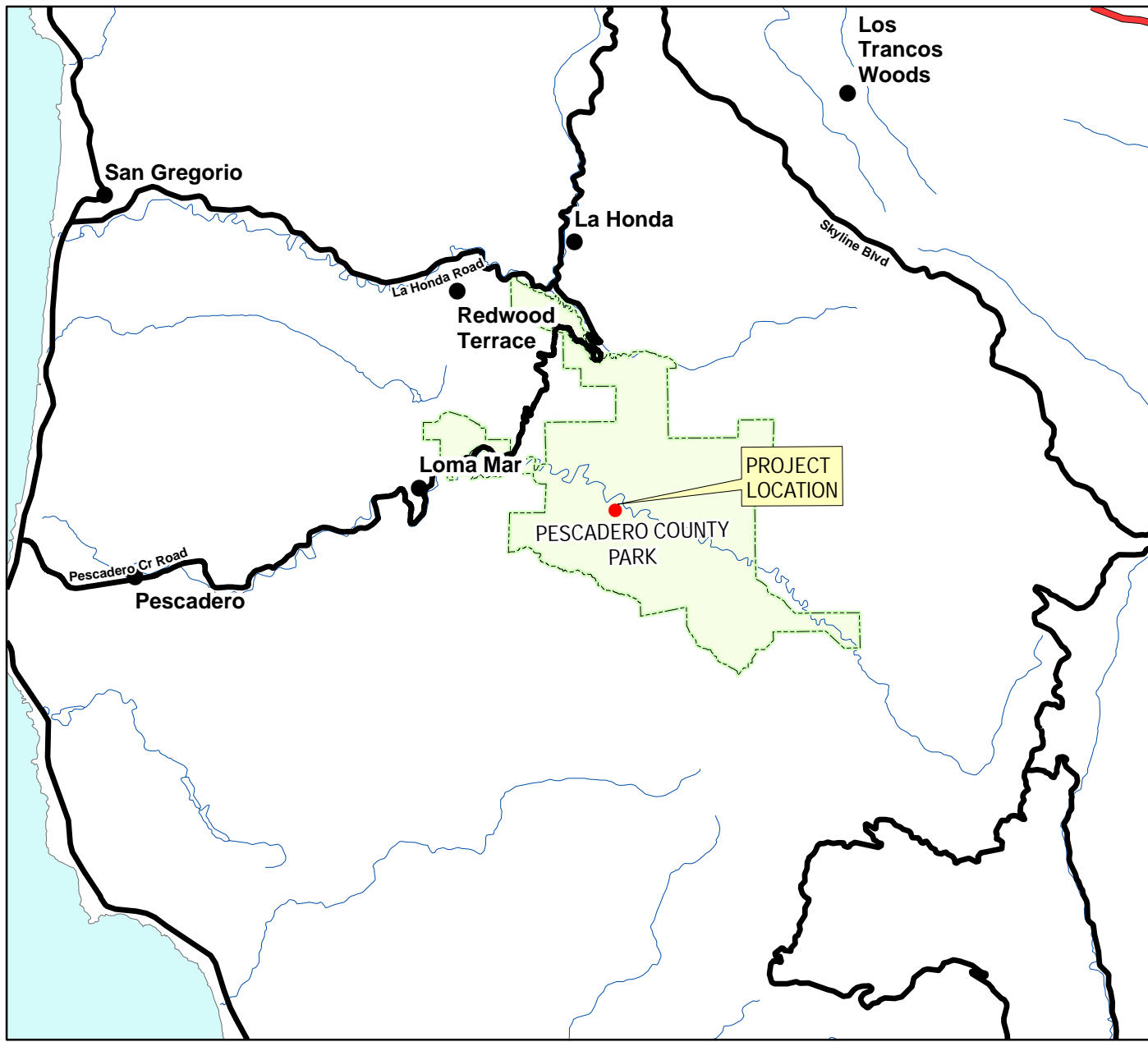


DARK GULCH CROSSING STABILIZATION PROJECT

PESCADERO CREEK COUNTY PARK
SAN MATEO COUNTY, CA
APN 084-13-011 and 084-13-012

REGIONAL MAP
N.T.S. (BING)



C7 SHEET INDEX

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C3.2	EXISTING CONDITIONS (2 OF 2)
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C4.2	CLEARING AND GRUBBING PLAN (2 OF 2)
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PROJECT DESCRIPTION/SCOPE

DARK GULCH CROSSING UPGRADE
THE CROSSING AT DARK GULCH CREEK CONSIST OF A 35,000 CY, 69 FOOT THICK FILL EMBANKMENT. THE UP AND DOWNSTREAM SIDES OF THE CROSSING WERE PARTIALLY SUPPORTED WITH LARGE (24 INCH TO 48 INCH) DIAMETER REDWOOD CRIB LOGS STACKED 15 TO 25 FEET HIGH LIKE A LOG CABIN. THE TIE BACK LOGS TO THE CRIB WALL EXTEND OVER 20 FEET INTO THE FILL EMBANKMENT. A WOOD BOX CULVERT LIKELY BUILT AT THE BOTTOM OF THE FILL CONVEYED STREAM FLOW THROUGH THE CROSSING, THOUGH EVIDENCE OF THIS STRUCTURE IS NO LONGER VISIBLE. THE CROSSING IS ACTIVELY FAILING RESULTING IN FAILURES ON BOTH SIDES OF THE FILL EMBANKMENT AND THE FORMATION OF CONE SHAPED "SINKHOLES" ON THE GROUND SURFACE.

THE PROJECT PROPOSES TO REMOVE THE UNSTABLE FILL MATERIAL AND ASSOCIATED CRIB LOGS, INSTALL A 66 INCH X 240 FT NEW CULVERT, AND RECONSTRUCT THE FILL EMBANKMENT. SALVAGED CRIB LOGS WILL BE USED AS ENERGY DISSIPATER AND/OR STOCKPILED FOR FUTURE PARK USE. EXCESS SPOILS WILL BE STOCKPILED ON LARGE LANDING WEST OF THE CROSSING.

GRADING VOLUMES (APPROX.)

CUT	42,000± CY
ENGINEERED FILL	29,000± CY
ONSITE SPREAD	13,000± CY
IMPORT ROCK	390± CY

GRADED AREA	
DARK GULCH CROSSING	1.2 ACRES (EST)
FILL STOCKPILE AREA	1.1 ACRES (EST)

OLD HAUL ROAD DRAINAGE IMPROVEMENTS
THE PROJECT ALSO PROPOSES TO MAKE DRAINAGE IMPROVEMENTS ALONG A ROUGHLY 2 MILE LONG SEGMENT OF OLD HAUL ROAD. THIS WORK WILL CONSIST OF THE FOLLOWING:

REGRADE AND RESHAPE THE ROAD PRISM	AS NEEDED
REVERSE GRADE DIP (CLEAN, RECONSTRUCT, NEW)	27 EACH
KNICK (CLEAN, RECONSTRUCT)	2 EACH
KNOCKOUT (CLEAN, NEW)	14 EACH
WATERBAR	3 EACH
DITCH RELIEF CULVERT (CLEAN)	4 EACH
DITCH RELIEF CULVERT (NEW, REMOVE & REPLACE)	
2 @ 18"X20'	
3 @ 18"X30'	270 LF
2 @ 18"X40'	
1 @ 18"X60'	
SLOPE DRAIN 1 @ 18" X 20'	20 LF
INBOARD DITCH (CLEAN, NEW)	2215 LF
ROCK AGGREGATE	644 TON

ABBREVIATIONS

AB	AGGREGATE BASE ROCK
A	ALDER
AB	AGGREGATE BASE ROCK
BB	BERM BREAK
CMP	CORRUGATED METAL PIPE
CP	CONTROL POINT
CTR	CENTER
CONC	CONCRETE
DB	DOUBLE
DRC	DITCH RELIEF CULVERT
EL	ELEVATION
EST	ESTIMATE
F	FIR
FL	FLOW LINE
FT	FOOT
GND	GROUND
HW	HEADWALL
IBD	INBOARD DITCH
IN	INCH
INV	INVERT
IS	INSLOPE
KO	KNOCKOUT
LWD	LARGE WOODY DEBRIS
M	MADRONE
NTS	NOT TO SCALE
O	OAK
RGD	REVERSE GRADE DIP
RED	ROCK ENERGY DISSIPATOR
R	REDWOOD
RSP	ROCK SLOPE PROTECTION
TOC	TOP OF CUT
TOE	TOE OF SLOPE
STA	STATION
STC	STREAM CROSSING CULVERT
SPK	SPIKE

CONTACTS

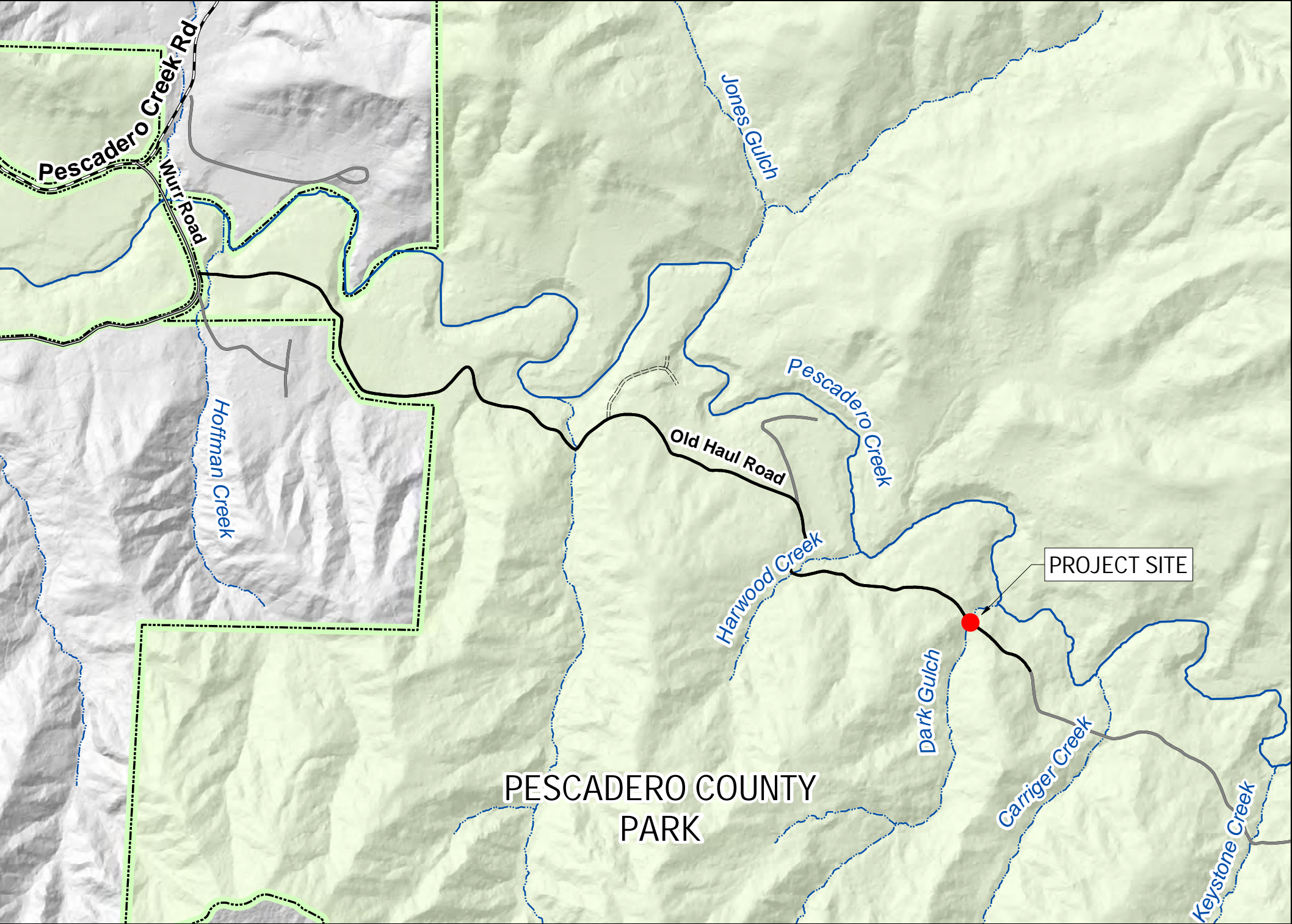
LAND OWNER
SAN MATEO COUNTY PARKS
DEPARTMENT
455 COUNTY CENTER, 4TH FLOOR
REDWOOD CITY, CA 94063-1646
(650) 599-1375
CONTACT: HANNAH ORMSHAW

CLIENT
SAN MATEO COUNTY RESOURCE
CONSERVATION DISTRICT
625 MIRAMONTES STREET SUITE 103
HALF MOON BAY, CA 94019
(650) 712- 7765
CONTACT: SARA POLGAR

ENGINEERING GEOLOGIST
TIMOTHY C BEST, CEG
1002 COLUMBIA STREET
SANTA CRUZ, CA 95060
831 425-5832
(831) 425-5832 (831) 332 7791 – CELL
CONTACT: TIM BEST

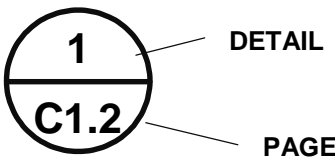
GEOTECHNICAL ENGINEER
HARO, KASUNICH AND ASSOCIATES
116 EAST LAKE AVE
WATSONVILLE, CA 95076
(831) 722-4175 (831) 247-5466 CELL
CONTACT: JOHN KASUNICH

VICINITY MAP
N.T.S.



DRAWING NOTATIONS

DETAIL CALL OUT



CALL BEFORE YOU DIG
Contact Underground Service Alter (USA) at 811
72 hours prior to excavation



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CONSERVATION DISTRICT

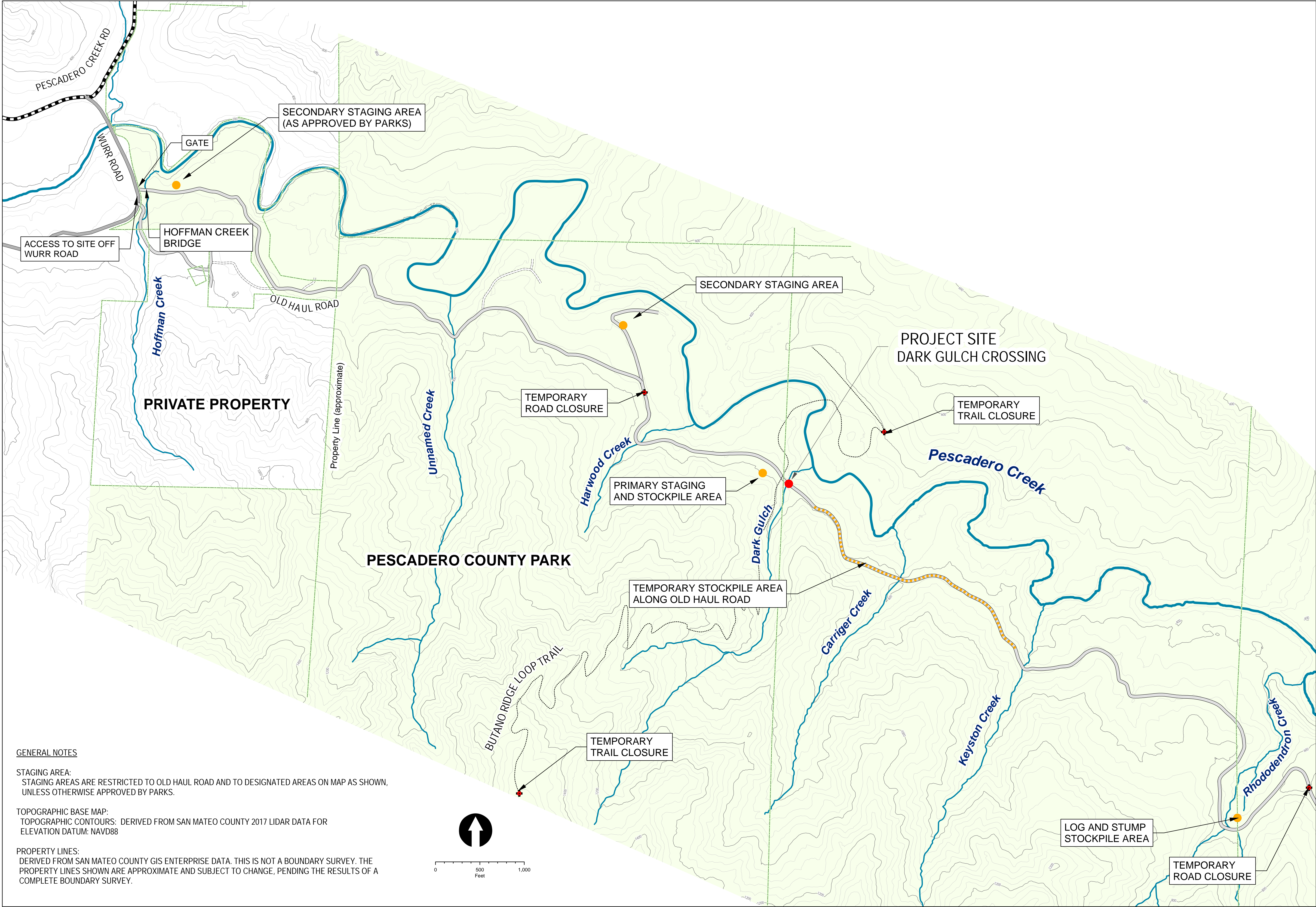
SHEET TITLE:
TITLE SHEET

PROJECT:
DARK GULCH CROSSING
STABILIZATION PROJECT
MEMORIAL PARK, SAN MATEO COUNTY, CA:

DESIGNED BY: T.C.B.
DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCD-DRKGULCH-775

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

C1

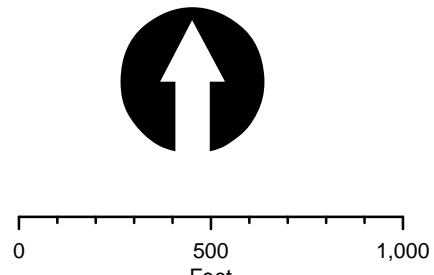





GENERAL NOTES

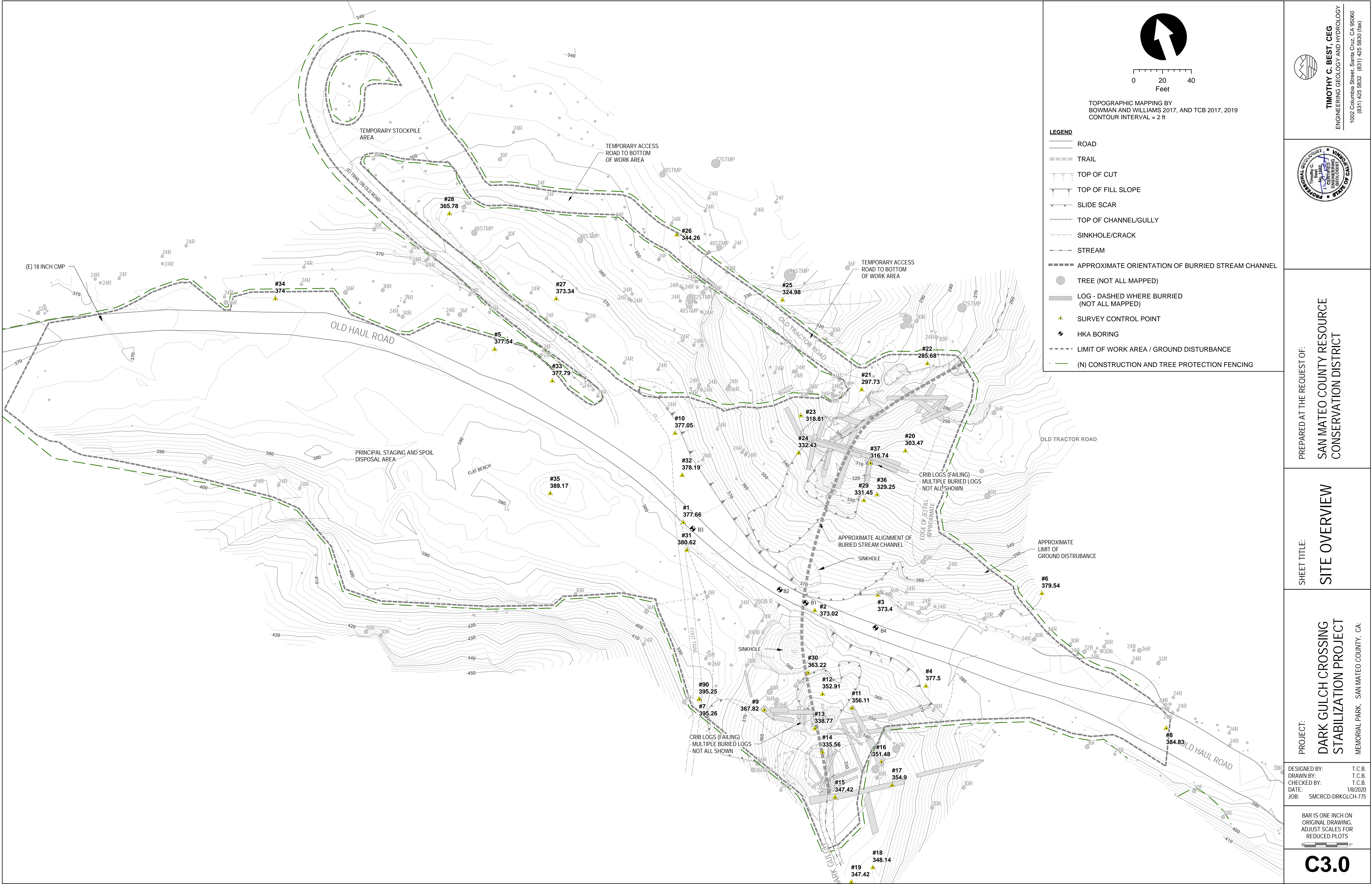
STAGING AREA:
STAGING AREAS ARE RESTRICTED TO OLD HAUL ROAD AND TO DESIGNATED AREAS ON MAP AS SHOWN,
UNLESS OTHERWISE APPROVED BY PARKS.

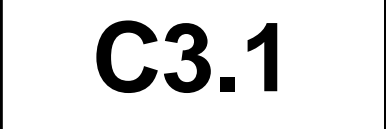
TOPOGRAPHIC BASE MAP:
TOPOGRAPHIC CONTOURS: DERIVED FROM SAN MATEO COUNTY 2017 LIDAR DATA FOR
ELEVATION DATUM: NAVD88

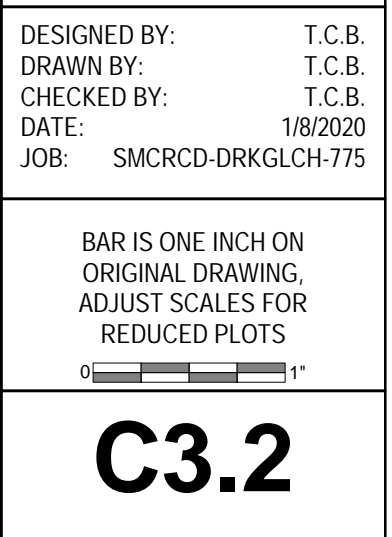
PROPERTY LINES:
DERIVED FROM SAN MATEO COUNTY GIS ENTERPRISE DATA. THIS IS NOT A BOUNDARY SURVEY. THE
PROPERTY LINES SHOWN ARE APPROXIMATE AND SUBJECT TO CHANGE, PENDING THE RESULTS OF A
COMPLETE BOUNDARY SURVEY.



 TIMOTHY C. BEST, CEG ENGINEERING GEOLOGY AND HYDROLOGY 1002 Columbia Street, Santa Cruz, CA 95060 (831) 425 5832 (831) 425 5830 (fax)	
PREPARED AT THE REQUEST OF: SAN MATEO COUNTY RESOURCE CONSERVATION DISTRICT	
SHEET TITLE: ACCESS MAP	
PROJECT: DARK GULCH CROSSING STABILIZATION PROJECT MEMORIAL PARK, SAN MATEO COUNTY, CA	DESIGNED BY: T.C.B. DRAWN BY: T.C.B. CHECKED BY: T.C.B. DATE: 1/8/2020 JOB: SMCRC-DKGLCH-775
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS 	
C2	







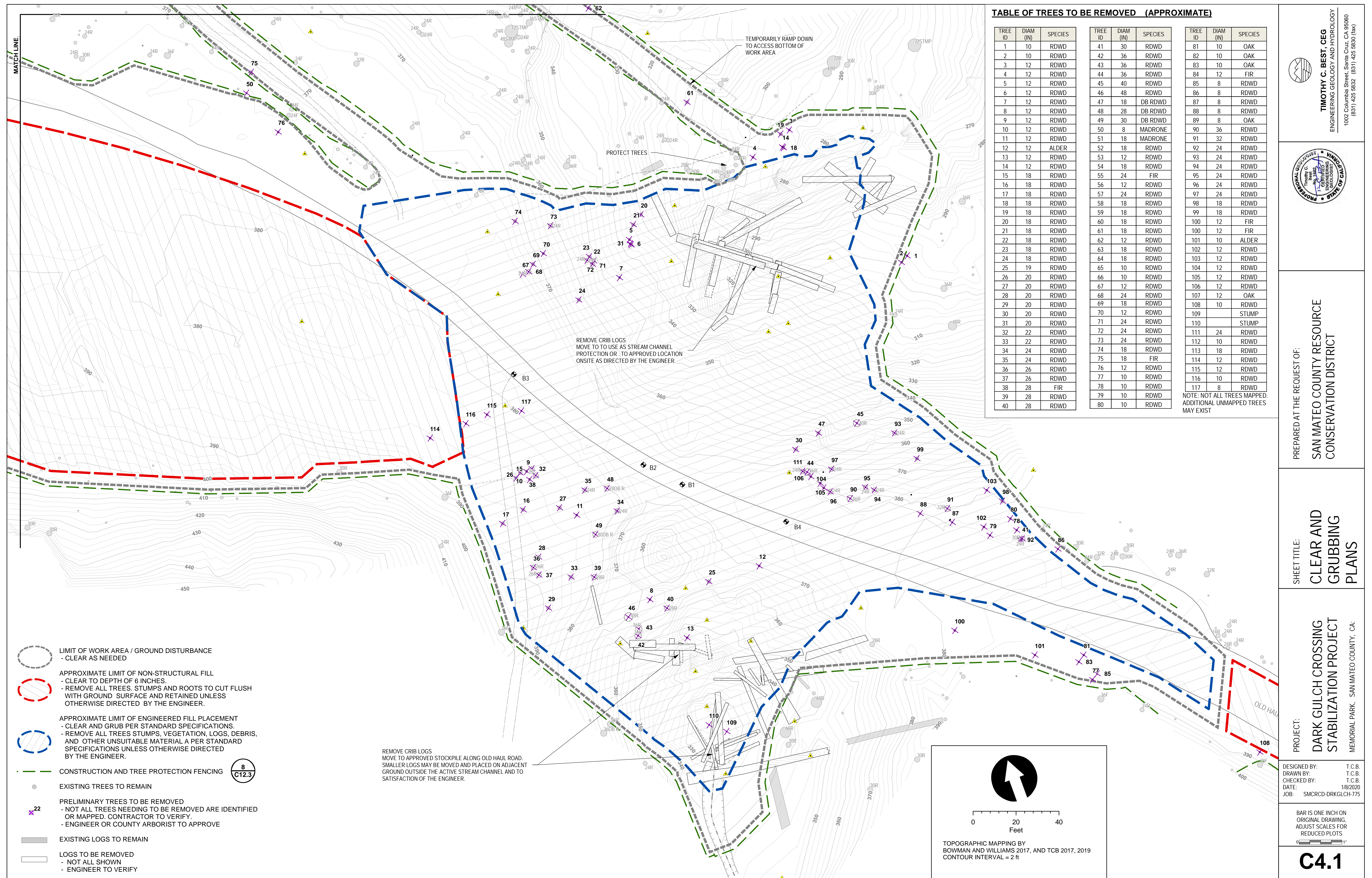
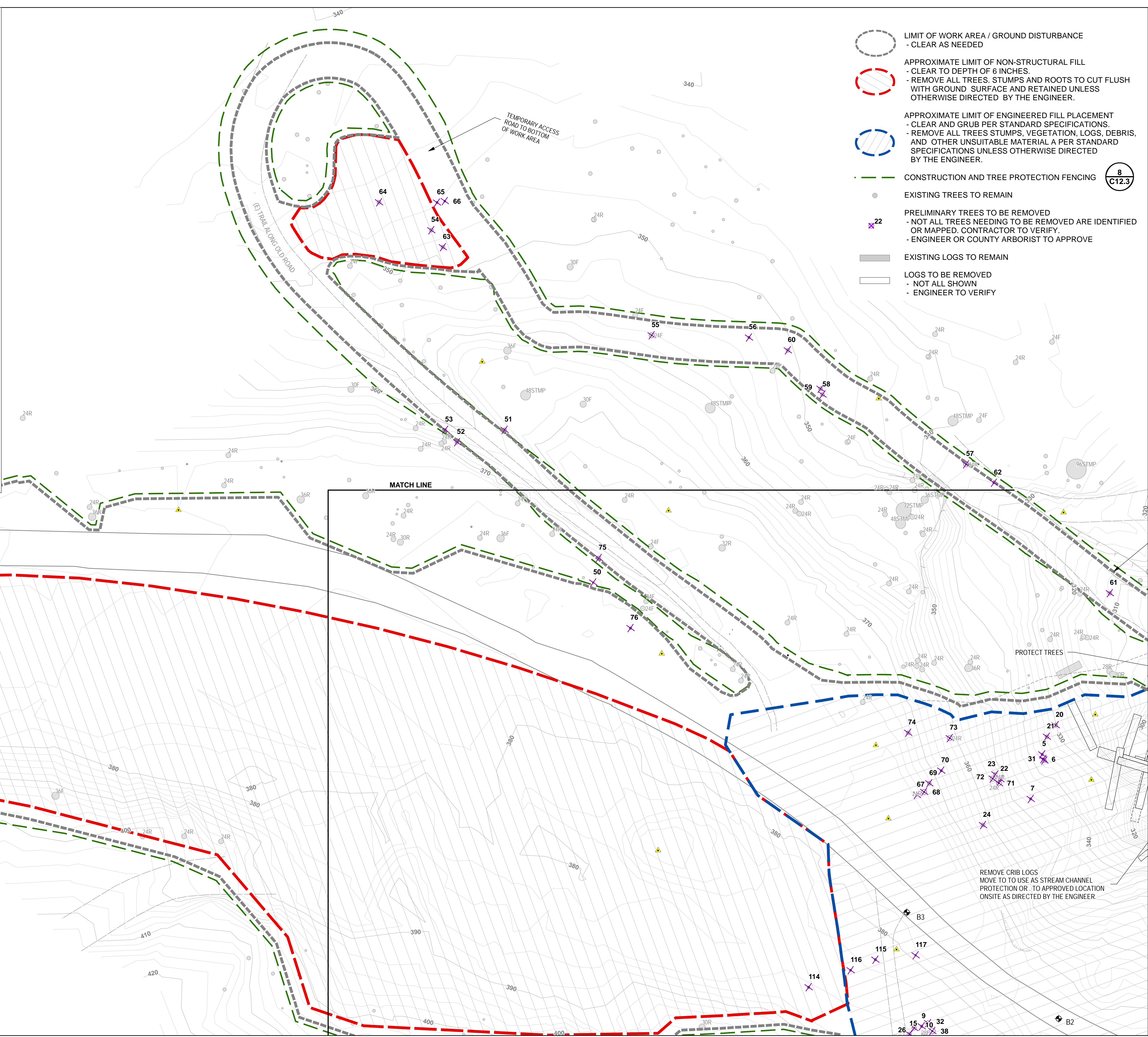


TABLE OF TREES TO BE REMOVED (APPROXIMATE)

TREE ID	DIAM (IN)	SPECIES	TREE ID	DIAM (IN)	SPECIES	TREE ID	DIAM (IN)	SPECIES
1	10	RDWD	41	30	RDWD	81	10	OAK
2	10	RDWD	42	36	RDWD	82	10	OAK
3	12	RDWD	43	36	RDWD	83	10	OAK
4	12	RDWD	44	36	RDWD	84	12	FIR
5	12	RDWD	45	40	RDWD	85	8	RDWD
6	12	RDWD	46	48	RDWD	86	8	RDWD
7	12	RDWD	47	18	DB RDWD	87	8	RDWD
8	12	RDWD	48	28	DB RDWD	88	8	RDWD
9	12	RDWD	49	30	DB RDWD	89	8	OAK
10	12	RDWD	50	8	MADRONE	90	36	RDWD
11	12	RDWD	51	18	MADRONE	91	32	RDWD
12	12	ALDER	52	18	RDWD	92	24	RDWD
13	12	RDWD	53	12	RDWD	93	24	RDWD
14	12	RDWD	54	18	RDWD	94	24	RDWD
15	18	RDWD	55	24	FIR	95	24	RDWD
16	18	RDWD	56	12	RDWD	96	24	RDWD
17	18	RDWD	57	24	RDWD	97	24	RDWD
18	18	RDWD	58	18	RDWD	98	18	RDWD
19	18	RDWD	59	18	RDWD	99	18	RDWD
20	18	RDWD	60	18	RDWD	100	12	FIR
21	18	RDWD	61	18	RDWD	100	12	FIR
22	18	RDWD	62	12	RDWD	101	10	ALDER
23	18	RDWD	63	18	RDWD	102	12	RDWD
24	18	RDWD	64	18	RDWD	103	12	RDWD
25	19	RDWD	65	10	RDWD	104	12	RDWD
26	20	RDWD	66	10	RDWD	105	12	RDWD
27	20	RDWD	67	12	RDWD	106	12	RDWD
28	20	RDWD	68	24	RDWD	107	12	OAK
29	20	RDWD	69	18	RDWD	108	10	RDWD
30	20	RDWD	70	12	RDWD	109		STUMP
31	20	RDWD	71	24	RDWD	110		STUMP
32	22	RDWD	72	24	RDWD	111	24	RDWD
33	22	RDWD	73	24	RDWD	112	10	RDWD
34	24	RDWD	74	18	RDWD	113	18	RDWD
35	24	RDWD	75	18	FIR	114	12	RDWD
36	26	RDWD	76	12	RDWD	115	12	RDWD
37	26	RDWD	77	10	RDWD	116	10	RDWD
38	28	FIR	78	10	RDWD	117	8	RDWD
39	28	RDWD	79	10	RDWD	NOTE: NOT ALL TREES MAPPED. ADDITIONAL UNMAPPED TREES MAY EXIST		
40	28	RDWD	80	10	RDWD			



- LIMIT OF WORK AREA / GROUND DISTURBANCE
- CLEAR AS NEEDED
- APPROXIMATE LIMIT OF NON-STRUCTURAL FILL
- CLEAR TO DEPTH OF 6 INCHES.
- REMOVE ALL TREES, STUMPS AND ROOTS TO CUT FLUSH WITH GROUND SURFACE AND RETAINED UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- APPROXIMATE LIMIT OF ENGINEERED FILL PLACEMENT
- CLEAR AND GRUB PER STANDARD SPECIFICATIONS.
- REMOVE ALL TREES STUMPS, VEGETATION, LOGS, DEBRIS, AND OTHER UNSUITABLE MATERIAL A PER STANDARD SPECIFICATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- CONSTRUCTION AND TREE PROTECTION FENCING
- EXISTING TREES TO REMAIN
- ✕ PRELIMINARY TREES TO BE REMOVED
- NOT ALL TREES NEEDING TO BE REMOVED ARE IDENTIFIED OR MAPPED. CONTRACTOR TO VERIFY.
- ENGINEER OR COUNTY ARBORIST TO APPROVE
- EXISTING LOGS TO REMAIN
- LOGS TO BE REMOVED
- NOT ALL SHOWN
- ENGINEER TO VERIFY

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PREPARED AT THE REQUEST OF:
**SAN MATEO COUNTY RESOURCE
CONSERVATION DISTRICT**

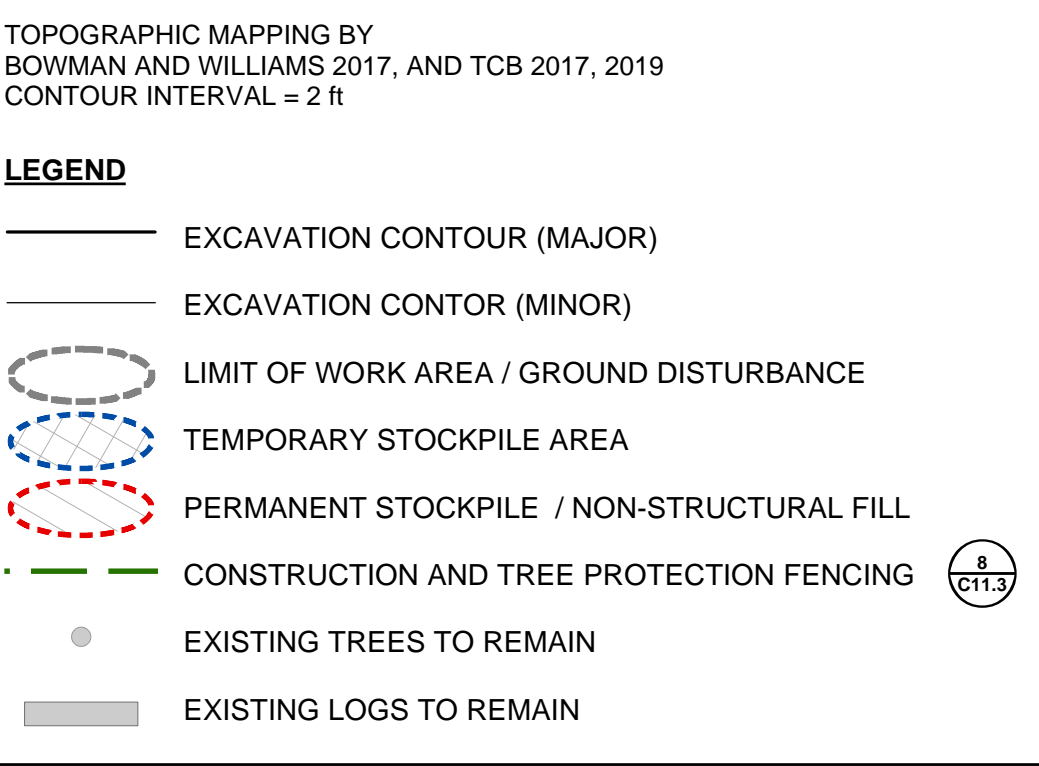
SHEET TITLE:
**CLEAR AND
GRUBBING
PLANS**

PROJECT:
**DARK GULCH CROSSING
STABILIZATION PROJECT**
MEMORIAL PARK, SAN MATEO COUNTY, CA:

DESIGNED BY: T.C.B.
DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCD-DRKGULCH-775

BAR IS ONE INCH ON
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ADJUST SCALES FOR
REDUCED PLOTS

C4.2



BACKSLOPES

1. GENERAL

- a. THE CONTRACTOR SHALL INFORM GEOTECHNICAL ENGINEER PRIOR TO ANY EXCAVATION RESULTING IN ANY CUTS GREATER THAN 20 FEET IN HEIGHT AND/OR INCLINED STEEPER THAN 1.5:1 (H:V).
- b. SITE SAFETY: THE CONTRACTOR IS ADVISED THAT THE PROPOSED TEMPORARY CUT SLOPES ARE COMPOSED OF OLD FILL, AND POSSIBLE ORGANIC CONTAMINANTS AT HAZARDOUS CONDITION MAY EXIST FOR CONSTRUCTION WORKERS WORKING BELOW THE PROPOSED TEMPORARY CUT SLOPES IF DELETERIOUS MATERIAL AND LOOSE FILLS ARE ENCOUNTERED DURING EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING WHATEVER SAFETY PRECAUTIONS HE DEEMS NECESSARY TO MINIMIZE EXPOSED HAZARDS BEFORE AND WHILE COORDINATING WITH THE ENGINEER. FENCING TO PROTECT PARK USERS FROM STEP EXCAVATIONS SHALL CONFORM TO ALL LOCAL CODES, ORDINANCES, AND OSHA REQUIREMENTS.

2. ROCK

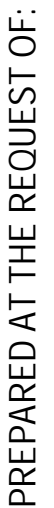
- a. TEMPORARY CUT SLOPES IN ROCK SHALL BE INCLINED NO STEEPER THAN 0.75:1 (H:V) SLOPE FOR HEIGHTS UP TO 20 FEET UNLESS REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER OR REPRESENTATIVE.
- b. TEMPORARY CUTS INTO ROCK GREATER THAN 20 FEET SHALL BE INSPECTED AND MAY BE APPROVED BY THE GEOTECHNICAL ENGINEER OR REPRESENTATIVE BASED ON SITE REVIEW DURING EXCAVATION.

3. NATIVE COLLUVIAL SOILS AND FILL

- a. TEMPORARY CUTS INTO FIRM NATIVE SOILS AND FILL SHALL BE INCLINED NO STEEPER THAN 1:1 (H/V) FOR HEIGHTS UP TO 20 FEET UNLESS REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER OR REPRESENTATIVE.
 - b. TEMPORARY CUTS INTO NATIVE SOILS AND FILL STEEPER THAN 1:1 AND/OR GREATER THAN 20 FEET IN HEIGHT SHALL BE INSPECTED AND MAY BE APPROVED BY THE GEOTECHNICAL ENGINEER OR REPRESENTATIVE BASED ON SITE REVIEW DURING EXCAVATION.
4. THE CONTRACTOR SHOULD BE AWARE THAT SLOPE HEIGHT, INCLINATION, OR EXCAVATION DEPTHS (INCLUDING UTILITY TRENCH EXCAVATIONS) SHOULD IN NO CASE EXCEED THOSE SPECIFIED IN LOCAL, STATE OR FEDERAL SAFETY REGULATIONS, I.E. OSHA HEALTH AND SAFETY STANDARDS FOR EXCAVATIONS, 29 CFR PART 1926 SUBPART P, OR SUCCESSOR REGULATIONS. CUT SLOPES EXCEEDING MINIMUM STANDARDS MUST BE INSPECTED AND EVALUATED BY THE GEOTECHNICAL ENGINEER OR REPRESENTATIVE BEFORE EXCAVATION COMMENCES.



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(831) 425 5832 (831) 425 5830 (fax)



SAN MATEO COUNTY RESOURCE
CONSERVATION DISTRICT

SHEET TITLE:

PRELIMINARY GRADING AND EXCAVATION PLAN

PROJECT.

DARK GULCH CROSSING STABILIZATION PROJECT

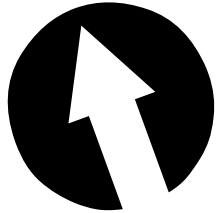
MEMORIAL PARK, SAN MATEO COUNTY, CA:

DESIGNED BY: T.C.B.
DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCDD-DRKGLCH-775

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ADJUST SCALES FOR
REDUCED PLOTS

C5.1


- EXCAVATION NOTES**
BACKSLOPES
- GENERAL**
 - THE CONTRACTOR SHALL INFORM GEOTECHNICAL ENGINEER PRIOR TO ANY EXCAVATION RESULTING IN ANY CUTS GREATER THAN 20 FEET IN HEIGHT AND/OR INCLINED STEEPER THAN 1.5:1 (H:V).
 - SITE SAFETY: THE CONTRACTOR IS ADVISED THAT THE PROPOSED TEMPORARY CUT SLOPES ARE COMPOSED OF OLD FILL AND POSSIBLE ORGANIC CONTAMINANTS. A HAZARDOUS CONDITION MAY EXIST FOR CONSTRUCTION WORKERS WORKING BELOW THE PROPOSED TEMPORARY CUT SLOPES IF DELETERIOUS MATERIAL AND LOOSE FILLS ARE ENCOUNTERED DURING EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING WHATEVER SAFETY PRECAUTIONS HE DEEMS NECESSARY TO MINIMIZE EXPOSED HAZARDS BEFORE AND WHILE COORDINATING WITH THE ENGINEER. FENCING TO PROTECT PARK USERS FROM STEEP EXCAVATIONS SHALL CONFORM TO ALL LOCAL CODES, ORDINANCES, AND OSHA REQUIREMENTS.
 - ROCK**
 - TEMPORARY CUT SLOPES IN ROCK SHALL BE INCLINED NO STEEPER THAN 0.75:1 (H:V) SLOPE FOR HEIGHTS UP TO 20 FEET UNLESS REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER OR REPRESENTATIVE.
 - TEMPORARY CUTS INTO ROCK GREATER THAN 20 FEET SHALL BE INSPECTED AND MAY BE APPROVED BY THE GEOTECHNICAL ENGINEER OR REPRESENTATIVE BASED ON SITE REVIEW DURING EXCAVATION.
 - NATIVE COLLUVIAL SOILS AND FILL**
 - TEMPORARY CUTS INTO FIRM NATIVE SOILS AND FILL SHALL BE INCLINED NO STEEPER THAN 1:1 (H:V) FOR HEIGHTS UP TO 20 FEET UNLESS REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER OR REPRESENTATIVE.
 - TEMPORARY CUTS INTO NATIVE SOILS AND FILL STEEPER THAN 1:1 AND/OR GREATER THAN 20 FEET IN HEIGHT SHALL BE INSPECTED AND MAY BE APPROVED BY THE GEOTECHNICAL ENGINEER OR REPRESENTATIVE BASED ON SITE REVIEW DURING EXCAVATION.
 - THE CONTRACTOR SHOULD BE AWARE THAT SLOPE HEIGHT, INCLINATION, OR EXCAVATION DEPTHS (INCLUDING UTILITY TRENCH EXCAVATIONS) SHOULD IN NO CASE EXCEED THOSE SPECIFIED IN LOCAL, STATE OR FEDERAL SAFETY REGULATIONS, I.E. OSHA HEALTH AND SAFETY STANDARDS FOR EXCAVATIONS, 29 CFR PART 1926 SUBPART P, OR SUCCESSOR REGULATIONS. CUT SLOPES EXCEEDING MINIMUM STANDARDS MUST BE INSPECTED AND EVALUATED BY THE GEOTECHNICAL ENGINEER OR REPRESENTATIVE BEFORE EXCAVATION COMMENCES.





02040
Feet


TOPOGRAPHIC MAPPING BY
BOWMAN AND WILLIAMS 2017, AND TCB 2017, 2019
CONTOUR INTERVAL = 2 ft


LEGEND


EXCAVATION CONTOUR (MAJOR)

EXCAVATION CONTOUR (MINOR)

LIMIT OF WORK AREA / GROUND DISTURBANCE


TEMPORARY STOCKPILE AREA


PERMANENT STOCKPILE / NON-STRUCTURAL FILL

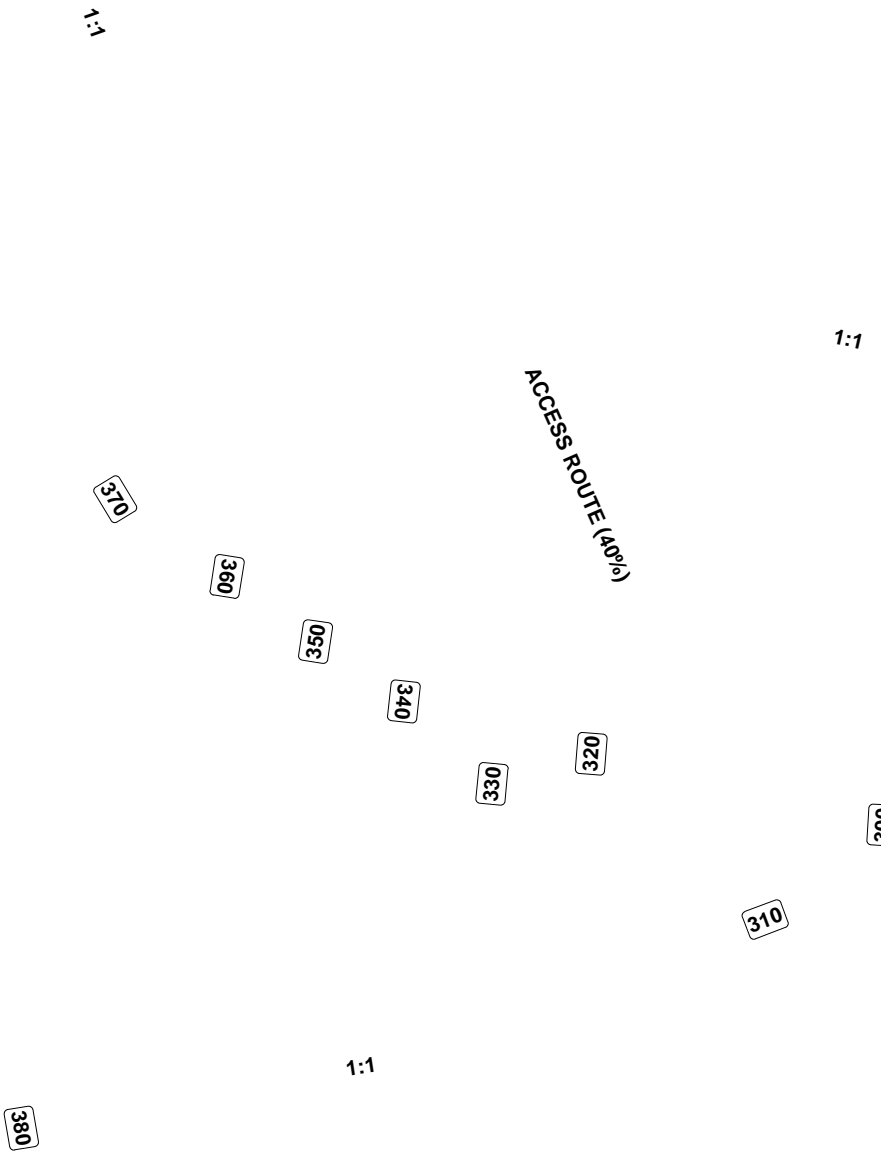


8
FT

CONSTRUCTION AND TREE PROTECTION FENCING

EXISTING TREES TO REMAIN

EXISTING LOGS TO REMAIN



PREPARED AT THE REQUEST OF:
SAN MATEO COUNTY RESOURCE
CONSERVATION DISTRICT

SHEET TITLE:
PRELIMINARY
GRADING AND
EXCAVATION PLAN

PROJECT:
DARK GULCH CROSSING
STABILIZATION PROJECT
MEMORIAL PARK, SAN MATEO COUNTY, CA:

DESIGNED BY: T.C.B.
DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCO-DRKGLCH-775

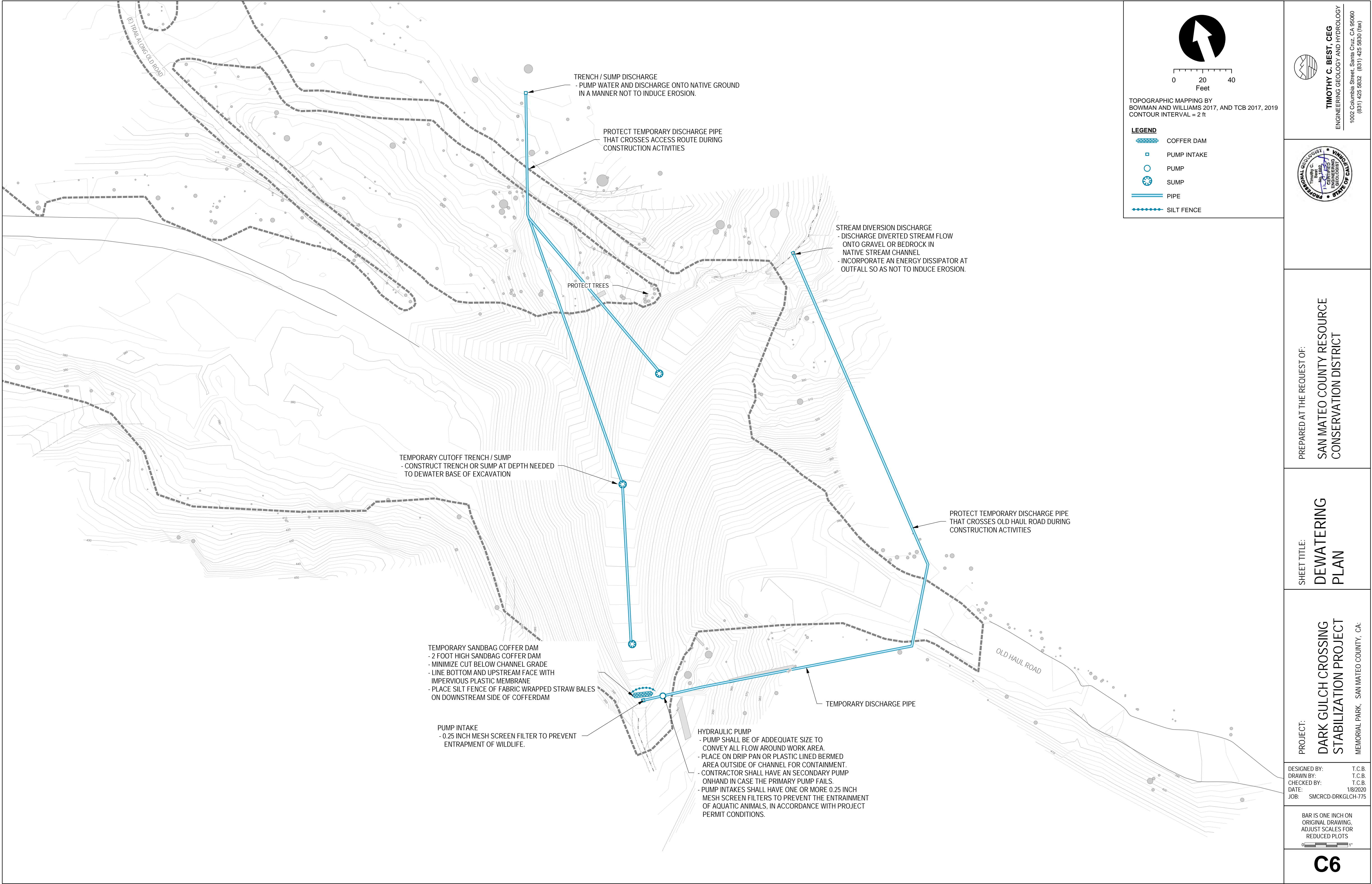
BAR IS ONE INCH ON
ORIGINAL DRAWING.
ADJUST SCALES FOR
REDUCED PLOTS


C5.2




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PROFESSIONAL GEOLOGIST
Timothy C. Best
No. 1185
State of California
REGISTERED

PREPARED AT THE REQUEST OF:
**SAN MATEO COUNTY RESOURCE
CONSERVATION DISTRICT**

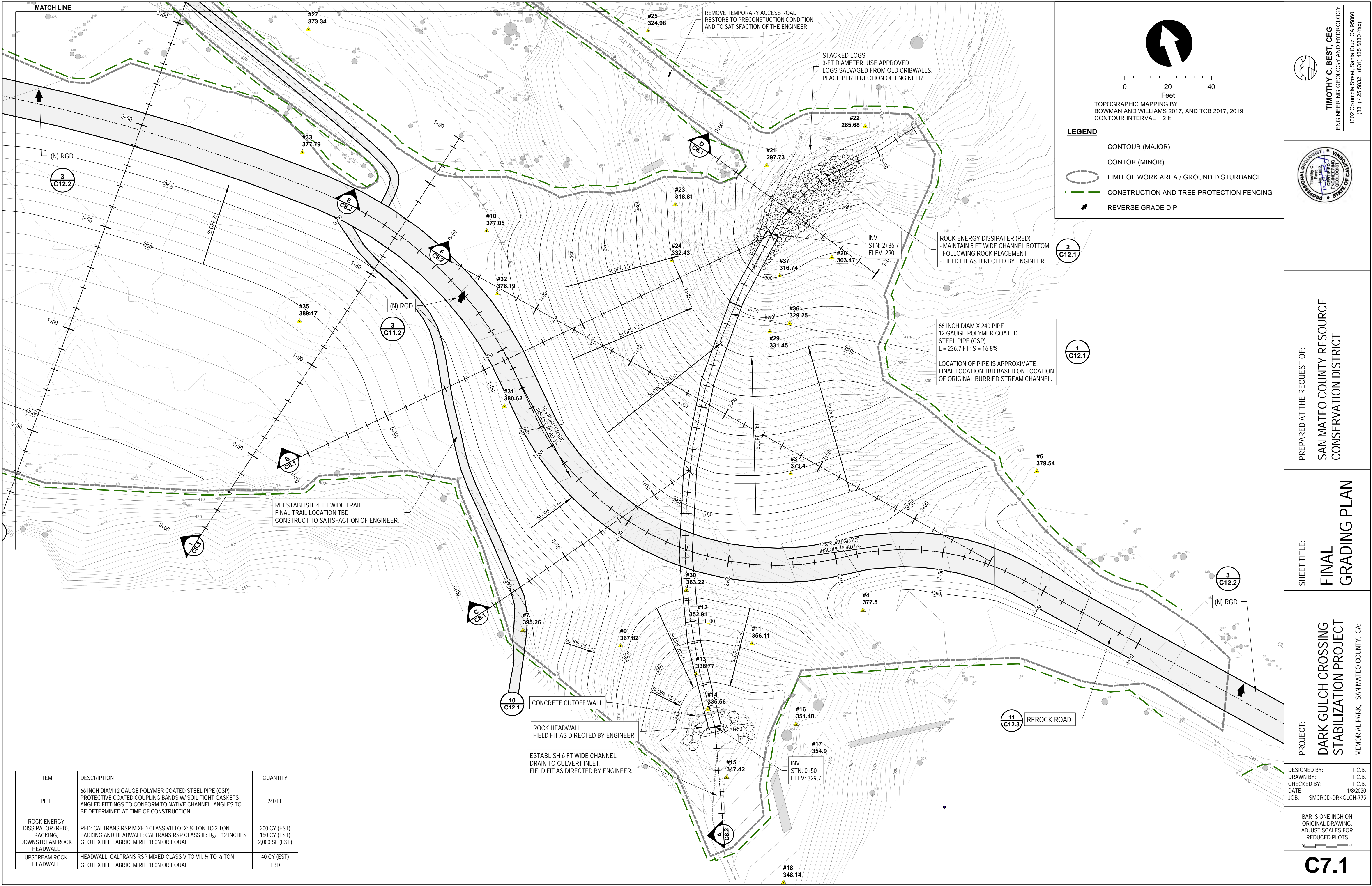
SHEET TITLE:
**DEWATERING
PLAN**

PROJECT:
**DARK GULCH CROSSING
STABILIZATION PROJECT**
MEMORIAL PARK, SAN MATEO COUNTY, CA:

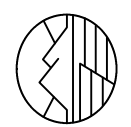
DESIGNED BY: T.C.B.
DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCDD-DRKGLCH-775

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


C6



ITEM	DESCRIPTION	QUANTITY
PIPE	66 INCH DIAM 12 GAUGE POLYMER COATED STEEL PIPE (CSP) PROTECTIVE COATED COUPLING BANDS W/ SOIL TIGHT GASKETS. ANGLED FITTINGS TO CONFORM TO NATIVE CHANNEL. ANGLES TO BE DETERMINED AT TIME OF CONSTRUCTION.	240 LF
ROCK ENERGY DISSIPATOR (RED), BACKING DOWNSTREAM ROCK HEADWALL	RED: CALTRANS RSP MIXED CLASS VII TO IX: ½ TON TO 2 TON BACKING AND HEADWALL: CALTRANS RSP CLASS III: D ₅₀ = 12 INCHES GEOTEXTILE FABRIC: MIRIFI 180N OR EQUAL	200 CY (EST) 150 CY (EST) 2,000 SF (EST)
UPSTREAM ROCK HEADWALL	HEADWALL: CALTRANS RSP MIXED CLASS V TO VII: ¼ TO ½ TON GEOTEXTILE FABRIC: MIRIFI 180N OR EQUAL	40 CY (EST) TBD



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PREPARED AT THE REQUEST OF:
**SAN MATEO COUNTY RESOURCE
CONSERVATION DISTRICT**

SHEET TITLE:
**FINAL
GRADING PLAN**

PROJECT:
**DARK GULCH CROSSING
STABILIZATION PROJECT**
MEMORIAL PARK, SAN MATEO COUNTY, CA

DESIGNED BY: T.C.B.
DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCD-DRKGLCH-775

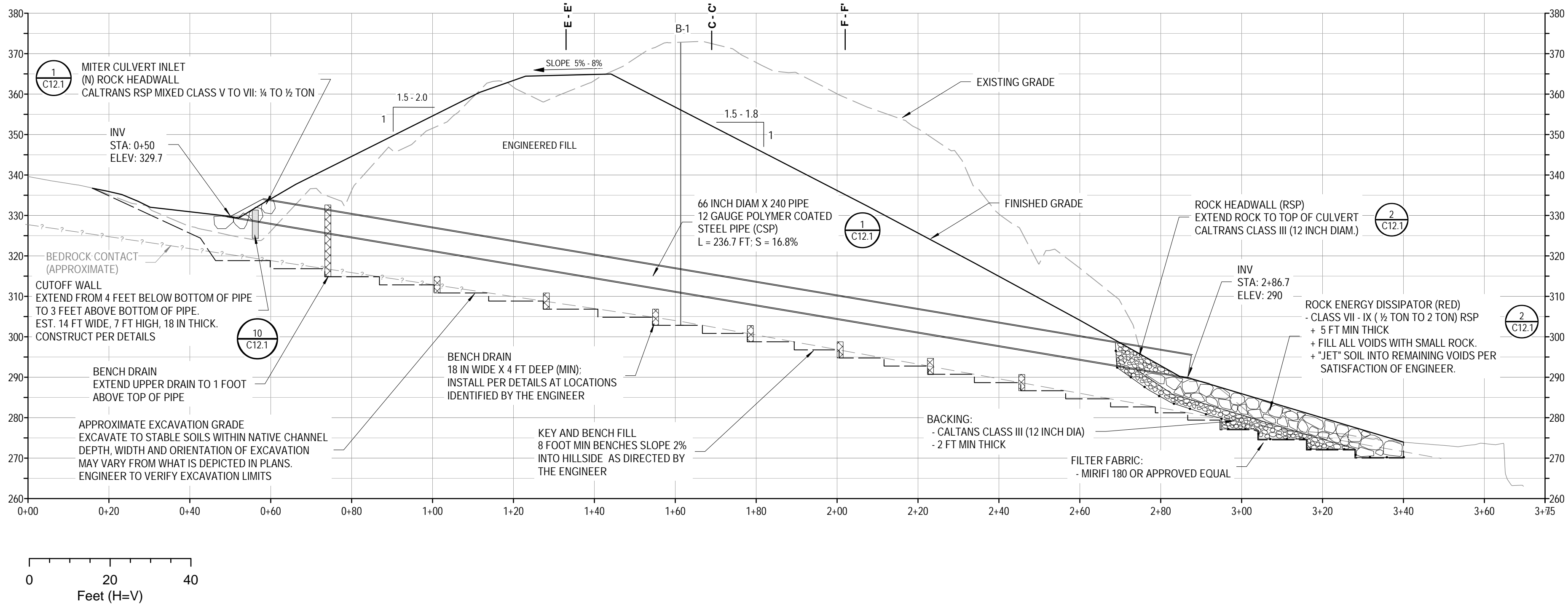
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C7.1

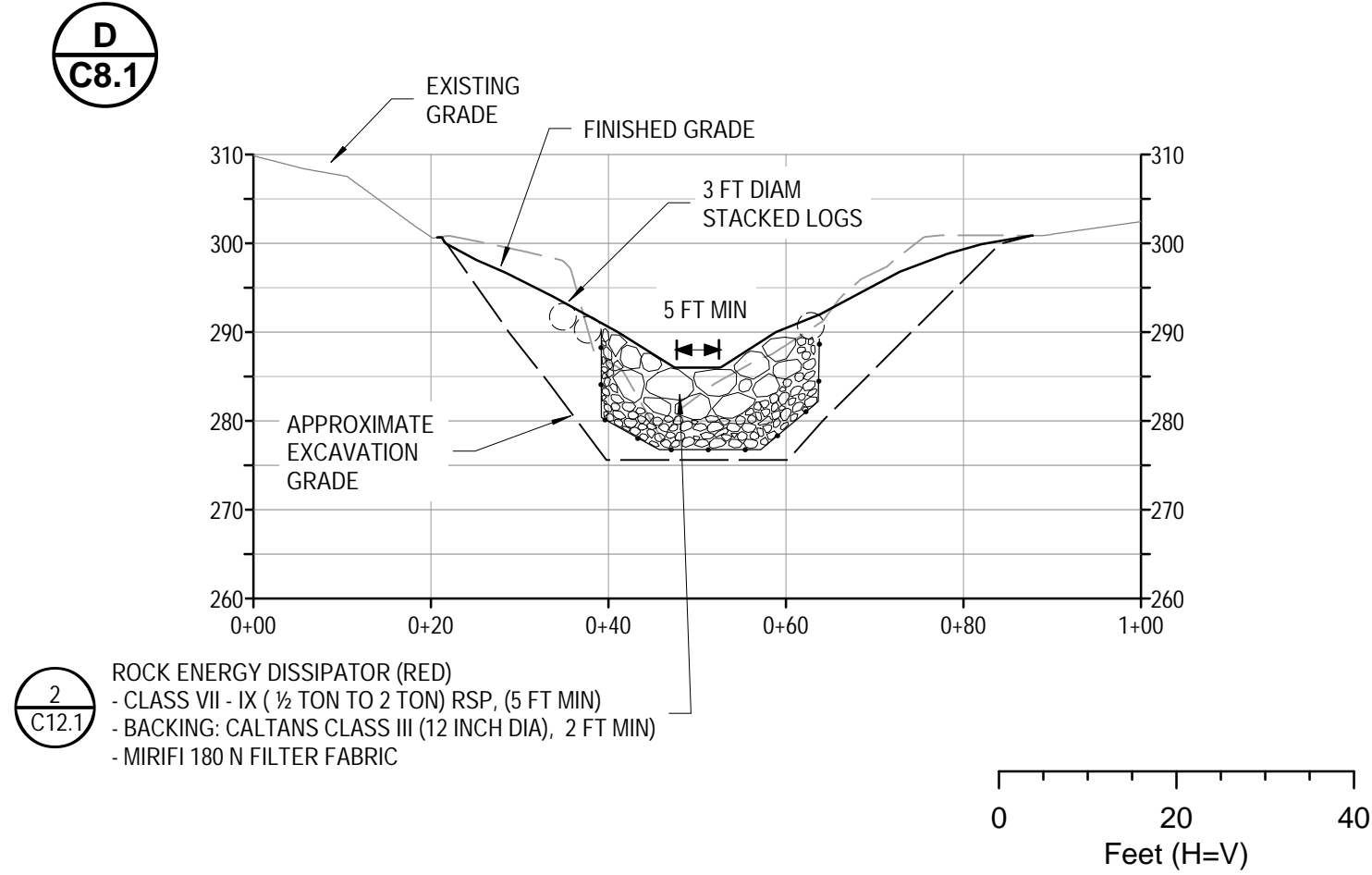


A
C8.1

SECTION A: CULVERT PROFILE

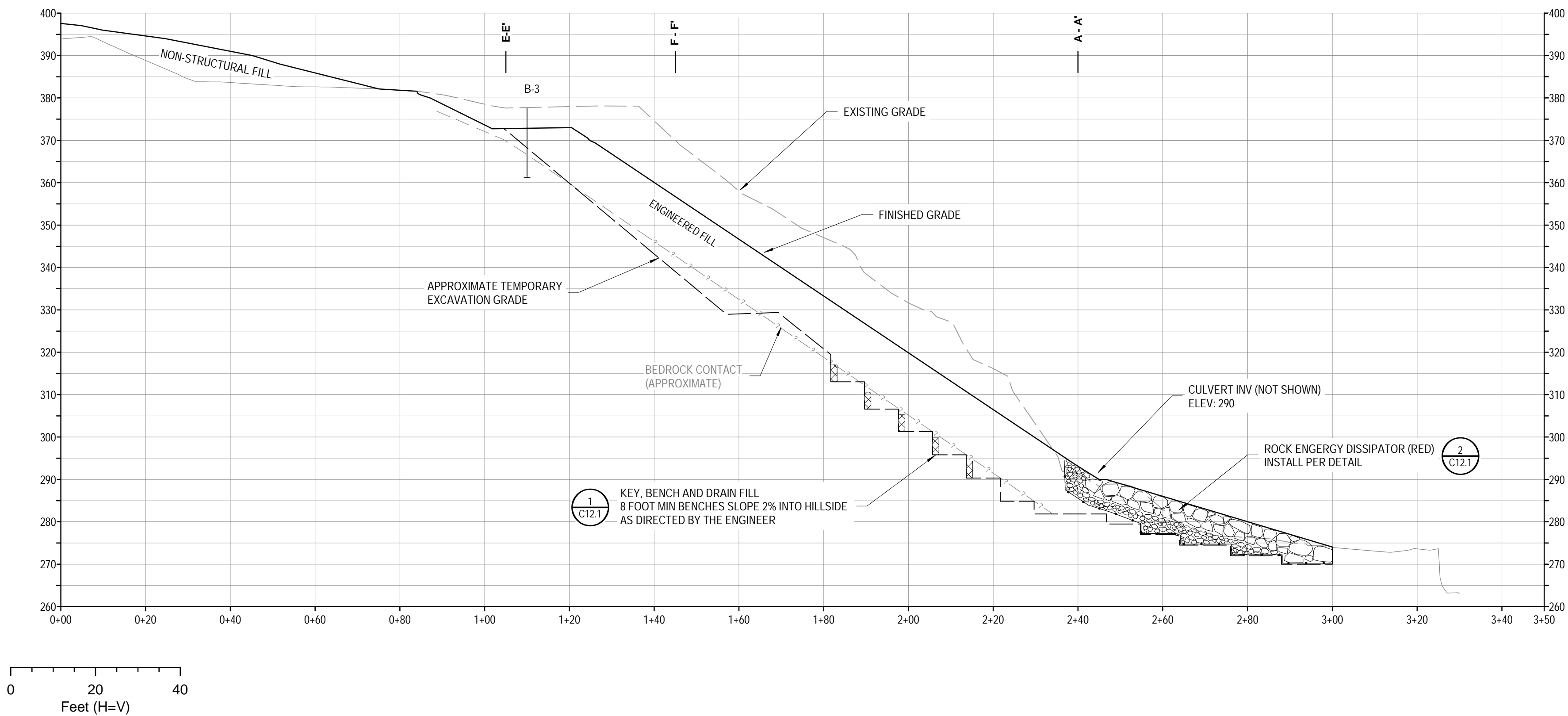


SECTION D: ROCK ENERGY DISSIPATOR SECTION

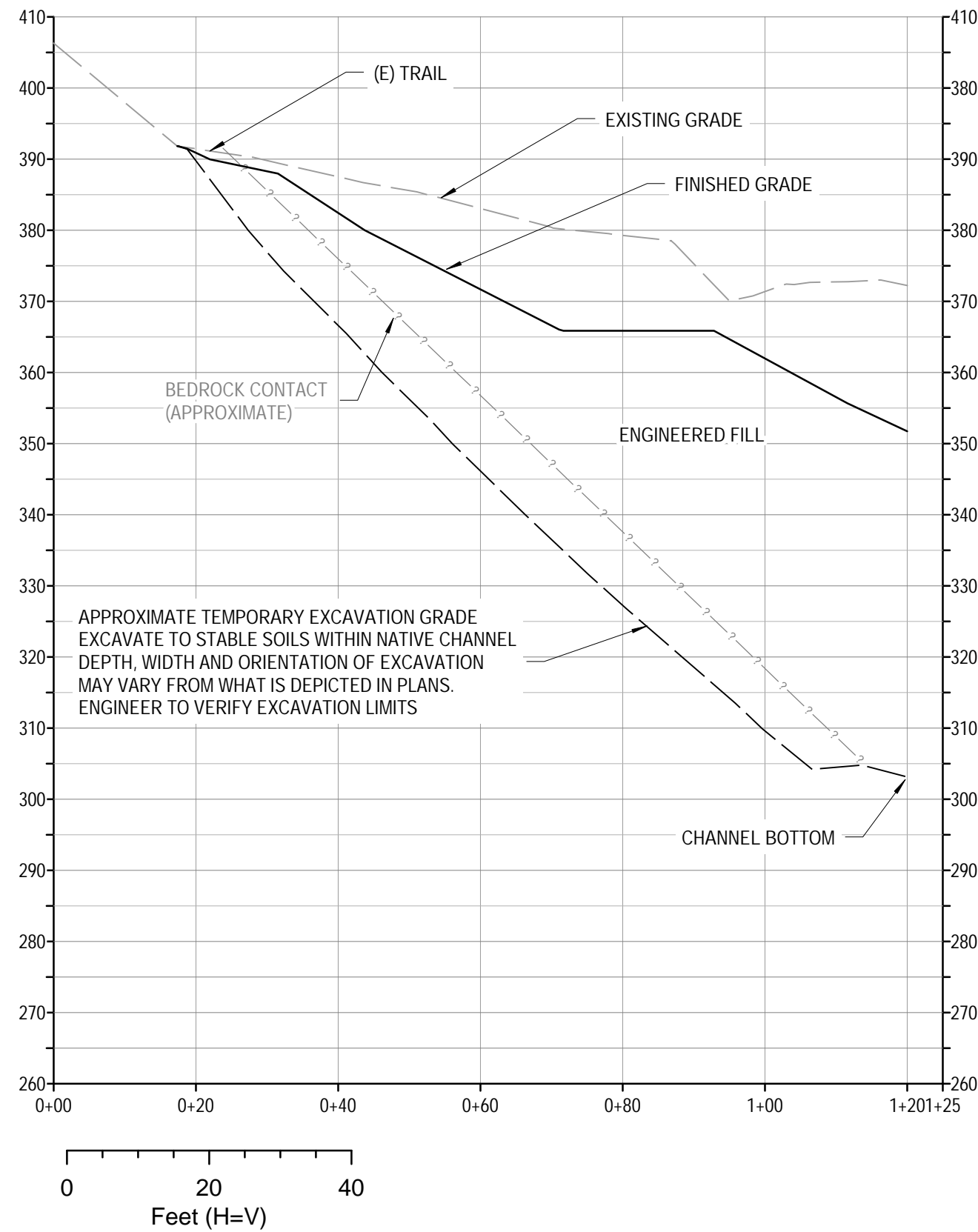


B
C8.1

SECTION B: SECTION



SECTION C: SECTION



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CONSERVATION DISTRICT

SHEET TITLE:
SECTIONS 1

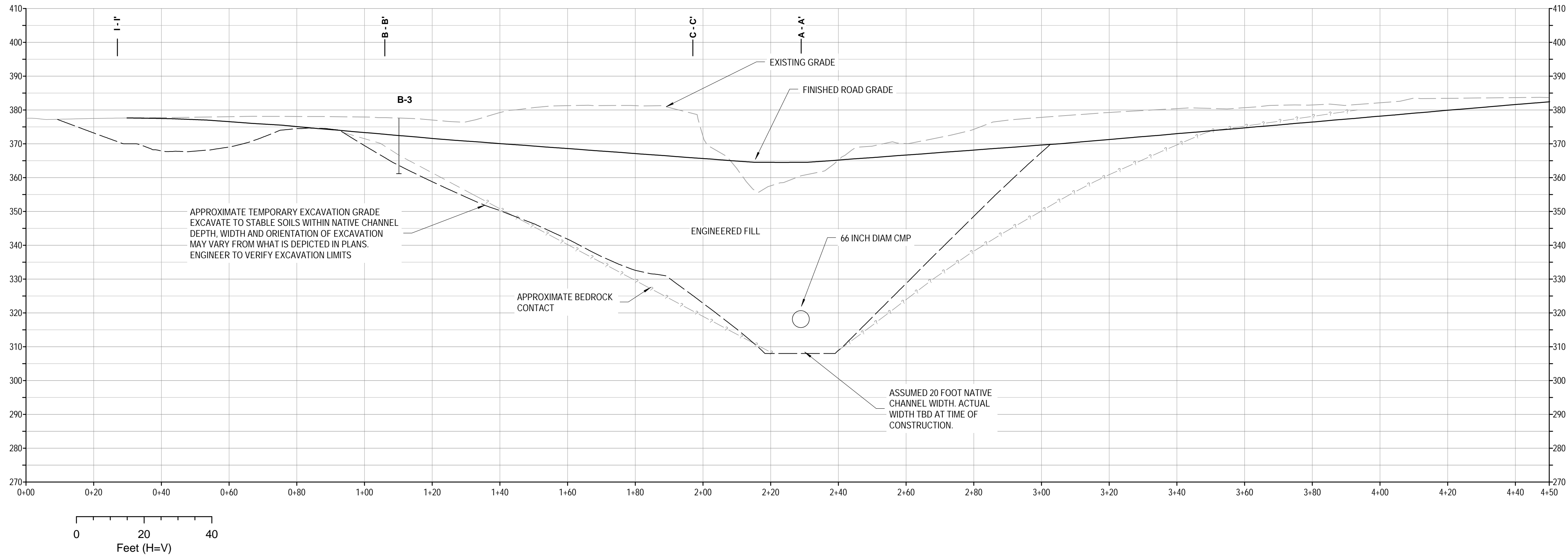
PROJECT:
DARK GULCH CROSSING
STABILIZATION PROJECT
MEMORIAL PARK, SAN MATEO COUNTY, CA

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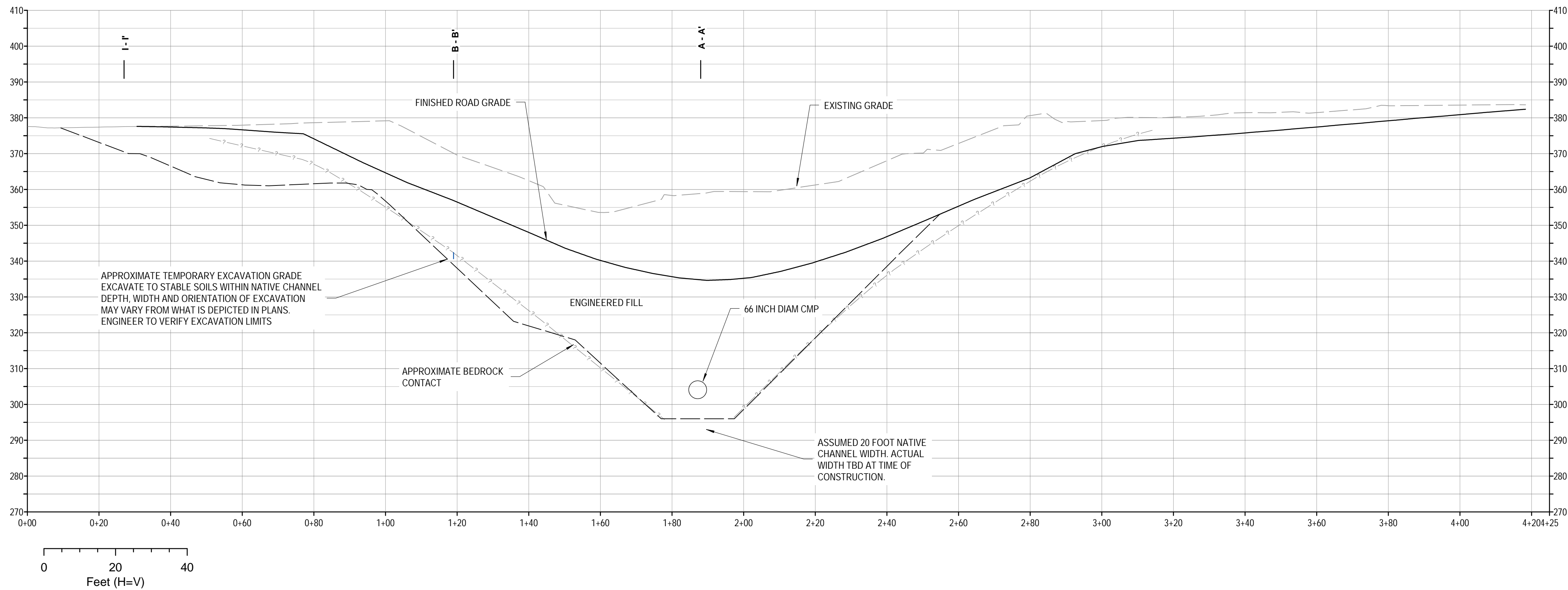
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C8.1

E
C8.2 SECTION E



F
C8.2 SECTION F



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PREPARED AT THE REQUEST OF:
**SAN MATEO COUNTY RESOURCE
CONSERVATION DISTRICT**

SHEET TITLE:
SECTIONS 2

PROJECT:
**DARK GULCH CROSSING
STABILIZATION PROJECT**
MEMORIAL PARK, SAN MATEO COUNTY, CA

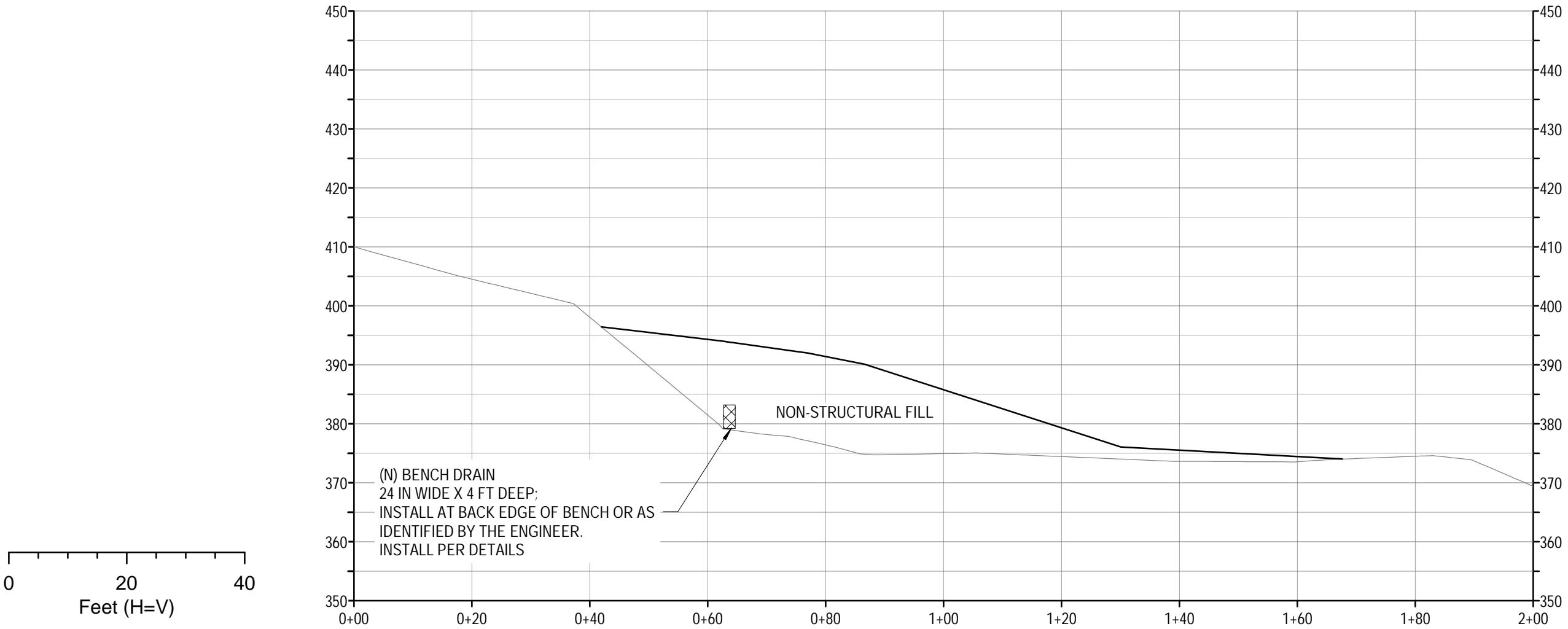
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C8.2

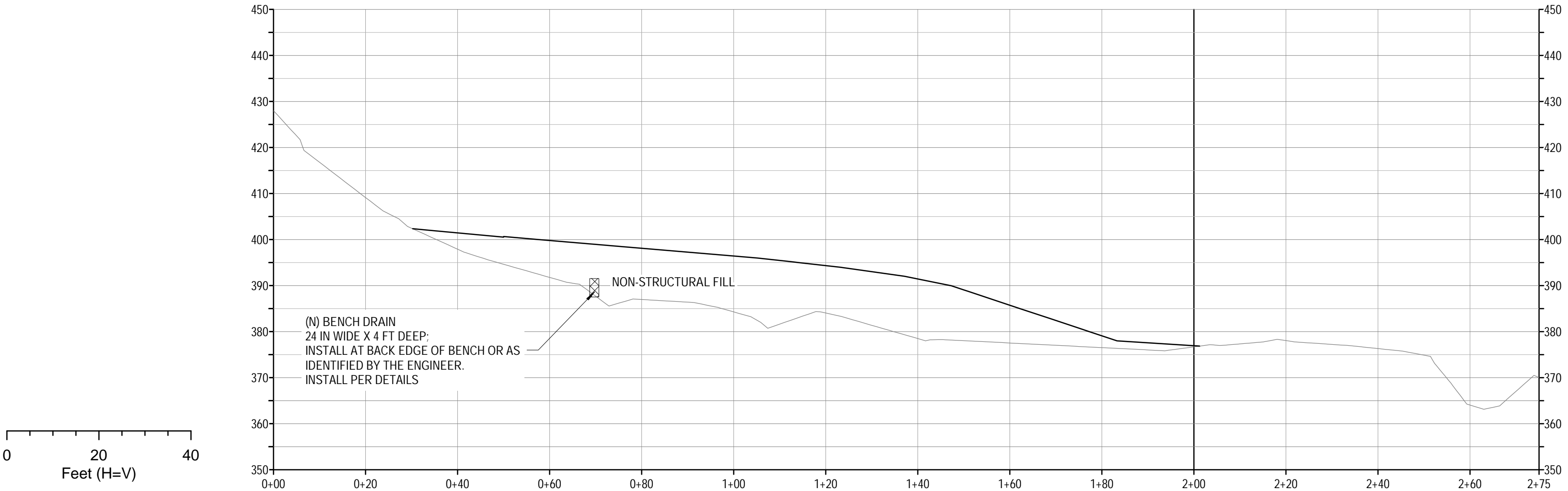
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C8.3

SECTION G: SPOIL - NON STRUCTURAL FILL PROFILE



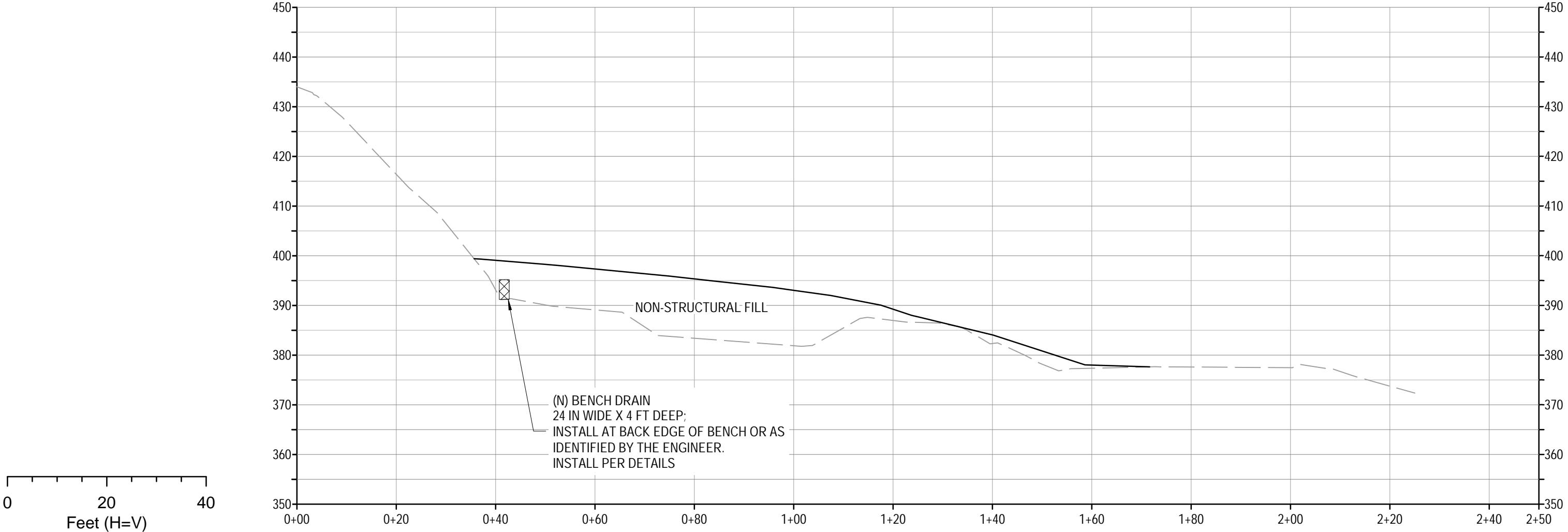
H
C8.3

SECTION H: SPOIL - NON STRUCTURAL FILL PROFILE



I
C8.3

SECTION I: SPOIL - NON STRUCTURAL FILL PROFILE



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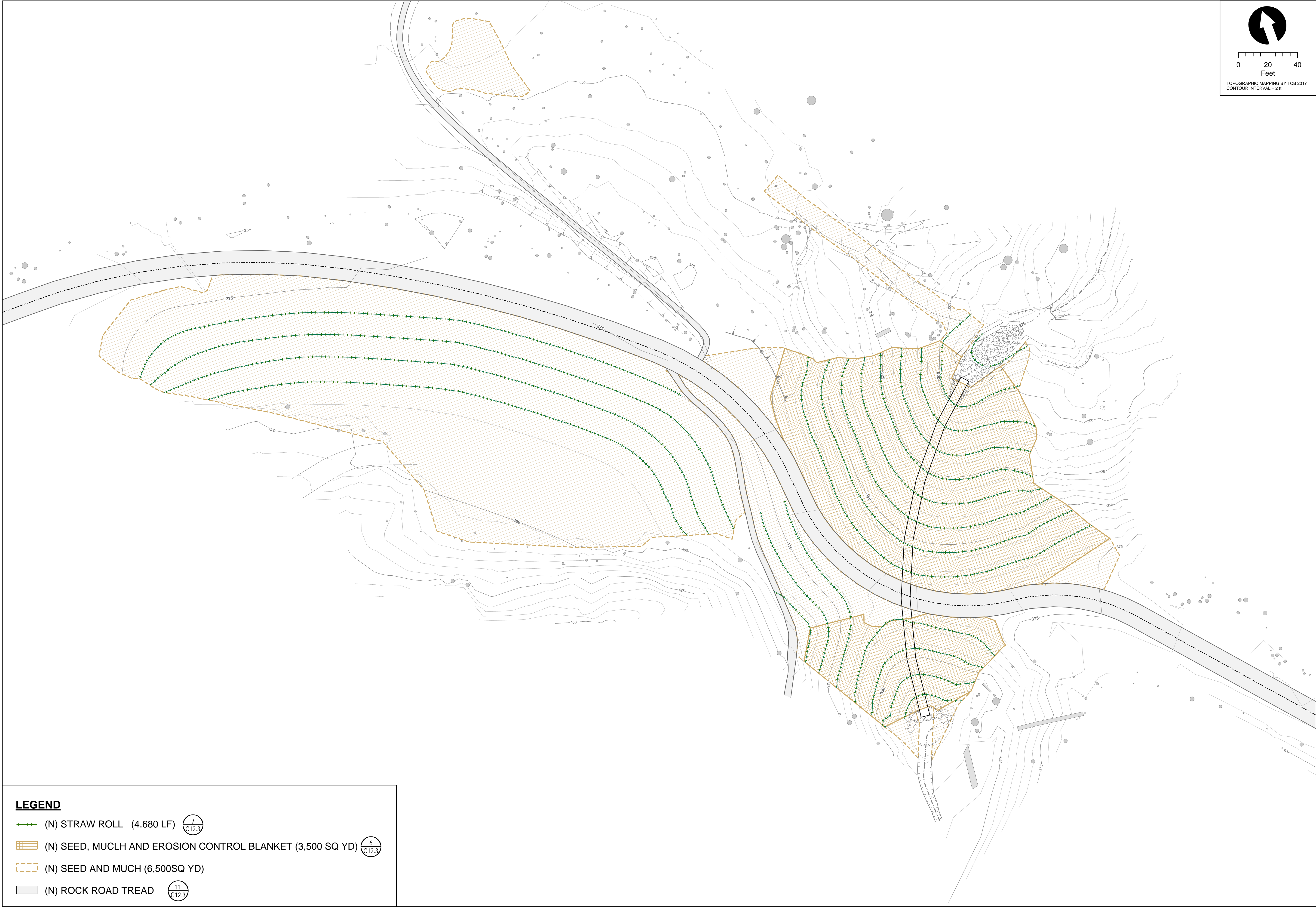
SHEET TITLE:
SECTIONS 3

PROJECT:
**DARK GULCH CROSSING
STABILIZATION PROJECT**
MEMORIAL PARK, SAN MATEO COUNTY, CA








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DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCDDRKGLCH-775

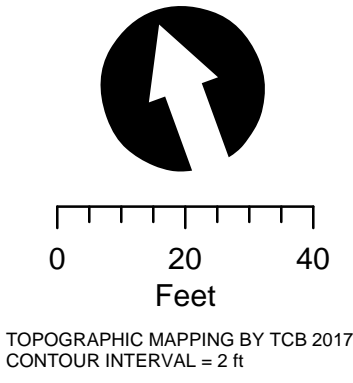
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C8.3



LEGEND

-  (N) STRAW ROLL (4,680 LF) 
-  (N) SEED, MUCLH AND EROSION CONTROL BLANKET (3,500 SQ YD) 
-  (N) SEED AND MUCH (6,500SQ YD)
-  (N) ROCK ROAD TREAD 



TOPOGRAPHIC MAPPING BY TCB 2017
CONTOUR INTERVAL = 2 ft



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**SAN MATEO COUNTY RESOURCE
CONSERVATION DISTRICT**

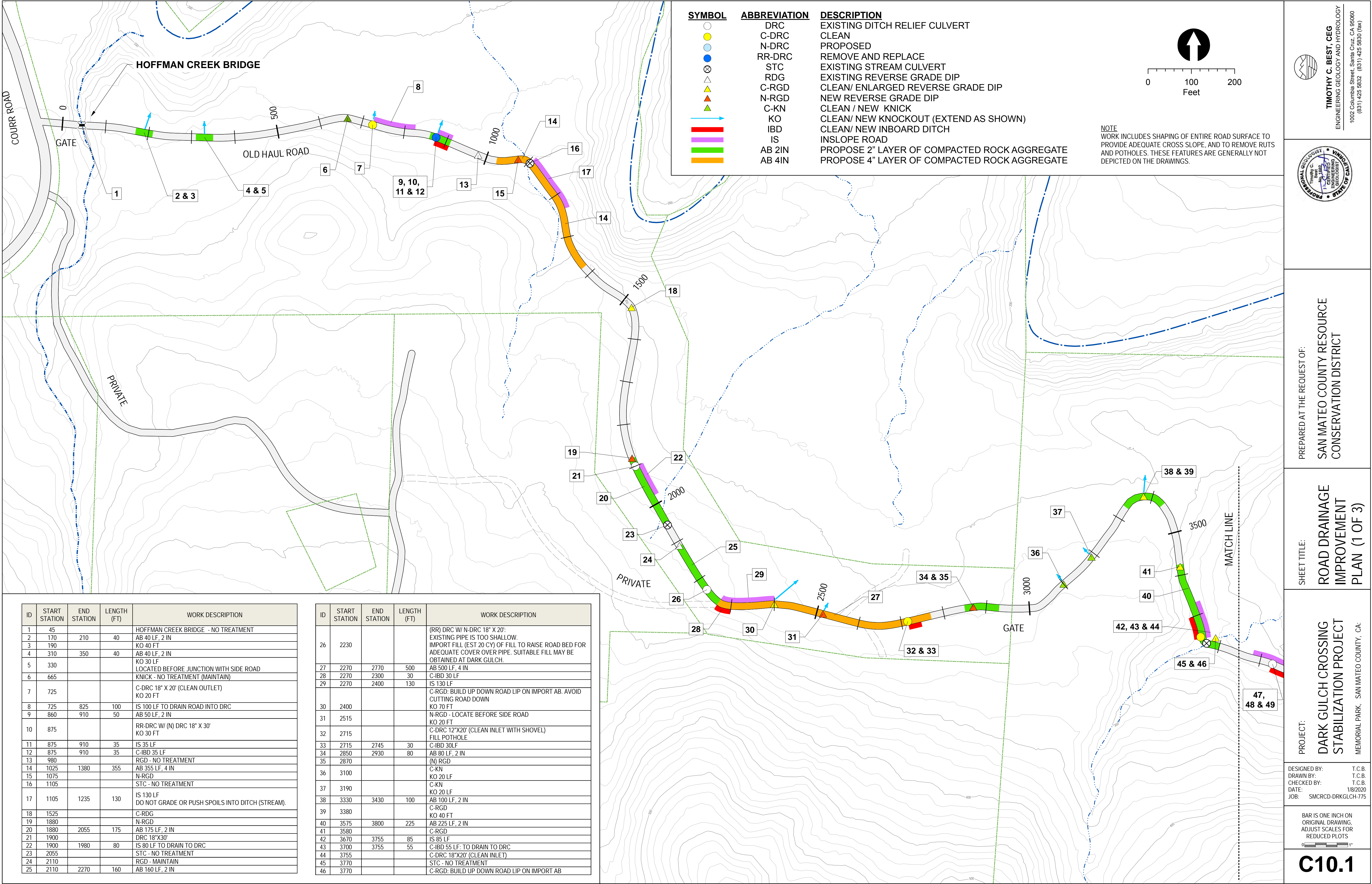
SHEET TITLE:
**EROSION CONTROL
AND VEGETATION
PLAN**

PROJECT:
**DARK GULCH CROSSING
STABILIZATION PROJECT**
MEMORIAL PARK, SAN MATEO COUNTY, CA

DESIGNED BY: T.C.B.
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C9



ID	START STATION	END STATION	LENGTH (FT)	WORK DESCRIPTION
1	45			HOFFMAN CREEK BRIDGE - NO TREATMENT
2	170	210	40	AB 40 LF, 2 IN
3	190			KO 40 FT
4	310	350	40	AB 40 LF, 2 IN
5	330			KO 30 LF
6	665			LOCATED BEFORE JUNCTION WITH SIDE ROAD
7	725			KNICK - NO TREATMENT (MAINTAIN)
8	725	825	100	C-DRC 18" X 20' (CLEAN OUTLET)
9	860	910	50	KO 20 FT
10	875			IS 100 LF TO DRAIN ROAD INTO DRC
11	875	910	35	AB 50 LF, 2 IN
12	875	910	35	RR-DRC W/ (N) DRC 18" X 30'
13	980			KO 30 FT
14	1025	1380	355	C-RGD
15	1075			N-RGD
16	1105			STC - NO TREATMENT
17	1105	1235	130	IS 130 LF
18	1525			DO NOT GRADE OR PUSH SPOILS INTO DITCH (STREAM).
19	1880			C-RGD
20	1880	2055	175	N-RGD
21	1900			AB 175 LF, 2 IN
22	1900	1980	80	DRC 18"X30'
23	2055			IS 80 LF TO DRAIN TO DRC
24	2110			STC - NO TREATMENT
25	2110	2270	160	RGD - MAINTAIN
				AB 160 LF, 2 IN

ID	START STATION	END STATION	LENGTH (FT)	WORK DESCRIPTION
26	2230			(RR) DRC W/ N-DRC 18" X 20':
27	2270	2770	500	EXISTING PIPE IS TOO SHALLOW.
28	2270	2300	30	IMPORT FILL (EST 20 CY) OF FILL TO RAISE ROAD BED FOR
29	2270	2400	130	ADEQUATE COVER OVER PIPE. SUITABLE FILL MAY BE
30	2400			OBTAINED AT DARK GULCH.
31	2515			AB 500 LF, 4 IN
32	2715			C-IBD 30 LF
33	2715	2745	30	IS 130 LF
34	2850	2930	80	C-RGD: BUILD UP DOWN ROAD LIP ON IMPORT AB. AVOID
35	2870			CUTTING ROAD DOWN
36	3100			KO 70 FT
37	3190			N-RGD - LOCATE BEFORE SIDE ROAD
38	3330	3430	100	KO 20 FT
39	3380			C-DRC 12"X20' (CLEAN INLET WITH SHOVEL)
40	3575	3800	225	FILL POT HOLE
41	3580			C-RGD
42	3670	3755	85	C-IBD 30LF
43	3700	3755	55	AB 80 LF, 2 IN
44	3755			(N) RGD
45	3770			C-KN
46	3770			KO 20 LF

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PREPARED AT THE REQUEST OF:

SAN MATEO COUNTY RESOURCE CONSERVATION DISTRICT

SHEET TITLE:

ROAD DRAINAGE IMPROVEMENT PLAN (1 OF 3)

PROJECT:

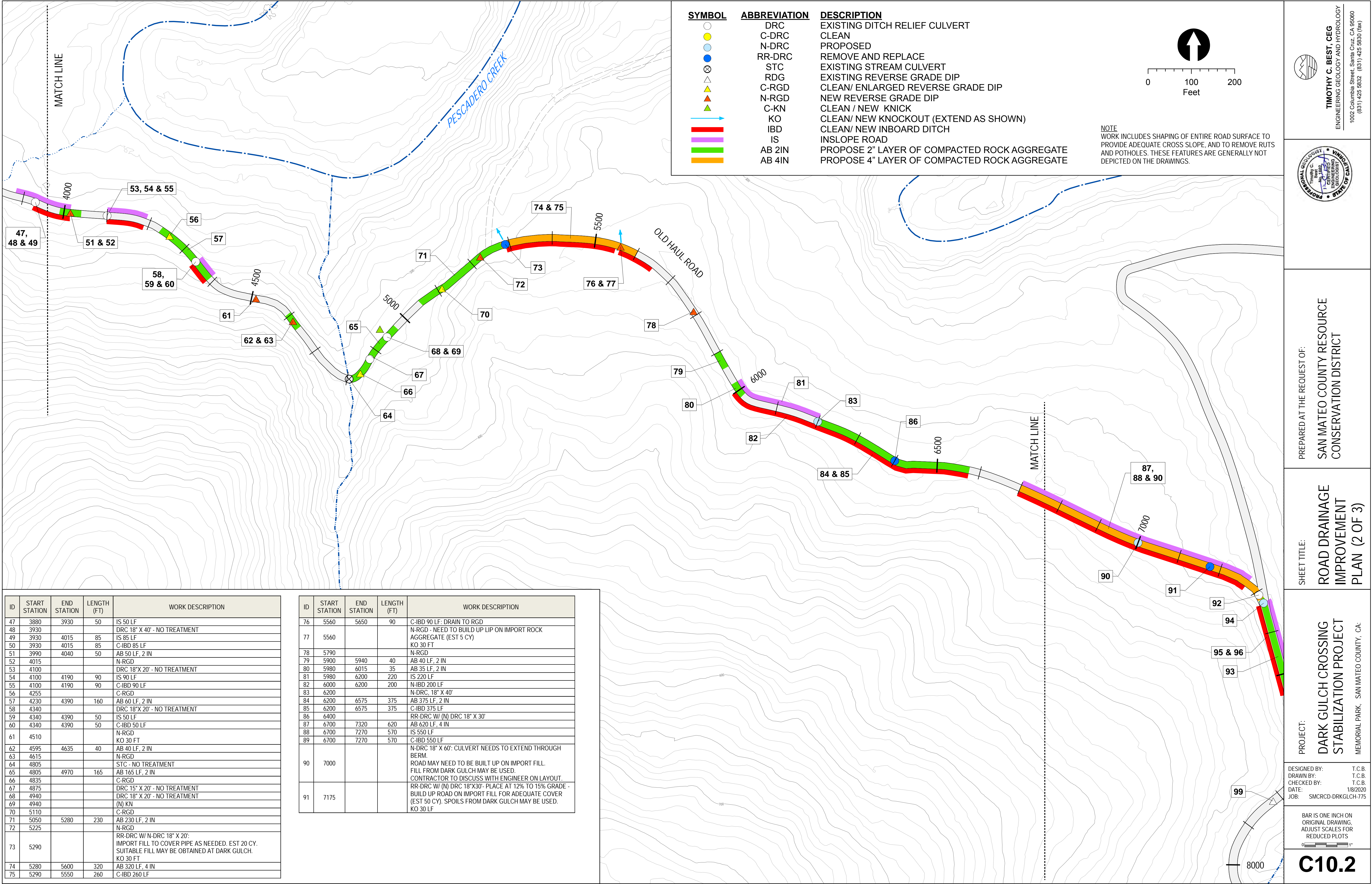
DARK GULCH CROSSING STABILIZATION PROJECT

MEMORIAL PARK, SAN MATEO COUNTY, CA:

DESIGNED BY: T.C.B.
DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCDD-DRKGLCH-775

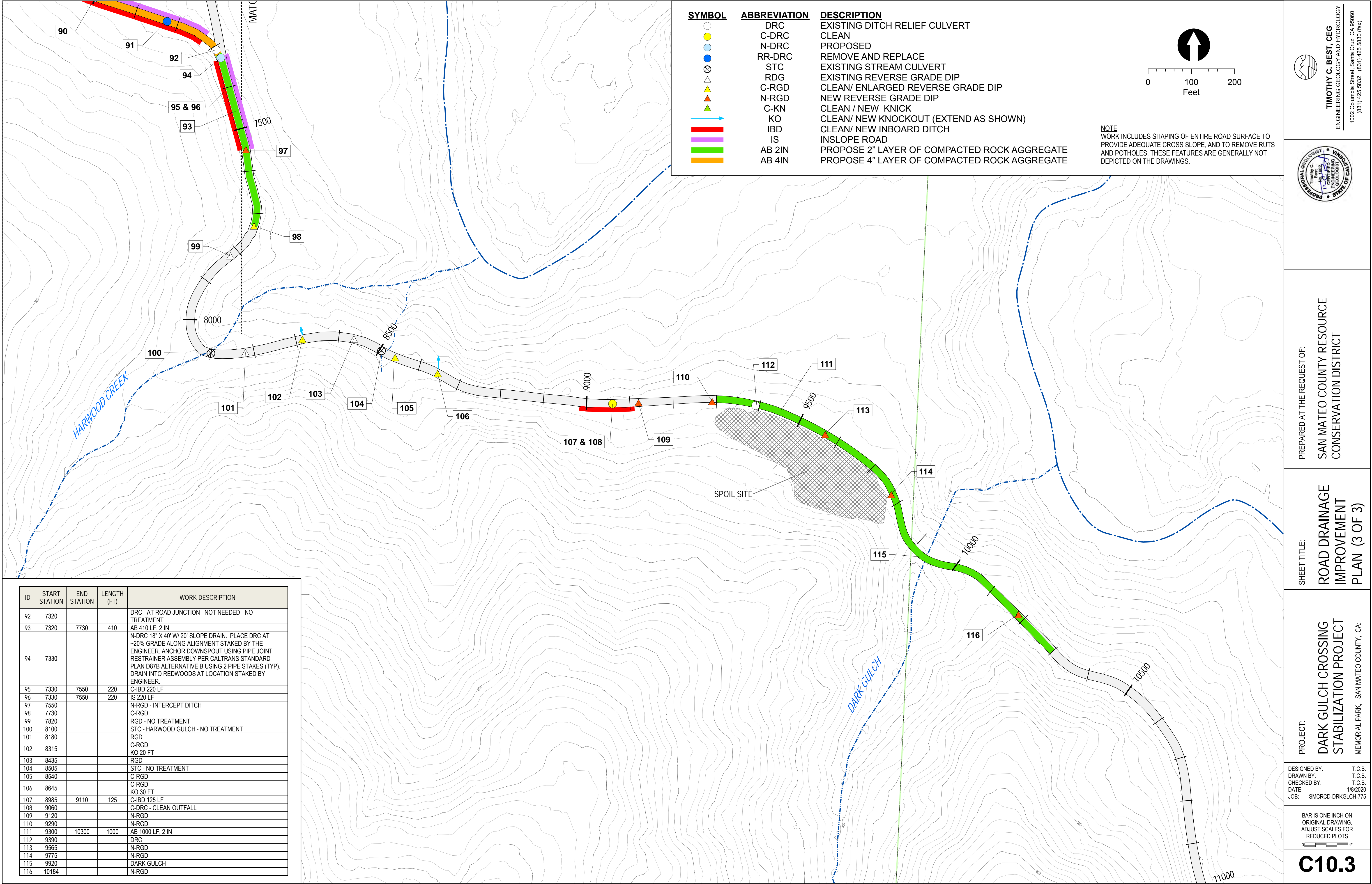
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C10.1



ID	START STATION	END STATION	LENGTH (FT)	WORK DESCRIPTION
47	3880	3930	50	IS 50 LF
48	3930			DRC 18" X 40' - NO TREATMENT
49	3930	4015	85	IS 85 LF
50	3930	4015	85	C-IBD 85 LF
51	3990	4040	50	AB 50 LF, 2 IN
52	4015			N-RGD
53	4100			DRC 18"X 20' - NO TREATMENT
54	4100	4190	90	IS 90 LF
55	4100	4190	90	C-IBD 90 LF
56	4255			C-RGD
57	4230	4390	160	AB 60 LF, 2 IN
58	4340			DRC 18"X 20' - NO TREATMENT
59	4340	4390	50	IS 50 LF
60	4340	4390	50	C-IBD 50 LF
61	4510			N-RGD
62	4595	4635	40	KO 30 FT
63	4615			AB 40 LF, 2 IN
64	4805			N-RGD
65	4805	4970	165	STC - NO TREATMENT
66	4835			AB 165 LF, 2 IN
67	4875			C-RGD
68	4940			DRC 15" X 20' - NO TREATMENT
69	4940			DRC 18" X 20' - NO TREATMENT
70	5110			(N) KN
71	5050	5280	230	C-RGD
72	5225			AB 230 LF, 2 IN
73	5290			N-RGD
74	5280	5600	320	RR-DRC W/ N-DRC 18" X 20':
75	5290	5550	260	IMPORT FILL TO COVER PIPE AS NEEDED. EST 20 CY. SUITABLE FILL MAY BE OBTAINED AT DARK GULCH. KO 30 FT

ID	START STATION	END STATION	LENGTH (FT)	WORK DESCRIPTION
76	5560	5650	90	AB 320 LF, 4 IN
77	5560			C-IBD 260 LF
78	5790			
79	5900	5940	40	C-IBD 90 LF: DRAIN TO RGD
80	5980	6015	35	N-RGD - NEED TO BUILD UP LIP ON IMPORT ROCK AGGREGATE (EST 5 CY)
81	5980	6200	220	KO 30 FT
82	6000	6200	200	N-RGD
83	6200			AB 40 LF, 2 IN
84	6200	6575	375	AB 35 LF, 2 IN
85	6200	6575	375	AB 375 LF, 2 IN
86	6400			C-IBD 375 LF
87	6700	7320	620	RR-DRC W/ (N) DRC 18" X 30'
88	6700	7270	570	AB 620 LF, 4 IN
89	6700	7270	570	IS 550 LF
90	7000			C-IBD 550 LF
91	7175			N-DRC 18" X 60': CULVERT NEEDS TO EXTEND THROUGH BERM. ROAD MAY NEED TO BE BUILT UP ON IMPORT FILL. FILL FROM DARK GULCH MAY BE USED. CONTRACTOR TO DISCUSS WITH ENGINEER ON LAYOUT. RR-DRC W/ (N) DRC 18"X30'. PLACE AT 12% TO 15% GRADE - BUILD UP ROAD ON IMPORT FILL FOR ADEQUATE COVER (EST 50 CY). SPOILS FROM DARK GULCH MAY BE USED. KO 30 LF



ID	START STATION	END STATION	LENGTH (FT)	WORK DESCRIPTION
92	7320			DRC - AT ROAD JUNCTION - NOT NEEDED - NO TREATMENT
93	7320	7730	410	AB 410 LF, 2 IN
94	7330			N-DRC 18" X 40' W/ 20' SLOPE DRAIN. PLACE DRC AT ~20% GRADE ALONG ALIGNMENT STAKED BY THE ENGINEER. ANCHOR DOWNSPOUT USING PIPE JOINT RESTRAINER ASSEMBLY PER CALTRANS STANDARD PLAN D87B ALTERNATIVE B USING 2 PIPE STAKES (TYP). DRAIN INTO REDWOODS AT LOCATION STAKED BY ENGINEER.
95	7330	7550	220	C-IBD 220 LF
96	7330	7550	220	IS 220 LF
97	7550			N-RGD - INTERCEPT DITCH
98	7730			C-RGD
99	7820			RGD - NO TREATMENT
100	8100			STC - HARWOOD GULCH - NO TREATMENT
101	8180			RGD
102	8315			C-RGD KO 20 FT
103	8435			RGD
104	8505			STC - NO TREATMENT
105	8540			C-RGD
106	8645			C-RGD KO 30 FT
107	8985	9110	125	C-IBD 125 LF
108	9060			C-DRC - CLEAN OUTFALL
109	9120			N-RGD
110	9290			N-RGD
111	9300	10300	1000	AB 1000 LF, 2 IN
112	9390			DRC
113	9565			N-RGD
114	9775			N-RGD
115	9920			DARK GULCH
116	10184			N-RGD

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PREPARED AT THE REQUEST OF:
**SAN MATEO COUNTY RESOURCE
CONSERVATION DISTRICT**

SHEET TITLE:
**ROAD DRAINAGE
IMPROVEMENT
PLAN (3 OF 3)**

PROJECT:
**DARK GULCH CROSSING
STABILIZATION PROJECT**
MEMORIAL PARK, SAN MATEO COUNTY, CA

DESIGNED BY: T.C.B.
DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCD-DRKGULCH-775

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C10.3

GENERAL NOTES

DEFINITIONS

1. THE "RCD" SHALL BE SAN MATEO COUNTY RESOURCE CONSERVATION DISTRICT. THE "PARKS" SHALL BE SAN MATEO COUNTY PARKS. THE ENGINEERING GEOLOGIST (CEG) SHALL BE TIMOTHY C. BEST. THE "GEOTECHNICAL ENGINEER" SHALL BE HARO, KASUNICH AND ASSOCIATES, INC. THE "CONTRACTOR" SHALL BE OR AN INDEPENDENT CONTRACTOR SELECTED BY THE RCD AND/OR PARKS TO PERFORM THE WORK DESCRIBED HEREIN.
2. ON THESE PLANS "ENGINEER" REFERS TO "ENGINEERING GEOLOGIST". THE FIRST POINT OF CONTACT FOR QUESTIONS REGARDING THESE PLANS SHALL BE THE ENGINEER (TIMOTHY C. BEST).

GENERAL

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETION OF ALL ITEMS SHOWN ON THE PLANS AND SPECIFICATIONS AND SHALL BE RESPONSIBLE FOR ANY DEVIATION FROM THESE PLANS AND ASSOCIATED RISK AND EXPENSE.
2. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE DRAWINGS SPECIFICATIONS, CURRENT EDITION OF STATE OF CALIFORNIA STANDARD SPECIFICATION ISSUED BY THE DEPARTMENT OF TRANSPORTATION, AND APPLICABLE SAN MATEO COUNTY ORDINANCES, CODES, AND REQUIREMENTS.
3. ALL WORK SHALL BE IN CONFORMANCE WITH APPLICABLE OCCUPATION SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS AS SET FOR BY THE FEDERAL DEPARTMENT OF LABOR AND/OR THE STATE OF CALIFORNIA
4. THE CONTRACTOR SHALL KEEP HIMSELF FULLY INFORMED OF ALL APPLICABLE CODES, LAWS, ORDINANCES AND REGULATIONS OF ANY JURISDICTION OR AUTHORITY, AND SHALL ADHERE STRICTLY THERETO. COMPLIANCE WITH ALL LAWS, ORDINANCES AND REGULATIONS OF FEDERAL, STATE, COUNTY AND LOCAL AGENCIES SHALL TAKE PRECEDENCE OVER ALL OTHER CONTRACT DOCUMENTS.
5. THE ENGINEERING GEOLOGIC REPORT PREPARED BY TIMOTHY C. BEST AND GEOTECHNICAL REPORT PREPARED BY HARO, KASUNICH AND ASSOCIATES SHALL BE CONSIDERED PART OF THE PLANS.
6. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, GEOTECHNICAL ENGINEER, RCD, AND PARKS WITH THE NAME AND TELEPHONE NUMBER OF THE RESPONSIBLE PERSON TO CONTACT, WITH REGARD TO THIS PROJECT, 24 HOURS A DAY.

EXAMINATION OF JOB SITE, PLANS AND SPECIFICATIONS

1. THE DOCUMENTS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE PROJECT DOCUMENTS WITH CONDITIONS FOUND AT THE SITE AND SHALL VERIFY EXISTING GRADES, ELEVATIONS AND CONDITIONS PRIOR TO COMMENCING WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK. ANY DEVIATION, SUBSTITUTION OR ALTERATION TO THE WORK SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER.
3. THE CONTRACTOR SHALL EXAMINE CAREFULLY THE SITE OF WORK AND THE PLANS AND SPECIFICATIONS. THE SUBMISSION OF A BID SHALL BE CONCLUSIVE EVIDENCE THAT THE CONTRACTOR HAS INVESTIGATED AND IS SATISFIED AS TO THE CONDITIONS TO BE ENCOUNTERED, AS TO THE CHARACTER, QUALITY, AND SCOPE OF WORK TO BE PERFORMED, THE QUANTITIES OF MATERIALS TO BE FURNISHED AND AS TO THE REQUIREMENTS OF THIS INVESTIGATION AND THE PLANS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL RECOGNIZE THAT THE PLANS USED FOR THE DRAWINGS OF THE WORK MAY DIFFER FROM THE ACTUAL PHYSICAL SITE. BEFORE PROCEEDING WITH THE WORK, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK THE SITE IN RELATION TO THE DRAWINGS AND SPECIFICATIONS. REPORT ANY DISCREPANCIES TO THE OWNER AND THE ENGINEER.
5. ANY DISCREPANCIES BETWEEN THE PERMITS AND PLANS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION TO ENABLE THE ENGINEER TO ADDRESS THE NEED FOR PLAN MODIFICATIONS.
6. IN THE EVENT THAT ANY UNUSUAL CONDITIONS NOT COVERED BY THE DRAWINGS AND SPECIFICATIONS ARE ENCOUNTERED DURING THE WORK, THE ENGINEER SHALL BE IMMEDIATELY CONTACTED FOR DIRECTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO IMMEDIATELY NOTIFY THE ENGINEER UPON DISCOVERY OF ANY CONFLICTS BETWEEN DRAWINGS AND FIELD CONDITIONS.
7. THE CONTRACTOR IS ENCOURAGED TO ATTEND A PRE-BID MEETING WITH THE ENGINEER PRIOR TO SUBMITTING A PROPOSAL TO COMPLETE THE PROPOSED WORK. THE CONTRACTOR SHALL BE REQUIRED TO ATTEND A PRE-CONSTRUCTION MEETING WITH THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE PURPOSES OF THESE MEETINGS ARE SO THE CONTRACTOR MAY ASK QUESTIONS CONCERNING THE WORK AND TO MAKE SURE THE CONTRACTOR UNDERSTANDS THE SCOPE OF WORK, PERMIT CONDITIONS AND ENVIRONMENTAL CONSTRAINTS.
8. AT ALL TIMES DURING PROJECT CONSTRUCTION ACTIVITIES, COPIES OF THE APPROVED FINAL PLANS, COPIES OF PERMITS, AND A COPY OF THE GEOTECHNICAL REPORT SHALL BE MAINTAINED AT THE CONSTRUCTION JOB SITE (WHERE SUCH COPIES SHALL BE AVAILABLE FOR PUBLIC REVIEW) AND ALL PERSONS INVOLVED WITH THE CONSTRUCTION SHALL BE BRIEFED ON THE CONTENT AND MEANING OF EACH PRIOR TO COMMENCEMENT OF CONSTRUCTION

EXISTING UNDERGROUND UTILITIES

1. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR LOCATION AND AVOIDANCE OR REPAIR OF ALL UTILITIES, INCLUDING, BUT NOT LIMITED TO WATER LINES. CONTRACTOR SHALL VERIFY LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE DRAWINGS OR NOT. IF THE CONTRACTOR FAILS TO ADEQUATELY PROTECT THE UTILITIES, ANY RESULTING DAMAGE SHALL BE REPAIRED AT CONTRACTOR'S COST.
2. THE CONTRACTOR, AND ANY SUBCONTRACTOR, IS REQUIRED TO NOTIFY U.S.A. FORTY- EIGHT HOURS IN ADVANCE OF PERFORMING EXCAVATION WORK, BY CALLING THE TOLL FREE NUMBER (800) 642-2444.

EARTH WORK GRADING

1. GENERAL
- A. ALL WORK SHALL CONFORM TO APPLICABLE PROVISIONS OF THE CONTACT TECHNICAL SPECIFICATIONS.
- B. THE PROPOSED PROJECT WILL REQUIRE SIGNIFICANT GRADING. THE GEOTECHNICAL ENGINEER SHALL BE NOTIFIED AT LEAST FOUR (4) WORKING DAYS PRIOR TO ANY GRADING OR FOUNDATION EXCAVATING SO THE WORK IN THE FIELD CAN BE COORDINATED WITH THE GRADING CONTRACTOR AND ARRANGEMENTS FOR TESTING AND OBSERVATION CAN BE MADE. THE RECOMMENDATIONS AND SPECIFICATIONS OUTLINED HERE ARE BASED ON THE ASSUMPTION THAT THE GEOTECHNICAL ENGINEER WILL PERFORM THE REQUIRED TESTING AND OBSERVATION DURING GRADING AND CONSTRUCTION. IT IS THE OWNER'S RESPONSIBILITY TO MAKE THE NECESSARY ARRANGEMENTS FOR THESE REQUIRED SERVICES.
- C. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE ACCURACY OF ALL LAYOUT WORK AND, IF NECESSARY, WILL RETAIN THE SERVICES OF A LICENSED SURVEYOR OR CIVIL ENGINEER TO SET ELEVATIONS, LINES AND GRADES FOR ALL CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR GRADE STAKING AND CONFORMANCE OF FINISH GRADES TO THOSE SHOWN ON THE PLANS.
- D. EQUIPMENT OPERATORS AND WORKERS ARE TO BE SKILLED IN GRADING OPERATIONS AND ARE TO BE SUPERVISED BY A COMPETENT SUPERINTENDENT WHO IS FAMILIAR WITH THE NATURE OF THE WORK, THESE PROVISIONS, AND ALL PERMIT CONDITIONS.
- E. FOLLOWING GRADING, EXPOSED BARE SLOPES AND SOIL SHALL BE PLANTED OR COVERED AS SOON AS POSSIBLE WITH EROSION RESISTANT VEGETATION OR EROSION CONTROL FABRIC INSTALLED IN ACCORDANCE WITH THE MANUFACTURES SPECIFICATIONS.
2. DEWATERING
- A. WATER CONTROL SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT PERMIT CONDITIONS, AND DEWATERING, SECTION 312319 OF THE SPECIFICATIONS. WHEN WATER IS ENCOUNTERED, EITHER GROUND WATER OR SURFACE RUNOFF, THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND OPERATE ALL NECESSARY MACHINERY AND EQUIPMENT REQUIRED TO KEEP THE EXCAVATION REASONABLY FREE FROM WATER, AS APPROVED BY THE ENGINEER, UNTIL THE PLACEMENT OF BACKFILL MATERIAL HAS BEEN COMPLETED, INSPECTED, AND APPROVED, AND ALL DANGER OF EROSION AND OTHER DAMAGE IS REMOVED. SEE TECHNICAL SPECIFICATIONS FOR MORE DETAIL.
3. CLEARING AND GRUBBING
- A. WITHIN THE LIMITS OF CLEARING AND GRUBBING, THE GROUND SHALL BE CLEARED AND GRUBBED TO A DEPTH NECESSARY TO REMOVAL ALL TREES, STUMPS, ROOTS, DOWN TIMBER, SNAGS, VEGETATION, LOGS, BURIED LOGS, OLD PILING, STONE, CONCRETE RUBBLE, AND OTHER OBJECTIONABLE DEBRIS SHALL BE CLEARED, UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR DIRECTED BY THE ENGINEER. STUMPS SHALL BE REMOVED TO MINIMUM DEPTH OF 4 FEET, OR TO A POINT WHERE REMAINING ROOTS ARE LESS THAN 1.5 INCHES IN DIAMETER, WHICHEVER DEPTH IS GREATER.
- B. IN AREAS WHERE GRUBBING IS NOT REQUIRED, THE CLEARING OPERATIONS SHALL CONSIST OF THE COMPLETE REMOVAL OF ALL OBSTRUCTIONS ABOVE THE GROUND SURFACE. ALL STUMPS SHALL BE CUT FLUSH WITH THE GROUND SURFACE.
- C. CLEARING AND GRUBBING SHALL BE PERFORMED TO THE SATISFACTION OF THE ENGINEER.
- D. EXCEPT AS HEREINAFTER SPECIFIED OR OTHERWISE INDICATED ON THE DRAWINGS, ALL LOGS, BRUSH, STRIPPINGS, SLASH, AND OTHER ORGANIC DEBRIS WHICH ARE THE PRODUCTS OF THE CLEARING AND GRUBBING OPERATIONS SHALL BE DISPOSED OF ON SITE AT LOCATIONS TO BE APPROVED BY THE ENGINEER. ALL GARBAGE, CONCRETE, PIPING, OR OTHER NON- ORGANIC MATERIALS SHALL BE DISPOSED OFF-SITE BY THE CONTRACTOR AT LOCATIONS TO BE ARRANGED AND PAID FOR BY THE CONTRACTOR.

4. EXCAVATION / CUTS
- A. THE CROSSING SHALL BE EXCAVATED TO NATIVE CHANNEL GRADE, WIDTH AND ORIENTATION, AND/OR AS DIRECTED BY THE ENGINEER. APPROXIMATE DEPTH, LINES, AND GRADES OF EXCAVATION ARE SHOWN ON THE DRAWINGS.
- B. EXCAVATIONS SHALL EXTEND INTO FIRM, UNDISTURBED NATIVE SOILS AS OUTLINED IN THE GEOTECHNICAL REPORT. IN THE EVENT THAT ORGANIC MATERIALS, YIELDING SUB- GRADE (PUMPING) OR OTHER DELETERIOUS MATERIALS ARE ENCOUNTERED DURING FOUNDATION EXCAVATIONS, THEY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.
- C. BACKSLOPES
- i) GENERAL
- a) THE CONTRACTOR SHALL INFORM GEOTECHNICAL ENGINEER PRIOR TO ANY EXCAVATION RESULTING IN ANY CUTS GREATER THAN 20 FEET IN HEIGHT AND/OR INCLINED STEEPER THAN 1.5:1 (H:V).
- b) SITE SAFETY: THE CONTRACTOR IS ADVISED THAT THE PROPOSED TEMPORARY CUT SLOPES ARE COMPOSED OF OLD FILL AND POSSIBLE ORGANIC CONTAMINANTS. A HAZARDOUS CONDITION MAY EXIST FOR CONSTRUCTION WORKERS WORKING BELOW THE PROPOSED TEMPORARY CUT SLOPES IF DELETERIOUS MATERIAL AND LOOSE FILLS ARE ENCOUNTERED DURING EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING WHATEVER SAFETY PRECAUTIONS HE DEEMS NECESSARY TO MINIMIZE EXPOSED HAZARDS BEFORE AND WHILE COORDINATING WITH THE ENGINEER. FENCING TO PROTECT PARK USERS FROM STEEP EXCAVATIONS SHALL CONFORM TO ALL LOCAL CODES, ORDINANCES, AND OSHA REQUIREMENTS.
- ii) ROCK
- a) TEMPORARY CUT SLOPES IN ROCK SHALL BE INCLINED NO STEEPER THAN 0.75:1 (H:V) SLOPE FOR HEIGHTS UP TO 20 FEET UNLESS REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER OR REPRESENTATIVE.
- b) TEMPORARY CUTS INTO ROCK GREATER THAN 20 FEET SHALL BE INSPECTED AND MAY BE APPROVED BY THE GEOTECHNICAL ENGINEER OR REPRESENTATIVE BASED ON SITE REVIEW DURING EXCAVATION.
- iii) NATIVE COLLUVIAL SOILS AND FILL
- a) TEMPORARY CUTS INTO FIRM NATIVE SOILS AND FILL SHALL BE INCLINED NO STEEPER THAN 1:1 (H:V) FOR HEIGHTS UP TO 20 FEET UNLESS REVIEWED BY THE PROJECT GEOTECHNICAL ENGINEER OR REPRESENTATIVE.
- b) TEMPORARY CUTS INTO NATIVE SOILS AND FILL STEEPER THAN 1:1 AND/OR GREATER THAN 20 FEET IN HEIGHT SHALL BE INSPECTED AND MAY BE APPROVED BY THE GEOTECHNICAL ENGINEER OR REPRESENTATIVE BASED ON SITE REVIEW DURING EXCAVATION.
- iv) THE CONTRACTOR SHOULD BE AWARE THAT SLOPE HEIGHT, INCLINATION, OR EXCAVATION DEPTHS (INCLUDING UTILITY TRENCH EXCAVATIONS) SHOULD IN NO CASE EXCEED THOSE SPECIFIED IN LOCAL, STATE OR FEDERAL SAFETY REGULATIONS, I.E. OSHA HEALTH AND SAFETY STANDARDS FOR EXCAVATIONS, 29 CFR PART 1926 SUBPART P, OR SUCCESSOR REGULATIONS. CUT SLOPES EXCEEDING MINIMUM STANDARDS MUST BE INSPECTED AND EVALUATED BY THE GEOTECHNICAL ENGINEER OR REPRESENTATIVE BEFORE EXCAVATION COMMENCES.AND SAFETY STANDARDS FOR EXCAVATIONS, 29 CFR PART 1926 SUBPART P, OR SUCCESSOR REGULATIONS.
5. SEPARATE EXCAVATED SOILS
- A. SEPARATE AND STOCKPILE SEPARATELY CLEAN EXCAVATED SOILS THAT IS TO BE REUSED AS ENGINEERED FILL, DELETERIOUS SOILS THAT IS TO BE PLACED AS NON-STRUCTURAL FILL, AND STUMPS AND VEGETATION PER SECTIONS 312316: STRIPPING AND EXCAVATION SECTION AND 312323: ENGINEERED AND NON-STRUCTURAL FILL.
- B. STOCKPILE IN APPROVED LOCATIONS AS SHOWN ON DRAWINGS AND AS APPROVED BY THE ENGINEER. PORTIONS OF OLD HAUL ROAD MAY BE USED TO TEMPORARILY STOCKPILE SPOILS
6. ENGINEERED AND NON-STRUCTURAL FILL
- A. ENGINEERED AND NON-STRUCTURAL FILL SHALL BE PLACED PER LIMITS, LINES AND GRADES AS SHOWN ON DRAWINGS, STANDARD SPECIFICATIONS, SECTION 312323: ENGINEERED AND NON-STRUCTURAL FILL, AND AS APPROVED BY THE ENGINEER. THE FINISHED GRADES SHALL TRANSITION NATURALLY INTO ADJACENT EXISTING GRADES TO PROVIDE A FUNCTIONAL AND NATURALISTIC FINISHED SURFACE.
- B. ENGINEERED FILL
- i) ENGINEERED FILL SHALL CONSIST OF A PREDOMINANTLY GRANULAR SOIL CONFORMING TO THE QUALITY AND GRADATION REQUIREMENTS AS FOLLOWS: THE SOIL SHALL BE RELATIVELY FREE OF ORGANIC MATERIAL AND CONTAIN NO ROCKS OR CLODS GREATER THAN 6 INCHES IN DIAMETER, WITH NO MORE THAN 15 PERCENT LARGER THAN 4 INCHES. THE MATERIAL SHALL BE PREDOMINATELY GRANULAR WITH A PLASTICITY INDEX LESS THAN 18, A LIQUID LIMIT LESS THAN 35, AND NOT MORE THAN 20 PERCENT PASSING THE #200 SIEVE. NATIVE, NONE-ORGANIC MATERIAL MAY BE USED IN ENGINEERED FILL.
- ii) THE SUBGRADE SHALL BE SCARIFIED AT LEAST 6 INCHES; MOISTURE CONDITIONED AND COMPACTED TO 80 PERCENT RELATIVE COMPACTION.
- iii) ENGINEERED FILL SHALL BE PLACED IN THIN LIFTS NOT EXCEEDING 8 INCHES IN LOOSE THICKNESS; MOISTURE CONDITIONED, AND COMPACTED TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION PER ASTM D 1557, UP TO DESIRED GRADE. FILL ADJACENT TO STRUCTURES, PIPE, CONDUITS, AND ANTI- SEEP COLLARS SHALL BE COMPACTED TO A DENSITY EQUIVALENT TO THAT OF THE SURROUNDING FILL BY MEANS OF HAND TAMPERS OR PLATE VIBRATORS. HAND DIRECTED TAMPERS OR COMPACTORS SHALL BE USED ON AREAS NOT ACCESSIBLE TO HEAVY COMPACTION EQUIPMENT, FILLS COMPACTED IN THIS MANNER SHALL BE PLACED IN LAYERS NOT GREATER THAN 4 INCHES IN THICKNESS BEFORE COMPACTION, AND SHALL MEET THE SAME DENSITY.
- iv) DURING PLACEMENT AND COMPACTION OF FILL, THE MOISTURE CONTENT OF THE MATERIALS BEING PLACED SHALL BE ADJUSTED AND MAINTAINED AS NECESSARY.
- v) FILL EMBANKMENTS SITUATED ON SLOPES 20% OR STEEPER IN GRADIENT SHALL BE KEYED AND BENCHED INTO SANDSTONE BEDROCK OR FIRM NATIVE MATERIAL. ALL KEYS AND BENCHES SHALL BE DRAINED PER DRAWINGS AND AS DIRECTED BY THE ENGINEER.
- vi) ENGINEERED FILL SLOPES SHALL BE DRESSED BY OVER-BUILDING AND CUTTING BACK TO THE REQUIRED GRADE. THE CONTRACTOR MAY COMPACT THE SHOULDER OF EACH LIFT DURING THE PLACEMENT OF FILL MATERIALS TO ASSIST IN THE SUBSEQUENT DRESSING OF THE SLOPES.
- vii) ENGINEERED FILL SLOPES SHALL BE INCLINED NO STEEPER THAN 1.5:1 (HORIZONTAL TO VERTICAL) AND NOT GREATER THAN 60 FEET IN HEIGHT WITHOUT APPROVAL OF THE ENGINEER. WHERE SHOWN ON PLANS AT THE TRANSITIONS TO EXISTING SLOPES THAT ARE STEEPER GRADIENTS.
- C. NON STRUCTURAL FILL
- i) SURPLUS, DETERIOUS AND/OR ORGANIC RICH EARTH MATERIALS DERIVED FROM THE EXCAVATION OF THE CROSSING AND WHICH IS NOT TO BE USED AS ENGINEERED FILL TO RECONSTRUCT THE CROSSING MAY BE USED AS NON-STRUCTURAL FILL.
- ii) AREAS TO RECEIVE NON-STRUCTURAL SHALL BE CLEARED OF VEGETATION AND RIPPED TO A DEPTH OF 6 INCHES. ALL STUMPS SHALL BE CUT FLUSH WITH THE GROUND SURFACE.
- iii) THE NON-STRUCTURAL FILL SHALL BE SHALL BE PLACED IN MAXIMUM 8 INCH LIFTS IS LOOSE THICKNESS AND COMPACTED TO A MINIMUM OF 85% OF THE MAXIMUM DRY DENSITY PER ASTM D 1557. THE PLACEMENT SURPLUS AND UNSUITABLE SOIL SHALL BE SEGREGATED TO THE EXTENT PRACTICABLE AND TO THE SATISFACTION OF THE ENGINEER, WITH THE LESS ORGANIC RICH SOILS PLACED ALONG THE BASE COURSE AND THE MORE ORGANIC RICH MATERIAL PLACED IN THE UPPER COURSE.
- iv) NON-STRUCTURAL FILL SITUATED ON SLOPES 20% OR STEEPER IN GRADIENT SHALL BE KEYED AND BENCHED INTO FIRM MATERIAL. NON-STRUCTURAL FILL GREATER THAN 5 FEET IN THICKNESS SHALL INCORPORATE A BACK DRAIN PER DRAWINGS AND AS DIRECTED BY THE ENGINEER.
- v) NON-STRUCTURAL FILL SLOPES SHALL BE INCLINED NO STEEPER THAN 3:1 (HORIZONTAL TO VERTICAL) AND NOT GREATER THAN 60 FEET IN HEIGHT WITHOUT APPROVAL OF THE ENGINEER. WHERE SHOWN ON PLANS AT THE TRANSITIONS TO EXISTING SLOPES THAT ARE STEEPER GRADIENTS, FILL SLOPES MAY BE BLENDED WITH NATURAL GRADES.

DRAINAGE

1. SITE DRAINAGE
- A. PROPER DRAINAGE IS KEY TO THIS PROJECT. SURFACE DRAINAGE PROVISIONS ARE TO BE INSTALLED AS DEPICTED ON PLANS AND AS DIRECTED BY CEG.
- B. CONTROL OF RUNOFF FROM THE SLOPES ABOVE; CONTROL OF INFILTRATION AND PONDING ADJACENT TO THE EDGE OF THE ROAD; AND CONTROL OF SUBSURFACE SEEPAGE IS CRITICAL. DISCHARGE COLLECTED WATER IN A WAY SO AS NOT TO CAUSE EROSION. RUNOFF AND DISCHARGE MUST NOT BE ALLOWED TO SPILL OVER GRADED SLOPES. WATER SHALL BE DIRECTED TO DRAIN INLETS CONNECTED TO A DRAINAGE SYSTEM THAT DISCHARGES AT LEAST 5 FEET HORIZONTALLY BEYOND THE BASE OF THE SLOPE, OR A STORM DRAIN SYSTEM. ENERGY DISSIPATERS SHALL BE INSTALLED AT THE DISCHARGE POINT BEYOND THE BASE OF THE SLOPES. DO NOT DISSIPATE NEAR TOP OF A BREAK IN SLOPE.
- C. NEVER CONNECT SUBDRAINS AND STORM DRAIN LINES. NEVER SURCHARGE ONE INTO THE OTHER. BOTH SYSTEMS SHALL DRAIN INDEPENDENTLY THROUGH DISCHARGE.
2. ROAD DRAINAGE
- A. ROLLING DIPS, KNICKS, WATERBARS AND DITCH RELIEF CULVERTS SHALL BE INSTALLED AS SPECIFIED ON PLANS. ROAD PRISM SHALL BE RESHAPED AS NECESSARY TO DRAIN TO DIPS AND CULVERTS.
3. ROAD AGGREGATE
- A. AGGREGATE BASEROCK SHALL CONSIST OF APPROVED 1 ½ INCH CLASS II AGGREGATE BASE CONFORMING TO THE LATEST CALTRANS STANDARDS. CONTRACTOR SHALL SUBMIT SAMPLE OF AGGREGATE BASE PRIOR TO PURCHASE AND PLACEMENT.
- B. THE SUBGRADE FOR THE ROAD SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES, MOISTURE CONDITIONED AND COMPACTED TO A MINIMUM OF 90 PERCENT RELATIVE COMPACTION. THE SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 12 INCHES BEYOND (LATERALLY) THE EDGE OF THE BASE ROCKED SURFACE.
- C. NEW AGGREGATE BASEROCK SHALL BE COMPACTED TO A MINIMUM 4" THICKNESS AND TO 95 PERCENT RELATIVE COMPACTION.


CONSTRUCTION OBSERVATION SCHEDULE

1. REVIEW, OBSERVATION AND TESTING
- A. THE PROJECT ENGINEER AND GEOTECHNICAL ENGINEER SHALL BE PROVIDED AN OPPORTUNITY TO REVIEW PROJECT PLANS WITH THE CONTRACTOR DURING THE PRE-CONSTRUCTION MEETING TO EVALUATE IF RECOMMENDATIONS HAVE BEEN PROPERLY INTERPRETED.
- B. THE CONTRACTOR SHALL NOTIFY THE CEG AND GEOTECHNICAL ENGINEER A MINIMUM OF 7 DAYS PRIOR TO COMMENCEMENT OF WORK AND A MINIMUM OF 4 WORKING DAYS PRIOR TO ANY INSPECTIONS.
- C. IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER AT LEAST FOUR (4) WORKING DAYS PRIOR TO ANY GRADING OR FOUNDATION EXCAVATING SO THE WORK IN THE FIELD CAN BE COORDINATED WITH THE GRADING CONTRACTOR AND ARRANGEMENTS FOR TESTING AND OBSERVATION CAN BE MADE. THE RECOMMENDATIONS OF THIS REPORT ARE BASED ON THE ASSUMPTION THAT THE GEOTECHNICAL ENGINEER WILL PERFORM THE REQUIRED TESTING AND OBSERVATION DURING GRADING AND CONSTRUCTION. IT IS THE OWNER'S RESPONSIBILITY TO MAKE THE NECESSARY ARRANGEMENTS FOR THESE REQUIRED SERVICES.
- D. REGULATORY AGENCIES MAY REQUIRE A FINAL GRADING COMPLIANCE LETTER. WE CAN ONLY OFFER THIS LETTER IF WE ARE CALLED TO THE SITE TO OBSERVE AND TEST, AS NECESSARY. ANY GRADING AND EXCAVATION OPERATIONS FROM THE START OF CONSTRUCTION. WE CANNOT PREPARE A LETTER IF WE ARE NOT AFFORDED THE OPPORTUNITY OF OBSERVATION FROM THE BEGINNING OF THE GRADING OPERATION. THE CONTRACTOR MUST BE MADE AWARE OF THIS AND EARTHWORK TESTING AND OBSERVATION MUST BE SCHEDULED ACCORDINGLY.


ITEM	REQUIRED	REMARKS
PRECONSTRUCTION	X	PRIOR TO CONSTRUCTION
LIMITS OF GRADING, EXCAVATION AND SPOIL PLACEMENT	X	CONTINUOUS
KEYWAYS AND DRAINS FOR EMBANKMENT CONSTRUCTION	X	CONTINUOUS
COMPLETED CULVERT TRENCHES	X	PRIOR TO PLACEMENT OF CULVERT OF BEDDING MATERIALS
FILL PLACEMENT AND COMPACTION OBSERVATIONS	X	CONTINUOUS
ROCK SLOPE PROTECTION AND ROCK ENERGY DISSIPATER SHAPE AND POSITION	X	CONTINUOUS AND FINAL
BMP'S INCLUDING EROSION CONTROL, DIVERSION, AND DEWATERING	X	PRIOR TO CONSTRUCTION
FINAL GRADING	X	CONTINUOUS AND FINAL
ROAD DRAINAGE PROVISIONS	X	FINAL
EROSION CONTROL	X	FINAL

SAFETY

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GENERAL SAFETY DURING CONSTRUCTION. ALL WORK SHALL CONFORM TO PERTINENT SAFETY REGULATIONS AND CODES. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR FURNISHING, INSTALLING, AND MAINTAINING ALL WARNING SIGNS AND DEVICES NECESSARY TO SAFEGUARD THE GENERAL PUBLIC AND THE WORK, AND PROVIDE FOR THE PROPER AND SAFE ROUTING OF VEHICULAR AND PEDESTRIAN TRAFFIC DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF OSHA IN THE CONSTRUCTION PRACTICES FOR ALL EMPLOYEES DIRECTLY ENGAGED IN THE CONSTRUCTION OF THIS PROJECT.
2. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTION LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL. NEITHER THE PROFESSIONAL ACTIVITIES OF CONSULTANT NOR THE PRESENCE OF CONSULTANT OR HIS OR HER EMPLOYEES OR SUB-CONSULTANTS AT A CONSTRUCTION SITE SHALL RELIEVE THE CONTRACTOR AND ITS SUBCONTRACTORS OF THEIR RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND APPLICABLE HEALTH OR SAFETY REQUIREMENTS OF ANY REGULATORY AGENCY OR OF STATE LAW.
3. CONTRACTOR IS REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
4. THE CONTRACTOR SHALL CONFORM TO THE RULES AND REGULATIONS OF THE CONSTRUCTION SAFETY ORDERS OF THE CALIFORNIA DIVISION OF OCCUPATIONAL SAFETY AND HEALTH PERTAINING TO EXCAVATION AND TRENCHES THE CALIFORNIA CODE OF REGULATIONS TITLE 8, SUBCHAPTER 4 CONSTRUCTION SAFETY ORDERS, ARTICLE 6 EXCAVATION.



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PREPARED AT THE REQUEST OF:

SAN MATEO COUNTY RESOURCE
CONSERVATION DISTRICT

SHEET TITLE:

NOTES


PROJECT:

DARK GULCH CROSSING
STABILIZATION PROJECT

MEMORIAL PARK, SAN MATEO COUNTY, CA

DESIGNED BY: T.C.B.
DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCD-DRKGLCH-775

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

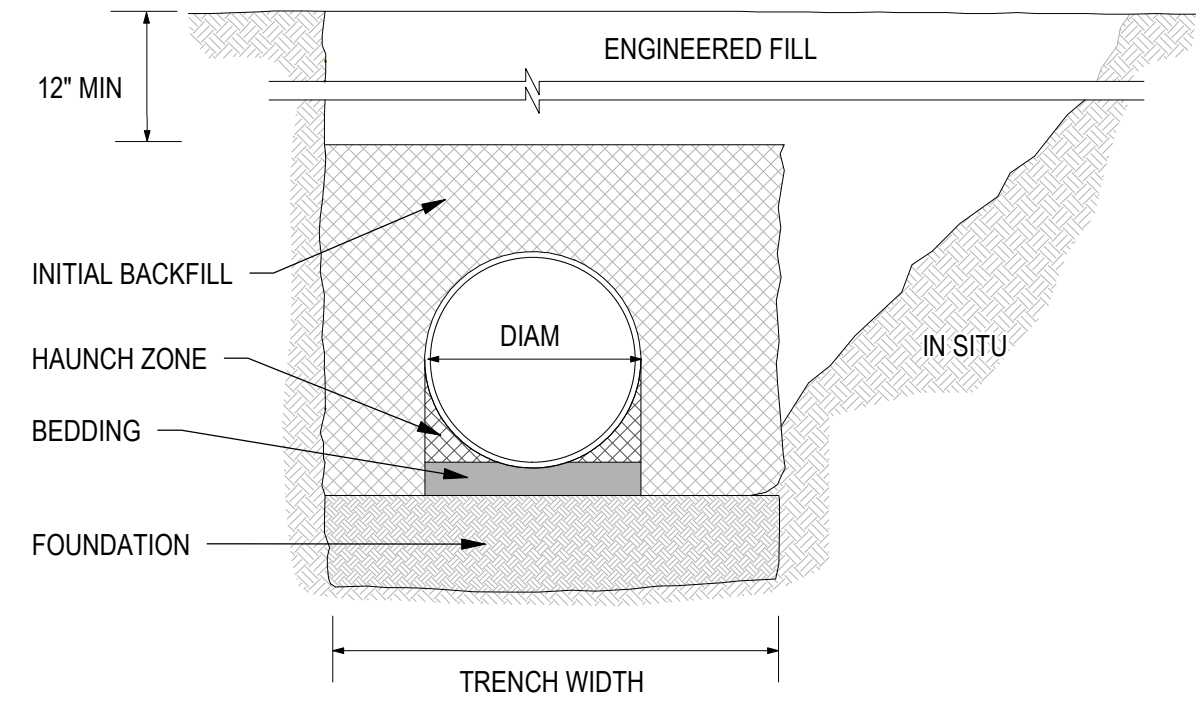
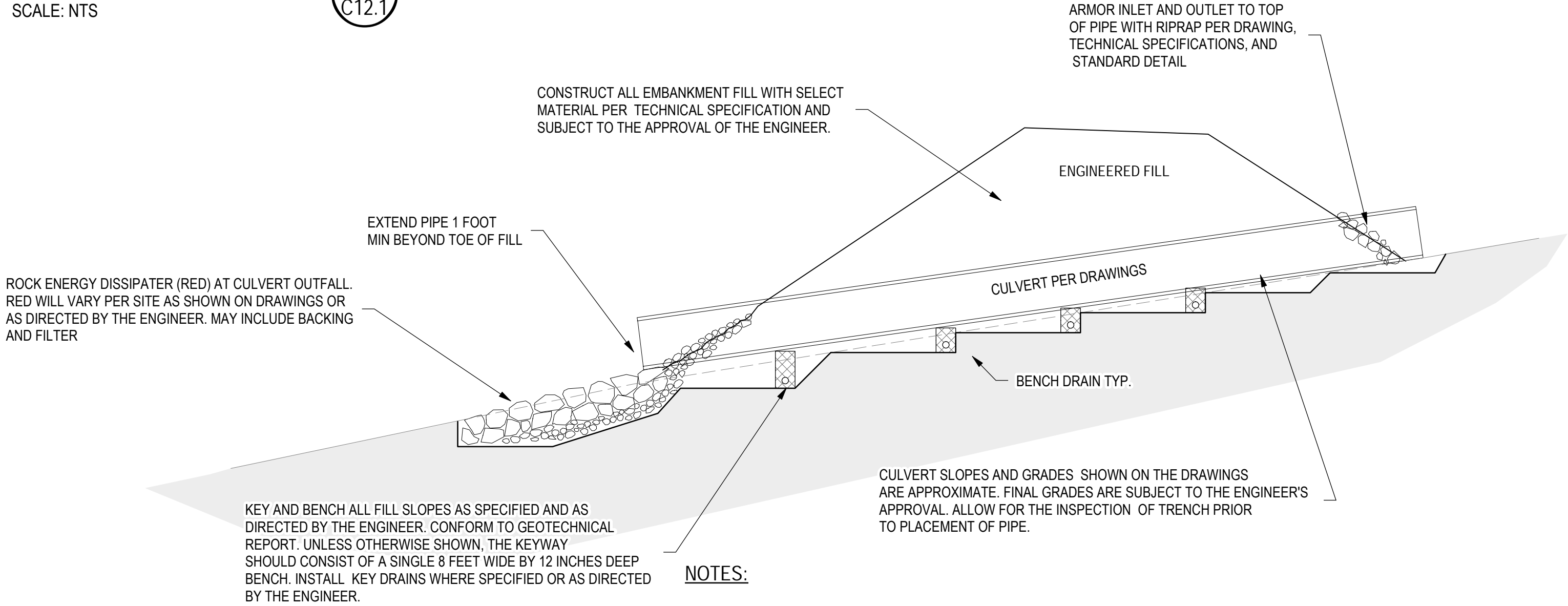


C11

CULVERT PROFILE

SCALE: NTS

1
C12.1



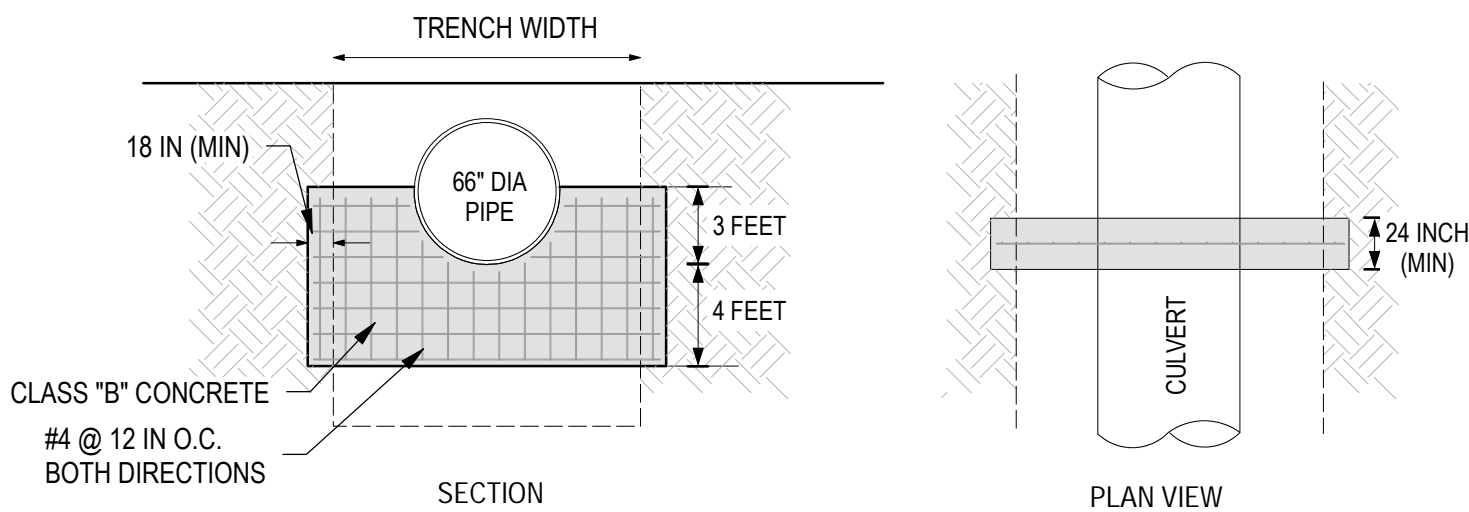
NOTES:

1. **PIPE TYPE, DIAMETER AND LENGTH:** AS SHOWN ON DRAWINGS
2. **PIPE INSTALLATION:** PIPE INSTALLATION SHALL COMPLY WITH THE MANUFACTURER'S SPECIFICATIONS AND THESE DRAWINGS. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED. THIS MAY REQUIRE WRAPPING BEDDING AND BACKFILL IN GEOTEXTILE MEMBRANE, WHERE SPECIFIED OR AS DIRECTED BY THE ENGINEER.
3. **FOUNDATION:** THE FOUNDATION UNDER THE PIPE AND SIDE BACKFILL SHALL BE COMPACTED TO 90% RELATIVE COMPACTION. WHERE THE TRENCH BOTTOM IS UNSTABLE, EXCAVATE TO THE DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING GEOTEXTILE MATERIAL.
4. **BEDDING:** BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE. SUITABLE MATERIAL SHALL BE CLASS 1, 2, OR 3 (ASTM D2321). NATIVE SOILS MAY BE USED, SUBJECT TO APPROVAL BY THE ENGINEER. THE MAXIMUM PARTICLE SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER UNLESS OTHERWISE NOTED BY THE ENGINEER. MAXIMUM BEDDING THICKNESS SHALL BE 6 INCHES.
5. **INITIAL BACKFILL:** INITIAL BACKFILL SHALL BE CLASS 1 OR 2, IN ACCORDANCE TO ASTM D2321. NATIVE SOILS MAY BE USED, SUBJECT TO THE APPROVAL OF THE ENGINEER. INITIAL BACKFILL SHALL HAVE NO ROCKS GREATER THAN 3 INCHES IN ANY DIMENSION PLACED CLOSER THAN 1 FOOT TO THE CULVERT. BACKFILL SHALL BE COMPACTED NOT LESS THAN 90 PERCENT RELATIVE COMPACTION PER ASTM D155 7.
6. **FINAL BACKFILL:** SUITABLE MATERIAL SHALL BE LOCAL CLEAN MINERAL SOILS WITH NO ROCK LARGER THAN 3 INCHES. NON-ORGANIC GRANULAR SOIL THAT IS RELATIVELY FREE OF ORGANIC MATERIAL AND CONTAINS NO ROCKS OR CLODS GREATER 6 INCHES IN DIAMETER, WITH NO MORE THAN 15 PERCENT LARGER THAN 4 INCHES. NO ROCKS GREATER THAN 3 INCHES WITHIN 1 FOOT OF CULVERT. FILL SHALL BE COMPACTED NOT LESS THAN 90 RELATIVE COMPACTION PER ASTM D155 7. UNLESS OTHERWISE SPECIFIED IN PLANS
7. **KEYWAY AND BENCHES:** FILL EMBANKMENTS SITUATED ON SLOPES BETWEEN 20% OR STEEPER IN GRADIENT SHALL BE DRAINED, KEYED AND BENCHED INTO SANDSTONE BEDROCK OR FIRM NATIVE MATERIAL. KEYWAY BENCH SHALL BE 8 FEET WIDE (MIN) BY 12 INCH DEEP (MIN) UNLESS OTHERWISE APPROVED BY THE ENGINEER
7. **KEYWAY AND BENCH DRAINS:** KEYWAY AND BENCH DRAINS SHALL BE COMPOSED OF CALTRANS CLASS 2 PERMEABLE DRAIN ROCK WITH A 3 INCH DIAMETER PERFORATED PVC PIPE (PERFORATIONS DOWN) PLACED AT THE INBOARD EDGE OF THE BENCH 3 INCHES FROM ITS BASE. THE DRAINS SHALL BE A MINIMUM OF 2 FEET WIDE AND EXTEND THE FULL HEIGHT OF THE BENCH OR MINIMUM 3 FEET (WHICHEVER IS GREATER). PERFORATED PIPE WILL NEED TO BE CONNECTED TO 4 INCH DIAMETER SOLID TIGHT LINE THAT CARRIES WATER TO THE BASE OF THE FILL AND DISCHARGES IN A LOCATION TO BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER.
9. **CRITICAL DIP:** INSTALL A CRITICAL DIP ON THE ROAD DOWN GRADE FROM THE CULVERT CROSSINGS, UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS OR DIRECTED BY THE ENGINEER. CRITICAL DIP SHALL CONFORM TO STANDARD DIMENSIONS FOR A REVERSE GRADE DIP.

CONCRETE CUTOFF WALL

SCALE: NTS

10
C12.1



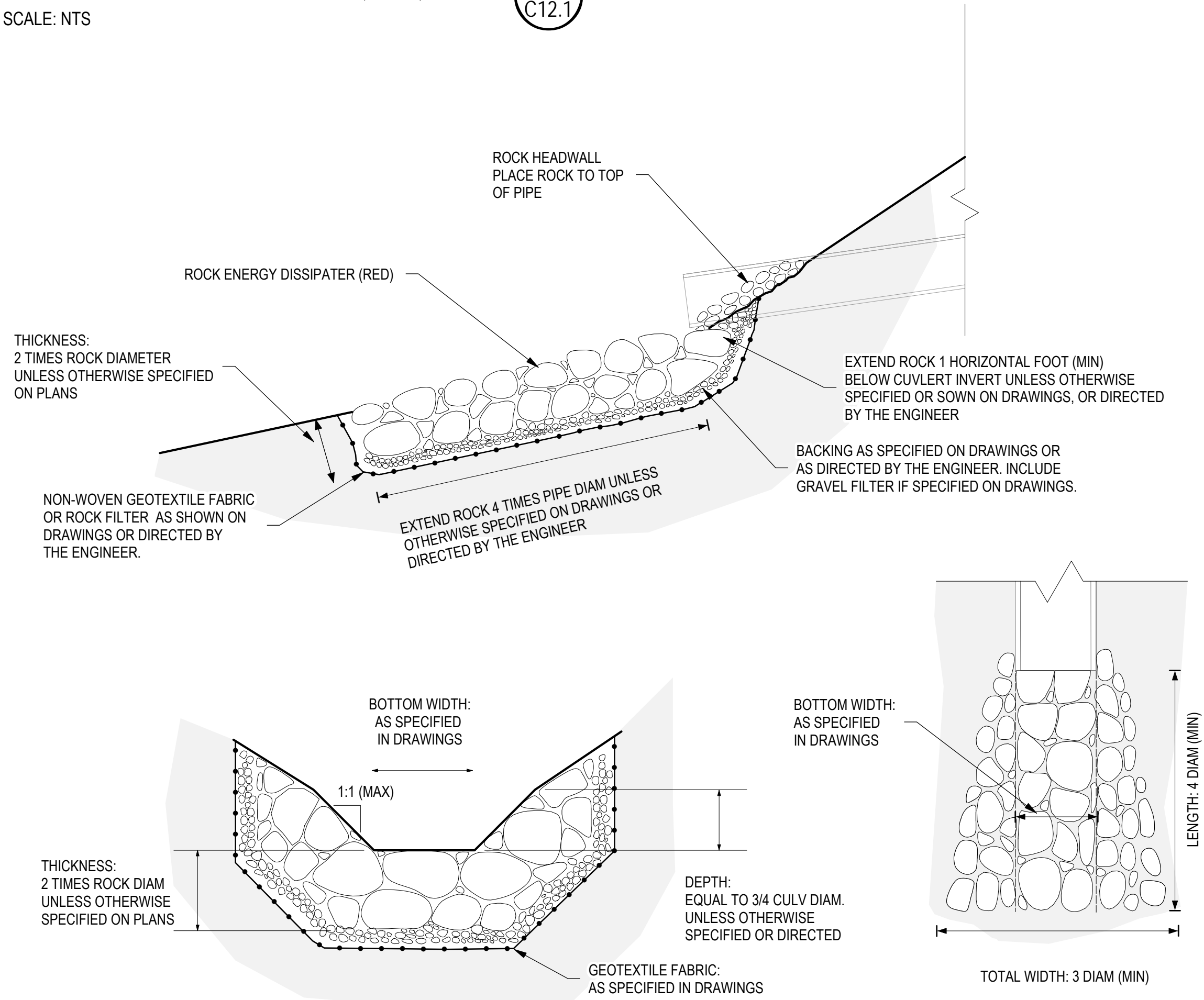
NOTES:

COMPACTED DRY "SAKCRETE" MAY BE SUBSTITUTED FOR CLASS B CONCRETE IF APPROVED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

ROCK ENERGY DISSIPATOR (RED)

SCALE: NTS

2
C12.1



NOTES

- ROCK HEADWALL (INLET AND OUTLET)
1. ARMOR INLET AND OUTLET TO TOP OF CULVERT WITH ROCK RIPRAP.
 2. RIPRAP SHALL CONSIST OF APPROVED WELL-GRADED, SOUND, DURABLE, ANGULAR ROCK UNLESS OTHERWISE SPECIFIED
 3. 50% OF ROCK (D50) SHALL BE LARGER THAN 8 INCHES MINIMUM DIAMETER UNLESS OTHERWISE SPECIFIED
 4. ROCK SHALL BE KEYED MINIMUM 2 TIMES DIAMETER INTO BED AND BANKS UNLESS OTHERWISE SPECIFIED

ROCK ENERGY DISSIPATER

1. THIS DETAIL APPLIES TO STREAM CROSSINGS ONLY. DETAIL DOES NOT APPLY TO DITCH RELIEF CULVERTS CULVERT SHALL DISCHARGE ONTO ROCK ENERGY DISSIPATER / APRON ALIGNED WITH NATIVE CHANNEL AS SHOWN ON DRAWINGS OR AS DIRECTED
2. RIPRAP AND BACKING SHALL CONSIST OF APPROVED SOUND, DURABLE, ANGULAR ROCK CONFORMING TO SECTION 72-2.02. MATERIALS OF THE STATE STANDARD SPECIFICATIONS FOR ROCK SIZE CLASS SPECIFIED
3. UNLESS OTHERWISE SPECIFIED IN DRAWINGS OR DIRECTED BY THE ENGINEER, ROCK SIZE SHALL CONFORM TO TABLE A.
4. EXTEND ROCK A MINIMUM OF 4 TIMES PIPE DIAMETER DOWNSTREAM OF OUTLET AND BE A MINIMUM OF 2 TIMES PIPE DIAMETER WIDE
5. OVER EXCAVATE CHANNEL IN AREAS TO RECEIVE ROCK. KEY ROCK A MINIMUM OF 2 TIMES MAXIMUM ROCK DIAMETER INTO BED OR BANKS UNLESS OTHERWISE SPECIFIED.
6. PLACE RIP RAP OVER ROCK BACKING WHERE SPECIFIED ON PLANS OR DIRECTED BY THE ENGINEER.
7. PLACE NON-WOVEN GEOTEXTILE FABRIC BETWEEN ROCK AND SOIL WHERE SPECIFIED ON PLANS OR DIRECTED BY THE ENGINEER.
8. ROCK SHALL BE PLACED TO FORM A UNIFORM GRADE AT THE PIPE OUTLET IN A MANNER TO PREVENT FLOW FROM ERODING AROUND THE EDGE OF THE ROCK
7. COMPACT LOOSE SOILS ADJACENT TO ROCK RIPRAP
8. FILL ALL VOIDS WITH SMALLER ROCK, JET SOIL INTO RSP IF SPECIFIED OR DIRECTED.

TABLE A

PIPE DIAMETER	CALTRANS CLASS	D50 ROCK SIZE DIAMETER	WEIGHT
18"	II	8 IN	60 LB
24"	III - V	12 - 18 IN	150 LB - ¼ T
36"	V - VII	18 - 24 IN	¼ - ½ T
48"	VIII	30 IN	1 T+
60"	VIII - IX	30 - 36+ IN	1 - 2+ T



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SAN MATEO COUNTY RESOURCE CONSERVATION DISTRICT

SHEET TITLE:
**DETAILS
1 OF 4**

PROJECT:
DARK GULCH CROSSING STABILIZATION PROJECT
MEMORIAL PARK, SAN MATEO COUNTY, CA

DESIGNED BY: T.C.B.
DRAWN BY: T.C.B.
CHECKED BY: T.C.B.
DATE: 1/8/2020
JOB: SMCRCD-DRKGLCH-775

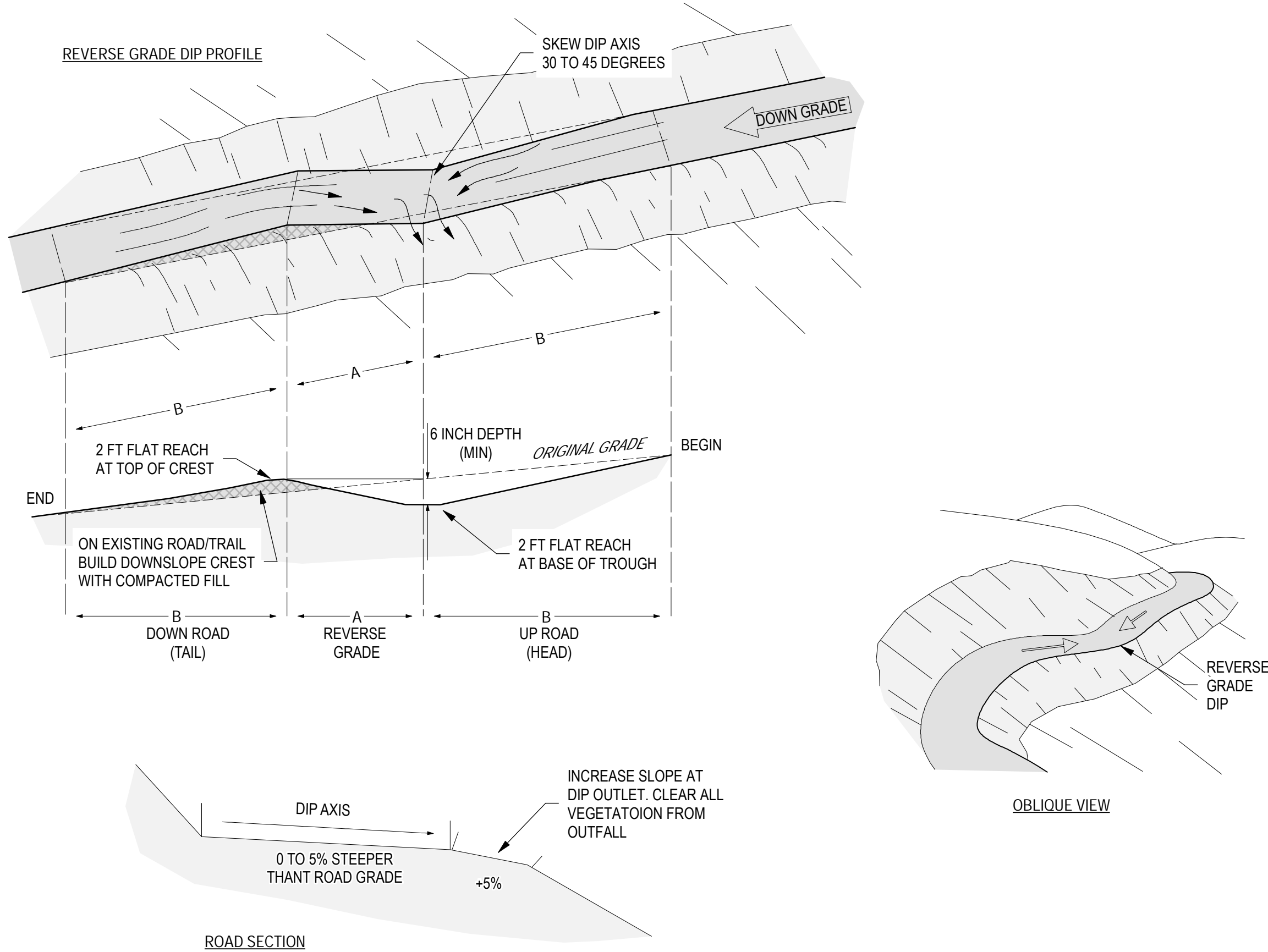
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

C12.1

REVERSE GRADE DIP (EXISTING ROAD)

SCALE: NTS

3
C12.2



ROAD GRADE (%)	TROUGH	A: REVERSE GRADE	B: UP ROAD HEAD - DOWN ROAD TAIL	
	MINIMUM DEPTH	MINIMUM DISTANCE FROM TROUGH AXIS TO DOWNROAD CREST	DISTANCE FROM UP-ROAD START OF ROLLING DIP TO TROUGH AXIS	ROAD GRADE (%)
<5%	6 INCHES	20 FT @ 3%	20 FT	8%
5% - 10%			30 FT	10%
10% - 15%			50 FT	19%
15% - 20%			75 FT	21%

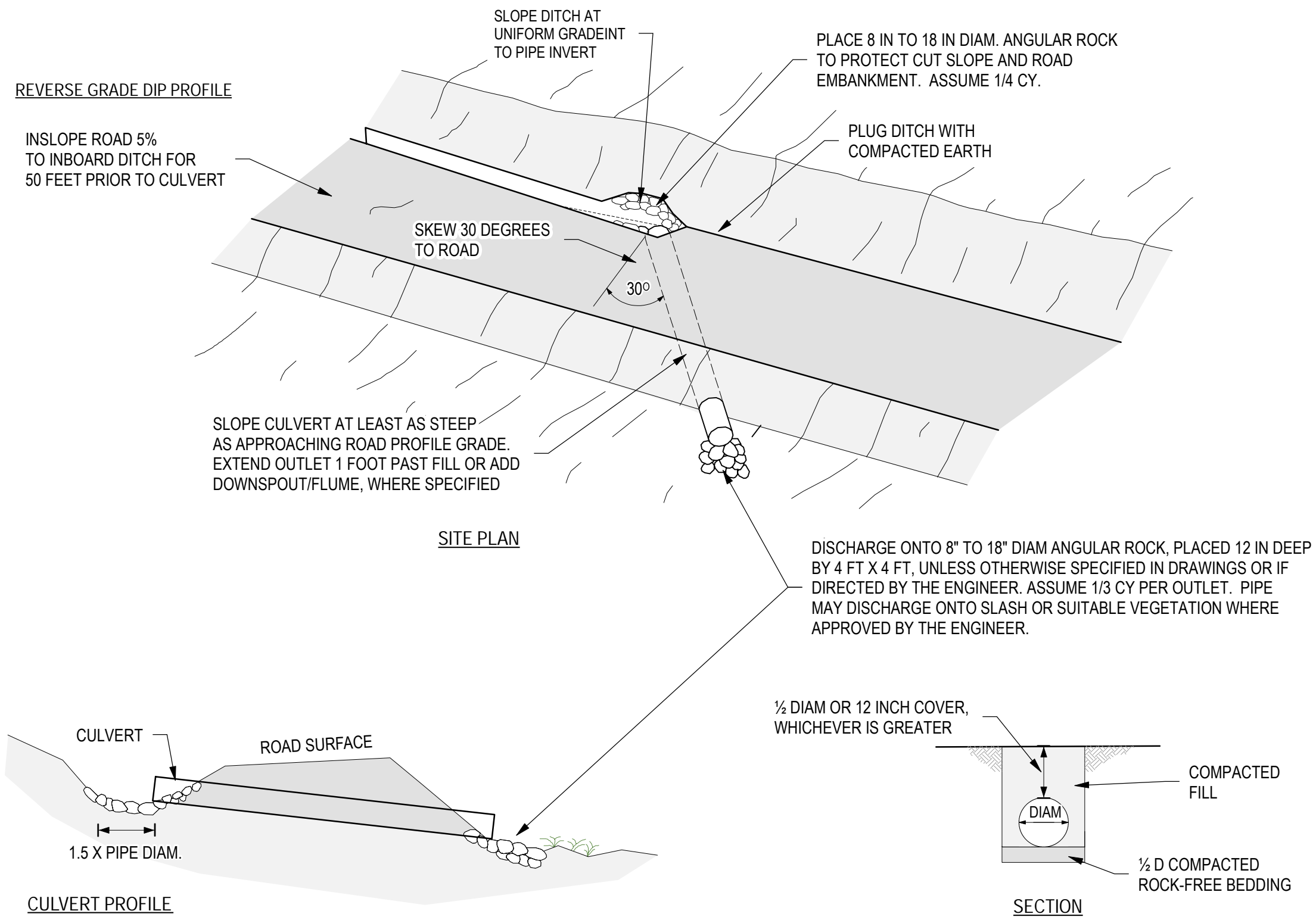
NOTES:

- REVERSE GRADE DIP LOCATIONS WILL BE FLAGGED BY THE ENGINEER IN THE FIELD, PRIOR TO START OF WORK
- ON EXISTING ROADS CONSTRUCT THE DIP BY EXCAVATING THE UPROAD HEAD BELOW EXISTING GRADE WITH THE CREST AND DOWNROAD TRAIL BUILT UP ON COMPACTED FILL
- CONSTRUCT DIP TO A MINIMUM OF 6 INCHES DEEP ACROSS THE ENTIRE ROAD WIDTH, AND INCORPORATE A 2 FOOT LONG FLAT REACH AT THE BASE OF THE TROUGH AND TOP OF THE CREST, UNLESS OTHER WISE DIRECTED OR APPROVED BY THE ENGINEER.
- THE DIP AXIS SHOULD BE OUTSLOPED 3% GREATER THAN ROAD GRADE. DIP AXIS MAY BE SKEWED DOWN ROAD AT 30 TO 45 DEGREES TO FACILITATE INSTALLATION ON STEEPER ROAD GRADES.
- DIP SHALL BE CONSTRUCTED TO HAVE SMOOTH GRADUAL TRANSITIONS BETWEEN HEAD, TROUGH, CREST AND TRAIL
- DIP OUTLETS SHOULD BE LOCATED TO DRAIN INTO AREAS WITH ADEQUATE SEDIMENT FILTER QUALITY AND NON-ERODIBLE MATERIAL SUCH AS ROCK, SLASH, BRUSH, ETC. WHERE SPECIFIED OR DIRECTED BY THE ENGINEER DIP OUTLETS SHALL BE ARMORED WITH 1/4 CY OF 4 TO 8 INCH DIAMETER ROCK.
- WHERE NATURAL SIDE SLOPES EXCEED 50%, FILL SHALL NOT BE PUSHED OVER THE DIP OUTLET. A BACKHOE OR EXCAVATOR MAY BE REQUIRED TO PULL BACK FILL AT OUTLET OF EXISTING DIPS.
- PLACE DIPS AS LOCATIONS SPECIFIED ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.

DITCH RELIEF CULVERT

SCALE: NTS

4
C12.2



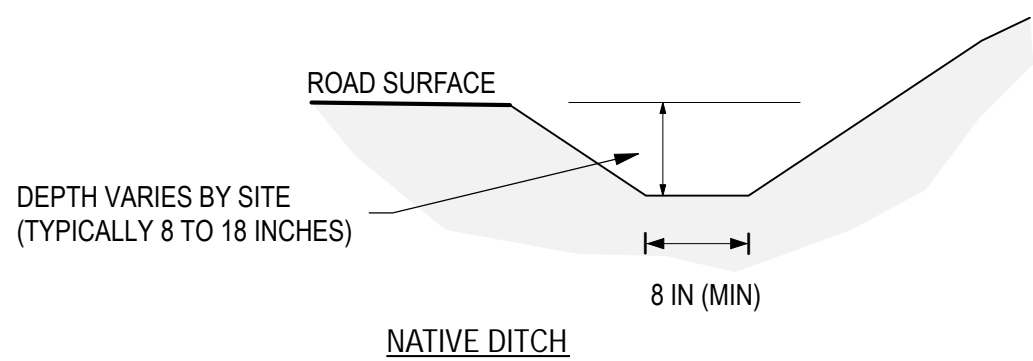
NOTES:

- DITCH RELIEF CULVERTS SHALL BE INSTALLED AT FLAGGED LOCATIONS OR AS IDENTIFIED ON PLANS.
- CULVERTS SHALL BE 18 INCH DIAMETER SMOOTH BORE, DOUBLE WALL HDPE (ASTM F2306) UNLESS OTHERWISE SPECIFIED, WITH SOIL TYPE FITTINGS AND GASKETS. "ADS N-12 ST" PIPE MEETS THIS SPECIATION.
- PLACE CULVERT AT 30 DEGREE SKEW ANGLE DOWN GRADE (WHERE FEASIBLE) WITH A GRADIENT EQUAL OR GREATER THAN THAT OF THE UPHILL ROAD PROFILE. CULVERTS SHOULD EXTEND A MINIMUM OF 1 FOOT BEYOND BASE OF ROAD FILL.
- WHERE NECESSARY, OUTLET DITCH SHALL BE CONSTRUCTED AT A STEEPER GRADIENT THAN THE CULVERT, AT LEAST ONE PIPE DIAMETER IN WIDTH, AND WITH BANK TAPERED BACK TO 1.5H:1V OR FLATTER SLOPE.
- THE CULVERT BED SHALL BE 1/2 DIAMETER OF THE CULVERT AND BE CLEAN AND FREE OF LARGE WOODY DEBRIS AND LARGE ROCKS. TRENCH SHALL BE ADEQUATE WIDTH TO FACILITATE COMPACTION.
- SELECT APPROVED MINERAL SOIL SHALL BE USED FOR CULVERT BACKFILL. THE BACKFILL SHALL HAVE NO ROCKS GREATER THAN 3 INCHES IN ANY DIMENSION PLACED CLOSER THAN 1 FOOT TO THE CULVERT. BACKFILL SHALL BE ADEQUATELY COMPACTED THROUGHOUT THE ENTIRE PROCESS TO 95 PERCENT PER ASTM 1557 UNLESS OTHERWISE SPECIFIED. DURING PLACEMENT AND COMPACTION OF FILL, THE MOISTURE CONTENT OF THE MATERIALS BEING PLACED SHALL BE MAINTAINED.
- MINIMUM SOIL COVER SHALL BE THE GREATER OF 1/2 PIPE DIAMETER OR 12 INCHES.
- DISCHARGE ONTO 8" TO 18" DIAM ANGULAR ROCK, PLACED 12 IN DEEP BY 4 FT X 4 FT, UNLESS OTHERWISE SPECIFIED IN DRAWINGS OR IF DIRECTED BY THE ENGINEER. ASSUME 1/3 CY PER OUTLET. PIPE MAY DISCHARGE ONTO SLASH OR SUITABLE VEGETATION WHERE APPROVED BY THE ENGINEER.
- A DITCH BLOCK SHALL BE PLACED IMMEDIATELY DOWNSLOPE OF THE CULVERT INTAKE TO PREVENT DITCH FLOW FROM BYPASSING THE PIPE INLET.
- SPECIFICATIONS ARE INTENDED ONLY AS GUIDELINES; MODIFICATIONS MAY BE MADE IN THE FIELD BY THE ENGINEER.

INBOARD DITCH

SCALE: NTS

5
C12.2



NOTES:

- SLOPE DITCH TO DRAIN AT 3% MINIMUM PROFILE GRADE
- ARMOR DITCH WITH STONE WHERE SPECIFIED OR AS DIRECTED BY THE ENGINEER.



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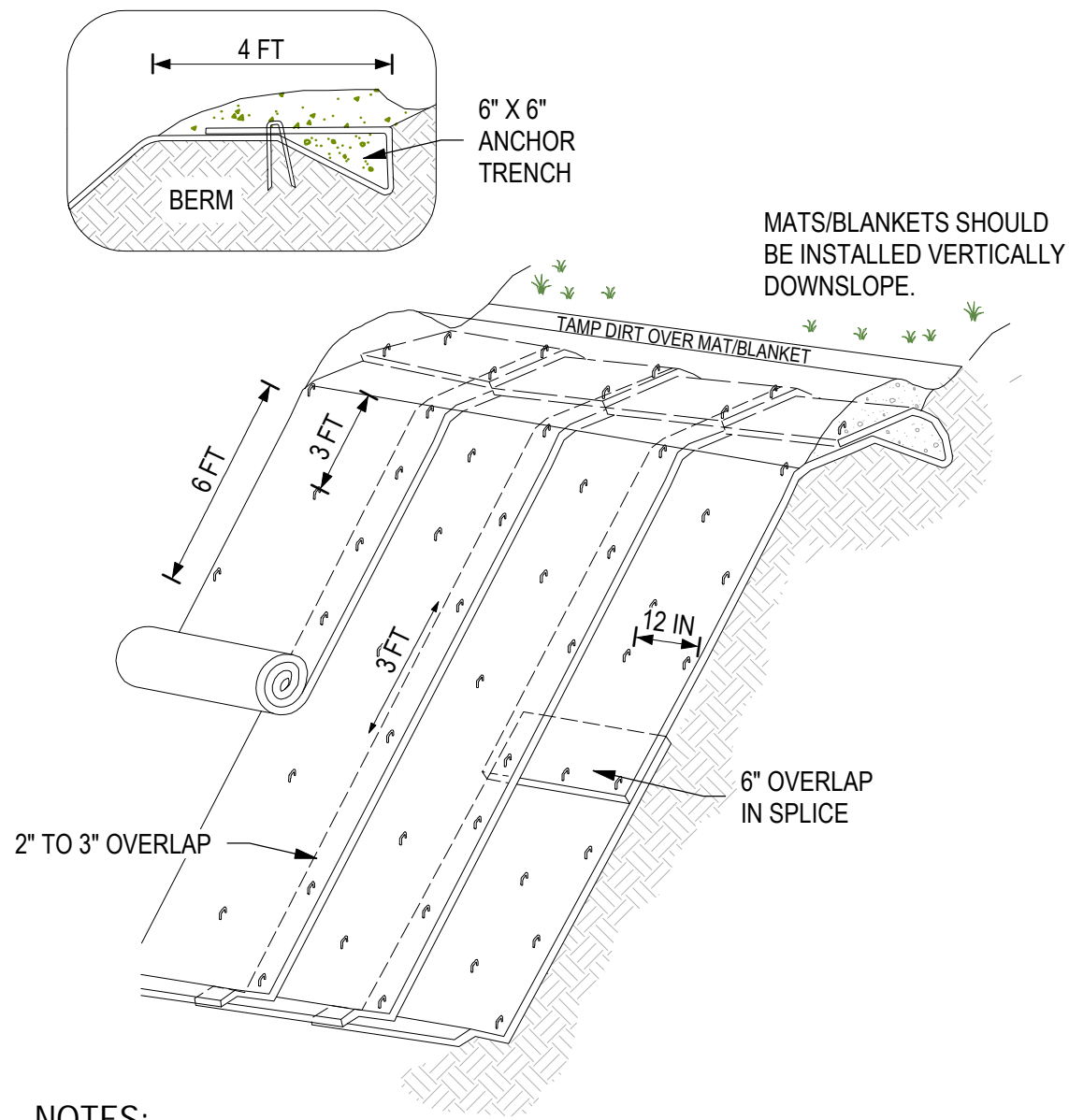


C12.2

EROSION CONTROL BLANKET

SCALE: NTS

6
C12.3



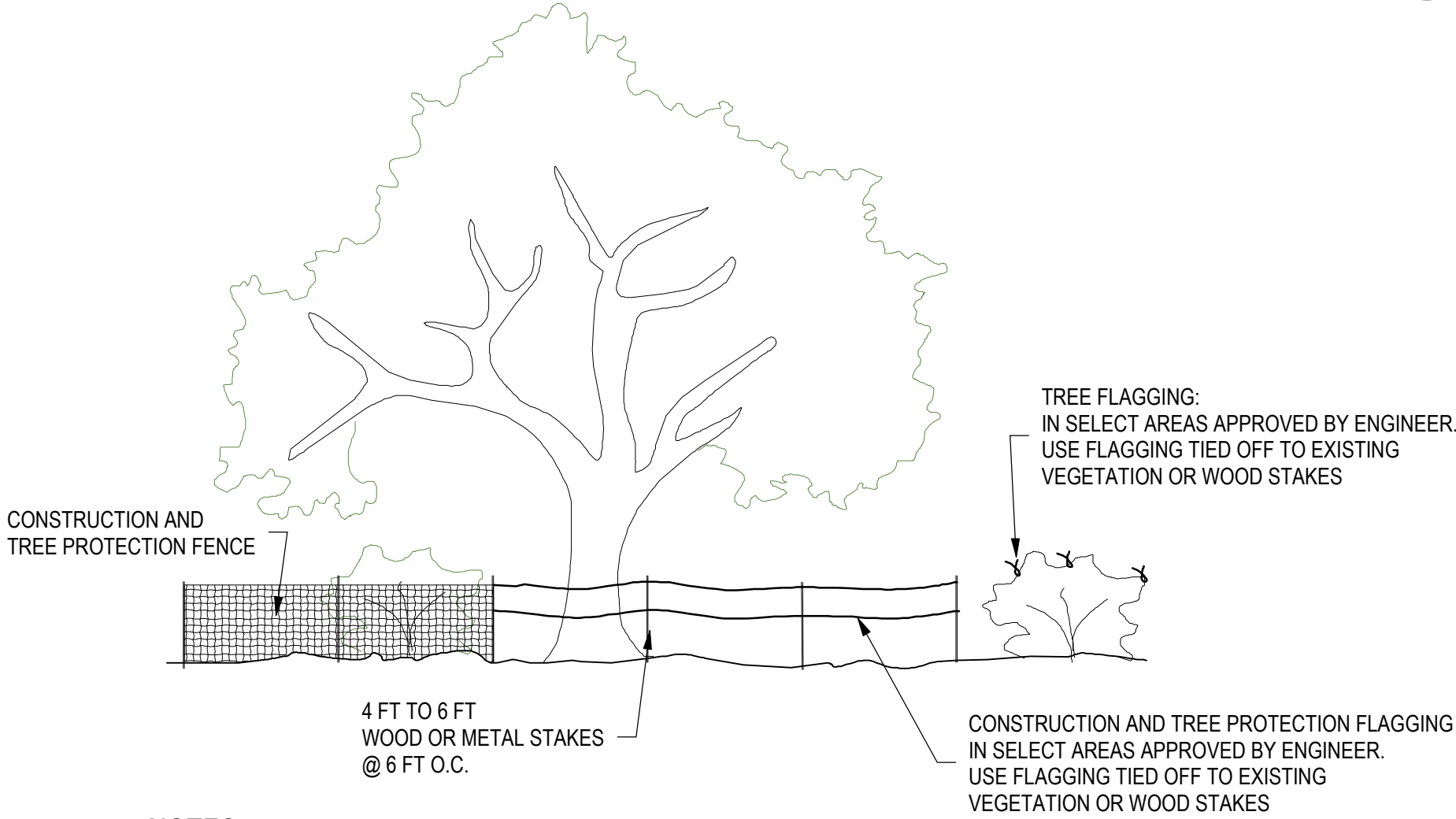
NOTES:

1. MATS/BLANKETS ARE SPECIFIED ON DRAWINGS. INSTALL AS SPECIFIED ON DRAWINGS, NOTES, OR AS DIRECTED BY THE ENGINEER.
2. LOPE SURFACE SHALL BE FREE OF ROCKS, CLOUDS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTRACT.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH
4. MATT/BLANKET INSTILLATION SHALL COMPLY WITH THE MANUFACTURER'S SPECIFICATIONS AND DRAWINGS.

CONSTRUCTION AND TREE PROTECTION FENCING/FLAGGING

SCALE: NTS

8
C12.3



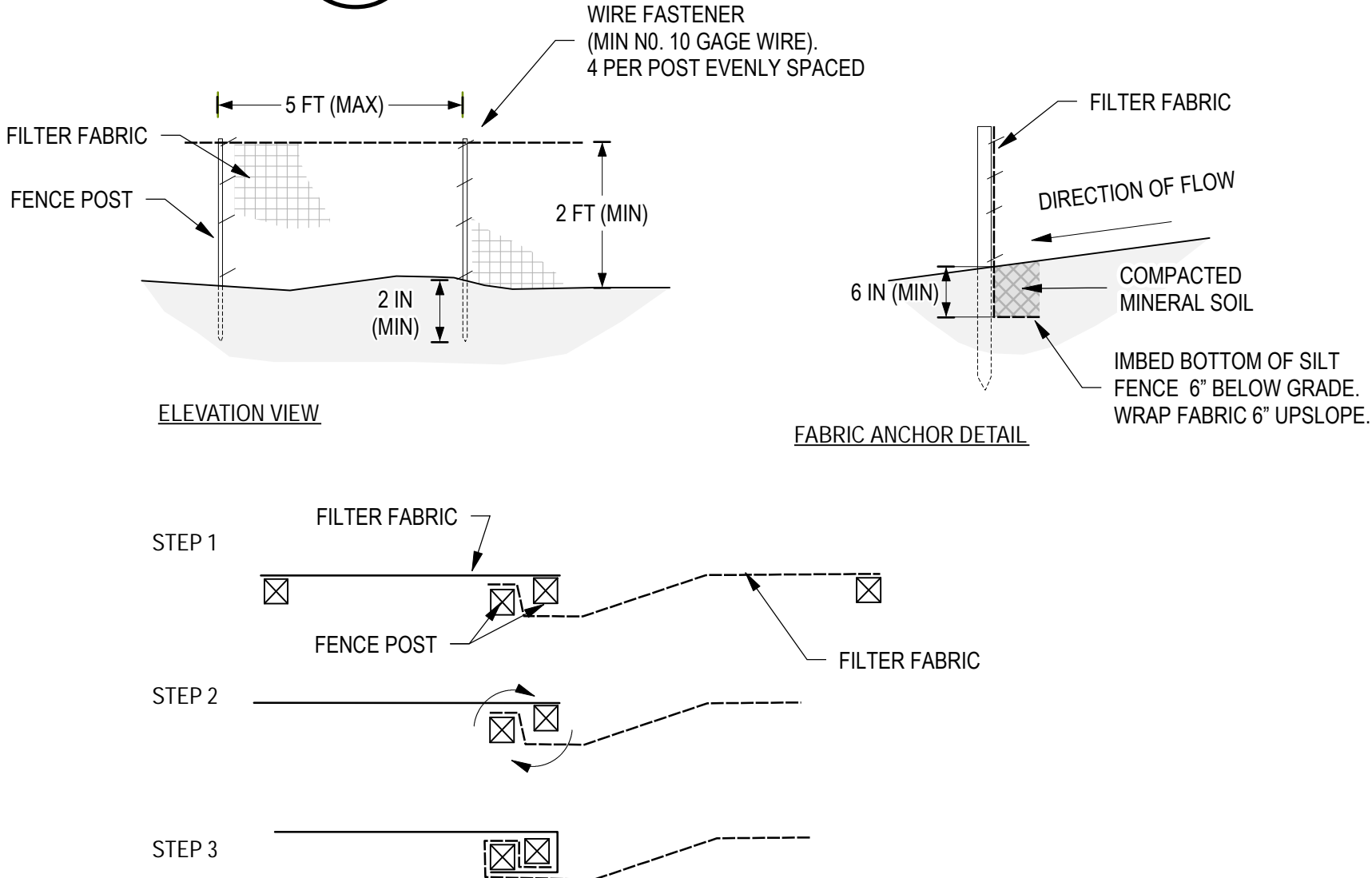
NOTES:

1. INSTALL CONSTRUCTION AND TREE PROTECTION FENCING ALONG BOUNDARY OF WORK AREA AND ALONG OUTER EDGE OF DRIP LINE OF TREES PER DRAWINGS, NOTES, PERMIT REQUIREMENTS, AND AS DIRECTED BY THE ENGINEER.
2. WHERE APPROVED BY THE ENGINEER, HIGH VISIBILITY FLAGGING HUNG ON WOOD OR ON OUTER BRANCHES OF VEGETATION MAY BE USED INSTEAD OF FENCING.
3. FENCING: HIGH VISIBILITY, HIGH DENSITY POLYETHYLENE FENCING WITH 3.5" X 1.5" OPENINGS.
4. FLAGGING: 1 INCH DAYGLO PINK OR 3 INCH YELLOW CAUTION.
5. CONSTRUCTION AND TREE PROTECTION FENCING/FLAGGING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGES TO THE PROTECTIVE FENCING MUST BE APPROVED BY THE ENGINEER.
6. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL FLAGGING AT COMPLETION OF WORK.

SILT FENCE

SCALE: NTS

10
C12.3



ATTACHING TWO SILT FENCES TOGETHER

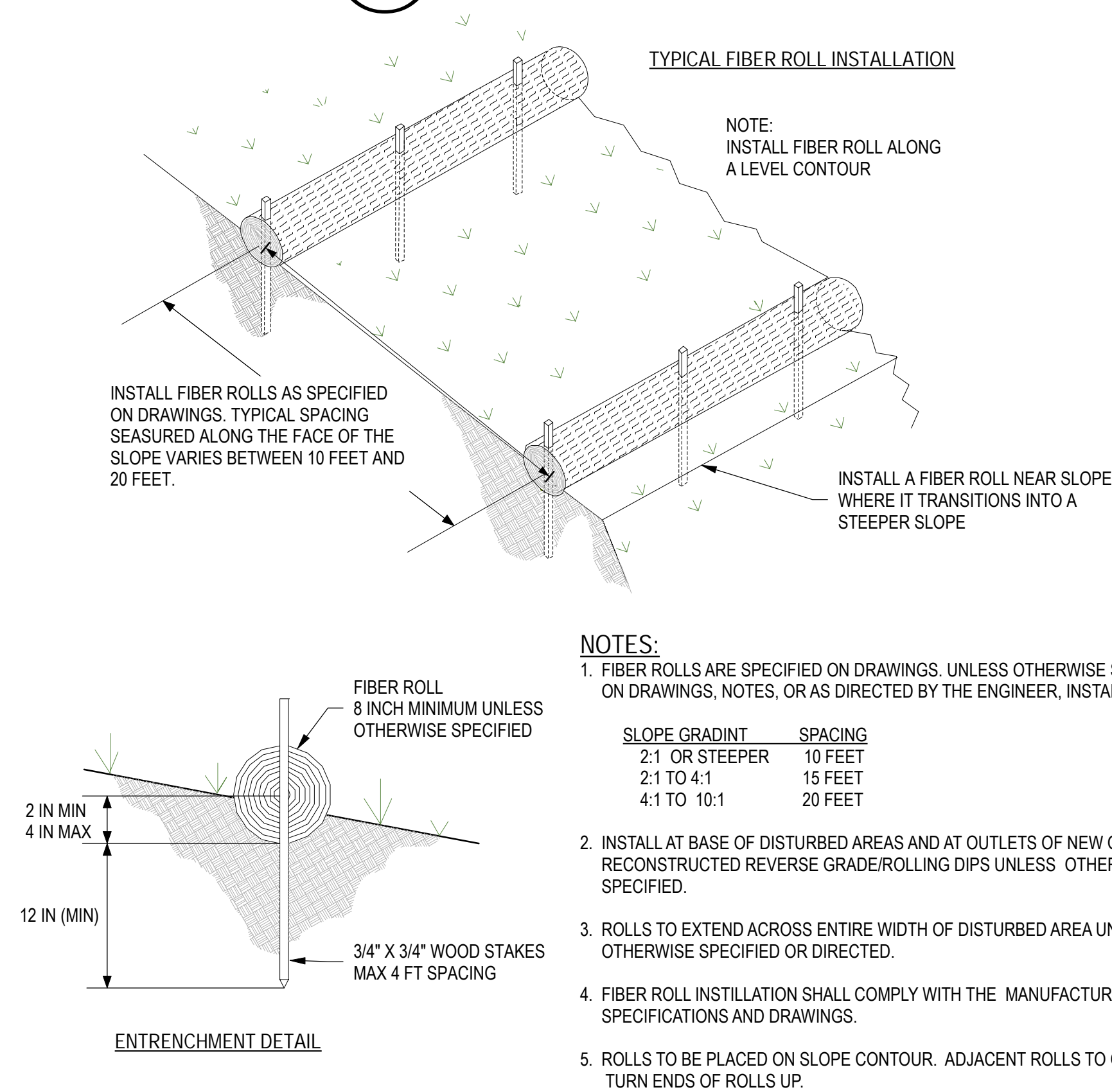
NOTES:

1. SILT FENCES SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY
2. INSPECT AND REPAIR FENCE ASTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9 INCH MAXIMUM RECOMMENDED STORAGE HEIGHT
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

FIBER ROLLS

SCALE: NTS

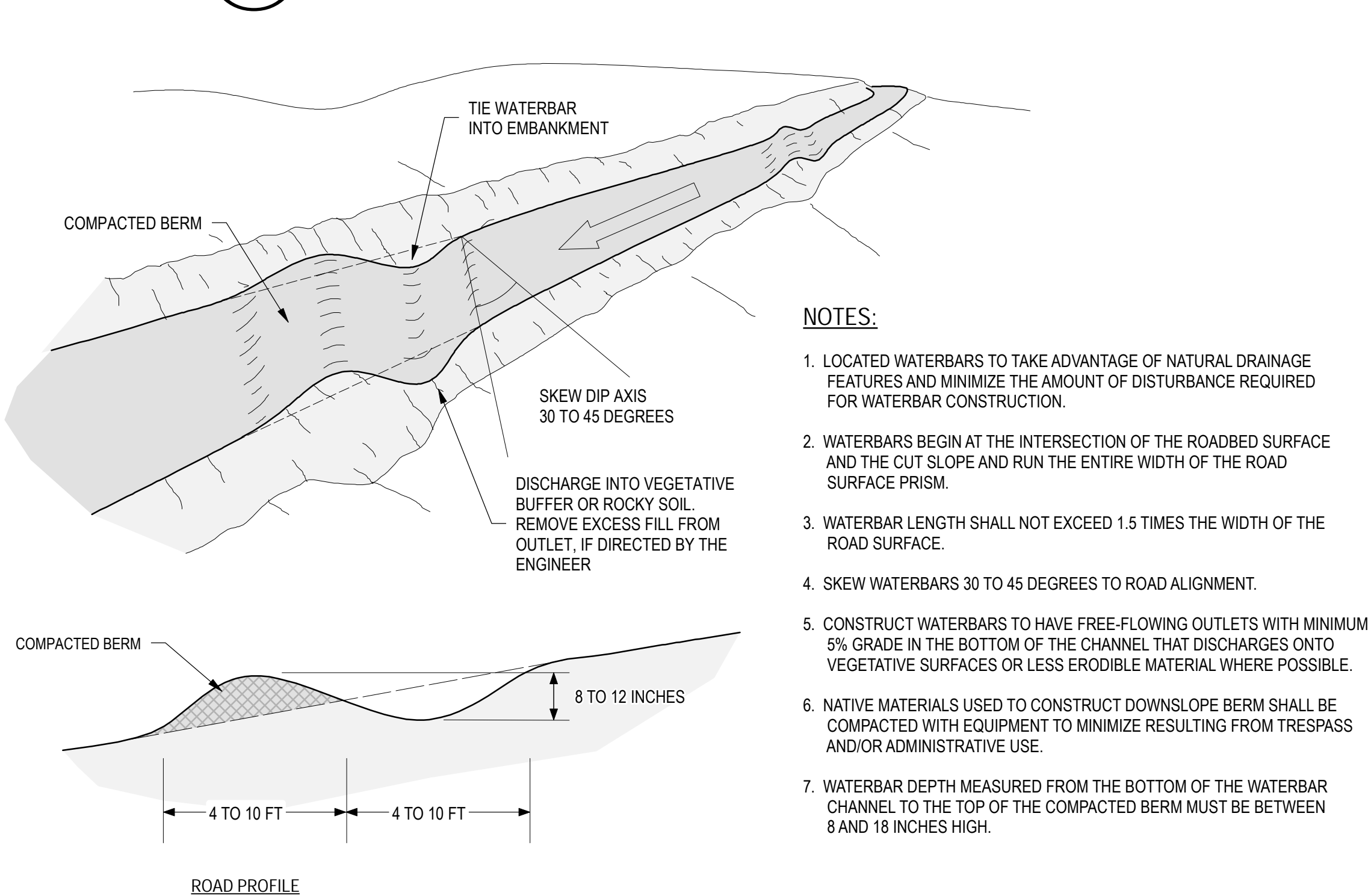
7
C12.3



WATERBAR

SCALE: NTS

9
C12.3



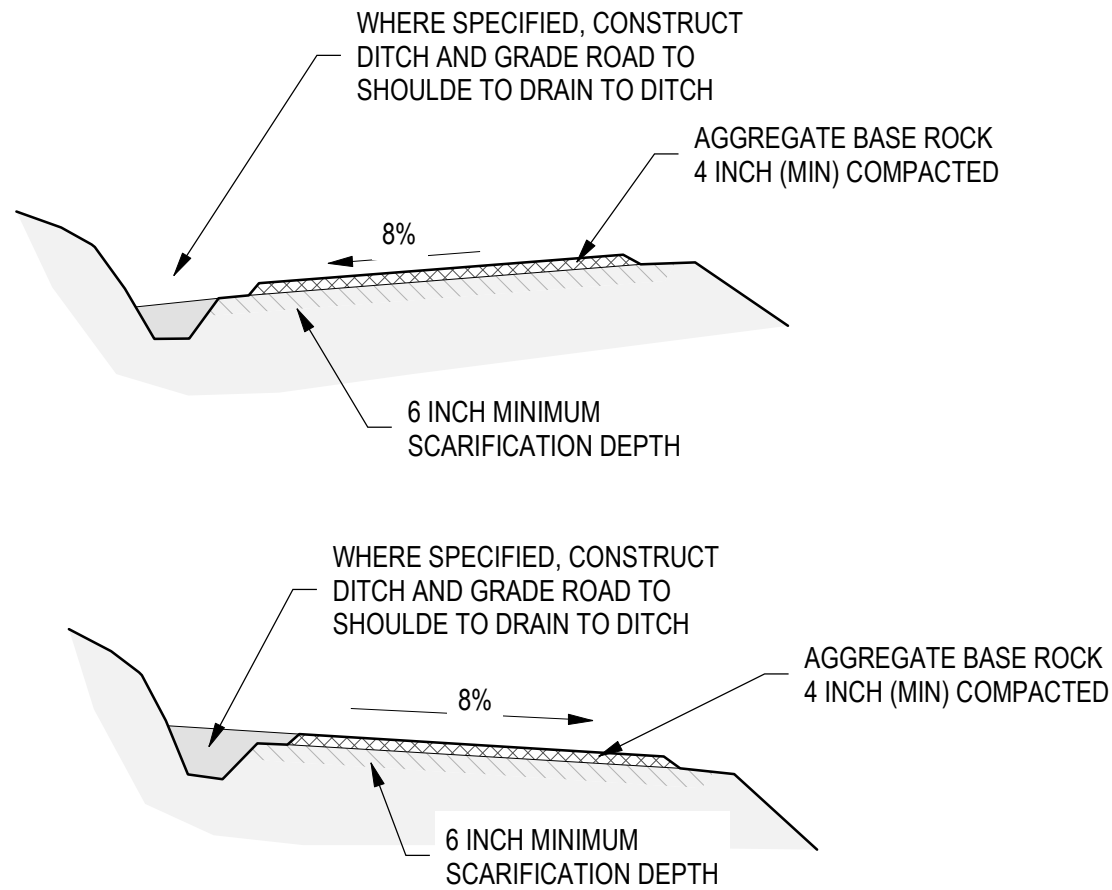
NOTES:

1. LOCATED WATERBARS TO TAKE ADVANTAGE OF NATURAL DRAINAGE FEATURES AND MINIMIZE THE AMOUNT OF DISTURBANCE REQUIRED FOR WATERBAR CONSTRUCTION.
2. WATERBARS BEGIN AT THE INTERSECTION OF THE ROADBED SURFACE AND THE CUT SLOPE AND RUN THE ENTIRE WIDTH OF THE ROAD SURFACE PRISM.
3. WATERBAR LENGTH SHALL NOT EXCEED 1.5 TIMES THE WIDTH OF THE ROAD SURFACE.
4. SKEW WATERBARS 30 TO 45 DEGREES TO ROAD ALIGNMENT.
5. CONSTRUCT WATERBARS TO HAVE FREE-FLOWING OUTLETS WITH MINIMUM 5% GRADE IN THE BOTTOM OF THE CHANNEL THAT DISCHARGES ONTO VEGETATIVE SURFACES OR LESS ERODIBLE MATERIAL WHERE POSSIBLE.
6. NATIVE MATERIALS USED TO CONSTRUCT DOWNSLOPE BERM SHALL BE COMPACTED WITH EQUIPMENT TO MINIMIZE RESULTING FROM TRESPASS AND/OR ADMINISTRATIVE USE.
7. WATERBAR DEPTH MEASURED FROM THE BOTTOM OF THE WATERBAR CHANNEL TO THE TOP OF THE COMPACTED BERM MUST BE BETWEEN 8 AND 18 INCHES HIGH.

AGGREGATE BASE ROCK ROAD SECTIONS

TYPICAL SCALE: NTS

11
C12.3



NOTES:

1. SCARIFY SUBGRADE BELOW ROAD SURFACING AND EXTENDING LATERALLY A MINIMUM OF 12 INCHES BEYOND PROPOSED SURFACING TO A DEPTH OF 6 INCHES. MOISTURE CONDITION AND COMPACT TO 90% RELATIVE COMPACTION.
2. OVER-EXCAVATION MAY BE REQUIRED IN LIMITED AREAS OF POOR SUBGRADE (E.G.) UNSTABLE SOILS OR EXCESSIVE MOISTURE) TO OBTAIN THE REQUIRED COMPACTION. THEE AREAS WILL BE IDENTIFIED THE FIELD BY THE ENGINEER. UNSUITABLE SOULS WILL BE DISPOSED ON SITE AT LOCATIONS TO BE FLAGGED BU THE ENGINEERING AND REPLACED WITH LOCALLY SOURCED MINERAL SOILS.
3. WHERE "SUBGRADE STABILIZATION" IS SPECIFIED, PLACE ROCK OVER SPECIFIED GEOSYNTHETIC MATERIAL
4. AGGREGATE BASE ROCK SHALL CONSIST OF APPROVED 1 1/2 INCH CLASS 2 AGGREGATE BASE
5. NEW AGGREGATE BASE ROCK SHALL BE COMPACTED TO A MINIMUM 4 IN THICKENS. UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR DIRECTED BY THE ENGINEER. BASE ROCK SHALL BE COMPACTED TO 95% RELATIVE COMPACTION N.
6. PLACE ROCK TO PLAN DIMENSIONS SHOWN ON DRAWINGS. ENGINEER MAY DIRECT THE CONTRACTOR TO PLACE ADDITIONAL ROCK AT TURNOUT AND OTHER AREAS TO ADDITIONAL ROAD WIDTH.



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0" 1"

C12.3

KNICK

SCALE: NTS

11
C12.4

CROSS DRAIN 3% TO 5%
GREATER THAN THE
ROAD'S PROFILE GRADE

FILL PLACEMENT

OUTSIDE EDGE OF ROAD
SHAVED DOWN

30 TO 40 FEET

NOTE:

1. A KNICK A SEMI-CIRCULAR, SHAVED-DOWN SECTION OF THE OUTSIDE EDGE OF THE ROAD.
2. KNICK IS INSTALLED AT A 45+ DEGREE ANGLE TO ROAD.
3. THE AXIS OF THE KNICK IS OUTSLOPED 3% TO 5% GREATER THAN ROAD PROFILE GRADE.
4. DOWN ROAD SIDE OF DIP MAY BE BUILT UP WITH COMPACTED FILL AS SITE CONDITIONS DICTATE.
5. DIP OUTLETS SHOULD BE LOCATED TO DRAIN INTO AREAS WITH ADEQUATE SEDIMENT FILTER QUALITY AND NON-ERODIBLE MATERIAL SUCH AS ROCK, SLASH, BRUSH, ETC.
6. CONTRACTOR SHALL CONSULT WITH THE ENGINEER ON KNICK DESIGN PRIOR TO CONSTRUCTION



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C12.4