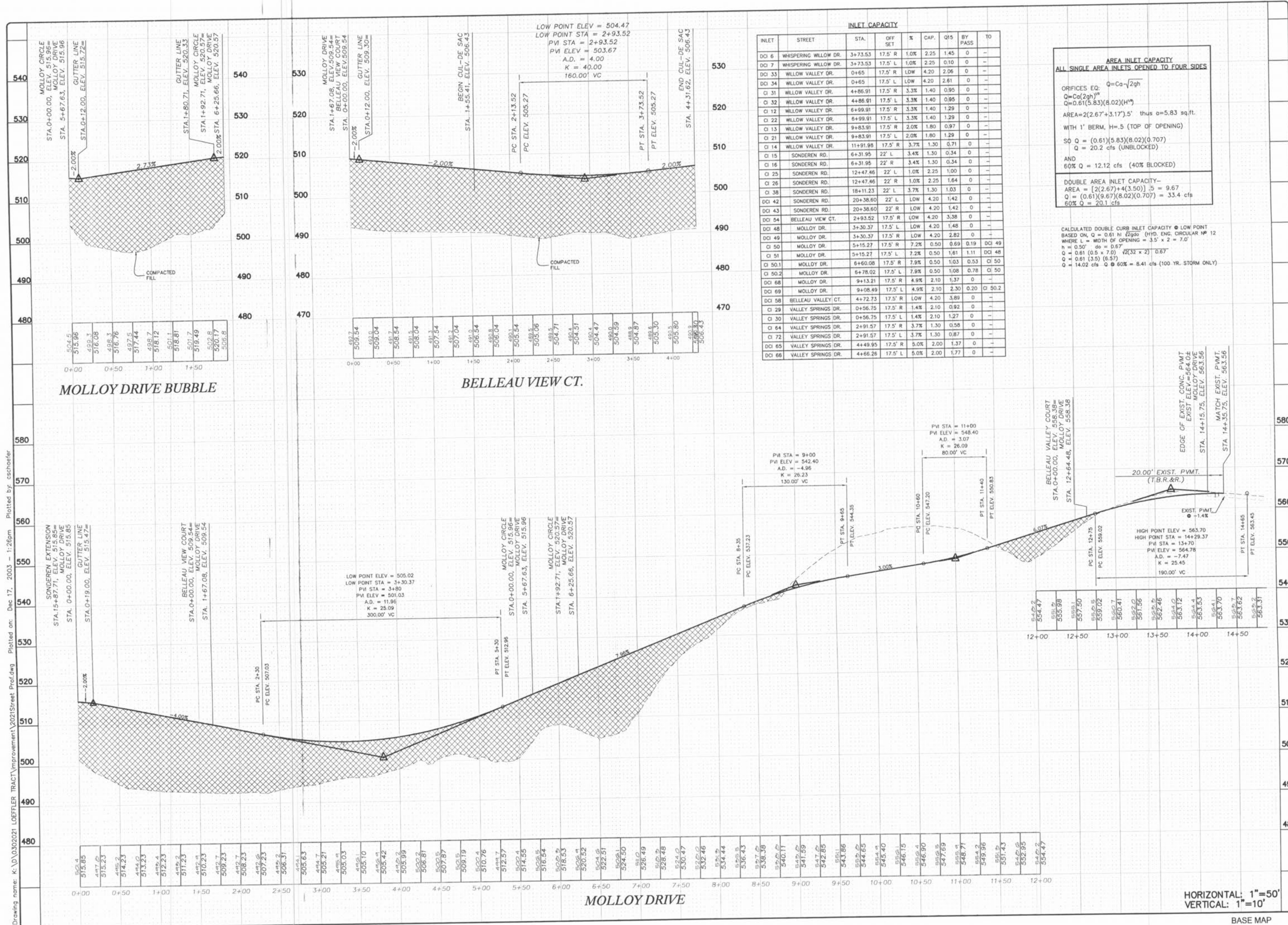


Drawing name: K:\0302021 LOEFFLER TRACT\Improvement\2021\Street Prof.dwg Plotted on: Dec 17, 2003 - 1:26pm Plotted by: cschoeter



INLET CAPACITY

INLET	STREET	STA.	OFF SET	%	CAP.	Q15	BY PASS	TO
DCI 6	WHISPERING WILLOW DR.	3+73.53	17.5' R	1.0%	2.25	1.45	0	
DCI 7	WHISPERING WILLOW DR.	3+73.53	17.5' L	1.0%	2.25	0.10	0	
DCI 33	WILLOW VALLEY DR.	0+65	17.5' R	LOW	4.20	2.06	0	
DCI 34	WILLOW VALLEY DR.	0+65	17.5' L	LOW	4.20	2.61	0	
CI 31	WILLOW VALLEY DR.	4+86.91	17.5' R	3.3%	1.40	0.95	0	
CI 32	WILLOW VALLEY DR.	4+86.91	17.5' L	3.3%	1.40	0.95	0	
CI 12	WILLOW VALLEY DR.	6+99.91	17.5' R	3.3%	1.40	1.29	0	
CI 22	WILLOW VALLEY DR.	6+99.91	17.5' L	3.3%	1.40	1.29	0	
CI 13	WILLOW VALLEY DR.	9+83.91	17.5' R	2.0%	1.80	0.97	0	
CI 21	WILLOW VALLEY DR.	9+83.91	17.5' L	2.0%	1.80	1.29	0	
CI 14	WILLOW VALLEY DR.	11+91.98	17.5' R	3.7%	1.30	0.71	0	
CI 15	SONDEREN RD.	6+31.95	22' L	3.4%	1.30	0.34	0	
CI 16	SONDEREN RD.	6+31.95	22' R	3.4%	1.30	0.34	0	
CI 25	SONDEREN RD.	12+47.46	22' L	1.0%	2.25	1.00	0	
CI 26	SONDEREN RD.	12+47.46	22' R	1.0%	2.25	1.64	0	
CI 38	SONDEREN RD.	18+11.23	22' L	3.7%	1.30	1.03	0	
DCI 42	SONDEREN RD.	20+38.60	22' L	LOW	4.20	1.42	0	
DCI 43	SONDEREN RD.	20+38.60	22' R	LOW	4.20	1.42	0	
DCI 54	BELLEAU VIEW CT.	2+93.52	17.5' R	LOW	4.20	3.38	0	
DCI 48	MOLLOY DR.	3+30.37	17.5' L	LOW	4.20	1.48	0	
DCI 49	MOLLOY DR.	3+30.37	17.5' R	LOW	4.20	2.82	0	
CI 50	MOLLOY DR.	5+15.27	17.5' R	7.2%	0.50	0.69	0.19	DCI 49
CI 51	MOLLOY DR.	5+15.27	17.5' L	7.2%	0.50	1.61	1.11	DCI 48
CI 50.1	MOLLOY DR.	6+60.08	17.5' R	7.9%	0.50	1.03	0.53	CI 50
CI 50.2	MOLLOY DR.	6+78.02	17.5' L	7.9%	0.50	1.08	0.78	CI 50
DCI 68	MOLLOY DR.	9+13.21	17.5' R	4.9%	2.10	1.37	0	
DCI 69	MOLLOY DR.	9+08.49	17.5' L	4.9%	2.10	2.30	0.20	CI 50.2
DCI 58	BELLEAU VALLEY CT.	4+72.73	17.5' R	LOW	4.20	3.89	0	
CI 29	VALLEY SPRINGS DR.	0+56.75	17.5' R	1.4%	2.10	0.92	0	
CI 30	VALLEY SPRINGS DR.	0+56.75	17.5' L	1.4%	2.10	1.27	0	
CI 64	VALLEY SPRINGS DR.	2+91.57	17.5' R	3.7%	1.30	0.58	0	
CI 72	VALLEY SPRINGS DR.	2+91.57	17.5' L	3.7%	1.30	0.87	0	
DCI 65	VALLEY SPRINGS DR.	4+49.95	17.5' R	5.0%	2.00	1.37	0	
DCI 66	VALLEY SPRINGS DR.	4+66.26	17.5' L	5.0%	2.00	1.77	0	

AREA INLET CAPACITY
ALL SINGLE AREA INLETS OPENED TO FOUR SIDES

ORIFICES EQ: $Q = C_a \sqrt{2gh}$
 $Q = C_a (2gh)^{0.5}$
 $Q = 0.61(5.83)(8.02)(H^{0.5})$

$AREA = 2(2.67 + 3.17) \cdot 5'$ thus $a = 5.83$ sq.ft.

WITH 1' BERM, $H = 5$ (TOP OF OPENING)

SO $Q = (0.61)(5.83)(8.02)(0.707)$
 $Q = 20.2$ cfs (UNBLOCKED)

AND
 $60\% Q = 12.12$ cfs (40% BLOCKED)

DOUBLE AREA INLET CAPACITY-
 $AREA = [2(2.67) + 4(3.50)] \cdot 5 = 9.67$
 $Q = (0.61)(9.67)(8.02)(0.707) = 33.4$ cfs
 $60\% Q = 20.1$ cfs

CALCULATED DOUBLE CURB INLET CAPACITY @ LOW POINT
 BASED ON: $Q = 0.61 \cdot H \cdot \sqrt{2gh}$ (HYD. ENG. CIRCULAR #12
 WHERE $L =$ WIDTH OF OPENING = $3.5' \times 2 = 7.0'$
 $H = 0.50'$ $do = 0.67'$
 $Q = 0.61(0.5 \times 7.0) \sqrt{2(32 \times 2) \cdot 0.67}$
 $Q = 0.61(3.5)(6.37)$
 $Q = 14.02$ cfs $Q @ 60\% = 8.41$ cfs (100 YR. STORM ONLY)

PROJECT: **WHISPERING WOODS** STREET PROFILES

DESIGNED: [Signature]

CHECKED: [Signature]

NO. 03 02 021
 M.S.D. SHEET 10 OF 28
 P# 10
 DIGITAL FILE LOCATION: [Path]
 PROJECT: [Path]

PREPARED FOR: **WHISPERING L.L.C.**
 5091 NEW BAUMGARTNER ROAD
 ST. LOUIS, MISSOURI 63129
 (314) 487-6717

PREPARED BY: **THE STERLING CO.**
 ENGINEERS & SURVEYORS
 5055 NEW BAUMGARTNER ROAD
 ST. LOUIS, MISSOURI 63129
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 E-Mail: Sterling@sterling-eng-sur.com

ISSUE/REMARKS/DATE
 1 09/15/03 - Plotted
 2 12-11-03
 3 12/17/03 - Submitted

HORIZONTAL: 1"=50'
 VERTICAL: 1"=10'

BASE MAP