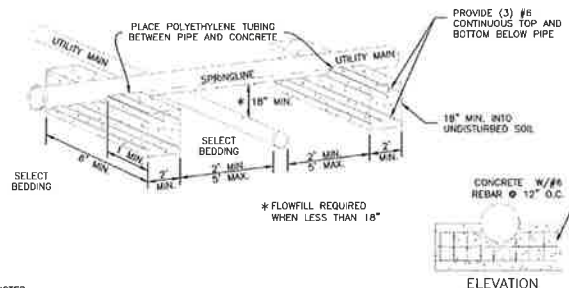


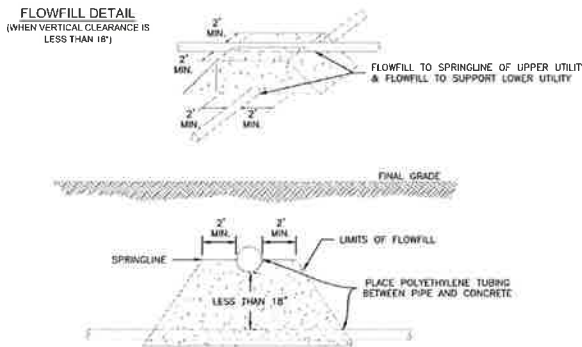
NOTE:
1. TRENCH BACKFILL SHALL CONFORM TO THE SPECIFICATIONS OF THE AUTHORITY HAVING JURISDICTION AND ASTM D2321.

PIPE SIZE AND MATERIAL	ALLOWABLE DEFLECTION	PIPE LENGTH AND CORRESPONDING RADIUS							
		20'	30'	40'	50'	60'	80'	100'	120'
4" - 12" DIP	4"00	280	250	220	200	170	140	110	100
14" - 16" DIP	3"12	350	320	290	270	240	210	170	140
18" - 36" DIP	2"24	420	400	380	360	340	320	290	270
4" - 24" SDR 35 PVC	3"00	300	280	260	240	220	190	170	150

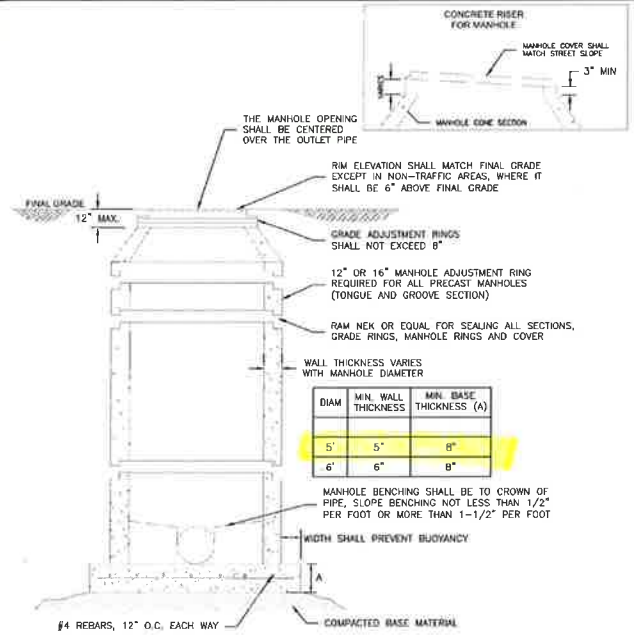
NOTES:
1. COLORADO SPRINGS UTILITIES USES A 1.25 SAFETY FACTOR FOR DIP SLIP JOINT DEFLECTION FROM THE MANUFACTURER'S ALLOWABLE DEFLECTION.
2. SDR 35 PVC SHALL NOT BE DEFLECTED WITHOUT THE USE OF FABRICATED 3" BENDS.
3. MINIMUM RADIUS FOR DIP AND 10" SDR 35 PVC SHALL BE 100'.



NOTES:
1. NO JOINTS OF UTILITY MAN SHALL BE ALLOWED BETWEEN CONCRETE BRIDGING BLOCKS.
2. CONCRETE AND REINFORCEMENT MATERIALS SHALL BE IN ACCORDANCE WITH CHAPTER 4.



NOTES:
1. ALL FLOWABLE-FILL SHALL BE IN CONFORMANCE WITH CHAPTER 4.
2. SEE SECTION 2.5.1.1 FOR UTILITY CROSSING REQUIREMENTS.



NOTES:
1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI @ 28 DAYS AND DESIGNED FOR HS-20 LOADING CONDITIONS.
2. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED.
3. FOR CAST IN PLACE MANHOLES, DO NOT DROP CONCRETE A DISTANCE OF MORE THAN 5' UNLESS APPROVED BY COLORADO SPRINGS UTILITIES.
4. 3/4" CRUSHED ROCK REQUIRED UNDER BASE TO A DEPTH OF 6" UP TO SPRINGLINE OF PIPE, 2"-3" RADIUS AROUND BASE.
5. SEE SECTION 2.5.1.1 FOR UTILITY CROSSING REQUIREMENTS.
6. STRUCTURAL REINFORCEMENT SHALL COMPLY TO ASTM C-478. ASTM C-478 SHALL BE STAMPED ON THE OUTSIDE OF THE MANHOLE.

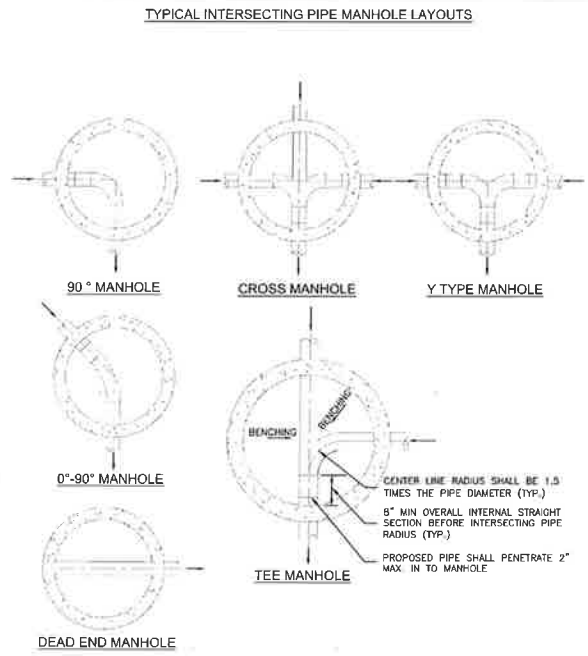
Colorado Springs Utilities
TYPICAL TRENCH SECTION
C2-1

Colorado Springs Utilities
MINIMUM RADIUS FOR DIP AND PVC PIPE
C2-2

Colorado Springs Utilities
PIPE BRIDGING DETAIL W/CONCRETE CRADLES
C2-7

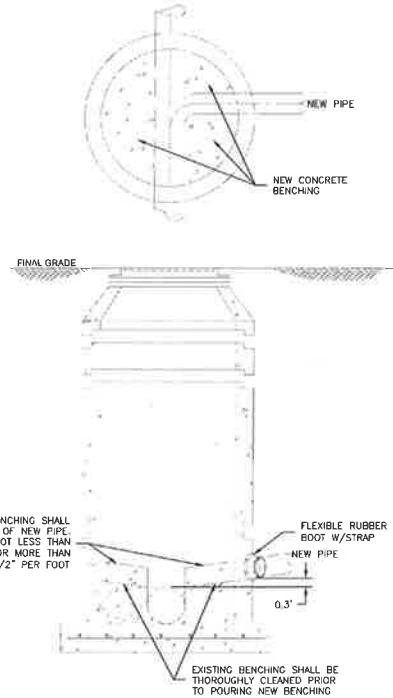
Colorado Springs Utilities
STANDARD CONCRETE MANHOLE
C3-1

MH STEPS (RUNGS) TO REMAIN



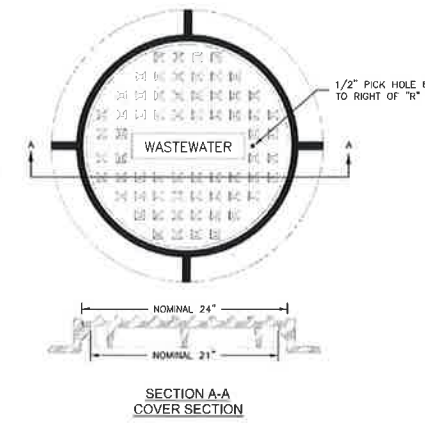
NOTES:
1. SEE DETAIL DRAWING C3-1 FOR MANHOLE REQUIREMENTS.
2. LAYOUTS SHOWN ARE FOR 8"-12" PIPES; LAYOUTS FOR LARGER DIAMETER PIPELINES AND MANHOLES SHALL BE DESIGNED BY THE DESIGN ENGINEER AND APPROVED BY COLORADO SPRINGS UTILITIES.
3. TO BE READ IN CONJUNCTION WITH CHAPTER 2, MANHOLE SIZES.

Colorado Springs Utilities
TYPICAL MANHOLE LAYOUTS AND INTERSECTIONS
C3-2



NOTES:
1. SEE DETAIL DRAWING C3-1 FOR MANHOLE REQUIREMENTS.

Colorado Springs Utilities
CORE DRILLING INTO AN EXISTING MANHOLE
C3-3



NOTES:
1. SEE CHAPTER 4 FOR ADDITIONAL INFORMATION AND SPECIFIC DIMENSIONS.

Colorado Springs Utilities
STANDARD MANHOLE RING AND COVER IN TRAFFIC AREAS
C3-9



ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING



UNLESS SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, THE APPLICABLE PURPOSES ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

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DATE	BY	REVISION	No.	H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
				N/A	N/A	01-04-21	APL	APL	

URBAN COLLECTION AT PALMER VILLAGE
DETAILS
WASTEWATER CONSTRUCTION PLAN

SHEET 7 OF 8
JOB NO. 25149.01