

TOWN OF PELHAM

12 MILE CREEK RESTORATION

MAY 2024

DRAWING LIST

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9	RESTORATION PLAN









N

FENCE LINE

TOP OF SLOPE

TOP OF SLOPE

RIP RAP

TREE - 43

TREE - 43

TREE - 51

TREE - 39

TREE - 26

TREE - 36

TREE - 48

TREE - 18

TREE - 30

TREE - 29

TREE - 29

TREE - 21

TREE - 34

TREE - 21

TREE - 35

TREE - 35

TREE - 44

TREE - 21

TREE - 17

TREE - 23

TREE - 15

TREE - 39

TREE - 23

TOP OF BANK

FLOW

BOTTOM OF BANK

TREE - 51

TREE - 27

TREE - 18

TREE - 21

TREE - 18

TOP OF BANK

BOTTOM OF BANK

CREEK CENTRELINE

FLOW

TREE - 28

TREE - 20

TREE - 18

TREE - 21

TREE - 35/25

TREE - 30

TOP OF SLOPE

TREE - 74

TOP OF BANK

CREEK CENTRELINE

BOTTOM OF BANK

TOP OF BANK

TREE - 20/50

TREE - 52

TREE - 48

TREE - 38

TREE - 93

BOTTOM OF BANK

TOP OF BANK

TREE - 32

TREE - 25

TREE - 15

TREE - 22

TREE - 60

TREE - 16

TREE - 15

TREE - 86

TREE - 35

TREE - 22

TREE - 45

TREE - 17

TREE - 43

TREE - 22

TREE - 42

HEADWALL

TREE - 20

TREE - 15/22/24/30

EX. CONCRETE BOX CULVERT

EX. 400mm HDPE OUTFALL

FENCE LINE

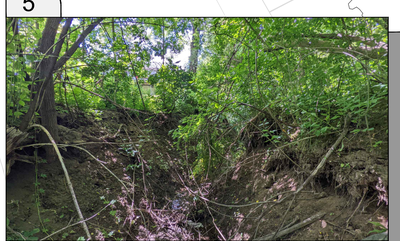
PELHAM CARES SIGN

HIGHWAY 20 EAST

PELHAM CARES CENTRE
191 HIGHWAY 20 E

LEGEND:

- EXISTING CENTRELINE
- EXISTING CULVERT
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- PROPOSED CENTRELINE
- PROPOSED TOP OF BANK
- PROPERTY LINE
- EXISTING TREE
- X EXISTING TREE TO BE REMOVED









No.	DATE	BY	REVISIONS
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SCALE: HORIZONTAL - 1:200

CONSULTANT

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12 MILE CREEK
CHANNEL REALIGNMENT

EXISTING CONDITIONS & REMOVALS

DESIGN	PROJECT No.
EEG	22008
CHECKED	SHEET No.
EG	1



LEGEND:

- EXISTING CENTRELINE
- EXISTING CULVERT
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- PROPOSED CENTRELINE
- PROPOSED TOP OF BANK
- PROPERTY LINE
- EXISTING TREE

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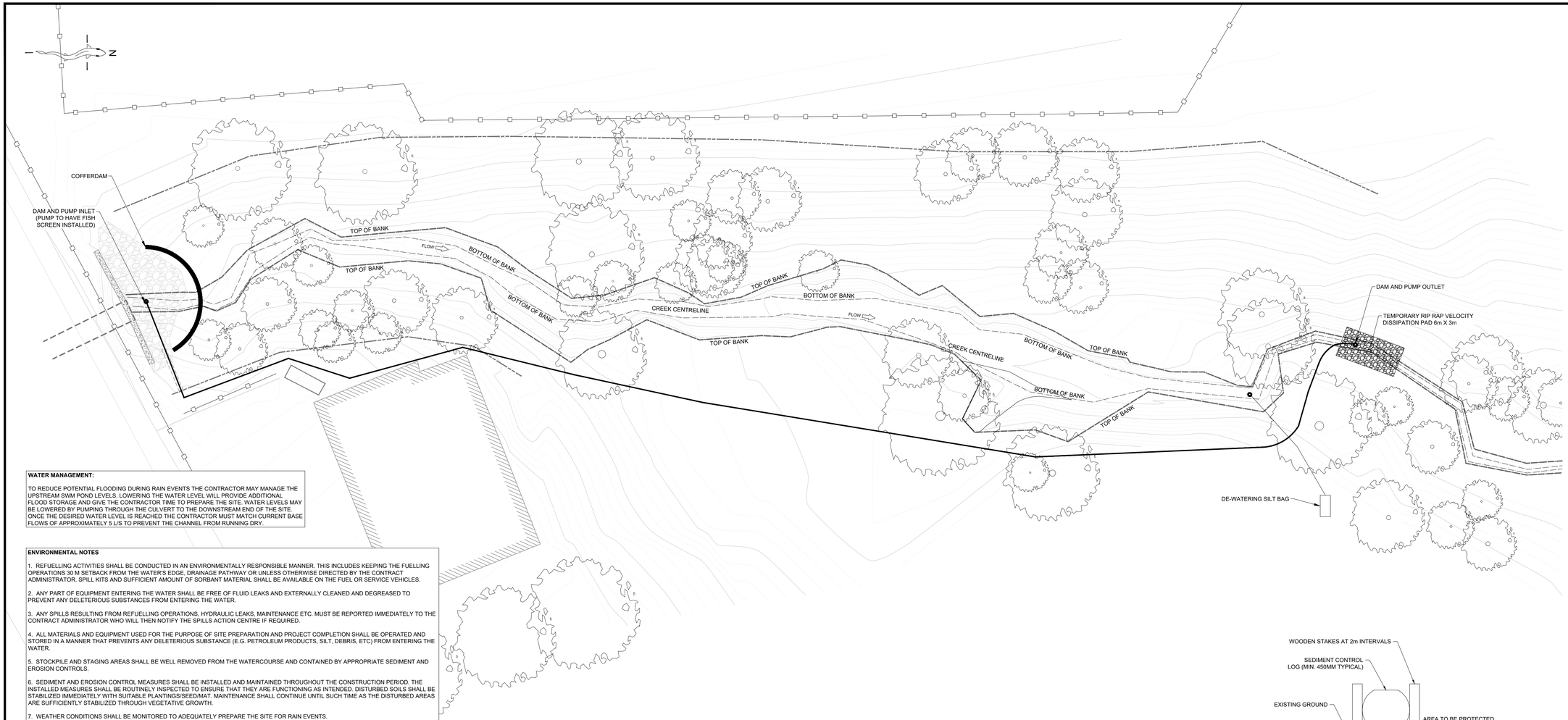
watersedge ENVIRONMENTAL SOLUTIONS TEAM LTD.

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12 MILE CREEK
CHANNEL REALIGNMENT

STAGING & ACCESS PLAN

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EG	2



WATER MANAGEMENT:

TO REDUCE POTENTIAL FLOODING DURING RAIN EVENTS THE CONTRACTOR MAY MANAGE THE UPSTREAM SWM POND LEVELS. LOWERING THE WATER LEVEL WILL PROVIDE ADDITIONAL FLOOD STORAGE AND GIVE THE CONTRACTOR TIME TO PREPARE THE SITE. WATER LEVELS MAY BE LOWERED BY PUMPING THROUGH THE CULVERT TO THE DOWNSTREAM END OF THE SITE. ONCE THE DESIRED WATER LEVEL IS REACHED THE CONTRACTOR MUST MATCH CURRENT BASE FLOWS OF APPROXIMATELY 5 L/S TO PREVENT THE CHANNEL FROM RUNNING DRY.

ENVIRONMENTAL NOTES

1. REFUELLING ACTIVITIES SHALL BE CONDUCTED IN AN ENVIRONMENTALLY RESPONSIBLE MANNER. THIS INCLUDES KEEPING THE FUELLING OPERATIONS 30 M SETBACK FROM THE WATER'S EDGE, DRAINAGE PATHWAY OR UNLESS OTHERWISE DIRECTED BY THE CONTRACT ADMINISTRATOR. SPILL KITS AND SUFFICIENT AMOUNT OF SORBANT MATERIAL SHALL BE AVAILABLE ON THE FUEL OR SERVICE VEHICLES.

2. ANY PART OF EQUIPMENT ENTERING THE WATER SHALL BE FREE OF FLUID LEAKS AND EXTERNALLY CLEANED AND DEGREASED TO PREVENT ANY DELETERIOUS SUBSTANCES FROM ENTERING THE WATER.

3. ANY SPILLS RESULTING FROM REFUELLING OPERATIONS, HYDRAULIC LEAKS, MAINTENANCE ETC. MUST BE REPORTED IMMEDIATELY TO THE CONTRACT ADMINISTRATOR WHO WILL THEN NOTIFY THE SPILLS ACTION CENTRE IF REQUIRED.

4. ALL MATERIALS AND EQUIPMENT USED FOR THE PURPOSE OF SITE PREPARATION AND PROJECT COMPLETION SHALL BE OPERATED AND STORED IN A MANNER THAT PREVENTS ANY DELETERIOUS SUBSTANCE (E.G. PETROLEUM PRODUCTS, SILT, DEBRIS, ETC) FROM ENTERING THE WATER.

5. STOCKPILE AND STAGING AREAS SHALL BE WELL REMOVED FROM THE WATERCOURSE AND CONTAINED BY APPROPRIATE SEDIMENT AND EROSION CONTROLS.

6. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. THE INSTALLED MEASURES SHALL BE ROUTINELY INSPECTED TO ENSURE THAT THEY ARE FUNCTIONING AS INTENDED. DISTURBED SOILS SHALL BE STABILIZED IMMEDIATELY WITH SUITABLE PLANTINGS/SEED/MAT. MAINTENANCE SHALL CONTINUE UNTIL SUCH TIME AS THE DISTURBED AREAS ARE SUFFICIENTLY STABILIZED THROUGH VEGETATIVE GROWTH.

7. WEATHER CONDITIONS SHALL BE MONITORED TO ADEQUATELY PREPARE THE SITE FOR RAIN EVENTS.

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 SHALL BE REPAIRED AND/OR REPLACED AS EXPEDITIOUSLY AS POSSIBLE UPON COMPLETION 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. ADDITIONAL ESC MEASURES TO BE KEPT ON SITE AND USED AS NECESSARY.

5. 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. SPILL KITS AND SUFFICIENT AMOUNT OF SORBANT MATERIAL SHALL BE AVAILABLE ON THE FUEL OR SERVICE VEHICLES.

6. ALL GRADES WITHIN THE REGULATORY FLOOD PLAIN WILL BE MAINTAINED OR MATCHED.

7. 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 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.

8. 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.

9. CONTRACTOR TO MAINTAIN STUMPS WHERE THEY OCCUR IF POSSIBLE TO ASSIST WITH OVERALL SITE STABILIZATION.

10. CONTRACTOR TO FOLLOW GUIDANCE AS OUTLINED IN THE "CLEAN EQUIPMENT PROTOCOL" IN ORDER TO LIMIT THE MOVEMENT OF INVASIVE SPECIES IN THE LANDSCAPE.

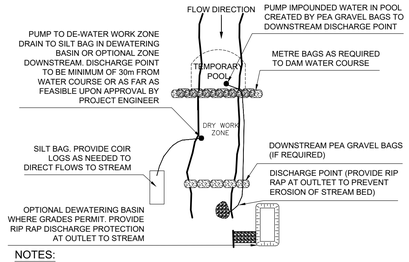
SECTION 2: FISH AND WILDLIFE RELOCATION

11. FISH AND WILDLIFE STRANDED WITHIN THE WORK AREA SHALL BE CAPTURED AND RELEASED LIVE IN SUITABLE HABITAT DOWNSTREAM OF THE WORK AREA UNDER THE SUPERVISION OF A QUALIFIED NPCA BIOLOGIST.

THE CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THE CONTINUOUS OPERATION OF THE BYPASS PUMPING/DIVERSION PIPING, TO ENSURE THAT THE WATER FLOW WILL BE MAINTAINED CONTINUOUSLY DOWNSTREAM OF THE WORK AREA (DURING ALL STAGES OF THE WORK), AND DISCHARGED BACK INTO THE CHANNEL USING A DIFFUSER/DISSIPATER TO ENSURE THAT THE RETURNING WATER DOES NOT SCOUR OR ERODE THE STREAMBED AND BANKS. BYPASS PUMPING/DIVERSION PIPING IS TO BE ADEQUATELY SIZED TO CONTROL A RANGE OF ANTICIPATED CREEK FLOWS. THE ANTICIPATED BASE FLOW RATE WITHIN THE CHANNEL DURING THE CONSTRUCTION TIMING WINDOW IS 5 L/S.

FISHERIES TIMING WINDOW:

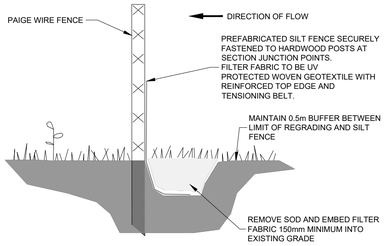
A FISHERIES TIMING WINDOW PROHIBITING IN-WATER WORKS BETWEEN OCTOBER 1ST AND JULY 15TH.



NOTES:

1. ALL INSTREAM WORK TO BE COMPLETED IN THE DRY BY DEWATERING THE WORK AREA AND DIVERTING AND/OR PUMPING FLOWS AROUND COFFERDAMS PLACED AT THE LIMITS OF THE WORK AREA.
2. EXISTING STREAM FLOWS OF 5 L/S TO BE MAINTAINED DOWNSTREAM OF THE DE-WATERED WORK AREA WITHOUT INTERRUPTION, DURING ALL STAGES OF THE WORK. THERE SHALL BE NO INCREASE IN WATER LEVELS UPSTREAM OF THE DE-WATERED WORK AREA.
3. FISH TO BE REMOVED FROM THE WORK AREA PRIOR TO DE-WATERING AND RELEASED ALIVE IMMEDIATELY DOWNSTREAM IN THE PRESENCE OF A NPCA.
4. FLOW DISSIPATERS AND/OR FILTER BAGS, OR EQUIVALENT, TO BE PLACED AT WATER DISCHARGE POINTS TO PREVENT EROSION AND SEDIMENT RELEASE.
5. SILT OR DEBRIS THAT HAS ACCUMULATED AROUND THE TEMPORARY COFFERDAMS SHOULD BE REMOVED PRIOR TO THEIR WITHDRAWAL.
6. WORK TO BE CONDUCTED DURING LOW FLOW CONDITIONS.
7. ANY "SANDBAGS" USED FOR COFFERDAM CONSTRUCTION TO BE FILLED WITH CLEAN PEA GRAVEL FREE OF FINE PARTICULATES. UPON PROJECT COMPLETION, ALL SAND BAGS TO BE REMOVED FROM THE WATERCOURSE.

D1 DAM AND PUMP (TYPICAL)
N.T.S.



D2 SILT FENCE (TYPICAL) (AS REQUIRED)
N.T.S.

GENERAL CREEK NOTES

1. ALL CHANNEL ACTIVITIES MUST BE COMPLETED IN THE DRY USING CONVENTIONAL DAM AND PUMP METHODS (IN-STREAM PLUG AND BYPASS PUMPING), OR A COMBINATION OF DIVERSION PIPING AND DAM AND PUMP METHODS.

2. NEW BANKS TO BE INTEGRATED INTO EXISTING BANK HEIGHT IN BOTH UPSTREAM AND DOWNSTREAM DIRECTIONS AND BE KEYED IN FOR 2-5M.

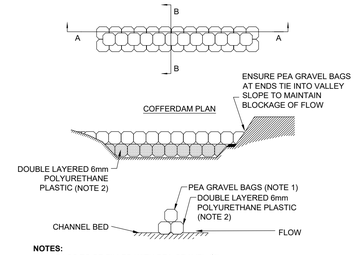
3. ANY FILL MATERIAL IS TO BE COMPACTED TO 95% SPD AND CONFIRMED WITH COMPACTION TESTING.

4. PROPER EROSION AND SEDIMENT CONTROL MEASURES TO BE USED AT ALL LOCATIONS TO PREVENT SEDIMENT FROM ENTERING WATER COURSE.

5. BANKS TO BE REVEGETATED AS PER THE DESIGN DRAWINGS WITH COIR 400 FABRIC, SEED AND STABILIZED WITH NATIVE VEGETATION AS PER SPECIFICATIONS.

6. CONTRACTOR TO RESTORE ANY DAMAGED AREAS TO THE EXISTING CONDITION OR TO THE SATISFACTION OF THE CLIENT AND CONTRACT ADMINISTRATOR.

D3 COIR LOG SEDIMENT CONTROL (TYPICAL)
N.T.S.



NOTES:
1. BAGS TO BE FILLED WITH PEA GRAVEL (¼")
2. DOUBLE LAYERED 6mm POLYURETHANE PLASTIC (OR APPROVED EQUIVALENT) TO ENSURE COFFERDAM IS WATER TIGHT

D4 PEA GRAVEL BAG COFFERDAM (TYPICAL)
N.T.S.

CHANNEL OPENING NOTES:

1. AFTER STABILIZATION OF THE BANKS IS CONFIRMED, FLOW IS TO BE REINITIATED INTO CHANNEL UNDER SUPERVISION OF WATER'S EDGE.

2. CONTRACTOR SHALL ENSURE THAT CHANNEL REMAINS ISOLATED FROM FLOWS UNTIL THE BANK WORK IS COMPLETE.

LEGEND:

- EXISTING CENTRELINE
- EXISTING CULVERT
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- PROPOSED CENTRELINE
- PROPERTY LINE
- EXISTING TREE

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CONSULTANT

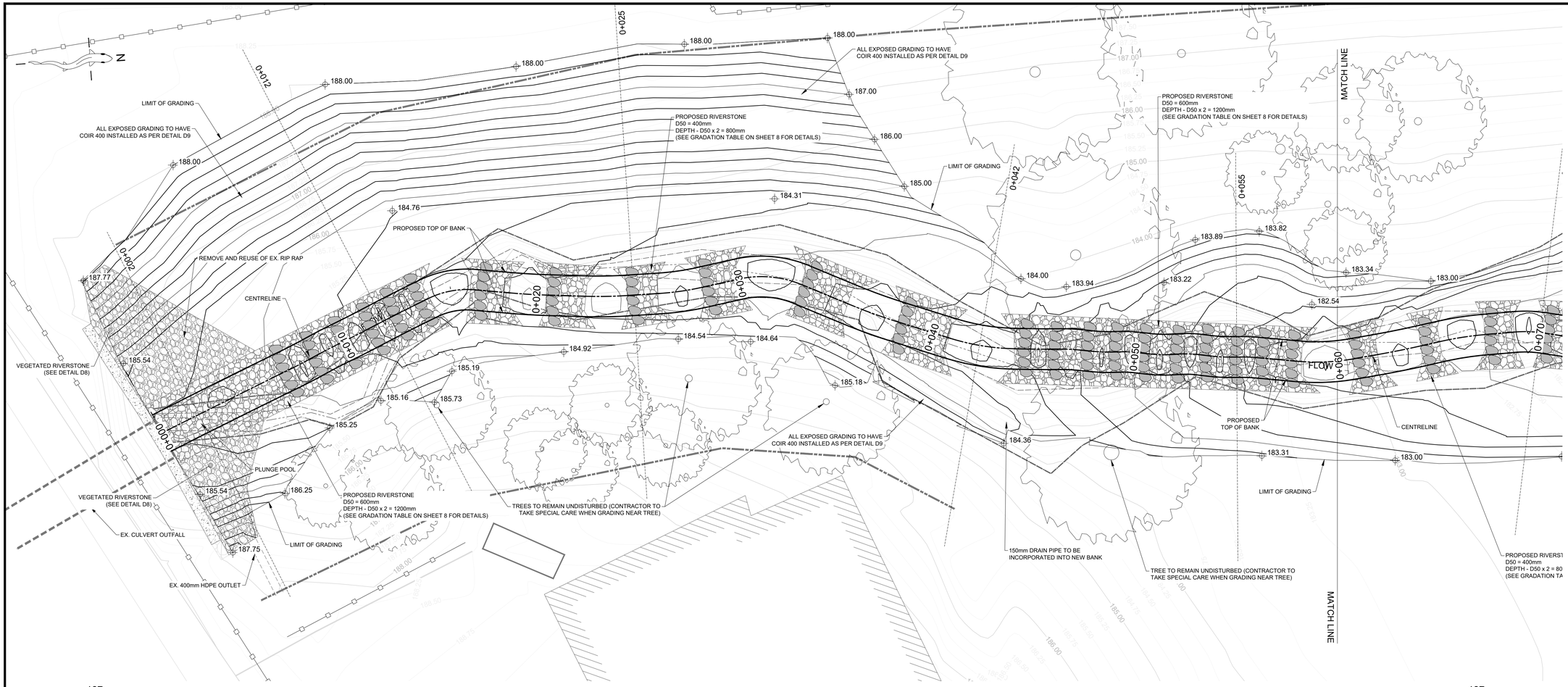
water's edge ENVIRONMENTAL SOLUTIONS TEAM LTD.

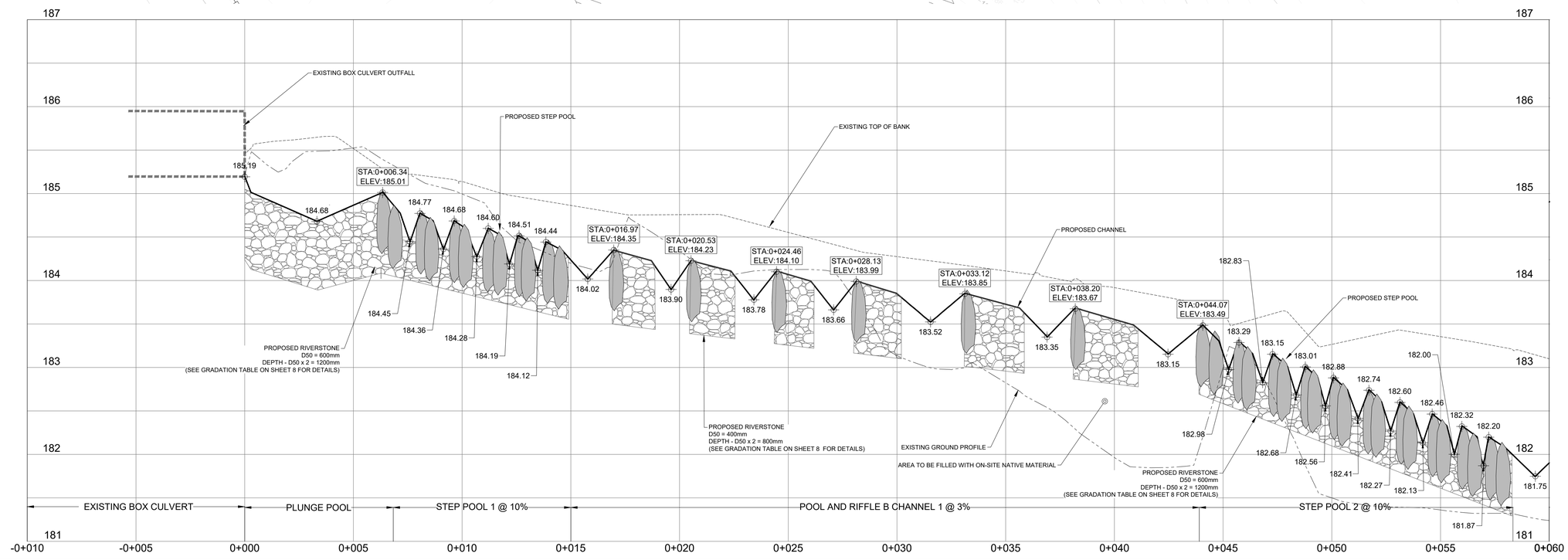
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12 MILE CREEK
CHANNEL REALIGNMENT

EROSION & SEDIMENT CONTROL PLAN

DESIGN	PROJECT No.
EEG	22008
CHECKED	SHEET No.
EG	3





LEGEND:

- EXISTING CENTRELINE
- EXISTING CULVERT
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- PROPOSED CENTRELINE
- PROPOSED TOP OF BANK
- PROPERTY LINE
- EXISTING TREE

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CONSULTANT: watersedge ENVIRONMENTAL SOLUTIONS TEAM LTD.

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12 MILE CREEK
CHANNEL REALIGNMENT

PLAN & PROFILE 1

DESIGN	PROJECT No.
EEG	22008
CHECKED	SHEET No.
EG	4

N

MATCH LINE

STONE

1200mm
TABLE ON SHEET 8 FOR DETAILS)

0+055

0+070

ALL EXPOSED GRADING TO HAVE
COIR 400 INSTALLED AS PER DETAIL D9

0+085

0+100

LIMIT OF GRADING

0+115

TIE PROPOSED CHANNEL SMOOTHLY
INTO EXISTING GRADES

PROPOSED RIVERSTONE
D50 = 400mm
DEPTH - D50 x 2 = 800mm
(SEE GRADATION TABLE FOR DETAILS)

0+060

0+080

0+090

0+110

FLOW

PROPOSED
TOP OF BANK

CENTRELINE

LIMIT OF GRADING

PROPOSED RIVERSTONE
D50 = 600mm
DEPTH - D50 x 2 = 1200mm
(SEE GRADATION TABLE ON SHEET 8 FOR DETAILS)

PROPOSED TOP OF BANK

CENTRELINE

ALL EXPOSED GRADING TO HAVE
COIR 400 INSTALLED AS PER DETAIL D9

PROPOSED RIVERSTONE
D50 = 400mm
DEPTH - D50 x 2 = 800mm
(SEE GRADATION TABLE ON SHEET 8 FOR DETAILS)

LIMIT OF GRADING

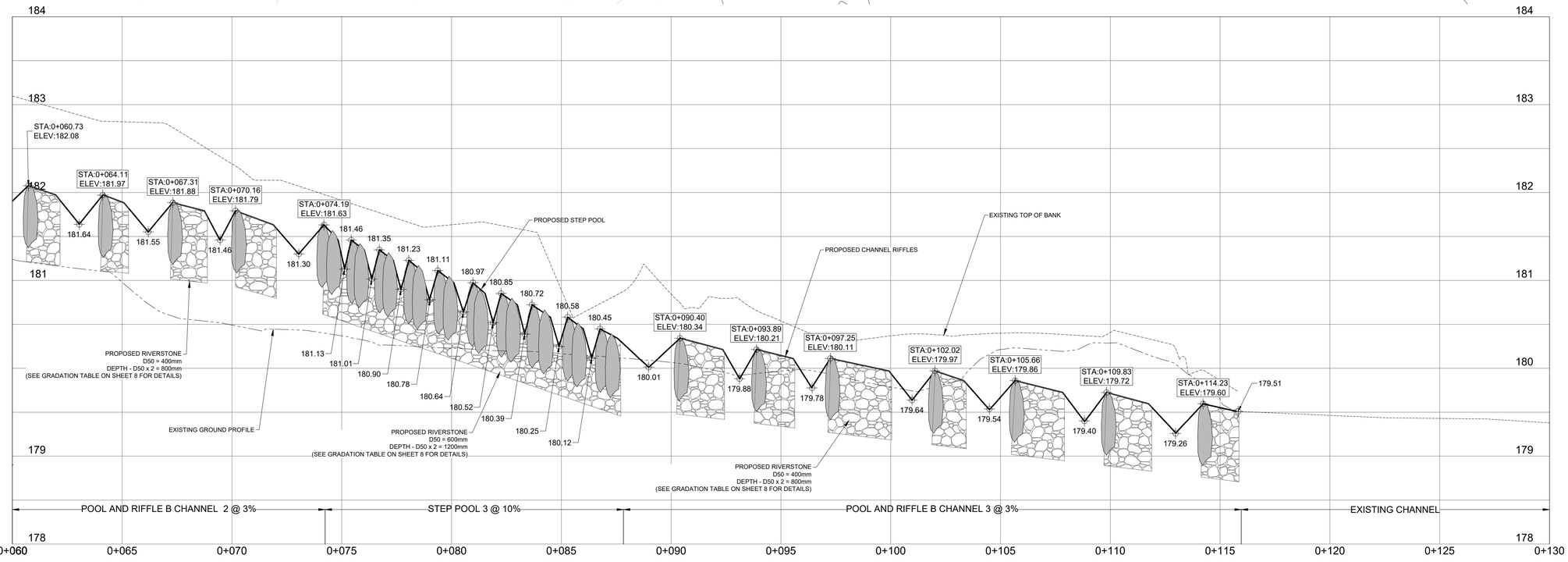
ALL EXPOSED GRADING TO HAVE
COIR 400 INSTALLED AS PER DETAIL D9

AREA TO BE FILLED WITH 400mm RIVERSTONE TO A MINIMUM DEPTH OF 800mm

(STURBED (CONTRACTOR TO
WHEN GRADING NEAR TREE)

MATCH LINE

183.82 183.34 183.00 182.54 181.93 183.00 183.00 183.00 182.00 181.51 181.24 181.00 180.85 180.52 180.28 179.87 179.88 180.46 180.00 181.00 181.86 183.31 183.00 182.75 182.00 182.30 181.95 182.00 180.77 180.63 180.26 182.00 182.00



LEGEND:

- EXISTING CENTRELINE
- EXISTING CULVERT
- EXISTING TOP OF BANK
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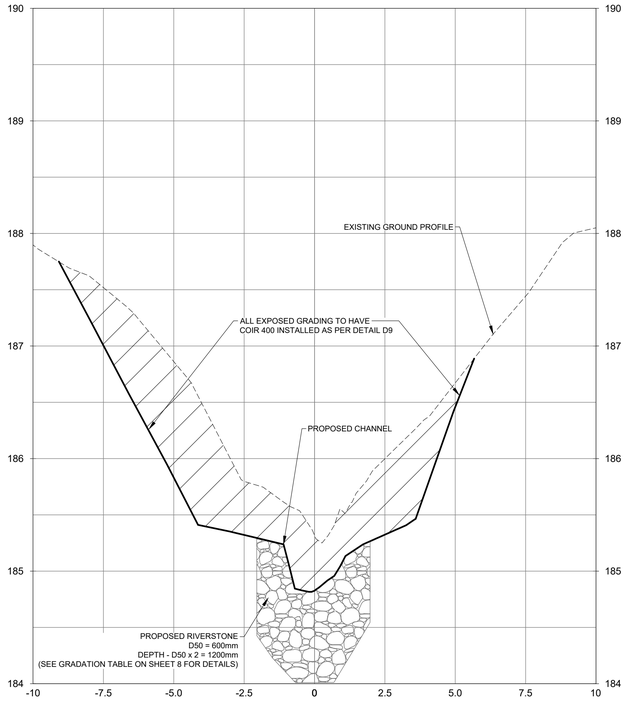
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12 MILE CREEK
CHANNEL REALIGNMENT

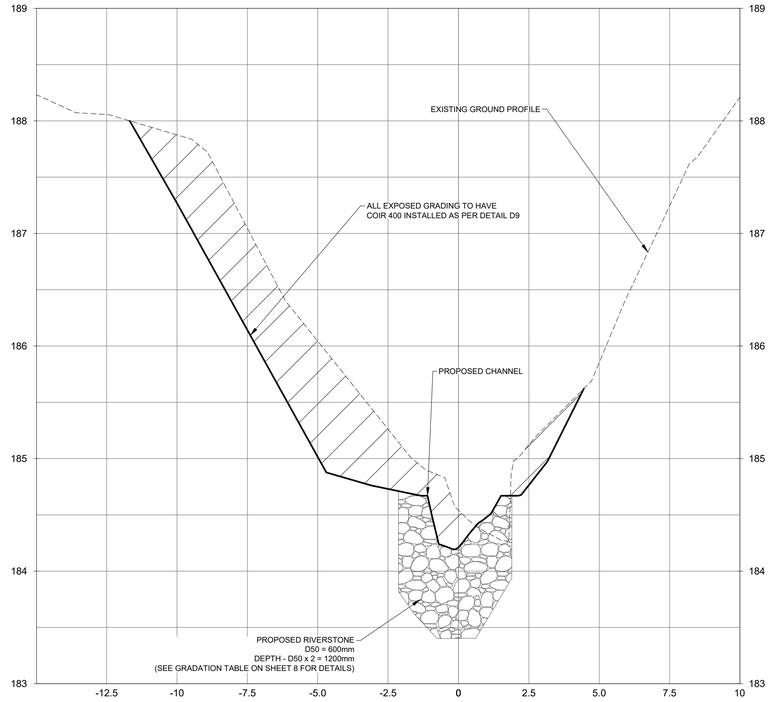
PLAN & PROFILE 2

DESIGN	PROJECT No.
EEG	22008
CHECKED	SHEET No.
EG	5

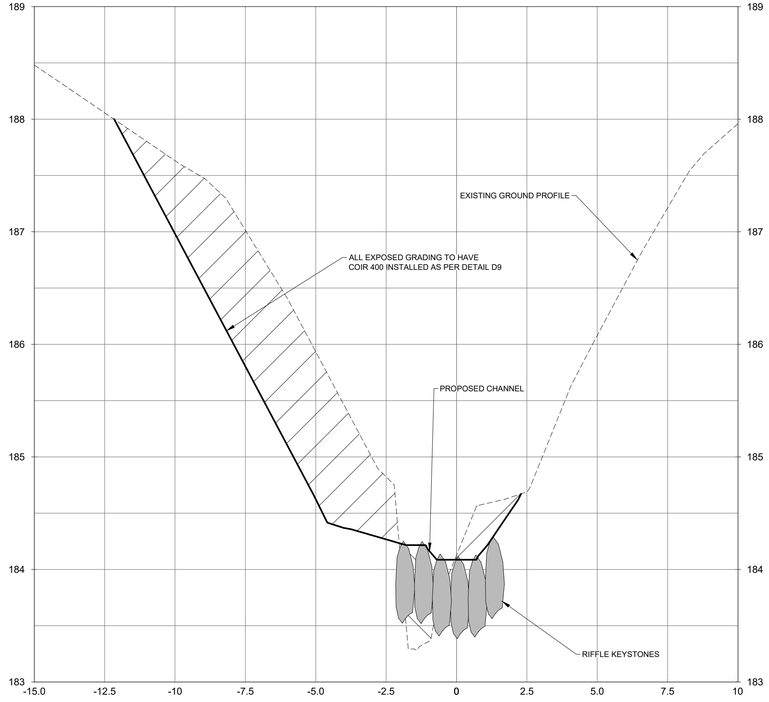
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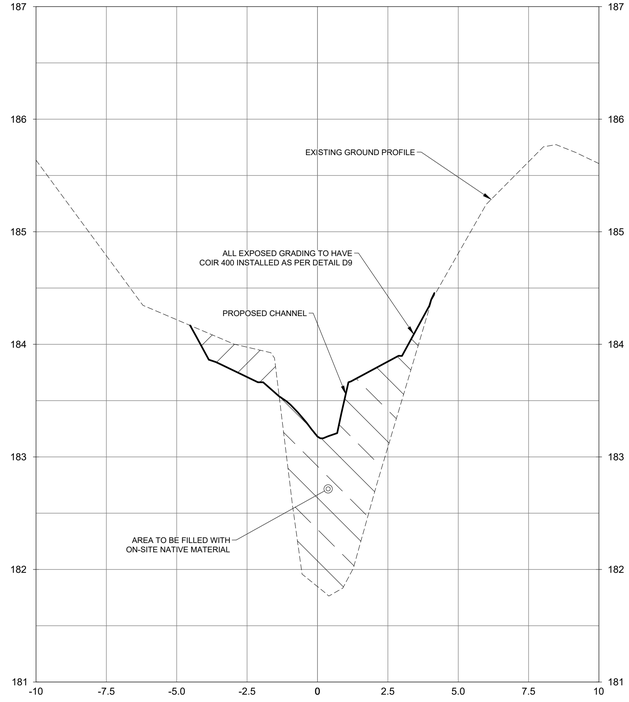
0+012



0+025



0+042



LEGEND:

EXISTING GROUND

PROPOSED CHANNEL

NOTE:

ALL SECTIONS LOOKING DOWNSTREAM

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CONSULTANT

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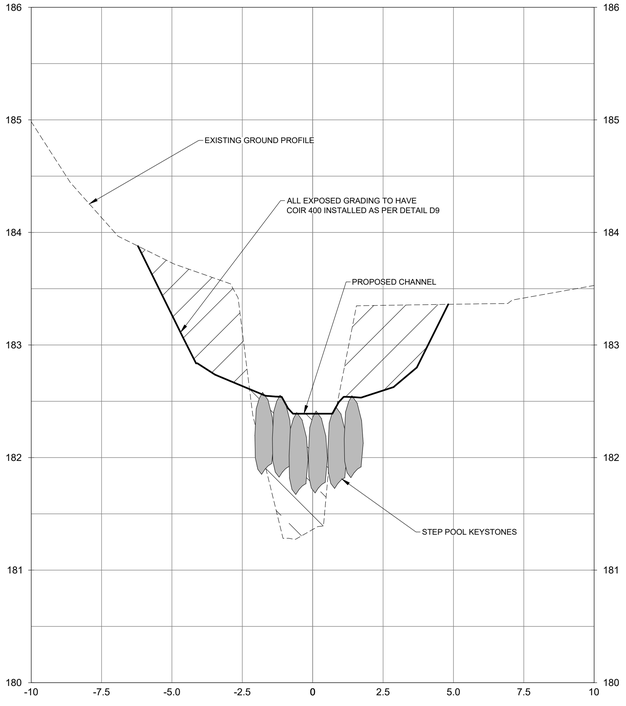
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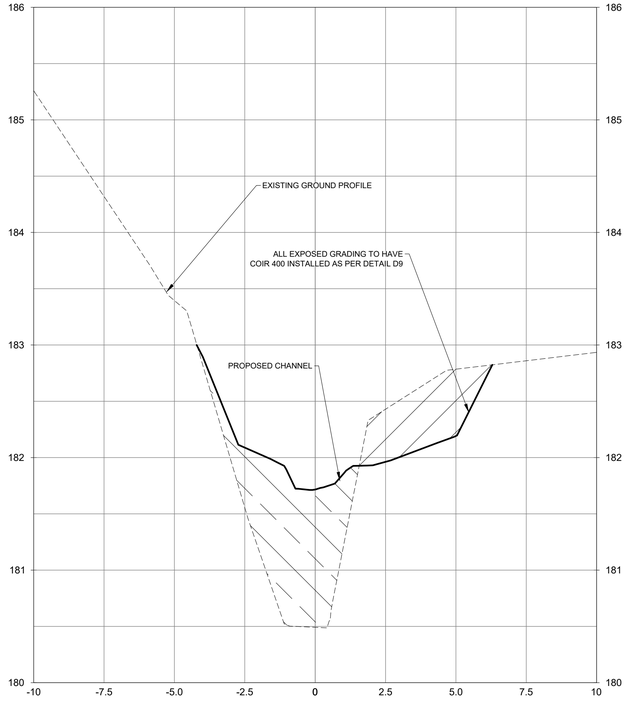
CROSS SECTIONS 1

DESIGN	PROJECT No.
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CHECKED	SHEET No.
EG	6

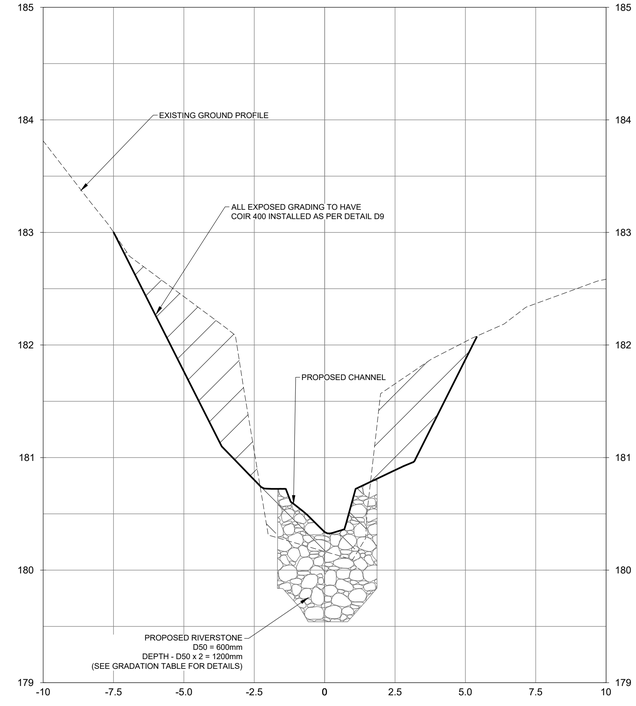
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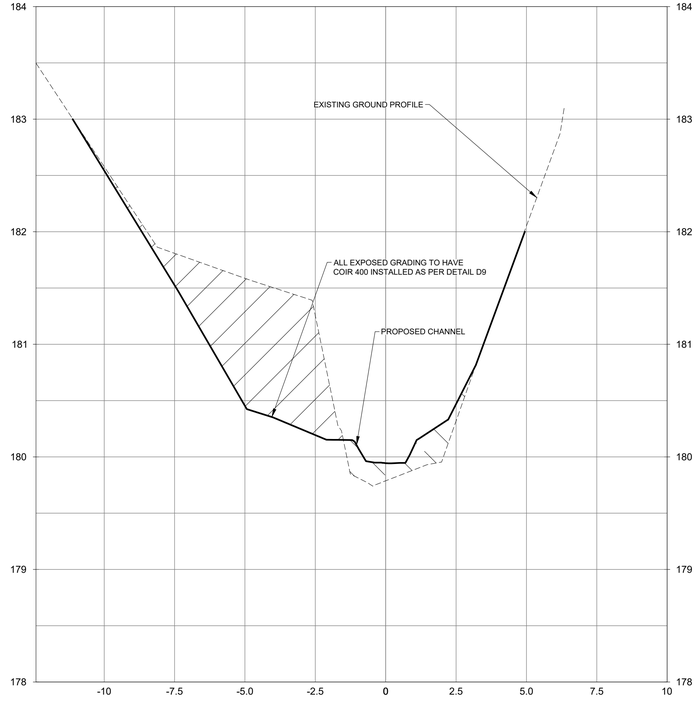
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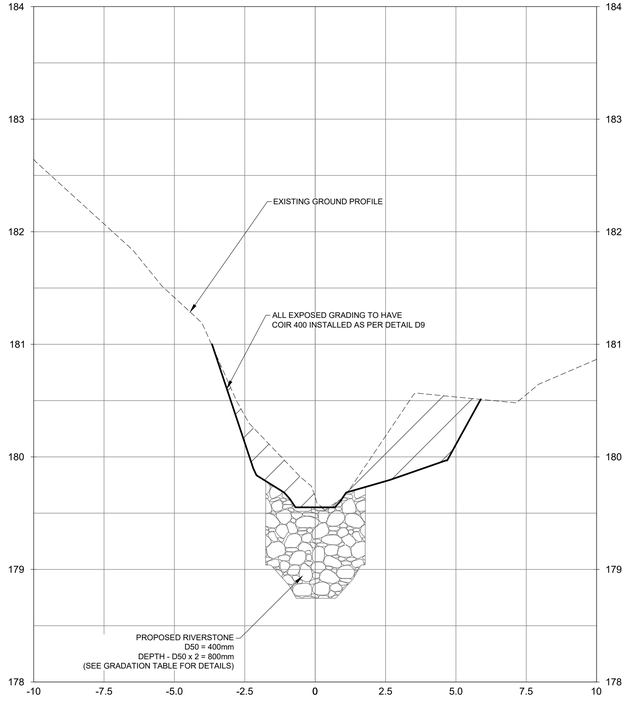
0+085



0+100



0+115



LEGEND:

EXISTING GROUND

PROPOSED CHANNEL

NOTE:

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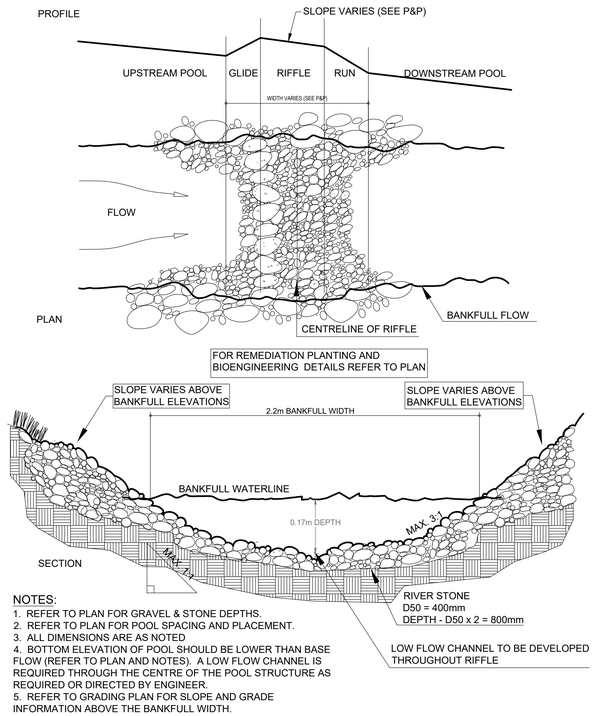
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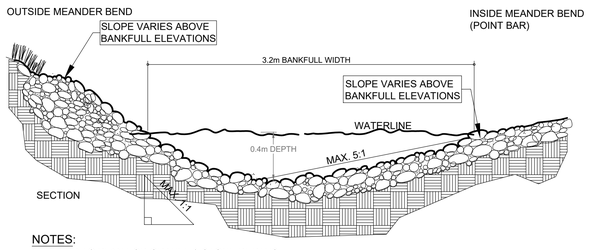
CROSS SECTIONS 2

DESIGN	PROJECT No.
EEG	22008
CHECKED	SHEET No.
EG	7



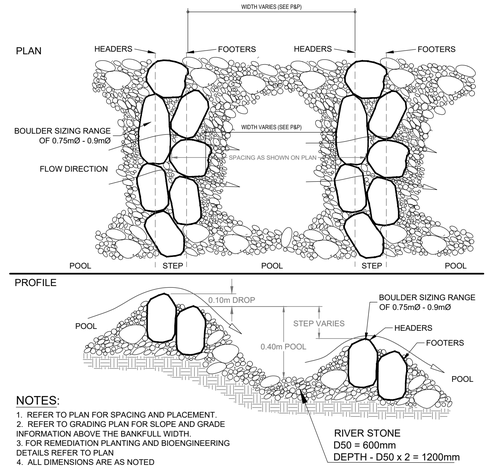
NOTES:
1. REFER TO PLAN FOR GRAVEL & STONE DEPTHS.
2. REFER TO PLAN FOR POOL SPACING AND PLACEMENT.
3. ALL DIMENSIONS ARE AS NOTED
4. BOTTOM ELEVATION OF POOL SHOULD BE LOWER THAN BASE FLOW (REFER TO PLAN AND NOTES). A LOW FLOW CHANNEL IS REQUIRED THROUGH THE CENTRE OF THE POOL STRUCTURE AS REQUIRED OR DIRECTED BY ENGINEER.
5. REFER TO GRADING PLAN FOR SLOPE AND GRADE INFORMATION ABOVE THE BANKFULL WIDTH.

D5 B CHANNEL RIFFLE (TYPICAL)
N.T.S.



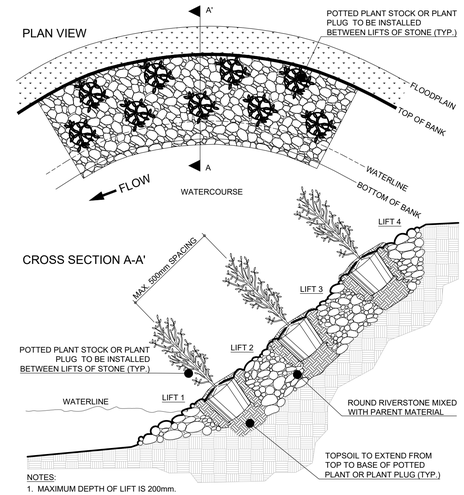
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3. ALL DIMENSIONS ARE AS NOTED
4. BOTTOM ELEVATION OF POOL TO BE LOWER THAN BASE FLOW (REFER TO PLAN AND NOTES). A LOW FLOW CHANNEL IS REQUIRED THROUGH THE CENTRE OF THE POOL STRUCTURE AS REQUIRED OR DIRECTED BY ENGINEER.
5. REFER TO GRADING PLAN FOR SLOPE AND GRADE INFORMATION ABOVE THE BANKFULL WIDTH.
6. EXCAVATE POOLS TO NATIVE MATERIAL

D6 B CHANNEL POOL (TYPICAL)
N.T.S.



NOTES:
1. REFER TO PLAN FOR SPACING AND PLACEMENT.
2. REFER TO GRADING PLAN FOR SLOPE AND GRADE INFORMATION ABOVE THE BANKFULL WIDTH.
3. FOR REMEDIATION PLANTING AND BIOENGINEERING DETAILS REFER TO PLAN
4. ALL DIMENSIONS ARE AS NOTED

D7 STEP / POOL (TYPICAL)
N.T.S.



NOTES:
1. MAXIMUM DEPTH OF LIFT IS 200mm.

D8 VEGETATED RIVERSTONE (TYPICAL)
N.T.S.

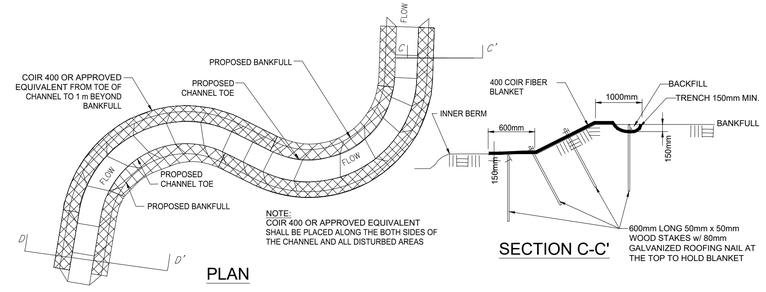
STONE SIZING GRADATION 600mm RIFFLESTONE (mm)	
800 - 900	5%
700 - 800	10%
600 - 700	20%
500 - 600	15%
400 - 500	15%
300 - 400	10%
150 - 300	5%
< 150	5%
Granular "B"	15%
SUM	100%
ADD ADDITIONAL GRANULAR B TO FILL ANY INTERSTITIAL VOIDS AS NECESSARY	

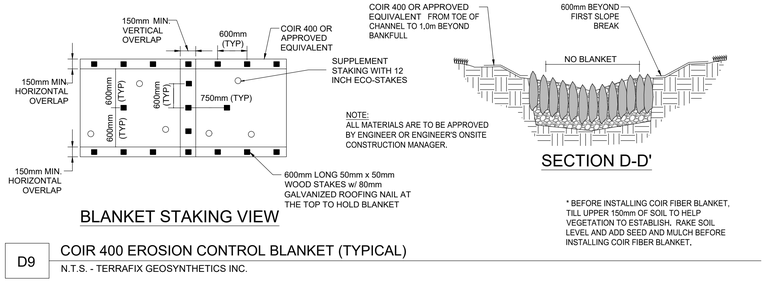
STONE SIZING GRADATION 400mm RIFFLESTONE (mm)	
700 - 800	5%
600 - 700	10%
500 - 600	15%
400 - 500	20%
300 - 400	15%
150 - 300	10%
< 150	5%
Granular "B"	20%
SUM	100%
ADD ADDITIONAL GRANULAR B TO FILL ANY INTERSTITIAL VOIDS AS NECESSARY	

KEYSTONES AND STEP POOL HEADERS & FOOTERS

SIZE: 750mm - 900mm

STONE SHALL BE ANGULAR TO SUBROUNDED WITH HIGH SPHERICITY. STONE SHOULD BE OF SUFFICIENT HARDNESS TO RESIST WEATHERING AND BE FREE OF CRACKS AND OTHER BLEMISHES TO RESIST WEATHERING. POROUS ROCK, SUCH AS SOME LIMESTONE, AND SOFT ROCK, SUCH AS SHALE, ARE UNACCEPTABLE. IN NO INSTANCE WILL CONCRETE OR OTHER "DEBRIS" STONE BE PERMITTED. NATIVE STONE EXCAVATED ON THE SITE MAY BE APPROPRIATE FOR USE. WHEN POSSIBLE, CONSIDERATION SHOULD BE GIVEN TO OBTAINING STONE THAT IS SIMILAR IN COLOUR AND TEXTURE TO THE NATIVE STONE IN THE PROJECT AREA.





NOTE:
ALL MATERIALS ARE TO BE APPROVED BY ENGINEER OR ENGINEER'S ONSITE CONSTRUCTION MANAGER.

* BEFORE INSTALLING COIR FIBER BLANKET, TILL UPPER 150mm OF SOIL TO HELP VEGETATION TO ESTABLISH. RAKE SOIL LEVEL AND ADD SEED AND MULCH BEFORE INSTALLING COIR FIBER BLANKET.

D9 COIR 400 EROSION CONTROL BLANKET (TYPICAL)
N.T.S. - TERRAFIX GEOSYNTHETICS INC.

No.	DATE	BY	REVISIONS
1	May 16, 2024	EEG	REVISED AS PER NPCA COMMENTS

DATE: May 16, 2024

SCALE:

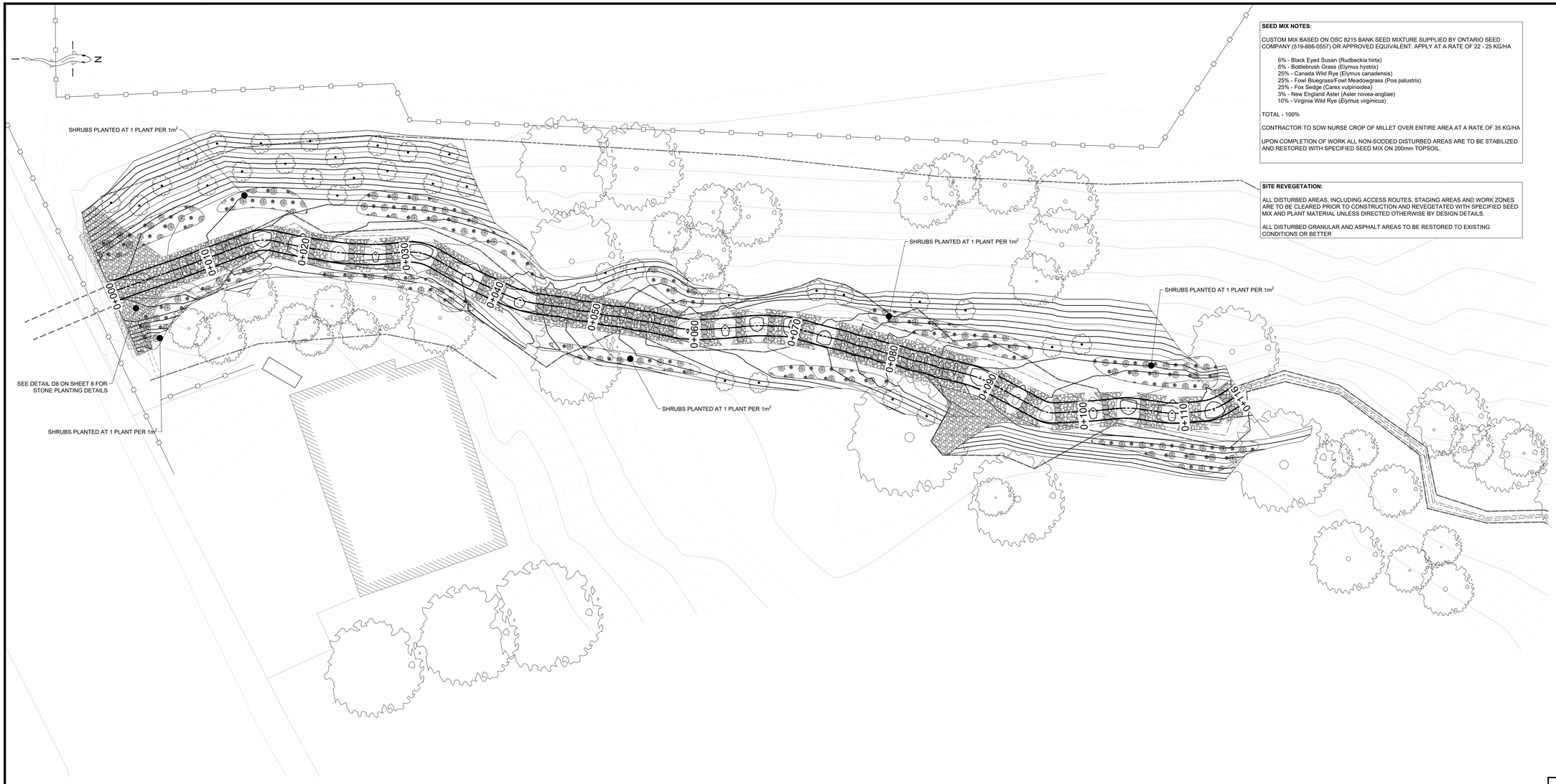
CONSULTANT
water's edge ENVIRONMENTAL SOLUTIONS TEAM LTD.

Trout Unlimited Canada

12 MILE CREEK
CHANNEL REALIGNMENT

DETAILS

DESIGN	PROJECT No.
EEG	22008
CHECKED	SHEET No.
EG	8



SEED MIX NOTES:

CUSTOM MIX BASED ON OSC 8215 BANK SEED MIXTURE SUPPLIED BY ONTARIO SEED COMPANY (519-886-0557) OR APPROVED EQUIVALENT. APPLY AT A RATE OF 22 - 25 KG/HA

- 6% - Black Eyed Susan (Rudbeckia hirta)
- 6% - Bottlebrush Grass (Elymus hystrix)
- 25% - Canada Wild Rye (Elymus canadensis)
- 25% - Fowl Bluegrass/Fowl Meadowgrass (Poa palustris)
- 25% - Fox Sedge (Carex vulpinoidea)
- 3% - New England Aster (Aster novea-angliae)
- 10% - Virginia Wild Rye (*Elymus virginicus*)

TOTAL - 100%

CONTRACTOR TO SOW NURSE CROP OF MILLET OVER ENTIRE AREA AT A RATE OF 35 KG/HA

UPON COMPLETION OF WORK ALL NON-SODDED DISTURBED AREAS ARE TO BE STABILIZED AND RESTORED WITH SPECIFIED SEED MIX ON 200mm TOPSOIL.

SITE REVEGETATION:

ALL DISTURBED AREAS, INCLUDING ACCESS ROUTES, STAGING AREAS AND WORK ZONES ARE TO BE CLEARED PRIOR TO CONSTRUCTION AND REVEGETATED WITH SPECIFIED SEED MIX AND PLANT MATERIAL UNLESS DIRECTED OTHERWISE BY DESIGN DETAILS.

ALL DISTURBED GRANULAR AND ASPHALT AREAS TO BE RESTORED TO EXISTING CONDITIONS OR BETTER

LEGEND:

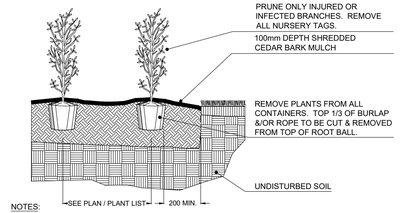
- EXISTING CENTRELINE
- EXISTING CULVERT
- EXISTING TOP OF BANK
- EXISTING BOTTOM OF BANK
- PROPOSED CENTRELINE
- PROPOSED TOP OF BANK
- PROPERTY LINE
- EXISTING TREE
- SHRUB PLANTING
- TREE PLANTING

TREE LIST

Key	Botanical Name	Common Name	Cal. WB (60mm)	Pot (3 gal)	Totals
	TREES				
ta	Tilia americana	Basswood	8	3	11
as	Acer saccharum	Sugar Maple	8	3	11
qr	Quercus rubra	Red Oak	8	3	11
	TOTAL				33

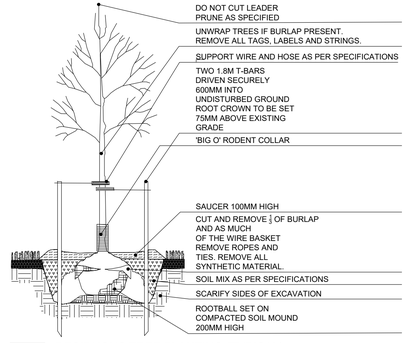
SHRUB LIST

Key	Botanical Name	Common Name	Cal. (mm)	Ht. (mm)	Root Condition	QNTY.
	SHRUBS					
iv	Ilex verticillata	Winterberry		60	3 Gal. Pot	26
cs	Cornus stolonifera	Red Osier Dogwood		60	3 Gal. Pot	35
pv	Prunus virginia	Chokecherry		60	3 Gal. Pot	23
ro	Rubus odoratus	Flowering Raspberry		60	3 Gal. Pot	23
seq	Salix exiqua	Sandbar Willow		60	3 Gal. Pot	25
sp	Salix petiolaris	Slender Willow		60	3 Gal. Pot	20
sc	Sambucus canadensis	Elderberry		60	3 Gal. Pot	33
sa	Spirea alba	Meadowsweet		60	3 Gal. Pot	25
vl	Viburnum lentago	Nannyberry		60	3 Gal. Pot	24
co	Cephalanthus occidentalis	Buttonbush		60	3 Gal. Pot	26
	TOTAL					260



NOTES:
1. SOIL MIXTURE: FOUR (4) PARTS NATIVE SOIL, ONE (1) PART WELL ROTTED COMPOST.
2. SAUCER SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING PLANTING.
3. ALL DIMENSIONS ARE IN mm.
4. IN POORLY DRAINED SOILS PLANT SHRUB SLIGHTLY HIGHER THAN ADJACENT GRADE.
5. ALL PLANTS TO BE STRAIGHT AND PLANTED VERTICALLY REGARDLESS OF SLOPE.

D10 POTTED SHRUB (TYPICAL)
N.T.S.



D11 DECIDUOUS TREE PLANTING (TYPICAL)
N.T.S.

LANDSCAPE NOTES:

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH BY-LAWS AND CODES HAVING JURISDICTION OVER SITE LOCATION.

2. COMPLETE ALL WORK TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR. REPORT ANY CHANGES, DISCREPANCIES OR SUBSTITUTIONS TO THE CONTRACT ADMINISTRATOR FOR REVIEW. OBTAIN APPROVAL FROM THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING.

3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXISTING SERVICE LOCATIONS.

4. EXACT LOCATIONS OF PLANT MATERIAL WILL BE DETERMINED BY PLACEMENT OF SITE SERVICES SUCH AS HYDRO VAULTS, METERS, UTILITIES ROOF RAIN WATER LEADERS, DRIVEWAYS, LIGHT STANDARDS, ETC.

5. ALL PLANT MATERIAL LOCATIONS TO BE STAKED OR MARKED OUT AND APPROVED BY CONTRACT ADMINISTRATOR PRIOR TO INSTALLATION.

6. SUPPLY ALL PLANT MATERIAL IN ACCORDANCE WITH THE CANADIAN STANDARDS FOR NURSERY STOCK (7TH ED.).

7. INSTALL PLANT MATERIAL ACCORDING TO DETAILS SHOWN.

8. DISTURBED SOIL AREAS AROUND TREES AND SHRUBS ARE TO BE COVERED WITH SHREDDED CONIFER BARK MULCH SUCH AS CANADA RED OR GRO BARK, SPM MULCH, OR APPROVED EQUIVALENT. ALTERNATIVE MULCHES MUST BE APPROVED BY THE CONTRACT ADMINISTRATOR.

9. CONTRACTOR TO UTILIZE LAYOUT DIMENSIONS WHERE PROVIDED.

10. PROVIDE PLANTING BED AREA AS NOTED ON THE DRAWING OR TO ACCOMMODATE MATURE SIZE OF PLANT MATERIAL.

11. ALL SUPPORT SYSTEMS MUST BE REMOVED TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR ONCE THE TREE IS ESTABLISHED.

12. SUPPLY AND PLACE TOPSOIL IN ACCORDANCE WITH OPSS 570 TO A MINIMUM DEPTH OR 100MM UNLESS OTHERWISE SPECIFIED.

13. SUPPLY AND PLACE SEED IN ACCORDANCE WITH OPSS 572 UNLESS OTHERWISE SPECIFIED.

14. CONTRACTOR TO PROVIDE NECESSARY EROSION CONTROL PROTECTION AS REQUIRED TO ENSURE SOIL STABILIZATION AND PROPER SEED GERMINATION.

15. ALL DIMENSIONS IN MM UNLESS OTHERWISE NOTED.

16. IF DISCREPANCIES ARISE BETWEEN PLANT MATERIAL COUNT SHOWN ON DRAWING AND PLANT LIST THE DRAWING SHALL BE CONSIDERED CORRECT.

CONTRACTOR TO PROVIDE 2 YEAR WARRANTY FROM DATE ACCEPTED ON ALL WORK AND PLANT MATERIALS.

17. ANY SITE PLAN OR GRADING AND SERVICING SHOWN IS FOR INFORMATION ONLY. REFER TO APPROVED DRAWINGS.

No.	DATE	BY	REVISIONS
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DATE: May 16, 2024

SCALE:
HORIZONTAL - 1:400
VERTICAL - 1:100

CONSULTANT
water's edge ENVIRONMENTAL SOLUTIONS TEAM LTD.

Trout Unlimited Canada

12 MILE CREEK
CHANNEL REALIGNMENT

RESTORATION PLAN

DESIGN	PROJECT No.
EEG	22008
CHECKED	SHEET No.
EG	9