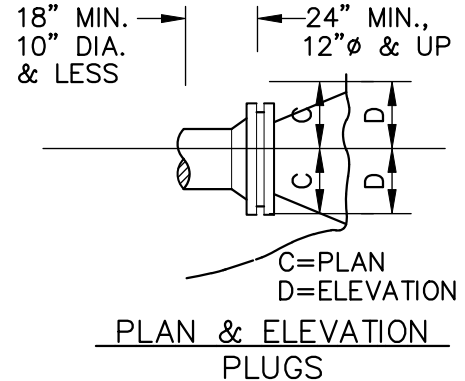


18" MIN.-10" DIA. OR LESS
24" MIN.-12" DIA. OR GREATER



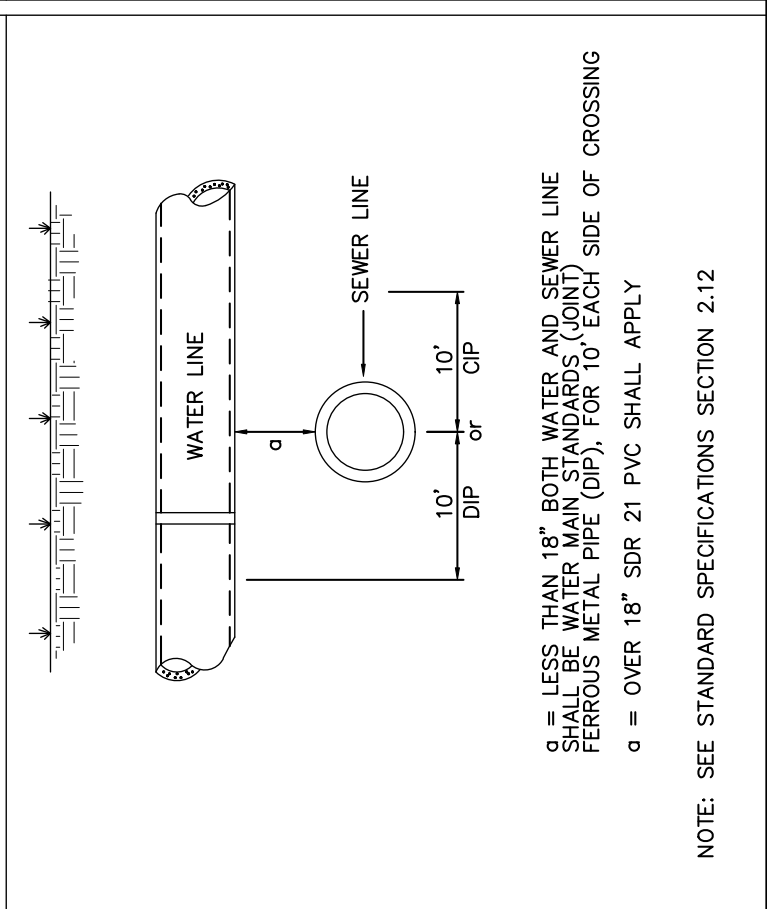
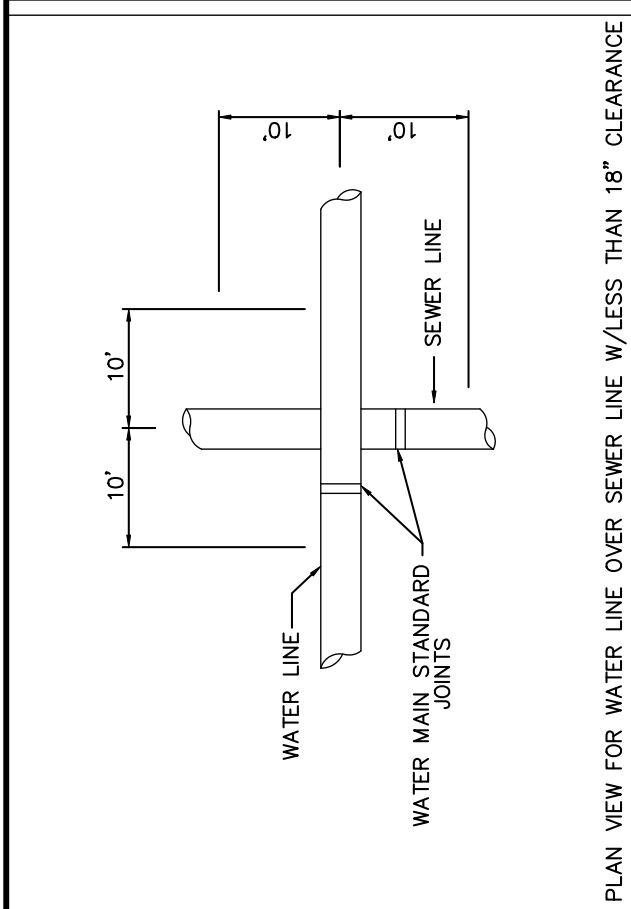
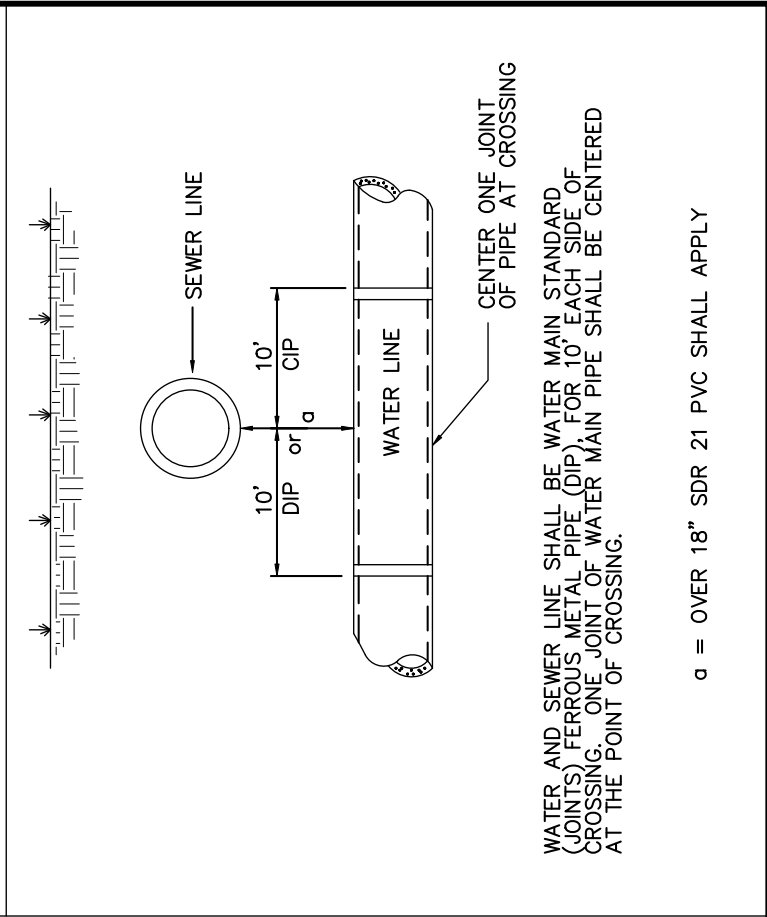
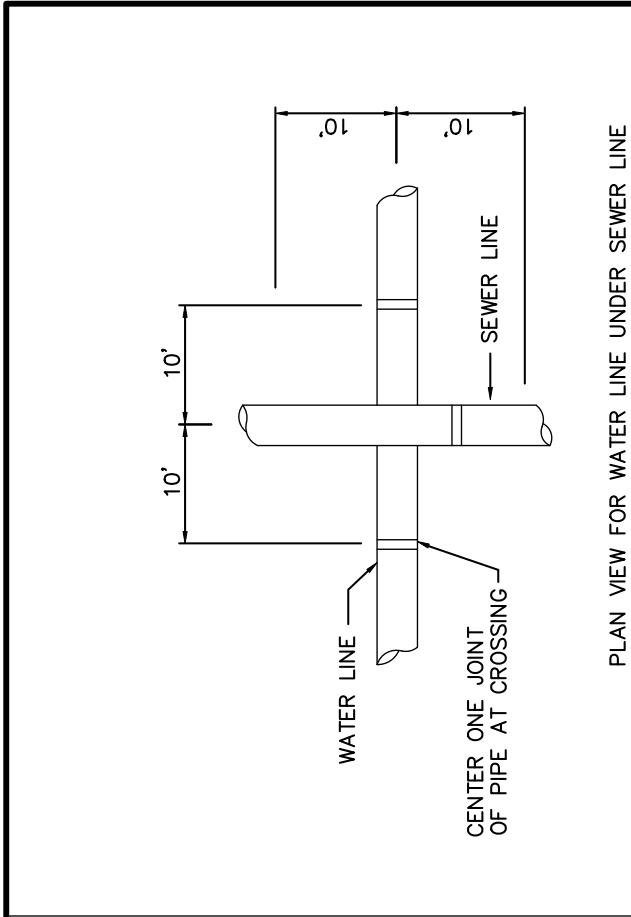
PIPE SIZE	90° BEND		45° BEND		22-1/2° BEND		11-1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	13"	6"
6"	18"	12"	10"	13"	7"	10"	7"	10"	12"	14"	19"	9"
8"	24"	18"	13"	18"	10"	12"	10"	12"	16"	18"	25"	11"
10"	28"	22"	15"	22"	12"	15"	12"	15"	20"	22"	31"	14"
12"	32"	28"	19"	28"	14"	18"	14"	18"	22"	28"	37"	17"
16"	54"	38"	30"	36"	18"	36"	18"	36"	36"	42"	54"	24"

2000 PSF SOIL (SAND & GRAVEL WITH CLAY)

NOTES:

1. BASED ON 200 PSI STATIC PRESSURE PLUS AWWA WATER HAMMER ALLOWANCE.
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
3. THRUST BLOCKS TO BE USED AT ALL LINES OPERATING UNDER PRESSURE.
4. KEEP ALL PIPING JOINTS CLEAR OF CONCRETE THRUST BLOCKS.

DATE: JANUARY 2008	STANDARD DETAIL	CITY OF LANCASTER LANCASTER COUNTY, S.C.
DRAWN BY: WKD		
SCALE: NONE	THRUST BLOCKING DETAIL	FILE NO. WS-1

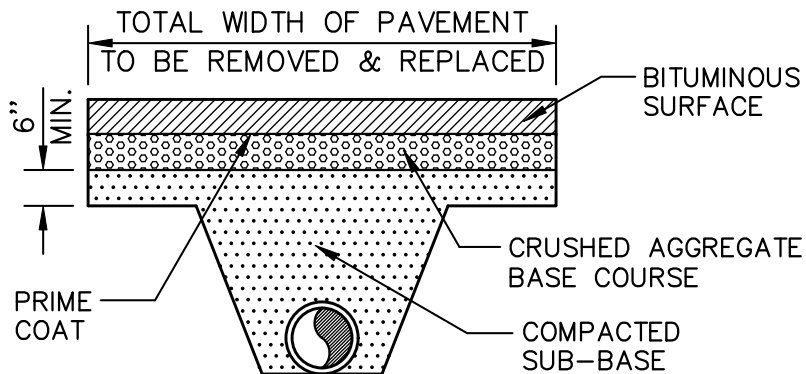


DATE: JANUARY 2008
 DRAWN BY: WKD
 SCALE: NONE

STANDARD DETAIL
 FERROUS MATERIALS AND JOINT
 REQUIREMENTS FOR WATER LINE
 AND SEWER LINE CROSSINGS

CITY OF LANCASTER
 LANCASTER COUNTY, S.C.
 FILE NO. WS-2

NOTE: SEE STANDARD SPECIFICATIONS SECTION 2.12
 a = OVER 18" SDR 21 PVC SHALL APPLY

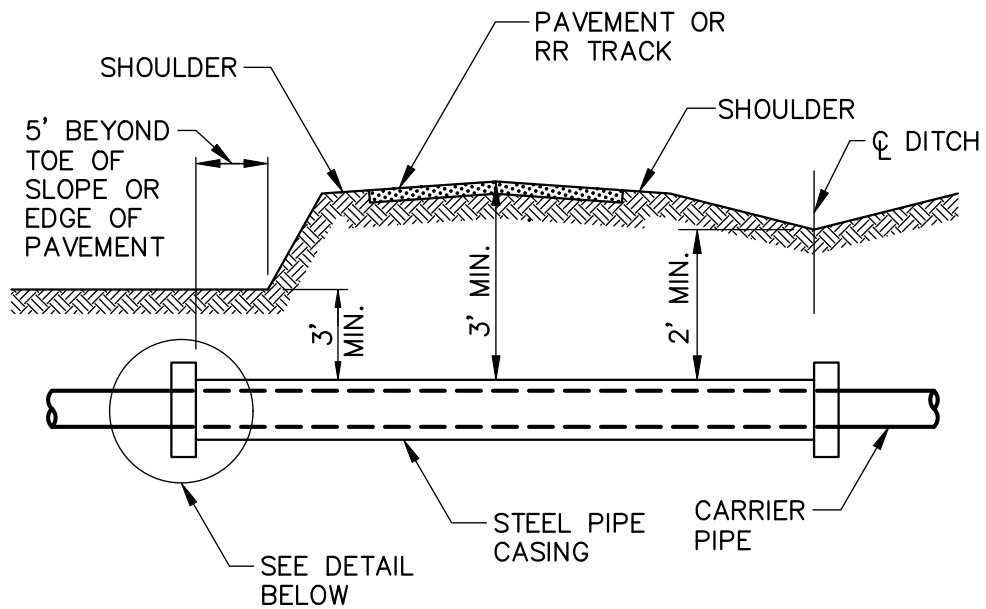


STREET-WIDTH	MINIMUM REPLACE	
	CABC	1-2
ASPHALT ROADWAY	8"	2"
ASPHALT DRIVEWAY	6"	2"
CONCRETE DRIVEWAY	6" CONCRETE ON SUBGRADE	
CONCRETE SIDEWALK	4" CONCRETE ON SUBGRADE	
STONE ROADWAY	6" STONE ON SUBGRADE	
STONE DRIVEWAY	4" STONE ON SUBGRADE	

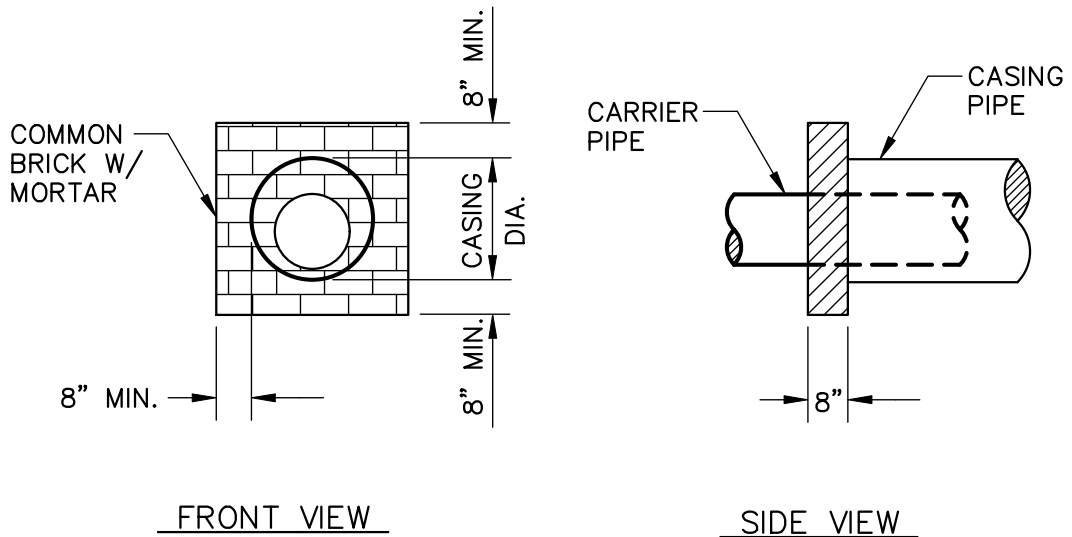
NOTES:

1. ALL BACKFILL LOCATED WITHIN THE VEHICULAR LOAD ZONE IS TO BE PLACED IN LIFTS NOT TO EXCEED 6" AND COMPACTED TO 95% OF STANDARD PROCTOR TEST (ASTM D698).
2. ALL BACKFILL OUTSIDE THE VEHICULAR LOAD ZONE BUT LOCATED IN THE RIGHT OF WAY IS TO BE COMPACTED TO 95% OF STANDARD PROCTOR TEST (ASTM D698).
3. THE LACK OF PROPER COMPACTION EQUIPMENT OR THE USE OF IMPROPER COMPACTION METHODS SHALL BE CAUSE FOR THE IMMEDIATE SHUTDOWN OF THE WORK BY THE ENGINEER.

DATE: JANUARY 2008	STANDARD DETAIL	CITY OF LANCASTER LANCASTER COUNTY, S.C.
DRAWN BY: WKD		
SCALE: NONE	TYPICAL PAVEMENT REPAIR FOR UTILITY CUT	FILE NO. WS-3



TYPICAL PIPE CROSSING

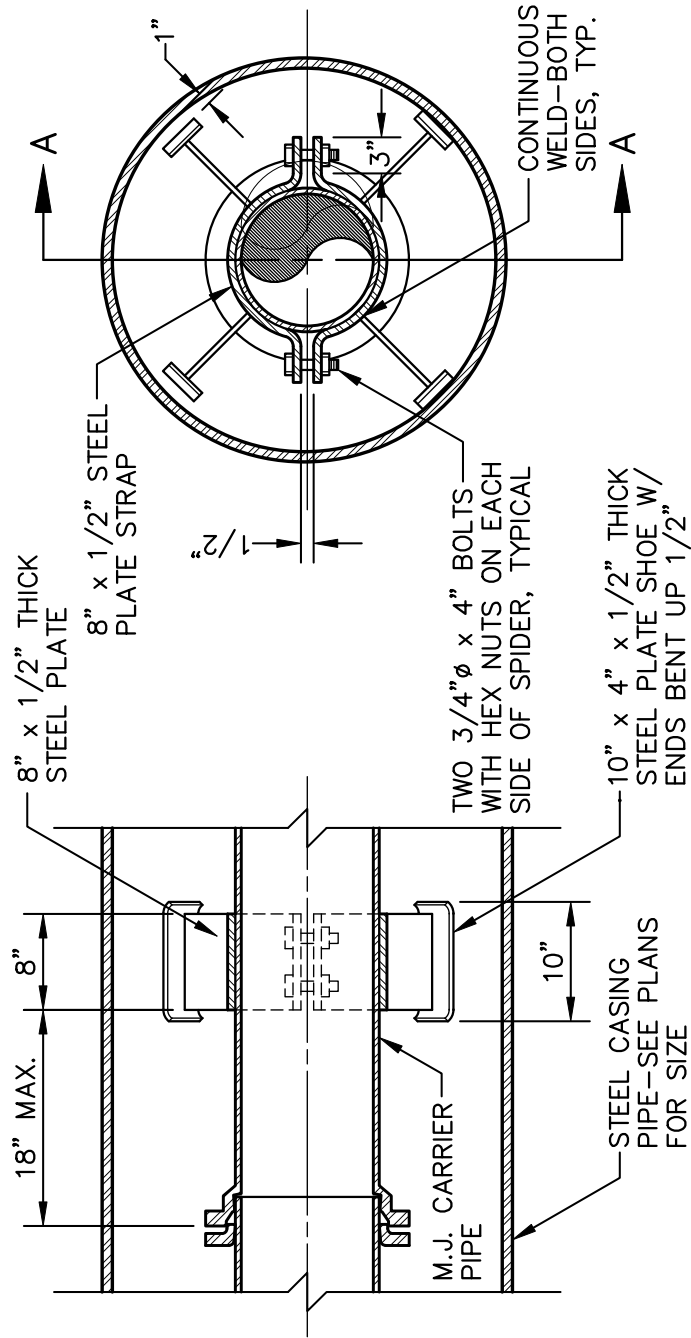


DETAIL

NOTES:

1. STEEL ENCASMENT PIPE SHALL CONFORM TO ASTM A-139 WITH WALL THICKNESS AND GRADE AS DEFINED IN THE SPECIFICATIONS. MINIMUM ALLOWABLE YIELD STRENGTH IS 35,000 PSI.
2. CARRIER PIPE SHALL BE ADEQUATELY SUPPORTED THE ENTIRE LENGTH WITHIN THE CASING BY USING "SPIDER" STEEL SUPPORTS AT A MAXIMUM OF 9 FOOT CENTERS (ONE AT EACH JOINT AND ONE INTERMEDIATE). OTHER METHODS MUST MEET APPROVAL OF THE TOWN OF DUNCAN.

DATE: JANUARY 2008	STANDARD DETAIL	CITY OF LANCASTER LANCASTER COUNTY, S.C.
DRAWN BY: WKD		
SCALE: NONE	ENCASEMENT PIPE UNDER HIGHWAYS AND RAILROADS	FILE NO. WS-4



END ELEVATION

CASING SECTION A-A

NOTE: ENTIRE SPIDER ASSEMBLY TO BE BITUMINOUS-COATED AFTER FABRICATION.

DATE: JANUARY 2008

DRAWN BY: WKD

SCALE: NONE

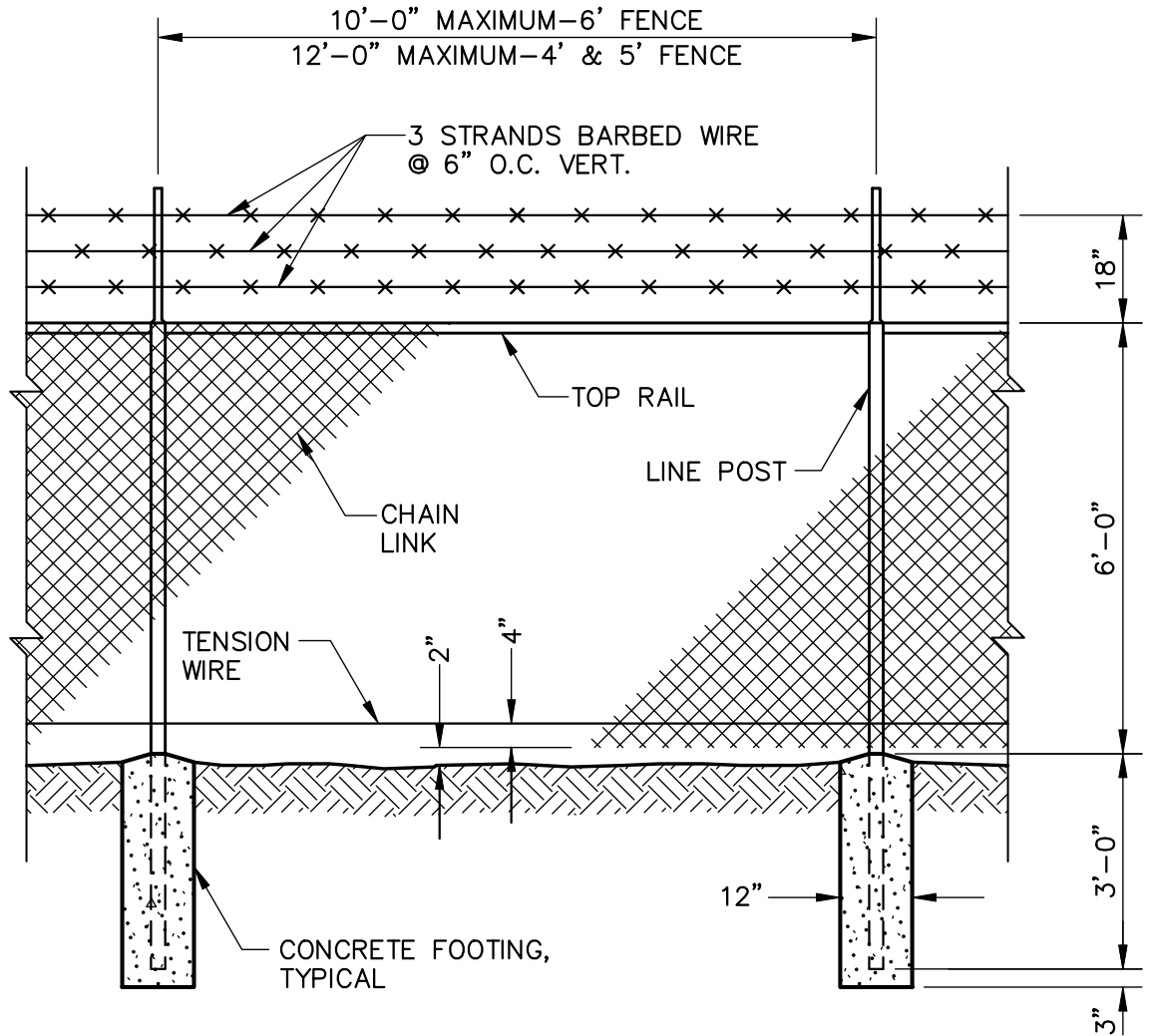
STANDARD DETAIL

STEEL SPIDER

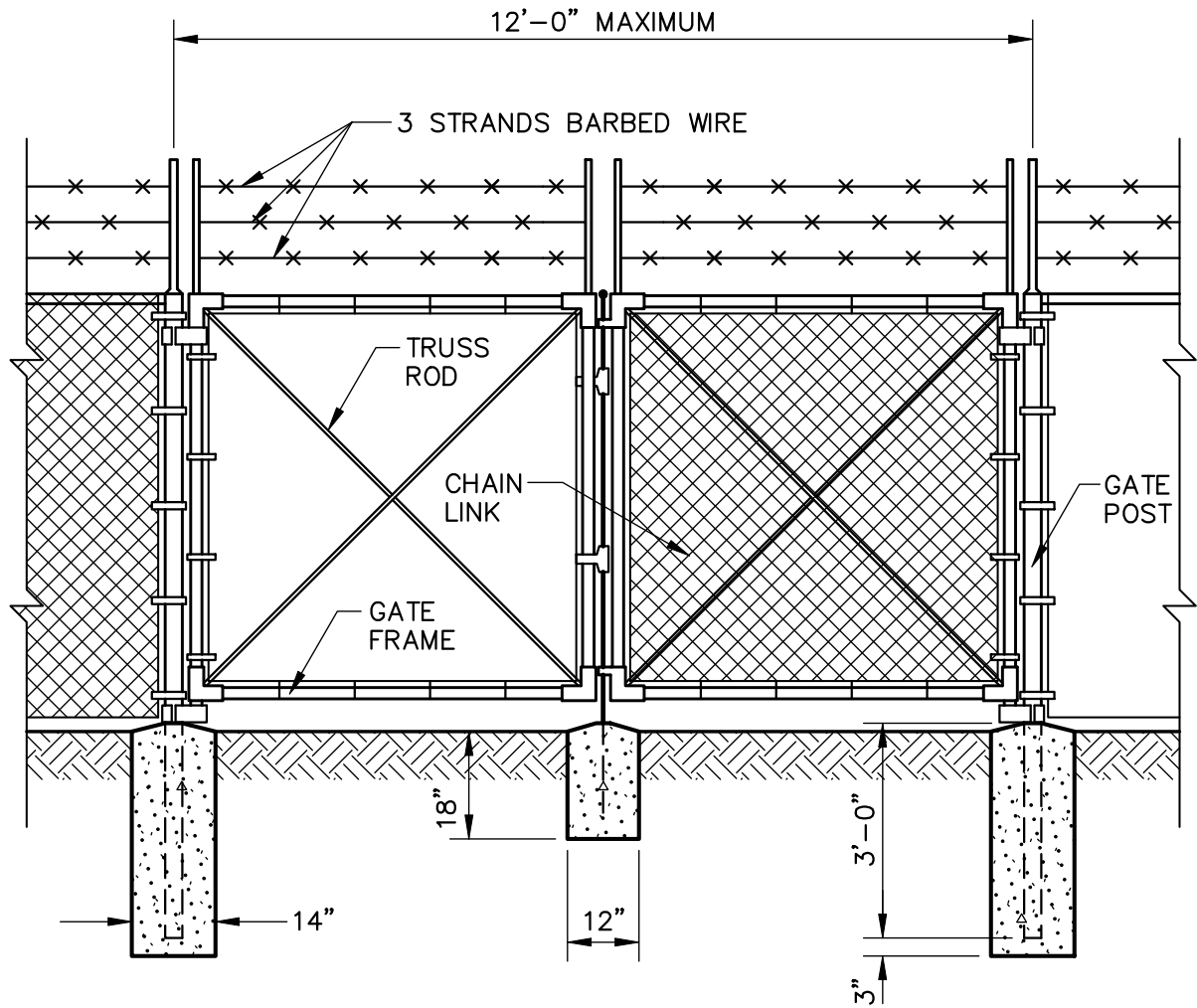
CITY OF LANCASTER
LANCASTER COUNTY, S.C.

FILE NO.

WS-5



DATE: JANUARY 2008	STANDARD DETAIL	CITY OF LANCASTER LANCASTER COUNTY, S.C.
DRAWN BY: WKD		
SCALE: NONE	CHAIN LINK FENCE DETAIL	FILE NO. WS-5



DATE: JANUARY 2008	<h2>STANDARD DETAIL</h2> <h3>DOUBLE CHAIN LINK SWING GATE</h3>	CITY OF LANCASTER LANCASTER COUNTY, S.C.
DRAWN BY: WKD		
SCALE: NONE		
		FILE NO. WS-7

AREAS REQUIRED FOR CONCRETE BLOCKING FOR TEES AND BENDS ETC.

BASED ON TEST PRESSURE OF 200 P.S.I.

ALL AREAS GIVEN ARE IN SQUARE FEET (AGAINST UNDISTURBED EARTH)

SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	FAIRLY DRY CLAY 4000 LBS./FT ²	SOFT CLAY 2000 LBS./FT ²	GRAVEL, COARSE SAND 1600 LBS./FT ²	TIE RODS REQUIRED
6"					2-5/8"∅
11-1/4°	1,108	1	1	1	
22-1/2°	2,207	1	2	2	
45°	4,328	2	3	3	
90°	7,996	2	4	5	
PLUG	5,665	2	3	4	
8"					2-5/8"∅
11-1/4°	1,970	1	1	2	
22-1/2°	3,922	1	2	3	
45°	7,694	2	4	5	
90°	14,215	4	8	9	
PLUG	10,053	3	5	6	
12"					4-3/4"∅
11-1/4°	4,433	2	3	3	
22-1/2°	8,826	3	5	6	
45°	17,312	5	9	11	
90°	31,983	8	16	19	
PLUG	22,619	6	12	14	
16"					6-3/4"∅
11-1/4°	7,881	2	4	5	
22-1/2°	15,691	4	8	10	
45°	30,779	8	16	19	
90°	56,861	15	29	35	
PLUG	40,213	10	21	25	

REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.

USE 6" - 90° BEND VALVE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

(2 - 5/8" ∅ ROD IS ADEQUATE FOR 6" F.H. LEG)

DATE: JANUARY 2008	STANDARD DETAIL	CITY OF LANCASTER LANCASTER COUNTY, S.C.
DRAWN BY: WKD		
	AREAS REQUIRED FOR CONCRETE BLOCKING FOR TEES & BENDS ETC. (BASED ON TEST PRESSURE OF 200 PSI)	FILE NO. WS-8