

**American River Flood Control District**  
**Central Valley Flood Protection Board Permit Applications**  
**1620 & 1622 McClaren Road**

**Staff Report**

**Discussion:**

The parcel owners at 1620 McClaren Road (Friedman) and 1622 McClaren Road (Bass) in Carmichael, California seek to obtain encroachment permits to construct bank protection work along their properties on the north bank of the American River. The proposed project is to remove existing gunnite bank protection that has failed and replace it with rock revetment. The work will require demolition and removal of the existing gunnite and then excavation to prepare an inset surface in the bank to install the new revetment. The permit application also includes a request to have a name change on the original permits for bank protection issued to previous residents at these locations.

All of the work described in these applications are outside the levee prism and toe area and the work will not have an impact on the District levee.

**California Environmental Quality Act:**

The applicants for this work believe their project requires CEQA documentation. Under CEQA, a government agency must fulfill the role as the CEQA lead agency. The representative for the applicants asked if the District could be the CEQA lead agency. The District has never been the CEQA lead agency for a private encroachment permit. Similar work as that proposed under this application was conducted at 1870 Claremont Road and that work listed Sacramento County as the CEQA lead agency.

**Recommendation:**

The General Manager recommends that the Board of Trustees endorse the permit application and suggest that the applicant seek having Sacramento County serve as the CEQA lead agency.

**APPLICATION FOR A CENTRAL VALLEY FLOOD PROTECTION BOARD  
ENCROACHMENT PERMIT**

**Application No.** \_\_\_\_\_  
(For Office Use Only)

1. Description of proposed work being specific to include all items that will be covered under the issued permit.

The proposed project is to repair the damaged bank protection site along the American River located at 1620 McClaren Drive in Carmichael, CA. The original protection has visible cracks and the bank material beneath is exposed and eroding. This application covers approximately 160 feet of the bank repair work. We are also requesting that permit 4352 issued to Jack Steiner on August 5, 1963 be transferred to Ms. Marcy Friedman.

2. Project

Location: Sacramento County, in Section 56  
(N) (E)  
Township: 9 North (S), Range: 6 East (W), M. D. B. & M.  
Latitude: 38.594179° Longitude: -121.333174°  
Stream : American River , Levee : North Designated Floodway: Yes  
APN: 28902830440000

3. Ms. Marcy Friedman of 1620 McClaren Drive  
Name of Applicant / Land Owner Address

Carmichael CA 95608 Telephone Number  
City State Zip Code  
marcy@marcyfriedman.com  
E-mail

4. Jay Punia of Wood Rodgers Inc.  
Name of Applicant's Representative Company

Sacramento CA 95816 (916) 870-0770  
City State Zip Code Telephone Number  
jpunia@woodroddgers.com  
E-mail

5. Endorsement of the proposed project from the Local Maintaining Agency (LMA):

We, the Trustees of \_\_\_\_\_ approve this plan, subject to the following conditions:  
Name of LMA

- Conditions listed on back of this form  Conditions Attached  No Conditions

\_\_\_\_\_  
Trustee Date

\_\_\_\_\_  
Trustee Date

### APPLICATION FOR A CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMIT

6. Names and addresses of adjacent property owners sharing a common boundary with the land upon which the contents of this application apply. If additional space is required, list names and addresses on back of the application form or an attached sheet.

Name	Address	Zip Code
See attached		

7. Has an environmental determination been made of the proposed work under the California Environmental Quality Act of 1970?  Yes  No  Pending

If yes or pending, give the name and address of the lead agency and State Clearinghouse Number:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SCH No. \_\_\_\_\_

8. When is the project scheduled for construction? \_\_\_\_\_

9. Please check exhibits accompanying this application.

- A.  Regional and vicinity maps showing the location of the proposed work.
- B.  Drawings showing plan view(s) of the proposed work to include map scale.
- C.  Drawings showing the cross section dimensions and elevations (vertical datum?) of levees, berms, stream banks, flood plain,
- D.  Drawings showing the profile elevations (vertical datum?) of levees, berms, flood plain, low flow, etc.
- E.  A minimum of four photographs depicting the project site.

\_\_\_\_\_  
Signature of Applicant Date

Include any additional information:  
See the attached plans, specifications and x-sections  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**APPLICATION FOR A CENTRAL VALLEY FLOOD PROTECTION BOARD  
ENCROACHMENT PERMIT**

**Application No.** \_\_\_\_\_  
(For Office Use Only)

1. Description of proposed work being specific to include all items that will be covered under the issued permit.

The proposed project is to repair the damaged bank protection site along the American River located at 1622 McClaren Drive in Carmichael, CA 956. The original protection has visible cracks and the bank material beneath is exposed and eroding. This application covers approximately 90 feet of the bank repair work. We are also requesting that permit 4902 issued to Jamee Eddy on April 5, 1965 be transferred to Dr. Lawrence Bass.

2. Project

Location: Sacramento County, in Section 56  
(N) (E)  
Township: 9 North (S), Range: 6 East (W), M. D. B. & M.  
Latitude: 38.594179° Longitude: -121.333174°  
Stream : American River , Levee : North Designated Floodway: Yes  
APN: 28902830440000

3. Dr. Lawrence Bass of 1622 McClaren Drive  
Name of Applicant / Land Owner Address

Carmichael CA 95608 Telephone Number  
City State Zip Code  
ljbass@surewest.net  
E-mail

4. Jay Punia of Wood Rodgers Inc.  
Name of Applicant's Representative Company

Sacramento CA 95816 (916) 870-0770  
City State Zip Code Telephone Number  
jpunia@woodrodgers.com  
E-mail

5. Endorsement of the proposed project from the Local Maintaining Agency (LMA):

We, the Trustees of \_\_\_\_\_ approve this plan, subject to the following conditions:  
Name of LMA

- Conditions listed on back of this form       Conditions Attached       No Conditions

\_\_\_\_\_  
Trustee Date      Trustee Date

\_\_\_\_\_  
Trustee Date      Trustee Date

### APPLICATION FOR A CENTRAL VALLEY FLOOD PROTECTION BOARD ENCROACHMENT PERMIT

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\_\_\_\_\_

SCH No. \_\_\_\_\_

8. When is the project scheduled for construction? \_\_\_\_\_

9. Please check exhibits accompanying this application.

- A.  Regional and vicinity maps showing the location of the proposed work.
- B.  Drawings showing plan view(s) of the proposed work to include map scale.
- C.  Drawings showing the cross section dimensions and elevations (vertical datum?) of levees, berms, stream banks, flood plain,
- D.  Drawings showing the profile elevations (vertical datum?) of levees, berms, flood plain, low flow, etc.
- E.  A minimum of four photographs depicting the project site.

\_\_\_\_\_  
Signature of Applicant Date

Include any additional information:  
See the attached plans, specifications and x-sections  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## TECHNICAL MEMORANDUM

TO: Mr. Jonathan Kors, PE

FROM: Mr. Jay Punia, PE  
Mr. Chuck Hilliard, PE

DATE: August 22, 2019

SUBJECT: Project Description – Friedman and Bass Revetment Replacement Project  
1620 and 1622 McLaren Drive, Carmichael, California

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## INTRODUCTION

At the right bank of the American River near U.S. Army Corps of Engineers (USACE) River Mile (RM) 13.4, the gunite bank protection that was installed in early 1960s is failing and needs to be replaced with a more robust design. The attached exhibit shows the location and the initial design for restoring the erosion protection at this site. The gunite extends approximately 250 lineal feet along the bank line and includes Dr. Bass' and Mrs. Friedman's properties along the river. Dr. Bass's property extent is the upstream (approximately) 90 feet of bank line, while Mrs. Friedman's is the remaining downstream 160 feet. The vertical extents of the gunite extend from the toe of the slope below the low summer water levels up to the top of the river bank. Dr. Bass's pool and retaining wall are located near the top edge of the river bank, while Mrs. Friedman's fence, gate, and landscaped structures are located near the top of the slope.

The purpose of this Technical Memorandum is to provide the needed information for preparing the CEQA/NEPA analyses and to describe the project to regulatory agencies.

## PROJECT DESCRIPTION

The proposed project will replace the existing gunite bank protection with Rock Slope Protection (RSP) and will meet or exceed the erosion control standard prescribed in the California Code of Regulations, Title 23, Article 8, Section 121. Based on the initial input from the Central Valley Flood Protection Board (CVFPB), two separate permit applications will be submitted. Application number one (on behalf of Dr. Bass) will cover a portion located approximately 90 feet (upstream) of the project, and a second application (on behalf of Mrs. Friedman) will cover the remaining 160 feet.

## SITE CHARACTERISTICS

- The banks are steep at this location and could become steeper with increased scour at the toe of the bank.

- Flow velocities are very high at or above the toe of the bank.
- Bank material can be mobilized at all flows.
- Toe scour is possible at the estimated velocities, which could encourage bank failure.
- Erosion behind the gunite wall is evident and with continued failure of the gunite wall could become worse.
- Further erosion and bank failure would likely lead to structural damage of Dr. Bass's retaining wall and pool, as well as Mrs. Friedman's staircase, fence, and lawn.

## **PROPOSED DESIGN**

As shown in attached Project Overview Exhibit (**Exhibit 1**), the existing gunite structure would be removed, and angular rock toe (launch-able) and slope revetment would be placed to arrest erosion and stabilize the bank at this location. The proposed design is based on recommendations developed in the Northwest Hydraulic Consultants (NHC) Report (December 6, 2019), and will meet or exceed the erosion control standard prescribed in the California Code of Regulations, Title 23, Article 8, Section 121.

## **ACCESS**

The project site is accessible from Mrs. Friedman's property through a gate near the top of the slope and down concrete steps constructed into the gunite protection. There is no existing access for construction equipment to reach the bottom of the steep slope through Mrs. Friedman's property. Dr. Bass has a small boat ramp that passes through the upstream extent of the gunite protection. The boat launch connects to Dr. Bass's driveway and is a feasible location for equipment access to reach the bottom of the slope.

## **CONSTRUCTION SEQUENCE**

The original gunite bank protection will be removed and hauled away from the project site, with the exception of the concrete anchor block at the waterside toe of the riverbank. The anchor block will remain in its current location, or will be relocated (shifted laterally) as necessary to accommodate the placement of the new rock slope protection.

Debris and vegetation will be removed from the riverbank slope. The bank slope will be excavated as necessary to create a 24-inch-deep inset for placing the Rock Slope Protection (RSP). Before RSP is placed, geotextile filter fabric will be placed there to prevent bank materials from eroding through RSP material. Revetment will be placed uniformly and transitioned into the bank slope. Topsoil materials will be placed over the rock (within the rock interstitial spaces) to facilitate vegetative growth.

## CONSTRUCTION SCHEDULE

<u>Activity</u>	<u>Month/Year</u>
Permits	October 2019–April 2020
Advertise Const. Contract	May–June 2020
Actual Construction	June–Sept. 2020

## EQUIPMENT

Construction Phase	Number of Each Equipment Type	Duration of Use (Days)
Removing and hauling existing gunite bank protection	Excavator with demolition attachment (hydraulic hammer), skid-steer loader, front-end loader, hauling trucks (1-2).	5-7 days
Clearing and grubbing/ stripping	Front-end loader, skid-steer loader, haul trucks, pickup trucks	5-7 days
Placing geotextile filter fabric on slope	Manual labor	3-5 days
Placing rock slope protection revetment	Front-end loader, excavator, haul trucks, and backhoe	15-20 days

## MATERIALS DELIVERY

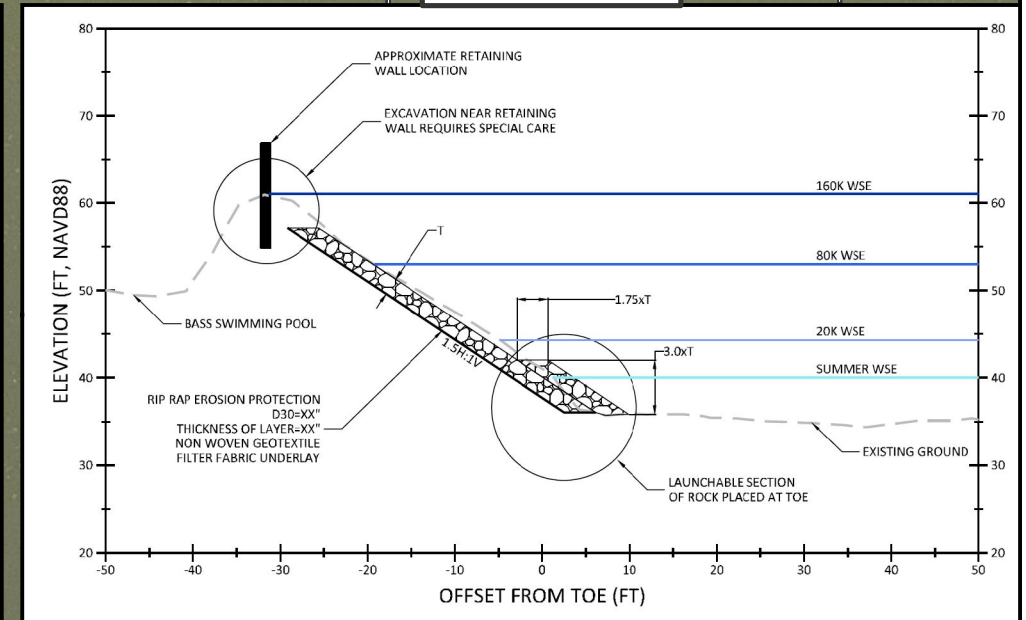
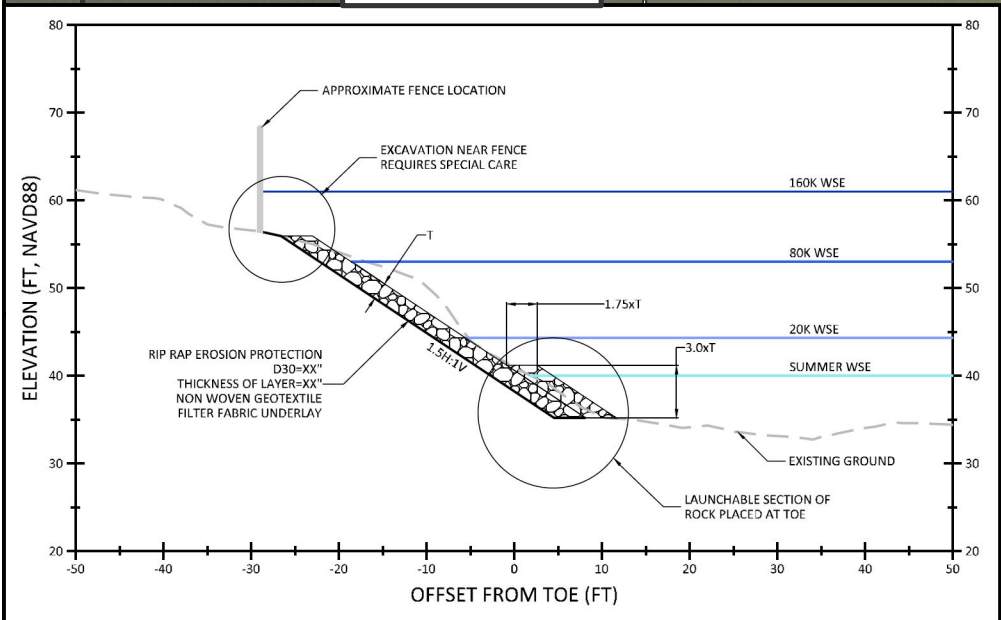
Typical deliveries and hauling for the project would include the rock slope protection, geofabric and bedding material needed to reconstruct the bank slope. The existing gunite and demolition debris would be hauled away to the nearest disposal site.

The project will require approximately 840 tons of rock to be imported and installed on site, and approximately 115 tons of gunite and concrete will be demolished and removed from the site. These number will be revised once the design is finalized.

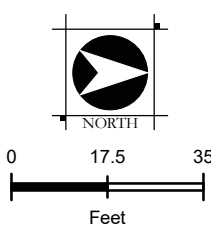
## REFERENCES

1. Northwest Hydraulic Consultants Report (December 6, 2018) to Mrs. Friedman and to Dr. Bass





**PROJECT OVERVIEW EXHIBIT**  
**FRIEDMAN AND BASS EROSION PROTECTION**  
**SACRAMENTO COUNTY, CA**  
**JUNE 2019**



**EXHIBIT 1**



60% DESIGN

# FRIEDMAN & BASS PROPERTIES REVTMENT REPLACEMENT PROJECT

**OWNERS:**

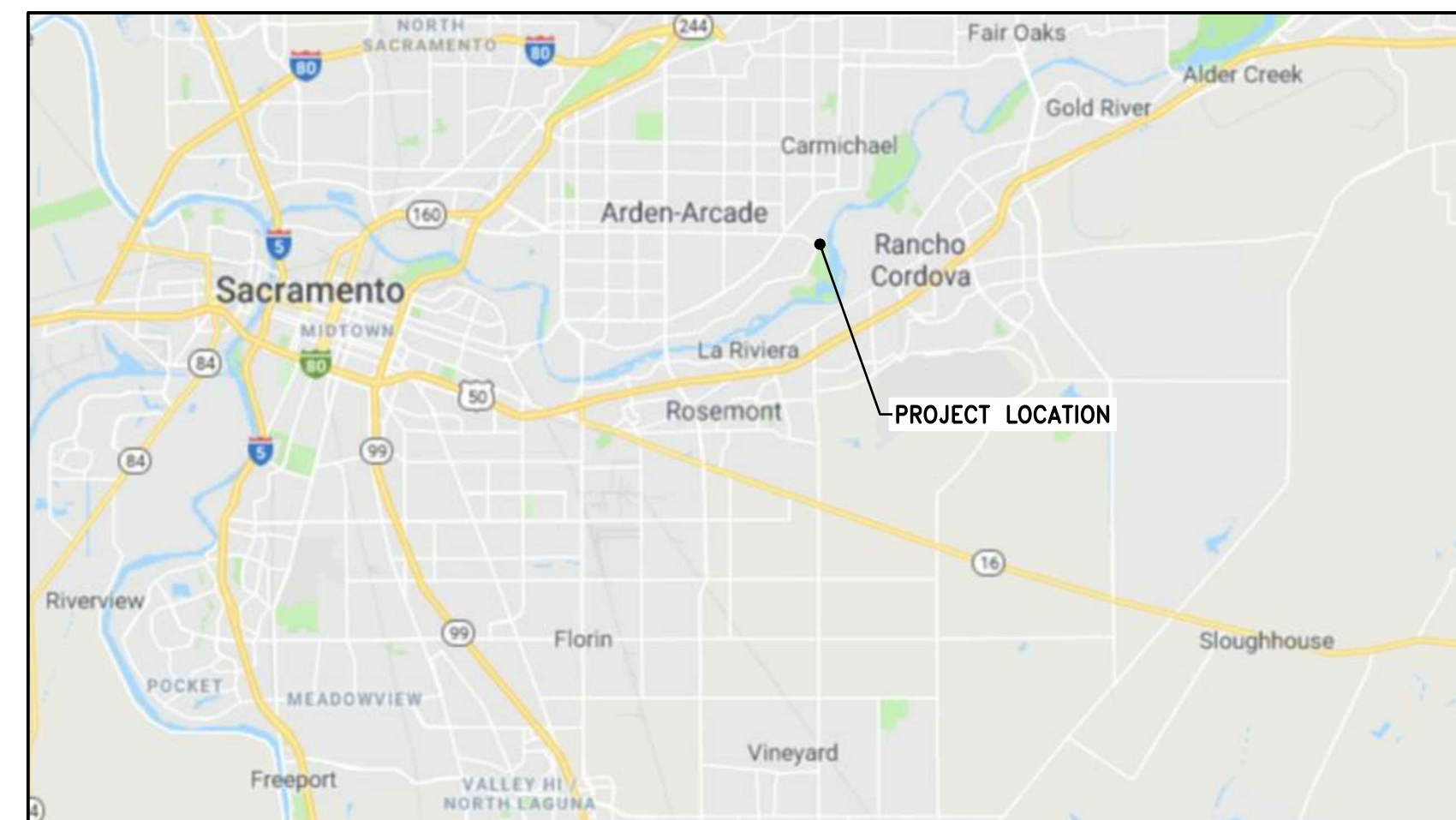
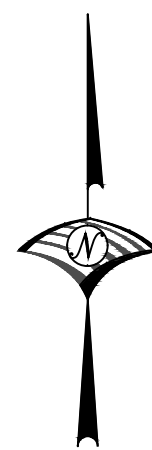
MRS. FRIEDMAN  
1620 McCLAREN DRIVE, CARMICHAEL, CALIFORNIA 95608  
DR. BASS  
1622 McCLAREN DRIVE, CARMICHEAL, CALIFORNIA 95608

**SHEET INDEX**

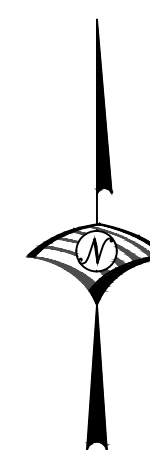
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1	G-001	TITLE SHEET AND SHEET INDEX
2	G-002	GENERAL NOTES AND SPECIFICATIONS
3	C-101	GENERAL PLAN
4	C-102	SITE ACCESS PHOTOS
5	C-103	EXISTING SITE PHOTOS
6	C-201	CROSS SECTIONS STA 0+50 TO 0+80
7	C-202	CROSS SECTIONS STA 0+90 TO 1+20
8	C-203	CROSS SECTIONS STA 1+30 TO 1+60
9	C-204	CROSS SECTIONS STA 1+70 TO 2+00
10	C-205	CROSS SECTIONS STA 2+10 TO 2+40
11	C-301	TYPICAL SECTIONS (1 OF 2)
12	C-302	TYPICAL SECTIONS (2 OF 2)
13	C-303	ALTERNATIVE CONCRETE RAMP



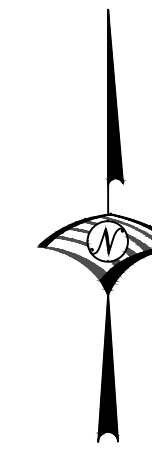
VICINITY MAP  
1"=200'



LOCATION MAP  
NOT TO SCALE

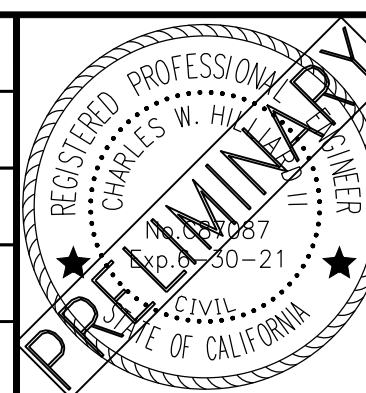


SITE MAP  
SCALE: 1"=40'



REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:  
C. HILLIARD  
DRAWN BY:  
J. KAUP  
CHECKED BY:  
J. KORS  
IN CHARGE:  
C. HILLIARD  
DATE:  
XX/XX/XXXX



**WOOD RODGERS**  
DEVELOPING • INNOVATIVE • DESIGN • SOLUTIONS  
3301 C STREET, BLDG. 100-B, SACRAMENTO, CA 95816  
PHONE: (916) 341-7769 FAX: (916) 341-7767

SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

**FRIEDMAN & BASS PROPERTIES**  
**REVTMENT REPLACEMENT PROJECT**  
TITLE SHEET

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS	
0" = 1"	
DRAWING NO.	SHEET
G-001	1

**60% DESIGN**

NOTES AND SPECIFICATIONS TO BE ADDED

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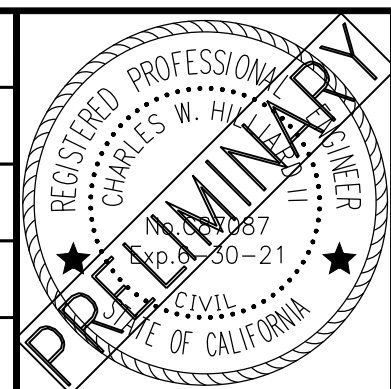
DESIGNED BY:  
C. HILLIARD

DRAWN BY:  
J. KAUP

CHECKED BY:  
J. KORS

IN CHARGE:  
C. HILLIARD

DATE:  
XX/XX/XXXX



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SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

**FRIEDMAN & BASS PROPERTIES**

**REVETMENT REPLACEMENT PROJECT**

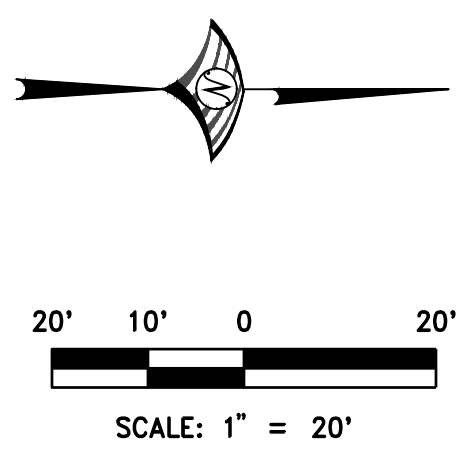
**GENERAL NOTES AND SPECIFICATIONS**

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DESIGNED BY:  
C. HILLIARD  
DRAWN BY:  
J. KAUP  
CHECKED BY:  
J. KORS  
IN CHARGE:  
C. HILLIARD  
DATE:  
XX/XX/XXXX



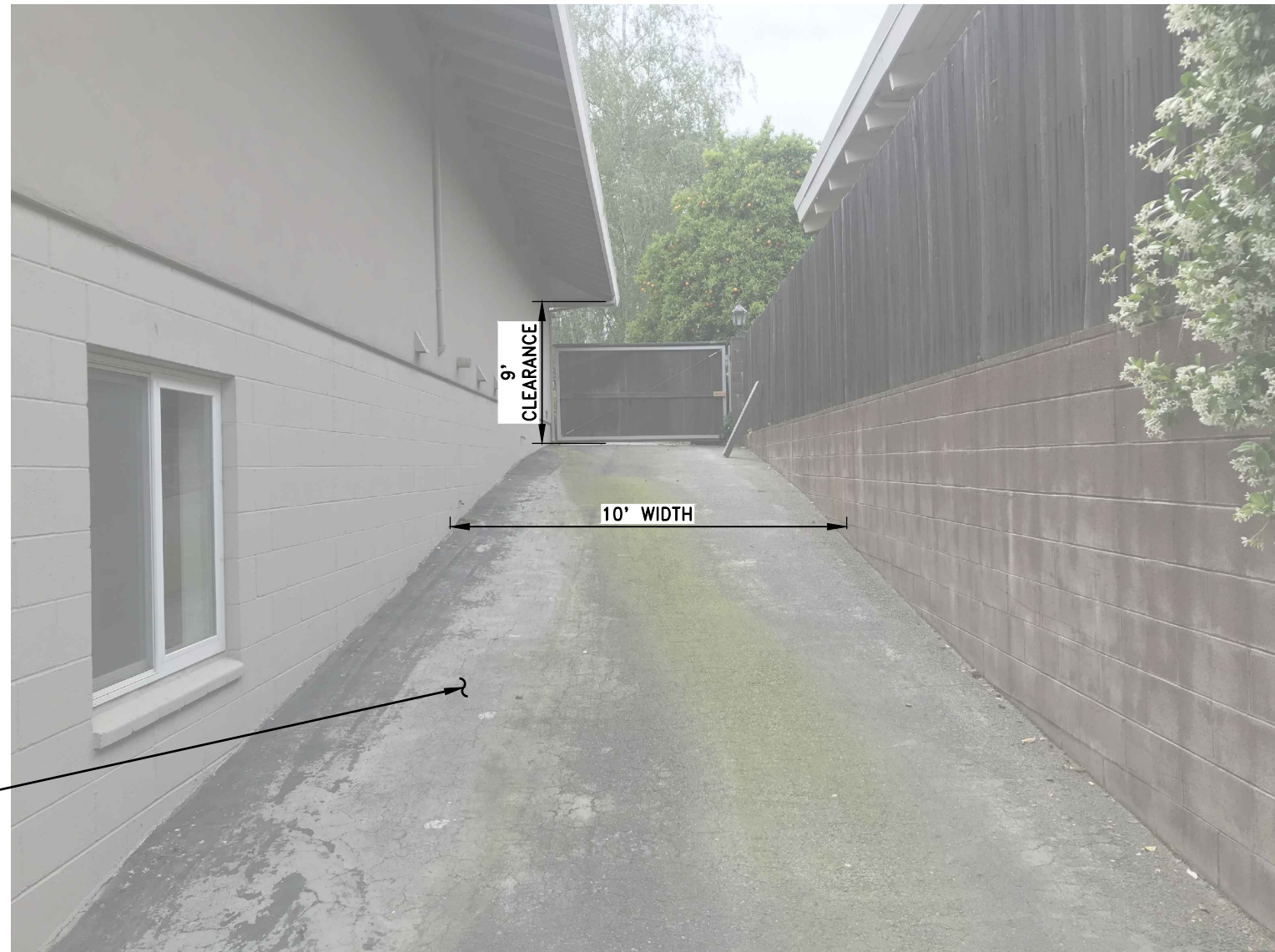
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SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

**FRIEDMAN & BASS PROPERTIES**  
**REVETMENT REPLACEMENT PROJECT**  
**GENERAL PLAN**

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<b>C-101</b>	<b>3</b>

**60% DESIGN**



EXISTING BASS PROPERTY BOAT RAMP TO BE USED FOR ALL CONSTRUCTION ACCESS

**SITE PHOTO 1**



EXISTING BASS PROPERTY BOAT RAMP TO BE USED FOR ALL CONSTRUCTION ACCESS

AMERICAN RIVER

**SITE PHOTO 2**



BASS PROPERTY DRIVEWAY (PAVERS TO BE PROTECTED IN PLACE)

McCLAREN DRIVE

**SITE PHOTO 3**



BASS PROPERTY DRIVEWAY (PAVERS TO BE PROTECTED IN PLACE)

BOAT RAMP LOCATED ON SIDE OF BASS RESIDENCE

**SITE PHOTO 4**

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:  
C. HILLIARD  
DRAWN BY:  
J. KAUP  
CHECKED BY:  
J. KORS  
IN CHARGE:  
C. HILLIARD  
DATE:  
XX/XX/XXXX



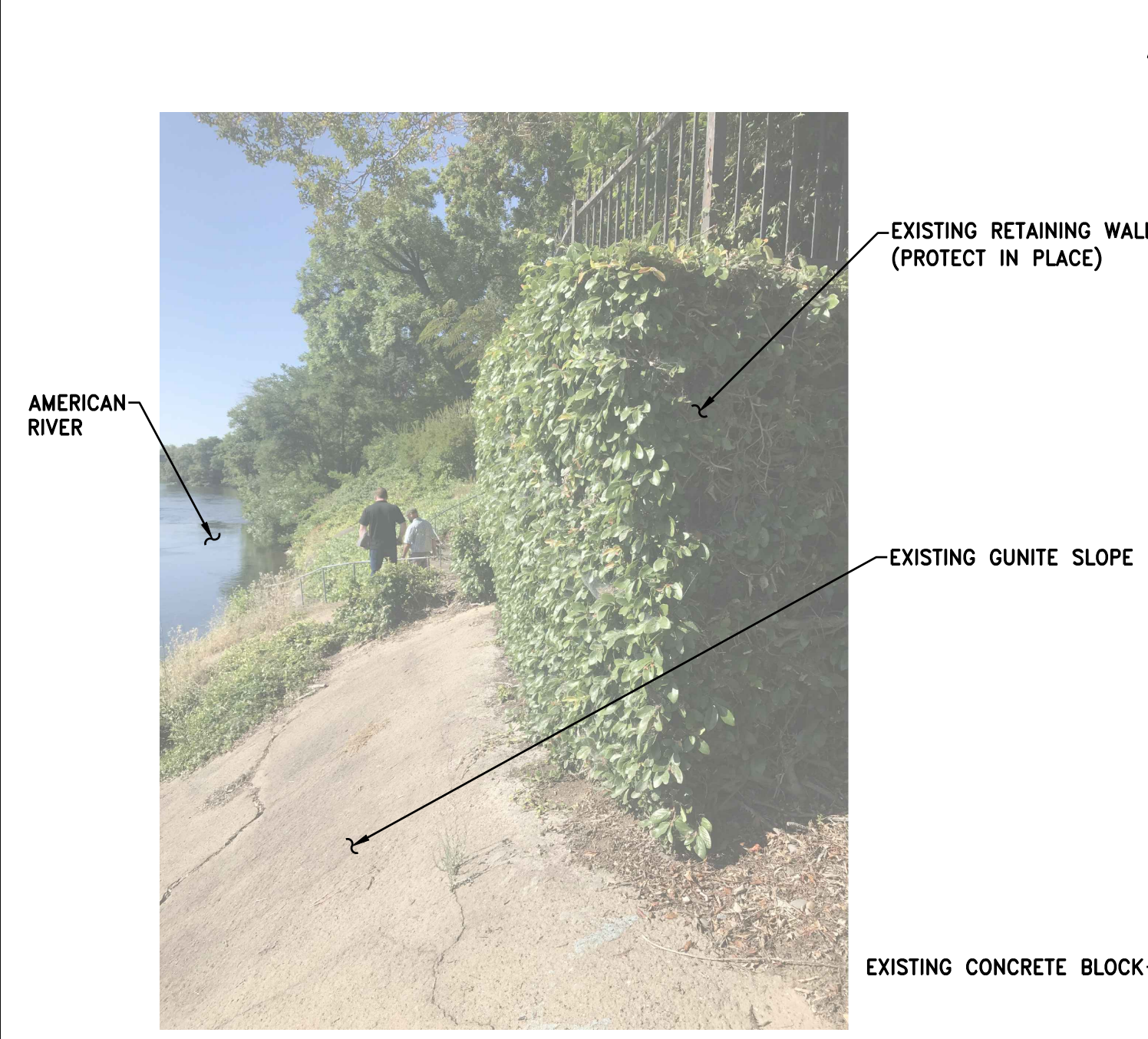
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SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

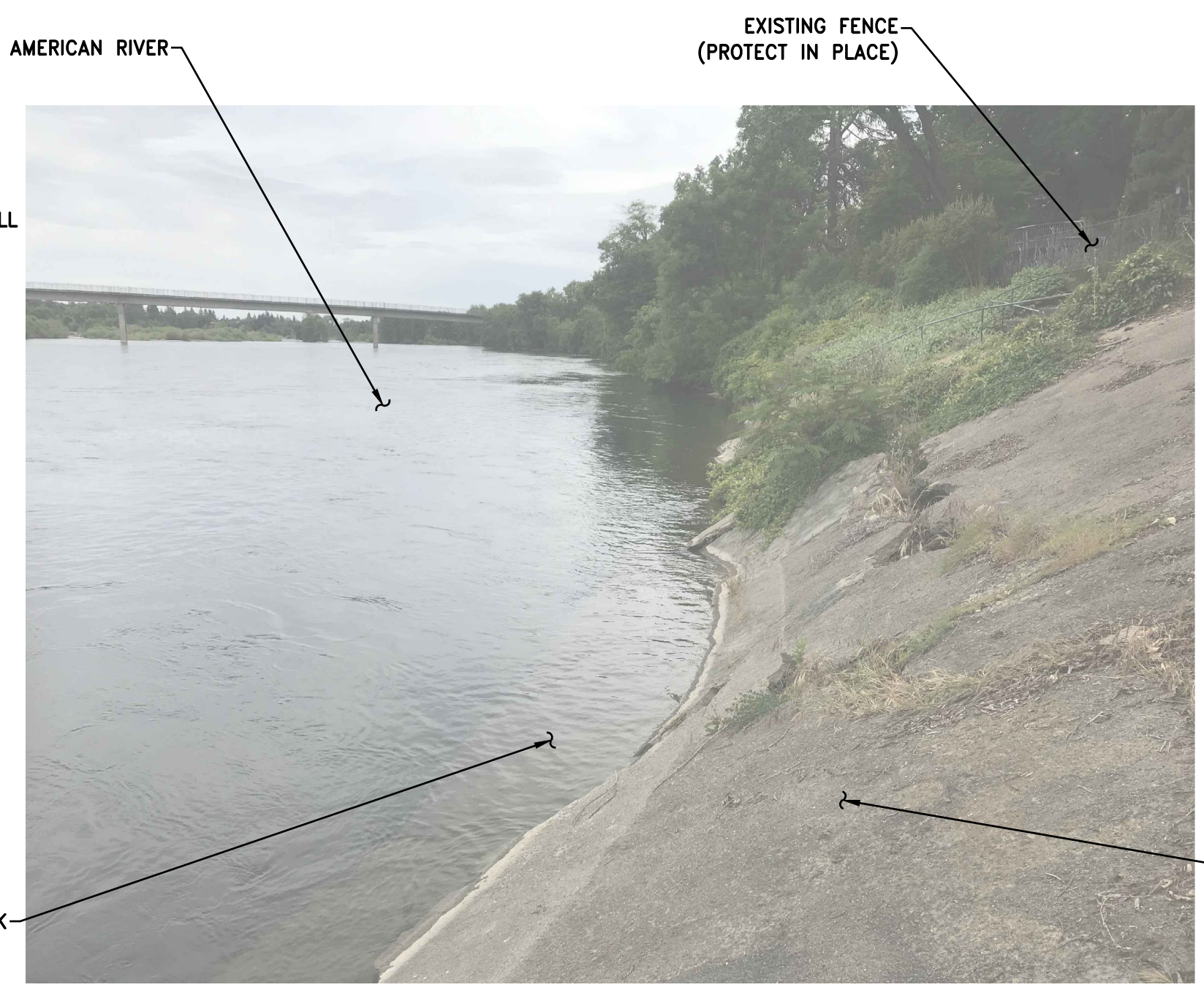
**FRIEDMAN & BASS PROPERTIES**  
**REVTMENT REPLACEMENT PROJECT**  
**SITE ACCESS PHOTOS**

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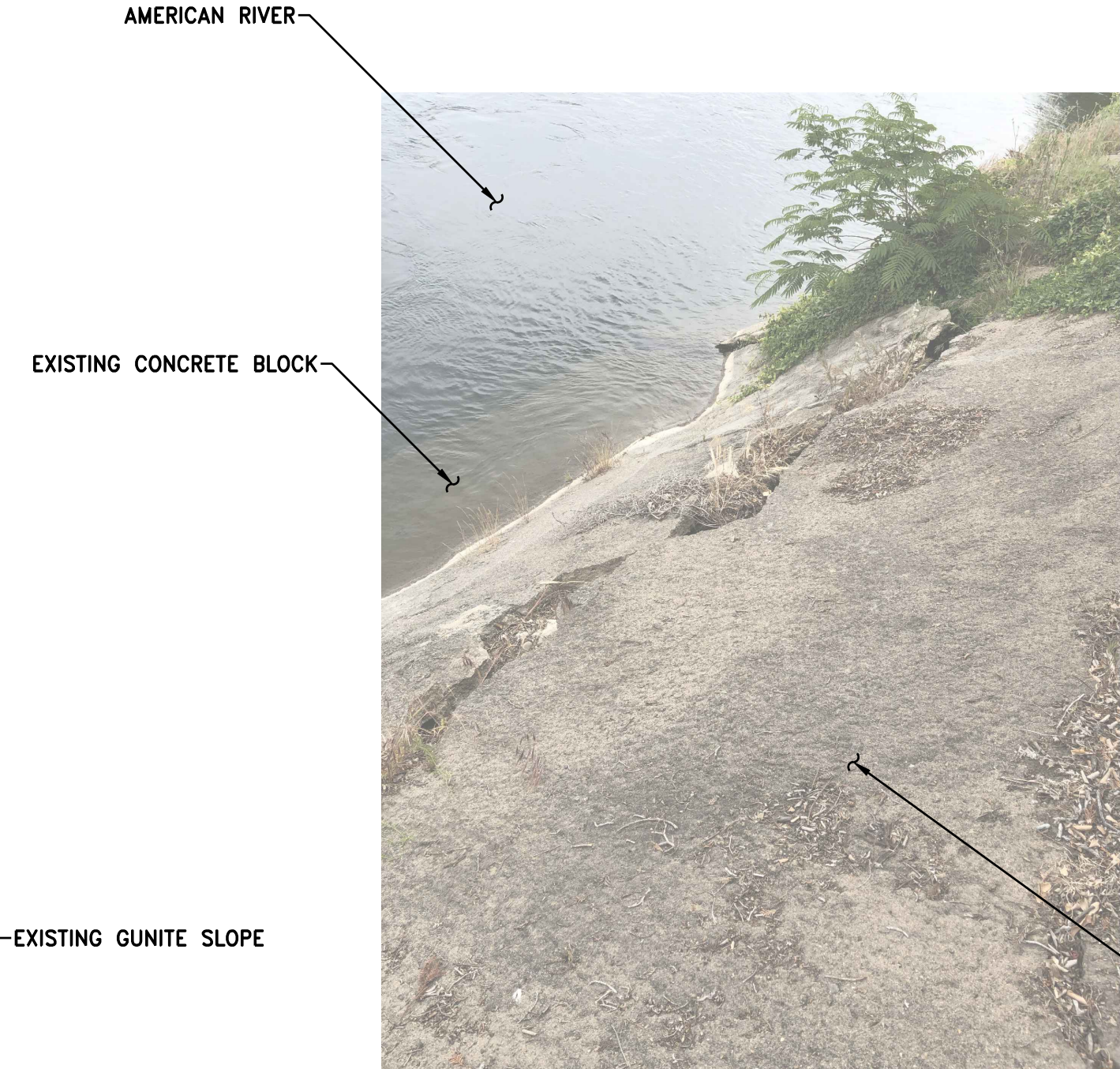
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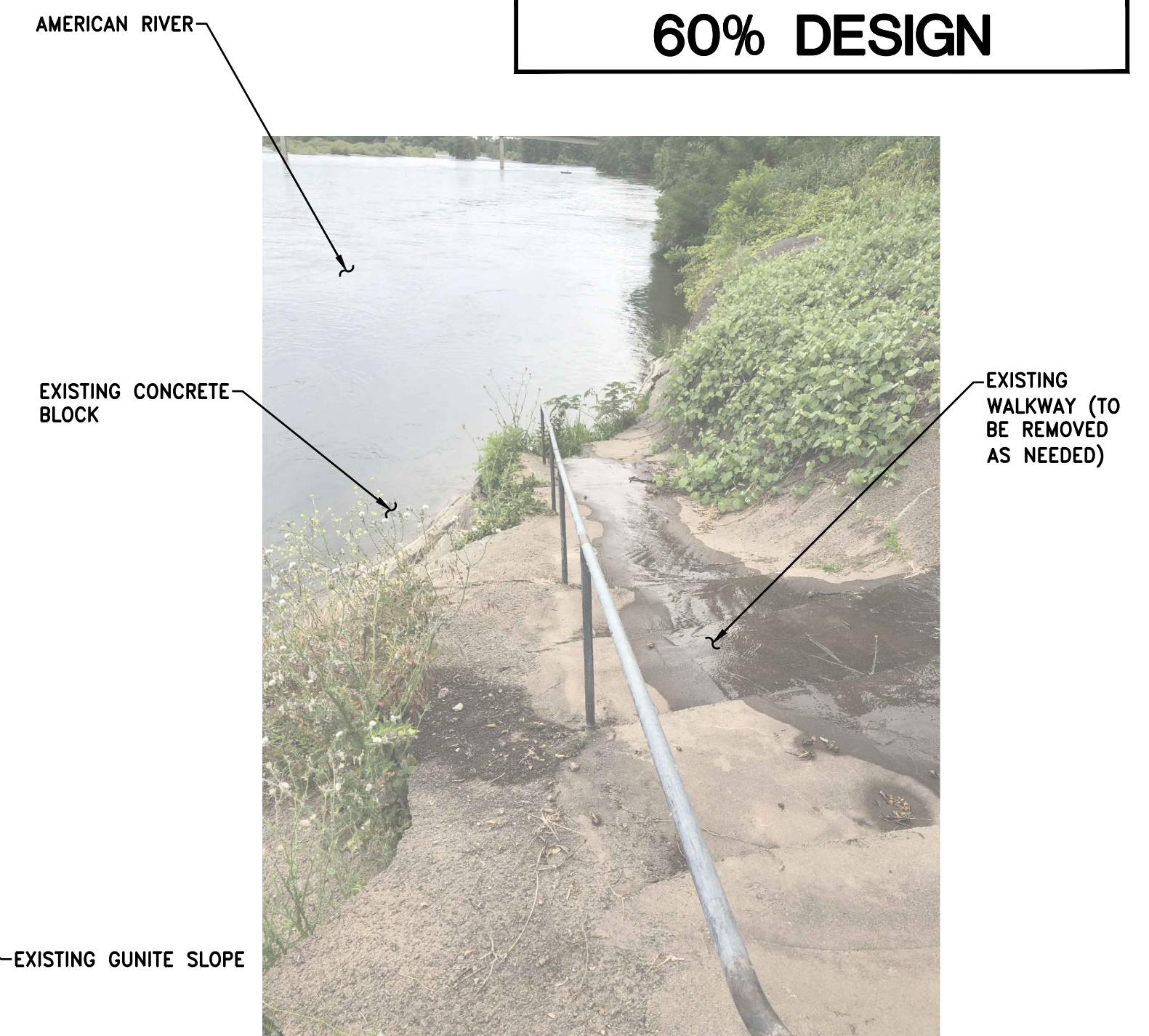
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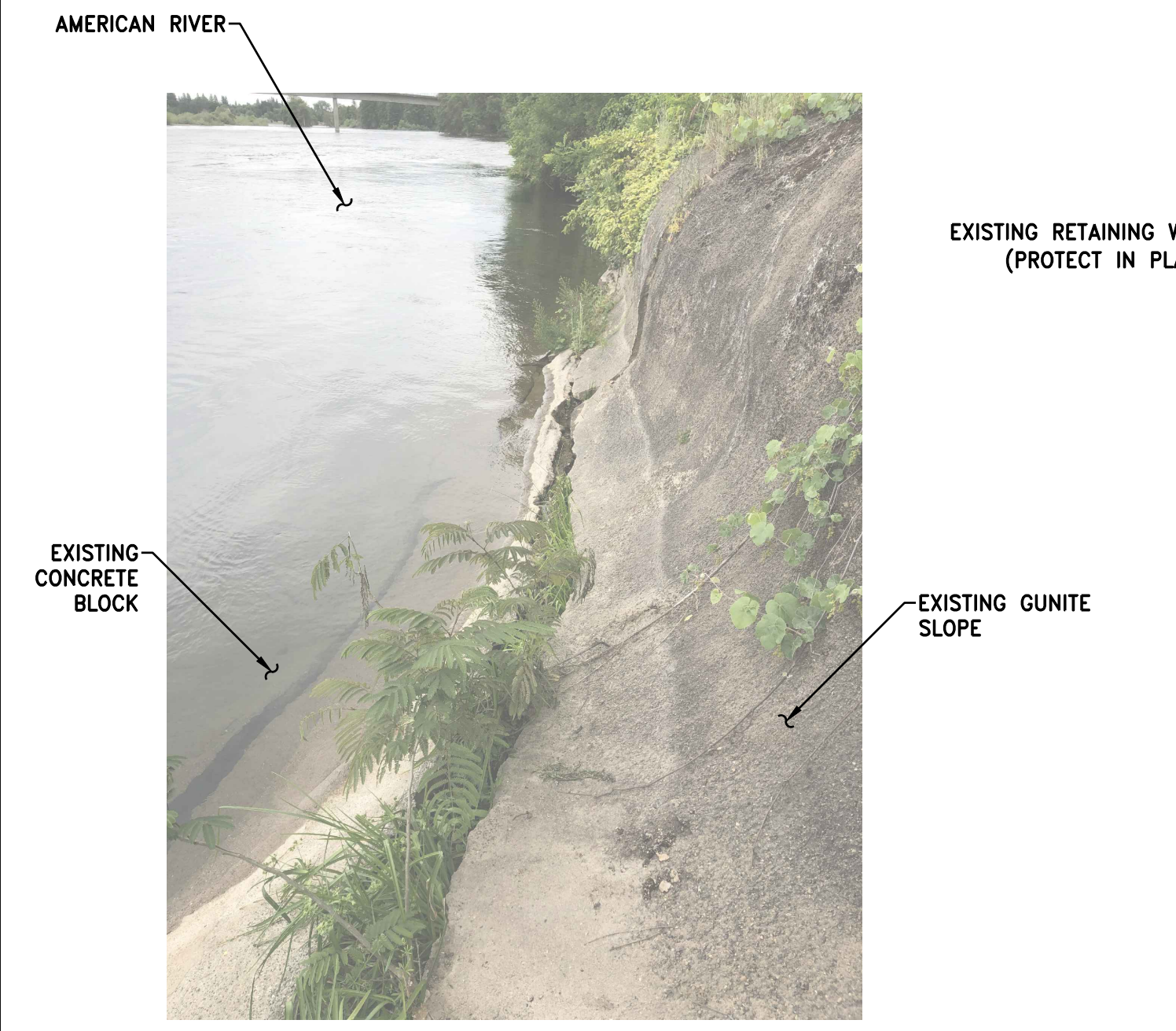
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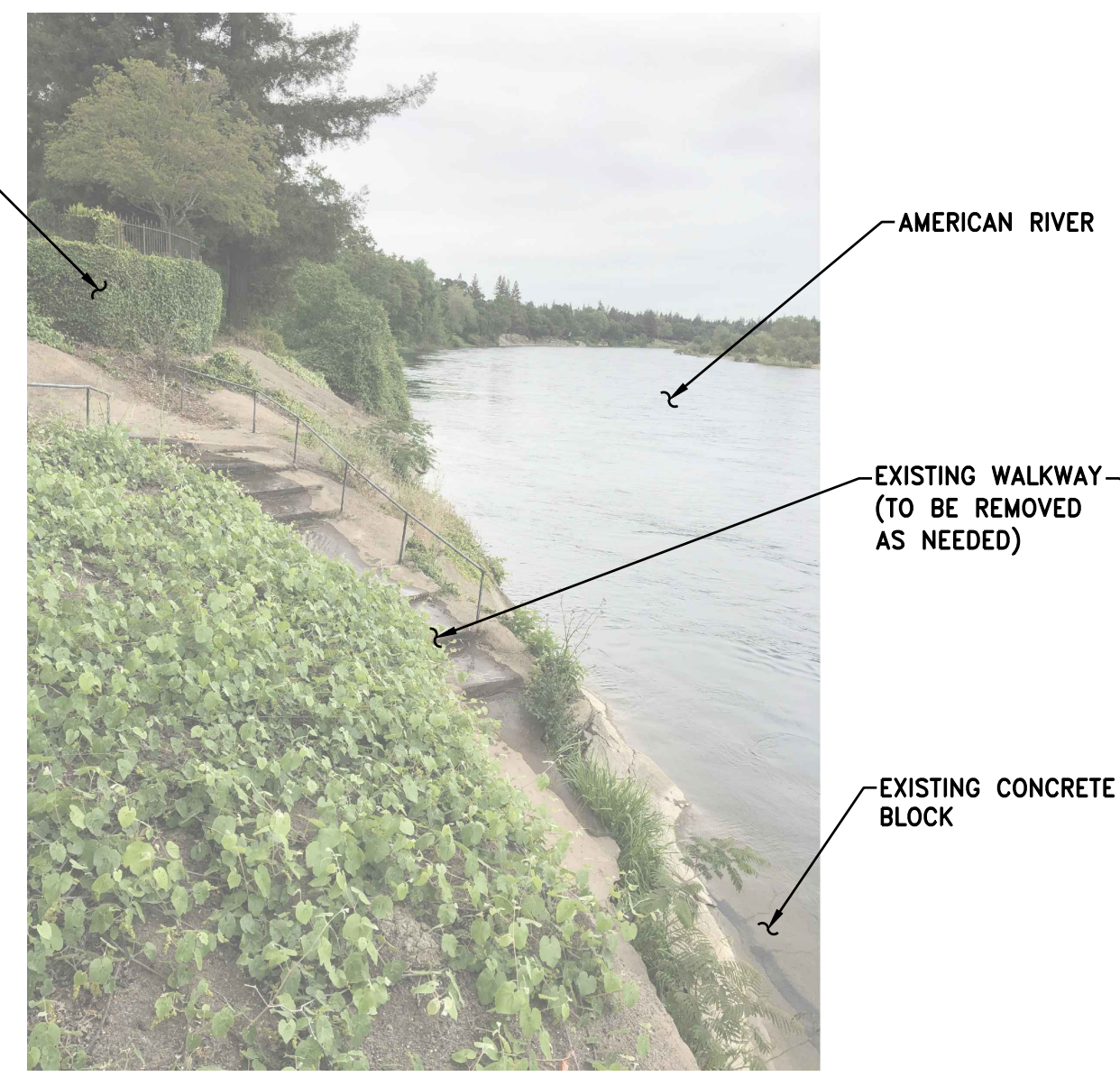
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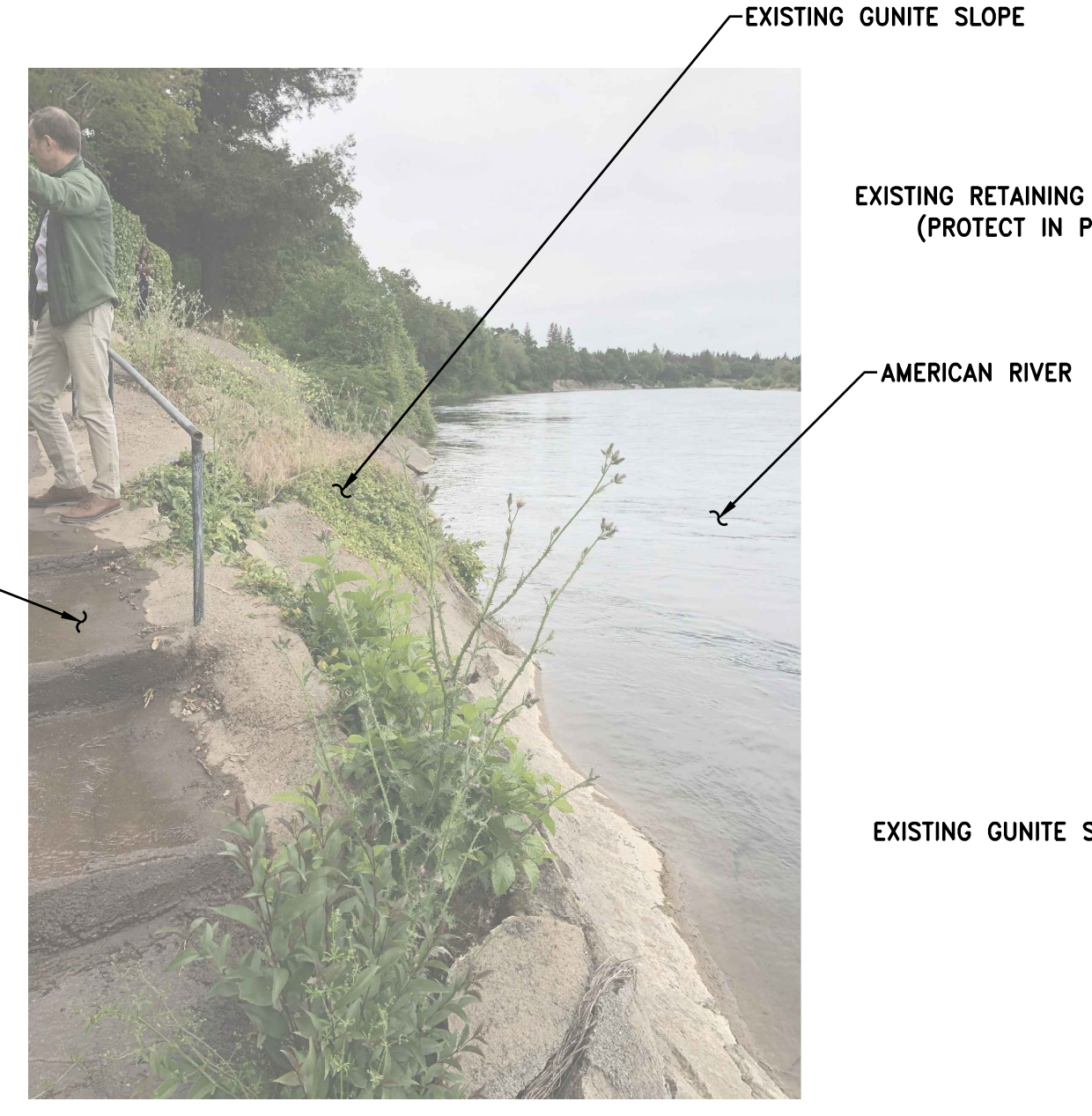
**SITE PHOTO 8**



**SITE PHOTO 9**



**SITE PHOTO 10**



**SITE PHOTO 11**



**SITE PHOTO 12**

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:  
C. HILLIARD  
DRAWN BY:  
J. KAUP  
CHECKED BY:  
J. KORS  
IN CHARGE:  
C. HILLIARD  
DATE:  
XX/XX/XXXX

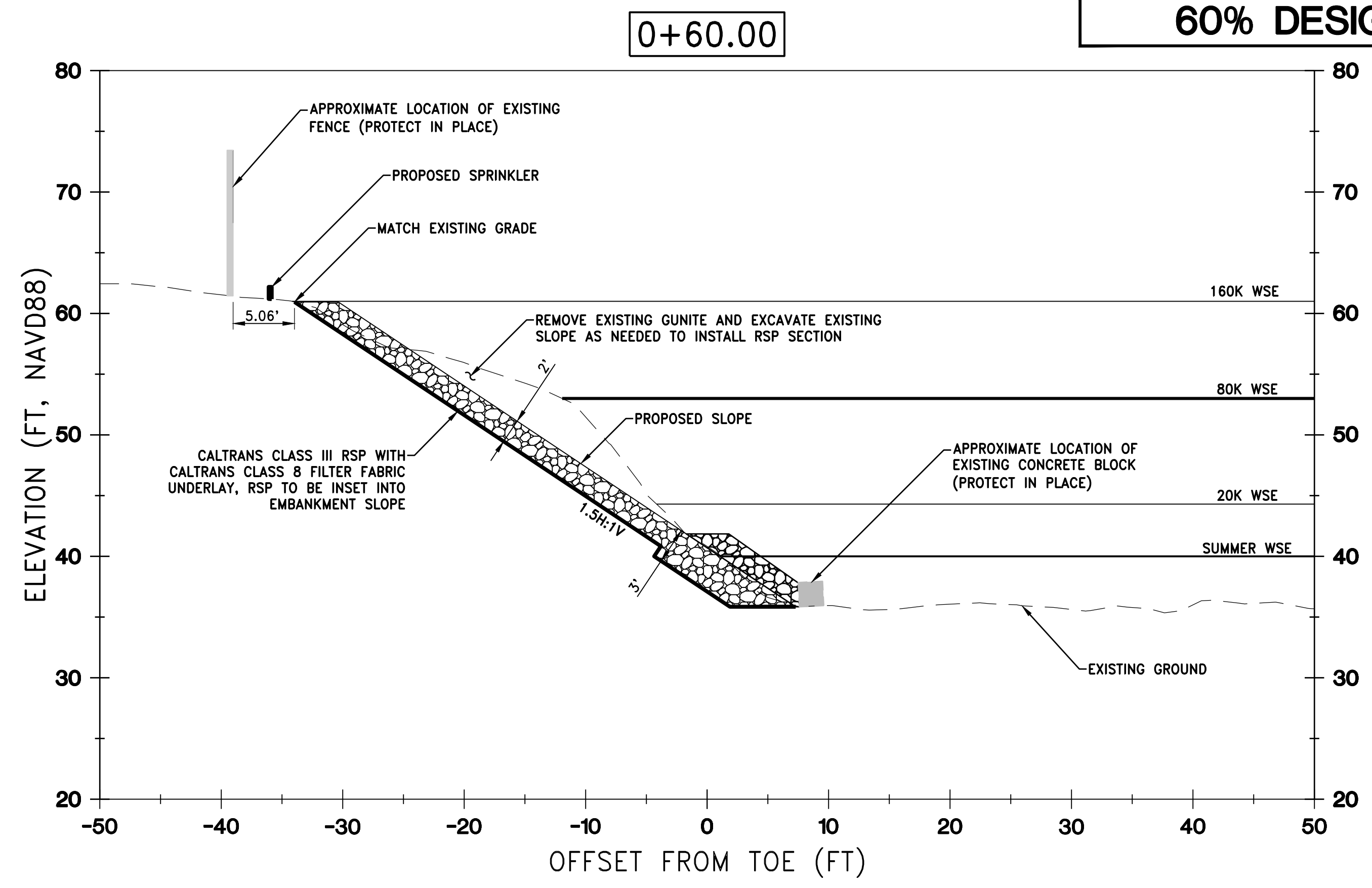
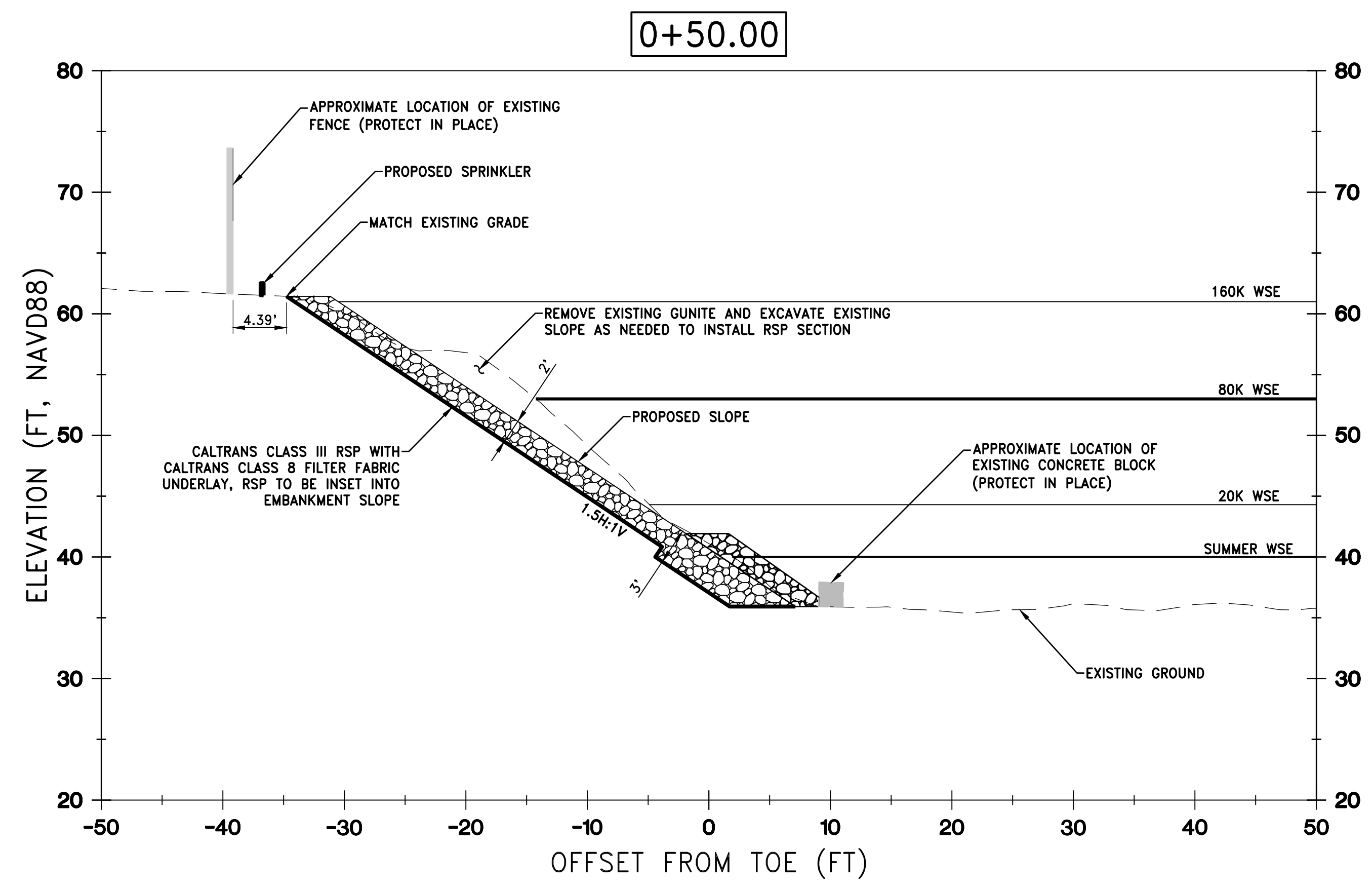


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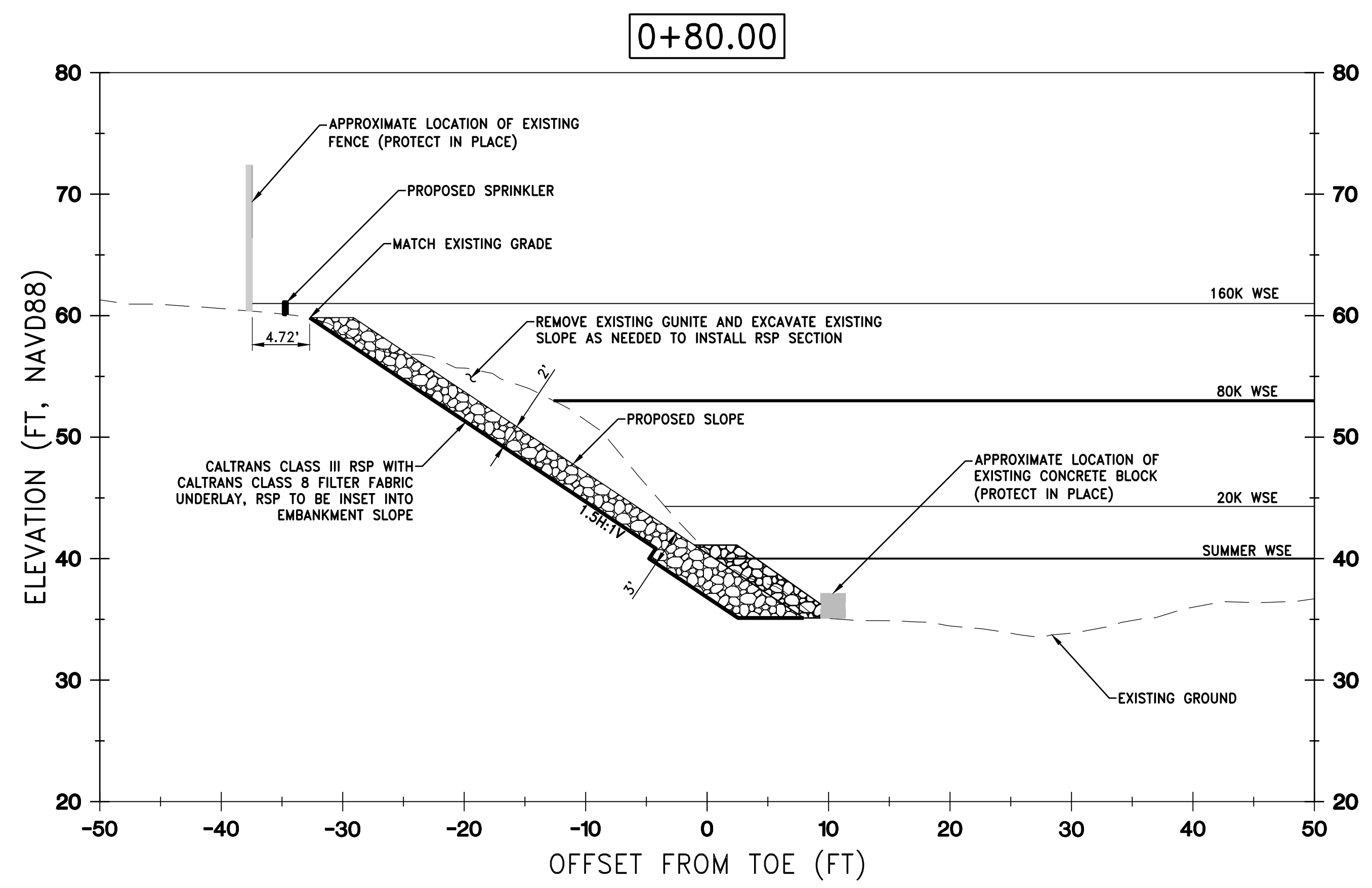
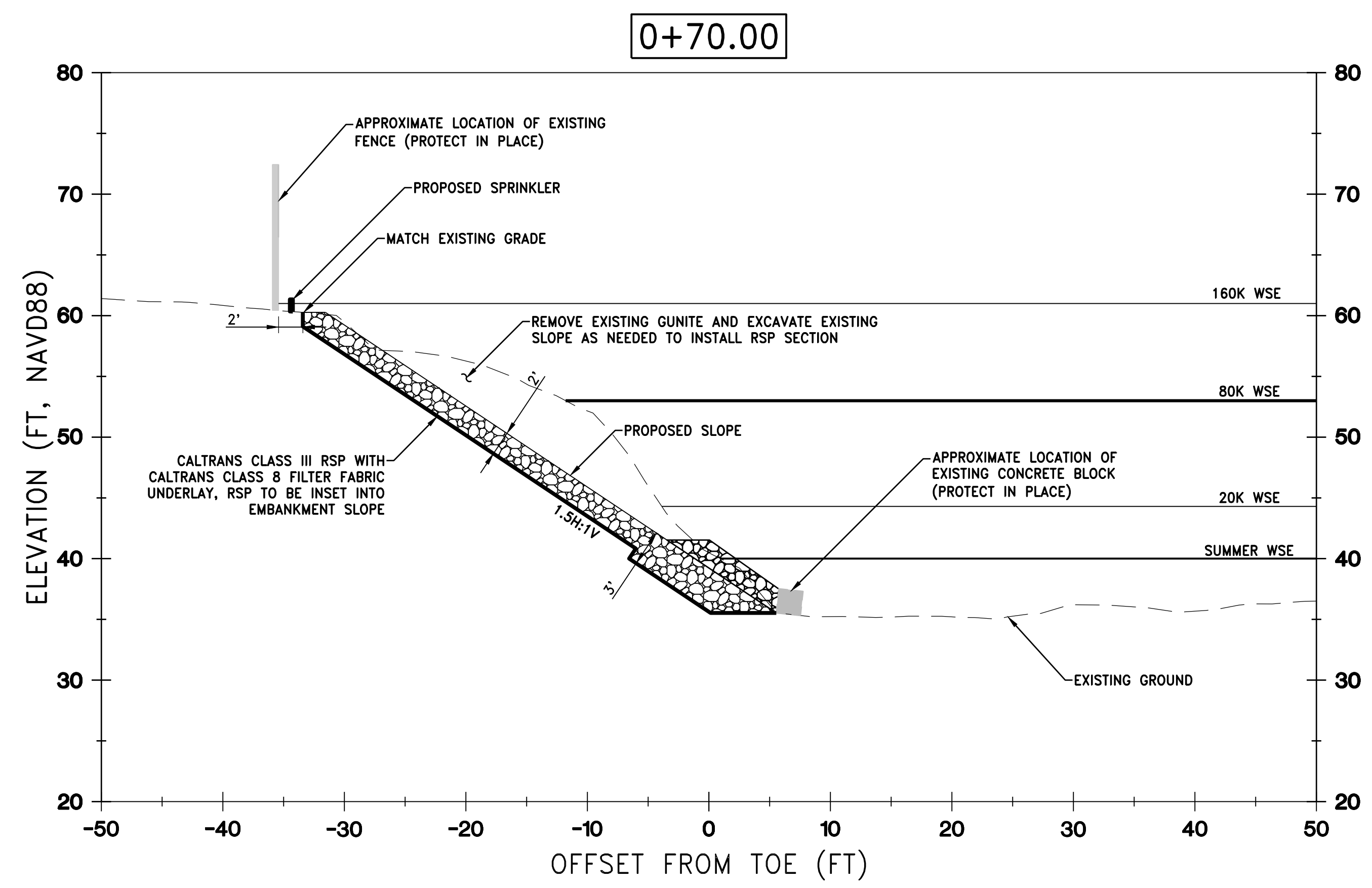
SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

**FRIEDMAN & BASS PROPERTIES**  
**REVTMENT REPLACEMENT PROJECT**  
**EXISTING SITE PHOTOS**

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS	
0" = 1"	
DRAWING NO. <b>C-103</b>	SHEET <b>5</b>



**60% DESIGN**



REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:  
C. HILLIARD

DRAWN BY:  
J. KAUP

CHECKED BY:  
J. KORS

IN CHARGE:  
C. HILLIARD

DATE:  
XX/XX/XXXX

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SUBMITTED \_\_\_\_\_

APPROVED \_\_\_\_\_



**FRIEDMAN & BASS PROPERTIES**

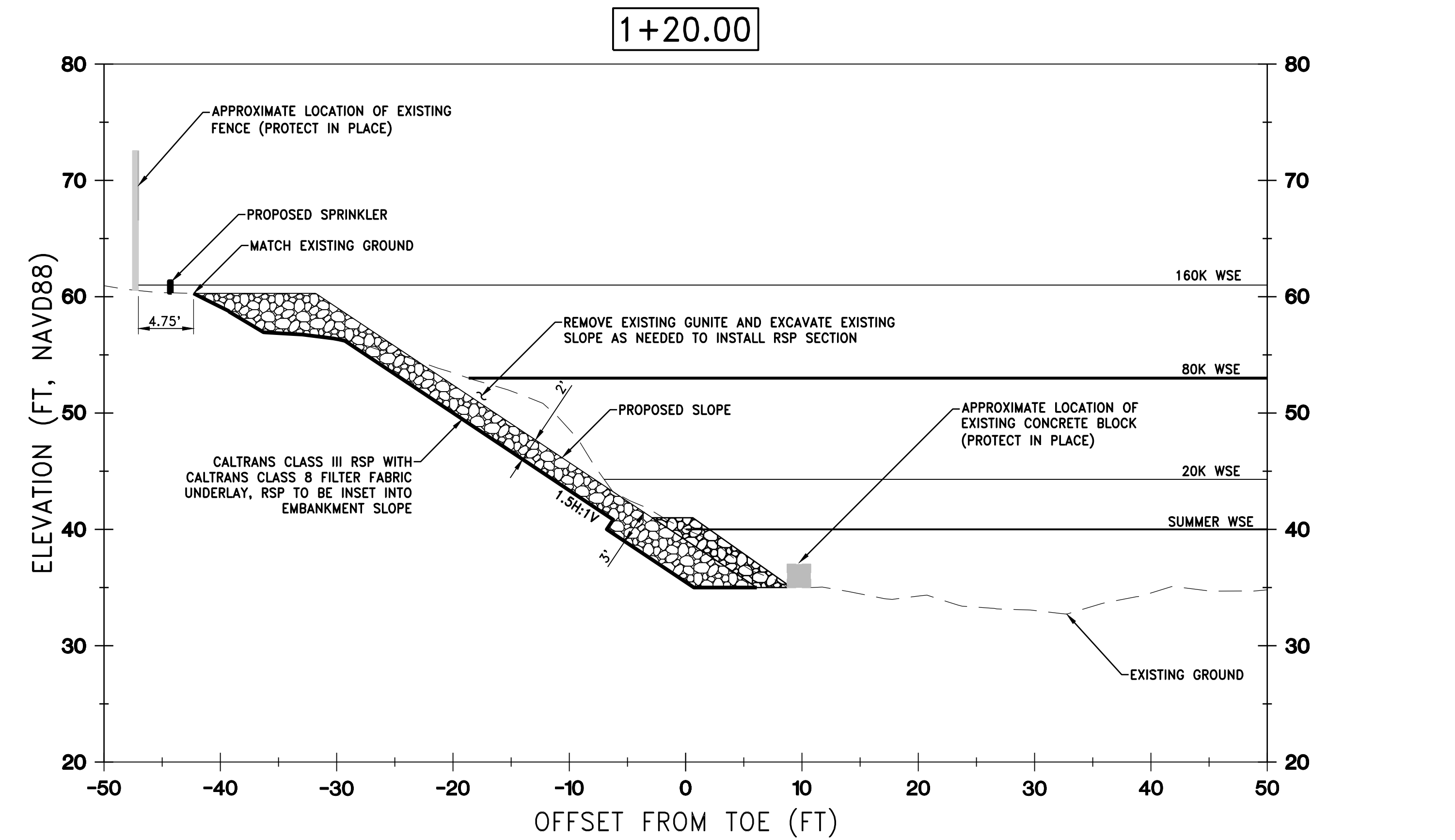
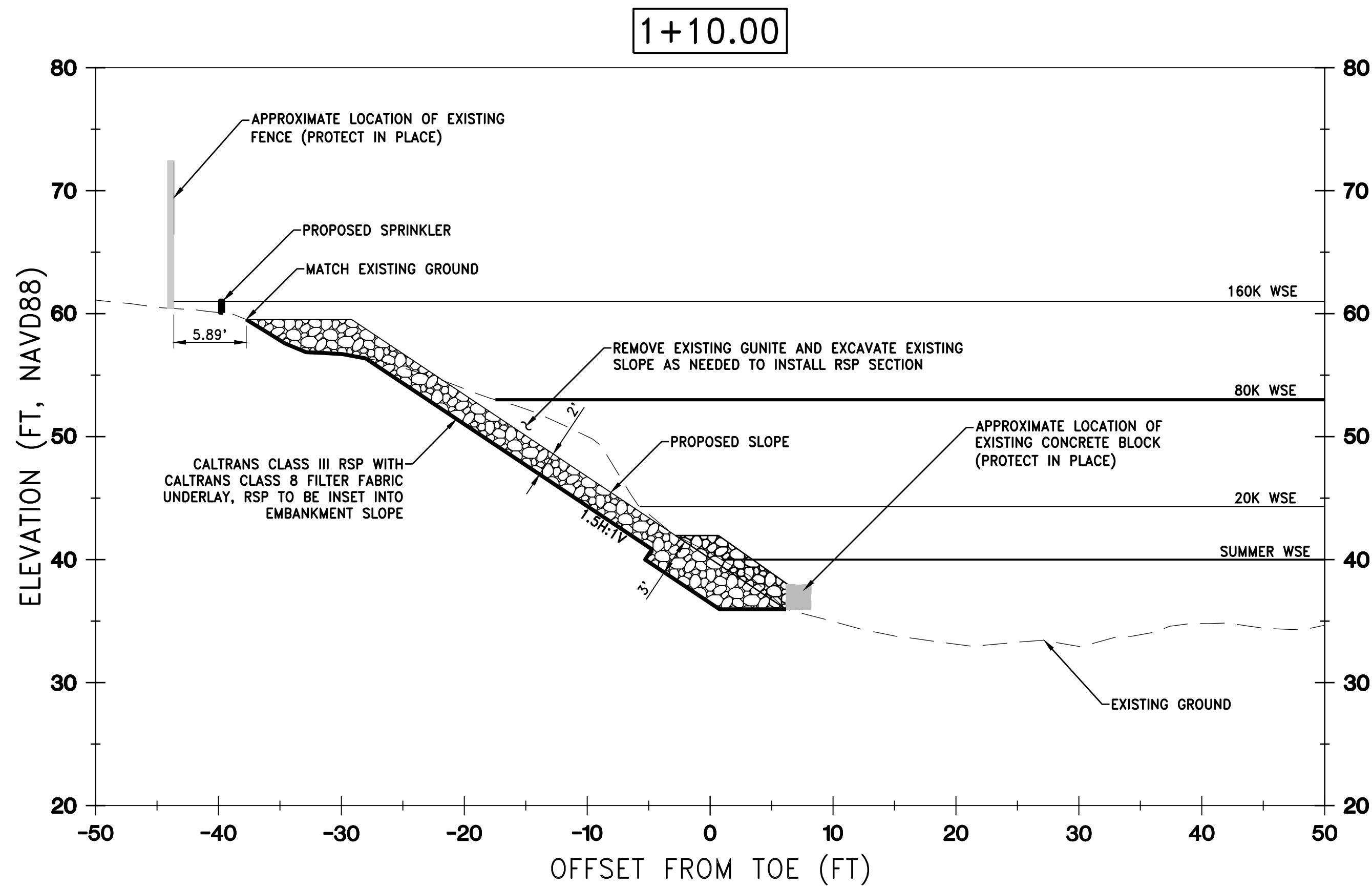
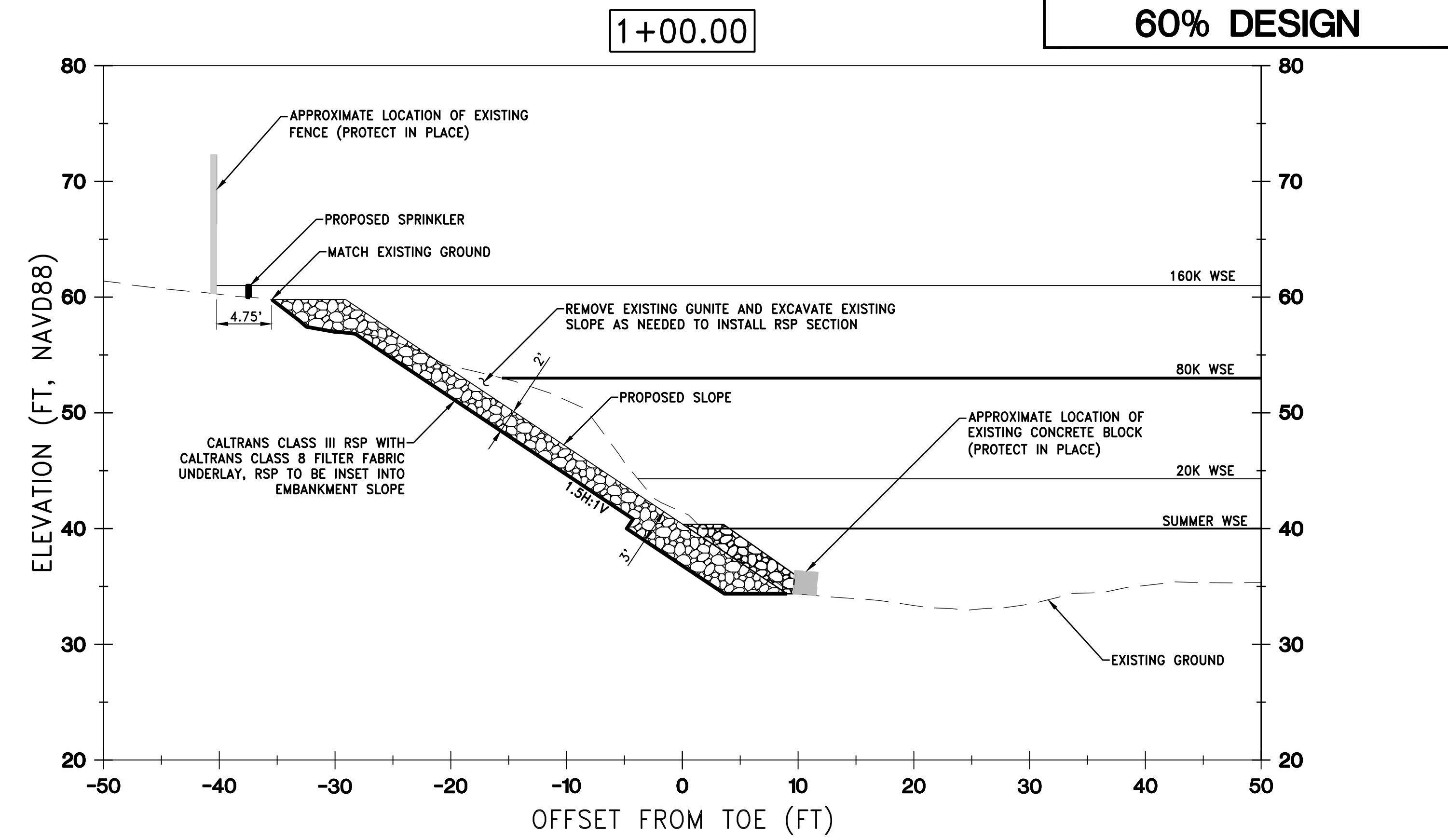
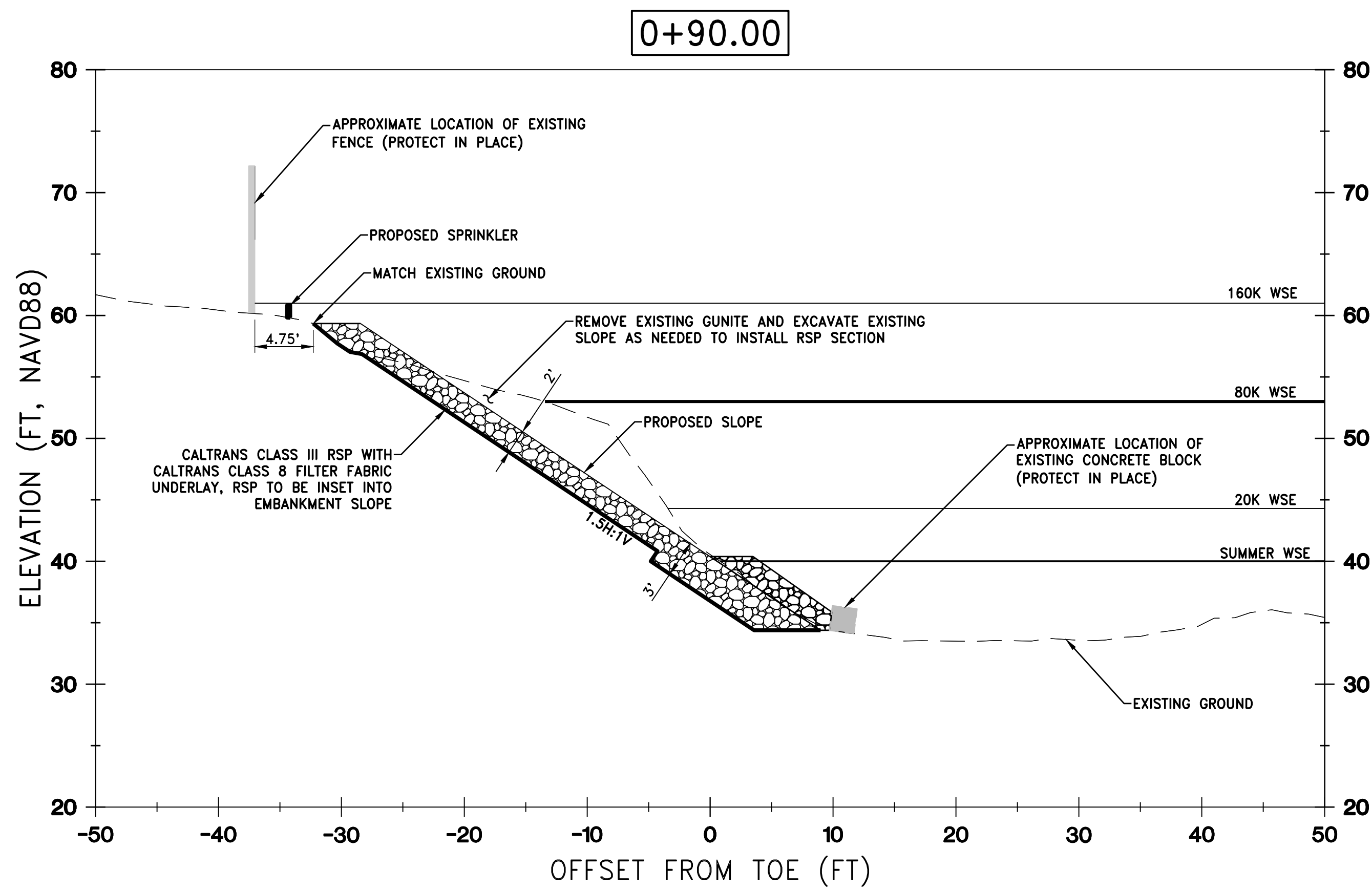
**REVETMENT REPLACEMENT PROJECT**

**CROSS SECTIONS**

**STATION 0+50 TO 0+80**

VERIFY SCALES  
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

DRAWING NO. **C-201** SHEET **6**



REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:  
C. HILLIARD

DRAWN BY:  
J. KAUP

CHECKED BY:  
J. KORS

IN CHARGE:  
C. HILLIARD

DATE:  
XX/XX/XXXX

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3301 C STREET, BLDG. 100-B, SACRAMENTO, CA 95816  
PHONE: (916) 341-7769 FAX: (916) 341-7767

SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

**FRIEDMAN & BASS PROPERTIES**

**REVETMENT REPLACEMENT PROJECT**

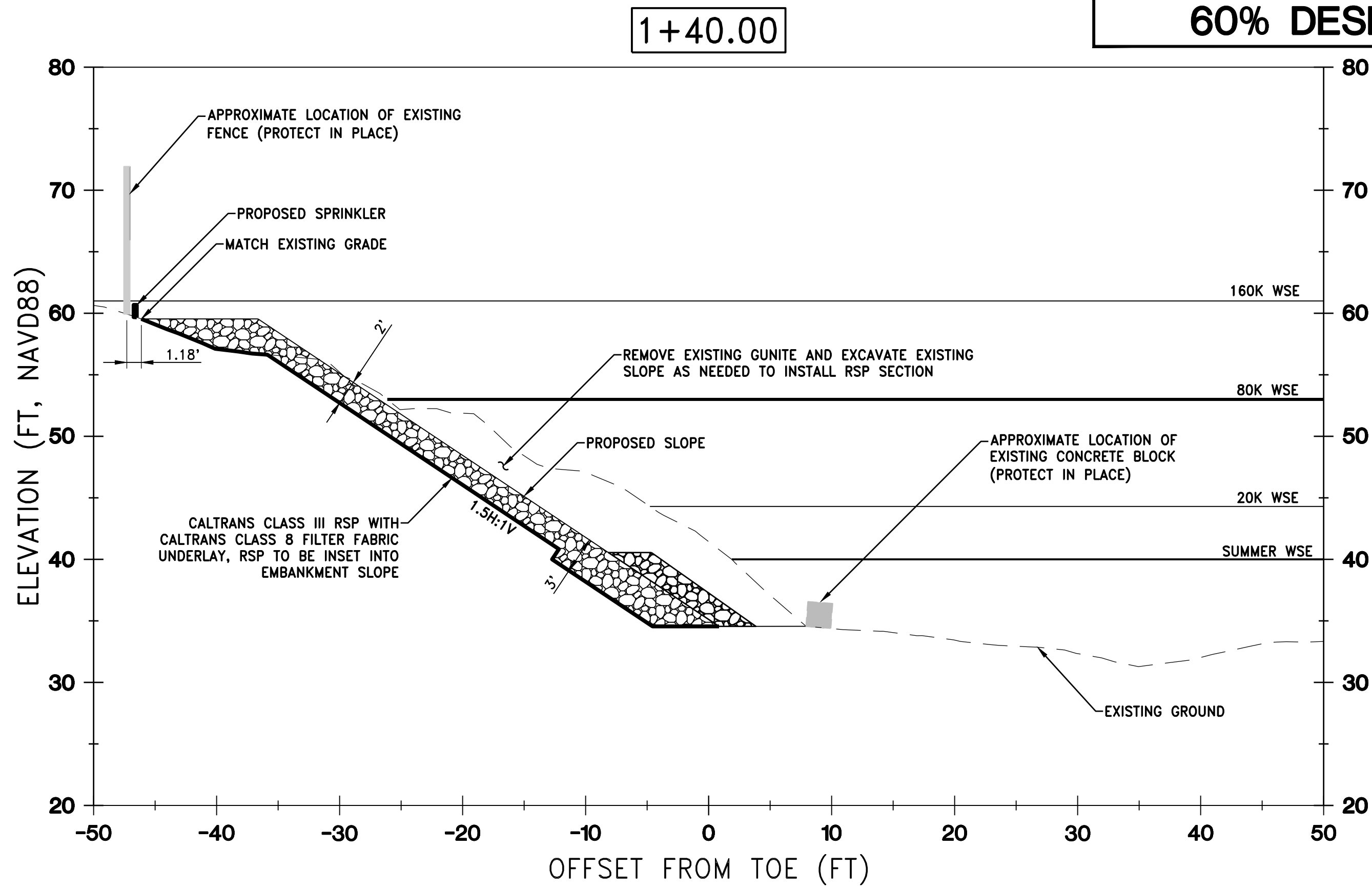
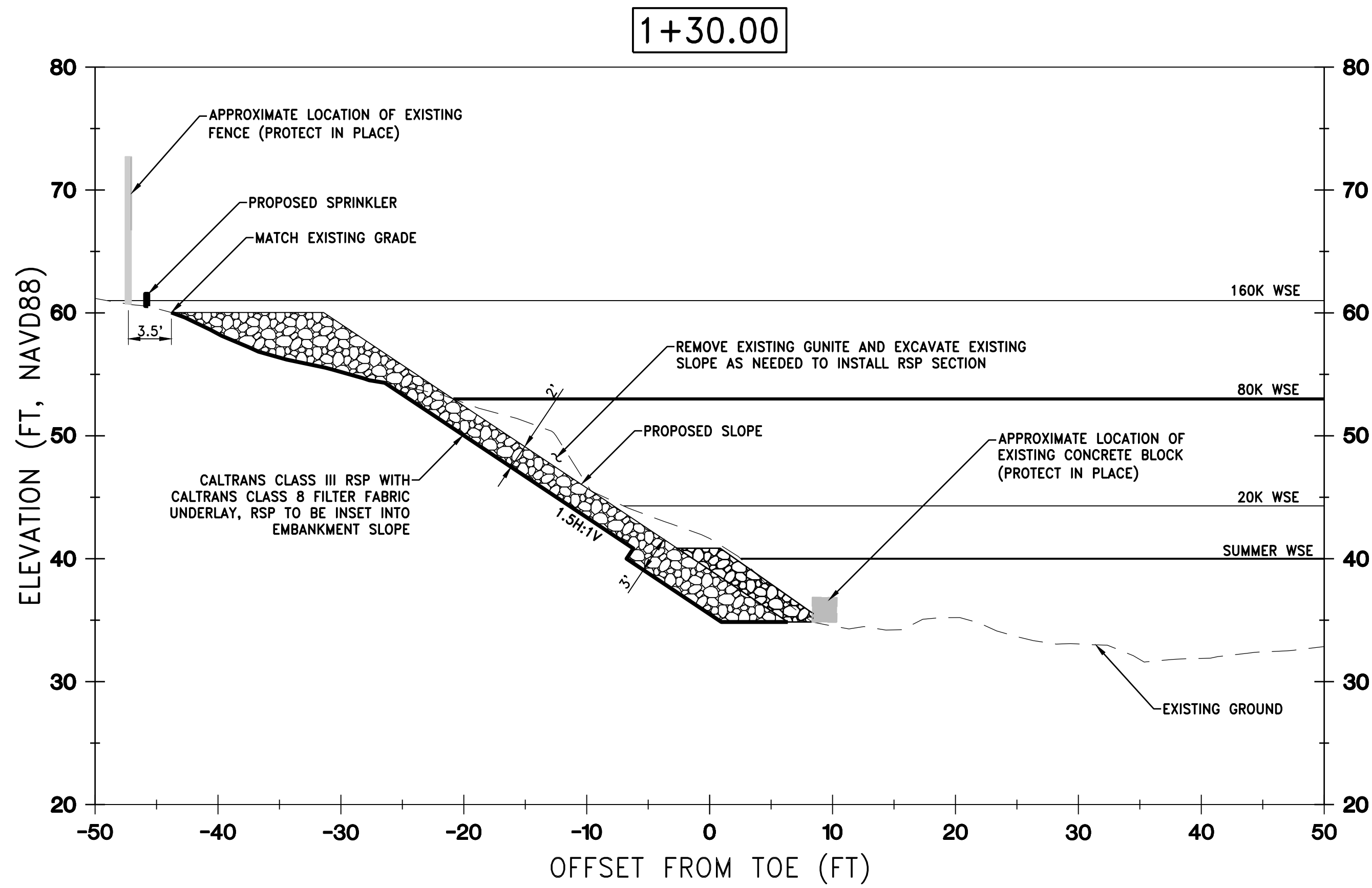
**CROSS SECTIONS**

**STATION 0+90 TO 1+20**

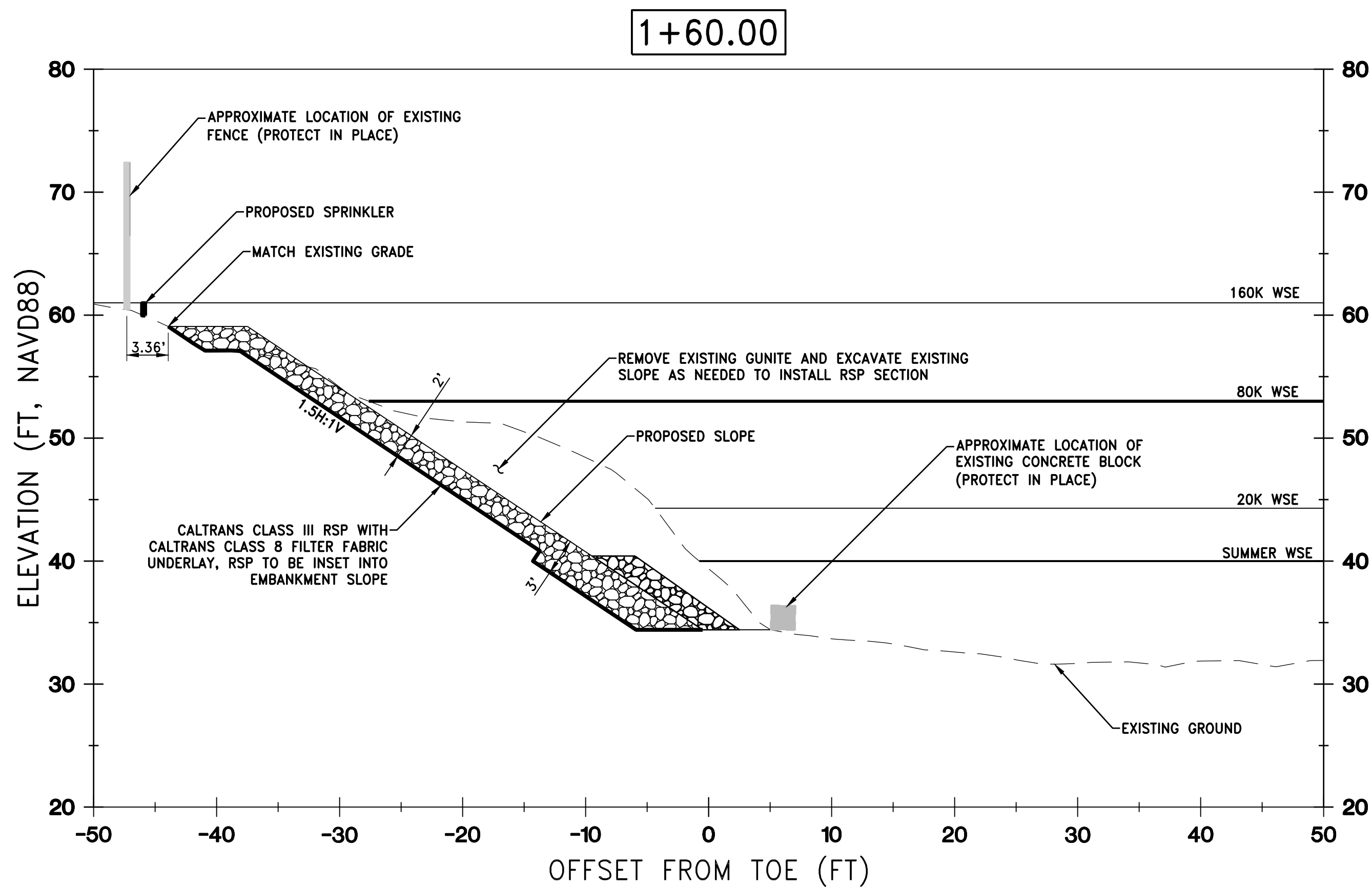
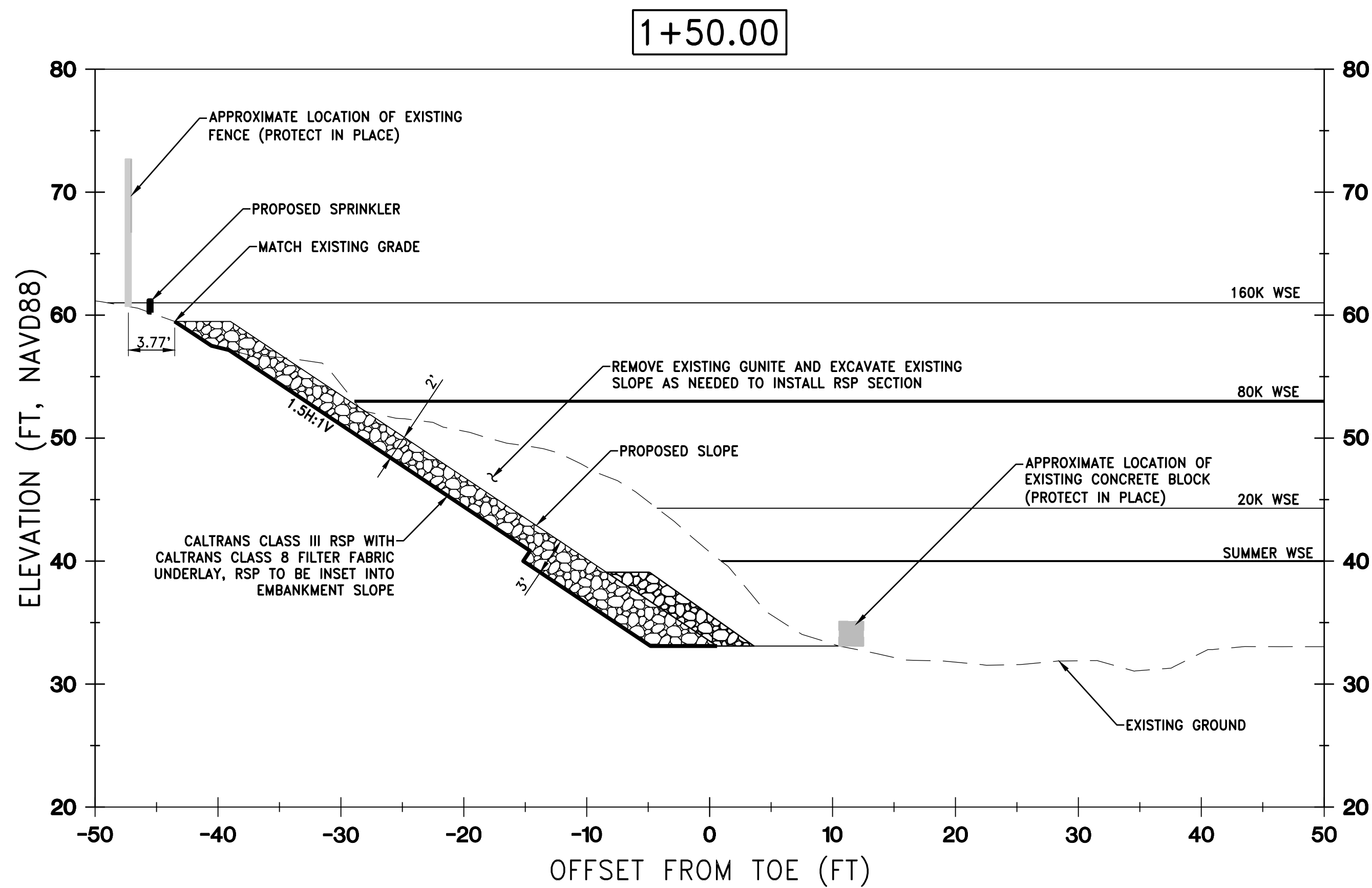
VERIFY SCALES  
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

DRAWING NO. **C-202** SHEET **7**





**60% DESIGN**



REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:  
C. HILLIARD  
DRAWN BY:  
J. KAUP  
CHECKED BY:  
J. KORS  
IN CHARGE:  
C. HILLIARD  
DATE:  
XX/XX/XXXX



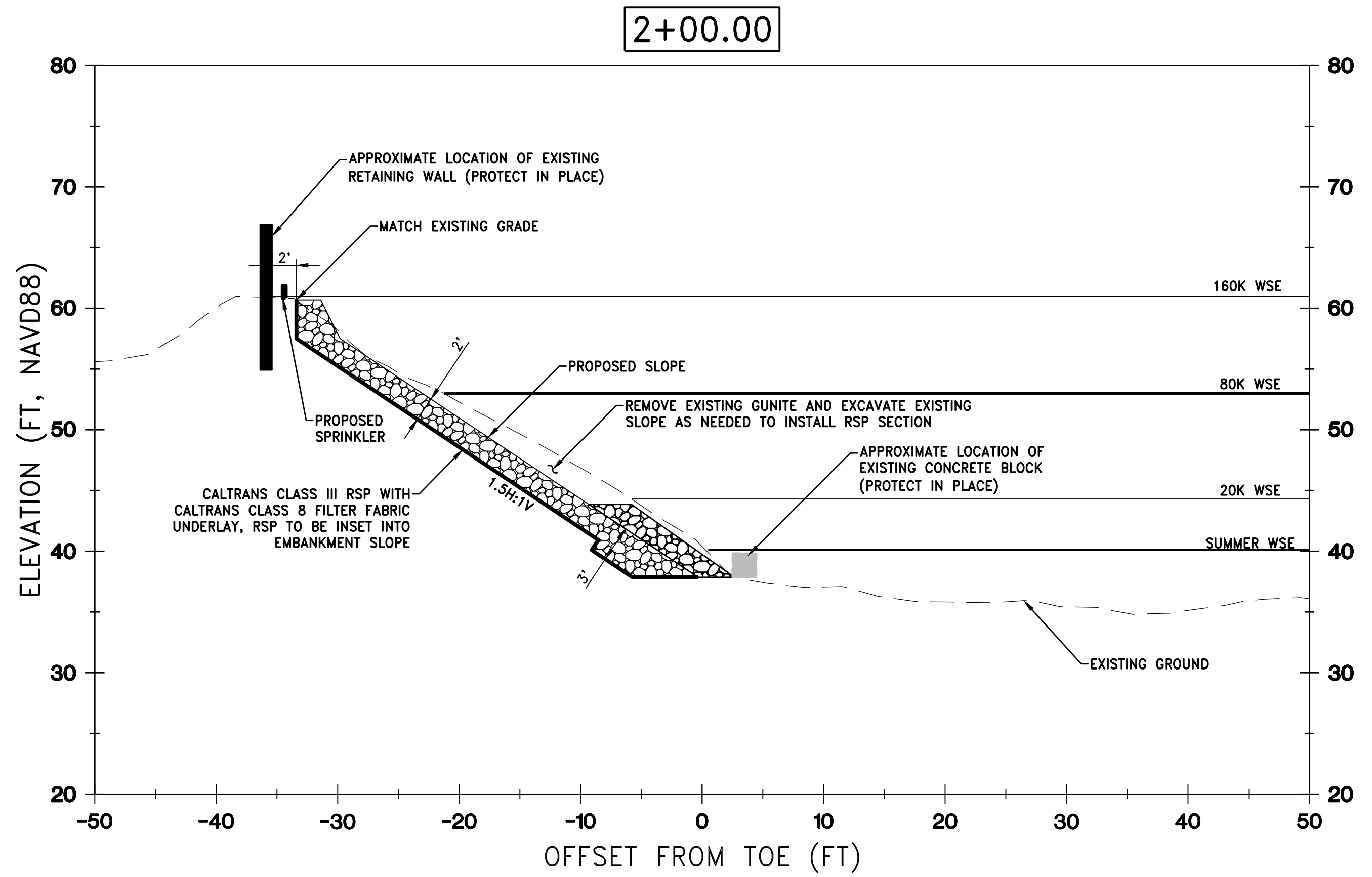
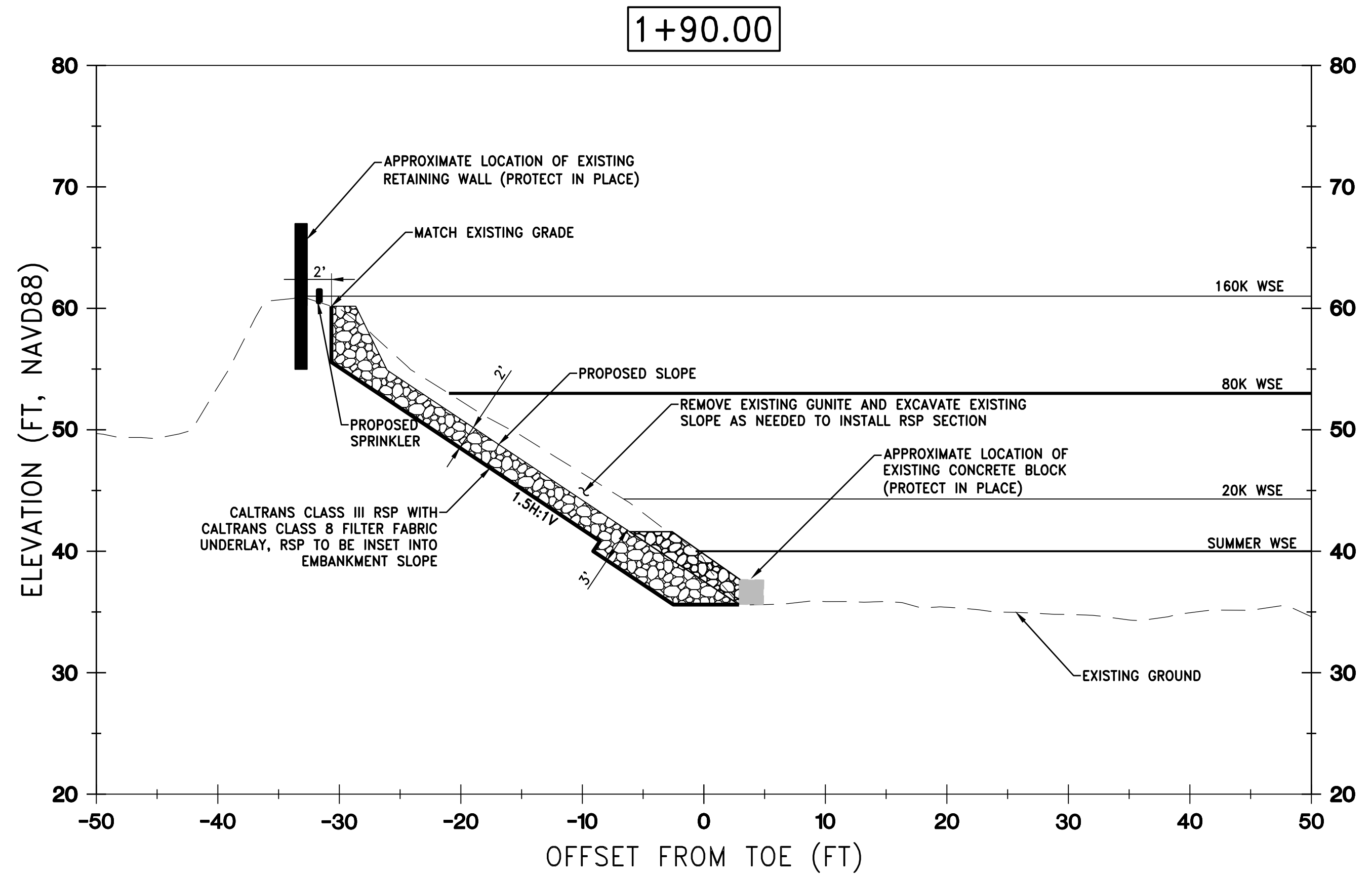
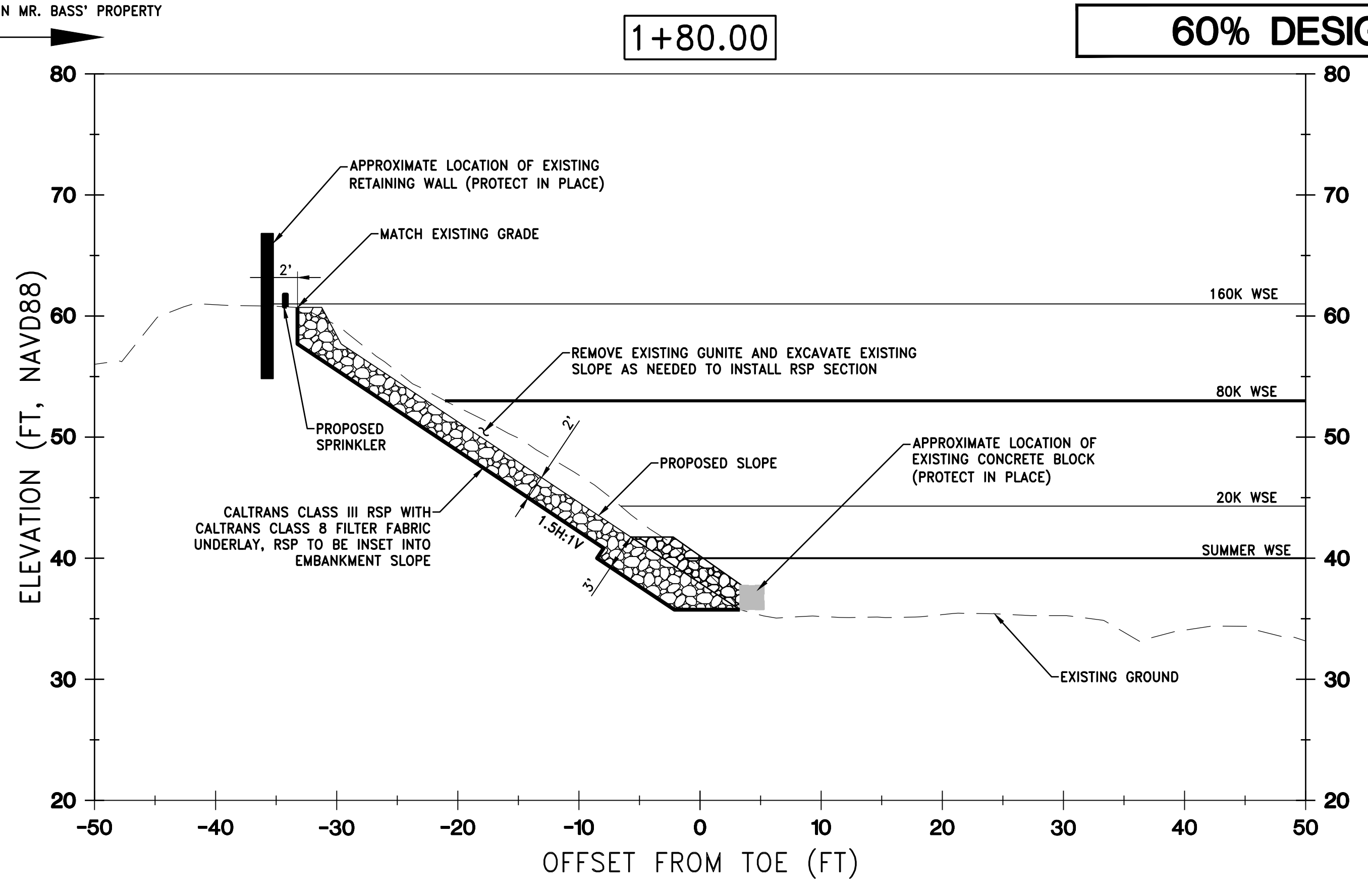
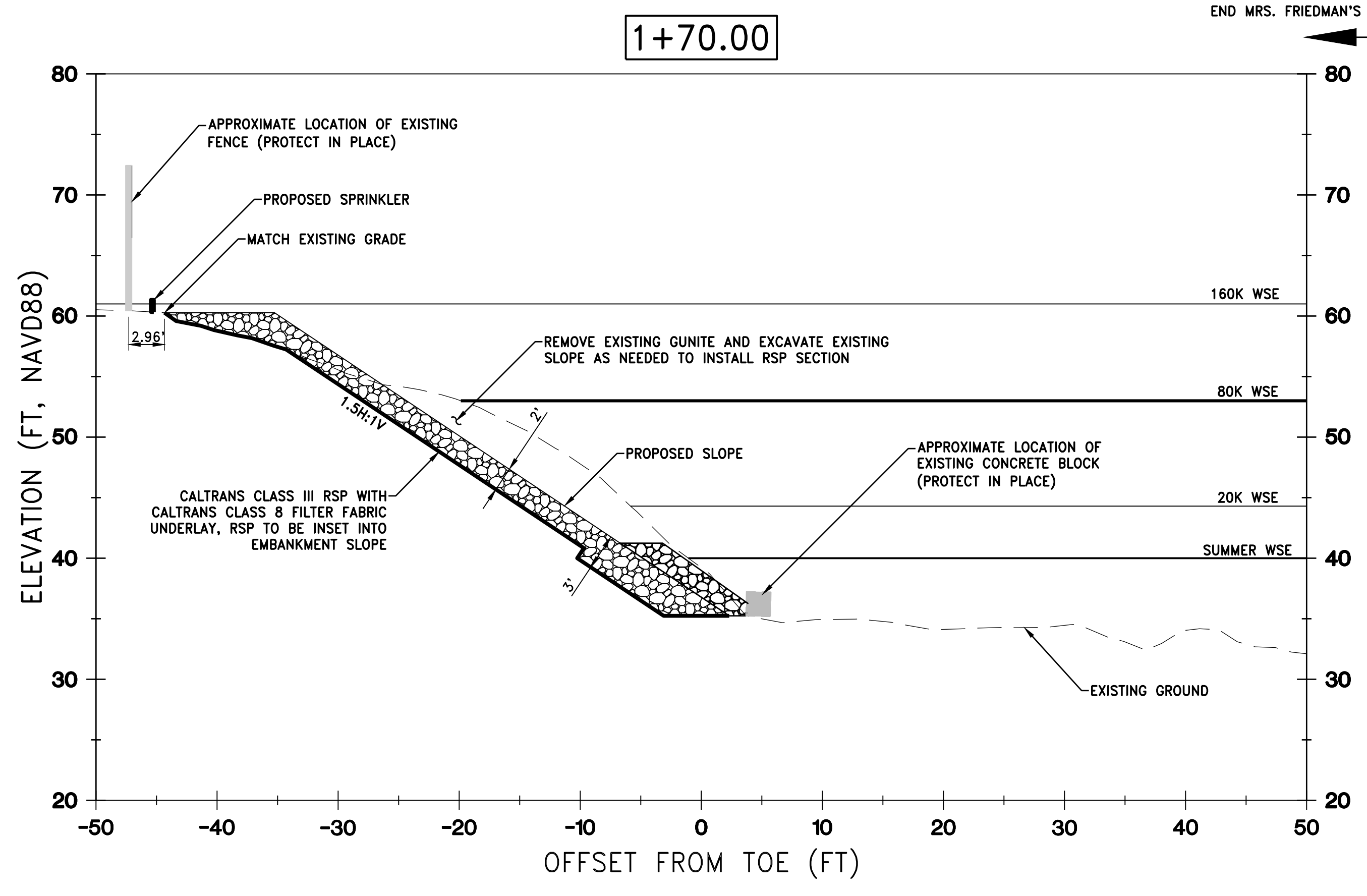
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PHONE: (916) 341-7769 FAX: (916) 341-7767

SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

**FRIEDMAN & BASS PROPERTIES**  
**REVTMENT REPLACEMENT PROJECT**  
CROSS SECTIONS  
STATION 1+20 TO 1+60

VERIFY SCALES  
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

DRAWING NO. **C-203** SHEET **8**



REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:  
C. HILLIARD  
DRAWN BY:  
J. KAUP  
CHECKED BY:  
J. KORS  
IN CHARGE:  
C. HILLIARD  
DATE:  
XX/XX/XXXX



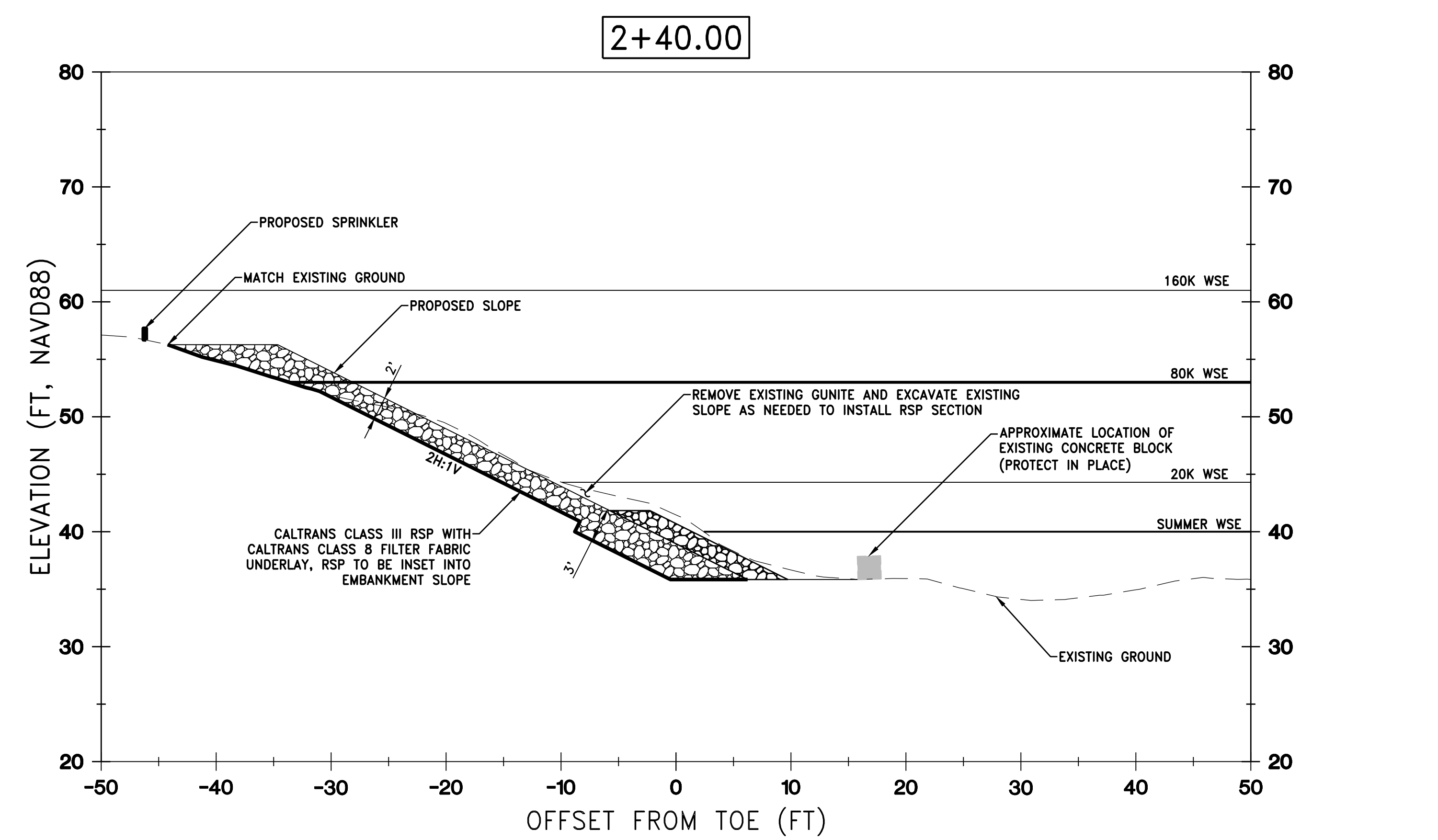
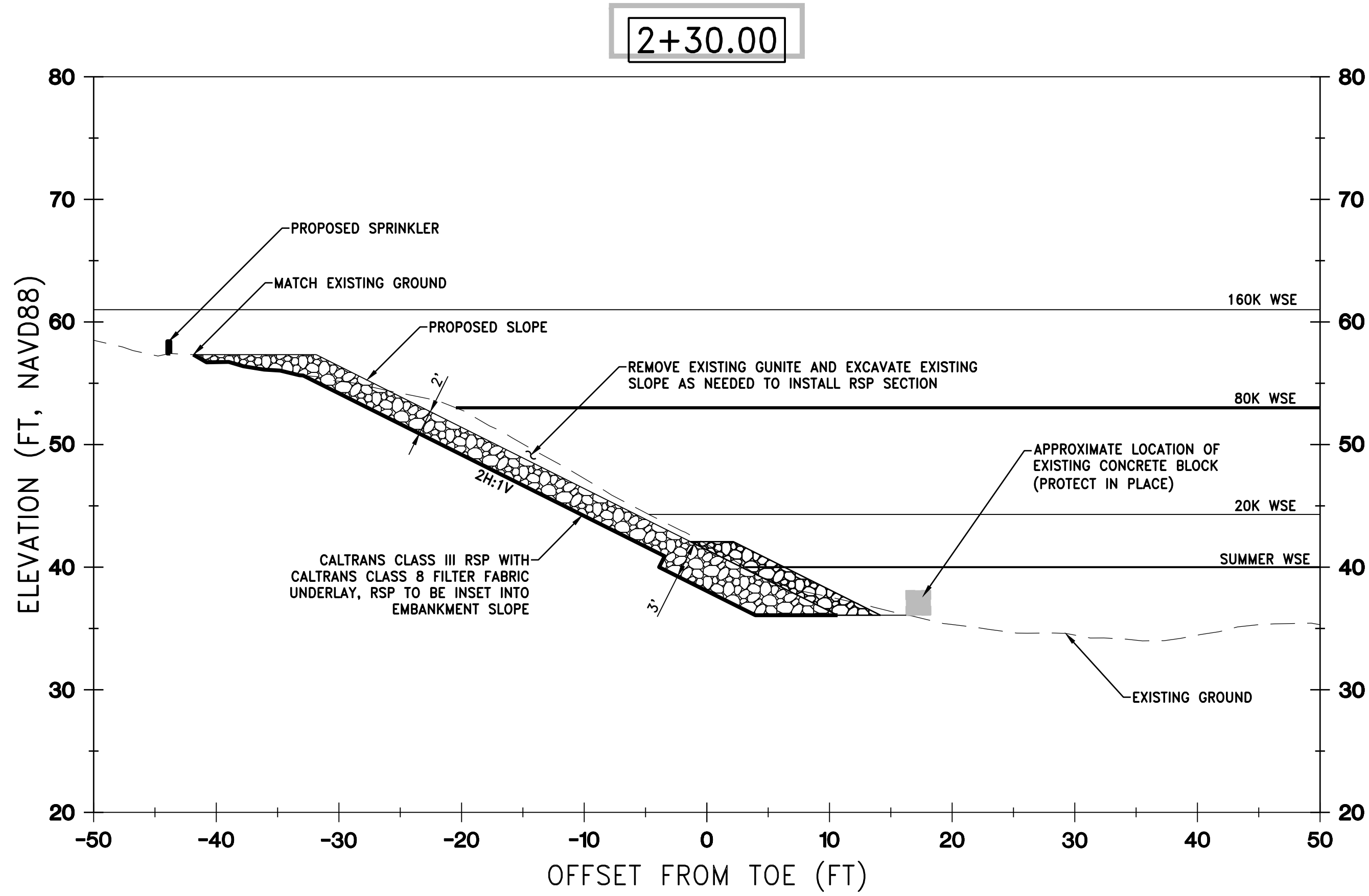
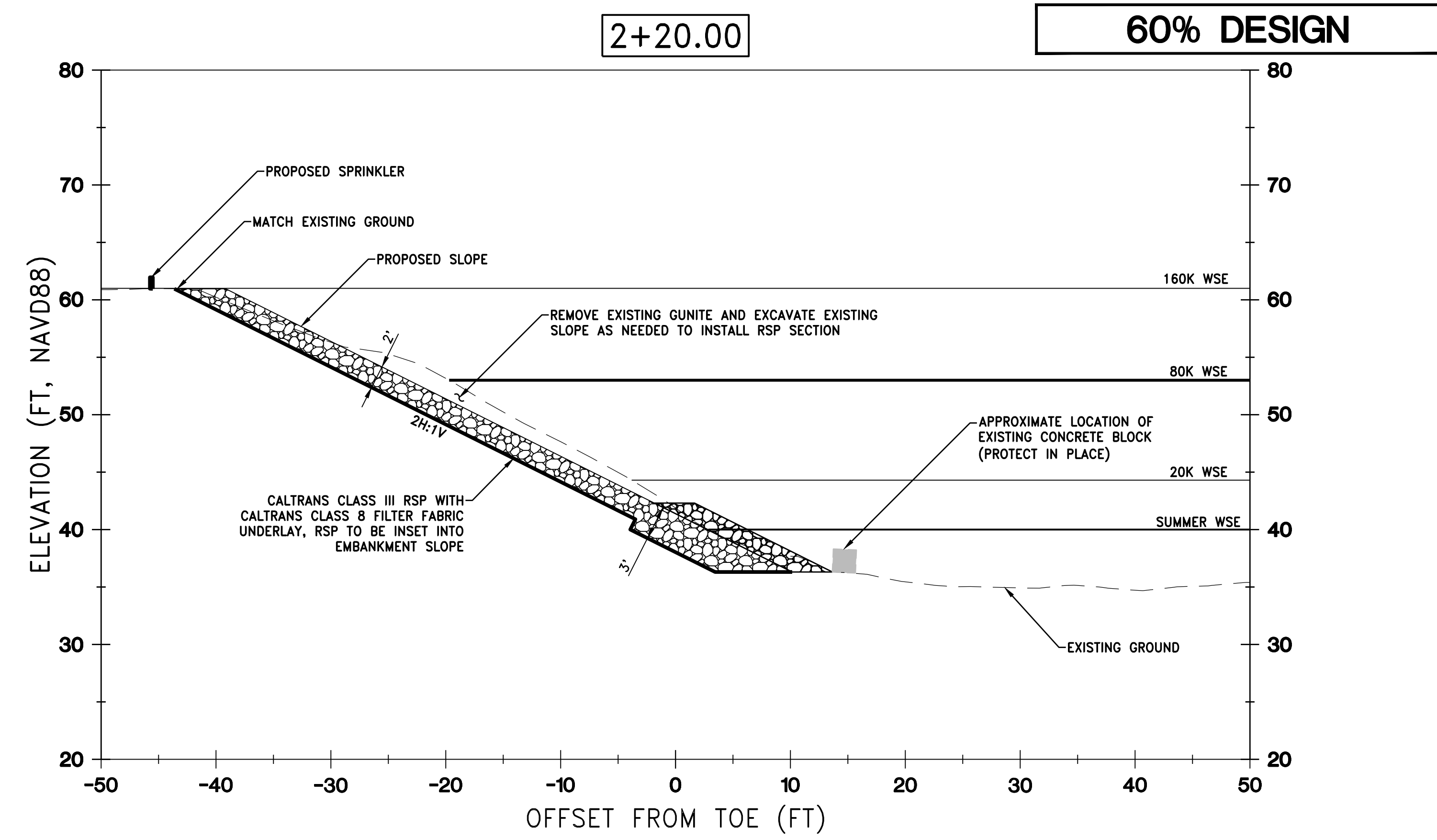
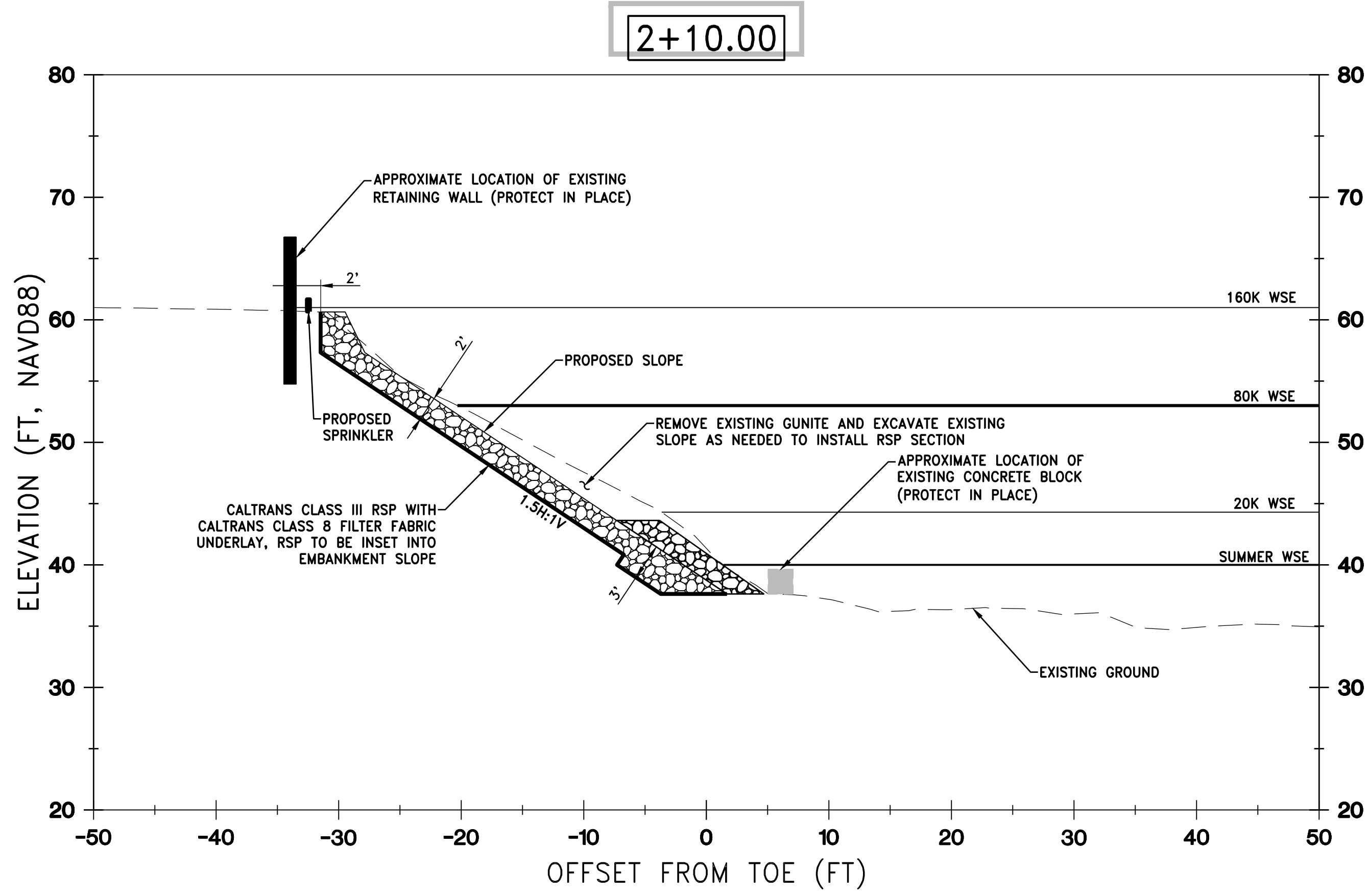
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SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

**FRIEDMAN & BASS PROPERTIES**  
**REVETMENT REPLACEMENT PROJECT**  
CROSS SECTIONS  
STATION 1+70 TO 2+00

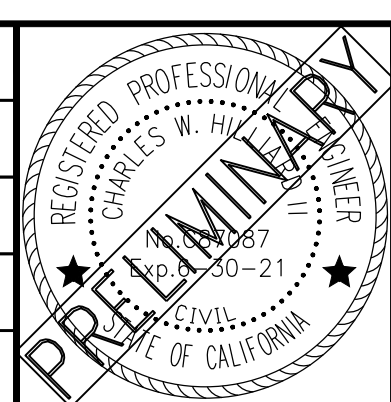
VERIFY SCALES  
BAR IS ONE INCH ON  
ORIGINAL DRAWING. ADJUST  
SCALES FOR REDUCED PLOTS  
0" = 1"

DRAWING NO. SHEET  
**C-204 9**



REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:  
C. HILLIARD  
DRAWN BY:  
J. KAUP  
CHECKED BY:  
J. KORS  
IN CHARGE:  
C. HILLIARD  
DATE:  
XX/XX/XXXX



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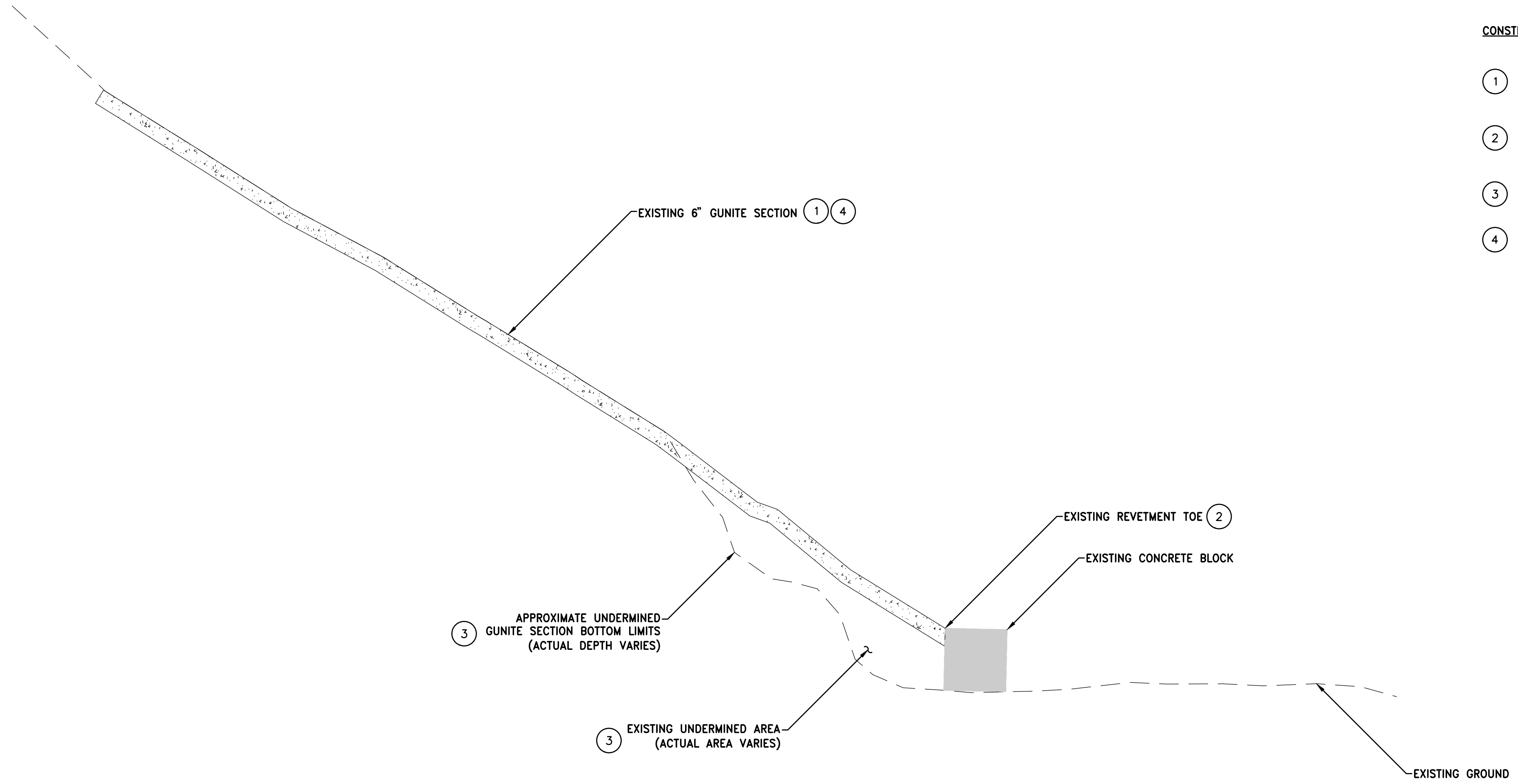
SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

**FRIEDMAN & BASS PROPERTIES**  
**REVTMENT REPLACEMENT PROJECT**  
CROSS SECTIONS  
STATION 2+10 TO 2+40

VERIFY SCALES  
BAR IS ONE INCH ON  
ORIGINAL DRAWING. ADJUST  
SCALES FOR REDUCED PLOTS  
0" = 1"

DRAWING NO. SHEET  
**C-205 10**

**60% DESIGN**



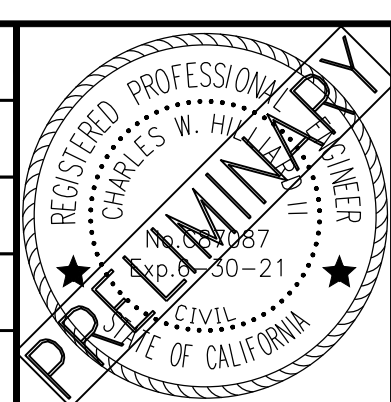
**CONSTRUCTION NOTES:**

- ① EXISTING 6" GUNITE SECTION IS REINFORCED WITH REBAR THROUGHOUT. CONTRACTOR IS TO REMOVE & DISPOSE OF EXISTING GUNITE AND REINFORCING MATERIALS
- ② THE TOP OF THE EXISTING CONCRETE BLOCK AND THE EXISTING GUNITE SLOPE TOE ARE ATTACHED BY ROD REINFORCEMENT. CONTRACTOR SHALL CUT REINFORCEMENT WHILE PROTECTING CONCRETE BLOCK IN PLACE
- ③ ALL UNDERMINED AREAS SHALL BE FILLED WITH ROCK
- ④ SURFACE AREA OF GUNITE TO BE REMOVED AND DISPOSED OF IS APPROXIMATELY 6,900\_SF

**EXISTING REVETMENT SECTION**  
SCALE: NTS

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:  
C. HILLIARD  
DRAWN BY:  
J. KAUP  
CHECKED BY:  
J. KORS  
IN CHARGE:  
C. HILLIARD  
DATE:  
XX/XX/XXXX



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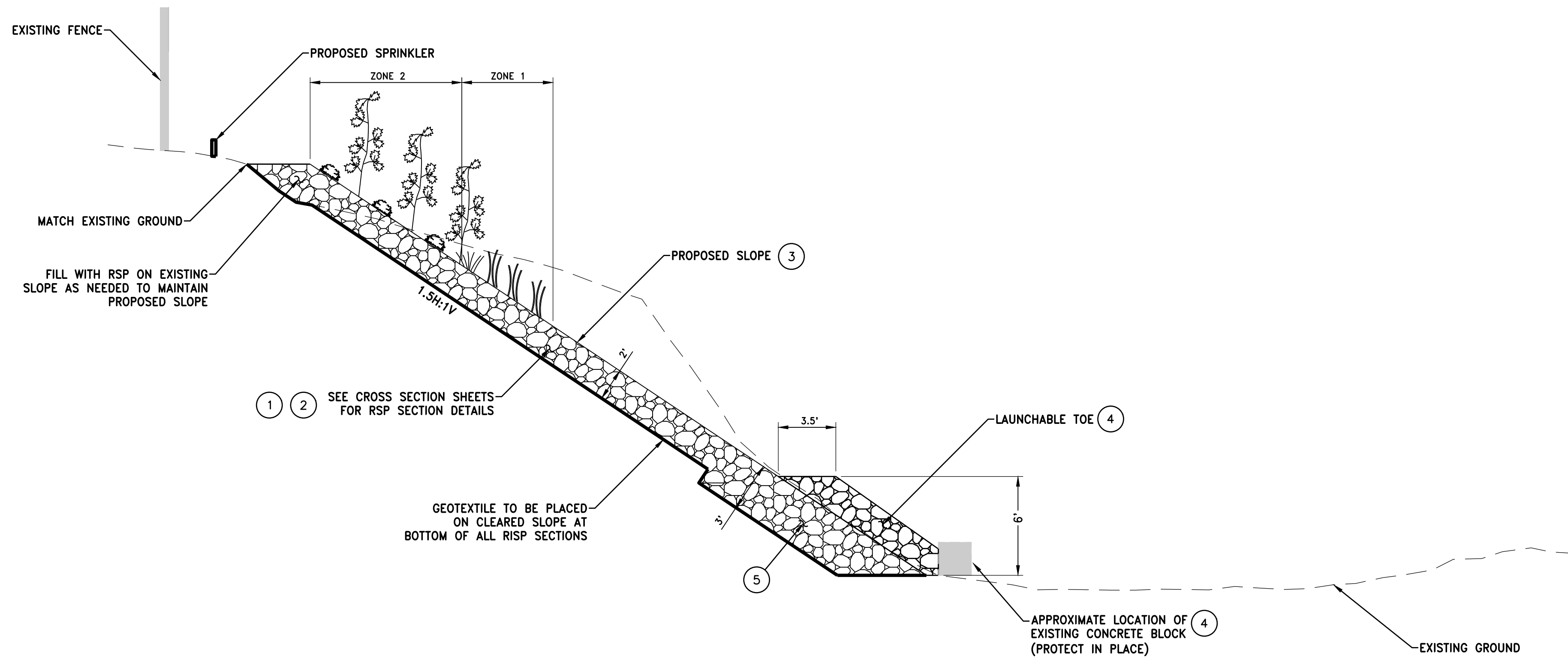
SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

**FRIEDMAN & BASS PROPERTIES**  
**REVETMENT REPLACEMENT PROJECT**  
TYPICAL DETAILS (1 OF 2)

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS	
0"  1"	
DRAWING NO. <b>C-301</b>	SHEET <b>11</b>

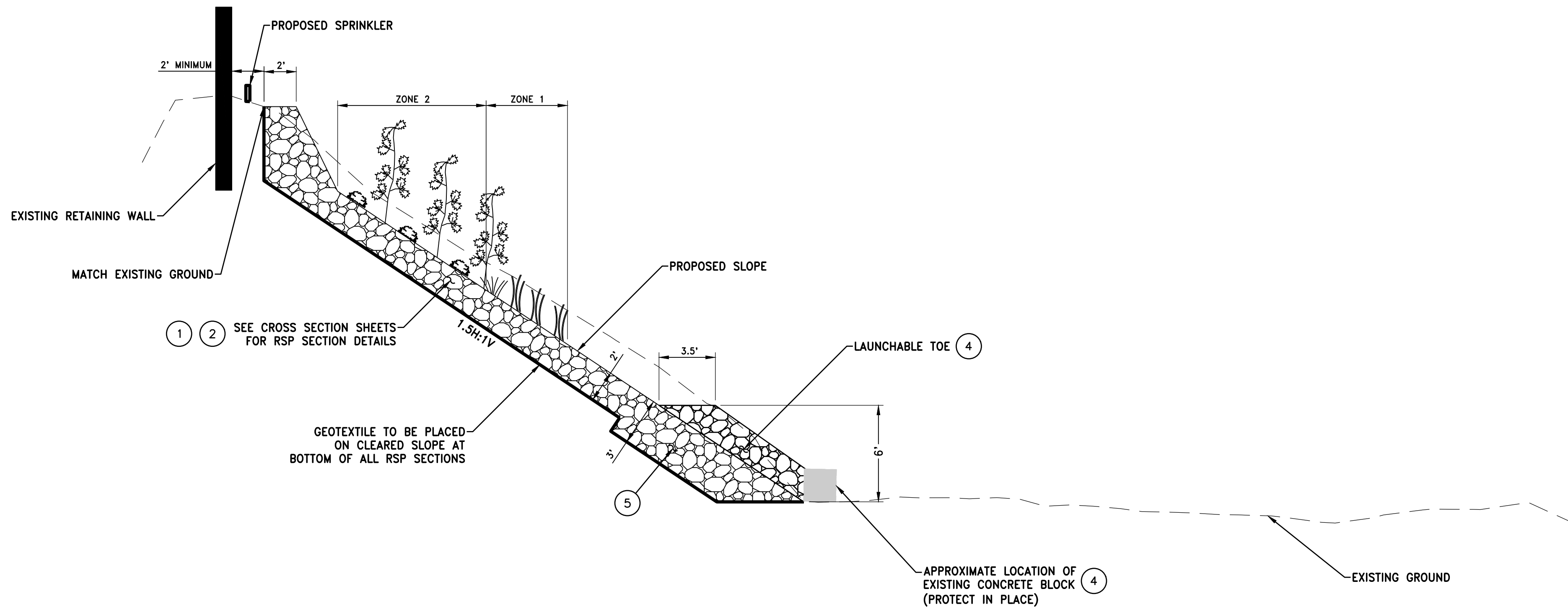
**CONSTRUCTION NOTES:**

- ① 2FT MINIMUM THICKNESS CALTRANS CLASS III RSP WITH CALTRANS CLASS 8 FILTER FABRIC UNDERLAY, RSP TO BE INSET INTO EMBANKMENT SLOPE
- ② FOLLOWING RSP PLACEMENT, SPREAD 3" TOPSOIL OVER RIPRAP AND MANIPULATE INTO VOIDS TO FACILITATE VEGETATIVE GROWTH
- ③ THE SLOPE SHALL TRANSITION FROM 1.5H:1V, TO 2H:1V AT STATIONS 2+20 TO 2+40
- ④ FILL LAUNCHABLE TOE SECTION AGAINST EXISTING CONCRETE BLOCK AS NEEDED
- ⑤ RSP SECTION TO INCREASE 50% WHEREVER SECTION IS BELOW WATER ELEVATION AT TIME OF PLACEMENT
- ⑥ ZONE 2 VEGETATION SHALL BE PLACED FROM TOP OF SLOPE TO 80K WSE (ELEV 53'). ZONE 1 VEGETATION SHALL BE PLACED FROM SUMMER WSE (ELEV 40') TO 80K WSE (ELEV 53').



**TYPICAL CROSS SECTION - FENCE**

STA 0+50 TO 1+70  
STA 2+20 TO 2+40  
SCALE: NTS

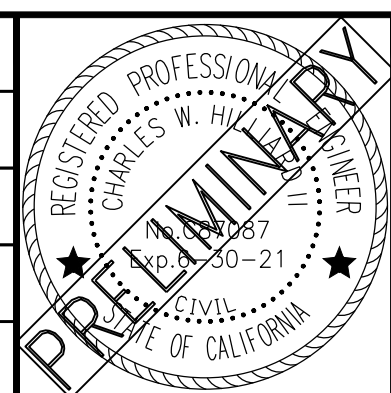


**TYPICAL CROSS SECTION- RETAINING WALL**

STA 1+80 TO 2+10  
SCALE: NTS

REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

DESIGNED BY:  
C. HILLIARD  
DRAWN BY:  
J. KAUP  
CHECKED BY:  
J. KORS  
IN CHARGE:  
C. HILLIARD  
DATE:  
XX/XX/XXXX



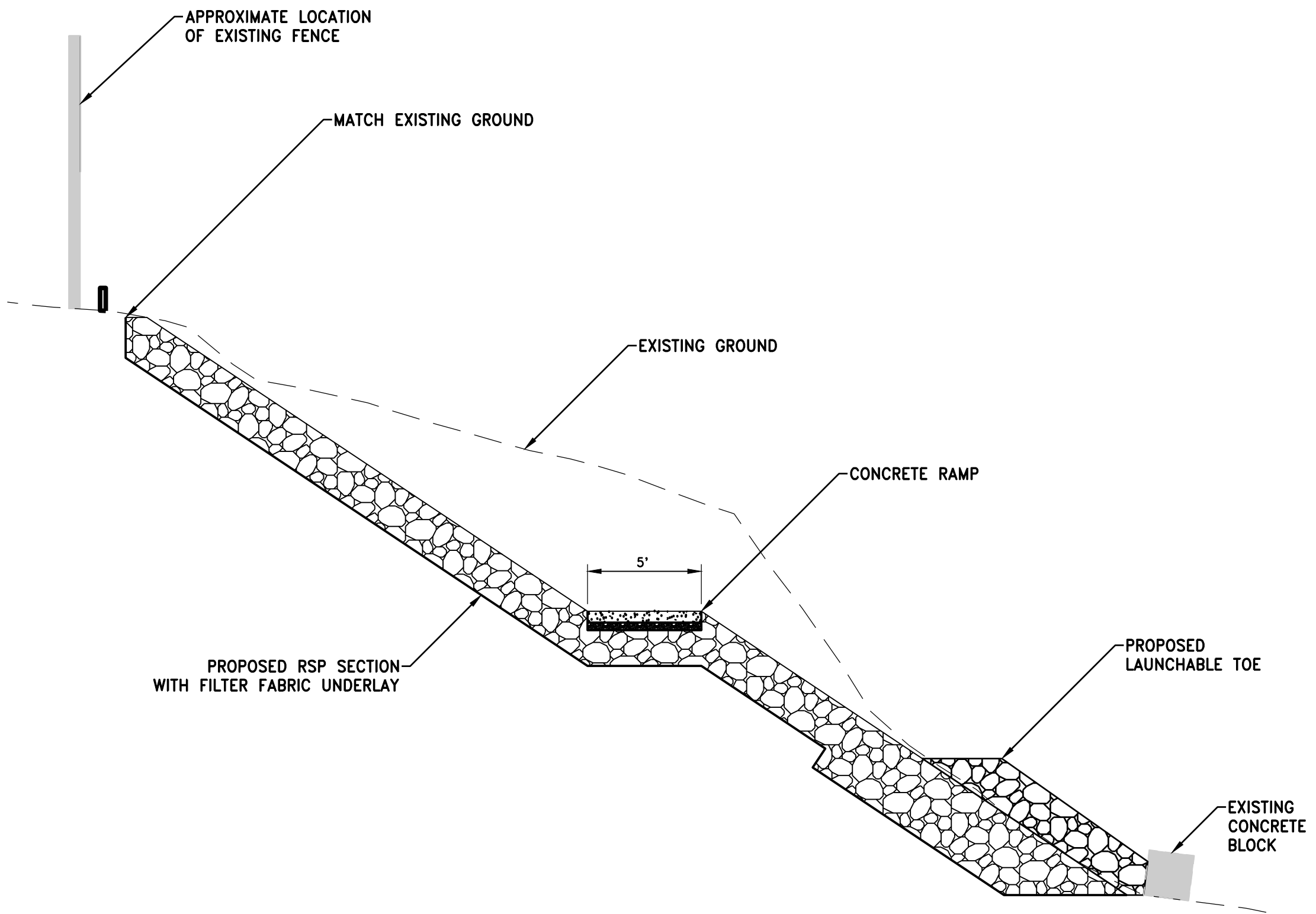
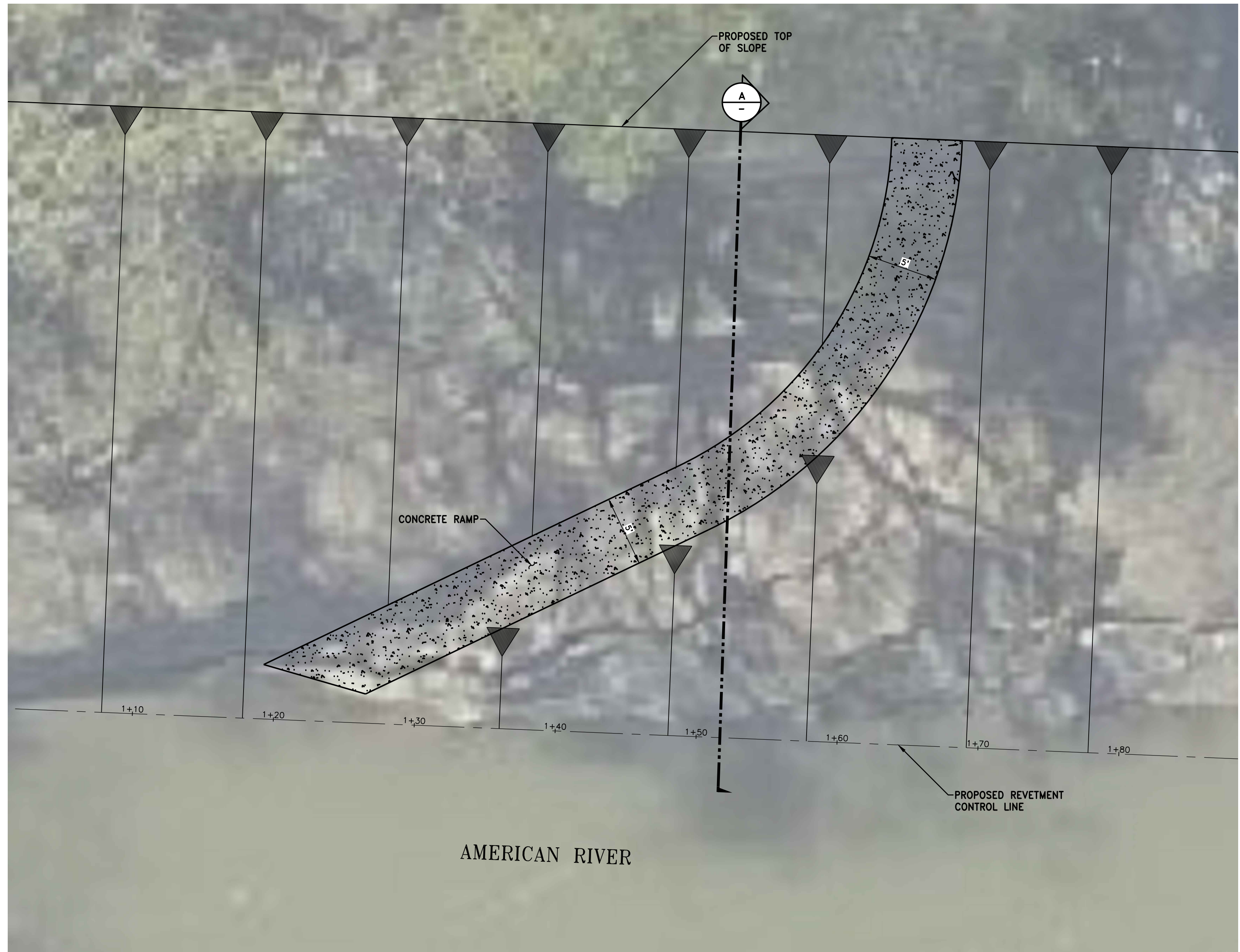
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**FRIEDMAN & BASS PROPERTIES**  
**REVTMENT REPLACEMENT PROJECT**  
TYPICAL DETAILS (2 OF 2)

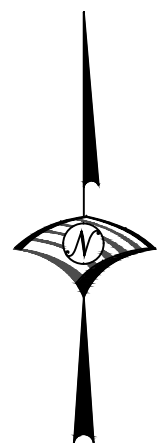
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS	
0" = 1"	
DRAWING NO.	SHEET
<b>C-302</b>	<b>12</b>

**60% DESIGN**



**ALTERNATIVE CONCRETE RAMP SECTION A**  
SCALE: 1"=5'

**ALTERNATIVE CONCRETE RAMP PLAN**  
SCALE: 1"=5'



REV.	DATE	BY	CHK.	APPR.	DESCRIPTION

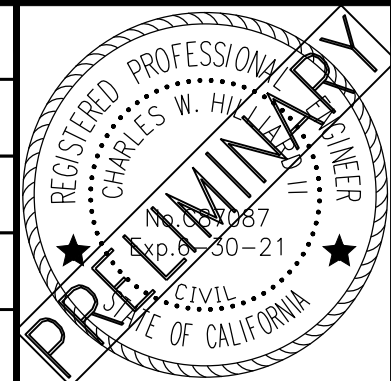
DESIGNED BY:  
C. HILLIARD

DRAWN BY:  
J. KAUP

CHECKED BY:  
J. KORS

IN CHARGE:  
C. HILLIARD

DATE:  
XX/XX/XXXX



**WOOD ROGERS**  
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SUBMITTED \_\_\_\_\_ APPROVED \_\_\_\_\_

**FRIEDMAN & BASS PROPERTIES**

**REVTMENT REPLACEMENT PROJECT**

**ALTERNATIVE CONCRETE RAMP**

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS	
0" = 1"	
DRAWING NO. <b>C-303</b>	SHEET <b>13</b>