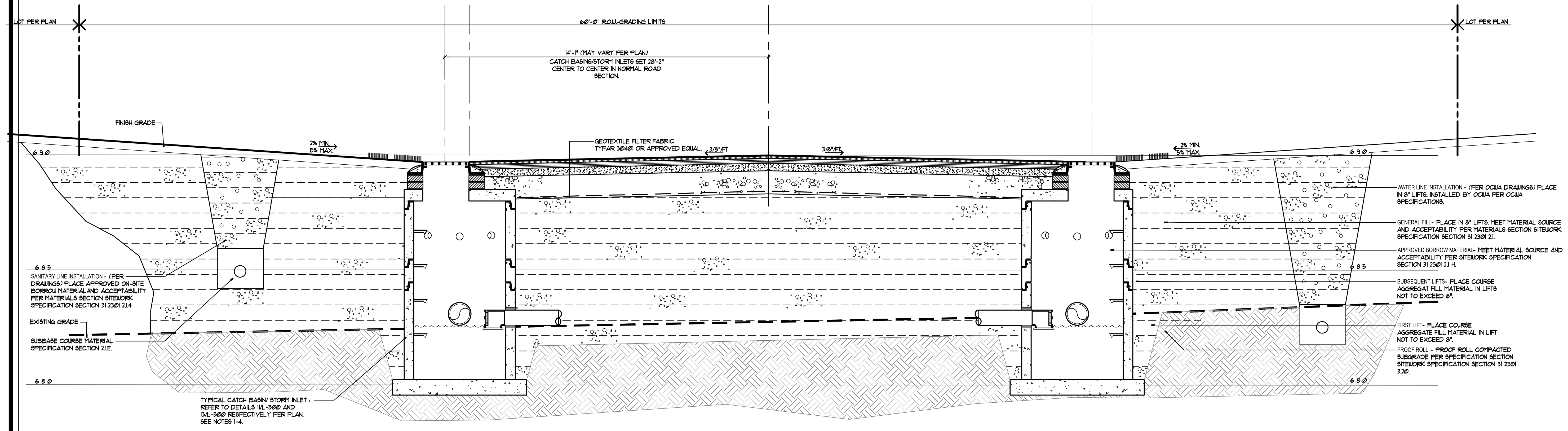
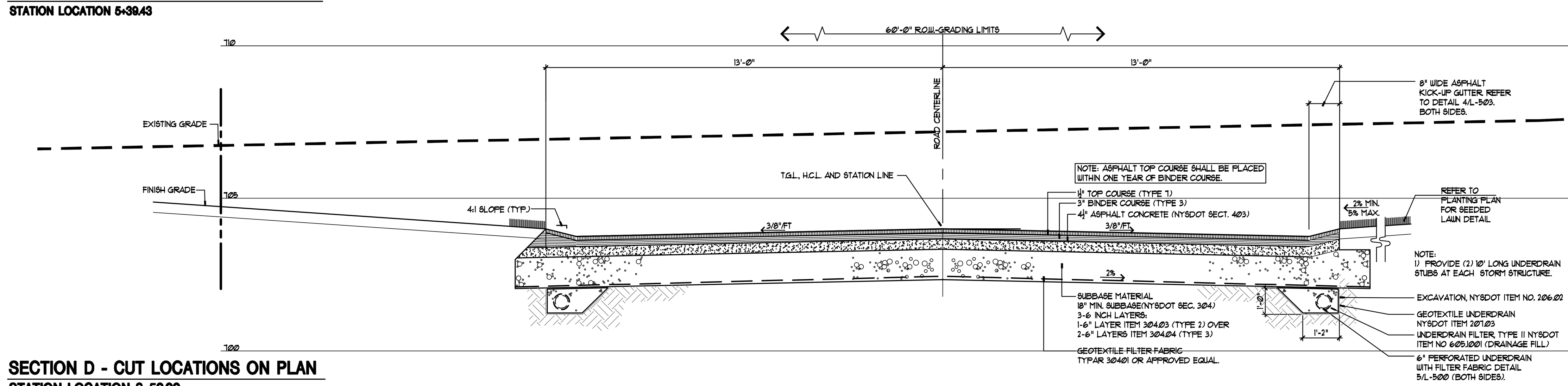
NOTES:
1. CATCH BASIN RIM SHALL BE 0.2' BELOW EDGE OF PAVEMENT.
2. ALL RISERS FOR CATCH BASIN TO BE PRECAST.
3. EXTENSION RINGS AS MANUFACTURED BY FOR MILLER CO, INC.
4. SEAL INSIDE BLOCK BOND FOLLOWED BY CONSEAL CS55 OR EQUAL.

MATERIALS TESTING, COMPACTION, PROOFROLLING AND SITEWORK SPECIFICATIONS DOCUMENTATION
1 - DEVELOPERS TESTING AGENCY, KENNY GEOTECHNICAL TO SHARE ALL BORROW MATERIAL TESTING AND COMPACTION REPORTS WITH TOWN OF MANLIUS ENGINEER AND CODES OFFICER.
2 - WEEKLY TESTING REPORTS TO BE SHARED WITH DEVELOPER, TOWN ENGINEER, CODES OFFICER AND DESIGN ENGINEER (RZE) AND SWPPP INSPECTOR (KFA) WITHIN SWPPP REPORT. SWPPP REPORT TO BE DISTRIBUTED DIGITALLY THROUGH E-MAIL (DROPBOX) WITH HARD COPIES PROVIDED ON SITE WITHIN SWPPP MAILBOX.
3 - DESIGN TEAM HAS REVIEWED TOWN OF MANLIUS SPECIFICATIONS WITH TOBIN CONSTRUCTION THE PROJECT CONTRACTOR.

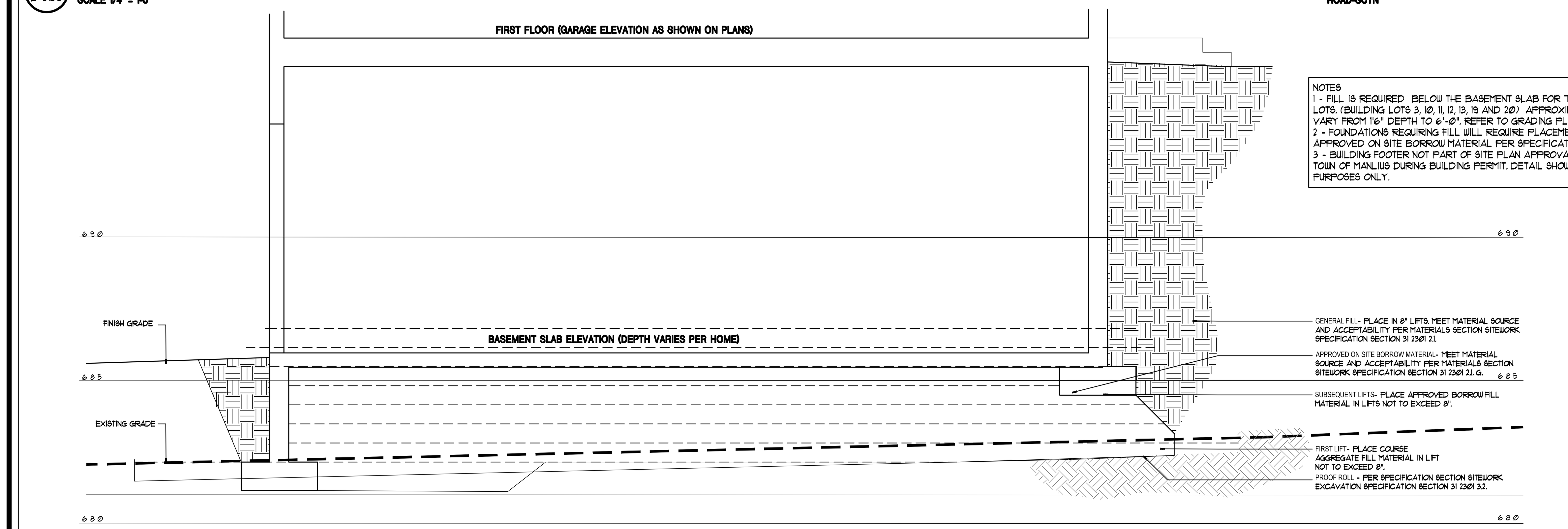


SECTION C - FILL LOCATIONS ON PLAN
STATION LOCATION 5+39.43



SECTION D - CUT LOCATIONS ON PLAN
STATION LOCATION 8+50.00

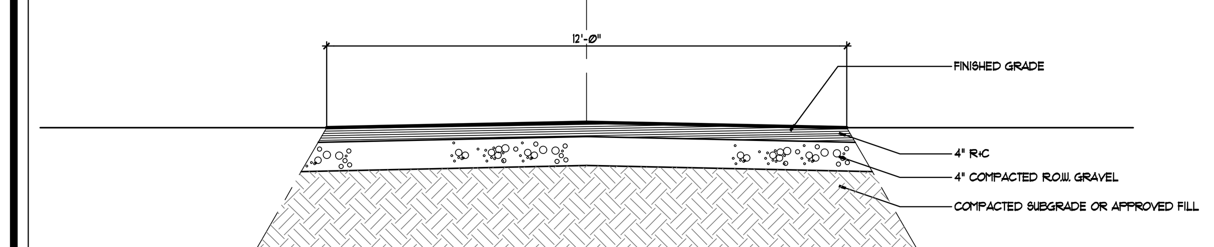
1/L-503 TYPICAL LOCAL ROAD SECTION - TOWN OF MANLIUS
SCALE 1/4" = 1-0" ROAD-SCTN



NOTES
1 - FILL IS REQUIRED BELOW THE BASEMENT SLAB FOR 7 OF THE 20 PROPOSED LOTS. (BUILDING LOTS 3, 10, 11, 12, 13, 19 AND 20) APPROXIMATE FILL AMOUNTS VARY FROM 1'6" DEPTH TO 6'-0". REFER TO GRADING PLANS.
2 - FOUNDATIONS REQUIRING FILL WILL REQUIRE PLACEMENT OF COMPACTED APPROVED ON SITE BORROW MATERIAL PER SPECIFICATIONS.
3 - BUILDING FOOTER NOT PART OF SITE PLAN APPROVAL. COORDINATE WITH TOWN OF MANLIUS DURING BUILDING PERMIT. DETAIL SHOWN FOR COORDINATION PURPOSES ONLY.

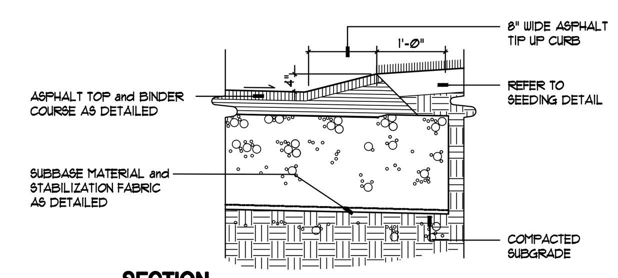
SECTION C - FILL LOCATIONS PER GRADING PLAN L-200
STATION LOCATION 4+50.00

2/L-503 TYPICAL FOUNDATION IN FILL CONDITION
SCALE: 1/4" - 1'-0"



SECTION F - ACCESS EASEMENT

3/L-503 BASIN ACCESS ROAD
SCALE: 1/4" - 1'-0"



SECTION

4/L-503 ASPHALT KICK-UP GUTTER
NOT TO SCALE 32-1216-11

SECTION 31 2301 – SITEWORK EXCAVATION, BACKFILLING AND COMPACTING

PART 1 GENERAL

1.1 TOWN OF MANLIUS, NY HIGHWAY SPECIFICATIONS - INCLUDED

1.2 EXAMINATION OF EXISTING GRADES

A. EXAMINE GRADES AND NOTIFY ARCHITECT OF DISCREPANCIES, IF ANY, BEFORE PROCEEDING. START OF WORK IMPLIES ACCEPTANCE OF EXISTING GRADES.

1.3 SUBMITTALS

A. **MATERIAL CERTIFICATES** (MC) INCLUDING A CERTIFIED LABORATORY SIEVE ANALYSIS (LA) BEARING NAME AND LOCATION OF QUARRY. SAMPLE (S) OF MATERIAL REQUIRED (APPROXIMATE VOLUME $1FT^3$) IN A WATERPROOF CONTAINER PERMANENTLY LABELED TO SHOW SOURCE. SUBMIT FOR THE FOLLOWING MATERIALS:
1. SUBBASE MATERIAL: (MC), (LA) INCLUDING MOISTURE/DENSITY CURVES AND (S)
2. COARSE AGGREGATE FILL: (MC) AND (S)
3. DRAINAGE FILL: (MC), (LA) AND (S)
4. APPROVED ON SITE BORROW MATERIAL

B. **MANUFACTURERS DATA** (MD) AND PRODUCT SAMPLE (S) REQUIRED FOR THE FOLLOWING MATERIALS:
1. STABILIZATION FABRIC: (MD) AND (S)

1.4 DEFINITIONS

A. **DEVELOPER'S ENGINEER**: REFERS TO THE PROFESSIONAL ENGINEER EMPLOYED BY THE DEVELOPER TO SUPERVISE THE WORK OF THE DEVELOPER AND THEREAFTER CERTIFY TO THE TOWN THAT THE ITEMS OF WORK CONSTRUCTED BY THE DEVELOPER ARE BUILT IN ACCORDANCE WITH THE APPROVED PLANS. AT COMPLETION OF ALL WORK, A COMPLETE SET OF "AS-BUILT" DRAWINGS SHALL BE SUBMITTED TO THE TOWN. THIS SET OF DRAWINGS SHALL BE CERTIFIED AS BEING CORRECT BY THE DEVELOPER'S ENGINEER.
B. **TOWN ENGINEER**: IS THAT PERSON OR FIRM EMPLOYED OR RETAINED BY THE TOWN TO REPRESENT AND/OR ADVISE THE TOWN IN ALL MATTERS OF AN ENGINEERING NATURE.
C. **HIGHWAY SUPERINTENDENT:** REFERS TO THE SUPERINTENDENT OF HIGHWAYS EMPLOYED BY THE TOWN.
D. **DEVELOPER**: IS THAT PERSON, COMPANY OR CORPORATION THAT IS THE OWNER OF THE LANDS AS SHOWN ON THE FINAL APPROVED SUBDIVISION PLAN. THE DEVELOPER WILL BE RESPONSIBLE FOR FULL COMPLIANCE TO THESE SPECIFICATIONS AS WELL AS ANY EXISTING SUBDIVISION AND ZONING REGULATIONS OF THE TOWN OF MANLIUS. THE DEVELOPER WILL REQUIRE ANY CONTRACTOR EMPLOYED BY HIM TO PERFORM THE CONSTRUCTION WORK TO COMPLY WITH THE ABOVE MENTIONED SPECIFICATIONS AND REGULATIONS.
E. **ROADWAY**: IS THAT PORTION OF THE RIGHT-OF-WAY THAT IS DISTURBED FOR PURPOSES OF CONSTRUCTING THE ROAD SECTION INCLUDING PAVEMENT, GUTTER, DITCHES AND BACK SLOPES.
F. **TESTING AGENCY**: REFERS TO TOWN OF MANLIUS APPROVED TESTING AGENCY TO PERFORM ALL SERVICES LISTED WITHIN SPECIFICATION FOR TESTING OF SUBGRADES, ROW FILL PLACEMENT AND FILL/BASIN EMBANKMENT PLACEMENT. INCLUDES TESTING OF APPROVED ON-SITE BORROW MATERIAL.

1.5 PLANS

A. PLANS SHOWING ORGINAL GROUND ELEVATIONS AND FINISHED GRADES, CENTERLINE PROFILES, TYPICAL CROSS-SECTION AND PROPOSED DRAINAGE FACILITIES SHALL BE SUBMITTED TO THE TOWN BOARD AND THE HIGHWAY SUPERINTENDENT BEFORE FINAL APPROVAL CAN BE GIVEN. NO CONSTRUCTION SHALL BE COMMENCED UNTIL SUCH APPROVAL HAS BEEN GIVEN.

1.6 STANDARDS (see Town Subdivision Regulations Chapter 127)

A. **GRADES**: THE ROAD SHALL NOT BE LESS THAN 1.0% NOR MORE THAN 7% FOR MINOR ROADS AND 5% FOR CUL-DE-SACS AND HAMMERHEAD TURN AROUNDS UNLESS OTHERWISE APPROVED BY THE HIGHWAY SUPERINTENDENT. THE ROAD GRADE AT INTERSECTIONS SHALL NOT EXCEED 3% FOR A DISTANCE OF 100 FEET IN ANY DIRECTION FROM THE POINT OF INTERSECTION.
B. **RIGHT-OF-WAY:** THE RIGHT OF WAY DEEDED TO THE TOWN SHALL NOT BE LESS THAN 60 FEET IN WIDTH AND WITH A 60 FOOT RADIUS AT THE CUL-DE-SAC TURN AROUNDS. THE BACK SLOPE FROM THE EDGE OF THE ROADWAY TO THE RIGHT-OF-WAY SHALL NOT EXCEED 5% WHEREEVER PRACTICAL AND SHALL BE GRADED TO CONFORM IN GENERAL WITH THE ROAD GRADE.
C. **CURVES:** THE HORIZONTAL CURVE SHALL NOT EXCEED A MINIMUM RADIUS OF 150 FEET ON MINOR STREETS AND CUL-DE-SACS. LONGER RADII ARE REQUIRED FOR MAJOR STREETS AS STATED IN THE SUBDIVISION REGULATIONS.
D. **DRAINAGE:** THE PATTERN OF DRAINAGE SHALL BE INCLUDED IN ALL ROAD PLANS. THIS PLAN TO CLEARLY INDICATE: THE DIRECTION OF FLOW OF ALL SURFACE WATER; 2) THE LOCATION, SIZE, AND TYPE OF DRAINAGE STRUCTURE; AND 3) NOTATION AS TO FINAL POINT OF DISCHARGE OF THE SURFACE WATER. NO STORM DRAINS SHALL BE LESS THAN 12 INCHES IN DIAMETER. DEVELOPERS MUST MAKE SUITABLE ENTRANCES TO PRIVATE DRIVEWAYS, AND DRIVEWAY CULVERTS SHALL BE INSTALLED WHEN DIRECTED BY THE HIGHWAY SUPERINTENDENT. CATCH BASINS SHALL BE INSTALLED ALONG THE GUTTER AT 400 FOOT INTERVALS OR LESS WHEN CONSIDERED NECCESSARY BY THE HIGHWAY SUPERINTENDENT AND/OR THE TOWN ENGINEER.
1. STORM SEWERS FOR RESIDENTIAL SUBDIVISIONS SHALL BE DESIGNED BASED A 10 YEAR FREQUENCY AND AS OUTLINED BY CURRENT NYSDEC RULES AND REGULATIONS. SPECIAL STRUCTURES AND FACILITIES SUCH AS DETENTION BASINS MAY BE REQUIRED BY THE TOWN ENGINEER WHEN CONDITIONS WARRANT.
2. FINISH GRADE OF ALL LOT CORNERS MUST BE INDICATED ON THE FINAL PLAN. ROUGH GRADING OF INDIVIDUAL LOTS SHALL BE WITHIN 6" OF THE INDICATED FINISH ELEVATION. BUILDING PERMITS WILL NOT BE ISSUED UNTIL THIS HAS BEEN ACCOMPLISHED.
3. REQUIREMENTS AS MANDATED BY ALL REGULATORY AGENCIES IN ADDITION TO THOSE OF THE TOWN MUST BE COMPILED WITH. ALL NECESSARY PERMITS MUST BE OBTAINED BY THE DEVELOPER.

E. **UTILITIES**: ALL UTILITIES SHALL BE LOCATED WITHIN THE ROAD RIGHT-OF-WAY OF THE TOWN OF MANLIUS WHEREVER POSSIBLE. EASEMENTS CONTAINING UTILITIES AND DITCHES OUTSIDE THE RIGHT OF WAY MUST BE PROPERLY DESCRIBED AND WILL BE SUBJECT TO APPROVAL BY THE TOWN PLANNING BOARD. ALL UTILITIES, INCLUDING LATERALS, TO BE INSTALLED BEFORE CONSTRUCTION OF THE SUB-BASE COURSE.
F. **HIGHWAY AGREEMENT GUARANTEE:** A CERTIFIED CHECK, BOND, OR OTHER SECURITY ACCEPTABLE TO THE TOWN IN THE AMOUNT AGREED UPON WITH THE HIGHWAY SUPERINTENDENT, AS TO THE VALUE OF THE WORK TO BE PERFORMED BY THE DEVELOPER, SHALL BE DEPOSITED WITH THE TOWN CLERK OF THE TOWN OF MANLIUS BEFORE ANY BUILDING PERMIT IS ISSUED, TO INSURE COMPLETION AS TO TIME AND SPECIFICATIONS. THIS DEPOSIT SHALL BE RETURNED AT THE TIME OF SATISFACTORILY COMPLETION OF THE WORK AS INDICATED BY THE HIGHWAY SUPERINTENDENT. A CERTIFIED CHECK, BOND, OR OTHER SECURITY ACCEPTABLE TO THE TOWN IN THE AMOUNT OF 5% FOR THE ROADWAY CONSTRUCTION COST WILL BE OFFERED AS A RETAINER FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF THE ROAD BY THE HIGHWAY SUPERINTENDENT AS A GUARANTEE AGAINST ANY REPAIRS WITHIN THE PERIOD.
G. **SIGNAGE**: ALL PROPOSED TRAFFIC CONTROL AND STREET IDENTIFICATION SIGNAGE SHALL BE SUBMITTED WITH FINAL ENGINEERING DRAWINGS FOR REVIEW AND APPROVAL BY THE HIGHWAY SUPERINTENDENT AND SHALL BE COMPLETED IN ACCORDANCE WITH THE NEW YORK STATE MANUAL OF UNIFORMTRAFFIC CONTROL DEVICES, LATEST EDITION.

1.7 TIMING

A. INSTALL DRAINAGE SYSTEM PRIOR TO OR CONCURRENT WITH ROAD EXCAVATION TO PREVENT/LIMIT DOWNSTREAM FLOODING AND EROSION/SEDIMENTATION, TO ALLOW TRENCH OR GENERAL FILL SETTLEMENT, AND TO ALLOW INSTALLATION OF SUBBASE MATERIALS FOR CONSTRUCTION.

1.8 GENERAL DEWATERING

A. THE CONTRACTOR SHALL DEWATER ALL EXCAVATIONS WHEN WATER HAS ENTERED THE EXCAVATION OR AT THE DIRECTION OF THE ENGINEER. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT NECESSARY TO COMPLETE THE WORK.

1.9 USAGE OF ELECTRONIC DOCUMENTS FOR MACHINE CONTROL EQUIP.

A. THE CONTRACTOR MAY USE ANY TYPE OF GPS MACHINE CONTROL EQUIPMENT AND SYSTEMS THAT RESULTS IN ACHIEVING THE PROPOSED GRADING REQUIREMENTS. THE CONTRACTOR SHALL CONVERT THE ELECTRONIC DATA PROVIDED BY THE ARCHITECT INTO THE FORMAT REQUIRED BY THEIR SYSTEM.

PART 2 PRODUCTS

2.1 MATERIALS

A. **GENERAL FILL/EXCAVATED SUBSOIL/SOIL FILL**: APPROVED, FREE OF FROST TRASH, STUMPS, TREES, ROOTS, SOD, MUCK, ETC. IF SUITABLE EXCAVATED MATERIAL IS INSUFFICIENT TO MEET FILL REQUIREMENTS, FURNISH ADDITIONAL MATERIAL AT CONTRACTOR'S EXPENSE, SUBJECT TO APPROVAL BY TESTING AGENCY. THOROUGHLY BREAK UP AND CONDITION SOILS FOR LAYERED PLACEMENT AND COMPACTION IN FILL AREAS.
B. **DRAINAGE FILL**: CRUSHED STONE OR WASHED CRUSHED GRAVEL. NYSDOT #1, TABLE 703-4. CLEAN, DURABLE, OF UNIFORM QUALITY THROUGHOUT.

STANDARD ASTM SIEVE SIZE	% PASSING BY WEIGHT
1" (25 MM)	100
1/2" (12.5 MM)	90-100
1/4" (6.3 MM)	0-15

C. **STABILIZATION FABRIC**: GEOTEXILE FILTER FABRIC TYPAR 3401 OR APPROVED EQUAL.
D. **SUBBASE COURSE MATERIAL**: CRUSHED LIMESTONE CONFORMING TO NYSDOT SECTION 304-2.02 SUBBASE COURSE TYPE 2 WELL GRADED FROM COARSE TO FINE TO PRODUCE TIGHTLY BONDED MATERIAL WHEN COMPACTED, AND FREE FROM SOIL, ORGANIC MATERIALS OR OTHER CONTAMINATION.

STANDARD ASTM SIEVE SIZE	% PASSING BY WEIGHT
2" (50 MM)	100
1/4" (6.3 MM)	25-65
NO. 40 (.425 MM)	5-40
NO. 200 (.075 MM)	0-10

E. **TOPSOIL**: UTILIZE ON-SITE TOPSOIL
F. **OVERSIZED SUBBASE COURSE MATERIAL**: CRUSHED LIMESTONE CONFORMING TO NYSDOT SECTION 304, SUBBASE COURSE, TYPE 1 GRADATION WITH 100% PASSING A 3" SIEVE AND WELL GRADED FROM COARSE TO FINE TO PRODUCE A RIGHTLY BONDED MATERIAL WHEN COMPACTED, AND FREE FROM SOIL, ORGANIC MATERIAL OR OTHER CONTAMINANTS.
G. **APPROVED ON-SITE BORROW MATERIAL** SIEVE ANALYSIS REVIEW PERFORMED BY TESTING AGENCY, TOWN OF MANLIUS SELECTED TESTING AGENCY. REFER TO COMPACTION TESTING REQUIREMENTS SECTION 3.10.

PART 3 EXECUTION

3.1 ROUGH GRADING OF ROADS

A. **GENERAL**: THE DEVELOPER SHALL REMOVE ALL ROCK, EARTH AND OTHER MATERIAL REQUIRED BY THE PLANS FOR THE FULL WIDTH OF THE ROADWAY. HE SHALL DISPOSE OF THIS MATERIAL AS REQUIRED. EARTH EMBANKMENTS SHALL BE CONSTRUCTED TO ESTABLISHED LINES AND GRADES FOR THE FULL WIDTH OF THE ROADWAY AT THE LOCATION SHOWN ON THE PLANS. EMBANKMENT MATERIAL SHALL BE NATURAL SOIL, FREE FROM EXCESSIVE MOISTURE, FROST, STUMPS, TREE ROOTS, SOD, MUCK, MARL, VEGETATION OR OTHER UNSUITABLE MATERIAL.
B. **STRIPPING:** PRIOR TO THE COMMENCEMENT OF EXCAVATION OF FILL, STRIPPING SHALL BE CONDUCTED TO REMOVE ALL TOPSOIL, ROOTS, ORGANIC MATTER, RUBBISH OR OTHER DEBRIS FOR THE FULL WIDTH OF THE PAVEMENT AND ADJACENT DISTURBED LAND.
C. **MATERIALS TO BE USED:** IF THERE IS NOT SUFFICIENT EXCAVATED MATERIAL OF A SUITABLE QUALITY AT THE SITE TO COMPLETE THE EMBANKMENT, SUBGRADES AND BACKFILLING TO THE REQUIRED LINES AND GRADE, THE DEVELOPER SHALL BORROW THE NECCESSARY ADDITIONAL MATERIALS. THE SOURCE AND ACCEPTABILITY OF THE BORROW MATERIAL SHALL BE SUBJECT TO APPROVAL OF THE TOWN ENGINEER OR THE HIGHWAY SUPERINTENDENT. THE DEVELOPER SHALL REQUEST APPROVAL OF THE PROPOSED BORROW AREAS AT LEAST FIVE DAYS BEFORE TAKING ANY MATERIAL FROM SUCH AREAS. ALL TEST PITS, EXPLORATIONS AND LABORATORY TESTS REQUIRED BY THE HIGHWAY SUPERINTENDENT OF TOWN ENGINEER SHALL BE DONE BY THE DEVELOPER AT HIS OWN EXPENSE. PLACING: IN GENERAL, EMBANKMENT MATERIALS SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING EIGHT INCHES IN THICKNESS MEASURED PRIOR TO COMPACTION. STONES, IF ANY, SHALL NOT EXCEED FOUR INCHES IN GREATEST DIMENSION AND SHALL BE WELL DISTRIBUTED THROUGH THE MASS. EACH LAYER OF EMBANKMENT MATERIAL SHALL BE ROUGHLY TAMPERED OR ROLLED TO THE REQUIRED DEGREE OF COMPACTION AT OPTIMUM MOISTURE CONTENT BY SHEEPSFOOT OR PNEUMATIC ROLLERS, MECHANICAL TAMPERS OR VIBRATORS. SUCCESSIVE LAYERS SHALL NOT BE PLACED UNTIL THE LAYER UNDER CONSTRUCTION HAS BEEN THOROUGHLY COMPACTED. TRUCKS OR OTHER HEAVY EQUIPMENT SHALL NOT BE OPERATED OVER PIPELINES UNTIL A MINIMUM OF 18 INCHES OF BACKFILL ABOVE THE CROWN OF THE PIPE HAS BEEN PLACED AND PROPERLY COMPACTED.
D. **COMPACTION CONTROL:** EMBANKMENT SHALL HAVE A MINIMUM DRY DENSITY OF 95 PERCENT OF THE MAXIMUM DRY WEIGHT DENSITY IN POUNDS PER CUBIC FOOT AS DETERMINED BY THE AASHO STANDARD DENSITY TEST OR THE PROCTOR COMPACTION TEST. COMPACTION TESTS SHALL BE PERFORMED ON A DAILY BASIS OR AS MAY BE DEEMED NECESSARY BY THE HIGHWAY SUPERINTENDENT OF THE TOWN ENGINEER. SUCH TESTS SHALL BE PERFORMED BY QUALIFIED LABORATORY PERSONNEL AT THE DEVELOPER'S EXPENSE. WHEN THE TEST RESULTS INDICATE THAT INSUFFICIENT COMPACTION HAS BEEN OBTAINED IN ANY LAYER, THE DEVELOPER SHALL TAKE SUCH ACTION AS THE HIGHWAY SUPERINTENDENT OR THE TOWN ENGINEER MAY DIRECT TO MODIFY OR ALTER THE MOISTURE CONTENT OF THE SOIL, TO PROVIDE ADDITIONAL COMPACTION OR OTHERWISE TO INCREASE THE IN-PLACE SOIL DENSITY.

3.2 PREPARATION OF SUBGRADE

A. THE DEVELOPER SHALL PREPARE THE SUBGRADE TO RECEIVE THE PAVEMENT IN CONFORMITY WITH THE LINES AND GRADES AS SHOWN ON THE PLANS. BEFORE THE SUB-BASE COURSE MATERIAL IS PLACED UPON THE SUBGRADE, IT SHALL BE SHAPED TO LINE AND GRADE AND COMPACTED WITH AN APPROVED SELF-PROPELLED ROLLER WEIGHING NOT LESS THAN 10 TONS. ALL HOLLOWS AND DEPRESSIONS WHICH DEVELOP UNDER ROLLING SHALL BE FILLED WITH ACCEPTABLE GRANULAR MATERIAL SHALL AGAIN BE ROLLED. GRANULAR MATERIALS USED TO FILL DEPRESSIONS SHALL CONSIST OF APPROVED HARD, DURABLE PARTICLES 100% OF WHICH SHALL PASS A ½ INCH SIEVE AND NOT MORE THAN 5% OF WHICH SHALL PASS NO. 200 SIEVE. THIS PROCESS OF SHAPING AND ROLLING AND FILLING SHALL BE REPEATED UNTIL NO DEPRESSIONS DEVELOP. THE SUBGRADE SHALL NOT BE MUDDY OR OTHERWISE UNSATISFACTORY WHEN THE SUB-BASED MATERIAL IS PLACED UPON IT. IF SOFT SPOTS DEVELOP DURING THE ROLLING, THE MATERIAL SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE GRANULAR MATERIAL ABOVE.

3.3 ROAD CONSTRUCTION

A. TOWN OF MANLIUS DETAILS OF ROAD CONSTRUCTION SHALL BE INSTALLED AS SHOWN WITHIN THE CONSTRUCTION DOCUMENTS
1. SD-1 TYPICAL ROAD CROSS SECTION (1/L-503)
2. SD-2 TYPICAL ROAD CROSS SECTION WITH CATCH BASIN LOCATION (1/L-503)
3. SD-3 STANDARD CATCH BASIN (11/L-500)
4. SD-4 TEMPORARY PAVED TURN AROUND AND EASEMENT (9/L-501)

3.4 SPECIAL CONDITIONS

A. ROUGH GRADING MUST BE COMPLETED BEFORE THE CONSTRUCTION OF UTILITIES IS COMMENCED.
B. THE SUBGRADE MUST BE INSPECTED AND APPROVED BY THE HIGHWAY SUPERINTENDENT BEFORE THE SUB-BASE COURSE IS PLACED.
C. THE SUB-BASE COURSE MUST BE INSPECTED AND APPROVED BY THE HIGHWAY SUPERINTENDENT BEFORE THE BINDER COURSE IS PLACED.
D. THE TOP COURSE OF ASPHALT PAVEMENT SHALL NOT BE PLACED UNTIL PERMISSION IS OBTAINED FROM THE HIGHWAY SUPERINTENDENT.
E. NO CERTIFICATE OF OCCUPANCY FOR HOUSES CONSTRUCTED ON NEW ROADS WILL BE ISSUED UNTIL THE ROAD CONSTRUCTION IS COMPLETED AND NECESSARY APPROVALS OBTAINED. APPROVAL TO BE OBTAINED FROM THE HIGHWAY SUPERINTENDENT. A LETTER OF CERTIFICATION BY THE DEVELOP'S ENGINEER WILL BE REQUIRED UNDER CIRCUMSTANCES WHERE THE HIGHWAY SUPERINTENDENT HAS NOT INSPECTED AND APPROVED THE CONSTRUCTION PROCEDURES OUTLINED ABOVE.

3.5 GENERAL

A. BANKS AND SIDES: ANGLE OF RECLINE OR SHEATHING, SHORING, AND BRACING AS REQUIRED FOR SAFETY AND CONFORMING TO ALL APPLICABLE LAWS, RULES, REGULATIONS AND CODES.

1. UNCLASSIFIED EXCAVATION

A. INCLUDES ALL EARTH AND MISCELLANEOUS MATERIAL ENCOUNTERED.
B. CUT TO EXACT ELEVATIONS AND GRADE. IF SOIL BECOMES SATURATED AND LOSES ITS STRUCTURE IN AN AREA, CEASE WORK IN THAT AREA, AFTER ESTABLISHING POSITIVE SURFACE DRAINAGE, UNTIL SURFACE DRIES. WHEN THE AREA HAS STABILIZED, CONTINUE EXCAVATION.TRANSPORT TO FILL AREAS.
C. STOCKPILED SOILS, PILE IN MANNER AND LOCATION THAT WILL NOT IMPEDE THE WORK OF ANY OTHER CONTRACTOR, AS DIRECTED BY STAGED PLANS.

3.6 UNCLASSIFIED EXCAVATION FOR STRUCTURES

A. INCLUDES ALL EARTH AND MISCELLANEOUS MATERIAL ENCOUNTERED.
B. EXCAVATE TO DEPTH AS SHOWN ON DRAWINGS. TRANSPORT TO FILL AREAS OR REMOVE FROM SITE.
C. EXCESS DEPTH: BACKFILL TO PROPER ELEVATIONS WITH APPROVED ON SITE BORROW MATERIAL.
D. CLEARANCE SUFFICIENT FOR FORM WORK TO BE PERFORMED. BANKS AND SIDES - ANGLE OF RECLINE OR SHEETING, SHORING, AND BRACING AS REQUIRED FOR SAFETY AND CONFORMING TO ALL APPLICABLE LAWS, RULES, REGULATIONS AND CODES. REMOVE BEFORE BACKFILLING.
E. REMOVE LOOSE MATERIAL AND DEBRIS FROM EXCAVATION SO ALL FOOTINGS REST ON SOLID, UNDISTURBED SOIL.
F. REMOVE WATER DURING EXCAVATION FOR FOUNDATIONS BY DITCHING OR PUMPING SO THAT NO WATER STANDS.
G. INSURE THAT MOVEMENT OF EQUIPMENT IN THE EXCAVATION DOES NOT CAUSE WORKING AND PUMPING OF THE UNDERLYING SOIL WHICH IS NOT TO BE EXCAVATED. SHOULD THE EQUIPMENT USED CAUSE EXCESSIVE WORKING, USE OTHER METHODS OF EXCAVATION TO MAINTAIN THE DESIGN BEARING CAPACITY OF THE SOIL.

3.7 UNCLASSIFIED TRENCH EXCAVATION

A. INCLUDES ALL EARTH AND MISCELLANEOUS MATERIAL ENCOUNTERED.
B. EXCAVATE TO EXACT DEPTH AND GRADE ALLOWING CLEARANCE FOR PIPE BEDDING AS REQUIRED.
C. TRANSPORT EXCESS TO FILL AREAS OR STOCKPILE AREAS.
D. PUMP AS REQUIRED TO DEWATER EXCAVATION.

3.8 GENERAL FILLING REQUIREMENTS

A. THE SUBGRADE TO RECEIVE FILL SHALL BE FIRM AND STABLE AND SHOULD NOT EXHIBIT MUD, ORGANIC MATERIAL, TOPSOIL, STANDING WATER, DEBRIS OR FROZEN MATERIAL. WHERE APPLICABLE, SUBGRADE SHOULD BE PROOFROLLED AND REMEDIATED (IF NECESSARY). APPROVED SUBGRADE SHOULD BE IMMEDIATELY PROTECTED BY PLACEMENT OF THE PLANNED FILL.
B. FILL MATERIAL SHALL BE PLACED ON A SATISFACTORY AND APPROVED SUBGRADE IN A MANNER TO MINIMIZE SEGREGATION. THE FILL SHOULD BE PLACED IN NEARLY HORIZONTAL 8" LIFTS COMMENCING AT THE LOWEST FILL AREA ELEVATION AND PROCEEDING WITH EACH LIFT UPWARD AND OUTWARD FROM THE LOWER LIFT. THE MOISTURE CONTENT OF THE MATERIAL SHALL BE ADJUSTED PRIOR TO APPLICATION OF COMPACTION SUCH THAT IT IS WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT. THE FIRST LIFT SHALL BE PLACED TO A LOOSE THICKNESS NOT TO EXCEED 8". THIS FIRST LIFT SHALL THEN BE COMPACTED TO AN IN PLACE DENSITY NOT TO LESS THAN 95% OF THE MAXIMUM DRY DENSITY, UNLESS NOTED OTHERWISE IN THIS SPECIFICATION SECTION.
C. NO SUBSEQUENT LIFT SHALL BE PLACED UNTIL THE UNDERLYING LIFT HAS BEEN ADEQUATELY COMPACTED TO A STABLE AND UNIFORM MASS.

D. TRENCH BACKFILL

1. MATERIALS:
a. UNDER LAWNS AND UNDER PLANTING BEDS: APPROVED EXCAVATED SUBSOIL MATERIAL.
b. UNDER PAVEMENT SECTION: APPROVED ON-SITE BORROW MATERIAL. REFER TO DETAILS ON L-503.
2. PLACE: DO NOT PLACE ON FROZEN GROUND. PLACE IN 6" LAYERS FROM CUSHION SAND OR FILTER MATERIAL TO SUBGRADE. NO BOULDERS OR STONES OVER 4". TAMP EACH 6" LAYER WITH MECHANICAL TAMPER. ADJUST FILL TO SMOOTH SUBGRADE.
3. COMPACTION: UNIFORMLY SPREAD EACH LAYER, MOISTEN OR DRY AS REQUIRED, AND THEN COMPACT SO UNIT DRY WEIGHT OF THE COMPACTED MATERIAL MEETS OR EXCEEDS 95% OF THE MAXIMUM MODIFIED PROCTOR DENSITY BASED ON ASTM D 1557 PROCEDURES.

E. FILL AT STRUCTURES

1. MATERIALS:
a. FILL UNDER PAVEMENT SUBGRADE - APPROVED ON-SITE BORROW MATERIAL
b. SITE STRUCTURES BACKFILL TO SUBGRADE WHERE PAVEMENT OCCURS AND NO FOOTING DRAINS OCCUR - APPROVED ON-SITE BORROW MATERIAL
2. PLACE: DO NOT PLACE ON FROZEN GROUND. PLACE IN 6" LAYERS. COMPACT BY APPROVED MECHANICAL EQUIPMENT. REMOVE CONSTRUCTION DEBRIS FROM EXCAVATION.
3. COMPACTION: UNIFORMLY SPREAD EACH LAYER, MOISTEN OR DRY AS REQUIRED, AND THEN COMPACT SO UNIT DRY WEIGHT OF THE COMPACTED MATERIAL MEETS OR EXCEEDS 95% OF THE MAXIMUM MODIFIED PROCTOR DENSITY BASED ON ASTM D 1557 PROCEDURES.

3.9 STABILIZATION FABRIC (GEOTEXTILE FILTER FABRIC)

A. PLACE STABILIZATION FABRIC IN LENGTHS AND WIDTHS AS LARGE AS POSSIBLE. LAP SEAMS PER MANUFACTURER'S INSTRUCTIONS OR 6" MINIMUM.
B. COVER USING METHODS THAT WILL NOT DAMAGE OR DISPLACE STABILIZATION FABRIC.
C. TIME OPERATIONS TO AVOID TRENCHING BY ANY CONTRACTOR IN AREAS WHERE STABILIZATION FABRIC HAS BEEN PLACED.

3.10 FIELD QUALITY CONTROL - KENNEY GEOTECHNICAL SHALL PROVIDE MATERIALS, COMPACTION AND PROOF ROLLING TESTING SERVICES.

A. **PROOFROLLING** - IMMEDIATELY PRIOR TO PLACING MATERIAL FOR PAVEMENTS OR SLABS ON GRADE, PROOFROLL SUBGRADE WITH 10 TON MINIMUM LOADED SMOOTH DRUM SELF- PROPELLED VIBRATORY ROLLER. UNDERCUT ALL AREAS WHICH SHOW PUMPING OR WEAVING AND REPLACE WITH ACCEPTABLE FILL MATERIALS COMPACTED TO 95% OF THE MAXIMUM MODIFIED PROCTOR DENSITY FOR PAVED AREAS AND 85% OF THE MAXIMUM MODIFIED PROCTOR DENSITY FOR LAWN AREAS BASED ON ASTM D 1557 PROCEDURES.
B. **QUALITY CONTROL TESTING DURING CONSTRUCTION**:
1. KENNEY GEOTECHNICAL SHALL PROVIDE SERVICES OF INDEPENDENT TESTING SERVICE TO INSPECT AND TEST FINAL CUT AND FILL SUBGRADES, UTILITY TRENCHING AND SUBBASE COURSE COMPACTION PRIOR TO PAVING. ADDITIONAL TESTS WILL BE TAKEN AS REQUIRED FOR FULL COVERAGE OF PAVED AREAS.
2. PROVIDE TIMELY NOTICE TO TOWN ENGINEER/ HIGHWAY SUPERINTENDENT TO INSPECT AND APPROVE SUBGRADES AND FILL LAYERS BEFORE FURTHER CONSTRUCTION WORK IS PERFORMED.
3. QA/QC RIGHT OF WAY TESTING:
a. EACH PROPOSED MANHOLE: COMPACTION RESULTS FOR EMBANKMENT, SUBGRADE, SUBBASE AND BASE IN 6" LIFTS.
b. EACH CATCH BASIN: COMPACTION RESULTS FOR EMBANKMENT, SUBGRADE, SUBBASE AND BASE IN 6" LIFTS.
c. EACH SANITARY SEWER: COMPACTION RESULTS FOR EMBANKMENT, SUBGRADE, SUBBASE AND BASE IN 6" LIFTS EVERY 500 LF.
d. EACH STORM SEWER: COMPACTION RESULTS FOR EMBANKMENT, SUBGRADE, SUBBASE AND BASE IN 6" LIFTS EVERY 500 LF.
e. ALL ROADWAYS TO BE DEDICATED TO THE TOWN; COMPACTION RESULTS FOR EMBANKMENT, SUBGRADE, SUBBASE, AND BASE IN 6" LIFTS EVERY 500 LF.

3.11 DEWATERING

A. DETAILS OF THE DEWATERING ARE LEFT TO THE CONTRACTOR'S DISCRETION. THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN OF HIS PROPOSED DEWATERING SYSTEM TO THE ENGINEER FOR REVIEW. NO EXCAVATION IN THE WET SHALL PROCEED UNTIL THE CONTRACTOR RECEIVES NOTICE THE REVIEW OF THE DEWATERING PLAN HAS BEEN COMPLETED BY THE ENGINEER.
B. THE CONTRACTOR SHALL AT ALL TIMES DURING CONSTRUCTION, PROVIDE AND MAINTAIN PROPER AND SATISFACTORY MEANS AND DEVICES FOR THE REMOVAL OF ALL WATER ENTERING THE EXCAVATIONS, AND SHALL REMOVE ALL WATER AS FAST AS IT MAY COLLECT, IN SUCH MANNER AS SHALL NOT INTERFERE WITH THE PROSECUTION OF THE WORK OR THE PROPER PLACING OF SOIL, GRANULAR MATERIAL, SEWERS, CONCRETE, MASONRY OR OTHER WORK.
C. REMOVAL OF WATER INCLUDES THE CONSTRUCTION AND REMOVAL OF COFFERDAMS, SHEETING AND BRACING, THE EXCAVATION AND MAINTENANCE OF DITCHES AND SLUICE-WAYS, FURNISHING AND OPERATION OF PUMPS, WELL POINTS, AND FURNISHING ALL LABOR, MATERIAL AND EQUIPMENT NEEDED TO MAINTAIN THOROUGH DRAINAGE OF THE WORK IN A SATISFACTORY MANNER.
D. WATER SHALL NOT BE ALLOWED TO RISE OVER OR COME IN CONTACT WITH ANY MASONRY, CONCRETE OR MORTAR AND NO WATER SHALL BE ALLOWED TO FLOW OVER SUCH WORK UNTIL SUCH TIME AS THE ENGINEER MAY PERMIT.
E. WATER PUMPED OR DRAINED FROM EXCAVATIONS, OR ANY SEWERS, DRAINS, OR WATER COURSES ENCOUNTERED IN THE WORK, SHALL BE DISPOSED OF IN A SUITABLE MANNER WITHOUT INJURY TO ADJACENT PROPERTY, THE WORK UNDER CONSTRUCTION, TO PAVEMENTS, ROADS AND DRIVES AND MUST COMPLY WITH THE REQUIREMENTS OF THE STORMWATER POLLUTION PREVENTION PLAN. NO WATER, INCLUDING SEDIMENTS, SHALL BE DISCHARGED TO SANITARY SEWERS, ADJOINING PROPERTIES, WATER COURSES OR WETLANDS. ANY DAMAGE CAUSED BY IMPROPER HANDLING OF WATER SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.

END OF SECTION 31 2301

EARTHWORK FIELD TESTING SUMMARY TABLE

Service	Particle Size Analysis	Modified Proctor	Proofrolling Observation	In-Place Soil Density Testing
Construction Stage	Estimated Quantity			
	tests*	tests*	days**	tests**
Stage 1	1	1	3	272
Stage 2	1	1	3	52
Stage 3	1	1	3	76
Stage 4	~	~	~	34
Stage 5	1	1	~	TBD
Stage 6	~	~	~	171
Stage 7	~	~	~	TBD
Total	~	~	~	~

* Based on varied soil conditions encountered during subsurface investigation and granular fill.
** Based on approximate volume of cut and fill for roads, utilities, and embankments

Note: Number of days and tests are subject to change based on construction schedule and changes in project scope. All quantities are estimated based on the staging drawings (L-102 through L-108) and specifications provided.

All laboratory and field testing will be performed under the direction and supervision of a New York State Certified Professional Engineer.

Refer to Specification Section 31 2301 part 3.10 Field Quantity Control

EARTHWORK FIELD TESTING NOTICE

1. NO BLASTING SHALL OCCUR ONSITE. NO ROCK REMOVAL OFFSITE TO OCCUR. NO BEDROCK OR RESTRICTIVE LAYERS ENCOUNTERED ON ANY ON-SITE SOIL TESTING/BORINGS.
2. PLACEMENT OF ALL EMBANKMENT FILL, RIGHT OF WAY FILL AND BASEMENT SLAB FILL SHALL BE PERFORMED IN ACCORDANCE WITH REPORT, SPECIFICATIONS, AND TOWN OF MANLIUS APPROVED TESTING AGENCY.
3. SITE CONTRACTOR, DESIGN TEAM, AND TESTING AGENCY TO MEET ON A WEEKLY BASIS TO COORDINATE REQUIRED TESTING.
4. TOWN OF MANLIUS APPROVED TESTING AGENCY SHALL COMPLY WITH KENNEY GEOTECHNICAL REPORTS IDENTIFIED AS EARTHWORK MATERIAL EVALUATION AND BERM STABILITY EVALUATION, DATED 05/18/2020 AND 05/27/2020 RESPECTIVELY.

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STATE OF NEW YORK · RUDY L. ZONA · 079543 · LICENSED PROFESSIONAL ENGINEER
UTILIZED FOR STORMWATER AND SANITARY DESIGN

FOR CONSTRUCTION
HOAG LANE SUBDIVISION
5280 HOAG LANE, MANLIUS, NY

CLIENT:
HOAG ROAD PROPERTIES, LLC

ISSUED AND REVISIONS NOTIFICATION

No.	Rev.	Description	Date	No.	Rev.	Description	Date
1	1	CHECK SET-TOWN OF MANLIUS	01/12/18	8	8	21 LOT SITE PLAN REVISIONS	01/04/19
2	2	CHECK SET-TOWN OF MANLIUS	01/26/18	9	9	MANLIUS- PLAN SUBMISSION	06/14/19
3	3	PUBLIC HEARING- MANLIUS	03/29/18	10	10	MANLIUS- PLAN SUBMISSION	07/12/19
4	4	PUBLIC HEARING- MANLIUS	05/04/18	11	11	MANLIUS- PLAN SUBMISSION	09/23/19
5	5	PUBLIC HEARING- MANLIUS	06/01/18	12	12	MANLIUS- PLAN SUBMISSION	12/18/19
6	6	TOWN REV.-21 LOTS-MANLIUS	10/23/18	13	13	MANLIUS- PLAN SUBMISSION	12/18/19
7	7	MANLIUS-21 HOME LOTS-PL BD	11/30/18	14	14	MANLIUS- PLAN SUBMISSION	06/15/20

△- Symbol Indicates Revision Issued

REGISTERED LANDSCAPE ARCHITECT · SCOTT LEE FREEMAN · 001473 · STATE OF NEW YORK

Drawn By: V.E.R.
Checked By: S.F.
KFA Proj. No.: 37050
Date: DECEMBER 1, 2017
Scale: AS NOTED

Title:
EXCAVATION, BACKFILLING, AND FILLING DETAILS

L-503

Plotted By:
Date Plotted:
Drawing File:

Monday, June 15, 2020 4:52:25 PM