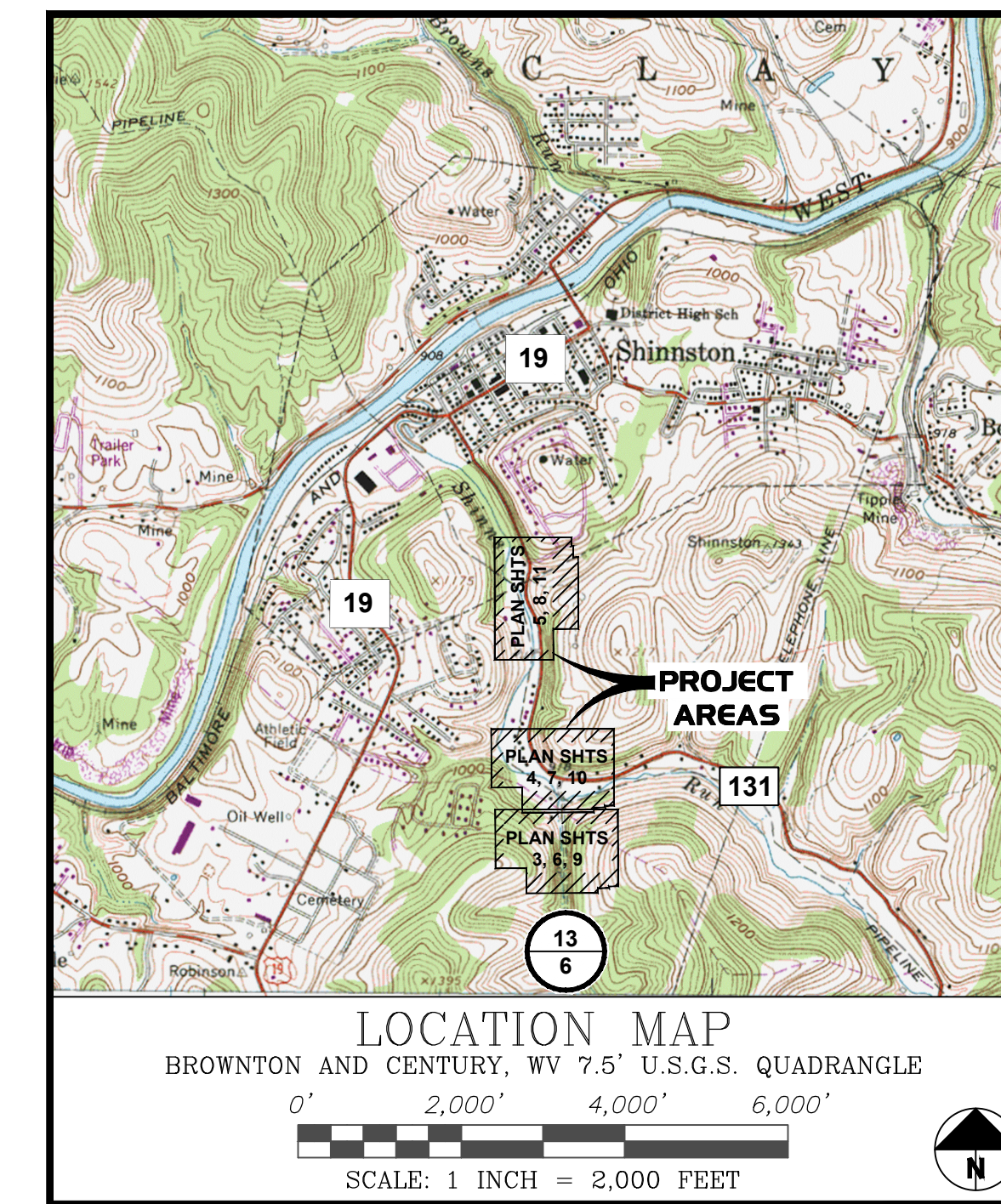


RANDY HUFFMAN
CABINET SECRETARY

EARL RAY TOMBLIN
GOVERNOR



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF ABANDONED MINE LANDS

SHINNS RUN PORTALS

NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
HARRISON COUNTY, WEST VIRGINIA

SCHEDULE OF ESTIMATED QUANTITIES (PAGE 1 OF 1)

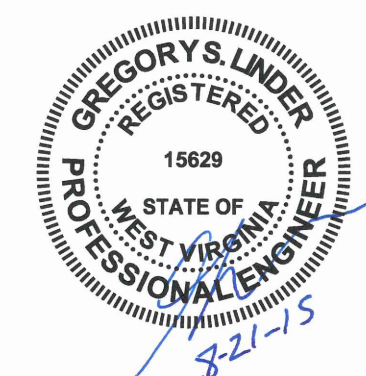
ITEM	DESCRIPTION	QUANTITY AND UNIT
1.0	MOBILIZATION AND DEMOBILIZATION (CANNOT BE MORE THAN 5% OF TOTAL AMOUNT BID)	LUMP SUM
2.0	CONSTRUCTION LAYOUT STAKES (CANNOT BE MORE THAN 5% OF TOTAL AMOUNT BID)	LUMP SUM
3.0	QUALITY CONTROL (CANNOT BE MORE THAN 2% OF TOTAL AMOUNT BID)	LUMP SUM
4.1	SITE PREPARATION (CANNOT BE MORE THAN 7% OF TOTAL AMOUNT BID)	LUMP SUM
4.2	TEMPORARY ACCESS ROAD	2,100 L.FT.
4.3	TEMPORARY STREAM CROSSINGS	LUMP SUM
4.4	LINE PROTECTION PADS	LUMP SUM
5.1	SILT FENCE	2,500 L.FT.
5.2	STRAW WATTLES	1,800 L.FT.
6.0	REVEGETATION (PER PLAN VIEW ACRE)	7 AC.
7.1	1.0 FT. DEEP "VEE" SHAPED GROUTED RIPRAP DITCH	15 L.FT.
7.2	1.5 FT. DEEP "VEE" SHAPED GROUTED RIPRAP DITCH	20 L.FT.
7.3	2.0 FT. DEEP "VEE" SHAPED RIPRAP DITCH	90 L.FT.
7.4	2.0 FT. DEEP "VEE" SHAPED GROUTED RIPRAP DITCH	600 L.FT.
7.5	4.0 FT. WIDE BY 2.0 FT. DEEP "FLAT BOTTOM" SHAPED GROUTED RIPRAP DITCH	380 L.FT.
7.6	4.0 FT. WIDE BY 3.0 FT. DEEP "FLAT BOTTOM" SHAPED GROUTED RIPRAP DITCH	500 L.FT.
7.7	48" Ø HDPE CULVERT NUMBER ONE	311 L.FT.
7.8	CONCRETE HEADWALLS	2 EA.
7.9	TRASH RACKS	2 EA.
7.10	DITCH NUMBER ONE GROUT KEY	375 L.FT.
7.11	STONE FILLED WIRE BASKETS	250 C.YDS.
7.12	SUBSIDENCE SOCK	1 EA.
8.1	UNCLASSIFIED EXCAVATION	10,000 C.YDS.
8.2	12" Ø RIPRAP FILL	6,700 TN.
9.1	MINE SEALS	8 EA.
9.2	MINE SEAL CONVEYANCE PIPE	900 L.FT.
9.3	SODA ASH BRIQUETTES	250 BAGS

SCHEDULE OF ESTIMATED QUANTITIES (PAGE 2 OF 2)

ITEM	DESCRIPTION	QUANTITY AND UNIT
10.1	SEEP COLLECTOR	660 L.FT.
10.2	UNDERDRAIN	375 L.FT.
10.3	8" Ø SOLID SDR35 PVC DRAIN PIPE	270 L.FT.
10.4	12" Ø SOLID SDR35 PVC DRAIN PIPE	140 L.FT.
10.5	8" INLINE CLEANOUT	5 EA.
10.6	12" INLINE CLEANOUT	5 EA.
11.1	ROAD REPAIR CRUSHED STONE	300 TN.
11.2	ROAD REPAIR ASPHALT	100 TN.
11.3	ROAD REPAIR CONCRETE	50 C.YDS.
12.1	PILOT HOLES	250 L.FT.
12.2	16" Ø STEEL PIPE BORED AND JACKED	100 L.FT.
12.3	60" Ø STEEL PIPE BORED AND JACKED	150 L.FT.
13.0	TRAFFIC CONTROL	LUMP SUM

ENGINEER:
REGISTERED PROFESSIONAL ENGINEER
P.E. No. 15629


GREGORY S. LINDER



Date: AUGUST 21, 2015

PROJECT: **SHINNS RUN PORTALS**

DRAWING INDEX

DESCRIPTION	SHEET NO.
TITLE SHEET	1
COMPOSITE DRAWING	2
EXISTING CONDITIONS	3-5
FINAL DESIGN	6-8
TAX MAP OVERLAY	9-11
BASELINE 1 CROSS SECTIONS - STA. 0+00 TO STA. 3+50	12-13
BASELINE 1 CROSS SECTIONS - STA. 3+50 TO STA. 4+00 AND DITCH ONE PROFILE	14
DITCH NUMBERS TWO TO SIX PROFILES	15
DITCH NUMBERS SEVEN AND EIGHT PROFILES	16
SEEP COLLECTOR ONE, UNDERDRAIN TWO, AND SEEP COLLECTOR THREE PROFILES	17
SEEP COLLECTOR NUMBERS FOUR AND FIVE AND MISCELLANEOUS DRAIN DETAILS	18
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REVISION RECORD

NO.	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

DEPARTMENT OF
ENVIRONMENTAL PROTECTION
OFFICE OF
ABANDONED MINE LANDS

C&E
Civil & Environmental Consultants, Inc.
99 Cambridge Place - Bridgeport, WV 26330
Ph: 304.933.3119 - 855.488.9539 - Fax: 304.933.3327
www.cceinc.com

SHINNS RUN PORTALS
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
HARRISON COUNTY, WEST VIRGINIA

TITLE SHEET
DATE: MARCH 2014 DRAWN BY: PWG
DWG SCALE: AS NOTED CHECKED BY: DRAFT
PROJECT NO: 131-204
APPROVED BY: DRAFT

DRAWING NO.: **1**
SHEET 1 OF 24

F:\2015\131-204\CADD\Drawings\Title Sheet.dwg(SHEET - 1) L5(8/21/2015 - noon) - LP: 8/24/2015 8:14 AM



48" Ø CMP CULVERT
INV. OUT 915.5
MATCH LINE WITH SHEET 4

48" Ø CMP CULVERT
INV. IN 925.3

STREAM CAPTURE MINE
SUBSIDENCE AREA

UNNAMED TRIBUTARY

SHINNS RUN

GARAGE

HOUSE
OUTBUILDING

EXISTING LEGEND

- 900 — EXISTING CONTOURS (2 FT. INTERVAL)
- 900 — DEPRESSION CONTOURS (2 FT. INTERVAL)
- — EDGE WOODS
- — GUY WIRE
- — POWER POLE
- — PROPERTY CORNER
- — BURIED GAS LINE
- — BURIED WATER LINE
- — BURIED TELEPHONE CABLE
- — OHU — OVERHEAD UTILITY LINE
- — PRIVATE SEPTIC SYSTEM LID
- — WATER WELL
- — (AST) ABOVE GROUND STORAGE TANK
- — EXISTING BURIED PIPES
- — CONCRETE
- — GRAVELED AREA
- — GARBAGE
- — STREAM OR EDGE WATER
- — BUILDING
- — LANDOWNER CONSTRUCTIONS
- — BORE HOLE LOCATION
- — FENCE
- — JEEP OR FOUR WHEELER TRAIL
- — CWL — CONTRACTOR'S WORK LIMITS
- — WT — STRAW WATTLES
- — SF — SILT FENCE
- — SSF — SUPER SILT FENCE

SCALE IN FEET
0 50 100

REVISION RECORD

NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 198, PARCEL 34.5

EXISTING CONDITIONS SHEET 1

DATE:	MARCH 2014	DRAWN BY:	PWC
DWG SCALE:	1"=50'	CHECKED BY:	DRAFT
PROJECT NO:	131-204		
APPROVED BY:			DRAFT

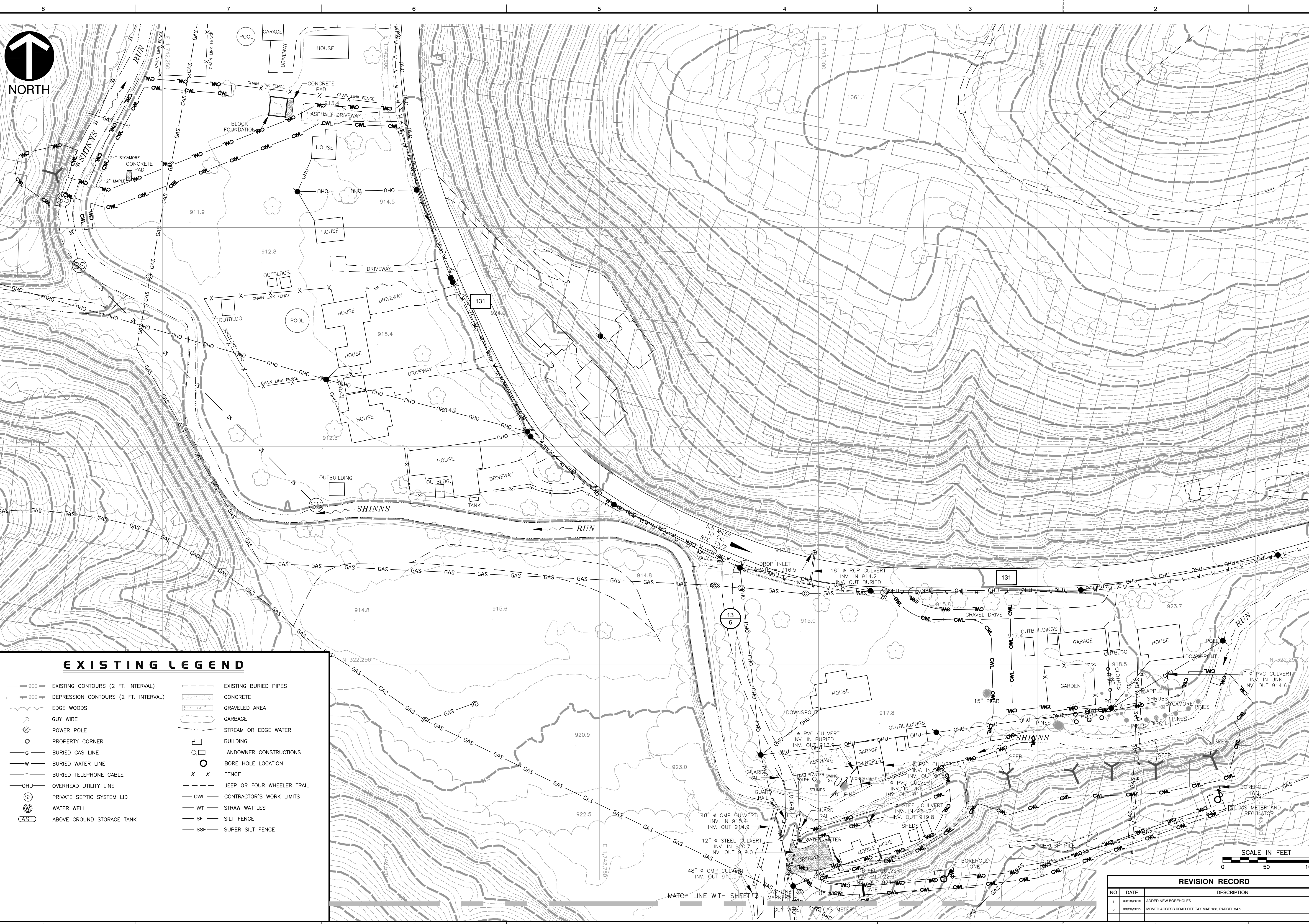
DRAWING NO.: **3**
SHEET 3 OF 24

SHINNS RUN PORTALS
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
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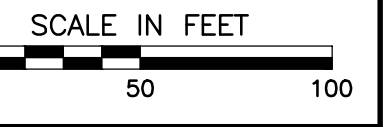
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS

P:\2015\131-204\CADD\Map\131204M-Existing.dwg/SHEET 1.dwg 8/21/2015 8:40 AM



EXISTING LEGEND

- 900 EXISTING CONTOURS (2 FT. INTERVAL)
- 900 DEPRESSION CONTOURS (2 FT. INTERVAL)
- EDGE WOODS
- GUY WIRE
- POWER POLE
- PROPERTY CORNER
- BURIED GAS LINE
- BURIED WATER LINE
- BURIED TELEPHONE CABLE
- OVERHEAD UTILITY LINE
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REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

EXISTING CONDITIONS SHEET 2

DATE:	MARCH 2014	DRAWN BY:	PWC
DWG SCALE:	1"=50'	CHECKED BY:	DRAFT
PROJECT NO:	131-204	APPROVED BY:	DRAFT

DRAWING NO: **4**
SHEET 4 OF 24

SHINNS RUN PORTALS

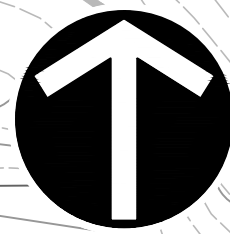
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
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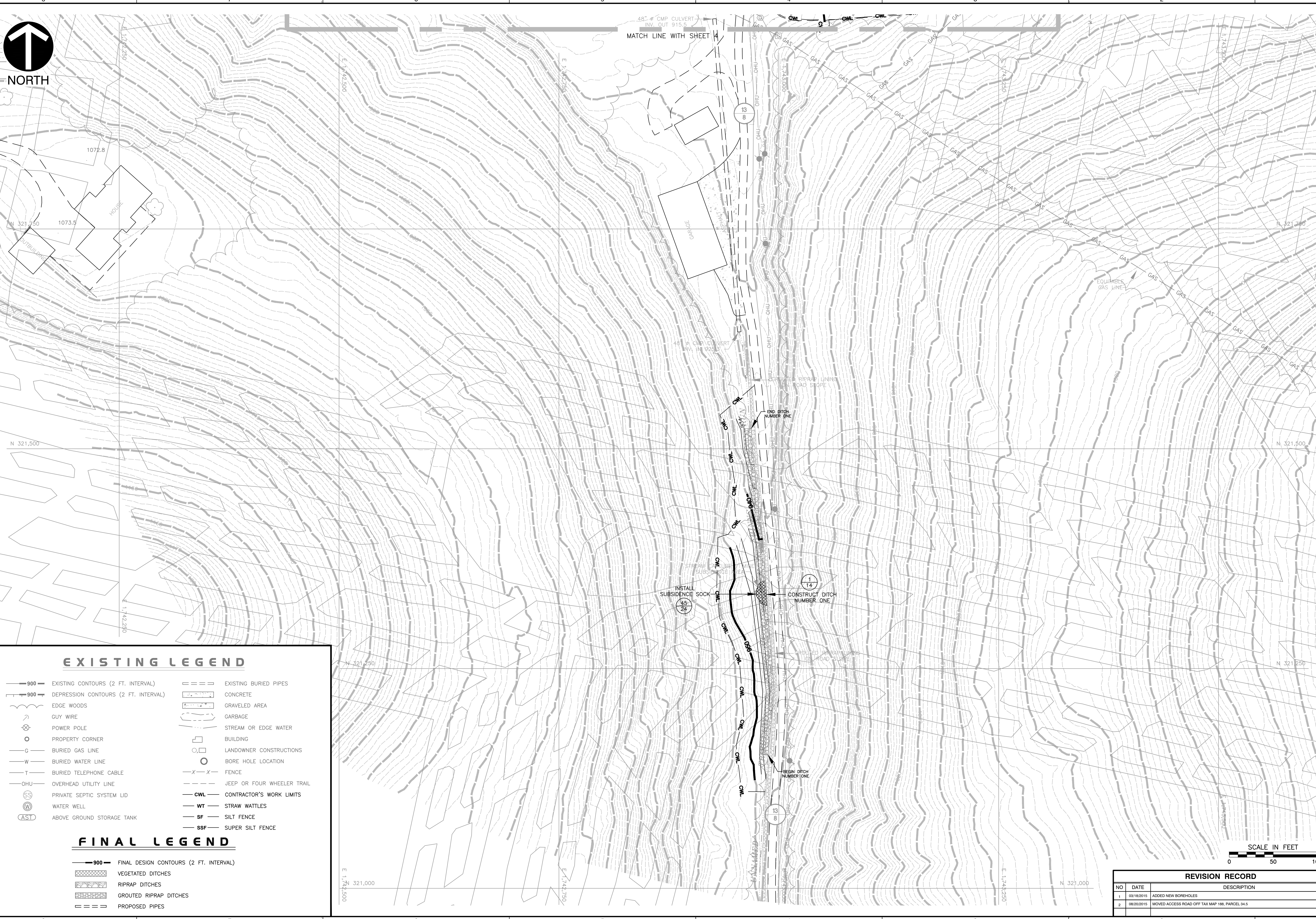
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS

P:\131-204-1-CADD\Drawings\131204-Existing.dwg | SHEET 4 | 131-204-1.dwg | 03/18/2015 8:41 AM



NORTH

48" CMP CULVERT
INV. OUT 915.5
MATCH LINE WITH SHEET

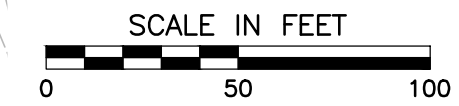


EXISTING LEGEND

- 900 EXISTING CONTOURS (2 FT. INTERVAL)
- 900 DEPRESSION CONTOURS (2 FT. INTERVAL)
- EDGE WOODS
- GUY WIRE
- POWER POLE
- PROPERTY CORNER
- BURIED GAS LINE
- BURIED WATER LINE
- BURIED TELEPHONE CABLE
- OVERHEAD UTILITY LINE
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- ABOVE GROUND STORAGE TANK
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- BORE HOLE LOCATION
- FENCE
- JEEP OR FOUR WHEELER TRAIL
- CONTRACTOR'S WORK LIMITS
- STRAW WATTLES
- SILT FENCE
- SUPER SILT FENCE

FINAL LEGEND

- 900 FINAL DESIGN CONTOURS (2 FT. INTERVAL)
- VEGETATED DITCHES
- RIPRAP DITCHES
- GROUTED RIPRAP DITCHES
- PROPOSED PIPES



REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 198, PARCEL 34.5

DEPARTMENT OF
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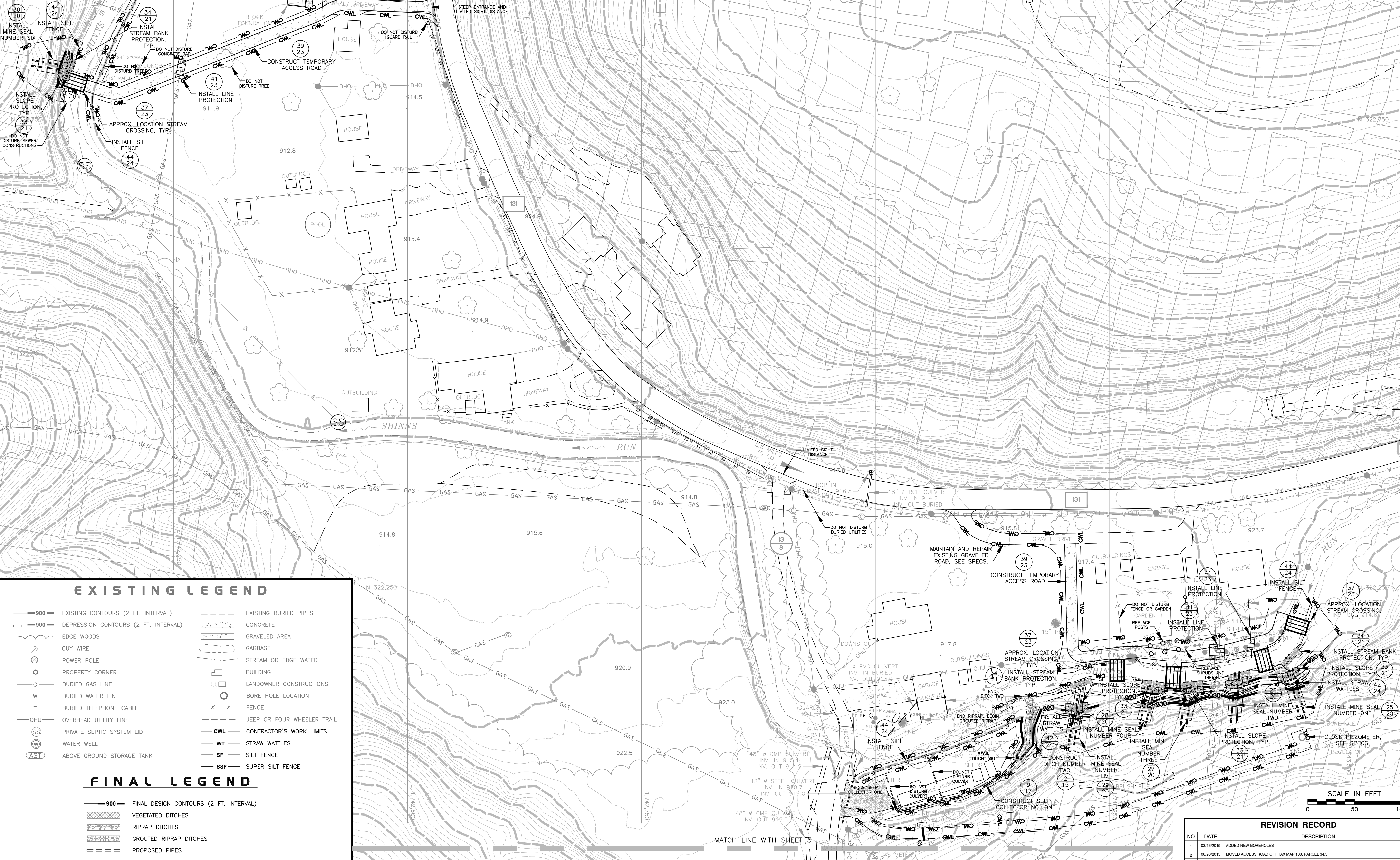
SHINNS RUN PORTALS
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
HARRISON COUNTY, WEST VIRGINIA

FINAL DESIGN SHEET 1

DATE:	MARCH 2014	DRAWN BY:	PWC
DWG SCALE:	1"=50'	CHECKED BY:	DRAFT
PROJECT NO:	131-204	APPROVED BY:	DRAFT

DRAWING NO.: **6**
SHEET 6 OF 24

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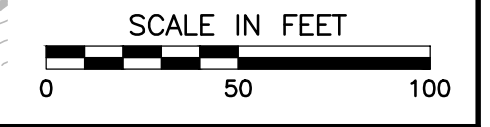


EXISTING LEGEND

- 900 — EXISTING CONTOURS (2 FT. INTERVAL)
- 900 — DEPRESSION CONTOURS (2 FT. INTERVAL)
- EDGE WOODS
- GUY WIRE
- POWER POLE
- O — PROPERTY CORNER
- G — BURIED GAS LINE
- W — BURIED WATER LINE
- T — BURIED TELEPHONE CABLE
- OHU — OVERHEAD UTILITY LINE
- SS — PRIVATE SEPTIC SYSTEM LID
- W — WATER WELL
- AST — ABOVE GROUND STORAGE TANK
- — — — — EXISTING BURIED PIPES
- — — — — CONCRETE
- — — — — GRAVELED AREA
- — — — — GARBAGE
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- — — — — CONTRACTOR'S WORK LIMITS
- — — — — STRAW WATTLES
- — — — — SILT FENCE
- — — — — SUPER SILT FENCE

FINAL LEGEND

- 900 — FINAL DESIGN CONTOURS (2 FT. INTERVAL)
- — — — — VEGETATED DITCHES
- — — — — RIPRAP DITCHES
- — — — — GROUTED RIPRAP DITCHES
- — — — — PROPOSED PIPES



REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

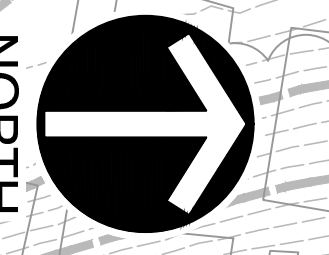
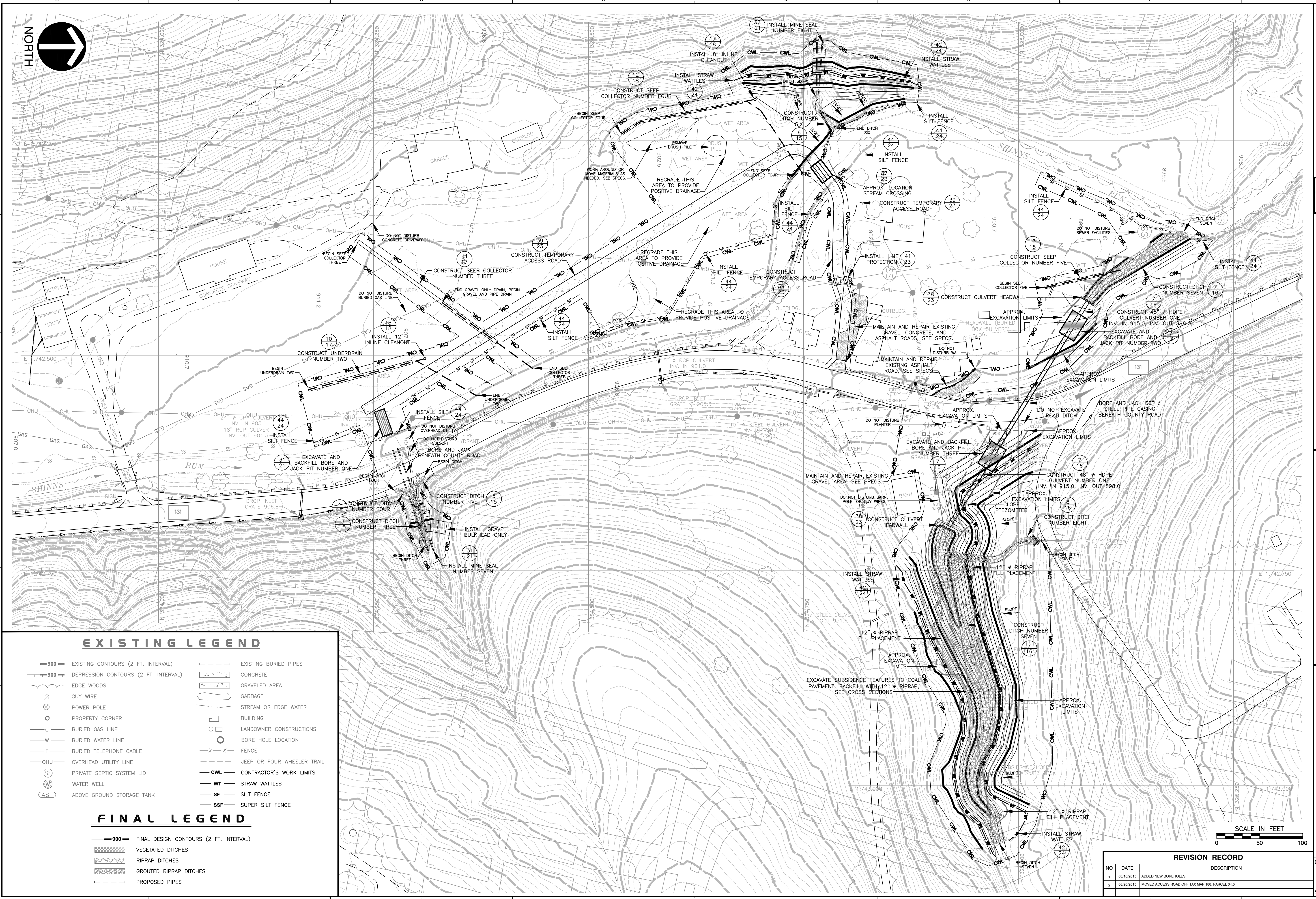
DATE:	MARCH 2014	DRAWN BY:	PWC
DWG SCALE:	1"=50'	CHECKED BY:	DRAFT
PROJECT NO:	131-204	APPROVED BY:	DRAFT

SHINNS RUN PORTALS
FINAL DESIGN SHEET 2
 NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
 HARRISON COUNTY, WEST VIRGINIA

Civil & Environmental Consultants, Inc.
 99 Cambridge Place - Bridgeport, WV 26330
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DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS

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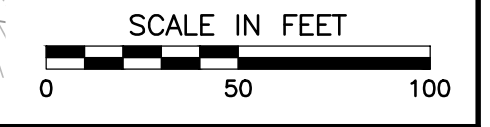


EXISTING LEGEND

- 900 — EXISTING CONTOURS (2 FT. INTERVAL)
- 900 — DEPRESSION CONTOURS (2 FT. INTERVAL)
- — — EDGE WOODS
- — — GUY WIRE
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- — — WATER WELL
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- — — BORE HOLE LOCATION
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- — — JEEP OR FOUR WHEELER TRAIL
- — — CONTRACTOR'S WORK LIMITS
- — — STRAW WATTLES
- — — SILT FENCE
- — — SSF — SUPER SILT FENCE

FINAL LEGEND

- 900 — FINAL DESIGN CONTOURS (2 FT. INTERVAL)
- — — VEGETATED DITCHES
- — — RIPRAP DITCHES
- — — GROUTED RIPRAP DITCHES
- — — PROPOSED PIPES



REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS

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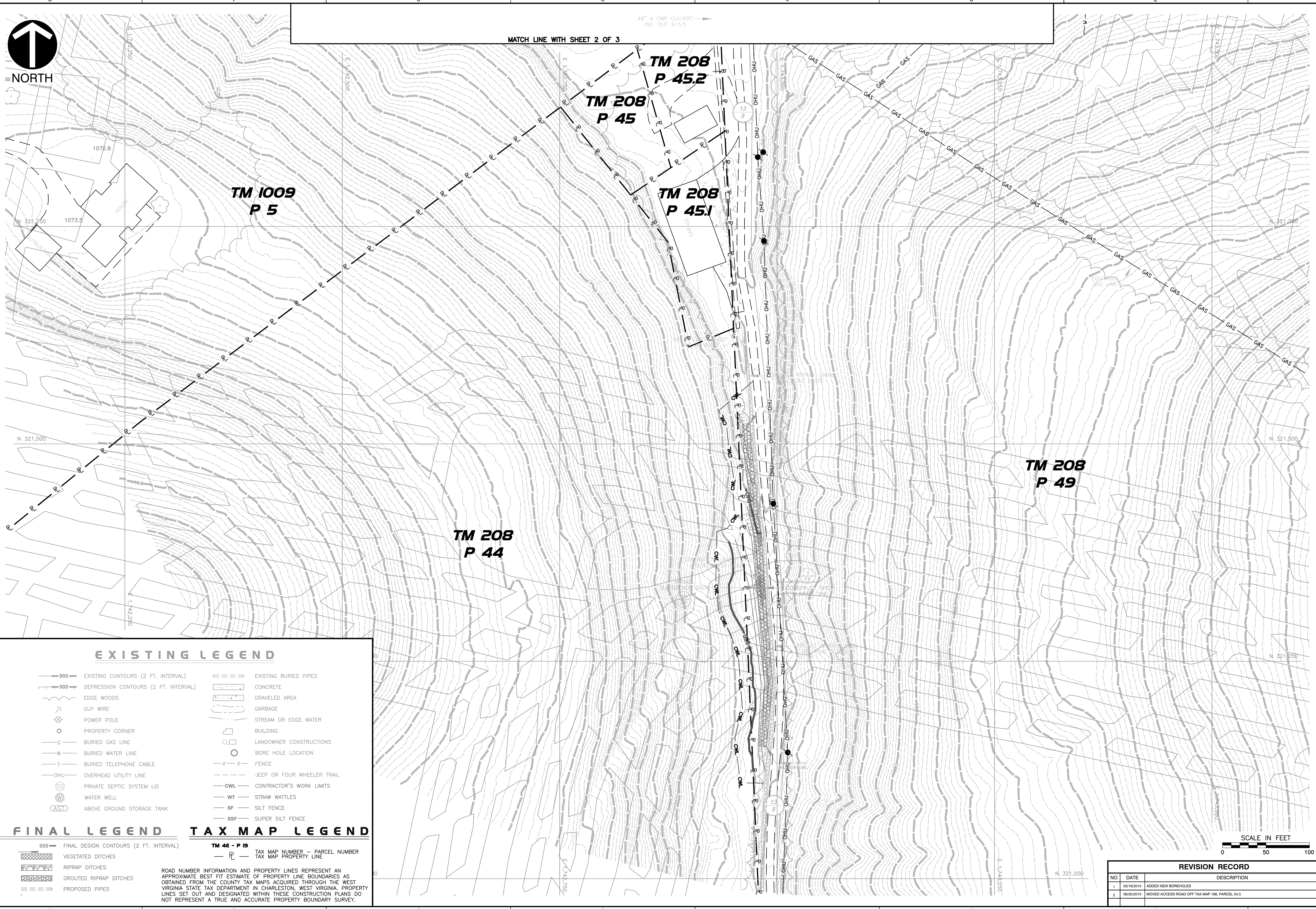
SHINN'S RUN PORTALS
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
HARRISON COUNTY, WEST VIRGINIA

FINAL DESIGN SHEET 3

DATE:	MARCH 2015	DRAWN BY:	PWC
DWG SCALE:	1"=50'	CHECKED BY:	DRAFT
PROJECT NO.:	131-204	APPROVED BY:	DRAFT

DRAWING NO.: **8**
SHEET 8 OF 24

F:\2015\131-204\CADD\DWG\131204R-Grading.dwg SHEET 3 of 13 8/21/2015 10:00 AM
 LP: 8/21/2015 10:00 AM



MATCH LINE WITH SHEET 2 OF 3

48" Ø CMP CULVERT
INV. OUT 915.5



**TM 1009
P 5**

**TM 208
P 45**
**TM 208
P 45.2**

**TM 208
P 45.1**

**TM 208
P 44**

**TM 208
P 49**

EXISTING LEGEND

- 900— EXISTING CONTOURS (2 FT. INTERVAL)
- 900— DEPRESSION CONTOURS (2 FT. INTERVAL)
- EDGE WOODS
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- O, □— LANDOWNER CONSTRUCTIONS
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- X—X— FENCE
- J— JEEP OR FOUR WHEELER TRAIL
- CWL— CONTRACTOR'S WORK LIMITS
- WT— STRAW WATTLES
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- SSF— SUPER SILT FENCE

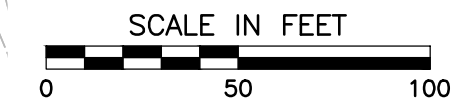
FINAL LEGEND

- 900— FINAL DESIGN CONTOURS (2 FT. INTERVAL)
- VEGETATED DITCHES
- RIPRAP DITCHES
- GRAouted RIPRAP DITCHES
- PROPOSED PIPES

TAX MAP LEGEND

TM 4E - P 19
— P — TAX MAP NUMBER - PARCEL NUMBER
— P — TAX MAP PROPERTY LINE

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



REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

DEPARTMENT OF ENVIRONMENTAL PROTECTION
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SHINNS RUN PORTALS
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
HARRISON COUNTY, WEST VIRGINIA

TAX MAP OVERLAY SHEET 1	DATE: MARCH 2014	DRAWN BY: PWC	DRAWING NO.: 9
	DWG SCALE: 1"=50'	CHECKED BY: 131-204	SHEET 9 OF 24
	APPROVED BY:	DRAFT	

P:\2015\131-204\1-CAD\Map\shinns\1-14-Taxmap Overlay.dwg TAX MAP SH1 OF LS(8/21/2015 - Revision) - LP: 8/21/2015 1:07 PM



TM 188
P 43

TM 208
P 17

TM 208
P 23

TM 208
P 16

TM 208
P 15

TM 208
P 24

TM 208
P 30

TM 208
P 14

TM 208
P 24.1

TM 208
P 13

TM 208
P 25

TM 208
P 26

TM 1009
P 5

TM 208
P 71

TM 208
P 72

TM 208
P 49.4

TM 208
P 49.5

TM 208
P 49

TM 1009
P 5

TM 208
P 49.2

TM 208
P 49

TM 208
P 45.2

SCALE IN FEET
0 50 100

EXISTING LEGEND

- 900 — EXISTING CONTOURS (2 FT. INTERVAL)
- 900 — DEPRESSION CONTOURS (2 FT. INTERVAL)
- — EDGE WOODS
- — GUY WIRE
- — POWER POLE
- — PROPERTY CORNER
- — BURIED GAS LINE
- — BURIED WATER LINE
- — BURIED TELEPHONE CABLE
- — OHU — OVERHEAD UTILITY LINE
- — PRIVATE SEPTIC SYSTEM LID
- — CAST — ABOVE GROUND STORAGE TANK
- — EXISTING BURIED PIPES
- — CONCRETE
- — GRAVELED AREA
- — GARBAGE
- — STREAM OR EDGE WATER
- — BUILDING
- — LANDOWNER CONSTRUCTIONS
- — BORE HOLE LOCATION
- — JEEP OR FOUR WHEELER TRAIL
- — CWL — CONTRACTOR'S WORK LIMITS
- — WT — STRAW WATTLES
- — SF — SILT FENCE
- — SSF — SUPER SILT FENCE

FINAL LEGEND

- 900 — FINAL DESIGN CONTOURS (2 FT. INTERVAL)
- — VEGETATED DITCHES
- — RIPRAP DITCHES
- — GROUDED RIPRAP DITCHES
- — PROPOSED PIPES

TAX MAP LEGEND

- — TM 4E - P 19
- — TAX MAP NUMBER - PARCEL NUMBER
- — TAX MAP PROPERTY LINE

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

MATCH LINE WITH SHEET 1 OF 3

REVISION RECORD

NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

DEPARTMENT OF
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OFFICE OF
ABANDONED MINE LANDS

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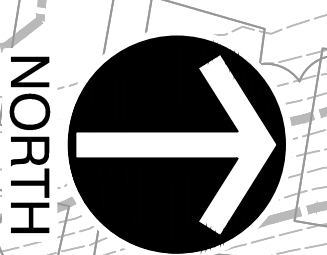
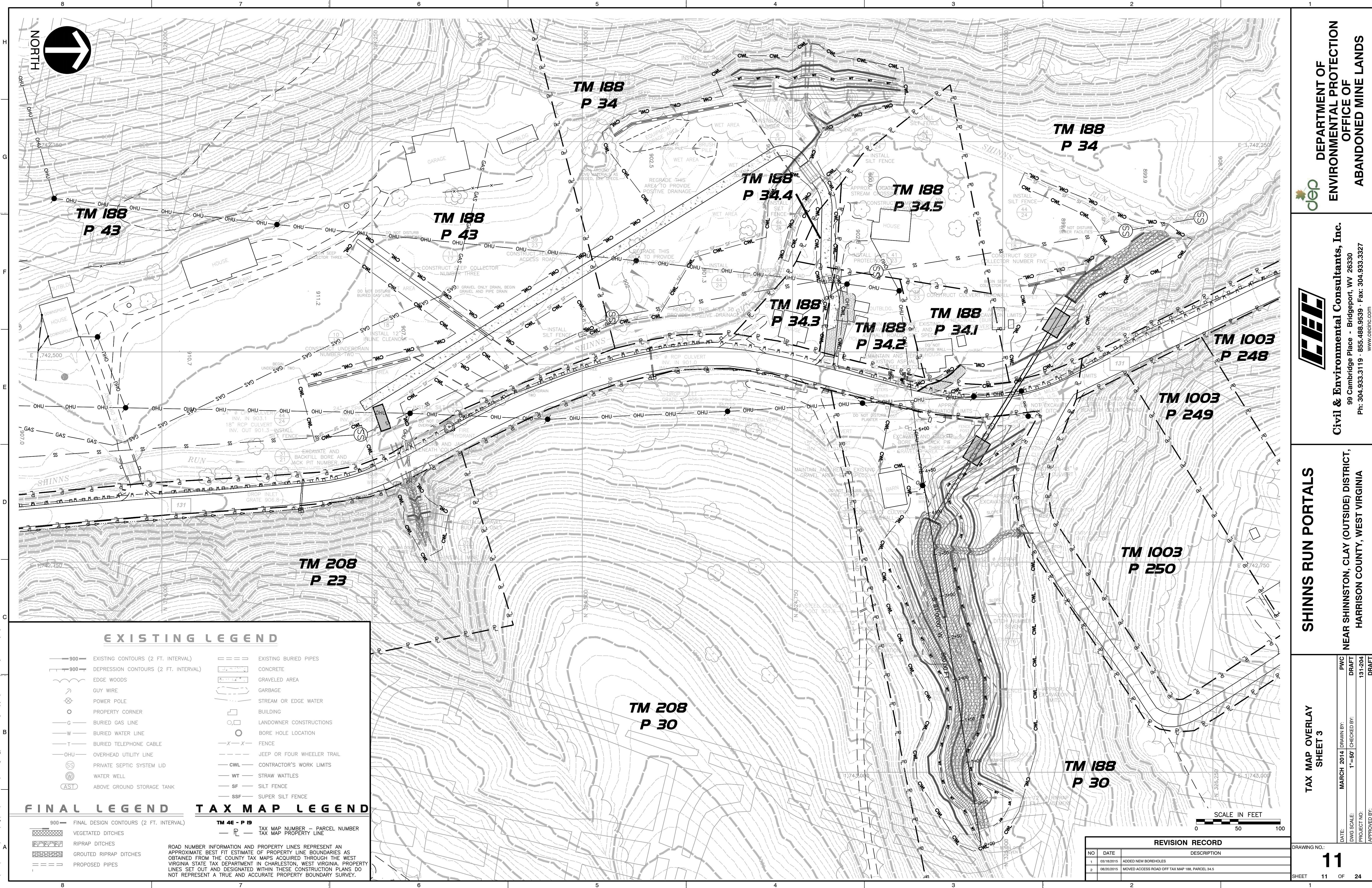
SHINNS RUN PORTALS
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
HARRISON COUNTY, WEST VIRGINIA

TAX MAP OVERLAY
SHEET 2

DATE:	MARCH 2014	DRAWN BY:	PWC
DWG SCALE:	1"=50'	CHECKED BY:	DRAFT
PROJECT NO.:	131-204	APPROVED BY:	DRAFT

DRAWING NO.:
10
SHEET 10 OF 24

P:\2015\131-204\CADD\Drawings\131-14-Taxmap Overlay.dwg (Tax Map SHINNS RUN PORTALS) - L.P. 8/21/2015 1:07 PM



EXISTING LEGEND

- 900 - EXISTING CONTOURS (2 FT. INTERVAL)
- DEPRESSION CONTOURS (2 FT. INTERVAL)
- EDGE WOODS
- GUY WIRE
- POWER POLE
- PROPERTY CORNER
- BURIED GAS LINE
- BURIED WATER LINE
- BURIED TELEPHONE CABLE
- OVERHEAD UTILITY LINE
- PRIVATE SEPTIC SYSTEM LID
- WATER WELL
- ABOVE GROUND STORAGE TANK
- EXISTING BURIED PIPES
- CONCRETE
- GRAVELED AREA
- GARBAGE
- STREAM OR EDGE WATER
- BUILDING
- LANDOWNER CONSTRUCTIONS
- BORE HOLE LOCATION
- FENCE
- JEEP OR FOUR WHEELER TRAIL
- CONTRACTOR'S WORK LIMITS
- STRAW WATTLES
- SILT FENCE
- SUPER SILT FENCE

FINAL LEGEND TAX MAP LEGEND

- 900 - FINAL DESIGN CONTOURS (2 FT. INTERVAL)
 - VEGETATED DITCHES
 - RIPRAP DITCHES
 - GROUTED RIPRAP DITCHES
 - PROPOSED PIPES
 - TM 4E - P 19**
 - TAX MAP NUMBER - PARCEL NUMBER
 - TAX MAP PROPERTY LINE
- ROAD NUMBER INFORMATION AND PROPERTY LINES REPRESENT AN APPROXIMATE BEST FIT ESTIMATE OF PROPERTY LINE BOUNDARIES AS OBTAINED FROM THE COUNTY TAX MAPS ACQUIRED THROUGH THE WEST VIRGINIA STATE TAX DEPARTMENT IN CHARLESTON, WEST VIRGINIA. PROPERTY LINES SET OUT AND DESIGNATED WITHIN THESE CONSTRUCTION PLANS DO NOT REPRESENT A TRUE AND ACCURATE PROPERTY BOUNDARY SURVEY.



REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 198, PARCEL 34.5

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www.celinc.com

SHINNS RUN PORTALS
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
HARRISON COUNTY, WEST VIRGINIA

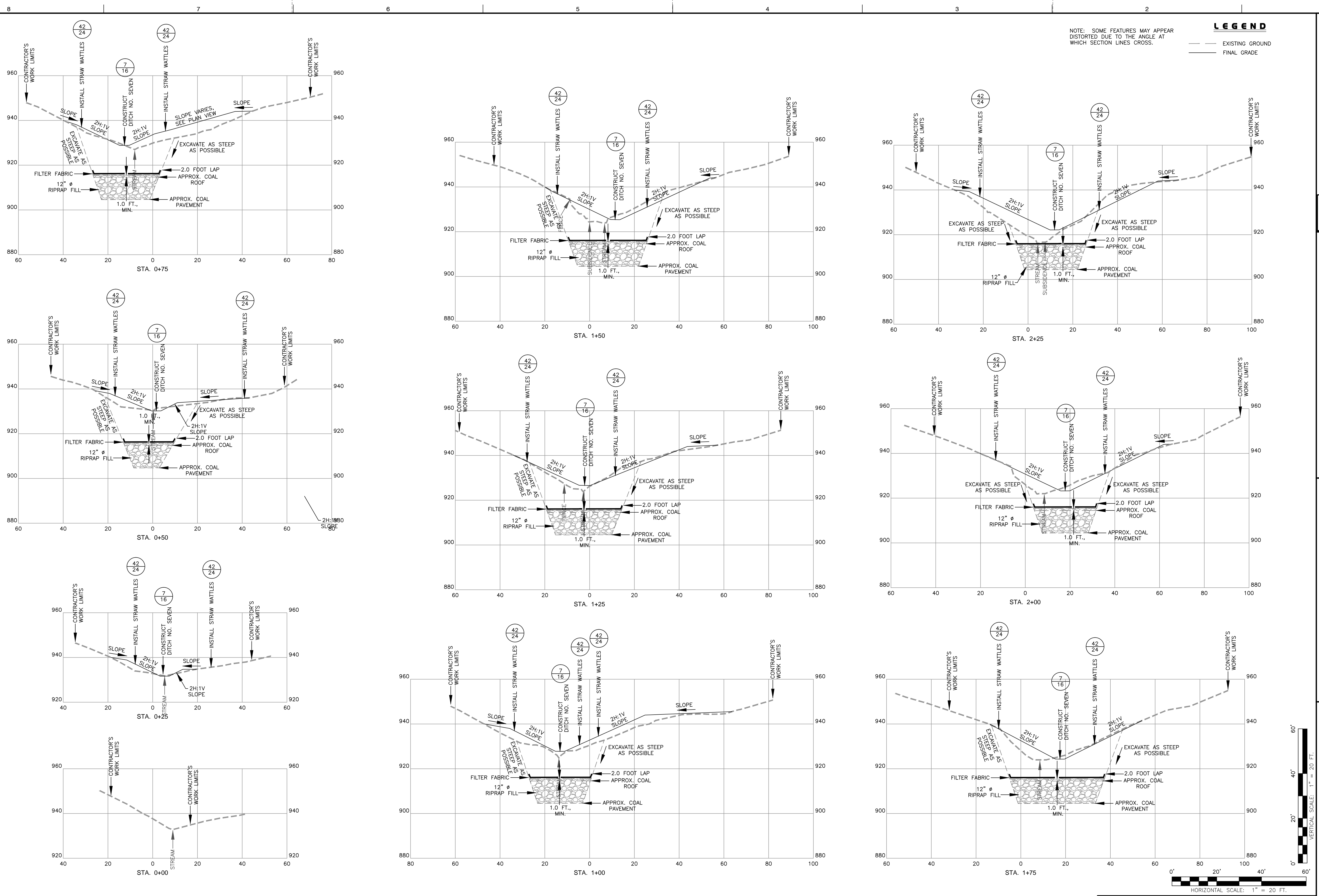
TAX MAP OVERLAY SHEET 3

DATE:	MARCH 2014	DRAWN BY:	PWC
DWG SCALE:	1"=50'	CHECKED BY:	DRAFT
PROJECT NO.:	131-204	APPROVED BY:	DRAFT

DRAWING NO.: **11**
SHEET 11 OF 24

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NOTE: SOME FEATURES MAY APPEAR DISTORTED DUE TO THE ANGLE AT WHICH SECTION LINES CROSS.

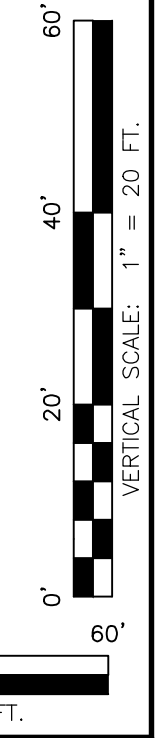
LEGEND
 --- EXISTING GROUND
 ——— FINAL GRADE

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SHINNS RUN PORTALS
 NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
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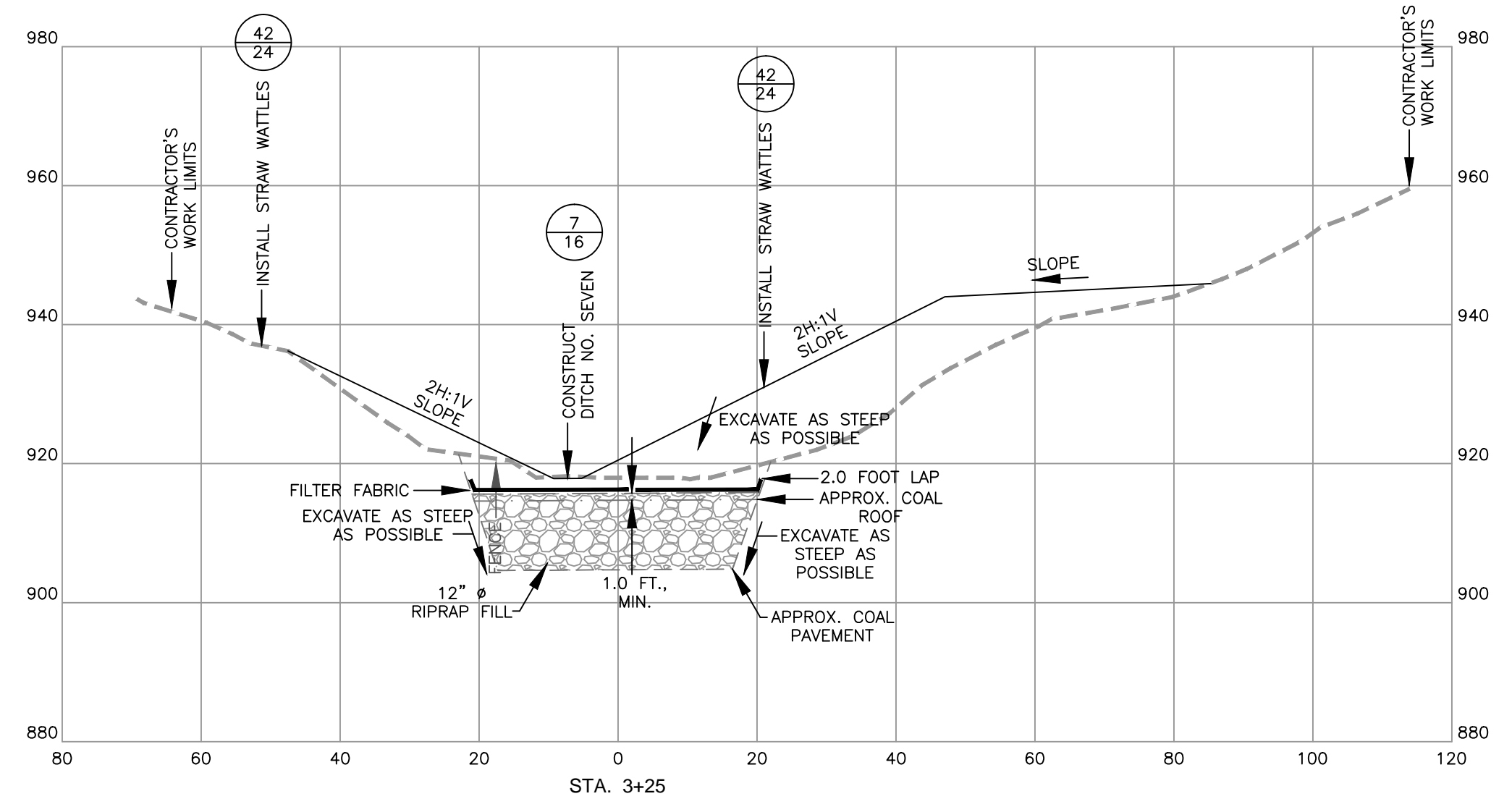
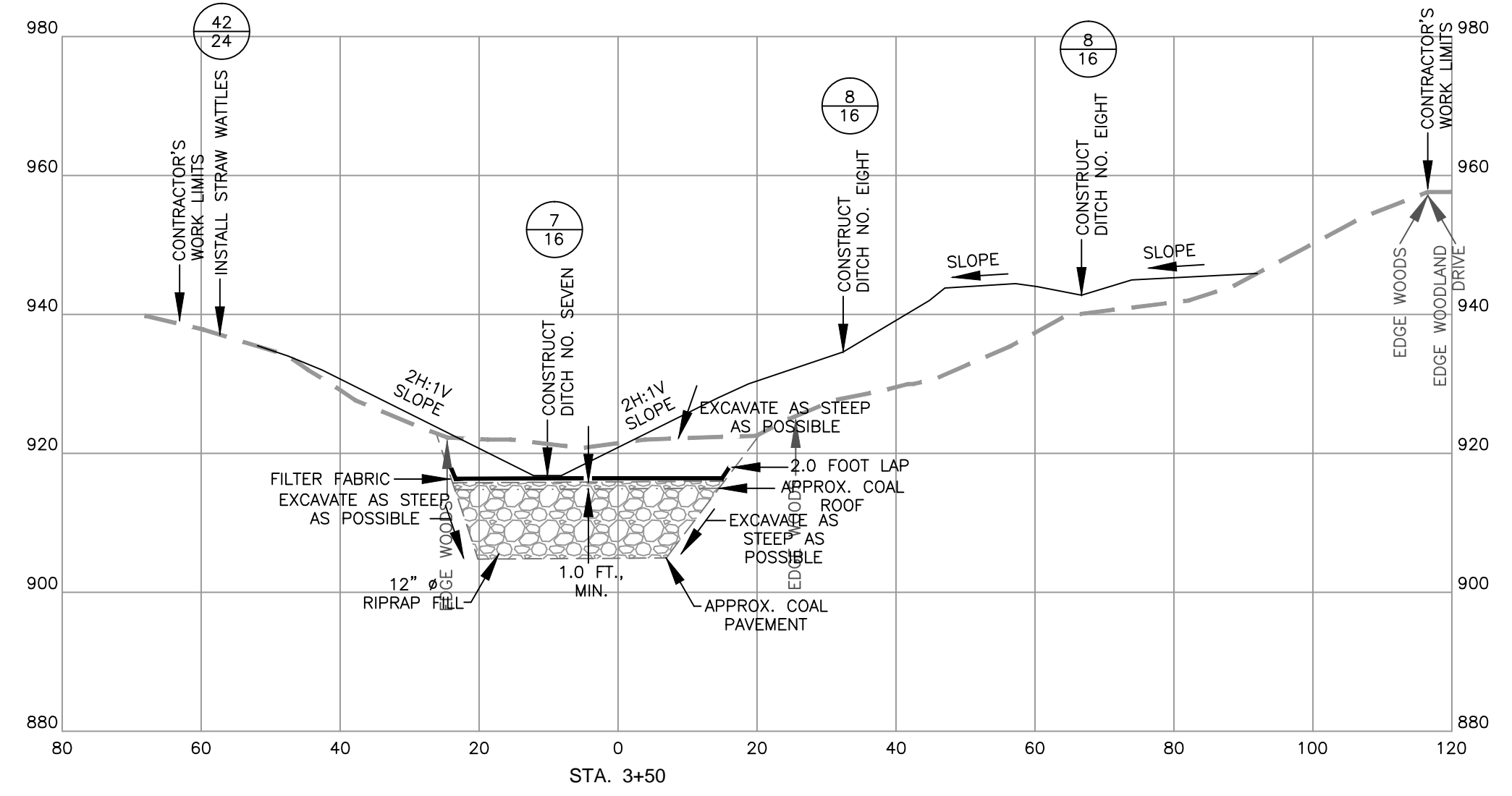
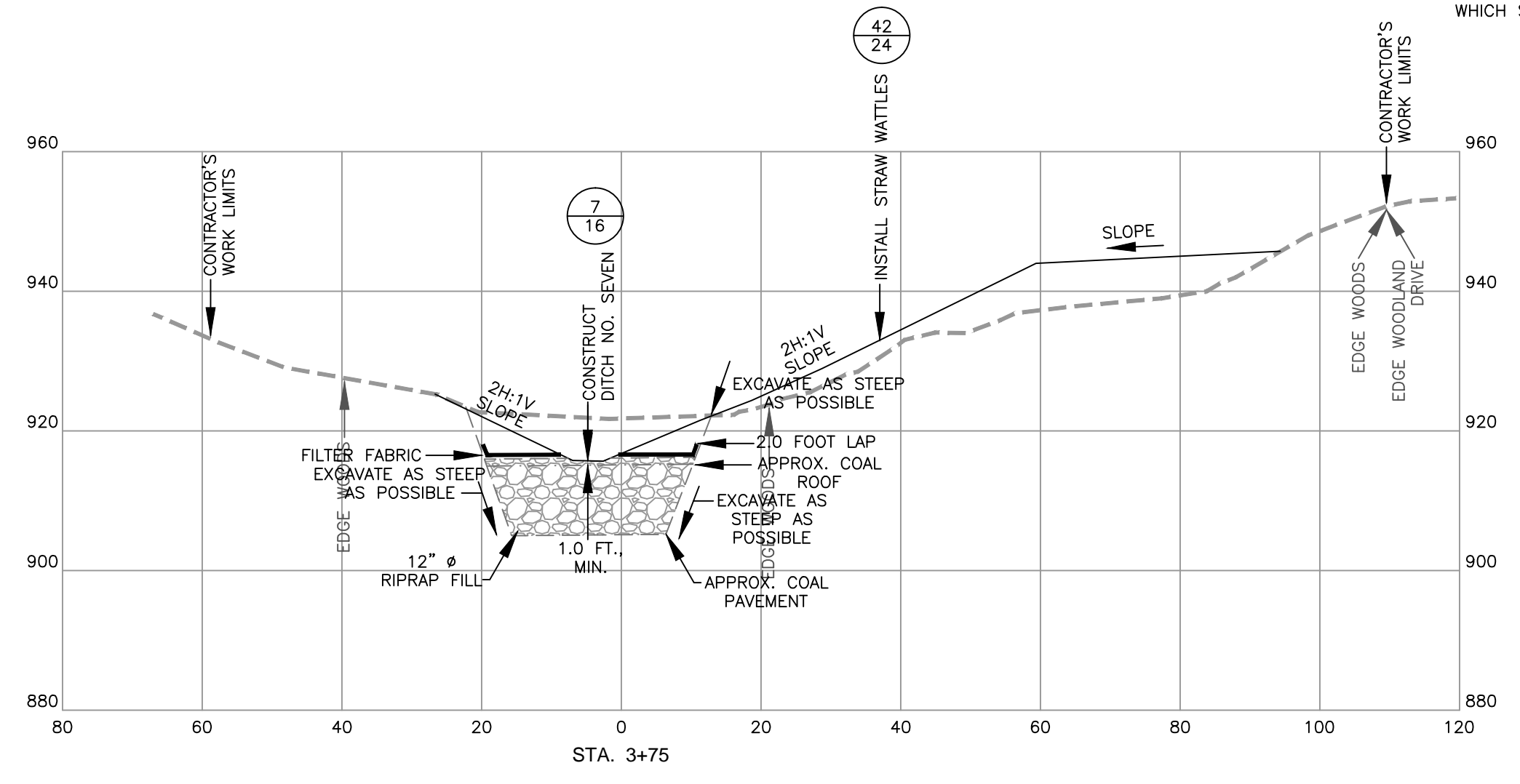
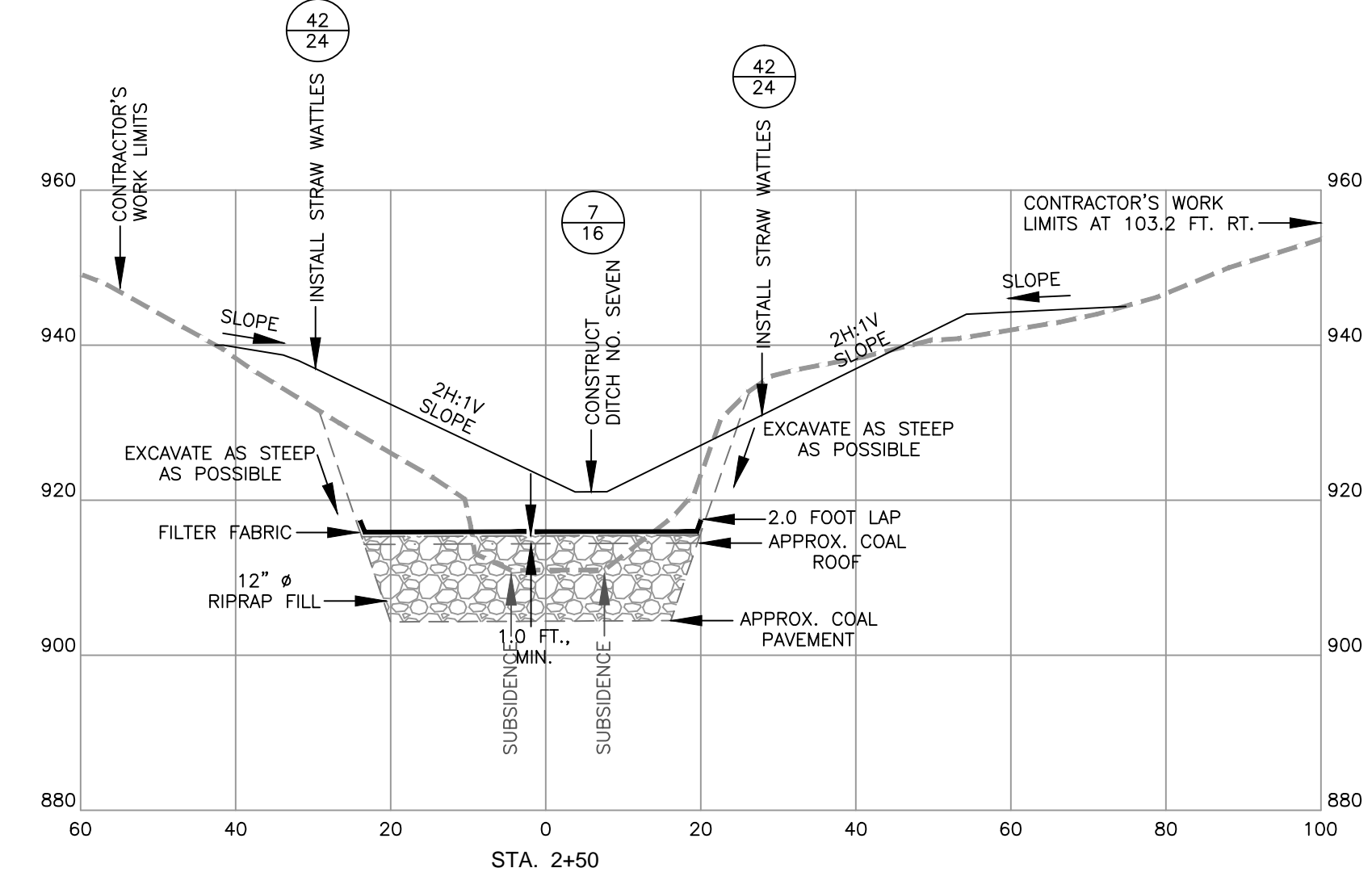
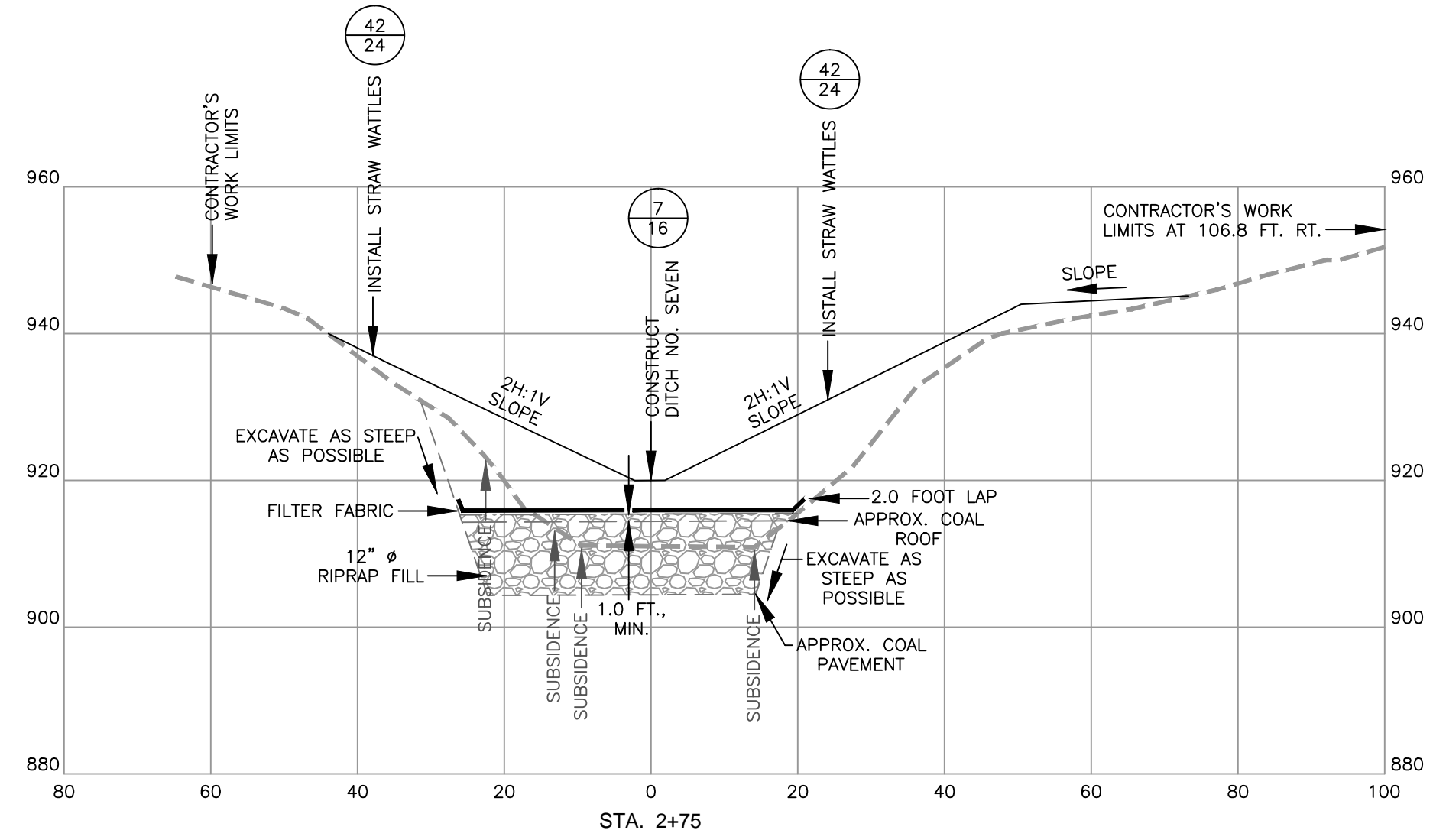
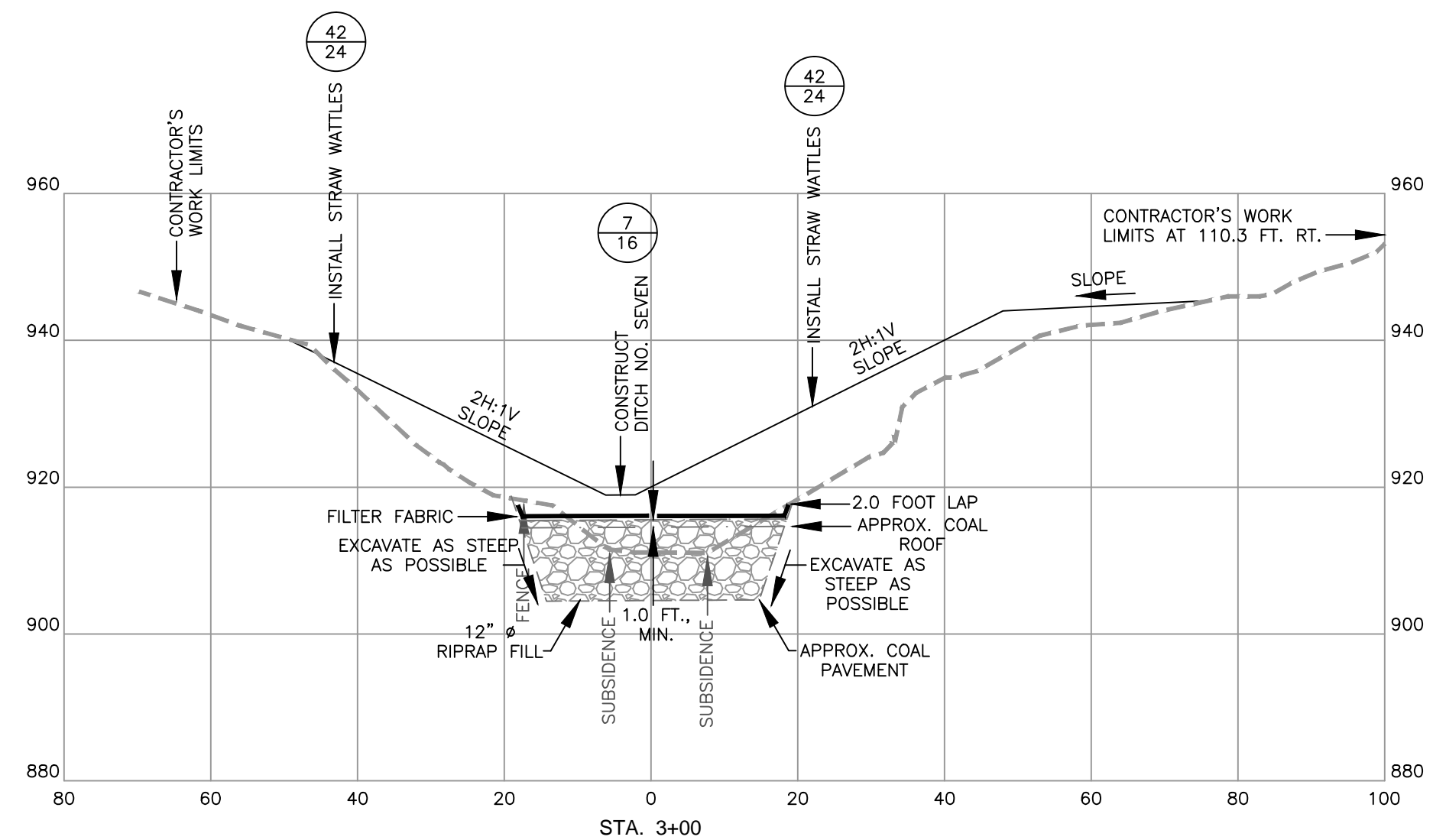
**BASELINE ONE CROSS SECTIONS
 STA. 0+00 TO STA. 2+25**
 DATE: MARCH 2015 DRAWN BY: PWC
 DWG SCALE: AS NOTED CHECKED BY: DRAFT
 PROJECT NO: 131-204
 APPROVED BY: DRAFT



REVISION RECORD		
NO.	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

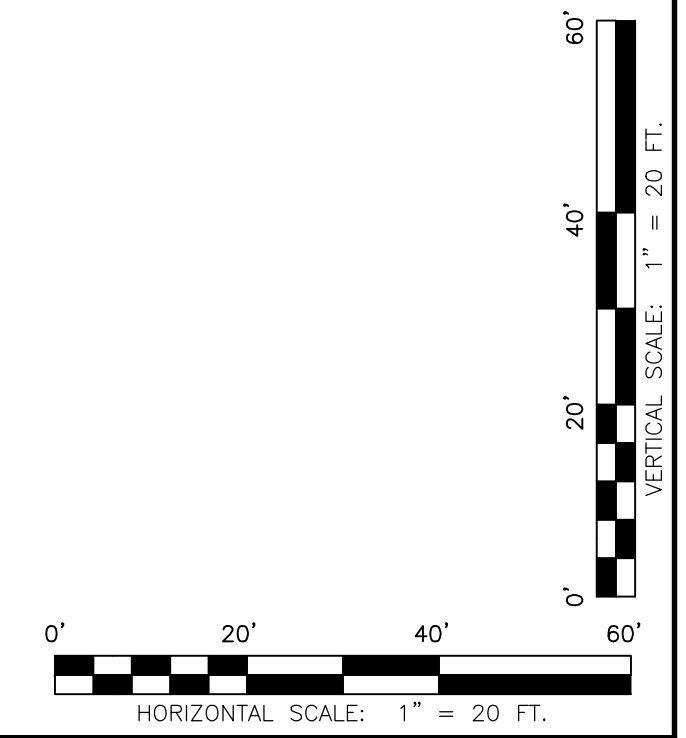
DRAWING NO.: **12**
 SHEET 12 OF 24

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NOTE: SOME FEATURES MAY APPEAR DISTORTED DUE TO THE ANGLE AT WHICH SECTION LINES CROSS.

LEGEND
 --- EXISTING GROUND
 --- FINAL GRADE



REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

DEPARTMENT OF ENVIRONMENTAL PROTECTION
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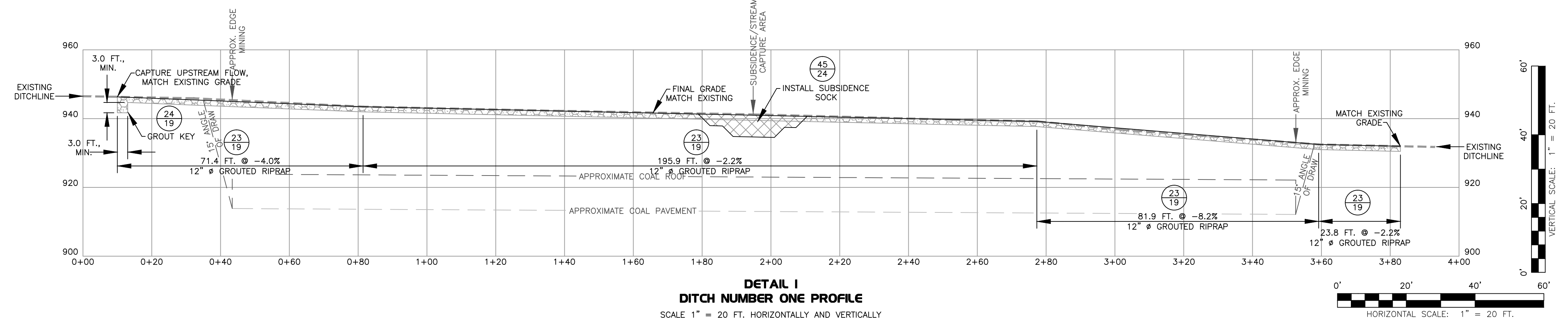
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SHINNS RUN PORTALS
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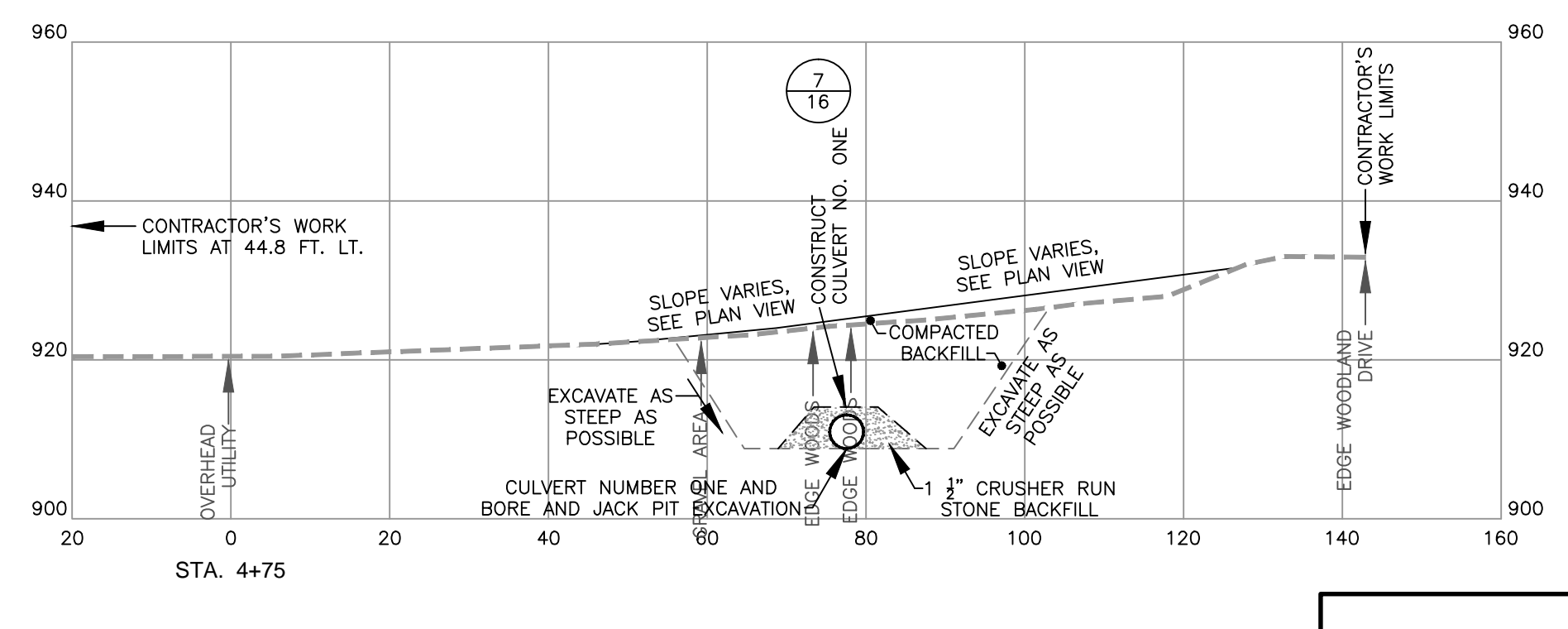
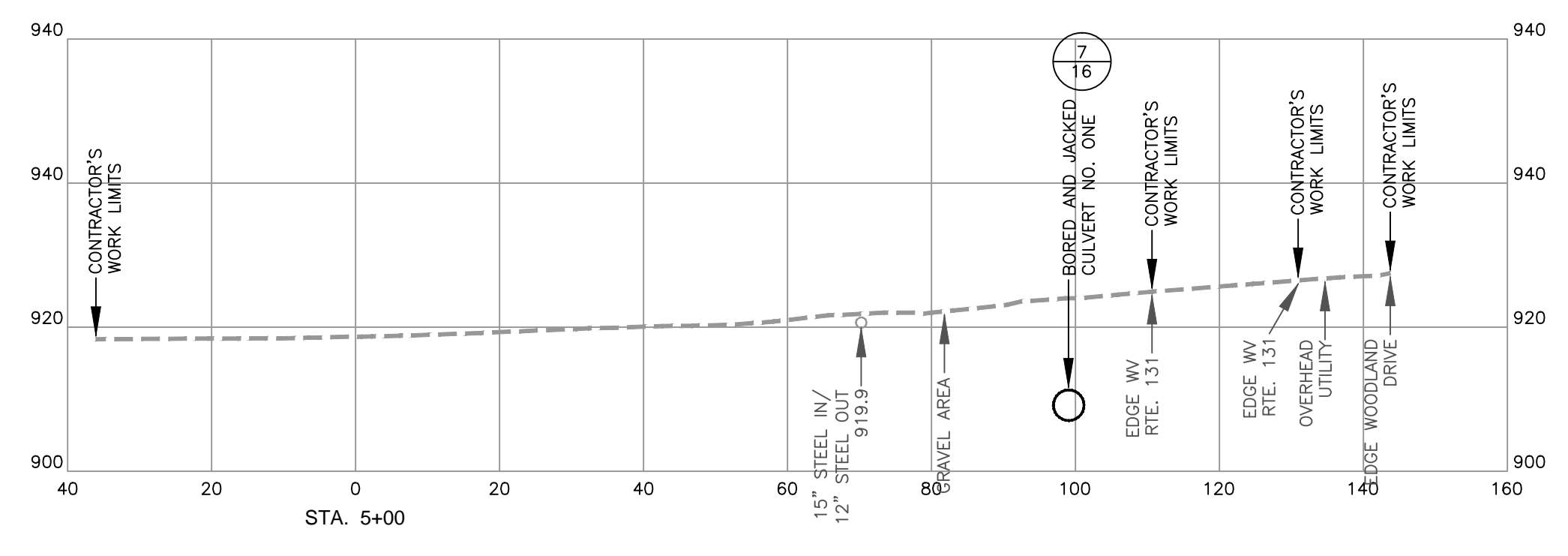
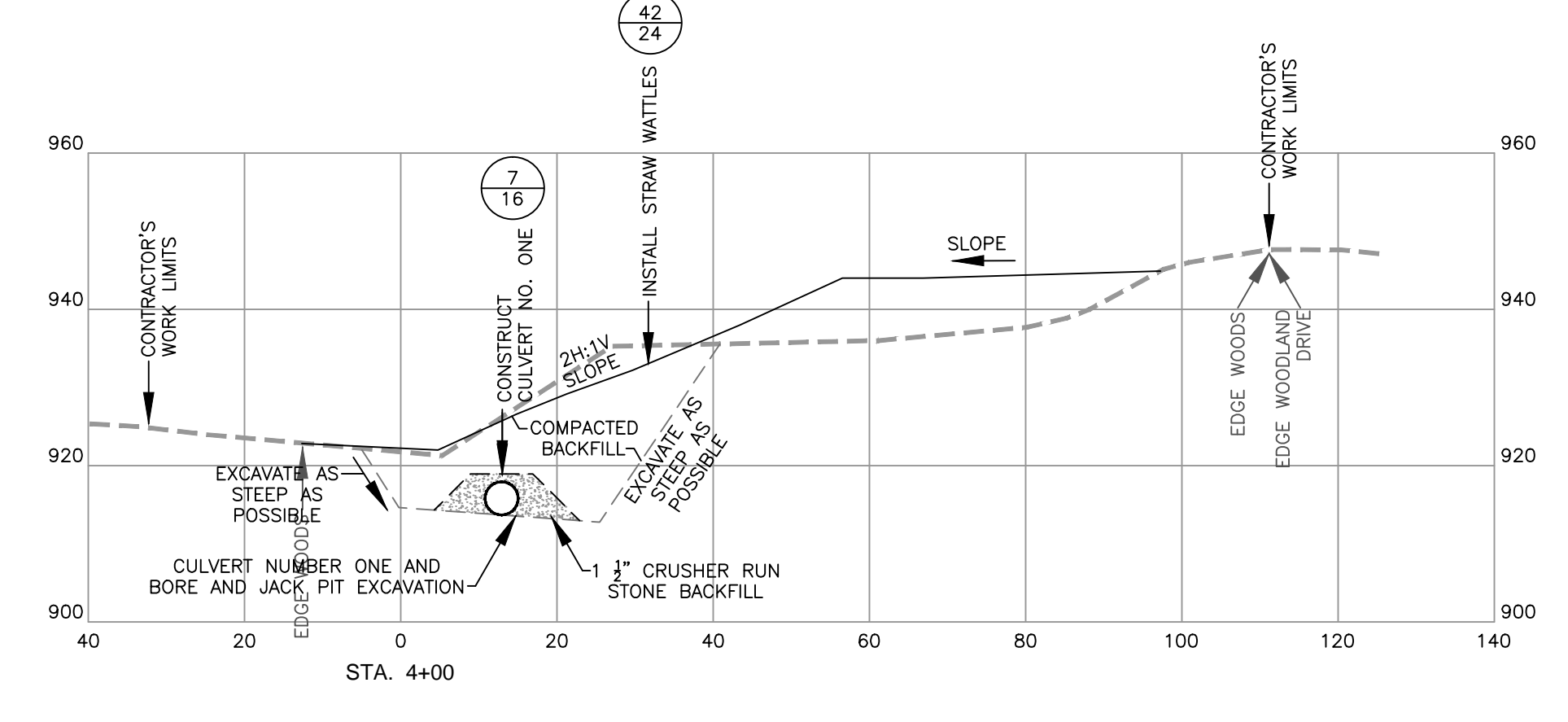
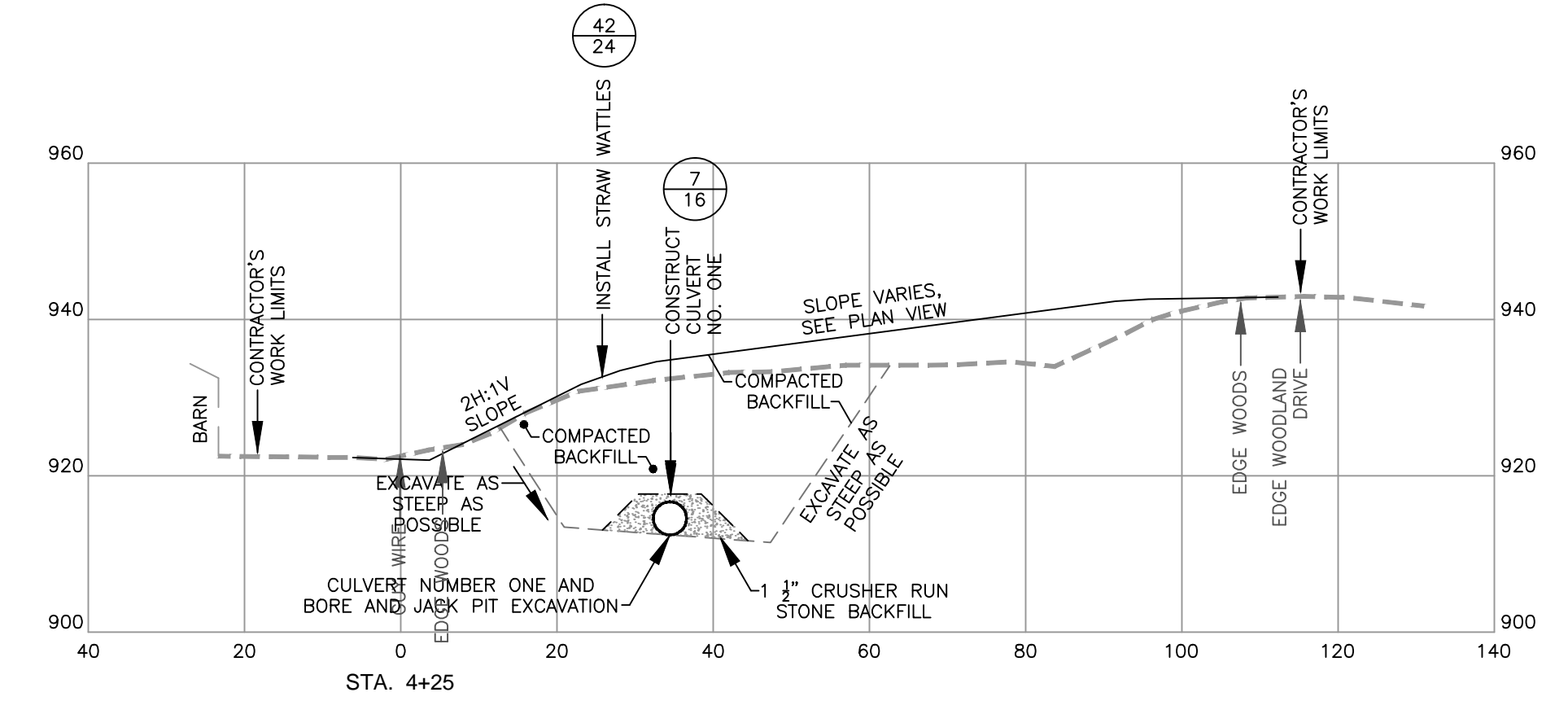
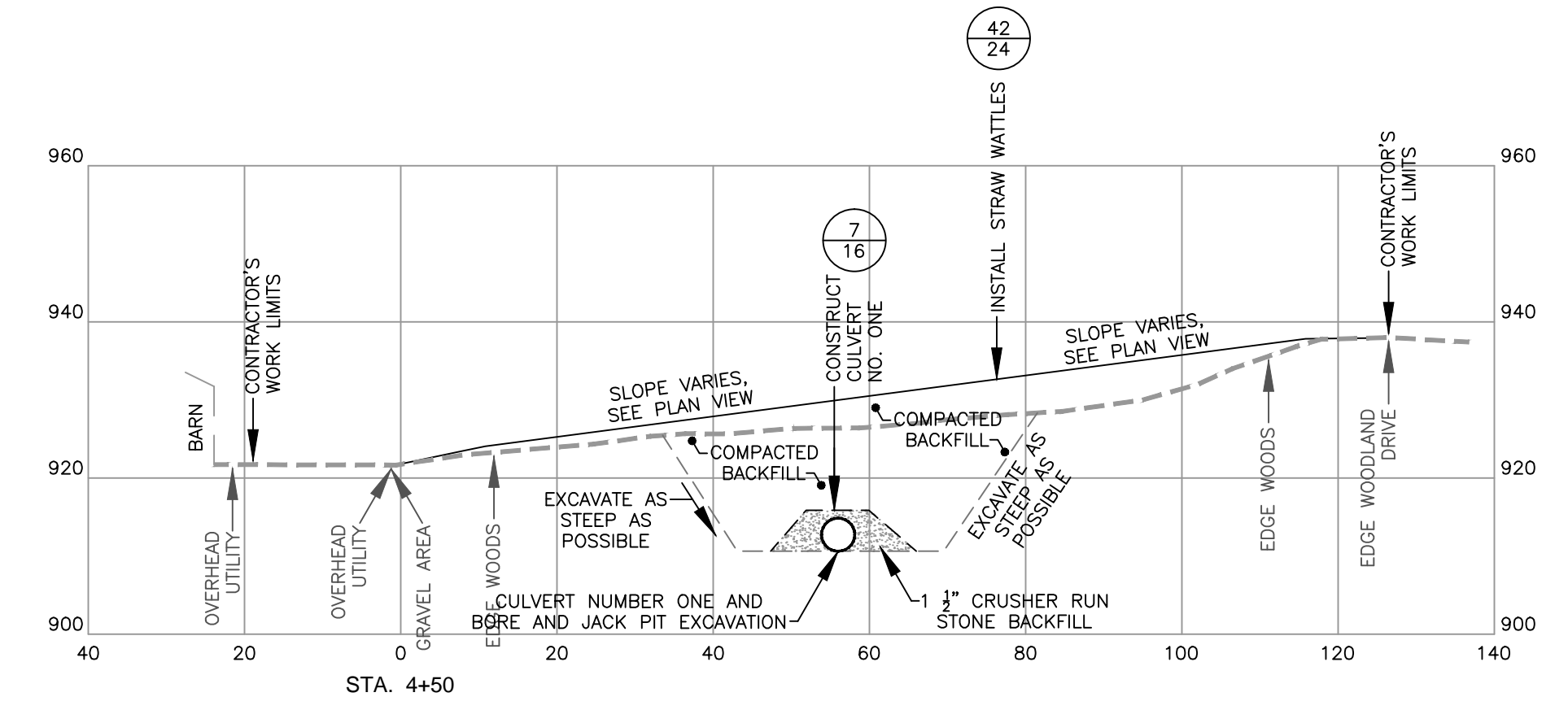
**BASILINE ONE CROSS SECTIONS
 STA. 2+50 TO STA. 3+75**

DATE: MARCH 2015
 DWG SCALE: AS NOTED
 PROJECT NO: 131-204
 APPROVED BY: [Signature]

DRAWING NO.: **13**
 SHEET 13 OF 24



**DETAIL I
DITCH NUMBER ONE PROFILE**
SCALE 1" = 20 FT. HORIZONTALLY AND VERTICALLY

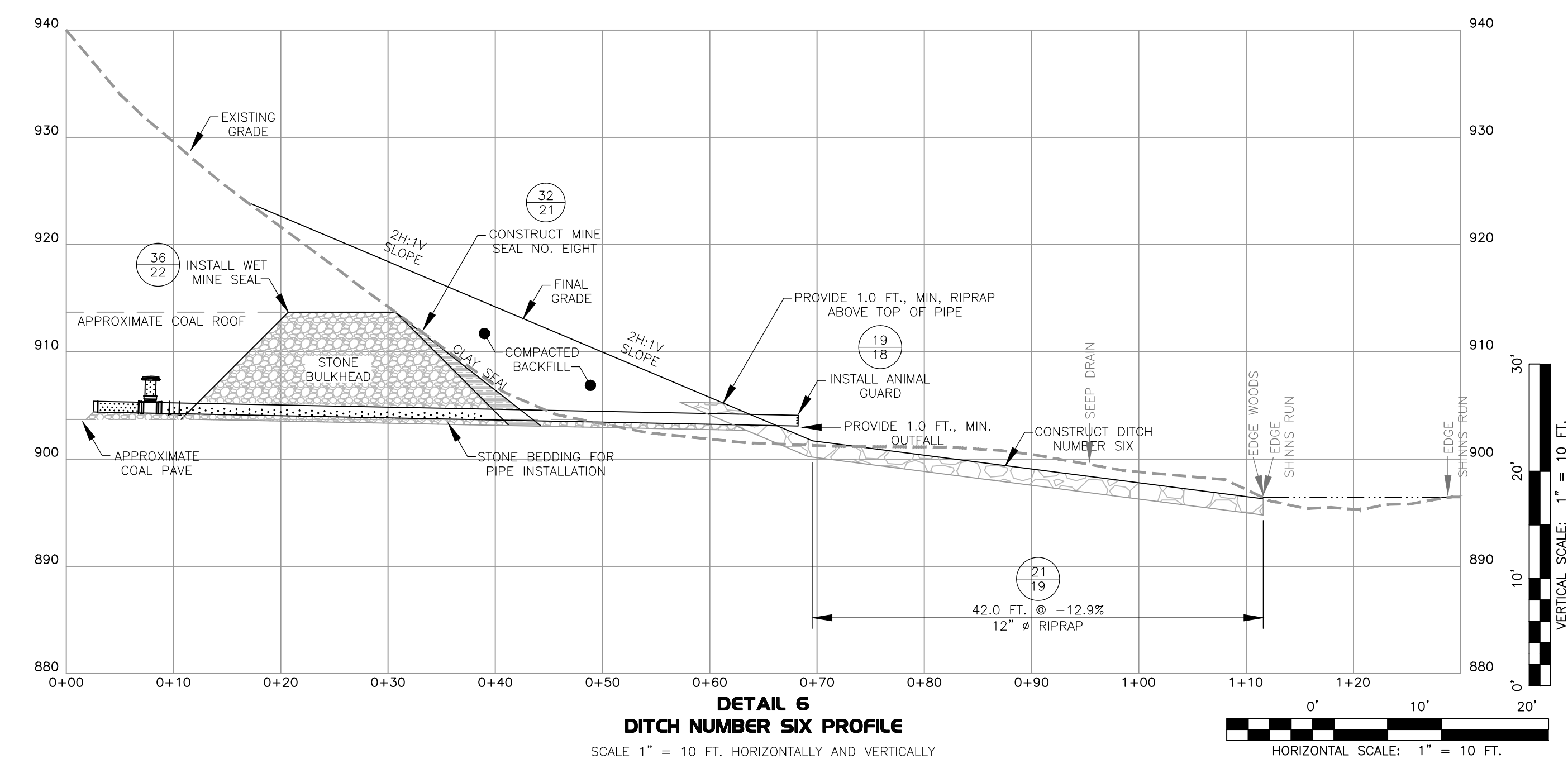


LEGEND
 --- EXISTING GROUND
 ——— FINAL GRADE

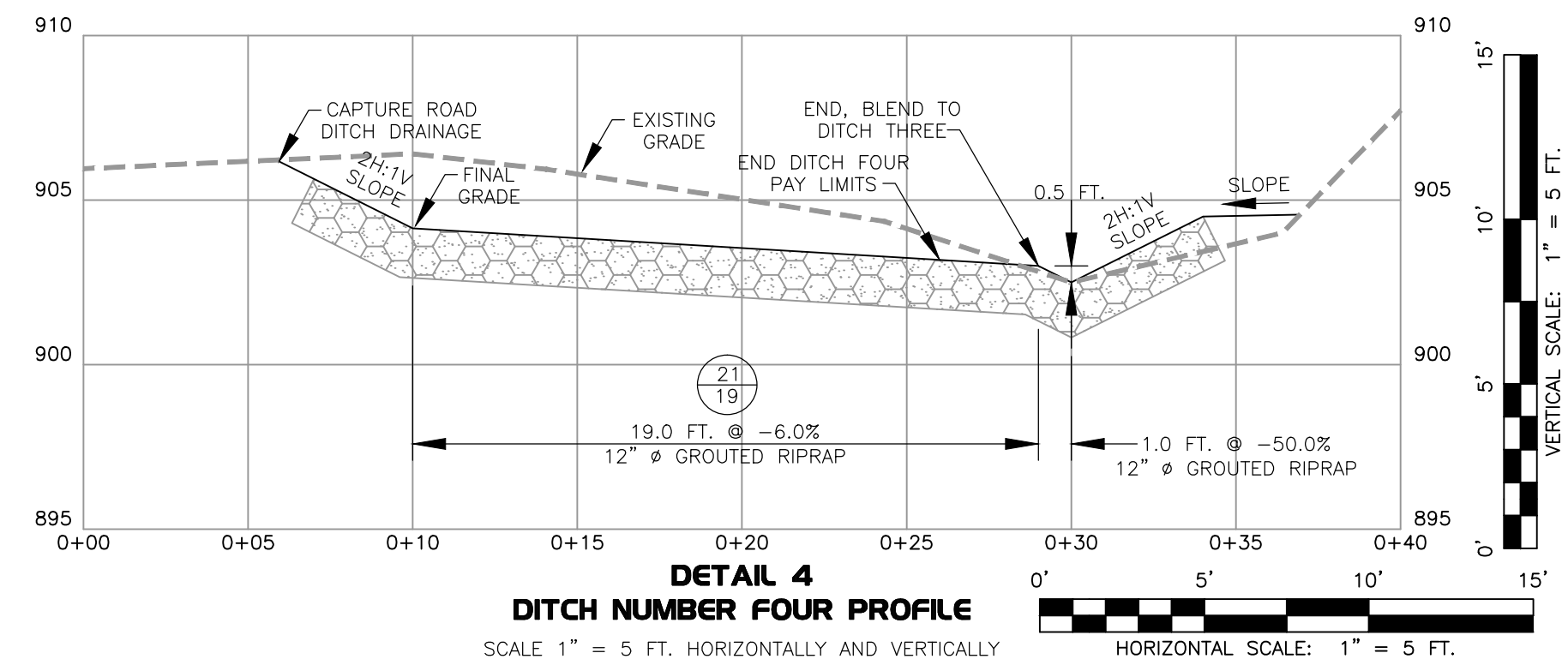
NOTE: SOME FEATURES MAY APPEAR DISTORTED DUE TO THE ANGLE AT WHICH SECTION LINES CROSS.

REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

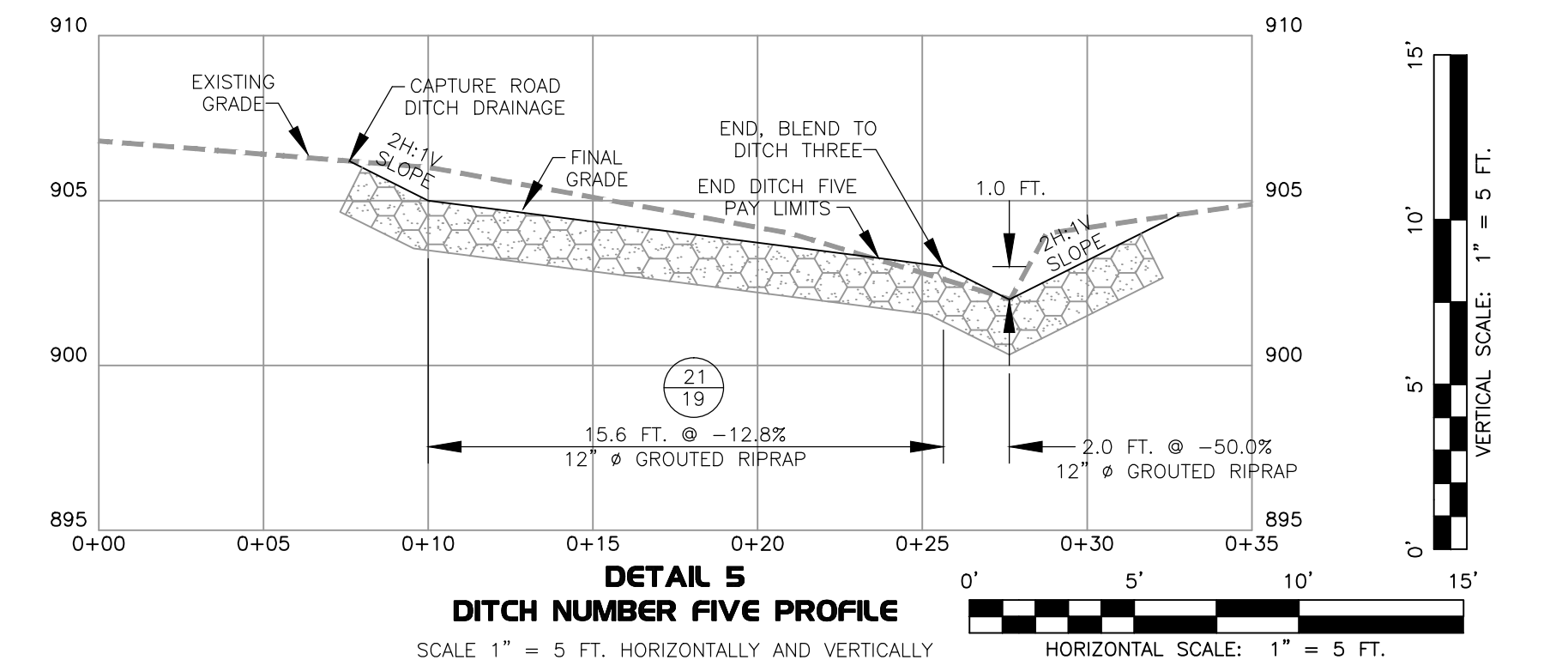
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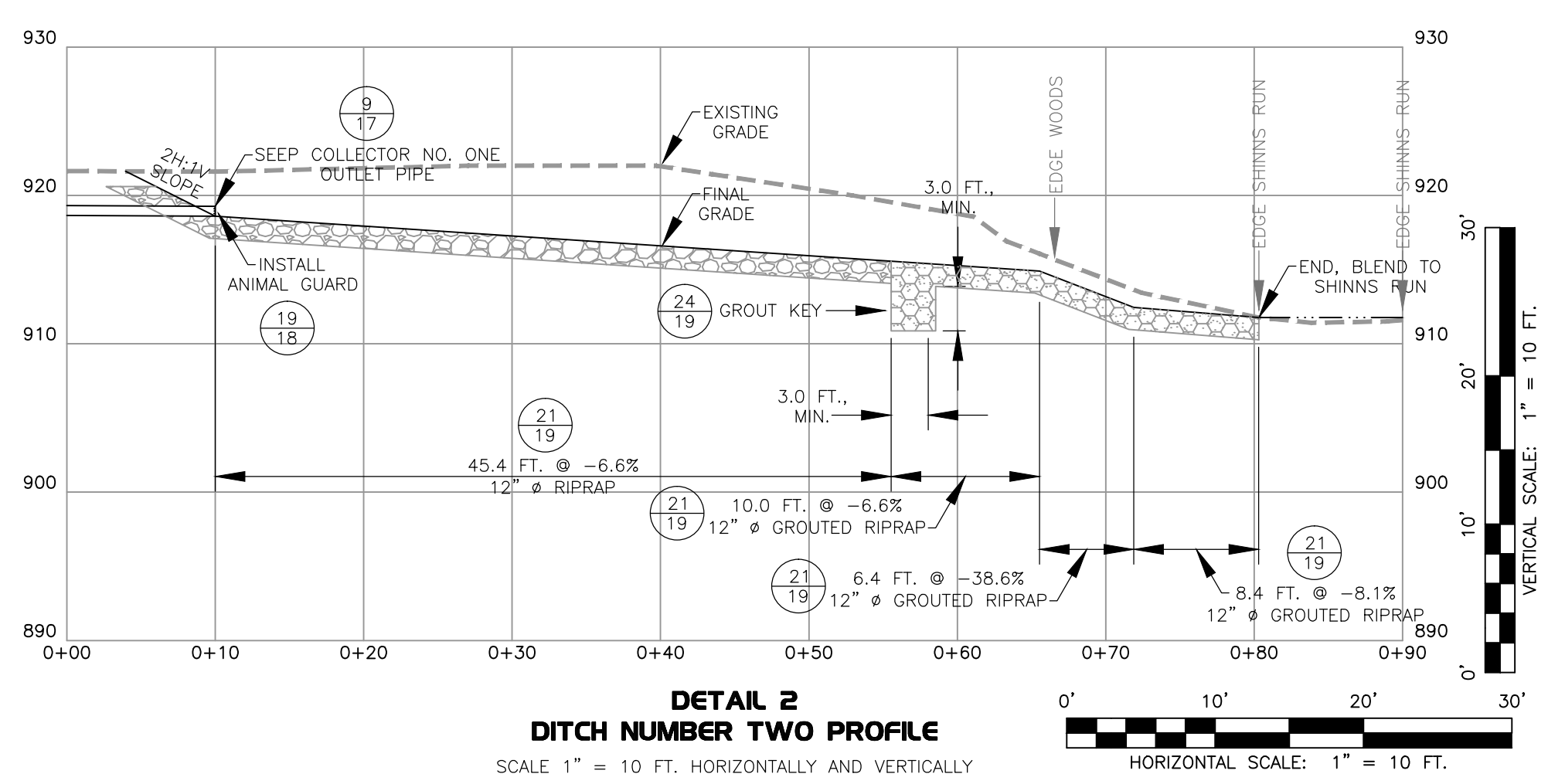
DETAIL 6
DITCH NUMBER SIX PROFILE
SCALE 1" = 10 FT. HORIZONTALLY AND VERTICALLY



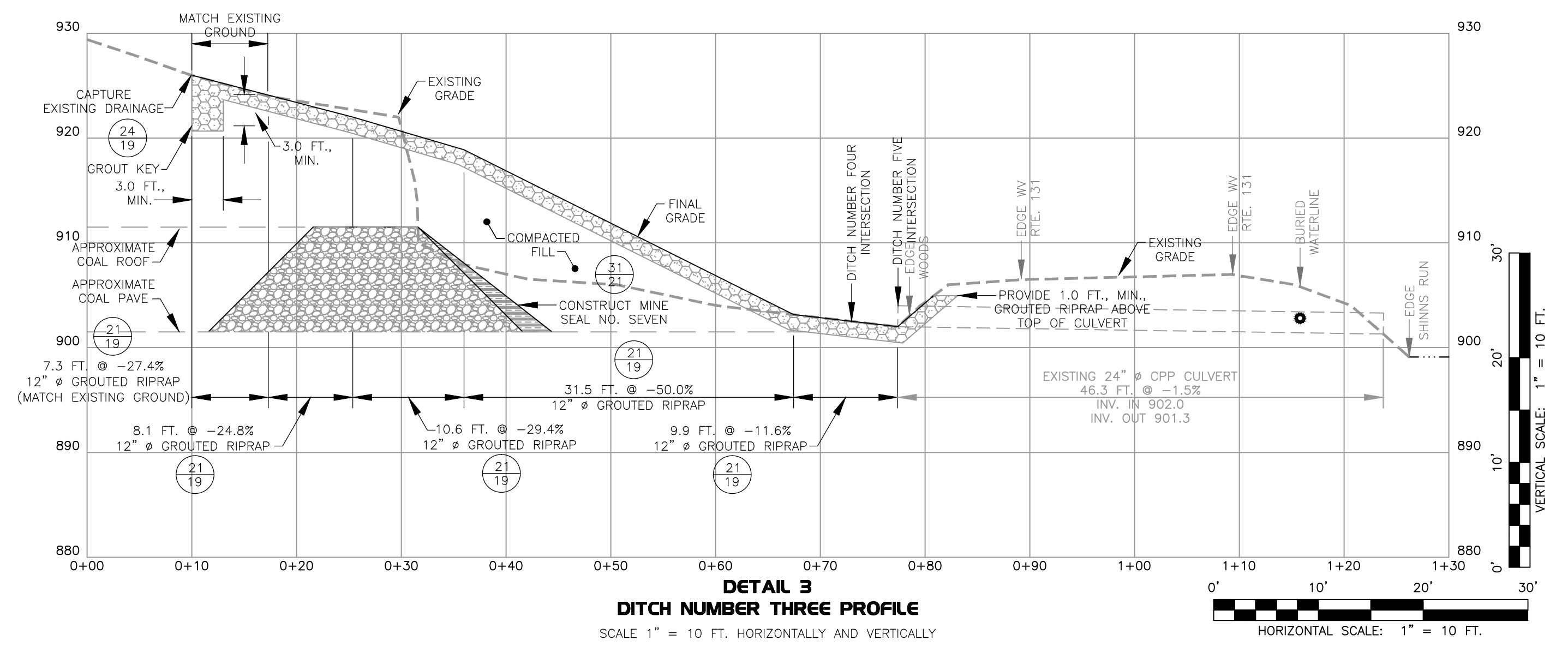
DETAIL 4
DITCH NUMBER FOUR PROFILE
SCALE 1" = 5 FT. HORIZONTALLY AND VERTICALLY



DETAIL 5
DITCH NUMBER FIVE PROFILE
SCALE 1" = 5 FT. HORIZONTALLY AND VERTICALLY



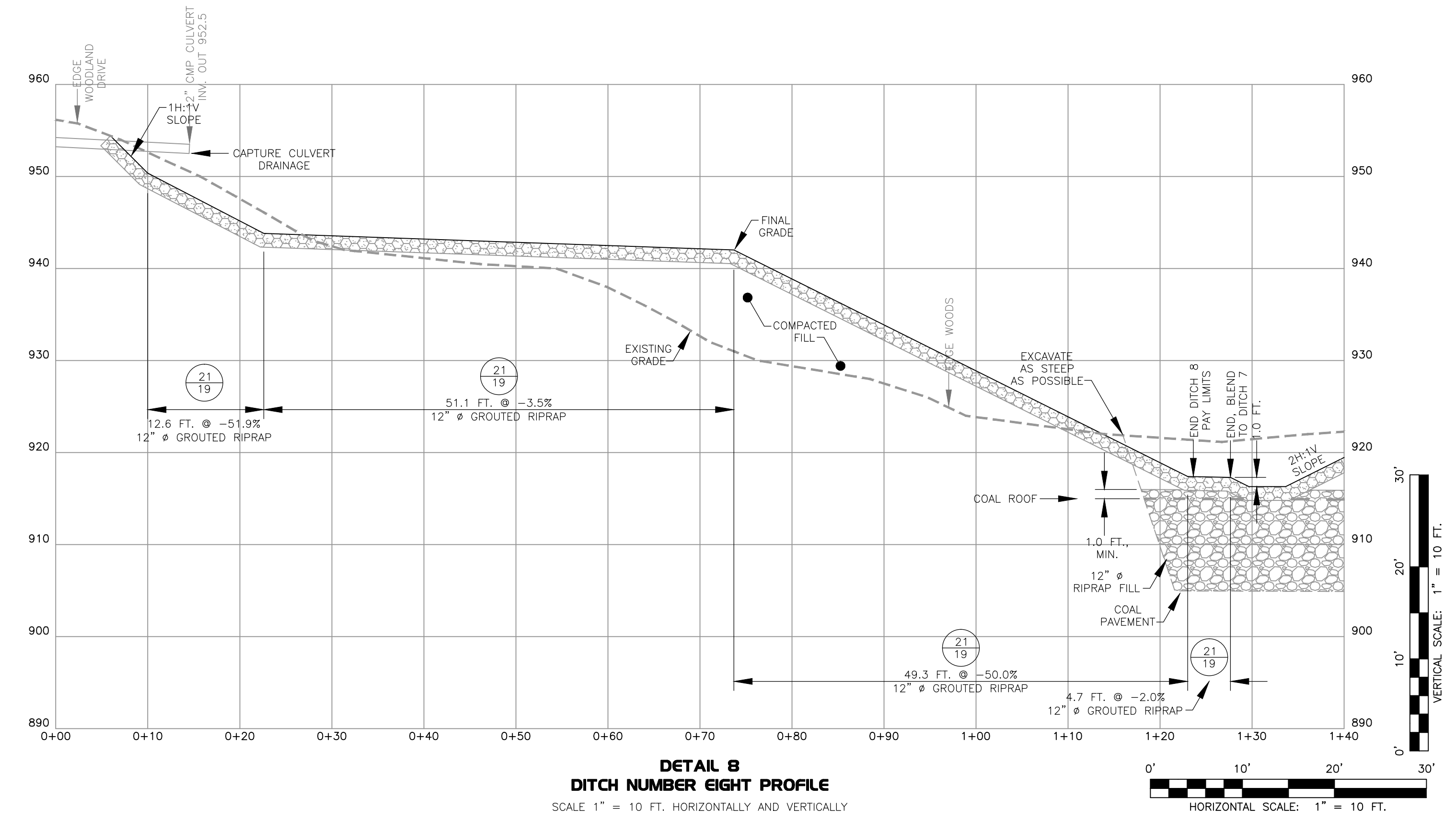
DETAIL 2
DITCH NUMBER TWO PROFILE
SCALE 1" = 10 FT. HORIZONTALLY AND VERTICALLY



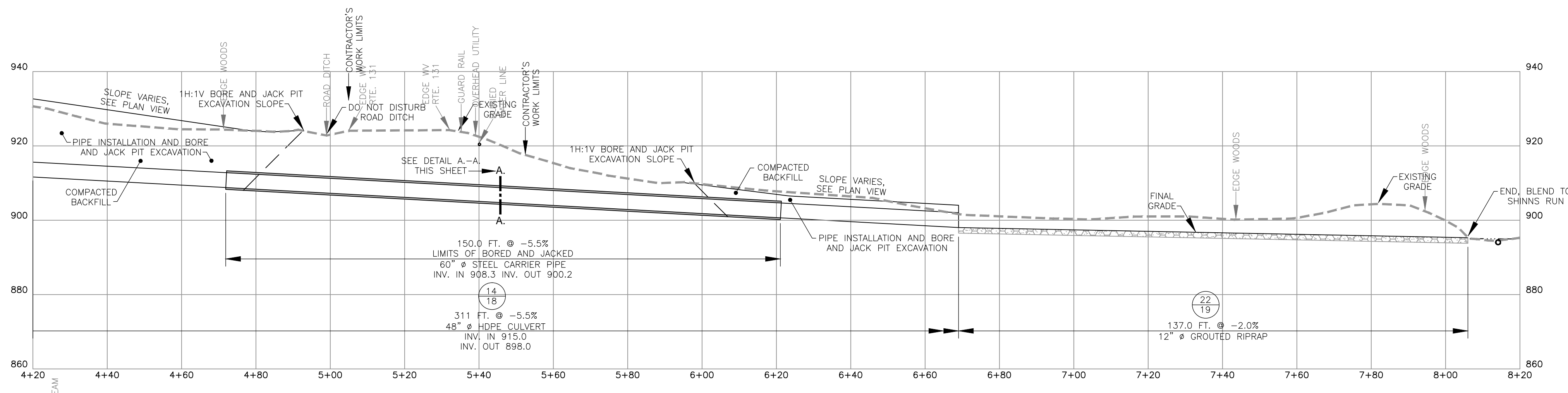
DETAIL 3
DITCH NUMBER THREE PROFILE
SCALE 1" = 10 FT. HORIZONTALLY AND VERTICALLY

REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

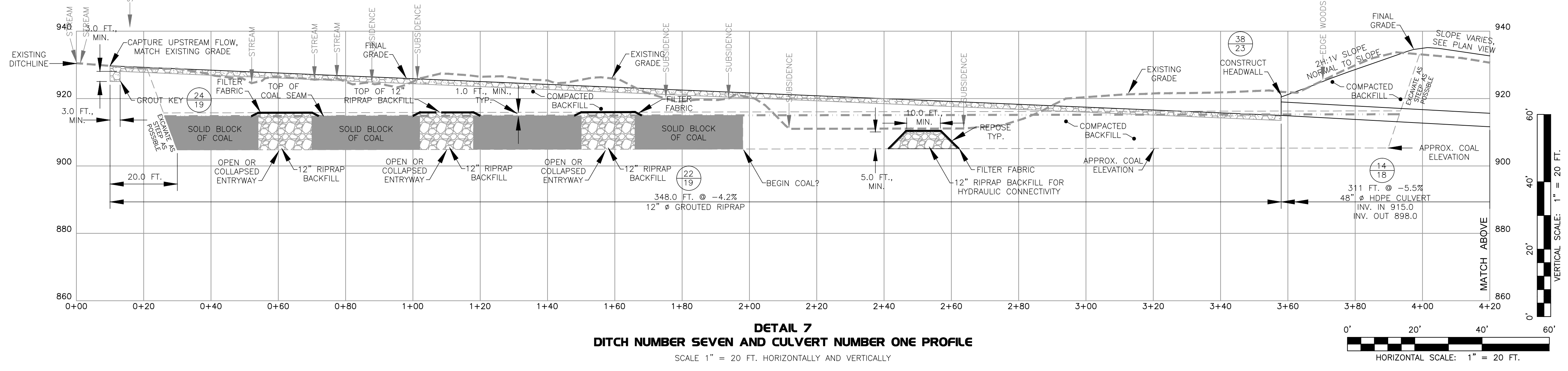
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DETAIL 8
DITCH NUMBER EIGHT PROFILE
SCALE 1" = 10 FT. HORIZONTALLY AND VERTICALLY



DETAIL A-A.
60" STEEL PIPE BORE AND JACK CROSS SECTION, TYP.
NOT TO SCALE

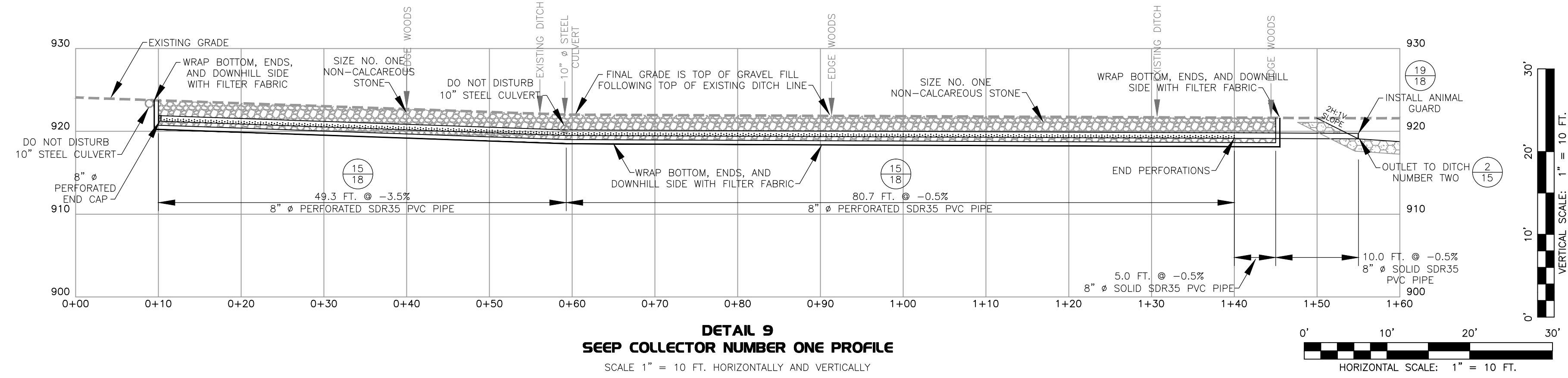
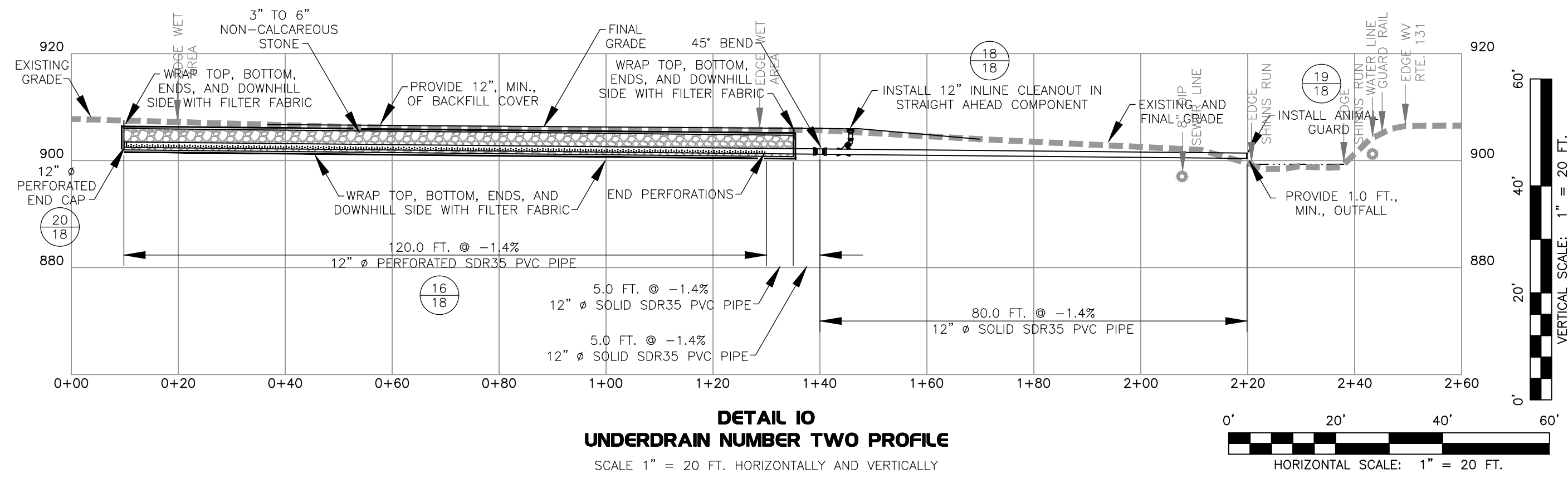
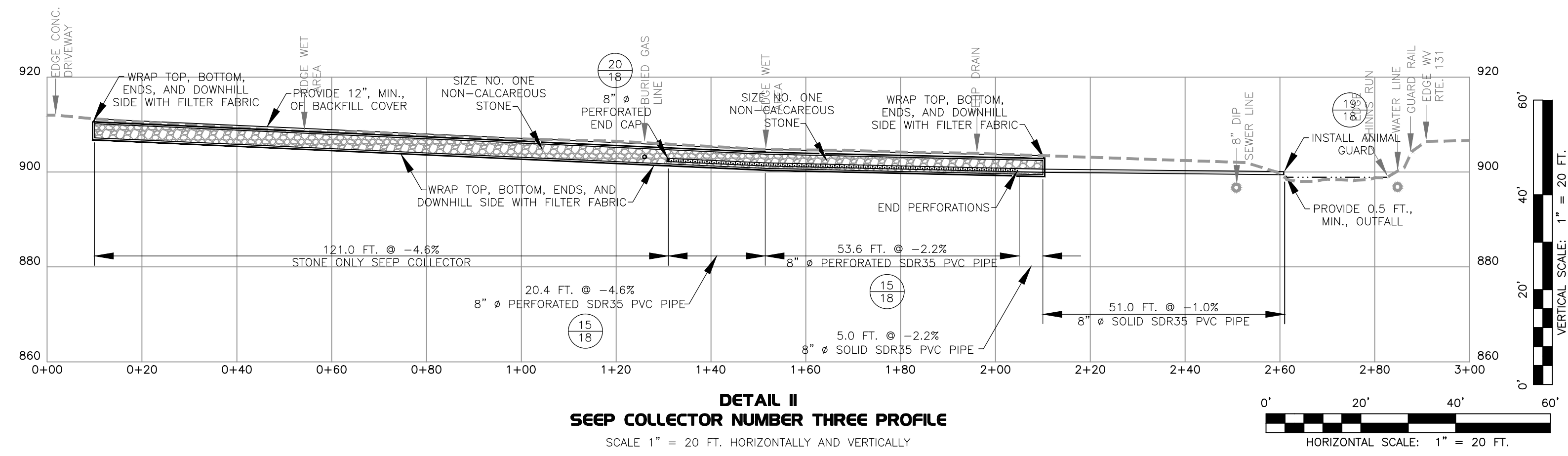


DETAIL 7
DITCH NUMBER SEVEN AND CULVERT NUMBER ONE PROFILE
SCALE 1" = 20 FT. HORIZONTALLY AND VERTICALLY

REVISION RECORD		
NO.	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

P:\2015\131-204\CADD\Drawings\Profile\Profile.dwg SHEET 161 LS(4/15/2015 - reobd) - LP 8/21/2015 1:59 PM

F:\2015\131-204\CADD\DWG\env\profiles.dwg(SHEET 17) L5(4/15/2015 - noon) - LP_8/21/2015 1:59 PM



REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

DATE:	MARCH 2014	DRAWN BY:	PWC
DWG SCALE:	AS NOTED	CHECKED BY:	DRAFT
PROJECT NO:	131-204	APPROVED BY:	DRAFT

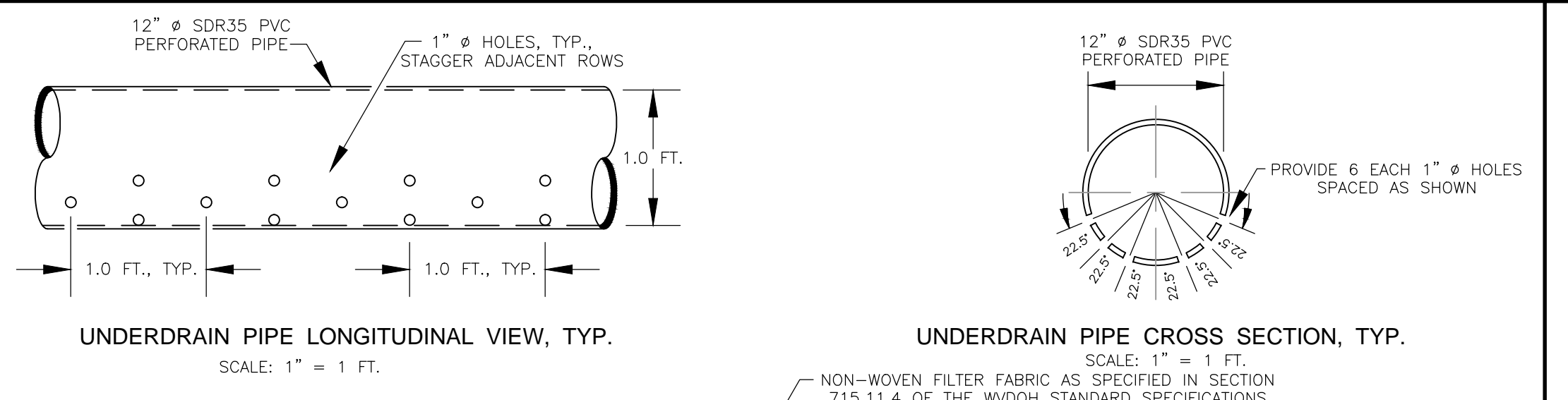
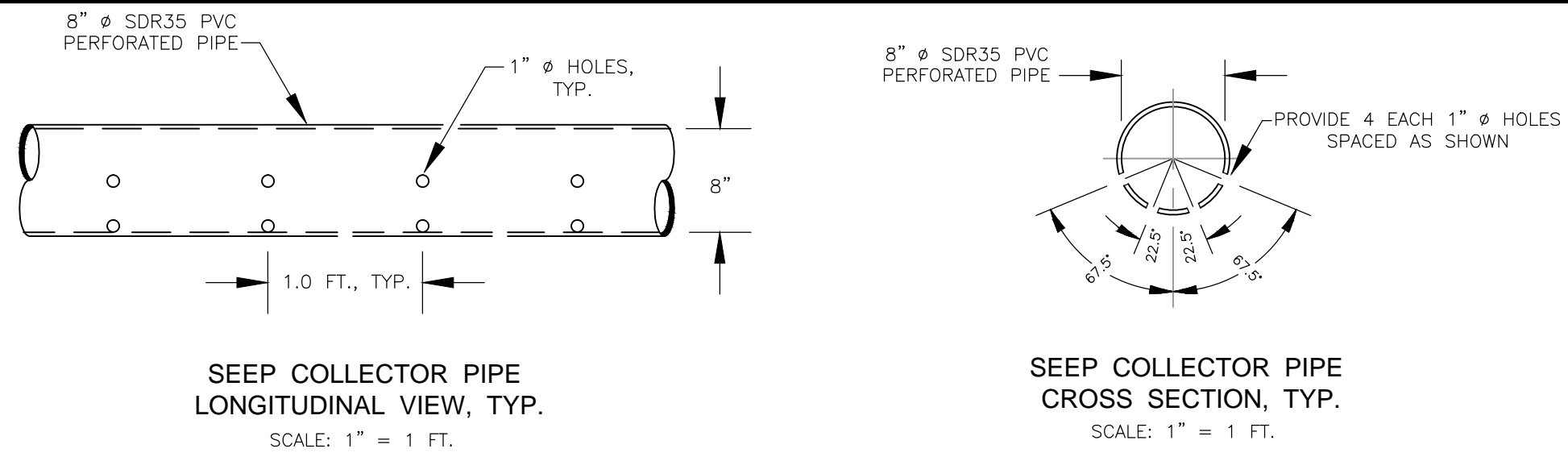
SHINNS RUN PORTALS
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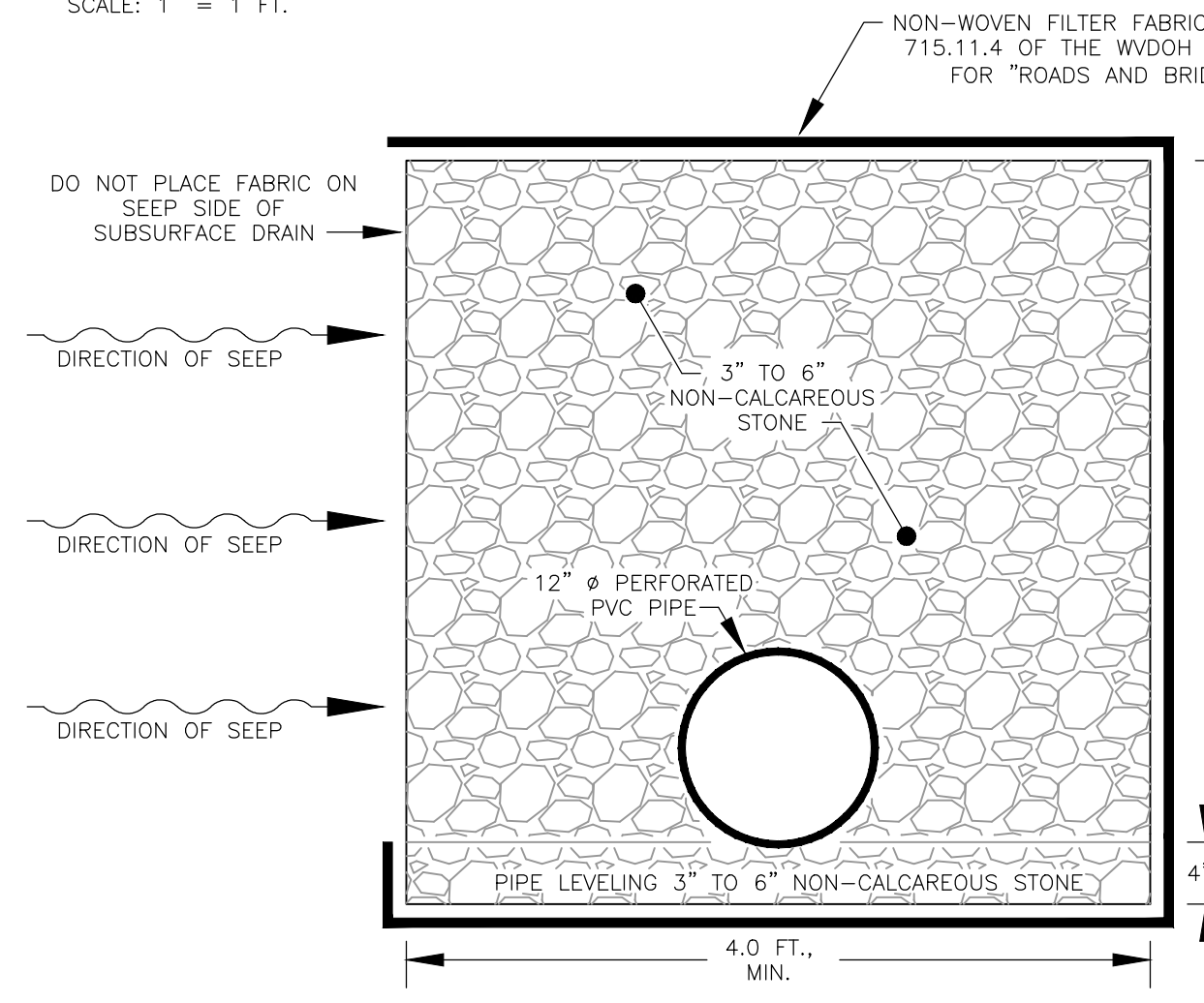
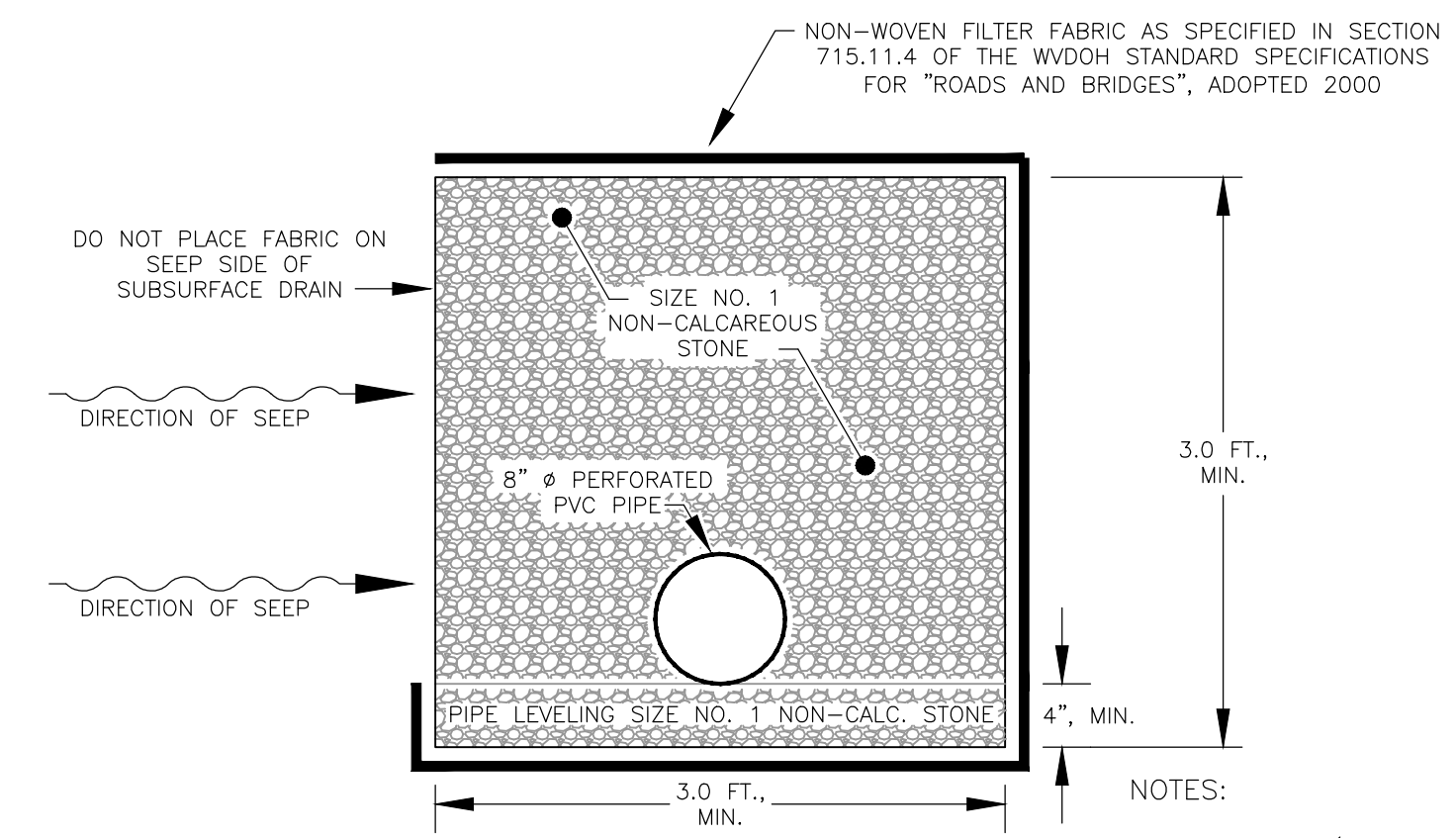
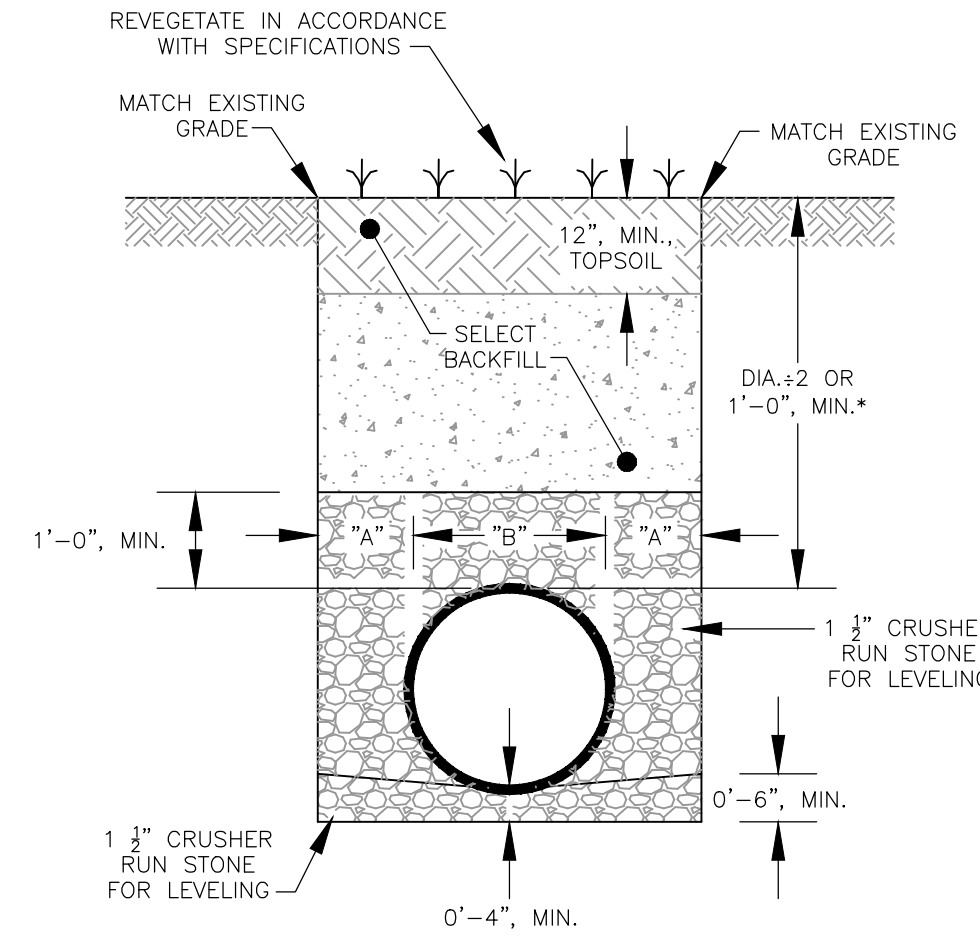
DEPARTMENT OF
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 OFFICE OF
 ABANDONED MINE LANDS

PIPE TRENCH DIMENSIONS

PIPE LOCATION	DIMENSION "A"	DIMENSION "B"
CULVERT NO. ONE	2 FOOT	4 FOOT
SEEP COLLECTOR NO. ONE	1 FOOT	8 INCHES
UNDERDRAIN NO. TWO	1 FOOT	8 INCHES
SEEP COLLECTOR NO. THREE	1 FOOT	8 INCHES
SEEP COLLECTOR NO. FOUR	1 FOOT	8 INCHES
SEEP COLLECTOR NO. FIVE	1 FOOT	8 INCHES



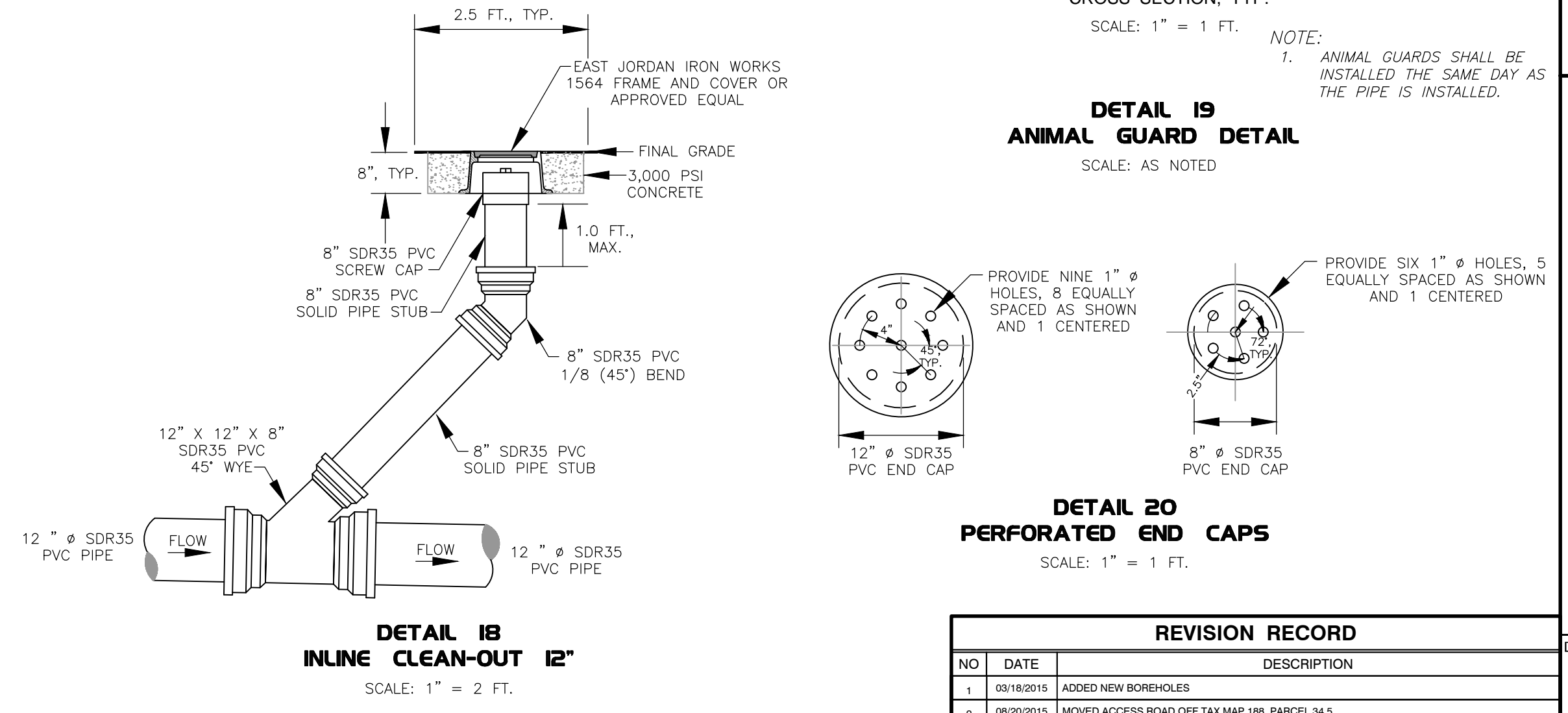
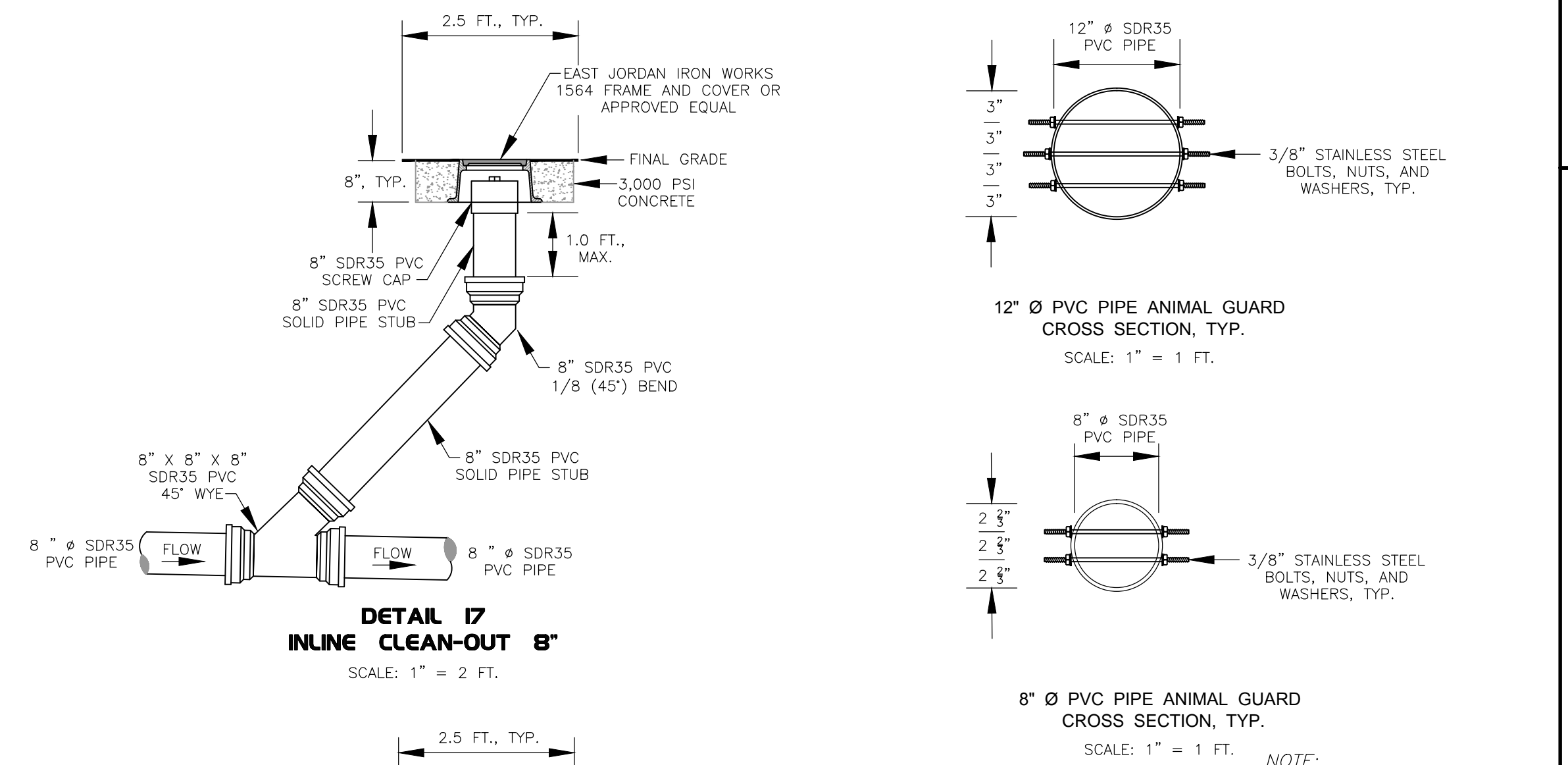
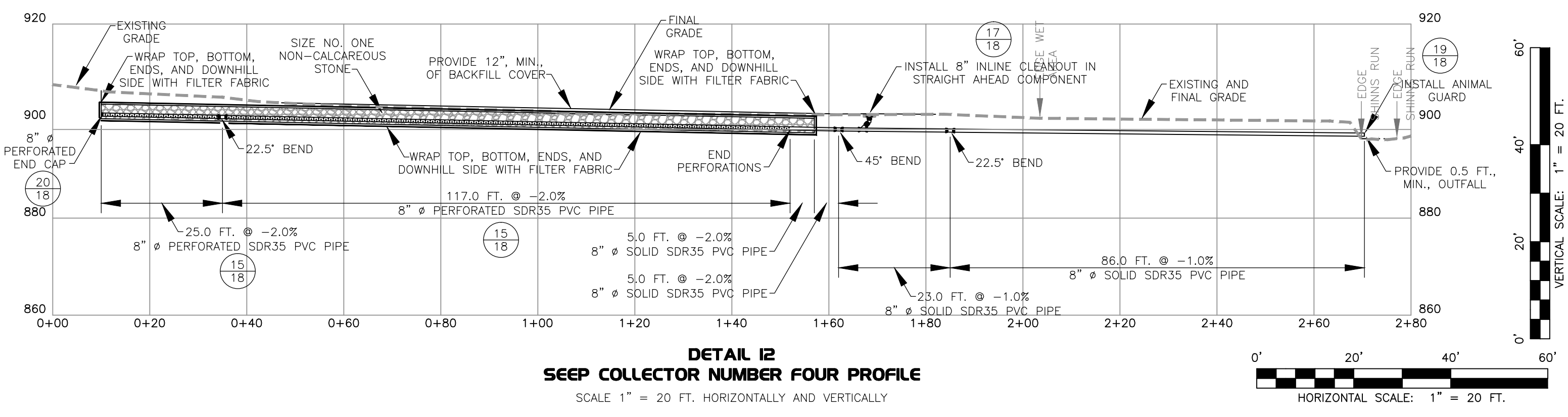
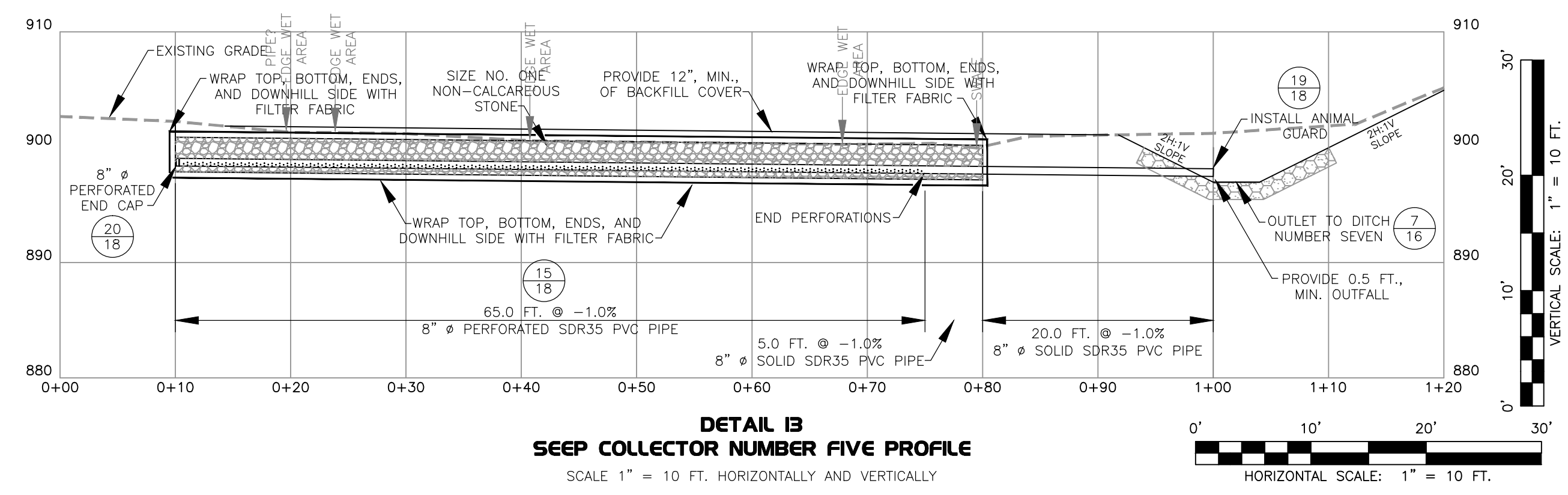
- NOTES:**
- 1 1/2" CRUSHER RUN STONE SHALL MEET THE GRADATION REQUIREMENTS FOR CLASS 1 AGGREGATE IN TABLE 704.6.2A OF THE WOODH STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES.
 - *SHOULD DIA. \times 2 BE EQUAL TO 1'-0". THEN CRUSHER RUN STONE GOES ALL THE WAY TO SURFACE.
 - THE WIDTH OF CULVERT EXCAVATION SHALL BE ADJUSTED TO ACCOMMODATE THE PROPOSED BORE AND JACK PITS. IN THESE AREAS, THE 1 1/2" CRUSHER RUN STONE DIMENSIONS SHALL REMAIN AS SHOWN WITH COMPACTED EXCAVATED MATERIAL PLACED ELSEWHERE IN THE PITS TO THE LINES AND GRADES SHOWN ON THE PLANS.



- NOTES:**
- SIZE NO. 1 (AASHTO NO. 1) NON-CALCAREOUS STONE SHALL MEET THE GRADATION REQUIREMENTS IN TABLE 703.4 OF THE WOODH SPECIFICATIONS FOR ROADS AND BRIDGES.
 - THE FILTER FABRIC SHALL BE OVERLAPPED 1.0 FOOT, MINIMUM, AT ALL JOINTS.

**SUBSURFACE DRAIN PIPE TABLE
(APPROXIMATE LENGTHS)**

DRAIN NO.	PERFORATED PIPE	SOLID PIPE
SEEP COLLECTOR NO. ONE	130 FEET	15 FEET
UNDERDRAIN NO. TWO	120 FEET	90 FEET
SEEP COLLECTOR NO. THREE	74 FEET	56 FEET
SEEP COLLECTOR NO. FOUR	142 FEET	120 FEET
SEEP COLLECTOR NO. FIVE	65 FEET	25 FEET



REVISION RECORD

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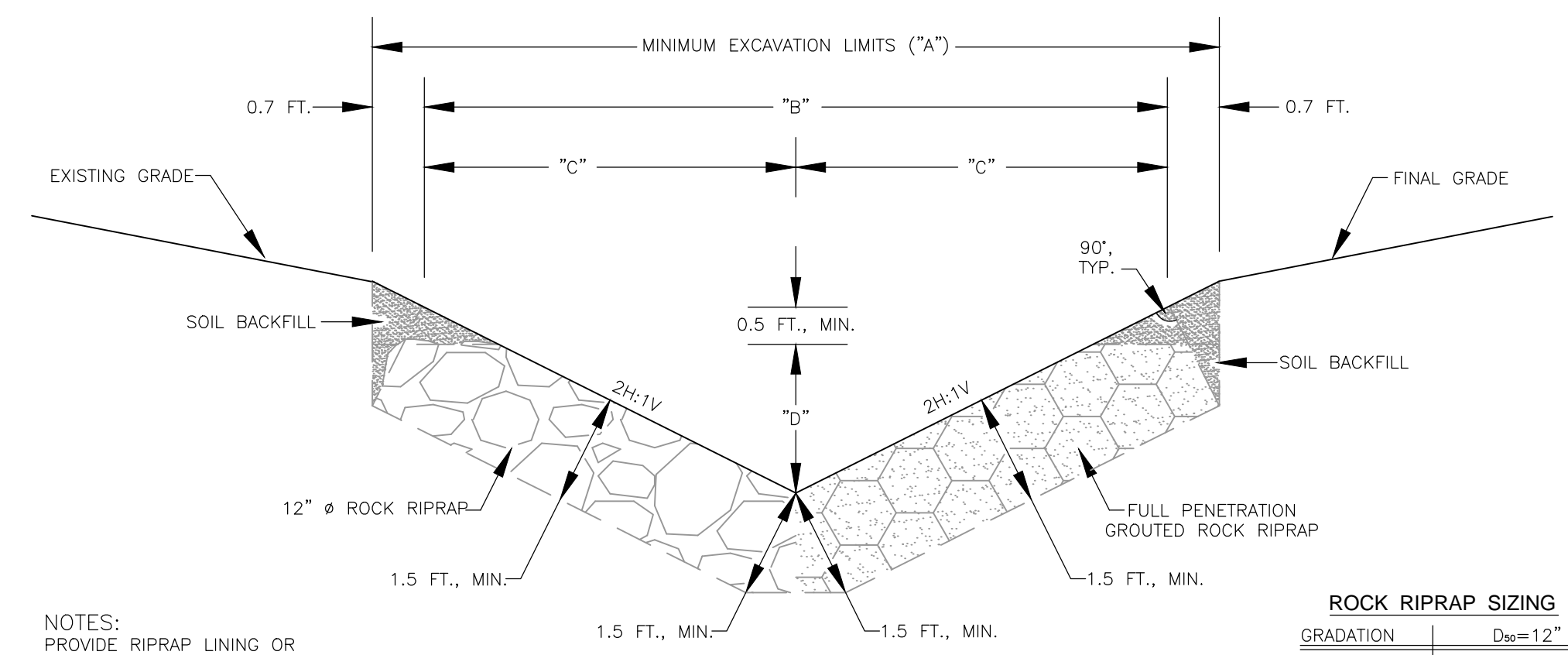
SHINNS RUN PORTALS
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
HARRISON COUNTY, WEST VIRGINIA

SEEP COLLECTOR NUMBERS FOUR AND FIVE AND MISCELLANEOUS DRAIN DETAILS

DATE: MARCH 2015 DRAWN BY: PWC
DWG SCALE: AS NOTED CHECKED BY: DRAFT
PROJECT NO: 131-204
APPROVED BY: DRAFT

DRAWING NO.: **18**
SHEET 18 OF 24

"VEE" SHAPED CHANNEL DIMENSIONS						
DITCH NUMBER	LINING	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"	TOTAL DEPTH
TWO	RIPRAP AND GROUDED RIPRAP	9.4 FT.	8.0 FT.	4.0 FT.	1.5 FT.	2.0 FT.
THREE	GROUDED RIPRAP	9.4 FT.	8.0 FT.	4.0 FT.	1.5 FT.	2.0 FT.
FOUR	GROUDED RIPRAP	7.4 FT.	6.0 FT.	3.0 FT.	1.0 FT.	1.5 FT.
FIVE	GROUDED RIPRAP	5.4 FT.	4.0 FT.	2.0 FT.	0.5 FT.	1.0 FT.
SIX	RIPRAP	9.4 FT.	8.0 FT.	4.0 FT.	1.5 FT.	2.0 FT.
EIGHT	GROUDED RIPRAP	9.4 FT.	8.0 FT.	4.0 FT.	1.5 FT.	2.0 FT.

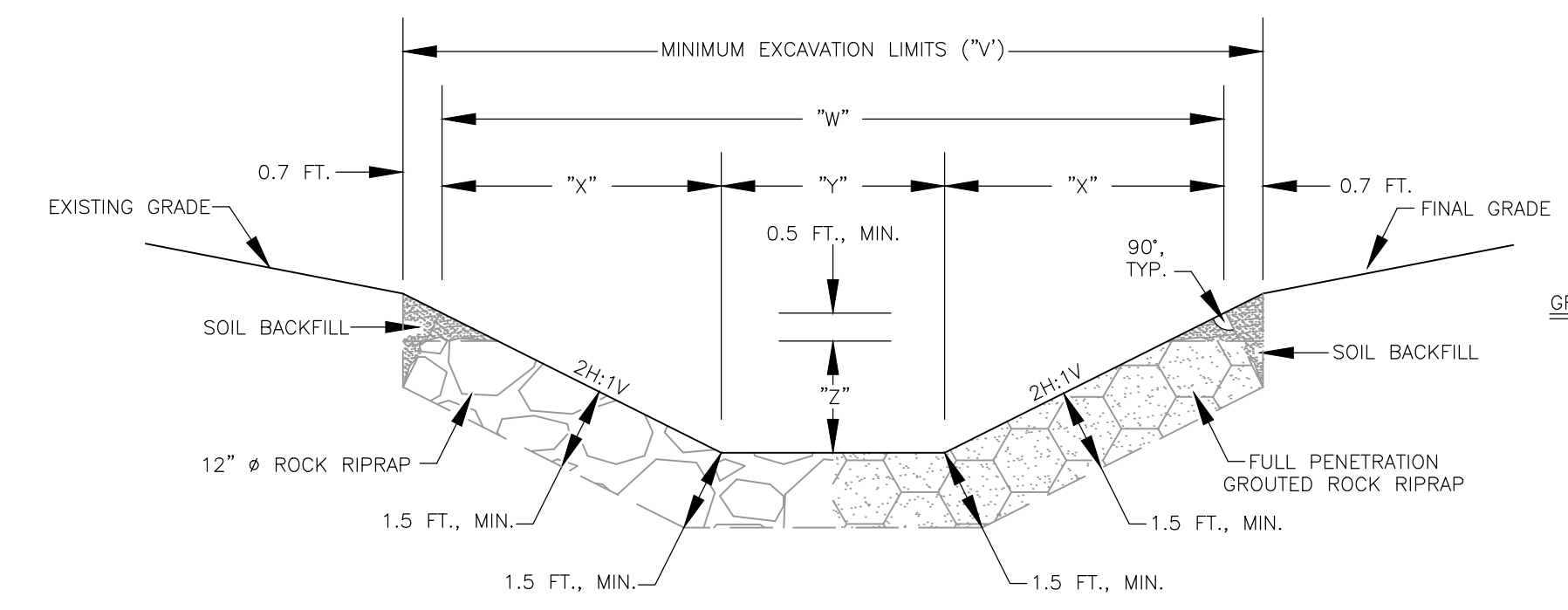


ROCK RIPRAP SIZING	
GRADATION	D ₅₀ =12"
50%	12" - 18"
35%	6" - 12"
15%	3" - 6"

DETAIL 21
RIPRAP OR GROUDED RIPRAP 2H:1V "VEE" CHANNEL
SCALE: 1" = 2 FEET

"TRAPEZOIDAL" SHAPED DITCH DIMENSIONS							
DITCH NUMBER	LINING	DIM. "V"	DIM. "W"	DIM. "X"	DIM. "Y"	DIM. "Z"	TOTAL DEPTH
ONE*	GROUDED RIPRAP	13.4 FT.*	12.0 FT.*	4.0 FT.*	4.0 FT.	1.5 FT.	2.0 FT.
SEVEN	GROUDED RIPRAP	17.4 FT.	16.0 FT.	6.0 FT.	4.0 FT.	2.5 FT.	3.0 FT.

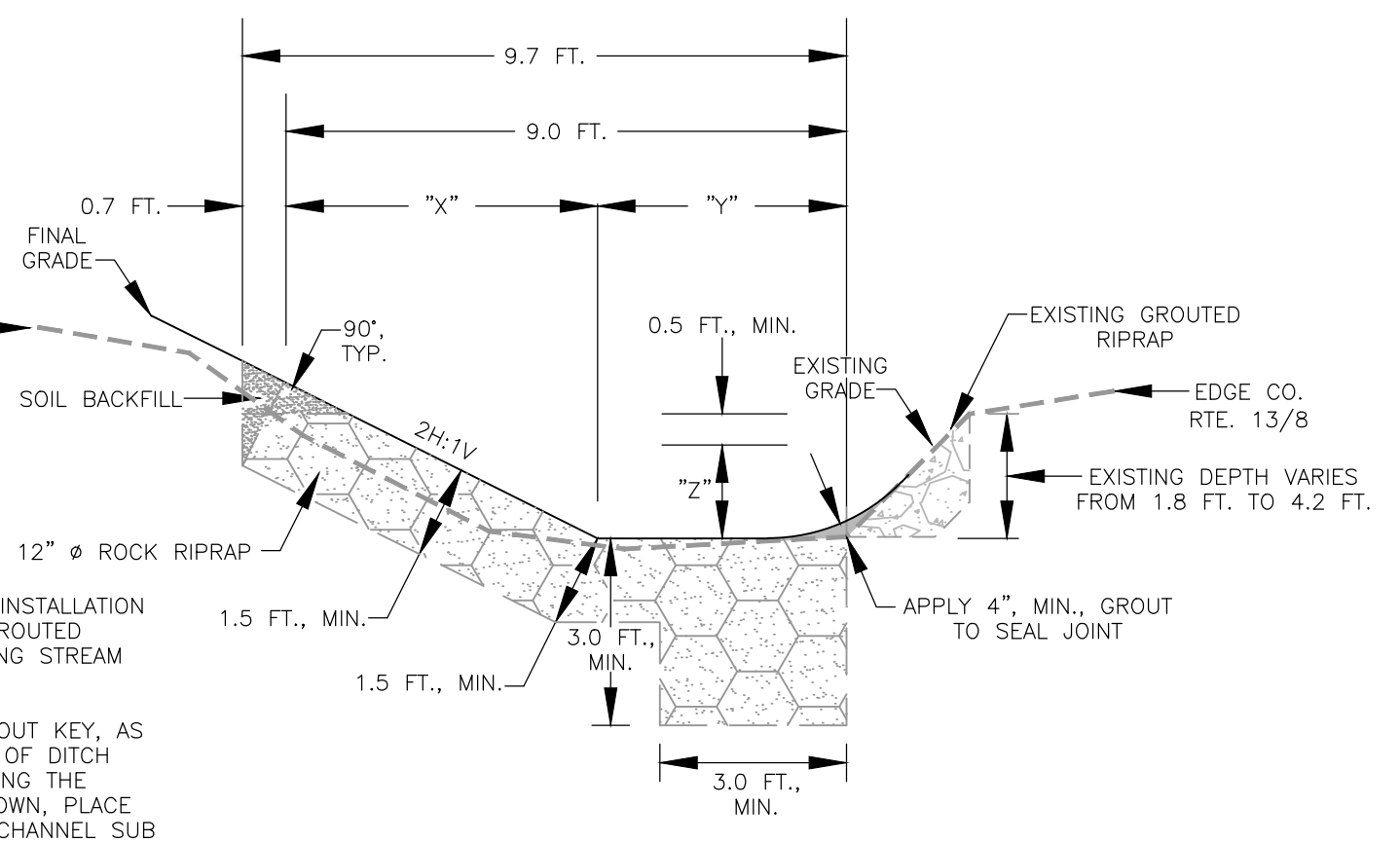
DITCH NUMBER ONE DIMENSIONS REQUIRE MODIFICATION TO TIE-INTO EXISTING GROUDED RIPRAP LOCATED ALONG THE RIGHT DESCENDING STREAM BANK. THE CONTRACTOR IS ADVISED THE EXISTING GROUDED RIPRAP CONTAINS SOIL NAILS TO STABILIZE THE STREAM BANK. THEREFORE, THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUDED RIPRAP OR SOIL NAILS. SEE DETAIL 23 FOR MODIFIED DITCH ONE DIMENSIONS.



ROCK RIPRAP SIZING	
GRADATION	D ₅₀ =12"
50%	12" - 18"
35%	6" - 12"
15%	3" - 6"

DETAIL 22
RIPRAP OR GROUDED RIPRAP 2H:1V "TRAPEZOIDAL" CHANNEL
SCALE: 1" = 3 FEET

ROCK RIPRAP SIZING	
GRADATION	D ₅₀ =12"
50%	12" - 18"
35%	6" - 12"
15%	3" - 6"

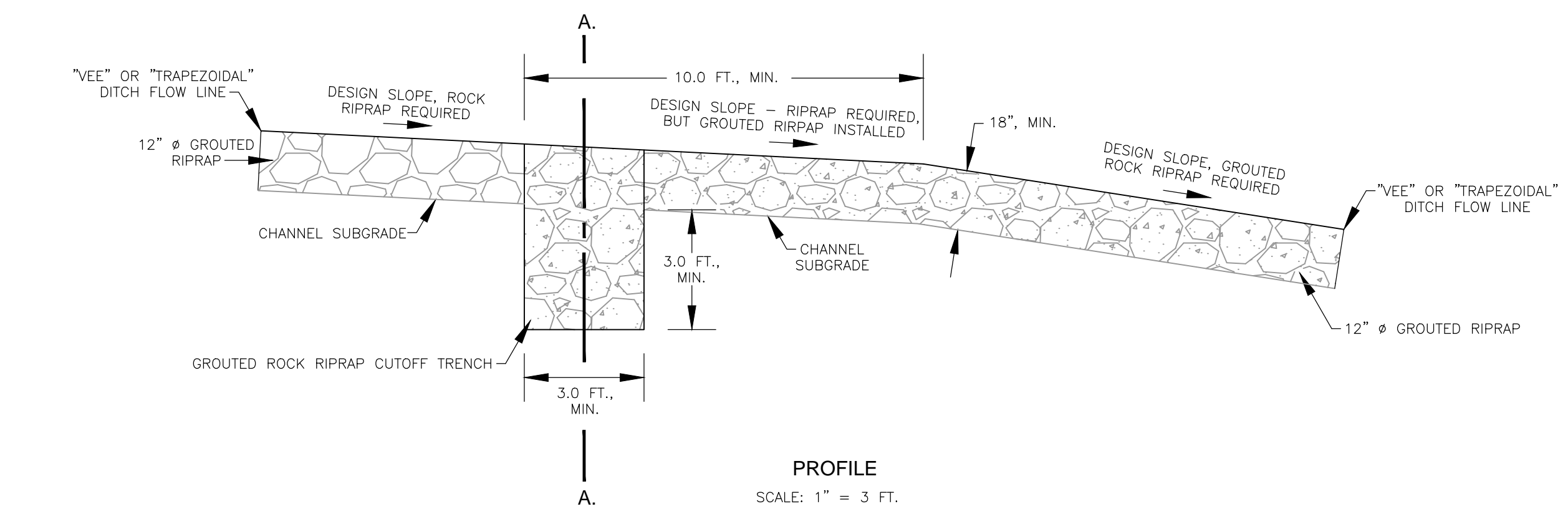


- NOTES:
- BEGIN DITCH ONE GROUDED RIPRAP INSTALLATION AT THE BOTTOM OF THE EXISTING GROUDED RIPRAP ALONG THE RIGHT DESCENDING STREAM BANK.
 - PROVIDE 3.0 FOOT BY 3.0 FOOT GROUT KEY, AS SHOWN, ALONG THE ENTIRE LENGTH OF DITCH ONE CONSTRUCTION. AFTER EXCAVATING THE GROUT KEY TO THE DIMENSIONS SHOWN, PLACE GROUT IN THE EXCAVATION TO THE CHANNEL SUB GRADE PRIOR TO PLACING THE RIPRAP.
 - PLACE A 4", MIN., THICK LAYER OF GROUT ALONG THE EXISTING GROUDED RIPRAP AND CONSTRUCTED GROUDED RIPRAP INTERSECTION, AS SHOWN, TO SEAL THE JOINT.

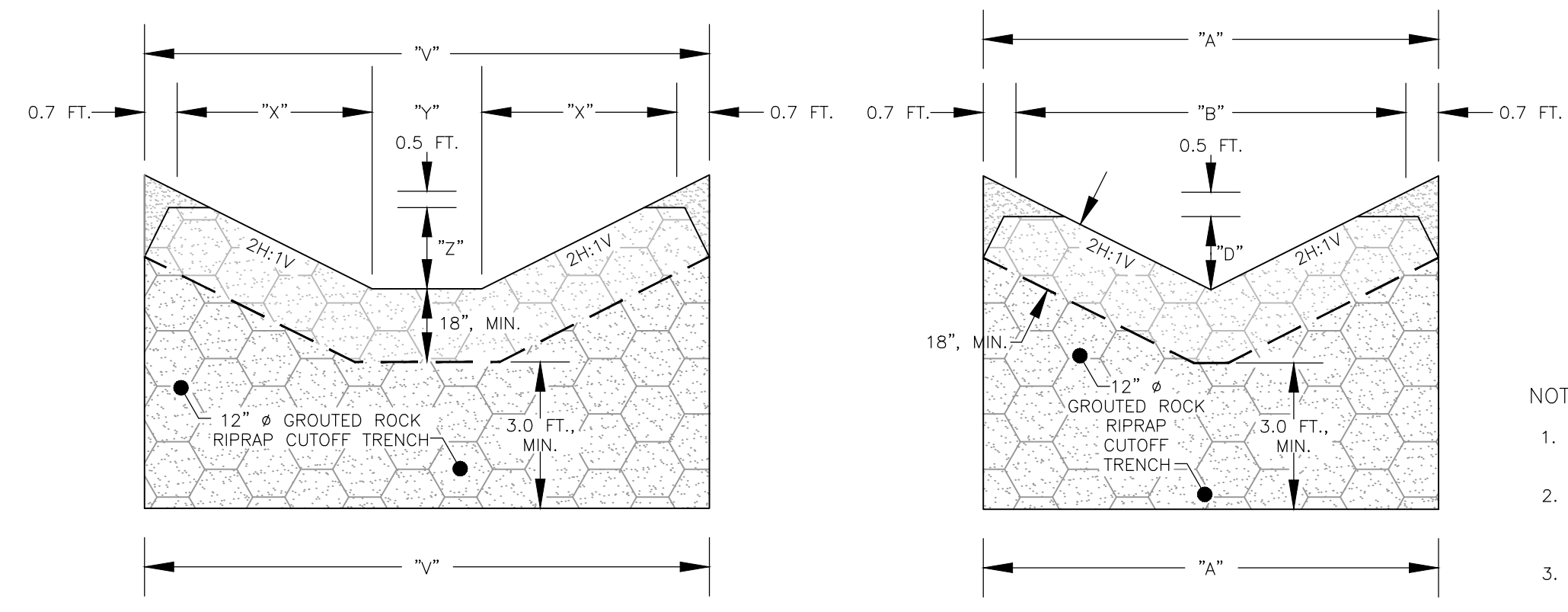
DETAIL 23
DITCH NUMBER ONE CROSS SECTION, TYP.
SCALE: 1" = 3 FEET

DITCH SUMMARY CHART										
DITCH NUMBER	REACH	HORIZONTAL DISTANCE (FT.)	SLOPE DISTANCE TO LEADING EDGE RECEIVING DITCH (FT.)	DEPTH, MIN. (FT.)	BOTTOM WIDTH MIN. (FT.)	SIDE SLOPES		AVERAGE FLOW SLOPE	DITCH LINING	DETAIL NUMBER
						LEFT	RIGHT			
DITCH NO. ONE	1	71.4		2.0	4.0	2H:1V	EXISTING	-4.0%	12" GROUDED RIPRAP	23/19
DITCH NO. ONE	2	195.9		2.0	4.0	2H:1V	EXISTING	-2.2%	12" GROUDED RIPRAP	23/19
DITCH NO. ONE	3	81.9		2.0	4.0	2H:1V	EXISTING	-8.2%	12" GROUDED RIPRAP	23/19
DITCH NO. ONE	4	23.8		2.0	4.0	2H:1V	EXISTING	-2.2%	12" GROUDED RIPRAP	23/19
TOTAL:			373.4*							
DITCH NO. TWO	1	45.4		2.0	0.0	2H:1V	2H:1V	-6.6%	12" RIPRAP	21/19
DITCH NO. TWO	2	10.0		2.0	0.0	2H:1V	2H:1V	-6.6%	12" GROUDED RIPRAP	21/19
DITCH NO. TWO	3	6.4		2.0	0.0	2H:1V	2H:1V	-38.6%	12" GROUDED RIPRAP	21/19
DITCH NO. TWO	4	8.4		2.0	0.0	2H:1V	2H:1V	-8.1%	12" GROUDED RIPRAP	21/19
TOTAL:			70.9*							
DITCH NO. THREE	1	7.3		2.0	0.0	2H:1V	2H:1V	-27.4%	12" GROUDED RIPRAP	21/19
DITCH NO. THREE	2	8.1		2.0	0.0	2H:1V	2H:1V	-24.8%	12" GROUDED RIPRAP	21/19
DITCH NO. THREE	3	10.6		2.0	0.0	2H:1V	2H:1V	-29.4%	12" GROUDED RIPRAP	21/19
DITCH NO. THREE	4	31.5		2.0	0.0	2H:1V	2H:1V	-50.0%	12" GROUDED RIPRAP	21/19
DITCH NO. THREE	5	9.9		2.0	0.0	2H:1V	2H:1V	-11.6%	12" GROUDED RIPRAP	21/19
TOTAL:			72.1*							
DITCH NO. FOUR	1	19.0		1.5	0.0	2H:1V	2H:1V	-6.0%	12" GROUDED RIPRAP	21/19
TOTAL:			16.0*							
DITCH NO. FIVE	1	15.6		1.0	0.0	2H:1V	2H:1V	-12.8%	12" GROUDED RIPRAP	21/19
TOTAL:			13.8*							
DITCH NO. SIX	1	42.0		2.0	0.0	2H:1V	2H:1V	-12.9%	12" RIPRAP	21/19
TOTAL:			42.3*							
DITCH NO. SEVEN	1	348.0		3.0	4.0	2H:1V	2H:1V	-4.2%	12" GROUDED RIPRAP	22/19
DITCH NO. SEVEN	2	311.0		N/A	N/A	N/A	N/A	-5.5%	48" Ø HDPE CULVERT NO. 1	14/18
DITCH NO. SEVEN	3	137.0		3.0	4.0	2H:1V	2H:1V	-2.0%	12" GROUDED RIPRAP	22/19
TOTAL:			485.4*							
DITCH NO. EIGHT	1	12.6		2.0	0.0	2H:1V	2H:1V	-51.9%	12" GROUDED RIPRAP	21/19
DITCH NO. EIGHT	2	51.1		2.0	0.0	2H:1V	2H:1V	-3.5%	12" GROUDED RIPRAP	21/19
DITCH NO. EIGHT	3	49.3		2.0	0.0	2H:1V	2H:1V	-50.0%	12" GROUDED RIPRAP	21/19
DITCH NO. EIGHT	4	4.7		2.0	0.0	2H:1V	2H:1V	-2.0%	12" GROUDED RIPRAP	21/19
TOTAL:			121.0*							

- NOTES:
- * DITCH LENGTHS LISTED IN THE TABLE AND SHOWN ON THE PROFILE INCLUDE OVERLAPPED DIMENSIONS WHERE TWO DITCHES INTERSECT. TOTALS SHOWN IN THE TABLE DISCOUNT THE OVERLAP. DITCH TOTALS IN THE TABLE ARE SLOPE DISTANCES.
 - GROUT KEYS SHALL BE PAID AT THE UNIT PRICE BID FOR THE DITCH IN WHICH THEY ARE LOCATED. FOR GROUT KEY LOCATIONS SEE DITCH PROFILES.



PROFILE
SCALE: 1" = 3 FT.



"TRAPEZOIDAL" DITCH CROSS SECTION A - A.
SCALE: 1" = 3 FT.

"VEE" DITCH CROSS SECTION A - A.
SCALE: 1" = 3 FT.

ROCK RIPRAP SIZING	
GRADATION	D ₅₀ =12"
50%	12" - 18"
35%	6" - 12"
15%	3" - 6"

- NOTES:
- EXTEND GROUT KEY Laterally THE FULL WIDTH OF THE CHANNEL AS SHOWN IN THE CROSS SECTION VIEWS.
 - INSTALL GROUT KEY AT THE JUNCTION OF ROCK RIPRAP CHANNEL WITH GROUDED ROCK RIPRAP CHANNEL AS SHOWN IN THE PROFILE VIEW.
 - AFTER EXCAVATING THE GROUT KEY TO THE DIMENSIONS SHOWN, PLACE GROUT IN THE EXCAVATION TO THE CHANNEL SUB GRADE PRIOR TO PLACING THE RIPRAP.
 - FOR "A" TO "D" AND "V" TO "Z" DIMENSIONS, SEE DETAILS 21 AND 22.

REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

DEPARTMENT OF ENVIRONMENTAL PROTECTION
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www.cecinc.com

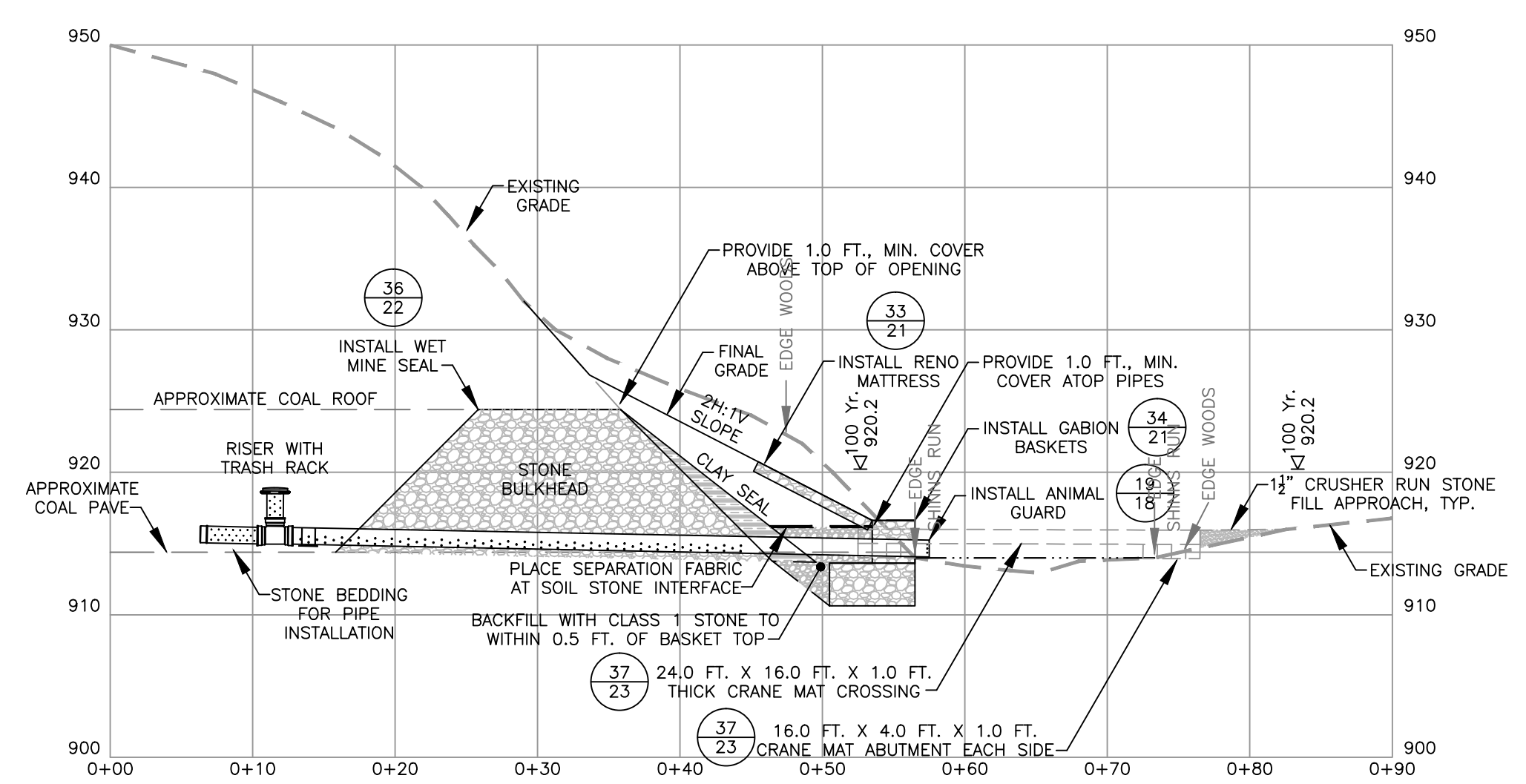
SHINNS RUN PORTALS
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
HARRISON COUNTY, WEST VIRGINIA

MISCELLANEOUS DITCH DETAILS

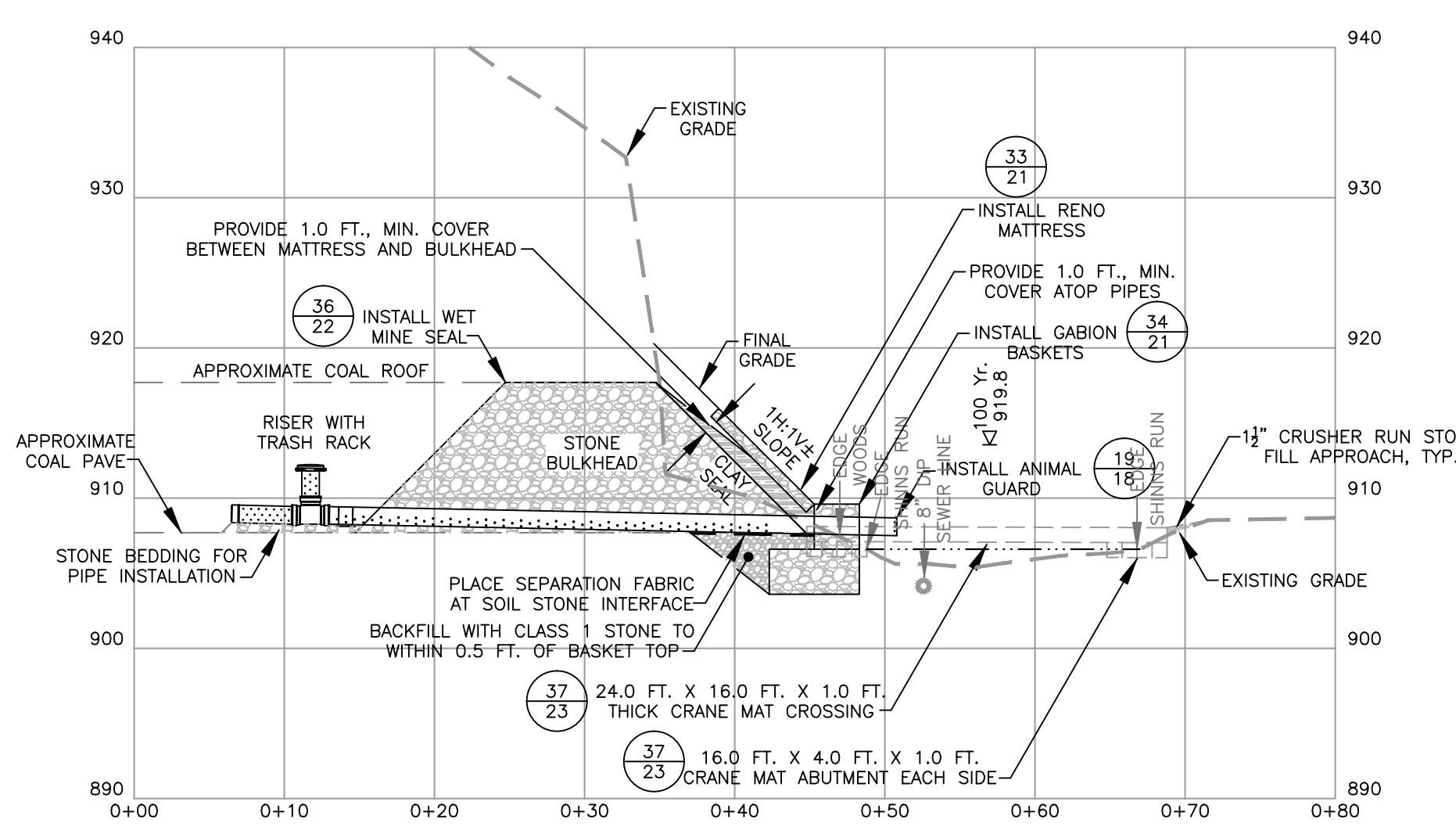
DATE:	MARCH 2015	DRAWN BY:	PWC
DWG SCALE:	AS NOTED	CHECKED BY:	DRAFT
PROJECT NO.:	131-204	APPROVED BY:	DRAFT

DRAWING NO.: 19
SHEET 19 OF 24

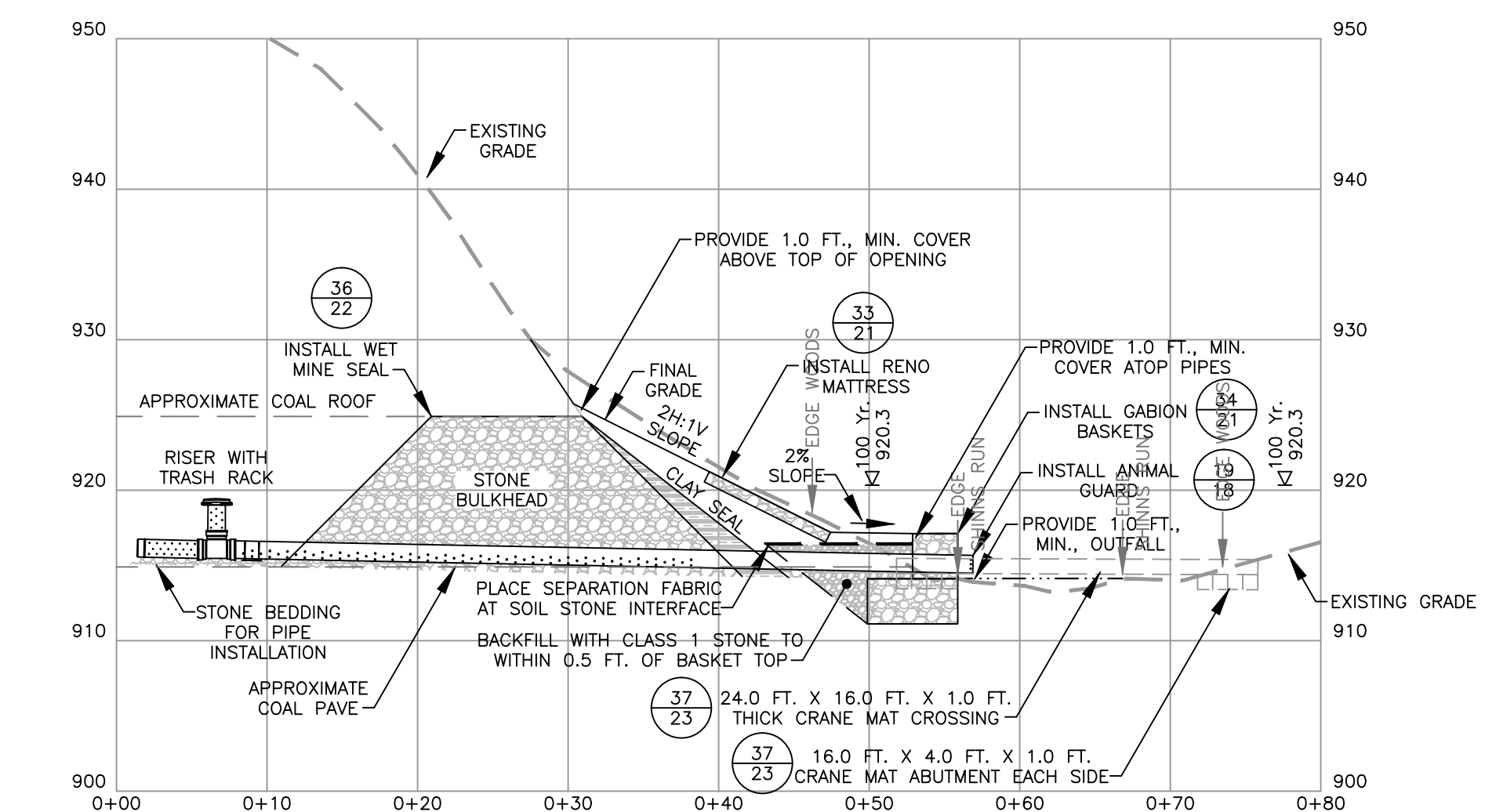
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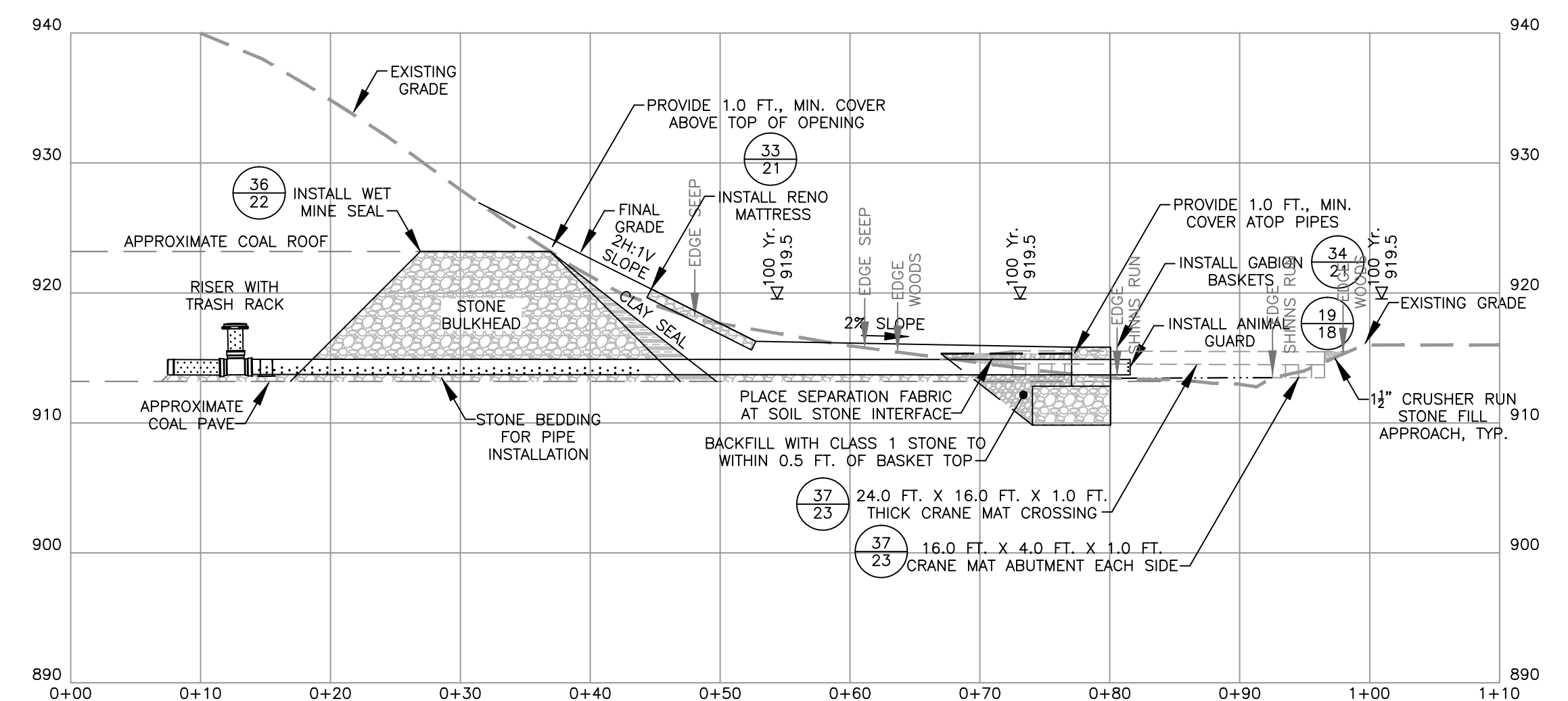
DETAIL 27
MINE SEAL NO. 3 PROFILE
SCALE 1" = 10 FT. HORIZONTALLY AND VERTICALLY



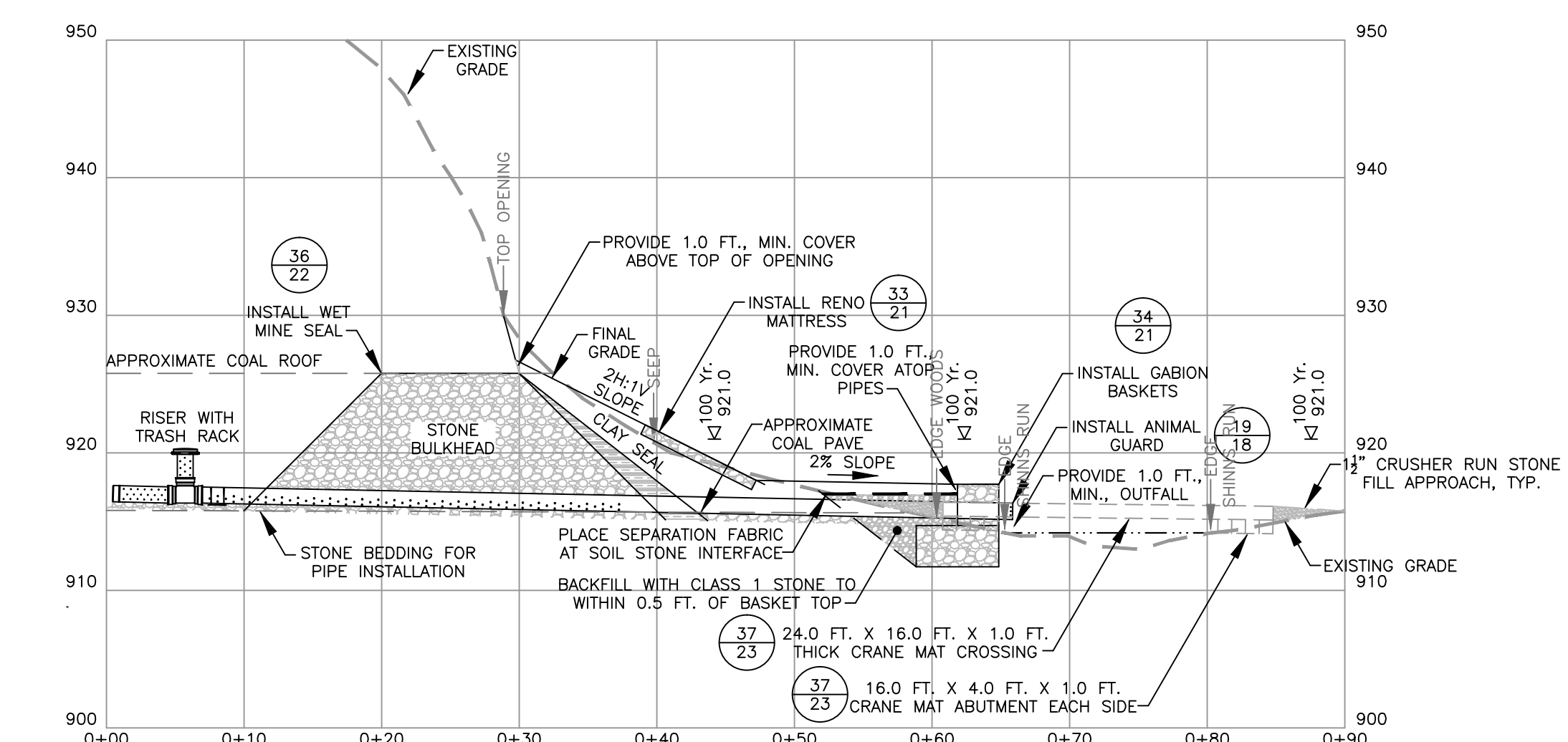
DETAIL 30
MINE SEAL NO. 6 PROFILE
SCALE 1" = 10 FT. HORIZONTALLY AND VERTICALLY



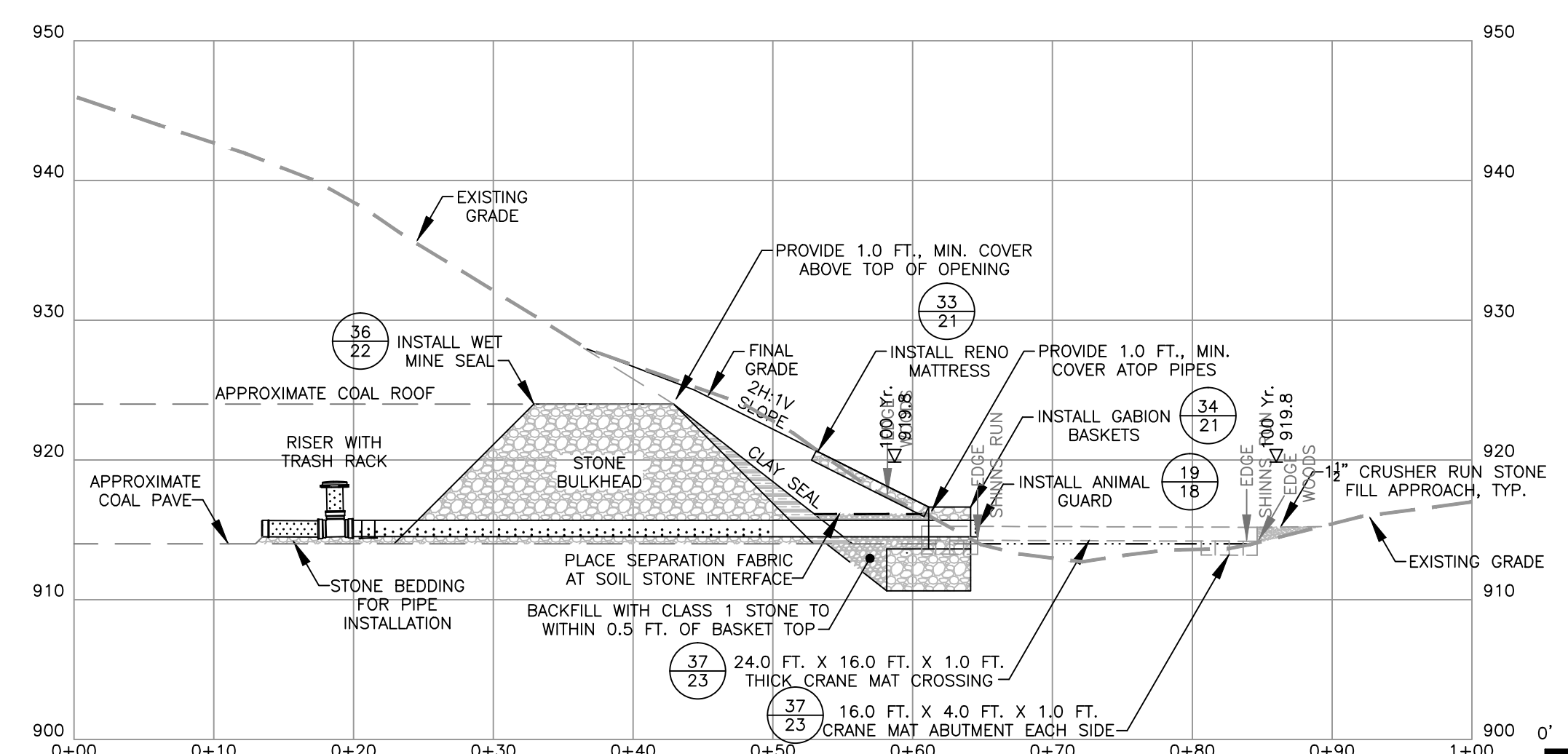
DETAIL 26
MINE SEAL NO. 2 PROFILE
SCALE 1" = 10 FT. HORIZONTALLY AND VERTICALLY



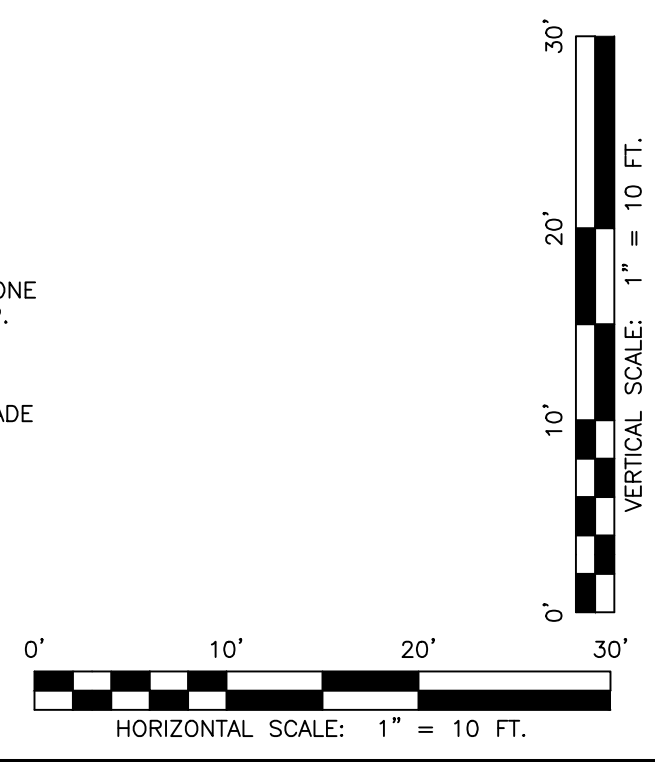
DETAIL 29
MINE SEAL NO. 5 PROFILE
SCALE 1" = 10 FT. HORIZONTALLY AND VERTICALLY



DETAIL 25
MINE SEAL NO. 1 PROFILE
SCALE 1" = 10 FT. HORIZONTALLY AND VERTICALLY

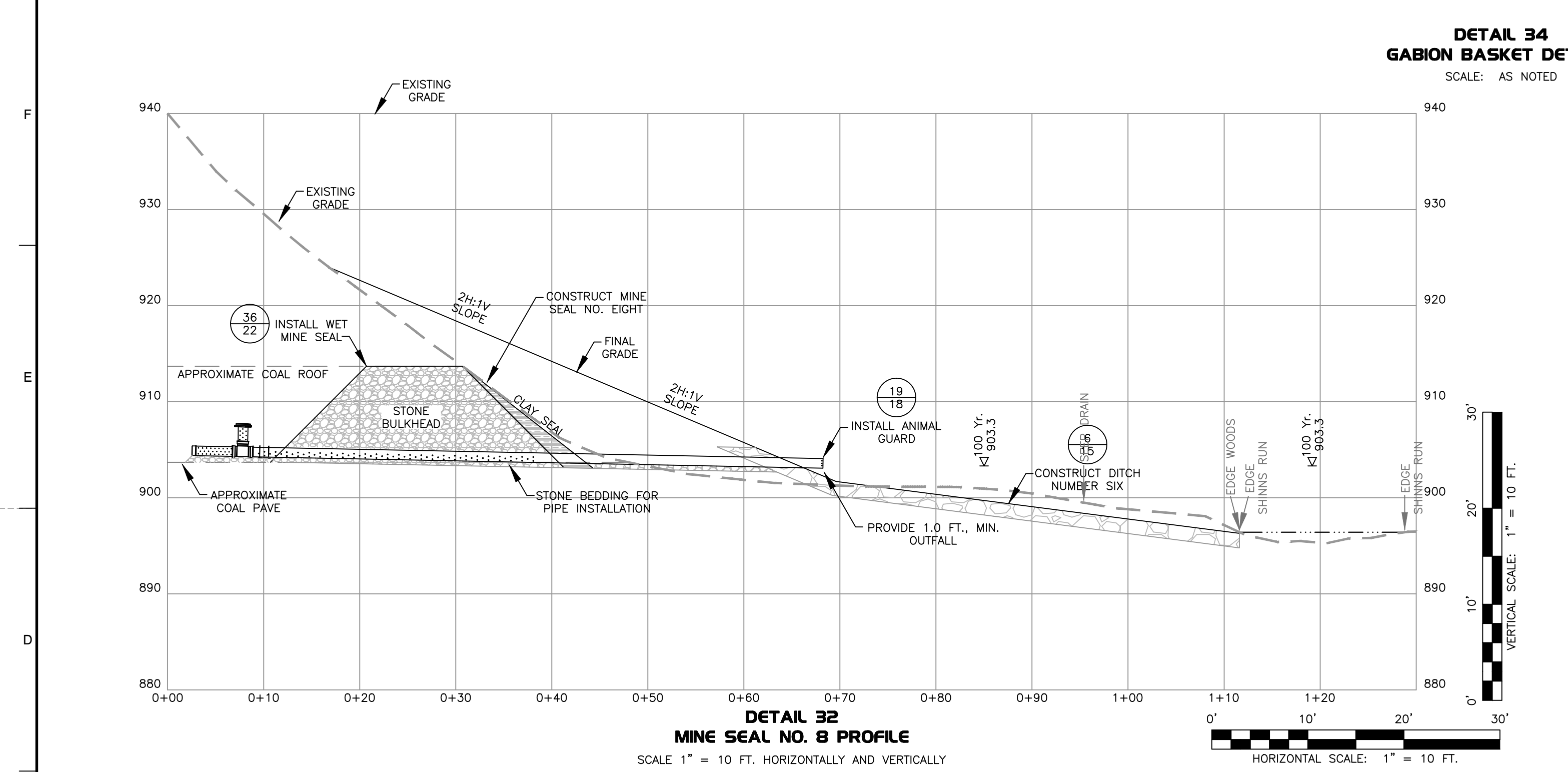
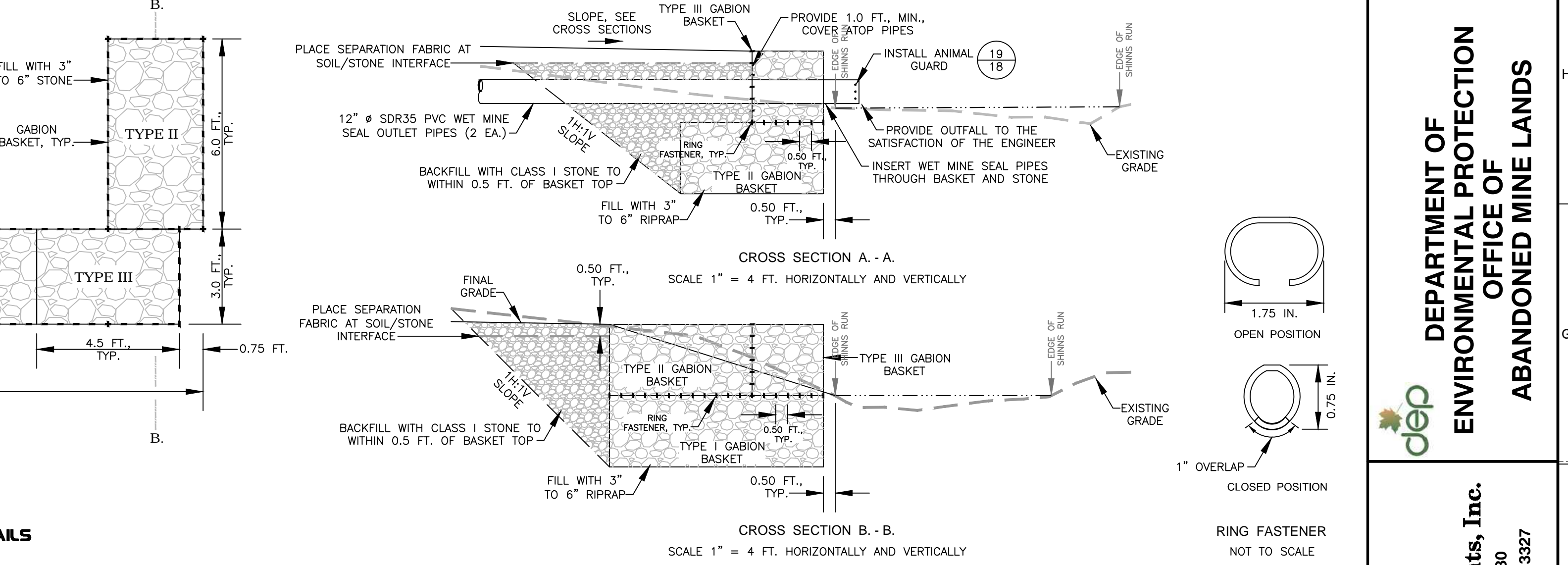
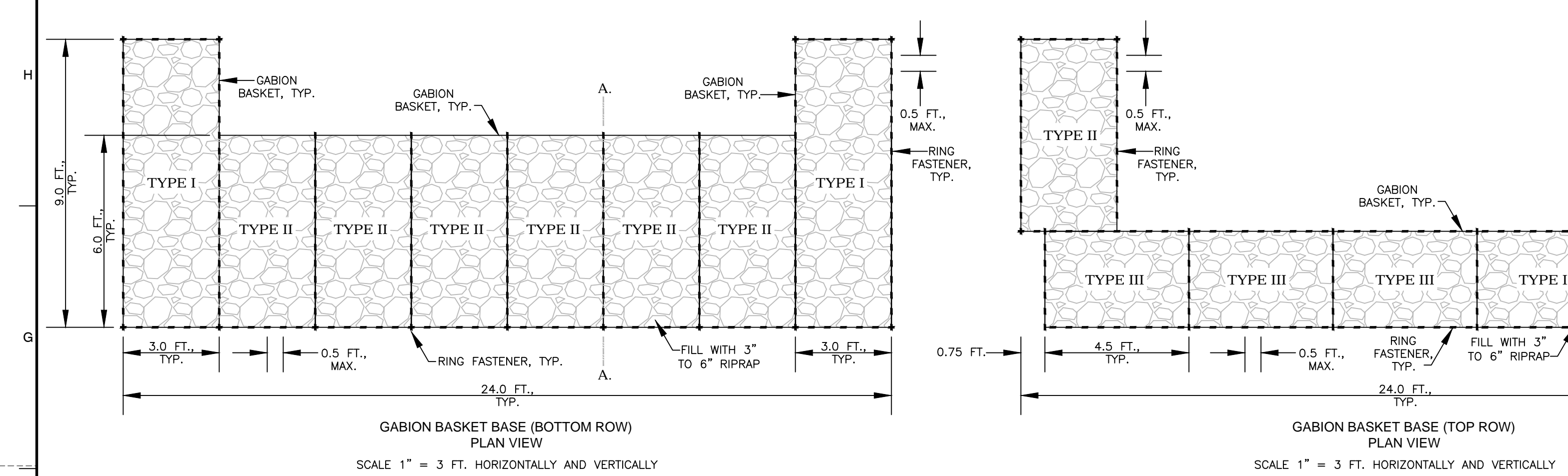


DETAIL 28
MINE SEAL NO. 4 PROFILE
SCALE 1" = 10 FT. HORIZONTALLY AND VERTICALLY



REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

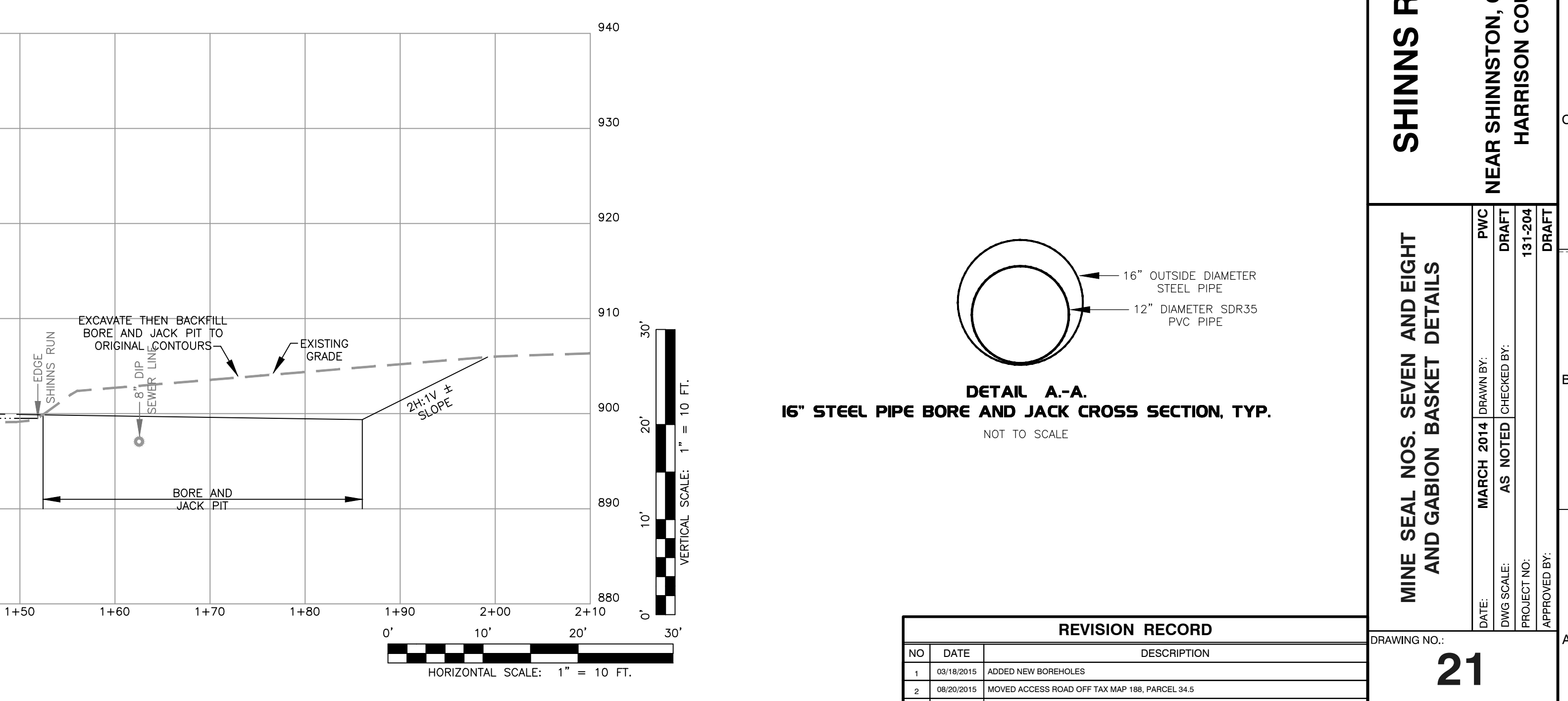
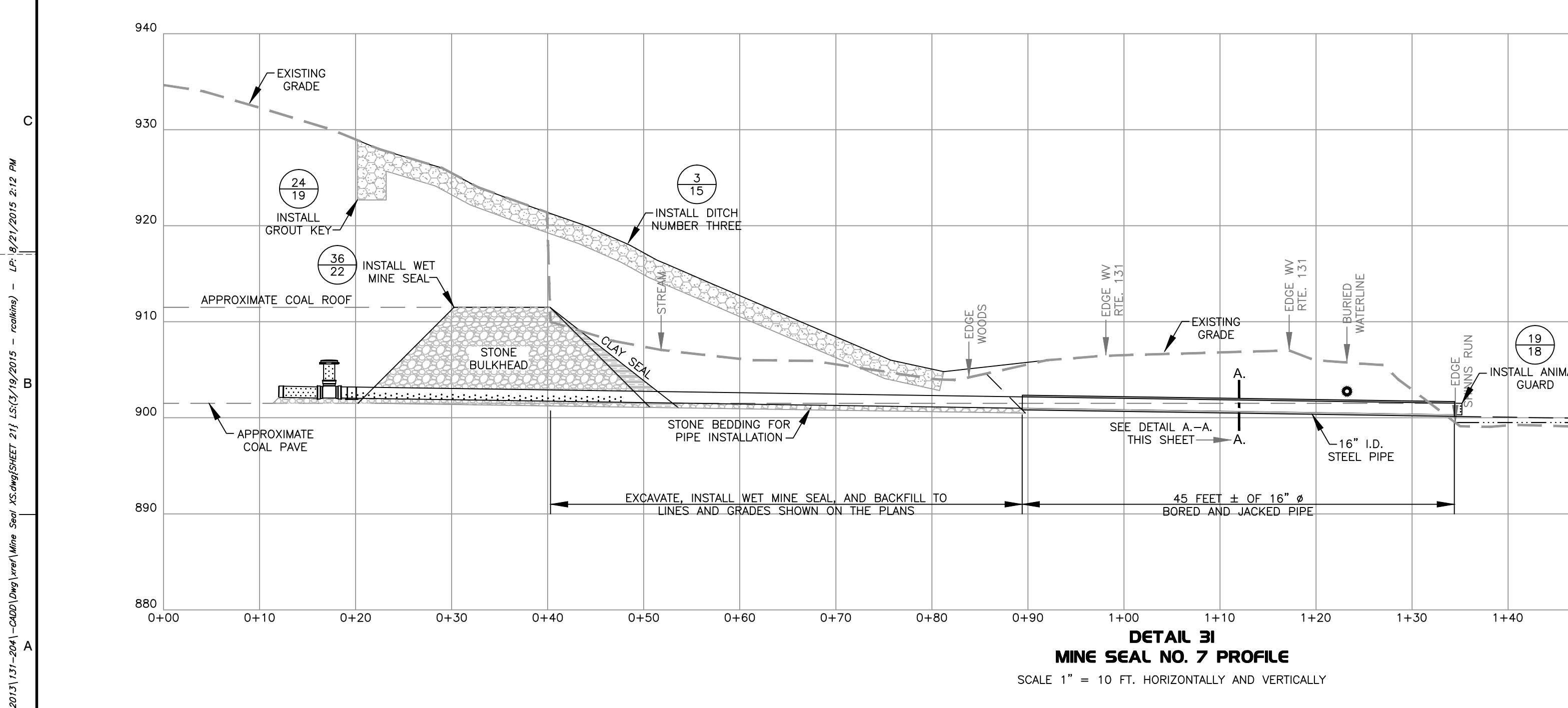
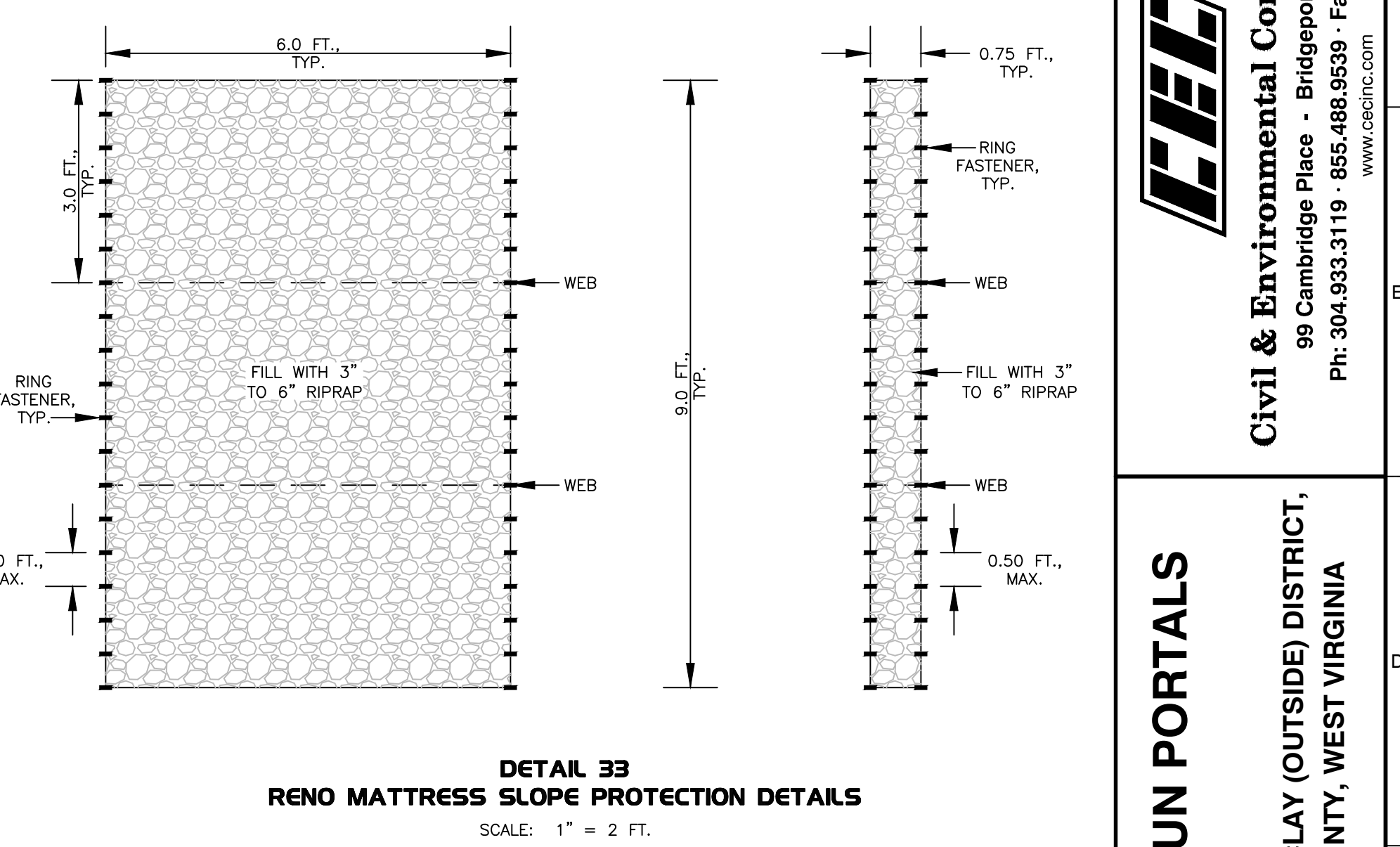
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GABION BASKET AND RENO MATTRESS DETAILS (APPROXIMATE)

DESCRIPTION	DIMENSIONS	NUMBER REQUIRED	TOTAL VOLUME
TYPE I	9' X 3' X 3'	12 EACH	36 CUBIC YARDS
TYPE II	6' X 3' X 3'	48 EACH	96 CUBIC YARDS
TYPE III	4.5' X 3' X 3'	30 EACH	45 CUBIC YARDS
RENO MATTRESS	9' X 6' X 0.75'	24 EACH	36 CUBIC YARDS

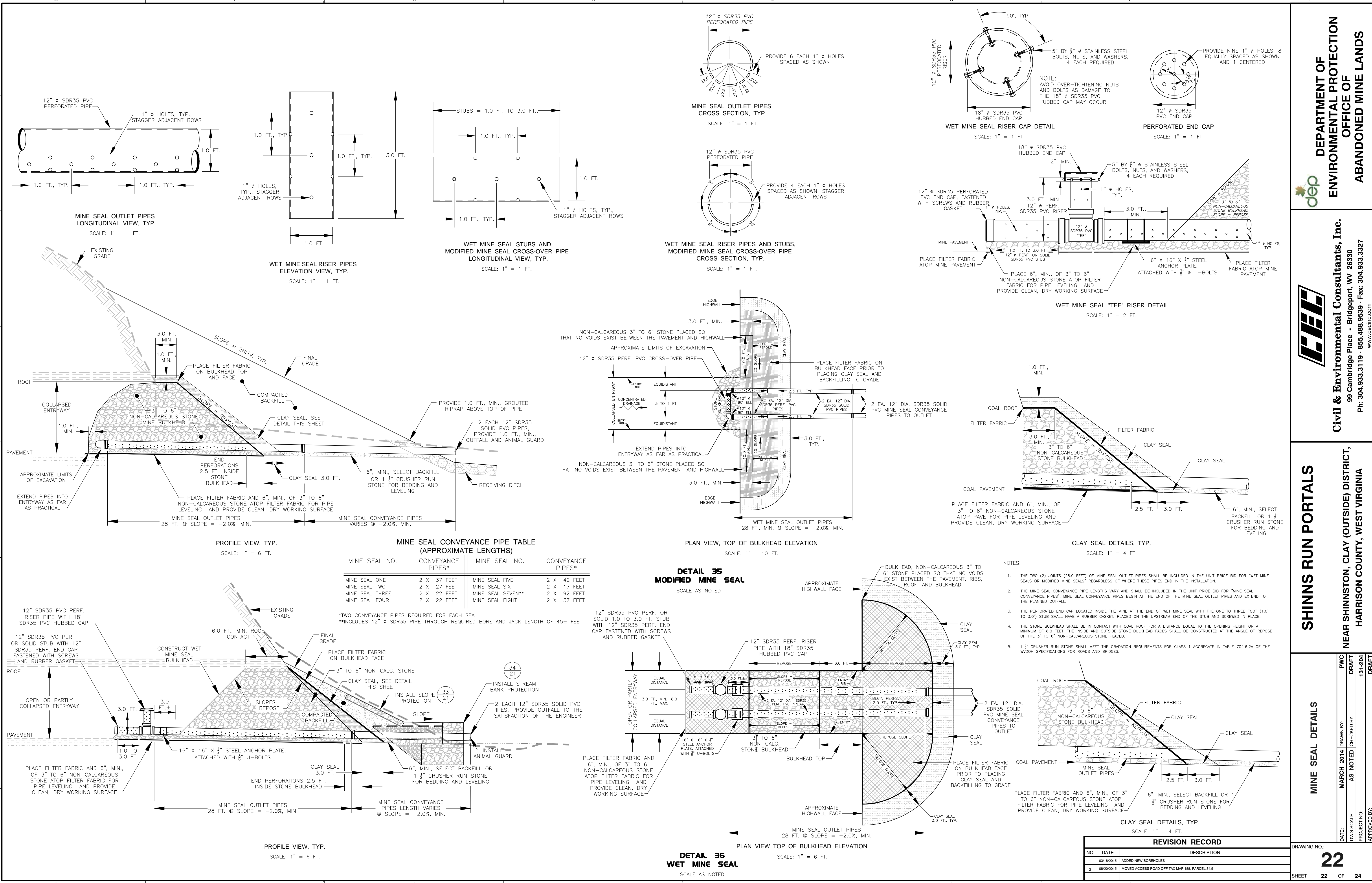
- NOTES:**
- THE CONTRACTOR SHALL BE REQUIRED TO EXCAVATE A FOUNDATION FOR THE PLACEMENT OF GABION BASKETS AND RENO MATTRESS'. THE FOUNDATION SHALL BE PROOF ROLLED TO ENSURE COMPACTION EFFORTS HAVE BEEN ATTAINED PRIOR TO WIRE BASKET PLACEMENT.
 - IF IN THE OPINION OF THE ENGINEER THE FOUNDATION IS UNSUITABLE, THE CONTRACTOR WILL BE REQUIRED TO UNDERCUT THE FOUNDATION 12" AND PLACE SUITABLE ONSITE SELECT FILL IN 4" COMPACTED LIFTS OR 1 1/2" CRUSHER RUN STONE TO THE REQUIRED FOUNDATION ELEVATION.
 - GABION BASKETS AND RENO MATTRESS' SHALL BE POSITIONED, CONNECTED, AND STONE FILLED TO THE LINES AND GRADES SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE SPECIFICATIONS.



REVISION RECORD

NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

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 DWG SCALE: AS NOTED
 PROJECT NO: 131-2041
 APPROVED BY:

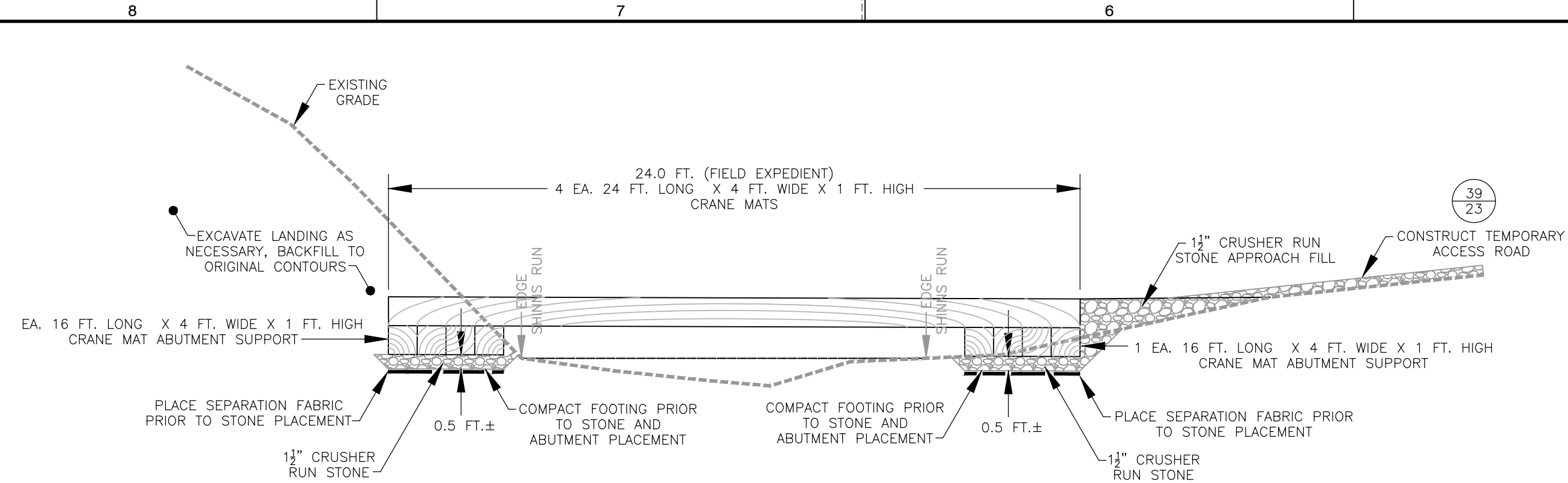
REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

MINE SEAL CONVEYANCE PIPE TABLE (APPROXIMATE LENGTHS)

MINE SEAL NO.	CONVEYANCE PIPES*	MINE SEAL NO.	CONVEYANCE PIPES*
MINE SEAL ONE	2 X 37 FEET	MINE SEAL FIVE	2 X 42 FEET
MINE SEAL TWO	2 X 27 FEET	MINE SEAL SIX	2 X 17 FEET
MINE SEAL THREE	2 X 22 FEET	MINE SEAL SEVEN**	2 X 92 FEET
MINE SEAL FOUR	2 X 22 FEET	MINE SEAL EIGHT	2 X 37 FEET

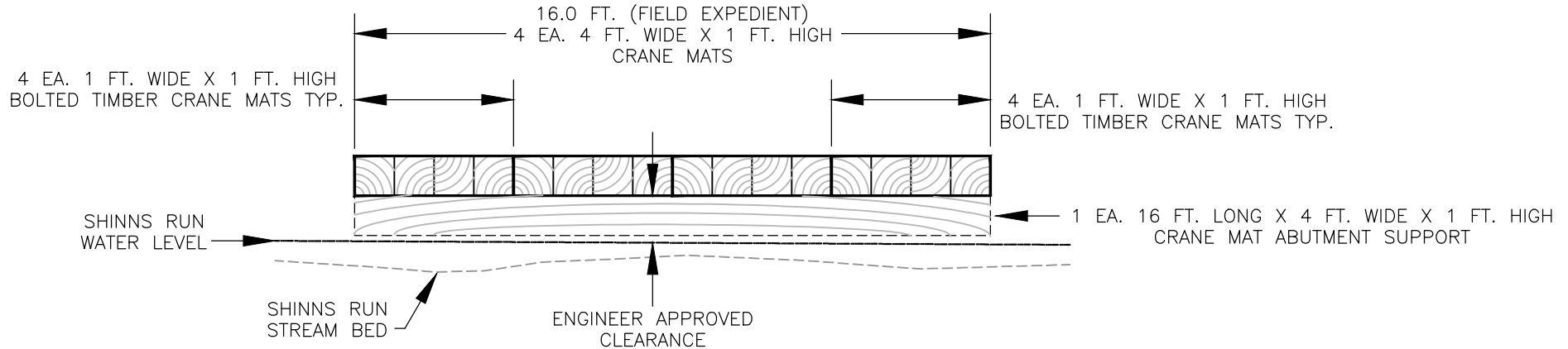
*TWO CONVEYANCE PIPES REQUIRED FOR EACH SEAL
 **INCLUDES 12" Ø SDR35 PIPE THROUGH REQUIRED BORE AND JACK LENGTH OF 45± FEET

- NOTES:
- THE TWO (2) JOINTS (28.0 FEET) OF MINE SEAL OUTLET PIPES SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "WET MINE SEALS OR MODIFIED MINE SEALS" REGARDLESS OF WHERE THESE PIPES END IN THE INSTALLATION.
 - THE MINE SEAL CONVEYANCE PIPE LENGTHS VARY AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "MINE SEAL CONVEYANCE PIPES". MINE SEAL CONVEYANCE PIPES BEGIN AT THE END OF THE MINE SEAL OUTLET PIPES AND EXTEND TO THE PLANNED OUTFALL.
 - THE PERFORATED END CAP LOCATED INSIDE THE MINE AT THE END OF WET MINE SEAL WITH THE ONE TO THREE FOOT (1.0' TO 3.0') STUB SHALL HAVE A RUBBER GASKET, PLACED ON THE UPSTREAM END OF THE STUB AND SCREWED IN PLACE.
 - THE STONE BULKHEAD SHALL BE IN CONTACT WITH COAL ROOF FOR A DISTANCE EQUAL TO THE OPENING HEIGHT OR A MINIMUM OF 6.0 FEET. THE INSIDE AND OUTSIDE STONE BULKHEAD FACES SHALL BE CONSTRUCTED AT THE ANGLE OF REPOSE OF THE 3" TO 6" NON-CALCAREOUS STONE PLACED.
 - 1 1/2" CRUSHER RUN STONE SHALL MEET THE GRADATION REQUIREMENTS FOR CLASS 1 AGGREGATE IN TABLE 704.6.2A OF THE WOODH SPECIFICATIONS FOR ROADS AND BRIDGES.



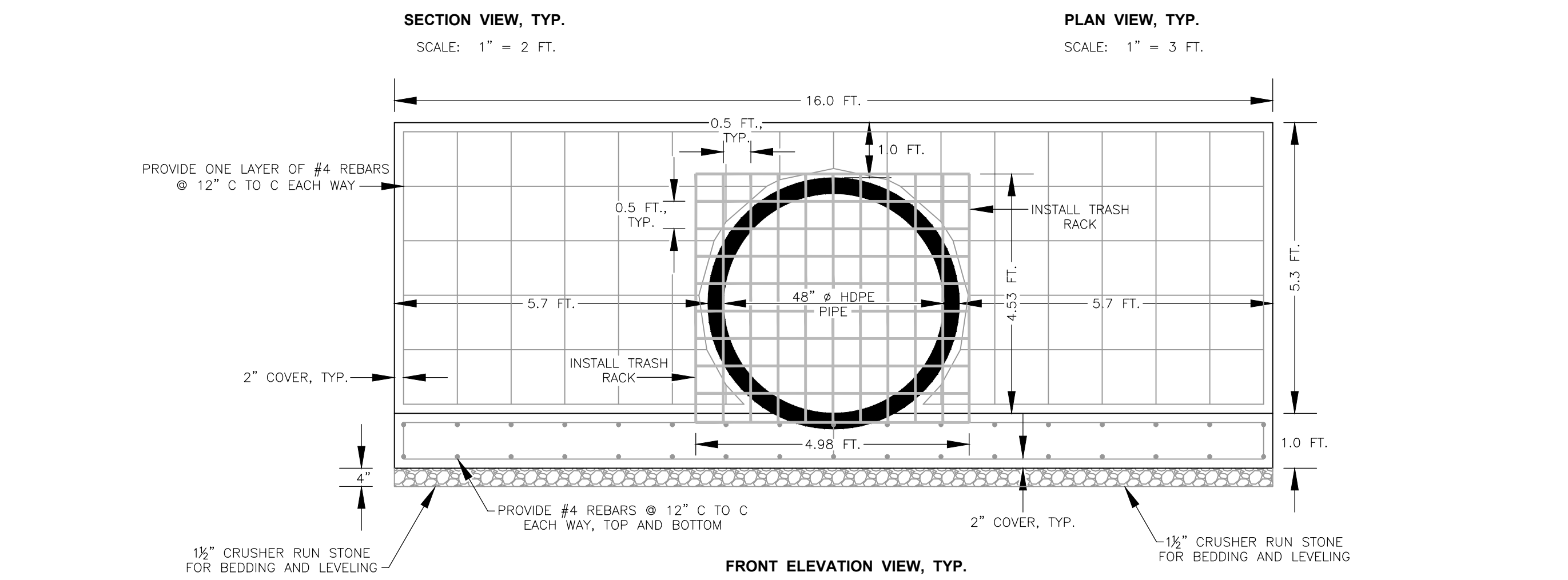
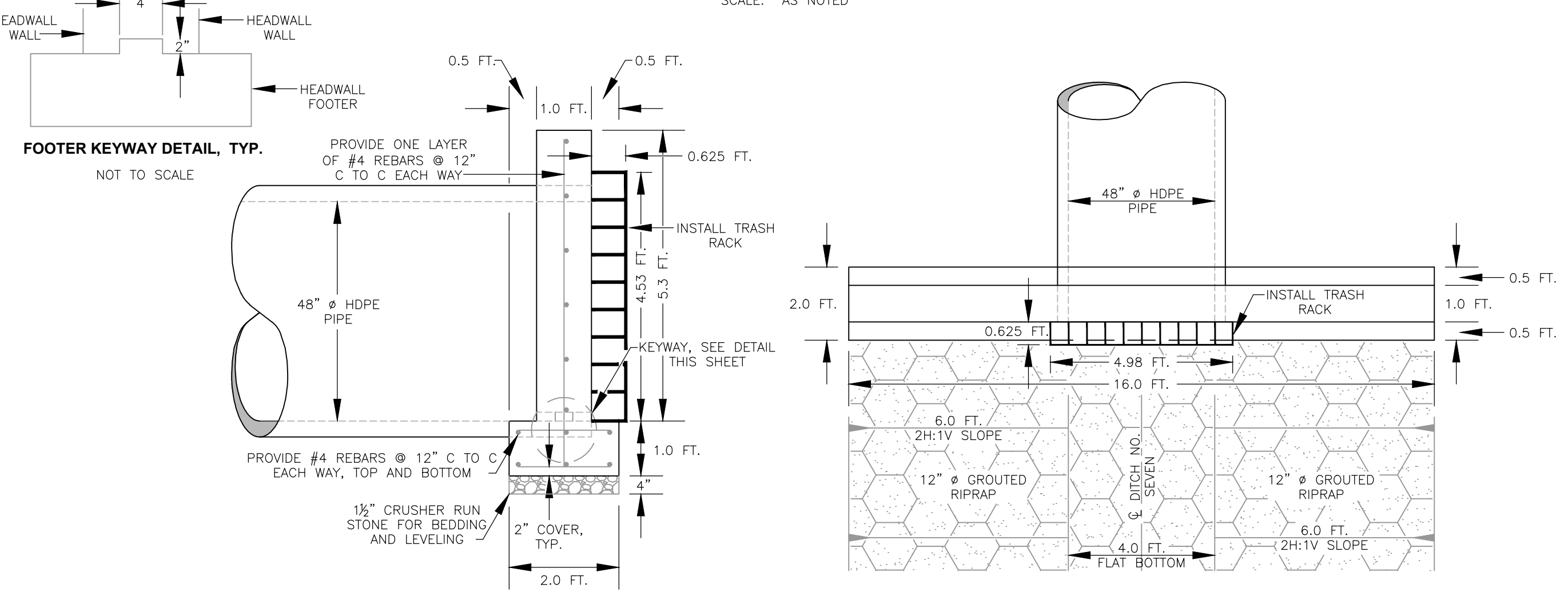
TEMPORARY STREAM CROSSING PROFILE, TYP.
SCALE: 1" = 4 FT.

- NOTES:
- BRIDGE TO REMAIN IN PLACE UNTIL COMPLETION OF RECLAMATION AS PLANNED.
 - INDIVIDUAL MATS SHALL BE ANCHORED AND BUTTED TIGHTLY TO MINIMIZE THE INTRODUCTION OF SEDIMENT TO THE WATER BODY.
 - TEMPORARY STREAM CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS.
 - DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION, AND BEFORE ANY SUBSEQUENT USE.
 - SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED WITHIN 24 HOURS OF THE INSPECTION. SILT FENCE SHALL BE INSTALLED UP TO EACH EDGE OF THE BRIDGE.



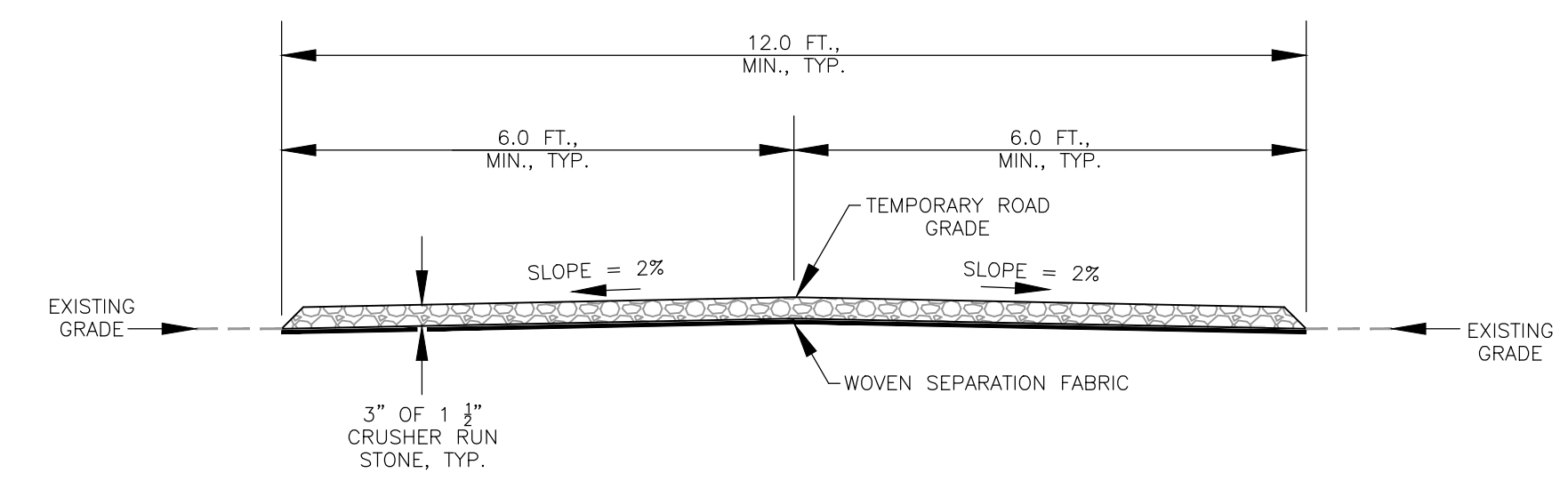
TEMPORARY STREAM CROSSING CROSS SECTION, TYP.
SCALE: 1" = 4 FT.

**DETAIL 37
TEMPORARY STREAM CROSSINGS, TYP.**
SCALE: AS NOTED



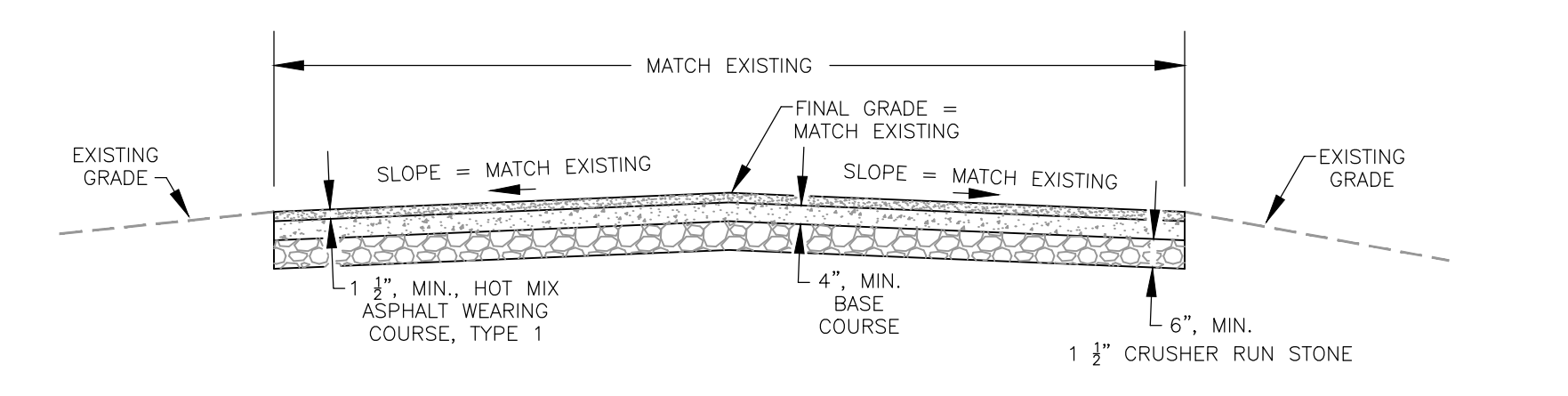
**DETAIL 38
CULVERT NUMBER ONE HEADWALLS, TYP.**
SCALE: AS NOTED

- NOTES:
- TEMPORARY ACCESS ROADS SHALL BE CONSTRUCTED IN THE LOCATIONS DEPICTED ON THE FINAL DESIGN SHEETS.
 - TEMPORARY ACCESS ROADS PLACED IN YARDS SHALL BE CONSTRUCTED WITHOUT ANY CUTTING AND ONLY WITH MINOR FILLING AS APPROVED BY THE ENGINEER.
 - TEMPORARY ACCESS ROADS SHALL BE CONSTRUCTED BY LAYING SEPARATION FABRIC THE WIDTH OF THE PROPOSED ROAD AND ALONG ITS ENTIRE LENGTH. 3" OF 1 1/2" CRUSHER RUN STONE SHALL THEN BE PLACED ATOP THE FABRIC TO CREATE A DRIVING SURFACE.
 - AFTER ALL OPERATIONS UTILIZING THE TEMPORARY ACCESS ROAD ARE COMPLETE, THE CONTRACTOR WILL BE REQUIRED TO REMOVE AND DISCARD THE ROAD COMPONENTS.
 - THE CONTRACTOR WILL BE REQUIRED TO PREPARE THE SURFACE LYING BENEATH THE REMOVED ACCESS ROAD FOOTPRINT PRIOR TO REVEGETATION IN ACCORDANCE WITH THE SPECIFICATIONS. PREPARATION MAY INVOLVE SCARIFYING THE COMPACTED SURFACE, MINOR REGROUNDING, AND PLACING FERTILIZER, LIME, LAWN SEED MIXTURE, AND MULCH TO THE SATISFACTION OF THE ENGINEER.



**DETAIL 39
TEMPORARY ACCESS ROAD CROSS SECTION, TYP.**
SCALE: 1" = 2 FT.

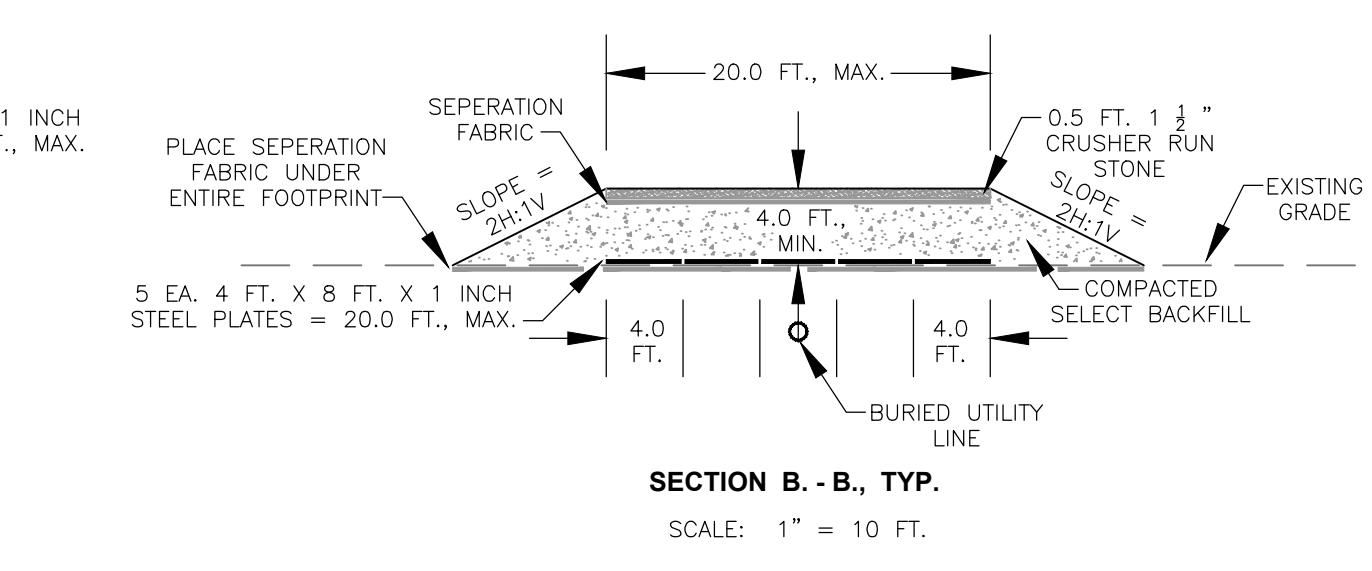
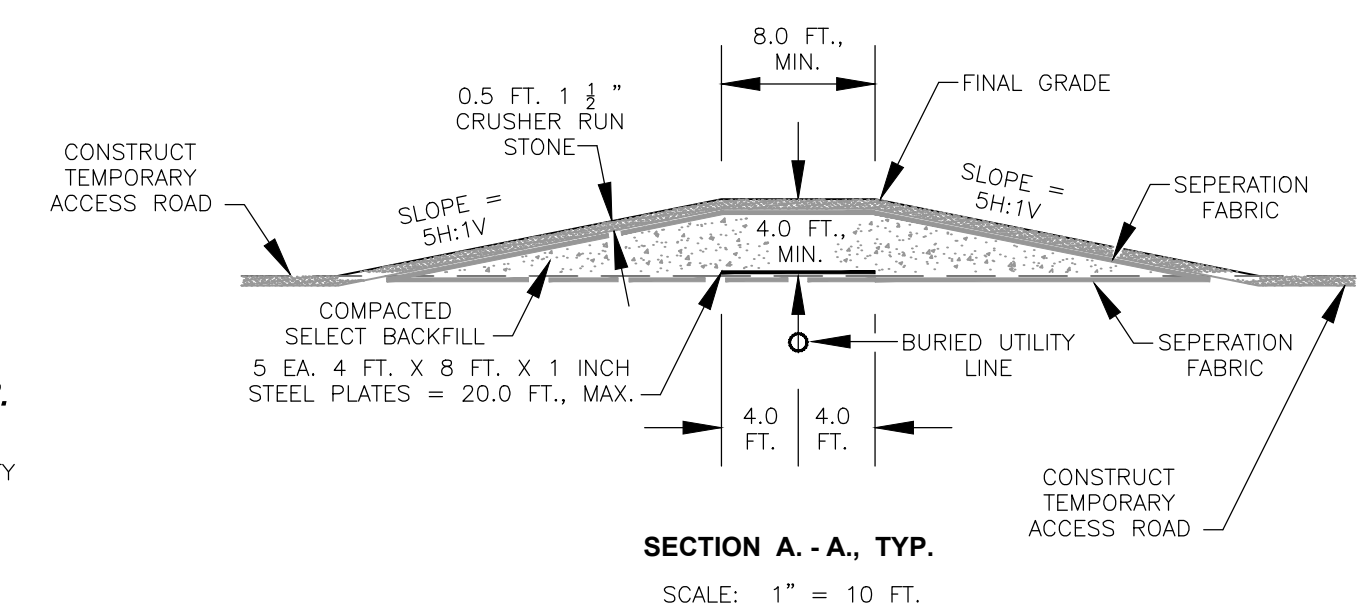
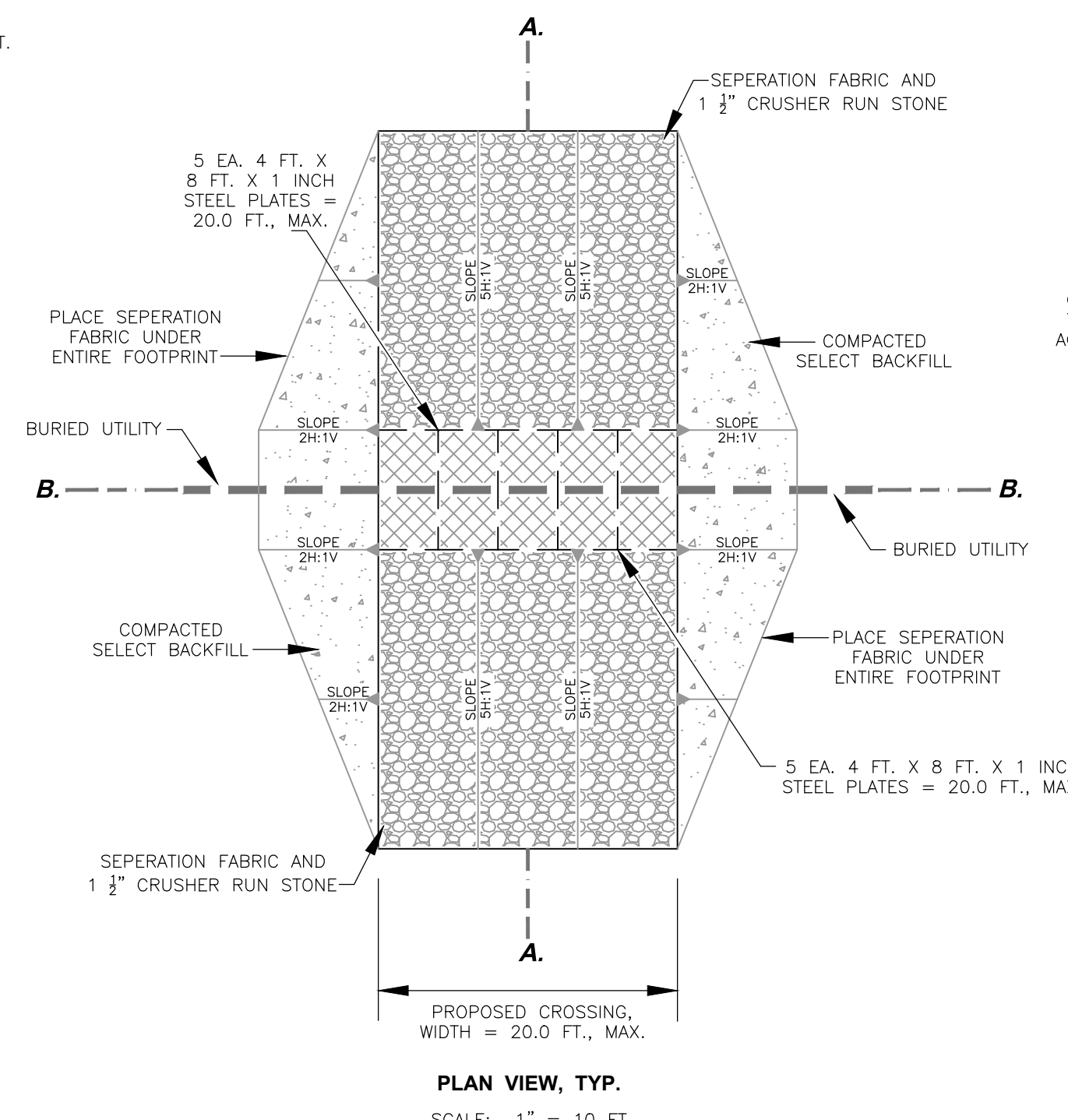
- NOTES:
- THE ENGINEER SHALL BE THE SOLE JUDGE IF DAMAGED ASPHALT REQUIRES RESURFACING OR REPAIR. RESURFACING AND REPAIR SHALL INVOLVE PLACEMENT OF 1 1/2" CRUSHER RUN STONE, 4" OF BASE COURSE ASPHALT, AND 1 1/2" OF WEARING COURSE ASPHALT.
 - THE AREA DESIGNATED FOR PAVEMENT RESURFACING OR REPAIR SHALL BE CLEANED OF ALL DIRT, DUST, AND DEBRIS TO THE SATISFACTION OF THE ENGINEER PRIOR TO RESURFACING OR REPAIR.
 - THE RESURFACING SHALL EXTEND FROM ROAD EDGE TO ROAD EDGE AND BLEND TO EXISTING PAVEMENT GRADES AT TIE-IN POINTS.
 - PAVEMENT REPAIR GRADES SHALL MATCH EXISTING UNDISTURBED PAVEMENT. 1 1/2" CRUSHER RUN STONE SHALL BE USED TO REPAIR ASPHALT SUBGRADE, IF REQUIRED BY THE ENGINEER.
 - 1 1/2" CRUSHER RUN STONE SHALL BE ROLLER COMPACTED.
 - 1 1/2" CRUSHER RUN STONE SHALL MEET THE GRADATION REQUIREMENTS OF AGGREGATE CLASS 1 STONE IN TABLE 704.6.2A OF THE WDOH SPECIFICATIONS FOR ROADS AND BRIDGES.
 - CONCRETE SHALL BE REPAIRED WITH 3,000 PSI CLASS "B" (TYPE I CEMENT) CONCRETE PLACED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS. DEFORMED BARS FOR REINFORCEMENT, IF REQUIRED, SHALL ALSO MEET THE REQUIREMENTS OF THE SPECIFICATIONS. CONCRETE SHALL BE PLACED TO DEPTHS AND AERIAL EXTENT DESIGNATED BY THE ENGINEER AND BLEND INTO SURROUNDING SURFACES. SUBGRADE REPAIRS, IF REQUIRED, SHALL BE MADE WITH 1 1/2" CRUSHER RUN STONE.
 - GRAVEL ROAD REPAIRS SHALL BE MADE WITH 1 1/2" CRUSHER RUN STONE PLACED TO DEPTHS AND AERIAL EXTENT DESIGNATED BY THE ENGINEER AND BLEND INTO SURROUNDING SURFACES.



**DETAIL 40
PAVEMENT RESURFACING AND REPAIR, TYP.**
SCALE: 1" = 3 FEET

- NOTES:
- PRIOR TO CONSTRUCTION OF THE PROTECTION PAD, THE CONTRACTOR MUST CONTACT THE UTILITY OWNER AND HAVE THE EXACT LOCATION OF THE BURIED LINE MARKED IN THE FIELD AT ALL CROSSINGS.
 - THE ENTIRE COVER ATOP THE STEEL PLATES MAY BE 1 1/2" CRUSHER RUN STONE OR COMPACTED SELECT BACKFILL MEETING THE APPROVAL OF THE ENGINEER.
 - SEPARATION FABRIC SHALL BE LAID ON THE EXISTING GROUND COVERING THE ENTIRE FOOTPRINT OF THE PAD PRIOR TO PLACING PAD COMPONENTS.
 - FIVE (5) CROSSINGS ARE REQUIRED AT:

LINE TYPE	NORTH COORDINATE	EAST COORDINATE
GAS LINE	N 322,187.0	E 1,743,362.8
PRIVATE WATER LINE	N 322,186.8	E 1,743,367.8
PRIVATE BURIED LINE	N 322,196.0	E 1,743,401.4
GAS LINE	N 322,809.6	E 1,742,257.8
SEWER LINE	N 324,792.7	E 1,742,413.5



**DETAIL 41
BURIED UTILITY CROSSING DETAILS, TYP.**
SCALE: AS NOTED

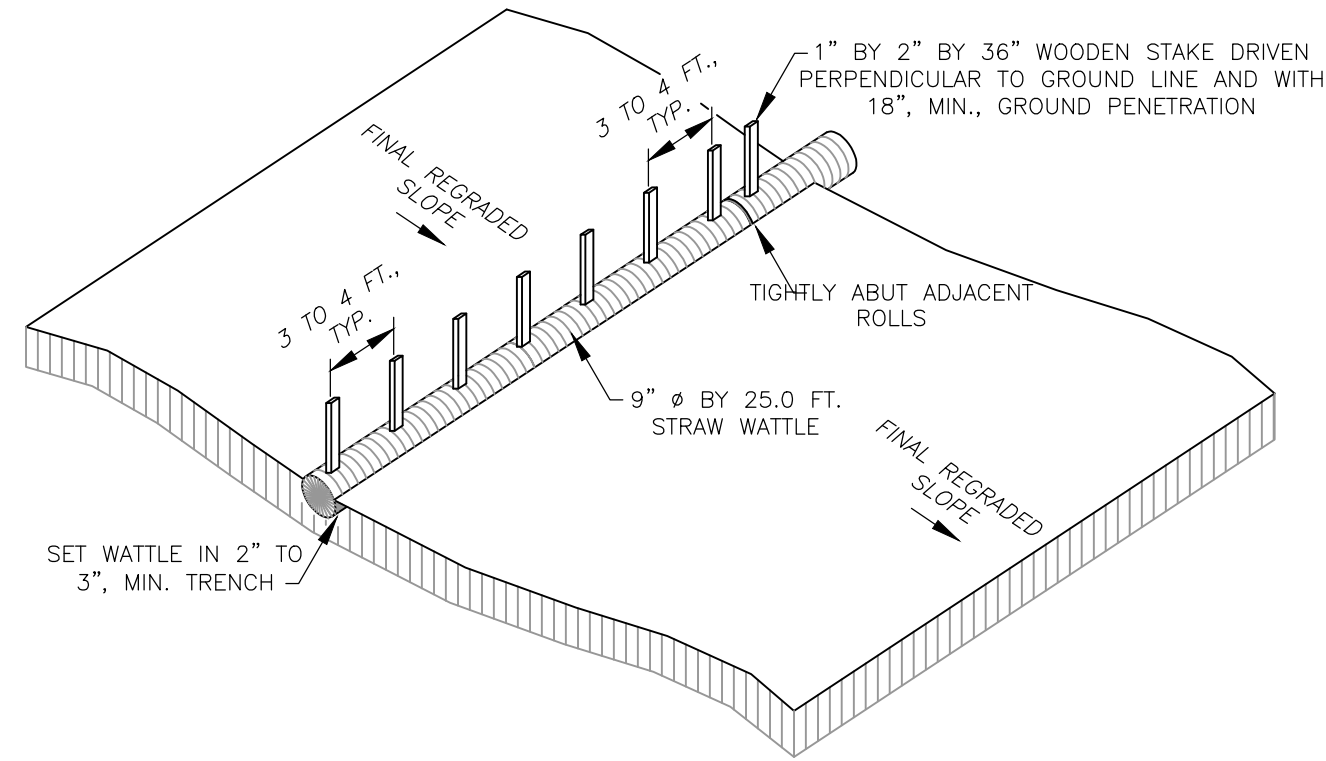
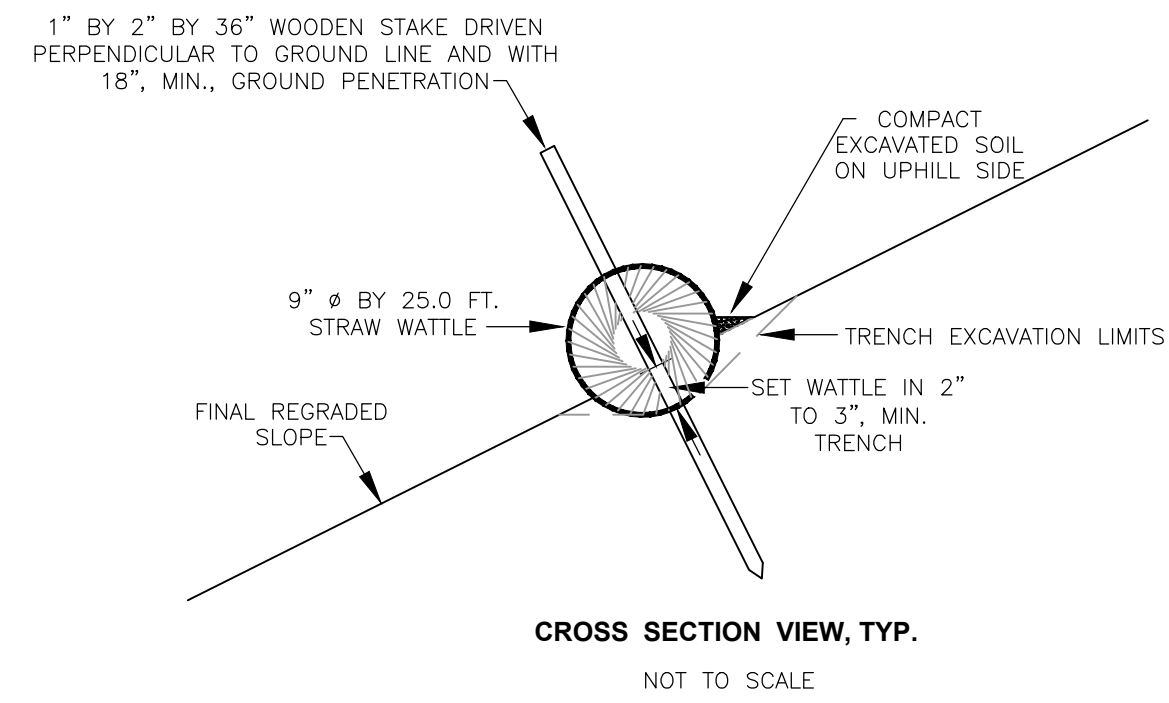
REVISION RECORD

NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS**

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 NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
 HARRISON COUNTY, WEST VIRGINIA
**MISCELLANEOUS DETAILS
SHEET 1**
 DATE: MARCH 2015 DRAWN BY: PWG
 DWG SCALE: AS NOTED CHECKED BY: DRAFT
 PROJECT NO: 131-204
 APPROVED BY: DRAFT
 DRAWING NO.: **23**
 SHEET 23 OF 24

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**DETAIL 42
STRAW WATTLE INSTALLATION**

NOT TO SCALE

GENERAL NOTES

- THIS CASE ILLUSTRATES PORTABLE INSTALLATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE TRAFFIC SIGNAL SYSTEM IN PLACE FOR THIS PROJECT. THE RESPONSIBILITY SHALL BEGIN WITH THE INITIALIZATION OF THE WORK AND CONTINUE UNTIL WET MINE SEAL SEVEN AND DITCH NUMBERS THREE, FOUR, AND FIVE ARE CONSTRUCTED AND APPROVED BY THE ENGINEER. MAINTENANCE SHALL BE INCLUDED BUT NOT BE LIMITED TO THE REPAIR OF ACTS OF VANDALISM, AS WELL AS NORMAL WEAR AND BURN OUT. ITEMS TO BE MAINTAINED AND/OR REPAIRED SHALL INCLUDE CONTROLLERS, CABINETS, DETECTORS, SIGNAL HEADS, SUPPORT POSTS AND ANY OTHER EQUIPMENT OR MISCELLANEOUS ITEMS IN PLACE FOR THIS SIGNAL INSTALLATION.
- SIGNAL TIMING INFORMATION WILL BE FURNISHED BY THE DIVISION OF HIGHWAYS AND MAY NOT BE CHANGED OR MODIFIED WITHOUT THE APPROVAL OF THE DIVISION OF HIGHWAYS.
- IF DUE TO EQUIPMENT FAILURES OR OTHER REASONS THE SIGNAL MUST BE PUT ON FLASH OR SHUT DOWN, THE CONTRACTOR IS REQUIRED TO FURNISH OR COMPENSATE THE FLAGGERS OR LAW ENFORCEMENT OFFICERS REQUIRED TO CONTROL TRAFFIC. IF TRAFFIC CONTROL IS DONE BY CONTRACTOR PERSONNEL AND IS IN LINE WITH THEIR NORMAL WORKING DUTIES NO COMPENSATION MAY BE REQUIRED. IN NO CASE SHALL THE SIGNAL SYSTEM BE DOWN FOR MORE THAN 24 HOURS UNLESS APPROVED BY THE ENGINEER OR OTHERWISE STATED IN THE PLANS.
- IF THE SIGNAL IS NOT NEEDED FOR A PERIOD OF GREATER THAN 24 HOURS DUE TO NORMAL OR NEAR NORMAL TRAFFIC CONDITIONS BEING RESTORED, THE CONTRACTOR MUST COVER THE SIGNAL HEADS.
- IF FLAGGERS ARE USED INSTEAD OF THE SIGNALS THEY SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES AND SIGNAL AHEAD SIGNS SHALL BE REPLACED WITH ADVANCE FLAGGER SIGNS.
- ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS THREE DAYS.
- MINIMUM ADVANCE SIGN DISTANCE ON ALL SIGNALS SHALL BE AS SPECIFIED IN SECTION 40.15 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, EXACT LOCATION OF ALL SIGNAL HEADS SHALL BE AS DIRECTED BY THE ENGINEER.
- FLASHING WARNING LIGHTS AND/OR FLAGS MAY BE USED TO CALL ATTENTION TO THE ABOVE WARNING SIGNS AS NEEDED ON THE PLANS AND/OR DIRECTED BY THE ENGINEER.
- IN ADDITION, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE FLAGMEN WHILE ACCESSING CONSTRUCTION ACCESS POINTS ALONG WV ROUTE 131 AS DETAILED IN THE SPECIFICATIONS. THE FLAGMEN SHALL BE POSITIONED 500 FEET IN EACH DIRECTION FROM THE CONSTRUCTION ACCESS POINT TOWARD AND FACING ONCOMING TRAFFIC. A "FLAGGER AHEAD" SIGN SHALL BE POSITIONED 500 FEET BEYOND THE FLAGMEN AND FACING ONCOMING TRAFFIC.

MINIMUM STANDARDS FOR THE PLACEMENT OF PORTABLE TRAFFIC SIGNALS

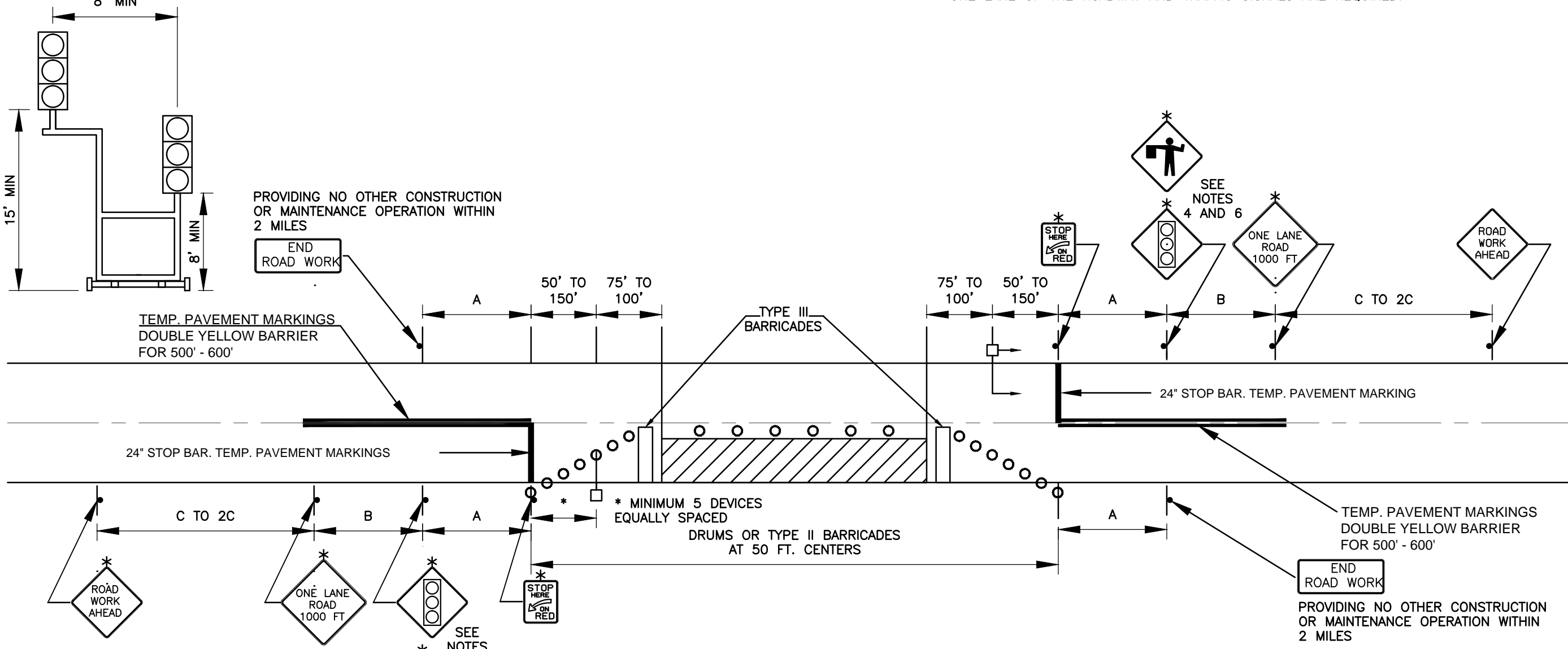
ALL INSTALLATIONS OF PORTABLE TRAFFIC SIGNALS SHALL COMPLY WITH CASE D5B AND WITH THE FOLLOWING MINIMUM SPECIFICATIONS.

- STANDARD CONTROLLER DEMAND WITH TBC (TIME BASED COORDINATION) AND CONFLICT MONITOR.
- MUST BE HARDWARE FROM CONTROLLER TO SIGNAL HEADS. (RADIO OR WIRELESS ARE NOT ACCEPTABLE).
- NO MANUAL CONTROL OVER LENGTH OF AMBER TIME.
- STANDARD 12' SIGNAL HEADS AND LAMPS.
- MINIMUM HORIZONTAL SIGNAL FACE SEPARATION OF 8 FEET.
- ONE SIGNAL HEAD MOUNTED A MINIMUM OF 15 FEET OVER APPROACH ROADWAY AND THE OTHER A MINIMUM OF 8 FEET ABOVE THE ROADWAY.
- POWER SUPPLY SHALL BE BY POWER COMPANY SERVICE OR GENERATOR.
- GENERATOR POWER SUPPLY SHALL HAVE A BATTERY BACKUP IF GENERATOR SHOULD FAIL.

THE GENERAL GUIDELINES ARE THAT THE HIGH/LOW SIGNAL SHOULD BE PLACED ON THE SAME SIDE OF THE ROAD THAT THE DRIVER MUST STOP. THIS MAY REQUIRE THE TRAILER WITH SIGNALS TO BE PLACED BEHIND THE GUARDRAIL OR SOME METHOD TO PLACE THE TRAILER OFF THE ROADWAY. WHEN USED AS A THREE PHASE SIGNAL FOR AN ADDITIONAL SIGNALIZED APPROACH, A THIRD TRAILER OR TEMPORARY SUPPORT SHOULD BE USED TO PROVIDE HIGH/LOW INDICATIONS SEPARATED BY 8 FEET.

CASE D5B

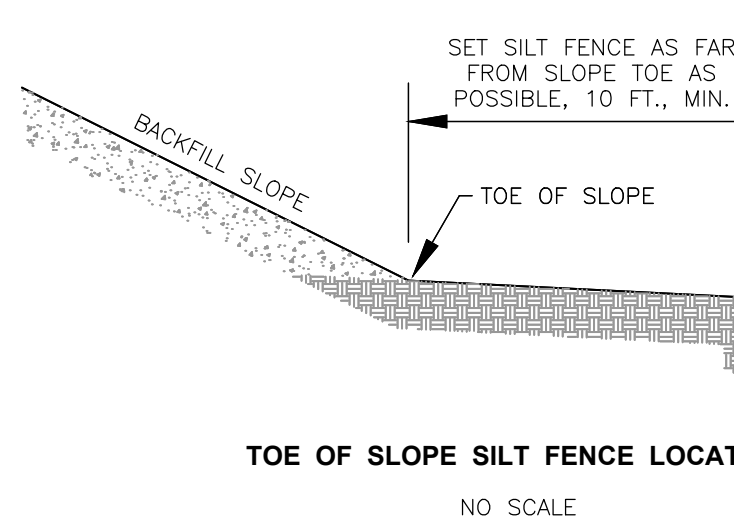
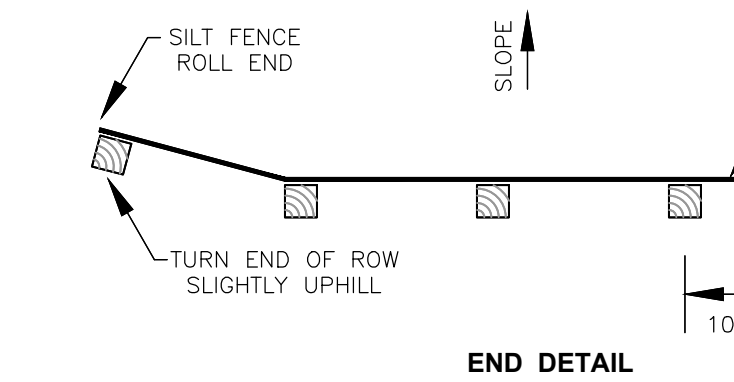
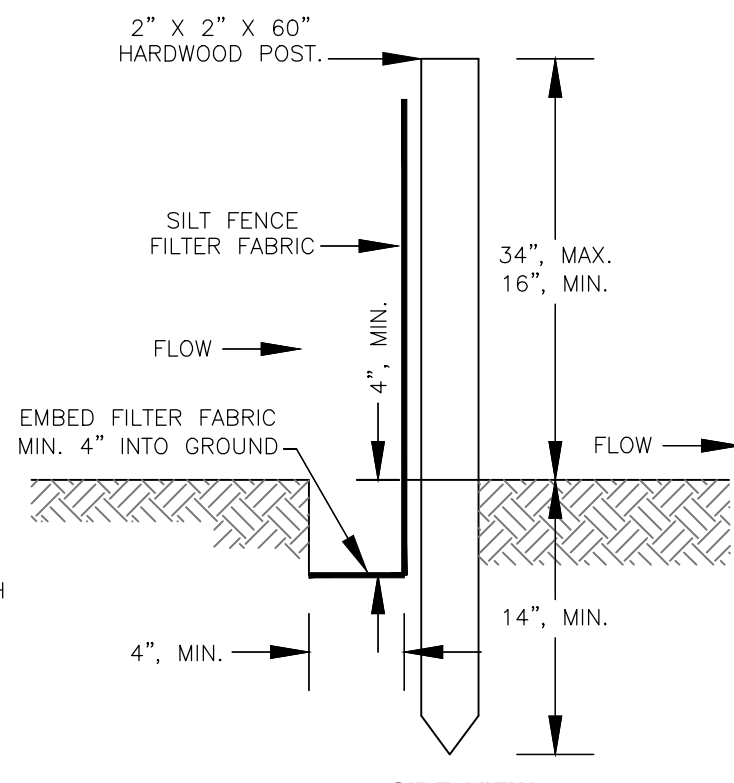
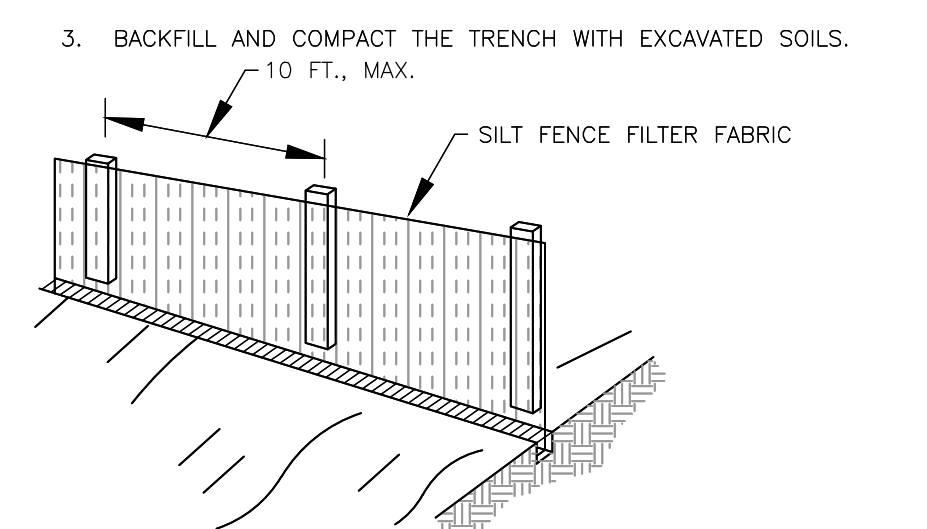
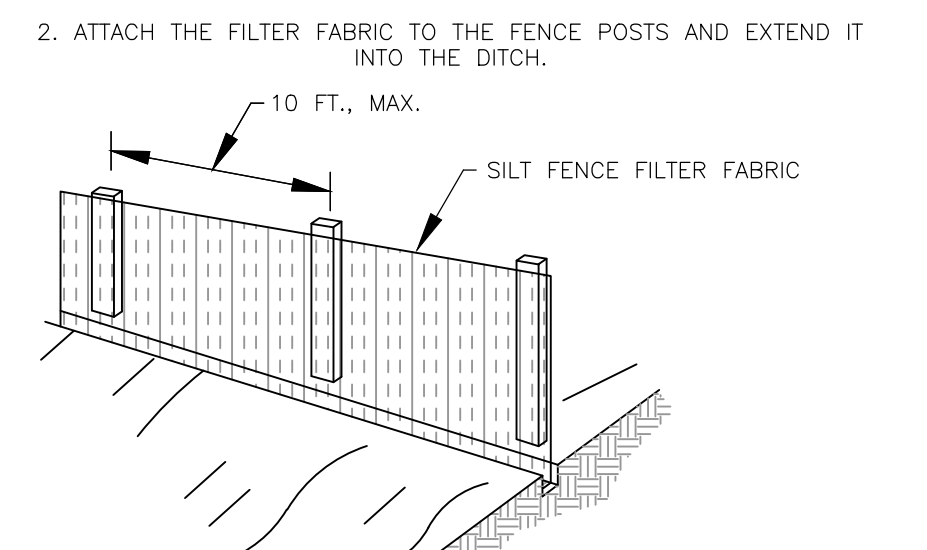
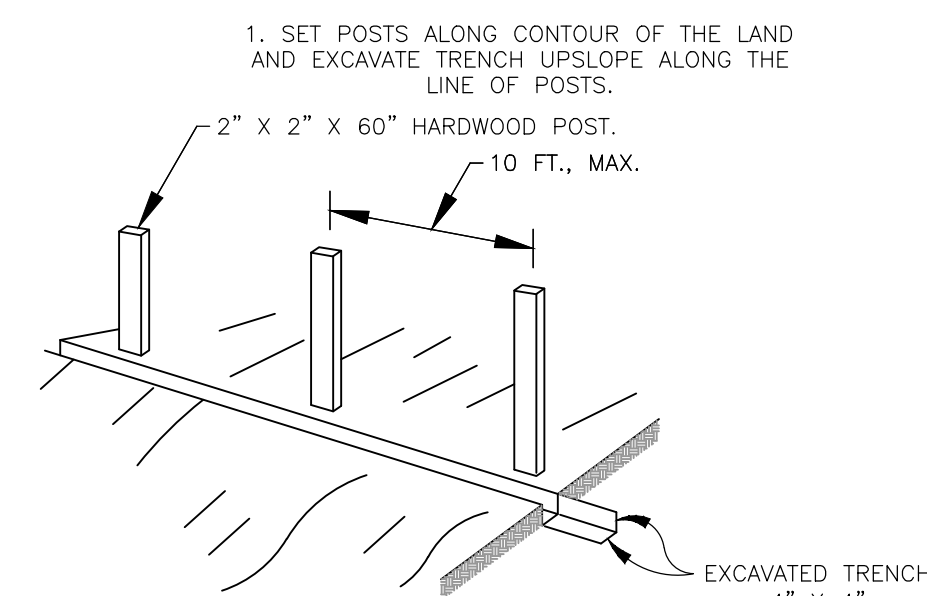
TWO LANE, TWO-WAY TRAFFIC ONE LANE CLOSURE PORTABLE INSTALLATION DAY OR NIGHT OPERATION WHERE AT ANY TIME, ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES WILL ENCR OACH ON ONE LANE OF THE ROADWAY AND TRAFFIC SIGNALS ARE REQUIRED.



SUGGESTED ADVANCE WARNING SIGN SPACING

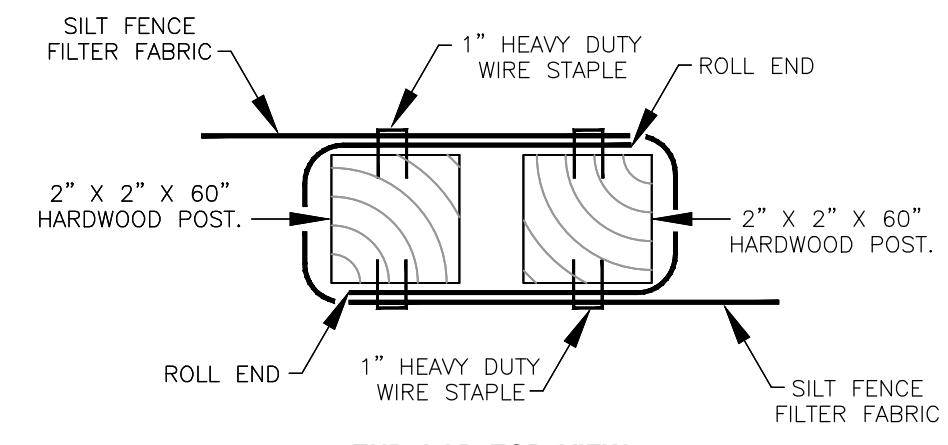
ROAD TYPE	DISTANCE BETWEEN SIGNS (IN FT)		
	A	B	C
URBAN (LOW SPEED)*	100'	100'	100'
URBAN (HIGH SPEED)*	350'	350'	350'
RURAL	500'	500'	500'
EXPRESSWAY/FREEWAY	1,000'	1,000'	2,640'

* SPEED CATEGORY TO BE DETERMINED BY WV DOH



**DETAIL 44
SILT FENCE**

NOT TO SCALE

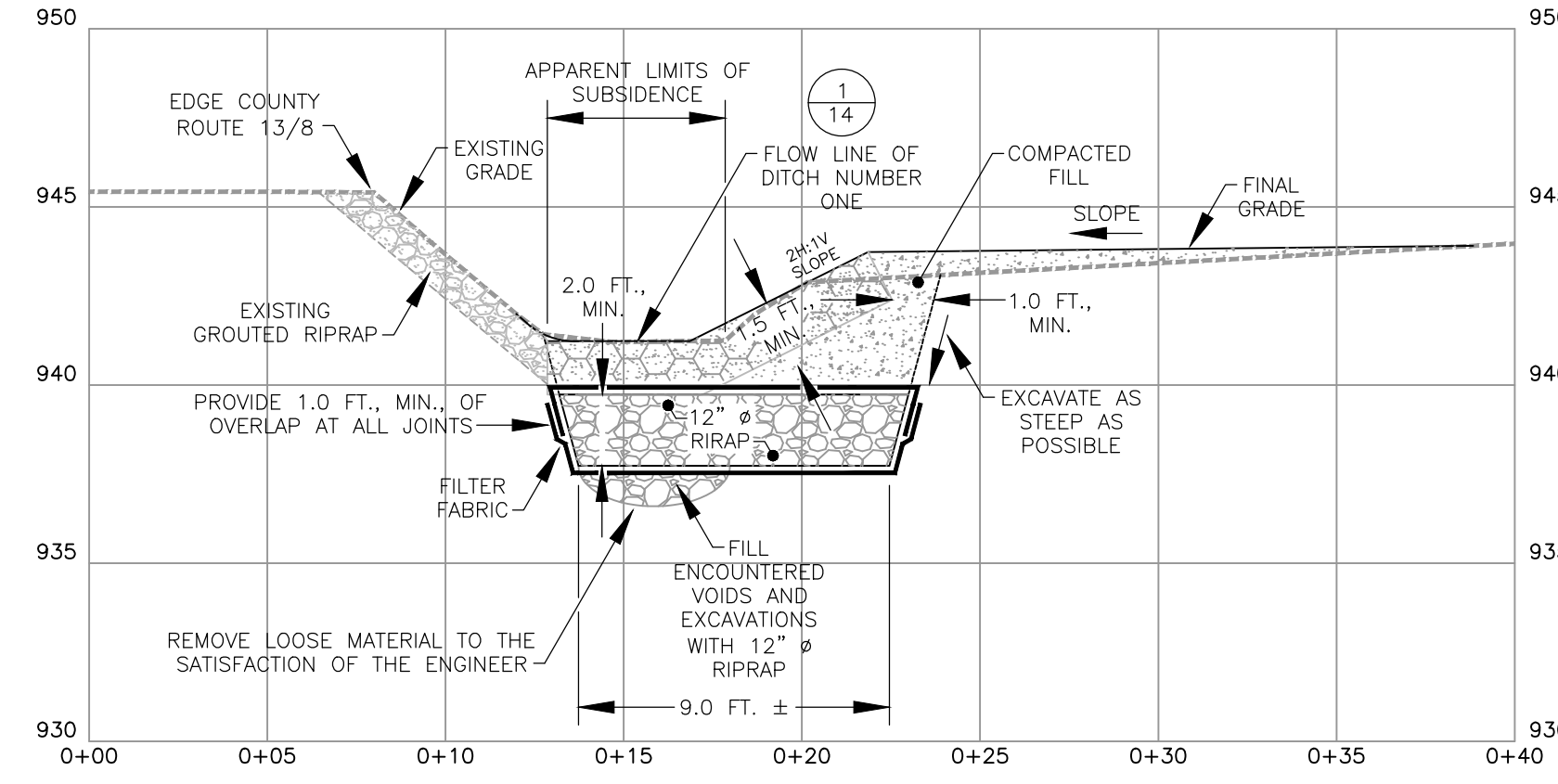
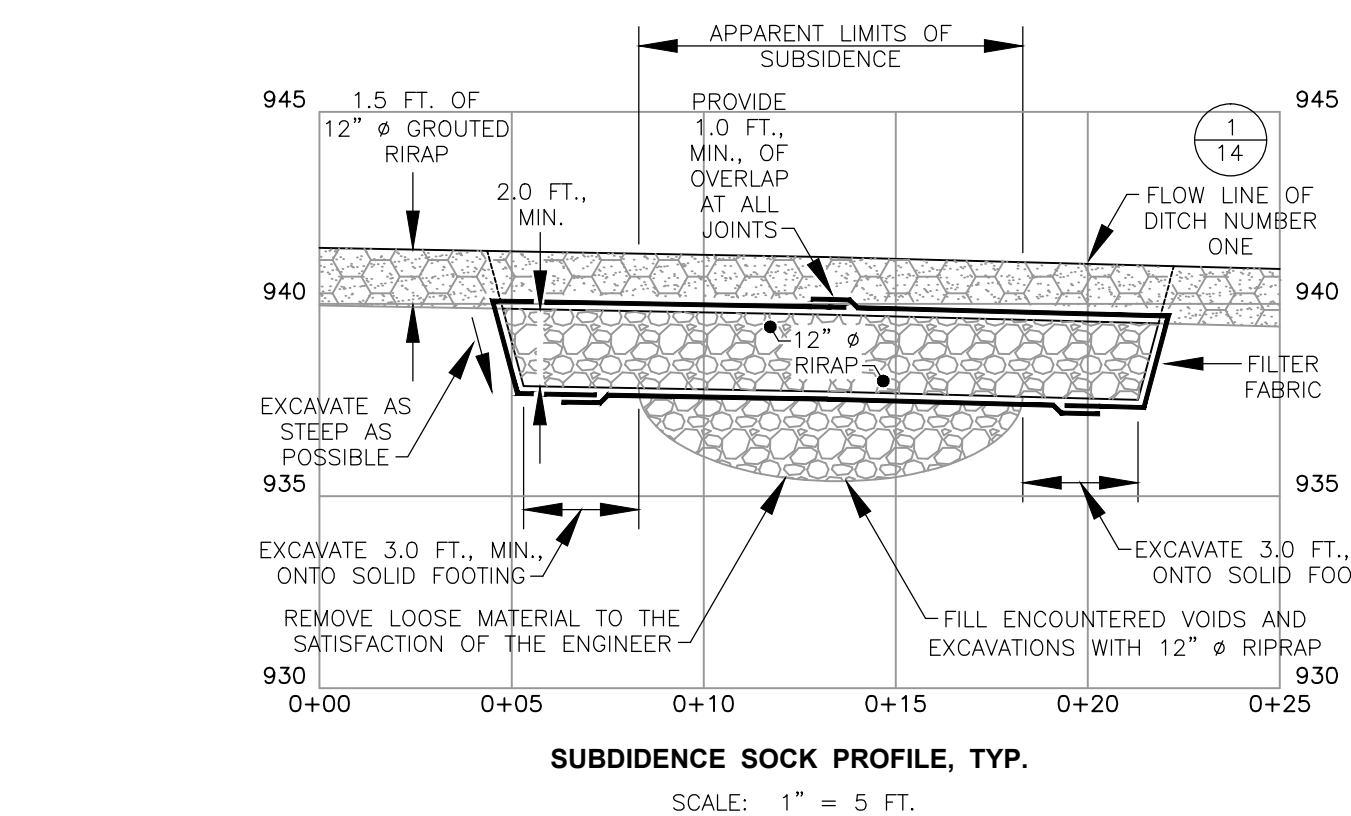


SILT FENCE NOTES:

- FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO ALIGNMENT LENGTH TO AVOID JOINTS. WHERE JOINTS ARE UNAVOIDABLE, THE FABRIC SHALL BE SPICED TOGETHER AT A SUPPORT POST BY TWISTING THE POST OF EACH RUN AROUND EACH OTHER.
- FILTER FABRIC SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE SUPPORT POSTS USING ONE INCH, MINIMUM, LONG HEAVY-DUTY WIRE STAPLES OR TIE WIRES WITH EIGHT INCHES, MINIMUM, OF FABRIC EXTENDED INTO THE TRENCH. DO NOT STAPLE FABRIC TO TREES.
- COMPACTED SOIL BACKFILL SHALL BE PLACED IN THE 4" BY 4" TRENCH ATOP THE EXTENDED FABRIC.
- POSTS SHALL BE CONSTRUCTED OF 2" X 2" HARDWOOD OR 2" X 4" PINE BY 60" LONG.
- FILTER FABRIC SHALL BE NON-WOVEN "MIRAFI 100X", "EXXON GTF 180" OR EQUAL.
- APPROVED PREFABRICATED UNITS INCLUDE "GEOFAB", "ENVIROFENCE", OR APPROVED EQUAL.
- THE MAXIMUM RUN OF SLOPE ABOVE A ROW OF SILT FENCE IS 110 FEET.

NOTES:

- THE ENGINEER IN CONJUNCTION WITH THE CONTRACTOR SHALL DESIGNATE THE OUTER BOUNDARY OF THE SUBSIDENCE FEATURE.
- EXCAVATE THE SUBSIDENCE HOLE 3.0 FEET, MIN., AND 1.0 FT., MIN., DISTANT FROM THE TOP OF PROPOSED DITCH NUMBER ONE AS SHOWN (OR AS DIRECTED BY THE ENGINEER) IN ALL DIRECTIONS AT AN ELEVATION OF 3.5 FT., MIN. (OR AS DIRECTED BY THE ENGINEER), BENEATH THE FLOW LINE OF DITCH NUMBER ONE.
- REMOVE LOOSE MATERIAL AND FILL VOIDS ENCOUNTERED BENEATH THE SUBSIDENCE SOCK PLACEMENT GRADE WITH 12" DIAMETER RIPRAP.
- LINE THE ENTIRE EXCAVATION WITH DRAINAGE FILTER FABRIC PRIOR TO SUBSIDENCE SOCK PLACEMENT. OVERLAP FILTER FABRIC 12", MINIMUM, AT ALL JOINTS.
- CAREFULLY PLACE A 3.0 FOOT (MINIMUM) LAYER OF 12" Ø RIPRAP ON TOP OF THE FILTER FABRIC WITHOUT DISPLACING THE UNDERLYING FABRIC OR RIPRAP PLACED IN UNDERLYING VOIDS.
- AFTER RIPRAP PLACEMENT, WRAP FILTER FABRIC COMPLETELY AROUND THE RIPRAP SUPPORT LAYER. OVERLAP FILTER FABRIC 12", MINIMUM, AT ALL JOINTS.
- CONSTRUCT DITCH NUMBER ONE TO THE LINES AND GRADES ABOVE THE SUBSIDENCE SOCK INSTALLATION.



**DETAIL 45
SUBSIDENCE SOCK DETAIL**

SCALE: AS NOTED

REVISION RECORD		
NO	DATE	DESCRIPTION
1	03/18/2015	ADDED NEW BOREHOLES
2	08/20/2015	MOVED ACCESS ROAD OFF TAX MAP 196, PARCEL 34.5

DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS

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SHINNS RUN PORTALS
NEAR SHINNSTON, CLAY (OUTSIDE) DISTRICT,
HARRISON COUNTY, WEST VIRGINIA

MISCELLANEOUS DETAILS
SHEET 2

DATE: MARCH 2014
DRAWN BY: PWG
DRAFT
AS NOTED
CHECKED BY: 131-204
PROJECT NO: 131-204
APPROVED BY: DRAFT

DRAWING NO.: 24
SHEET 24 OF 24

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