SUBSURFACE EXPLORATION REPORT
VENTANA
(FORMERLY KNOWN AS
WINDSOR ESTATES 2ND FILING)
WINDSOR, COLORADO
EEC PROJECT NO. 1962101

EARTH ENGINEERING
CONSULTANTS, INC.

November 6, 1996
(Revised: Name Change to Ventana-December 12, 2000)

Sollenberger Development Corporation
P.O. Box 272469
Fort Collins, Colorado 80527

Attn: Mr. Mike Sollenberger

Re: Subsurface Exploration Report
Ventana
(Formerly Known as Windsor Estates 2nd Filing)
Windsor, Colorado
EEC Project No. 1962101

Mr. Sollenberger:

Enclosed, herewith, are the results of the subsurface exploration completed for the referenced project. In summary, the subsurface materials encountered in the test borings consisted of low plasticity cohesive soils with occasional granular soil zones. Based on the materials we observed at the boring locations, it is our opinion the proposed lightly loaded residential buildings could be supported on conventional footing foundation bearing on the near surface cohesive materials. Occasional zones of softer/looser materials were observed in the test borings; care will be required to see that footing foundations are supported on suitable strength soils. The near surface soils have low plasticity and could also be used for direct support of floor slabs and pavements.

The near surface cohesive soils in the proposed lake areas could also be used for the construction of the lake bed liners and as general overlot fill material. Percolation test results indicate the site soils have a percolation rate which would allow for the use of standard sewage septic systems in accordance with Weld County requirements.

Geotechnical recommendations concerning design and construction of foundations and support of floor slabs, pavements and lake liners are presented in the text of the attached report.

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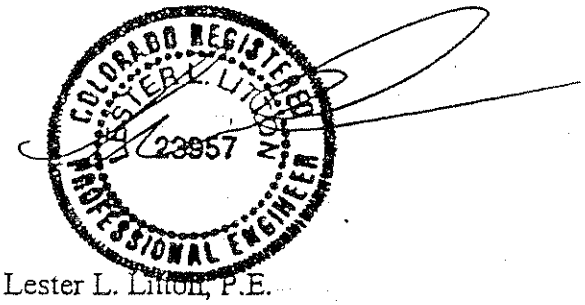
We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the enclosed report, or if we can be of further service to you in any other way, please do not hesitate to contact us.

Very truly yours,

Earth Engineering Consultants, Inc.



Lester L. Litton, P.E.
Principal Engineer

* Revised for development name change to "Ventana"

SUBSURFACE EXPLORATION REPORT
PROPOSED VENTANA DEVELOPMENT
(FORMERLY KNOWN AS WINDSOR ESTATES 2ND FILING)
WINDSOR, COLORADO
EEC PROJECT NO. 1962101

November 6, 1996
(Revised December 12, 2000)

INTRODUCTION

The subsurface exploration for the proposed Ventana development (Formerly known as Windsor Estates 2nd Filing) to be constructed east of Colorado State Highway 257 and a half mile south of Weld County Road 72 in Windsor, Colorado, has been completed. Ten (10) soil borings extending to depths of approximately 15 feet below present site grades were advanced in the proposed residential area to develop information on existing subsurface conditions. Individual boring logs and a diagram indicating the approximate boring locations are included with this report.

The Ventana development (formerly known as Windsor Estates 2nd Filing) will include the development of approximately 47 single-family residential lots. Paved streets and utilities will be developed as part of this project. It is anticipated that the proposed structures will be one and/or two-story wood frame buildings with full basements. Foundation loads for the proposed structures are expected to be light with continuous wall loads less than 2.5 kips per lineal foot and column loads less than 30 kips. Floor loads are expected to be light, less than 100 psf. Site utilities and roadways will be constructed as a part of this development. It is expected the site roadways will be used by low volumes of light vehicles (automobiles and light trucks).

The purpose of this report is to describe the subsurface conditions encountered in the borings, analyze and evaluate the test data and provide geotechnical recommendations concerning design and construction of foundations and support of floor slabs and pavements.

EXPLORATION AND TESTING PROCEDURES

The boring locations were selected and established in the field by Earth Engineering Consultants, Inc. (EEC) personnel. Field locations were established by pacing and estimating angles from identifiable site references. The locations of the borings should be considered accurate only to the degree implied by the methods used to make the field measurements.

The borings were performed using a truck mounted, CME 45 drill rig equipped with a hydraulic head employed in drilling and sampling operations. The boreholes were advanced using 4-inch nominal diameter continuous flight augers and samples of the subsurface materials encountered were obtained using split-barrel sampling procedures in general accordance with ASTM Specification D-1586. In the split-barrel sampling procedure, a standard 2-inch O.D. split-barrel sampling spoon is driven into the ground by means of a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the split barrel sampler is recorded and is used to estimate the in-situ relative density of cohesionless soils and, to a lesser degree of accuracy, the consistency of cohesive materials. Bulk samples were obtained from the auger cuttings. All samples obtained in the field were sealed and returned to the laboratory for further examination, classification and testing.

Field piezometers were installed at five (5) of the boring locations to allow for subsequent measurement of depth to groundwater. The piezometers consist of 2-inch nominal diameter PVC field-slotted to allow for water inflow. They were placed in the open boreholes and the annular space backfilled with the auger cuttings. Long-term measurements will be completed by others.

Field percolation tests were completed at four locations on the site. The field percolation tests included auger borings at each of the locations to identify soil stratigraphy and shallow percolation holes to evaluate the percolation rates of the near surface soils. The percolation measurements were completed after pre-soaking the shallow borings for approximately 24 hours. Results of those field tests and the logs of the auger borings are included with this report.

Moisture content tests were performed on each of the recovered samples. In addition, selected samples were tested for fine contents and plasticity by washed sieve analysis and Atterberg limits, respectively. Swell/consolidation tests were completed on selected samples to evaluate the soils tendency to change volume with variation in moisture content. Results of the outlined tests are indicated on the attached boring logs and summary sheets.

As a part of the testing program, all samples were examined in the laboratory by an engineer and classified in accordance with the attached General Notes and the Unified Soil Classification System, based on the texture and plasticity of the soils. The estimated group symbol for the Unified Soil Classification System is shown in the appropriate column on the boring logs and a brief description of that classification system is included with this report.

SITE AND SUBSURFACE CONDITIONS

The Ventana development (Formerly known as Windsor Estates 2nd Filing) will be located approximately one-half mile south of Weld County Road 72 and east of Colorado State Highway 257 in Windsor, Colorado. The project site is presently undeveloped farming ground. Surface drainage at the site is towards the south and east with a maximum difference of ground surface elevation across the site on the order of 3 to 5 feet. The Challgren Lateral borders the property to the north. Evidence of prior building construction was not observed at the project site by EEC field personnel.

An EEC field geologist was on-site during drilling to direct the drilling activities and evaluate the materials encountered. Field descriptions of the materials encountered were based on visual and tactual observation of disturbed samples and auger cuttings. The boring logs included with this report may contain modifications to the field logs based on results of laboratory testing and engineering evaluation. Based on results of field and laboratory evaluation, subsurface conditions can be generalized as follows.

Approximately 12 to 14 inches of vegetation and/or topsoil were encountered at the surface of the boring locations. The topsoil and/or vegetation was underlain by brown, lean clay which contained varying amounts of sand. The cohesive soils were soft to stiff and exhibited low plasticity.

Occasional zones of sands and gravels with varying percentages of fines were encountered in the cohesive soils. The granular soils were medium dense. The borings were terminated at depths of approximately 15 feet in the varied soils.

The stratification boundaries indicated on the boring logs represent the approximate location of changes in soil types; in-situ, the transition of materials may be gradual and indistinct.

GROUND WATER OBSERVATIONS

Observations were made while drilling and after completion of the borings to detect the presence and level of free water in the open boreholes. Free water was observed at a depth of 11 feet in boring B-1, 9 feet in boring B-3 and 14 feet in boring B-6 at the time of drilling. Free water was not encountered at the other boring locations at that time.

At the time of drilling, EEC personnel installed field piezometers in open boreholes B-1, B-2, B-3, B-6 and B-7. A summary of water level readings in the site piezometers is included with this report.

Zones of perched and/or trapped water may be encountered in more permeable zones in the subgrade soils at times throughout the year. Fluctuations in ground water levels and in the location and amount of perched water may occur over time depending on variations in hydrologic conditions and/or other conditions not apparent at the time of this report. Groundwater level may also be impacted by water levels in the canals on the north and east of the site. Continued monitoring of the site piezometers may be used to evaluate groundwater fluctuations.

ANALYSIS AND RECOMMENDATIONS

Footing Foundations

Based on materials observed at the test boring locations, it is our opinion the footing foundations could be used for support of the lightly loaded structures. At some locations, relatively loose or soft zones were observed; we recommend the in-place soils be closely observed during construction to

see that footing foundations are not supported on or immediately above loose/soft materials. The footing foundations should extend through all existing vegetation/topsoil and bear in the natural, stiff lean clay with varying amounts of sand and silt.

For design of footing foundations bearing in the stiff cohesive material, we recommend using a net allowable total load soil bearing pressure not to exceed 1,500 psf. The net bearing pressure refers to the pressure at foundation bearing level in excess of the minimum surrounding overburden pressure. Total load is based on full dead and live loads. The use of overexcavation and backfill procedures below the footings could be considered if it is desired to develop higher allowable bearing pressures.

The exterior foundations and foundations in unheated areas should be located a minimum of 30 inches below adjacent exterior grades to provide frost protection. We recommend formed continuous footings have a minimum width of 16 inches and isolated column foundations have a minimum width of 30 inches. Trenched foundations (grade beam foundations) could be used in the cohesive site soils. If used, we recommend the trenched foundations have a minimum width of 12 inches.

No unusual problems are anticipated in completing the excavations required for construction of the footing foundations. Care should be taken during excavation to avoid disturbing the foundation bearing materials. Bearing materials which are loosened or disturbed by the construction activities or materials which become dry and desiccated or wet and softened during construction should be removed and replaced prior to placement of reinforcing steel or foundation concrete.

We estimate the long-term settlement of footing foundations designed and constructed as outlined above would be less than 3/4 inch.

Floor Slab Subgrades

We recommend all existing vegetation/topsoil be removed from beneath the floor slab areas. After stripping and completing all cuts and prior to placement of any floor slabs or fill, we recommend the

exposed subgrades be scarified to a minimum depth of 9 inches, adjusted in moisture content and compacted to at least 95% of standard Proctor maximum dry density in accordance with ASTM Specification D-698. The moisture content of the scarified soils should be adjusted to be within the range of ±2% of standard Proctor optimum moisture at the time of compaction. For granular soils or high silt content soils, a lower moisture content requirement may be appropriate to reduce potential for instability of those soils during construction. This adjustment can best be made during construction. Scarification and recompaction of soils in the basement areas would generally not be required.

Fill soils required to develop the floor slab subgrades should consist of approved, low-volume change materials which are free from organic matter and debris. The near surface lean clay could be used for fill beneath floor slabs. Normally, low-volume change materials would have a liquid limit of 40 or less and plasticity index of 18 or less. Those materials should contain a minimum of 15% fines, material passing a #200 sieve. Fill materials in the floor slab areas should be placed in loose lifts not to exceed 9 inches thick, adjusted in moisture content as recommended for the scarified soils and compacted to at least 95% of standard Proctor maximum dry density.

Care should be taken after development of the floor slab subgrades to prevent disturbance of the in-place materials. Materials which are loosened or disturbed by construction activities or materials which become wet and softened or dry and desiccated should be reworked prior to placement of the overlying floor slabs.

Below Grade Areas

We recommend a perimeter drain system to be installed around all below grade areas to reduce the potential for seepage of infiltration water into the below grade areas and/or development of hydrostatic loads on the below grade walls. In general, a perimeter drain system should consist of perforated metal or plastic pipe placed at approximate foundation bearing level around the exterior perimeter of the structure. The drain line should be surrounded by a minimum of 6 inches of appropriately sized granular filter soil. We recommend the drain line or surrounding granular soil be wrapped in an appropriate filter fabric to reduce potential for an influx of fines into the system.

The drain system should allow for the free flow of water to a sump area where it can be removed without reverse flow into the system or to a gravity drain away from the structure.

Fill materials around below grade areas of the structures should consist of low-volume change materials as previously defined. Free drainage granular fill material could be used in these areas; however, the top 2 feet of material around the perimeter of the building should be an essentially cohesive material to reduce surface infiltration adjacent to the buildings. The fill materials should be placed in loose lifts not to exceed 9 inches thick, adjusted in moisture content and compacted to at least 90% standard Proctor maximum dry density. In areas where the backfill will support sidewalks, patio slabs, driveways or similar improvements, the backfill materials should be compacted to at least 95% of standard Proctor maximum dry density. Compaction in this area should be accomplished using light weight mechanical equipment or hand compaction equipment to reduce the potential for excessive lateral forces being developed on below grade walls.

We recommend an equivalent fluid pressure of 35 pounds per cubic foot be used for design of the below grade walls. That equivalent fluid pressure is based on an active stress condition which includes an assumption of slight wall rotation. That wall rotation is typically estimated to be less than 0.5% times the height of these walls. The recommended lateral earth pressure does not include an allowance for hydrostatic loading nor does it include a factor of safety. Surcharge loading adjacent to below grade walls would increase the lateral load on the walls.

Site Roadways

All existing vegetation and/or topsoil should be removed from pavement areas. After stripping and completing all cuts and prior to placement of any fill, floor slabs or pavements, we recommend the exposed soils be scarified to a minimum depth of 9 inches, adjusted in moisture content and compacted to at least 95% of the material's maximum dry density as determined in accordance with the standard Proctor procedure. The moisture content of the scarified soils should be adjusted to be within the range of ±2% of standard Proctor optimum moisture. High silt content soils were occasionally encountered in the test boring performed at this site. These higher silt content soils

should be adjusted to a drier moisture so that instability of the materials will not occur during construction.

Fill materials required to develop the pavement subgrades should consist of approved, low-volume change materials, free from organic matter and debris. The near surface site soils could be used for fill in these areas. We recommend those fill soils be placed in loose lifts not to exceed 9 inches thick, adjusted in moisture content and compacted to at least 95% of the material's standard Proctor maximum dry density.

After completion of the pavement subgrades, care should be taken to prevent disturbance of those materials prior to placement of the overlying pavements. The higher silt content site soils could be easily disturbed by construction activities if these soils are allowed to become wetted. Soils which are disturbed by construction activities should be reworked in-place or, if necessary, removed and replaced prior to placement of overlying fill or pavements.

The streets for this development would be constructed as limited access internal roadways. We anticipate traffic on these roadways will consist of low volumes of automobiles and light trucks. Occasional trash trucks or moving vans may use the development roadways. For the relatively low-volume of traffic being projected, we recommend the pavement section for the interior roadways consist of 3 inches of hot bituminous pavement overlying 6 inches of aggregate base. This pavement section is compatible with the minimum pavement section required by the City of Windsor.

The hot bituminous pavement should be consistent with Colorado Department of Transportation (CDOT) requirements for Class E or EX blends. Pavement aggregate base should consist of approved materials consistent with CDOT requirements for Class 5 or Class 6 base. The aggregate could be replaced with a stabilized subgrade, we would be pleased to provide added information on subgrade stabilization, if desired. The outlined pavement sections are minimums, and as such, periodic maintenance should be expected. Other pavement sections could be used and we would be pleased to evaluate alternative sections at your request.

Lake Excavation and Preparation

The approximate locations of the proposed lakes for the Ventana development (Formerly known as Windsor Estates 2nd Filing) are shown on the attached boring location diagram. It is our understanding that the lakes will be fed from the Challgren Lateral located along the north property boundary. The lake will then be a source for irrigation water for the residential lots within the development.

The soil profile in the area of the proposed lakes indicates 9 to 10 feet of sandy lean clay with occasional sand and gravel zones. Groundwater appeared to be at a depth of approximately 10 to 12 feet at the time of this report. No unusual problems are anticipated for the excavation in the proposed lake areas. It is our opinion the cohesive materials from those areas could be used for sewer and overlot fill materials. Prior to placement as fill material, adequate mixing of the materials should occur to avoid sand and gravel zones and/or pockets. While placing the excavated material as fill, the moisture content should be regulated in the field to within ±2% of optimum moisture content as determined in accordance with ASTM D-698, the standard Proctor procedure.

Based on the materials encountered at the boring locations in the proposed lake areas, it is our opinion the on-site sandy lean clay material could be used to develop a low permeability liner for the lake areas. During development of the lake bed liner, the materials should be scarified and recompacted and care should be taken to avoid loose and sand and gravel zones within the liner. If encountered in the lake liner area, they should be fully excavated and replaced with the on-site cohesive materials. The thickness of the compacted liner can be varied to create a liner system which will allow only small amounts of seepage under the designed hydraulic head for the compacted liner.

Other alternatives for lining the lakes would include the addition of bentonite, clay lining or the use of soil cement.

Individual Wastewater Disposal Systems

Based on the test borings and percolation testing, we expect standard absorption fields could be used over most of the site for individual wastewater disposal systems. The percolation rates measured at four locations across the site were within the range of 27 to 32 min/inch.

Other Considerations

Positive drainage should be developed away from the proposed structures to reduce the potential for wetting of the bearing soils or the subgrade material. We recommend a minimum slope of one (1) inch per foot for the first 10 feet away from the structures. Also, care should be taken in the design and installation of the lawn watering systems to avoid spraying of water on or directly adjacent to the foundations. Any leaks in the site utility systems should be promptly repaired to reduce potential saturation of subgrade materials. Care should be taken to avoid plantings immediately adjacent to the structures which could increase moisture fluctuations in the soils below footing foundations.

Concerning installation of underground utilities, care should be taken to develop stable side slopes in all utility excavations. OSHA standards should be followed when developing site excavations.

GENERAL COMMENTS

The analysis and recommendations presented in this report are based upon the data obtained from the soil borings performed at the indicated locations and from any other information discussed in this report. This report does not reflect any variations which may occur between borings or across the site. The nature and extent of such variations may not become evident until construction. If variations appear evident, it will be necessary to re-evaluate the recommendations of this report.

It is recommended that the geotechnical engineer be retained to review the plans and specifications so that comments can be made regarding the interpretation and implementation of our geotechnical recommendations in the design and specifications. It is further recommended that the geotechnical

engineer be retained for testing and observations during earthwork and foundation construction phases to help determine that the design requirements are fulfilled.

This report has been prepared for the exclusive use of Sollenberger Development Corporation for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranty, express or implied, is made. In the event that any changes in the nature, design or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing by the geotechnical engineer.

DRILLING AND EXPLORATION

DRILLING & SAMPLING SYMBOLS:

SS: Split Spoon - 13/8" I.D., 2" O.D., unless otherwise noted
ST: Thin-Walled Tube - 2" O.D., unless otherwise noted
R: Ring Barrel Sampler - 2.42" I.D., 3" O.D. unless otherwise noted
PA: Power Auger
HA: Hand Auger
DB: Diamond Bit = 4", N, B
AS: Auger Sample
HS: Hollow Stem Auger
PS: Piston Sample
WS: Wash Sample
FT: Fish Tail Bit
RB: Rock Bit
BS: Bulk Sample
PM: Pressure Meter
WB: Wash Bore

Standard "N" Penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2-inch O.D. split spoon, except where noted.

WATER LEVEL MEASUREMENT SYMBOLS:

WL : Water Level
WCI: Wet Cave in
DCI: Dry Cave in
AB : After Boring
WS : While Sampling
WD : While Drilling
BCR: Before Casing Removal
ACR: After Casting Removal

Water levels indicated on the boring logs are the levels measured in the borings at the time indicated. In pervious soils, the indicated levels may reflect the location of ground water. In low permeability soils, the accurate determination of ground water levels is not possible with only short term observations.

DESCRIPTIVE SOIL CLASSIFICATION

Soil Classification is based on the Unified Soil Classification system and the ASTM Designations D-2488. Coarse Grained Soils have move than 50% of their dry weight retained on a #200 sieve; they are described as: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are described as : clays, if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse grained soils are defined on the basis of their relative in-place density and fine grained soils on the basis of their consistency. Example: Lean clay with sand, trace gravel, stiff (CL); silty sand, trace gravel, medium dense (SM).

CONSISTENCY OF FINE-GRAINED SOILS

Unconfined Compressive Strength, Qu, psf	Consistency
< 500	Very Soft
500 - 1,000	Soft
1,001 - 2,000	Medium
2,001 - 4,000	Stiff
4,001 - 8,000	Very Stiff
8,001 - 16,000	Very Hard

RELATIVE DENSITY OF COARSE-GRAINED SOILS:

N-Blows/ft	Relative Density
0-3	Very Loose
4-9	Loose
10-29	Medium Dense
30-49	Dense
50-80	Very Dense
80 +	Extremely Dense

PHYSICAL PROPERTIES OF BEDROCK

DEGREE OF WEATHERING:

Slight	Slight decomposition of parent material on joints. May be color change.
Moderate	Some decomposition and color change throughout.
High	Rock highly decomposed, may be extremely broken.

HARDNESS AND DEGREE OF CEMENTATION:

Limestone and Dolomite:

Hard	Difficult to scratch with knife.
Moderately Hard	Can be scratched easily with knife.
Hard	Cannot be scratched with fingernail.
Soft	Can be scratched with fingernail.

Shale, Siltstone and Claystone:

Hard	Can be scratched easily with knife, cannot be scratched with fingernail.
Moderately Hard	Can be scratched with fingernail.
Soft	Can be easily dented but not molded with fingers.

Sandstone and Conglomerate:

Well Cemented	Capable of scratching a knife blade.
Cemented	Can be scratched with knife.
Poorly Cemented	Can be broken apart easily with fingers.

EEC

UNIFIED SOIL CLASSIFICATION SYSTEM[A]

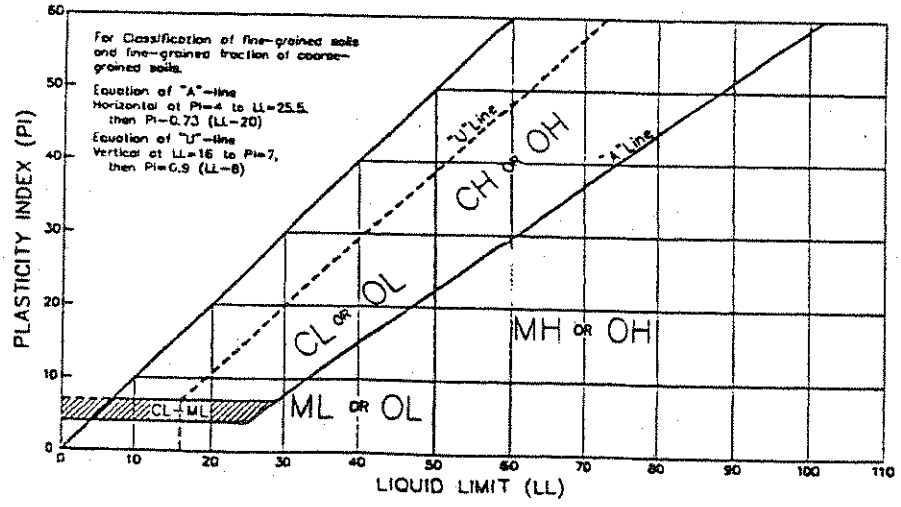
Criteria for Assigning Group Symbols and Group names Using Laboratory Tests				Soil Classification	
				Group Symbol	Group Name
Coarse-Grained Soils more than 50% retained on No. 200 sieve	Gravels more than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines	$Cu \geq 4$ and $< Cc \leq 3$[E]	GW	Well-graded gravel[F]
			$Cu < 4$ and/or $1 > Cc > 3$[E]	GP	Poorly-graded gravel[F]
		Gravels with Fines more than 12% fines	Fines classify as ML or MH	GM	Silty gravel, G,H
			Fines classify as CL or CH	GC	Clayey Gravel[F,G,H]
	Sands 50% or more coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines	$Cu \geq 6$ and $1 < Cc \leq 3$[E]	SW	Well-graded sand[I]
			$Cu < 6$ and/or $1 > Cc > 3$[E]	SP	Poorly-graded sand[I]
		Sands with Fines more than 12% fines	Fines classify as ML or MH	SM	Silty sand[G,H,I]
			Fines classify as CL or CH	SC	Clayey sand[G,H,I]
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid Limit less than 50	inorganic	PI>7 and plots on or above "A"Line[J]	CL	Lean clay[K,L,M]
			PI<4 or plots below "A"Line[J]	ML	Silt[K,L,M]
		organic	Liquid Limit - oven dried / Liquid Limit - not dried < 0.75	OL	Organic clay[K,L,M,N] / Organic silt[K,L,M,O]
	Silts and Clays Liquid Limit 50 or more	inorganic	PI plots on or above "A"Line	CH	Fat clay[K,L,M]
			PI plots below "A"Line	MH	Elastic Silt[K,L,M]
		organic	Liquid Limit - oven dried / Liquid Limit - not dried < 0.75	OH	Organic clay[K,L,M,P] / Organic silt[K,L,M,O]
Highly organic soils		Primarily organic matter, dark in color, and organic odor		PT	Peat

[A]Based on the material passing the 3-in. (75-mm) sieve
[B]If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C]Gravels with 5 to 12% fines required dual symbols:
GW-GM well graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly-graded gravel with silt
GP-GC poorly-graded gravel with clay
[D]Sands with 5 to 12% fines require dual symbols:
SW-SM well-graded sand with silt
SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})}{D_{10} \times D_{60}}$

[F]If soil contains ≥15% sand, add "with sand" to group name.
[G]If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H]If fines are organic, add "with organic fines" to group name
[I]If soil contains ≥15% gravel, add "with gravel" to group name.
[J]If Atterberg limits plots shaded area, soil is a CL-ML silty clay.

[K]If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel", whichever is predominant.
[L]If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M]If soil contains ≥ 30% plus No. 200 predominantly gravel, add "gravelly" to group name.
[N]PI≥4 and plots on or above "A" line.
[O]PI≤4 or plots below "A" line.
[P]PI plots on or above "A" line.
[Q]PI plots below "A" line.



EARTH ENGINEERING CONSULTANTS, INC.

PERCOLATION TESTS #4

Date October 1996 Sheet 4 of 4
Holes 3 , Diameter 6"± , Depth 30"±
Presoak time 24 hours Acres __
Weather Sunny - Mild

Proj.No. 1962101
Location Windsor Estates 2nd Filing
Tests by SCK
Test for John Turner

Hole #	Time	Depth	Increment		Time	Depth	Increment		Time	Depth	Increment		Perc Rate min/ inch
			Time Min.	Fall In.			Time Min.	Fall In.			Time Min.	Fall In.	
1	10:15	20 1/2"	xxx	xxx	10:55	22"	10	1/4"	11:35	23 3/8"	10	1/2"	
	10:25	21"	10	1/2"	11:05	22 1/4"	10	1/4"	11:45	23 7/8"	10	1/2"	27.4
	10:35	21 1/2"	10	1/2"	11:15	22 5/8"	10	3/8"					
	10:45	21 3/4"	10	1/4"	11:25	22 7/8"	10	1/4"					
2	10:16	23 1/8"	xxx	xxx	10:56	24 5/8"	10	1/4"	11:36	26"	10	3/8"	
	10:26	23 5/8"	10	1/2"	11:06	24 7/8"	10	1/4"	11:46	26 1/4"	10	1/4"	29.4
	10:36	24 1/8"	10	1/2"	11:16	25 1/4"	10	3/8"					
	10:46	24 3/8"	10	1/4"	11:26	25 5/8"	10	3/8"					
3	10:17	25 1/2"	xxx	xxx	10:57	26 7/8"	10	1/4"	11:37	28 1/8"	10	1/4"	
	10:27	25 7/8"	10	3/8"	11:07	27 1/8"	10	1/4"	11:47	28 3/8"	10	1/4"	31.7
	10:37	26 1/4"	10	3/8"	11:17	27 1/2"	10	3/8"					
	10:47	26 5/8"	10	3/8"	11:27	27 7/8"	10	3/8"					
												Average percolation rate	29.5

EARTH ENGINEERING CONSULTANTS, INC.
WATER LEVEL OBSERVATION SUMMARY

BORING NO.	10/21/96	10/22/96	10/29/96
B-1	11'	8.9'	8.7'
B-2	None	None	None
B-3	None	8.0'	8.2'
B-6	14'	12.7'	13.0'
B-7	None	9.4'	9.6'

PROJECT: Ventana Development
(Formerly known as
Windsor Estates 2nd Filing)

PROJECT NO: 1962101
DATE: October 1996
(Revised December 12, 2000)

EEC

EARTH ENGINEERING CONSULTANTS, INC.

PERCOLATION TESTS #3

Date October 1996 Sheet 3 of 4
Holes 3 , Diameter 6"± , Depth 30"±
Presoak time 24 hours Acres __
Weather Sunny - Mild

Proj.No. 1962101
Location Windsor Estates 2nd Filing
Tests by SCK
Test for John Turner

Hole #	Time	Depth	Increment		Time	Depth	Increment		Time	Depth	Increment		Perc Rate min/ inch
			Time Min.	Fall In.			Time Min.	Fall In.			Time Min.	Fall In.	
1	10:05	24 1/4"	xxx	xxx	10:45	25 7/8"	10	1/2"	11:25	27 5/8"	10	~~1/4"~~	27.9
	10:15	24 5/8"	10	3/8"	10:55	26 3/8"	10	1/2"	11:35	27 7/8"	10	1/4"	
	10:22	25"	10	3/8"	11:05	27 1/8"	10	3/4"					
	10:35	25 3/8"	10	3/8"	11:15	27 3/8"	10	1/4"					
2	10:06	26"	xxx	xxx	10:46	27 3/	10	1/4"	11:26	28 1/2"	10	1/8"	36.3
	10:16	26 3/8"	10	3/8"	10:56	27 5/8"	10	1/4"	11:36	28 5/8"	10	1/8"	
	10:26	26 3/4"	10	3/8"	11:06	28"	10	3/8"					
	10:36	27 1/8"	10	3/8"	11:16	28 3/8"	10	3/8"					
3	10:07	23 1/2"	xxx	xxx	10:47	25"	10	1/4"	11:27	25 7/8"	10	1/4"	30.9
	10:17	24"	10	1/2"	10:57	25 1/4"	10	1/4"	11:37	26 1/4"	10	3/8"	
	10:27	24 1/4"	10	1/4"	11:07	25 3/8"	10	1/8"					
	10:37	24 3/4"	10	1/2"	11:17	25 5/8"	10	1/4"					
												Average percolation rate	31.7

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EARTH ENGINEERING CONSULTANTS, INC.

PERCOLATION TESTS #2

Date October 1996 Sheet 2 of 4
Holes 3 , Diameter 6"+ , Depth 30"+
Presoak time 24 hours Acres __
Weather Sunny - Mild

Proj.No. 1962101
Location Windsor Estates 2nd Filing
Tests by SCK
Test for John Turner

Hole #	Time	Depth	Increment		Time	Depth	Increment		Time	Depth	Increment		Perc Rate min/ inch
			Time Min.	Fall In.			Time Min.	Fall In.			Time Min.	Fall In.	
1	10:01	23 3/8"	xxx	xxx	10:41	25 1/4"	10	5/8"	11:21	27 1/8"	10	3/8"	30.9
	10:11	23 7/8"	10	1/2"	10:51	25 7/8"	10	5/8"	11:31	27 3/8"	10	1/4"	
	10:21	24 1/8"	10	1/2"	11:01	26 1/2"	10	5/8"					
	10:31	25 5/8"	10	1/4"	11:11	26 3/4"	10	1/4"					
2	10:02	21 3/4"	xxx	xxx	10:42	23"	10	3/8"	11:22	24"	10	3/8"	34.3
	10:12	22 1/8"	10	3/8"	10:52	23 3/8"	10	3/8"	11:32	24 3/8"	10	3/8"	
	10:22	22 1/4"	10	1/8"	11:02	23 1/2"	10	1/8"					
	10:32	22 5/8"	10	3/8"	11:12	23 5/8"	10	1/8"					
3	10:03	25 1/8"	xxx	xxx	10:43	27"	10	1/2"	11:23	28 1/8"	10	1/8"	26.7
	10:13	25 5/8"	10	1/2"	10:53	27 1/4"	10	1/4"	11:33	28 3/8"	10	1/4"	
	10:23	26"	10	3/8"	11:03	27 3/4"	10	1/2"					
	10:33	26 1/2"	10	1/2"	11:13	28"	10	1/4"					
												Average percolation rate	30.6

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EARTH ENGINEERING CONSULTANTS, INC.

PERCOLATION TESTS #1

Date October 1996 Sheet 1 of 4
Holes 3 , Diameter 6"+ , Depth 30"+
Presoak time 24 hours Acres __
Weather Sunny - Mild

Proj.No. 1962101
Location Windsor Estates 2nd Filing
Tests by SCK
Test for John Turner

Hole #	Time	Depth	Increment		Time	Depth	Increment		Time	Depth	Increment		Perc Rate min/ inch
			Time Min.	Fall In.			Time Min.	Fall In.			Time Min.	Fall In.	
1	9:50	27 1/8"	xxx	xxx	10:30	28 3/4"	10	1/2"	11:10	30 1/8"	10	3/8"	27.0
	10:00	27 1/2"	10	3/8"	10:40	29 1/4"	10	1/2"	11:20	30 3/8"	10	1/4"	
	10:10	27 7/8"	10	3/8"	10:50	29 1/2"	10	1/4"					
	10:20	28 1/4"	10	3/8"	11:00	29 3/4"	10	1/4"					
2	9:51	22"	xxx	xxx	10:31	23 3/4"	10	3/8"	11:11	25 1/2"	10	1/2"	27.6
	10:01	22 1/2"	10	1/2"	10:41	24 1/8"	10	3/8"	11:21	25 3/4"	10	1/4"	
	10:11	22 7/8"	10	3/8"	10:51	24 1/2"	10	3/8"					
	10:21	23 3/8"	10	1/2"	11:01	25"	10	1/2"					
3	9:52	24"	xxx	xxx	10:32	25 3/4"	10	3/8"	11:12	27 1/8"	10	1/4"	27.6
	10:02	24 1/2"	10	1/2"	10:42	26 1/8"	10	3/8"	11:22	27 3/8"	10	1/4"	
	10:12	24 7/8"	10	3/8"	10:52	26 1/2"	10	3/8"					
	10:22	25 3/8"	10	1/2"	11:02	26 7/8"	10	3/8"					
												Average percolation rate	27.4

WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101			DATE: OCTOBER 1996
	LOG OF PERCOLATION P-4		
RIG TYPE: CME45	SHEET 1 OF 1		WATER DEPTH
FOREMAN: SCK	START DATE	10/21/96	WHILE DRILLING: None
AUGER TYPE: 4" CFA	FINISH DATE	10/21/96	AFTER DRILLING: None
SPT HAMMER: MANUAL	SURFACE ELEV	N/A	24 HOUR: None

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY CLAY(CL)		1									
brown											
medium stiff	AS	2									
		3									
SANDY SILTY CLAY(CL).		4									
tan		5									
medium stiff		6									
	AS	7					23	10	44.2		
		8									
BOTTOM OF BORING 8.0'		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

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WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101			DATE: OCTOBER 1996
	LOG OF BORING B-10		
RIG TYPE: CME45	SHEET 1 OF 1		WATER DEPTH
FOREMAN: SCK	START DATE	10/21/96	WHILE DRILLING: None
AUGER TYPE: 4" CFA	FINISH DATE	10/21/96	AFTER DRILLING: None
SPT HAMMER: MANUAL	SURFACE ELEV	N/A	24 HOUR: N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
		1									
	SS	2	12	*2000	8.1						
		3									
SANDY CLAY(CL)		4									
tan											
medium stiff	SS	5	15	*3000	7.3		30	14	54.1	<500psf	None
		6									
		7									
		8									
		9									
	SS	10	4	*2000	18.9						
		11									
		12									
		13									
		14									
	SS	15	7		12.7						
SAND(SP), red/orange,loose to med dense											
BOTTOM OF BORING 15.5'		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
*CHP		25									

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WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101		DATE: OCTOBER 1996
	LOG OF PERCOLATION HOLE P-1	
RIG TYPE: CME45	SHEET 1 OF 1	WATER DEPTH
FOREMAN: SCK	START DATE 10/21/96	WHILE DRILLING None
AUGER TYPE: 4" CFA	FINISH DATE 10/21/96	AFTER DRILLING None
SPT HAMMER: MANUAL	SURFACE ELEV N/A	24 HOUR None

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
CLAYEY SILT(ML)											
brown		1									
medium stiff											
		2									
		3									
SILTY CLAY(CL)											
brown		4									
medium stiff											
		5									
		6									
		7									
		8									
BOTTOM OF BORING 8.0'											
		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

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WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101

DATE: OCTOBER 1996

LOG OF PERCOLATION HOLE P-3

SHEET 1 OF 1

RIG TYPE: CME45
FOREMAN: SCK
AUGER TYPE: 4" CFA
SPT HAMMER: MANUAL

START DATE 10/21/96
FINISH DATE 10/21/96
SURFACE ELEV N/A

WATER DEPTH
WHILE DRILLING None
AFTER DRILLING None
24 HOUR None

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
		1									
	AS	2					23	12	47.2		
SANDY CLAY(CL) brown medium stiff to soft		3									
		4									
		5									
SANDY CLAY/CLAYEY SAND(CL/SP) brown soft	AS	6									
		7									
		8									
BOTTOM OF BORING 8.0'		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

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WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101	LOG OF PERCOLATION HOLE P-2		DATE: OCTOBER 1996
RIG TYPE: CME45	SHEET 1 OF 1		WATER DEPTH
FOREMAN: SCK	START DATE	10/21/96	WHILE DRILLING: None
AUGER TYPE: 4" CFA	FINISH DATE	10/21/96	AFTER DRILLING: None
SPT HAMMER: MANUAL	SURFACE ELEV	N/A	24 HOUR: None

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY CLAY(CL)	AS	2									
tan											
medium stiff		3									
		4									
		5									
		6									
	AS	7									
SILTY CLAY(CL)											
tan, soft to medium stiff		8									
BOTTOM OF BORING 8.0'		9									
		10									
		11									
		12									
		13									
		14									
		15									
		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

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WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101

DATE: OCTOBER 1996

LOG OF BORING B-9

SHEET 1 OF 1

RIG TYPE: CME45

FOREMAN: SCK

AUGER TYPE: 4" CFA

SPT HAMMER: MANUAL

START DATE: 10/21/96

FINISH DATE: 10/21/96

SURFACE ELEV: N/A

WATER DEPTH

WHILE DRILLING: None

AFTER DRILLING: None

24 HOUR: N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
		1									
	SS	2	4	*1000	4.7						
SANDY SILTY CLAY(CL) brown soft to medium stiff		3									
		4									
	SS	5	3	*7000	6.6						
		6									
		7									
		8									
		9									
CLAYEY SAND(SC) brown loose	SS	10	4		9.7						
		11									
		12									
		13									
SILTY CLAY(CL) tan/brown soft to medium stiff		14									
	SS	15	4		23.7						
BOTTOM OF BORING 15.5'		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

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WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101

DATE: OCTOBER 1996

LOG OF BORING B-8

SHEET 1 OF 1

RIG TYPE: CME45		WATER DEPTH	
FOREMAN: SCK	START DATE 10/21/96	WHILE DRILLING	None
AUGER TYPE: 4" CFA	FINISH DATE 10/21/96	AFTER DRILLING	None
SPT HAMMER: MANUAL	SURFACE ELEV N/A	24 HOUR	N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY CLAY(CL) brown medium stiff	SS	2	6	*5000	15.6						
	SS	5	4	*1000	19.1		35	20	62.6	700psf	0.6
SILTY SANDY CLAY(CL) brown soft to medium stiff	SS	10	5	*1000	18.7						
more moist with depth	SS	15	4		21.4						
BOTTOM OF BORING 15.5'											

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WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101

DATE: OCTOBER 1996

LOG OF BORING B-7

SHEET 1 OF 1

RIG TYPE: CME45
FOREMAN: SCK
AUGER TYPE: 4" CFA
SPT HAMMER: MANUAL

START DATE: 10/21/96
FINISH DATE: 10/21/96
SURFACE ELEV: N/A

WATER DEPTH
WHILE DRILLING: None
AFTER DRILLING: None
8 DAYS AFTER: 9.6'

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY LEAN CLAY(SP) brown medium stiff	SS	2	6		10.0						
CLAYEY SAND(SC) brown medium stiff	SS	5	7		8.3						
SANDY LEAN CLAY(CL) red/brown soft to stiff	SS	10	4		23.9						
GRAVELLY SAND(SP/GP) red medium dense	SS	15	7		---						
BOTTOM OF BORING 15.5'											

Piezometer installed in open bore hole prior to backfilling.

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WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101			DATE: OCTOBER 1996
	LOG OF BORING B-6		
RIG TYPE: CME45	SHEET 1 OF 1		WATER DEPTH
FOREMAN: SCK	START DATE	10/21/96	WHILE DRILLING 14'
AUGER TYPE: 4" CFA	FINISH DATE	10/21/96	AFTER DRILLING 14'
SPT HAMMER: MANUAL	SURFACE ELEV	N/A	8 DAYS AFTER 13.0'

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
		1									
SANDY LEAN CLAY(CL)	SS	2	7	*9000+	11.6						
dark brown		3									
moderately stiff		4									
	SS	5	5	*4000	13.0		37	17	53.8	<500psf	None
		6									
		7									
		8									
		9									
SANDY LEAN CLAY(CL)	SS	10	4		13.7						
tan		11									
soft to stiff		12									
		13									
		14									
	SS	15	4		20.1						
BOTTOM OF BORING 15.5'		16									
		17									
Piezometer installed in open bore hole prior to backfilling.		18									
		19									
		20									
		21									
		22									
		23									
		24									
*CHP		25									

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WINDSOR ESTATES 2nd FILING

WINDSOR, COLORADO

PROJECT NO: 1962101

DATE: OCTOBER 1996

LOG OF BORING B-5

RIG TYPE: CME45

SHEET 1 OF 1

FOREMAN: SCK

START DATE 10/21/96

WATER DEPTH

AUGER TYPE: 4" CFA

FINISH DATE 10/21/96

WHILE DRILLING None

SPT HAMMER: MANUAL

SURFACE ELEV N/A

AFTER DRILLING None

24 HOUR N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY LEAN CLAY(CL) brown moderately stiff	SS	2	9		10.9						
	SS	5	9	7000	12.0						
occasional sand and gravel zones	SS	10	7		18.3		25	6	36	<500psf	None
	SS	15	6		17.7						
BOTTOM OF BORING 15.5'											

WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101 | DATE: OCTOBER 1996

LOG OF BORING B-4

RIG TYPE: CME45 | SHEET 1 OF 1 | WATER DEPTH

FOREMAN: SCK | START DATE 10/21/96 | WHILE DRILLING None

AUGER TYPE: 4" CFA | FINISH DATE 10/21/96 | AFTER DRILLING None

SPT HAMMER: MANUAL | SURFACE ELEV N/A | 24 HOUR N/A

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
		1									
	SS	2	9		6.7						
SANDY LEAN CLAY(CL)		3									
brown		4									
medium stiff	SS	5	21	*9000+	6.0						
occasional sand and gravel zones		6									
		7									
		8									
		9									
	SS	10	11		8.5		27	8	37.6	<500psf	None
		11									
		12									
		13									
		14									
	SS	15	12	*9000	14.1						
BOTTOM OF BORING 15.5'		16									
		17									
		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

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WINDSOR ESTATES 2nd FILING

WINDSOR, COLORADO

PROJECT NO: 1962101

DATE: OCTOBER 1996

LOG OF BORING B-3

SHEET 1 OF 1

RIG TYPE: CME45

FOREMAN: SCK

AUGER TYPE: 4" CFA

SPT HAMMER: MANUAL

START DATE 10/21/96

FINISH DATE 10/21/96

SURFACE ELEV N/A

WATER DEPTH

WHILE DRILLING 12.8

AFTER DRILLING 12.8

8 DAYS AFTER 8.2'

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY LEAN CLAY(CL) brown medium stiff	SS	2	12		9.7						
	SS	5	25		10.2		34	15	56.8	<500psf	None
CLAYEY GRAVELLY SAND(SC/GC) brown medium dense	SS	10	15		10.8						
	SS	15	7		14.3						
BOTTOM OF BORING 15.5'											

Piezometer installed in open bore hole prior to backfilling.

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WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101 | DATE: OCTOBER 1996

LOG OF BORING B-2

RIG TYPE: CME45 | SHEET 1 OF 1 | WATER DEPTH

FOREMAN: SCK	START DATE	10/21/96	WHILE DRILLING: None
AUGER TYPE: 4" CFA	FINISH DATE	10/21/96	AFTER DRILLING: None
SPT HAMMER: MANUAL	SURFACE ELEV	N/A	8 DAYS AFTER: None

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
SANDY LEAN CLAY(CL)		1									
brown	SS	2	4		7.1						
soft to medium stiff		3									
		4									
	SS	5	7		5.6						
		6									
		7									
		8									
		9									
	SS	10	12	*9000+	9.3						
occasional sand and gravel zones		11									
		12									
		13									
		14									
	SS	15	13		14.7						
BOTTOM OF BORING 15.5'		16									
		17									
Piezometer installed in open bore hole prior to backfilling.		18									
		19									
		20									
		21									
		22									
		23									
		24									
CHP		25									

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WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101

DATE: OCTOBER 1996

LOG OF BORING B-1

SHEET 1 OF 1

RIG TYPE: CME45
FOREMAN: SCK
AUGER TYPE: 4" CFA
SPT HAMMER: MANUAL

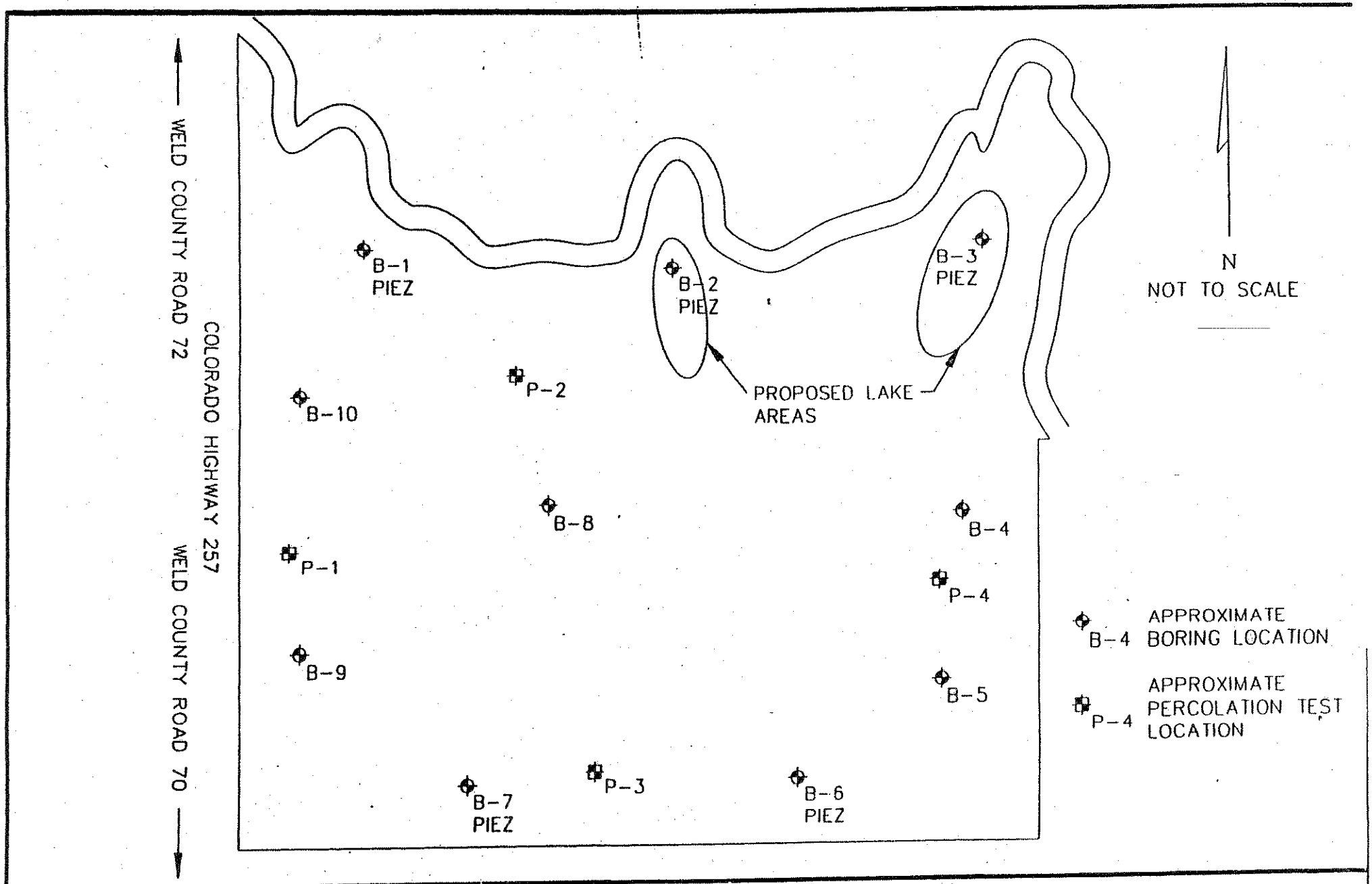
START DATE 10/21/96
FINISH DATE 10/21/96
SURFACE ELEV N/A

WATER DEPTH
WHILE DRILLING 11'
AFTER DRILLING 11'
8 DAYS AFTER 8.7'

SOIL DESCRIPTION	TYPE	D (FEET)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS LL	A-LIMITS PI	-200 (%)	SWELL PRESSURE	SWELL % @ 500 PSF
		1									
	SS	2	21		4.4						
SANDY LEAN CLAY(CL) brown medium stiff to stiff		3									
		4									
	SS	5	8		13.3		32	16	53.4	<500psf	NONE
occasional sand and gravel zones		6									
		7									
		8									
		9									
	SS	10	6	>1000	22.8						
		11									
		12									
		13									
		14									
	SS	15	50+	>1000	22.0						
BOTTOM OF BORING 15.5'		16									
		17									
Piezometer installed in open bore hole prior to backfilling.		18									
		19									
		20									
		21									
		22									
		23									
		24									
		25									

CHP

Earth Engineering Consultants



BORING AND PERCOLATION TEST LOCATION DIAGRAM
WINDSOR ESTATES 2nd FILING
WINDSOR, COLORADO

PROJECT NO: 1962101 DATE: OCTOBER 1996