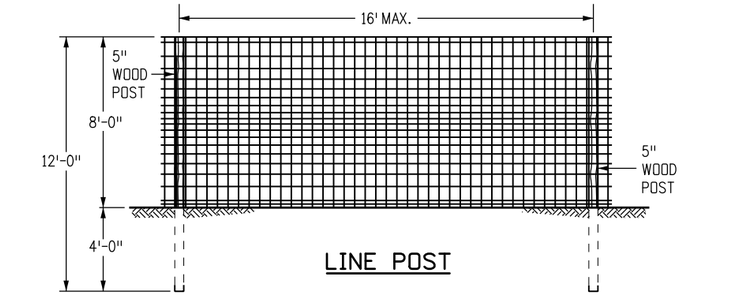
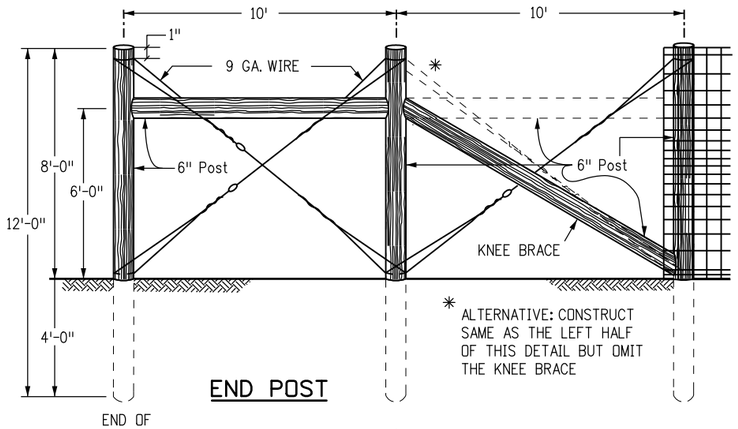
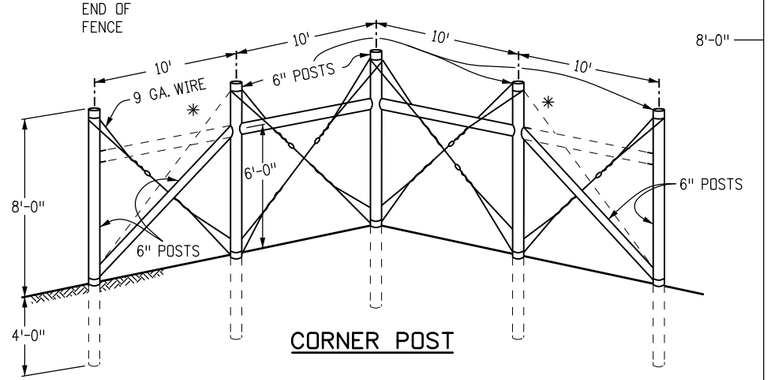


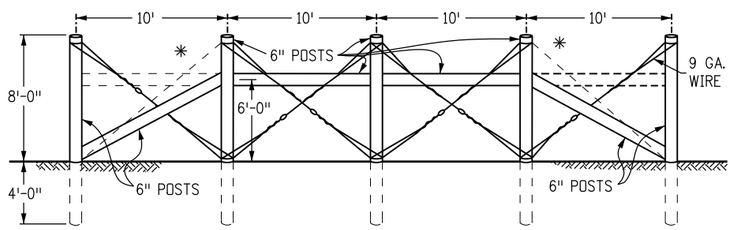
LINE POST



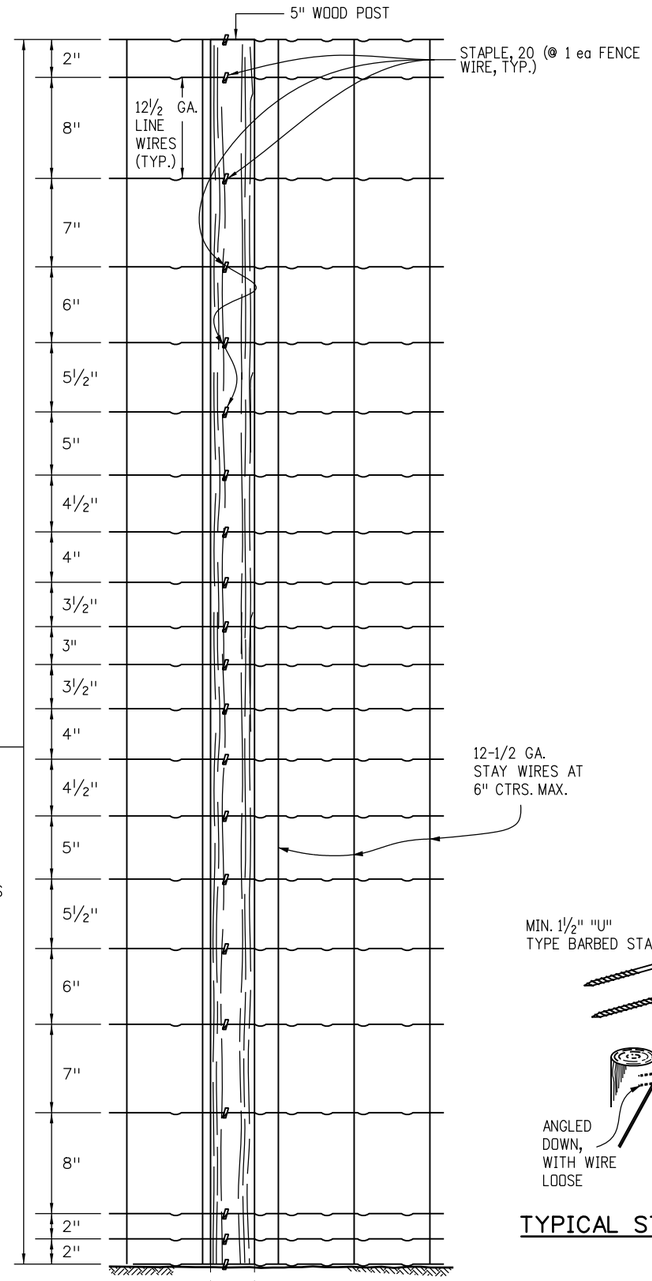
END POST



CORNER POST



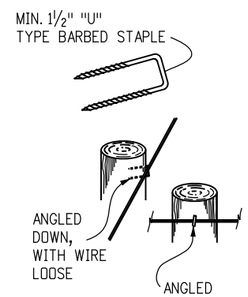
LINE BRACE POST



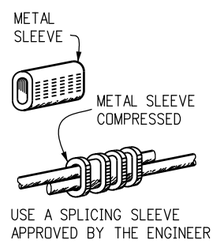
DEER FENCE WIRE FABRIC

GENERAL NOTES

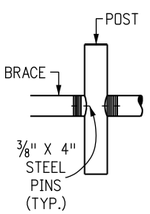
1. AT EACH LOCATION WHERE AN ELECTRIC TRANSMISSION, DISTRIBUTION OR SECONDARY LINE CROSSES A BARRIER FENCE, THE CONTRACTOR SHALL FURNISH AND INSTALL A GROUND CONFORMING TO ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE. THE GROUND ROD SHALL BE A MINIMUM DIAMETER OF ½ IN. AND 8 FT. IN LENGTH, AND DRIVEN AT LEAST 7½ FT. INTO THE GROUND. THE ROD SHALL BE CONNECTED TO EACH WIRE WITH A MINIMUM AWG NO. 8 STRANDED COPPER WIRE. GROUNDING WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE WORK.
2. END POST, CORNER POST, AND LINE BRACE POST SHALL BE ASSEMBLED BY THE UNIT AND PAID FOR AS SUCH. ALL WORK AND MATERIAL ASSOCIATED WITH EACH ASSEMBLY, SHALL BE INCLUDED IN THE UNIT PRICE FOR THAT ASSEMBLY.
3. LINE BRACE POSTS SHALL BE SPACED AT 400 FT. INTERVALS, WHERE FENCING IS CONTINUOUS AND WHERE END, CORNER & LINE BRACE POSTS ARE NOT SPECIFIED.
4. ALL LINE POSTS SHALL BE 5 IN. MIN. DIAMETER AND 12 FT. LONG. ALL END, CORNER AND LINE BRACE POSTS SHALL BE 6 IN. MIN. DIAMETER AND 12 FT. LONG. ALL POSTS AND BRACES SHALL BE TREATED IN ACCORDANCE WITH SUBSECTION 710.07.
5. FENCE WIRE MAY BE PLACED ON EITHER THE ROAD SIDE OR THE FIELD SIDE OF POSTS, DEPENDING ON LOCAL CONDITIONS; i.e., ON CURVES, THE WIRE SHOULD BE PLACED ON THE SIDE WHICH WOULD RESULT IN THE LEAST AMOUNT OF TENSION ON THE STAPLES. THIS ALSO APPLIES WHERE WIND DRIFT OR OTHER CONDITIONS WOULD EXERT UNUSUAL PRESSURE AGAINST THE WIRE.
6. WHERE CONCRETE STRUCTURES ARE USED AS A DEER PASS, THE FENCE SHALL END AT EYEBOLTS IN WINGS OF THE STRUCTURE. EYEBOLTS IN FRESH CONCRETE SHALL BE MADE OF ½ IN. ROUND BARS AND EMBEDDED A MINIMUM OF 6 IN. WITH A HOOKED OR BENT END. IN EXISTING CONCRETE, THE ½ IN. ROUND BARS SHALL BE DEFORMED AND GROUTED INTO DRILLED HOLES. EYEBOLTS SHALL HAVE A MINIMUM OF 1 IN. INSIDE EYE DIAMETER AND SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. COST OF EYEBOLTS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR FENCING.
7. WOVEN WIRE FENCE FABRIC SHALL CONFORM TO AASHTO M 279 (ASTM A 116). DESIGN NO. 2096-6-12½, GRADE 60, COATING TYPE ZA, COATING CLASS 80.
8. ALL FENCE WIRE TIES, BRACE WIRES, STAPLES AND OTHER WIRE APPURTENANCES SHALL BE GALVANIZED IN CONFORMANCE WITH AASHTO M 232.
9. THE CONTRACTOR SHALL RE-ESTABLISH DISTURBED OR DESTROYED SURVEY MONUMENTS TO THE APPROPRIATE ACCURACY IN ACCORDANCE WITH SUBSECTION 625.08 OF THE STANDARD SPECIFICATIONS.
10. CONTINUOUS LINE WIRE SHALL BE HIGH TENSILE (175 K MIN.). CONTINUOUS STAY WIRE SHALL BE MID-TENSILE (125 K MIN.). FIXED KNOT 13 GAUGE WIRE (60K MIN.) SHALL CONNECT LINE WIRE WITH THE VERTICAL STAY WIRE.
11. DEER GATE AND TOP BRACES SHALL BE PAINTED WITH GREEN PAINT ACCORDING TO SUBSECTION 708.03 AND COLOR NO. 14109 OF FEDERAL STANDARD 595B.



TYPICAL STAPLING



WIRE SPLICE



CROSS BRACE DOWELING

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CDOT HQ, 3rd Floor
Denver, CO 80204
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DEER FENCE, GATES, AND GAME RAMPS

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STANDARD PLAN NO.
M-607-4
Standard Sheet No. 1 of 7
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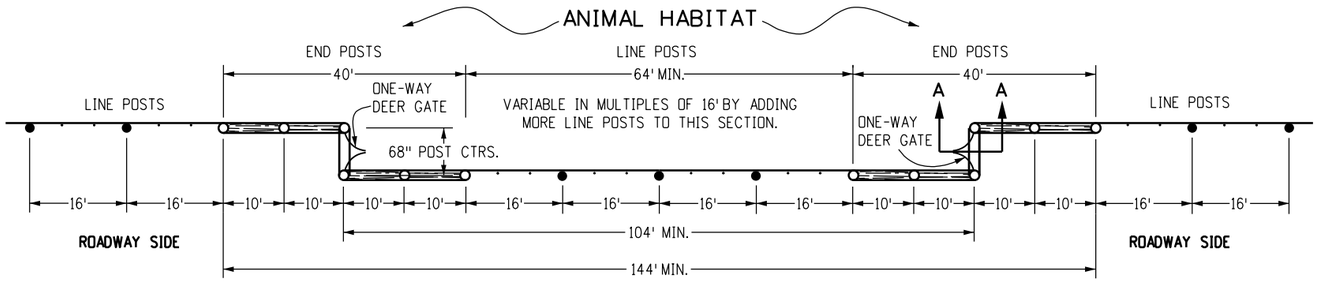


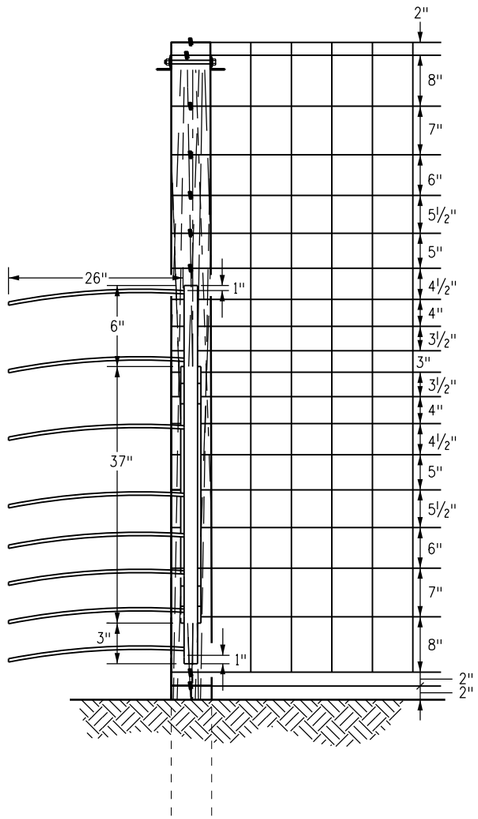
PLAN VIEW - TYPICAL DEER GATE INSTALLATION

LEGEND

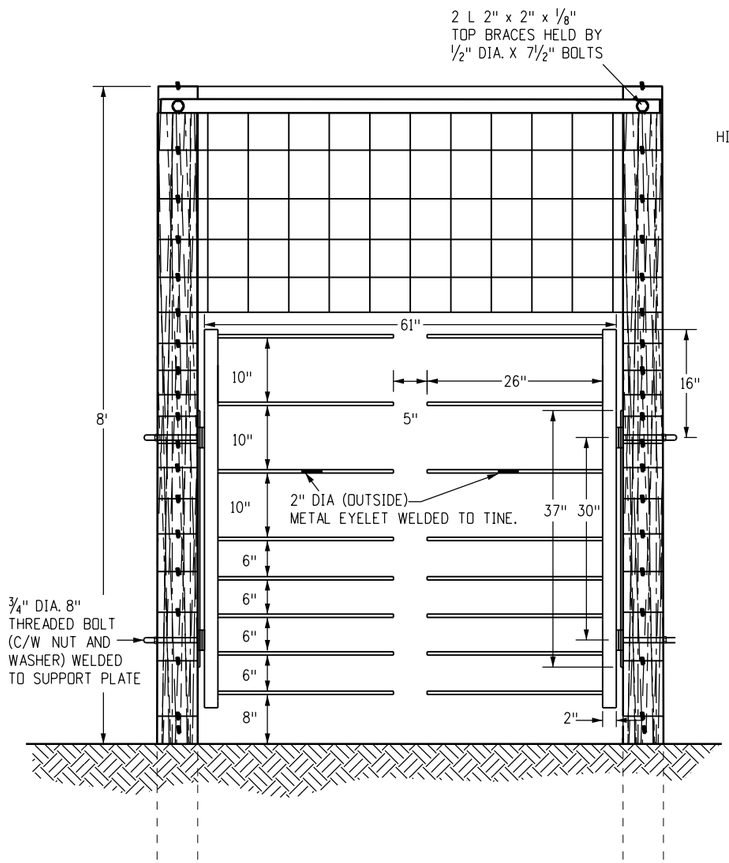
- =LINE POST
- =WOODEN STAY
- =END POST
- =BRACE

NOTES

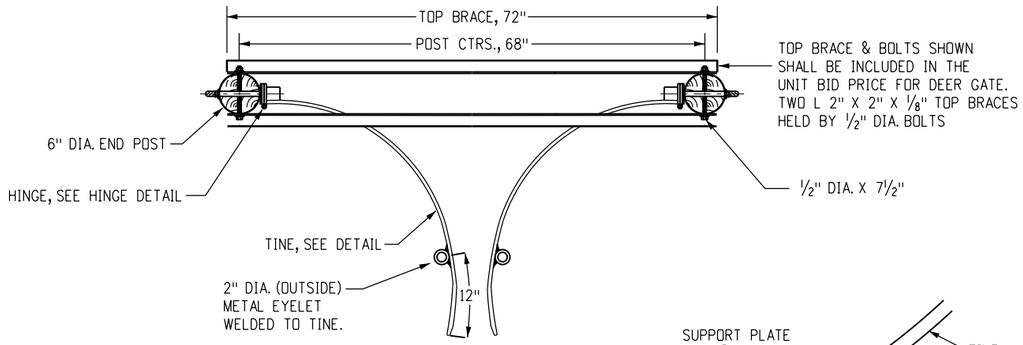
1. SIX IN. DOUBLE ACTING SPRING DOOR HINGE WITH FLAT BUTTON TIPS CUT IN TWO SHALL BE USED AS A SINGLE SWING HINGE AND BE PROVIDED WITH A GREASING NIPPLE AND WELDED TO SUPPORT PLATE.
2. TINES SHALL BE MOLDED IN ONE PIECE OF STEEL (AASHTO M 169, GRADE 1050), WITH NO WELDS ALLOWED.



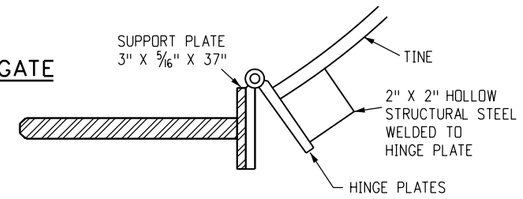
SECTION A-A



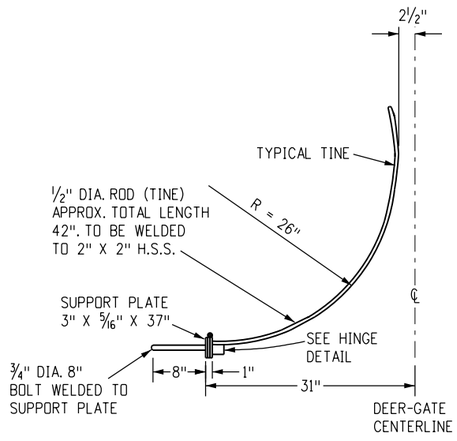
FRONT VIEW - DEER GATE



TOP VIEW - DEER GATE



TYPICAL HINGE DETAIL



TYPICAL TINE DETAIL

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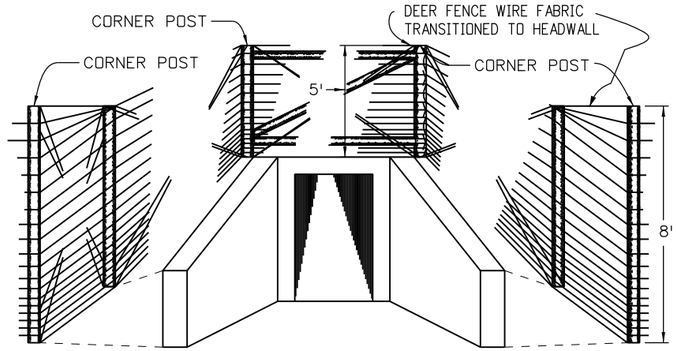
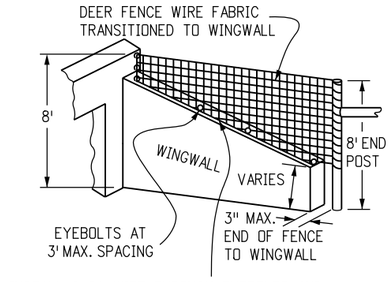


FENCE DEER OVER CONCRETE BOX CULVERT

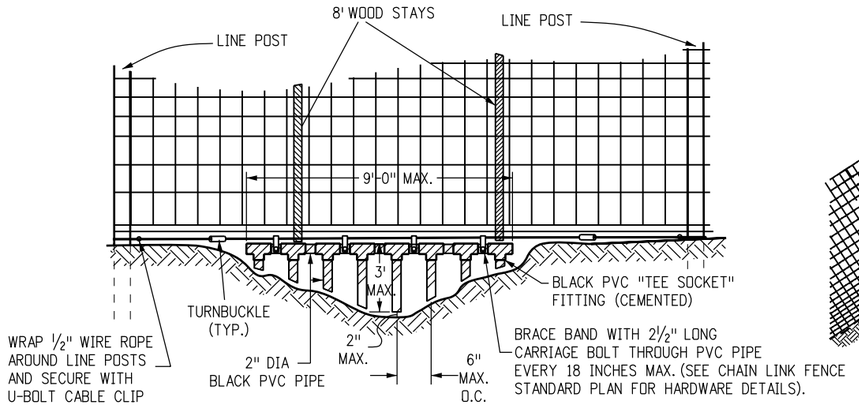
FIVE FOOT POSTS AND WIRE FABRIC SHALL BE INSTALLED WHERE THE FENCE PASSES OVER A CBC AT LOCATIONS SHOWN IN THE PLANS. THIS WORK WILL BE PAID FOR AS FENCE DEER (SPECIAL).

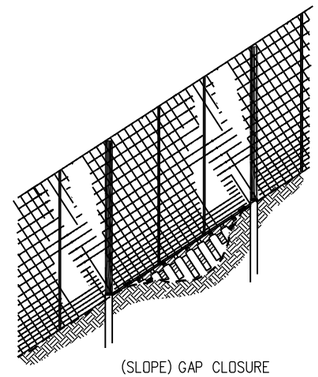


INSTALL 9 GA. WIRE THROUGH EYEBOLTS AND ATTACH FENCE FABRIC TO WIRE AT 1 FT. INTERVALS

NOTES

1. LOCATIONS OF DEER FENCE IN THE CLEAR ZONE SHALL BE SHOWN IN THE PLANS.
2. POSTS WITHIN THE CLEAR ZONE SHALL BE DRILLED.
3. DRILL HOLES PERPENDICULAR TO THE ROADWAY.
4. KNEE BRACE SHALL BE OMITTED FROM ANY END POST OR CORNER POST WITHIN THE CLEAR ZONE.

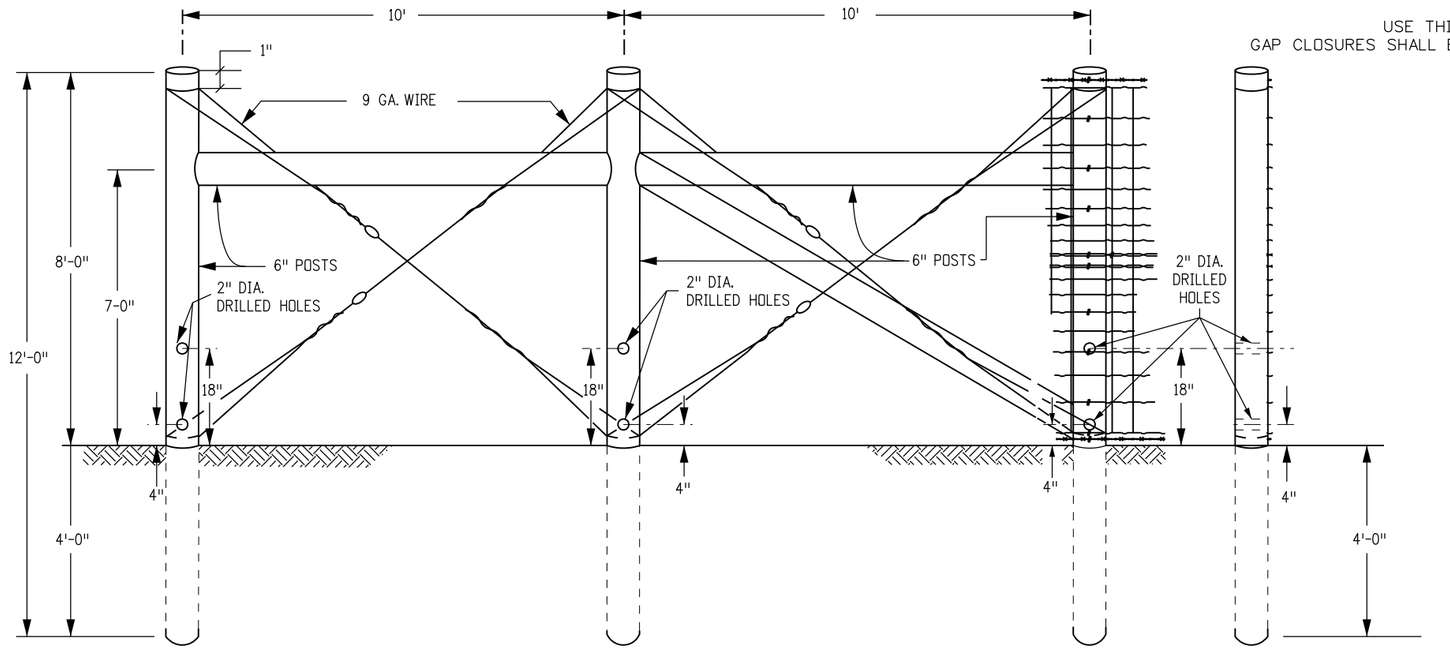




(SLOPE) GAP CLOSURE

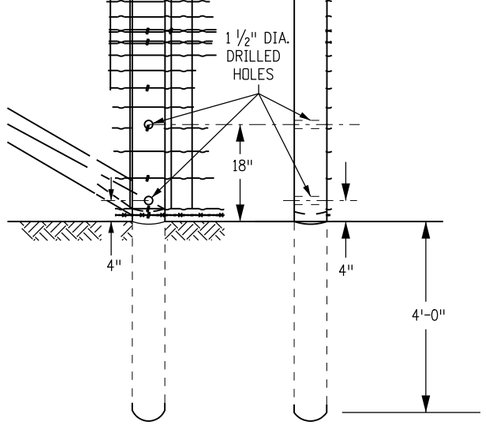
GAP CLOSURE

USE THIS DETAIL TO CLOSE ALL GAPS BEWTEEN 6 INCHES AND 3 FEET.
GAP CLOSURES SHALL BE INCLUDED IN THE PRICE OF THE FENCE AND NOT BE PAID FOR SEPARATELY.



END POST AND CORNER POST

SIDE VIEW



FRONT VIEW SIDE VIEW
5 IN. LINE POST

MODIFIED FOR PLACEMENT WITHIN ROADWAY CLEAR ZONE

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STANDARD PLAN NO.
M-607-4
Standard Sheet No. 3 of 7
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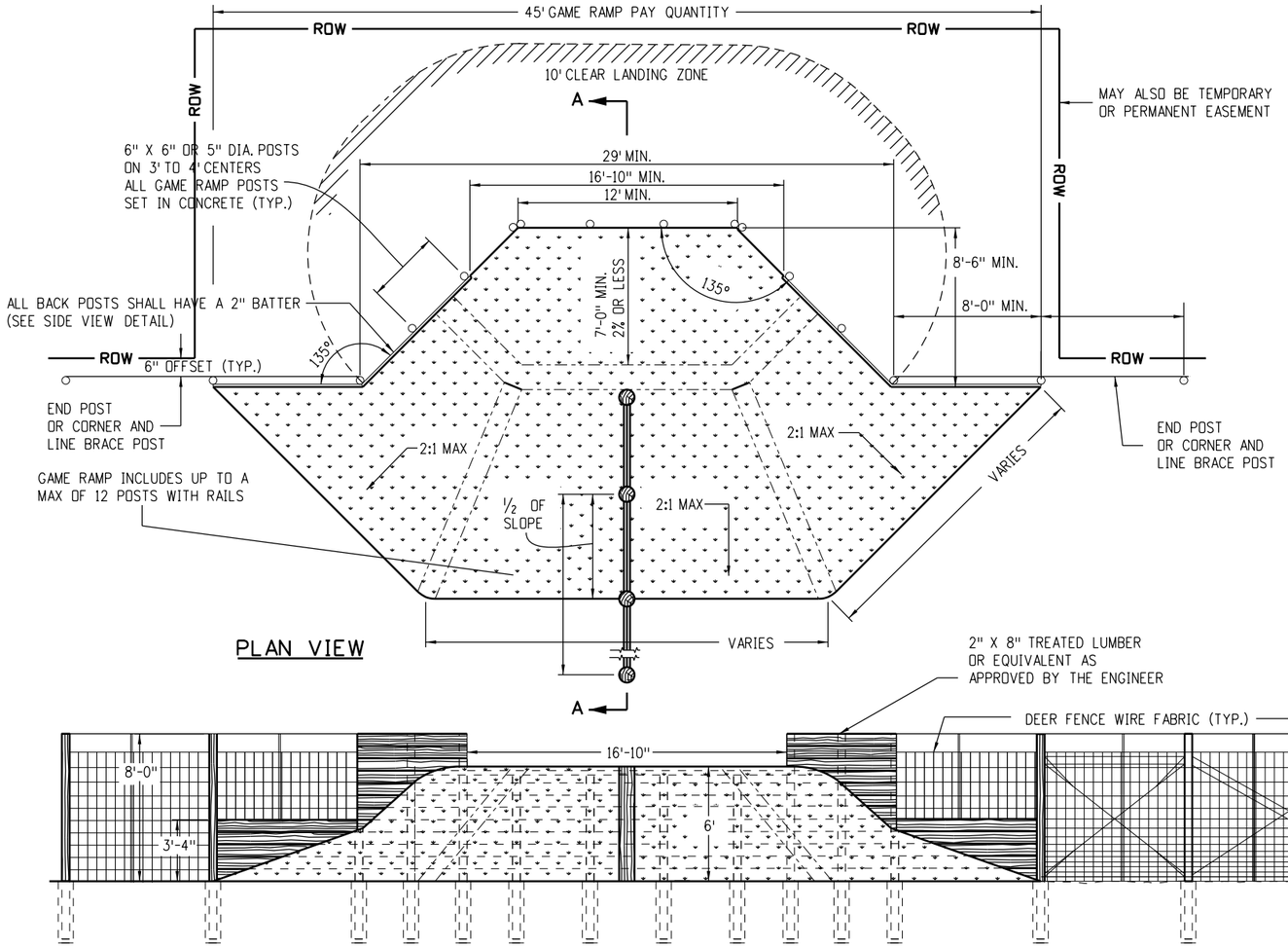
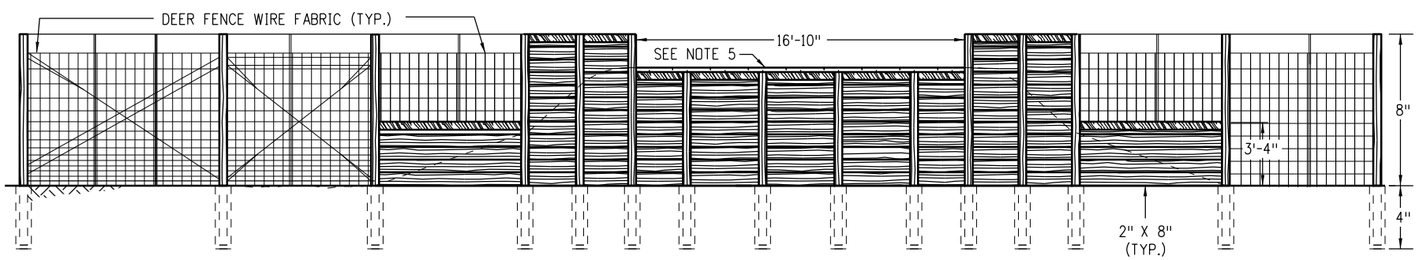


PLAN VIEW

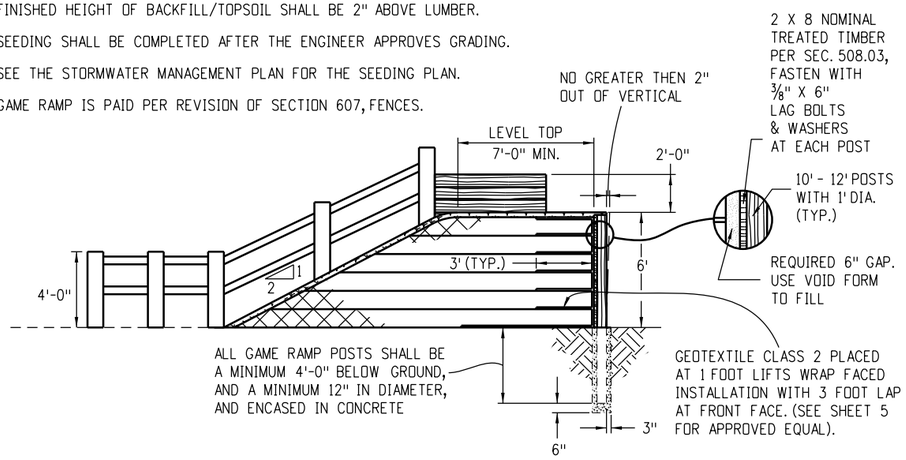
FRONT ELEVATION VIEW



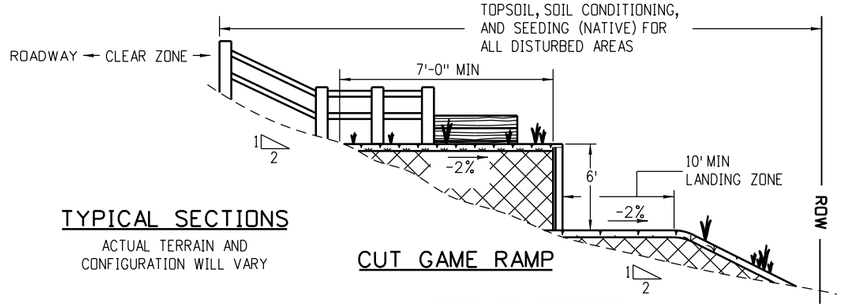
REAR ELEVATION VIEW

NOTES

1. THE LANDING ZONE SHALL BE FLAT, STABLE, AND EARTHEN. THE AREA SHALL BE VOID OF OBJECTS THAT MAY HINDER OR ENDANGER WILDLIFE. THE ENGINEER MAY ADJUST THE GAME RAMP LOCATION AS NEEDED.
2. THERE SHALL BE NO DISTURBANCE BEYOND THE ROW OR TEMPORARY/PERMANANT EASETMENTS.
3. FILL MATERIAL SHALL BE STRUCTURE BACKFILL (CLASS 2) AND MEET THE REQUIREMENTS OF SECTION 206 WITH A MINIMUM COMPACTION OF 90%.
4. FOUR INCHES OF TOPSOIL SHALL BE PLACED IN ACCORDANCE WITH SECTION 207.
5. FINISHED HEIGHT OF BACKFILL/TOPSOIL SHALL BE 2" ABOVE LUMBER.
6. SEEDING SHALL BE COMPLETED AFTER THE ENGINEER APPROVES GRADING.
7. SEE THE STORMWATER MANAGEMENT PLAN FOR THE SEEDING PLAN.
8. GAME RAMP IS PAID PER REVISION OF SECTION 607, FENCES.



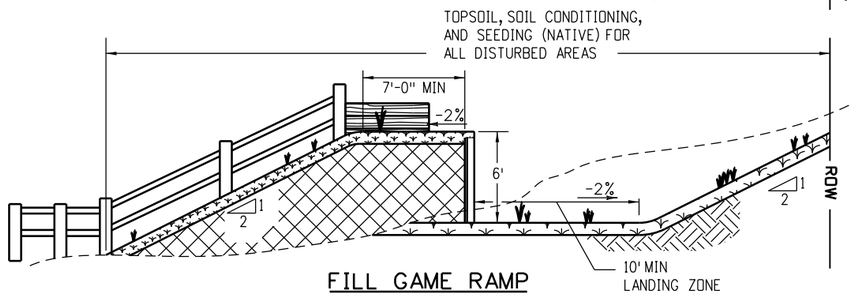
SECTION A-A



TYPICAL SECTIONS

ACTUAL TERRAIN AND CONFIGURATION WILL VARY

CUT GAME RAMP



FILL GAME RAMP

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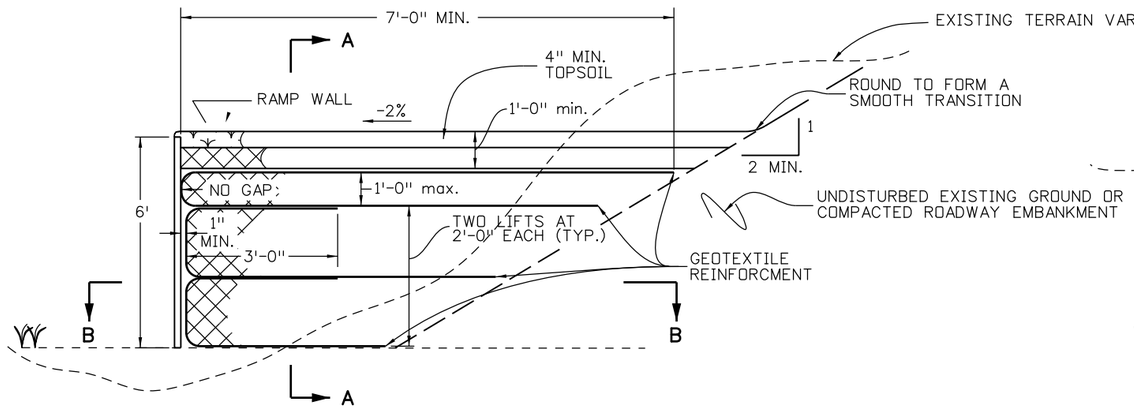
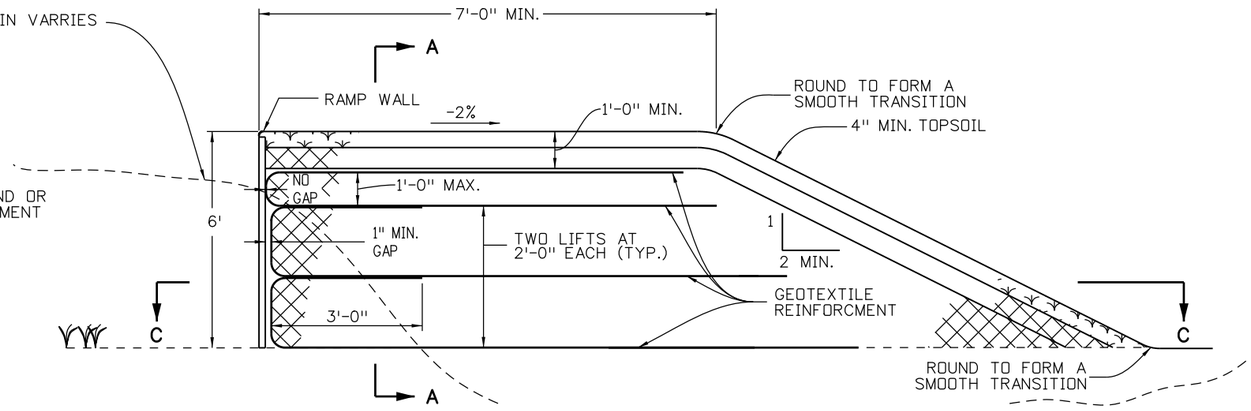


CUT SECTION PERPENDICULAR TO GAME RAMP



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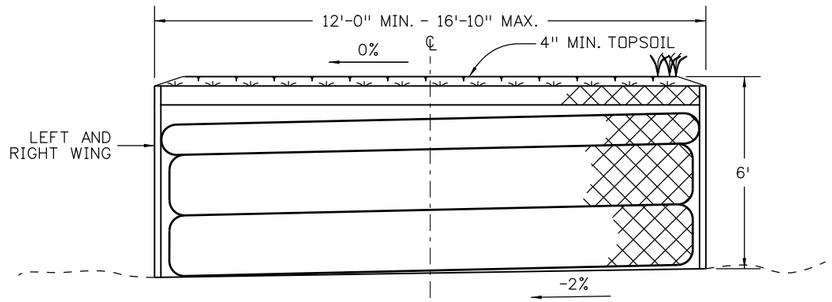
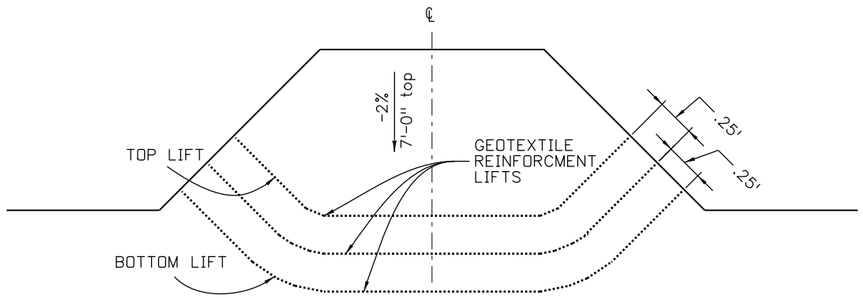


SECTION A-A



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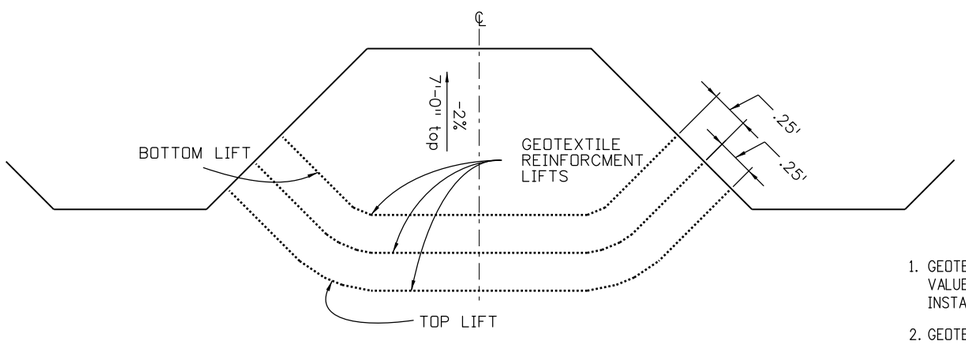
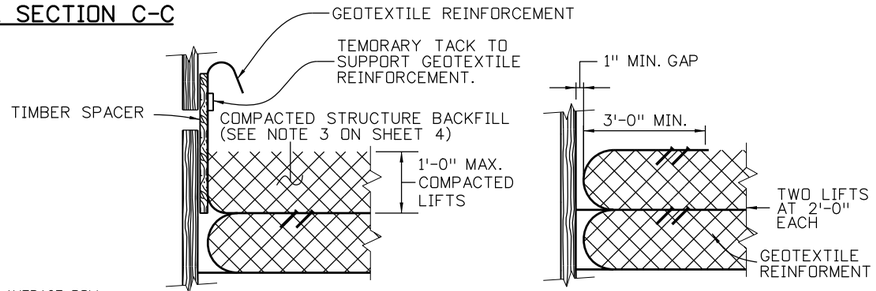


CUT SECTION B-B



GAP DETAIL STEP 1

GAP DETAIL STEP 2

NOTES

1. GEOTEXTILE REINFORCEMENT SHALL BE WOVEN FABRIC WITH A MINIMUM AVERAGE ROLL VALUE OF 4800 LB/FT FOR INSTALLATIONS WITH A GAP AND 2400 LB/FT FOR INSTALLATIONS WITHOUT A GAP BASED ON ASTM D4595.
2. GEOTEXTILE REINFORCEMENT SHALL BE PLACED BY ALTERNATING MACHINE DIRECTION (MD) WITH CROSS MACHINE DIRECTION (XD) FROM LAYER TO LAYER.
3. THE GEOTEXTILE REINFORCEMENT WRAP AT BACK FACE OF GAME RAMP SHALL BE PULLED BACK SLACK FREE WITH ITS END ANCHORED TO SOIL UNDERNEATH WITH STAPLES OR PINS.
4. MINIMUM SPLICE OF ALL GEOTEXTILE SHALL CONSIST OF 1 FOOT OF OVERLAP.
5. GEOTEXTILE REINFORCEMENT WRAP AT BACK FACE OF GAME RAMP WALL SHALL BE TEMPORARILY HUNG WITH A SPACER BOARD AND TACK STRIP. AFTER REACHING A TOTAL OF 2'-0" COMPACTED LIFT, THE TACK STRIP SHALL BE REMOVED AND GEOTEXTILE REINFORCEMENT SHALL BE PULLED BACK SLACK FREE WITH ITS END ANCHORED TO SOIL UNDERNEATH WITH STAPLE OR PINS BEFORE THE SPACER BOARD IS PULLED.
6. DO NOT USE SPACER FOR THE TOP LIFT (FINAL LIFT). TOP LIFT SHALL ABUT THE GAME RAMP WALL.

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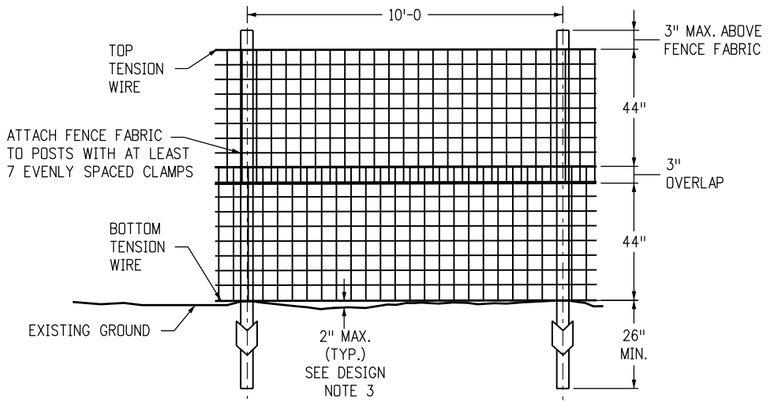


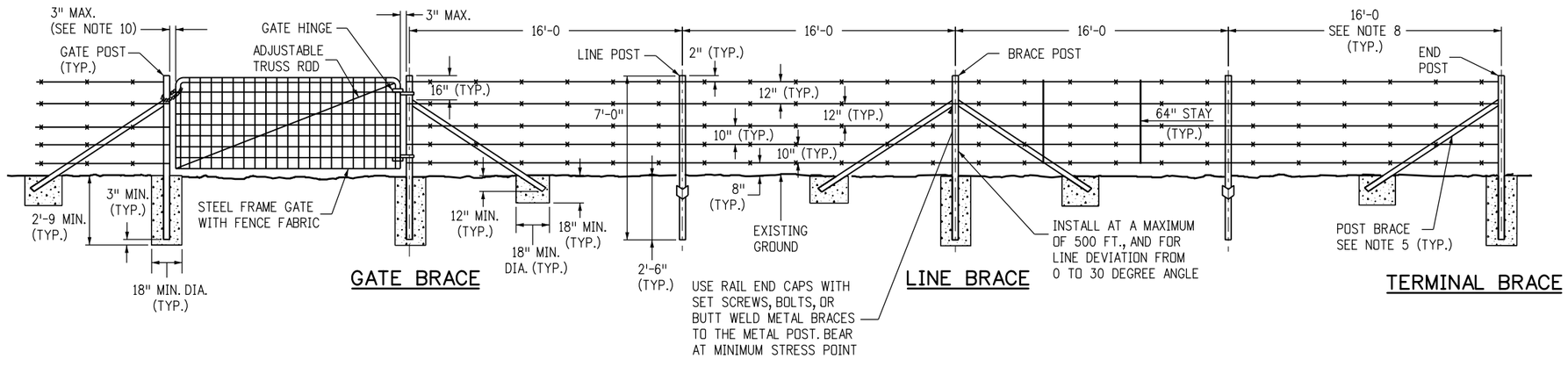
ALTERNATIVE DEER FENCE

DESIGN NOTES:

1. INSTALL A 4 FT. GATE ADJACENT TO ANIMAL CROSSING STRUCTURES.
2. A 3 INCH MIN. OVERLAP IS REQUIRED PLUS TIES OR CLAMPS TOGETHER EVERY 18 INCHES USING HOG RINGS OR OTHER TYPES OF TIES OR CLAMPS.
3. PLACE A BOTTOM TENSION WIRE AND FENCE FABRIC AT EXISTING GROUND AT POSTS AND WITHIN 2 INCHES OF EXISTING GROUND BETWEEN POSTS.
4. TIE OR CLAMP BOTTOM AND TOP TENSION WIRE TO FENCE FABRICS EVERY 24 INCHES USING HOG RINGS OR OTHER TYPES OF TIES OR CLAMPS.
5. A SINGLE FENCE FABRIC MAY BE USED IF IT MEETS OVERALL MINIMUM DIMENSIONS.

NOTES

1. SET GATE POST, BRACE POST, END POST, CORNER POST, AND POST BRACE IN CLASS "B" CONCRETE. SEE SHEET 7 FOR CORNER BRACE.
2. LINE POSTS
   A. "T", "Y", OR "U" STEEL CHANNEL SECTIONS, MINIMUM WEIGHT 1.33 LB/FT OF LENGTH OR STEEL PIPE, 1.900 INCH OUTSIDE DIAMETER SCHEDULE 40 PIPE, WEIGHT 2.72 LB/FT OF LENGTH OR HIGH TENSILE TRIPLE COATED STEEL PIPE, WEIGHT 2.23 LB/FT OF LENGTH.
   B. LINE POSTS ARE 10 FEET IN LENGTH.
3. BRACE POSTS, CORNER POSTS, AND END POSTS
   A. STEEL PIPE 2.375 INCH OUTSIDE DIAMETER, WEIGHT 3.65 LB/FT OR HIGH TENSILE TRIPLE COATED STEEL, 2.375 INCH OUTSIDE DIAMETER WEIGHT 3.11 LB/FT.
4. GATE POSTS
   A. GATE WIDTHS 6 FEET AND LESS USE STEEL PIPE WITH OUTSIDE DIAMETER 2.375 INCH AND WEIGHT 3.65 LB/FT OR HIGH TENSILE TRIPLE COATED STEEL, 2.375 INCH OUTSIDE DIAMETER WEIGHT 3.11 LB/FT.
   B. GATE WIDTHS GREATER THAN 6 FEET USE STEEL PIPE WITH OUTSIDE DIAMETER 3.50 INCH AND WEIGHT 7.58 LB/FT.
5. POST BRACES TO MATCH POST TYPE AND SIZE.
6. USE CORNER BRACE ON FENCE LINE DEVIATIONS GREATER THAN A 17 DEGREE ANGLE. SEE SHEET 7 FOR CORNER BRACE DETAILS.
7. TERMINATE FENCE FABRIC AND BARBED WIRE AT EACH CORNER POST.
8. USE 10 FEET SPACING IN AREAS OF FARM ANIMAL USE OR AS SHOWN.
9. GATE FRAME USE STEEL PIPE 1.875 INCH OUTSIDE DIAMETER WITH WEIGHT OF 2.72 LB/FT.
10. WHERE DOUBLE GATES ARE INSTALLED PROVIDE AT LEAST A 4 INCH GAP BETWEEN GATE FRAMES TO ALLOW FOR LATCH.
11. THE GALVANIZED POSTS SHALL BE STAINED FOREST SERVICE BROWN WHEN REQUIRED PER THE AEROSPACE MATERIAL SPECIFICATION STANDARD AMS 595A 20059.



ALTERNATIVE DEER FENCE INSTALLATION WITH ONLY METAL POSTS

Computer File Information		Sheet Revisions	
Creation Date: 07/31/19		Date:	Comments
Designer Initials: JBK	(R-X)	07/13/20	Added this sheet.
Last Modification Date: 07/13/20	(R-X)		
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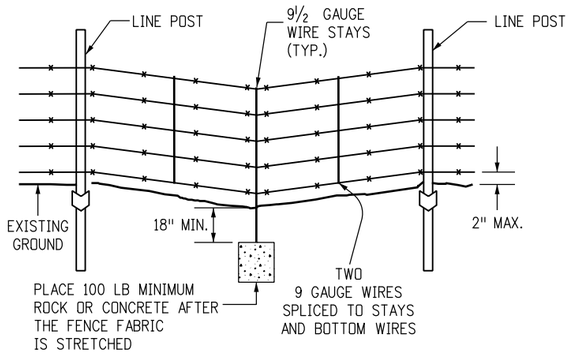
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	(R-X)		

Colorado Department of Transportation
2829 West Howard Place
CDOT HQ, 3rd Floor
Denver, CO 80204
Phone: 303-757-9021 FAX: 303-757-9868
Project Development Branch JBK

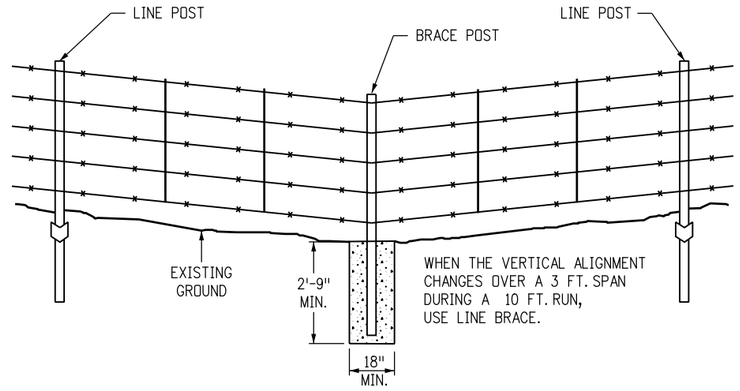
DEER FENCE, GATES, AND GAME RAMPS

Issued by the Project Development Branch: July 31, 2019

STANDARD PLAN NO.
M-607-4
Standard Sheet No. 6 of 7
Project Sheet Number:

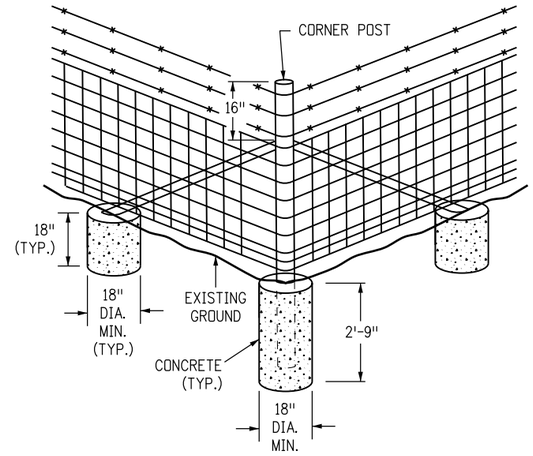


TYPICAL SAG SECTION



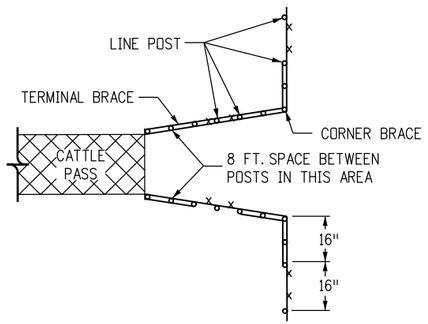
TYPICAL VERTICAL ALIGNMENT CHANGE

INSTALLATION WITH METAL POSTS (TYP.)



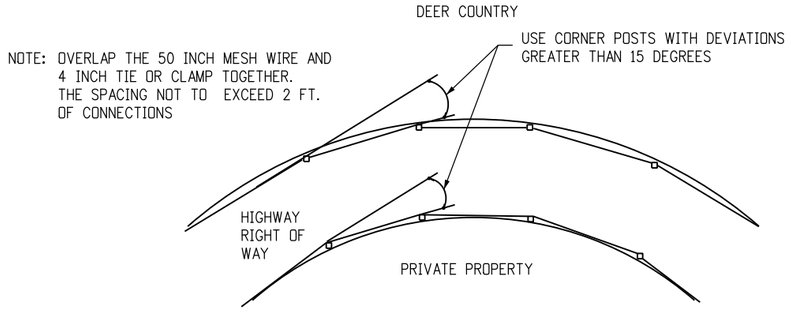
CORNER BRACE

SEE NOTE 6 ON SHEET 6



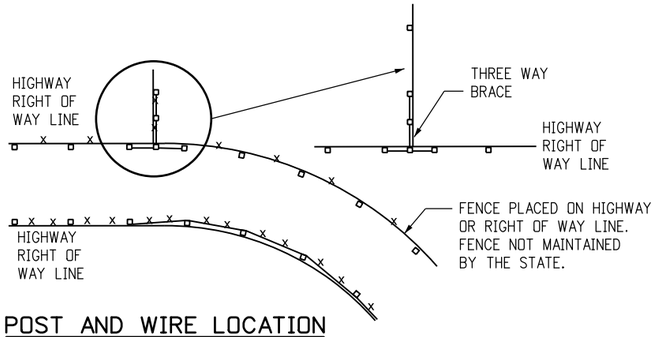
CATTLE PASS FENCE DETAIL

NOTE: OVERLAP THE 50 INCH MESH WIRE AND 4 INCH TIE OR CLAMP TOGETHER. THE SPACING NOT TO EXCEED 2 FT. OF CONNECTIONS



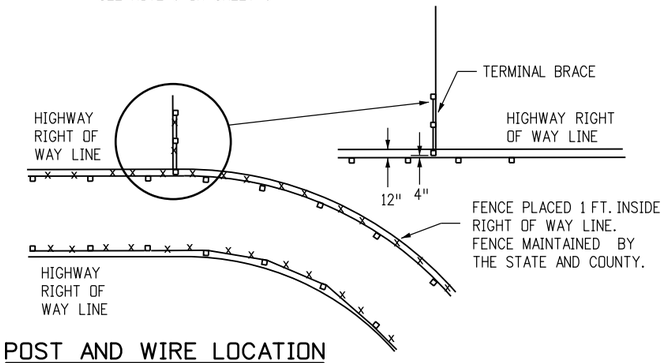
DEER BARRIER ON CURVES

SEE NOTE 6 ON SHEET 6



POST AND WIRE LOCATION

PLACE WIRE TO PULL AGAINST POST



POST AND WIRE LOCATION

PLACE WIRE TO PULL AGAINST POST

ALTERNATIVE DEER FENCE INSTALLATION WITH ONLY METAL POSTS

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