	BLDG PERMIT NO.			
TCP \$ 59,000 (Single Family Residential and A	ccessory Structures)			
SIF \$ 440.00 Community Developme	nt Department			
Building Address 704 ROUND UP	No. of Existing Bldgs No. Proposed			
Parcel No. 2697-354.14-008	Sq. Ft. of Existing Bldgs Sq. Ft. Proposed 3000			
Subdivision <u>INDependance Ranch</u>	Sq. Ft. of Lot / Parcel/ & K			
Filing <u>13</u> Block <u>1</u> Lot <u>2</u>	Sq. Ft. Coverage of Lot by Structures & Impervious Surface			
OWNER INFORMATION:	(Total Existing & Proposed) <u>5 す %</u> Height of Proposed Structure <u>こ ざ</u>			
Name <u>KOEMFISY</u> <u>LLC</u> Address <u>2057 Baschnic</u> Rol. City/State/Zip <u>C.5 Ca</u> <u>8152</u> <u>3</u>	DESCRIPTION OF WORK & INTENDED USE: New Single Family Home (*check type below) Interior Remodel Addition Other (please specify):			
APPLICANT INFORMATION:	*TYPE OF HOME PROPOSED:			
Name <u>FISUER</u>	Site Built Manufactured Home (UBC) Manufactured Home (HUD) Other (please specify):			
Address 2078 Kainteinel CA.				
City / State / Zip <u>C S CO</u>	NOTES:			
Telephone				
	xisting & proposed structure location(s), parking, setbacks to all on & width & all easements & rights-of-way which abut the parcel.			
	MUNITY DEVELOPMENT DEPARTMENT STAFF			
ZONE PD	Maximum coverage of lot by structures $357^{2}$			
per plan SETBACKS: Front <u>25</u> from property line (PL)	Permanent Foundation Required: YES <u></u> NO			
Side 10 from PL Rear 25 from PL				
Maximum Height of Structure(s)	Special Conditions			
Voting District Driveway Location Approval(Engineer's Initials	)			
Modifications to this Planning Clearance must be approved, in writing, by the Community Development Department. The structure authorized by this application cannot be occupied until a final inspection has been completed and a Certificate of Occupancy has been issued, if applicable, by the Building Department (Section 305, Uniform Building Code).				
	e information is correct; I agree to comply with any and all codes, e project. I understand that failure to comply shall result in legal of use of the building(s).			

Applicant Signature	()	Date <u> </u>	$\overline{7}$
Department Approval	-	Date 1 170	1
Additional water and/or sewer tap fee(s) are required:	YES NO	W/O No 199	29
Utility Accounting	4	Date ///7/1	v7

 VALID FOR SIX MONTHS FROM DATE OF ISSUANCE (Section 2.2.C.1 Grand Junction Zoning & Development Code)

 (White: Planning)
 (Yellew: Customer)

 (Pink: Building Department)
 (Goldenrod: Utility Accounting)

RESIDENTIAL+ CUSTOM+ REMODEL+ ADDITIONS DRAWN: CHECKED: JANYA AUGNUOR POL ROWE TO 0 ANTE UTANO PROJECT NO. 2 SHEET NO. SHEET 1 0 NAJ9 BTIS SOEWEISH TTC OULY DESIGN & DRAFTING התביאמבם *רס*ת: CALE: 1-10 704 ROUNDUP DR. LOT 2 BLOCK 1 00 510 11.15° B 30 V 1 49 Judit Par 1/17/07 "LANKE 1947 (13) 1979 - 19 ND F 704 Round Up

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GRAND JUNCTION LINCOLN - DeVORE, Inc. GEOTECHNICAL ENGINEERS - GEOLOGISTS

1441 Motor St. Grand Junction, CO 81505

December 28, 2006

TEL: (970) 242-8968 FAX: (970) 242-1561

Fisher Construction 2078 Raindance Court Grand Junction, CO 81503

Re: Open Excavation Observation 704 Roundup Drive, Grand Junction, CO

Gentlemen:

As requested, Grand Junction Lincoln DeVore personnel completed a foundation excavation evaluation at the abovereferenced site on December 15, 2006. The purpose of this observation and evaluation was to determine the type and condition of the soils on the site and to relate their engineering characteristics to foundation reactions of the proposed structure. This letter contains general recommendations for construction of a residential foundation, but it is not a foundation design and may not be used as such. Our conclusions and recommendations for this site are presented below.

<u>Soil Classification</u>: The soils at foundation level on this site are visually classified as poorly graded silty sands and silty sands of low compressive properties. These soils are similar to the surface soils described in the Grand Junction Lincoln DeVore report of Subsurface Soils Exploration for this subdivision, Job #89191-GJ, dated October 6, 2004. This upper soil is believed to be in excess of 20 feet thick below the foundation excavation and overlies the Mancos Shale Formation of low to moderate expansive properties. The allowable bearing capacities of the upper soils on this site, after wetting and compaction, are 3,000 psf maximum and 150 psf minimum.

In-place soil density tests of the reworked subgrade soils were taken within the building excavation on December 15, 2006. These eight in-place soil density tests indicate that the wetted, reworked soils have a dry density ranging from 110 to 115 pounds per cubic foot. Densities of this magnitude indicate that these reworked soils, in near proximity to the footings, do not possess moderate compressible or possible collapsible properties. No soft areas were indicated by the final density tests taken on December 15, 2006, nor were soft areas observed by personnel of Grand Junction Lincoln DeVore on that date.

Unless specifically noted, this site observation, any associated testing, and the reworking/compaction of the soils at foundation level address only the soils within 1 to 2 feet below the bottom of the building foundation excavation. It is possible that soil conditions, which may affect the performance of this foundation system, are present below the depth of soil compaction by the contractor and the testing performed by Grand Junction Lincoln DeVore. The grading and drainage recommendations are considered very important for the long-term stability of this foundation system and the structure.

<u>Man-made Fill</u>: Soils within the original foundation excavation appear to be native to the site. The subgrade soils within the upper 8 to 12 inches of the building excavation were wetted, reworked, and compacted by the contractor to obtain the soil densities reported above.

Personnel of Grand Junction Lincoln DeVore observed the recently placed structural fill on the above-referenced site on December 16, 2006. The structural fill was found to consist of approximately 24 inches of reworked native silty sands. In-place soil density tests taken on the structural fill indicated that compaction was either equal to or in excess of 90% of the modified proctor density (ASTM D-1557) for these materials. The structural fill appears to meet the minimum recommendations in the report of Subsurface Soil Exploration performed by Grand Junction Lincoln DeVore and the foundation design prepared by Grand Junction Lincoln DeVore.

<u>Soil Moisture Conditions</u>: The subgrade soils at foundation level within the original excavation were believed to be dry to damp based upon site conditions and our experience in this area. No free water was noted in the excavation. Some moisture was added to the soils in the excavation by the contractor in order to obtain proper compaction.

<u>Foundation Type Recommended</u>: We understand that a designed foundation system of the standard continuous spread footing and stemwall and the thickened edge structural slab type in the basement area only, apparently based upon the recommendations provided in our previous report, has been prepared by Lower Valley Engineering, Grand Junction, CO. That foundation design has not been reviewed by this office. The foundation system must be constructed in strict compliance with these plans and specifications, with no alterations or deviations allowed unless prior approval is first obtained from the design engineer.

Voids Beneath Foundation Walls: Voids are not required for this foundation design.

<u>Reinforcing</u>: The foundation shall be reinforced as shown on the foundation design. No changes shall be made to this placement of reinforcing without written approval of the design engineer or architect.

<u>Floor Slabs</u>: Non-structural floor slabs on grade, if any, should be positively separated from all structural portions of this building and allowed to float freely. Frequent scoring (control joints) of the slabs should be provided to allow for possible shrinkage cracking of the slab. These control joints should be placed to provide maximum slab areas of approximately 200 to 360 square feet. Any man-made fill placed below floor slabs on grade should be compacted to a minimum of 90% of its maximum modified proctor dry density (ASTM D-1557). These soils should be placed at a moisture content conducive to the required compaction (usually proctor optimum moisture content  $\pm 2\%$ ).

Drainage and Grading: Adequate site drainage should be provided in the foundation area, both during and after construction, to prevent the ponding of water and the wetting or saturation of the subsurface soils. We recommend that the ground surface around the structure be graded so that surface water will be carried quickly away from the building. The minimum gradient within 10 feet of the building will depend on surface landscaping. We recommend that paved areas maintain a minimum gradient of 2% and that landscaped areas maintain a minimum gradient of 8%. It is further recommended that roof drain downspouts be carried at least 5 feet beyond all backfilled areas and discharge a minimum 10 feet away from the structure. Proper discharge of roof drain downspouts may require the use of subsurface piping in some areas. Under no circumstances should a "dry well discharge" be used on this site unless specifically sited by a geotechnical engineer. Planters, if any, should be constructed so that moisture is not allowed to seep into foundation areas or beneath slabs or pavements.

The existing drainage on the site must either be maintained carefully or improved. We recommend that water be drained away from structures as rapidly as possible and not be allowed to stand or pond within 15 feet of the building or foundation. We recommend that water removed from one building not be directed onto the backfill areas of adjacent buildings.

Should an automatic lawn irrigation system be used on this site, we recommend that the sprinkler heads, irrigation piping, and valves be installed no less than 5 feet from the building. In addition, these heads should be adjusted so that spray from the system does not fall onto the walls of the building and that such water does not excessively wet the backfill soils. It is strongly recommended that any turf area or extensive irrigated areas in the back half of the building lot (northeast portion) be carefully constructed to prevent excessive amounts of water infiltration into these soils. The use of an underdrain beneath some landscaped areas may be required. Such an underdrain should be constructed with a membrane to protect the lower soils from excessive water infiltration. Discharge of this underdrain must be carefully constructed so as to remove water away and down the slope surface.

It is recommended that lawn and landscaping irrigation be reasonably limited to prevent undesirable saturation of subsurface soils or backfilled areas. Several methods of irrigation water control are possible, to include, but not be limited to:

- Metering the irrigation water.
- Sizing the irrigation distribution service piping to limit onsite water usage.
- Encourage efficient landscaping practices.
- Enforcing reasonable limits on the size of high water usage landscaping within 5 feet of the building or foundation.
- Incorporating "xeriscaping" landscaping and irrigation techniques.

A plastic membrane placed on any crawlspace ground surfaces may retain/trap excessive amounts of water beneath the membrane. If future moisture problems develop or are anticipated, the foundation design engineer or the geotechnical engineer may require that the membrane be partially or completely removed from the crawlspace area.

We recommend that a perimeter drain (see attached drain sketch) be placed around the exterior walls of the structure at foundation level or preferably below. It is recommended that be placed in the lower portion of any foundation structural fill and be placed several feet away from and somewhat below the building foundation. A drain of this type includes a perforated pipe and an adequate gravel collector, the whole being wrapped in a geotextile filter fabric. We recommend that the discharge pipe for this drain be given a free gravity outlet to exit at ground surface. If "daylight" cannot be obtained, we recommend that a sealed sump and pump be used to discharge the seepage. Under no circumstances should a "dry well discharge" be used on this site unless specifically sited by a geotechnical engineer.

<u>Backfill</u>: To reduce settlement and aid in keeping water from reaching beneath this building, all backfill around this building should be mechanically compacted to a minimum of 90% of its maximum modified proctor dry density (ASTM D-1557). The only exception to this would be the components of the perimeter foundation drain, if any. All backfill should be composed of the native soils and should not be placed by soaking, jetting or puddling. All backfill placed in utility trenches around this structure or below foundation walls should be mechanically compacted to a minimum of 90% of its maximum modified proctor dry density (ASTM D-1557). These soils should be placed at a moisture content conducive to the required compaction (usually proctor optimum content  $\pm 2\%$ ).

<u>Cement Type</u>: Type II, Type I-II, or Type II-V cement is recommended for all concrete in contact with the soils on this site. Calcium chloride should not be added to a Type II, Type I-II, or Type II-V cement under any circumstances.

<u>Remarks</u>: We recommend that the bottom of all foundation components rest a minimum of 1-1/2 feet below finished grade or as required by the local building codes. Foundation components must not be placed on frozen soils.

Structural slab on grade (monolithic) foundation systems typically have an effective soil cover of less than 12 inches. Under normal use, the building and foundation system radiates sufficient heat so that frost heave from the underlying soils is normally not a problem. However, additional protection can be provided by applying an insulation board to the exterior of the foundation and extending this board to approximately 18 inches below the final ground surface grade. This board may be applied either prior to or after the concrete is cast. It is very important that all areas of soil backfill are compacted. Local building officials should be consulted for regulatory frost protection depths.

<u>Senate Bill 13 (CRS 6-6.5-101) Discussion</u>: This particular residence is being constructed on foundation soils that do not possess a "significant potential for expansion." We recommend that the owner receive a copy of this summary report of our soil analysis and site recommendations.

<u>Limitations</u>: This report is issued with the understanding that it is the responsibility of the owner or his representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and are incorporated into the plans. In addition, it is his responsibility to ensure that the necessary steps are taken to see that the contractor and his subcontractors carry out these recommendations during construction. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. In addition, changes in acceptable or appropriate standards may occur or may result from legislation or the broadening of engineering knowledge. Accordingly, the findings of this report may be invalid, wholly or partially, by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

The recommendations of this report pertain only to the site investigated and are based on the assumption that the soil conditions do not deviate from those described in this report. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that planned on the day of this report, Grand Junction Lincoln DeVore should be notified so that supplemental recommendations can be provided, if appropriate.

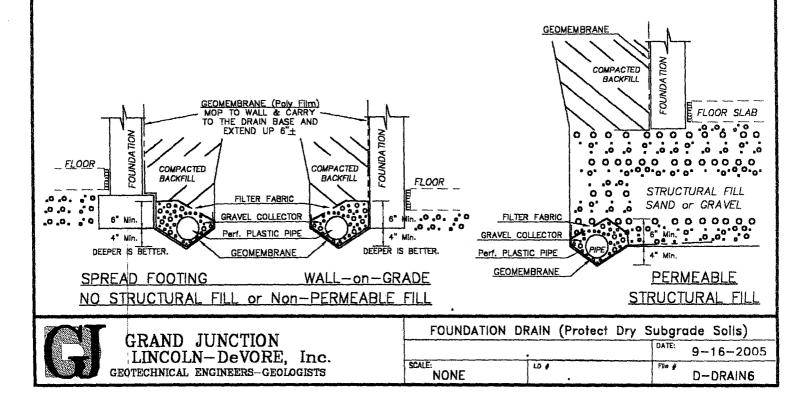
Grand Junction Lincoln DeVore makes no warranty, either expressed or implied, as to the findings, recommendations, specifications, or professional advice except that they were prepared in accordance with generally accepted professional engineering practices in the field of geotechnical engineering.

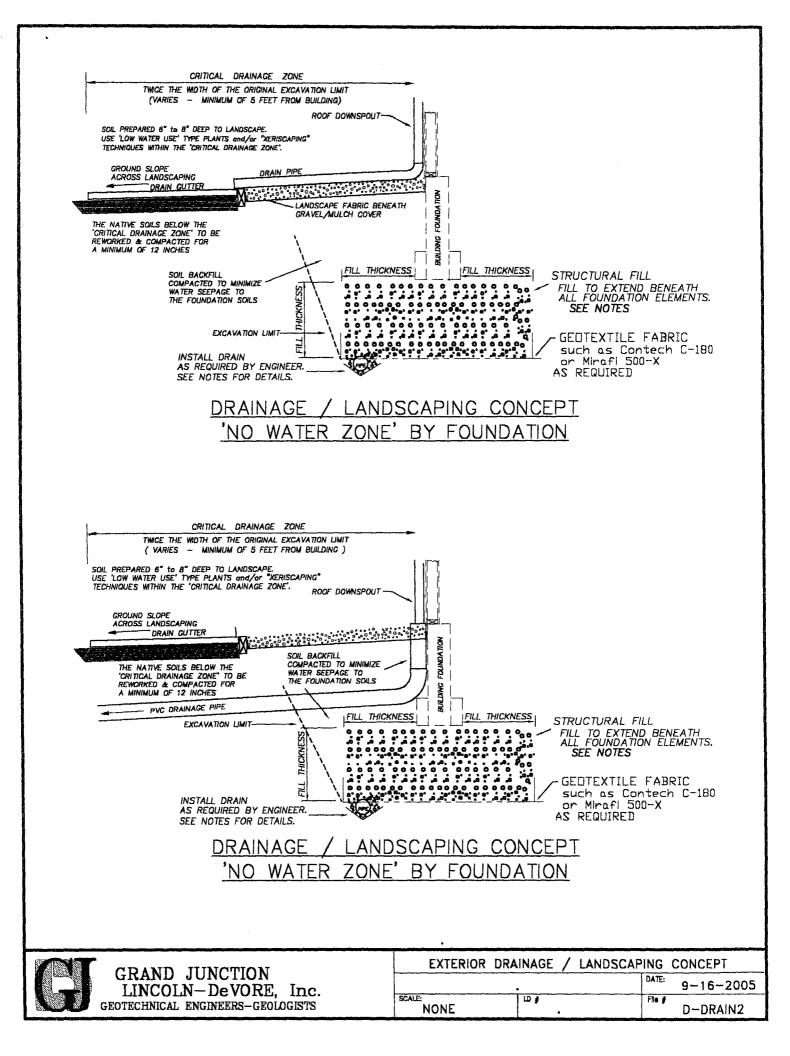
Respectfully submitted, **GRAND JUNCTION** LINCOLN DeVORE, INC. 30590 Edward M. Morris, P.E. by: **Principal Engineer** 

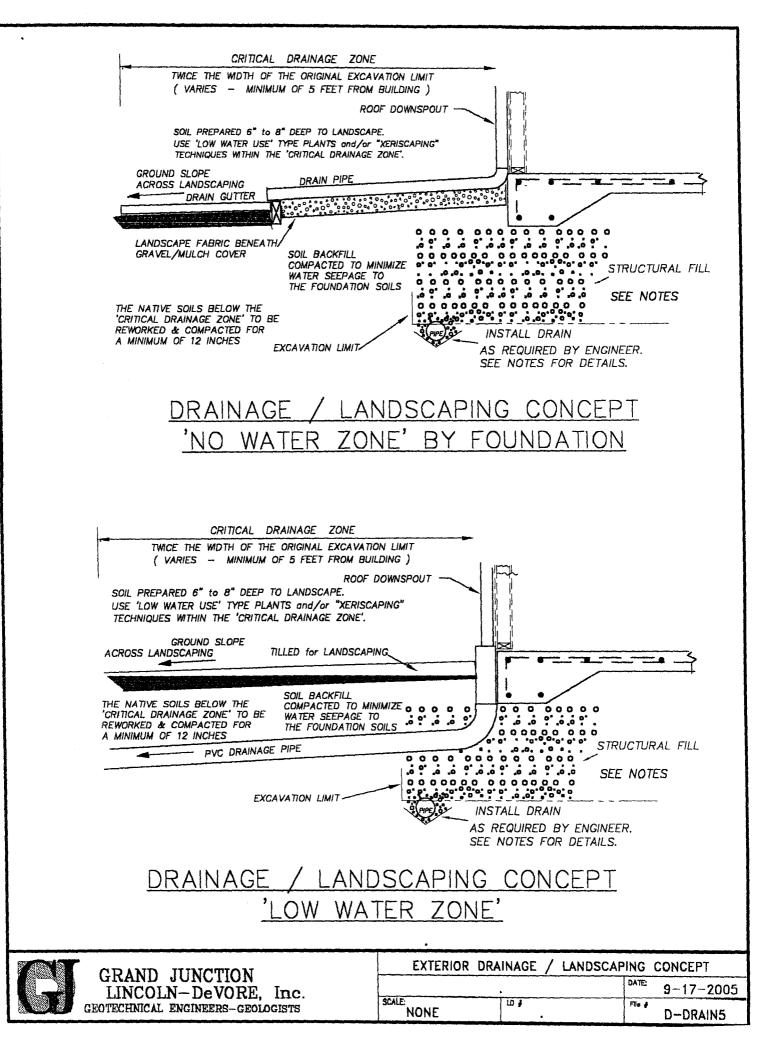
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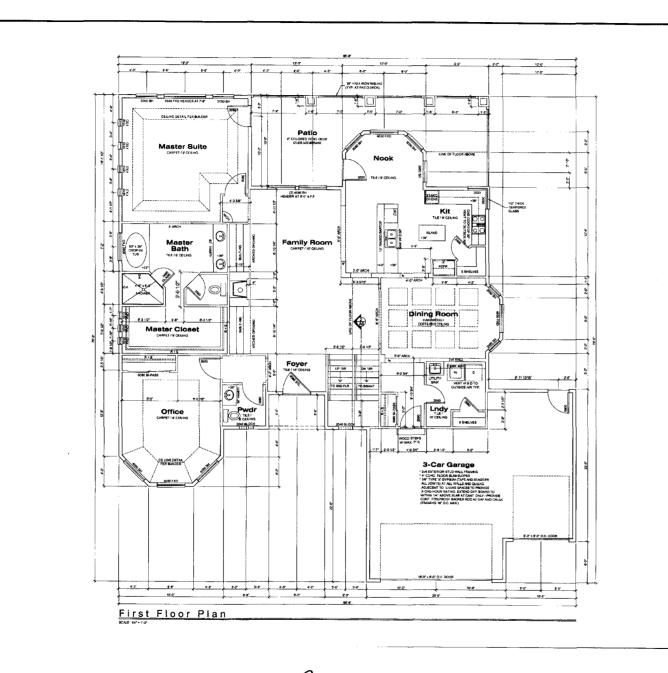
## NOTES FOR UNDERGROUND FOUNDATION DRAIN. Protect Dry Subgrade Solls

- The drain trench to be located at the base and exterior limit of any structural fill or below the base of the exterior foundations elements. Excavate any trenching as narrow as practical. Observe sloping or bracing, as required by the appropriate OSHA req. The sides and bottom of the trench is to be smooth and must be graded to drain to 'Daylight' Discharge or Sump. The Minimum trench and pipe gradient is to be 1%. If Daylight Discharge is not possible, a Sump & Pump must be used.
- A Geomembrane Barrier is to be placed on the foundation side, extended away from the Foundation and toward the Drain. The Geomembrane Barrier is to be placed beneath the drain, as a water channel and extend up 3" to 6" above Drain Pipe. All cut and graded earth surfaces in contact with the Geomembrane to be smooth, free of pockets, no loose rocks
- and have no sharp projections  $\underline{OB}$  a protective Geotextile or sand cushion layer must be installed between the soil and the Geomembrane.
- In Non-Traffic Areas. The Geomembrane to be a Polyethylene or equal and to have the following characteristics: 0.5mm (6 mils) Minimum Thickness, ASTM D-5199 in Traffic Areas, The Geomembrane to be a 10 mil Polyethylene or equal.
- All joints in the Geomembrane shall be overlapped and glued with products and in such a manner that conforms to the manufacturer's recommendation. If glued joints are not used, the membrane edges shall be overlapped a minimum of 32 inches (0.6m). The overlaps shall be "shingled" so the exposed edges face in the same direction as the flow of water drainage. A Geosynthetic/Composite Clay Liner may be substituted for the Geomembrane. <u>Confirm with the Design Engineer</u>.
- A Perforated Plastic Pipe (PVC) is to be enclosed within the Geomembrane, at the base of the trench. Flexible' Piping may be used if backfill is less than 5' deep or Specifically approved by the Design Engineer. For 'Critical' Applications, the use of 'flexible' piping is NOT RECOMMENDED.
- The Perforated Plastic Pipe to be a minimum 3" Diameter But, Must be sized for the anticipated conditions. If the length of 'Perforated Pipe Run Along Gradient' exceeds 200 feet. An Additional Perforated Pipe is to added in the trench <u>OR</u> the pipe size increased to either 4" or 6" diameter. Confirm with Engineer.
- The Plastic Pipe must be graded to drain to the 'Daylight" Discharge or a Sump Discharge. Minimum 1% Grade.
- The Perforated Plastic Pipe to be protected from clogging. Such protection can be achieved by wrapping the pipe with a non-woven Geotextile 'Filter Fabric' (Such as Amoco 4547, Contech C-50W, Mirafi 140N).
- A permeable Sand or Gravel Water Drainage/Collection medium is to be placed around and above the Perforated Pipe. This Drainage/Collection Medium to be compacted to at least 80% of Maximum Dry Density, ASTM D-1557. Place Geotextile fabric at the Top Surface of permeable Sand Or Gravel medium to prevent clogging.
- The permeable Water Drainage/Collection medium must be protected from clagging. Protection may be wrapping the medium with a non-woven Geotextile 'Filter Fabric', Such as Amoco 4547, Contech C-50W, Mirafi 140N ('Burrito Drain').
- All Backfill Cover over the Sand or Gravelly Sand Drain must be carefully placed and compacted. Th Bacfill Gover is to be placed in lifts and compacted to at least 85% of Maximum Dry Density, ASTM D-1557. Additional Compaction (min. 90% ASTM D-1557) is recommended for backfill over 18" above the Drain Pipe.
- With the approval of the Design Engineer, either Geocomposite Drains, Board Drains and Edge Drains may be substituted for portions of the drain shown on this drawing.
- Required Observations by the Design Engineer or approved representative: Completion of Trench and Surface Excavation / Preparation, prior to Membrane Installation. (Compaction Testing) Perforcted Drain Pipe or other Products in place, to include protection from clogging. Top of Water Drainage/Collection Medium. (May require soil compaction testing) Top and intermediate Backfill (Soil compaction testing) Final Sail Cover, surface graded and prior to final landscaping.









SENSEAL NOTES: 1. If it full reactive get in Or the BLADK OK OWNER TO VARY ALL DATALS we devide the optimum of the optimum o	C'S DESIGN & DRAFTING RESIGN & DRAFTING RESIDENTAL-CUSTOM-REMODEL-ADDITIONS PHONE- OFFICE- OTAGRALAUT CELL OTAGRALAUT
	FIRST FLOOR PLAN
	PREPARED FOR ROEMFISH LLC. 704 ROUINDUP DRIVE
BASEMENT FLOOR S.F. 2072 FIRST FLOOR S.F. 2256 SECOND FLOOR S.F. 580 GARAGE S.F. 856	SCALE: 14-1-0 DATE: 07/31/06 PROJECT NO. 3 SHEET NO.

704 Round Up

A2 SHEET 3 C

DATE