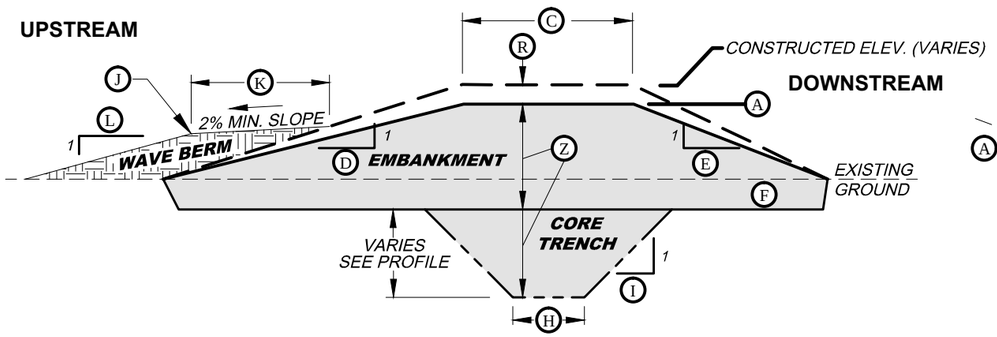
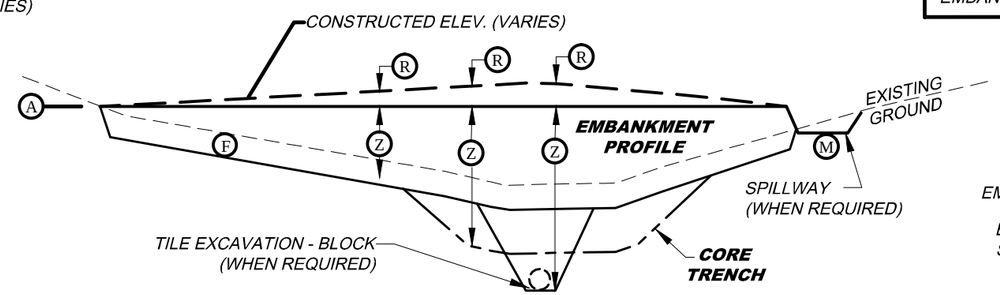
	EMBANKMENT DESIGN TABLE							CORE TRENCH DESIGN TABLE		WAVE BERM DESIGN TABLE			EMBANKMENT ESTIMATED QUANTITIES [1]			
	A	B	C	D	E	F	G	H	I	J	K	L				
EMBANKMENT / WETLAND ID #	DESIGN ELEVATION (FEET)	SETTLEMENT ALLOWANCE (%)	TOP WIDTH (FEET)	UPSTREAM SIDE SLOPE (X:1)	DOWNSTREAM SIDE SLOPE (X:1)	MINIMUM SUBCUT DEPTH (FEET)	COMPACTION METHOD (C1, C2, OR C3)	BOTTOM WIDTH (FEET)	SIDE SLOPE (X:1)	TOP ELEVATION (FEET)	MINIMUM WIDTH (FEET)	SIDE SLOPE (X:1)	SUBCUT VOLUME (CU.YD.)	EMBANKMENT VOLUME (CU.YD.)	CORE TRENCH VOLUME (CU.YD.)	WAVE BERM VOLUME (CU.YD.)

[1] THE EMBANKMENT VOLUME INCLUDES QUANTITIES FOR SUBCUT AND SETTLEMENT ALLOWANCE. QUANTITIES FOR CORE TRENCHES AND WAVE BERMS, IF REQUIRED, SHALL BE CONSIDERED AS SEPARATE PAY ITEMS (NOT PART OF EMBANKMENT).



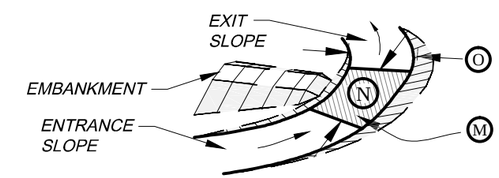
TYPICAL EMBANKMENT X-SECTION

NOT TO SCALE



TYPICAL EMBANKMENT PROFILE (CONSTRUCTION DETAILS)

NOT TO SCALE



ISOMETRIC VIEW SPILLWAY

NOT TO SCALE

EMBANKMENT AND SPILLWAY PROFILES TO BE PROVIDED ON OTHER DESIGN SHEETS

1. CONSTRUCTED ELEV. (VARIES) = DESIGN ELEVATION PLUS REQUIRED SETTLEMENT (A + R)
2. R (VARIES) = TOTAL FILL HEIGHT TIMES SETTLEMENT ALLOWANCE (Z x B)

CONSTRUCTION REQUIREMENTS

EMBANKMENT:
- SUBCUT DIMENSIONS ARE MINIMUMS, DEPTH MAY VARY BASED ON SITE AND SOIL CONDITION. ENGINEER MAY DIRECT WHEN NECESSARY TO EXCAVATE TO DIFFERENT DEPTHS THAN SHOWN.
- PLACE 4 TO 6 INCHES OF TOPSOIL ON THE ENTIRE EMBANKMENT SURFACE AFTER CONSTRUCTED ELEVATION IS ACHIEVED. TOPSOIL MATERIAL USED SHALL BE SUITABLE FOR VEGETATION ESTABLISHMENT.

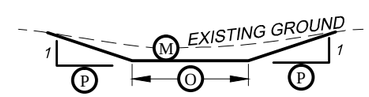
CORE TRENCH:
CORE TRENCH DIMENSIONS ARE MINIMUMS. DEPTH, WIDTH, AND SIDE SLOPES MAY VARY BASED ON SITE AND SOIL CONDITIONS. ENGINEER MAY DIRECT WHEN TO EXCAVATE TO DIFFERENT DEPTHS THAN SHOWN.

WAVE BERM:
WAVE BERM DIMENSIONS ARE MINIMUMS. HEIGHT, WIDTH AND SIDE SLOPES MAY VARY, AS DIRECTED BY THE ENGINEER, BASED ON SITE AND SOIL CONDITIONS, AND MATERIAL AVAILABILITY.

SPILLWAY:
- ENTRANCE AND EXIT SLOPES SHALL BE EXCAVATED / GRADED TO ENSURE POSITIVE DRAINAGE IN AND OUT OF SPILLWAY CONTROL SECTION.
- WHEN DIRECTED OR DEEMED NECESSARY, OVER EXCAVATE SPILLWAY 4 TO 6 INCHES AND REPLACE WITH TOPSOIL TO DESIGN ELEVATIONS. TOPSOIL MATERIAL SHALL BE SUITABLE FOR VEGETATION ESTABLISHMENT.

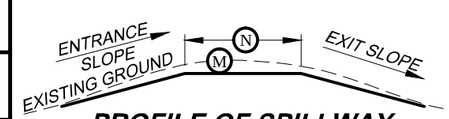
COMPACTION:
THE ENTIRE SURFACE OF EACH LIFT OF FILL SHALL BE COMPACTED BY AT LEAST 2 PASSES OF THE SPECIFIED COMPACTING EQUIPMENT.

	COMPACTION METHOD G	MAXIMUM LIFT (INCHES)
C1	200 P.S.I. TAMPING ROLLER OR SIMILAR TYPE EQUIPMENT AS APPROVED BY ENGINEER .	9
C2	RUBBER TIRED HAULING / SPREADING EQUIPMENT OR SIMILAR TYPE EQUIPMENT AS APPROVED BY ENGINEER, "LOADED" AND TRAVELING IN A DIRECTION PARALLEL TO THE MAIN AXIS OF THE FILL. **C1** IS AN ACCEPTABLE ALTERNATIVE COMPACTION METHOD.	8
C3	METAL TRACK-TYPE TRACTOR OR SIMILAR TYPE EQUIPMENT AS APPROVED BY ENGINEER. **C1** OR **C2** ARE ACCEPTABLE ALTERNATIVE COMPACTION METHODS.	6



X-SECTION OF SPILLWAY

NOT TO SCALE



PROFILE OF SPILLWAY

NOT TO SCALE

	SPILLWAY DESIGN TABLE				SPILLWAY ESTIMATED QUANTITIES
	M	N	O	P	
SPILLWAY / WETLAND ID #	CONTROL ELEVATION (FEET)	CONTROL SECTION LENGTH (FEET)	CONTROL SECTION WIDTH (FEET)	SIDE SLOPE (X:1)	EXCAVATED VOLUME (CU.YD.)

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME :

SIGNATURE :

LICENSE # : DATE :

WETLAND RESTORATION PLAN

EMBANKMENT / SPILLWAY DETAILS - MULTIPLE

APPROVED BY: DATE :

PROJECT # :

COUNTY : PLAN SHEET OF

BWSR

STANDARD SHEET # BWSR-102B