

**ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING**

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
2. EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO SECTION 204.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS).  
  
IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.
3. COMPACT THE SUBGRADE ACCORDING TO C&MS 204.03.
4. APPROXIMATE LIMITS FOR EXCAVATION OF UNSTABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.

PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO C&MS 204.06.

5. EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO C&MS 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
6. PROOF ROLL THE STABILIZED AREAS ACCORDING TO C&MS 204.06 TO VERIFY STABILITY.
7. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204, EXCAVATION OF SUBGRADE.

THE FOLLOWING CONTINGENCY QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR ANY UNSTABLE AREAS IDENTIFIED ALONG SR 46 BETWEEN STA. 402+00 AND STA.414+50 AS DIRECTED BY THE ENGINEER:

204, EXCAVATION OF SUBGRADE	150 CY
204, GRANULAR MATERIAL, TYPE C	150 CY
204, GEOTEXTILE FABRIC	450 SY

**PROFILE AND ALIGNMENT**

PLACE THE PROPOSED PAVEMENT TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. (PREVIOUS CONSTRUCTION PLANS, TRU-46-(5.68-7.07)(7.50), SHOWING THE ORIGINAL ALIGNMENT AND PROFILE, ARE AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE). PLACE THE PROPOSED ASPHALT CONCRETE OVERLAY (WITH A UNIFORM THICKNESS OF 1.5 INCHES AFTER PERFORMING 1.5 INCHES OF PAVEMENT PLANING MATCHING THE EXSITING. PAVEMENT CROSS SLOPE TO THE SAWCUT LIMITS.

**CONTRACTION JOINTS IN CONCRETE PAVEMENT OR BASE WIDENING**

WHERE NEW CONCRETE IS PLACED ADJACENT TO EXISTING CONCRETE, PROVIDE CONTRACTION JOINTS IN THE NEW CONCRETE TO FORM CONTINUOUS JOINTS WITH THOSE IN THE EXISTING CONCRETE.

THE MAXIMUM DISTANCE BETWEEN THE JOINTS IN THE NEW CONCRETE ARE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2, IF NECESSARY, ADDITIONAL JOINTS MAY BE PROVIDED IN THE NEW CONCRETE AT APPROXIMATELY EQUAL INTERVALS BETWEEN EXISTING JOINTS THAT EXCEED THE MAXIMUM SPACING.

**PART-WIDTH CONSTRUCTION**

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

**ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE J, ASTM D4956 TYPE XI REFLECTIVE SHEETING, PER CMS 730.193.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**CONTRACTION AND/OR EXPANSION JOINTS**

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN CONTRACTION AND EXPANSION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. IN ALL CASES, THE PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES INCLUDING THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS IS IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2 AND THE SPECIFICATIONS.

**MEDIAN AND/OR CURBING ON APPROACH SLABS**

WITHIN THE LIMITS OF THE APPROACH SLAB, TRANSITION THE SHAPE OF THE MEDIAN AND/OR CURBING ON APPROACH SLABS FROM THE STANDARD SECTION ON THE APPROACHES TO THE SECTION USED ON THE BRIDGE.

**LINEAR GRADING**

AREAS WHERE THE SHOULDER IS HIGHER THAN THE EDGE OF PAVEMENT WILL BE GRADED TO PROVIDE POSITIVE DRAINAGE. THIS WORK WILL ONLY BE PERFORMED IN AREAS NECESSARY AND WILL NOT BE PERFORMED ON THE ENTIRE PROJECT. AREAS FOR THE WORK WILL BE MARKED BY THE PROJECT ENGINEER. UNDER NO CIRCUMSTANCES WILL THIS WORK BE PERFORMED CONCURRENTLY WITH ANY OTHER OPERATION.

GRADING WILL BE ACCOMPLISHED BY THE REMOVAL OF MATERIAL TO PROVIDE A 0.08 POSITIVE SLOPE. THE GRADED AREAS WILL BE COMPACTED TO A SUFFICIENT DENSITY TO PREVENT EROSION UNTIL SEEDING AND MULCHING IS PERFORMED. ALL EXCESS MATERIAL WILL BE REMOVED FROM THE BERMS AND WILL BE DISPOSED OF OFF THE PROJECT BY THE CONTRACTOR.

SEEDING AND MUCHING, FERTILIZER AND LIME WILL BE PERFORMED WITHIN A PERIOD NOT TO EXCEED 10 DAYS AFTER THE LINEAR GRADING.

THE QUANTITY OF ITEM 209 IS NOT PERMITTED TO BE INCREASED. REDUCTIONS IN QUANTITIES ARE PERMITTED AS DETERMINED BY THE PROJECT ENGINEER.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK WILL BE INCLUDED IN THE UNIT PRICE FOR THE PERTINENT BID ITEM. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 209, LINEAR GRADING, 25 STA.

**ITEM 209 - RESHAPING UNDER GUARDRAIL**

TREATED SHOULDER WIDTH BEYOND THE LIMITS OF THE COMPACTED AGGREGATE SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE INTO THE DITCH AND SHALL BE PERFORMED ONLY IN THE AREAS NECESSARY. RESHAPING SHALL BE ACCOMPLISHED BY THE REMOVAL OF, OR ADDITION OF MATERIAL TO PROVIDE A 0.08 SLOPE TO THE DITCH BREAK POINT. EXCESS MATERIAL SHALL BE WINDROWED ON THE SHOULDER. THE RESHAPED AREAS SHALL BE COMPACTED TO A SUFFICIENT DENSITY TO PREVENT EROSION UNTIL SEEDING AND MULCHING AS PER 659 IS PERFORMED. ALL EXCESS MATERIAL SHALL BE REMOVED FROM THE BERMS AND NOT ALLOWED TO ENTER THE DITCH LINE AND SHALL BE DISPOSED OF OFF THE PROJECT BY THE CONTRACTOR.

THE METHOD OF MEASUREMENT OF ITEM 209 RESHAPING UNDER GUARDRAIL SHALL BE STATIONS, WITH ONE STATION EQUAL TO 100 LINEAR FEET. THE DISTANCE SHALL BE MEASURED ALONG EACH EDGE OF PAVEMENT. ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 209 RESHAPING UNDER GUARDRAIL. IN AREAS WHERE GRADING IS NOT REQUIRED BEYOND THE 617 LIMIT, RESHAPING UNDER GUARDRAIL WILL BE NON-PERFORMED AS DIRECTED BY THE ENGINEER. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

209, RESHAPING UNDER GUARDRAIL, 3 STA

**BARRIER REFLECTORS**

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AT LOCATIONS DIRECTED BY THE ENGINEER FOR INSTALLING/REPLACING BARRIER REFLECTORS ON ALL EXISTING BARRIER RUNS WITHIN THE PROJECT LIMITS.

202, REMOVAL MISC.: BARRIER REFLECTOR, 52 EACH  
626, BARRIER REFLECTOR, TYPE 1, 38 EACH  
626, BARRIER REFLECTOR, TYPE 2, 28 EACH

**ITEM SPECIAL - VERTICAL CLEARANCE**

AFTER ALL CONSTRUCTION HAS BEEN COMPLETED, A REGISTERED SURVEYOR WILL TAKE VERTICAL CLEARANCE MEASUREMENTS AT LOCATIONS INDICATED ON THE APPROVED ODOT FORM (AVAILABLE IN THE DISTRICT 4 STRUCTURES AND PAVEMENT OFFICE). THE FINAL MEASUREMENTS SHALL BE RECORDED ON THE FORM AND SUBMITTED TO THE PROJECT ENGINEER AND THE DISTRICT 4 STRUCTURES AND PAVEMENT ENGINEER. THE RECORD SHALL BEAR THE SEAL OF THE LICENSED SURVEYOR WHO HAS TAKEN THE MEASUREMENTS. THIS WORK SHALL BE PERFORMED AT THE FOLLOWING STRUCTURE: TRU-00082-18.050

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

SPECIAL - VERTICAL CLEARANCE, 1 EACH

**ITEM SPECIAL - ARTIFICIAL TURF**

AT THE LOCATIONS INDICATED IN THE PLAN, ARTIFICIAL TURF SHALL BE PLACED WITHIN VARIOUS TRAFFIC ISLANDS. BEFORE THIS WORK BEGINS THE FOLLOWING ITEMS AND THEIR PREDECESSORS SHALL BE COMPLETED AND ACCEPTED OR APPROVED BY THE ENGINEER.

1. ITEM 605 - UNDERDRAIN
2. ITEM 304 - AGGREGATE BASE
3. ITEM 609 - CURB, TYPE 6
4. ITEM 609 - 6" CONCRETE TRAFFIC ISLAND, AS PER PLAN, CLASS QC1P

THIS WORK SHALL INCLUDE THE INSTALLATION OF ARTIFICIAL TURF AND UNDERLYING MATERIALS AS FOLLOWS:

1. ANY VARIATIONS IN DEPTH BETWEEN THE AGGREGATE BASE COURSE AND THE TOP OF ISLAND SURFACE OR TOP OF CURB ELEVATION SHALL BE ACCOUNTED FOR BY THE PLACEMENT OF ADDITIONAL THICKNESS OF COMPACTED ITEM 304 AGGREGATE BASE SLOPED TO PARALLEL THE FINAL SURFACES SUCH THAT THE FOLLOWING LAYERS DESCRIBED BELOW IN 2 THROUGH 5 ARE UNIFORM THICKNESS, SLOPED TO DRAIN, AND FINE GRADED TO REDUCE SURFACE UNDULATIONS IN THE TURF.
2. ON TOP OF THE AGGREGATE BASE COURSE PLACE GEOTEXTILE FABRIC, TYPE D.
3. ON THE GEOTEXTILE FABRIC PLACE A MINIMUM COMPACTED 6 INCHES THICK LAYER OF COARSE AGGREGATE SIZE NO. 9 IN ACCORDANCE WITH ITEM 703.01.
4. ON THE GRANULAR MATERIAL LAYER PLACE A 3/4 INCH THICK LAYER OF FINE AGGREGATE SIZE NO. 9, IN ACCORDANCE WITH ITEM 703.20. THE FINISHED SURFACE SHALL BE UNIFORMLY FINISHED AND SURFACE UNDULATIONS SHALL NOT EXCEED HALF INCH DEEP OR HIGH PER FOUR FEET WIDTH AT ONE LOCATION PER LAID STRIP.
5. ON THE FINE AGGREGATE PLACE WEED FABRIC AND THEN INSTALL ARTIFICIAL TURF USING STAPLES/NAIIS AND SEAM TAPE/ADHESIVE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
6. THE ARTIFICIAL TURF SHALL BE:
  - A. TURF FACTORY DIRECT (TFD75 SPECIAL)
  - B. RUBBER FLOORING INC. (BEVERLY TURF) OR APPROVED EQUAL.

VERIFY THE ORIENTATION OF THE TURF BEFORE INSTALLATION SO THAT THE COLOR APPEARS UNIFORM THROUGHOUT THE TURFED AREA WHEN COMPLETE, AND INSTALL THE TURF IN A FASHION THAT MINIMIZES THE NUMBER OF CUTS TO THE ORIGINAL ROLL. ALL LEFT OVER MATERIAL SHALL BE DELIVERED TO HOWLAND TOWNSHIP FOR FUTURE MAINTENANCE PURPOSES.

MANUFACTURER SPECIFICATION, CERTIFICATIONS, INSTALLATION INSTRUCTIONS, AND OPERATION AND MAINTENANCE INSTRUCTIONS SHALL BE SUBMITTED FOR APPROVAL BY THE ENGINEER BEFORE ORDERING SAID MATERIALS.

ALL LABOR, MATERIALS, DELIVERY, EQUIPMENT AND ALL OTHER COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE BID UNIT PRICE FOR ITEM SPECIAL - ARTIFICIAL TURF PER SQUARE YARD.









