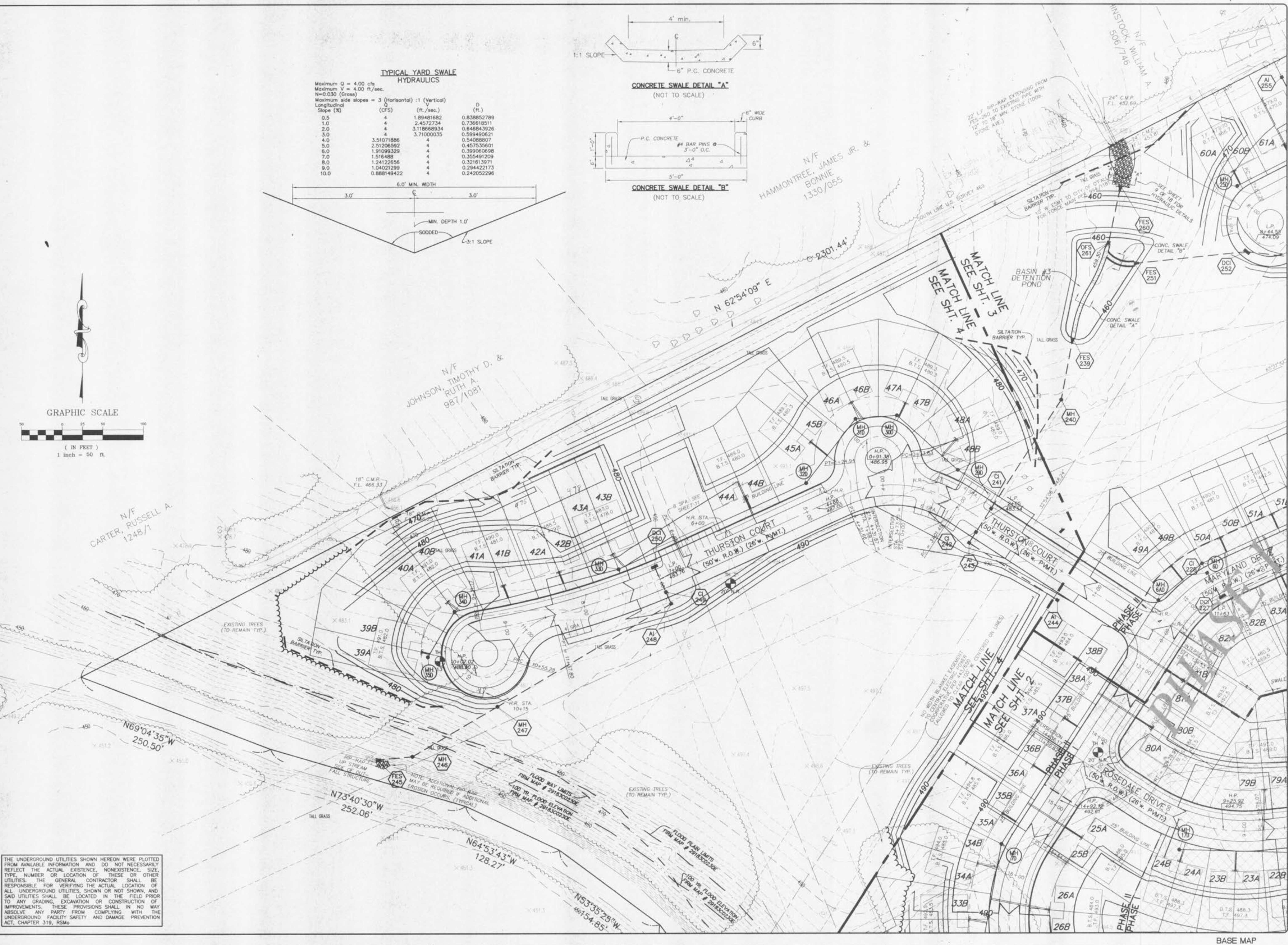
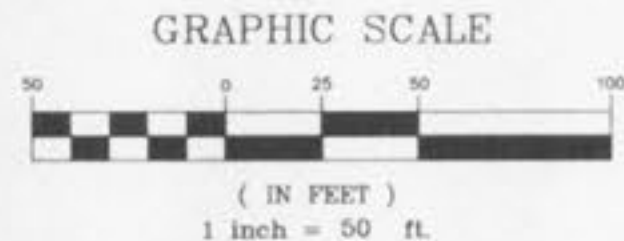
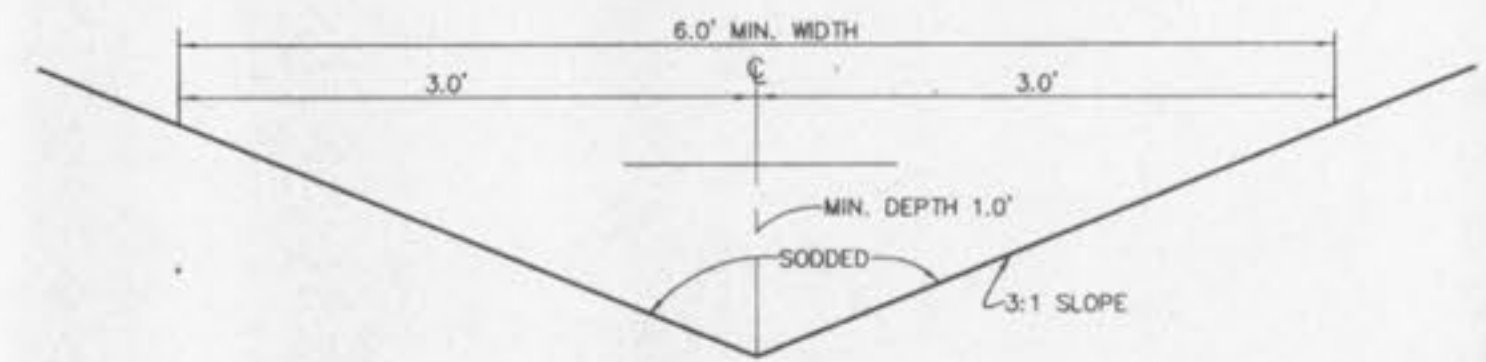
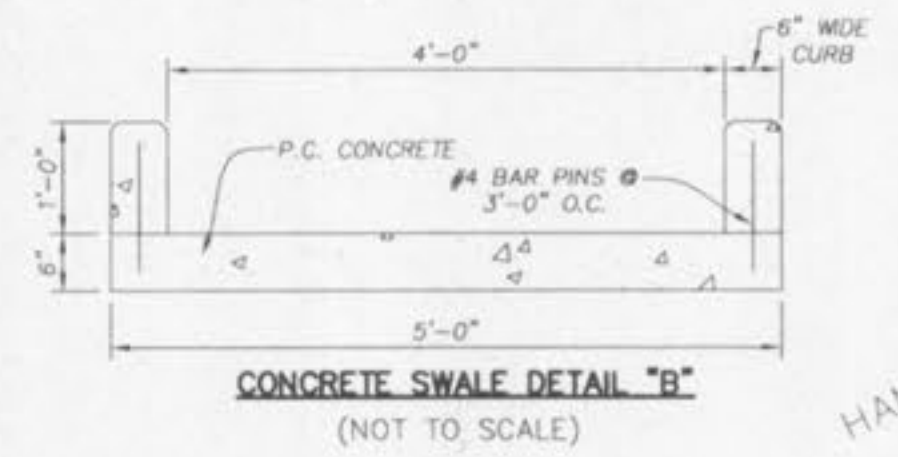
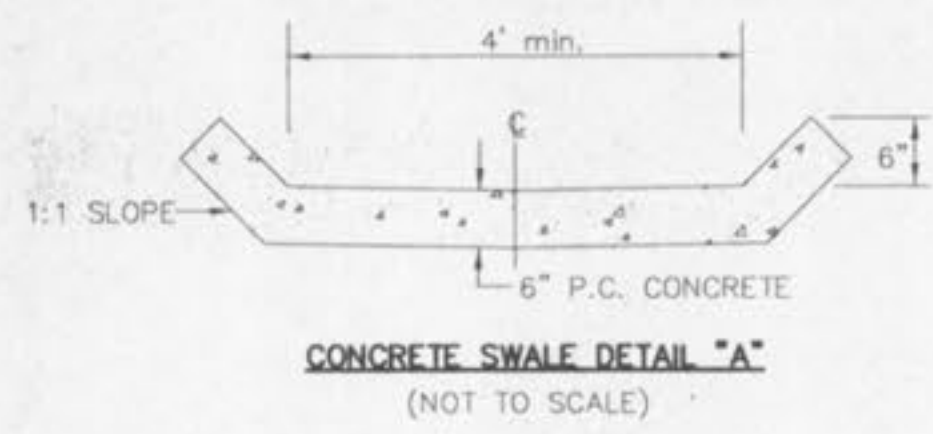


**TYPICAL YARD SWALE HYDRAULICS**

Maximum Q = 4.00 cfs  
 Maximum V = 4.00 ft./sec.  
 N=0.030 (Grass)  
 Maximum side slopes = 3 (Horizontal) : 1 (Vertical)  
 Longitudinal Slope (ft./sec.)

Q (CFS)	V (ft./sec.)	D (ft.)
0.5	1.89481682	0.838852789
1.0	2.4572734	0.736618511
2.0	3.118668934	0.646843926
3.0	3.71000035	0.599490621
4.0	3.51071886	0.54088807
5.0	2.51206592	0.457535601
6.0	1.91098329	0.399366988
7.0	1.516488	0.355491209
8.0	1.24122656	0.321613971
9.0	1.04021299	0.294422173
10.0	0.888148422	0.242052296



THE UNDERGROUND UTILITIES SHOWN HEREON WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SAID UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMo

ISSUE REMARKS/DATE

1	Original Issue 05/28/99
2	PER CITY COMMENTS REISSUED 07/02/99

PREPARED FOR:  
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PROJECT: **VILLAS AT HIGHGROVE PHASE TWO**

DRAWN: [Signature] DESIGNED: [Signature] CHECKED: [Signature]

SHEET TITLE: **GRADING PLAN**

NO.	08 02 036
M.S.D.	SHEET
P#	4
DIGITAL FILE LOCATION	18

BASE MAP