

FACTOR OF SAFETY = 1.5											
PIPE SIZE	PIPE MATERIAL	8" BEND	40" BEND	22-1/2" BEND	11-1/2" BEND	VALVE/ PULLER (NOTES 3)	TEE BRANCH (NOTES 4)	REDUCER (NOTES 4)	40" VERT.	32-1/2" VERT.	11-1/2" VERT.
6"	D.I.	29'	21'	6'	3'	50'	26'	26'	21'	10'	5'
8"	D.I.	36'	21'	6'	4'	65'	41'	21'	23'	13'	7'
10"	D.I.	43'	21'	6'	5'	77'	53'	26'	32'	16'	8'
12"	D.I.	51'	21'	10'	6'	91'	67'	27'	36'	18'	9'
6"	PVC	29'	21'	6'	3'	78'	25'	40'	32'	16'	8'
8"	PVC	37'	21'	6'	4'	102'	49'	43'	42'	21'	10'
10"	PVC	44'	21'	9'	5'	122'	68'	41'	51'	25'	12'
12"	PVC	51'	21'	11'	6'	143'	89'	42'	60'	29'	12'

1. ALL JOINTS SHALL BE RESTRAINED ON BOTH SIDES OF THE FITTING AND DOCUMENTED BY THE INSPECTOR FOR THE LENGTH SHOWN UNLESS OTHERWISE INDICATED.

2. RESTRAINED LENGTH SHOWN REFERS TO ANY DESIGNED OR POTENTIAL LINE STOP, INCLUDING GATE VALVES.

3. RESTRAINED LENGTH SHOWN REFERS TO THE BRANCH LINE ONLY, THE CONTINUOUS PIPE LENGTH OF THE MAIN RUN SHALL BE A MINIMUM OF 10' ON EACH SIDE OF THE FITTING.

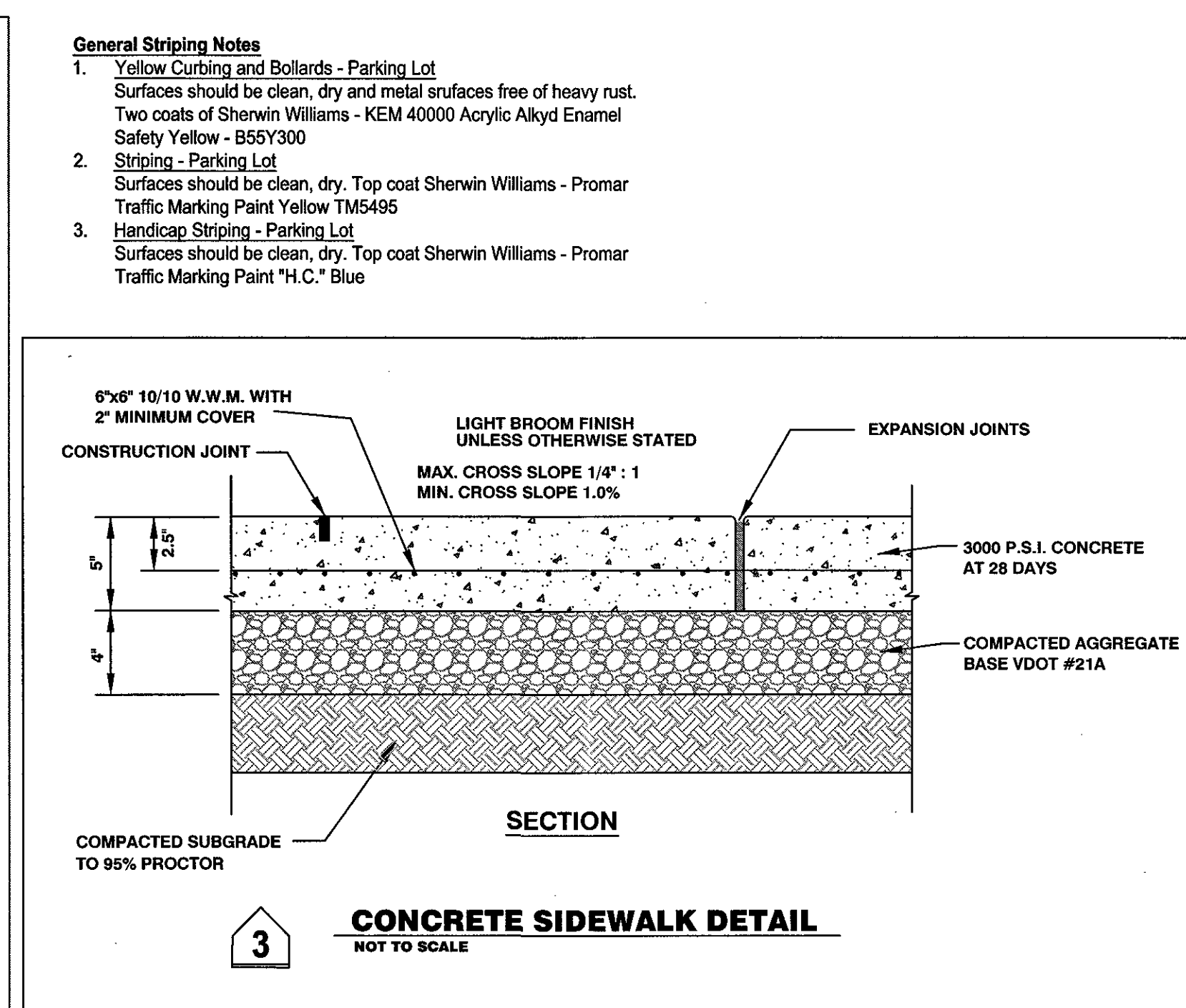
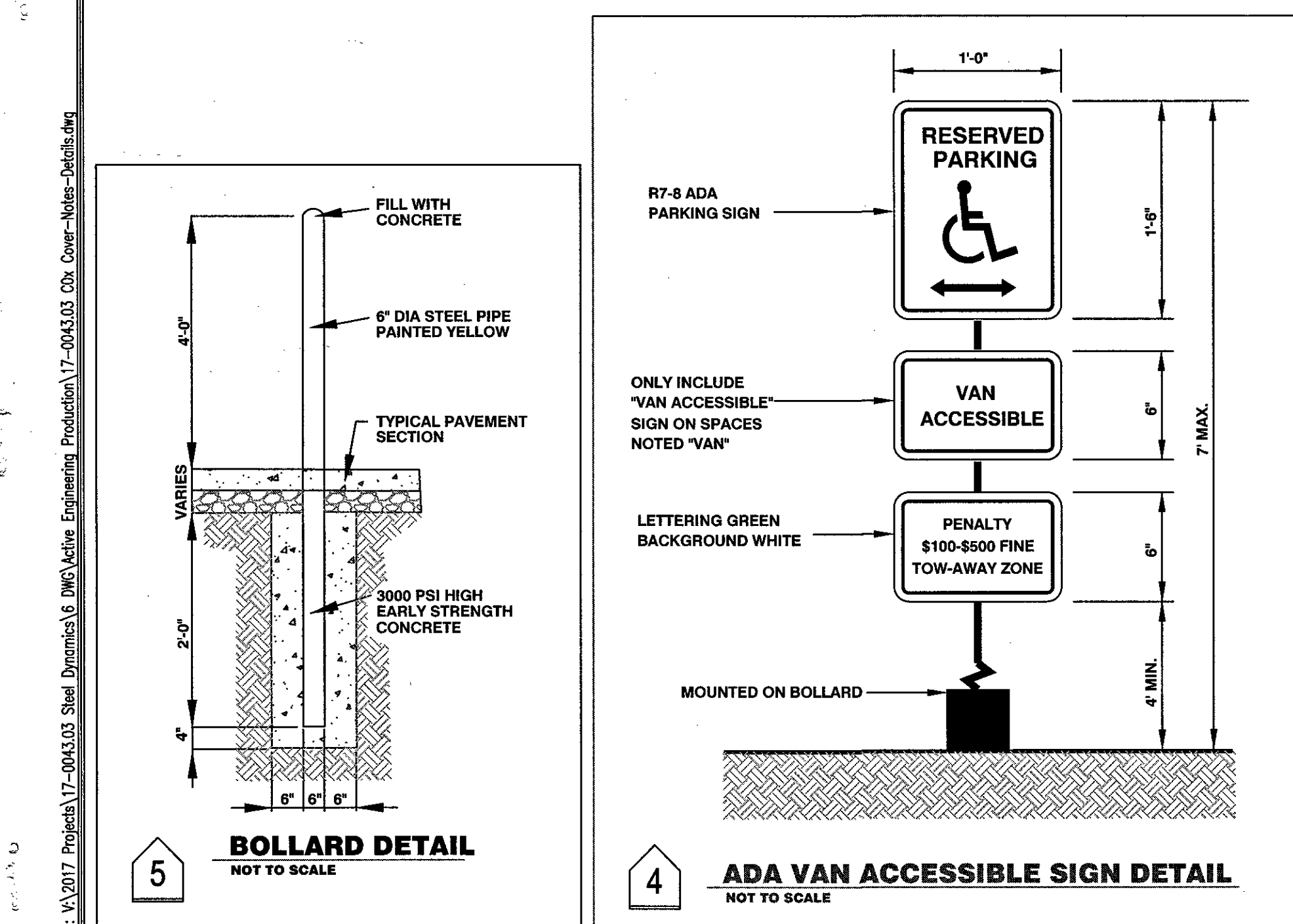
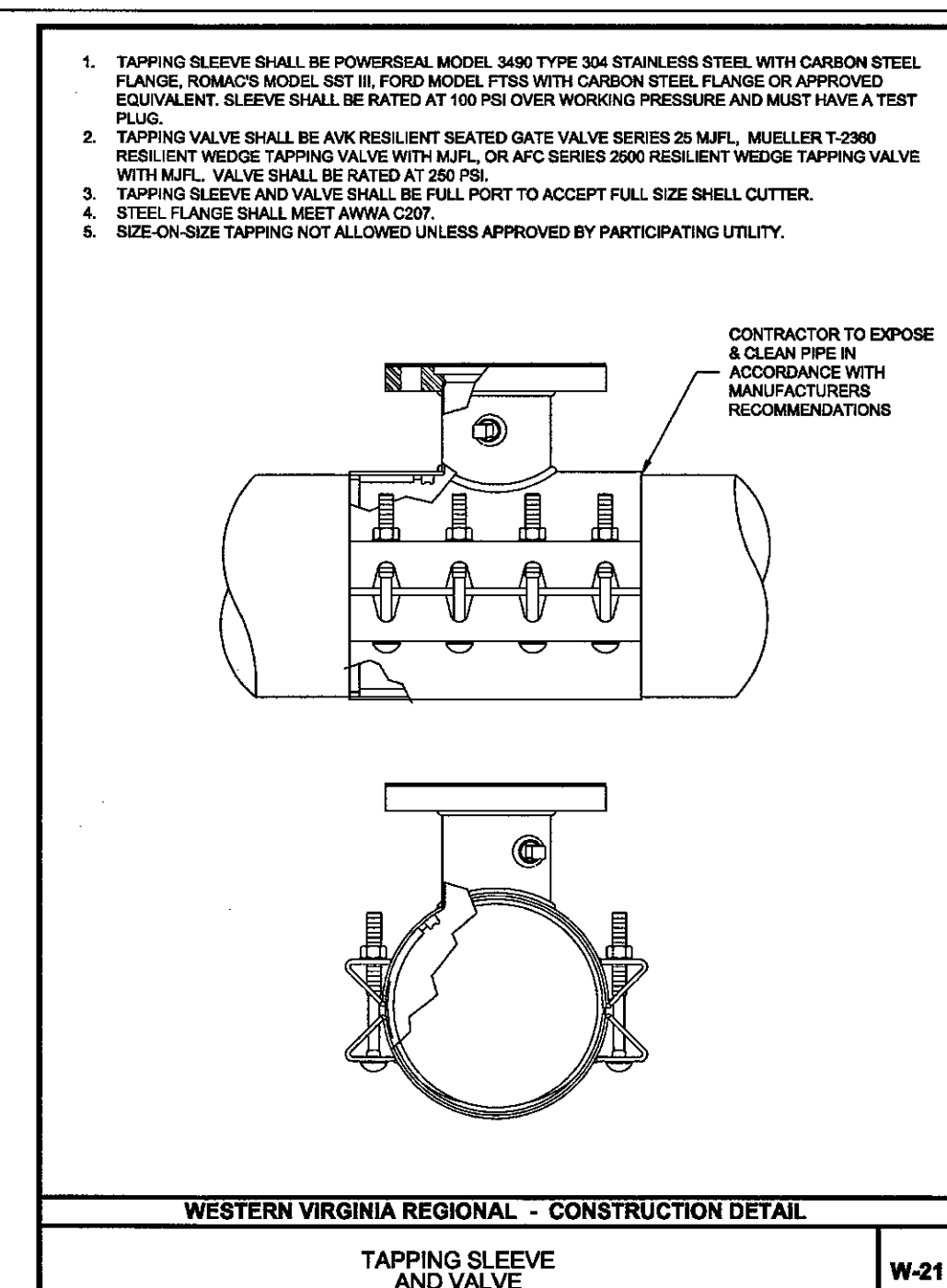
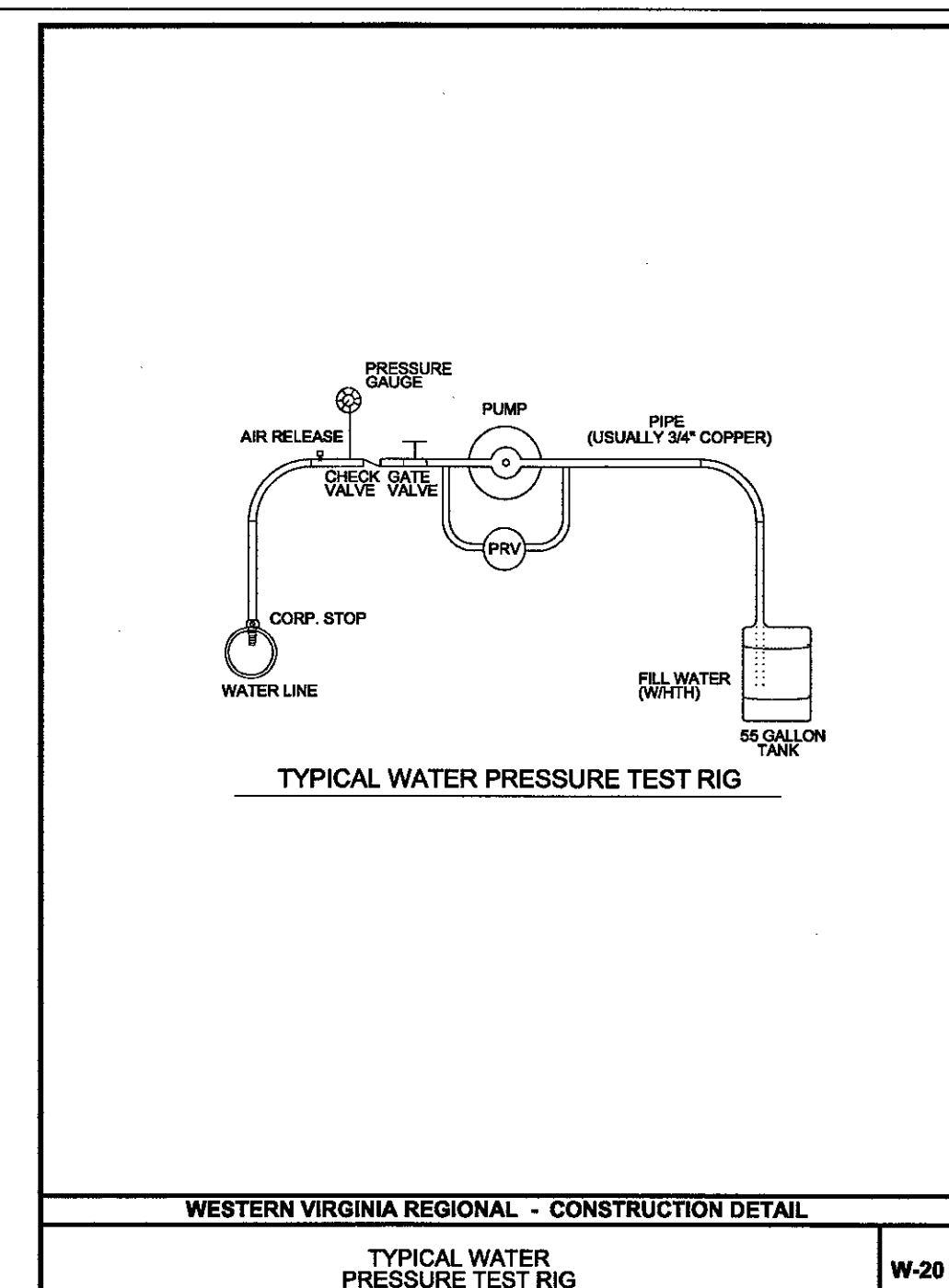
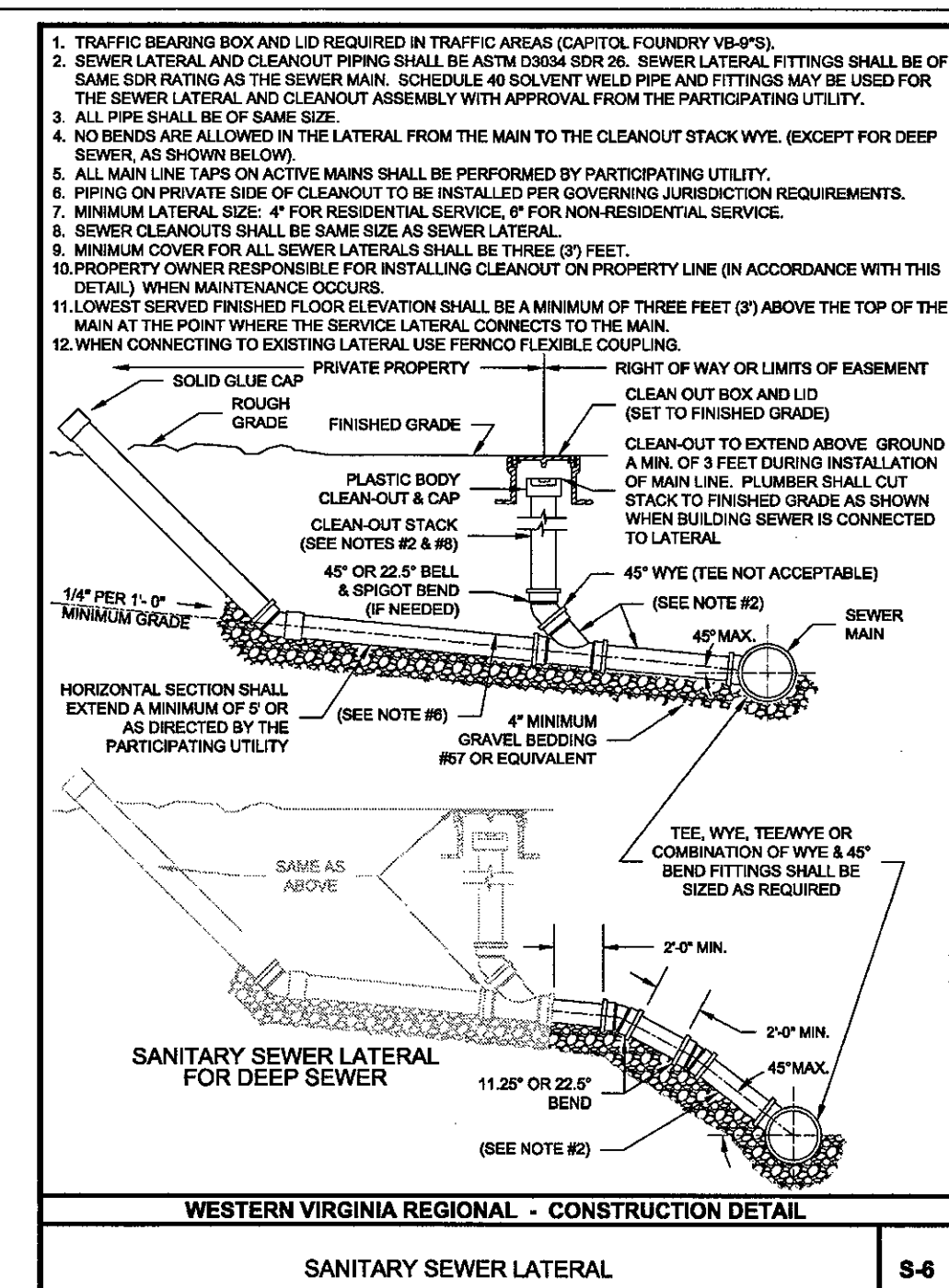
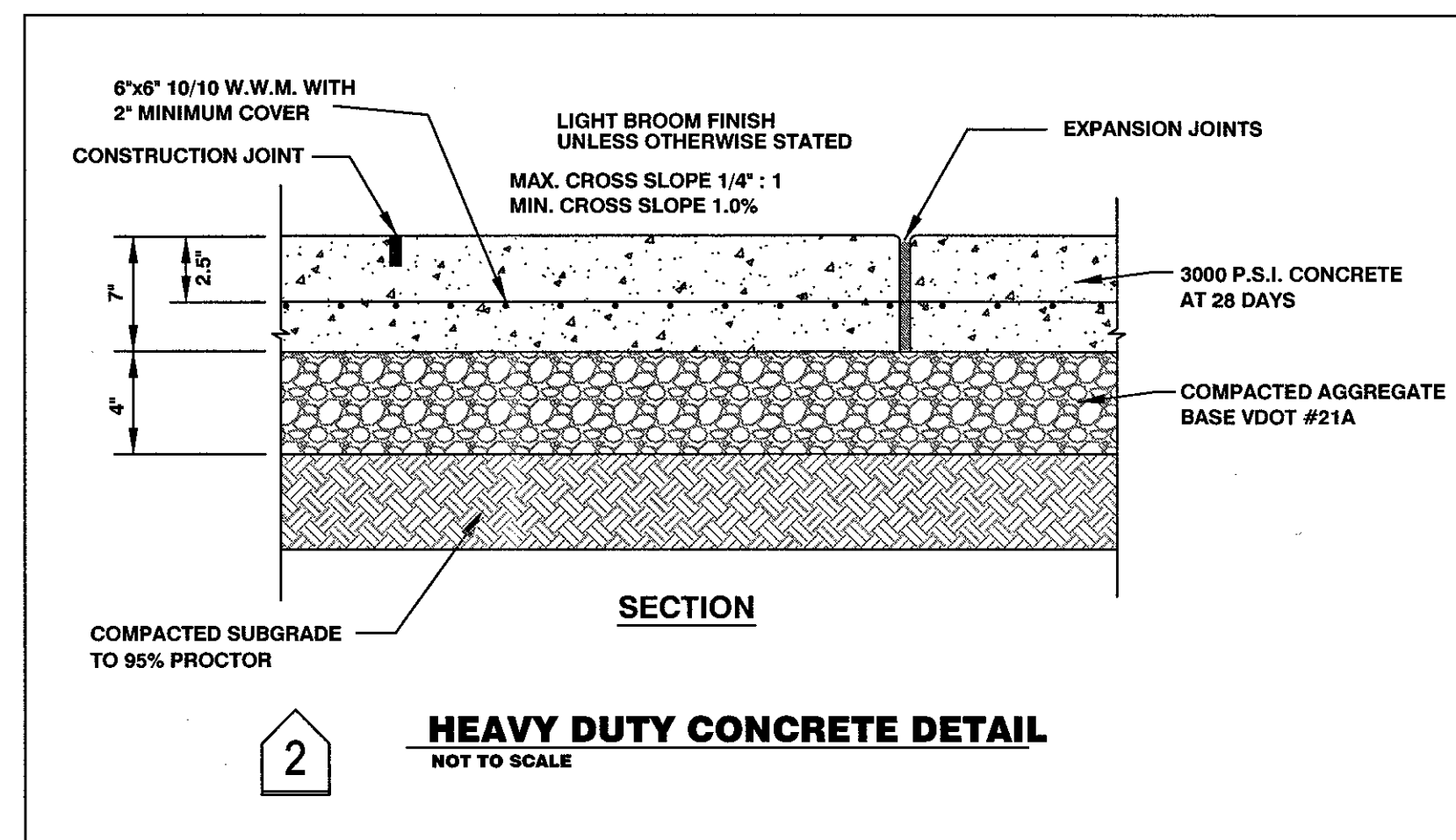
4. RESTRAINED LENGTH SHOWN IS BASED ON REDUCING PIPE DIAMETER TO ONE SIZE SMALLER THAN PIPE LISTED (ANY OTHER DIAMETER REDUCTION WILL REQUIRE ADDITIONAL CALCULATIONS BEFORE INSTALLATION). RESTRAINED LENGTH SHOWN IS UPSTREAM ON THE LARGE SIDE OF THE REDUCER.

5. **12" AND SMALLER DIAMETERS:** IF UNDER 150 PSI WORKING PRESSURE, RESTRAINED JOINT(S) ARE TO BE USED. IF EQUAL TO OR OVER 150 PSI WORKING PRESSURE, BOTH THRUST BLOCK(S) AND RESTRAINED JOINT(S) SHALL BE USED (UNLESS OTHERWISE APPROVED BY THE PARTICIPATING UTILITY).

LARGER THAN 12" DIAMETER: IF UNDER 100 PSI WORKING PRESSURE, RESTRAINED JOINT(S) ARE TO BE USED. IF EQUAL TO OR OVER 100 PSI WORKING PRESSURE, BOTH THRUST BLOCK(S) AND RESTRAINED JOINT(S) SHALL BE USED (UNLESS OTHERWISE APPROVED BY THE PARTICIPATING UTILITY).

6. FOR RESTRAINED JOINT PIPING REQUIREMENTS AT FITTING, R/L AND R/L DIP MAY BE USED INTER-CHANGEABLY WITH REDUCING FITTINGS. CONTRACTOR MUST PLAN ACCORDINGLY FOR THE DIFFERENCE IN PVC AND DIP BELL AND SPOUT DIMENSIONS.

WESTERN VIRGINIA REGIONAL - CONSTRUCTION DETAIL		W-19
MINIMUM THRUST RESTRAINT OF PIPE JOINTS DESIGN LENGTHS		
02/10/15		



General Striping Notes

- Yellow Curbing and Bollards - Parking Lot
Surfaces should be clean, dry and metal surfaces free of heavy rust. Two coats of Sherwin Williams - KEM 40000 Acrylic Alkyd Enamel Safety Yellow - B55Y300
- Striping - Parking Lot
Surfaces should be clean, dry. Top coat Sherwin Williams - Promar Traffic Marking Paint Yellow TM5495
- Handicap Striping - Parking Lot
Surfaces should be clean, dry. Top coat Sherwin Williams - Promar Traffic Marking Paint "H.C." Blue

City of Roanoke
Planning, Building, & Development
COMPREHENSIVE DEVELOPMENT PLAN

**FIELD REVISION
APPROVED**

by Adrian Gilbert 12/26/2017

parker
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CLYDE D. SPENCER
Lic. No. 36456
12/14/2017
PROFESSIONAL ENGINEER

STEEL DYNAMICS

Spare Parts Warehouse 2017

Tax # 6021103

City of Roanoke, Virginia

REVISIONS:

Rev.	Description	Date
Rev. 1	per City Comments 2017-09-18	2017-09-18
Rev. 2	Client Information	2017-09-27
Rev. 3	Revised for consistency	2017-10-16
Rev. 4	Revised for Water & Sewer	2017-11-01
Field Rev. #1	Utility Conflicts	2017-12-14

DESIGNED BY: CDS

DRAWN BY: CDS

CHECKED BY: SRB

DATE:
September 18, 2017

SHEET TITLE:
Site Details

SCALE:

SHEET NO.
C10