

PART V
DRAWINGS

Plum Creek Watershed – EWP REPAIRS
Floodwater Retarding Structure Site 11
Hays County, Texas

Drawing No. TX-EN-0752

Cover page + 7 sheets



PLUM CREEK WATERSHED

FLOODWATER RETARDING STRUCTURE SITE NO. 11 EWP

HAYS COUNTY, TEXAS


DRAINAGE AREA	2,470 ACRES
TOTAL STORAGE	1,420 AC. FT.
EFFECTIVE HEIGHT OF DAM	32.0 FEET

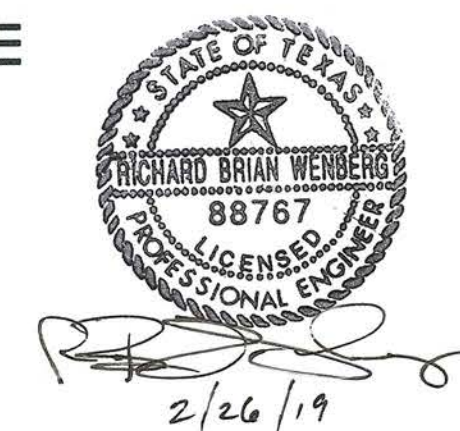
SPONSORED BY
PLUM CREEK CONSERVATION DISTRICT
HAYS COUNTY SOIL AND WATER CONSERVATION DISTRICT
CALDWELL - TRAVIS COUNTY SOIL AND WATER CONSERVATION DISTRICT

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

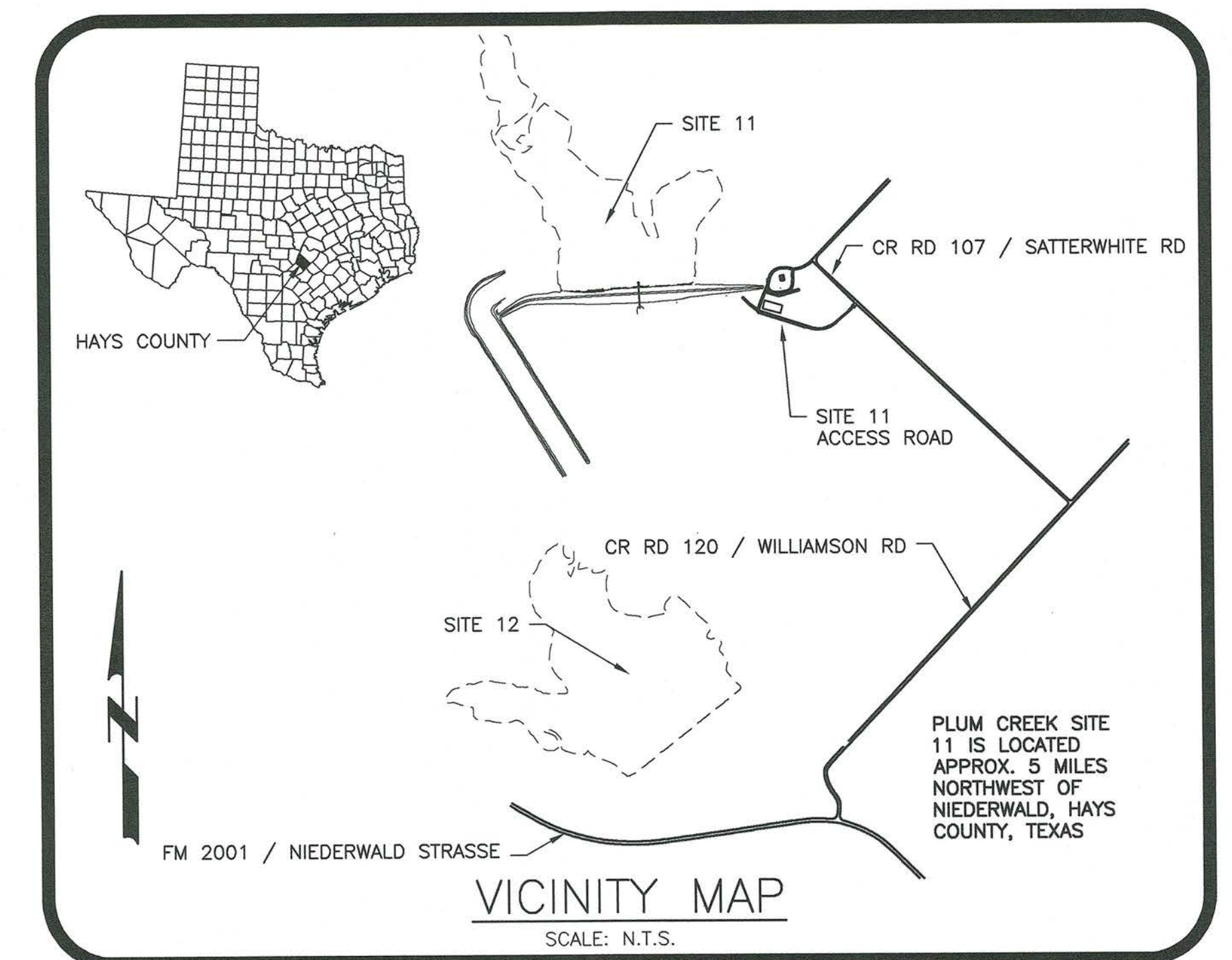
2019

CONSTRUCTION DRAWINGS APPROVED
ENGINEERING JOB CLASS V

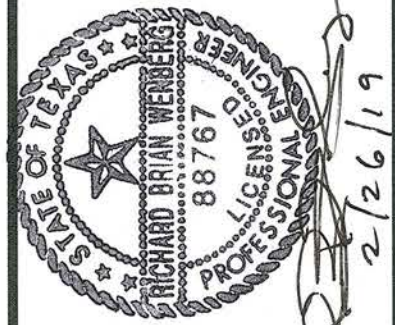
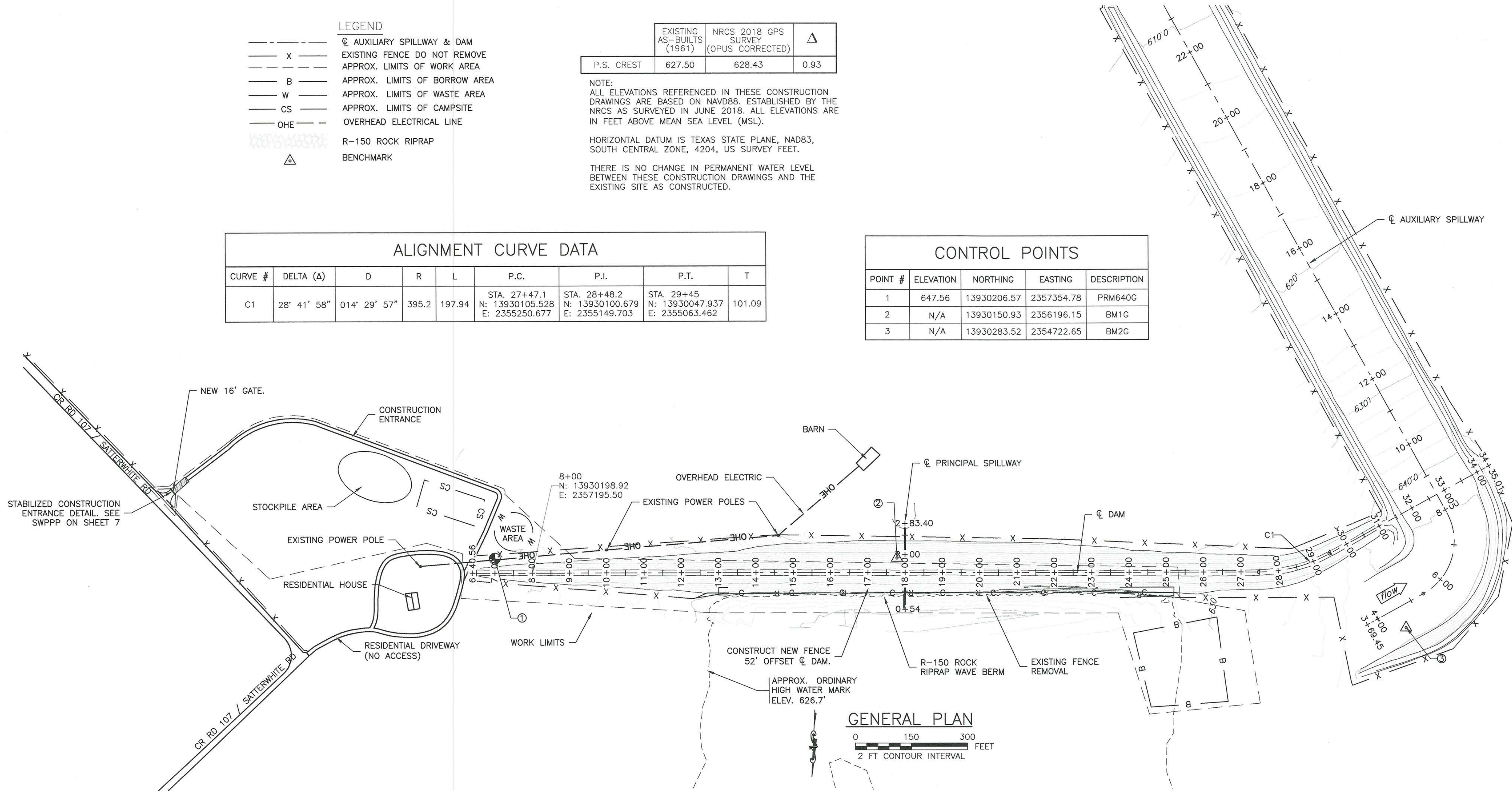

STATE CONSERVATION ENGINEER, N.R.C.S.
TEMPLE, TEXAS



2/26/19
DATE



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DESIGNED BY: JJH/SMD/GE
DRAWN BY: SMD
CHECKED BY: KSC/SWI
FILE NAME: PLUM CREEK SITE 11 EWP.dwg
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GENERAL PLAN
FLOODWATER RETARDING STRUCTURE SITE NO. 11 EWP
PLUM CREEK WATERSHED
IN
HAYS COUNTY, TEXAS

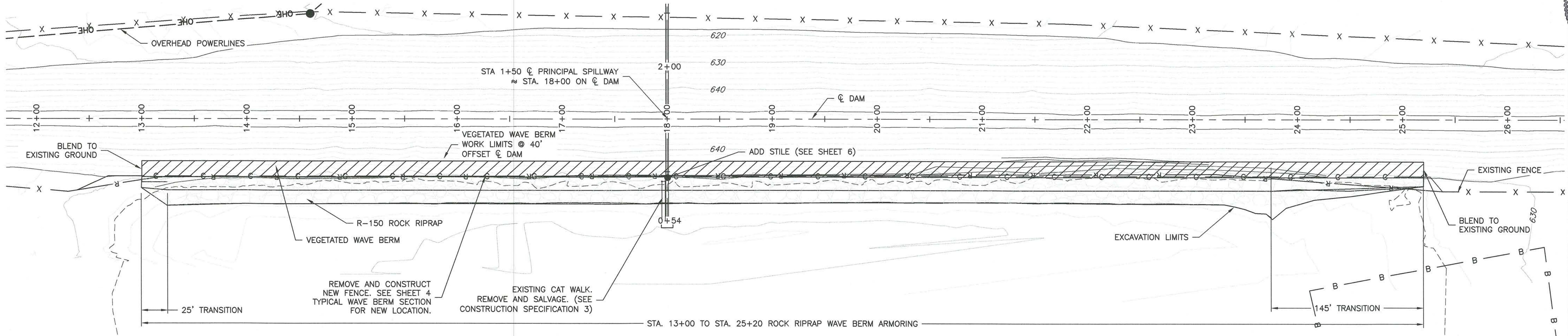


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SHEET NO.

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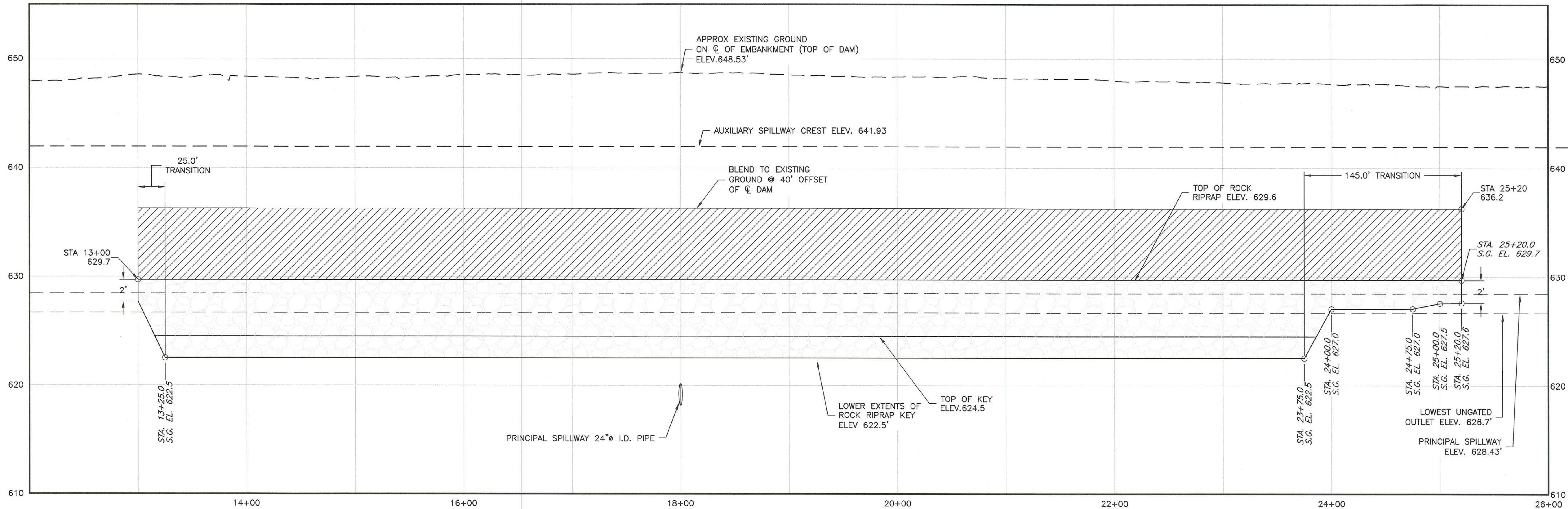
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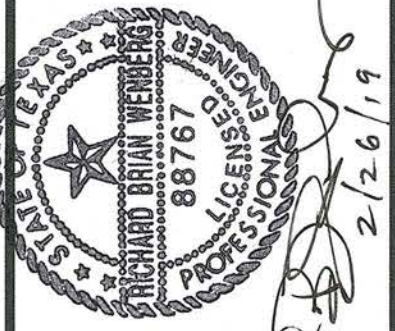
GENERAL PLAN

0 50 100
2 FT CONTOUR INTERVAL
FEET



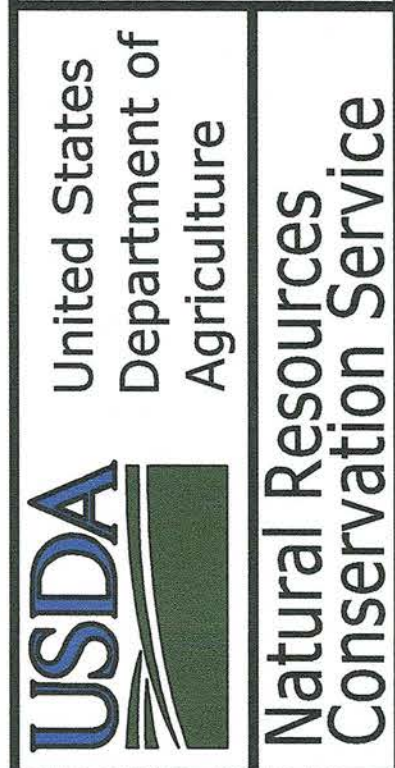
ELEVATION VIEW WAVE BERM

H = 0 50 100
V = 0 5 10
FEET



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PLAN AND PROFILE
FLOODWATER RETARDING STRUCTURE SITE NO. 11 EMP
PLUM CREEK WATERSHED
IN
HAYS COUNTY, TEXAS



DRAWING NO.
TX-EN-0752

SHEET NO.

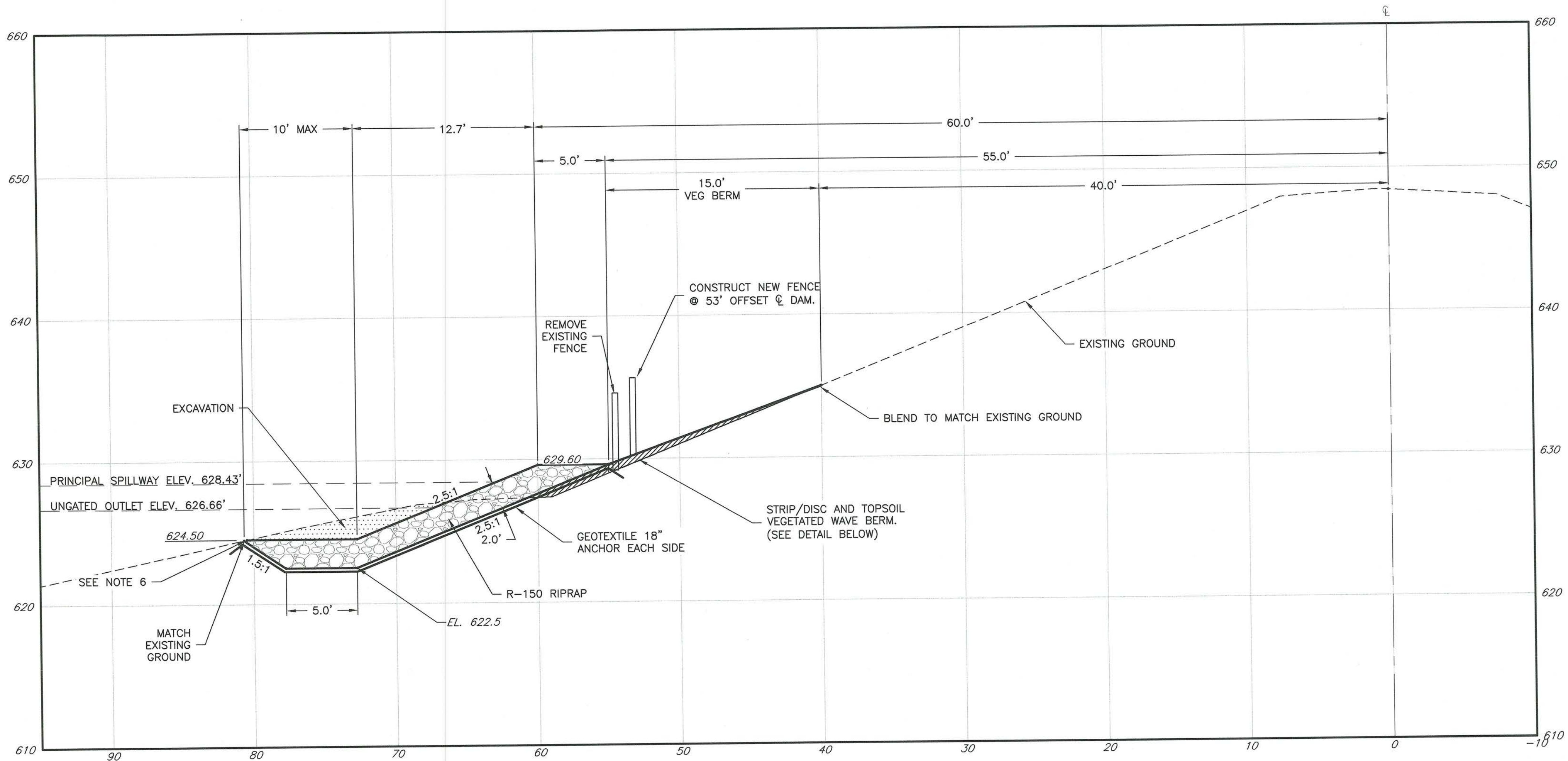
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- ARMORED TOE AND VEGETATED WAVE BERM CONSTRUCTION NOTES:
1. CONSTRUCT THE ROCK ARMORED WAVE BERM FROM BETWEEN STA. 13+00 AND STA. 25+20.
 2. PLACE GEOTEXTILE BETWEEN THE ROCK RIPRAP AND THE APPROVED SUBGRADE. GEOTEXTILE SHALL BE NON-WOVEN AND MEET THE REQUIREMENTS OF CONSTRUCTION SPECIFICATION 95 AND MATERIAL SPECIFICATION 592.
 3. ANCHOR THE GEOTEXTILE TO THE TOP AND BOTTOM OF THE SLOPE AS SHOWN.
 4. INCORPORATE MINIMUM 6" OF TOPSOIL IN THE VEGETATED WAVE BERM SECTION.
 5. NO EARTHFILL REQUIRED IF FILL IS LESS THAN 12". TOPSOIL SHALL BE USED FOR ALL FILL.
 6. IN THE EVENT THAT THE LEVEL BENCH OF ROCK RIPRAP AT THE TOE CANNOT BE CONSTRUCTED TO THE DIMENSION SHOWN DUE TO TOPOGRAPHY, THE ROCK SHALL BE PLACED LEVEL TO THE GREATEST LENGTH PRACTICABLE AND THEN ALLOWED TO TERMINATE INTO EXISTING GROUND AS SHOWN IN THE SECTIONS.

TYPICAL WAVE BERM SECTION

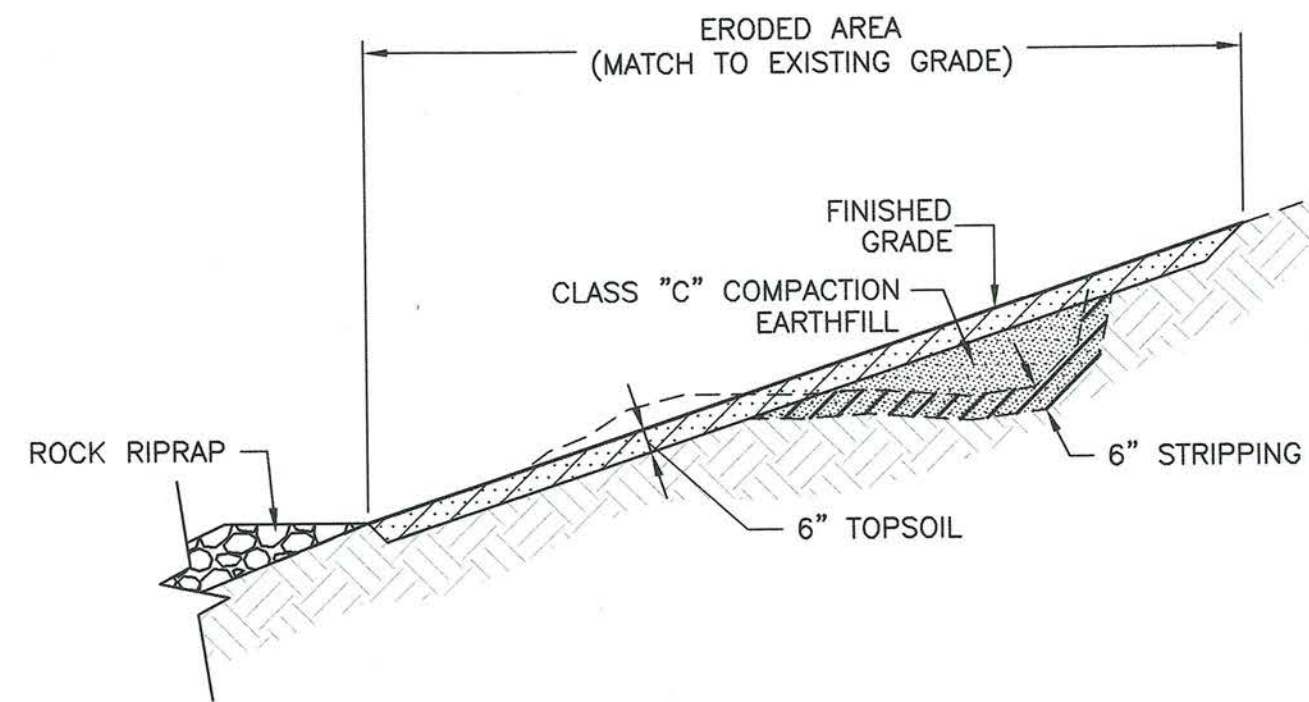


SIZE OF ROCK POUNDS	% SMALLER BY WEIGHT
300	100
150	50-100
60	15-50
20	0-15

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

- ROCK RIPRAP NOTES:
1. SPALLS AND ROCK DUST THAT PASS A 3" SIEVE SHALL CONSIST OF LESS THAN 5 PERCENT BY WEIGHT.
 2. ROCK PLACED AGAINST CONCRETE WORKS SHALL BE PLACED CAREFULLY TO AVOID DAMAGE.
 3. ALL ROCK RIPRAP REQUIRED SHALL COMPLY WITH THE GRADATION ABOVE (SEE CONSTRUCTION SPECIFICATION 61, AND MATERIAL SPECIFICATION 523.)

GRADATION OF ROCK RIPRAP



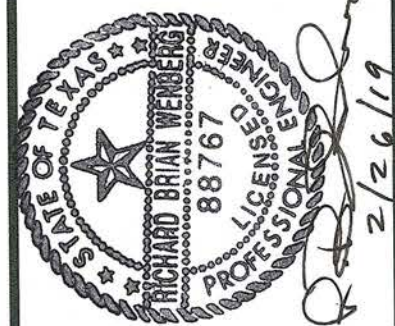
VEGETATED WAVE BERM ERODED AREAS - DETAIL

NOT TO SCALE

CONSTRUCTION NOTES:

1. THE APPROXIMATE LOCATIONS AND EXTENTS OF THE VEGETATED WAVE BERM ERODED AREAS TO BE REPAIRED ARE SHOWN IN THE DRAWINGS. THE FINAL EXTENTS SHALL BE STAKED BY THE ENGINEER.
2. CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED TO MINIMIZE IMPACTS TO THE SURROUNDING VEGETATION. CARE SHALL BE TAKEN TO ENSURE THAT THE MINIMUM CONSTRUCTION FOOTPRINT REQUIRED TO ACCOMPLISH THE JOB IS USED AND DAMAGE TO THE SURROUNDING VEGETATION IS KEPT TO A MINIMUM.
3. THE VEGETATED WAVE BERM ERODED AREAS SHALL BE REPAIRED IN ACCORDANCE WITH CONSTRUCTION SPECIFICATION 420, BRINGING THE FINISHED SURFACE UP TO MATCH THE EXISTING GRADE AS SHOWN.

REVISIONS		
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TYPICAL SECTIONS & DETAIL

FLOODWATER RETARDING STRUCTURE SITE NO. 11 EWP
PLUM CREEK WATERSHED

IN
HAYS, COUNTY, TEXAS

United States
Department of
Agriculture



Natural Resources
Conservation Service

DRAWING NO.
TX-EN-0752

SHEET NO.

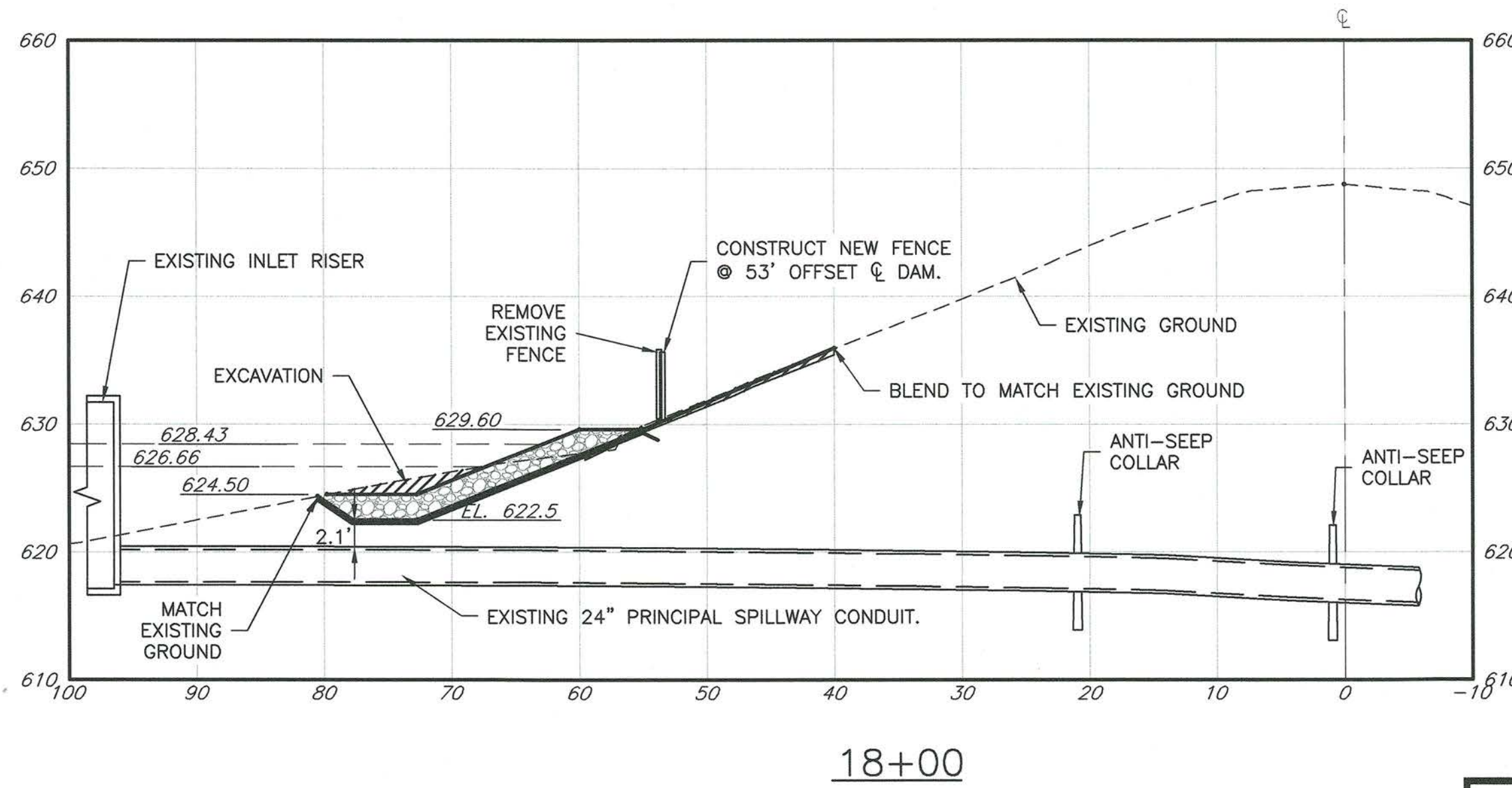
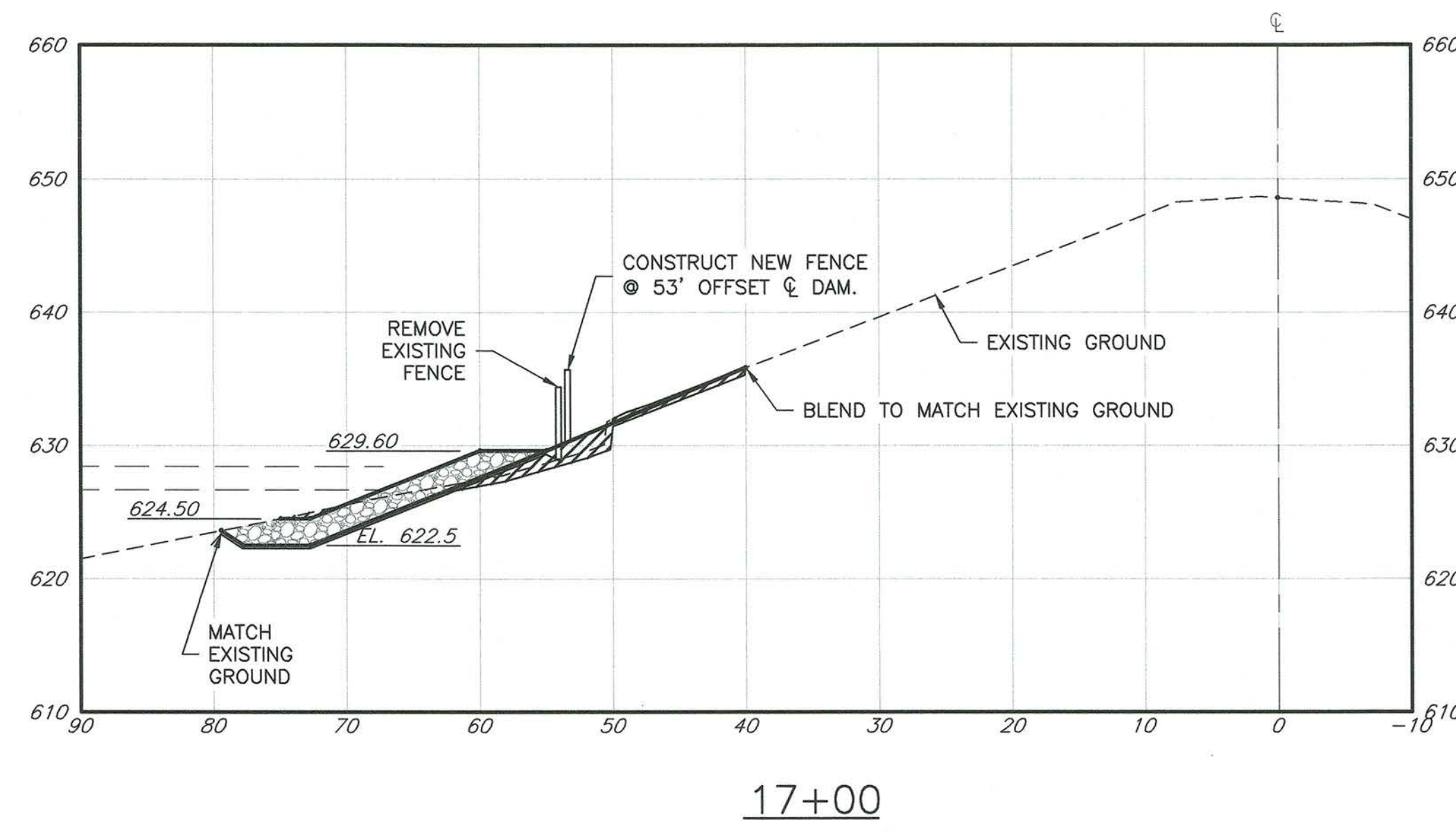
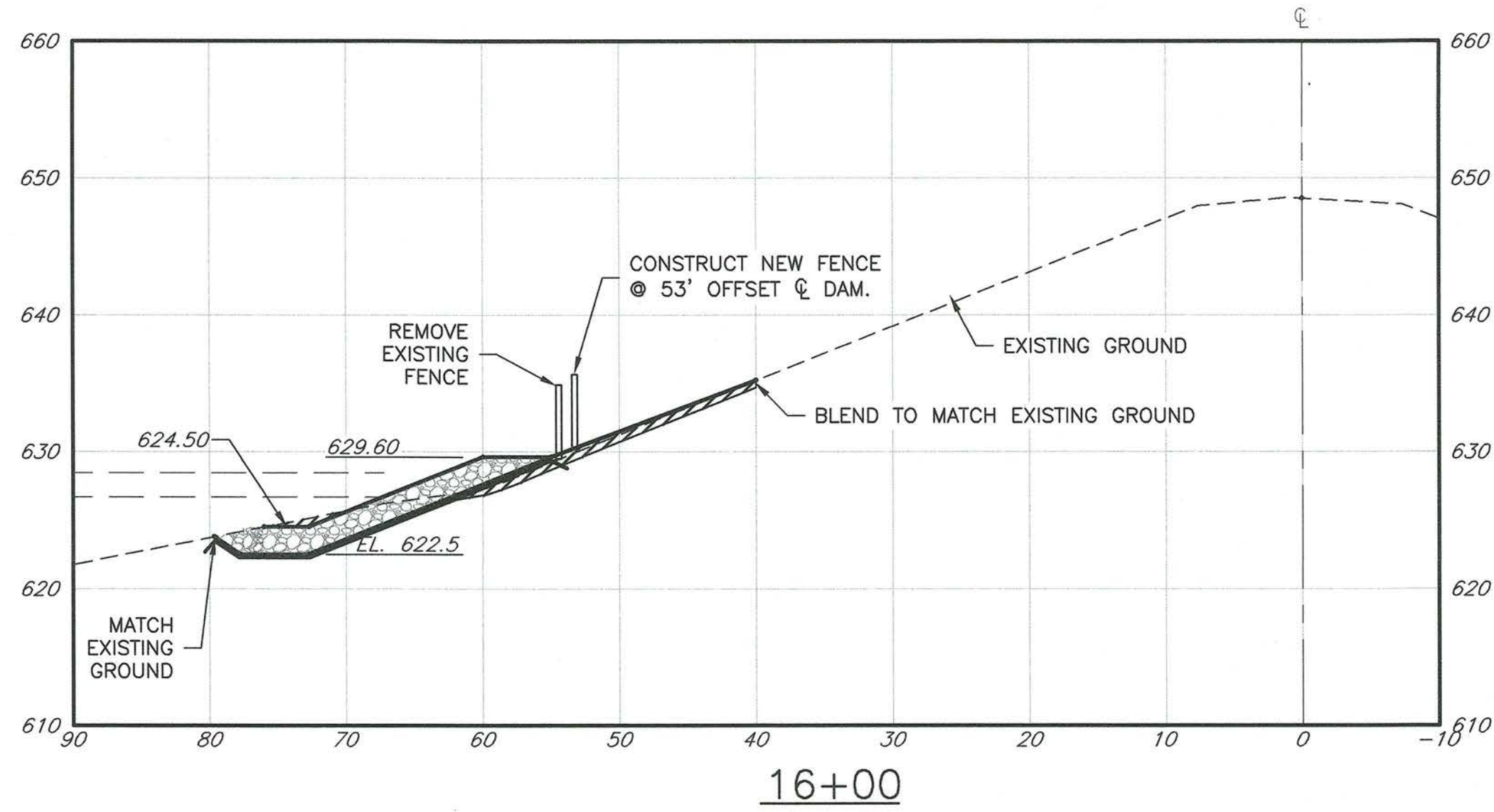
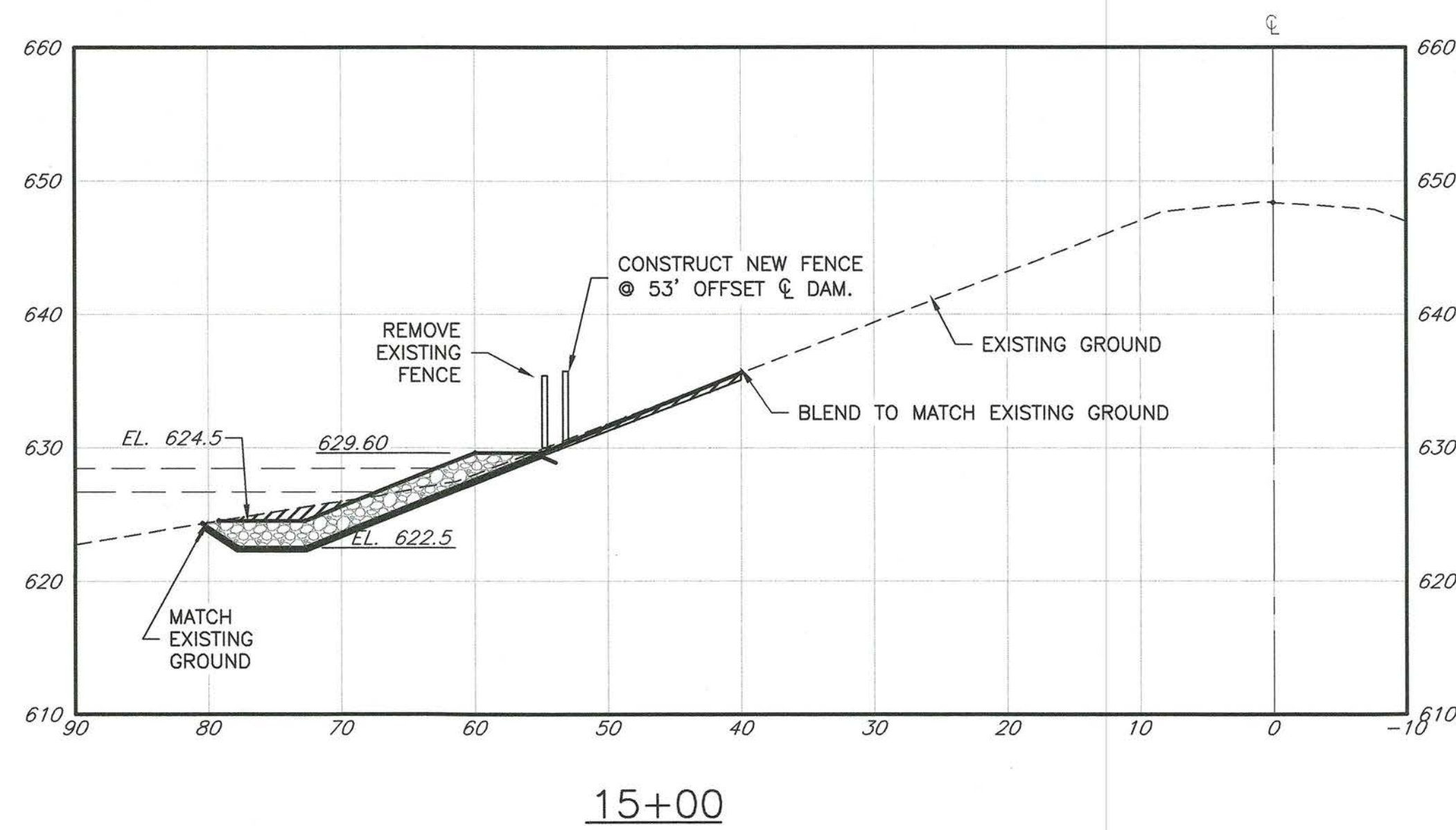
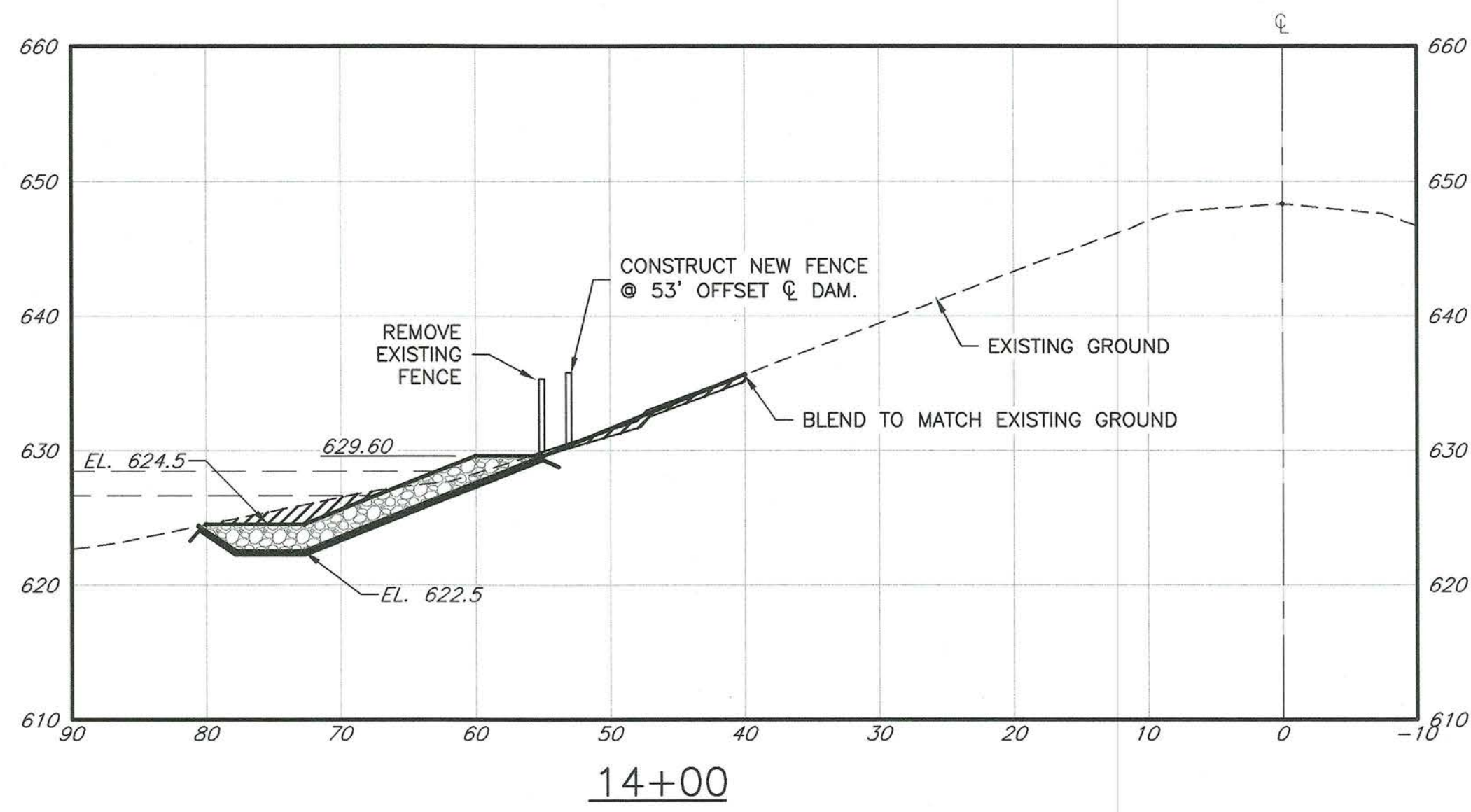
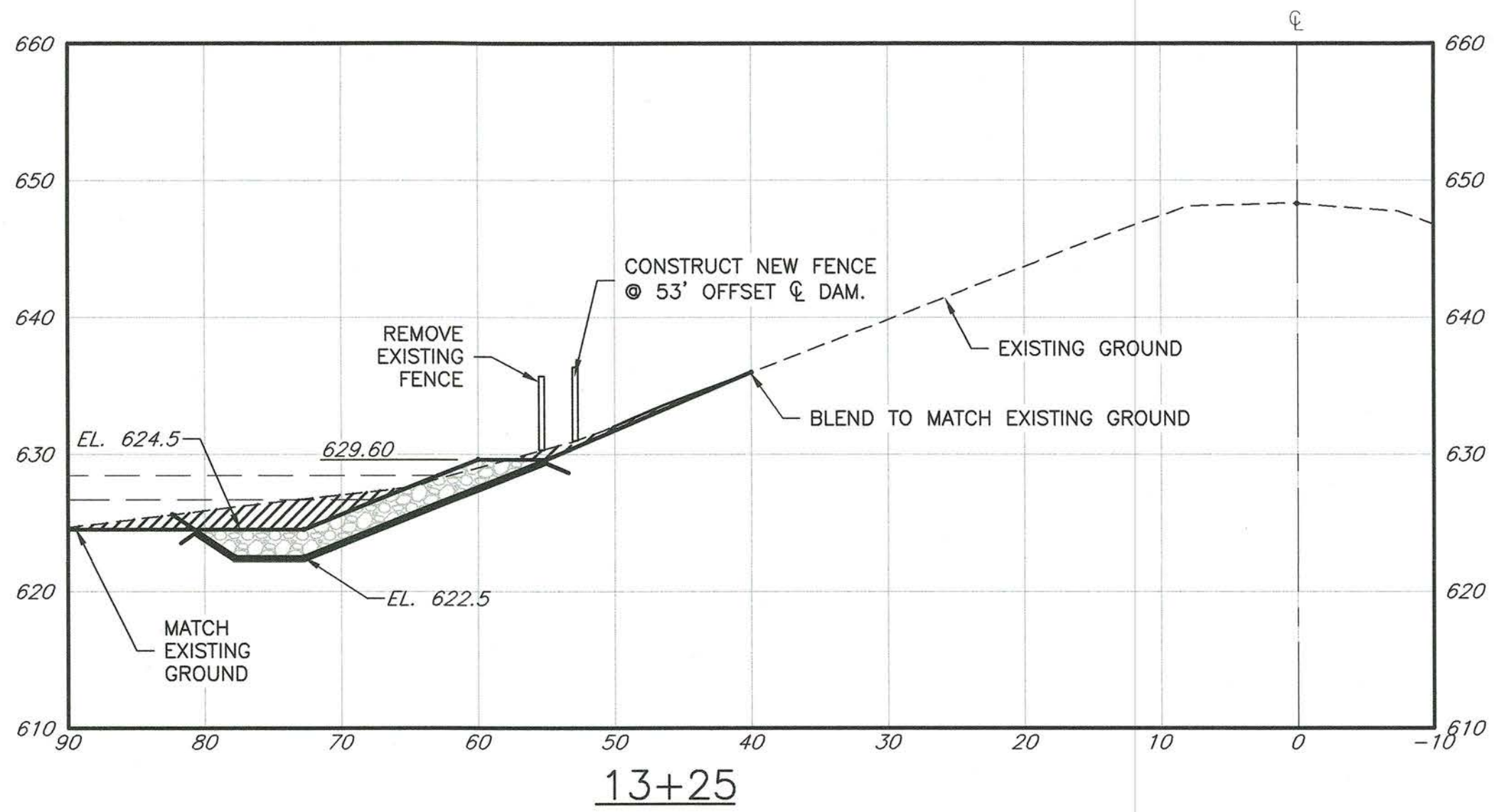
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NOTE: SECTIONS ARE FOR ELEVATION AND BASIC INFORMATIONAL PURPOSES ONLY.
SEE TYP. SECTION SHEET 3 FOR MORE DETAILS.



REVISIONS		
DATE	APPROVED	TITLE



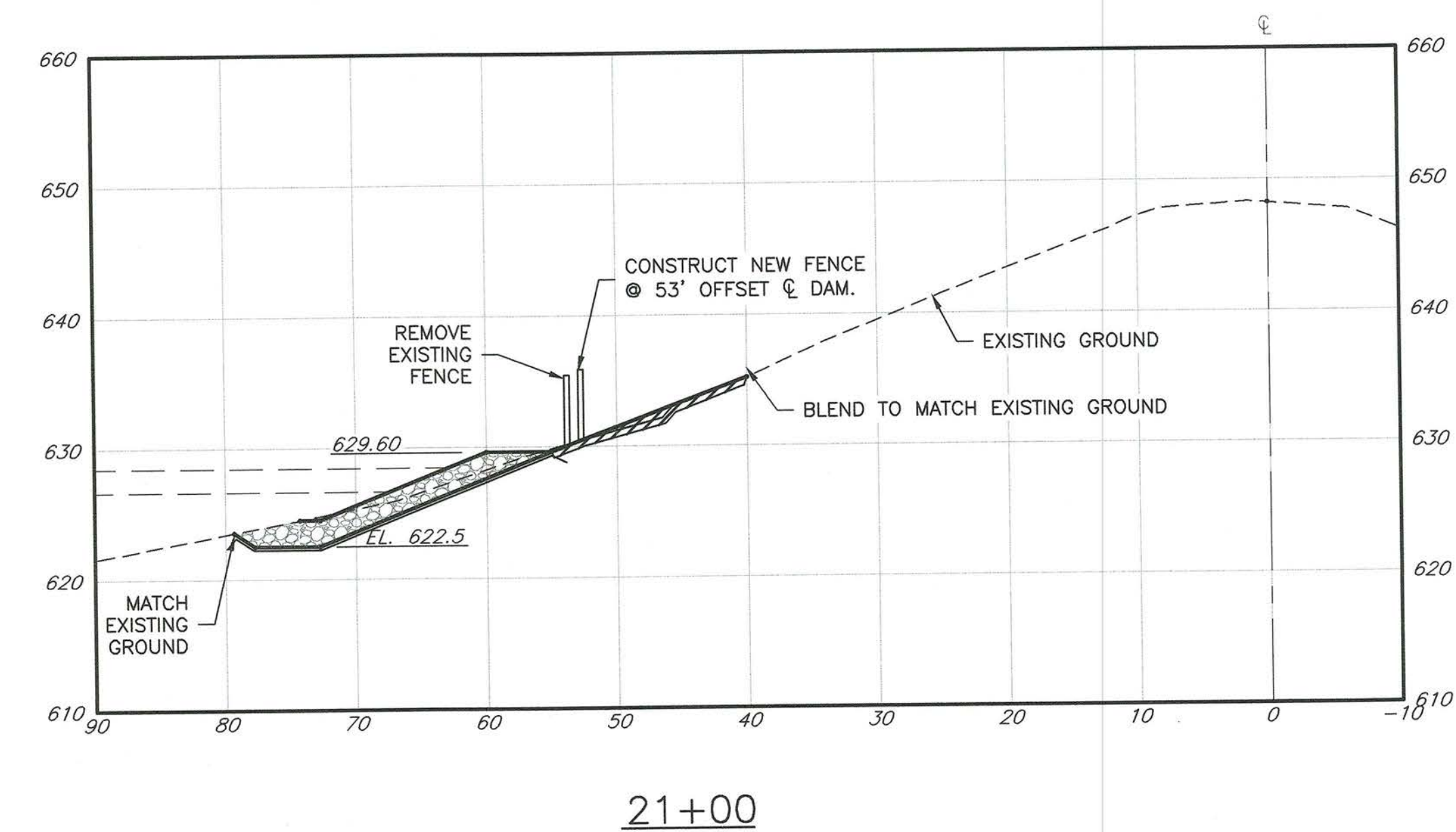
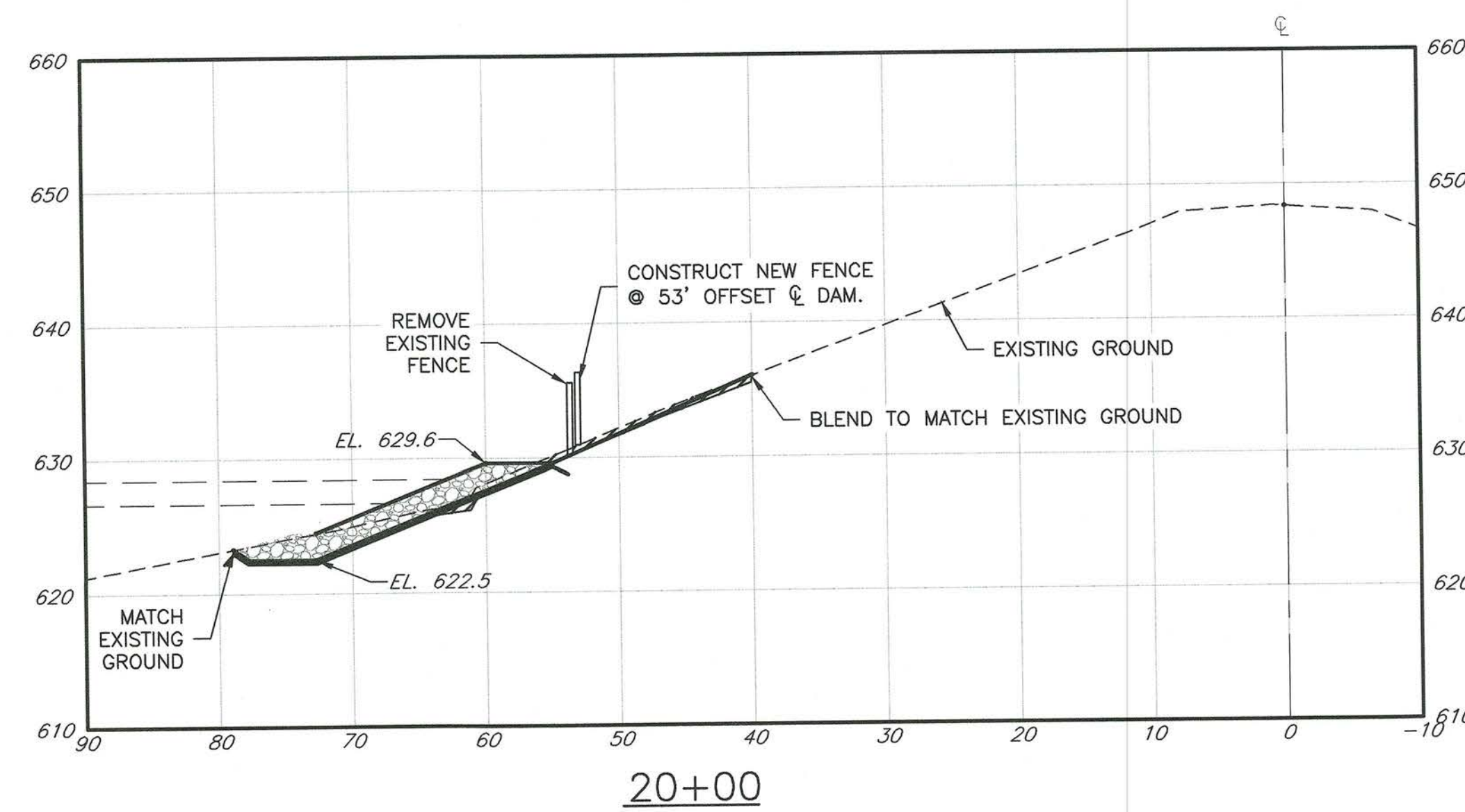
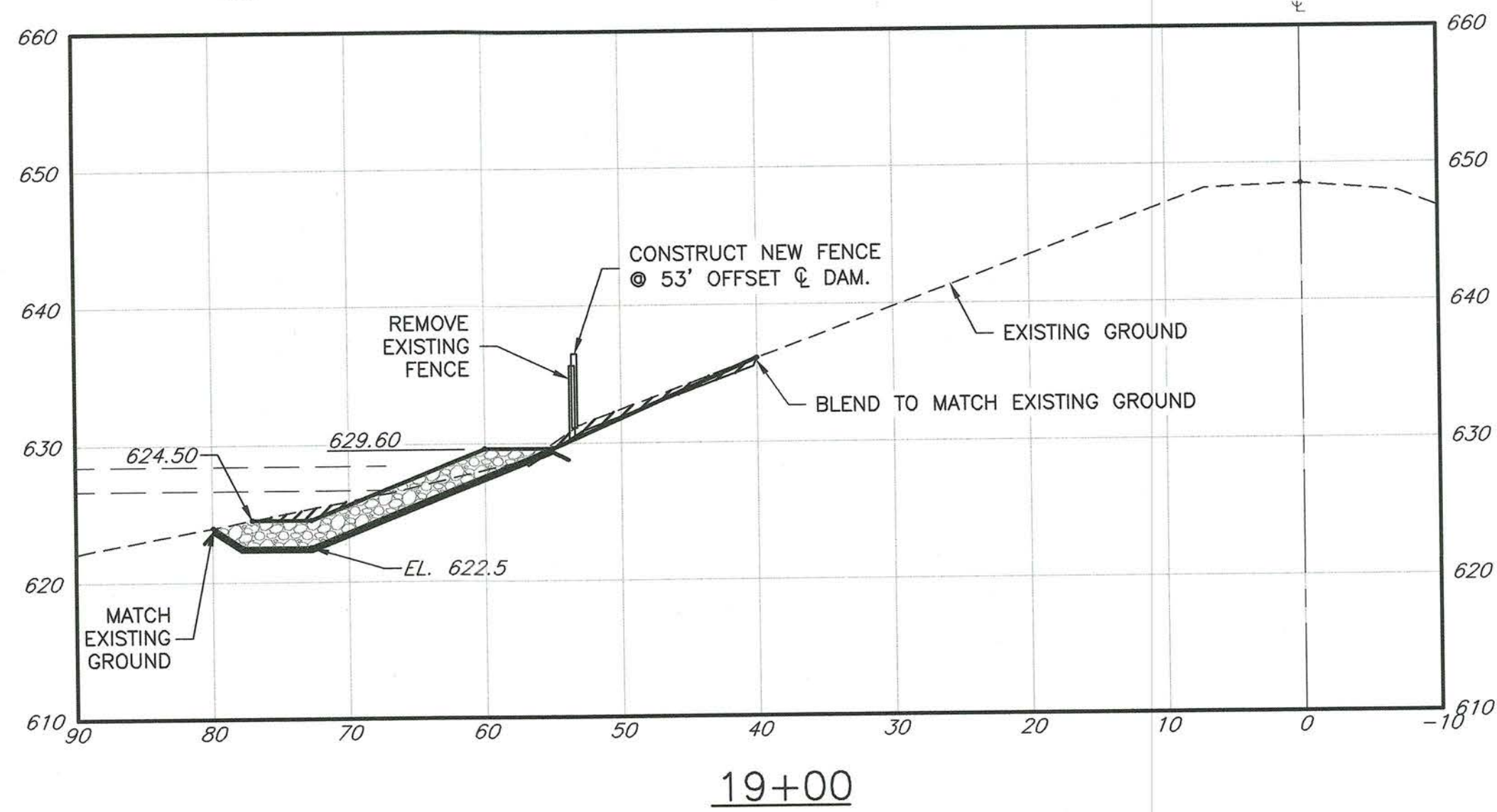
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DRAWN BY: SMD
CHECKED BY: KSC/SWI
FILE NAME: PLUM CREEK SITE 11 EMP.dwg
DATE CHECKED: 2/21/2019

SECTIONS (1 OF 2)
FLOODWATER RETARDING STRUCTURE SITE NO. 11 EWP
PLUM CREEK WATERSHED
IN
HAYS, COUNTY, TEXAS

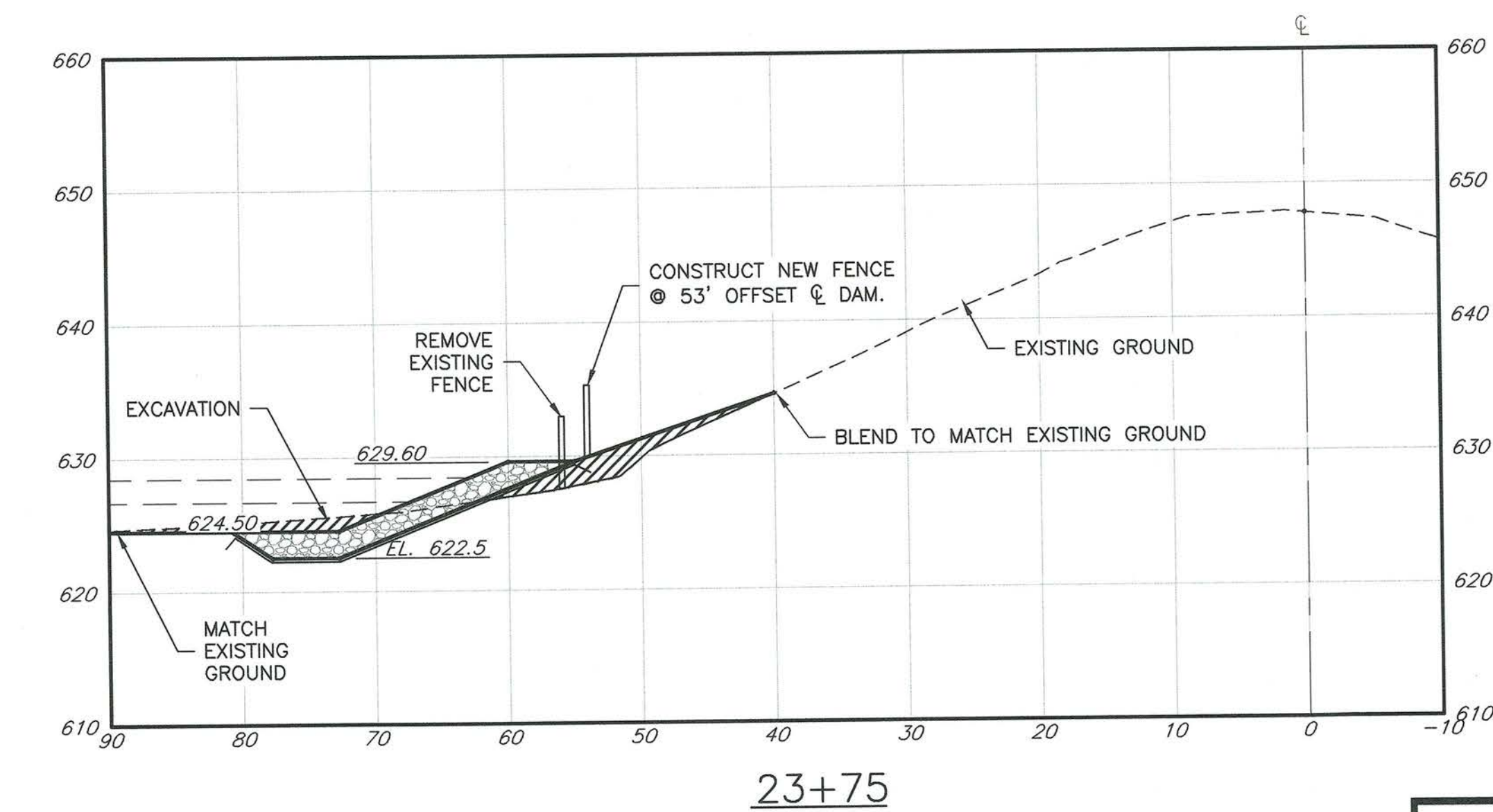
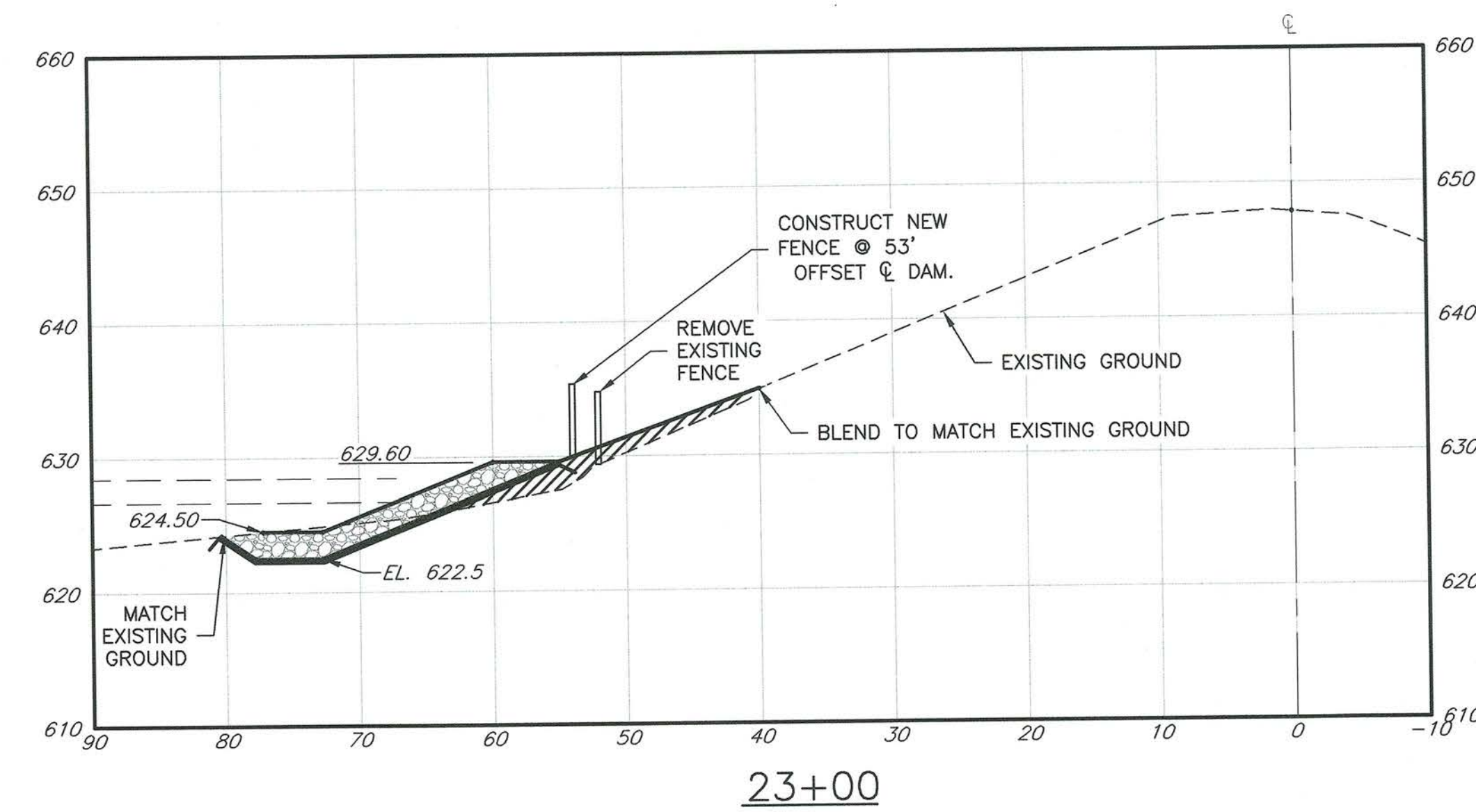
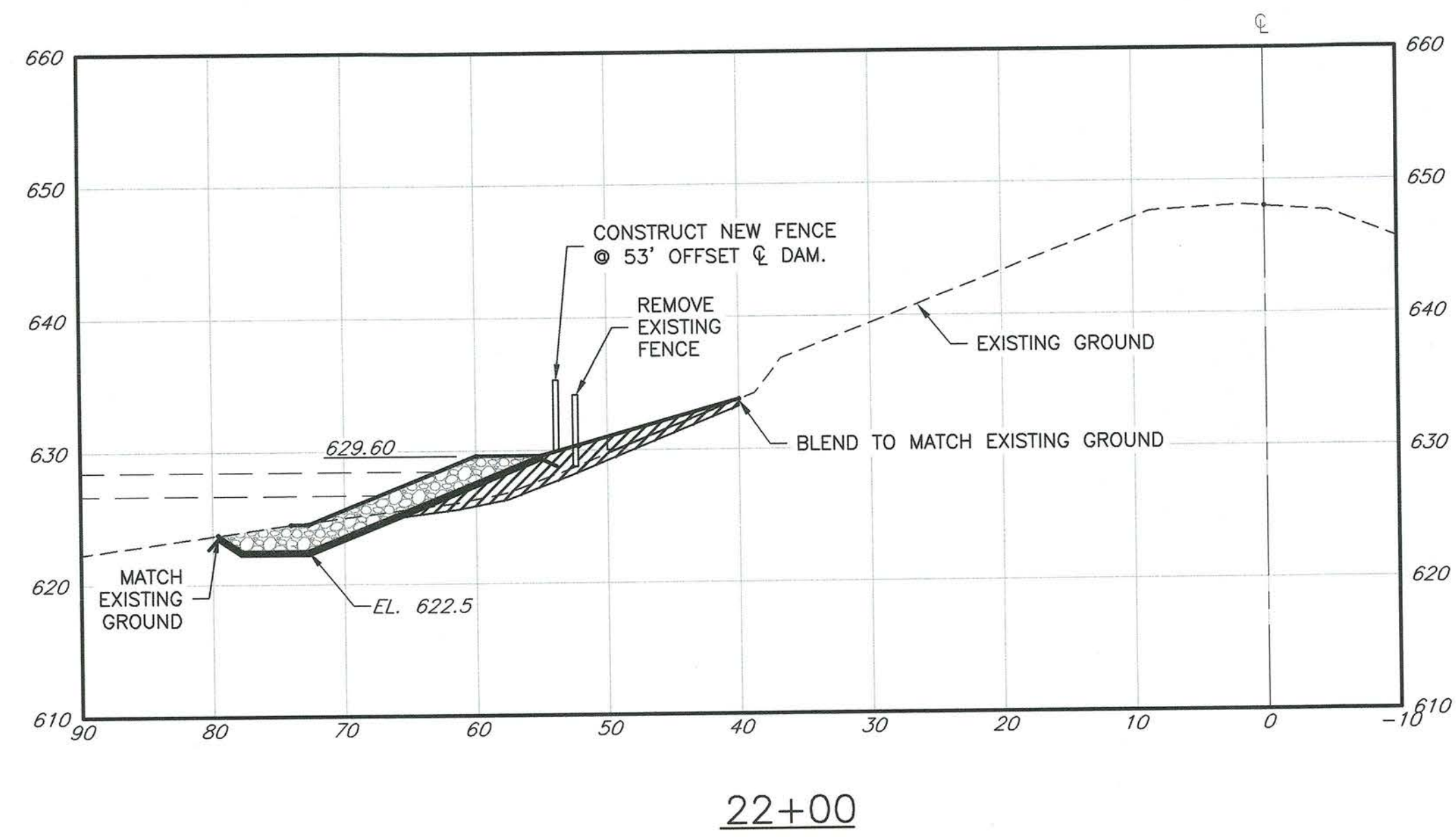


DRAWING NO.
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OF
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NOTE: SECTIONS ARE FOR ELEVATION AND BASIC INFORMATIONAL PURPOSES ONLY.
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0 5 10 FEET



REVISIONS		
DATE	APPROVED	TITLE



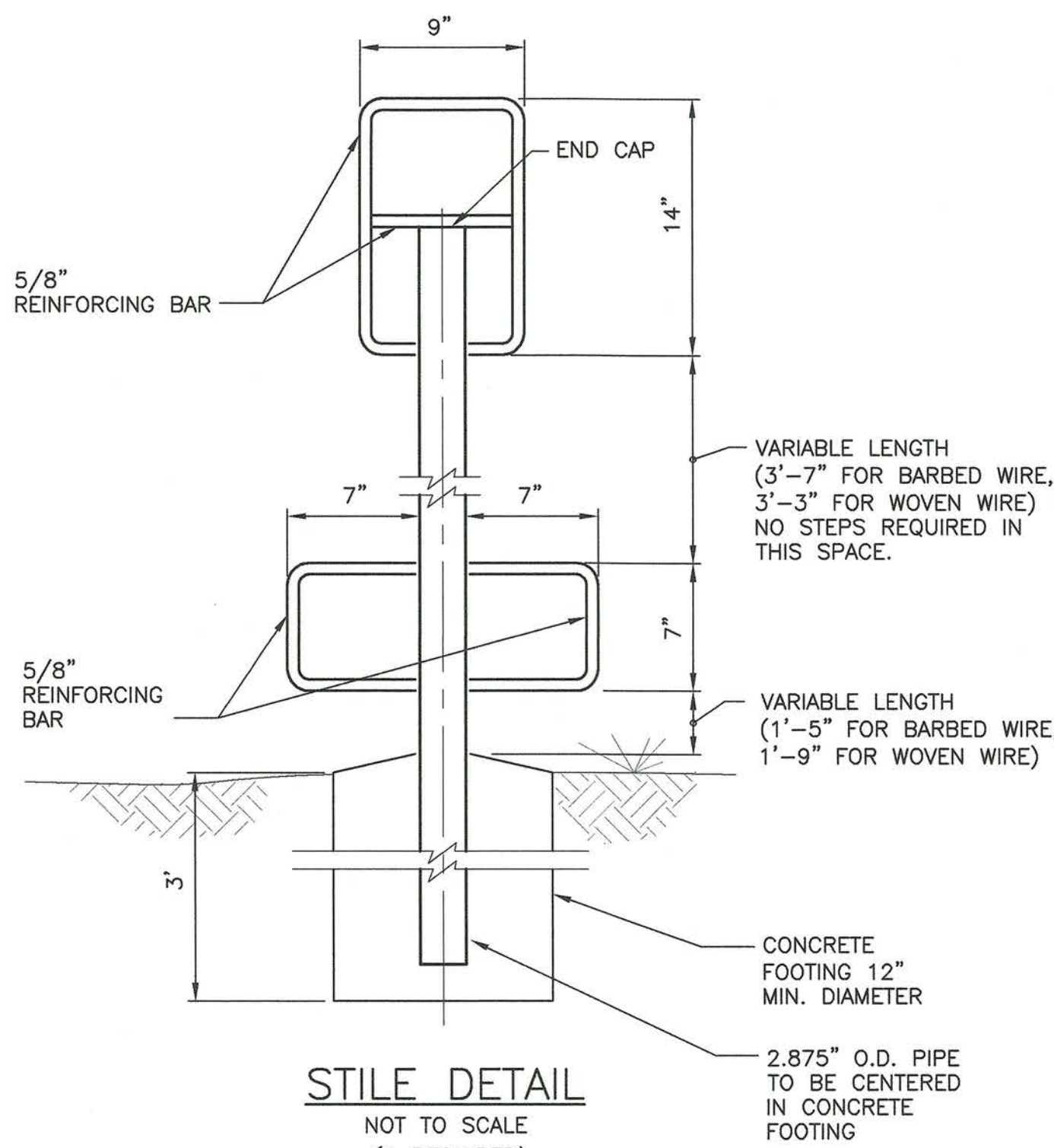
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CHECKED BY: KSG/SWH
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DATE CHECKED: 2/21/2019

SECTIONS (2 OF 2)
FLOODWATER RETARDING STRUCTURE SITE NO. 11 EWP
PLUM CREEK WATERSHED
IN
HAYS, COUNTY, TEXAS



DRAWING NO.
TX-EN-0752
SHEET NO.
5
OF
7

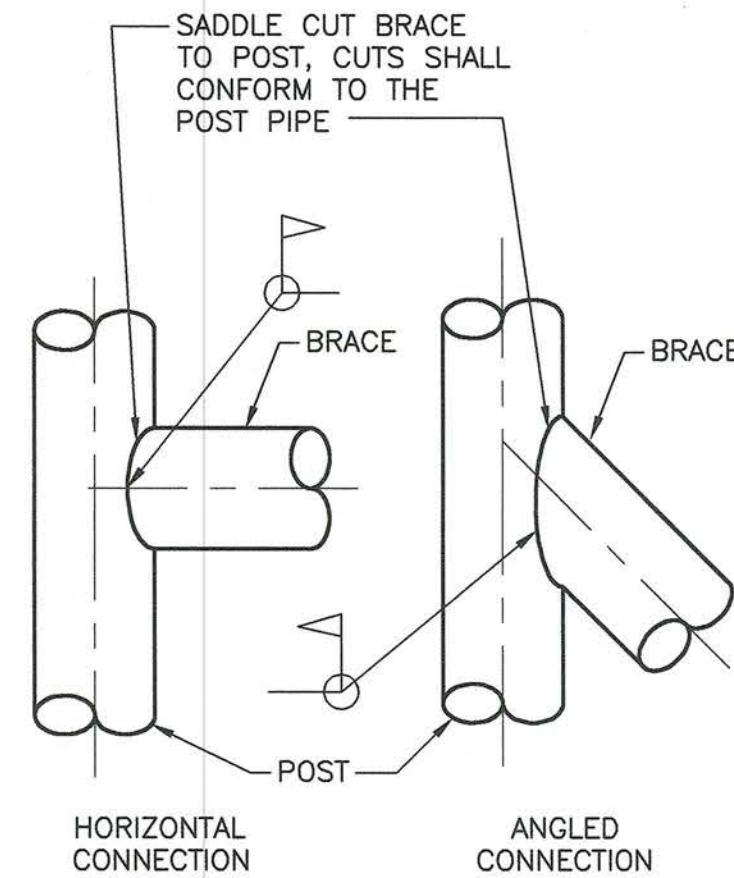
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NOTE:
POSITION STILE SO THAT STEPS AND HANDLE ARE PERPENDICULAR TO ALIGNMENT OF FENCE.
ALL BAR BENDS SHOWN SHALL HAVE AN INSIDE RADIUS OF APPROX. 1 1/2" PIPE FOR STILE SHALL BE 2.875" O.D. SCHEDULE 40 STEEL PIPE.
ALL BAR CONNECTIONS SHALL HAVE ALL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

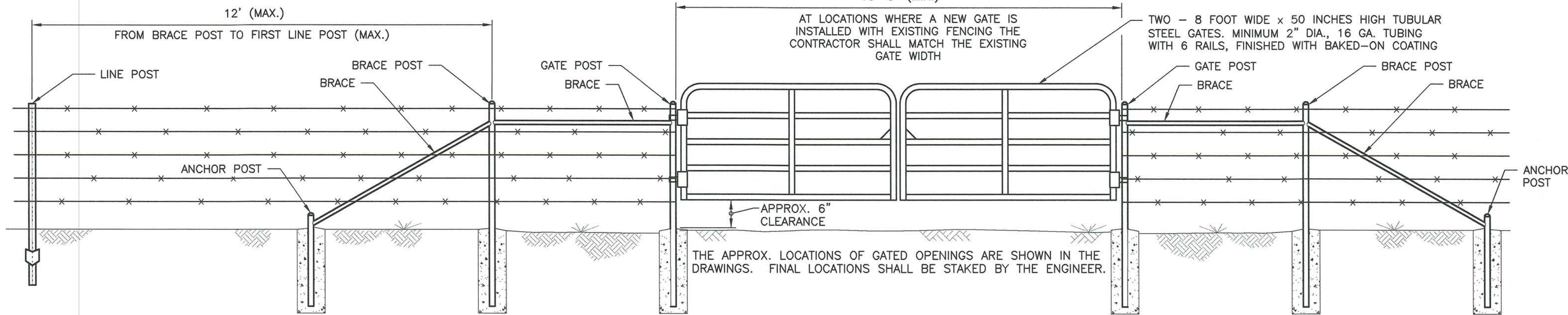
STILE DETAIL

NOT TO SCALE
(1 REQUIRED)



ELEVATION VIEW POST DETAILS

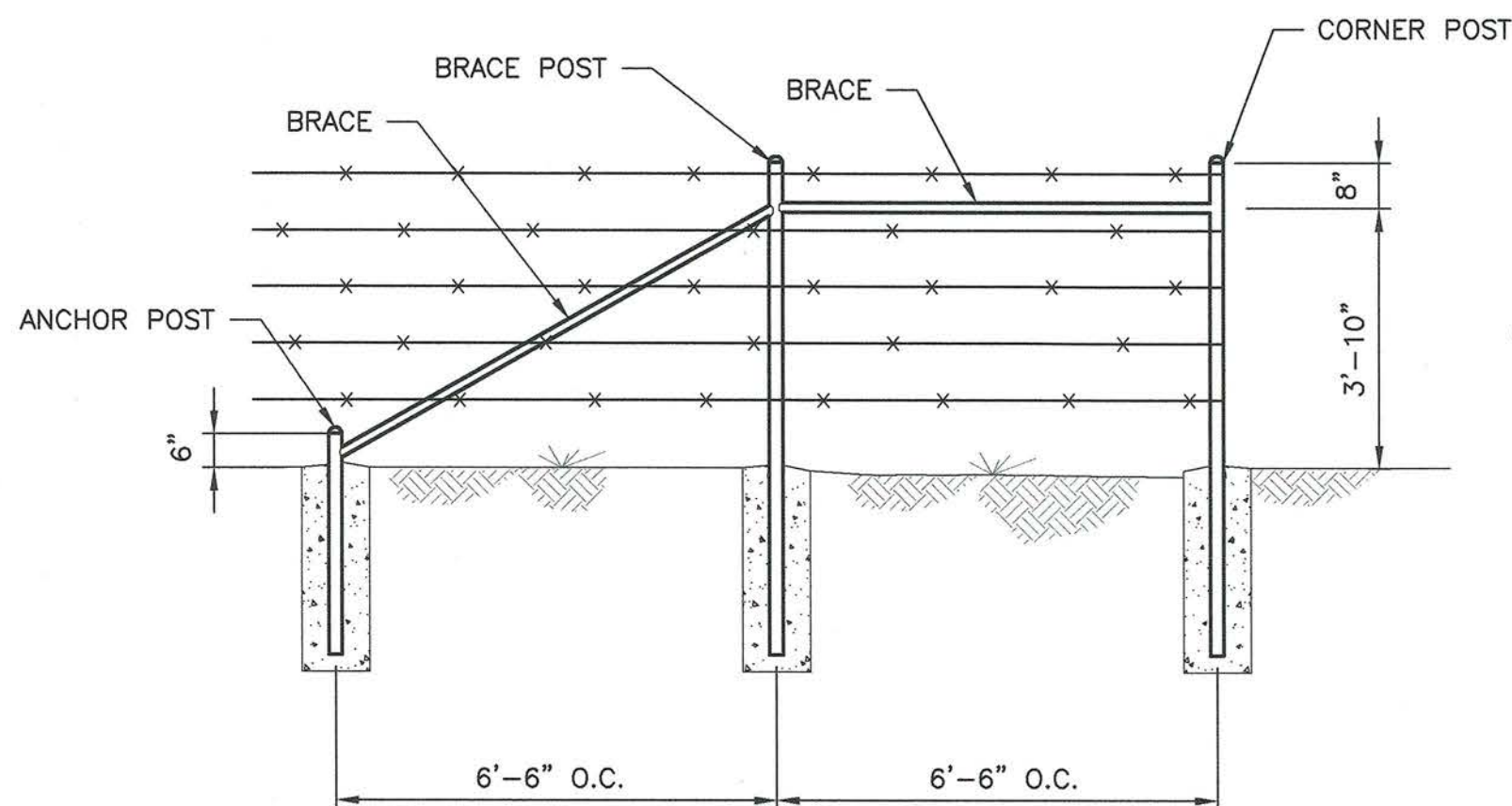
NOT TO SCALE



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

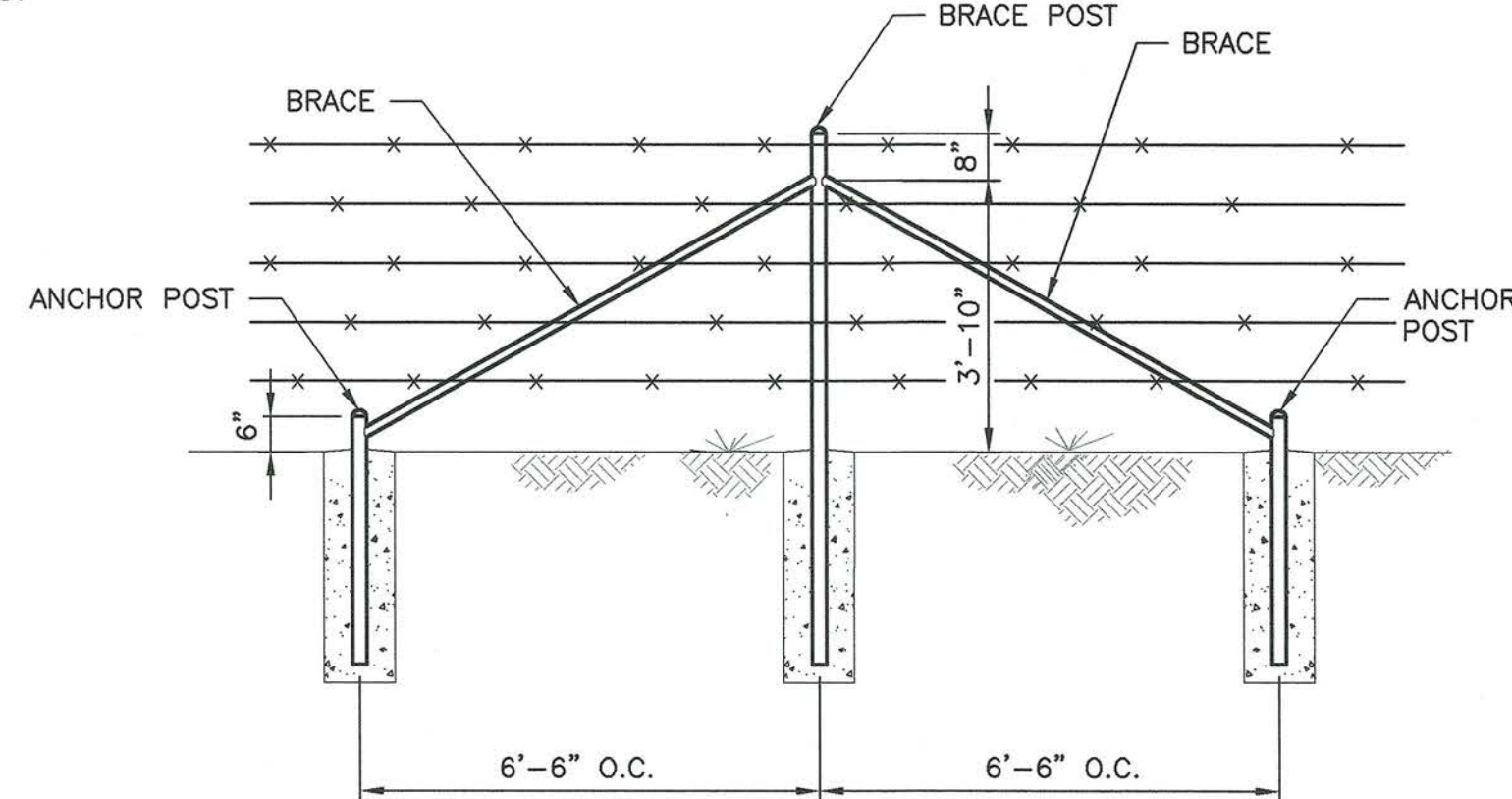
16' GATE OPENING

NOT TO SCALE
(ONE (1) OPENINGS SHOWN)



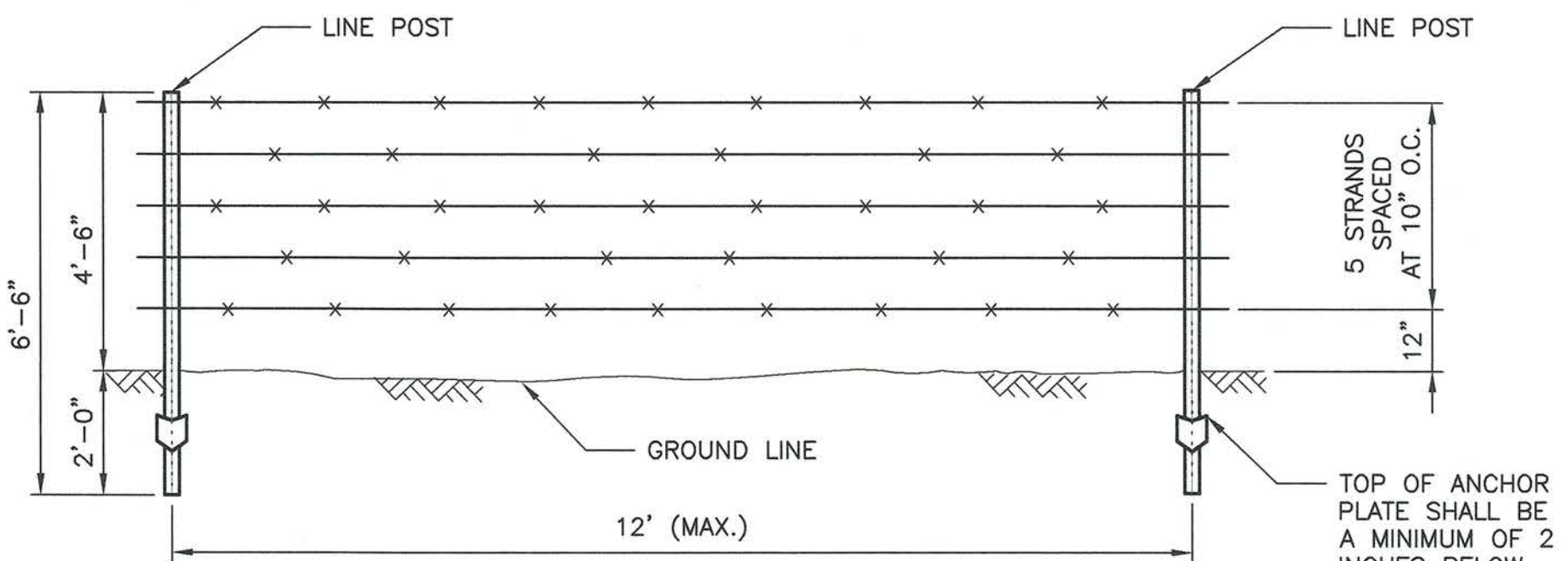
CORNER PANEL

NOT TO SCALE



PULL PANEL

NOT TO SCALE



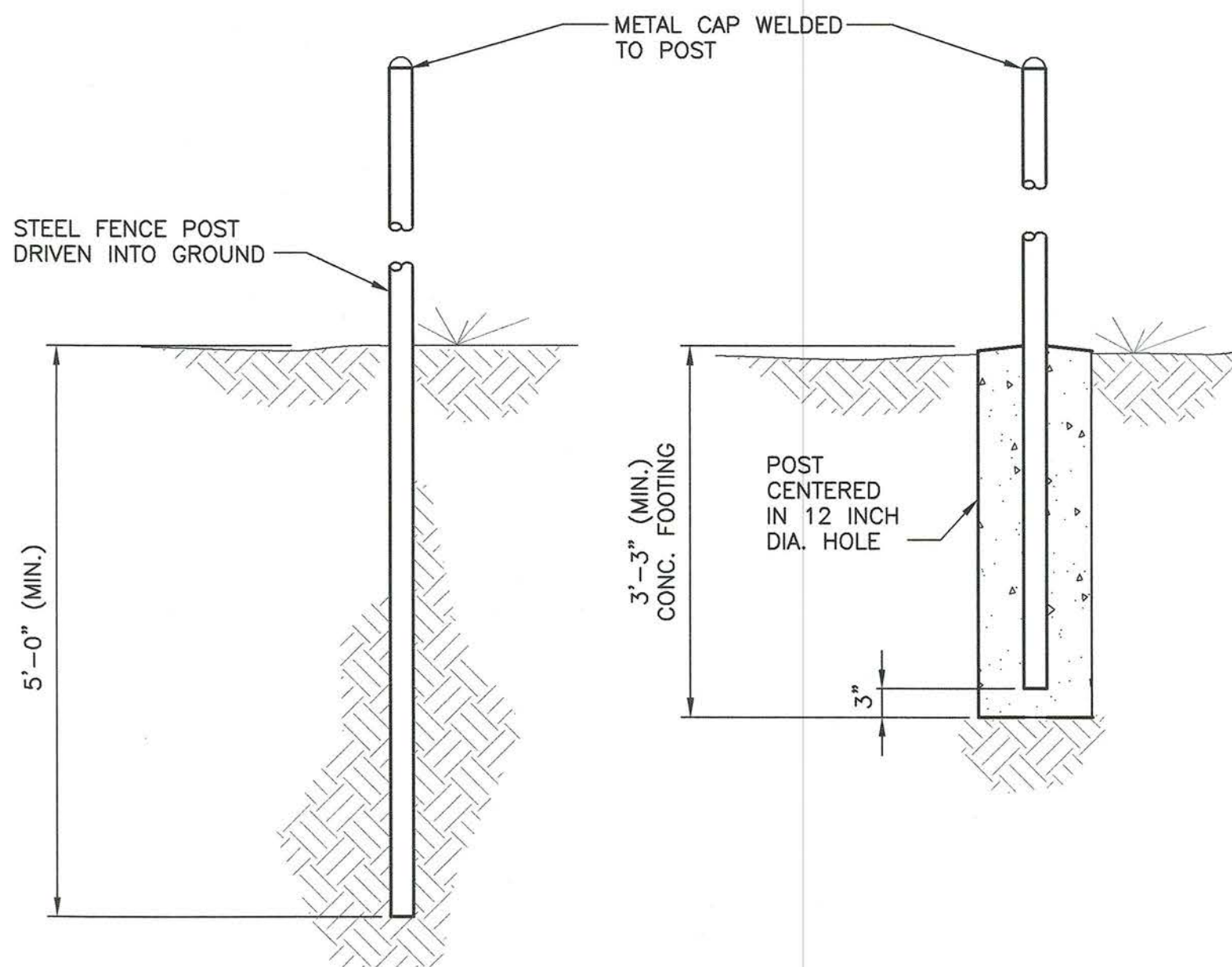
5-STRAND BARBED WIRE

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 (2) POINT, 14 GA. OR LARGER, ROUND OR FLAT AND ON 4" 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 1 AND 2.
THE FINAL LOCATION OF THE FENCES SHALL BE APPROVED BY THE ENGINEER.

- 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.



DRIVE EMBEDMENT OPTION DETAIL

NOT TO SCALE

CONCRETE EMBEDMENT OPTION DETAIL

NOT TO SCALE



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DATE CHECKED: 2/21/2019

FENCE DETAILS

FLOODWATER RETARDING STRUCTURE SITE NO. 11 EWP

PLUM CREEK WATERSHED

IN

HAYS COUNTY, TEXAS



DRAWING NO.
TX-EN-0752

SHEET NO.

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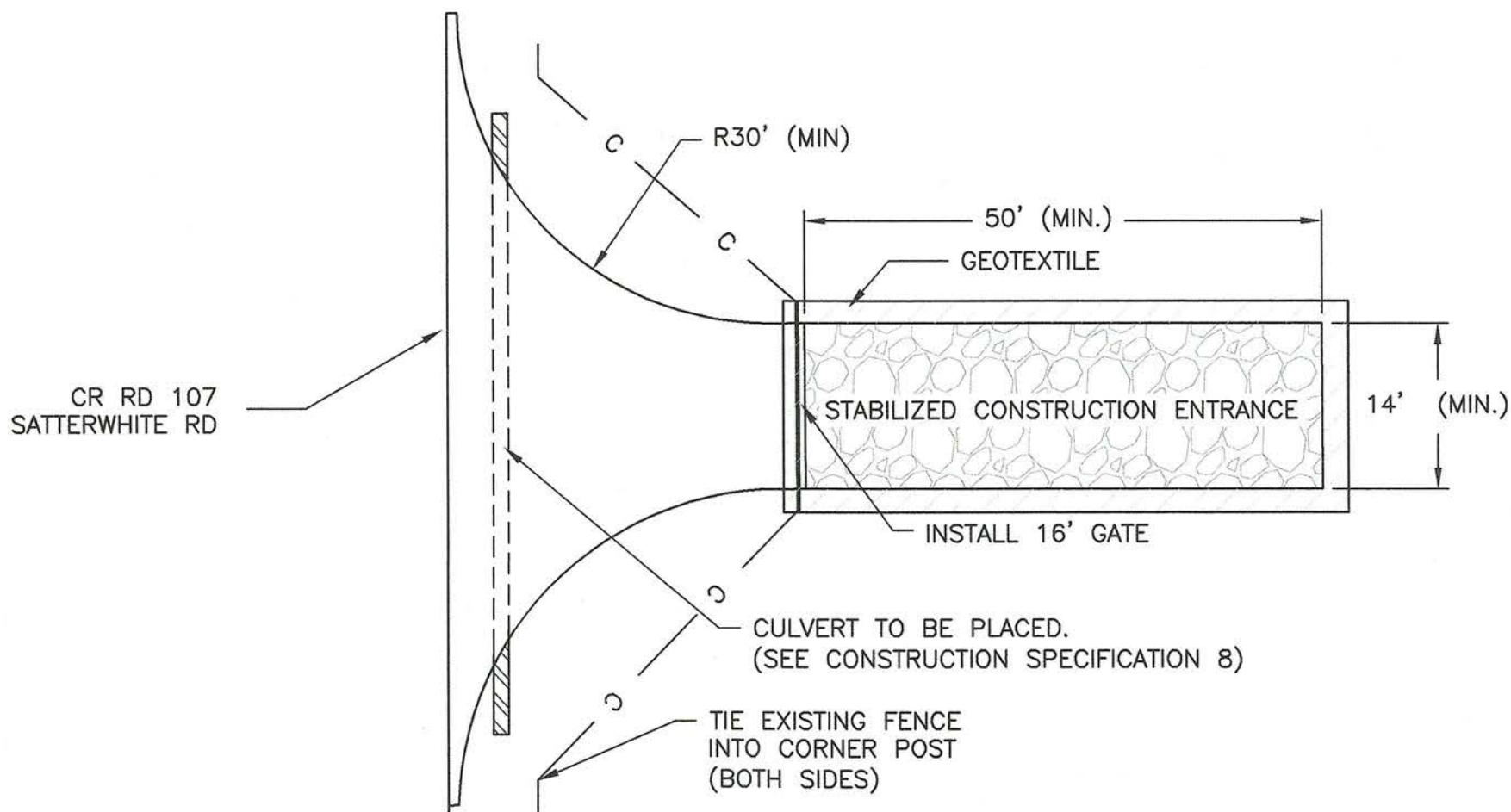
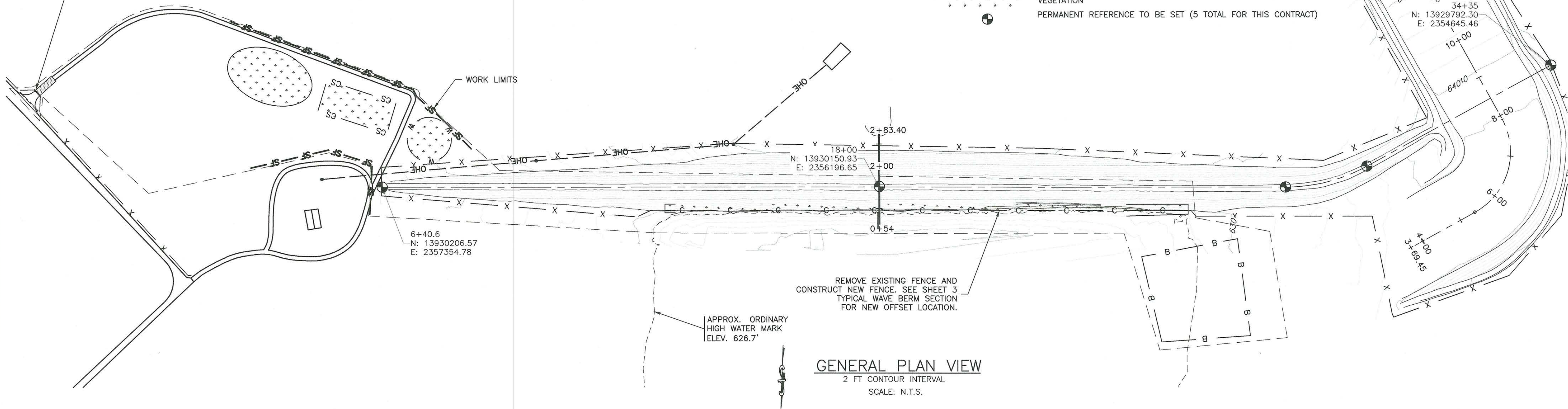
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DATE	APPROVED	TITLE

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STABILIZED CONSTRUCTION ENTRANCE.
(SEE DETAIL THIS SHEET.)



STABILIZED CONSTRUCTION ENTRANCE DETAIL
PLAN VIEW
NOT TO SCALE

NOTE:
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 GEOTEXTILE LAYER 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 & 8).

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

- Q --- AUXILIARY SPILLWAY AND DAM
- X --- EXISTING FENCE (DO NOT REMOVE)
- C --- FENCE TO BE CONSTRUCTED
- B --- APPROX. LIMITS OF WORK AREA
- W --- APPROX. LIMITS OF BORROW AREA
- CS --- APPROX. LIMITS OF WASTE AREA
- SF --- APPROX. LIMITS OF CAMPSITE
- SF --- APPROX. SILT FENCE LOCATION
- VEG --- VEGETATION
- PERMANENT REFERENCE TO BE SET (5 TOTAL FOR THIS CONTRACT)

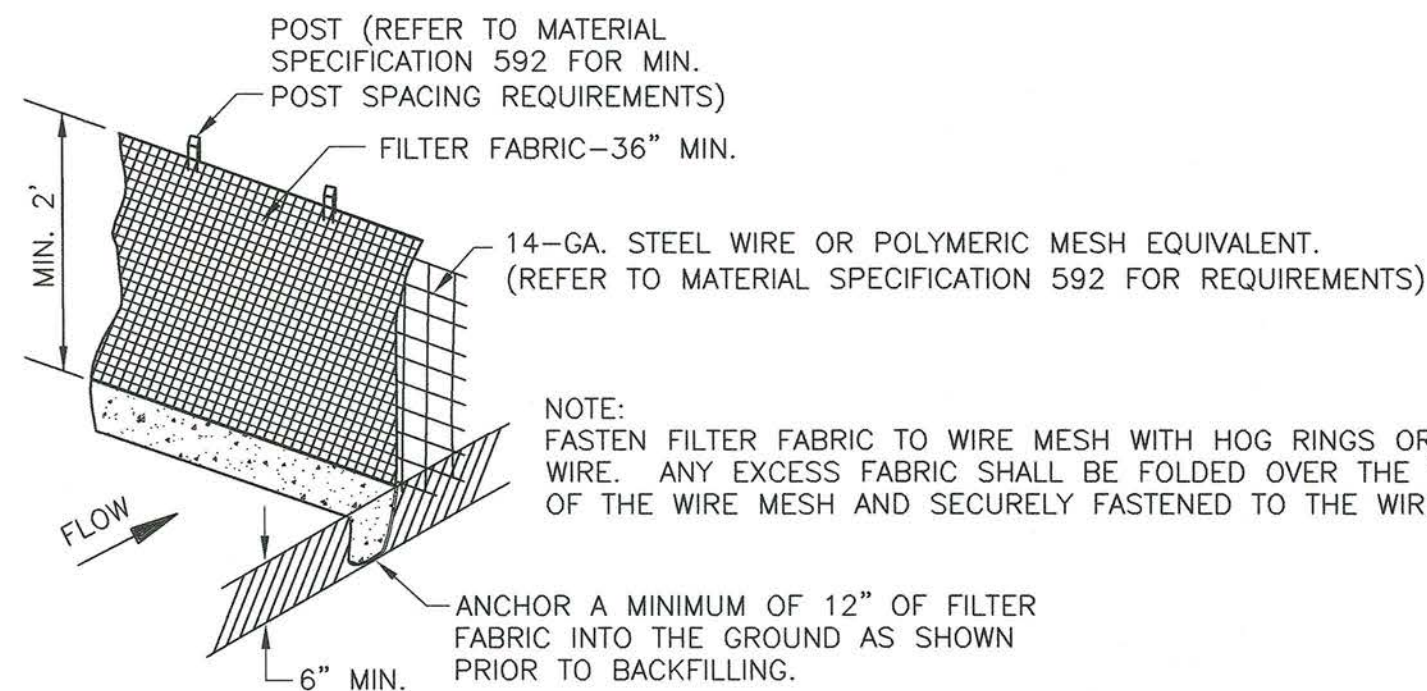
NOTE:
CONTRACTOR SHALL ADD LOCATION(S) OF SEDIMENT FENCE TO PLAN AS REQUIRED.

APPROXIMATELY 1080 FEET OF SEDIMENT FENCE IS CURRENTLY SHOWN.

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



FILTER FABRIC SILT FENCE DETAILS
(SEE CONSTRUCTION SPECIFICATION 5)

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.

STORMWATER POLLUTION PREVENTION PLAN

FLOODWATER RETARDING STRUCTURE SITE NO. 11 EMP

PLUM CREEK WATERSHED

IN

HAYS, COUNTY, TEXAS



DRAWING NO.
TX-EN-0752

SHEET NO.

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