

GRADING NOTES

- PROPOSED CONTOURS ARE TO FINISHED SURFACE ELEVATION. SPOT ELEVATIONS SHOWN ARE TO FINISHED GRADE.
- CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
- SAFETY NOTICE TO CONTRACTORS: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, 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 CONTINUOUSLY 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.
- CONTRACTOR SHALL COMPLETE THE SITE GRADING CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE OWNER'S GEOTECHNICAL ENGINEER. ALL SOIL TESTING SHALL BE COMPLETED BY THE OWNER'S GEOTECHNICAL ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED SOIL TESTS AND INSPECTIONS WITH THE GEOTECHNICAL ENGINEER.

TWO GEOTECHNICAL ENGINEERING SOILS REPORTS HAVE BEEN COMPLETED BY:

COMPANY: NORTHERN TECHNOLOGIES, INC. ADDRESS: 14000 SUNFISH LAKE BLVD, SUITE M RAMSEY, MN 55303 PHONE: 763-433-9175 DATED: 12/30/2003	COMPANY: HAUGO GEOTECHNICAL SERVICES, LLC ADDRESS: 2825 CEDAR AVE SOUTH MINNEAPOLIS, MN 55407 PHONE: 612-729-2959 DATED: 6/6/2016
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CONTRACTOR SHALL OBTAIN A COPY OF THE GEOTECHNICAL REPORT.

- CONTRACTOR SHALL COMPLETE DEWATERING AS REQUIRED TO COMPLETE THE SITE GRADING CONSTRUCTION.
- PRIOR TO PLACEMENT OF THE AGGREGATE BASE, A TEST ROLL SHALL BE PERFORMED ON THE STREET AREA SUBGRADE. CONTRACTOR SHALL PROVIDE A LOADED TANDEM AXLE TRUCK WITH A GROSS WEIGHT OF 25 TONS. THE TEST ROLLING SHALL BE AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER AND SHALL BE COMPLETED IN AREAS AS DIRECTED BY THE GEOTECHNICAL ENGINEER. CORRECTION OF THE SUBGRADE SOILS SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE GEOTECHNICAL ENGINEER.
- REPLACE ALL SUBGRADE SOIL DISTURBED DURING THE CONSTRUCTION THAT HAVE BECOME UNSUITABLE AND WILL NOT PASS A TEST ROLL. REMOVE UNSUITABLE SOIL FROM THE SITE AND IMPORT SUITABLE SOIL AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING VEHICULAR AND PEDESTRIAN 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.
- EXISTING 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. CONTRACTOR SHALL PROTECT TREES TO REMAIN AT ALL TIMES. EQUIPMENT SHALL NOT NEEDLESSLY BE OPERATED UNDER NEARBY TREES AND EXTREME CAUTION SHALL BE EXERCISED WHEN WORKING ADJACENT TO TREES. SHOULD ANY PORTION OF THE TREE BRANCHES REQUIRE REMOVAL TO PERMIT OPERATION OF THE CONTRACTOR'S EQUIPMENT, CONTRACTOR SHALL OBTAIN THE SERVICES OF A PROFESSIONAL TREE TRIMMING SERVICE TO TRIM THE TREES PRIOR TO THE BEGINNING OF OPERATION. SHOULD 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 GRADING CONSTRUCTION AND NO SPECIAL PAYMENT WILL BE MADE.
 - RESTRICTED AREAS SHALL INCLUDE ALL DESIGNATED TREAED 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.
 - ALL RESTRICTED AREAS SHALL BE FENCED OFF WITH BRIGHT ORANGE POLYETHYLENE SAFETY NETTING AND STEEL STAKES AS SHOWN ON THE TREE PROTECTION DETAIL. 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.
- EXCAVATE TOPSOIL FROM AREAS TO BE FURTHER EXCAVATED OR REGRADED AND STOCKPILE IN AREAS DESIGNATED ON THE SITE. CONTRACTOR SHALL SALVAGE ENOUGH TOPSOIL FOR RESPREADING ON THE SITE AS SPECIFIED. EXCESS TOPSOIL SHALL BE PLACED IN EMBANKMENT AREAS, OUTSIDE OF BUILDING PADS, ROADWAYS AND PARKING AREAS. CONTRACTOR SHALL SUBCUT CUT AREAS, WHERE TURF IS TO BE ESTABLISHED, TO A DEPTH OF 4 INCHES. RESPREAD TOPSOIL IN AREAS WHERE TURF IS TO BE ESTABLISHED TO A MINIMUM DEPTH OF 4 INCHES. TOPSOIL CANNOT BE USED AS FILL UNDER TRAILS OR SIDEWALKS.

- TRENCH BORROW CONSTRUCTION: IF ALLOWED BY THE OWNER, CONTRACTOR SHALL COMPLETE "TRENCH BORROW" EXCAVATION IN AREAS DIRECTED BY THE ENGINEER IN ORDER TO OBTAIN STRUCTURAL MATERIAL. TREES SHALL NOT BE REMOVED OR DAMAGED AS A RESULT OF THE EXCAVATION, UNLESS APPROVED BY THE ENGINEER. THE EXCAVATION SHALL COMMENCE A MINIMUM OF 10 FEET FROM THE LIMIT OF THE BUILDING PAD. THE EXCAVATION FROM THIS LIMIT SHALL EXTEND AT A MINIMUM SLOPE OF 1 FOOT HORIZONTAL TO 1 FOOT VERTICAL (1:1) DOWNWARD AND OUTWARD FROM THE FINISHED SURFACE GRADE ELEVATION. THE TRENCH BORROW EXCAVATION SHALL BE BACKFILLED TO THE PROPOSED FINISHED GRADE ELEVATION, AND SHALL BE COMPACTED IN ACCORDANCE WITH REQUIREMENTS OF THE QUALITY COMPACTION METHOD AS OUTLINED IN MN/DOT SPECIFICATION 2105.3F2. SNOW FENCE SHALL BE FURNISHED AND PLACED ALONG THE PERIMETER OF THE TRENCH BORROW AREA WHERE THE SLOPES EXCEED 2 FOOT HORIZONTAL TO 1 FOOT VERTICAL (2:1).

- FINISHED GRADING SHALL BE COMPLETED. CONTRACTOR SHALL UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING, INCLUDING ADJACENT TRANSITION AREAS. PROVIDE A SMOOTH FINISHED SURFACE WITHIN SPECIFIED TOLERANCES, WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN, OR BETWEEN SUCH POINTS AND EXISTING GRADES. AREAS THAT HAVE BEEN FINISHED GRADED SHALL BE PROTECTED FROM SUBSEQUENT CONSTRUCTION OPERATIONS, TRAFFIC AND EROSION. REPAIR ALL AREAS THAT HAVE BECOME RUTTED, ERODED OR HAS SETTLED BELOW THE CORRECT GRADE. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO EQUAL OR BETTER THAN ORIGINAL CONDITION OR TO THE REQUIREMENTS OF THE NEW WORK.

- TOLERANCES
 - THE RESIDENTIAL BUILDING SUBGRADE FINISHED SURFACE ELEVATION SHALL NOT VARY BY MORE THAN 0.30 FOOT ABOVE, OR 0.30 FOOT BELOW, THE PRESCRIBED ELEVATION AT ANY POINT WHERE MEASUREMENT IS MADE.
 - THE STREET AREA SUBGRADE FINISHED SURFACE ELEVATION SHALL NOT VARY BY MORE THAN 0.05 FOOT ABOVE, OR 0.10 FOOT BELOW, THE PRESCRIBED ELEVATION OF ANY POINT WHERE MEASUREMENT IS MADE.
 - AREAS WHICH ARE TO RECEIVE TOPSOIL SHALL BE GRADED TO WITHIN 0.30 FOOT ABOVE OR BELOW THE REQUIRED ELEVATION, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
 - TOPSOIL SHALL BE GRADED TO PLUS OR MINUS 1/2 INCH OF THE SPECIFIED THICKNESS.

- AFTER THE SITE GRADING IS COMPLETED, IF EXCESS OR SHORTAGE OF SOIL MATERIAL EXISTS, CONTRACTOR SHALL TRANSPORT ALL EXCESS SOIL MATERIAL OFF THE SITE TO AN AREA SELECTED BY THE CONTRACTOR, OR IMPORT SUITABLE MATERIAL TO THE SITE.

- LOCATION OF HAUL ROADS OVER EXISTING UTILITIES ARE SHOWN ON THE EROSION CONTROL PLANS. IN ALL OTHER AREAS, CONTRACTOR SHALL DETERMINE THE LOCATION OF ANY HAUL ROADS THAT MAY BE REQUIRED TO COMPLETE THE SITE GRADING CONSTRUCTION AND SHALL INDICATE HAUL ROADS ON EROSION AND SEDIMENT CONTROL "SITE MAP". CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE GOVERNING AUTHORITY OF EACH ROADWAY. CONTRACTOR SHALL POST WHATEVER SECURITY, AND COMPLY WITH ALL CONDITIONS WHICH ARE REQUIRED BY EACH GOVERNING AUTHORITY OF EACH ROADWAY.

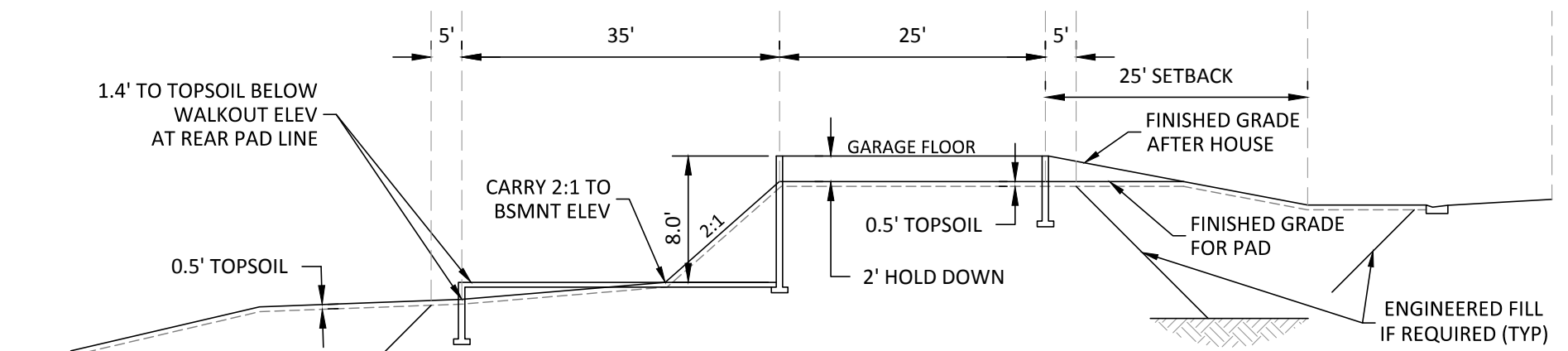
- DISTURBED AREAS WITHIN WETLAND MITIGATION SITE AND ANY DISTURBED AREAS WITHIN THE WETLAND SHALL BE RESTORED WITH 6 TO 12 INCHES OF ORGANIC SOILS, PREFERABLY SOILS THAT WERE PREVIOUSLY REMOVED FROM WETLAND AREAS. SEEDING IN THE WETLAND MITIGATION AREAS ABOVE THE NORMAL WATER LEVEL SHALL BE MN STATE SEED MIX 34-271, WET MEADOW SOUTH AND WEST, OR APPROVED EQUAL. FOR STATE SEED MIXES, OATS AND WINTER WHEAT SHOULD BE SELECTED BASED ON THE TIME OF YEAR THAT THE MIX IS BEING USED. OATS SHOULD BE INCLUDED IN MIXES IF BEING USED BETWEEN OCTOBER 15TH AND AUGUST 1ST. WINTER WHEAT SHOULD BE USED BETWEEN AUGUST 1ST AND OCTOBER 15TH. THE SEEDING RATE IS THE SAME FOR OATS AND WINTER WHEAT. MIX 34-271 SHOULD BE APPLIED AT 12 POUNDS PER ACRE. SEED SHALL BE WATERED UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.

- FILL PLACED WITHIN THE BUILDING PAD AREAS SHALL BE IN CONFORMANCE WITH HUD/FHA PROCEDURES AND DATA SHEET 79G.
- RETAINING WALL(S) SHALL BE CONSTRUCTED OF BOULDER MATERIAL. CONTRACTOR SHALL SUBMIT TO THE ENGINEER AND LOCAL AUTHORITY CERTIFIED ENGINEERING DRAWINGS, DESIGN CALCULATIONS AND SOIL BORINGS. THE CERTIFIED ENGINEER FOR THE RETAINING WALL(S) SHALL PROVIDE CONSTRUCTION OBSERVATIONS OF THE RETAINING WALL IMPROVEMENT, AND A LETTER CERTIFYING THE INSTALLATION OF THE WALL(S) WAS CONSTRUCTED IN CONFORMANCE WITH THE PLANS AND SPECIFICATIONS.
- GRADING PAD TYPE DESIGNATION SHALL NOT RESTRICT BUILDING TYPE SO LONG AS RESTRICTED LOW FLOOR, LOW OPENINGS, EMERGENCY OVERFLOW AND DRAINAGE PATTERN ARE PRESERVED.

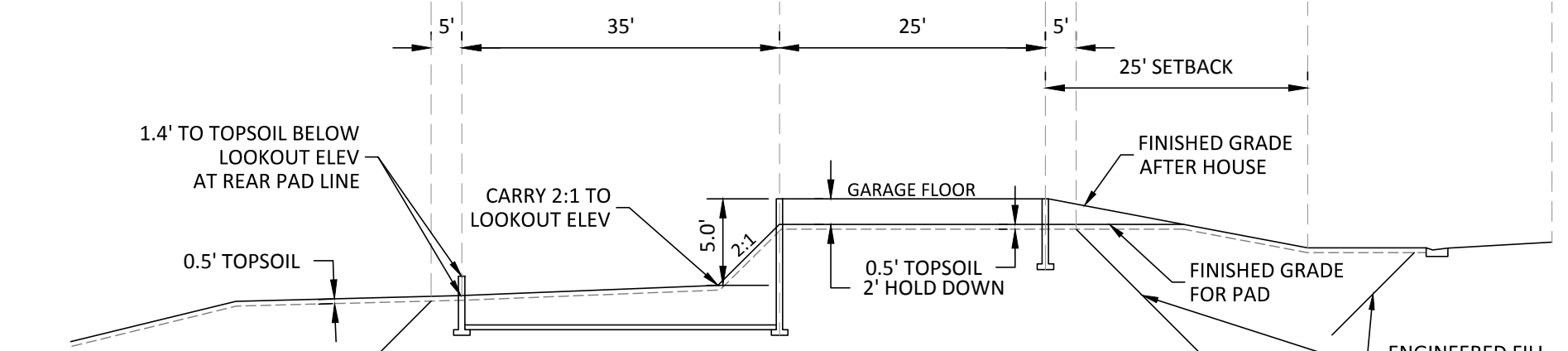
THE SUBSURFACE UTILITY INFORMATION SHOWN ON THESE PLANS IS A UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF ASCE/FG 38-02, TITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA." THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. BY CONTACTING THE NOTIFICATION CENTER (GOPHER STATE ONE FOR MINNESOTA), THE CONTRACTOR AND/OR SUBCONTRACTOR AGREES TO ANY AND ALL DAMAGES, WHICH MIGHT BE OCCASIONED BY HIS OR HER FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES (UNDERGROUND AND OVERHEAD).

IF THE CONTRACTOR ENCOUNTERS ANY DRAIN TILE WITHIN THE SITE, HE OR SHE SHALL NOTIFY THE ENGINEER WITH THE LOCATION, SIZE, INVERT AND IF THE TILE LINE IS ACTIVE. NO DRAIN TILE SHALL BE BACKFILLED WITHOUT APPROVAL FROM THE PROJECT ENGINEER.

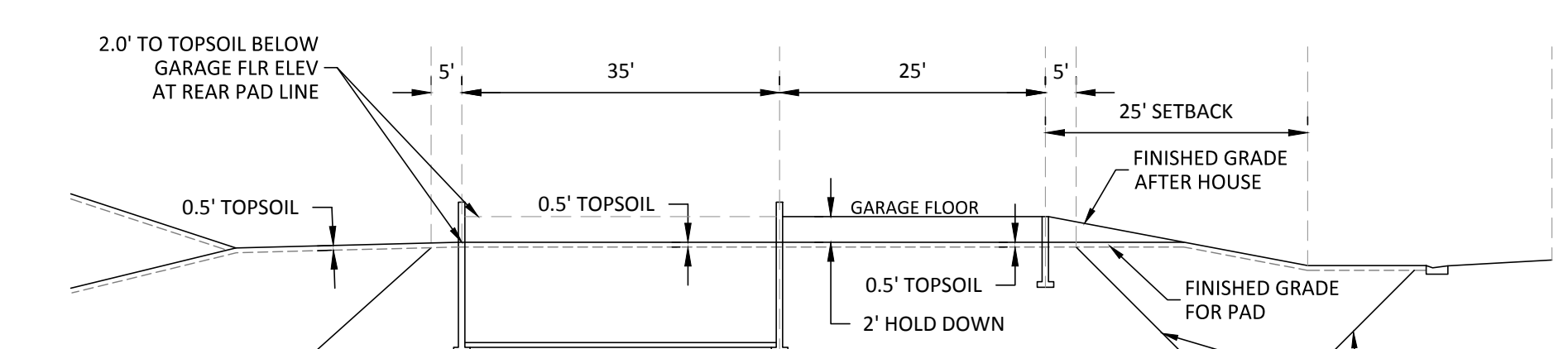
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.



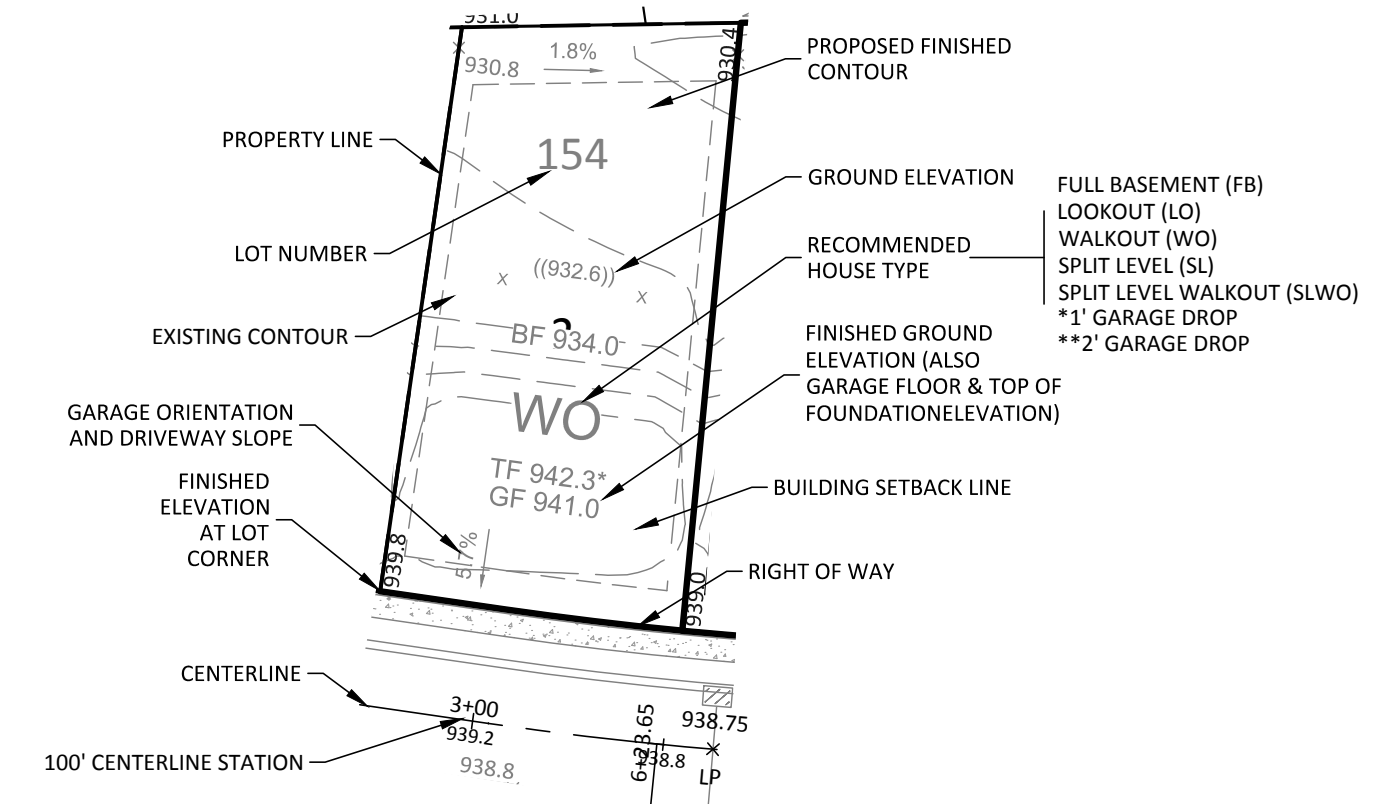
1 TYPICAL SINGLE FAMILY WALKOUT (WO) BUILDING PAD GRADING DETAIL
N.T.S.



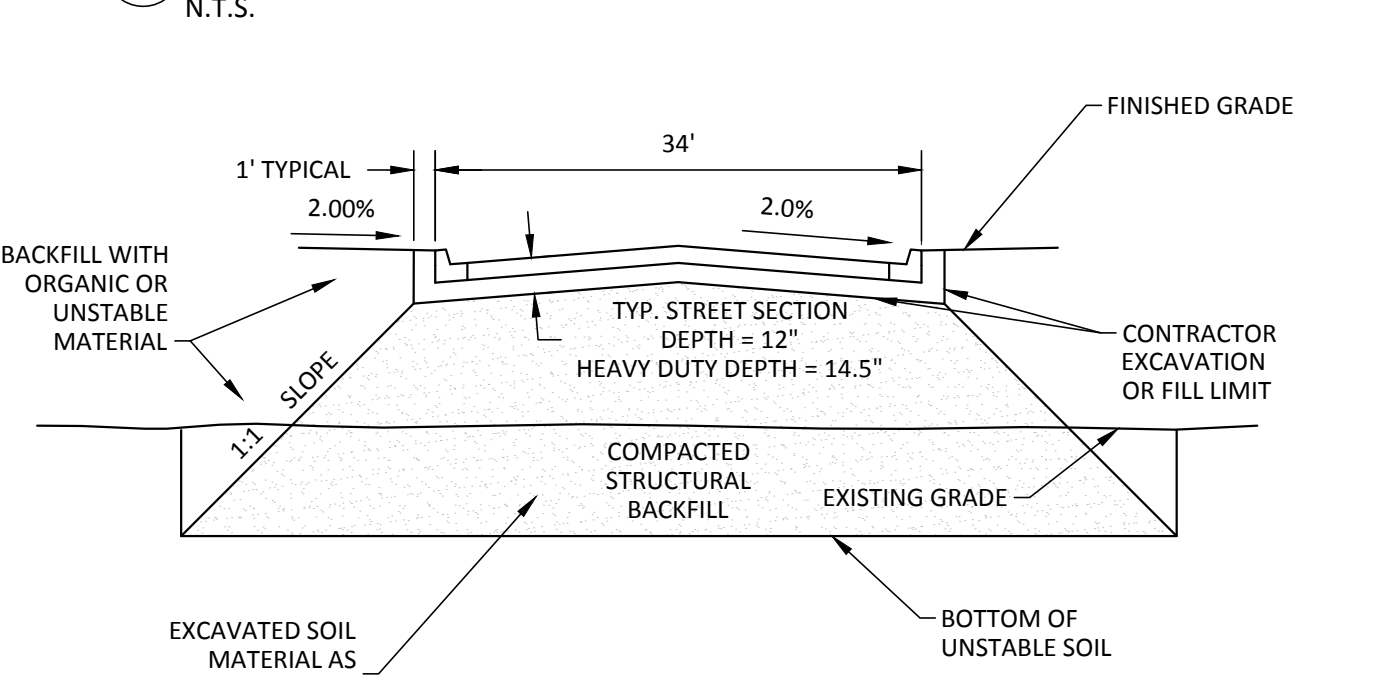
2 TYPICAL SINGLE FAMILY LOOKOUT (LO) BUILDING PAD GRADING DETAIL
N.T.S.



4 TYPICAL SINGLE FAMILY FULL BASEMENT (FB) BUILDING PAD GRADING DETAIL
N.T.S.



NOTE: GRADES MAY CHANGE TO MAXIMUM ALLOWABLE PER BUILDING DEPARTMENT
TYPICAL SINGLE FAMILY LOT GRADING DETAIL
N.T.S.



TYPICAL STREET GRADING DETAIL
N.T.S.

NOTES:

- PROVIDE SEPARATION FROM WALKOUT ELEVATION OR EXPOSED OPENING TO FINISHED GRADE AS SHOWN IN EACH DETAIL.
- THE DESIGNATED HOLD DOWN SHALL BE COMPLETED ACROSS THE ENTIRE WIDTH OF THE LOT (SIDE LOT LINE TO SIDE LOT LINE).
- SOIL CORRECTION FOR EACH BUILDING PAD SHALL AS A MINIMUM BE COMPLETED THE FULL WIDTH OF THE LOT (SIDE LOT LINE TO SIDE LOT LINE). ON CORNER LOTS, SOIL CORRECTION FOR EACH BUILDING PAD SHALL BE COMPLETED ALONG BOTH SIDES OF THE LOT, TO ALLOW HOME TO BE CONSTRUCTED ALONG ENTIRE FRONTAGE.
- SOME BUILDING PADS MAY BE GREATER THAN 60 (80 FOR SOG) FEET IN DEPTH (FROM FRONT TO BACK) AS SHOWN ON THE GRADING PLAN. CONTRACTOR TO CONTACT ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION TO REVIEW THIS ITEM.
- FOR PAD TYPES CONTAINING TWO HOUSE TYPES, THE PAD SHOULD BE HELD DOWN ACCORDING TO THE FIRST LISTED. (IE. A PAD SHOWING LO/SWO SHALL BE HELD DOWN ACCORDING TO A LOOKOUT (LO) HOUSE TYPE.)
- FINISHED GRADE SHALL BE ESTABLISHED TO THE 10' FRONT EASEMENT LINE BEFORE STARTING THE PAD HOLD DOWN FOR ALL LOTS.
- PROVIDE DRAINAGE FOR ALL PADS. IF NECESSARY, CUT TRENCH TO DRAIN PAD TO THE FRONT OR REAR YARD.



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Client
PAXMAR, LLC.

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SUITE 210
COON RAPIDS, MN 55448

Project
MISKE
MEADOWS
FOURTH
ADDITION

Location
ELK RIVER, MN

Certification

I hereby certify that this plan, specification or report 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.

Eric T. Luth
Eric T. Luth
Registration No. 50475 Date: 03/28/2018

If applicable, contact us for a wet signed copy of this plan which is available upon request at Sambatek's, Minnetonka, MN office.

Summary

Designed: NRH Drawn: NRH
Approved: ETL Initial Issue: 03/15/18
Phase: CONSTRUCTION DOCUMENTS

Revision History

No.	Date	By	Submittal / Revision
A	03/28/18	MMQ	CONSTRUCTION DOCS
A	04/18/18	ETL	REVISE EAST TRAIL GRADES

Sheet Title
GRADING
DETAILS (FOR
REFERENCE)

Sheet No. Revision
C4.02 A

Project No. 20460.05