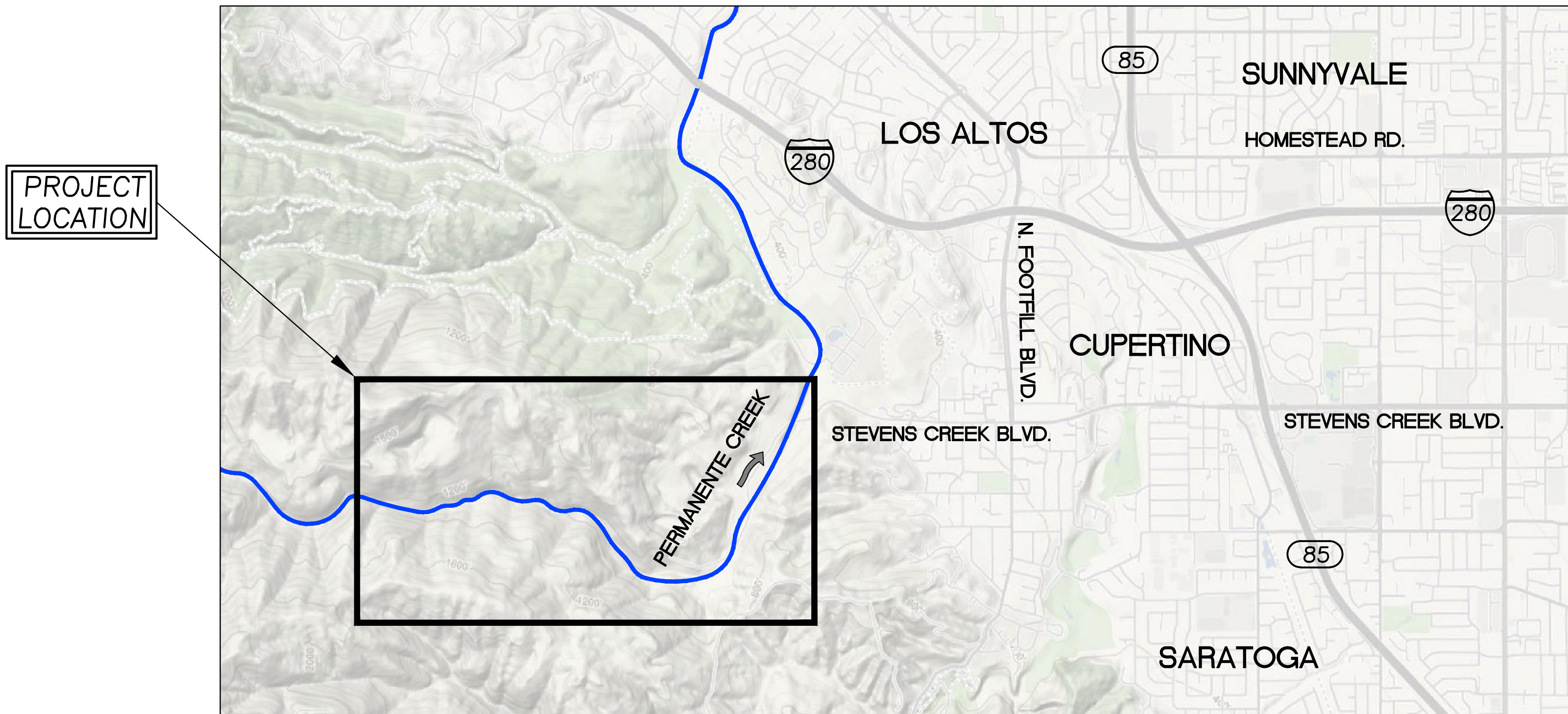


PERMANENTE CREEK RESTORATION PLAN

PRELIMINARY GRADING PLAN - 90% DESIGN

SANTA CLARA COUNTY GRADING PERMIT SUBMITTAL

NOVEMBER 15, 2018



PROJECT LOCATION

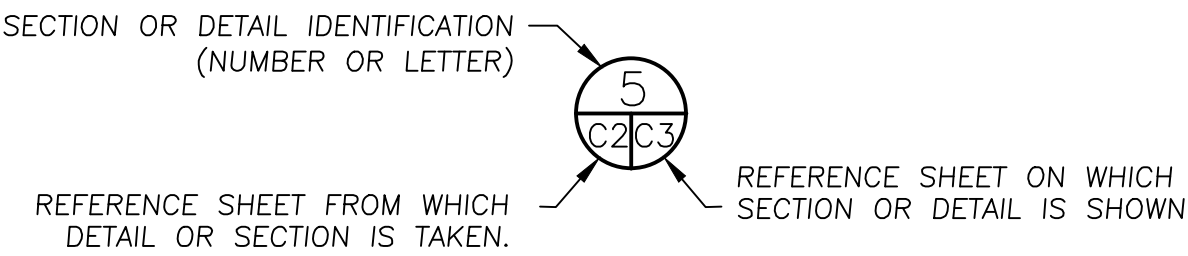
GENERAL NOTES

- TOPOGRAPHIC MAPPING WAS PERFORMED BY:
WATERWAYS CONSULTING, INC.
509 SWIFT STREET, UNIT A
SANTA CRUZ, CA 95060
SURVEY DATES: JUNE THROUGH AUGUST 2013, FEBRUARY THROUGH MAY 2014, MARCH 2015, AUGUST 2018.
- AERIAL CONTOURS PROVIDED BY LEHIGH HANSON FOR THE ROCK PILE AREA (MAY 2011) AND THE MATERIAL REMOVAL AREA (NOVEMBER 2017).
- ELEVATION DATUM: NAVD88 BASED ON A FIELD TIE TO SANTA CLARA VALLEY WATER DISTRICT BENCHMARK ID: BM198 WITH AN ELEVATION OF 478.22'.
- HORIZONTAL DATUM: NAD83 CALIFORNIA STATE PLANE, ZONE 3.
- AERIAL PHOTO SOURCE:
AERIAL PHOTOMAPPING SERVICES
2929 LARKIN AVENUE
CLOVIS, CA 93612
PHOTOGRAPH DATE: JUNE 2013 AND JUNE 2017
- ELEVATIONS AND DISTANCES SHOWN ARE IN FEET AND DECIMALS THEREOF. CONTOUR INTERVAL IS 1 FOOT.
- THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES, WHERE SHOWN, WERE COMPILED FROM RECORD INFORMATION. THE LOCATION OF THESE LINES IS SUBJECT TO CHANGE, PENDING THE RESULTS OF A COMPLETE BOUNDARY SURVEY.
- TREE DIMENSIONS: TRUNK DIAMETERS SHOWN REPRESENT DIAMETER AT BREAST HEIGHT (DBH), MEASURED IN INCHES. DBH IS MEASURED 4.5 FT ABOVE GROUND FOR SINGLE TRUNKS AND TRUNKS THAT SPLIT INTO SEVERAL STEMS CLOSE TO THE GROUND. EACH TRUNK IS SHOWN AT MULTI-STEM TREES. ONLY THE LABEL OF THE DBH OF THE LARGEST TRUNK IS SHOWN FOR DRAWING CLARITY. WHERE TREES FORK NEAR BREAST HEIGHT, TRUNK DIAMETER IS MEASURED AT THE NARROWEST PART OF THE MAIN STEM BELOW THE FORK. FOR TREES ON A SLOPE, BREAST HEIGHT IS REFERENCED FROM THE UPPER SIDE OF THE SLOPE. FOR LEANING TREES, BREAST HEIGHT IS MEASURED ON THE SIDE THAT THE TREE LEANS TOWARD. TREES WITH DBH LESS THAN 8" ARE TYPICALLY NOT SHOWN.

12"P = 12" DBH PINE
- TREE SPECIES ARE IDENTIFIED WHEN KNOWN. HOWEVER, FINAL DETERMINATION SHOULD BE MADE BY A QUALIFIED BOTANIST. REFER TO THE LEGEND FOR TREE SPECIES SYMBOLS.
- SURVEYED TREES INCLUDE:
A. OAKS (QUERCUS SPP.) 5 INCHES OR LARGER DBH
B. ALL OTHER TREES 12 INCHES OR LARGER DBH
C. ALL MULTI-STEM TREES WITH A COMBINED DIAMETER OF 24 INCHES OR LARGER DBH
- THE DRIPLINES ARE SHOWN AROUND ALL SURVEYED TREES. DRIPLINES ARE BASED ON A UNIFORM CANOPY RADIUS FOR EACH TREE. WHERE CANOPIES OF INDIVIDUAL TREES OVERLAP, THEY WERE JOINED TO SHOW A CONTIGUOUS DRIPLINE. THE DRIPLINES OF SMALL DIAMETER, UNMAPPED TREES ARE NOT SHOWN.

VICINITY MAP
N.T.S. (GOOGLE)

SECTION AND DETAIL CONVENTION



ABBREVIATIONS

AVG.	AVERAGE	NTS	NOT TO SCALE
CC	CONCRETE	O.C.	ON CENTER
CY	CUBIC YARDS	O.D.	RELATIVE COMPACTION
DBH	DIAMETER BREST HEIGHT	RSP	ROCK SLOPE PROTECTION
DIA.	DIAMETER	S	SLOPE
E	EXISTING	SD	STORM DRAIN
E.G.	EXISTING GROUND	SPK	SPIKE
ELEV.	ELEVATION	SQ.FT.	SQUARE FOOT
DI	DRAINAGE INLET	TBD	TO BE DETERMINED
FG	FINISHED GRADE	TYP	TYPICAL
FT	FEET	UNK	UNKNOWN
INV	INVERT	WSE	WATER SURFACE ELEVATION
N	NEW	YR	YEAR

SHEET INDEX

C1	COVER SHEET
C2	PROJECT AREA OVERVIEW
C3	RECLAMATION PLAN AREA OVERVIEW
C4	EXISTING CHANNEL PROFILE
C5	SHEET LAYOUT OVERVIEW
C6	SITE PARCELS AND RIGHT-OF-WAY OVERLAY
C7	CHANNEL WIDENING DEMOLITION PLAN (1 OF 2)
C8	CHANNEL WIDENING DEMOLITION PLAN (2 OF 2)
C9	ROCK PILE AREA DEMOLITION PLAN
C10	MAT. REMOVAL AREA AND OLD CRUSHER FOUNDATION DEMO. PLAN
C11	CHANNEL WIDENING PLAN (1 OF 6)
C12	CHANNEL WIDENING PLAN (2 OF 6)
C13	CHANNEL WIDENING PLAN (3 OF 6)
C14	CHANNEL WIDENING PLAN (4 OF 6) AND SEDIMENT REMOVAL AREA
C15	CULVERT #8 PROFILE AND SECTION
C16	SEDIMENT REMOVAL AREA PROFILE AND SECTIONS
C17	CHANNEL WIDENING PLAN (5 OF 6)
C18	CHANNEL WIDENING PLAN (6 OF 6)
C19	ROCK PILE AREA PLAN
C20	ROCK PILE AREA SECTIONS (1 OF 2)
C21	ROCK PILE AREA SECTIONS (2 OF 2)
C22	OLD CRUSHER FOUNDATION SITE PLAN
C23	MATERIAL REMOVAL AREA PLAN (1 OF 2)
C24	MATERIAL REMOVAL AREA PLAN (2 OF 2)
C25	MATERIAL REMOVAL AREA SECTIONS (1 OF 2)
C26	MATERIAL REMOVAL AREA SECTIONS (2 OF 2)
C27	ACCESS AND STAGING PLAN (1 OF 2)
C28	ACCESS AND STAGING PLAN (2 OF 2)
C29	CHANNEL WIDENING DIVERSION AND EROSION CONTROL PLAN (1 OF 2)
C30	CHANNEL WIDENING DIVERSION AND EROSION CONTROL PLAN (2 OF 2)
C31	ROCK PILE AREA DIVERSION AND EROSION CONTROL PLAN
C32	MATERIAL REMOVAL AREA DIVERSION AND EROSION CONTROL PLAN
C33	DEWATERING DETAILS
C34	DETAILS (1 OF 3)
C35	DETAILS (2 OF 3)
C36	DETAILS (3 OF 3)
C37	HABITAT LOG DETAILS AND ROCK SPECIFICATIONS
C38	NOTES
C39	CONTROL POINT TABLES
L1	CONCRETE CHANNEL REVEGETATION PLAN
L2	CHANNEL WIDENING REVEGETATION PLAN (1 OF 2)
L3	CHANNEL WIDENING REVEGETATION PLAN (2 OF 2)
L4	ROCKPILE AREA REVEGETATION PLAN
L5	MATERIAL REMOVAL AREA REVEGETATION PLAN
L6	TYPICAL PLANTING LAYOUTS

PROJECT DESCRIPTION

THESE DRAWINGS PROVIDE 90% LEVEL DESIGNS FOR THE CONSTRUCTION OF CHANNEL AND FLOODPLAIN ENHANCEMENTS ON PORTIONS OF PERMANENTE CREEK AT THE PERMANENTE QUARRY PROPERTY IN SANTA CLARA COUNTY, CALIFORNIA.

TREE REMOVAL NOTES

- SALVAGE MAPPED WILLOWS SHOWN ON THE DRAWINGS FOR REMOVAL AND INCORPORATE THEM INTO THE WORK AS FLOODPLAIN LIVE LOGS, PER DETAIL 5, SHEET C34. ALL UNMAPPED WILLOWS WITHIN THE GRADING LIMITS SHALL BE RESERVED FOR SALVAGE AND TRANSPLANTING, PER THE WILLOW TRANSPLANT DETAIL 2 ON SHEET C35. WILLOWS TO BE SALVAGED FOR TRANSPLANTING WILL BE FLAGGED IN THE FIELD BY THE PROJECT ARBORIST, PRIOR TO THE START OF ANY CLEARING OR GRADING ACTIVITIES.
- SALVAGE ALL OTHER TREES SHOWN ON THE DRAWINGS FOR REMOVAL AND INCORPORATE THEM INTO THE WORK AS FLOODPLAIN ROUGHNESS LOGS, PER DETAIL 5, SHEET C34.

TREE ABBREVIATIONS

A	ALDER
B	BAY
BK	BUCKEYE
M	MAPLE
O	OAK
SYC	SYCAMORE
W	WILLOW

* CALL BEFORE YOU DIG *
CONTACT UNDERGROUND SERVICE ALERT (USA)
PRIOR TO ANY CONSTRUCTION WORK 1-800-227-2800

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
LEHIGH HANSON
HEIDELBERG CEMENT
GROUP

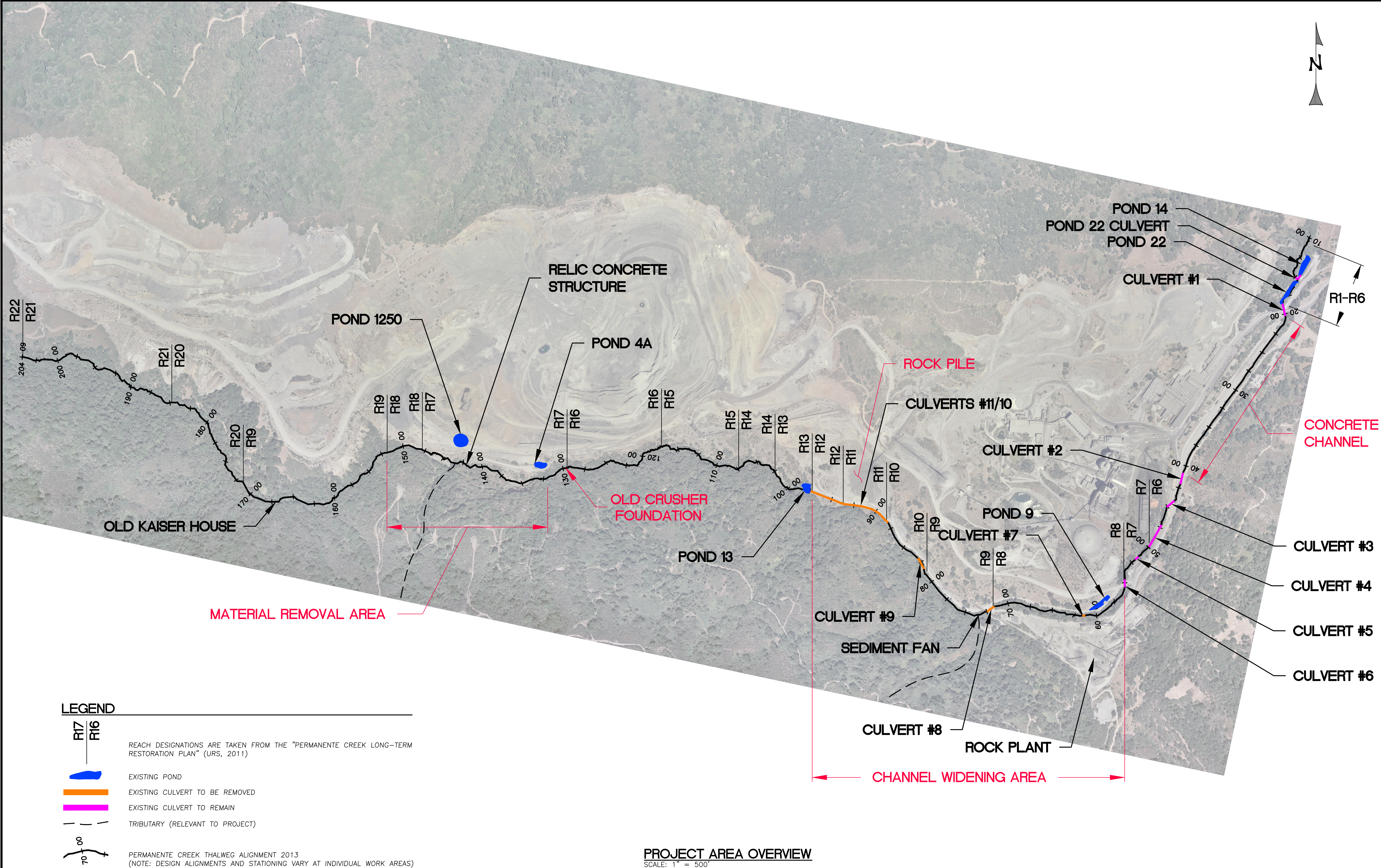
COVER SHEET

PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: I
DRAWN BY: B.M.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS
0 1"

C1
1 OF 45



LEGEND

R17
R16

REACH DESIGNATIONS ARE TAKEN FROM THE "PERMANENTE CREEK LONG-TERM RESTORATION PLAN" (URS, 2011)

EXISTING POND

EXISTING CULVERT TO BE REMOVED

EXISTING CULVERT TO REMAIN

TRIBUTARY (RELEVANT TO PROJECT)

PERMANENTE CREEK THALWEG ALIGNMENT 2013
(NOTE: DESIGN ALIGNMENTS AND STATIONING VARY AT INDIVIDUAL WORK AREAS)

PROJECT AREA OVERVIEW
SCALE: 1" = 500'

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GROUP

PROJECT

AREA
OVERVIEW

PERMANENTE CREEK
RESTORATION PLAN

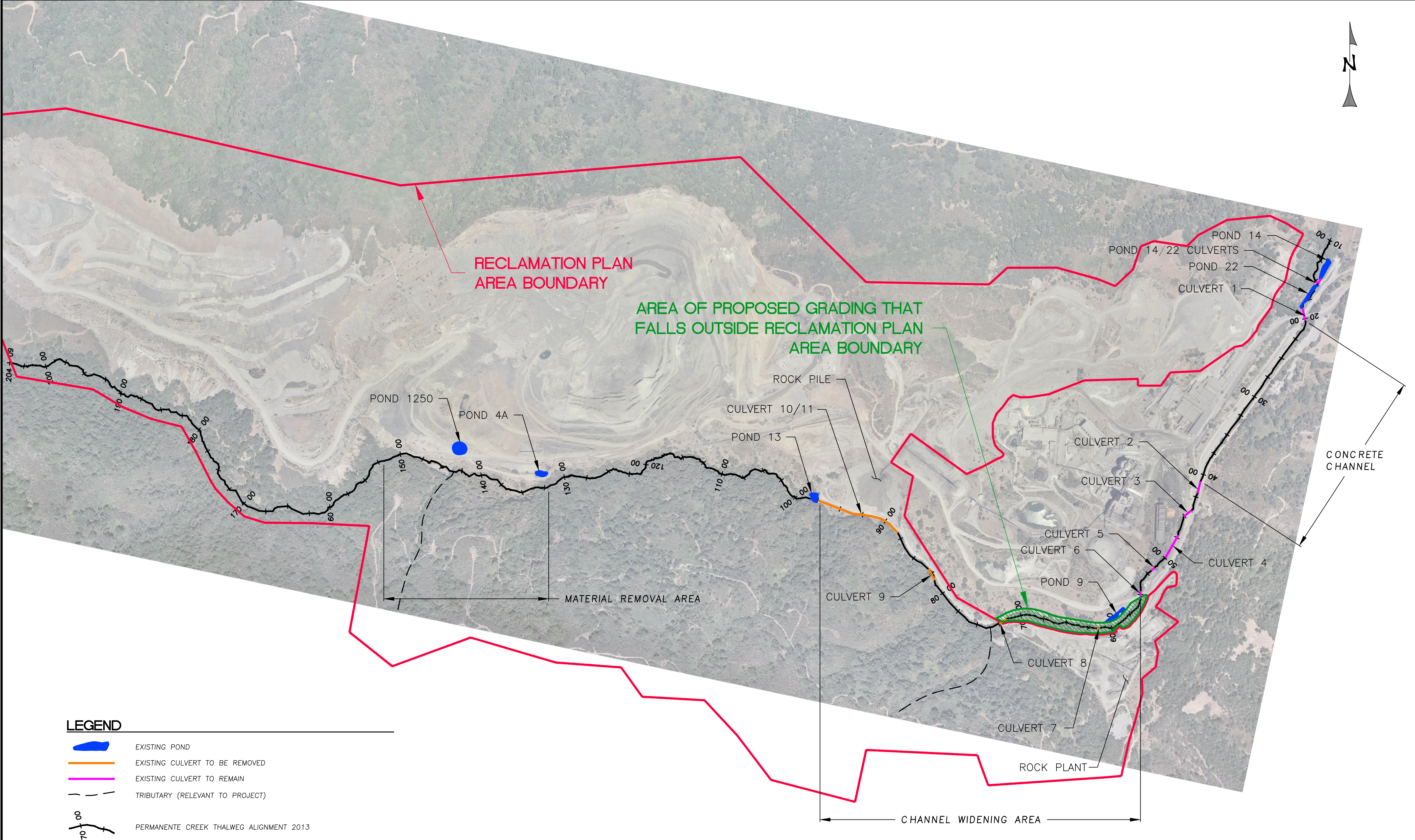
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
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ADJUST SCALES FOR
REDUCED PLOTS
0 1"

C2

2
OF
45

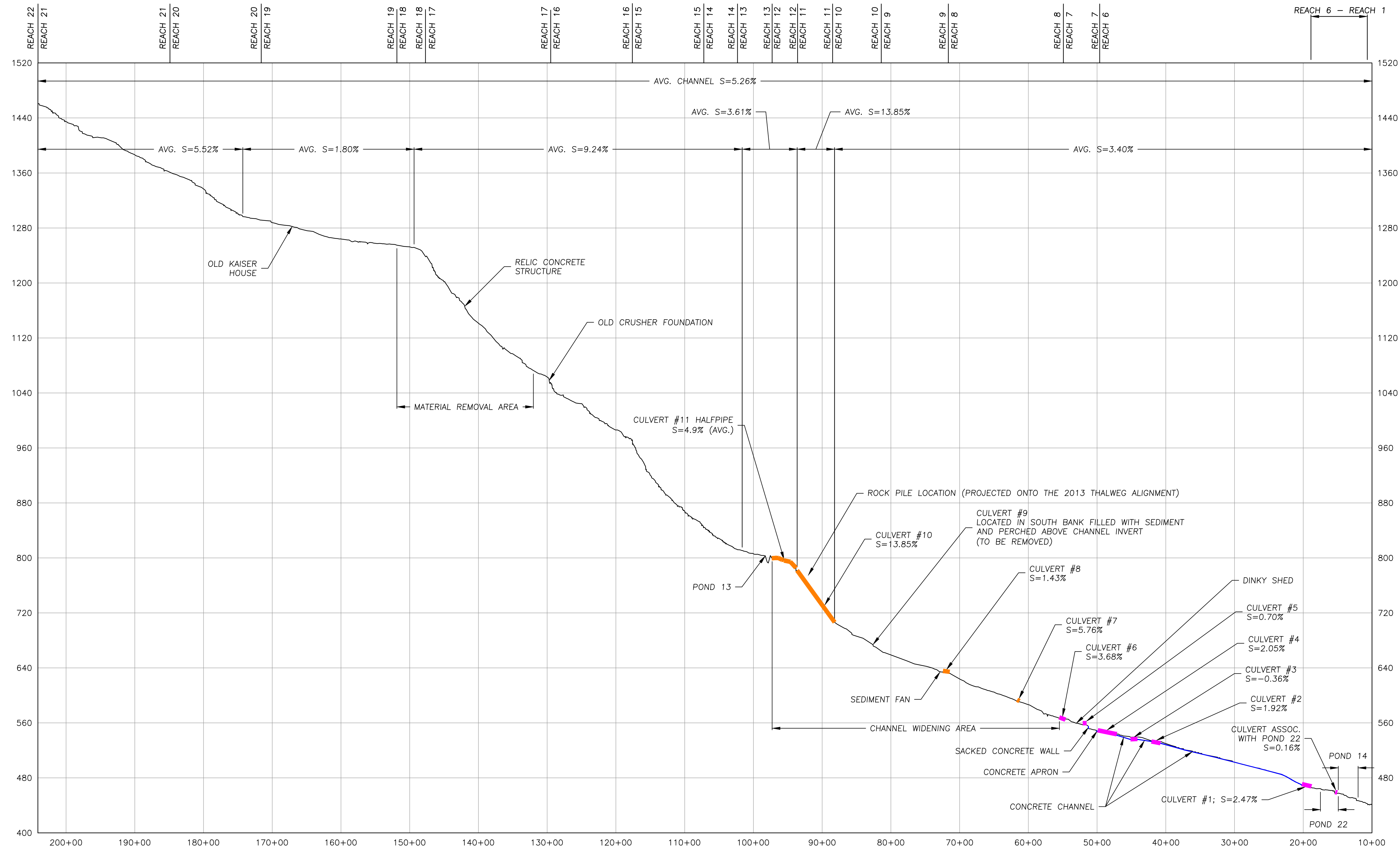


LEGEND

- EXISTING POND
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN
- TRIBUTARY (RELEVANT TO PROJECT)
- PERMANENTE CREEK THALWEG ALIGNMENT 2013

RECLAMATION PLAN AREA OVERVIEW
SCALE: 1" = 500'

 <div>509A SWIFT ST. SANTA CRUZ, CA 95060 PH: (831) 421-9291 / FAX: (888) 819-6847 WWW.WATWAYS.COM</div>	
PRELIMINARY NOT FOR CONSTRUCTION	
PREPARED AT THE REQUEST OF: LEHIGH HANSON HEIDELBERG CEMENT GROUP	
RECLAMATION PLAN AREA OVERVIEW	
PERMANENTE CREEK RESTORATION PLAN	PRELIMINARY GRADING PLAN 90% DESIGN SANTA CLARA COUNTY GRADING PERMIT SUBMITTAL
DESIGNED BY: B.M.S. DRAWN BY: B.M.S. CHECKED BY: M.W.W. DATE: 11/15/18 JOB NO.: 13-016	
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS 	
C3	3 OF 45



LEGEND

- REACH 7
REACH 6
- REACH DESIGNATIONS FROM THE "PERMANENTE CREEK LONG-TERM RESTORATION PLAN" (URS, 2011)
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN

EXISTING CHANNEL THALWEG PROFILE
SCALE: H: 1" = 800'; V: 1"=80'

PRELIMINARY
NOT FOR CONSTRUCTION

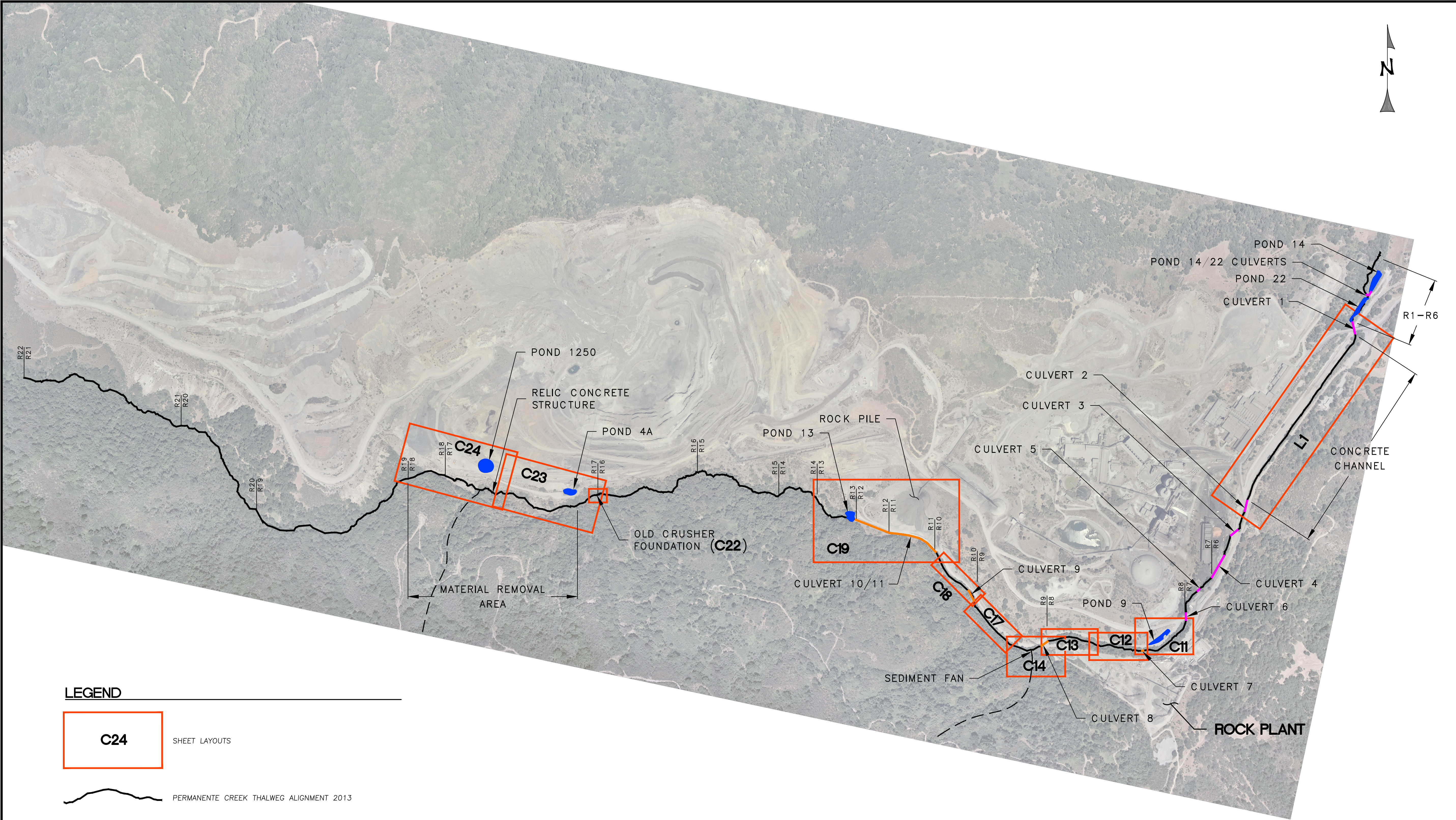
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GROUP

EXISTING
CHANNEL
PROFILE

PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

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DATE: 11/15/18
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BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS
0 1"



LEGEND

- C24** SHEET LAYOUTS
- PERMANENTE CREEK THALWEG ALIGNMENT 2013
- TRIBUTARY (RELEVANT TO PROJECT)
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN

SHEET LAYOUT OVERVIEW

SCALE: 1" = 500'



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GROUP**

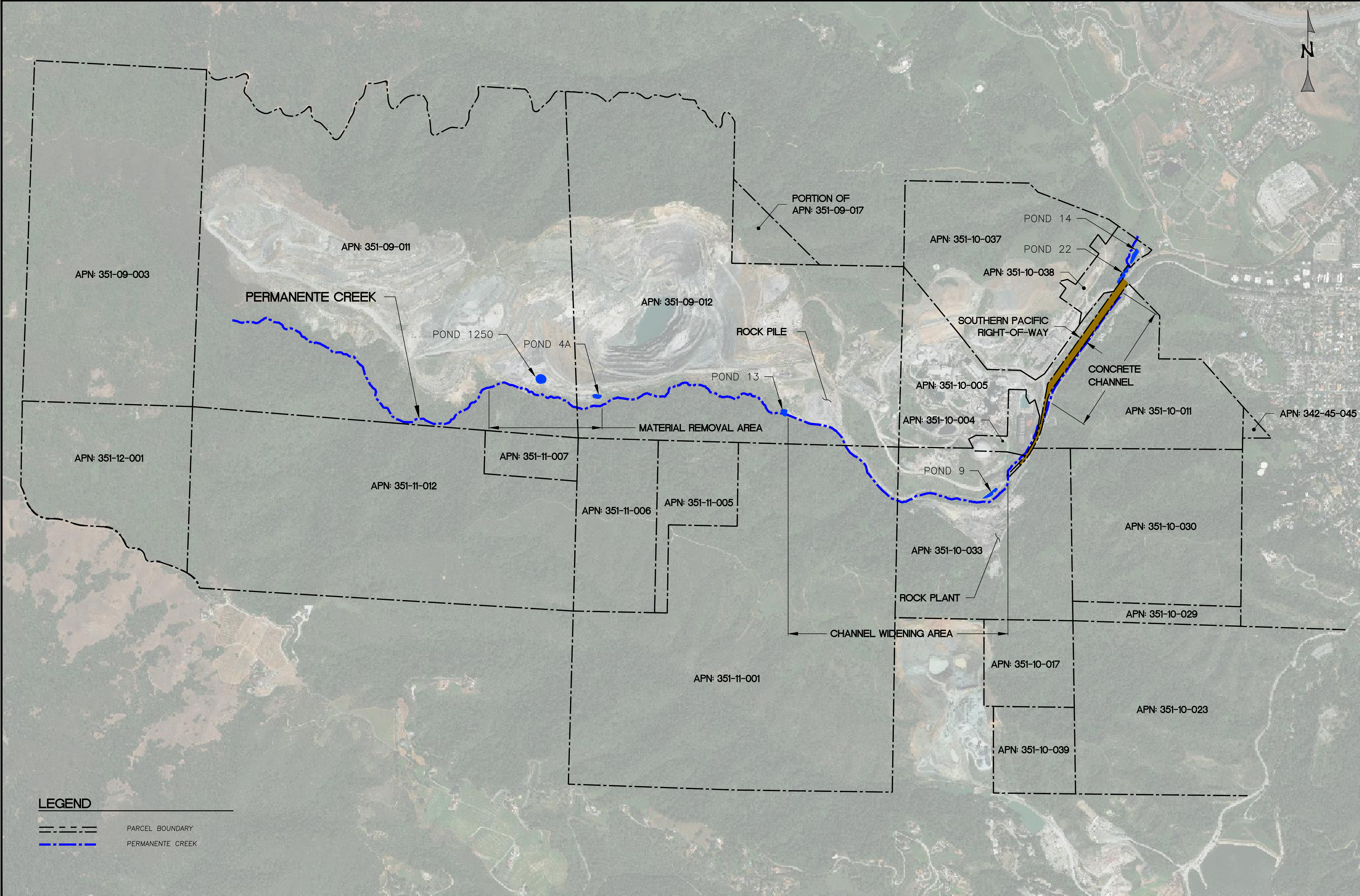
SHEET
LAYOUT
OVERVIEW

PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

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DATE: 11/15/18
JOB NO.: 13-016

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ADJUST SCALES FOR
REDUCED PLOTS

0 1"



LEGEND

--- PARCEL BOUNDARY
--- PERMANENTE CREEK

PARCEL BOUNDARY SOURCES:
1. ENVIROMINE, INC. PERMANENTE QUARRY POST MID-PEN LAND SWAP
SURVEYED/DELINEATED PARCELS, MAY 2008. PROVIDED BY LEHIGH.

SITE PARCELS AND RIGHT-OF-WAY OVERLAY
SCALE: 1"=700'

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GROUP**

**SITE PARCELS
AND
RIGHT-OF-WAY
OVERLAY**

PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS
0 1"



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HEIDELBERG CEMENT
GROUP

CHANNEL
WIDENING
DEMOLITION
PLAN (1 OF 2)


PERMANENTE CREEK
RESTORATION PLAN

PRELIMINARY GRADING PLAN
90% DESIGN

SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

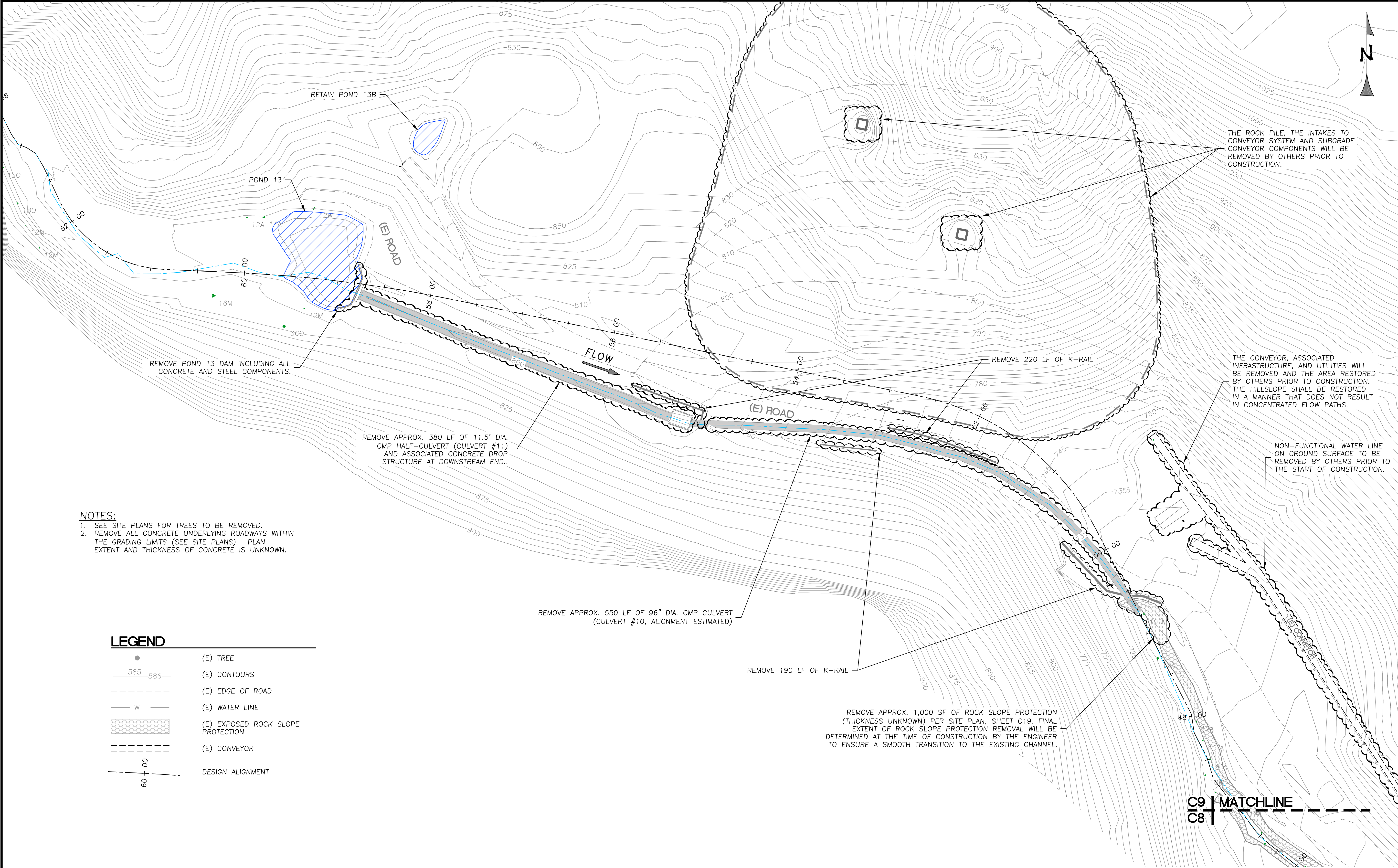
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DRAWN BY: B.M.S
CHECKED BY: M.W.W
DATE: 11/15/18
JOB NO.: 13-016

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

0  1"

C7

7
OF
45



NOTES:
1. SEE SITE PLANS FOR TREES TO BE REMOVED.
2. REMOVE ALL CONCRETE UNDERLYING ROADWAYS WITHIN THE GRADING LIMITS (SEE SITE PLANS). PLAN EXTENT AND THICKNESS OF CONCRETE IS UNKNOWN.

LEGEND	
	(E) TREE
	(E) CONTOURS
	(E) EDGE OF ROAD
	(E) WATER LINE
	(E) EXPOSED ROCK SLOPE PROTECTION
	(E) CONVEYOR
	DESIGN ALIGNMENT

ROCK PILE AREA DEMOLITION PLAN
SCALE: 1" = 50'

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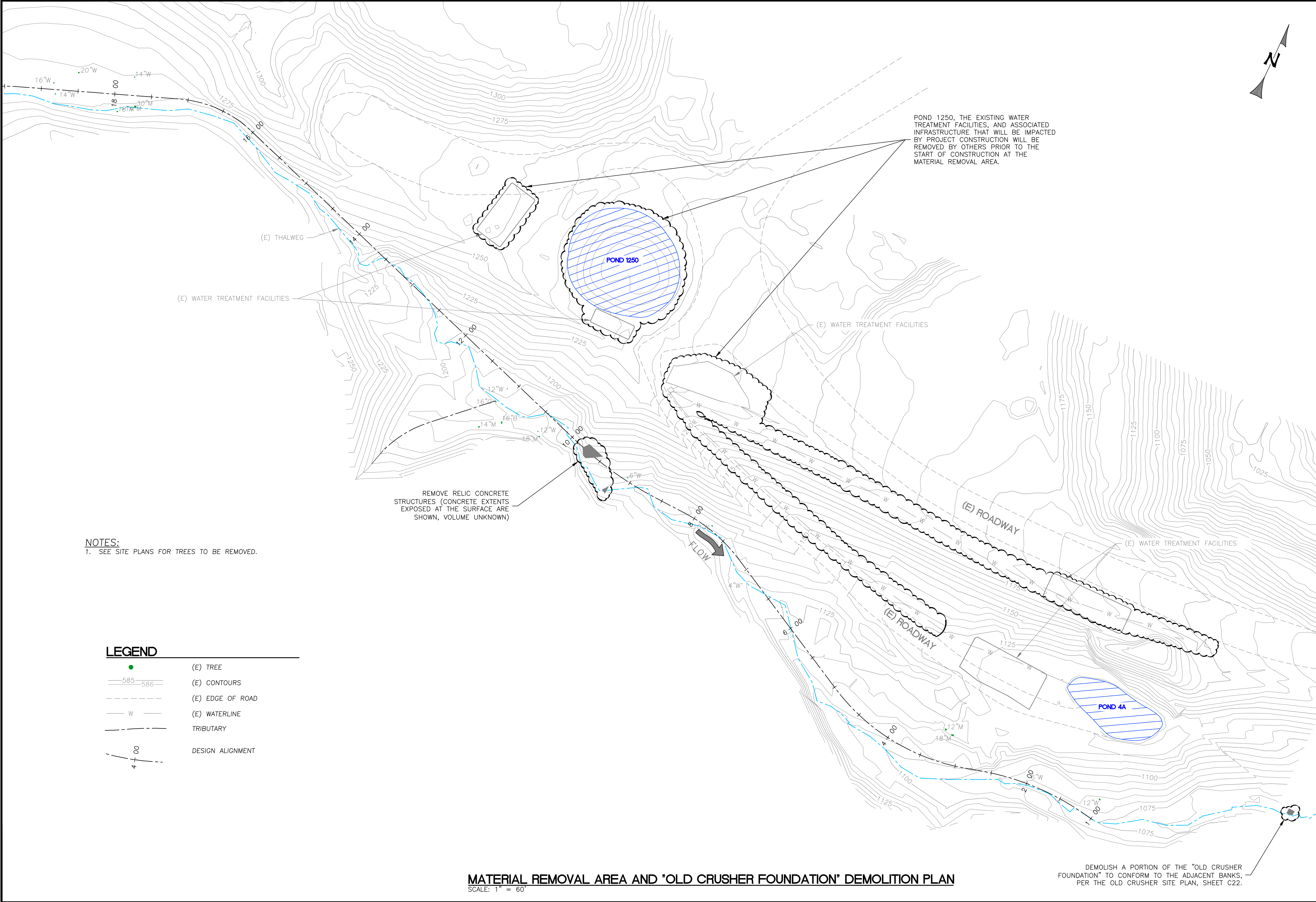
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GROUP

ROCK PILE
AREA
DEMOLITION
PLAN

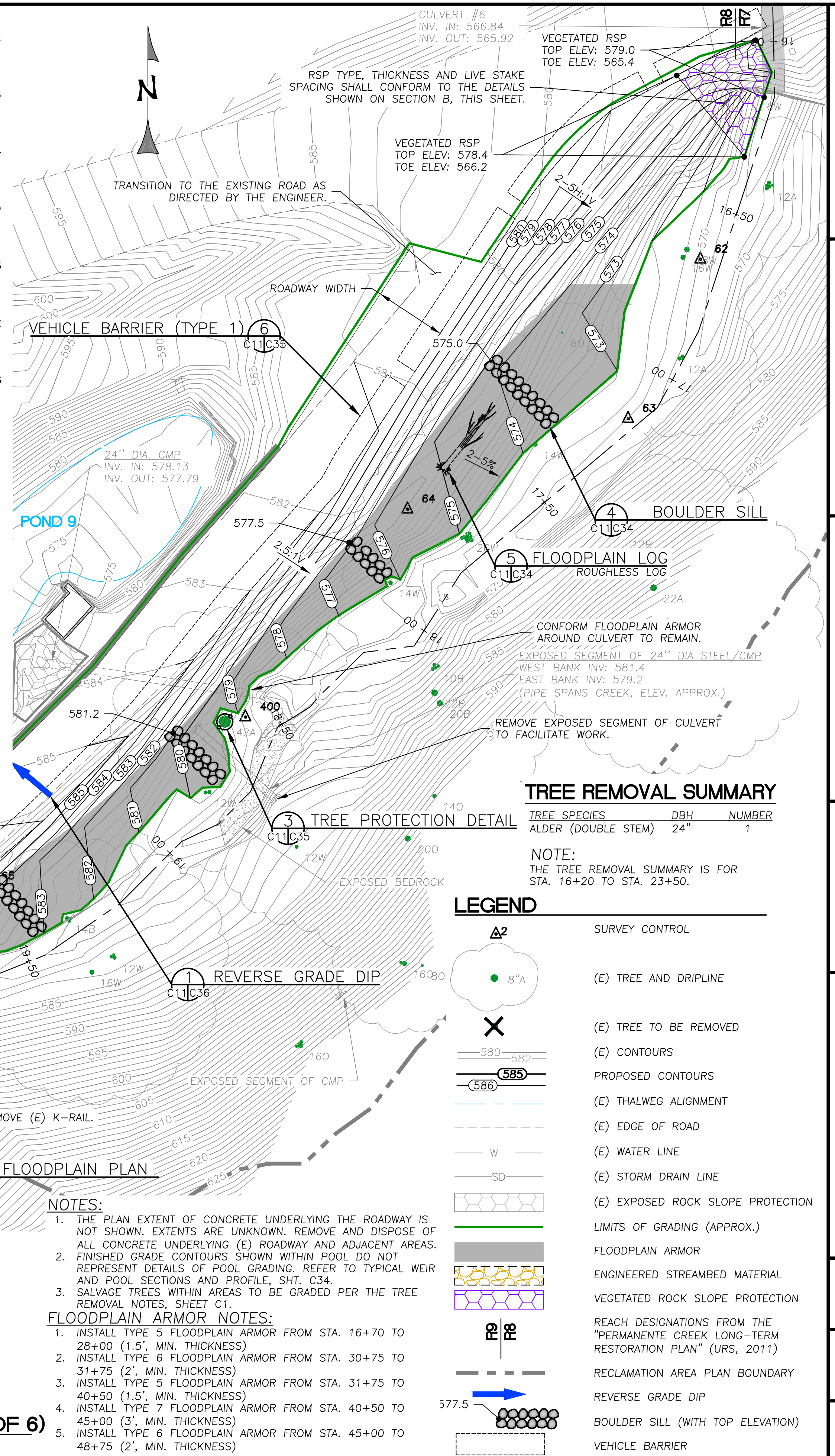
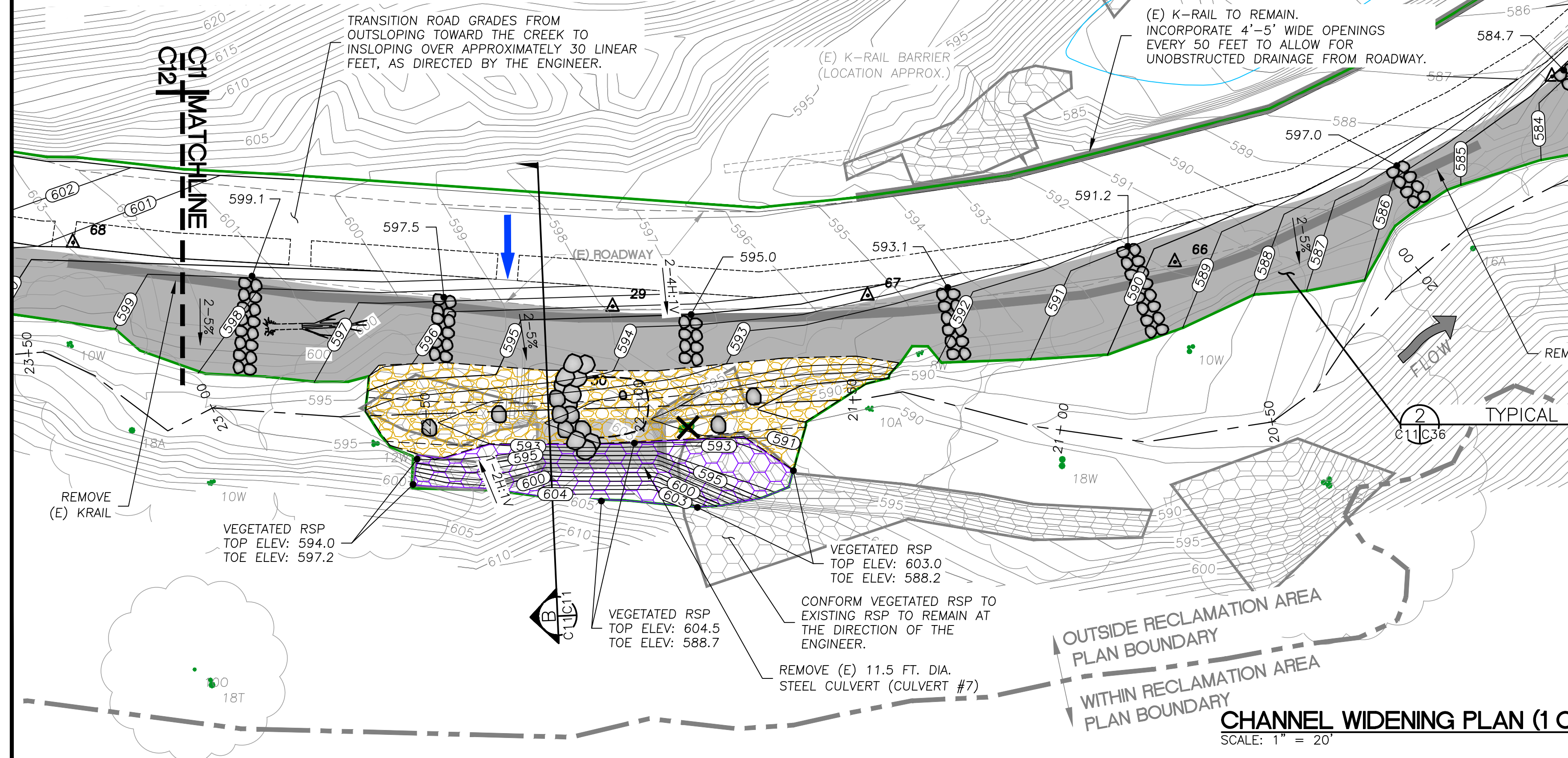
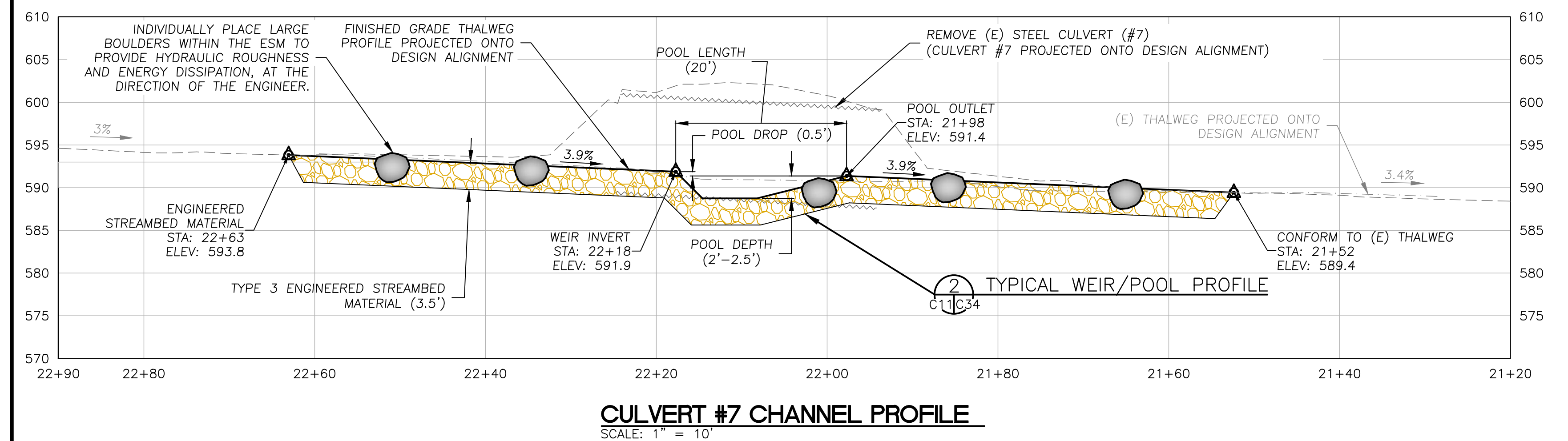
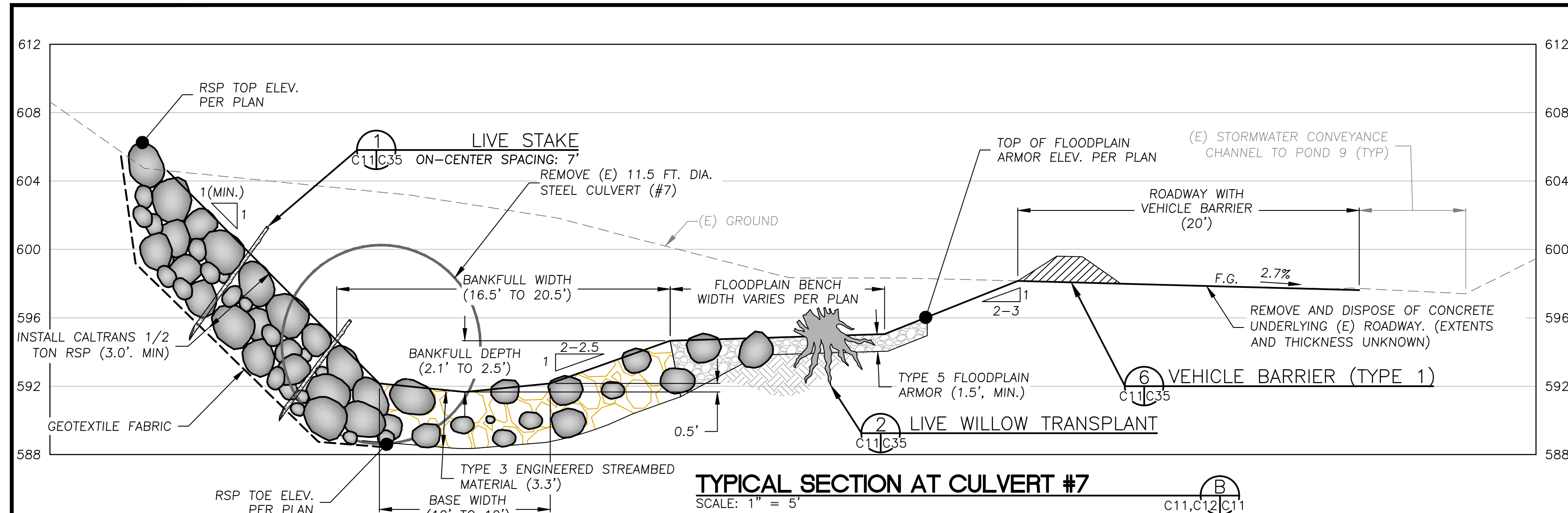
PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: B.M.Z.
DRAWN BY: B.R.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
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BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS
0 1"



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PRELIMINARY NOT FOR CONSTRUCTION	
PREPARED AT THE REQUEST OF: LEHIGH HANSON HEIDELBERG CEMENT GROUP	
MAT. REMOVAL AREA AND OLD CRUSHER FOUNDATION DEMO. PLAN	
PERMANENT CREEK RESTORATION PLAN PRELIMINARY GRADING PLAN 90% DESIGN SANTA CLARA COUNTY GRADING PERMIT SUBMITTAL	DESIGNED BY: B.M.Z. DRAWN BY: B.M.S. CHECKED BY: M.W.W. DATE: 11/15/18 JOB NO.: 13-016 BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS 0 1"
C10	10 OF 45



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GROUP

CHANNEL
WIDENING PLAN
(1 OF 6)

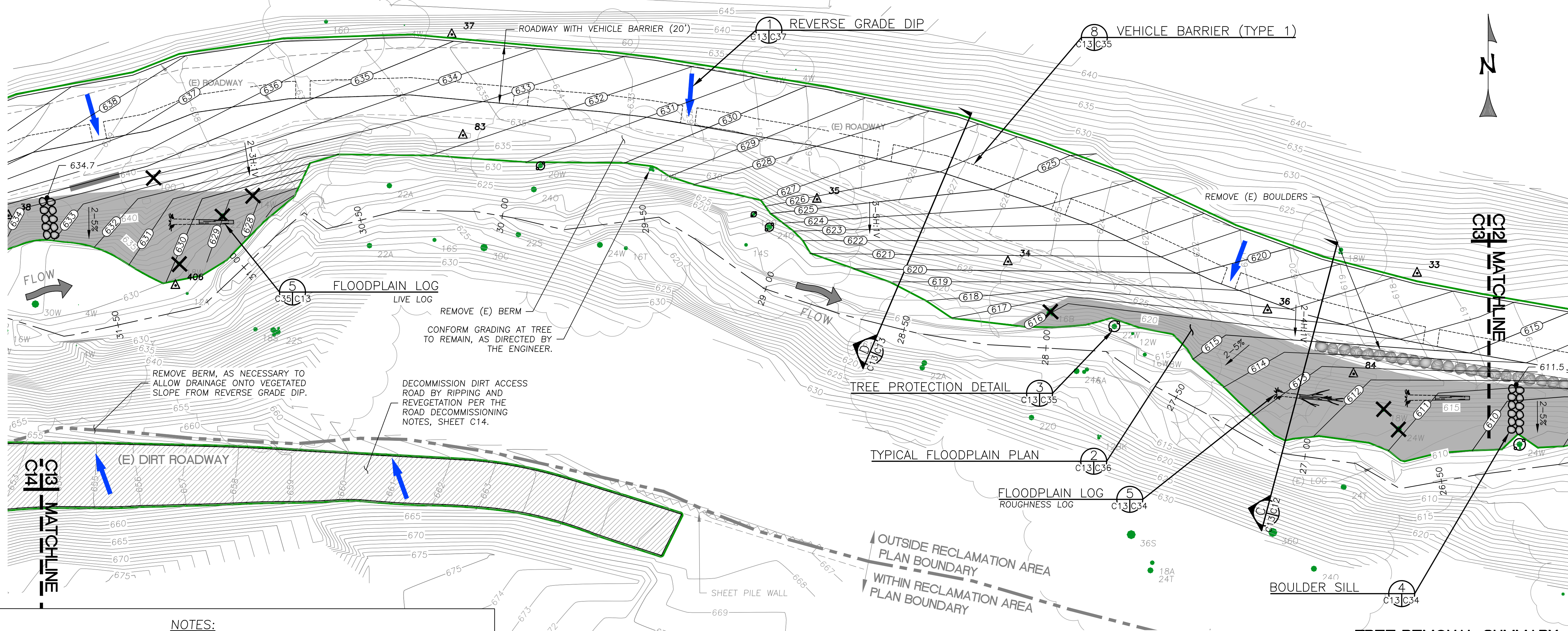
PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: B.Z.
DRAWN BY: B.M.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

BAR IS ONE INCH ON
ORIGINAL DRAWING.
ADJUST SCALES FOR
REDUCED PLOTS
0 1" 2"

C11

11
OF
45



- NOTES:
1. THE PLAN EXTENT OF CONCRETE UNDERLYING THE ROADWAY IS NOT SHOWN. EXTENTS ARE UNKNOWN. REMOVE AND DISPOSE OF ALL CONCRETE UNDERLYING (E) ROADWAY AND ADJACENT AREAS.
 2. SALVAGE TREES WITHIN AREAS TO BE GRADED PER THE TREE REMOVAL NOTES, SHEET C1.

FLOODPLAIN ARMOR NOTES:
SEE THE FLOODPLAIN ARMOR NOTES ON SHEET C11 FOR FLOODPLAIN ARMOR TYPE, THICKNESS AND LOCATION.

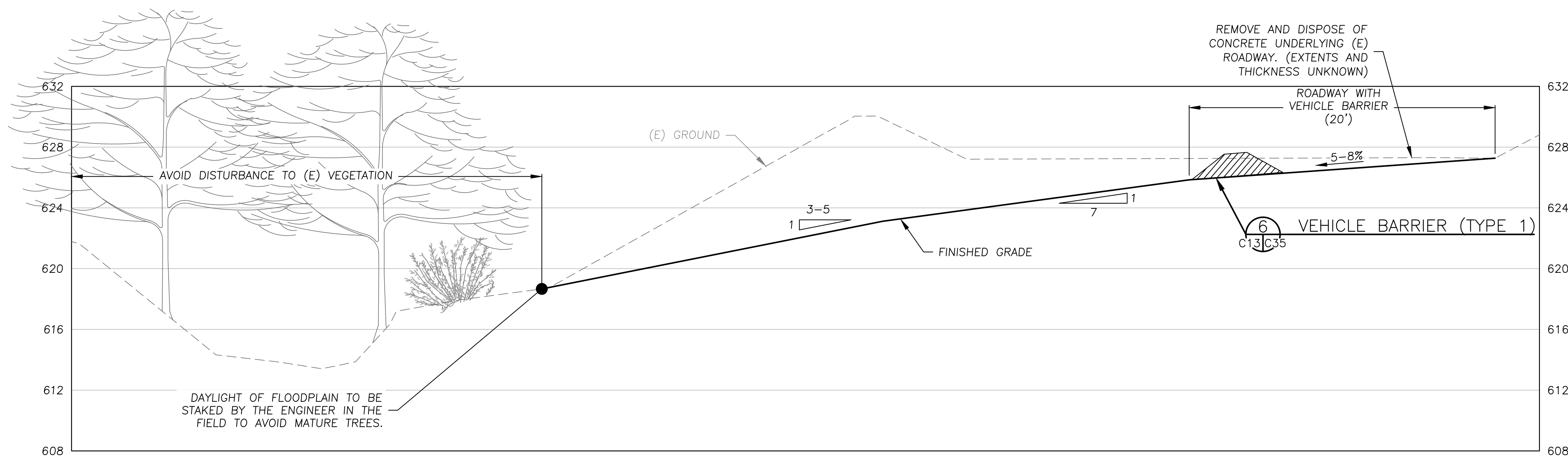
CHANNEL WIDENING PLAN (3 OF 6)
SCALE: 1" = 20'

TREE REMOVAL SUMMARY

TREE SPECIES	DBH	NUMBER
WILLOW	14"	1
WILLOW	18"	2
WILLOW	24"	1
WILLOW	22"	1
OAK	10"	1
BAY	16"	1

LEGEND

- SURVEY CONTROL
- (E) TREE AND DRIPLINE
- (E) TREE TO BE REMOVED
- (E) CONTOURS
- PROPOSED CONTOURS
- (E) THALWEG ALIGNMENT
- (E) EDGE OF ROAD
- (E) WATER LINE
- (E) STORM DRAIN LINE
- (E) EXPOSED ROCK SLOPE PROTECTION
- LIMITS OF GRADING (APPROX.)
- FLOODPLAIN ARMOR
- ENGINEERED STREAMBED MATERIAL
- VEGETATED ROCK SLOPE PROTECTION
- ROAD DECOMMISSIONING AREA
- REACH DESIGNATIONS FROM THE "PERMANENTE CREEK LONG-TERM RESTORATION PLAN" (URS, 2011)
- RECLAMATION AREA PLAN BOUNDARY
- REVERSE GRADE DIP
- BOULDER SILL (WITH TOP ELEVATION)
- VEHICLE BARRIER



TYPICAL SECTION D
SCALE: 1" = 5'

PRELIMINARY
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HEIDELBERG CEMENT
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CHANNEL
WIDENING PLAN
(3 OF 6)

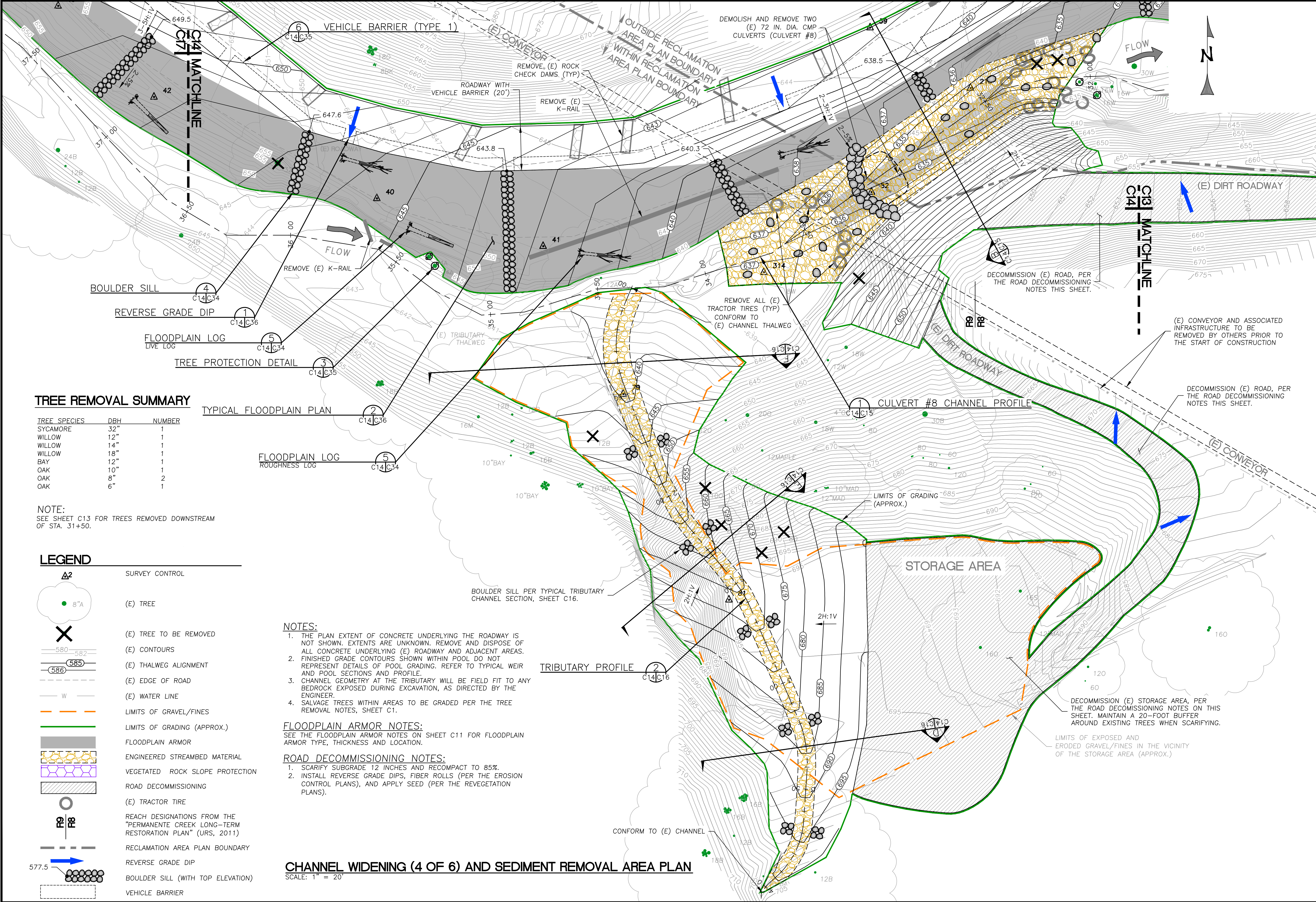
PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
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ADJUST SCALES FOR
REDUCED PLOTS

C13

13
OF
45



TREE REMOVAL SUMMARY

TREE SPECIES	DBH	NUMBER
SYCAMORE	32"	1
WILLOW	12"	1
WILLOW	14"	1
WILLOW	18"	1
BAY	12"	1
OAK	10"	1
OAK	8"	2
OAK	6"	1

NOTE:
SEE SHEET C13 FOR TREES REMOVED DOWNSTREAM
OF STA. 31+50.

LEGEND

	SURVEY CONTROL
	(E) TREE
	(E) TREE TO BE REMOVED
	(E) CONTOURS
	(E) THALWEG ALIGNMENT
	(E) EDGE OF ROAD
	(E) WATER LINE
	LIMITS OF GRAVEL/FINES
	LIMITS OF GRADING (APPROX.)
	FLOODPLAIN ARMOR
	ENGINEERED STREAMBED MATERIAL
	VEGETATED ROCK SLOPE PROTECTION
	ROAD DECOMMISSIONING
	(E) TRACTOR TIRE
	REACH DESIGNATIONS FROM THE "PERMANENTE CREEK LONG-TERM RESTORATION PLAN" (URS, 2011)
	RECLAMATION AREA PLAN BOUNDARY
	REVERSE GRADE DIP
	BOULDER SILL (WITH TOP ELEVATION)
	VEHICLE BARRIER

NOTES:

1. THE PLAN EXTENT OF CONCRETE UNDERLYING THE ROADWAY IS NOT SHOWN. EXTENTS ARE UNKNOWN. REMOVE AND DISPOSE OF ALL CONCRETE UNDERLYING (E) ROADWAY AND ADJACENT AREAS.
2. FINISHED GRADE CONTOURS SHOWN WITHIN POOL DO NOT REPRESENT DETAILS OF POOL GRADING. REFER TO TYPICAL WEIR AND POOL SECTIONS AND PROFILE.
3. CHANNEL GEOMETRY AT THE TRIBUTARY WILL BE FIELD FIT TO ANY BEDROCK EXPOSED DURING EXCAVATION, AS DIRECTED BY THE ENGINEER.
4. SALVAGE TREES WITHIN AREAS TO BE GRADED PER THE TREE REMOVAL NOTES, SHEET C1.

FLOODPLAIN ARMOR NOTES:

SEE THE FLOODPLAIN ARMOR NOTES ON SHEET C11 FOR FLOODPLAIN ARMOR TYPE, THICKNESS AND LOCATION.

ROAD DECOMMISSIONING NOTES:

1. SCARIFY SUBGRADE 12 INCHES AND RECOMPACT TO 85%.
2. INSTALL REVERSE GRADE DIPS, FIBER ROLLS (PER THE EROSION CONTROL PLANS), AND APPLY SEED (PER THE REVEGETATION PLANS).

CHANNEL WIDENING (4 OF 6) AND SEDIMENT REMOVAL AREA PLAN

SCALE: 1" = 20'

PRELIMINARY

NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:

LEHIGH HANSON
HEIDELBERG CEMENT
GROUP

CULVERT #8
PROFILE AND
SECTION


PERMANENTE CREEK
RESTORATION PLAN

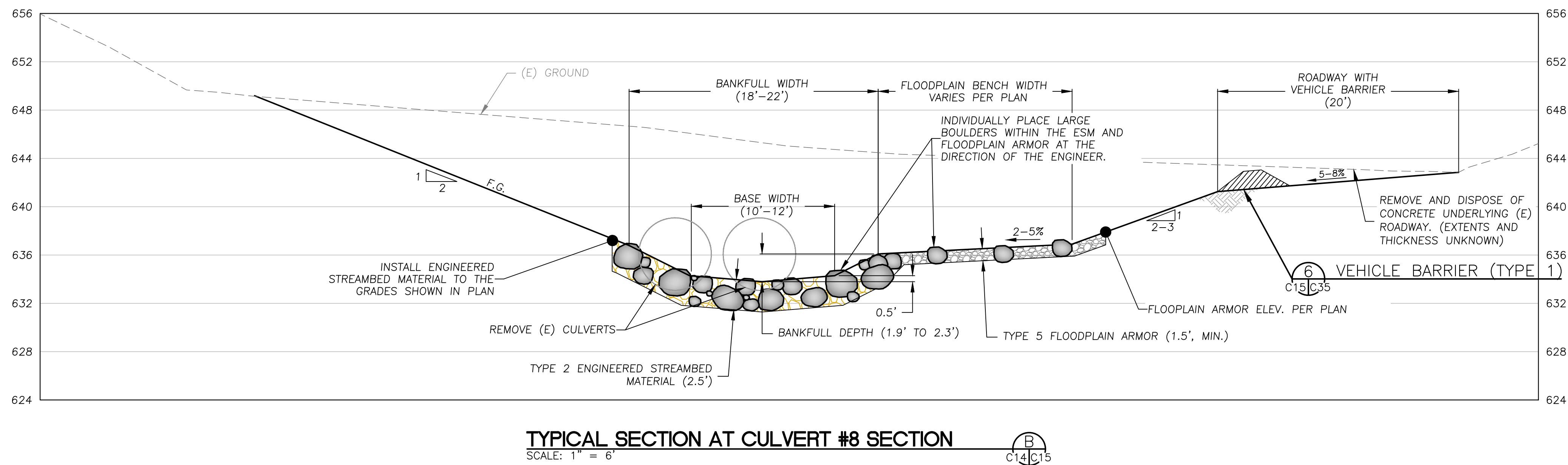
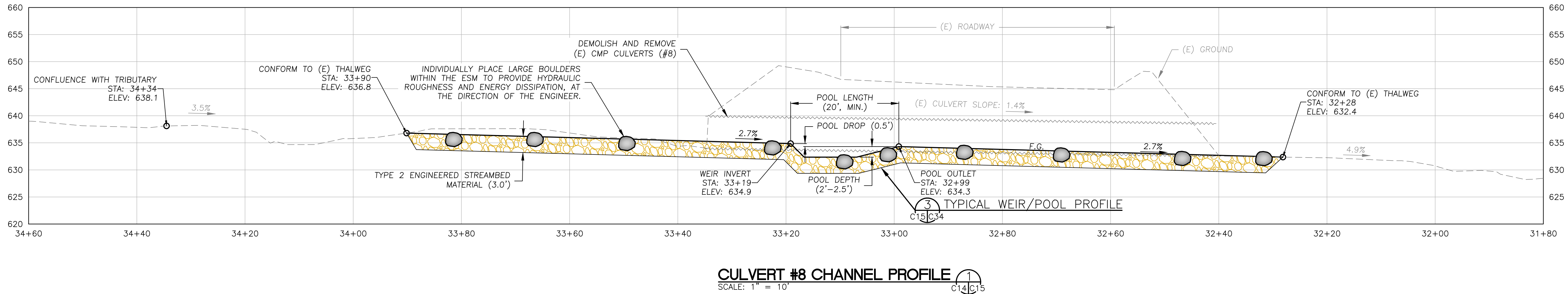
PRELIMINARY GRADING PLAN
90% DESIGN

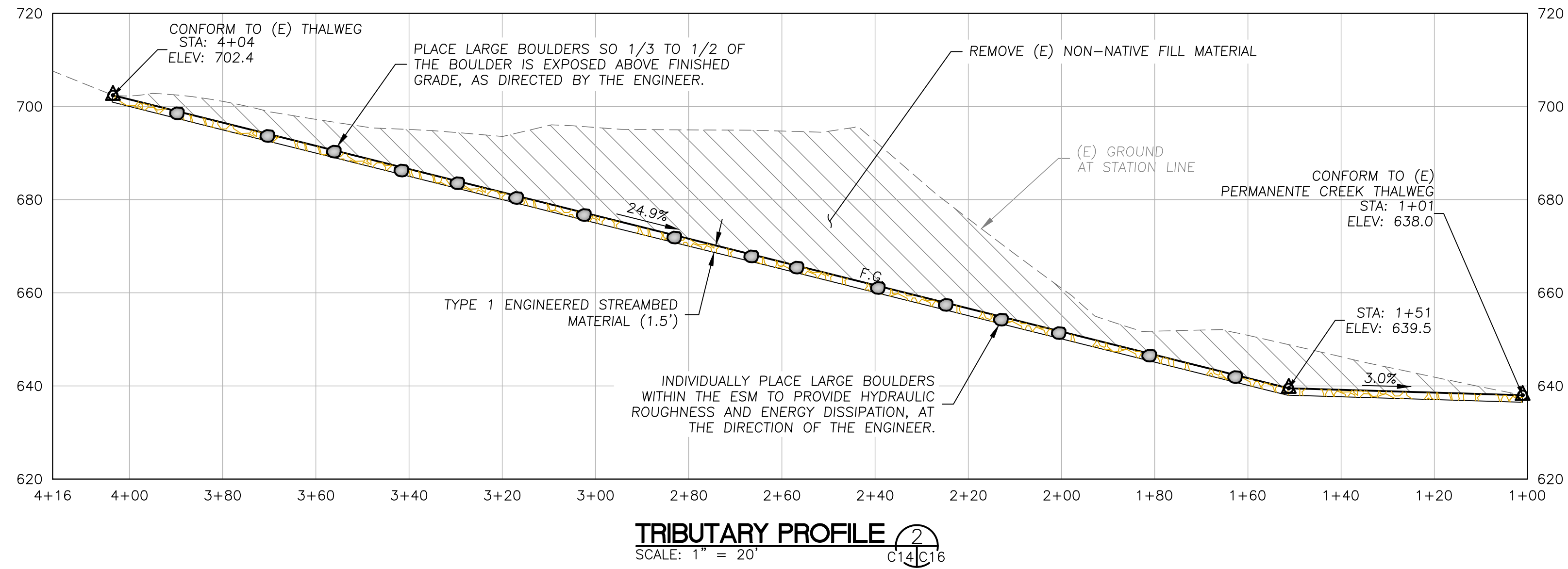
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: B.M.Z.
DRAWN BY: B.M.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

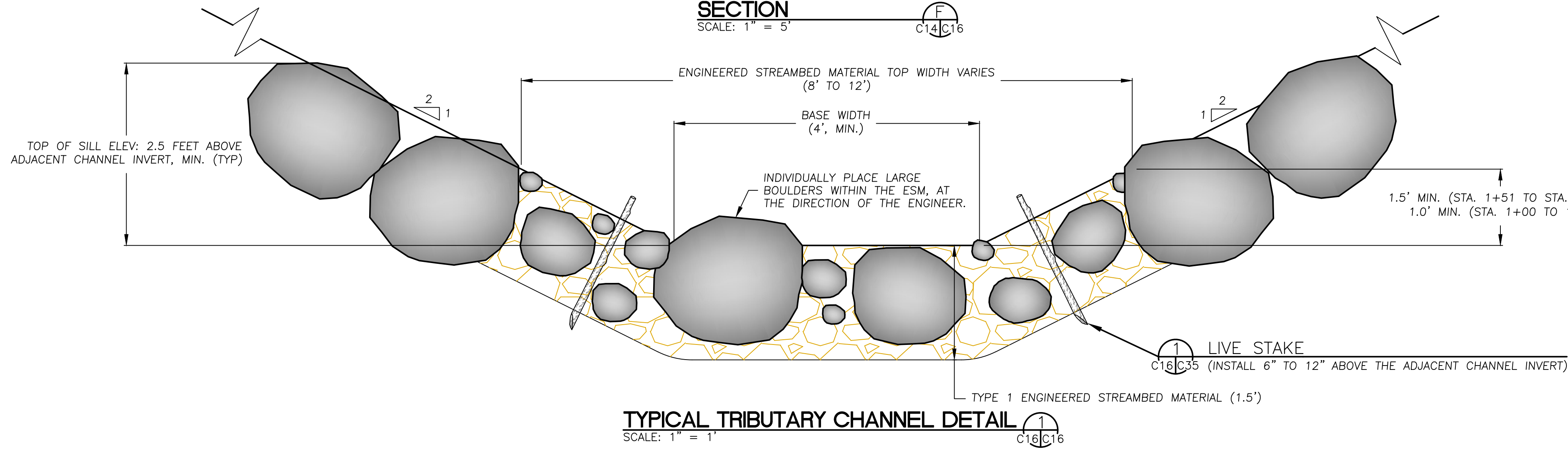
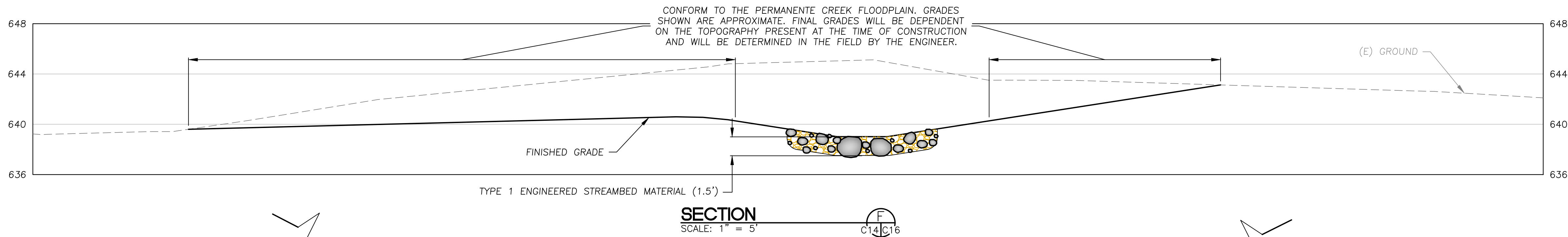
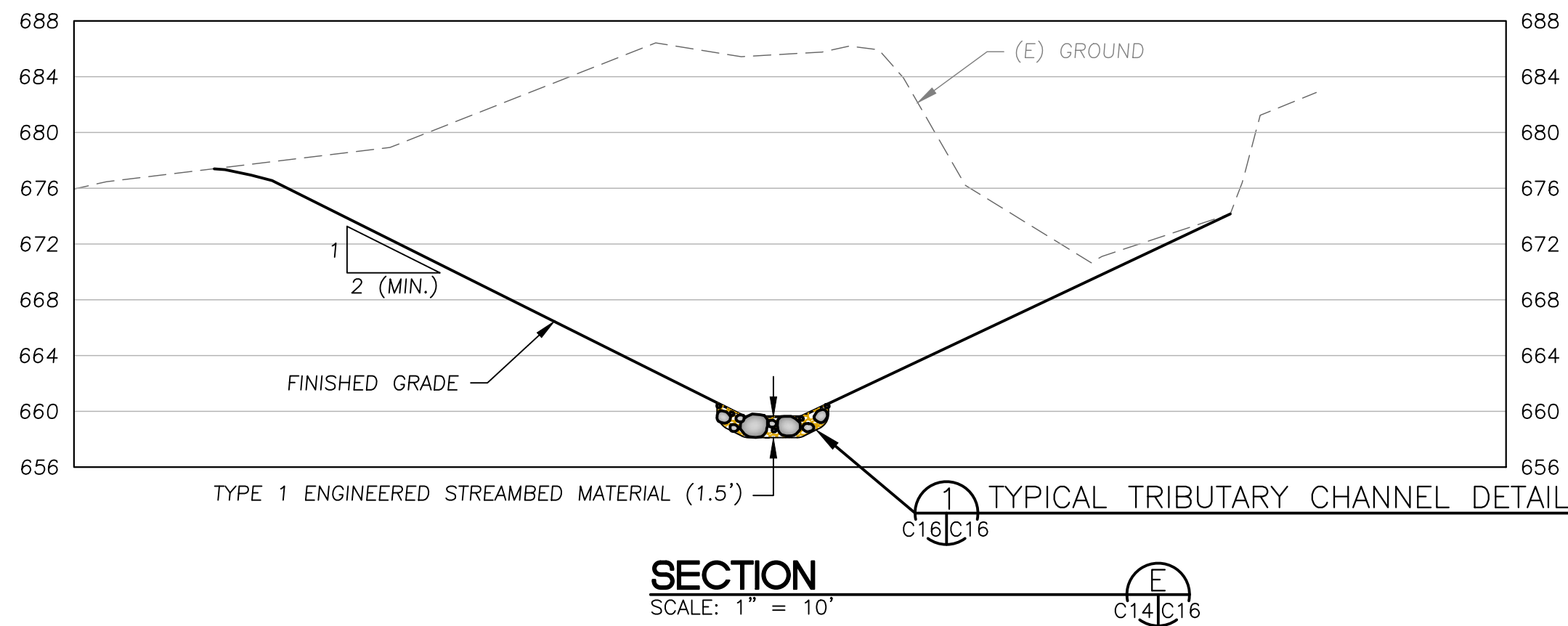
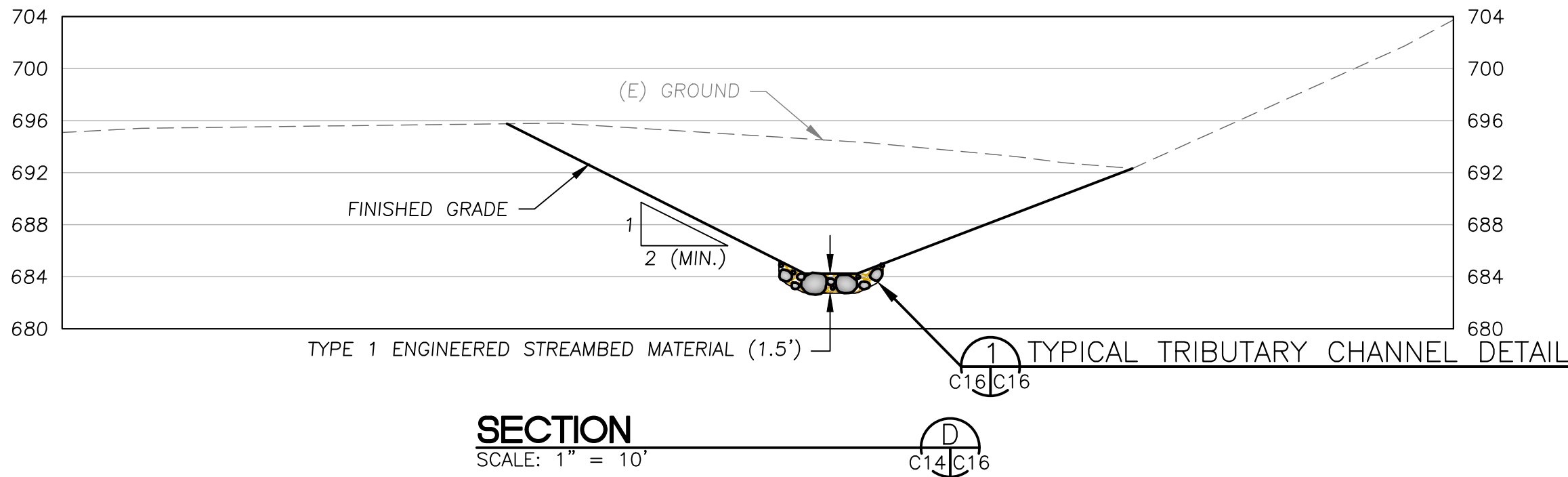
BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS







NOTE:
1. FINISHED GRADES SHOWN ARE APPROXIMATE. ALL IMPORTED FILL SHALL BE REMOVED FROM THE CHANNEL BED AND BANKS.
2. CHANNEL GEOMETRY AT THE TRIBUTARY WILL BE FIELD FIT TO ANY BEDROCK EXPOSED DURING EXCAVATION, AS DIRECTED BY THE ENGINEER.
3. CONFORM ENGINEERED STREAMBED MATERIAL TO THE EXISTING CHANNEL AT THE UPSTREAM AND DOWNSTREAM END AS DIRECTED BY THE ENGINEER.



PRELIMINARY
NOT FOR CONSTRUCTION

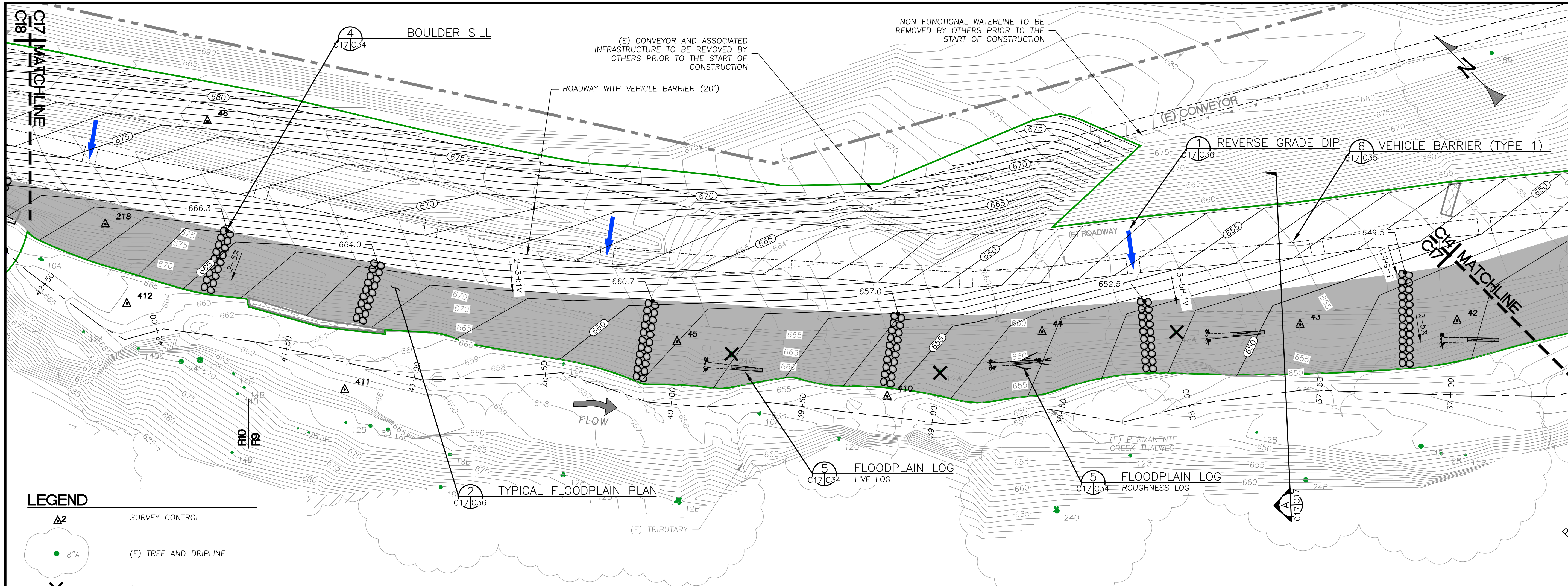
PREPARED AT THE REQUEST OF:
LEHIGH HANSON
HEIDELBERG CEMENT
GROUP

SEDIMENT
REMOVAL AREA
PROFILE AND
SECTIONS

PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: B.Z.
DRAWN BY: B.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

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REDUCED PLOTS
0 1"



LEGEND

- SURVEY CONTROL
- (E) TREE AND DRIPLINE
- (E) TREE TO BE REMOVED
- (E) CONTOURS
- PROPOSED CONTOURS
- (E) THALWEG ALIGNMENT
- (E) EDGE OF ROAD
- (E) WATER LINE
- (E) STORM DRAIN LINE
- (E) EXPOSED ROCK SLOPE PROTECTION
- LIMITS OF GRADING (APPROX.)
- FLOODPLAIN ARMOR
- ENGINEERED STREAMBED MATERIAL
- REACH DESIGNATIONS FROM THE "PERMANENTE CREEK LONG-TERM RESTORATION PLAN" (URS, 2011)
- RECLAMATION AREA PLAN BOUNDARY
- REVERSE GRADE DIP
- BOULDER SILL (WITH TOP ELEVATION)
- VEHICLE BARRIER

TREE REMOVAL SUMMARY

TREE SPECIES	DBH	NUMBER
ALDER	18"	1
WILLOW	12"	1
WILLOW	24"	1

NOTES:

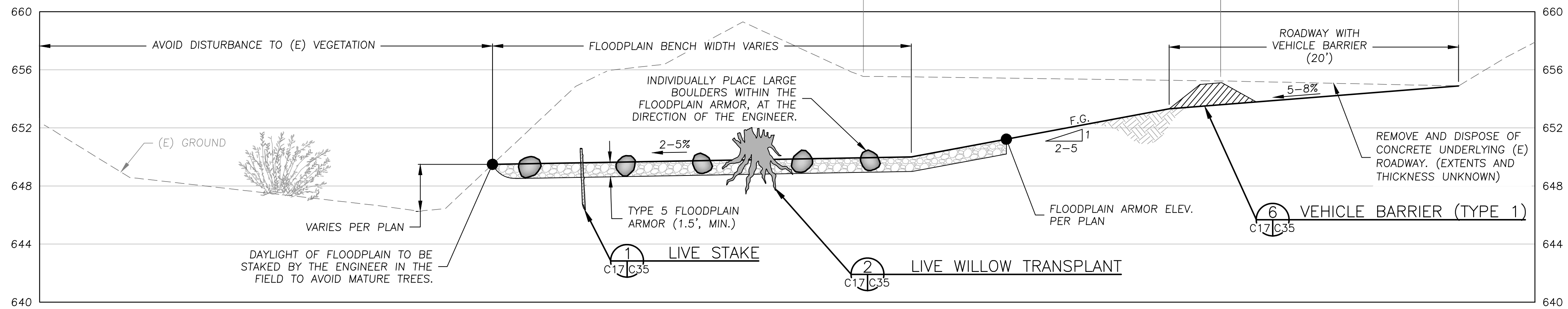
1. THE PLAN EXTENT OF CONCRETE UNDERLYING THE ROADWAY IS NOT SHOWN. EXTENTS ARE UNKNOWN. REMOVE AND DISPOSE OF ALL CONCRETE UNDERLYING (E) ROADWAY AND ADJACENT AREAS.
2. SALVAGE TREES WITHIN AREAS TO BE GRADED PER THE TREE REMOVAL NOTES, SHEET C1.

FLOODPLAIN ARMOR NOTES:

SEE THE FLOODPLAIN ARMOR NOTES ON SHEET C11 FOR FLOODPLAIN ARMOR TYPE, THICKNESS AND LOCATION.

CHANNEL WIDENING PLAN

SCALE: 1" = 20'

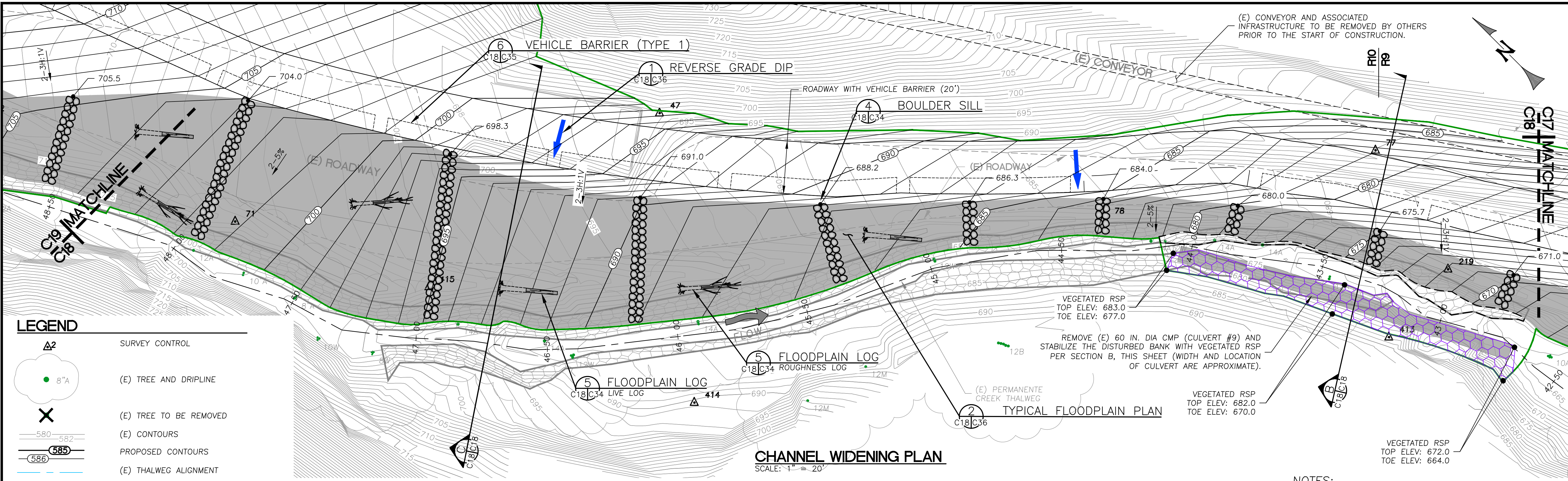


TYPICAL SECTION

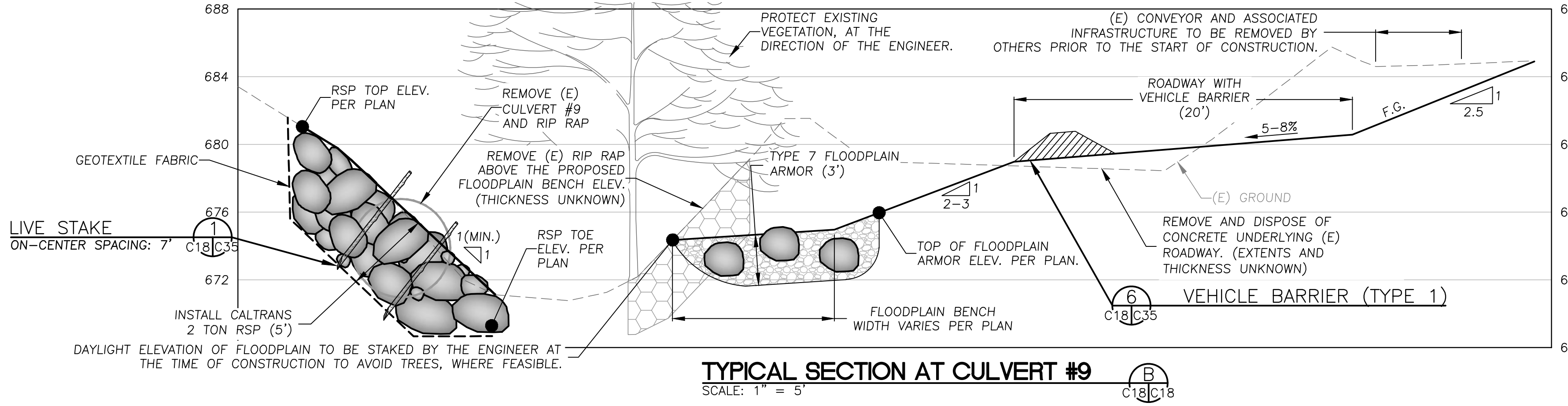
SCALE: 1" = 5'

NOTES:

SEE REVEGETATION SHEETS (L1-L5) FOR DETAILS REGARDING SPACING OF LIVE STAKES AND WILLOW TRANSPLANTS.



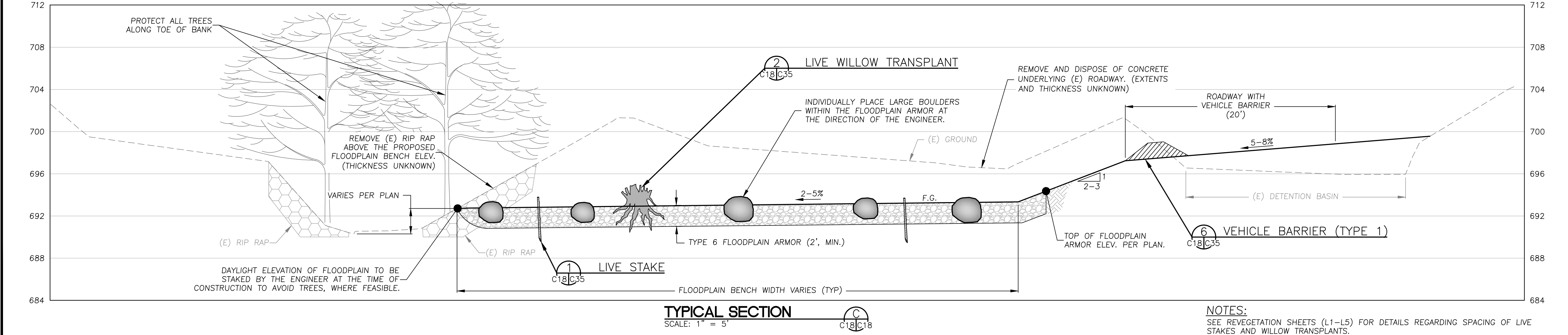
- LEGEND**
- △² SURVEY CONTROL
 - 8" A (E) TREE AND DRIPLINE
 - ✕ (E) TREE TO BE REMOVED
 - 580-582 (E) CONTOURS
 - 585 PROPOSED CONTOURS
 - 586 (E) THALWEG ALIGNMENT
 - (E) EDGE OF ROAD
 - W (E) WATER LINE
 - SD (E) STORM DRAIN LINE
 - ⬢ (E) EXPOSED ROCK SLOPE PROTECTION
 - LIMITS OF GRADING (APPROX.)
 - FLOODPLAIN ARMOR
 - ENGINEERED STREAMBED MATERIAL
 - VEGETATED ROCK SLOPE PROTECTION
 - ROAD DECOMMISSIONING AREA
 - REACH DESIGNATIONS FROM THE "PERMANENTE CREEK LONG-TERM RESTORATION PLAN" (URS, 2011)
 - ↔ REVERSE GRADE DIP
 - BOULDER SILL (WITH TOP ELEVATION)
 - VEHICLE BARRIER



- NOTES:**
- THE PLAN EXTENT OF CONCRETE UNDERLYING THE ROADWAY IS NOT SHOWN. EXTENTS ARE UNKNOWN. REMOVE AND DISPOSE OF ALL CONCRETE UNDERLYING (E) ROADWAY AND ADJACENT AREAS.
 - SALVAGE TREES WITHIN AREAS TO BE GRADED PER THE TREE REMOVAL NOTES, SHEET C1.
- VEGETATED RSP NOTES:**
- THE PROPOSED EXTENT AND TOP AND TOE ELEVATIONS OF THE VEGETATED RSP ARE APPROXIMATE. THE FINAL GEOMETRY WILL BE DETERMINED AT THE TIME OF CONSTRUCTION AND WILL BE BASED ON THE AREA OF BANK DISTURBED FOR THE REMOVAL OF CULVERT #9.
- FLOODPLAIN ARMOR NOTES:**
- SEE THE FLOODPLAIN ARMOR NOTES ON SHEET C11 FOR FLOODPLAIN ARMOR TYPE, THICKNESS AND LOCATION.

TREE REMOVAL SUMMARY

TREE SPECIES	DBH	NUMBER
NONE	N/A	N/A



- NOTES:**
- SEE REVEGETATION SHEETS (L1-L5) FOR DETAILS REGARDING SPACING OF LIVE STAKES AND WILLOW TRANSPLANTS.

WATERWAYS CONSULTING INC.

509A SWIFT ST.
SANTA CRUZ, CA 95060
PH: (831) 421-9291 / FAX: (888) 819-6847
WWW.WATWAYS.COM

PRELIMINARY

NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:

**LEHIGH HANSON
HEIDELBERG CEMENT
GROUP**

**CHANNEL
WIDENING PLAN
(6 OF 6)**

PERMANENTE CREEK
RESTORATION PLAN

PRELIMINARY GRADING PLAN
90% DESIGN

SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: B.Z.
DRAWN BY: B.M.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

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

0 1"

C18

**18
OF
45**

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
**LEHIGH HANSON
HEIDELBERG CEMENT
GROUP**

**ROCK PILE
AREA PLAN**

PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: B.M.Z.
DRAWN BY: B.R.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

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

KEY NOTES:

1. THE GRADING PLAN REFLECTS THE LOWER LIMIT OF POTENTIAL DESIGN CHANNEL INVERT. REFER TO THE FIELD ENGINEERING NOTES ON SHEET C38 FOR A DESCRIPTION OF PROPOSED METHODOLOGY FOR "FIELD-FITTING" THE DESIGN PROFILE TO ACCOMMODATE UNKNOWN SUBSURFACE CONDITIONS.
2. POOL GEOMETRY AND LOCATIONS ARE NOT SHOWN ON THE GRADING PLAN OR DESIGN PROFILE DUE TO UNKNOWN SUBSURFACE CONDITIONS. POOL GEOMETRY AND LOCATIONS WILL BE DETERMINED AT THE TIME OF CONSTRUCTION BY THE ENGINEER TO CONFORM TO SUBSURFACE CONDITIONS AND WILL CONFORM WITH THE TYPICAL PROFILE (DETAIL 2) ON SHEET C34.
3. THE PROJECT GEOTECHNICAL ENGINEER OR PROJECT GEOLOGIST MUST INSPECT THE SLOPE EXPOSED BELOW THE ROCK PILE, FOLLOWING THE REMOVAL OF THE ROCK PILE, TO EVALUATE THE NATURE AND STABILITY OF THE EXPOSED MATERIAL AND PREPARE RECOMMENDATIONS FOR STABILIZING THE SLOPE. FINAL SLOPE GEOMETRY WILL BE ADJUSTED, AS NECESSARY, PER THE GEOTECHNICAL ENGINEER'S OR PROJECT GEOLOGIST'S RECOMMENDATIONS ONCE THE ROCK PILE IS REMOVED. BENCHING OF THE SLOPE MAY BE REQUIRED.

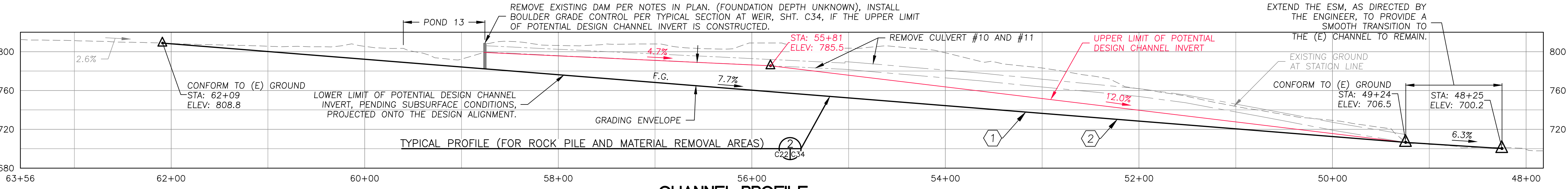
- LEGEND**
- (E) CONTOURS
 - (N) CONTOURS
 - (E) CONTOURS ESTIMATED BELOW ROCK PILE
 - (E) TREE
 - (E) TREE TO BE REMOVED
 - (E) CULVERT
 - (E) ROADWAY
 - (E) THALWEG
 - PROPOSED THALWEG
 - LIMITS OF GRADING (APPROX.)
 - FLOODPLAIN ARMOR
 - ENGINEERED STREAMBED MATERIAL
 - BOULDER SILL (WITH TOP ELEVATION, BOTH SIDES)
 - SURVEY CONTROL POINT
 - REVERSE GRADE DIP
 - VEHICLE BARRIER

TREE REMOVAL SUMMARY

TREE SPECIES	DBH	NUMBER
ALDER	10"	1
ALDER	12"	1
MAPLE	12"	1

NOTES (CONTINUED):

4. INSTALL ENGINEERED STREAMBED MATERIAL AND FLOODPLAIN ARMOR PER THE TYPICAL CHANNEL TREATMENT SECTION, SHEET C20, EXCEPT AT LOCATIONS WHERE BEDROCK IS EXPOSED DURING CONSTRUCTION.
5. THE PLAN EXTENT OF CONCRETE UNDERLYING THE ROADWAY IS NOT SHOWN. EXTENTS ARE UNKNOWN. REMOVE AND DISPOSE OF ALL CONCRETE UNDERLYING (E) ROADWAY AND ADJACENT AREAS.
6. SALVAGE TREES WITHIN AREAS TO BE GRADED PER THE TREE REMOVAL NOTES, SHEET C1.



CHANNEL PROFILE
SCALE: 1" = 60'

ROCK PILE AREA PLAN
SCALE: 1" = 50'

REMOVE (E) DAM INCLUDING ALL CONCRETE AND STEEL COMPONENTS AND IMPOUNDED FINE SEDIMENT WITHIN THE POND. INSTALL BOULDER GRADE CONTROL PER TYPICAL SECTION AT WEIR, SHT. C34, IF THE UPPER LIMIT OF POTENTIAL DESIGN CHANNEL INVERT IS CONSTRUCTED

FLOODPLAIN LOG
ROUGHNESS LOG

TYPICAL FLOODPLAIN AND POOL PLAN

MAINTAIN (E) PARKING AREA

UPPER LIMITS OF GRADING ALONG THE PROJECT AREA ARE APPROXIMATE

LIMITS OF (E) ROCK PILE (MAY 2011, APPROX.)

(E) ROCK PILE AND INTAKE TO CONVEYOR SYSTEM TO BE REMOVED BY OTHERS PRIOR TO CONSTRUCTION.

1 REVERSE GRADE DIP

7 VEHICLE BARRIER (TYPE 2)

(E) CONVEYOR, ASSOCIATED INFRASTRUCTURE, AND UTILITIES TO BE REMOVED BY OTHERS PRIOR TO CONSTRUCTION.

6 VEHICLE BARRIER (TYPE 1)

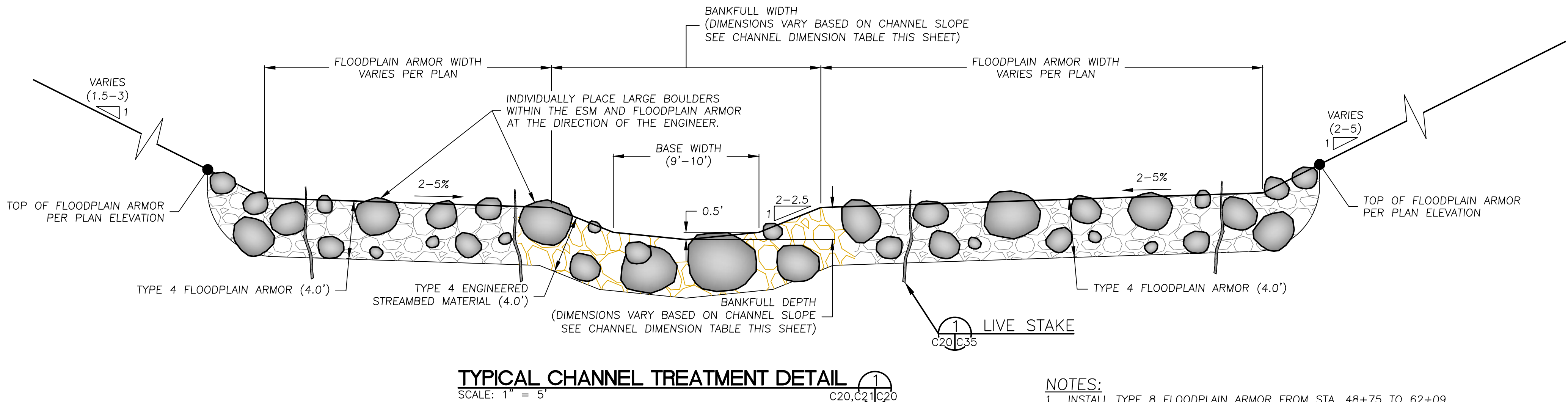
TRANSITION FROM 18' TO 20' ROADWAY WIDTH OVER 10 LF

REMOVE (E) RSP. THE EXTENT OF RSP REMOVAL WILL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION TO ENSURE A SMOOTH TRANSITION TO THE EXISTING CHANNEL

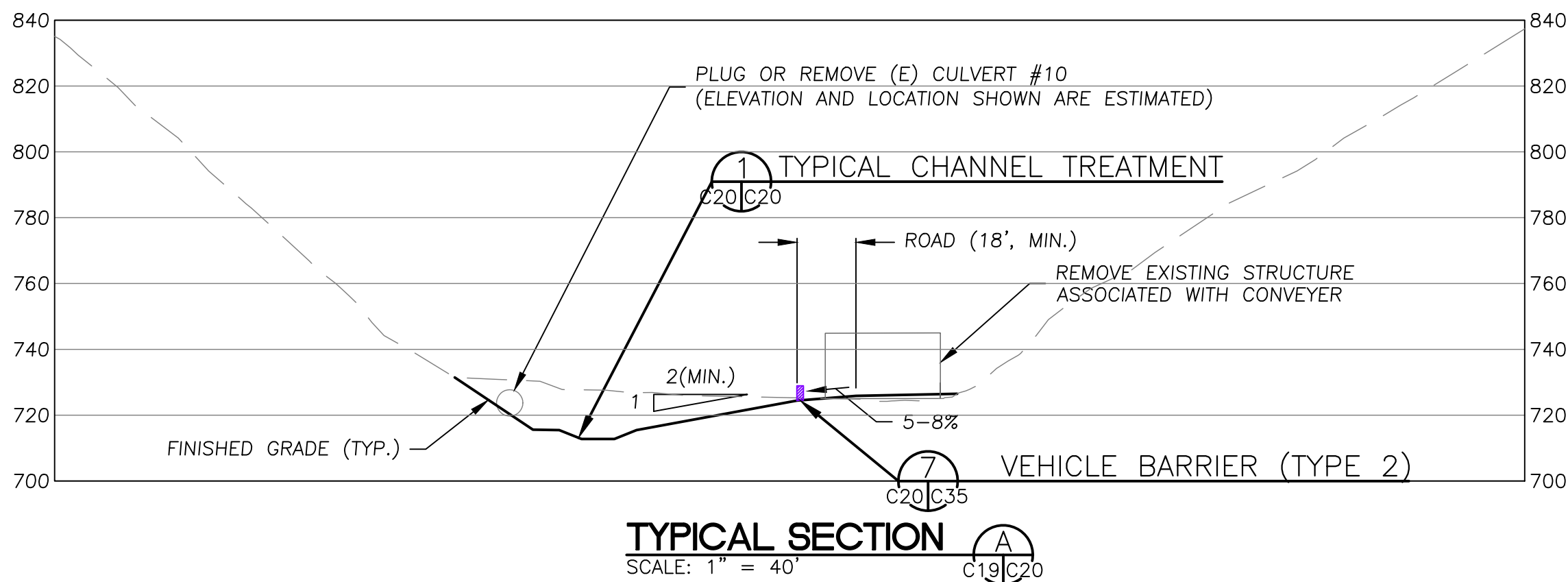
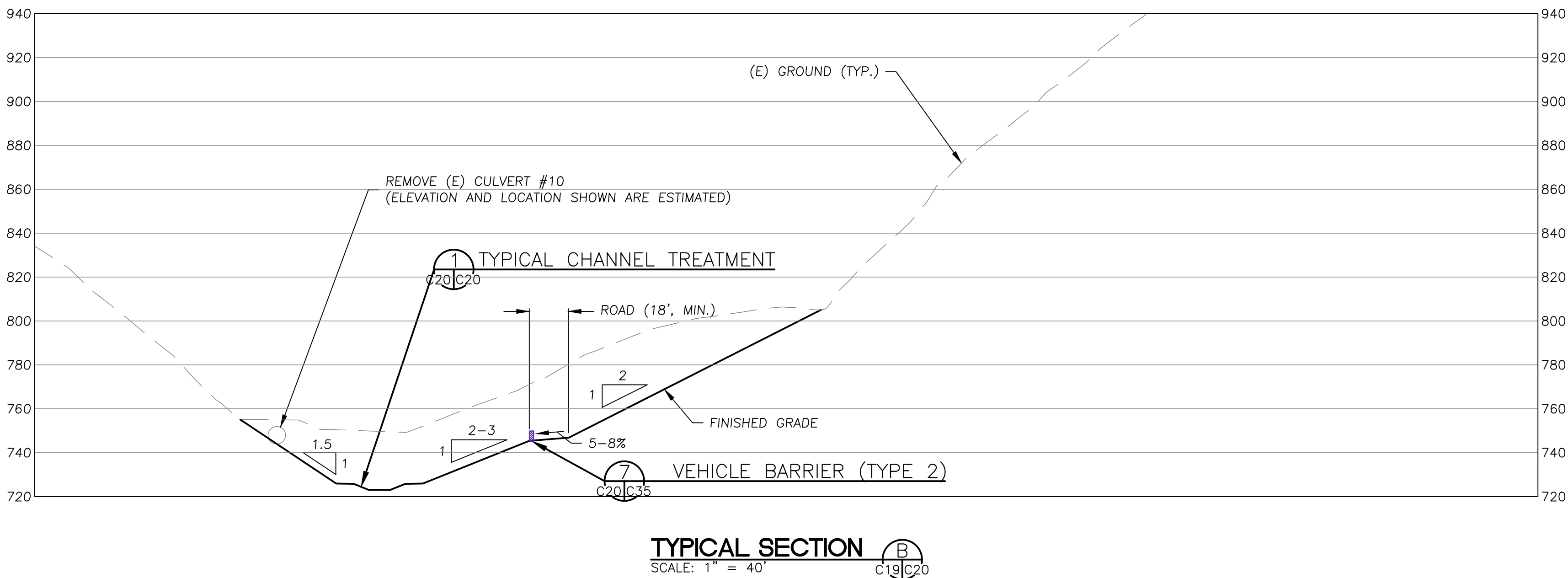
REMOVE 96" DIA. CMP (CULVERT #10). (EXISTING ALIGNMENT ESTIMATED)

REMOVE 11.5' DIA. HALF CMP (CULVERT #11) AND ASSOCIATED CONCRETE HEADWALL AND DROP INLET.

CHANNEL DIMENSIONS FOR ROCKPILE AREA		
DESIGN SLOPE (%)	DESIGN DIMENSIONS	
	BANKFULL WIDTH	BANKFULL DEPTH
<4%	17.5'-21.5'	1.8'-2.2'
4%-8%	16.0'-20.0'	2.0'-2.4'
>8%	15.5'-18.5'	2.4'-2.8'



- NOTES:
1. INSTALL TYPE 8 FLOODPLAIN ARMOR FROM STA. 48+75 TO 62+09.
 2. INSTALL TYPE 4 ENGINEERED STREAMBED MATERIAL FROM STA 49+15 (APPROX.) TO 62+09.
 3. SEE THE TYPICAL FLOODPLAIN ROUGHNESS AND POOL PLAN, SHEET C34 FOR INFORMATION REGARDING FEATURES NOT SHOWN ON THE TYPICAL TREATMENT DETAIL.



- NOTES:
1. FINISHED GRADE SHOWN REPRESENTS THE LOWER LIMIT OF POTENTIAL DESIGN CHANNEL INVERT.
 2. LEAVE 4'-5' WIDE OPENINGS IN K-RAIL EVERY 50-60 FEET TO ALLOW FOR UNOBSTRUCTED DRAINAGE FROM ROADWAY.
 3. BACKFILL AREAS WHERE CULVERT REMOVAL OCCURS BELOW FINISHED GRADE BY PLACING TYPE 1 ENGINEERED STREAMBED MATERIAL, AS DIRECTED BY THE ENGINEER.

LEGEND	
---	EXISTING GROUND AT TIME OF SURVEY
----	ESTIMATED EXISTING GROUND BELOW ROCK PILE
—	FINISH GRADE

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
LEHIGH HANSON
HEIDELBERG CEMENT
GROUP

ROCK PILE
AREA
SECTIONS
(1 OF 2)

PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: B.M.Z.
DRAWN BY: B.R.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS
0 1"

PRELIMINARY

NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:

LEHIGH HANSON

HEIDELBERG CEMENT

GROUP

ROCK PILE

AREA

SECTIONS

(2 OF 2)

PERMANENTE CREEK

RESTORATION PLAN

PRELIMINARY GRADING PLAN

90% DESIGN

SANTA CLARA COUNTY GRADING

PERMIT SUBMITTAL

DESIGNED BY: B.M.Z.

DRAWN BY: B.R.S.

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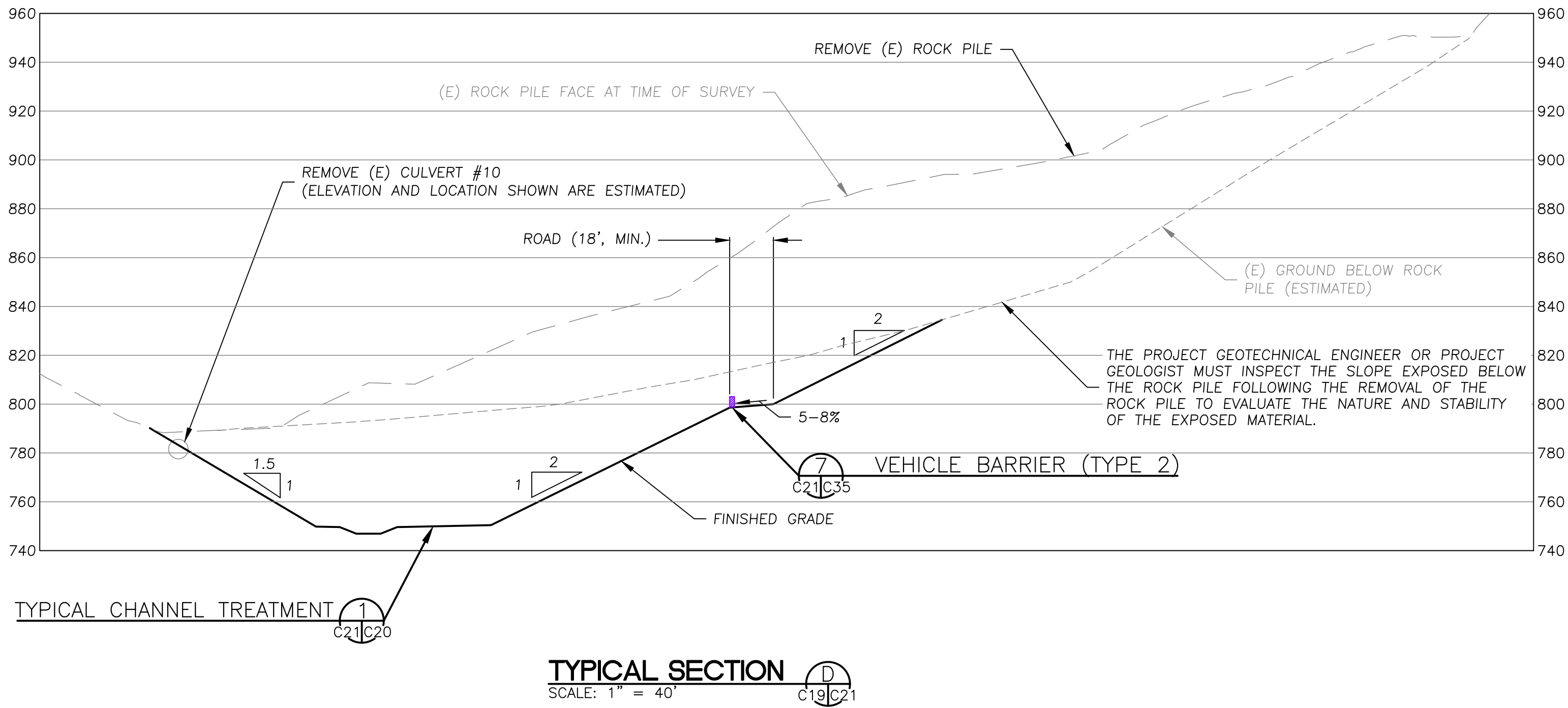
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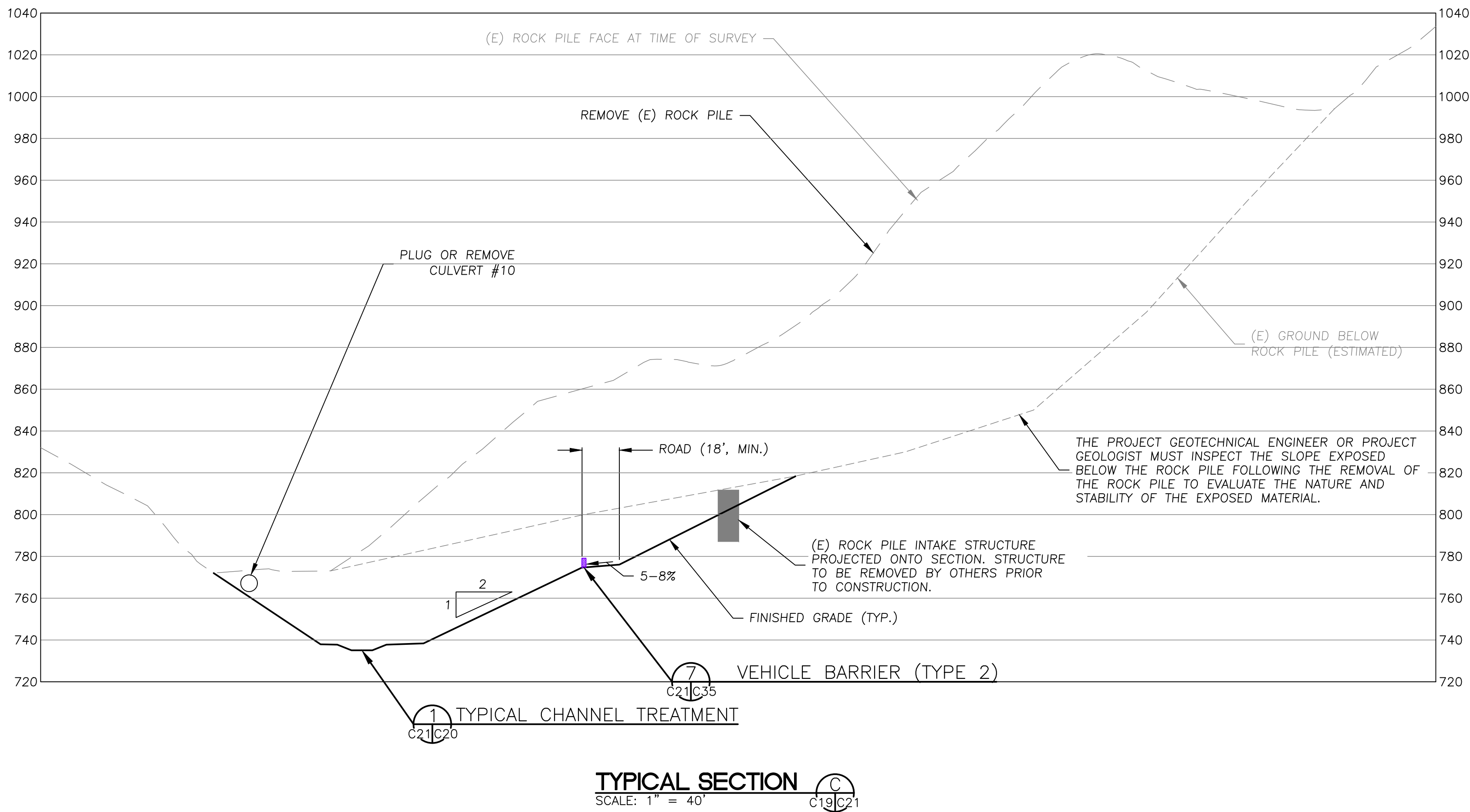
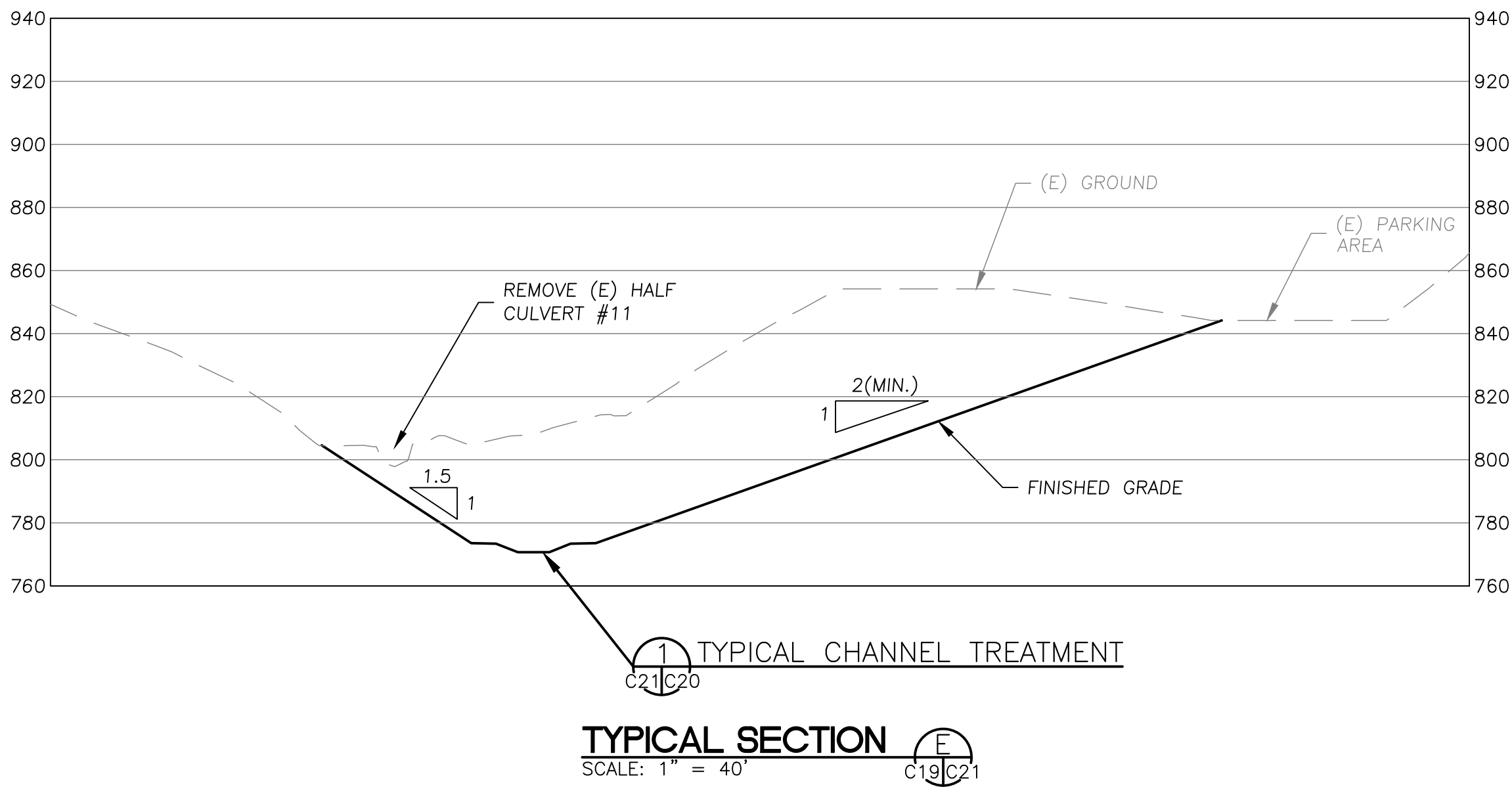
ADJUST SCALES FOR

REDUCED PLOTS

0 1"



NOTE:
THE PROJECT GEOTECHNICAL ENGINEER OR PROJECT GEOLOGIST MUST INSPECT THE SLOPE EXPOSED BELOW THE ROCK PILE FOLLOWING THE REMOVAL OF THE ROCK PILE TO EVALUATE THE NATURE AND STABILITY OF THE EXPOSED MATERIAL.

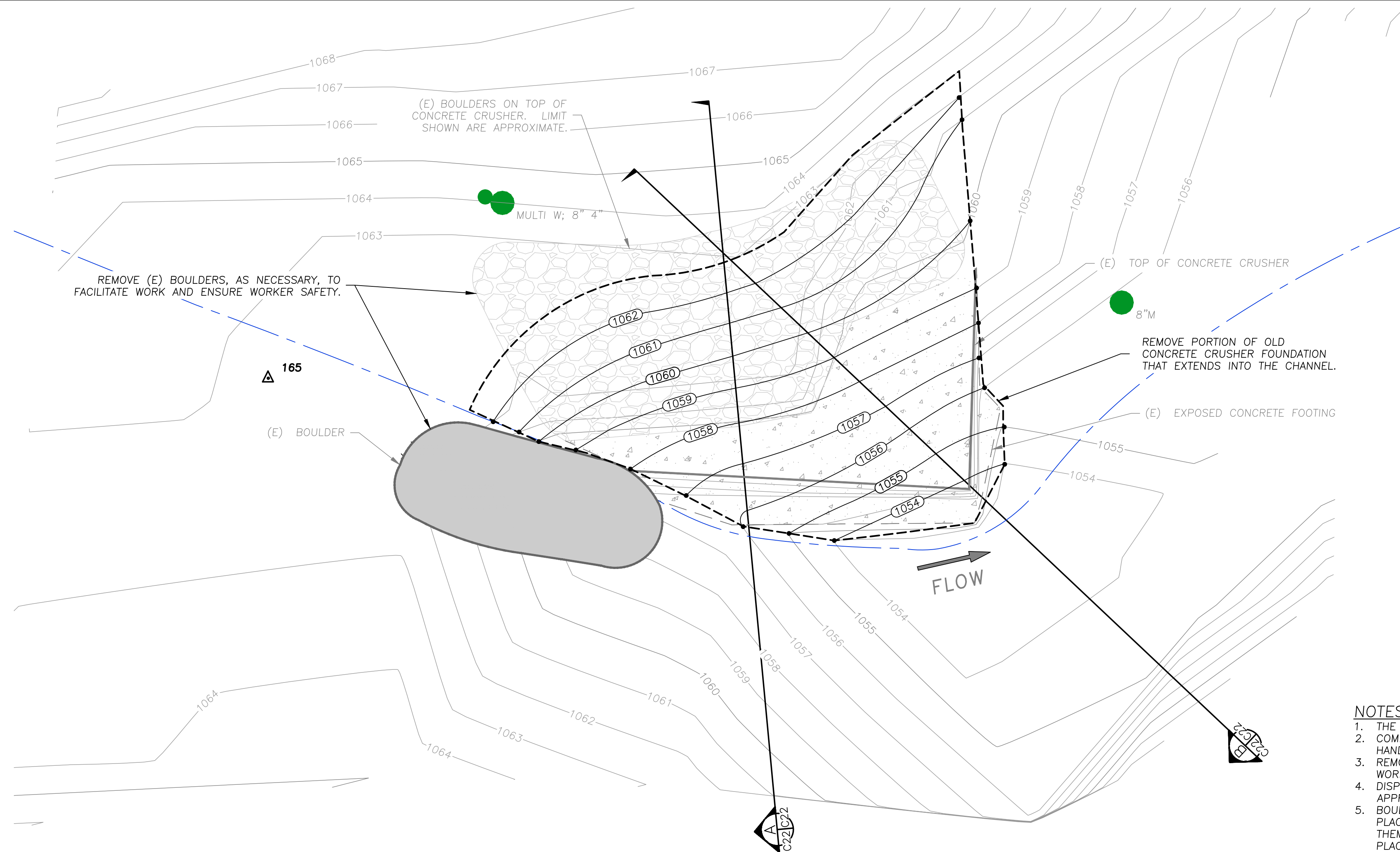


LEGEND

- EXISTING GROUND AT TIME OF SURVEY
- ESTIMATED EXISTING GROUND BELOW ROCK PILE
- FINISH GRADE

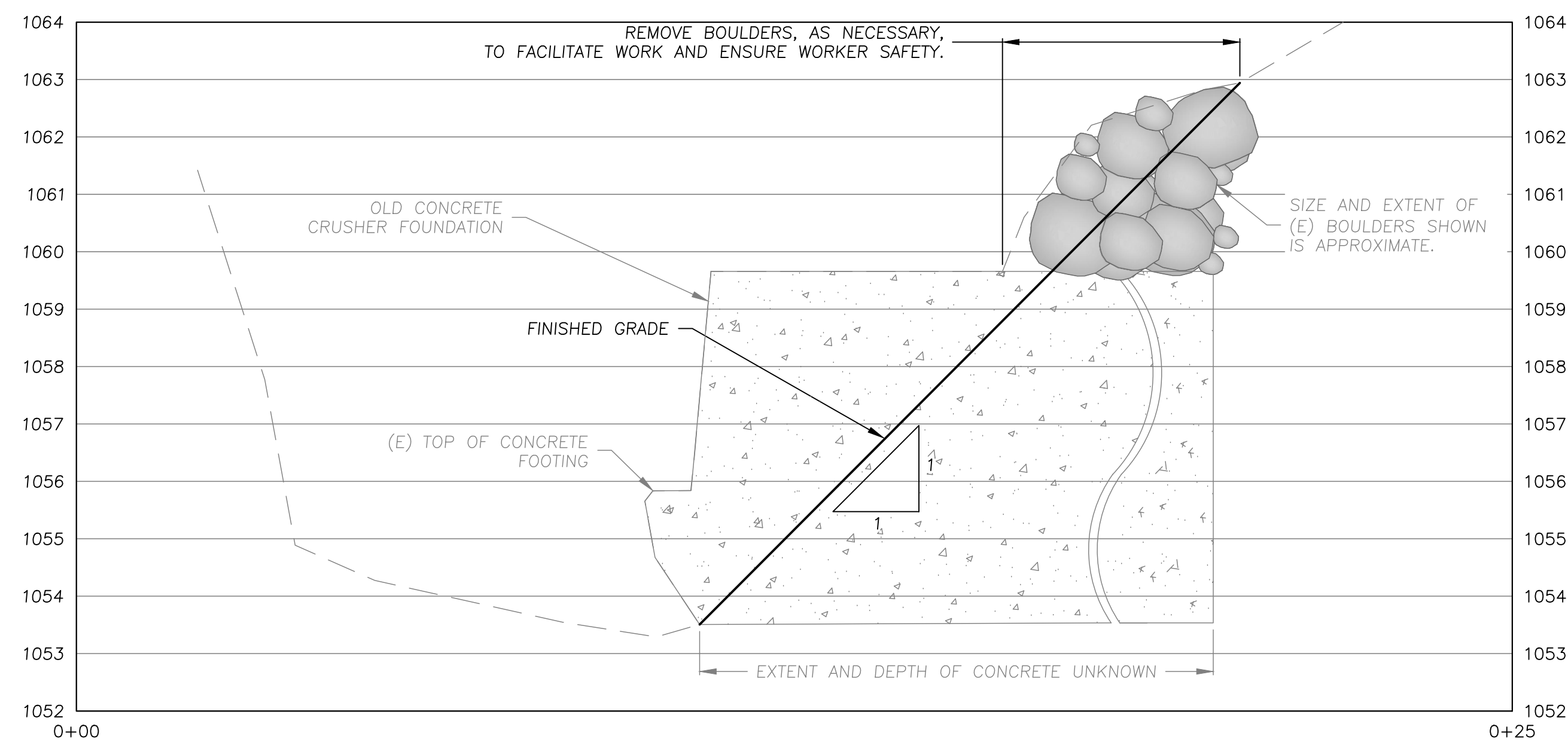
NOTES:

- FINISHED GRADE SHOWN REPRESENTS THE LOWER LIMIT OF POTENTIAL DESIGN CHANNEL INVERT.
- LEAVE 4'-5' WIDE OPENINGS IN K-RAIL EVERY 50-60 FEET TO ALLOW FOR UNOBSTRUCTED DRAINAGE FROM ROADWAY.
- BACKFILL AREAS WHERE CULVERT REMOVAL OCCURS BELOW FINISHED GRADE BY PLACING TYPE 1 ENGINEERED STREAMBED MATERIAL, AS DIRECTED BY THE ENGINEER.

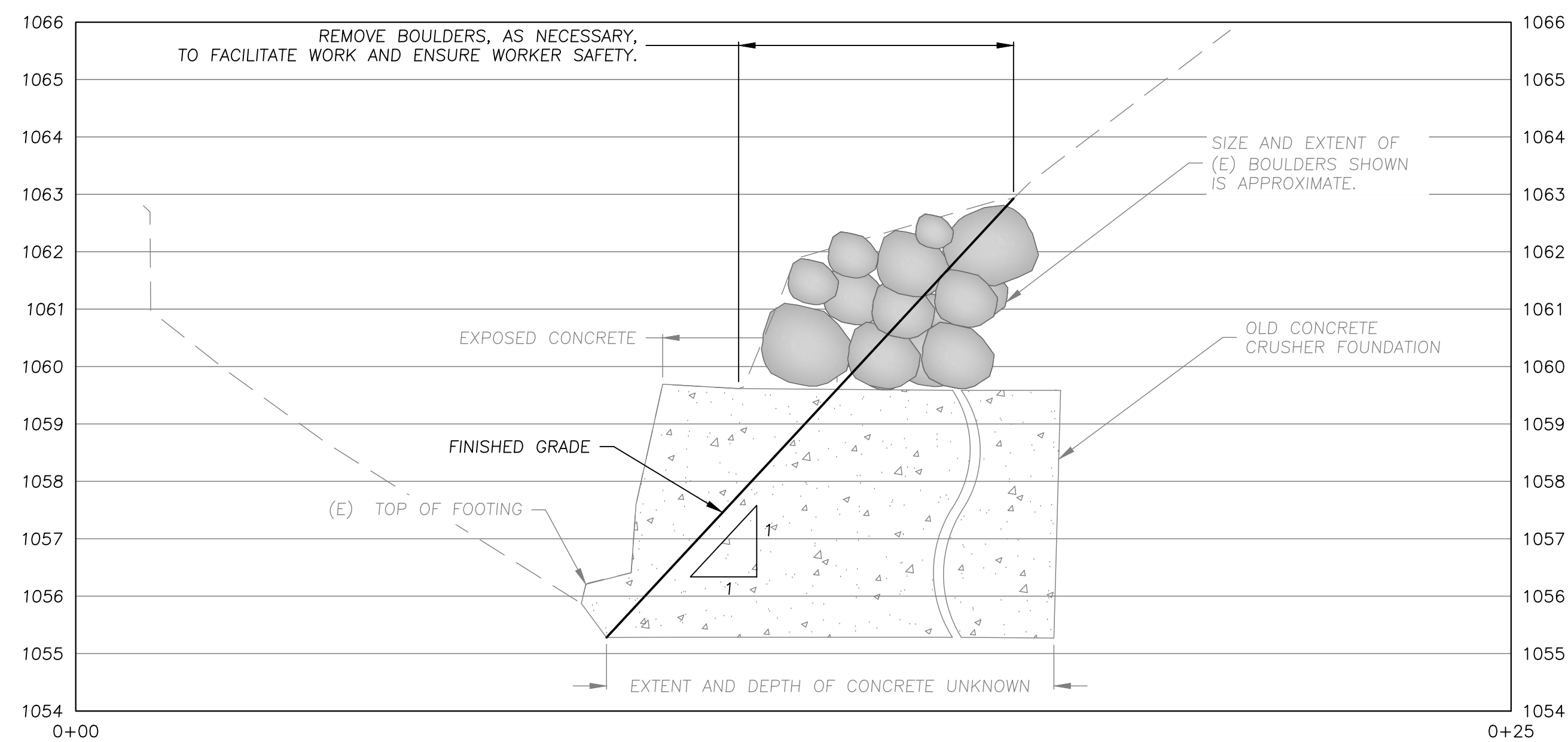


- NOTES:
1. THE SITE IS NOT ACCESSIBLE TO VEHICLES.
 2. COMPLETE WORK USING SMALL HAND-OPERATED EQUIPMENT AND HAND LABOR.
 3. REMOVE BOULDERS AND DEBRIS, AS NECESSARY, TO FACILITATE WORK AND ENSURE WORKER SAFETY.
 4. DISPOSE OF ALL REMOVED CONCRETE AND DEBRIS AT AN APPROVED, OFFSITE LOCATION.
 5. BOULDERS REMOVED TO FACILITATE CONSTRUCTION MAY BE PLACED ON THE SLOPE IN A MANNER THAT WILL NOT ALLOW THEM TO ENTER THE CREEK. THE LOCATION FOR BOULDER PLACEMENT WILL BE FLAGGED IN THE FIELD BY THE ENGINEER.

OLD CRUSHER FOUNDATION SITE PLAN
SCALE: 1" = 2'



SECTION B-B
SCALE: 1" = 2'



SECTION A-A
SCALE: 1" = 2'

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
**LEHIGH HANSON
HEIDELBERG CEMENT
GROUP**

**OLD CRUSHER
FOUNDATION
SITE PLAN**

PERMANENTE CREEK
RESTORATION PLAN
**PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL**

DESIGNED BY: C.B.H.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

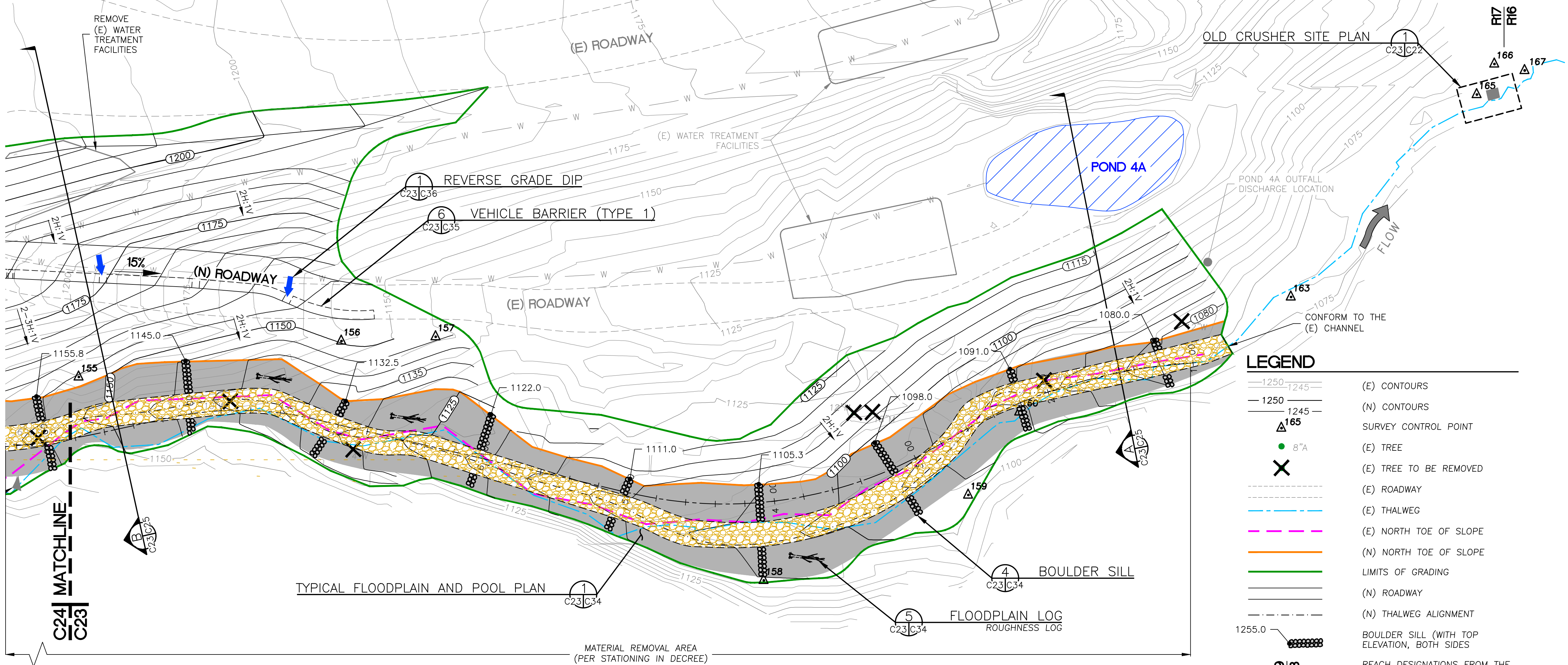
BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS

TREE REMOVAL SUMMARY

TREE SPECIES	DBH	NUMBER
MADRONE	12"	1
MADRONE	18"	1
WILLOW	4"	1
WILLOW	6"	2
WILLOW	10"	1
WILLOW	12"	1

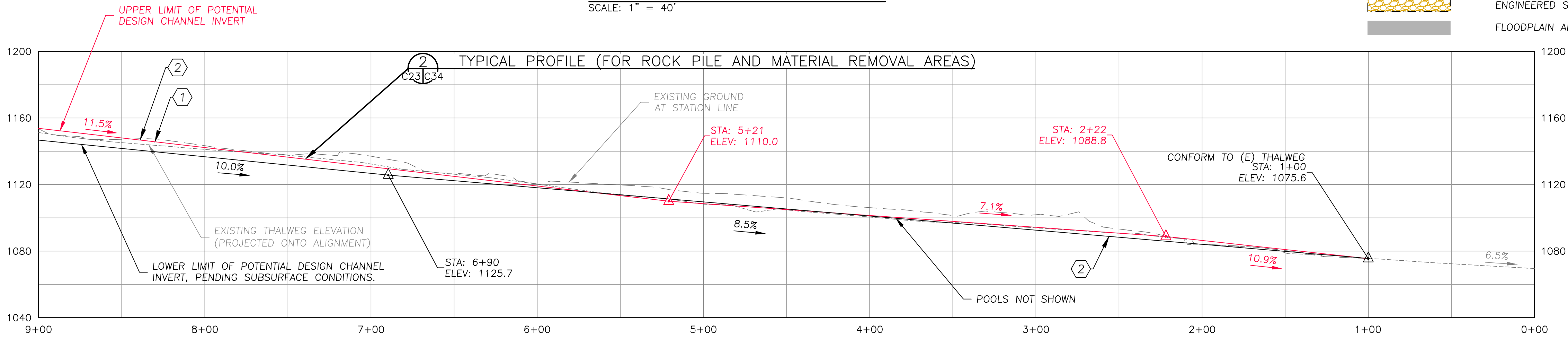
KEY NOTES:

1. THE GRADING PLAN REFLECTS THE UPPER LIMIT OF POTENTIAL FINISHED GRADE CHANNEL PROFILES. REFER TO THE NOTES ON SHEET C38 FOR A DESCRIPTION OF PROPOSED METHODOLOGY FOR "FIELD-FITTING" THE DESIGN PROFILE TO ACCOMMODATE UNKNOWN SUBSURFACE CONDITIONS.
2. POOL GEOMETRY AND LOCATIONS ARE NOT SHOWN ON THE GRADING PLAN OR DESIGN PROFILE DUE TO UNKNOWN SUBSURFACE CONDITIONS. POOL GEOMETRY AND LOCATIONS WILL BE DETERMINED AT THE TIME OF CONSTRUCTION BY THE ENGINEER TO CONFORM TO SUBSURFACE CONDITIONS AND WILL CONFORM WITH THE TYPICAL PROFILE (DETAIL 2) ON SHEET C34.
3. INSTALL ENGINEERED STREAMBED MATERIAL AND FLOODPLAIN ARMOR PER THE TYPICAL CHANNEL TREATMENT SECTION, SHEET C26, EXCEPT AT LOCATIONS WHERE BEDROCK IS EXPOSED DURING CONSTRUCTION.
4. SALVAGE TREES WITHIN AREAS TO BE GRADED PER THE TREE REMOVAL NOTES, SHEETS C1.
5. GRADING WILL NOT EXTEND SOUTH OF THE LIMITS OF GRADING SHOWN ALONG THE SOUTHERN SIDE OF THE WORK AREA. IF BEDROCK IS NOT ENCOUNTERED AT THE UPPER LIMIT OF POTENTIAL DESIGN CHANNEL INVERT SHOWN, AND ADDITIONAL EXCAVATION IS REQUIRED, GRADING SHALL PROJECT DOWN APPROXIMATELY FOLLOWING THE EXISTING SOUTHERN BANK SLOPE TO THE CONSTRUCTED FLOODPLAIN BENCH ELEVATION, SIMILAR TO THE GRADING SHOWN ON SECTION C, SHEET C25, AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR PROJECT GEOLOGIST.
6. THE GRADING PLAN SHOWN RESULTS IN THE REMOVAL OF POND 1250, PORTIONS OF THE WATER TREATMENT FACILITIES AND RELOCATION OF THE ACCESS ROAD TO POND 4A. IF THE WATER TREATMENT FACILITIES ARE REQUIRED BY THE RESOURCE AGENCIES TO REMAIN IN USE AT THE TIME THE MATERIAL REMOVAL AREA CHANNEL RESTORATION IS TO TAKE PLACE, AN ALTERNATIVE PLAN WILL BE DEVELOPED THAT INCORPORATES RETAINING WALLS, WHERE NECESSARY, TO MAINTAIN THE WATER TREATMENT FACILITIES (INCLUDING POND 1250).



MATERIAL REMOVAL AREA PLAN

SCALE: 1" = 40'



MATERIAL REMOVAL AREA CHANNEL PROFILE

SCALE: 1" = 40'

LEGEND

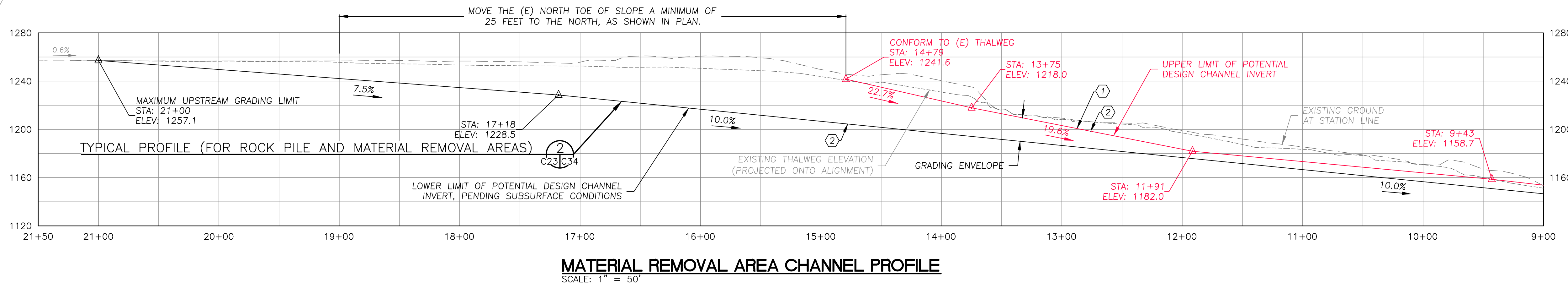
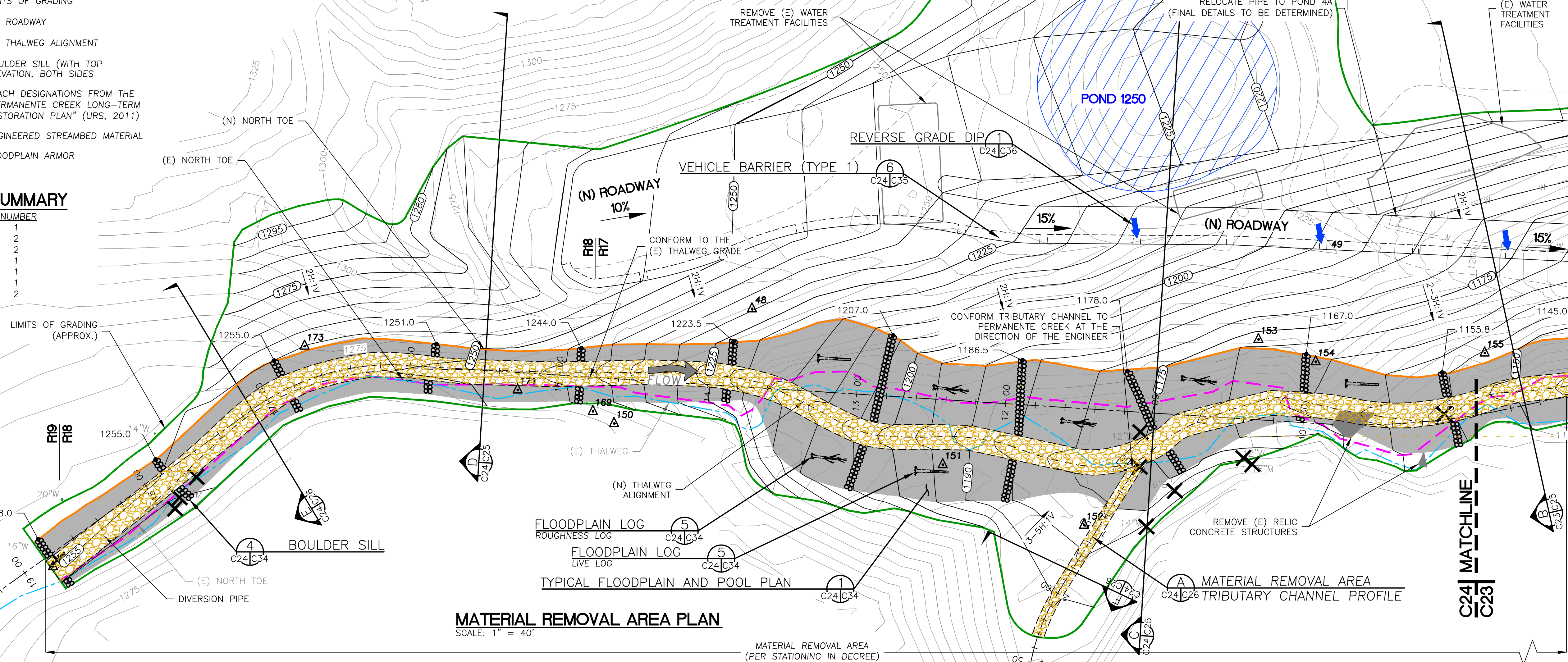
1250-1245	(E) CONTOURS
1250	(N) CONTOURS
1245	
△ 165	SURVEY CONTROL POINT
● 8" A	(E) TREE
X	(E) TREE TO BE REMOVED
---	(E) ROADWAY
---	(E) THALWEG
---	(E) NORTH TOE OF SLOPE
---	(N) NORTH TOE OF SLOPE
---	LIMITS OF GRADING
---	(N) ROADWAY
---	(N) THALWEG ALIGNMENT
1255.0	BOULDER SILL (WITH TOP ELEVATION, BOTH SIDES)
R19 R18	REACH DESIGNATIONS FROM THE "PERMANENTE CREEK LONG-TERM RESTORATION PLAN" (URS, 2011)
---	ENGINEERED STREAMBED MATERIAL
---	FLOODPLAIN ARMOR

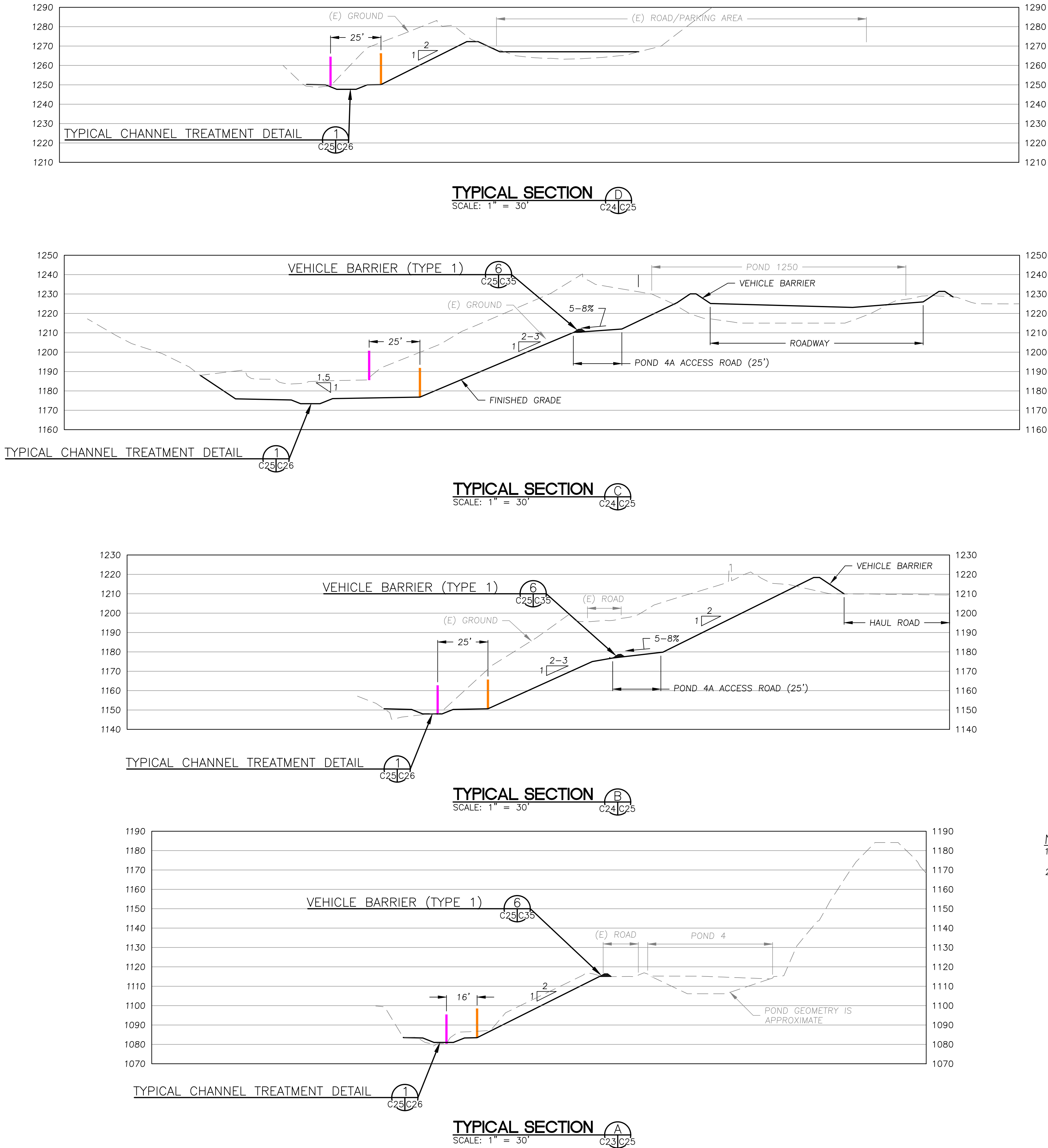
TREE REMOVAL SUMMARY

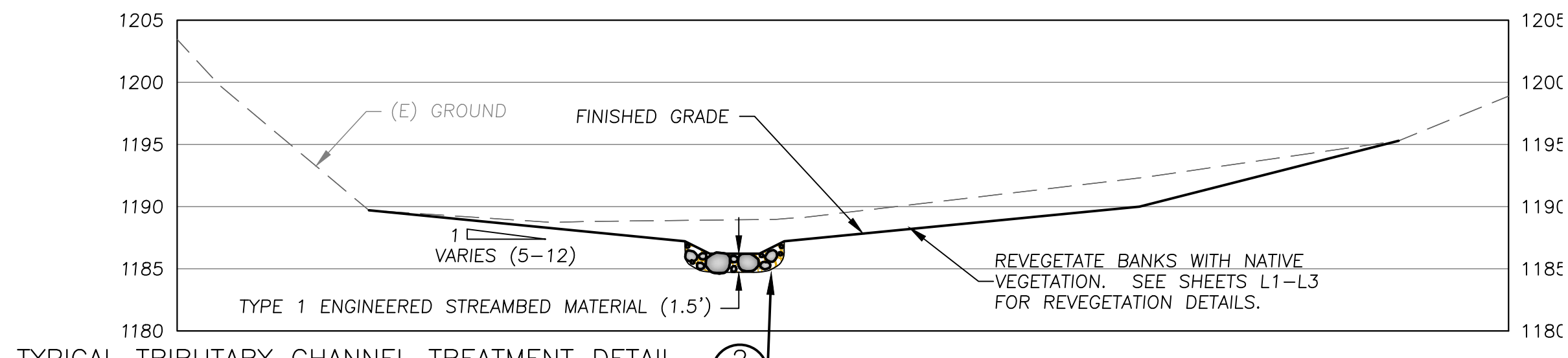
TREE SPECIES	DBH	NUMBER
BAY	16"	1
MAPLE	14"	2
MAPLE	18"	2
MAPLE	30"	1
OAK	16"	1
WILLOW	14"	1
WILLOW	12"	2

KEY NOTES:

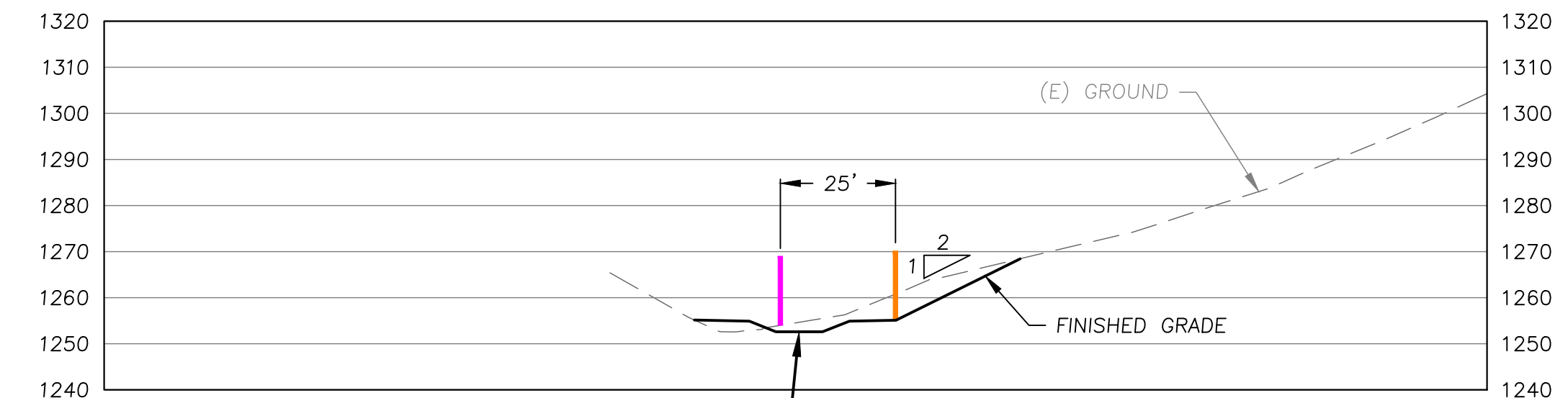
- THE GRADING PLAN REFLECTS THE UPPER LIMIT OF POTENTIAL FINISHED GRADE CHANNEL PROFILES. REFER TO THE NOTES ON SHEET C38 FOR A DESCRIPTION OF PROPOSED METHODOLOGY FOR "FIELD-FITTING" THE DESIGN PROFILE TO ACCOMMODATE UNKNOWN SUBSURFACE CONDITIONS.
- POOL GEOMETRY AND LOCATIONS ARE NOT SHOWN ON THE GRADING PLAN OR DESIGN PROFILE DUE TO UNKNOWN SUBSURFACE CONDITIONS. POOL GEOMETRY AND LOCATIONS WILL BE DETERMINED AT THE TIME OF CONSTRUCTION BY THE ENGINEER TO CONFORM TO SUBSURFACE CONDITIONS AND WILL CONFORM WITH THE TYPICAL PROFILE (DETAIL 2) ON SHEET C34.
- INSTALL ENGINEERED STREAMBED MATERIAL AND FLOODPLAIN ARMOR PER THE TYPICAL CHANNEL TREATMENT SECTION, SHEET C26, EXCEPT AT LOCATIONS WHERE BEDROCK IS EXPOSED DURING CONSTRUCTION.
- SALVAGE TREES WITHIN AREAS TO BE GRADED PER THE TREE REMOVAL NOTES, SHEETS C1.
- GRADING WILL NOT EXTEND SOUTH OF THE LIMITS OF GRADING SHOWN ALONG THE SOUTHERN SIDE OF THE WORK AREA. IF BEDROCK IS NOT ENCOUNTERED AT THE UPPER LIMIT OF POTENTIAL DESIGN CHANNEL INVERT SHOWN, AND ADDITIONAL EXCAVATION IS REQUIRED, GRADING SHALL PROJECT DOWN APPROXIMATELY FOLLOWING THE EXISTING SOUTHERN BANK SLOPE TO THE CONSTRUCTED FLOODPLAIN BENCH ELEVATION, SIMILAR TO THE GRADING SHOWN ON SECTION C, SHEET C25, AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR PROJECT GEOLOGIST.
- THE GRADING PLAN SHOWN RESULTS IN THE REMOVAL OF POND 1250, PORTIONS OF THE WATER TREATMENT FACILITIES AND RELOCATION OF THE ACCESS ROAD TO POND 4A. IF THE WATER TREATMENT FACILITIES ARE REQUIRED BY THE RESOURCE AGENCIES TO REMAIN IN USE AT THE TIME THE MATERIAL REMOVAL AREA CHANNEL RESTORATION IS TO TAKE PLACE, AN ALTERNATIVE PLAN WILL BE DEVELOPED THAT INCORPORATES RETAINING WALLS, WHERE NECESSARY, TO MAINTAIN THE WATER TREATMENT FACILITIES (INCLUDING POND 1250).







TYPICAL SECTION
SCALE: 1" = 10'



TYPICAL SECTION
SCALE: 1" = 30'

LEGEND

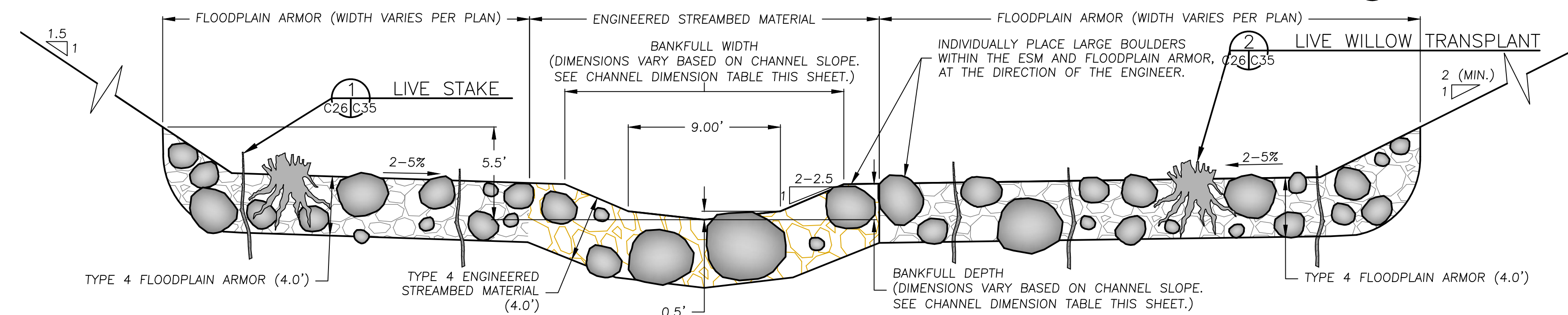
(E) NORTH
SLOPE TOE

PROPOSED NORTH
SLOPE TOE

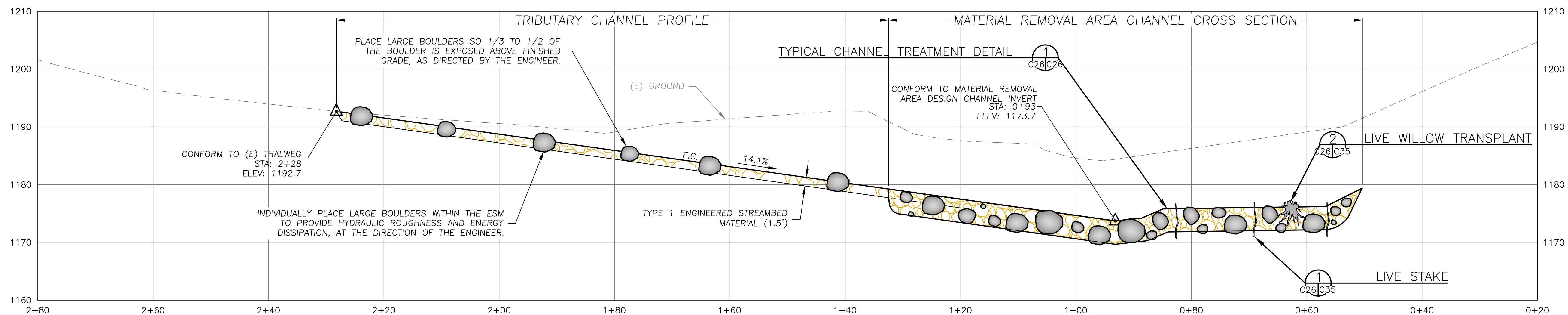
CHANNEL DIMENSIONS FOR OVERBURDEN REMOVAL AREA		
DESIGN SLOPE (%)	BANKFULL WIDTH	BANKFULL DEPTH
<4%	16'-20'	1.7'-2.1'
4%-8%	14.5'-18.5'	1.9'-2.3'
>8%	14'-18'	2.3'-2.7'

NOTES:

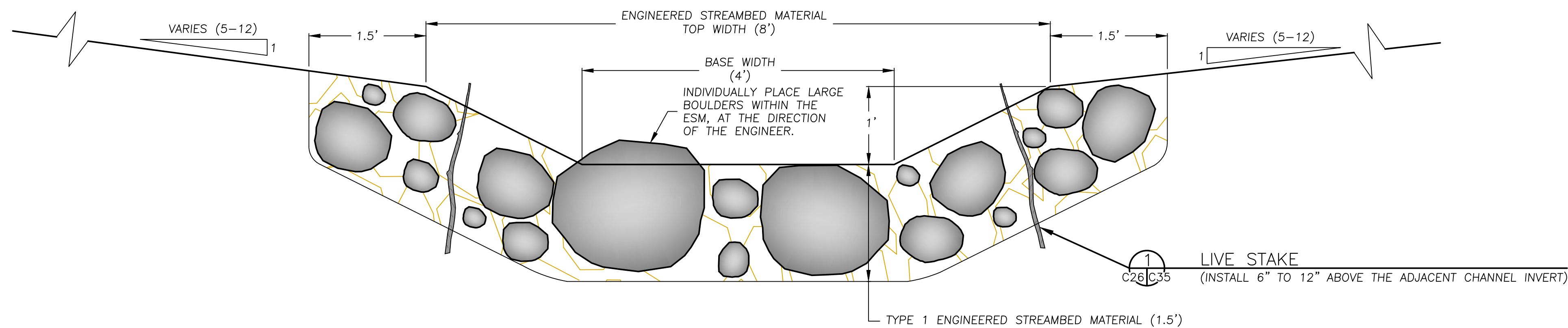
1. INSTALL TYPE 8 FLOODPLAIN ARMOR ALONG THE ENTIRE MATERIAL REMOVAL AREA PROJECT REACH WHERE FLOODPLAIN ARMOR IS SHOWN IN PLAN.
2. INSTALL TYPE 4 ENGINEERED STREAMBED MATERIAL ALONG THE ENTIRE MATERIAL REMOVAL AREA PROJECT REACH WHERE ESM IS SHOWN IN PLAN.
3. SEE THE TYPICAL FLOODPLAIN ROUGHNESS AND POOL PLAN, SHEET C34 FOR INFORMATION REGARDING FEATURES NOT SHOWN ON THE TYPICAL TREATMENT DETAIL.
4. FINISHED GRADE SHOWN REPRESENTS THE UPPER LIMIT OF POTENTIAL DESIGN CHANNEL INVERT.



TYPICAL CHANNEL TREATMENT DETAIL
SCALE: 1" = 5'



MATERIAL REMOVAL AREA TRIBUTARY CHANNEL PROFILE
SCALE: 1" = 10'



TYPICAL TRIBUTARY CHANNEL TREATMENT DETAIL
SCALE: 1" = 1'

PRELIMINARY
NOT FOR CONSTRUCTION

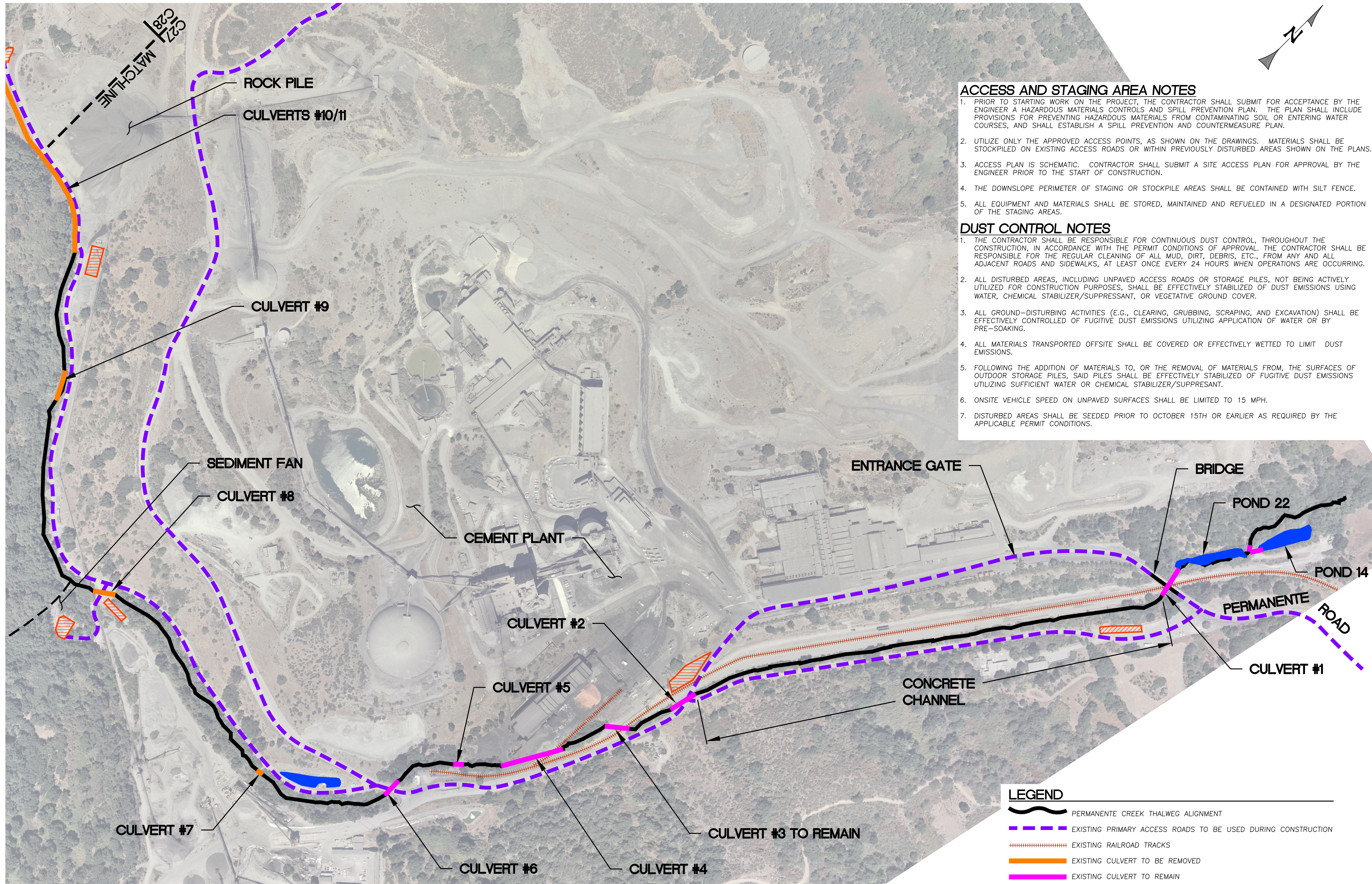
PREPARED AT THE REQUEST OF:
LEHIGH HANSON
HEIDELBERG CEMENT
GROUP

MATERIAL
REMOVAL
AREA
SECTIONS
(2 OF 2)

PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: B.Z.
DRAWN BY: B.M.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS
0 1" 1"



ACCESS AND STAGING AREA NOTES

1. PRIOR TO STARTING WORK ON THE PROJECT, THE CONTRACTOR SHALL SUBMIT FOR ACCEPTANCE BY THE ENGINEER A HAZARDOUS MATERIALS CONTROLS AND SPILL PREVENTION PLAN. THE PLAN SHALL INCLUDE PROVISIONS FOR PREVENTING HAZARDOUS MATERIALS FROM CONTAMINATING SOIL OR ENTERING WATER COURSES, AND SHALL ESTABLISH A SPILL PREVENTION AND COUNTERMEASURE PLAN.
2. UTILIZE ONLY THE APPROVED ACCESS POINTS, AS SHOWN ON THE DRAWINGS. MATERIALS SHALL BE STOCKPILED ON EXISTING ACCESS ROADS OR WITHIN PREVIOUSLY DISTURBED AREAS SHOWN ON THE PLANS.
3. ACCESS PLAN IS SCHEMATIC. CONTRACTOR SHALL SUBMIT A SITE ACCESS PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.
4. THE DOWNSLOPE PERIMETER OF STAGING OR STOCKPILE AREAS SHALL BE CONTAINED WITH SILT FENCE.
5. ALL EQUIPMENT AND MATERIALS SHALL BE STORED, MAINTAINED AND REFUELED IN A DESIGNATED PORTION OF THE STAGING AREAS.

DUST CONTROL NOTES

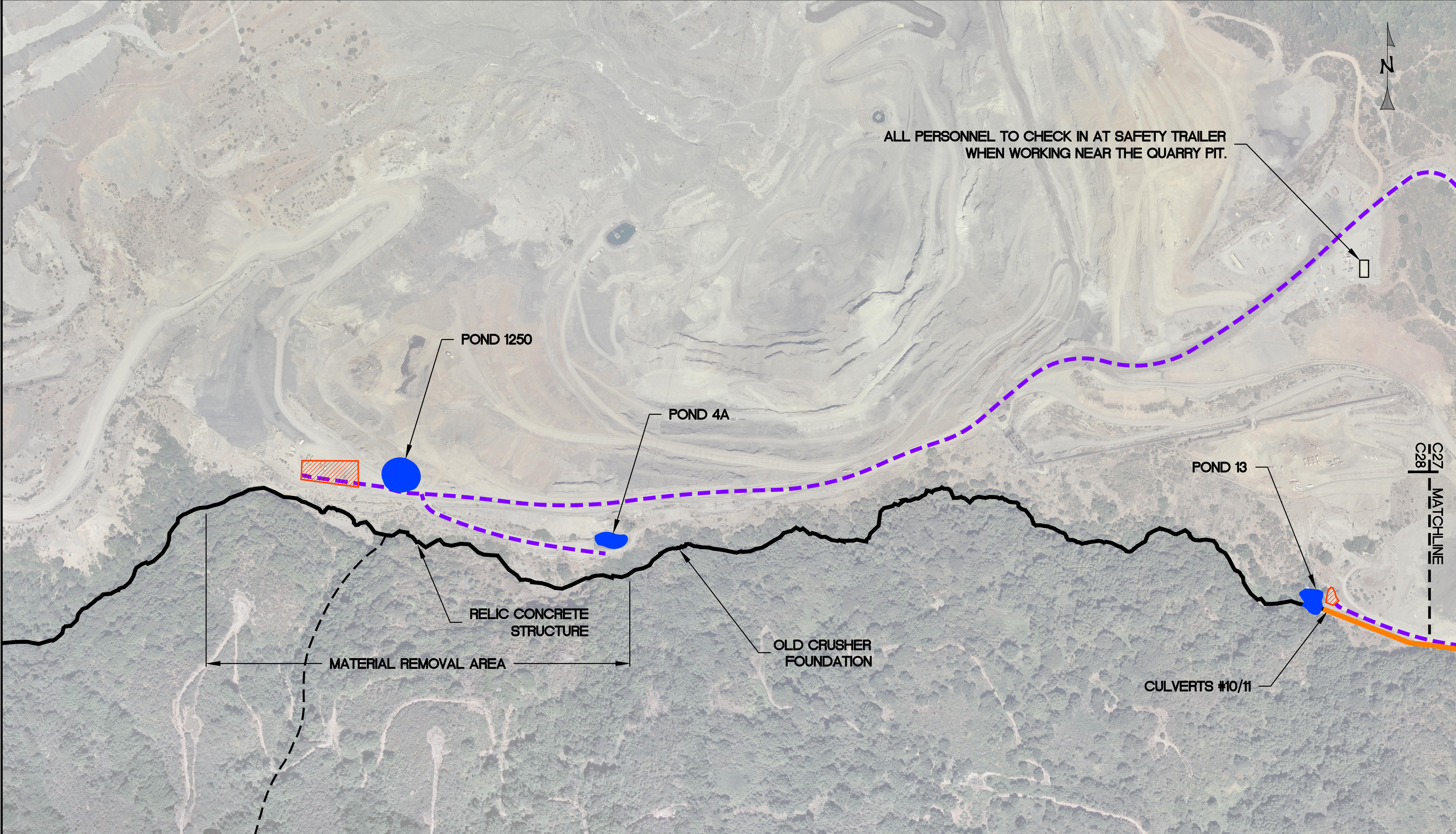
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUOUS DUST CONTROL, THROUGHOUT THE CONSTRUCTION, IN ACCORDANCE WITH THE PERMIT CONDITIONS OF APPROVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REGULAR CLEANING OF ALL MUD, DIRT, DEBRIS, ETC., FROM ANY AND ALL ADJACENT ROADS AND SIDEWALKS, AT LEAST ONCE EVERY 24 HOURS WHEN OPERATIONS ARE OCCURRING.
2. ALL DISTURBED AREAS, INCLUDING UNPAVED ACCESS ROADS OR STORAGE PILES, NOT BEING ACTIVELY UTILIZED FOR CONSTRUCTION PURPOSES, SHALL BE EFFECTIVELY STABILIZED OF DUST EMISSIONS USING WATER, CHEMICAL STABILIZER/SUPPRESSANT, OR VEGETATIVE GROUND COVER.
3. ALL GROUND-DISTURBING ACTIVITIES (E.G., CLEARING, GRUBBING, SCRAPING, AND EXCAVATION) SHALL BE EFFECTIVELY CONTROLLED OF FUGITIVE DUST EMISSIONS UTILIZING APPLICATION OF WATER OR BY PRE-SOAKING.
4. ALL MATERIALS TRANSPORTED OFFSITE SHALL BE COVERED OR EFFECTIVELY WETTED TO LIMIT DUST EMISSIONS.
5. FOLLOWING THE ADDITION OF MATERIALS TO, OR THE REMOVAL OF MATERIALS FROM, THE SURFACES OF OUTDOOR STORAGE PILES, SAID PILES SHALL BE EFFECTIVELY STABILIZED OF FUGITIVE DUST EMISSIONS UTILIZING SUFFICIENT WATER OR CHEMICAL STABILIZER/SUPPRESSANT.
6. ONSITE VEHICLE SPEED ON UNPAVED SURFACES SHALL BE LIMITED TO 15 MPH.
7. DISTURBED AREAS SHALL BE SEEDED PRIOR TO OCTOBER 15TH OR EARLIER AS REQUIRED BY THE APPLICABLE PERMIT CONDITIONS.

LEGEND

- PERMANENTE CREEK THALWEG ALIGNMENT
- EXISTING PRIMARY ACCESS ROADS TO BE USED DURING CONSTRUCTION
- EXISTING RAILROAD TRACKS
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN
- STAGING AND STOCKPILE AREAS
- TRIBUTARY (RELEVANT TO PROJECT)

ACCESS AND STAGING PLAN
SCALE: 1"=200'

WATERWAYS CONSULTING INC.		509A SWIFT ST. SANTA CRUZ, CA 95060 PH: (831) 421-9291 / FAX: (888) 819-6847 WWW.WATWAYS.COM	
PRELIMINARY		NOT FOR CONSTRUCTION	
PREPARED AT THE REQUEST OF: LEHIGH HANSON HEIDELBERG CEMENT GROUP			
ACCESS AND STAGING PLAN (1 OF 2)			
PERMANENTE CREEK RESTORATION PLAN		PRELIMINARY GRADING PLAN 90% DESIGN SANTA CLARA COUNTY GRADING PERMIT SUBMITTAL	
DESIGNED BY: DRAWN BY: CHECKED BY: DATE: JOB NO.:		B.M.S. B.M.S. M.W.W. 11/15/18 13-016	
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS 0 1"			
C27		27 OF 45	




LEGEND

- PERMANENTE CREEK THALWEG ALIGNMENT
- EXISTING PRIMARY ACCESS ROADS TO BE USED DURING CONSTRUCTION
- EXISTING CULVERT TO BE REMOVED
- EXISTING CULVERT TO REMAIN
- STAGING AND STOCKPILE AREAS
- TRIBUTARY (RELEVANT TO PROJECT)

ACCESS AND STAGING PLAN

SCALE: 1" = 200'

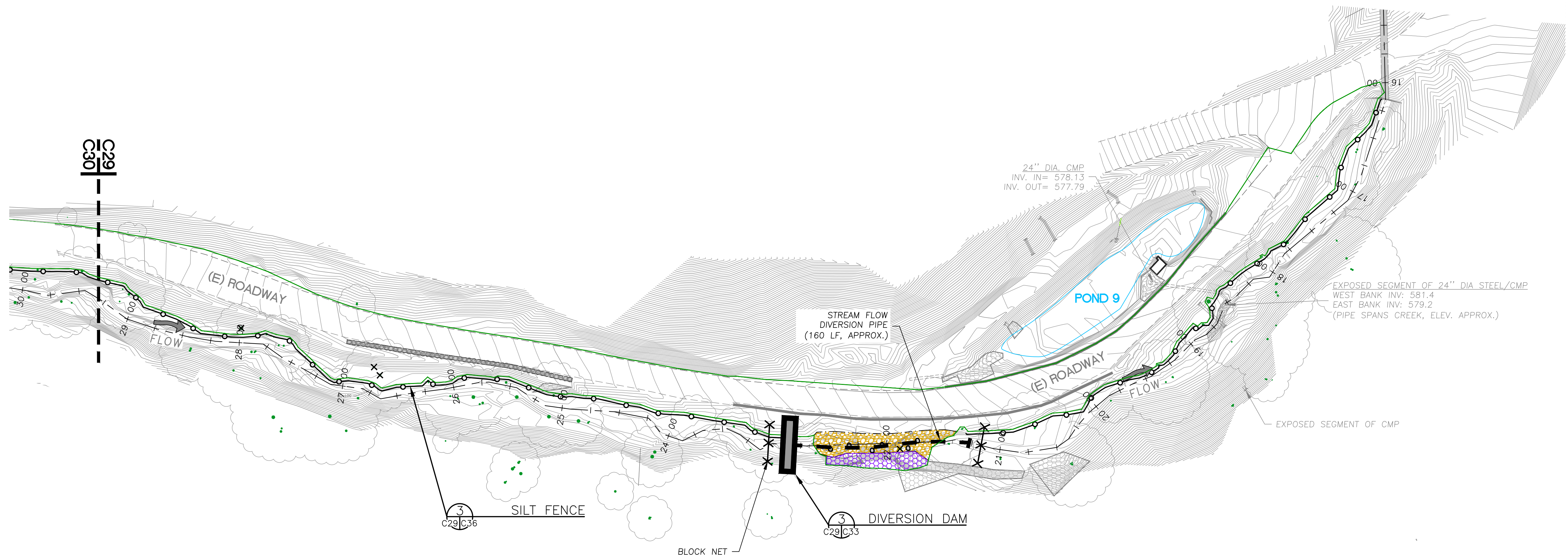
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PRELIMINARY NOT FOR CONSTRUCTION	
PREPARED AT THE REQUEST OF: LEHIGH HANSON HEIDELBERG CEMENT GROUP	
ACCESS AND STAGING PLAN (2 OF 2)	
PERMANENTE CREEK RESTORATION PLAN PRELIMINARY GRADING PLAN 90% DESIGN SANTA CLARA COUNTY GRADING PERMIT SUBMITTAL	DESIGNED BY: B.M.S. DRAWN BY: B.M.S. CHECKED BY: M.W.W. DATE: 11/15/18 JOB NO.: 13-016
C28	28 OF 45

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

LEGEND

- EXISTING CONTOURS
- EXISTING TREE
- (E) ROAD
- SILT FENCE
- PROPOSED FIBER ROLL
- LIMITS OF GRADING
- DESIGN ALIGNMENT

00
30



CHANNEL WIDENING DIVERSION AND EROSION CONTROL PLAN (1 OF 2)

SCALE: 1" = 50'



PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
**LEHIGH HANSON
HEIDELBERG CEMENT
GROUP**

**CHANNEL
WIDENING
DIVERSION AND
EROSION
CONTROL
PLAN (1 OF 2)**

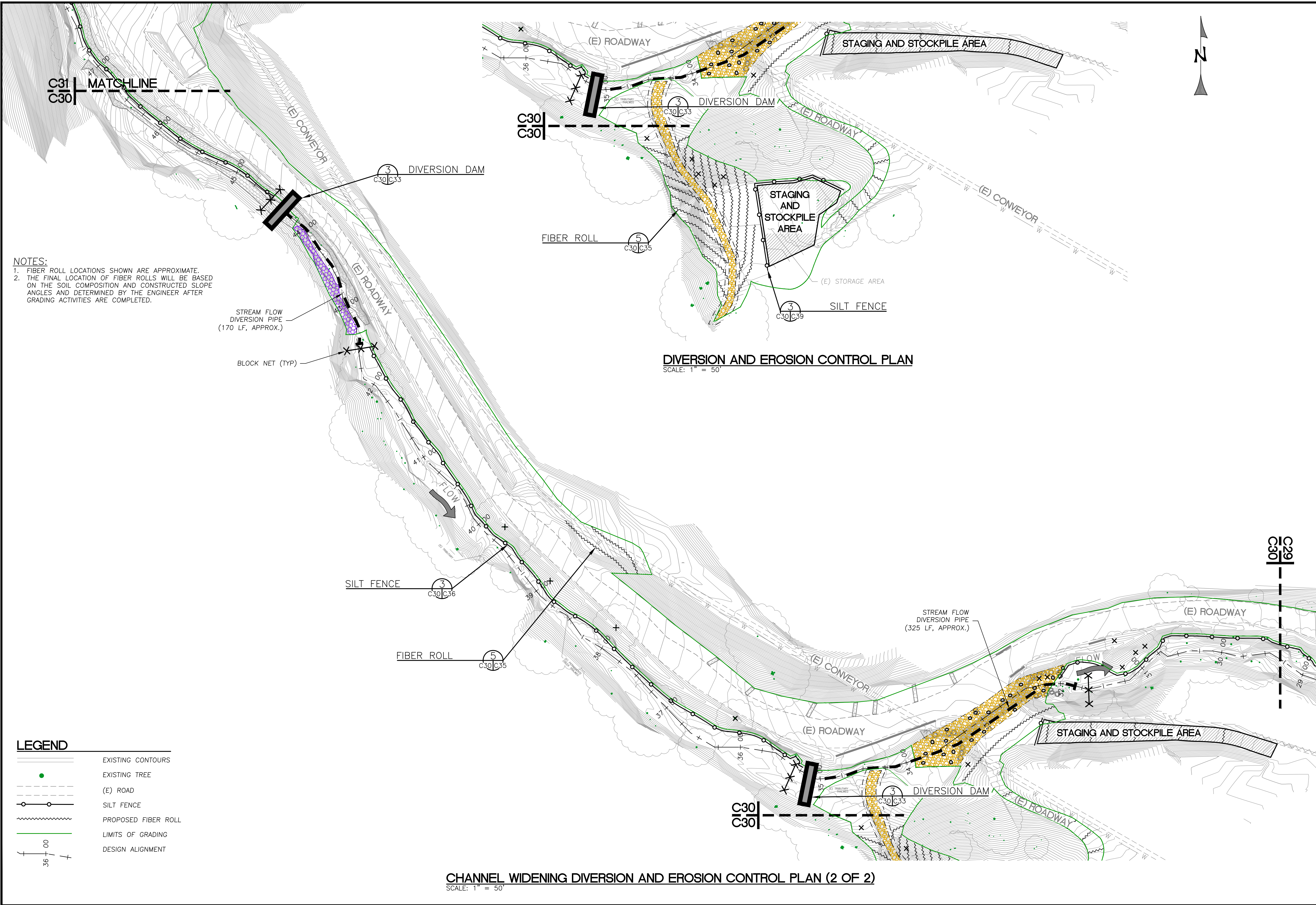
PERMANENTE CREEK
RESTORATION PLAN
**PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL**

DESIGNED BY: B.M.S.
DRAWN BY: B.M.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

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ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS


C29

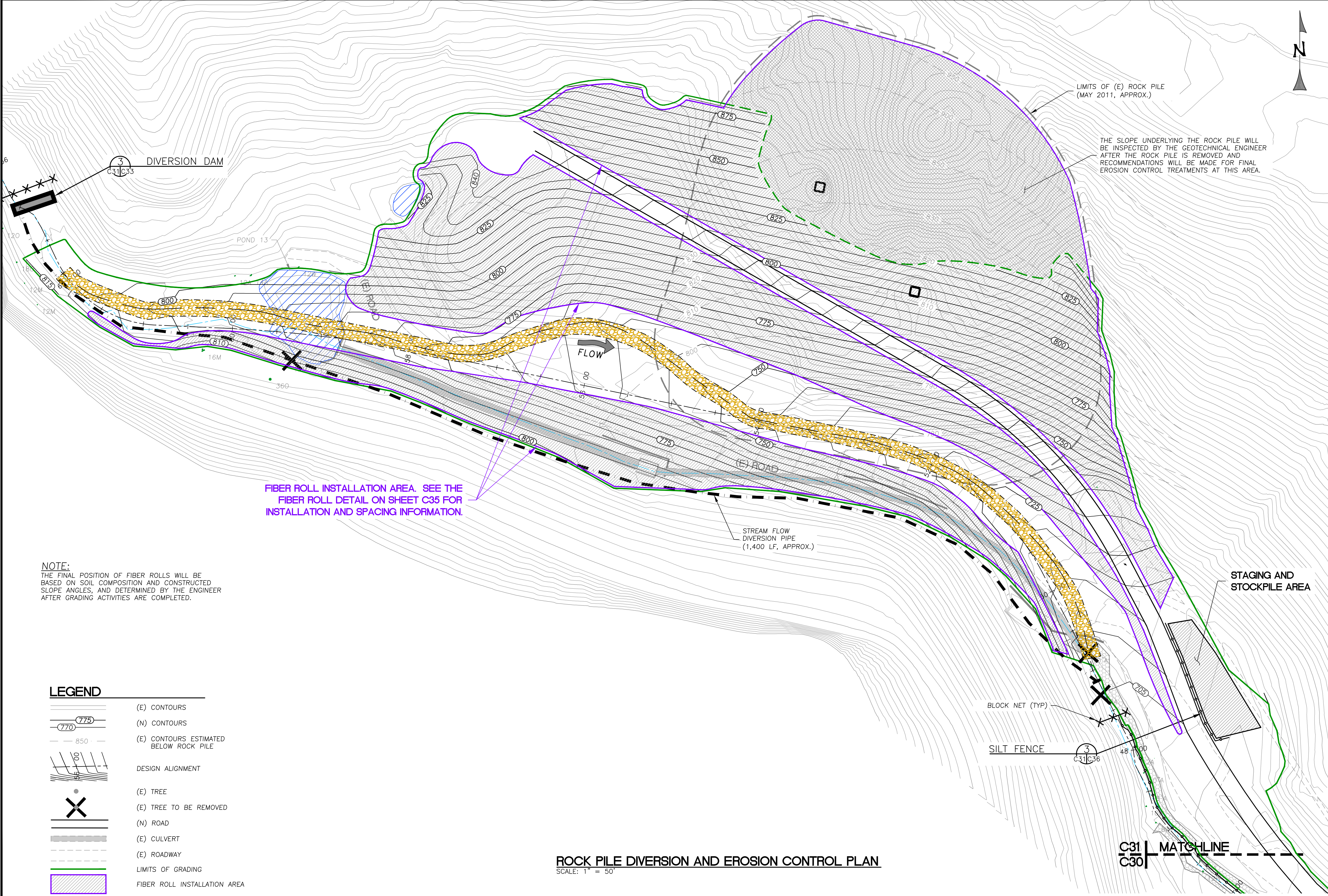
29
OF
45



NOTES:
1. FIBER ROLL LOCATIONS SHOWN ARE APPROXIMATE.
2. THE FINAL LOCATION OF FIBER ROLLS WILL BE BASED ON THE SOIL COMPOSITION AND CONSTRUCTED SLOPE ANGLES AND DETERMINED BY THE ENGINEER AFTER GRADING ACTIVITIES ARE COMPLETED.

- LEGEND**
- EXISTING CONTOURS
 - EXISTING TREE
 - (E) ROAD
 - SILT FENCE
 - PROPOSED FIBER ROLL
 - LIMITS OF GRADING
 - DESIGN ALIGNMENT

 <p>509A SWIFT ST. SANTA CRUZ, CA 95060 PH: (831) 421-9291 / FAX: (888) 819-6847 WWW.WATWAYS.COM</p>	
PRELIMINARY NOT FOR CONSTRUCTION	
PREPARED AT THE REQUEST OF: LEHIGH HANSON HEIDELBERG CEMENT GROUP	
CHANNEL WIDENING DIVERSION AND EROSION CONTROL PLAN (2 OF 2)	
PERMANENT CREEK RESTORATION PLAN PRELIMINARY GRADING PLAN 90% DESIGN SANTA CLARA COUNTY GRADING PERMIT SUBMITTAL	DESIGNED BY: B.M.S. DRAWN BY: B.M.S. CHECKED BY: M.W.W. DATE: 11/15/18 JOB NO.: 13-016 BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS 0 1"
C30	30 OF 45



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**LEHIGH HANSON
HEIDELBERG CEMENT
GROUP**

ROCK PILE
DIVERSION AREA
EROSION
CONTROL PLAN

PERMANENTE CREEK
RESTORATION PLAN

PRELIMINARY GRADING PLAN
90% DESIGN

SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

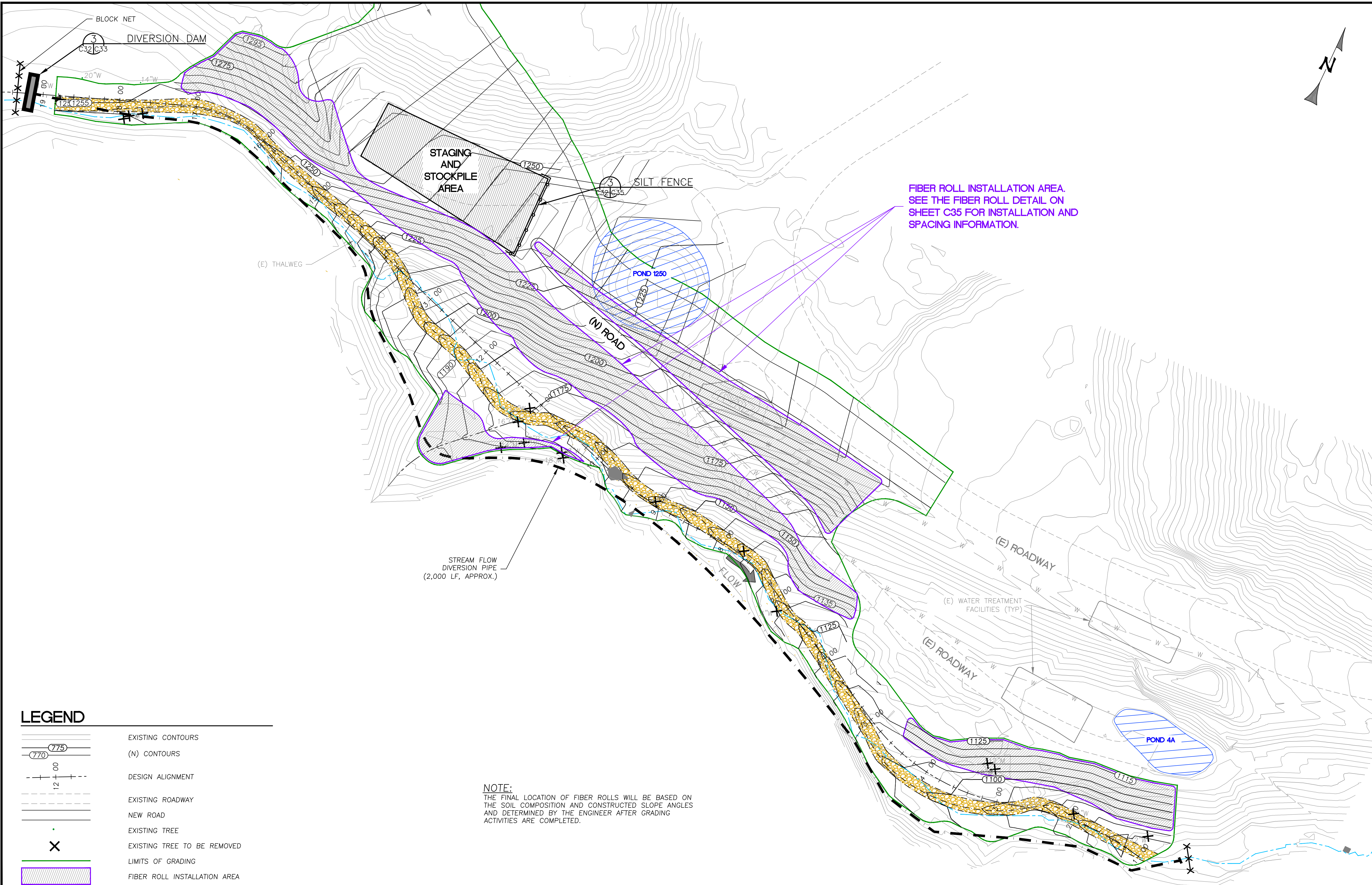
DESIGNED BY: B.M.Z.
DRAWN BY: B.R.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

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

0 1" 1"

C31

31
OF
45



LEGEND

- EXISTING CONTOURS
- (N) CONTOURS
- DESIGN ALIGNMENT
- EXISTING ROADWAY
- NEW ROAD
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- LIMITS OF GRADING
- FIBER ROLL INSTALLATION AREA

NOTE:
THE FINAL LOCATION OF FIBER ROLLS WILL BE BASED ON THE SOIL COMPOSITION AND CONSTRUCTED SLOPE ANGLES AND DETERMINED BY THE ENGINEER AFTER GRADING ACTIVITIES ARE COMPLETED.

MATERIAL REMOVAL AREA DIVERSION AND EROSION CONTROL PLAN
SCALE: 1" = 60'

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
LEHIGH HANSON
HEIDELBERG CEMENT
GROUP

MATERIAL REMOVAL AREA
DIVERSION AND
EROSION
CONTROL PLAN

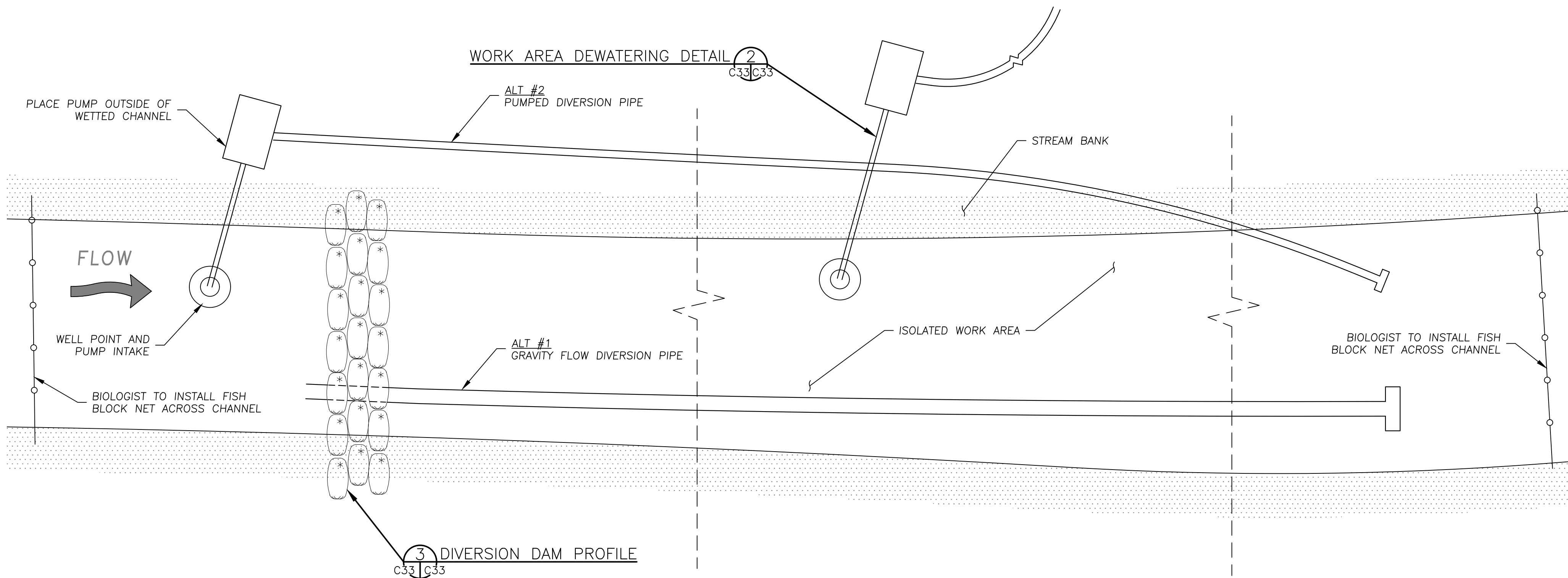
PERMANENTE CREEK
RESTORATION PLAN

PRELIMINARY GRADING PLAN
90% DESIGN

SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: B.M.Z.
DRAWN BY: B.M.S.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

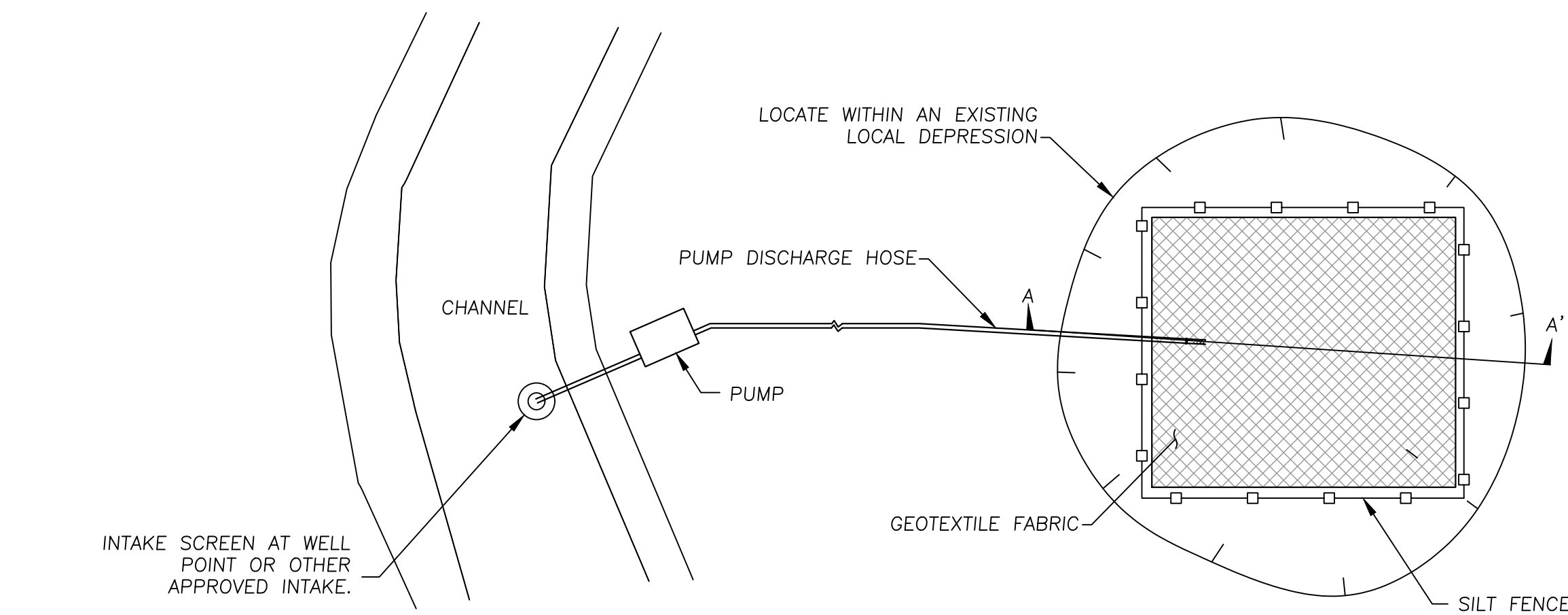
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS



TYPICAL DEWATERING PLAN

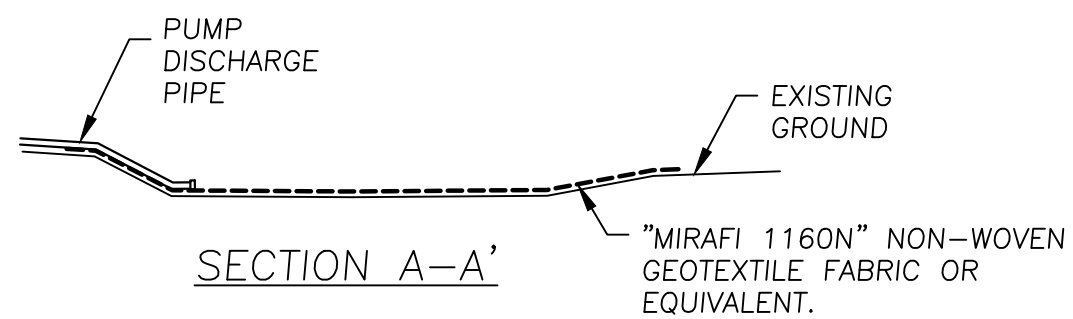
N.T.S.

1
C33/C33



DEWATERING DISCHARGE AREA NOTES:

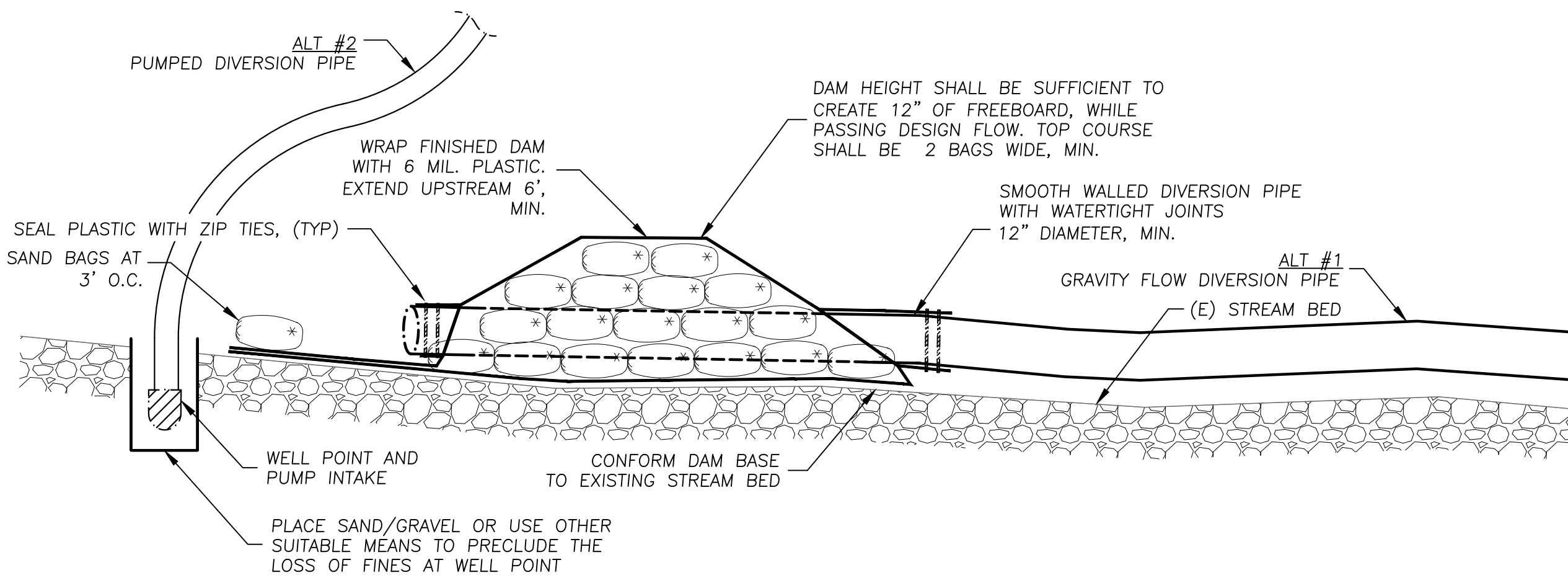
1. DEWATERING SHALL COMPLY WITH ALL PROJECT PERMITS.
2. THIS DETAIL REPRESENTS A POTENTIAL OPTION FOR DEWATERING OF WORK AREAS.
3. TURBID WATER RESULTING FROM DEWATERING ACTIVITIES WILL EITHER BE TREATED OR DISCHARGED TO A LOCAL DEPRESSION(S) TO INFILTRATE OR EVAPORATE.
4. TURBID WATERS WILL NOT BE ALLOWED TO DISCHARGE INTO PERMANENTE CREEK.
5. PROPOSED FILTRATION METHODS WILL BE FIELD-FIT TO EXISTING CONDITIONS AT THE TIME OF CONSTRUCTION, AS APPROVED BY THE ENGINEER.
6. REMOVE ACCUMULATED SEDIMENT AT THE COMPLETION OF DEWATERING ACTIVITIES AND DISPOSE OF AT AN APPROVED LOCATION.



WORK AREA DEWATERING DETAIL

N.T.S.

2
C33/C33



DIVERSION DAM PROFILE

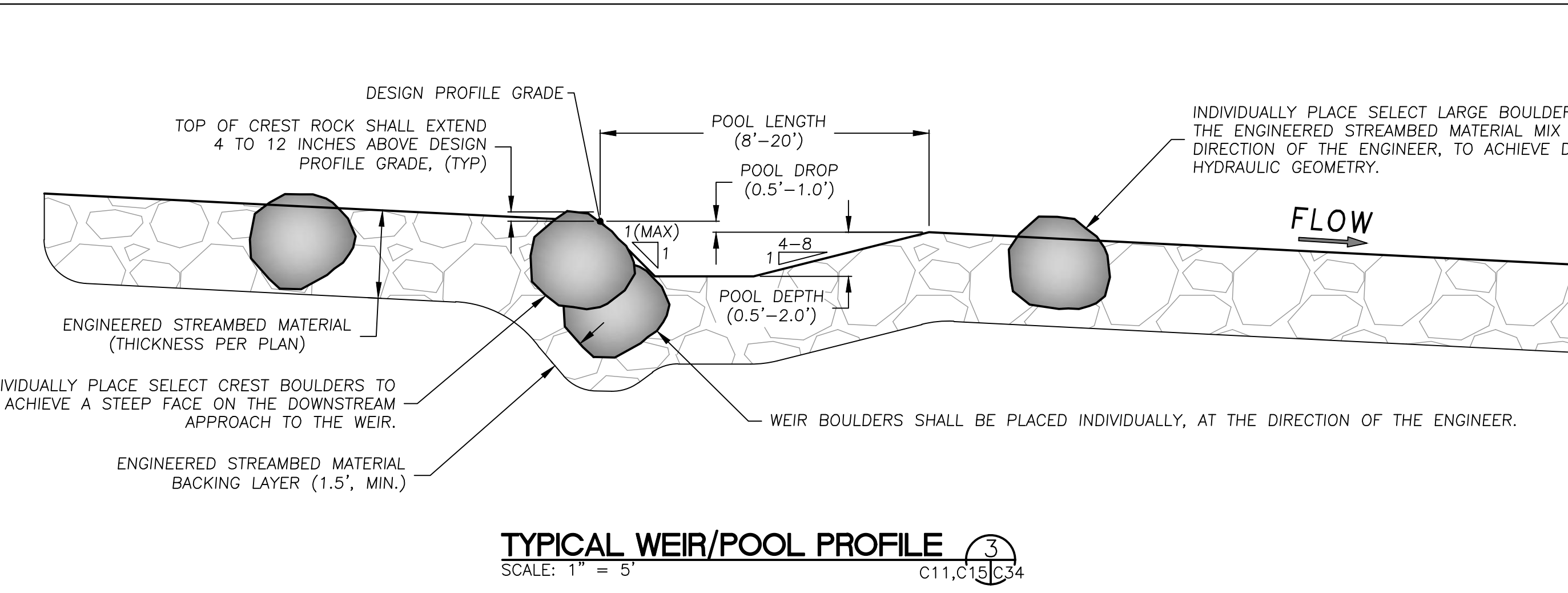
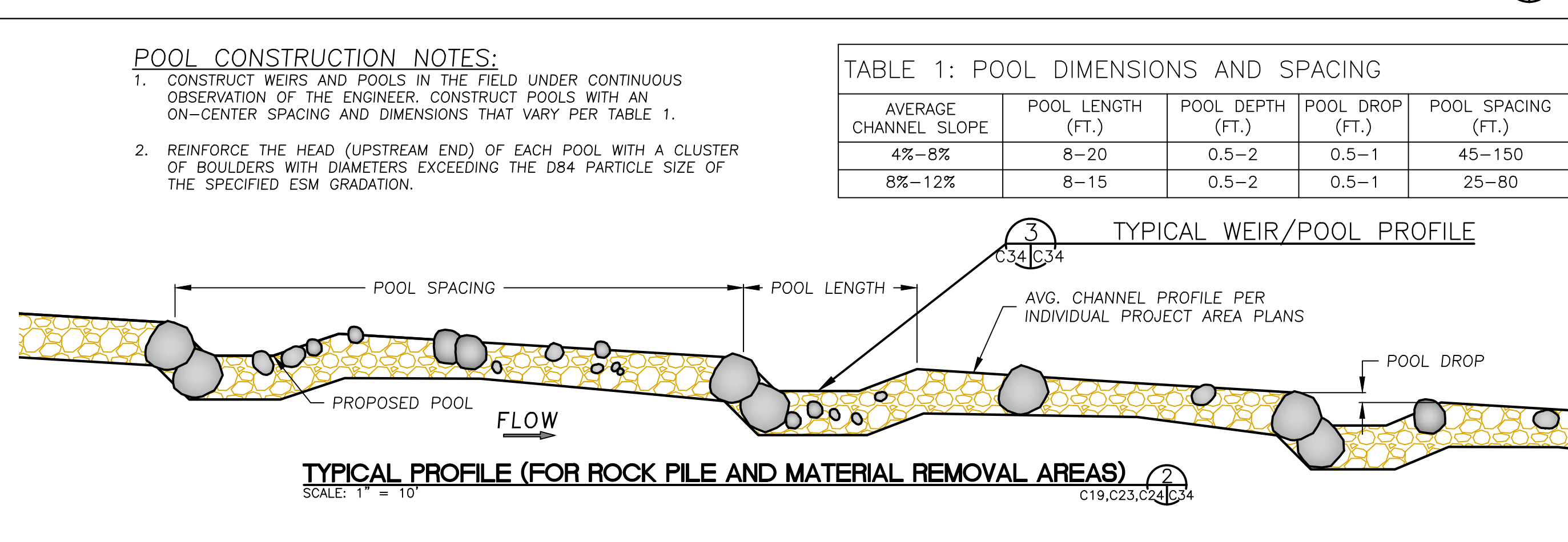
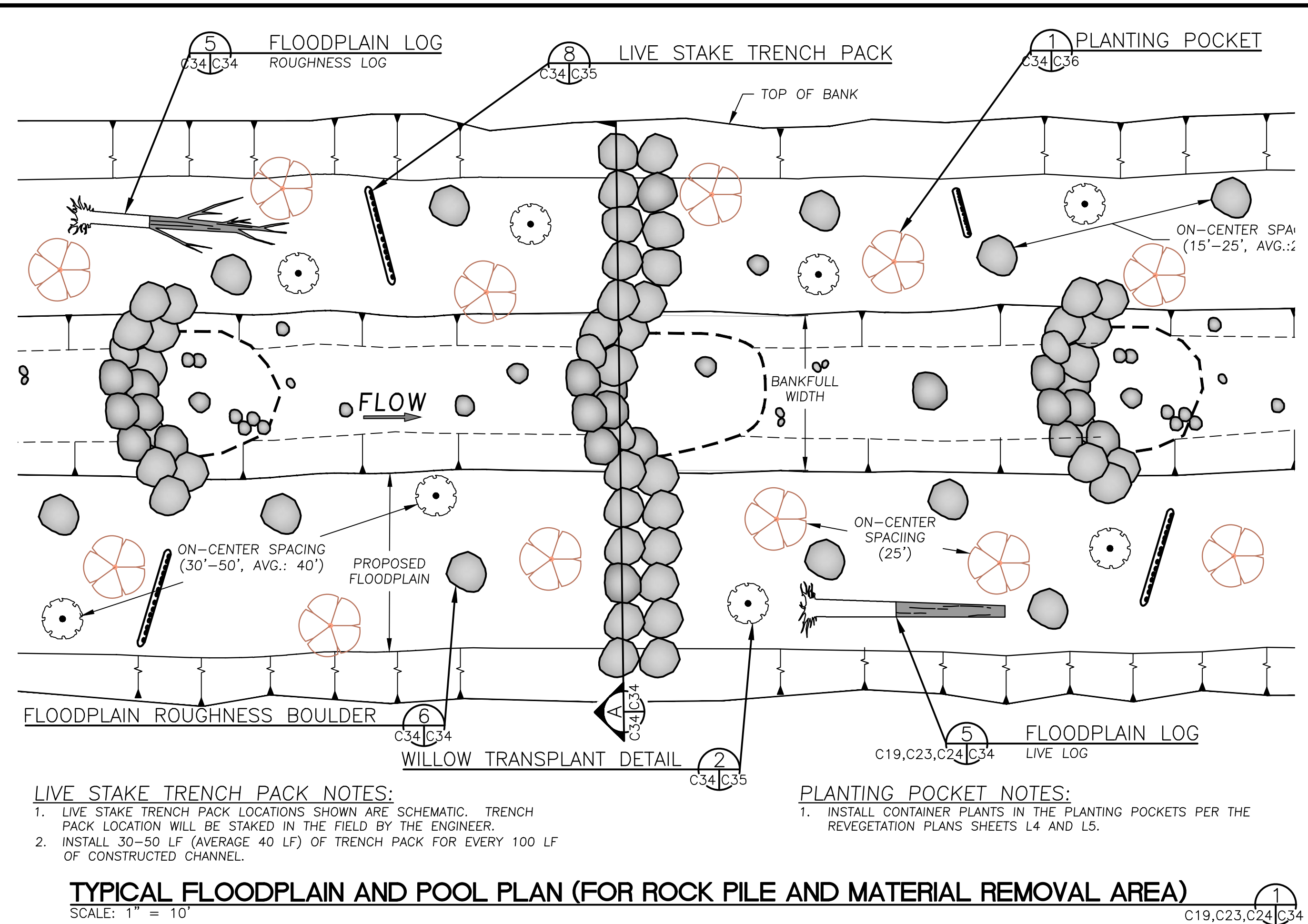
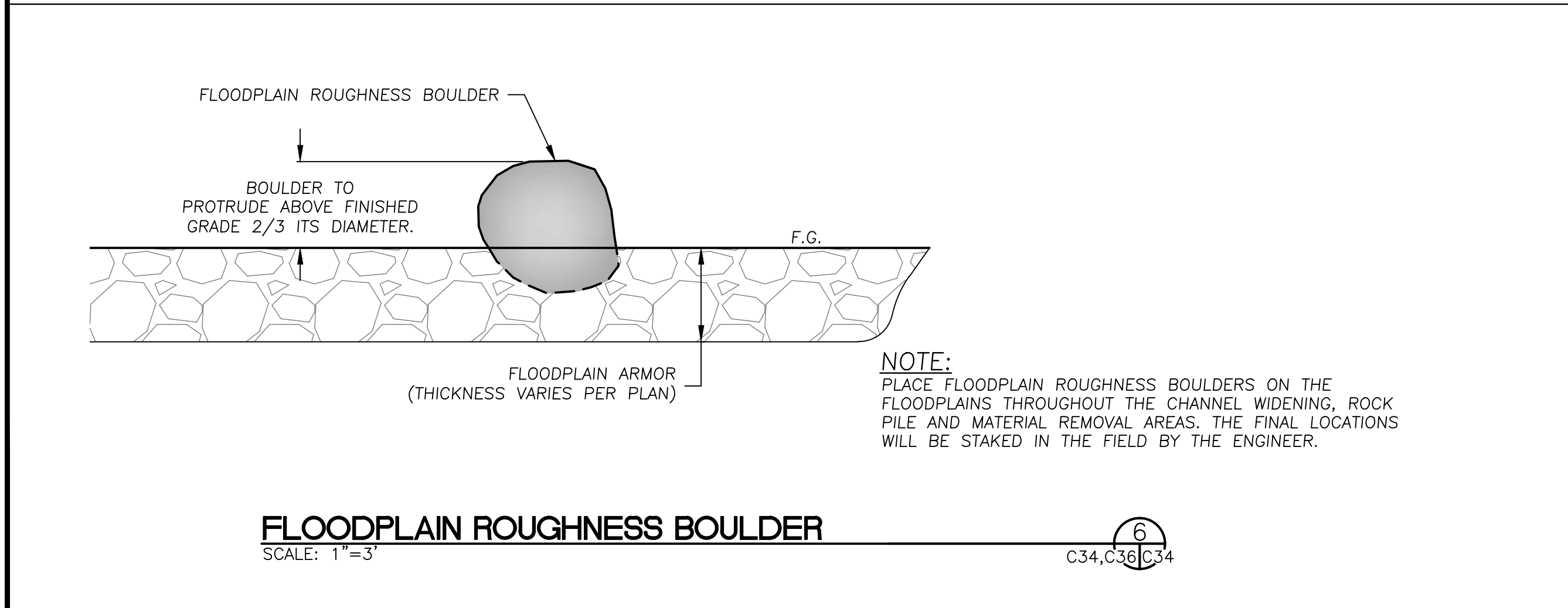
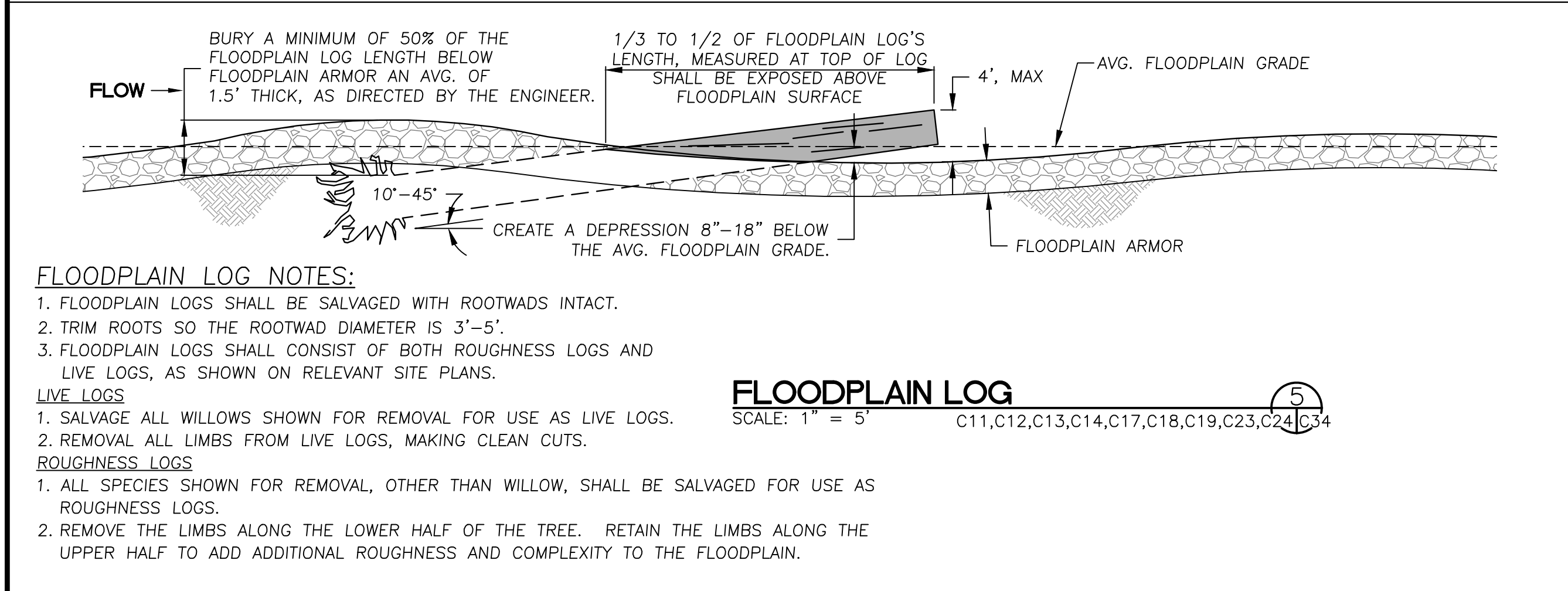
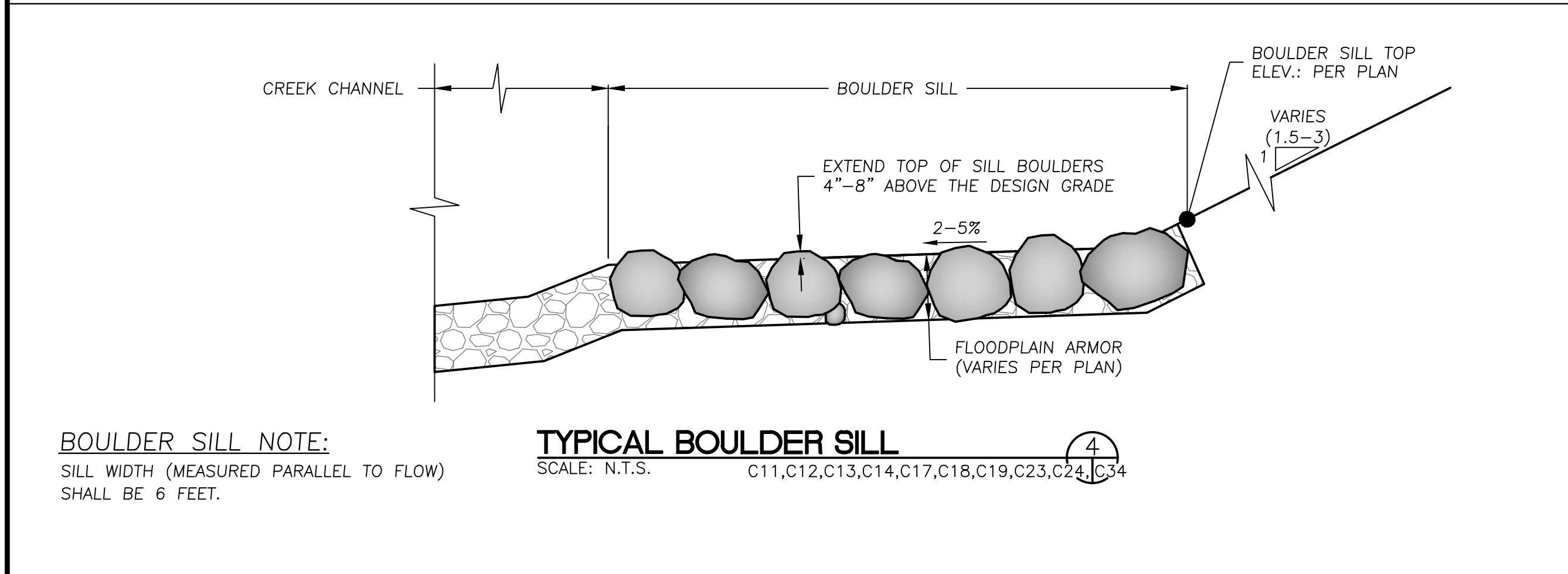
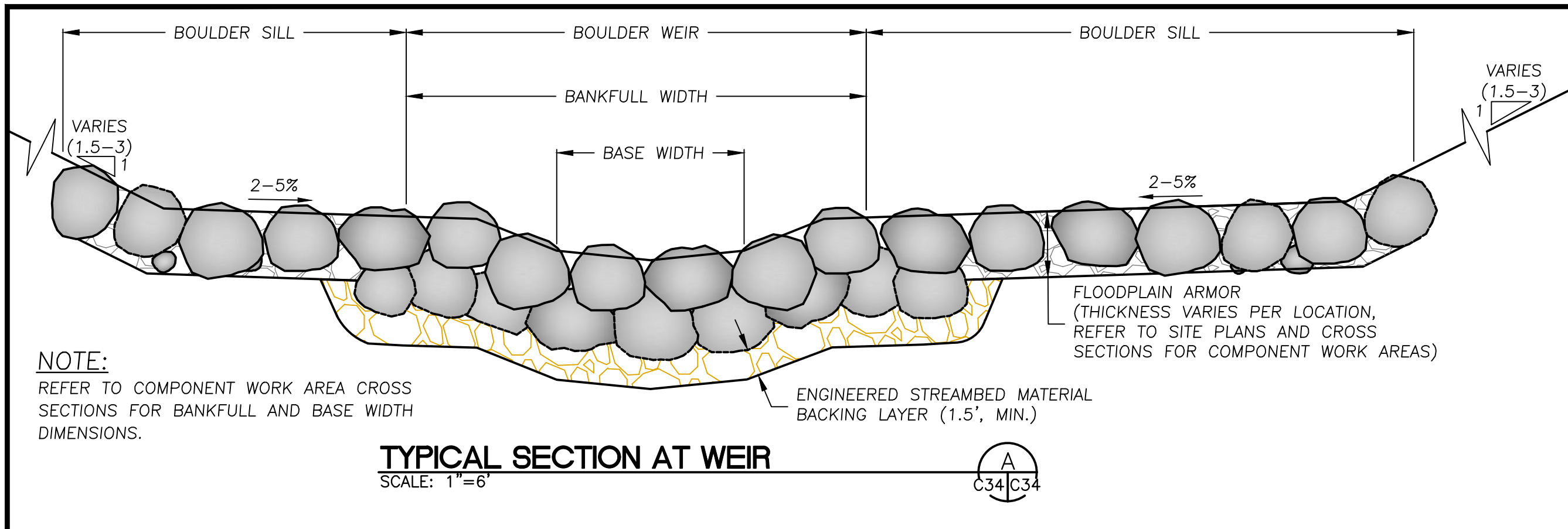
N.T.S.

3
C29,C30,C31,C32,C33/C33

NOTE: CONTRACTOR MAY USE ALTERNATE DAM DETAIL, SUBJECT TO APPROVAL OF THE ENGINEER AND THE PERMITTING AGENCIES.

DIVERSION NOTES CONTINUED

1. GENERAL
 - 1.1. DIVERSION SYSTEMS SHALL BE INSTALLED TO DEWATER THE INDIVIDUAL PROJECT AREAS TO FACILITATE IN-STREAM CONSTRUCTION AND TO REDUCE THE POTENTIAL IMPACTS TO WATER QUALITY DOWNSTREAM OF THE PROJECT SITES.
 - 1.2. THE CONTRACTOR SHALL CONFIRM THAT A FAVORABLE LONG TERM WEATHER FORECAST (1 WEEK MIN.) IS OBSERVED PRIOR TO PLACEMENT OF DIVERSION STRUCTURE.
 - 1.3. PRIOR TO PLACEMENT OF DIVERSION STRUCTURE, FISH SHALL BE REMOVED FROM THE DIVERTED REACH, IN ACCORDANCE WITH SECTION 2.
 - 1.4. DIVERSION SYSTEM INSTALLATION SHALL NORMALLY BEGIN IN THE DOWNSTREAM AREA AND CONTINUE IN AN UPSTREAM DIRECTION. THE FLOW SHALL BE DIVERTED ONLY WHEN THE DIVERSION CONSTRUCTION IS COMPLETE.
 - 1.5. THE DIVERSION PLAN SHOWN IS SCHEMATIC. THE DESIGN AND IMPLEMENTATION OF THE DIVERSION DAM IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR PRIOR TO INSTALLATION. THE CONTRACTOR SHALL SUBMIT A DIVERSION PHASING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL. THE BASIC REQUIREMENTS OF THE DIVERSION PLAN ARE SHOWN.
 - 1.6. THE TYPICAL DEWATERING PLAN SHOWN DEPICTS TWO ALTERNATIVE TYPES OF DIVERSION STRUCTURES. AN AUTOMATIC BACKUP SYSTEM MUST BE INSTALLED IF ALTERNATIVE #2 (PUMPED DIVERSION) IS THE SOLE METHOD OF DIVERSION.
 - 1.7. DIVERSION PIPES MAY BE RELOCATED DURING CONSTRUCTION.
 - 1.8. FOLLOWING ENGINEER'S APPROVAL OF THE COMPLETED WORK, DIVERSION SHALL BE REMOVED IMMEDIATELY, IN AN UPSTREAM DIRECTION.
2. FISH REMOVAL
 - 2.1. FISH SHALL BE REMOVED FROM THE DIVERTED REACHES BY A QUALIFIED FISHERIES BIOLOGIST, LICENSED FOR SUCH ACTIVITIES BY THE NATIONAL MARINE FISHERIES SERVICE AND THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE.
 - 2.2. BLOCK NETS SHALL BE PROVIDED AND INSTALLED BY THE FISHERIES BIOLOGIST. BLOCK NETS SHALL BE MAINTAINED BY THE CONTRACTOR BOTH UPSTREAM AND DOWNSTREAM OF THE WORK AREA, THROUGHOUT THE PERIOD OF CONSTRUCTION. MAINTENANCE INCLUDES PERIODIC REMOVAL OF ACCUMULATED DEBRIS, AS NECESSARY TO ENSURE FUNCTION. BLOCK NETS SHALL BE REMOVED BY THE FISHERIES BIOLOGIST AFTER THE DIVERSION IS REMOVED AND THE IN CHANNEL WORK AREA IS RE-WATERED.
3. DIVERSION SYSTEM
 - 3.1. THE CONTRACTOR SHALL INSTALL A TEMPORARY SEALED SANDBAG DAM TO CAPTURE AND DIVERT STREAM FLOW UPSTREAM OF THE PROJECT SITE. THE DAM AND METHOD OF SEALING SHALL BE PLACED AT AN APPROPRIATE DEPTH TO CAPTURE SUBSURFACE STREAM FLOW, AS NEEDED TO DEWATER THE STREAMBED.
 - 3.2. THE CONTRACTOR SHALL MAINTAIN THE DIVERSION DAM DURING THE COURSE OF CONSTRUCTION WORK.
 - 3.3. IN THE EVENT OF A SIGNIFICANT STORM, THE CONTRACTOR SHALL BE PREPARED TO TAKE NECESSARY MEASURES TO INSURE SAFE PASSAGE OF STORM WATER FLOW THROUGH THE PROJECT AREA, WITHOUT DAMAGE TO EXISTING STRUCTURES, OR INTRODUCTION OF EXCESSIVE SEDIMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY EROSION CONTROL B.M.P.'S.
4. DEWATERING OF CONSTRUCTION AREAS
 - 4.1. ANY DEWATERING ACTIVITIES WHICH MAY BE REQUIRED FOR CONSTRUCTION PURPOSES SHALL BE CONDUCTED IN A MANNER WHICH DOES NOT RESULT IN AN EXCEEDANCE OF ANY WATER QUALITY REQUIREMENTS ESTABLISHED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD.
 - 4.2. DISCHARGE OF WATER FROM THE DEWATERED CONSTRUCTION SITE, EITHER BY GRAVITY OR PUMPING, SHALL BE PERFORMED IN A MANNER TO PREVENT EXCESSIVE TURBIDITY FROM ENTERING THE RECEIVING WATERWAYS AND TO PREVENT SCOUR AND EROSION OUTSIDE OF THE CONSTRUCTION SITE. PUMPED WATER SHOULD BE PRE-FILTERED WITH SAND/GRAVEL PACK AROUND SUMPS FOR SUBSURFACE FLOWS AND A SILT FENCE OR HAY BALES AROUND PUMPS FOR SURFACE FLOW. PUMPED WATER SHALL BE DISCHARGED INTO ISOLATED LOCAL DEPRESSIONS OR TREATMENT FACILITIES, AS NECESSARY TO MEET WATER QUALITY REQUIREMENTS. WHERE WATER TO BE DISCHARGED INTO THE CREEK WILL CREATE EXCESSIVE TURBIDITY, THE WATER SHALL BE ROUTED THROUGH A SEDIMENT INTERCEPTOR OR OTHER FACILITIES TO REMOVE SEDIMENT FROM WATER.
 - 4.3. CONTRACTOR SHALL SUPPLY ALL NECESSARY PUMPS, PIPING, FILTERS, SHORING, AND OTHER TOOLS AND MATERIALS NECESSARY FOR DEWATERING.



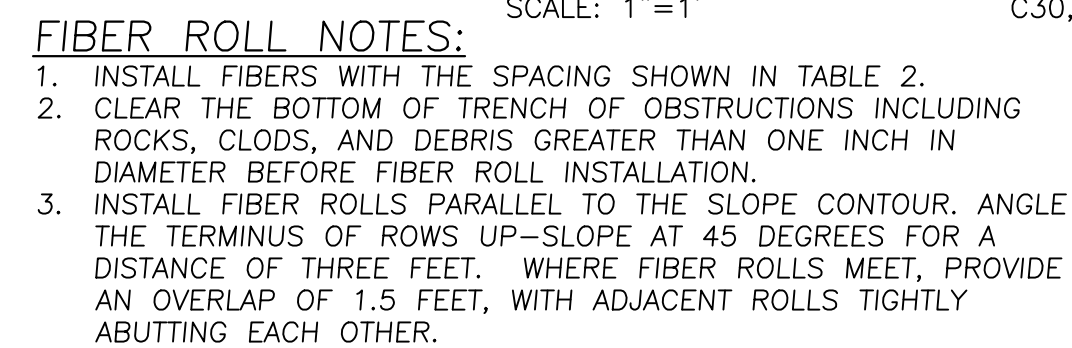
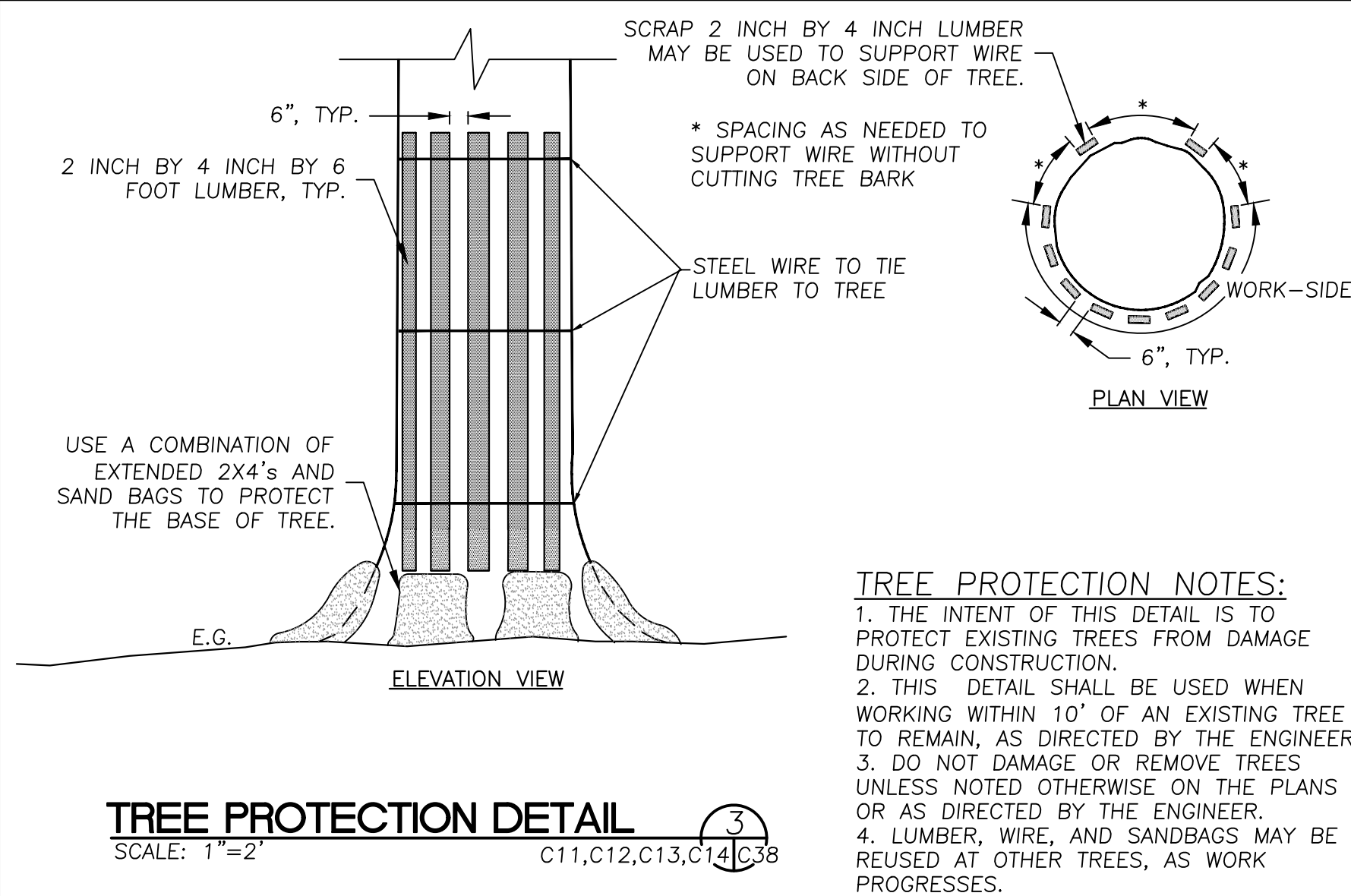
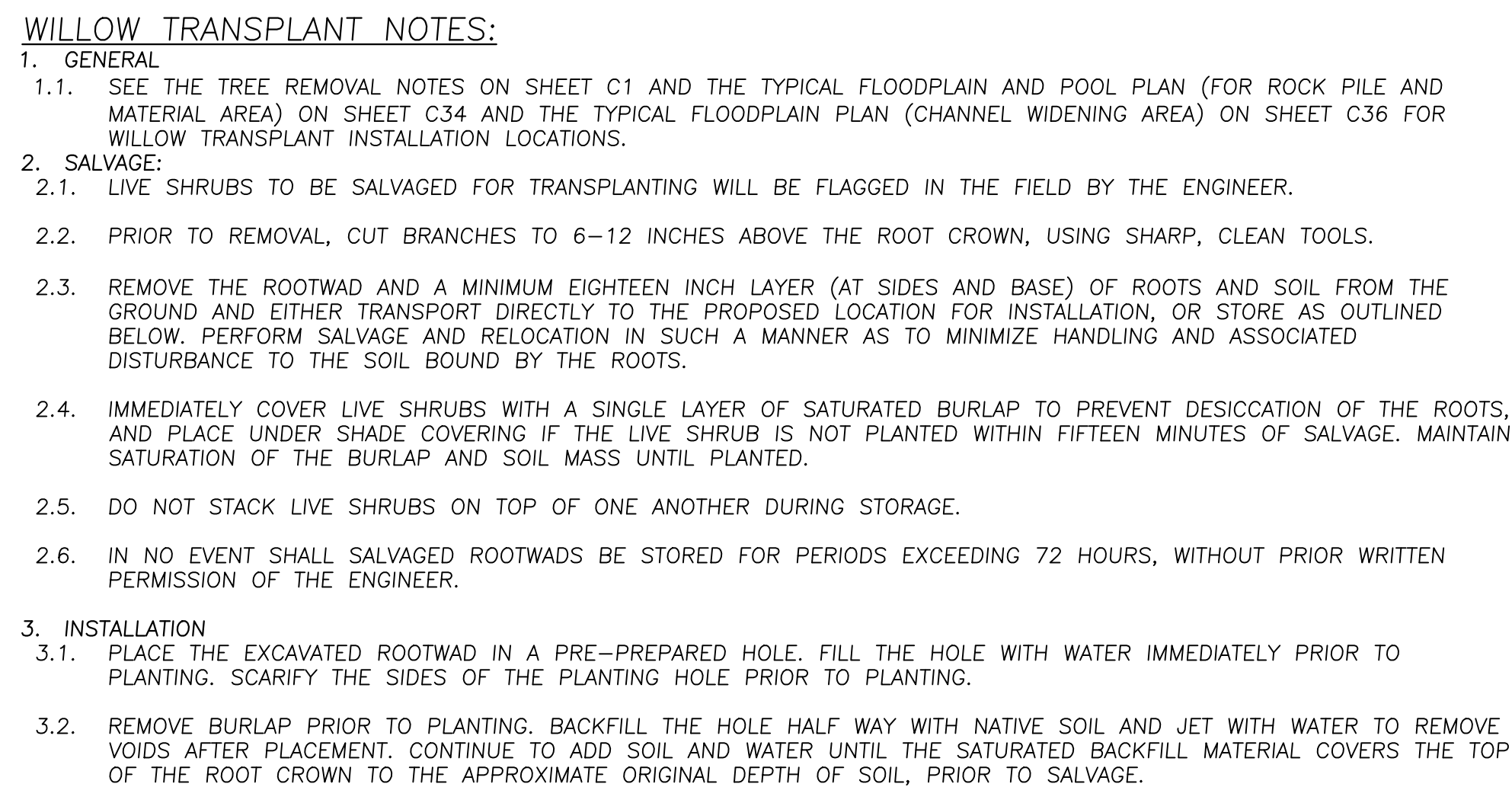
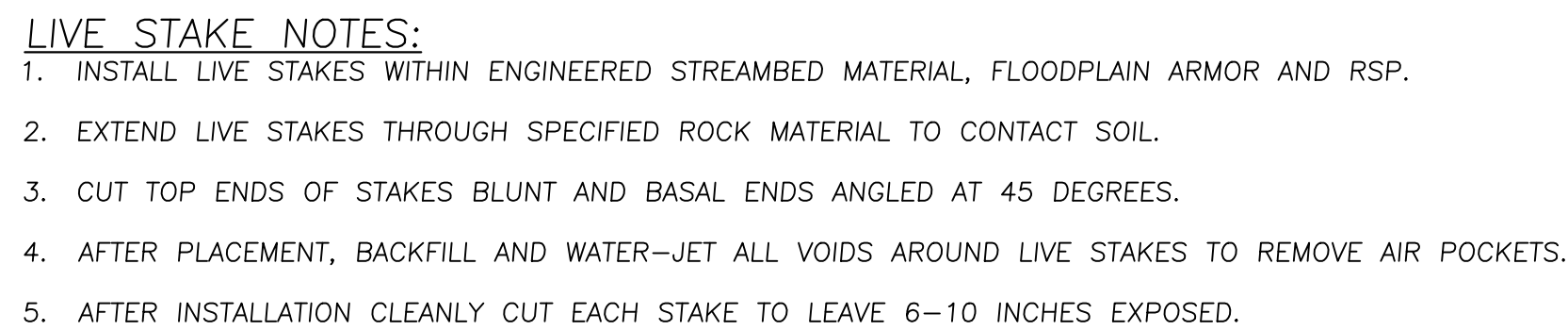
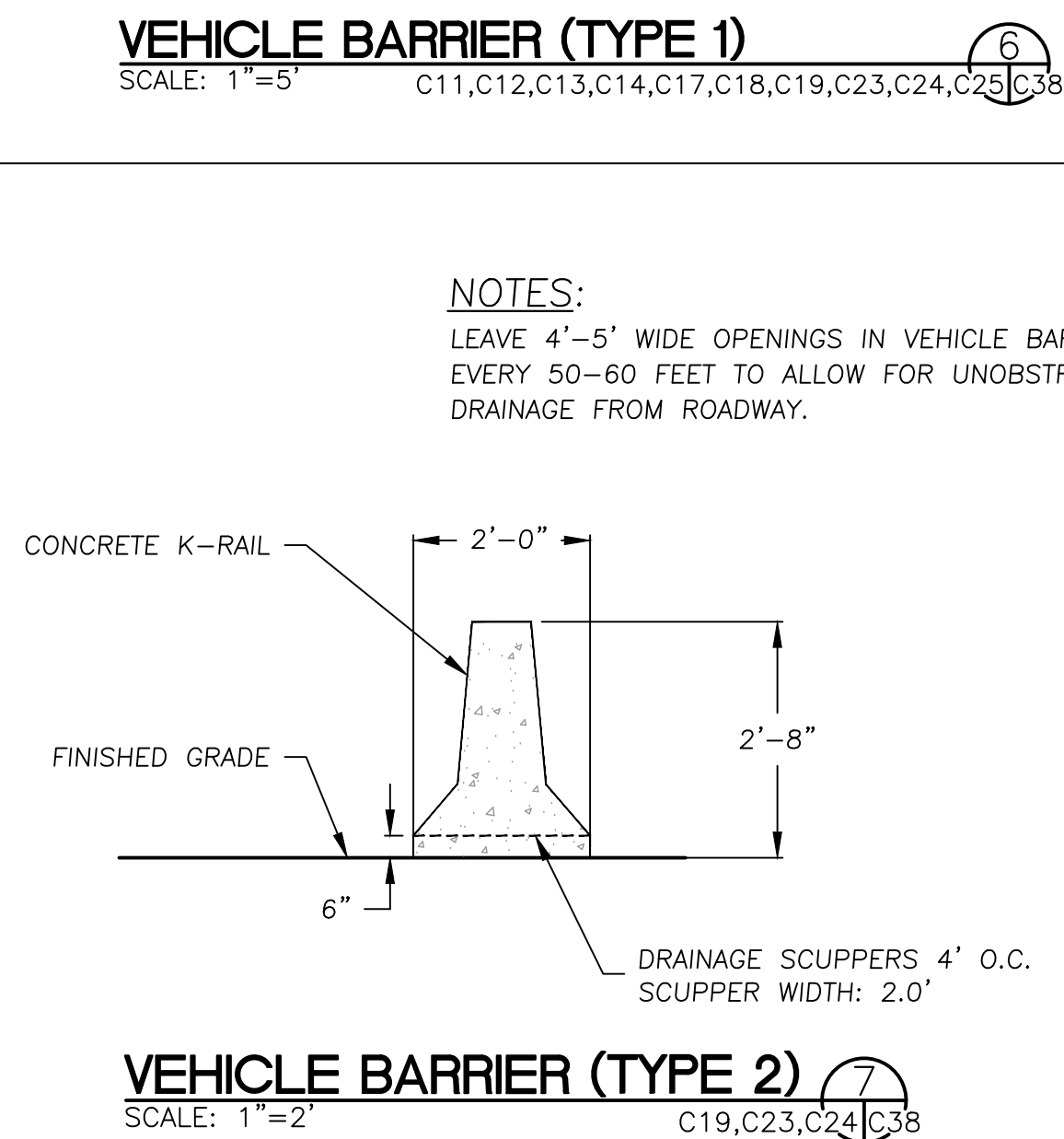
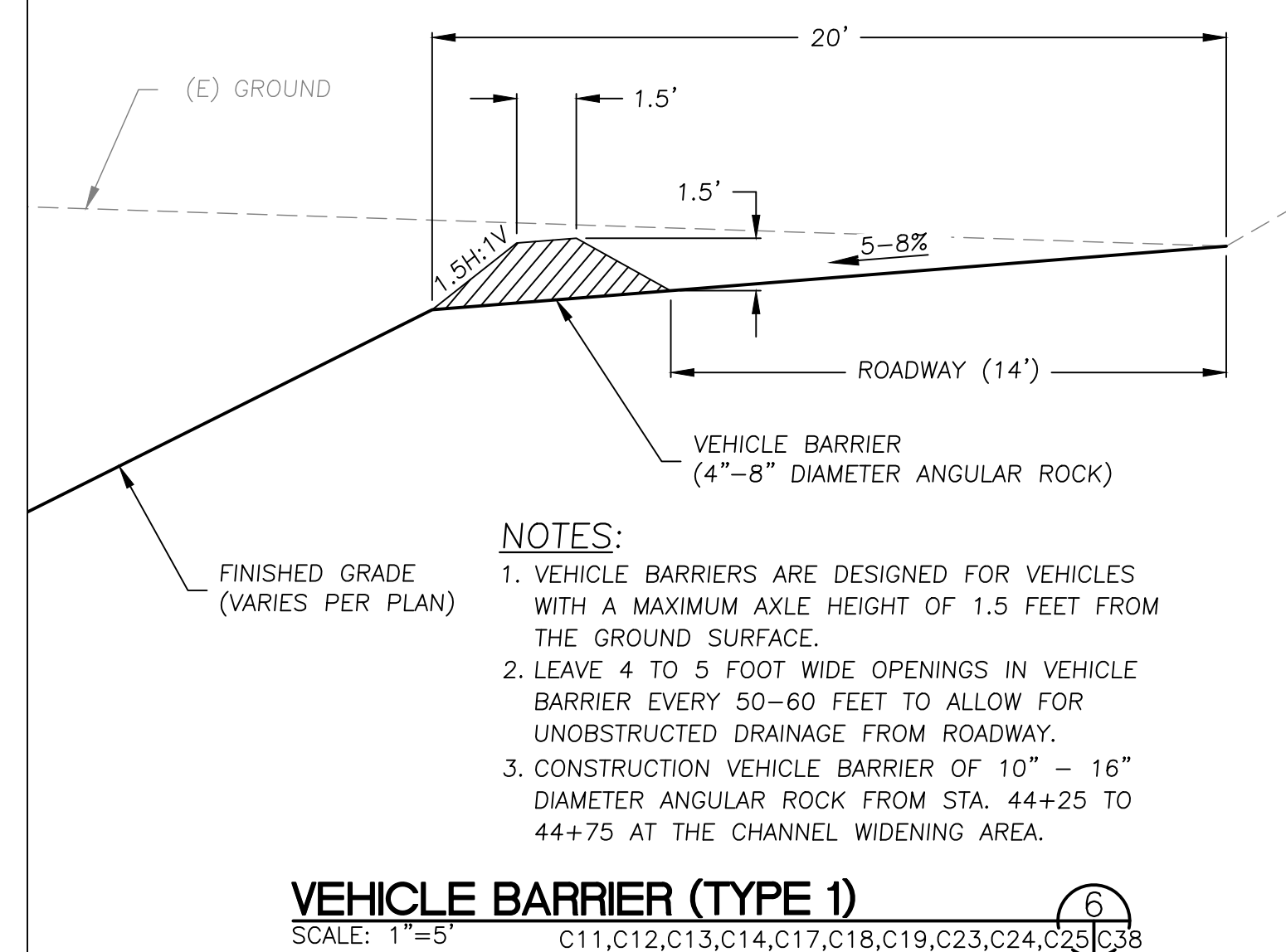


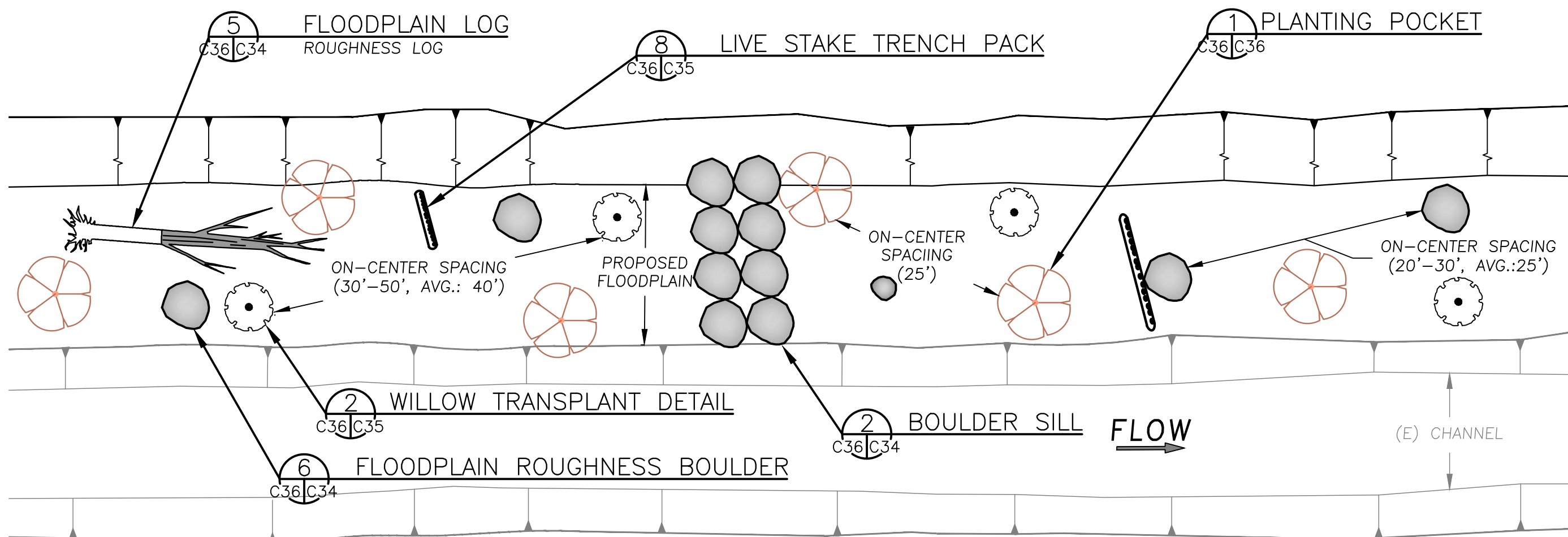
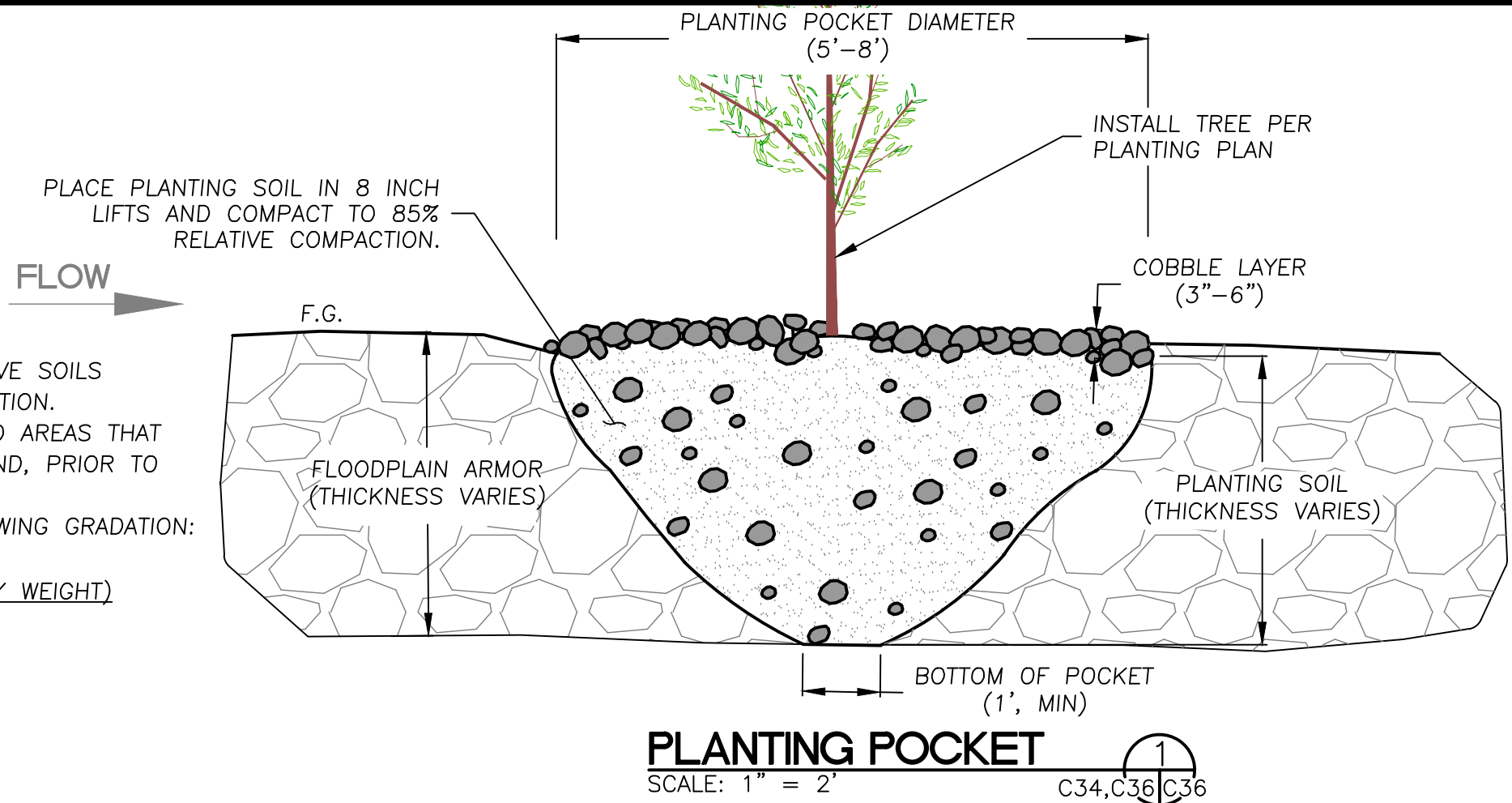
TABLE #: FIBER ROLL SPACING	
SLOPE INCLINATION	SPACING ALONG SLOPE
2H:1V AND STEEPER	10 FEET
4H:1V TO 2H:1V	15 FEET
10H:1V TO 4H:1V	20 FEET
FLATTER THAN 10H:1V	MAX. 50 FEET



PLANTING SOIL NOTES

1. PLANTING SOIL SHALL CONSIST OF NATIVE SOILS EXCAVATED DURING PROJECT CONSTRUCTION.
2. OBTAIN PLANTING SOIL FROM EXCAVATED AREAS THAT ARE WITHIN 3 FEET OF EXISTING GROUND, PRIOR TO DISTURBANCE.
3. PLANTING SOIL SHALL MEET THE FOLLOWING GRADATION:

U.S. SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
6"	100
3"	90-95
1"	80-90
No.4	60-80
No.40	30-60
No.100	15-30



LIVE STAKE TRENCH PACK NOTES:

1. LIVE STAKE TRENCH PACK LOCATIONS SHOWN ARE SCHEMATIC. TRENCH PACK LOCATION WILL BE STAKED IN THE FIELD BY THE ENGINEER.
2. INSTALL 30-50 LF (AVERAGE 40 LF) OF TRENCH PACK FOR EVERY 100 LF OF CONSTRUCTED CHANNEL.

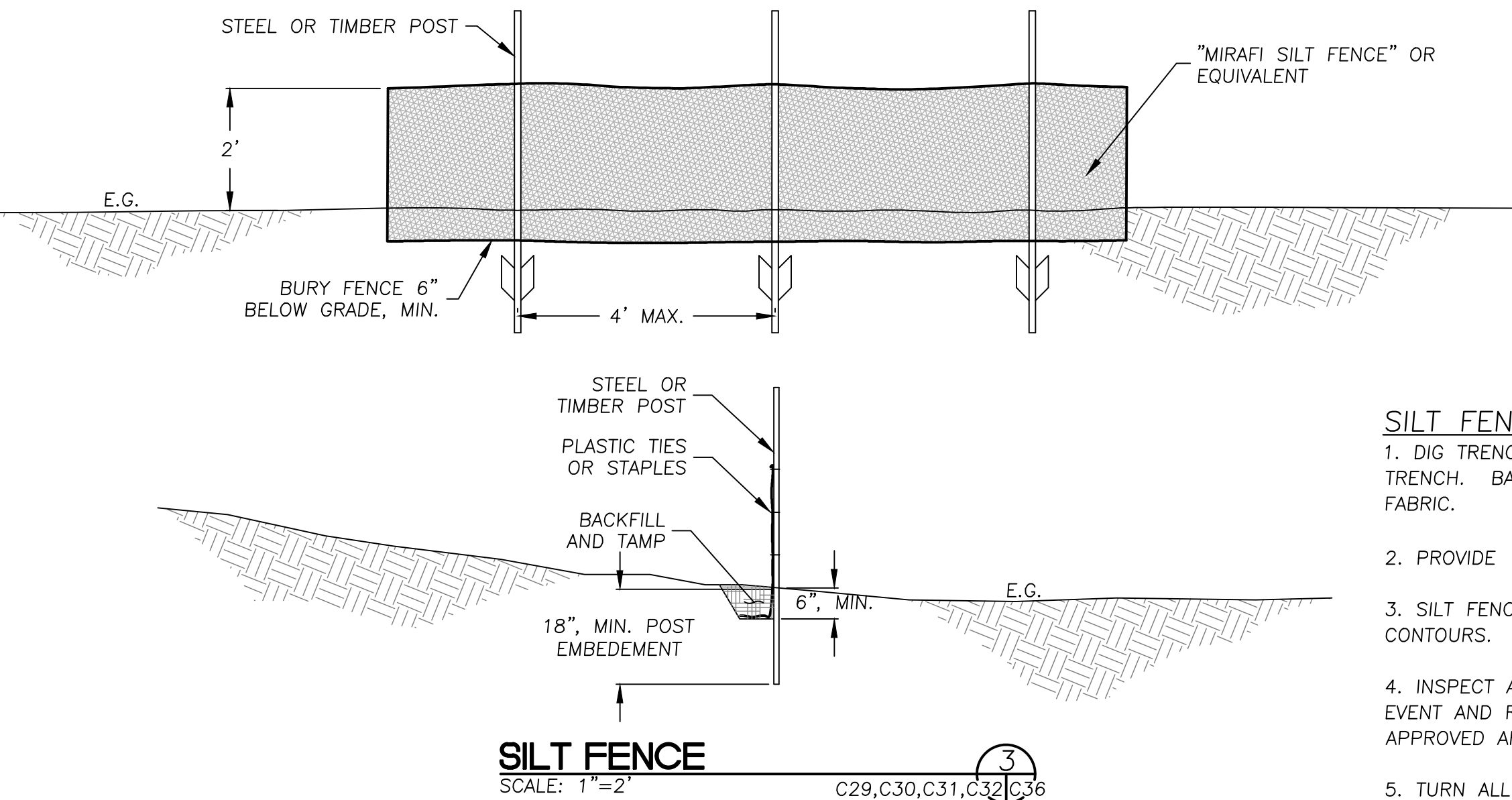
PLANTING POCKET NOTES:

1. INSTALL CONTAINER PLANTS IN THE PLANTING POCKETS PER THE REVEGETATION PLANS SHEETS L4 AND L5.

TYPICAL FLOODPLAIN PLAN (FOR CHANNEL WIDENING)

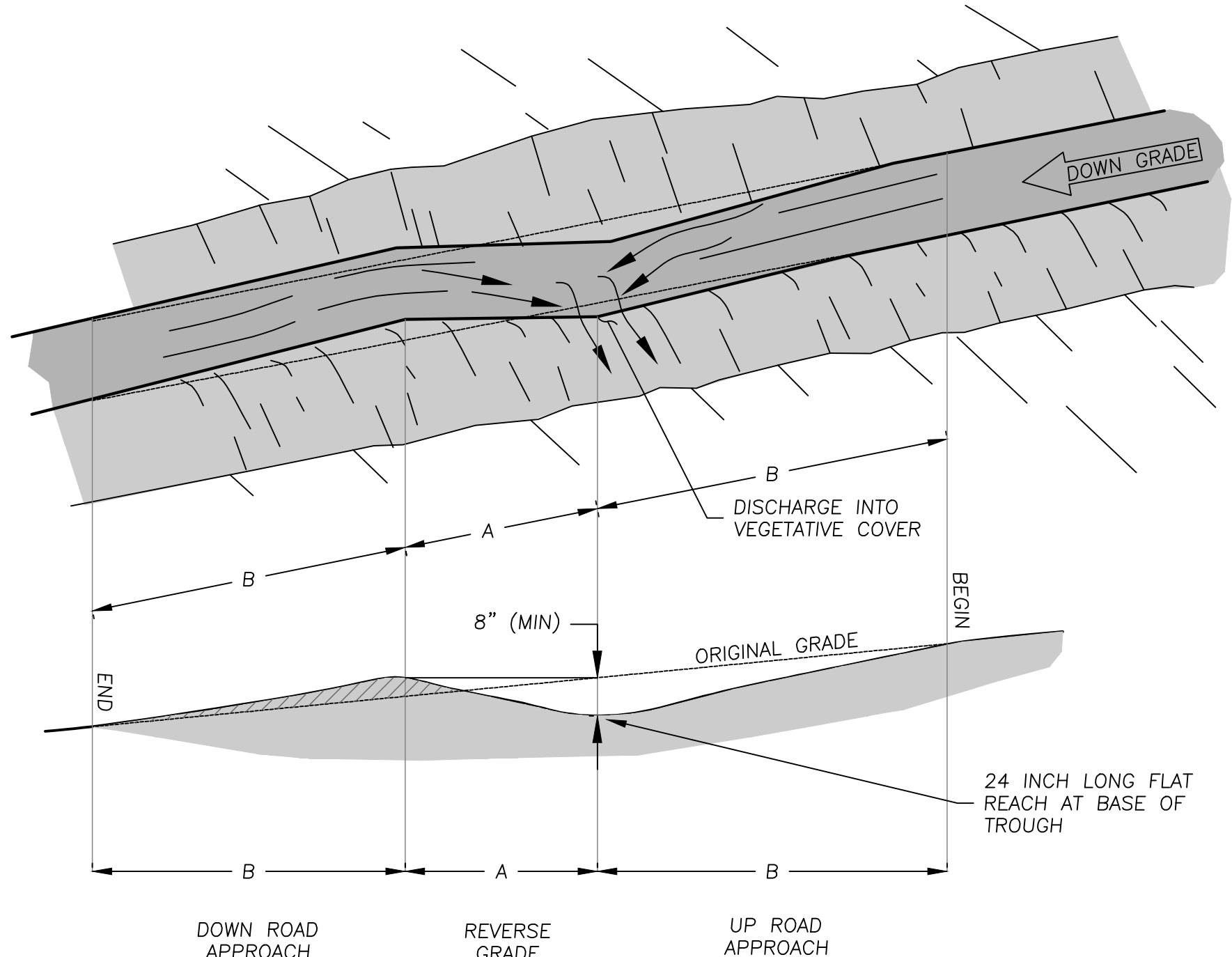
SCALE: 1" = 10'

C11, C12, C13, C14, C17, C18, C36

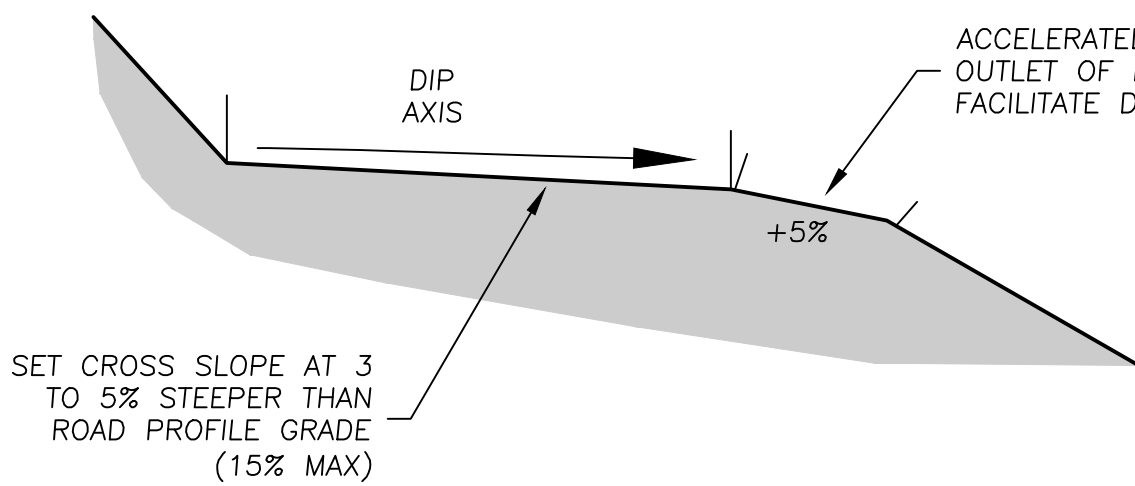


SILT FENCE NOTES

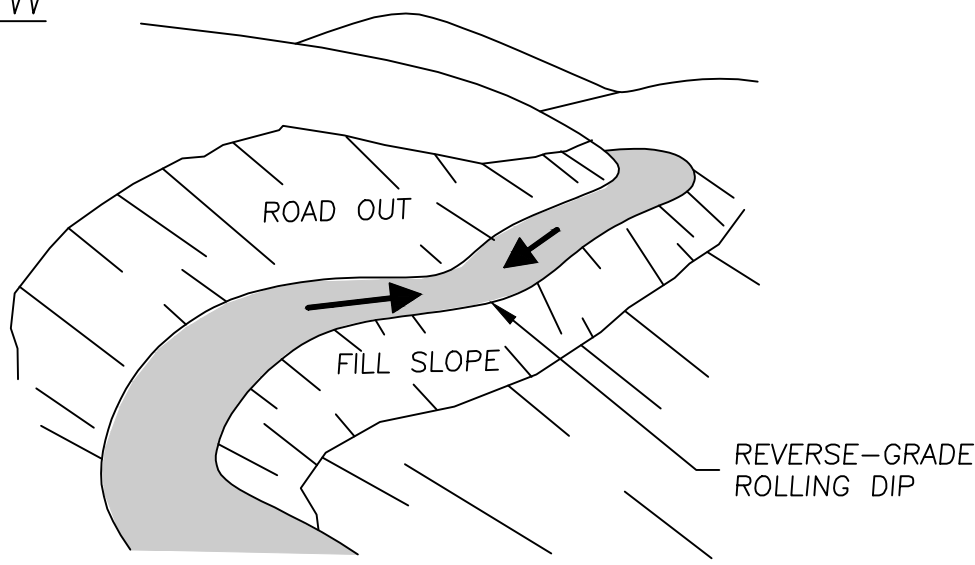
1. DIG TRENCH FIRST, THEN ERECT FENCE IN TRENCH. BACKFILL AND COMPACT SOIL TO SECURE FABRIC.
2. PROVIDE 1' MINIMUM OVERLAP AT FENCE SPLICES.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS.
4. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE ACCUMULATED SEDIMENT, TO AN APPROVED AREA.
5. TURN ALL FENCE TERMINATIONS UPSLOPE TO PREVENT FLANKING.



REVERSE GRADE DIP OVERVIEW



ROAD SECTION



OBLIQUE VIEW

ROAD GRADE (%)	TROUGH	A: REVERSE GRADE	B: UP ROAD APPROACH DOWN ROAD TRAIL	GRADE (%)
	MINIMUM DEPTH BELOW DOWNSLOPE CREST	MINIMUM DISTANCE AND GRADE FROM TROUGH AXIS TO DOWNROAD CREST (FT)	DISTANCE FROM UP-ROAD START OF ROLLING DIP TO TROUGH AXIS (FT)	
<5			17	10
5 TO 10		15 FEET AT 5%	30	15
10 TO 15			60	20
>15		7 FEET AT 10%	60	25

NOTES

1. CUT DIP INTO THE ROAD WITH THE DOWN ROAD APPROACH BUILT UP ON COMPACTED FILL.
2. CONSTRUCT DIP TO A MINIMUM OF 8 INCHES DEEP AND INCORPORATE A 2 FOOT LONG FLAT REACH AT THE BASE OF THE TROUGH (UNLESS OTHERWISE DIRECTED).
3. SLOPE THE DOWNROAD REVERSE GRADE AT 5% FOR A MINIMUM OF 7 FEET, TO 10% FOR MINIMUM OF 15 FEET, TO FORM THE MINIMUM 8 INCH DEEP DIP. ON ROADS STEEPER THAN 15% A STEEPER REVERSE-GRADE DIP MAY BE REQUIRED.
4. OUTSLOPE DIP AXIS 3-5% GREATER THAN ROAD GRADE TO MAXIMUM 15%. DIP AXIS MAY BE SKEWED DOWN ROAD AT 30 DEGREES TO FACILITATE INSTALLATION OF DIPS ON STEEPER GRADES.
5. DO NOT PUSH MATERIAL OVER THE EDGE OF SLOPE. ALL EXCAVATED MATERIAL SHALL BE USED TO CONSTRUCT THE DOWN ROAD APPROACH.
6. DIP LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. FINAL LOCATIONS WILL BE STAKED IN THE FIELD BY THE ENGINEER.
7. ON EXISTING ROADS BUILD DOWNSLOPE DIP WITH COMPACTED FILL.

REVERSE GRADE ROLLING DIP

SCALE: N.T.S.

C11, C12, C13, C14, C17, C18, C19, C19, C23, C24, C36

ROCK SPECIFICATIONS

THERE ARE SIX CLASSES OF ROCK SPECIFIED ON THIS PROJECT;

- (1) – ENGINEERED STREAMBED MATERIAL
- (2) – FLOODPLAIN ARMOR
- (3) – ROCK SLOPE PROTECTION (RSP)
- (4) – WEIR BOULDERS
- (5) – SILL BOULDERS
- (6) – FLOODPLAIN ROUGHNESS BOULDERS

ALL ROCK SHALL CONFORM TO THE FOLLOWING QUALITY REQUIREMENTS:

- 1) RESISTANT TO WEATHERING AND WATER ACTION AND FREE OF ORGANIC OR OTHER UNSUITABLE MATERIAL. DO NOT USE SHALE, ROCK WITH SHALE SEAMS, OR OTHER FISSILE OR FISSURED ROCK THAT MAY BREAK INTO SMALLER PIECES IN THE PROCESS OF HANDLING AND PLACING.
- 2) SUB-ROUNDED TO ANGULAR IN SHAPE.
- 3) GRANITE OR HAVE A SPECIFIC GRAVITY EQUAL TO OR GREATER THAN THAT OF GRANITE.
- 4) COLOR AND TEXTURE CONSTANT THROUGHOUT THE STOCKPILE.

PROVIDE SAMPLES OF EACH GRADATION SPECIFIED FOR APPROVAL BY THE ENGINEER, PRIOR TO STOCKPILING AT INDIVIDUAL PROJECT AREAS.

INDIVIDUAL ROCK CLASSES AND PLACEMENT METHODS ARE FURTHER DEFINED AS FOLLOWS:

1 – ENGINEERED STREAMBED MATERIAL

ENGINEERED STREAMBED MATERIAL SHALL CONSIST OF SANDS, GRAVELS, COBBLES, AND BOULDERS FREE OF ORGANIC MATTER, AND MEETING THE FOLLOWING GRADATION SPECIFICATIONS (REFER TO DRAWINGS FOR TYPE LOCATIONS):

TYPE 1 GRADATION:

PERCENT OF MIX (BY WEIGHT)	SIZE RANGE (INCHES)
20	12–24
30	6–12
30	2–6
12	0.08–2
8	<0.08

TYPE 2 GRADATION:

PERCENT OF MIX (BY WEIGHT)	SIZE RANGE (INCHES)
20	24–36
30	16–24
20	6–16
10	2–6
12	0.08–2
8	<0.08

TYPE 3 GRADATION:

PERCENT OF MIX (BY WEIGHT)	SIZE RANGE (INCHES)
20	30–42
30	16–30
20	6–16
10	2–6
12	0.08–2
8	<0.08

TYPE 4 GRADATION:

PERCENT OF MIX (BY WEIGHT)	SIZE RANGE (INCHES)
20	48–60
30	24–48
20	10–24
10	2–10
12	0.08–2
8	<0.08

A) PLACE ENGINEERED STREAMBED MATERIAL TO THE LINES, GRADES AND THICKNESSES SHOWN ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER. UNIFORMLY DISTRIBUTE LARGE STONES TO PRODUCE THE REQUIRED GRADATION OF ROCK. PREVENT CONTAMINATION OF ROCK MATERIALS BY EXCAVATION AND/OR EARTH MATERIALS.

B) FOLLOWING PLACEMENT, WATER-JET VOIDS WITHIN ROCK TO IMPROVE COMPACTION AND EMBED THE FINES WITHIN THE MIX. START JETTING AT THE UPSTREAM LIMITS OF PLACEMENT AND PROGRESS DOWNSTREAM. CONTINUE JETTING UNTIL THE TURBIDITY LEVELS OF RUNOFF PRODUCED FROM THE JETTING PROCESS HAVE REACHED AN ACCEPTABLE LEVEL AS DETERMINED BY THE ENGINEER. RETAIN ALL SEDIMENT-LADEN RUNOFF GENERATED BY THE JETTING OPERATIONS SO ENTRAINMENT SEDIMENT CAN SETTLE OUT OR BE PUMPED TO A SETTLING TANK OR SIMILAR DEVICE TO REDUCE TURBIDITY TO ACCEPTABLE LEVELS, IN COMPLIANCE WITH PERMIT CONDITIONS, PRIOR TO DISCHARGE TO THE CREEK. DISPOSE OF ALL CAPTURED SEDIMENT AT AN APPROVED LOCATION.

2 – FLOODPLAIN ARMOR

FLOODPLAIN ARMOR MATERIAL SHALL CONSIST OF SANDS, GRAVELS, COBBLES, AND BOULDERS FREE OF ORGANIC MATTER, AND MEETING THE FOLLOWING GRADATION SPECIFICATIONS (REFER TO DRAWINGS FOR TYPE LOCATIONS):

TYPE 5 GRADATION:

COMPLY WITH THE ENGINEERED STREAMBED MATERIAL TYPE 1 GRADATION.

TYPE 6 GRADATION:

PERCENT OF MIX (BY WEIGHT)	SIZE RANGE (INCHES)
20	16–30
30	10–16
20	4–10
10	2–4
12	0.08–2
8	<0.08

TYPE 7 GRADATION:

COMPLY WITH THE ENGINEERED STREAMBED MATERIAL TYPE 3 GRADATION.

TYPE 8 GRADATION:

COMPLY WITH THE ENGINEERED STREAMBED MATERIAL TYPE 4 GRADATION.

A) PLACE FLOODPLAIN ARMOR MATERIAL TO THE LINES, GRADES AND DEPTHS SHOWN ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER. UNIFORMLY DISTRIBUTE LARGE STONES TO PRODUCE THE REQUIRED GRADATION OF ROCK. PREVENT CONTAMINATION OF ROCK MATERIALS BY EXCAVATION AND/OR EARTH MATERIALS.

B) FOLLOWING PLACEMENT, WATER-JET VOIDS WITHIN ROCK TO IMPROVE COMPACTION AND EMBED THE FINES WITHIN THE MIX. START JETTING AT THE UPSTREAM LIMITS OF PLACEMENT AND PROGRESS DOWNSTREAM. CONTINUE JETTING UNTIL THE TURBIDITY LEVELS OF RUNOFF PRODUCED FROM THE JETTING PROCESS HAVE REACHED AN ACCEPTABLE LEVEL AS DETERMINED BY THE ENGINEER. RETAIN ALL SEDIMENT-LADEN RUNOFF GENERATED BY THE JETTING OPERATIONS SO ENTRAINMENT SEDIMENT CAN SETTLE OUT OR BE PUMPED TO A SETTLING TANK OR SIMILAR DEVICE TO REDUCE TURBIDITY TO ACCEPTABLE LEVELS, IN COMPLIANCE WITH PERMIT CONDITIONS, PRIOR TO DISCHARGE TO THE CREEK. DISPOSE OF ALL CAPTURED SEDIMENT AT AN APPROVED LOCATION.

3 – ROCK SLOPE PROTECTION

A) ROCK SLOPE PROTECTION (RSP) SHALL CONFORM TO SECTION 72–2.02 MATERIALS OF THE STANDARD SPECIFICATIONS AND MEET THE MATERIAL GRADATIONS SHOWN ON THE DRAWINGS WHERE PROPOSED RSP IS SHOWN.

B) BACKFILL VOIDS WITHIN THE ROCK SLOPE PROTECTION USING USING NATIVE STREAMBED MATERIAL. IF GRANULAR NATIVE MATERIAL IS NOT AVAILABLE, BLEND SAND, GRAVELS, AND NATIVE SOILS TO THE SATISFACTION OF THE ENGINEER FOR USE IN BACKFILLING THE RSP VOIDS.

C) PLACE BACKFILL MATERIAL TO MATCH THE FINISHED SURFACE OF THE RSP AND WATER-JET TO FILL ALL VOIDS, AS DIRECTED BY THE ENGINEER.

ROCK SLOPE PROTECTION FABRIC

1. PLACE GEOTEXTILE FABRIC BELOW ROCK SLOPE PROTECTION.
2. USE NON-WOVEN, GEOTEX 1601, AS MANUFACTURED BY SYNTHETIC INDUSTRIES; OR MIRAFI 1160N, AS MANUFACTURED BY TC MIRAFI; OR APPROVED EQUAL.

INSTALLATION

1. PREPARE SURFACE TO RECEIVE THE GEOTEXTILE TO A RELATIVELY SMOOTH CONDITION, FREE OF OBSTRUCTIONS, DEPRESSIONS, DEBRIS, AND SOFT OR LOW DENSITY POCKETS OF MATERIAL.
2. PLACE AND SECURE A LAYER OF GEOTEXTILE FABRIC BELOW THE FIRST ROCK LAYER. AT THE TIME OF INSTALLATION, THE GEOTEXTILE WILL BE REJECTED IF IT HAS DEFECTS, RIPS, HOLES, FLAWS, DETERIORATION, OR DAMAGE INCURRED DURING MANUFACTURE, TRANSPORTATION, OR STORAGE.
3. PLACE GEOTEXTILE WITH THE LONG DIMENSION PARALLEL TO FLOW AND LAID SMOOTH AND FREE OF TENSION, STRESS, FOLDS, WRINKLES, OR CREASES.

4 – WEIR BOULDERS

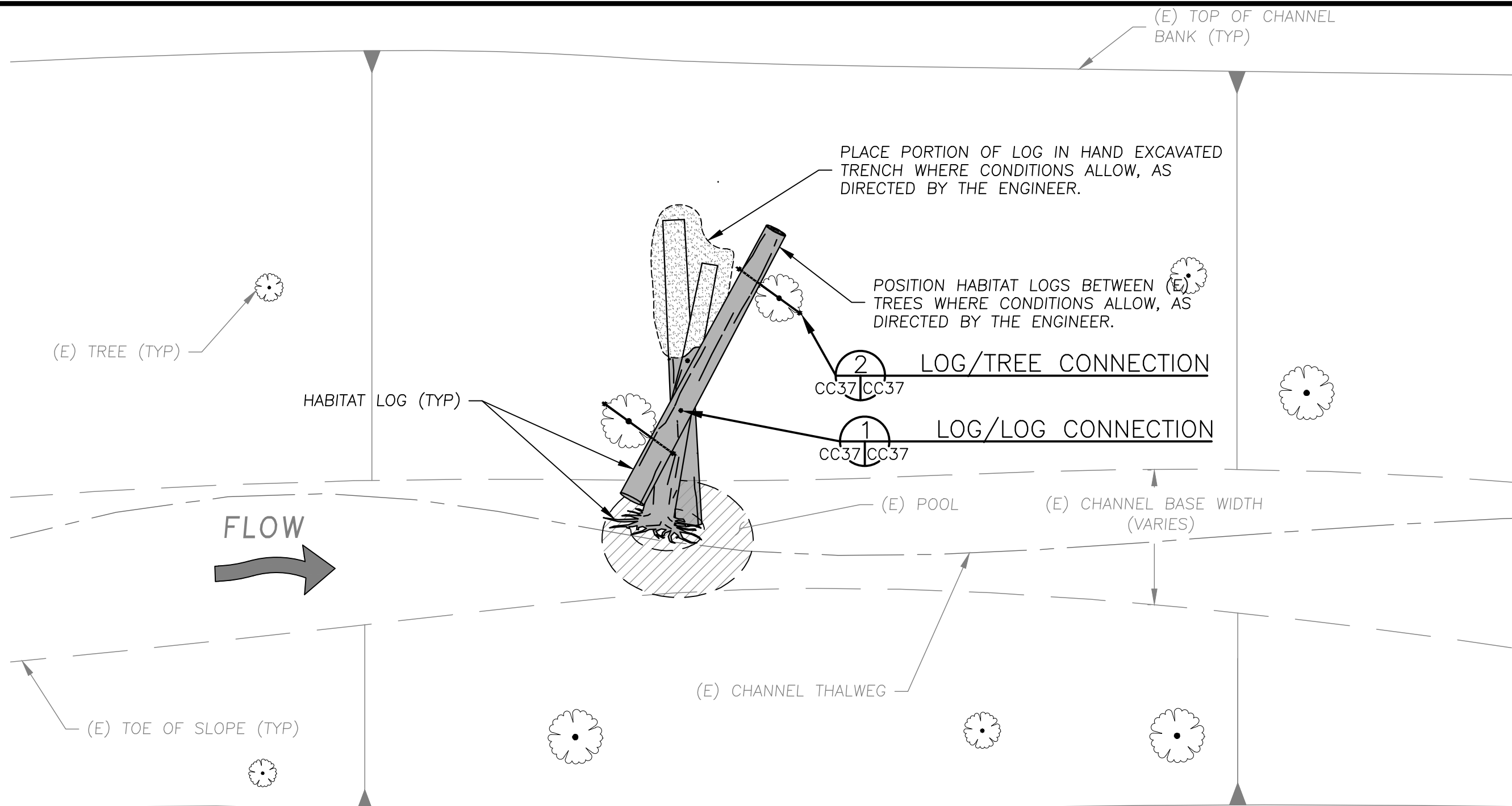
A) WEIR BOULDERS SHALL HAVE A MINIMUM Y-AXIS DIMENSION OF 4 FEET AND A MINIMUM WEIGHT OF 3 TONS.

5 – SILL BOULDERS

A) SILL BOULDERS SHALL BE BETWEEN THE D84–D100 OF THE SPECIFIED FLOODPLAIN ARMOR GRADATION AT THE LOCATION OF THE SILL.

6 – FLOODPLAIN ROUGHNESS BOULDERS

A) FLOODPLAIN ROUGHNESS BOULDERS SHALL MEET THE D84 (MIN.) OF THE SPECIFIED FLOODPLAIN ARMOR GRADATION AT THE LOCATION OF THE FLOODPLAIN ROUGHNESS BOULDER.



HABITAT LOG PLAN

SCALE: 1" = 5'

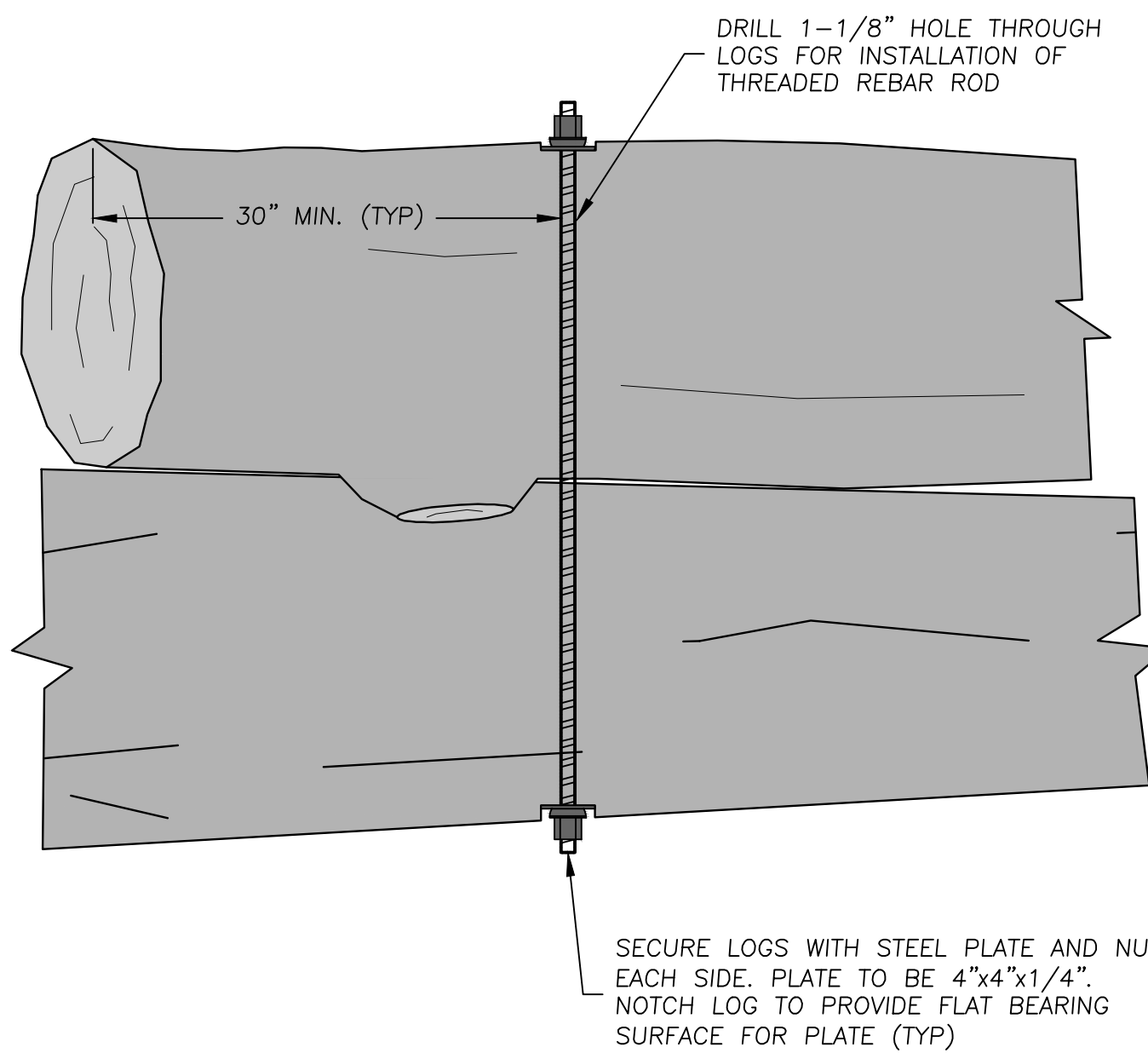
HABITAT LOG NOTES:

1. GENERAL

- 1.1. PLACE THREE HABITAT LOGS AT EACH OF FOUR LOCATIONS PER REACH, IN REACHES R14 TO R16 AND R19 TO R21 (SEE SHEET C2 FOR REACH LOCATIONS).
- 1.2. SOURCE HABITAT LOGS LOCALLY FROM EXISTING LIVE AND DEAD TREES. TREES TO BE SALVAGED WILL BE FLAGGED IN THE FIELD AT THE TIME OF CONSTRUCTION BY THE PROJECT ENGINEER AND ARBORIST. SALVAGE DOWNED TREES WHERE POSSIBLE, PREFERABLY WITH THE ROOTWAD INTACT. IF DOWNED LOGS ARE NOT AVAILABLE, THE PROJECT ARBORIST WILL IDENTIFY TREES TO BE FELLED. USE CONIFERS IF AVAILABLE. OAK, TAN OAK, WILLOW, ALDER, AND BAY ARE ACCEPTABLE SPECIES WHEN CONIFERS ARE NOT AVAILABLE.
- 1.3. LOCATIONS FOR HABITAT LOG PLACEMENT WILL BE DETERMINED BY THE ENGINEER AND FISHERIES BIOLOGIST AT THE TIME OF CONSTRUCTION. FINAL LOCATIONS SHALL BE BASED ON LOCAL GEOMORPHIC CONDITIONS AND THE AVAILABILITY OF EXISTING POOLS AND LOGS, MEETING THE CRITERIA BELOW.
- 1.4. INCORPORATE HABITAT LOGS INTO EXISTING POOLS WHEN LOCALLY AVAILABLE.

2. LOG PLACEMENT AND DIMENSIONS

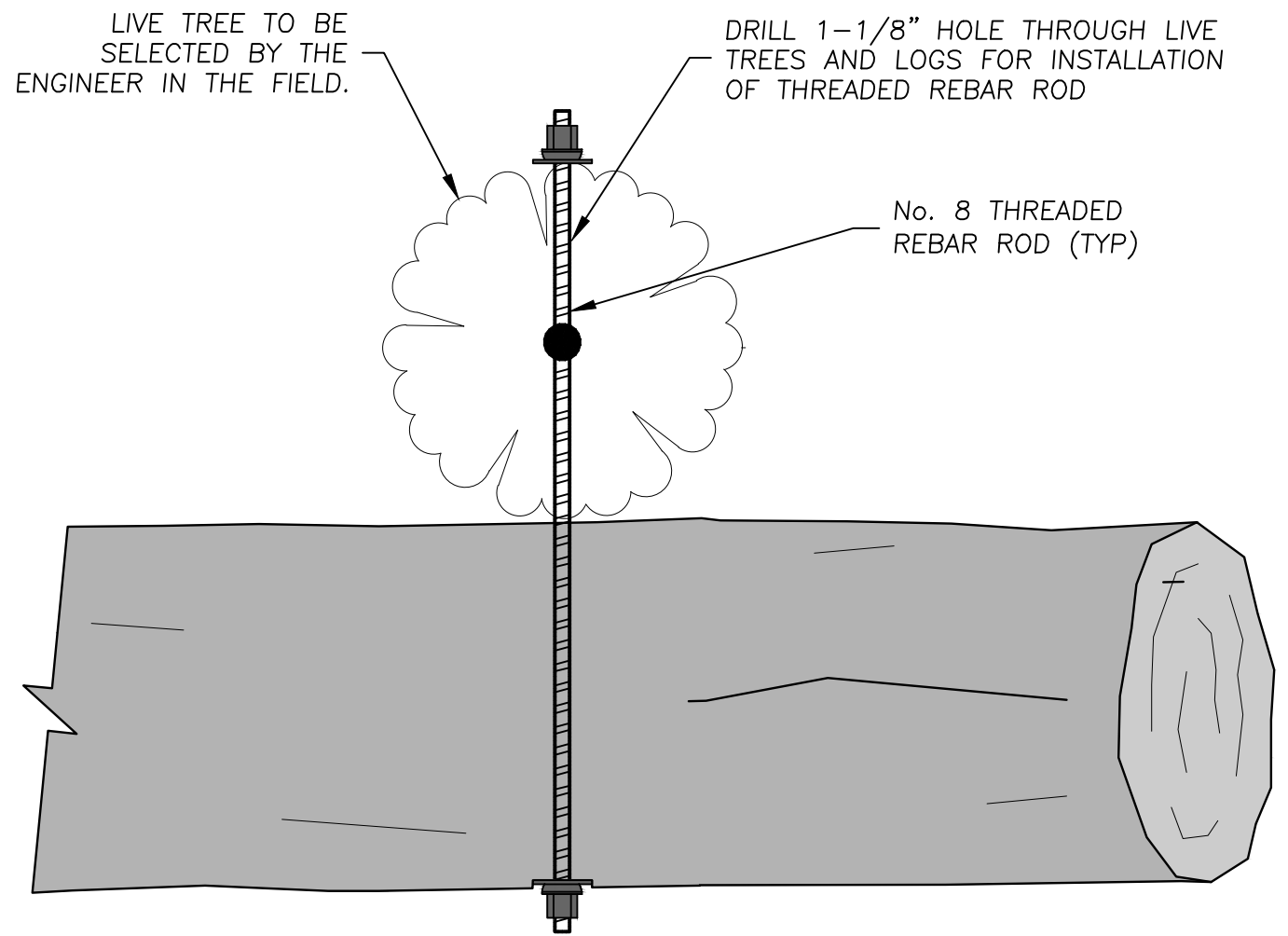
- 2.1. HABITAT LOG DESIGNS ARE SHOWN CONCEPTUALLY DUE TO THE INHERENT VARIABILITY OF MATERIAL PROPERTIES. THE DESIGN REQUIRES THAT THE ENGINEER OBSERVE INSTALLATION OF THE HABITAT LOGS TO ENSURE THE INTENT OF THE DESIGN IS MET. OBSERVATIONS WILL INCLUDE LOG SELECTION, PLACEMENT, AND ANCHORING STABILIZATION.
- 2.2. HABITAT LOGS SHALL BE A MINIMUM OF 12 FT. IN LENGTH AND 1 FT. IN DIAMETER, ALONG THE LENGTH OF THE LOG.
- 2.3. POSITION HABITAT LOGS BETWEEN EXISTING TREES WITH A PORTION OF THE LOG(S) BURIED IN A TRENCH WHERE CONDITIONS ALLOW.
- 2.4. SECURE HABITAT LOGS TOGETHER WHERE CONDITIONS ALLOW.
- 2.5. SECURE HABITAT LOGS, EITHER AS A GROUP OR INDIVIDUALLY, TO TWO STANDING LIVE TREES THAT ARE A MINIMUM OF 14-INCHES DIAMETER AT BREAST HEIGHT (DBH). WHERE CONDITIONS ALLOW FOR BURIAL OF A HABITAT LOG IN A TRENCH, SECURING THE LOG TO A SINGLE TREE MAY BE ALLOWED, AND WILL BE EVALUATED AT THE TIME OF CONSTRUCTION BY THE ENGINEER.
- 2.6. THE FINAL LOCATION AND NUMBER OF LOG/LOG CONNECTIONS BETWEEN HABITAT LOGS, AND LOG/TREE CONNECTIONS BETWEEN HABITAT LOGS AND STANDING LIVE TREES AT EACH HABITAT LOG INSTALLATION AREA WILL BE DETERMINED IN THE FIELD BY THE ENGINEER TO ENSURE THE LOGS ARE NOT MOBILIZED BY FLOOD FLOWS AND THAT THEY ARE PLACED IN GEOMORPHICALLY APPROPRIATE POSITIONS.



LOG/LOG CONNECTION

SCALE: 1"=1'

C37/C37



LOG/TREE CONNECTION

SCALE: 1"=1'

C37/C37

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE 2015 EDITION OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS, ISSUED BY THE DEPARTMENT OF TRANSPORTATION (HEREAFTER REFERRED TO AS "STANDARD SPECIFICATIONS").
2. NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE ENGINEER OR A DESIGNATED REPRESENTATIVE SHALL MONITOR THE CONSTRUCTION PROCESS, AS NECESSARY, TO ENSURE PROPER INSTALLATION PROCEDURES.
3. EXISTING UNDERGROUND UTILITY LOCATIONS:
 - A. PRIOR TO BEGINNING WORK, CONTACT ALL UTILITIES COMPANIES WITH REGARD TO WORKING OVER, UNDER, OR AROUND EXISTING FACILITIES AND TO OBTAIN INFORMATION REGARDING RESTRICTIONS THAT ARE REQUIRED TO PREVENT DAMAGE TO THE FACILITIES.
 - B. LOCATIONS SHOWN ARE COMPILED FROM INFORMATION SUPPLIED BY THE APPROPRIATE UTILITY AGENCIES AND FROM FIELD MEASUREMENTS TO ABOVE GROUND FEATURES READILY VISIBLE AT THE TIME OF SURVEY. LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE DIMENSIONS, SIZES, MATERIALS, LOCATIONS, AND DEPTH OF UNDERGROUND UTILITIES.
 - C. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE LOCATION AND/OR PROTECTION OF ALL EXISTING AND PROPOSED PIPING, UTILITIES, TRAFFIC SIGNAL EQUIPMENT (BOTH ABOVE GROUND AND BELOW GROUND), STRUCTURES, AND ALL OTHER EXISTING IMPROVEMENTS THROUGHOUT CONSTRUCTION.
 - D. PRIOR TO COMMENCING FABRICATION OR CONSTRUCTION, DISCOVER OR VERIFY THE ACTUAL DIMENSIONS, SIZES, MATERIALS, LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES AND POT HOLE THOSE AREAS WHERE POTENTIAL CONFLICTS ARE LIKELY OR DATA IS OTHERWISE INCOMPLETE.
 - E. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO PROTECT EXISTING UTILITIES DURING CONSTRUCTION OPERATIONS, AND SHALL BE SOLELY RESPONSIBLE FOR THE COST OF REPAIR/REPLACEMENT OF ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. CONTRACTOR TO CALL UNDERGROUND SERVICE ALERT (1-800-642-2444) TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO COMMENCING CONSTRUCTION.
 - F. UPON LEARNING OF THE EXISTENCE AND/OR LOCATIONS OF ANY UNDERGROUND FACILITIES NOT SHOWN OR SHOWN INACCURATELY ON THE PLANS OR NOT PROPERLY MARKED BY THE UTILITY OWNER, IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE CITY BY TELEPHONE AND IN WRITING.
 - G. UTILITY RELOCATIONS REQUIRED FOR THE CONSTRUCTION OF THE PROJECT FACILITIES WILL BE PERFORMED BY THE UTILITY COMPANY, UNLESS OTHERWISE NOTED.

DEMOLITION NOTES

1. THE REMOVAL OF EXISTING IMPROVEMENTS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 15 OF THE STANDARD SPECIFICATIONS.
2. EXISTING IMPROVEMENTS, ADJACENT PROPERTY, TREES AND PLANTS, UTILITIES AND OTHER FACILITIES THAT ARE NOT REMOVED SHALL BE PROTECTED FROM INJURY OR DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATIONS IN ACCORDANCE WITH SECTION 15.1 OF THE STANDARD SPECIFICATIONS.

1. GRADING SUMMARY:

OUTSIDE RECLAMATION AREA PLAN BOUNDARY
CHANNEL WIDENING AREA:
CUT VOLUME = 8,300 CY
FILL VOLUME= 200 CY
NET (CUT)= 8,100 CY

WITHIN RECLAMATION AREA PLAN BOUNDARY
CHANNEL WIDENING AREA:
CUT VOLUME = 14,000 CY
FILL VOLUME= 1,400 CY
NET (CUT)= 12,600 CY

SEDIMENT FAN AREA:
CUT VOLUME = 5,000 CY
FILL VOLUME= 0 CY
NET (CUT)= 5,000 CY

ROCK PILE AREA:
CUT VOLUME = 420,000 CY
FILL VOLUME= 1,600 CY
NET (CUT)= 418,400 CY

MATERIAL REMOVAL AREA:
CUT VOLUME = 141,000 CY
FILL VOLUME= 1,000 CY
NET (CUT)= 140,000 CY

PROJECT TOTAL
CUT VOLUME = 580,000 CY
FILL VOLUME= 4,000 CY
NET (CUT)= 576,000 CY

THE ABOVE QUANTITIES ARE APPROXIMATE IN-PLACE VOLUMES CALCULATED AS THE DIFFERENCE BETWEEN EXISTING GROUND AND THE PROPOSED FINISH GRADE, PREPARED FOR PERMITTING PURPOSES. ONLY EXISTING GROUND IS DEFINED BY THE TOPOGRAPHIC CONTOURS AND/OR SPOT ELEVATIONS ON THE PLANS. THE QUANTITIES FOR EXCAVATION OF EXISTING GROUND ARE SUBJECT TO THE FIELD CONDITIONS TO BE CONSTRUCTED, AS SHOWN ON THE DRAWINGS. THE QUANTITIES HAVE NOT BEEN FACTORED TO INCLUDE ALLOWANCES FOR BULKING, CLEARING AND GRUBBING, SUBSIDENCE, SHRINKAGE, OVER EXCAVATION, AND RECOMPACTION, UNDERGROUND UTILITY AND SUBSTRUCTURE SPOILS AND DEBRIS, AND/OR REMOVAL OF EXISTING MATERIALS. THE QUANTITIES ARE BASED ON THE VISUAL INSPECTION OF SUBSURFACE CONDITIONS AT THE "ROCK PILE" AND "OVERBURDEN REMOVAL" AREAS, WHICH WILL ULTIMATELY DETERMINE FINISH GRADE AT THESE TWO AREAS.

THE CONTRACTOR SHALL PERFORM AN INDEPENDENT EARTHWORK ESTIMATE FOR THE PURPOSE OF PREPARING BID PRICES FOR EARTHWORK. THE BID PRICE SHALL INCLUDE COSTS FOR ANY NECESSARY IMPORT AND PLACEMENT OF EARTH MATERIALS OR THE EXPORT AND PROPER DISPOSAL OF EXCESS OR UNSUITABLE EARTH MATERIALS.

2. ALL EXCESS SOILS WILL BE USED ON SITE, AS APPROPRIATE, FOR RECLAMATION PURPOSES AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR PROJECT GEOLOGIST.

3. CLEARING AND GRUBBING, SUBGRADE PREPARATION AND EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 19 OF THE STANDARD SPECIFICATIONS, THESE DRAWINGS, AND THE TECHNICAL SPECIFICATIONS.

4. UNSUITABLE SOIL OR MATERIALS, NOT TO BE INCLUDED IN THE WORK INCLUDE:

- A. ORGANIC MATERIALS SUCH AS PEAT, MULCH, ORGANIC SILT OR SOD.
B. SOILS CONTAINING EXPANSIVE CLAYS.
C. MATERIAL CONTAINING EXCESSIVE MOISTURE.
D. POORLY GRADED COARSE MATERIAL, PARTICLE SIZE IN EXCESS OF 6 INCHES.
E. MATERIAL WHICH WILL NOT ACHIEVE SPECIFIED DENSITY OR BEARING.

5. FINE GRADING ELEVATIONS AND SLOPES NOT SHOWN SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD TO OBTAIN DRAINAGE IN THE DIRECTION INDICATED. ALL FINAL GRADING SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

6. THE TOP 6" OF SUBGRADE UNDER ALL PAVED SURFACES SUBJECT TO VEHICULAR USE SHALL BE COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION, IN ACCORDANCE WITH ASTM-D1557 STANDARD. ALL OTHER FILL TO BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DENSITY AS DETERMINED BY ASTM-D1557 AND SO CERTIFIED BY TESTS AND REPORTS FROM THE ENGINEER IN CHARGE OF THE GRADING CERTIFICATION.

7. FILL MATERIAL SHALL BE SPREAD IN LIFTS OF APPROXIMATELY 8 INCHES, MOISTENED OR DRIED TO NEAR OPTIMUM MOISTURE CONTENT AND RECOMPACTED. THE MATERIALS FOR ENGINEERED FILL SHALL BE APPROVED BY A REGISTERED GEOTECHNICAL ENGINEER OR PROFESSIONAL GEOLOGIST. ANY IMPORTED MATERIALS MUST BE APPROVED BEFORE BEING BROUGHT TO THE SITE. THE MATERIALS USED SHALL BE FREE OF ORGANIC MATTER AND OTHER DELETERIOUS MATERIALS.

8. ALL CONTACT SURFACES BETWEEN ORIGINAL GROUND AND RECOMPACTED FILL SHALL BE EITHER HORIZONTAL OR VERTICAL. ALL ORGANIC MATERIAL SHALL BE REMOVED AND THE REMAINING SURFACE SCARIFIED TO A DEPTH OF AT LEAST 12 INCHES, UNLESS DEEPER EXCAVATION IS REQUIRED BY THE ENGINEER.

1. A DETAILED EROSION AND SEDIMENT CONTROL PLAN WILL BE PREPARED BY THE ENGINEER, PRIOR TO FINALIZATION OF THE CONSTRUCTION DOCUMENTS.
2. CONTRACTOR SHALL BE FAMILIAR WITH THE CONDITIONS OF APPROVAL OF ALL REQUIRED PROJECT PERMITS AND SHALL IMPLEMENT ALL REQUIRED BMP'S PRIOR TO COMMENCING GRADING OPERATIONS
3. CONTRACTOR SHALL UTILIZE ONLY THE APPROVED HAUL ROADS AND ACCESS POINTS (AS SHOWN ON THE DRAWINGS) FOR TRANSPORT OF MATERIALS AND EQUIPMENT.
4. BETWEEN OCTOBER 15 AND APRIL 15, EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. DURING CONSTRUCTION SUCH PROTECTION MAY CONSIST OF MULCHING AND/OR PLANTING OF NATIVE VEGETATION OF ADEQUATE DENSITY. BEFORE COMPLETION OF THE PROJECT, ANY EXPOSED SOIL ON DISTURBED SLOPES SHALL BE PERMANENTLY PROTECTED FROM EROSION.
5. REMAIN AVAILABLE AT ALL TIMES FOR EMERGENCY WORK THAT MAY BE REQUIRED DURING THE RAINY SEASON (OCTOBER 15 THROUGH APRIL 15). NECESSARY MATERIALS SHALL BE AVAILABLE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES.
6. CONSTRUCT TEMPORARY EROSION CONTROL MEASURES AS SHOWN ON THE DRAWINGS AND/OR AS DIRECTED BY THE ENGINEER TO CONTROL DRAINAGE WHICH HAS BEEN AFFECTED BY GRADING AND/OR TRENCHING OPERATIONS.
7. CONSTRUCT AND MAINTAIN EROSION CONTROL MEASURES TO PREVENT THE DISCHARGE OF EARTHEN MATERIALS TO THE CREEK FROM DISTURBED AREAS UNDER CONSTRUCTION AND FROM COMPLETED CONSTRUCTION AREAS.
8. INSTALL ALL PROTECTIVE DEVICES AT THE END OF EACH WORK DAY WHEN THE FIVE-DAY RAIN PROBABILITY EQUALS OR EXCEEDS 50 PERCENT AS DETERMINED FROM THE NATIONAL WEATHER SERVICE FORECAST OFFICE: WWW.SRH.NOAA.GOV.
9. AFTER A RAINSTORM REMOVE ACCUMULATED SEDIMENT AND DEBRIS FROM ALL EROSION CONTROL MEASURES.
10. KEEP IN FORCE ALL EROSION CONTROL DEVICES AND MODIFY THOSE DEVICES AS SITE PROGRESS DICTATES.
11. MONITOR THE EROSION CONTROL DEVICES DURING STORMS AND MODIFY THEM IN ORDER TO PREVENT PROGRESS OF ANY ONGOING EROSION.
12. CONTACT THE ENGINEER IN THE EVENT THAT THE EROSION CONTROL PLAN AS DESIGNED REQUIRES ANY SUBSTANTIAL REVISIONS.

1. GENERAL

THESE DRAWINGS WERE DEVELOPED WITH THE GOAL OF CREATING MORE NATURAL CONDITIONS, WHILE MAINTAINING A RELATIVELY UNIFORM PROFILE GRADIENT WITHIN THE PROPOSED LIMITS OF DISTURBANCE TO IMPROVE CHANNEL STABILITY AND ENHANCE ECOLOGICAL FUNCTION. THE DRAWINGS WERE PREPARED WITHOUT FULL KNOWLEDGE OF SUBSURFACE CONDITIONS, INCLUDING THE ELEVATION OF UNDERLYING BEDROCK OR ALLUVIAL MATERIALS THAT WOULD INDICATE THE LOCATION OF THE PRE-EXISTING DISTURBANCE CHANNEL. PROFILES 18-17, 13-17, AND 13-18 WERE USED TO LOCATE THE CHANNEL. THESE REACHES WILL EMPLOY FIELD CHANNELING AND A FIELD DIRECTED CONSTRUCTION APPROACH TO MAXIMIZE CHANNEL STABILITY, WHILE AVOIDING EXCAVATION INTO NATIVE BEDROCK. THE FINAL CONSTRUCTED GEOMETRY WILL BE DIRECTED BY THE ENGINEER IN THE FIELD, PENDING SUBSURFACE CONDITIONS, AS DESCRIBED BELOW.

1.1. THE ROCK PILE AREA (REACHES 13-11) IS EXPECTED TO BE CONSTRUCTED PRIOR TO THE MATERIAL REMOVAL AREA. EXPERIENCE GAINED FROM THE FIELD DIRECTED CONSTRUCTION APPROACH AT THE ROCK PILE AREA WILL BE USED TO REFINE THE DESIGN FOR THE MATERIAL REMOVAL AREA.

2.1. GENERAL. THE FINISHED GRADE ELEVATION OF THE FLOWLINE WILL GENERALLY FALL BETWEEN THE UPPER AND LOWER LIMITS SHOWN ON THE DRAWINGS, DEFINED THERE AS THE "GRADING ENVELOPE," EXCEPT WHERE THE LOCATION OF EXISTING BEDROCK REQUIRES DEVIATION. THE LOWER LIMIT OF THE ENVELOPE IS THE OPTIMUM "STRAIGHT GRADE" UNIFORM PROFILE WITHIN THE PROPOSED LIMITS OF WORK. THE UPPER LIMIT OF THE ENVELOPE IS A BEST-FIT LINE BETWEEN IDENTIFIED POINTS OF BEDROCK CONTROL, AS ESTIMATED FROM RECENT SUBSURFACE INVESTIGATIONS. THE CONSTRUCTION WILL ATTEMPT TO FOLLOW THE LOWER LIMIT OF THE ENVELOPE, SUBJECT TO THE CONSTRAINTS SET FORTH BELOW.

2.2. BEDROCK.

A. GENERAL. THE QUALIFICATION OF MATERIAL AS "BEDROCK" WILL BE PERFORMED INITIALLY BY THE PROJECT GEOTECHNICAL ENGINEER. IF THE PROJECT GEOTECHNICAL ENGINEER DETERMINES THAT EXCAVATION TO BEDROCK HAS OCCURRED PRIOR TO REACHING THE LOWEST ELEVATION AT ANY LOCATION WITHIN THE GRADING ENVELOPE, AN INDEPENDENT PROFESSIONAL GEOLOGIST WILL ASSESS AND MAKE THE FINAL DETERMINATION OF THE EXISTENCE AND EXTENT OF ANY SUCH BEDROCK.

B. WHERE BEDROCK IS ENCOUNTERED ABOVE THE LOWER LIMIT OF THE GRADING ENVELOPE, THE PROFILE WILL NOT BE EXCAVATED INTO THE BEDROCK. AN INSPECTION TRENCH WILL BE CONSTRUCTED ACROSS THE CHANNEL, WITHIN THE POTENTIAL CROSS SECTION LIMITS (BETWEEN THE ADJACENT HILL SLOPES), TO ENSURE THAT BEDROCK IS CONTINUOUS. THE CHANNEL ALIGNMENT WILL FOLLOW THE LOW POINT OF THE BEDROCK, TO THE EXTENT THAT THIS IS FEASIBLE WHILE MAINTAINING A GEOMORPHICALLY APPROPRIATE PLATFORM ALIGNMENT, AND WHILE REMAINING WITHIN THE LATERAL LIMITS DESCRIBED BELOW. UPSTREAM OF BEDROCK CONTROL POINTS, THE LOWER LIMIT OF THE PROFILE WILL BE SUBJECT TO THE MINIMUM DESIGN PROFILE GRADIENT, AS SPECIFIED BELOW.

C. MINIMUM DESIGN PROFILE GRADIENT. UPSTREAM OF BEDROCK CONTROLS, THE MINIMUM DESIGN PROFILE GRADE WILL BE SET TO 4%, TO HELP MAINTAIN SEDIMENT TRANSPORT CONTINUITY AND CHANNEL STABILITY.

D. THE CONSTRUCTED PROFILE GRADIENT BETWEEN BEDROCK OUTCROPS WILL NOT EXCEED 12.0%.

E. ALLUVIAL MATERIALS. WHERE THE ORIGINAL "PRE-DISTURBANCE" STREAMBED IS IDENTIFIED BY THE PRESENCE OF SIGNIFICANT ALLUVIAL DEPOSITS, THE DESIGN PROFILE WILL NOT BE CONSTRUCTED BELOW THE ELEVATION OF THESE DEPOSITS, PROVIDED THE SPECIFIED MINIMUM AND MAXIMUM PROFILE GRADE CRITERIA ARE MET. TEMPORARY EXCAVATIONS WILL NOT EXTEND BELOW THE DESIGN PROFILE ANY MORE THAN IS NECESSARY TO CONSTRUCT THE ENGINEERED STREAMBED MATERIAL SHOWN ON THE DESIGN DRAWINGS.

3. CROSS SECTION GEOMETRY

A. ACTIVE CHANNEL. THE LOW FLOW CROSS SECTION GEOMETRY WILL BE INFORMED BY REGIONAL ANALOGS AND REFINED BASED ON THE LOCAL PROFILE GRADIENT WITHIN EACH CONSTRUCTED REACH. CROSS SECTION DETAILS WILL CLOSELY RESEMBLE THE RANGE OF TYPICAL SECTIONS SHOWN ON THE DRAWINGS, EXCEPT WHERE INFLUENCED BY THE PRESENCE OF BEDROCK AS DISCUSSED ABOVE.

B. FLOODPLAIN. THE FLOODPLAIN WIDTHS WILL BE MAXIMIZED WITHIN THE CONSTRAINT OF MAINTAINING THE STABILITY OF THE ADJACENT HILLSIDE AND THE NEED TO ACCOMMODATE ROADS SHOWN ON THE DRAWINGS. THE STABLE DESIGN SLOPE OF THE ADJACENT HILLSIDE WILL BE DETERMINED BY THE GEOTECHNICAL ENGINEER, AND WILL LIKELY VARY BETWEEN 2H:1V AND 1.5H:1V, AS SHOWN ON THE DRAWINGS. EXPOSED BEDROCK MAY ALLOW FOR STEEPER SLOPES, SUBJECT TO APPROVAL OF THE GEOTECHNICAL ENGINEER. WHERE THE FINAL DESIGN PROFILE APPROACHES THE LOWER LIMIT OF THE GRADING ENVELOPE, THE STABILITY OF ADJACENT HILLSIDES WILL DICTATE A NARROWER FLOODPLAIN WIDTH. SLOPE BENCHING MAY BE INCORPORATED TO REDUCE SLOPE LENGTH, CONTROL SURFACE RUNOFF AND HELP PROTECT SLOPES FROM SURFACE EROSION WHILE VEGETATION BECOMES ESTABLISHED.

C. WHERE BEDROCK OUTCROPS CONSTRAIN THE FLOODPLAIN WIDTH, UPSTREAM AND DOWNSTREAM FLOODPLAINS WILL TRANSITION RAPIDLY TO CONFORM TO THOSE RESTRICTIONS AND THEN RETURN TO THE STANDARD FLOODPLAIN WIDTHS AS DESCRIBED ABOVE.

ROCKPILE AREA CONTROL POINTS

POINT #	DESCRIPTION	ELEV	NORTHING	EASTING
72	CP SET SPK	716.22	1941334.47	6096793.81
75	CP SET SPK	803.09	1941619.31	6096158.88
76	CP SET RBR	808.85	1941680.82	6095909.82
111	CP SET RBR	806.80	1941671.67	6095921.21
114	CP SET RBR	816.20	1941779.90	6095582.76
115	CP SET RBR	812.88	1941879.05	6095569.80
117	CP SET RBR	819.89	1941892.45	6095529.40
217	CP SET RBR	724.29	1941371.11	6096727.29
404	SPK	806.27	1941662.30	6095969.08
405	RBR	796.09	1941537.79	6096266.02

CONCRETE CHANNEL CONTROL POINTS

POINT #	DESCRIPTION	ELEV	NORTHING	EASTING
10	MAG NAIL	510.38	1943483.74	6101146.44
12	1" IRON PIPE	529.20	1942175.05	6099969.01
17	REBAR	485.24	1943557.06	6100979.06
18	REBAR	490.06	1943435.52	6100870.89
19	REBAR	498.09	1943198.66	6100699.22
20	REBAR	508.54	1942872.53	6100467.68
21	MAG NAIL	521.46	1942467.45	6100151.60
22	SPIKE	551.31	1941760.87	6099823.75
51	MONUMENT	478.22	1943592.65	6101044.38
52	REBAR	483.41	1943590.24	6101025.98
53	REBAR	515.91	1942632.18	6100296.75
54	SPIKE	521.30	1942452.03	6100170.82
193	REBAR	476.72	1943711.46	6100983.49

OLD CRUSHER FOUNDATION CONTROL POINTS

POINT #	DESCRIPTION	ELEV	NORTHING	EASTING
165	CP SET RBR	1063.33	1941953.01	6093263.23

CHANNEL WIDENING AREA CONTROL POINTS

POINT #	DESCRIPTION	ELEV	NORTHING	EASTING
27	REBAR	593.54	1940695.05	6099210.37
28	REBAR	596.51	1940561.90	6099071.25
29	MAG NAIL	598.00	1940385.77	6098868.13
30	REBAR	601.51	1940365.48	6098858.92
31	REBAR	610.23	1940446.61	6098616.89
32	REBAR	613.75	1940462.10	6098526.45
33	REBAR	618.26	1940475.93	6098439.20
34	REBAR	628.65	1940479.92	6098296.99
35	REBAR	632.45	1940501.64	6098230.63
36	MAG NAIL	620.81	1940463.13	6098387.20
37	REBAR	635.48	1940558.97	6098103.67
38	REBAR	641.70	1940495.95	6097949.58
40	MAG NAIL	648.83	1940405.35	6097615.83
41	MAG NAIL	646.63	1940383.67	6097691.16
42	REBAR	656.48	1940451.30	6097514.85
43	REBAR	657.09	1940492.55	6097471.45
44	REBAR	660.96	1940560.15	6097400.04
45	REBAR	668.01	1940655.83	6097298.98
46	SPIKE	680.15	1940841.82	6097231.78
62	SPIKE	569.70	1940615.33	6099288.05
63	SPIKE	570.71	1940570.68	6099267.81
64	REBAR	584.77	1940545.28	6099205.98
65	REBAR	590.89	1940439.65	6099088.09
66	MAG NAIL	591.86	1940396.17	6098999.78
67	MAG NAIL	595.38	1940388.34	6098927.84
68	MAG NAIL	602.87	1940400.72	6098741.75
69	MAG NAIL	606.61	1940410.97	6098663.01
79	SPIKE	646.21	1940316.73	6097727.47
81	SPIKE	694.63	1940223.55	6097775.38
82	REBAR	649.67	1940408.23	6097839.94
83	REBAR	637.23	1940523.90	6098107.56
84	REBAR	621.56	1940440.92	6098417.10
215	REBAR	646.91	1940455.35	6097884.82
218	REBAR	677.67	1940841.54	6097176.51
219	REBAR	680.66	1940900.16	6097145.81
314	REBAR	637.77	1940371.89	6097791.16
400	REBAR	576.85	1940487.04	6099160.53
401	REBAR	607.02	1940404.17	6098660.54
402	REBAR	609.64	1940411.88	6098607.86
403	REBAR	615.06	1940428.64	6098517.03
406	REBAR	629.80	1940471.66	6098007.66
410	REBAR	653.73	1940584.46	6097340.83
411	REBAR	661.24	1940732.49	6097196.50
412	REBAR	664.95	1940814.37	6097160.96
413	REBAR	683.39	1940897.81	6097111.72

MATERIAL REMOVAL AREA CONTROL POINTS

POINT #	DESCRIPTION	ELEV	NORTHING	EASTING
48	CP SET RBR	1261.52	1942178.50	6091840.78
49	CP SET RBR	1227.82	1942114.42	6092223.57
150	CP SET RBR	1248.81	1942121.40	6091732.54
151	CP SET RBR	1209.33	1942037.70	6091938.21
152	CP SET RBR	1193.37	1941973.93	6092019.31
153	CP SET RBR	1206.00	1942064.01	6092164.43
154	CP SET RBR	1203.50	1942039.62	6092197.65
155	CP SET RBR	1174.15	1942015.96	6092308.67
156	CP SET RBR	1156.71	1941993.50	6092485.97
157	CP SET RBR	1146.54	1941979.84	6092548.12
158	CP SET RBR	1107.87	1941764.00	6092719.31
159	CP SET RBR	1096.94	1941783.90	6092867.43
160	CP SET RBR	1090.73	1941829.03	6092915.18
163	CP SET RBR	1071.81	1941856.46	6093112.11
165	CP SET RBR	1063.33	1941953.01	6093263.23
166	CP SET RBR	1069.37	1941972.57	6093285.20
169	CP SET RBR	1247.35	1942132.95	6091720.89
171	CP FD SPK	1248.13	1942159.92	6091675.87
174	CP SET RBR	1257.05	1942125.94	6091344.28
175	CP SET SPK	1256.76	1942089.48	6091244.14

PRELIMINARY

NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:

LEHIGH HANSON
HEIDELBERG CEMENT
GROUP

CONTROL
POINT
TABLES

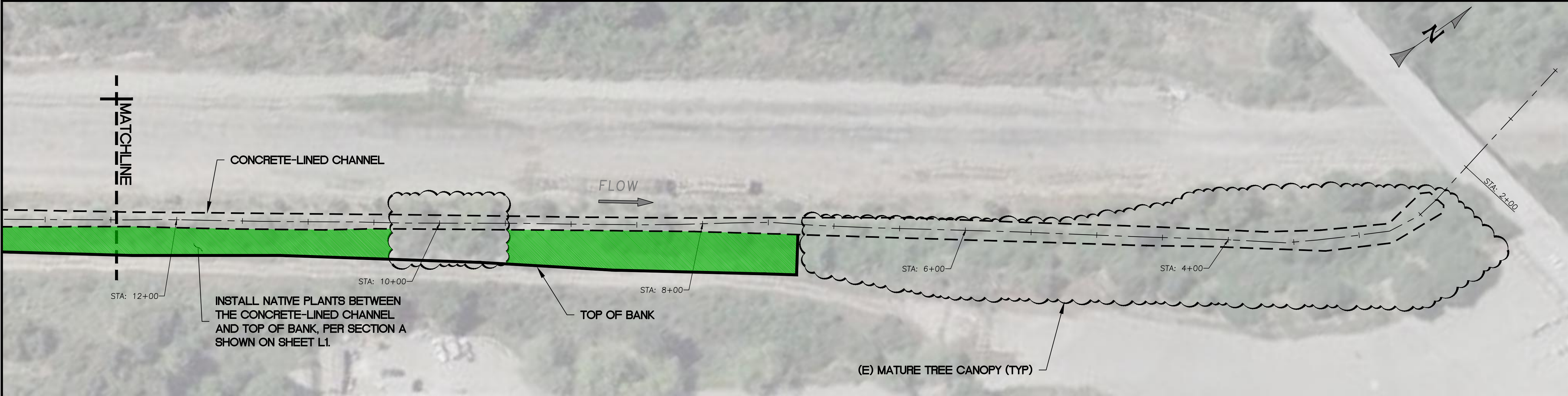
PERMANENTE CREEK
RESTORATION PLAN

PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____
DATE: 11/15/18
JOB NO.: 13-016

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

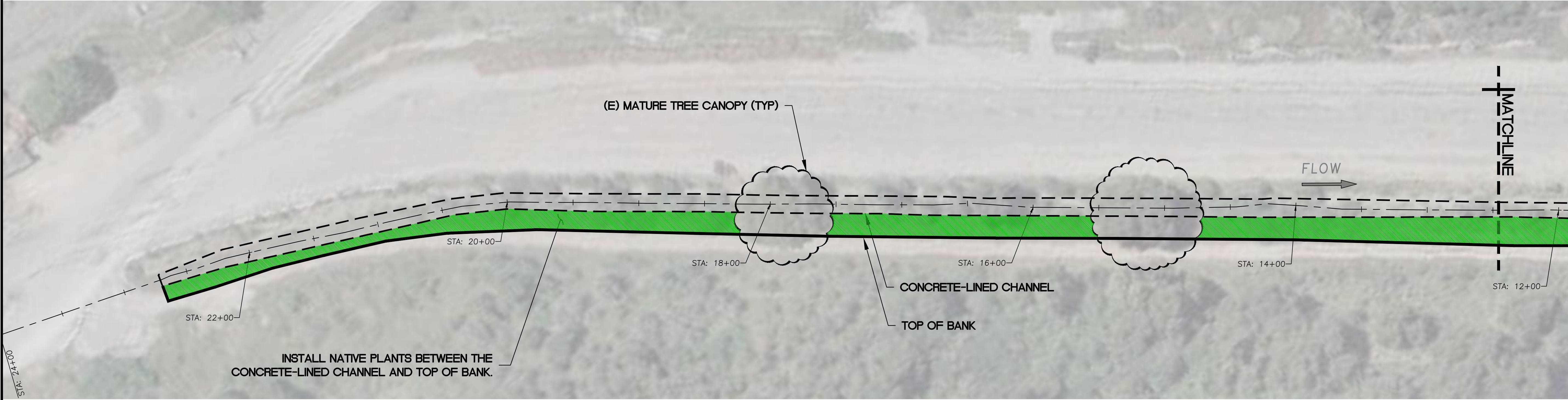
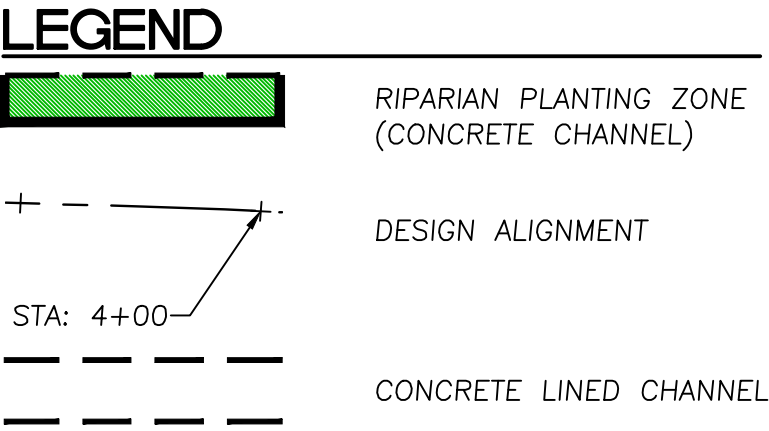
0 1"



CONCRETE-LINED CHANNEL SOUTHERN BANK PLANTING PLAN
SCALE: 1" = 40'

- SUPPLEMENTAL PLANTING NOTES:
1. PROTECT IN PLACE ALL EXISTING NATIVE TREES AND SHRUBS, INCLUDING EXISTING OAK SEEDLINGS.
 2. A QUALIFIED REVEGETATION SPECIALIST SHALL CONFIRM EACH PROPOSED PLANTING LOCATION PRIOR TO EXCAVATION OF PLANTING PITS.
 3. PROPOSED PLANT SPECIES CONTAINER SIZE AND SPACING SHALL CONFORM TO TABLE 1. CONCRETE CHANNEL - RIPARIAN PLANTING.
 4. CLEAR AND GRUB A THREE-FOOT DIAMETER AREA AT EACH PROPOSED PLANTING LOCATION.
 5. PLANTING EXCAVATION SHALL NOT OCCUR WITHIN THE DRIP LINE OF EXISTING SHRUBS OR TREES, WITHIN TEN FEET FROM THE TRUNKS OF EXISTING ESTABLISHED TREES, OR WITHIN FIVE FEET OF EXISTING OAK SEEDLINGS.
 6. INSTALL PLANTINGS, BROWSE PROTECTION AND IRRIGATION IN ACCORDANCE WITH THE CONTAINER PLANTING DETAIL ON SHEET L2.
 7. DEPENDING ON THE CONDITION OF EXISTING SOILS, SOIL EXCAVATED FOR PLANTING MAY REQUIRE AMENDMENT, AS DETERMINED BY THE REVEGETATION SPECIALIST. USE EXCESS SOIL TO FORM A WATERING WELL AROUND THE INSTALLED PLANT.
 8. PLACE THREE TO FOUR INCHES OF MULCH AND/OR WEED MATS IN THE CLEARED AND GRUBBED AREA AROUND EACH INSTALLED PLANT OR OAK SEEDLING FOR WEED CONTROL AND MOISTURE RETENTION.

TABLE 1. CONCRETE CHANNEL - RIPARIAN PLANTING				
COMMON NAME	SCIENTIFIC NAME	CONTAINER SIZE	ON-CENTER SPACING (FT)	QUANTITY
California Buckeye	<i>Aesculus Californica</i>	Treepot 4 (TP4)	15	Container plant quantities will be dependent on the location of existing native species and will be determined at the time of construction.
Coast Live Oak	<i>Quercus Agrifolia</i>	Treepot 4 (TP4)	12	
Blue Elderberry	<i>Sambucus Nigra, SSP. Caerulea</i>	Treepot 4 (TP4)	10	
Hollyleaf Cherry	<i>Prunus Ilicifolia</i>	Deepot 40 (D-40)	10	
Coyote Brush	<i>Baccharis Pillularis</i>	Deepot 40 (D-40)	8	
Black Sage	<i>Salvia Mellifera</i>	Deepot 60 (D-60)	5	
California Sagebrush	<i>Artemisia Californica</i>	Deepot 40 (D-40)	3	



CONCRETE-LINED CHANNEL SOUTHERN BANK PLANTING PLAN
SCALE: 1" = 40'

PRELIMINARY
NOT FOR CONSTRUCTION

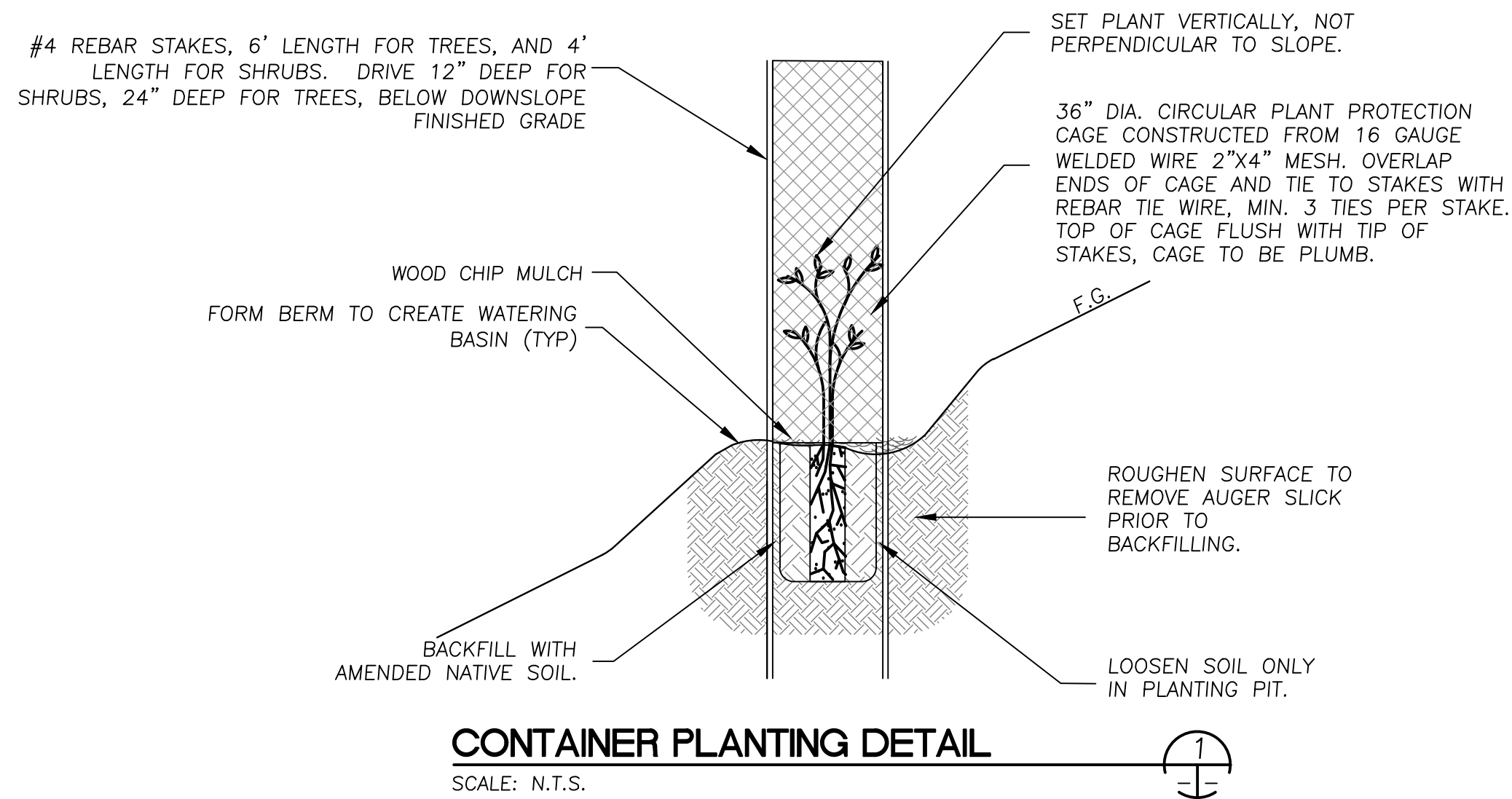
PREPARED AT THE REQUEST OF:
LEHIGH HANSON
HEIDELBERG CEMENT GROUP

CONCRETE CHANNEL
REVEGETATION PLAN

PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: B.M.Z.
DRAWN BY: B.M.Z.
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS
0 1"



SPECIES TO RECEIVE BROWSE PROTECTION CAGES:

COMMON NAME	SCIENTIFIC NAME
CALIFORNIA BUCKEYE	AESCULUS CALIFORNICA
MADRONE	ARBUTUS MENZIESII
CALIFORNIA SAGE	ARTEMISIA CALIFORNICA
HOLLYLEAF CHERRY	PRUNIS ILICIFOLIA
COASTAL LIVE OAK	QUERCUS ARGIFOLIA
BLUE ELDERBERRY	SAMBUCUS NIGRA SSP. CAERULA

NOTE: BROWSE PROTECTION CAGES WILL NOT BE INSTALLED AROUND PLANTINGS IN FLOODPLAIN AREAS DUE TO THE LIKELIHOOD THAT CAGES MAY BE INUNDATED AND DAMAGED BY FLOOD FLOWS.

IRRIGATION NOTES:

ALL CONTAINER PLANTINGS WILL RECEIVE DRIP IRRIGATION. IRRIGATION DETAILS ARE NOT INCLUDED IN THIS DRAWINGS SET AND WILL BE INCLUDED IN THE NEXT DESIGN SUBMITTAL.

TABLE 2a. FLOODPLAIN PLANTING SEED MIX

Floodplain Seeding Area:		
Channel Widening and Rockpile Area (acres): 2.53		
Material Removal Area (acres): 1.44		
COMMON NAME	SCIENTIFIC NAME	PLS LBS / ACRE
California Brome	Bromus Carinatus	10.0
Blue Wildrye	Elymus Glaucus	8.0
Creeping Wildrye	Elymus Triticoides	6.0
Small Fescue	Festuca Microstachys	8.0
Meadow Barley	Hordeum Brachyantherum	6.0
Blue-Eyed Grass	Sisyrinchium Bellum	1.0
Purple Needlegrass	Stipa Bellum	5.0
Tomcat Clover	Trifolium Willdenovii	5.0
TOTAL		49.0

Seed mix to be applied to the Floodplain Planting Zones at all project sites.

TABLE 2b. UPLAND AND RIPARIAN PLANTING SEED MIX

Upland Seeding Area:		
Channel Widening and Rockpile Area (acres): 5.57		
Material Removal Area (acres): 2.18		
Riparian Seeding Area:		
Channel Widening and Rockpile Area (acres): 2.43		
Material Removal Area (acres): 1.25		
COMMON NAME	SCIENTIFIC NAME	PLS LBS / ACRE
California Sagebrush	Artemisia Californica	0.5
California Brome	Bromus Carinatus	12.0
Blue Wildrye	Elymus Glaucus	10.0
California Poppy	Eschscholzia Californica	2.0
Deerweed	Lotus Scoparius	3.0
Purple Needlegrass	Nasella Pulchra	5.0
Three Weeks Fescue	Festuca Microstachys	6.0
Tomcat clover	Trifolium willdenovii	5.0
Lupine	Lupinus Nanus	4.0
TOTAL		47.5

Seed mix to be applied to the Upland Seedings Zones and the Riparian Planting Zones at all project sites.

TABLE 3. CHANNEL WIDENING/SEDIMENT REMOVAL AREA - FLOODPLAIN PLANTING (TYPE 1)

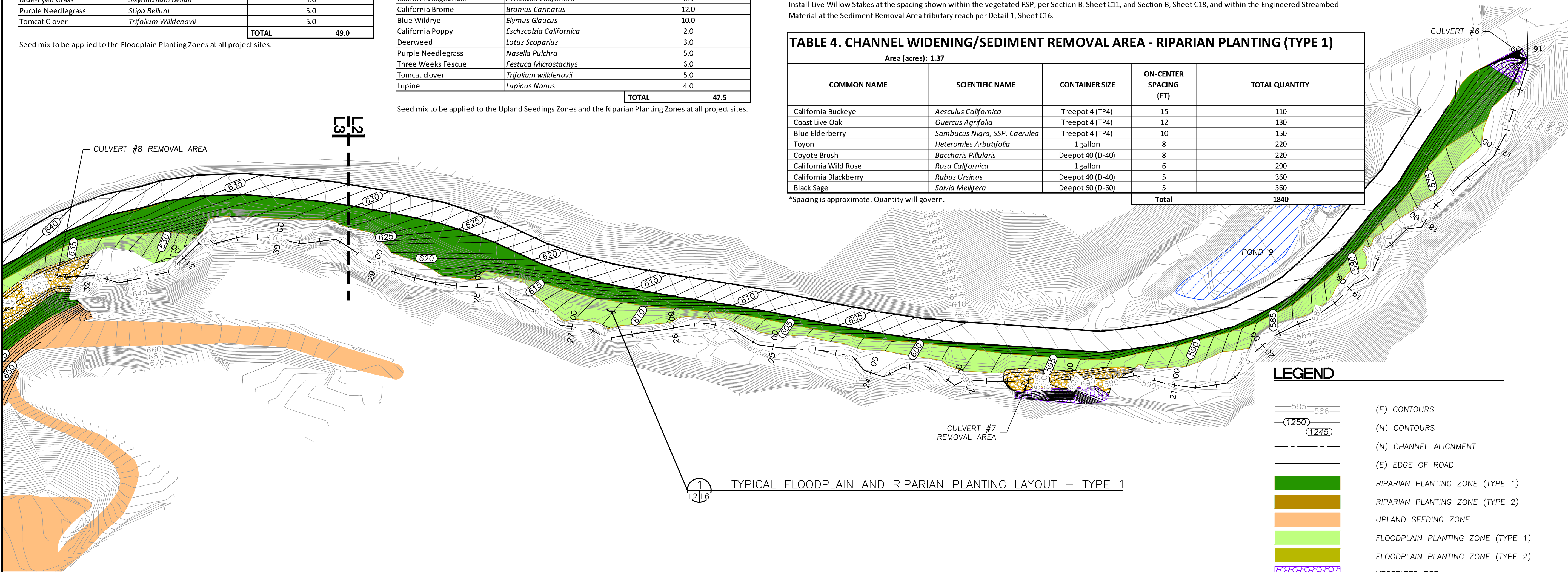
Area (acres): 1.51				
COMMON NAME	SCIENTIFIC NAME	CONTAINER SIZE	ON-CENTER SPACING (FT)	TOTAL QUANTITY
Big Leaf Maple	Acer Macrophyllum	Treepot 4 (TP4)	25	90
White Alder	Alnus Rhombifolia	Treepot 4 (TP4)	20	110
Red/Arroyo Willow (Floodplain)	Salix Laevigata/lasiolepis	Live Stake	15	290
Red/Arroyo Willow (Vegetated RSP)	Salix Laevigata/lasiolepis	Live Stake	7	60
Red/Arroyo Willow (Sed. Removal Area)	Salix Laevigata/lasiolepis	Live Stake	7	90
Total				640

*Spacing is approximate. Quantity will govern.
Install Live Willow Stakes at the spacing shown within the vegetated RSP, per Section B, Sheet C11, and Section B, Sheet C18, and within the Engineered Streambed Material at the Sediment Removal Area tributary reach per Detail 1, Sheet C16.

TABLE 4. CHANNEL WIDENING/SEDIMENT REMOVAL AREA - RIPARIAN PLANTING (TYPE 1)

Area (acres): 1.37				
COMMON NAME	SCIENTIFIC NAME	CONTAINER SIZE	ON-CENTER SPACING (FT)	TOTAL QUANTITY
California Buckeye	Aesculus Californica	Treepot 4 (TP4)	15	110
Coast Live Oak	Quercus Agrifolia	Treepot 4 (TP4)	12	130
Blue Elderberry	Sambucus Nigra, SSP. Caerulea	Treepot 4 (TP4)	10	150
Toyon	Heteromelis Arbutifolia	1 gallon	8	220
Coyote Brush	Baccharis Pillularis	Deepot 40 (D-40)	8	220
California Wild Rose	Rosa Californica	1 gallon	6	290
California Blackberry	Rubus Ursinus	Deepot 40 (D-40)	5	360
Black Sage	Salvia Mellifera	Deepot 60 (D-60)	5	360
Total				1840

*Spacing is approximate. Quantity will govern.



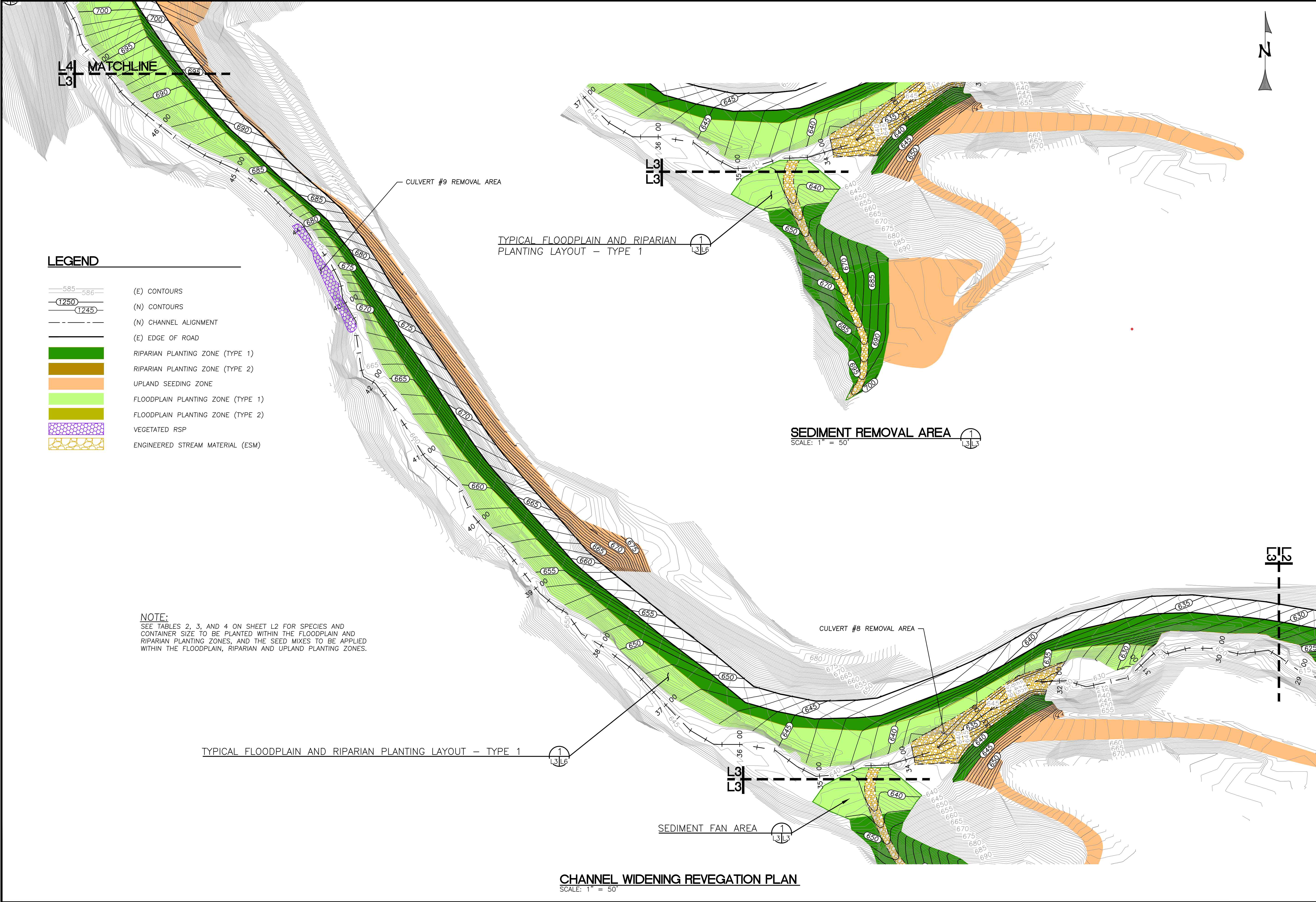
TYPICAL FLOODPLAIN AND RIPARIAN PLANTING LAYOUT - TYPE 1


CHANNEL WIDENING REVEGETATION PLAN

SCALE: 1" = 50'

LEGEND

- (E) CONTOURS
- (N) CONTOURS
- (N) CHANNEL ALIGNMENT
- (E) EDGE OF ROAD
- RIPARIAN PLANTING ZONE (TYPE 1)
- RIPARIAN PLANTING ZONE (TYPE 2)
- UPLAND SEEDING ZONE
- FLOODPLAIN PLANTING ZONE (TYPE 1)
- FLOODPLAIN PLANTING ZONE (TYPE 2)
- VEGETATED RSP
- ENGINEERED STREAM MATERIAL (ESM)





509A SWIFT ST.
SANTA CRUZ, CA 95060
PH: (831) 421-9291 / FAX: (888) 819-6847
WWW.WATWAYS.COM

PRELIMINARY

NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:

**LEHIGH HANSON
HEIDELBERG CEMENT
GROUP**

CHANNEL
WIDENING
REVEGETATION
PLAN (2 OF 2)

PERMANENT CREEK
RESTORATION PLAN

PRELIMINARY GRADING PLAN
90% DESIGN

SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

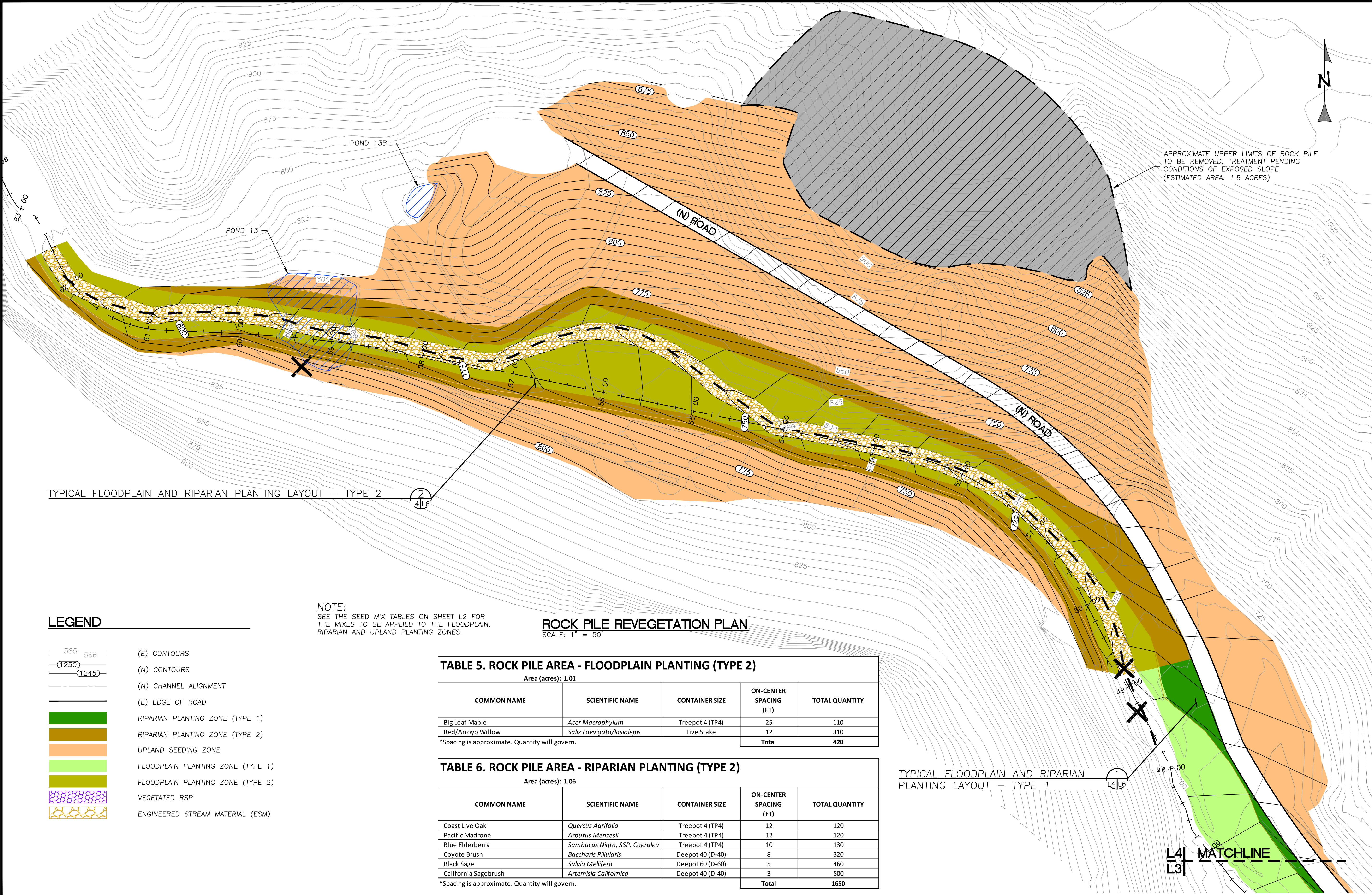
DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

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

0 1"

L3

42
OF
45



LEGEND

- (E) CONTOURS
- (N) CONTOURS
- (N) CHANNEL ALIGNMENT
- (E) EDGE OF ROAD
- RIPARIAN PLANTING ZONE (TYPE 1)
- RIPARIAN PLANTING ZONE (TYPE 2)
- UPLAND SEEDING ZONE
- FLOODPLAIN PLANTING ZONE (TYPE 1)
- FLOODPLAIN PLANTING ZONE (TYPE 2)
- VEGETATED RSP
- ENGINEERED STREAM MATERIAL (ESM)

NOTE:
SEE THE SEED MIX TABLES ON SHEET L2 FOR
THE MIXES TO BE APPLIED TO THE FLOODPLAIN,
RIPARIAN AND UPLAND PLANTING ZONES.

ROCK PILE REVEGETATION PLAN
SCALE: 1" = 50'

TABLE 5. ROCK PILE AREA - FLOODPLAIN PLANTING (TYPE 2)				
Area (acres): 1.01				
COMMON NAME	SCIENTIFIC NAME	CONTAINER SIZE	ON-CENTER SPACING (FT)	TOTAL QUANTITY
Big Leaf Maple	<i>Acer Macrophyllum</i>	Treepot 4 (TP4)	25	110
Red/Arroyo Willow	<i>Salix Laevigata/lasiolepis</i>	Live Stake	12	310
Total				420

*Spacing is approximate. Quantity will govern.

TABLE 6. ROCK PILE AREA - RIPARIAN PLANTING (TYPE 2)				
Area (acres): 1.06				
COMMON NAME	SCIENTIFIC NAME	CONTAINER SIZE	ON-CENTER SPACING (FT)	TOTAL QUANTITY
Coast Live Oak	<i>Quercus Agrifolia</i>	Treepot 4 (TP4)	12	120
Pacific Madrone	<i>Arbutus Menzesii</i>	Treepot 4 (TP4)	12	120
Blue Elderberry	<i>Sambucus Nigra, SSP. Caerulea</i>	Treepot 4 (TP4)	10	130
Coyote Brush	<i>Baccharis Pillularis</i>	Deepot 40 (D-40)	8	320
Black Sage	<i>Salvia Mellifera</i>	Deepot 60 (D-60)	5	460
California Sagebrush	<i>Artemisia Californica</i>	Deepot 40 (D-40)	3	500
Total				1650

*Spacing is approximate. Quantity will govern.

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
LEHIGH HANSON
HEIDELBERG CEMENT
GROUP

MATERIAL
REMOVAL AREA
REVEGETATION
PLAN

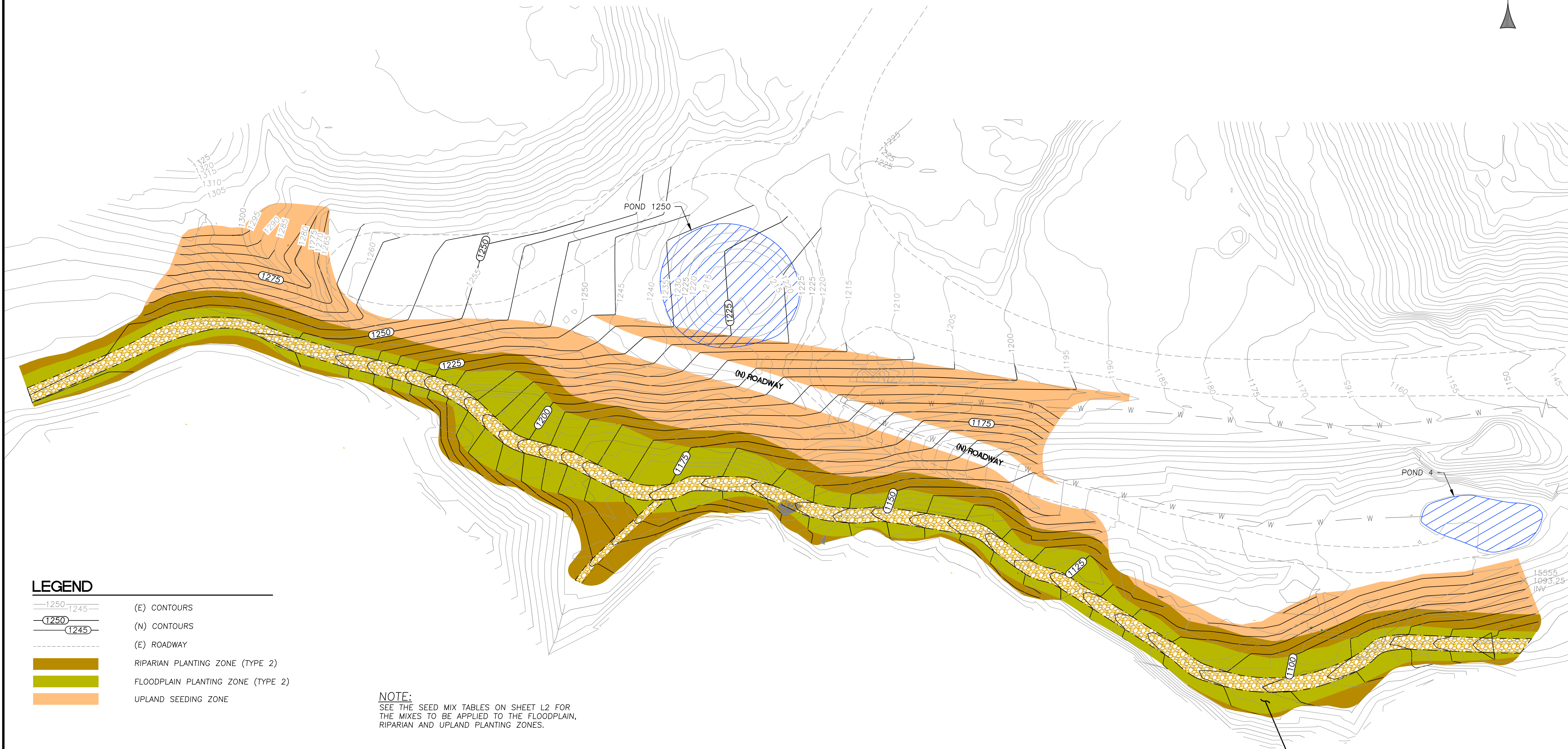
PERMANENTE CREEK
RESTORATION PLAN
PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: M.W.W.
DATE: 11/15/18
JOB NO.: 13-016

BAR IS ONE INCH ON
ORIGINAL DRAWING,
ADJUST SCALES FOR
REDUCED PLOTS
0 1"

L5

44
OF
45



LEGEND

	(E) CONTOURS
	(N) CONTOURS
	(E) ROADWAY
	RIPARIAN PLANTING ZONE (TYPE 2)
	FLOODPLAIN PLANTING ZONE (TYPE 2)
	UPLAND SEEDING ZONE

NOTE:
SEE THE SEED MIX TABLES ON SHEET L2 FOR
THE MIXES TO BE APPLIED TO THE FLOODPLAIN,
RIPARIAN AND UPLAND PLANTING ZONES.

TABLE 7. MATERIAL REMOVAL AREA - FLOODPLAIN PLANTING (TYPE 2)

Area (acres): 1.44				
COMMON NAME	SCIENTIFIC NAME	CONTAINER SIZE	ON-CENTER SPACING (FT)	TOTAL QUANTITY
Big Leaf Maple	<i>Acer Macrophyllum</i>	Treepot 4 (TP4)	25	150
Red/Arroyo Willow	<i>Salix Laevigata/lasiolepis</i>	Live Stake	12	440
Red/Arroyo Willow (Tributary)	<i>Salix Laevigata/lasiolepis</i>	Live Stake	7	40
			Total	590

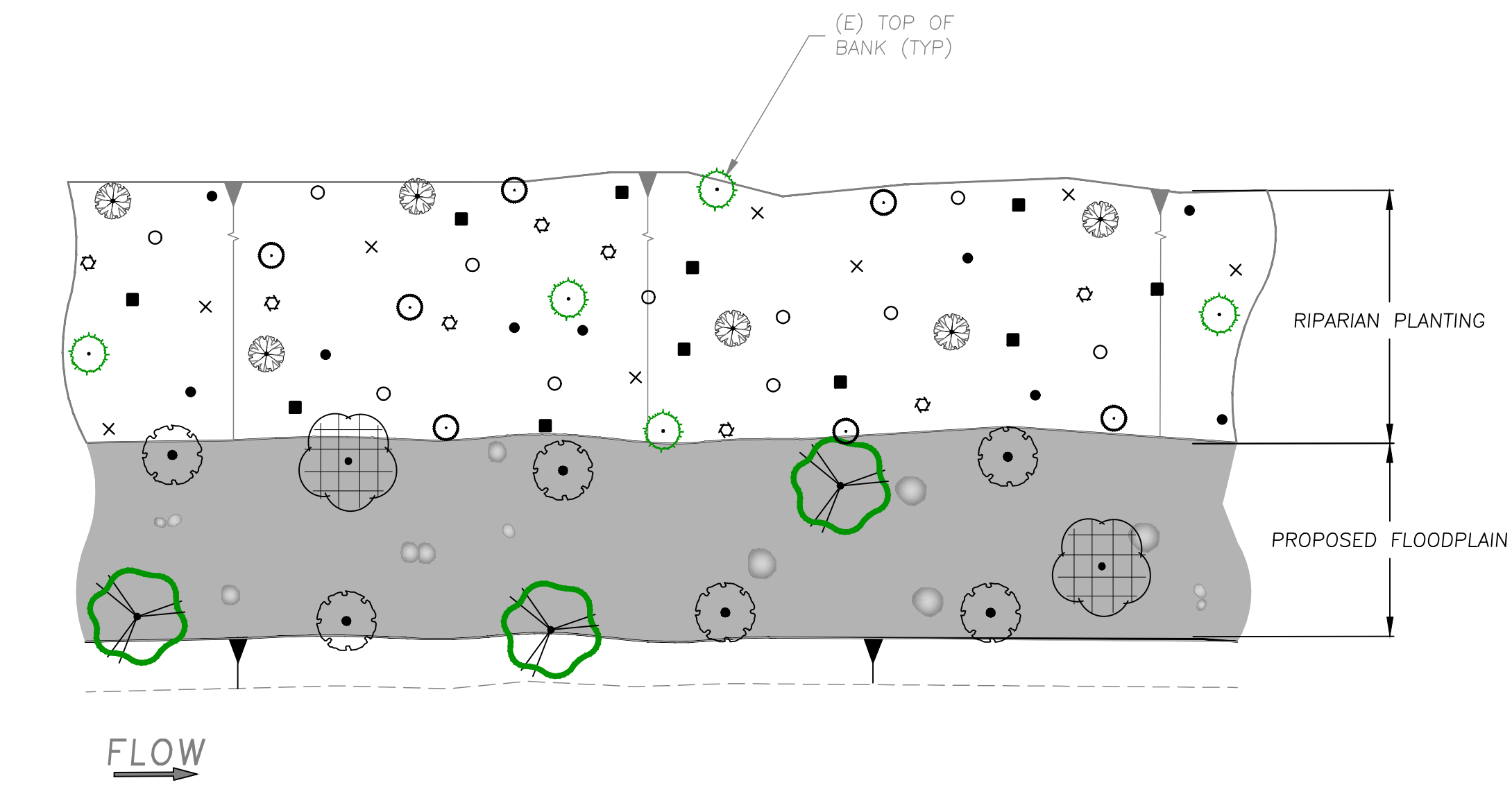
*Spacing is approximate. Quantity will govern.
Install Live Willow Stakes at the spacing shown within the Engineered Streambed Material at the Material Removal Area tributary per Section 2, Sheet C26.

TABLE 8. MATERIAL REMOVAL AREA - RIPARIAN PLANTING (TYPE 2)

Area (acres): 1.25				
COMMON NAME	SCIENTIFIC NAME	CONTAINER SIZE	ON-CENTER SPACING (FT)	TOTAL QUANTITY
Coast Live Oak	<i>Quercus Agrifolia</i>	Treepot 4 (TP4)	12	140
Pacific Madrone	<i>Arbutus Menzesii</i>	Treepot 4 (TP4)	12	140
Blue Elderberry	<i>Sambucus Nigra, SSP. Coerulea</i>	Treepot 4 (TP4)	10	150
Coyote Brush	<i>Baccharis Pillularis</i>	Deepot 40 (D-40)	8	380
Black Sage	<i>Salvia Mellifera</i>	Deepot 60 (D-60)	5	540
California Sagebrush	<i>Artemisia Californica</i>	Deepot 40 (D-40)	3	590
			Total	1940

*Spacing is approximate. Quantity will govern.

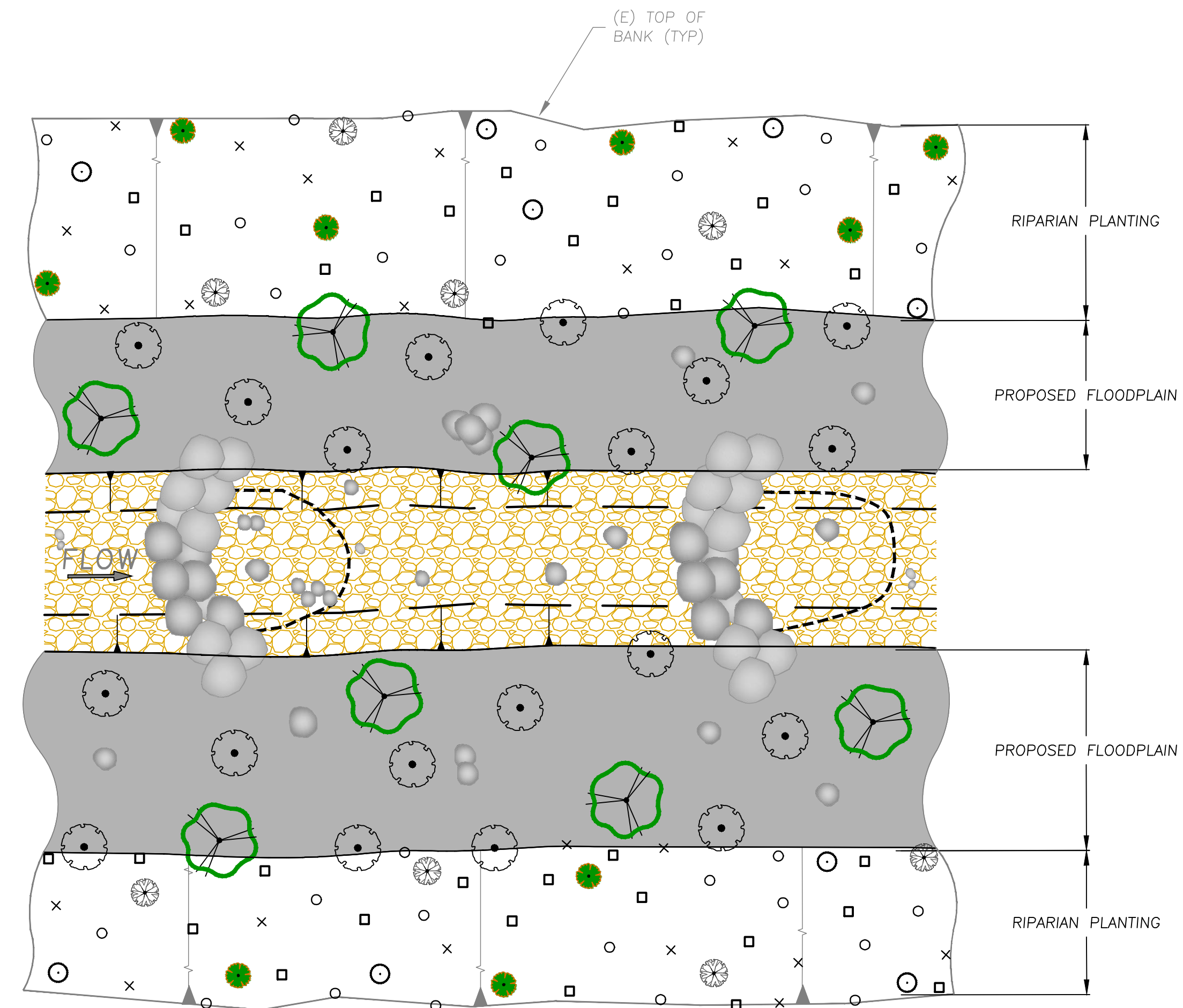
MATERIAL REMOVAL AREA REVEGETATION PLAN
SCALE: 1" = 60'



TYPICAL FLOODPLAIN AND RIPARIAN PLANTING LAYOUT - TYPE 1
SCALE: 1" = 10'
(CHANNEL WIDENING AREA)

PLANTING LEGEND - TYPE 1

- FLOODPLAIN PLANTING**
- | BOTANICAL / COMMON NAME |
|----------------------------------|
| ACER MACROPHYLLUM/BIG LEAF MAPLE |
| ALNUS RHOMBIFOLIA/WHITE ALDER |
| SALIX LAEVIGATA/RED WILLOW |
- RIPARIAN PLANTING**
- | |
|---|
| AESCULUS CALIFORNICA/CALIFORNIA BUCKEYE |
| QUERCUS AGRIFOLIA/COAST LIVE OAK |
| SAMBUCUS NIGRA, SSP. CAERULEA/BLUE ELDERBERRY |
| HETEROMLES ARBUTIFOLIA/TOYON |
| BACCHARIS PILLULARIS/COYOTE BRUSH |
| ROSA CALIFORNICA/CALIFORNIA WILD ROSE |
| RUBUS URSINUS/CALIFORNIA BLACKBERRY |
| SALVIA MELLIFERA/BLACK SAGE |



TYPICAL FLOODPLAIN AND RIPARIAN PLANTING LAYOUT - TYPE 2
SCALE: 1" = 10'
(ROCK PILE AND MATERIAL REMOVAL AREAS)

PLANTING LEGEND - TYPE 2

- FLOODPLAIN PLANTING**
- | BOTANICAL / COMMON NAME |
|----------------------------------|
| ACER MACROPHYLLUM/BIG LEAF MAPLE |
| SALIX LAEVIGATA/RED WILLOW |
- RIPARIAN PLANTING**
- | |
|---|
| QUERCUS AGRIFOLIA/COAST LIVE OAK |
| ARBUTUS MENZESII/PACIFIC MADRONE |
| SAMBUCUS NIGRA, SSP. CAERULEA/BLUE ELDERBERRY |
| BACCHARIS PILLULARIS/COYOTE BRUSH |
| SALVIA MELLIFERA/BLACK SAGE |
| ARTEMESIA CALIFORNICA/CALIFORNIA SAGEBRUSH |

NOTE:
SEE SHEETS L2 TO L5 FOR THE LOCATION OF PLANTING ZONES AND PLANTING/SEEDING TABLES WITH ON CENTER SPACING, CONTAINER SIZE AND THE NUMBER OF EACH SPECIES TO BE INSTALLED.

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED AT THE REQUEST OF:
**LEHIGH HANSON
HEIDELBERG CEMENT
GROUP**

**TYPICAL
PLANTING
LAYOUTS**

PERMANENTE CREEK
RESTORATION PLAN
**PRELIMINARY GRADING PLAN
90% DESIGN
SANTA CLARA COUNTY GRADING
PERMIT SUBMITTAL**

DESIGNED BY: _____
DRAWN BY: _____
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