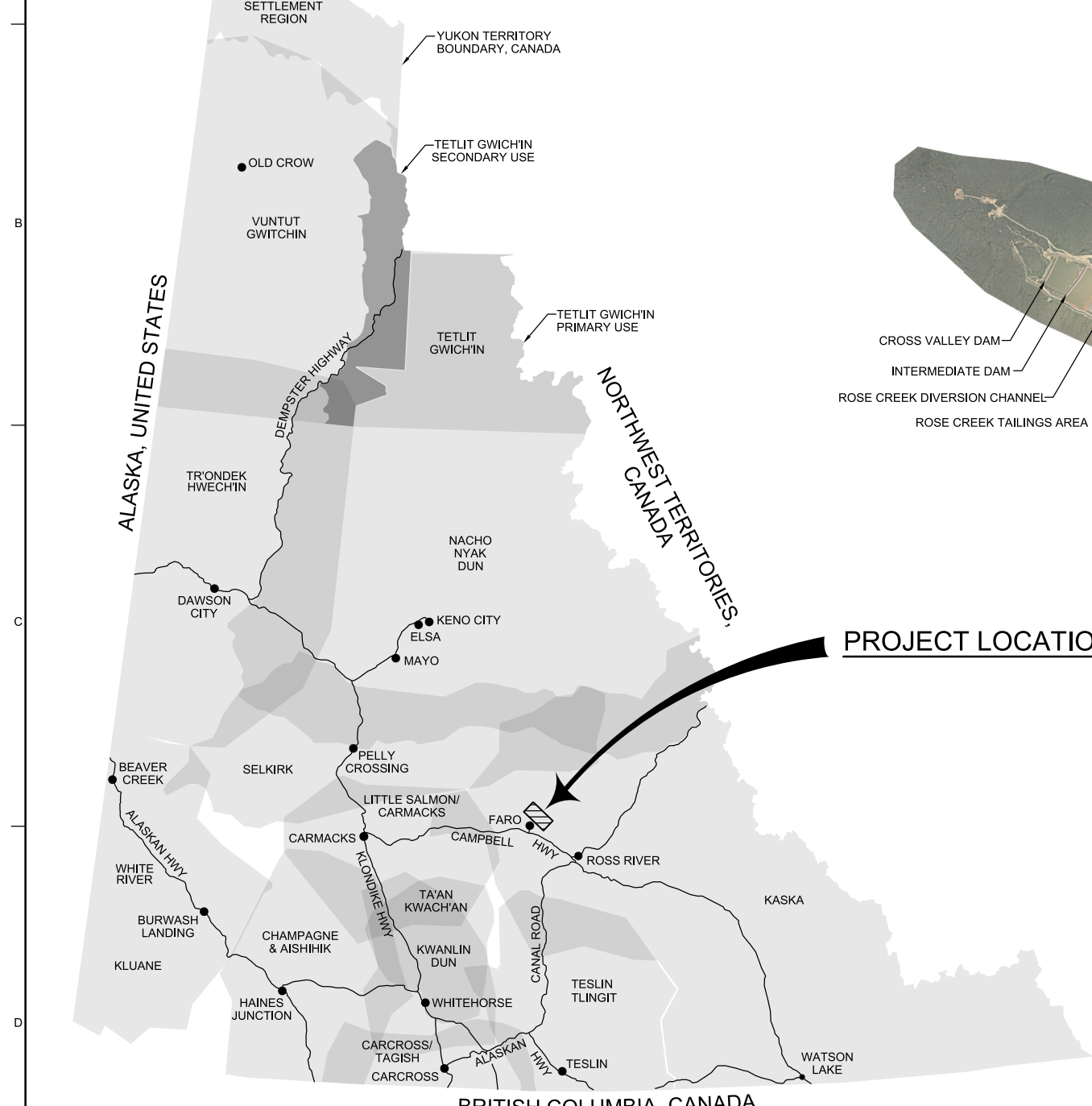


Appendix F

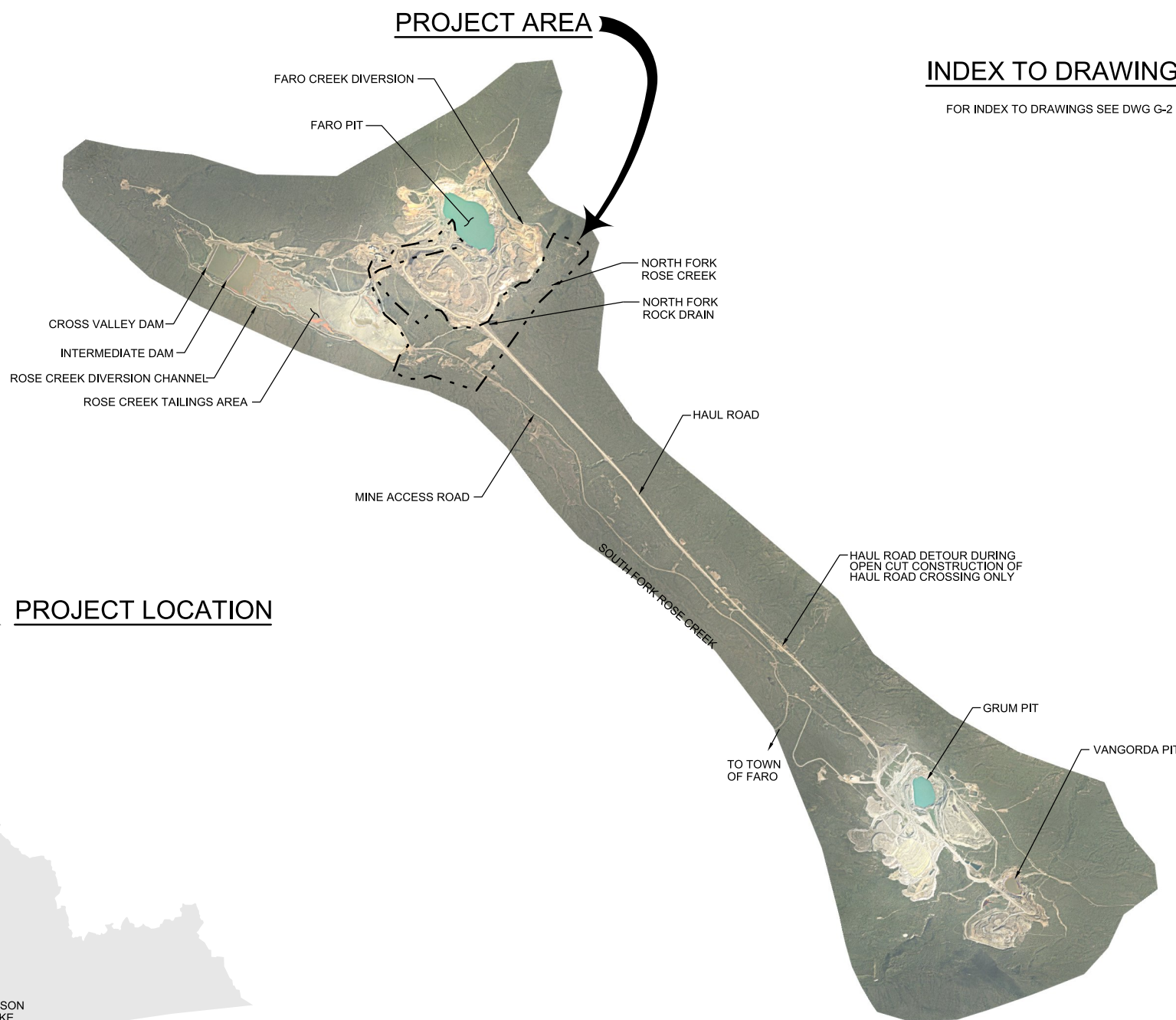
Conceptual Design Drawings

FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK (NFRC)

TASK AUTHORIZATION NO. (TAR) 21
CONCEPTUAL DESIGN
MARCH 2016



VICINITY MAP
NTS



INDEX TO DRAWINGS
FOR INDEX TO DRAWINGS SEE DWG G-2

PROJECT LOCATION

PREPARED FOR GOVERNMENT OF YUKON AND GOVERNMENT OF CANADA AS REPRESENTED BY INDIGENOUS AND NORTHERN AFFAIRS CANADA.

LOCATION MAP
NTS

2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831	
CH2MHILL®		GENERAL COVER SHEET, INDEX TO DRAWINGS VICINITY AND LOCATION MAPS		CH2MHILL®	
AS SHOWN		VERIFY SCALE		AS SHOWN	
BAR IS 25mm ON ORIGINAL DRAWING.		BAR IS 25mm ON ORIGINAL DRAWING.		BAR IS 25mm ON ORIGINAL DRAWING.	
DATE	MARCH 2016	NO. DATE	DR	REVISION	CHK
PROJ	TA021-427716	NO. DATE	DR	REVISION	CHK
DWG	G-1	NO. DATE	DR	REVISION	CHK
SHEET	1 of 61	NO. DATE	DR	REVISION	CHK
APVD		APVD		APVD	
BY		BY		BY	
J. SPITZLEY		J. SPITZLEY		J. SPITZLEY	

REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2MHILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.

© CH2MHILL 2011. ALL RIGHTS RESERVED.

PRELIMINARY - NOT FOR CONSTRUCTION

INDEX TO DRAWINGS

SHT NO.	DWG NO.	TITLE
1	G-1	TITLE SHEET, VICINITY/LOCATION MAP
2	G-2	CIVIL LEGEND & ABBREVIATION
3	G-3	I&C LEGEND
4	G-4	RESERVOIR STORAGE AREA CURVES, SPILLWAY RATING CURVES
5	C-1	OVERALL SITE PLAN
6	C-2	NFRC REALIGNED CHANNEL 1 OF 2
7	C-3	NFRC REALIGNED CHANNEL 2 OF 2
8	C-4	NFRC SEEPAGE COLLECTION TRENCH PLAN & PROFILE
9	C-5	NFRC SEGMENT 1 CUTOFF WALL PLAN & PROFILE
10	C-6	NFRC REALIGNED CHANNEL PROFILE 1 OF 2
11	C-7	NFRC REALIGNED CHANNEL PROFILE 2 OF 2
12	C-8	NFRC REALIGNED CHANNEL TYPICAL CROSS SECTION
13	C-9	NFRC REALIGNED CHANNEL TYPICAL CROSS SECTION
14	C-10	NFRC REALIGNED CHANNEL TYPICAL CROSS SECTION
15	C-10A	NFRC REALIGNED CHANNEL STEP POND DETAILS
16	C-11	NFRC HAUL ROAD CROSSING ALTERNATIVES
17	C-12	NFRC MINE ACCESS ROAD CROSSING ALTERNATIVES
18	C-13	NFRC PARTIAL PLAN 1 OF 2
19	C-14	NFRC PARTIAL PLAN 2 OF 2
20	C-15	COFFER DAM PLAN AND SECTION ALTERNATIVE 1
21	C-16	SEEPAGE COLLECTION OVERALL SITE PLAN, ALTERNATIVES 1 AND 2
22	C-17	SEEPAGE COLLECTION DAM EMBANKMENT PLAN, ALTERNATIVE 1
23	C-18	SEEPAGE COLLECTION DAM EMBANKMENT PROFILE, ALTERNATIVE 1
24	C-19	SEEPAGE COLLECTION DAM EMBANKMENT SECTIONS AND DETAILS, ALTERNATIVE 1
25	C-20	SEEPAGE COLLECTION DAM PROFILES AND SECTION ALTERNATIVE 1
26	C-21	SEEPAGE COLLECTION DAM ACCESS ROAD PROFILES, ALTERNATIVE 1
27	C-22	SEEPAGE COLLECTION POND EMBANKMENT PLAN, ALTERNATIVE 2
28	C-23	SEEPAGE COLLECTION POND EMBANKMENT PROFILE, ALTERNATIVE 2
29	C-24	SEEPAGE COLLECTION POND EMBANKMENT SECTIONS, ALTERNATIVE 2
30	C-25	SEEPAGE COLLECTION POND EMBANKMENT SECTIONS, ALTERNATIVE 2
31	C-26	SEEPAGE COLLECTION POND SPILLWAY AND STORMWATER CHANNEL SECTION, ALTERNATIVE 2
32	C-27	SEEPAGE COLLECTION POND STORMWATER CHANNEL PROFILE AND SECTION, ALTERNATIVE 2
33	C-28	SEEPAGE COLLECTION POND PUMP STATION ENLARGED PLAN AND SECTIONS, ALTERNATIVE 2
34	C-29	SEEPAGE COLLECTION POND LINER DETAILS, ALTERNATIVE 2
35	C-30	NFRC SEEPAGE COLLECTION POND CONVEYANCE PIPELINE PLAN ALTERNATIVE 1 AND 2
36	C-31	NFRC SEEPAGE COLLECTION POND CONVEYANCE PIPELINE PLAN VALVE STATION TO FARO PIT
37	C-32	NFRC SEEPAGE COLLECTION POND CONVEYANCE PIPELINE PROFILE ALTERNATIVE 1
38	C-33	NFRC SEEPAGE COLLECTION POND CONVEYANCE PIPELINE PROFILE ALTERNATIVE 2
39	C-34	NFRC SEEPAGE COLLECTION POND CONVEYANCE PIPELINE PROFILE VALVE STATION TO FARO PIT
40	C-35	CONVEYANCE PIPELINE DETAILS
41	C-36	BORROW PLAN
42	C-37	HAUL ROAD BORROW PLAN & PROFILE
43	C-38	ACCESS ROAD PLAN
44	SM-1	SCP PUMP STATION PLAN
45	SM-2	SCP PUMP STATION SECTION
46	SM-3	SCP VALVE AND METER STATION PLAN
47	SM-4	SCP VALVE AND METER STATION SECTIONS
48	SM-5	SCP VALVE AND METER STATION SECTION
49	SM-6	PUMP INTAKE STRUCTURE
50	N-1	SCP - PUMP STATION 1 OF 2
51	N-2	SCP - PUMP STATION 2 OF 2
52	N-3	SCP - VALVE AND METER STATION
53	N-4	PLANT COMMUNICATION
54	E-1	FARO ONE-LINE DIAGRAM
55	E-2	FARO ONE-LINE DIAGRAM
56	E-3	OVERALL ELECTRICAL SITE PLAN
57	E-4	SEEPAGE COLLECTION POND ALTERNATIVE 1 AND 2
58	E-5	ELECTRICAL SITE PLAN —IWTS
59	E-6	ELECTRICAL SITE PLAN —RADIO REPEATER
60	E-7	SCP PUMP STATION ELECTRICAL PLAN
61	E-8	SCP VALVE AND METERING STATION ELECTRICAL PLAN

ABBREVIATIONS

APPROX	APPROXIMATE
APVD	APPROVED
BC	BEGIN CURVE
BLDG	BUILDING
CGVD	CANADIAN GEODETIC VERTICAL DATUM
CHK	CHECKED
CL	CENTER LINE
CSRS	CANADIAN SPACIAL REFERENCE SYSTEM
CU	CUBIC
DBR	DESIGN BASIS REPORT
DIA	DIAMETER
DR	DRAWN BY, DRIVE, DIMENSIONAL RATIO
DSGN	DESIGNED BY
DWG	DRAWING
E	EAST, EASTING
EC	END CURVE
EL OR ELEV	ELEVATION
E(OH)	ELECTRIC OVERHEAD
EXST	EXISTING
FT	FEET, FOOT
H	HORIZONTAL
ID	INTERMEDIATE DAM
INV	INVERT
IP	INTERMEDIATE POND
LBS	POUNDS
LF	LINEAR FEET
M	METRES
mm	MILIMETRES
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
N	NORTH, NORTING
NAD83	NORTH AMERICAN DATUM OF 1983
NO.	NUMBER
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OG	ORIGINAL GROUND
OH	OVERHEAD
PI	POINT OF INTERSECTION
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POE	POINT OF ENDING
PROJ	PROJECT
PVC	POLYVINYL CHLORIDE
REQD	REQUIRED
RCD	ROSE CREEK DIVERSION
RD	ROAD
R/W	RIGHT OF WAY
S	SLOPE
SC	SERVICE CONNECTION
SIM	SIMILAR
SQ	SQUARE
SR	SURFACE RESTORATION
ST	STREET
STA	STATION
TYP	TYPICAL
UG	UNDERGROUND
UNK	UNKNOWN
V	VERTICAL
VC	VERTICAL CURVE
WSE	WATER SURFACE ELEVATION
WTP	WATER TREATMENT PLANT
W/	WITH
WS	WATER SURFACE

GENERAL NOTES

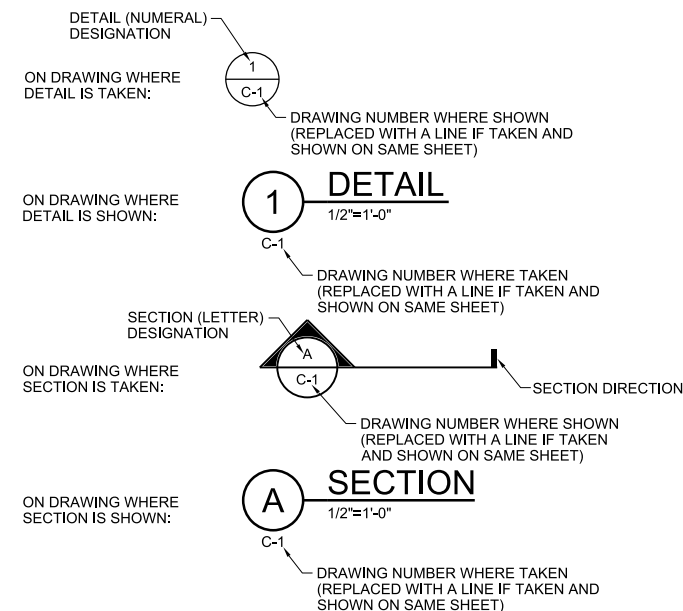
- CONTOURS SHOWN ON DRAWINGS WERE PREPARED BY CRITIGEN CORPORATION FROM LIDAR DATED OCT 2011. PLANIMETRIC MAPPING PREPARED BY CRITIGEN CORPORATION FROM AERIAL PHOTOS DATED AUGUST 2012.
- EXISTING TOPOGRAPHY, STRUCTURES, AND SITE FEATURES ARE SHOWN SCREENED AND OR LIGHT-LINED. NEW FINISH GRADE, STRUCTURES, AND SITE FEATURES ARE SHOWN HEAVY-LINED.
- HORIZONTAL DATUM: NAD83, CSRS EPOCH 2002.
- VERTICAL DATUM: CGVD 28 (HTV 2.0).
- MAINTAIN, RELOCATE, OR REPLACE EXISTING SURVEY MONUMENTS, CONTROL POINTS, AND STAKES WHICH ARE DISTURBED OR DESTROYED. PERFORM THE WORK TO PRODUCE THE SAME LEVEL OF ACCURACY AS THE ORIGINAL MONUMENT(S) IN A TIMELY MANNER AND AT THE CONTRACTOR'S EXPENSE.
- EXISTING UTILITIES, PIPELINES, STRUCTURES, AND CONNECTION POINTS ARE SHOWN ON DRAWINGS IN ACCORDANCE WITH AVAILABLE RECORDS. CONTRACTOR SHALL NOTIFY ALL UTILITY OFFICES WHICH ARE AFFECTED BY THE CONSTRUCTION OPERATION AT LEAST TWO WEEKS PRIOR TO COMMENCING EXCAVATION.
- CAUTION: THERE ARE OVERHEAD UTILITIES IN THE WORK AREA. CONTRACTOR SHALL MAINTAIN REQUIRED CLEARANCE BETWEEN EQUIPMENT AND UTILITIES TO PROTECT ALL PERSONNEL, EQUIPMENT, AND UTILITIES. COORDINATE WITH UTILITY COMPANIES AS NECESSARY.
- STATIONING AND DISTANCES SHOWN ON THE DRAWINGS ARE BASED ON HORIZONTAL MEASUREMENTS. REFERENCES TO LEFT OR RIGHT ON THE DRAWINGS ASSUME THE DIRECTION OF INCREASING STATION ALONG THE ROSE CREEK DIVERSION ALIGNMENT.
- CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES WITHIN THE WORK LIMITS SHOWN OR SPECIFIED. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, VEHICLES AND EQUIPMENT, LIMITS OF EXCAVATION, EXCAVATED MATERIAL AND BACKFILL MATERIAL STORAGE. WHERE WORK LIMITS ARE NOT SHOWN LIMIT CONSTRUCTION ACTIVITIES WITHIN ROAD RIGHT-OF-WAYS, UNLESS OTHERWISE SHOWN.
- CONTOURS ARE TO BE RESTORED TO THE PRE-CONSTRUCTION CONDITION UNLESS OTHERWISE SHOWN.
- REPAIR OR REPLACE ALL PROPERTY DAMAGED BY CONSTRUCTION.
- THESE DRAWINGS FORM PART OF THE PRELIMINARY FINAL DESIGN BASIS REPORT AND SHOULD BE READ IN CONJUNCTION WITH THE TEXT AND APENDICIES.

LEGEND

CIVIL

	EDGE OF UNPAVED ROAD
	WORK LIMITS AND/ OR BOUNDARY
	CENTERLINE
	ROSE CREEK DIVERSION CHANNEL BASELINE AND STATIONING
	POWER POLE
	TEST PIT
	MONITORING WELL, PIEZOMETER, OR OTHER INSTRUMENTATION
	SURVEY CONTROL MONUMENT
	BORE HOLE
	SHALLOW TEST PIT

DETAIL AND SECTION DESIGNATION



CH2MHILL®

GENERAL
INDEX TO DRAWINGS,
CIVIL LEGEND, ABBREVIATIONS
AND GENERAL NOTES

AS SHOWN
VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm
DATE MARCH 2016
PROJ 427716
DWG G-2
SHEET 2 of 61

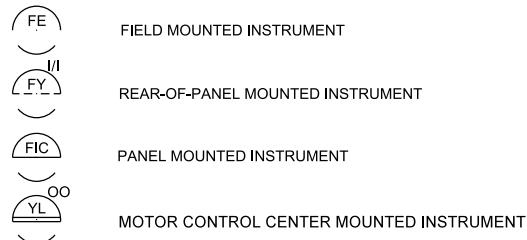
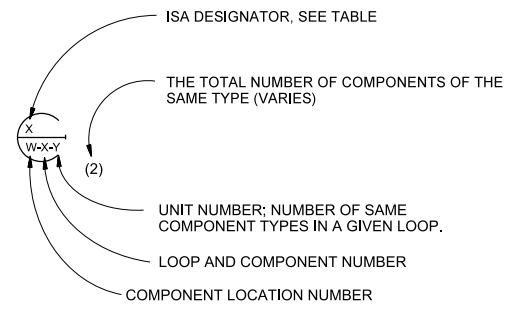
PRELIMINARY - NOT FOR CONSTRUCTION

© CH2M HILL 2011. ALL RIGHTS RESERVED.

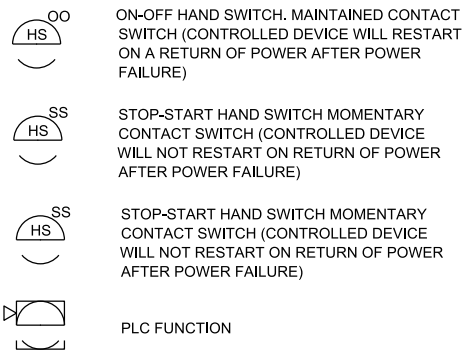
REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

INSTRUMENTATION IDENTIFICATION

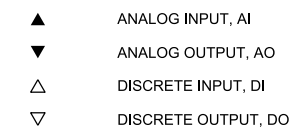
EXAMPLE SYMBOLS



SPECIAL CASES



RTU SYMBOL DEFINITIONS



FLOW STREAM IDENTIFICATION

- DR DRAIN
- IR IRRIGATION
- NPW NON POTABLE WATER
- OF OVERFLOW
- PTW PUMP TO WASTE
- PW POTABLE WATER
- RW RAW WATER
- SA SAMPLE
- SD STORM DRAIN
- SHC SODIUM HYPOCHLORITE

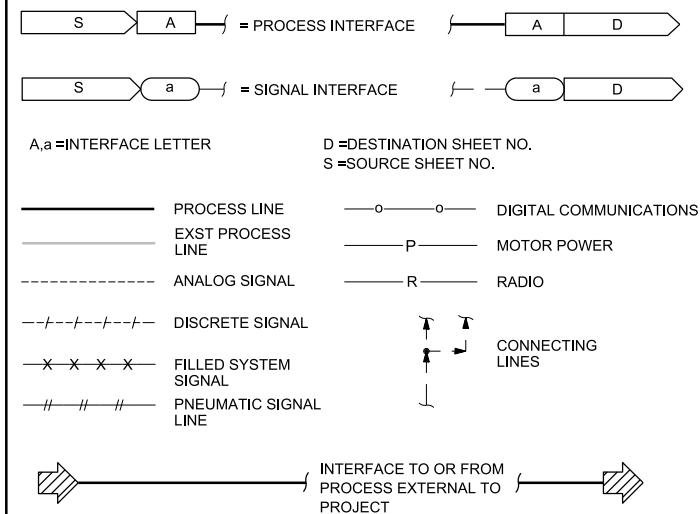
INSTRUMENT IDENTIFICATION LETTERS TABLE

LETTER	FIRST LETTER (S)		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (+)		ALARM		
B	BURNER FLAME		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
C	CONDUCTIVITY			CONTROL / COMMAND	
D	DENSITY (S.G)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			
G	GAUGE		GLASS	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTION				MIDDLE
N	USERS CHOICE (+)		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
O	USERS CHOICE (+)		ORFICE		
P	PRESSURE (OR VACUUM)		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE	INTEGRATE		
R			RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (+)		MULTIFUNCTION	MULTIFUNCTION (+)	MULTIFUNCTION (+)
V	VISCOSITY			VALVE OR DAMPER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED (+)		UNCLASSIFIED (+)	UNCLASSIFIED (+)	UNCLASSIFIED (+)
Y	EVENT			RELAY OR COMPUTE (+)	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

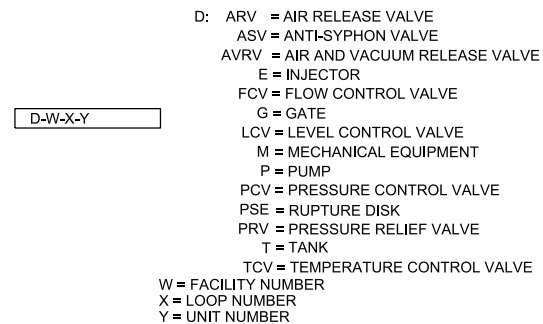
TABLE BASED ON THE INSTRUMENTATION, SYSTEMS, AND AUTOMATION SOCIETY (ISA) STANDARD.

(+) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS.

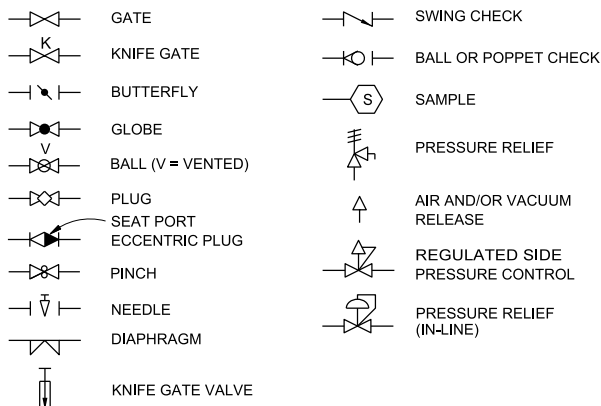
INTERFACE SYMBOLS & LINE LEGEND



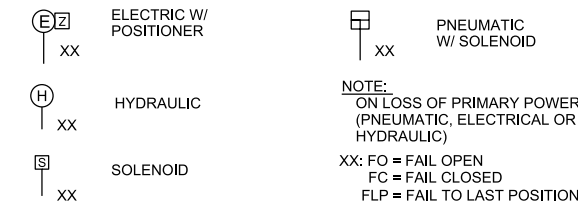
SELF CONTAINED VALVE & EQUIPMENT TAG NUMBERS



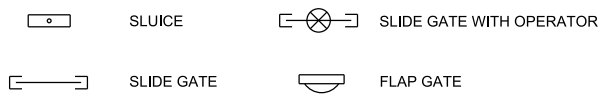
VALVE SYMBOLS



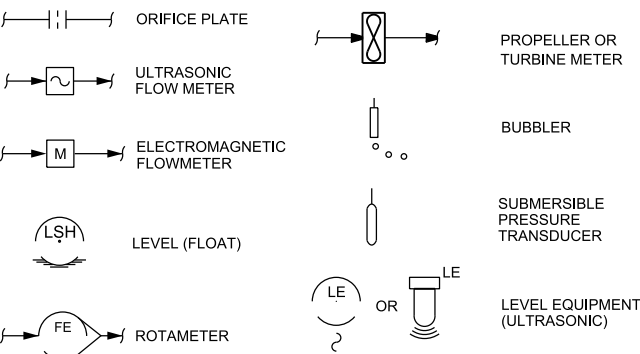
ACTUATOR SYMBOLS



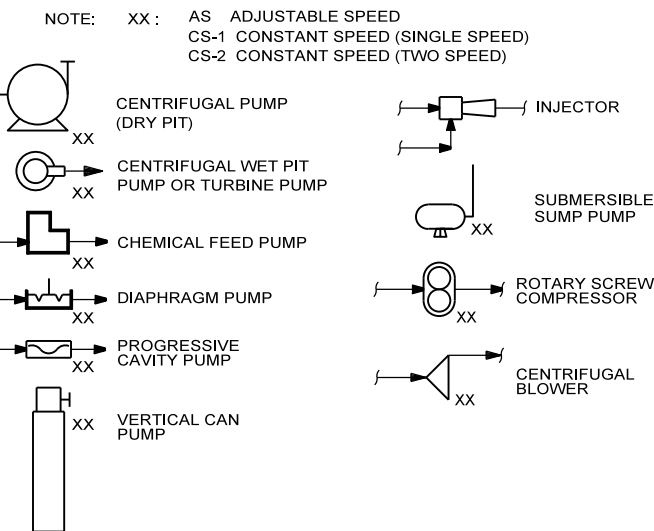
GATE SYMBOLS



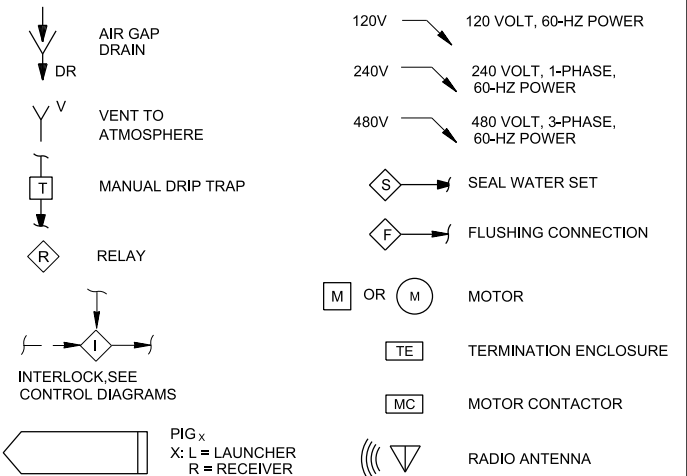
PRIMARY ELEMENT SYMBOLS



PUMP SYMBOLS



MISCELLANEOUS SYMBOLS



ABBREVIATIONS

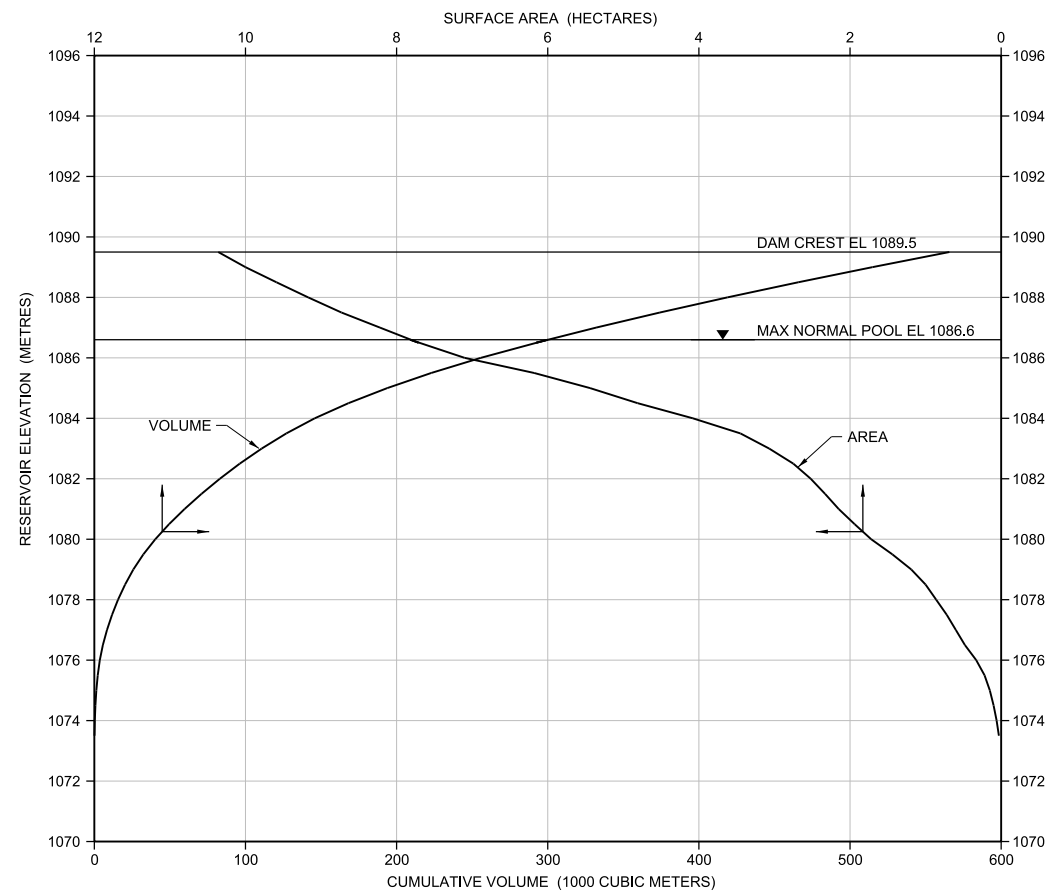
ACK	ACKNOWLEDGE	MRL	MOTORIZED RELIEF LOUVER
AC	ALTERNATING CURRENT	MS	MOTOR STARTER
AVRV	AIR VACUUM RELIEF VALVE	MSC	MANUFACTURER SUPPLIED CABLE
BAT	BATTERY	MSTR	MOISTURE DETECTOR
BFP	BACKFLOW PREVENTER	MTD	MOTOR TEMPERATURE DETECTOR
BRG	BEARING	MTR	MOTOR
BRKR	BREAKER		
BTD	BEARING TEMPERATURE DETECTOR		
BUG	BACKUP GENERATOR	N.C.	NORMALLY CLOSED
		N.O.	NORMALLY OPEN
CL ₂	CHLORINE	OC	OPEN-CLOSE (D)
CLS	CLOSE (CMD)	OCA	OPEN-CLOSE-AUTO
CLSD	CLOSED	OCR	OPEN-CLOSE-REMOTE
CMD	COMMAND	OIS	OPERATOR INTERFACE STATION
CO ₂	CARBON DIOXIDE	OL	OVERLOAD (MOTOR)
CP	CONTROL PANEL	OO	ON-OFF
CS	CONSTANT SPEED OR CONTROL STATION	OOA	ON-OFF-AUTO
CSCR	CAPACITOR START, CAPACITOR RUN CONTROLLER	OOR	ON-OFF-REMOTE
		OPN	OPEN (CMD)
DC	DIRECT CURRENT	OPND	OPENED
DISCH	DISCHARGE	OSC	OPEN-STOP-CLOSE
DOL	DIRECT ON LINE	OW4	OLD WASHOE 4 WELL
DR	DRAIN		
EF	EXHAUST FAN	PCP	PUMP CONTROL PANEL
ES	EMERGENCY STOP	PER	PERMISSIVE
EXT	EXTERNAL	pH	HYDROGEN ION CONCENTRATION
FO	FIBER OPTIC	PLC	PROGRAMMABLE LOGIC CONTROLLER
FP	FIELD PANEL	PRESS	PRESSURE
FWD	FORWARD	PTW	PUMP TO WASTE
		QTY	QUANTITY
GW	GROUNDWATER		
H ₂ O	WATER	RDY	READY
HOA	HAND-OFF-AUTO	REV	REVERSE
HTR	HEATER	RMT	REMOTE
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	RSL	RAISE-STOP-LOWER
		RTU	REMOTE TELEMETRY UNIT
		RVSS	REDUCED VOLTAGE SOLID STATE
ICP	INSTRUMENTATION CONTROL PANEL	SCP	SEEPAGE COLLECTION POND
INT	INTERNAL	SHC	SODIUM HYPOCHLORITE
		SMK	SMOKE
		SPD	SPEED
		SS	START-STOP
		STBY	STAND BY
		SUB	SUPPLY FAN
LDS	LEAK DETECTION SYSTEM	TEMP	TEMPERATURE
LCP	LOCAL CONTROL PANEL	TYP	TYPICAL
LOR	LOCAL-OFF-REMOTE	UPS	UNINTERRUPTIBLE POWER SUPPLY
LR	LOCAL-REMOTE		
LVL	LEVEL	VCP	VALVE CONTROL PANEL
MA	MANUAL-AUTO	VD	VFD - DOL
MCC	MOTOR CONTROL CENTER	VDC	VOLTS DC
MFR	MANUFACTURER	VFD	VARIABLE FREQUENCY DRIVE
MIL	MOTORIZED INLET LOUVER	WDG	WINDING
MLD	MOTOR LEAKAGE DETECTOR		

GENERAL NOTES

- THIS IS A STANDARD LEGEND, THEREFORE NOT ALL OF THIS INFORMATION MAY BE USED ON THIS PROJECT.
- COMPONENTS AND PANELS SHOWN WITH A (◆) ARE FURNISHED BY TMWA AND INSTALLED BY CONTRACTOR
- COMPONENTS AND PANELS SHOWN WITH A DOUBLE (✱✱) ARE PART OF A PACKAGE SYSTEM; SEE EQUIPMENT SPECIFICATIONS.

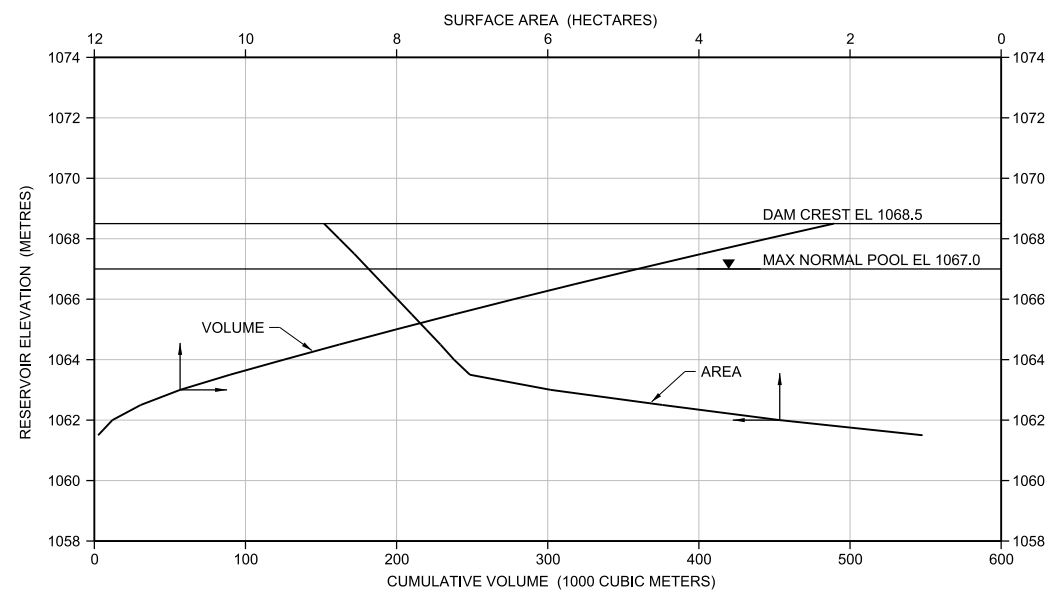
CH2MHILL®

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
DATE MARCH 2016
PROJ 427716
DWG G-3
SHEET 3 of 61



RESERVOIR CAPACITY, ALTERNATIVE 1

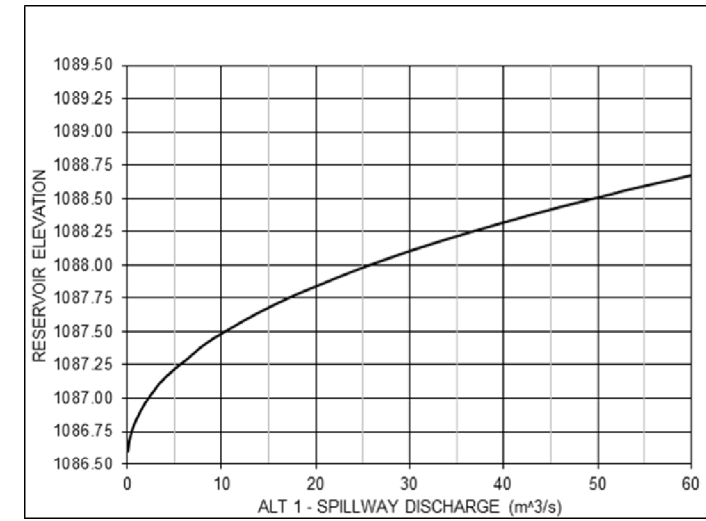
NTS



RESERVOIR CAPACITY, ALTERNATIVE 1

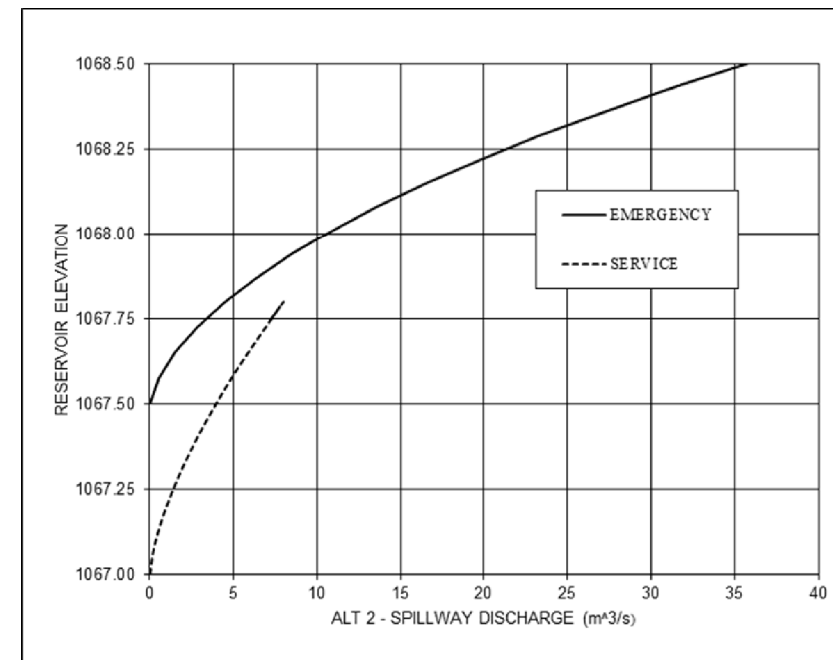
NTS

ELEVATION (METERS)	CUMULATIVE VOLUME (1000 m³)	SURFACE AREA (HECTARES)
1073.5	0.10	0.03
1074	0.31	0.06
1074.5	0.70	0.10
1075	1.32	0.15
1075.5	2.26	0.22
1076	3.62	0.33
1076.5	5.65	0.48
1077	8.37	0.60
1077.5	11.71	0.72
1078	15.67	0.86
1078.5	20.35	1.00
1079	25.81	1.19
1079.5	32.45	1.44
1080	40.33	1.72
1080.5	49.48	1.94
1081	59.71	2.15
1081.5	70.89	2.33
1082	83.03	2.52
1082.5	96.18	2.75
1083	110.75	3.07
1083.5	127.01	3.45
1084	145.80	4.08
1084.5	168.12	4.81
1085	193.82	5.44
1085.5	222.92	6.18
1086	255.70	7.10
1086.6	300.01	7.82
1086.5	292.38	7.71
1087	331.99	8.22
1087.5	374.19	8.73
1088	418.85	9.17
1088.5	465.74	9.59
1089	514.81	10.00
1089.5	565.71	10.36



SPILLWAY RATING CURVE, ALTERNATIVE 1

NTS



SPILLWAY RATING CURVE, ALTERNATIVE 2

NTS

ELEVATION (METERS)	CUMULATIVE VOLUME (1000 m³)	SURFACE AREA (HECTARES)
1061.5	2.52	1.04
1062	11.94	2.93
1062.5	30.67	4.48
1063	56.74	5.96
1063.5	89.7	7.03
1064	125.43	7.24
1064.5	162.08	7.42
1065	199.67	7.61
1065.5	238.18	7.8
1066	277.65	7.99
1066.5	318.06	8.18
1067	359.43	8.37
1067.5	401.77	8.56
1068	445.09	8.76
1068.5	489.29	8.96

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831
FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL

CIVIL

**RESERVOIR STORAGE AREA CURVES
SPILLWAY RATING CURVES**

NO. DATE

DR

REVISION

CHK

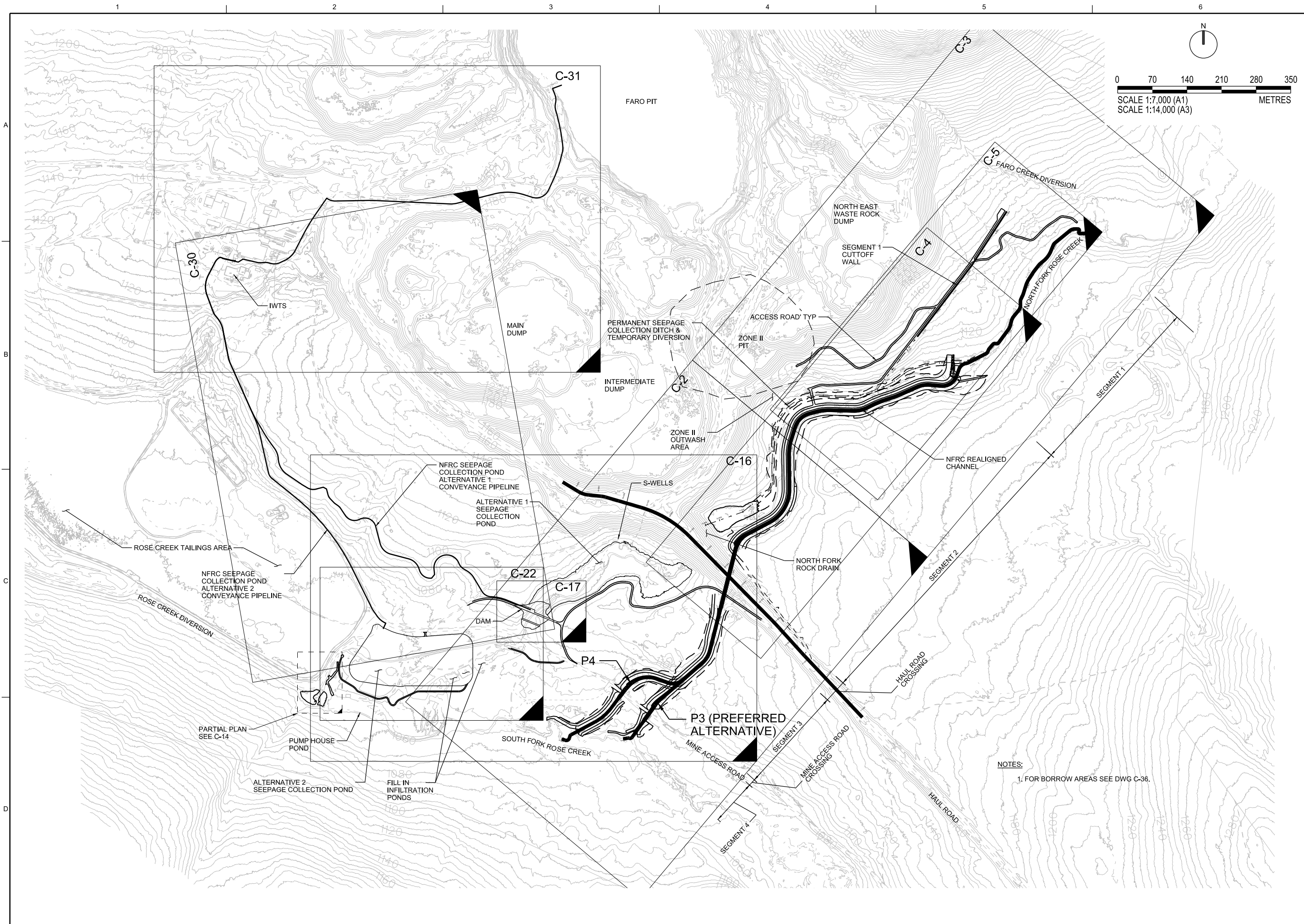
APVD

BY

APVD

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831
FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

DATE MARCH 2016
PROJ 427716
DWG G-4
SHEET 4 of 61



0 70 140 210 280 350
 SCALE 1:7,000 (A1)
 SCALE 1:14,000 (A3)
 METRES

NO.	DATE	DR	CHK	REVISION	BY	APVD
		L. ALLIGER	J. CHELONIS	J. SPITZLEY	J. SPITZLEY	J. SPITZLEY

2625 AIRPARK DR.
 REDDING, CA 96001
 (530) 243-5831

FARO MINE REMEDIATION PROJECT
 NORTH FORK ROSE CREEK PROJECT
 GOVERNMENT OF YUKON
 DESIGN

CH2MHILL®

CIVIL

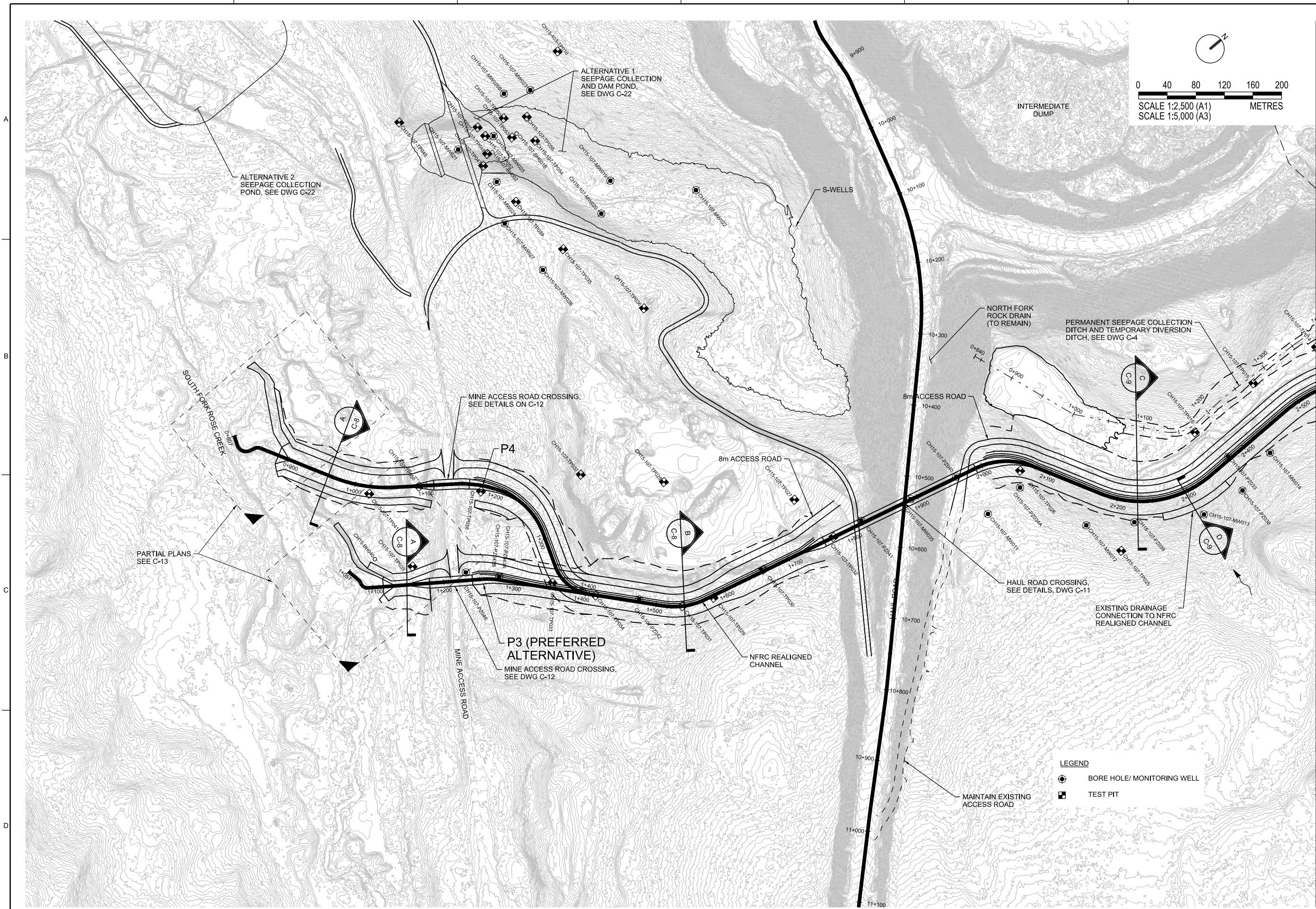
OVERALL SITE PLAN

AS SHOWN
VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
DATE MARCH 2016
PROJ C-1
DWG C-1
SHEET 5 of 61

NOTES:
 1. FOR BORROW AREAS SEE DWG C-36.

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THE DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



MATCH LINE SEE DWG C-3

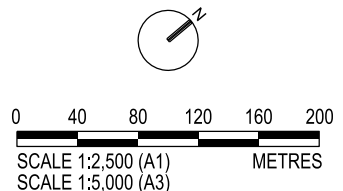
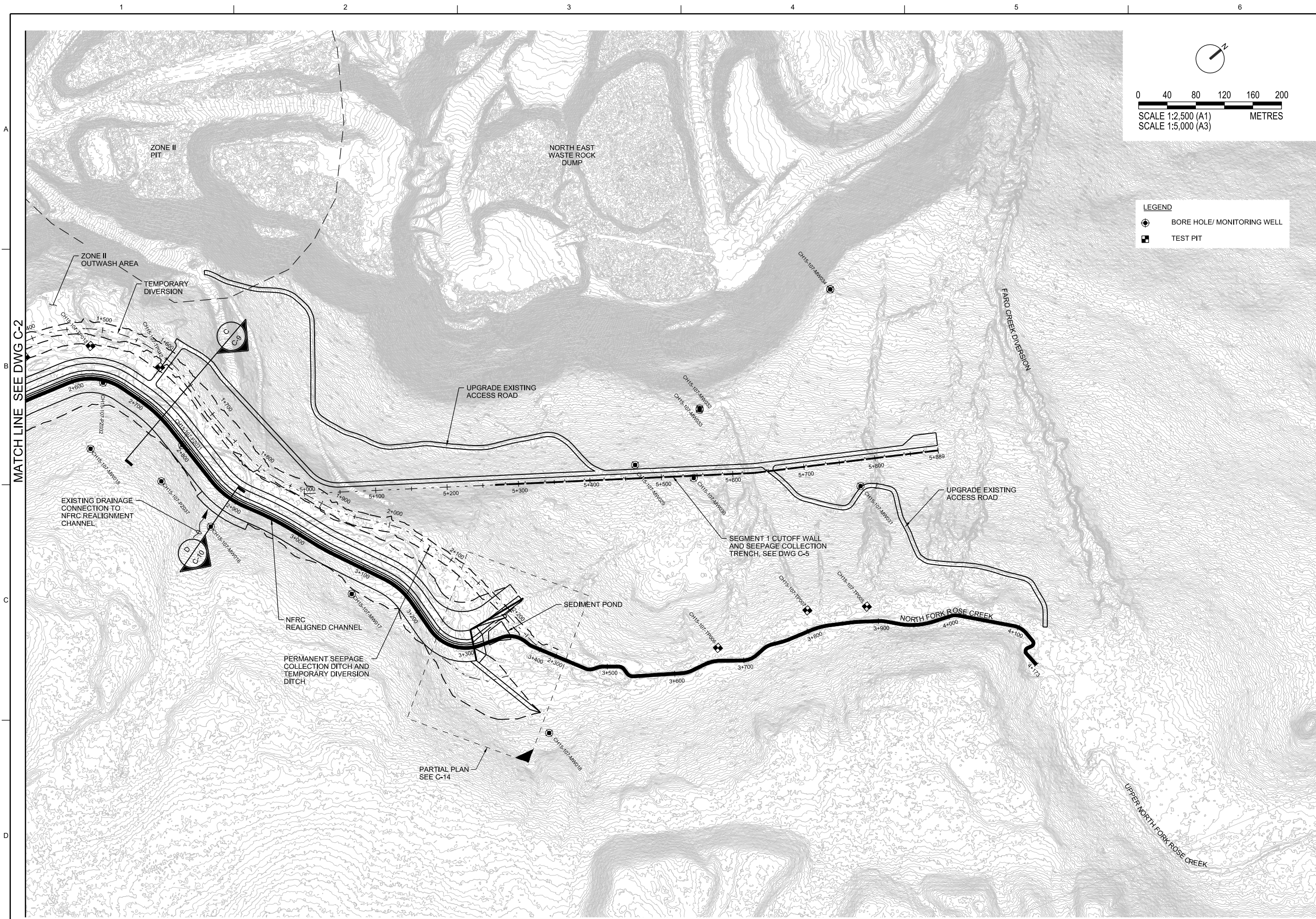
2525 ARBARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		NO. DATE		DR		REVISION		BY	
CIVIL		NFRC REALIGNED CHANNEL 1 OF 2		L. ALLIGER		J. CHELONIS		J. SPITZLEY		J. SPITZLEY	
VERIFY SCALE		BAR IS 25mm ON ORIGINAL DRAWING.		DATE		MARCH 2016		PROJ		427716	
DATE		MARCH 2016		DWG		C-2		SHEET		6 of 61	

CH2MHILL®

CIVIL
NFRC REALIGNED CHANNEL
1 OF 2

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THE DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



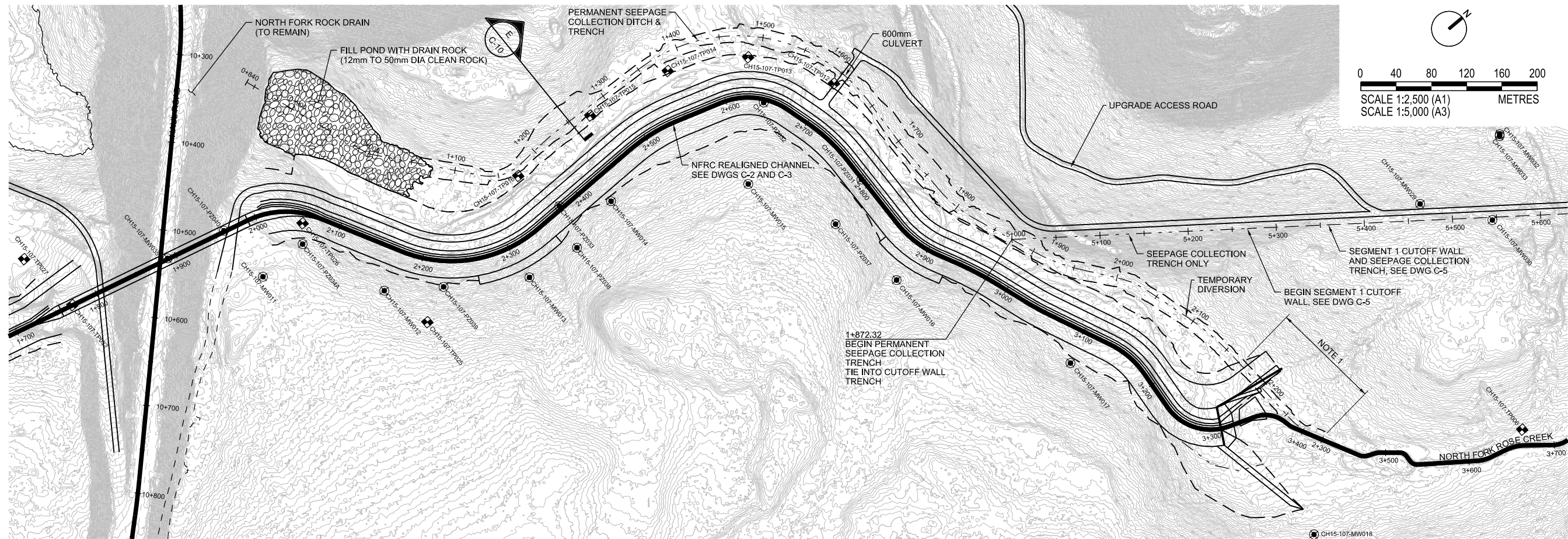
LEGEND

- BORE HOLE/MONITORING WELL
- TEST PIT

MATCH LINE SEE DWG C-2

A
B
C
D

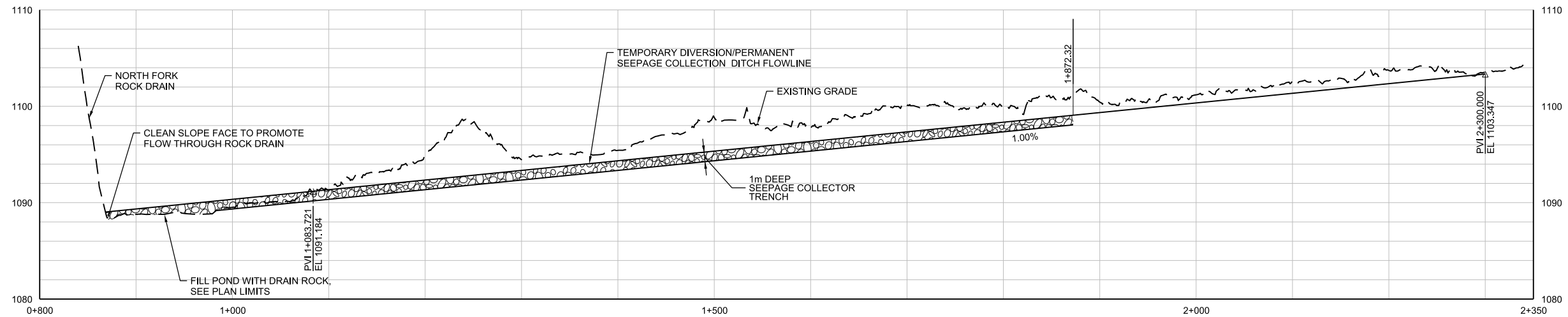
CH2MHILL®		CIVIL	
2625 AIRPARK DR. REDDING, CA 96001 (530) 243-8831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN	
NFCR REALIGNED CHANNEL 2 OF 2		PRELIMINARY - NOT FOR CONSTRUCTION	
VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 25mm			
DATE	MARCH 2016	DR	L. ALLIGER
PROJ	427716	CHK	J. CHELONIS
DWG	C-3	REVISION	J. SPITZLEY
SHEET	7 of 61	BY	APVD
FILENAME: 100-021-C-003_427716.dgn		PLOT DATE: 3/29/2016	
PLOT TIME: 10:54:20 AM		© CH2M HILL 2011. ALL RIGHTS RESERVED.	



PLAN

NOTES:

- 1. FILL IN TEMPORARY DIVERSION AFTER NFRS IS DIVERTED INTO NFRS REALIGNED CHANNEL.



PROFILE

HORIZ 1:2500
HORIZ 1:250

NO.	DATE	DR	CHK	REVISION	BY	APVD
		L ALLIGER	J CHELONIS		J SPITZLEY	J SPITZLEY

2625 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

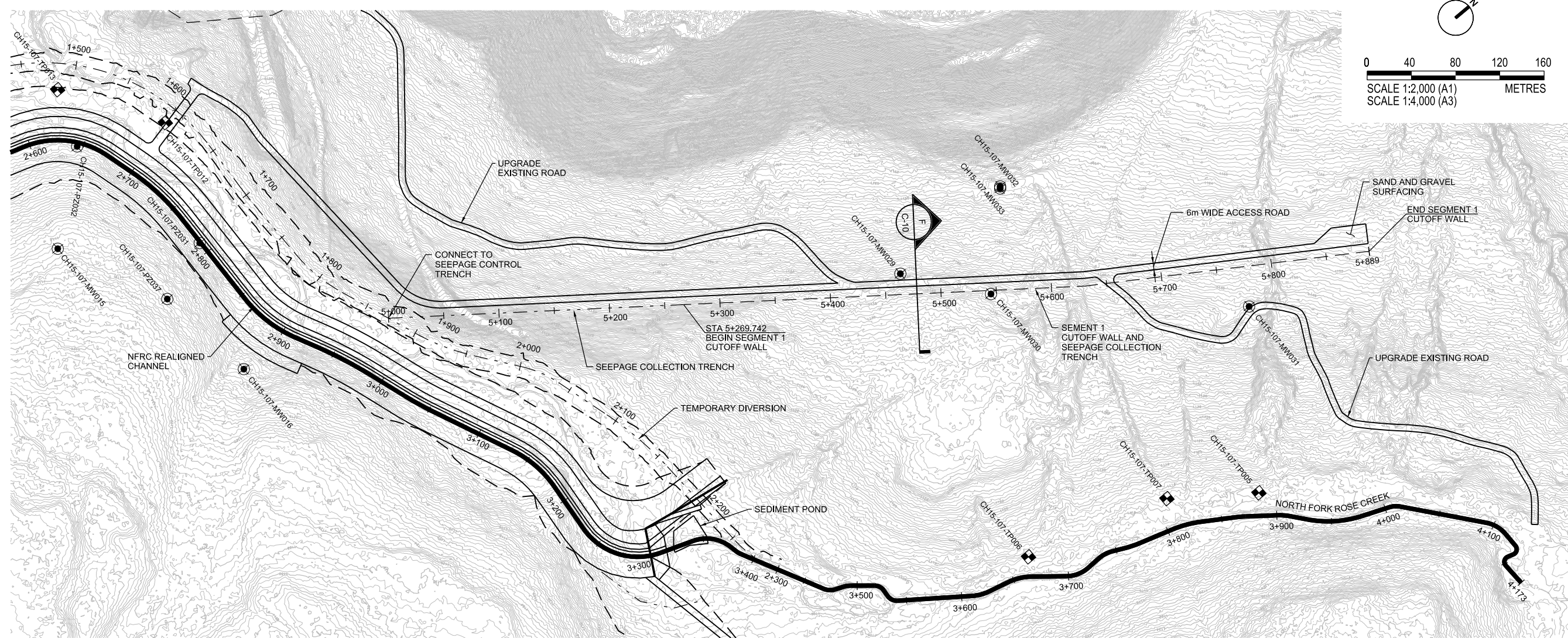
FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL®
CIVIL

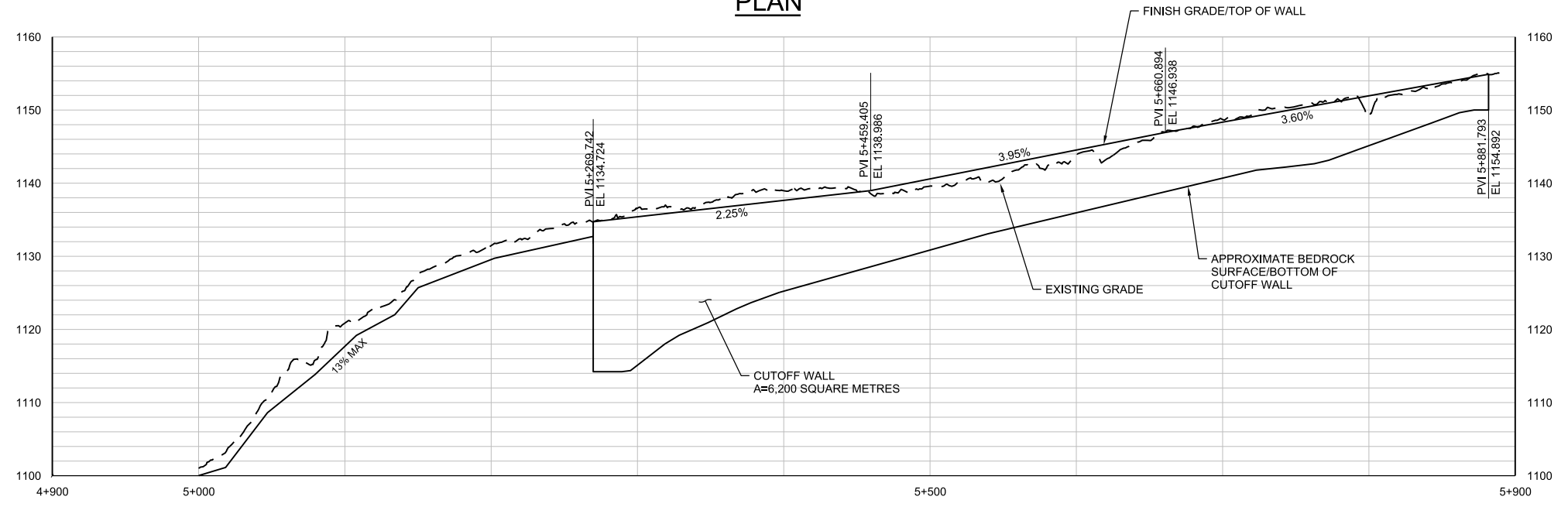
**NFRC SEEPAGE COLLECTION TRENCH
PLAN AND PROFILE**

PRELIMINARY - NOT FOR CONSTRUCTION

VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	25mm
DATE	MARCH 2016
PROJ	427716
DWG	C-4
SHEET	8 of 61



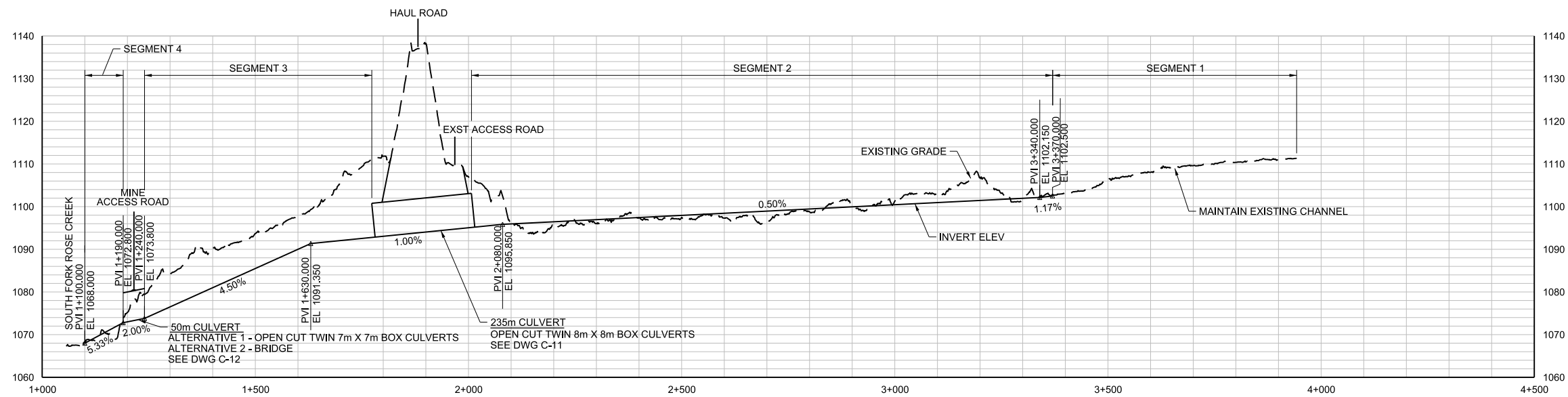
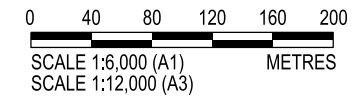
PLAN



PROFILE
 HORIZ 1:2000
 HORIZ 1:400

CH2MHILL® CIVIL NFRC SEGMENT 1 CUTOFF WALL PLAN AND PROFILE		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		
		2525 AIRPARK DR. REDDING, CA 96001 (530) 243-8831	NO. DATE DSGN	DR L ALLIGER
VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm		DATE MARCH 2016 PROJ 427716 DWG C-5 SHEET 9 of 61		

PRELIMINARY - NOT FOR CONSTRUCTION



NFRC REALIGNED CHANNEL PREFERRED ALTERNATE P3 PROFILE
 HORIZ 1:6000
 VERT 1:600

NO.	DATE	DR	CHK	REVISION	BY	APVD
		L ALLIGER	J CHELONIS		J SPITZLEY	J SPITZLEY

2525 AIRPARK DR.
 REDDING, CA 96001
 (530) 243-8831

FARO MINE REMEDIATION PROJECT
 NORTH FORK ROSE CREEK PROJECT
 GOVERNMENT OF YUKON
 DESIGN

CH2MHILL®

CIVIL

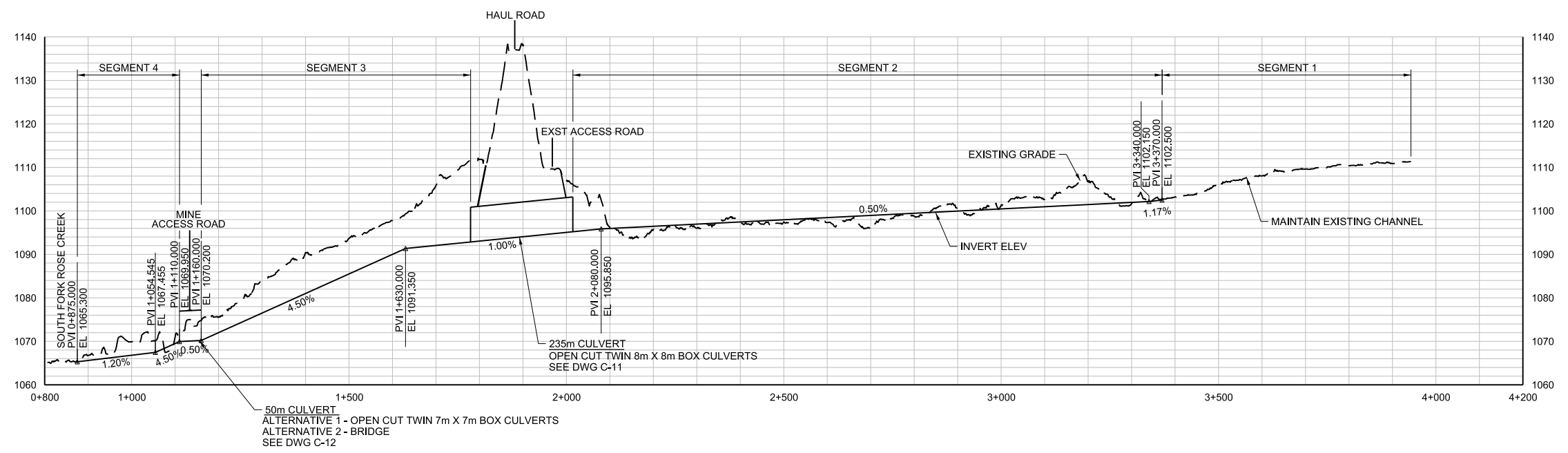
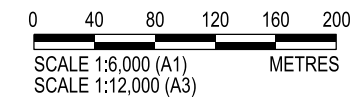
NFRC REALIGNED CHANNEL PROFILE
 1 OF 2

VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	
DATE	MARCH 2016
PROJ	427716
DWG	C-6
SHEET	10 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

© CH2M HILL 2011. ALL RIGHTS RESERVED.



NFRC REALIGNED CHANNEL ALTERNATE P4 PROFILE
 HORIZ 1:6000
 VERT 1:600

NO.	DATE	DR	CHK	BY
		L ALLIGER	J CHELONIS	J SPITZLEY
				APVD
				APVD

2525 AIRPARK DR.
 REDDING, CA 96001
 (530) 243-5831

FARO MINE REMEDIATION PROJECT
 NORTH FORK ROSE CREEK PROJECT
 GOVERNMENT OF YUKON
 DESIGN

CH2MHILL®

CIVIL

NFRC REALIGNED CHANNEL PROFILE
 2 OF 2

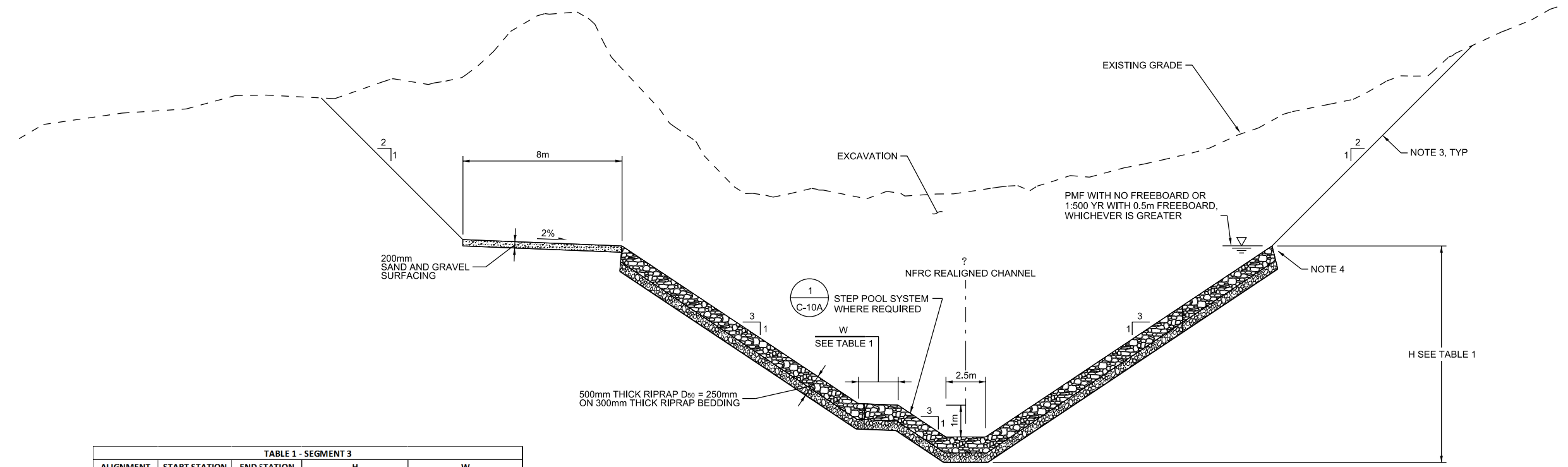
VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	
DATE	MARCH 2016
PROJ	427716
DWG	C-7
SHEET	11 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

© CH2M HILL 2011. ALL RIGHTS RESERVED.

A
B
C
D

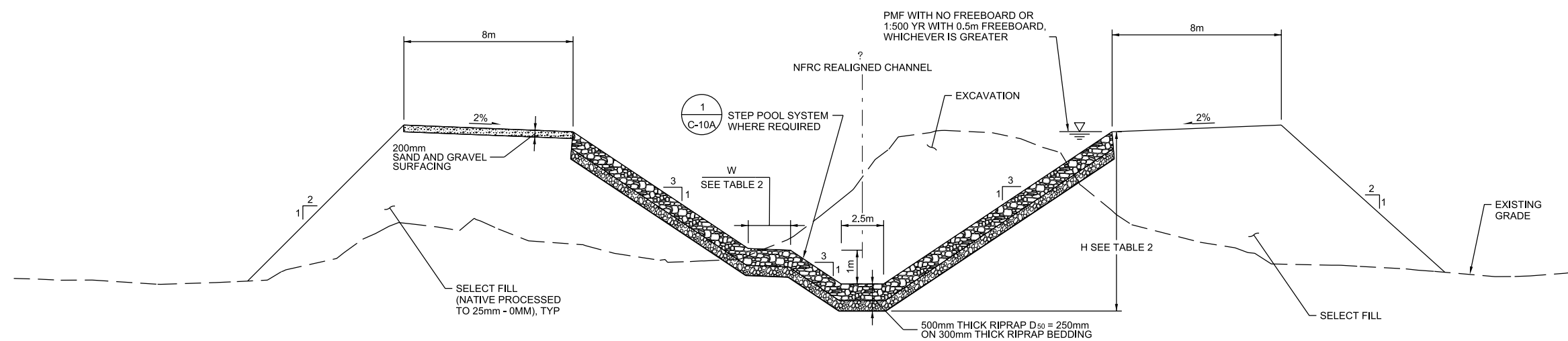


ALIGNMENT	START STATION	END STATION	H	W
P3	1+240	1+330	7.5m TO 5.0m	8.95m TO 2.5m
P3	1+330	1+720	5.0m	2.5m
P3	1+720	1+755	5.0m TO 6.0m	2.5m TO 10.95m

P3 STA. 1+240 TO 1+755 (PREFERRED ALIGNMENT)
P4 STA. 1+160 TO 1+755

(B) NFRS REALIGNED CHANNEL - SEGMENT 3
1:150
C-2

- NOTES:
- EXCAVATE ALL MATERIAL, INCLUDING VEGETATION, SOIL, ROCK, AND ORGANICS TO SUBGRADE AS SHOWN AND DISPOSE OF IN DESIGNATED EXCAVATION WASTE AREAS. MATERIAL NOT TO BE REUSED FOR EMBANKMENT CONSTRUCTION.
 - PREPARED SUBGRADE SHALL BE FREE OF LOOSE OR DISTURBED MATERIAL, ORGANIC DEBRIS, OR MASSIVE GROUND ICE. NOTIFY ENGINEER IF MELTING OF FROZEN GROUND IS OBSERVED OR IF PEAT AND ORGANIC SOIL IS OBSERVED IN PREPARED SUBGRADE.
 - STABILITY OF EXCAVATED SLOPES TO BE REVIEWED IN FINAL DESIGN PARTICULARLY CONSIDERING EARTHQUAKE EFFECTS.
 - CONSIDER ADDING A BENCH BETWEEN 3H:1V AND 2H:1V SLOPE IN FINAL DESIGN.



ALIGNMENT	START STATION	END STATION	H	W
P3	1+130	1+150	5.5m TO 4.5m	8.95m TO 2.5m
P3	1+150	1+180	4.5m	2.5m

P3 STA. 1+130 TO 1+180 (PREFERRED ALIGNMENT)
P4 STA. 0+900 TO 1+180

(A) NFRS REALIGNED CHANNEL - SEGMENT 4
1:150
C-2

NO.	DATE	DR	CHK	REVISION	BY	APVD
		P. DAVIS	J. CHELONIS		J. SPITZLEY	J. SPITZLEY

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL®
CIVIL
NFRS REALIGNED CHANNEL
TYPICAL CROSS SECTION

VERIFY SCALE	BAR IS 25mm ON ORIGINAL DRAWING.
DATE	MARCH 2016
PROJ	427716
DWG	C-8
SHEET	12 of 61

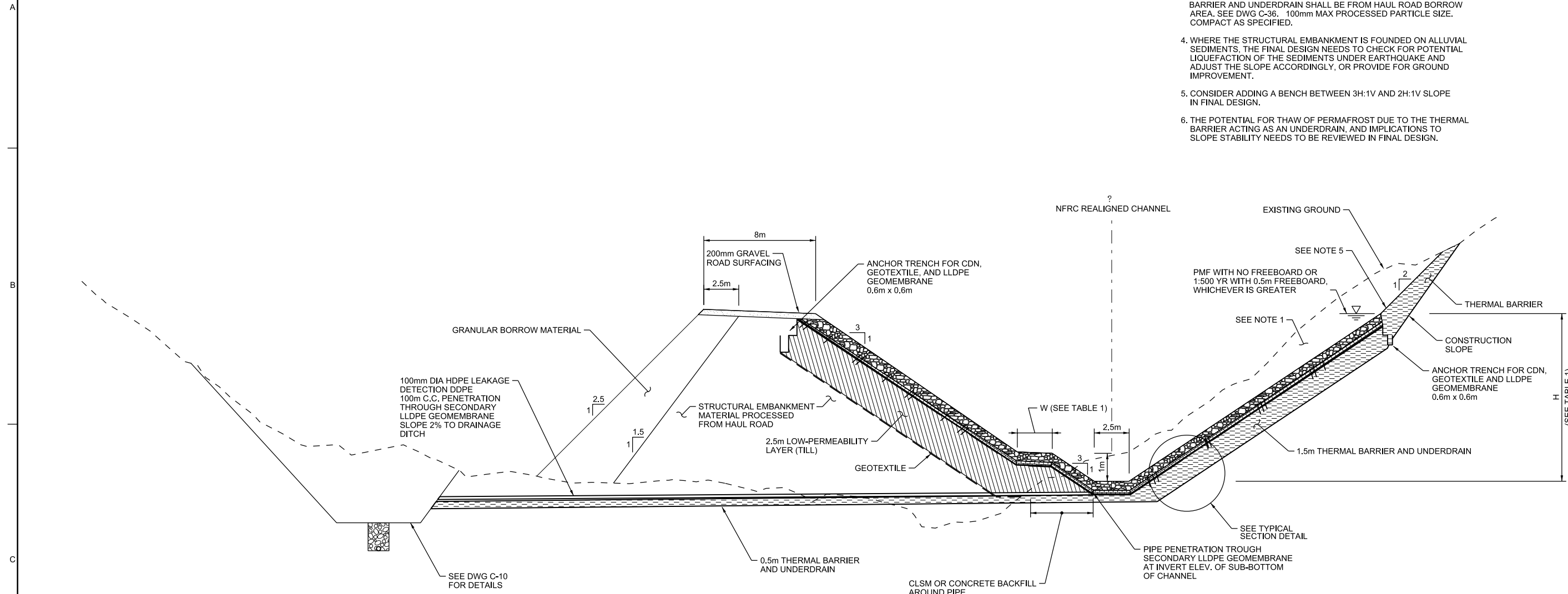
PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2MHILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.

© CH2MHILL 2011. ALL RIGHTS RESERVED.

NOTES:

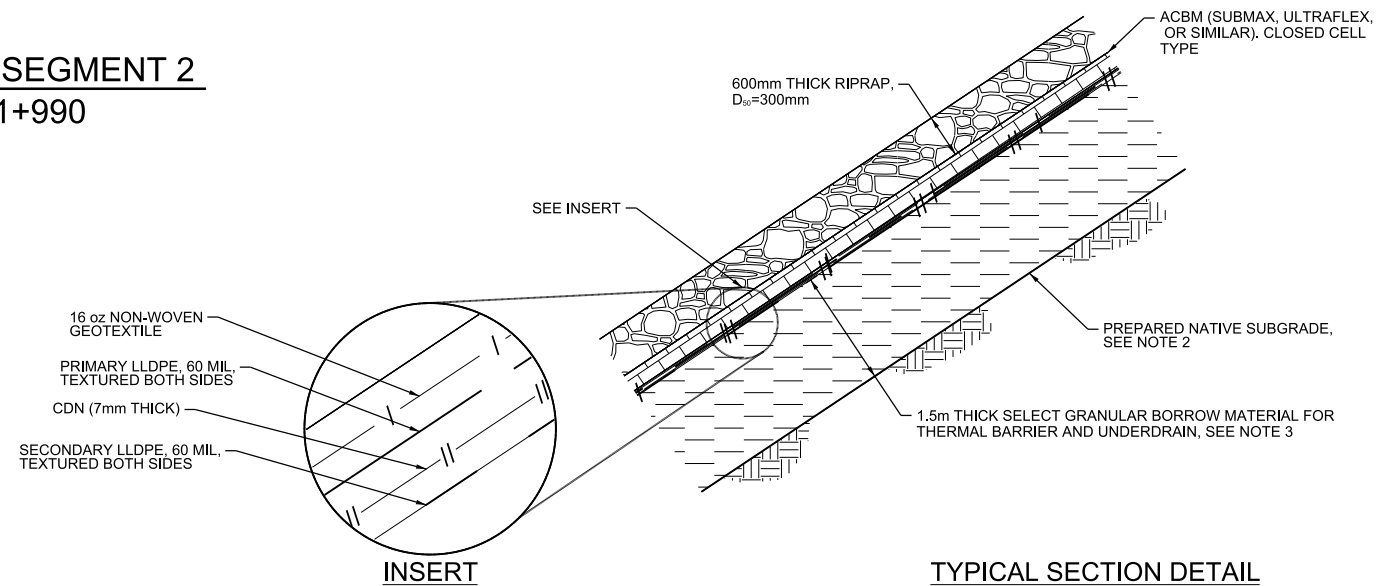
- EXCAVATE ALL MATERIAL, INCLUDING VEGETATION, SOIL, ROCK, AND ORGANICS TO SUBGRADE AS SHOWN AND DISPOSE OF IN DESIGNATED EXCAVATION WASTE AREAS. MATERIAL NOT TO BE REUSED FOR EMBANKMENT CONSTRUCTION.
- PREPARED SUBGRADE SHALL BE FREE OF LOOSE OR DISTURBED MATERIAL AND ORGANIC DEBRIS. NOTIFY ENGINEER IF MELTING OF FROZEN GROUND IS OBSERVED OR IF PEAT AND ORGANIC SOIL IS OBSERVED IN PREPARED SUBGRADE.
- SELECT GRANULAR BORROW MATERIAL FOR USE AS THERMAL BARRIER AND UNDERDRAIN SHALL BE FROM HAUL ROAD BORROW AREA. SEE DWG C-36. 100mm MAX PROCESSED PARTICLE SIZE. COMPACT AS SPECIFIED.
- WHERE THE STRUCTURAL EMBANKMENT IS FOUNDED ON ALLUVIAL SEDIMENTS, THE FINAL DESIGN NEEDS TO CHECK FOR POTENTIAL LIQUEFACTION OF THE SEDIMENTS UNDER EARTHQUAKE AND ADJUST THE SLOPE ACCORDINGLY, OR PROVIDE FOR GROUND IMPROVEMENT.
- CONSIDER ADDING A BENCH BETWEEN 3H:1V AND 2H:1V SLOPE IN FINAL DESIGN.
- THE POTENTIAL FOR THAW OF PERMAFROST DUE TO THE THERMAL BARRIER ACTING AS AN UNDERDRAIN, AND IMPLICATIONS TO SLOPE STABILITY NEEDS TO BE REVIEWED IN FINAL DESIGN.



(C) NFRC REALIGNED CHANNEL - SEGMENT 2
 1:150
 P3 & P4 STA. 3+300 TO 1+990
 C-2
 C-3

TABLE 1 - SEGMENT 2

ALIGNMENT	START STATION	END STATION	H	W
P3	1+990	2+080	7.0m TO 6.0m	10.95m TO 2.5m
P3	2+074	3+300	6m	2.5m



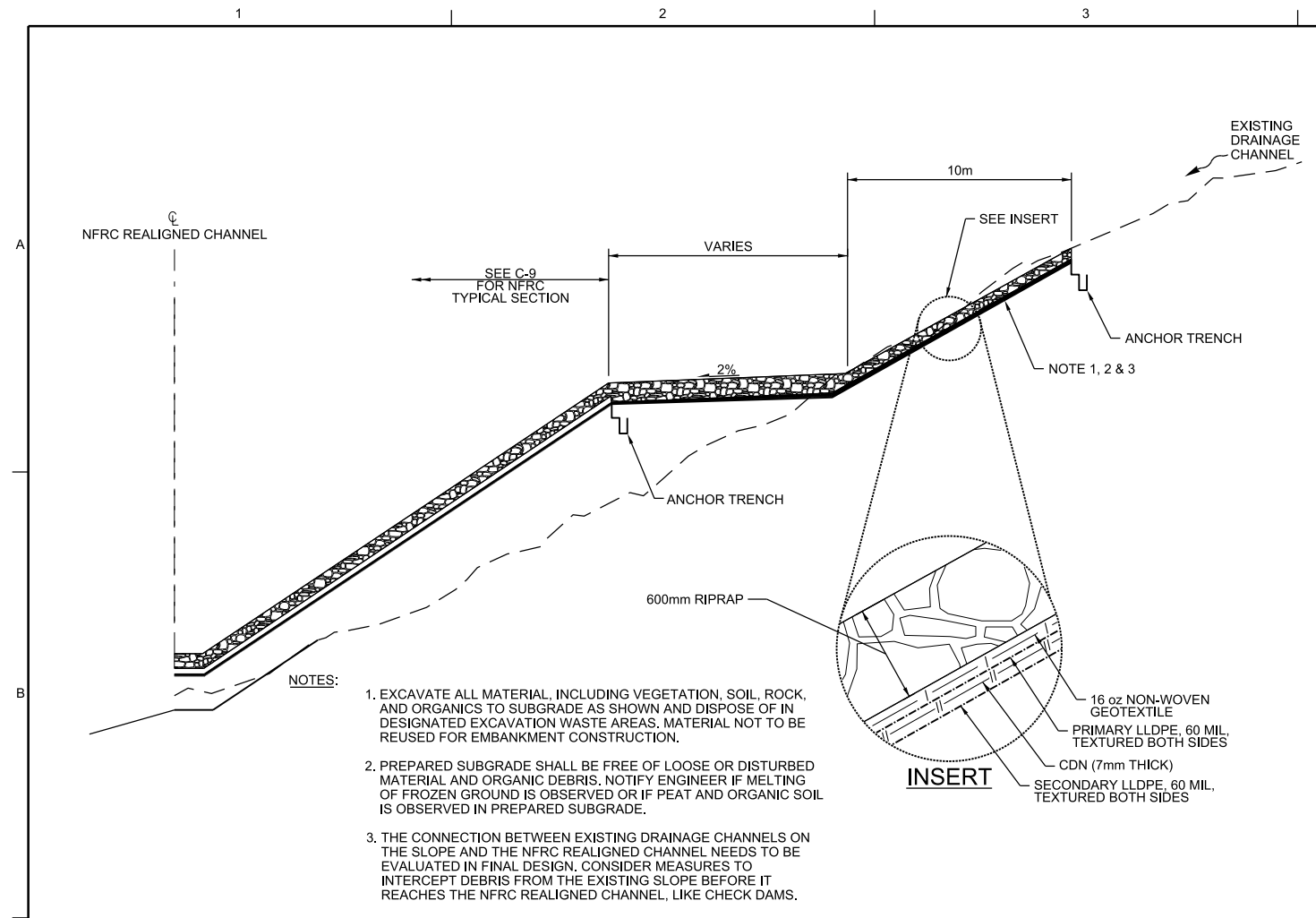
CH2MHILL

CIVIL
 NFRC REALIGNED CHANNEL
 TYPICAL CROSS SECTION

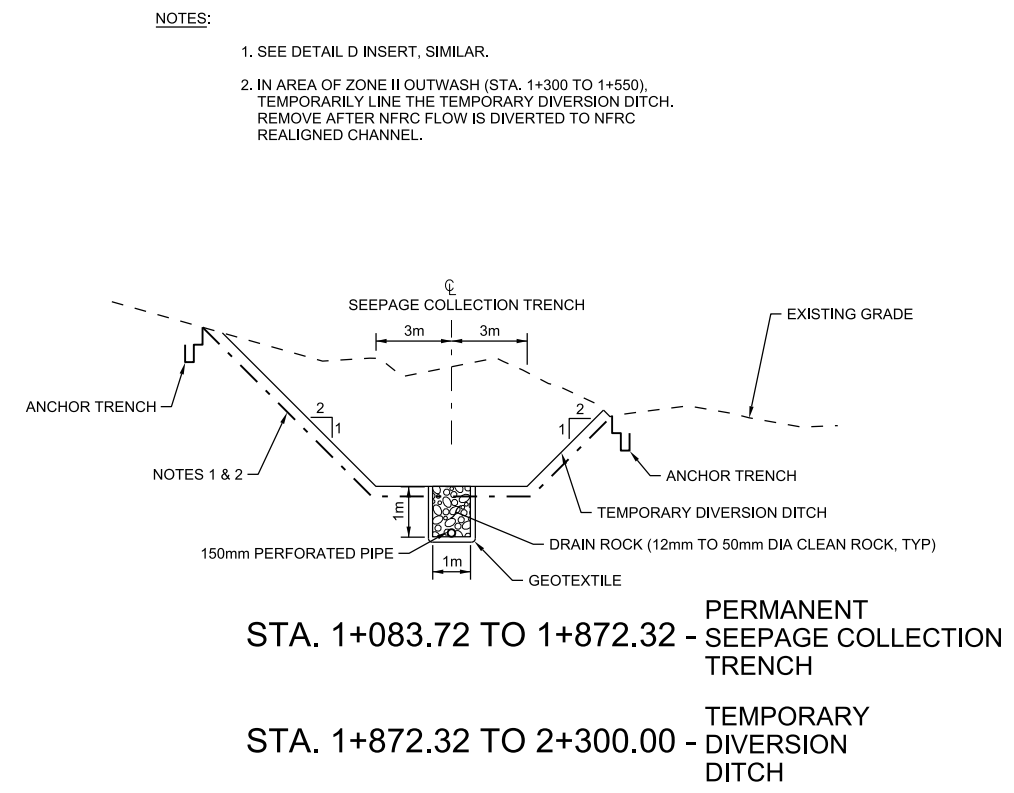
VERIFY SCALE
 BAR IS 25mm ON ORIGINAL DRAWING.
 25mm

DATE	MARCH 2016
PROJ	427716
DWG	C-3
SHEET	13 OF 61

NO.	DATE	DR	CHK	REVISION	BY	APVD
		P. DAVIS	J. CHELONIS	J. SPITZLEY	J. SPITZLEY	J. SPITZLEY

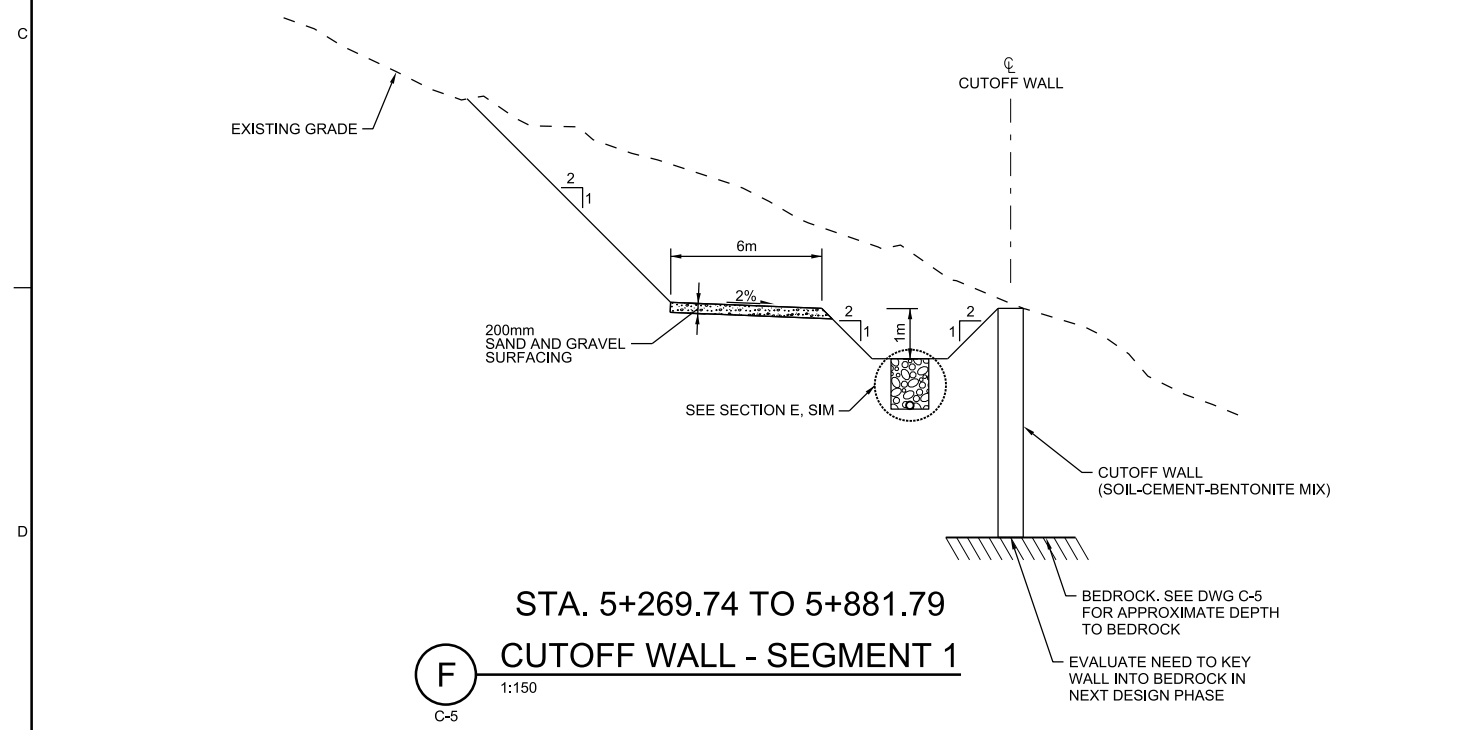


D 1:150
EXISTING DRAINAGE CHANNEL CONNECTION TO NFRC REALIGNED CHANNEL



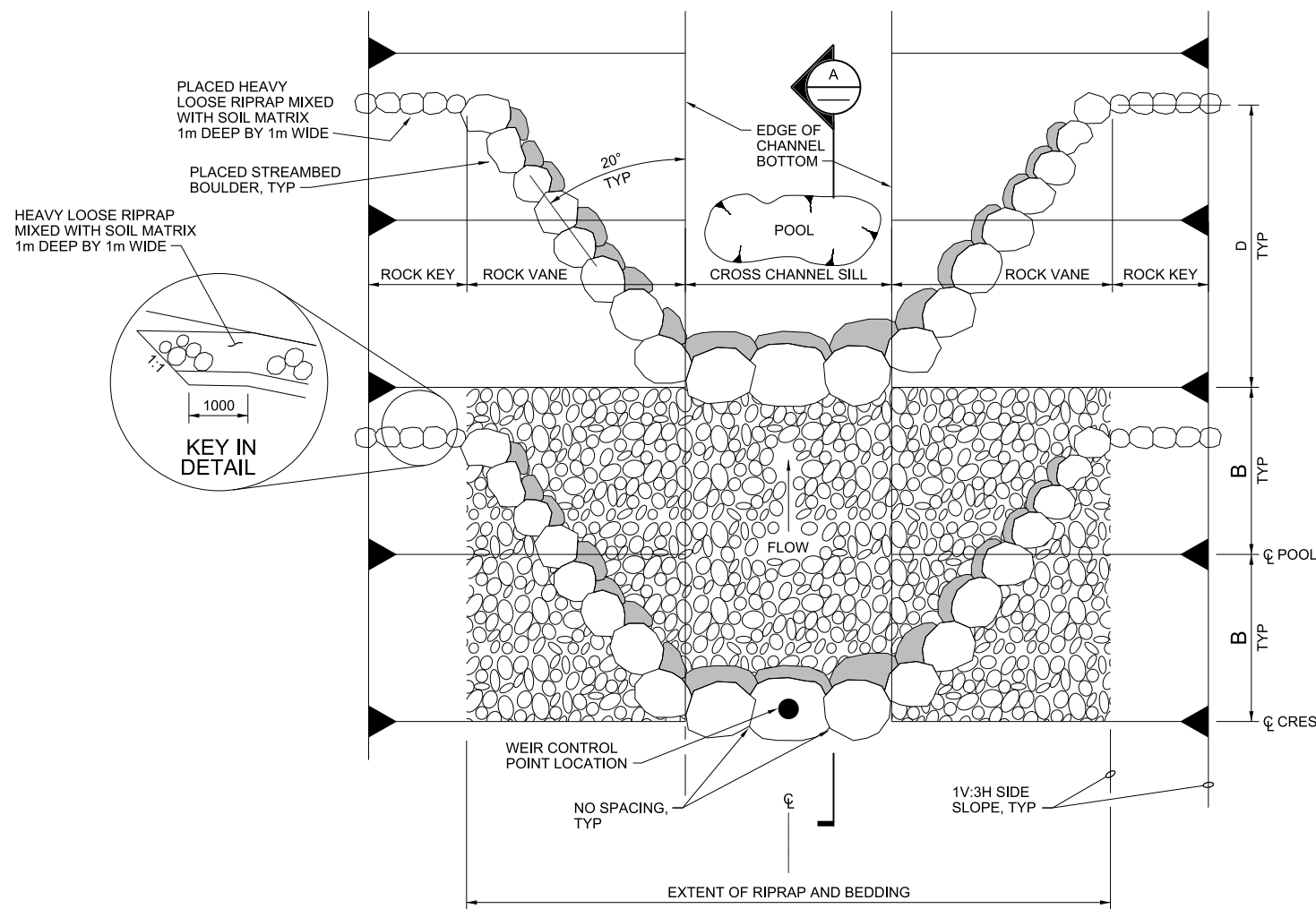
STA. 1+083.72 TO 1+872.32 - PERMANENT SEEPAGE COLLECTION TRENCH
STA. 1+872.32 TO 2+300.00 - TEMPORARY DIVERSION DITCH

E 1:150
SEEPAGE COLLECTION TRENCH/TEMPORARY DIVERSION-SEGMENT 2



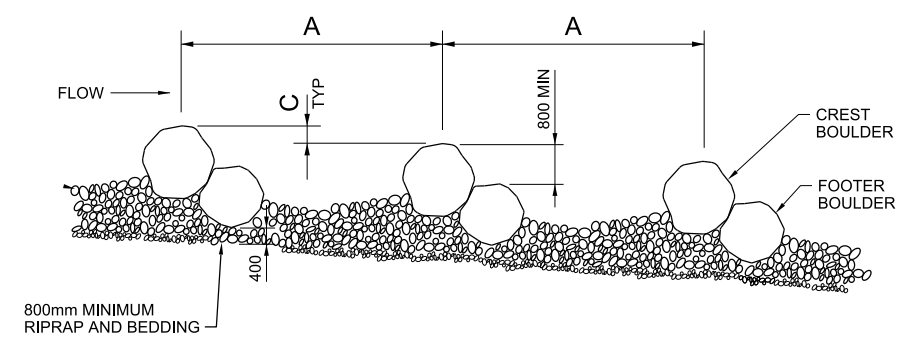
F 1:150
CUTOFF WALL - SEGMENT 1

2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN	
CH2MHILL CIVIL		TYPICAL CROSS SECTION	
VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm			
DATE	MARCH 2016	BY	J. SPITZLEY
PROJ	427716	CHK	J. CHELONIS
DWG	C-10	DR	L. ALLIGER
SHEET	14 of 61	DSGN	NO. DATE
PRELIMINARY - NOT FOR CONSTRUCTION			



- NOTES:**
1. PLACE CREST BOULDER ON FOOTER BOULDERS SO THAT THEY REST ON TWO HALVES OF EACH FOOTER BOULDER BELOW.
 2. DIMENSIONS AND LAYOUT AS SHOWN ARE APPROXIMATES. ACTUAL DESIGN WILL VARY TO ACCOMMODATE DESIGN FLOW, UNIT DISCHARGE, LOW FLOW CHANNEL, AND GRADING PLANS TO BE DEVELOPED IN SUBSEQUENT DESIGN.
 3. PARTIAL PLAN DEPICTS CONCEPT OF ROCK WEIR COMPONENTS. ACTUAL SLOPE, BOULDER SIZES, BOULDER FOOTER SIZE, DIMENSION A, DIMENSION B, C, AND DIMENSION D WILL BE DEVELOPED IN SUBSEQUENT DESIGN.

1 STEP POOL SYSTEM PARTIAL PLAN
NTS
C-8

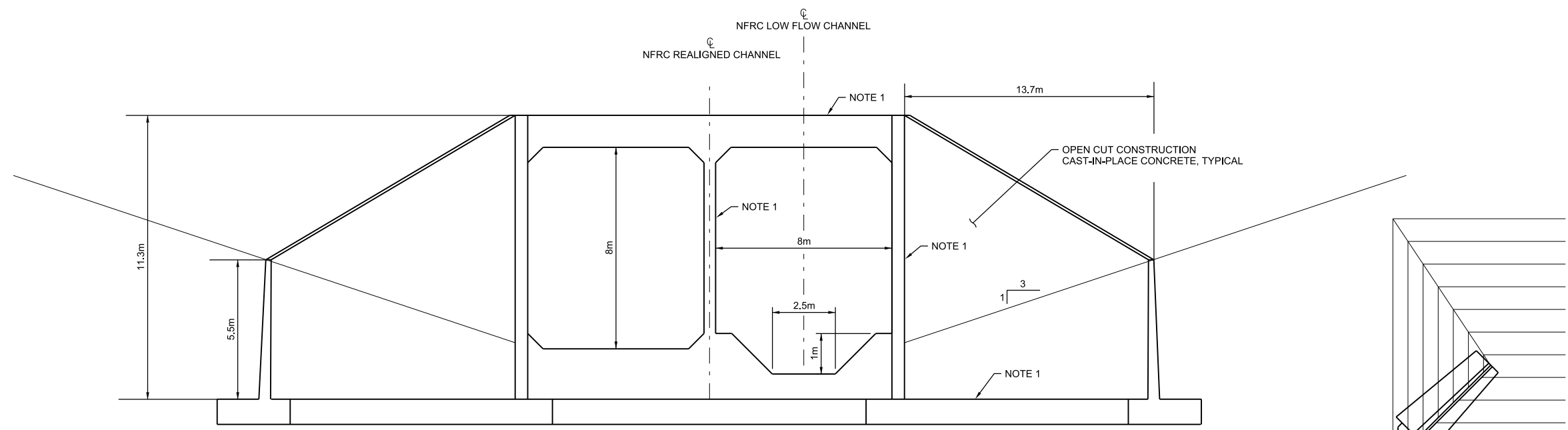


STEP POOL PROFILE DETAIL

A SECTION
NTS

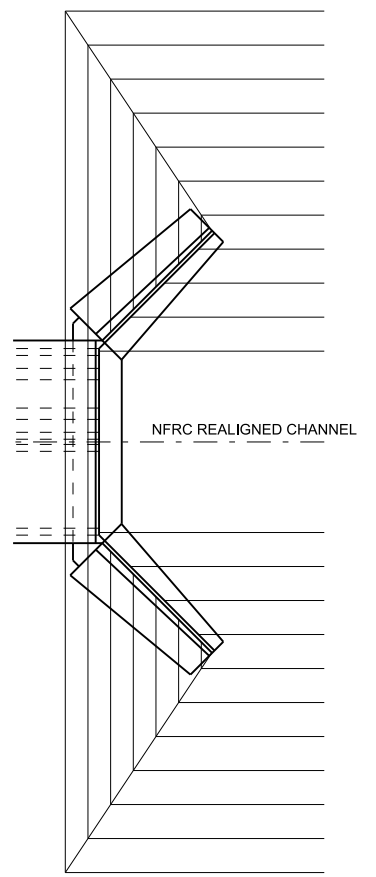
2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		J. SPITZLEY	
CH2MHILL®		CIVIL NFRC REALIGNED CHANNEL STEP POND DETAILS		L. ALLIGER	
NO. DATE		REVISION		BY APVD	
DGSN		CHK		APVD	
NO. DATE		REVISION		BY APVD	
DGSN		CHK		APVD	
NO. DATE		REVISION		BY APVD	
DGSN		CHK		APVD	
VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm					
DATE MARCH 2016					
PROJ 427716					
DWG C-10A					
SHEET 15 of 61					

PRELIMINARY - NOT FOR CONSTRUCTION
REUSE OF DOCUMENTS: THE DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.

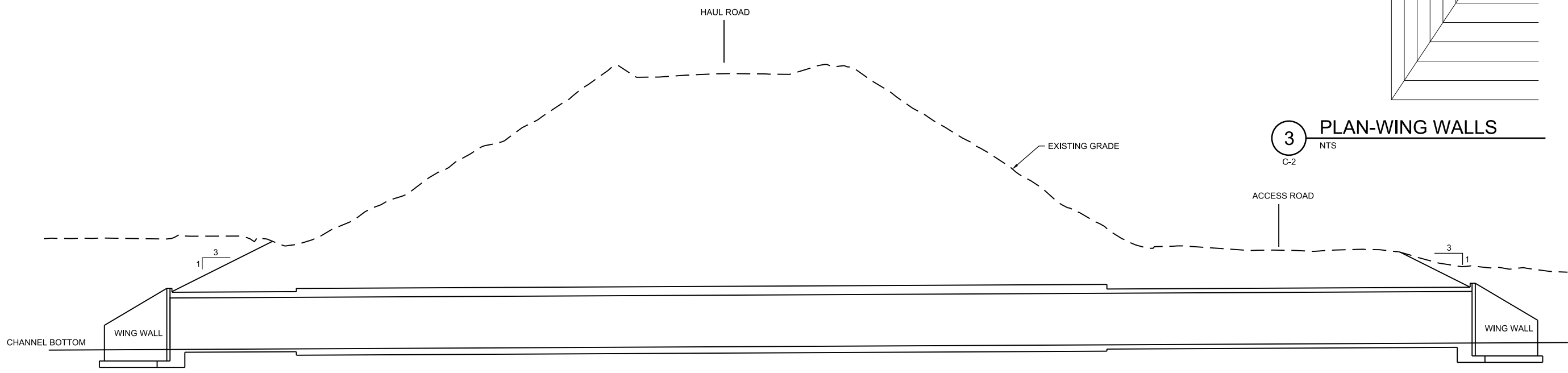


1 HAUL ROAD CROSSING - TWIN BOX CULVERTS- SECTION
 1:100
 C-2

NOTE:
 1. THICKNESS OF TOP AND BOTTOM SLABS AND WALLS NEEDS TO BE EVALUATED IN NEXT DESIGN PHASE.
 CONCEPT DESIGN ASSUMES THE USE OF SHEAR REINFORCING STEEL TO REDUCE THICKNESS REQUIRED.



3 PLAN-WING WALLS
 NTS
 C-2



2 HAUL ROAD CROSSING - PROFILE
 1:400
 C-2

NO.	DATE	DR	CHK	APVD	BY	APVD
		L. LALLIGER	J. CHELONIS	M. RANDALL	J. SPITZLEY	

2525 AIRPARK DR.
 REDDING, CA 96001
 (530) 243-5831

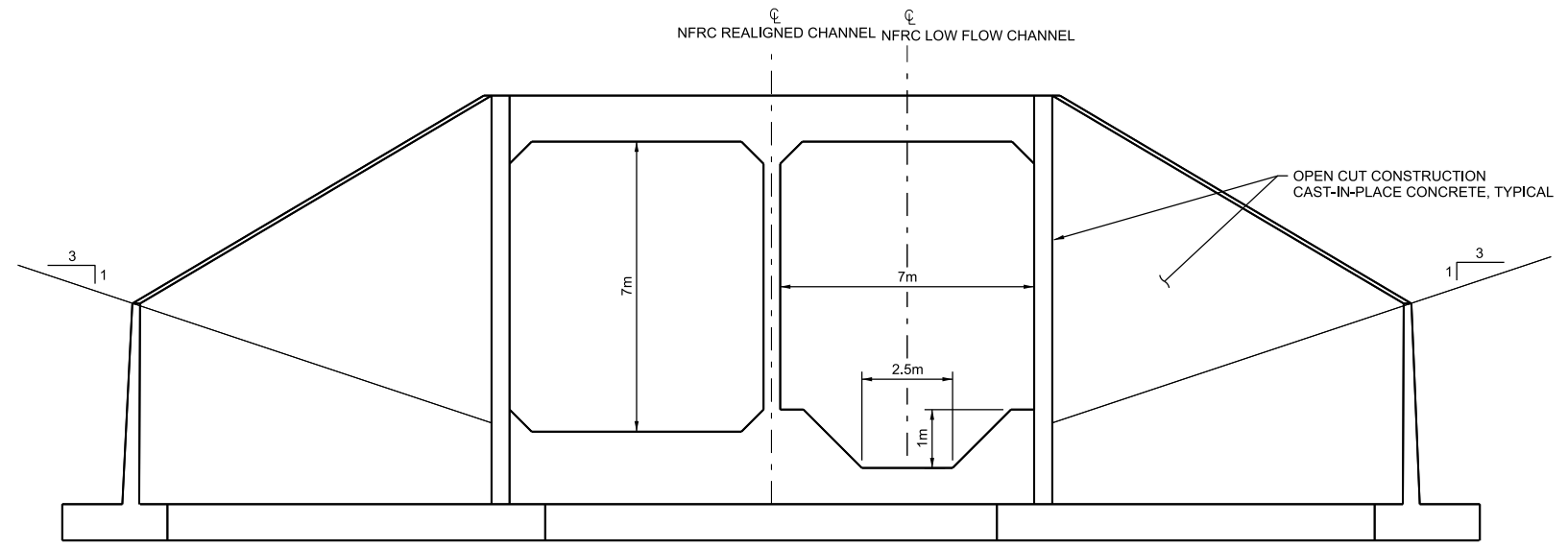
FARO MINE REMEDIATION PROJECT
 NORTH FORK ROSE CREEK PROJECT
 GOVERNMENT OF YUKON
 DESIGN

CH2MHILL®
 CIVIL
 NFRC HAUL ROAD
 CROSSING ALTERNATIVES

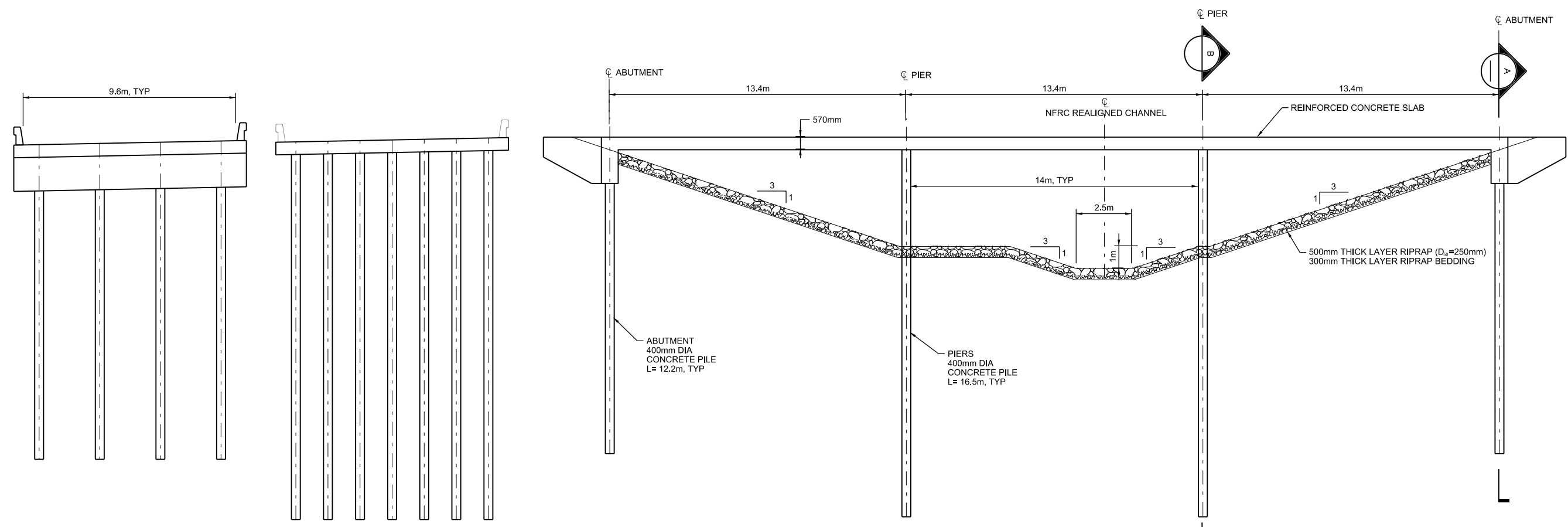
VERIFY SCALE	
BAR IS 25mm ON	25mm
ORIGINAL DRAWING.	25mm
DATE	MARCH 2016
PROJ	427716
DWG	C-11
SHEET	16 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

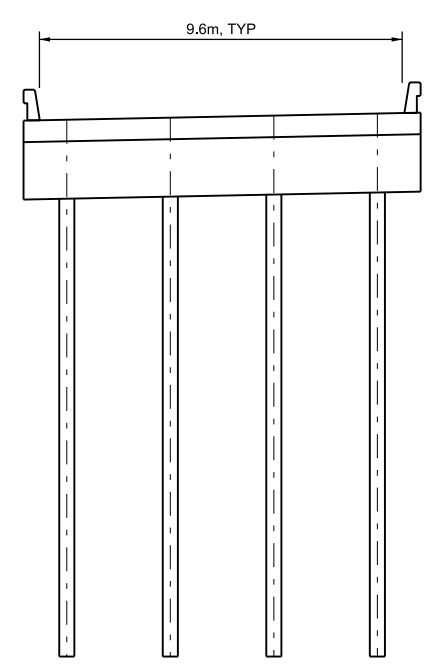
REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



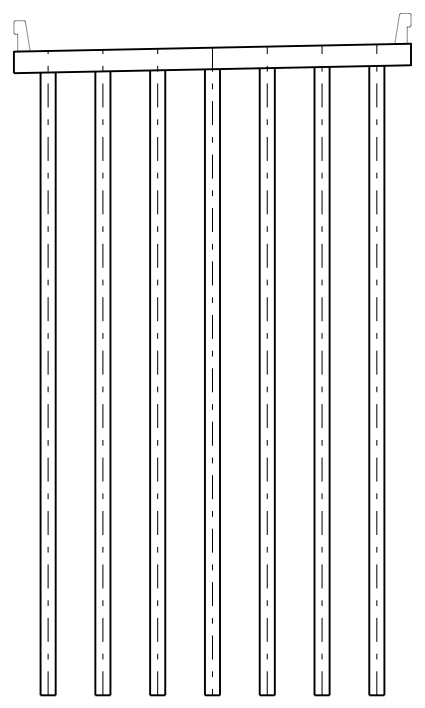
1 MINE ACCESS ROAD CROSSING ALTERNATIVE 1 - TWIN BOX CULVERTS
1:100
C-2



2 MINE ACCESS ROAD CROSSING ALTERNATIVE 2 - BRIDGE
(PREFERRED ALTERNATIVE)
1:100
C-2



A SECTION



B SECTION

NO.	DATE	DR	CHK	APVD	BY	APVD
		L. LALLIGER	J. CHELONIS	M. RANDALL	J. SPITZLEY	

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL[®]

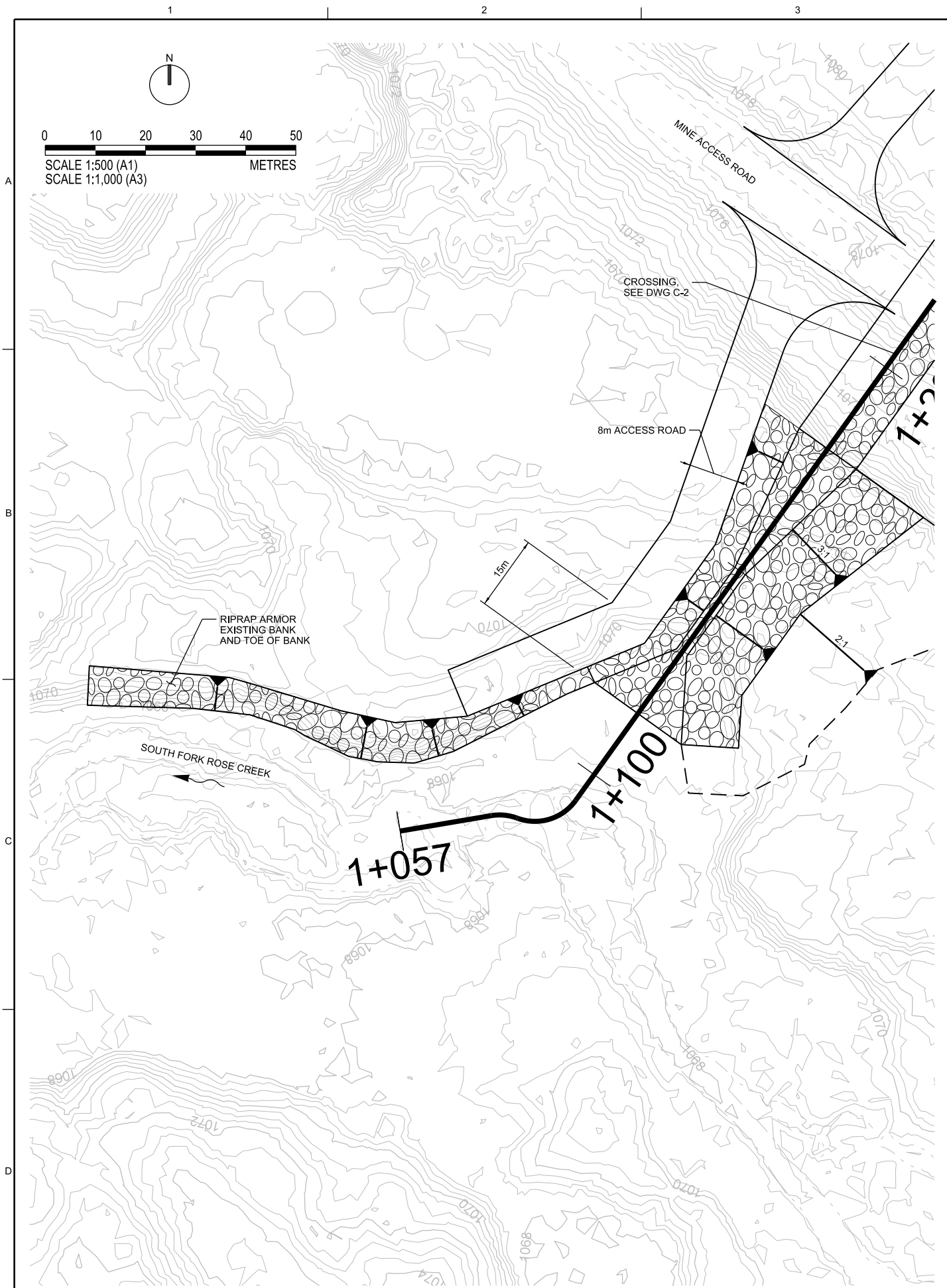
CIVIL
MINE ACCESS ROAD
CROSSING ALTERNATIVES

VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	25mm
DATE	MARCH 2016
PROJ	427716
DWG	C-12
SHEET	17 of 61

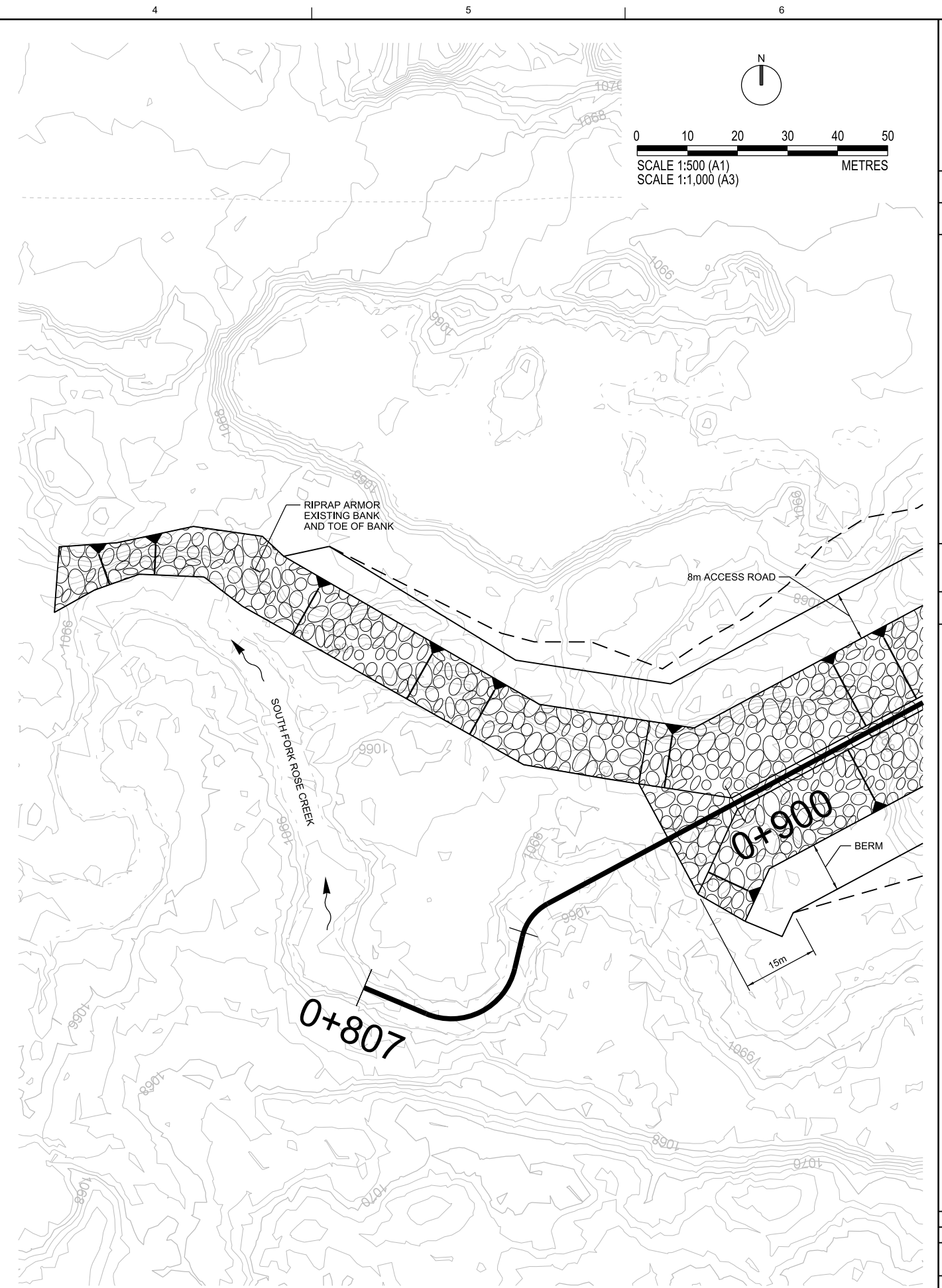
PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

© CH2M HILL 2011. ALL RIGHTS RESERVED.



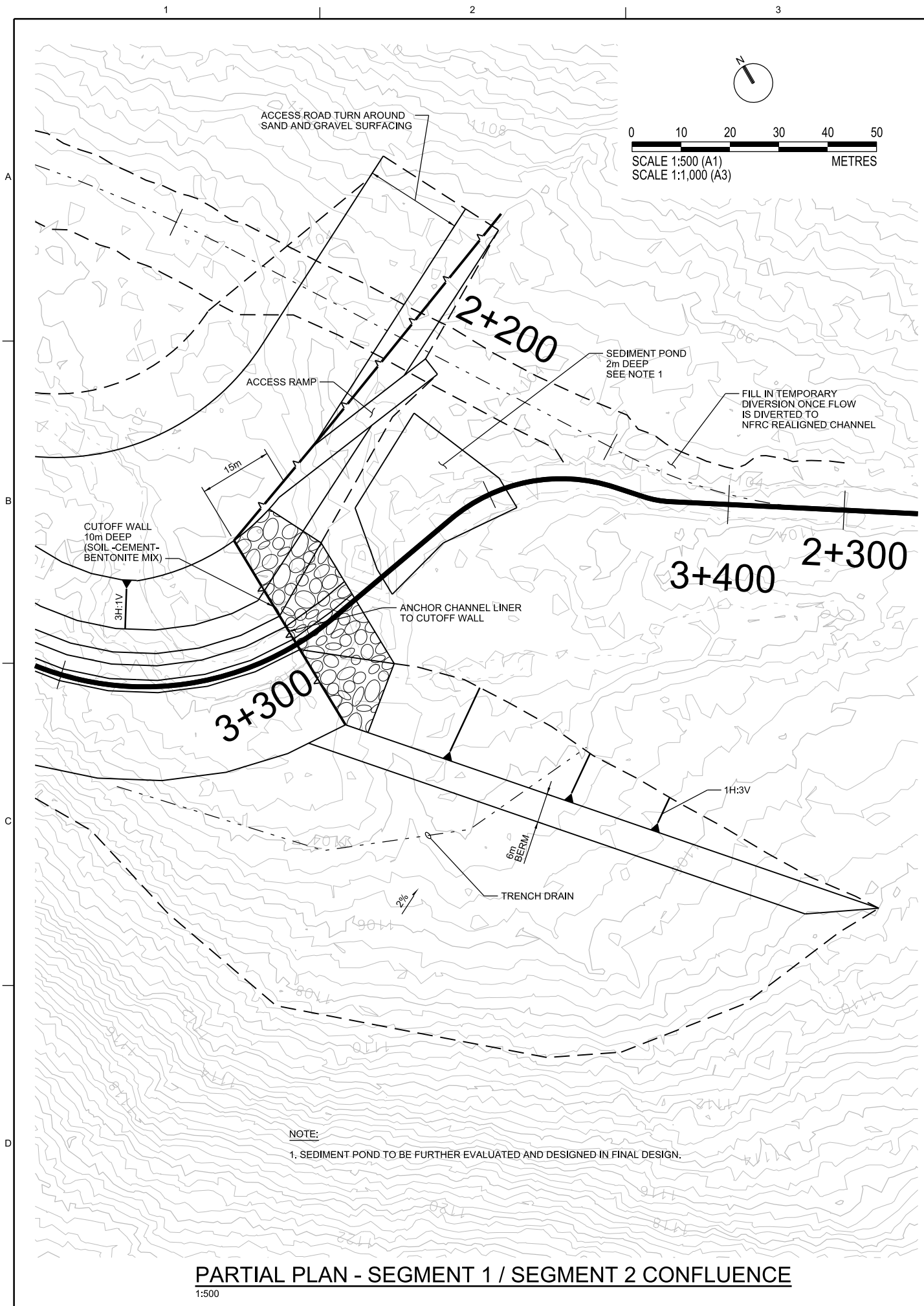
PARTIAL PLAN - P3 ALIGNMENT (PREFERRED) CONFLUENCE WITH SFRC
1:500



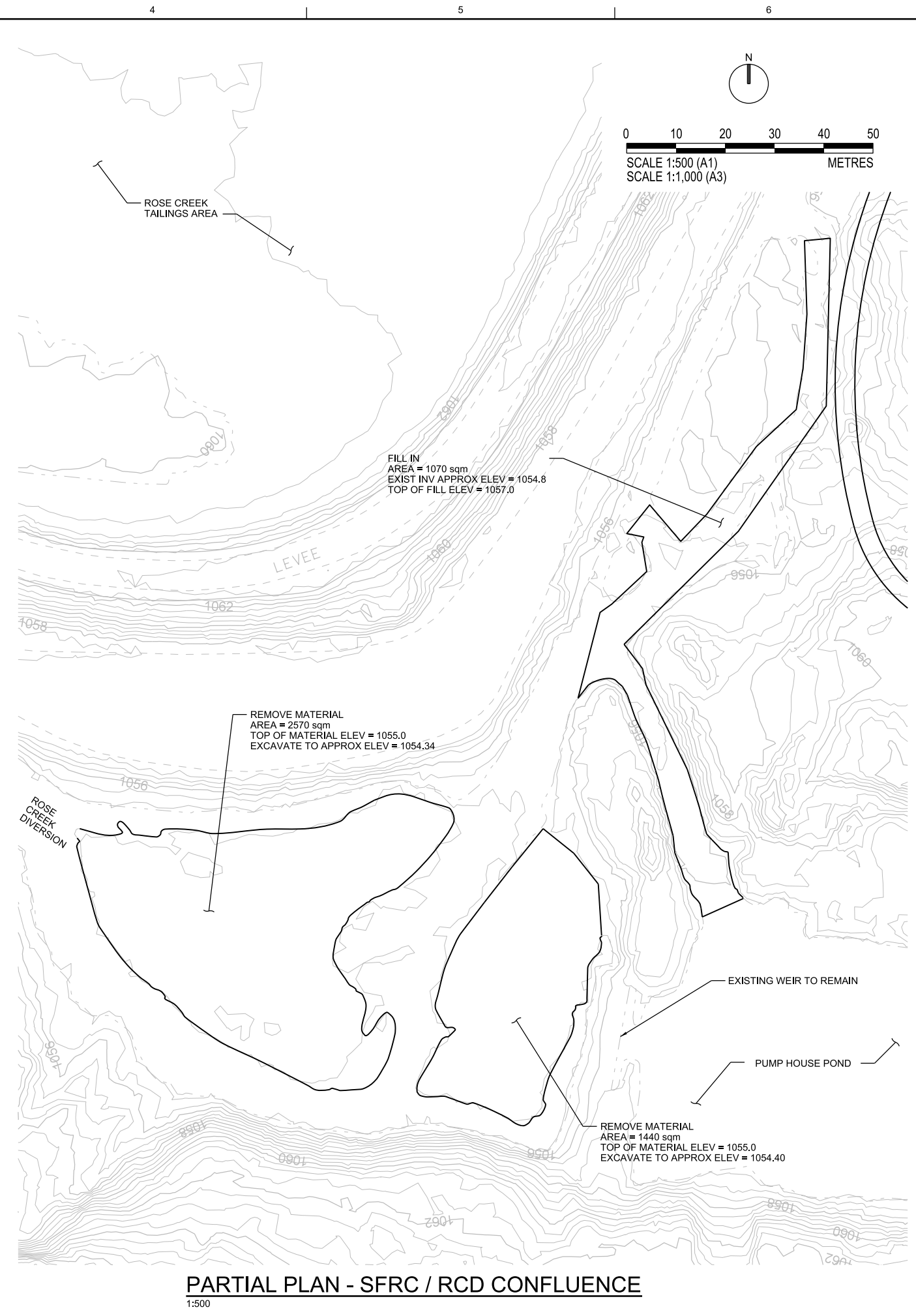
PARTIAL PLAN - P4 ALIGNMENT CONFLUENCE WITH SFRC
1:500

2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		NO. DATE		DR L ALLIGER		REVISION		CHK J SPITZLEY		BY APVD		J SPITZLEY	
CH2MHILL®		CIVIL		NO. DATE		DR L ALLIGER		REVISION		CHK J SPITZLEY		BY APVD		J SPITZLEY	
AS SHOWN		VERIFY SCALE		NO. DATE		DR L ALLIGER		REVISION		CHK J SPITZLEY		BY APVD		J SPITZLEY	
DATE MARCH 2016		PROJ		NO. DATE		DR L ALLIGER		REVISION		CHK J SPITZLEY		BY APVD		J SPITZLEY	
DWG C-13		SHEET 18 of 61		NO. DATE		DR L ALLIGER		REVISION		CHK J SPITZLEY		BY APVD		J SPITZLEY	

PRELIMINARY - NOT FOR CONSTRUCTION

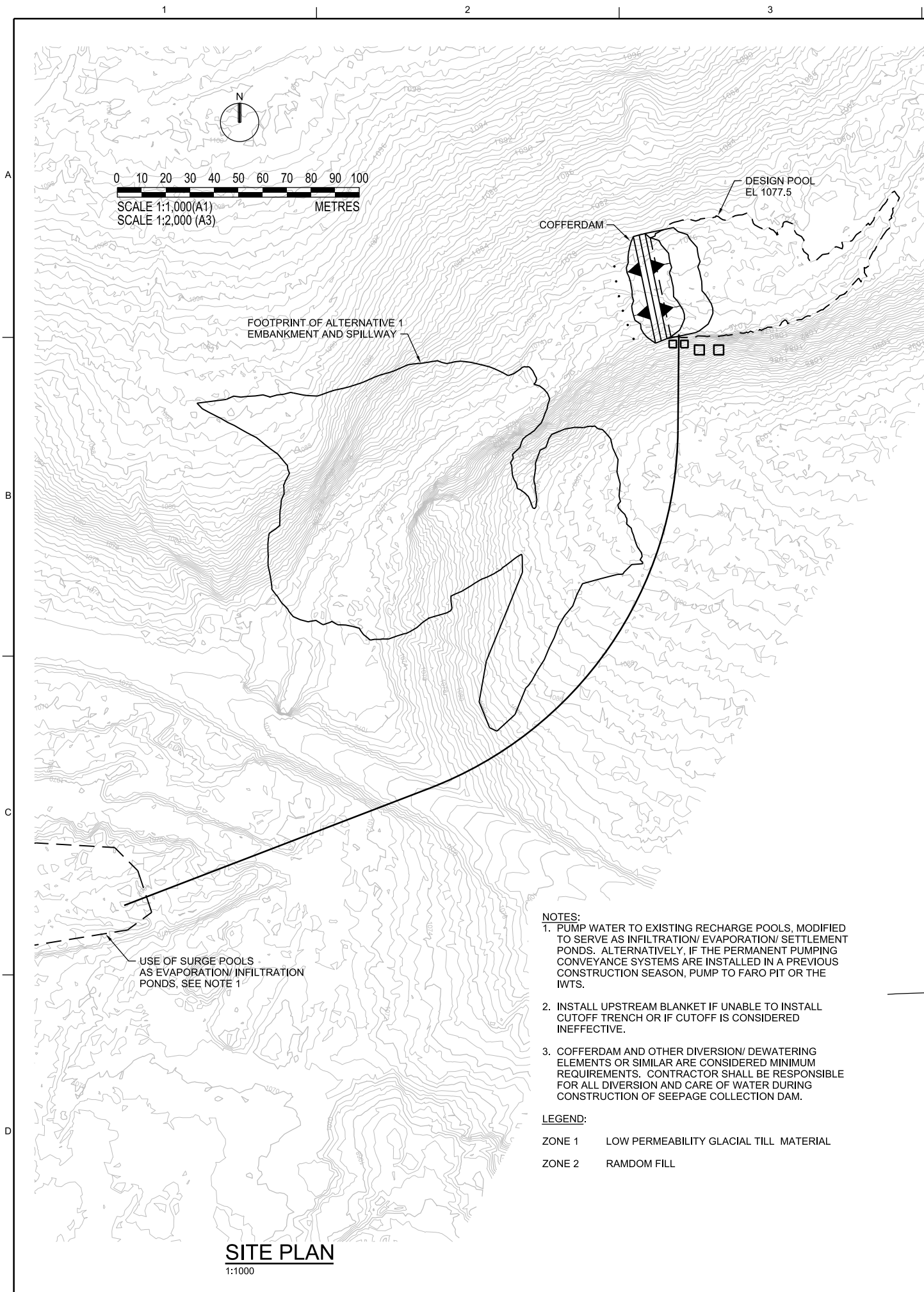


PARTIAL PLAN - SEGMENT 1 / SEGMENT 2 CONFLUENCE
1:500



PARTIAL PLAN - SFRC / RCD CONFLUENCE
1:500

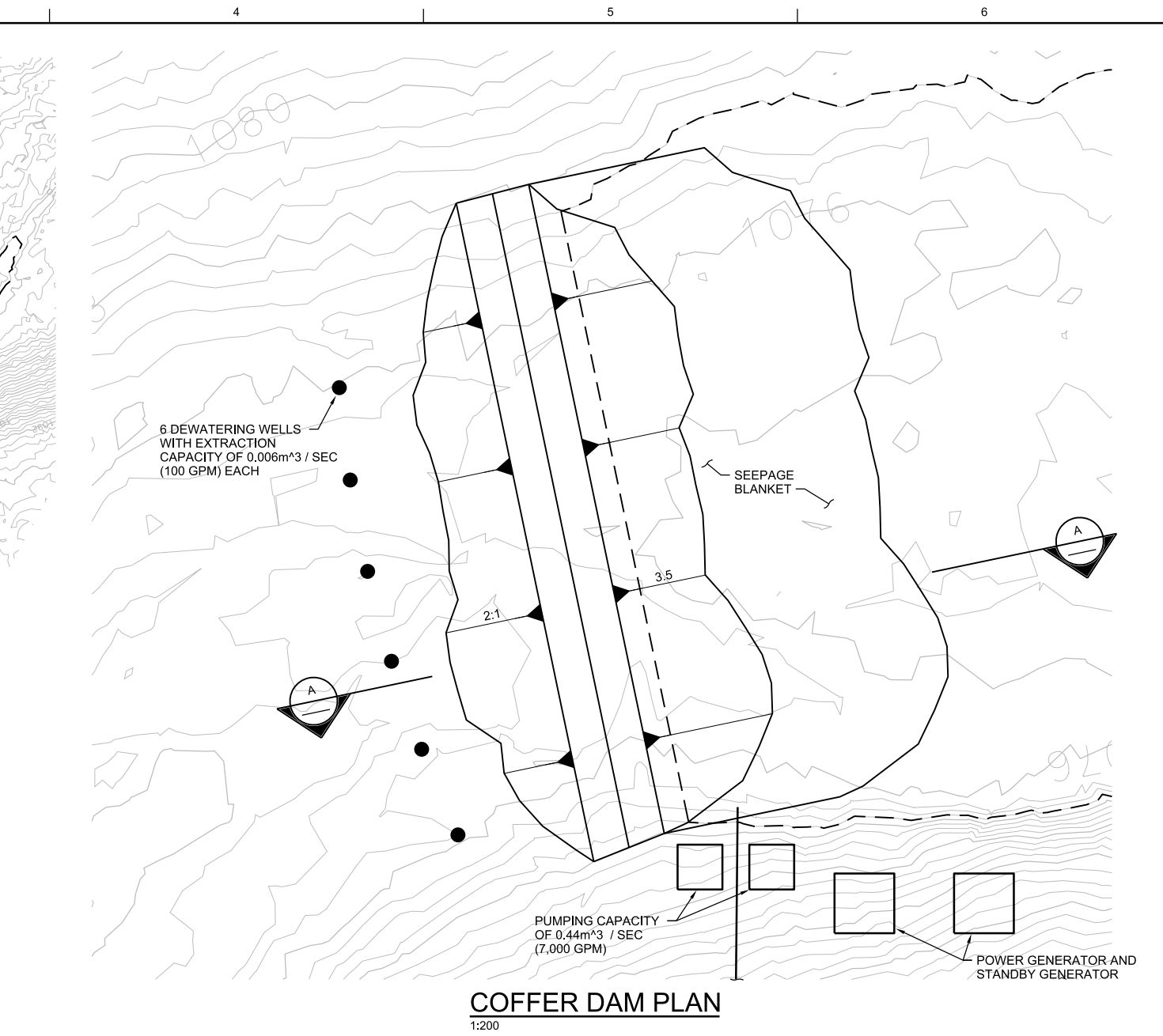
2525 ARBARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON		DESIGN	
CH2MHILL®		CIVIL		NFRC PARTIAL PLAN 2 OF 2	
PRELIMINARY - NOT FOR CONSTRUCTION					
DATE	MARCH 2016	DR	L ALLIGER	CHK	J CHELONIS
PROJ		NO.		REVISION	J SPITZLEY
DWG	C-14	DATE		BY	APVD
SHEET	19 of 61	NO.		BY	APVD
AS SHOWN		VERIFY SCALE			
BAR IS 25mm ON ORIGINAL DRAWING.					
25mm					



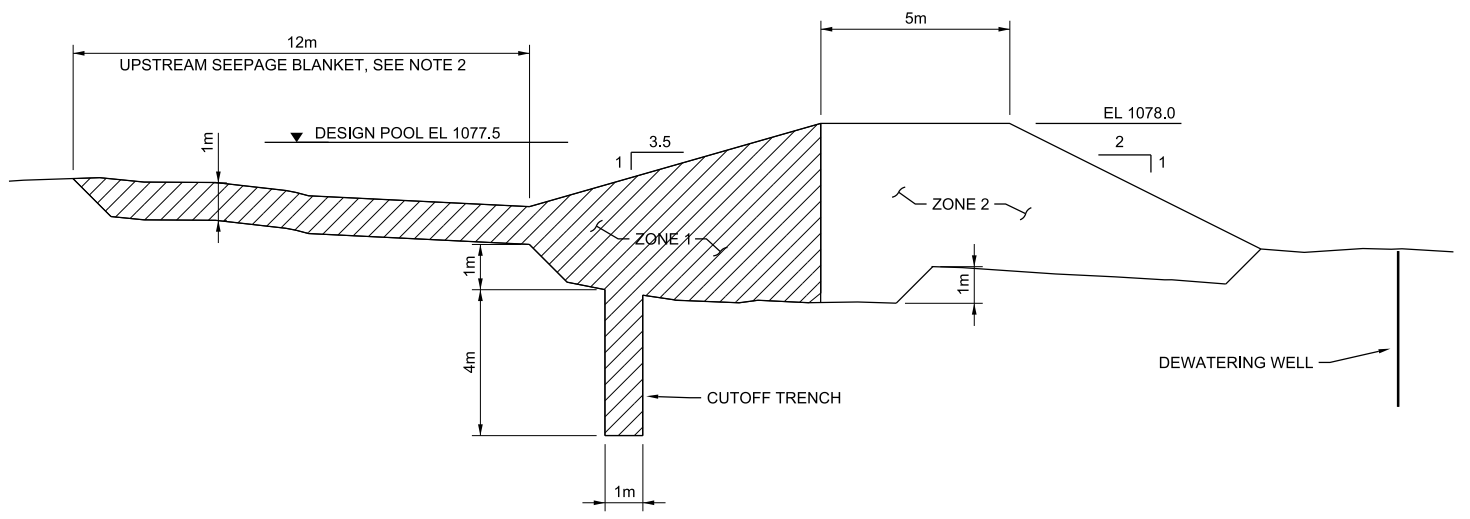
SITE PLAN
1:1000

- NOTES:**
- PUMP WATER TO EXISTING RECHARGE POOLS, MODIFIED TO SERVE AS INFILTRATION/ EVAPORATION/ SETTLEMENT PONDS. ALTERNATIVELY, IF THE PERMANENT PUMPING CONVEYANCE SYSTEMS ARE INSTALLED IN A PREVIOUS CONSTRUCTION SEASON, PUMP TO FARO PIT OR THE IWTS.
 - INSTALL UPSTREAM BLANKET IF UNABLE TO INSTALL CUTOFF TRENCH OR IF CUTOFF IS CONSIDERED INEFFECTIVE.
 - COFFERDAM AND OTHER DIVERSION/ DEWATERING ELEMENTS OR SIMILAR ARE CONSIDERED MINIMUM REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DIVERSION AND CARE OF WATER DURING CONSTRUCTION OF SEEPAGE COLLECTION DAM.

- LEGEND:**
- ZONE 1 LOW PERMEABILITY GLACIAL TILL MATERIAL
 - ZONE 2 RANDOM FILL



COFFER DAM PLAN
1:200



COFFERDAM SECTION
1:100

2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN	
CH2MHILL®		CIVIL COFFER DAM PLAN AND SECTION ALTERNATIVE 1	
VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm			
DATE	MARCH 2016		
PROJ	427716		
DWG	C-15		
SHEET	20 of 61		

REVISION

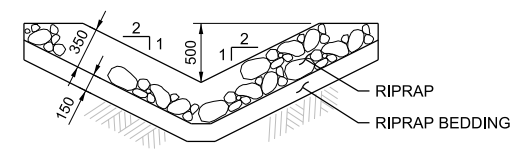
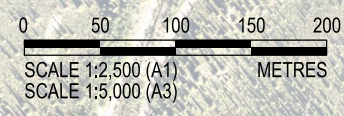
NO.	DATE	DR	CHK	REVISION
		JJ LESTERHUIZEN	RE BROWN	JJ LESTERHUIZEN
				J SPITZLEY

APVD BY APVD

© CH2MHILL 2011. ALL RIGHTS RESERVED.

RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2MHILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.

PRELIMINARY - NOT FOR CONSTRUCTION



(A) DITCH SECTION
NTS

NO.	DATE	DR	CHK	REVISION	BY
		JJ LESTERHUIZEN	RE BROWN	JJ LESTERHUIZEN	J SPITZLEY
					APVD

2625 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

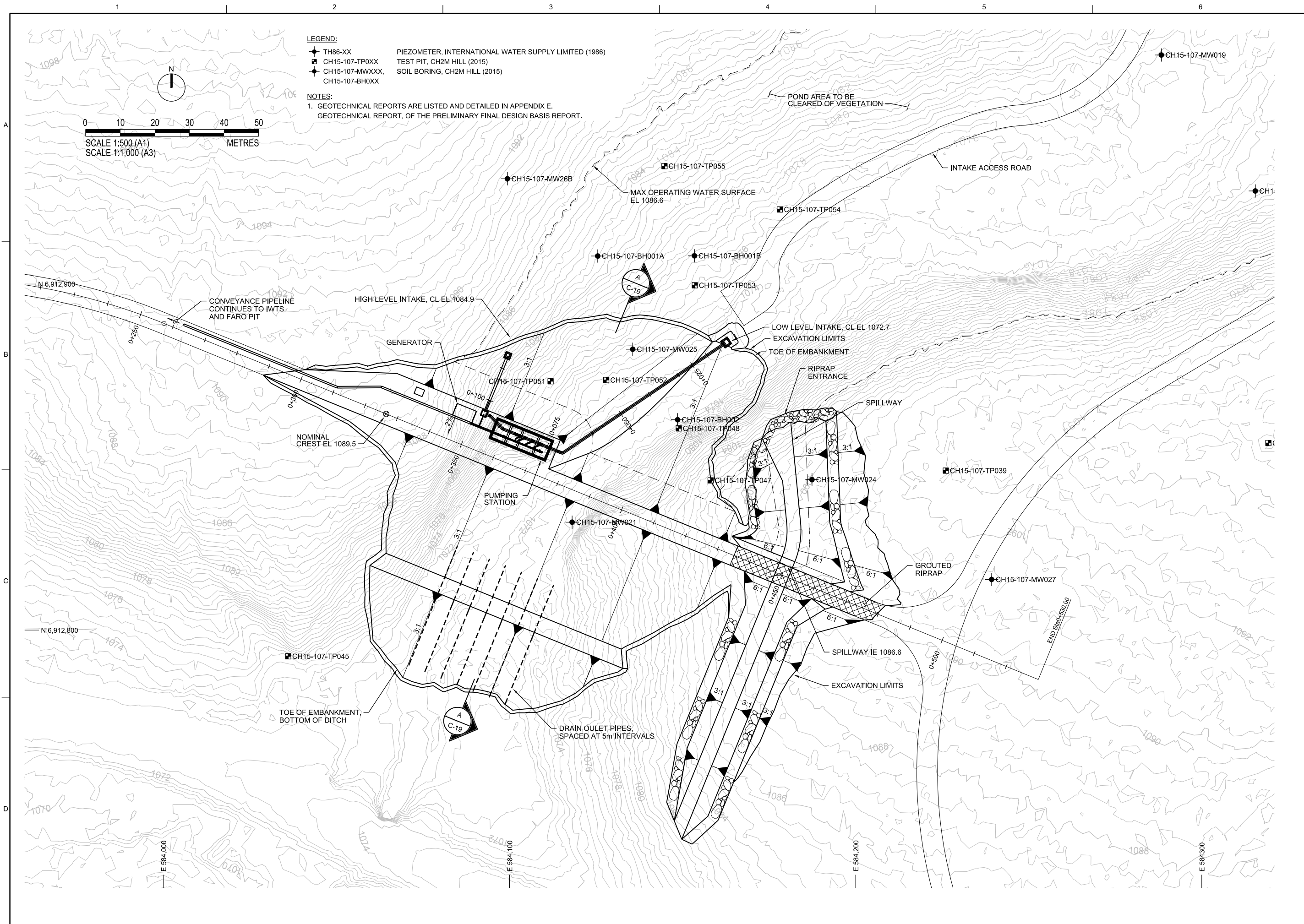
CH2MHILL®

CIVIL
**SEEPAGE COLLECTION
OVERALL SITE PLAN
ALTERNATIVES 1 AND 2**

VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	25mm
DATE	MARCH 2016
PROJ	427716
DWG	C-16
SHEET	21 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THE DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



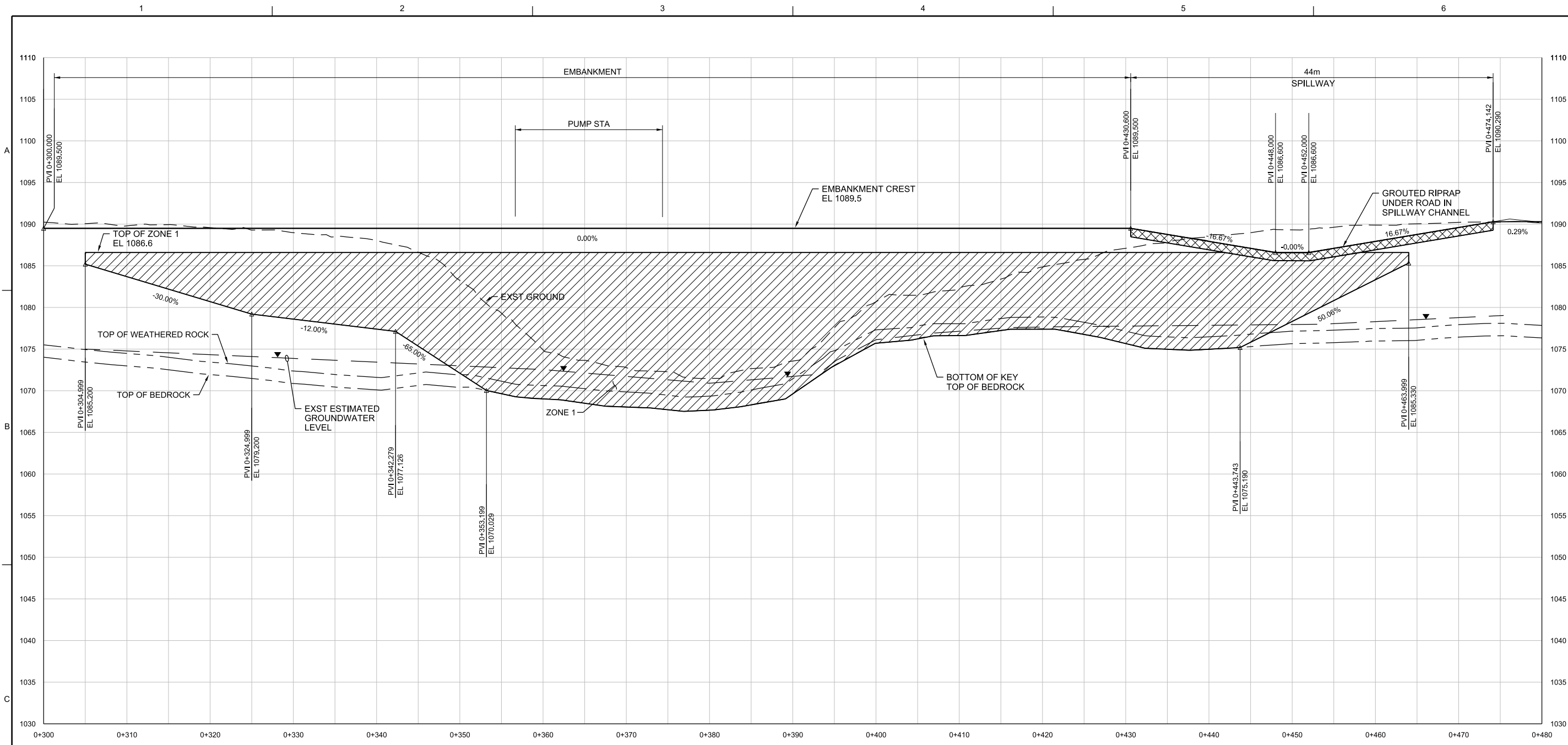
LEGEND:
 ◆ TH86-XX PIEZOMETER, INTERNATIONAL WATER SUPPLY LIMITED (1986)
 □ CH15-107-TP0XX TEST PIT, CH2M HILL (2015)
 ◆ CH15-107-MWXXX, CH15-107-BH0XX SOIL BORING, CH2M HILL (2015)

NOTES:
 1. GEOTECHNICAL REPORTS ARE LISTED AND DETAILED IN APPENDIX E. GEOTECHNICAL REPORT, OF THE PRELIMINARY FINAL DESIGN BASIS REPORT.

0 10 20 30 40 50
 SCALE 1:500 (A1)
 SCALE 1:1,000 (A3)
 METRES

2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		DR J. LESTERHUIZEN REVISION CHK J. LESTERHUIZEN APVD J. SPITZLEY	
CH2MHILL®		CIVIL SEEPAGE COLLECTION DAM EMBANKMENT PLAN ALTERNATIVE 1		NO. DATE DSGN J. LESTERHUIZEN DR J. LESTERHUIZEN REVISION CHK J. LESTERHUIZEN APVD J. SPITZLEY	
VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm		DATE MARCH 2016		PROJ 427716	
DWG C-17		SHEET 22 of 61		PLOT DATE: 3/28/2016	
FILENAME: 100-021-C-017_427716.dgn		PLOT TIME: 1:34:14 PM		PRELIMINARY - NOT FOR CONSTRUCTION	

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



NOTES:
 1. WEATHERED ROCK, BEDROCK, AND GROUNDWATER LEVELS SHOWN AT RIGHT ABUTMENT ARE APPROXIMATE ESTIMATES AS PROJECTED FROM UPSTREAM BORINGS. RESULTS FROM GEOPHYSICAL SURVEY SUGGEST THAT ROCK AT THIS LOCATION SHOULD BE SHALLOWER.

EXCAVATION AND EMBANKMENT PROFILE AT CENTERLINE OF DAM CREST

1:250

NO.	DATE	REVISION	BY	APVD
		CHK		J. SPITZLEY
		DR		APVD

2525 AIRPARK DR.
 REDDING, CA 96001
 (530) 243-5831

FARO MINE REMEDIATION PROJECT
 NORTH FORK ROSE CREEK PROJECT
 GOVERNMENT OF YUKON
 DESIGN

JJ LESTERHUIZEN
 DSGN

RE BROWN
 CHK

CH2MHILL®
 CIVIL

SEEPAGE COLLECTION DAM
 EMBANKMENT PROFILE
 ALTERNATIVE 1

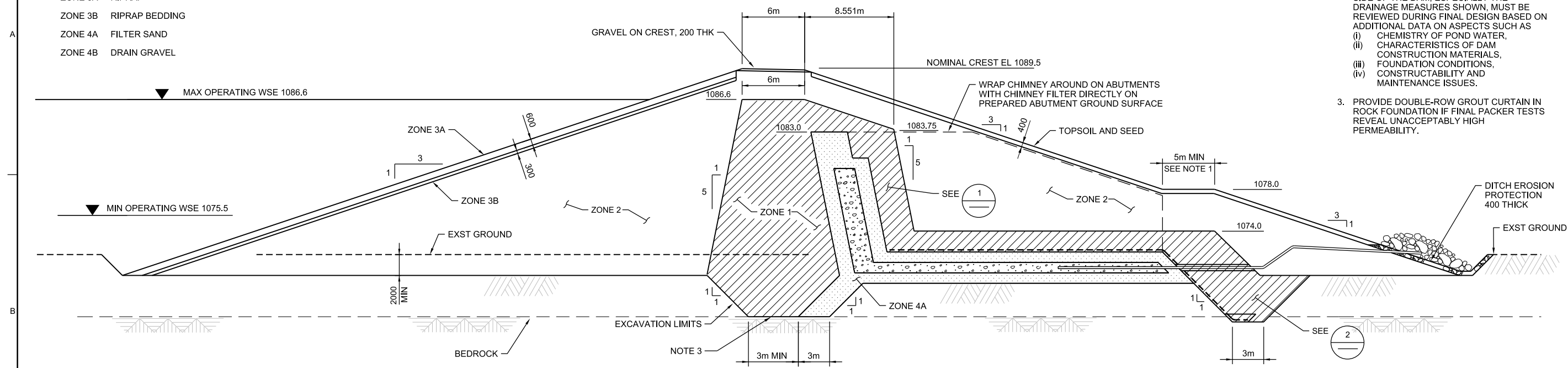
VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	
0 25mm	
DATE	MARCH 2016
PROJ	427716
DWG	C-18
SHEET	23 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

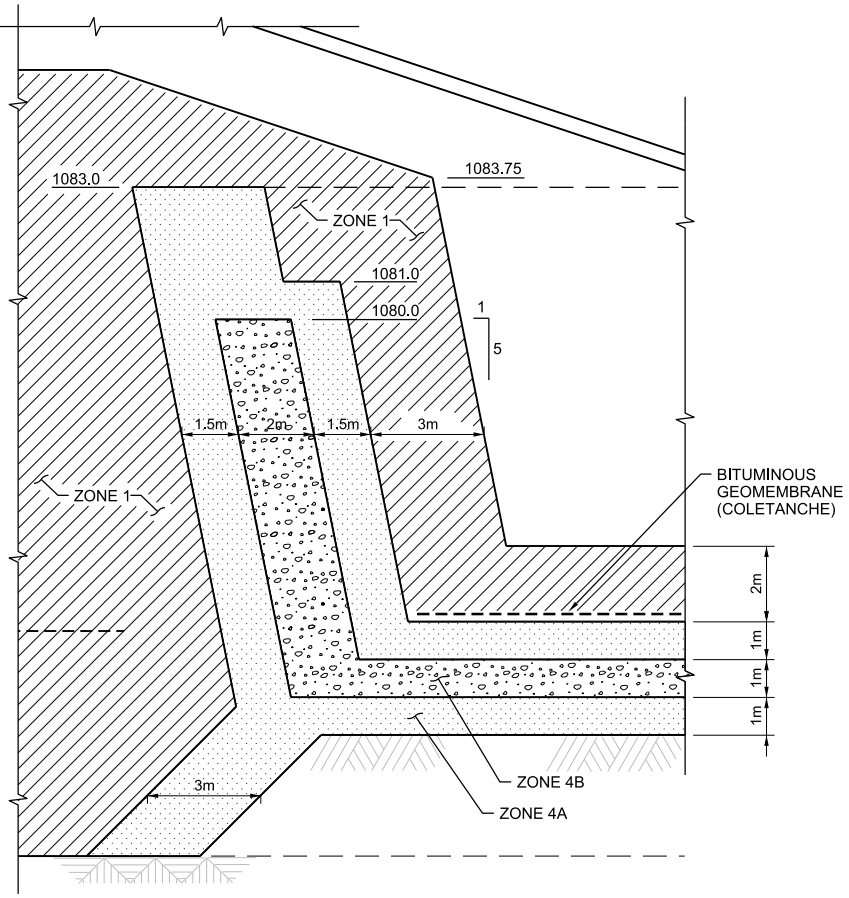
RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.

- LEGEND:**
- ZONE 1 LOW PERMEABILITY GLACIAL TILL MATERIAL
 - ZONE 2 RANDOM FILL
 - ZONE 3A RIPRAP
 - ZONE 3B RIPRAP BEDDING
 - ZONE 4A FILTER SAND
 - ZONE 4B DRAIN GRAVEL

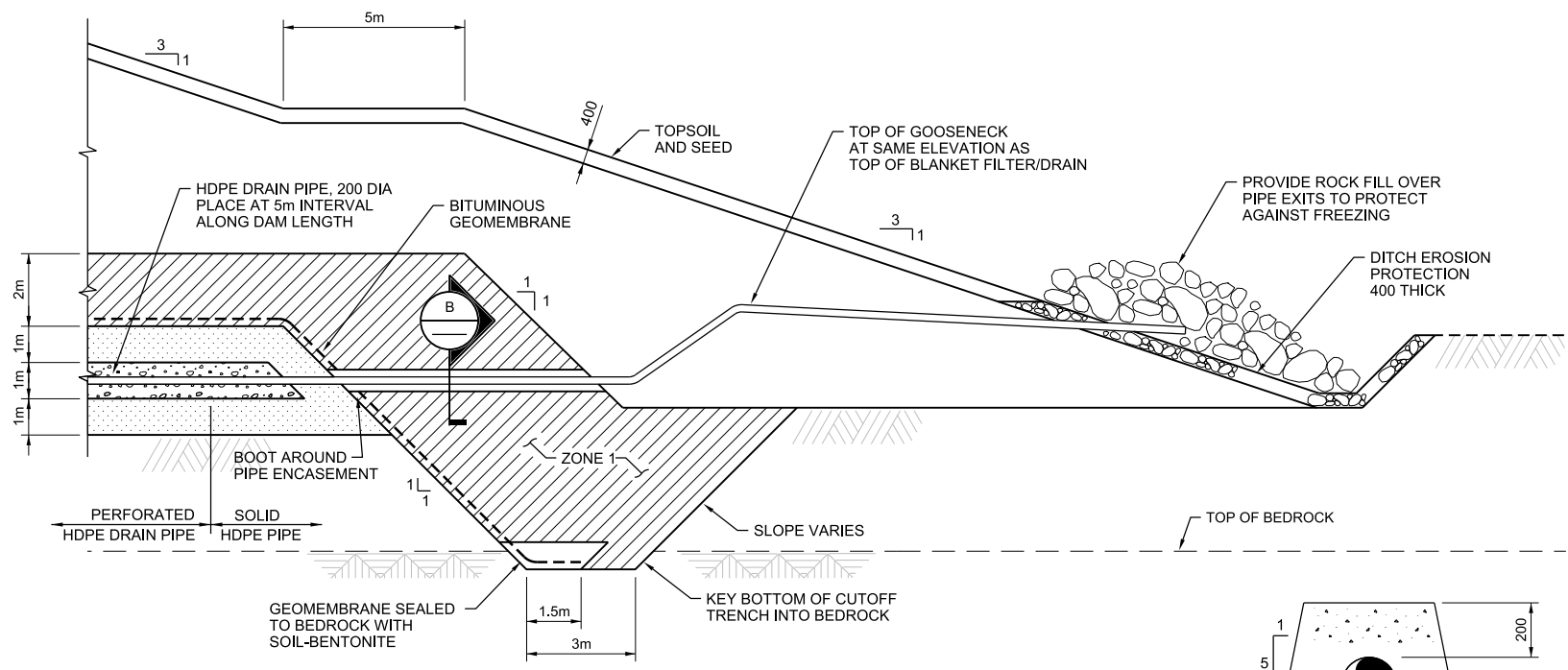
- NOTES:**
1. WIDEN BENCH DEPENDING ON DEPTH TO BEDROCK ENCOUNTERED DURING CONSTRUCTION.
 2. THE CONFIGURATION OF THE DOWNSTREAM SIDE OF THE DAM, ESPECIALLY THE DRAINAGE MEASURES SHOWN, MUST BE REVIEWED DURING FINAL DESIGN BASED ON ADDITIONAL DATA ON ASPECTS SUCH AS
 - (i) CHEMISTRY OF POND WATER,
 - (ii) CHARACTERISTICS OF DAM CONSTRUCTION MATERIALS,
 - (iii) FOUNDATION CONDITIONS,
 - (iv) CONSTRUCTION AND MAINTENANCE ISSUES.
 3. PROVIDE DOUBLE-ROW GROUT CURTAIN IN ROCK FOUNDATION IF FINAL PACKER TESTS REVEAL UNACCEPTABLY HIGH PERMEABILITY.



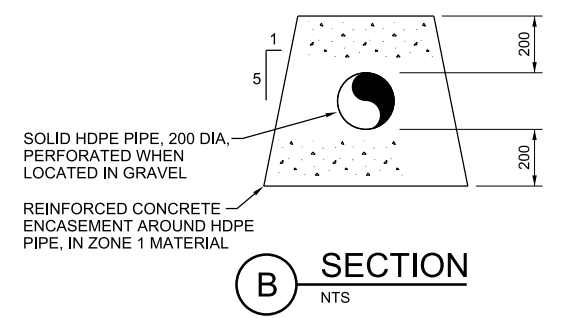
A TYPICAL EMBANKMENT SECTION
1:200
C-17



1 CORE DETAIL
1:100



2 TOE DETAIL
1:100



B SECTION
NTS

NO.	DATE	DR	CHK	REVISION	BY	APVD
		JJ LESTERHUIZEN	RE BROWN	JJ LESTERHUIZEN	JJ LESTERHUIZEN	J SPITZLEY

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

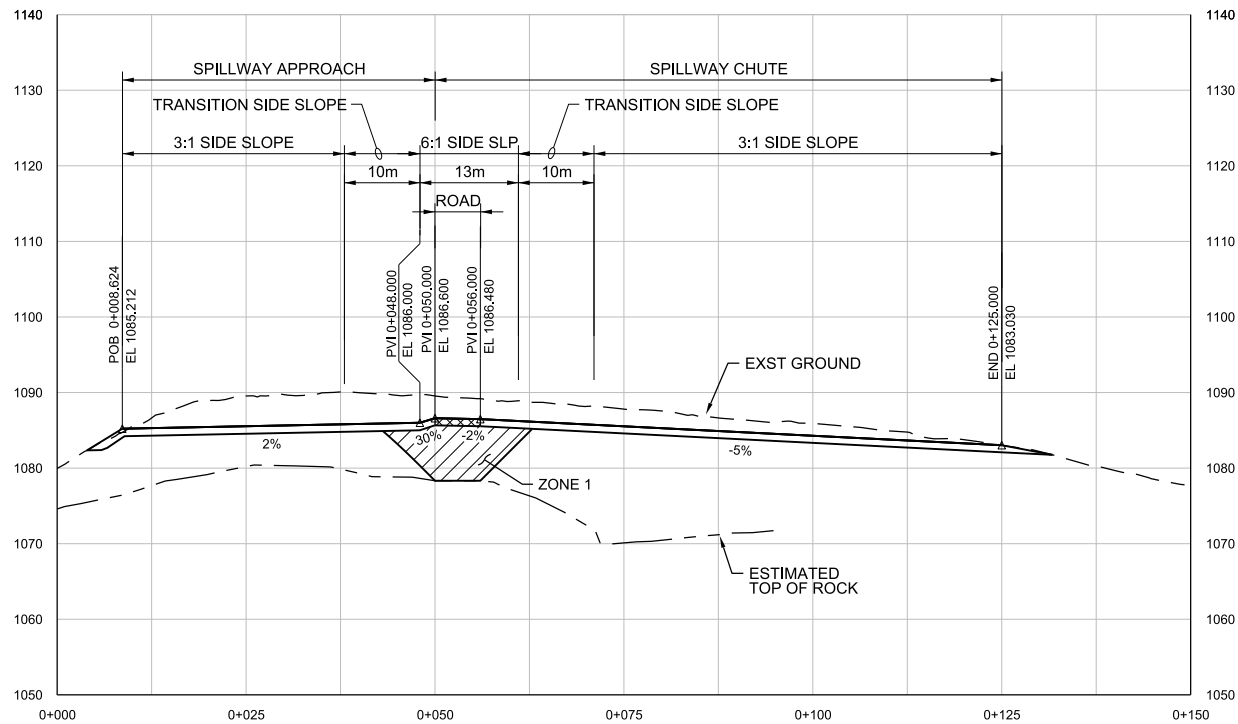
CH2MHILL®

CIVIL
SEEPAGE COLLECTION DAM
EMBANKMENT SECTION AND DETAILS
ALTERNATIVE 1

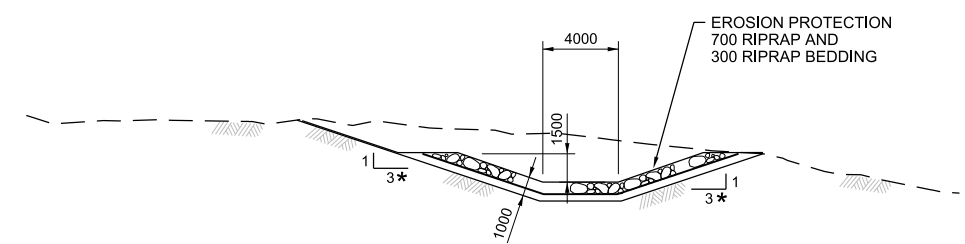
VERIFY SCALE	DATE	MARCH 2016
BAR IS 25mm ON ORIGINAL DRAWING.	PROJ	427716
0 25mm	DWG	C-19
	SHEET	24 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

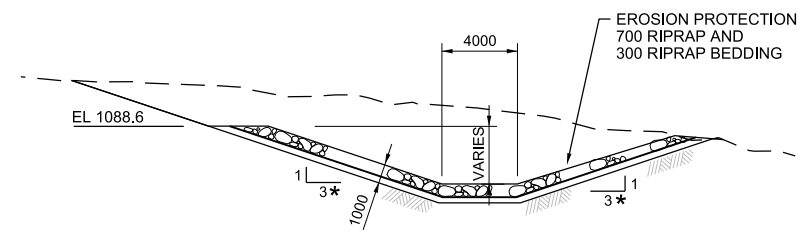
REUSE OF DOCUMENTS: THE DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



1 SPILLWAY PROFILE
1:500
C-17



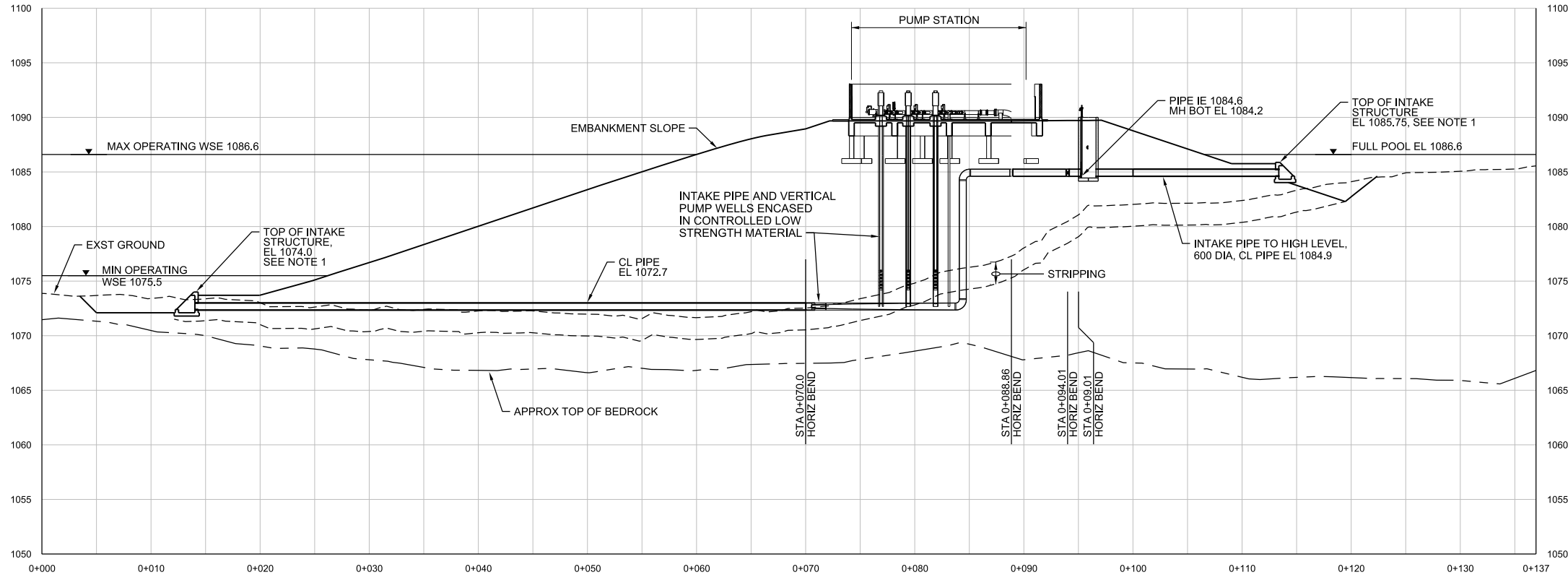
TYPICAL CHUTE
(LOOKING DOWNSTREAM)



TYPICAL APPROACH
(LOOKING DOWNSTREAM)

* SIDE SLOPE VARIES FROM 3:1 TO 6:1 AS NOTED IN PROFILE

A SPILLWAY SECTION
1:200



2 PUMP STATION PIPING PROFILE
1:250
100-C-211

NOTES:
1. INTAKE STRUCTURES TO BE PROVIDED WITH TRASH RACKS. PROVIDE SUITABLE MEANS FOR REMOVING TRASH, INCLUDING PEAT OR WOOD DEBRIS FROM THE POND.

NO.	DATE	DR	CHK	APVD	BY	APVD
		JJ LESTERHUIZEN	RE BROWN	JJ LESTERHUIZEN		J SPITZLEY

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

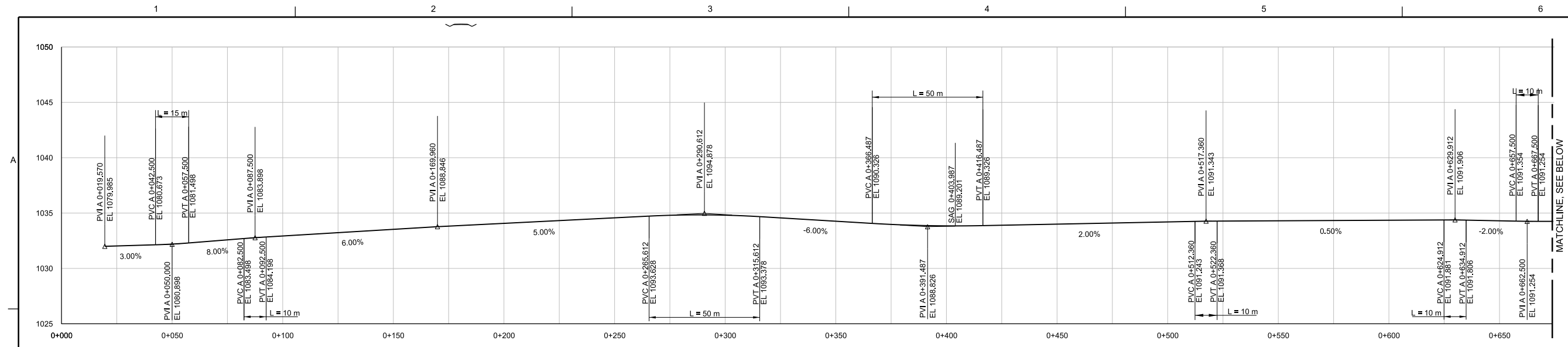
FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL
CIVIL

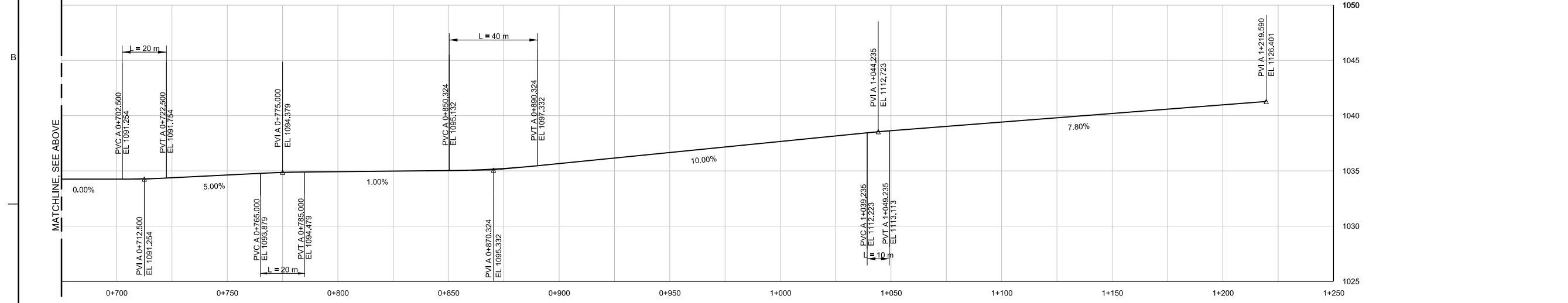
SEEPAGE COLLECTION DAM
PROFILES AND SECTION
ALTERNATIVE 1

VERIFY SCALE	
BAR IS 25mm ON	ORIGINAL DRAWING.
DATE	MARCH 2016
PROJ	427716
DWG	C-20
SHEET	25 of 61

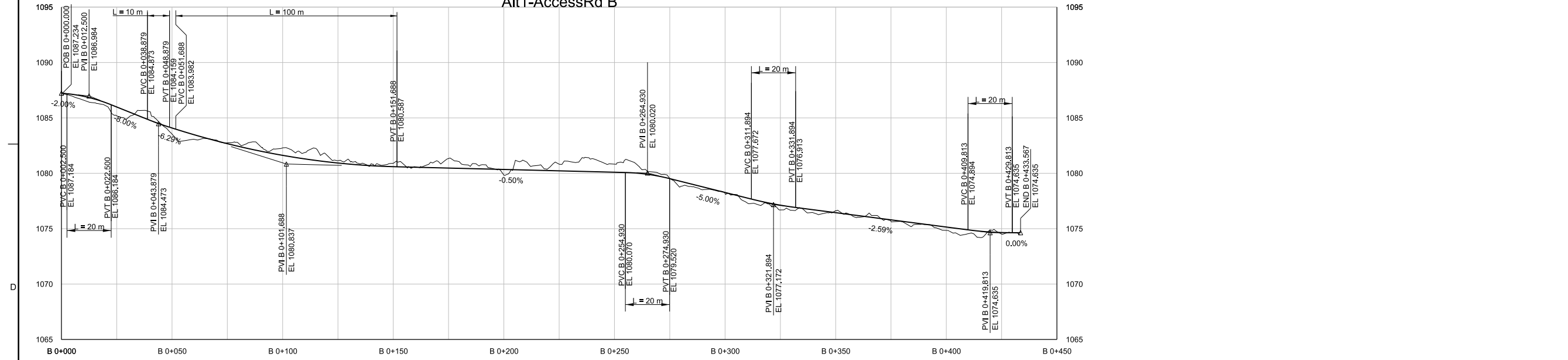
PRELIMINARY - NOT FOR CONSTRUCTION



A ACCESS ROAD PROFILE
 1:1000 HORIZ
 1:200 VERT
 C-16



A ACCESS ROAD PROFILE (CONT)
 1:1000 HORIZ
 1:200 VERT
 C-16



B ACCESS ROAD PROFILE
 1:1000 HORIZ
 1:200 VERT
 C-16

CH2MHILL
 CIVIL

SEEPAGE COLLECTION DAM
 ACCESS ROAD PROFILES
 ALTERNATIVE 1

2525 AIRPARK DR.
 REDDING, CA 96001
 (530) 243-8831

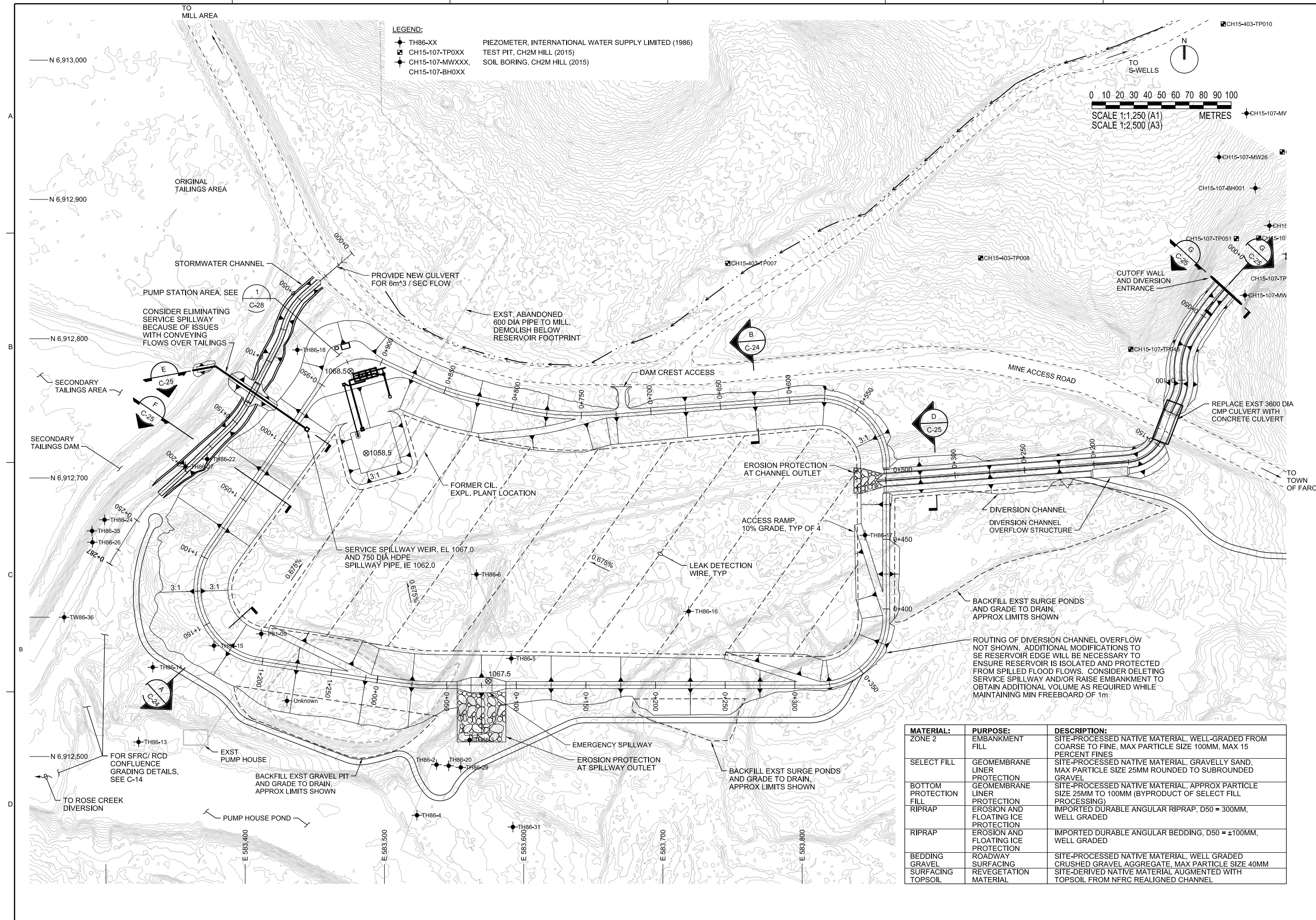
FARO MINE REMEDIATION PROJECT
 NORTH FORK ROSE CREEK PROJECT
 GOVERNMENT OF YUKON
 DESIGN

NO.	DATE	DR	CHK	APVD	BY	APVD
		JJ LESTERHUIZEN	RE BROWN	JJ LESTERHUIZEN	J SPITZLEY	

RE/USE OF DOCUMENTS: THE DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

© CH2M HILL 2011. ALL RIGHTS RESERVED.

1 2 3 4 5 6



LEGEND:
 ◆ TH86-XX PIEZOMETER, INTERNATIONAL WATER SUPPLY LIMITED (1986)
 □ CH15-107-TP0XX TEST PIT, CH2M HILL (2015)
 ◆ CH15-107-MWXXX, CH15-107-BH0XX SOIL BORING, CH2M HILL (2015)

0 10 20 30 40 50 60 70 80 90 100
 SCALE 1:1,250 (A1)
 SCALE 1:2,500 (A3)
 METRES

MATERIAL:	PURPOSE:	DESCRIPTION:
ZONE 2	EMBANKMENT FILL	SITE-PROCESSED NATIVE MATERIAL, WELL-GRADED FROM COARSE TO FINE, MAX PARTICLE SIZE 100MM, MAX 15 PERCENT FINES
SELECT FILL	GEOMEMBRANE LINER PROTECTION	SITE-PROCESSED NATIVE MATERIAL, GRAVELLY SAND, MAX PARTICLE SIZE 25MM ROUNDED TO SUBROUNDED GRAVEL
BOTTOM PROTECTION FILL	GEOMEMBRANE LINER PROTECTION	SITE-PROCESSED NATIVE MATERIAL, APPROX PARTICLE SIZE 25MM TO 100MM (BYPRODUCT OF SELECT FILL PROCESSING)
RIPRAP	EROSION AND FLOATING ICE PROTECTION	IMPORTED DURABLE ANGULAR RIPRAP, D50 = 300MM, WELL GRADED
RIPRAP	EROSION AND FLOATING ICE PROTECTION	IMPORTED DURABLE ANGULAR BEDDING, D50 = ±100MM, WELL GRADED
BEDDING GRAVEL	ROADWAY SURFACING	SITE-PROCESSED NATIVE MATERIAL, WELL GRADED CRUSHED GRAVEL AGGREGATE, MAX PARTICLE SIZE 40MM
SURFACING TOPSOIL	REVEGETATION MATERIAL	SITE-DERIVED NATIVE MATERIAL AUGMENTED WITH TOPSOIL FROM NFRC REALIGNED CHANNEL

CH2MHILL®

CIVIL

SEEPAGE COLLECTION POND EMBANKMENT PLAN ALTERNATIVE 2

FARO MINE REMEDIATION PROJECT
 NORTH FORK ROSE CREEK PROJECT
 GOVERNMENT OF YUKON
 DESIGN

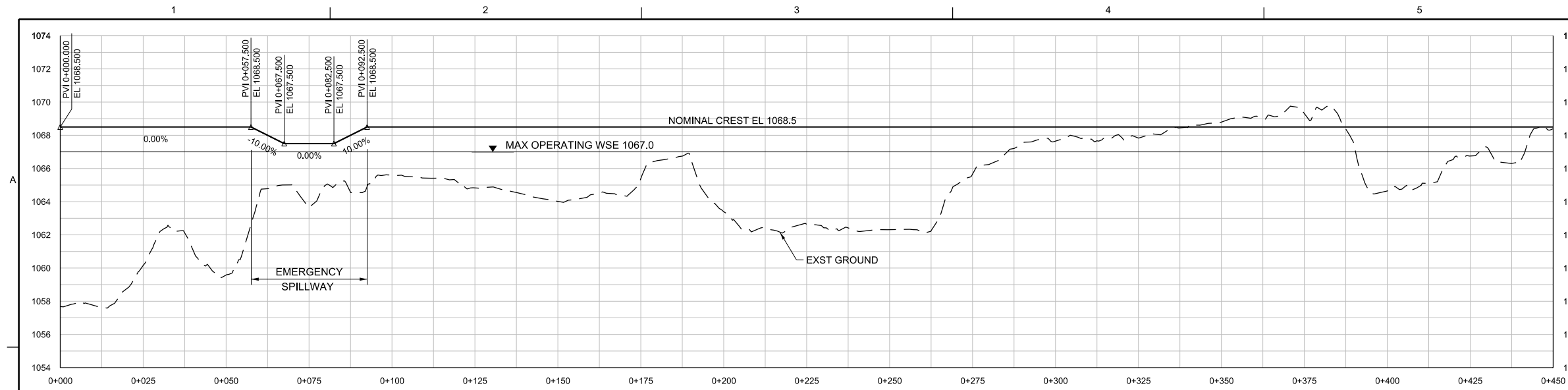
2525 AIRPARK DR.
 REDDING, CA 96001
 (530) 243-8831

DATE	MARCH 2016
PROJ	427716
DWG	C-22
SHEET	27 of 61

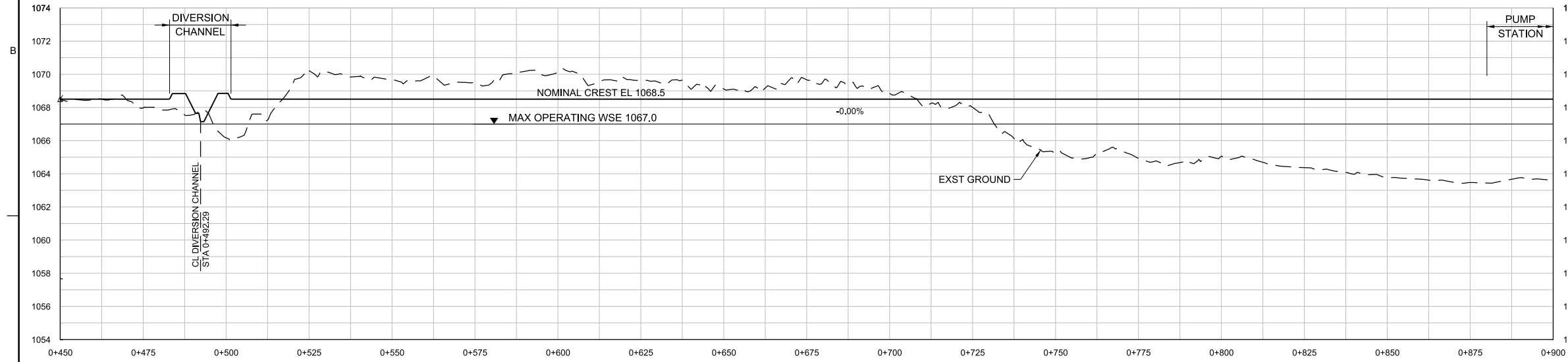
VERIFY SCALE
 BAR IS 25mm ON ORIGINAL DRAWING.
 0 25mm

REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

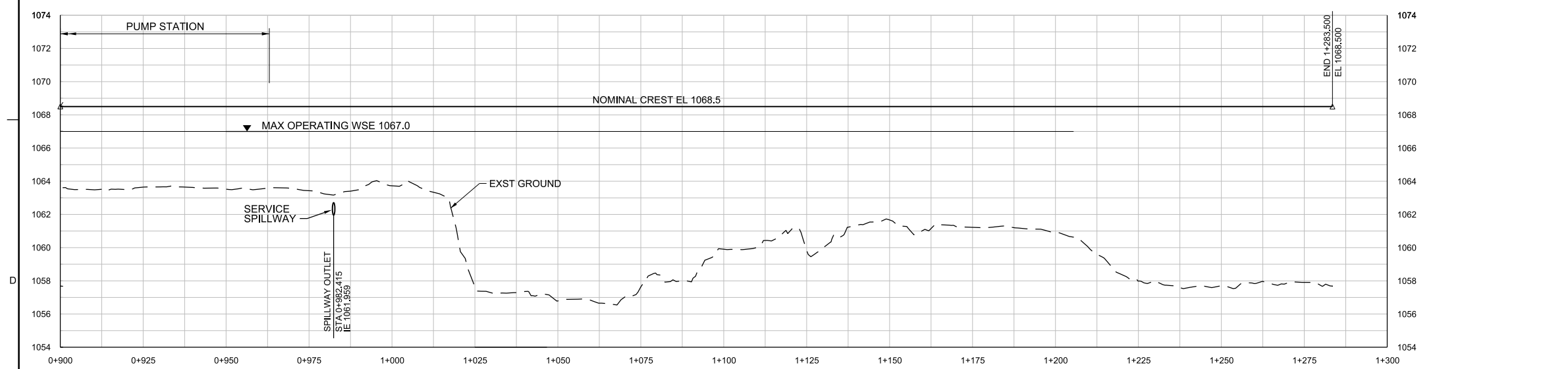
PRELIMINARY - NOT FOR CONSTRUCTION



EMBANKMENT PROFILE
 1:750 HORIZ
 1:150 VERT



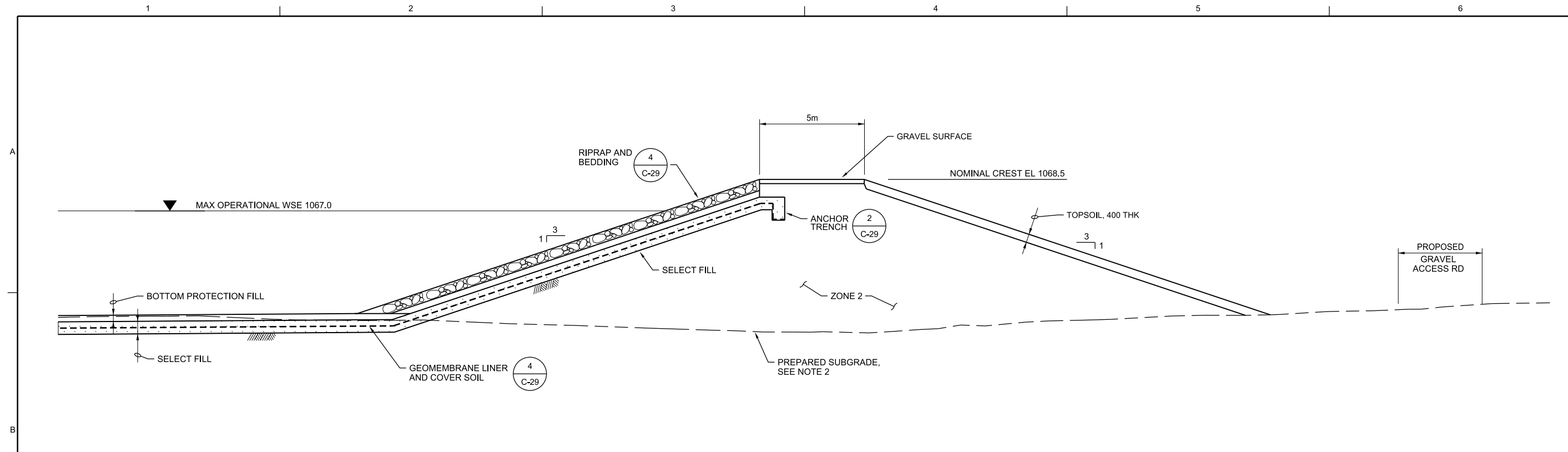
EMBANKMENT PROFILE (CONTINUED)
 1:750 HORIZ
 1:150 VERT



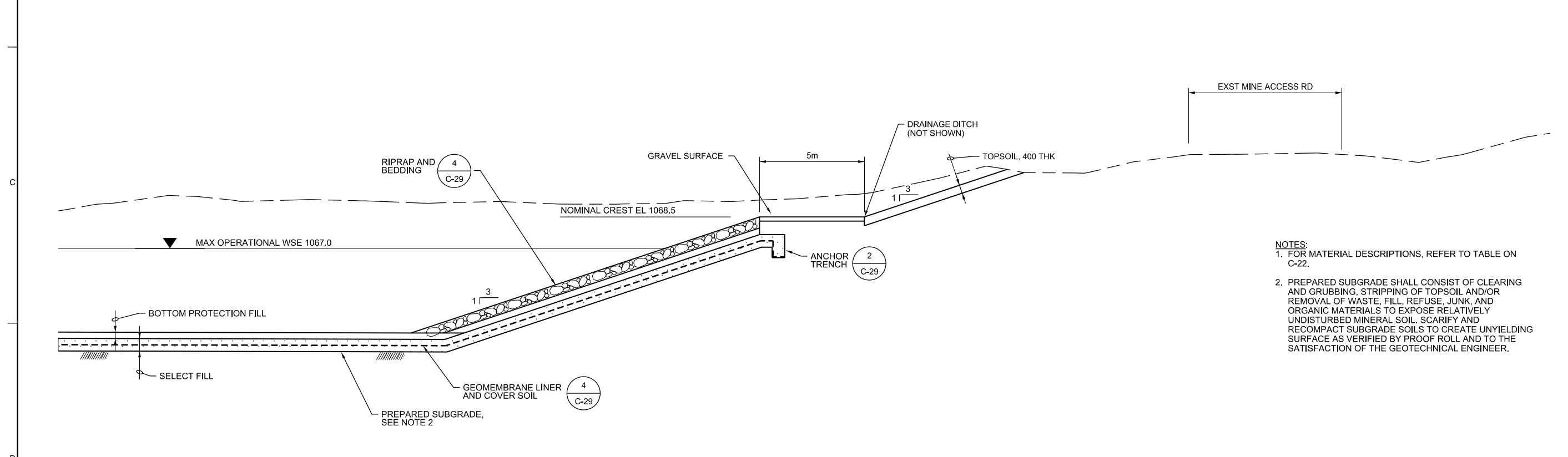
EMBANKMENT PROFILE (CONTINUED)
 1:750 HORIZ
 1:150 VERT

CH2MHILL® CIVIL SEEPAGE COLLECTION POND EMBANKMENT PROFILE ALTERNATIVE 2		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		MD KACMARCIK DR		RE BROWN CHK		J J LESTERHUIZEN APVD		J SPITZLEY BY APVD	
		2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		NO. DATE		REVISION		APVD		J SPITZLEY	
VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING.											
DATE MARCH 2016 PROJ 427716 DWG C-23 SHEET 28 of 61											

PRELIMINARY - NOT FOR CONSTRUCTION
 RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



(A) TYPICAL EMBANKMENT SECTION
1:200
C-22



(B) TYPICAL CUT SECTION
1:200
C-22

- NOTES:**
- FOR MATERIAL DESCRIPTIONS, REFER TO TABLE ON C-22.
 - PREPARED SUBGRADE SHALL CONSIST OF CLEARING AND GRUBBING, STRIPPING OF TOPSOIL AND/OR REMOVAL OF WASTE, FILL, REFUSE, JUNK, AND ORGANIC MATERIALS TO EXPOSE RELATIVELY UNDISTURBED MINERAL SOIL. SCARIFY AND RECOMPACT SUBGRADE SOILS TO CREATE UNYIELDING SURFACE AS VERIFIED BY PROOF ROLL AND TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.

NO.	DATE	DR	CHK	APVD	BY	APVD
		MD KAGMARCIC	JJ LESTERHUIZEN	RE BROWN	J SPITZBERG	

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

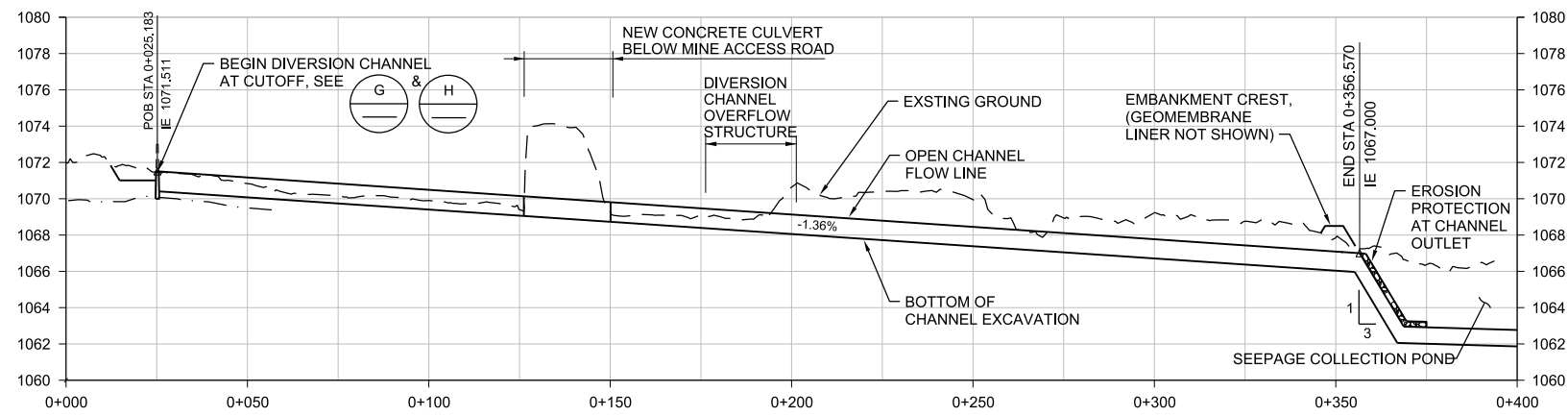
CH2MHILL®

CIVIL
SEEPAGE COLLECTION POND
EMBANKMENT SECTIONS
ALTERNATIVE 2

VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	25mm
DATE	MARCH 2016
PROJ	427716
DWG	C-24
SHEET	29 of 61

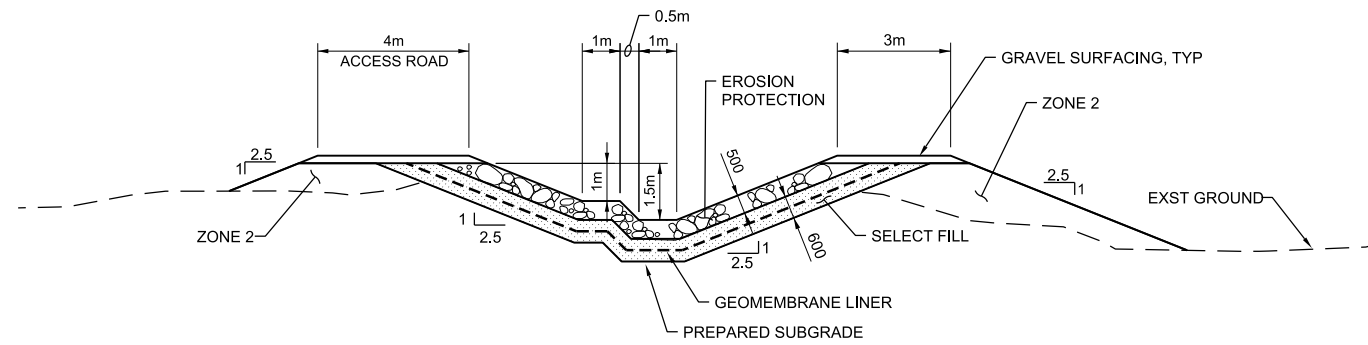
PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



DIVERSION CHANNEL PROFILE

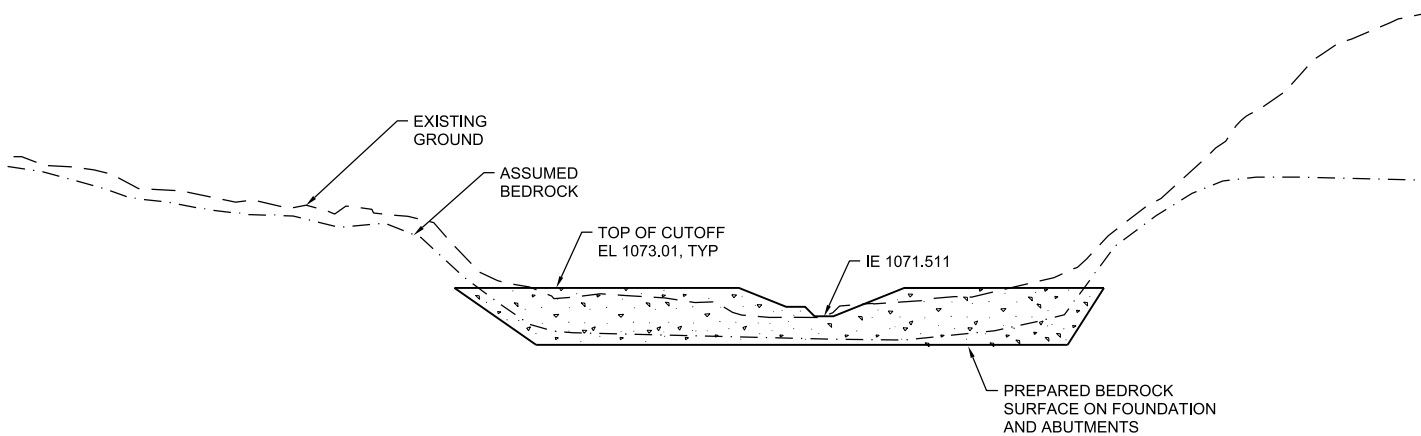
1:1000 HORIZ
1:200 VERT



NOTE:
FOR MATERIAL DESCRIPTIONS,
REFER TO TABLE ON C-22.

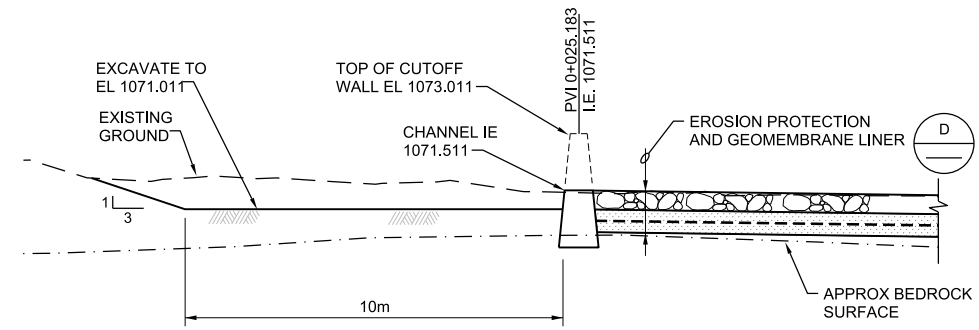
D TYPICAL CHANNEL SECTION

1:100



G CUTOFF WALL SECTION

1:200



H CUTOFF WALL SECTION

1:100

NO.	DATE	REVISION	BY
		CHK	J. SPITZLEY
		DR	JJ. ESTERHUIZEN
		APVD	

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

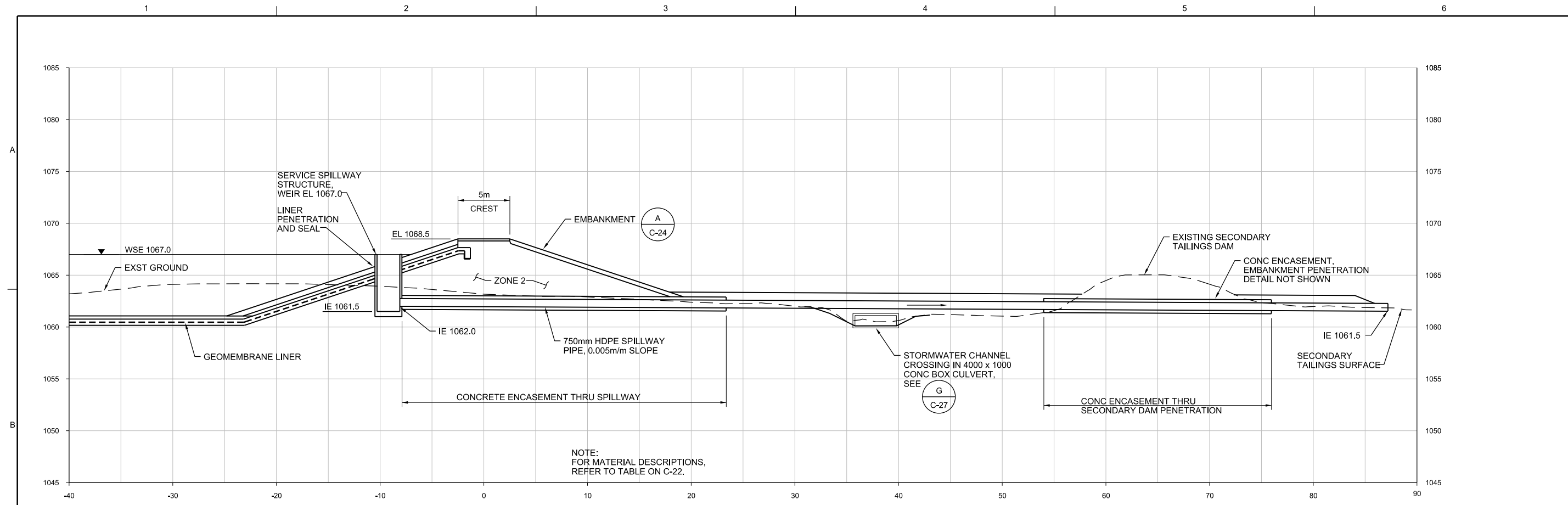
FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL®

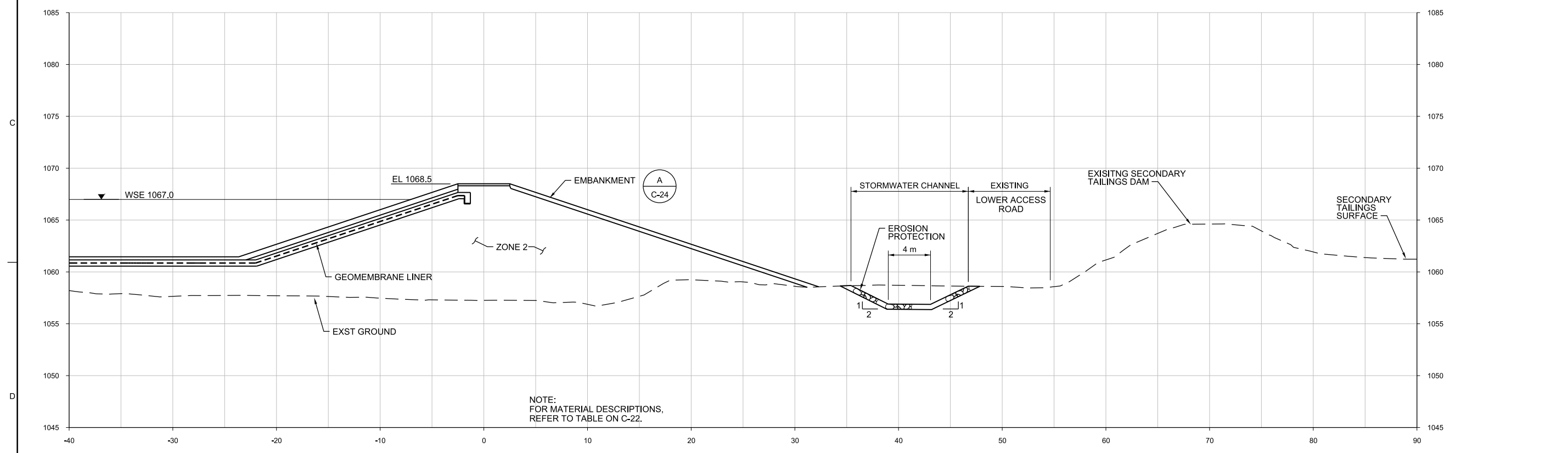
CIVIL
SEEPAGE COLLECTION POND
EMBANKMENT SECTIONS
ALTERNATIVE 2

VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	
DATE	MARCH 2016
PROJ	427716
DWG	C-25
SHEET	30 of 61

PRELIMINARY - NOT FOR CONSTRUCTION



E SERVICE SPILLWAY SECTION
1:200
C-22



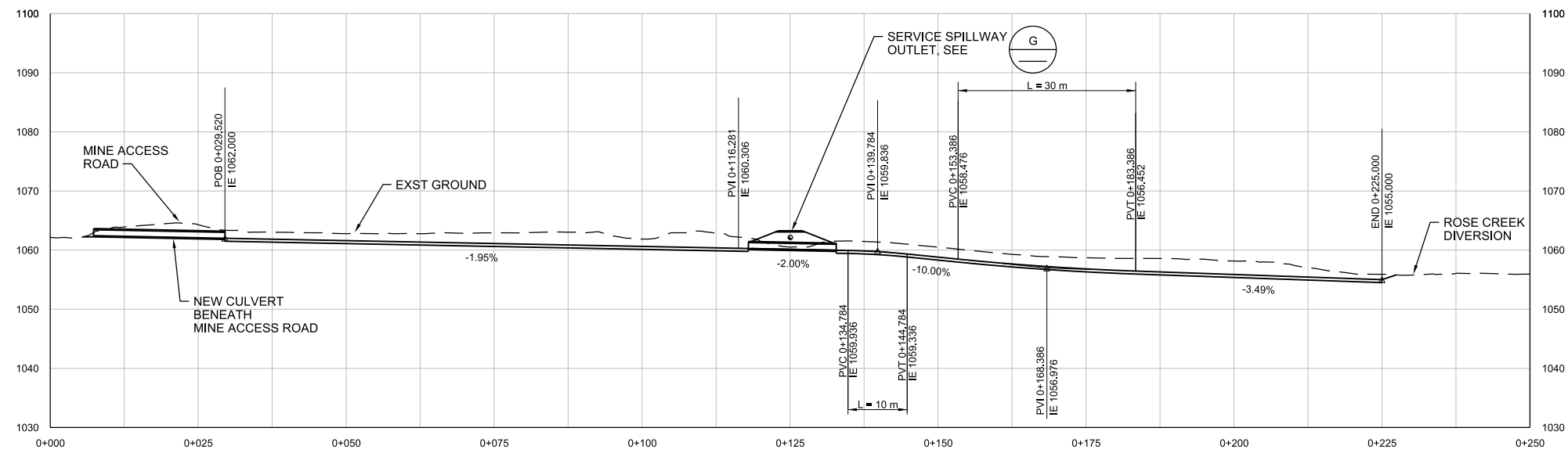
F STORMWATER CHANNEL SECTION
1:200
C-22

2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		NO. DATE		DR		REVISION		BY APVD	
CH2MHILL®		CIVIL		NO. DATE		DR		CHK		BY APVD	
SEEPAGE COLLECTION POND SPILLWAY AND STORMWATER CHANNEL SECTION, ALTERNATIVE 2		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		NO. DATE		DR		CHK		BY APVD	
VERIFY SCALE		DATE		NO. DATE		DR		CHK		BY APVD	
BAR IS 25mm ON ORIGINAL DRAWING.		MARCH 2016		NO. DATE		DR		CHK		BY APVD	
0 25mm		PROJ		NO. DATE		DR		CHK		BY APVD	
		427716		NO. DATE		DR		CHK		BY APVD	
		C-26		NO. DATE		DR		CHK		BY APVD	
		SHEET		NO. DATE		DR		CHK		BY APVD	
		31 of 61		NO. DATE		DR		CHK		BY APVD	

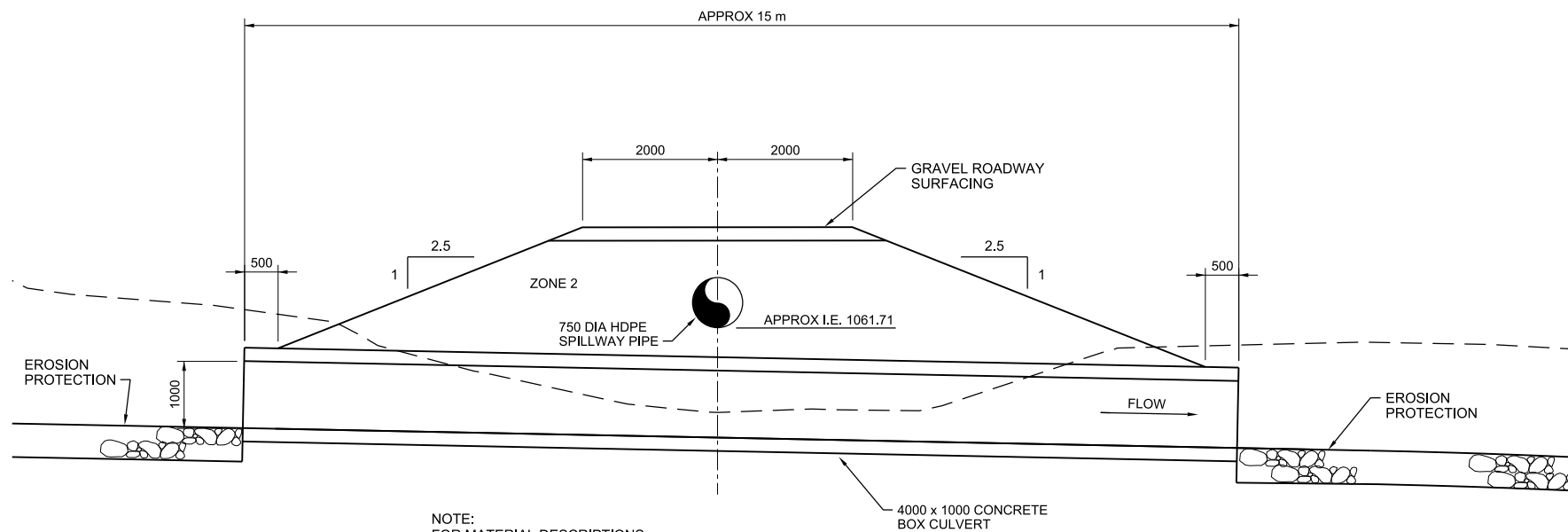
PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

© CH2M HILL 2011. ALL RIGHTS RESERVED.



STORMWATER CHANNEL PROFILE
1:500

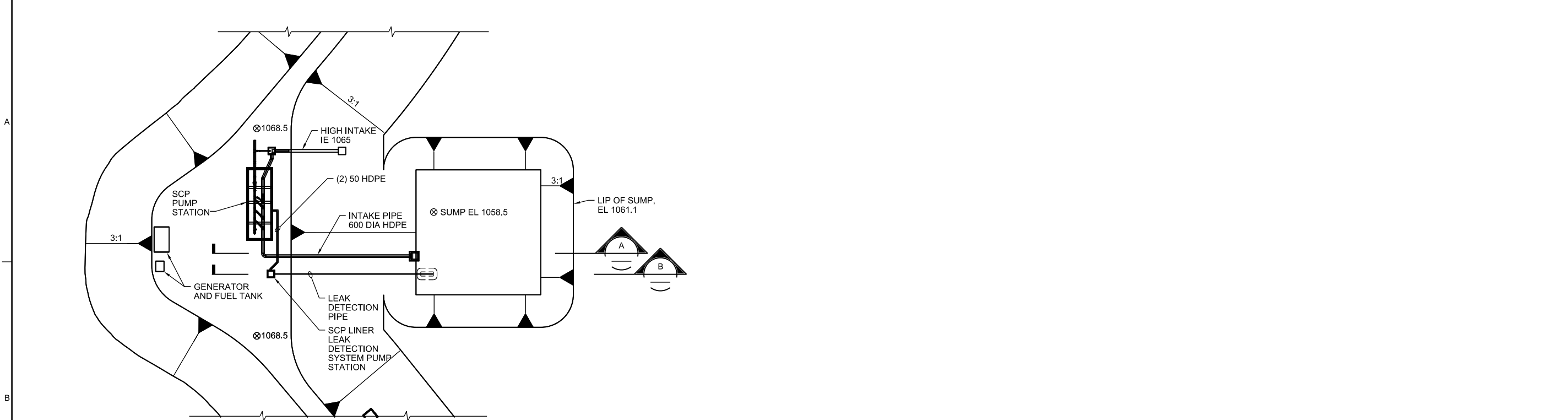


NOTE:
FOR MATERIAL DESCRIPTIONS,
REFER TO TABLE ON C-22.

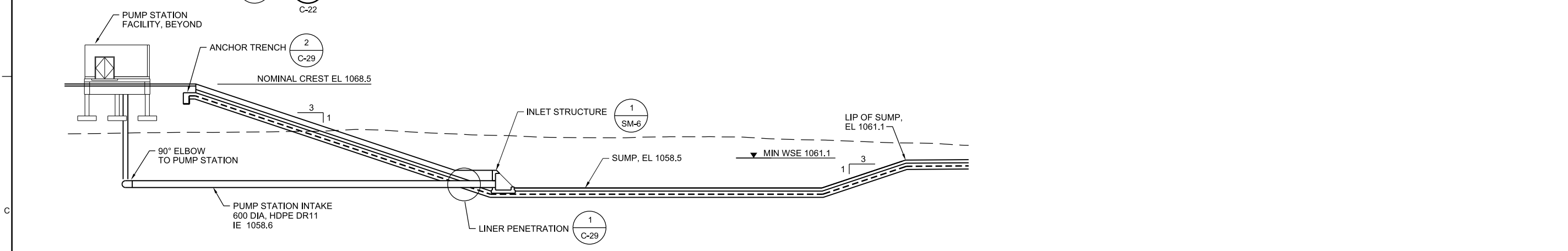
(G) SPILLWAY CROSSING AND BOX CULVERT SECTION
1:50
C-22
C-26

2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		CIVIL SEEPAGE COLLECTION POND STORMWATER CHANNEL PROFILE AND SECTION, ALTERNATIVE 2	
NO.	DATE	REVISION	CHK	APVD	BY
					J. SPITZLEY
DSGN	MD KAGMARCIK	DR	RE BROWN	JJ ESTERHUIZEN	
RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.					
PRELIMINARY - NOT FOR CONSTRUCTION					
VERIFY SCALE					
BAR IS 25mm ON ORIGINAL DRAWING.					
0 25mm					
DATE	MARCH 2016				
PROJ	427716				
DWG	C-27				
SHEET	32 of 61				

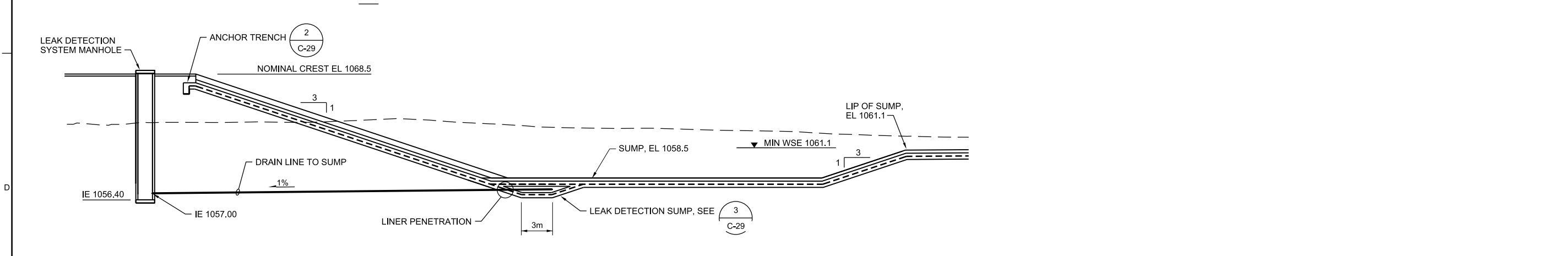
1 2 3 4 5 6



1 PUMP STATION ENLARGED PLAN
1:500



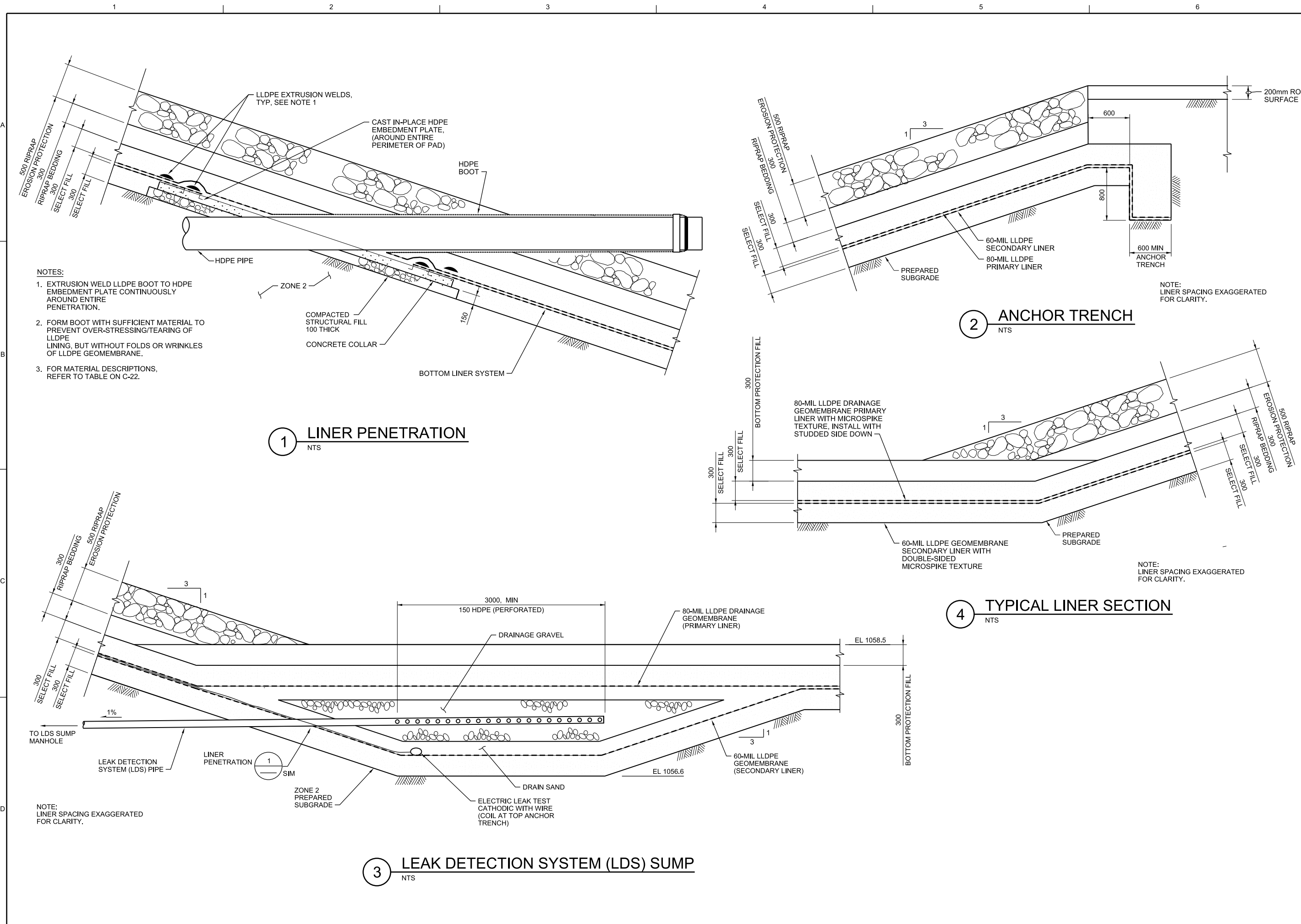
A PUMP STATION INTAKE SECTION
1:200



B LEAK DETECTION MANHOLE SECTION
1:200

CH2MHILL® CIVIL SEEPAGE COLLECTION POND PUMP STATION ENLARGED PLAN AND SECTIONS, ALTERNATIVE 2		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		REVISION NO. DATE DSGN DR CHK APVD BY APVD	
		2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		MD KAGMARCIK RE BROWN J J LESTERHUIZEN J SPITZLEY	
VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING.					
DATE MARCH 2016 PROJ 427716 DWG C-28 SHEET 33 of 61					

PRELIMINARY - NOT FOR CONSTRUCTION



- NOTES:**
- EXTRUSION WELD LLDPE BOOT TO HDPE EMBEDMENT PLATE CONTINUOUSLY AROUND ENTIRE PENETRATION.
 - FORM BOOT WITH SUFFICIENT MATERIAL TO PREVENT OVER-STRESSING/TEARING OF LLDPE LINING, BUT WITHOUT FOLDS OR WRINKLES OF LLDPE GEOMEMBRANE.
 - FOR MATERIAL DESCRIPTIONS, REFER TO TABLE ON C-22.

NOTE: LINER SPACING EXAGGERATED FOR CLARITY.

NOTE: LINER SPACING EXAGGERATED FOR CLARITY.

NOTE: LINER SPACING EXAGGERATED FOR CLARITY.

NO.	DATE	DR	CHK	REVISION	BY	APVD
		MD KACMARCIK	JJ LESTERHUIZEN			J SPITZLEY

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL
CIVIL

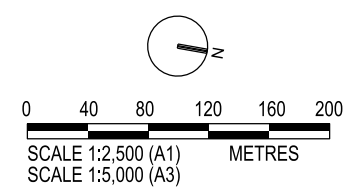
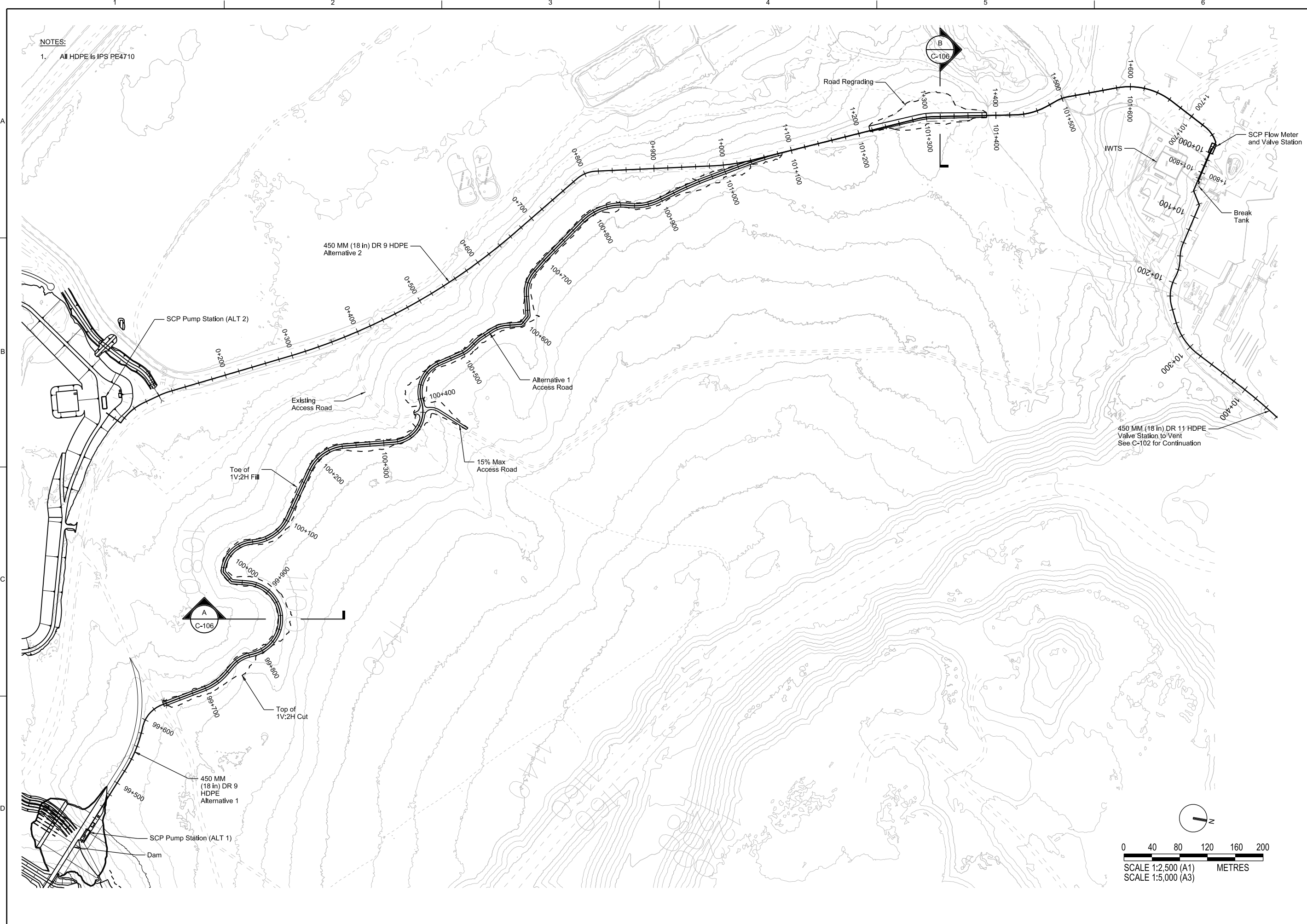
SEEPAGE COLLECTION POND
LINER DETAILS
ALTERNATIVE 2

VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	25mm
DATE	MARCH 2016
PROJ	427716
DWG	C-29
SHEET	34 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

© CH2M HILL 2011. ALL RIGHTS RESERVED.

NOTES:
1. All HDPE is IPS PE4710



NO.	DATE	REVISION	CHK	DR	APVD	BY	APVD
				R. STILLMUNKES	J. CHELONIS	C. FUNK	J. SPITZLEY

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL
CIVIL

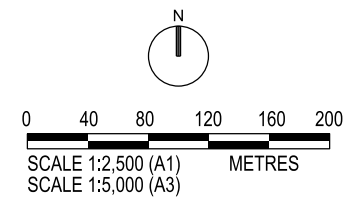
**NFRC SEEPAGE COLLECTION POND
CONVEYANCE PIPELINE PLAN
ALTERNATIVE 1 AND 2**

AS SHOWN
VERIFY SCALE
BAR IS 25mm ON
ORIGINAL DRAWING.
0 25mm

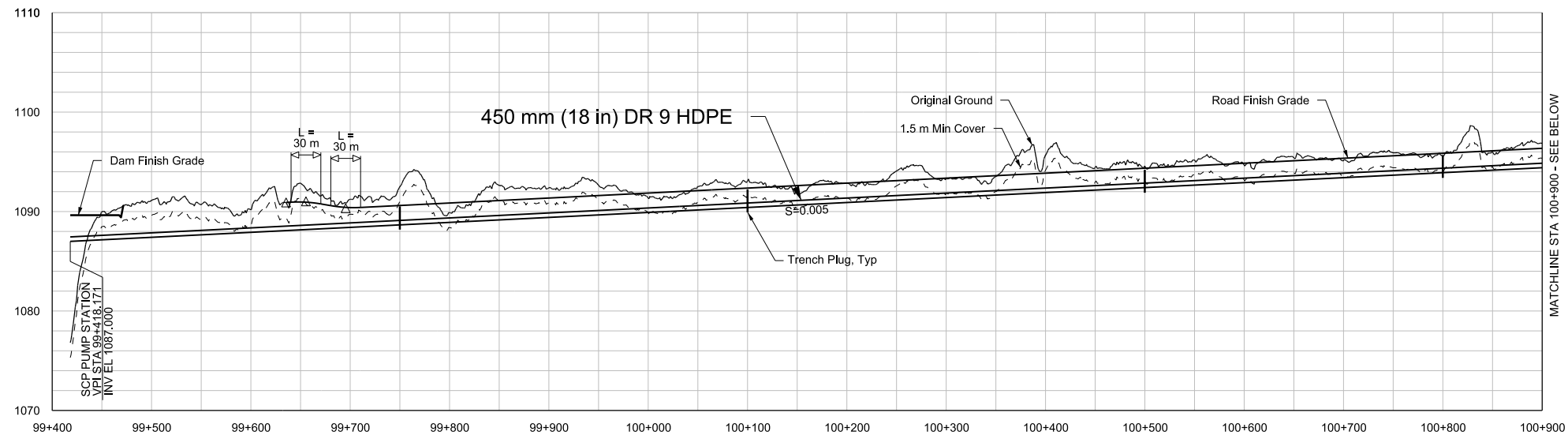
DATE	MARCH 2016
PROJ	
DWG	C-30
SHEET	35 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

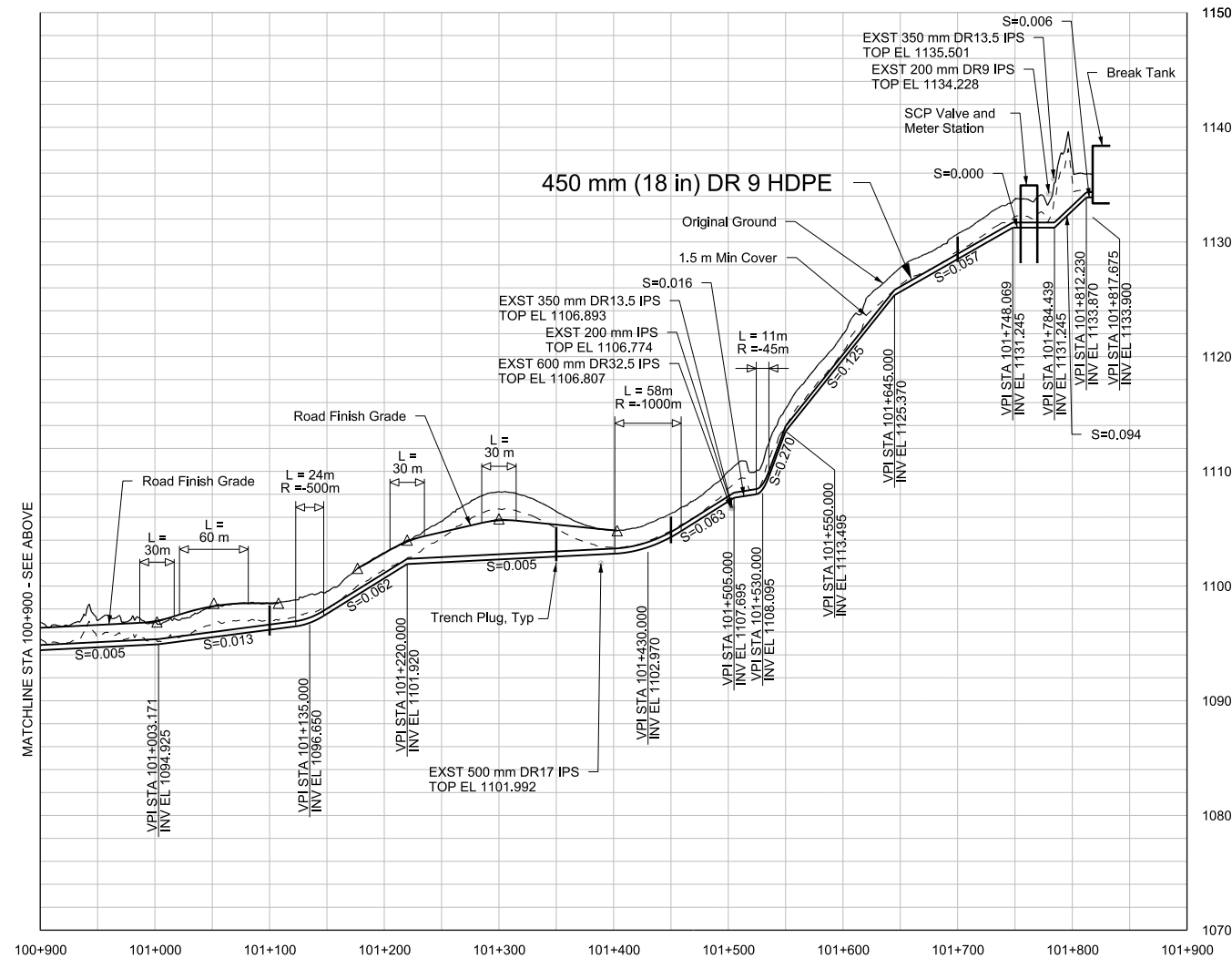
NOTES:
 1. All HDPE is IPS PE4710



2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		CH2MHILL® CIVIL NFRC SEEPAGE COLLECTION POND CONVEYANCE PIPELINE PLAN VALVE STATION TO FARO PIT		AS SHOWN VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm	
NO.	DATE	DR	CHK	REVISION	APVD	BY	APVD
		R. STILLMUNKE	J. CHELONIS		C. FUNK		J. SPITZLEY
REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2MHILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.							
PRELIMINARY - NOT FOR CONSTRUCTION							
DATE	MARCH 2016						
PROJ							
DWG	C-31						
SHEET	36 of 61						



**ALTERNATIVE 1
PROFILE**
HORIZ 1:3000
VERT 1:300



**ALTERNATIVE 1
PROFILE**
HORIZ 1:3000
VERT 1:300

REVISION		CHK	APVD
NO.	DATE	DR	BY
		R. STILLMUNKES	J. SPITZLEY
		J. CHELONIS	C. FUNK

CH2MHILL
CIVIL

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

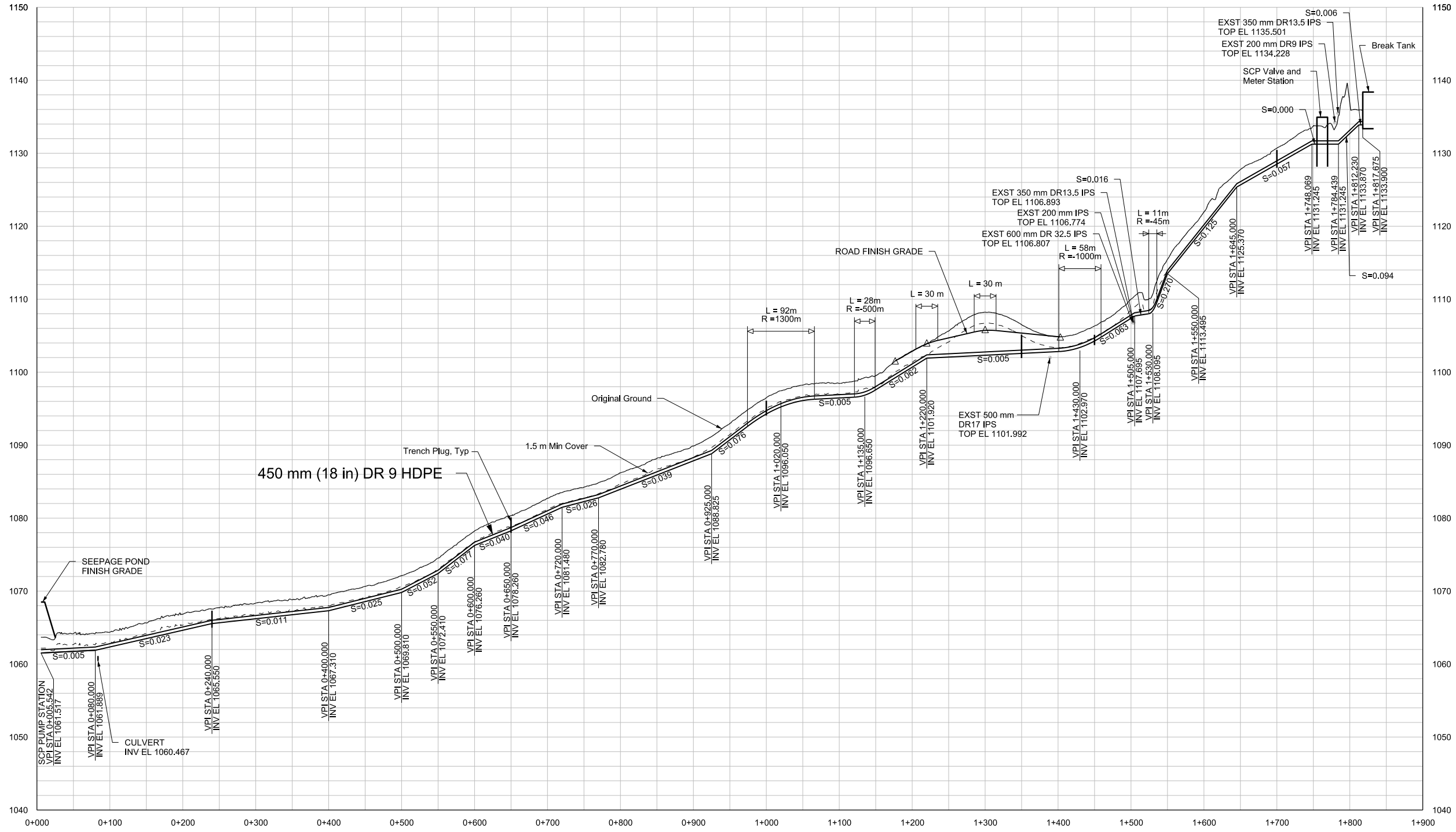
NFRC SEEPAGE COLLECTION POND
CONVEYANCE PIPELINE PROFILE
ALTERNATE 1

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
25mm

DATE	MARCH 2016
PROJ	427716
DWG	C-32
SHEET	37 of 61

PRELIMINARY - NOT FOR CONSTRUCTION
RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. ©CH2M HILL 2011. ALL RIGHTS RESERVED.

A
B
C
D



ALTERNATIVE 2
PROFILE
HORIZ 1:3000
VERT 1:300



2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CIVIL
NFCR SEEPAGE COLLECTION POND
CONVEYANCE PIPELINE PROFILE
ALTERNATE 2

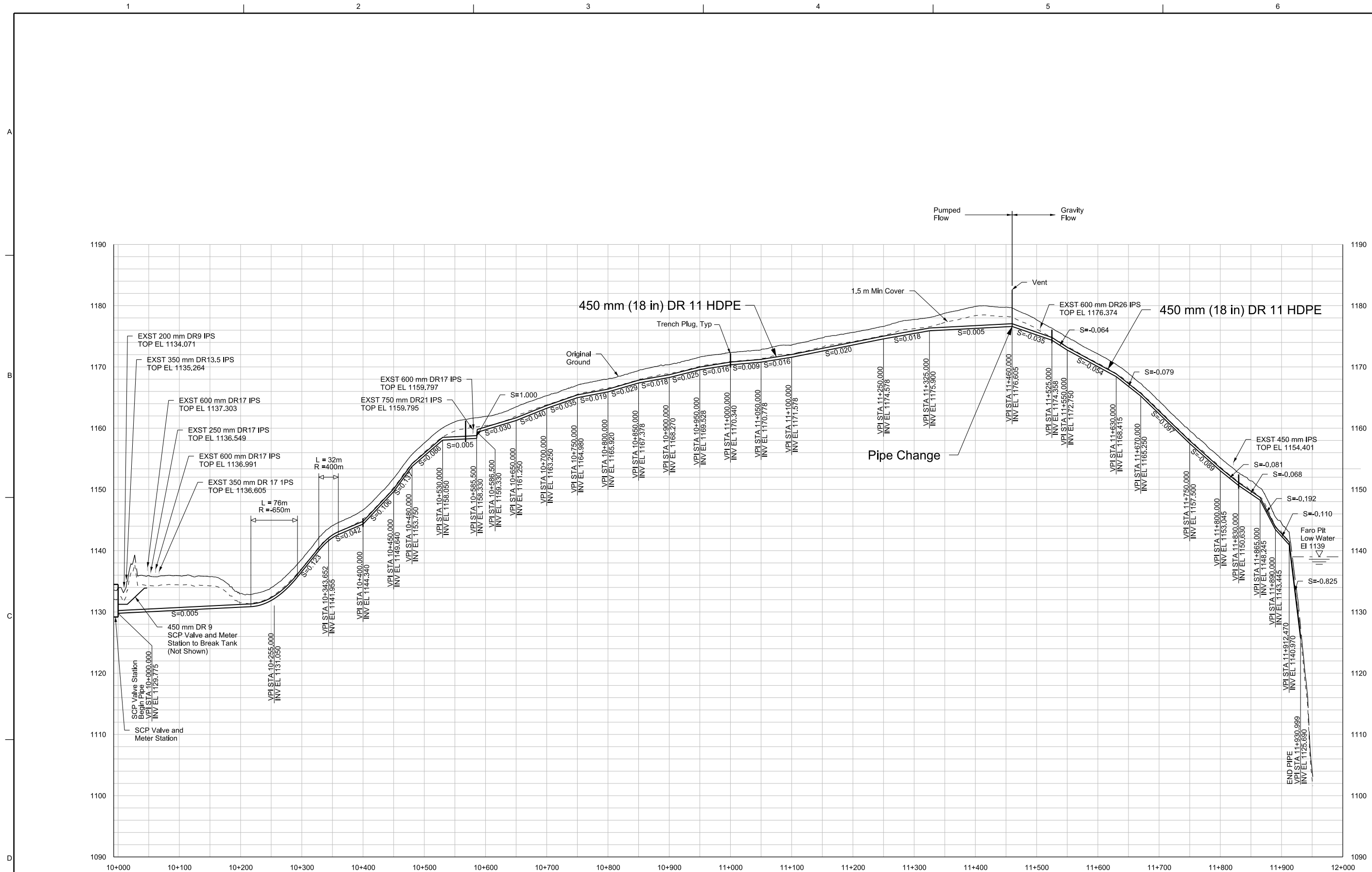
VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	
DATE	MARCH 2016
PROJ	427716
DWG	C-33
SHEET	38 of 61

NO.	DATE	DR	REVISION	CHK	APVD
		R. STILLMUNKES		J. CHELONIS	C. FUNK
					J. SPITZLEY

REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

PRELIMINARY - NOT FOR CONSTRUCTION

© CH2M HILL 2011. ALL RIGHTS RESERVED.



VALVE STATION TO FARO PIT

PROFILE

HORIZ: 1:3000
VERT: 1:300

NO.	DATE	DR	REVISION	CHK	APVD	BY	APVD
		R STILLMUNKES		J CHELONIS	C FUNK		J SPITZLEY

2625 AIRPARK DR.
REDDING, CA 96001
(530) 243-8831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL®

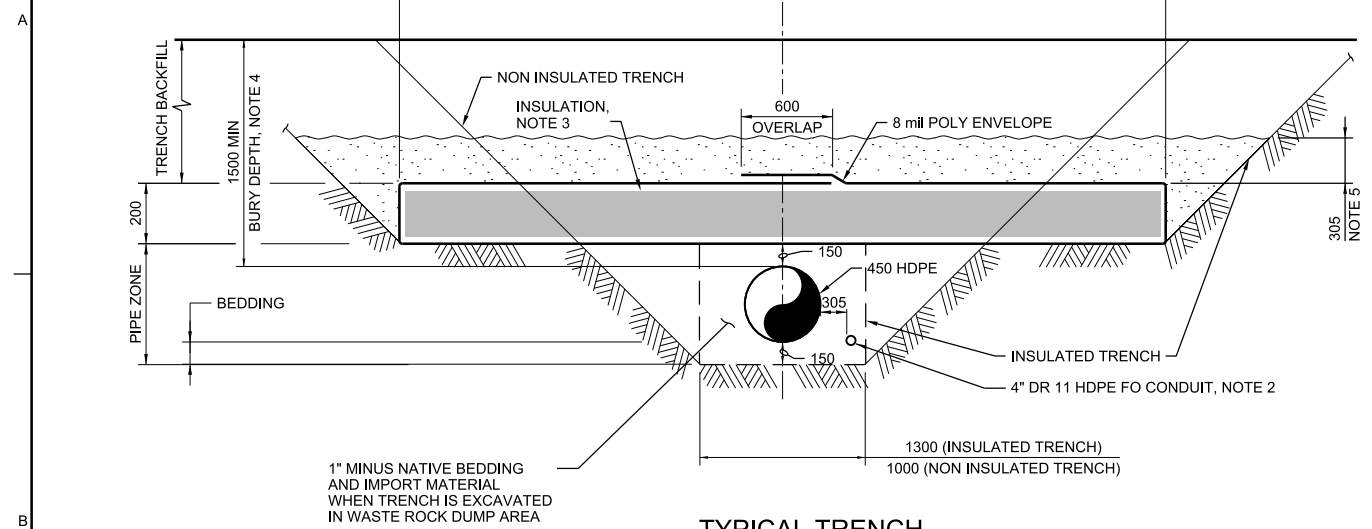
CIVIL

**NFRC SEEPAGE COLLECTION POND
CONVEYANCE PIPELINE PROFILE
VALVE STATION TO FARO PIT**

VERIFY SCALE	
BAR IS 25mm ON	25mm
ORIGINAL DRAWING.	
DATE	MARCH 2016
PROJ	427716
DWG	C-34
SHEET	39 of 61

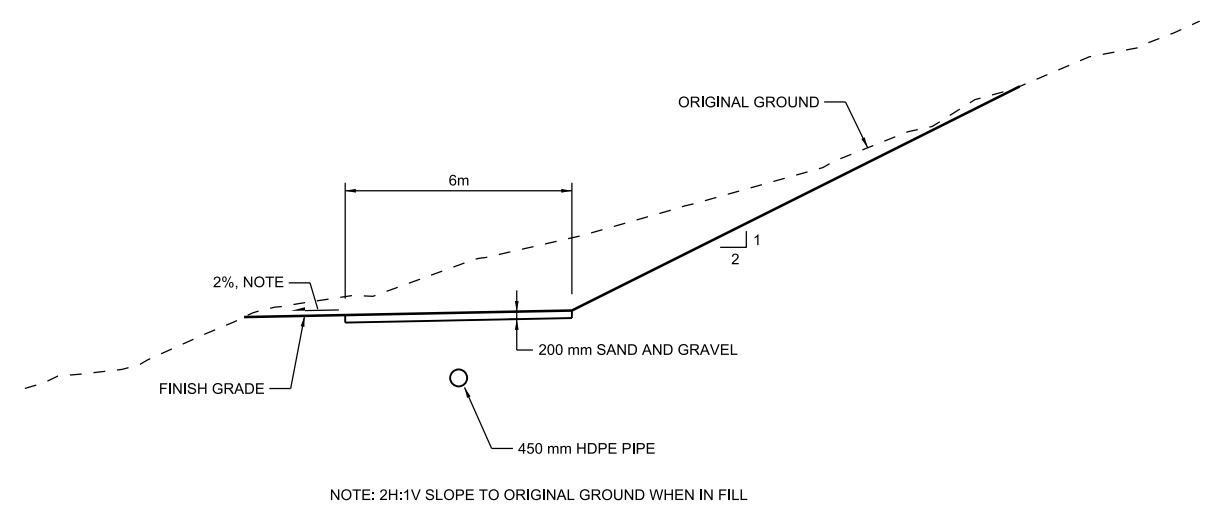
PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. ©CH2M HILL 2011. ALL RIGHTS RESERVED.

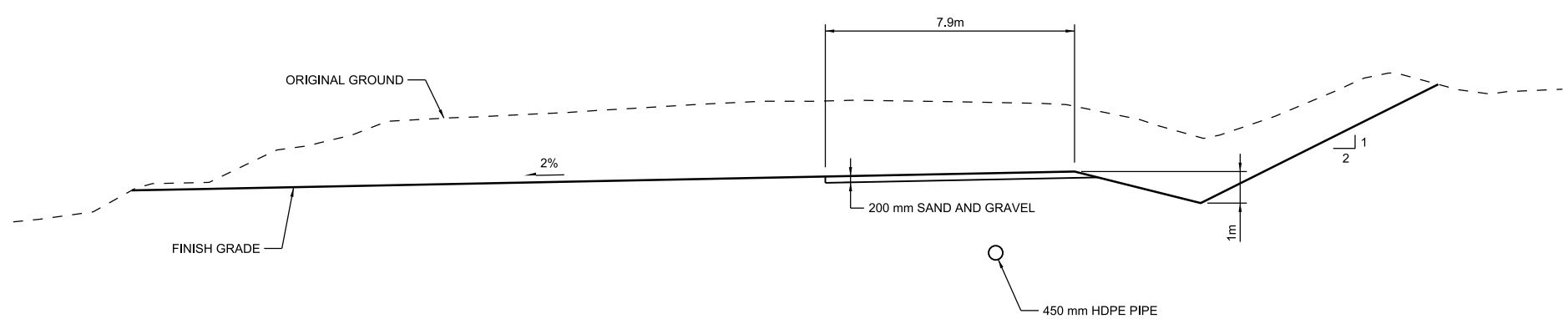


TYPICAL TRENCH
1 **DETAIL**
 1:25
 C-X

- NOTE:**
- ALL DIMENSIONS SHOWN IN MILLIMETERS.
 - INSTALL FO CONDUIT FROM SCP PUMP STATION TO SCP VALVE AND FLOW METER STATION AND IWTS BREAK TANK.
 - INSTALL 2 - 100 mm (4 INCH) RIGID STYROFOAM LAYERS.
 - NO INSULATION REQUIRED OVER 3500 mm (11.5 FT) BURY DEPTH.
 - PROVIDE 305 mm (12 INCHES) OF COMPACTED SAND OVER INSULATION.



A **SECTION**
 HORIZ 1:100
 VERT 1:100
 C-101



B **SECTION**
 HORIZ 1:100
 VERT 1:100
 C-101

NO.	DATE	DR	CHK	APVD	BY	APVD
		R. STILLMUNKES	J. CHELONIS	C. FUNK		J. SPITZLEY

2525 AIRPARK DR.
 REDDING, CA 96001
 (530) 243-5831

FARO MINE REMEDIATION PROJECT
 NORTH FORK ROSE CREEK PROJECT
 GOVERNMENT OF YUKON
 DESIGN

CH2MHILL[®]

CIVIL

CONVEYANCE PIPELINE DETAILS

AS SHOWN
VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
DATE MARCH 2016
PROJ C-35
DWG C-35
SHEET 40 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THE DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.

1

2

3

4

5

6

A

B

C

D



CH2MHILL®

CIVIL
BORROW PLAN

2625 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

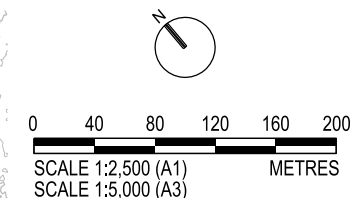
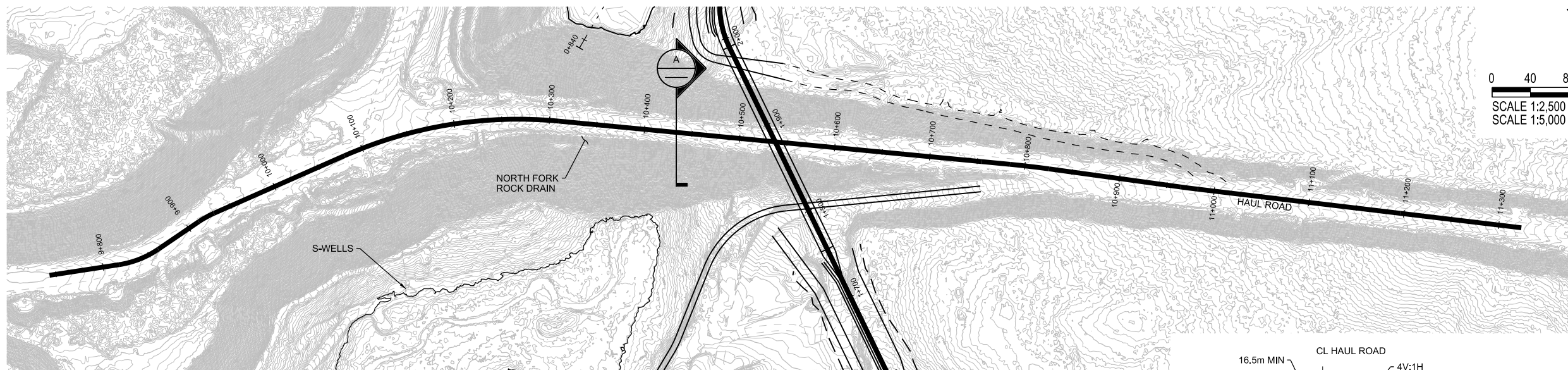
FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

AS SHOWN
VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm
DATE MARCH 2016
PROJ
DWG C-36
SHEET 41 of 61

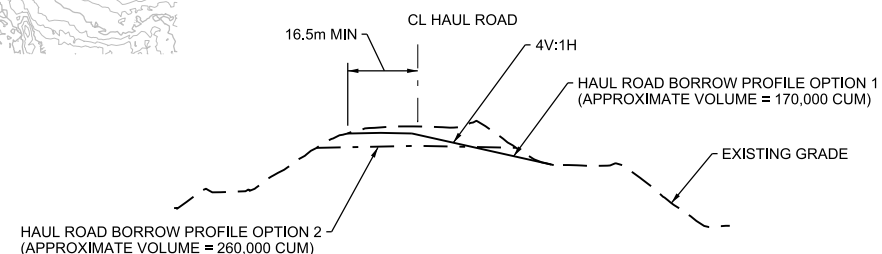
NO.	DATE	DR	REVISION	BY	APVD
		M. KACMARCIK	J. CHELONIS	P. DAVIS	J. SPITZLEY
			CHK	APVD	

PRELIMINARY - NOT FOR CONSTRUCTION

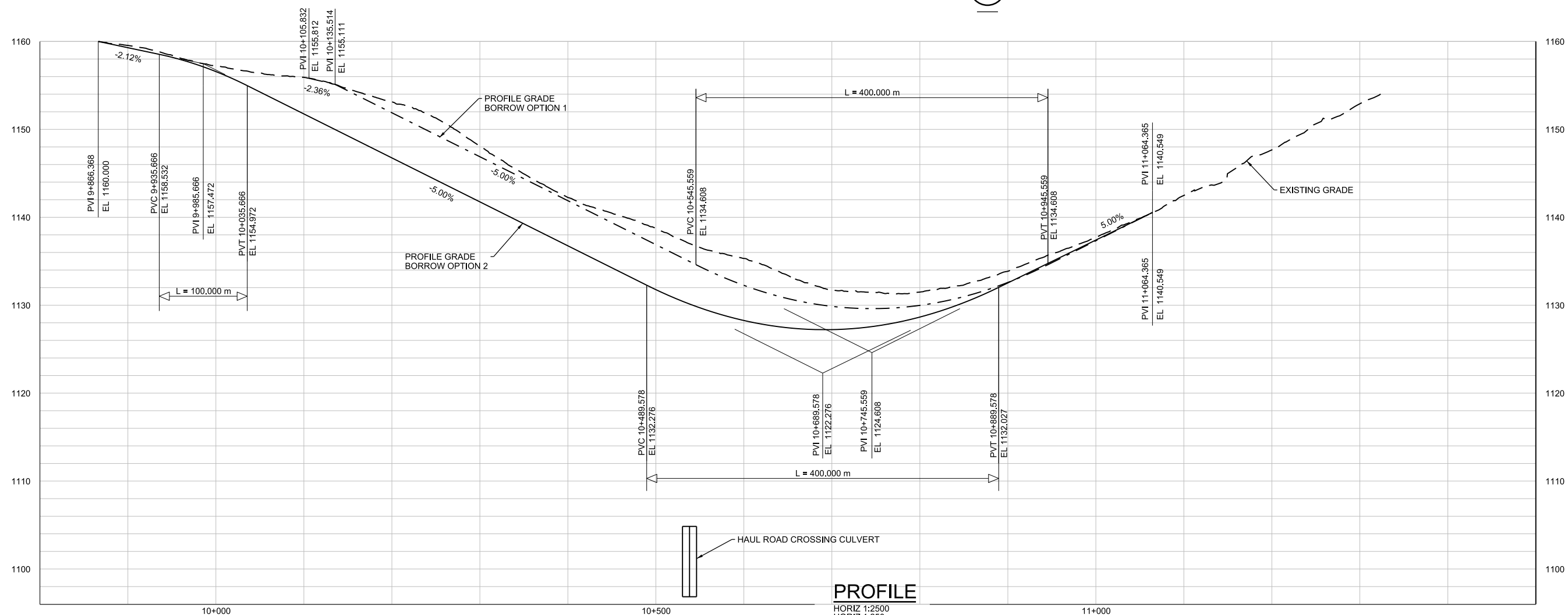
REUSE OF DOCUMENTS: THE DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



PLAN



A HAUL ROAD BORROW TYPICAL SECTION
1:1000



PROFILE
HORIZ 1:2500
HORIZ 1:250

NO.	DATE	DR	CHK	APVD	BY	APVD
		L LALLIGER	J CHELONIS			J SPITZLEY

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL®

CIVIL

**HAUL ROAD BORROW
PLAN AND PROFILE**

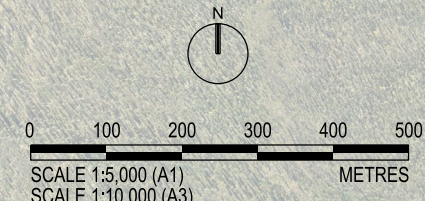
VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

DATE	MARCH 2016
PROJ	427716
DWG	C-37
SHEET	42 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

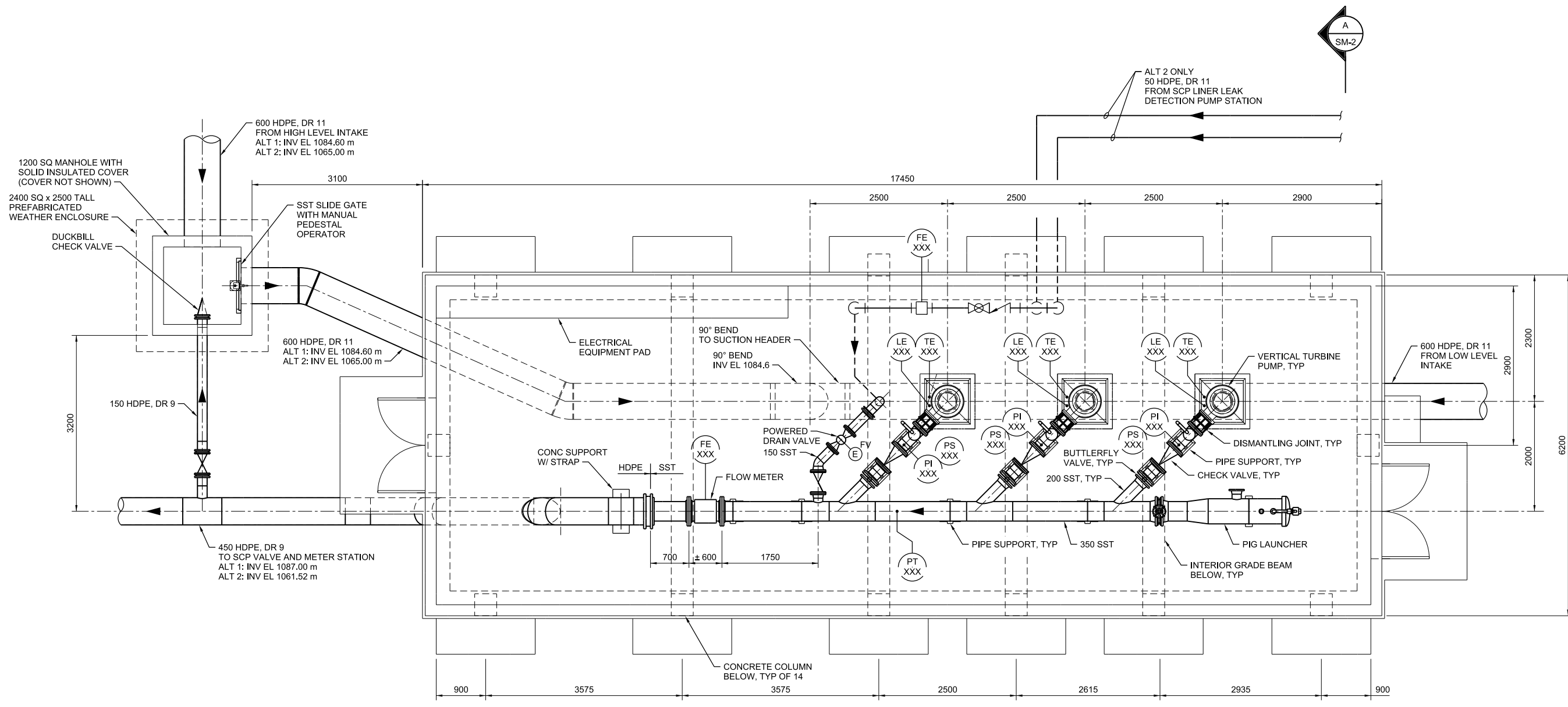
© CH2M HILL 2011. ALL RIGHTS RESERVED.



2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN	
CH2MHILL®		CIVIL ACCESS ROAD PLAN	
REUSE OF DOCUMENTS: THE DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2MHILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.			
DATE	MARCH 2016	DR	L. ALLIGER
PROJ		CHK	J. CHELONIS
DWG	C-38	APVD	J. SPITZLEY
SHEET	43 of 61	BY	APVD

1 2 3 4 5 6

A
B
C
D



ALT 2 ONLY
 50 HDPE, DR 11
 FROM SCP LINER LEAK
 DETECTION PUMP STATION

1200 SQ MANHOLE WITH
 SOLID INSULATED COVER
 (COVER NOT SHOWN)

2400 SQ x 2500 TALL
 PREFABRICATED
 WEATHER ENCLOSURE

DUCKBILL
 CHECK VALVE

600 HDPE, DR 11
 FROM HIGH LEVEL INTAKE
 ALT 1: INV EL 1084.60 m
 ALT 2: INV EL 1065.00 m

SST SLIDE GATE
 WITH MANUAL
 PEDESTAL
 OPERATOR

600 HDPE, DR 11
 ALT 1: INV EL 1084.60 m
 ALT 2: INV EL 1065.00 m

150 HDPE, DR 9

450 HDPE, DR 9
 TO SCP VALVE AND METER STATION
 ALT 1: INV EL 1087.00 m
 ALT 2: INV EL 1061.52 m

CONC SUPPORT
 W/ STRAP

HDPE

SST

FE
 XXX

FLOW METER

700 ± 600 1750

POWERED
 DRAIN VALVE
 150 SST

FV
 (E)

90° BEND
 TO SUCTION HEADER

90° BEND
 INV EL 1084.6

ELECTRICAL
 EQUIPMENT PAD

FE
 XXX

LE
 XXX

TE
 XXX

LE
 XXX

TE
 XXX

LE
 XXX

TE
 XXX

PT
 XXX

PI
 XXX

PS
 XXX

PI
 XXX

PS
 XXX

PI
 XXX

PS
 XXX

VERTICAL TURBINE
 PUMP, TYP

DISMANTLING JOINT, TYP

PIPE SUPPORT, TYP

CHECK VALVE, TYP

200 SST, TYP

BUTTLERFLY
 VALVE, TYP

350 SST

PIPE SUPPORT, TYP

PIG LAUNCHER

INTERIOR GRADE BEAM
 BELOW, TYP

600 HDPE, DR 11
 FROM LOW LEVEL
 INTAKE

900

3575

CONCRETE COLUMN
 BELOW, TYP OF 14

3575

2500

2615

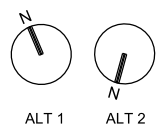
2935

900

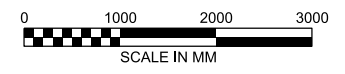
2300

2900

6200



PLAN
 1:40



NO.	DATE	DR	REVISION	BY

2525 AIRPARK DR.
 REDDING, CA 96001
 (530) 243-5831

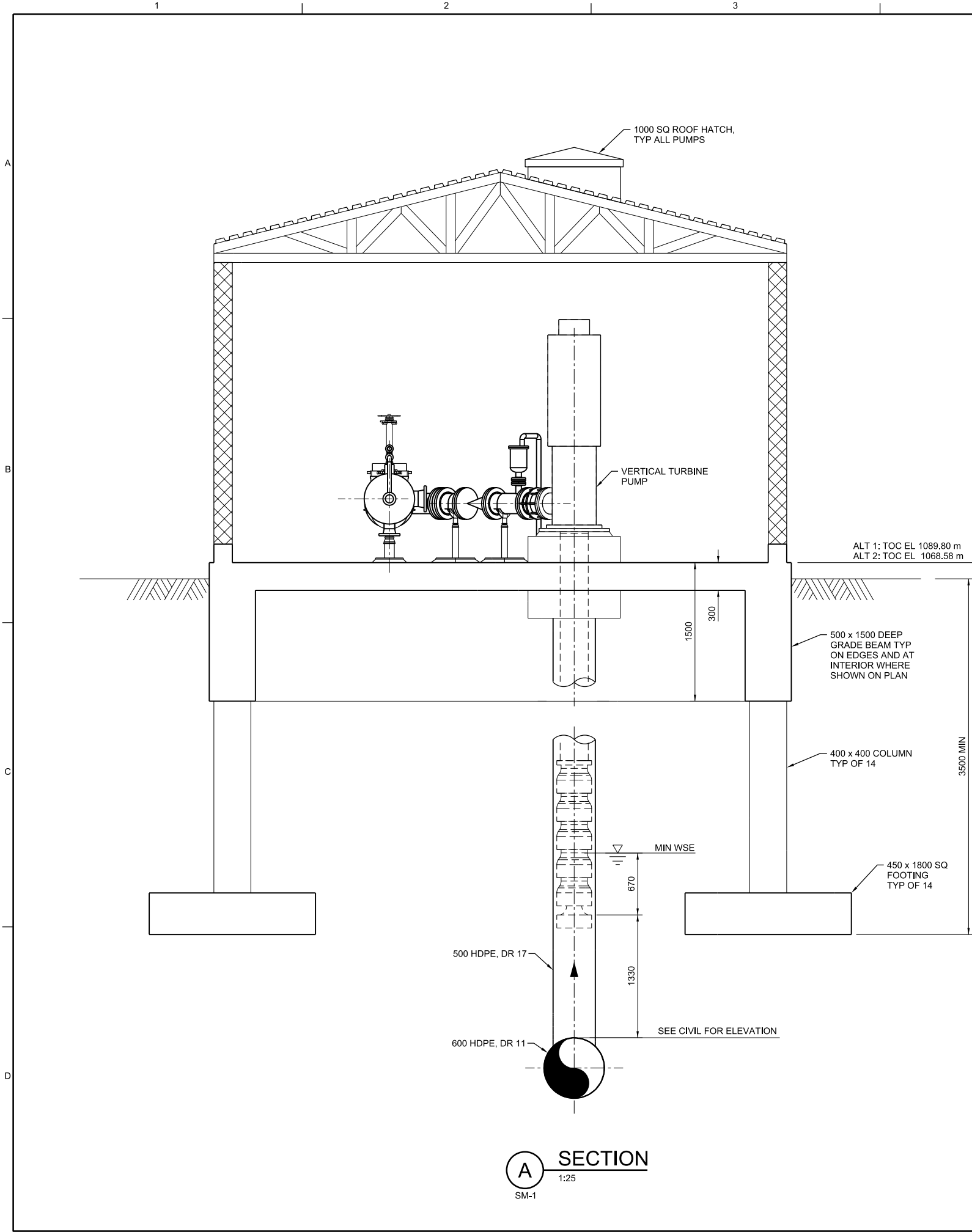
FARO MINE REMEDIATION PROJECT
 NORTH FORK ROSE CREEK PROJECT
 GOVERNMENT OF YUKON
 DESIGN

CH2MHILL®
 STRUCTURAL / MECHANICAL

SCP PUMP STATION
 PLAN

AS SHOWN	
VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	
DATE	MARCH 2016
PROJ	
DWG	SM-1
SHEET	44 of 61

PRELIMINARY - NOT FOR CONSTRUCTION
 © CH2MHILL 2011. ALL RIGHTS RESERVED.
 REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2MHILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.
 J. SPITZLEY (APVD)
 C. FUNK (APVD)
 D. CAVE (CHK)
 M. RIESS (DRS)



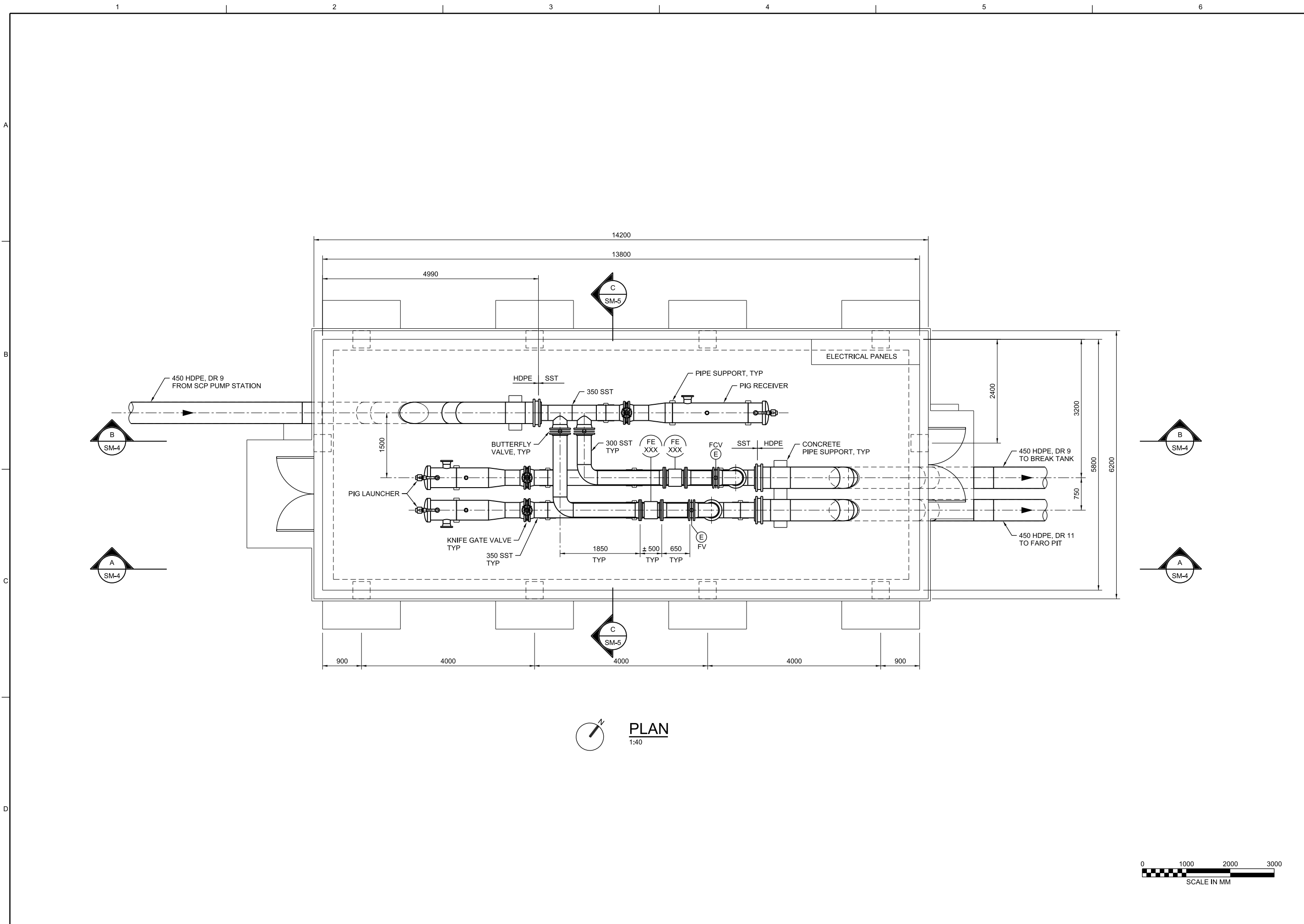
A SECTION
1:25
SM-1

ALT 2 ONLY
50 HDPE, DR 11
FROM SCP LINER LEAK
DETECTION PUMP STATION

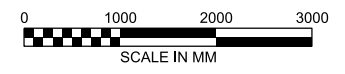
CH2MHILL®				2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831				FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN			
STRUCTURAL / MECHANICAL				SCP PUMP STATION SECTION				REVISION			
AS SHOWN				DATE				MARCH 2016			
VERIFY SCALE				PROJ				SM-2			
BAR IS 25mm ON ORIGINAL DRAWING.				DWG				SM-2			
0 25mm				SHEET				45 of 61			
				NO.				DATE			
				DGSN				M REISS			
				DR				D CAVE			
				CHK				C FUNK			
				REVISION				APVD			
				BY				APVD			
								J SPITZLEY			

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.

PRELIMINARY - NOT FOR CONSTRUCTION



PLAN
1:40

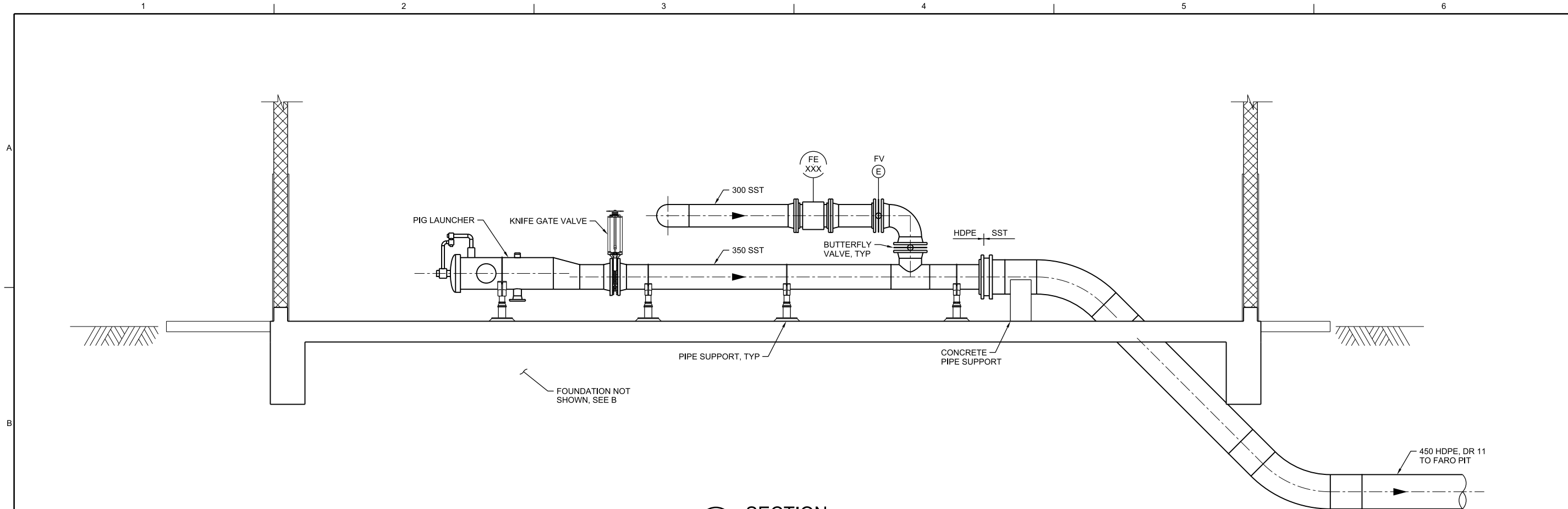


CH2MHILL® STRUCTURAL / MECHANICAL		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN	
		2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831	
SCP VALVE AND METER STATION PLAN		NO. DATE REVISION CHK DR M REISS DSGN	
AS SHOWN VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm		DATE MARCH 2016 PROJ DWG SM-3 SHEET 46 of 61	

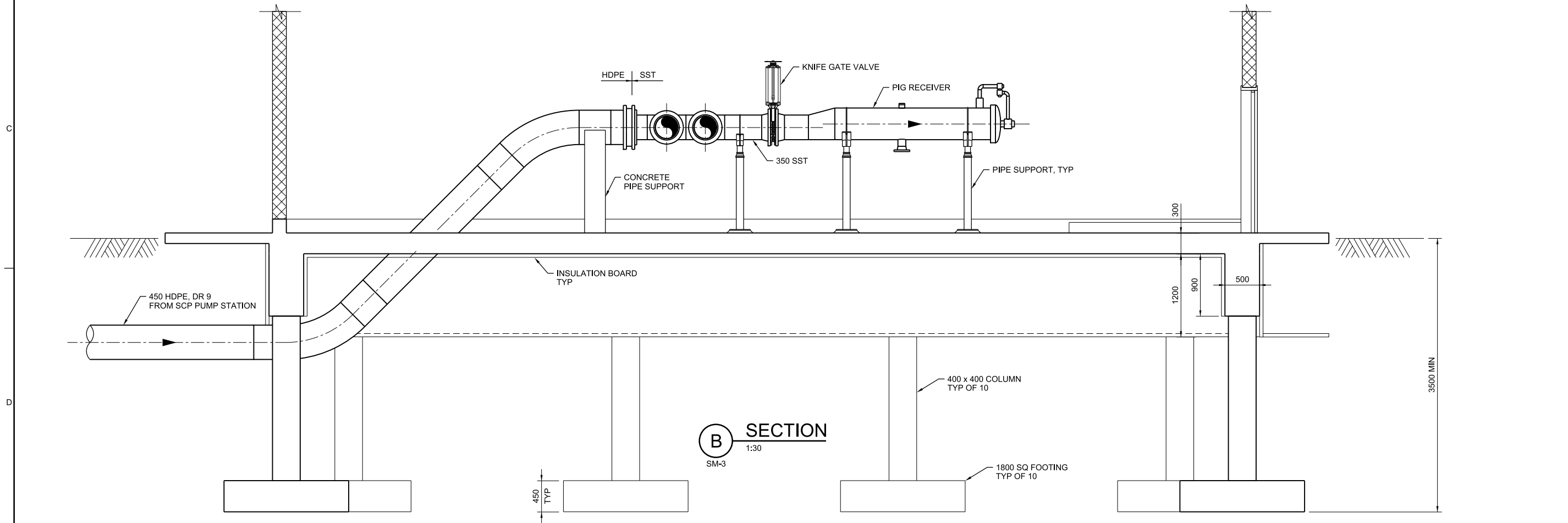
PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

© CH2M HILL 2011. ALL RIGHTS RESERVED.



A SECTION
1:30
SM-3



B SECTION
1:30
SM-3

NO.	DATE	DR	REVISION	BY
		M RIESS	CHK	J SPITZLEY
		D CAVE		
		C FUNK		
		APVD		

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL®
STRUCTURAL / MECHANICAL

SCP VALVE AND METER STATION SECTIONS

AS SHOWN
VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
25mm

DATE: MARCH 2016
PROJ:
DWG: SM-4
SHEET: 47 of 61

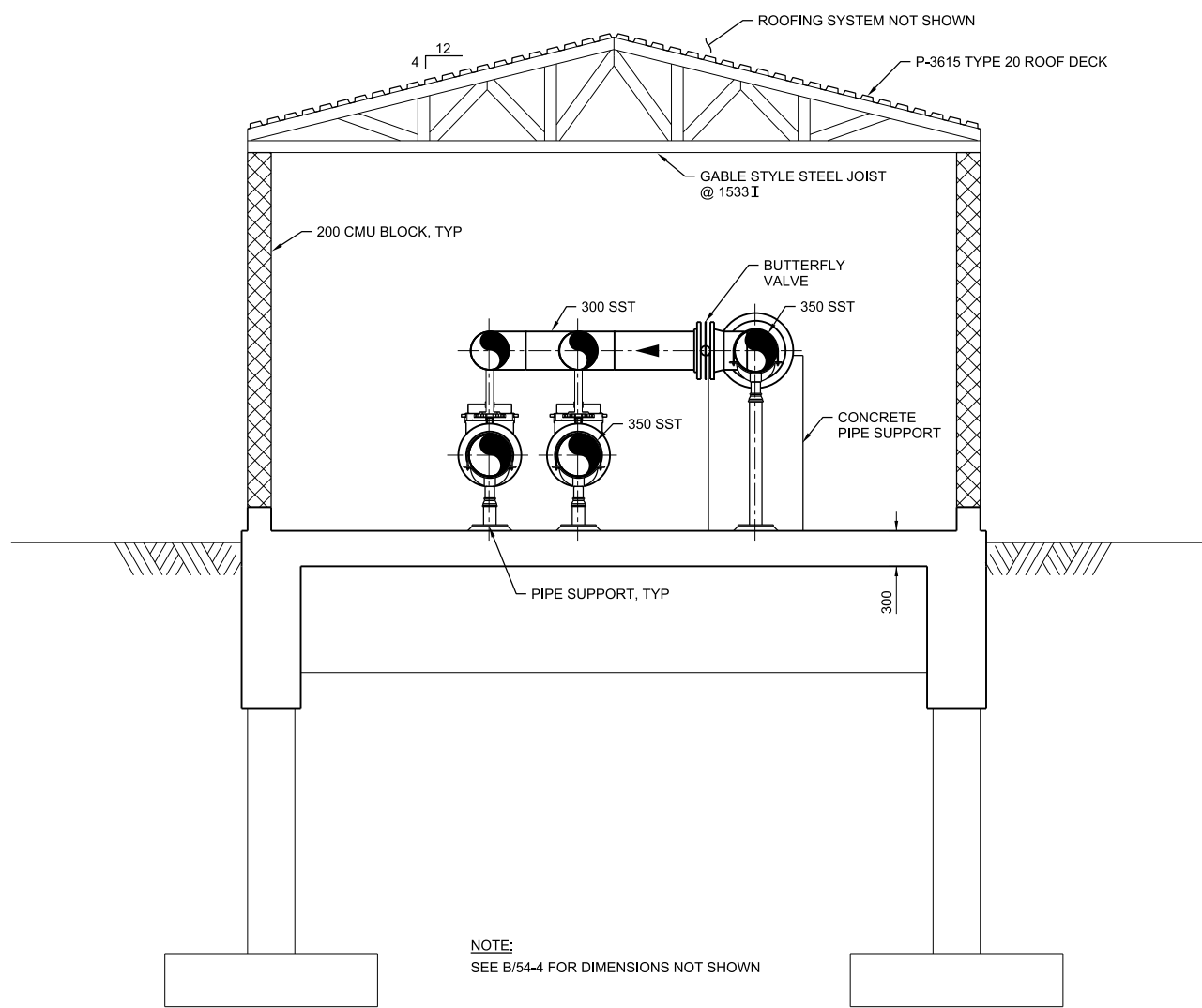
PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

© CH2M HILL 2011. ALL RIGHTS RESERVED.

1 2 3 4 5 6

A
B
C
D



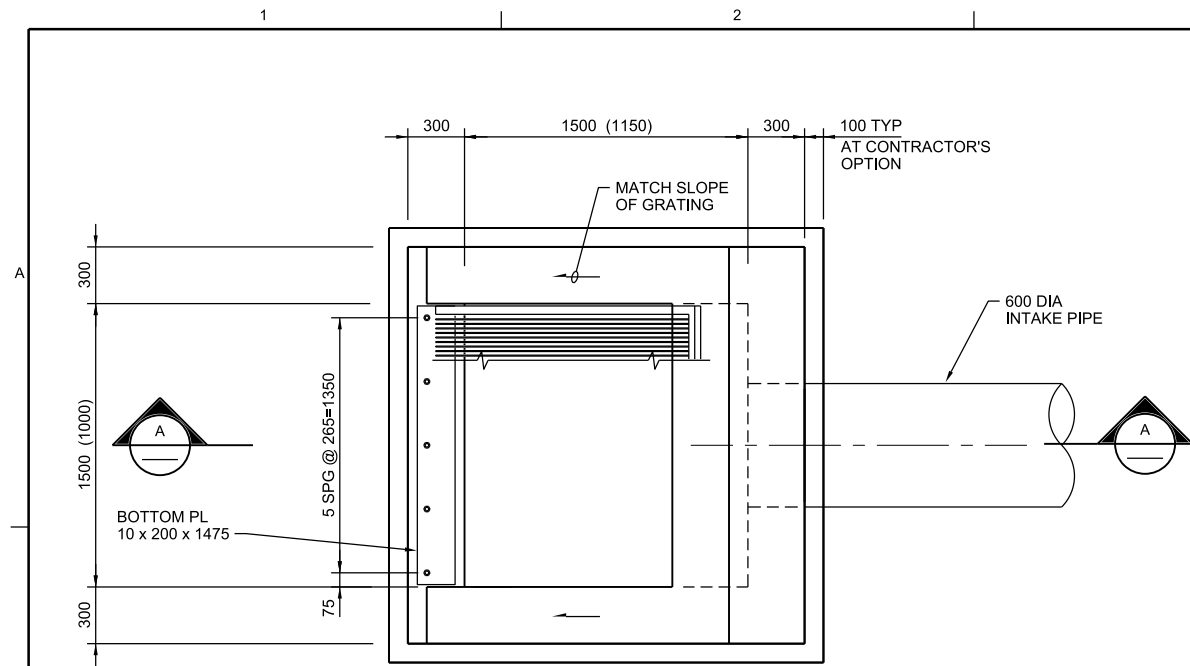
C SECTION
SM-3 1:30

CH2MHILL STRUCTURAL / MECHANICAL		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN	
2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		REVISION NO. DATE DSGN DR M REISS D CAVE C FUNK APVD BY APVD	
AS SHOWN VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING.		DATE MARCH 2016 PROJ DWG SM-5 SHEET 48 of 61	

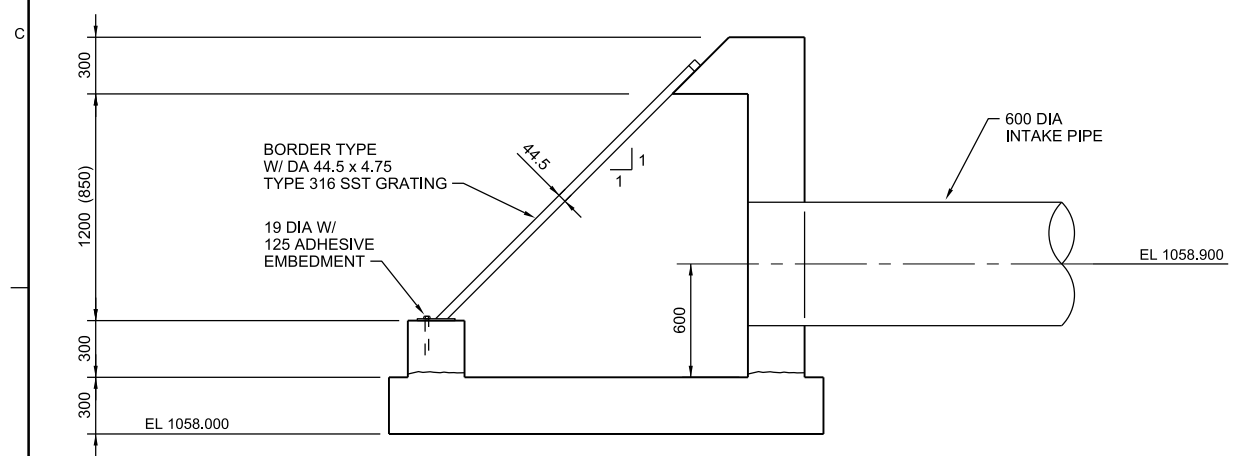
PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

© CH2M HILL 2011. ALL RIGHTS RESERVED.



1 PUMP STATION INTAKE STRUCTURE
1:20
C-20
C-28

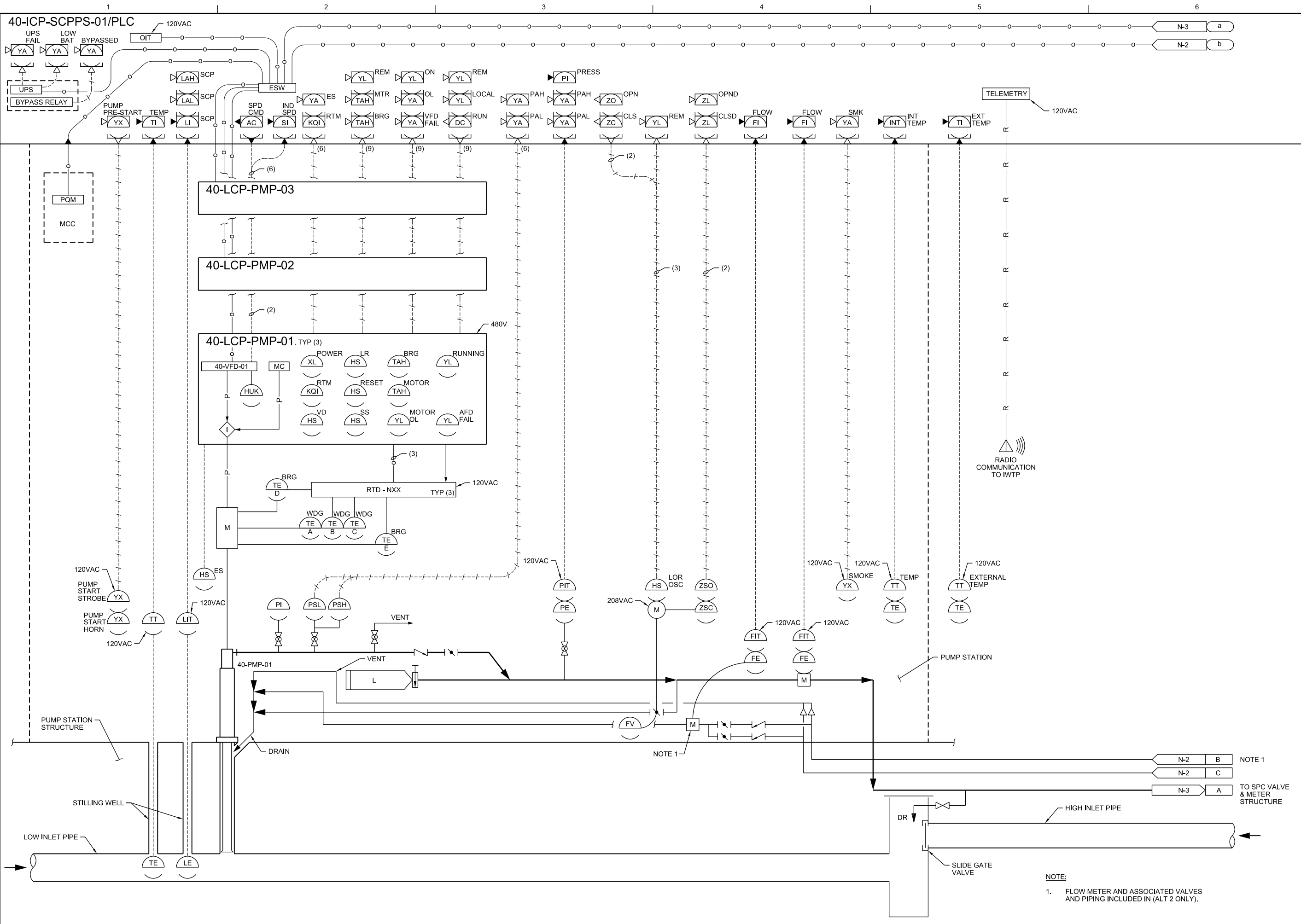


- NOTES:
1. ELEVATIONS WILL VARY FOR ALTERNATIVE 1.
2. DIMENSIONS IN BRACKETS ARE FOR HIGH LEVEL INTAKE STRUCTURE, WHICH IS SMALLER.

A PUMP STATION INTAKE STRUCTURE
1:20

CH2MHILL® STRUCTURAL / MECHANICAL PUMP INTAKE STRUCTURE		2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN	
NO.	DATE	DR	REVISION	CHK	APVD
		H. HENRICKSON	RE BROWN	C. FUNK	J. SPITZLEY
AS SHOWN VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING.					
DATE	MARCH 2016				
PROJ					
DWG	SM-6				
SHEET	49 of 61				

RE/USE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



40-ICP-SCPPS-01/PLC

40-LCP-PMP-03

40-LCP-PMP-02

40-LCP-PMP-01, TYP (3)

RTD - NXX TYP (3)

40-PMP-01

NOTE:
1. FLOW METER AND ASSOCIATED VALVES AND PIPING INCLUDED IN (ALT 2 ONLY).

NO.	DATE	DR	REVISION	BY	APVD
		L. ALLIGER			
			CHK	M. DUNN	
				J. SPITZLEY	

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

INSTRUMENTATION AND CONTROL

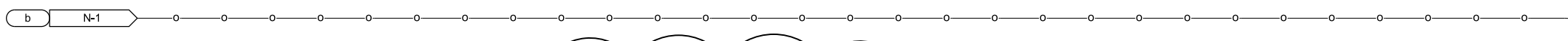
SCP - PUMP STATION 1 OF 2

VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	25mm
DATE	MARCH 2016
PROJ	427716
DWG	N-1
SHEET	50 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2MHILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.

© CH2MHILL 2011. ALL RIGHTS RESERVED.

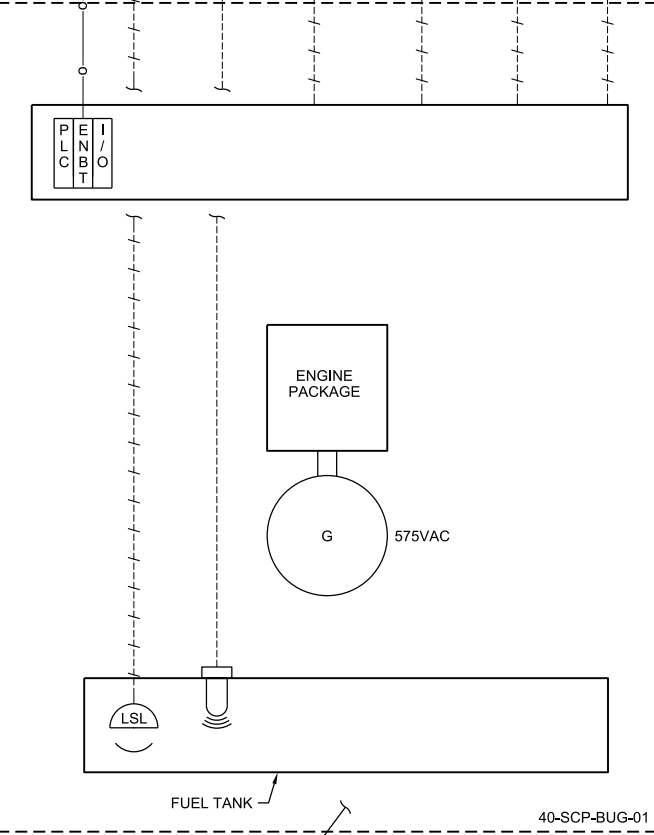
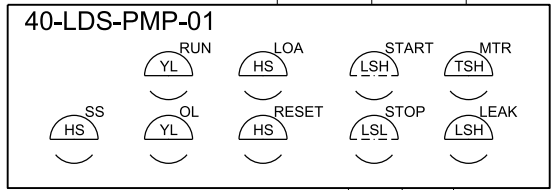
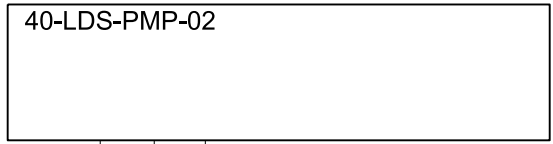
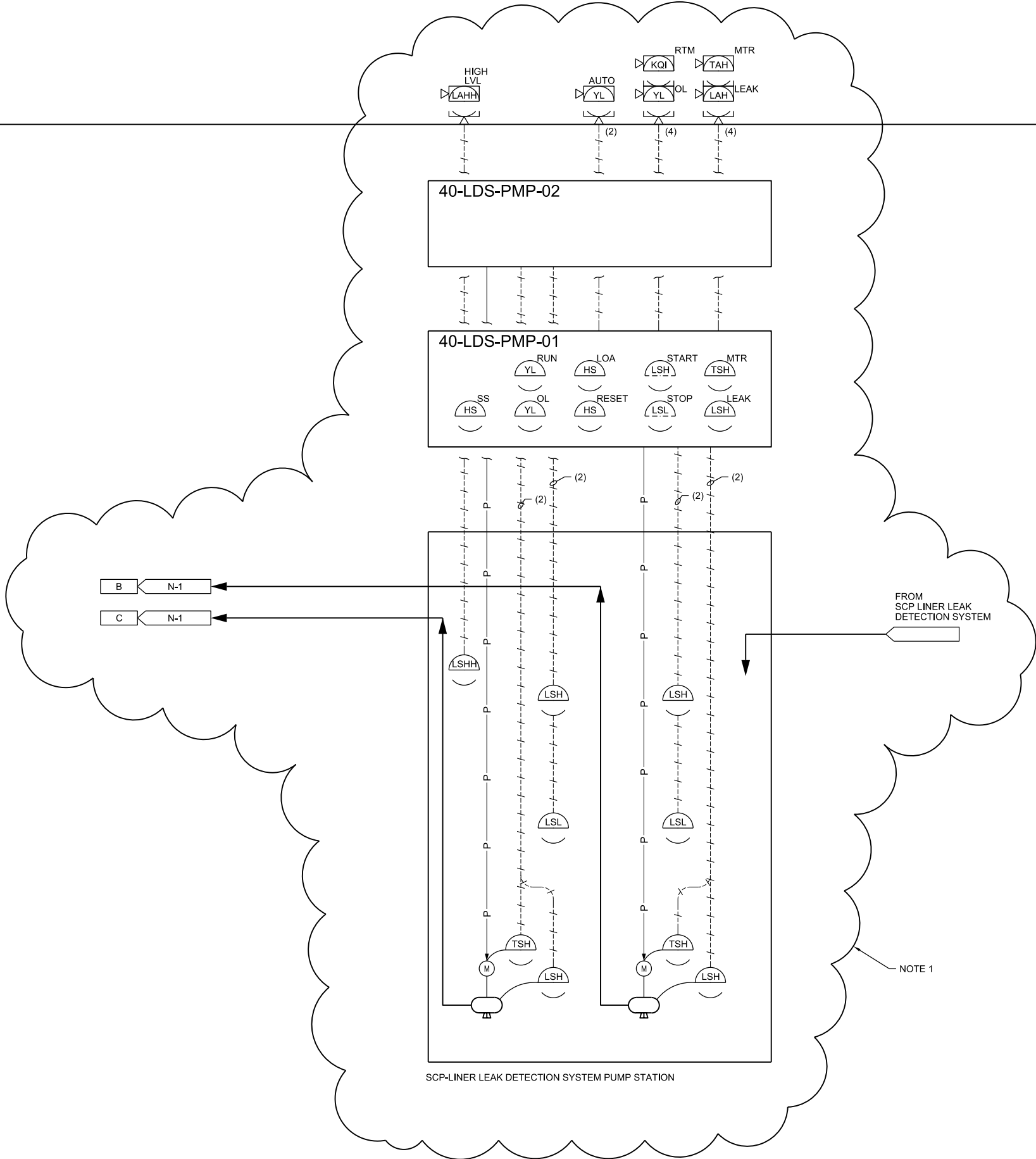


A

B

C

D



NOTE:
1. PUMP STATION ASSOCIATED CONTROL AND I/O FOR ALT 1 ONLY.

NOTE 1

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

CH2MHILL®

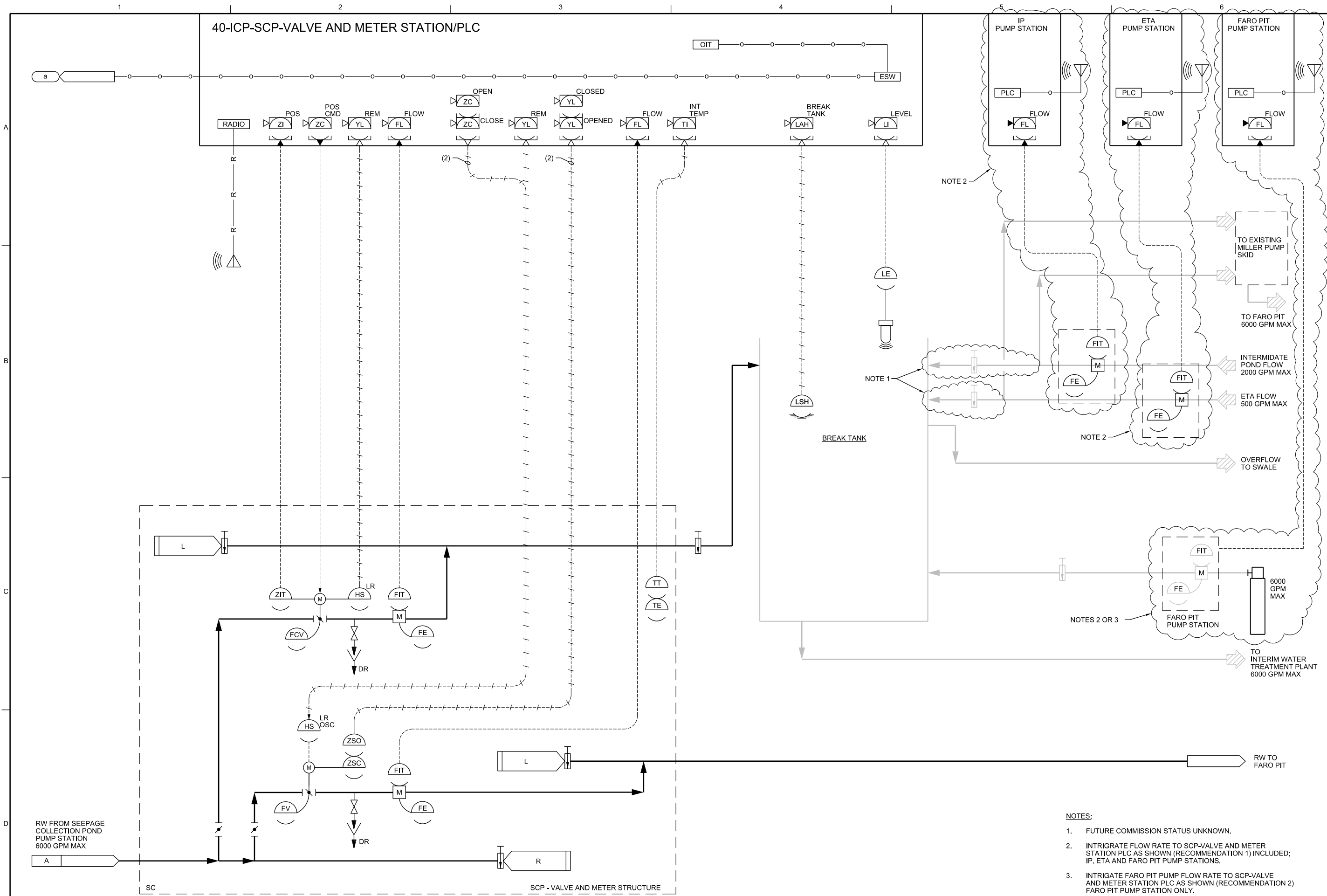
FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

INSTRUMENTATION AND CONTROL
SCP - PUMP STATION 2 OF 2

VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm	
DATE	MARCH 2016
PROJ	427716
DWG	N-2
SHEET	51 of 61

NO.	DATE	REVISION	CHK

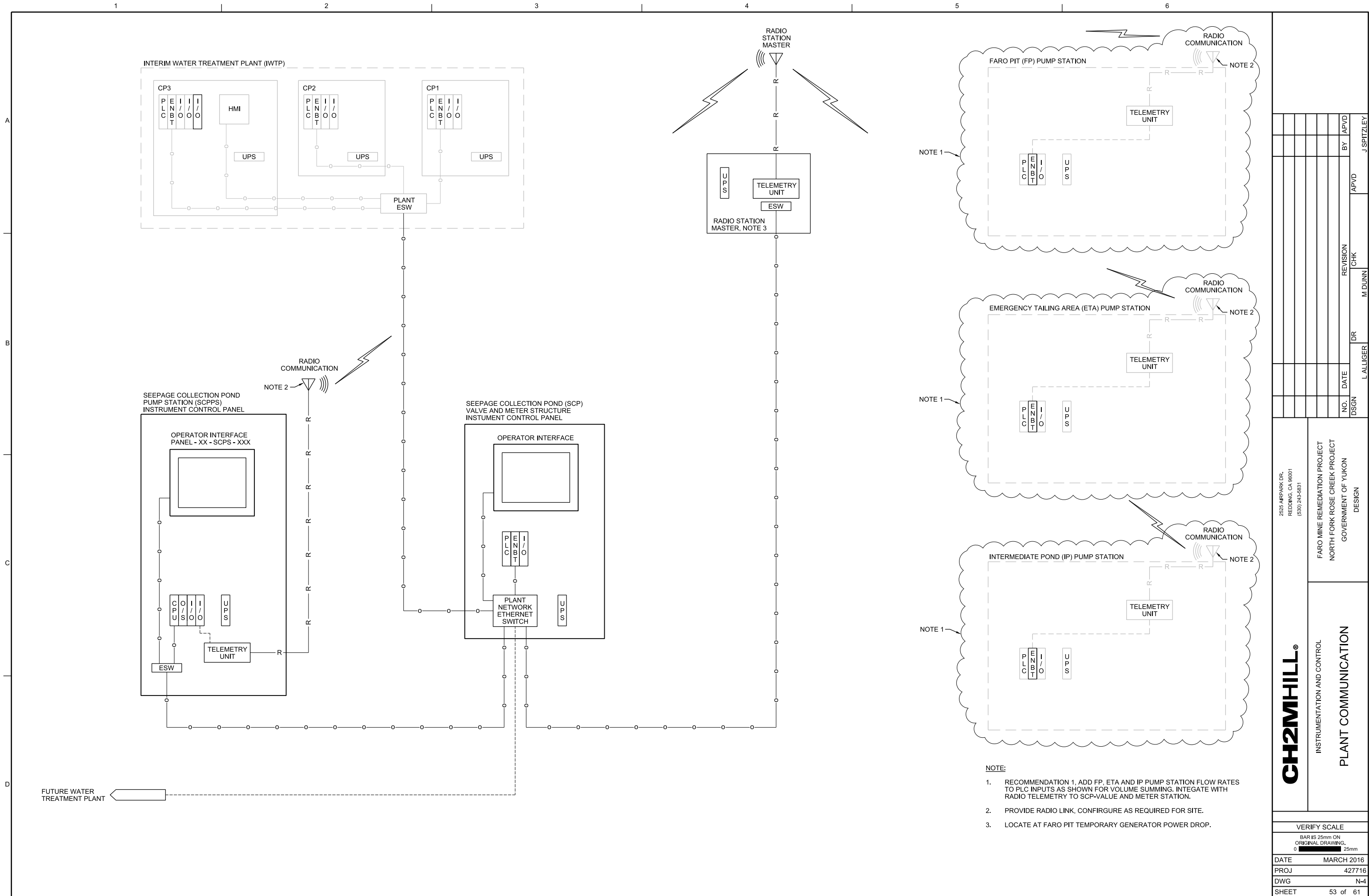
DR L ALLIGER
M DUNN
APVD J SPITZLEY
BY APVD



- NOTES:**
1. FUTURE COMMISSION STATUS UNKNOWN.
 2. INTRIGRATE FLOW RATE TO SCP-VALVE AND METER STATION PLC AS SHOWN (RECOMMENDATION 1) INCLUDED; IP, ETA AND FARO PIT PUMP STATIONS.
 3. INTRIGRATE FARO PIT PUMP FLOW RATE TO SCP-VALVE AND METER STATION PLC AS SHOWN (RECOMMENDATION 2) FARO PIT PUMP STATION ONLY.

<p>CH2MHILL</p> <p>INSTRUMENTATION AND CONTROL</p> <p>SCP - VALVE AND METER STATION</p>		<p>2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831</p> <p>FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN</p>		<p>NO. DATE DSGN</p> <p>REVISION</p> <p>CHK</p> <p>DR</p> <p>APVD</p> <p>BY</p> <p>APVD</p>		<p>J. SPITZLEY</p>
<p>VERIFY SCALE</p> <p>BAR IS 25mm ON ORIGINAL DRAWING.</p> <p>0 25mm</p>		<p>DATE MARCH 2016</p> <p>PROJ 427716</p> <p>DWG N-3</p> <p>SHEET 52 of 61</p>		<p>L. LALLIGER</p> <p>M. DUNN</p>		<p>© CH2M HILL 2011. ALL RIGHTS RESERVED.</p>

PRELIMINARY - NOT FOR CONSTRUCTION



- NOTE:**
- RECOMMENDATION 1. ADD FP, ETA AND IP PUMP STATION FLOW RATES TO PLC INPUTS AS SHOWN FOR VOLUME SUMMING. INTEGRATE WITH RADIO TELEMETRY TO SCP-VALUE AND METER STATION.
 - PROVIDE RADIO LINK, CONFIGURE AS REQUIRED FOR SITE.
 - LOCATE AT FARO PIT TEMPORARY GENERATOR POWER DROP.

NO.	DATE	DSGN	DR	CHK	REVISION	BY	APVD

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

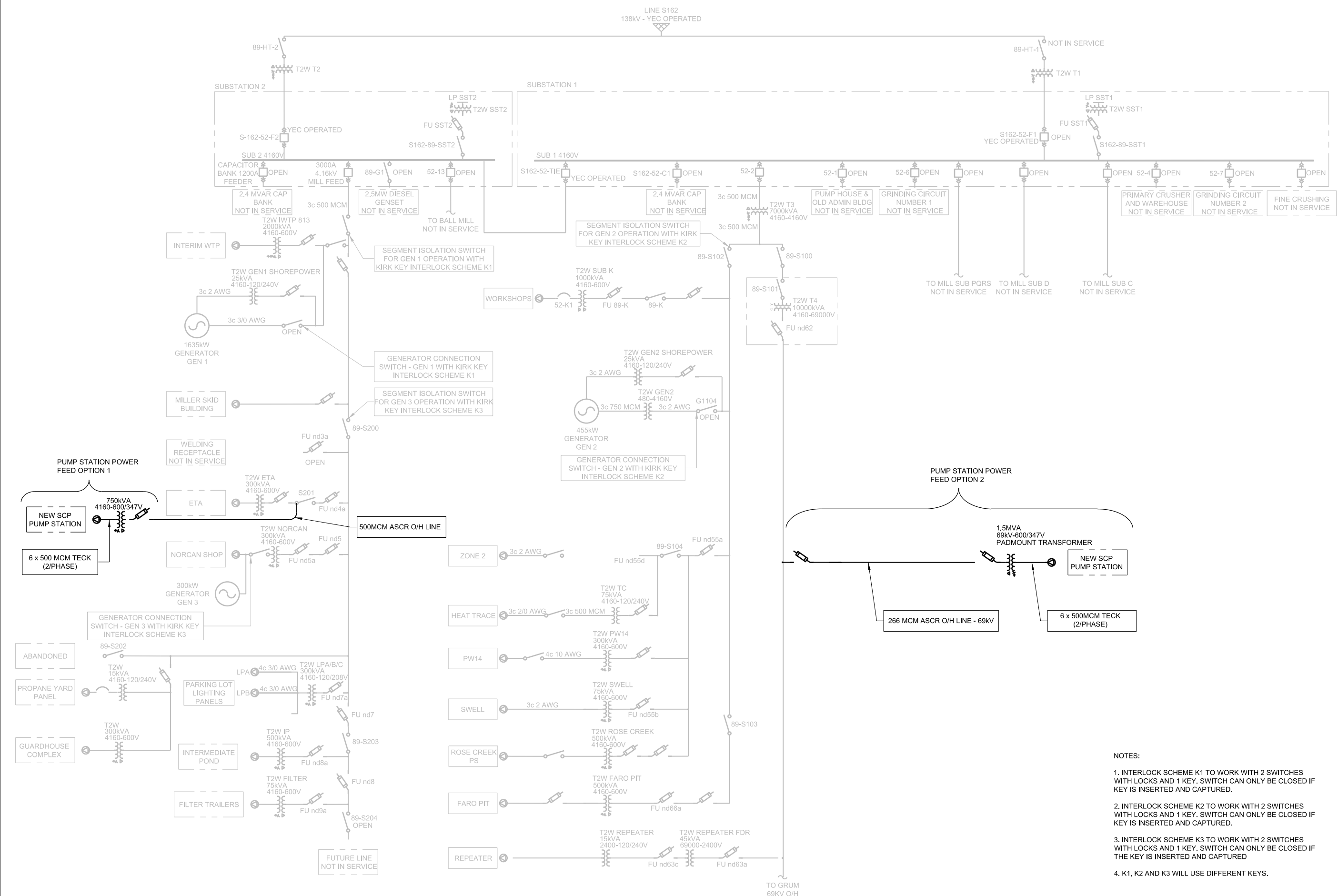
CH2MHILL®

INSTRUMENTATION AND CONTROL
PLANT COMMUNICATION

VERIFY SCALE	
BAR IS 25mm ON	ORIGINAL DRAWING.
0	25mm
DATE	MARCH 2016
PROJ	427716
DWG	N-4
SHEET	53 of 61

PRELIMINARY - NOT FOR CONSTRUCTION
 REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.
 © CH2M HILL 2011. ALL RIGHTS RESERVED.
 J. SPITZLEY
 M. DUNN
 L. LALLIGER

A
B
C
D



- NOTES:
1. INTERLOCK SCHEME K1 TO WORK WITH 2 SWITCHES WITH LOCKS AND 1 KEY. SWITCH CAN ONLY BE CLOSED IF KEY IS INSERTED AND CAPTURED.
 2. INTERLOCK SCHEME K2 TO WORK WITH 2 SWITCHES WITH LOCKS AND 1 KEY. SWITCH CAN ONLY BE CLOSED IF KEY IS INSERTED AND CAPTURED.
 3. INTERLOCK SCHEME K3 TO WORK WITH 2 SWITCHES WITH LOCKS AND 1 KEY. SWITCH CAN ONLY BE CLOSED IF THE KEY IS INSERTED AND CAPTURED
 4. K1, K2 AND K3 WILL USE DIFFERENT KEYS.

NO.	DATE	DR	REVISION	CHK	APVD	BY	APVD
		L DELANG		J CHELONIS	W THIESSEN		J SPITZLEY

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

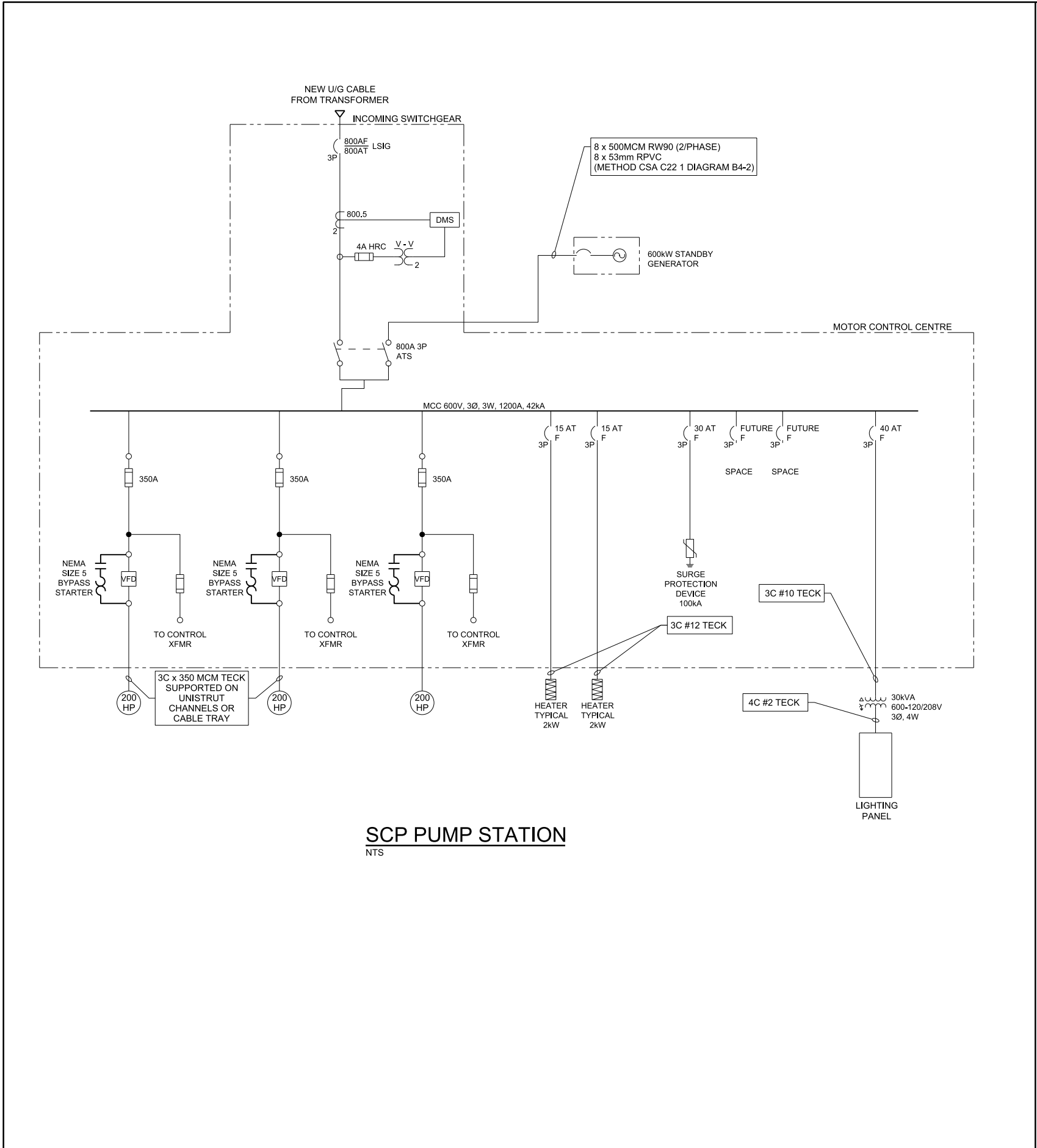
FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL®
ELECTRICAL
FARO ONE LINE DIAGRAM

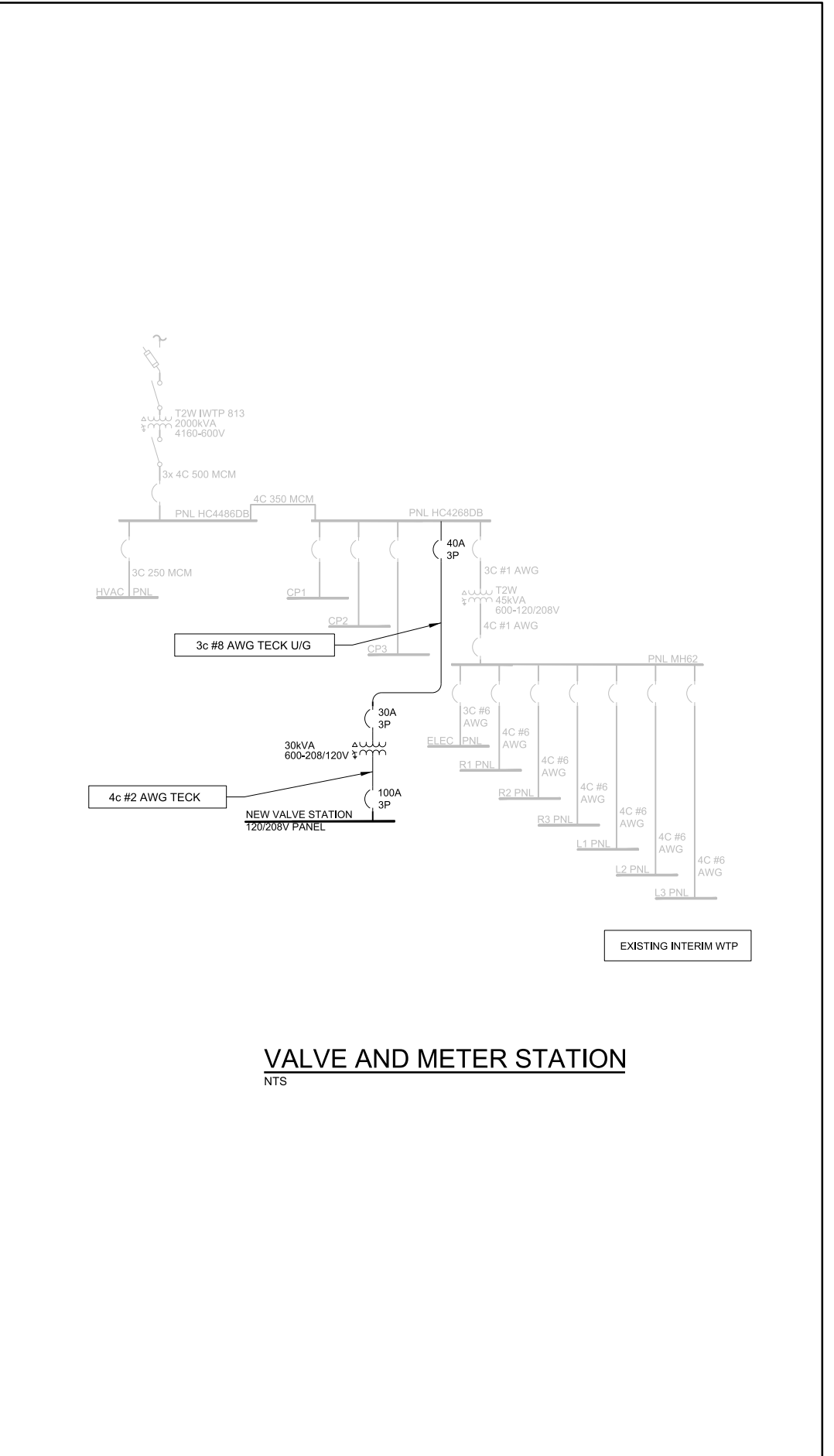
AS SHOWN
VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
DATE MARCH 2016
PROJ
DWG E-1
SHEET 54 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THE DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



SCP PUMP STATION
NTS



VALVE AND METER STATION
NTS

NO.	DATE	DR	CHK	REVISION	BY	APVD
		L DELANG	J CHELONIS	W THIESSEN		J SPITZLEY

2625 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

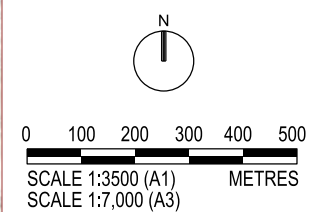
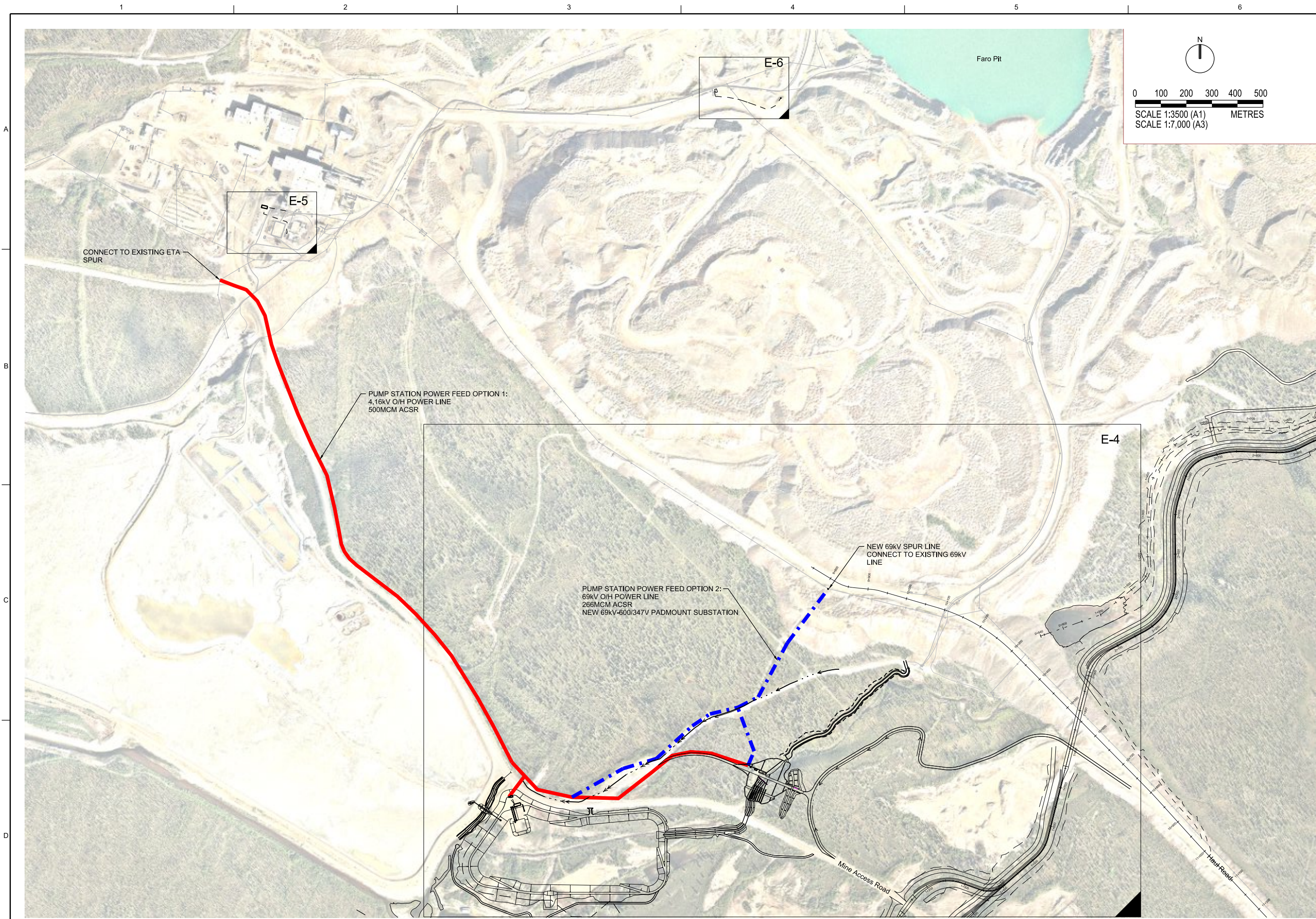
CH2MHILL®

ELECTRICAL

FARO ONE LINE DIAGRAM

AS SHOWN
VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm

DATE MARCH 2016
PROJ
DWG E-2
SHEET 55 of 61



CONNECT TO EXISTING ETA SPUR

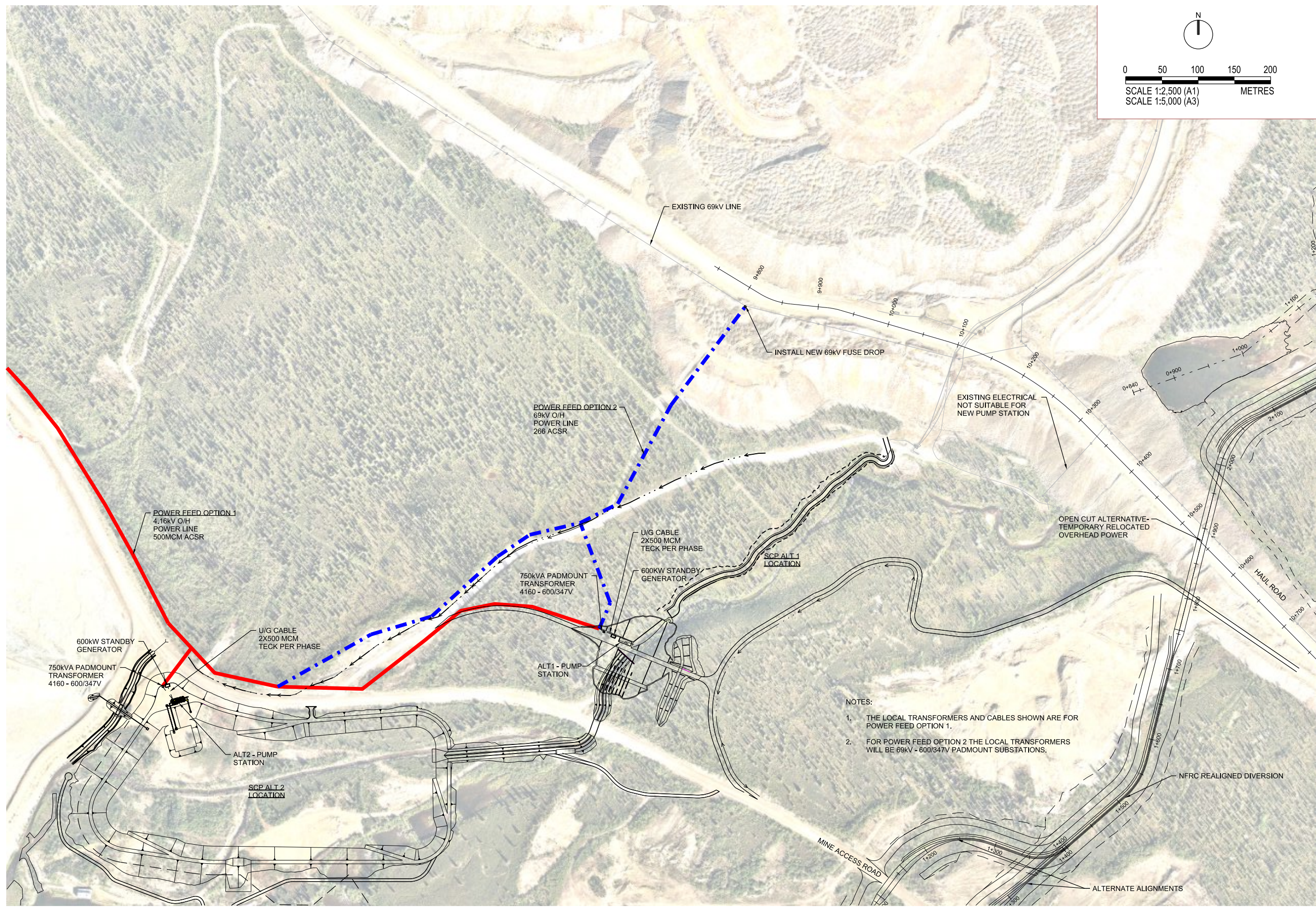
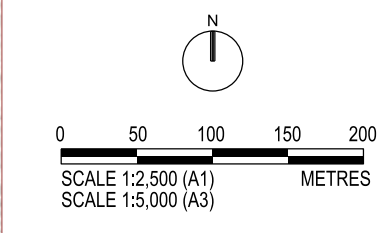
PUMP STATION POWER FEED OPTION 1:
4.16kV O/H POWER LINE
500MCM ACSR

PUMP STATION POWER FEED OPTION 2:
69kV O/H POWER LINE
266MCM ACSR
NEW 69kV-600/347V PADMOUNT SUBSTATION

NEW 69kV SPUR LINE
CONNECT TO EXISTING 69kV
LINE

<p>2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831</p>		<p>FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN</p>	
<p>CH2MHILL® ELECTRICAL</p>		<p>OVERALL ELECTRICAL SITE PLAN</p>	
<p>VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm</p>			
DATE	MARCH 2016	DWG	E-3
PROJ	427716	SHEET	56 of 61
<p>REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.</p>		<p>DR L DELANG CHK W THIESSEN REVISION BY APVD J SPITZLEY</p>	

PRELIMINARY - NOT FOR CONSTRUCTION



- NOTES:
1. THE LOCAL TRANSFORMERS AND CABLES SHOWN ARE FOR POWER FEED OPTION 1.
 2. FOR POWER FEED OPTION 2 THE LOCAL TRANSFORMERS WILL BE 69kV - 600/347V PADMOUNT SUBSTATIONS.

NO.	DATE	DR	CHK	REVISION	BY	APVD
		L DELANG	J CHELONIS	W THIESSEN	J SPITZLEY	

2525 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL®

ELECTRICAL

**SEEPAGE COLLECTION POND
ALTERNATIVE 1 AND 2**

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
25mm

DATE MARCH 2016
PROJ 427716
DWG E-4
SHEET 57 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2MHILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.

© CH2MHILL 2011. ALL RIGHTS RESERVED.

1

2

3

4

5

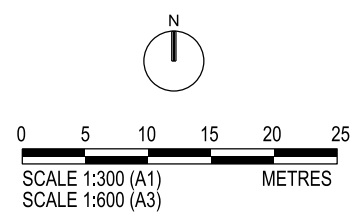
6

A

B

C

D



NO.	DATE	DR	CHK	REVISION	BY	APVD
		L DELANG	J CHELONIS			J SPITZLEY
			W THIESSEN			

2625 AIRPARK DR.
REDDING, CA 96001
(530) 243-5831

FARO MINE REMEDIATION PROJECT
NORTH FORK ROSE CREEK PROJECT
GOVERNMENT OF YUKON
DESIGN

CH2MHILL®

ELECTRICAL

ELECTRICAL SITE PLAN - IWTS

VERIFY SCALE	
BAR IS 25mm ON ORIGINAL DRAWING.	
DATE	MARCH 2016
PROJ	427716
DWG	E-5
SHEET	58 of 61

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.

1 2 3 4 5 6

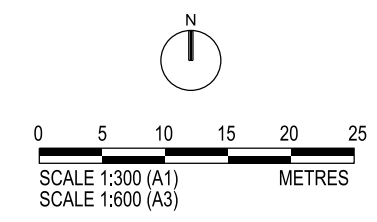
A
B
C
D



EXISTING RENTAL GENERATOR
W/ SHORE POWER PANEL

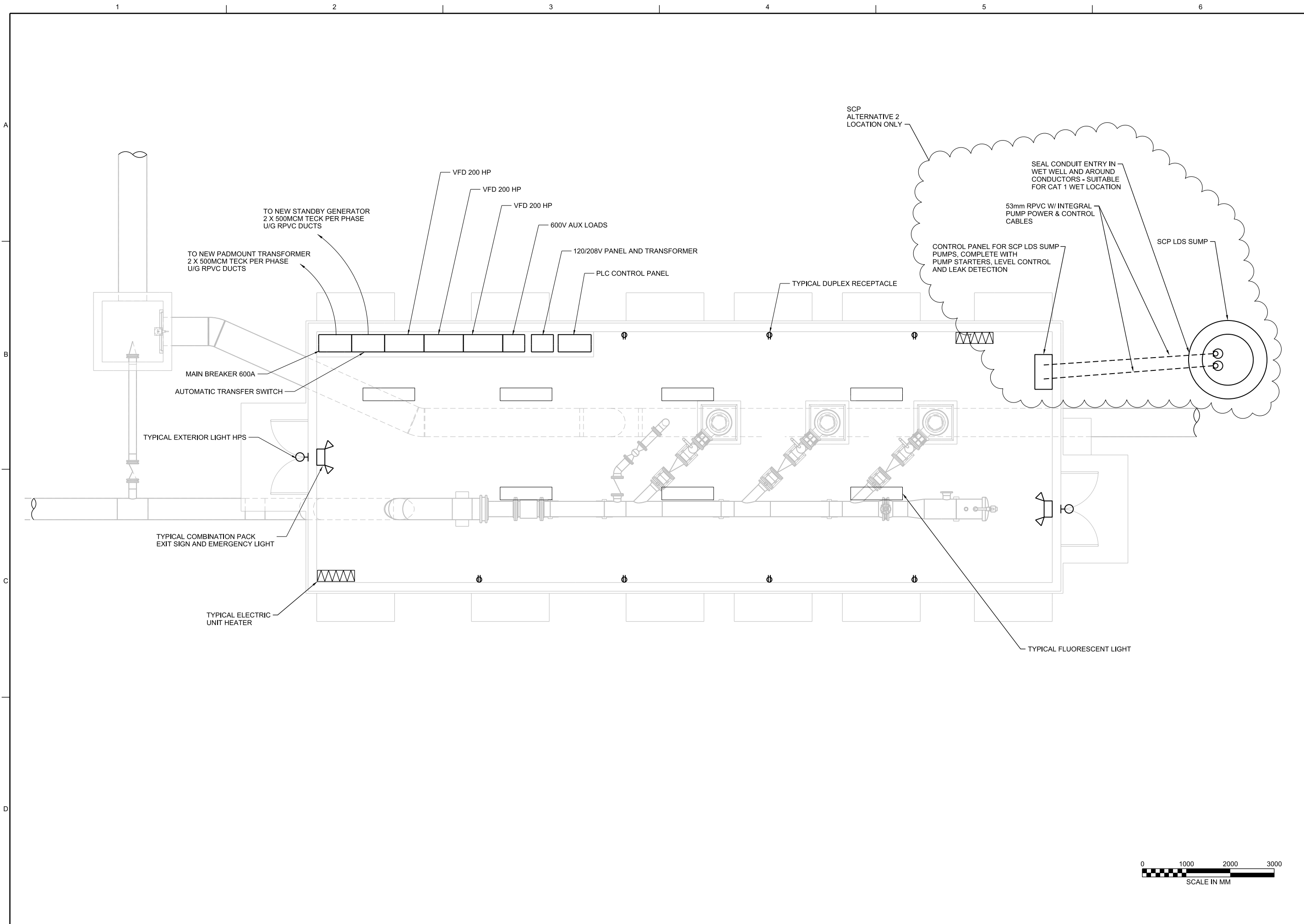
POWER FEED TO
PROPOSED FUTURE RADIO
REPEATER
2c #8 TECK U/G

PROPOSED FUTURE
RADIO REPEATER

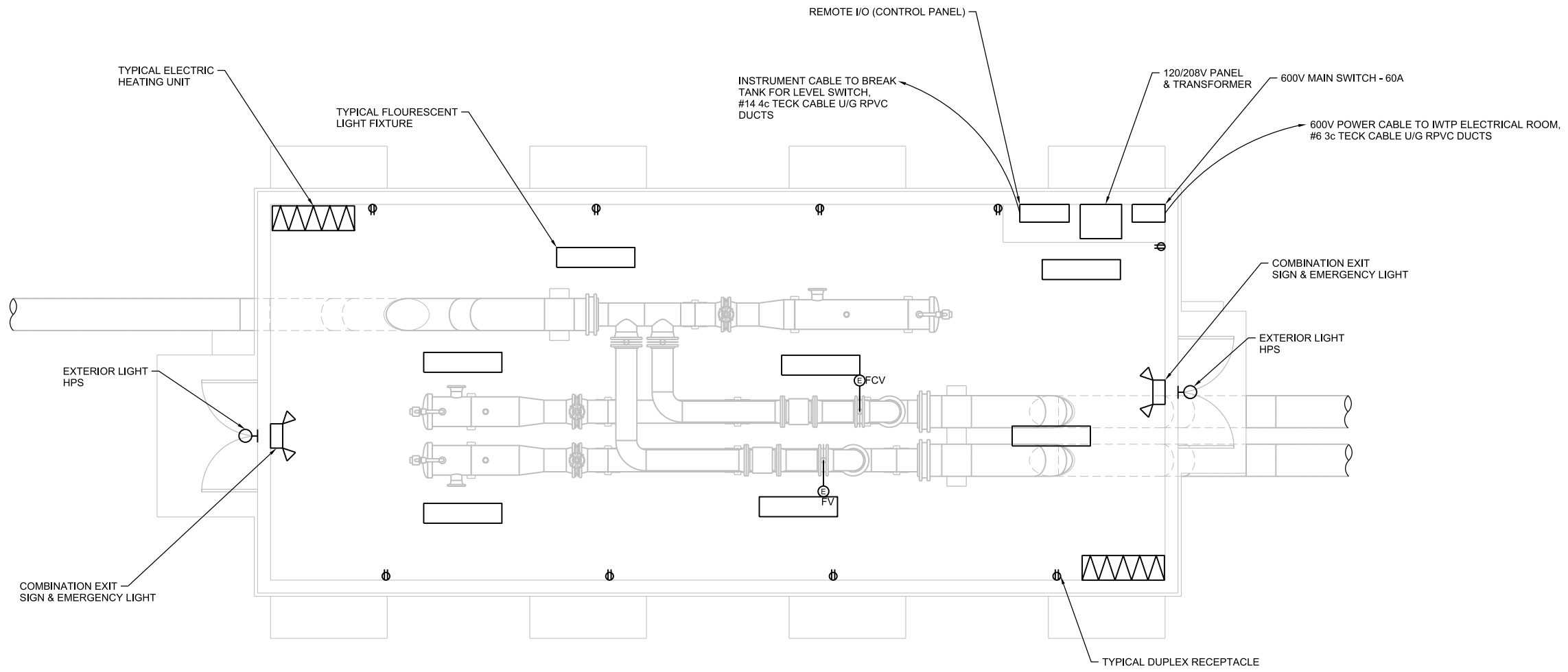


2625 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		NO. DATE		DR L DELANG		REVISION		CHK W THIESSEN		BY APVD J SPITZLEY			
CH2MHILL®				ELECTRICAL				ELECTRICAL SITE PLAN RADIO REPEATER							
VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm															
DATE		MARCH 2016		PROJ		427716		DWG		E-6		SHEET		59 of 61	

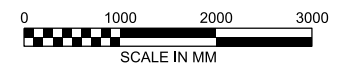
PRELIMINARY - NOT FOR CONSTRUCTION
REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. © CH2M HILL 2011. ALL RIGHTS RESERVED.



2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		CH2MHILL® ELECTRICAL SCP PUMP STATION ELECTRICAL PLAN	
AS SHOWN		VERIFY SCALE		BAR IS 25mm ON ORIGINAL DRAWING. SCALE IN MM	
DATE	MARCH 2016	DWG	E-7	REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2MHILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2MHILL.	
PROJ		DWG	E-7	T. PATTISSON DR L. DELANG DGN NO. DATE REVISION CHK W. THIESSEN APVD BY APVD J. SPITZBERG	
SHEET	60 of 61			PRELIMINARY - NOT FOR CONSTRUCTION © CH2MHILL 2011. ALL RIGHTS RESERVED.	



PLAN
1:40



CH2MHILL® 2525 AIRPARK DR. REDDING, CA 96001 (530) 243-5831		FARO MINE REMEDIATION PROJECT NORTH FORK ROSE CREEK PROJECT GOVERNMENT OF YUKON DESIGN		REVISION NO. DATE DSGN DR T PATTISON W THIESSEN J SPITZBERG BY APVD	
ELECTRICAL SCP VALVE AND METER STATION ELECTRICAL PLAN		AS SHOWN VERIFY SCALE BAR IS 25mm ON ORIGINAL DRAWING. 0 25mm		DATE MARCH 2016 PROJ DWG E-8 SHEET 61 of 61	

PRELIMINARY - NOT FOR CONSTRUCTION

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

© CH2M HILL 2011. ALL RIGHTS RESERVED.