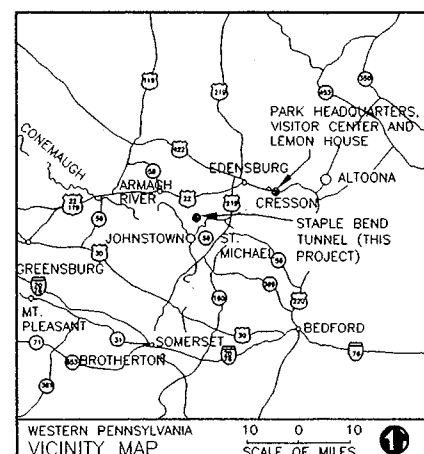
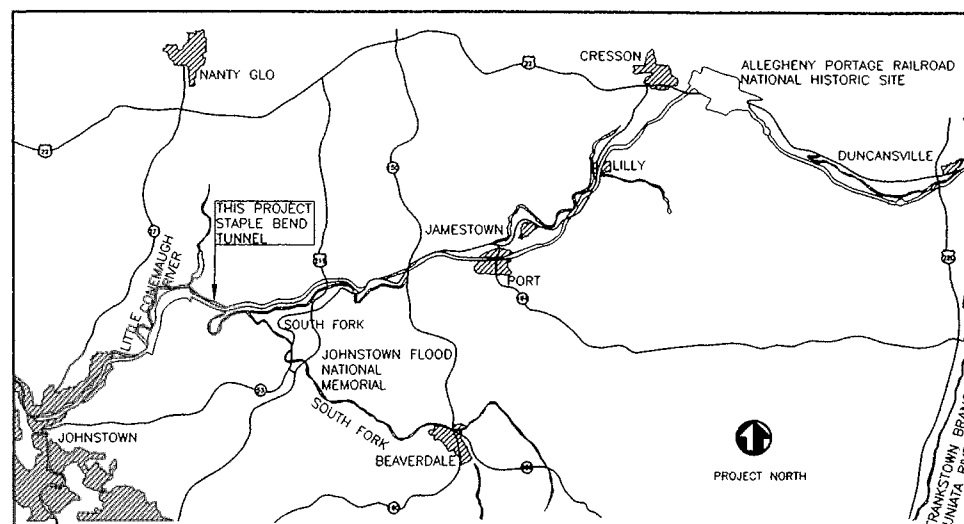


ALLEGHENY PORTAGE RAILROAD NHS
CAMBRIA COUNTY, PENNSYLVANIA

ABBREVIATIONS

AFF. ALUM. ARCH. ANOD.	Above Finish Floor Aluminum Architectural Anodized	MACH. MFR. MGR. MAS. MAX. MAINT. MIN. M.O. MTL. MTD.	Machine Manufacturer Manager Masonry Maximum Maintenance Minimum Masonry Opening Metal Mounted
BLDG. BLKG.	Building Blocking	N.A. N.I.C. N.T.S. NO.	Not Applicable Not in Contract Not To Scale Number
C.L. CLG. CLR. COL. CONC. CMU. CONT. C.J. CORR.	Center Line Ceiling Clear Column Concrete Concrete Masonry Unit Continuous Control Joint Corrugated	O.C. OPP. HND. O.D.	On Center Opposite Hand Outside Diameter
DEMO. DIAG. DIAM. DN. DWG.(S)	Demolish-tion Diagonal Diameter Down Drawing(s)	PRKG. PVMT. PLYWD. PT. PTD. PR.	Parking Pavement Plywood Pressure Treated Painted Pair
EA. EL. ENGR. EQ. EQUIP. EXIST. EXT.	Each Elevation Engineer Equal Equipment Existing Exterior	R. REINF. REM. REQ'D R.O. RM.	Radius Reinforce Removable Required Rough Opening Room
F.O. F.F.E. FLR. FLUOR. FNDN.	Face of Finish Floor Elevation Flooring Fluorescent Foundation	SCHED. SHT. SIM. SPEC. STL. S.T. STOR. SQ. SUSP.	Schedule Sheet Similar Specification Steel Steel Tube Storage Square Suspended
GALV. G.C. GND.	Galvanized General Contractor Ground	T.MPD. T.O.B. TYP.	Tempered Top Of Beam Typical
HCP. HVAC. H.P. HM. HR.	Handicapped Heat, Vent, Air Cond. High Point Hollow Metal Hour	VIF. VNR.	Verify In Field Vener
ID. INSUL. INTR. INV.	Identification Insulated Interior Invert	W.W.F. W/ WD.	Welded Wire Fabric With Wood
L.O.W.	Limit of Work		



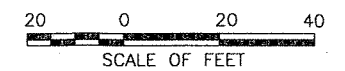
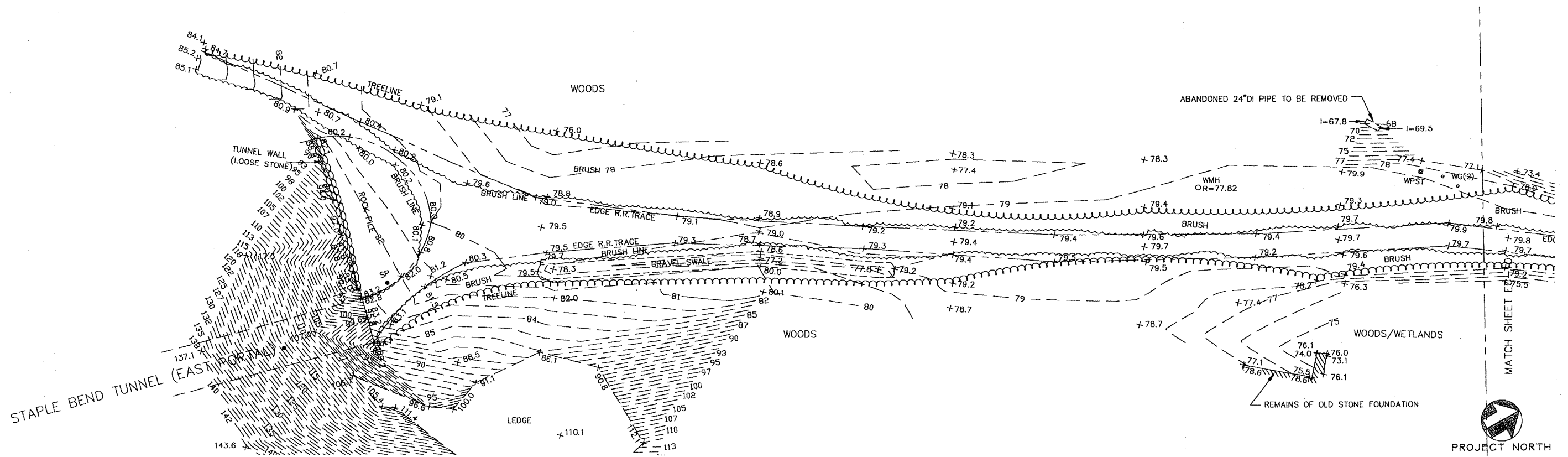
<u>DRAWING INDEX</u>			LANDSCAPING	KEY PLAN
<u>SHEET</u>	<u>DRAWING NO.</u>	<u>SHEET TITLE</u>		
01		TITLE SHEET	22 L1	PARKING AREA SITE PREPARATION PLAN
EXISTING CONDITIONS			23 L2	PARKING AREA LAYOUT AND MATERIALS PLAN
02 EC1	EXISTING CONDITIONS SURVEY		24 L3	PARKING AREA GRADING PLAN
03 EC2	EXISTING CONDITIONS SURVEY		25 L4	PARKING AREA PLANTING PLAN
04 EC3	EXISTING CONDITIONS SURVEY		26 L5	LEVEL #2 TRAIL
05 EC4	EXISTING CONDITIONS SURVEY		27 L6	LEVEL #2 TRAIL
06 EC5	EXISTING CONDITIONS SURVEY		28 L7	LEVEL #2 TRAIL
07 EC6	EXISTING CONDITIONS SURVEY		29 L8	LEVEL #2 TRAIL
08 EC7	EXISTING CONDITIONS SURVEY		30 L9	LEVEL #2 TRAIL
09 EC8	EXISTING CONDITIONS SURVEY		31 L10	LEVEL #2 TRAIL
10 EC9	EXISTING CONDITIONS SURVEY		32 L11	LEVEL #2 TRAIL
11 EC10	EXISTING CONDITIONS SURVEY		33 L12	LEVEL #2 TRAIL
12 EC11	EXISTING CONDITIONS SURVEY		34 L13	LEVEL #2 TRAIL
13 EC12	EXISTING CONDITIONS SURVEY		35 L14	LEVEL #2 TRAIL
GEOTECHNICAL ENGINEERING			36 L15	LEVEL #2 TRAIL
14 T1	GENERAL EXPLORATORY INFORMATION		37 L16	LEVEL #2 TRAIL
15 T2	GEOLOGIC PROFILES - SHT. 1 OF 2		38 L17	LEVEL #2 TRAIL
16 T3	GEOLOGIC PROFILES - SHT. 2 OF 2		39 L18	LEVEL #2 TRAIL
17 T4	ROCK BOLTS & SHORING POST LOCATIONS		40 L19	LEVEL #2 TRAIL
18 T5	ROCK BOLT & SHORING POST DETAILS; PEDESTRIAN BRIDGE FOUNDATIONS		41 L20	LEVEL #2 TRAIL
19 T6	RETAINING WALL DETAILS		42 L21	LEVEL #2 TRAIL
20 T7	TYPICAL TUNNEL SECTIONS		43 L22	LEVEL #2 TRAIL
21 T8	OPTION NO. 1; WATER VAULT MODIFICATIONS		44 L23	LEVEL #2 TRAIL
			45 L24	EAST PORTAL PLAN
			46 L25	TUNNEL TRAIL PLAN
			47 L26	WEST PORTAL PLAN
			48 L27	INCLINE PLANE PLAN
			49 L28	INCLINE PLANE PLAN
			50 L29	SITE DETAILS
			51 L30	SITE DETAILS
			52 L31	SITE DETAILS
			53 L32	SITE DETAILS
			54 L33	SITE DETAILS
			55 L34	SITE DETAILS
			56 L35	SITE DETAILS
			57 L36	EAST PORTAL PLANTING PLAN
			58 L37	WEST PORTAL PLANTING PLAN
			ARCHITECTURAL	
			59 A1	EAST PORTAL - EXISTING
			60 A2	EAST PORTAL - REPAIR/PRESERVATION
			61 A3	EAST PORTAL - REPAIR/PRESERVATION
			62 A4	WEST PORTAL - EXISTING
			63 A5	WEST PORTAL - SELECTIVE DEMOLITION
			64 A6	WEST PORTAL - REPAIR/PRESERVATION
			65 A7	WEST PORTAL - REPAIR/PRESERVATION
			66 A8	WEST PORTAL - RETAINING WALLS
			67 A9	TUNNEL PORTAL GATES
			68 A10	TUNNEL STABILIZATION - PHOTO DETAILS

[illegible]

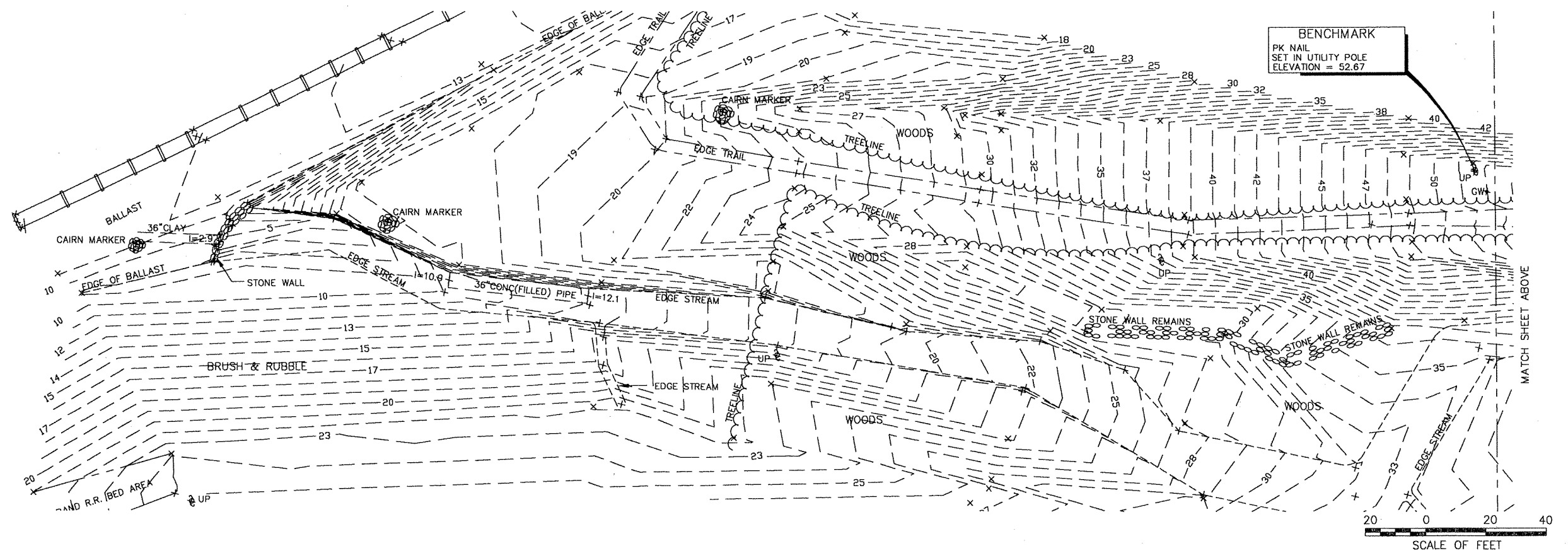
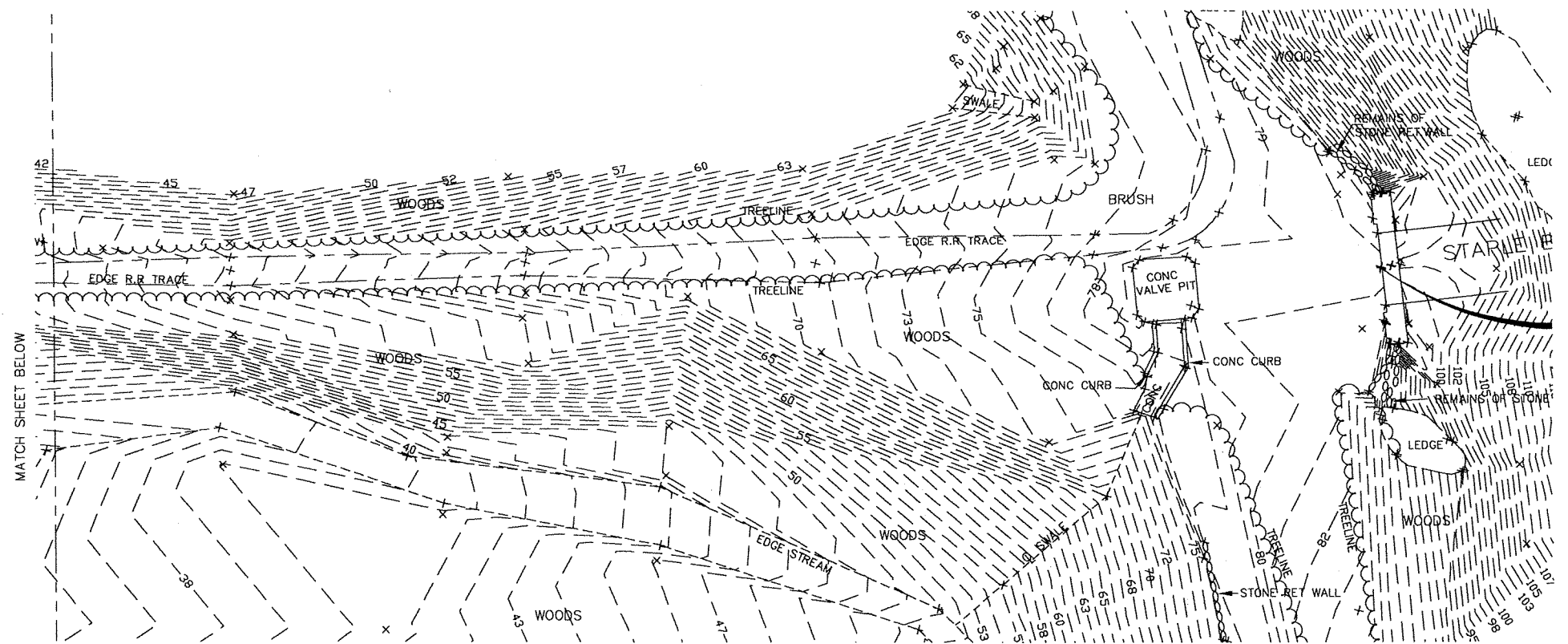
RECOMMENDED	_____ SUPERINTENDENT	_____ DATE
	_____ SUPERINTENDENT PSO	_____ DATE

CONSTRUCTION DRAWINGS		DESIGNED: JB
UNITED STATES DEPARTMENT OF THE INTERIOR		DRAWN: GA/JG
NATIONAL PARK SERVICE PHILADELPHIA SUPPORT OFFICE		TECH. REVIEW: <i>Glossman</i>
		DATE: 3/26/00

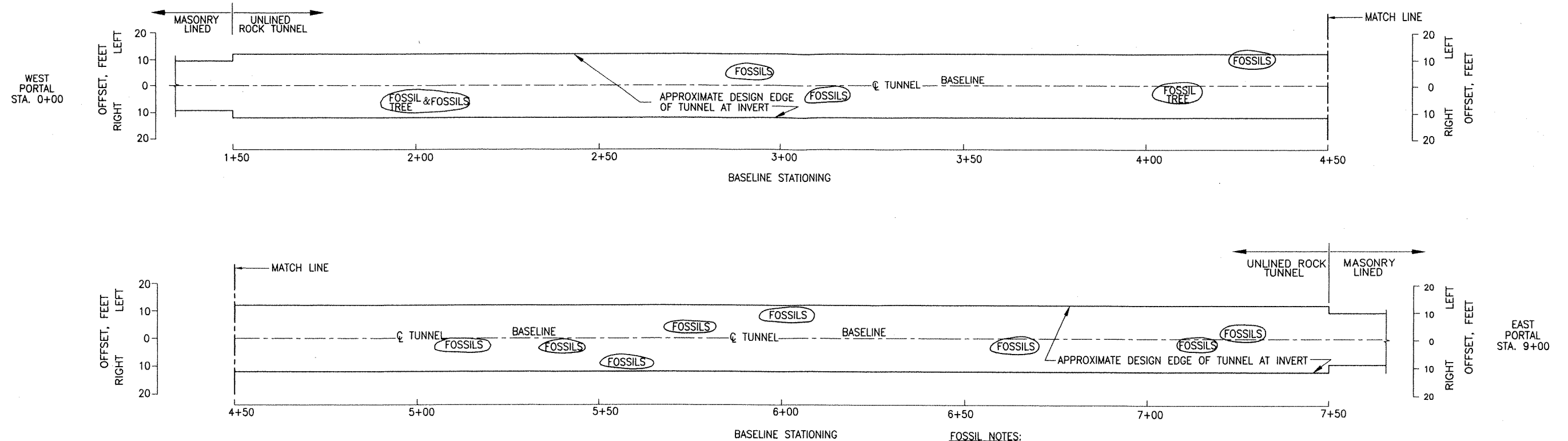
TITLE OF DRAWING		DRAWING NO.
STABLE BEND TUNNEL PRESERVATION AND VISITOR ACCESS IMPROVEMENTS		<u>423</u> 60,011
TITLE OF PARK		PKG. NO.
ALLEGHENY PORTAGE RAILROAD NHS		SHEET 1
REGION	COUNTY	STATE
NORTHEAST	CALBAMIA	PENNSYLVANIA
		OF 68



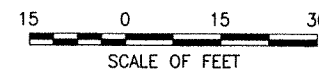
DESIGNED: CEH	SUB SHEET NO. EC-11	TITLE OF SHEET EXISTING CONDITIONS SURVEY STAPLE BEND TUNNEL ALLEGHENY PORTAGE RAILROAD NHS	DRAWING NO. 423 60,011
DRAWN: CEH		REGION NORTHEAST	COUNTY CAMBRIA
TECH. REVIEW: GJH		STATE PENNSYLVANIA	PKG. NO. SHEET 12 OF 68
DATE: 04/99			



DESIGNED: CEH	SUB SHEET NO. EC-12	TITLE OF SHEET EXISTING CONDITIONS SURVEY STAPLE BEND TUNNEL ALLEGHENY PORTAGE RAILROAD NHS	DRAWING NO. 423 60,011
DRAWN: CEH			PKG. NO. 13
TECH. REVIEW: GJH			SHEET OF 68
DATE: 04/99		REGION NORTHEAST COUNTY CAMBRIA STATE PENNSYLVANIA	

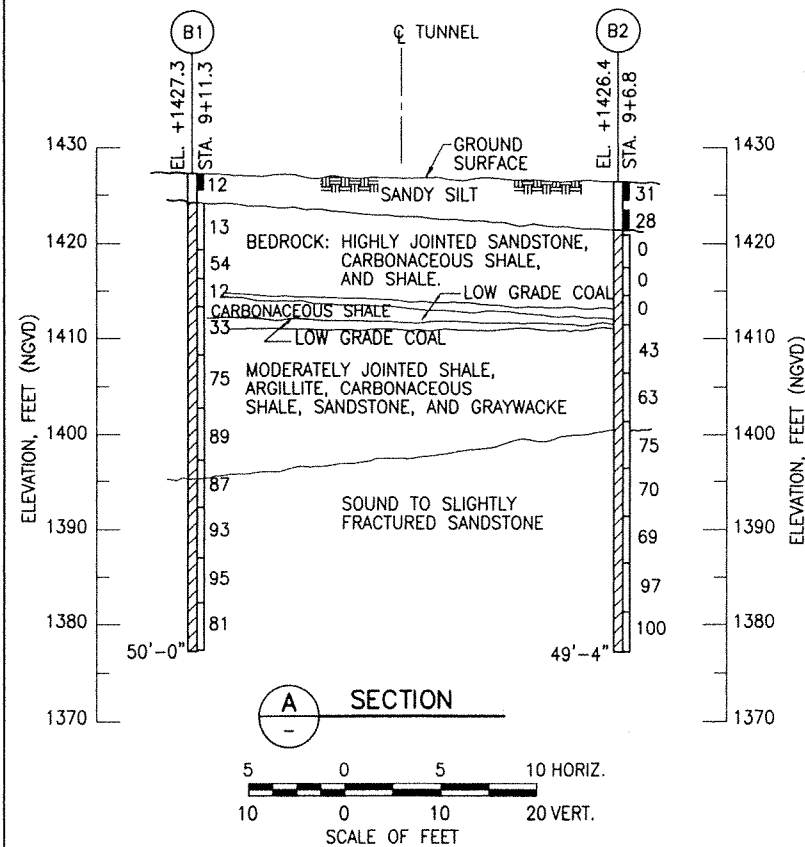


PLAN - FOSSIL LOCATIONS



FOSSIL NOTES:

1. FOSSILS ARE LOCATED IN CROWN OF TUNNEL.
2. RETAIN AND PROTECT FOSSILS DURING THE WORK. REPORT CONFLICTS TO CONTRACTING OFFICER.

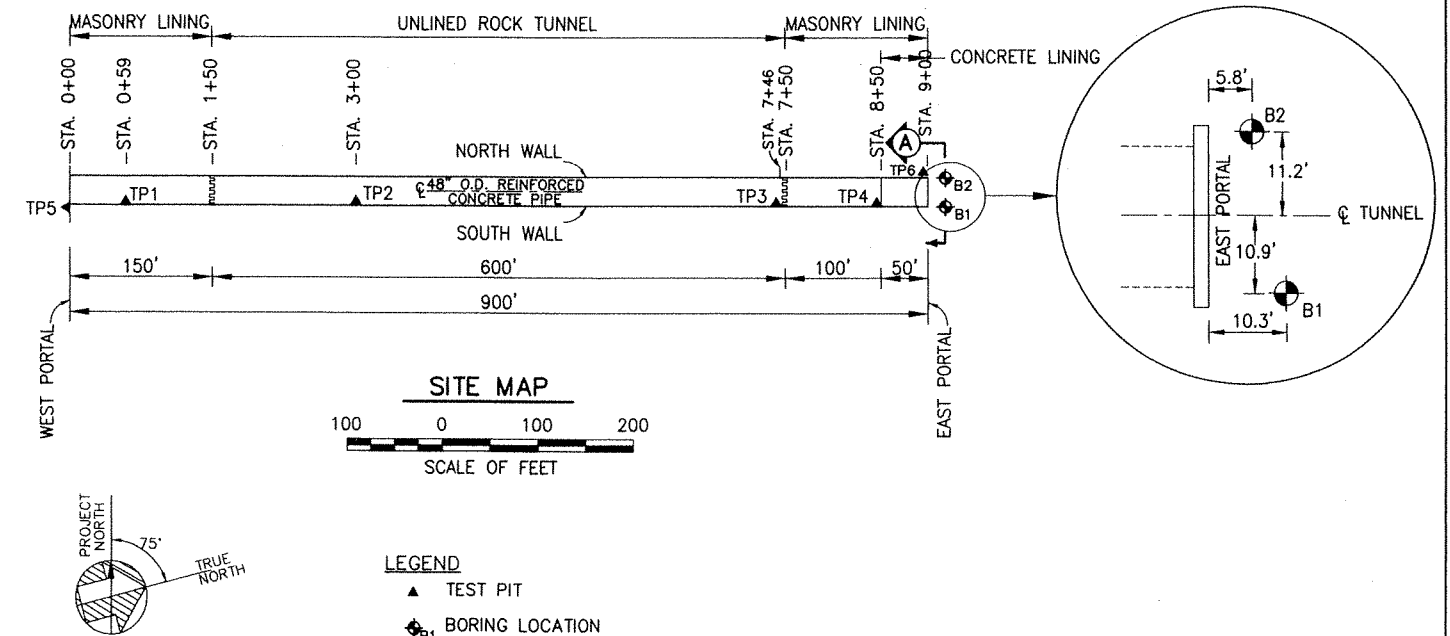


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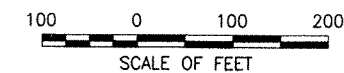
- B1 BORING NUMBER
- APPROXIMATE ELEVATION OF GROUND SURFACE AND STATION LOCATION
- APPROXIMATE GROUND SURFACE AT BORING
- LOCATION OF SPLIT SPOON SAMPLE WITH STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
- APPROXIMATE LOCATION OF STRATUM CHANGE
- LOCATION OF ROCK CORE SAMPLE WITH RQD, PERCENTAGE (SEE NOTE 3)
- BOTTOM OF BORING DEPTH

NOTES:

1. BORINGS B1 AND B2 WERE PERFORMED OUTSIDE THE EAST PORTAL OF THE TUNNEL.
2. THE TRANSITION BETWEEN STRATUM CHANGES AT BORING LOCATIONS MAY BE GRADUAL. THE LOCATION OF STRATUM CHANGES BETWEEN BORING LOCATIONS ARE BASED ON INTERPOLATION AND ARE APPROXIMATE ONLY.
3. $RQD = \frac{\text{LENGTHS OF SOUND CORES} > 4 \text{ INCHES}}{\text{LENGTH CORED}} \times 100\%$

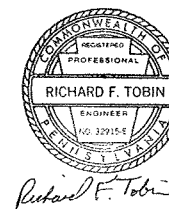


SITE MAP

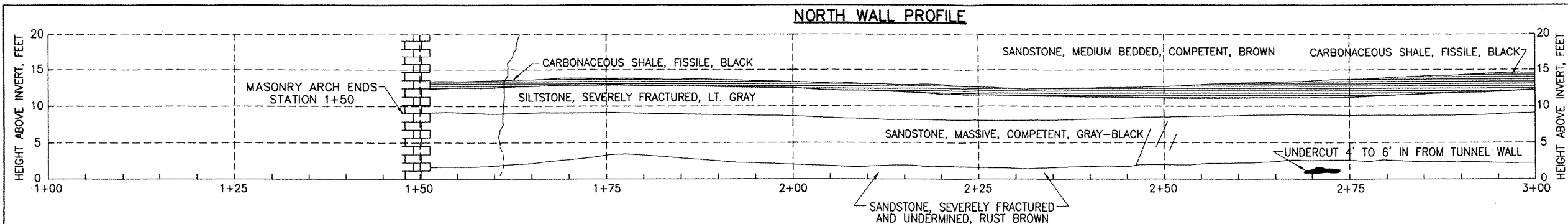


LEGEND

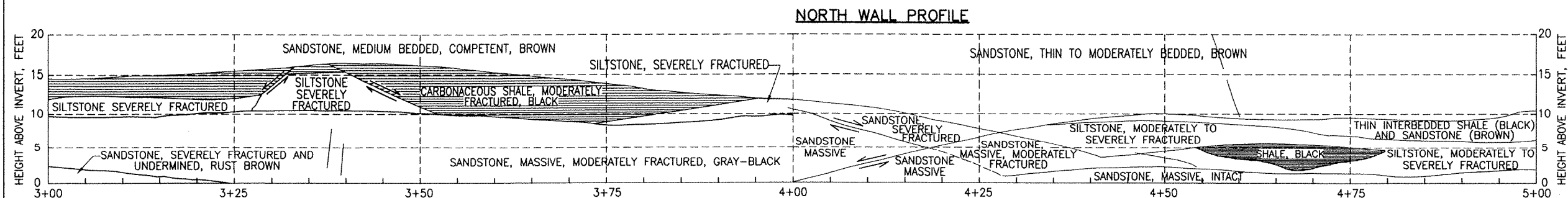
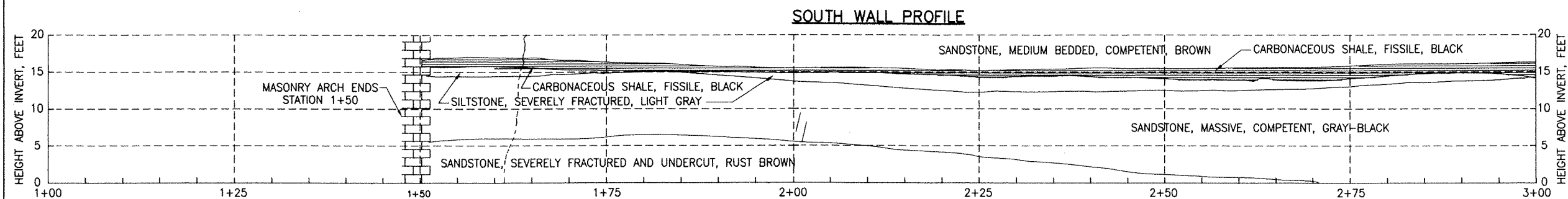
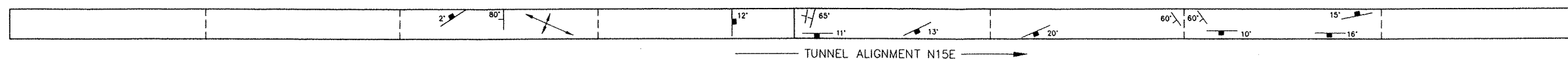
- ▲ TEST PIT
- ◆ B1 BORING LOCATION



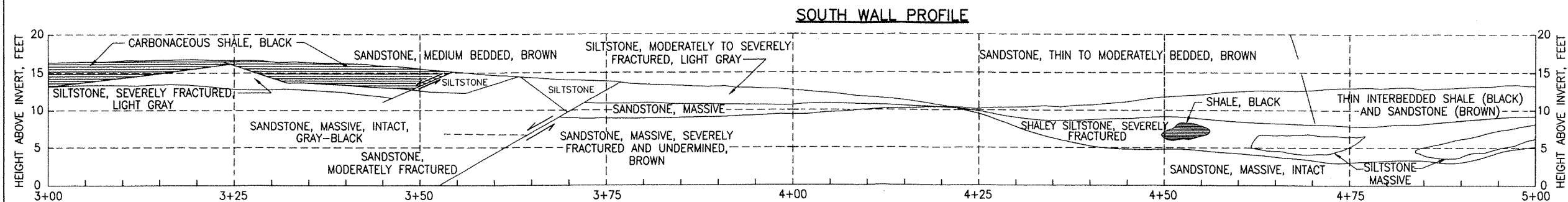
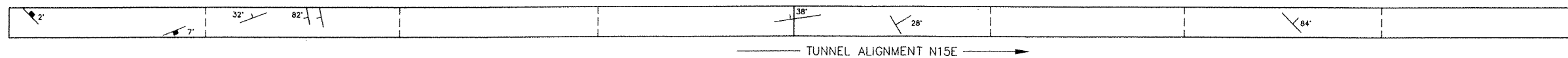
DESIGNED: COLLINGWOOD	SUB SHEET NO. T1	TITLE OF SHEET General Exploratory Information	DRAWING NO. 423
DRAWN: A. BLAIR		Staple Bend Tunnel Allegheny Portage Railroad NHS	PKG. NO. 14
TECH. REVIEW: M. Paster		REGION NORTHEAST	SHEET OF 68
DATE: 7/ 26/99		COUNTY CAMBRA	
		STATE PENNSYLVANIA	



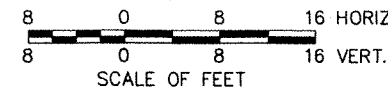
PLAN PROJECTED TO TUNNEL MIDHEIGHT



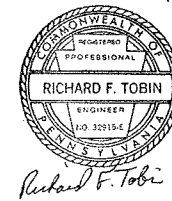
PLAN PROJECTED TO TUNNEL MIDHEIGHT



NOTES:
FOR NOTES & LEGEND, SEE SHEET T3



TEST PIT
2



DESIGNED:
W. PITT
DRAWN:
A. BLAIR
TECH. REVIEW:
W.E. PITT
DATE:
7/26/99

SUB SHEET NO.

T2

TITLE OF SHEET
Geologic Profiles
SHEET 1 OF 2
Staple Bend Tunnel
Allegheny Portage Railroad NHS

REGION
NORTHEAST
COUNTY
CAMBRA
STATE
PENNSYLVANIA

DRAWING NO.
423
60,011

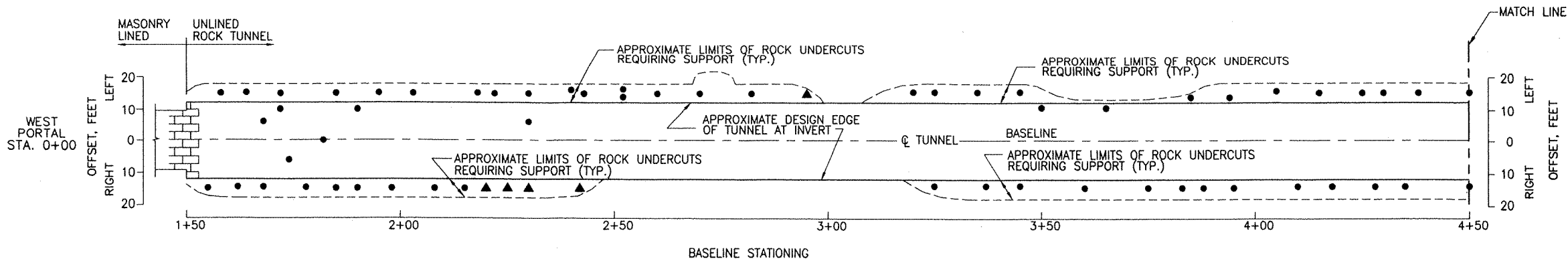
PKG.
NO.
SHEET
15
OF
68

SCHEDULE OF ROCK BOLTS AND SHORING POSTS					
NORTH WALL					
STATION	BOLT = B POST = P	LOCATION CROWN = C SHOULDER = S	LENGTH FT.	ANGLE DEGREES	COMMENTS
1+58	B	S	10	10	INSTALL BOLT IN CENTER OF ROCK BLOCK
1+64	B	S	10	10	
1+68	B	C	15	VERTICAL	
1+72	B	S	10	15	
1+72	B	C	15	10	
1+82	B	C	10	10	
1+85	B	S	10	10	
1+90	B	C	10	10	
1+95	B	S	10	10	
2+03	B	S	10	10	
2+18	B	S	10	10	SCALE THIN SLABS BEFORE BOLTING
2+22	B	S	10	10	
2+30	B	S	10	10	
2+30	B	C	15	10	
2+40	B	S	10	10	
2+43	B	S	10	10	
2+52	B	S	10	10	
2+52	B	S	10	10	
2+60	B	S	15	10	
2+70	B	S	15	10	
2+82	B	S	15	10	LIMITED HEADROOM TO DRILL LIMITED HEADROOM TO DRILL
2+95	P	S	3	VERTICAL	
3+20	B	S	15	10	
3+25	B	S	15	10	
3+35	B	S	15	10	
3+45	B	S	15	10	
3+50	B	C	10	10	
3+65	B	C	10	10	
3+85	B	S	15	10	
3+94	B	S	15	10	
4+05	B	S	15	10	SCALE LOOSE ROCK BEFORE BOLTING SCALE LOOSE ROCK BEFORE BOLTING
4+15	B	S	15	10	
4+25	B	S	15	20	
4+30	B	S	10	20	
4+38	B	S	15	10	
4+50	B	S	10	10	
4+55	B	S	10	10	
4+60	B	S	10	20	
4+83	B	S	10	20	
4+92	B	S	10	20	
5+00	B	S	10	20	
7+03	B	S	10	15	
7+20	B	S	10	15	
7+26	B	S	10	15	
7+35	B	S	10	15	
7+43	B	S	10	15	

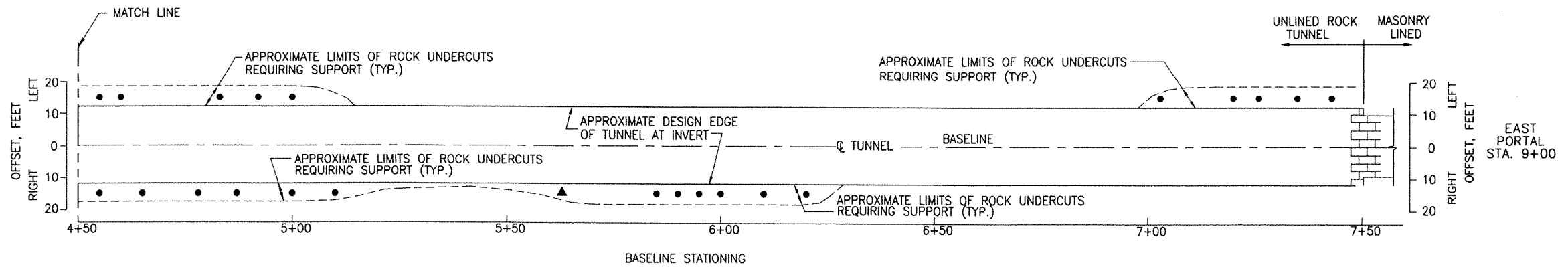
SOUTH WALL					
STATION	BOLT = B POST = P	LOCATION CROWN = C SHOULDER = S	LENGTH ft.	ANGLE DEGREES	COMMENTS
1+55	B	S	15	10	
1+62	B	S	15	10	
1+68	B	S	15	10	
1+74	B	C	10	10	
1+78	B	S	15	10	
1+85	B	S	15	10	
1+90	B	S	15	10	
1+98	B	S	15	10	
2+08	B	S	10	10	
2+15	B	S	10	10	
2+20	P	S	6	VERTICAL	INSTALL METAL STRAP BETWEEN BOLTS @ STATIONS 4+28 AND 4+35
2+25	P	S	5	VERTICAL	
2+30	P	S	5	VERTICAL	
2+42	P	S	3	VERTICAL	
3+25	B	S	15	10	
3+37	B	S	15	10	
3+45	B	S	15	10	
3+60	B	S	15	10	
3+75	B	S	15	10	
3+83	B	S	15	10	
3+88	B	S	15	10	WILL REQUIRE SIGNIFICANT ROCK CHIPPING
3+95	B	S	15	10	
4+10	B	S	15	10	
4+18	B	S	10	10	
4+28	B	S	10	10	
4+35	B	S	10	10	
4+50	B	S	10	10	
4+55	B	S	10	10	
4+65	B	S	15	10	
4+78	B	S	15	10	
4+87	B	S	15	10	
5+00	B	S	10	10	
5+10	B	S	10	20	
5+63	P	S	6	VERTICAL	
5+85	B	S	10	20	
5+90	B	S	10	20	
5+95	B	S	10	20	
6+00	B	S	10	20	
6+10	B	S	10	20	
6+20	B	S	10	20	

NOTES: 1. ROCK BOLT ANGLES MEASURED AS A DEPARTURE FROM VERTICAL, ANGLED AWAY FROM CROWN.
2. SHORING POST LENGTHS MEASURED FROM EXISTING GRADE TO OVERHANGING ROCK ACTUAL LENGTH WILL BE LONGER.
3. ACTUAL LOCATIONS WERE PAINTED ON TUNNEL SURFACE, APRIL 1999.

SCALING SCHEDULE	
SCALE LOOSE ROCKS AND THIN SLABS AT THE FOLLOWING LOCATIONS.	
2+78	SHOULDER OF NORTH WALL
2+22	SHOULDER OF SOUTH WALL
2+80	SHOULDER OF SOUTH WALL



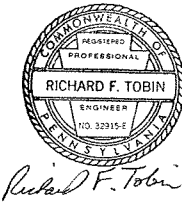
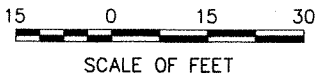
PLAN VIEW OF PROPOSED ROOF ROCK BOLTS AND SHORING POSTS



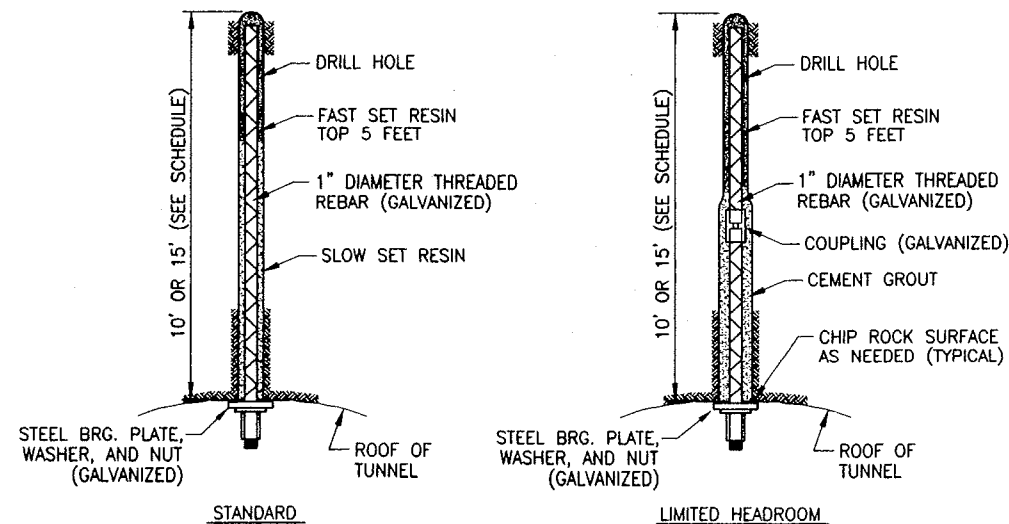
PLAN VIEW OF PROPOSED ROOF ROCK BOLTS AND SHORING POSTS

NOTES:
1. FOR POST AND BOLT DETAILS SEE SHEET T5.

LEGEND:
● - NEW ROOF ROCK BOLT
▲ - NEW SHORING POST



DESIGNED: M. McCAFFREY	SUB SHEET NO. T4	TITLE OF SHEET Rock Bolt and Shoring Post Locations Staple Bend Tunnel Allegheny Portage Railroad NHS	DRAWING NO. 423 60,011
DRAWN: A. BLAIR	TECH. REVIEW: M. Paster	REGION NORTHEAST	COUNTY CAMBRA
DATE: 7/26/99		STATE PENNSYLVANIA	PKG. NO. SHEET 17 OF 68

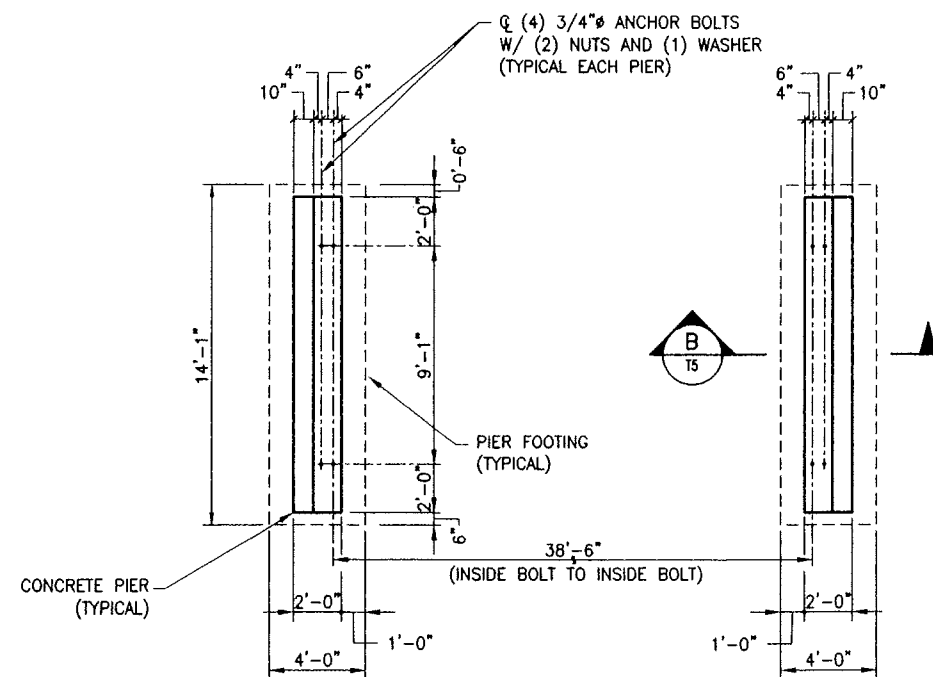


NOTES:

1. CONTRACTOR TO FABRICATE AN APPROXIMATELY 8-FOOT-LONG GALVANIZED STEEL BEARING PLATE TO CONNECT ROCK BOLTS AT STATIONS 4+28 AND 4+35. WIDTH AND THICKNESS THE SAME AS STANDARD BEARING PLATE.
2. TENSION BOLTS TO A LOCK-OFF LOAD OF 10 KIPS.

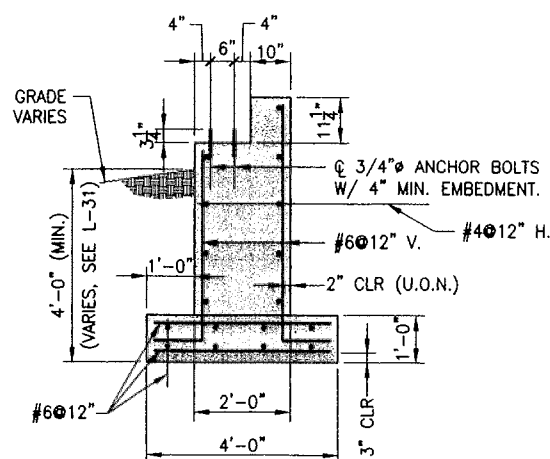
ROOF ROCK BOLT DETAILS

NOT TO SCALE



FOOTBRIDGE FOUNDATION PLAN

SCALE (A)

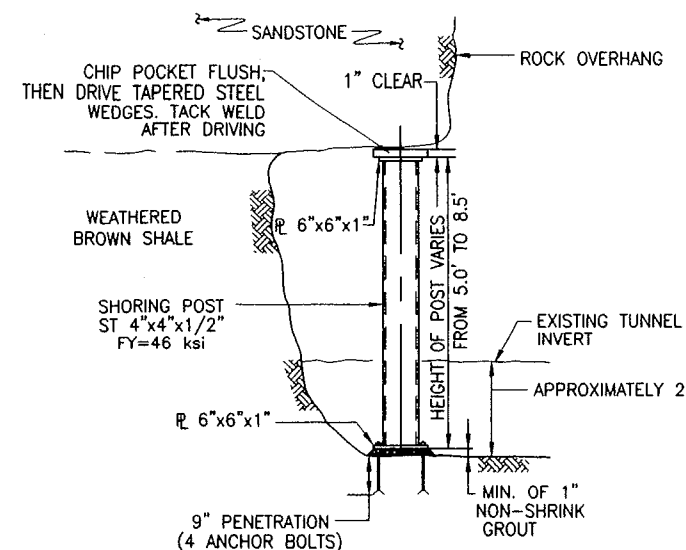


NOTE:

1. VERIFY ANCHOR BOLT SIZE AND SPACING WITH BRIDGE SUPPLIER PRIOR TO CONSTRUCTION OF FOUNDATION.

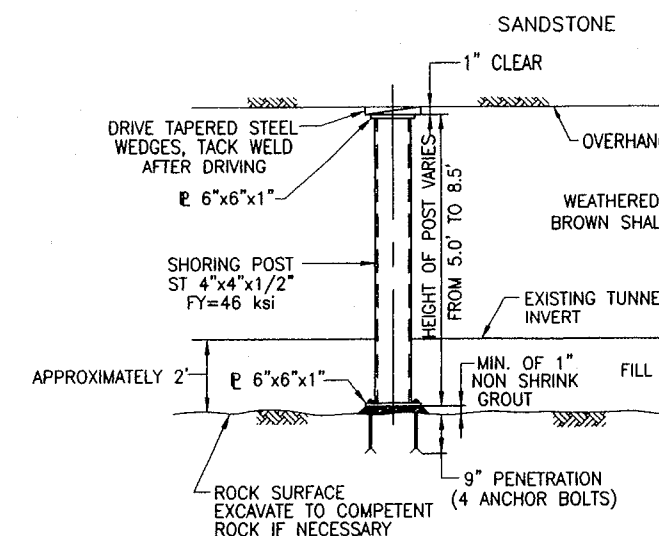
SECTION B

SCALE (B)



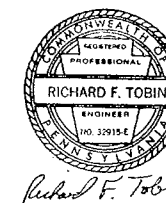
SIDE ELEVATION OF SHORING POST

NOT TO SCALE

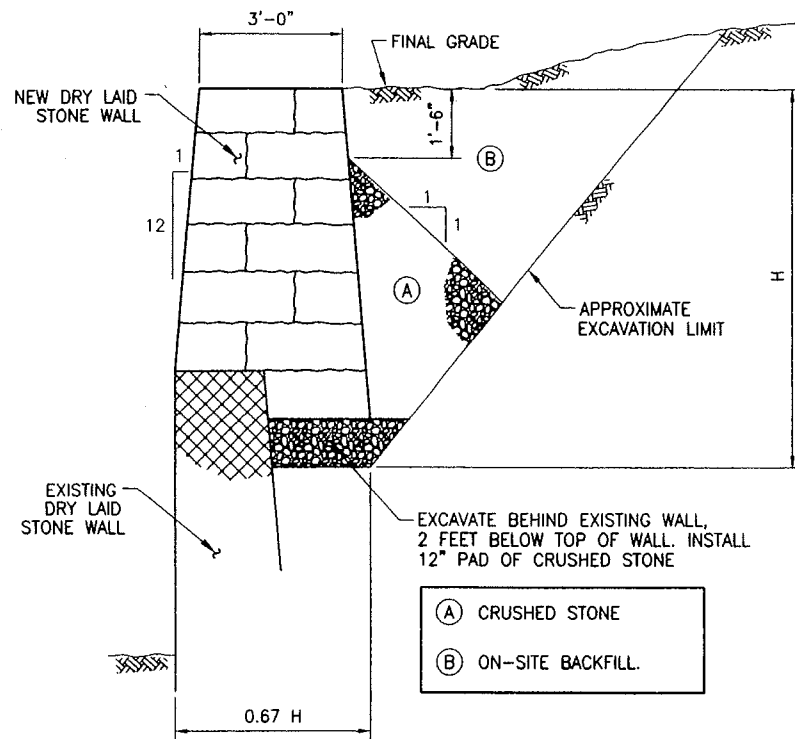


FRONT ELEVATION OF SHORING POST

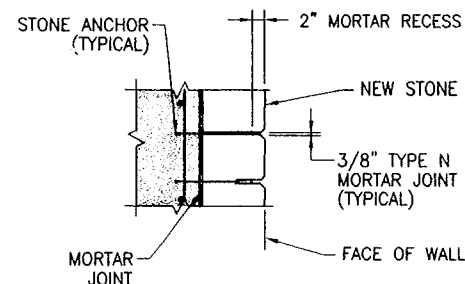
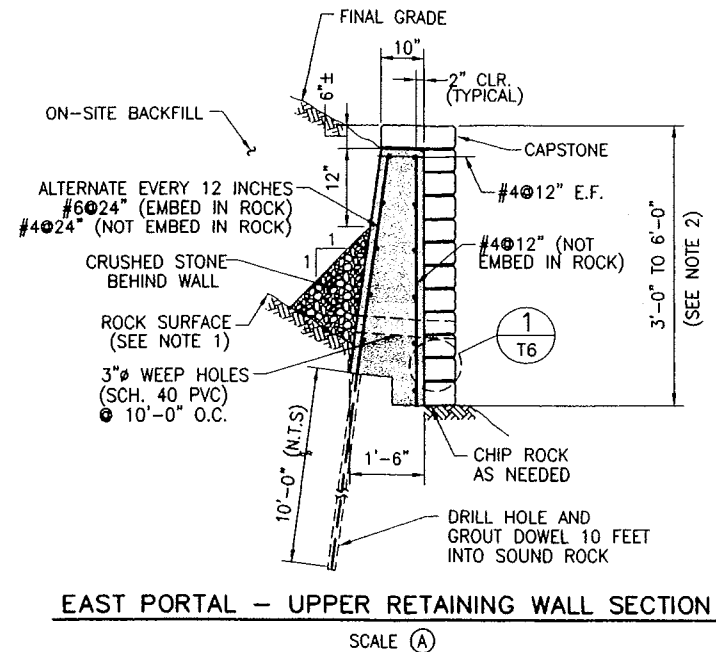
NOT TO SCALE



DESIGNED: M. WALKER	SUB SHEET NO. T5	TITLE OF SHEET Rockbolt & Shoring Post Details and Pedestrian Bridge Foundations	DRAWING NO. 423
DRAWN: A. BLAIR			60,011
TECH. REVIEW: M. Pastor			PKG. NO. 18
DATE: 7/26/99			SHEET OF 68
		REGION NORTHEAST	COUNTY CAMBRA
		STATE PENNSYLVANIA	

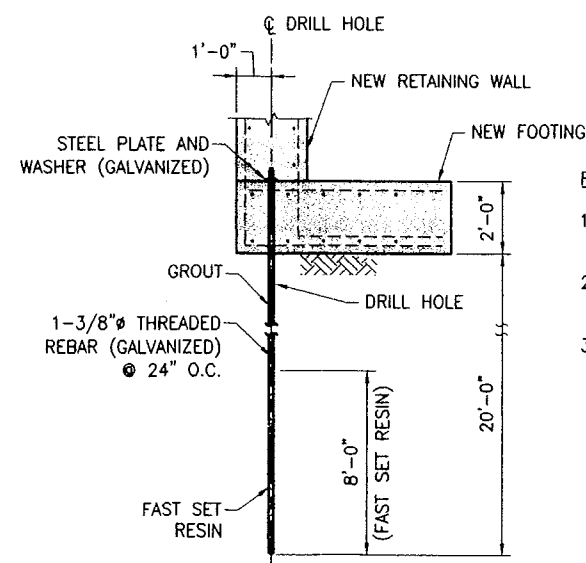


INFILL OVER EXISTING DRY LAID WALL
WEST PORTAL - LEFT AND RIGHT SIDES
EAST PORTAL - RIGHT SIDE
SCALE (A)

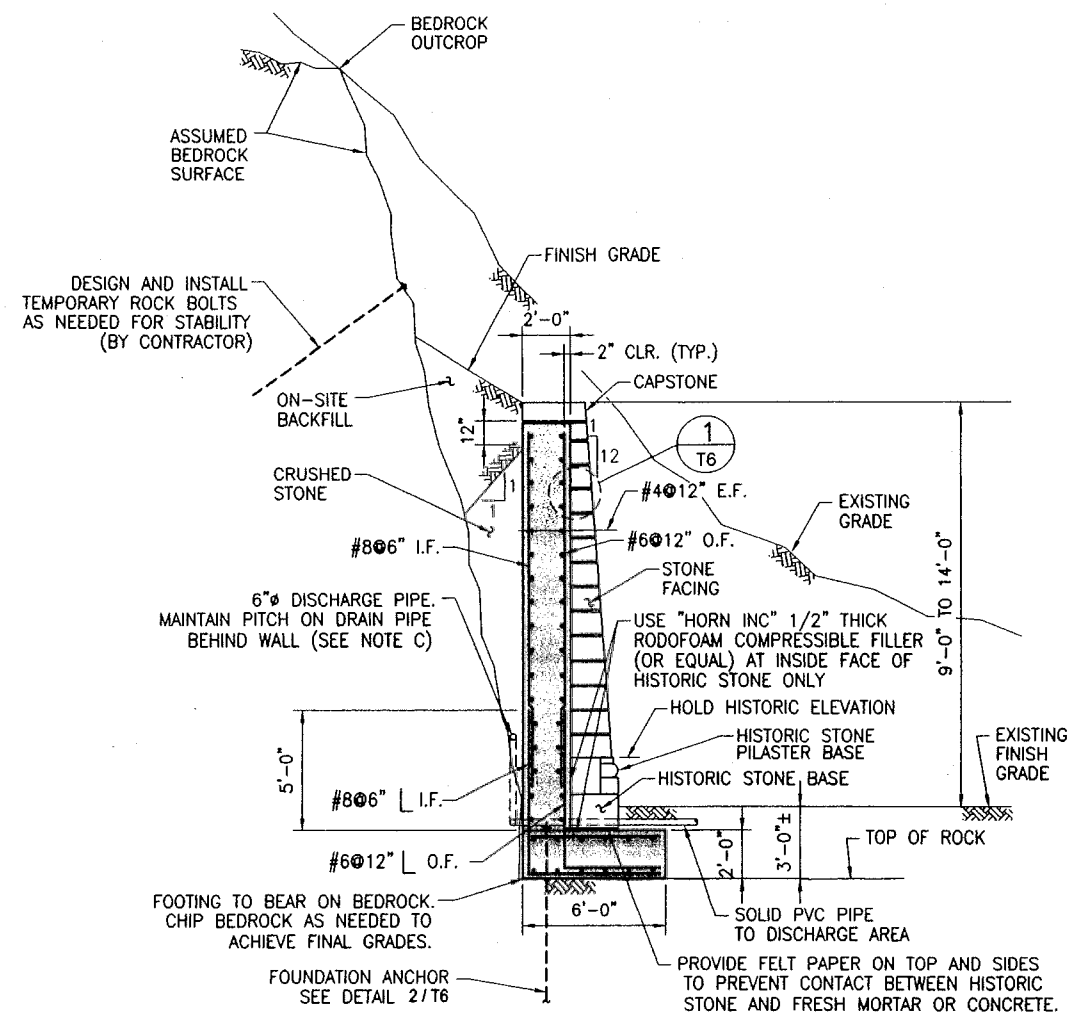


NOTE:
ANCHOR THE STONE MASONRY TO THE CONCRETE WITH 3/16 INCH DIAMETER THREADED STAINLESS STEEL RODS (AISC TYPE 304) EPOXIED AT LEAST 3 INCHES INTO THE CONCRETE WITH AT LEAST 10 INCHES OF ROD BENT TO FORM A HORIZONTAL BEND OR HOOK IN THE MORTAR JOINT. SPACE ANCHORS 18 INCHES ON CENTER IN EACH DIRECTION.

1 DETAIL
T6 NO SCALE

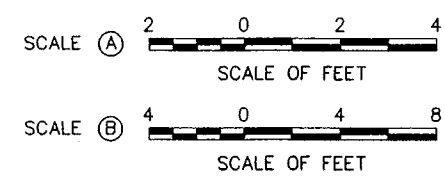


2 FOUNDATION ANCHOR DETAIL
T6 NO SCALE



NOTES:
A. REMOVE AND REPLACE EXISTING PILASTER BASE.
B. REMOVE EXISTING STONE FOOTING AND REPLACE WITH NEW CONCRETE FOOTING.
C. NEW 6" SLOTTED PVC SCH. 40 OR CORRUGATED PVC PIPE DRAIN, WITH 6 INCHES (MINIMUM) CRUSHED STONE ALL AROUND BEHIND WALL. NEW 6" PVC PIPE THRU THE WALL OUT TO THE DISCHARGE AREA (SEE SUB-SHEET L-25).

RETAINING WALL SECTION
EAST PORTAL - LEFT SIDE
SCALE (B)

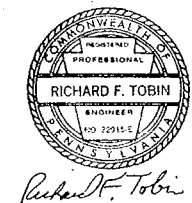


- GENERAL NOTES
- FOR TOP OF WALL ELEVATIONS SEE SUB-SHEET NO. L-25, AND L-27.
 - REINFORCING TO BE ASTM 615, GRADE 60.
 - CONCRETE TO HAVE A COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
 - ALL REINFORCING TIES AND ANCHORS SHALL BE GALVANIZED OR MADE FROM NON-CORROSIVE METAL.
 - STONE FACING FOR CONCRETE RETAINING WALLS SHALL MEET THE REQUIREMENTS OF SPECIFICATION SECTION 04404, EXCEPT THAT THE DEPTH OF THE STONES (MEASURED PERPENDICULAR TO THE FACE OF THE WALL) MAY BE AS SMALL AS 8". CAPSTONES SHALL BE 8 TO 10 INCHES HIGH, SHALL BE THE FULL DEPTH OF THE TOP OF THE WALL, AND SHALL BE AT LEAST 30 INCHES LONG.
 - MORTAR FOR STONE FACED CONCRETE WALLS TO BE TYPE N.

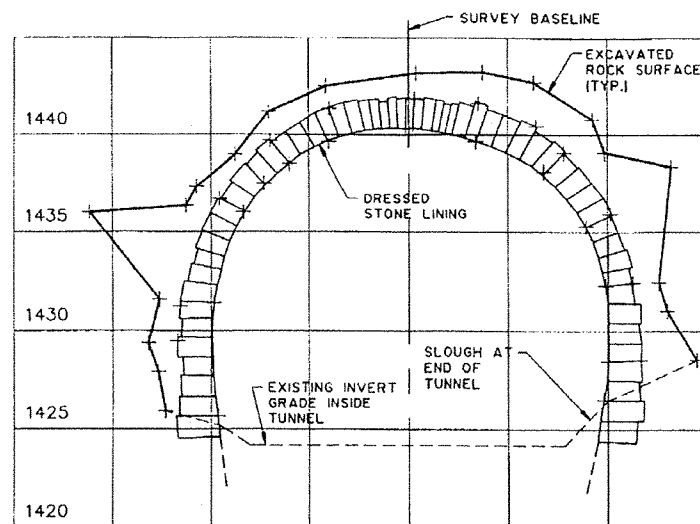
EAST PORTAL UPPER RETAINING WALL NOTES

- CLEAN TO TOP OF SOUND ROCK AND ROUGHEN SURFACE OF ROCK TO ENSURE BONDING WITH CONCRETE WALL.
- WALL HEIGHT TO BE DETERMINED IN FIELD, BASED ON DEPTH TO SOUND ROCK. HEIGHT NOT TO EXCEED 6 FEET.
- SEE SUB-SHEET NO. L-25 FOR WALL LOCATION.

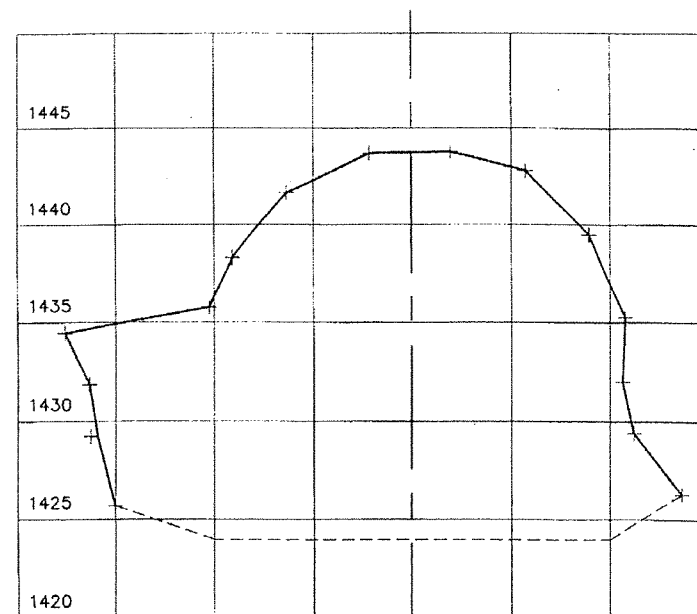
- FOUNDATION ANCHOR NOTES:
- WALL STEM PLACED AFTER BOLT INSTALLATION AND TESTING.
 - PROTECT NEW REINFORCING DURING BOLT INSTALLATION AND TESTING.
 - BOLT LOCKOFF LOAD IS 40 KIPS.



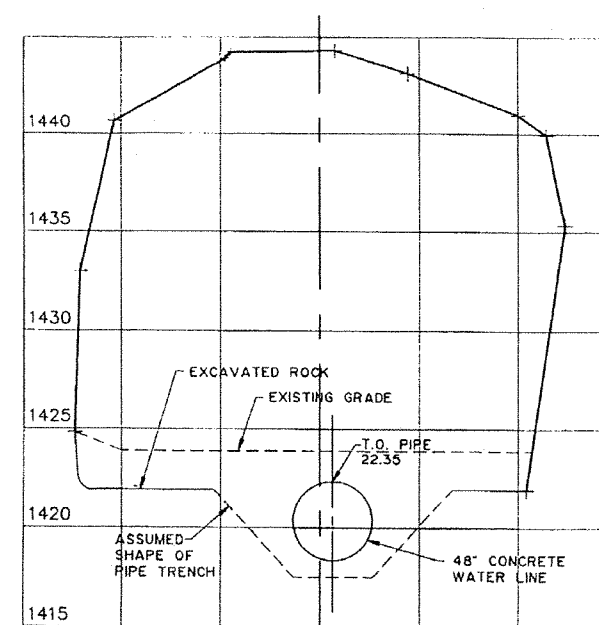
DESIGNED: M. WALKER	SUB SHEET NO. T6	TITLE OF SHEET Retaining Wall Details Staple Bend Tunnel Allegheny Portage Railroad NHS	DRAWING NO. 423 60,011
DRAWN: A. BLAIR	TECH. REVIEW: M. Paster	REGION NORTHEAST	COUNTY CAMBRA
DATE: 7/26/99		STATE PENNSYLVANIA	PKG. NO. SHEET 19 OF 68



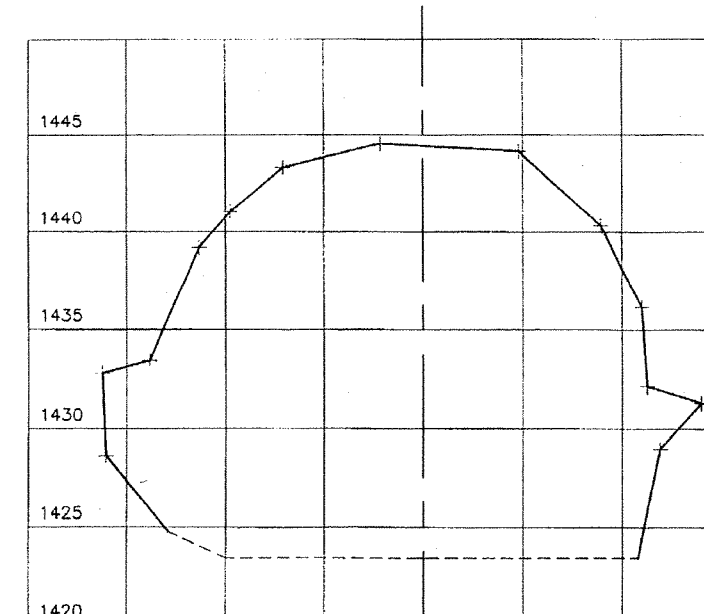
CROSS SECTION AT 1+50
(END OF DRESSED STONE LINING)



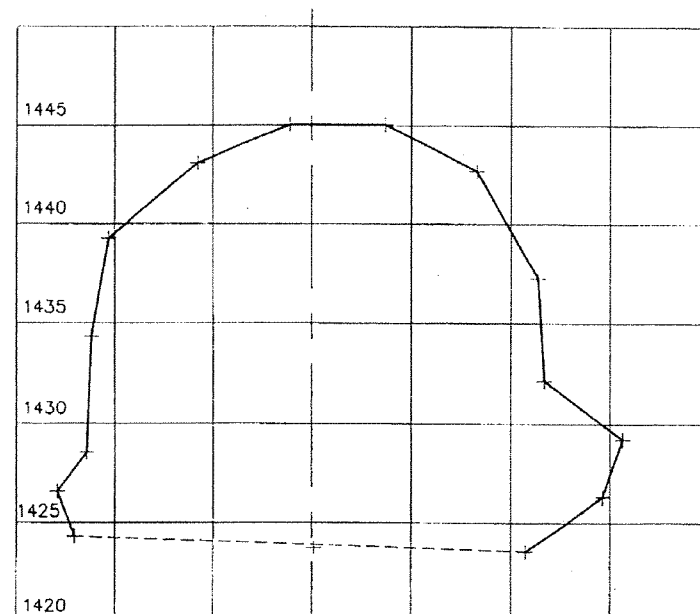
CROSS SECTION AT STA. 2+25



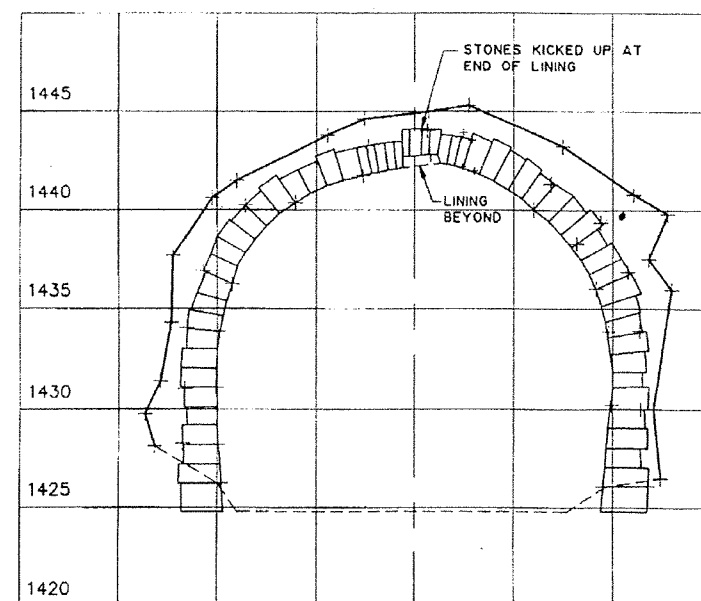
CROSS SECTION AT STA. 3+00



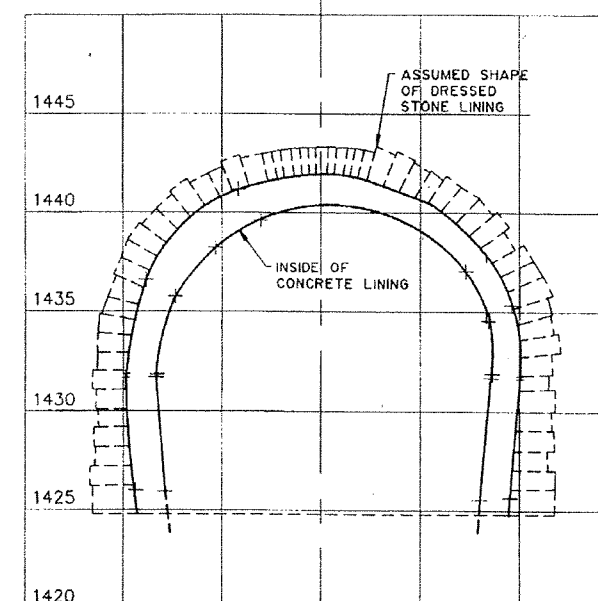
CROSS SECTION AT STA. 4+37



CROSS SECTION AT STA. 6+15



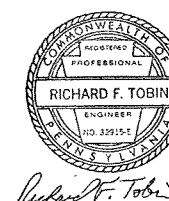
CROSS SECTION AT STA. 7+50
(BEGINNING OF DRESSED STONE LINING)



CROSS SECTION AT STA. 8+50
(BEGINNING OF CONCRETE LINING)

NOTE:
THESE SECTIONS WERE SURVEYED BY THE EADS GROUP FOR SELLARDS AND GRIGG, INC., IN 1990

5 0 5 10
SCALE OF FEET

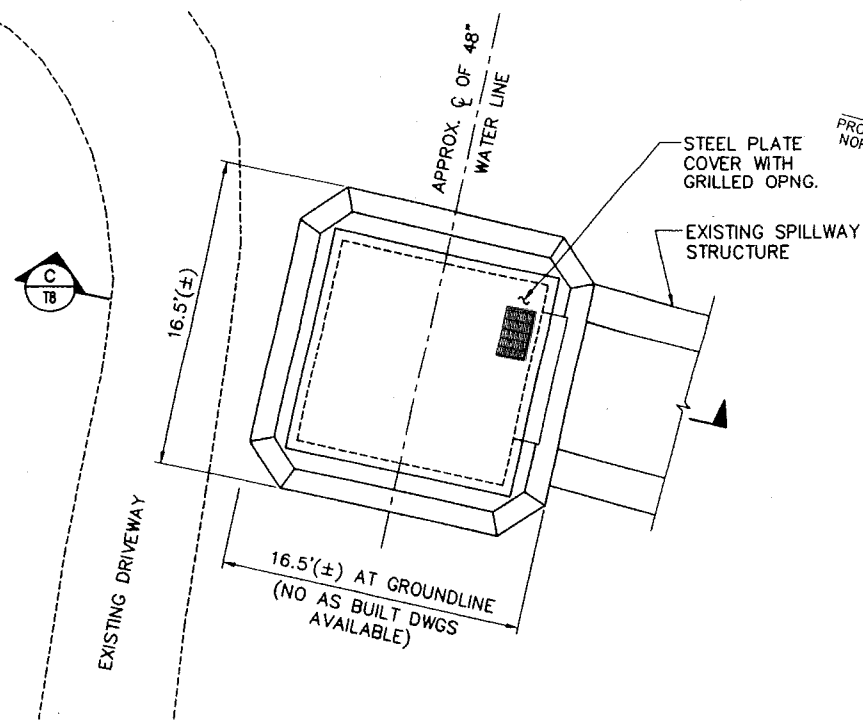


DESIGNED:
M. PASTER
DRAWN:
A. BLAIR
TECH. REVIEW:
M. Paster
DATE:
7/26/99

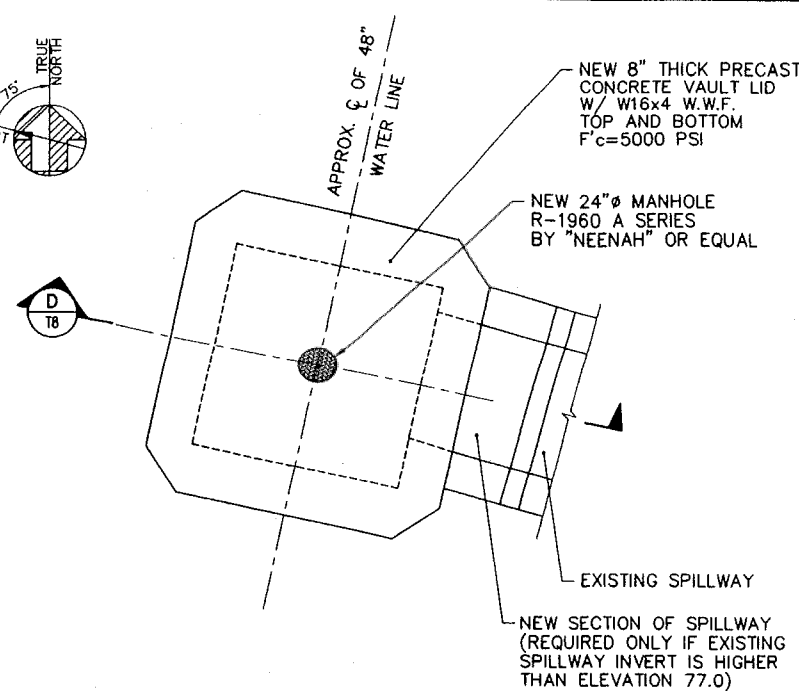
SUB SHEET NO.
T7

TITLE OF SHEET
Typical Tunnel Sections
Staple Bend Tunnel
Allegheny Portage Railroad NHS
REGION: NORTHEAST
COUNTY: CAMBRA
STATE: PENNSYLVANIA

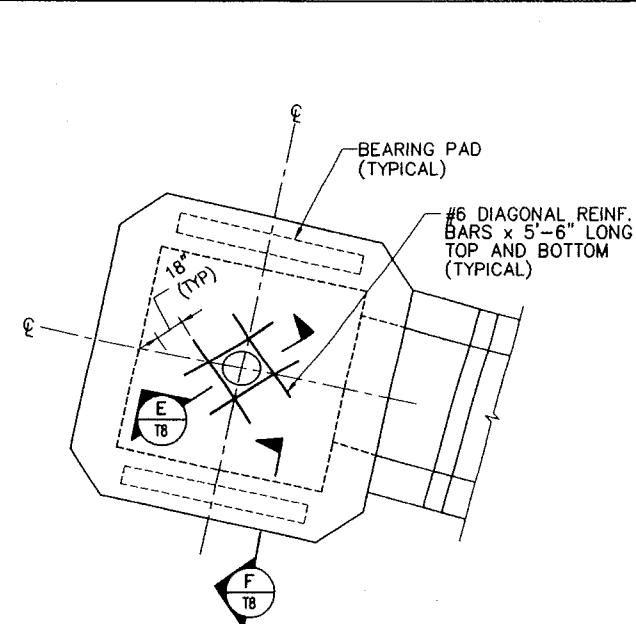
DRAWING NO.
423
60,011
PKG. NO.
SHEET
20
OF **68**



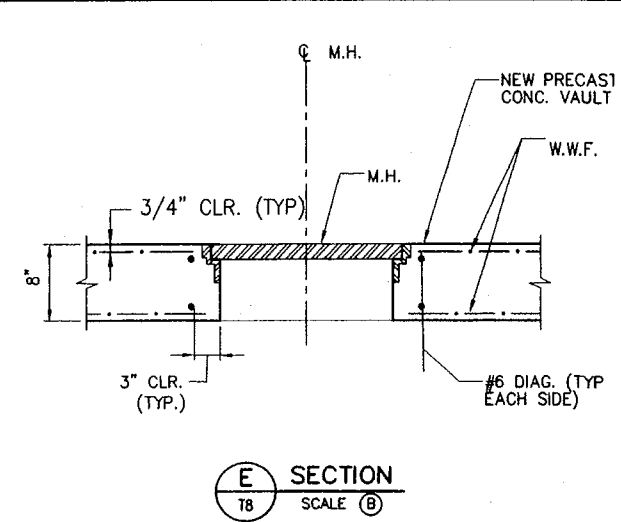
EXISTING SITE PLAN
SCALE (A)



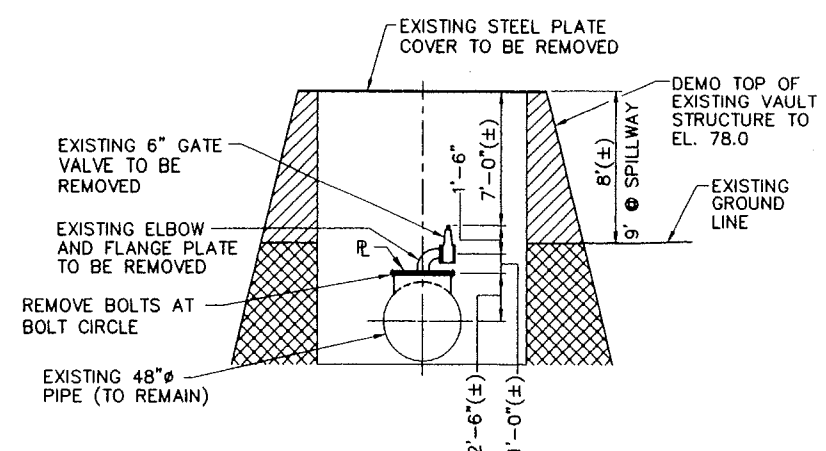
NEW VAULT COVER PLAN
SCALE (A)



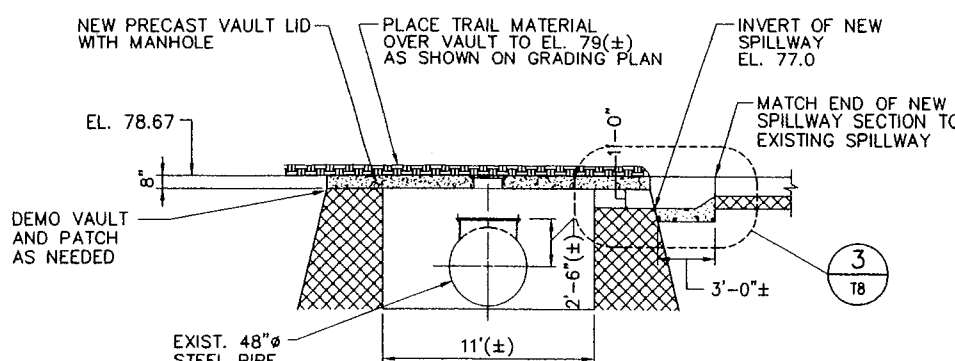
VAULT COVER REINFORCING PLAN
SCALE (A)



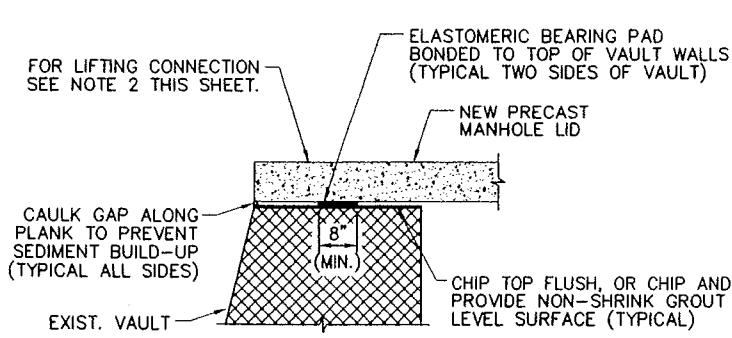
SECTION E
SCALE (B)



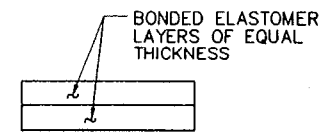
EXISTING WATER VAULT SECTION
SCALE (A)



NEW WATER VAULT SECTION
SCALE (A)

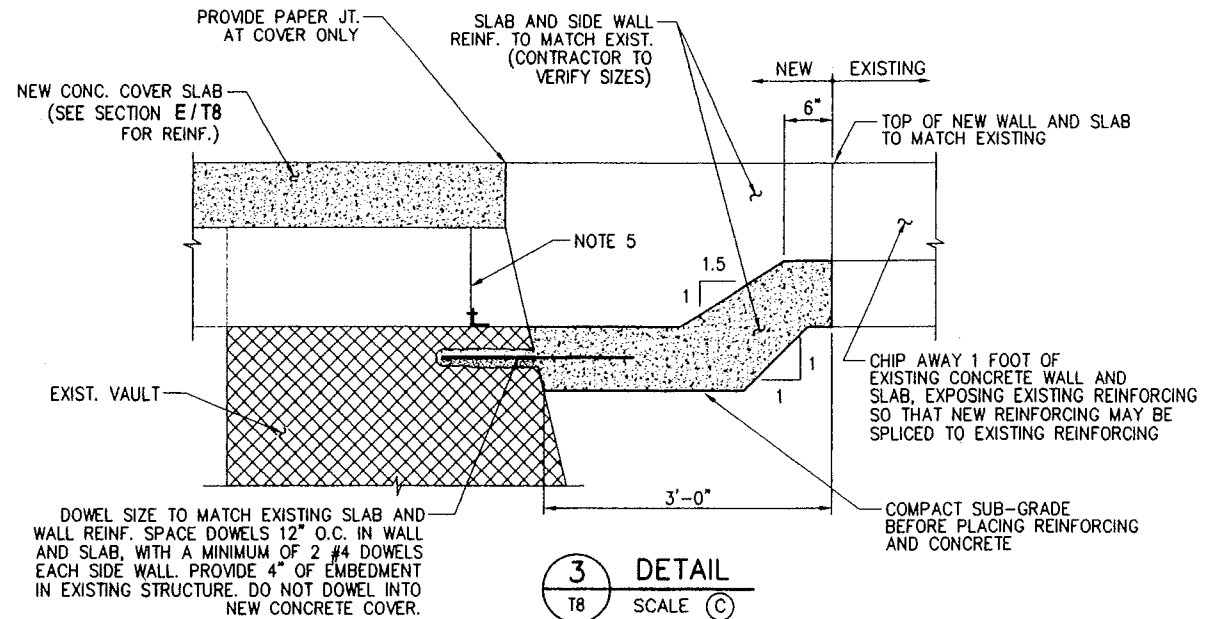


SECTION F
NO SCALE



NOTE:
1. HARDNESS (SHORE A DUROMETER) = 60.
2. CONSTRUCT BEARING PAD FROM LOW TEMPERATURE GRADE C ELASTOMER AS DEFINED IN SECTION 18.2, DIVISION II OF AASHTO BRIDGE SPECIFICATIONS.

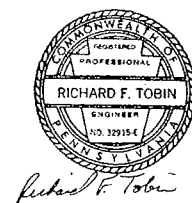
LAMINATED ELASTOMERIC PAD
TYPICAL SECTION
NO SCALE



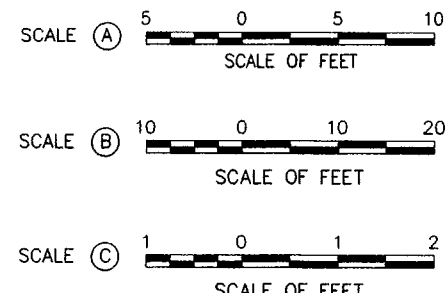
DETAIL 3
SCALE (C)

- NOTES:**
- CONCRETE FOR PRECAST VAULT LID = 5000 PSI.
 - CONTRACTOR TO DESIGN AND PROVIDE LIFTING LUGS FOR TEMPORARY HANDLING OF VAULT LID, SUITABLE FOR PERMANENT USE BY OWNER.
 - VAULT LID DESIGNED FOR HS15 WHEEL LOADS.
 - FIELD VERIFY NEW PRECAST LID DIMENSIONS PRIOR TO FABRICATION.
 - PROVIDE 1/2 INCH SQUARE GALVANIZED MESH SCREEN WITH ANCHORAGE ON THREE SIDES TO PREVENT DEBRIS AND ANIMALS FROM ENTERING VAULT.

- LEGEND FOR THIS SHEET**
- NEW CONCRETE
 - EXISTING CONCRETE TO BE REMOVED
 - EXISTING CONCRETE TO REMAIN



DESIGNED: M. WALKER	SUB SHEET NO. T8	TITLE OF SHEET Option No. 1 Water Vault Modifications	DRAWING NO. 423 60,011
DRAWN: A. BLAIR	TECH. REVIEW: M. Paster	DATE: 7/26/99	REGION NORTHEAST
COUNTY CAMBRA	STATE PENNSYLVANIA	PKG. NO. 21	SHEET OF 68





MASTER PLANT LIST					
SYM.	BOTANICAL NAME	COMMON NAME	QTY.	MIN. SIZE	REMARKS
CANOPY TREES					
AR	Acer rubrum	Red maple	2	4-1/2" cal.	B&B, multi-stem, spring planting only
CC	Carpinus caroliniana	American hornbeam	8	4-1/2" cal.	B&B, Spring planting only
LT	Liriodendron tulipifera	Tuliptree	5	3-1/2" cal.	B&B, Spring planting only
PS	Pinus strobus	White pine	15	12' ht.	B&B
FA	Fraxinus americana	White ash	8	4-1/2" cal.	B&B
QA	Quercus alba	White oak	7	4-1/2" cal.	B&B
TA	Tilia americana	American basswood	5	4-1/2" cal.	B&B
UNDERSTORY TREES					
AL	Amelanchier laevis	Allegheny serviceberry	24	10' ht.	B&B, multi-stem
CF	Cornus florida	Flowering dogwood	18	2-1/2" cal.	B&B
HV	Hamamelis virginiana	American witch-hazel	17	10' ht.	B&B, multi-stem
SA	Sassafras albidum	Sassafras	35	10' ht.	B&B
SHRUBS					
RM	Rhod. maximum	Rosebay rhododendron	86	24"-30" ht.	B&B

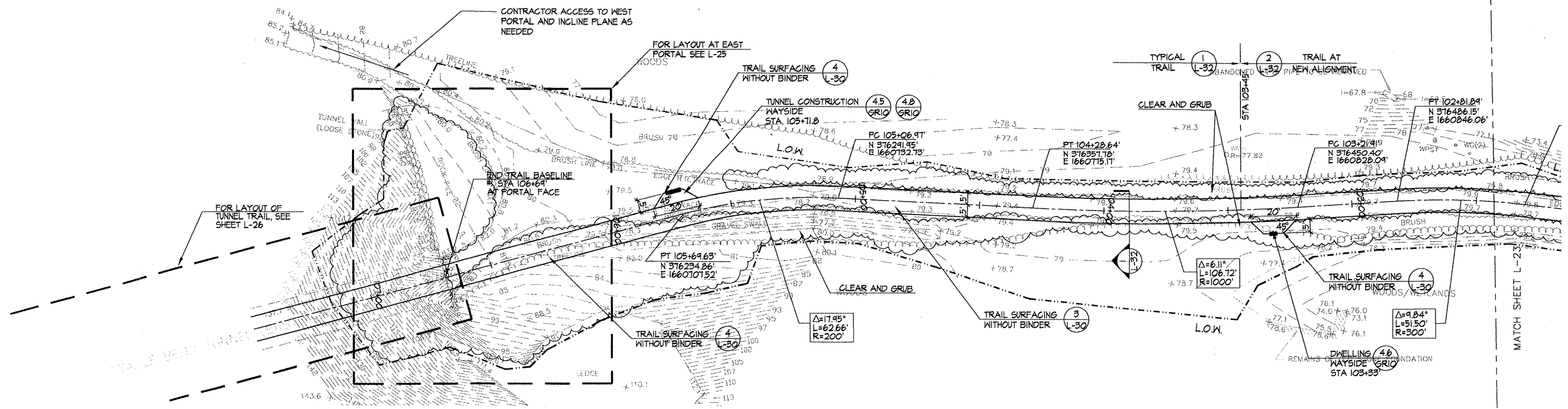
SCALE

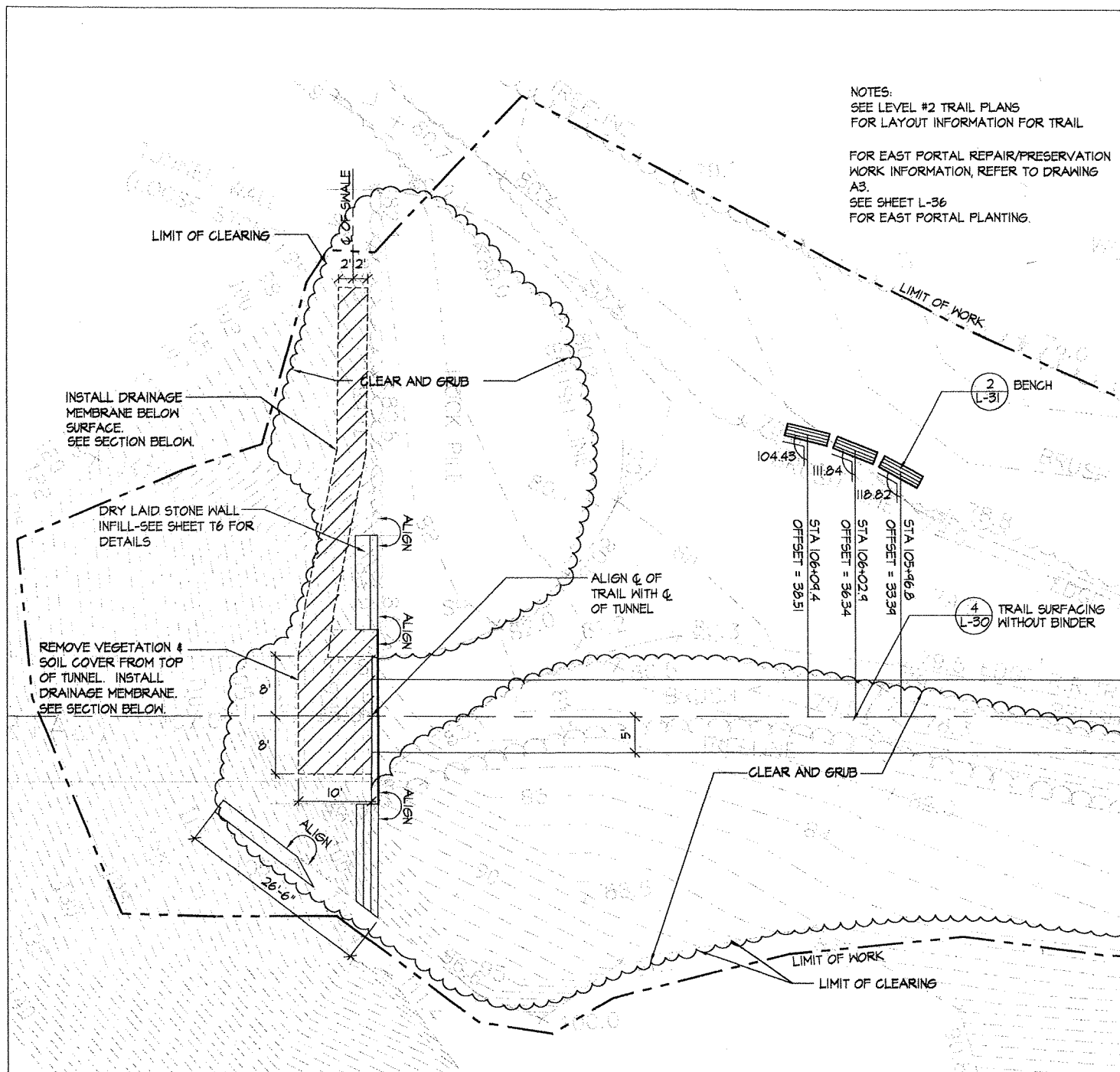


0 150' 300' 600'

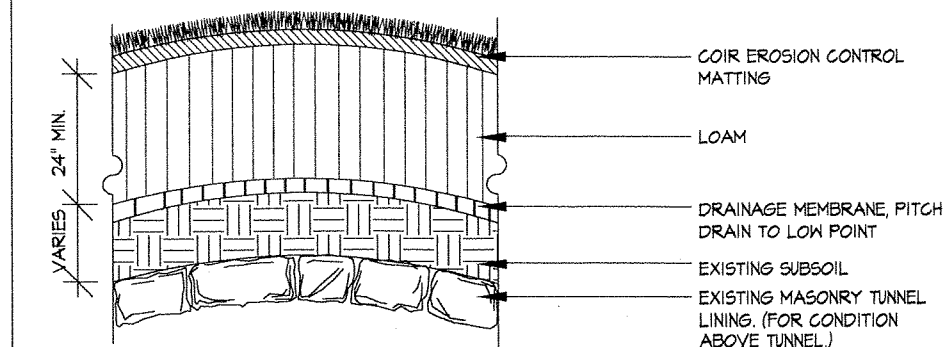
SEE SHEET L-6 FOR NOTES

SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
L-1	KEY PLAN	423
	STAPLE BEND TUNNEL	60,011
	ALLEGHENY PORTAGE RAILROAD NHS	PKG. NO.
	REGION CAMBRIA	SHEET
COUNTY	STATE	22
PENNSYLVANIA	OF 68	

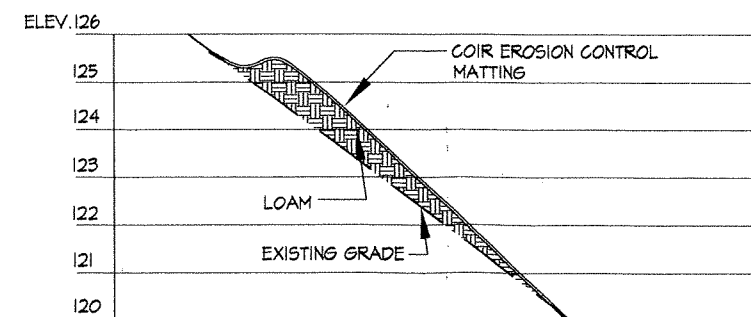




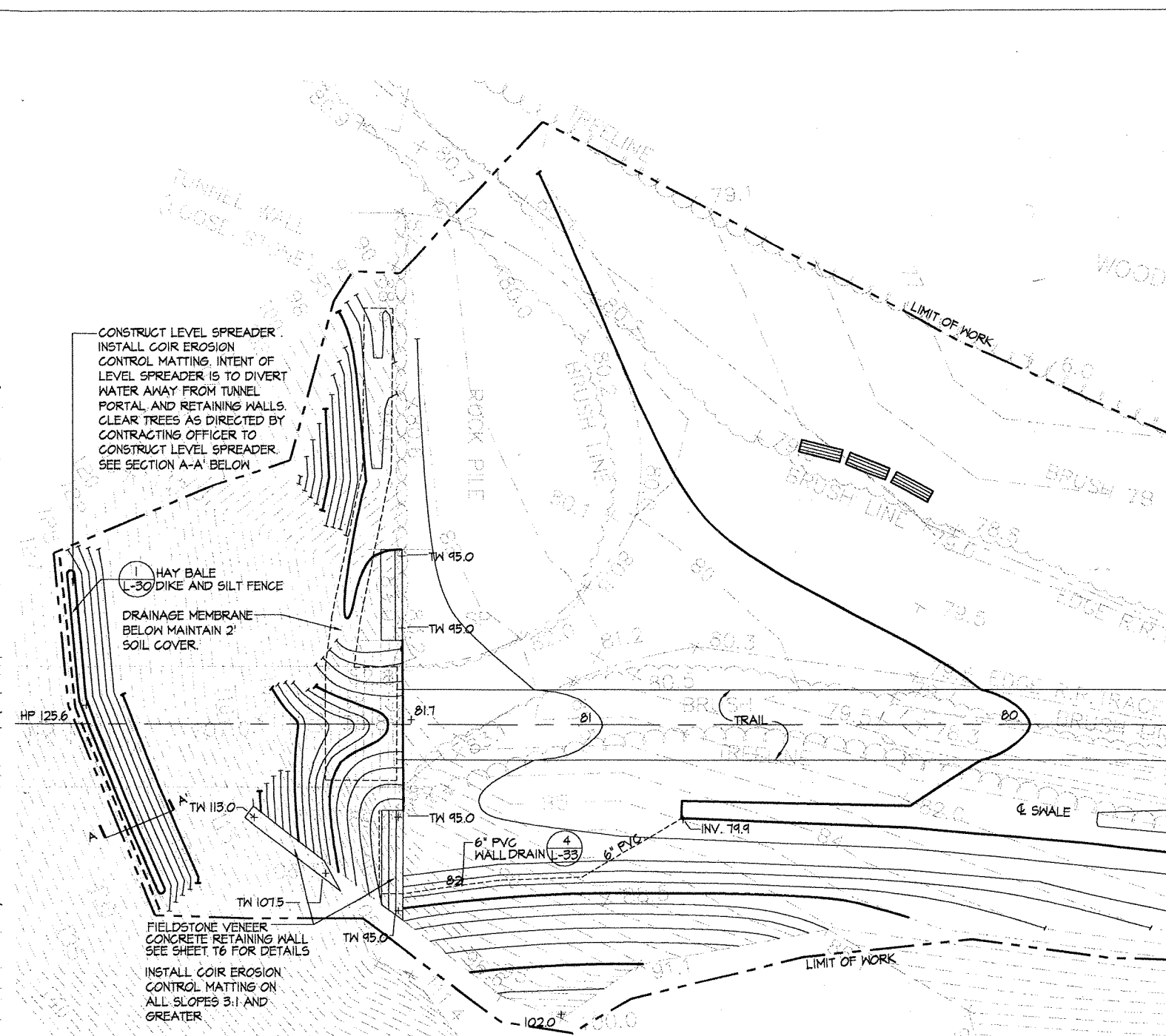
EAST PORTAL-SITE PREPARATION AND LAYOUT PLAN



DRAINAGE MEMBRANE OVER TUNNEL
NOT TO SCALE

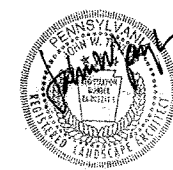
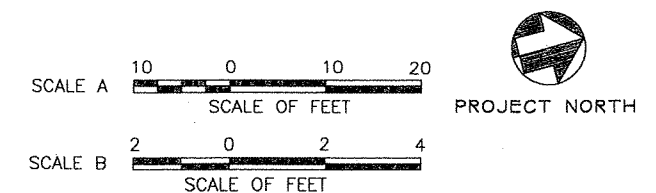


SECTION A-A' - LEVEL SPREADER
SCALE B



EAST PORTAL- GRADING PLAN

SCALE A

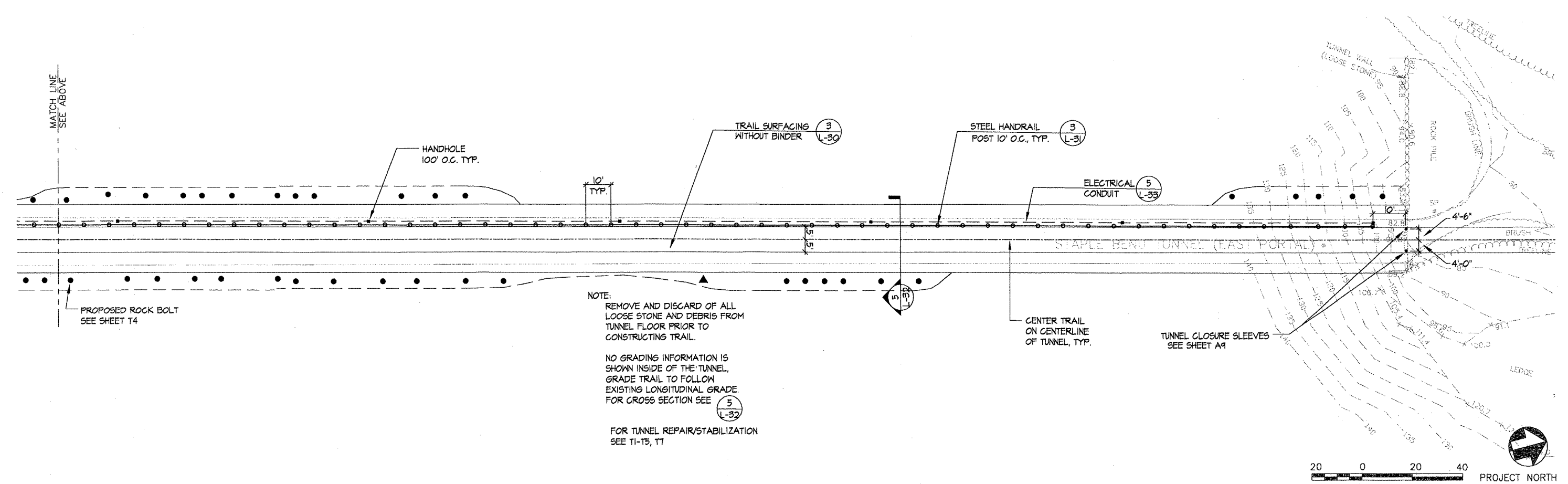
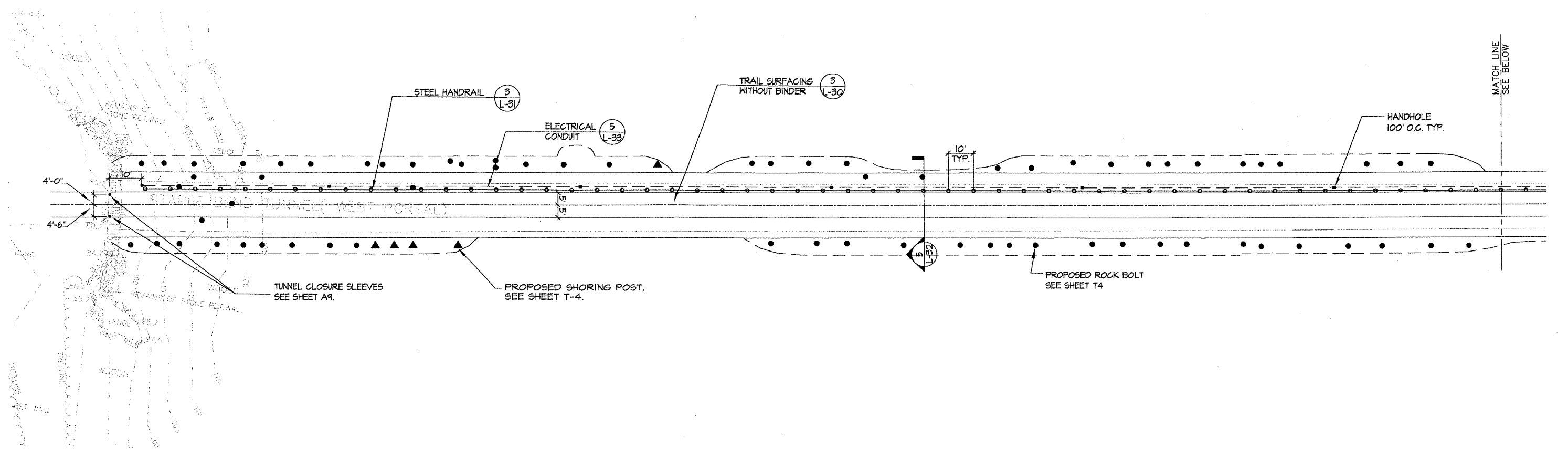


DESIGNED: KZ
DRAWN: AEM/BLD
TECH. REVIEW: TWK
DATE: 07/26/99

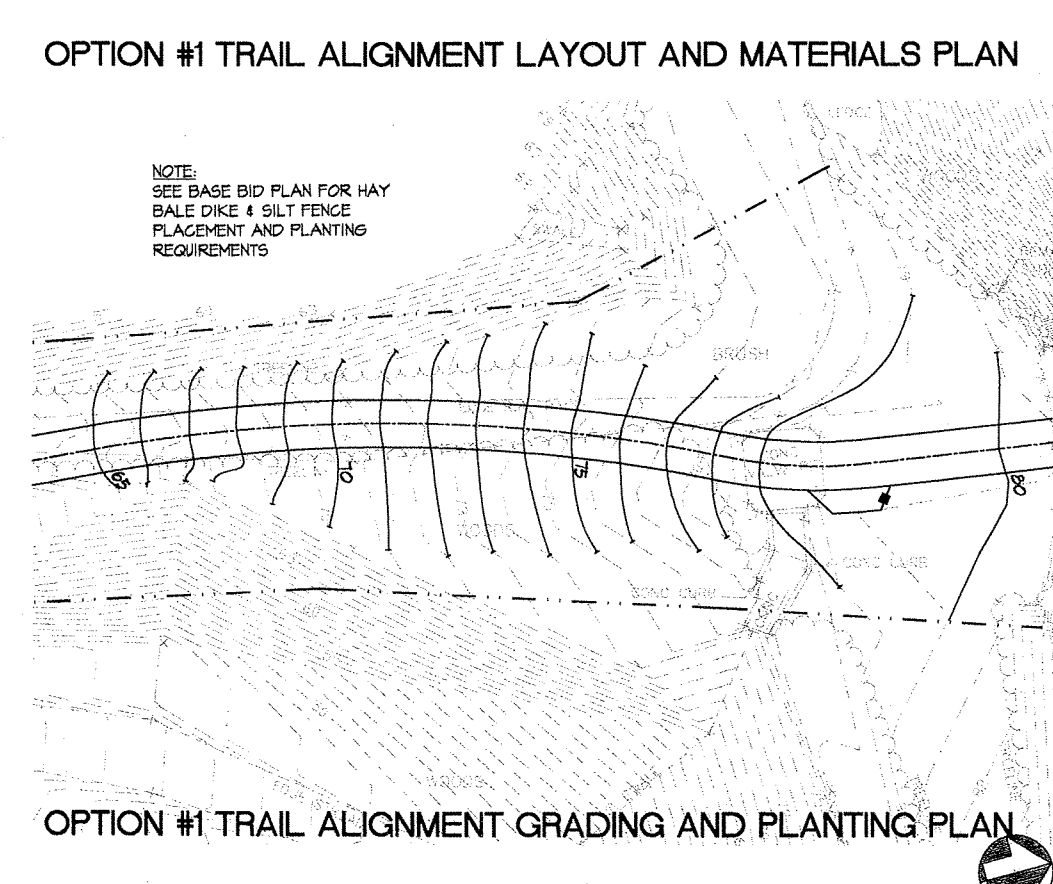
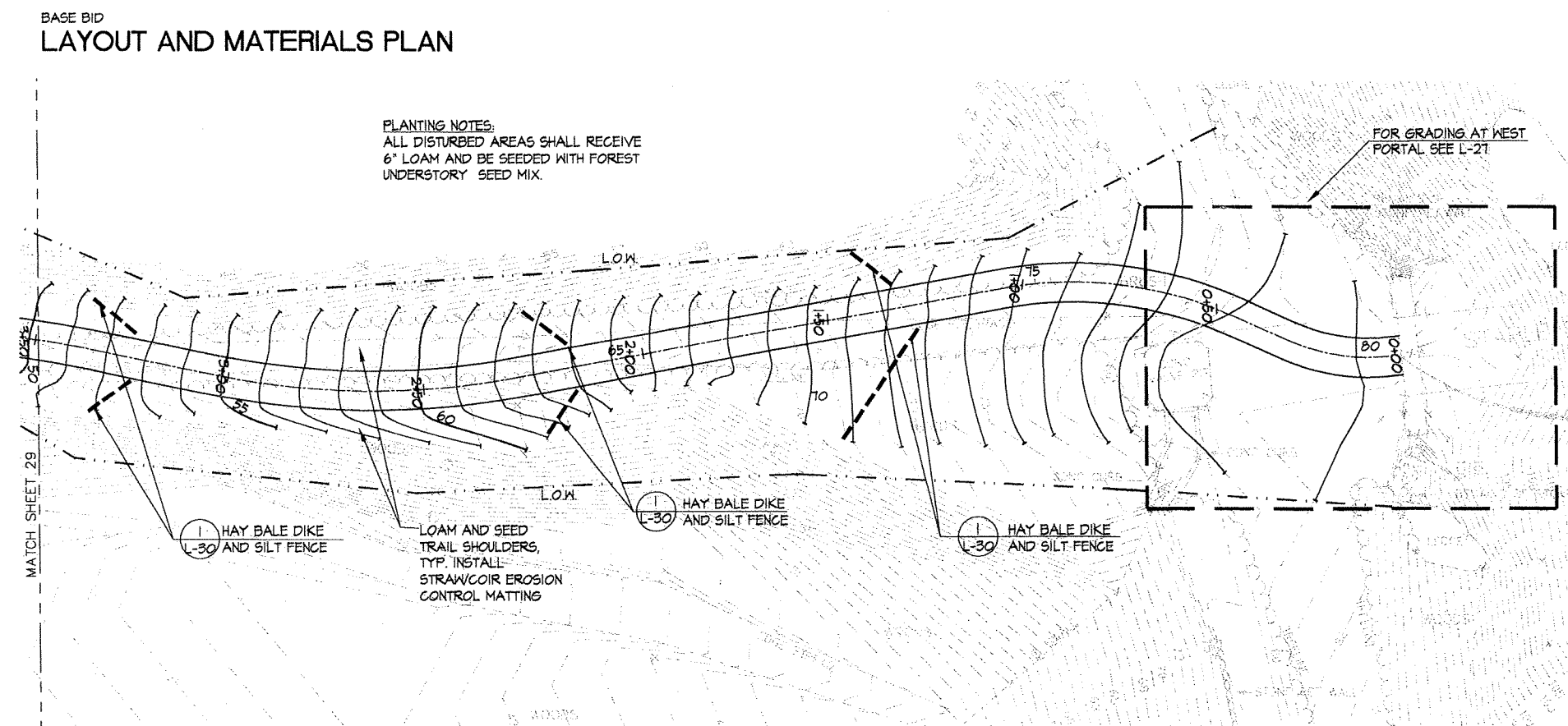
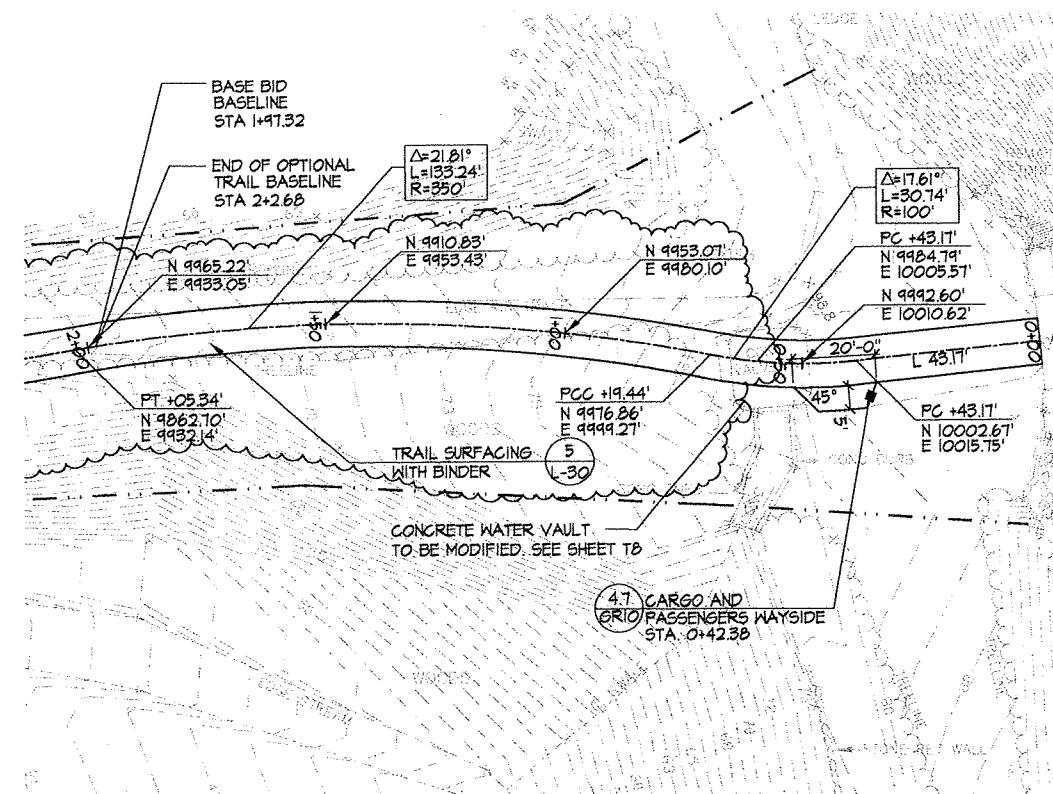
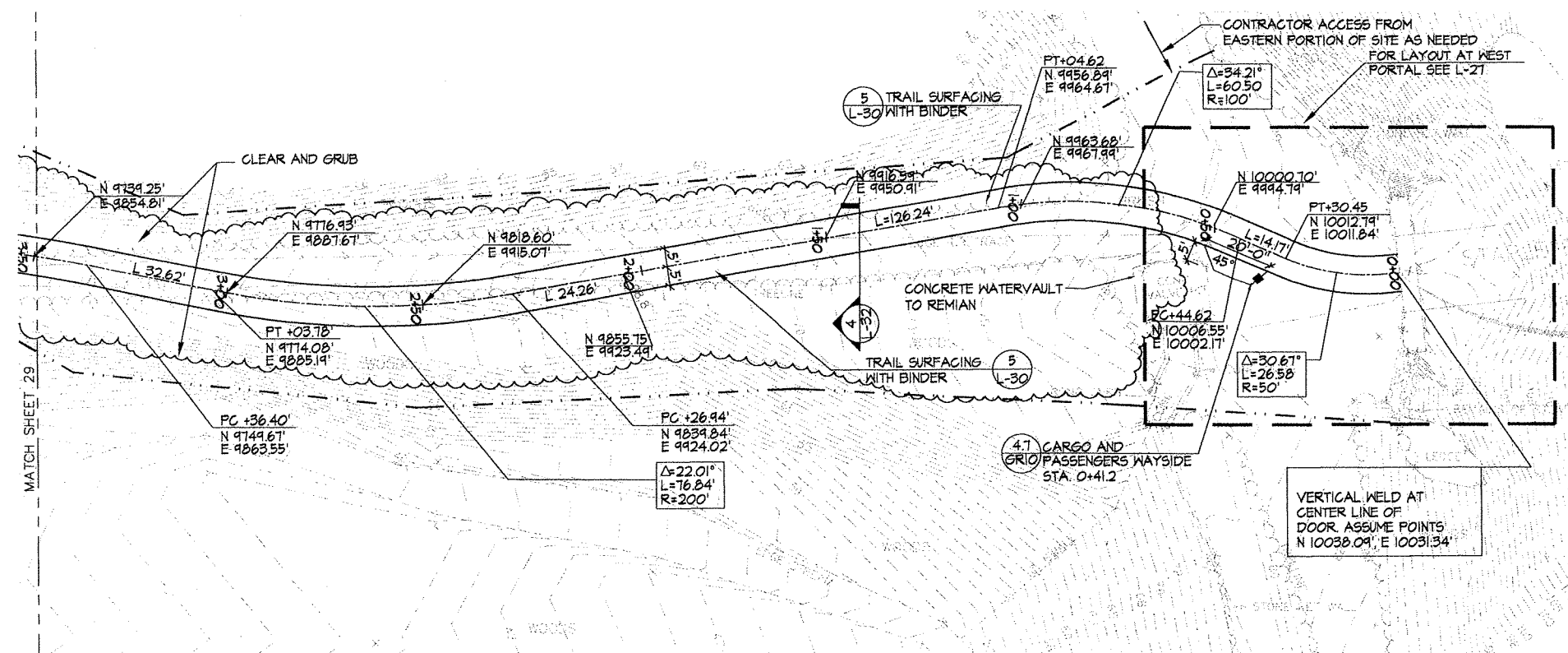
SUB SHEET NO.
L-25

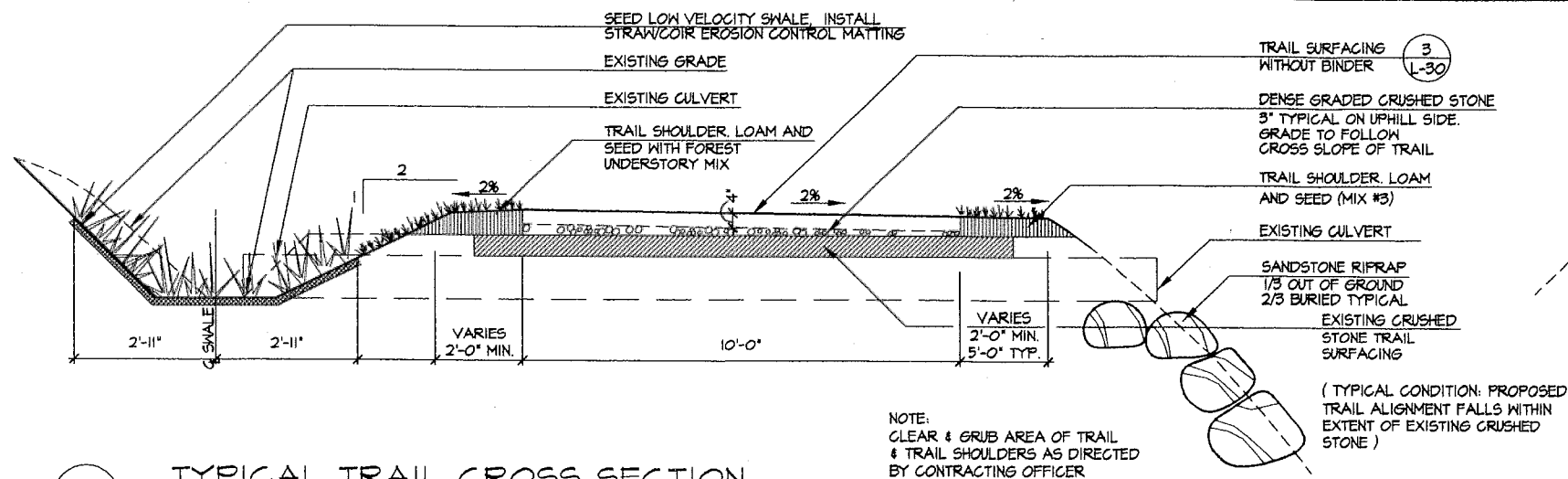
TITLE OF SHEET
EAST PORTAL PLAN
STAPLE BEND TUNNEL
ALLEGHENY PORTAGE RAILROAD NHS
REGION NORTH-EAST COUNTY CAMBRIA STATE PENNSYLVANIA

DRAWING NO. 423 60,011	
PKG. NO.	SHEET 46 OF 68

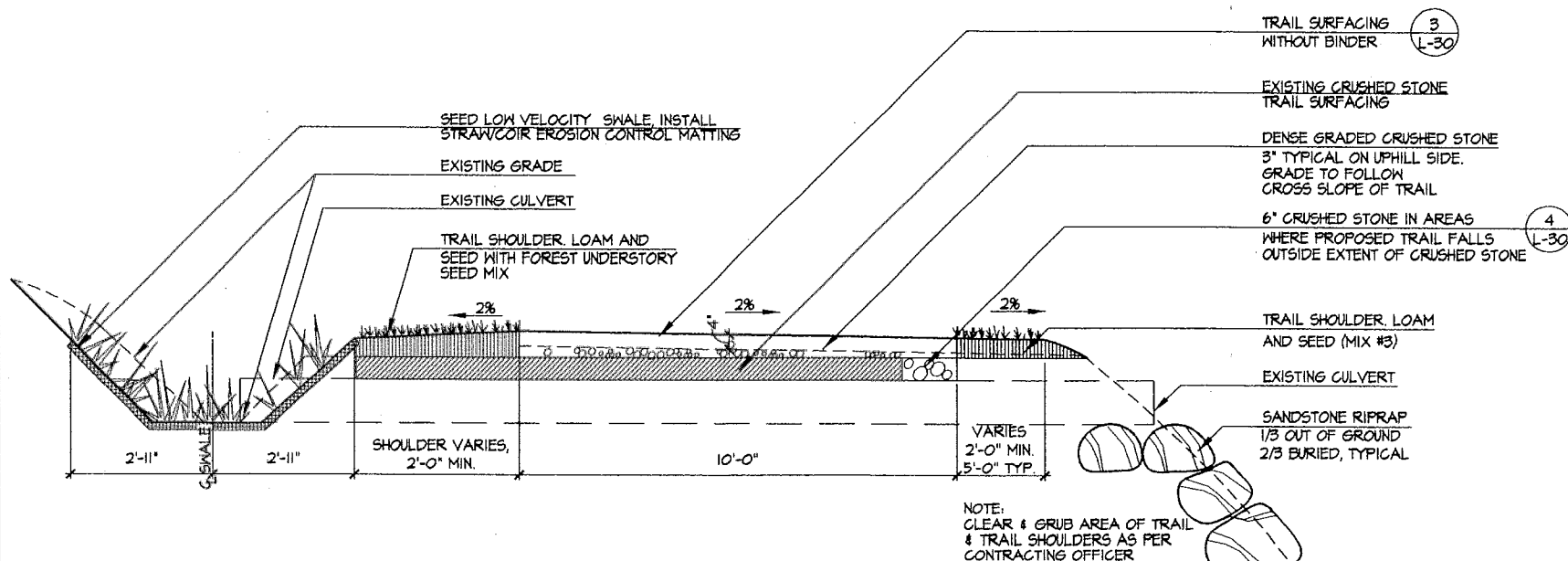


DESIGNED: KZ	SUB SHEET NO. L-26	TITLE OF SHEET TRAIL IN TUNNEL STAPLE BEND TUNNEL ALLEGHENY PORTAGE RAILROAD NHS	DRAWING NO. 423 60,011
DRAWN: AEM/BLD		REGION NORTHEAST	PKG. NO. SHEET 47
TECH. REVIEW: TWK		COUNTY CAMBRIA	OF 68
DATE: 07/26/99		STATE PENNSYLVANIA	

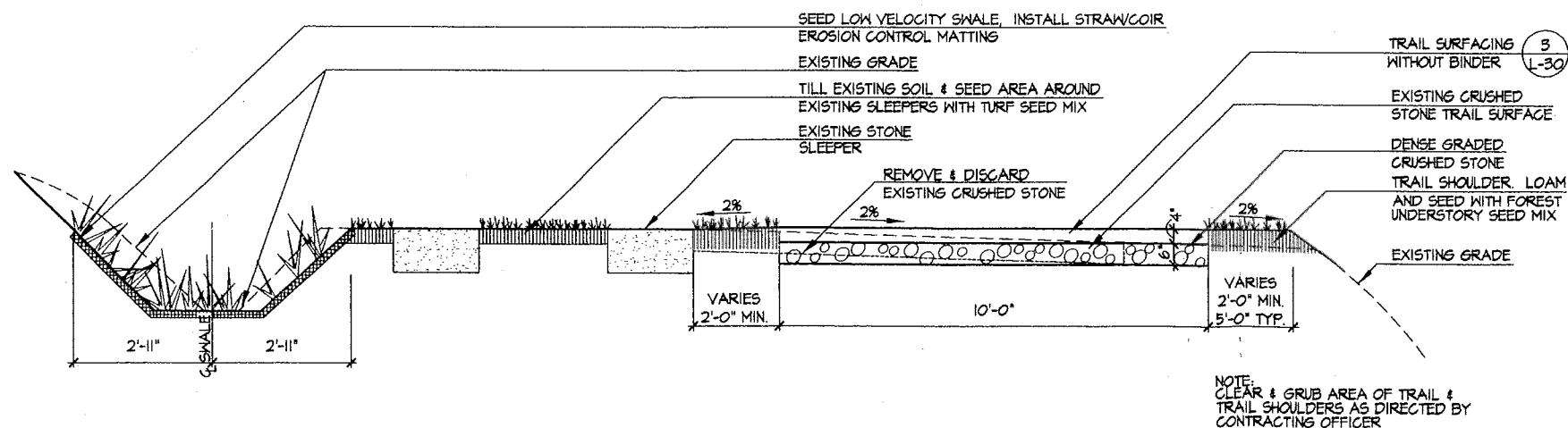




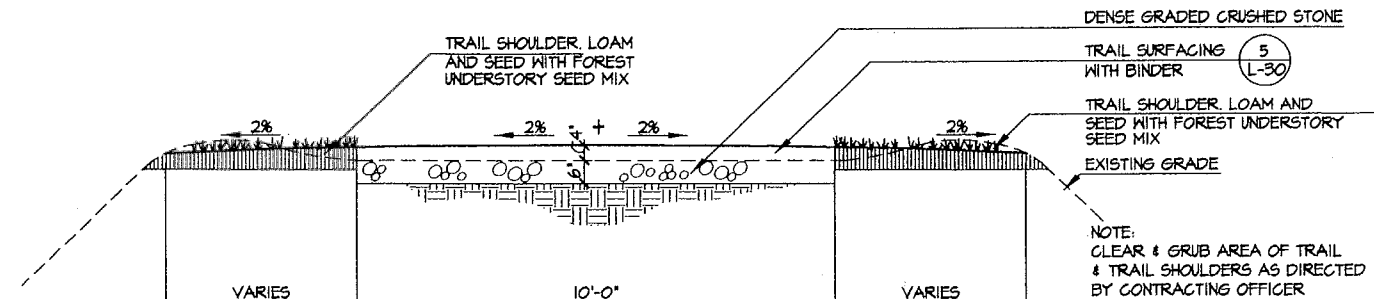
1 TYPICAL TRAIL CROSS SECTION
SCALE: D



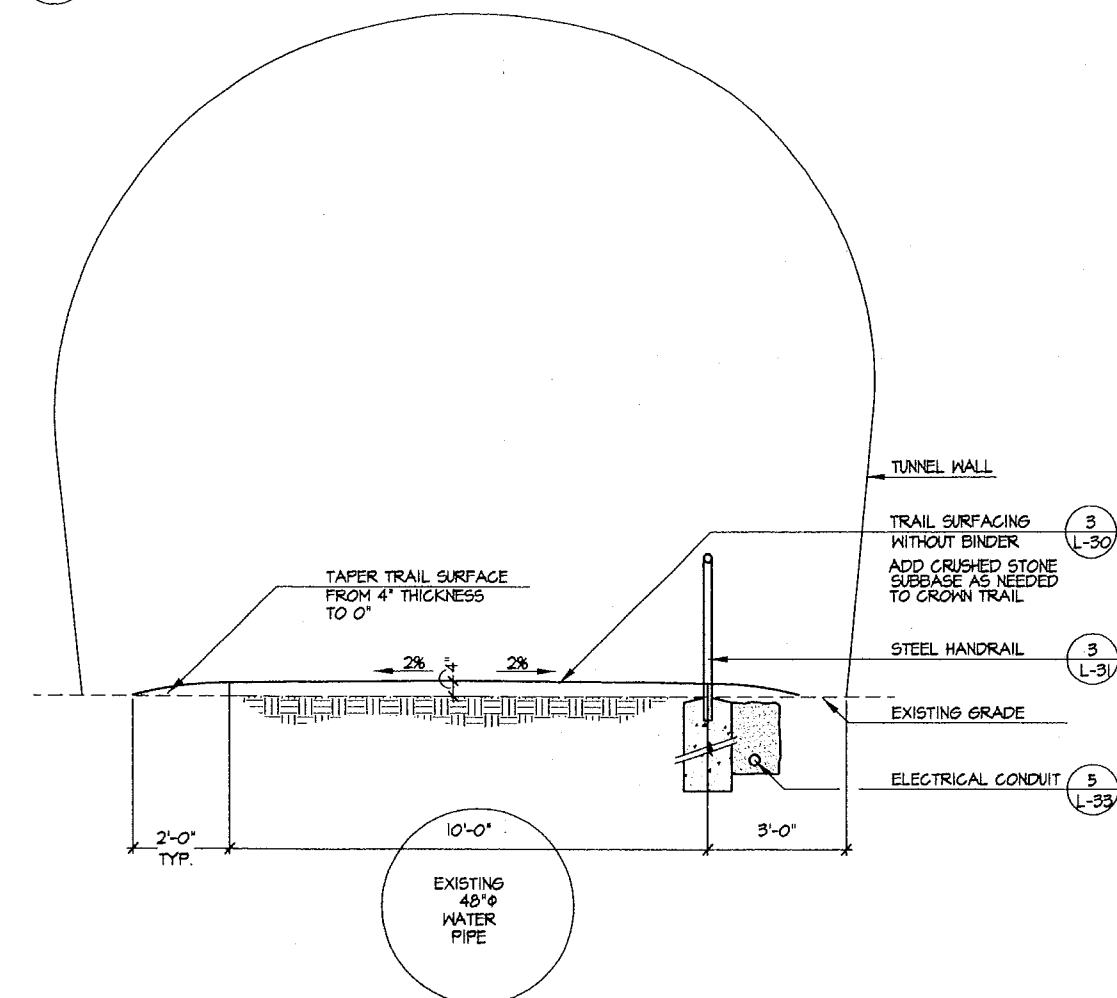
2 TYPICAL TRAIL CROSS SECTION AT NEW ALIGNMENT
SCALE: D



3 TYPICAL TRAIL CROSS SECTION AT EXISTING STONE SLEEPERS
SCALE: D



4 TYPICAL INCLINE PLANE TRAIL CROSS SECTION
SCALE: D

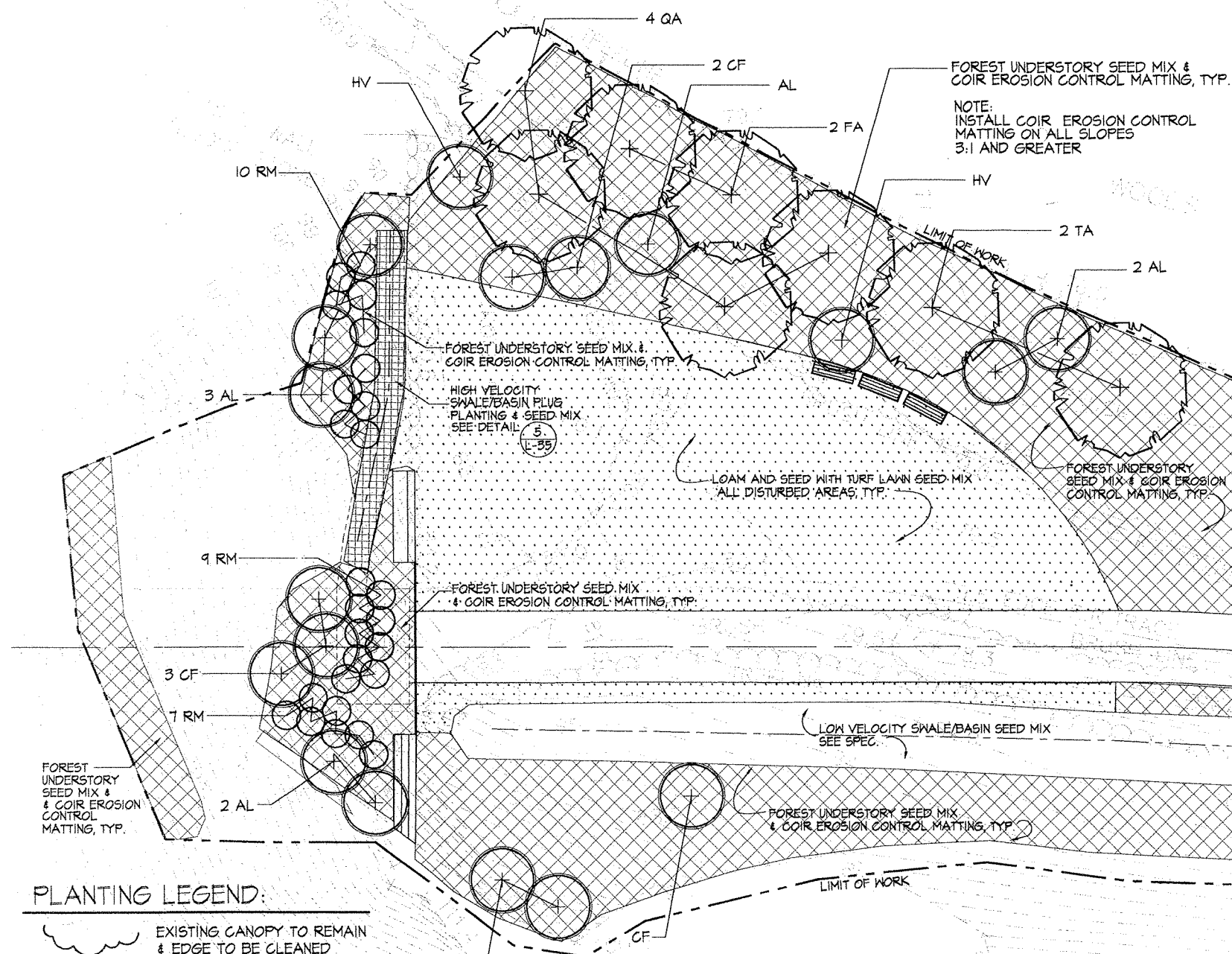


5 TYPICAL TUNNEL TRAIL CROSS SECTION
SCALE: D

SCALE ① 2 0 2 4
SCALE OF FEET



DESIGNED: KZ	SUB SHEET NO.	TITLE OF SHEET DETAIL SHEET 3	DRAWING NO. 423 60,011
DRAWN: AEM/BLD		STAPLE BEND TUNNEL	PKG. NO.
TECH. REVIEW: TWK	L-32	ALLEGHENY PORTAGE RAILROAD NHS	SHEET 53
DATE: 07/26/99		REGION NORTHEAST	STATE PENNSYLVANIA
		COUNTY CAMBRIA	OF 68



PLANTING LEGEND:

- EXISTING CANOPY TO REMAIN & EDGE TO BE CLEANED
- PROPOSED DECIDUOUS TREE, SEE 1
L-35
- PROPOSED UNDERSTORY TREE, SEE 1
L-35
- PROPOSED EVERGREEN TREE, SEE 2
L-35
- TURF LAWN SEED MIX SEE SPECS.
- WARM SEASON MEADOW SEED MIX SEE SPECS.
- CONTAINERIZED TREE SEEDLING PLANTING, SEE 4
L-35
- HIGH VELOCITY SWALE/BASIN PLUG & PLANTING, SEE 5
L-35
- FOREST UNDERSTORY SEED MIX & EROSION CONTROL MATTING, SEE SPECS.

PLANT LIST- EAST PORTAL

SYM.	BOTANICAL NAME	COMMON NAME	QTY.	MIN. SIZE	REMARKS
DECIDUOUS TREES					
FA	<i>Fraxinus americana</i>	White ash	2	4-1/2" cal.	B&B
QA	<i>Quercus alba</i>	White oak	4	4-1/2" cal.	B&B
TA	<i>Tilia americana</i>	American basswood	2	4-1/2" cal.	B&B
UNDERSTORY TREES					
AL	<i>Amelanchier laevis</i>	Allegheny serviceberry	10	10' ht.	B&B, multistem
CF	<i>Cornus florida</i>	Flowering dogwood	6	2-1/2" cal.	B&B
HV	<i>Hamamelis virginiana</i>	American witch-hazel	2	10' ht.	B&B, multistem
SHRUBS					
RM	<i>Rhod. maximum</i>	Rosebay rhododendron	26	24"-30" ht.	B&B

EAST PORTAL- PLANTING PLAN

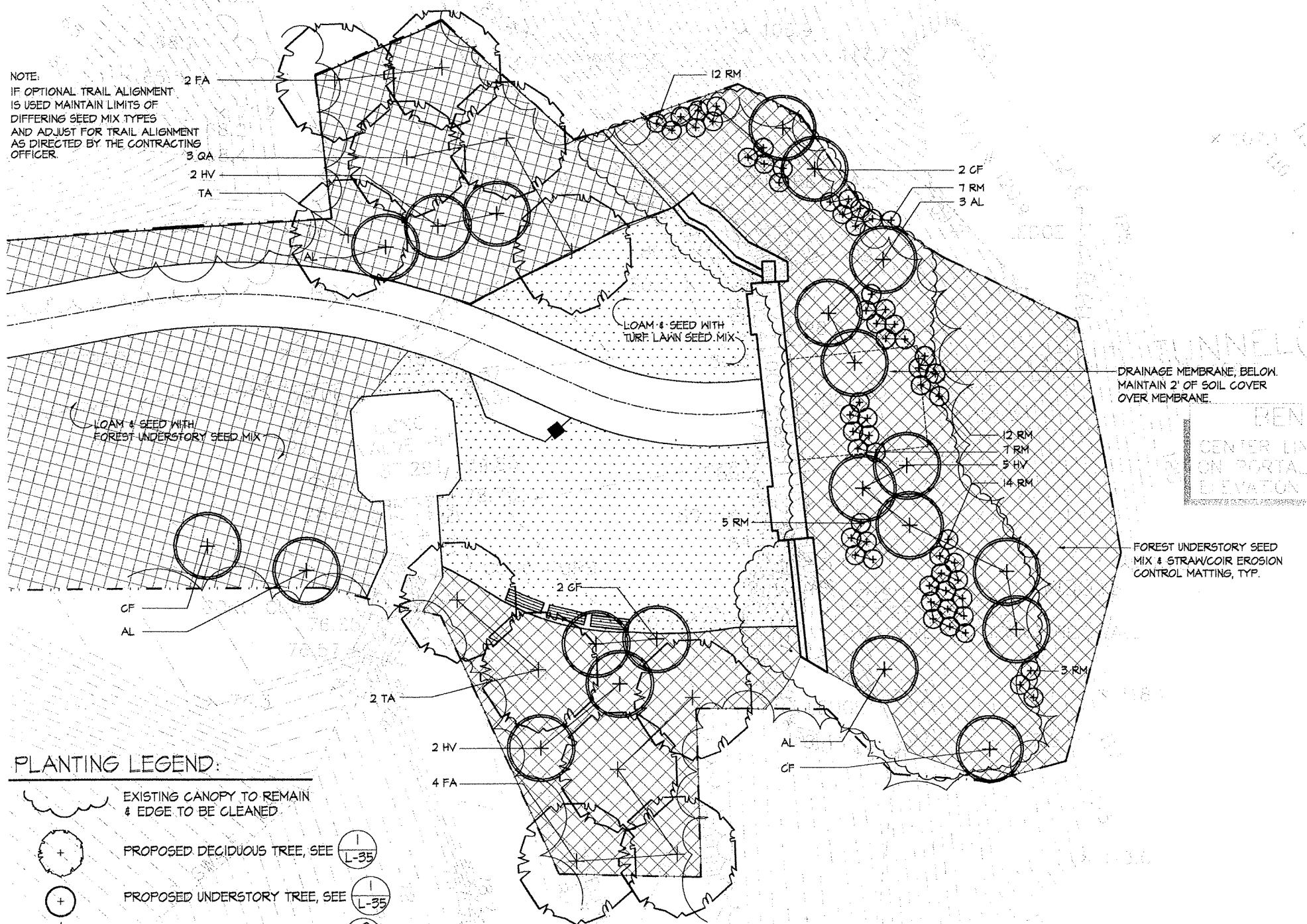
10 0 10 20
SCALE OF FEET

PROJECT NORTH



DESIGNED: KZ	SUB SHEET NO. L-36	TITLE OF SHEET EAST PORTAL- PLANTING PLAN	DRAWING NO. 423 60,011
DRAWN: AEM/BLD		STAPLE BEND TUNNEL ALLEGHENY PORTAGE RAILROAD NHS	PKG. NO. SHEET 57 OF 68
TECH. REVIEW: TWK		REGION NORTHEAST	COUNTY CAMBRIA
DATE: 07/26/99		STATE PENNSYLVANIA	

NOTE:
IF OPTIONAL TRAIL ALIGNMENT
IS USED MAINTAIN LIMITS OF
DIFFERING SEED MIX TYPES
AND ADJUST FOR TRAIL ALIGNMENT
AS DIRECTED BY THE CONTRACTING
OFFICER.

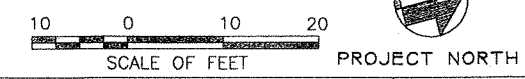


PLANTING LEGEND:

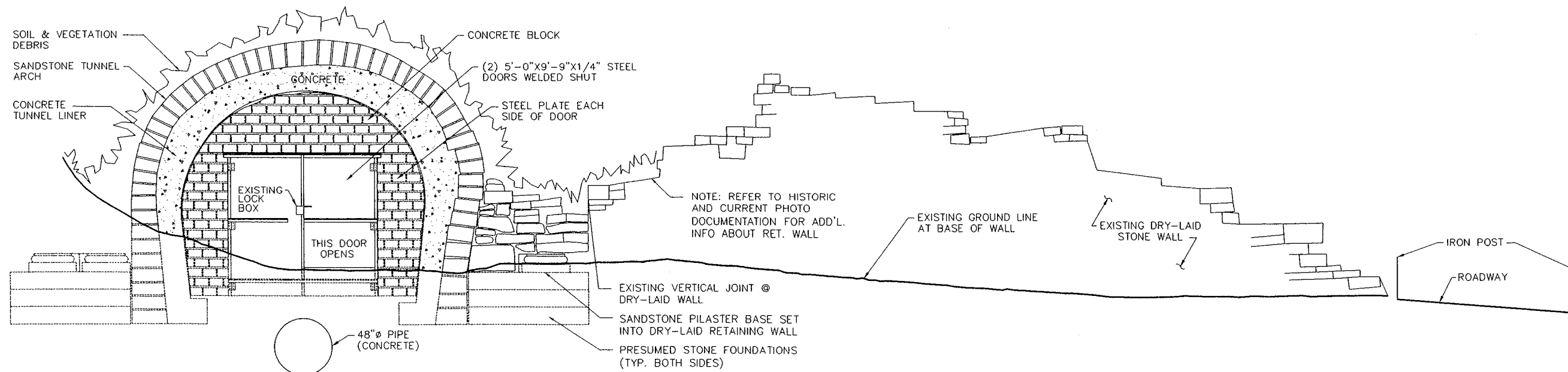
- EXISTING CANOPY TO REMAIN & EDGE TO BE CLEANED
- PROPOSED DECIDUOUS TREE, SEE 1
L-35
- PROPOSED UNDERSTORY TREE, SEE 1
L-35
- PROPOSED EVERGREEN TREE, SEE 2
L-35
- TURF LAWN SEED MIX SEE SPECS.
- WARM SEASON MEADOW SEED MIX SEE SPECS.
- CONTAINERIZED TREE SEEDLING PLANTING, SEE 4
L-35
- HIGH VELOCITY SWALE/BASIN PLUG & PLANTING, SEE 5
L-35
- FOREST UNDERSTORY SEED MIX & EROSION CONTROL MATTING, SEE SPECS.

PLANT LIST - WEST PORTAL					
SYM.	BOTANICAL NAME	COMMON NAME	QTY.	MIN. SIZE	REMARKS
DECIDUOUS TREES					
FA	Fraxinus americana	White ash	6	4-1/2" cal.	B&B
QA	Quercus alba	White oak	3	4-1/2" cal.	B&B
TA	Tilia americana	American basswood	3	4-1/2" cal.	B&B
UNDERSTORY TREES					
AL	Amelanchier laevis	Allegheny serviceberry	6	10' ht.	B&B, multistem
CF	Cornus florida	Flowering dogwood	6	2-1/2" cal.	B&B
HV	Hamamelis virginiana	American witch-hazel	9	10' ht.	B&B, multistem
SHRUBS					
RM	Rhod. maximum	Rosebay rhododendron	60	24"-30" ht.	B&B

WEST PORTAL PLANTING PLAN



DESIGNED: KZ	SUB SHEET NO. L-37	TITLE OF SHEET WEST PORTAL PLANTING PLAN	DRAWING NO. 423 60,011
DRAWN: AEM/BLD		STAPLE BEND TUNNEL ALLEGHENY PORTAGE RAILROAD NHS	PKG. NO. 58
TECH. REVIEW: TWK		REGION NORTHEAST	SHEET OF 68
DATE: 07/26/99		COUNTY CAMBRIA	STATE PENNSYLVANIA

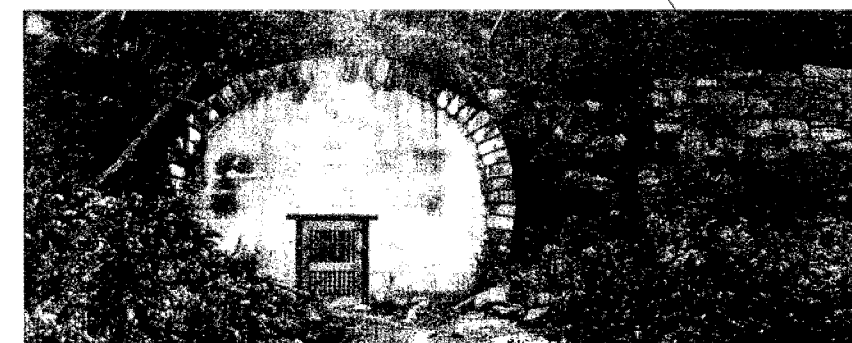


1 EAST ELEVATION

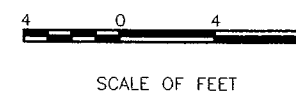


2 OVERALL VIEW OF EAST PORTAL AREA
N.T.S.

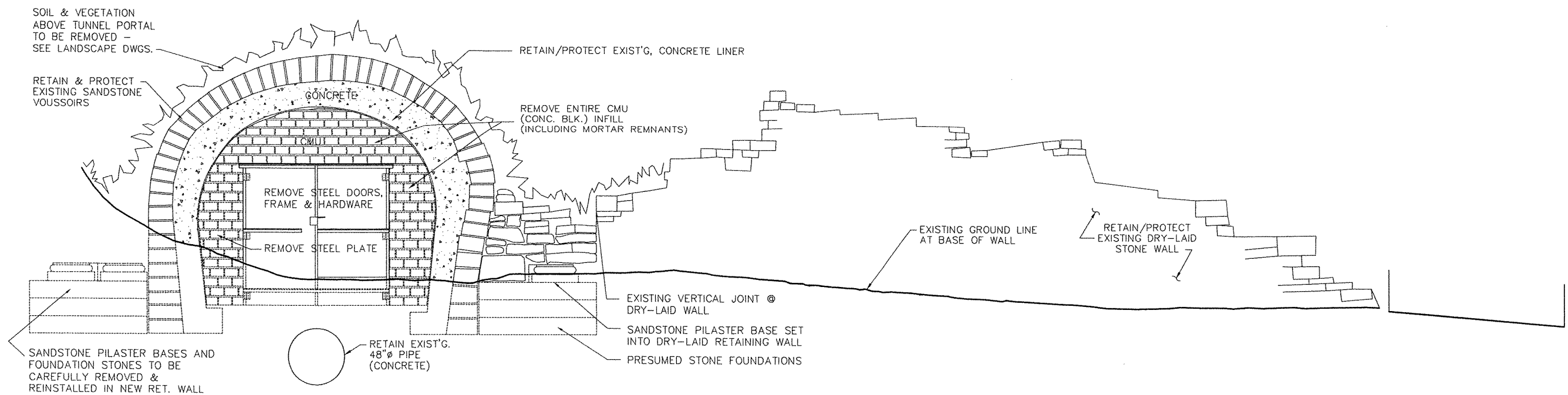
NOTE CONFIGURATION OF DRY-LAID STONE RETAINING WALLS: UPPER SECTION IS RANDOM-COURSED AND IS COMPRISED OF LARGER, IRREGULAR STONES.



3 CA. 1910 VIEW OF EAST PORTAL
FROM 1991 HSR; MG 327, STOUFFER COLLECTION, PENN. STATE ARCHIVES



DESIGNED: JB	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN: CA/JG		East Portal - Existing	423
TECH. REVIEW: <i>Glassman</i>	A1	Staple Bend Tunnel	60,011
DATE: 7/26/99		Allegheny Portage Railroad NHS	PKG. NO. SHEET
		REGION: NORTHEAST COUNTY: CAMBRIA STATE: PENNSYLVANIA	59 OF 68



A EAST ELEVATION



SCALE OF FEET

DESIGNED: JB	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN: GA/JG	A2	East Portal - Selective Demolition	423
TECH. REVIEW: <i>[Signature]</i>		Staple Bend Tunnel	60,011
DATE: 7/26/99		Allegheny Portage Railroad NHS	60
		REGION NORTHEAST	COUNTY CAMBRIA
		STATE PENNSYLVANIA	OF 68



EXISTING DRY-LAID STONE RET. WALL SHALL BE RETAINED & PROTECTED.

CMU & STEEL INFILL TO BE REMOVED FROM SITE (TYPICAL BOTH PORTALS)

STORE LOOSE STONES ON SITE FOR SALVAGE & REUSE IN NEW RET. WALLS - SORT INTO FACING AND BACKUP STONES.

LOCATION OF HISTORIC PILASTER BASE TO BE RETAINED & PROTECTED

1 EAST PORTAL & RET. WALL
A3 (LOOKING NORTH)

N.T.S.



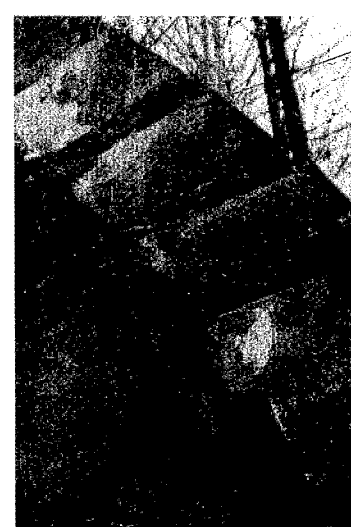
REMOVE VEGETATION ABOVE TUNNEL PORTAL; REFER TO LANDSCAPE DRAWINGS & SPECIFICATIONS.

CAREFULLY REMOVE PLANT MATERIALS AND MISC. BIOLOGICAL DEBRIS ABOVE WALL.

PROTECT HISTORIC WALL; RETAIN FACING STONES IN PLACE.

2 EXIST'G. STONE RET. WALL
A3 NORTH OF EAST PORTAL

N.T.S.



REMOVE PLANT MATERIALS, SOIL DEBRIS, LICHENS, MOSSES, ALGAE, ETC. FROM MORTAR JOINTS AND FROM STONE FACES. TREAT WITH APPROVED ARCHITECTURAL BIOCIDES, IN ACCORD. WITH MFR'S. DIRECTIONS, TYP. ENTIRE PORTAL. REPOINT ALL MORTAR JOINTS WITH APPROVED LIME-BASED MORTAR - REFER TO SPEC'NS.

3 DETAIL OF ARCH VOUSOIRS
A3 EAST PORTAL

N.T.S.



AT JOINT BETW. CONC. LINER AND STONE ARCH VOUSOIRS, REMOVE ALL BIOLOGICAL MATERIALS. RAKE OUT LOOSE OR DETERIORATED MORTAR AND CONCRETE. REPOINT WITH LIME-BASED MORTAR - REFER TO SPEC'NS.

REMOVE SALT AND/OR CALCIUM CARBONATE DEPOSITS AT FACE OF CONCRETE, TYP. ENTIRE PORTAL. PREPARE & PAINT FACE OF CONCRETE (FLAT BLACK).

4 DETAIL OF CONC. LINER
A3 EAST PORTAL

N.T.S.

NEW REINFORCED CONC. RETAINING WALL WITH COURSED, SANDSTONE FACING & CAPSTONES TIES INTO EXIST'G ROCK OUTCROPPING. CUT BACK MORTAR JOINTS TO CREATE DRY-LAID APPEARANCE. REFER TO LANDSCAPE DWGS., DWG. T6 "EAST PORTAL-UPPER RETAINING WALL SECTION," & SPEC'NS.

NEW REINFORCED CONC. RETAINING WALL WITH COURSED, SANDSTONE FACING & CAPSTONES. CUT BACK MORTAR JOINTS TO CREATE DRY-LAID APPEARANCE. REFER TO LANDSCAPE & ENGINEERING DWGS. & SPEC'NS.

CAREFULLY REMOVE HISTORIC SANDSTONE PILASTER BASES & STONE BASE, PROTECT AND STORE AS DIRECTED BY CONTRACTING OFFICER DURING WALL CONSTRUCTION. REINSTALL PILASTER BASES & STONE BASE IN AT NEW CONCRETE RETAINING WALL WITH STONE FACING AS SHOWN - REFER TO ENGINEERING DWGS.

REMOVE ORGANIC MATERIAL (PLANTS, SOIL DEBRIS, ETC.) FROM JOINT BETW. CONC. LINER & ARCH VOUSOIRS. REPOINT WITH LIME-BASED MORTAR - REFER TO SPECIFICATIONS.

RETAIN & PROTECT EXISTING SANDSTONE VOUSOIRS

RETAIN/PROTECT EXIST'G. CONC. LINER. PAINT FACE OF LINER FLAT BLACK.

RETAIN/PROTECT EXIST'G. PORTAL ARCH STONES

RETAIN EXIST'G. 48"Ø PIPE (CONCRETE)

CAREFULLY REMOVE FOUNDATION STONES TO ALLOW CONSTRUCTION OF NEW CONC. FOUND'N. FOR NEW RET. WALL - PROTECT ADJACENT PORTAL ARCH STONES AND FOUNDATION STONES.

NEW COURSED, DRY-LAID SANDSTONE RETAINING WALL - ROCK-FACE BLOCKS APPROX. 30"Wx9"Hx12"D (NOM.), TYP. BOTH SIDES OF PORTAL

REBUILD DRY-LAID STONE RETAINING WALL USING SALVAGED EXISTING BOULDERS FROM THE EAST PORTAL AREA (AND NEW LARGER STONES, AS REQ'D.) BASED ON HISTORIC PHOTO DOCUMENTATION. SUBMIT INVENTORY OF SALVAGED STONES FOR APPROVAL BY CONTRACTING OFFICER PRIOR TO CONSTRUCTION OF THIS WALL SEGMENT- SEE SHT. A-1.

RETAIN EXIST'G. VERTICAL JOINT AT EXISTING AND NEW DRY-LAID STONE WALLS

EXISTING GROUND LINE AT BASE OF WALL

APPROX. NEW GRADE - SEE LANDSCAPE DWGS.

REPAIR & STABILIZE TOP OF EXIST'G. WALL - REFER TO LANDSCAPE DWGS.

RETAIN/PROTECT EXISTING DRY-LAID STONE WALL

REPAIR EXISTING PORTION OF INFILL WALL - RESET STONES AS REQ'D. AFTER VEGETATION AND DEBRIS ARE REMOVED.

RETAIN & PROTECT SANDSTONE PILASTER BASE SET INTO DRY-LAID RET. WALL & STONE BASE

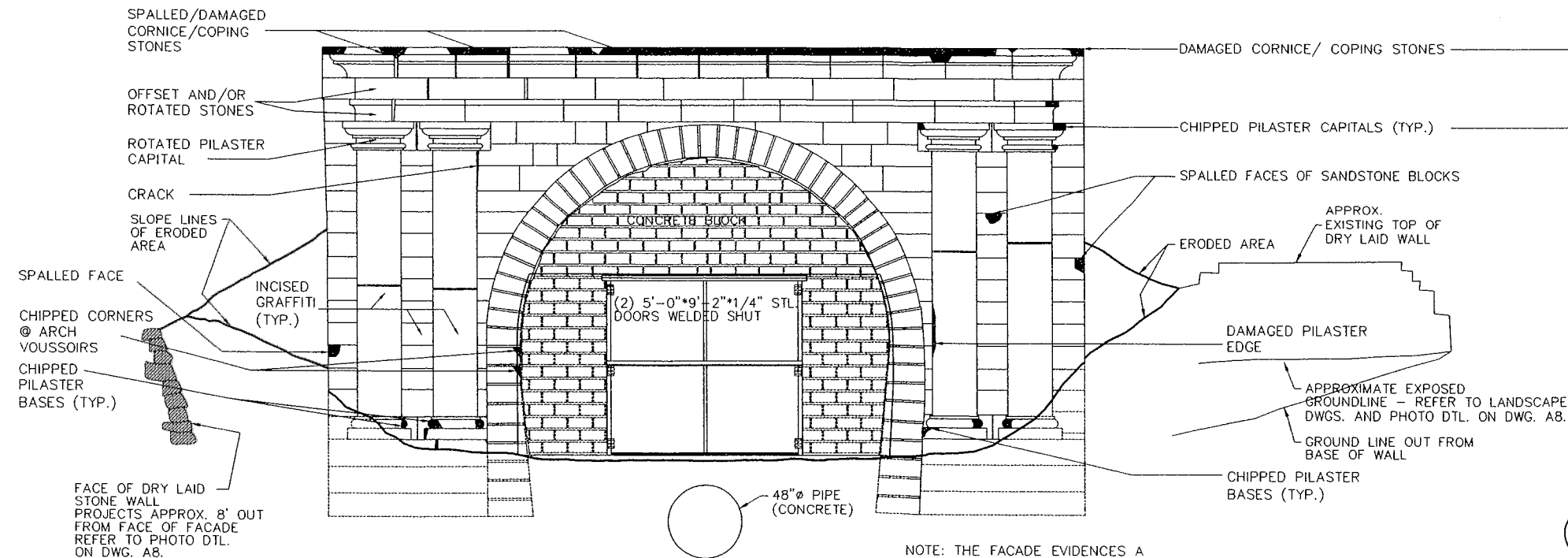
PRESUMED STONE FOUNDATIONS



SCALE OF FEET

A EAST ELEVATION

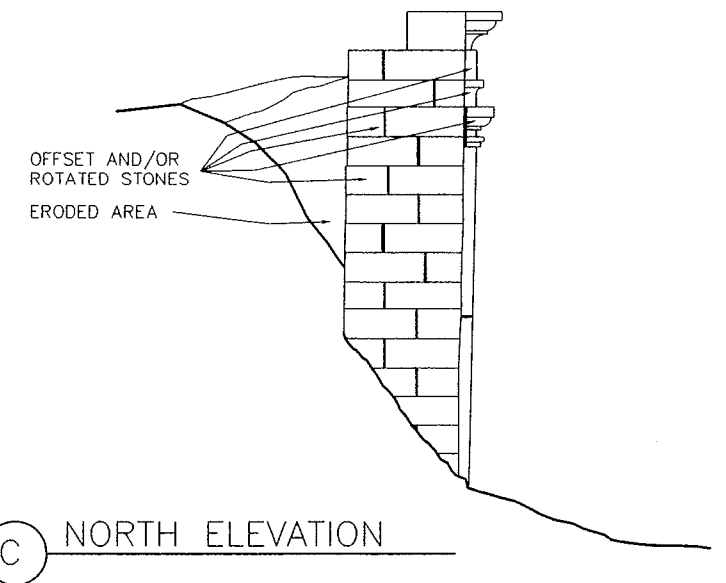
DESIGNED: JB	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN: GA/JG	A3	East Portal - Repair/Preservation	423
TECH. REVIEW: [Signature]		Staple Bend Tunnel	60,011
DATE: 7/26/99		Allegheny Portage Railroad NHS	61
		REGION: NORTHEAST COUNTY: CAMBRIA STATE: PENNSYLVANIA	OF 68



A EXISTING ELEVATION

NOTE: THE FACADE EVIDENCES A SIGNIFICANT AMOUNT OF "HISTORIC" INCISED & "MODERN" PAINTED GRAFFITI

B SOUTH ELEVATION



C NORTH ELEVATION



1 EXISTING FACADE FROM WEST
A4 N.T.S.



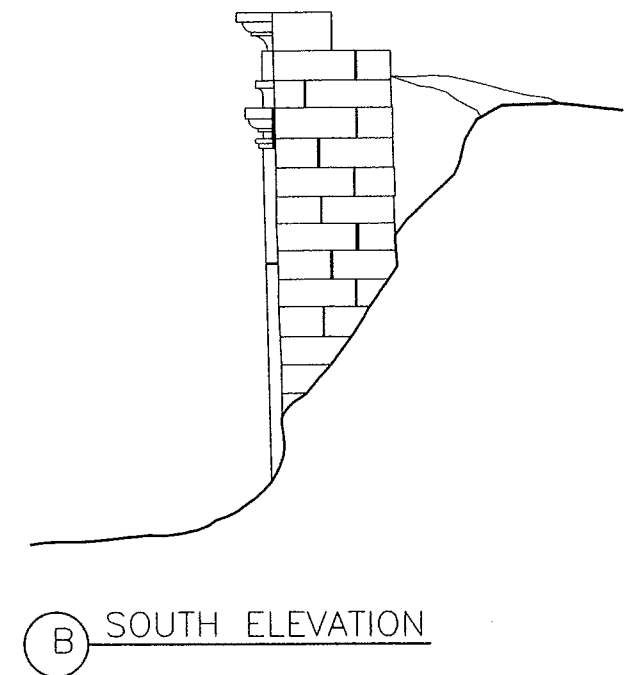
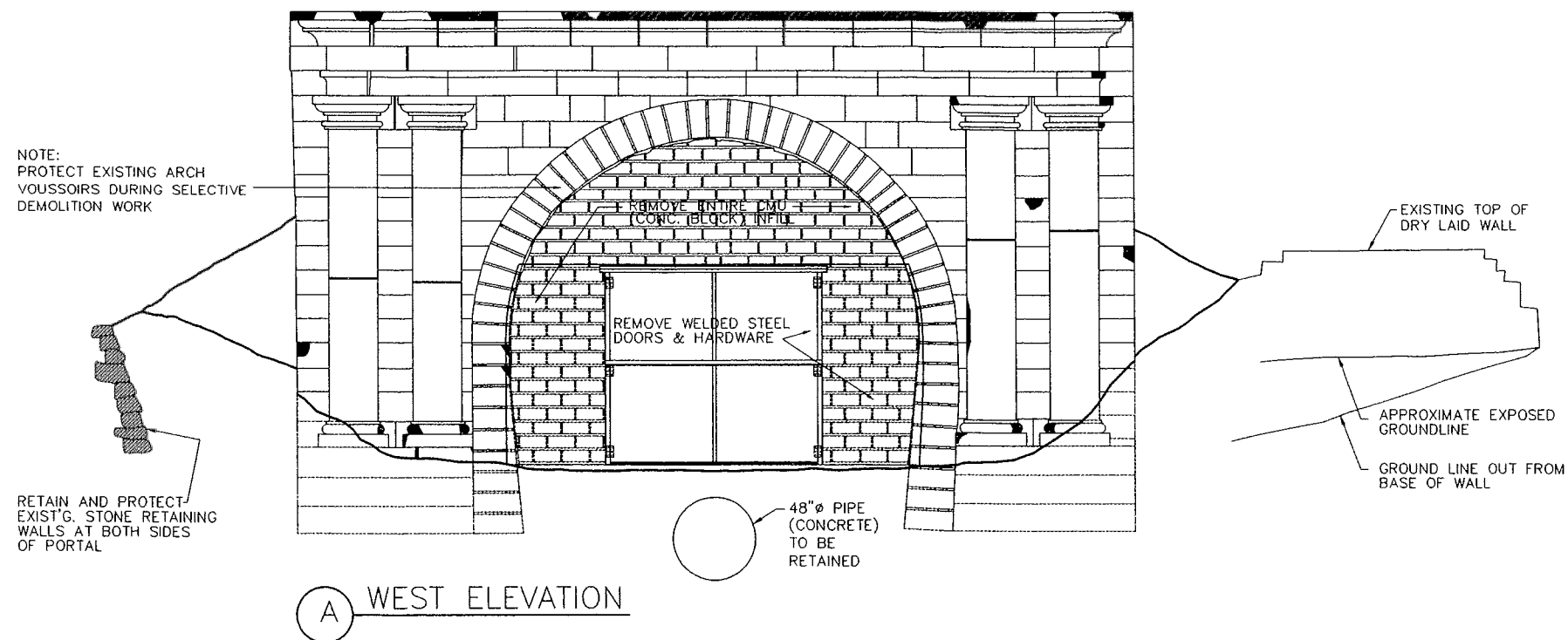
2 REAR WALL AT NORTH END
A4 N.T.S.



3 SIDE WALL AT SOUTH END
A4 N.T.S.

4 0 4 8
SCALE OF FEET

DESIGNED: JB	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN: GA/JG	A4	West Portal - Existing	423
TECH. REVIEW: <i>[Signature]</i>		Staple Bend Tunnel	60.011
DATE: 7/26/99		Allegheny Portage Railroad NHS	PKG. NO. SHEET
		REGION: NORTHEAST COUNTY: CAMBRIA STATE: PENNSYLVANIA	62 OF 68



1
A5 RETAINING WALL COMPLEX (WALLS "E1" & "E2")
AFTER TEMPORARY ARCHEOLOGICAL EXCAVATION

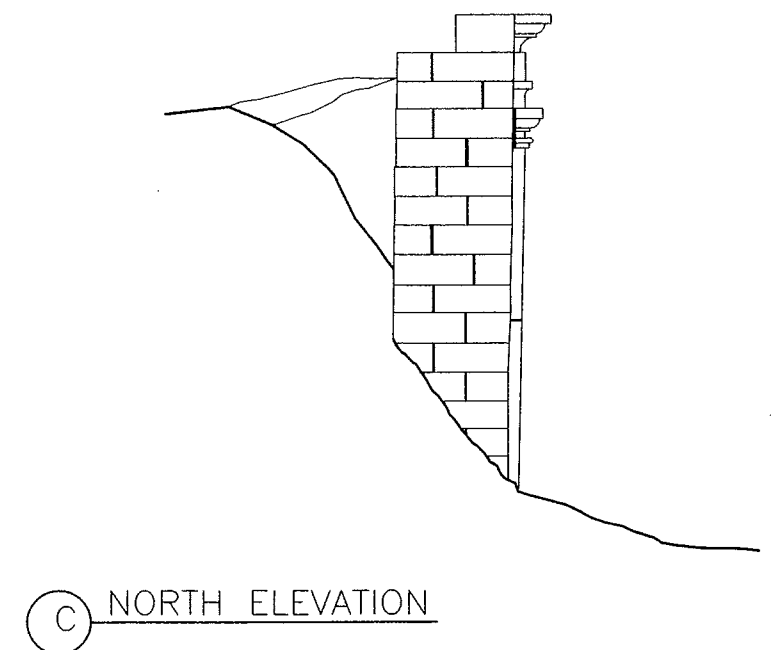


2
A5 WEST PORTAL, CA. 1920
PHOTO FROM 1991 HSR; COURTESY SMITHSONIAN INSTITUTION

NOTE:
PHOTOGRAPHS ARE NOT TO SCALE



3
A5 WEST PORTAL/RET. WALL, CA. 1920
PHOTO FROM 1991 HSR; MG 286, PENN. RR COLLECTION, PENN. STATE ARCHIVES



4 0 4 8
SCALE OF FEET

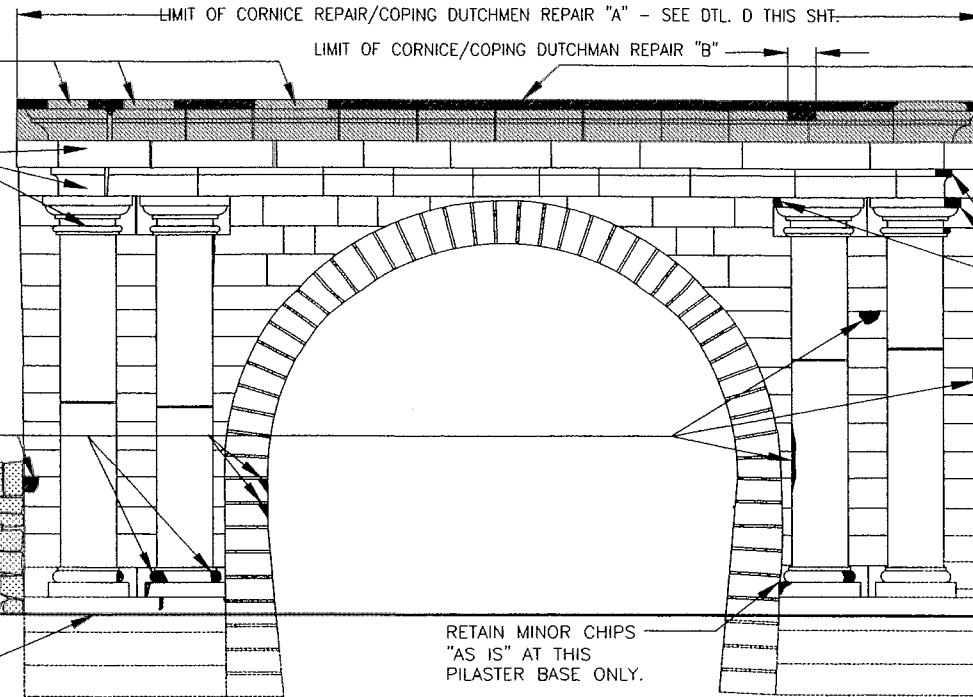
DESIGNED: JB	SUB SHEET NO. A5	TITLE OF SHEET West Portal - Selective Demolition Staple Bend Tunnel Allegheny Portage Railroad NHS	DRAWING NO. 423 60,011
DRAWN: GA/JC			PKG. NO. SHEET 63
TECH. REVIEW: <i>Classman</i>			OF 68
DATE: 7/26/99		REGION NORTHEAST	COUNTY CAMBRIA
		STATE PENNSYLVANIA	

NOTE: RETAIN & PROTECT SOUND, UNDAMAGED FASCIA SEGMENTS, TYP. ENTIRE CORNICE.

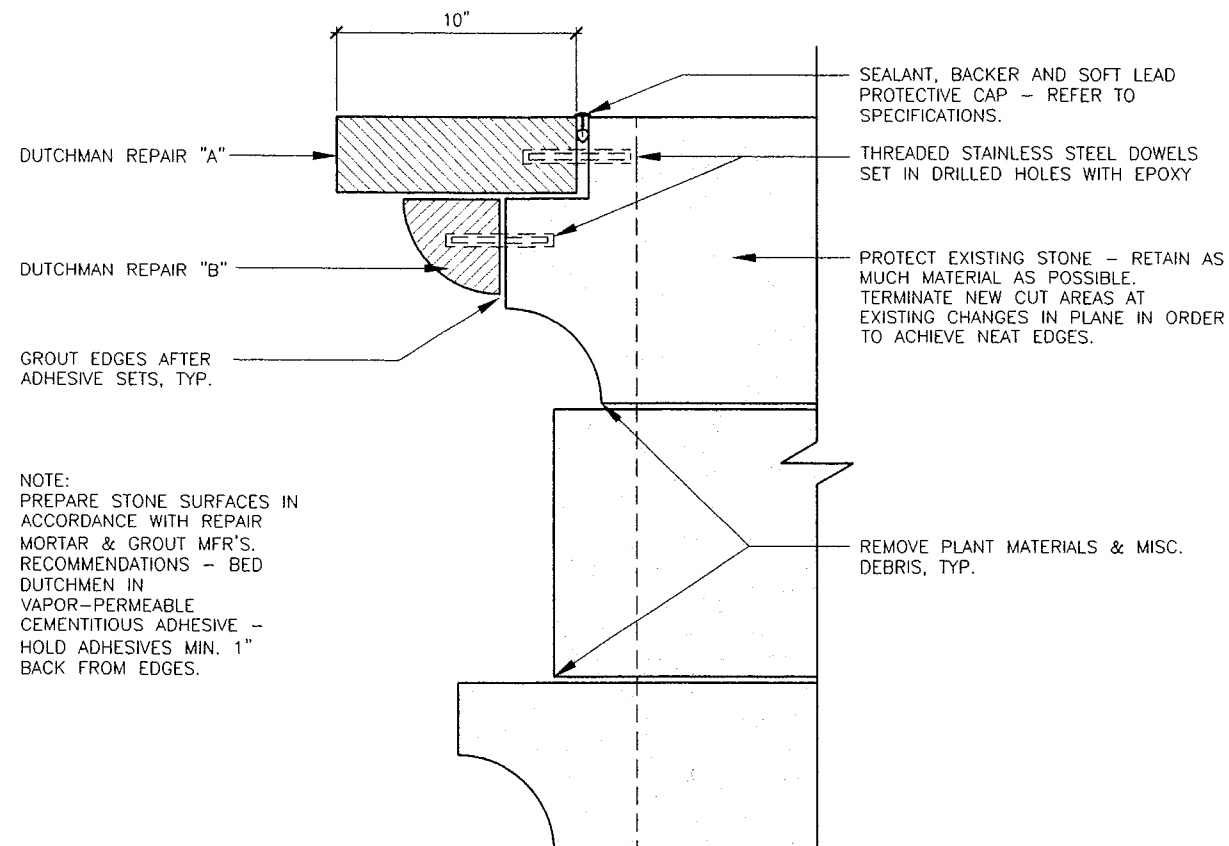
CAREFULLY RESET DISPLACED STONES. REPOINT JOINTS WITH LIME-BASED MORTAR, TYP. REFER TO SPECIFICATIONS.

CUT BACK EDGES OF SPALLED OR DAMAGED AREAS TO CREATE PATCH AREA OF REGULAR SHAPE. UNDERCUT EDGES SLIGHTLY TO CREATE MECHANICAL KEY. INSTALL APPROVED PATCHING MORTAR IN ACCORD. WITH MFR'S. DIRECTIONS AND TOOL TO MATCH SURROUNDING STONE.

APPROX. NEW GRADE -- REFER TO LANDSCAPE DWGS.



A WEST ELEVATION
SCALE A



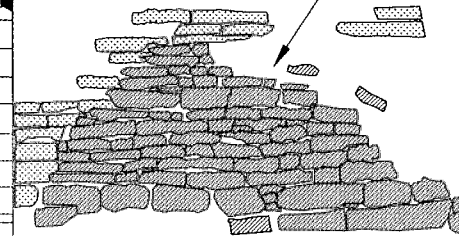
NOTE: PREPARE STONE SURFACES IN ACCORDANCE WITH REPAIR MORTAR & GROUT MFR'S. RECOMMENDATIONS - BED DUTCHMEN IN VAPOR-PERMEABLE CEMENTITIOUS ADHESIVE -- HOLD ADHESIVES MIN. 1" BACK FROM EDGES.

D DETAIL - STONE "DUTCHMAN" REPAIRS
SCALE B

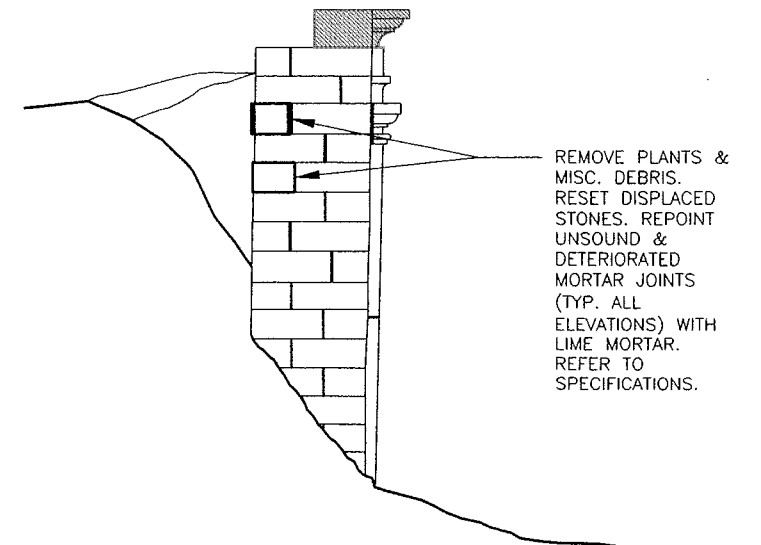
CAREFULLY REMOVE CORNICE/ COPING STONES FOR GENTLE CLEANING AND REPAIR. CUT BACK DAMAGED FASCIA AND QUARTER-ROUND (OVOLO) SEGMENTS TO SOUND STONE - MAKE SQUARE CUTS. INSTALL DOWEL ANCHORS AND MATCHING SANDSTONE "DUTCHMEN" PATCHES. REINSTALL CORNICE/COPING STONES WITH LIME-BASED MORTAR; AT TOP MORTAR JOINTS ONLY, INSTALL SEALANT, BACKER, AND SOFT LEAD PROTECTIVE CAP - REFER TO SPEC'NS.

REINSTATE MINOR CHIPS "AS IS" AT THESE PILASTER CAPITALS

NOTE: REFER TO DWG. A8 FOR INFO ON PRESERVATION & CONSTRUCTION OF STONE RET. WALLS (BOTH SIDES).



B SOUTH ELEVATION
SCALE A

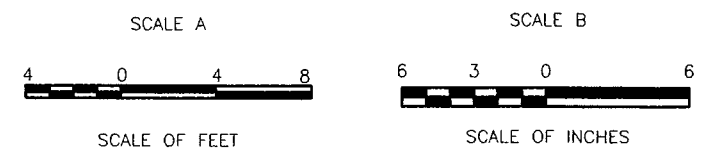


C NORTH ELEVATION
SCALE A

NOTE: AFTER THOROUGH TESTING, CLEAN MASONRY SURFACES USING APPROVED MATERIALS AND TECHNIQUES TO REMOVE OR LIGHTEN STAINS. APPLY APPROVED ARCHITECTURAL BIOCIDES TO REMOVE BIOLOGICAL GROWTH, INCLUDING ALGAE, LICHENS & MOSSES. THOROUGHLY RINSE ALL SURFACES TREATED WITH CLEANERS & STAIN REMOVERS, IN ACCORDANCE WITH MFR'S. INSTRUCTIONS, TYP. ALL ELEVATIONS.

KEY	
	DAMAGE TO EXISTING DRESSED STONES AT PORTAL
	STONES TO BE TEMPORARILY REMOVED FOR CLEANING AND "DUTCHMAN" REPAIR

NOTE: REFER TO DWG. AT PHOTO DETAILS FOR ADDITIONAL INFORMATION ON REPAIR & PRESERVATION OF WEST PORTAL.



DESIGNED: JB	SUB SHEET NO. A6	TITLE OF SHEET West Portal - Repair/Preservation Staple Bend Tunnel Allegheny Portage Railroad NHS	DRAWING NO. 423 60,011
DRAWN: GA/JG		REGION NORTHEAST	COUNTY CAMBRIA
TECH. REVIEW: <i>[Signature]</i>		STATE PENNSYLVANIA	PKG. NO. SHEET 64 OF 68
DATE: 7/26/99			



3
A7

7
A7

8
A7

9
A7

12
A7

SIM

1
A7
EXISTING WEST PORTAL
NORTH SIDE



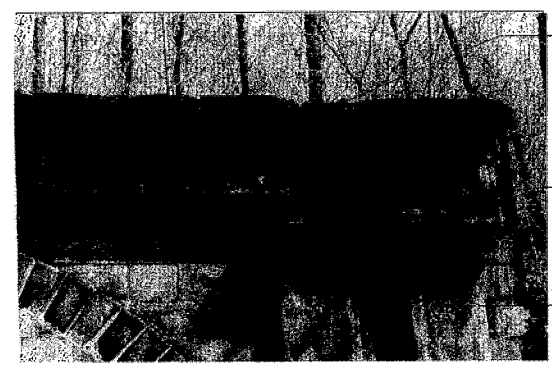
NOTE EXISTING GAPS; RESET PILASTER CAPITALS AGAINST FACADE & REPOINT MORTAR JOINTS - REFER TO SPECIFICATIONS.

2
A7
DETAIL OF PILASTER AND CORNICE
WEST PORTAL



CAREFULLY RESET DISPLACED STONES. REPOINT MORTAR JOINTS WITH APPROVED LIME-BASED MORTAR(S). REFER TO SPECIFICATIONS.

3
A7
EXISTING PILASTER CAPITALS NORTH OF ARCH
WEST PORTAL



CAREFULLY REMOVE CORNICE/COPING STONES FOR GENTLE CLEANING & REPAIR. CUT BACK DAMAGED FASCIA & QUARTER-ROUND (OVOLO) SEGMENTS TO SOUND STONE - MAKE SQUARE CUTS. INSTALL DOWEL ANCHORS & APPROVED SANDSTONE "DUTCHMEN" PATCHES. REINSTALL CORNICE/COPING STONES IN ORIG. LOC'NS. SEE DWGS. & SPEC'NS.

IN SITU, CUT BACK DAMAGED MOLDING TO SOUND, UNDAUNAGED STONE. INSTALL APPROVED PATCHING MORTAR IN ACCORD. WITH MFR'S. DIRECTIONS. TOOL SURFACE TO MATCH EXIST'G. UNIT. SEE SPEC'NS.

REMOVE PLANT MATERIALS, SOIL & MISC. DEBRIS FROM JOINTS, CREVICES & HORIZ. SURFACES. APPLY APPROVED ARCHITECTURAL BIOCIDES IN ACCORD. WITH MFR'S. DIRECTIONS, TYP. ENTIRE PORTAL.

4
A7
EXISTING CORNICE, SOUTH END
WEST PORTAL



REMOVE TEMPORARY DRAINAGE FABRIC.

REPAIR EXISTING RUBBLE MASONRY BACKUP AT HEADWALL (BOTH SIDES, TYP.) - REPLACE MISSING STONES AS REQ'D. AND REPOINT 100%.

REMOVE PLANTS & MISC. DEBRIS. RESET DISPLACED STONES. REPOINT UNSOUND & DETERIORATED MORTAR JOINTS (TYP. ALL ELEVATIONS) WITH LIME-BASED MORTAR. REFER TO SPECIFICATIONS.

5
A7
REAR OF PORTAL HEADWALL
WEST PORTAL



GENTLY CLEAN STONE, REMOVING EFFLORESCENCE AND/OR BIOLOGICAL STAINING USING APPROVED METHODS & MATERIALS, TYP. TREAT WITH APPROVED ARCHITECTURAL BIOCIDES, IN ACCORDANCE WITH MFR'S. INSTRUCTIONS, TYP. ENTIRE PORTAL.

PROTECT HISTORIC TOOLING ON ALL DRESSED STONES, TYP. BOTH PORTALS.

6
A7
DETAIL OF FACING STONES, PILASTERS AND
PILASTER CAPITALS, WEST PORTAL



REMOVE PLANT MATERIALS, ALGAE, LICHENS, ETC. AND TREAT WITH APPROVED ARCHITECTURAL BIOCIDES. REPOINT UNSOUND OR DETERIORATED MORTAR JOINTS, TYP. ALL ELEVATIONS - REFER TO SPECIFICATIONS.

NOTE EXFOLIATION OF TOOLED SURFACE OF SANDSTONE.

7
A7
DETAIL OF DETERIORATED FACING STONES AT
SPANDREL & ARCH VOUSSOIRS, WEST PORTAL

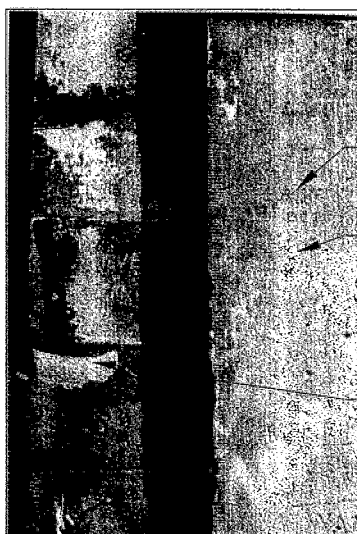


REMOVE PLANT MATERIALS & SOIL DEBRIS, TYP.

RETAIN AND PROTECT EXISTING TOOLING AT MARGINS AND STONE FACES, TYP. ALL ELEVATIONS AT BOTH PORTALS.

RAKE OUT LOOSE OR DETERIORATED MORTAR. REPOINT WITH LIME-BASED MORTAR - REFER TO SPECIFICATIONS.

8
A7
DETAIL OF ARCH VOUSSOIRS &
SPANDREL STONES, WEST PORTAL



RETAIN AND PROTECT HISTORIC (CARVED) GRAFFITI, TYP.

CAREFULLY REMOVE PAINTED GRAFFITI WITH MATERIALS & TECHNIQUES APPROVED BY CONTRACTING OFFICER, BASED ON PREVIOUS APPROVAL OF CLEANING SAMPLES, TYP. FOR BOTH PORTALS.

REPAIR SPALLED STONE WITH APPROVED PATCHING MORTAR. TOOL SURFACE TO MATCH ADJACENT MARGINS & TOOLING - SEE SPECIFICATIONS.

9
A7
DETAIL OF FACING STONES &
PILASTER, WEST PORTAL



EXISTING CORNICE/COPING STONES TO BE REMOVED, REPAIRED AND PATCHED, THEN REINSTALLED.

REMOVE ALGAE, MOSS, LICHENS & MISC. BIOLOGICAL GROWTH AND STAINING WITH APPROVED ARCHITECTURAL BIOCIDES, TYP.

RACKING "CRACK" CAUSED BY DISPLACEMENT OF UPPER HEADWALL SECTION - RESET IF POSSIBLE; OTHERWISE, REPOINT JOINTS WITH SOFT, LIME-BASED MORTAR MATCHING HISTORIC MORTAR COLOR & TEXTURE. STRIKE JOINT AT FACE OF INTACT STONE FACE.

REMOVE EXIST'G. TEMPORARY DRAINAGE SYSTEM, INCLUDING PIPING & FABRIC.

REMOVE DEBRIS & PLANT MATERIAL - RETAIN & PROTECT EXISTING STONE RET. WALL SEGMENTS (TYP. BOTH SIDES OF PORTAL).

10
A7
EXISTING SOUTH ELEVATION
WEST PORTAL



PROTECT HISTORIC TOOLING OF STONE FACES AND MARGINS, TYP.

REPOINT RACKING CRACK WITH SOFT, LIME-BASED MORTAR MATCHING HISTORIC MORTAR COLOR & TEXTURE. STRIKE JOINTS AT INTACT STONE FACE.

REPAIR DAMAGED CORNER WITH APPROVED PATCHING MORTAR - REFER TO SPECIFICATIONS.

11
A7
DETAIL OF EXISTING SOUTH ELEVATION
WEST PORTAL



PREPARE CHIPPED STONE TO RECEIVE PATCHING MORTAR IN APPROVED COLOR, TEXTURE & COMPOSITION. FABRICATE PATCH IN ACCORDANCE WITH MFR'S. DIRECTIONS AND TOOL PATCH TO MATCH SURROUNDING STONE, TYP.

REMOVE PLANT MATERIALS, LICHENS, SOIL DEBRIS, ETC. USING APPROVED MATERIALS.

RETAIN AND PROTECT EXISTING CARVED GRAFFITI, TYP. BOTH PORTALS.

12
A7
DETAIL OF PILASTER BASE (NORTH SIDE)
WEST PORTAL

NO SCALE

DESIGNED: JB	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN: JG	A7	West Portal Repair/Preservation - Photo Details	423
TECH. REVIEW: JAS		Staple Bend Tunnel	60,011
DATE: 7/26/99		Allegheny Portage Railroad NHS	PKG. NO. 65
		REGION: NORTHEAST	SHEET OF 68
		COUNTY: CAMBRIA	
		STATE: PENNSYLVANIA	

ERECT NEW COURSED, DRY-LAID SANDSTONE RET. WALL ABOVE EXISTING WALL "W1". MATCH COLOR, TEXTURE, TOOLING & DIMENSIONS OF EXISTING "W1" STONES. INTEGRATE NEW WALL INTO SLOPE, INCLUDING EXISTING LEDGE AS APPLICABLE. BATTER WALL - SEE ENGINEERING DWGS.

RETAIN & PROTECT EXISTING HISTORIC RETAINING WALL "W2"

RETAIN & PROTECT EXISTING HISTORIC RETAINING WALL "W1". ERECT NEW DRY-LAID STONE WALL ABOVE. SEE PHOTO DTL. 1/A8 BELOW.

NOTE: REFER TO WEST PORTAL REPAIR/PRESERVATION DWG. FOR INFO ON REPAIR & PRESERVATION OF EXISTING PORTAL

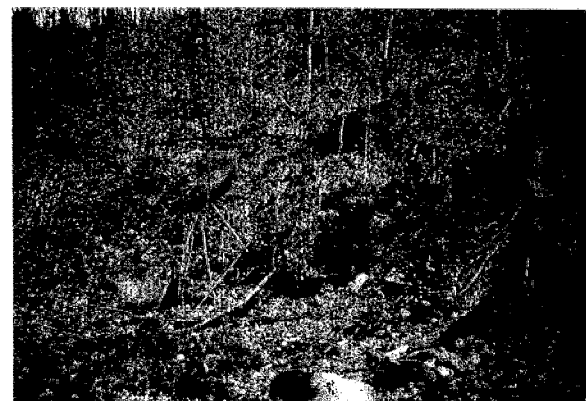
ERECT NEW DRY-LAID, COURSED SANDSTONE RET. WALL ABOVE EXISTING WALL "E1". MATCH COLOR, TEXTURE, TOOLING & DIMENSIONS OF EXISTING "E1" STONES. INSTALL STEPPED CONFIG. AS SHOWN. BATTER WALL - SEE ENGINEERING DWGS.

RETAIN & PROTECT EXISTING HISTORIC RETAINING WALL "E2"

RETAIN & PROTECT EXISTING HISTORIC RETAINING WALL "E1". ERECT NEW DRY-LAID STONE WALL ABOVE. SEE PHOTO DTL. 2/A8 BELOW.

APPROX. NEW GRADE - REFER TO LANDSCAPE DWGS.

A WEST ELEVATION
SCALE A



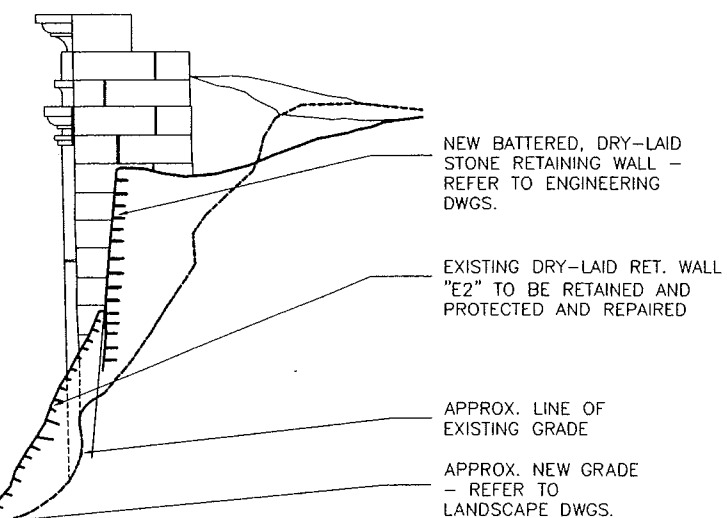
1 EXIST'G. RET. WALL SEGMENTS "W1" & "W2"
A8 NORTH SIDE OF WEST PORTAL N.T.S.



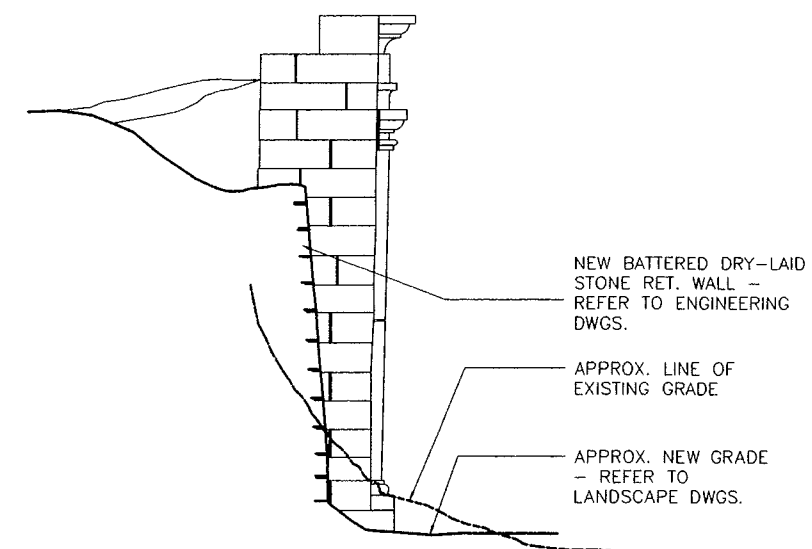
2 EXIST'G. RET. WALL SEGMENTS "E1" & "E2"
A8 SOUTH SIDE OF WEST PORTAL N.T.S.

NOTE: THIS DRAWING WAS PREPARED USING CURRENT AND HISTORIC PHOTOGRAPHS AND SHALL BE USED FOR STONE REPRESENTATION. DO NOT SCALE STONES.

KEY	
	EXTANT PORTIONS OF STONE RET. WALLS "W2" & "E2"
	EXTANT PORTIONS OF STONE RET. WALLS "W1" & "E1"
	NEW STONE RET. WALLS



B SOUTH ELEVATION/SECTION
SCALE A



C NORTH ELEVATION/SECTION
SCALE A

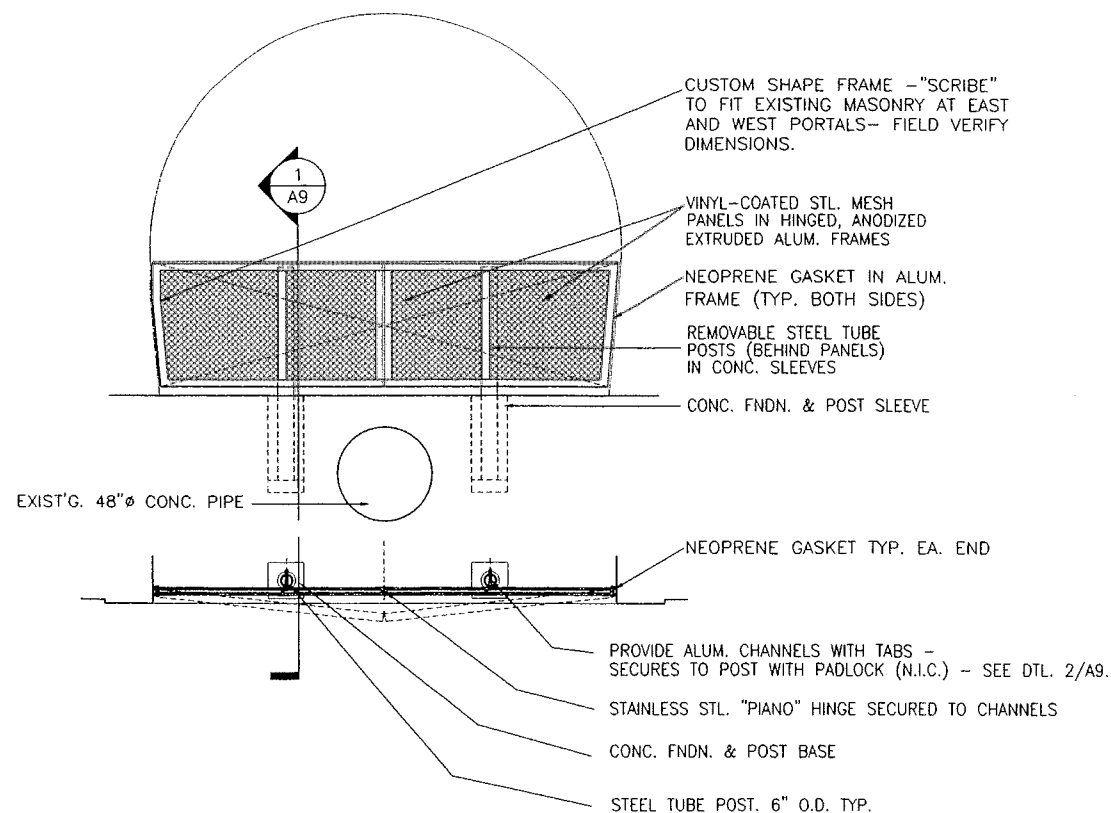
SCALE A



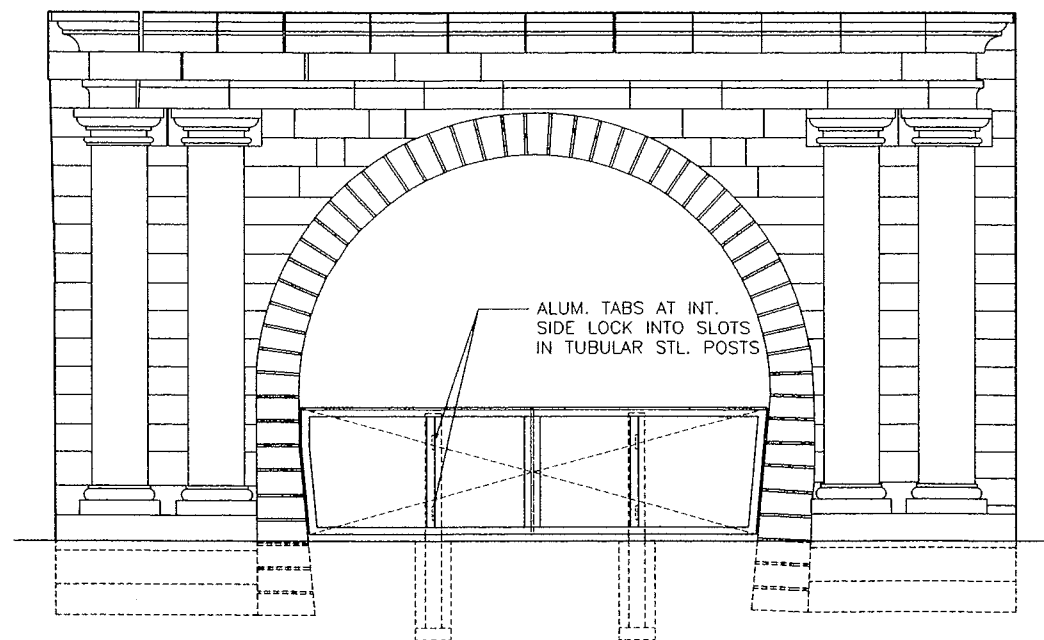
SCALE OF FEET

DESIGNED: JB	SUB SHEET NO. A8	TITLE OF SHEET West Portal - Retaining Walls Staple Bend Tunnel Allegheny Portage Railroad NHS	DRAWING NO. 423 60,011
DRAWN: GA/JG			PKG. NO. SHEET 66
TECH. REVIEW: <i>[Signature]</i>			OF 68
DATE: 7/26/99		REGION: NORTHEAST COUNTY: CAMBRIA STATE: PENNSYLVANIA	

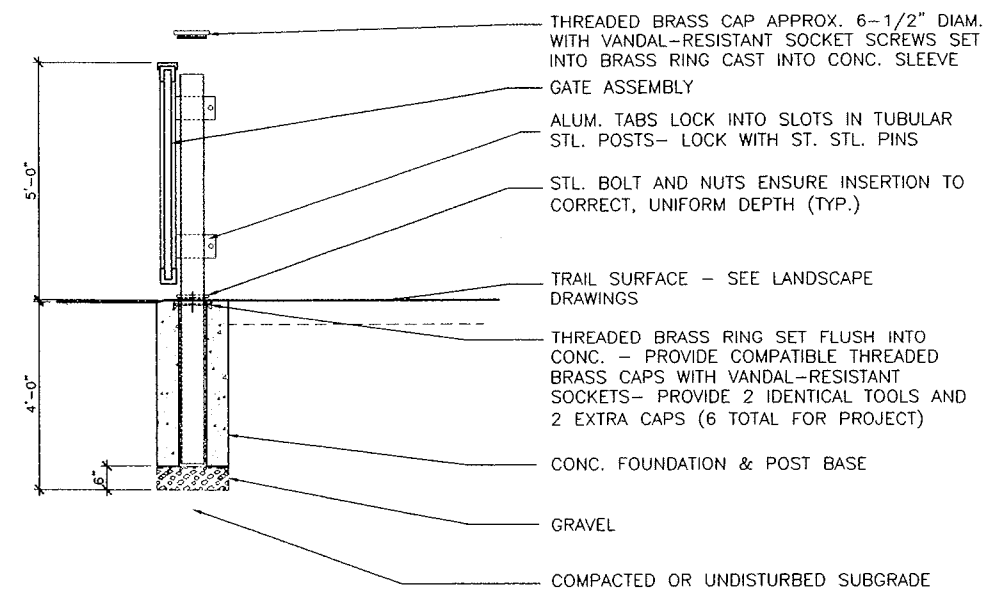
NOTE:
GATES (AT EAST & WEST
PORTALS) FOLD FOR SEASONAL
TRANSPORTATION AND STORAGE



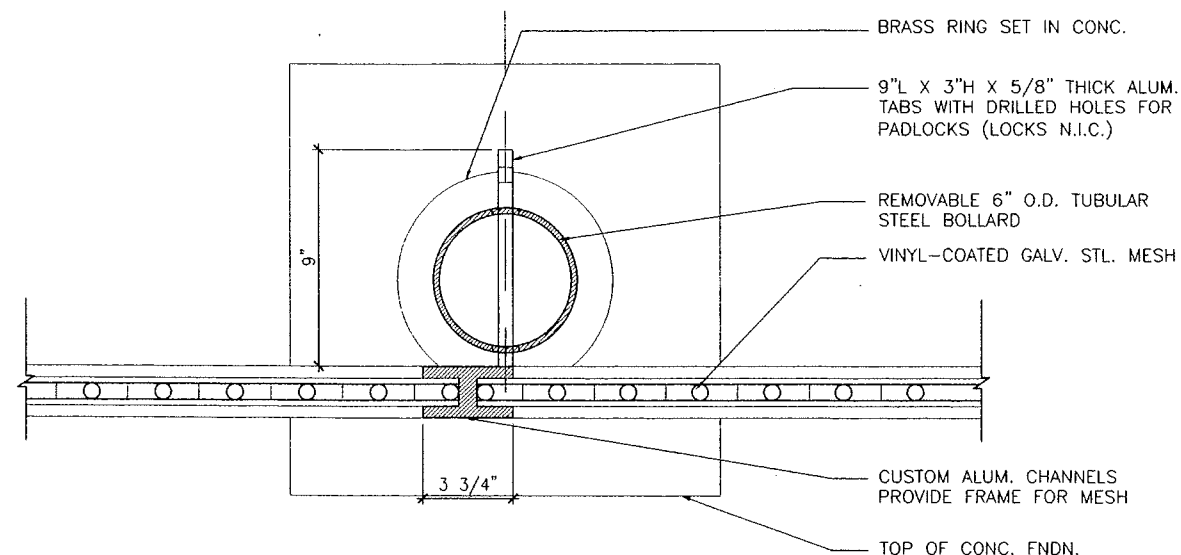
A PARTIAL ELEVATION/PLAN GATE SYSTEM
SCALE C



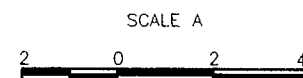
B WEST ELEVATION GATE SYSTEM
SCALE C



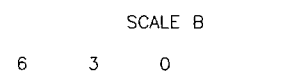
1 GATE SYSTEM SECTION
(TYPICAL @ EAST & WEST PORTALS)
SCALE A



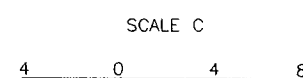
2 POST CONNECTION DETAIL
SCALE B



SCALE OF FEET



SCALE OF INCHES



SCALE OF FEET

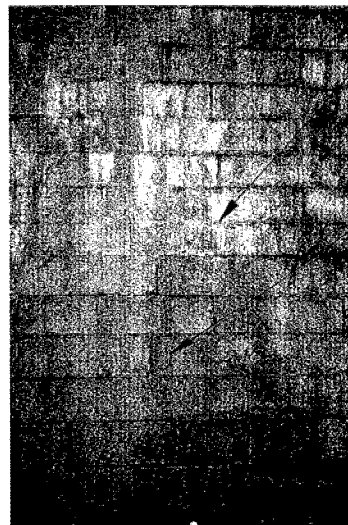
NOTE: CLOSURE SYSTEM
SHALL BE SIMILAR AT EAST
PORTAL. DETERMINE AND
VERIFY DIMENSIONS IN FIELD.

DESIGNED: JB	SUB SHEET NO. A9	TITLE OF SHEET Tunnel Portal Gates Staple Bend Tunnel Allegheny Portage Railroad NHS	DRAWING NO. 423 60,011
DRAWN: GA/JG	REVIEW: [Signature]	REGION NORTHEAST	COUNTY CAMBRIA
DATE: 7/26/99		STATE PENNSYLVANIA	PKG. NO. SHEET 67 OF 68



WHEN REPOINTING MASONRY AT TUNNEL WALLS AND VAULTING, STRIKE FACE OF MORTAR JOINTS BACK FROM FACE OF STONES, IN ORDER TO RETAIN HISTORIC APPEARANCE OF MASONRY AND TO PREVENT "FEATHEREDGING" & SPALLING, TYP. TOOL JOINTS TO MATCH ORIGINAL JOINTS AND TEXTURE; DO NOT LEAVE JOINTS EXCESSIVELY SMOOTH.

1
A10
DETAIL OF EXISTING WALL MASONRY
INTERIOR OF TUNNEL



NOTE: REFER TO SPECIFICATIONS SECTION 04510 - HISTORIC MASONRY TUNNEL LINER RESTORATION FOR INFORMATION ABOUT MASONRY REPAIR, INJECTION GROUTING AND REPOINTING, TYP.

WHERE ASHLAR BLOCKS ARE CRACKED BUT OTHERWISE SOUND AND STRUCTURALLY STABLE, REPAIR WITH INJECTION GROUTS; REFER TO ENGINEERING DWGS. AND SPECIFICATIONS.

2
A10
DETAIL OF TYPICAL MASONRY
WALLS OF TUNNEL



REPLACE MISSING STONES AT CROWN OF VAULT WITH SALVAGED OR NEW SANDSTONE BLOCKS TO MATCH SURROUNDING MASONRY, TYP. REFER TO ENGINEERING DRAWINGS AND TO SPECIFICATIONS FOR STABILIZATION AND REPOINTING INFORMATION.

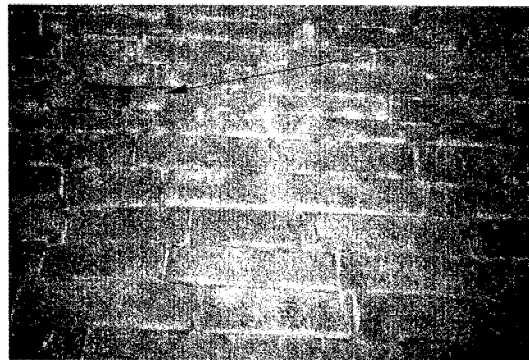
NOTE: REMOVE ALL ROOTS AND TENDRILS FROM JOINTS PRIOR TO REPAIR AND REPOINTING, TYP.

3
A10
DETAIL OF NARROW "KEYSTONE" BLOCKS
AT CROWN OF VAULT



REMOVE CALCIUM CARBONATE DEPOSITS FROM INTERIOR AND EXTERIOR FACE OF CONCRETE LINER, TYP.

4
A10
DETAIL OF CONC. LINER
EAST PORTAL



NOTE: NARROWER STONES EMPLOYED AT CROWN. STABILIZE RUBBLE MASONRY ABOVE AND REPLACE MISSING STONES WITH SALVAGED OR NEW SANDSTONE ASHLAR BLOCKS MATCHING SURROUNDING MASONRY, TYP. REFER TO ENGINEERING DRAWINGS AND TO SPECIFICATIONS.

5
A10
DETAIL OF TYPICAL MASONRY VAULTING
INTERIOR OF TUNNEL

NO SCALE

DESIGNED: JB	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
DRAWN: JG	A10	Tunnel Stabilization - Photo Details Staple Bend Tunnel Allegheny Portage Railroad NHS	423
TECH. REVIEW: <i>[Signature]</i>			60,011
DATE: 7/26/99			68
REGION: NORTHEAST	COUNTY: CAMBRIA	STATE: PENNSYLVANIA	OF 68