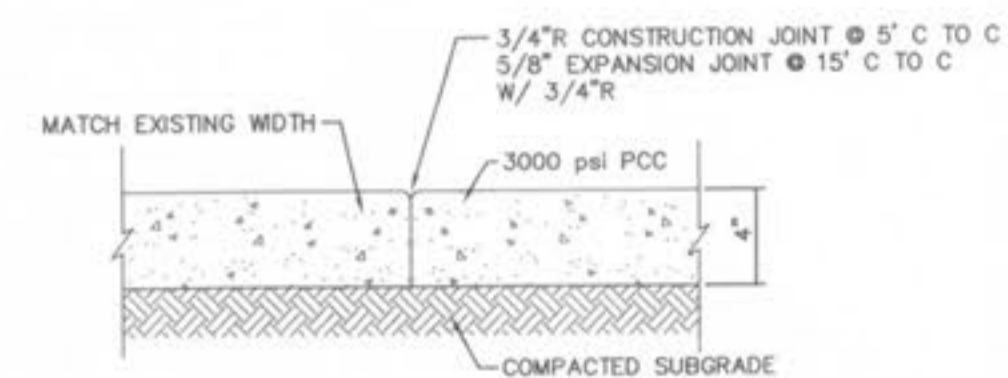




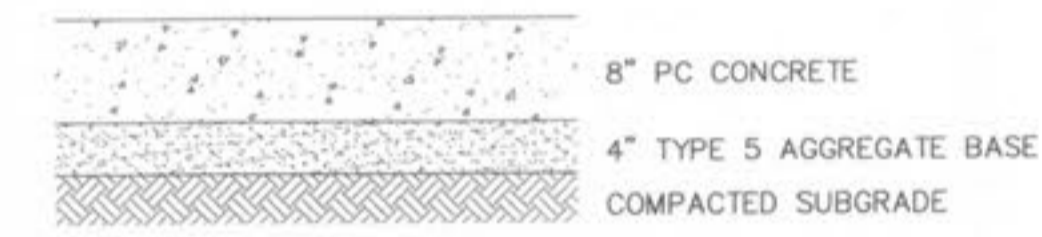
DISCLAIMER OF RESPONSIBILITY  
I HEREBY CERTIFY THAT THE DOCUMENTS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THE SHEETS AND I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, PROFESSIONAL ESTIMATES, REPORTS OR OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SUBJECT.

DESIGNED: ERB  
CHECKED: CEM  
DATE: 12/05/02  
PROJECT NO.: 01-067

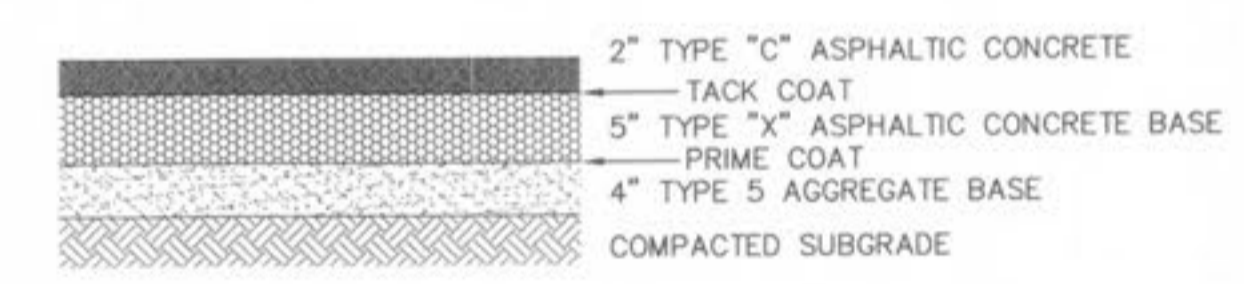
SHEET  
28 OF 29



**SIDEWALK REPAIR DETAIL**  
NOT TO SCALE



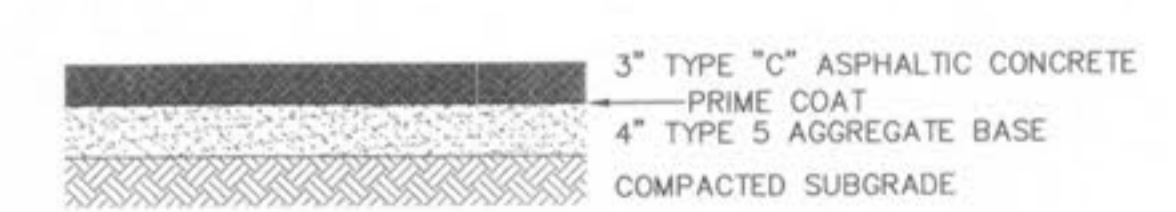
**CONCRETE PAVEMENT SECTION — ROADWAY & COMMERCIAL DRIVEWAY**  
NOT TO SCALE



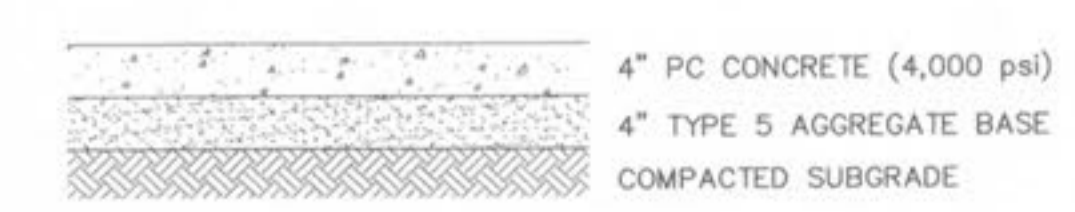
**ASPHALT PAVEMENT SECTION — ROADWAY & COMMERCIAL DRIVEWAY**  
NOT TO SCALE



**GRAVEL SECTION — DRIVEWAY**  
NOT TO SCALE



**ASPHALT PAVEMENT SECTION — RESIDENTIAL DRIVEWAY**  
NOT TO SCALE



**CONCRETE PAVEMENT SECTION — RESIDENTIAL DRIVEWAY**  
NOT TO SCALE

FITTING	PIPE SIZE			
	16"	20"	24"	30"
90° BEND, TEE, PLUG	157'	194'	232'	288'
VALVE	157'	194'	232'	288'
45° BEND	130'	161'	192'	239'
22 1/2° BEND	62'	77'	92'	115'
11 1/4° BEND	31'	38'	46'	57'

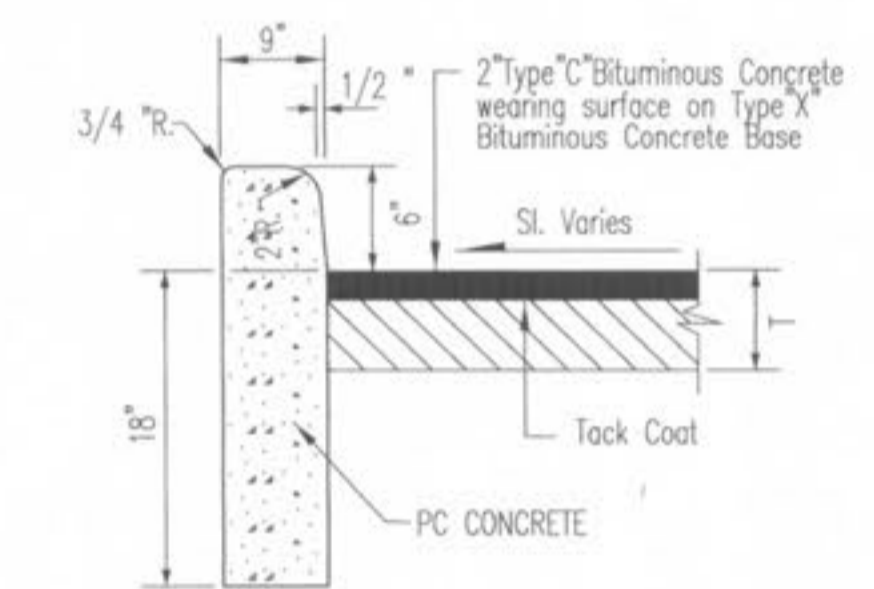
L=LENGTH OF RESTRAINT

FITTING	PIPE SIZE	
	24"-20"	30"-24"
REDUCER	69'	101'

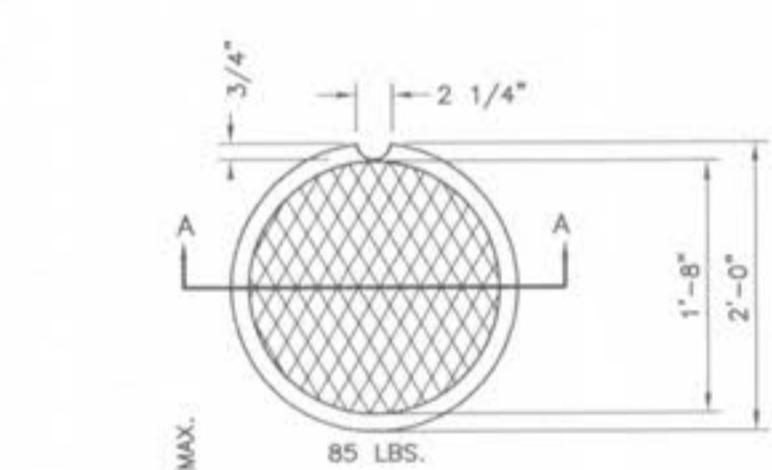
L=LENGTH OF RESTRAINT

1. LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
2. MINIMUM 3.5' GROUND COVER REQUIRED.
3. BASED ON 110 PSI INTERNAL PRESSURE AND 100 PSI SURGE PRESSURE.
4. LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE RESTRAINED TOGETHER.
5. LENGTH OF RESTRAINED PIPE CHART IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR MEGALUGS.
6. CROSSES MUST BE RESTRAINED IN ALL APPLICABLE DIRECTIONS.

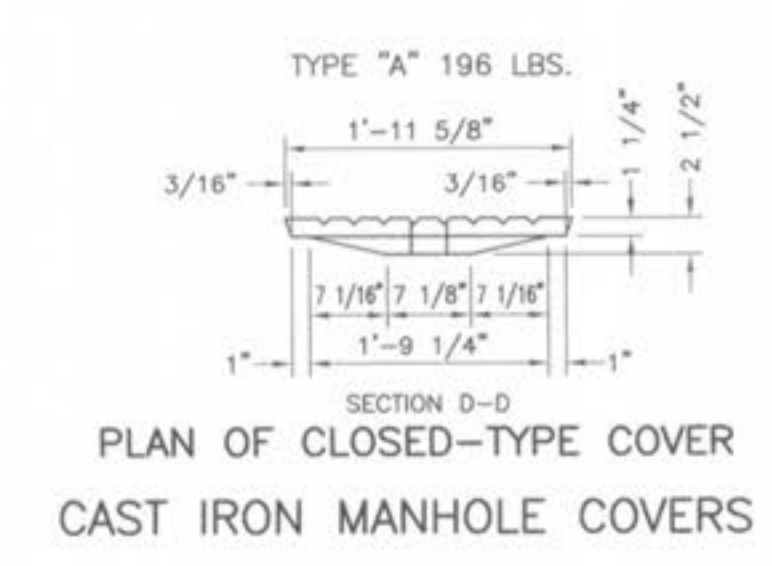
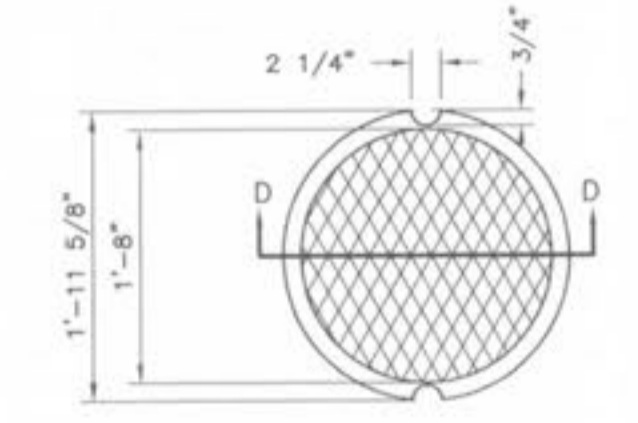
**RESTRAINT LENGTH DETAIL**  
NOT TO SCALE



**TYPE S CONCRETE CURB**  
NOT TO SCALE



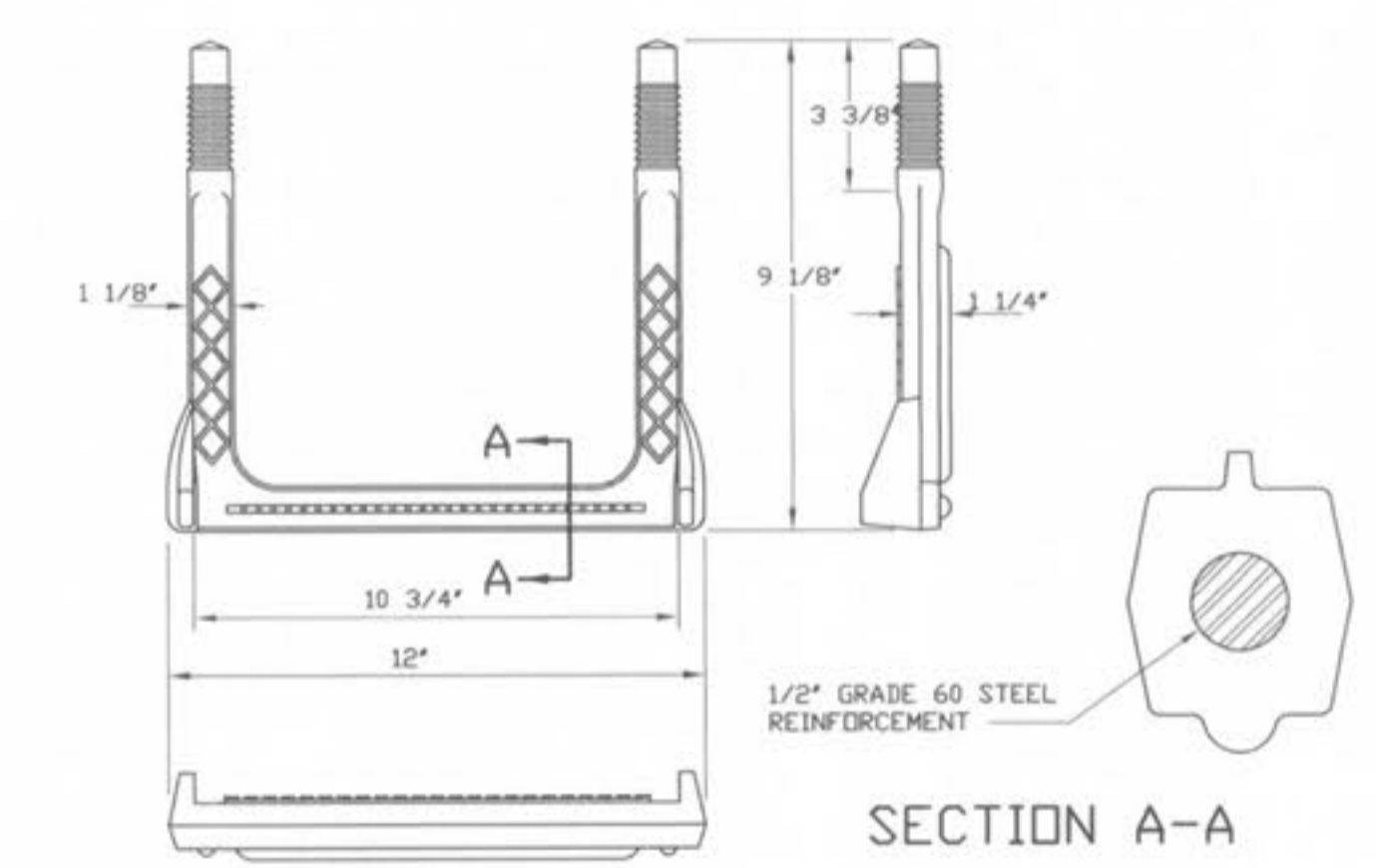
**STANDARD CAST IRON MANHOLE COVER**



**PLAN OF CLOSED-TYPE COVER  
CAST IRON MANHOLE COVERS**

NOTE A: MACHINE CONTACTING SURFACES FOR SEAT OF STANDARD MANHOLE FRAME AND BEARING SURFACE OF COVERS.

NOTE B: PROVIDE 1/8" RAISED LETTERING APPROXIMATELY 3/4" TO 1" HIGH.



**COPOLYMER POLYPROPYLENE PLASTIC  
MANHOLE STEP FOR  
PRECAST MANHOLE**