

west virginia department of environmental protection

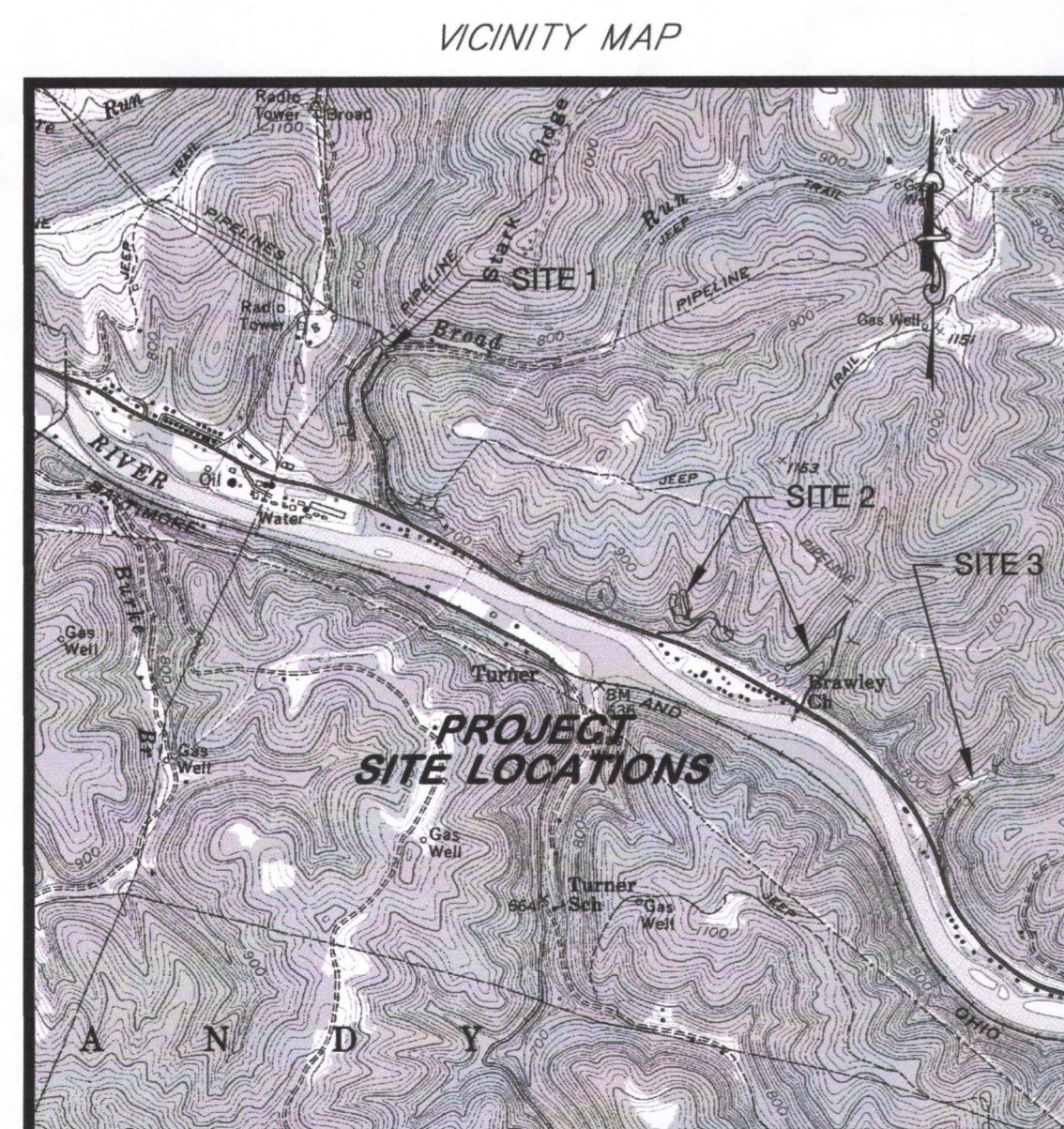
EARL RAY TOMBLIN, GOVERNOR **RANDY C. HUFFMAN, CABINET SECRETARY**

OFFICE OF ABANDONED MINE LANDS AND RECLAMATION

BROAD RUN PORTALS

NEAR CLENDENIN
KANAWHA COUNTY, WEST VIRGINIA

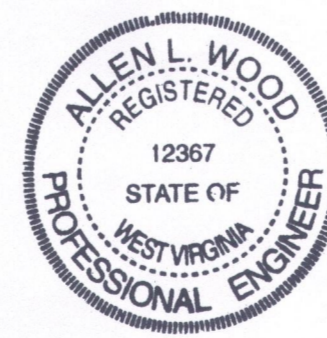
BID SCHEDULE



USGS 7.5' QUAD (CLENDENIN)

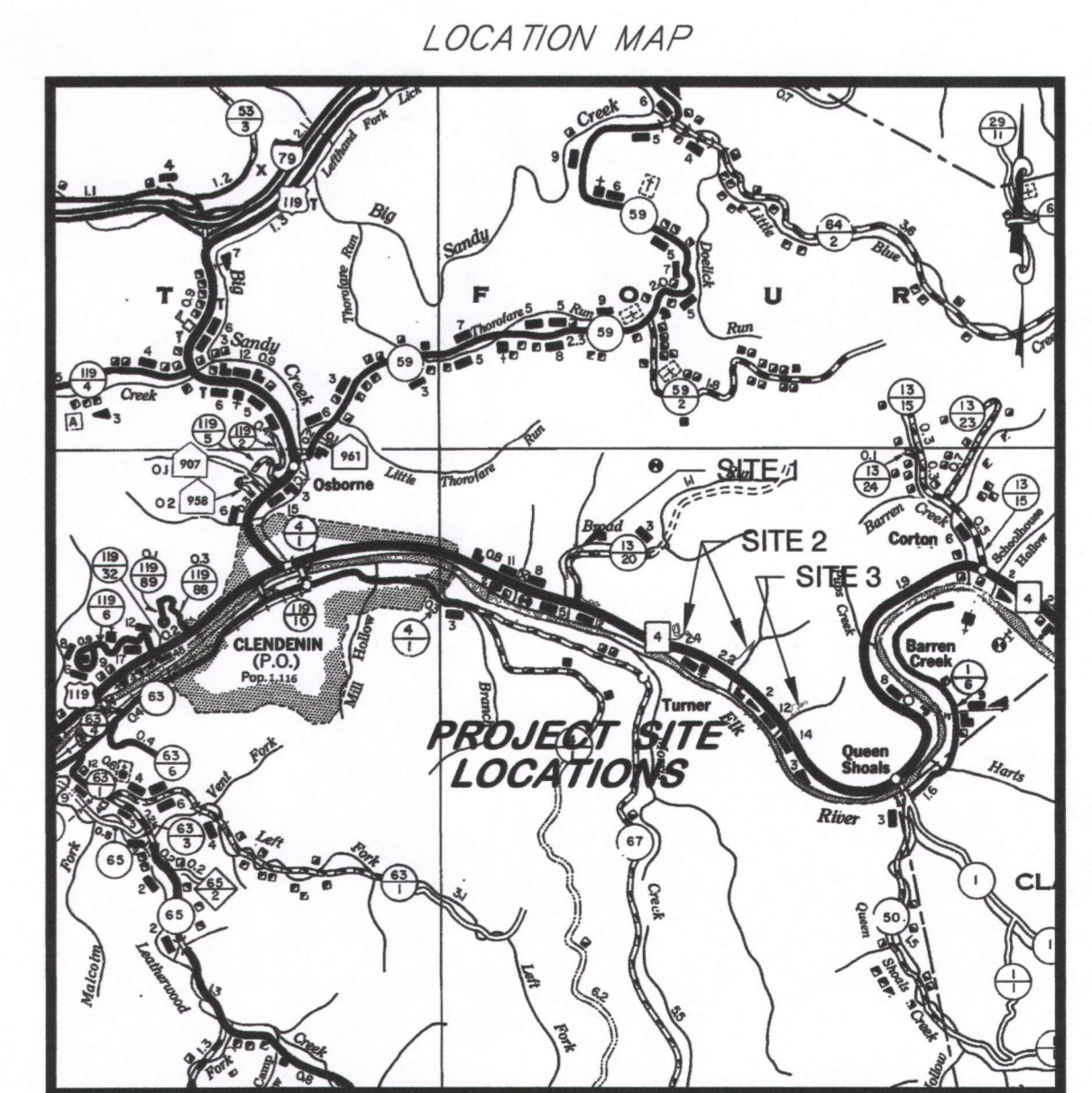
| SHEET NO. | DESCRIPTION |
|-----------|--|
| 2 | ALL SITES GENERAL OVERVIEW |
| 3 | SITE 1 - EXISTING CONDITIONS AND TAX MAP OVERLAY |
| 4 | SITE 2 - EXISTING CONDITIONS AND BORING PLAN |
| 5 | SITE 3 - EXISTING CONDITIONS |
| 6-8 | PROPOSED RECLAMATION PLANS |
| 9-10 | PROPOSED DRAINAGE DETAILS |
| 11 | PROPOSED MINE SEALS |
| 12 | PROPOSED BAT GATE |
| 13 | DRAINAGE DETAILS |

| ITEM NO. | QUANTITY | UNIT | DESCRIPTION | UNIT PRICE |
|----------|----------|------|---|------------|
| 1.0 | LS | LS | Mobilization and Demobilization, per lump sum (Limited to 10% of total bid) | LS |
| 2.0 | LS | LS | Construction Layout, per lump sum (Limited to 5% of total bid) | LS |
| 3.0 | LS | LS | Quality Control, per lump sum (Limited to 3% of total bid) | LS |
| 4.0 | LS | LS | Site Preparation, per lump sum (Limited to 10% of total bid) | LS |
| 5.1 | 2,000 | LF | Silt Fence, per linear foot | \$ |
| 5.2 | 150 | TON | Stabilized Construction Entrances, per ton installed | \$ |
| 5.3 | 10 | EA | Temporary Stone Check Dam, per each | \$ |
| 6.0 | LS | LS | Revegetation, per lump sum | LS |
| 7.1 | 113 | LF | 1.5' Vee Ditch, Rock Riprap, per linear foot | \$ |
| 7.2 | 553 | LF | 4' Flat Bottom Ditch, Vegetated, per linear foot | \$ |
| 7.3 | 105 | LF | 4' Flat Bottom Ditch, Rock Riprap, per linear foot | \$ |
| 7.4 | 31 | LF | 5' Flat Bottom Ditch, Rock Riprap, per linear foot | \$ |
| 7.5 | 1 | EA | Temporary 36" Culvert Crossing, per each | \$ |
| 7.6 | 100 | LF | 24" HDPE Culvert, per linear foot | \$ |
| 9.1 | 3 | EA | Dry Mine Seal, per each | \$ |
| 9.2 | 6 | EA | Wet/Modified Mine Seal, per each | \$ |
| 9.3 | 2 | EA | Dry Mine Seal with bat gate, Type I, per each | \$ |
| 9.4 | 2 | EA | Dry Mine Seal with bat gate, Type II, per each | \$ |
| 9.5 | 2 | EA | Wet Mine Seal with bat gate, per each | \$ |
| 9.6 | 1 | EA | Standard Bat Gate, per each | \$ |
| 9.7 | 1 | EA | Mine Water Outlet Drain, per each | \$ |
| 9.8 | 20 | BAG | Soda Ash Briquettes, per 50 pound bag | \$ |
| 13.1 | 200 | TON | No. 1 Stone, per ton | \$ |
| 13.2 | 200 | TON | Crusher Run Stone, per ton | \$ |
| 14.0 | LS | LS | Structure Demolition, per lump sum | LS |

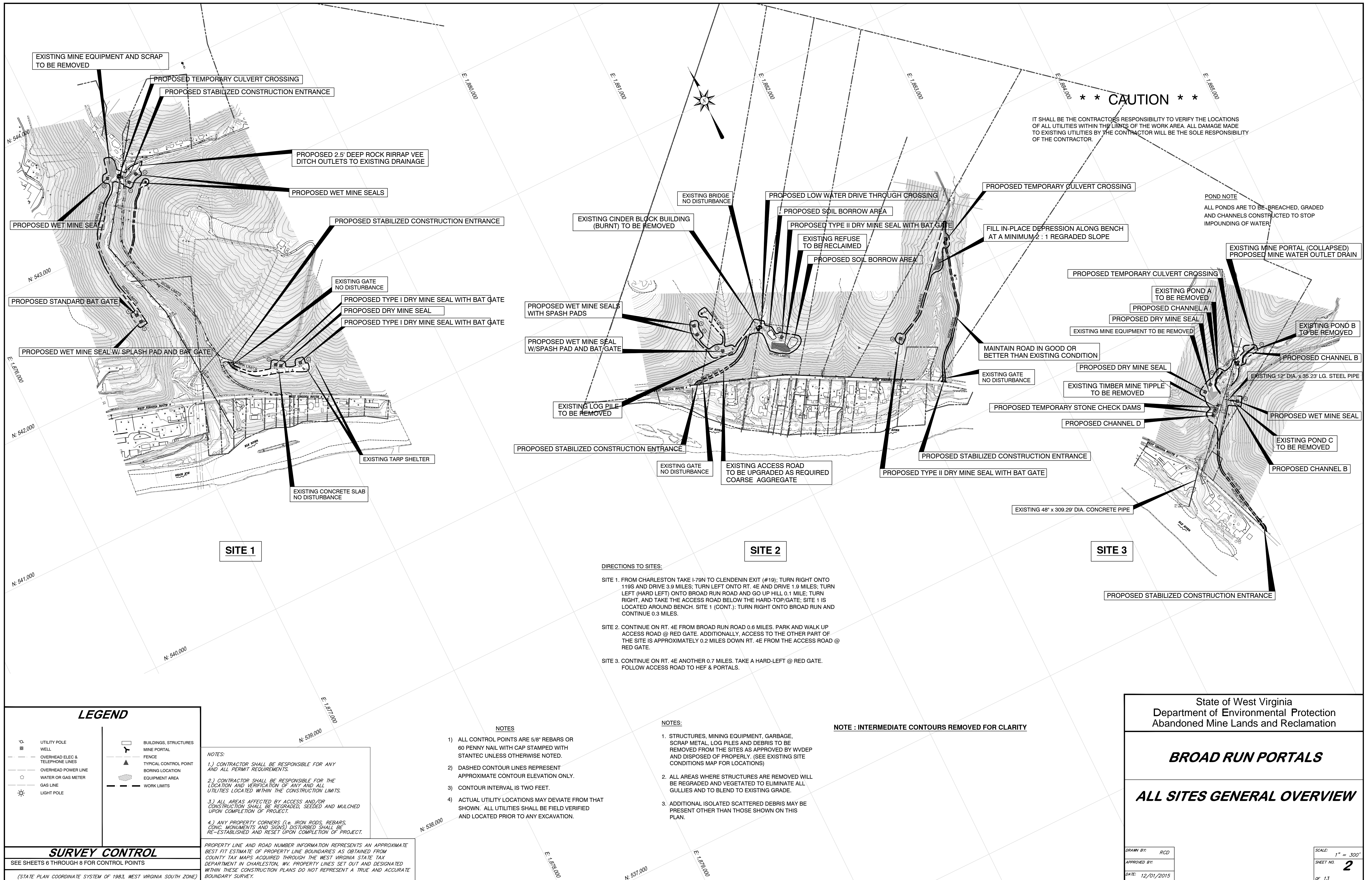


Allen L. Wood
APPROVED

8/10/15
DATE



COUNTY HIGHWAY MAP, 1" = 1 MI.



CAUTION

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK AREA. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

POND NOTE

ALL PONDS ARE TO BE BREACHED, GRADED AND CHANNELS CONSTRUCTED TO STOP IMPOUNDING OF WATER.

SITE 1

SITE 2

SITE 3

DIRECTIONS TO SITES:

SITE 1. FROM CHARLESTON TAKE I-79N TO CLENDENIN EXIT (#19); TURN RIGHT ONTO 119S AND DRIVE 3.9 MILES; TURN LEFT ONTO RT. 4E AND DRIVE 1.9 MILES; TURN LEFT (HARD LEFT) ONTO BROAD RUN ROAD AND GO UP HILL 0.1 MILE; TURN RIGHT, AND TAKE THE ACCESS ROAD BELOW THE HARD-TOP/GATE; SITE 1 IS LOCATED AROUND BENCH. SITE 1 (CONT.): TURN RIGHT ONTO BROAD RUN AND CONTINUE 0.3 MILES.

SITE 2. CONTINUE ON RT. 4E FROM BROAD RUN ROAD 0.6 MILES. PARK AND WALK UP ACCESS ROAD @ RED GATE. ADDITIONALLY, ACCESS TO THE OTHER PART OF THE SITE IS APPROXIMATELY 0.2 MILES DOWN RT. 4E FROM THE ACCESS ROAD @ RED GATE.

SITE 3. CONTINUE ON RT. 4E ANOTHER 0.7 MILES. TAKE A HARD-LEFT @ RED GATE. FOLLOW ACCESS ROAD TO HEF & PORTALS.

- NOTES**
- 1.) ALL CONTROL POINTS ARE 5/8" REBARS OR 60 PENNY NAIL WITH CAP STAMPED WITH STANTEC UNLESS OTHERWISE NOTED.
 - 2.) DASHED CONTOUR LINES REPRESENT APPROXIMATE CONTOUR ELEVATION ONLY.
 - 3.) CONTOUR INTERVAL IS TWO FEET.
 - 4.) ACTUAL UTILITY LOCATIONS MAY DEVIATE FROM THAT SHOWN. ALL UTILITIES SHALL BE FIELD VERIFIED AND LOCATED PRIOR TO ANY EXCAVATION.

- NOTES:**
- NOTE : INTERMEDIATE CONTOURS REMOVED FOR CLARITY**
1. STRUCTURES, MINING EQUIPMENT, GARBAGE, SCRAP METAL, LOG PILES AND DEBRIS TO BE REMOVED FROM THE SITES AS APPROVED BY WVDEP AND DISPOSED OF PROPERLY. (SEE EXISTING SITE CONDITIONS MAP FOR LOCATIONS)
 2. ALL AREAS WHERE STRUCTURES ARE REMOVED WILL BE REGRADED AND VEGETATED TO ELIMINATE ALL GULLIES AND TO BLEND TO EXISTING GRADE.
 3. ADDITIONAL ISOLATED SCATTERED DEBRIS MAY BE PRESENT OTHER THAN THOSE SHOWN ON THIS PLAN.

LEGEND

| | | | |
|---|---------------------------------|-----|-----------------------|
| ○ | UTILITY POLE | □ | BUILDINGS, STRUCTURES |
| ● | WELL | ⊙ | MINE PORTAL |
| — | OVERHEAD ELEC & TELEPHONE LINES | — | FENCE |
| — | OVERHEAD POWER LINE | ▲ | TYPICAL CONTROL POINT |
| ○ | WATER OR GAS METER | ● | BORING LOCATION |
| — | GAS LINE | ■ | EQUIPMENT AREA |
| ⊙ | LIGHT POLE | --- | WORK LIMITS |

SURVEY CONTROL

SEE SHEETS 6 THROUGH 8 FOR CONTROL POINTS

(STATE PLAN COORDINATE SYSTEM OF 1983, WEST VIRGINIA SOUTH ZONE)

NOTES:

- 1.) CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL PERMIT REQUIREMENTS.
- 2.) CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND VERIFICATION OF ANY AND ALL UTILITIES LOCATED WITHIN THE CONSTRUCTION LIMITS.
- 3.) ALL AREAS AFFECTED BY ACCESS AND/OR CONSTRUCTION SHALL BE REGRADED, SEEDING AND MULCHED UPON COMPLETION OF PROJECT.
- 4.) ANY PROPERTY CORNERS (i.e. IRON RODS, REBARS, CONC. MONUMENTS AND SIGNS) DISTURBED SHALL BE RE-ESTABLISHED AND RESET UPON COMPLETION OF PROJECT.

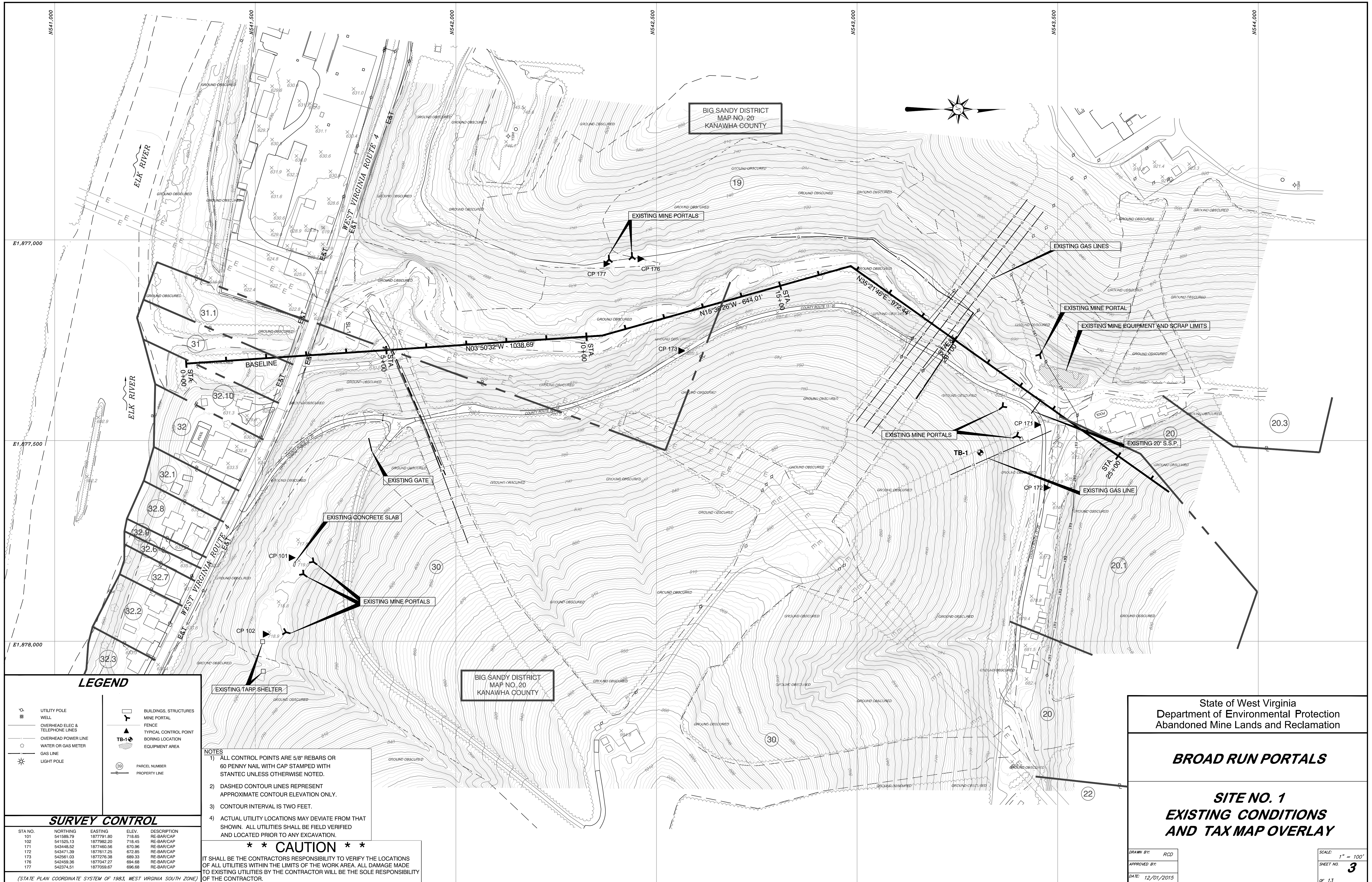
PROPERTY LINE AND ROAD NUMBER INFORMATION REPRESENTS AN APPROXIMATE BEST FIT ESTIMATE OF PROPERTY LINE BOUNDARIES AS OBTAINED FROM COUNTY TAX MAPS ACQUIRED THROUGH THE WEST VIRGINIA STATE TAX DEPARTMENT IN CHARLESTON, WV. PROPERTY LINES SET OUT AND DESIGNATED WITHIN THESE CONSTRUCTION PLANS DO NOT REPRESENT A TRUE AND ACCURATE BOUNDARY SURVEY.

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BROAD RUN PORTALS

ALL SITES GENERAL OVERVIEW

| | |
|------------------|------------------|
| DRAWN BY: RCD | SCALE: 1" = 300' |
| APPROVED BY: | SHEET NO. 2 |
| DATE: 12/01/2015 | OF 13 |



BIG SANDY DISTRICT
MAP NO. 20
KANAWHA COUNTY

BIG SANDY DISTRICT
MAP NO. 20
KANAWHA COUNTY

LEGEND

- UTILITY POLE
- WELL
- OVERHEAD ELEC. & TELEPHONE LINES
- OVERHEAD POWER LINE
- WATER OR GAS METER
- GAS LINE
- LIGHT POLE
- BUILDINGS, STRUCTURES
- MINE PORTAL
- FENCE
- TYPICAL CONTROL POINT
- BORING LOCATION
- EQUIPMENT AREA
- PARCEL NUMBER
- PROPERTY LINE

SURVEY CONTROL

| STA NO. | NORTHING | EASTING | ELEV. | DESCRIPTION |
|---------|-----------|-----------|--------|-------------|
| 101 | 541589.79 | 187791.80 | 718.65 | RE-BAR/CAP |
| 102 | 541525.13 | 187792.20 | 718.45 | RE-BAR/CAP |
| 171 | 543448.52 | 187480.96 | 670.96 | RE-BAR/CAP |
| 172 | 543471.39 | 187761.25 | 672.85 | RE-BAR/CAP |
| 173 | 542561.03 | 187726.38 | 683.33 | RE-BAR/CAP |
| 176 | 542559.36 | 187704.27 | 694.68 | RE-BAR/CAP |
| 177 | 542374.51 | 187705.67 | 696.68 | RE-BAR/CAP |

NOTES

- 1) ALL CONTROL POINTS ARE 5/8" REBARS OR 60 PENNY NAIL WITH CAP STAMPED WITH STANTEC UNLESS OTHERWISE NOTED.
- 2) DASHED CONTOUR LINES REPRESENT APPROXIMATE CONTOUR ELEVATION ONLY.
- 3) CONTOUR INTERVAL IS TWO FEET.
- 4) ACTUAL UTILITY LOCATIONS MAY DEVIATE FROM THAT SHOWN. ALL UTILITIES SHALL BE FIELD VERIFIED AND LOCATED PRIOR TO ANY EXCAVATION.

**** CAUTION ****

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK AREA. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

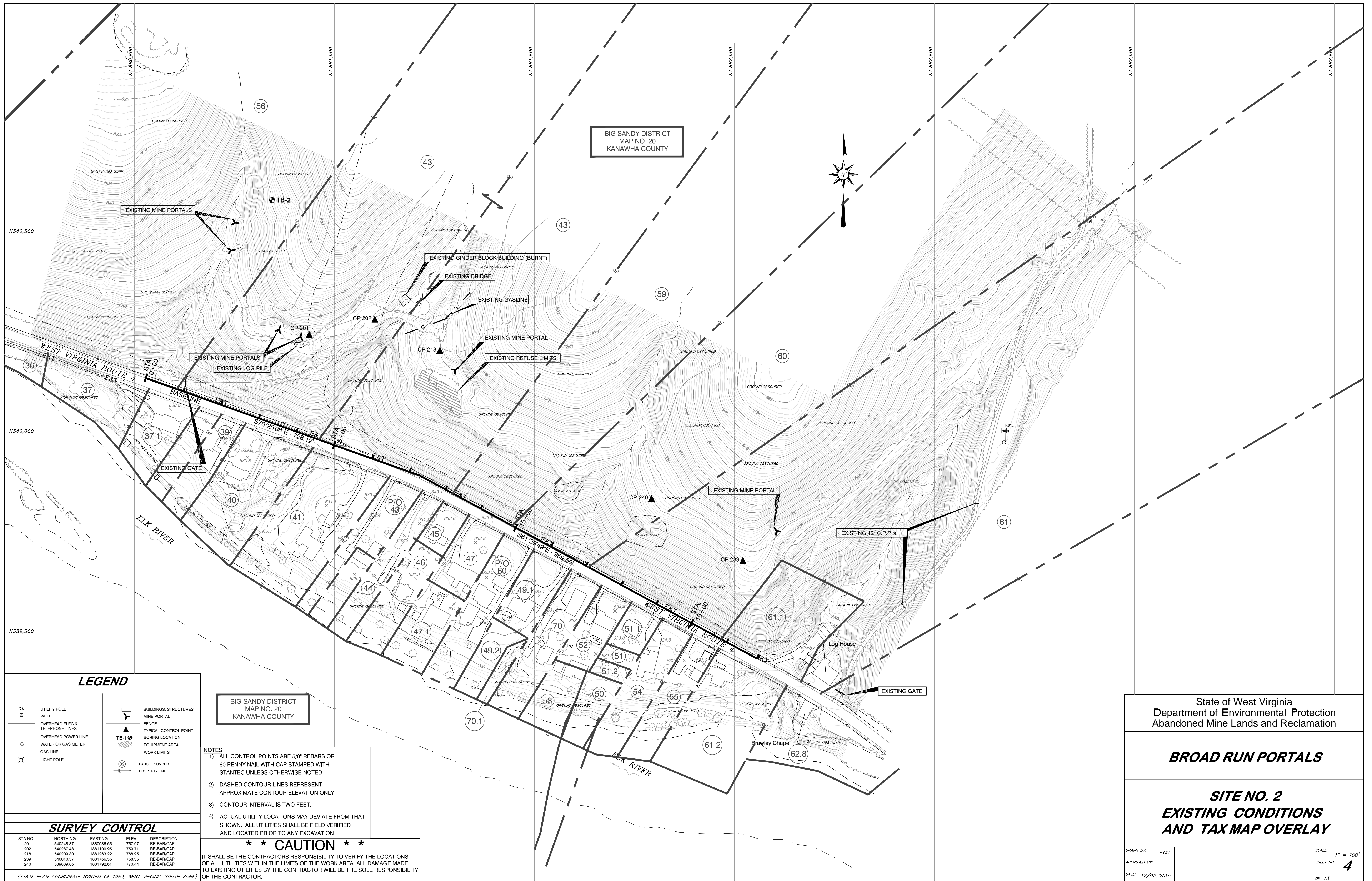
BROAD RUN PORTALS

**SITE NO. 1
EXISTING CONDITIONS
AND TAX MAP OVERLAY**

DRAWN BY: RCD
APPROVED BY:
DATE: 12/01/2015

SCALE: 1" = 100'
SHEET NO. 3
OF 13

(STATE PLAN COORDINATE SYSTEM OF 1983, WEST VIRGINIA SOUTH ZONE)



BIG SANDY DISTRICT
MAP NO. 20
KANAWHA COUNTY

BIG SANDY DISTRICT
MAP NO. 20
KANAWHA COUNTY

LEGEND

- UTILITY POLE
- WELL
- OVERHEAD ELEC & TELEPHONE LINES
- OVERHEAD POWER LINE
- WATER OR GAS METER
- GAS LINE
- LIGHT POLE
- BUILDINGS, STRUCTURES
- MINE PORTAL
- FENCE
- TYPICAL CONTROL POINT
- BORING LOCATION
- EQUIPMENT AREA
- WORK LIMITS
- PARCEL NUMBER
- PROPERTY LINE

NOTES

- 1) ALL CONTROL POINTS ARE 5/8" REBARS OR 60 PENNY NAIL WITH CAP STAMPED WITH STANTEC UNLESS OTHERWISE NOTED.
- 2) DASHED CONTOUR LINES REPRESENT APPROXIMATE CONTOUR ELEVATION ONLY.
- 3) CONTOUR INTERVAL IS TWO FEET.
- 4) ACTUAL UTILITY LOCATIONS MAY DEVIATE FROM THAT SHOWN. ALL UTILITIES SHALL BE FIELD VERIFIED AND LOCATED PRIOR TO ANY EXCAVATION.

**** CAUTION ****

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK AREA. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

SURVEY CONTROL

| STA NO. | NORTHING | EASTING | ELEV. | DESCRIPTION |
|---------|-----------|------------|--------|-------------|
| 201 | 540248.87 | 1880936.65 | 757.07 | RE-BAR/CAP |
| 202 | 540287.48 | 1881100.95 | 759.71 | RE-BAR/CAP |
| 218 | 540039.50 | 1881293.22 | 768.95 | RE-BAR/CAP |
| 239 | 540010.57 | 1881766.56 | 768.35 | RE-BAR/CAP |
| 240 | 539839.86 | 1881792.61 | 770.44 | RE-BAR/CAP |

(STATE PLAN COORDINATE SYSTEM OF 1983, WEST VIRGINIA SOUTH ZONE)

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BROAD RUN PORTALS

**SITE NO. 2
EXISTING CONDITIONS
AND TAX MAP OVERLAY**

DRAWN BY: RCD
APPROVED BY:
DATE: 12/02/2015

SCALE: 1" = 100'
SHEET NO. 4
OF 13



BIG SANDY DISTRICT
MAP NO. 20
KANAWHA COUNTY

LEGEND

| | | | |
|--|---------------------------------|--|-----------------------|
| | UTILITY POLE | | BUILDINGS, STRUCTURES |
| | WELL | | MINE PORTAL |
| | OVERHEAD ELEC & TELEPHONE LINES | | FENCE |
| | OVERHEAD POWER LINE | | TYPICAL CONTROL POINT |
| | WATER OR GAS METER | | BORING LOCATION |
| | GAS LINE | | EQUIPMENT AREA |
| | LIGHT POLE | | WORK LIMITS |
| | | | PARCEL NUMBER |
| | | | PROPERTY LINE |

NOTES

- 1) ALL CONTROL POINTS ARE 5/8" REBARS OR 60 PENNY NAIL WITH CAP STAMPED WITH STANTEC UNLESS OTHERWISE NOTED.
- 2) DASHED CONTOUR LINES REPRESENT APPROXIMATE CONTOUR ELEVATION ONLY.
- 3) CONTOUR INTERVAL IS TWO FEET.
- 4) ACTUAL UTILITY LOCATIONS MAY DEVIATE FROM THAT SHOWN. ALL UTILITIES SHALL BE FIELD VERIFIED AND LOCATED PRIOR TO ANY EXCAVATION.

**** CAUTION ****

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK AREA. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

SURVEY CONTROL

| STA NO. | NORTHING | EASTING | ELEV. | DESCRIPTION |
|---------|-----------|------------|--------|-------------|
| 346 | 537952.55 | 1883601.27 | 632.77 | RE-BAR/CAP |
| 10001 | 538429.32 | 1884227.99 | 770.88 | RE-BAR/CAP |
| 10002 | 538173.87 | 1884092.36 | 770.99 | RE-BAR/CAP |

(STATE PLAN COORDINATE SYSTEM OF 1983, WEST VIRGINIA SOUTH ZONE)

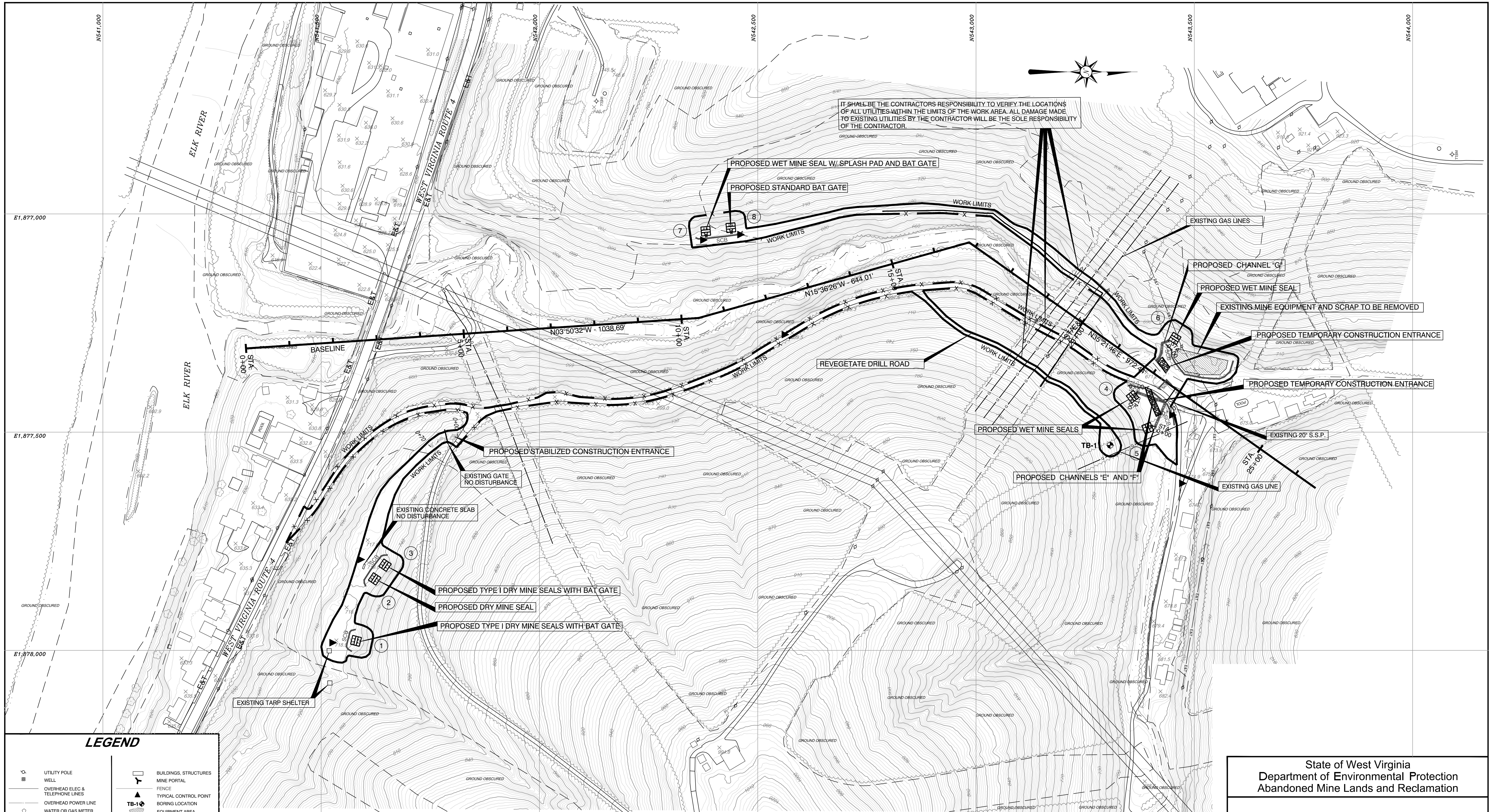
State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BROAD RUN PORTALS

**SITE NO. 3
EXISTING CONDITIONS
AND TAX MAP OVERLAY**

DRAWN BY: RCD
APPROVED BY:
DATE: 12/02/2015

SCALE: 1" = 100'
SHEET NO. **5**
OF 13



IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK AREA. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

LEGEND

| | | | |
|--|---------------------------------|--|---------------------------|
| | UTILITY POLE | | BUILDINGS, STRUCTURES |
| | WELL | | MINE PORTAL |
| | OVERHEAD ELEC & TELEPHONE LINES | | FENCE |
| | OVERHEAD POWER LINE | | TYPICAL CONTROL POINT |
| | WATER OR GAS METER | | BORING LOCATION |
| | GAS LINE | | EQUIPMENT AREA |
| | LIGHT POLE | | WORK LIMITS |
| | | | PORTAL NUMBER & MINE SEAL |

SURVEY CONTROL

| STA NO. | NORTHING | EASTING | ELEV. | DESCRIPTION |
|---------|-----------|------------|--------|-------------|
| 101 | 541589.79 | 1877791.80 | 718.05 | RE-BAR/CAP |
| 102 | 541525.13 | 1877982.20 | 718.45 | RE-BAR/CAP |
| 171 | 543448.52 | 1877460.56 | 670.96 | RE-BAR/CAP |
| 172 | 543471.29 | 1877617.25 | 672.85 | RE-BAR/CAP |
| 173 | 542951.00 | 1877276.58 | 688.33 | RE-BAR/CAP |
| 176 | 542459.36 | 1877047.27 | 694.68 | RE-BAR/CAP |
| 177 | 542374.51 | 1877059.67 | 696.68 | RE-BAR/CAP |

(STATE PLAN COORDINATE SYSTEM OF 1983, WEST VIRGINIA SOUTH ZONE)

- NOTES**
- 1) ALL CONTROL POINTS ARE 5/8" REBARS OR 60 PENNY NAIL WITH CAP STAMPED WITH STANTEC UNLESS OTHERWISE NOTED.
 - 2) DASHED CONTOUR LINES REPRESENT APPROXIMATE CONTOUR ELEVATION ONLY.
 - 3) CONTOUR INTERVAL IS TWO FEET.
 - 4) ACTUAL UTILITY LOCATIONS MAY DEVIATE FROM THAT SHOWN. ALL UTILITIES SHALL BE FIELD VERIFIED AND LOCATED PRIOR TO ANY EXCAVATION.

**** CAUTION ****

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK AREA. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

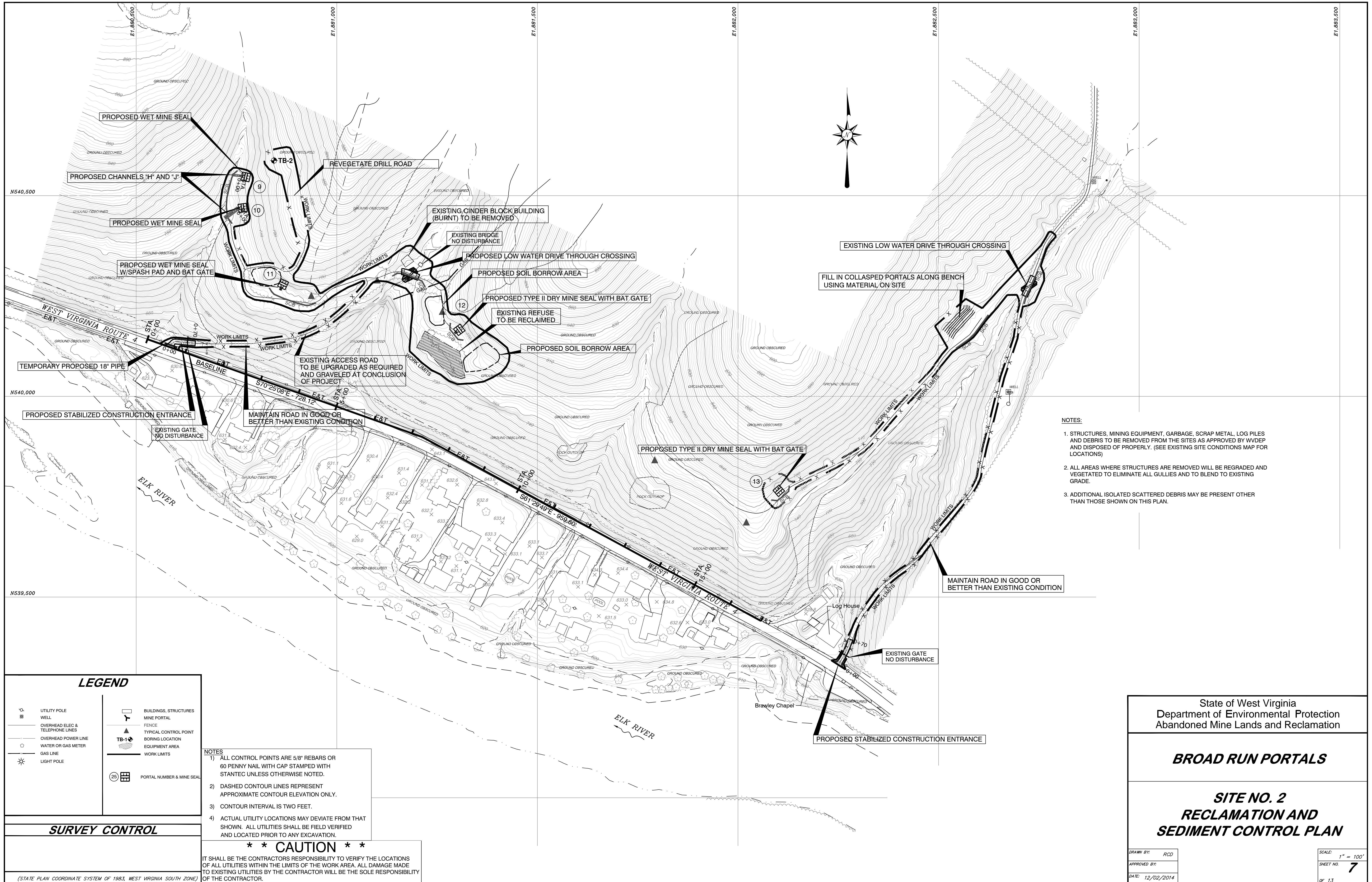
State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BROAD RUN PORTALS

**SITE NO. 1
RECLAMATION AND
SEDIMENT CONTROL PLAN**

DRAWN BY: RCD
APPROVED BY:
DATE: 12/02/2014

SCALE: 1" = 100'
SHEET NO. **6**
OF 13



- NOTES:**
1. STRUCTURES, MINING EQUIPMENT, GARBAGE, SCRAP METAL, LOG PILES AND DEBRIS TO BE REMOVED FROM THE SITES AS APPROVED BY WVDEP AND DISPOSED OF PROPERLY. (SEE EXISTING SITE CONDITIONS MAP FOR LOCATIONS)
 2. ALL AREAS WHERE STRUCTURES ARE REMOVED WILL BE REGRADED AND VEGETATED TO ELIMINATE ALL GULLIES AND TO BLEND TO EXISTING GRADE.
 3. ADDITIONAL ISOLATED SCATTERED DEBRIS MAY BE PRESENT OTHER THAN THOSE SHOWN ON THIS PLAN.

| LEGEND | |
|--------|---------------------------------|
| | UTILITY POLE |
| | WELL |
| | OVERHEAD ELEC & TELEPHONE LINES |
| | OVERHEAD POWER LINE |
| | WATER OR GAS METER |
| | GAS LINE |
| | LIGHT POLE |
| | BUILDINGS, STRUCTURES |
| | MINE PORTAL |
| | FENCE |
| | TYPICAL CONTROL POINT |
| | BORING LOCATION |
| | EQUIPMENT AREA |
| | WORK LIMITS |
| | PORTAL NUMBER & MINE SEAL |

- NOTES**
- 1) ALL CONTROL POINTS ARE 5/8" REBARS OR 60 PENNY NAIL WITH CAP STAMPED WITH STANTEC UNLESS OTHERWISE NOTED.
 - 2) DASHED CONTOUR LINES REPRESENT APPROXIMATE CONTOUR ELEVATION ONLY.
 - 3) CONTOUR INTERVAL IS TWO FEET.
 - 4) ACTUAL UTILITY LOCATIONS MAY DEVIATE FROM THAT SHOWN. ALL UTILITIES SHALL BE FIELD VERIFIED AND LOCATED PRIOR TO ANY EXCAVATION.

**** CAUTION ****

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK AREA. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

SURVEY CONTROL

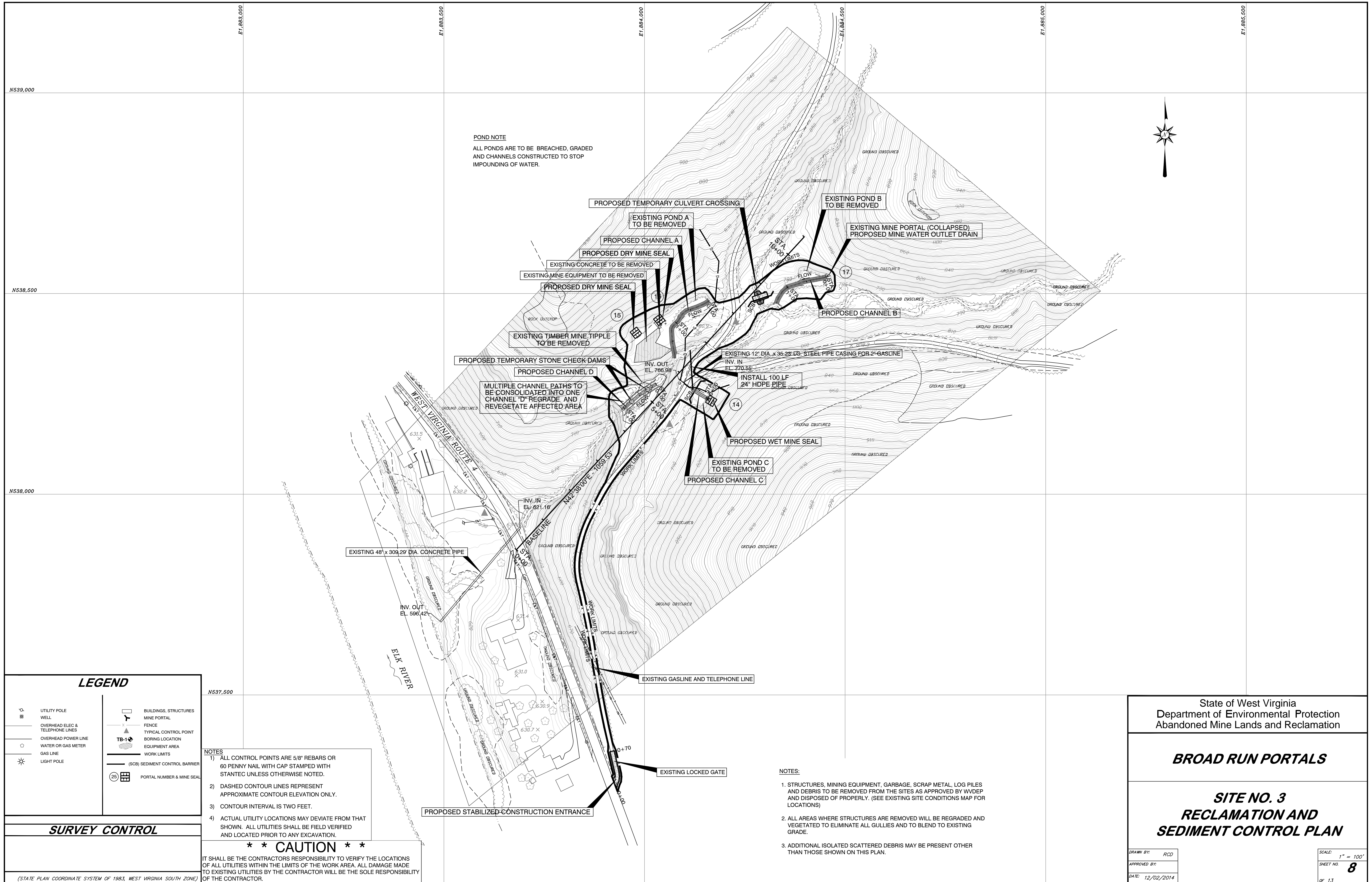
(STATE PLAN COORDINATE SYSTEM OF 1983, WEST VIRGINIA SOUTH ZONE)

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

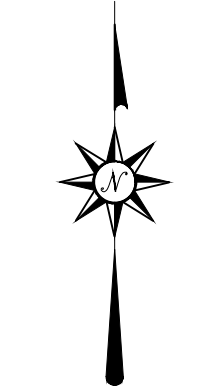
BROAD RUN PORTALS

**SITE NO. 2
RECLAMATION AND
SEDIMENT CONTROL PLAN**

| | |
|------------------|------------------|
| DRAWN BY: RCD | SCALE: 1" = 100' |
| APPROVED BY: | SHEET NO. 7 |
| DATE: 12/02/2014 | OF 13 |



POND NOTE
 ALL PONDS ARE TO BE BREACHED, GRADED
 AND CHANNELS CONSTRUCTED TO STOP
 IMPOUNDING OF WATER.



| LEGEND | |
|--------|---------------------------------|
| | UTILITY POLE |
| | WELL |
| | OVERHEAD ELEC & TELEPHONE LINES |
| | OVERHEAD POWER LINE |
| | WATER OR GAS METER |
| | GAS LINE |
| | LIGHT POLE |
| | BUILDINGS, STRUCTURES |
| | MINE PORTAL |
| | FENCE |
| | TYPICAL CONTROL POINT |
| | BORING LOCATION |
| | EQUIPMENT AREA |
| | WORK LIMITS |
| | (SCB) SEDIMENT CONTROL BARRIER |
| | PORTAL NUMBER & MINE SEAL |

- NOTES**
- 1) ALL CONTROL POINTS ARE 5/8" REBARS OR 60 PENNY NAIL WITH CAP STAMPED WITH STANTEC UNLESS OTHERWISE NOTED.
 - 2) DASHED CONTOUR LINES REPRESENT APPROXIMATE CONTOUR ELEVATION ONLY.
 - 3) CONTOUR INTERVAL IS TWO FEET.
 - 4) ACTUAL UTILITY LOCATIONS MAY DEVIATE FROM THAT SHOWN. ALL UTILITIES SHALL BE FIELD VERIFIED AND LOCATED PRIOR TO ANY EXCAVATION.

**** CAUTION ****

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK AREA. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

- NOTES:**
1. STRUCTURES, MINING EQUIPMENT, GARBAGE, SCRAP METAL, LOG PILES AND DEBRIS TO BE REMOVED FROM THE SITES AS APPROVED BY WVDEP AND DISPOSED OF PROPERLY. (SEE EXISTING SITE CONDITIONS MAP FOR LOCATIONS)
 2. ALL AREAS WHERE STRUCTURES ARE REMOVED WILL BE REGRADED AND VEGETATED TO ELIMINATE ALL GULLIES AND TO BLEND TO EXISTING GRADE.
 3. ADDITIONAL ISOLATED SCATTERED DEBRIS MAY BE PRESENT OTHER THAN THOSE SHOWN ON THIS PLAN.

SURVEY CONTROL

(STATE PLAN COORDINATE SYSTEM OF 1983, WEST VIRGINIA SOUTH ZONE)

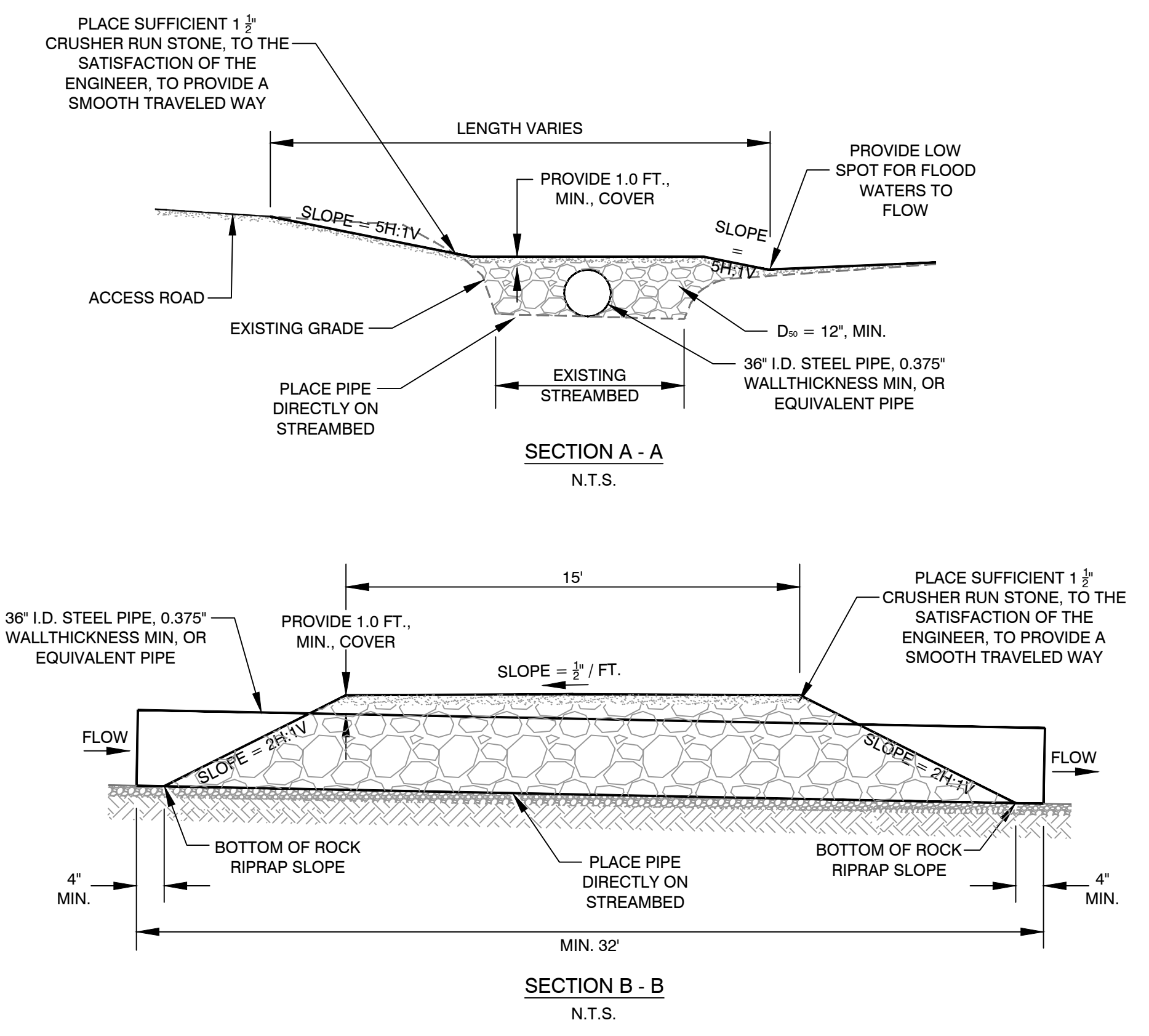
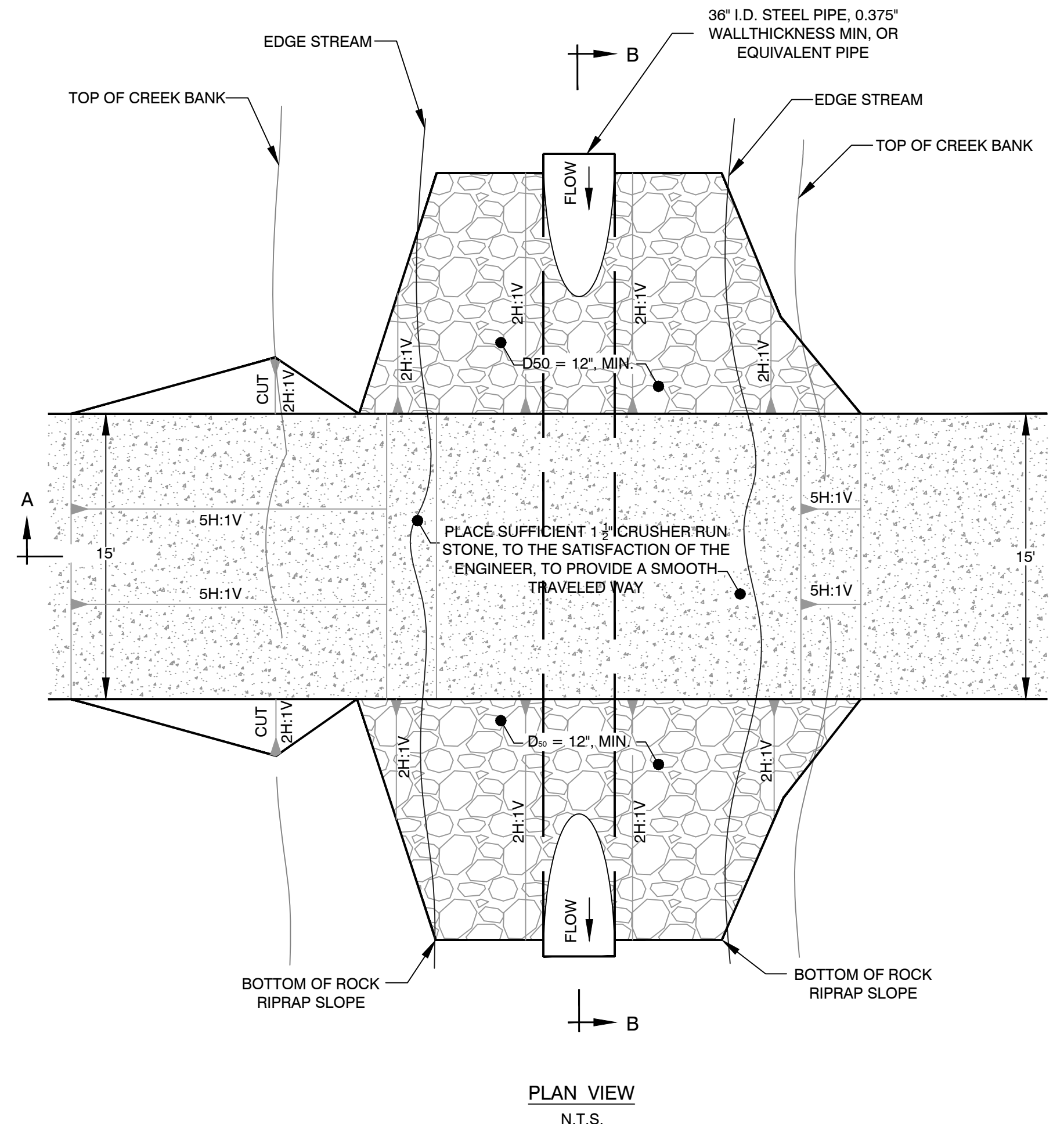
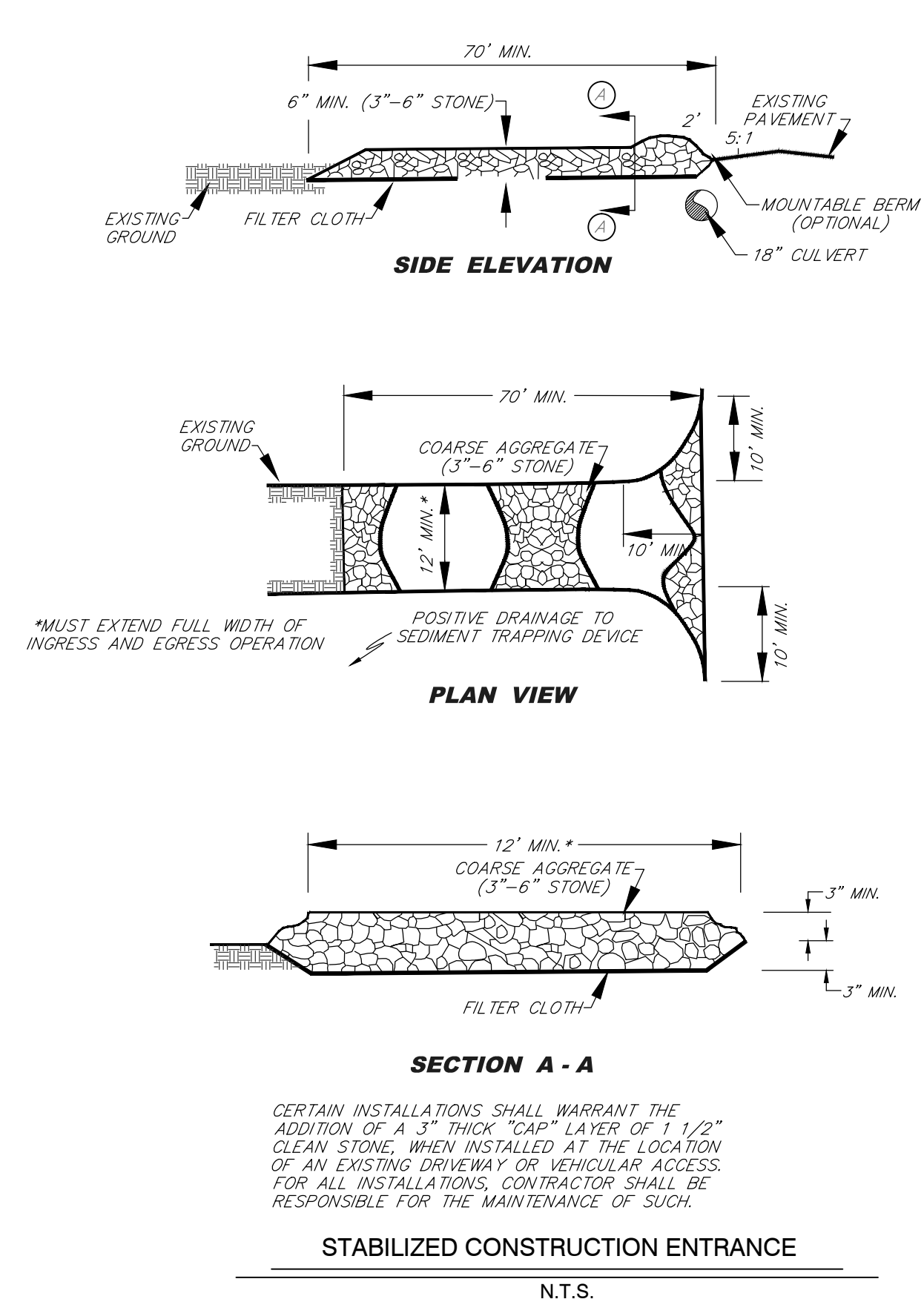
State of West Virginia
 Department of Environmental Protection
 Abandoned Mine Lands and Reclamation

BROAD RUN PORTALS

**SITE NO. 3
 RECLAMATION AND
 SEDIMENT CONTROL PLAN**

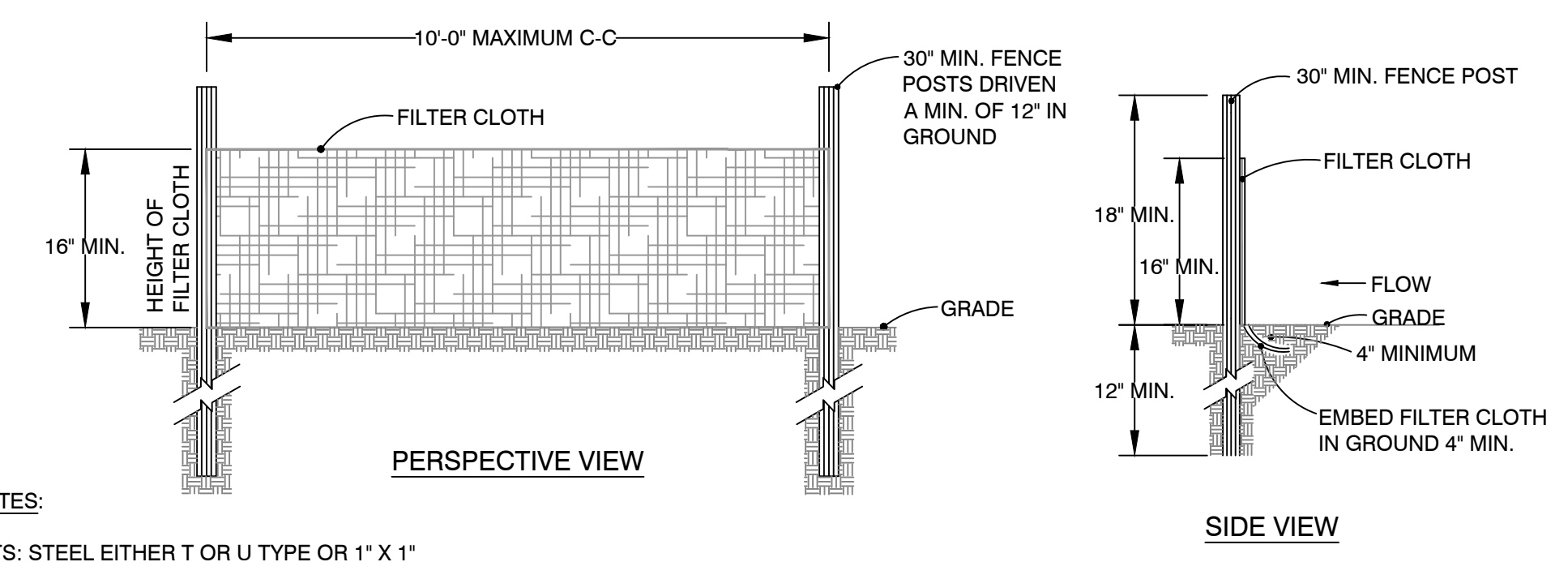
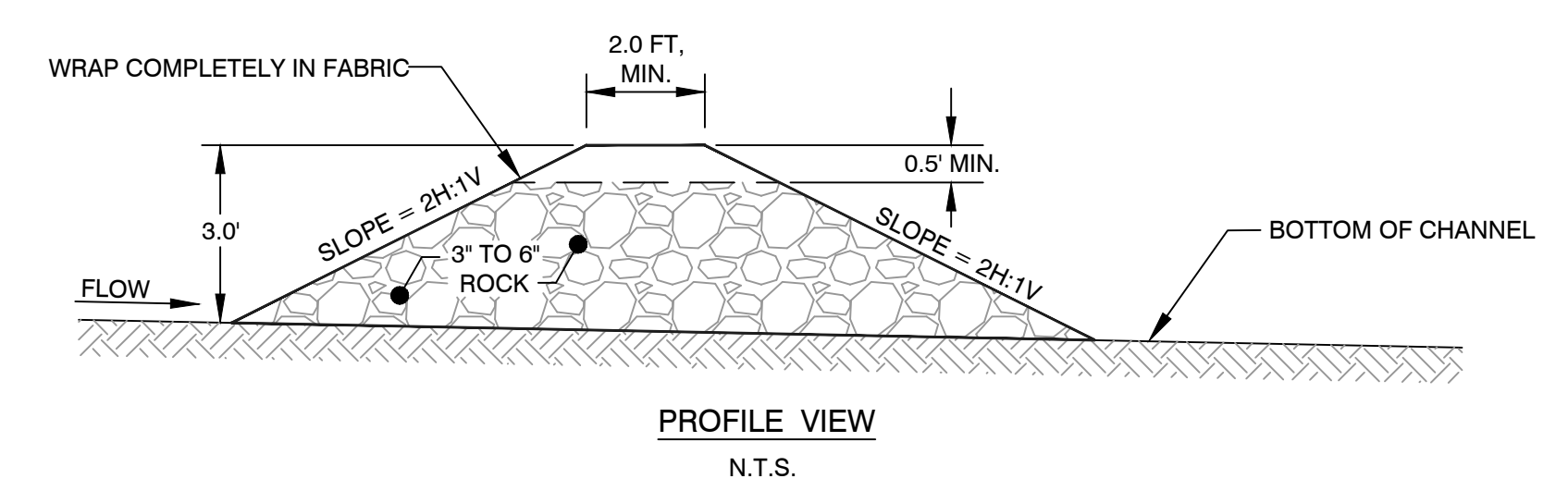
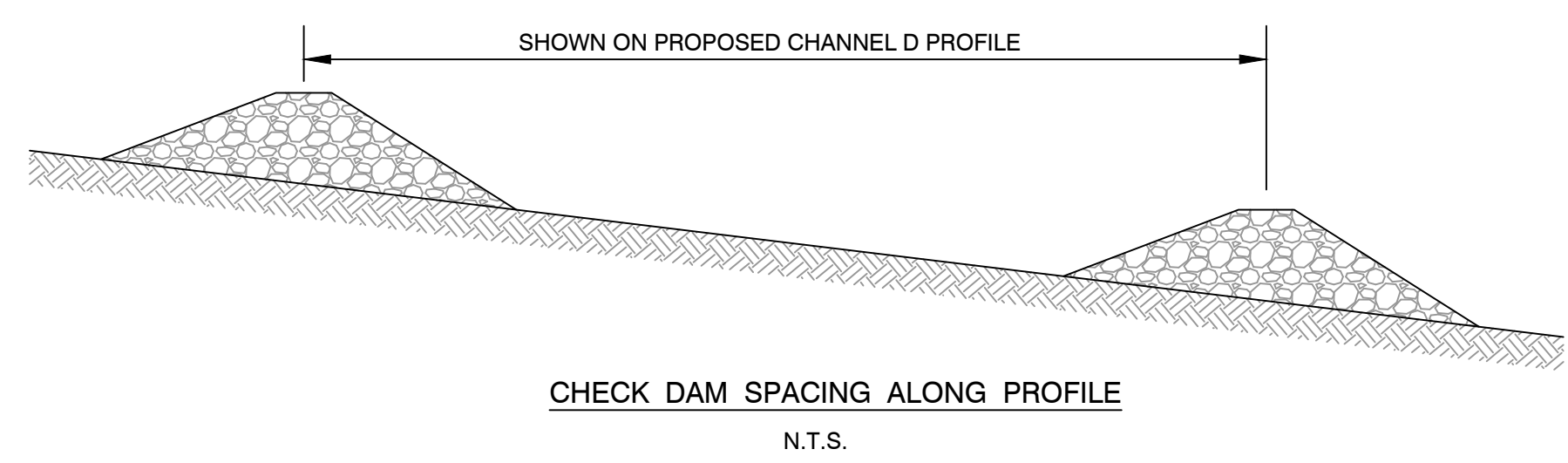
DRAWN BY: RCD
 APPROVED BY:
 DATE: 12/02/2014

SCALE: 1" = 100'
 SHEET NO. **8**
 OF 13



- NOTES:**
- 1) 1 1/2" CRUSHER RUN STONE SHALL MEET THE GRADATION REQUIREMENTS FOR CLASS 1 AGGREGATE IN TABLE 704.6.2A OF THE WDOH SPECIFICATIONS FOR ROADS AND BRIDGES.
 - 2) AFTER ALL RECLAMATION OPERATIONS ARE COMPLETE USING THE TEMPORARY CROSSING, THE CONTRACTOR SHALL REMOVE AND DISCARD ALL INSTALLED COMPONENTS (PIPE AND STONE) AND RESTORE THE CREEK BED AND BANKS TO PRE-CONSTRUCTION CONDITIONS. ALL TO THE SATISFACTION OF THE ENGINEER.

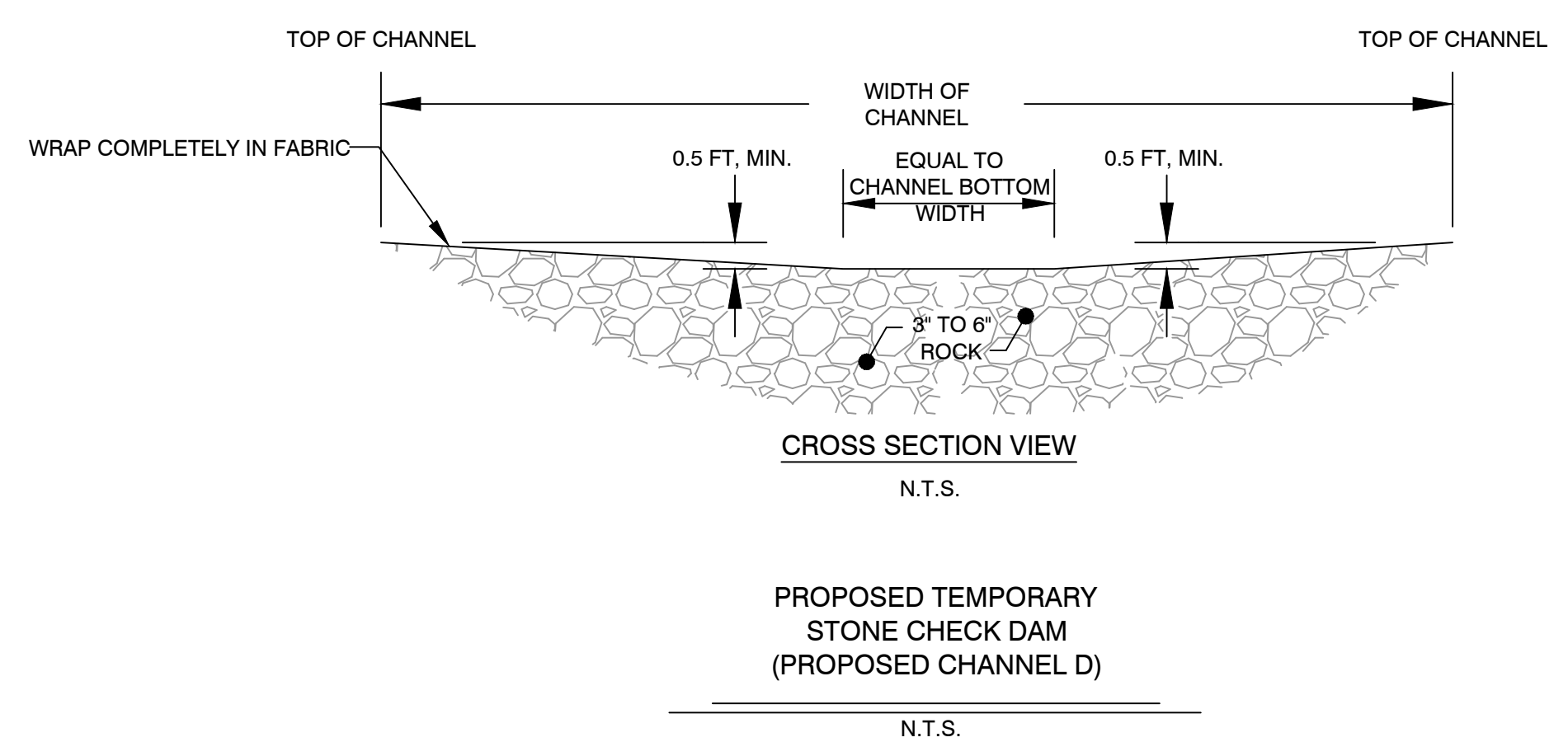
PROPOSED TEMPORARY 36" CULVERT CROSSING
(TYPICAL PLAN WILL VARY ON EACH SITE)
N.T.S.



- SCB NOTES:**
- 1.) POSTS: STEEL EITHER T OR U TYPE OR 1" X 1" HARDWOOD.
 - 2.) FILTER CLOTH TO BE FASTENED SECURELY POSTS WITH STAPLES, NAILS, WIRE, CORD OR POCKETS.

SEDIMENT CONTROL BARRIER (SILT FENCE)
N.T.S.

- PROPOSED TEMPORARY STONE CHECK DAM NOTES:**
1. ROCK SHALL CONSIST OF CRUSHED STONE OR ROUGH SHOT ROCK. IN-PLACE RAMMED OR HAMMERED ROCK SHALL BE ACCEPTABLE. THE ROCK SHALL BE HARD DURABLE SANDSTONE OR LIMESTONE. THE ROCK SHALL HAVE A MAXIMUM WEIGHTED LOSS OF THIRTY (30) PERCENT WHEN SUBJECTED TO FIVE (5) CYCLES OF THE SODIUM SULFATE SOUNDNESS TEST; ASTM C-88 AS MODIFIED BY AASHTO T-104 (MODIFIED FOR TESTING OF LEDGE ROCK), SHALE OR OTHER ROCK WITH HIGH WEATHERING POTENTIAL SHALL NOT BE USED.
 2. ROCK SHALL BE WELL-GRADED ROCK RANGING IN SIZE FROM THREE (3) TO SIX (6) INCHES WITH A MEDIAN DIAMETER (D₅₀) OF FOUR AND FIVE TENTHS (4.5) INCHES.
 3. STONE CHECK DAMS SHALL BE REMOVED AFTER REVEGETATION AND DIRECTED BY THE ENGINEER.



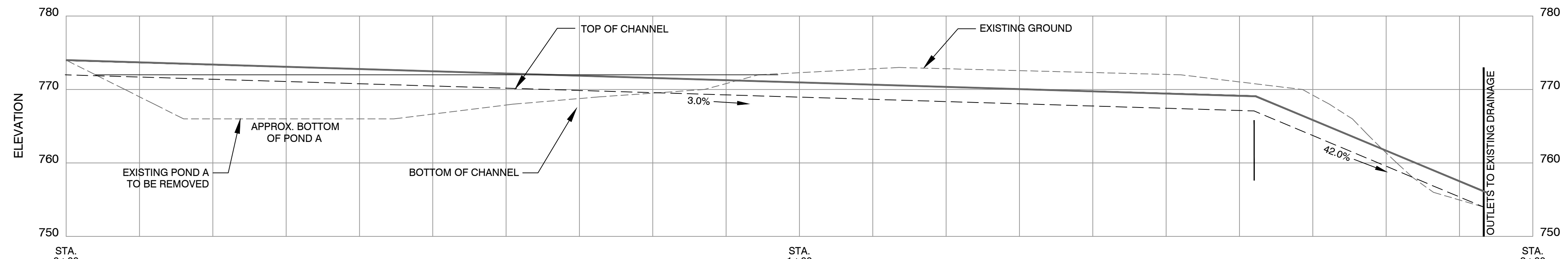
State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BROAD RUN PORTALS

SEDIMENT CONTROL DETAILS

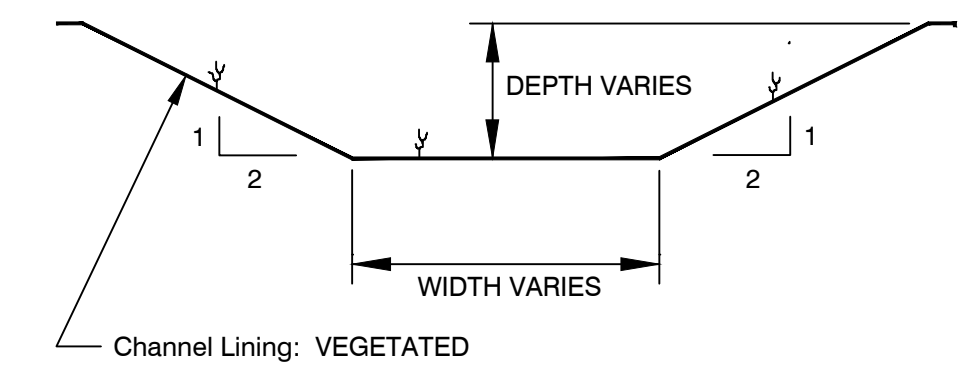
DRAWN BY: RCD
APPROVED BY:
DATE: 12/02/2014

SCALE: AS NOTED
SHEET NO. 9
OF 13

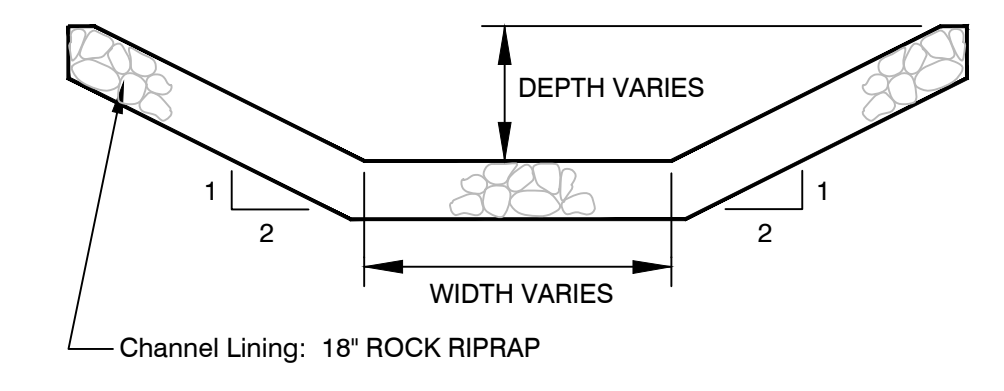


PROPOSED CHANNEL A
SCALE 0' 5' 10' 15'

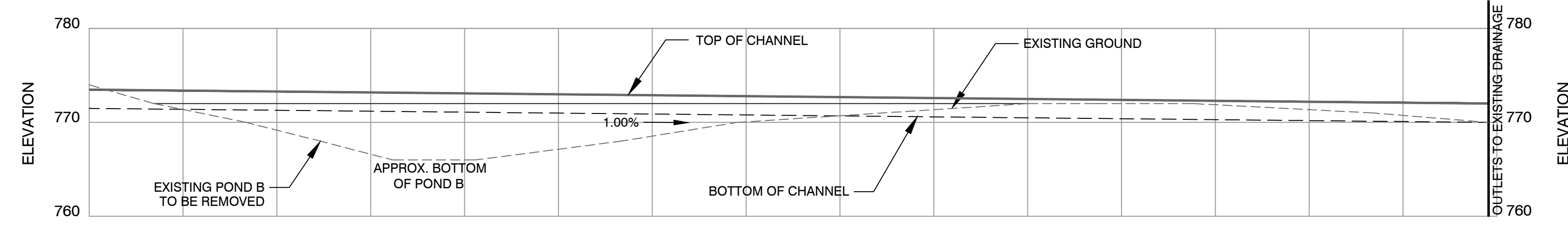
| STATION FROM | STATION TO | DEPTH (FT.) | BOTTOM WIDTH (FT.) | CHANNEL PROTECTION |
|--------------|------------|-------------|--------------------|--------------------|
| 00+00 | 01+62 | 2.0 | 4.0 | VEGETATED |
| 01+62 | 01+93 | 1.5 | 5.0 | ROCK RIPRAP |



TYPICAL CHANNEL B, C, E, F AND G DETAIL
N.T.S.

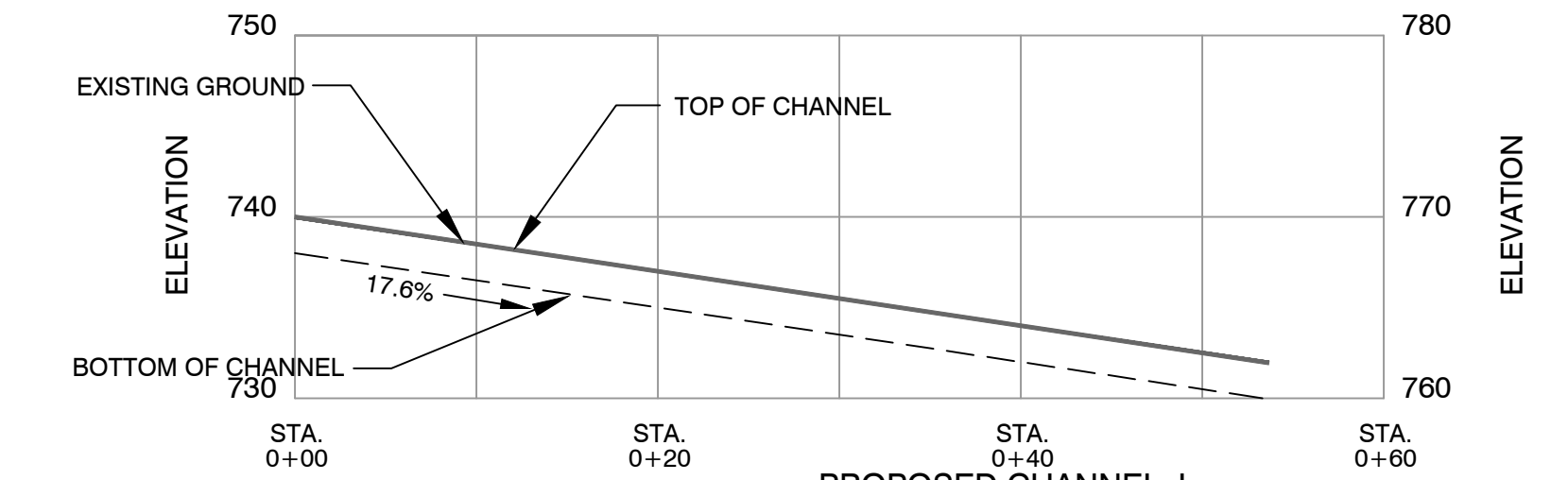


TYPICAL CHANNEL A AND D DETAIL
N.T.S.



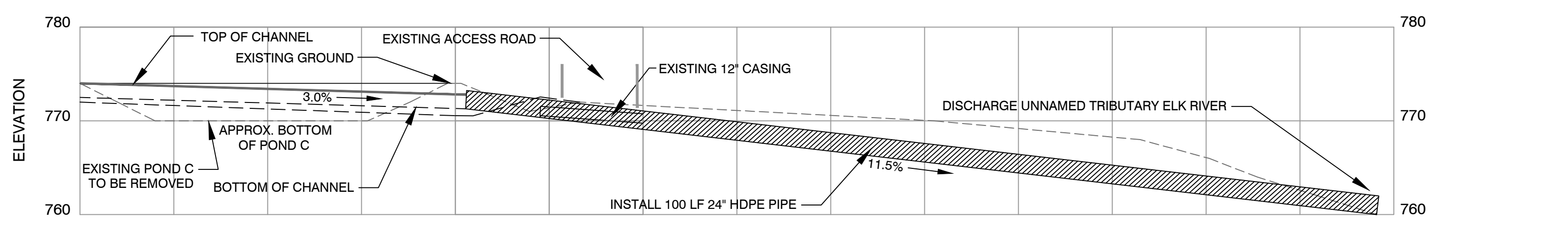
PROPOSED CHANNEL B
SCALE 0' 5' 10' 15'

| STATION FROM | STATION TO | DEPTH (FT.) | BOTTOM WIDTH (FT.) | CHANNEL PROTECTION |
|--------------|------------|-------------|--------------------|--------------------|
| 00+00 | 01+49 | 1.5 | 4.0 | VEGETATED |

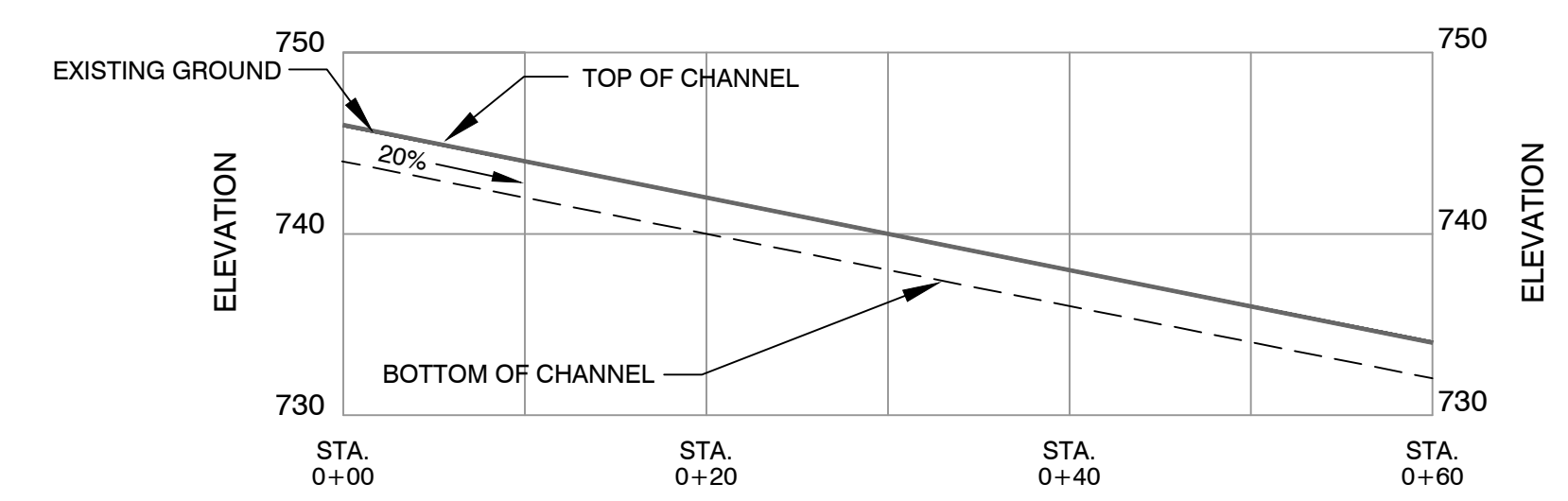


PROPOSED CHANNEL J
SCALE 0' 5' 10' 15'

| STATION FROM | STATION TO | DEPTH (FT.) | BOTTOM WIDTH (FT.) | CHANNEL PROTECTION |
|--------------|------------|-------------|--------------------|--------------------|
| 00+00 | 00+53 | 1.5 | 0.00' | ROCK RIP RAP |

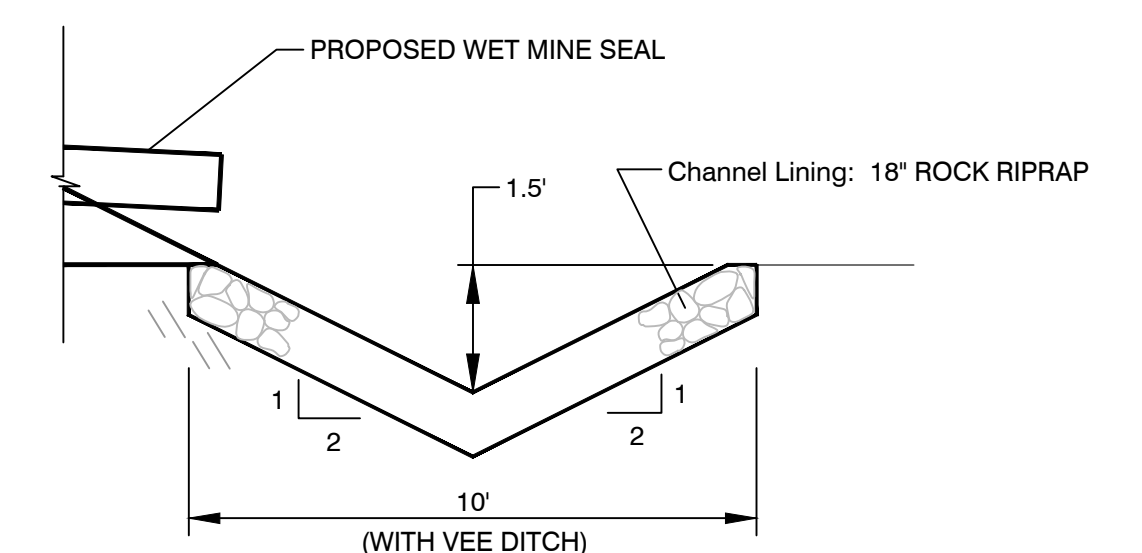


| STATION FROM | STATION TO | DEPTH (FT.) | BOTTOM WIDTH (FT.) | CHANNEL PROTECTION |
|--------------|------------|-------------|--------------------|--------------------|
| 00+00 | 00+42 | 1.5 | 4.0 | VEGETATED |

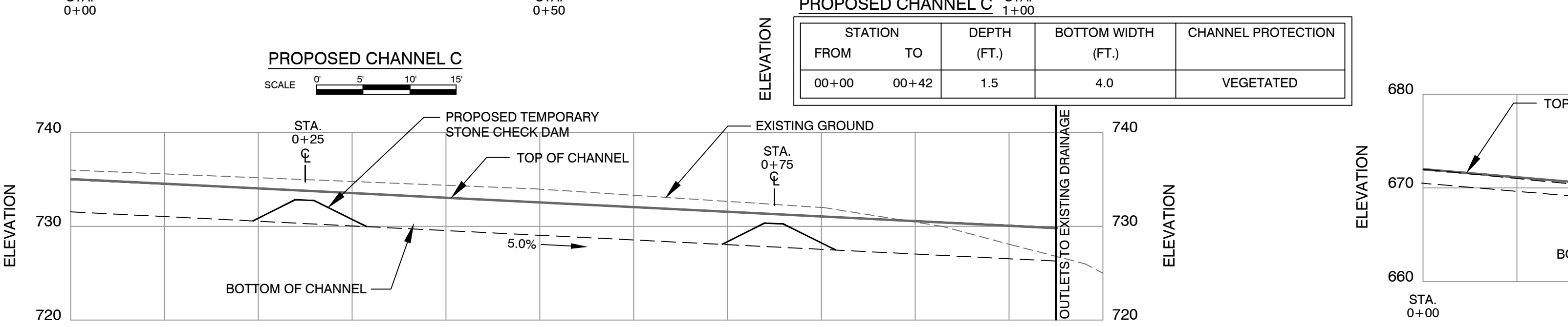


PROPOSED CHANNEL H
SCALE 0' 5' 10' 15'

| STATION FROM | STATION TO | DEPTH (FT.) | BOTTOM WIDTH (FT.) | CHANNEL PROTECTION |
|--------------|------------|-------------|--------------------|--------------------|
| 00+00 | 00+60 | 1.5 | 0.00' | ROCK RIP RAP |

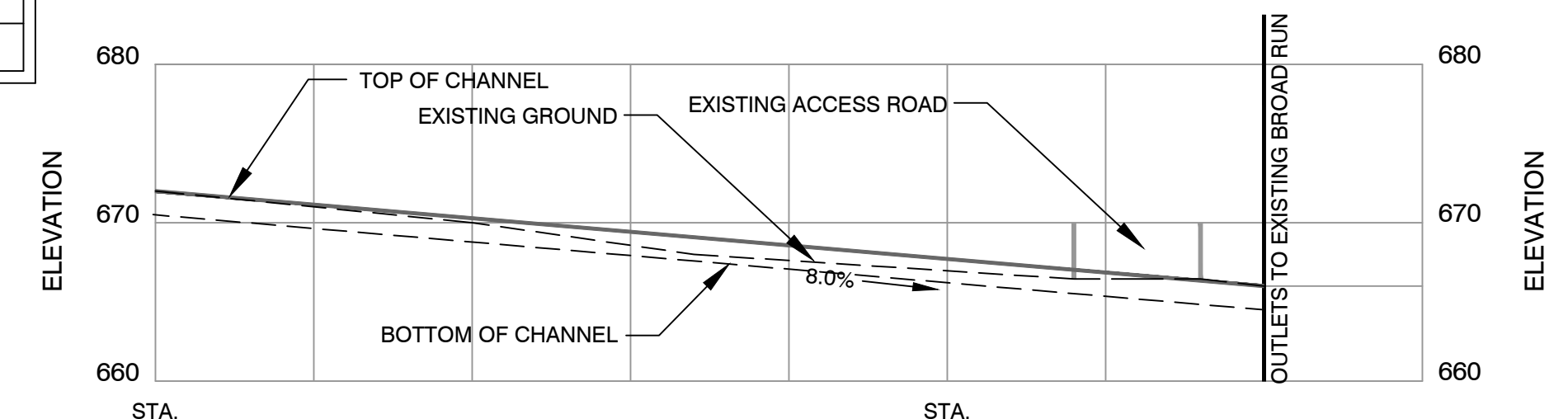


TYPICAL CHANNEL H AND J DETAIL
N.T.S.



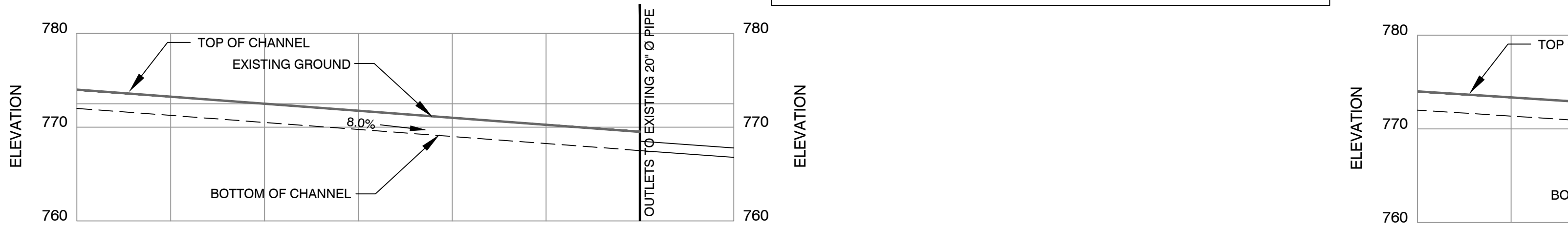
PROPOSED CHANNEL D
SCALE 0' 5' 10' 15'

| STATION FROM | STATION TO | DEPTH (FT.) | BOTTOM WIDTH (FT.) | CHANNEL PROTECTION |
|--------------|------------|-------------|--------------------|--------------------|
| 00+00 | 01+05 | 3.5 | 4.0 | ROCK RIPRAP |



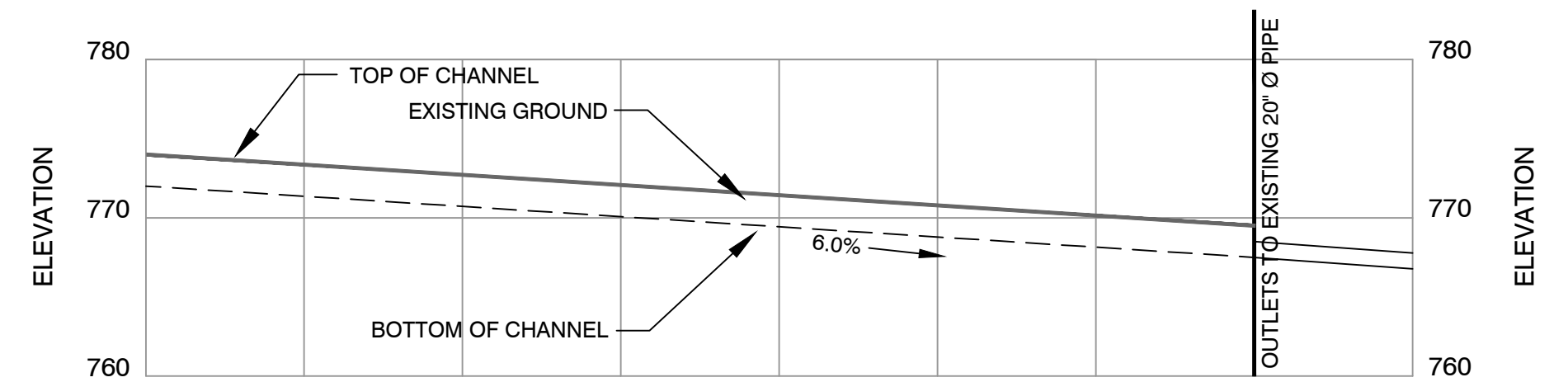
PROPOSED CHANNEL G
SCALE 0' 5' 10' 15'

| STATION FROM | STATION TO | DEPTH (FT.) | BOTTOM WIDTH (FT.) | CHANNEL PROTECTION |
|--------------|------------|-------------|--------------------|--------------------|
| 00+00 | 00+70 | 1.5 | 4.0 | VEGETATED |



PROPOSED CHANNEL E
SCALE 0' 5' 10' 15'

| STATION FROM | STATION TO | DEPTH (FT.) | BOTTOM WIDTH (FT.) | CHANNEL PROTECTION |
|--------------|------------|-------------|--------------------|--------------------|
| 00+00 | 00+60 | 1.5 | 4.0 | VEGETATED |



PROPOSED CHANNEL F
SCALE 0' 5' 10' 15'

| STATION FROM | STATION TO | DEPTH (FT.) | BOTTOM WIDTH (FT.) | CHANNEL PROTECTION |
|--------------|------------|-------------|--------------------|--------------------|
| 00+00 | 00+70 | 1.5 | 4 | VEGETATED |

NOTES :
CHANNEL PROTECTION SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING METHODS OR A COMBINATION THEREOF . A GREATER PROTECTION CAN BE SUBSTITUTED FOR A LESSER CHANNEL PROTECTION SPECIFICATION . SEE CHARTS FOR SPECIFIED METHOD .

- 1.) VEGETATED - UPON COMPLETION OF FINAL GRADE OF DITCH LINE THE DITCH SHALL BE VEGETATED ACCORDING TO THE RECLAMATION PLAN .
- 2.) ROCK RIPRAP - WHERE PLACED SHALL BE 1.5' (MIN.) THICK BLANKET ON THE BOTTOM AND SIDES OF THE CHANNEL . THE ROCK WILL BE A DURABLE ROCK WITH A MEDIAN DIAMETER (D50) OF TWELVE (12) IN . TWENTY FIVE PERCENT BY WEIGHT OF THE ROCK WILL BE ONE AND ONE-HALF (1 1/2) TIMES THE MEDIAN DIAMETER OR SLIGHTLY LARGER . THE REMAINING SEVENTY-FIVE (75) PERCENT WILL BE WELL-GRADED MATERIAL CONSISTING OF SUFFICIENT ROCK SMALL ENOUGH TO FILL THE VOIDS BETWEEN THE LARGER ROCKS . SHALE OR MATERIAL THAT WILL SLAKE IN WATER SHALL NOT BE USED .

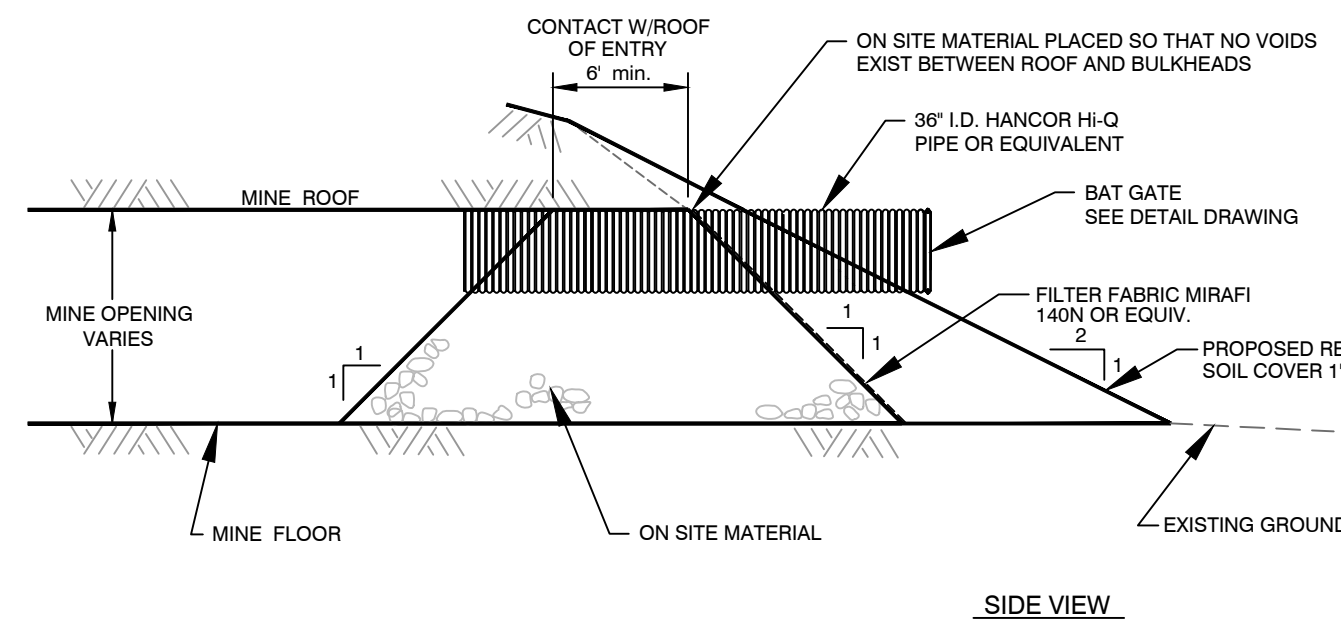
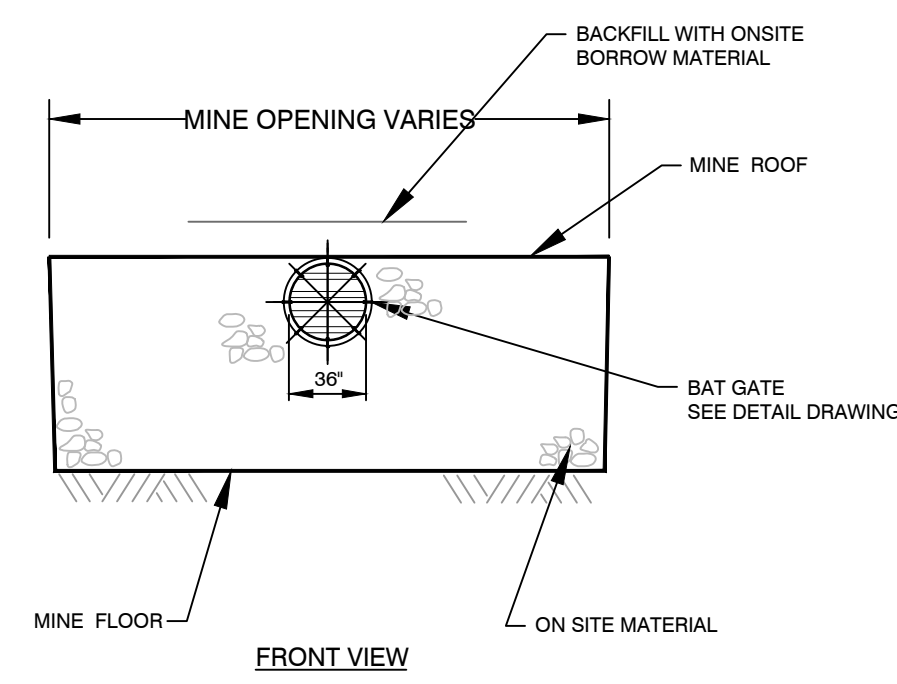
State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BROAD RUN PORTALS

PROPOSED CHANNELS

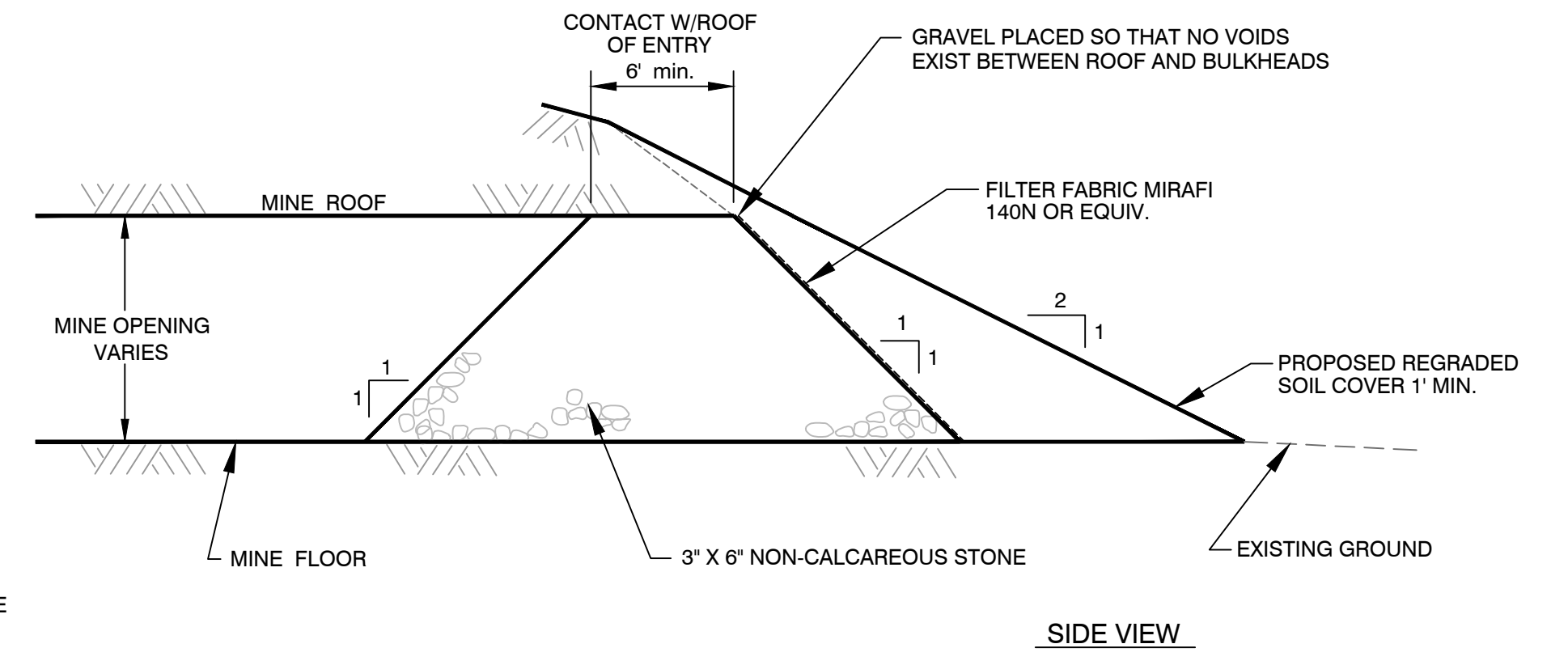
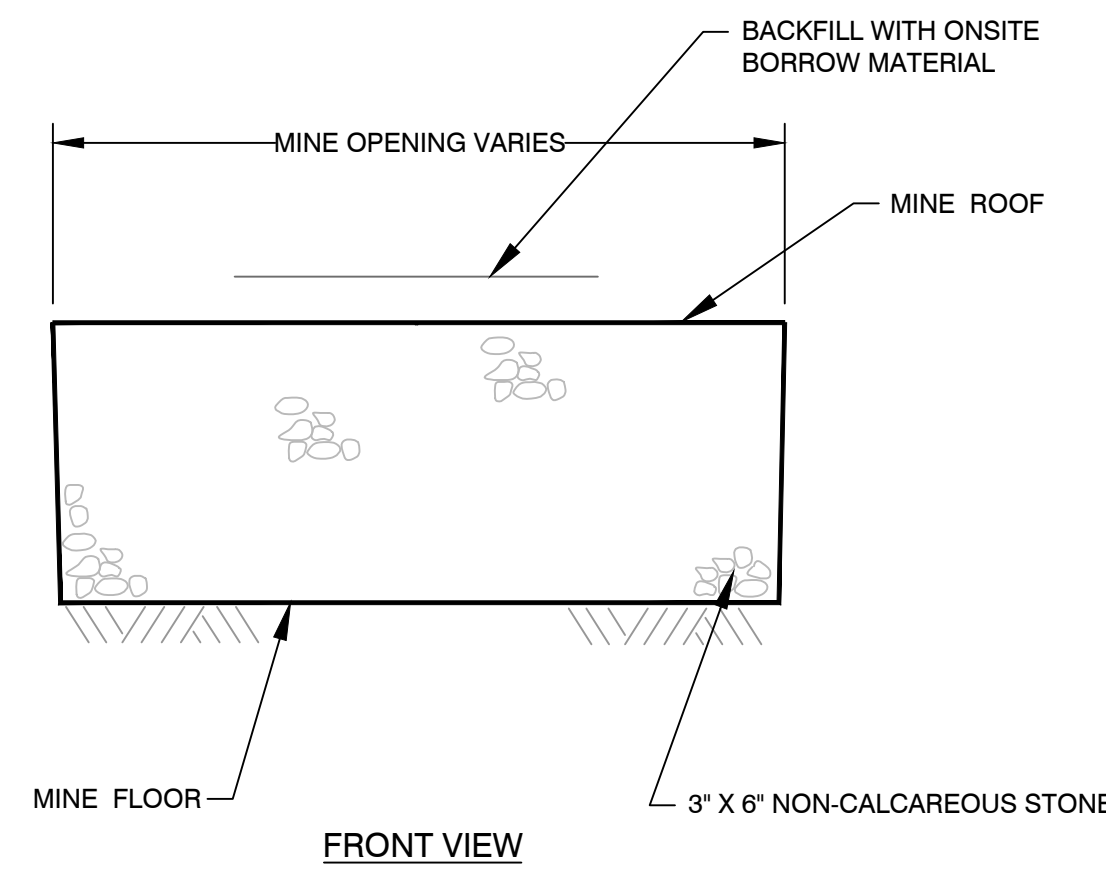
DRAWN BY: RCD
APPROVED BY:
DATE: 12/02/2014

SCALE: AS NOTED
SHEET NO. 10
OF 13



PROPOSED TYPICAL TYPE II DRY MINE SEAL WITH BAT GATE USING ONSITE MATERIAL PORTAL 12 AND 13
N.T.S.

NOTE:
THE BAT GATE AND APPURTENANT METALLIC STRUCTURES SHALL BE PRIMED WITH A RUST PROHIBITIVE PRIMER AND THEN PAINTED WITH TWO (2) COATS OF RUST PROHIBITIVE BROWN COLORED PAINT



PROPOSED TYPICAL DRY MINE SEAL PORTALS 2, 15 AND 16
N.T.S.

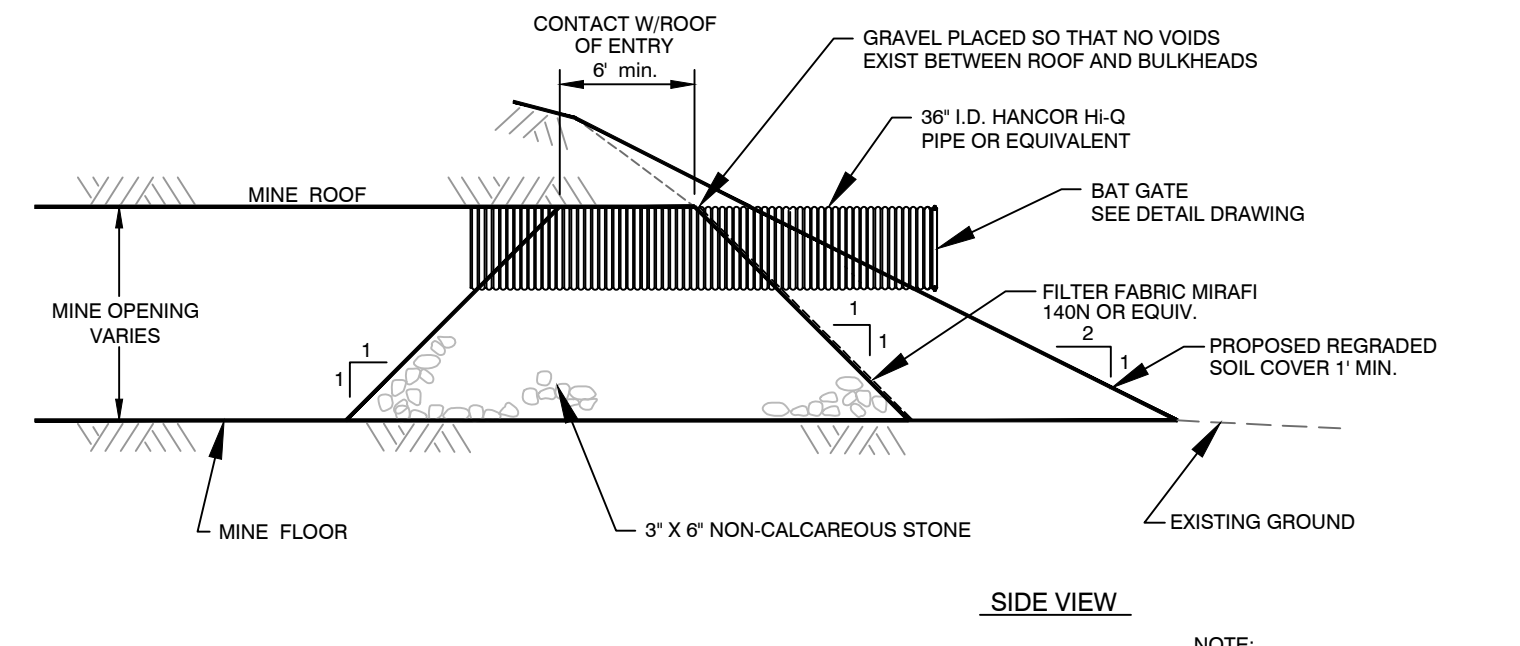
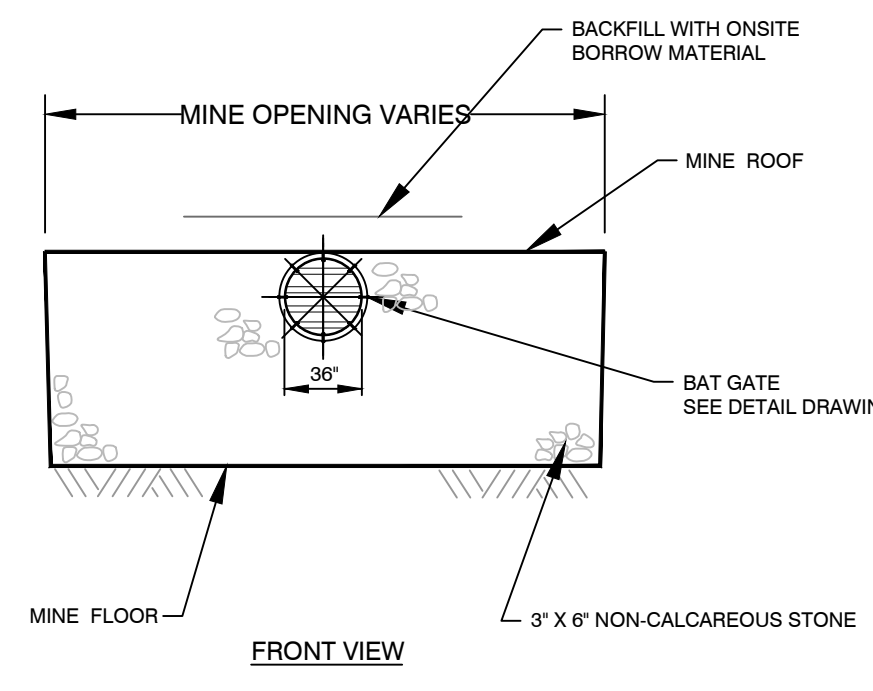
BACKFILL NOTES:

ENTRY STABILIZATION SHALL BE ACCOMPLISHED BY BACK FILLING WITH 3" X 6" NON-CALCAREOUS STONE.

BACK FILLING SHALL OCCUR AFTER INSTALLATION OF DRAIN IS ACCEPTED BY THE ENGINEER.

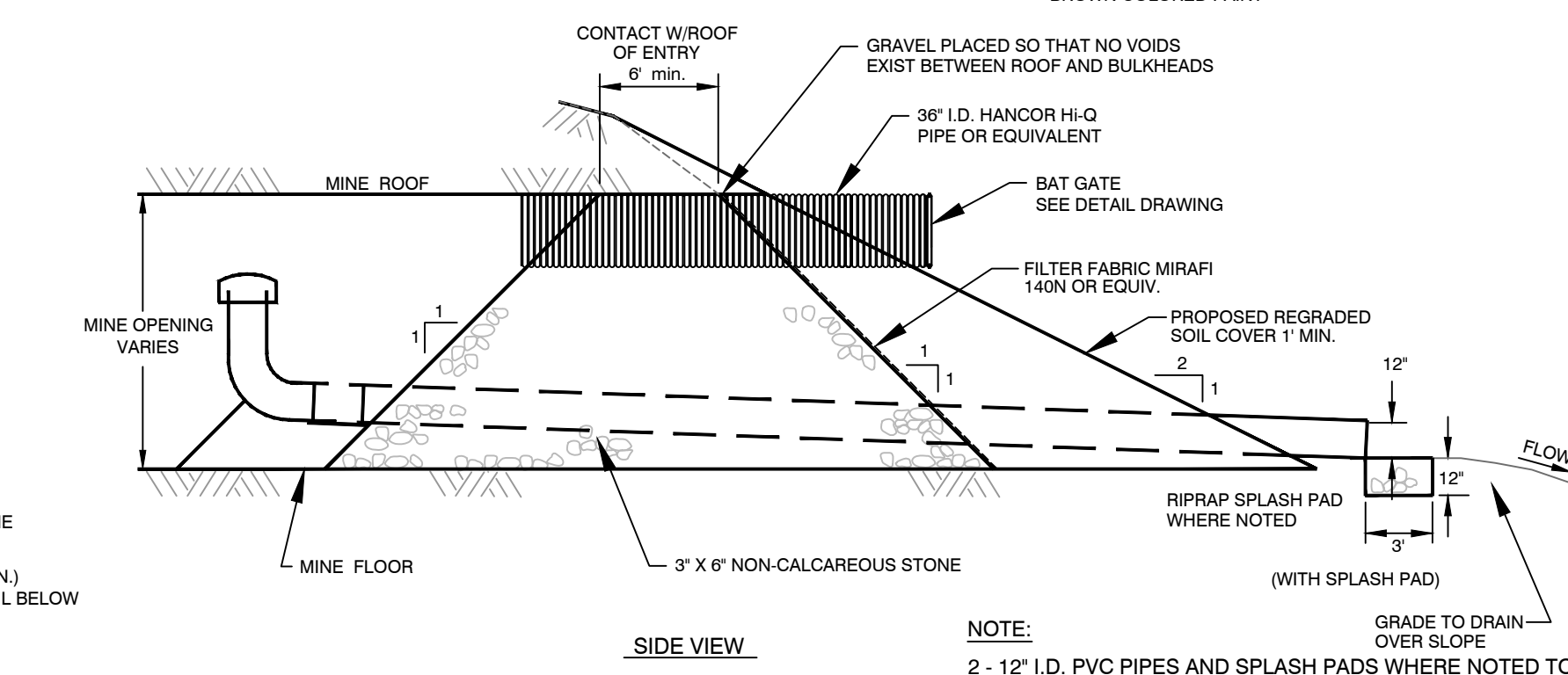
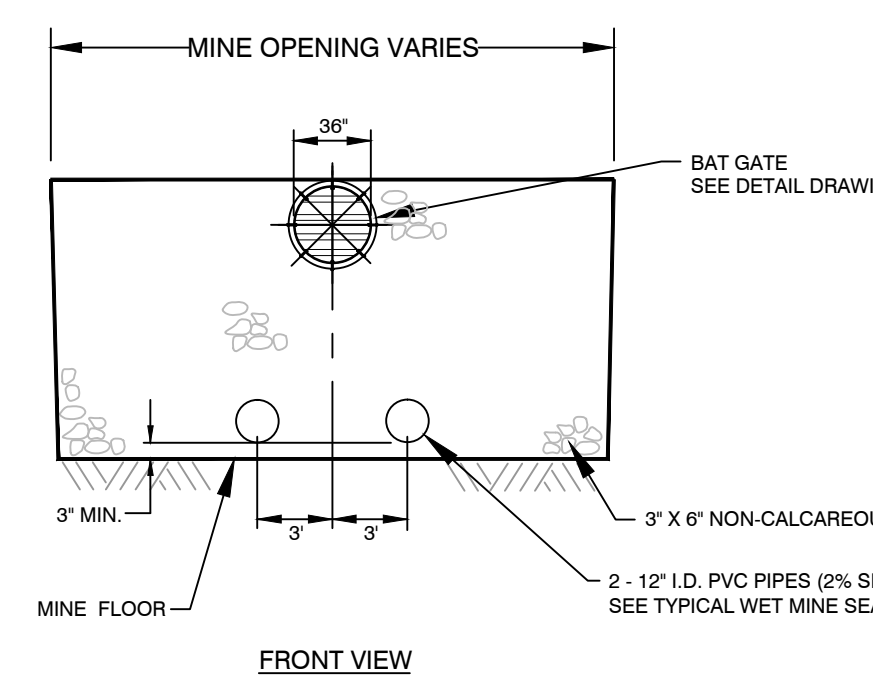
THE ENTRY SHALL BE FILLED WITH 3" X 6" NON-CALCAREOUS STONE TO A DEPTH ALLOWING A MINIMUM OF 6 LINEAR FEET OF CONTACT WITH THE ROOF.

AFTER ACCEPTANCE OF THE ENTRY BACKFILL AND OUTLET DRAIN INSTALLATION, BY THE ENGINEER, THE REGRADE SOIL COVER MATERIAL SHALL BE PLACED AND COMPACTED. THE ENTIRE AREA SHALL THEN BE GRADED, SEEDED AND MULCHED.



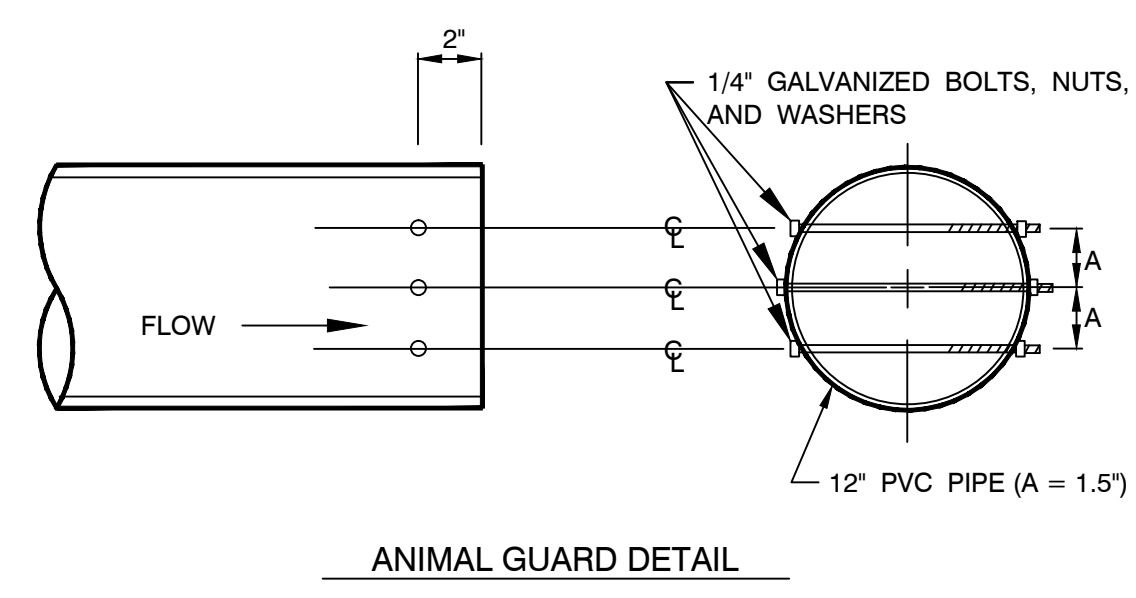
PROPOSED TYPICAL TYPE I DRY MINE SEAL WITH BAT GATE PORTAL 1 AND 3
N.T.S.

NOTE:
THE BAT GATE AND APPURTENANT METALLIC STRUCTURES SHALL BE PRIMED WITH A RUST PROHIBITIVE PRIMER AND THEN PAINTED WITH TWO (2) COATS OF RUST PROHIBITIVE BROWN COLORED PAINT

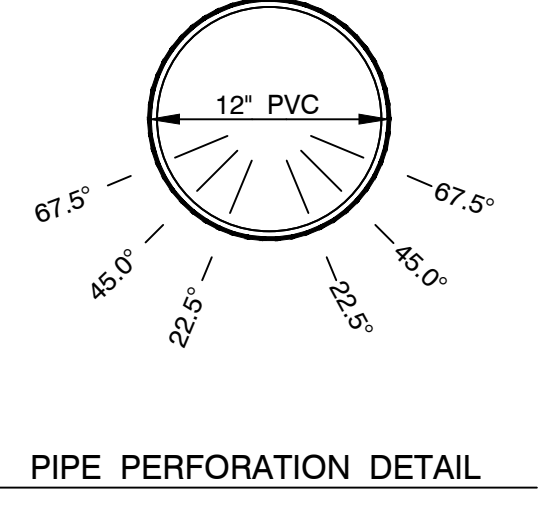


PROPOSED TYPICAL WET MINE SEAL WITH BAT GATE PORTALS 7 AND 11
N.T.S.

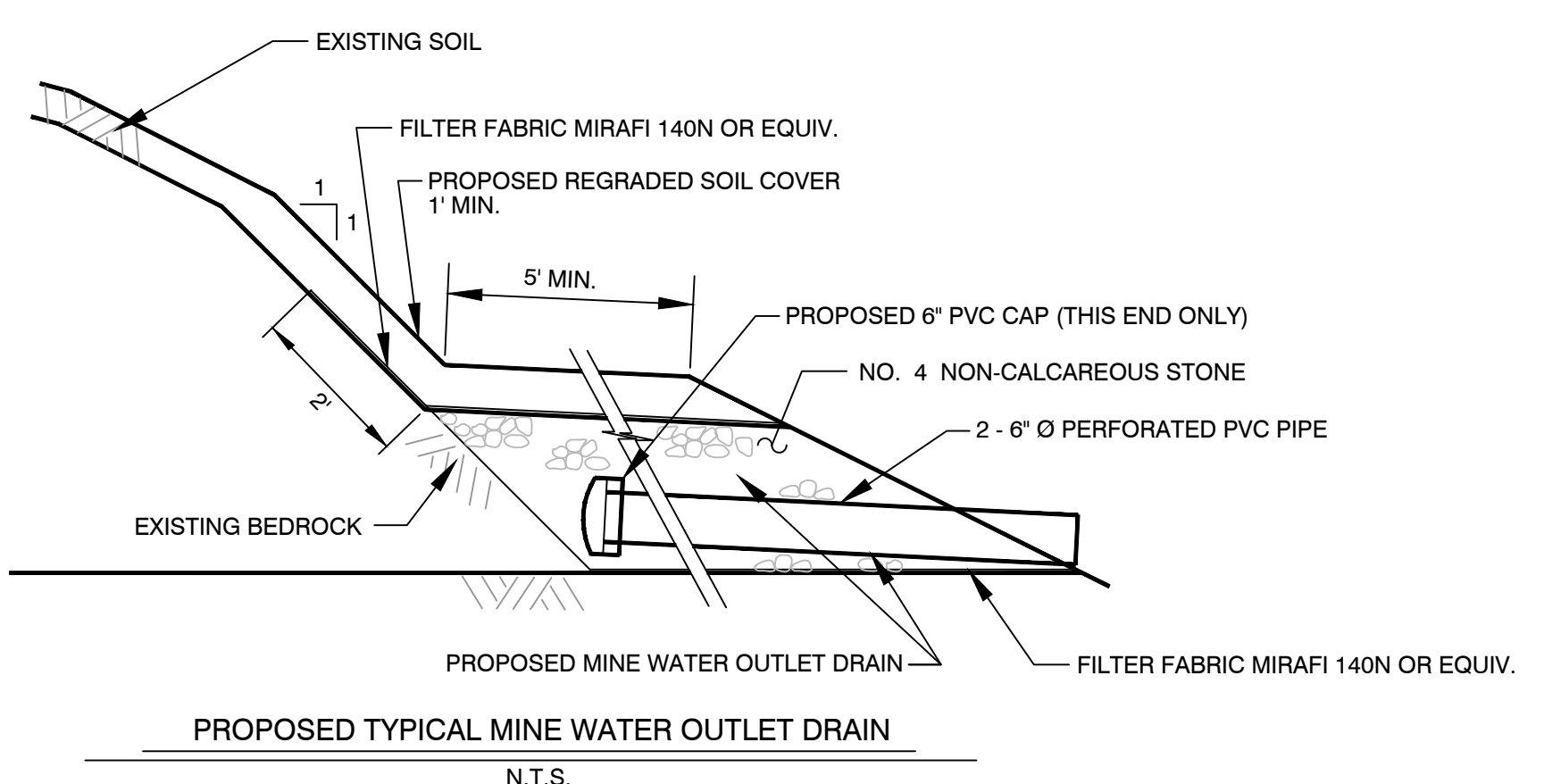
NOTE:
2 - 12" I.D. PVC PIPES AND SPLASH PADS WHERE NOTED TO BE INSTALLED SEE TYPICAL WET MINE SEAL DETAIL BELOW.



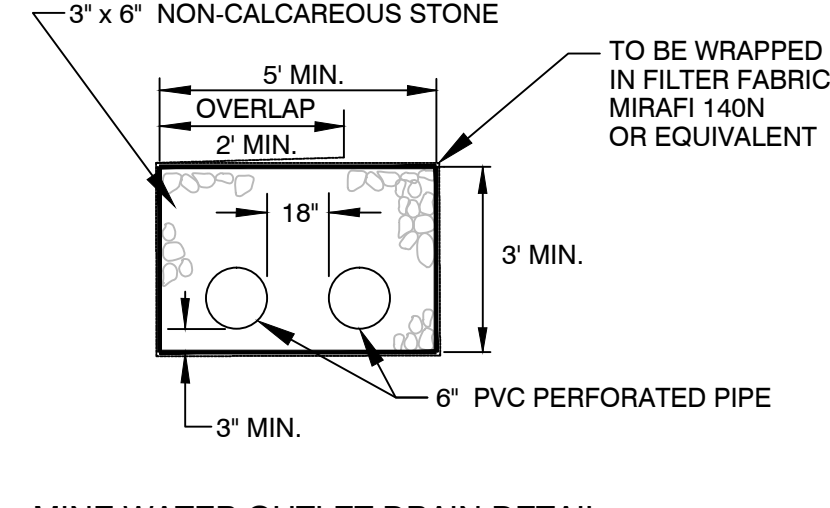
ANIMAL GUARD DETAIL



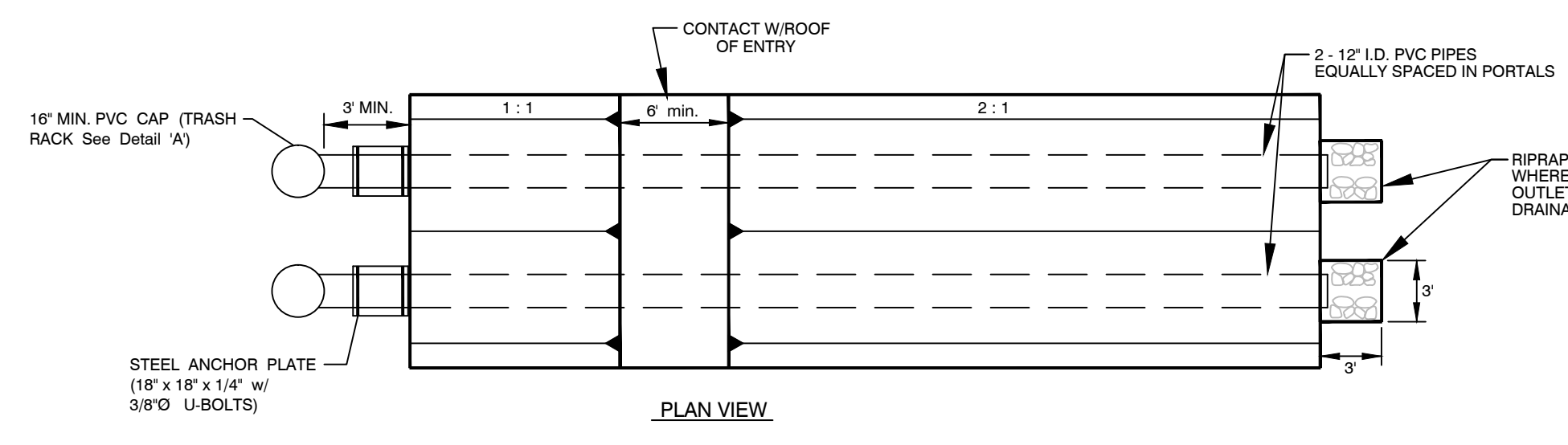
PIPE PERFORATION DETAIL



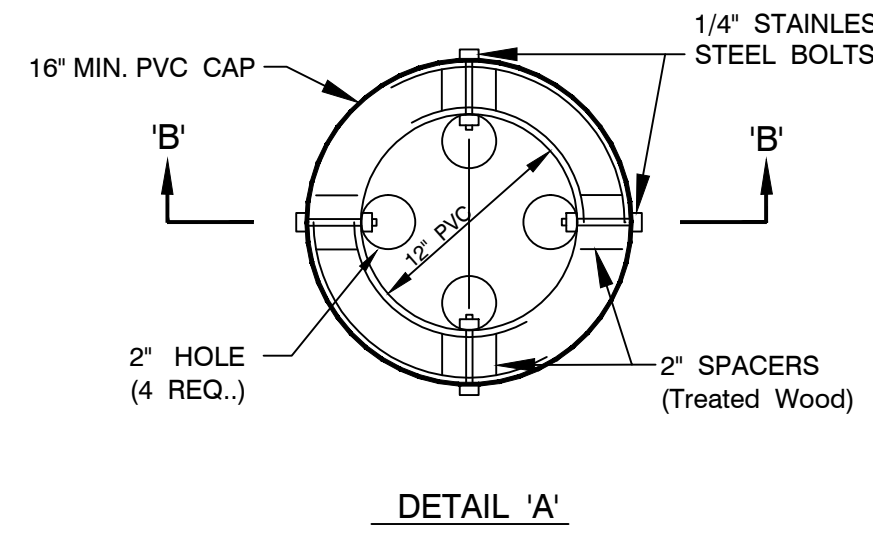
PROPOSED TYPICAL MINE WATER OUTLET DRAIN
N.T.S.



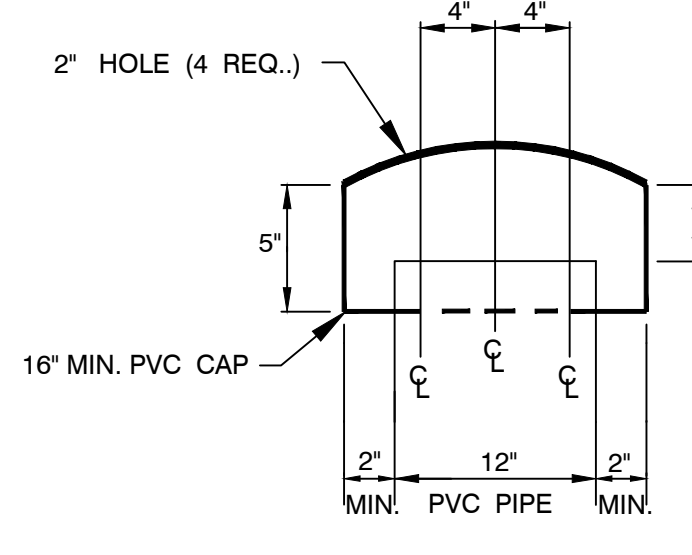
MINE WATER OUTLET DRAIN DETAIL



PLAN VIEW



DETAIL 'A'



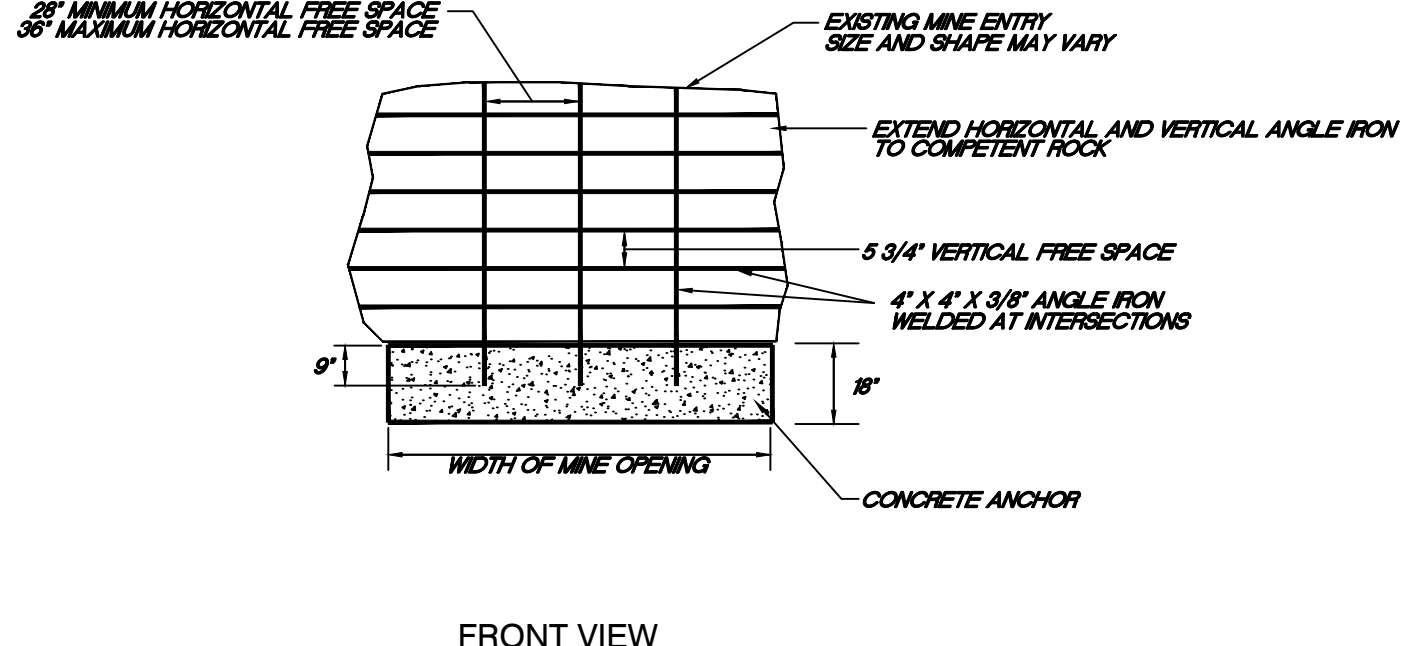
SECTION 'B' - 'B'

NOTES:

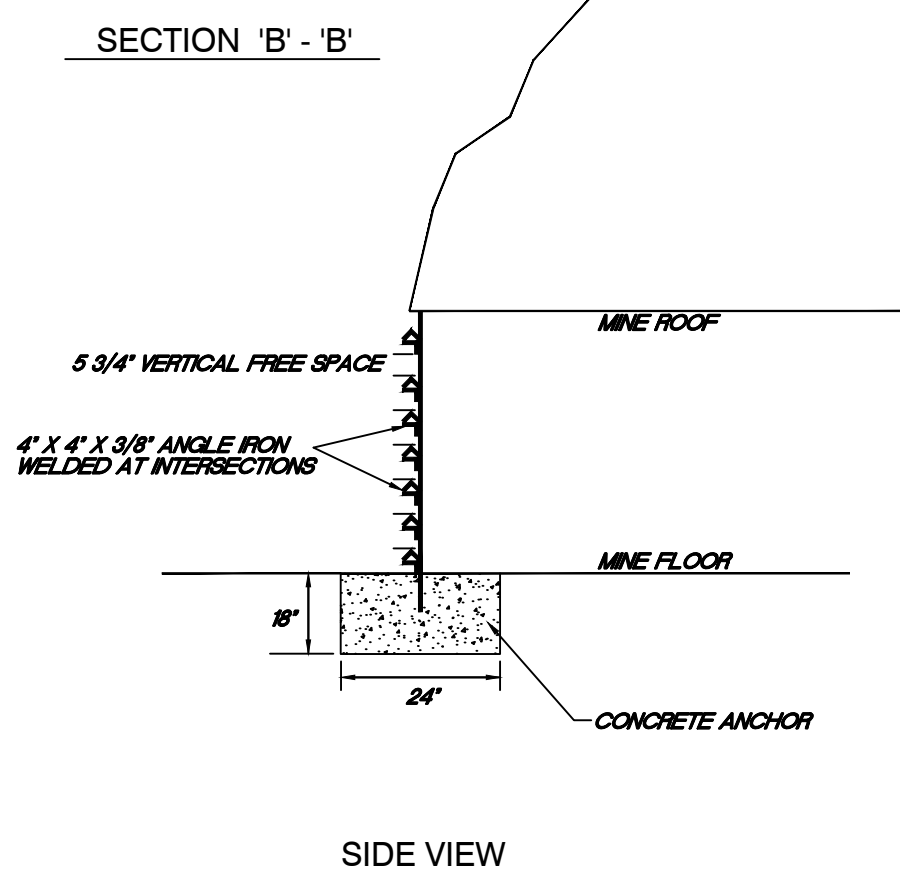
(A) RISER PERFORATIONS TO BE AT 22.5° FOR FULL 360° C-C SPACING

(B) INSTALL 2 - 12" PERFORATED PVC PIPES W/TRASH RACKS AT EACH WET MINE SEAL.

(C) IF A MINE PORTAL IS NOT ENCOUNTERED AND MINE WATER IS FLOWING FROM FRACTURED BEDROCK, COAL SEAM, ETC. A MINE WATER OUTLET DRAIN MAY BE INSTALLED IF DIRECTED BY THE ENGINEER.



FRONT VIEW



SIDE VIEW

STANDARD BAT GATE DETAIL PORTAL 8
N.T.S.

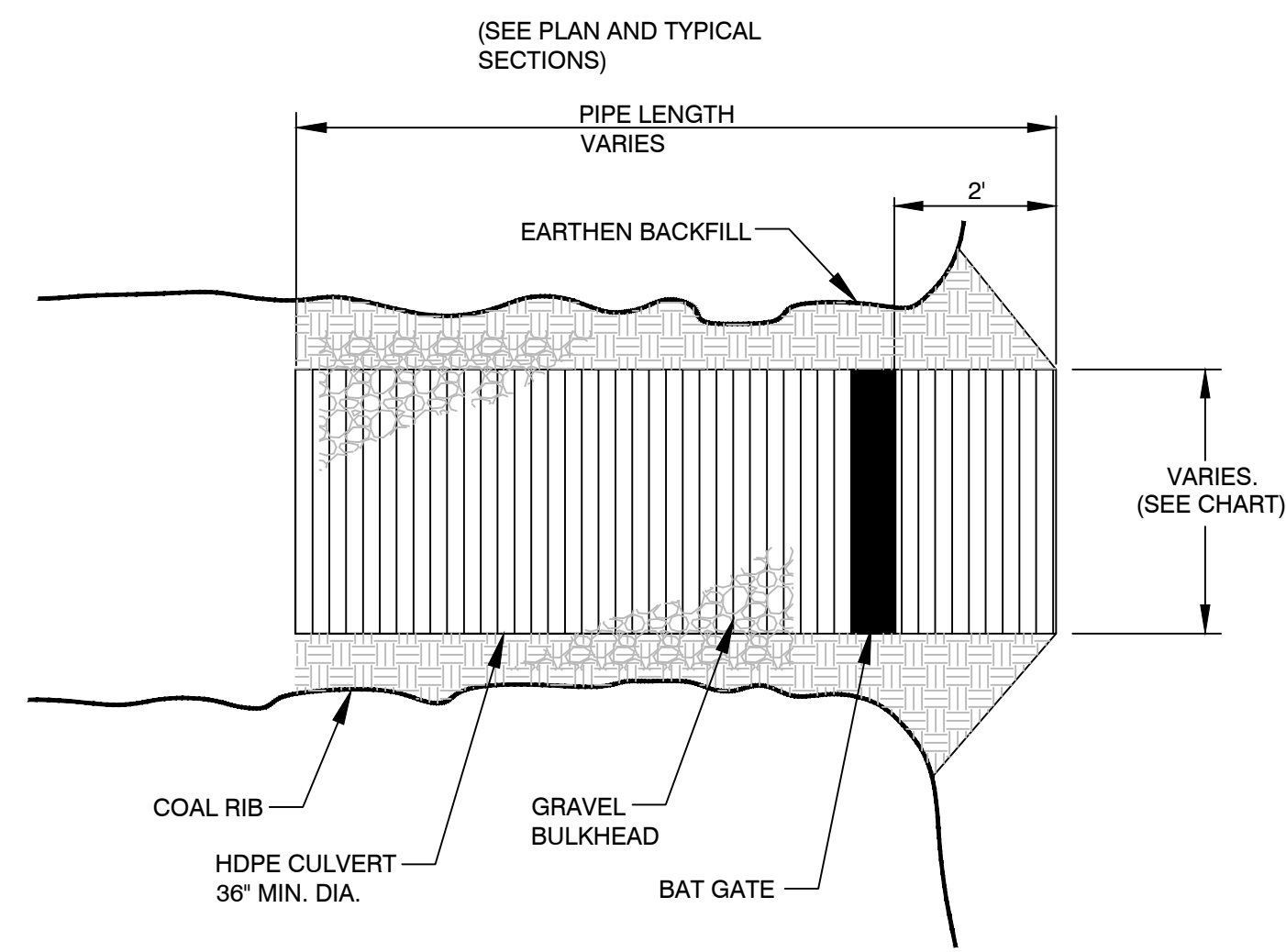
State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BROAD RUN PORTALS

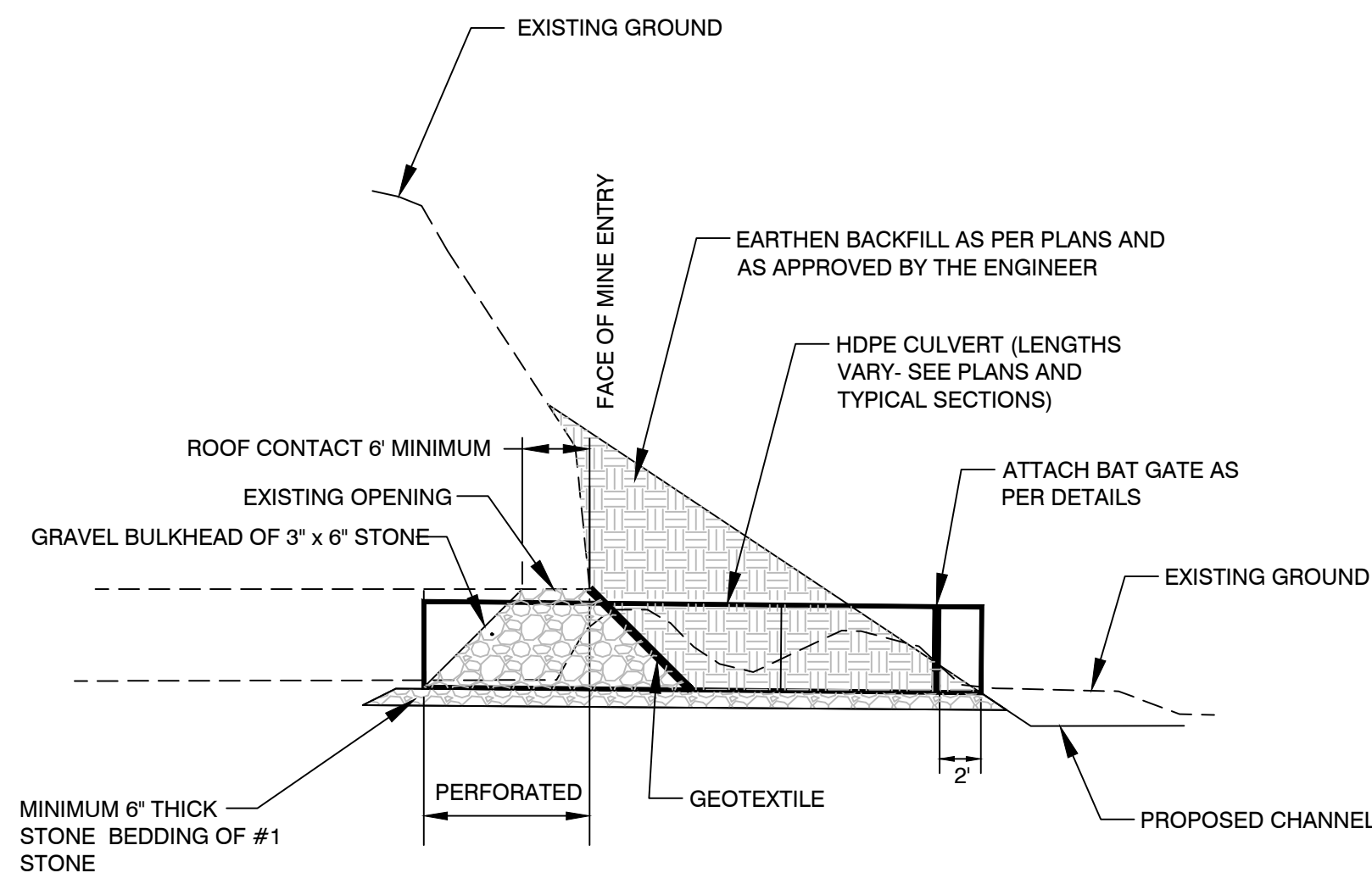
MINE SEAL DETAILS

DRAWN BY: RCD
APPROVED BY:
DATE: 12/02/2014

SCALE: AS NOTED
SHEET NO. 11
OF 13

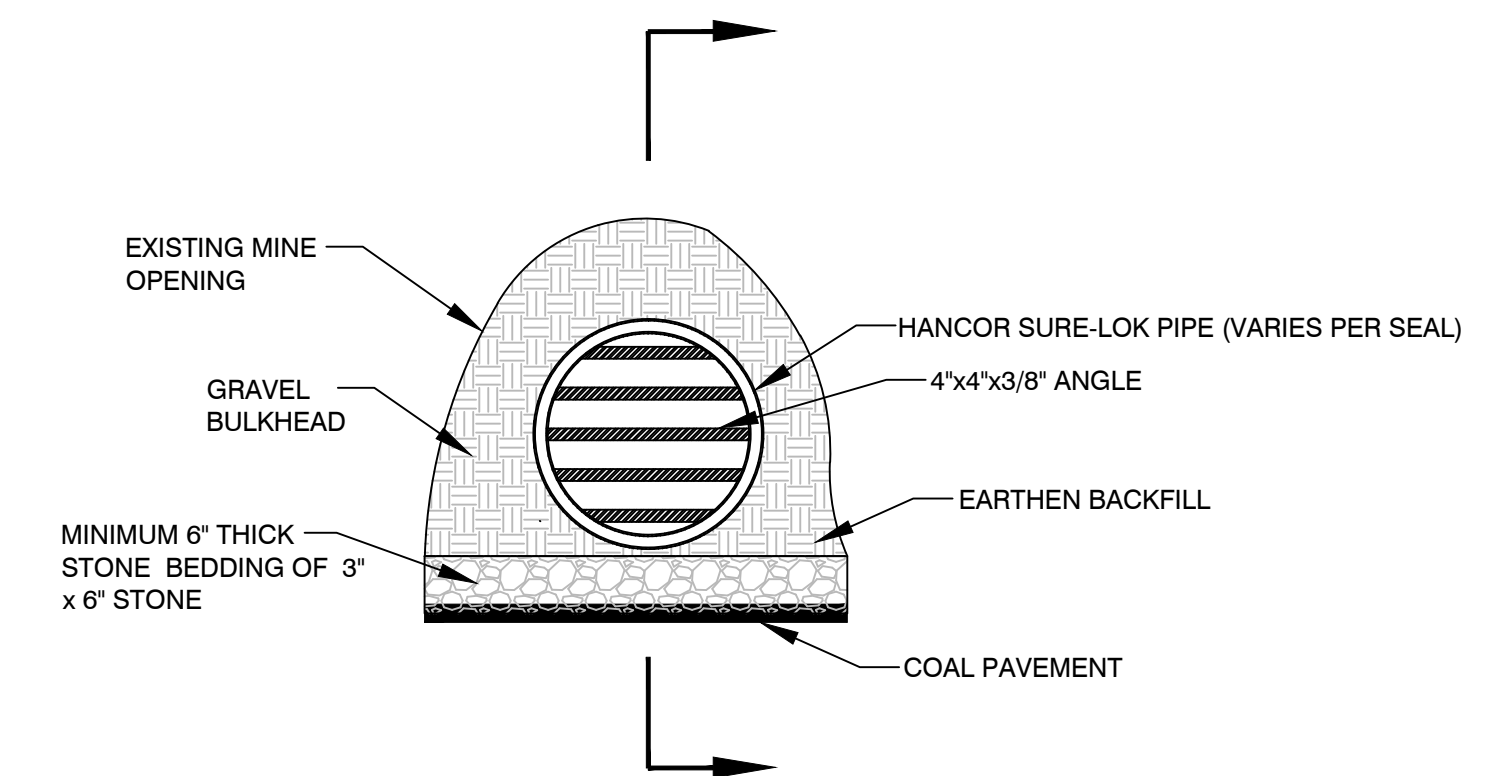


PLAN

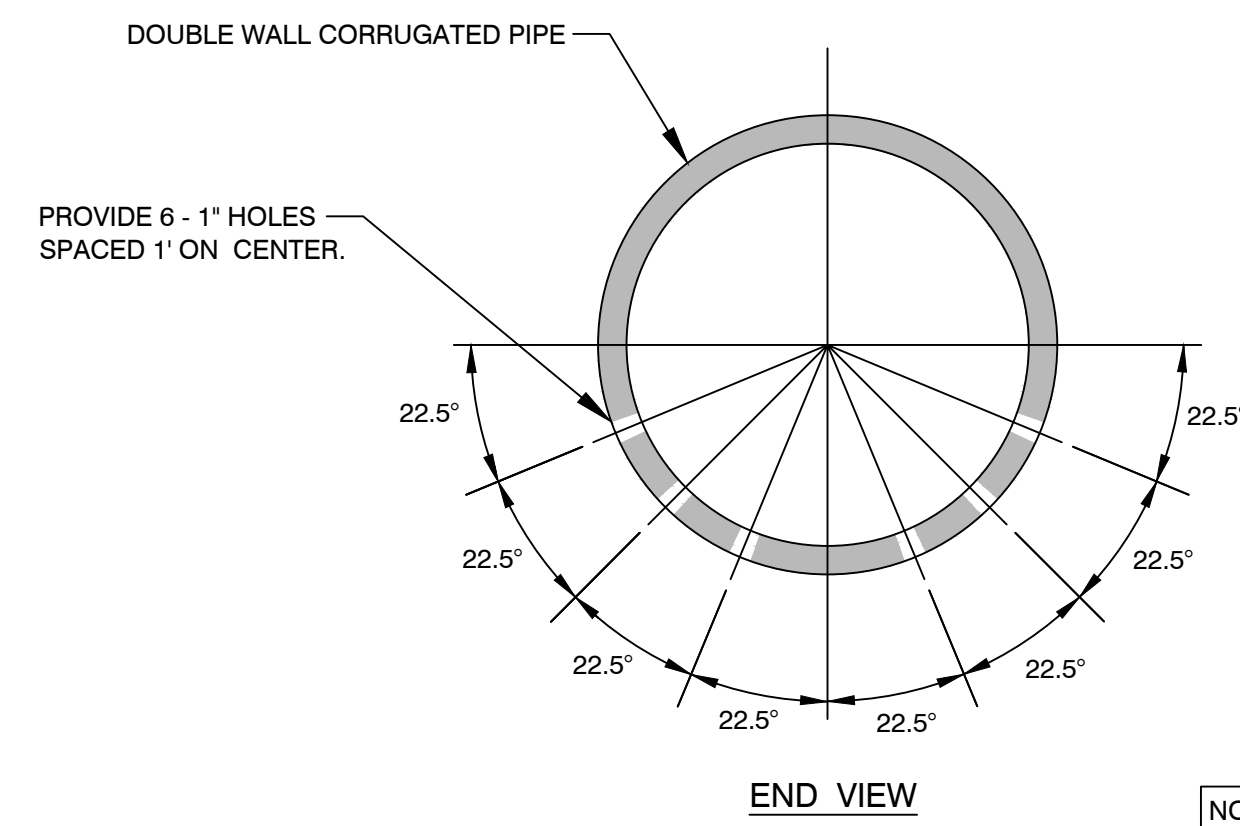


THE HDPE CULVERT, SHALL BE INSTALLED AT A 2% MINIMUM GRADE, TYPICAL OF ALL.

TYPICAL CONSTRUCTION DETAILS
(APPLICABLE TO ALL BAT GATES)
N.T.S.

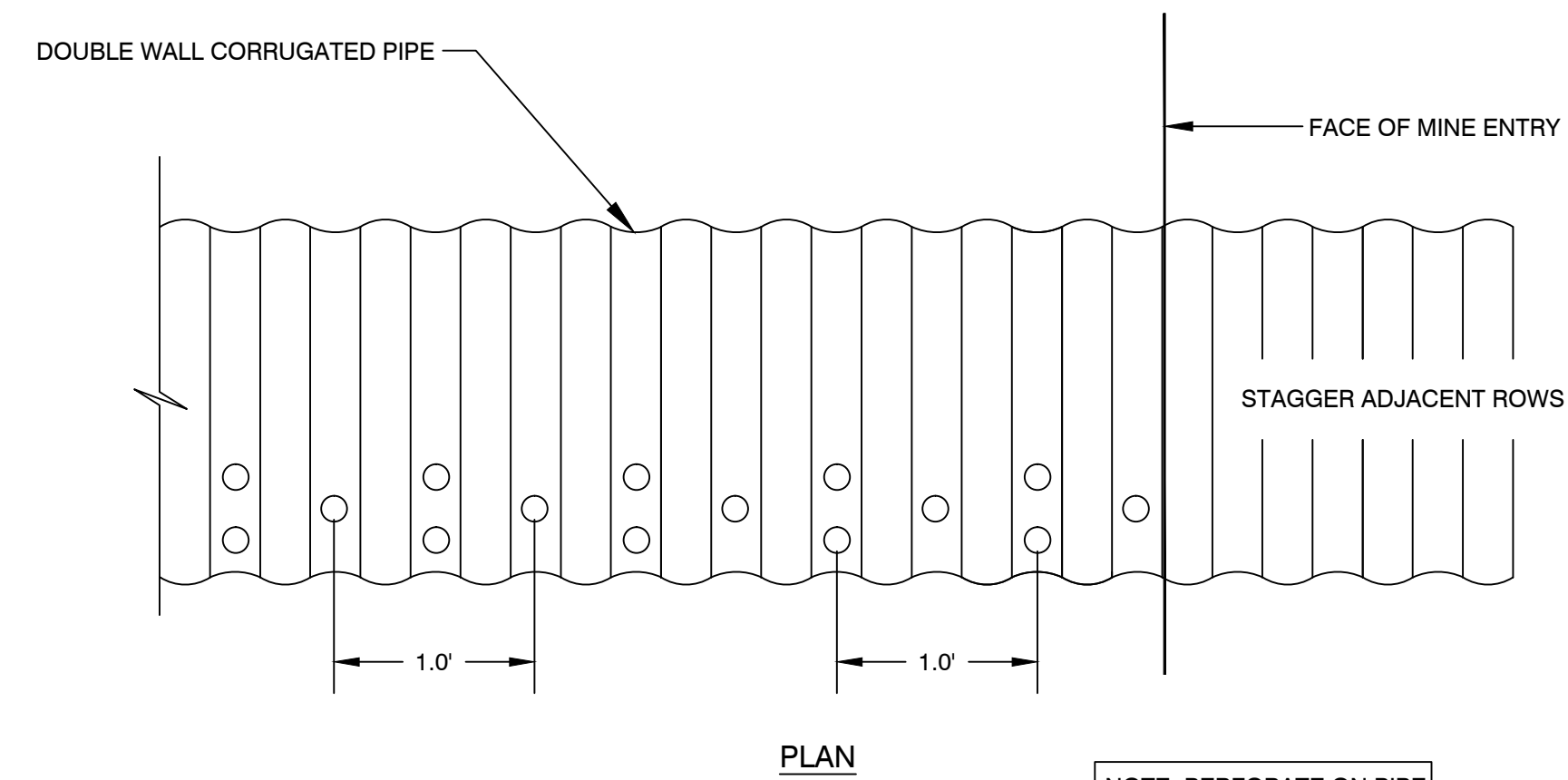


END VIEW



END VIEW

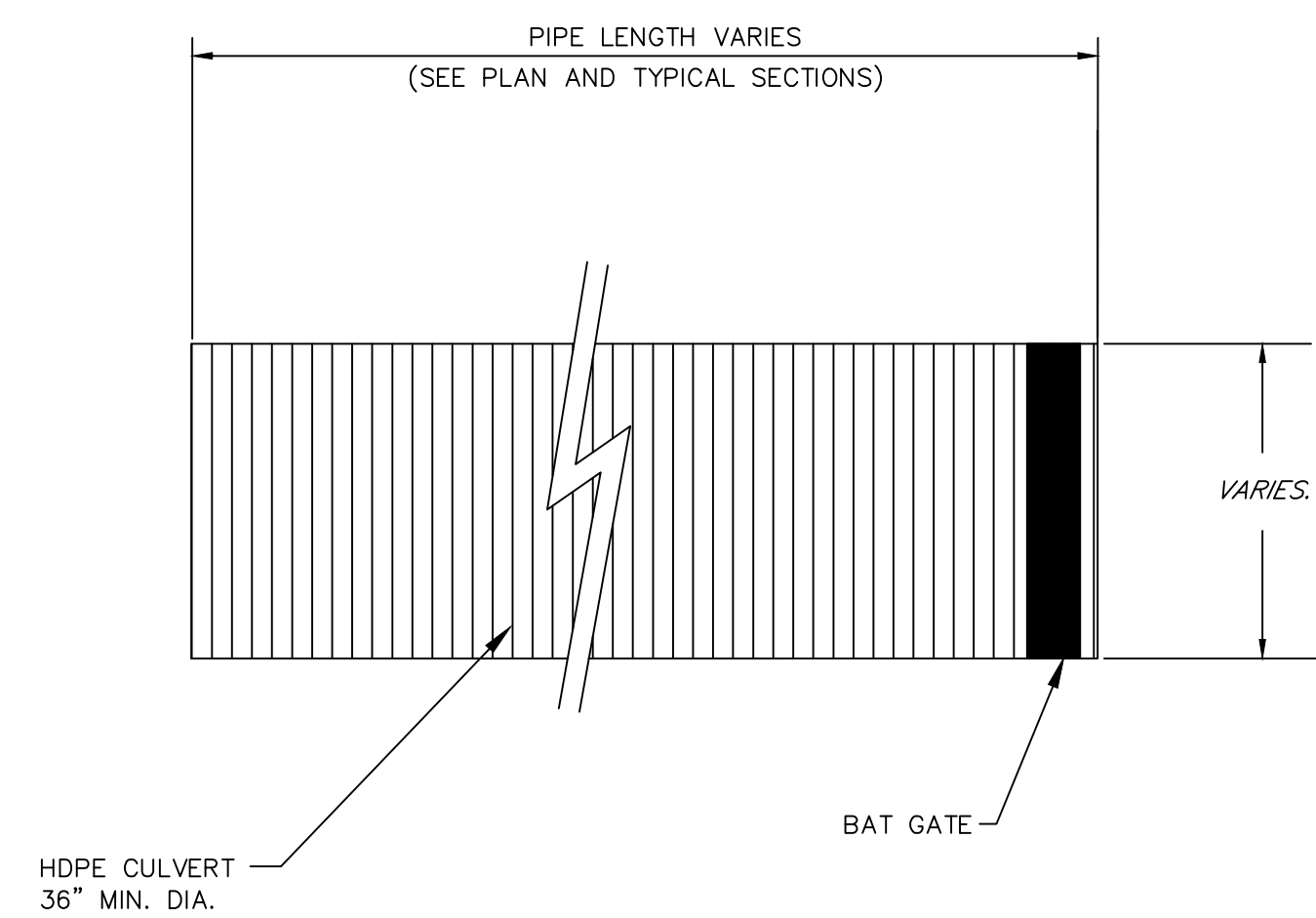
NOTE: PERFORATE ON PIPE WALLS NOT ON RIBS.



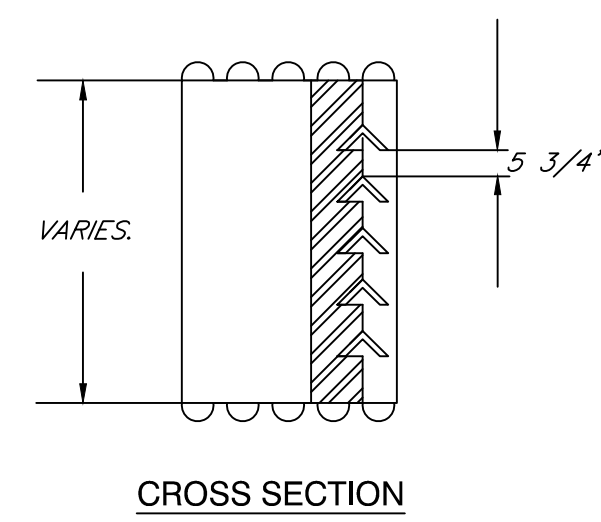
PLAN

NOTE: PERFORATE ON PIPE WALLS NOT ON RIBS.

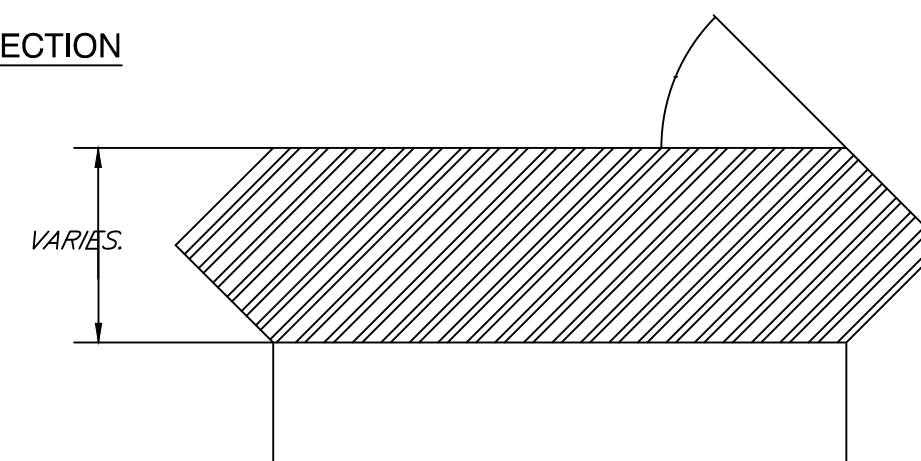
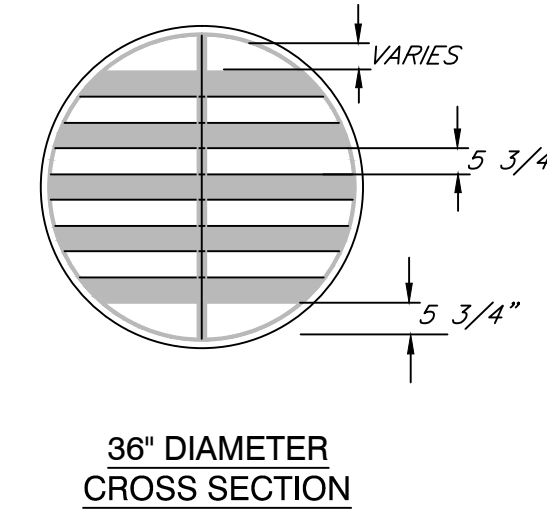
PERFORATION DETAIL
N.T.S.



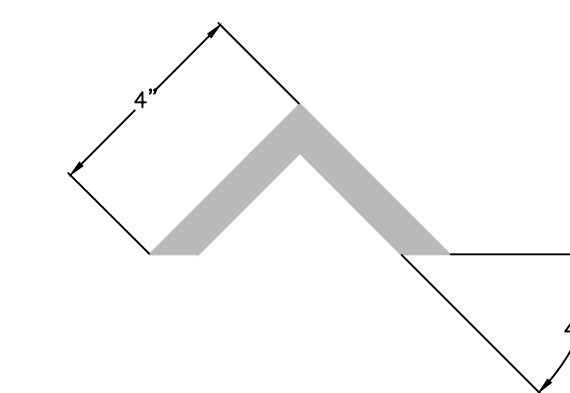
PLAN VIEW



DETAIL 9.3
BAT GATE PIPE WITH
BAT GATE ATTACHED
NOT TO SCALE



PROFILE VIEW OF VERTICAL BRACE



CROSS SECTION HORIZONTAL BAR

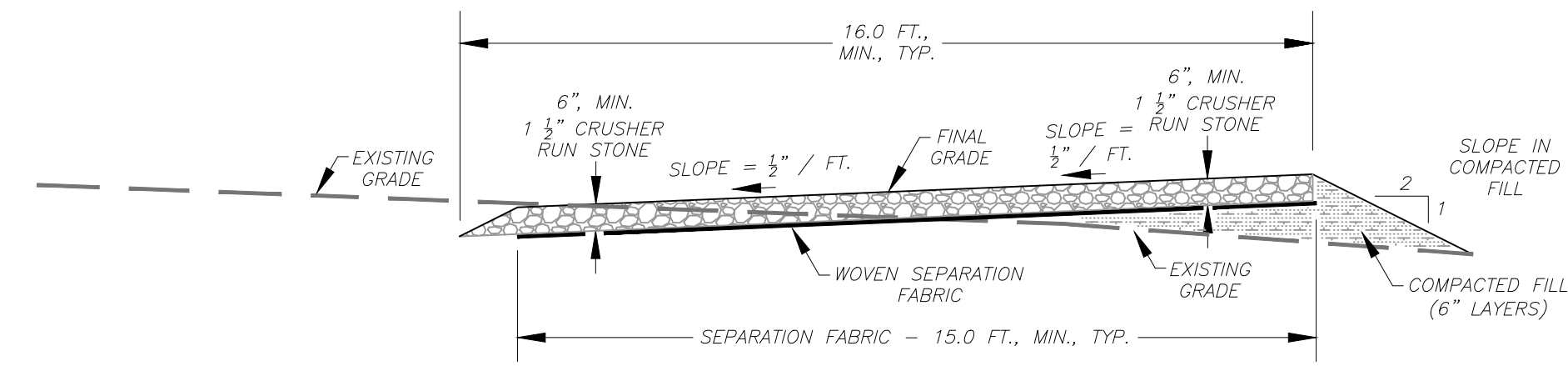
State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BROAD RUN PORTALS

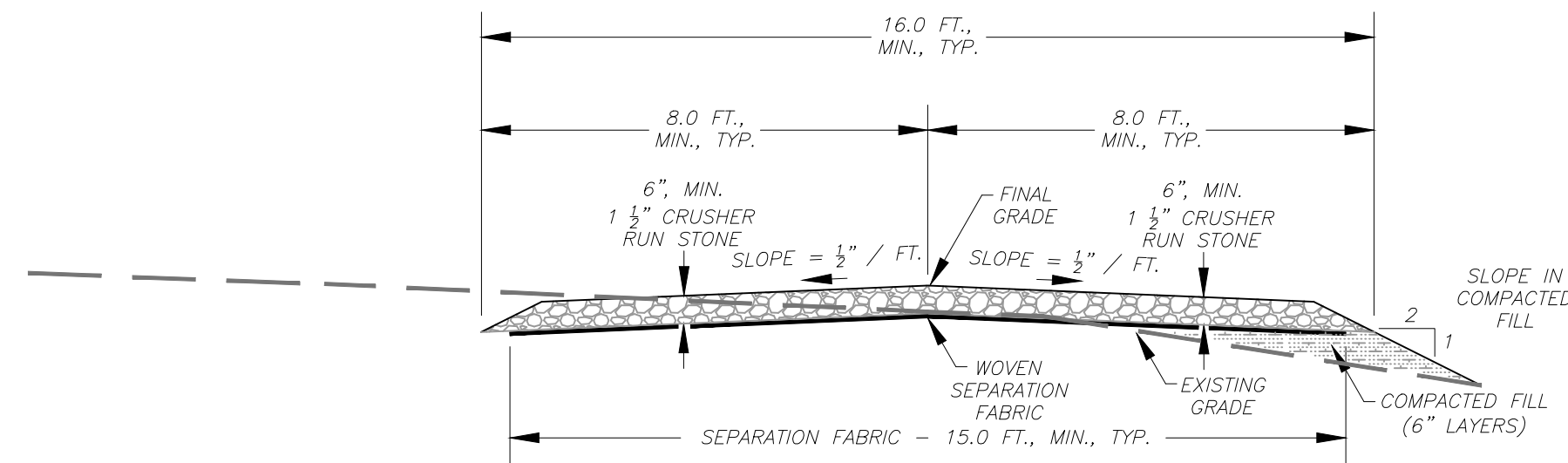
BAT GATE DETAILS

DRAWN BY: RCD
APPROVED BY:
DATE: 12/02/2014

SCALE: AS NOTED
SHEET NO. 12
OF 13

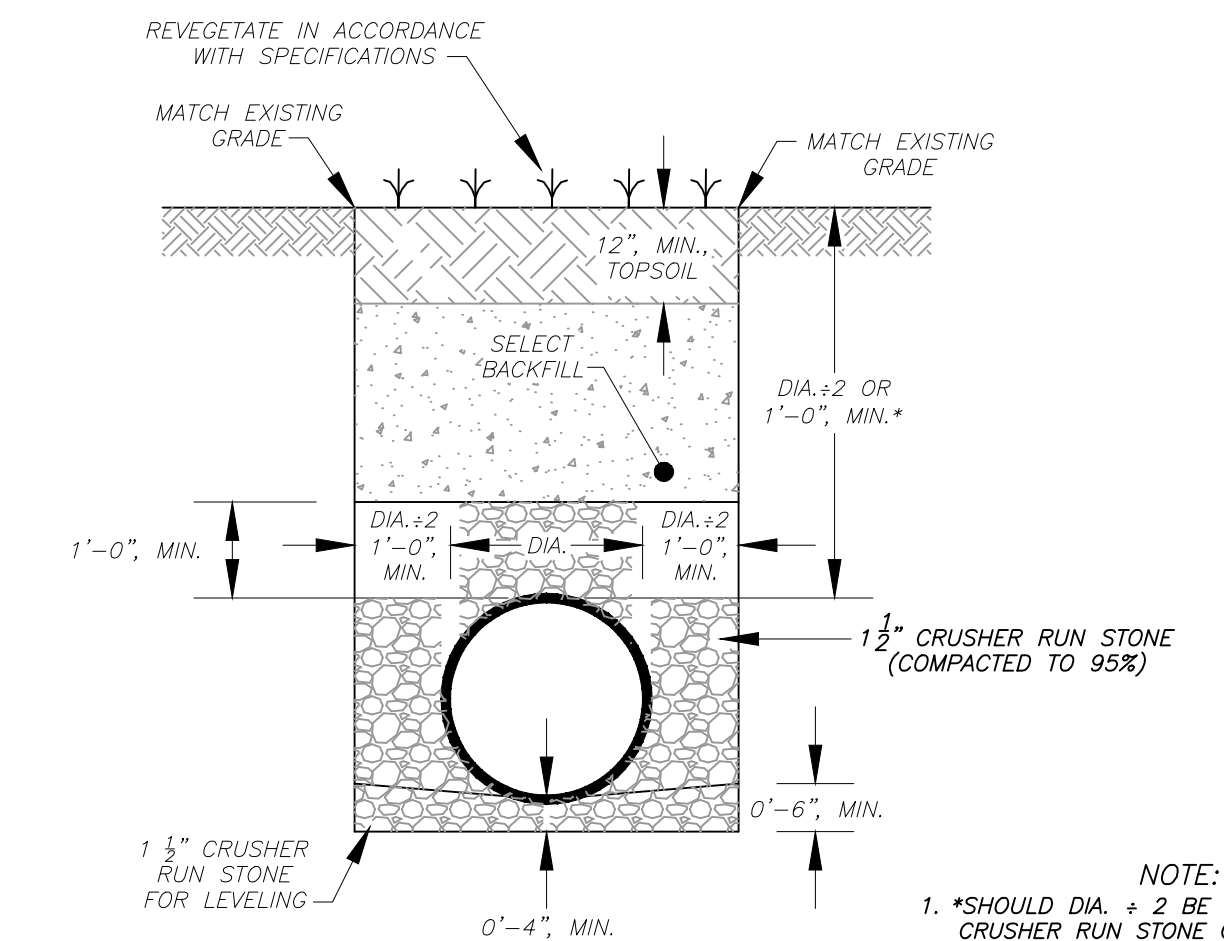


- NOTES:
- ROADWAY SURFACE MAY BE SLOPED TO EITHER SIDE AS TOPOGRAPHY AND CONDITIONS WARRANT.
 - 1 1/2" CRUSHER RUN STONE.



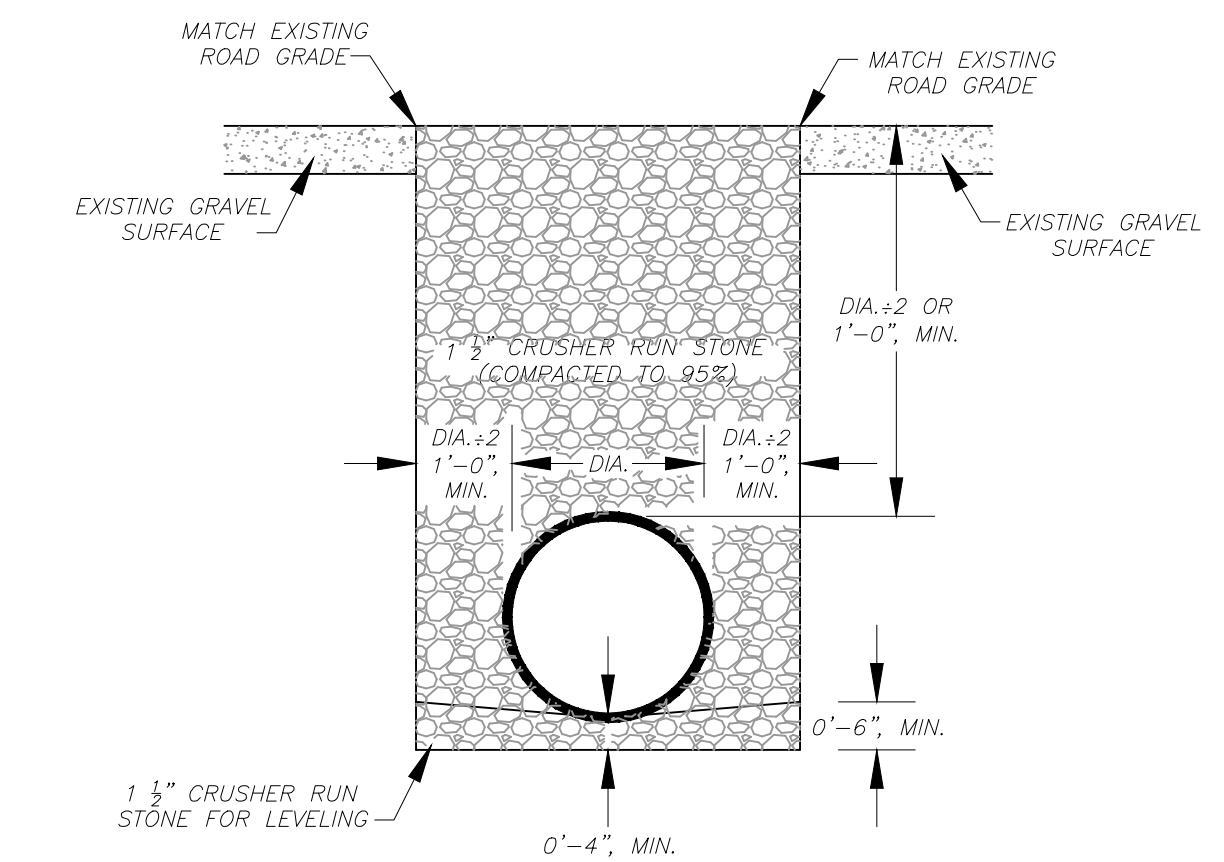
- NOTES:
- IN CUT THROUGH SECTIONS, CONSTRUCT DITCHES ON BOTH SIDES OF ROAD OR SLOPE THE ROADWAY TOWARD THE SOLITARY CONSTRUCTED DITCH.
 - CRUSHER RUN STONE SHALL BE ROLLER COMPACTED.
 - 1 1/2" CRUSHER RUN STONE.

DETAIL 4.2.1
ACCESS ROAD CONSTRUCTION
NOT TO SCALE



NOTE:
1. *SHOULD DIA. ± 2 BE EQUAL TO 1'-0", THEN CRUSHER RUN STONE GOES ALL THE WAY TO SURFACE.

DETAIL 7.6.3E
PIPE TRENCH - VEGETATED SURFACE
NOT TO SCALE



DETAIL 7.6.3d
PIPE TRENCH - AGGREGATE SURFACE
NOT TO SCALE

State of West Virginia
Department of Environmental Protection
Abandoned Mine Lands and Reclamation

BROAD RUN PORTALS

DRAINAGE DETAILS

DRAWN BY: RCD
APPROVED BY: AW
DATE: 3/31/2015

SCALE: 1" = 1'
SHEET NO. **13**
OF 13