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Client

Lyman Development
Excelsior, MN

Project

Meadowwoods Village
Elk River, MN

Sheet Title

Final Grading
Development Plan

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Name Paul Pearson Paul Pearson

Date 03/28/01 License # 12795

Designed PWP/RMB Checked

Drawn RMB Approved

Date 03/28/01

Revisions

| No. | Date | By | Remarks |
|-----|----------|-----|--|
| A | 12/14/00 | AMB | Revised Existing Contours, Lowered Fin. Grade To Balance per City Memo of 12-12-00 |
| B | 03/06/01 | JHB | Revised grading & storm s per City Memo of 2/26/01 |
| C | 03/28/01 | JHB | Added Outlot A Protection Fence |
| D | 4/17/01 | JHB | Revised easements per final plat |

Sheet Revision

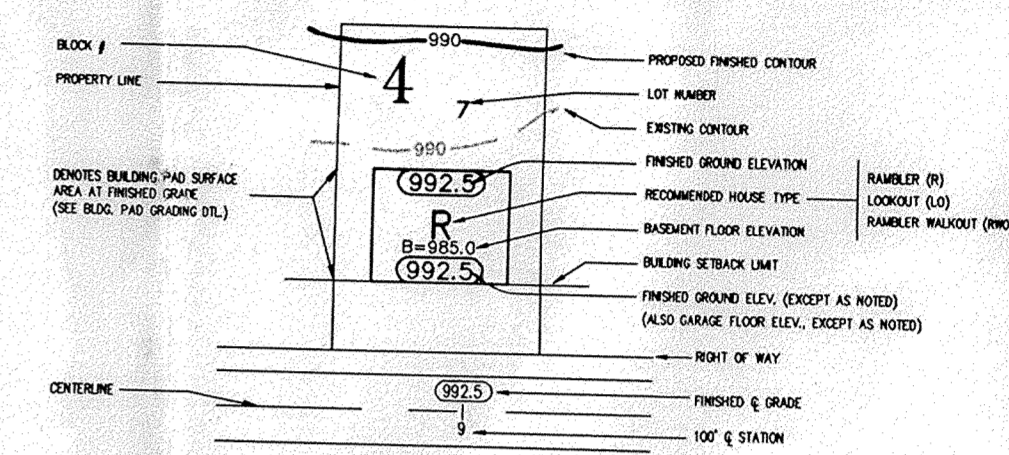
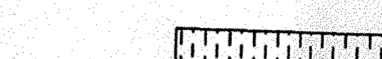
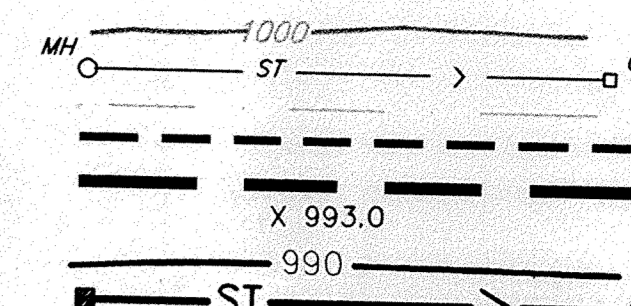
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JUL 09 2001

McCombs Frank
Roos Assoc., Inc.

MFR FILE NO.: 12396

LEGEND

- EXISTING CONTOURS
- EXISTING STORM SEWER
- EXISTING WETLANDS
- PROPOSED EROSION CONTROL FENCE
- PROPOSED TREE FENCE
- PROPOSED SPOT ELEVATION
- PROPOSED CONTOUR
- PROPOSED STORM SEWER
- SOIL BORING
- WOOD FIBER BLANKET
- EMERGENCY OVERFLOW
- DRAINAGE ARROW
- DRAINAGE & UTILITY EASEMENT LIMIT
- OUTLOT A PROTECTION FENCE



TYPICAL LOT
NO SCALE

1. THE TREES AND OTHER NATURAL VEGETATION WITHIN THE PROJECT AND/OR ADJACENT TO THE PROJECT ARE OF PRIME CONCERN TO THE CONTRACTOR'S OPERATIONS AND SHALL BE A RESTRICTED AREA. HE WILL BE REQUIRED TO PROTECT THE TREES WHICH ARE TO BE SAVED TO BE SURE THAT THE EQUIPMENT IS NOT NECESSARILY OPERATED UNDER NEARBY TREES AND SHALL EXERCISE EXTREME CAUTION IN WORKING ADJACENT TO TREES. SHOULD A PORTION OF THE TREE BRANCHES REQUIRE REMOVAL TO PERMIT OPERATION OF THE CONTRACTOR'S EQUIPMENT, HE SHALL OBTAIN THE SERVICES OF A PROFESSIONAL TREE TRIMMING SERVICE TO TRIM THE TREES PRIOR TO THE BEGINNING OF OPERATION. SHOULD THE CONTRACTOR'S OPERATIONS RESULT IN THE BREAKING OF ANY LIMBS, THE BROKEN LIMBS SHOULD BE REMOVED IMMEDIATELY AND CUTS SHALL BE PROPERLY PROTECTED TO MINIMIZE ANY LASTING DAMAGE TO THE TREE. NO TREES SHALL BE REMOVED WITHOUT AUTHORIZATION BY THE ENGINEER. COSTS FOR TRIMMING SERVICES SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION AND NO SPECIAL PAYMENT WILL BE MADE.

RESTRICTED AREAS SHALL INCLUDE ALL DESIGNATED TREE AREAS OUTSIDE OF THE DESIGNATED CONSTRUCTION ZONE. ALL VEGETATION WITHIN THE RESTRICTED AREAS SHALL REMAIN.

CONTRACTOR SHALL RESTRICT ALL GRADING AND CONSTRUCTION ACTIVITIES TO AREAS DESIGNATED ON THE PLANS. ACTIVITIES WITHIN THE CONSTRUCTION MAY BE RESTRICTED TO A NARROWER WIDTH IN THE FIELD TO SAVE ADDITIONAL TREES AS DIRECTED BY THE OWNER.

ACTIVITIES PROHIBITED OUTSIDE OF THE CONSTRUCTION BOUNDARIES WOULD INCLUDE, BUT NOT BE LIMITED TO, SOIL STORAGE, DRIVING OF ANY VEHICLE, LEAKAGE OR SPILLAGE OF ANY "WASHOUT" OR OTHER TOXIC MATERIAL. THE COLLECTION OF OTHER DEBRIS AND SOIL STOCKPILING WILL BE IN AN AREA DETERMINED ON-SITE BY THE ENGINEER.

ALL RESTRICTED AREAS SHALL BE FENCED OFF WITH BRIGHT ORANGE POLYETHYLENE SAFETY NETTING AND STEEL STAKES. AT NO TIME SHALL THIS FENCING BE REMOVED OR ACTIVITY OF ANY KIND TAKE PLACE WITHIN IT. FINAL PLACEMENT OF ALL PROTECTIVE FENCING SHALL BE COMPLETE BEFORE ANY WORK COMMENCES ON-SITE.

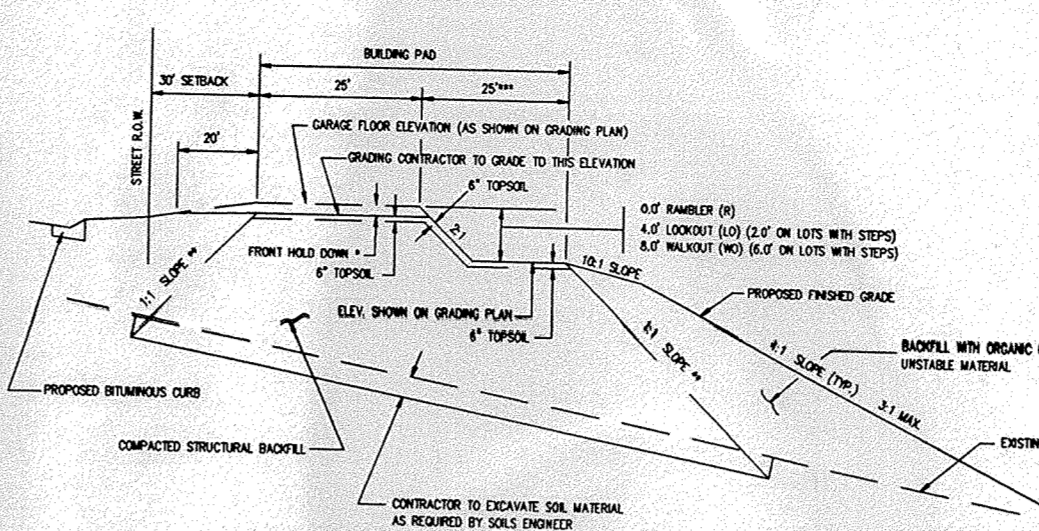
BEFORE COMMENCING WITH ANY EXCAVATION THE CONTRACTOR SHALL COMPLETE ALL PREPARATORY WORK REGARDING TREE REMOVAL, ROOT PRUNING, TREE PRUNING AND STUMP REMOVAL TO THE SATISFACTION OF THE OWNER.

PREPARATORY WORK SHALL INCLUDE THE FOLLOWING AND SHALL BE COMPLETED UNDER THE DIRECT SUPERVISION OF THE OWNER'S REPRESENTATIVE:

1. TREE REMOVAL: THE CONTRACTOR SHALL FELL THE TREES. AT NO TIME SHALL TREES BE BULLDOZED OUT, BUT SHALL BE CUT DOWN AND STUMPS REMOVED SEPARATELY. PRIOR TO THE FELLING OF ALL TREES, PROPER REMOVAL OF A PORTION OR ALL OF THE CANOPY SHALL BE COMPLETED SO THAT TREES IN THE RESTRICTED AREAS SHALL NOT BE INJURED IN THE PROCESS.
2. ROOT PRUNING: BEFORE ANY STUMPS ARE TO BE REMOVED, ALL ROOTS SHALL BE SEVERED FROM ROOTS IN THE RESTRICTED AREAS BY SAW CUTTING WITH A VERMIER DESIGNED FOR ROOT PRUNING BY HAND, OR WITH A CHANSAM. TREE ROOTS PROJECTING INTO THE CONSTRUCTION ZONE SHALL BE EXPOSED PRIOR TO ROOT PRUNING WITH SMALL MACHINERY, I.E., BOBCAT.
3. STUMP REMOVAL: AT SUCH TIME THAT ROOTS HAVE BEEN PROPERLY SEVERED, STUMPS MAY BE REMOVED, WHERE REMOVAL OF CERTAIN TREE STUMPS SHALL BE GROUND OUT. ALL STUMP REMOVAL SHALL BE UNDER THE DIRECT SUPERVISION OF THE OWNER'S REPRESENTATIVE.
4. TREE PRUNING: PROPER PRUNING OF TREES IN THE RESTRICTED ZONE SHALL BE DIRECTED BY AND SUPERVISION AT ALL TIMES BY THE OWNER'S REPRESENTATIVE.
AN OWNER'S REPRESENTATIVE WILL BE AVAILABLE DURING THE PREPARATORY AND CONSTRUCTION PERIOD.
MULCH RATHER THAN SEED OR SOD WILL BE USED AT THE BASE OF QUALITY TREES TO A PERIMETER DETERMINED BY THE OWNER'S REPRESENTATIVE. AREAS TO BE SEED FOR EROSION CONTROL PURPOSES WITHIN THE CONSTRUCTION ZONE ARE TO BE DETERMINED BY THE OWNER'S REPRESENTATIVE. NATURAL GROUND COVER WILL BE MAINTAINED WHEREVER POSSIBLE.
5. THE USE OF RETAINING WALLS NEAR TREES, IN ADDITION TO THOSE REQUIRED ON THE PLANS SHALL BE DETERMINED IN THE FIELD, BASED ON TREE LOCATIONS AND TOPOGRAPHY.
6. THE SITE GRADING IN THE WOODED AREA SHALL BE COMPLETED WITH THE INITIAL GRADING, IN THE EVENT OF A NEED TO ADJUST GRADES TO BALANCE THE EARTHWORK QUANTITIES.

BENCHMARKS:

- BM NO. 1
Double spike in P.P. East side of County Road 1, 500' southerly of driveway at house no. 21031. ELEV. = 979.76
- BM NO. 2
Double spike in P.P. East side of County Road 1, 200' northerly of driveway at house no. 20673. ELEV. = 971.89



TYPICAL BUILDING PAD GRADING DETAIL
NO SCALE

NOTES:
1. THE HEIGHT DIFFERENCE BETWEEN THE GARAGE FLOOR AND THE BUILDING FLOOR IS APPROXIMATELY 2.5 FT. (EXCEPT ON BLOCKS WITH STEPS, SEE NOTES CONCERNING).
2. THE DESIGNATED AREA SHALL BE COMPLETED WITHIN THE DESIGN WIDTH OF THE LOT (SEE LOT LINE TO SEE LOT LINE).
3. THE CONSTRUCTION FOR EACH BUILDING PAD SHALL BE AS FOLLOWS:
A. COMPLETE THE FINAL WORK ON THE LOT (SEE LOT LINE TO SEE LOT LINE).
B. COMPLETE ALL SOIL BORING TO THE LOT TO ALLOW SOIL TO BE CONSTRUCTED ABOVE THE FINISH GRADE.
4. SOME BUILDING PADS MAY BE GREATER THAN 30 FEET IN DEPTH FROM FRONT PROPERTY LINE TO REAR PROPERTY LINE. CONTRACTOR TO CONTACT ENGINEER PRIOR TO CONSTRUCTION TO REVIEW THE FINAL DESIGN.
5. IF A SPILT WASTEWATER IS TO BE CONSTRUCTED ON A LOT, THE DESIGN SHALL BE IN ACCORDANCE WITH THE DESIGN AND CITY WILL ALLOW.

APPROVED

Paul Pearson
Howard R. Green Co.

= CRITICAL ELEV'S OR SPILLS

SITE GRADING NOTES

- A. PROPOSED CONTOURS ARE TO FINISHED SURFACE ELEVATION. SPOT ELEVATIONS ALONG SPECIFIED CURBS DENOTE GUTTER GRADE.
- B. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE.

THE CONTRACTOR MUST CONTACT ALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. THE LOCATIONS OF SMALL UTILITIES SHALL BE OBTAINED BY THE CONTRACTOR BY CALLING Gopher State ONE CALL (1-900-252-1166).

C. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.

D. SAFETY NOTICE TO CONTRACTORS: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY TO ALL CONTRACTORS AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THE ENGINEER OR THE DEVELOPER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON OR NEAR THE CONSTRUCTION SITE.

E. SILTATION AND EROSION CONTROL:

THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR CONTROLLING ALL SILTATION AND EROSION OF THE PROJECT AREA. ALL EROSION CONTROL AND SILTATION CONTROL MEASURES SHALL COMPLY WITH MINNESOTA'S BEST MANAGEMENT PRACTICES MANUAL. THE CONTRACTOR SHALL USE WHATEVER MEANS NECESSARY TO CONTROL EROSION AND SILTATION INCLUDING, BUT NOT LIMITED TO, STAKED STRAW BALES, ROCK ENTRANCES AND/OR SILT FENCES. CONTROL SHALL COMMENCE WITH GRADING AND CONTINUE THROUGHOUT THE PROJECT UNTIL ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR'S RESPONSIBILITY INCLUDES: ALL DESIGN AND IMPLEMENTATION AS REQUIRED TO PREVENT EROSION AND THE DEPOSITING OF SILT. THE OWNER MAY, AT HIS/HER OPTION, DIRECT THE CONTRACTOR IN HIS/HER METHODS AS DEEMED FIT TO PROTECT PROPERTY AND IMPROVEMENTS. ANY DEPOSITING OF SILT OR MUD ON NEW OR EXISTING PAVEMENT OR IN EXISTING STORM SEWERS OR SWALES SHALL BE REMOVED AFTER EACH RAIN AND EFFECTED AREAS CLEANED TO THE SATISFACTION OF THE OWNER, ALL AT THE EXPENSE OF THE CONTRACTOR.

TEMPORARY AND PERMANENT SEDIMENTATION PONDS SHALL BE CONSTRUCTED WITH THE INITIAL GRADING. THE SEDIMENT MUST BE REMOVED FROM THESE PONDS, AS NECESSARY, PRIOR TO COMPLETION OF THE PROJECT.

| TOTAL PROJECT AREA | BEFORE CONSTR. | AFTER CONSTR. |
|----------------------------|----------------|---------------|
| TOTAL EST. IMPERVIOUS AREA | AC | AC |
| TOTAL EST. PVIOUS AREA | AC | AC |

GRADING CONTRACTOR IS RESPONSIBLE FOR SEEDING AND MULCHING SITE AFTER SITE GRADING IS COMPLETED AS REQUIRED BY THE PERMIT.

"FINAL STABILIZATION" OF ALL EXPOSED SOIL AREAS WILL BE ACCOMPLISHED BY USE OF SOD OR SEED AND MULCH UPON COMPLETION OF THE HOME CONSTRUCTION.

G. THE CONTRACTOR SHALL COMPLETE THE SITE GRADING CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER'S SOILS ENGINEER. ALL SOIL TESTING SHALL BE COMPLETED BY THE OWNER'S SOILS ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED SOIL TESTS AND INSPECTIONS WITH THE SOILS ENGINEER.

H. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TRAFFIC CONTROL DEVICES SUCH AS BARRICADES, WARNING SIGNS, DIRECTIONAL SIGNS, FLAGMEN AND LIGHTS TO CONTROL THE MOVEMENT OF TRAFFIC WHERE NECESSARY. TRAFFIC CONTROL DEVICES SHALL CONFORM TO APPROPRIATE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARDS.

