## PAVING UNDER GUARDRAIL

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING ITEM 203, LINEAR GRADING, AS PER PLAN AND PAVING UNDER THE GUARDRAIL USING ITEM 448, ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE 1, PG64-22, (UNDER GUARDRAIL).

ITEM 203, LINEAR GRADING, AS PER PLAN SHALL CONSIST OF EXCAVATING TOPSOIL AND PLACING MATERIAL AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING:

ALL COLLECTED DEBRIS AND TOPSOIL, INCLUDING RHIZOMES, ROOTS AND OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN 203.05.

THE REMOVED MATERIAL SHALL BE REPLACED WITH MATERIAL AS DETAILED ON THE TYPICAL SECTIONS OR AS APPROVED BY THE ENGINEER.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 203, LINEAR GRADING, AS PER PLAN.

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

## METHOD A

- I) SET GUARDRAIL POSTS.
- 2) PLACE ITEM 448.

## METHOD B

- 1) PLACE ITEM 448.
- 2) BORE ASPHALT AT POST LOCATIONS
- (MAY BE OMITTED IF STEEL POSTS ARE USED). 3) SET GUARDRAIL POST.
- 4) PATCH AROUND PUSTS. THE MATERIALS USED FOR PATCHING SHALL BE A BITUMINOUS CONCRETE APPROVED BY THE ENGINEER. PATCHING AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE, WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 448, ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG64-22, (UNDER GUARDRAIL).

## LOCATION OF GUARDRAIL

THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

## GUARDRAIL PROTECTION

901234567890123 455555555556666

B X

NO SIGN SUPPORTS SHALL BE ERECTED BEFORE THE NECESSARY GUARDRAIL PROTECTION IS IN PLACE. SIMILARLY EXISTING GUARDRAIL WHICH PROTECTS AN OBSTRUCTION OR SLOPE WHICH IS TO BE UPGRADED TO ELIMINATE GUARDRAIL, SHALL NOT BE REMOVED UNTIL THAT WORK HAS BEEN COMPLETED. EXISTING GUARDRAIL WHICH IS SCHEDULED TO BE REPLACED WITH TYPE 5 GUARDRAIL, SHALL NOT BE REMOVED UNTIL THE NEW GUARDRAIL IS READY TO BE INSTALLED, UNDER NO CIRCUMSTANCES SHALL ANY HAZARD BE WITHOUT GUARDRAIL PROTECTION FOR MORE THAN 24 HOURS.

#### FASTENING OF BRIDGE TERMINAL ASSEMBLIES

BRIDGE TERMINAL ASSEMBLIES WHICH ARE FASTENED TO THE EXISTING CONCRETE PARAPETS SHALL BE ATTACHED BY MEANS OF THRU BOLTS. EXPANSION ANCHOR BOLTS WILL NOT BE PERMITTED.

THIS ITEM REQUIRES THE USE OF POLYESTER RESIN ANCHORS WITH FEMALE THREADED INSERTS (10 INCH LONG ) TO ACCEPT 7/8" DIAMETER BOLTS WHEN THRU BOLTS CANNOT BE USED.

## SEQUENCE OF OPERATIONS FOR GUARDRAIL INSTALLATIONS

- I. COMPLETE SHOULDER CONSTRUCTION
- 2. REMOVE EXISTING GUARDRAIL (INSTALL TEMPORARY CONCRETE BARRIER AT HAZARDS-SEE PUBLIC SAFETY NOTE).
- 3. INSTALL GUARDRAIL AND CONSTRUCT STRIP OF ITEM 448 AS PER METHOD A OR B.

## CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN ON STANDARD CONSTRUCTION DRAWING GR-1./M. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

## FENCE REPLACEMENT

ALL EXISTING FENCE SHALL BE REMOVED AND REPLACED EXCEPT WHERE SHOWN ON THE PLANS. QUANTITIES FOR REMOVAL OF EXISTING FENCE AND PLACEMENT OF THE NEW FENCE ARE SHOWN ON THE PLANS AND CARRIED TO THE GENERAL SUMMARY.

## ITEM 606 - IMPACT ATTENUATOR, TYPE 1-98 (BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER THE C-A-T IMPACT ATTENUATOR THE BREAKMASTER IMPACT ATTENUATOR. SEE SHEET 134 FOR DETAILS AND NOTES.

## ITEM 606 - ANCHOR ASSEMBLY, TYPE E-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER THE ET-2000 OR THE SKT-350. SEE DETAILS AND NOTES ON SHEET 133.

# PAVFMFNT

#### ASPHALT CONCRETE SURFACE COURSE

THE COARSE AGGREGATE FOR THE SURFACE COURSE SHALL BE LIMITED TO AIR COOLED BLAST FURNACE SLAG OR LIMESTONE.