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Lockport – Batavia 112

Rebuild Project

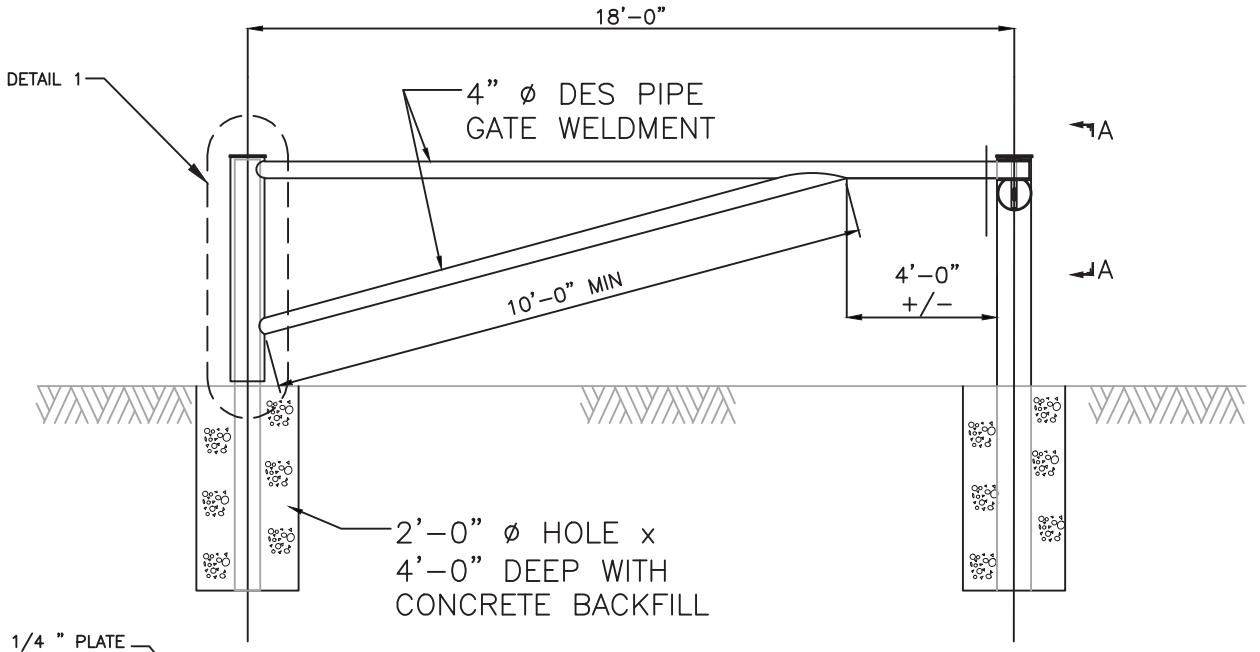
Appendix AC

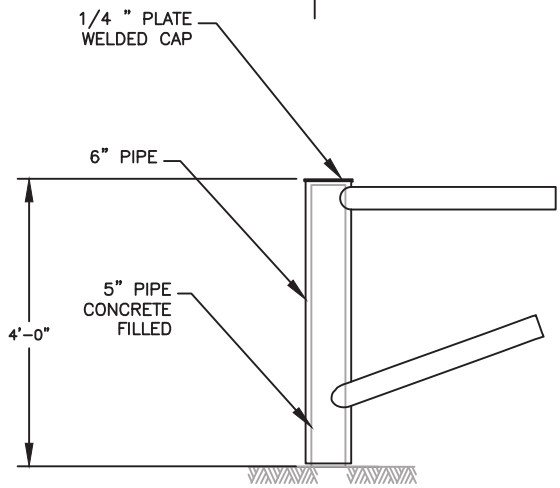
Fencing Details, Guard Structures and Typical Drawings for Drain Tile Repairs

June 2025

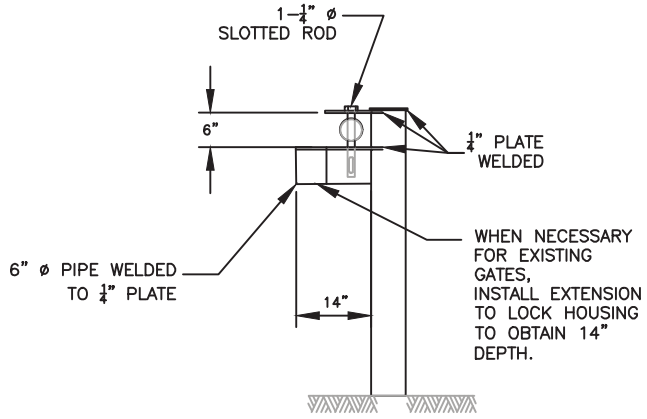
Case 22-T-0654

VER	DATE	VERSION DESCRIPTION	PREPARED	REVIEWED	APPROVED	VERSION
1	07/26/10	INITIAL RELEASE, SUPERSEDES NEPSCO E10760	TEC			4
2	08/16/16	CHANGED PIPE GATE DIMENSION TO 18'–0", PROBLEM LOG ENTRY 289	TEC	NLD		
3	09/15/16	REVISED NE PIPE GATE DETAIL	TEC	NLD		
4	06/28/17	REVISE NE PIPE GATE LOCK HOUSING DIMENSION	TEC	NMM		





DETAIL 1



SECTION A–A

NOTES
1. ALL GATE STEEL PIPES SHALL BE IN ACCORDANCE WITH ASTM A–501, PLATES SHALL BE ASTM A–36
2. ALL STEEL PIPES SHALL BE PRIMED WITH ZINC–CHROMATE PRIMER AND FINISHED WITH AN APPROVED OSHA "SAFETY YELLOW" TOP COAT COMPATIBLE WITH THE PRIMER AND FOR EXTERIOR EXPOSURE.
3. REFLECTORS SHALL BE SPACED AT 3 FEET ALONG THE LENGTH OF THE CROSSBAR AND BRACE
4. BACKFILL AT POSTS TO BE COMPACTED.

TRANSMISSION LINE STANDARDS

R.O.W. GATES AND FENCES
PIPE GATE (NEW ENGLAND)

PREPARED BY	TEC	
REVIEWED BY	JLC	
APPROVED BY	MSB	
SCALE	NTS	
SHEET	1 OF 5	
INDEX	SP.06.01.301	

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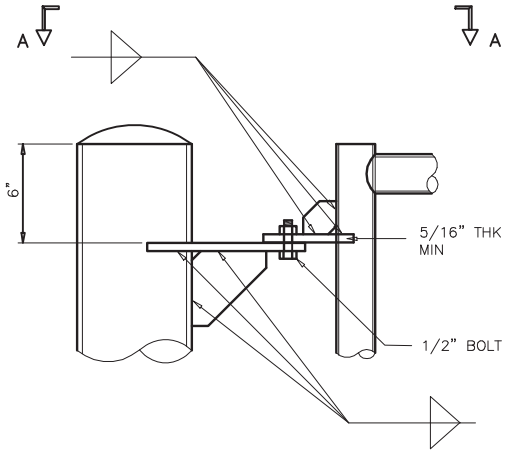
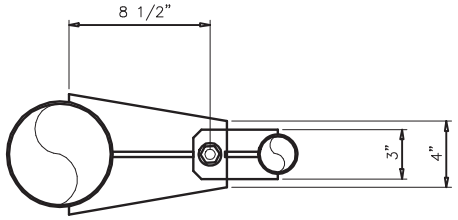
SP.06.01.301.103

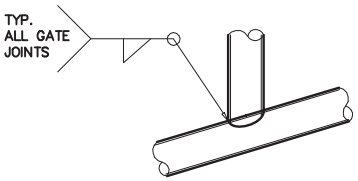
VER	DATE	VERSION DESCRIPTION	PREPARED	REVIEWED	APPROVED	VERSION
1	07/26/10	INITIAL RELEASE	TEC			4
2	08/16/16	CHANGED PIPE GATE DIMENSION TO 18'–0", PROBLEM LOG ENTRY 289	TEC	NLD		
3	09/15/16	REVISED NE PIPE GATE DETAIL	TEC	NLD		
4	06/28/17	REVISE NE PIPE GATE LOCK HOUSING DIMENSION	TEC	NMM		



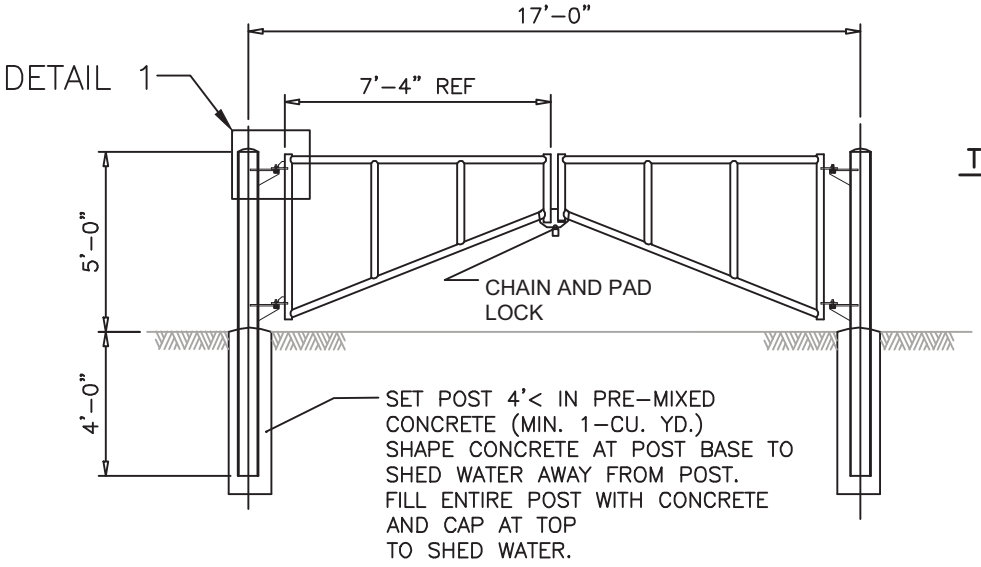
DETAIL 1



SECTION A–A



TYPICAL JOINT WELD DETAIL



NOTES:

1. GATE COATING – THE FINISHED WELDED GATE AND POST/HINGE ASSEMBLIES SHALL BE HOT–DIP GALVANIZED PER THE LATEST EDITION OF ASTM A123.
2. GATE: 2" SCH. 40 GALV. PIPE. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH AMERICAN WELDING STANDARD D11.
3. POSTS: 6" SCH. 40 GALVANIZED PIPE
4. HINGES ARE WELDED PLATES (5/16" THK. MIN.) AND CASE HARDENED ½" BOLTS. THE BOLTS ARE TO BE SPOT WELDED TO PREVENT LOOSENING. SELF LOCKING NUTS CAN BE SUBSTITUTED FOR SPOT WELDING.
5. ALL STEEL PIPES SHALL BE PRIMED WITH ZINC–CHROMATE PRIMER AND FINISHED WITH AN APPROVED OSHA "SAFETY YELLOW" TOP COAT COMPATIBLE WITH THE PRIMER AND FOR EXTERIOR EXPOSURE.
6. REFLECTORS SHALL BE SPACED AT 3 FEET ALONG THE LENGTH OF THE COROSSBARS.

TRANSMISSION LINE STANDARDS

R.O.W. GATES AND FENCES PIPE GATE (NEW YORK)

PREPARED BY	TEC	
REVIEWED BY	JLC	
APPROVED BY	MSB	
SCALE	NTS	
SHEET	2 OF 5	
INDEX	SP.06.01.301	

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SP.06.01.301.103

VER	DATE	VERSION DESCRIPTION	PREPARED	REVIEWED	APPROVED	VERSION
1	07/26/10	INITIAL RELEASE	TEC			4
2	08/16/16	CHANGED PIPE GATE DIMENSION TO 18'-0", PROBLEM LOG ENTRY 289	TEC	NLD		
3	09/15/16	REVISED NE PIPE GATE DETAIL	TEC	NLD		
4	06/28/17	REVISE NE PIPE GATE LOCK HOUSING DIMENSION	TEC	NMM		

NOTES
1. THE NUMBER OF WIRES IN EACH BARBED WIRE GATE SHALL MATCH THAT OF THE EXISTING FENCE, BUT IN NO CASE SHALL IT BE LESS THAN FOUR.
2. GROUNDING – METALLIC FENCES WHICH ARE CROSSED BY SUPPLY LINES SHALL BE GROUNDED FROM THE LOCATION THE SUPPLY LINE CROSSES THE FENCE TO THE EDGE OF THE RIGHT–OF–WAY ON BOTH SIDES. A GROUNDING ONDUCTOR MUST BE BURIED BELOW THE FENCE LINE AND BONDED TO THE METALLIC POSTS. IF THE FENCE POSTS ARE NONCONDUCTING MATERIAL, THE GROUND CONDUCTOR MUST BE BONDED TO THE METALLIC FENCE. THIS INCLUDES SEPARATE BARBED WIRE STRANDS IF USED.
3. GROUND RODS SHALL BE INSTALLED AT APPROXIMATELY 30 FOOT INTERVALS ALONG THE BURIED GROUNDING CONDUCTOR. THE GROUNDING CONDUCTOR SHOULD BE BONDED TO THE FENCE AT EVERY THIRD FENCE POST, OR AT 30 FOOT INTERVALS, WHICHEVER DISTANCE IS LEAST.
4. METALLIC FENCES INSTALLED PARALLEL TO OVERHEAD SUPPLY LINES ARE NORMALLY ADEQUATELY GROUNDED BY BEING INSTALLED IN DIRECT CONTACT WITH THE EARTH. METALLIC FENCE POSTS ARE REQUIRED FOR THIS SITUATION. IF NON– METALLIC FENCE POSTS ARE UTILIZED, THEN GROUND CONDUCTOR AND RODS SHALL BE INSTALLED AS IN NOTES 1 AND 2 LISTED ABOVE.

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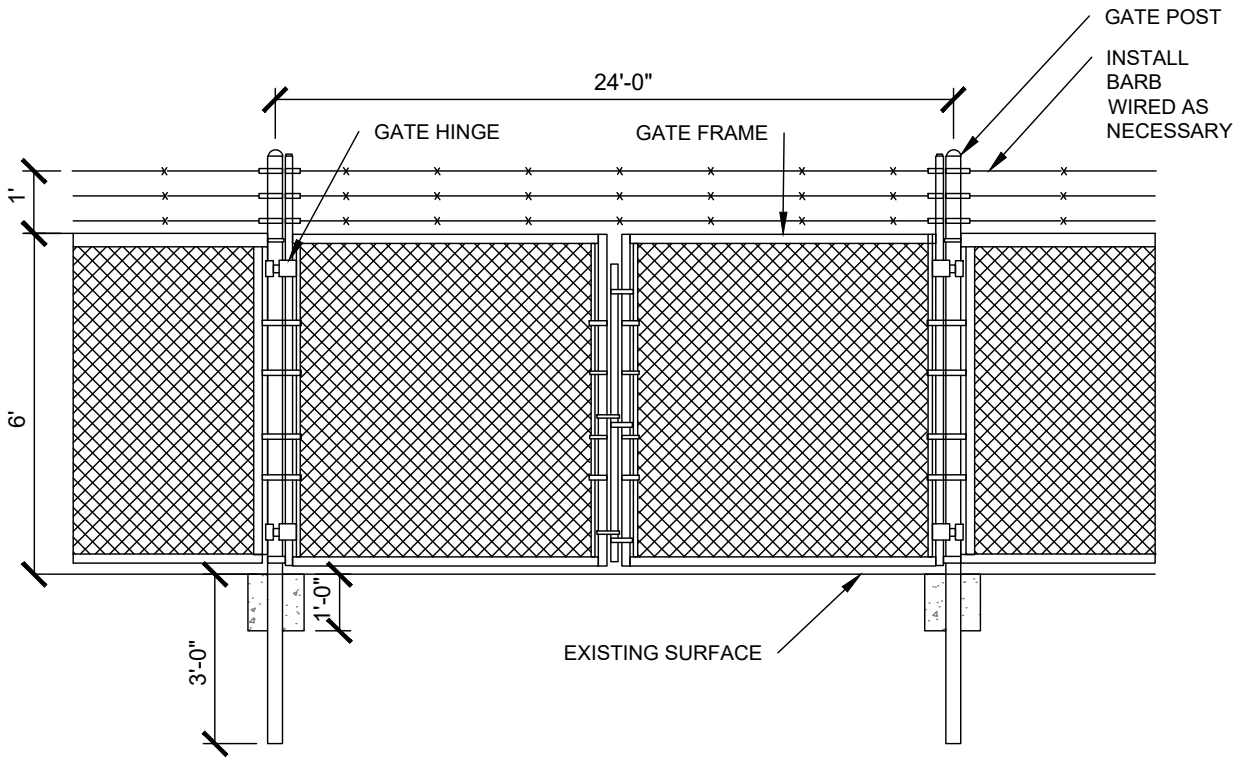
TRANSMISSION LINE STANDARDS

R.O.W. GATES AND FENCES
BARBED WIRE FENCE WITH
GATE

PREPARED BY	TEC
REVIEWED BY	JLC
APPROVED BY	MSB
SCALE	NTS
SHEET	3 OF 5
INDEX	SP.06.01.301



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FISHER ASSOCIATES

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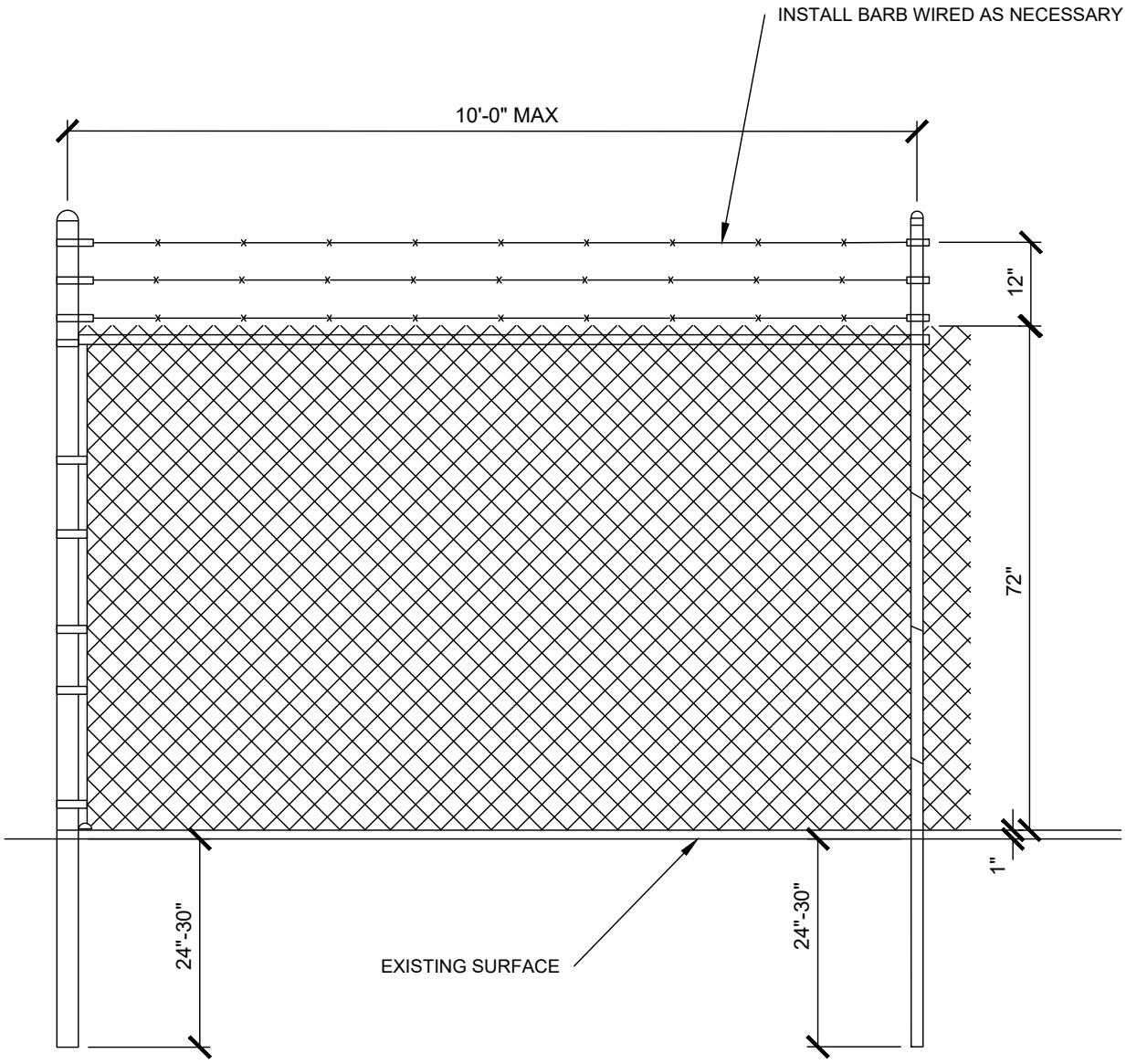
DRAWING TITLE: CHAIN LINK FENCE GATE - 24' OPENING

PROJECT TITLE: NATIONAL GRID STANDARD DETAILS	DRAWING NO.:	SCALE: NTS	DATE: 4/16/2025

DRAWN BY: CHECKED BY: FILE PATH



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FISHER ASSOCIATES

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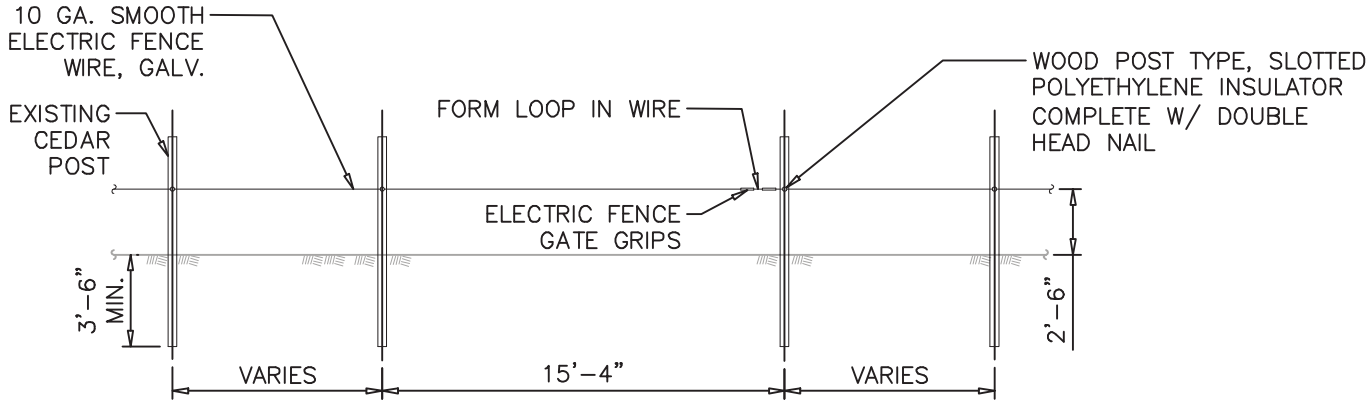
DRAWING TITLE: STANDARD CHAIN LINK FENCE

PROJECT TITLE: NATIONAL GRID STANDARD DETAILS	DRAWING NO.:	SCALE: NTS	DATE: 4/16/2025

DRAWN BY: CHECKED BY: FILE PATH

VER	DATE	VERSION DESCRIPTION	PREPARED	REVIEWED	APPROVED	VERSION
1	07/26/10	INITIAL RELEASE	TEC			4
2	08/16/16	CHANGED PIPE GATE DIMENSION TO 18'-0", PROBLEM LOG ENTRY 289	TEC	NLD		
3	09/15/16	REVISED NE PIPE GATE DETAIL	TEC	NLD		
4	06/28/17	REVISE NE PIPE GATE LOCK HOUSING DIMENSION	TEC	NMM		



NOTES
1. GATE FRAMES AND POSTS SHALL BE OF ASTM A120 HOT-DIPPED GALVANIZED PIPE OR EQUAL.

TRANSMISSION LINE STANDARDS

R.O.W. GATES AND FENCES ELECTRIFIED WIRE GATE

PREPARED BY	TEC	
REVIEWED BY	JLC	
APPROVED BY	MSB	
SCALE	NTS	
SHEET	4 OF 5	
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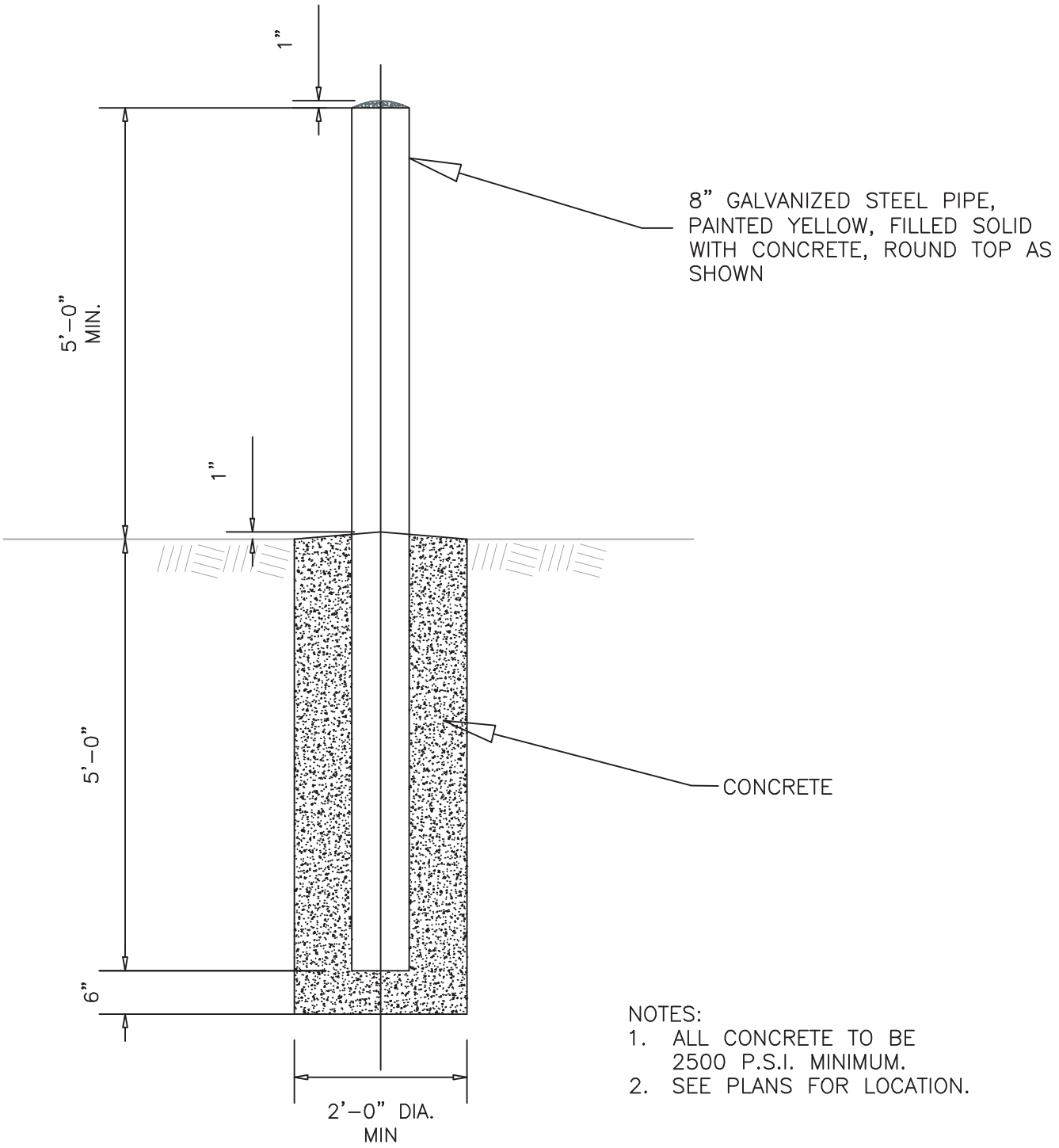
VER	DATE	VERSION DESCRIPTION	PREPARED	REVIEWED	APPROVED	VERSION
1	07/26/10	INITIAL RELEASE	TEC			4
2	08/16/16	CHANGED PIPE GATE DIMENSION TO 18'-0", PROBLEM LOG ENTRY 289	TEC	NLD		
3	09/15/16	REVISED NE PIPE GATE DETAIL	TEC	NLD		
4	06/28/17	REVISE NE PIPE GATE LOCK HOUSING DIMENSION	TEC	NMM		



NOTES:
1. ALL CONCRETE TO BE 2500 P.S.I. MINIMUM.
2. SEE PLANS FOR LOCATION.

TRANSMISSION LINE STANDARDS

R.O.W. GATES AND FENCES TYPICAL BOLLARD DETAIL

PREPARED BY	TEC	
REVIEWED BY	JLC	
APPROVED BY	MSB	
SCALE	NTS	
SHEET	5 OF 5	
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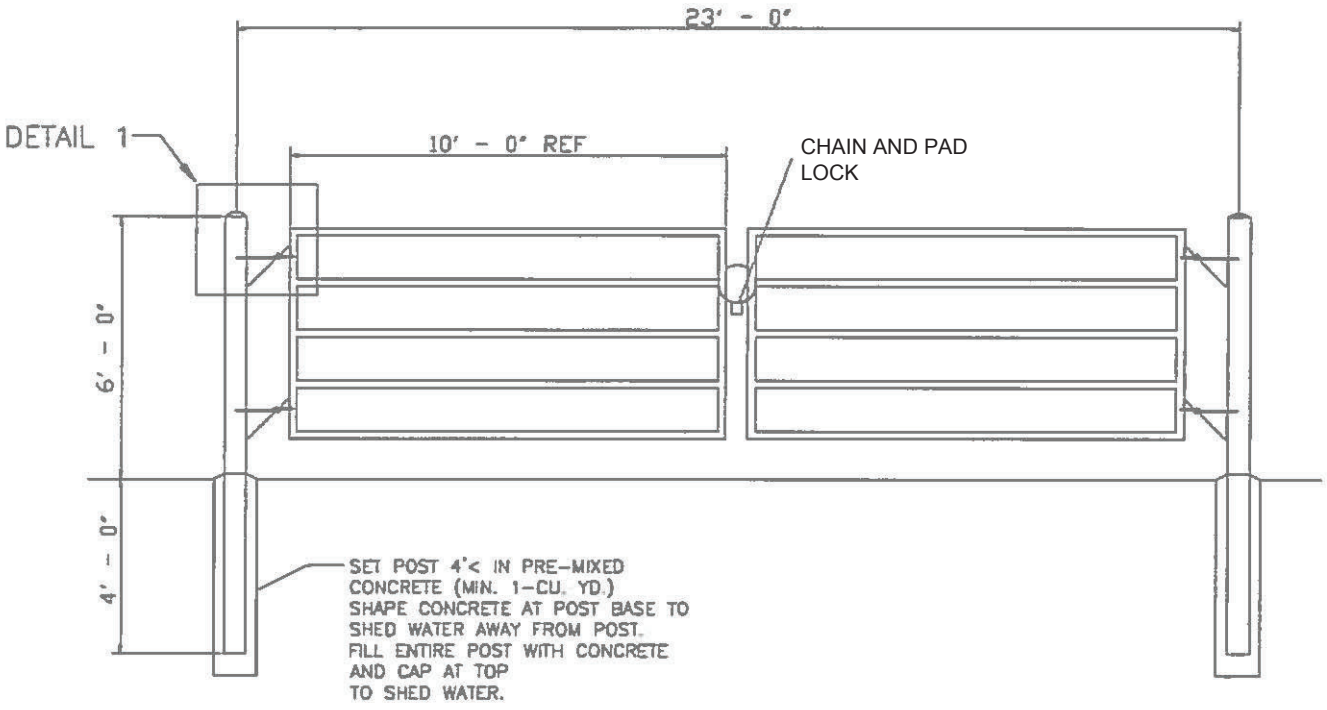

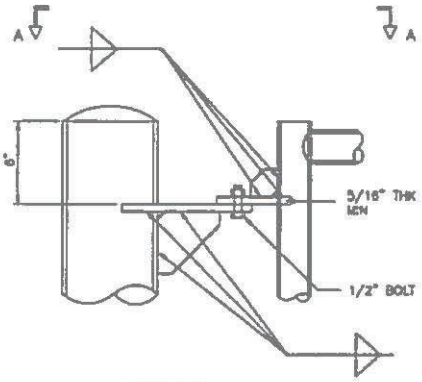

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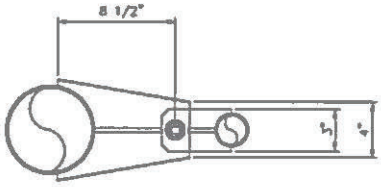
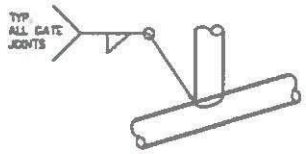


SECTION A–A



TYPICAL JOINT WELD DETAIL

NOTES:
1. GATE COATING – THE FINISHED WELDED GATE AND POST/HINGE ASSEMBLIES SHALL BE HOT-DIP GALVANIZED PER THE LATEST EDITION OF ASTM A123.
2. GATE: 2" SCH. 40 GALV. PIPE. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH AMERICAN WELDING STANDARD D11.
3. POSTS: 6" SCH. 40 GALVANIZED PIPE
4. HINGES ARE WELDED PLATES (3/16" THK. MIN.) AND CASE HARDENED ½" BOLTS. THE BOLTS ARE TO BE SPOT WELDED TO PREVENT LOOSENING. SELF LOCKING NUTS CAN BE SUBSTITUTED FOR SPOT WELDING.

ORIGINAL	REVISIONS		
DATE	REV.	DATE	
DESIGNED	1		
CHECKED	2		
DRAWN	3		
CHECKED	4		
REVIEWED	5		
APPROVED	6		
	7		

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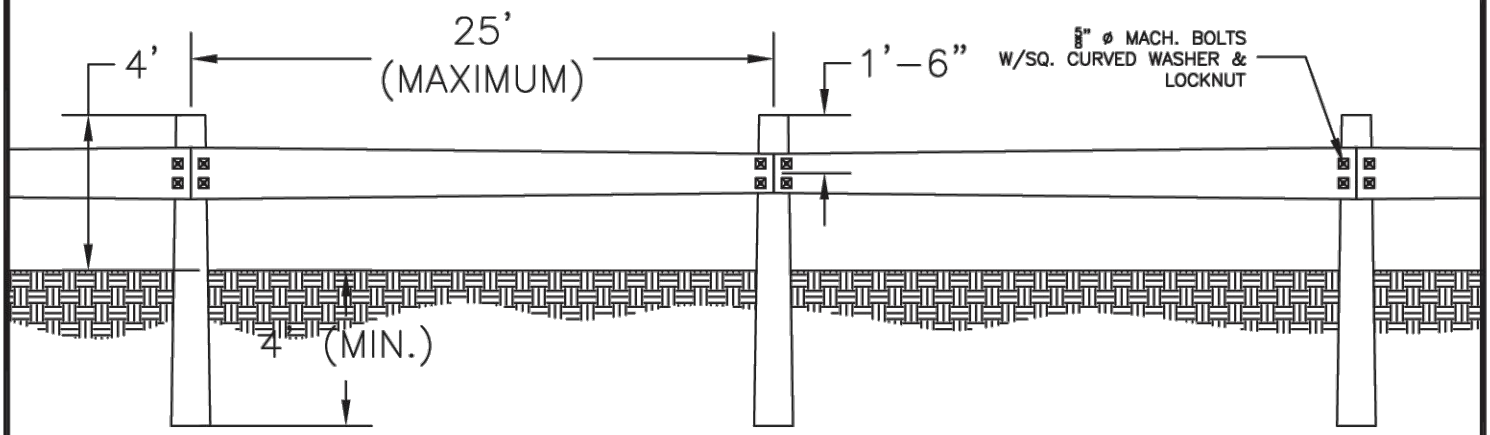
AGRICULTURAL STEEL GATE DETAILS

EM&CP 0543

SCALE: NONE

VER	DATE	VERSION DESCRIPTION	PREPARED	REVIEWED	APPROVED	VERSION
1						1
2						
3						
4						



NOTES:
1. IF HORIZONTAL POLES ARE BUTT JOINTED, USE FOUR (4) 5/8" MACHINE BOLTS TO ATTACH TO VERTICAL POLE.
2. IF HORIZONTAL POLES ARE LAPP JOINTED, USE TWO (2) 5/8" MACHINE BOLTS TO ATTACH TO VERTICAL POLE.

EM&CP APPENDIX AC

BARRIER DETAIL
WOOD POLE BARRIER

PREPARED BY	JTF	12/05/17
REVIEWED BY		
APPROVED BY		
SCALE	NTS	
SHEET	1 OF 1	
INDEX	200140	

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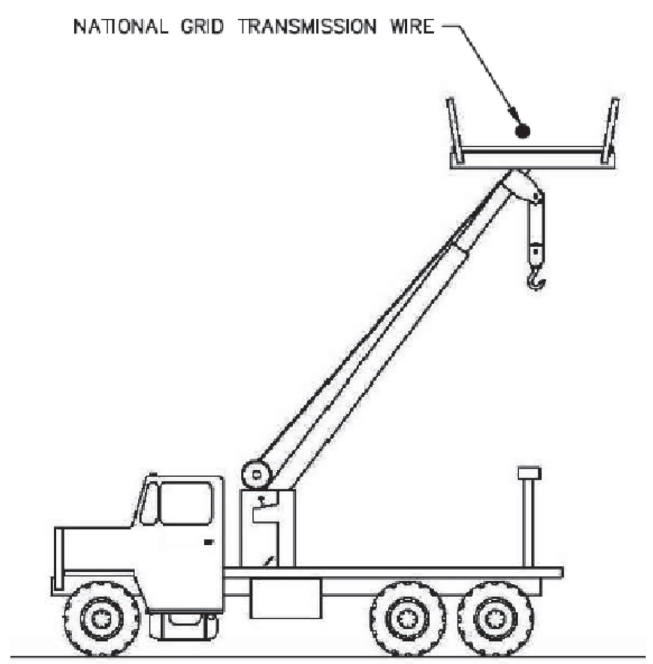
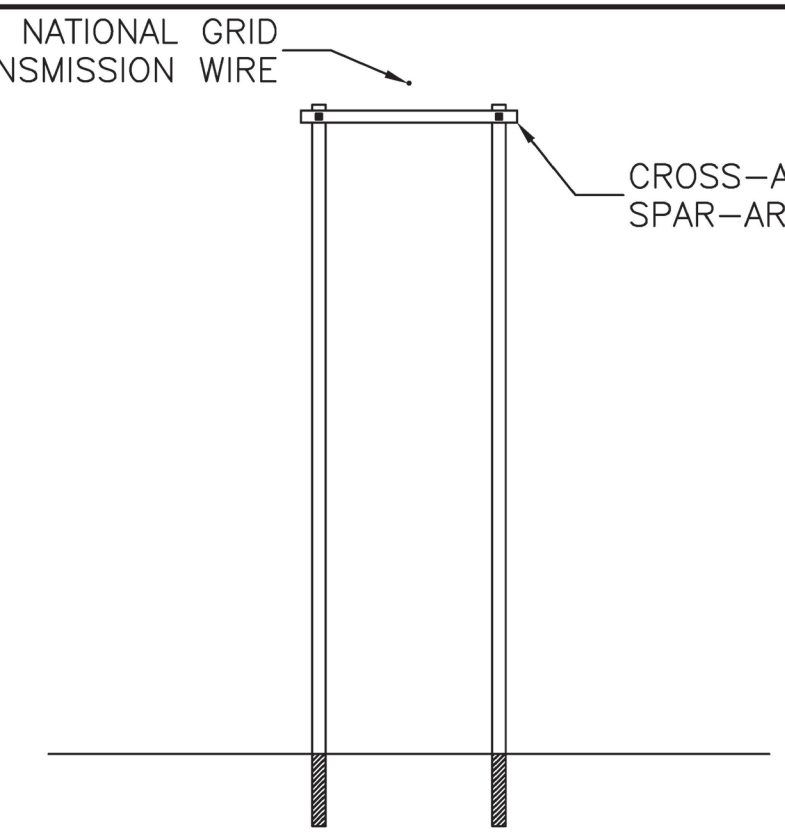
VER	DATE	VERSION DESCRIPTION
1		
2		
3		
4		

PREPARED	REVIEWED	APPROVED	VERSION
			1

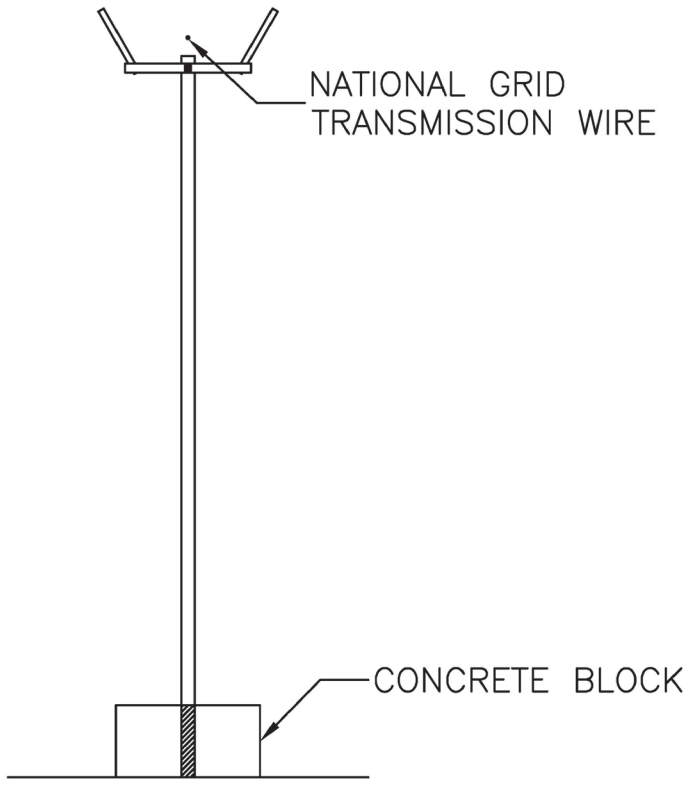


"BAT WING" VEHICLE MOUNTED GUARD DEVICE

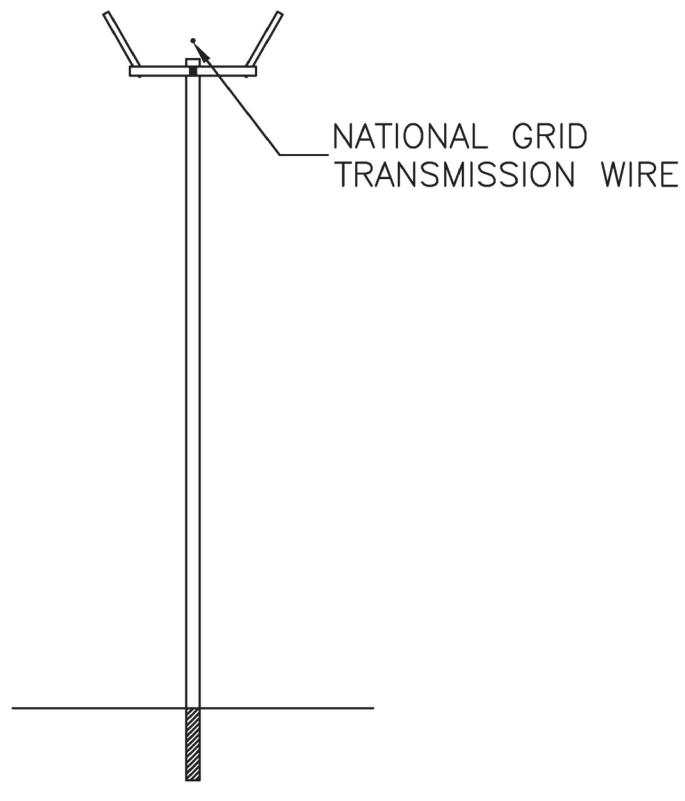
Note: Guard structures typically used at all road crossings and overhead utility crossings.



H–FRAME GUARD STRUCTURE



SINGLE POLE "FLOWER POT" GUARD STRUCTURE



SINGLE POLE DIRECT EMBED GUARD STRUCTURE

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PREPARED BY	JTF	12/05/17
REVIEWED BY		
APPROVED BY	JTF	12/05/17
SCALE	N.T.S.	
SHEET	1 OF 1	
INDEX	200140	

WIRE PULLING SAFETY DETAILS

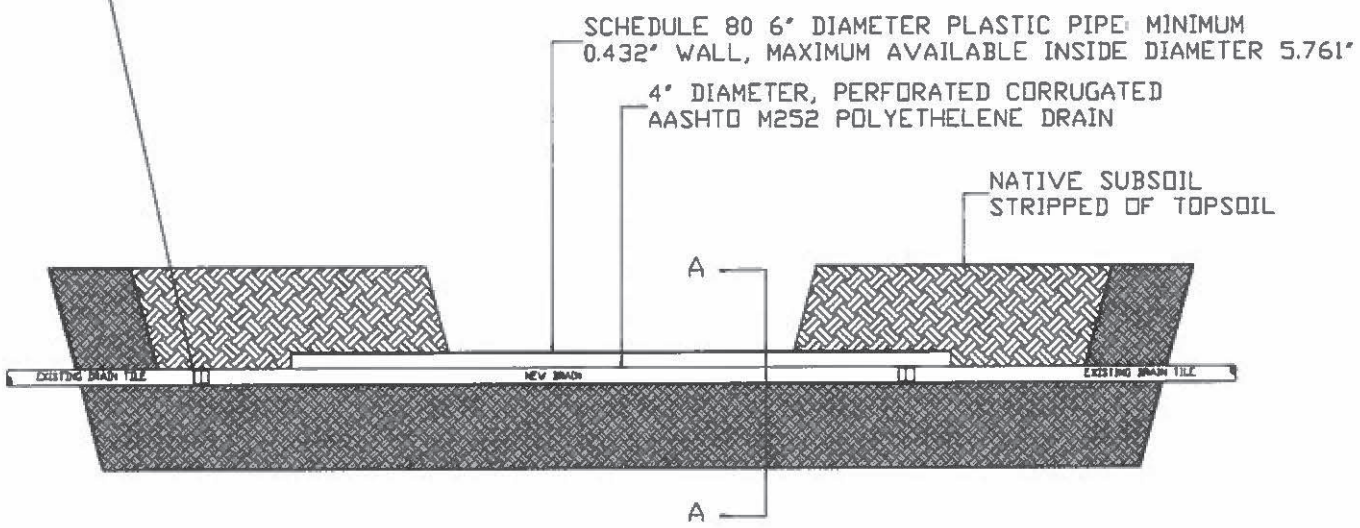
TYPICAL TEMPORARY GUARD STR'S & VEHICLE MOUNTED GUARD DEVICE A.K.A. "RIDER POLES"

INCHES ON ORIGINAL

200140–M–SK–02

200140–M–SK–02

USE MANUFACTURER'S CONNECTOR FOR COUPLING THE ORIGINAL SEVERED POLYETHELENE DRAIN TO NEW SECTION OF AASHTO M252 POLYETHELENE DRAIN. THE CONNECTIONS FOR THESE AND ALL DRAIN LINE JOINTS MUST BE SECURED WITH WRAP AROUND TILE TAPE.



DRAINAGE TILE	SUPPORT SIZE
3" TO 5"	6" PIPE
0'-6"	8"PIPE
7" TO 8"	10"PIPE
9" TO 10"	12" PIPE
1'-0"	W12 x 14
15" TO 18"	W16 x 26
OVER 18"	W18 x 46

PVC SCHEDULE 80 PIPE (FOR BRIDGING SLEEVES

NOMINAL SIZE (INCHES)	AVERAGE O.D. (INCHES)	MAXIMUM WALL THICKNESS (INCHES)	MAXIMUM AVAILABLE I.D. (INCHES)
4	4.5000	0.3370	3.8260
6	6.6250	0.4320	5.7610
8	8.6250	0.5000	7.6250
10	10.7500	0.5930	9.5640
12	12.7500	0.6870	11.3760

AASHTO M252 SINGLE WALL, CORRUGATED, PERFORATED (SLOTTED) POLYETHELENEDRAIN LINE

NOMINAL SIZE (INCHES)	OUTSIDE DIAMETER (INCHES)
4	4.7100
6	7
8	9.9000
10	11.9000
12	14.4100
15	17.7000

ORIGINAL	REVISIONS		
DATE	REV.	DATE	
DESIGNED	1		
CHECKED	2		
DRAWN	3		
CHECKED	4		
REVIEWED	5		
APPROVED	6		
	7		

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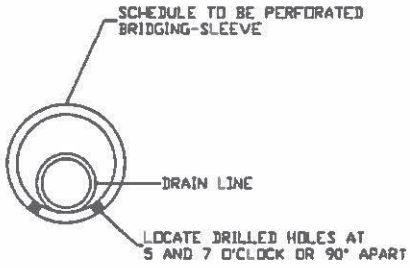
DRAIN TILE REPAIR

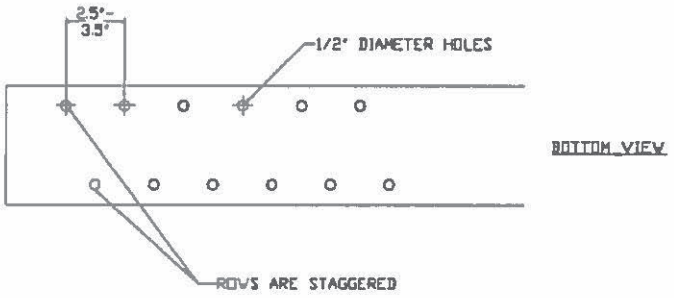
EM&CP 0434

1 OF 3

SCALE: NONE

SECTION A-A VIEW OF DRAIN LINE PROTECTED
BY PERFORATED, DURABLE SLEEVE





NOTES:

1. THE BRIDGING-SLEEVE REPAIR IS VERTICALLY POSITIONED ACROSS THE TRENCH SO IT MAINTAINS THE GRAVITY-FLOW GRADIENT OF THE ORIGINAL DRAIN TILE.

2. BOTH OF THE RECONNECTIONS MAY BE LOCATED PHYSICALLY OUTSIDE OF THE BRIDGING-SLEEVE (LEFT) OR INSIDE THE SLEEVE (RIGHT) AFFTER SLIDING IT OVER THE REPAIR.

ORIGINAL	REVISIONS		
DATE	REV.	DATE	
DESIGNED	1		
CHECKED	2		
DRAWN	3		
CHECKED	4		
REVIEWED	5		
APPROVED	6		
	7		

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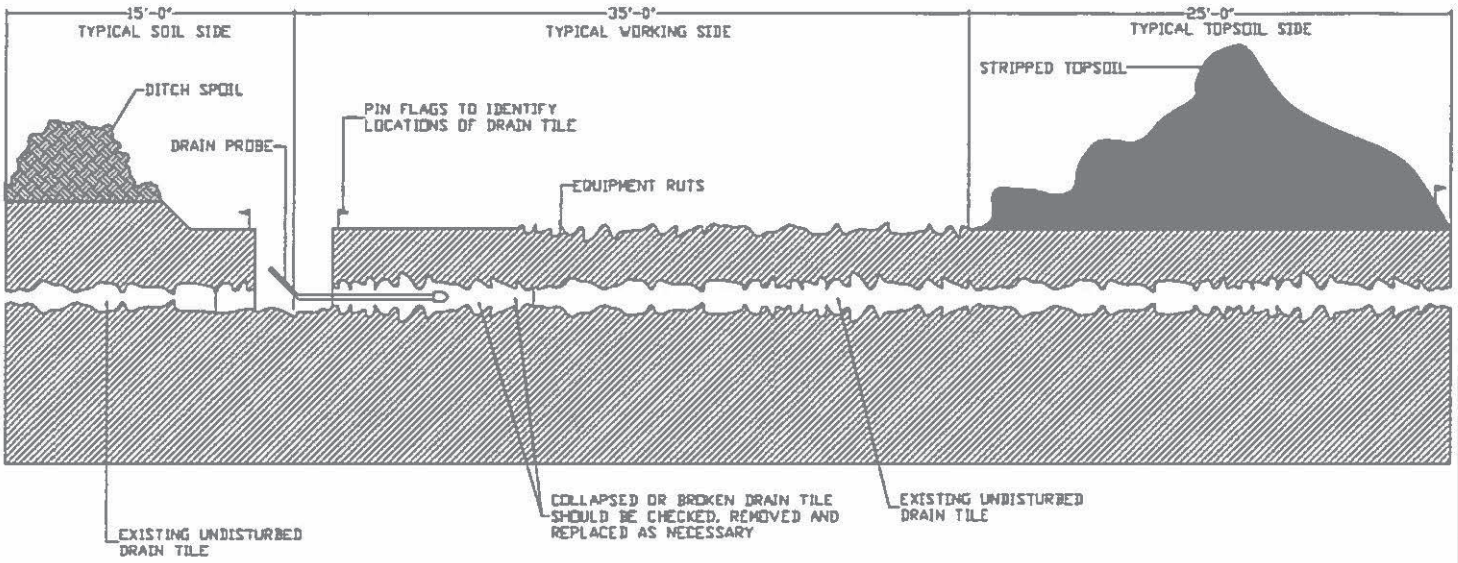
DRAIN TILE REPAIR

EM&CP 0434

2 OF 3

SCALE: NONE



NOTE:
WITHIN ALL AREAS OF CONSTRUCTION ACTIVITIES:
1. PROBE AND CLEAN OUT ALL DRAIN TILES.
2. REPLACE ANY DAMAGED TILES.
3. REPAIR ANY DAMAGED JOINTS.

ORIGINAL	REVISIONS		
DATE	REV.	DATE	
DESIGNED	1		
CHECKED	2		
DRAWN	3		
CHECKED	4		
REVIEWED	5		
APPROVED	6		
	7		

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DRAIN TILE REPAIR

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3 OF 3

SCALE: NONE