

PART V

DRAWINGS

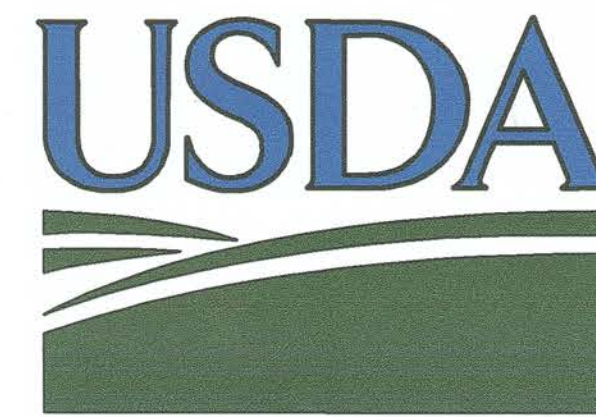
Lower Plum Creek Watershed – STRUCTURAL REPAIRS

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

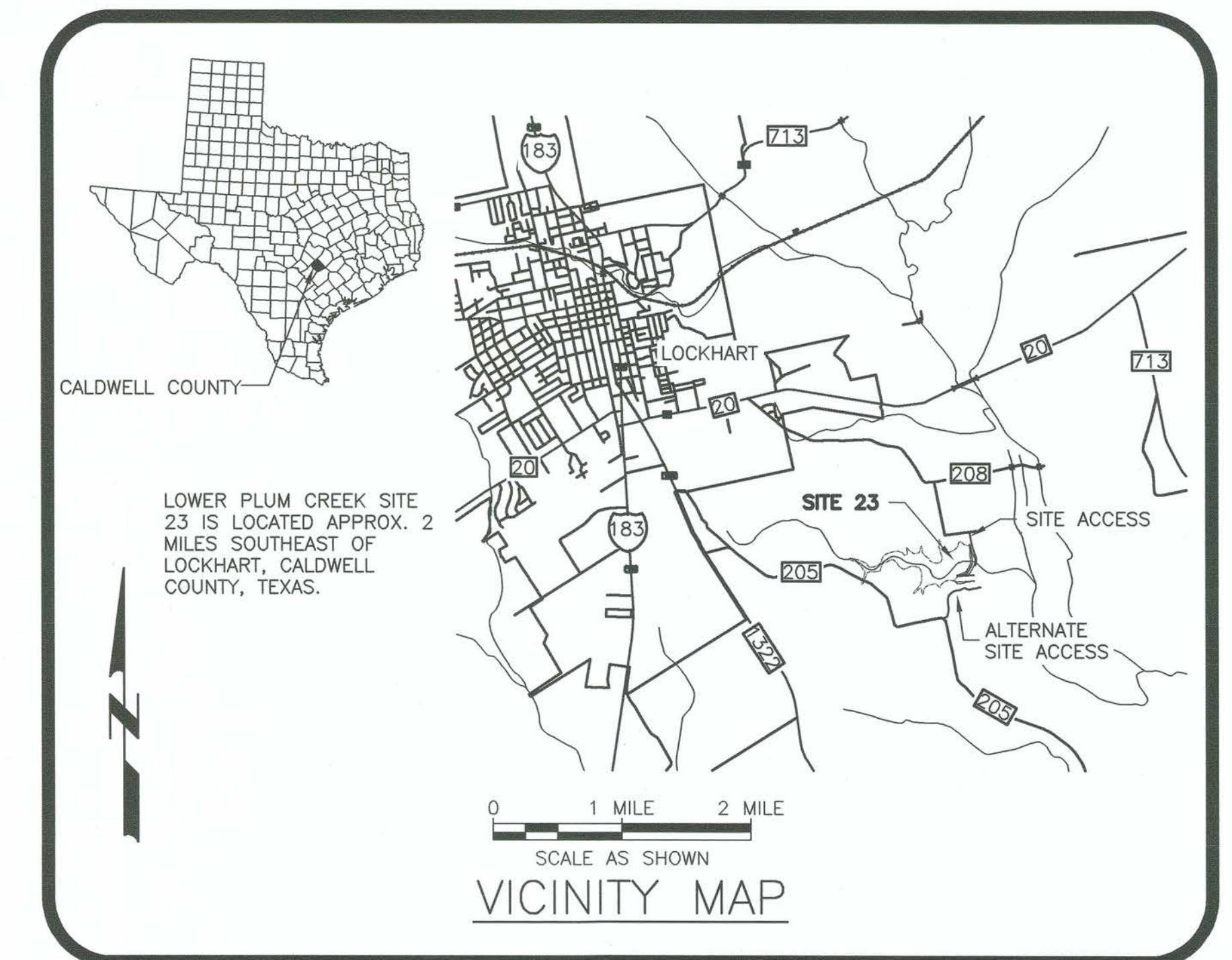


STATE CONSERVATION ENGINEER, N.R.C.S.
TEMPLE, TEXAS

9/4/2020
DATE

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Sheet Number	Sheet Title
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5	STORMWATER POLLUTION PREVENTION PLAN
6	FENCE DETAILS



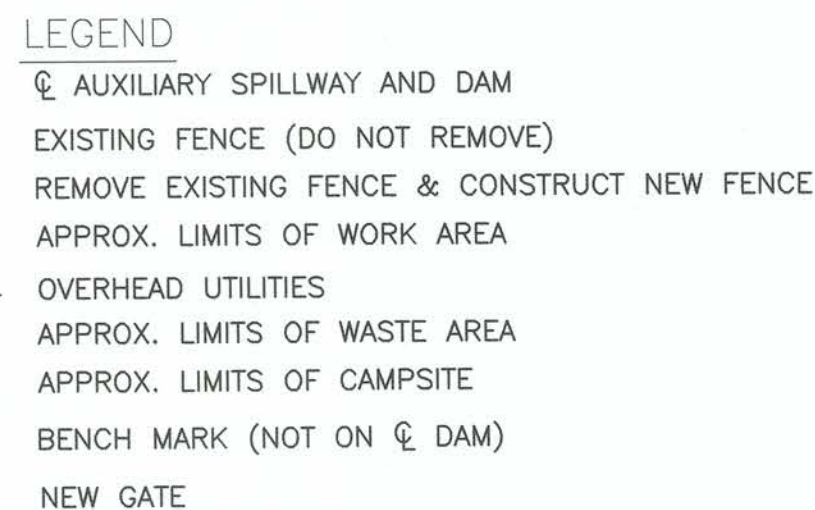
1. THE CONTRACTOR SHALL BE LIABLE FOR DAMAGE TO IMPROVEMENTS AND UTILITIES ALONG THE ACCESS ROUTE AND AT OR NEAR THE WORK SITE.
2. THE LOCATION OF THE CAMPSITE, SITE ACCESS, STOCKPILE AREA, AND WORK LIMITS SHOWN ARE APPROXIMATE. THE LOCATION OF THE BORROW AND/OR FINAL WASTE AREA LOCATIONS WILL BE DESIGNATED AT THE TIME OF SHOWING OF THE SITE TO PROSPECTIVE BIDDERS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND MAINTAINING ALL BARRICADES, WARNING SIGNS, TRAFFIC CONTROL DEVICES, ETC. NECESSARY TO CONTROL TRAFFIC AND PROVIDE FOR PUBLIC SAFETY AT THE ENTRANCE TO THE SITE. SEE CONSTRUCTION SPECIFICATION 9.
4. MATERIALS FROM EXCAVATIONS SHALL BE PROCESSED AND USED FOR THE EARTHFILL MATERIALS. UNSUITABLE MATERIALS SHALL BE PLACED IN A WASTE AREA OR OTHER AREAS APPROVED BY THE ENGINEER. SEE CONSTRUCTION SPECIFICATION 420.
5. THE TOPSOIL THICKNESS SHALL BE 6" UNLESS OTHERWISE SPECIFIED IN AREAS WHERE THE FILL TOTAL IS LESS THAN 6", THE TOPSOIL SHALL BE THE THICKNESS OF THE FILL.
6. CONSTRUCTION ACTIVITIES SHALL NOT OCCUR OUTSIDE THE DESIGNATED WORK LIMITS, UNLESS OTHERWISE AUTHORIZED BY THE CONTRACTING OFFICER.
7. THE FINAL GRADES AND ELEVATIONS FOR ALL WORK OF IMPROVEMENT SHOWN ARE APPROXIMATE AND SHALL BE ADJUSTED IN THE FIELD BY THE ENGINEER TO BEST FIT THE TOPOGRAPHY OF THE SITE.
8. THE EXISTING NATURAL GROUND SHOWN FOR THE SITE IS BASED ON SURVEYED CONDITIONS AS THEY EXISTED IN APRIL 2020. CHANGES IN SITE CONDITIONS PRIOR TO CONSTRUCTION MAY NECESSITATE ADJUSTMENTS TO THE GRADES AND ELEVATIONS SHOWN.
9. THE CONTROL POINTS SHOWN ARE TO BE USED TO ESTABLISH HORIZONTAL AND VERTICAL CONTROL.

NOTE:
ALL ELEVATIONS REFERENCED IN THESE CONSTRUCTION
DRAWINGS ARE BASED ON NAVD88. ESTABLISHED BY THE
NRCS AS SURVEYED IN APRIL 2020. ALL ELEVATIONS ARE
IN FEET ABOVE MEAN SEA LEVEL (MSL).

HORIZONTAL DATUM IS TEXAS STATE PLANE, NAD83,
SOUTH CENTRAL ZONE, 4204, US SURVEY FEET.

THERE IS NO CHANGE IN PERMANENT WATER LEVEL
BETWEEN THESE CONSTRUCTION DRAWINGS AND THE
EXISTING SITE AS CONSTRUCTED.

1. EARTHFILL SHALL NOT BE PLACED UNTIL THE SUB-GRADE EXCAVATION LIMITS HAVE BEEN APPROVED BY THE ENGINEER.
2. PRIOR TO PLACING EARTHFILL, THE APPROVED SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 6" TO FACILITATE BONDING OF THE FILL TO THE UNDERLYING SUBGRADE.
3. CONTRACTOR TO PROTECT CULVERT PRIOR TO RUNNING EQUIPMENT/TRUCKS OVER IT.



REVISIONS		
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GENERAL PLAN
FLOODWATER RETARDING STRUCTURE SITE 23
LOWER PLUM CREEK WATERSHED
IN
CALDWELL COUNTY, TEXAS

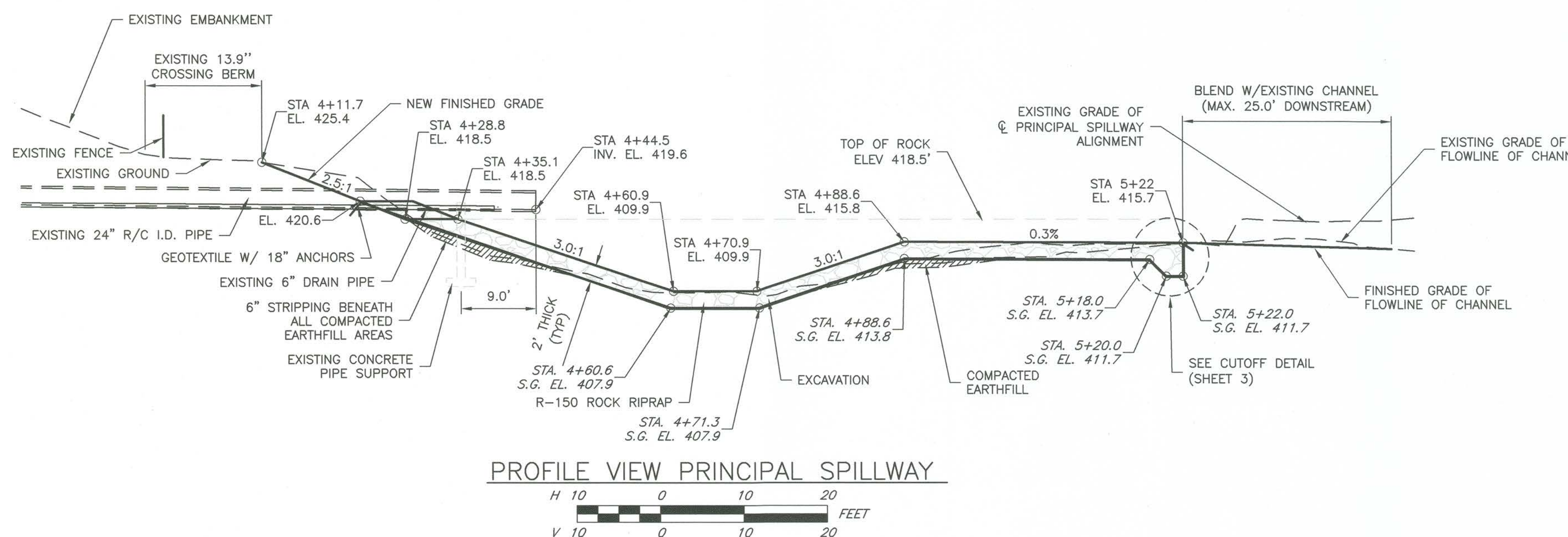
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REFERENCE A.S.T.M. D 6092 (R-150)

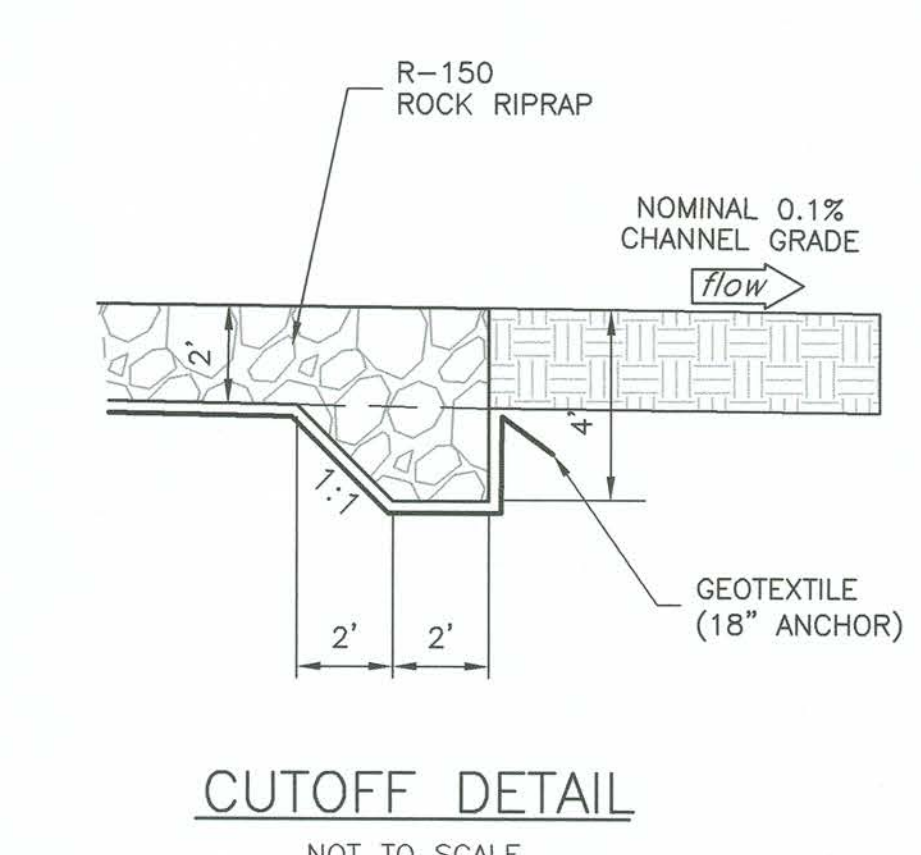
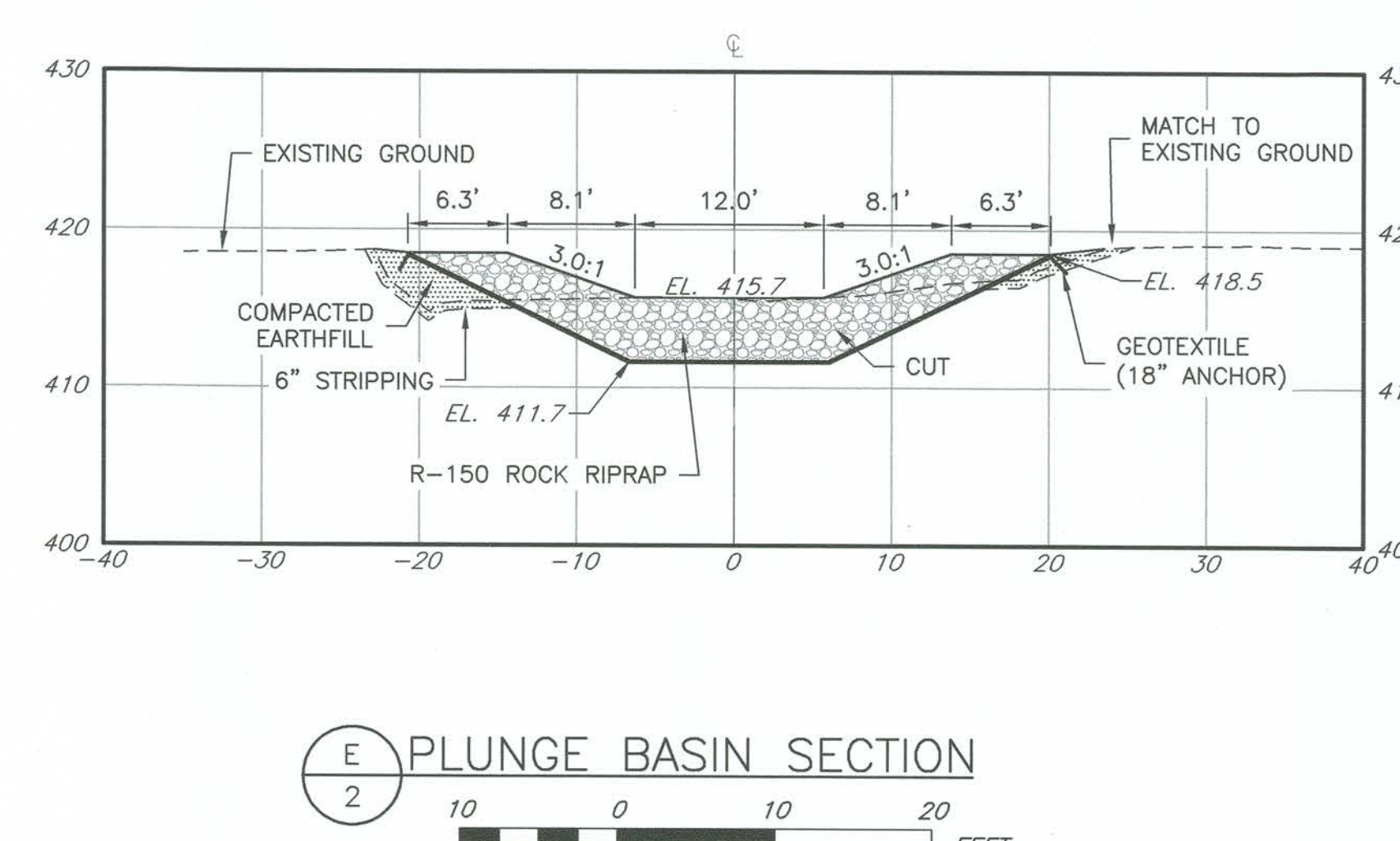
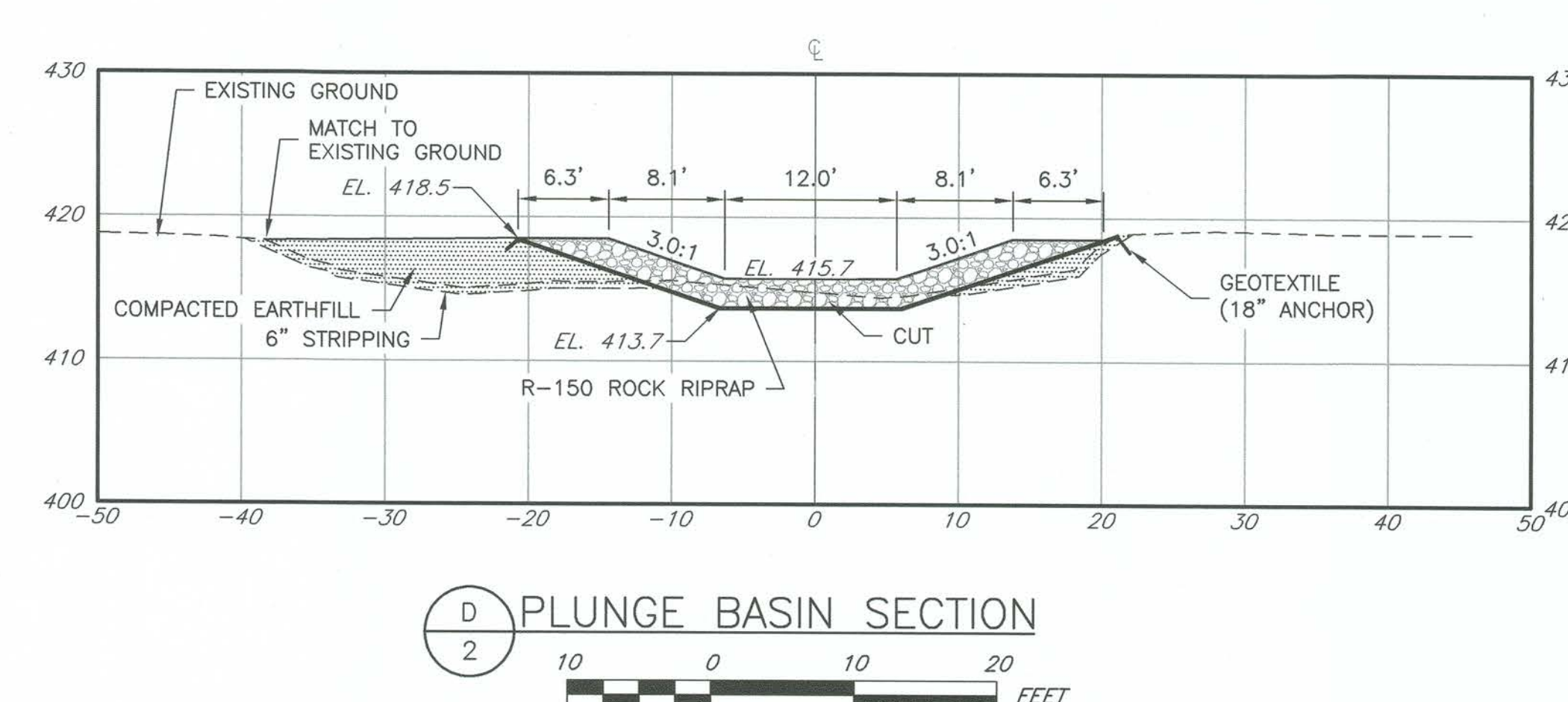
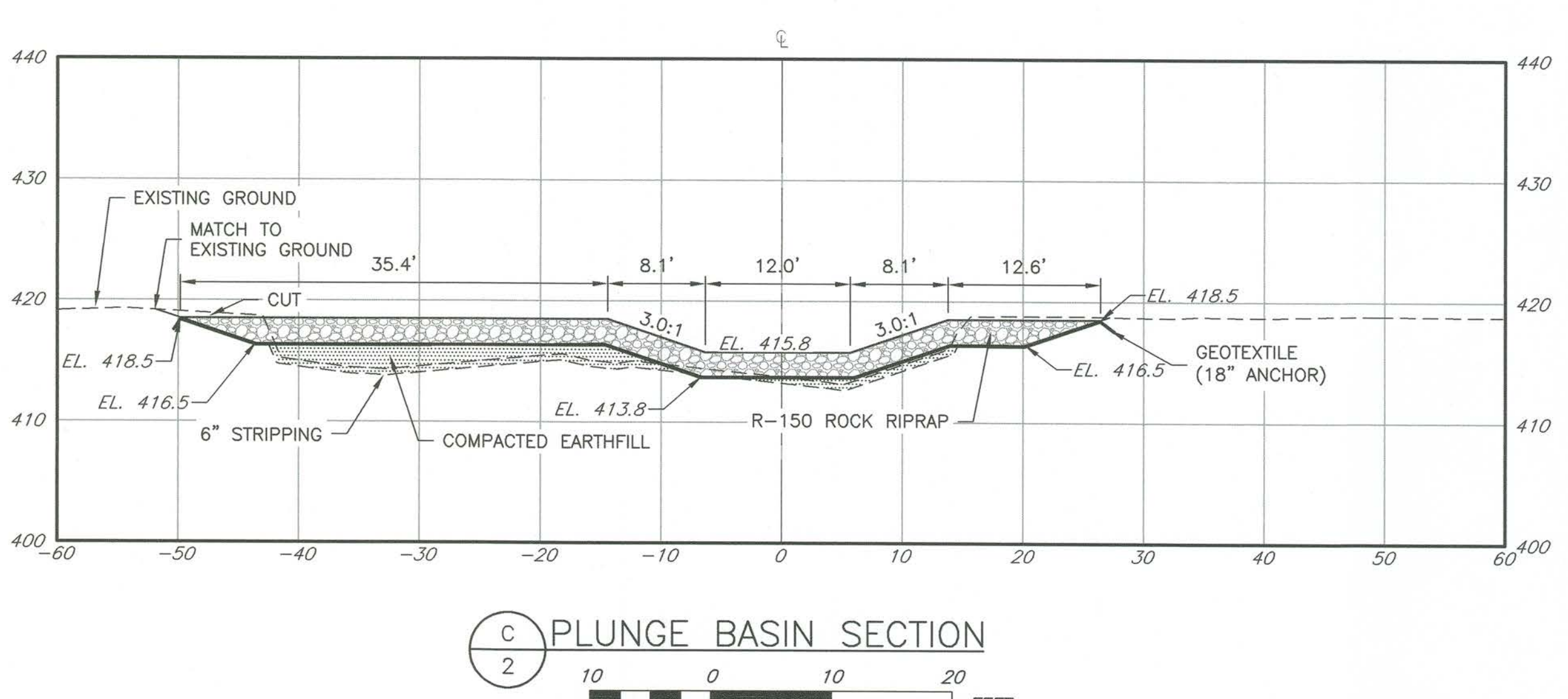
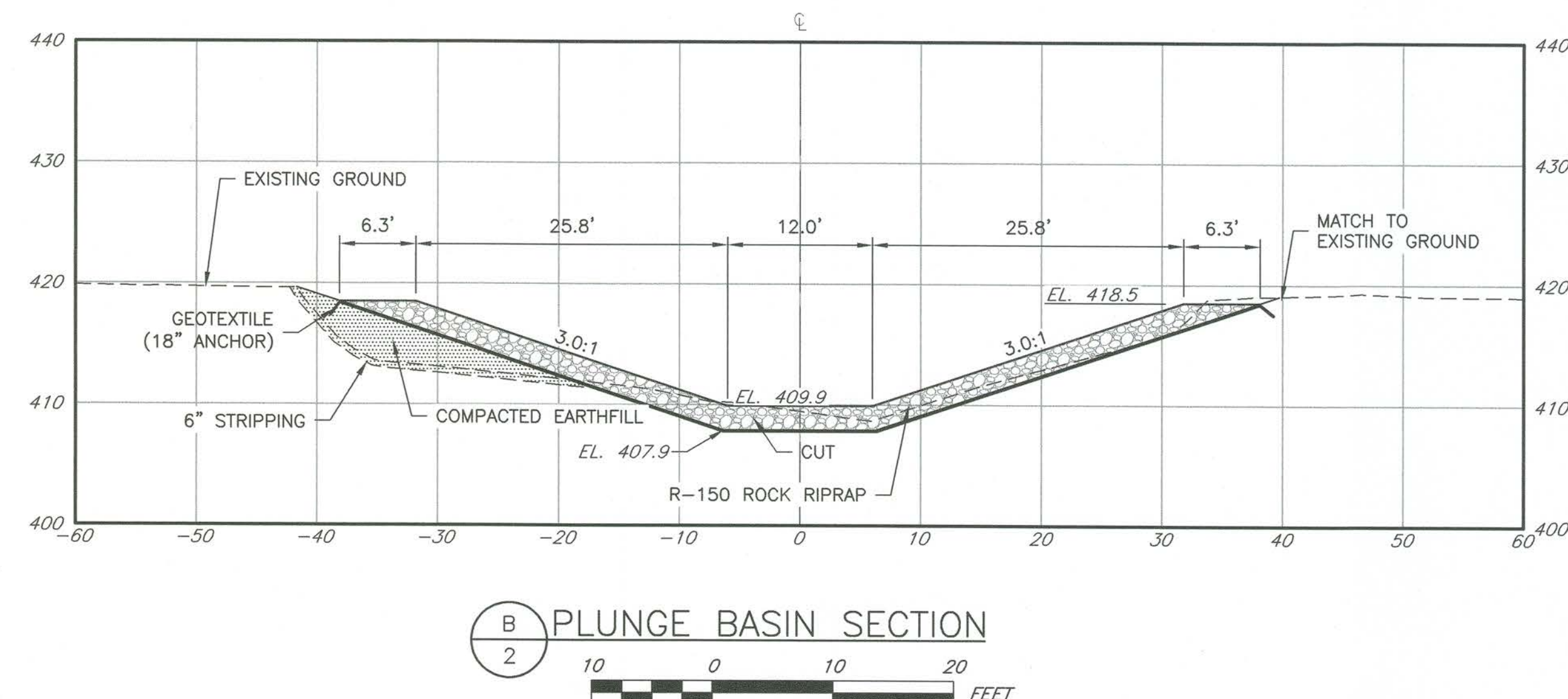
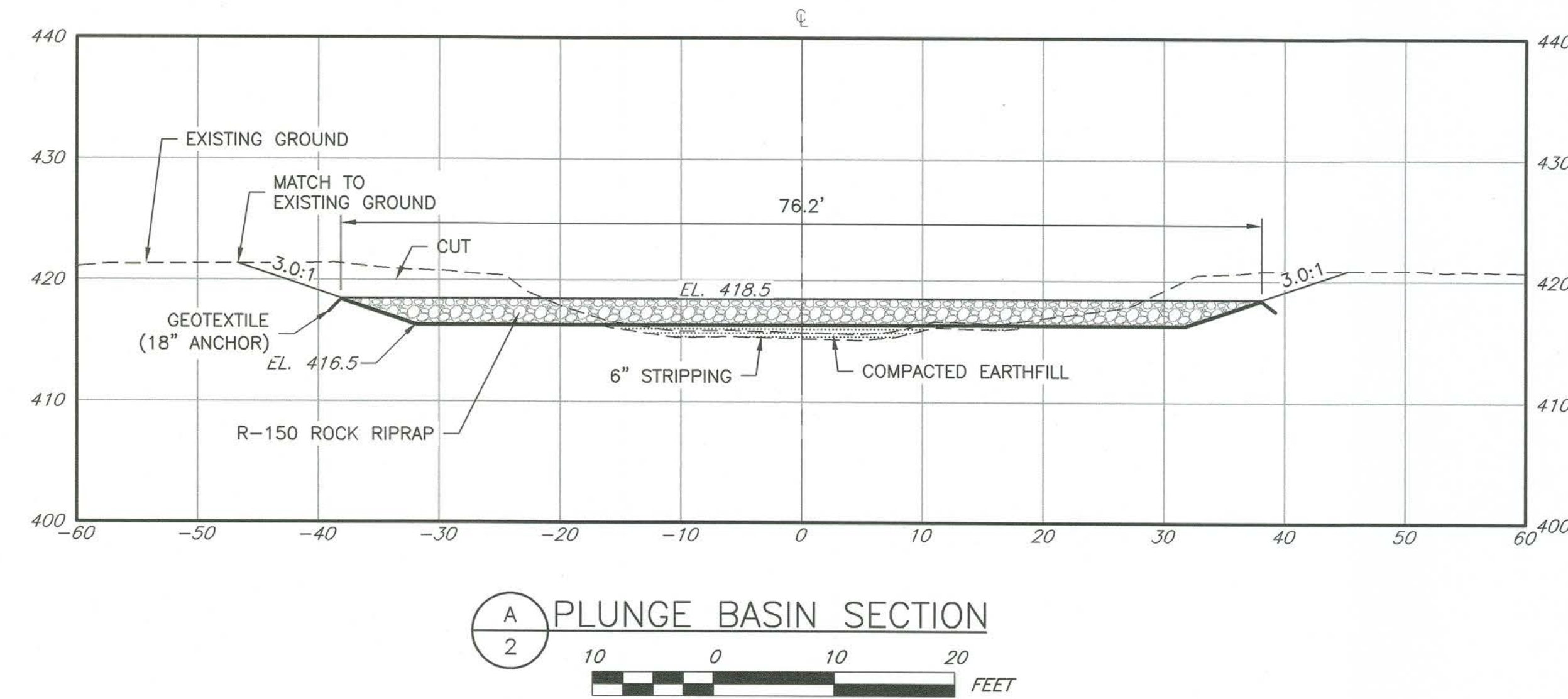
1. SPALLS AND ROCK DUST THAT PASS A 3" SIEVE SHALL CONSIST OF LESS THAN 5 PERCENT BY WEIGHT.
2. ROCK PLACED AGAINST EXISTING WORKS OF IMPROVEMENT SHALL BE PLACED CAREFULLY TO AVOID DAMAGE. ALL ROCK RIPRAP REQUIRED SHALL COMPLY WITH THE GRADATION ABOVE (SEE CONSTRUCTION SPECIFICATION 61, AND MATERIAL 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.

REVISIONS		
DATE	APPROVED	TITLE

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REVISIONS		
DATE	APPROVED	TITLE



DESIGNED BY: GEG, DPG
DRAWN BY: SMD
CHECKED BY: DDW, GEG, SPI
FILE NAME: LOWER PLUM CREEK 23.dwg
DATE CHECKED: 9/1/2020

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

United States
Department of
Agriculture
USDA
Natural Resources
Conservation Service

DRAWING NO.
TX-EN-0786
SHEET NO.
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GENERAL NOTES:
EROSION & SEDIMENT CONTROL MEASURES
& WORKS

SEDIMENT FILTERS

- SEDIMENT FILTERS SHALL BE FABRIC (GEOTEXTILE) SILT FENCES INSTALLED AS DETAILED ON THIS SHEET AND INDICATED IN CONSTRUCTION SPECIFICATION 5 AND MATERIAL SPECIFICATION 592.
- SEDIMENT FILTERS SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS:
(A) ALONG THE DOWNSTREAM BOUNDARY OF ANY AREA WHICH IS STRIPPED OF EXISTING VEGETATION AND/OR SURFACE MATERIAL DURING ANY PHASE OF CONSTRUCTION ACTIVITY.
(B) ALONG THE DOWNSTREAM BOUNDARY OF ANY SOIL MATERIAL WHICH IS STOCKPILED DURING ANY PHASE OF CONSTRUCTION ACTIVITY FOR MORE THAN 14 DAYS.
(C) OTHER AREAS WHICH ARE DETERMINED BY THE CONTRACTING OFFICER TO BE POTENTIAL SILT SOURCES.
- SEDIMENT FILTERS SHALL NOT BE USED WHERE CONCENTRATED FLOWS WHICH EXCEED ONE CFS ARE EXPECTED, OR WHERE DRAINAGE AREA EXCEEDS TWO ACRES.
- THE HEIGHT OF SILT FENCES SHALL NOT EXCEED 48 INCHES (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE).
- SPLICES IN THE FILTER FABRIC ARE NOT RECOMMENDED. WHEN JOINTS ARE UNAVOIDABLE, FABRIC SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH LAP.
- POST SHALL BE DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 20 INCHES).

MAINTENANCE

- SEDIMENT FILTERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- SILT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE SEDIMENT FILTER.
- SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE, THE FABRIC SHALL BE REPLACED PROMPTLY UNLESS INSPECTION REPORTS INDICATE THAT THE REPLACEMENT IS UNNECESSARY.

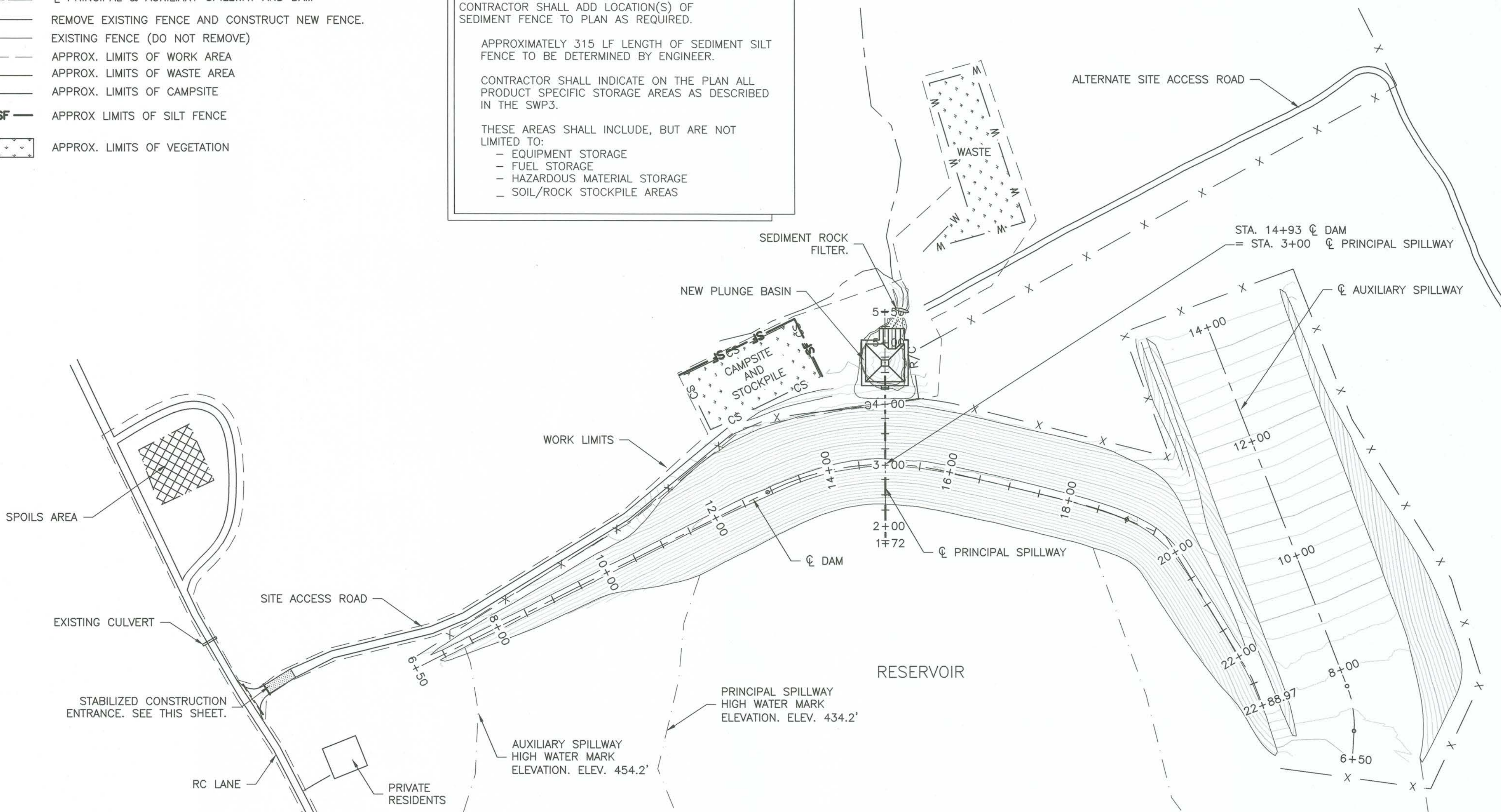
- LEGEND
- PRINCIPAL & AUXILIARY SPILLWAY AND DAM
 - R/C REMOVE EXISTING FENCE AND CONSTRUCT NEW FENCE.
 - X EXISTING FENCE (DO NOT REMOVE)
 - - - - - APPROX. LIMITS OF WORK AREA
 - W APPROX. LIMITS OF WASTE AREA
 - CS APPROX. LIMITS OF CAMPSITE
 - SF SF APPROX. LIMITS OF SILT FENCE
 - APPROX. LIMITS OF VEGETATION

NOTE:
CONTRACTOR SHALL ADD LOCATION(S) OF SEDIMENT FENCE TO PLAN AS REQUIRED.

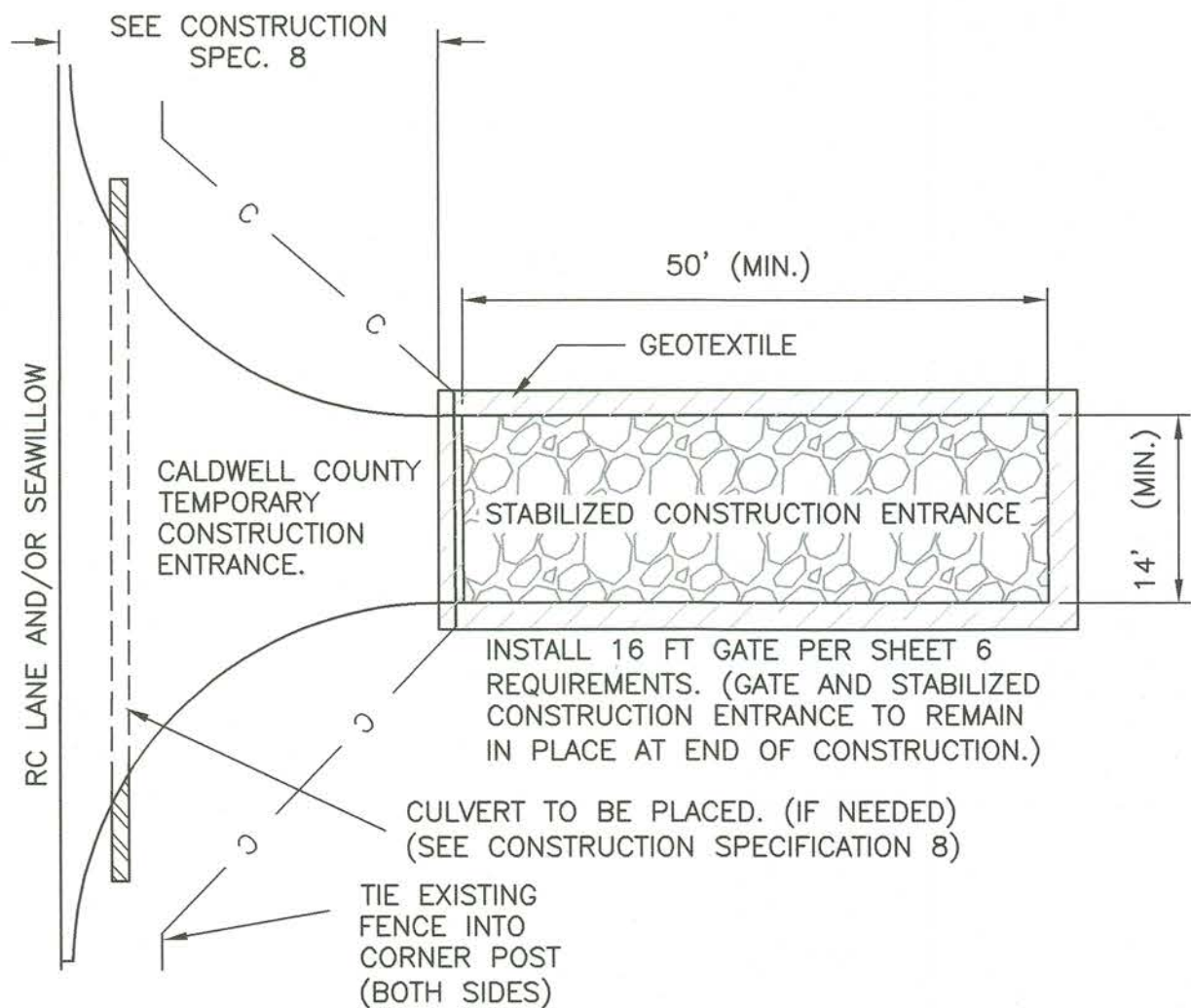
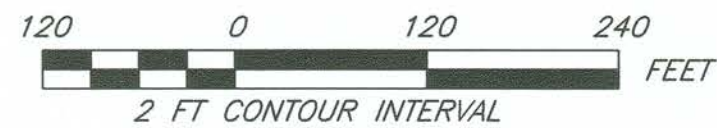
APPROXIMATELY 315 LF LENGTH OF SEDIMENT SILT FENCE TO BE DETERMINED BY ENGINEER.

CONTRACTOR SHALL INDICATE ON THE PLAN ALL PRODUCT SPECIFIC STORAGE AREAS AS DESCRIBED IN THE SWP3.

THESE AREAS SHALL INCLUDE, BUT ARE NOT LIMITED TO:
- EQUIPMENT STORAGE
- FUEL STORAGE
- HAZARDOUS MATERIAL STORAGE
- SOIL/ROCK STOCKPILE AREAS



STORMWATER POLLUTION PREVENTION PLAN

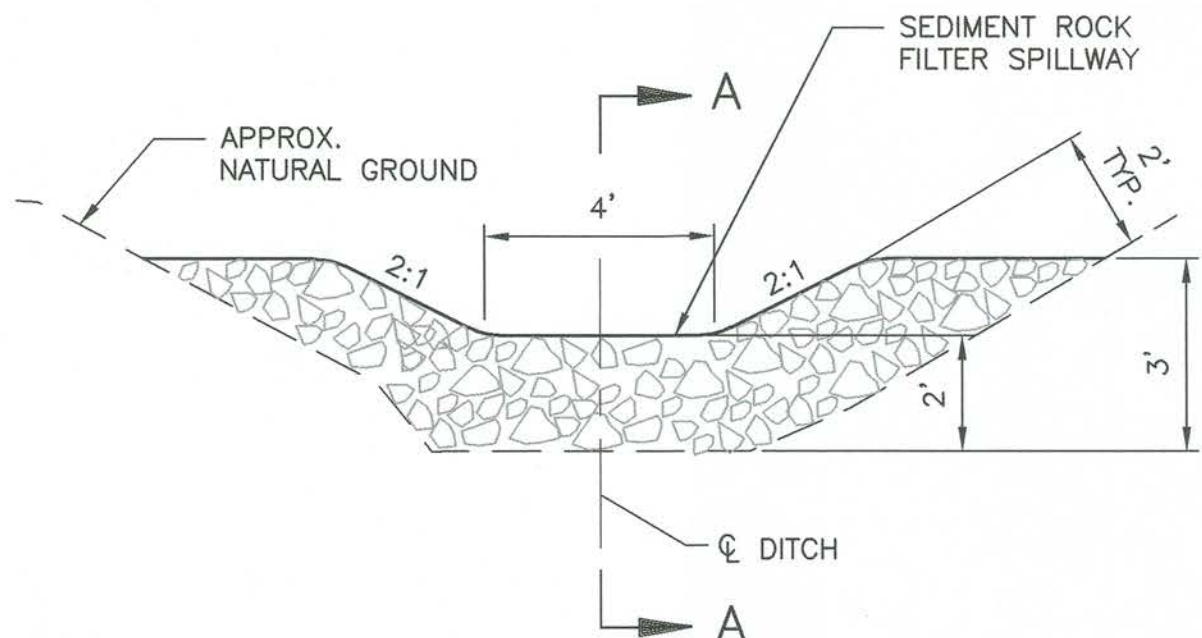


THE STABILIZED CONSTRUCTION ENTRANCE SHALL CONSIST OF A MINIMUM OF 8" THICKNESS OF CRUSHED ROCK PREDOMINANTLY 4" TO 6" IN SIZE. THE AGGREGATES SHALL BE CLEAN, HARD, DURABLE, AND FREE FROM ADHERENT COATINGS SUCH AS SALT, ALKALI, DIRT, CLAY, LOAM, SHALE, SOFT OR FLAKY MATERIALS, AND ORGANIC OR INJURIOUS MATTER. PROVIDE A LAYER OF GEOTEXTILE BENEATH THE CRUSHED ROCK.

ACTUAL SIZES, DIMENSIONS, QUANTITIES, ALIGNMENT AND EXTENTS SHALL BE AS DETERMINED IN THE FIELD BY THE ENGINEER. (SEE CONSTRUCTION SPECIFICATION 5).

STABILIZED CONSTRUCTION ENTRANCE DETAIL

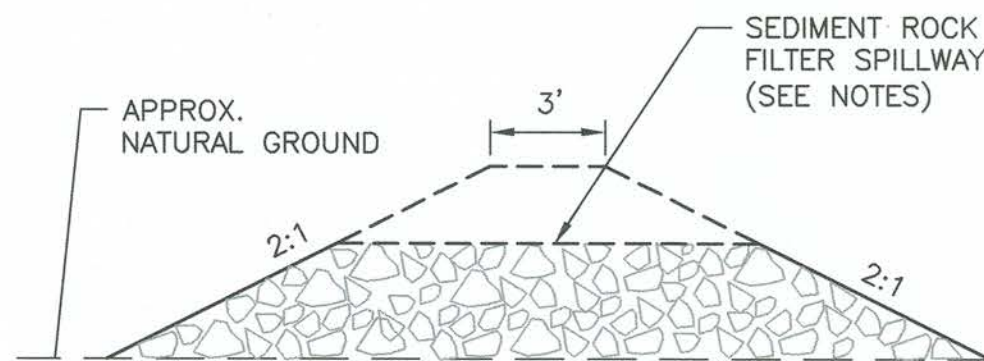
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ELEVATION

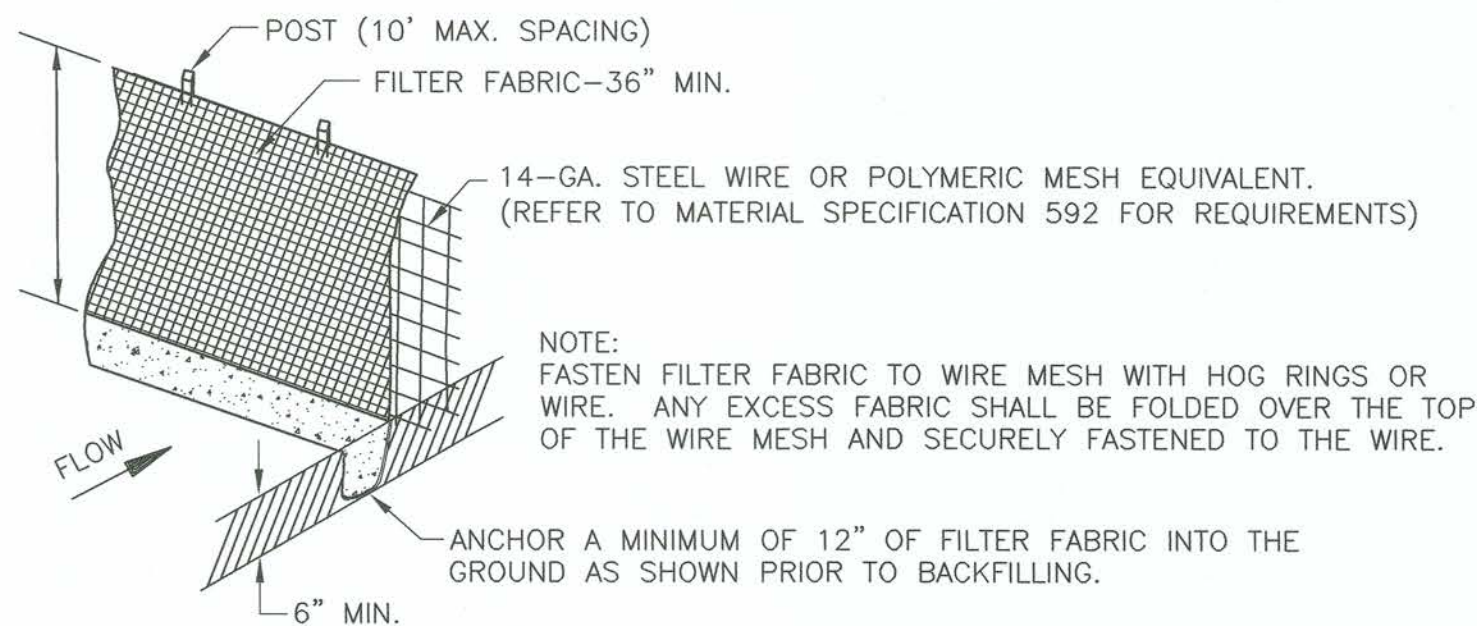
SEDIMENT ROCK FILTER DETAIL

NO SCALE
(SEE CONSTRUCTION SPECIFICATION 5)



SECTION A-A

- NOTES:
- FINAL LOCATION OF SEDIMENT ROCK FILTER SHALL BE AS STAKED BY THE ENGINEER.
 - CONSTRUCT SEDIMENT ROCK FILTER SPILLWAY AT APPROX. CENTERLINE OF EXISTING CHANNEL. THE MINIMUM BOTTOM WIDTH OF THE SPILLWAY SHALL BE 4' WITH 2:1 SIDE SLOPES EXTENDING TO THE TOP OF THE ROCK SEDIMENT FILTER.
 - AT THE END OF CONSTRUCTION, TRANSFER THE ROCK SEDIMENT FILTER MATERIAL TO THE TRANSITION AREA OF THE NEW PLUNGE BASIN (SHEET 2) ACCORDING TO CONSTRUCTION SPECIFICATION 5.
 - USE 3" - 5" STONE OR RECYCLED CONCRETE.



FILTER FABRIC SILT FENCE DETAILS

(SEE CONSTRUCTION SPECIFICATION 5)
NOT TO SCALE

NOTE: STAKES FOR INSTALLING SEDIMENT FILTER FABRIC SILT FENCE SHALL BE 5' STEEL "T" POSTS. ALL STEEL POSTS AND FILTER FABRIC SILT FENCES SHALL BE REMOVED AT THE END OF THE CONTRACT.



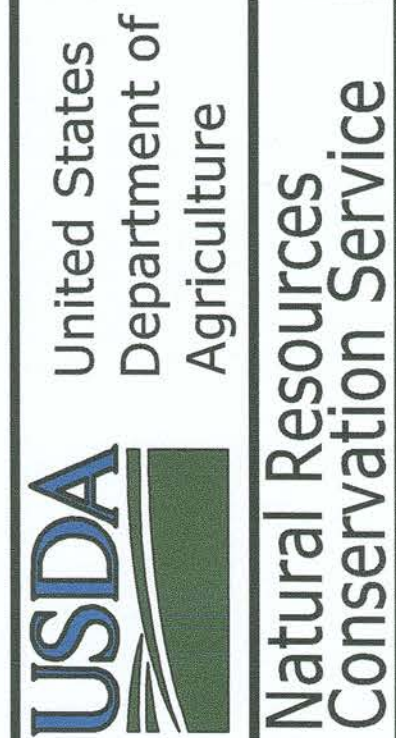
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DRAWN BY: SMD
CHECKED BY: DDW, GEG, SPI
FILE NAME: LOWER PLUM CREEK 23.dwg
DATE CHECKED: 9/1/2020

STORMWATER POLLUTION PREVENTION PLAN

FLOODWATER RETARDING STRUCTURE SITE 23

LOWER PLUM CREEK WATERSHED

IN CALDWELL COUNTY, TEXAS



DRAWING NO.
TX-EN-0786

SHEET NO.

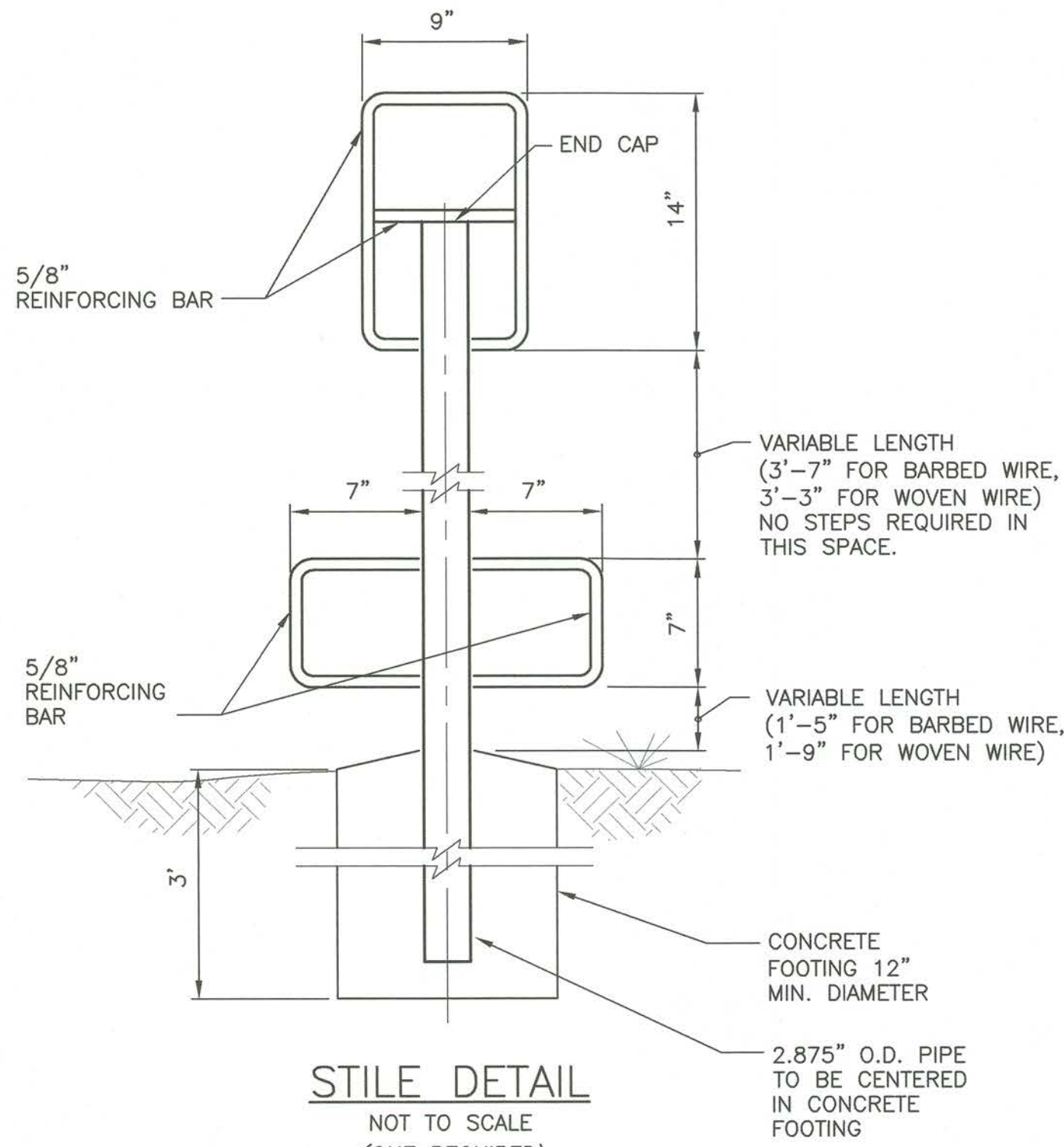
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\\A07XTEM3FP1\Engineering\Watershed Project Designs\Watershed Site Repairs\Lower Plum Creek\Lower Plum 23\Repair\DWG\LOWER PLUM 23 NRCS FENCE.dwg

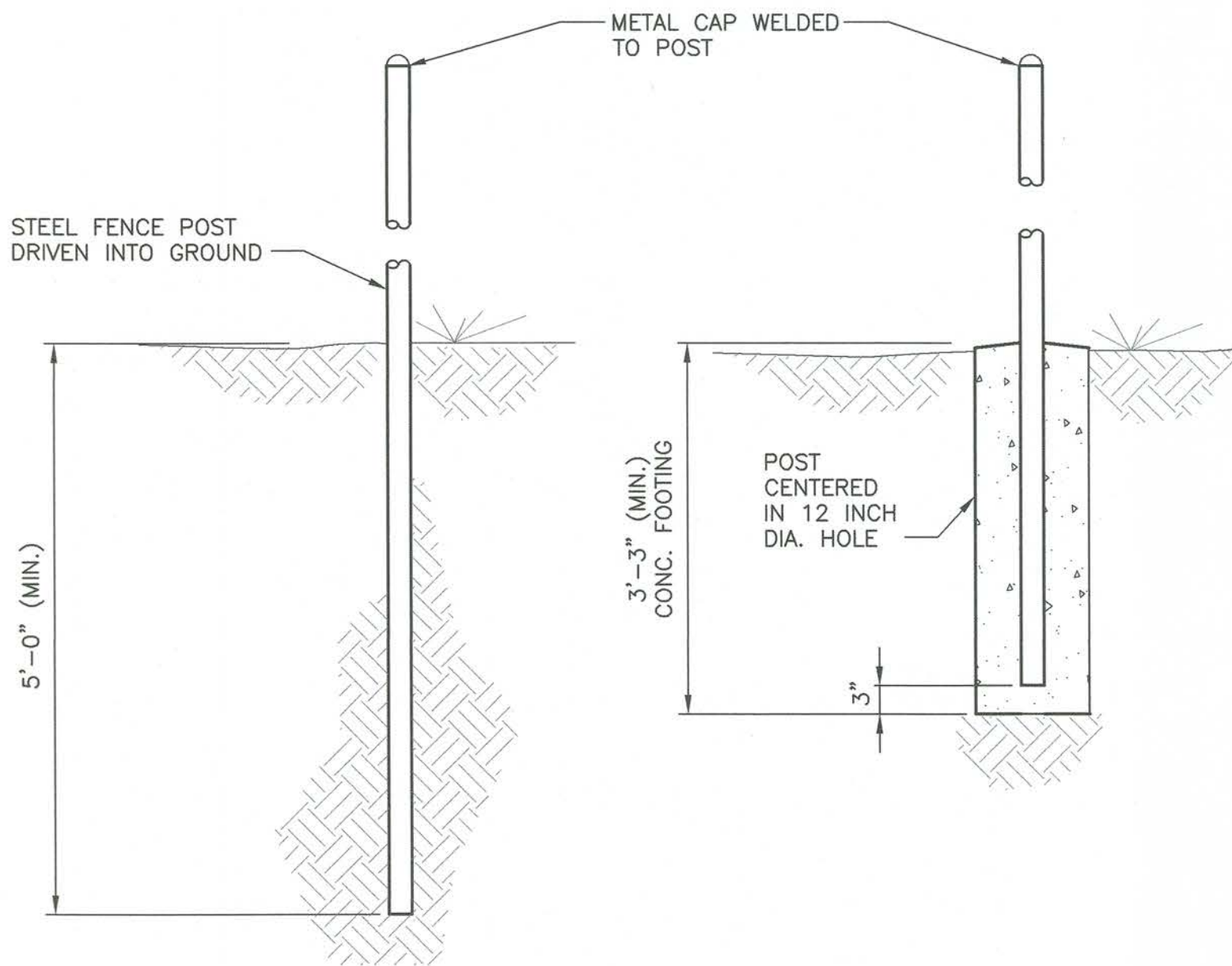
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- NOTE:
1. POSITION STILE SO THAT STEPS AND HANDLE ARE PERPENDICULAR TO ALIGNMENT OF FENCE.
 2. ALL BAR BENDS SHOWN SHALL HAVE AN INSIDE RADIUS OF APPROX. $1\frac{1}{2}$ "
 3. PIPE FOR STILE SHALL BE 2.875" O.D. SCHEDULE 40 STEEL PIPE.
 4. ALL BAR 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.

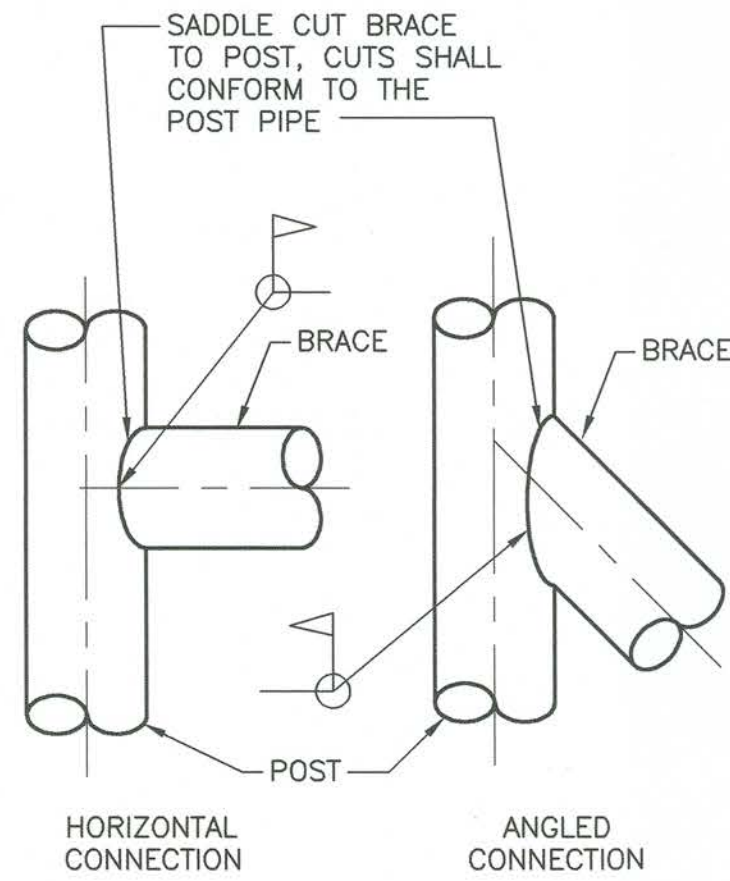
- DRIVE EMBEDMENT NOTES:
1. DRIVE STEEL CORNER, BRACE, AND GATE POSTS TO THE MINIMUM DEPTH SHOWN.
 2. IN THE EVENT THAT DRIVING OPERATIONS DO NOT ACHIEVE THE MINIMUM DEPTH SHOWN, THE POST SHALL BE REMOVED AND REPLACED IN ACCORDANCE WITH THE CONCRETE EMBEDMENT DETAIL.
 3. CHANGES IN VERTICAL ALIGNMENT, 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.

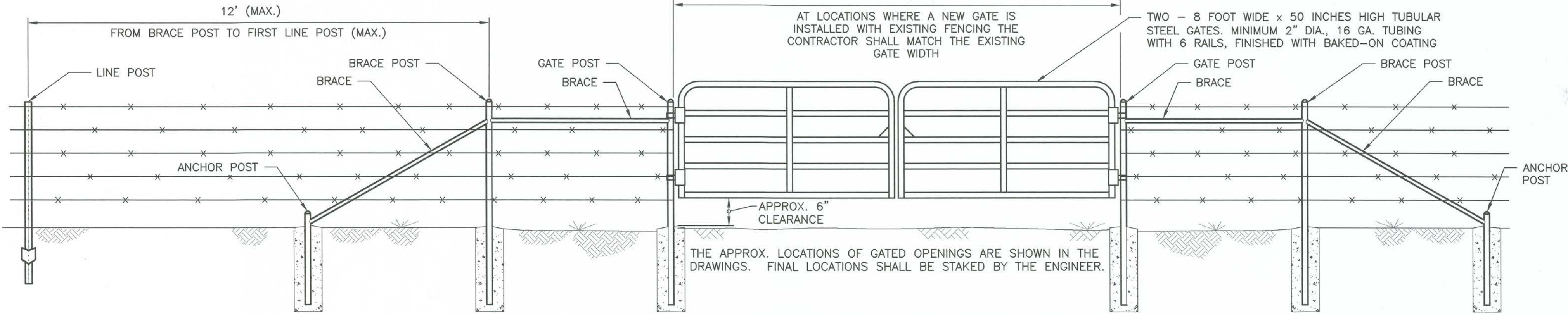


DRIVE EMBEDMENT OPTION
DETAIL
NOT TO SCALE

CONCRETE EMBEDMENT OPTION
DETAIL
NOT TO SCALE

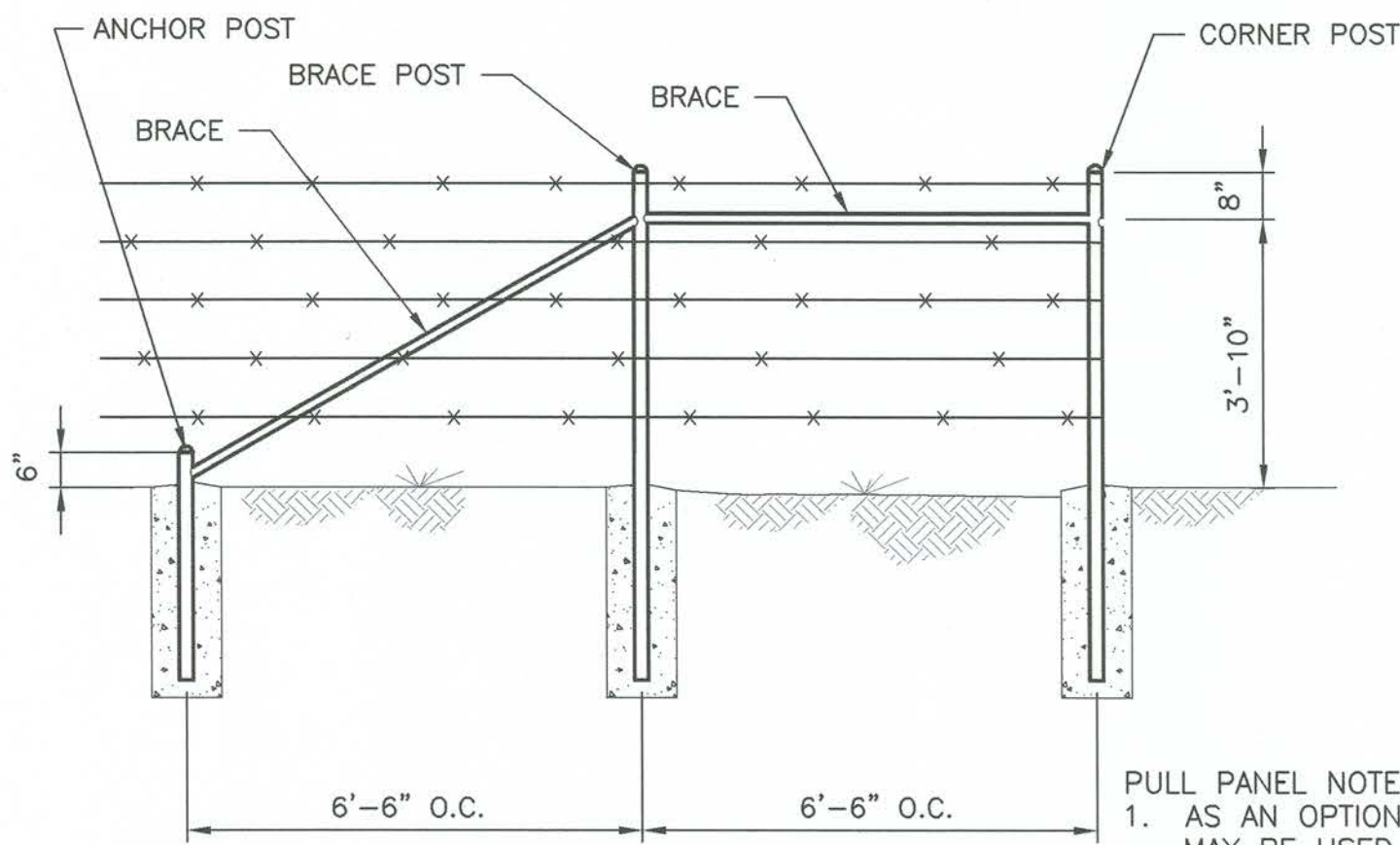


ELEVATION VIEW
POST DETAILS
NOT TO SCALE



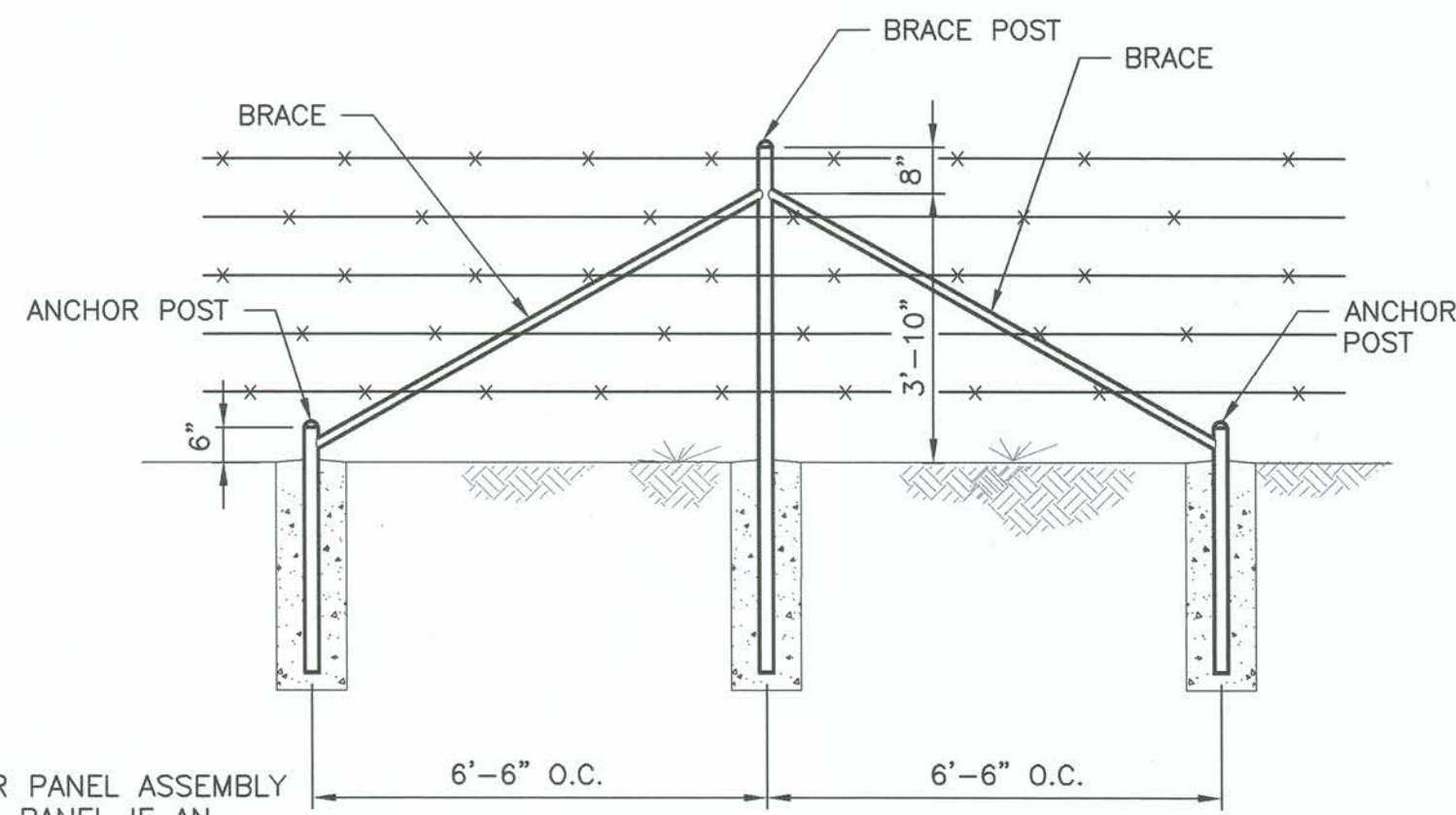
NOTE: IN LIEU OF TWO 8-FOOT GATES ONE 16-FOOT WIDE GATE MAY BE USED.

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

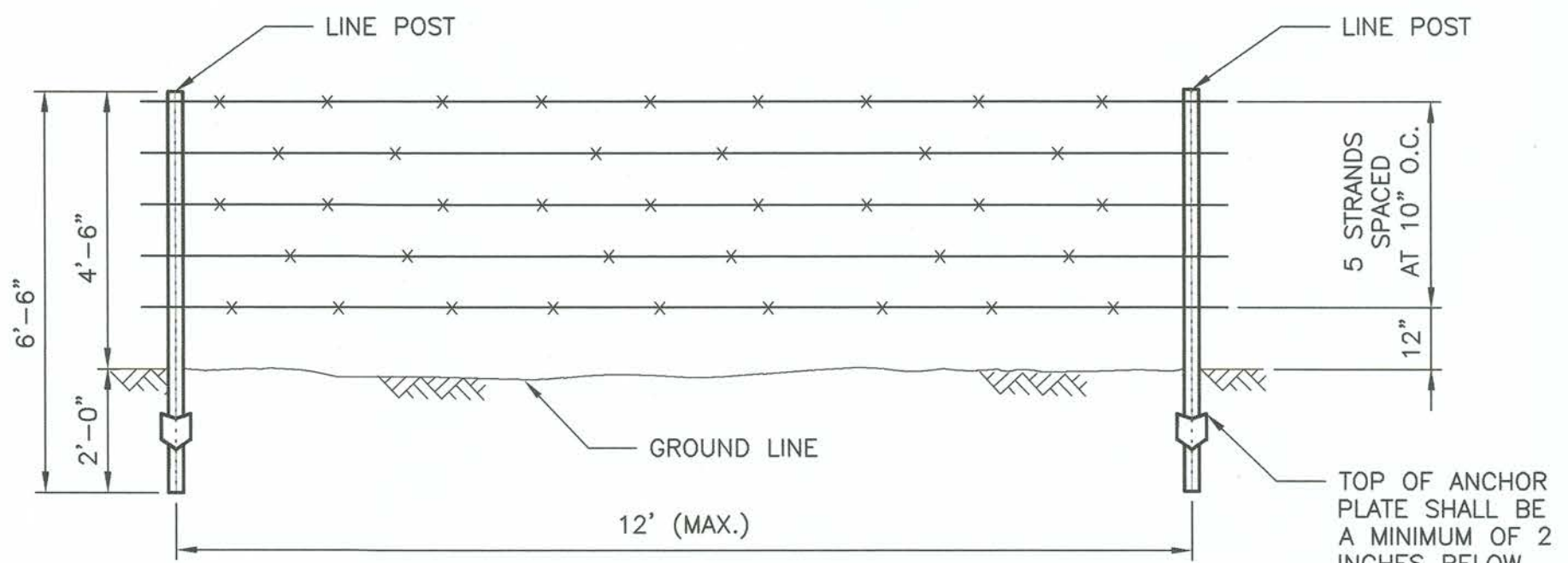


CORNER PANEL
NOT TO SCALE

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.



PULL PANEL
NOT TO SCALE



5-STRAND BARBED WIRE
NOT TO SCALE

BARBED WIRE REQUIRED SHALL BE STEEL DOUBLE STRAND 12 $\frac{1}{2}$ 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



DESIGNED BY: GEG, DPG
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
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SHEET NO.
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