

**NOTES:**

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTOGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

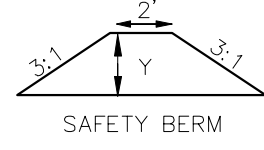
UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

**STANDARD CONSTRUCTION DETAIL #4-1  
COMPOST FILTER SOCK**

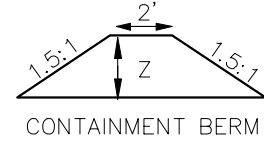
NOT TO SCALE

**1 PERIMETER E&S CONTROL - NTS**

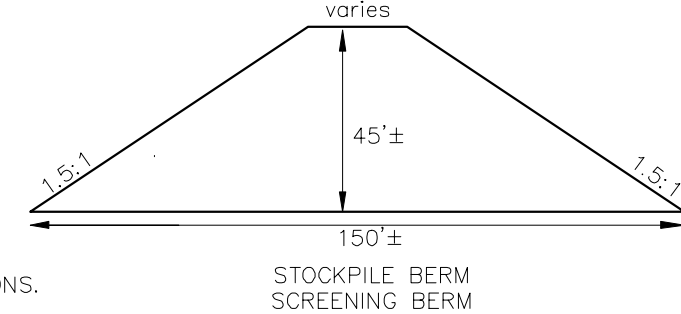
Y = 3' (MIN) OR MID-AXLE OF LARGEST SELF PROPELLED MOBILE EQUIPMENT WHICH USUALLY TRAVELS THE ROADWAY



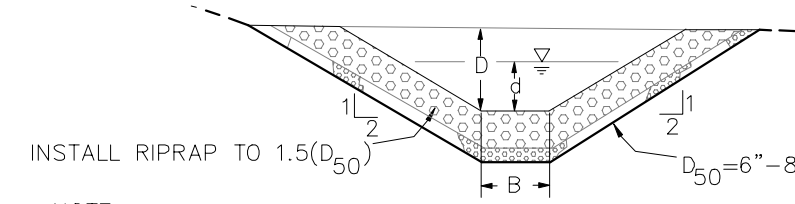
Z = 4' (MIN) OR MID-AXLE OF LARGEST SELF PROPELLED MOBILE EQUIPMENT WHICH USUALLY TRAVELS THE ROADWAY



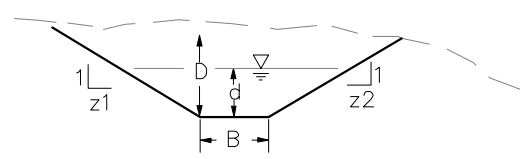
NOTE: DIMENSIONS MAY BE MODIFIED PER FIELD CONDITIONS.



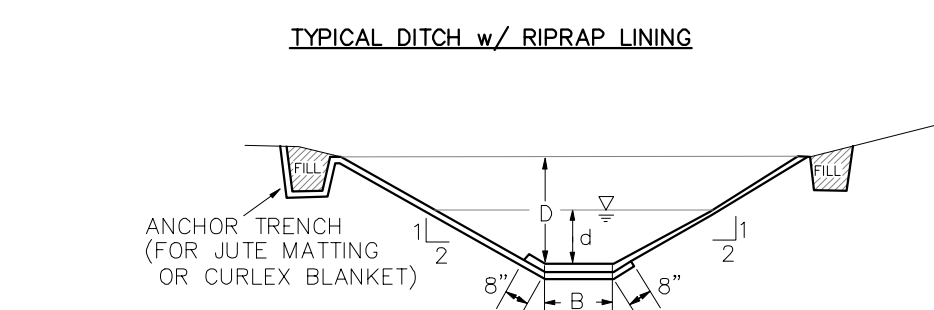
**7 BERM DETAIL - NTS**



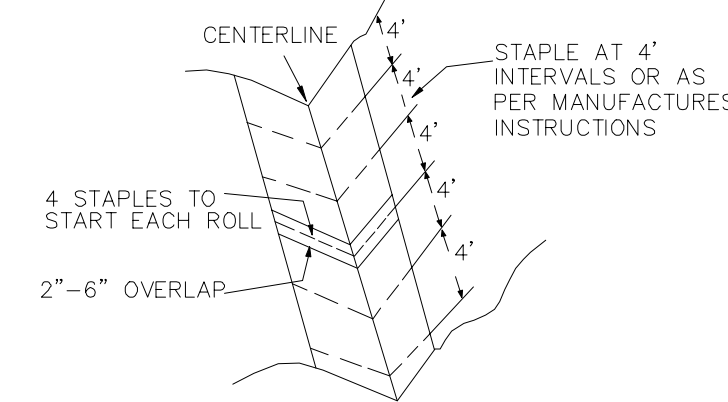
NOTE:  
1.) EXCAVATE AS PER REQUIRED DESIGN.  
2.) INSTALL COARSE GRAVEL FILTER UNDER RIPRAP.  
3.) INSTALL RIPRAP TO 1.5(D<sub>50</sub>)



NOTE:  
1.) EXCAVATE AS PER REQUIRED DESIGN.  
2.) SMOOTH BED TO ELIMINATE LARGE CLODS AND STONES.  
3.) FERTILIZE PRIOR TO FINAL SEED & MULCH

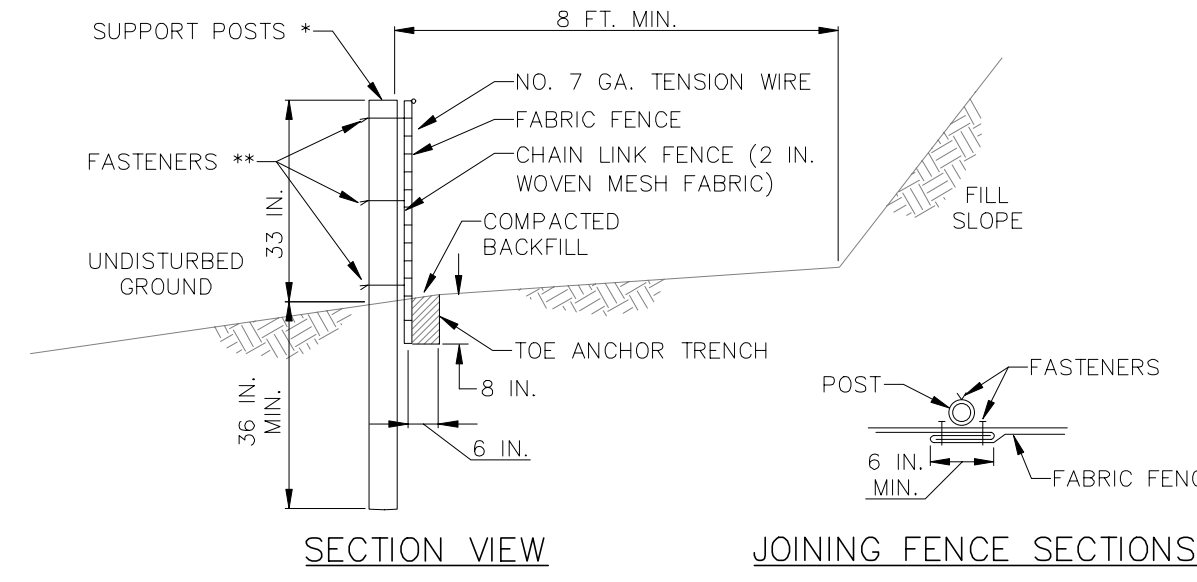


NOTE:  
1.) EXCAVATE AND SMOOTH TO PREPARE SEED BED. DO NOT COMPACT. IF USING FERTILIZER, ADD TO SOIL PRIOR TO GRADING.  
2.) UNROLL IN DIRECTION OF FLOW. IF TWO(2) BLANKETS ARE REQUIRED, OFFSET AND OVERLAP AS SHOWN.  
3.) USE 4 STAPLES AT THE START OF EACH ROLL. WHEN USING 2 ROLLS, STAPLE TO CATCH EDGES OF EACH ROLL AT 4' INTERVALS. CONTINUE AT 4.0' INTERVALS. AREAS OF > 5 FPS USE 2.0' INTERVALS.  
4.) OVERLAP SIDES 8"-12" AND LAP UPSTREAM ROLL AND DOWNSTREAM.  
5.) SEED WITH APPROVED MIXTURE.



**11 DITCH DETAILS - NTS**

**10.1 NTS**



\* POSTS SPACED AT 10 FT. MAX. USE 2-1/2 IN. DIA HEAVY DUTY GALVANIZED OR ALUMINUM POSTS.  
\*\* CHAIN LINK TO POST FASTENERS SPACED AT 14 IN. MAX. USE NO. 9 GA. ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL WIRE. FABRIC TO SHAIN FASTENERS SPACED AT 24 IN. MAX. ON CENTER.

**NOTES:**

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 42 IN. MINIMUM.

POSTS SHALL BE INSTALLED USING A POSTHOLE DRILL.

CHAIN LINK SHALL BE GALVANIZED NO. 11.5 GA. STEEL WIRE WITH 2-1/4 IN. OPENING, NO. 11 GA. ALUMINUM COATED STEEL WIRE IN ACCORDANCE WITH ASTM-A-491, OR GALVANIZED NO. 9 GA. STEEL WIRE TOP AND BOTTOM WITH GALVANIZED NO. 11 GA. STEEL INTERMEDIATE WIRES. NO. 7 GAGE TENSION WIRE TO BE INSTALLED HORIZONTALLY THROUGH HOLES AT TOP AND BOTTOM OF CHAIN-LINK FENCE OR ATTACHED WITH HOG RINGS AT 5 FT MAX. CENTERS.

SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

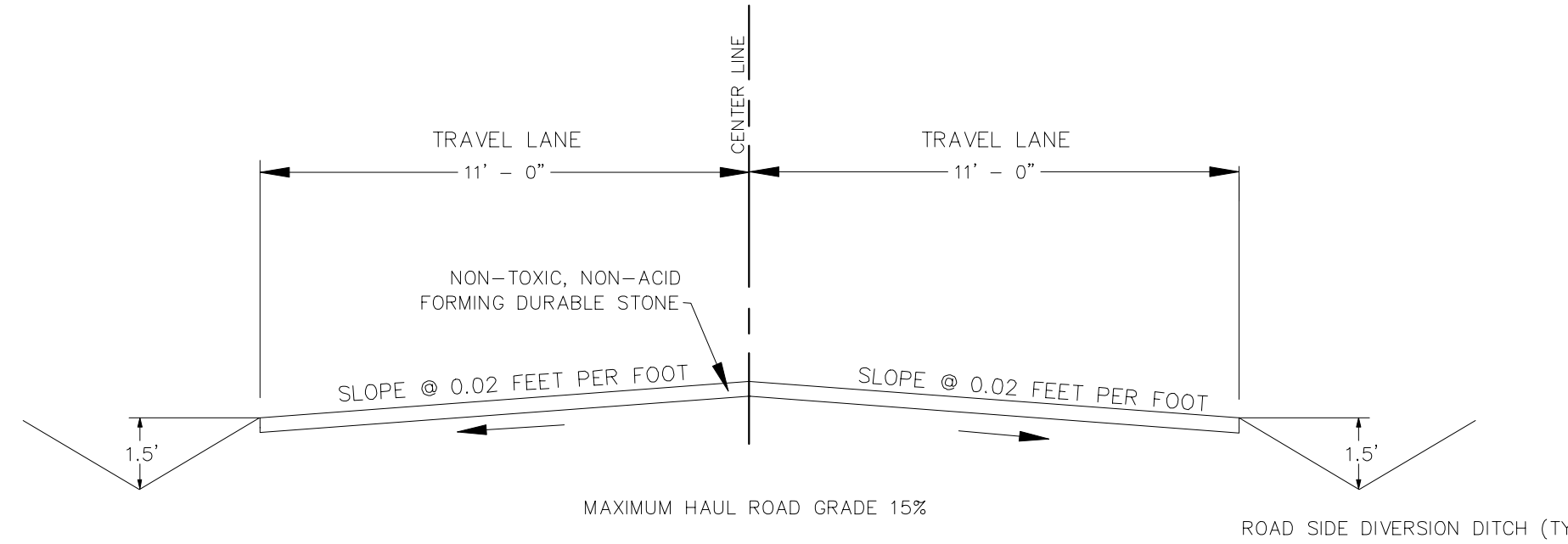
SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

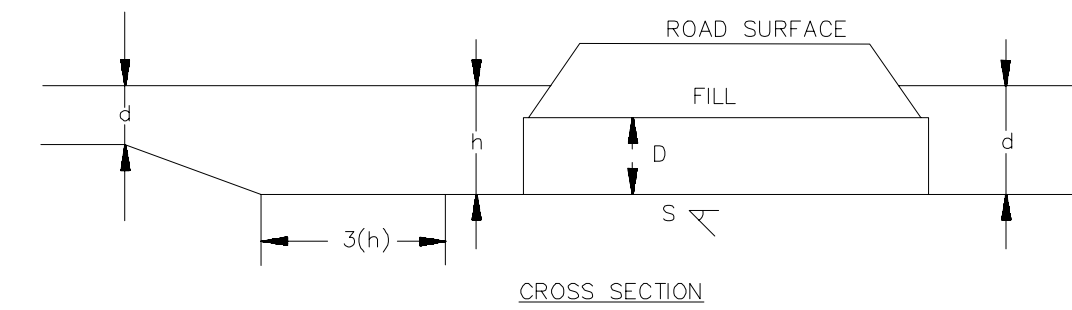
**STANDARD CONSTRUCTION DETAIL #4-10  
SUPER SILT FENCE**

NOT TO SCALE

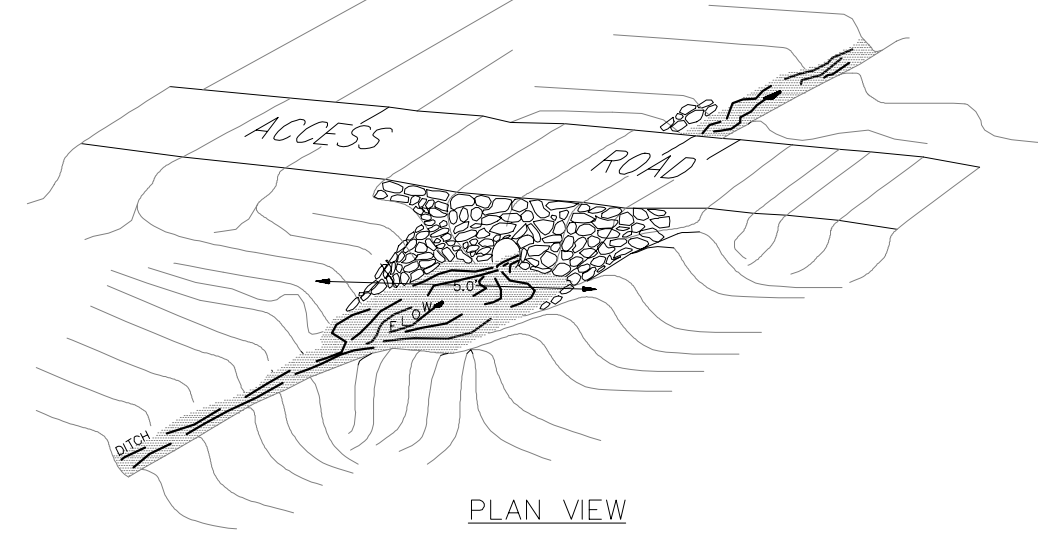
**2 PERIMETER E&S CONTROL - SUPER SILT FENCE - NTS**



**10.1 NTS**

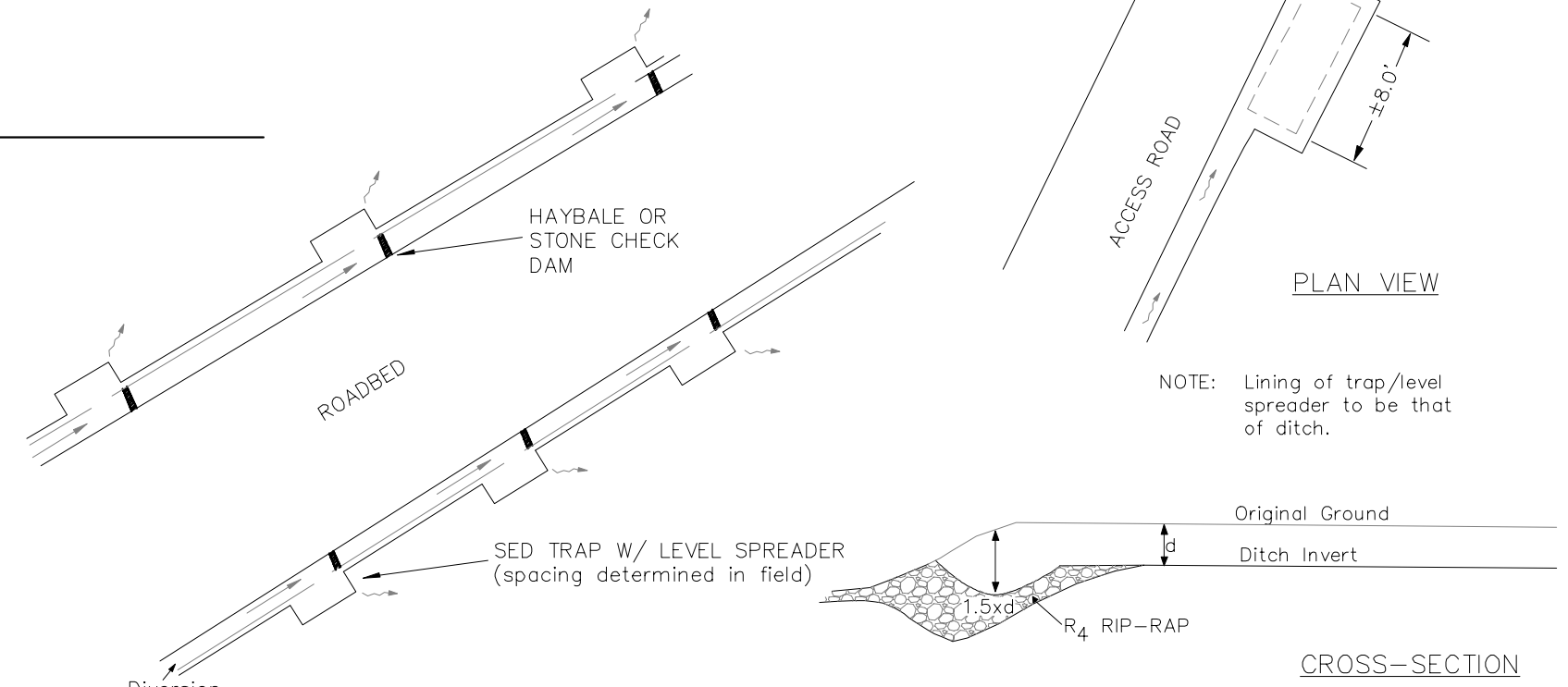


LEGEND  
d= DITCH DESIGN DEPTH (WITHOUT FREEBOARD)  
h= REQUIRED HEAD (INLET CONTROL)  
D= CULVERT DIAMETER  
S= 1.0% (min)

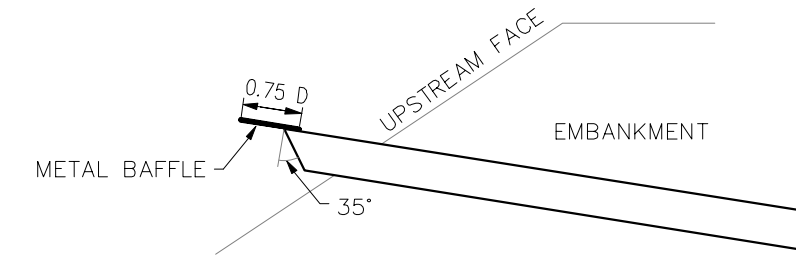


**3 TYPICAL HAUL ROAD CULVERT DETAIL - NTS**

**10.1 NTS**



**10.1 NTS**



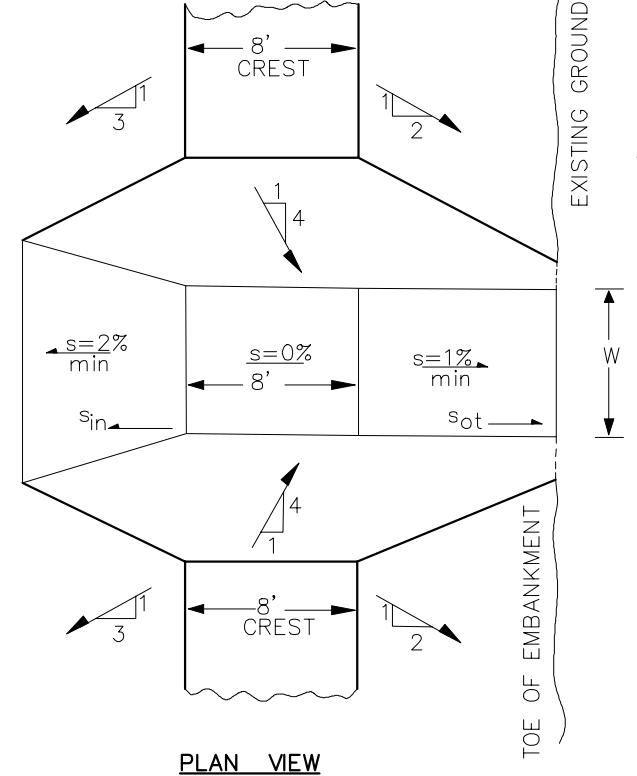
**10.1 NTS**

**9 BLANK - NTS**

**10.1 NTS**

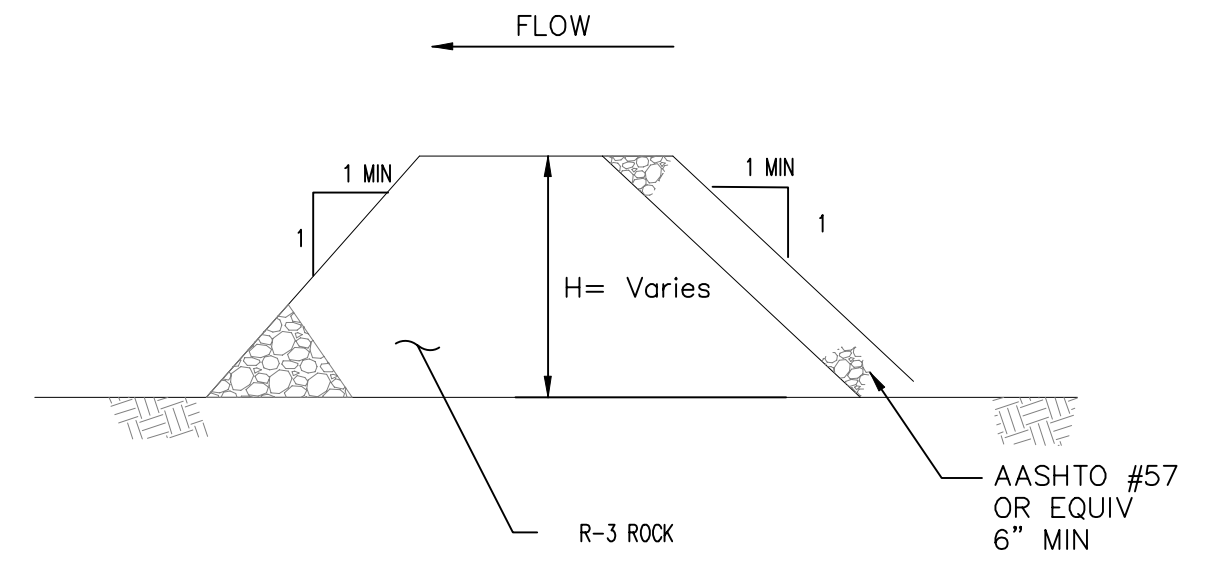
**NOTES:**

1. Typical Section is shown through the embankment. Dimensions shown are for the minimum cases.  
2. Lining to be of D=6" Rip-Rap and/or grass as per specific design.  
3. Spillway outlet channel to extend a minimum of 5' beyond the outslope toe of the embankment.



**13 EMERGENCY SPILLWAY DETAILS - NTS**

**10.1 NTS**

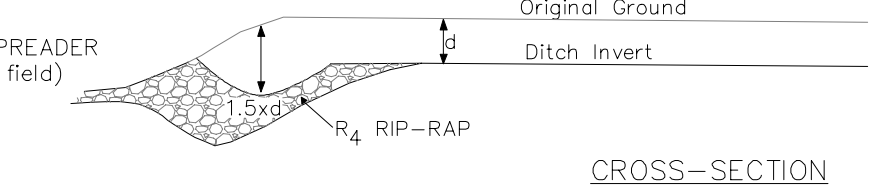


Sediment must be removed when accumulations reach 1/3 the height of the outlet. Berm height varies based upon application. Minimum height shall be two (2) feet for other applications.

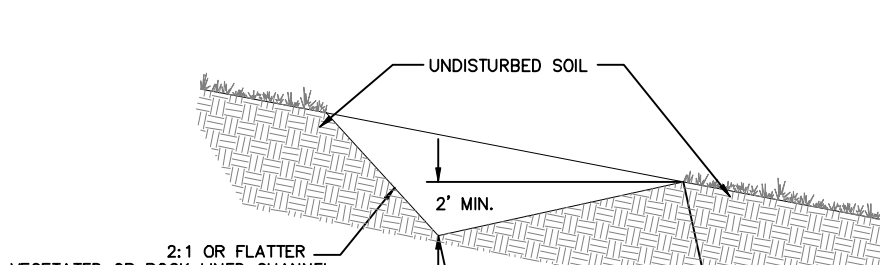
**4 ROCK FILTER - NTS**



**10.1 NTS**



**10.1 NTS**

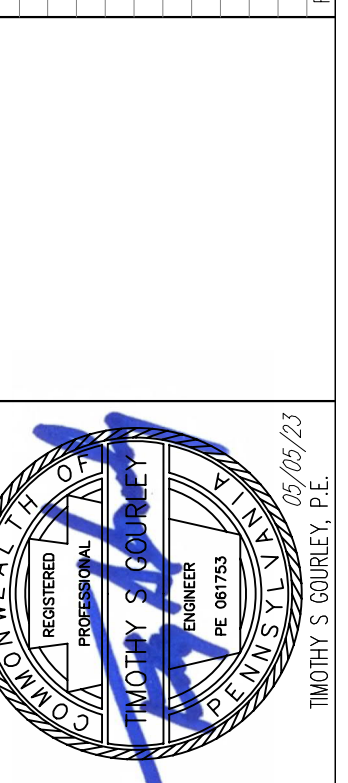


**10.1 NTS**



**10.1 NTS**

FILE	MINARD-1001010.dwg		
REV.	DATE	BY	COMMENT



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DRAWING NO: Minard-1001010  
DRAWN BY: Ing  
CHKD BY: Dsc  
DATE: 05/05/23

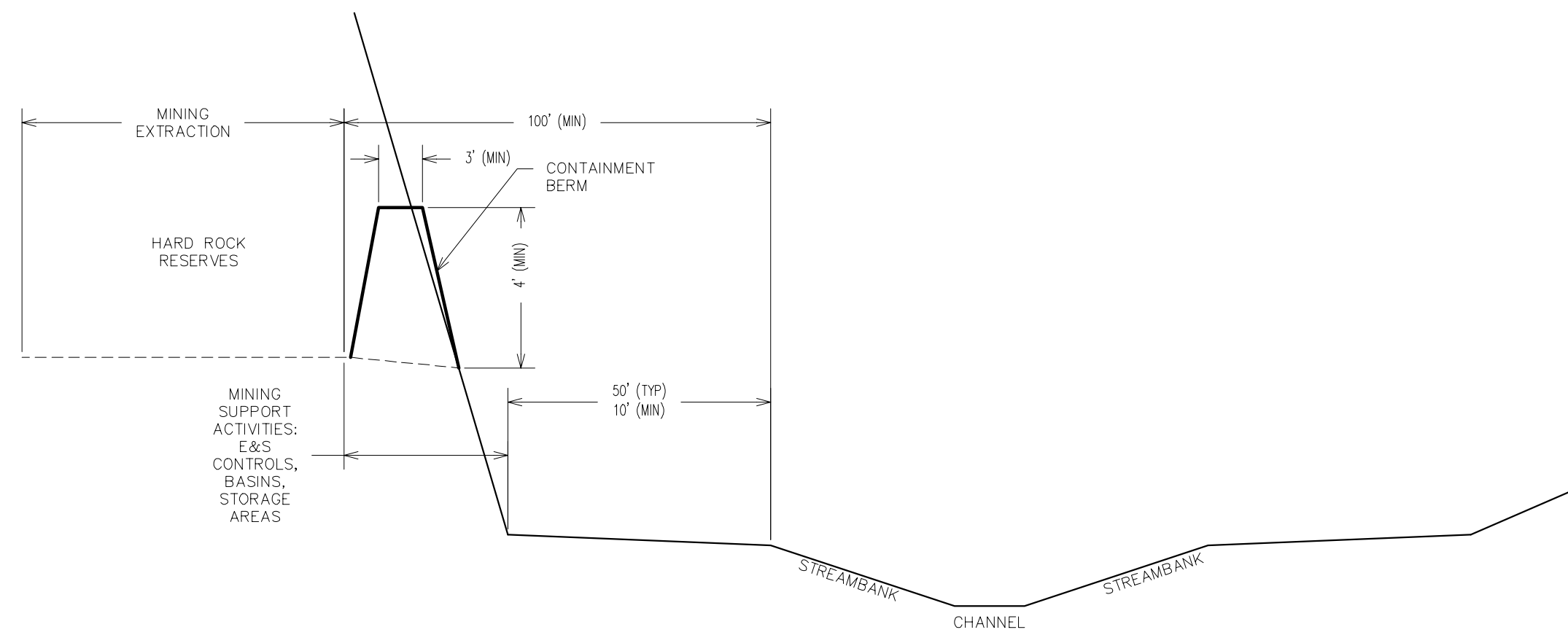
**TRACT ENGINEERING, PLLC**  
120 Ridge Avenue  
State College, PA 16803  
814.272.0301  
www.TractILC.com

PROJECT: Minard Mine  
Bishop Brothers Construction Co., Inc  
Athens Township, Bradford County, Pennsylvania  
License of Professional Engineer  
Timothy S. Cozzelli, P.E.  
Tax Parcel ID: 09-000-00-104  
TITLE: **Exhibit 10.1**  
Mining Details

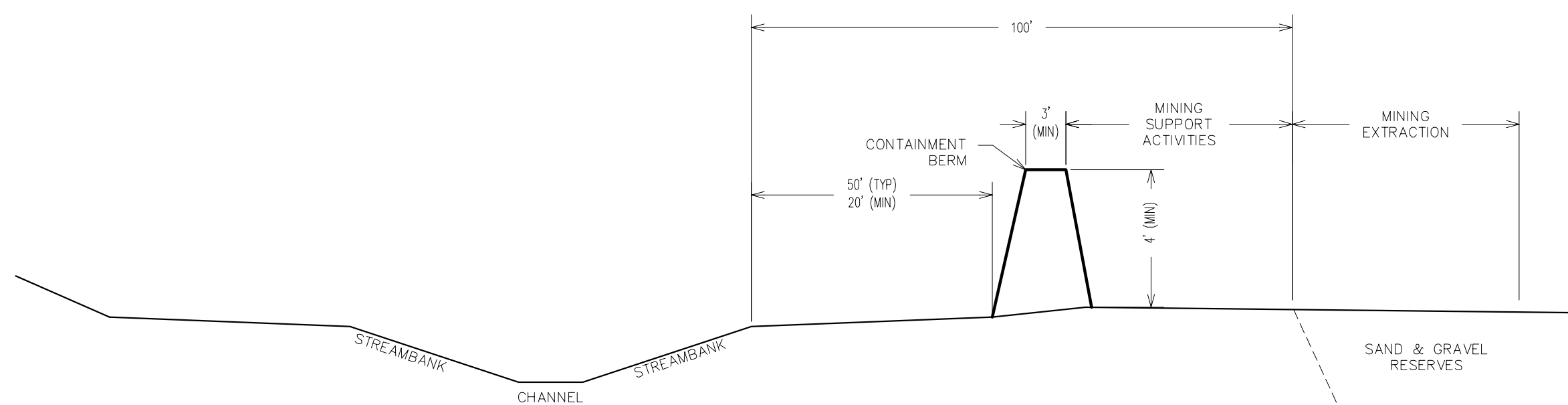
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Rev No: 0

Sheet No:

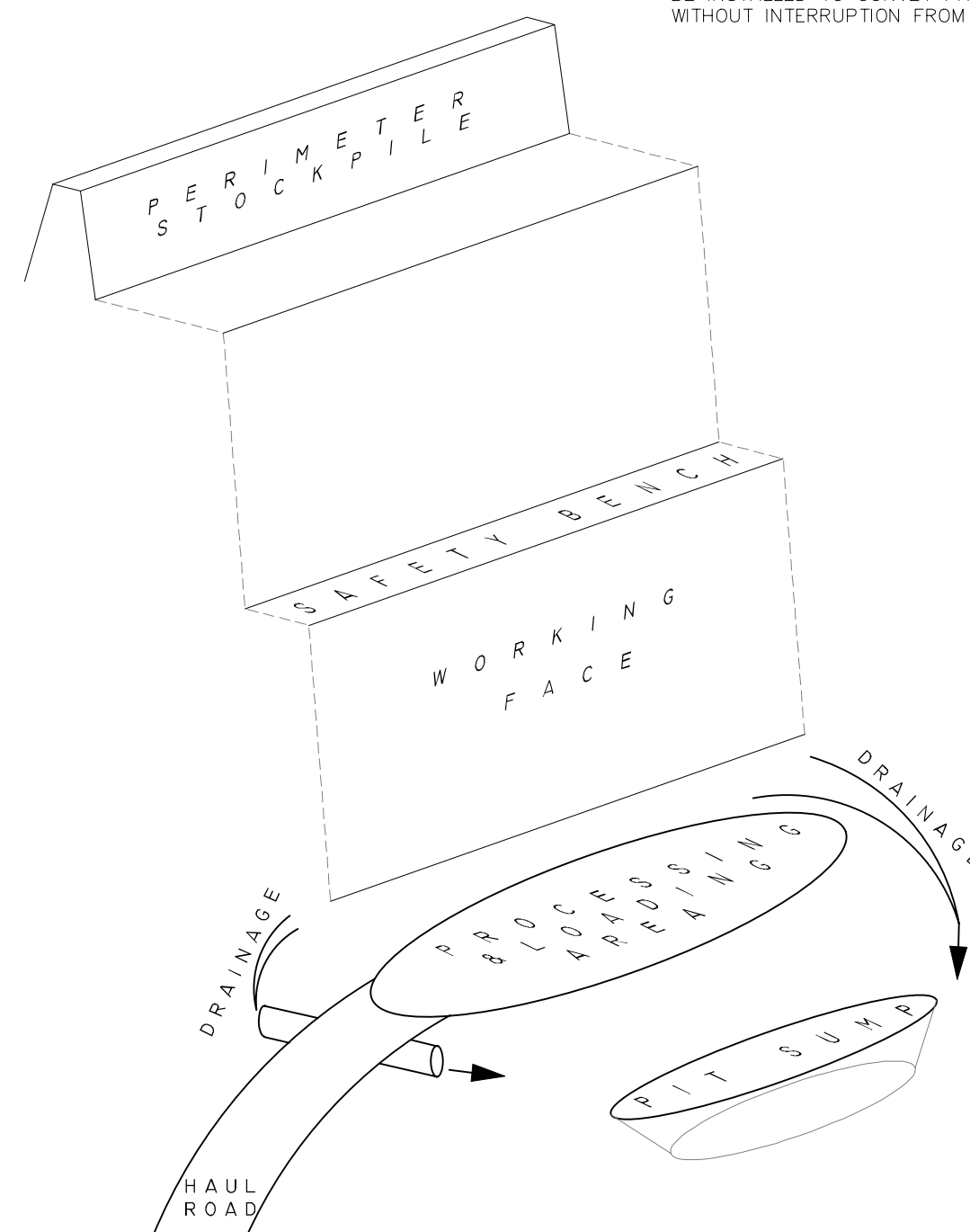


6  
10.2  
TUTELOW CREEK &  
UNIT 1 TUTELOW CREEK ENCROACHMENT - HARD ROCK MINING  
NTS

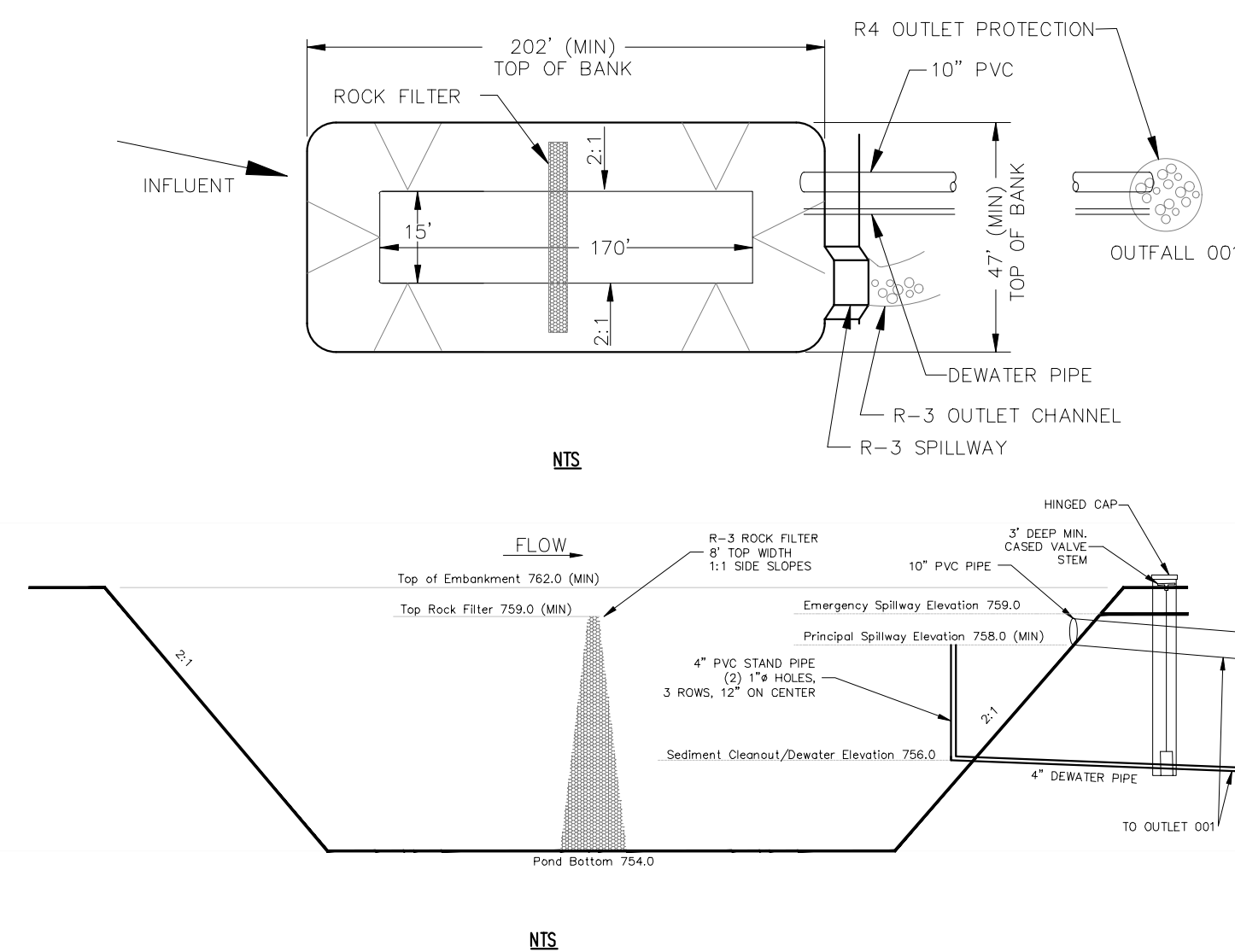


5  
10.2  
TUTELOW CREEK ENCROACHMENT - SAND & GRAVEL MINING  
NTS

- NOTES:
1. PIT FLOOR PROCESSING & LOADING AREA MUST BE ABOVE THE WATER LEVEL OF THE PIT SUMP.
  2. PIT SUMP SHALL BE SIZED TO CONTROL STORMWATER RUNOFF FROM CONTRIBUTING DRAINAGE AREA.
  3. EQUIPMENT AND TRUCKS SHALL NOT TRAVEL THROUGH STANDING PIT WATER.
  4. CONTROLS SUCH AS PIPES AND/OR DIVERSIONS SHALL BE INSTALLED TO CONVEY PIT WATER TO SUMP WITHOUT INTERRUPTION FROM TRAFFIC.

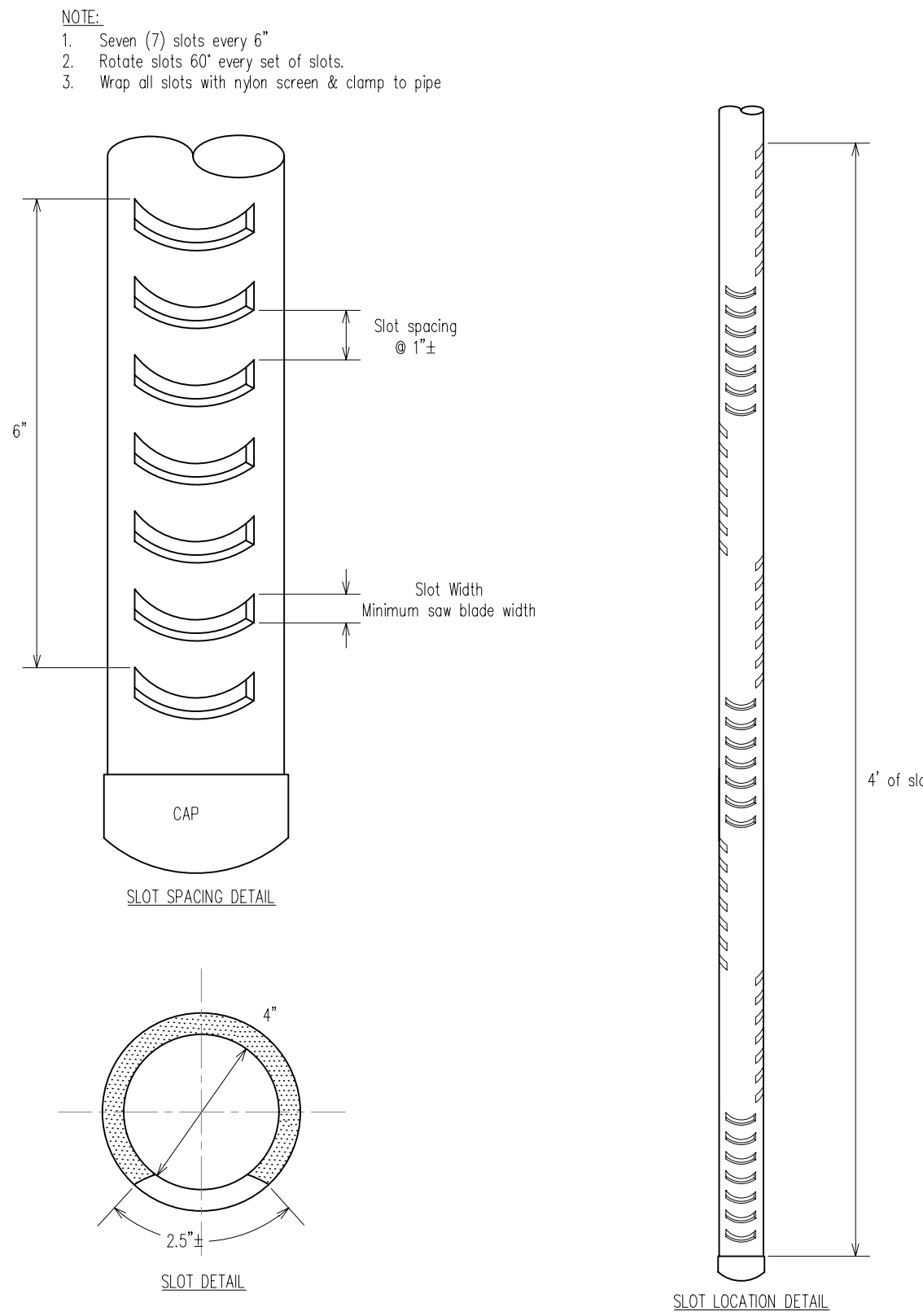


1  
10.2  
PIT SUMP LOCATION DETAIL & PERIMETER SAFETY FENCE  
NTS

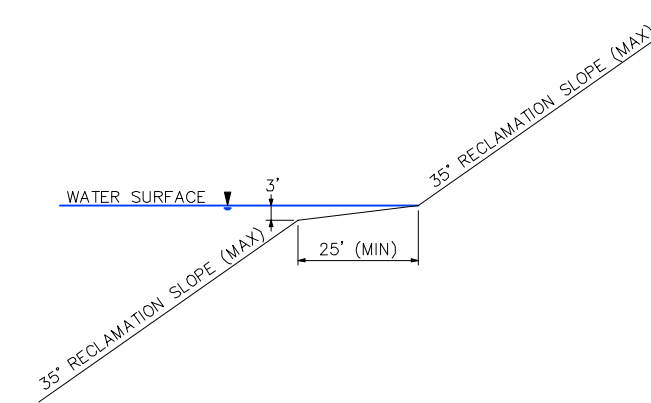


- NOTE:
1. EMERGENCY SPILLWAY WIDTH = 25' (SEE DETAIL 13, EXHIBIT 10.1)
  2. EMBANKMENT TOP WIDTH = 10' (MIN)
  3. OUTSLOPES SHALL BE 3:1 (TYP)
  4. SEED & MULCH ALL DISTURBED AREAS AT COMPLETION OF CONSTRUCTION

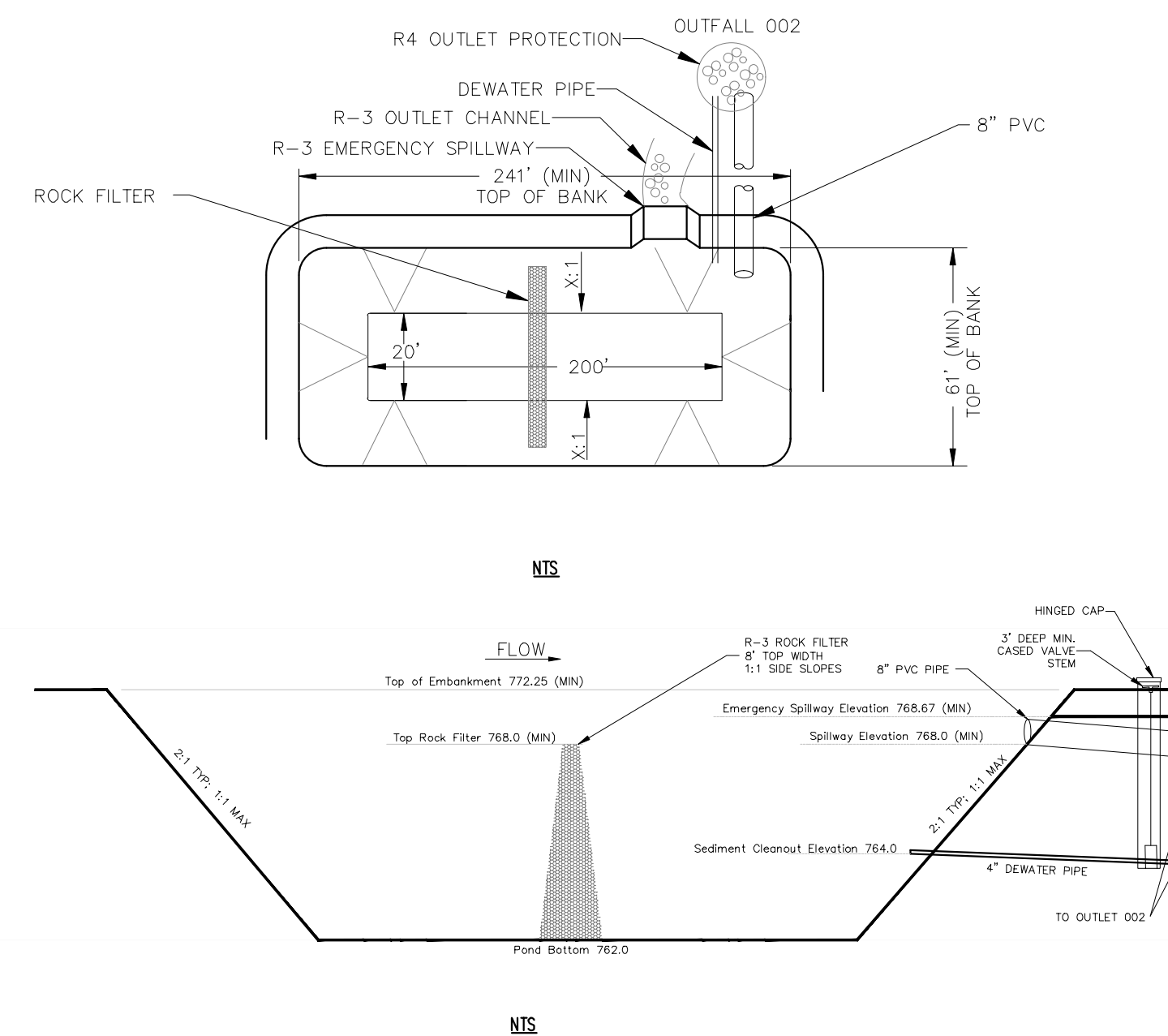
2  
10.2  
BASIN 1 DETAIL  
NTS



8  
10.2  
PIPE PERFORATION DETAIL  
NTS

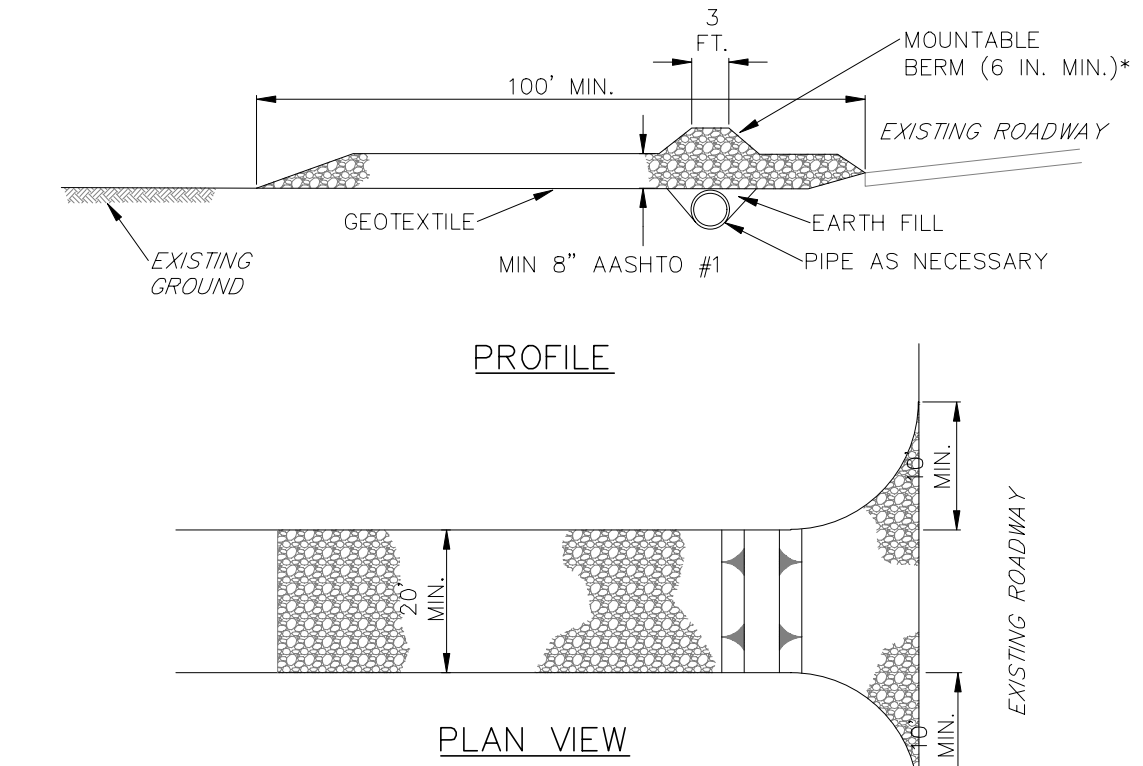


7  
10.2  
IMPOUNDMENT SAFETY BENCH DETAIL  
NTS



- NOTE:
1. EMERGENCY SPILLWAY WIDTH = 45' (SEE DETAIL 13, EXHIBIT 10.1)
  2. EMBANKMENT TOP WIDTH = 10' (MIN)
  3. OUTSLOPES SHALL BE 3:1 (TYP)
  4. SEED & MULCH ALL DISTURBED AREAS AT COMPLETION OF CONSTRUCTION

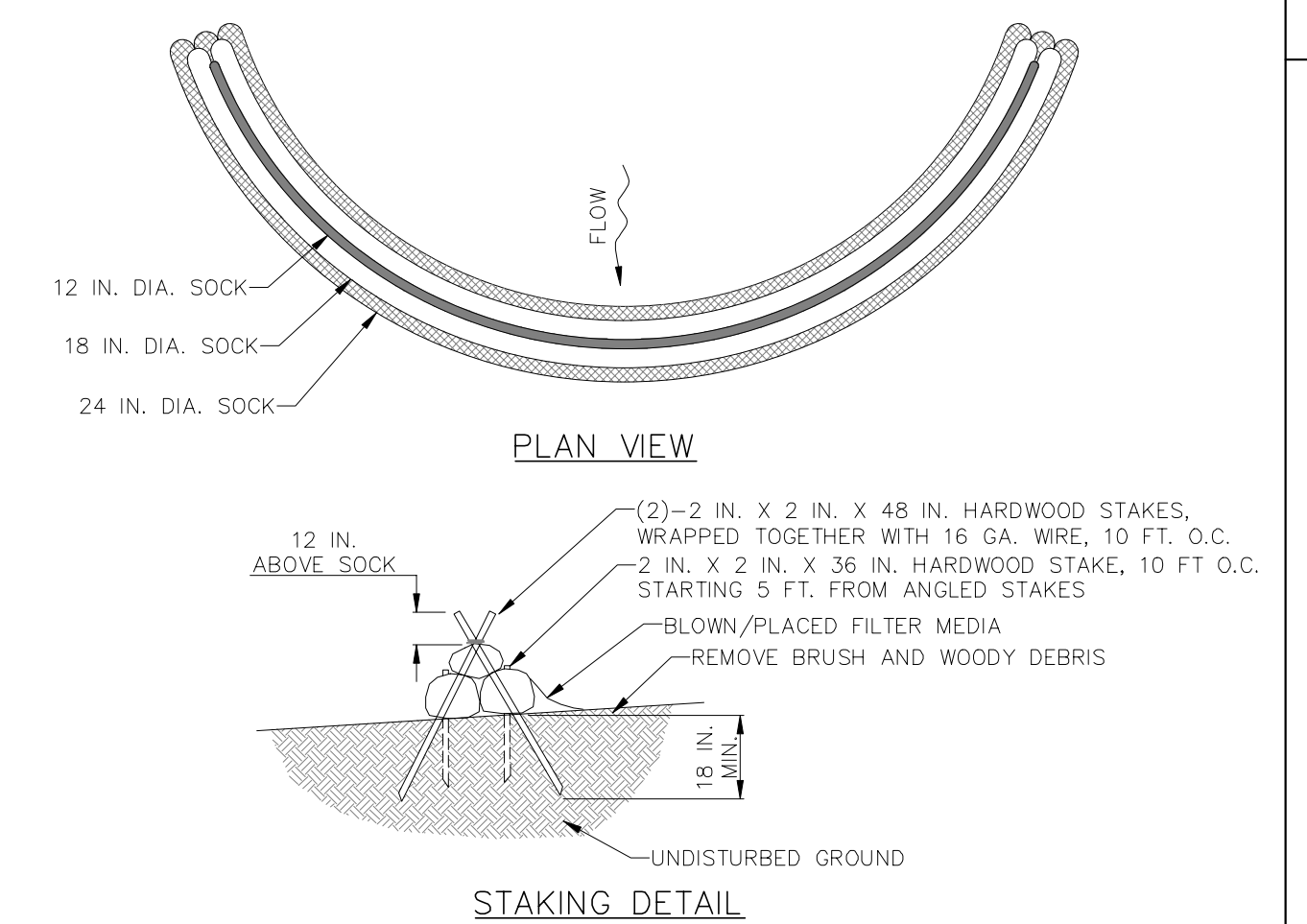
3  
10.2  
BASIN 2 DETAIL  
NTS



- \* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE
- NOTES:
1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
  2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
  3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
  4. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1  
ROCK CONSTRUCTION ENTRANCE  
NOT TO SCALE

9  
10.2  
ROCK CONSTRUCTION ENTRANCE  
NTS



- DESIGN NOTES:
1. COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
  2. MINIMUM BASE WIDTH IS EQUAL TO THE HEIGHT.
  3. SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
  4. SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS SHOWN ON THE PLAN VIEW.
  5. ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID-SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

- NOTES:
1. SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.
  2. COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.
  3. COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)
  4. THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW-THROUGH," NO SPILLWAY IS REQUIRED.
  5. COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 THE HEIGHT OF THE SOCKS.
  6. PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.

STANDARD CONSTRUCTION DETAIL #3-11  
COMPOST SOCK SEDIMENT TRAP  
NOT TO SCALE

4  
10.2  
COMPOST SEDIMENT TRAP FOR PERIMETER CONTROLS  
NTS

FILE	REV.	DATE	BY	COMMENT



PROJECT NO:	20.013
DRAWING NO:	Minor-Details
DRAWN BY:	Ing
CHECK BY:	12/06/21
	06/05/23

**TRACT ENGINEERING, PLLC**  
120 Ridge Avenue  
State College, PA 16803  
814.272.0301  
www.TractILC.com

PROJECT: **Minard Mine**  
**Bishop Brothers Construction Co., Inc**  
Athens Township, Bradford County, Pennsylvania  
Lanes of Inanna Mine  
Tax Parcel ID 09-000-00-104

TITLE: **Exhibit 10.2**  
**Mining Details**

Date: 05/05/23

Rev No: 0

Sheet No:  
**1** of 1