS,
   C. SILT FENCE WHERE INDICATED
   D. TREE PRESERVATION
   E. TEMPORARY POND AS SHOWN ON DRAWING, WITH TURBIDITY CURTAIN,
   F. SILT TRAPS
4. SILT CONTROL FENCE SHOULD BE INSTALLED AROUND PERIMETER OFFSET 0.60m INSIDE THE PROPERTY OF THE SITE AND MAINTAINED UNTIL THE COMPLETION OF LANDSCAPING.
5. CATCHBASIN SILT TRAPS ARE TO BE INSTALLED AT ALL CATCHBASINS AND CATCHBASIN MANHOLE LOCATIONS UPON COMPLETION OF THE LANDSCAPING.
6. ACCUMULATED SILT TO BE REMOVED OFF SITE PRIOR TO REMOVAL OF THE SILT CONTROL FENCE.
7. CONTRACTOR TO INSTALL AND MAINTAIN MUD MAT AT CONSTRUCTION ACCESS IN ORDER TO PREVENT MUD TRACKING ONTO ADJACENT ROADS. MUD MAT TO BE A MINIMUM 20.0m LONG AND 3.0m WIDE AND SHALL CONSIST OF 100mm CLEAR STONE AND 400 mm DEEP.
8. CONTRACTOR TO CLEAN ADJACENT ROADS ON A REGULAR BASIS TO THE SATISFACTION OF THE TOWN OF OAKVILLE OR HALTON REGION, WHICHEVER IS APPLICABLE. THE ROAD SHALL BE SCARPED AND FLUSHED DAILY AS REQUIRED OR AS DIRECTED BY THE TOWN OR REGION.
9. ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED WEEKLY AND IMMEDIATELY AFTER RAINFALL EVENTS FOR RIPS AND TEARS, BROKEN STAKES, BLOW OUTS (STRUCTURAL FAILURE) AND ACCUMULATION OF SEDIMENT. THE SILT FENCE MUST BE FIXED AND/OR REPLACED IMMEDIATELY WHEN DAMAGED. SEDIMENT MUST BE REMOVED FROM SILT FENCE WHEN ACCUMULATION REACHES 50% OF THE HEIGHT OF THE FENCE.
10. THE OWNER WILL SEED, MULCH AND MAINTAIN THE ENTIRE SITE IF A BUILDING PERMIT IS NOT ISSUED.
11. THE OWNER SHALL IMMEDIATELY SEED, MULCH AND STABILIZE ARES THAT HAVE BEEN DISTURBED AND OUR OTHERWISE UNFINISHED.
12. UPON COMPLETION OF LANDSCAPING ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED.
13. NO CONSTRUCTION ACTIVITY OR MACHINERY SHALL BE BEYOND THE SILT FENCE.
14. ALL TOPSOIL STOCKPILES SHALL BE SURROUNDED WITH A SEDIMENT CONTROL FENCE.
15. WASHING–WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADS. WHEN WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

CVC ESC – Mandatory Notes

1. Be advised that the Credit Valley Conservation Authority may, at any time, withdraw this permission, if, in the opinion of the Authority, the conditions of the permit are not being complied with. This approval does not exempt the property owner/applicant/agent from the provisions of any other Federal, Provincial or Municipal statutes, regulations or by–laws, or any rights under common law.

2. Following installation of the proposed ESC measures, a qualified agent of the proponent, preferably an Environmental Monitor, will conduct regular site visits to monitor all works, particularly the condition of the ESC measures, dewatering, and in– or near–water works. Should concerns arise; the Environmental Monitor will contact the proponent, CVC, and any other appropriate parties.

3. All construction activities, including maintenance procedures, will be controlled to prevent the entry of debris, sediments, or other deleterious products to the watercourse or wetland. Equipment maintenance will be conducted a minimum of 30 metres from the watercourse/wetland.

4. Sediment laden runoff from disturbed areas to the watercourse or natural feature is not allowed. All dewatering shall be treated and then released 30 metres from a watercourse or wetland. Discharge is to be released to an undisturbed natural area. These control measures shall be monitored and maintained or revised to ensure water quality targets are being achieved.

5. Please refer to ESC Guideline for Urban Construction (December 2006) for the design and design alteration of ESC measures.

6. ESC measures will be implemented prior to, and maintained during the construction phases, to prevent entry of sediment into the watercourse/natural ESC measures are to be evaluated on a weekly basis and after any storm event. Any repairs required are to be rectified immediately.

7. The Erosion and Sediment Control (ESC) Plan is a dynamic document, which may be subject to change or modifications as a result of site developments or changes on site. Any deviation from approved plans must be designed by a qualified professional.

8. Additional ESC materials (i.e. silt fence, filter socks, straw bales, clear stones, etc.) are to be kept on site for emergencies and repairs.

9. The project proponent or their representative is ultimately responsible for controlling sediment and erosion within the construction site for the total period of the construction.

10. Disturbed areas will be minimized to the extent possible, and temporarily or permanently stabilized or restored as the work progresses. All disturbed ground left inactive for more than 30 days shall be stabilized using appropriate erosion control measures and an appropriate native non–invasive seed mix or with the final approved restoration plan.

11. Any Sediment Spill from the site should be reported to Ministry of Environment (Spill Action Center) at 1–800–268–6060.

12. If excessive siltation results from the construction activities, the onsite upervisor/inspector and/or CVC reserve the right to request additional ESC measures which would be installed prior to further construction activities.

CVC ESC – Site–Specific Notes

13. The contractor shall monitor weather forecasts to ensure that the works will be conducted in favourable weather. The contractor is responsible for removing all construction equipment and materials that would have potential to cause a spill or obstruction (i.e. fuel tanks, portable toilets, machinery, etc.), from the 100 year* Floodplain in the case of a large storm event.
* or site–specific storm event

14. Crossing an active watercourse or wetland by equipment, vehicles, personnel, is not permitted unless approved by CVC. All access to work sites shall be from either sides of the watercourse or wetland.

15. All in–water and near water works will be conducted in the dry and must be staged with appropriate erosion and sediment controls. Plan the work accordingly with the weather forecast.

16. An after–hours contact number is to be visibly posted on–site for emergencies. All the plans should have name and contact info of the person responsible for ESC measures.

ESC STAGING NOTES:

STAGE 1: PRIOR TO INSTALLATION OF BELOW GROUND WORKS:

1. INSTALL ALL SILT FENCE ALONG TOP OF BANK OF WATERCOURSE AND SITE PERIMETER, AS DETAILED ON ESC–1 PLAN. SILT FENCE TO REMAIN IN PLACE UNTIL COMPLETION OF CONSTRUCTION AND STABILIZATION OF ALL DISTURBED AREAS.
2. CONSTRUCTION MUD MATS TO BE PLACED AT NORTH SITE ENTRANCE, AS PER PLAN ESC–1 AND CITY OF MISSISSAUGA STD NO. 2970.010.
3. VEHICLE STORAGE AND REFUELING AREA TO BE PROVIDED NEAR CONSTRUCTION ENTRANCE, AS SHOWN ON PLAN ESC–1. SIGNAGE TO BE VISIBLY POSTED IDENTIFYING RE–FUELING AREA.
4. TEMPORARY ESC BASIN AND INTERIM ESC SWALES TO BE CONSTRUCTED. TEMPORARY OUTLET, COMPLETE WITH CONTROLS TO BE INSTALLED, DISCHARGING TO WATERCOURSE.
5. FILL BROUGHT ON SITE TO BE PLACED AND COMPACTED IMMEDIATELY. STOCK PILING OF MATERIAL NOT TO BE PERMITTED.
6. COMPLETE WATERCOURSE CROSSING WORKS, INCLUDING TEMPORARY BY–PASS PUMPING OF CREEK FLOWS, AS DETAILED ON PLAN ESC–1. STABILIZE DISTURBED CREEK AREA.

STAGE 2: INSTALLATION OF SITE SERVICES

7. INSTALL BELOW GROUND SERVICES. CATCHBASINS TO BE EQUIPPED WITH TEMPORARY SEDIMENT CONTROL DEVICE AS PER CITY OF MISSISSAUGA STD. NO 2930.040.
8. INFILTRATION TRENCHES TO BE CONSTRUCTED AND KEPT OFF–LINE UNTIL COMPLETION OF CONSTRUCTION AND STABILIZATION OF SITE. BULKHEAD TO BE PROVIDED IN ALL INLET AND OUTLETS FROM THE INFILTRATION TRENCHES UNTIL CONSTRUCTION AND STABILIZATION COMPLETE AND VEHICLE MUD TRACKING HAS ENDED.
9. TEMPORARY ESC BASIN AND DIVERSION SWALES TO BE DECOMMISSIONED AS SITE WORKS PROCEED TOWARD SOUTH END OF SITE.
10. COMPLETE BELOW GROUND SERVICE INSTALLATION. SITE ELEVATIONS TO BE BROUGHT TO PRE–GRADE, BELOW FINAL ASPHALT.
11. FINAL GRADING, ASPHALT AND SITE STABILIZATION TO BE COMPLETED.
12. UPON COMPLETION OF ALL ON–SITE CONSTRUCTION, ESC MEASURES MAY BE REMOVED.

STABILIZATION NOTES:

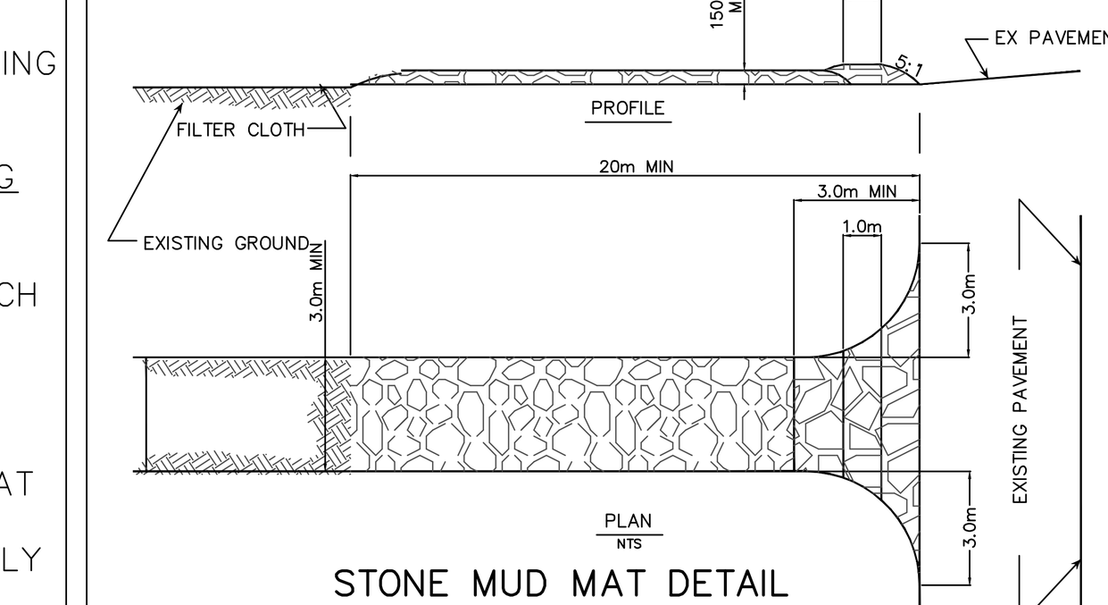
- PROVIDE TEMPORARY STABILIZATION FOR AREAS THAT ARE BEING DISTURBED
- ALL ESC POND SLOPES AND INTERCEPTOR SWALES TO BE EFFECTIVELY STABILIZED WITH VEGETATION PRIOR TO RECEIVING ANY WATER FLOWS TO PREVENT SOIL EROSION. TEMP SEEDING TO CONSIST OF ANNUAL RYE GRASS, 25 kg/ha. ALTERNATE MEASURE TO BE PROVIDED OUTSIDE OF GROWING SEASON, SUCH AS EROSION CONTROL BLANKETS.
- SITE TO BE STABILIZED BEFORE RECEIVING FLOWS
- MECHANICAL SEEDING TO BE APPLIED TO VEGETATE ANY DISTURBED SURFACE THAT IS TO BE LEFT EXPOSED FOR IMMEDIATELY AS THE WORK PROGRESSES AND FOR AREAS THAT ARE AT FINAL GRADE.
- THE LOWER HALF OF THE TOPSOIL PILES SHALL BE IMMEDIATELY STABALIZED USING GROUNDCOVER VEGETATION WITH A NON–INVASIVE SPECIES, IE: SEEDED COMPOST OR SEEDED BIODEGRADABLE MATS. TEMP SEEDING MIX TO CONSIST OF ANNUAL RYE GRASS 25kg/ha, OR EROSION AND SEDIMENT CONTROL BLANKETS.

TEMPORARY SEDIMENT BASIN DECOMMISSIONING NOTES:

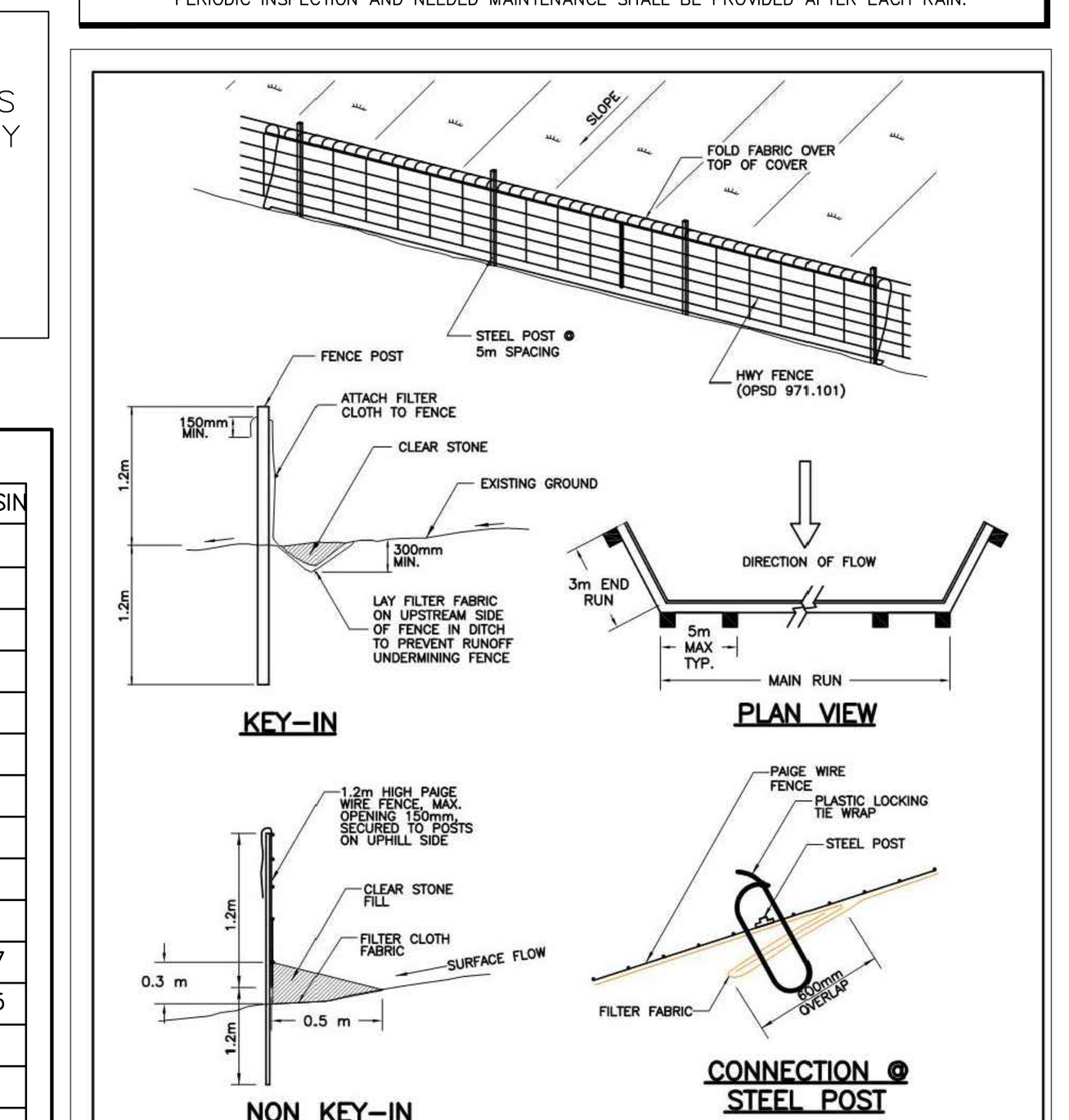
- ONCE SITE WORKS HAVE BEEN SUBSTANTIALLY STABILIZED, THE TEMPORARY SEDIMENT BASINS MAY BE DECOMMISSIONED.
- THE ESC BASIN ARE TO BE PUMPED THROUGH ENVIROBAGS UNTIL EMPTY. ENVIROBAGS TO BE LOCATED A MINIMUM OF 30m FROM ANY CREEK/WETLAND AND IN A WELL VEGETATED AREA.
- SEDIMENT AND DEBRIS TO BE REMOVED FROM THE BOTTOM OF THE ESC BASINS.
- ESC BASIN TO BE FILLED TO REQUIRED PRE–GRADE. FILL MATERIAL AND COMPACTION TO BE COMPLETED TO THE SATISFACTION OF GEOTECHNICAL RECOMMENDATIONS.

GENERAL DEWATERING NOTE:

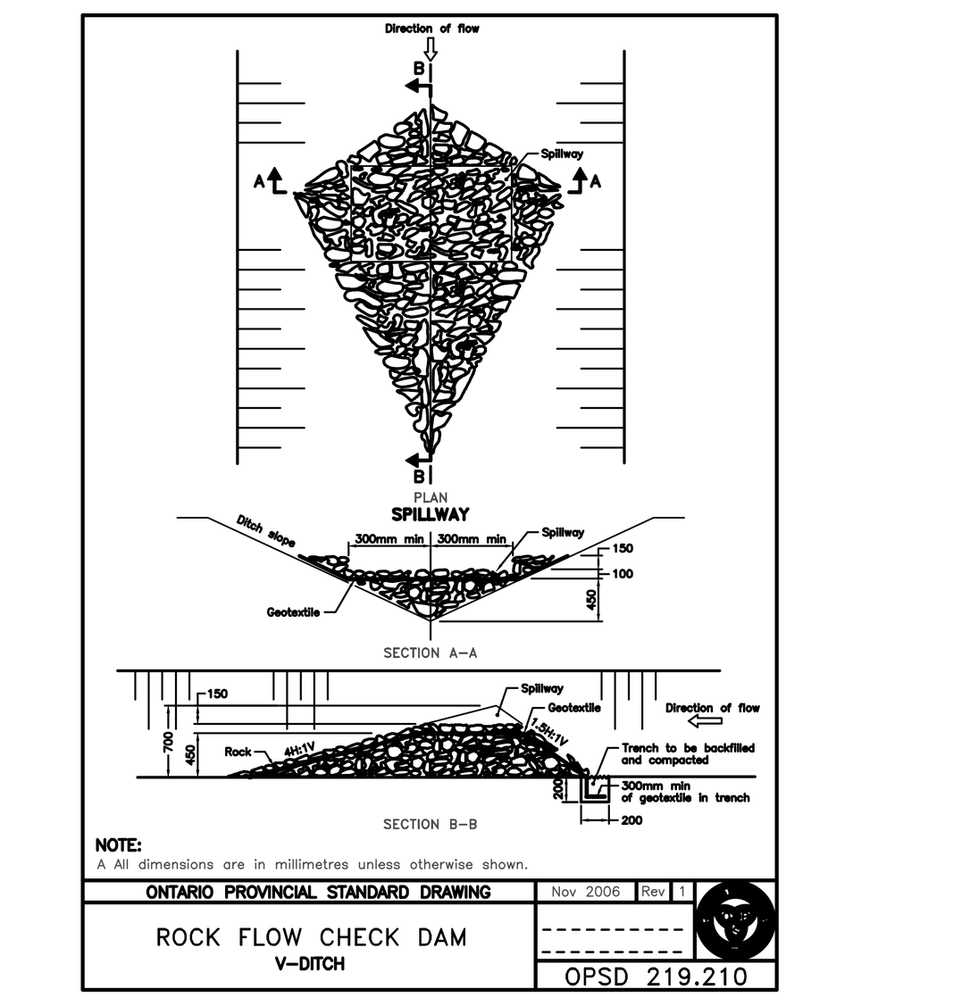
- IF DEWATERING IS NECESSARY, ENSURE DEWATERING ACTIVITIES ARE PUMPED INTO A FILTER BAG PRIOR TO RELEASE INTO ANY WATERCOURSE/DRAINAGE FEATURE. FILTER BAG IS TO BE PLACED A MINIMUM OF 30 M FROM THE WATERCOURSE/POND ON STABLE, WELL VEGETATED GROUND. THE DEWATERING ACTIVITIES IS TO BE MONITORED TO ENSURE THE FILTER DISCHARGE IS CLEAN AND FREE OF SUSPENDED SOLIDS.



STONE MUD MAT DETAIL



HEAVY DUTY SILT FENCE BARRIER



ROCK FLOW CHECK DAM V–DITCH
OPSD 219.210

REFER TO PLAN C–1 FOR CONSTRUCTION DETAILS AND SECTIONS.

TREE PROTECTION BARRIERS SHALL BE ERECTED IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

1. THE REQUIRED BARRIER SHALL BE 1.2m HIGH, WOOD CLAD HOARDING. WHERE BRANCHES OF THE TREE INTERFERE WITH THE BARRIER, THE HEIGHT OF THE BARRIERS MAY BE LOWERED TO ACCOMMODATE THE BRANCHES.
2. TREE PROTECTION BARRIERS LOCATED ON THE TOWN ROAD ALLOWANCE, WHERE VISIBILITY MUST BE MAINTAINED SHALL BE 1.2m HIGH, AND CONSIST OF ORANGE PLASTIC WEB SNOW FENCING 2"x4" FRAME.
3. WHERE SOME EXCAVATE OR FILL HAS TO BE TEMPORARILY LOCATED NEAR A TREE PROTECTION BARRIER, PLYWOOD OR SIMILAR MATERIAL SHALL BE USED TO ENSURE THAT NO MATERIAL ENTERS THE TREE PROTECTION ZONE.
4. ALL SUPPORTS AND BRACING SHALL BE LOCATED OUTSIDE THE TREE PROTECTION ZONE IN A MANNER THAT MINIMIZES DAMAGE TO ROOTS WITHIN OR OUTSIDE THE TREE PROTECTION ZONE.

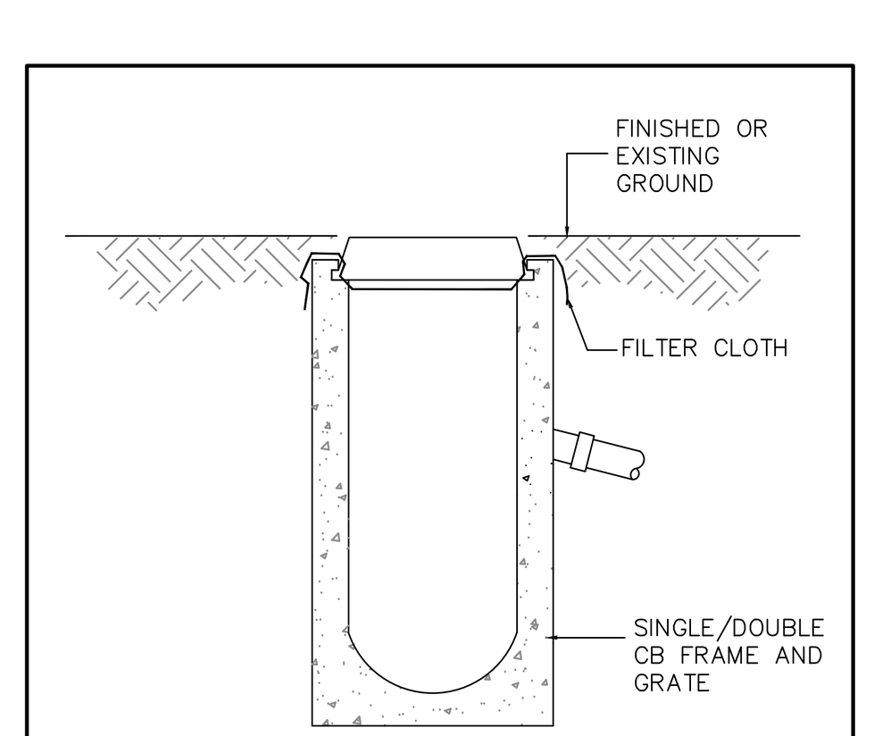
I HAVE REVIEWED PLANS FOR THE CONSTRUCTION OF ESC WORKS INCLUDING INTERCEPTOR SWALES, A TEMPORARY ESC BASIN, A MUD MAT AND SILT FENCING LOCATED AT 772 WINSTON CHURCHILL BLVD. AND HAVE PREPARED THIS PLAN TO INDICATE THE COMPATIBILITY OF THE PROPOSAL TO EXISTING ADJACENT PROPERTIES AND MUNICIPAL SERVICES. IT IS MY BELIEF THAT ADHERENCE TO THE PROPOSED GRADES AS SHOWN WILL PRODUCE ADEQUATE SURFACE DRAINAGE AND PROPER FACILITY OF THE MUNICIPAL SERVICES WITHOUT ANY DETRIMENTAL EFFECT TO THE EXISTING DRAINAGE PATTERNS OR ADJACENT PROPERTIES.

- ALL IN–WATER AND NEAR WATER WORKS ARE TO BE COMPLETED BETWEEN JULY TO MARCH 31.

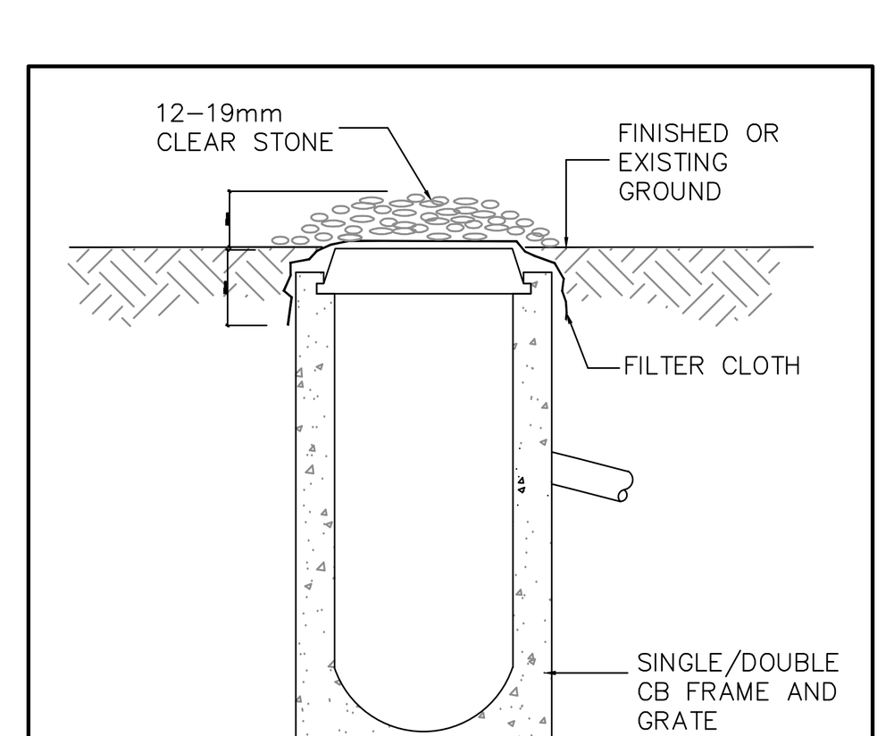
100 YEAR AND REGIONAL FLOODLINE INFORMATION TAKEN FROM CVC FLOOD HAZARD MAP FOR CLEARVIEW CREEK WATERSHED, SHEET 3

LEGEND

Symbol	Description
+118.02	EXISTING ELEVATION
120.00 EX	EXISTING ELEVATION
120.00	PROPOSED ELEVATION
120.00 TC	PROPOSED TOP OF CURB ELEVATION
120.00 TW	PROPOSED TOP OF WALL ELEVATION
120.00 BW	PROPOSED BOTTOM OF WALL ELEVATION
120.00 SW	PROPOSED SWALE ELEVATION
	REGULATORY FLOODLINE
12094	SECTION NUMBER
93.90	REGIONAL FLOOD ELEVATION
93.43	100YEAR FLOOD ELEVATION
	ROCK CHECK DAM
	STONE MUD MAT
SILT	SILT FENCE
	INTERCEPTOR SWALE
SILT / SILT	HEAVY DUTY DOUBLE SILT FENCE WITH NON–WOVEN GEOTEXTILE AND STRAW BALES BETWEEN FENCES
	ESC DRAINAGE BOUDNARY
	PROPOSED BUILDING LIMITS
	TREE PRESERVATION FENCE AS PER TOWN STANDARD



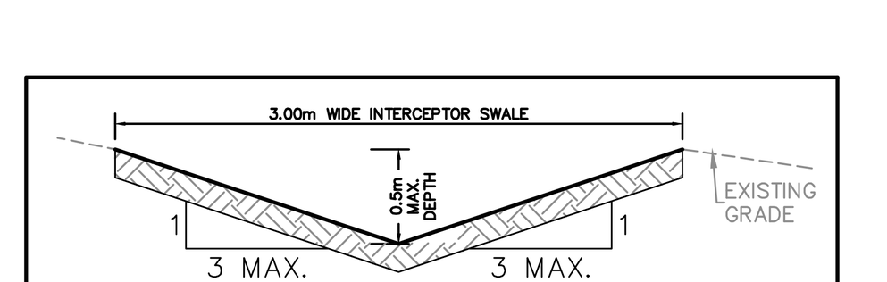
CATCHBASIN SEDIMENT TRAP DETAIL 1
N.T.S.



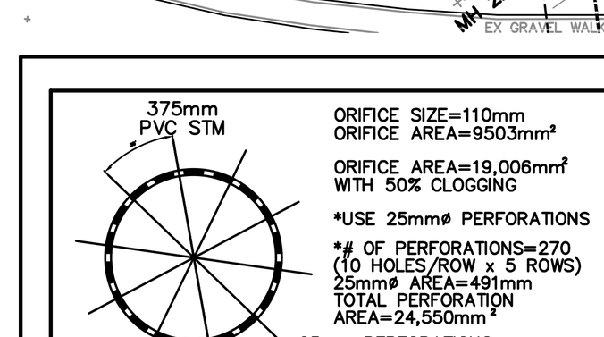
CATCHBASIN SEDIMENT TRAP DETAIL 2
N.T.S.

EROSION AND SEDIMENT CONTROL – SUPPLEMENTARY NOTES

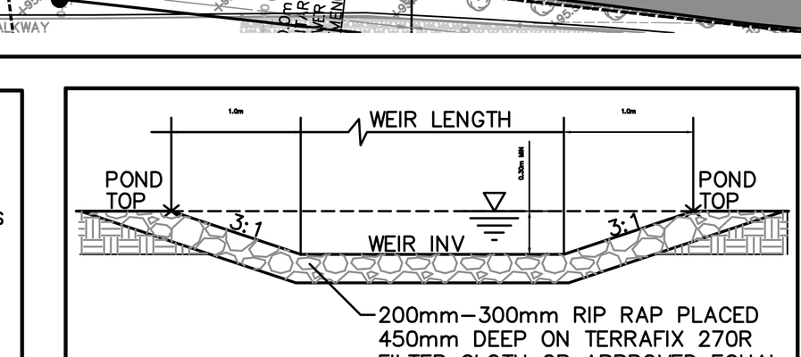
A. ESC PLAN IS A DYNAMIC DOCUMENT, WHICH MAY BE SUBJECT TO CHANGE OR MODIFICATION AS A RESULT OF SITE DEVELOPMENTS OR CHANGES ON SITE.
B. SEDIMENT LADEN WATERS ARE TO BE TREATED PRIOR TO DISCHARGING INTO THE DITCH.
C. NO PUMPING OF SEDIMENT LADEN RUNOFF FROM TEMPORARY POND(S) TO THE DITCH IS ALLOWED AT ANY TIME.
D. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE EVALUATED BY A QUALIFIED PERSON AS DETERMINED BY THE TOWN AND HALTON CONSERVATION, ON A WEEKLY BASIS AND AFTER ANY STORM EVENT. ANY REPAIRS REQUIRED ARE TO BE RECTIFIED IMMEDIATELY.
E. ADDITIONAL EROSION AND SEDIMENT CONTROL MATERIALS (IE SILT FENCE, STRAW BALES, CLEAR STONES...ETC.) ARE TO BE KEPT ON SITE FOR EMERGENCIES AND REPAIRS.
F. AN AFTER HOURS CONTACT NUMBER IS TO BE VISIBLY POSTED ON–SITE FOR EMERGENCIES.
G. ANY SEDIMENT SPILL FROM THE SITE SHOULD BE REPORTED TO MINISTRY OF ENVIRONMENT (SPILL ACTION CENTER) AT 1–800–268–6060.
H. SHOULD THERE BE CONTINUOUS PUMPING PROPOSED, AN AFTER HOURS TECHNICIAN IS TO BE ASSIGNED TO ENSURE THAT THE TREATMENT SYSTEM (PUMPING EQUIPMENT, DIVERSION, SETTLEMENT PONDS...ETC) IS FUNCTIONING PROPERLY.



3.0m WIDE TEMPORARY INTERCEPTOR SWALE (TYP.)
NTS



PERFORATION DETAIL TEMPORARY SEDIMENT POND



TEMP SEDIMENT BASIN EMERGENCY OVERFLOW DETAIL

SEDIMENT STORAGE VOLUME REQUIRED:

DRY STORAGE = 125m³/ha
WET STORAGE = 125m³/ha

RELEASE RATE
AVG HEAD=Dry Storage Depth/2

$$\text{AVG 48hr DISCHARGE} = \frac{\text{Dry Storage Volume}}{48 \times 60 \times 60}$$

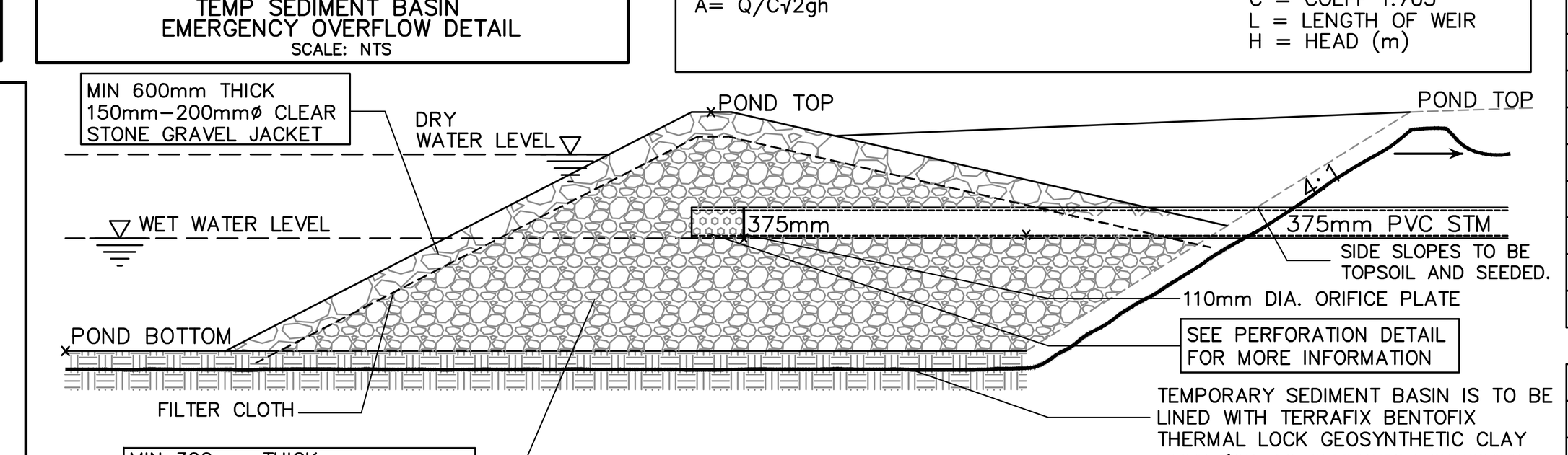
$$Q = CA\sqrt{2gh}$$

$$A = Q/C\sqrt{2gh}$$

EMERGENCY OVERFLOW CALCULATIONS:

Q=CAIN
I_{100yr} = 160.0 mm/hr (for tc=10min)
C = 0.25
A = AREA (ha)
N = 2.778

WEIR EQN: $Q = CLH^{3/2}$
C = COEFF 1.705
L = LENGTH OF WEIR
H = HEAD (m)



TEMPORARY SEDIMENT CONTROL FACILITY TYPICAL CONTROL STRUCTURE DETAIL
SCALE: NTS

SEDIMENT BASIN SUMMARY TABLE

	ESC BASIN
TRIBUTARY AREA (ha)	11.92
Wet Vol.–Required (m³)	1490
Wet Vol.–Provided (m³)	1549
Dry Vol.–Required (m³)	1490
Dry Vol.–Provided (m³)	1674
BOTTOM	92.30
Wet Water Level	93.00
Dry Water Level	93.60
POND TOP	94.00
Dry Storage Depth	0.60
Avg 48hr Disch. (m³/s)	0.0097
ORIFICE AREA (m²)	0.0095
ORIFICE SIZE (mm)	110
DRAWDOWN TIME (h)	47.5
EMERGENCY OVERFLOW WEIR	
100yr FLOW (m3/s)	1.325
WEIR INV	93.70
WEIR LENGTH (m)	5.0
HEAD (m)	0.30
WEIR CAPACITY (m3/s)	1.40

LICENSED PROFESSIONAL ENGINEER – APR 26/24 – A. M. CANDARAS – PROVINCE OF ONTARIO

No.	Date	By	REVISIONS
6	APR 26/24	RPA	FIFTH SUBMISSION
5	FEB.12/24	J.M.N.	ISSUED FOR SITE ALTERATION PERMIT
4	DEC 14/23	RPA	FOURTH SUBMISSION
3	DEC 19/22	FP	THIRD SUBMISSION
2	DEC 15/21	FP	SECOND SUBMISSION
1	APR 9/21	FP	FIRST SUBMISSION

a.m.candaras associates inc.
consulting engineers
8551 Weston rd., suite 203
Woodbridge ont. L4L 9R4
905–850–8020 Fax 905–850–8099
Email: civil@amcai.com

772 WINSTON CHURCHILL BLVD.

SPA 1601.029/01
Region of Peel No. C602647

TOWN OF OAKVILLE
REGION OF HALTON

EROSION AND SEDIMENT CONTROL PLAN – PHASE 1

SCALE: 1:750	DATE: MAR 2021	PROJ No. 2060
DRAWN: F.P.	CHK'D: A.M.C.	PLAN No. ESC-1
DESIGNED: A.M.C.	SHEET 5 OF 6	