

WRANGELL JUNKYARD REPOSITORY

CITY AND BOROUGH OF WRANGELL, ALASKA

TDD NO.: 17-01-0015

PAN NO.: 1004530.0004.178.01

REVISION	DATE

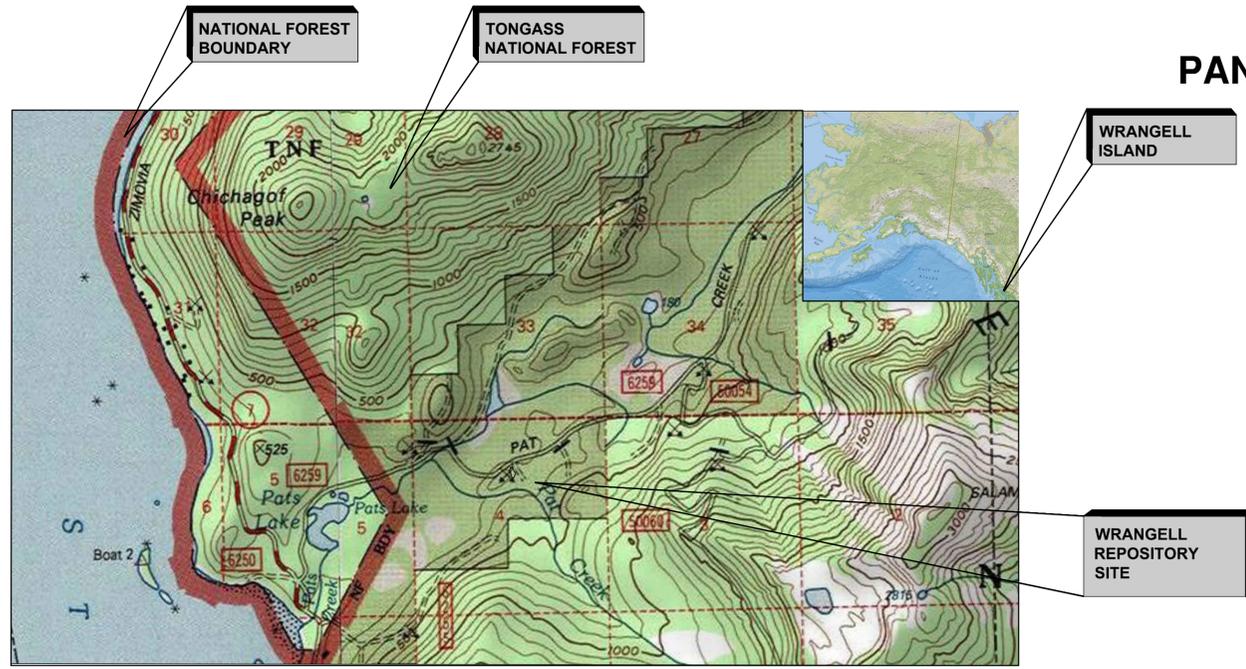
R&M
ENGINEERS
GEOLOGISTS SURVEYORS
7180 REVILLA ROAD SUITE 300
KETCHIKAN, ALASKA 99901

CITY AND BOROUGH OF WRANGELL
WRANGELL JUNKYARD MONOFILL

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WRANGELL JUNKYARD MONOFILL

VICINITY MAP,
SITE
LOCATON,
AND SHEET
INDEX

JOB #:
SHEET
C-1



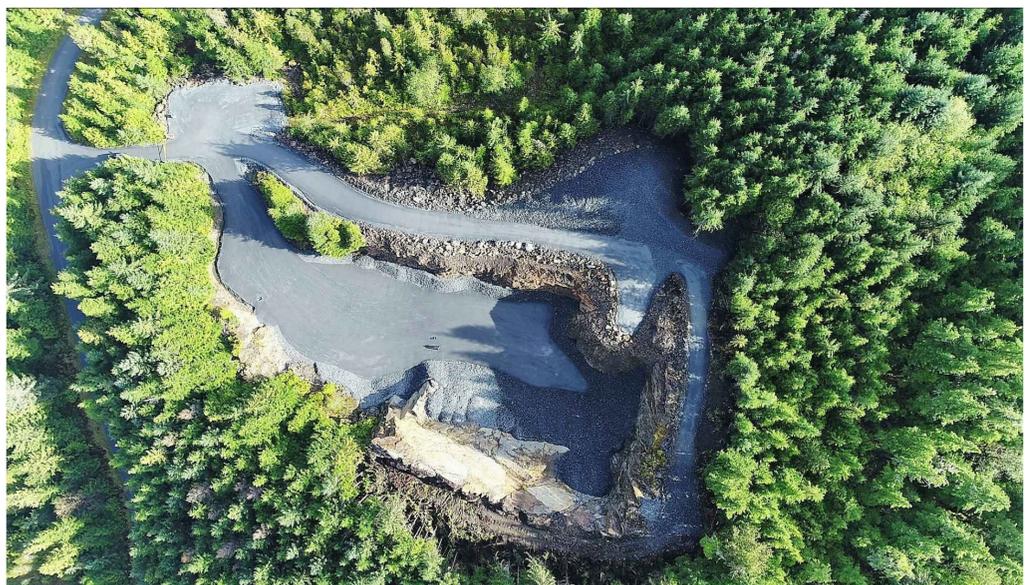
VICINITY MAP
1" = 2500'

SOURCE: ERSI INC. 2015



SITE LOCATION MAP
1" = 300'

SOURCE: ERSI INC. 2015



CURRENT AERIAL PHOTO OF SITE



CURRENT PHOTO OF SITE

LIST OF ABBREVIATIONS

APPROX	APPROXIMATE	MH	MANHOLE
CL	CENTER LINE	N	NORTH
CFS	CUBIC FOOT PER SECOND	NO., #	NUMBER
CY	CUBIC YARD	NTS	NOT TO SCALE
D, DIA, Ø	DIAMETER	NAD83	NORTH AMERICAN DATUM, 1983
EL	ELEVATION	NAVD88	NORTH AMERICAN VERTICAL DATUM, 1988
FT, '	FEET, FOOT	OC	ON CENTER
GW	GROUNDWATER	OD	OUTSIDE DIAMETER
H, HORIZ	HORIZONTAL	OZ/SQ YD	OUNCE PER SQUARE YARD
HR	HOOR	PVC	POLYVINYL CHLORIDE
I.E.	INVERT ELEVATION	RCP	REINFORCED CONCRETE PIPE
IN, "	INCH	TYP	TYPICAL
MAX	MAXIMUM	V	VERTICAL
MIN	MINIMUM		

SHEET INDEX

SHEET NO.	DESCRIPTION OF DRAWINGS
C-1	VICINITY MAP, SITE LOCATION, AND SHEET INDEX
C-2	EXISTING CONDITIONS SURVEY 2016
C-3	SITE FEATURES AND GRADING PLAN
C-4	PROFILE AND SECTION VIEWS
C-5	CONSTRUCTION DETAILS
C-6	ENGINEERED CAP SECTION DETAIL



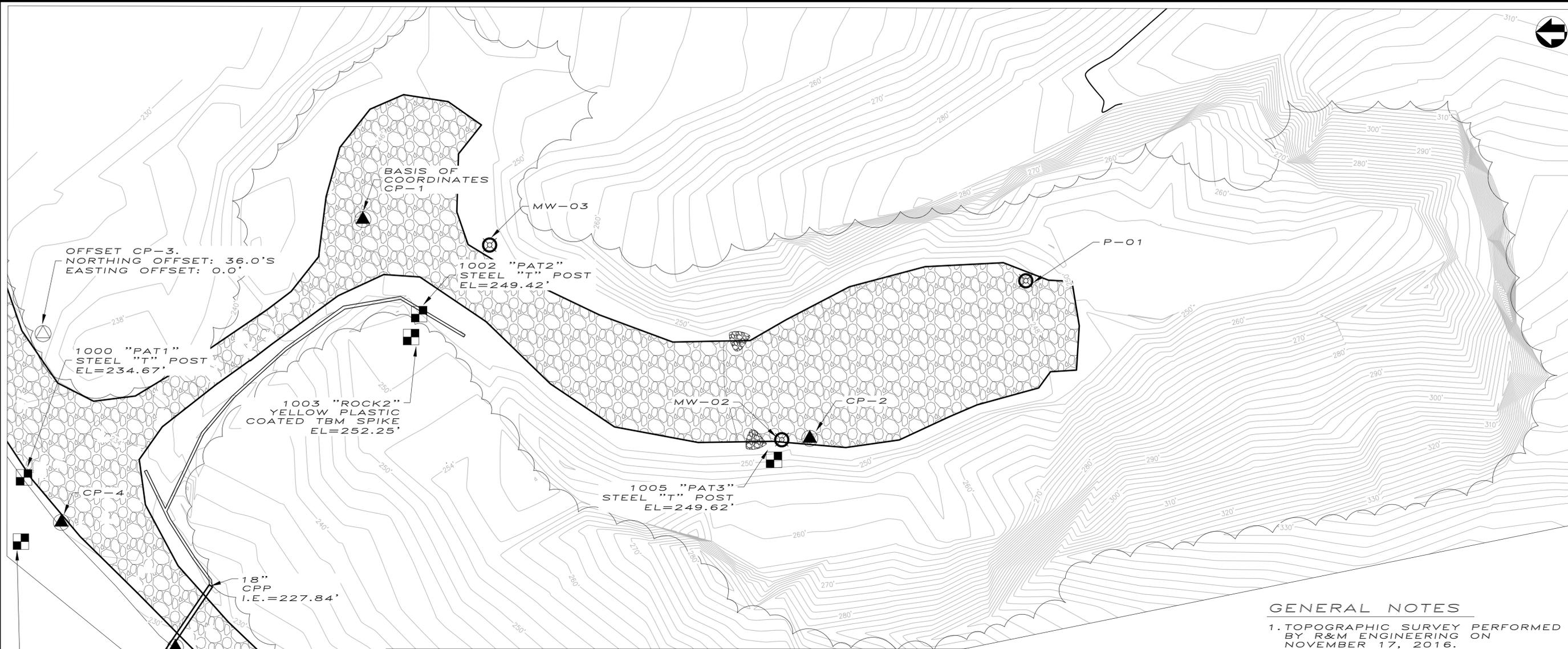
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EXISTING
 CONDITIONS
 SURVEY 2016

JOB #:
 SHEET



OFFSET CP-3.
 NORTHING OFFSET: 36.0'S
 EASTING OFFSET: 0.0'

1000 "PAT1"
 STEEL "T" POST
 EL=234.67'

1003 "ROCK2"
 YELLOW PLASTIC
 COATED TBM SPIKE
 EL=252.25'

1002 "PAT2"
 STEEL "T" POST
 EL=249.42'

1005 "PAT3"
 STEEL "T" POST
 EL=249.62'

18" CPP
 I.E.=227.84'

18" CPP
 I.E.=224.63'

BASIS OF VERTICAL
 CONTROL
 1001 "ROCK1"
 YELLOW PLASTIC
 COATED TBM SPIKE
 EL=233.56'

GENERAL NOTES

1. TOPOGRAPHIC SURVEY PERFORMED BY R&M ENGINEERING ON NOVEMBER 17, 2016.
2. WELL LOCATIONS ARE APPROXIMATE AND BASED ON THE AHTNA HYDRO-GEOTECHNICAL INVESTIGATION REPORT, FIGURE 1.

SURVEY NOTES

1. THE HORIZONTAL DATUM FOR THIS SURVEY IS NORTH AMERICAN DATUM 1983, ALASKA STATE COORDINATE SYSTEM ZONE1 (NAD83 AK SPC Z1)[5001].
2. THE VERTICAL DATUM FOR THIS SURVEY IS NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).
3. THE PROJECT CONTROL WAS PROCESSED THROUGH NGS OPUS AND TRIMBLE BUSINESS CENTER, VER. 3.7.1.
4. THIS SURVEY WAS PERFORMED WITH A TRIMBLE S7 ROBOTICS INSTRUMENT USING STANDARD LASER RANGING TECHNIQUES.
5. TRIMBLE GNSS R8-2 RECEIVERS WERE USED TO PERFORM GPS STATIC SESSIONS TO OBTAIN DATUM CORRECTIONS.
6. THIS SURVEY AND ALL COORDINATES, SHOWN HEREON, ARE IN NAD 83 AK SPC Z1 GRID COORDINATES.
7. DIFFERENTIAL LEVELING WAS PERFORMED THOUGH ALL BENCHMARKS, SHOWN HEREON. ALL ELEVATIONS WERE ADJUSTED TO THE BASIS OF VERTICAL CONTROL. THIS WORK WAS PERFORMED WITH A SOKKIA B2-1 DIFFERENTIAL LEVEL. THE COLLIMATION OF THIS INSTRUMENT WAS CHECKED PRIOR TO DIFFERENTIAL LEVELING.
8. THE PROJECT SCOPE REQUIRED "T" POSTS, WITH IDENTIFYING LATH, TO BE SET FOR THIS SURVEY. THESE WERE SET, BUT STABILITY IS QUESTIONABLE. ADDITIONAL PLASTIC COATED TBM SPIKES WERE SET IN MORE STABLE POSITIONS AND ARE SHOWN, HEREON.
9. ALL CONVENTIONAL TRAVERSES WERE ADJUSTED USING THE COMPASS-BOWDITCH METHOD.
10. THE FIELD WORK WAS PERFORMED ON OCTOBER 25 - 28, 2016.
11. NO TIES TO THE PUBLIC LAND SURVEY SYSTEM WERE MADE DURING THE COURSE OF THIS SURVEY.
12. THIS SURVEY DOES NOT CONSTITUTE A SUBDIVISION, AS PER AS 40.15.900(5)(A).
13. THIS SURVEY DOES NOT EXCEED THE UNADJUSTED HORIZONTAL CLOSURE REQUIREMENTS FOR FGCS THIRD ORDER, CLASS ONE STANDARDS OF 1:10,000.
14. THIS SURVEY DOES NOT EXCEED THE VERTICAL FGCS THIRD ORDER, CLASS II REQUIREMENTS.

LEGEND

- MONITORING WELL LOCATION
- HORIZONTAL CONTROL POINT (ESTABLISHED)
- OFFSET CONTROL POINT
- TEMPORARY BENCH MARK (ESTABLISHED)
- TOP OF BANK
- TOE OF SLOPE
- 18" CORRUGATED PLASTIC PIPE CULVERT (EXISTING)
- MAJOR EXISTING CONTOUR LINE
- MINOR EXISTING CONTOUR LINE
- TREE LINE
- GRAVEL SURFACE

TABLE OF VERTICAL CONTROL

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1000	1,653,598	2,960,613	234.67'	STEEL "T" POST WITH IDENTIFYING LATH
1001	1,653,599	2,960,589	233.56'	YELLOW PLASTIC COATED TBM SPIKE IN 8" CEDAR
1002	1,653,446	2,960,676	249.42'	STEEL "T" POST WITH IDENTIFYING LATH
1003	1,653,449	2,960,667	252.25'	YELLOW PLASTIC COATED TBM SPIKE
1005	1,653,310	2,960,620	249.62'	STEEL "T" POST WITH IDENTIFYING LATH

TABLE OF HORIZONTAL CONTROL

CP	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION	DESCRIPTION
1	1,653,467.90	2,960,712.17	N56°21'13.77"	W132°18'42.32"	246.20'	8" SPIKE
2	1,653,296.37	2,960,628.28	N56°21'12.09"	W132°18'43.87"	247.77'	8" SPIKE
3	1,653,626.60	2,960,668.38	N56°21'15.34"	W132°18'43.04"	232.28'	14" SPIKE
4	1,653,583.57	2,960,596.09	N56°21'14.93"	W132°18'44.34"	232.66'	8" SPIKE
5	1,653,539.78	2,960,548.29	N56°21'14.51"	W132°18'45.20"	229.71'	5/8" X 30" REBAR

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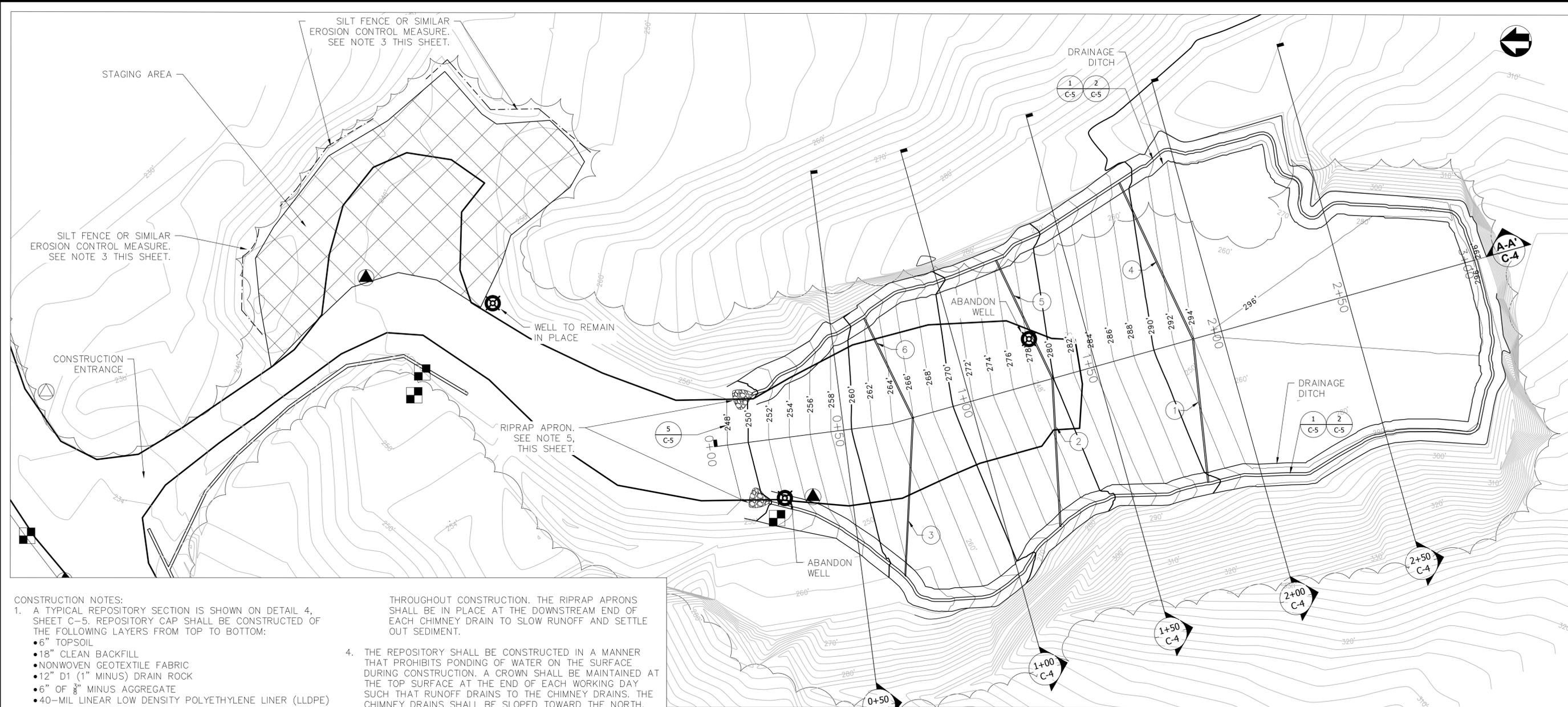
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SITE FEATURES AND GRADING PLAN

JOB #:
 SHEET

C-3



- CONSTRUCTION NOTES:**
- A TYPICAL REPOSITORY SECTION IS SHOWN ON DETAIL 4, SHEET C-5. REPOSITORY CAP SHALL BE CONSTRUCTED OF THE FOLLOWING LAYERS FROM TOP TO BOTTOM:
 - 6" TOPSOIL
 - 18" CLEAN BACKFILL
 - NONWOVEN GEOTEXTILE FABRIC
 - 12" D1 (1" MINUS) DRAIN ROCK
 - 6" OF 3/8" MINUS AGGREGATE
 - 40-MIL LINEAR LOW DENSITY POLYETHYLENE LINER (LLDPE)
 - 4" OF 3/8" MINUS AGGREGATE
 - TREATED WASTE SOIL (THICKNESS VARIES, SEE SECTIONS ON SHEET C-4)
 - NON-WOVEN GEOTEXTILE FABRIC
 - 24" BASE LAYER OF SHOT ROCK TOPPED WITH SMALLER AGGREGATE SUCH AS 6" MINUS ROCK AND 1" DRAIN ROCK TO FORM A SMOOTH UNYIELDING SURFACE.
 - TREATED WASTE MATERIAL SHALL NOT BE PLACED ADJACENT TO EXISTING GRADE OR QUARRY WALLS. A 2' BASE LAYER OF 6" MINUS ROCK SHALL BE PLACED ALONG THE EXISTING QUARRY FLOOR OVER THE ENTIRE PROPOSED REPOSITORY FOOTPRINT. A 3' WIDE CHIMNEY DRAIN WILL EXTEND AROUND THE PERIMETER OF THE REPOSITORY TO PROVIDE DRAINAGE AND MATERIAL SEPARATION.
 - RUNOFF AND SEDIMENT SHALL BE MANAGED DURING CONSTRUCTION.
 - THE STAGING AREA SHALL BE MAINTAINED IN A MANNER THAT LIMITS FUGITIVE DUST BY UTILIZING A WATER TRUCK AS NECESSARY. THE DOWN-GRADIENT PERIMETER OF THE STAGING AREA SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. BRUSH BARRIERS, SILT FENCE, OR STRAW WATTLES MAY BE USED FOR THIS PURPOSE.
 - RUNOFF FROM THE REPOSITORY SHALL BE CONSIDERED DURING CONSTRUCTION. CHIMNEY DRAINS SHALL BE BUILT UP CONCURRENT WITH PLACING WASTE MATERIAL SUCH THAT THE REPOSITORY WILL DRAIN RUNOFF TO THE QUARRY SIDES AND TOWARD THE NORTH

- THROUGHOUT CONSTRUCTION. THE RIPRAP APRONS SHALL BE IN PLACE AT THE DOWNSTREAM END OF EACH CHIMNEY DRAIN TO SLOW RUNOFF AND SETTLE OUT SEDIMENT.
- THE REPOSITORY SHALL BE CONSTRUCTED IN A MANNER THAT PROHIBITS PONDING OF WATER ON THE SURFACE DURING CONSTRUCTION. A CROWN SHALL BE MAINTAINED AT THE TOP SURFACE AT THE END OF EACH WORKING DAY SUCH THAT RUNOFF DRAINS TO THE CHIMNEY DRAINS. THE CHIMNEY DRAINS SHALL BE SLOPED TOWARD THE NORTH, WITH NO LOW SPOTS. THE REPOSITORY SHALL REMAIN COVERED WITH PLASTIC SHEETING EXCEPT DURING MATERIAL PLACEMENT TO PREVENT INFILTRATION PRIOR TO PLACEMENT OF ENGINEERED CAP.
- THE DRAINAGE CHANNELS SHALL TERMINATE AT RIPRAP APRONS CONSTRUCTED OF 6" MINUS MATERIAL. THE APRONS SHALL EXTEND A MINIMUM OF 10 FEET BEYOND THE DRAINAGE CHANNEL ALONG EXISTING GRADE TO DISSIPATE ENERGY AND DEPOSIT SEDIMENT. THE APRONS SHALL BE PLACED PRIOR TO CONSTRUCTION OF THE REPOSITORY, AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. SIGNIFICANT SEDIMENT SHALL BE CLEANED FROM THE APRONS PRIOR TO DEMOBILIZATION. NO EXCAVATION SHALL TAKE PLACE TO CONSTRUCT APRON.
- UPON COMPLETION OF TOPSOIL PLACEMENT, THE ENTIRE REPOSITORY CAP AREA SHALL BE SEEDED WITH NATIVE GRASS. SEE PLANTING SPECIFICATION FOR SEED MIX.
- CLEARING AND GRUBBING SHALL BE PERFORMED AS NECESSARY. ALL TREES AND BRUSH SHALL BE REMOVED WITHIN THE REPOSITORY PRIOR TO CONSTRUCTION.

UNDERDRAIN PIPE SCHEDULE			
ID	DIAMETER (IN)	LENGTH (FT)	SLOPE (%)
1	4	55	3.00
2	4	57	3.00
3	4	61	3.00
4	4	66	3.00
5	4	50	3.00
6	4	42	3.00

- UNDERDRAIN PIPE NOTES:**
- UNDERDRAIN PIPE SHALL BE 4"Ø PERFORATED PVC.
 - ALL UNDERDRAINS SHALL DAYLIGHT AND DISCHARGE TO THE DRAINAGE DITCH.

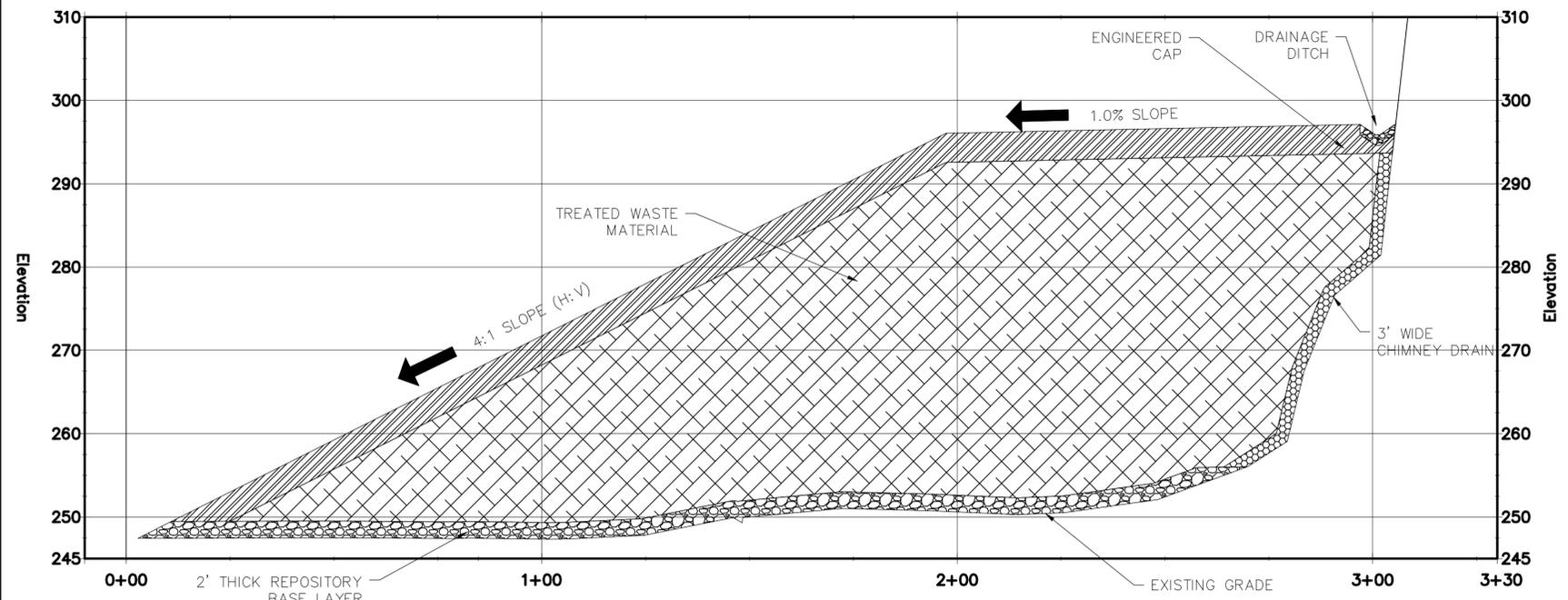
LEGEND

- Monitoring Well Location
- Horizontal Control Point (Established)
- Offset Control Point
- Temporary Bench Mark (Established)
- Top of Bank
- Toe of Slope
- Major Existing Contour Line
- Minor Existing Contour Line
- Tree Line
- Proposed Underdrain Pipe (See Underdrain Pipe Schedule)
- Staging Area
- Erosion Control Measure
- Riprap Apron
- Major Proposed Contour
- Minor Proposed Contour

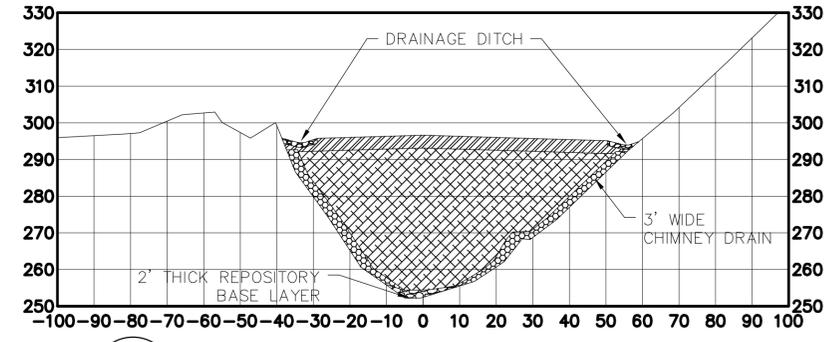


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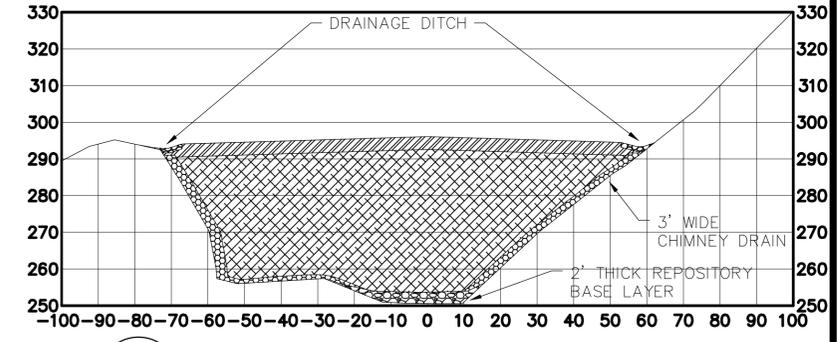
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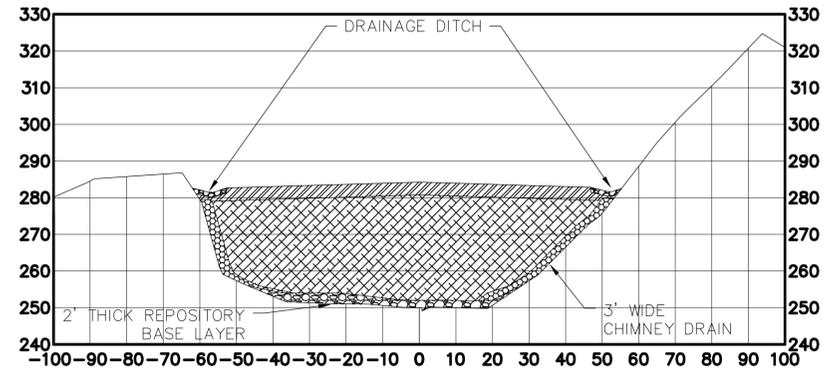
A-A'
C-3 REPOSITORY PROFILE VIEW
SCALE: AS SHOWN



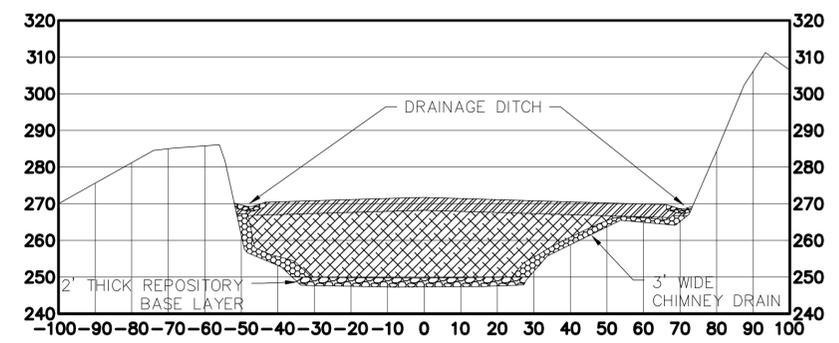
2+50
C-3 REPOSITORY SECTION VIEW
SCALE: AS SHOWN



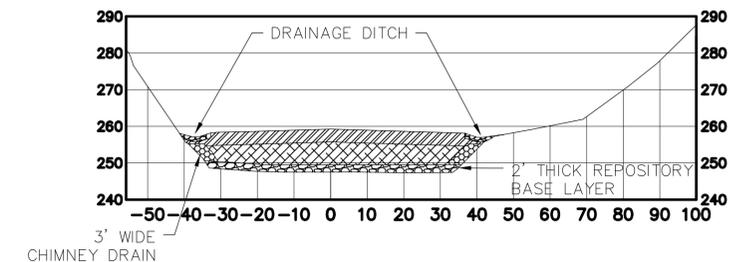
2+00
C-3 REPOSITORY SECTION VIEW
SCALE: AS SHOWN



1+50
C-3 REPOSITORY SECTION VIEW
SCALE: AS SHOWN



1+00
C-3 REPOSITORY SECTION VIEW
SCALE: AS SHOWN



0+50
C-3 REPOSITORY SECTION VIEW
SCALE: AS SHOWN

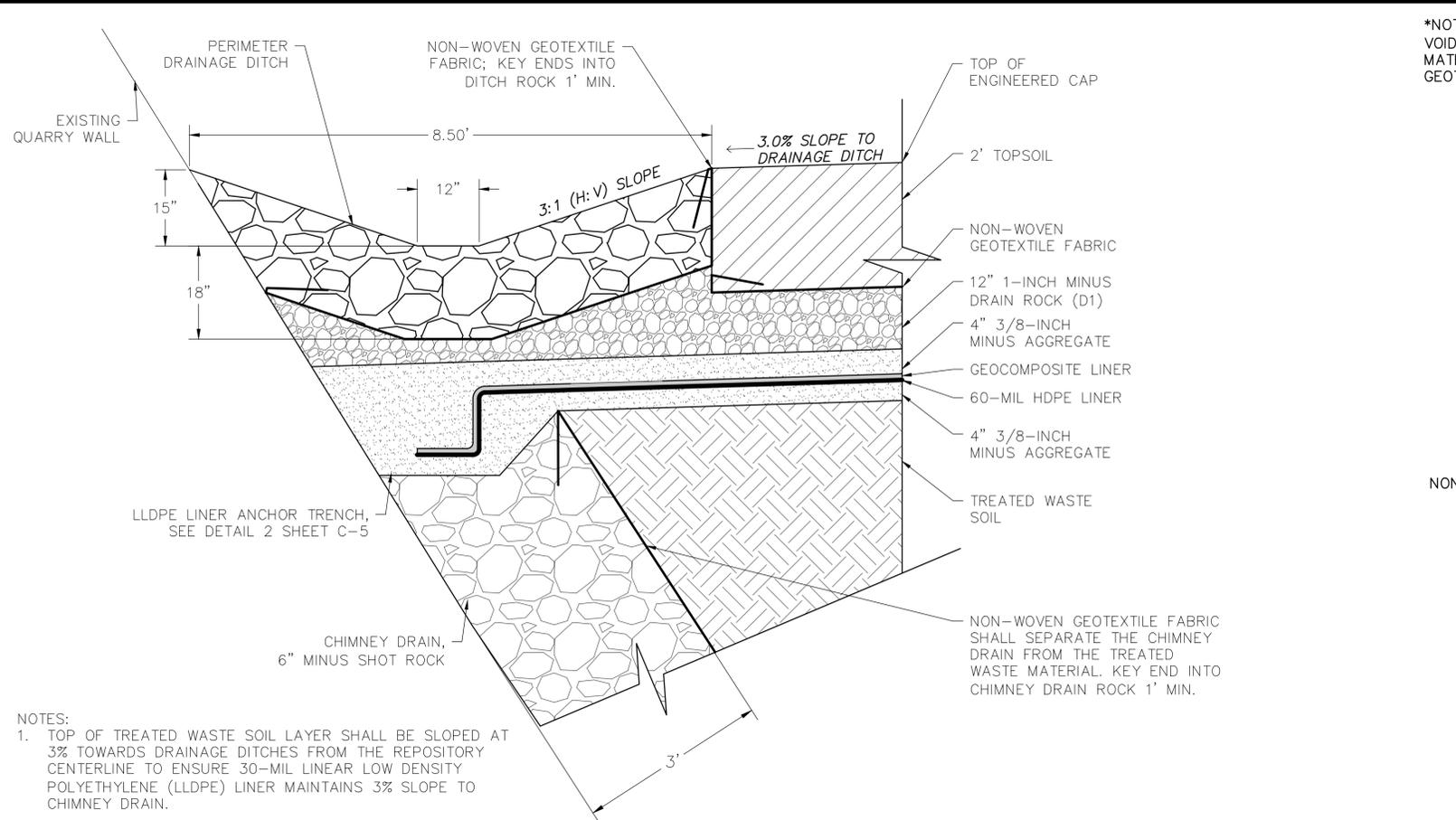


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PROFILE AND SECTION VIEWS

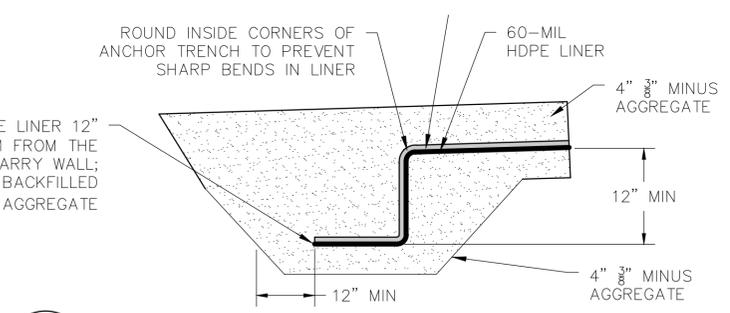
JOB #:
SHEET

C-4

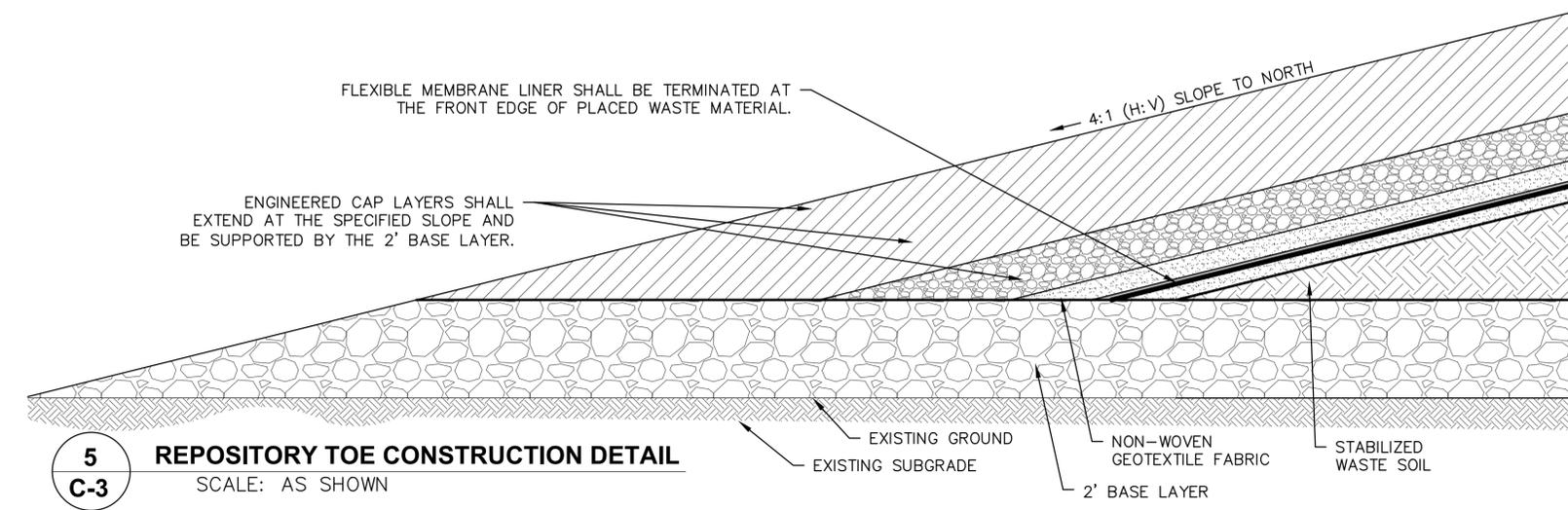


NOTES:
 1. TOP OF TREATED WASTE SOIL LAYER SHALL BE SLOPED AT 3% TOWARDS DRAINAGE DITCHES FROM THE REPOSITORY CENTERLINE TO ENSURE 30-MIL LINEAR LOW DENSITY POLYETHYLENE (LLDPE) LINER MAINTAINS 3% SLOPE TO CHIMNEY DRAIN.

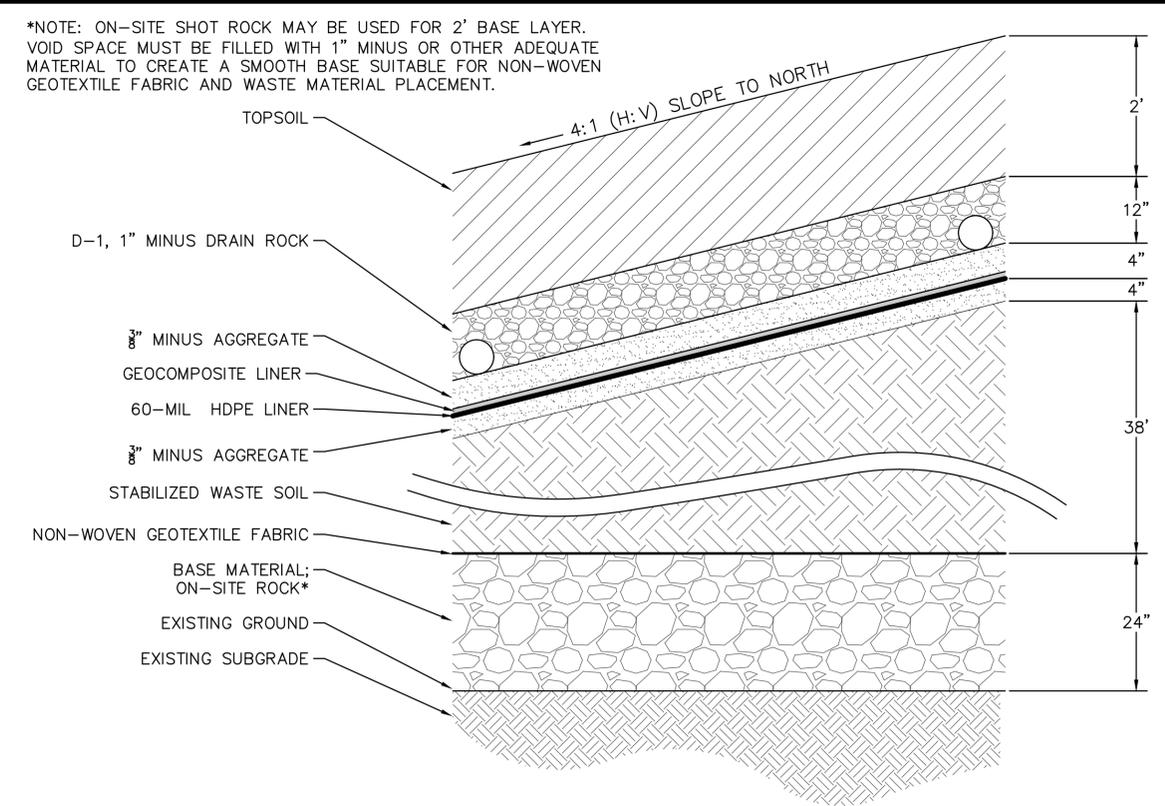
1
C-3 **DRAINAGE DITCH CONSTRUCTION DETAIL**
 SCALE: AS SHOWN



2
C-3 **ANCHOR TRENCH CONSTRUCTION DETAIL**
 SCALE: AS SHOWN

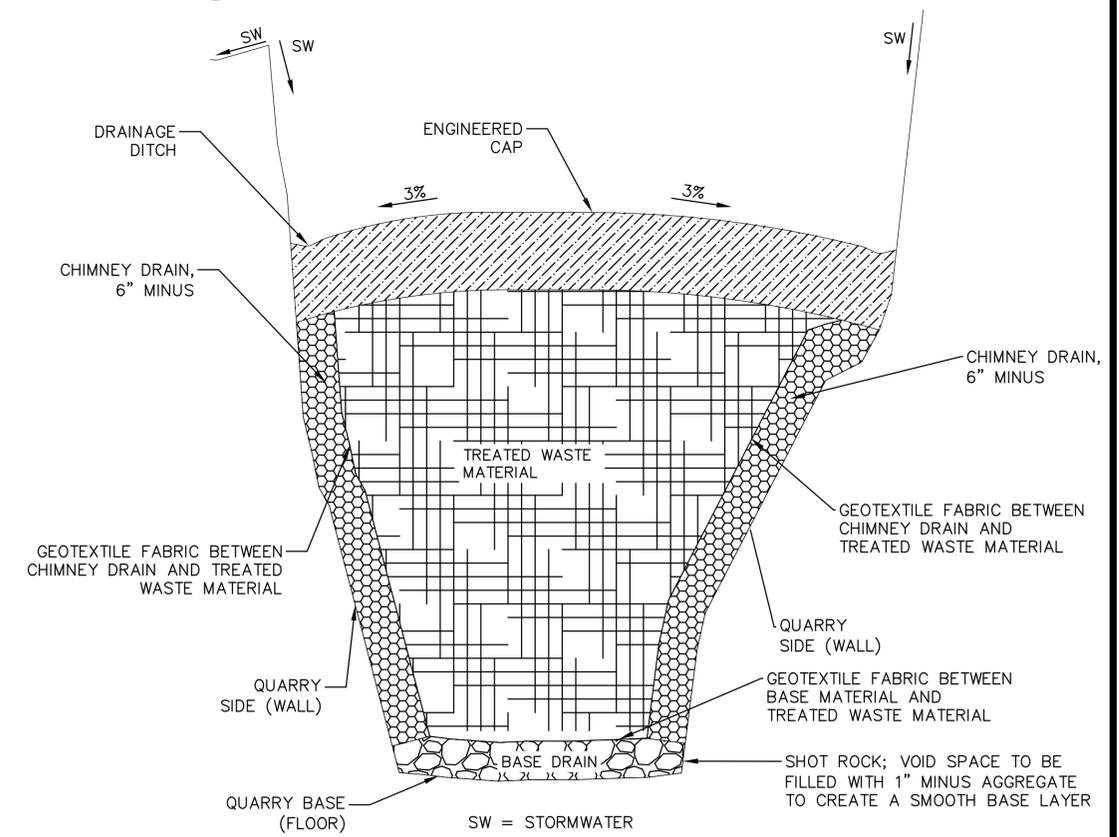


5
C-3 **REPOSITORY TOE CONSTRUCTION DETAIL**
 SCALE: AS SHOWN



*NOTE: ON-SITE SHOT ROCK MAY BE USED FOR 2' BASE LAYER. VOID SPACE MUST BE FILLED WITH 1\"/>

3
C-3 **REPOSITORY LAYERS CONSTRUCTION DETAIL**
 SCALE: AS SHOWN



4
C-3 **REPOSITORY TYPICAL SECTION DETAIL**
 SCALE: AS SHOWN



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CONSTRUCTION DETAILS
 JOB #:
 SHEET
C-5

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ENGINEERED
 TOP CAP
 DETAIL

JOB #
 SHEET

C-6

