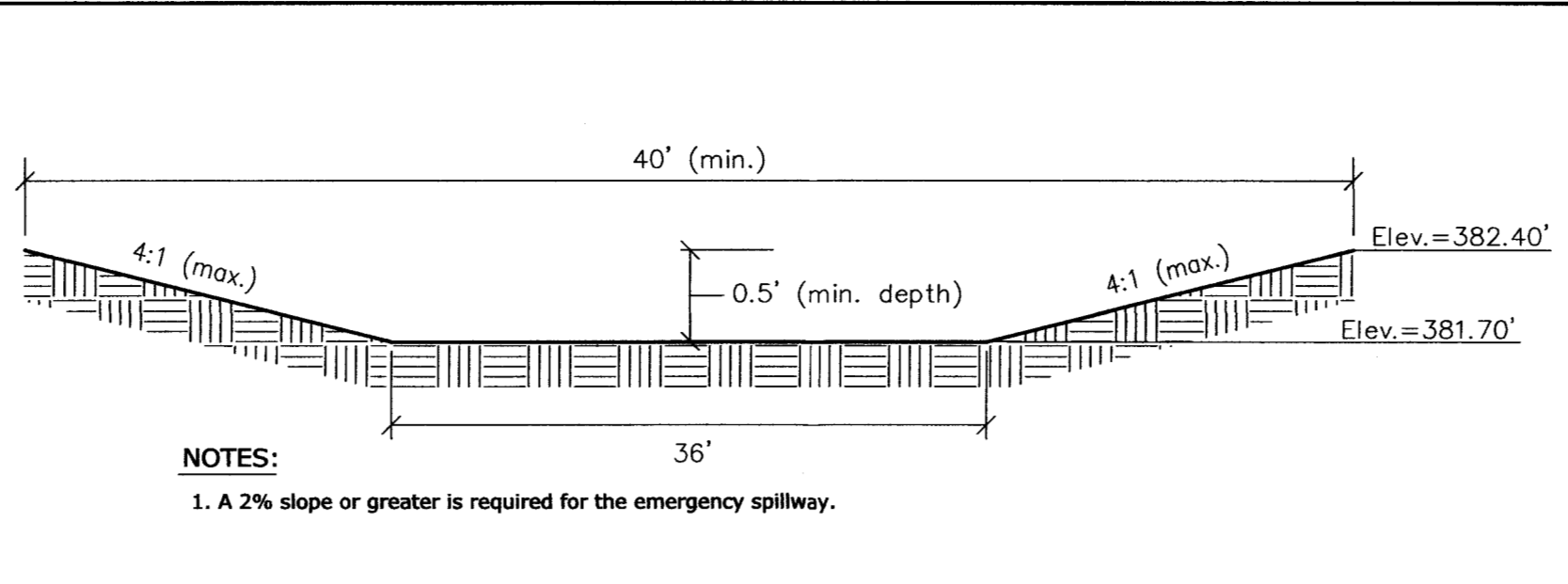


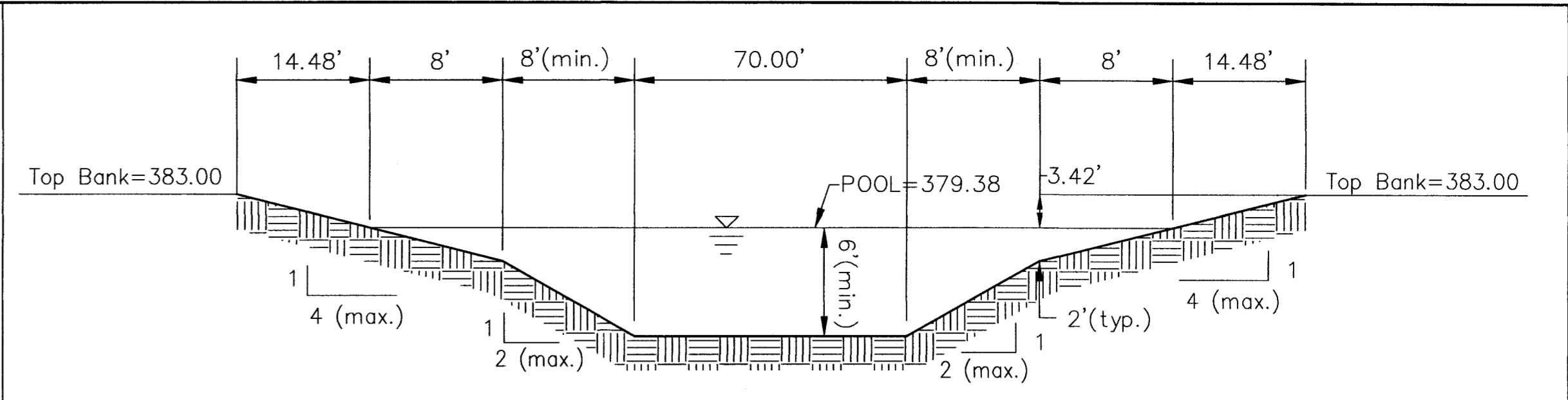
**DETENTION BASIN #1 CROSS SECTION A-A**

Scale: N.T.S.



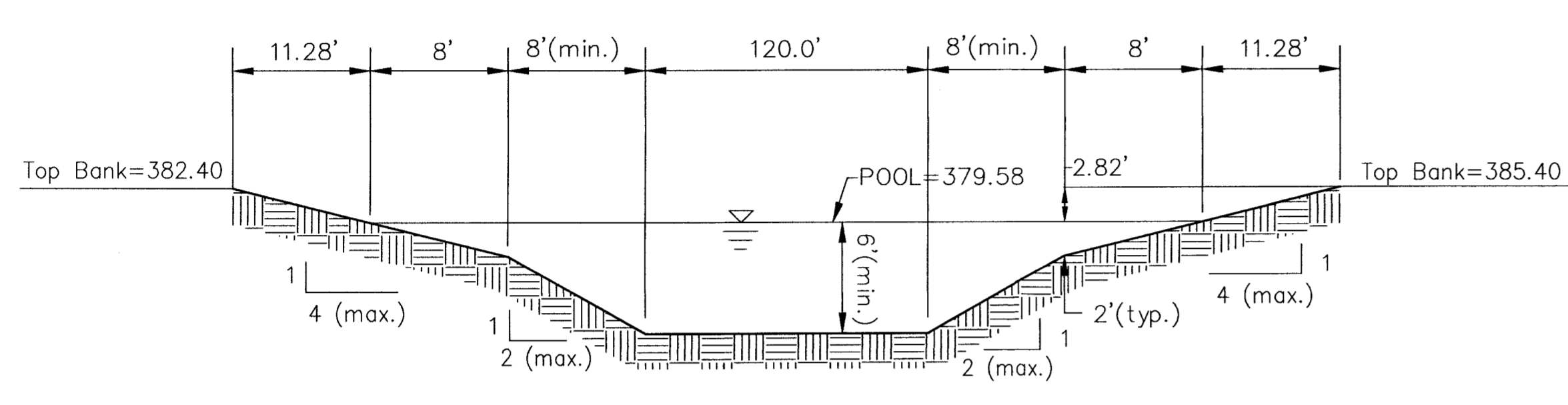
**DETENTION BASIN #1 EMERGENCY SPILLWAY CROSS-SECTION**

Scale: N.T.S.



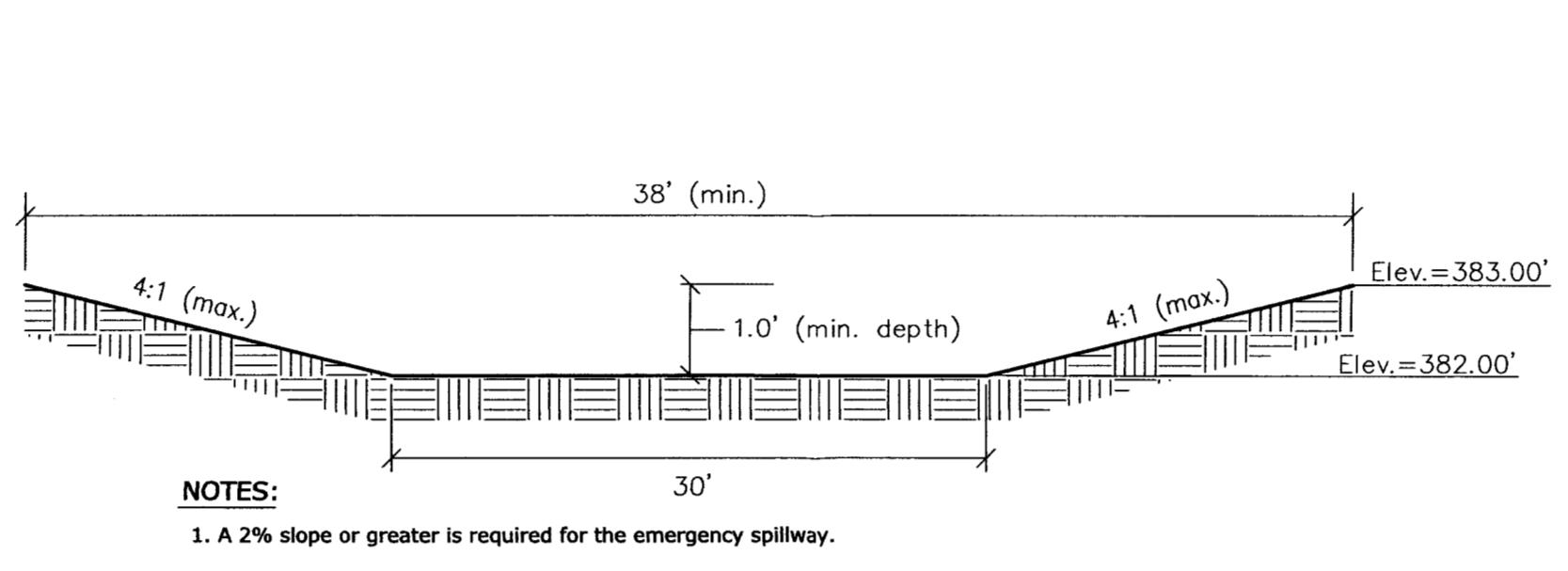
**DETENTION BASIN #2 CROSS SECTION C-C**

Scale: N.T.S.



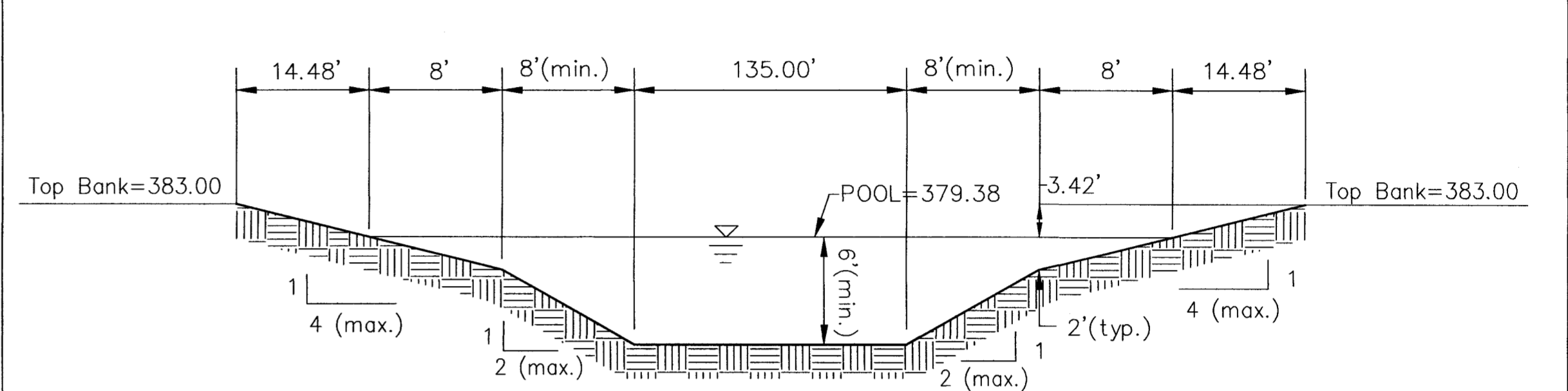
**DETENTION BASIN #1 CROSS SECTION B-B**

Scale: N.T.S.



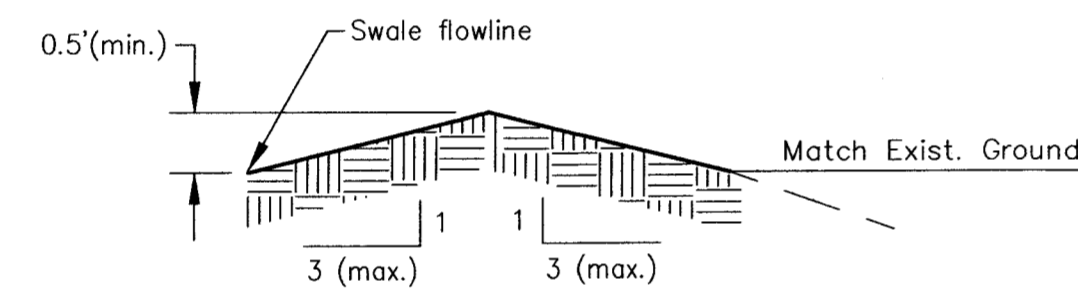
**DETENTION BASIN #2 EMERGENCY SPILLWAY CROSS-SECTION**

Scale: N.T.S.



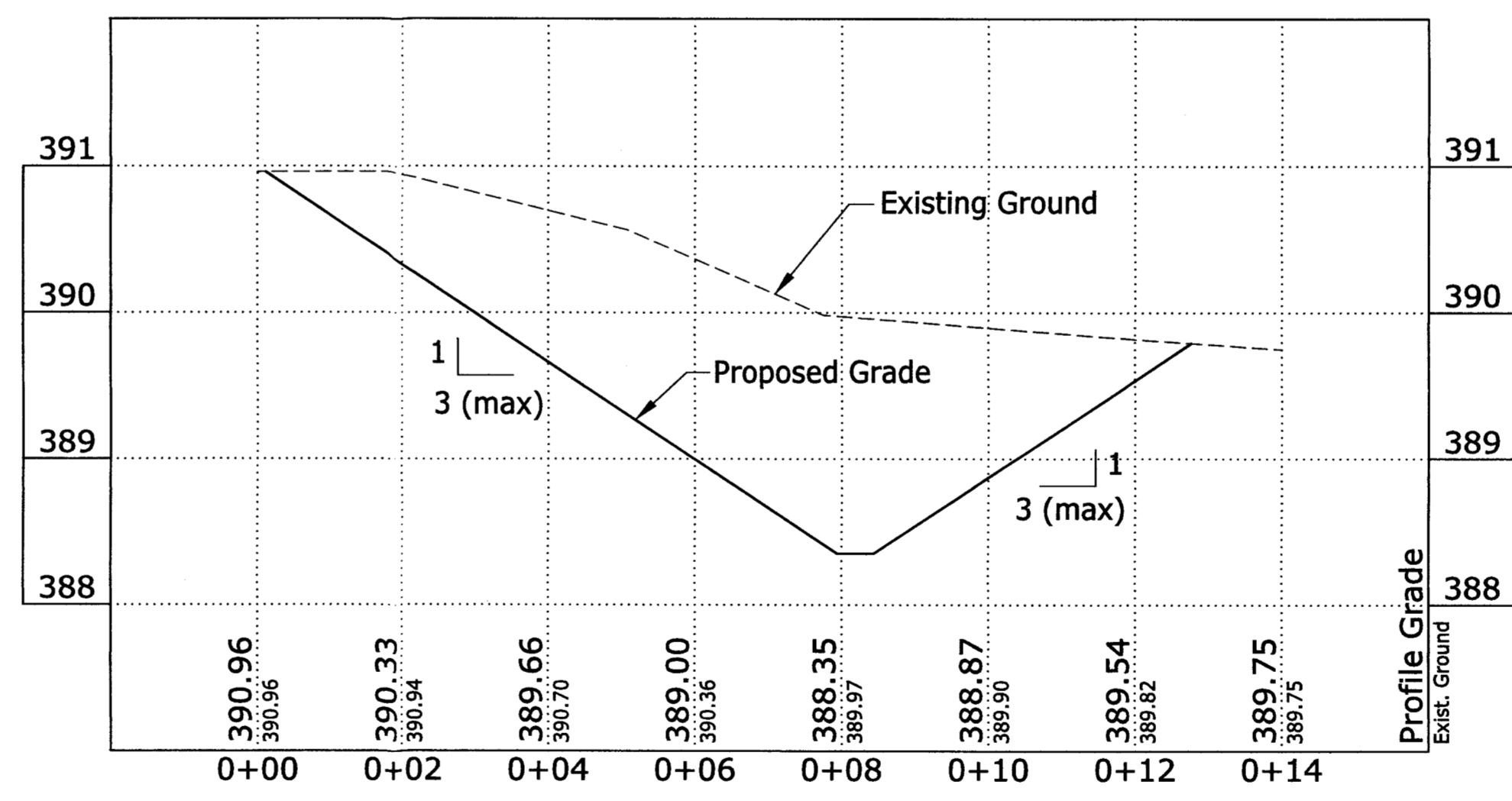
**DETENTION BASIN #2 CROSS SECTION D-D**

Scale: N.T.S.



**BERM CROSS SECTION F-F**

Scale: N.T.S.



**SWALE #8 CROSS SECTION E-E**

Scale: N.T.S.

**Table 1. Permanent Seeding Recommendations**

Open Low-Maintenance Areas (remaining idle more than six months)

Seed Mixtures	Rate/acre Pure Live Seed	Optimum Soil pH
1. Perennial ryegrass - white clover *	70 lbs. 2 lbs.	5.6 to 7.0
2. Perennial ryegrass - tall fescue **	70 lbs. 50 lbs.	5.6 to 7.0
3. Tall fescue ** - white clover *	70 lbs. 2 lbs.	5.5 to 7.5

Steep Banks and Cuts, Low-Maintenance Areas (not mowed)

Seed Mixtures	Rate/acre Pure Live Seed	Optimum Soil pH
1. Smooth brome grass - red clover *	35 lbs. 20 lbs.	5.5 to 7.0
2. Tall fescue ** - white clover *	50 lbs. 2 lbs.	5.5 to 7.5
3. Tall fescue ** - red clover *	50 lbs. 20 lbs.	5.5 to 7.5
4. Orchard grass - red clover * - white clover *	30 lbs. 20 lbs. 2 lbs.	5.6 to 7.0
5. Crownvetch * - tall fescue **	12 lbs. 30 lbs.	5.6 to 7.0

Lawns and High-Maintenance Areas

Seed Mixtures	Rate/acre Pure Live Seed	Optimum Soil pH
1. Bluegrass	140 lbs.	5.5 to 7.0
2. Perennial ryegrass (turf type)	60 lbs. 90 lbs.	5.6 to 7.0
3. Tall fescue (turf type) ** - bluegrass	170 lbs. 30 lbs.	5.6 to 7.5

Channels and Areas of Concentrated Flow

Seed Mixtures	Rate/acre Pure Live Seed	Optimum Soil pH
1. Perennial ryegrass - white *	150 lbs. 2 lbs.	5.5 to 7.0
2. Kentucky bluegrass - smooth bromegrass - switchgrass - timothy - perennial ryegrass - white clover **	20 lbs. 10 lbs. 3 lbs. 4 lbs. 10 lbs. 2 lbs.	5.5 to 7.5
3. Tall fescue * - white clover **	150 lbs. 2 lbs.	5.5 to 7.5
4. Tall fescue ** - perennial ryegrass - Kentucky bluegrass	150 lbs. 20 lbs. 20 lbs.	5.5 to 7.5

\* For best results: (a) legume seed should be inoculated; (b) seeding mixtures containing legumes should preferably be spring-seeded, although the grass may be fall-seeded and the legume frost-seeded; and (c) if legumes are fall-seeded, do so in early fall.  
 \*\* Tall fescue provides little cover for, and may be toxic to some species of wildlife.  
 The IDNR recognizes the need for additional research on alternatives such as buffalograss, orchardgrass, smooth bromegrass, and switchgrass. This research, in conjunction with demonstration areas, should focus on erosion control characteristics, wildlife toxicity, turf durability and drought resistance.

**PERMANENT SURFACE STABILIZATION SPECIFICATIONS:**  
 - The Contractor shall fertilize, seed and mulch all disturbed areas when final grading and land disturbing operations are complete. Seeding requirements shall be in accordance with Table 1, located in Chapter 7, pages 38-39 of the Indiana Storm Water Quality Manual, shown above.  
 - The seed bed shall be prepared by applying 400-600 lbs per acre of 12-12-12 fertilizer and working 2-4 inches into the soil and apply straw/mulch at the rate of 2 tons per acre.  
 - Optimum dates for permanent seeding are March 1 - May 10 and August 10 - September 30.  
 - Temporary seeding should be considered between May 10 and August 10.  
 - Dormant & Frost Seeding should be utilized when temperatures are too low for germination to occur, October 1 - May 9.

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 Application of a material or equipment to Work installed by others constitutes acceptance of that Work and assumption of responsibility for satisfactory installation.

**OLEN A. MERRITT, P.E.**  
 REGISTERED PROFESSIONAL ENGINEER  
 No. PE10403870  
 STATE OF INDIANA  
 PROFESSIONAL ENGINEER

*Al Merritt*  
 SIGNATURE  
 9 Apr 19  
 DATE

**CASH WAGNER & ASSOCIATES, P.C.**  
 414 CITADEL CIRCLE  
 SUITE B  
 EVANSVILLE, IN 47715  
 PH: 812.401.5561  
 FAX: 812.401.5563  
 CELL: 812.774.2988  
 E-MAIL: GMERRIT@CASHWAGNER.COM

NO.	DATE	BY	DESCRIPTION

PROJECT NO.: 14-1887  
 DESIGNED BY: G.A.M.  
 DRAWN BY: G.A.M.  
 FILE NAME: 1887 DrainageDtls  
 LAYOUT TAB:    
 SCALE: As Shown

PROJECT: HUNTER CHASE ESTATES  
 ADDRESS: NORTH GREEN RIVER ROAD  
 EVANSVILLE, INDIANA

DATE: 04.09.19  
 DRAWING NO.: C-102  
 SHEET TITLE: DRAINAGE DETAILS  
 OF: