GOVERNING SPECIFICATIONS

The governing provisions applicable to this project are the West Virginia Department of Highways Standard Specifications, Roads and Bridges, adopted 2000, as amended by the current* Supplemental Specifications of the West Virginia Department of Highways, the contract plans and the contract documents

*Current Supplemental Specifications shall be the Specifications in effect on the first day of project advertisement for letting to contract.

DESIGN-NEW STRUCTURES (1)

This bridge is designed for an HS-25 live load capacity, as well as for a 25 p.s.f. wearing surface. Design Unit Str

Reinforcing Steel-fg= 20,000 p.s.i. Structural Steel (A36)-f₈= 20,000 p.s.i. Structural Steel (A588)-f₈= 27,000 p.s.i. Class B Concrete f = 3,000 p.s.i. Class B Concrete-f_C= 1,200 p.s.i. Class B Concrete-n = 10

DESIGN-REHABILITAION AND STRENGTHENING (2)

This bridge is strengthened for a live load capacity of (A) Strengthening steel design stressctural steel shall be ASTM A36 unless other f_s=B p.s.i. All str

CONCRETE (CAST-IN-PLACE) (3)

Concrete shall be cured in accordance with Subsection 601.12 of the Standard Specifications, if used, polyethylene coated-burlap shall conform to the requirements of Subsection 707.5 of the Standard Specifications

Specifications.

The minimum covering, measured from the surface of the concrete to the face of any reinforcing steel bar, shall be 3 inches of the concrete is in contact with the ground surface and 2 inches otherwise, except as

SUBSTRUCTURE CONCRETE (CAST-IN-PLACE) (4)

Althonorete in the substructure shall be Class B, air entrained.

Chamfer all exposed edges of the substructure concrete 1 inch, except for the abutment out bs, which

shall be chamfered 34-loch.

The exposed surface of the substructure shall be Class 1, Ordinary Surface-Finish, in accordance with Subsection 601.11.1 of the Standard Specifications, except for the abutment curbs and wingwalls, which shall be Class 2, Rubbed Finish, in accordance with Subsection 601.11.2 gifthe Standard Specifications.

The abutment curtain wall shall not be ported until after the superstructure is in piece.

For footings embedded in rock, the top of the swafment footing shall be maintained at the elevations shown on the plans. The footings shall be carried a minimum, of 1 soot into sold rock and poured against the face of the rock without forms, except where the rock exception—in not the entire depth of the footing.

the face of the rock without forms, except where the rock exception—a not the entire depth of the foot The abutment bearing seat, upon which the shoes or other bearing devices will be set, shall be finished to true elevations as from on the plans.

Fill anchor bolt belies with non-shrink grout after anchor bolts are set. The non-shrink grout shall consist of 1 part regular portland cement, 1 part silica sand and 1 part non-shrink admixture. The cost of the non-shrink grout shall be included in Pay Item 601–2, "Class B Concrete".

SUPERSTRUCTURE CONCRETE (CAST-IN-PLACE)(5)

All concrete in the superstructure shall be Class K, air entrained. All concrete for decks, curbs,

parapets or medians shell be Class K, air entrained, tontaining 7 begs of cement per cubic yard.

Chemfer all exposed edges of the curbs parapets or medians 34. The exposed surfaces of the curbs shell be Class 2, Rubbed Finish, in accordance with Subsection 601.11.2 of the Standard Specifications. Bridge decks shall be finished in accordance with Subsection 601.11.4 of the Standard Spesifications.

REINFORCING STEEL BARS (6)

All reinforcing steel bars shall be intermediate grade billet steel. Grade 40 or 60 in accordance with Subsection 709.1 of the Standard Specifications . The requirements of Section 602 of the Standard

The minimum spites length or dowel bar embedment shall be 30 bar diameters forcement under the shoes or other bearing device shall be so placed so as to avoid interference

with drilling of anchor boit holes.

The inspector shall select random bars from the retinforcing bar list for test bars. He shall cut 5'-0' from the bars chosen, rebars have been detailed to allow a 30 bar diameter splice at each end. One robar for each 10 tons or fraction thereof of each size has been included in the bill of steel and will be paid for under Item 602-1. In the eyear all bars of any one size are not sent in one shipment, the supplier shall, at his expense, furnish one bar for each 10 tons or fraction thereof, for each extra shipment

In the event that any shipment of material has been pre-tested and has been identified in accordance with Materials Control, Soil and Testing Division's Informational Memorandum Number 17(1M-17):the shipment may be accepted without further testing subject to record sampling procedures.

STRUCTURE EXCAVATION (FOOTINGS FOUNDED IN ROCK) (7)

Structure excavation quantities through earth fill shall be measured from the top of rock to the original ground line, 18 inches outside the neat lines of the footings. No excavation will be classified as wet or rock excevation. Rock shelf be excevated and paid for as structure excevation to the nest lines of the footings only. Book shall be excevated until a level surface is provided with the entire tooting testing on

STEEL TOUGHNESS REQUIREMENT (*)

The provisions of the AASHTO Specifications in accordance with Article 615.4.9 of the Standard Specifications shall apply to those items of structural steel as shown and/or designated by these plans.

PAINTING (NEW STRUCTURES) (9)

Shap and field painting shall be in accordance with Section 615 of the current Standard Spec and/or Special Provision OPTION: (9A)

Paint system shall consist of one shop prime cost, one field prime cost and two field finish costs. Shop Prime Coats One complete coat of vinyl shop primer conforming to the requirements of tion 711.7 of the Standard Specifications. This will replace the shop paint specified in Subsection 615.6.3.

Ory film thickness shall be a trainimum of two (2) mile.

Field Prime Cost: One complete cost of linseedalkyd primer conforming to the requirements of Subsection 711.8 of the Standard Specifications. Dry film thickness shall be a minimum of two (2) mile.

First Finish Cost: One complete pigmented finish cost conforming to the requirements of Subsection 711.10 of the Standard Specifications. The color shall be in accordance with Federal Standard 595,

711.10 or the Standard Specincations. The color shall be \$\mathbb{U}\$ in accordance with Federal Standard 595, number \$\mathbb{E}\$. Dry film thickness shall be a minimum of two (2) mils.

Too Finlsh Coat: One complete pigmented finish coat-footforming to the requirements of Subsection 711.11 of the Standard Specifications. The color shall be \$\mathbb{D}\$ in accordance with Federal Standard 595, number \$\mathbb{E}\$. Dry film thickness shall be a minimum of two (2) mills.

OPTION: (9B)

Paint system shall consist of shoo prime cost, intermediate field foocoat and finish topcoat. Field painting raint system shall consist of stop prime cost, intermediate lead to glocal and initial sopcoat, red p shall also include touch—up and repeir of \$fop paint. Paint system, shall be the inorganic zinc rich system meeting the requirements of Section 34.20 of the Standard Specifications.

Shop Prime Cost: Shall conform to the requirements of Subsection 711.20.2 of the Standard Specifications. Dry film thickness shall be minimum three (3) mills.

Intermediate Field Coat: Shall conform to the requirements of Subsection 711.20.3 of the Standard

Topcoat: Shall conform to the requirements of Subsection 711.20.4 of the Standard Specifications. The color shall be fin accordance with Federal Standard 595, number (F). Dry film thickness of the total paint system shall be a minimum of seven (7) mils.

Paint system shall consist of application of shop prime cost and field touch-up and repa of shop cost. Paint system shall be the inorganic zinc rich primer meeting the requirements of Subsection 71.20.2 of the Standard Specifications. Dry film thickness shall be a minimum three (3) mils.

\cleaning and painting (existing structures) 🕟

Rield cleaning and painting shall be in accordance with either OPTION (10A) or (10B) and shall also conform to all applicable requirements of Section 620 of the current Standard Specifications and/or Special Provisions. When it is determined that the structure contains an elazardous existing point system then option (100) shall also apply.

OPTION: (NA)

Cleaning: The portions of the structure listed in the special notes and quantity sheet, which is tely O per cent, shall be cleaned in accordance with Subsection 620.6.1 of the Standard

The remaining portions of the structure not specified, shall be cleaned in ac Subsection 620.6.2. It is not intended that sound, adherent old paint be removed unless it is excessively

Attention is called to the requirements of paragraph 2 of Section 620.6 which requires

Attention is called to the equirements of paragraph 2 of Section 620.6 which requires that edges of paint be properly feathered to produce a smooth apperance. In the event that there is a difference of opinion as to which dress must be sandblasted or hand cleaned or to the extent of surface cleahing or surface preparation, the decision of the Engineer shall be final.

Spot Painting: All steel surfaces cleahed to bare metal shall/receive one coet of linseed/alykd primer conforming to the requirements of Section X1.8 of the Standayd Specifications. This coet shall be tinted with a tinting agent, type as recommended by the paint manufacturer and approved by the Engineer.

Prime Cost: One complete coat of linseed/alkyd primer shall be applied to the entrire structure upon completion of the spot painting. The primer shall perform to the requirements of Section 71.8 of the Standard Specifications. Dry film thickness shall be a priningment of two (2) mils.

Intermediate Field Cost: Upon completion of Application of the prime coat, the entire structure shall receive a minimum of one complete color underget conforming to the requirements of Section 711.10 of the Standard Specifications. Dry film thickness shalf be a minimum two (2) mils. The color shall be

in accordance with Federal Standard 595, number 0.

accordance with Federal Standard 595, number (E).

Top Cost-Picimented Finish Cost: Upon completion of application of the intermediate cost, the entire structure shall receive a minimum of one complete pigmented finish cost conforming to the requirements of Section 711.11 of the Standard Specifications. Dry film thickness shall be a minimum two (2) mills. The color shall be (F) in accordance with Federal Standard 595, number (S).

OPTION: (10B)

Cleaning: All surfaces to be painted shall be cleaned and prepared in accordance with Section 620.5 of the Standard Specifications to a "white metal" or "near white metal" condition. The paint system shall be as follows:

Field Prime Coat: All bare surfaces shall be primed with an organic zinc cich primer conforming to the requirements of SPC Specification Number 20, Type 2. Dry film thickness of the primer shall he a minimum of four (4) mils. Field Intermediate Coat: The field intermediate coat shall conform to the requirements of

Article 711,20.3 of the Standard Specifications. Field Top Cost: The field top coat shall conform to the requirements of Article 711-20.4

of the Standard Specifications. The color shall be (F) in accordance with Federal Standard 595, number (G) ess of the total paint system shall be a minimum seven (7) mils.

ØPTION: (100)

Environmental Protection: All portions of the structure shall be cleaned in accordance with Special Provision for 620-Cleaning and Painting Existing Steel Bridges, Sub-articles 620.1, 620.9, 620.10, 620.11, and 620.12 as contained in these plans.

STRUCTURE EXCAVATION (FOOTINGS FOUNDED ON PILES) (1)

Structure excavation quantities through earth fill shall be measured from the bottom of the footing to the original ground line, 18 inches outside the neat line of the footings. No excavation will be classified as

PREFORMED ELASTOMERIC JOINT SEALER (2)

The preformed elastomeric joint seater shall conform to the requirements of Section 624 of the Standard Specifications

BRIDGE GUARDRAIL (13)

The guardrail, buffer end terminal sections, posts and end anchors shall conform to the requirements as set forth by the West Virginia Department of Highways Standard Details Book (Standard Sheets G.R.1 through G.R.7, as applicable) and Standard Bridge Plan Sheet BR-G1. Blocks are required. End anchorage shall be in accordance with Design Directive DD 16.4. All guardrail mounting hardware will be hot-dip galvanized after fabrication. Threads shall be retapped to ensure proper fit. Guardrail posts may be

STRUCTURAL STEEL (14)

All structural steel shall conform to the requirements of ASTM A36 (fe=20,000 p.s.i.) unless

For superstructures utilizing steel grid flooring, structural steel conforming to the requirement of ASTM A588 (fe=27.000 p.s.i.) may be substituted for ASTM A36 steel. No painting shall be required for

OPTION: (14A All ASTM A36 steel shall be blast cleamed and shop primed in accordance with Section 615 of the Standard Specifications.

STEEL GRID FLOORING (CONCRETE FILLED TYPE)

The steel grid flooring shall conform to all applicable requirements of Section 622 of the current Standard Specifications and/or all Special Provisions of the West Virginia Department of Security Manufacture
The grid shall conform to Stapplicable requirements as set forth by the Bridge Grid Flooring Manufacture
Association. Size and type shall be as specified on the plans.
The steel grid flooring shall conform to all requirements of ASTM A36, A572 or A588, type as specified

Cleaning: All surfaces to be painted shall be cleaned and prepared in accordance with Section 615.6 of the Standard Specifications to a "white metal" or "near white metal" condition. The paint system shall be as follows:

n shall be as follows:

The steel grid flooring and el-components shall either be shop painted with an inorganic chiprimer meeting Subsection 711.20.2 of the Standard Specifications or hot dipped galvanized agrequirements of ASTM A123. Type of cooring shall be as specified on the plans.

All subforces deal shall be asset as a specified on the plans. zing rich primer meeting Subse All reinforcing steel shall be number 3 billet steel bars either Grade 40 or 60 in accordance with Subsection 7090 of the Standard Specifications.

rete used to fill the steel grid shell be Class A air entrained. The design stresses for this concrete are $f_c = 3,500$ psi, $f_c = 1,400$ psi and n = 10.

STEEL GRID FLOORING (OPEN TYPE) 19

The steel grid flooring shall conform to all applicable requirements of Section 621 of the current Standard Specifications and/or all Special Provisions of the West Virginia Department of Highways.

The grid shall conform to all applicable requirements as set forth by the Bridge Grid Flooring Manufacturers Association. Size and type shall be as specified on the plans. The steel grid flooring shall conform to all requirements of ASTM A36, A572 or A588, type as specified

Cleaning: All surfaces to be gainted shall be cleaned and prepared in accordance with Section

Standard Specifications to a "white metal" or "near white metal" condition. The paint system shall be as follows: The steel-drid flooring and all components shall either be shop painted with an inorganic

zinc rich primer meeting Subsection 71:20.2 of the Standard Specifications or hot dispact galvanized meeting requirements of ASTM. A123. Type of coating shall be as specified on the plans.

MAINTAINING TRAFFIC (7)

Traffic shall be maintained in accordance with Section 636 and Subsection 104,5 of the Standard

CONTROL VALUE

CODE VALUE

A NA
B NA
C NA
D NA
E NA
F NA
G NA

NAIL LAMINATED WOOD DECK (18)

PROJECT NUMBER

5349-1/1-0.03

SHEET TOTAL

NO. SHTS

2 10

COUNTY

Pine Bridge Lumber all lumber shall be surfaced four sides, pressure treated No. 2 Medium. Grain or better Southern Pine as specified by current Grading Rules for Southern Pine Lumber published by the Southern Pine Inspection Bureau, New Orleans, Louisiana.

The allowable bending stress shall not be less than 1,200 p.s.i. and the allowable shearing stress shall

All lumber shall be sized by being processed through a hit-or-miss surfacer

STATE DIST.

W.VA

This material shall be subject to random sampling and testing for compliance with the above

Material will be accepted in bundles when the shipment is accompanied by a certificated, issued by a Department of Highways Materials Control, Soil and Testing Division certified inspector, showing that the lumber in the "white" meets the above requirements. When said certificate is not availabe, the material will be inspected by Department of Highways personnel at the delivery site and stacked and struck by the vendor.

<u>Treatment:</u> material for pressure treatment shall be in accordance with Subsection 710.5 of the

Standard Specifications. Treatment shall be by either the full cell or empty cell process at 150 to 200 p.s.i. and a minimum retention as specified by the American Wood Preservative Association Standard C-2 shall be obtained

Material and/or workmanship shall conform to the requirements of Subsection 710.1 of the Standard

• Delivery: material shall be delivered in minimum shipments of 2,000 board feet or as directed by the Engineer. A maximum of 15 calender days will be allowed for delivery following notification by the Engineer.

The vendor shall notify the Engineer one working day prior to delivery of the material.

Seneral: any deviation from the above requirements may be cause for rejection, by the Engineer,

of the entire shipment of lumber.

All non-specified material in any shipment shall be rejected and will be removed from the West Virginia

Notification shall be made on all receiving documents endor delivery slips specifying reason(s) for rejection of any portion of a shipment. The signatures of both the Department of Highways and delivering agency representatives shall be affixed to documents on which rejection reason(s) is recorded.

The vendor must furnish to the Engineer a certificate of inspection, certifying that the total order meets the specifications for quality of lumber, preservative and retention required. A cartified copy of the certificate of inspection must be attached to the invoice. Under no circumstances may the vendor ship nor will the Department of Highways accept or pay

ties of material in excess of the quantity stated on the purchase order, except upon advance approval of the Engineer.

The inspection agencies listed hereinafter may be considered as prequalified. If a vendor desires inspection by responsible agencies other than those listed, advance approval must be obtained from the Director, Materials Control, Soil and Testing Division, 312 Michigan Avenue, Cherleston, West Virginia 25305. Qualified Lumber Inspection Agencies:

Norfolk, virginia

Froehling and Robertson, Inc. Richmond, Virginia A. W. Williams Inspection Company

uthern Pines Inspection Bureau New Orleans, Louisiana

PRESTRESSED CONCRETE SUPERSTRUCTURE (9)

Although the plans are detailed for a particular type of prestressed concrete beam alternate types or shaped prestressed concrete beams may be furnished with the following stipular

a) Supplier must submit proposed alternate with design computations for review and approval by the Department of Highways.

b) Contractor must supply revised modified construction plans showing all revisions and modifications as required by the use of the alternate beam for review and approval by the Department of Highways. c) Completion date of the project will not be extended due to any delay encountered in obtaining

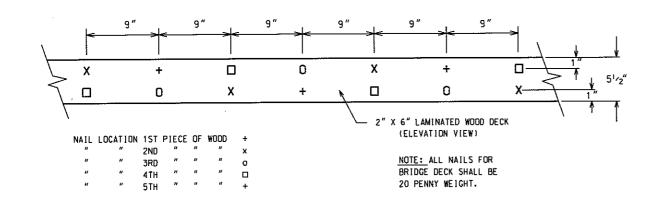
alternate bears and revised modified plan approval by the Department of Highways.

d) The project canot be started until the revised modified plans are approved by the Department

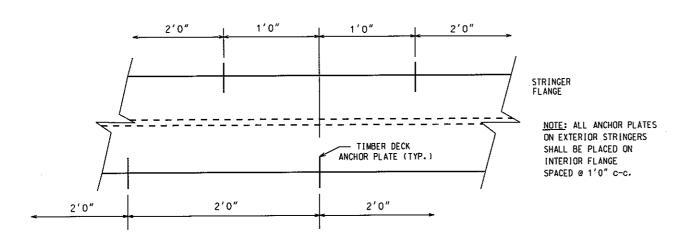
| CODI 1 2 3 4 5 6 | | ND | 108 100 11 12 13 14 14A | YES - | NO | ▼ These items are for Purchase Order Contract only. | |
|--|--|--------|---|------------------------|-------|---|---|
| 9 9A 9B | | × × | 15 16 17 18 | - | Ž | THE WEST VIRGINIA DEPARTMENT OF TRA DIVISION OF HIGHWAYS-STRUCTURE | |
| 9C 19 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10 | | | | | | CONSTRUCTION PLANS OF HACKERS CREEK ARCH REPLACEMENT ON C.R 1/1 (SLS) | DRAWN BY: DRAWN BY: DECKED BY: GFL REVIEWED BY: |
| WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS-STRUCTURES STANDARD BRIDGE PLANS ### PREPARED 11-26-90 ### PREPARED 11- | | | | 11- REVISEO 5-91 | 26-90 | OVER HACKERS CREEK UPSHUR COUNTY | DATE: 89-18 SCALE: NONE SHEET MO.: |
| GENERAL NOTES STANDARD SHEET BR-2A | | | | · = | | GENERAL NOTES | BRIDGE NUMBER 49-1/1-0.04 |

NOTE SELECTION TABLE

| PROJECT FEDERAL | NUMBERS STATE | WV District Seven | SHEET | OF |
|--------------------|------------------|-------------------------|-------|----|
| PEDERAL | S349-1/1-0.03 | | 7 | 10 |



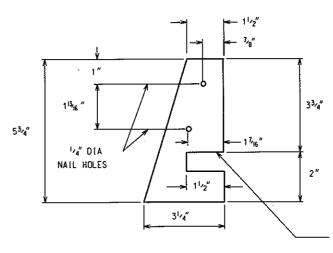
TIMBER DECK NAILING DIAGRAM NO SCALE



DECK ANCHOR PLATE SPACING DETAIL

(INTERIOR STRINGER)

NO SCALE

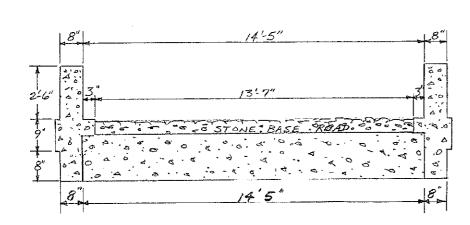


SLOT FOR TIGHT FIT ON FLANGE OF STRINGER
 W14X120 FLANGE THICKNESS = 15/16 " - 210 pcs

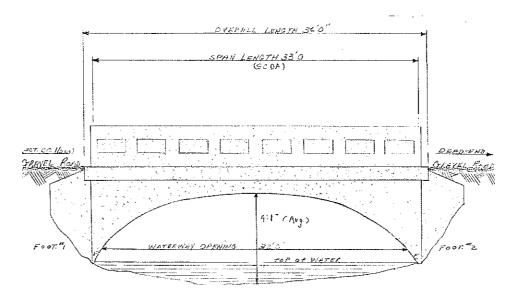
DECK ANCHOR PLATE DETAILS NO SCALE

| | | WEST VIRGINIA DEPT. OF TRAN DIVISION OF HIGHWAY DISTRICT SEVEN | | TA | T] (| ON |
|--|-------|--|------------------------------|----|-------|----|
| REVISIONS DAT DESIGNED BY: RMW DRAWN BY: RMW | | CONSTRUCTION PLANS OF HACKERS CREEK ARCH REPLACEM ON C.R. 1/1 (SLS) OVER HACKERS CREEK UPSHUR COUNTY | ENT | | | |
| CHECKED BY: GFL | 09-10 | UI SHOK COOKIT | SHEET | 7 | OF | 10 |
| CHECKED BY: REVIEWED BY: WRW | 10-10 | NAILING AND DECK ANCHOR DETAILS | BR.NO.49-1/1-0.04 (10983) | | | |

| PROJECT | | WV | COUNTY | SHEET | OF |
|---------|---------------|----------|--------|--------------|----|
| FEDERAL | STATE | DISTRICT | | - | |
| | S349-1/1-0.03 | SEVEN | UPSHUR | 3 | 10 |



EXISTING DECK SECTION NO SCALE



EXISTING ELEVATION VIEW NO SCALE

| ESTIMATE OF QUANTITIES PROJECT NO. \$349-1/1-0.03 | | | | | | | |
|---|-------------------|--|--|--|--|--|--|
| DESCRIPTION DECK TIMBER NAILS *NAILING CLIPS *STRINGERS *#PILING *BEARING CAPS *#BACKWALL PLATES *JJAPHRAGM ASSEMBLIES *J4" X 212" HIGH STRENGTH BOLTS *J4" X 2" HIGH STRENGTH BOLTS FOUNDATION PROTECTION MATERIAL HLBC BASE HLBC WEARING STONE APPROACH RAIL (BY CONTRACT) BRIDGE GUARDRAIL ASSEMBLIES **GUARDRAIL ASSEMBLIES | UNITS EA LB LB LB | | TOTAL 318 132 210 24600 15600 3900 7136 1114 81 6 124 167 65 714 87.5 87.5 691 | | | | |

* -ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM M223 GRADE 50 AND SHALL BE GALVANIZED. GALVANIZING SHALL CONFORM TO THE WVDOH SPECIFICATIONS, JAN 2003, FOR SECTION 689.

SCOPE OF WORK

- CONSTRUCT APPROACH FILL.
- 2. DRIVE PILING AND PLACE CAP BEAMS.
- 2. DRIVE FILING AND PLACE CAP BEAMS.
 3. PLACE FOUNDATION PROTECTION MATERIAL.
 4. PLACE SUPERSTRUCTURE STEEL.
 5. PLACE BACKWALL PLATES.
 6. CONSTRUCT 2"X 6" DECK.
 7. INSTALL BRIDGE GUARDRAIL POSTS.

- 8. PAVE.

- 9. OPEN STRUCTURE TO TRAFFIC.
 10. REMOVE EXISTING STRUCTURE.
 11. INSTALL APPROACH RAILING & SITE DRESS, SEED, & MULCH ALL DISTURBED AREAS.

| | WEST VIRGINIA DEPT. OF TRAN DIVISION OF HIGHWAY DISTRICT SEVEN | | ?TA | TIC | N | |
|--------------------|--|------------------------|-----|-----|----|--|
| REVISIONS DATE BY | CONSTRUCTION PLANS OF HACKERS CREEK ARCH REPLACE ON C.R 1/1 (SLS) OVER HACKERS CREEK UPSHUR COUNTY | EMENT | | | | |
| CHECKED BY: 09-10 | EXISTING ELEVATION AND END VIEW. | SHEET | 3 | OF | 10 | |
| REVIEWED BY: 10-10 | ESTIMATE OF QUANTITIES, & SCOPE OF WORK. | 49-1/1-0.04 (10983) | | | | |

