

GRADING LEGEND:

- EXISTING CONTOUR LINE
- EXISTING SPOT ELEVATION
- SLOPE SETBACK LINE
- PROPOSED TREE LINE
- PROPOSED ORANGE CONSTRUCTION FENCE
- PROPOSED WORK LIMITS (CLEARING AND GRADING LIMIT LINE)
- PROPOSED 2 FT CONTOUR
- PROPOSED SPOT GRADE
- DRAINAGE SWALE
- PROPOSED RIPRAP
- PROPOSED GRAVEL ACCESS DRIVE
- FEDERAL WETLAND AREAS TO REMAIN

GRADING AND TREE PROTECTION NOTES:

- ALL EARTHWORK SHALL BE SMOOTHLY AND EVENLY BLENDED INTO EXISTING CONDITIONS.
- THE EROSION CONTROL MEASURES DEPICTED ON THESE PLANS ARE REQUIRED AS MINIMUM. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING ANY AND ALL GENERAL AND PARTICULAR MEASURES AS DEEMED NECESSARY BY THE OWNER'S FIELD REPRESENTATIVES AND THE ENGINEER.
- TEMPORARY PROTECTION:** PROVIDE TEMPORARY FENCING, BARRICADES, OR OTHER SUITABLE GUARDS LOCATED OUTSIDE THE DRAIN LINE (OUTER PERIMETER OF BRANCHES) TO PROTECT TREES AND OTHER PLANTS TO REMAIN FROM DAMAGE.
- PROTECT TREE ROOT SYSTEMS FROM DAMAGE DUE TO NOXIOUS MATERIALS CAUSED BY RUNOFF OR SPILLAGE WHILE MIXING, PLACING OR STORING CONSTRUCTION MATERIALS. PROTECT ROOT SYSTEMS FROM FLOODING, EROSION OR EXCESSIVE WETTING CAUSED BY DEWATERING OPERATIONS.**
- DO NOT STORE CONSTRUCTION MATERIALS, DEBRIS OR EXCAVATED MATERIAL WITHIN TREE DRIP LINE OF REMAINING TREES. DO NOT PERMIT VEHICLES OR FOOT TRAFFIC WITHIN THE DRAIN LINE AND PREVENT SOIL COMPACTION OVER ROOT SYSTEMS.**
- WHERE EXCAVATION FOR NEW CONSTRUCTION IS REQUIRED WITHIN TREE DRIP LINES, HAND EXCAVATE TO MINIMIZE DAMAGE TO ROOT SYSTEMS. USE NARROWING SPACING FORKS AND COMB SOIL TO EXPOSE ROOTS.**
- RELOCATE ROOTS IN BACKFILL AREAS WHEREVER POSSIBLE. IF ENCOUNTERING LARGE, MAIN LATERAL ROOTS, EXPOSE BEYOND EXCAVATION LIMITS AS REQUIRED TO BEND AND RELOCATE WITH-- CUT BREAKING, IF ENCOUNTERING IMMEDIATELY ADJACENT TO**

- LOCATION OF NEW CONSTRUCTION AND RELOCATION IS NOT PRACTICAL, CUT ROOTS APPROXIMATELY 3 INCHES BACK FROM NEW CONSTRUCTION.
- B. DO NOT ALLOW EXPOSED ROOTS TO DRY OUT BEFORE PLACING PERMANENT BACKFILL. PROVIDE TEMPORARY EARTH COVER OR PACK WITH PEAT MOSS AND WATER WITH BURLAP. WATER AND MAINTAIN IN A MOST CONDITION AND TEMPORARILY SUPPORT AND PROTECT ROOTS FROM DAMAGE UNTIL THEY ARE PERMANENTLY RELOCATED AND COVERED WITH EARTH.**
- 7. WHERE UTILITY TRENCHES ARE REQUIRED WITHIN TREE DRIP LINES, TUNNEL UNDER OR AROUND THE ROOTS BY DRILLING, AUGER BORING PIPE JACKING OR DIGGING BY HAND.**

- ROOT PRUNING:** DO NOT CUT MAIN LATERAL ROOTS OR TAP ROOTS; CUT ONLY SMALLER ROOTS THAT INTERFERE WITH INSTALLATION ON NEW WORK. CUT ROOTS WITH SHARP PRUNING INSTRUMENTS. DO NOT BREAK OR CHOP.
- GRADE LOWERING:** WHERE NEW FINISHED GRADE IS INDICATED BELOW EXISTING GRADE AROUND TREES, SLOPE GRADE AWAY FROM TREES.
- ROOT PRUNING:** PRUNE TREE ROOTS EXPOSED DURING GRADE LOWERING. DO NOT CUT MAIN LATERAL ROOTS OR TAP ROOTS. CUT ONLY SMALLER ROOTS. CUT ROOTS WITH SHARP PRUNING INSTRUMENTS. DO NOT BREAK OR CHOP.
- MINOR FILL:** WHERE EXISTING GRADE IS 6 INCHES OR LESS BELOW ELEVATION OF FINISHED GRADE SHOWN AROUND TREES, FILL WITH TOPSOIL. PLACE TOPSOIL IN A SINGLE UNCOMPACTED LAYER AND HAND GRADE TO REQUIRED FINISHED ELEVATIONS.
- DO NOT REGRADE MORE THAN 6 INCHES ABOVE EXISTING GRADE AROUND TREES. PROVIDE TREE PROTECTION FOR FILL OVER 6 INCHES.**
- PRUNE REMAINING TREES AFFECTED BY TEMPORARY AND NEW CONSTRUCTION.**
- PRUNE REMAINING TREES TO COMPENSATE FOR ROOT LOSS CAUSED BY DAMAGING OR CUTTING ROOT SYSTEM. PROVIDE SUBSEQUENT MAINTENANCE DURING CONSTRUCTION PERIOD.**
- PRUNING STANDARDS:** PRUNE TREES ACCORDING TO THE NATIONAL ARBORIST ASSOCIATION'S "PRUNING STANDARDS FOR SHADE TREES".
- CUT BRANCHES WITH SHARP PRUNING INSTRUMENTS. DO NOT BREAK OR CHOP.**
- CHIP BRANCHES REMOVED FROM TREES. SPREAD MATERIALS WHERE INDICATED OR AS DIRECTED BY THE ENGINEER/ARCHITECT.**

GEOTECHNICAL RECOMMENDATION NOTES:

- FOUNDATIONS:**
- FOOTINGS SHALL BEAR ON VIRGIN SUBGRASSES. IN THE BROWN SILTY SAND SUBGRADE, FOOTINGS SHALL NOT BEAR ON THE GRAY CLAY. ENCOUNTERED 10- TO 12- FEET BELOW GRADE WITHOUT SUBGRADE IMPROVEMENTS AS RECOMMENDED BY A GEOTECHNICAL ENGINEER. ALL BUILDINGS CONSTRUCTED ON SITE SHALL HAVE FOOTING DRAINS AROUND THE EXTERIOR PERIMETER OF FOOTINGS OR BASEMENTS, BACKFILLED WITH STONE FILL.

- PAVEMENT:**
- TOP TYPE OF (NYSDOT ITEM NO. 403.18): 1.0 INCHES
- TYPE 3 BINDER (NYSDOT ITEM NO. 403.13): 3.0 INCHES
- CRUSHER RUN: 4.0 INCHES
- BASE GRAVEL: 14.0 INCHES
- STABILIZATION FABRIC (AMOCO 2016 OR EQUAL): REQUIRED
- FILL MATERIALS:**
- ALL FILL MATERIALS SHALL BE FREE OF ORGANIC AND/OR FROZEN MATERIAL. FILL AREAS SHOULD BE CLEARED OF ALL VEGETATION AND TOPSOIL/ORGANIC MATERIALS PRIOR TO PLACEMENT OF FILL MATERIALS. ALL FILL MATERIAL, PLACEMENT, AND COMPACTION SHALL BE APPROVED BY A QUALIFIED GEOTECHNICAL ENGINEER. THE GEOTECHNICAL INVESTIGATION CAN BE USED ON SITE AS NON-STRUCTURAL. THIS MATERIAL SHOULD NOT BE USED AS STRUCTURAL COMPONENTS UNDER ROADS OR STRUCTURES, AND SHOULD NOT BE SLOPED STEEPER THAN 3:1 HORIZONTAL TO 1:1 VERTICAL. RECOMMENDED FILL MATERIALS ARE OUTLINED BELOW:
- STONE FILL:**
- STONE FILL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 12-INCHES IN THICKNESS. A MINIMUM OF 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DENSITY (ASTM D1557) WILL BE REQUIRED. STONE FILL SHOULD CONFORM TO THE FOLLOWING GRADATION:
- | SIZE | % PASSING BY WEIGHT |
|------------|---------------------|
| 1 1/2 INCH | 90-100 |
| 3/4 INCH | 0-15 |
| NO. 200 | 0-10 |
- ENGINEERING FILL:**
- CLEAN, GRANULAR, ENGINEERING FILL CAN BE SPREAD IN LIFTS NOT EXCEEDING 10-INCHES IN LOOSE THICKNESS. THESE MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM MODIFIED PROCTOR DENSITY (ASTM D1557). ENGINEERING FILL SHOULD CONFORM TO THE FOLLOWING GRADATION:
- | SIZE | % PASSING BY WEIGHT |
|--------|---------------------|
| NO. 10 | 100 |
| NO. 20 | 0-10 |

- NON STRUCTURAL BACKFILL:**
- MATERIALS CONTAINING SIGNIFICANT PERCENTAGES OF FINE-GRAINED SOILS OR COHESIVE MATERIALS (>10% PASSING NO. 200 SIEVE) SHOULD BE SPREAD IN LIFTS NOT EXCEEDING 8-INCHES IN LOOSE THICKNESS AND COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM MODIFIED PROCTOR DENSITY (ASTM D1557).
- SITE CLEARING:**
- CONSTRUCTION AREAS SHOULD BE CLEARED AND GRUBBED OF ALL DRUNK TOPSOIL AND VEGETATION. ORGANIC TOPSOIL SHOULD BE STOCKPOILED ON SITE TO BE RE-USED AT PROJECT COMPLETION. ANY UNCONTROLLED FILL AND DEBRIS SHOULD BE STRIPPED FROM THE SITE.
- SITE GRADING:**
- CUT OR FILL SLOPES WITHIN THE BROWN SILTY SAND MATERIALS SHOULD NOT EXCEED 4:1 HORIZONTAL TO 1:1 VERTICAL. IF STEEPER SLOPES ARE USED, THEY MUST BE DESIGNED BY A GEOTECHNICAL ENGINEER. FILL SLOPES SHOULD BE PLACED IN COMPACTED LIFTS NOT EXCEEDING 10-INCHES IN LOOSE THICKNESS AND COMPACTED TO A MINIMUM OF 95 PERCENT OF THE STANDARD PROCTOR DENSITY (ASTM D698).
- CONTROL OF WATER:**
- IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION THE CONTRACTOR SHALL MAINTAIN DRY CONDITIONS SO THAT FLOOD PLACEMENT, FOOTING PLACEMENT, PAVEMENT CONSTRUCTION AND SLAB-ON-GRADE CONSTRUCTION MAY BE COMPLETED UNDER DRY CONDITIONS. GROUND WATER LEVELS SHOULD BE MAINTAINED AT A MINIMUM OF 2- FEET BELOW ALL SUBGRADE ELEVATIONS.
- OBSERVATION DURING LOGS:**
- THE FINAL BEARING SURFACE FOR ALL FOUNDATIONS SHOULD BE CAREFULLY INSPECTED BY A QUALIFIED GEOTECHNICAL ENGINEER TO ASCERTAIN THAT THE SUBGRADE HAS BEEN PROPERLY PREPARED. THE INSPECTION OF BEARING SURFACES SHOULD INCLUDE PROBING AT SELECTED LOCATIONS, SPECIFICALLY WHERE LOAD-BEARING SOLIDS MAY HAVE BEEN DISTURBED.

TOWN OF BETHLEHEM SOILS NOTES:

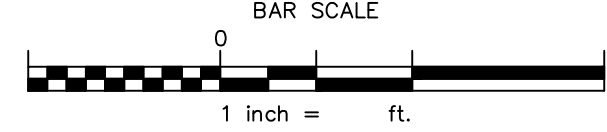
- THE DEVELOPERS SHALL HAVE A SITE-SPECIFIC SOILS REPORT WRITTEN FOR ANY LOT THAT HAS A PROPOSED FOUNDATION FOOTPRINT THAT IS LOCATED ENTIRELY OR PARTIALLY ON THE BROWN SILTY SAND SIDE OF THE SLOPE SETBACK LINE AS SHOWN ON THE GRADING PLAN, ADDRESSING THE SLOPE STABILITY OF ISSUE AND HAVING BEEN DULY PREPARED BY A LICENSED GEOTECHNICAL ENGINEER. THE REPORT SHALL BE SUBMITTED TO THE TOWN BUILDING INSPECTOR PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR THAT LOT. THE DEVELOPER SHALL ALSO INCLUDE A DEED NOTICE IN THE DEED FOR THAT LOT, AS WRITTEN IN NOTE 4 BELOW. THIS PERTAINS TO, BUT IS NOT LIMITED TO, THE FOLLOWING LOTS:
6 & 10 HERITAGE WAY
18, 32, 36, 46, & 60 SAVANNAH COURT
- IN ADDITION TO THE ABOVE LOTS, THE DEVELOPER SHALL INCLUDE A DEED NOTICE IN THE DEED FOR ANY ADDITIONAL LOTS THAT HAVE A SLOPE SETBACK LINE SHOWN ON IT AS SHOWN ON THE GRADING PLAN. THE DEED NOTICE SHALL BE WRITTEN AS NOTE 4 BELOW.

- THE DEVELOPER SHALL PLACE A CONDITION IN THE CONTRACT FOR PURCHASE AND SALE OF REAL ESTATE FOR ANY LOT THAT WILL HAVE A DEED NOTICE. THE CONDITION WILL STATE THAT THE DEED FOR THE TRANSACTION WILL HAVE A DEED NOTICE AS WRITTEN IN ITEM 4 BELOW.
- THE FOLLOWING STATEMENT IS THE SLOPE-RELATED DEED NOTICE TO BE PLACED IN THE DEEDS OF THE SPECIFIED LOTS:
"SUBJECT TO THIS NOTICE OF SITE CONDITIONS, WHICH SHOULD BE CONSIDERED BEFORE FUTURE IMPROVEMENTS ARE MADE TO THE LOT DUE TO THE SURFACE-PRONE NATURE OF THE SOIL CONDITIONS ASSOCIATED WITH THE SLOPES ON THIS PROPERTY, THE SLOPE FILL, RE-GRADING, GEOTECHNICAL ENGINEERING SHOULD BE OBTAINED BEFORE ANY CHANGES ARE MADE ON THE PROPERTY, SUCH AS PLACING FILL, RE-GRADING, BUILDING RETAINING WALLS, CUTTING TREES, INSTALLING SWIMMING POOLS, CHANGING SURFACE OR SUB-SURFACE DRAINAGE PATTERNS, ALTERING ANY STREAMS THAT MAY BE ON THE PROPERTY, ETC. A SITE-SPECIFIC SOILS REPORT ADDRESSING THE ISSUE OF SLOPE STABILITY MAY HAVE BEEN REQUIRED FOR TOWN SUBDIVISION APPROVAL OF THIS LOT, IN WHICH CASE THE REPORT WOULD BE ON FILE AND AVAILABLE AT THE TOWN OF BETHLEHEM BUILDING DEPARTMENT."

BUILDING FOOTPRINT GRADING NOTES:

- SEE TOWN OF BETHLEHEM STANDARD NOTE NO. 5 ON SHEET 2.1.
- GARAGE FINISHED FLOOR ELEVATIONS SHALL BE SET AT LEAST 18" INCHES HIGHER THAN THE ROADWAY CENTERLINE ELEVATION OPPOSITE THE GARAGE.
- FINAL DRIVEWAY SHALL SLOPE TOWARDS ROADWAY WITH A MAXIMUM SLOPE OF 10%.

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REV.	DATE	DESCRIPTION
12	7/8/09	LABELED RETAINING WALL W/ FENCE
11	6/19/09	REMOVED ALL WETLAND IMPACTS
10	3/10/09	REVISED PER HEALTH DEPARTMENT COMMENTS
9	8/7/08	REVISED PER TOWN DIVISION OF ENGINEERING COMMENTS
8	6/13/08	REVISED PER TOWN 5/13/08 COMMENTS
7	02/28/08	GENERAL REVISIONS PER TOWN AND AECDE COMMENTS
6	11/6/07	REVISED PER TOWN 11/5/07
5	9/27/07	REVISED PER TOWN 5/23/07 COMMENTS
4	2/20/07	REVISED BASIN LOCATIONS
3	9/15/06	REVISED PER TOWN 7/12/06 COMMENTS
2	12/27/05	REVISED PER TOWN 12/16/05 COMMENTS
1	3/4/05	REVISED PER TOWN COMMENTS

ELM AVENUE EAST RESIDENTIAL DEVELOPMENT

GRADING PLAN

TOWN OF BETHLEHEM, ALBANY COUNTY, NEW YORK

drawn: CJB
checked: JML
date: 12/19/03
scale: 1"=50'
project no.: 30337.00
sheet: **S4.1**