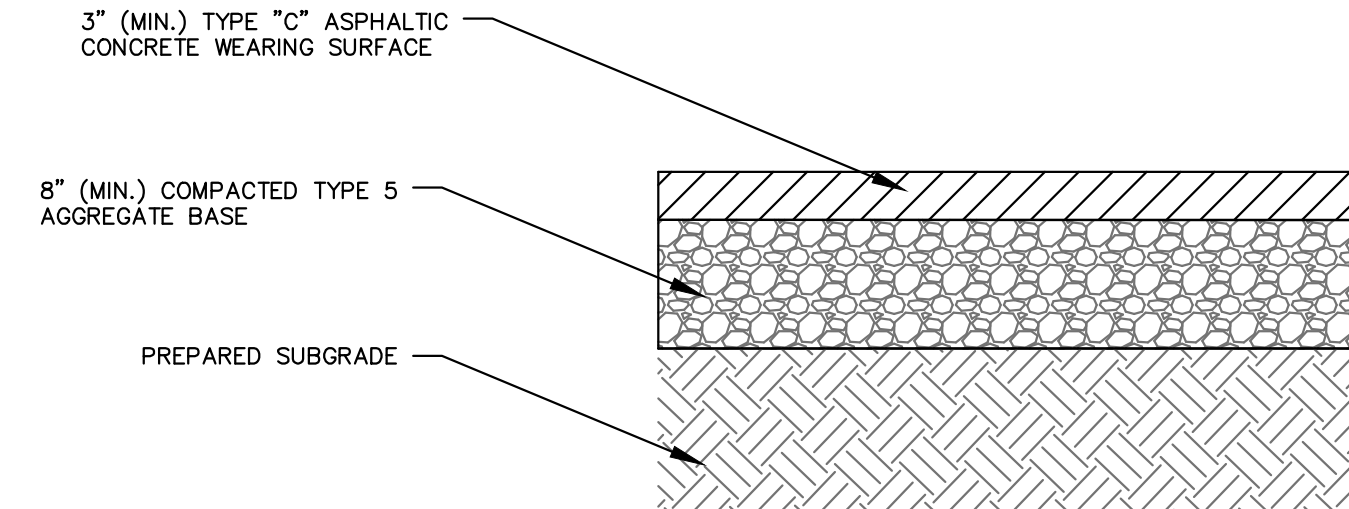
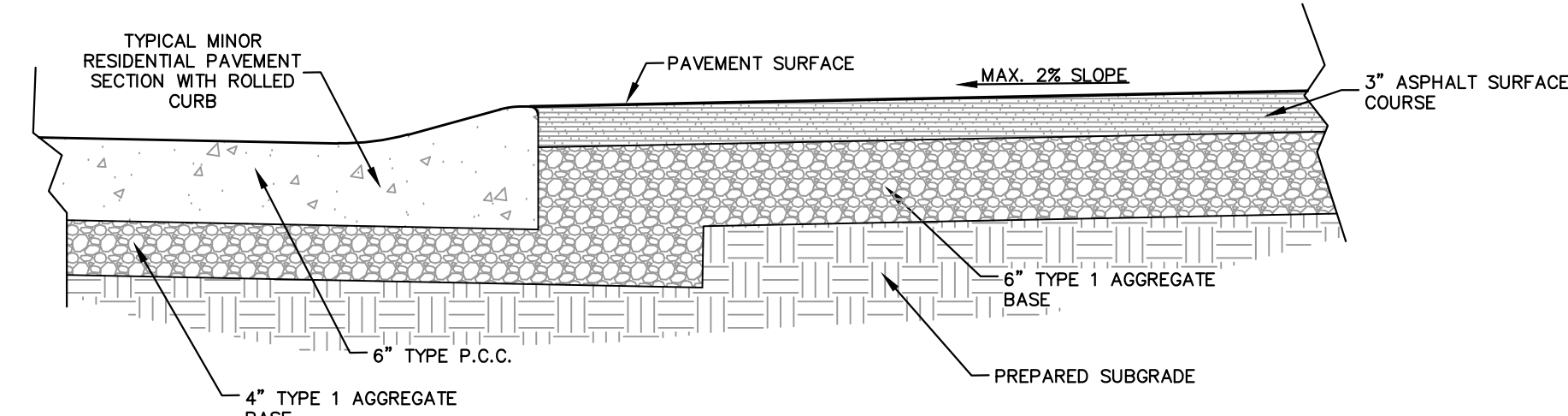
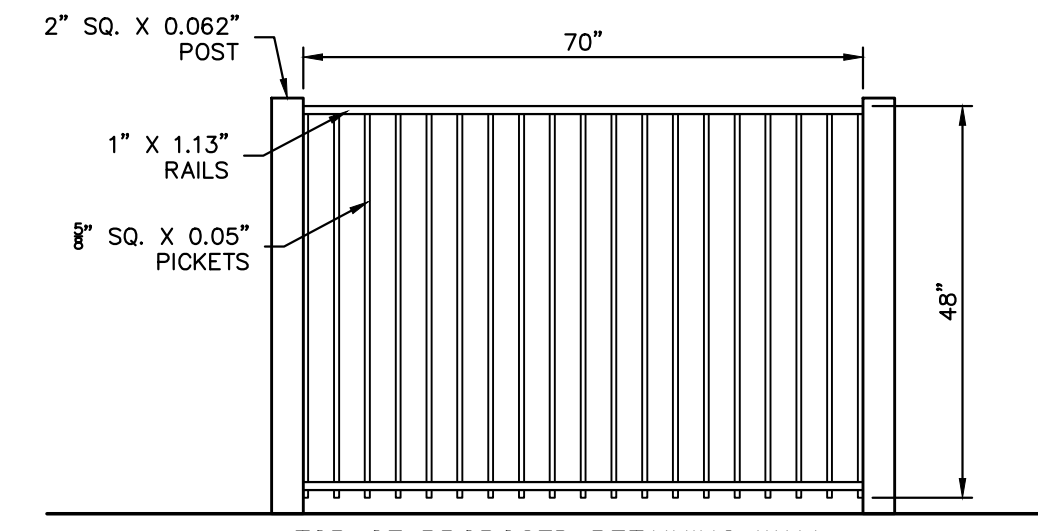
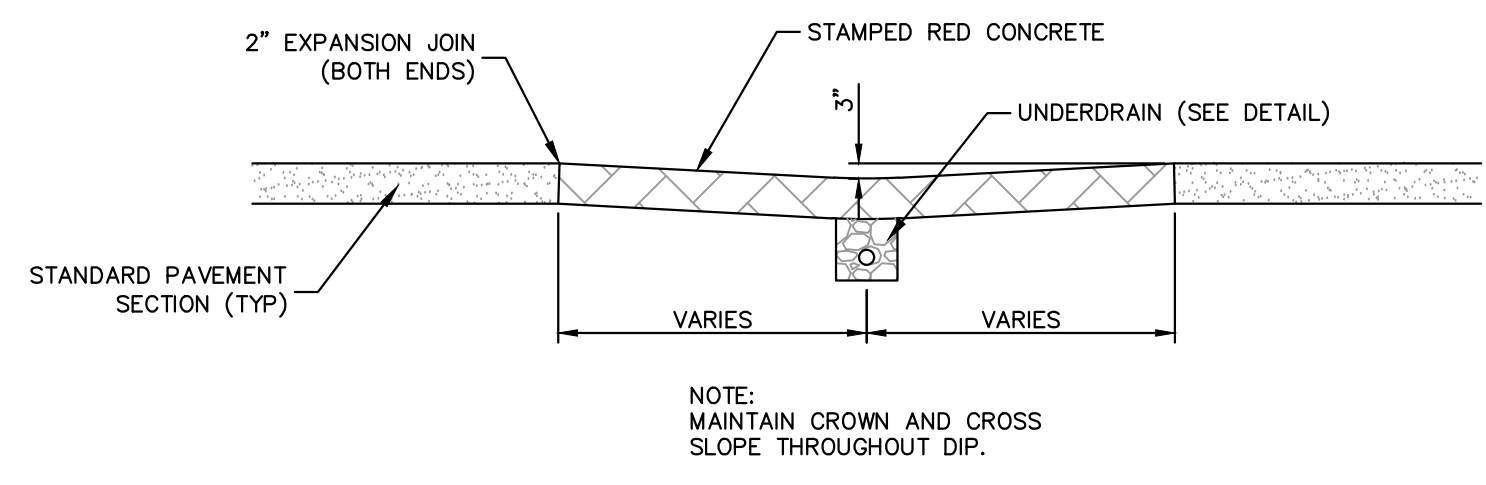
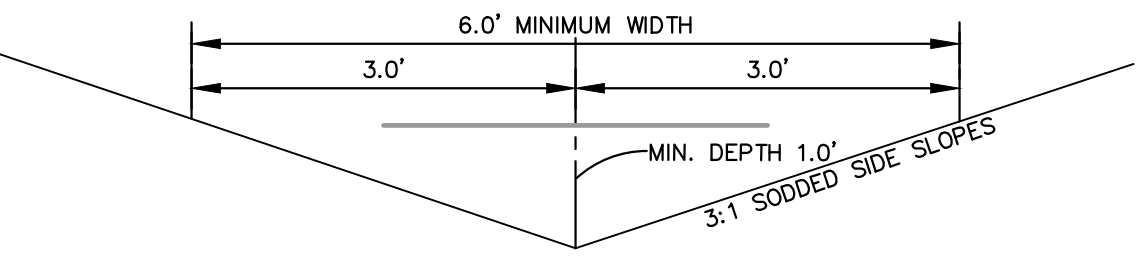
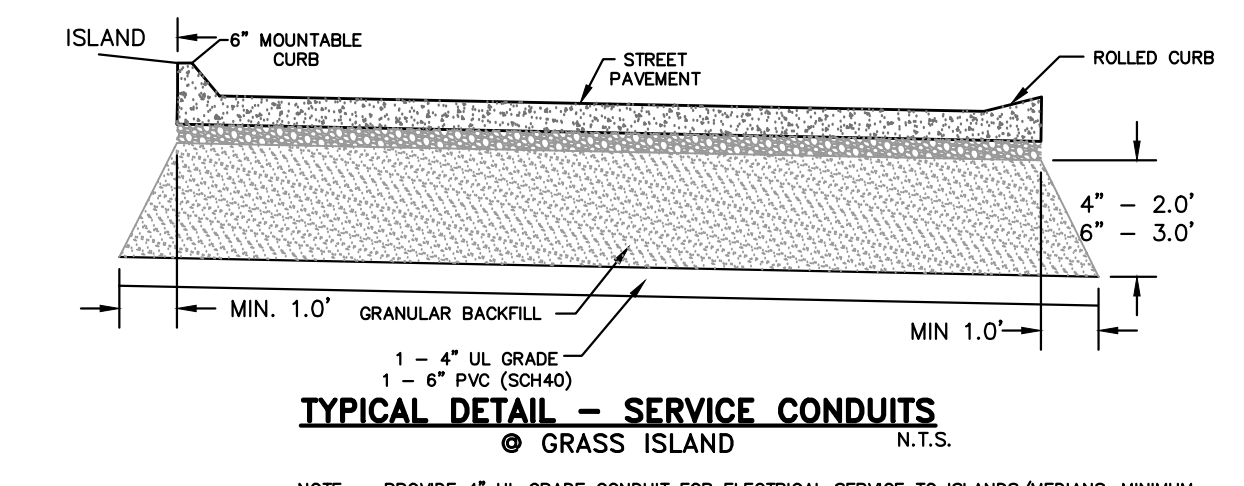
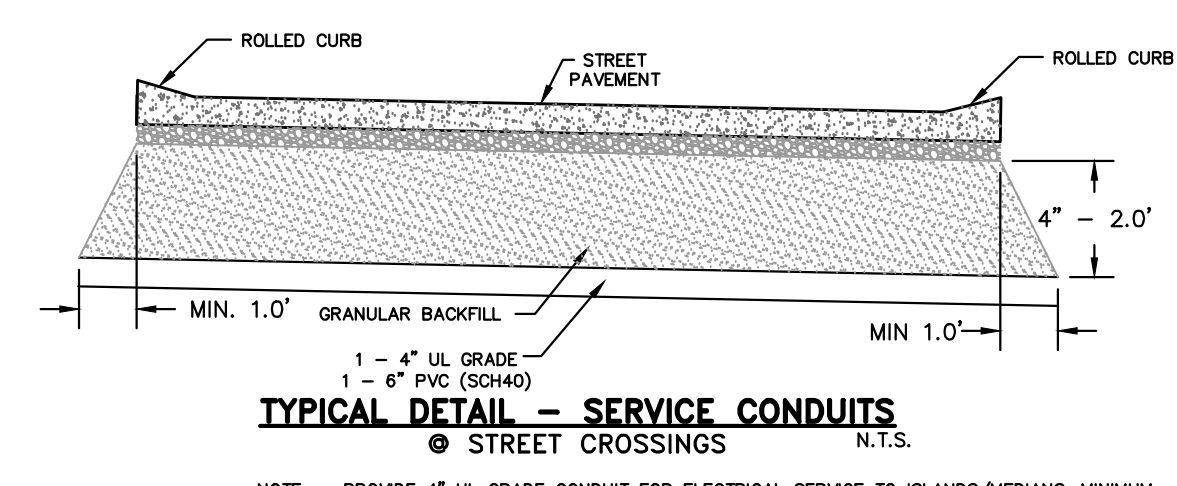
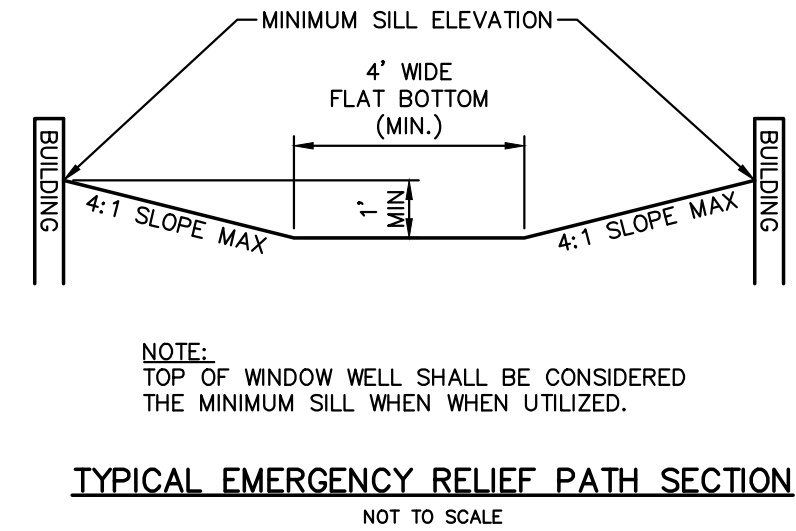
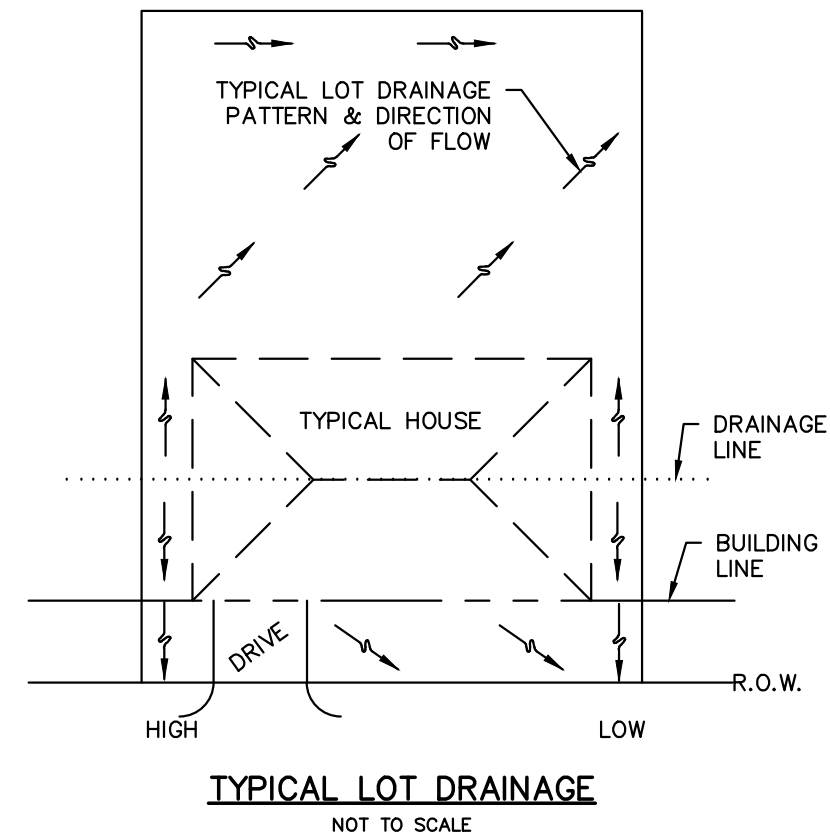


ISSUE	DATE / REMARKS
1	06/28/2017 Initial Submittal
2	10/06/2017 City Comments
3	11/10/2017 City Comments
4	12/16/2017 City Comments
5	01/11/2018 City Resubmittal

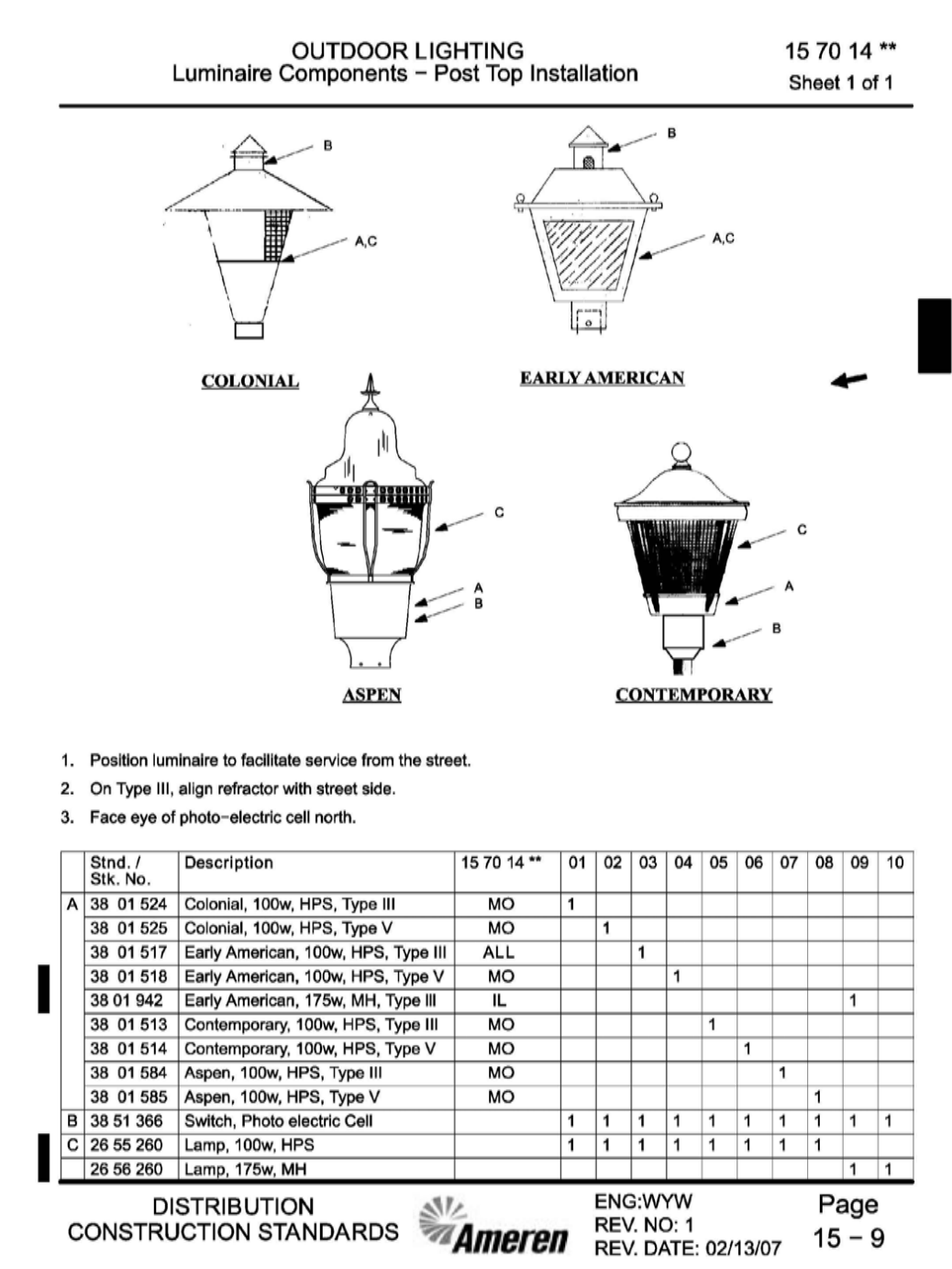
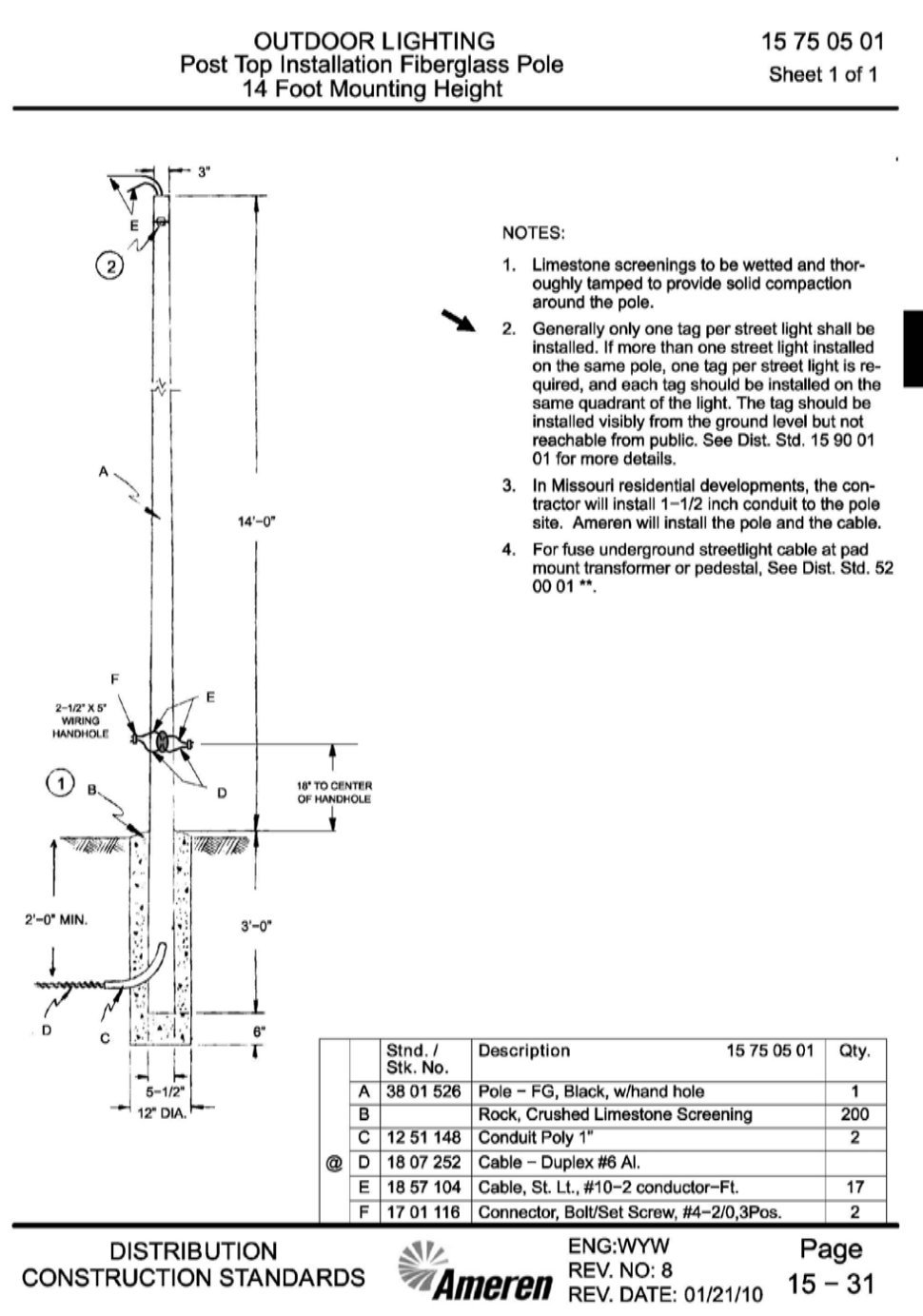
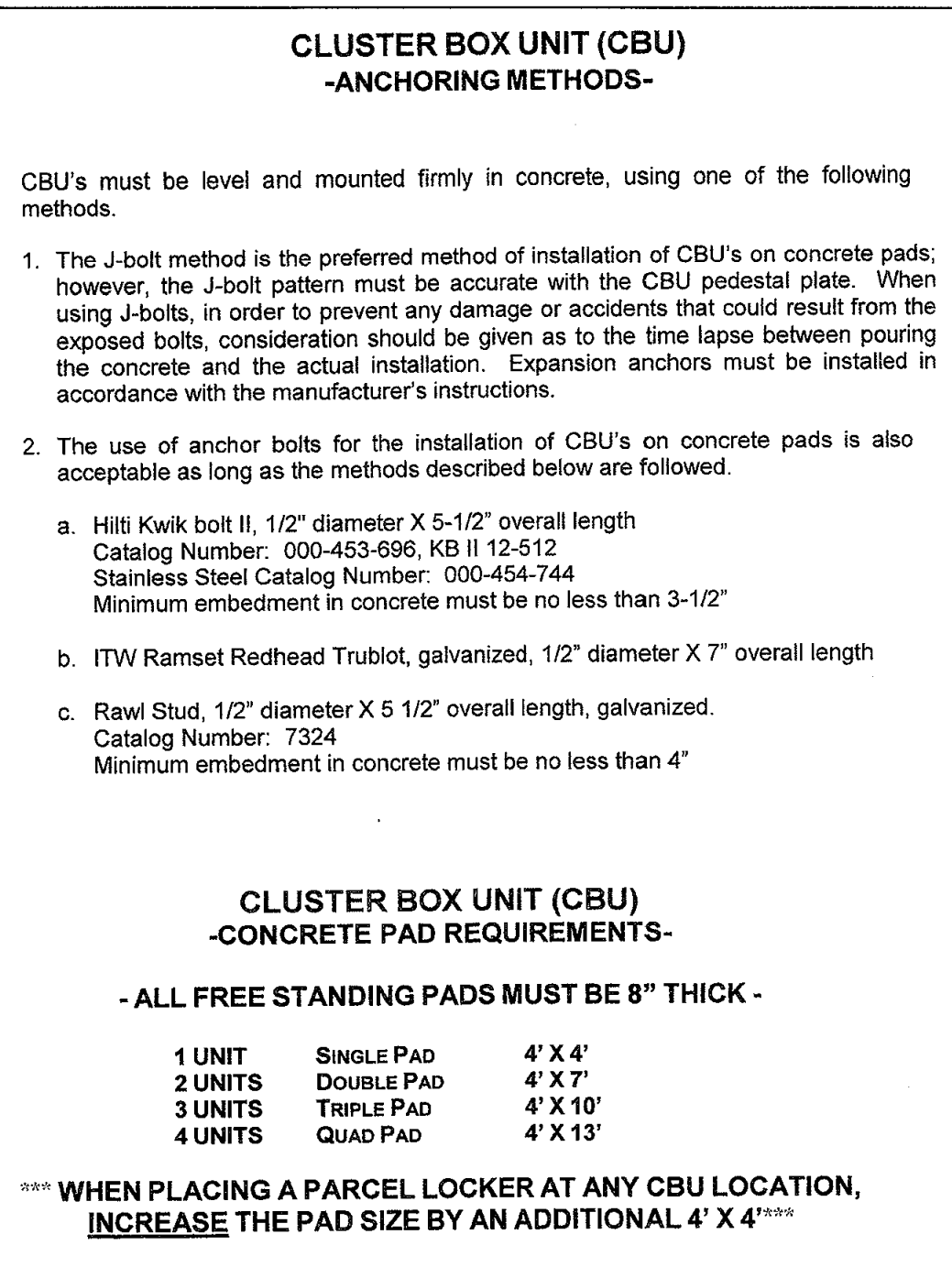
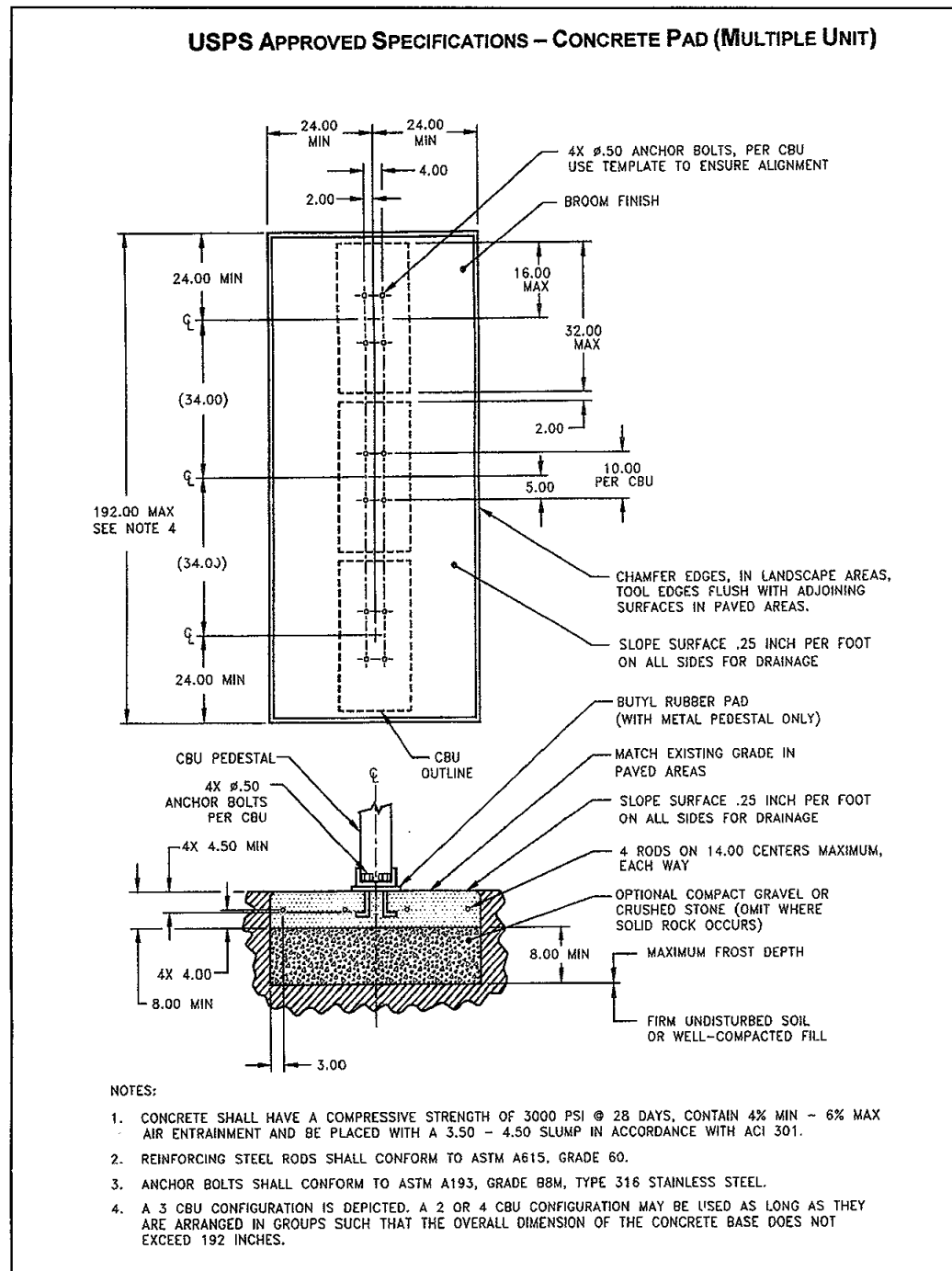
**TYPICAL YARD SWALE**

Maximum Discharge (Q) = 3.00 cfs  
 Maximum Velocity (V) = 3.00 ft/sec  
 N = 0.030 (grass)  
 Maximum side slopes = 3 (horizontal) : 1 (vertical)

Longitudinal Slope (%)	Discharge (cfs)	Velocity (ft/sec)	Depth (ft)
0.5	3.00	1.73	0.76
1.0	3.00	2.23	0.67
2.0	3.00	2.87	0.59
3.0	1.99	3.00	0.47
4.0	1.30	3.00	0.38
5.0	0.92	3.00	0.32
6.0	0.70	3.00	0.28
7.0	0.52	3.00	0.24
8.0	0.43	3.00	0.22
9.0	0.36	3.00	0.20
10.0	0.32	3.00	0.19



**TYPICAL PAVEMENT DIP CROSS SECTION**



**POSTAL SERVICE DETAILS FOR MULTI-UNIT CBU PLACEMENT**

**TYPICAL STREET LIGHTING**

**PROJECT TITLE**  
*Brookview*  
OFFALLON, MISSOURI

**THE STERLING CO.**  
ENGINEERS & SURVEYORS  
5055 New Baumgartner Road  
St. Louis, Missouri 63129  
Ph 314-487-0440 Fax 314-487-8944  
www.sterling-eng-sur.com  
Corporate Certificate of Authority #001348



Date: 01/11/18  
SEAN ACKLEY  
LICENSE # PE-2009018679  
Civil Engineer

**McBride Guthrie, LLC**  
16091 Swingley Ridge Road, Suite 300  
Chesterfield, Missouri 63017  
Ph. (636) 537-2000  
Fax (636) 537-2546

**P-Z No.** 17-005894  
**City No.** 17-008288  
**Date:** 01/11/18  
**Job No.** 17-02-041

**Page No.**  
**13.3**

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