CELL 77 SPECIFIC SOILS AND CONSTRUCTION NOTES

GRADING

TOPSOIL - THE TOPSOIL SHALL BE SALVAGED, PULVERIZED AND SUBSEQUENTLY PLACED ON THE DISTURBED AREAS AS SHOWN IN THE TYPICAL SECTIONAL.

GRADING GRADE IS DEFINED AS THE BOTTOM OF THE CLASS 4 AGGREGATE BASE.

SELECT GRADING MATERIAL SHALL BE ANY GRANULAR SOIL ENCOUNTERED IN EXCAVATION OR BORROW AREAS MEETING THE REQUIREMENTS OF SELECT GRANULAR BORROW, SPEC. 26A/B,SEC.

SUPTABLE GRADING MATERIAL IS ANY MINERAL SOIL ENCOUNTERED IN THE EXCAVATION OR BORROW AREAS MATCHING THE TEXTURAL CLASS IN THE AREAS OF CONSTRUCTION NOT DEFINED AS UNSUITABLE.

UNSUITABLE MATERIAL IS DEFINED AS DEBRIS, PEAT, MUCK, TOPSOIL, SILT, LOAM, MARL OR OTHER ORGANIC MATERIAL.

THE BOTTOM OF THE SUBCUT SHALL BE SHAPED AND COMPACTED BY THE QUALITY COMPACTION METHOD WITH A MINIMUM OF 4 PASSES OF AN APPROVED ROLLER.

EXCESS MATERIALS AND ALL MATERIALS NOT DESIGNATED FOR SALVAGE AND ALL DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF OFF THE R/W IN ACCORDANCE WITH MD/DOT SPEC. 2104.

UNSUITABLE MATERIAL MAY NOT BE PLACED WITHIN THE LS SLOPE OUTWARD AND DOWN FROM THE GRADING SHOULDER PL OR WITHIN THE UPPER 1' OF THE SUBGRADE.

TEST EQUIPMENT

MN ROAD OPERATIONS REQUIRES 6 WORKING DAYS ON THE FINISHED SUBGRADE OF CELL 77 TO 79 FOR INSTALLATION OF CONDUIT, INSTRUMENTATION, ANDLYSIEMETERS. ANOTHER 4 WORKING DAYS ARE REQUIRED ON THE FINISHED BASE FOR INSTALLATION OF INSTRUMENTATION.

COMPACTION REQUIREMENTS

GRADING MATERIALS
AGG. BASE MATERIAL
AGG. SHLD. MATERIALS
QUALITY COMPACTION METHOD
PENETRATION INDEX COMPACTION METHOD
QUALITY COMPACTION METHOD

EXISTING/REMOVAL CELL 77
STA. 16+65 TO STA. 18+35

PROPOSED CELL 77
STA. 16+45 TO STA. 19+25

NOTE:
TRANSITION FROM CELL TO CELL WILL BE VARIABLE, SEE PROFILE SHEETS.
TABULATED QUANTITIES FOR CELL 77 (STATION 186+05 TO STATION 190+22)

<table>
<thead>
<tr>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOVE SHOULDER RECLAIMATION</td>
<td></td>
<td>549</td>
</tr>
<tr>
<td>COMMON EXCAVATION</td>
<td></td>
<td>254</td>
</tr>
<tr>
<td>GRAADING MATERIAL (CV) FROM STOCKPILE</td>
<td></td>
<td>167</td>
</tr>
<tr>
<td>AGGREGATE SHOULDER CONSTRUCTION</td>
<td></td>
<td>59</td>
</tr>
<tr>
<td>SHOULDER RECLAIMATION</td>
<td></td>
<td>117</td>
</tr>
<tr>
<td>SHOULDER MATERIAL FOR TACK COAT</td>
<td></td>
<td>59</td>
</tr>
<tr>
<td>TYPE 30 TCS WEARING COURSE MIXTURE (3C) SPECIAL</td>
<td></td>
<td>255</td>
</tr>
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</table>

EARTHWORK SUMMARY

<table>
<thead>
<tr>
<th>CELL 77 STATION</th>
<th>COMMON CV.</th>
<th>GRAADING MATERIAL (CV)</th>
<th>NOT Haul</th>
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<tbody>
<tr>
<td>186+05 - 190+22</td>
<td>CU YD</td>
<td>CU YD</td>
<td>CU YD</td>
</tr>
<tr>
<td></td>
<td>226</td>
<td>167</td>
<td>292</td>
</tr>
</tbody>
</table>

THE FOLLOWING SHRINKAGE FACTOR WERE USED:

SUITABLE 1200

NOTES:

1. ALL MATERIAL COMES FROM STOCKPILES ON SITE TO BE DESIGNATED BY THE PROJECT ENGINEER
2. MONOT 200 FUNDS.
CELL 78 SPECIFIC SOILS AND CONSTRUCTION NOTES

GRADING:

TOPSOIL - The topsoil shall be salvaged, pulverized and subsequently placed on the disturbed areas as shown in the typical sections. Grading grade is defined as the bottom of the class 4 aggregate base. Select grading material shall be any granular soil encountered in excavation or borrow areas meeting the requirements of select granular borrow, Spec. 3049.252. Suitable grading material is any mineral soil encountered in the excavation or borrow areas matching the texture class in the areas of construction not defined as unsuitable. Unsuitable material is defined as debris, peat, muck, topsoil, Silt, loam, muck, or other organic material. The bottom of the subcut shall be shaped and compacted by the quality compaction method with a minimum of 4 passes of an approved roller. Excess materials and all materials not designated for salvage and all debris shall become the property of the contractor and be disposed of off the P.M. in accordance with Mn/DOT Spec. 3004. Unsuitable material may not be placed within the 1.5:1 slope outward and down from the grading shoulder PLC or within the upper 1' of the subgrade.

TEST EQUIPMENT

No road operations require 6 working days on the finished subgrade of cell 77.76.79 for installation of conduit, instrumentation, and lysimeters. Another 4 working days are required on the finished base for installation of instrumentation.

COMPACTION REQUIREMENTS

Grading Materials: Quality compaction method
Aggregate materials: Penetration index compaction method
Aggregate shoulder: Quality compaction method

EXISTING/REMOVAL CELL 21
STA. 190+22 TO STA. 191+85
TRANSITION AREA
STA. 191+95 TO STA. 192+15
EXISTING/REMOVAL CELL 20
STA. 192+15 TO STA. 193+87

EXISTING/REMOVAL CELL 21
STA. 190+22 TO STA. 191+85
TRANSITION AREA
STA. 191+95 TO STA. 192+15
EXISTING/REMOVAL CELL 20
STA. 192+15 TO STA. 193+87

TYPICAL SECTIONS (CELL 78)

CERTIFIED BY: [Signature]
STATE PROJ. NO. 8660-156 (TJL 94) SHEET NO. 14 OF 25 SHEETS
CELL 79 SPECIFIC SOILS AND CONSTRUCTION NOTES

GRADING

TOPSOIL - THE TOPSOIL SHALL BE SALVAGED, PULVERIZED AND SUBSEQUENTLY PLACED ON THE DISTURBED AREAS AS SHOWN IN THE TYPICAL SECTIONS.

GRADING GRADE IS DEFINED AS THE BOTTOM OF THE CLASS 6 AGGREGATE BASE.

SELECT GRADING MATERIAL SHALL BE ANY GRANULAR SOIL ENCOUNTERED IN EXCAVATION OR BORROW AREAS MEETING THE REQUIREMENTS OF SELECT GRANULAR BORROW, SPEC. 3148.292.

SUITABLE GRADING MATERIAL IS ANY MINERAL SOIL ENCOUNTERED IN THE EXCAVATION OR BORROW AREAS MATCHING THE TEXTURAL CLASS IN THE AREAS OF CONSTRUCTION NOT DEFINED AS UNSUITABLE.

UNSUITABLE MATERIAL IS DEFINED AS DEBRIS, PEAT, MUCK, TOPSOIL, SILT, LOAM, MUD, OR OTHER ORGANIC MATERIAL.

THE BOTTOM OF THE SUBCUT SHALL BE SHAPED AND COMPACTED BY THE QUALITY COMPACTATION METHOD WITH A MINIMUM OF 4 PASSES OF AN APPROVED ROLLER.

EXCESS MATERIALS AND ALL MATERIALS NOT DESIGNATED FOR SALVAGE AND ALL DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF OFF THE INSTALLATION SITE IN ACCORDANCE WITH MWSCC SPEC. 2024.

UNSUITABLE MATERIAL MAY NOT BE PLACED WITHIN THE 1.5' SLOPE OUTWARD AND DOWN FROM THE GRADING SHOULDER PL. OR WITHIN THE UPPER 1' OF THE SUBGRADE.

COMPACATION REQUIREMENTS

GRADING MATERIALS
AGL BASE MATERIALS
AGL SHD MATERIALS
QUALITY COMPACTATION METHOD
PENETRATION INDEX COMPACTATION METHOD
QUALITY COMPACTATION METHOD

ADDITIONS

FLY ASH
FLY ASH IS ADDED AT A RATE OF 1% BY DRY WEIGHT OF RECLAIMED BASE.
FORMULA = 20% ASH X WIDTH X 20' X LENGTH X 378 X 140 LB PER CU FT / 2000 LB X 140

TEST EQUIPMENT

MW ROAD OPERATIONS REQUIRES 6 WORKING DAYS ON THE FINISHED SUBGRADE OF CELL 77,78,79 FOR INSTALLATION OF CONDUIT, INSTRUMENTATION, AND LVS METERS. ANOTHER 4 WORKING DAYS ARE REQUIRED ON THE FINISHED BASE FOR INSTALLATION OF INSTRUMENTATION.

EXISTING/REMOVAL CELL 9C
STA. 183+65 TO STA. 187+65

EXISTING TOPSOIL

PROPOSED CELL 79
STA. 183+67 TO STA. 187+65

EXISTING GROUND

TYPICAL SECTIONS (CELL 79)

CERTIFIED BY

STATE PROJ. NO. 8680-156 (T.J.A. 94)
SHEET NO. 16 OF 25 SHEETS

4/25/2001
TABULATED QUANTITIES FOR CELL 79 (STATION 193+87 TO STATION 197+65)

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<thead>
<tr>
<th>ITEM DESCRIPTION</th>
<th>UNIT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOVE BITUMINOUS SHOULDER PAVEMENT</td>
<td>YD</td>
<td>546</td>
</tr>
<tr>
<td>COMMON EXCAVATION</td>
<td>YD</td>
<td>229</td>
</tr>
<tr>
<td>SPADING MATERIAL, Collective Stockpile</td>
<td>YD</td>
<td>453</td>
</tr>
<tr>
<td>FYI ASH</td>
<td>TON</td>
<td>69</td>
</tr>
<tr>
<td>AGGREGATE SHOULDERING, Collective Stockpile</td>
<td>YD</td>
<td>29</td>
</tr>
<tr>
<td>BITUMINOUS PAVEMENT RECLAMATION</td>
<td>GALLON</td>
<td>1176</td>
</tr>
<tr>
<td>BITUMINOUS MATERIAL, FOR TACK COAT</td>
<td>TON</td>
<td>25</td>
</tr>
<tr>
<td>TYPE SP GUS MEANS COURSE MIXTURE (L/C SPECIAL)</td>
<td>TON</td>
<td>125</td>
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EARTHWORK SUMMARY

<table>
<thead>
<tr>
<th>CELL 79 STATION</th>
<th>COMMON EXC</th>
<th>SPADING MATERIAL UCV</th>
<th>SILT MUD</th>
</tr>
</thead>
<tbody>
<tr>
<td>193+87 - 197+65</td>
<td>CUB FT</td>
<td>CUB FT</td>
<td>CUB FT</td>
</tr>
<tr>
<td>TOTAL</td>
<td>228</td>
<td>168</td>
<td>24</td>
</tr>
</tbody>
</table>

THE FOLLOWING SHRINKAGE FACTORS WERE USED:
SUITABLE: 120%
NOTES:
1) ALL MATERIAL COMES FROM STOCKPILES ON SITE TO BE DESIGNATED BY THE PROJECT ENGINEER.
2) MDOT 200 FUNDS.

PLAN VIEW

TABULATED QUANTITIES, PLAN VIEW (CELL 79)