



# PUBLIC NOTICE

U.S. ARMY CORPS OF ENGINEERS  
LOS ANGELES DISTRICT

BUILDING STRONG®

## APPLICATION FOR PERMIT Ferro Ditch Channel Improvement Project

**Public Notice/Application No.:** SPL-2013-00592-AJS

**Project:** Ferro Ditch Channel Improvement Project

**Comment Period:** July 9 through August 8, 2019

**Project Manager:** Antal Szijj; (805) 585-2147; [Antal.J.Szijj@usace.army.mil](mailto:Antal.J.Szijj@usace.army.mil)

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### Applicant

Glenn Shephard, Director  
Ventura County Watershed Protection District  
800 South Victoria Avenue  
Ventura, California 93009-1610

### Contact

Pam Lindsey  
Ventura County Watershed Protection District  
800 South Victoria Avenue  
Ventura, California 93009-1610

### Location

Ferro Ditch (2019) near the city of Camarillo, Ventura County, CA (at: 34.258218°N lat., 119.110345°W long.).

### Activity

To construct flood control improvements to a 1,700-foot segment of Ferro Ditch, between the outlet of Ferro Basin and Highway 118, including widening the existing trapezoidal channel and lining the bed and banks with 1/4-ton ungrouted riprap in association with Ferro Ditch Channel Improvement Project (see attached drawings). For more information see Additional Project Information section below.

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Interested parties are hereby notified an application has been received for a Department of the Army permit for the activity described herein and shown on the attached drawing(s). We invite you to review today's public notice and provide views on the proposed work. By providing substantive, site-specific comments to the Corps Regulatory Division, you provide information that supports the Corps' decision-making process. All comments received during the comment period become part of the record and will be considered in the decision. This permit will be issued, issued with special conditions, or denied under Section 404 of the Clean Water Act. Comments should be mailed to:

DEPARTMENT OF THE ARMY  
LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
REGULATORY DIVISION  
ATTN: Antal Szijj  
60 South California Street, Suite 201  
Ventura, CA 93001-2598

Alternatively, comments can be sent electronically to: [Antal.J.Szijj@usace.army.mil](mailto:Antal.J.Szijj@usace.army.mil)

The mission of the U.S. Army Corps of Engineers Regulatory Program is to protect the Nation's aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions. The Corps evaluates permit applications for essentially all construction activities that occur in the Nation's waters, including wetlands. The Regulatory Program in the Los Angeles District is executed to protect aquatic resources by developing and implementing short- and long-term initiatives to improve regulatory products, processes, program transparency, and customer feedback considering current staffing levels and historical funding trends.

Corps permits are necessary for any work, including construction and dredging, in the Nation's navigable water and their tributary waters. The Corps balances the reasonably foreseeable benefits and detriments of proposed projects, and makes permit decisions that recognize the essential values of the Nation's aquatic ecosystems to the general public, as well as the property rights of private citizens who want to use their land. The Corps strives to make its permit decisions in a timely manner that minimizes impacts to the regulated public.

During the permit process, the Corps considers the views of other Federal, state and local agencies, interest groups, and the general public. The results of this careful public interest review are fair and equitable decisions that allow reasonable use of private property, infrastructure development, and growth of the economy, while offsetting the authorized impacts to the waters of the United States. The permit review process serves to first avoid and then minimize adverse effects of projects on aquatic resources to the maximum practicable extent. Any remaining unavoidable adverse impacts to the aquatic environment are offset by compensatory mitigation requirements, which may include restoration, enhancement, establishment, and/or preservation of aquatic ecosystem system functions and services.

### **Evaluation Factors**

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof. Factors that will be considered include conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people. In addition, if the proposal would discharge dredged or fill material, the evaluation of the activity will include application of the EPA Guidelines (40 CFR Part 230) as required by Section 404 (b)(1) of the Clean Water Act.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

## **Preliminary Review of Selected Factors**

**EIS Determination**- A preliminary determination has been made an environmental impact statement is not required for the proposed work.

**Water Quality**- The applicant is required to obtain water quality certification, under Section 401 of the Clean Water Act, from the California Regional Water Quality Control Board. Section 401 requires any applicant for an individual Section 404 permit provide proof of water quality certification to the Corps of Engineers prior to permit issuance.

**Coastal Zone Management**-This project is located outside the coastal zone and preliminary review indicates it would not affect coastal zone resources. After a review of the comments received on this public notice and in consultation with the California Coastal Commission, the Corps will make a final determination of whether this project affects coastal zone resources after review of the comments received on this Public Notice.

**Essential Fish Habitat**- No Essential Fish Habitat (EFH), as defined by the Magnuson-Stevens Fishery Conservation and Management Act, occurs within the project area and no EFH is affected by the proposed project.

**Cultural Resources**- The latest version of the National Register of Historic Places has been consulted and this site is not listed. This review constitutes the extent of cultural resources investigations by the District Engineer, and he is otherwise unaware of the presence of such resources. The Corps' permit area is entirely comprised of lands previously disturbed by the construction and ongoing maintenance of Ferro Ditch.

**Endangered Species**- Preliminary determinations indicate the proposed activity would not affect federally-listed endangered or threatened species, or their critical habitat. Therefore, formal consultation under Section 7 of the Endangered Species Act does not appear to be required at this time.

**Public Hearing**- Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearing shall state with particularity the reasons for holding a public hearing.

## **Proposed Activity for Which a Permit is Required**

**Basic Project Purpose**- The basic project purpose comprises the fundamental, essential, or irreducible purpose of the proposed project, and is used by the Corps to determine whether the applicant's project is water dependent (i.e., requires access or proximity to or siting within the special aquatic site to fulfill its basic purpose). Establishment of the basic project purpose is necessary only when the proposed activity would discharge dredged or fill material into a special aquatic site (e.g., wetlands, pool and riffle complex, mudflats, coral reefs). Because no fills are proposed within special aquatic sites, identification of the basic project purpose is not necessary.

**Overall Project Purpose**- The overall project purpose serves as the basis for the Corps' 404(b)(1) alternatives analysis and is determined by further defining the basic project purpose in a manner that more specifically describes the applicant's goals for the project, and which allows a reasonable range of alternatives to be analyzed. The overall project purpose for the proposed project is *to project flood protection up to the 50-year recurrence interval for property and infrastructure along Ferro Ditch.*

## **Additional Project Information**

**Baseline information-** Ferro Ditch is a maintained, earthen trapezoidal channel which connects the Ferro Basin located immediately upstream with a system of channelized drainages that eventually drain to Calleguas Creek. The Ferro Basin and Ferro Ditch are maintained by the Ventura County Watershed Protection District (VCWPD) for flood control purposes. Maintenance activities include occasional removal of accumulated sediments, erosion repairs to the channel embankments and vegetation management through herbicide use. As a result, vegetation within Ferro Ditch generally consists of weedy, herbaceous plant species. The channel is bound by earthen levees and access roads on each side, with adjacent active agricultural uses. At the downstream end of the project reach, Ferro Ditch transitions to a reinforced concrete box culvert which passes under Hwy 118 and eventually discharges to Beardsley Wash.

Ferro Ditch currently has an estimated capacity to accommodate the 10-year recurrence interval and therefore poses a threat of flooding to adjacent property and public infrastructure.

**Project description-** VCWPD proposes to improve the flood capacity of Ferro Ditch by widening and deepening the channel to improve capacity (see attached figures). The majority (approximately 1,550 linear feet) of existing earthen trapezoidal channel would be widened to a base width of 7 feet with 2:1 side slopes and a top width of 34 feet (increased from an average top width of 19 feet). Channel depth would be increased from 4 to 6.75 feet. The widened channel would be lined with a 2-foot layer of ungrouted rock along the invert and channel slopes to control erosion and downstream sedimentation. The upper 2 feet of the side slopes on the reconfigured channel (outside the existing limits of Corps jurisdiction) would consist of grouted rock to better support and maintain the adjacent access roads. Approximately 80 linear feet at the downstream end would be converted to an open concrete transition structure connecting to the existing reinforced concrete box culvert under Highway 118.

Rock placement would result in approximately 0.68 acre of permanent impact to waters of the U.S. The concrete transition structure would result in approximately 0.04 acre of permanent impact. Once constructed the channel is expected to support a similar vegetation condition in the interstices of the ungrouted rock and within sediment that naturally accretes in the channel invert (excluding the 80-foot transition structure). The ungrouted rock would also allow infiltration. The channel would continue to be maintained for flood control purposes.

**Proposed Mitigation-** VCWPD is proposing to provide 0.13 acre of off-site enhancement within an existing permittee-responsible mitigation site within Arroyo Simi to compensate for the 0.04 acre of new concrete-lining associated with the transition structure. The proposed mitigation may change as a result of comments received in response to this public notice, the applicant's response to those comments, and/or the need for the project to comply with the 404(b)(1) Guidelines.

## **Proposed Special Conditions**

None proposed at this time.

For additional information please call Antal Szijj of my staff at (805) 585-2147 or via e-mail at [Antal.J.Szijj@usace.army.mil](mailto:Antal.J.Szijj@usace.army.mil). This public notice is issued by the Chief, Regulatory Division.

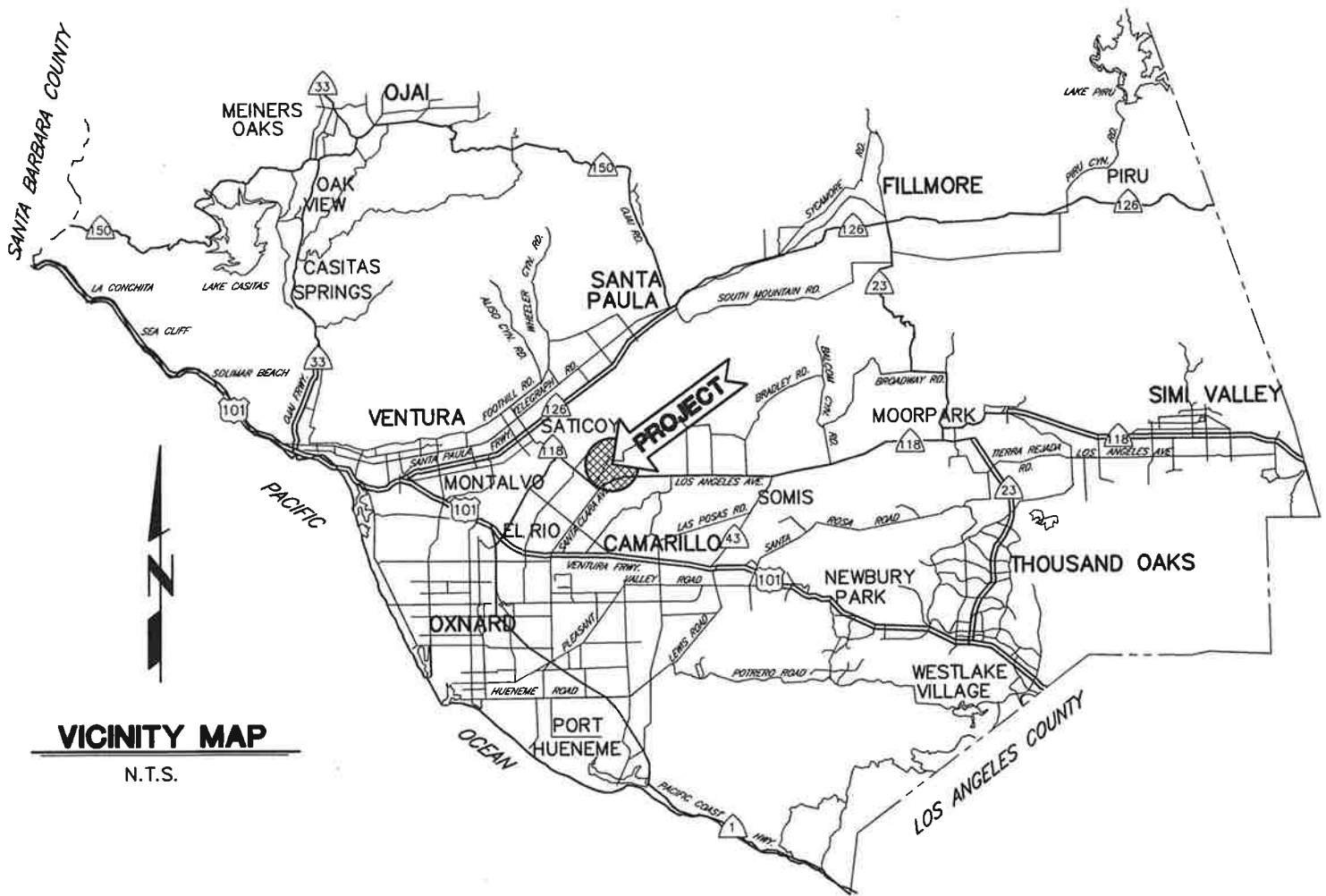


*Regulatory Program Goals:*

- To provide strong protection of the nation's aquatic environment, including wetlands.
- To ensure the Corps provides the regulated public with fair and reasonable decisions.
- To enhance the efficiency of the Corps' administration of its regulatory program.

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**DEPARTMENT OF THE ARMY**  
**LOS ANGELES DISTRICT, U.S. ARMY CORPS OF ENGINEERS**  
60 South California Street, Suite 201  
Ventura, CA 93001-2598  
[WWW.SPL.USACE.ARMY.MIL/MISSIONS/REGULATORY](http://WWW.SPL.USACE.ARMY.MIL/MISSIONS/REGULATORY)



**VICINITY MAP**

N.T.S.

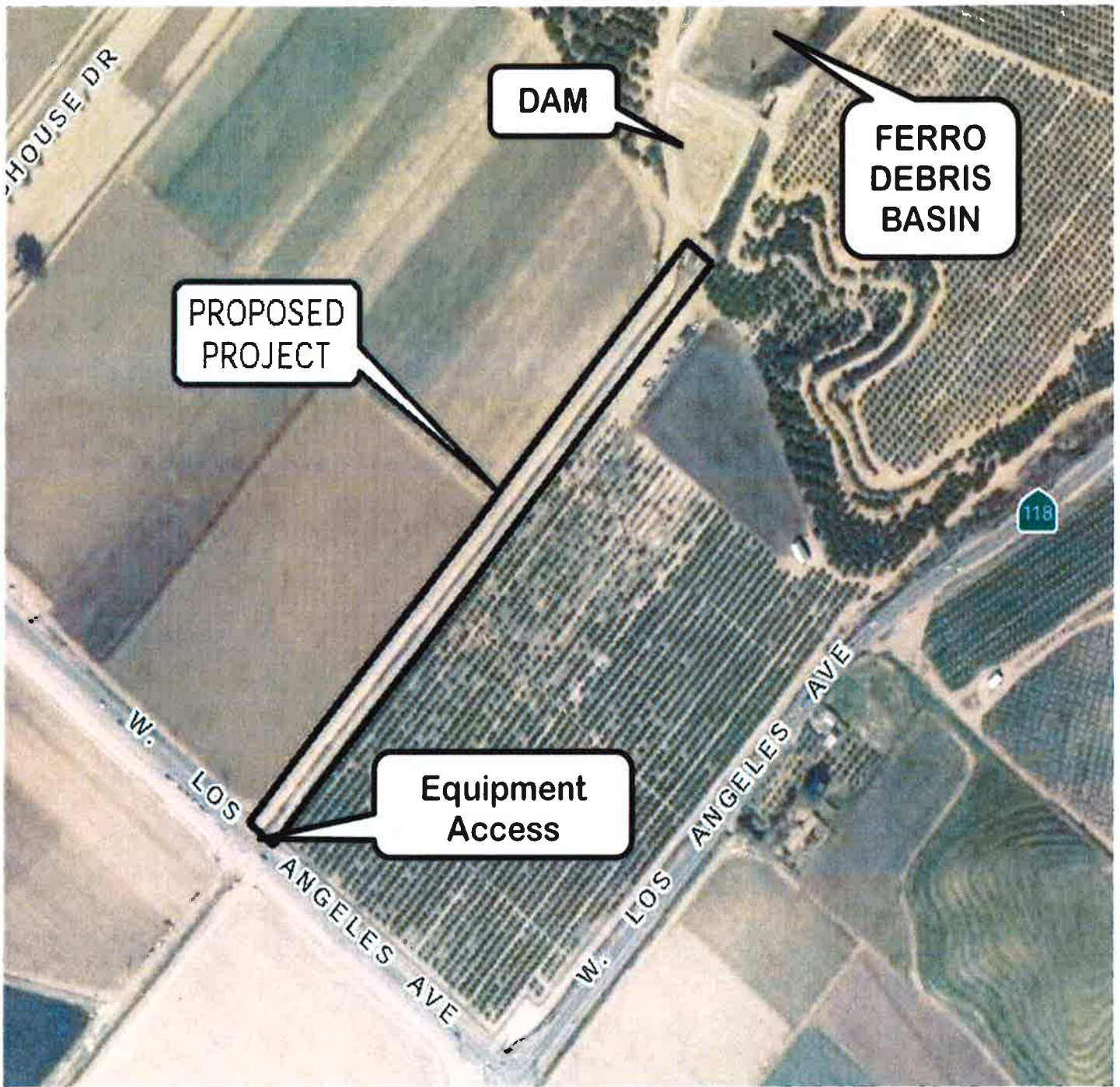
**Ferro Ditch Channel Improvement Project  
Ventura County Watershed Protection District  
Vicinity Map**

Not to scale

FIGURE 1







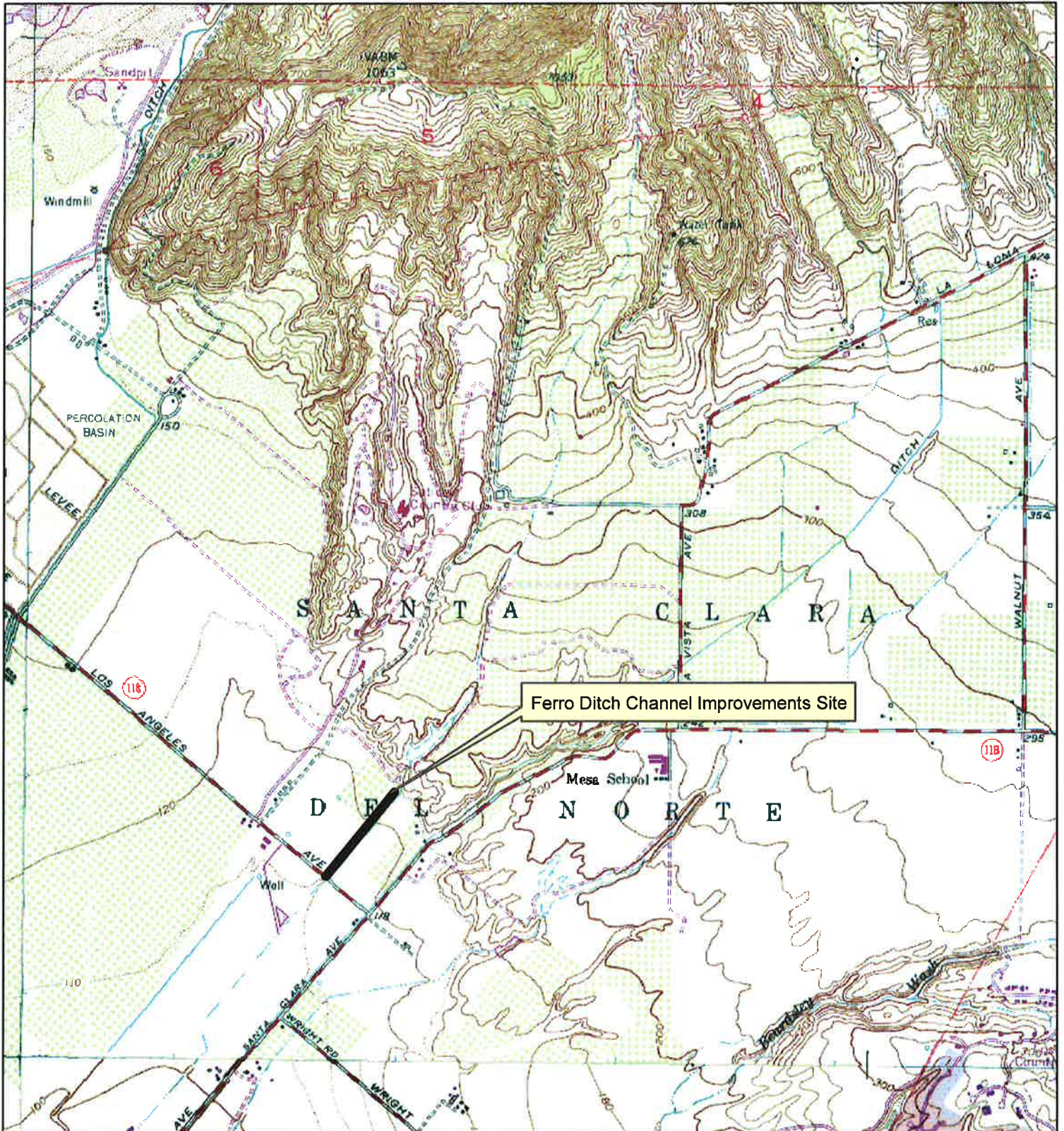
**Ferro Ditch Channel Improvement Project  
Ventura County Watershed Protection District  
Plan View**

Not to scale

FIGURE 2

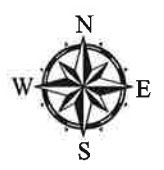






**Ferro Ditch Channel Improvement Project  
 Ventura County Watershed Protection District  
 USGS Quad Map**

**FIGURE 3**



Not to scale





Photo 1: Downstream view of the Ferro Ditch from the Ferro Debris Basin dam.



Photo 2: Typical cross section of Ferro Ditch facing downstream.

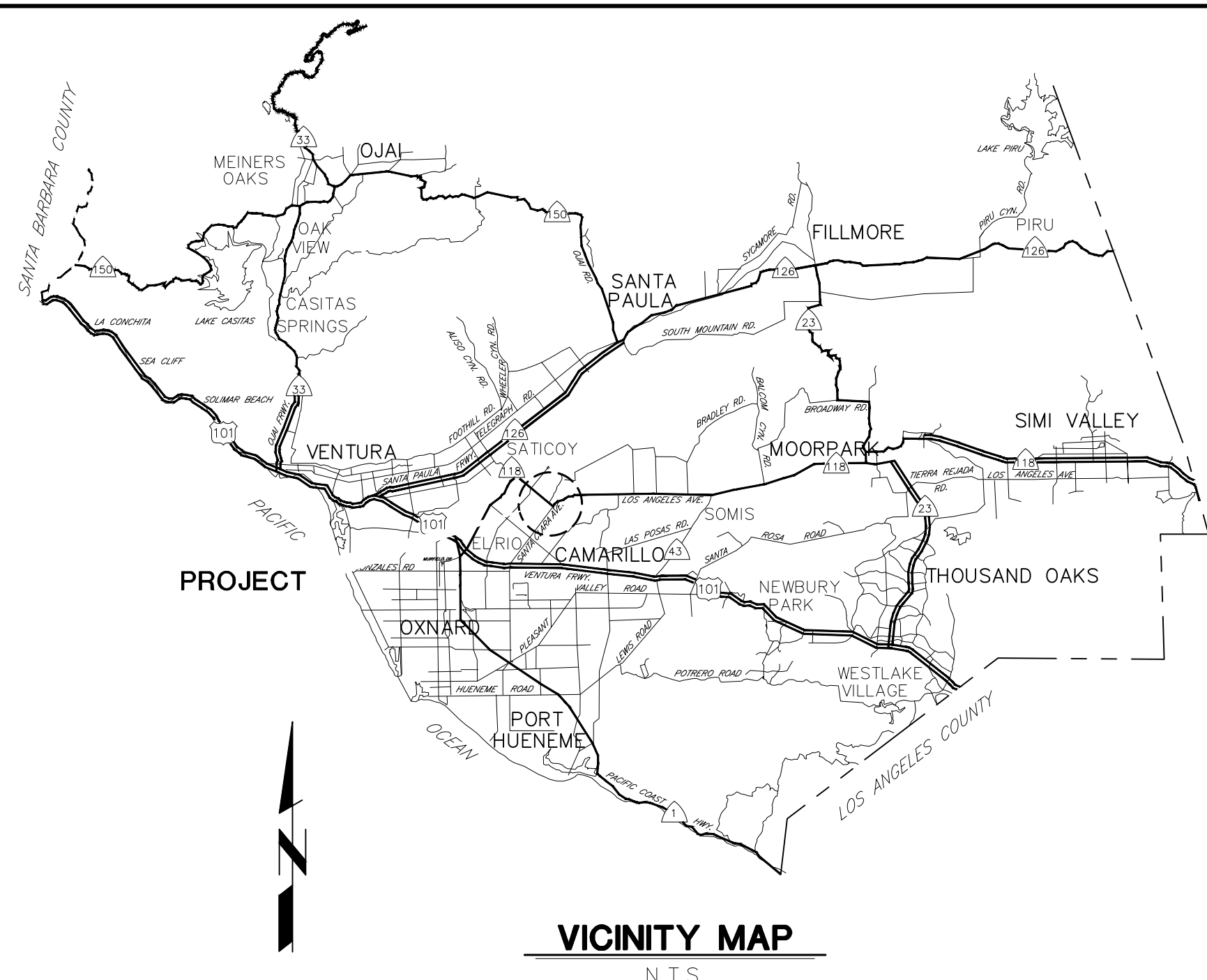
**Ferro Ditch Channel Improvement Project  
Ventura County Watershed Protection District  
Representative Photographs**

FIGURE 4



# COUNTY OF VENTURA PUBLIC WORKS AGENCY VENTURA COUNTY WATERSHED PROTECTION DISTRICT

## ZONE 3 FERRO DITCH CHANNEL IMPROVEMENTS



SHEET NO.	TITLE
1.	GENERAL PLAN
2.	HYDROLOGY AND SOIL BORINGS PLAN
3.	PLAN AND PROFILE STA 1+00 TO 5+00
4.	PLAN AND PROFILE STA 5+00 TO 10+00
5.	PLAN AND PROFILE STA 10+00 TO 15+00
6.	PLAN AND PROFILE STA 15+00 TO 17+85
7.	FLOOD CONTROL WALL PLAN, PROFILE AND DETAILS 1
8.	FLAP GATE AND LOW FLOW OUTLET DETAILS
9.	MISCELLANEOUS DETAILS
10.	RC RECT CHANNEL – STRUCTURAL DETAILS
11.	WARPED SECTION – STRUCTURAL DEATILS
12.	SUBDRAIN SYSTEM DETAILS
13.	FENCE DETAILS
14.	CROSS SECTION – 1+00 to 6+00
15.	CROSS SECTION – 7+00 to 14+00
16.	CROSS SECTION – 15+00 to 17+50

**GENERAL NOTES**

- ELEVATIONS SHOWN ARE IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988, NGS PUB 1995.
- STATIONS SHOWN ON DRAWINGS ARE ALONG CENTERLINE OF STRUCTURE AND/OR SURVEY CONTROL LINE.
- NUMBERS IN ## INDICATE BID ITEMS FOR WHICH PAYMENT WILL BE MADE.
- LETTER AND NUMBER IN (X/XX) INDICATE THE DETAIL CALL-OUT AND SHEET ON WHICH REFERENCE DETAIL IS SHOWN.
- NUMBERS IN △△ REFER TO NOTES ON SAME SHEET UNLESS OTHERWISE NOTED.
- TREES DESIGNATED BY (tree symbol) SHALL BE REMOVED. ALL OTHER TREES SHALL BE PROTECTED IN PLACE UNLESS INDICATED OTHERWISE.
- ||— DELINEATES LIMITS OF VCPWD RIGHT OF WAY.
- DELINEATES LIMITS OF TEMPORARY WORK AREA.
- TOPOGRAPHY AND CROSS SECTIONS FOR THIS PROJECT ARE BASED AN AERIAL AND FIELD SURVEYS PERFORMED IN APRIL 2018.
- SYMBOL △ INDICATES THE LOCATION OF HORIZONTAL AND VERTICAL CONTROL POINTS WHICH WILL BE FURNISHED BY THE AGENCY FOR CONSTRUCTION USE.

**SURVEY CONTROL POINTS**

PT	NORTHING/Y:	EASTING/X:	ELEV/Z:
PT 1301	1,918,806.12	6,226,675.06	124.69
PT 1302	1,917,923.85	6,225,952.40	119.10
PT 1304	1,918,145.76	6,225,562.40	119.06
PT 1003	1,919,629.16	6,226,961.39	178.25
PT 1009	1,919,521.31	6,227,183.69	179.95

- SOIL TEST BORINGS SHOWN FOR THE PROJECT WERE MADE ON OCTOBER, 2018 AND THEIR LOCATION IS MARKED BY THE SYMBOL (circle with dot) REFER TO THE SPECIFICATIONS FOR ADDITIONAL GEOTECHNICAL REPORT INFORMATION. SUBSURFACE SOIL INVESTIGATION RESULTS ARE FURNISHED FOR INFORMATION ONLY IN ACCORDANCE WITH SUBSECTION 2-7 OF THE STANDARD SPECIFICATIONS, AND NO WARRANTY IS MADE THEREFOR.
- EXISTING IMPROVEMENTS WITHIN THE RIGHT OF WAY AND WORK AREAS SHALL REMAIN AND SHALL BE PROTECTED UNLESS OTHERWISE NOTED. DAMAGED IMPROVEMENTS SHALL BE REPLACED IN KIND TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION.
- UTILITIES ARE SHOWN AS KNOWN TO EXIST AT TIME OF SURVEY. UTILITIES MAY HAVE BEEN OMITTED, MISPLACED, AND/OR RELOCATED. CONTRACTOR SHALL EXERCISE CARE IN EXCAVATION AND SHALL PROTECT ALL UTILITIES.
- CONTRACTOR SHALL NOTIFY UTILITY OWNERS A MINIMUM OF 48 HOURS PRIOR TO STARTING WORK IN AREAS AFFECTING THEIR FACILITIES.

VERIZON  
SOUTHERN CALIFORNIA EDISON COMPANY  
SOUTHERN CALIFORNIA GAS COMPANY  
CRIMSON MIDSTREAM LLC

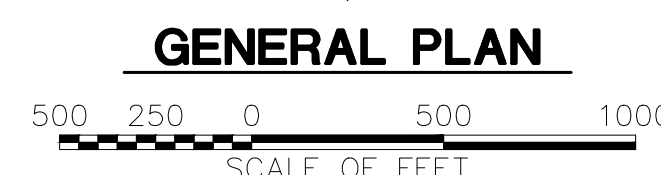
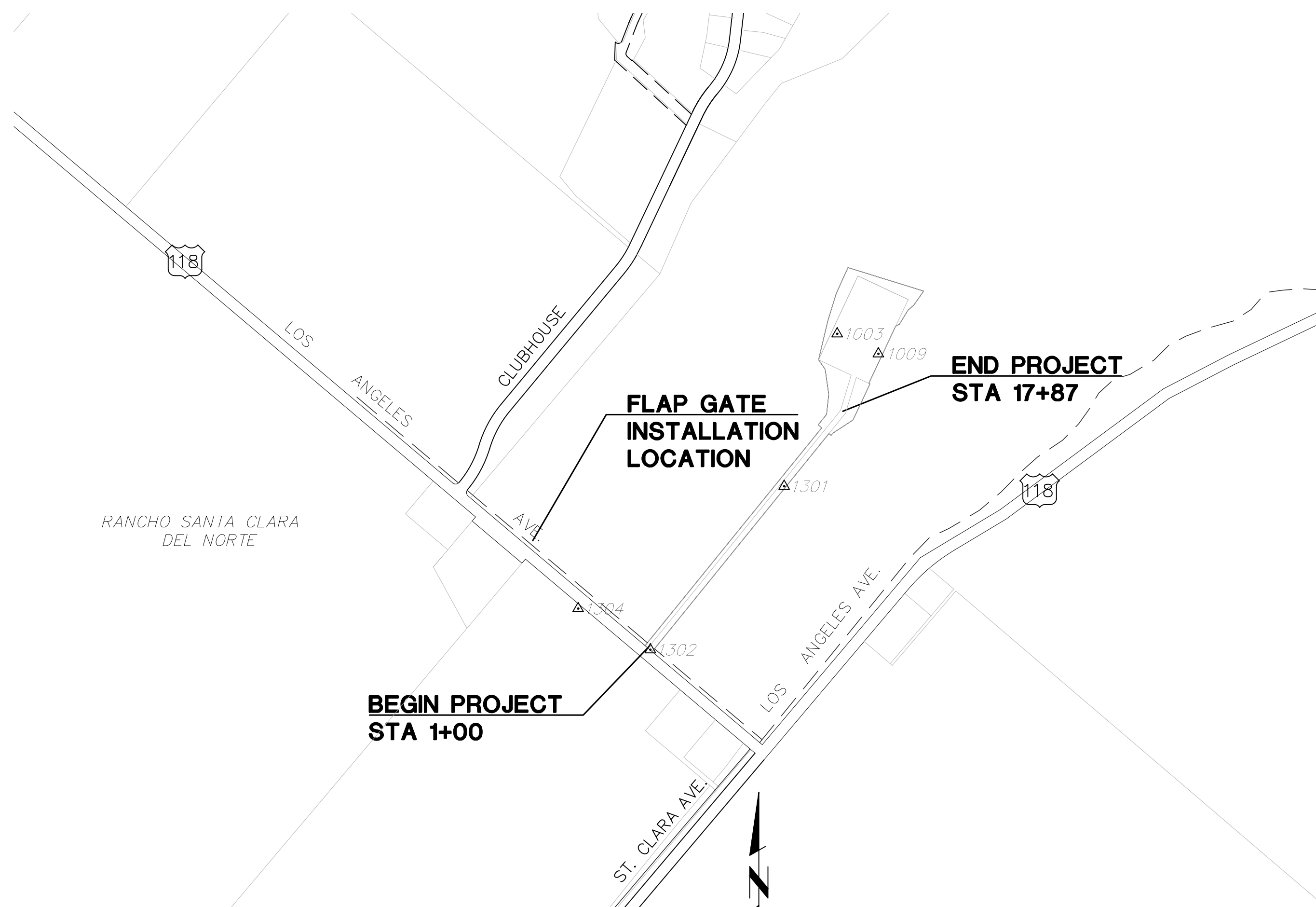
TEL. NO. (805) 388-2220 TOM SMITH  
TEL. NO. (805) 654-7315 DOUG FROST  
TEL. NO. (805) 701-3324 TERRY ESKRIDGE  
TEL. NO. (805) 791-0028 TIM EGGLESTON

**UNDERGROUND SERVICE ALERT**  
1-800-422-4133  
CALL USA/SC  
FOR UNDERGROUND LOCATION  
2 WORKING DAYS BEFORE YOU DIG



RECOMMENDED BY: \_\_\_\_\_ STATE DESIGN ENGINEER  
APPROVED BY: \_\_\_\_\_ STATE CONSERVATION ENGINEER

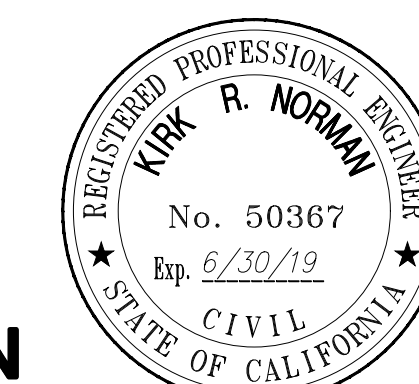
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DISTRICT DEPUTY DIRECTOR DATE  
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DISTRICT DIRECTOR DATE  
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AGENCY DIRECTOR DATE



**INDEX OF STANDARD PLANS  
USED BY REFERENCE**

CALTRANS STANDARD PLANS, 2018 EDITION:  
D80 CAST IN PLACE REINFORCED CONCRETE – SINGLE BOX CULVERT  
D82 CAST-IN-PLACE – BOX CULVERT – MISCELLANEOUS DETAILS  
D88 CONSTRUCTION LOADS ON CULVERTS  
D94B CONCRETE FLARED END SECTIONS

**100% DESIGN  
NOT FOR CONSTRUCTION**



**COUNTY OF VENTURA  
PUBLIC WORKS AGENCY  
WATERSHED PROTECTION DISTRICT**

SPEC. NO. \_\_\_\_\_  
PROJ. NO. 85301

**FERRO DITCH  
CHANNEL IMPROVEMENTS  
GENERAL**

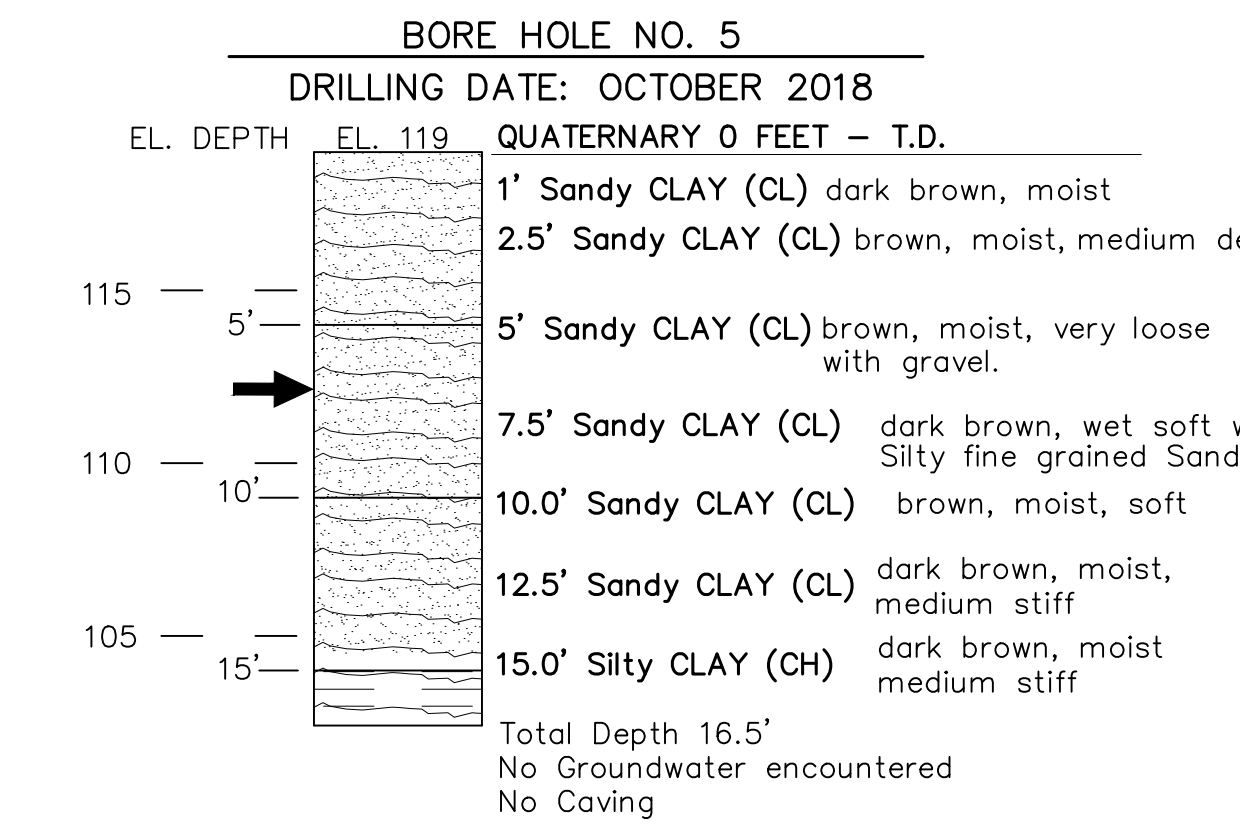
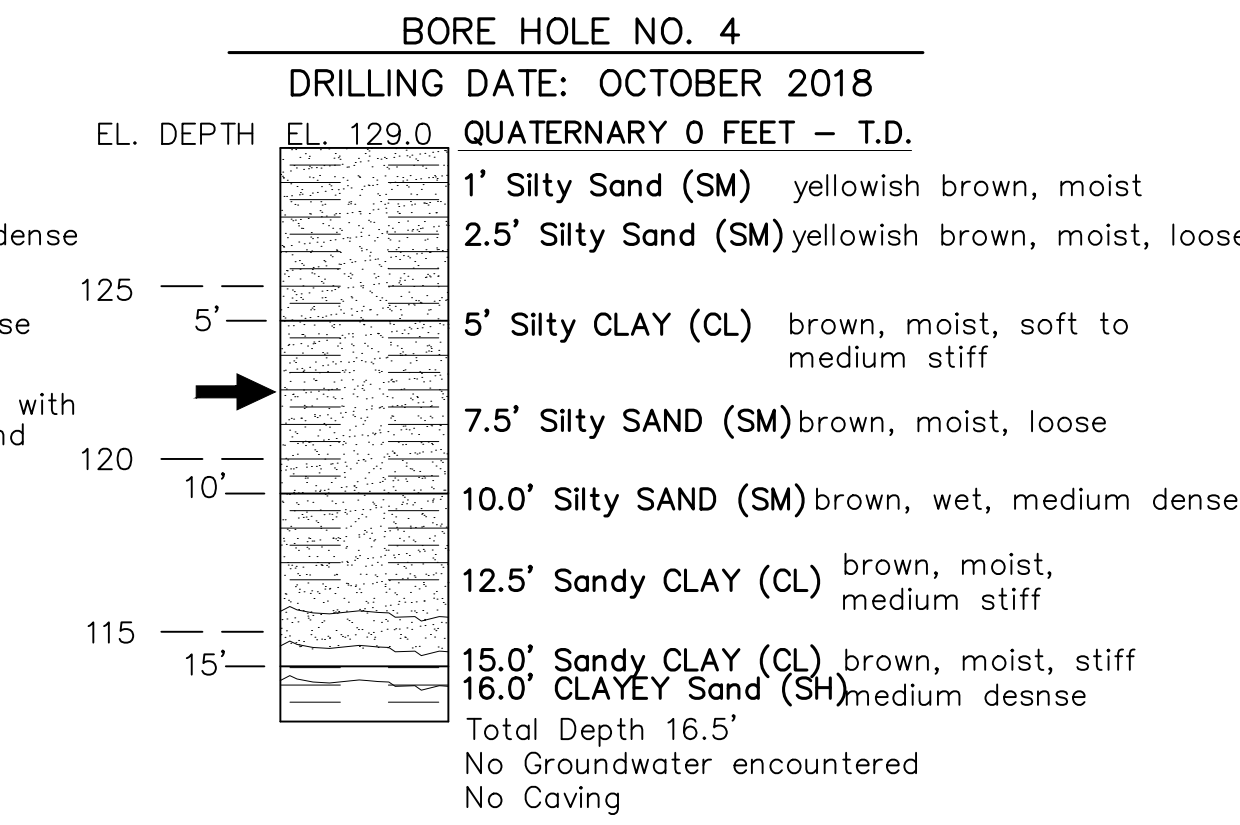
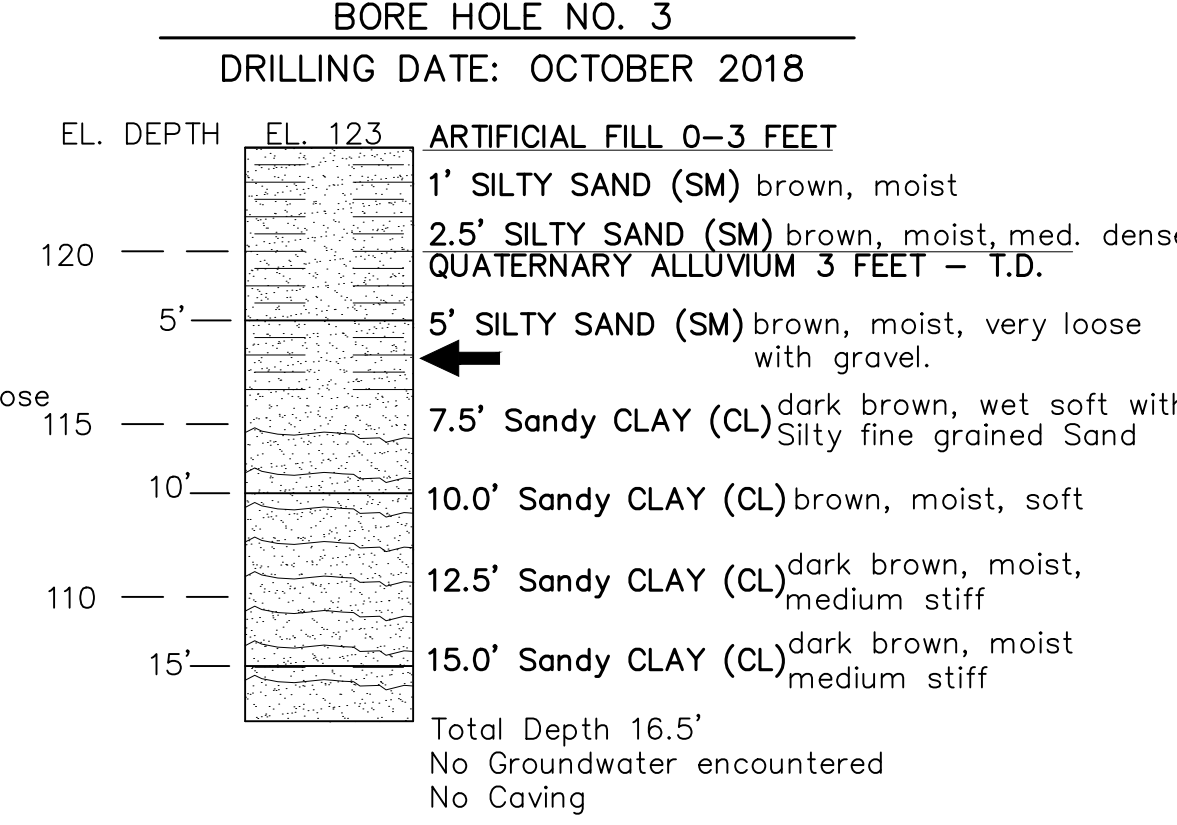
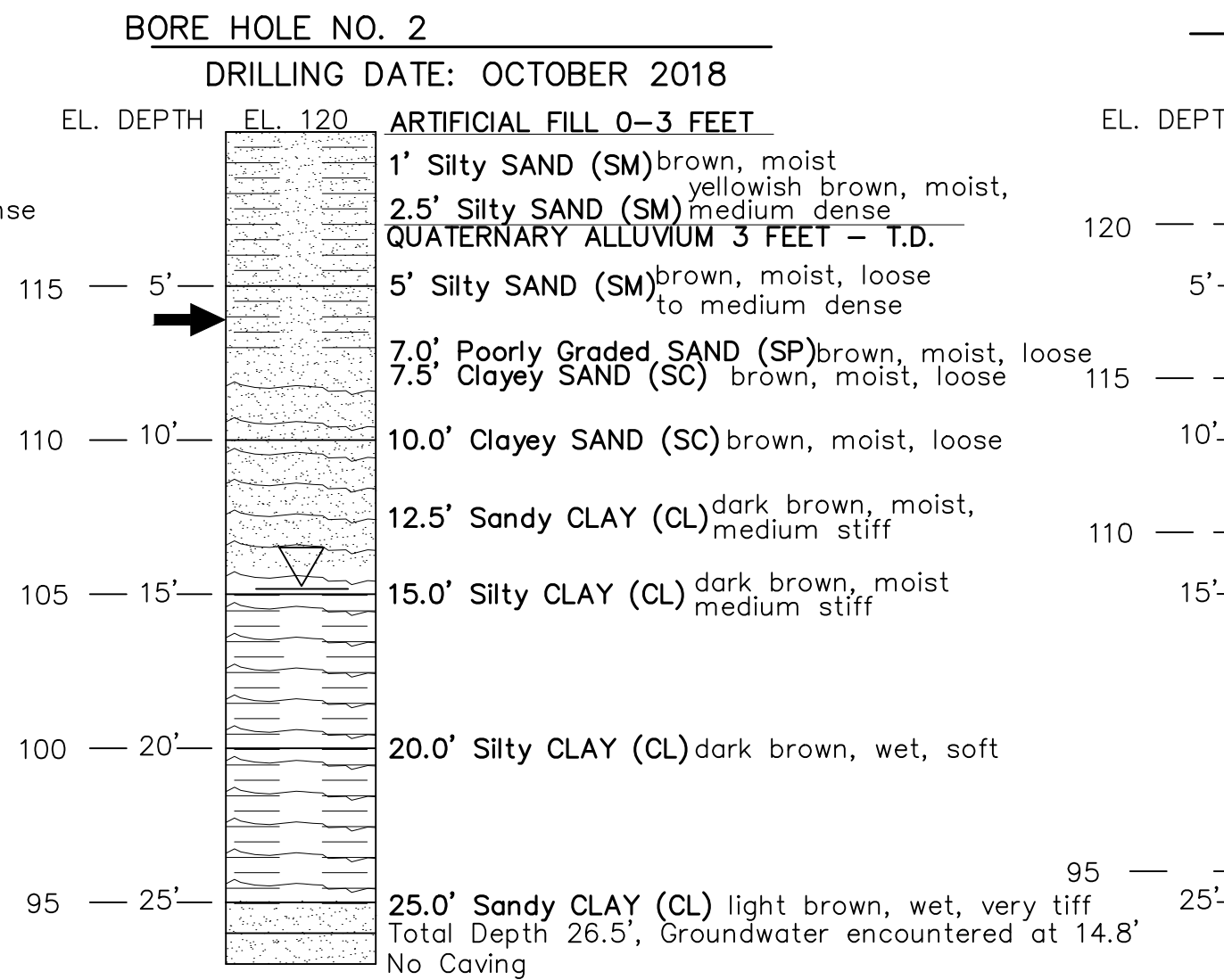
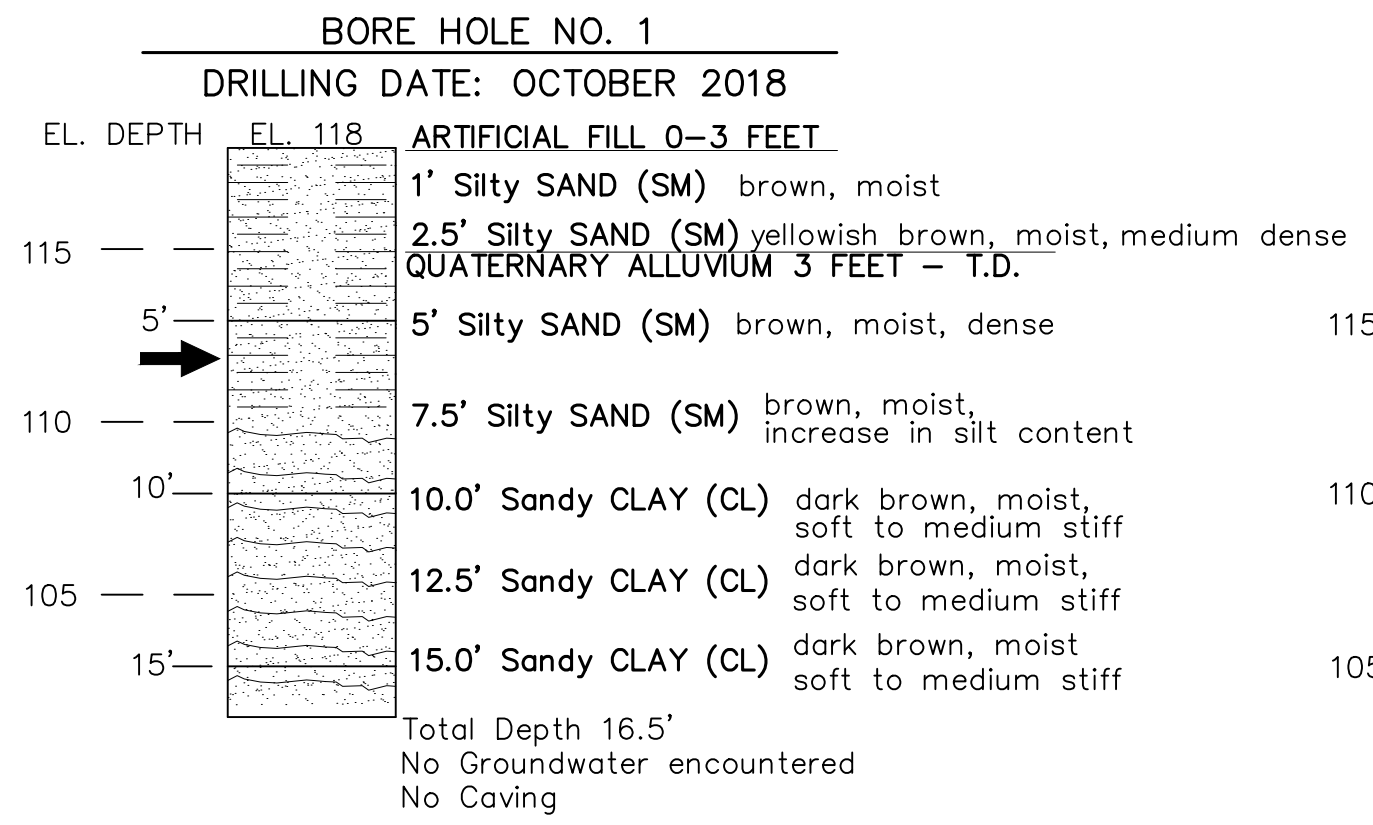
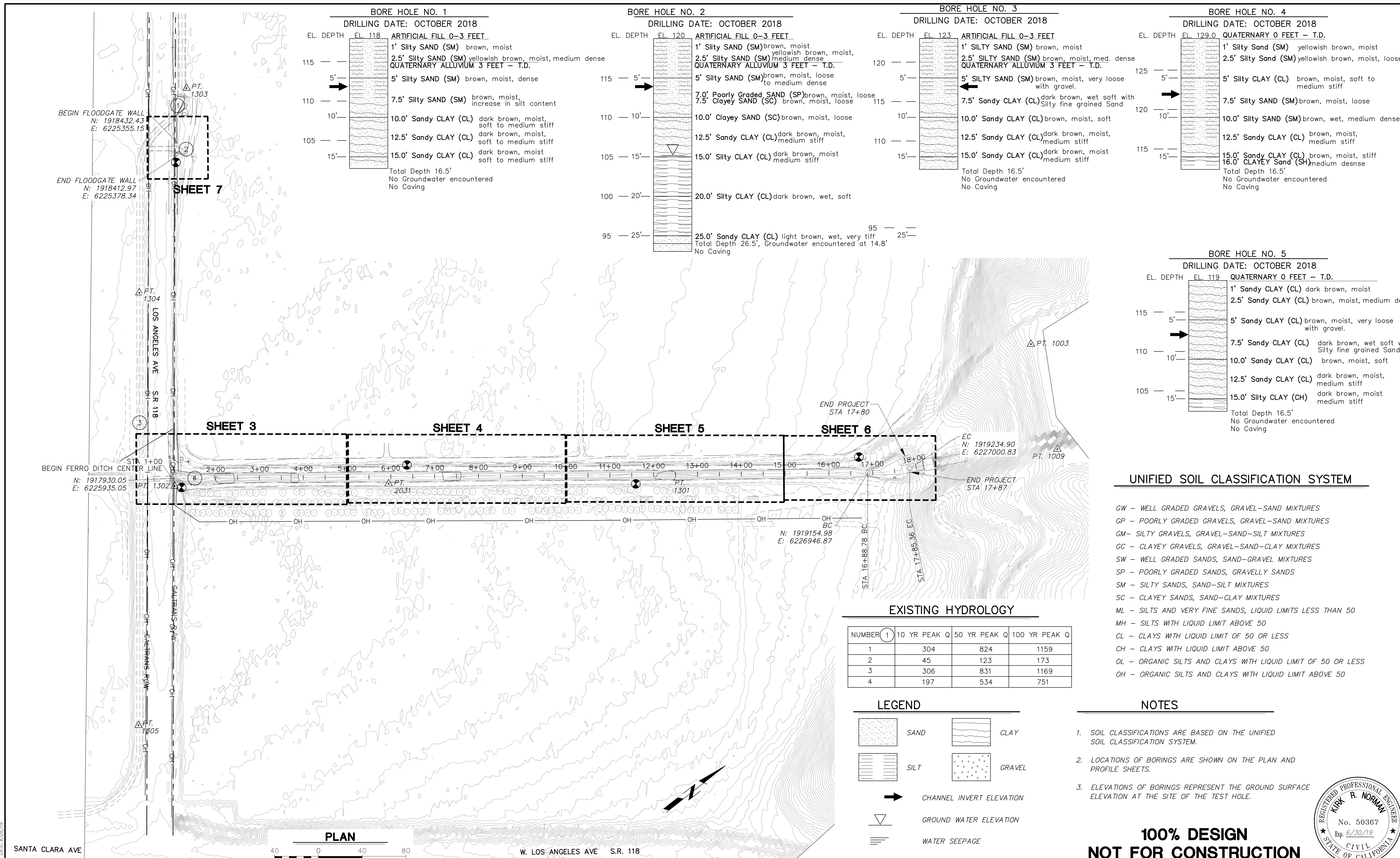
SHEET 1  
OF 16  
DRAWING NO. Y-3-5220

PLOT DATE: 4/25/19

SHT1\_COVER.DWG

REVISION	DESCRIPTION	APP.	DATE
D			
C			
B			
A			
△			





**UNIFIED SOIL CLASSIFICATION SYSTEM**

- GW - WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
- GP - POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
- GM - SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
- GC - CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
- SW - WELL GRADED SANDS, SAND-GRAVEL MIXTURES
- SP - POORLY GRADED SANDS, GRAVELLY SANDS
- SM - SILTY SANDS, SAND-SILT MIXTURES
- SC - CLAYEY SANDS, SAND-CLAY MIXTURES
- ML - SILTS AND VERY FINE SANDS, LIQUID LIMITS LESS THAN 50
- MH - SILTS WITH LIQUID LIMIT ABOVE 50
- CL - CLAYS WITH LIQUID LIMIT OF 50 OR LESS
- CH - CLAYS WITH LIQUID LIMIT ABOVE 50
- OL - ORGANIC SILTS AND CLAYS WITH LIQUID LIMIT OF 50 OR LESS
- OH - ORGANIC SILTS AND CLAYS WITH LIQUID LIMIT ABOVE 50

**EXISTING HYDROLOGY**

NUMBER	10 YR PEAK Q	50 YR PEAK Q	100 YR PEAK Q
1	304	824	1159
2	45	123	173
3	306	831	1169
4	197	534	751

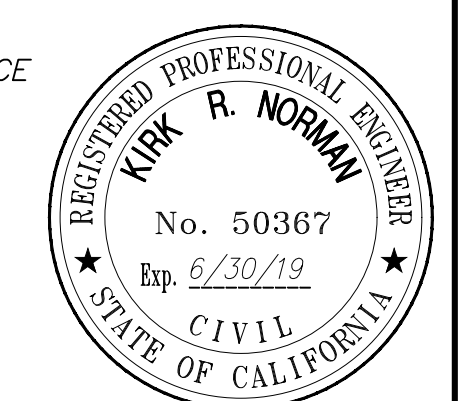
**LEGEND**

- SAND
- CLAY
- SILT
- GRAVEL
- CHANNEL INVERT ELEVATION
- GROUND WATER ELEVATION
- WATER SEEPAGE

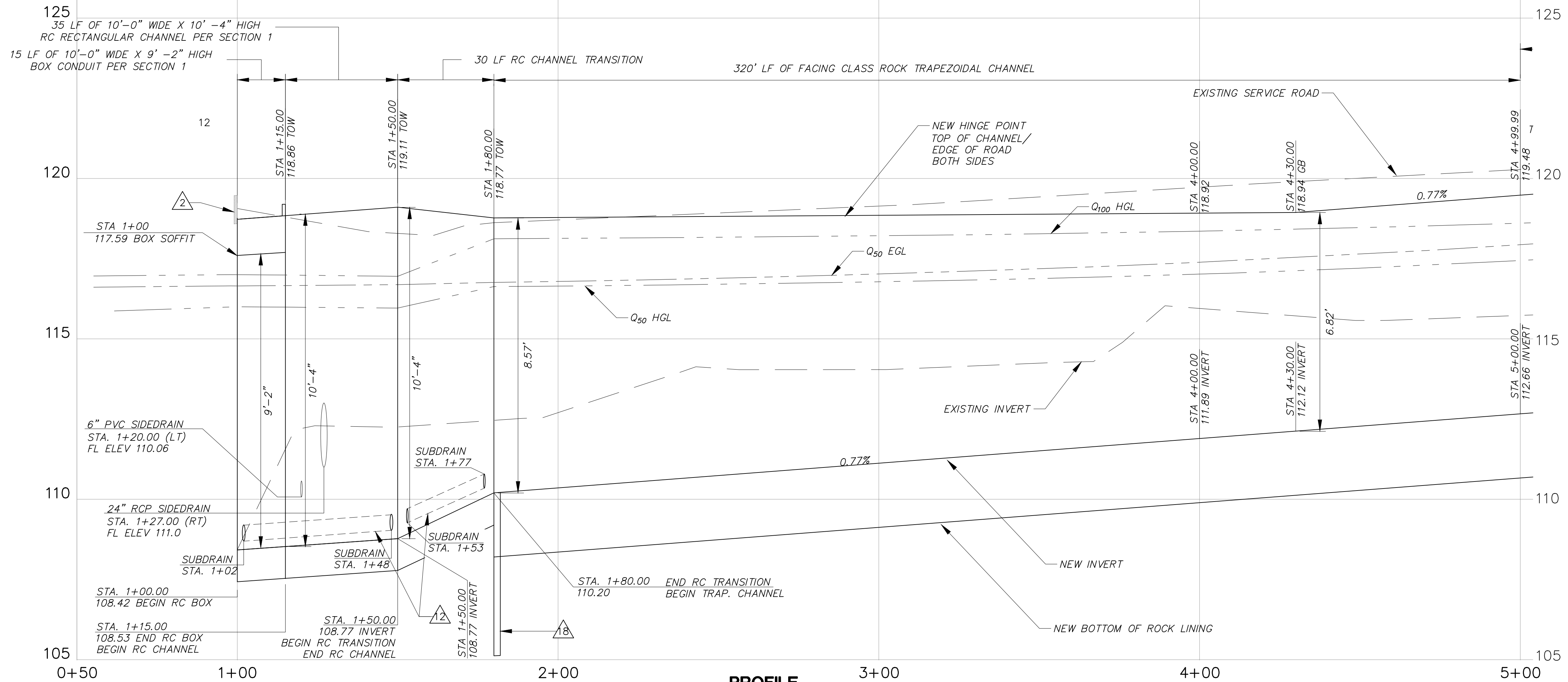
**NOTES**

1. SOIL CLASSIFICATIONS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM.
2. LOCATIONS OF BORINGS ARE SHOWN ON THE PLAN AND PROFILE SHEETS.
3. ELEVATIONS OF BORINGS REPRESENT THE GROUND SURFACE ELEVATION AT THE SITE OF THE TEST HOLE.

**100% DESIGN**  
**NOT FOR CONSTRUCTION**

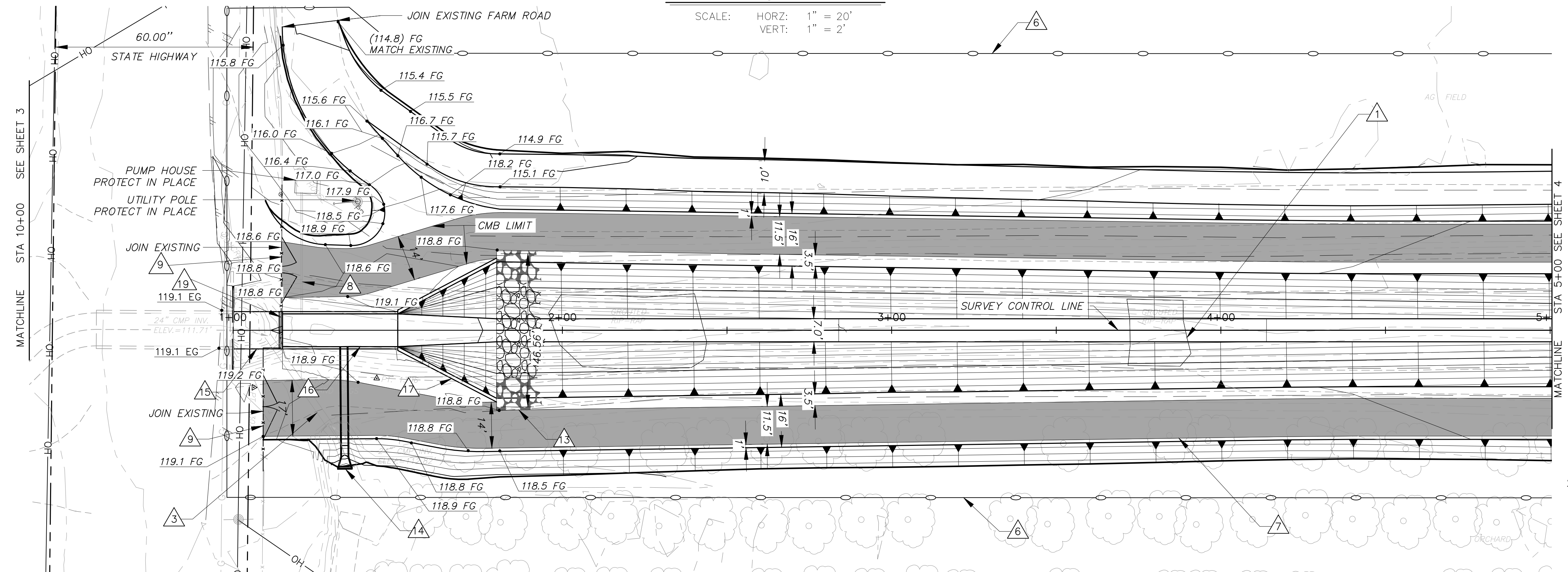




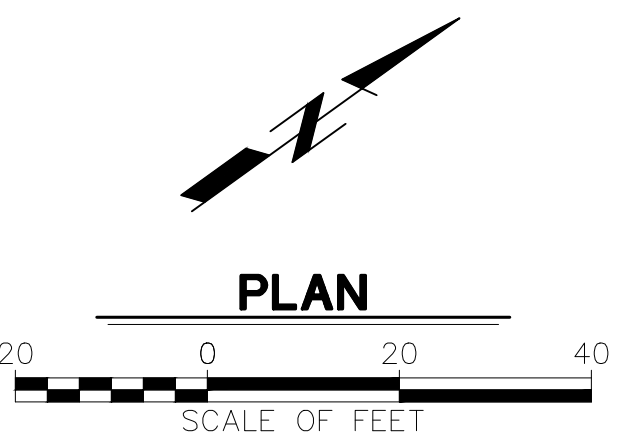


- NOTES:**
- REMOVE AND DISPOSE EXISTING CONCRETE/ROCK CHANNEL IMPROVEMENTS WITHIN THE PROJECT LIMITS (8)
  - REMOVE PARAPET AND HEADWALLS FLUSH TO TOP OF RCB AND CONSTRUCT COVER SLAB. (8)
  - EXISTING 24" CMP INTERFERING PORTIONS TO BE REMOVED, THE REMAINING TO BE FILLED W/ SLURRY AND ABANDONED IN PLACE. (8)
  - REMOVE AND DISPOSE OF INTERFERING PORTIONS OF EXISTING CHAIN LINK FENCE AND OR GATE. (8)
  - EXISTING CHAIN LINK FENCE, PROTECT IN PLACE
  - INSTALL TEMPORARY FENCING (9)
  - REMOVE AND DISPOSE OF ALL EXISTING TREES AND TREE TRUNKS WITHIN PROJECT LIMITS. (7)
  - EXISTING 6" PVC SIDEDRAIN, CONNECT TO RC CHANNEL PER (L 12) (8)
  - INSTALL 5' HIGH 20' WIDE DOUBLE LEAF GATE PER (00 13) (16) (12) (13) (8)
  - INSTALL 5' HIGH CHAIN LINK FENCE WITH TOP RAIL PER (LL 13) (15)
  - INSTALL 6" CMB SERVICE ROAD PER (G 9) (20)
  - INSTALL SUBDRAIN PER (J 12) (19)
  - INSTALL ROCK TO 6" BELOW SERVICE ROAD ELEVATION & CONCRETE TOP 3' TO FULL PENETRATION PER DETAIL (G 9) (12) (13)
  - INSTALL RC FLARED END SECTION AND 24" RCP (D-900) SIDEDRAIN PER DETAIL (A 9) (21) (22)
  - INSTALL RC BOX CONDUIT 2018 CALTRANS STANDARD PLAN D80, D80, D88. CHANGE LONGITUDINAL/TEMPERATURE STEEL TO #5 REBAR @ 12" MAX. (17) (18)
  - INSTALL RC RECTANGULAR CHANNEL PER DETAIL (C 10) (17) (18)
  - INSTALL RC WARPED SECTION PER DETAIL (H 11) (17) (18)
  - INSTALL CUTOFF WALL PER DETAIL (N 9) (12) (13)
  - INSTALL 5' HIGH CHAINLINK FENCE WITH TOP RAIL ALONG PARAPET PER DETAIL (P 9) (LL 12)

**PROFILE**  
SCALE: HORIZ: 1" = 20'  
VERT: 1" = 2'



**LEGEND**  
CMB SERVICE ROAD



**100% DESIGN  
NOT FOR CONSTRUCTION**



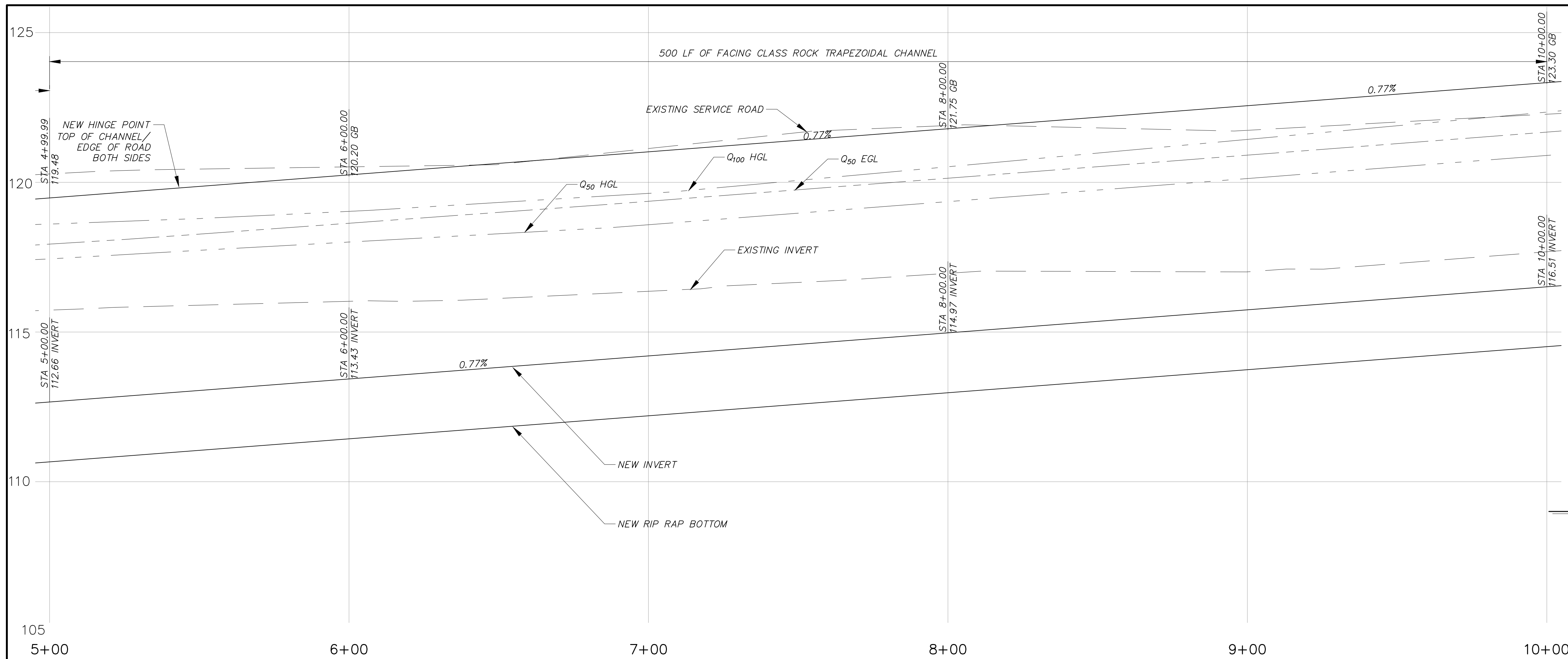
DESIGNED	J M	DISTRICT PROJECT MANAGER	DATE
DRAWN		DISTRICT DEPUTY DIRECTOR	DATE
CHECKED		DISTRICT DIRECTOR	DATE

**COUNTY OF VENTURA  
PUBLIC WORKS AGENCY  
WATERSHED PROTECTION DISTRICT**

SPEC. NO.  
PROJ. NO.  
85301

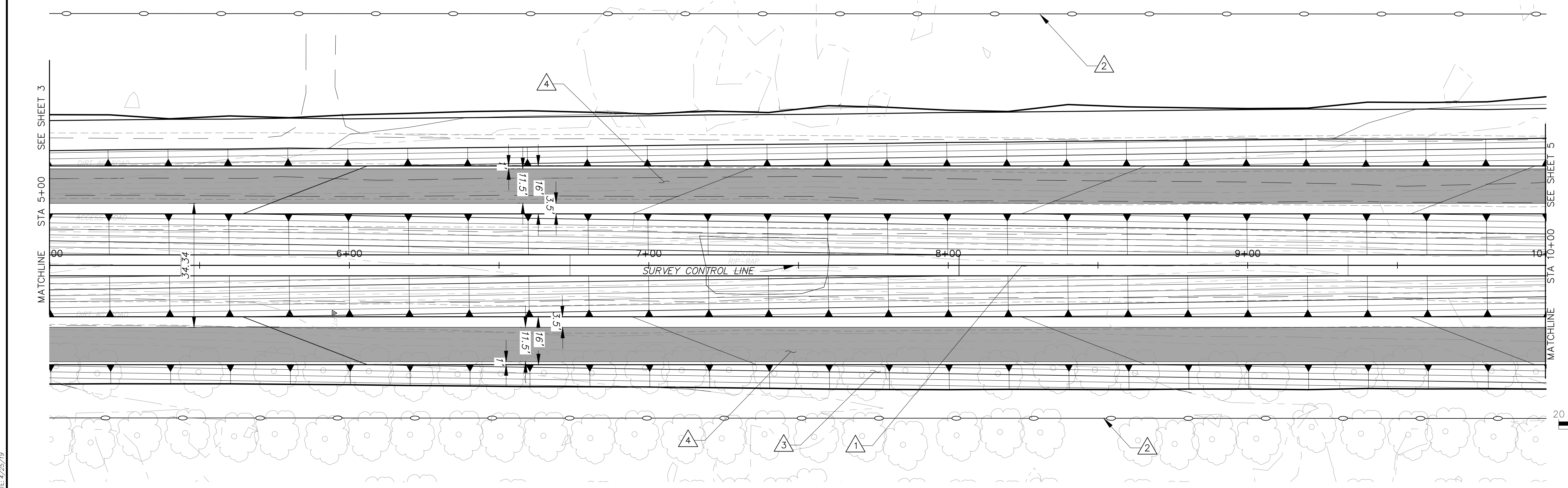
**FERRO DITCH  
CHANNEL IMPROVEMENTS**  
PLAN AND PROFILE STA 1+00 TO 5+00

SHEET **3**  
OF **16**  
DRAWING NO.  
Y-3-5222

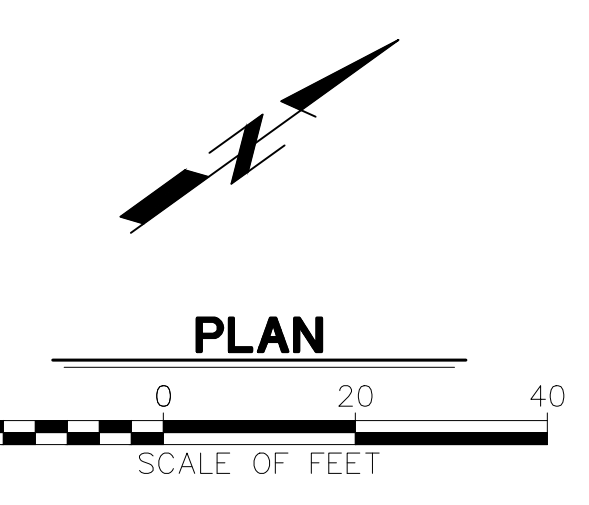


- NOTES:**
1. REMOVE AND DISPOSE EXISTING CONCRETE/ROCK CHANNEL IMPROVEMENTS WITHIN THE PROJECT LIMITS (8)
  2. INSTALL TEMPORARY FENCING (9)
  3. REMOVE AND DISPOSE OF ALL EXISTING TREES AND TREE TRUNKS WITHIN PROJECT LIMITS. (7)
  4. INSTALL 6" CMB SERVICE ROAD PER DETAIL (6) (9) (21)
  5. INSTALL FACING CLASS ROCK TO 6" BELOW SERVICE ROAD ELEVATION & CONCRETE TOP 2.5' TO FULL PENETRATION PER DETAIL (6) (9) (12) (13)

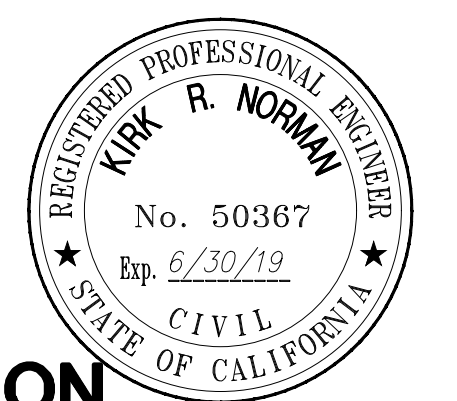
**PROFILE**  
 SCALE: HORIZ: 1" = 20'  
 VERT: 1" = 2'



**LEGEND**  
 CMB SERVICE ROAD

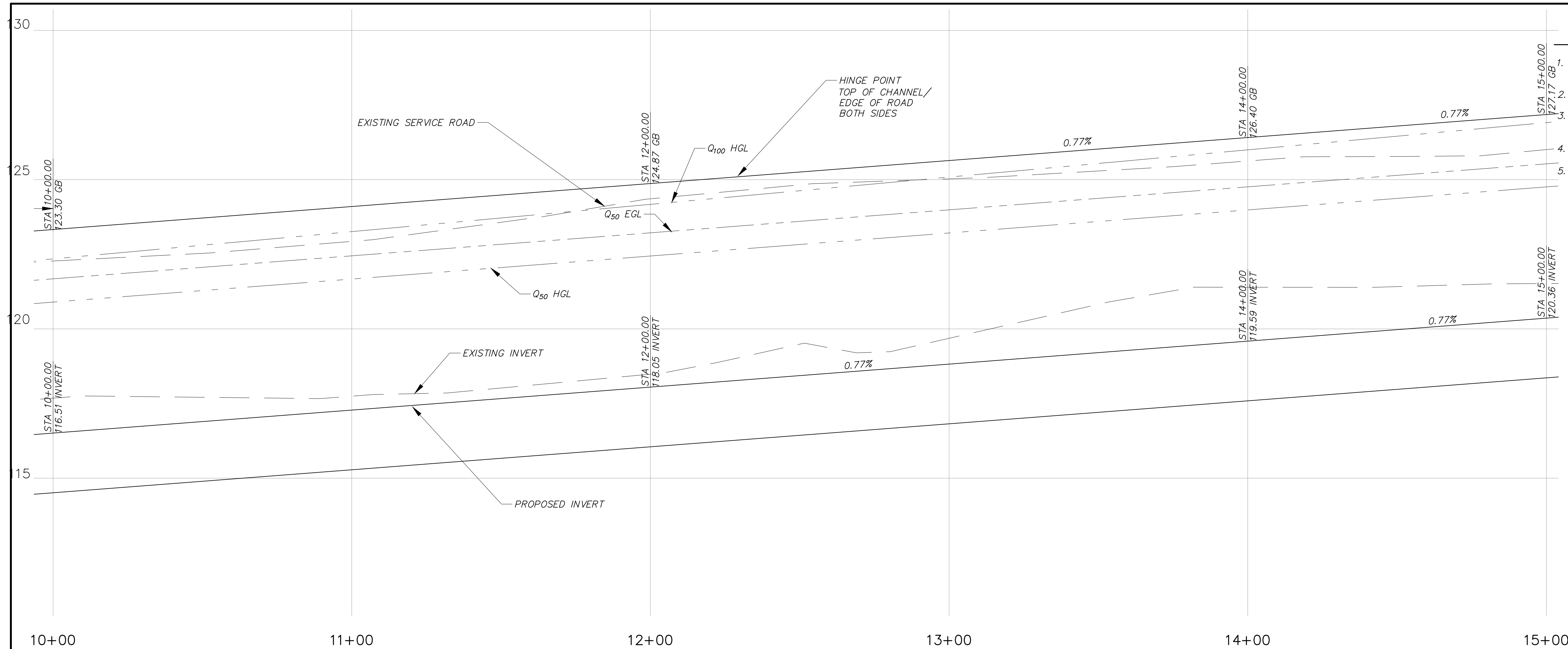


**100% DESIGN  
 NOT FOR CONSTRUCTION**



SAVE DATE: 4/25/19 MUELLER, JOHN K:\PROJECTS\ZONE3\FERRODITCH\85301\_FERRO\_DITCH\_IMPROVEMENT\DESIGN\DESIGN DRAWINGS\100PC\SH1 3-6 9 PP\_FERRO\_DITCH\_REV1.DWG

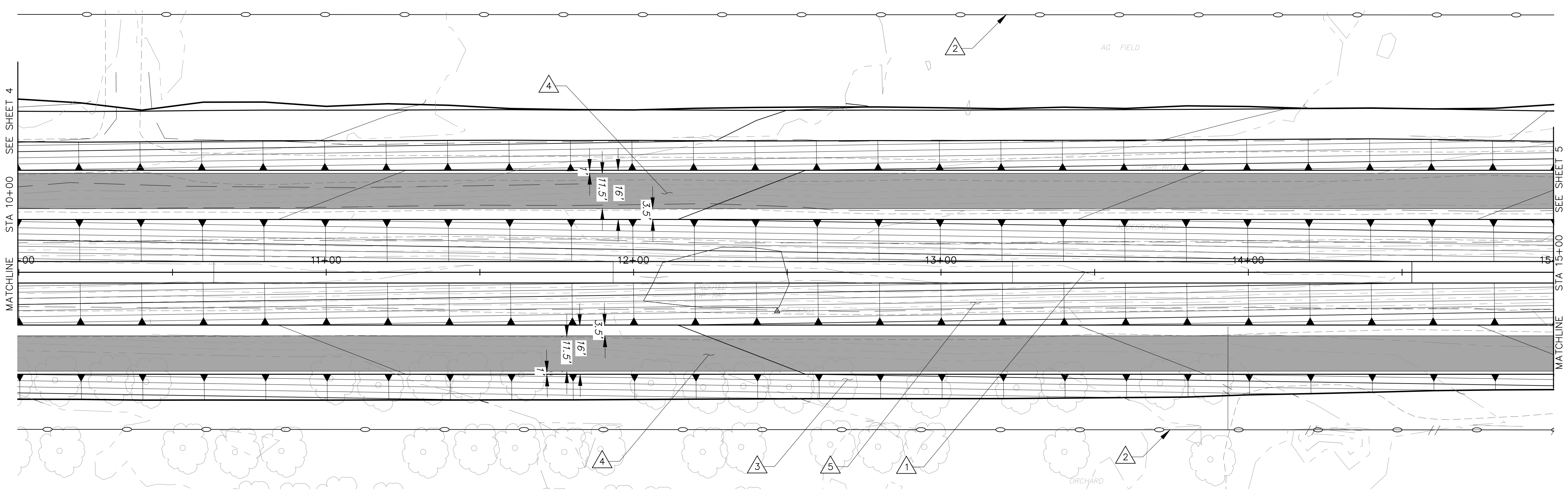
D C B A REVISION DESCRIPTION APP. DATE	DESIGNED	DISTRICT PROJECT MANAGER	DATE	COUNTY OF VENTURA PUBLIC WORKS AGENCY WATERSHED PROTECTION DISTRICT	SPEC. NO.	FERRO DITCH CHANNEL IMPROVEMENTS PLAN AND PROFILE STA 5+00 TO 10+00	SHEET 4 OF 16 DRAWING NO. Y-3-5223
	DRAWN	DISTRICT DEPUTY DIRECTOR	DATE		PROJ. NO.		
	CHECKED	DISTRICT DIRECTOR	DATE		85301		



- NOTES:**
1. REMOVE AND DISPOSE EXISTING CONCRETE/ROCK CHANNEL IMPROVEMENTS WITHIN THE PROJECT LIMITS (8)
  2. INSTALL TEMPORARY FENCING (9)
  3. REMOVE AND DISPOSE OF ALL EXISTING TREES AND TREE TRUNKS WITHIN PROJECT LIMITS. (7)
  4. INSTALL 6" CMB SERVICE ROAD PER DETAIL (G 9) (21)
  5. INSTALL FACING CLASS ROCK TO 6" BELOW SERVICE ROAD ELEVATION & CONCRETE TOP 2.5' TO FULL PENETRATION PER DETAIL (G 9) (12) (13)

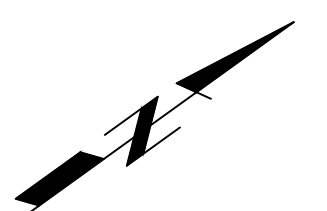
**PROFILE**

SCALE: HORZ: 1" = 20'  
VERT: 1" = 2'



**LEGEND**

■ CMB SERVICE ROAD



**PLAN**



**FINAL DESIGN  
NOT FOR CONSTRUCTION**

DESIGNED	DISTRICT PROJECT MANAGER	DATE
DRAWN	DISTRICT DEPUTY DIRECTOR	DATE
CHECKED	DISTRICT DIRECTOR	DATE

**COUNTY OF VENTURA  
PUBLIC WORKS AGENCY  
WATERSHED PROTECTION DISTRICT**

SPEC. NO.  
PROJ. NO.  
85301

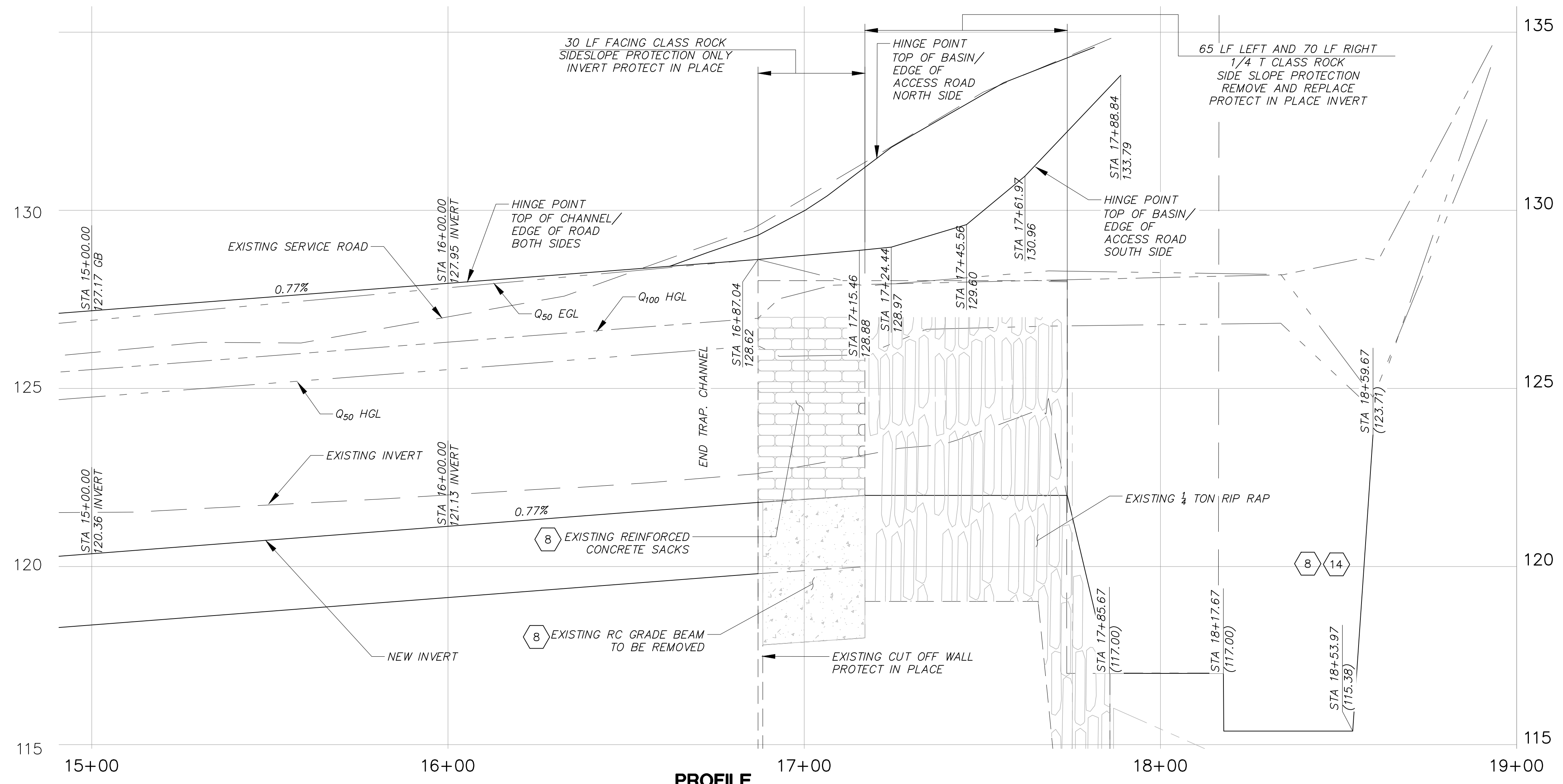
**FERRO DITCH  
CHANNEL IMPROVEMENTS**  
PLAN AND PROFILE STA 10+00 TO 15+00

SHEET 5  
OF 16  
DRAWING NO.  
Y-3-5224

PLOT DATE: 4/25/19

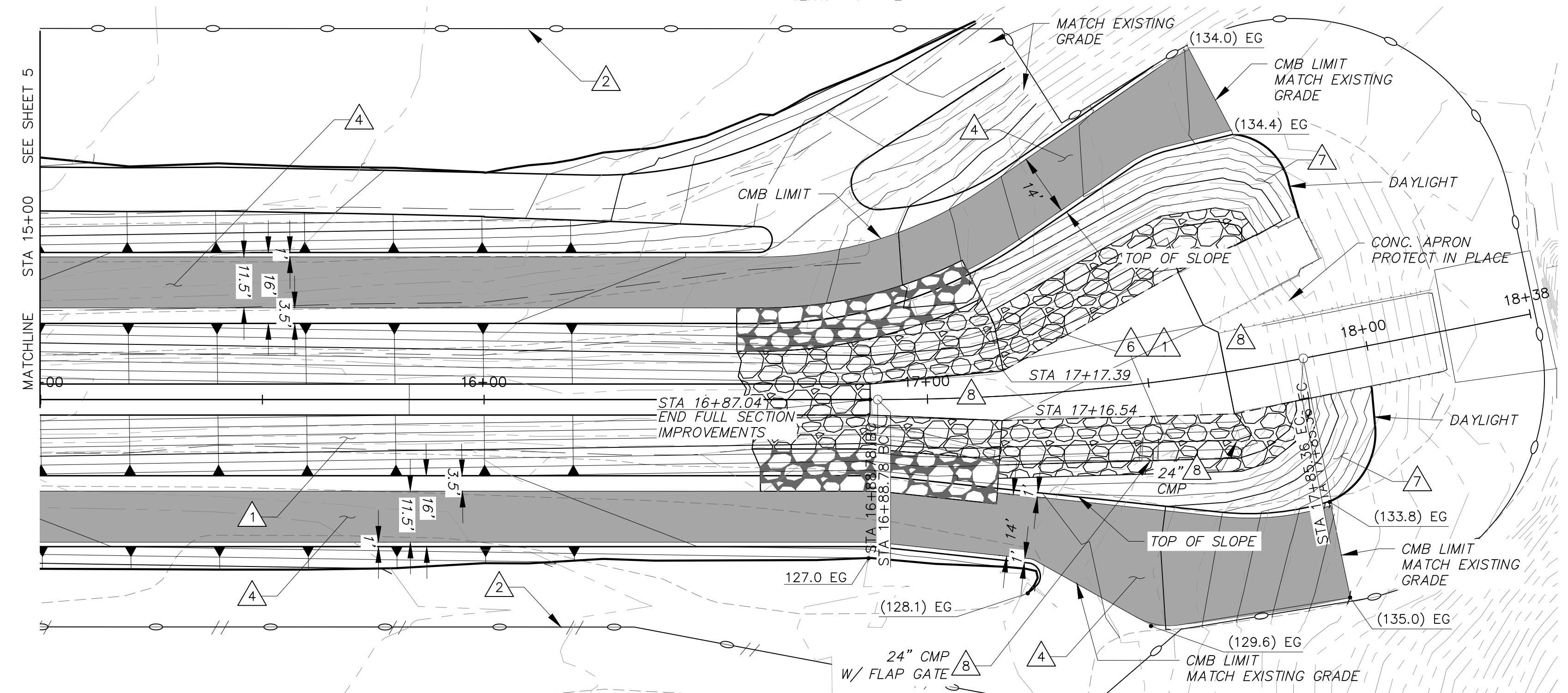
SAVE DATE: 4/25/19 MUJELLER, JOHN K:\PROJECTS\ZONE3\FERRODITCH\85301\_FERRO\_DITCH\_IMPROVEMENT\DESIGN\DESIGN\_DRAWINGS\100PC\SH1\_3-6\_9\_PP\_FERRO\_DITCH\_REV1.DWG



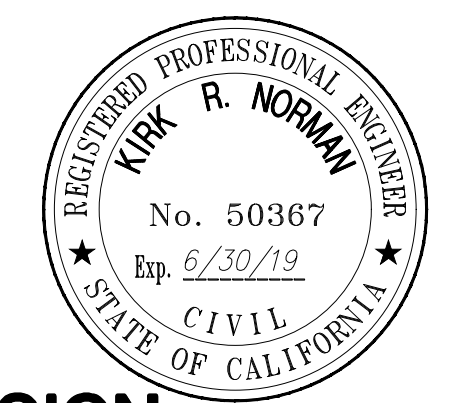
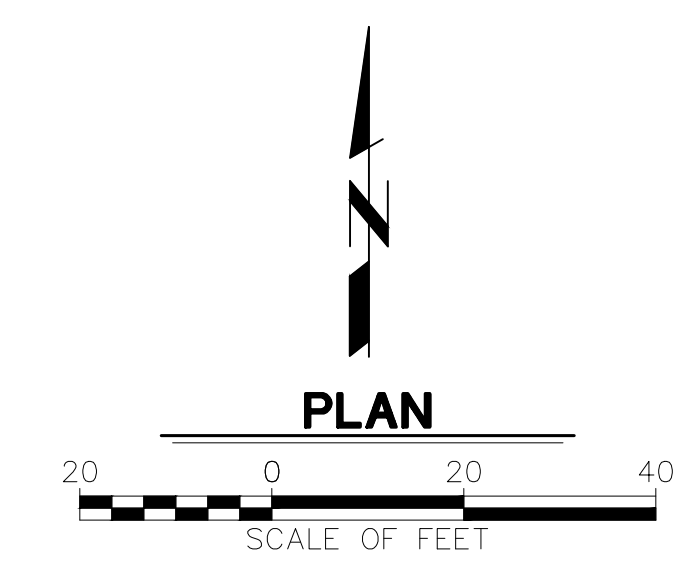


- NOTES:**
- REMOVE AND DISPOSE EXISTING CONCRETE/ROCK CHANNEL IMPROVEMENTS WITHIN THE PROJECT LIMITS (8)
  - INSTALL TEMPORARY FENCING (9)
  - REMOVE AND DISPOSE OF ALL EXISTING TREES AND TREE TRUNKS WITHIN PROJECT LIMITS (7)
  - INSTALL 6" CMB SERVICE ROAD PER DETAIL (G9) (21)
  - INSTALL FACING CLASS ROCK TO 6" BELOW SERVICE ROAD ELEVATION & CONCRETE TOP 2.5' TO FULL PENETRATION PER DETAIL. (G9) (12) (13)
  - REMOVE AND REPLACE 1/4 TON CLASS ROCK SLOPE PROTECTION PER DETAIL. (E8) (14)
  - GRADE 2:1 TO DAYLIGHT (11)
  - PROTECT IN PLACE

**PROFILE**  
 SCALE: HORIZ: 1" = 20'  
 VERT: 1" = 2'



**LEGEND**  
 CMB SERVICE ROAD



**100% DESIGN  
 NOT FOR CONSTRUCTION**

REVISION	DESCRIPTION	APP.	DATE
D			
C			
B			
A			

DESIGNED	DISTRICT PROJECT MANAGER	DATE
DRAWN	DISTRICT DEPUTY DIRECTOR	DATE
CHECKED	DISTRICT DIRECTOR	DATE

**COUNTY OF VENTURA  
 PUBLIC WORKS AGENCY  
 WATERSHED PROTECTION DISTRICT**

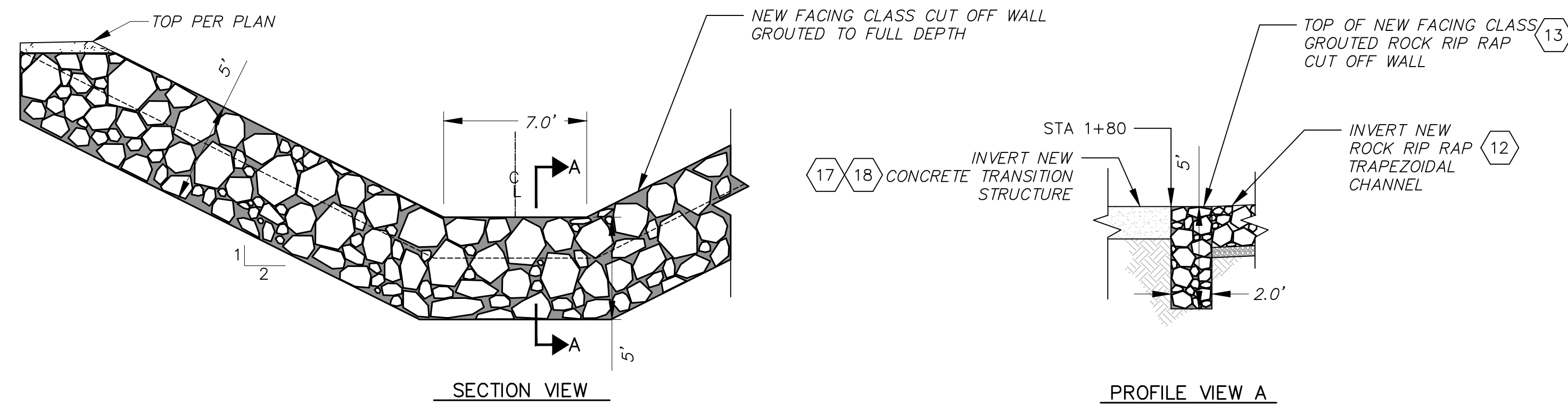
SPEC. NO.	
PROJ. NO.	85301

**FERRO DITCH  
 CHANNEL IMPROVEMENTS**  
 PLAN AND PROFILE 15+00 TO 17+87

SHEET	6
OF	16
DRAWING NO.	Y-3-5225

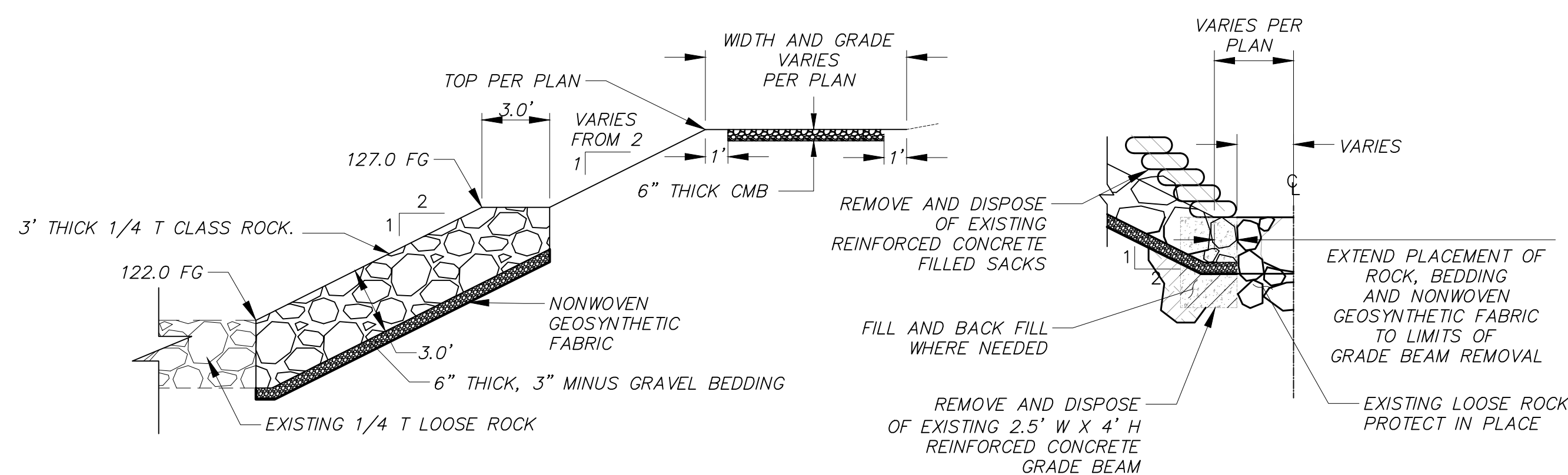
PLOT DATE: 4/25/19

SAVE DATE: 4/25/19 MUJLLER, JOHN K:\PROJECTS\ZONE3\FERRODITCH\85301\_FERRO DITCH IMPROVEMENT\DESIGN\DESIGN DRAWINGS\100PC\SH1 3-6 9 PP\_FERRO DITCH\_REV1.DWG



**GRouted ROCK RIP RAP CUT-OFF WALL DETAIL** (N-13)

STA 1+80 TO 1+82  
NOT TO SCALE

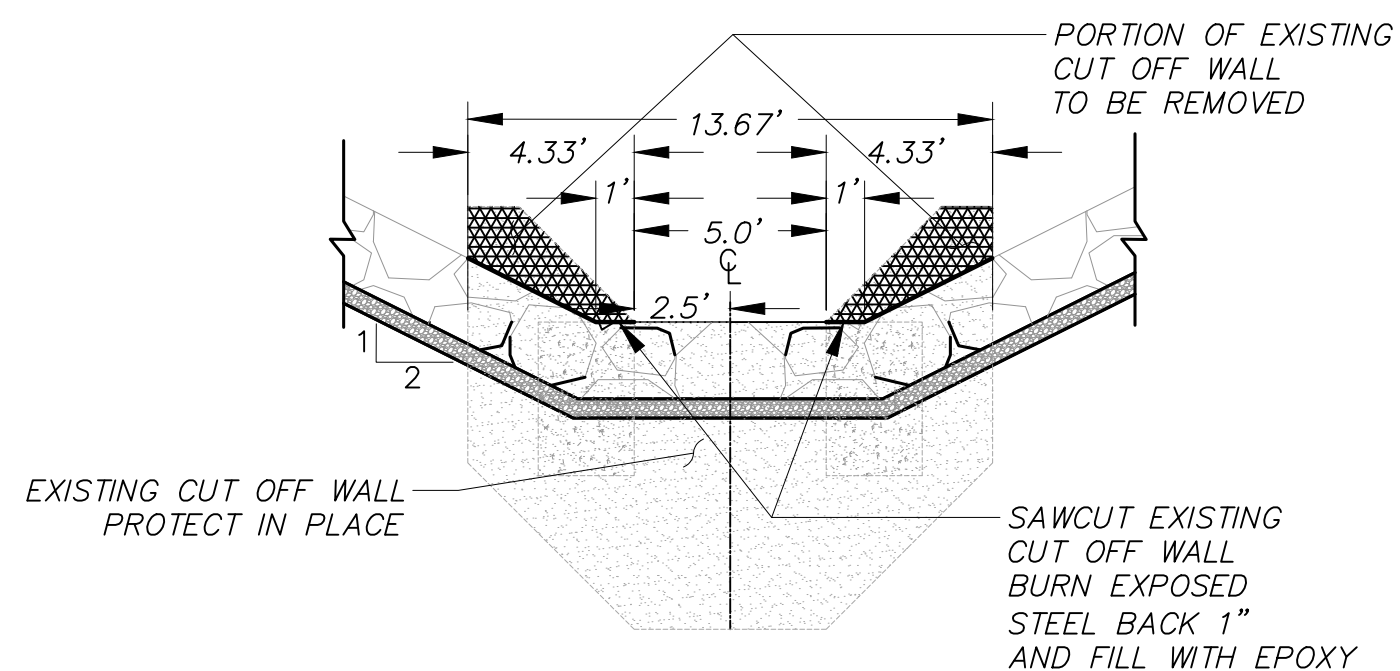


**1/4 T RIP RAP PLACEMENT** (E-14)

STA 17+17.39 NORTH SIDE TO 17+87  
STA 17+16.54 SOUTH SIDE TO 17+87  
NOT TO SCALE

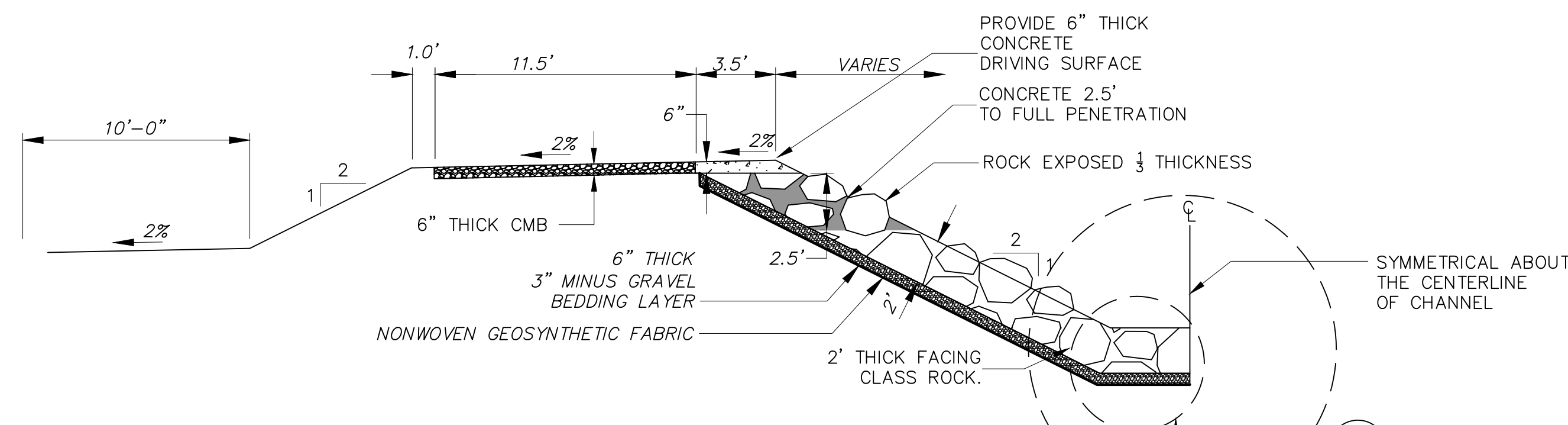
**ROCK RIP RAP SECTION** (I-12, 13, 21)

STATION 16+87.04 TO 17+17.39 NORTH SIDE  
STATION 16+87.04 TO 17+16.54 SOUTH SIDE  
NOT TO SCALE



**EXISTING CUT-OFF WALL MODIFICATION  
ROCK RIP RAP SECTION** (M-12, 13, 21)

STA 16+87.54  
NOT TO SCALE



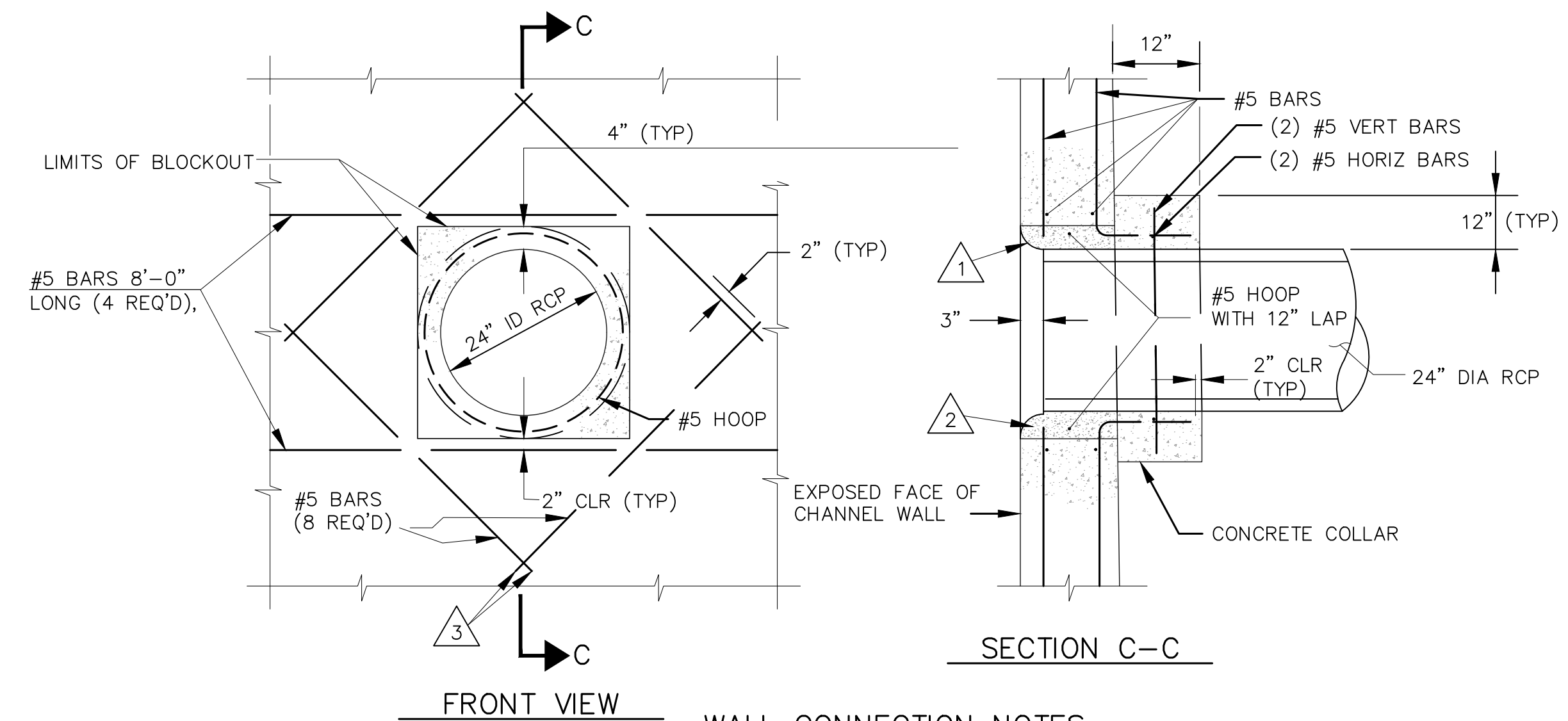
**CMB ACCESS ROAD AND ROCK RIP RAP SECTION** (G-12, 13, 21)

STA 1+80.00 TO STA 16+87.04  
NOT TO SCALE

FOR DEATIL AT STATION 16+87.04 SEE (H) HERE ON

**NOTES:**

- TEMPORARY WORK AREA LIMITS SHALL BE STAKED AND ALL EQUIPMENT SHALL BE OPERATED WITHIN THE TEMPORARY WORK AREA LIMITS. (9)
- INSTALL FLAP GATE PER DETAIL HERE ON. (27)
- INSTALL CHAINLINK FENCE ON TOP OF FLOODGATE WALL PER (D/8) (27)
- INSTALL CHAINLINK FENCE PER (LL/12) (15)
- EXISTING CHAINLINK FENCE PROTECT IN PLACE.
- INSTALL 24" CLASS II RCP (D-900) PER PLAN PER DETAIL (A/25)
- INSTALL PRECAST FLARED END SECTION PER 2015 CALTRANS STANDARD PLAN D94B AND PER DETAIL (A/23)

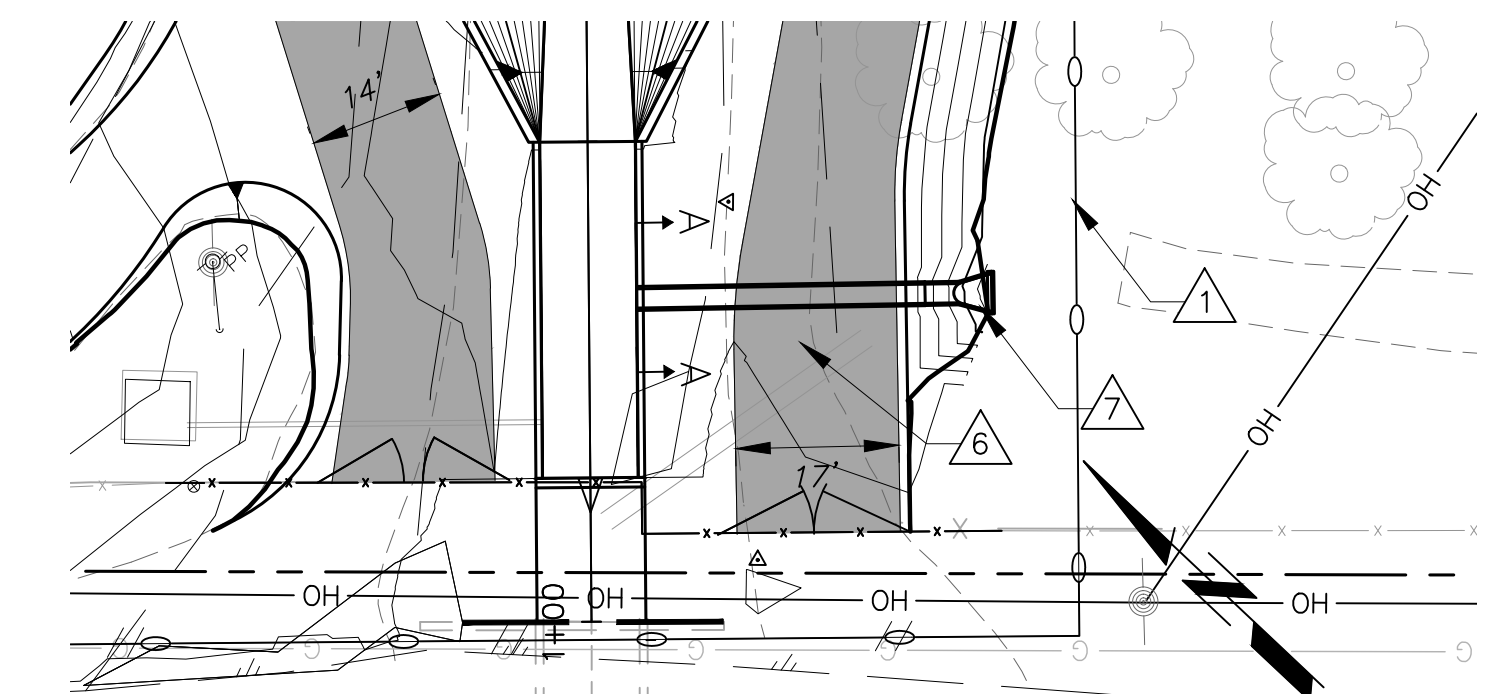


**WALL CONNECTION NOTES:**

- INSTALL RCP 3" FROM FACE OF WALL. PROVIDE 3" RADIUS LIP ALL AROUND.
- FILL VOID BETWEEN BLOCKOUT AND PIPE WITH GROUT OR DRY PACK FLUSH WITH INSIDE FACE OF WALL. PROVIDE NEAT STEEL TROWELED FINISH.
- STOP BARS 1 1/2" CLEAR OF STARTER WALL.
- CUT TRANSVERSE AND LONGITUDINAL WALL STEEL 2" CLEAR OF BLOCKOUT, EXCEPT FOR PIPES LARGER THAN 30" IN DIAMETER, OUTSIDE FACE BARS SHALL BE CUT AND BENT INTO COLLAR.

**24" RCP WALL CONNECTION DETAIL** (17, 18)

SECTION A-A  
NOT TO SCALE

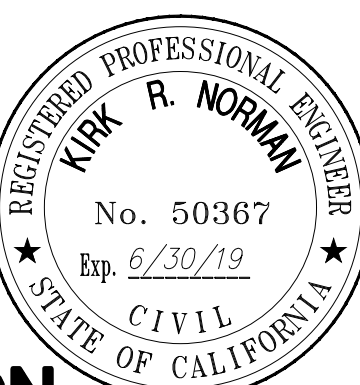


PLAN  
SCALE OF FEET  
0 20 40

**24" RCP AND FLAPED END SECTION DETAIL** (17, 18, 22, 23)

NOT TO SCALE

**100% DESIGN  
NOT FOR CONSTRUCTION**



SAVE DATE: 4/25/19 MUJLLER, JOHN K:\PROJECTS\ZONE3\FERRODITCH\85301\_FERRO DITCH IMPROVEMENT\DESIGN\DESIGN DRAWINGS\100PC\SH1 3-6 9 PP\_FERRO DITCH\_REV1.DWG

D				
C				
B				
A				
REVISION	DESCRIPTION	APP.	DATE	

JM	DESIGNED	DISTRICT PROJECT MANAGER	DATE
JM/ND	DRAWN	DISTRICT DEPUTY DIRECTOR	DATE
	CHECKED	DISTRICT DIRECTOR	DATE

**COUNTY OF VENTURA  
PUBLIC WORKS AGENCY  
WATERSHED PROTECTION DISTRICT**

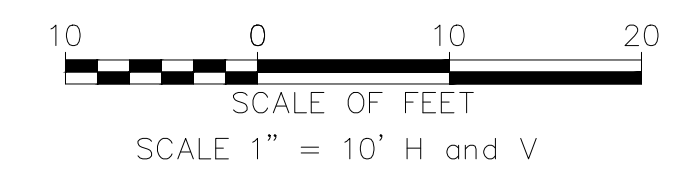
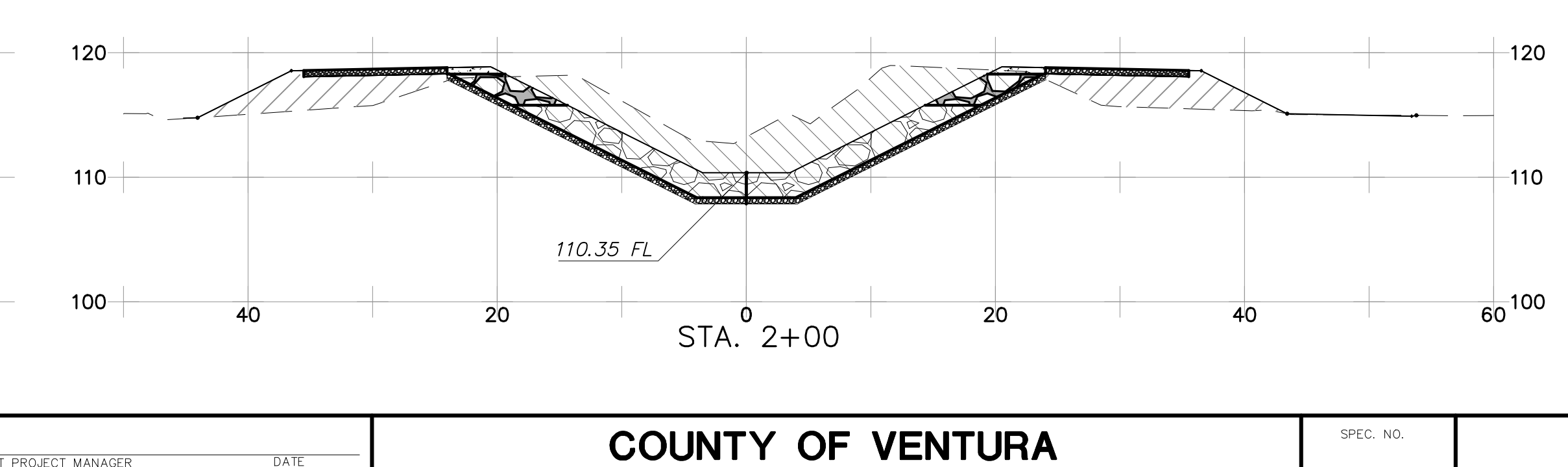
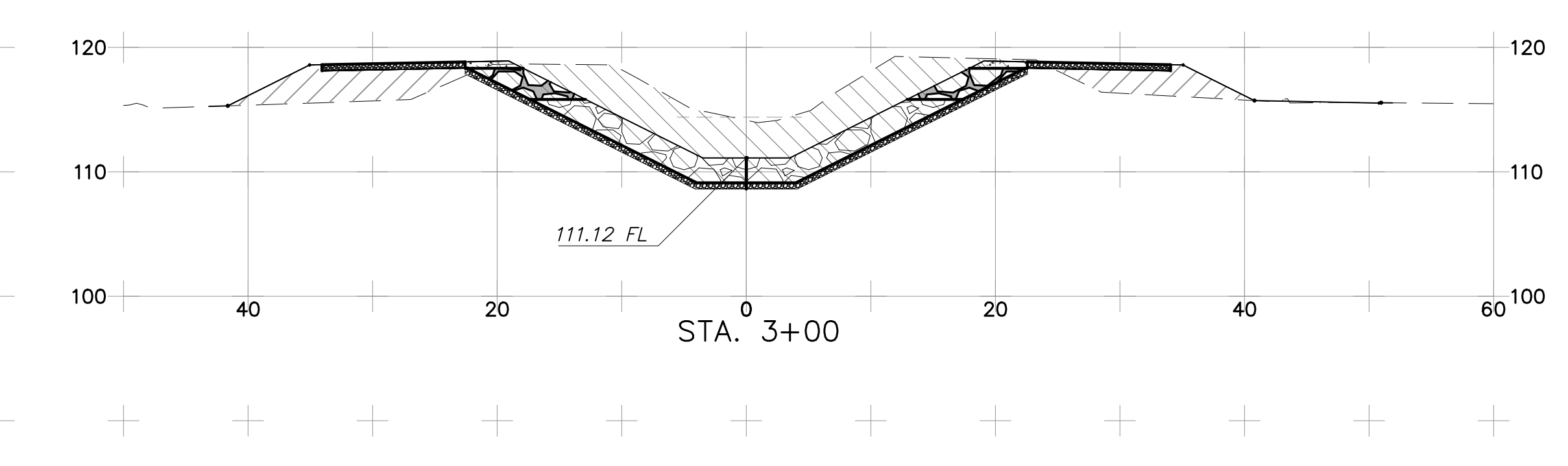
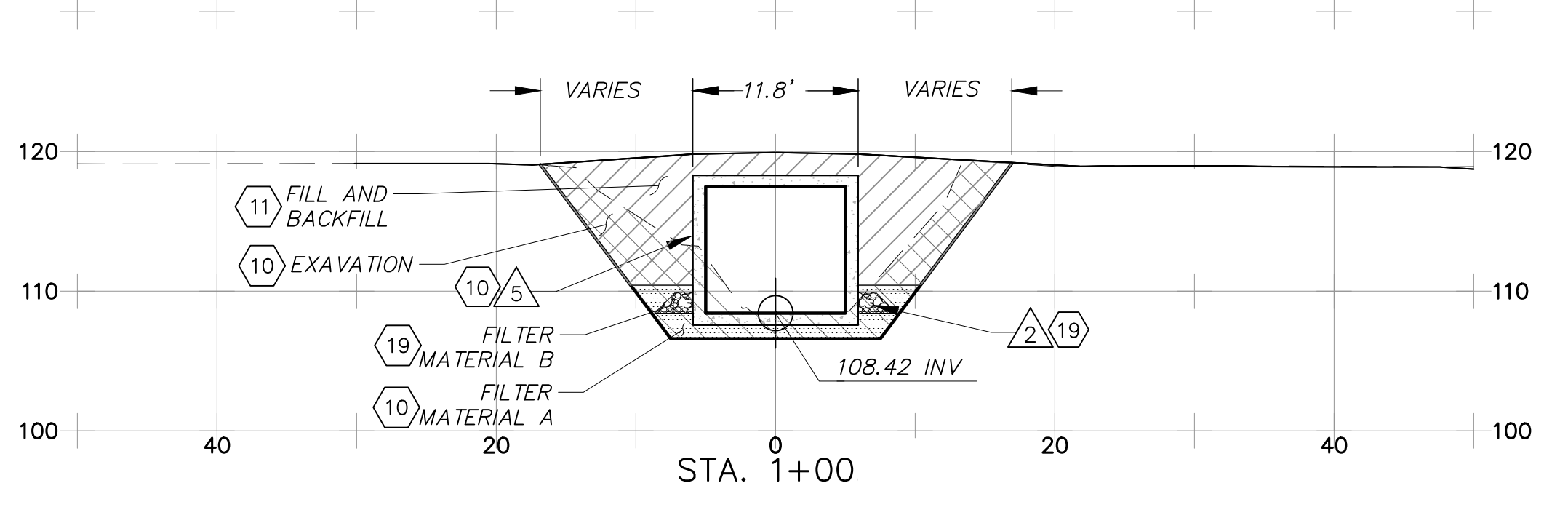
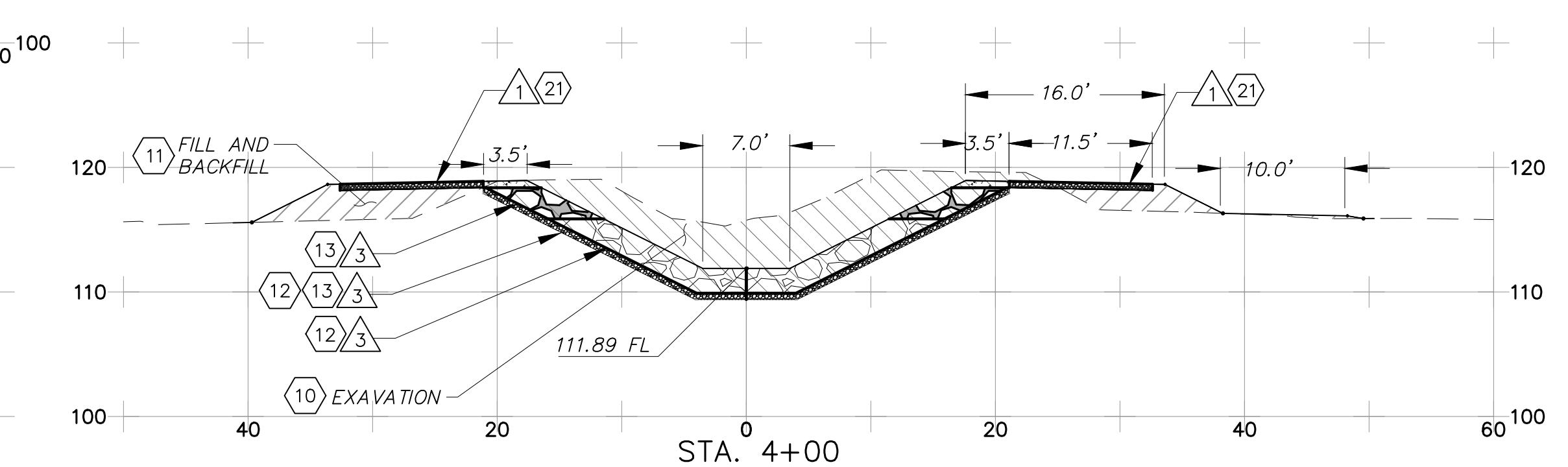
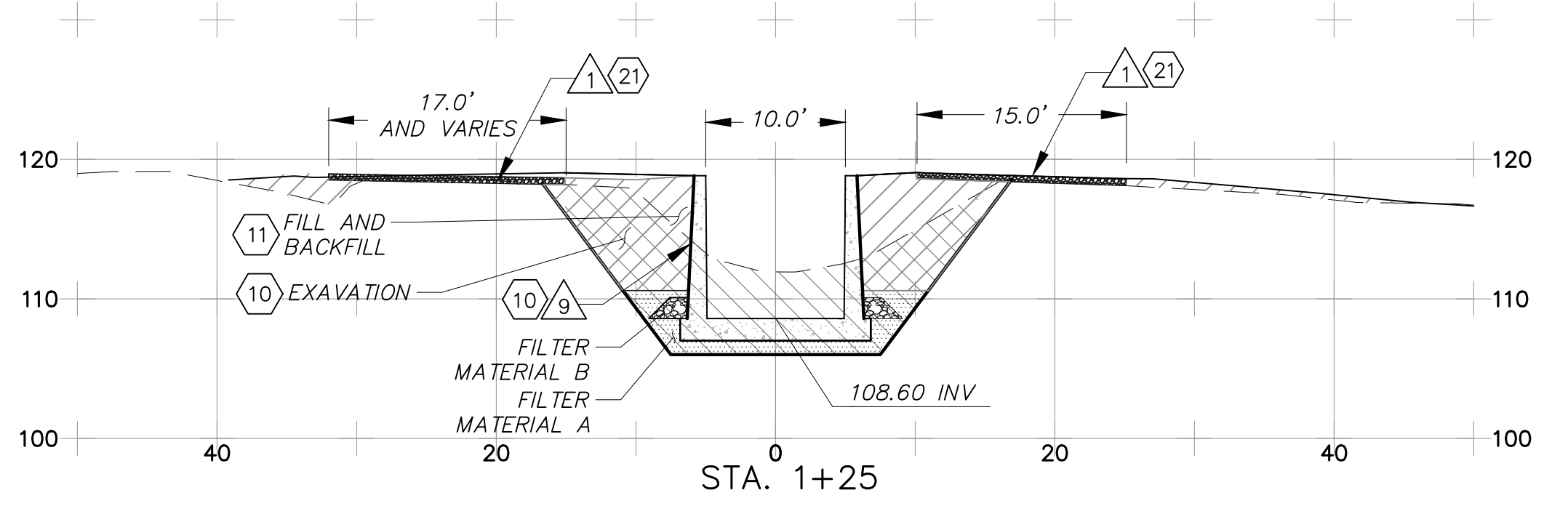
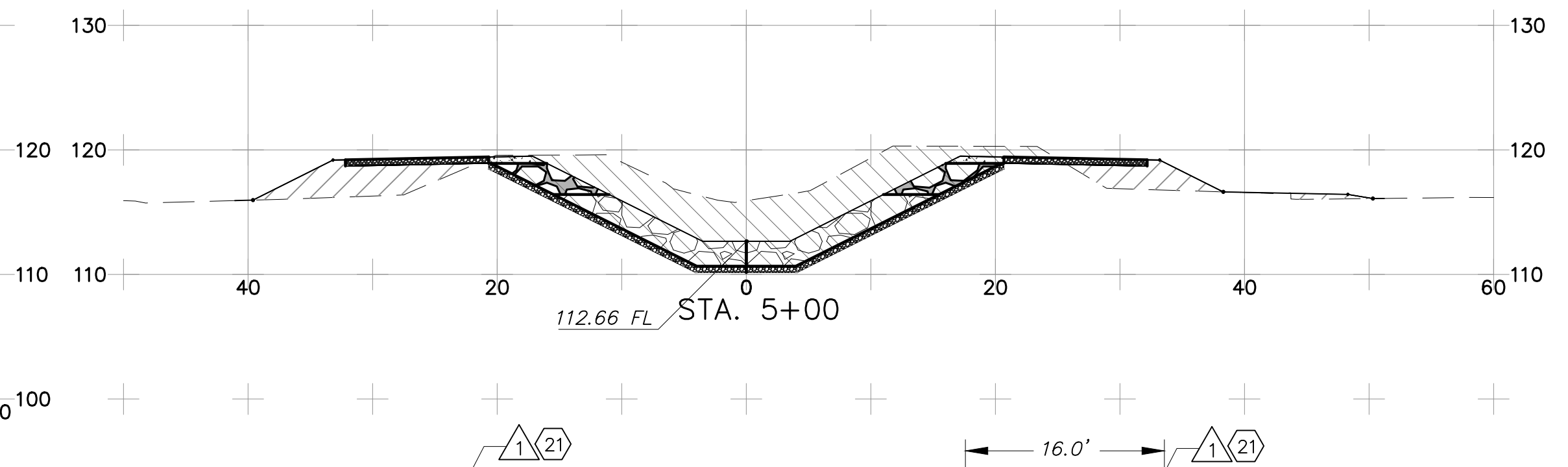
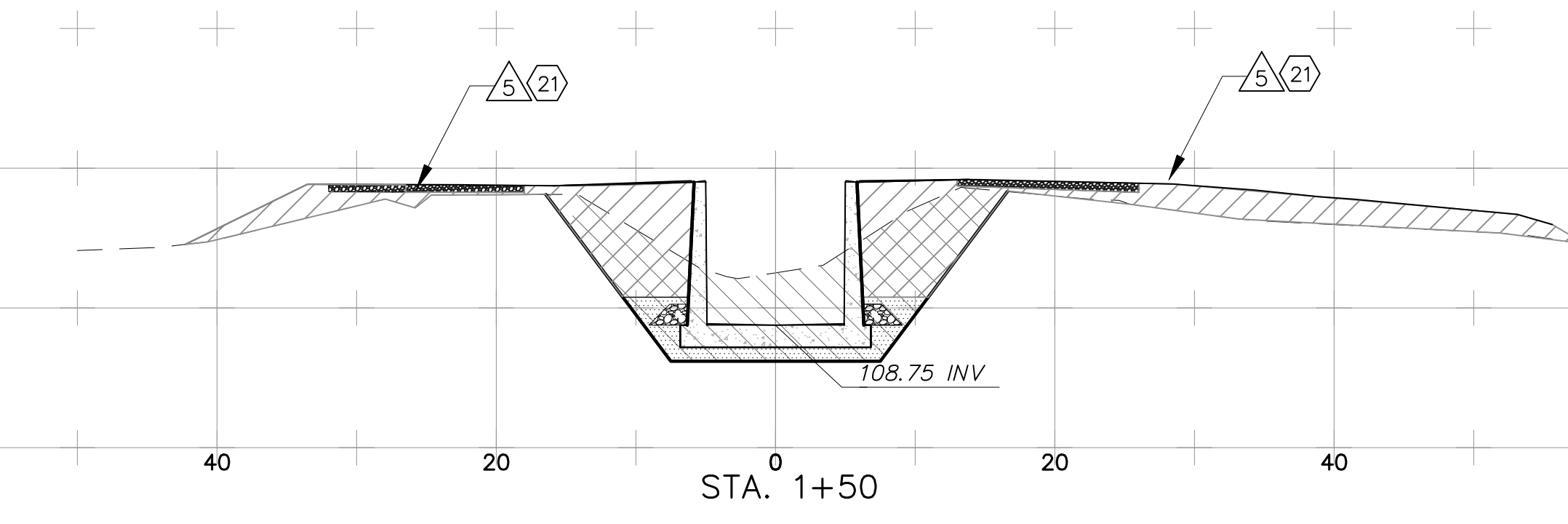
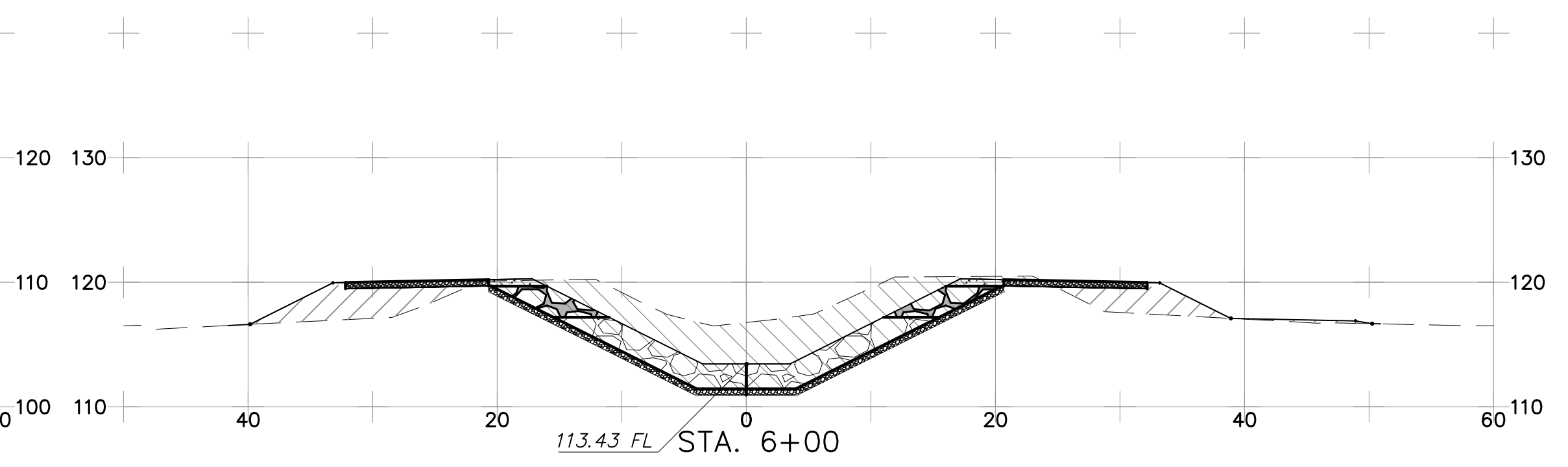
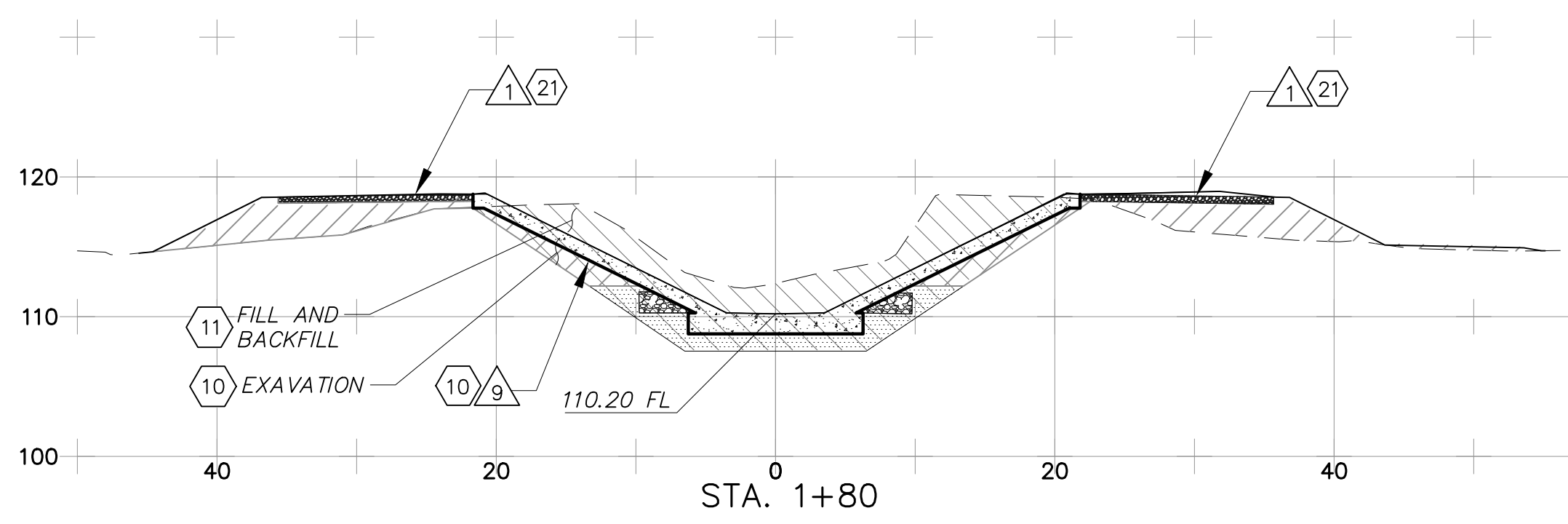
SPEC. NO.	
PROJ. NO.	85301

**FERRO DITCH  
CHANNEL IMPROVEMENTS**  
MISCELLANEOUS DETAILS

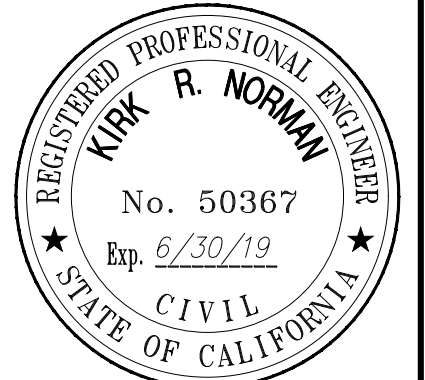
SHEET	9
OF	16
DRAWING NO.	Y-3-5227

NOTES:

1. INSTALL 6" CMB SERVICE ROAD PER (G/9)
2. INSTALL SUBDRAIN PER (I/12)
3. INSTALL 6" BEDDING LAYER OF 3" MINUS PIT GRAVEL, INSTALL ROCK TO 6" BELOW SERVICE ROAD ELEVATION & CONCRETE TOP 3' TO FULL PENETRATION PER DETAIL. (G/9)
5. INSTALL RC BOX CONDUIT 2015 CALTRANS STANDARD PLAN D30, D33, D88. CHANGE LONGITUDINAL/TEMPERATURE STEEL TO #5 REBAR @ 12" MAX
6. INSTALL RC RECTANGULAR CHANNEL PER DETAIL (C/10)
7. INSTALL RC WARPED SECTION PER DETAIL (H/11)



**100% DESIGN  
NOT FOR CONSTRUCTION**



PLOT DATE: 4/25/19

SAVE DATE: 4/25/19 MUJLLER, JOHN K:\PROJECTS\ZONE3\FERRODITCH\85301\_FERRO\_DITCH\_IMPROVEMENT\DESIGN\DESIGN\_DRAWINGS\100PCT\SH14 -16\_CROSS\_SECTION\_1\_REV1.DWG

D				
C				
B				
A				
	REVISION	DESCRIPTION	APP.	DATE

JM	DESIGNED	DISTRICT PROJECT MANAGER	DATE
JM	DRAWN	DISTRICT DEPUTY DIRECTOR	DATE
	CHECKED	DISTRICT DIRECTOR	DATE

**COUNTY OF VENTURA  
PUBLIC WORKS AGENCY  
WATERSHED PROTECTION DISTRICT**

SPEC. NO.	
PROJ. NO.	85301

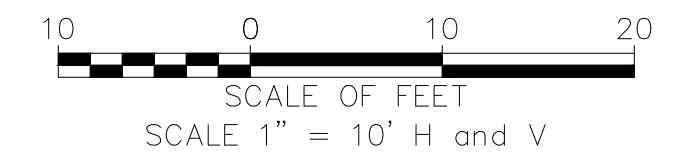
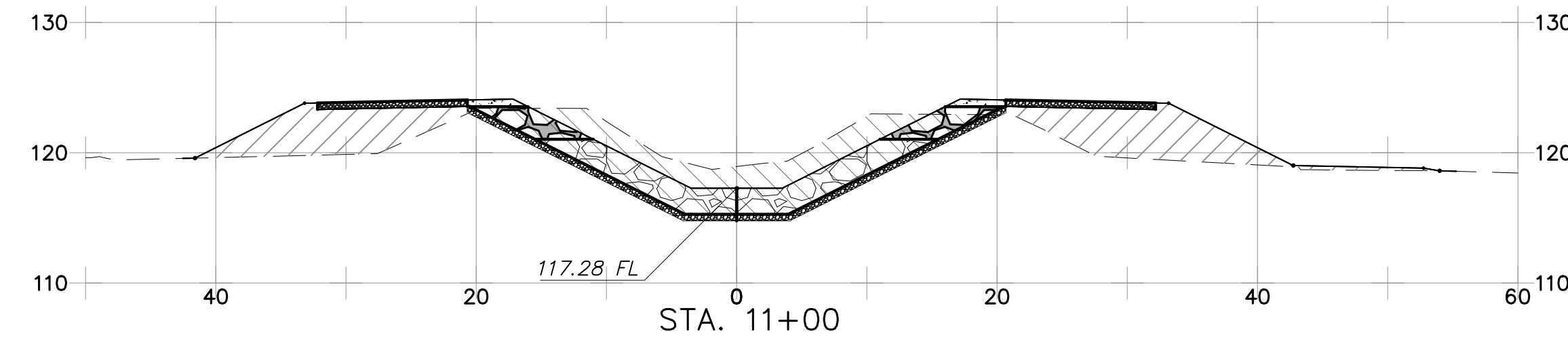
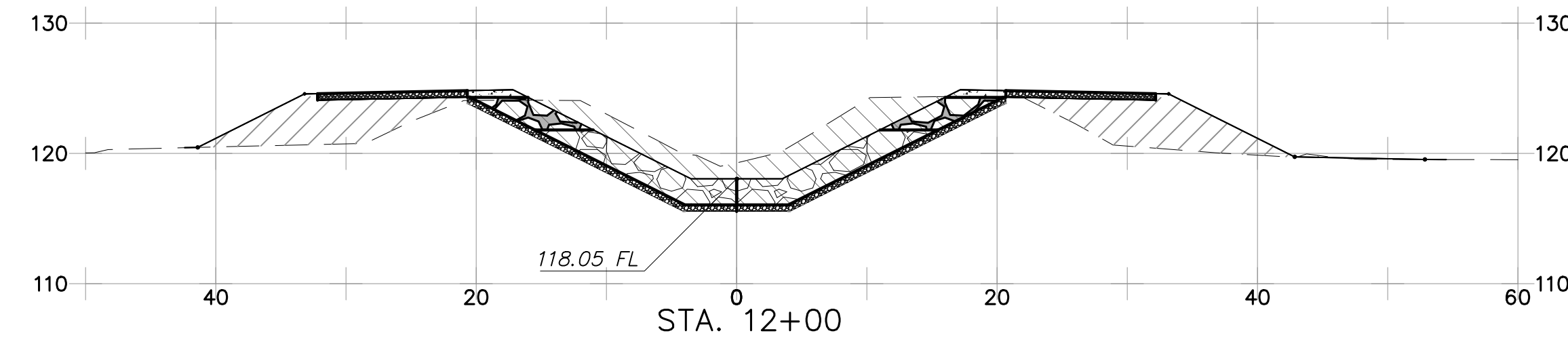
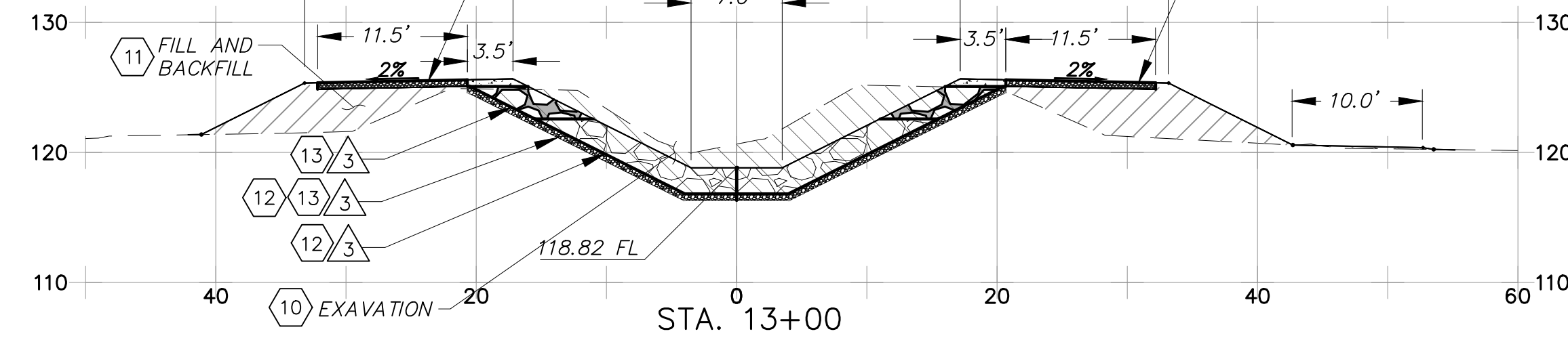
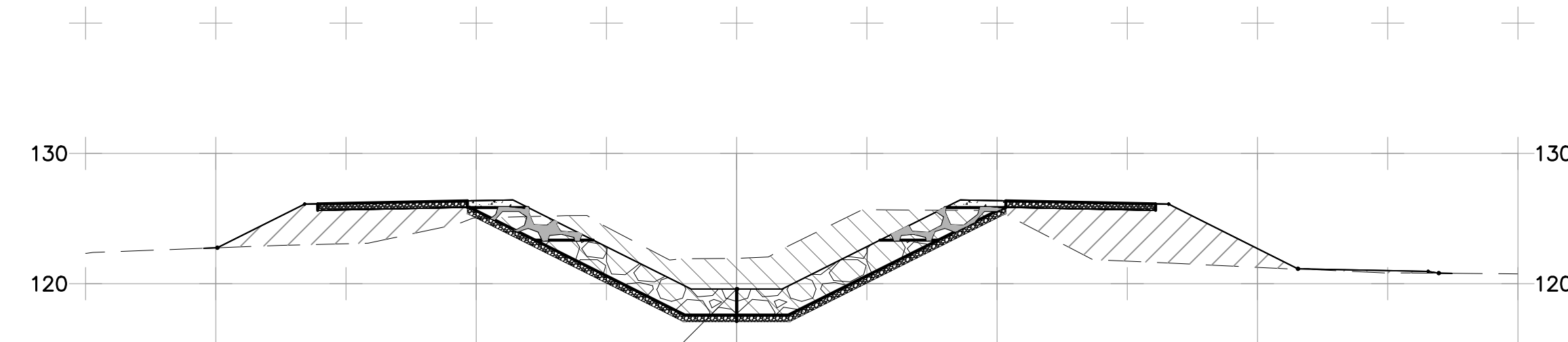
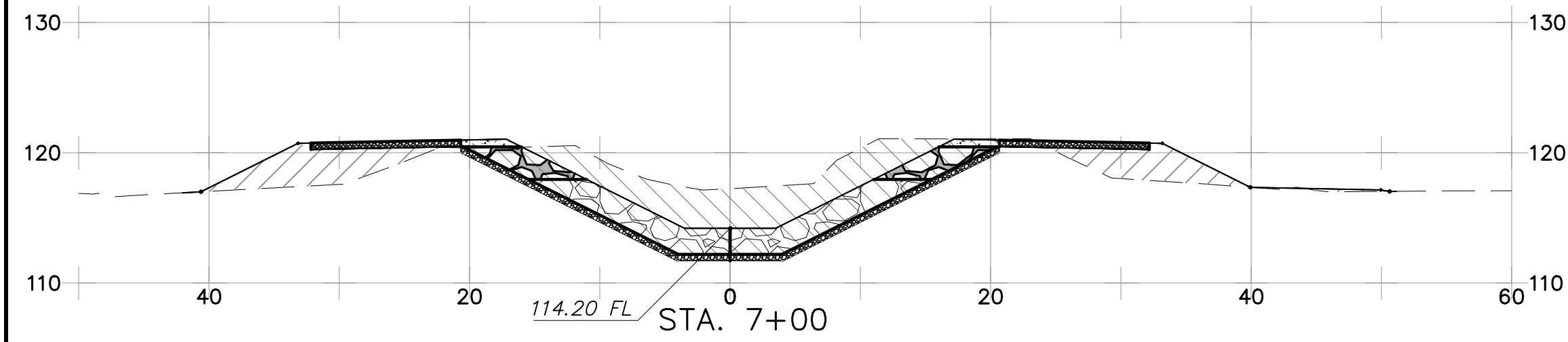
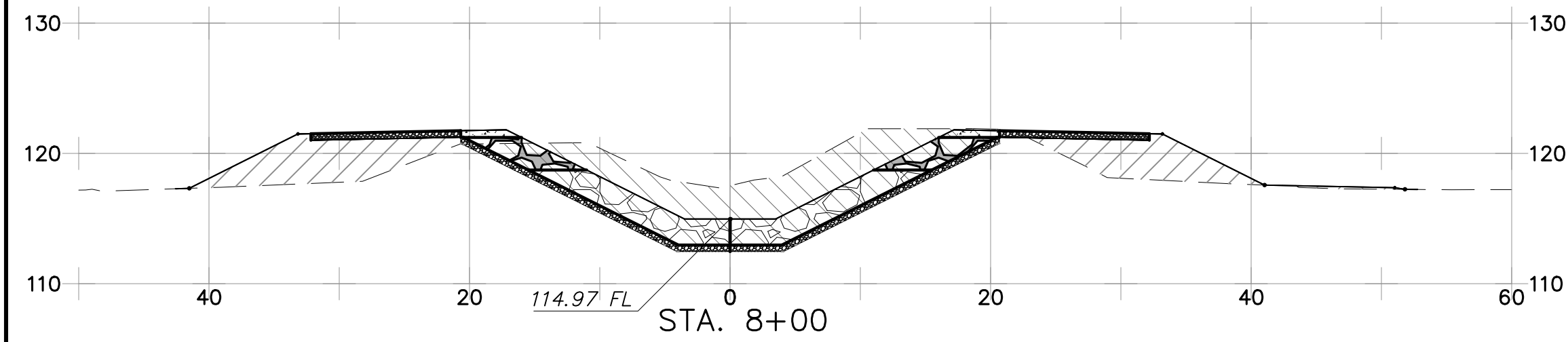
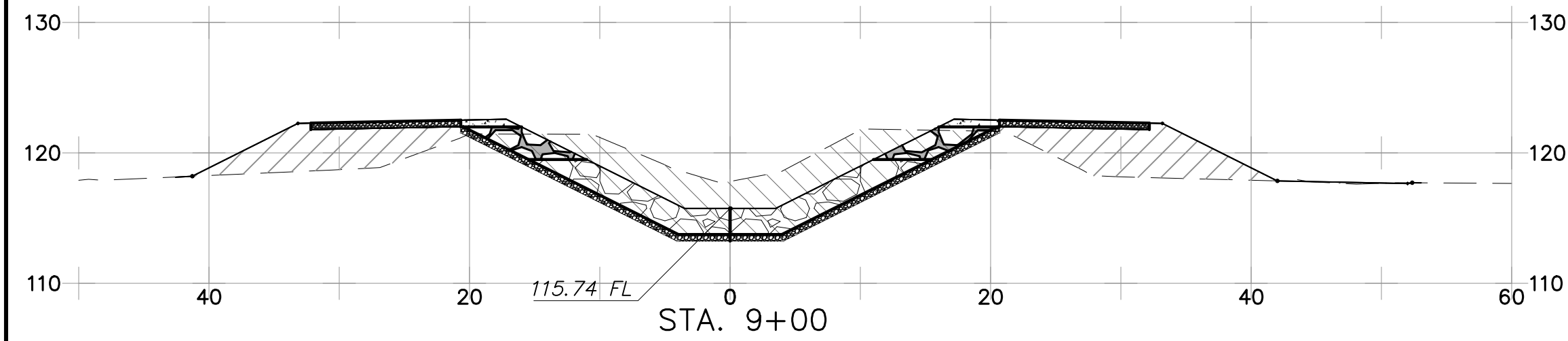
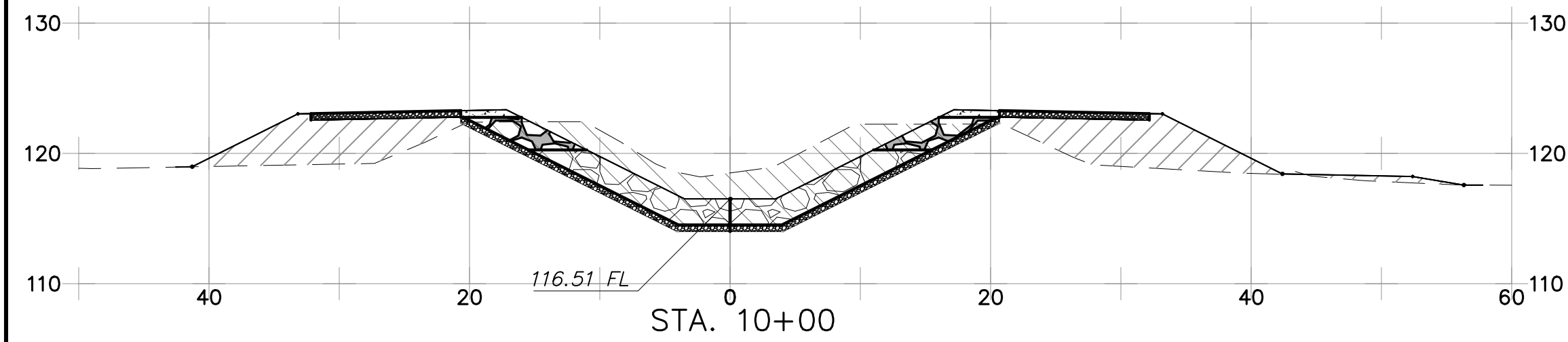
**FERRO DITCH  
CHANNEL IMPROVEMENTS**  
CROSS SECTIONS 1+00 TO 6+00

SHEET	14
OF	16
DRAWING NO.	Y-3-5232

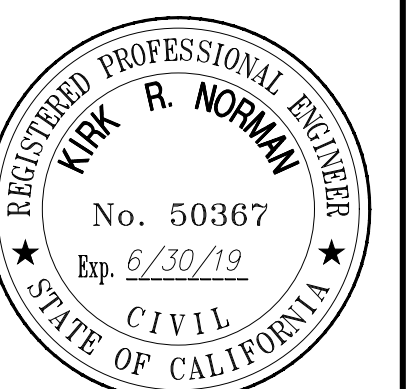


NOTES:

1. INSTALL 6" CMB SERVICE ROAD PER (G/9)
2. INSTALL SUBDRAIN PER (I/12)
3. INSTALL 6" BEDDING LAYER OF 3" MINUS PIT GRAVEL, INSTALL ROCK TO 6" BELOW SERVICE ROAD ELEVATION & CONCRETE TOP 3' TO FULL PENETRATION PER DETAIL. (G/9)



**100% DESIGN  
NOT FOR CONSTRUCTION**



PLOT DATE: 4/25/19

SAVE DATE: 4/25/19 MUJLLER, JOHN K:\PROJECTS\ZONE3\FERRODITCH\85301 FERRO DITCH IMPROVEMENT\DESIGN\DESIGN DRAWINGS\100PC\SH14 -16 CROSS SECTION 1 REV1.DWG

REVISION	DESCRIPTION	APP.	DATE
D			
C			
B			
A			

JM	DESIGNED	DISTRICT PROJECT MANAGER	DATE
JM	DRAWN	DISTRICT DEPUTY DIRECTOR	DATE
-	CHECKED	DISTRICT DIRECTOR	DATE

**COUNTY OF VENTURA  
PUBLIC WORKS AGENCY  
WATERSHED PROTECTION DISTRICT**

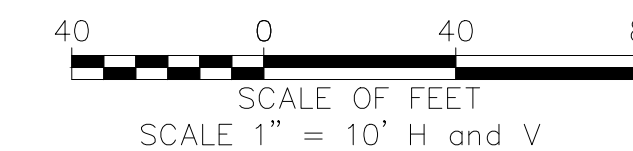
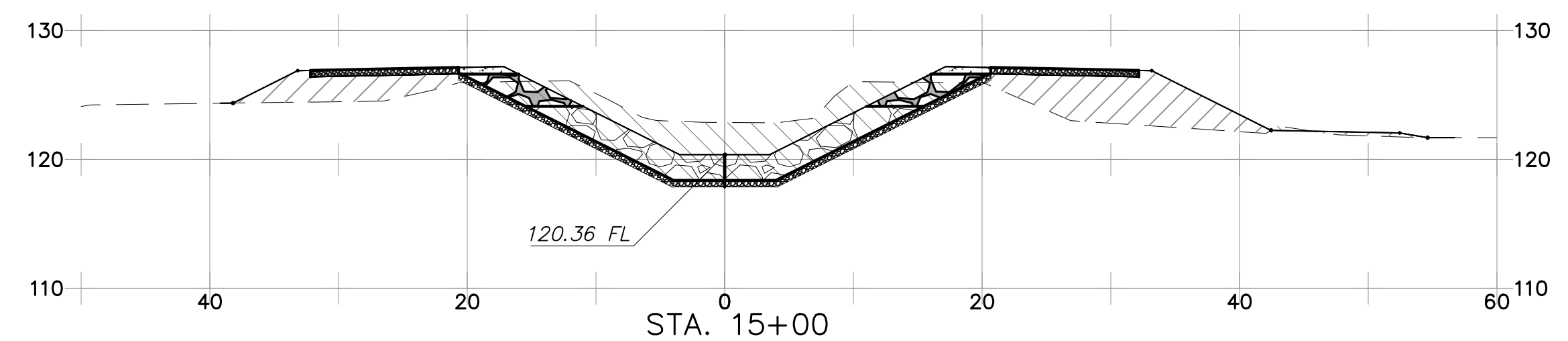
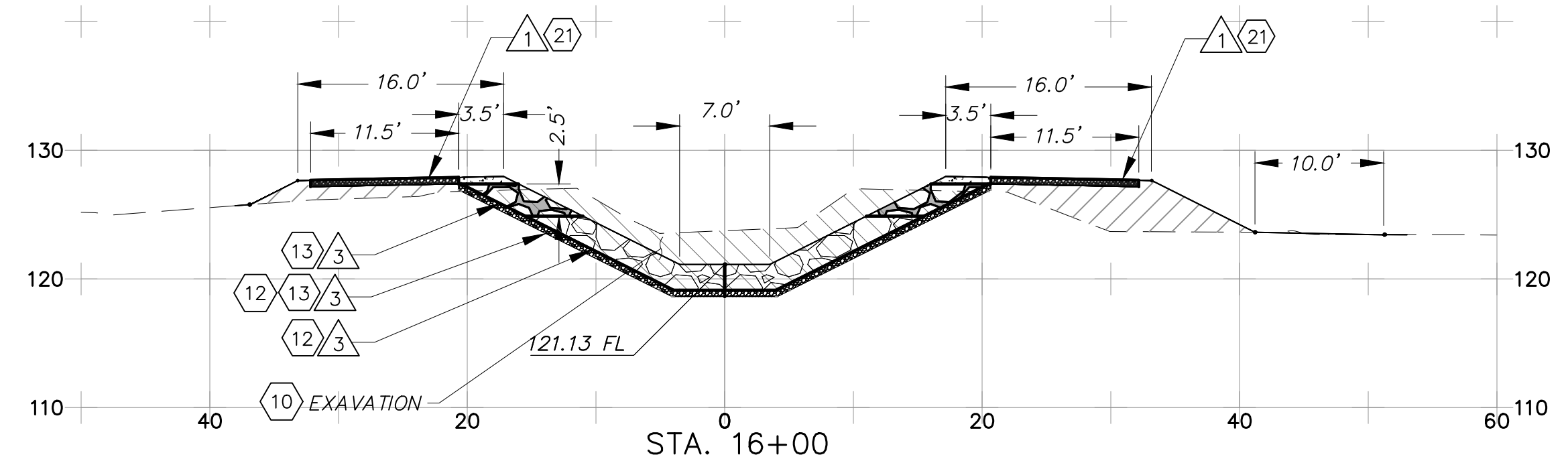
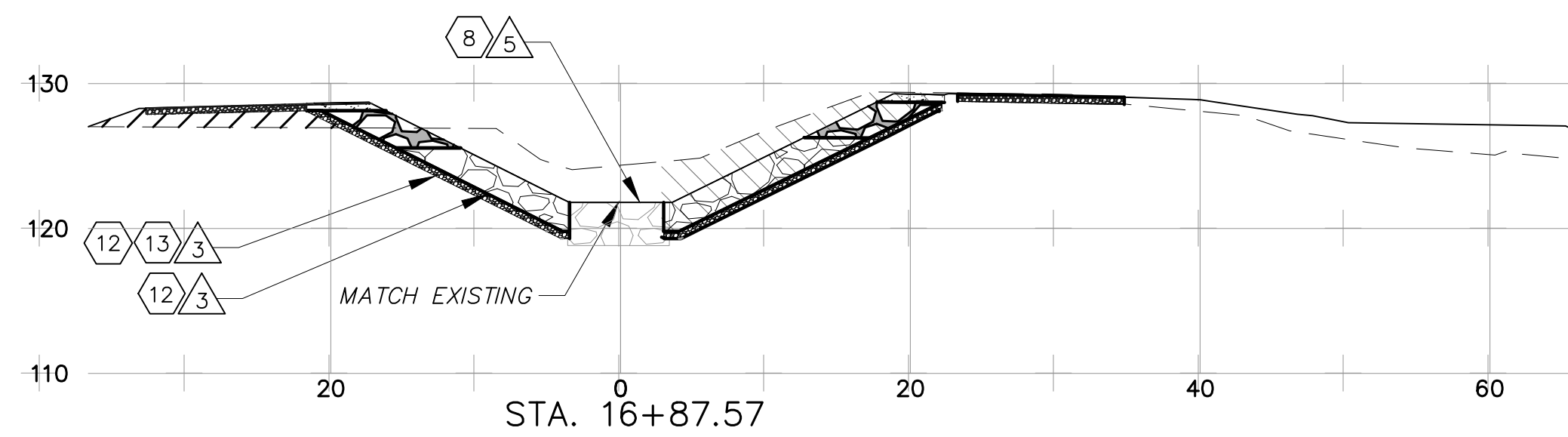
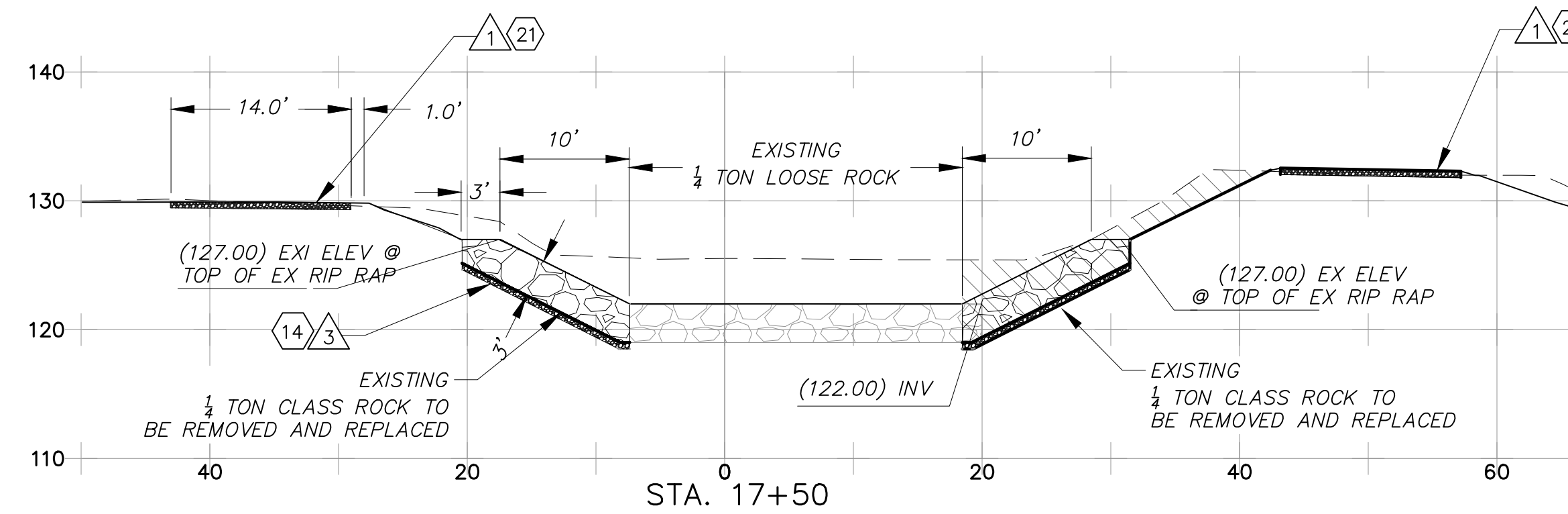
SPEC. NO.	-
PROJ. NO.	85301

**FERRO DITCH  
CHANNEL IMPROVEMENTS**  
CROSS SECTIONS 7+00 TO 14+00

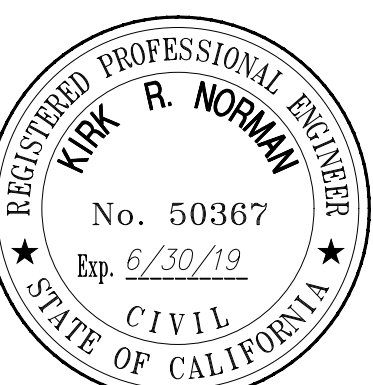
SHEET	15
OF	16
DRAWING NO.	Y-3-5233

NOTES:

1. INSTALL 6" CMB SERVICE ROAD PER (G/9)
2. INSTALL SUBDRAIN PER (1/12)
3. INSTALL 6" BEDDING LAYER OF 3" MINUS PIT GRAVEL, INSTALL ROCK TO 6" BELOW SERVICE ROAD ELEVATION & CONCRETE TOP 3" TO FULL PENETRATION PER DETAIL. (G/9)
4. INSTALL 6" BEDDING LAYER OF 3" MINUS PIT GRAVEL, INSTALL ROCK 1/4 TON ROCK AS SHOWN ON PLANS.
5. PROTECT IN PLACE EXISTING ROCK LINED BOTTOM



**100% DESIGN  
NOT FOR CONSTRUCTION**



PLOT DATE: 4/25/19

SAVE DATE: 4/25/19 MUELLER, JOHN K:\PROJECTS\ZONE3\FERRODITCH\85301\_FERRO\_DITCH\_IMPROVEMENT\DESIGN\DESIGN\_DRAWINGS\100PCT\SH14-16\_CROSS\_SECTION\_1\_REV1.DWG

REVISION	DESCRIPTION	APP.	DATE
D			
C			
B			
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JM	DESIGNED	DISTRICT PROJECT MANAGER	DATE
JM	DRAWN	DISTRICT DEPUTY DIRECTOR	DATE
-	CHECKED	DISTRICT DIRECTOR	DATE

**COUNTY OF VENTURA  
PUBLIC WORKS AGENCY  
WATERSHED PROTECTION DISTRICT**

SPEC. NO.	-
PROJ. NO.	85301

**FERRO DITCH  
CHANNEL IMPROVEMENTS**  
CROSS SECTIONS 15+00 TO 17+50

SHEET	16
OF	16
DRAWING NO.	Y-3-5234