

PART V
DRAWINGS

**Lower Plum Creek Watershed – STRUCTURAL
REPAIRS**

Floodwater Retarding Structure Site 23

Caldwell County, Texas

Drawing No. TX-EN-0786

(Cover page + 6 sheets)



United States
Department of
Agriculture

Natural Resources Conservation Service

LOWER PLUM CREEK WATERSHED

FLOODWATER RETARDING STRUCTURE SITE NO. 23 STRUCTURAL REPAIRS

CALDWELL COUNTY, TEXAS

NID # TX03422

CONTROLLED DRAINAGE AREA	2,163 ACRES
TOTAL STORAGE	1,135 AC. FT.
EFFECTIVE HEIGHT OF DAM	36 FEET

SPONSORED BY

PLUM CREEK CONSERVATION DISTRICT
CALDWELL - TRAVIS SOIL AND WATER CONSERVATION DISTRICT
HAYS COUNTY SOIL AND WATER CONSERVATION DISTRICT

COOPERATING WITH

NATURAL RESOURCES CONSERVATION SERVICE
OF THE
U.S. DEPARTMENT OF AGRICULTURE

2020

CONSTRUCTION DRAWINGS APPROVED
ENGINEERING JOB CLASS VI



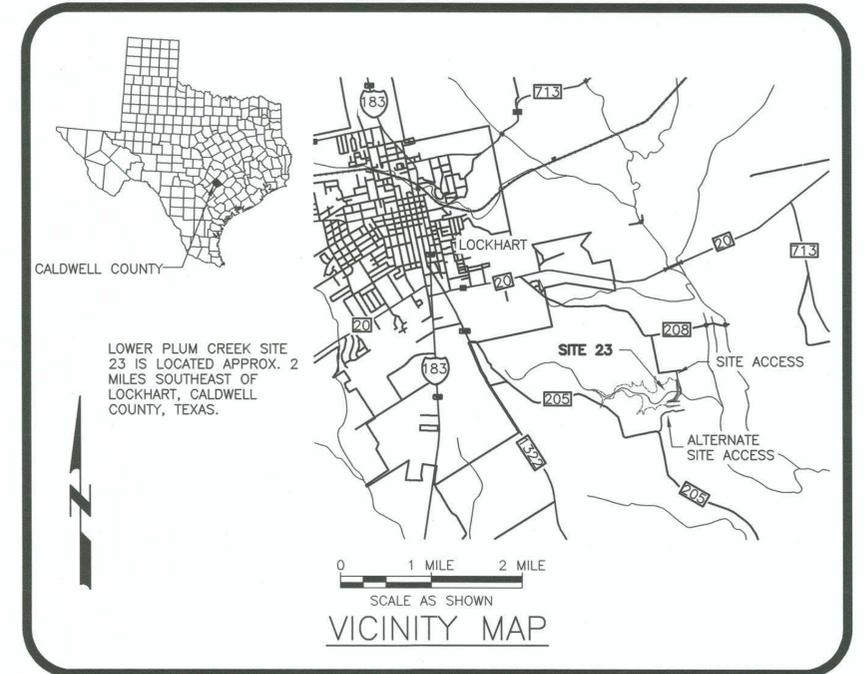
R. B. Winters
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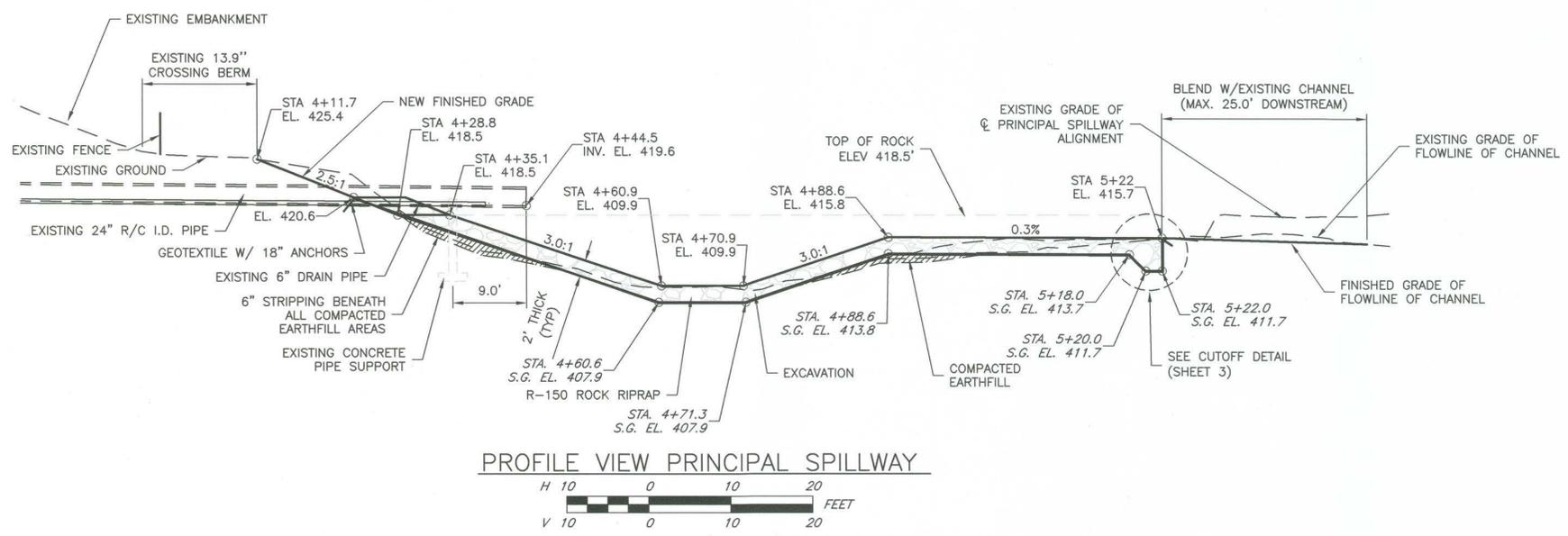
R. B. Winters
STATE CONSERVATION ENGINEER, N.R.C.S.
TEMPLE, TEXAS

Sheet List Table

Sheet Number	Sheet Title
1	GENERAL PLAN
2	PLUNGE BASIN PLAN & PROFILE
3	PLUNGE BASIN TYPICAL SECTIONS
4	DRAIN-PIPE REPLACEMENT
5	STORMWATER POLLUTION PREVENTION PLAN
6	FENCE DETAILS



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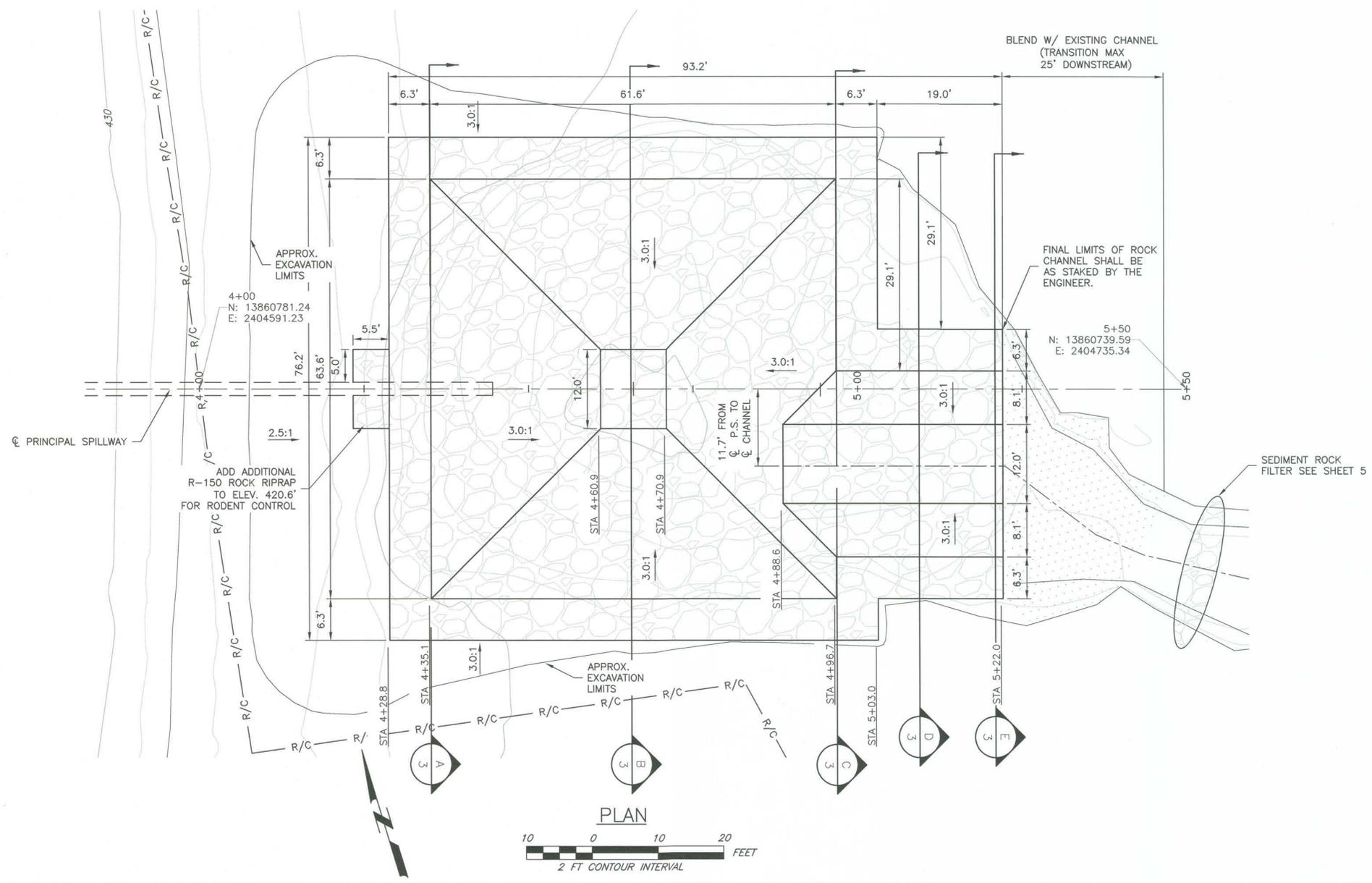
SIZE OF ROCK POUNDS	% SMALLER BY WEIGHT
300	100
150	50-100
60	15-50
20	0-15

REFERENCE A.S.T.M. D 6092 (R-150)

1. SPALLS AND ROCK DUST THAT PASS A 3" SIEVE SHALL CONSIST OF LESS THAN 5 PERCENT BY WEIGHT.
2. ROCK PLACED AGAINST EXISTING WORKS OF IMPROVEMENT SHALL BE PLACED CAREFULLY TO AVOID DAMAGE. ALL ROCK RIPRAP REQUIRED SHALL COMPLY WITH THE GRADATION ABOVE (SEE CONSTRUCTION SPECIFICATION 61, AND MATERIAL SPECIFICATION 523.)
3. APPROX. 1159 TONS OF R-150 ROCK RIPRAP IS REQUIRED FOR THE PLUNGE BASIN AND FOR THE ROCK CHANNEL.

GRADATION OF ROCK RIPRAP

- NOTE:
1. PLACE GEOTEXTILE BETWEEN THE ROCK RIPRAP AND THE APPROVED SUBGRADE. GEOTEXTILE SHALL BE NON-WOVEN AND MEET THE REQUIREMENTS OF CONSTRUCTION SPECIFICATION 95 AND MATERIAL SPECIFICATION 592.



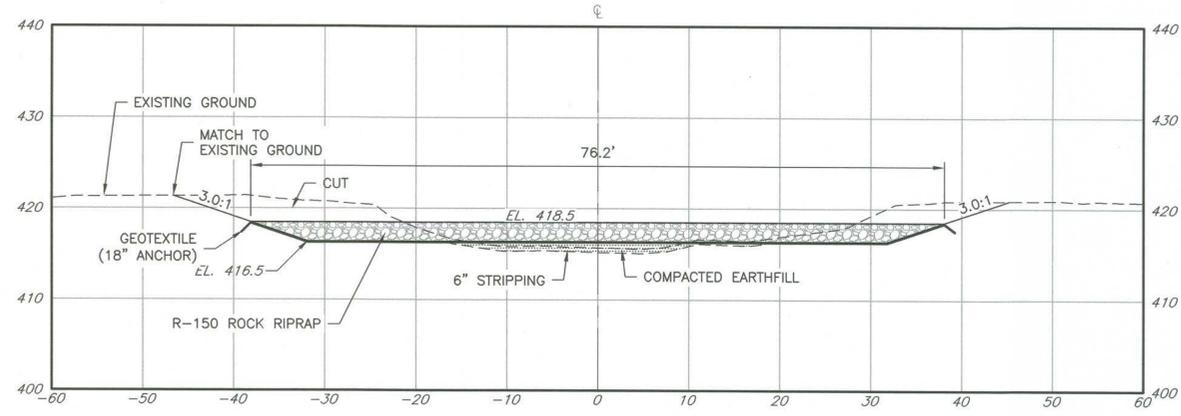
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PLUNGE BASIN PLAN & PROFILE
 FLOODWATER RETARDING STRUCTURE SITE 23
 LOWER PLUM CREEK WATERSHED
 IN
 CALDWELL COUNTY, TEXAS

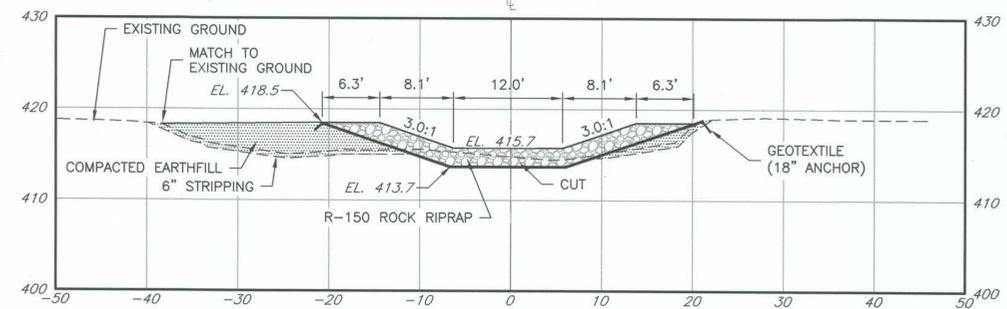


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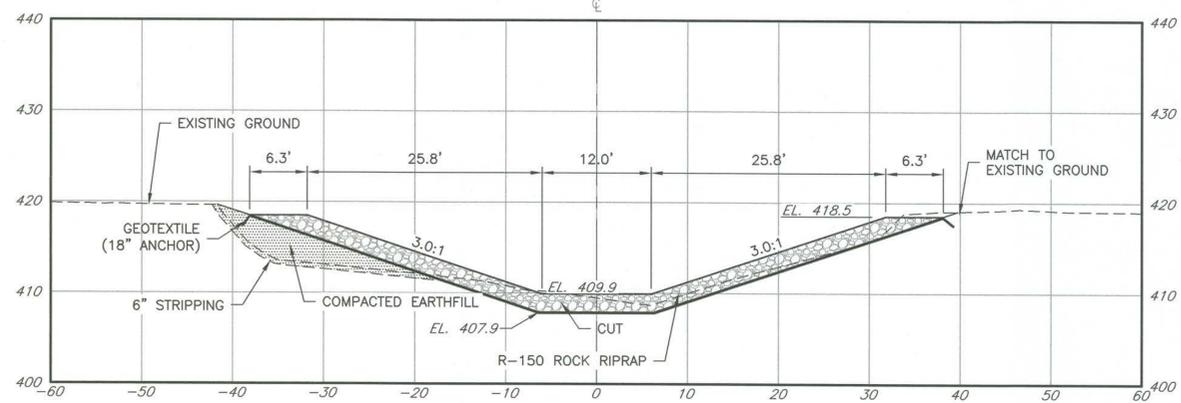
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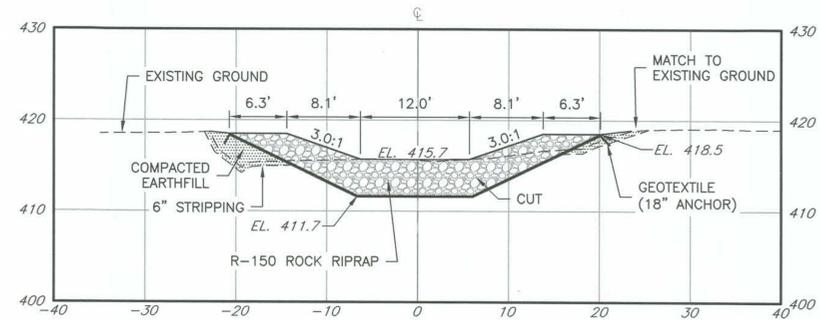
A
2 PLUNGE BASIN SECTION
10 0 10 20 FEET



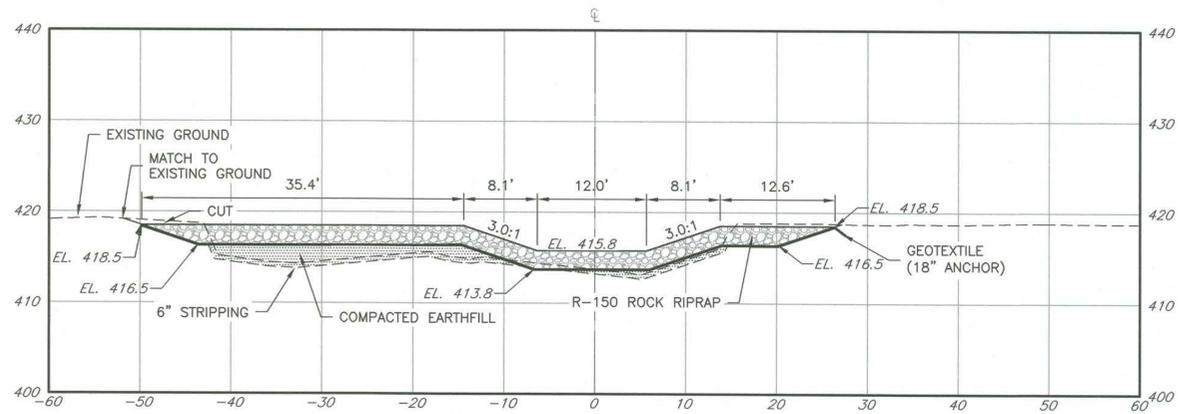
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2 PLUNGE BASIN SECTION
10 0 10 20 FEET



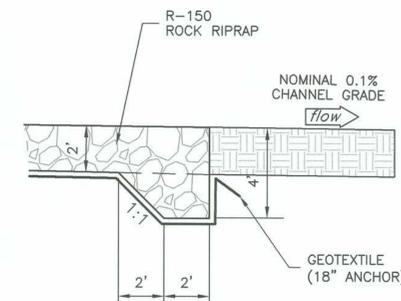
B
2 PLUNGE BASIN SECTION
10 0 10 20 FEET



E
2 PLUNGE BASIN SECTION
10 0 10 20 FEET



C
2 PLUNGE BASIN SECTION
10 0 10 20 FEET



CUTOFF DETAIL
NOT TO SCALE



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PLUNGE BASIN TYPICAL SECTIONS
FLOODWATER RETARDING STRUCTURE SITE 23
LOWER PLUM CREEK WATERSHED
IN
CALDWELL COUNTY, TEXAS

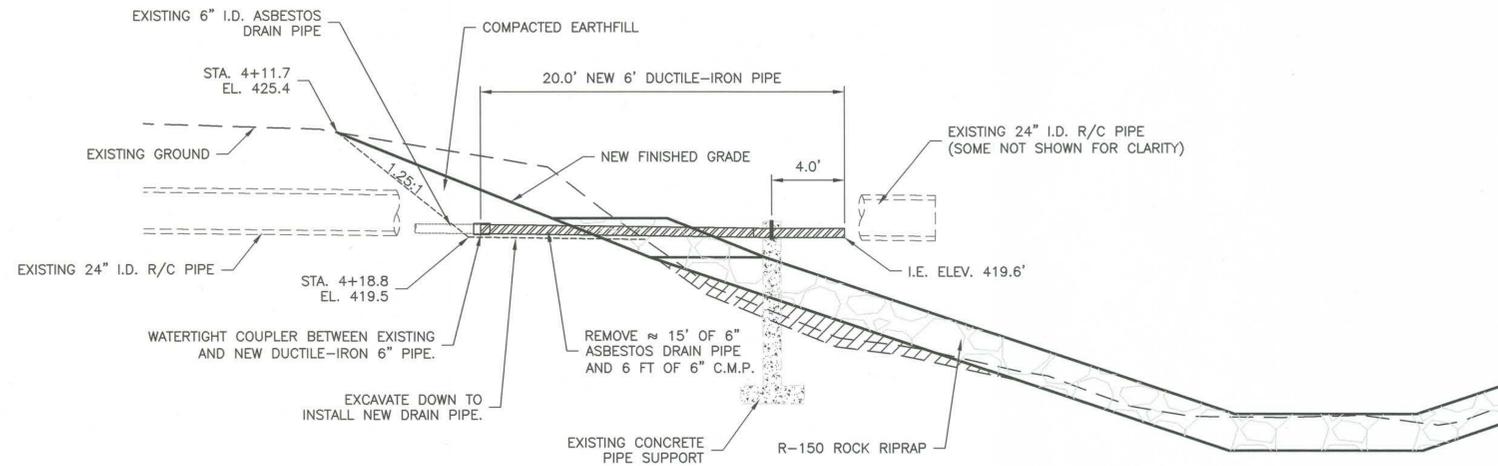
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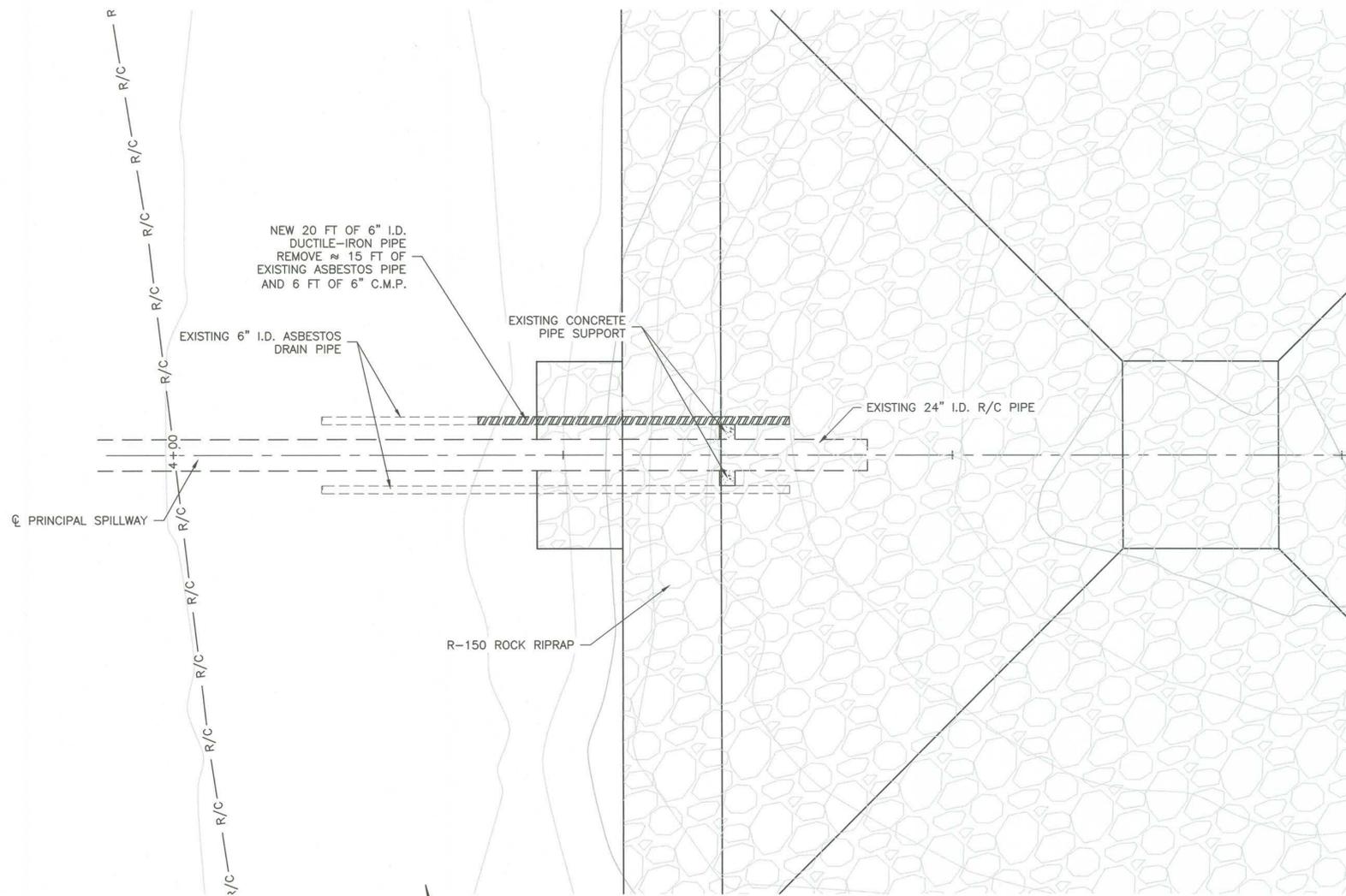
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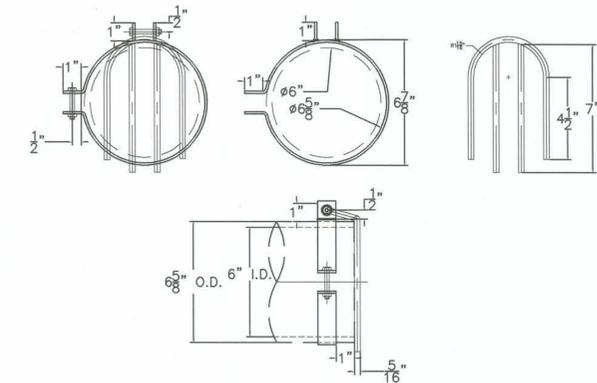
PROFILE VIEW NEW DRAIN PIPE



PLAN

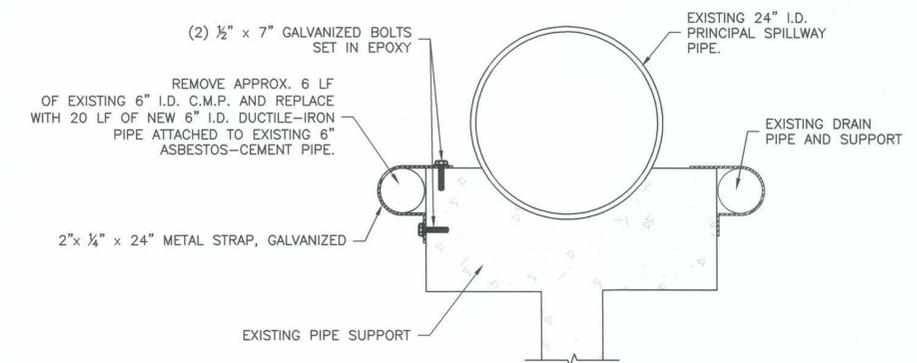


- EXISTING DRAIN OUTLET NOTES:
1. DEMO EXISTING 6" C.M.P. AND ≈ 15 FT OF ASBESTOS PIPE TO THE PIPE CONNECTION.
 2. MAKE A WATERTIGHT JOINT WITH A COUPLER AT THE EXISTING PIPE END AND NEW DUCTILE-IRON PIPE.
 3. THE ACCESS TRENCH SHALL HAVE 1.5:1 SIDE SLOPES WITH 1.25:1 BACK SLOPE AND MIN. 8' BOTTOM WIDTH. ADDITIONAL SHORING AND/OR TRENCH PROTECTION SHALL BE AS REQUIRED BY THE ENGINEER AND IN ACCORDANCE WITH OSHA REGULATIONS (SEE CONSTRUCTION SPECIFICATION 21).
 4. THE NEW DUCTILE-IRON SECTION OF THE OUTFALL LINE SHALL BE FASTENED TO THE PIPE SUPPORT WITH A STRAP AND 2 BOLTS AS SHOWN ON THE DETAIL (THIS SHEET). SEE CONSTRUCTION SPECIFICATION 53 AND 81.



SIDE VIEW
 ANIMAL GUARD DETAIL
 NOT TO SCALE

APPROVED MODEL RG06BT MANUFACTURED BY "AGRI-DRAIN" OR APPROVED EQUAL



PIPE SUPPORT SECTION
 NOT TO SCALE
 LOOKING DOWNSTREAM



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DRAIN-PIPE REPLACEMENT
 FLOODWATER RETARDING STRUCTURE SITE 23
 LOWER PLUM CREEK WATERSHED
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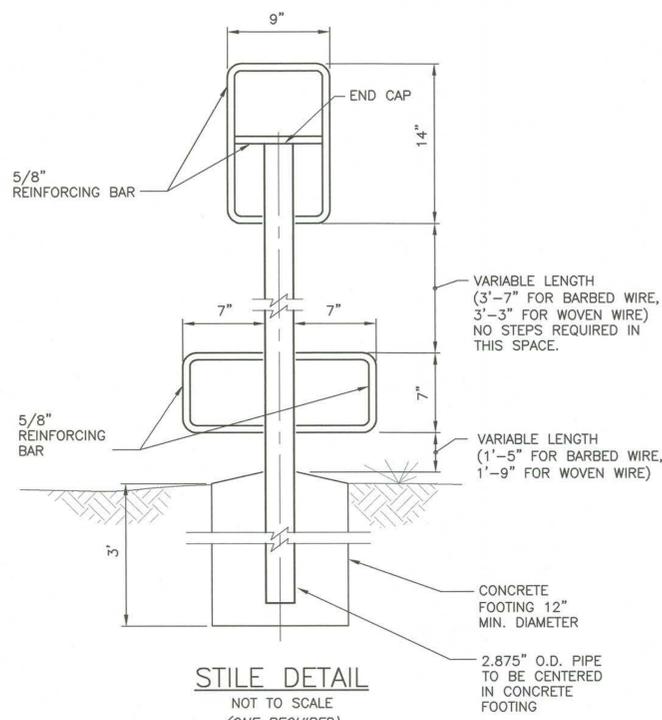
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DRAWING NO.
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SHEET NO. 4
 OF 6

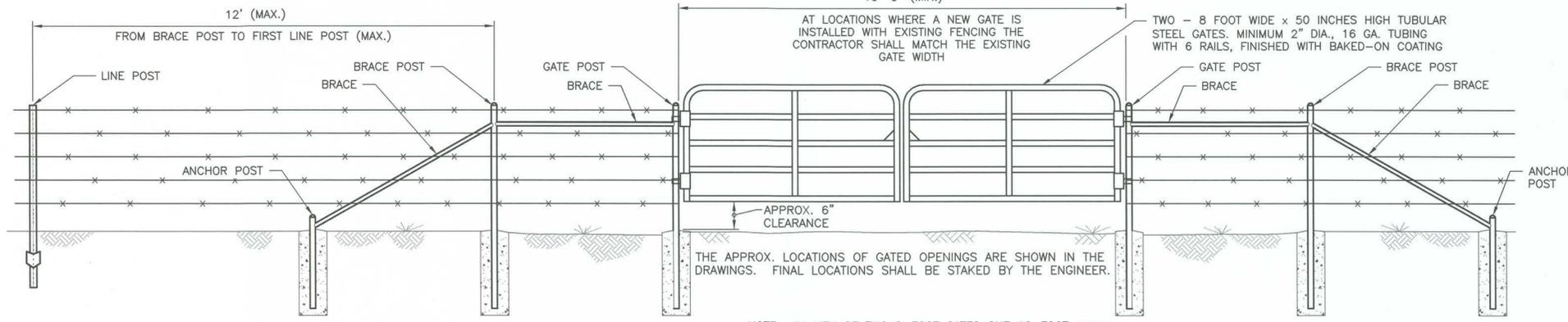
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STILE DETAIL
NOT TO SCALE
(ONE REQUIRED)

- NOTE:
1. POSITION STILE SO THAT STEPS AND HANDLE ARE PERPENDICULAR TO ALIGNMENT OF FENCE.
 2. ALL BAR BENDS SHOWN SHALL HAVE AN INSIDE RADIUS OF APPROX. 1 1/2"
 3. PIPE FOR STILE SHALL BE 2.875" O.D. SCHEDULE 40 STEEL PIPE.
 4. ALL BAR CONNECTIONS SHALL HAVE ALL AROUND FILLET WELD.
 5. ATTACH END CAP TO PIPE WITH ALL AROUND WELD, AND BAR TO END CAP BY WELDING BOTH SIDES.
 6. GALVANIZE STILE AFTER FABRICATION.
 7. THE APPROXIMATE LOCATION OF THE STILE IS SHOWN ON THE DRAWINGS.
 8. THE FINAL LOCATION OF THE STILE SHALL BE AS DESIGNATED BY THE ENGINEER DURING FENCE LAYOUT.



NOTE: IN LIEU OF TWO 8-FOOT GATES ONE 16-FOOT WIDE GATE MAY BE USED.

16' GATE OPENING
NOT TO SCALE
(TWO (2) GATE REQUIRED FOR THIS PROJECT)

NOTE:

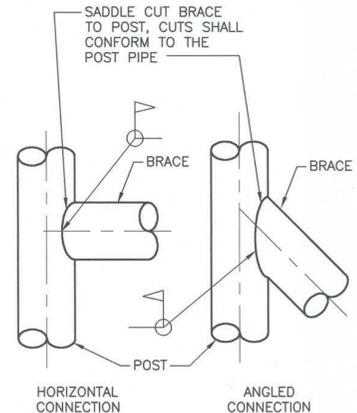
TEE POSTS SHALL MEET THE REQUIREMENTS OF ASTM A702 WITH TWO COATS OF PAINT. ALL LINE POST SHALL BE THE SAME COLOR.

PIPE POSTS AND BRACES SHALL MEET THE REQUIREMENTS OF ASTM A500 OR ASTM A53, EXCEPT SECTION B, HYDROSTATIC TEST SHALL NOT APPLY.

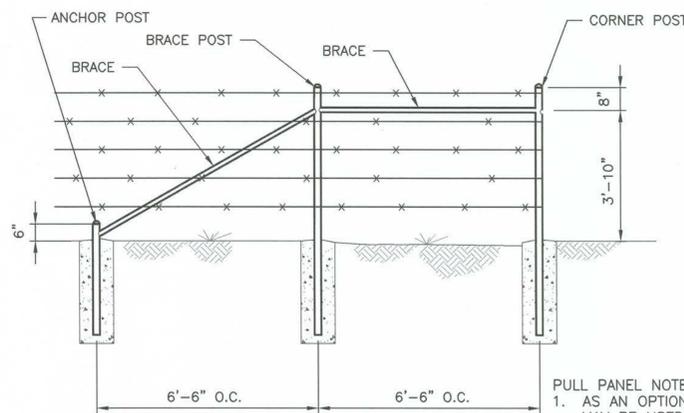
GALVANIZATION OF GATE/CORNER POSTS, BRACE POSTS, ANCHOR POSTS, BRACES, AND CAPS SHALL NOT BE REQUIRED.

GATE POSTS, CORNER POSTS, BRACE POSTS, ANCHOR POSTS, AND PULL POSTS SHALL BE 2.875" O.D.

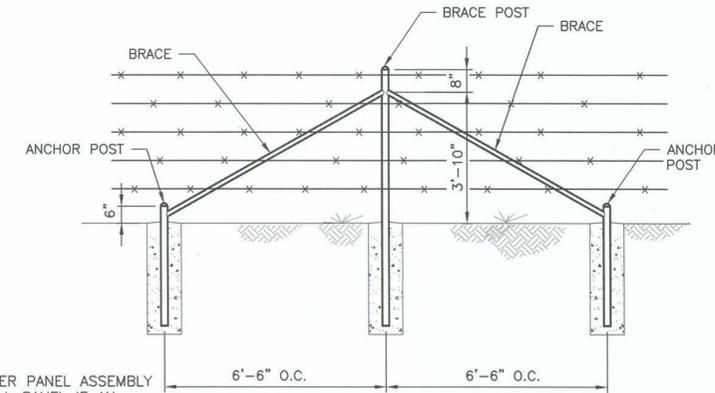
BRACES AND LINE POSTS SHALL BE MIN. 2.375" O.D.. ALL POSTS AND BRACES SHALL BE SCHEDULE 40 PIPE.



POST DETAILS
NOT TO SCALE



CORNER PANEL
NOT TO SCALE



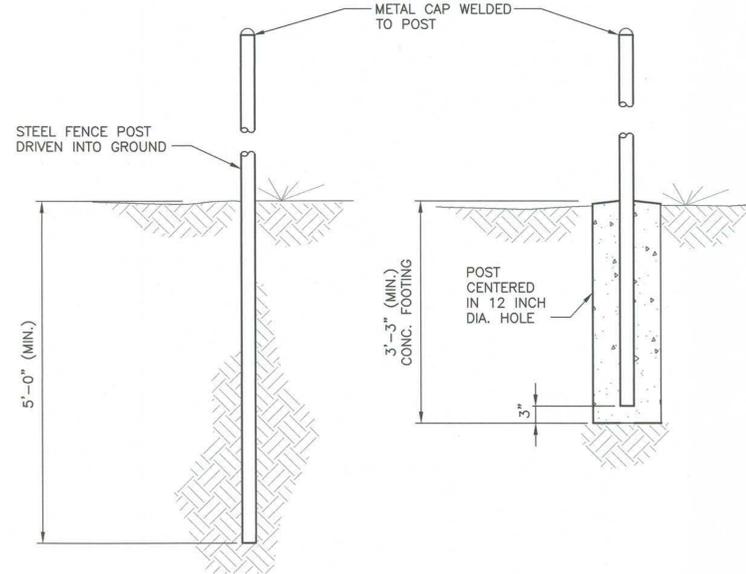
PULL PANEL
NOT TO SCALE

PULL PANEL NOTE:

1. AS AN OPTION, A CORNER PANEL ASSEMBLY MAY BE USED AS A PULL PANEL IF AN ADDITIONAL DIAGONAL BRACE AND ANCHOR POST ARE ADDED TO THE CORNER POST IN OPPOSITION TO THE DIAGONAL BRACE SHOWN. THE ORIENTATION OF THE NEW DIAGONAL BRACE AND ANCHOR POST SHALL BE WITHIN THE PLANE OF PULL OF THE CONSTRUCTED FENCELINE.

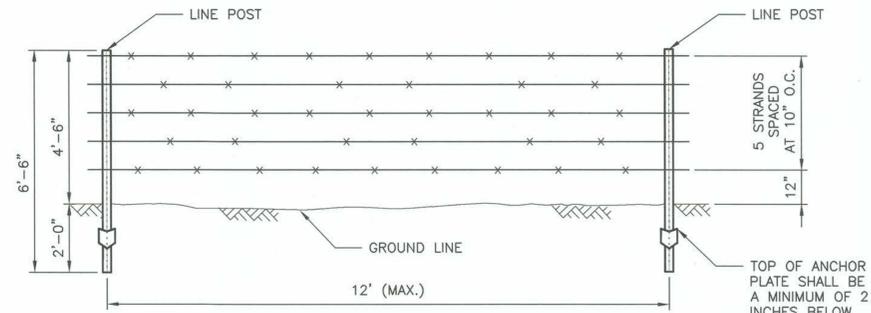
- DRIVE EMBEDMENT NOTES:
1. DRIVE STEEL CORNER, BRACE, AND GATE POSTS TO THE MINIMUM DEPTH SHOWN.
 2. IN THE EVENT THAT DRIVING OPERATIONS DO NOT ACHIEVE THE MINIMUM DEPTH SHOWN, THE POST SHALL BE REMOVED AND REPLACED IN ACCORDANCE WITH THE CONCRETE EMBEDMENT DETAIL.
 3. CHANGES IN VERTICAL ALIGNMENT, SUCH AS CROSSING OF STUB DIVERSIONS, LINE POSTS OR PULL PANEL POSTS THAT RESTRAIN UPWARD PULL OF THE FENCE STRANDS SHALL BE ANCHORED BY SETTING SUCH POST IN 18" OF CONCRETE. THE ENGINEER WILL DESIGNATE THE LOCATIONS WHERE THIS ANCHORAGE TREATMENT IS REQUIRED.

- CONCRETE EMBEDMENT NOTES:
1. SET STEEL CORNER, BRACE, AND GATE POSTS IN CONCRETE AS SHOWN.
 2. IF SOUND ROCK IS ENCOUNTERED THE DRILL HOLE MAY BE A MINIMUM OF 6" IN DIAMETER.
 3. UNLESS OTHERWISE STATED OR APPROVED BY THE ENGINEER, CONCRETE FOR THE FOOTING SHALL HAVE A MINIMUM STRENGTH OF 3,000 PSI AT 28 DAYS.
 4. CONCRETE SHALL BE MIXED PRIOR TO PLACEMENT.
 5. CHANGES IN VERTICAL ALIGNMENT, SUCH AS CROSSING OF STUB DIVERSIONS, LINE POSTS OR PULL PANEL POSTS THAT RESTRAIN UPWARD PULL OF THE FENCE STRANDS SHALL BE ANCHORED BY SETTING SUCH POST IN 18" OF CONCRETE. THE ENGINEER WILL DESIGNATE THE LOCATIONS WHERE THIS ANCHORAGE TREATMENT IS REQUIRED.



DRIVE EMBEDMENT OPTION DETAIL
NOT TO SCALE

CONCRETE EMBEDMENT OPTION DETAIL
NOT TO SCALE



5-STRAND BARBED WIRE
NOT TO SCALE

BARBED WIRE REQUIRED SHALL BE STEEL DOUBLE STRAND 12 1/2 GA., COATING TYPE Z (ZINC GALVANIZED) AND COATING CLASS 3 WIRE CONFORMING TO ASTM A121.

BARBS SHALL BE (4) POINT, 14 GA. OR LARGER, ROUND OR FLAT AND ON 5" SPACING.

ATTACH EACH BARBED WIRE STRAND TO THE CORNER, END POST, AND PULL PANEL BRACE POST WITH A DOUBLE WRAP OF GALVANIZED WIRE TIED BACK WITH A MIN. OF 4 WRAPS.

ANCHORAGE OF FENCE WIRE TO POSTS WHERE THERE IS A CHANGE IN VERTICAL ALIGNMENT THAT PRODUCES UPWARD OR DOWNWARD PULL SHALL BE ACCOMPLISHED WITH DOUBLE TIE WIRES TO EACH SUCCESSIVE FENCE WIRE. THE ENGINEER WILL DESIGNATE THE POSTS WHERE THIS SPECIAL FASTENING OF THE FENCE WIRES ARE REQUIRED.

THE APPROX. LOCATION OF FENCES TO BE CONSTRUCTED ARE SHOWN ON SHEET 2.
THE FINAL LOCATION OF THE FENCES SHALL BE APPROVED BY THE ENGINEER.

REVISIONS		
DATE	APPROVED	TITLE



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DRAWN BY: SMD
CHECKED BY: DDW, GEG, SPI
FILE NAME: LOWER PLUM 23 NRCS FENCE.dwg
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FENCE DETAILS
FLOODWATER RETARDING STRUCTURE SITE 23
LOWER PLUM CREEK WATERSHED
IN CALDWELL COUNTY, TEXAS



DRAWING NO. TX-EN-0786
SHEET NO. 6 OF 6