



## Department of Energy

Ohio Field Office  
 Fernald Closure Project  
 175 Tri-County Parkway  
 Springdale, Ohio 45246  
 (513) 648-3155



FEB 3 2006

Mr. James A. Saric, Remedial Project Manager  
 United States Environmental Protection Agency  
 Region V, SR-6J  
 77 West Jackson Boulevard  
 Chicago, Illinois 60604-3590

DOE-0066-06

Mr. Tom Schneider, Project Manager  
 Ohio Environmental Protection Agency  
 Southwest District Office  
 401 East 5<sup>th</sup> Street  
 Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

### **TRANSMITTAL OF SUPPLEMENTAL INFORMATION REGARDING THE INSTALLATION OF GRADE CONTROL STRUCTURES IN PADDYS RUN**

Enclosed please find the revised design for the installation of grade control structures in Paddys Run. The use of grade controls is detailed in the Waste Pits Area and Paddys Run Natural Resource Restoration Design Plan (NRRDP, Rev. 1), which was submitted November 28, 2005. The design called for three cross-vane grade control structures to be installed onsite. Following a field walkdown with the Ohio Department of Natural Resources and Ohio Environmental Protection Agency (OEPA) and subsequent discussions with OEPA, it was agreed that a "Newbury Riffle" would be installed in the Silos area replacing Structure #2 instead of a cross-vane structure. The enclosed sheets detail the location and construction of the Newbury Riffle. The details regarding the location and construction of the Newbury Riffle were developed in consultation with ODNR.

Technical Specifications for both types of grade control structures are also enclosed. As referenced in the response to comments enclosed to the November 28, 2005 revision of the NRRDP, this specification was not included in the NRRDP. At the time of the submittal, it was our position that there were enough installation details included in the design drawings to support installation without a specification. Through further evaluation, it was later determined that the use of gabions as footers warranted the generation of a technical specification.

The attached supplemental information completes the revised path forward for stream restoration of Paddys Run. Field implementation will commence once stream conditions are favorable (i.e., the stream is dry or water is frozen).

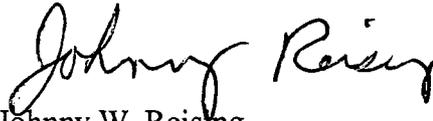
Mr. James A. Saric  
Mr. Tom Schneider

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DOE-0066-06

Please contact me at (513) 648-3139 with any questions regarding this matter.

Sincerely,

  
Johnny W. Reising  
Director

Enclosure:

w/enclosure:

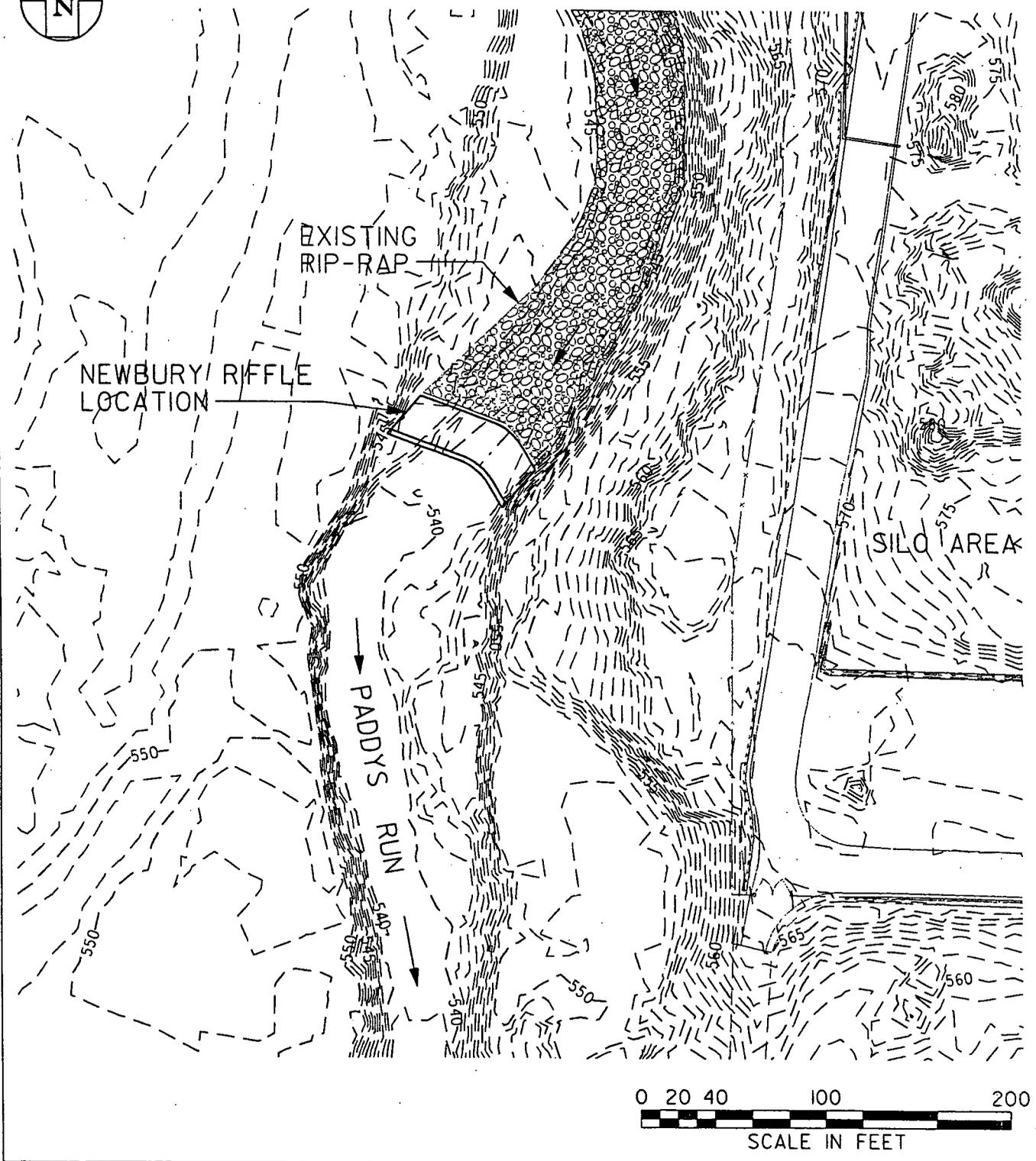
J. Desormeau, DOE-OH/FCP  
G. Stegner, DOE-OH  
T. Schneider, OEPA-Dayton (three copies of enclosures)  
G. Jablonowski, USEPA-V, SR-6J  
D. Sarno, FCAB  
M. Cullerton, Tetra Tech  
M. Shupe, HSI GeoTrans  
R. Vandegrift, ODH  
AR Coordinator, Fluor Fernald, Inc./MS6

cc w/o enclosure:

H. Bilson, Fluor Fernald, Inc./MS1  
J. Chiou, Fluor Fernald, Inc./MS88  
J. Homer, Fluor Fernald, Inc./MS90  
F. Johnston, Fluor Fernald, Inc./MS12  
U. Kumthekar, Fluor Fernald, Inc./MS88  
L. McHenry, Fluor Fernald, Inc./MS90  
D. Nixon, Fluor Fernald, Inc./MS1  
D. Powell, Fluor Fernald, Inc./MS64  
J. Schwing, Fluor Fernald, Inc./MS90  
C. Van Arsdale, Fluor Fernald, Inc./MS88  
S. Walpole, Fluor Fernald, Inc./MS76  
J. Williams, Fluor Fernald, Inc./MS60  
E. Woods, Fluor Fernald, Inc./MS90

**Enclosure**

**Revised Design Drawings and Technical Specifications**



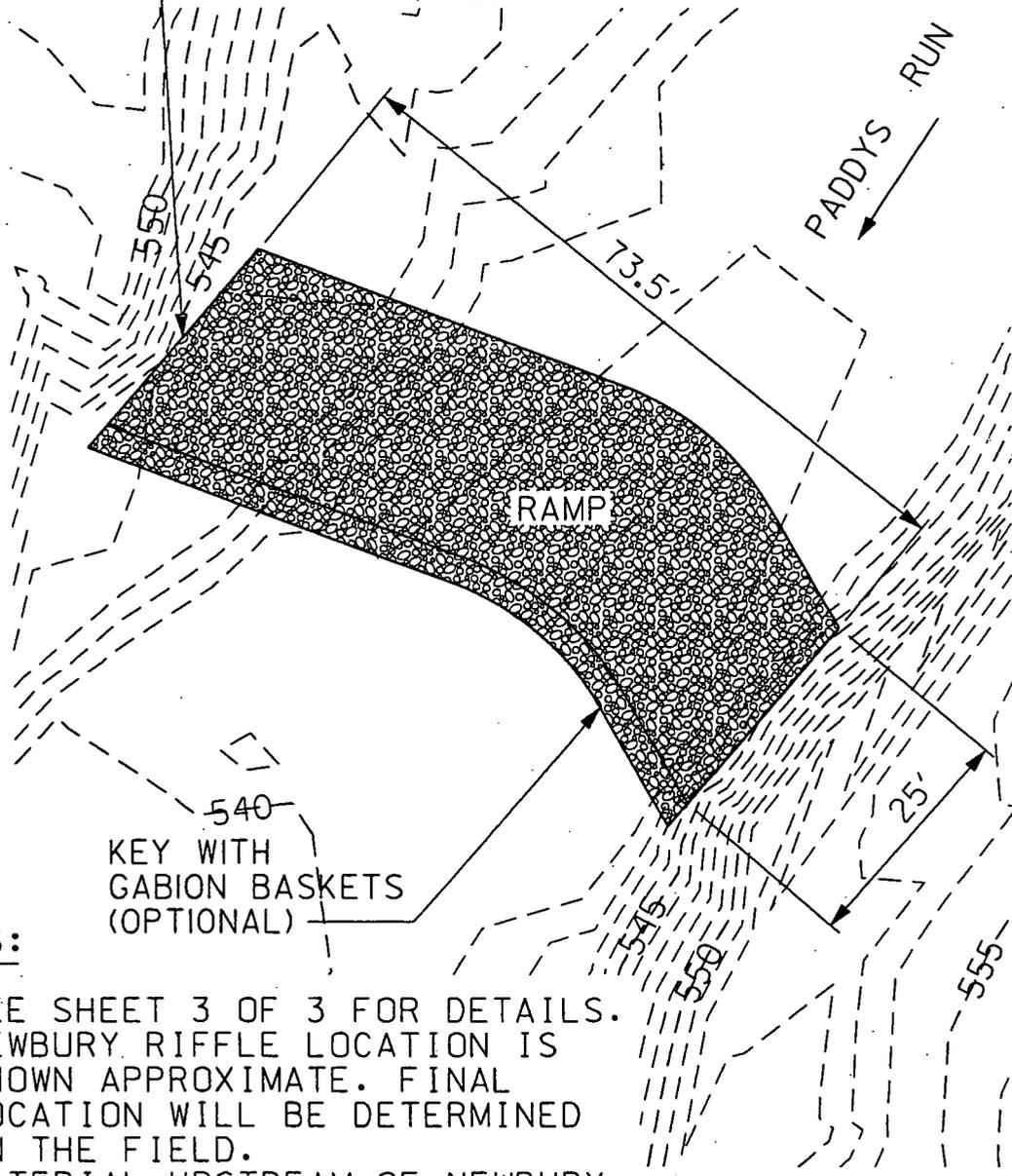
# NEWBURY RIFFLE LOCATION MAP

SCALE: 1"=80'

SHEET 1 OF 3

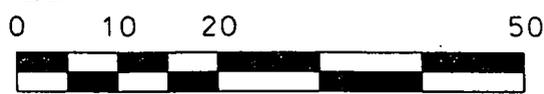


RIP-RAP WILL BE KEYED INTO  
EXISTING BANK AT 2 YEAR  
FLOODPLAIN ELEVATION  
(APPROX. 4 FEET)



NOTES:

1. SEE SHEET 3 OF 3 FOR DETAILS.
2. NEWBURY RIFFLE LOCATION IS SHOWN APPROXIMATE. FINAL LOCATION WILL BE DETERMINED IN THE FIELD.
3. MATERIAL UPSTREAM OF NEWBURY RIFFLE LOCATION CONTAINS BOTH ODOT TYPE "C" AND TYPE "D" DUMPED ROCK FILL. THIS MATERIAL WILL MEET  $d_{50}=8"$  STONE REQUIREMENT.

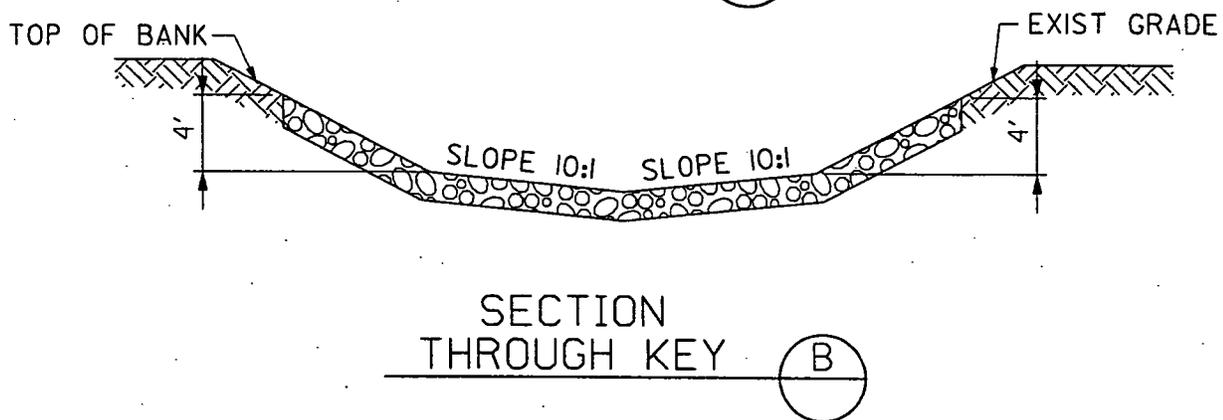
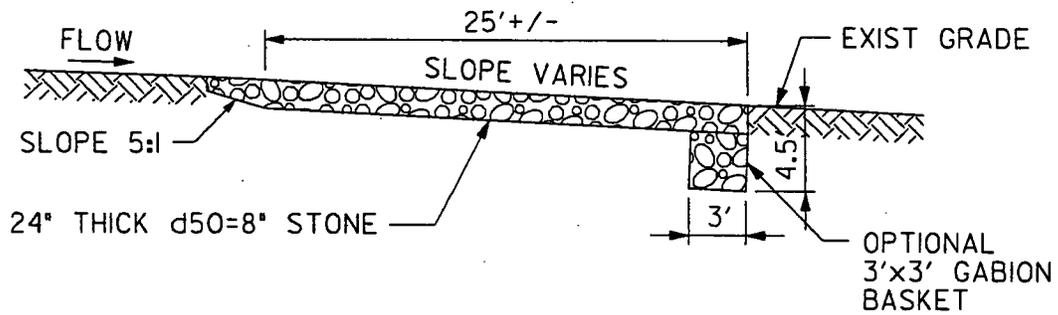
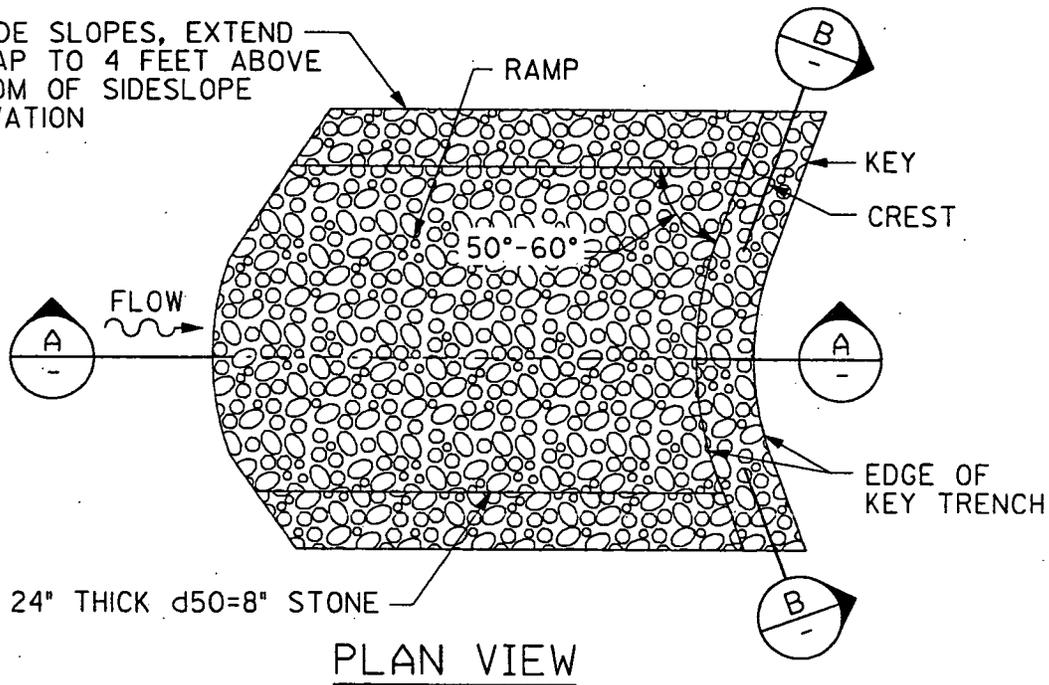


SCALE IN FEET

# NEWBURY RIFFLE GRADING PLAN

SCALE: 1"=20'

ON SIDE SLOPES, EXTEND  
RIP-RAP TO 4 FEET ABOVE  
BOTTOM OF SIDESLOPE  
ELEVATION



# NEWBURY RIFFLE STRUCTURE DETAIL

(NOT TO SCALE)

## **GRADE CONTROL STRUCTURE TECHNICAL SPECIFICATIONS**

### **1. Scope**

Grade Control Structures are in-stream structures constructed for the purpose of reducing shear stress on streambanks as well as grade control for the streambed. Grade control structures are constructed as shown on the technical drawings and the following technical specification. Grade control structures shall consist of footer gabions placed below the invert of the existing streambed, gabions placed on top of footer gabions (as needed), and riprap stone.

### **2. References**

- A. State of Ohio, Department of Transportation (ODOT), Construction and Material Specifications.

### **3. Health and Safety Requirements**

- A. Environmental Health and Safety/Training requirements shall be in accordance with the Fluor Fernald Safe Work Plan for the project.

### **4. Submittals**

- A. Drawing from the gabion basket fabricator showing the fabrication details for the gabion baskets including material specifications.
- B. Recommended procedures from the gabion basket fabricator for assembling and installing gabions.

### **5. Materials**

- A. Gabion Baskets:

Gabion baskets shall be as fabricated by Terra Aqua Gabions, Inc or approved equal. Baskets shall be fabricated from the double twisted hexagonal steel wire mesh coated with polyvinyl chloride (PVC). PVC coating shall be in accordance with ASTM A975-97 section 8.2. Gabion baskets shall be 3-feet by 3-feet by 9-feet and 3-feet by 3-feet by 6-feet. Where the length of the gabion basket exceeds one and one half its horizontal width, the gabion basket shall be divided by diaphragms of the same mesh and gauge as the body of the gabion basket, into cells whose length does not exceed the horizontal width.
- B. Gabion Rock

Rock used in filling the gabion baskets shall be Type D dumped rock fill conforming to the ODOT Construction and Material Specifications.
- C. Riprap Stone

Riprap stone placed on the streambanks and streambed on top of rock filled gabions shall be minimum 12-inch and maximum 24-inch thick unless otherwise approved by the Construction Manager.

## 6. Construction

- 6.1 Gabion baskets shall be assembled and placed as shown on the drawing and as recommended by the gabion basket fabricator.
- 6.2 Grade control structures including rock filled gabions and riprap stone shall be installed according to the sequence of construction, construction drawings, this technical specifications, and as directed by the Construction Manager.
- 6.3 Grade control structures shall be constructed as two (2) rock filled gabions on opposite sides/banks of the stream, with a connecting cross channel sill set at the proposed invert of the streambed as shown on the construction drawing.
- 6.4 Grade control structures shall be constructed so that adjoining rocks taper in an upstream direction, from the bank elevation to the stream invert. The upstream (lower) end of the grade control structure is set at an angle of 20° to 30° tangent to the curve.
- 6.5 The downstream end of the grade control structure shall be keyed into the streambank, as shown on the drawings. The upstream end of grade control structure shall be keyed into the streambed at the invert elevation.
- 6.6 The grade control structure shall be completed by the placement of gabion and riprap stone. The elevation of the gabion and riprap stone shall be as shown on the technical drawings unless otherwise directed by the Construction Manager.

Excavation for gabion footer shall be as specified in the technical specification Section 02200. Before placement of gabion footer, dewater excessive water from the excavation. After excavation for the footer, place gabion and dumped rock as for the grade control structure as shown on the construction drawing. Backfill voids around the gabion footer as specified in technical specifications.

- 6.7 Gabion shall be placed in a linear fashion so as to produce the sloping grade control structure, and shall be placed with tight, continuous surface contact between adjoining rock. Gabions shall be placed so as to have no significant gap between adjoining gabions.
- 6.8 As the grade control structure is constructed, the Contractor shall chink all voids between the gabion footer. Voids shall be chinked with small boulders, cobble or rock fragments. Chinking will be conducted such that no voids greater than four inches (4") in size will be present.
- 6.9 Riprap stone shall be placed after placement of rock filled gabion baskets as shown on the construction drawing. Riprap stone shall be overlapped and placed to form a tight, continuous surface that completely covers the installed gabions.
- 6.10 The Contractors shall upon completion of the work reshape the slopes and stream bottom to the specified elevations. All unsuitable and surplus rocks will be removed from the site.