TOPSOIL AND EROSION AND SEDIMENT CONTROL (ESC) MANAGEMENT STRATEGY

THE EROSION AND SEDIMENT CONTROLS SHALL BE A MULTI BARRIER APPROACH TO PREVENT EROSION DURING CONSTRUCTION TO DEAL WITH SEDIMENT TRANSPORT AT SOURCE AND TO MINIMIZE SEDIMENT TRANSPORT FROM LEAVING THE SITE. THE MITIGATION MEASURES OUTLINED BELOW SHALL BE MAINTAINED BY THE CONTRACTOR THROUGH REGULAR INSPECTIONS, MONITORING AND MAINTENANCE UNTIL THE SOIL HAS BEEN STABILIZED. THE CONTRACTOR SHALL KEEP A COPY OF THE ESC PLANS AND THE TORONTO AND REGION CONSERVATION AUTHORITY, EROSION AND SEDIMENT CONTROL GUIDELINE, DECEMBER 2006, ON SITE AT ALL TIMES.

GENERAL NOTES

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.

1. 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 ARE TO BE KEPT ON SITE AND USED AS NECESSARY.
2. 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. SHOULD CONCERNS ARISE ON SITE THE ENVIRONMENTAL MONITOR WILL CONTACT THE TRCA ENFORCEMENT OFFICER AS WELL AS THE CONTRACTOR.
3. 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 30M FROM THE WATER.

EROSION CONTROLS

1. THE 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 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. ALL DEWATERING SHALL BE TREATED AND RELEASED TO THE ENVIRONMENT AT LEAST 30m 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.
3. THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE AT ANY ONE TIME TO LIMIT THE DURATION OF SOIL EXPOSURE. CONSTRUCTION SHALL BE PHASED AS NECESSARY AND AREAS STABILIZED AS THE WORK PROGRESSES. AREAS DISTURBED AND LEFT EXPOSED FOR MORE THAN 15 DAYS TO BE PROTECTED WITH LAYER OF STRAW MULCH, TO THE SATISFACTION OF THE ENGINEER.
4. THE CONTRACTOR SHALL RETAIN AS MUCH EXISTING VEGETATION AS POSSIBLE BY LIMITING THE DISTURBANCE TO NON-ESSENTIAL AREAS AND STABILIZE EXPOSED SOILS QUICKLY. THE PROPOSED VEGETATION SPECIFICATION INCLUDES A FAST GERMINATING SEED MIX TO QUICKLY ESTABLISH GROUND COVER AND SHALL BE APPLIED WITHIN 15 DAYS OF COMPLETING THE CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL ENSURE THAT THE PROPOSED VEGETATION GERMINATES AND ESTABLISHES QUICKLY AND SHALL REAPPLY THE GROUND COVER MIX AS DIRECTED BY THE ENGINEER UNTIL A SUITABLE VEGETATED GROUND COVER IS IN PLACE.
5. THE CONTRACTOR SHALL MINIMIZE THE SLOPE LENGTH AND GRADIENT OF DISTURBED AREAS, MAINTAIN OVERLAND SHEET FLOW AND AVOID CONCENTRATED FLOWS.

SEDIMENT CONTROLS

1. SILT FENCE TO BE INSTALLED IN LOCATIONS SHOWN ON PLAN AND AS DIRECTED BY SITE ENGINEER.
2. SILT FENCE MUST BE INSPECTED WEEKLY FOR RIPS OR TEARS, BROKEN STAKES, BLOW-OUTS AND ACCUMULATION OF SEDIMENT.
3. SILT FENCE MUST BE INSPECTED FOLLOWING ALL 15mm OR GREATER RAIN STORM EVENT OR AS DIRECTED BY SITE ENGINEER.
4. SEDIMENT MUST BE REMOVED FROM SILT FENCE WHEN ACCUMULATION REACHES 50% OF THE HEIGHT OF FENCE.
5. ALL SILT FENCES MUST BE REMOVED ONLY WHEN THE ENTIRE SITE IS STABILIZED AND AS DIRECTED BY THE SITE ENGINEER.
6. STONE MUD MAT TO BE INSTALLED PRIOR TO CONSTRUCTION ON SITE.
7. REMOVE ACCUMULATED SEDIMENT UPSTREAM OF ROCK CHECK DAM IF GREATER THAN ONE HALF OF DAM HEIGHT.
8. SILT REMOVAL FROM FILTREXX CHECK DAMS MUST BE UNDERTAKEN WITH CARE TO MINIMIZE DOWNSTREAM SEDIMENTATION IN SWALE OR DITCH.
9. SEDIMENT TO BE CLEANED FROM TEMPORARY POND ONCE ACCUMULATION REACHES 50% OF CAPACITY.
10. SEDIMENT SHALL BE CLEANED FROM PUBLIC ROADS AT THE END OF EACH DAY, OR AS DIRECTED BY THE ENGINEER

GENERAL NOTES

1. THE ESC STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO PREVENT SEDIMENT RELEASES TO THE NATURAL ENVIRONMENT. ANY CHANGES FROM THE APPROVED ESC PLANS WILL BE DOCUMENTED AND REPORTED TO THE ENFORCEMENT OFFICE.
2. INSPECTION OF THE PROPOSED EROSION AND SEDIMENT CONTROL MEASURES WILL OCCUR AT THE FREQUENCY DEFINED IN SECTION 10.1.2.
3. DISTURBED AREAS LEFT FOR 30 DAYS OR LONGER MUST BE STABILIZED.
4. EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE INSPECTED WEEKLY, AT A MINIMUM, AFTER RAIN AND SNOW MELT EVENTS AND DAILY DURING EXTENDED RAIN OR SNOWMELT PERIODS. DURING INACTIVE PERIODS, WHERE THE SITE IS INACTIVE FOR 30 DAYS OR LONGER, A MONTHLY INSPECTION SHOULD BE CONDUCTED.
5. ALL DAMAGED ESC MEASURES WILL BE REPAIRED AND/OR REPLACED WITHIN 48 HOURS OR SOONER IF ENVIRONMENTAL RECEPTORS ARE AT IMMINENT AND FORESEEABLE RISK OF ADVERSE IMPACT.
6. ALL SEDIMENT CONTROL MEASURES SUCH AS SEDIMENT CONTROL FENCE, TEMPORARY PONDS, CONSTRUCTION ACCESS MATS, SEDIMENT TRAPS, SWALES AND CHECK DAMS MUST BE INSTALLED PRIOR TO THE COMMENCEMENT OF SITE WORKS.
7. ADDITIONAL MATERIALS SUCH AS CLEAR STONE, FILTER FABRIC, PUMPS, HOSES AND SILTSOXX TO BE KEPT ONSITE AT ALL TIMES FOR CONDUCTING REPAIRS TO SEDIMENT CONTROL MEASURES.
8. ENGINEERED CHANGES TO THE ESC MEASURES MAY BE NEEDED AS SITE CONDITIONS CHANGE THROUGHOUT THE CONSTRUCTION PROCESS. THESE UPDATES MUST REFLECT BEST MANAGEMENT PRACTICES TO CONTROL SEDIMENT AND EROSION ONSITE AND SHOULD BE COMPLETED BASED ON DIRECION FROM THE SITE ENGINEER. ADDITIONAL MEASURES MAY BE REQUIRED AS DIRECTED BY AN ENGINEER THROUGHOUT THE CONSTRUCTION PROCESS.
9. THE CONSTRUCTION ENTRANCE MAT IS TO BE INSTALLED AS THE FIRST STEP IN THE SITE ALTERATION PROCESS.
10. SEDIMENT CONTROL FENCE IS TO BE INSTALLED DOWNSLOPE OF ALL DISTRUBED AREAS. A DOUBLE ROW OF SEDIMENT CONTROL FENCE IS TO BE INSTALLED SURROUNDING ALL NATURAL HERITAGE FEATURES AND AS DIRECTED BY THE SITE ENGINEER. SEDIMENT CONTROL FENCE IS TO BE AS PER THE STANDARDS ON THIS DRAWINGS AT A MINIMUM.
11. FILTEREXX SILTSOXX OR APPROVED EQUIVALENT TO BE INSTALLED DOWNSTREAM FROM OUTLET AND WITHIN DITCHES TO A MINIMUM HEIGH OF 300mm.
12. AN APPROVED SPILLS MANAGEMENT PLAN IS TO BE KEPT ON SITE.
13. SPILL CLEANUP EQUIPEMENT SUCH AS ABSORPTIVE MEDIA IS TO BE MAINTAINED ON SITE FOR IMMEDIATE USE IN THE EVENT OF A SPILL.
14. SPILLS ARE TO BE REPORTED IMMEDIATELY TO THE MECP SPILLS ACTION CENTRE AT 1-800-268-6060.
15. THE CONNTRACTOR WILL BE RESPONSIBLE FOR CLEAN-UP AND RESTORATION, INCLUDING ALL COST, DUE TO THE RELEASE OF SEDIMENT FROM THE SITE.
16. LOW IMPACT DEVELOPMENT (LID) MEASURES ARE NOT TO BE USED AS SEDIMENT CONTROL DEVICES.
17. ADDITIONAL SEDIMENT CONTROL DEVICES MAY BE DEEMED NECESSARY AND AS SITE CONDITIONS CHANGE AND SHALL BE INSTALLED AS DIRECTED BY THE SITE ENGINEER, CONTRACT ADMINISTRATOR OR LOCAL MUNICIPALITY.

SEDIMENT BASIN DECOMMISSIONING

1. PROVIDE SPLASH PAD AT BOTTOM OF VEGETATED AREA FOR PUMP DISCHARGE LOCATION.
2. CREATE STABLE INTAKE (TO AVOID PUMPING SEDIMENT). LOCATE INTAKE AS FAR FROM ACCUMULATED SEDIMENT AS POSSIBLE AND USE PERFORATED STANDPIPE TO HOUSE THE PUMP INTAKE. SURROUND PERFORATED STANDPIPE WITH FILTER FABRIC AND CLEAR STONE. PUMP INTAKE SHOULD BE FITTED WITH FILTER.
3. PUMP SLOWLY TO ENSURE THAT NO SEDIMENT IS ESCAPING TO THE WATERCOURSE;
4. MONITOR INTAKE REGULARLY TO ENSURE THAT PUMP IS PULLING WATER AND NOT SEDIMENT;
5. IF SEDIMENT IS OBSERVED TO BE REACHING THE WATERCOURSE, SHUT DOWN PIPES IMMEDIATELY AND CALL DESIGN ENGINEER;
6. CONTINUE TO PUMP UNTIL POND LEVELS ARE SUFFICIENTLY LOW TO ALLOW FOR SEDIMENT REMOVAL.
7. ONCE SEDIMENT HAS BEEN EXPOSED AND ALLOWED TO BEGIN DRYING, IT NEEDS TO BE TESTED TO DETERMINE DISPOSAL OPTIONS;
8. A QUALIFIED PERSON(S) (QP) WILL NEED TO SAMPLE THE SEDIMENT AND SUBMIT IT TO AN ACCREDITED LAB FOR CHEMICAL ANALYSIS WHILE MAINTAINING THE CHAIN OF CUSTODY;
9. ONCE THE SEDIMENT HAS BEEN CHARACTERIZED, SEDIMENT REMOVAL MAY BEGIN;
10. SEDIMENT MAY BE REMOVED USING AN EXCAVATOR OR A HEAVY DUTY VACUUM TRUCK. REMOVAL SHOULD CONTINUE UNTIL NATIVE MATERIAL IS ENCOUNTERED AND CONFIRMED BY A GEOTECHNICAL CONSULTANT;

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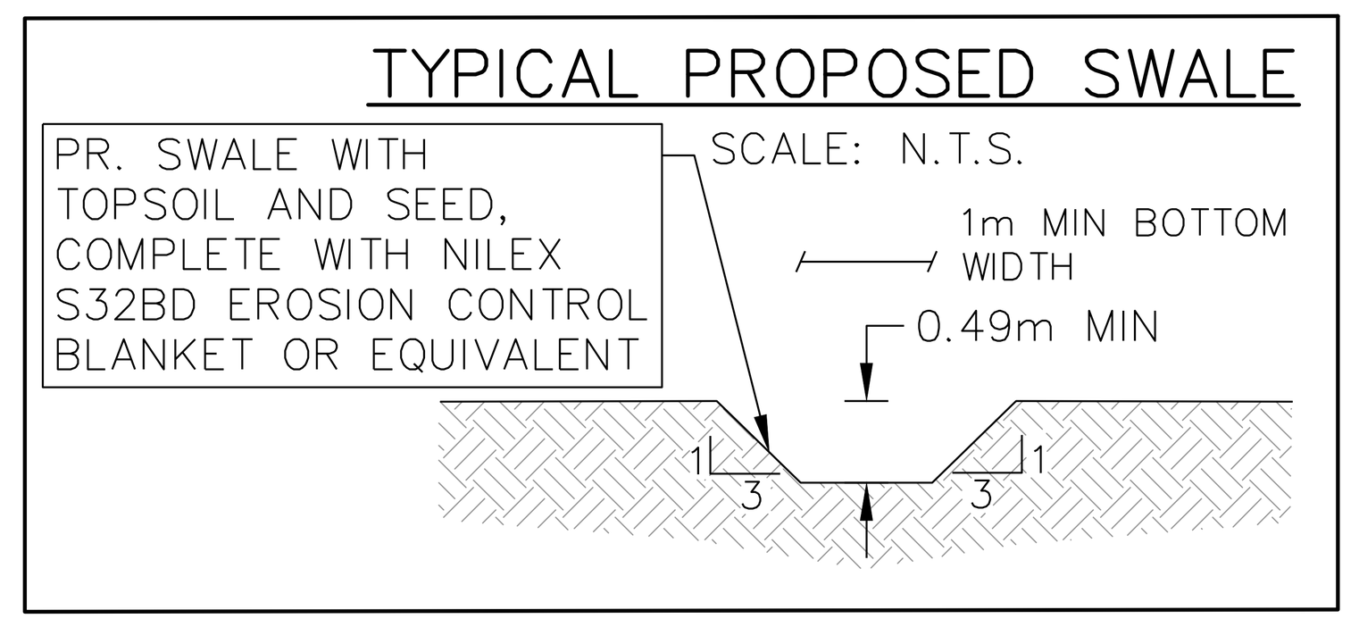
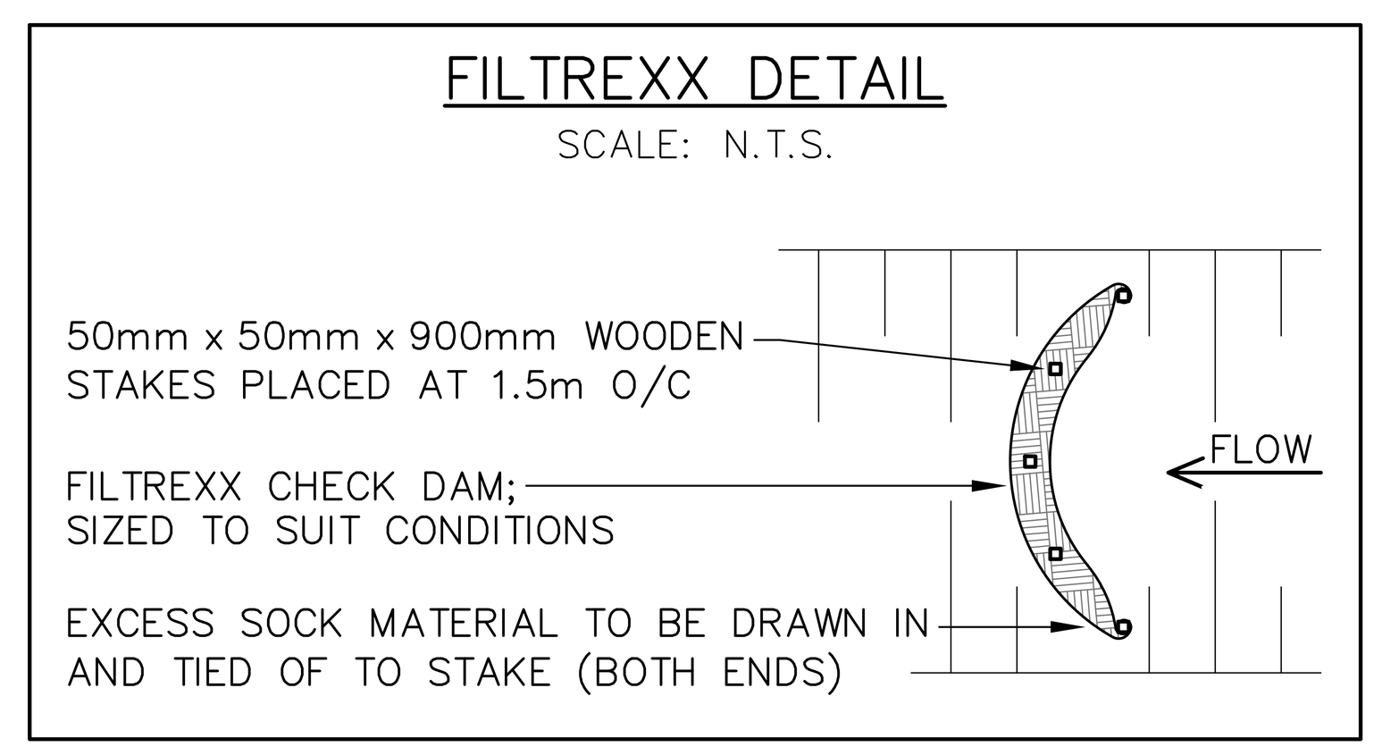
SWALE TYPE A
SLOPE = 0.30%
BOTTOM WIDTH = 1.0m
3:1 SIDE SLOPES TO MATCH EXISTING GROUND (MIN. HEIGHT = 0.57m)
CHECK DAMS (SILTSOXX) WITH MIN HEIGHT OF 0.20m TO BE PLACED EVERY 65m

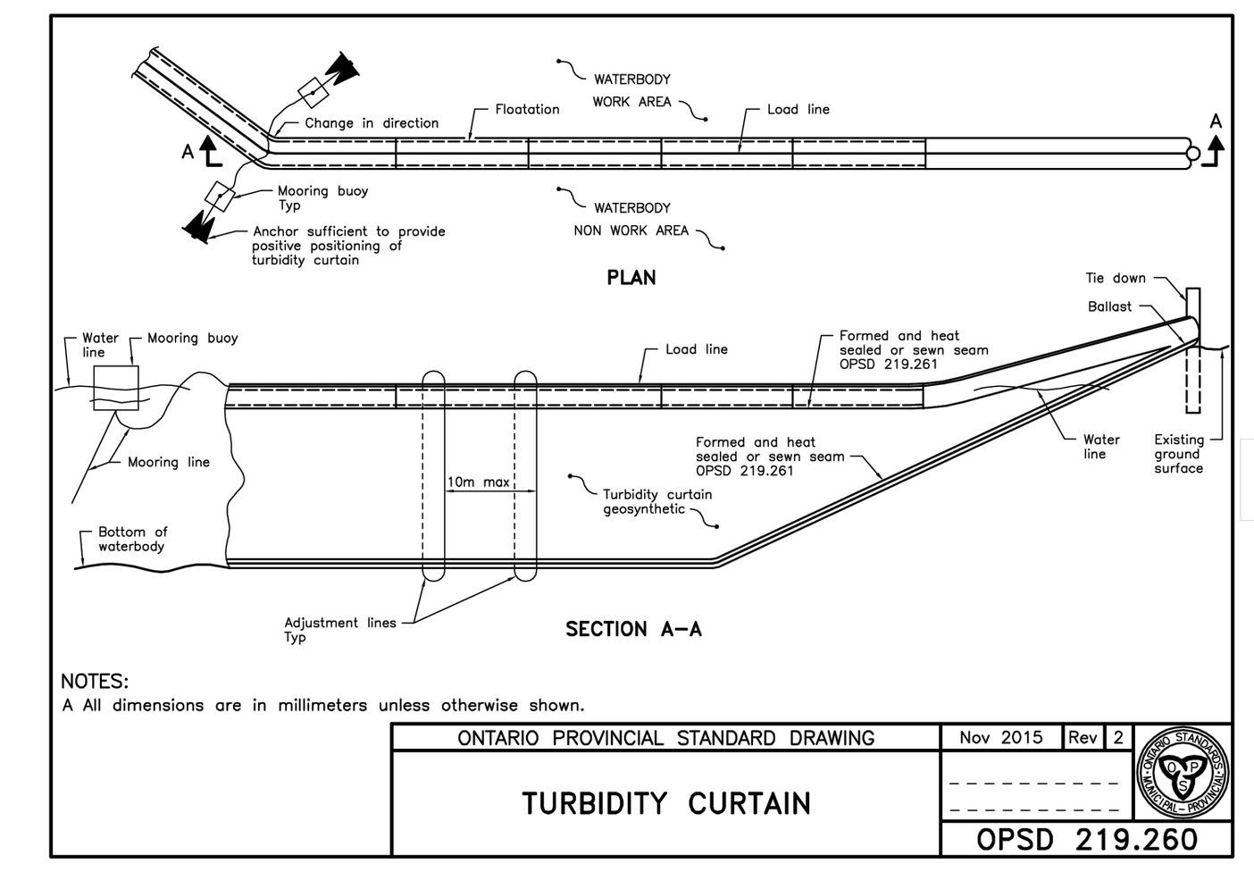
SWALE TYPE B
SLOPE = 0.70%
BOTTOM WIDTH = 1.0m
3:1 SIDE SLOPES TO MATCH EXISTING GROUND (MIN. HEIGHT = 0.49m)
CHECK DAMS (SILTSOXX) WITH MIN HEIGHT OF 0.20m TO BE PLACED EVERY 28m

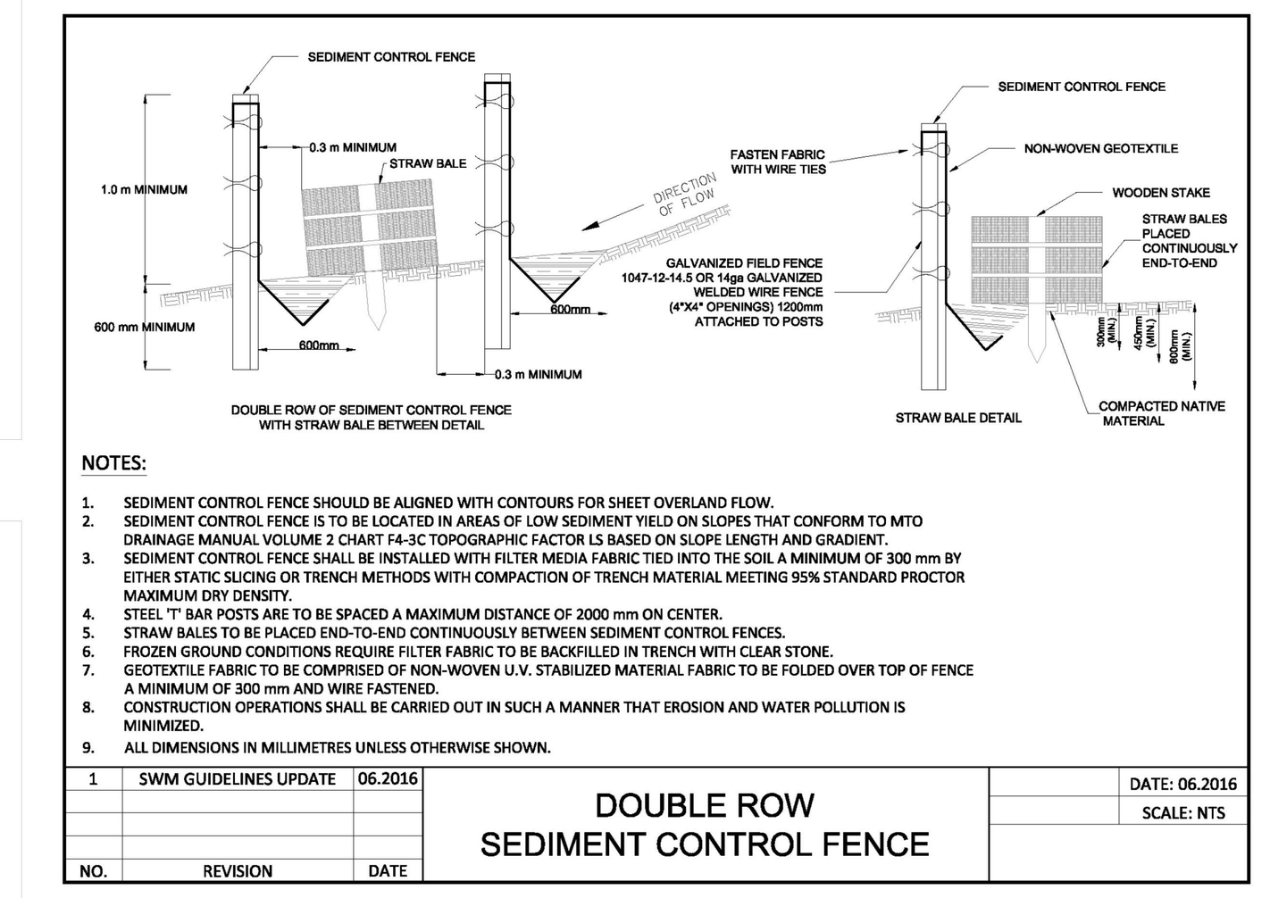
SWALE TYPE C
SLOPE = 1.10%
BOTTOM WIDTH = 1.0m
3:1 SIDE SLOPES TO MATCH EXISTING GROUND (MIN. HEIGHT = 0.53m)
CHECK DAMS (SILTSOXX) WITH MIN HEIGHT OF 0.30m TO BE PLACED EVERY 27m

SWALE TYPE D
SLOPE = 1.50%
BOTTOM WIDTH = 1.0m
3:1 SIDE SLOPES TO MATCH EXISTING GROUND (MIN. HEIGHT = 0.51m)
CHECK DAMS (SILTSOXX) WITH MIN HEIGHT OF 0.30m TO BE PLACED EVERY 20m









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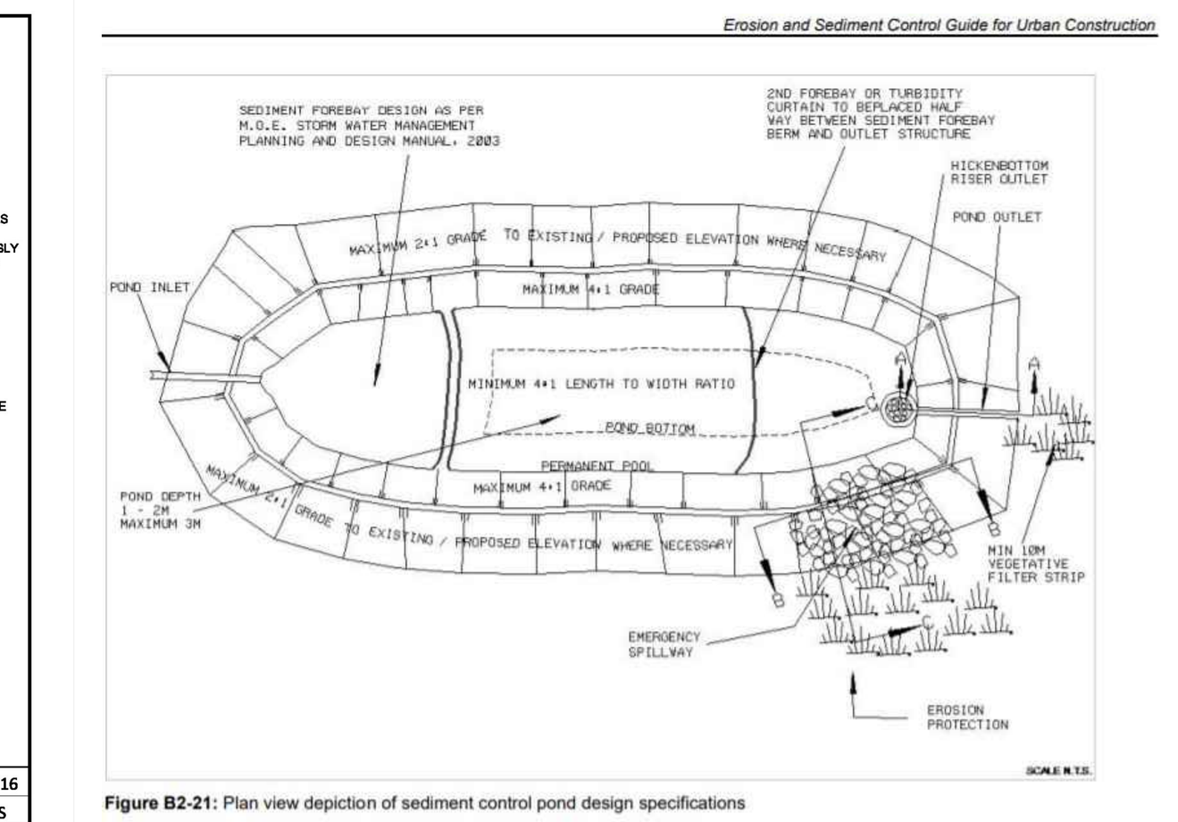

Figure B2-21: Plan view depiction of sediment control pond design specifications

Appendix B: Erosion and Sediment Control Best Management Practices Page B2-37

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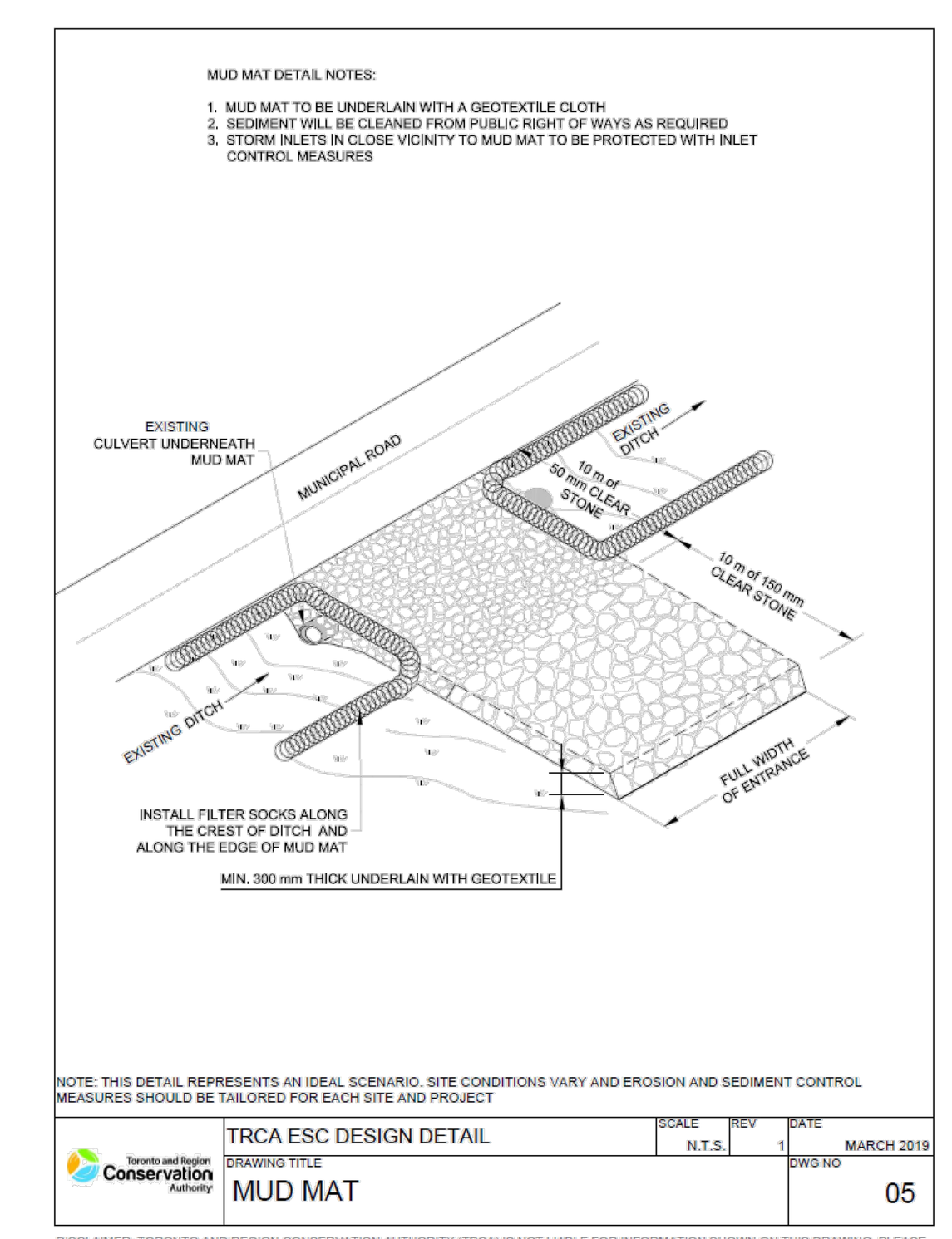

Figure B2-29: Design detail for mud mat for construction site vehicle access

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Erosion and Sediment Control Guide for Urban Construction

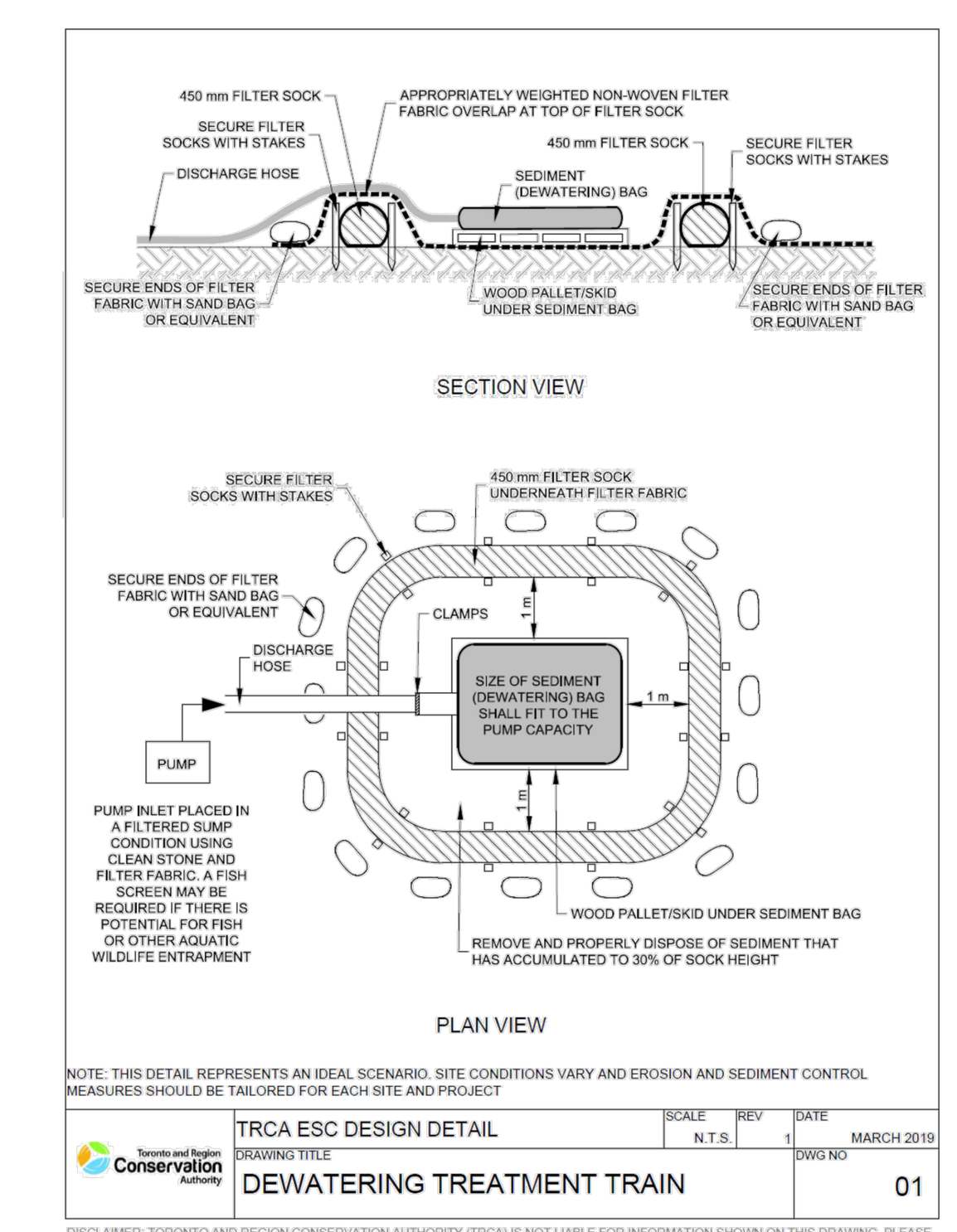
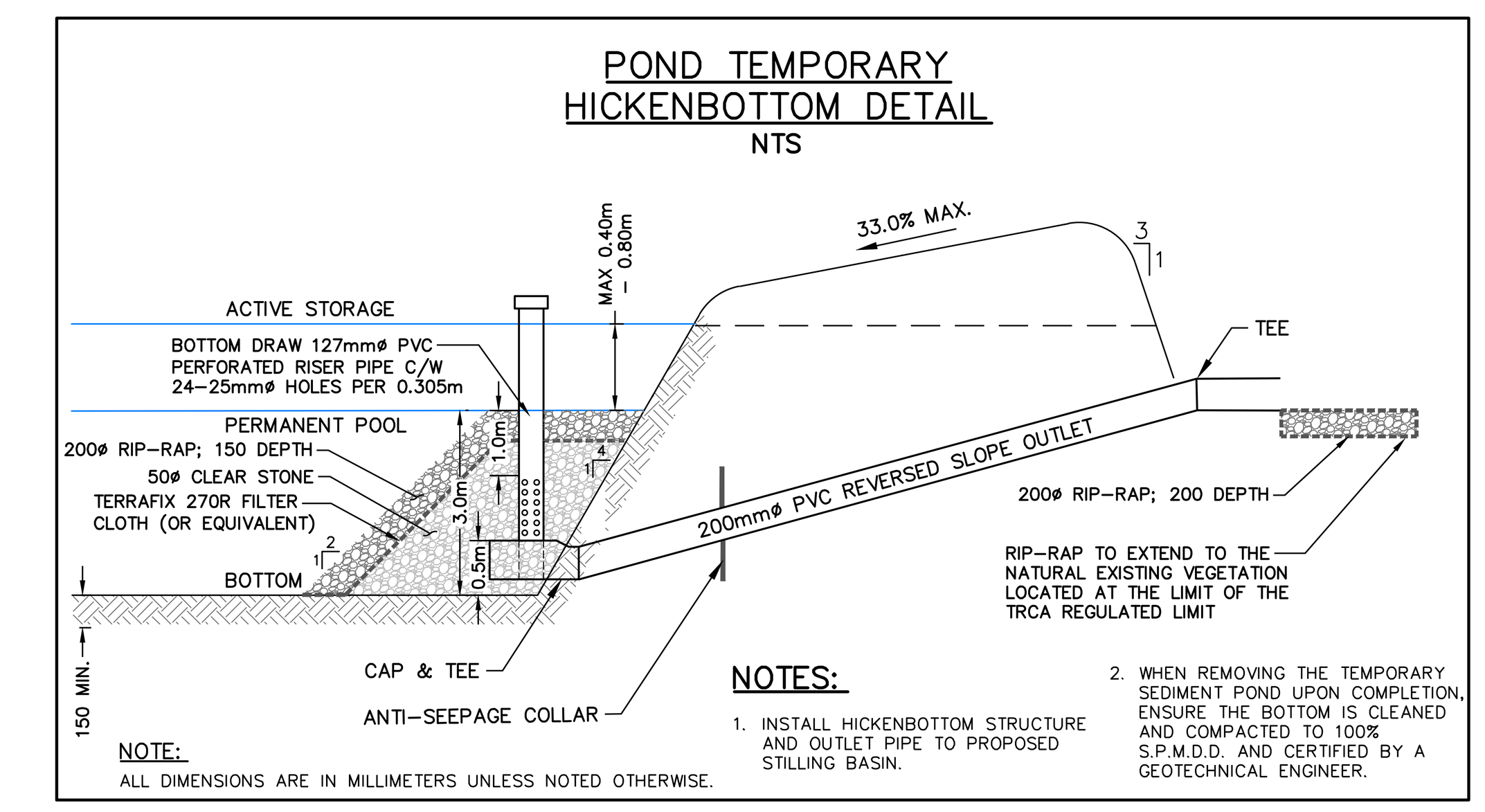


Figure B2-16: Dewatering bag treatment train (unfrozen conditions)

Appendix B: Erosion and Sediment Control Best Management Practices Page B2-27



Species	Description	Application rate and Additional Instructions
Annual Rye - Lolium Multiflorum	Annual species. Suitable for a wide range of site and soil types. Oats are suitable for a wide range of sites, including both moist and dry sites. Some allelopathy effects are known to occur; however, the effects are anticipated to only last a few weeks after death. Seed March to October	Control may be required for spring/summer plantings (e.g. mowing, etc.) to prevent cover cropfrom impeding native seed mix and to deter seed production. Oats can be mowed in October before they set seed to reduce competition.Can reduce seeding ratio to limit mowing needs. Winterkill is adequate control for fall plantings.

Toronto and Region Conservation Authority - Seed Mix Guideline (V.2.0 January 2022)
Appendix B: Seed Mix Examples
Table 1 - Recommended species to be used as nurse and/or cover crops

TRCA Frugal Dry Mix (TRCA-SD-1)

L-Rank	Scientific Name	Common Name	%
L3	*Panicum virigatum*	Switch grass	15.0%
L2	*Sorghastrum nutans*	Indian grass	15.0%
L3	*Andropogon gerardii*	Big bluestem	15.0%
L4	*Elymus riparius*	Riverbank rye	3.0%
L5	*Elymus virginicus*	Virginia wild rye	7.0%
L4	*Elymus canadensis*	Canada wild rye	11.0%
L2	*Elymus trachycaulus*	Slender wheat grass	2.0%
L2	*Elymus villosus*	Silky Wild Rye*	2.0%
L5	*Oenothera biennis*	Evening primrose	2.0%
L2	*Heliopsis helianthoides*	Oxeye	2.0%
L4	*Rudbeckia hirta*	Black eyed Susan	5.0%
L2	*Schizachyrium scoparium*	Little bluestem	10.0%
L5	*Asclepias syriaca*	Common milkweed	5.0%
L3	*Penstemon digitalis*	Foxglove beardtongue	2.0%
L3	*Pycnanthemum virginianum*	Virginia mountain mint*	2.0%
L5	*Monarda fistulosa*	Wild bergamont	2.0%
		Total	**100.0%**

* If supply issues arise, please replace these species with reasonable substitute from Appendix C.

Minimum recommended ratio of 21.39 Kg/ha

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 1

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	245.00	2070	0.30	-	589	-
ACTIVE STORAGE	244.70	1858	0.80	1224	1274	-
PERMANENT POOL	243.90	1347	3.00	1811	1830	-
BOTTOM	240.90	161	-	-	-	-
FOREBAY	243.90	150	1.00	-	68	-
EMERGENCY WEIR	-	-	0.30	-	-	9.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 2

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	242.20	1892	0.30	-	537	-
ACTIVE STORAGE	241.90	1689	0.80	1033	1149	-
PERMANENT POOL	241.10	1204	3.00	1528	1546	-
BOTTOM	238.10	114	-	-	-	-
FOREBAY	241.10	134	1.00	-	57	-
EMERGENCY WEIR	-	-	0.30	-	-	7.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 3

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	243.70	1282	0.30	-	359	-
ACTIVE STORAGE	243.40	1116	0.40	398	404	-
PERMANENT POOL	243.00	912	3.00	588	994	-
BOTTOM	240.00	38	-	-	-	-
FOREBAY	243.00	101	1.00	-	37	-
EMERGENCY WEIR	-	-	0.30	-	-	3.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 4

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	237.10	2237	0.30	-	638	-
ACTIVE STORAGE	236.80	2016	0.80	1198	1391	-
PERMANENT POOL	236.00	1482	3.00	1772	2107	-
BOTTOM	233.10	210	-	-	-	-
FOREBAY	236.00	165	1.00	-	165	-
EMERGENCY WEIR	-	-	-	-	-	9.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 5

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	236.45	1082	0.30	-	301	-
ACTIVE STORAGE	236.15	930	0.50	396	406	-
PERMANENT POOL	235.65	702	3.00	586	631	-
BOTTOM	232.65	6	-	-	-	-
FOREBAY	235.65	78	1.00	-	23	-
EMERGENCY WEIR	-	-	0.30	-	-	3.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 6

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	233.50	1414	0.30	-	397	-
ACTIVE STORAGE	233.20	1239	0.65	646	691	-
PERMANENT POOL	232.55	900	3.00	956	972	-
BOTTOM	229.55	36	-	-	-	-
FOREBAY	232.55	100	1.00	-	36	-
EMERGENCY WEIR	-	-	0.30	-	-	5.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 7

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	243.90	1954	0.30	-	555	-
ACTIVE STORAGE	243.60	1747	0.60	913	931	-
PERMANENT POOL	243.00	1369	3.00	1351	1875	-
BOTTOM	239.65	182	-	-	-	-
FOREBAY	243.00	152	1.00	-	69	-
EMERGENCY WEIR	-	-	0.30	-	-	7.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 8

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	240.30	2247	0.30	-	640	-
ACTIVE STORAGE	240.00	2025	0.70	1178	1247	-
PERMANENT POOL	239.30	1552	3.00	1743	2252	-
BOTTOM	236.30	237	-	-	-	-
FOREBAY	239.30	172	1.00	-	83	-
EMERGENCY WEIR	-	-	-	-	-	8.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 9

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	240.65	2323	0.30	-	663	-
ACTIVE STORAGE	240.35	2098	0.60	1126	1130	-
PERMANENT POOL	239.75	1681	3.00	1667	2523	-
BOTTOM	237.54	190	-	-	-	-
FOREBAY	239.75	187	1.00	-	93	-
EMERGENCY WEIR	-	-	0.30	-	-	8.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 10

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	238.50	2116	0.30	-	602	-
ACTIVE STORAGE	238.20	1901	0.70	1134	1165	-
PERMANENT POOL	237.50	1444	3.00	1678	2028	-
BOTTOM	235.00	240	-	-	-	-
FOREBAY	237.50	160	1.00	-	75	-
EMERGENCY WEIR	-	-	0.30	-	-	8.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 11

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	240.30	961	0.30	-	266	-
ACTIVE STORAGE	240.00	818	0.40	290	292	-
PERMANENT POOL	239.60	645	3.00	429	539	-
BOTTOM	236.00	2	-	-	-	-
FOREBAY	239.60	72	1.00	-	20	-
EMERGENCY WEIR	-	-	0.30	-	-	2.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 12

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	241.00	1875	0.30	-	532	-
ACTIVE STORAGE	240.70	1673	0.80	1006	1137	-
PERMANENT POOL	239.90	1190	3.00	1489	1519	-
BOTTOM	236.90	117	-	-	-	-
FOREBAY	239.90	132	1.00	-	56	-
EMERGENCY WEIR	-	-	0.30	-	-	7.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 13

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	244.00	1369	0.30	-	384	-
ACTIVE STORAGE	243.70	1197	0.70	556	708	-
PERMANENT POOL	243.00	841	3.00	823	867	-
BOTTOM	239.00	104	-	-	-	-
FOREBAY	243.00	93	1.00	-	32	-
EMERGENCY WEIR	-	-	0.30	-	-	7.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 14

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	247.60	2098	0.30	-	597	-
ACTIVE STORAGE	247.30	1884	0.80	1241	1293	-
PERMANENT POOL	246.50	1369	3.00	1837	1875	-
BOTTOM	243.50	169	-	-	-	-
FOREBAY	246.50	152	1.00	-	69	-
EMERGENCY WEIR	-	-	0.30	-	-	9.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 15

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	247.70	1764	0.30	-	499	-
ACTIVE STORAGE	247.40	1568	0.75	903	1005	-
PERMANENT POOL	246.65	1129	3.00	1336	1400	-
BOTTOM	242.60	92	-	-	-	-
FOREBAY	246.65	125	1.00	-	52	-
EMERGENCY WEIR	-	-	0.30	-	-	6.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 16

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	246.00	1722	0.30	-	487	-
ACTIVE STORAGE	245.70	1529	0.70	894	922	-
PERMANENT POOL	245.00	1122	3.00	1323	1387	-
BOTTOM	242.00	77	-	-	-	-
FOREBAY	245.00	125	1.00	-	51	-
EMERGENCY WEIR	-	-	0.30	-	-	6.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 17

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	247.30	2079	0.30	-	591	-
ACTIVE STORAGE	247.00	1866	0.80	1100	1280	-
PERMANENT POOL	246.20	1354	3.00	1628	1845	-
BOTTOM	242.00	164	-	-	-	-
FOREBAY	246.20	150	1.00	-	68	-
EMERGENCY WEIR	-	-	0.30	-	-	8.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 18

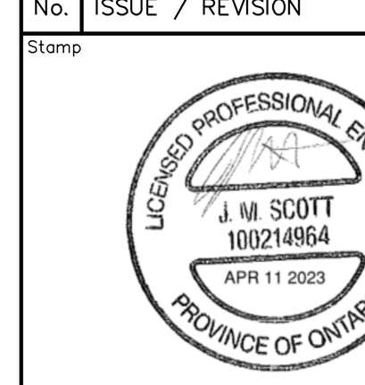
	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	247.10	2088	0.30	-	594	-
ACTIVE STORAGE	246.80	1875	0.80	1198	1286	-
PERMANENT POOL	246.00	1362	3.00	1772	1860	-
BOTTOM	243.00	166	-	-	-	-
FOREBAY	246.00	151	1.00	-	69	-
EMERGENCY WEIR	-	-	0.30	-	-	8.00

HICKENBOTTOM AND SEDIMENT BASIN DETAIL - POND 19

	ELEVATION (m)	AREA (m^2)	DEPTH (m)	STORAGE REQUIRED (m^3)	STORAGE PROVIDED (m^3)	LENGTH (m)
TOP OF BERM	248.50	1190	0.30	-	333	-
ACTIVE STORAGE	248.20	1030	0.45	403	413	-
PERMANENT POOL	247.75	812	3.00	596	817	-
BOTTOM	245.25	20	-	-	-	-
FOREBAY	247.75	90	1.00	-	30	-
EMERGENCY WEIR	-	-	0.30	-	-	3.00

No.	ISSUE / REVISION	YYYY/MMM/DD
2	ISSUED FOR TOPSOIL STRIPPING PERMIT	2023/APR/11
1	ISSUED FOR TOPSOIL STRIPPING PERMIT	2022/DEC/21
0	ISSUED FOR TOPSOIL STRIPPING PERMIT	2022/NOV/24

Stamp



Stamp

BEARING NOTE:

BEARINGS ARE UTM GRID, DERIVED FROM GPS OBSERVATION USING THE "TOPNET" GPS NETWORK OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (1997.0)

ELEVATION NOTE:

ELEVATIONS HERON ARE GEODETIC IN ORIGIN AND WERE DERIVED FROM GPS OBSERVATION USING THE "TOPNET" GPS NETWORK AND REFERED TO THE CGVD-1928: 1987 DATUM

SITE BENCHMARK:

A CUT CROSS HAVING ELEVATION 242.51 m WAS SET ON THE NORTHEAST CORNER OF THE INTERSECTION BETWEEN MAYFIELD ROAD AND TORBRAM ROAD

DRAFT PLAN NOTES:

DESIGN ELEMENTS ARE BASED ON SITE PLAN BY WESTON CONSULTING INC.
DRAWING No.: TBD
PROJECT No.: TBD

DRAWING NOTES:

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Project

TULLAMORE LANDS
TOWN OF CALEDON

Drawing

TOPSOIL STRIPPING CONSTRUCTION NOTES AND DETAILS

CROZIER CONSULTING ENGINEERS
2800 HIGH POINT DRIVE
SUITE 100
MILTON, ON L9T 6P4
905-875-0026 T
905-875-4915 F
WWW.CFCROZIER.CA

Drawn L.E.	Design I.C.	Project No. 2022–5842	
Check I.C.	Check J.S.	Scale 1:2500	Fig. TSP–03