Administration Department
(970) 984-2311
Fax: (970) 984-2716
www.newcastlecolorado.org

Town of New Castle
PO Box 90
450 W. Main Street
New Castle, Co 81647

DEVELOPMENT APPLICATION

Applicant: CVR Investors, Inc. and its assigns	
Address: 5282 Red Pass Way, Castle Rock, CO 80108	Phone: 303-549-1916 FAX: E-mail: aa@hackstafflaw.com
Property Owner: CVR Investors, Inc.	
Address:	Phone: FAX: E-mail:
Contact Person: Aaron Atkinson	
Address:	Phone: FAX: E-mail:
Property Location/Address: Castle Valley Ranch, New Castle, CO	
Legal Description: See Attached	Acres: Text
Existing Zone (Not sure? Click here for help): R and M/U2	
Existing Land Use: Vacant Land	

TYPE(S) OF LAND USE(S) REQUESTED

- ☐ Pre-Annexation Agreement
- ☐ Annexation
- ☑ Subdivision (including Minor and Major Subdivisions, Lot Splits, Sketch Plans, Subdivision Preliminary Plans, Subdivision Final Plans, & Condominiumizations)
- ☐ Amended Plat
- ☑ Planned Unit Development (including PUD Sketch Plans, Preliminary PUD Development Plans, PUD Master Plans and Final PUD Development Plans)
- ☐ Floodplain Development Permit
- ☐ Lot Line Adjustment or Dissolution
- ☐ Site Specific Development Plan/Vested Rights
- ☐ Variance
- ☐ Zoning
- ☐ Zoning Amendment
- ☐ Re-zoning
- ☐ R-1-HC Identification
- ☐ Conditional Use Permit or Special Review Use Permit
- ☐ Other

*Combined Preliminary/Final Application

This development would create 91 residences and 0 square feet of commercial space.

Applicant must also complete and submit the appropriate checklist for the type of land use requested. Both the applicant and the property owner must sign this application.

Applicants are encouraged to schedule a pre-application meeting with the Town Administrator and/or Town Consultants prior to submitting this application.

CVR INVESTORS, INC.
5282 Red Pass Way
Castle Rock, CO 80108
303.549.1916

April 30, 2020

Via Electronic Mail

Town of New Castle
Attn: Planning & Zoning Commission
P.O. Box 90
New Castle, CO 81647

Re: *Application for Combined Preliminary/Final Plat Approval for Filing 11- AMENDED*

Dear Commissioners:

We are tendering our application for combined final/preliminary plat approval in regards to Filing 11 in Castle Valley Ranch. The following outlines our fundamental basis for the application.

As witnessed during the Sketch Plan process in late 2019, our application meets all the objective criteria outlined in section 17.100.090 of the Town Code. The only item from Sketch Plan which Staff identified as less than "Moderate" conformity with the Code involved the question of the uses proposed being within the PUD permitted outright or by special review. (Sketch Plan staff report of 9/9/19 at 5.)

With regard to the uses as being permitted, objectively the uses are permitted by right, as confirmed by Staff: "[i]n both residential and mixed-use zones, townhomes are permitted by right." (Sketch Plan staff report of 9/9/19 at 5.) As such, it is difficult for us to accept anything less than a "high" level of conformity with that requirement.

While we understand the Town's interest in being comfortable with the prospect of future commercial development, we have a pending application in which we've outlined our position on commercial development, which we incorporate here. In sum, like the Town, we are interested in smart growth in New Castle, and we firmly believe that this filing furthers that goal.

Nevertheless, in response to queries and concerns from both the Planning & Zoning Commission, as well as Town Council, we have made several alterations to our submittals. First, we have widened the southerly sidewalk to 8' as an east-west trail connector to future development. Further, we have added a bulk of parking spots at the

southern border of the parcel for both snow storage as well as to provide residents and guests with convenient parking which does not unduly restrict traffic flow. Finally, we conducted a community forum at the strong urging of both Town staff and City Council. While there were only three citizen attendees (not including a few Councilmen and staff members), we did address questions and concerns from them and were pleased to do so.

I. NATURE, DESIGN & APPROPRIATENESS OF PROPOSED LAND USE ARRANGEMENT FOR SIZE & CONFIGURATION OF PROPERTY INVOLVED

Castle Valley Ranch Filing No. 11 covers an area of Castle Valley Ranch (approximately 13.538 acres). Under the Master Plan, this parcel spans vacant land which is presently zoned for residential use, and also spans vacant land which is zoned as mixed use. Our company has a pending development application to have the entirety of Planning Area 17 (as well as the remainder of this company's holdings in New Castle) designated as "Residential" in the map attached to the Master Plan, which will include a portion of this filing.

Castle Valley Ranch Filing No. 11 will plat only the westerly half of the remaining undeveloped portion of Castle Valley Ranch immediately south of and adjacent to Castle Valley Boulevard.

As the Commission witnessed during the Sketch Plan process for this filing, the Applicant has met all of the objective requirements of the Town of New Castle for this development. Attached hereto are the other materials in compliance with section 16.16.020 and 16.16.030 of the New Castle Town Code.

The proposed development will contain triplex and four-plex structures conceptually similar to the product in Filing 9, which lies immediately north of Castle Valley Boulevard from this parcel. It is anticipated that there will be 27 lots, which will largely be comprised of triplexes with several four-plexes.

Nestled within the center of this development will be a neighborhood park for the enjoyment of the Castle Valley Ranch residents. It will be reached via a public sidewalk and trail system which will connect to the west to an extended existing pedestrian trail bisecting Filings 8 & 11 and reaching Castle Valley Blvd. at the northwest comer of Castle Valley Ranch Filing No. 11. This is the Avenue C trail connection.

Vehicular access to this community will be from a single point of connection, with a divided entry, to Castle Valley Blvd., as depicted on the Final Plat.

All road improvements for Castle Valley Ranch Filing No. 11 are designed to be public and include paved public streets and sidewalks built to localized street standards.

Public water lines will be provided and will connect with an existing water main in Castle Valley Blvd. to the north and existing water mains to the west, serving existing residents

in Castle Valley Ranch Filing No. 8. A sanitary sewer main tie-in to be constructed offsite from Avenue C to Castle Valley Ranch Filing No. 11 will connect these homes to the Town's sewer system. Storm drainage will be handled through the street system and off-site storm sewers leading to two detention ponds to be constructed within the open space south and west of this development and to an area just to the east of the Castle Valley Ranch Filing No. 11 boundary.

This neighborhood meets the standards as set out in Title 16 Subdivisions, Chapter 16.28 Design and Improvements Standards of the Town's code. There are no natural hazards on the property or land with slopes greater than 35%.

Lots will be designed to be compatible with the zone district regulations of MF-1 within the residential and MU-2 zoned areas of this property.

All homes will be subject to and made a part of the existing Castle Valley PUD Homeowners Association. In addition, these townhomes will be subject to and made a part of a new sub-association unto itself. The covenants of this sub-association will resemble those of the Filing 9 townhomes, and they will be at least as restrictive as the Filing 9 covenants. They will be more tailored to this particular development and will be reduced to writing as development progresses.

II. STATEMENT OF PRESENT OWNERSHIP & LEGAL DESCRIPTION OF ALL LAND WITHIN PLANNED UNIT DEVELOPMENT

All of the land referenced in this application is owned by CVR Investors, Inc., and the legal descriptions of the parcels in question are attached hereto.

III. GENERAL INDICATION OF ANTICIPATED DEVELOPMENT SCHEDULE

The proposed development schedule for Castle Valley Ranch Filing No. 1 1 will be broken into three phases; the first is depicted on the attached plat. We intend to commence development of Phase 1 as soon as an approved Final Plat for this development can be recorded. We would request that the approval of future phases in accordance with this application be approved through staff review without the necessity of the formal approval procedures (provided, of course, there is no substantial deviation from what is currently being proposed).

IV. COMPLIANCE WITH COMPREHENSIVE PLAN

As far as the objectives of the New Castle Land Use Plan, this plan affords compatibility with the character of the overall community and enhancement of existing public infrastructure.

The homes and neighborhood we are proposing fit into both Castle Valley Ranch and New Castle, as they are an updated extension of existing neighborhoods. None of the character that exists in Castle Valley Ranch today will be lost.

One of the goals of the Town's Comprehensive Plan is to afford development of a variety of housing types: "[e]nsure a variety and mix of uses that complement the existing New Castle land-use patterns." (Compl. Plan at 33.) Even though the proposed structures of this subdivision are all multi-family in nature, we believe that this filing meets that objective.. This is because the Comprehensive Plan did not limit its scope merely to each proposed filing. For example, in 2009 the Comprehensive Plan states that "The majority of [the 1657 estimated housing units at that time] are single-family residences." (Comp. P. at 19.) Those multi-family units identified by the Plan in 2009 essentially remain the only multi-family products in the Town to this day. Only 18% of the dwellings in 2009 were multi-family units. Across the map of The Town of New Castle, there has been a need for multi-family development, which is met by our filing.

The Plan seeks to enrich the community at large with a variety of housing types across the entire Town of New Castle. At present, there is a dearth of multi-family offerings in New Castle, and this is a very under-served market for New Castle residents according to the Comprehensive Plan. Our filing squarely meets that longstanding, community need, and promotes community growth. (Goals CG-1 and CG4E, Comp. Plan at 50 and 52.)

We have also provided for non-motorized access and interconnection between areas of the Town in our filing. (Compl. Plan at 33.) With the vital Avenue C trail connection, we are ensuring the cohesiveness of the entire New Castle community—bridging a geographical gap between the residences of Castle Valley Ranch and Lakota Canyon with the commercial enterprises of downtown New Castle. (Goal RT-1, Comp. Plan at 55.)

The attached plat incorporates open spaces and parks that are also part and parcel of the goals of the Comprehensive Plan (Comp. Plan at 33.) This is commensurate with the goal of providing different land-use categories within the filing: parks/open/space/trails, non-motorized access and large residential areas. (Goals CG-4 and POST-1, Comp. Plan at 52.) And, because irrigation will be accomplished through the use of raw water lines, there is recognition and appreciation for water use and energy conservation. (Goal I-1, Comp. Plan at 54.)

In short, this filing substantially complies with the terms of the Master Plan—even moreso given the market-based changes that we have witnessed since its creation in 2009. We have also exhibited an elevated level of compliance with the conditions in section 17.100.090 of the Town Code.

V. FISCAL IMPACT

The proposed filing 11 will serve to bring more property taxes to Garfield County, and could also augment the sales tax revenues for the Town of New Castle through new

potential residents to the Town. The sales taxes are extensive, as well, given the goods and services that the new residents of Filing 11 will purchase from local businesses.

This is the most affordable product in the New Castle market at this time, and buyers of townhomes at Filing 9 have oftentimes been wealthy retirees. These individuals are typically a benefit to the New Castle community in that they do not require the use of much of the Town infrastructure (such as schools, for example), and have sufficient resources such that they do not draw off of the Town's resources.

There will also be a subassociation governing Filing 11, which will be subservient to the Castle Valley Ranch Master Association. These will obviously provide other layers of maintenance cost mitigation over this parcel, including upkeep of the open spaces and sidewalks. As the declarant of the Castle Valley Ranch Homeowners Association, and being familiar with the terms and provisions of the covenants of the PUD, we anticipate no obstacles to the success of the plat, the dedication of land and other attributes of this proposed filing.

The Town, for its part, will be assuming responsibility for long-term maintenance of sewer and water lines; and road maintenance, including re-surfacing the streets. However, we expect TONC building fees to be around $18,000 per unit; when multiplied by 91 units, this totals $1,638,000 of revenue to the Town upon complete build-out of the filing. It's also important to consider real estate property taxes, which are expected to at least cover the utilities and road maintenance in New Castle.

All in all we are very enthusiastic about our plans to build and develop in New Castle. It is important to us that we maintain close ties and work together with the Town in this and in all other facets of our development. Thank you.

Sincerely,

J. Aaron Atkinson
President
CVR Investors, Inc.

SGM

April 30, 2020

Mr. Dave Reynolds, Town Administrator
Town of New Castle
P.O. Box 90
New Castle, Colorado 81647

RE: Filing No. 11, Castle Valley Ranch Planning Area #17
Preliminary and Final Plan Review - SGM Response

Dear Dave,

The purpose of this letter serves to provide a summary response regarding the proposed development of Filing Number 11, PA #17 of Castle Valley Ranch Subdivision. We are responding to the survey, civil and infrastructure-related comments provided by the following:

1. Public Works Department
2. Burning Mountain Fire District
3. Town Engineer
4. Town Attorney

Following review of the above Town comments, we have the following response:

1. **Public Works Department**
    a. **Streets and sidewalks** – The proposed street section for Bear Canyon Drive is (2) 10.5 ft travel lanes, (2) 8 ft parking lanes, and (2) 5 ft sidewalks, a flowline to flowline width of 37 ft and a Right-of-Way (ROW) width of 50 ft. Bear Canyon Drive is planned to serve PA 17, and PA 19 to the east in the future. The future development area of PA 17 and 19 served by Bear Canyon Drive is approximately 33 acres.
        i. Recently, relatively in the history of Castle Valley Ranch, the constructed streets of North and South Wildhorse Drive have a similar flowline to flowline width.
            1. North Wildhorse serves over 90 acres, has a ROW of 70 ft with detached sidewalks of 5 ft and 8 ft in width, 5 ft green belt. North Wildhorse is the access to VIX Park.
            2. South Wildhorse serves over 60 acres, has a ROW width of 50 ft with attached 5 ft sidewalks, no green belt.
        ii. Based upon the development area served, Bear Canyon Drive is similar in nature to South Wildhorse Drive, with 50% of the development area. Bear Canyon Drive should be held to the same standard as South Wildhorse Drive.

iii. Detached sidewalk has created drainage and road failure issues in Lakota Canyon Ranch

b. **Falcon Ridge Court** is designed as a "K" turnaround and can be accessed by a Fire Truck which has the ability to utilize 74 ft and 115 ft legs for a 3-point turn similar to hammerhead in the Capital Court area of CVR. Comment #3 from BMFD accepts this as a fire truck turnaround.

c. **Snow Storage** areas are not defined by Code or Public Works Manual in terms of location or required area. We have attached a plan showing proposed snow storage that considers temporary storage by phase and permanent storage locations. Below is a table based on the plan that provides the areas of those potential temporary and permanent locations.

CVR PA 17 - SNOW STORAGE (SF)				
	PAVED AREA		AVAILABLE SNOW STORAGE	
PHASE	@ 10%	@ 15%	TEMPORARY	PERMANENT
1	3300	5000	6000	3300
2	2500	3800	4000	9900
3	3300	5000	2000	4200
TOTAL	9100	13800		17400

d. **Open Space** comments are noted and will be accommodated.

e. **Potable Water** – a sample station will be provided in the proposed location.

f. **Tracer wire** will be provided on all utilities.

g. **Fire Hydrants** will be Mueller brand.

2. **Burning Mountain Fire District**
   a. **Project phasing** will provide Town-accepted infrastructure prior to vertical construction.
   b. **Project phasing** will provide Fire Truck turnaround for each phase.
   c. Remaining comments are noted.
3. **Town Engineer**
   a. The comments are noted and will be addressed prior to Final Plan review by Council. The construction level detail nature of the comments can be addressed without changing the development or infrastructure layout. The comments will not affect the SIA to any significant percentage. Most of the comments pertain to either; infrastructure phasing detail, off-site sewer improvements (previously bid in 2008 by the Town), or recently implemented Subsurface Utility Engineering requirements; again, all technical comments that can be addressed without material change to the development or infrastructure plan.
4. **Town Attorney**
   a. Redline comments will be coordinated with Garfield and Hecht and addressed prior to Final Plan review by Council.

SGM

Dan Cokley, P.E.
Principal

COLORADO
Parks and Wildlife
Department of Natural Resources

711 Independent Avenue
Grand Junction, CO 81505

April 2, 2020

Paul Smith
Town of New Castle Planning Department
450 W. Main Street
New Castle, CO 81647

RE: Castle Valley Ranch filing 11 / Final application

Dear Mr. Smith:

I have reviewed the proposal for this development for the Town of New Castle. I had previously provided comments for this proposal in May of 2008. The previous comments for this development are still applicable.

The wildlife habitat and associated wildlife utilization of the area has not changed drastically since this proposal was first initiated. As previously mentioned, this development will impact wildlife by replacing marginal habitat with buildings, streets, and manicured landscaping. The quality and quantity of wildlife habitat in the area has been greatly compromised by cumulative development over the last 20-25 years.

If the opportunity exists for creating wildlife movement corridors on the edges of this development, they should be reclaimed using appropriate vegetation and should contain visual and noise barriers. Some wildlife species may still attempt to access the area to the south of this development, so a vegetative barrier may provide some mitigation for the disruption at the site.

Thank you for the opportunity to provide comments regarding land use issues for the Town of New Castle. If you have any questions, please contact me.

Sincerely,

Brian Gray
District Wildlife Manager

cc: Kirk Oldham, Area Wildlife Manager
file

Paul,
Reviewing the plans for Castle Valley Ranch I have the following comments:

1. The phasing of the construction does not say if Infrastructure is in place prior to construction of buildings. We need information on how the phasing will be done, roads, (all weather driving surface), waterlines and fire hydrants will be installed and in service. Buildings shall not be built prior to roads, hydrants and water supply being in service.
2. Phase 1 shows a dead end with provisions of a fire truck turnaround installed at the beginning of Falcon Ridge Court. Phase 2 shows no fire truck turnaround at the end of the street. Fire truck turnaround on all-weather driving surface is required.
3. All street names shall be cleared through Garfield County Communications to avoid any duplication of street names in the county dispatch area.

Address numbering shall be sequential and based on distance from entrance of street. Fire Marshal will submit names to Communications for approval.

3. Falcon Ridge parking entrance will work for a fire truck turnaround on the street. Parking signage shall be installed on turnaround to disallow any parking other that the established parking spots. Wording on signage shall be approved by Fire Marshal.
4. Fire Hydrant Detail on plans will be strictly enforced as to finish grade elevation. Hydrants to low will be reviewed by fire marshal and New Castle public works to determine if an extension is needed prior to final approval.

Any vegetation located near fire hydrants shall be planted to allow growth which will never obstruct a 3' radius around fire hydrant.

Please feel free to contact me with any questions or concerns.

THANK YOU,

ORRIN D. MOON
PREVENTION DIVISION CHIEF/FIRE MARSHAL
COLORADO RIVER FIRE RESCUE
970-625-1243
orrin.moon@crfr.us

Paul Smith

From: Orrin Moon <Orrin.Moon@Crfr.us>
Sent: Friday, April 17, 2020 9:32 AM
To: holmant@garco911.com
Cc: Paul Smith; John Gredig
Subject: New proposed Street Names in New Castle

Tom,
I am in the process of reviewing plans for a new subdivision in New Castle off of Castle Valley Blvd and they have listed the following street names on the plans. I just want to check with you to see if there is going to be any conflict with other street names in the county.
The names are as follow:

Eagle Ridge Drive
Bear Canyon Drive
Falcon Ridge Court

Please let me know what you guys think.

THANK YOU,

ORRIN D. MOON
PREVENTION DIVISION CHIEF/FIRE MARSHAL
COLORADO RIVER FIRE RESCUE
970-625-1243
orrin.moon@crfr.us

Paul Smith

From: John Gredig <John.Gredig@Crfr.us>
Sent: Friday, April 17, 2020 11:38 AM
To: Orrin Moon; holmant@garco911.com
Cc: Paul Smith
Subject: RE: New proposed Street Names in New Castle

Orrin,

We already have an Eagle Ridge Drive in Parachute,

We currently have Bear Paw Ln, Bear Wallow Ln, Bear Ridge Rd, Black Bear Rd, Golden Bear Dr, and Little Bear Peak Dr

We do not have any roads named with Falcon,

John

From: Orrin Moon
Sent: Friday, April 17, 2020 9:32 AM
To: holmant@garco911.com
Cc: Paul Smith (psmith@newcastlecolorado.org) <psmith@newcastlecolorado.org>; John Gredig <John.Gredig@Crfr.us>
Subject: New proposed Street Names in New Castle

Tom,
I am in the process of reviewing plans for a new subdivision in New Castle off of Castle Valley Blvd and they have listed the following street names on the plans. I just want to check with you to see if there is going to be any conflict with other street names in the county.
The names are as follow:

Eagle Ridge Drive
Bear Canyon Drive
Falcon Ridge Court

Please let me know what you guys think.

THANK YOU,

ORRIN D. MOON
PREVENTION DIVISION CHIEF/FIRE MARSHAL
COLORADO RIVER FIRE RESCUE
970-625-1243
orrin.moon@crfr.us

Paul Smith

From: Cody Smith <smithc@garco911.com>
Sent: Monday, April 20, 2020 1:27 PM
To: Holman, Thomas
Cc: Paul Smith; John Gredig; Orrin.Moon@crfr.us
Subject: RE: New proposed Street Names in New Castle

Hey Orrin,

I would say no on Eagle Ridge Dr. There is already one in Parachute and lots of others with Eagle in the name.

The others are okay.

Cody Smith – IT Administrator
Garfield County Emergency Communications Authority
970-625-8281

From: Holman, Thomas <holmant@garco911.com>
Sent: Monday, April 20, 2020 10:51 AM
To: Smith, Cody <smithc@garco911.com>
Subject: Re: New proposed Street Names in New Castle

Cody, when you have final input on this could you reply back to Orrin Moon with it? Thanks.

On Fri, Apr 17, 2020 at 6:43 PM Smith, Cody <smithc@garco911.com> wrote:

> Yeah.....Eagle Ridge probably isn't a good one. Let me check the MSAG and ill get back to you.
>
> Cody
>
> On Fri, Apr 17, 2020, 12:58 PM Holman, Thomas <holmant@garco911.com> wrote:
>
> > Cody, do you have an issue with these proposed street names? John listed some similarly named streets.
> >
> > Thanks,
> >
> > ---------- Forwarded message ---------
> > From: **Orrin Moon** <Orrin.Moon@crfr.us>
> > Date: Fri, Apr 17, 2020 at 9:31 AM
> > Subject: New proposed Street Names in New Castle
> > To: holmant@garco911.com <holmant@garco911.com>
> > Cc: Paul Smith (psmith@newcastlecolorado.org) <psmith@newcastlecolorado.org>, John Gredig
> > <John.Gredig@crfr.us>
> >
> >
> > Tom,

Public Works Department
(970) 984-0669 ex200
jwenzel@newcastlecolorado.org

Town of New Castle
801 W Main Street
New Castle, CO 81647

April 8, 2020

Paul,

The Public Works Department has had the opportunity to review the Castle Valley Ranch Planning Area 17 & 19 application, and has the following comments:

Streets and Sidewalks
With the ultimate buildout of the adjacent property located to the east of PA 17 &19, Bear Canyon Drive will likely have high traffic volumes and will function more as of a collector street than as a residential street. Our Municipal Code defines a collector street as: "those with low to medium traffic volumes, whose purpose is to provide access to residential areas and to channel traffic from residential areas to arterial streets." The Public Works Department recommends that Bear Canyon Drive have a right-of-way of 60 feet, to include 2/12' wide travel lanes, 2/8' wide parking lanes, 2/5' wide "green belts", and 2/5' wide sidewalks. The incorporation of the "green belt" will provide much needed snow storage space. The alternative to storing snow in the "green belt" is storing snow in the parking lane. Storing snow in the parking lane causes drivers to partially park in the travel lane, creating dangerous conditions for motorist. This can be especially hazardous on high volume roads.

Falcon Ridge Ct. has been designed as a dead-end street. The Town's Municipal Code does not permit this design standard. Dead-end streets do not efficiently and safely accommodate all modes of travel, particularly emergency vehicles, maintenance vehicles, and delivery vehicles. Dead-end streets often result in conflict between private property owners and vehicle operators, especially when vehicle operators require the use of private property to safely turn around.

Snow Storage
High density developments make snow removal services extremely difficulty and time consuming. The close proximity and the large number of driveways greatly reduces snow storage availability. Additional design standards should be considered, including, "green belts", designated snow storage areas, and ample off street parking.

Open Space
The applicant indicates that Open Spaces B, C, and D are to be conveyed to the Castle Valley Ranch HOA. We should make sure that that is an acceptable situation with the Castle Valley Ranch HOA authorities. Otherwise, it may be necessary for the applicant to create a sub HOA.

Open Space A, to be dedicated to the Town, should be irrigated with raw water and should be landscaped with appropriate species. The town's parks department should have the opportunity to review and comment on the landscape design.

Potable Water

The Utility Department would like the applicant to install a ¾" potable water line to service a sample station. Sample stations allow crews to regularly test water quality. The ideal location for the station is near unit 14A.

Potable water service lines should include a tracer wire.

The Utility department request that all fire hydrants be manufactured by Muller.

SGM
www.sgm-inc.com

April 24, 2020

Mr. Dave Reynolds, Town Administrator
Town of New Castle
P.O. Box 90
New Castle, Colorado 81647

RE: Filing No. 11, Castle Valley Ranch Planning Area #17
Preliminary and Final Plan Review

Dear Dave,

The purpose of this letter serves to provide comment, concerns and questions regarding the proposed development of Filing Number 11, PA #17 of Castle Valley Ranch Subdivision. In order to conduct this review, we are in receipt of a variety of pieces of information noted as follows:

1. A 44-sheet set of drawings prepared by SGM dated February 2020
2. Supplemental Information packet dated February 2020 containing the following:
    a. Development Application
    b. Certificate of Development Ownership
    c. Application
    d. Warranty Deed
    e. Cost Estimates
    f. Drainage Report
    g. Soils Report
    h. Architectural Renderings
3. March 18, 2020 PA 17 Utility Report
4. March 18, 2020 PA 17 Traffic Impact Study

Following our review of the above stated documents, we have determined that a variety of additional details need to be provided to bring the drawings to a construction level and to be definitive on the magnitude of public improvements that will ultimately need to be secured for this project. That being said, please note the following comments:

1. Prior to Final Plan review for Council, additional specificity needs to be provided for the proposed phasing of this project. Specifically, although phasing lines are noted on the street plans and the utility plans, additional detail is necessary to assure that the Phase 1 improvements are properly terminated. Likewise, drainage and erosion control best management practices (BMP's) specific to the Phase 1 public improvements need to be provided.

2. The project involves extension of water lines, sewer lines and the raw water lines in public right of way. Also, excavation area in excess of 22" exceeds 1,000 sf. As such, the project is subject to the Subsurface Utility Engineering (SUE) requirements of SB 18-167. Prior to construction plans approval, the project will need to provide SUE locates in accordance to SB 18-167.

3. Note that because of SB 18-167, all utilities will need to be installed in such a fashion an to be electronically locatable. Details will need to be revised to provide instruction to the contractor that provide tracer wire, magnetic tape, etc... on all subsurface utilities.

4. For the offsite utilities, the extents of pavement repair and surface restoration needs to be better defined. As an example, for the sewer installation on C Avenue, such information as the saw cut lines, paving patching and surface restoration needs to be identified. For the surfacing on C Avenue and the North Alley, surface restoration will require the need to replace the asphalt milling surfaces that currently exist with similar material. Road base replacement in lieu of millings is not acceptable. Other improvements such as potential impacts to driveway slabs, retaining walls and fences need to be identified and detailed for repair/replacement.

5. Existing property line locations depicted along the west side of C Avenue do not appear to be complete (ie., 114 N. C Avenue and 151 N. C Avenue). Concern exists as to the proposed sewer line location being able to be installed in the location proposed. If easements exist to aid in installation, then these need to be identified.

6. Clarification of whether the section of line that feeds the existing 6" line shown in the north/south alley west of C Avenue is to be replaced with new and how existing services are to be maintained during installation of the new line is to be provided.

7. For the sewer line installation on C Avenue, additional information is necessary. Locations of the storm drain, culvert and waterline main and service crossings need to be identified. Also, specific details of how the manhole tie onto the existing sewer line is to be performed needs to be provided.

8. For the offsite water tie in the southerly limits of Open Space A, provide specific detail of how the tie will be made. In essence, is there an existing blind flange and CRB that needs to be removed prior to tying onto the existing water line? What existing valves, services and procedures need to be put in place to perform flushing, sanitizing and testing of the new installation. This comment holds true for the water line tie to the line in the north east corner of the site in Castle Valley Boulevard right of way. With this particular tie, we would recommend that the valve shown be provided after the air release valve and prior to the tee. Also, the air vent for the air release valve needs to be shown with a "bollard" protection to assure that snow plowing of CVBLVD will not result in damaging the vent.

9. Note that all water line fittings are to be polywrapped ductile iron pipe fittings and not PVC.

10. Is a fence line proposed to be constructed south and east of the East detention pond? If so, what type of fence and what details are to be provided?

11. Provide clarification through notes, details and hatching as to the culvert outlet protection necessary for those culverts identified on sheet 9. Provide necessary straw waddles along the interface developed at the toe of slope in fill areas of the mass grading. Depict specific ditching and erosion protection that are necessary in Phase 1 to accomplish the goals of the overall grading plan. Provide specific grading for the Proposed East Pond complete with erosion control. Identify how access for maintenance to the temporary pond is to be provided.

12. Provide locations of transformers, pedestals and gas meter locations relative to providing electric, cable, telephone and gas service to the buildings. Provide this information in the context of assuring ample room remains for snow storage and is consistent with the landscape plan intent.

13. Clarify on street plans and profiles of how Phase 1 improvements are to be terminated regarding how curb, gutter, sidewalk, finish grading, pavement, temporary revegetation and erosion control are to be terminated.

14. Clarify on the respective utility plans of how Phase 1 improvements are to be properly terminated regarding how water, sewer and dry utilities are to be terminated. With the clarification, provide information on how testing, sanitizing, flushing, air release and subsequent phase operation of the utilities is performed.

15. For the infrastructure located in the deep fill areas (south east portion of site), provide clarification as to the anticipated rates of settlement that are expected to occur with both water and sewer utilities. We anticipate the need to provide structural fill to be provided below the manholes to mitigate settlement of the manholes. Given the anticipated rates of settlement, provide anticipated performance of the utilities and provide assurance that minimum grades and integrity of the utilities can be maintained. In essence, will settlement in a deep fill area cause a sewer line to lose its ability to drain by gravity?

16. Assure that all water/sewer crossings can be provided with a minimum separation of 18". This also holds true for all water/storm drain crossings. Assure that water/storm drain crossings provide adequate freeze protection at each crossing.

17. Note that all pavement ties to existing require a T-patch that involves rotomilling at least 24" of the existing pavement to allow the friction course of asphalt to span the joint of existing asphalt with the lower course of asphalt. Provide a detail that specifically identifies such.

18. Provide details identifying how new concrete improvements are to tie to existing.

Please note that as there are a variety of concerns and clarifications noted/requested, we have held back on the review of the cost estimate for the Subdivision Improvements Agreement. Once we confirm the specific scope of work and final construction drawings are prepared, we will provide a review of such. Although there are a variety of concerns and clarifications noted, we do not see that the issues cannot be technically resolved.

Upon your receipt and review, if you have any questions, please don't hesitate to call.

Respectfully,
SGM

Jefferey S. Simonson, P.E.
Principal

From: Haley Carmer
To: Jeff Simonson; Paul Smith; John Wenzel; David H. McConaughy
Subject: RE: Filing 11 plan set
Date: Wednesday, March 4, 2020 2:06:31 PM

Hi Paul,

We have the following questions/comments about the initial application materials:

1. A sub-association will be created for Filing 11, and Filing 11 will be subject to its own set of covenants similar to those for Filing 9. Eventually we'll need a copy of the covenants for Filing 11 specifically, but at this point it would be helpful to see the Filing 9 covenants so that we can get a sense of what the general and limited common elements will be.

2. The plat we received only subdivides the property into 10 lots. The application narrative says Filing 11 will include 27 lots and be developed in 2 phases. The phasing plan shows 3 phases. Is CVRI only platting the first phase now? If so, we'll want confirmation on the phasing (2 phases or 3) and that the first phase plat should only include 10 lots. If the plan is to subdivide the entire filing, we need an updated plat.

3. Is CVRI proposing to construct the public improvements for the entire filing at once or in phases? It's not clear if the cost estimate covers all of the improvements or just a portion, especially because the phasing plan conflicts with the statements in the application narrative.

4. The application narrative says the lots will be compatible with the SF2 and MF-1 standards but the plans identify MF-1 zoning. Which is it? I'm assuming MF-1 but that should be clarified.

The above comments shouldn't hold up scheduling the public hearing, but we'll need to work through them between now and the hearing. Please let us know the date of the hearing once it's scheduled. Thanks.

Best,

Haley

From: Jeff Simonson [mailto:JeffS@sgm-inc.com]
Sent: Wednesday, March 4, 2020 10:17 AM
To: Paul Smith <psmith@newcastlecolorado.org>; John Wenzel <jwenzel@newcastlecolorado.org>; David H. McConaughy <dmcconaughy@garfieldhecht.com>; Haley Carmer <hcarmer@garfieldhecht.com>; Orrin.Moon@Crfr.us
Subject: RE: Filing 11 plan set

Hi Paul,

I don't like this "Initial Property 1 and 2" - does this leave any remainder parcels not shown? If so, anything not included here needs to be > 35 acres or else depicted as a parcel. I'm hoping this shows the entirety of the remainder, which should be shown as one big parcel, not 2

change "shall be" to "is hereby" (no deed req'd)

what does Plans refer to

Phase 1

Open Space Tract B for a trail to be constructed [who maintains that?]

update - 2008?

does this include future phases? It should.

8. Individual townhome units within Lots 1 through 10 shall not be separately conveyed until an amended plat showing the boundaries of such units is approved by New Castle Town Staff and recorded in the real estate records of Garfield County.

deal with this in 3

delete this line - entirety of remainder should be one parcel labeled as "future phases"

could put this in ord.

Final Plat
Castle Valley Ranch Subdivision, Filing No. 11
a Portion in Initial Property 1 and Initial Property 2,
E 1/2, NW 1/4 Section 32 and E 1/2, NE 1/4 Section 31 in
Township 5 South, Range 90 West of the 6th Principal Meridian,
Town of New Castle, Garfield County, Colorado

PLAT NOTES:

1. Private open space lots may contain project identification monument signs, landscape areas, trails, and other recreational activities shown in the Plans.

2. Open Space Tract A shall be dedicated to the Town of New Castle, which is to include the use of areas as reasonably necessary for the installation, maintenance, repair and replacement of utilities, including water, sewer, irrigation, electric, telephone, gas, cablevision, pedestrian trail, facilities and installations for water drainage and the control of water flow, as well as for any reasonable necessary cut/fill slopes and related facilities

3. Open Space Tracts B, C & D shall be conveyed to the Castle Valley Ranch Homeowner's Association by separate deed after the completion of the issuance of the last Certificate of Occupancy for Filing #11. The open space tracts may contain project identification monument signs, landscape areas, and trails. Open Space Tract B is reserved for construction and dedication of a neighborhood park to serve the residents of Castle Valley Ranch.

4. The Snow Storage Easement located in Open Space Tract B, may be used by the Town of New Castle for snow storage

5. Filing 11 is located within FEMA Zone C according to FIRM Panel 080455C1111E, 1109E, 1108E — Areas of minimal flooding and is not subject to 100 year floodplain of any drainage with tributary areas in excess of 40 acre sites

6. All disturbed areas in the project shall be revegetated and maintained in a predominately weed free condition in conformance with the Town of New Castle Noxious Weed Management Plan.

7. The applicant shall comply with the recommendations of the geotechnical engineers contained in the reports dated June 12, 2006 and September 27, 2006 completed by A.C. Wessenaar Geotechnical and Environmental Consultants.

8. [illegible] on Lots 1 through 27 shall occur until a Certificate of Occupancy is issued for the respective Townhomes constructed on those [illegible] Lots

9. [illegible] the issuance of a certificate of occupancy, the Applicants surveyor will submit an affidavit stating that the lot lines shown on the [illegible] conform with the actual location of the party walls. In the event that the lot lines do not conform to the location of the party walls as built, the Applicant shall be required to submit an amended plat for the lot or lots [illegible] deviation between the lot line and the actual location of the party wall results in a change of more than 5% in the recorded plat may be approved administratively by Staff and signed by the Town Administrator. If the deviation in any lot size is greater than 5%, the Applicant shall be required to submit the amended plat for review by Town Council

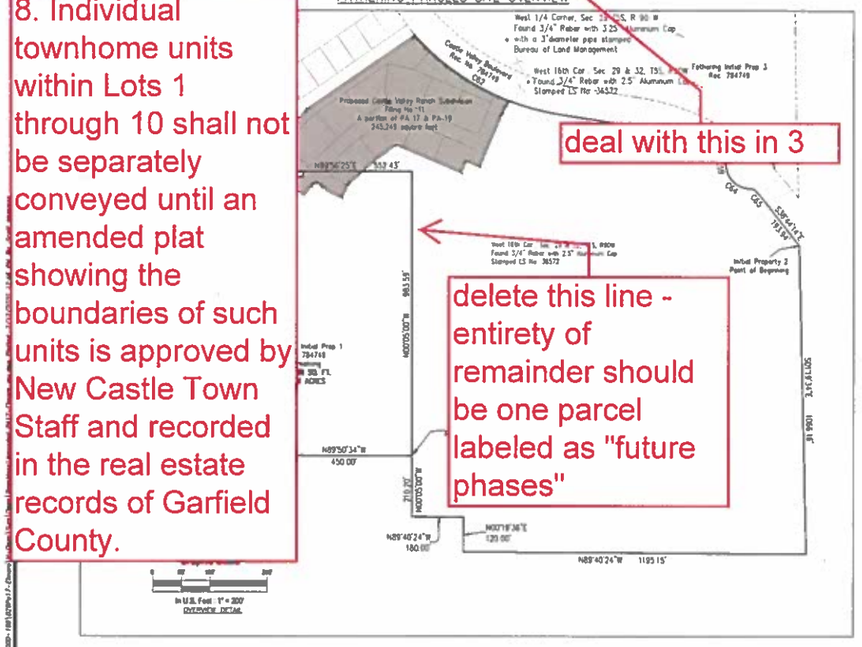
10. A Trail/Walk Easement (10' wide) for Public Access is to be located across Open Space Tract A and B to be defined at conclusion of the trail/walk construction

11. The Applicant shall reserve an option right for three years, or until such time as the remainder of PA 17 is platted, whichever is sooner, by plat note or separate instrument to construct a pedestrian trail in the northerly 20' side setback of proposed Lot [illegible]. Such pedestrian trail, if required and constructed, shall be maintained by the CVR Homeowners Association, but shall be open to the public.

12. Multi Family Lots 1 through [illegible]
A. There is hereby [illegible] public utility and drainage easement over and across all areas not within building footprints. "Utility easements" includes without limitation water, sewer, electric, gas, telephone, and cable tv.
B. HOA maintained areas shall be all areas within a lot not covered by a townhome structure, concrete flatwork, patios, and/or decks. Within the HOA maintained areas the HOA shall maintain all landscaping, irrigation systems and fencing.
C. Easements, open space, [illegible] are governed by the Declaration of Covenants, Conditions, and Restrictions of Castle Valley Ranch Townhomes Association recorded in the records of Garfield County at Reception Number [illegible].

CURVE	RADIUS	DELTA	CHORD BEARING	CHORD LENGTH
C1	[illegible]	[illegible]	S35°38'43"E	408.84'
C2	[illegible]	[illegible]	S42°53'24"W	21.02'
C3	[illegible]	[illegible]	S38°44'06"W	18.40'
C4	[illegible]	[illegible]	S38°34'51"W	12.21'
C5	[illegible]	[illegible]	S14°30'47"E	19.00'
C6	[illegible]	[illegible]	S61°39'05"E	57.19'
C7	[illegible]	[illegible]	N67°40'47"E	339.36'
C8	[illegible]	[illegible]	N88°[illegible]'E	102.47'
C9	[illegible]	[illegible]	S61°01'02"W	57.29'

FATHERING PARCELS SITE OVERVIEW



Title Certificate

_____ does hereby certify that _____ has examined the title to all lands dedicated and shown upon this plat, and that such lands is in the dedicator free and clear of all liens, taxes, and encumbrances except as follows: _____

B. [illegible] subject to the approval of the [illegible]

— This surveyor is not represent a title search by this surveyor to determine ownership or to discover easements or other encumbrances of record. All information pertaining to ownership, easements or other encumbrances of record has been taken from a title [illegible] commitment issued by Land Title Guarantee Company dated 14 March, 2008 as Order No. GB63002532. Pertaining to schedule B-2 of said Order No. GB63002532:

Items 10 – 14: This parcel may be subject to the rights of others for the extraction on minerals including oil and gas and the maintenance for ditches as described in Book 12 at Page 407, Book 73 at Page 213, Book 545 at Page 681, Book 358 at Page 328 and Book 358 at Page 318. The extent of these burdens cannot be graphically depicted

Items 15 & 17. The subject parcel is effected by the terms, conditions and provisions of Ordinance #99-8 as recorded in Book 1133 at Page 832 and Ordinance #2002-2 as recorded in Book 1349 at Page 948 the extent of these burdens cannot be graphically depicted.

Items 16, 19, 25, & 33. The restrictive covenants as recorded in Book 632 at Page 881 and as amended in instrument recorded February 08, 1996, in Book 966 at Page 879 and as amended in instrument recorded November 06, 2000, in Book 1218 at Page 205, and supplement recorded November 29, 2000, in Book 1219 at Page 827 and fourth supplement recorded November 29, 2000, in Book 1219 at Page 840 and fifth supplement recorded April 26, 2002, in Book 1350 at Page 84, sixth supplement recorded June 24, 2003 in Book 1484 at Page 138, seventh supplement recorded October 22, 2004, in Book 1833 at Page 210, eighth supplement recorded June 13, 2005, in Book 1996 at Page 460, ninth supplement recorded November 23, 2005, in Book 1750 at Page 282, Assignment of Declarants Rights recorded March 9, 2006, in Book 1778 at Page 709, in Book 1778 at Page 731 and Book 1915 at Page 980 all affect the subject parcel the extent of these effects cannot be graphically depicted

Items 18, & 20. The terms, conditions and provisions of the Agreements recorded in Book 1780 at Page 501, Book 1778 at Page 689 and Book 1915 at Page 902 affect the subject parcel. The extent of these effects cannot be graphically depicted.

Item 21: The subject parcel is not effected by the terms, conditions and provisions of Ordinance #2006-11 as recorded in Book 1829 at Page 736

Item 22. The terms, conditions and provisions of the Water Rights Agreements recorded in Book 1915 at Page 902 affect the subject parcel. The extent of these effects cannot be graphically depicted

Item 23. The terms, conditions and provisions of assignment Development Agreement recorded in Book 1915 at Page 939 affect the subject parcel. The extent of these effects cannot be graphically depicted

Item 24. The terms, conditions and provisions of agreement regarding Town Agreements recorded in Book 1915 at Page 948 affect the subject parcel. The extent of these effects cannot be graphically depicted

Item 26. The terms, conditions and provisions of assignment of Declarant Rights recorded in Book 1915 at Page 969 affect the subject parcel. The extent of these effects cannot be graphically depicted

Item 27. The terms, conditions and provisions of agreement regarding Grant of Easement recorded in Book 1915 at Page 975 does not affect the subject parcel.

Item 28. The terms, conditions and provisions of agreement regarding Silverado Trail recorded in Book 1915 at Page 987 does not affect the subject parcel.

Item 29. The terms, conditions and provisions of Easement Agreement recorded in Book 1915 at Page 997 does not affect the subject parcel.

Item 30. The terms, conditions and provisions of Grading Agreement recorded in Book 1918 at Page 1 affect the subject parcel. The extent of these effects cannot be graphically depicted.

Item 31. The terms, conditions and provisions of Memorandum Agreement recorded in Book 1918 at Page 15 does not affect the subject parcel

Item 32. The terms, conditions and provisions of Drainage Easements recorded at Reception No. 733782 and 733781 does not affect the subject parcel

Zoning Regulations

Lots 1 through 27

Multi Family (MF-1) under Residential,
1. Purpose and intent: To allow for creative approaches to development with housing alternatives that are sensitive to existing and surrounding uses.

2. Permitted Uses: Detached dwelling units; attached dwelling units with rear yards; patio homes/dwelling units oriented to the side of the lot, attached dwelling units in structures containing more than two units; including attached garages/studios; parking facilities, public parks, private parks, open spaces, playgrounds and related accessory structures 3,000 sq. ft or less; recreation facilities, and, pedestrian and bike trails

3. Conditional Uses: Entry and monumentation; childcare facilities; churches, synagogues, chapels, and temples; and fire stations

4. Temporary Land Uses: Those uses that are necessary or incidental to the construction and sale of platted lots, homes, commercial structures and development of the PUD. Such temporary uses may include business offices, storage areas, construction yards and equipment and trailers, signs, model homes and units, sales offices and management offices, and parking facilities and lighting facilities related to it. Temporary storage areas and construction yards shall be considered conditional uses.

5. Maximum Lot Area: 2,200 square feet

6. Maximum Lot Frontage: 20 feet

7. Maximum Setbacks:
A. Front Yard: 18 feet
B. Front yard with side entry garage: 10 feet
C. Back yard: 10 feet
D. Side yard
1) Corner lot: on the side adjacent to any local street: 10 feet
2) Corner lot: on the side adjacent to a collector street: 15 feet
3) Interior lot: 0 feet from the lot line
4) Maximum distance between buildings: 10 feet (separation area): Side yard setbacks shall be calculated from building main wall to building main wall.
— Architectural projections, including but not limited to fireplaces, chimneys, bay windows, solarium windows, eaves, cornices, entertainment centers, awnings, canopies, window wells, overhangs and those required to provide for interior niches shall be allowed into the separation area between buildings and into the building setbacks a maximum of three feet.
— Covered porches are permitted to extend outward from the structure 6 feet into a front or rear setback.
— Driveways, patios, decks and stairs are permitted anywhere in setbacks.
— Stairs cannot be constructed any closer than 5 feet to a property line

8. Maximum Building Height:
A. Principal building: 35 feet
B. Accessory building: 20 feet

9. Supplementary Regulations:
A. Maximum fence height
1) All lots
a) Maximum front yard fence height: 42 inches
b) Side yard: 72 inches
c) Rear yard: 72 inches
d) Minimum setback, rear and side yard fence adjacent to public road: 10 feet

CERTIFICATE OF DEDICATION AND OWNERSHIP

Know all men by these presents that, CVR Investors, Inc., a Colorado Corporation, being sole owner in fee simple of all that real property described as follows:

A parcel of land situated entirely within Initial Property 1 and Initial Property 2 as described at Reception No. 784749, also being located within the NE1/2NW1/4 Section 32, and the E1/2NE1/4 Section 31, Township 5 South, Range 90 West of the 6th Principal Meridian, County of Garfield County, State of Colorado, said parcel being more particularly described as follows:

21.22 feet along a non-tangent curve to the left, having a radius of 44.51 feet, a central angle of 027°18'49", the chord of which bears S 42°13'24" W a distance of 21.02 feet,
thence S 28°34'39" W a distance of 29.98 feet,
thence S 22°50'32" W a distance of 202.05 feet,
thence N 67°08'28" W a distance of 50.00 feet,
thence S 22°50'32" W a distance of 43.82 feet,
thence N 67°09'28" W a distance of 248.30 feet,
thence S 5°47'47" W a distance of 84.08 feet,
thence S 48°29'44" W a distance of 130.04 feet,
thence S 25°18'28" W a distance of 51.42 feet,
thence 82.78 feet along a non-tangent curve to the right, having a radius of 175.00 feet, a central angle of 026°36'23", the chord of which bears N 62°35'08" W a distance of 81.53 feet,
thence N 49°08'37" W a distance of 20.80 feet,
thence S 84°33'11" W a distance of 11.18 feet,
thence 12.21 feet along a non-tangent curve to the left, having a radius of 875.00 feet, a central angle of 000°47'03", the chord of which bears S 38°34'31" W a distance of 12.21 feet,
thence S 38°13'29" W a distance of 43.10 feet,
thence N 51°46'40" W a distance of 53.00 feet,
thence N 38°13'20" E a distance of 43.10 feet,
thence 18.40 feet along a curve to the right, having a radius of 1028.00 feet, a central angle of 001°01'35", the chord of which bears N 38°44'07" E, a distance of 18.40 feet,
thence N 48°51'37" W a distance of 105.27 feet,
thence S 40°53'48" W a distance of 234.54 feet,
thence N 49°28'08" W a distance of 30.00 feet,
thence N 40°53'45" E a distance of 409.03 feet,
thence N 33°43'11" E a distance of 455.87 feet,
thence 410.81 feet along a non-tangent curve to the left, having a radius of 862.01 feet, a central angle of 027°18'20", the chord of which bears S 55°36'48" E a distance of 406.83 feet, to the point of beginning and parcel containing 5.630 acres (245248 square feet), more or less. Have by these presents laid out, platted and subdivided the same into lots and blocks as shown hereon and designate the same as Castle Valley Ranch Filing 11 in the Town of New Castle, County of Garfield, State of Colorado, and do hereby grant to the Town of New Castle, County of Garfield, Colorado, for public use the streets shown hereon, including avenues, drives, courts, places and alleys, the public lands shown hereon for their indicated public use and the utility and drainage easements shown hereon for utility and drainage purposes only, and do further state that this subdivision shall be subject to the protective covenants filed and recorded for this subdivision in the office of the Clerk and Recorder of Garfield County, Colorado as Document No. _____

EXECUTED this _____ day of _____ A.D. 2020.

Owner CVR Investors, Inc., a Colorado Corporation

STATE OF COLORADO)
COUNTY OF GARFIELD) ss
TOWN OF NEW CASTLE)

The foregoing dedication was acknowledged before me this _____ day

by _____

My commission expires _____

WITNESS MY HAND AND SEAL.

_____
Notary Public

Town Council Certificate

This plat approved by the [Town Council/Planning Commission] of the Town of New Castle, Garfield County, Colorado, this _____ day of _____, A.D. 2020, for filing with the Clerk and Recorder of Garfield County and for conveyance to the Town of the public dedications shown hereon, subject to the provision that approval in no way obligates the Town of New Castle for financing or constructing of improvements on land, streets or easements dedicated to the public except as specifically agreed to by the Town Council.

_____
Mayor
Witness my hand and the seal of the Town of New Castle

Attest:

_____
Town Clerk

SURVEYOR'S CERTIFICATE

I, Scott A. Hamman, do hereby certify that I am a registered land surveyor licensed under the laws of the State of Colorado, that the Plat as a true, correct and complete plat the of Castle Valley Subdivision Filing 11, as laid out, platted, dedicated and shown hereon, that such plat was made from an accurate survey of said property by me, or under my supervision, and correctly shows the location and dimensions of the lots, easements and streets of said subdivision as the same are staked upon the ground in compliance with _____ regulations governing the subdivision of land

In witness whereof, I have set my hand and seal this ____ day of _____ A.D. 2020.

_____
Registered Land Surveyor

Scott A. Hamman
Colorado PLS # 38182
For, and on behalf of SGM

CLERK AND RECORDER'S CERTIFICATE

This plat was filed for record in the [illegible] of Garfield County, Colorado, at ____ o'clock ____ M. _____ 2020, and is duly recorded in [illegible]

Clerk and Recorder

By _____
Deputy

- PRELIMINARY - FOR REVIEW ONLY

SGM
118 West Sixth Street, Suite 200
Glenwood Springs, CO 81601
970.945.1004 www.sgm-inc.com

Castle Valley Ranch Sub
Filing 11

Final Plat

1

Final Plat
Castle Valley Ranch Subdivision, Filing No. 11
a Portion in Initial Property 1 and Initial Property 2,
W 1/2, NW 1/4 Section 32 and E 1/2, NE 1/4 Section 31 in
Township 5 South, Range 90 West of the 6th Principal Meridian,
Town of New Castle, Garfield County, Colorado

- CURVE TABLE -

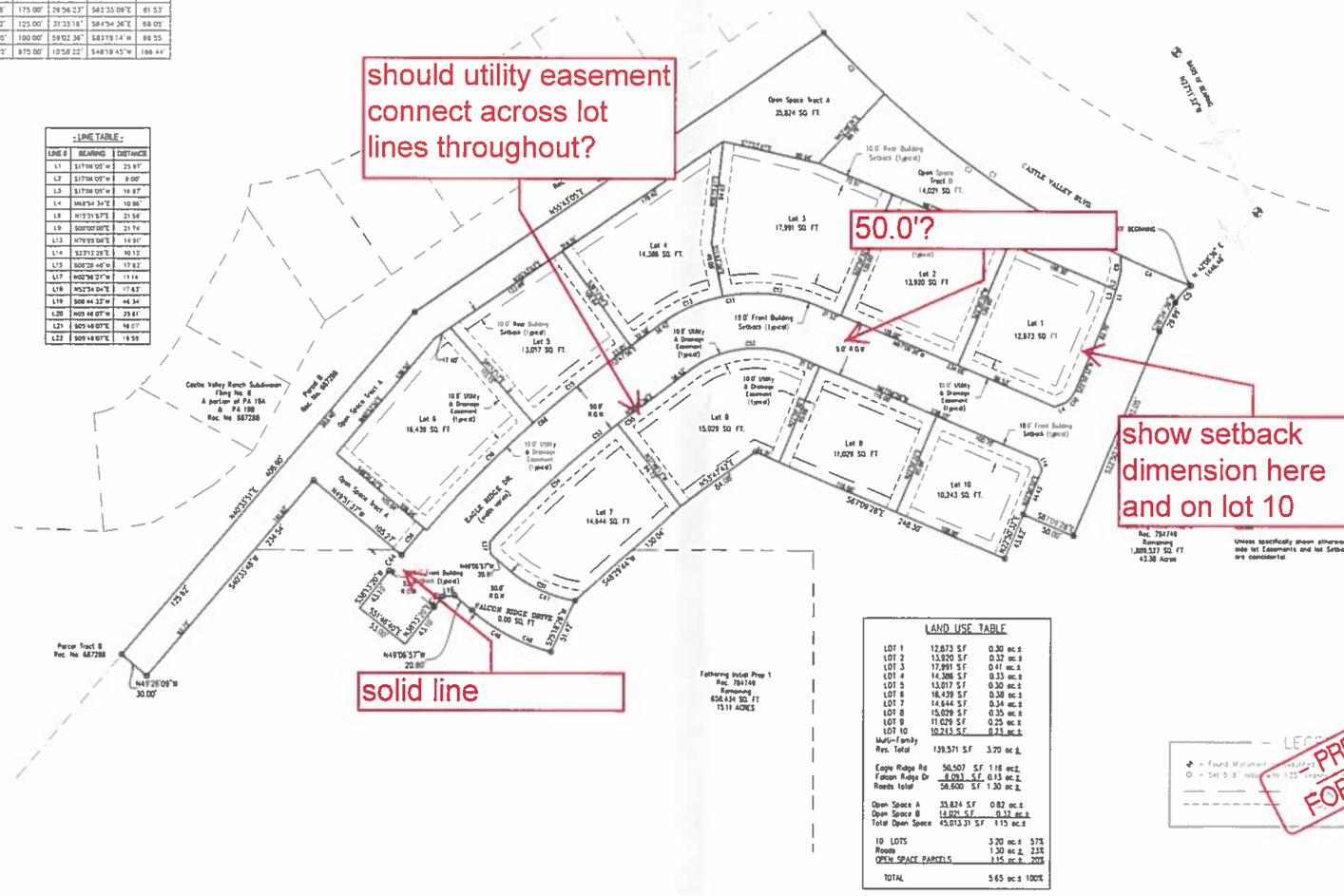
CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	410.62'	862.25'	27°17'54"	S55°38'43"E	406.64'
C2	77.82'	862.01'	5°10'46"	S44°33'02"E	77.90'
C3	282.82'	862.18'	17°28'22"	S53°54'41"E	281.90'
C4	69.96'	862.01'	4°39'01"	S66°58'28"E	69.94'
C5	21.22'	44.31'	27°18'49"	S42°13'24"W	21.02'
C9	22.95'	49.83'	26°23'31"	N63°55'42"E	22.75'
C10	13.56'	24.58'	31°35'37"	N38°36'21"E	13.38'
C11	154.58'	150.00'	59°02.36"	S83°19'14"W	147.83'
C12	90.67'	150.00'	34°38.06"	N84°28'31"W	89.30'
C13	63.90'	150.00'	24°24.30"	S68°00'11"W	63.42'
C15	89.81'	1025.00'	5°01.13"	S51°17'20"W	89.78'
C16	138.55'	1025.00'	7°44.41"	S44°54.23"W	138.44'
C44	18.40'	1028.00'	1°01.33"	S38°44.08"W	18.40'
C45	12.21'	875.00'	0°43.03"	S38°34.31"W	12.21'
C46	82.28'	175.00'	26°56.23"	S62°35.09"E	81.53'
C47	68.82'	125.00'	31°33.18"	S64°34.36"E	68.05'
C48	82.28'	175.00'	26°56.23"	S62°35.09"E	81.53'
C51	68.82'	125.00'	31°33.18"	S64°34.36"E	68.05'
C52	103.05'	100.00'	59°02.36"	S83°19'14"W	98.55'
C53	186.72'	875.00'	10°56.22"	S48°18'45"W	186.44'

- CURVE TABLE -

CURVE #	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C54	159.13'	975.00'	9°21'13"	S47°30'11"W	159.00'
C55	27.55'	975.00'	1°37'08"	S52°59'22"W	27.55'
C56	32.00'	1028.00'	1°47'01"	S40°08'23"W	32.00'
C59	19.02'	115.42'	9°26.33"	S14°30'47"E	19.00'
C62	591.53'	862.07'	39°18.53"	S61°39'05"E	579.99'
C63	342.58'	718.98'	27°15.45"	N67°40'47"W	339.36'
C64	110.68'	82.00'	77°20'15"	N48°27'33"W	102.47'
C65	57.31'	719.98'	4°33'37"	N41°01'02"W	57.29'
C66	228.36'	1025.00'	12°45.53"	S47°24'58"W	227.89'

- LINE TABLE -

LINE #	BEARING	DISTANCE
L1	S17°06'05"W	25.97'
L2	S17°06'05"W	8.00'
L3	S17°06'05"W	16.97'
L4	N62°54'34"E	10.86'
L8	N15°31'57"E	21.56'
L9	S00°00'00"E	21.74'
L13	N79°03'06"E	14.97'
L14	S27°12'29"E	90.13'
L15	S08°28'46"W	17.82'
L17	N02°36'21"W	19.16'
L18	N52°34'04"E	17.63'
L19	S08°44'32"W	46.34'
L20	N05°48'07"W	39.61'
L21	S05°48'07"E	90.07'
L22	S05°48'07"E	19.59'



LAND USE TABLE

LOT 1	12,873 S.F.	0.30 ac.±
LOT 2	13,920 S.F.	0.32 ac.±
LOT 3	17,991 S.F.	0.41 ac.±
LOT 4	14,388 S.F.	0.33 ac.±
LOT 5	13,017 S.F.	0.30 ac.±
LOT 6	16,439 S.F.	0.38 ac.±
LOT 7	14,644 S.F.	0.34 ac.±
LOT 8	15,029 S.F.	0.35 ac.±
LOT 9	11,029 S.F.	0.25 ac.±
LOT 10	10,243 S.F.	0.23 ac.±
Multi-Family Res. Total	139,571 S.F.	3.20 ac.±
Eagle Ridge Rd	50,507 S.F.	1.16 ac.±
Falcon Ridge Dr	8,093 S.F.	0.19 ac.±
Roads total	58,600 S.F.	1.35 ac.±
Open Space A	33,824 S.F.	0.82 ac.±
Open Space B	14,021 S.F.	0.32 ac.±
Total Open Space	45,013.31 S.F.	1.15 ac.±
10 LOTS		3.20 ac.± 37%
Roads		1.30 ac.± 23%
OPEN SPACE PARCELS		1.15 ac.± 20%
TOTAL		5.65 ac.± 100%

PRELIMINARY - FOR REVIEW ONLY

Graphic Scale
In U.S. Feet 1" = 80'

SGM
118 West Sixth Street, Suite 200
Glenwood Springs, CO 81601
970.945.1004 www.sgm-inc.com

Castle Valley Ranch Sub
Filing 11

Final Plat

Sheet No. 2 OF 2

Paul Smith

From: Haley Carmer <hcarmer@garfieldhecht.com>
Sent: Monday, April 20, 2020 4:28 PM
To: Paul Smith
Cc: David H. McConaughy
Subject: RE: G&H questions
Attachments: Filing 11, Phase 1 Plat comments.PDF

Hi Paul,

Thanks for forwarding Aaron's responses. Attached is a marked-up plat that includes changes and comments for CVRI to address along with the following:

- Refer to Filing 11 as "Filing 11, Phase 1" throughout
- Plat Note 3: Take out reference to Open Space Areas C & D as they are not shown on the plat. Are open space areas to be deeded to HOA once the developer has C.O.s for all Filing 11 units or just Phase 1 units? Per site plan, it appears Open Space Area C is supposed to be the park.
- Plat Note 4: No snow storage easement is shown on the plat
- Plat Note 11: Change "applicant" to "owner;" identify lot(s) subject to reserved right

Let us know if anyone has questions about our changes. Thanks.

Best,

Haley

From: Paul Smith [mailto:psmith@newcastlecolorado.org]
Sent: Monday, April 20, 2020 7:48 AM
To: David H. McConaughy <dmcconaughy@garfieldhecht.com>; Haley Carmer <hcarmer@garfieldhecht.com>
Subject: FW: G&H questions

David and Haley,

Attached (and below) are revisions to the Filing 11 application based on your comments.

Thanks,
Paul

From: Aaron Atkinson [mailto:aa@hackstafflaw.com]
Sent: Friday, April 17, 2020 3:40 PM
To: Paul Smith <psmith@newcastlecolorado.org>
Cc: Dan Cokley <DanC@sgm-inc.com>; Dave Reynolds <dreynolds@newcastlecolorado.org>
Subject: Re: G&H questions

Paul:

Town of New Castle

"Burning Mountain" - 1888

Police Department

801 West Main St

New Castle, Colorado 81647

(970) 984-2302

To: Paul Smith N.C. Building and Planning
P&Z Board Members

After Reviewing the Platt for the Atkinson Filing 11. I find that the roadways are to narrow to support parking on both sides of the roadway. We have ran into issues on roadways and subdivisions in town. Feildstone and Sandstone are classic examples, we recently experienced an emergent call for service where the street was blocked by BMFD Fire Truck and an Ambulance. Our Police Vehicle could not pass and were requested to respond emergent this was not possible due to the restriction of the width of roadway with parking on both sides of a narrow street.

Thank you for your consideration on this issue.

Tony Pagni
Chief of Police #601
(970) 984-2302 Ext. #301
apagni@newcastlecolorado.org

New Castle
Police Department

801 West Main Street
New Castle, CO 81647

Good evening Paul!

Thank you for extending an opportunity to the district to respond.
I collected feedback from our Maintenance and Transportation Directors as well as the Principals that lead schools closest to the development.

They all feel there is minimal impact to their sites or scope of responsibilities, and have the capacity to absorb the growth the development would bring to the system.

Sincerely,
Heather Grumley
Interim Superintendent
"You must develop a feeling that there's no way you're going to lose!"
"Our Kids are Worth Whatever it Takes!" ~ Spence Rogers

On Tue, Apr 7, 2020 at 1:41 PM Paul Smith <psmith@newcastlecolorado.org> wrote:

Hi Heather,

The Town of New Castle is currently processing an application for new development east of Castle Valley Ranch – 91 townhome units (page 6 "overall site plan"). Per the Town Code, we are required to solicit feedback from relevant outside agencies about potential impacts a development may have on their community and facilities.

In most cases the impacts are minimal. However we want to allow the school district a chance to voice their thoughts. The deadline for comment is April 17th. An email response is sufficient. If you do not usually handle these requests, please forward to the representative who oversees this area.

Thank you for the help,

Paul Smith

TONC Planner

May 6, 2020

TO: Planning and Zoning Commissioners and Paul Smith, Planner
FR: Residents of New Castle (53 names and addresses below)
RE: Preliminary/Final Filing 11 application

We urge you not to approve the Filing 11 application for development of the property behind South Wildhorse Drive and Mount Harvard Court by CVR Investors, Inc. (CVR), a company located in Castle Rock, CO. Our rationale is described in more detail below, but in short, this high-density development offers very little open space, provides insufficient buffers between multiple-unit housing and single-family homes, inadequately considers the impact of the development to surrounding property values, ignores the need to maintain wildlife migration patterns, does not adequately provide for pedestrian/traffic interface on Castle Valley Boulevard, has not adequately addressed viewsheds and ridgelines, may not provide for natural drainage from the storm water pipes on both sides of Castle Valley Boulevard, increases traffic loading onto Castle Valley Boulevard, does not provide adequate additional parking for new residents during Phase 1, and may increase costs to the town as it addresses traffic, safety, fire, and other infrastructure issues. It also limits the town's ability to provide mixed-use development. Moreover, it does not reflect the goals of New Castle's Comprehensive Plan, leaving the town with a densely packed sea of rooftops that does little to make the town unique or desirable. We recognize the right of CVR to develop this property; however, that right is not absolute in much the same way as we are governed by the requirements of a homeowner's association. If this development is allowed as currently presented, we have much to lose, as described below.

1. Too much density

The planned net density for the development is 10.45 dwelling units per acre (91 units on 13.5 acres). This far exceeds the average density in the town, creating many potential problems for the town, surrounding homeowners and future residents. The town will face higher costs in traffic control, snow removal, fire response, infrastructure maintenance, etc. After the coronavirus devastates the economy, we are also likely to face a recession, at least in the short term, and the town may be saddled with costs at a time where it is most difficult to meet them. This means that we will all face higher costs. The surrounding homeowners will likely suffer from greatly reduced property values, which seems very unfair, and the town has a responsibility to not damage current homeowners in permitting a new development. Moreover, future residents of the development will face inadequate parking (only four extra parking spaces are provided in the application), few amenities, noise and congestion. A recent example can be found in the newly developed triplexes on Redstone Drive and Foxwood Lane, where congestion and parking are on-going issues. Building fewer fourplexes and triplexes would go a long way in improving the development, helping preserve property values, and preserving the town's sense of community.

2. Insufficient buffer between single-family and multiple family homes

Concerns about an urban buffer were identified in the town planning staff report to the Town Council in response to CVR's initial sketch plan on October 1, 2019. The staff report noted concerns about the "blunt transition" from large single-family homes to high density homes. Very little action has been taken to meet those concerns since that report. Instead, more fourplexes now border the buffer between the single-family homes on South Wildhorse/Mount Harvard than were in the sketch plan.

The preliminary/final application allows just 59 to 72 feet of buffer behind the homes on South Wildhorse/Mount Harvard, including the hill owned by the town. The developer provides very little, as the buffer includes the natural drainage down the hill, as well as the town's property. In order to protect the value of the homes along the development, this buffer needs to be much larger. This is a win-win-win for residents and the town. Increasing the buffer not only brings the development into greater compliance with the goals of the Town of New Castle Comprehensive Plan and helps protect property values, both outside and inside the development, it has the added benefit of adding much-needed open space for the pedestrian walkway and offers a corridor for wildlife. The Colorado Division of Wildlife has identified this area as an important deer habitat, and residents view deer everyday grazing and bedding in this field.

The visual impact analysis was not available for review on the town's website, so we cannot comment. If this analysis exists, we would like to review it. If not, one should be done considering the buffer concerns.

3. Insufficient open space

At first glance, it appears that CVR's application has met the minimal requirements for open space (1.5 acres dedicated open space in the 13.5 acres to be built). However, a closer look at the four open spaces shown on Overall Site Plan Map (page 7 of the application) tells a different story. Municipal Code Sec.17.104.010 encourages a creative approach to the development of land and an integrated open space system throughout the Castle Valley Ranch PUD. The Town of New Castle's Comprehensive Plan calls for pedestrian networks, recognizes the importance that citizens put on open spaces and calls for preserving open space and natural beauty whenever possible. We call attention to Comprehensive Plan Goal CG-1: Ensure that new development substantially conforms to the New Castle Comprehensive Plan principles, goals and policies and includes: Policy CG-1B: Applicants will be required to clearly demonstrate substantial conformity with the comprehensive plan in all applications; and, Policy CG-1D: Non-compliant land-use applications shall be modified to conform substantially to the comprehensive plan or will be rejected. (Town of New Castle Comprehensive Plan, p.50)

The Comprehensive Plan further calls for the creation of park space so to meet the standard of an additional 14 acres of usable park land for every thousand person increase in the town's population. Data from the Comprehensive Plan showed that the town was just under the minimum in 2007 (13.6 acres to service roughly 4,000 people). The addition of Dancing Bear Park is welcomed, but does not add enough park space to meet the standard. Thus, more park space is needed as development continues.

The developer proposes that "Open Space B" be a neighborhood park maintained by the town. The idea of a park is welcomed; however, this parcel of land has issues. First, it is directly adjacent to Castle Valley Boulevard, and provides for little buffer between the street and the park. In contrast, the newest park, Dancing Bear, is separated from the main street. Second, at just one-third of an acre (14,000 square feet), this "open space" largely represents what would be needed to provide a buffer between the street and the development anyway, as is the case with the homes along Castle Valley Boulevard to the north. The staff report pointed to the need for open space recreation, and this does not meet that need. This area is also suggested for snow removal for the Town, which further hampers the appeal of Open Space B.

Open Space A is the buffer area that roughly parallels the homes on South Wildhorse. As described above, it does not meet the stated desire of the town to have natural green ways and open space

corridors, in that it is much too narrow for this purpose. By increasing this open space, the developer would retain the natural beauty of the area, as well as enhance the desirability of the multi-family units and help to offset the negative impacts of the development. One can imagine a networked pedestrian trail connecting both sides of the development along Castle Valley Boulevard.

Another issue is drainage and slope. The storm water drain for run-off from the east side of Castle Valley Boulevard creates an intermittent pond during snow melt that runs fully into the open space areas. The slope of this open space area is also significant and further limits its use. Open space should be space that is accessible to the public, not undevelopable space. A hydrological study was not available for review, but even at current flow rates, standing water is not likely to be fully solved by the proposed re-routing of the storm drain and placement of rip-rap along the hill.

Also troubling is the pedestrian walkway that currently is designed to end at Castle Valley Boulevard. There is no provision for safe crossing of the street; there are no sidewalks that join that area. The only crosswalk that exists is on the north side the South Wildhorse/Castle Valley Boulevard intersection.

Open Space C is a pocket park in the center of the 91-unit development; Open Space D is a very small area also in the center of the development, much too small to be considered viable open space. These may serve the residents of the development but are not easily accessible to other citizens. We concur with the staff report that urged that the development have more open space than currently proposed.

4. Wildfires and other considerations

As the town's population increases, we must consider a second street to allow people in Castle Valley Ranch to enter/leave. Traffic loading is already apparent on Castle Valley Boulevard, the only street out of Castle Valley Ranch. However, this inconvenience may become a very serious danger should a wildfire sweep the area, as people have no way out other than one street. In October 2019, many residents witnessed the fire on the hill that is adjacent to the land in Filing 11. We were lucky that time, due to the amazing work of our firefighters and the availability of air support. Next time we may not be so lucky. This issue is paramount in the minds of many Castle Valley Ranch residents and must be considered with any development, but especially in ones with high density that compounds traffic concerns. Connecting to C Street should be discussed as a way of potentially saving lives.

Additionally, as noted in the staff report, concerns continue regarding how the remaining lots on the other side of Castle Valley Boulevard, along North Wildhorse, and VIX Park will be developed. The town has a great opportunity to consider the prominent value residents place on open spaces, with connected trail systems in thinking about future development. It also must consider where and how multiple-use building will occur. Finally, we encourage the town to carefully consider infrastructure capacity. We saw no stormwater management study in the materials for Filing 11.

In sum, we have an opportunity to make New Castle a highly desired gem of a town through careful development, but once that opportunity is lost, we've lost it forever. The Town of New Castle has an opportunity to promote development that aligns with its comprehensive plan, Smart Growth Principles, and the stated desires of the community to protect the town's scenic quality and open space. **We urge you to not approve this application until it more closely represents these goals as stated in the Comprehensive Plan and the municipal code. We stand ready as residents to assist the town that we all love in honoring the New Castle Comprehensive Plan and vision as set forth.**

Signatures for the letter (Because of the stay-at-home/safer at home orders, gathering signatures was not possible. However, everyone provided their name and address, often by email, noting their interest in signing the letter.)

Denise Scheberle	507 S. Wildhorse Drive
Steve Scheberle	507 S. Wildhorse Drive
Wayne Shelton	501 S. Wildhorse Drive
Virginia Shelton	501 S. Wildhorse Drive
Myrna Candreia	26 Foxwood Ln.
Jeanne Huyser	34 Foxwood Ln.
Karen Skalsky-Schwenk	511 S. Wildhorse Drive
Tom Schwenk	511 S. Wildhorse Drive
Paul Gonnerman	51 Mt Yale Ct
Susan J Bilstad	51 Mt Yale Ct.
Jes Dooling	729 S. Wildhorse Drive
Ines Baquero	73 Mount Harvard Ct.
Dee Demming-Kressner	156 N. Wildhorse Drive
Robert Wang	655 S. Wildhorse Drive
Lynne Cassidy	655 S. Wildhorse Drive
Jeff Andrews	715 Storm King Circle
Diana Andrews	715 Storm King Circle
Sue Cooke	26 Buckskin Circle
Gary Cooke	26 Buckskin Circle
Khmasea Bristol	351 Buckthorn Rd.
Bay Bristol	351 Buckthorn Rd.
Connie Davis	818 Ute Circle
Rick Davis	818 Ute Circle
JR Torrez	882 Ute Circle
Stephanie Torrez	882 Ute Circle
Kristi Stark	829 Ute Circle
Jeff Stark	829 Ute Circle

Pat Gunther	695 Cheyenne
John Gunther	695 Cheyenne
Larry Dragon	845 Ute Circle
Ruth Belda	845 Ute Circle
Erin Courtney Quinn	142 W. Cathedral Ct.
Jamin Heady-Smith	39 S. Painted Horse Cir
Stephanie Dani Carballo	309 Maroon Ct.
Bert Carballo	309 Maroon Ct.
Sally Linden	805 Ute Circle
Janet Kinghorn	379 Maroon Ct.
Mark Kinghorn	379 Maroon Ct.
Joni Owens	235 W. Capital Ct.
David Bristol	386 W. Main #4
Lee Teran	386 W. Main #4
Brittney Street	680 Cheyenne
Jeff Street	680 Cheyenne
Tom Elder	247 N. 7th St.
Mary Johnson	247 N. 7th St.
Shirley Williams	0981 County Road 245
Jenna Bontempo	44 Foxwood Lane
Toni Main	48 Foxwood Lane
Ken Collins	48 Foxwood Lane
Sandy Weaver	308 Penny Royal
Andy Hawley	120 Deer Valley Dr.
Diane Blasingame	382 Faas Ranch Rd.

Wayne and Virginia Shelton

501 S. Wild Horse Dr.

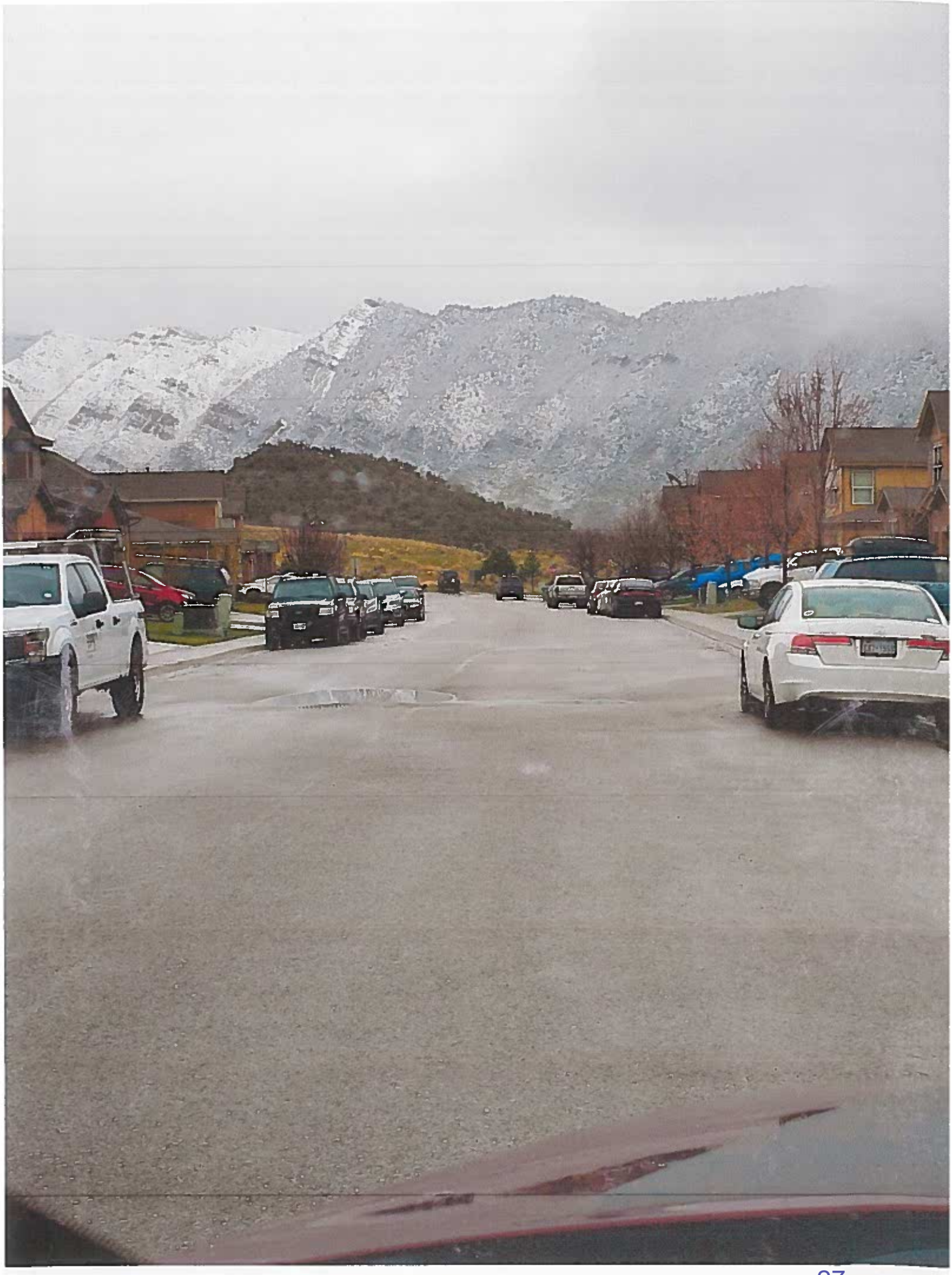
New Castle, Co 81647

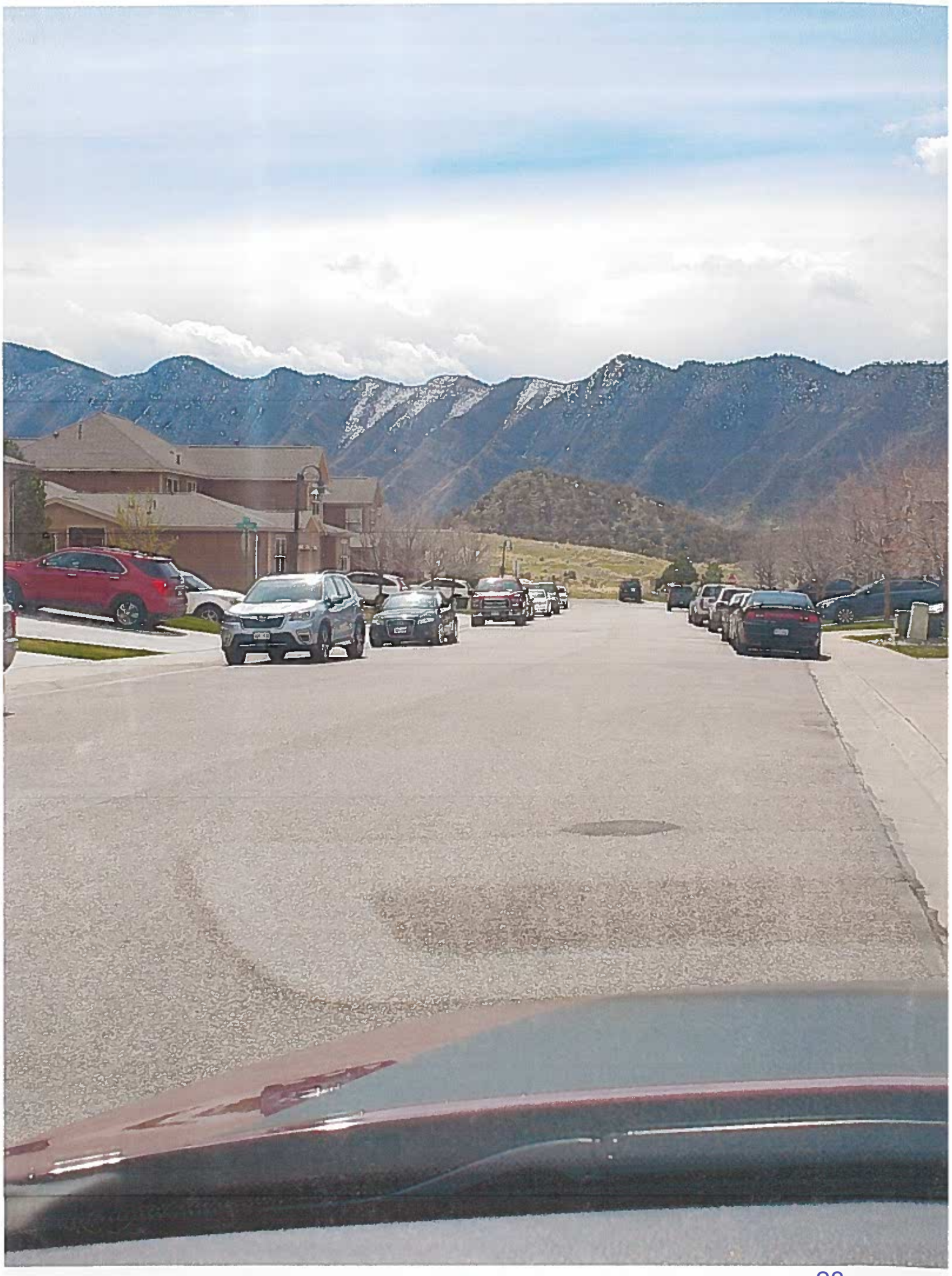
As 11 year residents of S. Wild Horse Drive that will be directly affected by R-11, we have several concerns.

1. This greatly increased density does not seem appropriate for a single family neighborhood. It seems that a disproportionate number, 91 of the 540, approved housing units has been proposed and concentrated in only 14 acres. I believe a wider buffer zone and lesser density would be appropriate for this area.
2. These are 3 bedroom units so I would assume the occupancy rate would most likely be between 3 and 4 people per unit. This being the case you should assume 2 to 3 cars per unit which would necessitate 1 car in the garage, 1 in the driveway, and 1 parked in the street. There is little or no provision for parking in the street, due to the number of driveways and the density of the units. This would seem to lead to a very cluttered and probably unsightly density. All this can be verified by observing the problems in the existing triplex areas and would be even more exacerbated by an even larger number of proposed 3 and 4 plexs.
3. Based on the growing number of electric vehicles, I have seen no provision for outdoor access to the power supplies, unless you run dropcords across driveways, lawns, and sidewalks.
4. It looks like snow removal would be very problematic. The city recommends shoveling snow on to each lawn, however in snowy winters we have had to shovel the excess snow in to the street's parking area. This being the case for the increased density there would be even less lawn space, due to the number of driveways, to put the snow which would necessitate putting more snow into the already inadequate street parking.
5. Also based on past observations this density would be problematic for the trash collections due to the increased number of cars and winter snow placement along the streets.
6. The proposed open space seems entirely inadequate for the ultimate number of residents. It looks like most of the "open space" was based on land that would have been difficult to build on anyway and does not seem suitable for most accepted "open space" uses.

It would seem they are proposing this area for the increased density so they can make other areas more desirable for single family homes to their benefit. It should be remembered that the developer's effort to maximize profits will produce neighborhoods that we will all have to live with long after they are gone.

Virginia Shelton





Xcel Energy®

WILL SERVE LETTER

February 6, 2020

CVR Investors Inc
Attn: Aaron Atkinson
1038 Country Club Estates Dr
Castle Rock, CO 80108

Re: Multi family units-Eagle Ridge Dr, Castle Valley Ranch Subdivision, New Castle

Dear Mr. Atkinson,

This letter is to confirm that Xcel Energy is your utility provider for natural gas and electrical service. In accordance with our tariffs, on file with and approved by the Colorado Public Utilities Commission, gas and electric facilities can be made available to serve the project at multi-family units Eagle Ridge Dr, Castle Valley Ranch Subdivision, New Castle.

Your utility service(s) will be provided after the following steps are completed:

- ***Application submitted to Public Service's "Builders Call Line (BCL)"*** – once your application is accepted you will be assigned a design department representative who will be your primary point of contact
- ***Utility design is completed*** – you must provide your design representative with the site plan, the one line diagrams, and panel schedules for electric and gas loads if applicable
- ***All documents provided by design representative are signed and returned***
- ***Payment is received***
- ***Required easements are granted*** - you must sign and return applicable easement documents to your Right-of-Way agent
- ***Site is ready for utility construction***

A scheduled in-service date will be provided once these requirements have been met.

It is important to keep in mind that the terms and conditions of utility service, per our tariffs, require that you provide adequate space and an easement on your property for all gas and electric facilities required to serve your project, including but not limited to gas and electrical lines and meters, transformers, and pedestals. General guidelines for these requirements can be found at Site Requirements. https://www.xcelenergy.com/staticfiles/xe-responsive/Admin/Managed Documents & PDFs/Xcel-Energy-Standard-For-Electric-Installation-and-Use.pdfEasement requirements can be found at Utility Design and Layout.

Xcel Energy looks forward to working with you on your project and if I can be of further assistance, please contact me at the phone number or email listed below.

Sincerely,

Samantha Wakefield
Xcel Energy Planner

Mailing address: Public Service Company of Colorado
1995 Howard Ave
Rifle, CO 81650

Version November 1, 2019

NOTICE OF PUBLIC HEARING
Town of New Castle

Due to concerns related to COVID-19, this meeting will be held as a virtual meeting only. The public is invited to attend by computer or telephone.

Date: May 13, 2020

Time: 7:00 PM

Place of hearing: **To join by computer, smart phone or tablet:**
https://us02web.zoom.us/j/7096588400

To Telephone into the meeting:
Please call: 1-346-248-7799
Meeting ID: 709 658 8400

Public body conducting hearing: Planning & Zoning Commission

Brief description application: Combined Preliminary/Final Application for Subdivision and PUD Development Plans in Castle Valley Ranch, Filing 11

Legal description: Town of New Castle, Garfield County, State of Colorado:

- **Parcel A:** A PARCEL OF LAND SITUATE IN THE NE1/4 SECTION 31 AND THE NW1/4 SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M., COUNTY OF GARFIELD, STATE OF COLORADO, SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE WEST 1/16 CORNER BETWEEN SAID SECTIONS 29 AND 32 A REBAR AND ALUMINUM CAP LS NO. 36572 SET IN PLACE; THENCE S 01° 19' 34" E 1570.62 FEET TO A POINT ON THE SOUTHERLY RIGHT OF WAY OF LINE CASTLE VALLEY BOULEVARD, AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE RECORDED JANUARY 9, 2001 UNDER RECEPTION NO. 574735, ALSO BEING A POINT ON THE EASTERLY BOUNDARY LINE OF CASTLE VALLEY RANCH PUD AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE RECORDED AUGUST 10, 1983 UNDER RECEPTION NO. 344590 THE TRUE POINT OF BEGINNING; THENCE DEPARTING SAD RIGHT OF WAYS 01°19' 34" E AND ALONG SAID EASTERLY BOUNDARY LINE 1066.16 FEET TO A POINT ON THE SOUTHERLY BOUNDARY LINE OF SAID CASTLE VALLEY RANCH, P.U.D.; THENCE ALONG SAID SOUTHERLY BOUNDARY LINE THE FOLLOWING FOUR (4) COURSES: 1. N 89° 40' 24" W 1195.15 FEET; 2. N 00° 19' 36" E 120.00 FEET; 3. N 89° 40' 24" W 180.00 FEET; 4. N 00° 05'00" W 210.20 FEET; THENCE DEPARTING SAID SOUTHERLY BOUNDARY LINE N 00° 05'00" W 983.59 FEET; THENCE S 89° 56' 5" W 552.43 FEET TO A POINT ON THE EASTERLY BOUNDARY LINE OF CASTLE VALLEY RANCH, PA19A AND PA19B AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE RECORDED NOVEMBER 29, 2005 UNDER RECEPTION NO. 687288; THENCE N 40° 33' 51" E ALONG SAID EASTERLY BOUNDARY LINE 283.40 FEET; THENCE CONTINUING ALONG SAD EASTERLY BOUNDARY LINE N 55° 43' 05" E 455.98 FEET TO A POINT ON SAID SOUTHERLY RIGHT OF WAY LINE OF CASTLE VALLEY BOULEVARD; THENCE DEPARTING SAD EASTERLY BOUNDARY LINE AND ALONG SAID SOUTHERLY RIGHT OF WAY LINE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 862,01 FEET; AN ARC LENGTH OF 591.51 FEET (CHORD BEARS S61° 39' 09" E

579.98 FEET); THENCE CONTINUING ALONG SAID SOUTHERLY RIGHT OF WAY LINE THE FOLLOWING SEVEN (7) COURSES: 1.S 81° 18' 39" E 261.25 FEET; 2. ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 719.98 FEET, AN ARC LENGTH OF 342.58 FEET (CHORD BEARS 5 67° 40' 47" E 339.36 FEET); 3. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 115.42 FEET, AN ARC LENGTH OF 19.02 FEET (CHORD BEARS S 14° 30' 47" E 19.00 FEET); 4. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 82.00 FEET, AN ARC LENGTH OF 110.68 FEET (CHORD BEARS S 48° 27' 33" E 102.47 FEET); 5. ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT HAVING A RADIUS OF 115.42 FEET, AN ARC LENGTH OF 20.06 FEET (CHORD BEARS S 82° 08' 49" E 20.03 FEET); 6. ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 719.98 FEET, AN ARC LENGTH OF 57.30 FEET (CHORD BEARS S 41° 01' 02" E 57.29 FEET); 7. S 38° 44' 14" E 193.94 FEET TO THE POINT OF BEGINNING.

- **Parcel B:** A PARCEL OF LAND SITUATE IN THE NE1/4 SECTION 31, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M. COUNTY OF GARFIELD, STATE OF COLORADO, SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE WEST 1/16 CORNER BETWEEN SAID SECTIONS 29 AND 32, A REBAR AND ALUMINUM CAP LS NO. 36572 SET IN PLACE; THENCE S29° 45' 20" W 2647.04 FEET TO A POINT ON THE SOUTHERLY BOUNDARY LINE OF CASTLE VALLEY RANCH, P.U.D. AS FLED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE RECORDED AUGUST 10, 1983 UNDER RECEPTION NO. 344590, THE TRUE POINT OF BEGINNING; THENCE ALONG SAID SOUTHERLY BOUNDARY LINE THE FOLLOWING FOUR (4) COURSES: 1. N 89° 50' 34" W 450.00 FEET; 2. N 00° 09' 26" E 75.00 FEET; 3, N 89° 50' 34" W 275.00 FEET; 4, N 000 09' 26" € 150.00 FEET; THENCE DEPARTING SAID SOUTHERLY BOUNDARY LINE N00° 47' 28" W 548.03 FEET TO A POINT ON THE SOUTHERLY BOUNDARY LINE OF CASTLE VALLEY RANCH, PA 19A & WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE RECORDED NOVEMBER 29, 2005 UNDER RECEPTION NO. 687288; THENCE ALONG SAID SOUTHERLY BOUNDARY LINE N 40° 33' 51" E 273.86 FEET; THENCE DEPARTING SAID SOUTHERLY BOUNDARY LINE N 89° 56' 25" E 552.43 FEET; THENCE S 00° 0500" E 983,59 FEET TO THE POINT OF BEGINNING (a/k/a Assessor Account No. R043084.)

Common address or Description:	13.538 acres east of S. Wild Horse Dr. (CVR Filing 8) & south of Castle Valley Blvd
Applicant:	CVR Investors, Inc. and its assigns
Landowner:	CVR Investors, Inc.

The complete application is available at the Town Clerk's office at 450 West Main Street, P. O. Box 90, New Castle, CO 81647. All interested persons are invited to appear and state their views, protests or objections. If you cannot appear personally at such hearing, then you are urged to state your views by letter.

Garfield County Land Explorer

Parcel	Physical Address	Owner	Account Num	Mailing Address
212331100002	Not available NEW CASTLE	CVR INVESTORS INC	R043084	5282 RED PASS WAY CASTLE ROCK, CO 80108
212331101001	Not available NEW CASTLE	GARFIELD COUNTY	R380315	108 8TH STREET, SUITE 213 GLENWOOD SPRINGS, CO 81601-3363
212331101002	Not available NEW CASTLE	GELINEAU, TERI N	R380030	714 BENNETT AVENUE GLENWOOD SPRINGS, CO 81601
212331101005	644 E MAIN ST NEW CASTLE	GELINEAU, TERI N	R380200	714 BENNETT AVENUE GLENWOOD SPRINGS, CO 81601
212331101006	Not available NEW CASTLE	MCCULLOUGH, ROBERT B	R380061	696 E MAIN STREET NEW CASTLE, CO 81647
212331101007	640 E MAIN ST NEW CASTLE	ROBERTS, CALVIN D & PATRICIA A	R380062	1655 COUNTY ROAD 247 NEW CASTLE, CO 81647
212331102010	Not available NEW CASTLE	CALLIES, STANLEY & CHASTAN, MARIAH	R380271	116 NORTH D AVENUE NEW CASTLE, CO 81647
212331102012	116 N D AVE NEW CASTLE	CALLIES, STANLEY & CHASTAN, MARIAH	R380178	116 NORTH D AVENUE NEW CASTLE, CO 81647
212331102014	586 E MAIN ST NEW CASTLE	JERKUNICA PROPERTIES LLC	R082588	0262 S BILL CREEK ROAD CARBONDALE, CO 81623
212331102015	572 E MAIN ST NEW CASTLE	TREVINO, MELINDA J & GABRIEL SR	R082589	572 E MAIN STREET NEW CASTLE, CO 81647
212331162001	16 KIT CARSON PEAK CT NEW CASTLE	WILSON, DANE BRANDON & KENDRA JONES	R042930	16 KIT CARSON PEAK COURT NEW CASTLE, CO 81647
212331162025	538 S WILDHORSE DR NEW CASTLE	NEW CASTLE HOMES LLC	R042954	3768 HIGHWAY 82 #101 GLENWOOD SPRINGS, CO 81601
212331162026	526 S WILDHORSE DR NEW CASTLE	NEW CASTLE HOMES LLC	R042955	3768 HIGHWAY 82 #101 GLENWOOD SPRINGS, CO 81601
212331162027	520 S WILDHORSE DR NEW CASTLE	NEW CASTLE HOMES LLC	R042956	3768 HIGHWAY 82 #101 GLENWOOD SPRINGS, CO 81601
212331162028	510 S WILDHORSE DR NEW CASTLE	FLAHERTY, KENT & CINDY	R042957	510 S WILDHORSE DRIVE NEW CASTLE, CO 81647
212331162029	501 S WILDHORSE DR NEW CASTLE	SHELTON, WAYNE & VIRGINIA	R042958	501 S WILD HORSE DRIVE NEW CASTLE, CO 81647
212331162030	507 S WILD HORSE DR NEW CASTLE	SCHEBERLE, STEVEN W & DENISE L	R042959	507 S WILD HORSE DRIVE NEW CASTLE, CO 81647
212331162031	513 S WILD HORSE DR NEW CASTLE	SCHWENK, THOMAS & KAREN	R042960	513 SOUTH WILDHORSE DRIVE NEW CASTLE, CO 81647
212331162032	519 S WILD HORSE DR NEW CASTLE	KIM, ELIS	R042961	3120 BLAKE AVENUE #D GLENWOOD SPRINGS, CO 81601
212331162033	523 S WILD HORSE DR NEW CASTLE	HERNANDEZ, VICTOR & MARIA	R042962	523 S WILD HORSE DRIVE NEW CASTLE, CO 81647
212331162034	529 S WILD HORSE DR NEW CASTLE	MEEKER, DAVID	R042963	PO BOX 10926 ASPEN, CO 81612
212331162035	533 S WILD HORSE	ORTEGA, OTONIEL & VICTORIA	R042964	533 S WILD HORSE DRIVE

Parcel	Physical Address	Owner	Account Num	Mailing Address
212332301001	Not available NEW CASTLE	KITCHEN, DEAN	R130318	PO BOX 228 NEW CASTLE, CO 81647
212332301002	230 S E AVE NEW CASTLE	MCCUNE, BARBARA CEBULA	R130319	PO BOX 182 NEW CASTLE, CO 81647-0182
212332302001	700 BURNING MOUNTAIN AVE NEW CASTLE	BAILIE, ROBERT C LIVING TRUST	R790003	3001 HOWARD AVENUE RIFLE, CO 81650
212332302002	702 BURNING MOUNTAIN AVE NEW CASTLE	TORRES, RAQUEL & VEGA TORRES, JOSE HERNAN	R790004	PO BOX 1791 CARBONDALE, CO 81623
212332302003	704 BURNING MOUNTAIN AVE NEW CASTLE	HURTADO, JOSE M & URENO, AMPARO	R790005	1900 WILLITS LANE NO 25 BASALT, CO 81621
212332302065	Not available NEW CASTLE	NEW CASTLE, TOWN OF	R790067	PO BOX 90 NEW CASTLE, CO 81647-0166
212332302066	Not available NEW CASTLE	NEW CASTLE, TOWN OF	R006618	PO BOX 90 NEW CASTLE, CO 81647-0166
212332304009	Not available NEW CASTLE	NEW CASTLE, TOWN OF	R130402	PO BOX 90 NEW CASTLE, CO 81647-0166
ROW	Not available null			
ROW	Not available null			
ROW	Not available null			
ROW	Not available null			

AFFIDAVIT AS TO NOTICE OF PUBLIC HEARING

I, AARON ATKINSON, do hereby certify that pursuant to ordinances of the Town of New Castle, Colorado, I provided notice of a public hearing before the New Castle Planning Commission/Town Council on MAY 13, 2020 regarding a DEVELOPMENT application by doing the following:

1. At least fifteen (15) days prior to such hearing, I sent a copy of the **attached** Notice of Public Hearing by certified mail to the owners of all property within two hundred fifty (250) feet of the subject property and to the Town of New Castle.

2. If required by Chapter 16.10 of the new Castle Municipal Code, at least thirty (30) days prior to such hearing, I sent a copy of the **attached** Notice of Public Hearing by certified mail to the owners of mineral estates who have requested notification with respect to the subject property at the Garfield County Clerk and Recorder.

3. At least fifteen (15) days prior to such hearing, I posted notice of the hearing on the property on a sign approved by the Town at least twenty-two (22) inches wide, twenty-six (26) inches high, with letters at least one (1) inch in height. The sign was posted so that it was visible from a public street.

4. At least (15) days prior to such hearing, the **attached** Notice of Public Hearing was published on the Town's website.

Signature

STATE OF COLORADO)
) ss.
COUNTY OF)

Subscribed and sworn to before me this 1st day of May, 2020, by Aaron Atkinson.

Witness my hand and official seal.

Notary Public
My commission expires: 8/25/21

JOHN T SNOW
NOTARY PUBLIC - STATE OF COLORADO
Notary ID 20054033470
My Commission Expires 8/25/2021

AGREEMENT TO PAY CONSULTING FEES AND EXPENSES

It is the policy of the Town of New Castle that all land use applications must be filed in the Office of the Town Clerk to receive formal consideration. Please refer to the Town Clerk's Office for all applicable procedures.

However, the Town encourages land use applicants to consult informally with members of the Town Staff, including outside consultants, prior to filing applications if the applicant has questions regarding areas within Staff members' particular expertise; PROVIDED THAT THE POTENTIAL APPLICANT AGREES TO REIMBURSE THE TOWN FOR ALL FEES AND EXPENSES RELATING TO SUCH INFORMAL MEETINGS.

The Town employs outside consultants for engineering, surveying, planning, and legal advice. These consultants bill the Town on an hourly basis as well as for expenses including but not limited to copies, facsimile transmissions, and long distance telephone calls.

It is the Town's policy that all persons wishing to hold informal meetings with members of the Town Staff acknowledge responsibility for all fees and expenses charged by outside consultants by signing this Agreement below.

I acknowledge and agree to pay the Town of New Castle all actual costs incurred by the Town in relation to legal, engineering, surveying, planning, or other services performed by consultants to the Town as a result of such consultants' review and comment upon, or other services related to, land use proposals and/or applications proposed by me or on my behalf, regardless of whether or not such application is formally filed with the Town. Interest shall be paid at the rate of 1.5% per month on all balances not paid within thirty (30) days of the date of the statement. In the event the Town is forced to pursue collection of any amounts due and unpaid, the Town shall be entitled to collect all costs of collection in addition to the amount due and unpaid, including but not limited to reasonable attorney's fees and costs.

SO AGREED this 10th day of February, 2020.

J. Aaron Atkinson
Applicant (Print Name)

J Aaron
Signature

303-549-1916
Telephone

5282 Red Pass Way, Castle Rock, CO 80108
Mailing Address

CVR Investors, Inc.
Property Owner

Mailing Address If Different From Above

Authorized Representative
Relationship to Applicant or Potential Applicant

Type of application: Subdivision and PUD

Property description: See Attached

Land Title
GUARANTEE COMPANY
Since 1967

Land Title Guarantee Company
Customer Distribution

PREVENT FRAUD - Please remember to call a member of our closing team when initiating a wire transfer or providing wiring instructions.

Order Number: **ABS63014515** Date: **01/10/2020**

Property Address: **TBD NEW CASTLE, NEW CASTLE, CO 81647**

PLEASE CONTACT YOUR CLOSER OR CLOSER'S ASSISTANT FOR WIRE TRANSFER INSTRUCTIONS

For Closing Assistance	For Title Assistance
	Melissa Schroder 5975 GREENWOOD PLAZA BLVD GREENWOOD VILLAGE, CO 80111 (303) 270-0438 (Work) mschroder@ltgc.com

Seller/Owner
HACKSTAFF & SNOW LLC
Attention: CVR INVESTERS C/O J AARON ATKINSON
1601 BLAKE ST #310
DENVER, CO 80202
(303) 534-4317 (Work)
(303) 534-4309 (Work Fax)
aa@hackstafflaw.com
Delivered via: Electronic Mail

ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule A

Order Number: ABS63014515

Property Address:

TBD NEW CASTLE, NEW CASTLE, CO 81647

1. **Effective Date:**

   12/06/2019 at 5:00 P.M.

2. **Policy to be Issued and Proposed Insured:**

   "TBD" Commitment $0.00
   Proposed Insured:
   A BUYER TO BE DETERMINED

3. **The estate or interest in the land described or referred to in this Commitment and covered herein is:**

   A Fee Simple

4. **Title to the estate or interest covered herein is at the effective date hereof vested in:**

   CVR INVESTORS, INC., A COLORADO CORPORATION

5. **The Land referred to in this Commitment is described as follows:**

PARCEL A:

A PARCEL OF LAND SITUATE IN THE NE1/4 SECTION 31, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M. COUNTY OF GARFIELD, STATE OF COLORADO, SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE WEST 1/16 CORNER BETWEEN SAID SECTIONS 29 AND 32, A REBAR AND ALUMINUM CAP LS NO. 36572 SET IN PLACE;
THENCE S29° 45' 20" W 2647.04 FEET TO A POINT ON THE SOUTHERLY BOUNDARY LINE OF CASTLE VALLEY RANCH, P.U.D. AS FLED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE RECORDED AUGUST 10, 1983 UNDER RECEPTION NO. 344590, THE TRUE POINT OF BEGINNING;
THENCE ALONG SAID SOUTHERLY BOUNDARY LINE THE FOLLOWING FOUR (4) COURSES:
1. N 89° 50' 34" W 450.00 FEET;
2. N 00° 09' 26" E 75.00 FEET;
3, N 89° 50' 34" W 275.00 FEET;
4, N 000 09' 26" € 150.00 FEET;
THENCE DEPARTING SAID SOUTHERLY BOUNDARY LINE N00° 47' 28" W 548.03 FEET TO A POINT ON THE SOUTHERLY BOUNDARY LINE OF CASTLE VALLEY RANCH, PA 19A & WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE RECORDED NOVEMBER 29, 2005 UNDER RECEPTION NO. 687288;
THENCE ALONG SAID SOUTHERLY BOUNDARY LINE N 40° 33' 51" E 273.86 FEET;
THENCE DEPARTING SAID SOUTHERLY BOUNDARY LINE N 89° 56' 25" E 552.43 FEET;
THENCE S 00° 0500" E 983,59 FEET TO THE POINT OF BEGINNING. COUNTY OF GARFIELD STATE OF COLORADO.

PARCEL B:

A PARCEL OF LAND SITUATE IN THE NE1/4 SECTION 31 AND THE NW1/4 SECTION 32, TOWNSHIP 5 SOUTH, RANGE 90 WEST OF THE 6TH P.M., COUNTY OF GARFIELD, STATE OF COLORADO, SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE WEST 1/16 CORNER BETWEEN SAID SECTIONS 29 AND 32 A REBAR AND ALUMINUM CAP LS NO. 36572

RECORDER'S OFFICE RECORDED JULY 18, 2003 UNDER RECEPTION NO. 632116, THE TRUE POINT OF BEGINNING;
THENCE DEPARTING SAID WESTERLY LINE S 90° 00' 00" W 34.26 FEET;
THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 300.00 FEET; AN ARC LENGTH OF 123.32 FEET, CHORD REARS S 78° 13' 25" W 122.46 FEET;
THENCE S66° 26' 50" W 88.64 FEET;
THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 300.00 FEET, AN ARC LENGTH OF 180.86 FEET, CHORD BEARS S83° 43' 05" W 178.13 FEET;
THENCE N 79° 00' 40" W 277.49 FEET;
THENCE ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 300.00 FEET, AN ARC LENGTH OF 273.25 FEET, CHORD BEARS N 52° 55' 05" W 263.90 FEET;
THENCE N 26° 49' 30" W 358.53 FEET;
THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 175.00 FEET; AN ARC LENGTH OF 218.29 FEET, CHORD BEARS N 62° 33' 33" W 204.41 FEET;
THENCE S 81° 42' 24" W 142.08 FEET;
THENCE S 08° 42' 12" E 51.58 FEET;
THENCE ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 855.84 FEET, AN ARC LENGTH OF 209.29 FEET, CHORD BEARS S 15° 42' 32" E 208.77 FEET;
THENCE S 65° 53' 03" W 97.34 FEET;
THENCE S 81° 23' 34" W 266.32 FEET;
THENCE S 51° 51' 16" W 126.84 FEET;
THENCE S 36° 47' 12" W 88.30 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF CASTLE VALLEY BOULEVARD AS FILED WITH THE GARFIELD COUNTY CLERK AND RECORDERS OFFICE RECORDED JANUARY 9, 2001 UNDEER RECEPTION NO. 574735;
THENCE ALONG SAID NORTHERLY RIGHT OF WAY THE FOLLOWING NINE (9) COURSES:
1. S 34° 40' 33" E 927.02 FEET;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 762.01 FEET, AN ARC LENGTH OF 620.22 FEET, CHORD BEARS S 57° 59' 36" E 603.25 FEET;
3. S 81° 18' 39" E 261.25 FEET;
4. ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 819.98 FEET, AN ARC LENGTH OF 395.62 FEET, CHORD BEARS S 67° 29' 21" E 391.79 FEET;
5. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 140.42 FEET, AN ARC LENGTH OF 11.84 FEET, CHORD BEARS N 87° 15' 43" E 11.84 FEET:
6. ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 86.00 FEET, AN ARC LENGTH OF 136.02 FEET; CHORD BEARS S 49° 50' 45" E 122.28 FEET;
7. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 170.42 FEET, AN ARC LENGTH OF 16.26 FEET, CHORD BEARS S 07° 16' 18" E 16.26 FEET;
8. ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 819.98 FEET, AN ARC LENGTH OF 70.54 FEET, CHORD BEARS S 41° 12' 06" E 70.52 FEET;
9. S 38° 44' 14" E 63.19 FEET TO A POINT ON SAID WESTERLY LINE OF LAKOTA CANYON RANCH, FIRST AMENDED PLAT FILING NO. 1 AS FLED WITH THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE RECORDED JULY 18, 2003 UNDER RECEPTION NO. 632116 UNDER RECEPTION NO. 632116;
THENCE ALONG SAID WESTERLY LINE THE FOLLOWING NINE (9) COURSES:
1. N 01° 19' 33" W 284.64 FEET;
2. N 00° 50' 46" W 298.08 FEET;
3. N 01° 24' 24" W 405.00 FEET;
4, N 01° 13' 24" W 135.00 FEET;
5. N 03° 05' 23" E 23.82 FEET:
6, N 01° 46' 46" W 247.13 FEET;
7. S 88° 47' 17" W 2.05 FEET;

WILD HORSE DRIVE RIGHT OF WAY AS DESCRIBED IN THE SPECIAL WARRANTY DEED RECORDED SEPTEMBER 25, 2007 UNDER RECEPTION NO. 733780;
THENCE THE FOLLOWING THREE (3) COURSES ALONG SAID NORTH WILD HORSE DRIVE;
1. N 08° 42' 12" W A DISTANCE OF 17.22 FEET;
2. THENCE 390.97 FEET ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 668.49 FEET, A CENTRAL ANGLE OF 33° 30' 34" AND A SUBTENDING CHORD BEARING N 08° 03' 05" E A DISTANCE OF 385.42 FEET;
3. THENCE 228.11 FEET ALONG THE ARC OF A REVERSE CURVE HAVING A RADIUS OF 491.25 FEET, A CENTRAL ANGLE OF 26° 36' 20" AND SUBTENDING CHORD BEARING N 11° 30' 11" E A DISTANCE OF 226.07 FEET TO A POINT OF NON-TANGENCY;
THENCE 103.99 FEET ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 250.00 FEET, A CENTRAL ANGLE OF 23°50'00" AND A SUBTENDING CHORD BEARING S 79° 12' 35" E A DISTANCE OF 103.24 FEET;
THENCE S 67° 17' 36" E A DISTANCE OF 131.42 FEET;
THENCE S 30° 00' 58" W A DISTANCE OF 50.41 FEET;
THENCE S 18° 54' 59" W A DISTANCE OF 221.52 FEET;
THENCE S16° 07' 55" W A DISTANCE OF 50.00 FEET;
THENCE 104.09 FEET ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 970.00 FEET, A CENTRAL ANGLE OF 6° 08' 55" AND A SUBTENDING CHORD BEARING S 11° 34' 51" W A DISTANCE OF 104.04 FEET TO A POINT OF NON-TANGENCY;
THENCE S 71° 43' 03" E A DISTANCE OF 57.57 FEET;
THENCE S 63° 30' 38" E A DISTANCE OF 55.33 FEET;
THENCE S 56° 40' 07" E A DISTANCE OF 55.13 FEET;
THENCE S 44°48' 48" E A DISTANCE OF 174.82 FEET TO A POINT OF NON-TANGENCY;
THENCE 30.23 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 275.00 FEET, A CENTRAL ANGLE OF 6° 17' 51" AND A SUBTENDING CHORD BEARING N 42° 06' 34" E A DISTANCE OF 30,21 FEET;
THENCE S 51° 02' 22" E A DISTANCE OF 247.25 FEET TO A POINT OF NON-TANGENCY;
THENCE 102.92 FEET ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 481.00 FEET, A CENTRAL ANGLE OF 12° 15' 34" AND SUBTENDING CHORD BEARING N 54° 54' 14" E A DISTANCE OF 102.72 FEET;
THENCE 122.69 FEET ALONG THE ARC OF A REVERSE CURVE HAVING A RADIUS OF 219.00 FEET, A CENTRAL ANGLE OF 32° 05' 53" AND A SUBTENDING CHORD BEARING N 44° 59' 05" E A DISTANCE OF 121.09 FEET;
THENCE N 28° 56' 08" E A DISTANCE OF 541.68 FEET;
THENCE N 14° 00' 12" E A DISTANCE OF 22.45 FEET; T
HENCE N 00° 55' 44" W A DISTANCE OF 289.40 FEET;
THENCE N 32° 41' 48" W A DISTANCE OF 88.46 FEET;
THENCE N 00° 02' 34" W A DISTANCE OF 167,50 FEET;
THENCE N 54° 50' 38" E A DISTANCE OF 173.10 FEET;
THENCE S 89° 54' 27" E A DISTANCE OF 116.87 FEET TO THE POINT OF BEGINNING, COUNTY OF GARFIELD, STATE OF COLORADO.

LESS AND EXCEPT THE FOLLOWING PROPERTIES FROM ALL OF THE ABOVE:

LOTS 1 THROUGH 19 AND OPEN SPACE,
CASTLE VALLEY RANCH SUBDIVISION PA12, FILING 9,
TOWN OF NEW CASTLE, COUNTY OF GARFIELD, STATE OF COLORADO, ACCORDING TO THE PLAT THEREOF RECORDED SEPTEMBER 25, 2007 UNDER RECEPTION NO. 733785.

ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule B, Part I

(Requirements)

Order Number: ABS63014515

All of the following Requirements must be met:

This proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

Pay the agreed amount for the estate or interest to be insured.

Pay the premiums, fees, and charges for the Policy to the Company.

Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.

1. RELEASE OF DEED OF TRUST DATED JANUARY 03, 2018 FROM CVR INVESTORS, INC., A COLORADO CORPORATION TO THE PUBLIC TRUSTEE OF GARFIELD COUNTY FOR THE USE OF ANB BANK TO SECURE THE SUM OF $2,500,000.00 RECORDED JANUARY 03, 2018, UNDER RECEPTION NO. 901825.

   SAID DEED OF TRUST WAS FURTHER SECURED IN ASSIGNMENT OF RENTS RECORDED JANUARY 03, 2018, UNDER RECEPTION NO. 901826.

2. WARRANTY DEED FROM CVR INVESTORS, INC., A COLORADO CORPORATION TO A BUYER TO BE DETERMINED CONVEYING SUBJECT PROPERTY.

   NOTE: ADDITIONAL REQUIREMENTS OR EXCEPTIONS MAY BE NECESSARY WHEN THE BUYERS NAMES ARE ADDED TO THIS COMMITMENT. COVERAGES AND/OR CHARGES REFLECTED HEREIN, IF ANY, ARE SUBJECT TO CHANGE UPON RECEIPT OF THE CONTRACT TO BUY AND SELL REAL ESTATE AND ANY AMENDMENTS THERETO.

ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule B, Part II

(Exceptions)

Order Number: ABS63014515

14. RIGHT OF WAY FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES AS RESERVED IN UNITED STATES PATENT RECORDED NOVEMBER 28, 1941, IN BOOK 73 AT PAGE 213.
15. AN UNDIVIDED ONE-HALD INTEREST IN ALL OIL, GAS AND OTHER MINERALS AS DESCRIBED IN INSTRUMENT RECORDED MARCH 25, 1980 IN BOOK 545 AT PAGE 681 ANY AND ALL ASSIGNMENTS THEREOF OR INTERESTS THEREIN
16. AN UNDIVIDED ONE-HALF INTEREST OF ALL OIL, GAS AND OTHER MINERALS AS RESERVED IN INSTRUMENT RECORDED JULY 14, 1964 IN BOOK 359 AT PAGE 328 ANY AND ALL ASSIGNMENTS THEREOF OR INTERESTS THEREIN
17. AN UNDIVIDED ONE-HALF INTEREST IN ALL OIL, GAS AND OTHER MINERALS AS RESERVED IN INSTRUMENT RECORDED MARCH 13, 1964 IN BOOK 356 AT PAGE 319 ANY AND ALL ASSIGNMENTS THEREOF OR INTERESTS THEREIN
18. TERMS, CONDITIONS AND PROVISIONS OF RIGHT OF WAY AS RESERVED IN PATENTS RECORDED FEBRUARY 17, 1896 IN BOOK 12 AT PAGE 407.
19. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT RECORDED JANUARY 07, 1982 IN BOOK 590 AT PAGE 65.
20. MATTERS AS SHOWN ON THE MAP OF CASTLE VALLEY RANCH RECORDED AUGUST 10, 1983 UNDER RECEPTION NO. 344590 AS AMENDED BY AMENDED ANNEXATION AGREEMENT RECORDED MAY 30, 1989 IN BOOK 755 AT PAGE 38.
21. TERMS, CONDITIONS AND PROVISIONS OF ANNEXATION AGREEMENT RECORDED AUGUST 10, 1983 IN BOOK 632 AT PAGE 542, FIRST AMENDMENT TO ANNEXATION AGREEMENT RECORDED DECEMBER 31, 1984 IN BOOK 662 AT PAGE 243 AND AMENDED ANNEXATION AGREEMENT RECORDED MAY 30, 1989 IN BOOK 755 AT PAGE 38.
22. TERMS, CONDITIONS AND PROVISIONS OF SUBDIVISION IMPROVEMENTS AGREEMENT RECORDED AUGUST 15, 1983 IN BOOK 632 AT PAGE 951, AND AMENDMENT RECORDED MAY 30, 1989 IN BOOK 755 AT PAGE 62.
23. RESTRICTIVE COVENANTS, WHICH DO NOT CONTAIN A FORFEITURE OR REVERTER CLAUSE, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS CONTAINED IN INSTRUMENT RECORDED AUGUST 15, 1983, IN BOOK 632 AT PAGE 961.
24. TERMS, CONDITIONS AND PROVISIONS OF SUBDIVISION IMPROVEMENTS AGREEMENT RECORDED AUGUST 03, 1984 IN BOOK 654 AT PAGE 55.
25. TERMS, CONDITIONS AND PROVISIONS OF ORDINANCE NO. 99-8 RECORDED JUNE 08, 1999 IN BOOK 1133 AT PAGE 632.
26. TERMS, CONDITIONS AND PROVISIONS OF DEED OF EASEMENT RECORDED DECEMBER 21, 1999 IN BOOK 1165 AT PAGE 966.

ALTA COMMITMENT

Old Republic National Title Insurance Company

Schedule B, Part II

(Exceptions)

Order Number: ABS63014515

33. TERMS, CONDITIONS AND PROVISIONS OF ORDINANCE #2006-11 RECORDED AUGUST 08, 2006 IN BOOK 1829 AT PAGE 736.

34. TERMS, CONDITIONS, PROVISIONS, BURDENS, OBLIGATIONS AND EASEMENTS AS SET FORTH AND GRANTED IN DEED OF EASEMENT RECORDED MARCH 15, 2007 UNDER RECEPTION NO. 719068.

35. TERMS, CONDITIONS AND PROVISIONS OF WATER RIGHTS AGREEMENT RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE 902.

36. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN AGREEMENT REGARDING TOWN AGREEMENTS RECORDED APRIL 17, 2007 UNDER RECEPTION NO. 721296.

37. RESTRICTIVE COVENANTS, WHICH DO NOT CONTAIN A FORFEITURE OR REVERTER CLAUSE, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS CONTAINED IN INSTRUMENT RECORDED APRIL 17, 2007, IN BOOK 1915 AT PAGE 960.

38. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT REGARDING GRANT OF EASEMENT RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE 975.

39. TERMS, CONDITIONS AND PROVISIONS OF AGREEMENT REGARDING SILVERADO TRAIL RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE 987.

40. TERMS, CONDITIONS AND PROVISIONS OF EASEMENT AGREEMENT RECORDED APRIL 17, 2007 IN BOOK 1915 AT PAGE 997.

41. TERMS, CONDITIONS AND PROVISIONS OF GRADING AGREEMENT RECORDED APRIL 17, 2007 IN BOOK 1916 AT PAGE 1.

42. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN CONSTRUCTION DEED OF TRUST, SECURITY AGREEMENT AND FIXTURE FILING WITH ASSIGNMENT OF RENT, PROCEEDS AND AGREEMENTS RECORDED APRIL 17, 2007 UNDER RECEPTION NO. 721304 AND AGREEMENT REGARDING PRIORITY RECORDED APRIL 17, 2008 UNDER RECEPTION NO. 746717.

43. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN DECLARATION AND ASSIGNMENT OF RESTRICTIVE COVENANTS RECORDED APRIL 17, 2008 UNDER RECEPTION NO. 746714.

44. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN ASSIGNMENT OF DECLARANT RIGHTS UNDER SECOND AMENDMENT TO THE DECLARANT RIGHTS UNDER SECOND AMENDMENT TO THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR CASTLE VALLEY RANCH, PLANNED UNIT DEVELOPMENT, AS AMENDED AND SUPPLEMENTED RECORDED APRIL 17, 2008 UNDER RECEPTION NO. 746715.

45. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN EASEMENT AGREEMENT RECORDED APRIL 17, 2008 UNDER RECEPTION NO. 746716.

LAND TITLE GUARANTEE COMPANY
DISCLOSURE STATEMENTS

Note: Pursuant to CRS 10-11-122, notice is hereby given that:

(A) The Subject real property may be located in a special taxing district.

(B) A certificate of taxes due listing each taxing jurisdiction will be obtained from the county treasurer of the county in which the real property is located or that county treasurer's authorized agent unless the proposed insured provides written instructions to the contrary. (for an Owner's Policy of Title Insurance pertaining to a sale of residential real property).

(C) The information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder, or the County Assessor.

Note: Effective September 1, 1997, CRS 30-10-406 requires that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right and bottom margin of at least one half of an inch. The clerk and recorder may refuse to record or file any document that does not conform, except that, the requirement for the top margin shall not apply to documents using forms on which space is provided for recording or filing information at the top margin of the document.

Note: Colorado Division of Insurance Regulations 8-1-2 requires that "Every title entity shall be responsible for all matters which appear of record prior to the time of recording whenever the title entity conducts the closing and is responsible for recording or filing of legal documents resulting from the transaction which was closed". Provided that Land Title Guarantee Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception number 5 will not appear on the Owner's Title Policy and the Lenders Policy when issued.

Note: Affirmative mechanic's lien protection for the Owner may be available (typically by deletion of Exception no. 4 of Schedule B, Section 2 of the Commitment from the Owner's Policy to be issued) upon compliance with the following conditions:

(A) The land described in Schedule A of this commitment must be a single family residence which includes a condominium or townhouse unit.

(B) No labor or materials have been furnished by mechanics or material-men for purposes of construction on the land described in Schedule A of this Commitment within the past 6 months.

(C) The Company must receive an appropriate affidavit indemnifying the Company against un-filed mechanic's and material-men's liens.

(D) The Company must receive payment of the appropriate premium.

(E) If there has been construction, improvements or major repairs undertaken on the property to be purchased within six months prior to the Date of Commitment, the requirements to obtain coverage for unrecorded liens will include: disclosure of certain construction information; financial information as to the seller, the builder and or the contractor; payment of the appropriate premium fully executed Indemnity Agreements satisfactory to the company, and, any additional requirements as may be necessary after an examination of the aforesaid information by the Company.

No coverage will be given under any circumstances for labor or material for which the insured has contracted for or agreed to pay.

JOINT NOTICE OF PRIVACY POLICY OF LAND TITLE GUARANTEE COMPANY, LAND TITLE GUARANTEE COMPANY OF SUMMIT COUNTY LAND TITLE INSURANCE CORPORATION AND OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

This Statement is provided to you as a customer of Land Title Guarantee Company as agent for Land Title Insurance Corporation and Old Republic National Title Insurance Company.

We want you to know that we recognize and respect your privacy expectations and the requirements of federal and state privacy laws. Information security is one of our highest priorities. We recognize that maintaining your trust and confidence is the bedrock of our business. We maintain and regularly review internal and external safeguards against unauthorized access to your non-public personal information ("Personal Information").

In the course of our business, we may collect Personal Information about you from:

- applications or other forms we receive from you, including communications sent through TMX, our web-based transaction management system;
- your transactions with, or from the services being performed by us, our affiliates, or others;
- a consumer reporting agency, if such information is provided to us in connection with your transaction;

and

- The public records maintained by governmental entities that we obtain either directly from those entities, or from our affiliates and non-affiliates.

Our policies regarding the protection of the confidentiality and security of your Personal Information are as follows:

- We restrict access to all Personal Information about you to those employees who need to know that information in order to provide products and services to you.
- We may share your Personal Information with affiliated contractors or service providers who provide services in the course of our business, but only to the extent necessary for these providers to perform their services and to provide these services to you as may be required by your transaction.
- We maintain physical, electronic and procedural safeguards that comply with federal standards to protect your Personal Information from unauthorized access or intrusion.
- Employees who violate our strict policies and procedures regarding privacy are subject to disciplinary action.
- We regularly assess security standards and procedures to protect against unauthorized access to Personal Information.

WE DO NOT DISCLOSE ANY PERSONAL INFORMATION ABOUT YOU WITH ANYONE FOR ANY PURPOSE THAT IS NOT STATED ABOVE OR PERMITTED BY LAW.

Consistent with applicable privacy laws, there are some situations in which Personal Information may be disclosed. We may disclose your Personal Information when you direct or give us permission; when we are required by law to do so, for example, if we are served a subpoena; or when we suspect fraudulent or criminal activities. We also may disclose your Personal Information when otherwise permitted by applicable privacy laws such as, for example, when disclosure is needed to enforce our rights arising out of any agreement, transaction or relationship with you.

Our policy regarding dispute resolution is as follows: Any controversy or claim arising out of or relating to our privacy policy, or the breach thereof, shall be settled by arbitration in accordance with the rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

(f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I—Requirements have been met to the satisfaction of the Company.
(g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

6. **LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT**
   (a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
   (b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.
   (c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
   (d) The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
   (e) Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
   (f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. **IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT**

   The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. **PRO-FORMA POLICY**

   The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. **ARBITRATION**

   The Policy contains an arbitration clause. All arbitrable matters when the Proposed Policy Amount is $2,000,000 or less shall be arbitrated at the option of either the Company or the Proposed Insured as the exclusive remedy of the parties. A Proposed Insured may review a copy of the arbitration rules at http://www.alta.org/arbitration.

IN WITNESS WHEREOF, Land Title Insurance Corporation has caused its corporate name and seal to be affixed by its duly authorized officers on the date shown in Schedule A to be valid when countersigned by a validating officer or other authorized signatory.

Issued by:
Land Title Guarantee Company
3033 East First Avenue Suite 600
Denver, Colorado 80206
303-321-1880

CB Rants

Senior Vice President

OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY
A Stock Company
400 Second Avenue South, Minneapolis, Minnesota 55401
(612) 371-1111

By C Monroe *President*

Attest David Wold *Secretary*

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by Land Title Insurance Corporation. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I—Requirements; and Schedule B, Part II—Exceptions; and a counter-signature by the Company or its issuing agent that may be in electronic form.

A.G. Soils Report

A.G. Wassenaar, Inc.
Geotechnical and Environmental Consultants
2180 South Ivanhoe Street, Suite 6
Denver, Colorado 80222-5710
303-759-8100 Fax 303-756-2820
www.agwassenaar.com

September 27, 2006

Village Homes of Colorado, Inc.
100 Inverness Terrace East, Suite 200
Englewood, Colorado 80112

Attention: Mr. Ron Hettinger

Subject: Addendum to the Preliminary Geotechnical Study
Castle Valley Ranch
West of Castle Valley Boulevard and Clubhouse Drive
New Castle, Colorado
Project Number 90114-A

Reference: "Preliminary Geotechnical Study
Castle Valley Ranch
West of Castle Valley Boulevard and Clubhouse Drive
New Castle, Colorado"
Project Number 90114
Dated June 12, 2006
Prepared by A. G. Wassenaar, Inc.

Dear Mr. Hettinger:

We have conducted additional field explorations for the proposed development at the subject site. Our summary of the data collected during our field and laboratory work and our analysis, opinions, and conclusions are presented below. The purpose of our study is to determine the excavatability of the sandstone and to determine the extent of collapsing soils in the proposed development.

In general, the subsurface materials encountered consist of topsoil, fill, sandy clay, interbedded clay and sand, and gravel, cobble, and boulders overlying bedrock. Claystone, sandstone, and/or shale bedrock was encountered at depths of 5 to 21 feet below the ground surface in all of the test borings. Ground water was not encountered during this study. Test Boring 23 refused at a depth of 16 feet.

Field Explorations

Subsurface conditions were explored by drilling six test borings and excavating three test pits at the approximate locations indicated on Figure 1. The borings were advanced using a 4-inch diameter, continuous flight auger powered by a truck-mounted, CME 45 drilling rig. At frequent intervals, samples of the subsurface materials were taken using a Modified California sampler which is driven into the soil by dropping a 140-pound hammer through a free fall of 30 inches. The Modified California sampler is a 2.5-inch outside diameter by 2-inch inside diameter device. The

number of blows required for the sampler to penetrate 12 inches gives an indication of the consistency or relative density of the soils encountered. Results of the penetration tests and location of sampling are presented on the "Exploratory Boring Logs," Figure 2. The test pits were excavated using a hydraulic excavator. In addition to sampling and logging each boring for material types, ground water measurements were made at the time of drilling and again six days after drilling.

Laboratory Testing

Samples were returned to the laboratory where they were visually classified by a geotechnical engineer. Testing was then assigned to specific samples to evaluate their engineering properties. The laboratory tests included 14 settlement-swell tests to evaluate the effect of wetting and loading on the selected soils samples. The results of the settlement-swell tests are presented on Figures 3 through 9. In addition, a representative sample was tested for water soluble sulfates, pH, resistivity, and chlorides. The test results are summarized on Figure 2 and Table I.

Subsurface Conditions

Test Borings

The subsurface materials encountered in our test borings consisted of topsoil, fill, sandy clay, interbedded clay and sand, and gravel, cobble, and boulders overlying bedrock. Claystone, sandstone, and/or shale bedrock was encountered at depths of 5 to 21 feet below the ground surface in all of the test borings. Ground water was not encountered during this study. Test Boring 23 refused at a depth of 16 feet. A graphical depiction of the subsurface materials and ground water encountered is shown on Figure 2.

Topsoil was found in five of the six test borings. The topsoil encountered consisted of sandy clay, up to ½ foot thick, was organic and moist, and dark brown in color. The topsoil is not considered capable of supporting the structures and should be removed. Construction on topsoil is at the sole risk of the Owner.

Fill was found in one test boring (Boring 23). The fill material encountered consisted of sandy clay and was 1½ feet thick. It was compact in consistency and moist. It was mottled brown in color. This fill was placed prior to A. G. Wassenaar, Inc.'s involvement at this site. The fill was a stockpile located in the vicinity of the test boring. Construction on undocumented fill is at the sole risk of the Owner.

Slightly sandy clay was found in all of the test borings. The clay was generally stiff to very stiff, slightly moist to moist, and light brown to brown in color. It exhibited in-situ dry densities ranging from 95 to 110 pounds per cubic foot (pcf) at in-situ moisture contents ranging from 5 to 13 percent (%). The samples were visually of low plasticity. These soils exhibited compression to low swell (-1.7% to +0.4%) upon wetting and under a load of 1,000 pounds per square foot (psf). This soil is assessed to possess low expansion potential.

Interbedded clay and sand was encountered in one of the test borings. It was stiff/medium dense, moist, and brown to red brown in color. The sample was visually of low plasticity. This soil is assessed to possess low expansion potential.

Clayey gravel, cobbles, and boulders were encountered in three of the test borings. They were hard, slightly moist, mottled gray, brown to gray in color. The sample exhibited an in-situ dry density of 105 pcf at an in-situ moisture content of 9%. The samples were visually of low plasticity. These soils exhibited compression upon wetting and under a load of 1,000 psf. This soil is assessed to possess low expansion potential.

Claystone bedrock was encountered in three of the test borings. It was hard to very hard, silty, slightly sandy, iron stained, slightly moist to moist, and olive to rust in color. It exhibited in-situ dry densities of 115 to 124 pcf at in-situ moisture contents of 7 to 11%. The samples tested were of moderate plasticity. The claystone exhibited low to moderate (+0.5 to +3.3%) upon wetting and under a loading of 1,000 psf. It is considered to possess high expansion potential.

Sandstone bedrock was encountered in two of the test borings. The sandstone encountered was very hard, well cemented, silty, iron stained, slightly moist, and gray to red brown in color. The samples observed were visually of low plasticity. It is considered to possess low expansion potential.

Shale bedrock was encountered in one of the test borings. It was very hard, slightly moist, and olive in color. It was visually of low plasticity. The shale is considered to possess low expansion potential.

Interbedded claystone and shale was encountered in five of the test borings. It was very hard, slightly sandy, iron stained, slightly moist to moist, and olive to rust to brown in color. It exhibited an in-situ dry density of 108 pcf at an in-situ moisture content of 6%. The samples observed were visually of low to moderate plasticity. The interbedded claystone and shale exhibited compression (-0.9%) upon wetting and under a loading of 1,000 psf. It is considered to possess moderate expansion potential.

Test Pits

Three test pits were excavated with a light duty John Deere excavator to determine excavation difficulty. The test pits encountered up to ½ foot of topsoil over approximately 5 feet of sandy clay. Cobbles and boulders were encountered below the clay. Some of the boulders were not able to be excavated. Very hard sandstone was encountered in Test Pit 1 and the hydraulic excavator was not able to remove this material.

Summary

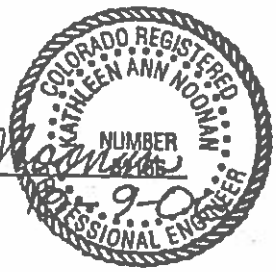
The recommendations in the referenced preliminary geotechnical study have been validated by these additional test borings and test pits. It appears that the collapsing soils may be isolated to

small pockets in the overall clay layer in the vicinity of Test Borings 23 and 24. The cobbles and boulders encountered in the test pits should be able to be excavated, and the sandstone encountered in Test Pit 1 appears to be rippable using a medium to heavy duty excavator equipped with a rock bucket. We believe that blasting should not be required.

If you have any questions regarding the contents of this letter or our analyses of the subsurface conditions which will influence the proposed development, please call us. We have appreciated the opportunity to provide this service for you.

Sincerely,

A. G. WASSENAAR, INC.



Kathleen A. Noonan, P.E.
Project Engineer

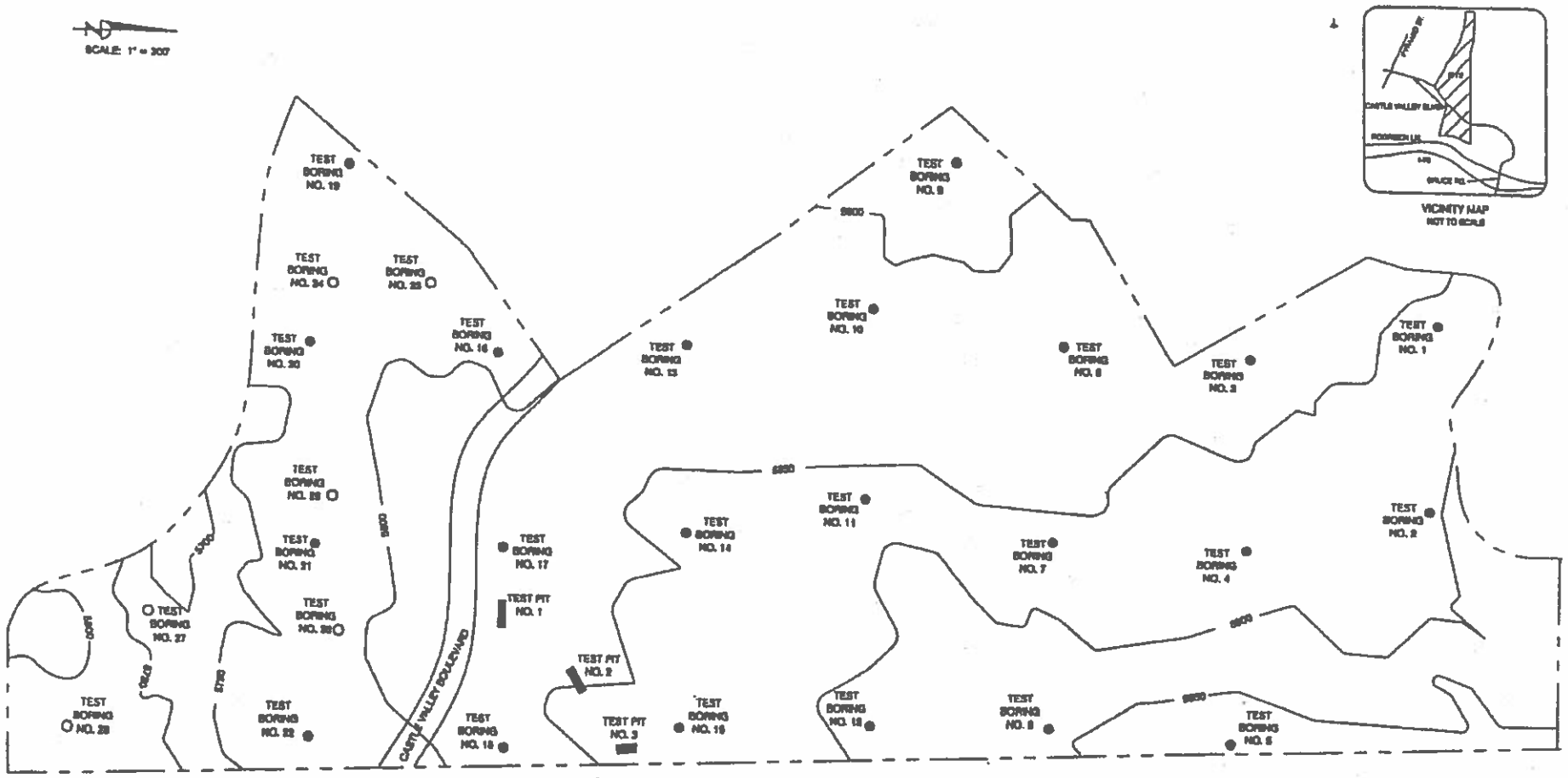
Reviewed by:

Keith D. Seaton, P.E.
Senior Engineer

KAN/KDS/kan/lia

Attachments: Figures 1 through 9, Table I

Statement of Services



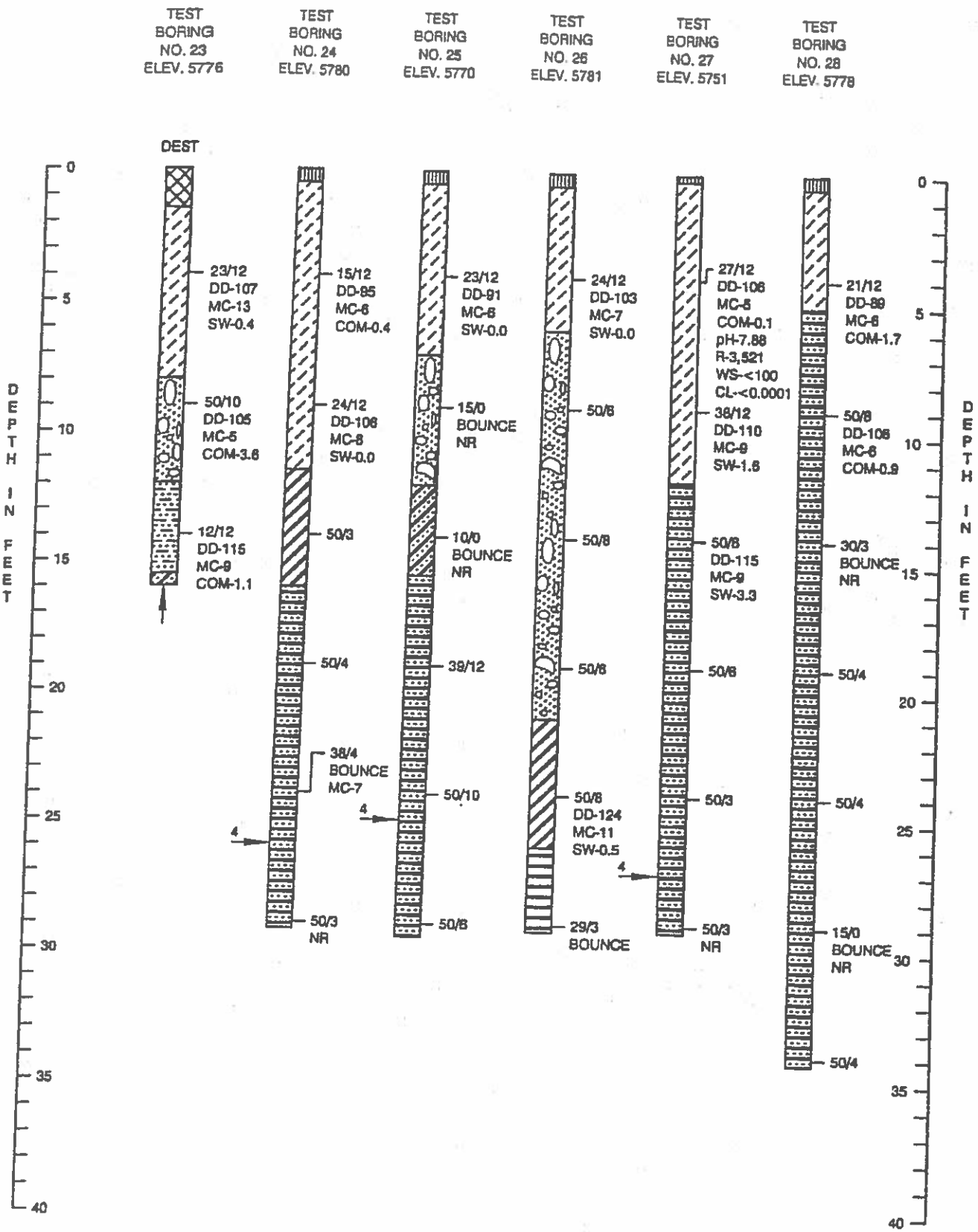
—— 5850 —— APPROXIMATE 5850-FOOT CONTOUR LINE

● INDICATES TEST BORING DRILLED DURING OUR PREVIOUS STUDY

○ INDICATES TEST BORING DRILLED FOR THIS STUDY

NOTE: ALL LOCATIONS ARE APPROXIMATE

A.G. Wassenaar, Inc.	
SITE PLAN AND VICINITY MAP	PROJECT NO. 90114-A FIGURE 1


TEST BORING NO. 23 ELEV. 5776
TEST BORING NO. 24 ELEV. 5780
TEST BORING NO. 25 ELEV. 5770
TEST BORING NO. 26 ELEV. 5781
TEST BORING NO. 27 ELEV. 5751
TEST BORING NO. 28 ELEV. 5778
DEST
23/12 DD-107 MC-13 SW-0.4
50/10 DD-105 MC-5 COM-3.6
12/12 DD-115 MC-9 COM-1.1
15/12 DD-85 MC-6 COM-0.4
24/12 DD-106 MC-8 SW-0.0
50/3
50/4
38/4 BOUNCE MC-7
50/3 NR
23/12 DD-91 MC-6 SW-0.0
15/0 BOUNCE NR
10/0 BOUNCE NR
39/12
50/10
50/6
24/12 DD-103 MC-7 SW-0.0
50/6
50/8
50/8
50/8 DD-124 MC-11 SW-0.5
29/3 BOUNCE
27/12 DD-106 MC-8 COM-0.1 pH-7.88 R-3,521 WS-<100 CL-<0.0001
38/12 DD-110 MC-9 SW-1.6
50/8 DD-115 MC-9 SW-3.3
50/6
50/3
50/3 NR
21/12 DD-89 MC-6 COM-1.7
50/8 DD-106 MC-6 COM-0.9
30/3 BOUNCE NR
50/4
50/4
15/0 BOUNCE NR
50/4
DEPTH IN FEET
0
5
10
15
20
25
30
35
40

LEGEND


TOPSOIL, CLAY, SANDY, ORGANIC, MOIST, DARK BROWN


FILL, CLAY, COMPACT, SANDY, MOIST, MOTTLED BROWN


CLAY, STIFF TO VERY STIFF, SLIGHTLY SANDY, SLIGHTLY MOIST TO MOIST, LIGHT BROWN TO BROWN


GRAVELS, COBBLES, AND BOULDERS, CLAYEY, HARD, SLIGHTLY MOIST, GRAY TO BROWN


CLAY / SAND, INTERBEDDED, STIFF / MEDIUM DENSE, MOIST, BROWN TO RED BROWN


CLAYSTONE (BEDROCK), HARD TO VERY HARD, SILTY, SLIGHTLY SANDY, IRON STAINED, SLIGHTLY MOIST TO MOIST, OLIVE TO RUST


SANDSTONE (BEDROCK), VERY HARD, WELL CEMENTED, SILTY, IRON STAINED, MOIST, RED BROWN TO GRAY


CLAYSTONE / SHALE (BEDROCK) INTERBEDDED, VERY HARD, IRON STAINED, SLIGHTLY SANDY, SLIGHTLY MOIST TO MOIST, OLIVE TO RUST TO BROWN


SHALE (BEDROCK), VERY HARD, SLIGHTLY MOIST, OLIVE

23/12 — INDICATES THAT 23 BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE A 2.5-INCH OUTSIDE DIAMETER SAMPLER 12 INCHES.

BOUNCE — INDICATES THAT THE SAMPLER BOUNCED AT THE TERMINATION OF THE DRIVE.

DEST — INDICATES THE TEST BORING WAS DESTROYED WHEN WE RETURNED TO CHECK THE WATER LEVEL.


INDICATES THE DEPTH AT WHICH THE TEST BORING CAVED AND THE NUMBER OF DAYS AFTER DRILLING WHEN THE MEASUREMENT WAS TAKEN.

DD — INDICATES DRY WEIGHT OF SAMPLE IN POUNDS PER CUBIC FOOT.

MC — INDICATES MOISTURE CONTENT AS A PERCENTAGE OF DRY WEIGHT OF SOIL.

SW — INDICATES PERCENT SWELL UNDER A SURCHARGE OF 1000 PSF UPON WETTING.

COM — INDICATES PERCENT COMPRESSION UNDER A SURCHARGE OF 1000 PSF UPON WETTING

WS — INDICATES WATER SOLUBLE SULFATES IN PARTS PER MILLION.

pH — INDICATES ACIDITY OR ALKALINITY OF SAMPLE IN pH UNITS.

CL — INDICATES CHLORIDES IN PERCENT.

R — INDICATES RESISTIVITY IN OHMS-CM.

NR — INDICATES NO SAMPLE RECOVERED

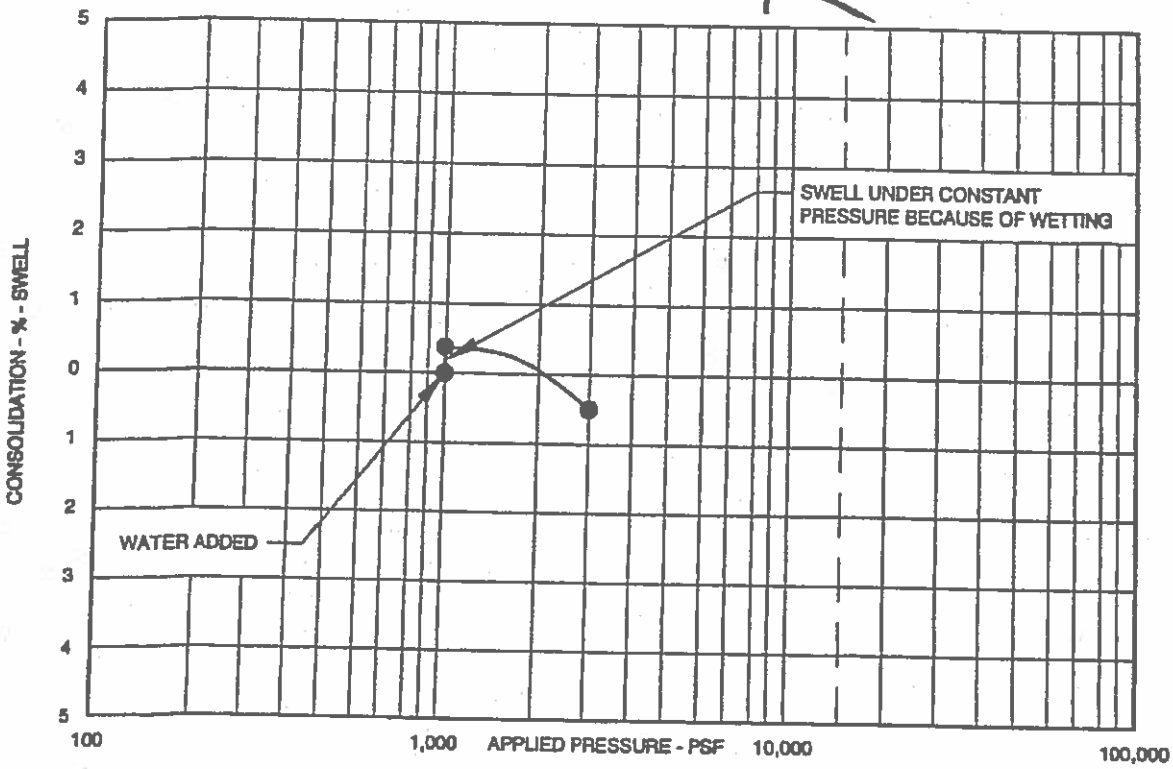
NOTES

1. TEST BORINGS WERE DRILLED SEPTEMBER 2, 2006 WITH A 4-INCH DIAMETER, CONTINUOUS FLIGHT POWER AUGER.
2. LOCATIONS OF TEST BORINGS WERE MEASURED BY DISTANCE WHEEL FROM FEATURES SHOWN ON THE SITE PLAN PROVIDED BY OTHERS.
3. ELEVATIONS WERE PROVIDED BY OTHERS.
4. THE HORIZONTAL LINES SHOWN ON THE LOGS ARE TO DIFFERENTIATE MATERIALS AND REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN MATERIALS. THE TRANSITIONS BETWEEN MATERIALS MAY BE GRADUAL.
5. DRILL LOGS SHOWN IN THIS REPORT ARE SUBJECT TO THE LIMITATIONS, EXPLANATIONS, AND CONCLUSIONS OF THIS REPORT.

A.G. Wassenaar Geotechnical and Environmental Consultants Inc.	
EXPLORATORY BORING LOGS	PROJECT NO. 90114-A FIGURE 2

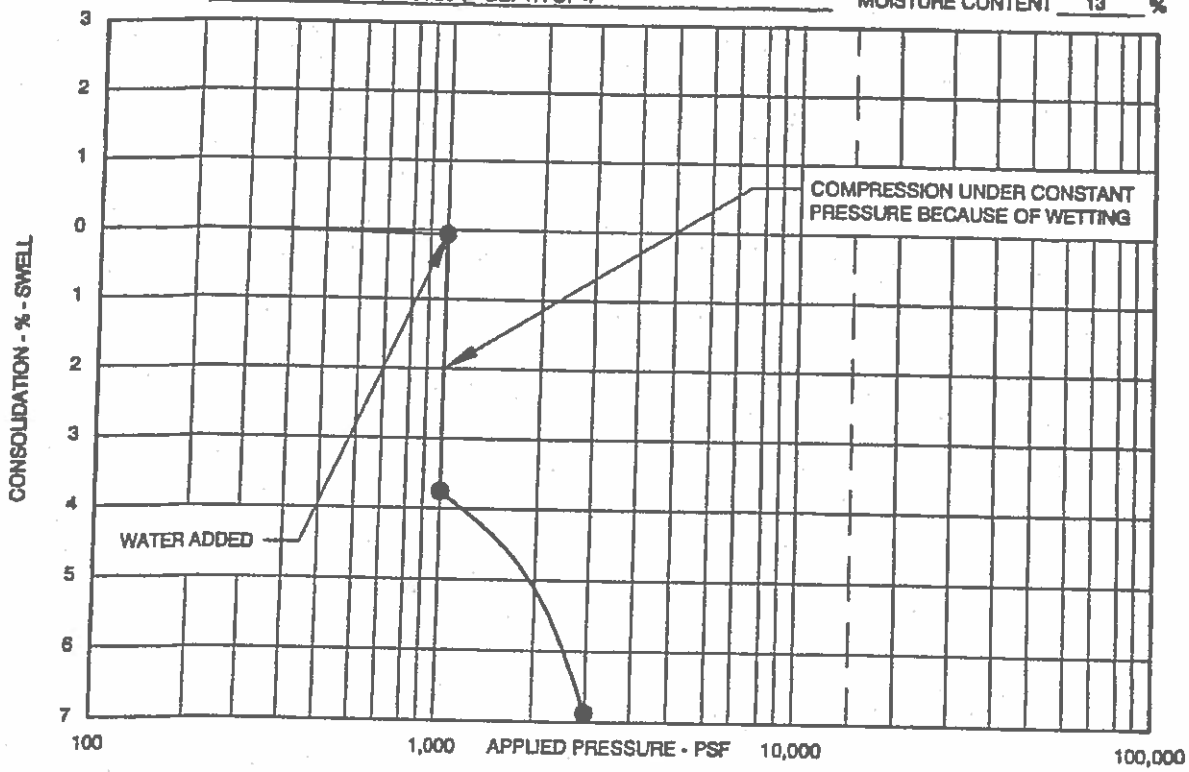
A.G. Wassenaar Inc.

Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SILTY
LOCATION TEST BORING NO. 23 @ DEPTH OF 4'

DRY UNIT WT. 107 PCF
MOISTURE CONTENT 13 %



SAMPLE DESCRIPTION GRAVEL, CLAYEY (DISTURBED)
LOCATION TEST BORING NO. 23 @ DEPTH OF 9'

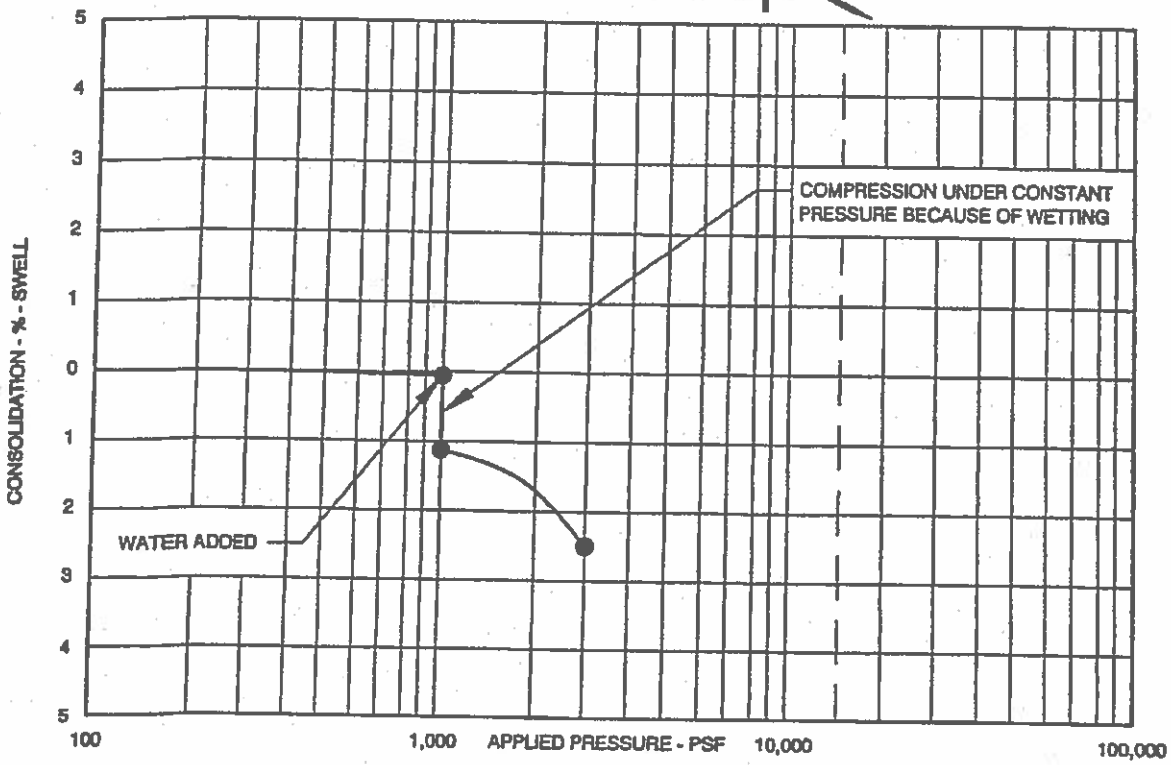
DRY UNIT WT. 105 PCF
MOISTURE CONTENT 5 %

SWELL - CONSOLIDATION TEST RESULTS

FIGURE 3

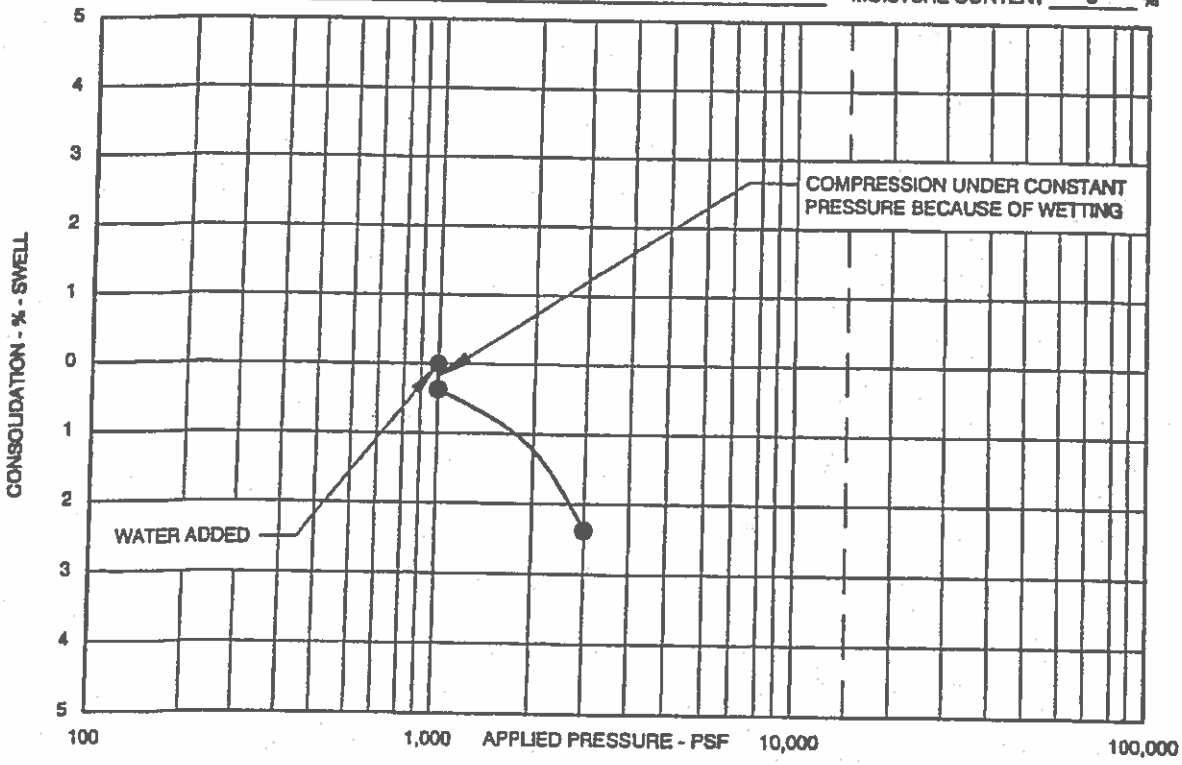
PROJECT NO. 90114-A

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY / SAND, INTERBEDDED
LOCATION TEST BORING NO. 23 @ DEPTH OF 14'

DRY UNIT WT. 115 PCF
MOISTURE CONTENT 9 %



SAMPLE DESCRIPTION CLAY, SILTY
LOCATION TEST BORING NO. 24 @ DEPTH OF 4'

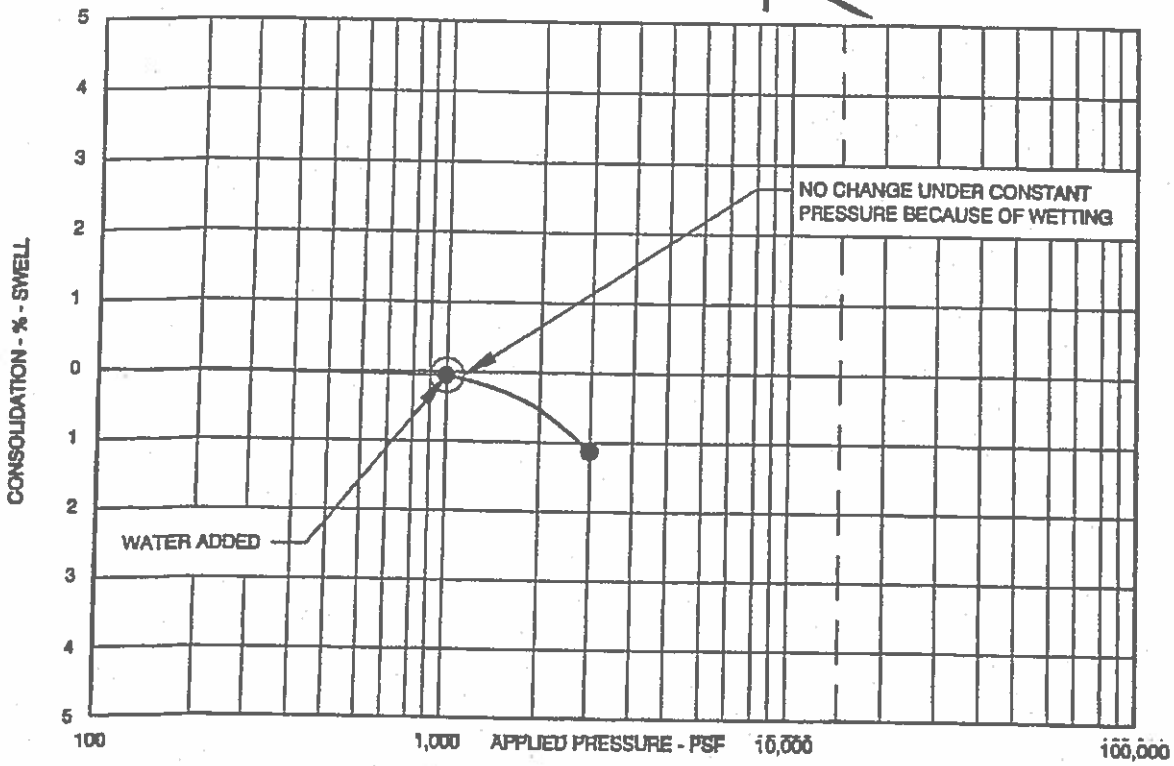
DRY UNIT WT. 95 PCF
MOISTURE CONTENT 6 %

SWELL - CONSOLIDATION TEST RESULTS

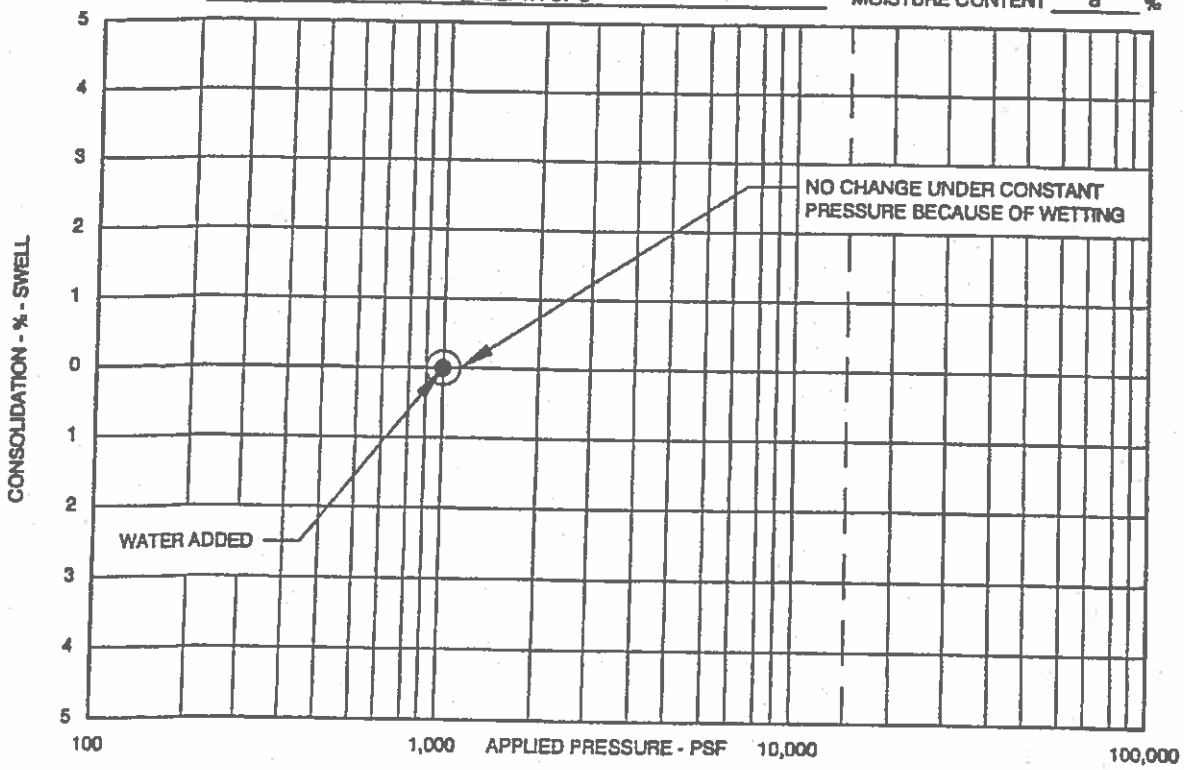
FIGURE 4

PROJECT NO. 90114-A

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SILTY
LOCATION TEST BORING NO. 24 @ DEPTH OF 9'
DRY UNIT WT. 106 PCF
MOISTURE CONTENT 8 %



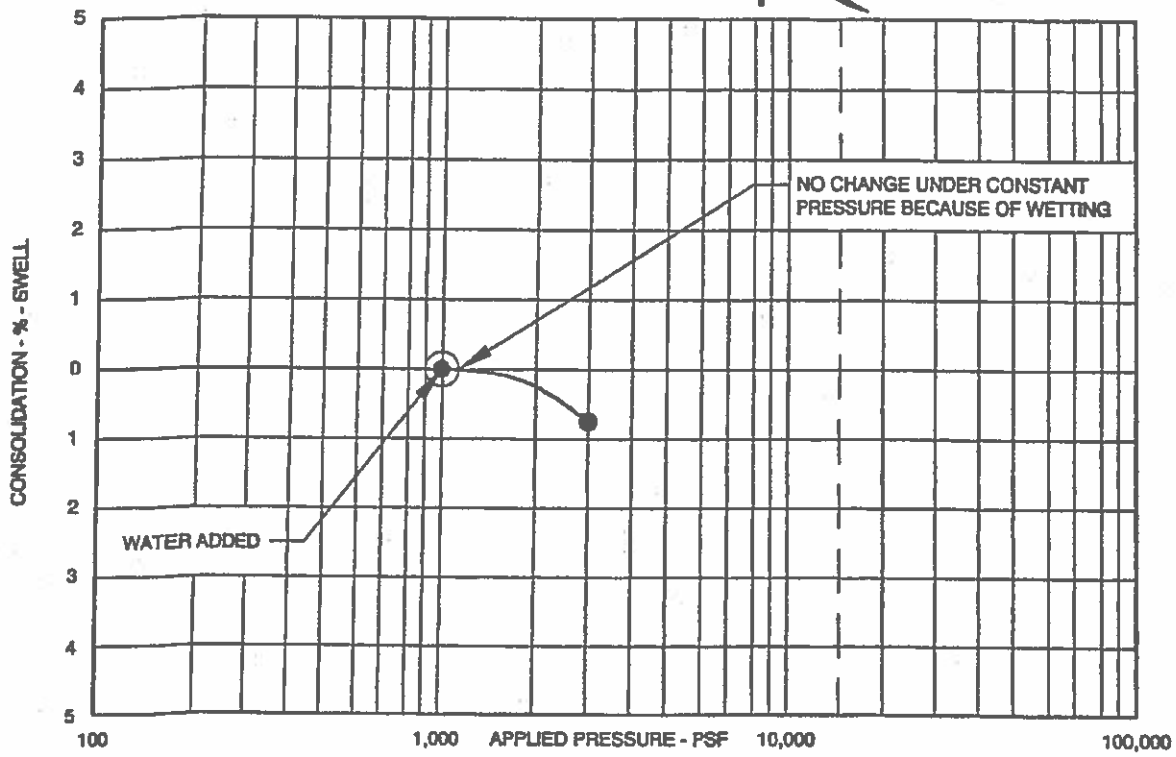
SAMPLE DESCRIPTION CLAY, SILTY
LOCATION TEST BORING NO. 25 @ DEPTH OF 4'
DRY UNIT WT. 91 PCF
MOISTURE CONTENT 6 %

SWELL - CONSOLIDATION TEST RESULTS

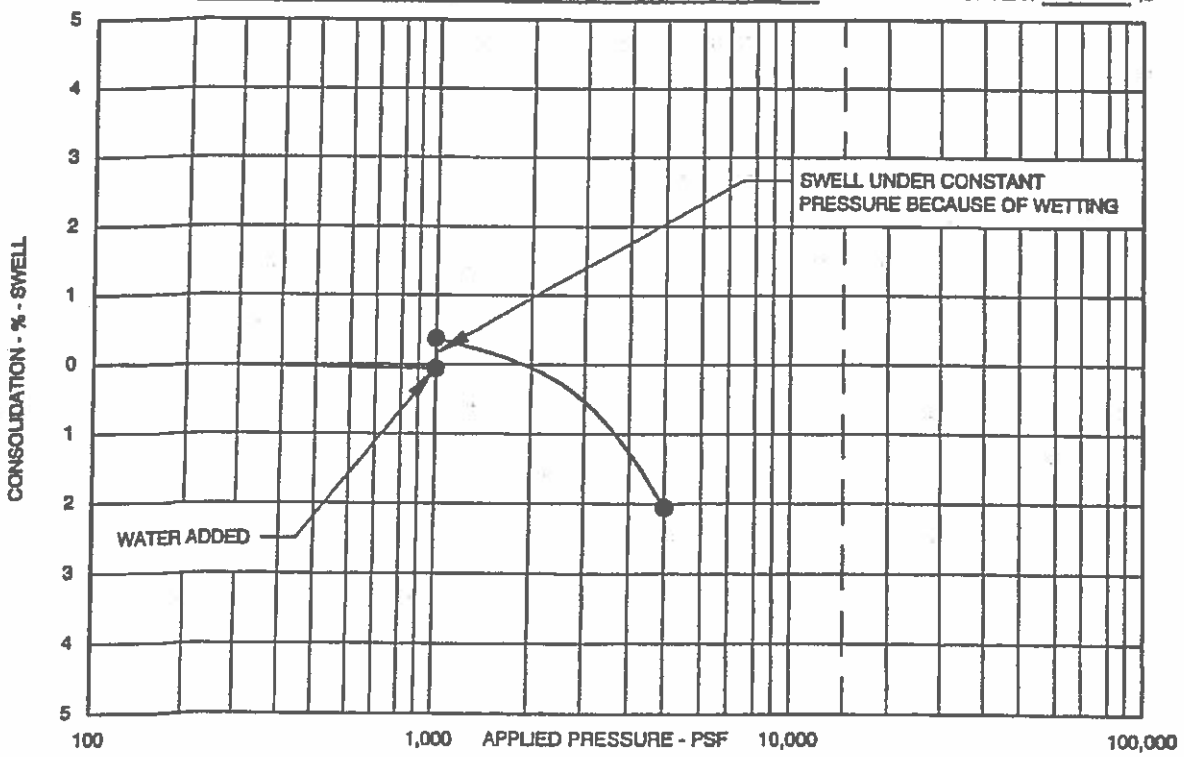
FIGURE 5

PROJECT NO. 90114-A

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SILTY
LOCATION TEST BORING NO. 26 @ DEPTH OF 4'
DRY UNIT WT. 103 PCF
MOISTURE CONTENT 7 %



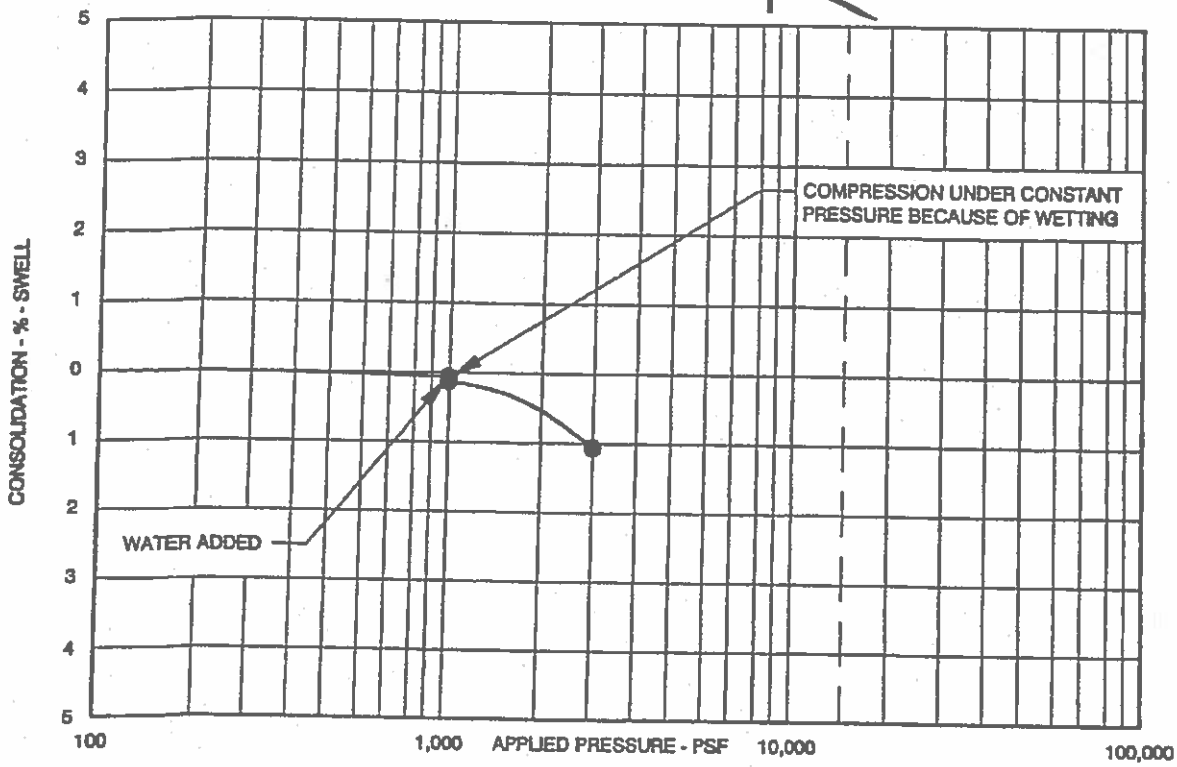
SAMPLE DESCRIPTION CLAYSTONE, SILTY
LOCATION TEST BORING NO. 26 @ DEPTH OF 24'
DRY UNIT WT. 124 PCF
MOISTURE CONTENT 11 %

SWELL - CONSOLIDATION TEST RESULTS

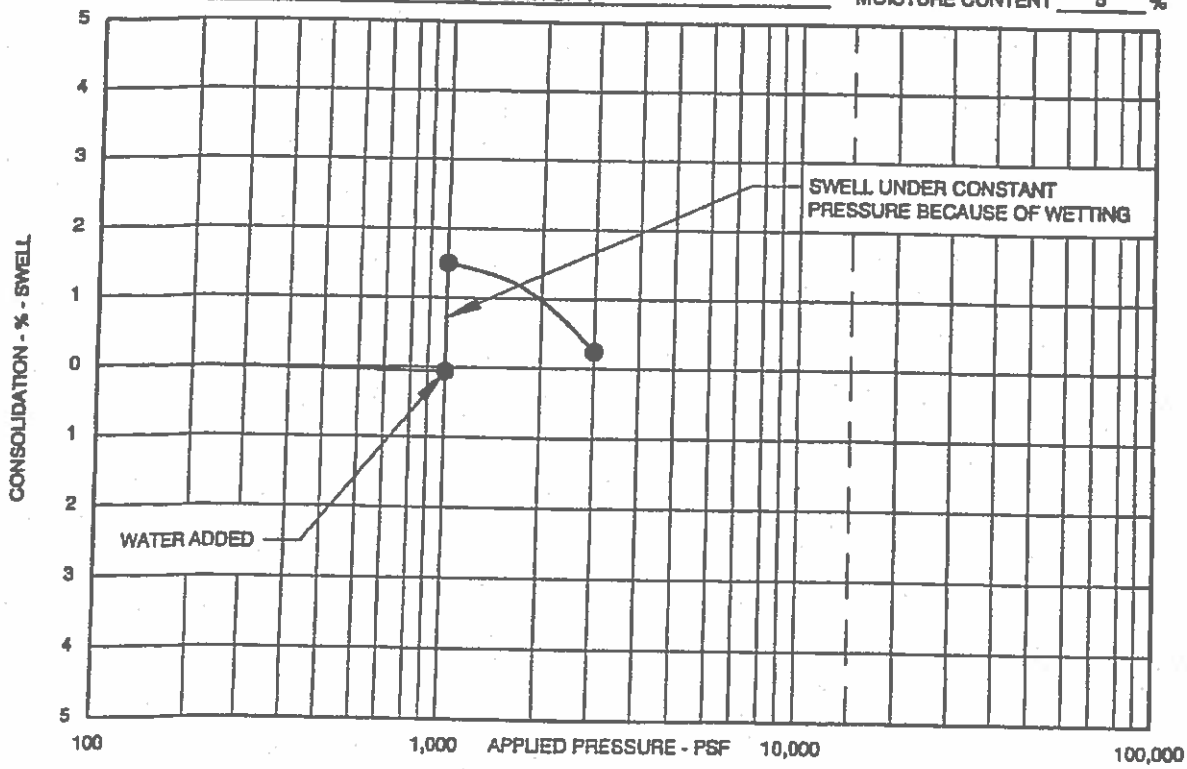
FIGURE 6

PROJECT NO. 90114-A

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SILTY
LOCATION TEST BORING NO. 27 @ DEPTH OF 4'
DRY UNIT WT. 106 PCF
MOISTURE CONTENT 5 %



SAMPLE DESCRIPTION CLAY, SILTY
LOCATION TEST BORING NO. 27 @ DEPTH OF 8'
DRY UNIT WT. 110 PCF
MOISTURE CONTENT 9 %

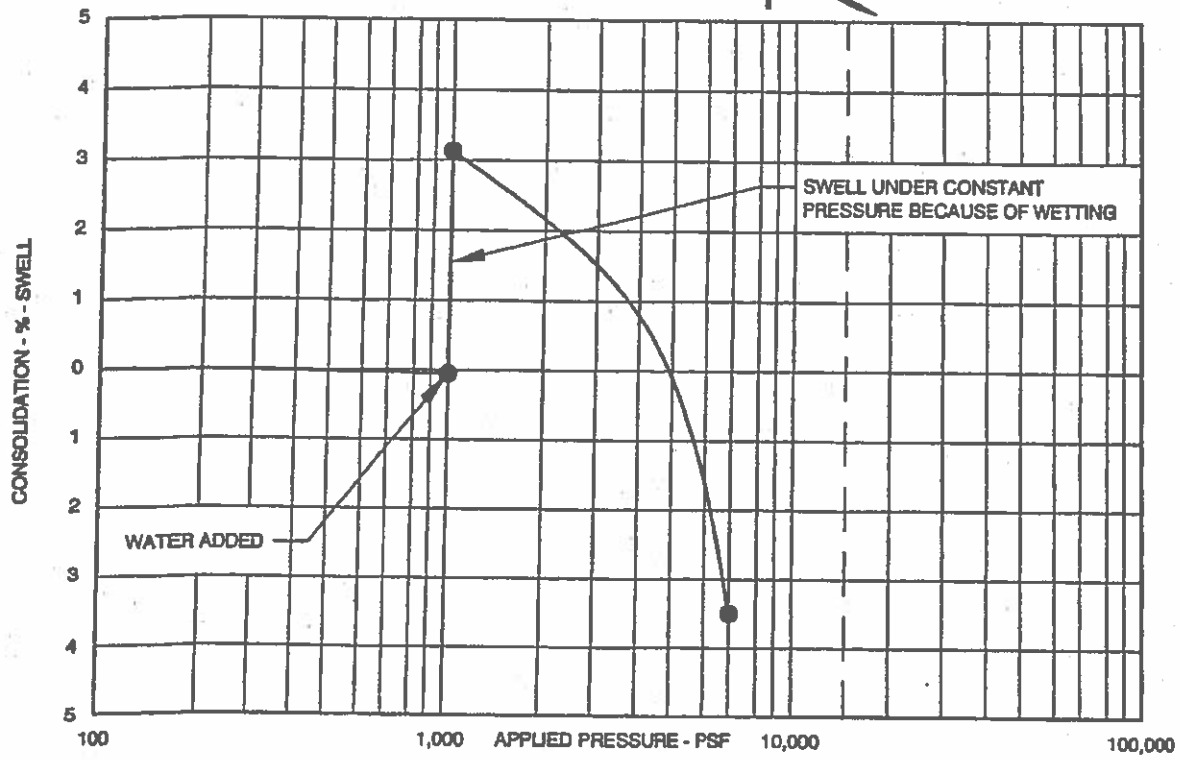
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 7

PROJECT NO. 90114-A

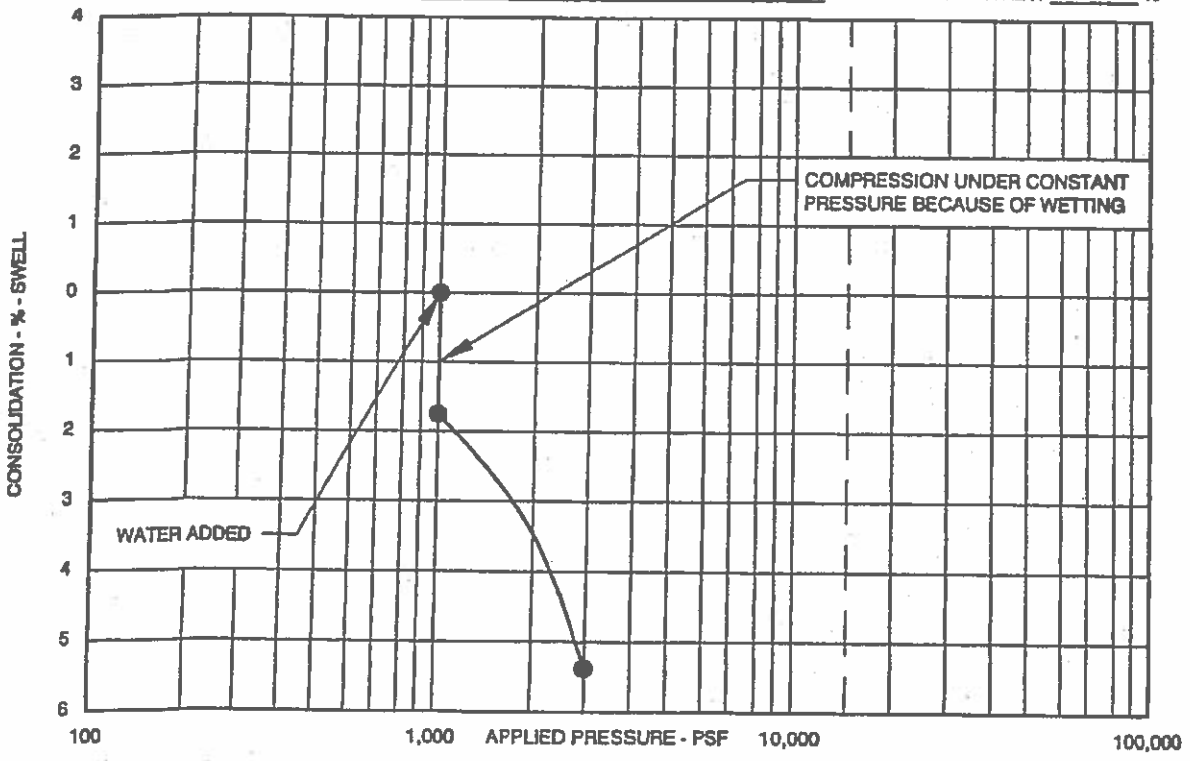
A.G. Wassenaar Inc.

Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAYSTONE / SHALE, INTERBEDDED — DRY UNIT WT. 115 PCF

LOCATION TEST BORING NO. 27 @ DEPTH OF 14' — MOISTURE CONTENT 9 %



SAMPLE DESCRIPTION CLAY, SILTY — DRY UNIT WT. 89 PCF

LOCATION TEST BORING NO. 28 @ DEPTH OF 4' — MOISTURE CONTENT 6 %

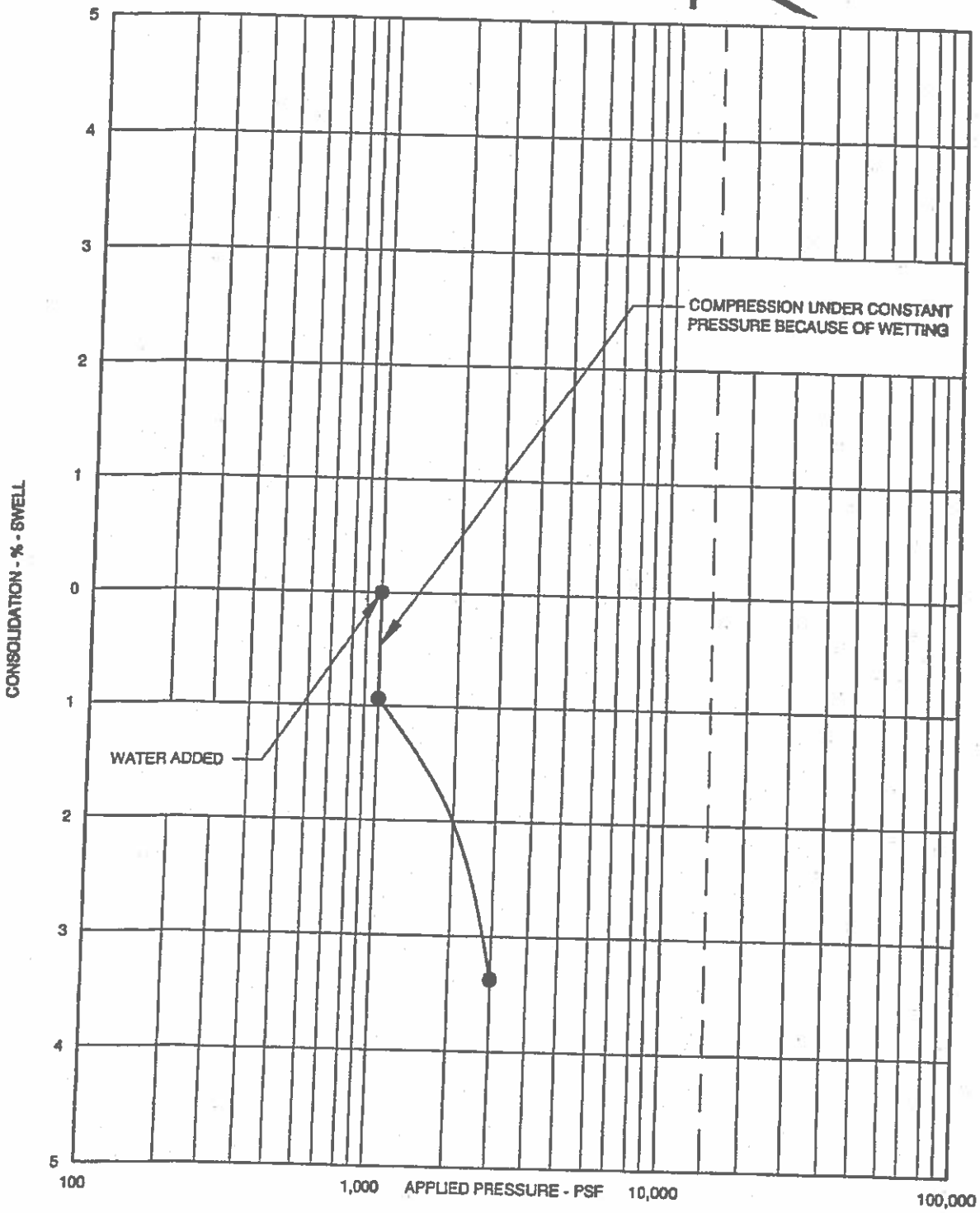
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 8

PROJECT NO. 90114-A

A.G. Wassenaar Inc.

Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAYSTONE / SHALE, INTERBEDDED

LOCATION TEST BORING NO. 28 @ DEPTH OF 9'

DRY UNIT WT. 108 PCF

MOISTURE CONTENT 6 %

SWELL - CONSOLIDATION TEST RESULTS

FIGURE 9

PROJECT NO. 90114-A

Test Boring No.	Depth (feet)	Soil Type	Natural Dry Density (pcf)	Natural Moisture (%)	Swell (+) / Consolidation (-) (%)*	Swell Pressure (psf)	pH	Resistivity (ohm/cm)	Water Soluble Sulfates (ppm)	Chlorides (%)
23	4	Clay, silty	107	13	+0.4	2,100				
	9	Gravel, clayey (disturbed)	105	5	-3.6					
	14	Clay/sand, interbedded	115	9	-1.1					
24	4	Clay, silty	95	6	-0.4					
	9	Clay, silty	106	8	0.0					
	14	Claystone, silty		7	**					
25	4	Clay, silty	91	6	0.0					
26	4	Clay, silty	103	7	0.0					
	24	Claystone, silty	124	11	+0.5	2,000				
27	4	Clay, silty	106	5	-0.1		7.88	3,521	<100	<0.0001
	9	Clay, silty	110	9	+1.6	3,400				
	14	Claystone/shale, interbedded	115	9	+3.3	5,000				
28	4	Clay, silty	89	6	-1.7					
	9	Claystone/shale, interbedded	108	6	-0.9					

Notes:

* Indicates Percent Swell (+) or Consolidation (-) when wetted under a 1,000 psf load.

** Sample fell apart during testing.

A.G. Wassenaar

Geotechnical and Environmental Consultants

SUMMARY OF LABORATORY TEST RESULTS

Village Homes of Colorado, Inc.

Castle Valley Ranch

Project Number 90114-A

September 27, 2006

TABLE I

Page 1 of 1

PRELIMINARY GEOTECHNICAL STUDY FOR

CASTLE VALLEY RANCH
WEST OF CASTLE VALLEY BOULEVARD
AND CLUBHOUSE DRIVE
NEW CASTLE, COLORADO

PREPARED FOR

VILLAGE HOMES OF COLORADO, INC.
100 INVERNESS TERRACE EAST, SUITE 200
ENGLEWOOD, COLORADO 80112

JUNE 12, 2006
PROJECT NUMBER 90114

2180 South Ivanhoe Street, Suite 5
Denver, Colorado 80222-5710

Phone 303-759-8100
Fax 303-756-2920

www.agwassenaar.com

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants
2180 South Ivanhoe Street, Suite 5
Denver, Colorado 80222-5710
303-759-8100 Fax 303-756-2820
www.agwassenaar.com

June 12, 2006

Village Homes of Colorado, Inc.
100 Inverness Terrace East, Suite 200
Englewood, Colorado 80112

Attention: Mr. Ron Hettinger

Subject: Preliminary Geotechnical Study
Castle Valley Ranch
West of Castle Valley Boulevard and Clubhouse Drive
New Castle, Colorado
Project Number 90114

Dear Mr. Hettinger:

We have conducted a preliminary geotechnical study for the proposed development at the subject site. Our summary of the data collected during our field and laboratory work and our analysis, opinions, and conclusions are presented in the attached report. The purpose of our study is to provide geotechnical design criteria for planning and site development, and preliminary design concepts for foundation systems, interior floor support, and drainage for the proposed development. Preliminary pavement thickness recommendations are also included.

In general, the subsurface materials encountered consist of topsoil, fill, sandy clay, silty to clayey sand and sand and gravel overlying bedrock. Claystone and/or sandstone bedrock was encountered at depths of four and one-half (4½) to 26 feet below the ground surface in 15 of the 22 test borings. Ground water was not encountered during this study. Six (6) of the 22 test borings caved at depths of 13 to 27½ feet one (1) to two (2) days after drilling.

Site development considerations should include provisions related to the presence of expansive clays and bedrock. Consideration should be given to the placement of a thick layer of moisture treated fill to mitigate the expansive materials. Well cemented, hard to very hard sandstone bedrock was found in five (5) borings which may cause construction difficulties.

Based upon the results of this preliminary study, we expect that the structures at the site will be founded on straight shaft piers drilled into competent bedrock or footings or footing pads. Preliminary foundation design concepts are given in the report.

Slabs-on-grade will require some special consideration because of the moderate to high swelling potential of some of the clay and the claystone. Where the structures are founded upon straight shaft piers, structural floors can be anticipated. Where footings are constructed, slabs-on-grade may be appropriate.

Perimeter subdrains will be necessary for all below grade areas.

Sulfate test results indicate that concrete in contact with the soils should be designed for very severe sulfate conditions.

Preliminary pavement sections are given in the following report. Overexcavation and placement of moisture treated fill in the streets during site grading may be advantageous in areas where claystone is found in the cut areas prior to pavement construction.

Additional recommendations are presented in the following report.

If you have any questions regarding the contents of this report or our analyses of the subsurface conditions which will influence the proposed development, please call us. We have appreciated the opportunity to provide this service for you.

Sincerely,

A. G. WASSENAAR, INC.

Kathleen A Noonan

Kathleen A. Noonan, P.E.
Project Engineer

COLORADO REGISTERED KATHLEEN ANN NOONAN NUMBER 31156 PROFESSIONAL ENGINEER 12-06

Reviewed by:

Keith D. Seaton

Keith D. Seaton, P.E.
Senior Engineer

KAN/KDS/kan/meg

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(continued)

ATTACHMENTS

PRELIMINARY GEOTECHNICAL STUDY

Castle Valley Ranch
West of Castle Valley Boulevard and Clubhouse Drive
New Castle, Colorado
June 12, 2006

PURPOSE

This report presents results of a geotechnical study for a proposed development located along Castle Valley Boulevard to the west of Clubhouse Drive in New Castle, Colorado. This study was conducted for the purpose of generating geotechnical data to assist in determining geotechnical design criteria for planning, site evaluation, and development considerations. Preliminary geotechnical design concepts are also presented for foundations, interior floor support, drainage, and street construction. Factual data gathered during the field and laboratory work is summarized on Figures 1 through 27 and Table I attached. Our opinions and recommendations presented in this report are based on the data generated during this field exploration, associated laboratory testing, our experience with similar type projects, and our understanding of the proposed project.

This report was not intended to provide design criteria for individual foundations or street construction. Additional geotechnical studies will be required to develop these types of final design criteria and construction recommendations.

PROPOSED CONSTRUCTION

We understand the proposed 157 acre development will consist of single family and/or multi-family residential structures and the associated infrastructure. No details of structure construction are available at this time. Preliminary overlot grading plans were not available at the time of this study. We have assumed maximum cut/fill depths will not exceed 10 feet across the site.

SITE CONDITIONS

The site is located to the north and south of Castle Valley Boulevard west of Clubhouse Drive in New Castle, Colorado (see Figure 1). The site is vacant and slopes to the south and the west with a total relief of approximately 330 feet. Vegetation consists of native plants, grasses, and trees. It appears that the level areas of the parcel have been used for agricultural purposes. A creek runs along the southern boundary of the site. Cobbles and boulders were evident along the northern, eastern, and southern boundaries of the site.

FIELD EXPLORATIONS

Subsurface conditions were explored by drilling 22 test borings at the approximate locations indicated on Figure 1. The boring locations were located by this firm by reconnoitering from the typographic features on the site. The borings were advanced using a 4-inch diameter, continuous flight auger powered by a truck-mounted, CME 55 drilling rig. At frequent intervals, samples of the subsurface materials were taken using a Modified California sampler which is driven into the soil by dropping a 140-pound hammer through a free fall of 30 inches. The Modified California sampler is a 2.5-inch outside diameter by 2-inch inside diameter device. The number of blows required for the sampler to penetrate 12 inches gives an indication of the consistency or relative density of the soils encountered. Results of the penetration tests and location of sampling are presented on the "Exploratory Boring Logs," Figures 2 through 5. In addition to sampling and logging each boring for material types, ground water measurements were made at the time of drilling and again one (1) and two (2) days after drilling.

LABORATORY TESTING

Samples were returned to the laboratory where they were visually classified by a geotechnical engineer. Testing was then assigned to specific samples to evaluate their engineering properties.

The laboratory tests included 34 settlement-swell tests to evaluate the effect of wetting and loading on the selected soils samples. The results of the settlement-swell tests are presented on Figures 6 through 22. Nine (9) gradation analysis tests and Atterberg limits tests were conducted to evaluate grain size distribution and plasticity. These results are presented on Figures 23 through 27. In addition, representative samples were tested for water soluble sulfates, pH, resistivity, and chlorides. These results are discussed under the heading "Site Concrete and Corrosivity". The test results are summarized on Figures 2 through 5 and Table I.

SUBSURFACE CONDITIONS

The subsurface materials encountered in our test borings consisted of topsoil, fill, sandy clays, silty to clayey sands and sand and gravel over sedimentary bedrock. Claystone and/or sandstone bedrock was encountered at depths of four and one-half (4½) to 26 feet below the ground surface in 15 of the 22 test borings. Ground water was not encountered during this study. Six (6) of the 22 test borings had caved at depths of 13 to 27½ feet when checked one (1) to two (2) days after drilling. A graphical depiction of the subsurface materials and ground water encountered is shown on Figures 2 through 5.

Topsoil was found in 19 of the 22 test borings. The topsoil encountered consisted of sandy clay, up to one-half (½) foot thick, was organic and moist, and dark brown in color. The topsoil is not considered capable of supporting the structures and should be removed. Construction on topsoil is at the sole risk of the Owner.

Fill was found in one (1) test boring (Boring 22). The fill material encountered consisted of sandy clay and was 16 feet thick. It was compact in consistency and moist. It was mottled brown in color. It exhibited in-situ dry densities ranging from 102 to 119 pounds per cubic foot (pcf) at in-

situ moisture contents ranging from 10 to 12 percent (%). The samples tested were of low plasticity. These soils exhibited consolidation (-1.9% to -0.3%) upon wetting and under a load of 1,000 pounds per square foot (psf). This fill was placed prior to A. G. Wassenaar, Inc.'s involvement at this site. Therefore, it is not known if this fill was placed with the proper compactive effort and density compaction testing. Unless documentation is available for the fill which verifies proper placement and compaction, this fill is not considered capable of supporting the structures. Construction on undocumented fill is at the sole risk of the Owner.

Sandy clay was found in 19 of the 22 borings. The clay was generally stiff to very stiff, slightly moist to moist, and brown to red brown in color. It exhibited in-situ dry densities ranging from 78 to 120 pcf at in-situ moisture contents ranging from 6 to 18%. The samples tested were of low to moderate plasticity. These soils exhibited compression to high swell (+4.3%) upon wetting and under a load of 1,000 psf. Some samples from the southern portion of the site exhibited collapse. This soil is assessed to possess a low to high expansion potential.

Silty to clayey sand was encountered in 11 of the 22 test borings. The sand was dense to medium dense, slightly moist to moist, with some silt layers and scattered gravel and cobble and sandstone, and brown to light brown to red brown to gray in color. It exhibited in-situ dry densities of 87 to 123 pcf at an in-situ moisture contents of 2 to 8%. The samples tested were non-plastic or of low plasticity. The samples tested exhibited consolidation (-0.5%) to low swell (+1.7%) when wetted under a 1,000 psf surcharge load. The sands are considered to possess no to low expansion potential.

Claystone bedrock was encountered in 11 of the 22 borings. It was medium hard to very hard, silty to very silty, slightly sandy to sandy, iron stained, with sulfur and sulfate crystals, slightly moist

to moist, and olive to rust in color. It exhibited in-situ dry densities of 94 to 124 pcf at in-situ moisture contents of 6 to 16%. The samples tested were of moderate plasticity. The claystone exhibited consolidation (-7.5%) to very high swell (+6.0%) upon wetting and under a loading of 1,000 psf. It is considered to possess a high expansion potential.

Sandstone bedrock was encountered in five (5) of the 22 borings. The sandstone encountered was clean to silty to clayey, moderately to well cemented, firm to very hard, slightly moist to moist, and rust to brown in color. The sandstone tested exhibited an in-situ dry density of 120 pcf at an in-situ moisture content of 5%. The samples observed were visually of low plasticity. The sandstone exhibited low swell (+0.8%) upon wetting and under a loading of 1,000 psf. It is considered to possess a low expansion potential. A map showing the estimated depths to bedrock is shown on Figure 28.

GEOTECHNICAL CONCERNS

Expansive clays and claystone bedrock were encountered across the site. The clays exhibited no to high swell when tested. The claystone exhibited no to very high swell when tested. In our opinion, the expansive properties of the soil and bedrock can be reduced with proper fill placement, drainage, future irrigation controls, and with the use of proper design and construction techniques. To eliminate use of deep foundations for expansive and collapse prone soils, overexcavation may be performed.

Hard to very hard sandstone bedrock was encountered in the test borings. Very hard, well cemented bedrock may cause construction difficulties during the various excavations to be made during development. It may become especially evident if cuts encounter the sandstone bedrock.

The sandstone may require light blasting or special equipment. The sandstone may require crushing in order to be re-used as fill.

Collapsing clays were encountered in Test Borings 19 and 21. The final concern is the presence of the collapse prone sandy clay. In the presence of moisture, these soils will consolidate, sometimes suddenly. This could cause significant settlements to structures (residence, pavements, etc.) supported by these soils. If left in-place, pier type foundations would be needed in these areas to prevent settlement of the structures. Due to the wide spacing of the test borings, the extent of the collapsing soils could not be accurately determined. We recommend a more in-depth study in the vicinity of these test borings be conducted in order to adequately delineate the areas of collapse potential.

Fill was encountered in Test Boring 22. The fill is approximately 16 feet thick and was placed prior to our involvement with this site. Construction on undocumented fill is the sole risk of the Owner. We recommend the removal of this fill.

SITE DEVELOPMENT

OVERLOT GRADING

We assume the fill materials to be used at the site will be from on-site cut areas. In general, suitable inorganic on-site or off-site soils may be used for structural fill. Any topsoil, or soil containing vegetation or other deleterious material, should also be removed prior to placement of structural fill. Any materials that have been chemically contaminated should be removed from the site for proper disposal. Off-site material considered for structural fill should be evaluated by our office prior to hauling to the site.

Construction of the fill embankments throughout the site will consist of proper foundation preparation, constructing embankment benching where necessary, disposition of strippings, proper fill placement and compaction, and designing and vegetating slopes in accordance with the analysis performed and the applicable governing regulations. Following are general site grading recommendations:

1. It is recommended that we be called to observe and test the fill placement so that a uniform, compacted fill will be placed.
2. Based upon the subsurface information contained in this report, and our assumption that the near surface soils will be used as fill, we have provided general specifications for the project in the Appendix.
3. All vegetation and topsoil beneath planned fill areas should be thoroughly stripped and removed prior to fill placement. These soils should be removed from the site or stockpiled for future use in revegetating exposed slopes. In no case should these materials be used in the structural areas or where the stability of slopes will be affected by their low shear strength. If these materials are used in non-structural areas, they should only be placed in fills where the embankment section does not exceed five feet in height.
4. Any existing fill should be entirely removed prior to new fill placement.
5. Soft soils are anticipated near the existing drainage. Soft soils may need to be stabilized prior to fill placement where encountered. This may be accomplished by drying, addition of angular rock or with manufactured products such as geogrids or stabilization fabric. These areas will need to be field identified at the time of grading. Once the extent of these areas is identified, a stabilization method may be chosen.

6. Where natural slopes exceed an existing slope of 5:1 (horizontal to vertical), benching will be required for structural integrity of any fills. Benches should be constructed as shown on Figure 29.
7. After the foundation has been properly prepared, the natural foundation soils should be scarified to a minimum depth of 6 inches, brought to the proper moisture content and then compacted according to the Appendix.
8. The compaction and moisture control of the soils will be dependent upon material types. The specifications outlined in the Appendix are based upon providing a fill with sufficient shear strength to support structures and controlling residual swell of expansive soil used in fill sections.
9. Particular attention should be paid to compaction of the exterior faces of slopes (i.e., slopes should be compacted to the minimum specification to the surface of the fill embankment).
10. Other specifications outlined in the Appendix of this report should be followed.

Moisture Treated Fill

An option to reduce the amount of swell of the expansive clays and claystone and potential for collapse of the clays would be to remove them from beneath the foundation and pavement areas and then to replace them as a moisture treated fill. This procedure generally results in a fill that is either able to support footing type foundations or reduces the swell of the materials sufficiently to allow the construction of minimum pier lengths. This procedure involves excavating to a depth below the foundations and pavements as determined by the amount of potential swell. The excavated soil is then wetted to above the optimum moisture content and then recompacted into the excavations. If this procedure is desired, it will be necessary to perform a more detailed study

of the proposed residential areas to better define the characteristics of the existing soil and bedrock. We are available to discuss this with you.

SLOPES

A slope stability analysis was not conducted as part of this study. Based upon preliminary site specific observation, it appears that most of the existing slopes appear stable. The only instabilities noted were the result of erosion of banks along the various gullies and intermittent stream channels on the site. These areas will need to be laid back or removed during construction. Where natural slopes exceed 5 to 1, horizontal to vertical, benching to maintain structural integrity will be required. Planned excavations into the steeper natural slopes should be reviewed by this office when grading plans become available. Construction of conventional fill slopes should be limited to 2 to 1 or flatter. Cut slopes steeper than 2 to 1 should be evaluated for stability.

CONSTRUCTION EXCAVATIONS

In our opinion, the site grading and utility excavations may be constructed using conventional earth-moving equipment for the area. The excavations in areas where bedrock is present at or near the surface will require additional effort where moderately to well cemented sandstone is encountered. The use of a large dozer (CAT D8 or D9) with a single shank ripper tooth will be required. In addition, some of the sandstone may require light blasting where well cemented. Excavations deeper than three feet should be properly sloped or braced to prevent collapse because of caving soils. Local, city, county, state, and federal (OSHA) regulations should be followed.

SITE DRAINAGE

We recommend that provision be made to divert surface runoff away from foundation areas. This may reduce potential problems associated with excess water in the foundation bearing soils. The site should be designed such that a 10% slope can be established at the residences after foundation construction. Slopes of at least 2% should then be planned in landscaped areas once the water is away from the foundation.

SUBSURFACE DRAINAGE

The ground water encountered is not anticipated to cause significant problems across most of the site during development except near the existing drainages. It may be necessary to construct blanket drains in the existing drainages if they are to be filled to significant depths.

The types of materials encountered across the site have a relatively low permeability, and are, therefore, susceptible to the creation of a perched water condition. Perched water, in conditions such as these, forms after construction has taken place, when extensive irrigation is introduced to the property.

For these reasons, we recommend an overall area drain be considered during site development. In addition, the overall area drain can also provide for a discharge and collection point for individual foundation drains. Because the sanitary sewer trench excavation is typically the deepest excavated trench area, underdrains can be designed and constructed with installation of the sanitary sewer system. The civil engineering company contracted to design the infrastructure should be able to provide this design. We are available to assist in drain design. For the system to work, the area drain must be graded to a positive discharge point. Given the topography of the site, it should be possible to lead the area drain to a gravity "daylight" outfall on the lower

topographic portions of the site. **If a permanent outfall for an area drain cannot be determined, the area drain should not be constructed.** If an area drain is not constructed, it would be advantageous to provide a gravity outfall for the sewer bedding material.

UTILITY CONSTRUCTION

Excavations into the overburden soils will encounter primarily sands, clays and some bedrock. The bedrock may be considered a "Type A" soil, where intact. The overburden clay above the ground water level may be considered a "Type B" soil, and the sands and any soil influenced by the ground water should be considered as a "Type C" soil. Final determination of the soil types must be made by the contractor's "competent person" at the time of construction. All excavations should be sloped or shored in the interest of safety, following local and federal (OSHA) regulations.

The bedrock, when encountered, may stand vertically unsupported, except where fractured or inundated with water. In the interest of safety, bedrock excavations should be sloped as outlined above. In our opinion, most of the utility excavations may be constructed using conventional earth-moving equipment for the area. Difficulty will be experienced where moderately to well cemented sandstone is found. Excavation with rock buckets or trenchers designed for the cemented rock should be anticipated. In addition, some light blasting may be required.

Trench backfill should be well compacted to prevent future settlement. Trenches, as a minimum, should be compacted to the same specifications as required for overlot grading. Trenches in streets should be compacted to Town of New Castle specifications. Density-compaction testing must be performed during trench backfilling.

SITE CONCRETE AND CORROSIVITY

Testing performed on selected soil samples indicates a water soluble sulfate content ranging from less than 50 ppm to 20,000 ppm. This is considered to be a negligible to very severe concentration relative to potential corrosive attack on concrete. Therefore, all concrete in contact with the soils on the site should be designed for very severe sulfate exposure in accordance with the American Concrete Institute (ACI) Design Manual, Section 318, Chapter 4.3, 2004 Edition.

The pH testing exhibited levels of 7.32 to 8.31. Resistivity testing at in-situ moistures resulted in levels from 516 to 3,984 Ohms/cm. Chloride test results indicated less than 0.0001% to 0.0068%. These results are summarized on Figures 2 through 5, and in Table I. The results of this testing should be used as an aid in choosing the construction materials in contact with these soils and will be resistant to the various corrosive forces. Manufacturer's representatives should be contacted regarding the specific corrosivity resistance to the stated levels of pH, resistivity, and chlorides for their particular product. In addition, local district specifications should be consulted when selecting pipe materials.

PRELIMINARY FOUNDATION DESIGN CONCEPTS

The foundation recommendations for each structure are dependent upon the subsurface profile and engineering properties of the materials encountered at and near to the depth of the proposed foundation. These are dependent upon the final configuration and construction methods used during overlot grading at the site and the type of structure to be constructed. Therefore, foundation design recommendations for each structure cannot be presented until site grading is complete. **The information presented in the following sections presents preliminary foundation concepts which must be finalized for each building site upon completion of the overlot grading operations.** We should be retained to provide an additional soil and foundation

exploration after completion of site grading to provide specific foundation design recommendations for each site.

PIERS

A suitable foundation system for structures founded where claystone bedrock, moderate to highly expansive clay soils or collapse prone soils are found at or near to the bottom of the final excavations would be straight shaft piers drilled into bedrock. The piers will likely be designed for an end bearing pressure in the range of 15,000 to 30,000 pounds per square foot (psf), a minimum dead load pressure in the range of 15,000 to 20,000 psf, and a side shear in the range of 1,500 to 3,000 psf. The side shear would be applied for that portion of the pier in undisturbed bedrock with the exception of the upper 10 feet of each pier beneath the grade beam or foundation wall. Pier lengths on the order of 20 to 30 feet with bedrock penetration from eight (8) to 15 feet can be anticipated.

As an alternative, helical steel piers may be considered. These piers will need to be drilled to depths of 15 to 20 feet below the bottom of the foundation and bear into materials capable of supporting their design pressures. Due to the hardness of the bedrock, pre-drilling of the pier locations will likely be necessary. Heavy duty piers may be necessary. Additionally, refusal of the piers may occur in the well cemented sandstone.

FOOTINGS

It is likely that some of the structures could be supported by spread footings or pad-type footings bearing on the natural sands, sandstone, and clays or thick, low expansive fill materials. If the expansive and collapse prone materials are overexcavated and replaced as moisture treated fill,

most of the structures could likely be supported by footings. The footings must be founded below frost depth. Some densification may be required for footing support in areas where loose sand is encountered at foundation level. The footings will likely be designed for a maximum soil pressure ranging from 1,000 to 3,000 pounds per square foot (psf). A minimum dead load pressure may be required where clays are present.

LATERAL EARTH PRESSURES

Foundation walls with fill on only one side and any retaining walls will need to be designed for lateral earth pressures. For this site, lateral equivalent fluid pressures on the order of 45 to 60 pounds per cubic foot should be anticipated dependent upon the type of soil used to backfill the walls.

INTERIOR FLOOR CONSTRUCTION

Where straight shaft piers are used for foundation support, the sites will be assessed with a moderate to very high slab risk performance evaluation. Where footing type foundations are constructed, it is likely that the sites will be assessed with a low or moderate slab risk performance evaluation. For structures constructed on piers, it is likely that it will be necessary to construct a structural basement floor where moderate or higher risk is present. Where structures are supported on footings, low to moderate basement slab risk assessments can be anticipated. If the risk tolerance for slab movement is zero, structural floors should be considered in all areas.

DRAIN SYSTEMS

Due to the relatively impermeable nature of the soils encountered on the site, drain systems will be required where below grade spaces are planned. Either interior or exterior drains may be used. The drains must be led to a positive gravity outfall or sump.

BACKFILL AND SURFACE DRAINAGE

Backfill should be moistened and compacted to reduce future settlement. The site grading should consider a slope of 10% away from the foundations at the completion of construction. All other drainage swales in landscaped areas should slope at a minimum of 2%.

PRELIMINARY STREET PAVEMENT DESIGN

Pavement design procedures are based on strength properties of the subgrade and pavement materials, along with the assumed design traffic conditions. Subgrade materials, such as the clay materials encountered on this site, are potentially expansive and require additional precautions be taken to provide for adequate pavement performance. The pavement design procedures outlined address expansive subgrade materials primarily by modifying the subgrade materials in such a manner as to reduce the swell potential and then by attempting to minimize subgrade wetting after construction.

Based upon our preliminary analysis, it appears the proposed pavement subgrade materials will be the sandy clays and clayey sands. These soils are summarized below according to their AASHTO Soil Classification System and Group Index Method.

Soil	AASHTO	
	Classification	Group Index
Silty, gravelly sand, clayey sand, sandstone	A-1-b, A-2-4, A-4	0
Sandy clay	A-6	9-14

From these soil classifications, we have estimated R-Values in order to determine the preliminary pavement thicknesses. Based on this information and utilizing thickness as determined from the CDOT Design Nomograph, as accepted by the Town of New Castle, the alternatives presented below were calculated.

PAVEMENT ALTERNATIVES FOR INTERIOR STREETS

A-1-b, A-2-4, A-4 Soils		
Traffic Category	**HBP**	**HBP/ABC**
Local	5.5" - 6.5"	3.5" - 4.5" / 7.5" - 9.0"
Minor Collector (Residential)	7.0" - 8.5"	4.0" - 5.0" / 8.0" - 9.5"

A-6 Soils		
Traffic Category	**HBP**	**HBP/ABC**
Local	6.0" - 7.0"	3.5" - 4.5" / 7.5" - 9.0"
Minor Collector (Residential)	8.0" - 9.5"	4.5" - 5.5" / 8.0" - 9.5"

HBP = Hot Bituminous Pavement ABC = Aggregate Base Course

Note: Composite sections are only allowed in private streets and parking lots.

DTNs of 5 were used for the local streets and a DTN of 30 was used for the residential minor collector. A design life of 20 years was assumed. It should be emphasized that the design alternatives provided above are preliminary for interior local residential streets and collectors. The final design thickness could be more or less than indicated.

Proper surface and subsurface drainage is essential for adequate performance of pavements constructed on these types of subgrade materials. It has been our experience that water from landscaped areas will infiltrate pavement subgrade soils and result in loss of subgrade integrity

followed by pavement damage. Therefore, provisions should be made to maintain adequate drainage and/or contain runoff from such areas. In addition, water and irrigation lines should be thoroughly pressure tested for leaks prior to placement of pavement materials.

It must be reiterated that the information contained in this section is preliminary in nature. More detailed information will be required by the Town of New Castle prior to issuance of a paving permit. **Therefore, when overlot grading is complete at the site, a final pavement evaluation must be performed.**

FINAL DESIGN CONSULTATION AND CONSTRUCTION OBSERVATION

This report has been prepared for the exclusive use of Village Homes of Colorado, Inc. for the purpose of providing geotechnical criteria for the proposed project. The data gathered and the conclusions and recommendations presented herein are based upon the consideration of many factors including, but not limited to, the type of structures proposed, the configuration of the structures, the proposed usage of the site, the configuration of surrounding structures, the geologic setting, the materials encountered, and our understanding of the level of risk acceptable to the client. Therefore, the conclusions and recommendations contained in this report shall not be considered valid for use by others unless accompanied by written authorization from A. G. Wassenaar, Inc.

It is recommended that A. G. Wassenaar, Inc. be retained to provide general review of the final design and specifications in order that the recommendations presented may be properly interpreted and implemented. Our firm should also be retained to provide geotechnical engineering and material testing services during construction of the site grading, utilities, and drainage features. The purpose is to observe the construction with respect to the geotechnical

design concepts, specifications or recommendations, and to facilitate design changes in the event that subsurface conditions differ from those anticipated prior to start of construction. It is also recommended that our firm be retained to perform a final pavement design for the streets and parking lots in the development and to perform a final foundation design report for each structure in the development after site grading is complete.

GEOTECHNICAL RISK

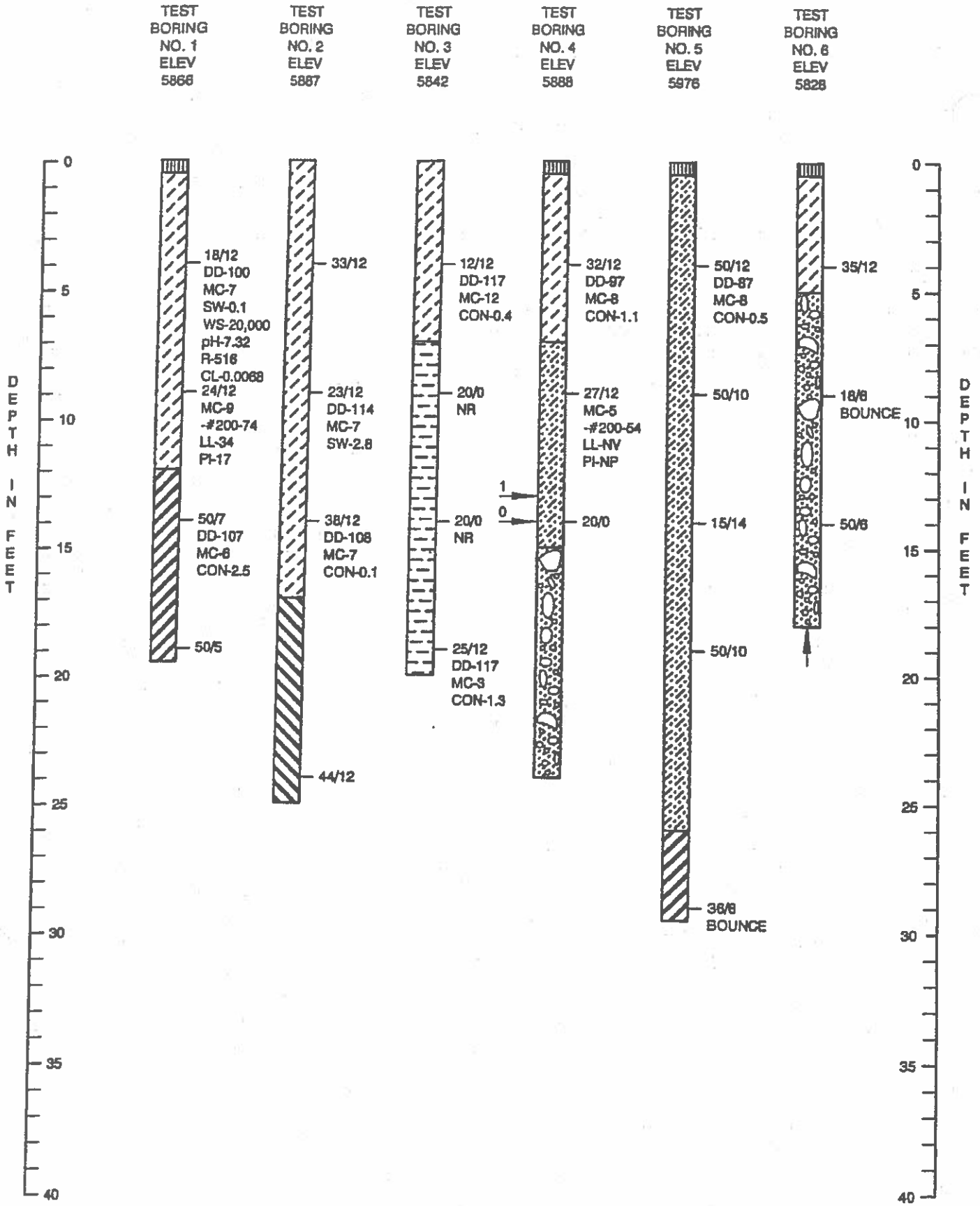
The concept of risk is an important aspect of any geotechnical evaluation. The primary reason for this is that the analytical methods used to develop geotechnical recommendations do not comprise an exact science. The analytical tools which geotechnical engineers use are generally empirical and must be tempered by engineering judgment and experience. Therefore, the solutions or recommendations presented in any geotechnical evaluation should not be considered risk-free and, more importantly, are not a guarantee that the interaction between the soils and the proposed structure will perform as desired or intended. What the engineering recommendations presented in the preceding sections do constitute is our best estimate, based on the information generated during this and previous evaluations and our experience in working with these conditions, of those measures that are necessary to help the development perform in a satisfactory manner. The Developer, Builder, and future Owners must understand this concept of risk, as it is they who must decide what is an acceptable level of risk for the proposed development of the site.

LIMITATIONS

The professional judgments expressed in this report meet the standard care of our profession in this area at this time. The test borings drilled for this study were spaced to obtain a reasonably accurate picture of underground conditions for design purposes. Variations frequently occur from

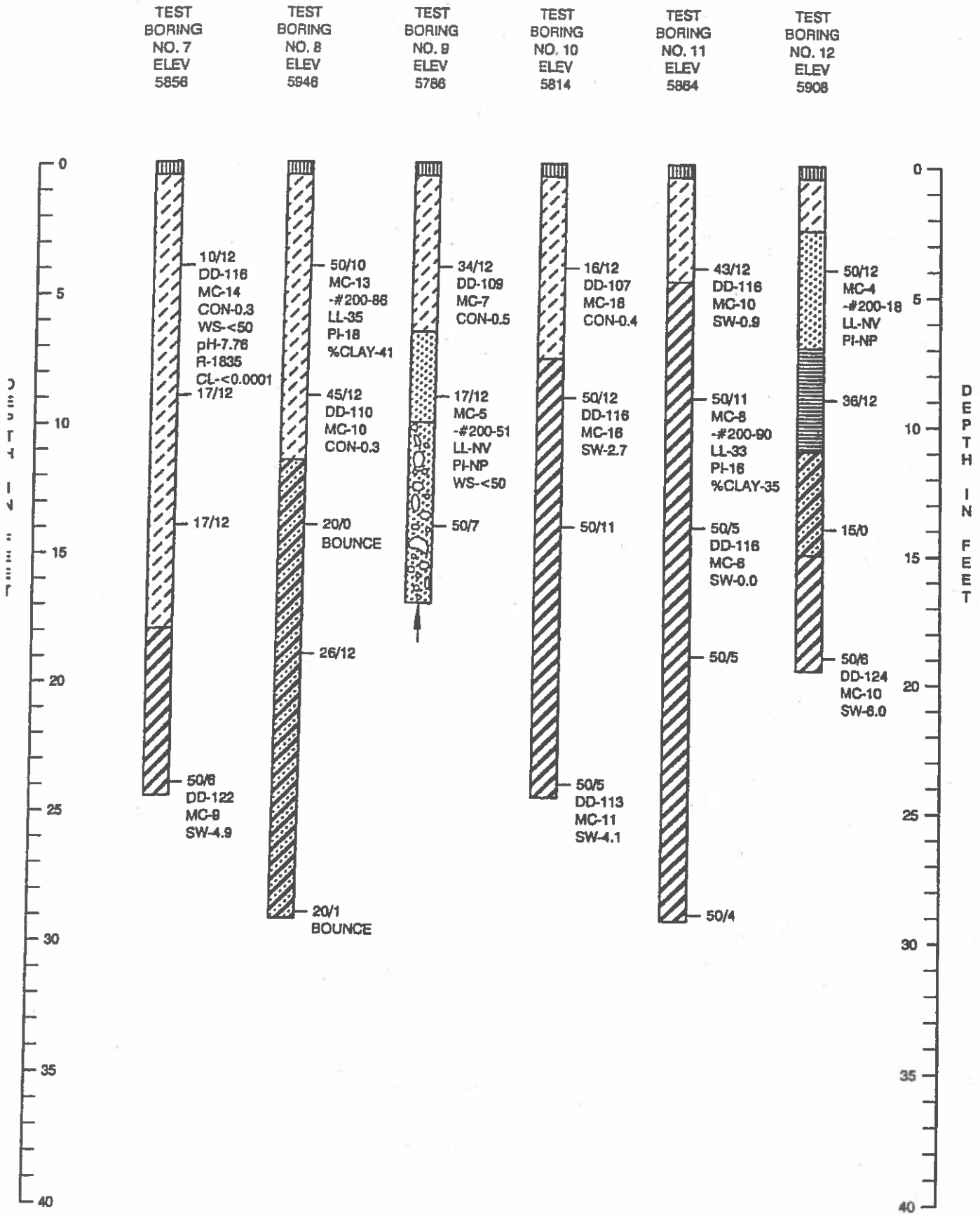
these conditions which are not indicated by the test borings. These variations are sometimes sufficient to necessitate modifications in the designs. For this reason, we should be retained to observe the site during construction.

Our scope of services for this project did not include any research, testing, or assessment relative to past or present contamination of the site by any source. If such contamination were present, it is likely that the exploration and testing conducted for this report would not reveal its existence. If the Client is concerned about the potential for such contamination, additional studies should be undertaken. We are available to discuss the scope of such studies with you.



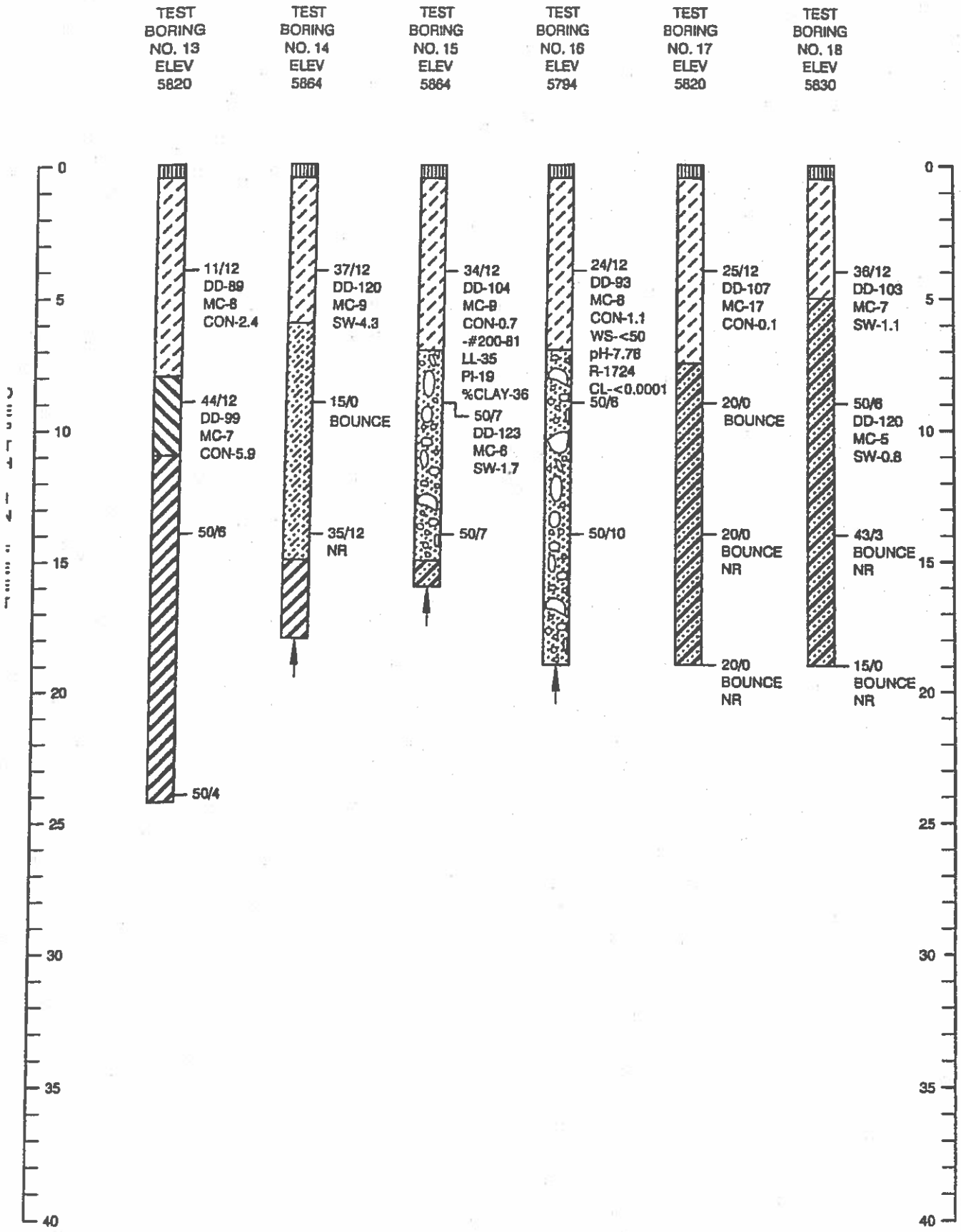
SEE FIGURE 5 FOR LEGEND AND NOTES TO EXPLORATORY BORINGS

EXPLORATORY BORING LOGS
FIGURE 2



SEE FIGURE 5 FOR LEGEND AND NOTES TO EXPLORATORY BORINGS

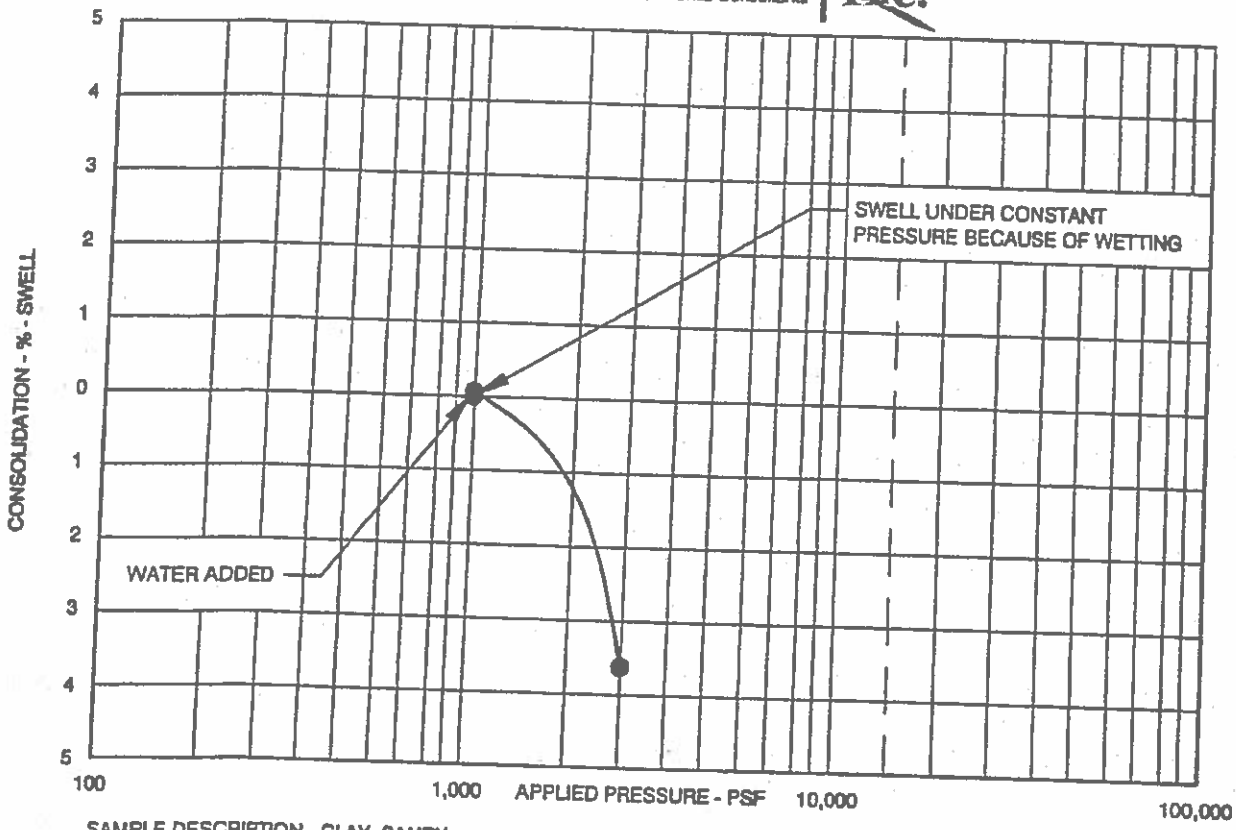
EXPLORATORY BORING LOGS
FIGURE 3



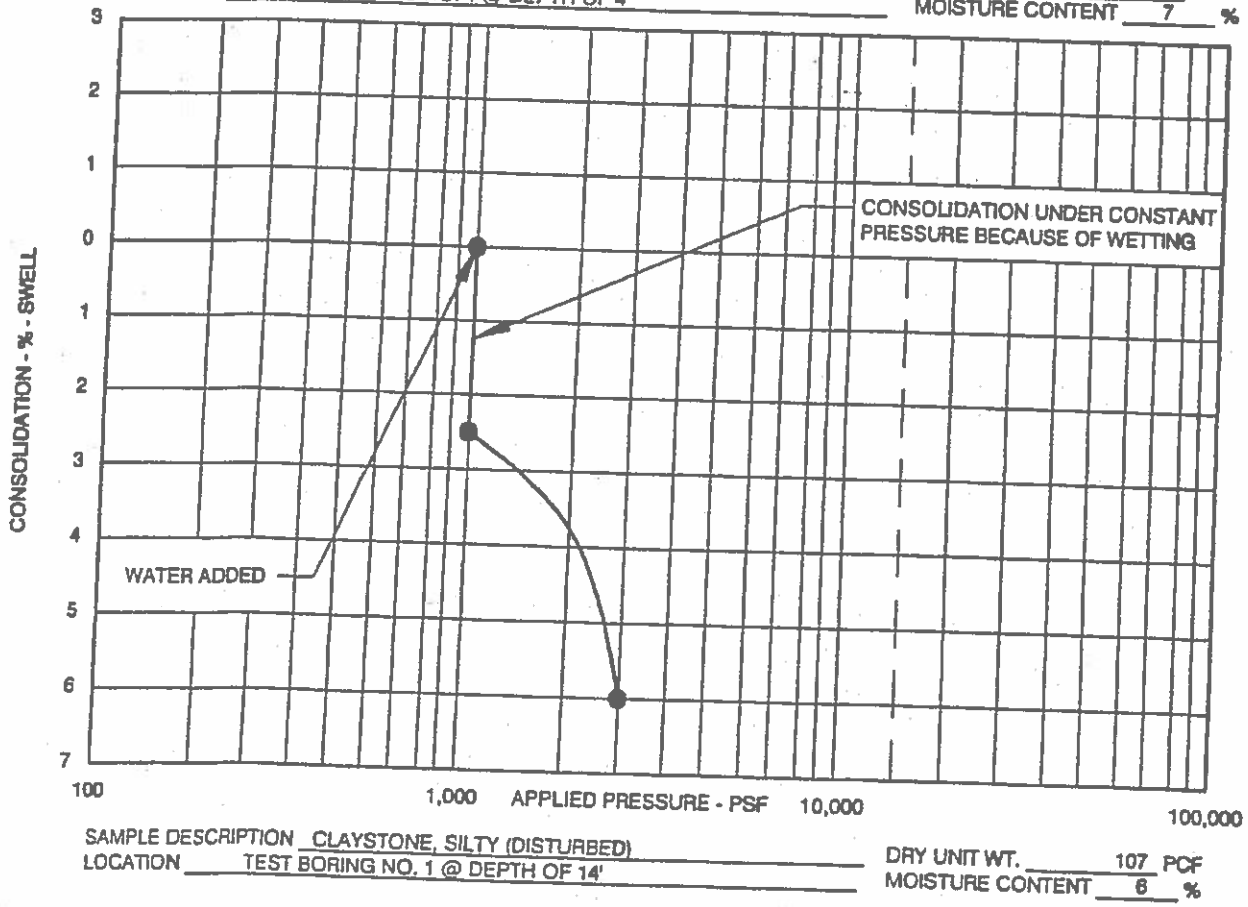
SEE FIGURE 5 FOR LEGEND AND NOTES TO EXPLORATORY BORINGS

EXPLORATORY BORING LOGS
FIGURE 4

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 1 @ DEPTH OF 4'
DRY UNIT WT. 100 PCF
MOISTURE CONTENT 7 %

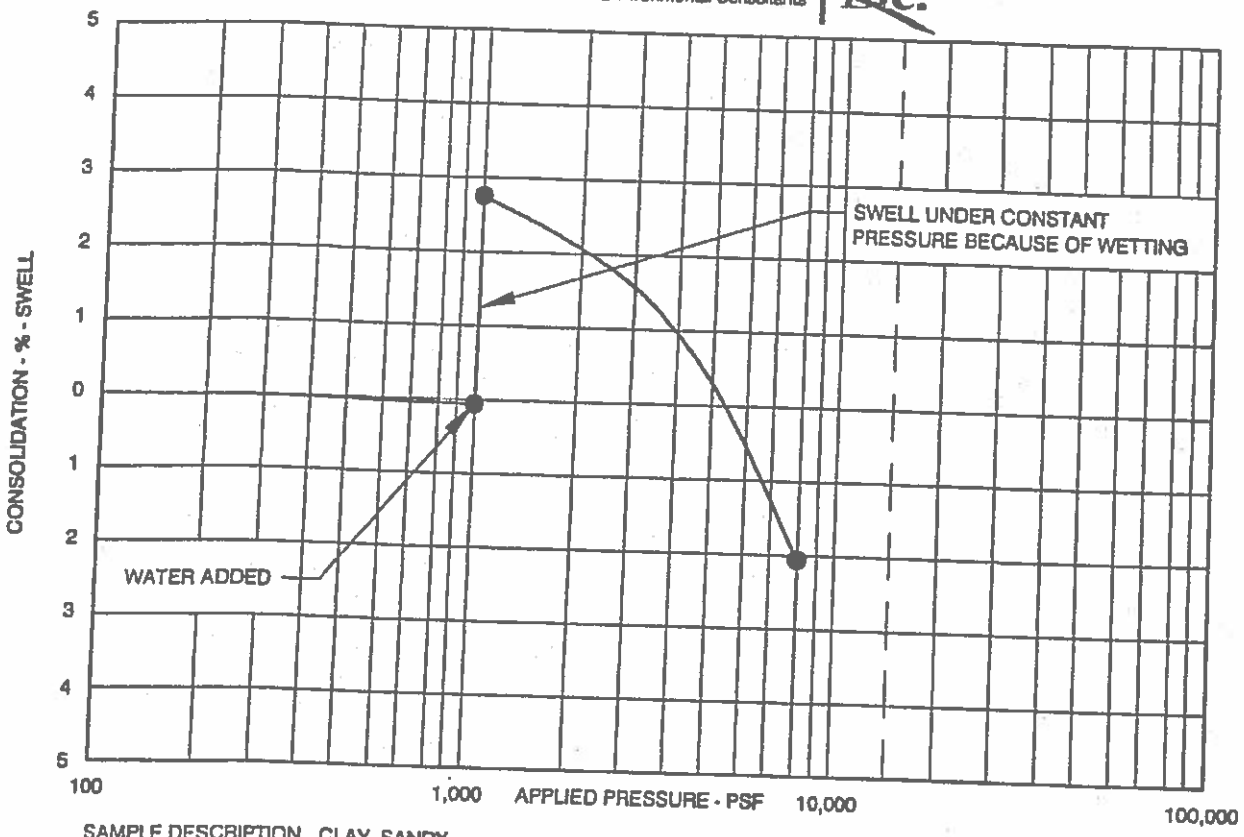


SAMPLE DESCRIPTION CLAYSTONE, SILTY (DISTURBED)
LOCATION TEST BORING NO. 1 @ DEPTH OF 14'
DRY UNIT WT. 107 PCF
MOISTURE CONTENT 6 %

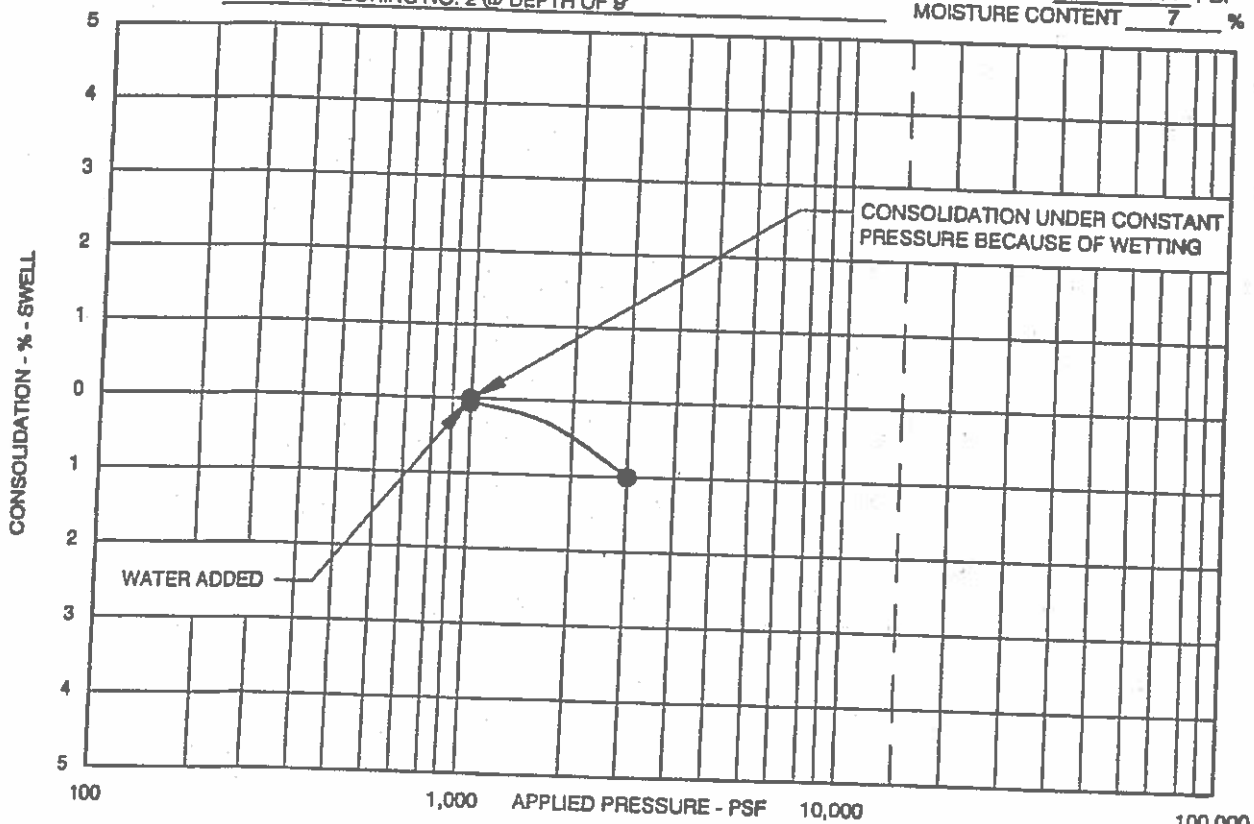
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 6

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 2 @ DEPTH OF 9'
DRY UNIT WT. 114 PCF
MOISTURE CONTENT 7 %



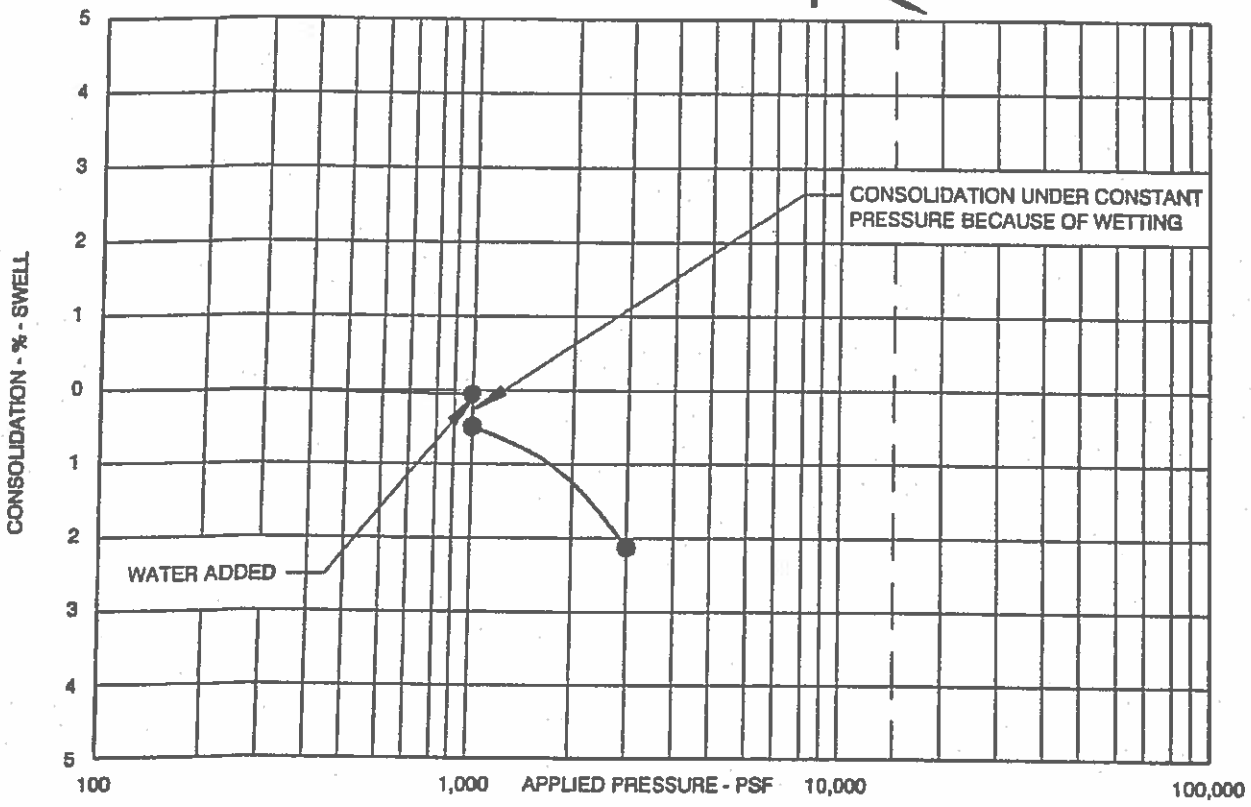
SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 2 @ DEPTH OF 14'
DRY UNIT WT. 108 PCF
MOISTURE CONTENT 7 %

SWELL - CONSOLIDATION TEST RESULTS

FIGURE 7

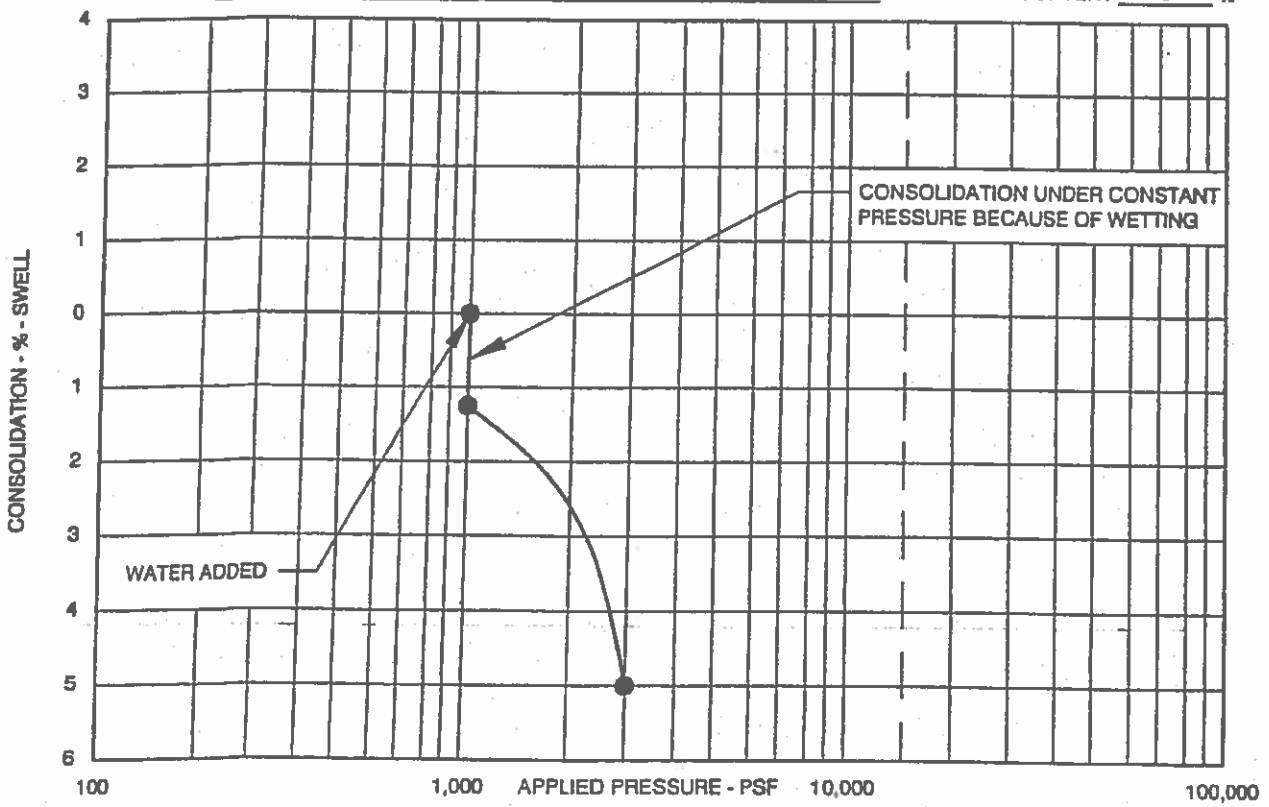
A.G. Wassenaar Inc.

Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 3 @ DEPTH OF 4'

DRY UNIT WT. 117 PCF
MOISTURE CONTENT 12 %



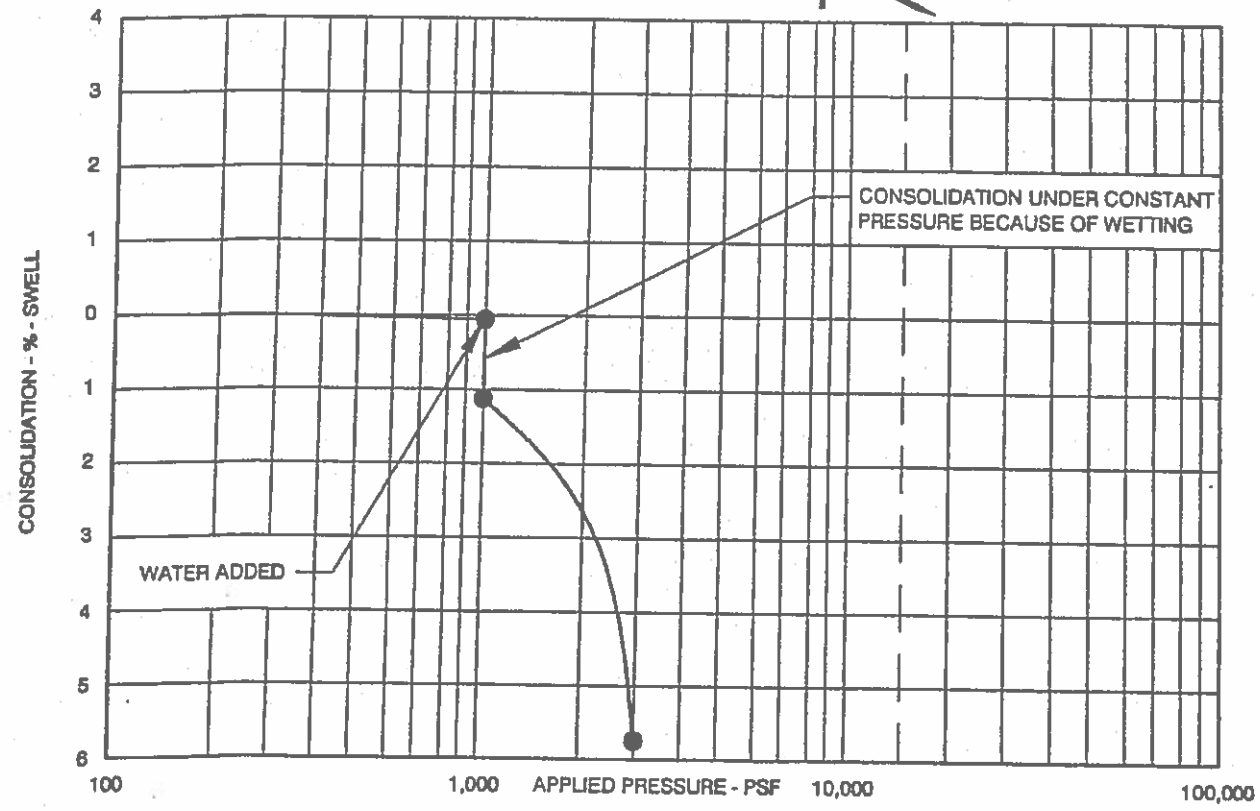
SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 3 @ DEPTH OF 19'

DRY UNIT WT. 117 PCF
MOISTURE CONTENT 3 %

SWELL - CONSOLIDATION TEST RESULTS

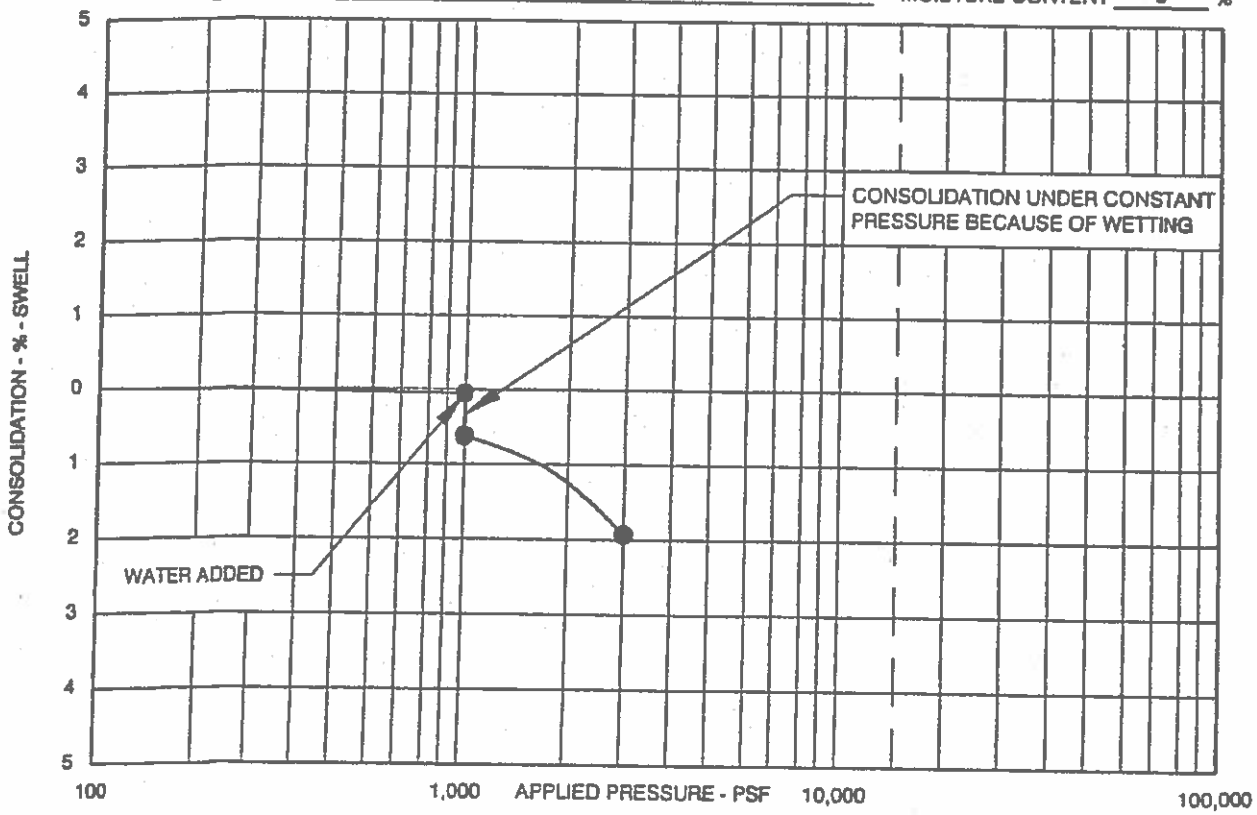
FIGURE 8

A.G. Wassenaar, Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 4 @ DEPTH OF 4'

DRY UNIT WT. 97 PCF
MOISTURE CONTENT 8 %



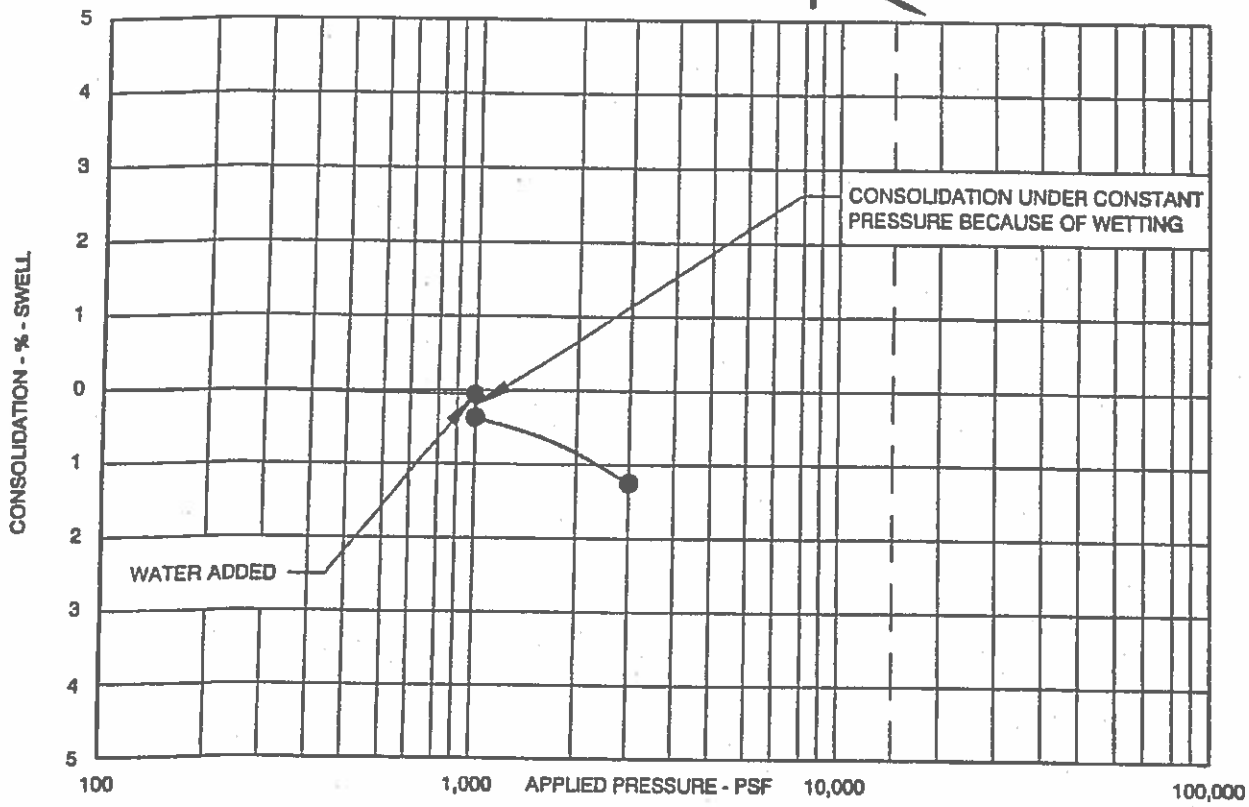
SAMPLE DESCRIPTION SAND, CLAYEY
LOCATION TEST BORING NO. 5 @ DEPTH OF 4'

DRY UNIT WT. 87 PCF
MOISTURE CONTENT 8 %

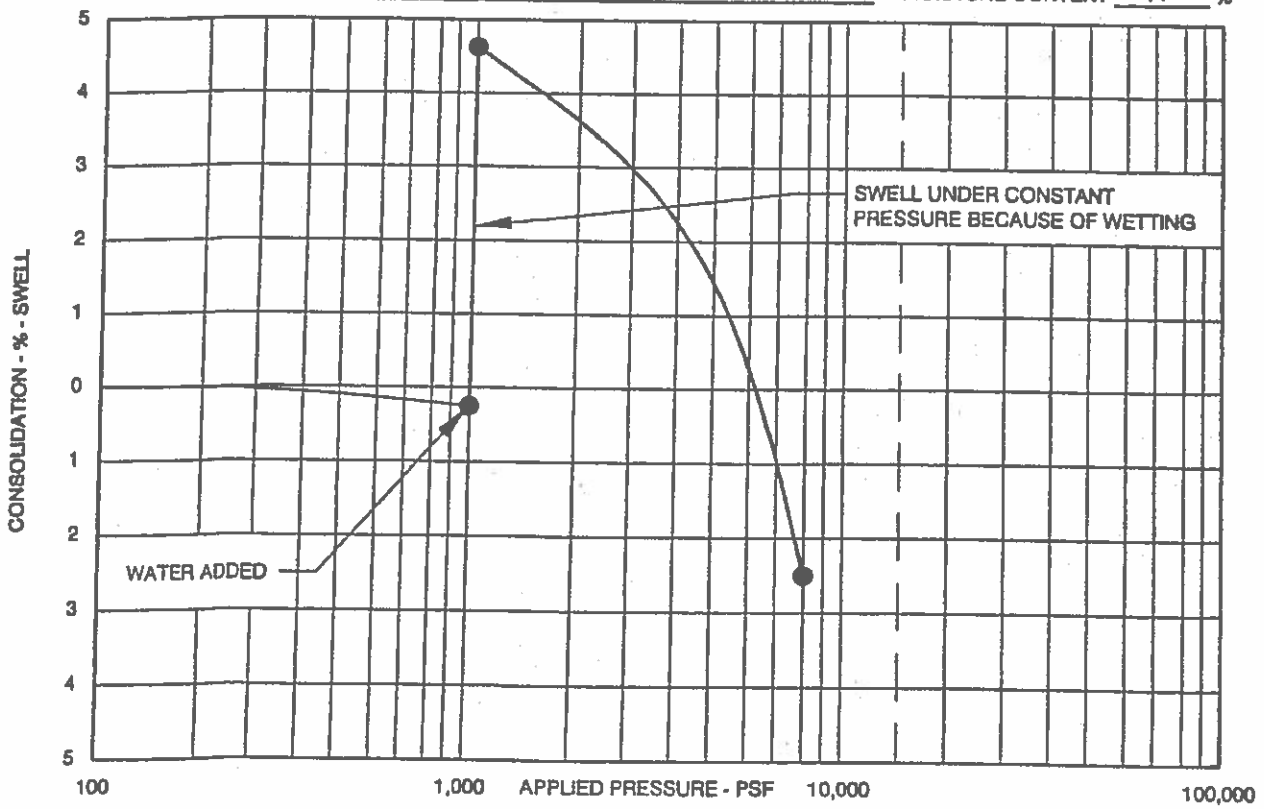
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 9

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 7 @ DEPTH OF 4'
DRY UNIT WT. 116 PCF
MOISTURE CONTENT 14 %

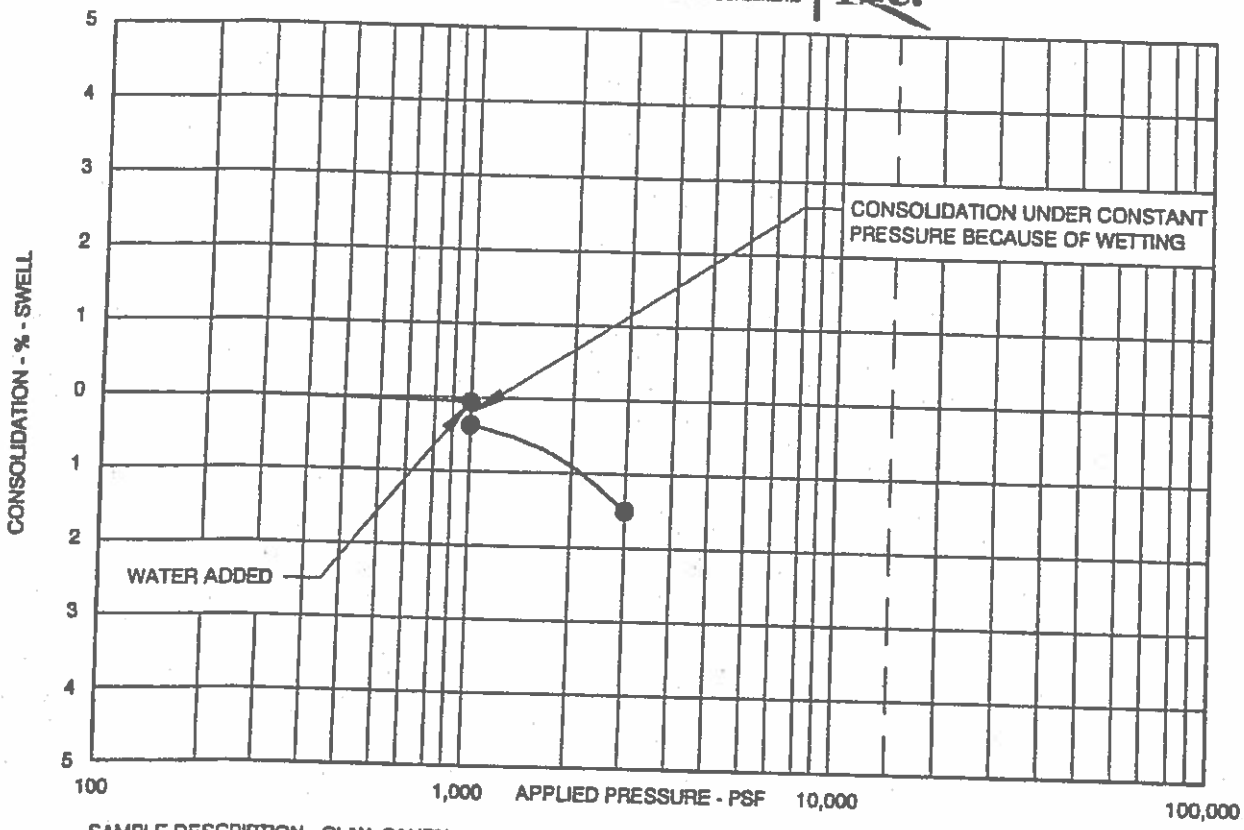


SAMPLE DESCRIPTION CLAYSTONE, SILTY
LOCATION TEST BORING NO. 7 @ DEPTH OF 24'
DRY UNIT WT. 122 PCF
MOISTURE CONTENT 9 %

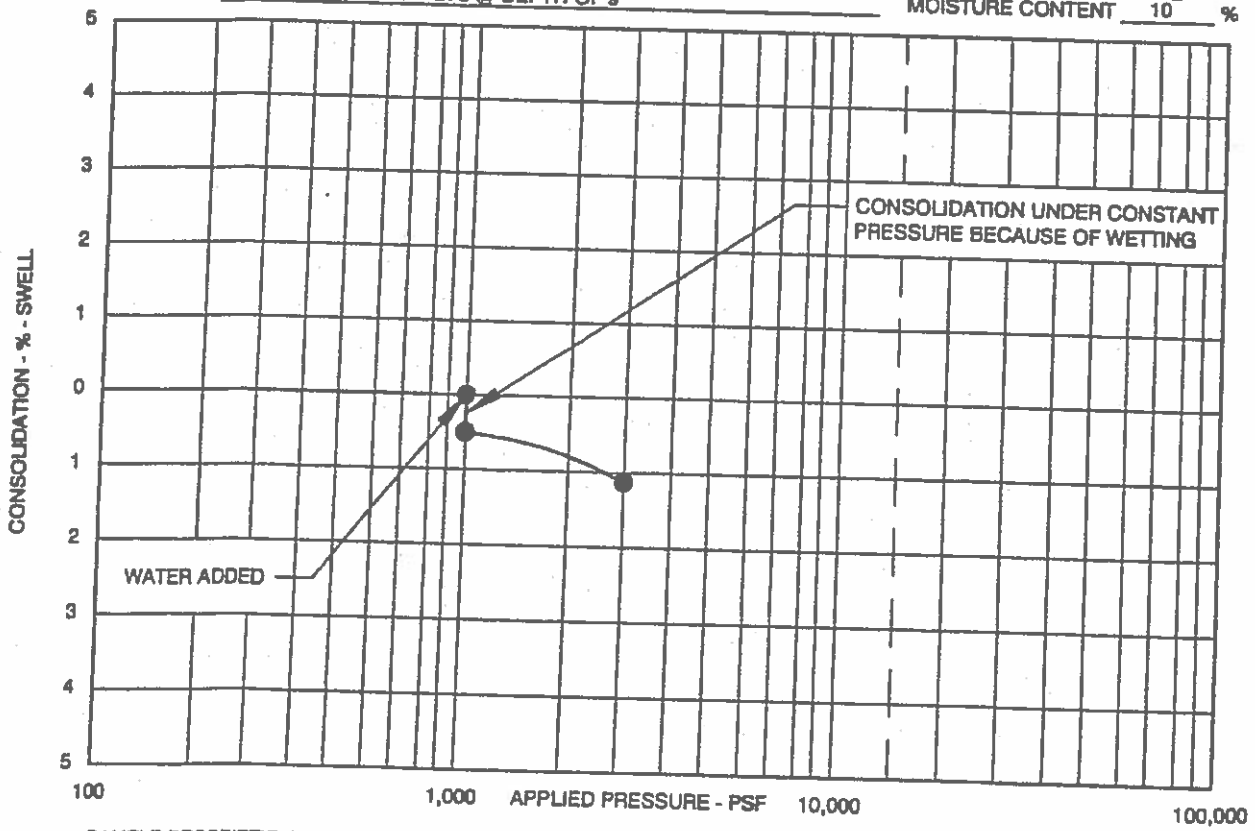
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 10

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 8 @ DEPTH OF 8'
DRY UNIT WT. 110 PCF
MOISTURE CONTENT 10 %

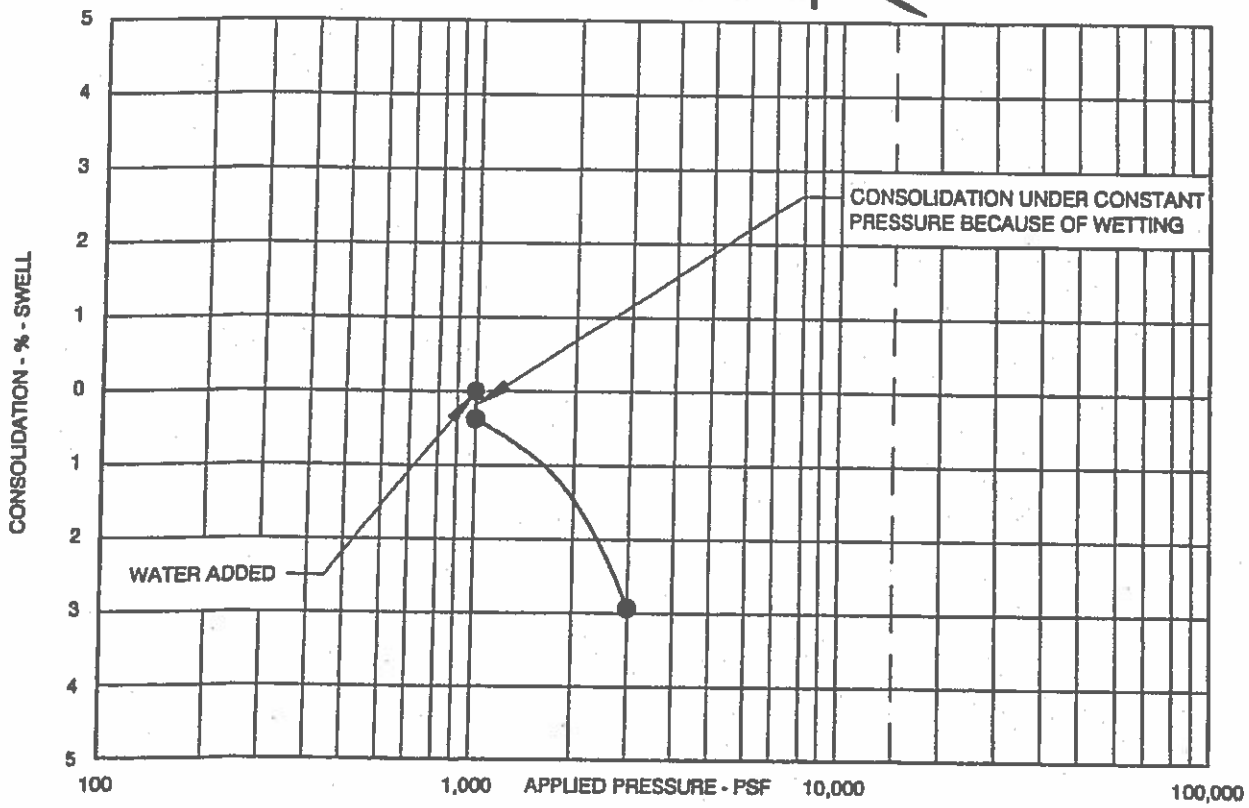


SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 9 @ DEPTH OF 4'
DRY UNIT WT. 109 PCF
MOISTURE CONTENT 7 %

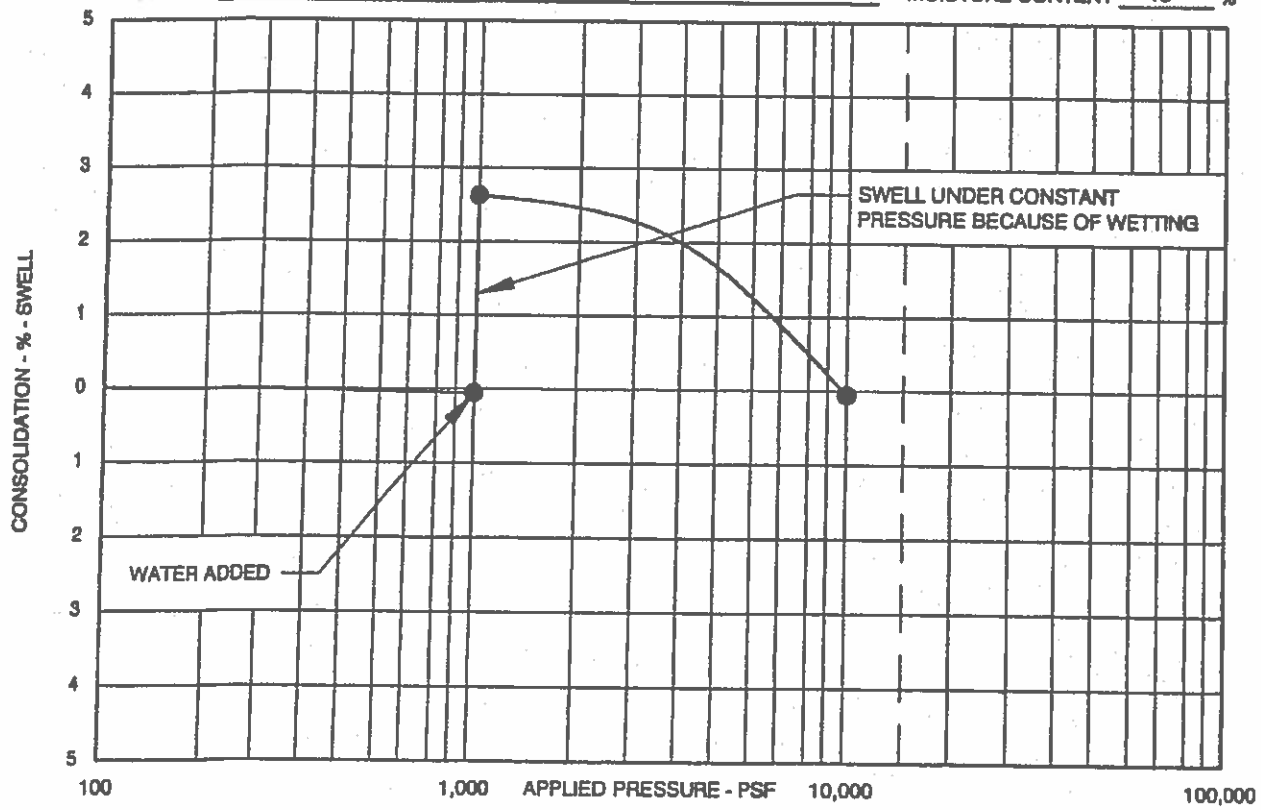
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 11

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 10 @ DEPTH OF 4'
DRY UNIT WT. 107 PCF
MOISTURE CONTENT 18 %

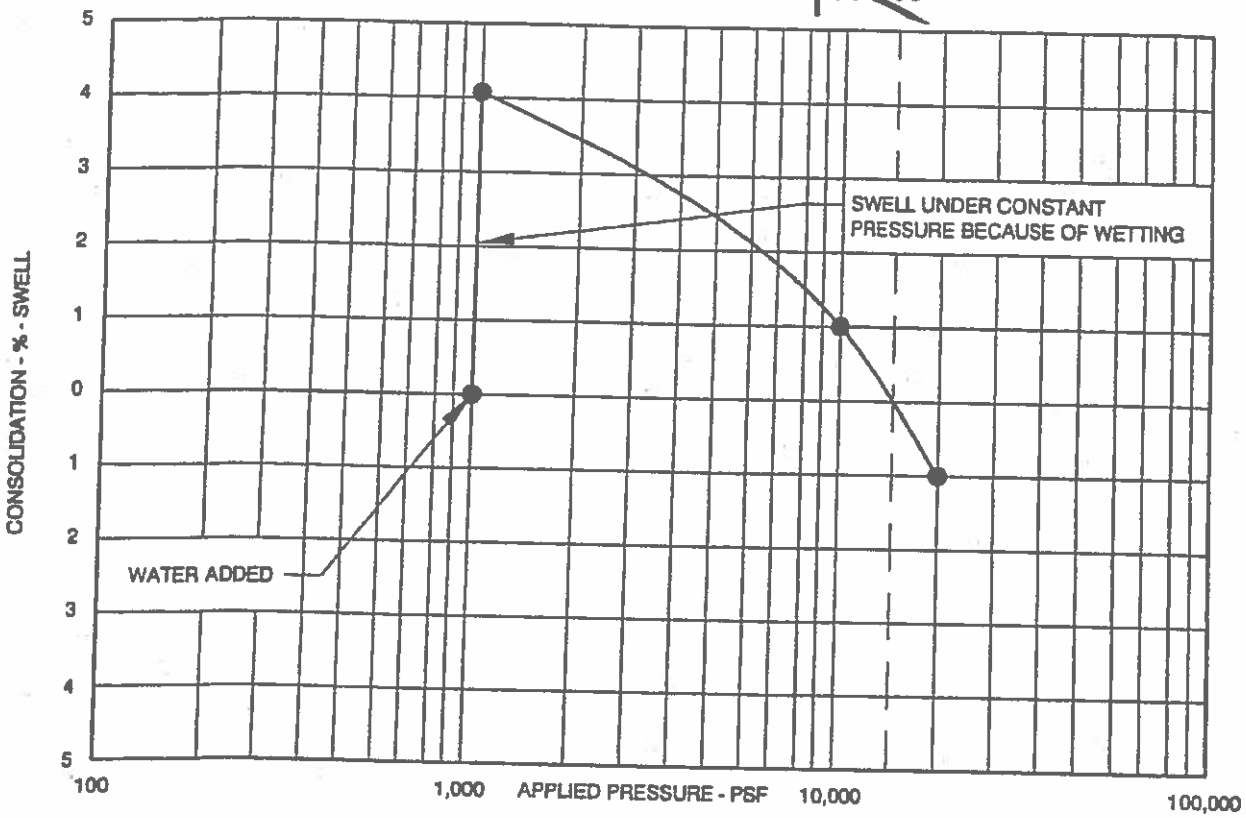


SAMPLE DESCRIPTION CLAYSTONE, SILTY
LOCATION TEST BORING NO. 10 @ DEPTH OF 9'
DRY UNIT WT. 116 PCF
MOISTURE CONTENT 16 %

SWELL - CONSOLIDATION TEST RESULTS

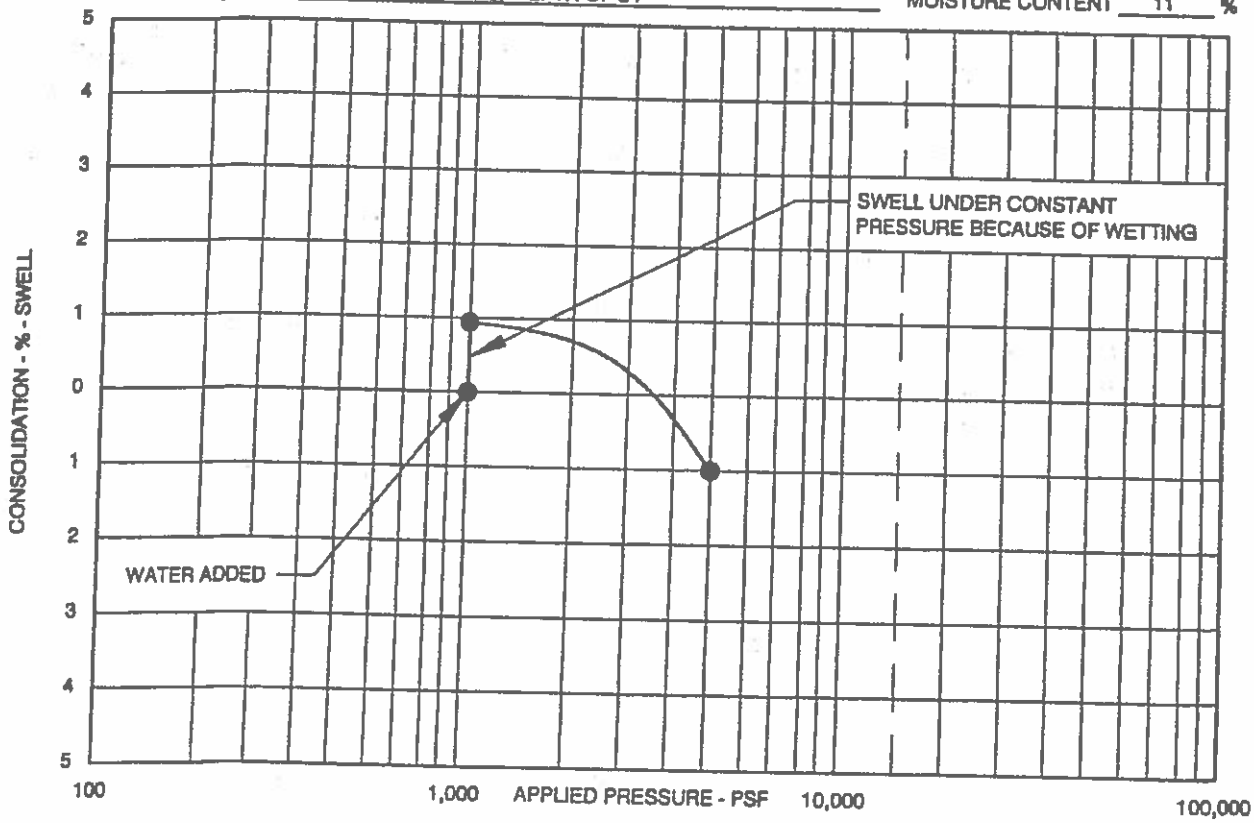
FIGURE 12

A.G. Wassenaar
Geotechnical and Environmental Consultants Inc.



SAMPLE DESCRIPTION CLAYSTONE, SILTY
LOCATION TEST BORING NO. 10 @ DEPTH OF 24'

DRY UNIT WT. 113 PCF
MOISTURE CONTENT 11 %



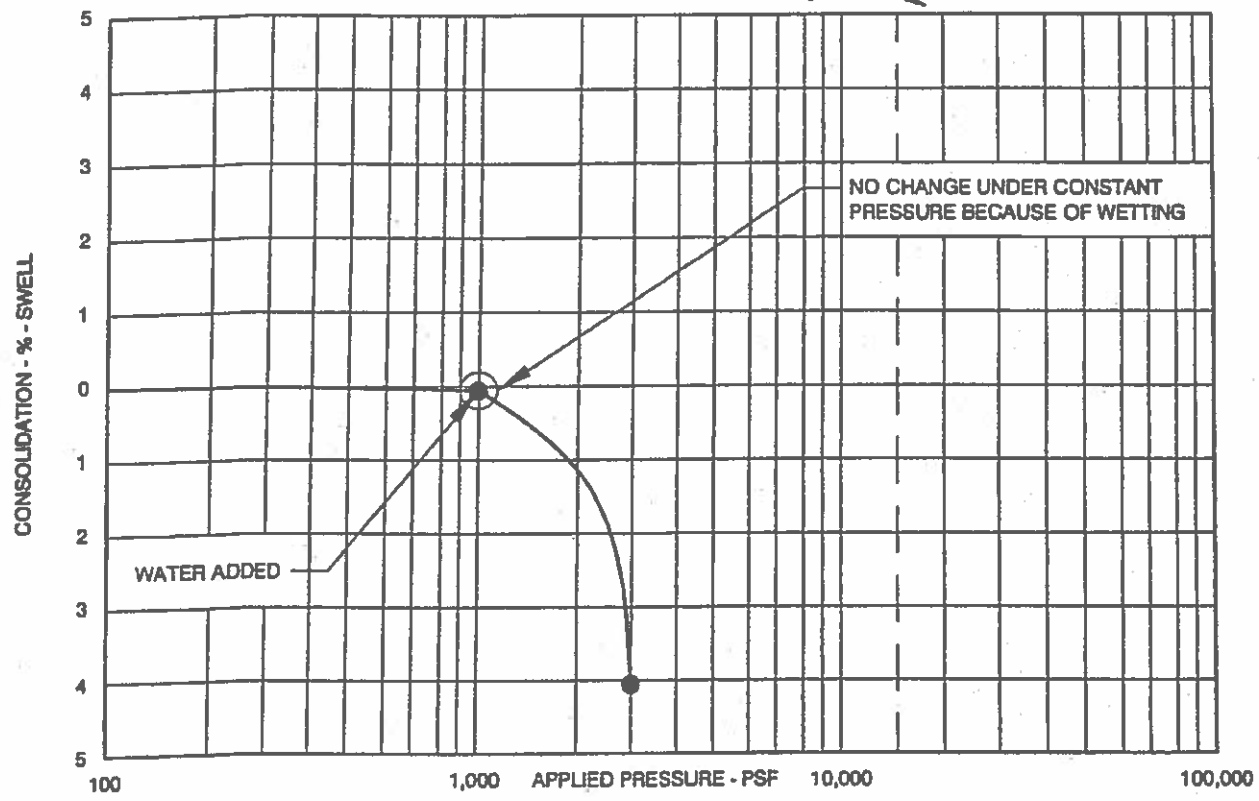
SAMPLE DESCRIPTION CLAYSTONE, SILTY
LOCATION TEST BORING NO. 11 @ DEPTH OF 4'

DRY UNIT WT. 116 PCF
MOISTURE CONTENT 10 %

SWELL - CONSOLIDATION TEST RESULTS

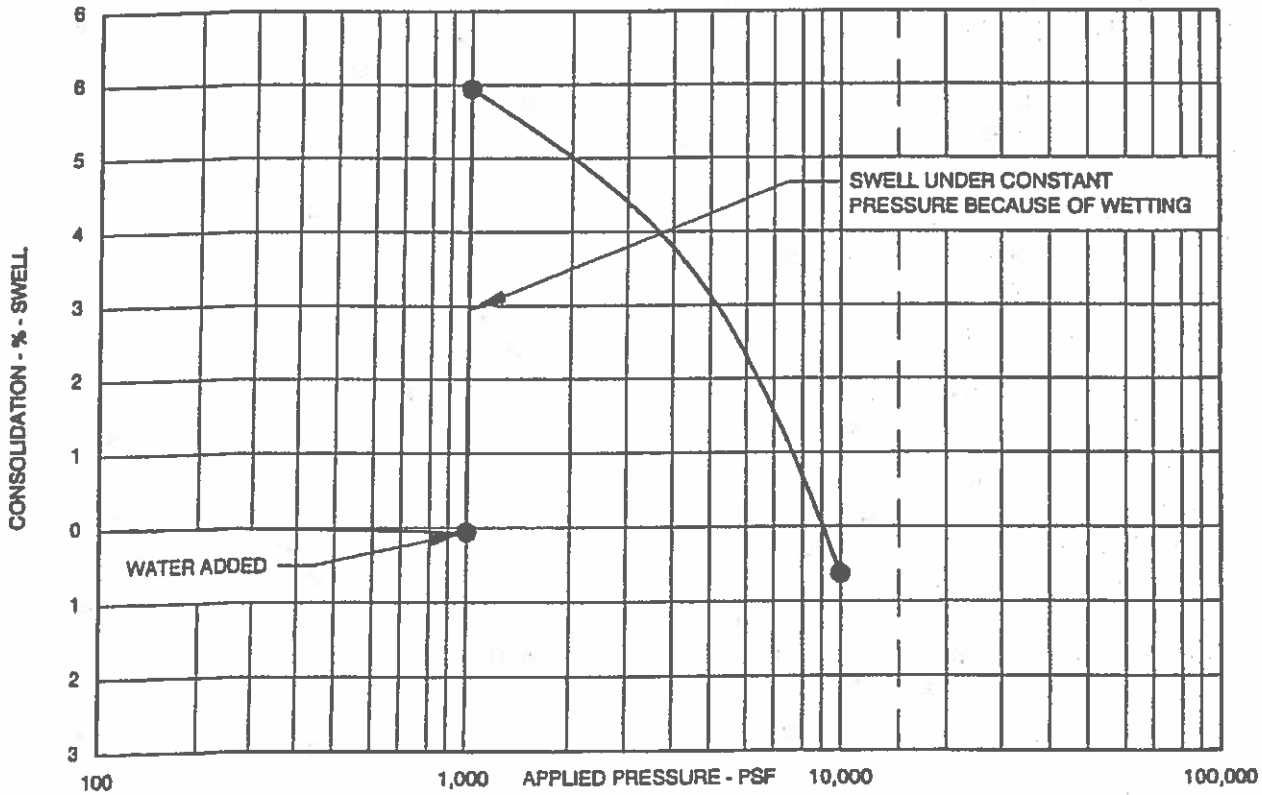
FIGURE 13

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAYSTONE, SILTY
LOCATION TEST BORING NO. 11 @ DEPTH OF 14'

DRY UNIT WT. 116 PCF
MOISTURE CONTENT 6 %



SAMPLE DESCRIPTION CLAYSTONE, SILTY
LOCATION TEST BORING NO. 12 @ DEPTH OF 19'

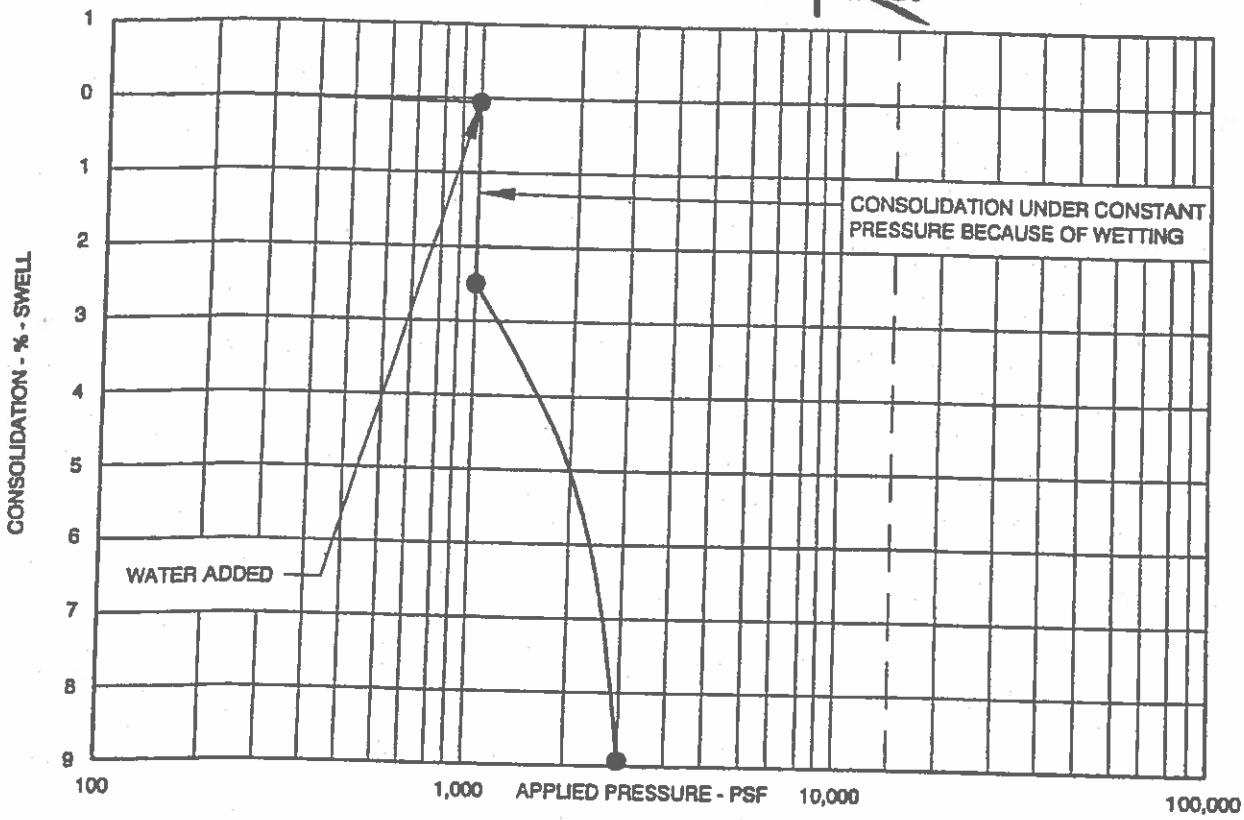
DRY UNIT WT. 124 PCF
MOISTURE CONTENT 10 %

SWELL - CONSOLIDATION TEST RESULTS

FIGURE 14

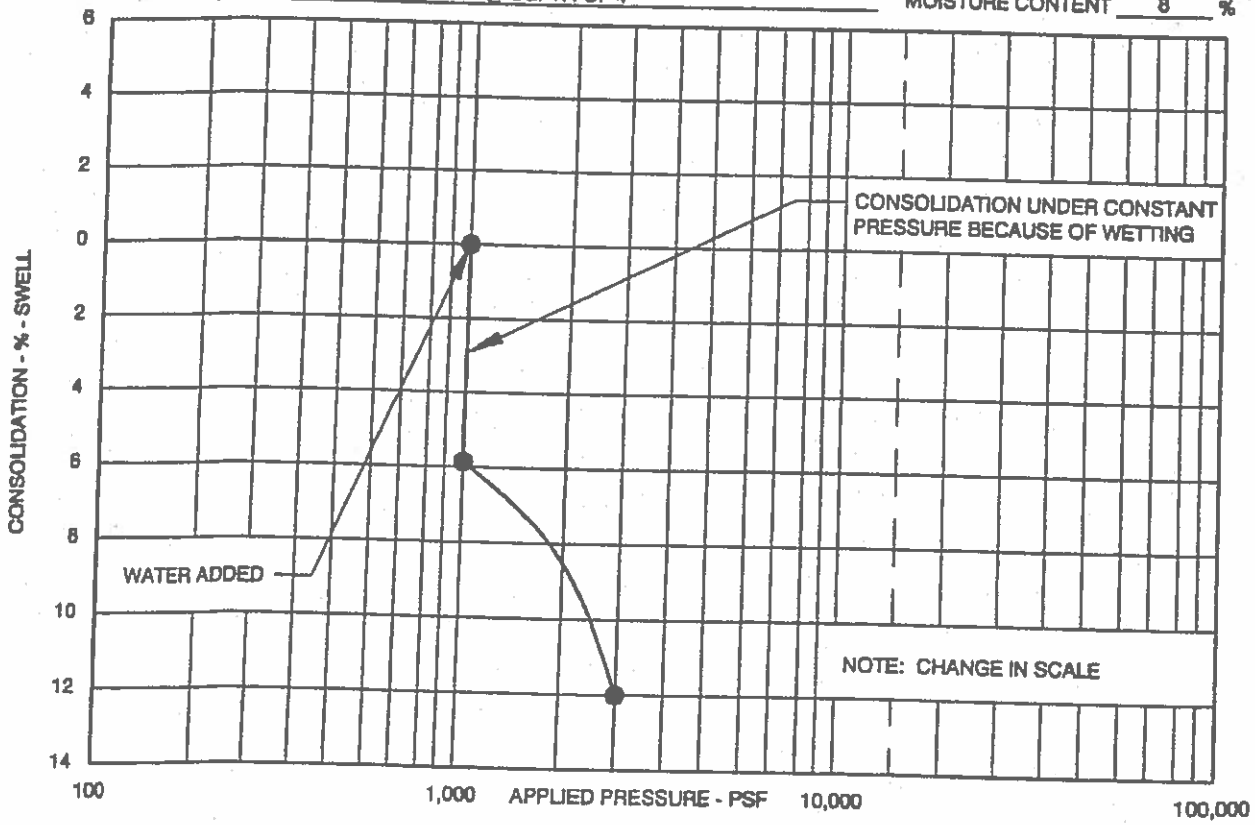
A.G. Wassenaar Inc.

Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 13 @ DEPTH OF 4'

DRY UNIT WT. 89 PCF
MOISTURE CONTENT 8 %



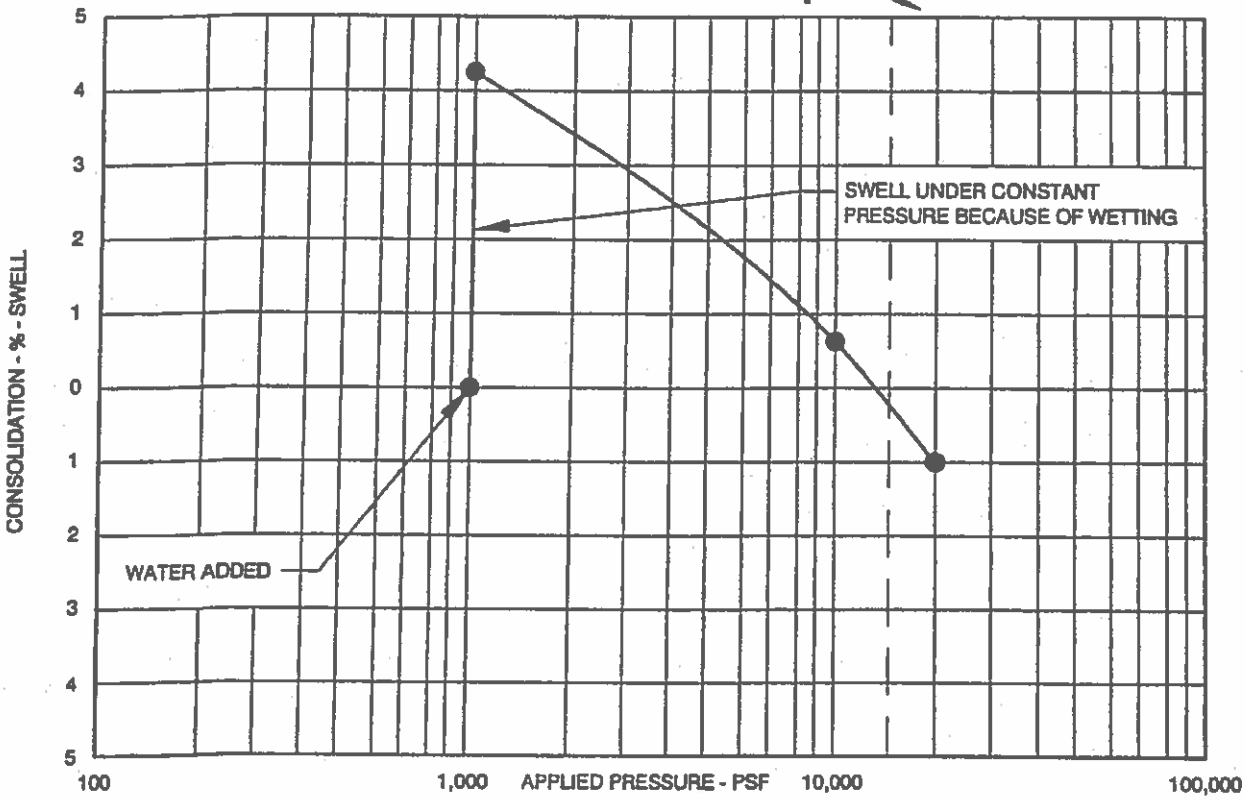
SAMPLE DESCRIPTION CLAYSTONE, SILTY (DISTURBED)
LOCATION TEST BORING NO. 13 @ DEPTH OF 9'

DRY UNIT WT. 99 PCF
MOISTURE CONTENT 7 %

SWELL - CONSOLIDATION TEST RESULTS

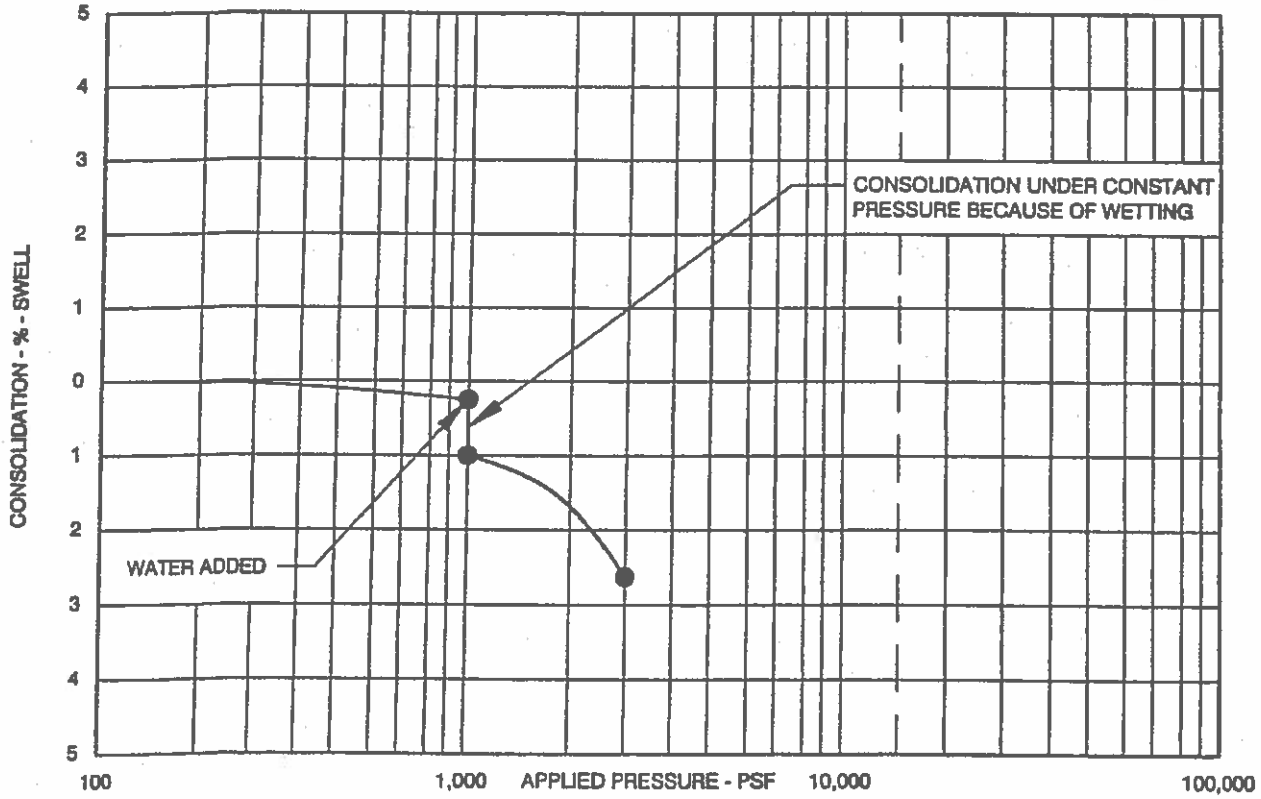
FIGURE 15

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 14 @ DEPTH OF 4'

DRY UNIT WT. 120 PCF
MOISTURE CONTENT 9 %



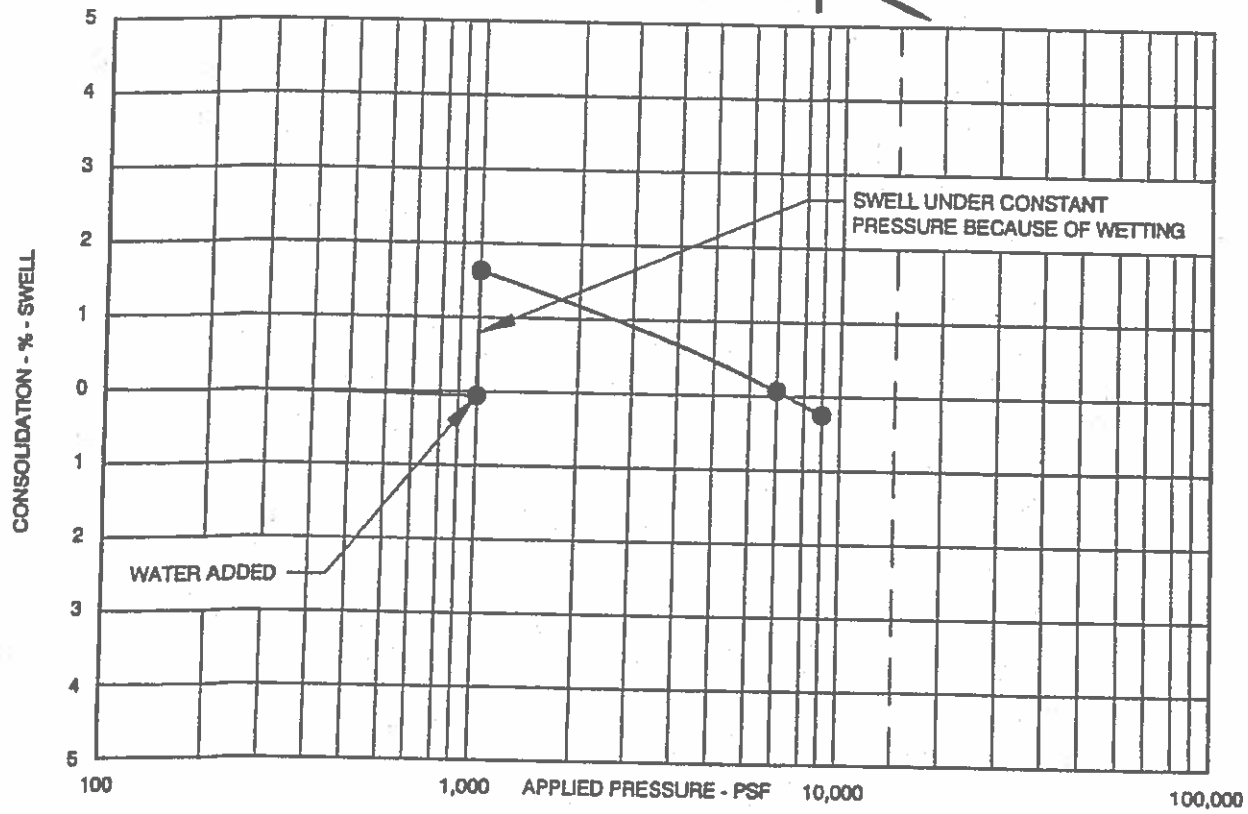
SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 15 @ DEPTH OF 4'

DRY UNIT WT. 104 PCF
MOISTURE CONTENT 9 %

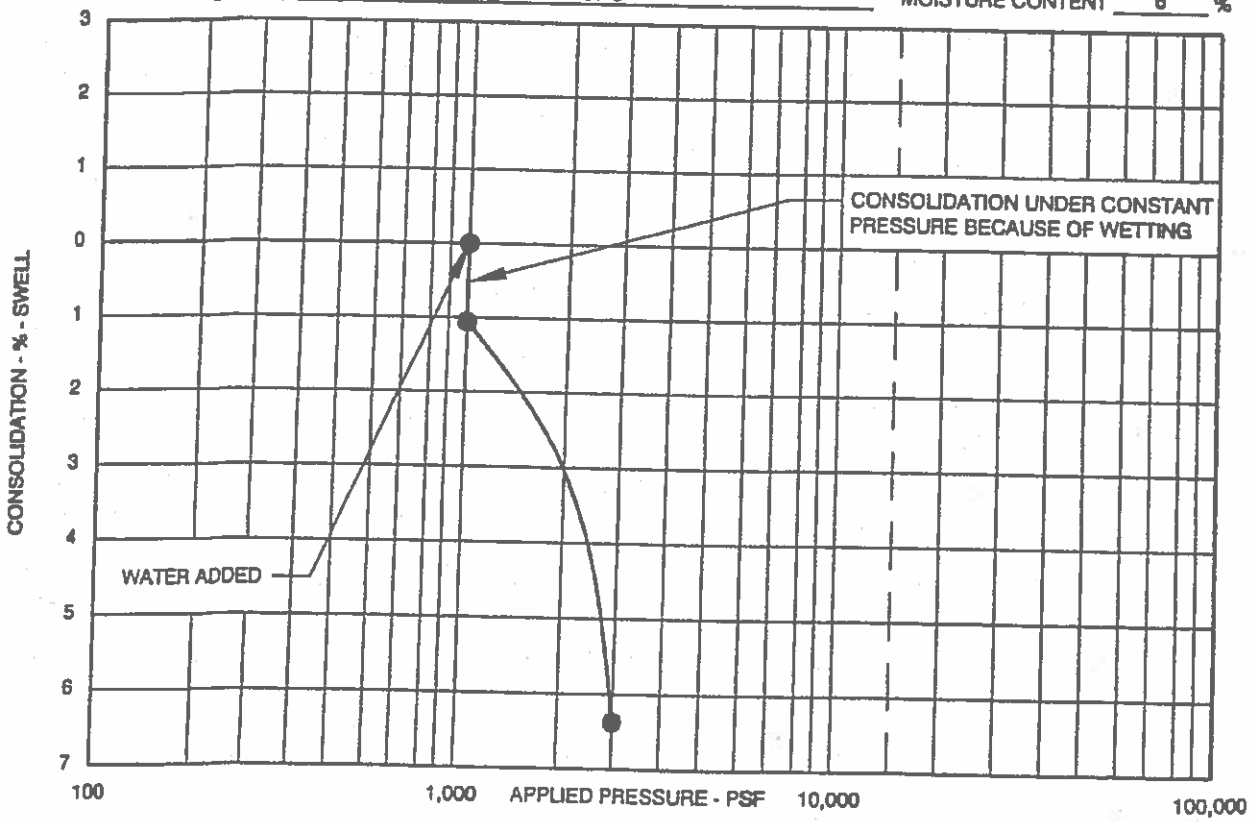
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 16

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, VERY SANDY
LOCATION TEST BORING NO. 15 @ DEPTH OF 9'
DRY UNIT WT. 123 PCF
MOISTURE CONTENT 6 %

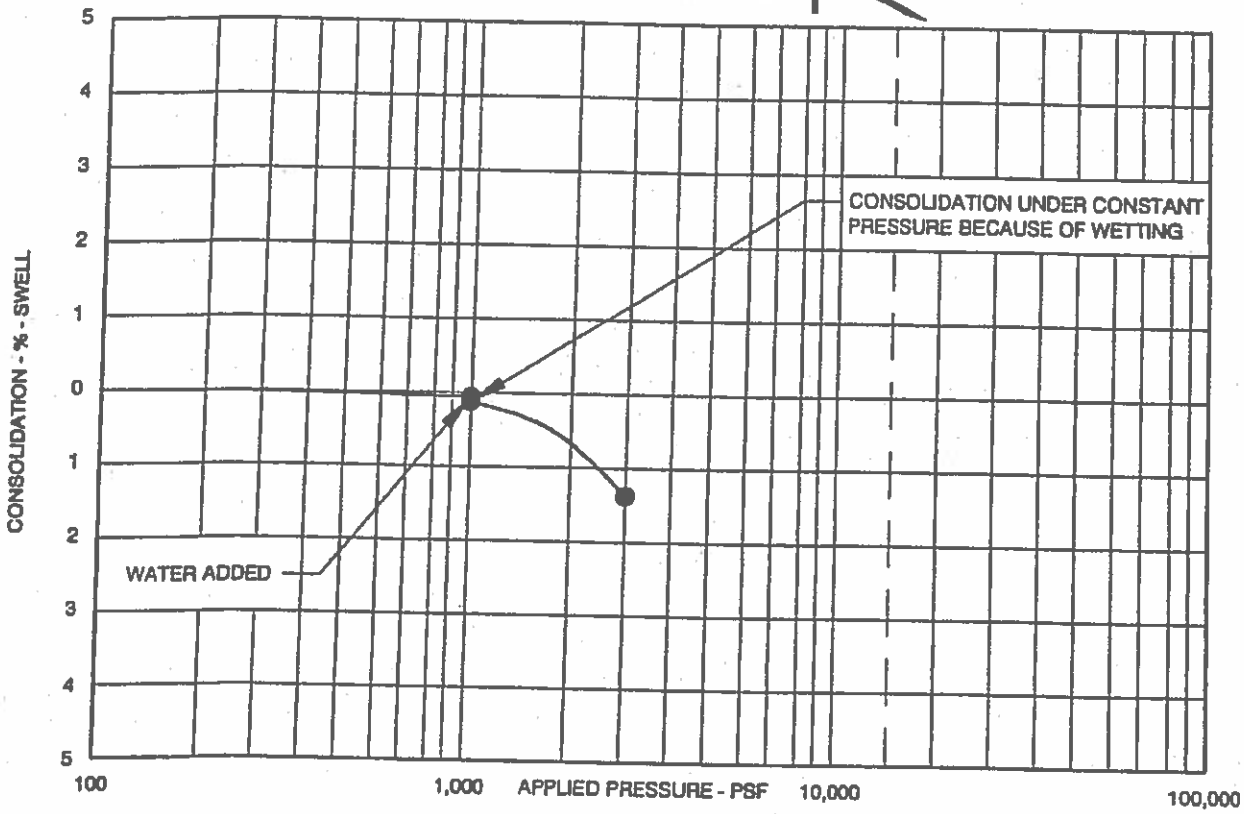


SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 16 @ DEPTH OF 4'
DRY UNIT WT. 93 PCF
MOISTURE CONTENT 8 %

SWELL - CONSOLIDATION TEST RESULTS

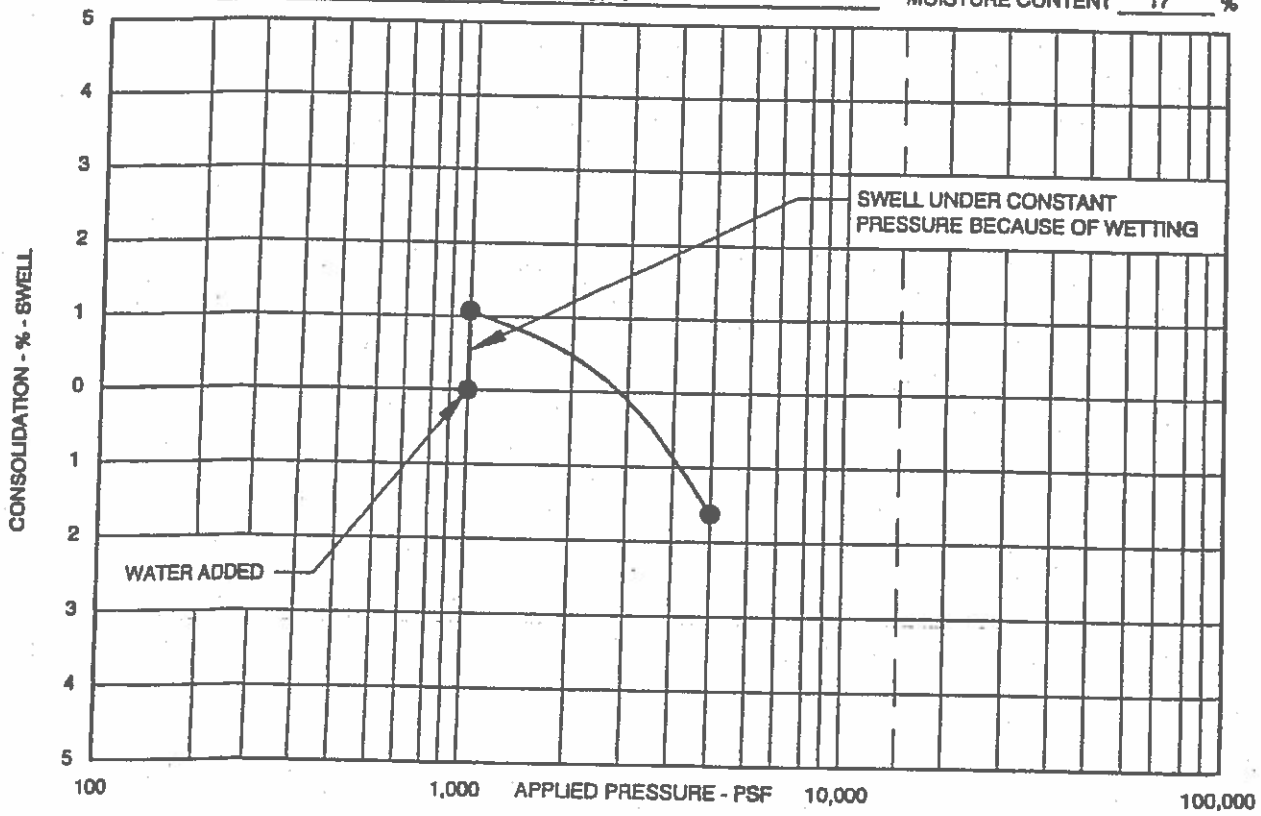
FIGURE 17

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 17 @ DEPTH OF 4'

DRY UNIT WT. 107 PCF
MOISTURE CONTENT 17 %



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 18 @ DEPTH OF 4'

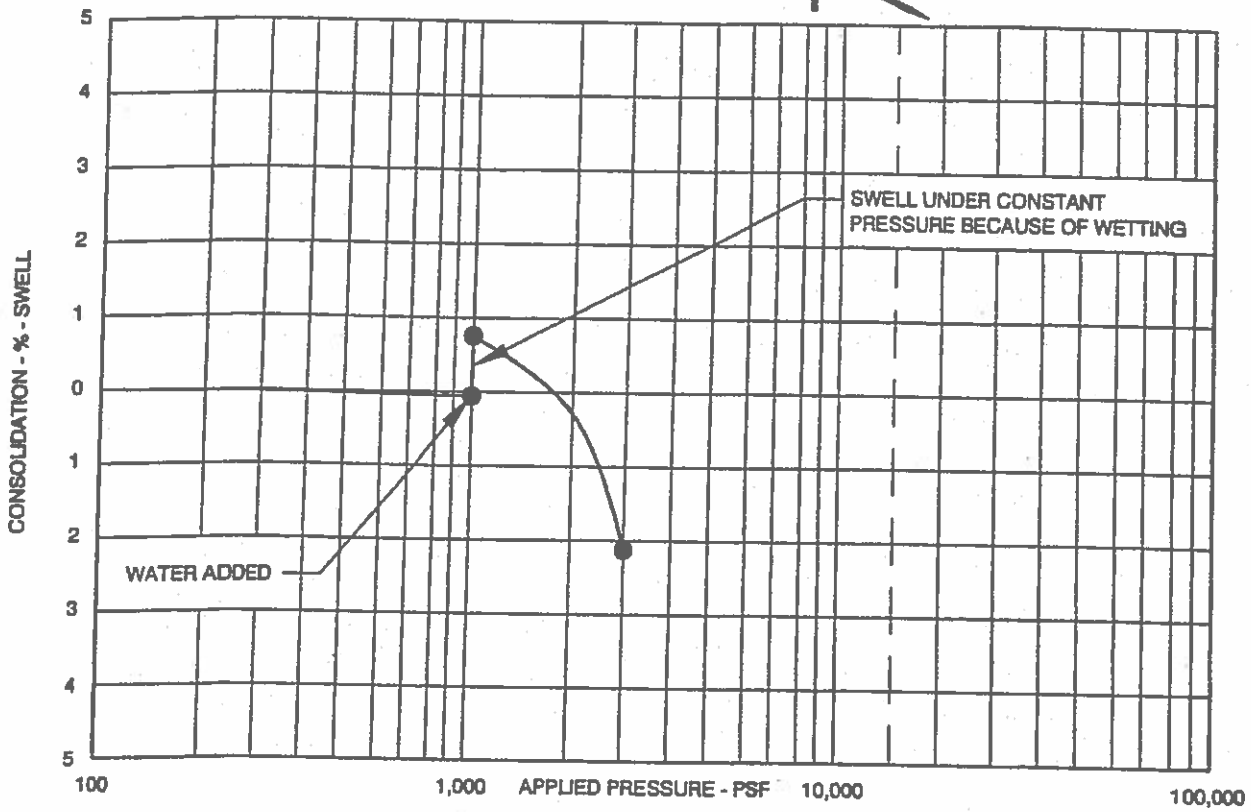
DRY UNIT WT. 103 PCF
MOISTURE CONTENT 7 %

SWELL - CONSOLIDATION TEST RESULTS

FIGURE 18

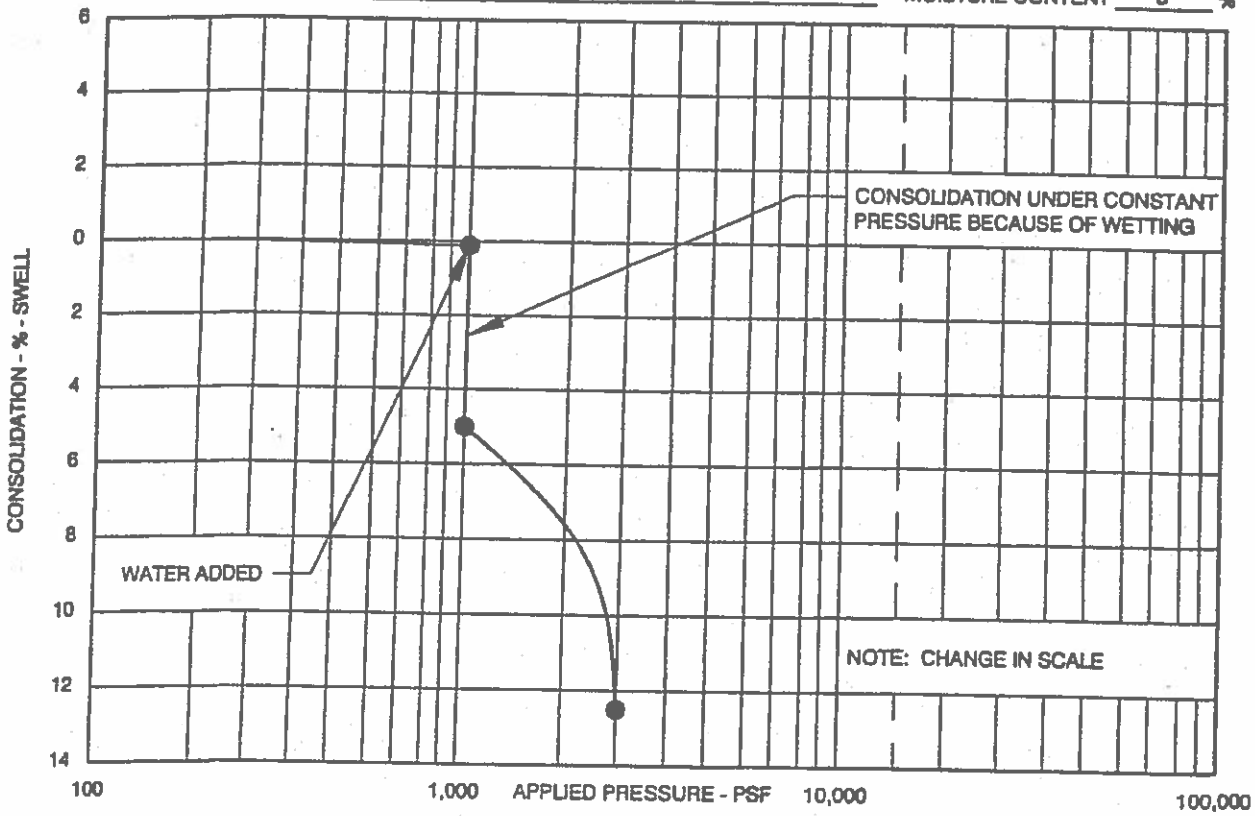
A.G. Wassenaar Inc.

Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION SANDSTONE, SLIGHTLY CLAYEY
LOCATION TEST BORING NO. 18 @ DEPTH OF 9'

DRY UNIT WT. 120 PCF
MOISTURE CONTENT 5 %



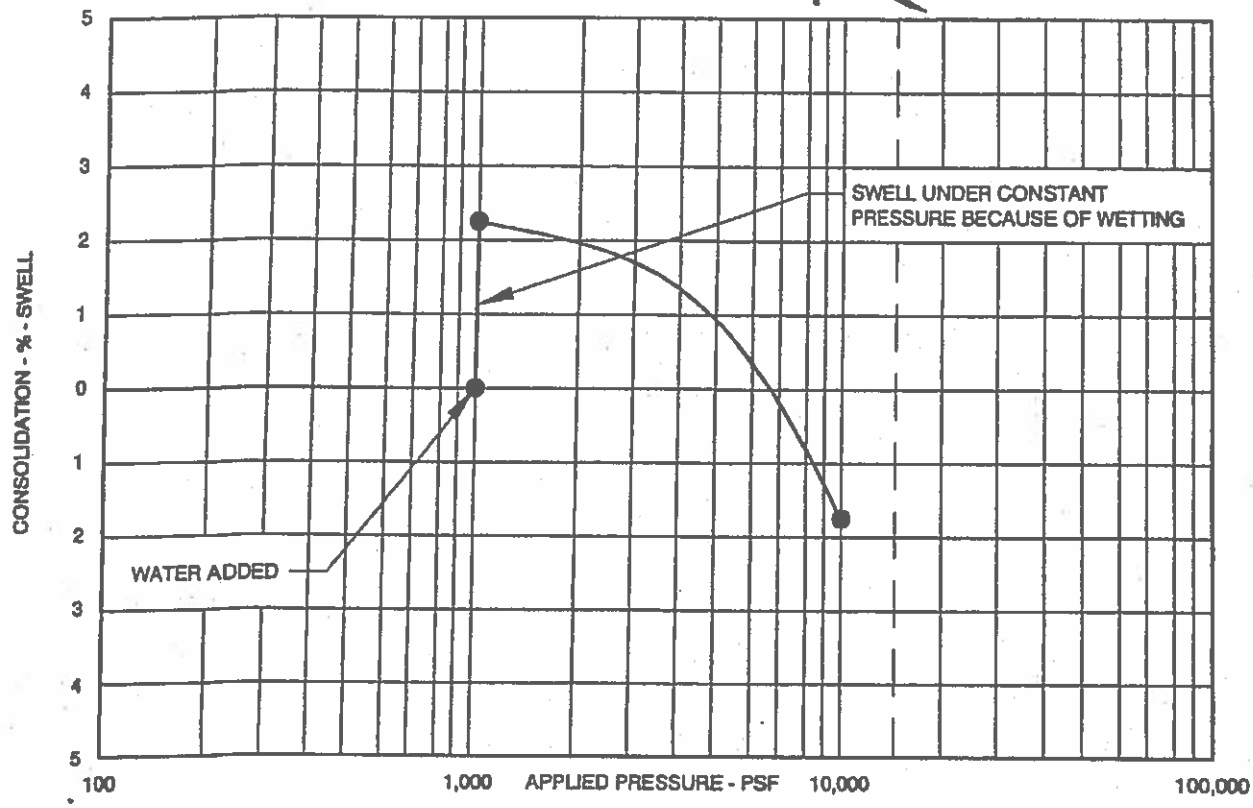
SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 19 @ DEPTH OF 4'

DRY UNIT WT. 78 PCF
MOISTURE CONTENT 6 %

SWELL - CONSOLIDATION TEST RESULTS

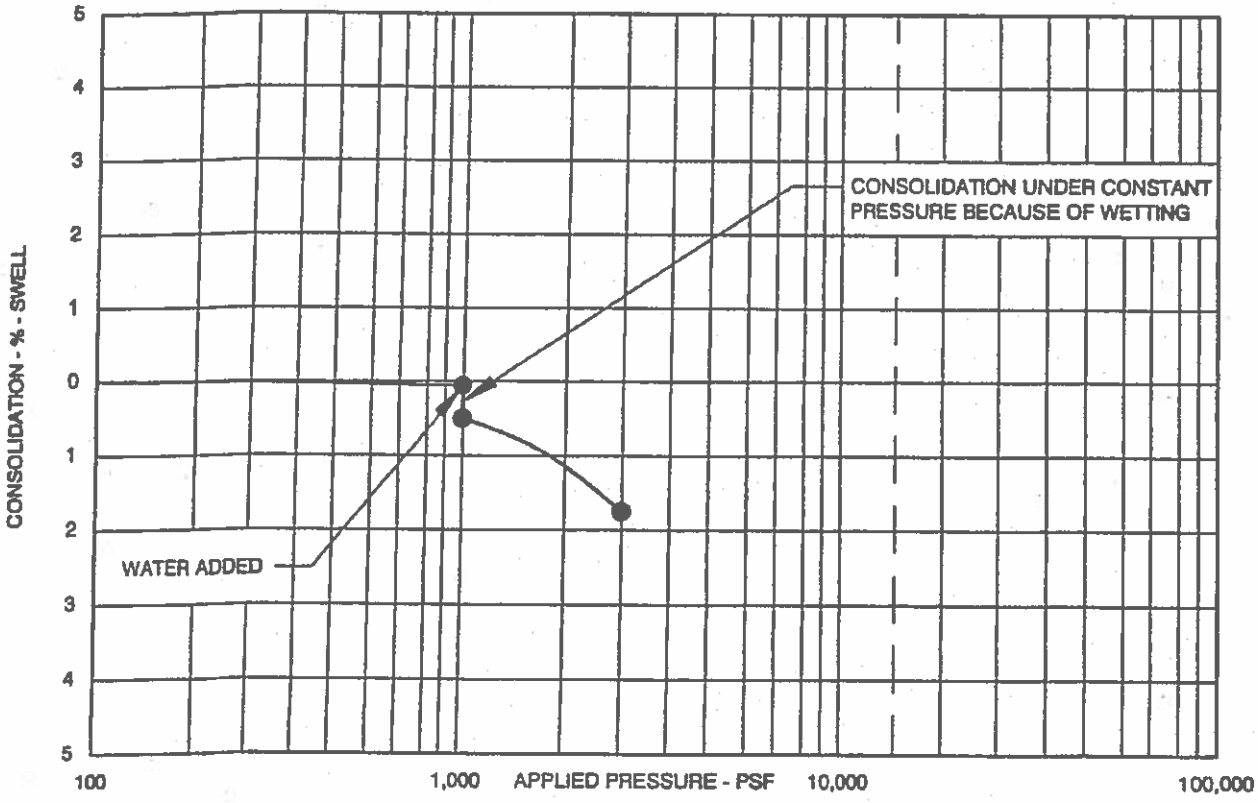
FIGURE 19

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION CLAYSTONE, SILTY
LOCATION TEST BORING NO. 19 @ DEPTH OF 24'

DRY UNIT WT. 124 PCF
MOISTURE CONTENT 7 %



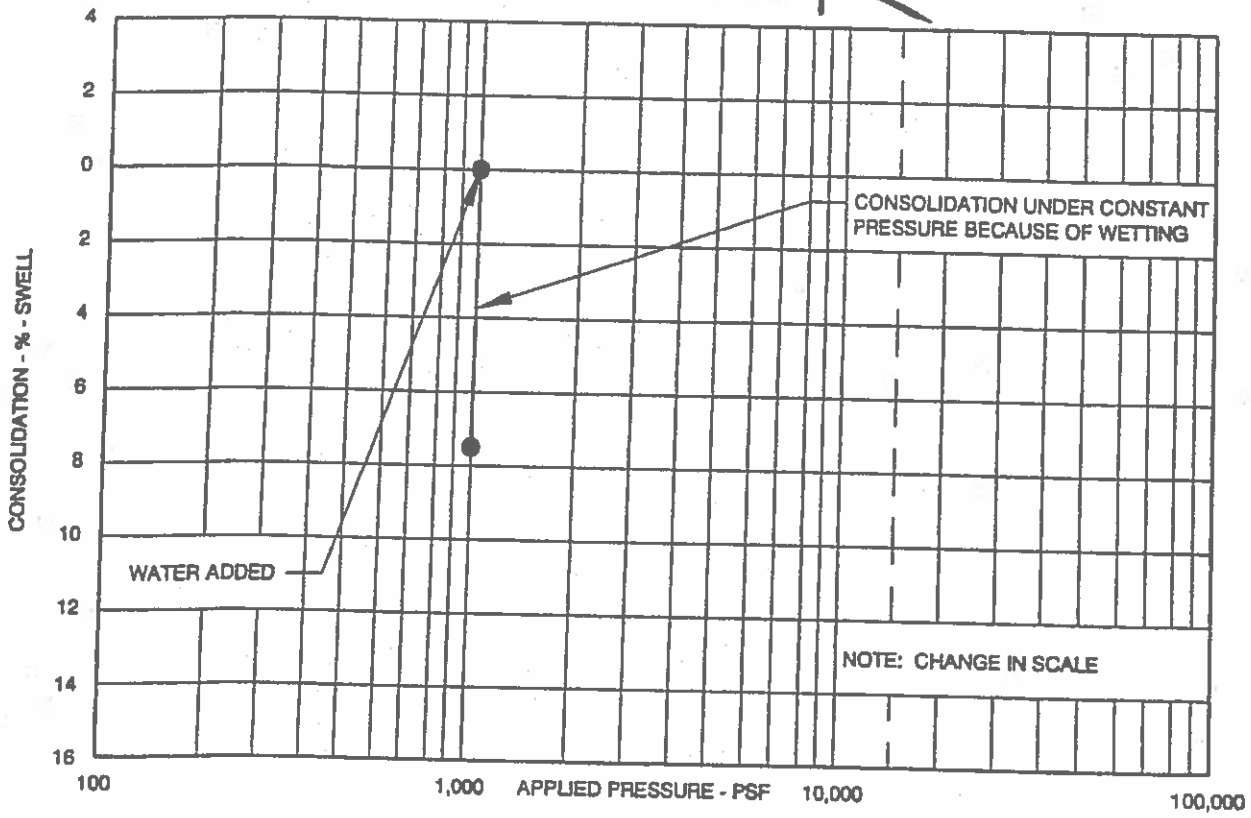
SAMPLE DESCRIPTION CLAY, SLIGHTLY SANDY
LOCATION TEST BORING NO. 20 @ DEPTH OF 4'

DRY UNIT WT. 108 PCF
MOISTURE CONTENT 15 %

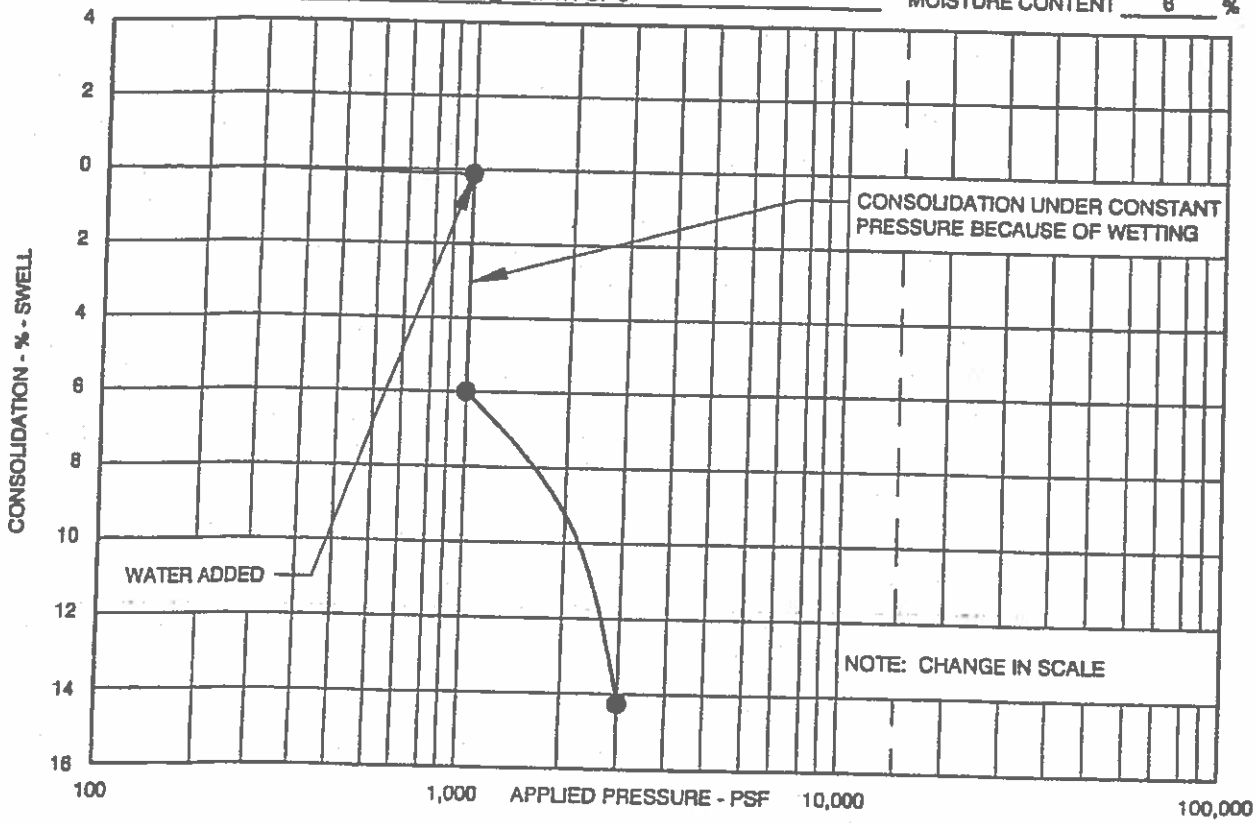
SWELL - CONSOLIDATION TEST RESULTS

FIGURE 20

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



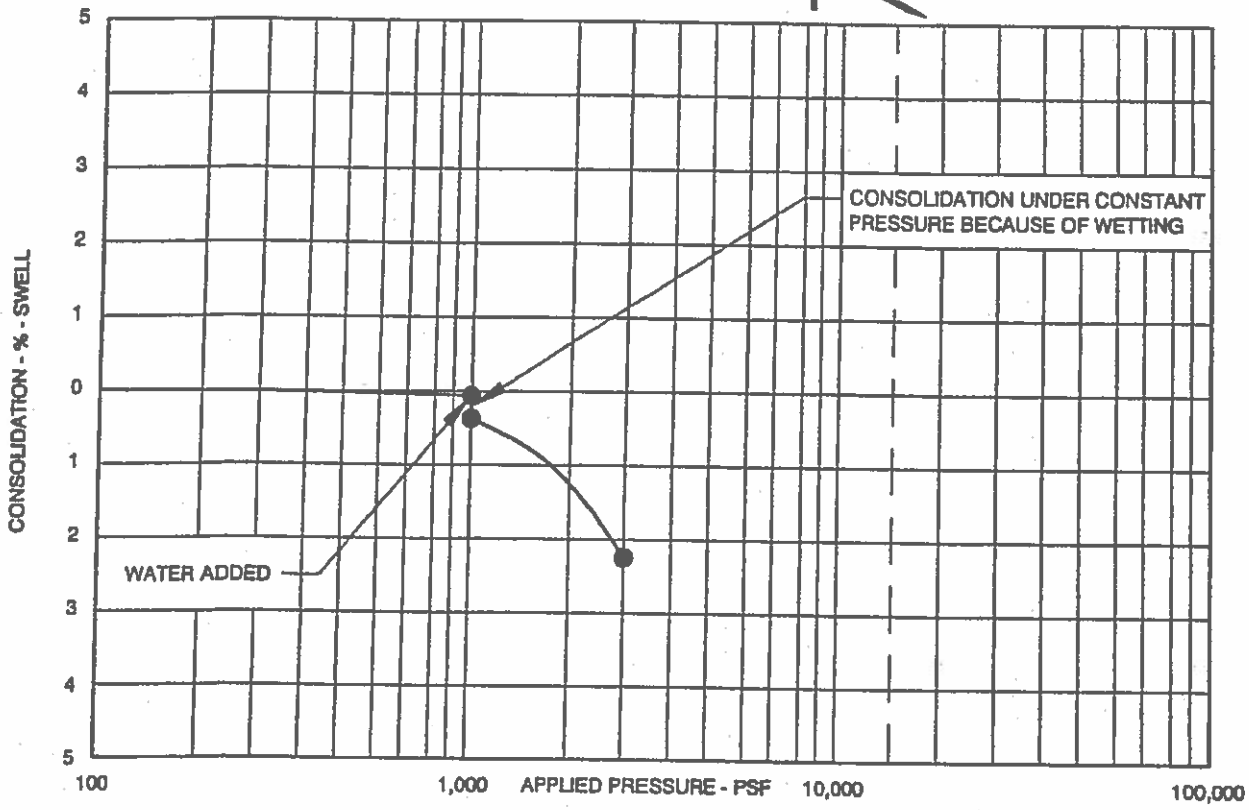
SAMPLE DESCRIPTION CLAYSTONE, SILTY (DISTURBED)
LOCATION TEST BORING NO. 20 @ DEPTH OF 9'
DRY UNIT WT. 94 PCF
MOISTURE CONTENT 6 %



SAMPLE DESCRIPTION CLAY, SANDY
LOCATION TEST BORING NO. 21 @ DEPTH OF 4'
DRY UNIT WT. 91 PCF
MOISTURE CONTENT 6 %

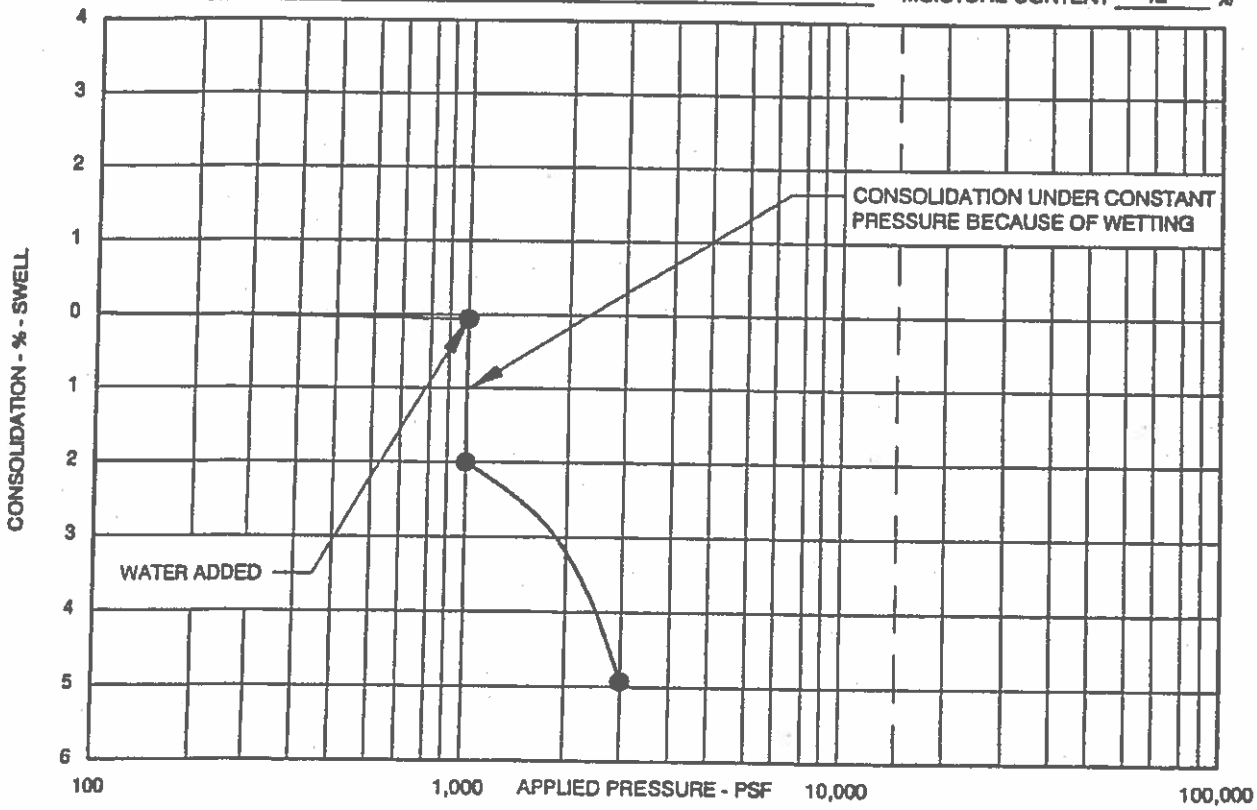
SWELL - CONSOLIDATION TEST RESULTS

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



SAMPLE DESCRIPTION FILL-CLAY, SANDY
LOCATION TEST BORING NO. 22 @ DEPTH OF 9'

DRY UNIT WT. 119 PCF
MOISTURE CONTENT 12 %

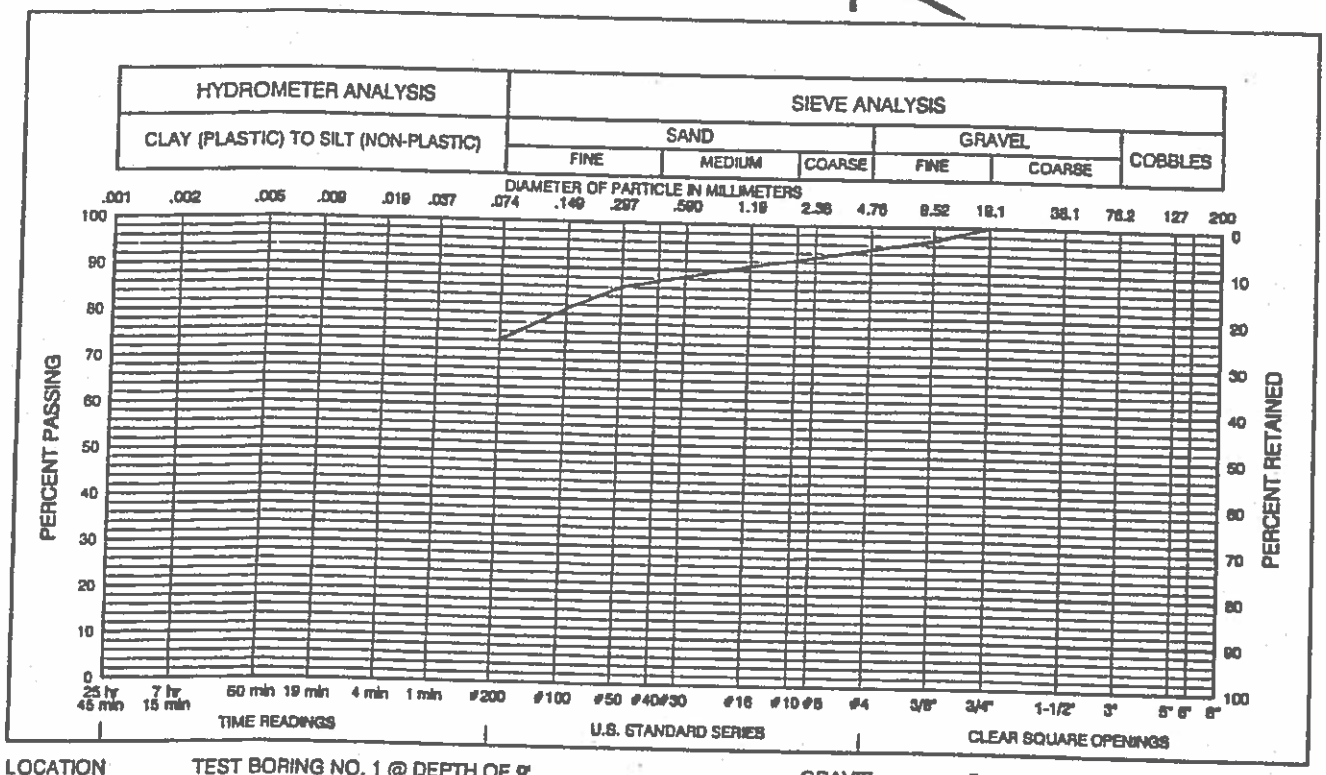


SAMPLE DESCRIPTION FILL-CLAY, SANDY
LOCATION TEST BORING NO. 22 @ DEPTH OF 14'

DRY UNIT WT. 102 PCF
MOISTURE CONTENT 10 %

SWELL - CONSOLIDATION TEST RESULTS

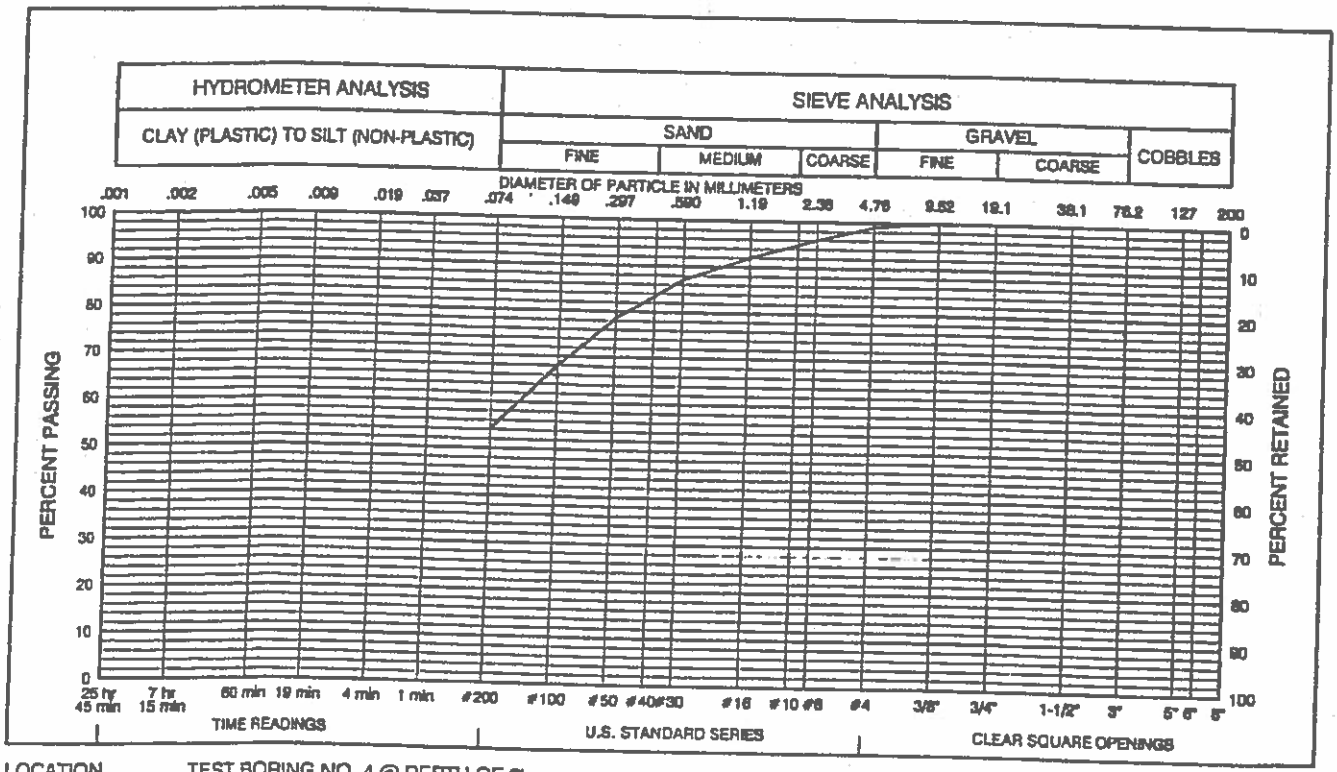
FIGURE 22



LOCATION TEST BORING NO. 1 @ DEPTH OF g'
SAMPLE DESCRIPTION CLAY, SANDY, SLIGHTLY GRAVELLY (CL)
CLASSIFICATION AASHTO A-6 (11)

GRAVEL 5 %
SAND 21 %
SILT & CLAY 74 %

LIQUID LIMIT 35
PLASTICITY INDEX 17



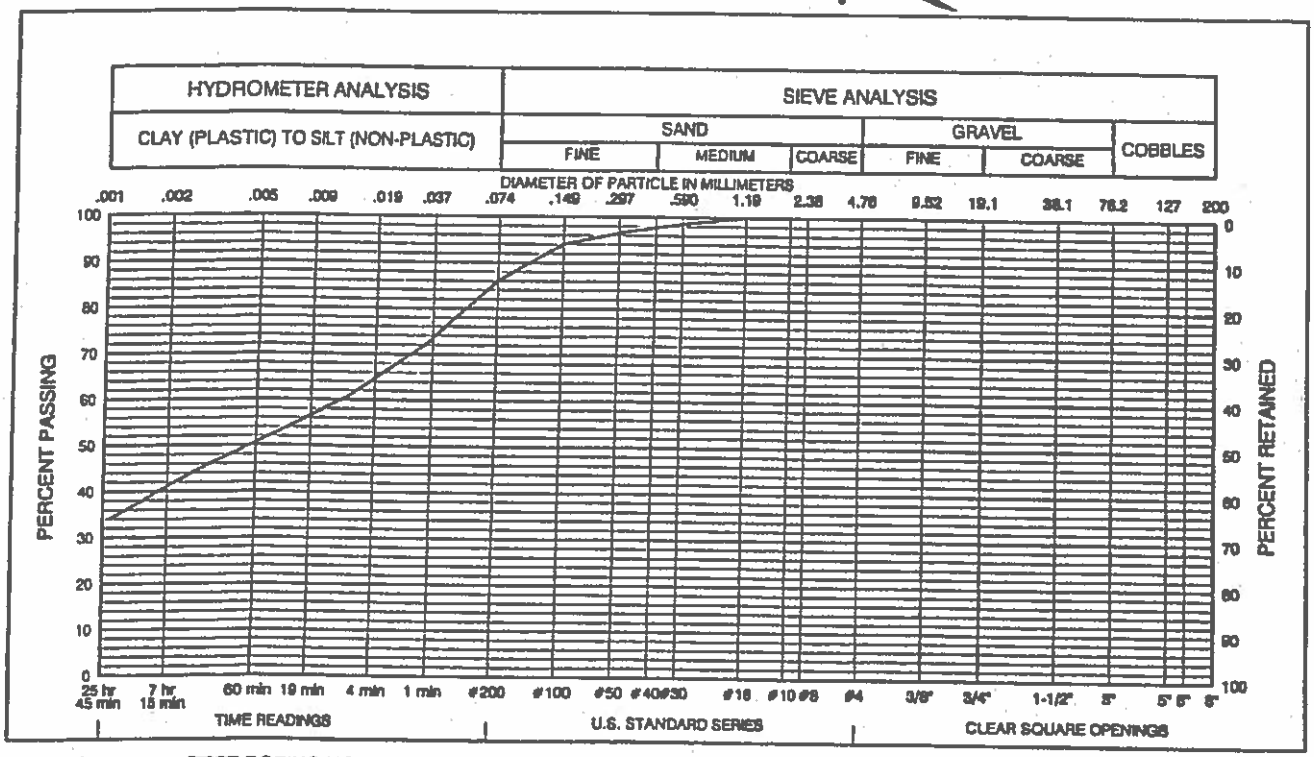
LOCATION TEST BORING NO. 4 @ DEPTH OF g'
SAMPLE DESCRIPTION SILT, VERY SANDY (ML)
CLASSIFICATION AASHTO A-4 (0)

GRAVEL 1 %
SAND 45 %
SILT & CLAY 54 %

LIQUID LIMIT NV
PLASTICITY INDEX NP

GRADATION TEST RESULTS

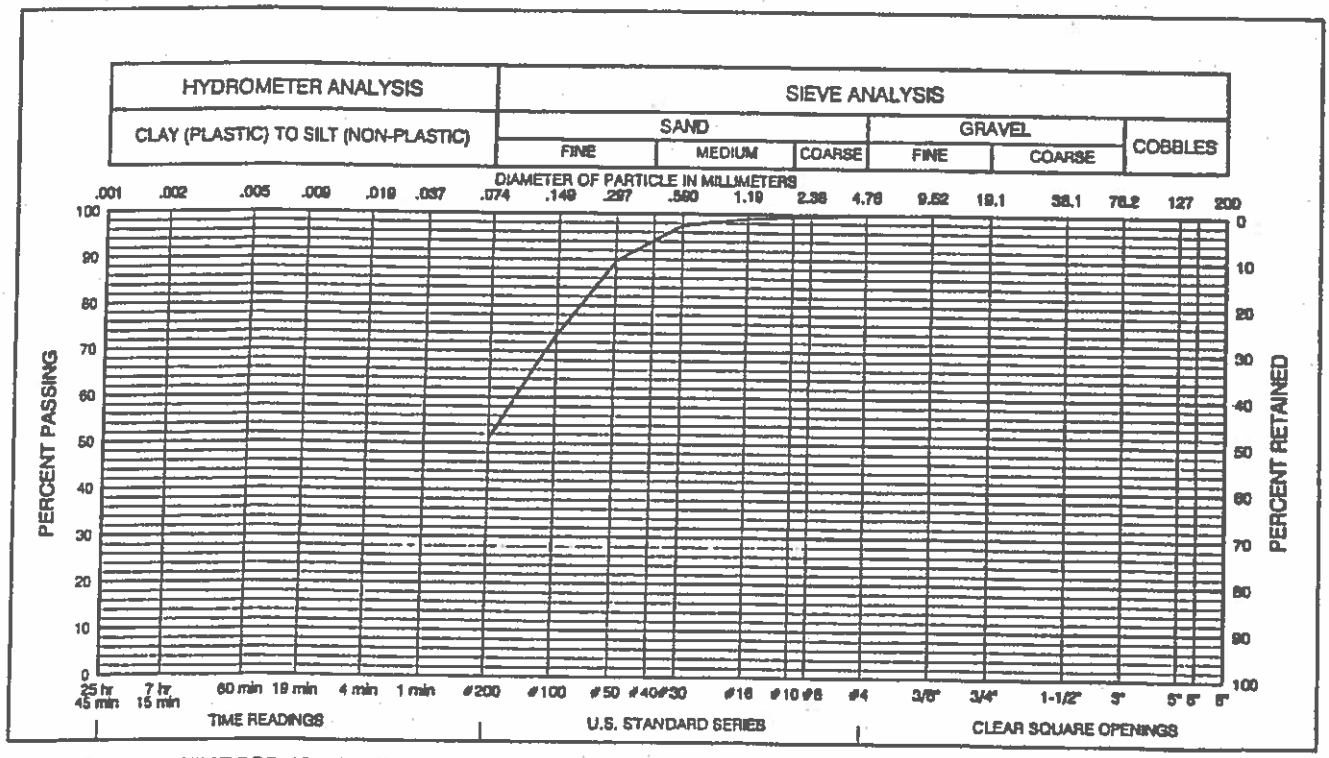
FIGURE 23



LOCATION TEST BORING NO. 8 @ DEPTH OF 4'
SAMPLE DESCRIPTION CLAY, SLIGHTLY SANDY (CL)
CLASSIFICATION AASHTO A-6 (13)

GRAVEL 0 %
SAND 14 %
SILT & CLAY 86 %

LIQUID LIMIT 35
PLASTICITY INDEX 18



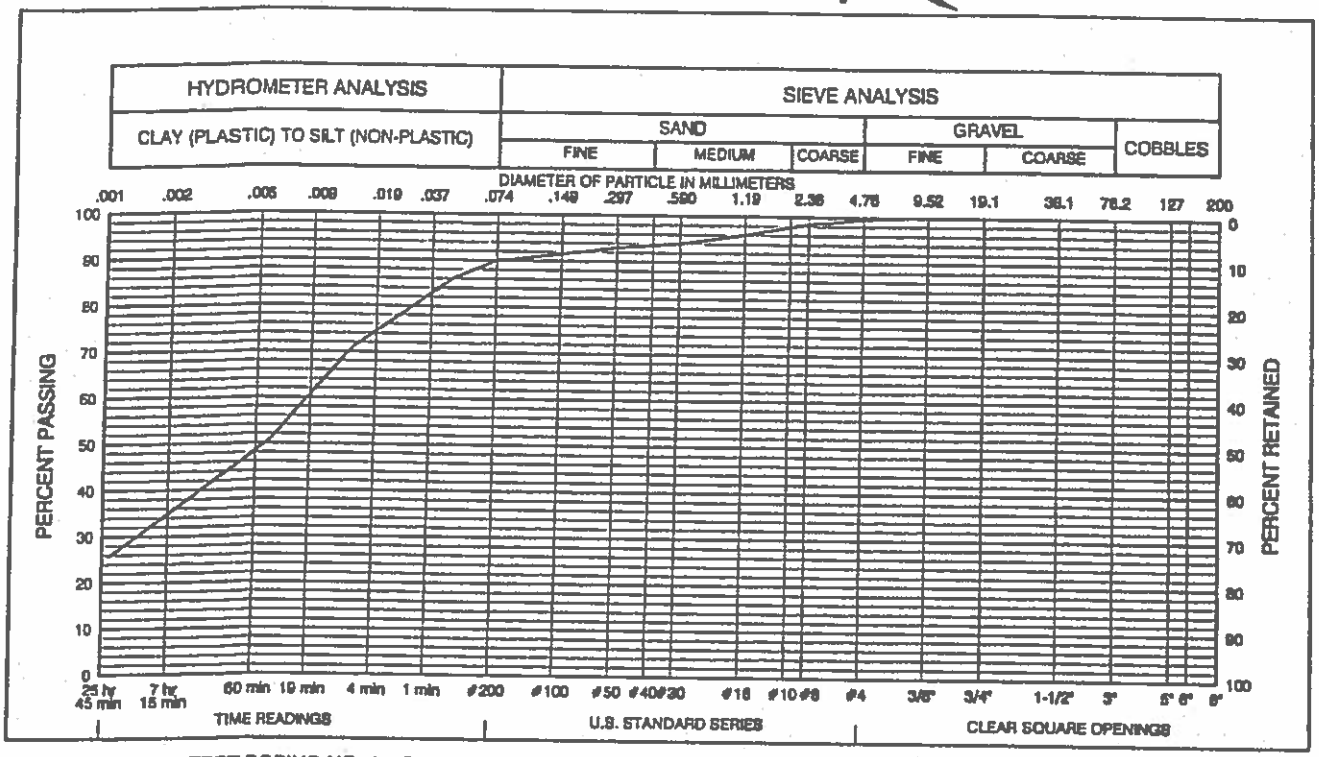
LOCATION TEST BORING NO. 9 @ DEPTH OF 9'
SAMPLE DESCRIPTION SILT, VERY SANDY (ML)
CLASSIFICATION AASHTO A-4 (0)

GRAVEL 0 %
SAND 49 %
SILT & CLAY 51 %

LIQUID LIMIT NV
PLASTICITY INDEX NP

GRADATION TEST RESULTS
FIGURE 24

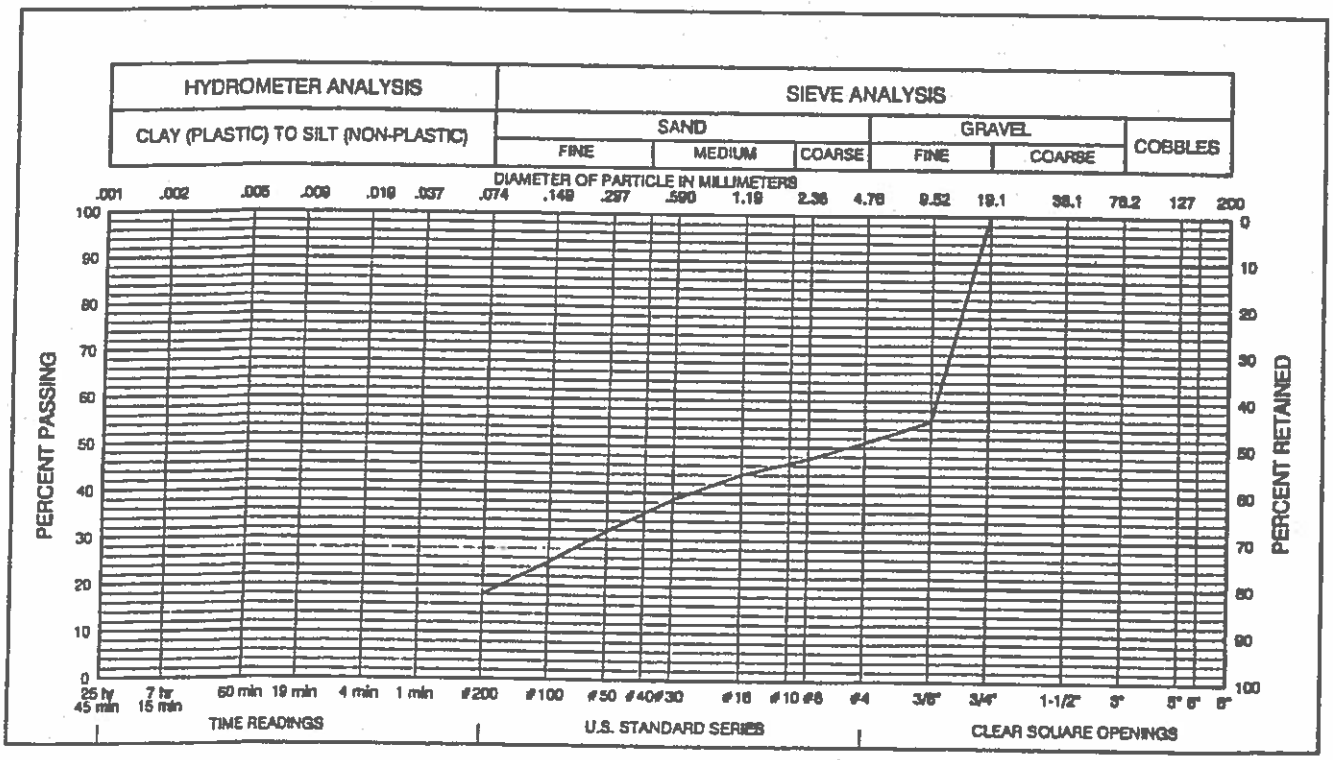
A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



LOCATION TEST BORING NO. 11 @ DEPTH OF 9'
SAMPLE DESCRIPTION CLAY, SLIGHTLY SANDY (CL)
CLASSIFICATION AASHTO A-6 (13)

GRAVEL 0 %
SAND 10 %
SILT & CLAY 90 %

LIQUID LIMIT 33
PLASTICITY INDEX 16



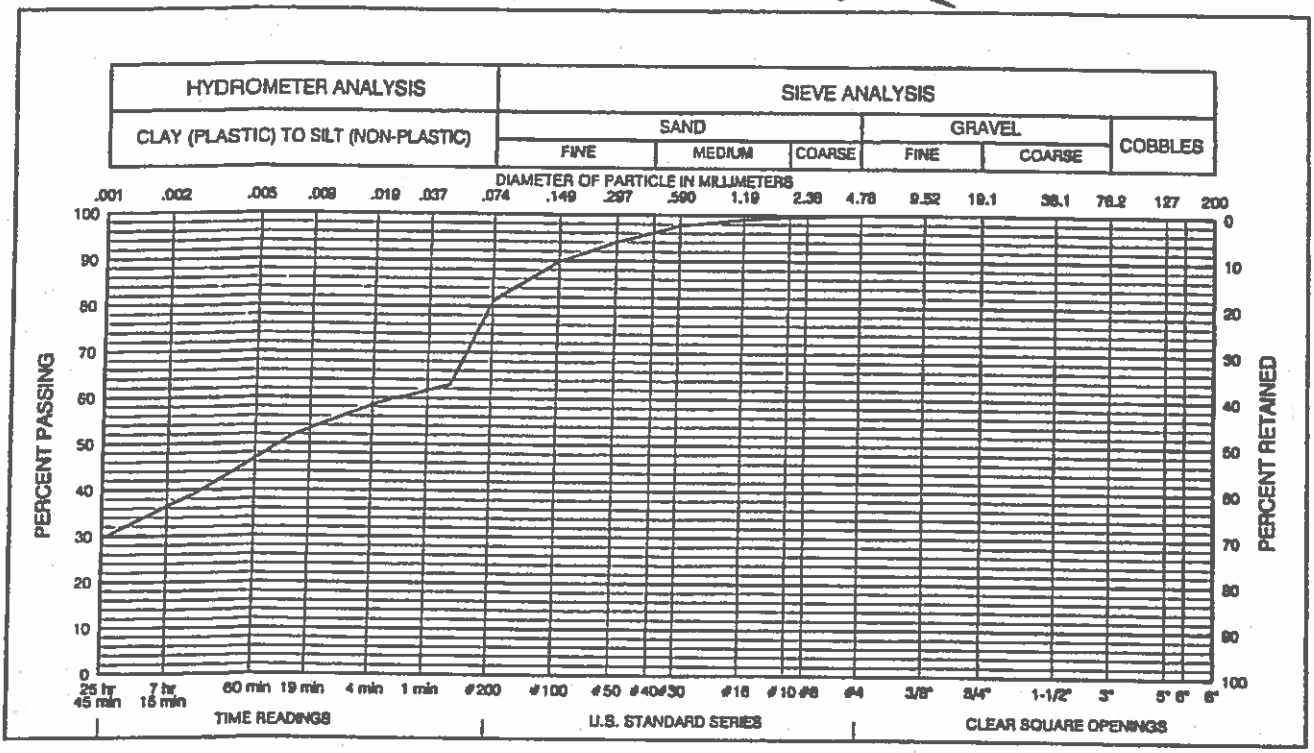
LOCATION TEST BORING NO. 12 @ DEPTH OF 4'
SAMPLE DESCRIPTION GRAVEL, VERY SANDY, SILTY (GM)
CLASSIFICATION AASHTO A-1-b

GRAVEL 49 %
SAND 33 %
SILT & CLAY 18 %

LIQUID LIMIT NV
PLASTICITY INDEX NP

GRADATION TEST RESULTS
FIGURE 25

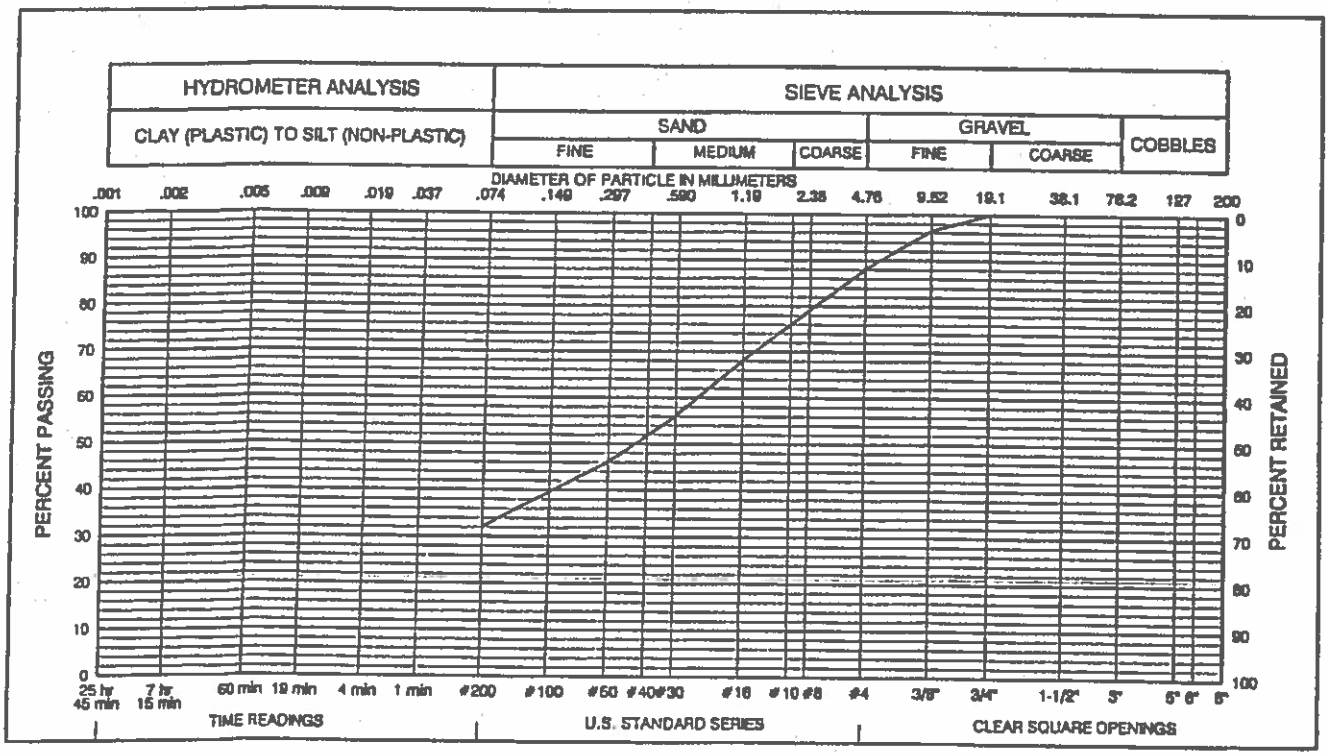
A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



LOCATION TEST BORING NO. 15 @ DEPTH OF 4'
SAMPLE DESCRIPTION CLAY, SLIGHTLY SANDY (CL)
CLASSIFICATION AASHTO A-6 (14)

GRAVEL 0 %
SAND 19 %
SILT & CLAY 81 %

LIQUID LIMIT 35
PLASTICITY INDEX 19



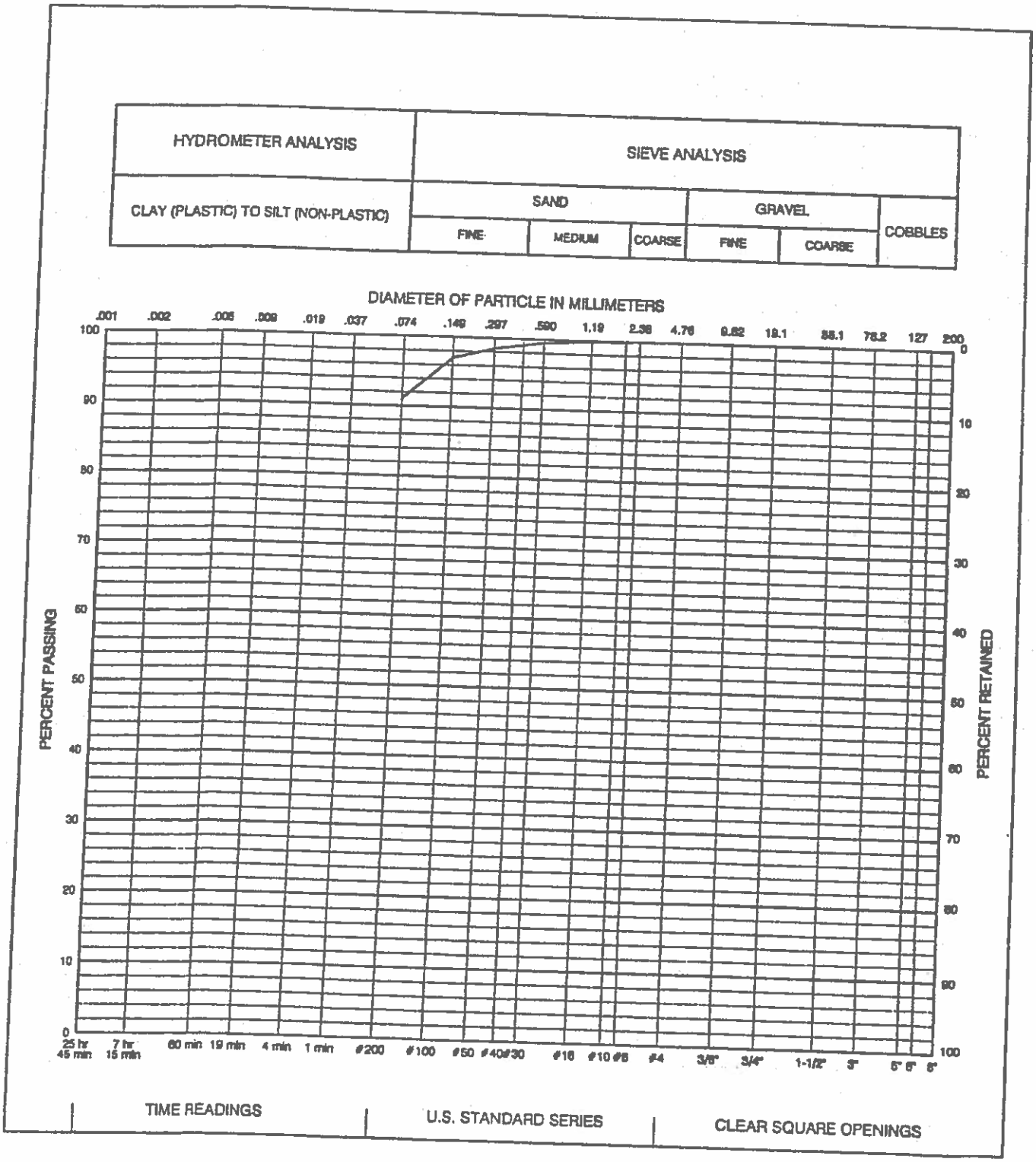
LOCATION TEST BORING NO. 19 @ DEPTH OF 9'
SAMPLE DESCRIPTION SAND, VERY CLAYEY TO SILTY, SL. GRAVELLY (SC-SM)
CLASSIFICATION AASHTO A-2-4 (0)

GRAVEL 12 %
SAND 65 %
SILT & CLAY 32 %

LIQUID LIMIT 23
PLASTICITY INDEX 6

GRADATION TEST RESULTS
FIGURE 26

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants



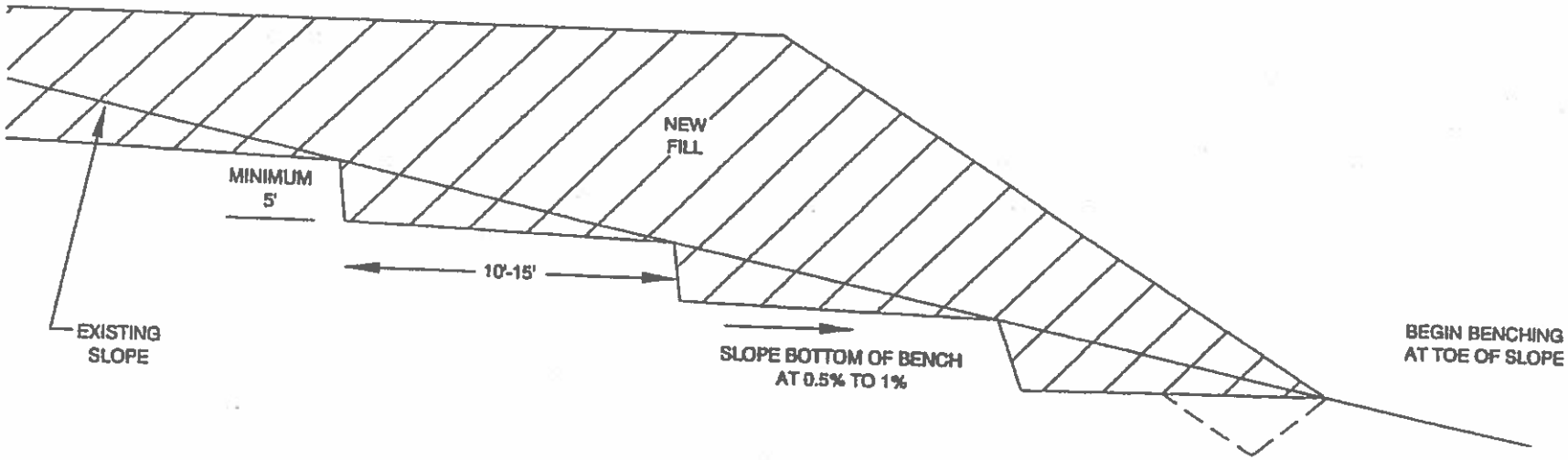
LOCATION TEST BORING NO. 20 @ DEPTH OF 4'
SAMPLE DESCRIPTION CLAY, SLIGHTLY SANDY (CL)
CLASSIFICATION AASHTO A-6 (9)

GRAVEL 0 %
SAND 9 %
SILT & CLAY 91 %

LIQUID LIMIT 27
PLASTICITY INDEX 12

GRADATION TEST RESULTS
FIGURE 27

CONTINUE BENCHING UNTIL NATURAL SLOPE
FLATTENS OR SLOPE DAYLIGHTS



BENCHING REQUIRED WHEN EXISTING
SLOPE IS 5 : 1 (HORITONTAL : VERTICAL) OR GREATER

NOTES: DRAINS MAY BE REQUIRED IF GROUND
WATER IS ENCOUNTERED.

ADDITIONAL CUTTING BACK OF SOME SLOPES
MAY BE REQUIRED BY GEOTECHNICAL ENGINEER
IF SLOPE INSTABILITY IS NOTED.

NOT TO SCALE

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants

GENERALIZED BENCHING DETAIL	PROJECT NO. 90114 FIGURE 29

Test Boring No.	Depth (feet)	Soil Type	Natural Dry Density (pcf)	Natural Moisture (%)	Swell (+) / Consolidation (-) (%)*	Swell Pressure (psf)	% Clay	% Passing #200 Sieve	Atterberg		pH	Resistivity (ohm/cm)	Water Soluble Sulfates (ppm)	Chlorides (%)
									Liquid Limit LL	Plasticity Index PI				
1	4	Clay, sandy	100	7	+0.1	1,100					7.32	516	20,000	0.0068
	9	Clay, sandy, slightly gravelly		9				74	35	17				
	14	Claystone, silty (disturbed)	107	6	-2.5	—								
2	9	Clay, sandy	114	7	+2.8	5,400								
	14	Clay, sandy	108	7	-0.1	—								
3	4	Clay, sandy	117	12	-0.4	—								
	19	Clay, sandy	117	3	-1.3	—								
4	4	Clay, sandy	97	8	-1.1	—								
	9	Silt, very sandy		5				54	NV	NP				
5	4	Sand, clayey	87	8	-0.5	—								
7	4	Clay, sandy	116	14	-0.3	—			-		7.76	1,835	<50	<0.0001
	24	Claystone, silty	122	9	+4.9	6,500								
8	4	Clay, slightly sandy		13			41	86	35	18				
	9	Clay, slightly sandy	110	10	-0.3	—								
9	4	Clay, slightly sandy	109	7	-0.5	—								
	9	Silt, very sandy		5				51	NV	NP			<50	

Notes:

*Indicates Percent Swell (+) or Consolidation (-) when wetted under a 1,000 psf load.

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants

SUMMARY OF LABORATORY TEST RESULTS

Village Homes of Colorado, Inc.
Castle Valley Ranch
Project Number 90114

TABLE I

Test Boring No.	Depth (feet)	Soil Type	Natural Dry Density (pcf)	Natural Moisture (%)	Swell (+) / Consolidation (-) (%)*	Swell Pressure (psf)	% Clay	% Passing #200 Sieve	Atterberg		pH	Resistivity (ohm/cm)	Water Soluble Sulfates (ppm)	Chlorides (%)
									Liquid Limit LL	Plasticity Index PI				
10	4	Clay, sandy	107	18	-0.4	—								
	9	Claystone, silty	116	16	+2.7	10,000					8.31	1,000	<50	0.0003
	24	Claystone, silty	113	11	+4.1	15,000								
11	4	Claystone, silty	116	10	+0.9	3,500								
	9	Clay, slightly sandy		8			35	90	33	16				
	14	Clay, slightly sandy	116	6	0.0	—								
12	4	Gravel, very sandy, silty		4				18	NV	NP				
	19	Claystone, silty	124	10	+6.0	9,200								
13	4	Clay, sandy	89	8	-2.4	—								
	9	Claystone, silty (disturbed)	99	7	-5.9	—								
14	4	Clay, sandy	120	9	+4.3	14,000								
15	4	Clay, slightly sandy	104	9	-0.7	—	36	81	35	19				
	9	Clay, very sandy	123	6	+1.7	7,700								
16	4	Clay, sandy	93	8	-1.1	—					7.76	1,724	<50	<0.0001
17	4	Clay, sandy	107	17	-0.1	—								
18	4	Clay, sandy	103	7	+1.1	2,900								

Notes:

*Indicates Percent Swell (+) or Consolidation (-) when wetted under a 1,000 psf load.

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants

SUMMARY OF LABORATORY TEST RESULTS

Village Homes of Colorado, Inc.
Castle Valley Ranch
Project Number 90114

TABLE I

Test Boring No.	Depth (feet)	Soil Type	Natural Dry Density (pcf)	Natural Moisture (%)	Swell (+) / Consolidation (-) (%)*	Swell Pressure (psf)	% Clay	% Passing #200 Sieve	Atterberg		pH	Resistivity (ohm/cm)	Water Soluble Sulfates (ppm)	Chlorides (%)
									Liquid Limit LL	Plasticity Index PI				
18	9	Sandstone, slightly clayey	120	5	+0.8									
19	4	Clay, sandy	78	6	-4.9	—								
	9	Sand, very clayey to silty, slightly gravelly		2				32	23	6				
	24	Claystone, silty	124	7	+2.3									
20	4	Clay, slightly sandy	108	15	-0.4	—		91	27	12				
	9	Claystone, silty (disturbed)	94	6	-7.5	—								
21	4	Clay, sandy	91	6	-5.9	—								
22	9	Fill - clay, sandy	119	12	-0.3	—								
	14	Fill - clay, sandy	102	10	-1.9	—					7.82	3,984	<50	0.0007

Notes:
*Indicates Percent Swell (+) or Consolidation (-) when wetted under a 1,000 psf load.

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants

SUMMARY OF LABORATORY TEST RESULTS

Village Homes of Colorado, Inc.
Castle Valley Ranch
Project Number 90114

TABLE I

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants
2180 South Ivanhoe Street, Suite 5
Denver, Colorado 80222-5710
303-759-8100 Fax 303-758-2920
www.agwassenaar.com

APPENDIX

SPECIFICATIONS FOR PLACEMENT OF FILL

GENERAL

The Soil Engineer, as the Owner's representative, shall conduct tests to determine if the material, method of placement, and compaction are in reasonable compliance with the specifications.

PREPARATION OF NATURAL GROUND

Vegetation, organic topsoil, any existing man-made fill and any other deleterious materials shall be removed from the fill area. The area to be filled shall then be scarified, moistened if necessary, and compacted in the manner specified below prior to placement of subsequent layers of fill.

FILL MATERIAL

Fill material shall consist of on or off-site soils which are relatively free of vegetable matter and rubble. Off-site materials shall be evaluated by the Soil Engineer prior to importation. No organic, frozen, perishable, or other unsuitable material shall be placed in the fill. For the purpose of this specification, cohesive soil shall be defined as a mixture of clay, sand, and silt with more than 35% passing a U. S. Standard #200 sieve and a Plasticity Index of at least 11. These materials will classify as an A-6 or A-7 by the AASHTO Classification system. Granular soils shall be all materials which do not classify as cohesive.

Crushed sandstone should consist of a material of which at least 90% are smaller than 4-inches in dimension and at least 60% passes a U. S. Standard No. 4 sieve.

PLACEMENT OF FILL MATERIAL

The materials shall be delivered to the fill in a manner which will permit a well and uniformly compacted fill. Before compacting, the fill material shall be properly mixed and spread in approximately horizontal layers not greater than 8 inches in loose thickness.

MOISTURE CONTROL

While being compacted, the material shall contain uniformly distributed optimum moisture for compaction. The Contractor shall be required to add moisture to the materials if, in the opinion of the Soil Engineer, proper and uniform moisture is not being obtained for compaction. If the fill materials are too wet for proper compaction, aerating and/or mixing with drier materials may be required.

Moisture content shall be controlled as a percentage deviation from optimum. Optimum moisture content is defined as the moisture content corresponding to the maximum density of a laboratory compacted sample performed according to ASTM D698 for cohesive soils or ASTM D1557 for granular soils. The moisture content specifications for the various areas are as follows:

1. Beneath Structural Areas:	Cohesive	-1 to +3 percent
	Granular	-2 to +2 percent
2. Beneath Non-Structural Areas:		-3 to +3 percent
3. Moisture Treated Fill:	Cohesive	0 to +4 percent
	Granular	-2 to +2 percent

COMPACTION

When the moisture content and conditions of each layer spread are satisfactory, it shall then be compacted by an approved method. Moisture-density tests shall be performed on typical fill materials to determine the maximum density. Field density tests must then be made to determine the adequacy of the fill compaction. The compaction standard to be utilized in determining the maximum density is ASTM D698 for cohesive soils or ASTM D1557 for granular soils. The following compaction specifications should be followed for each area:

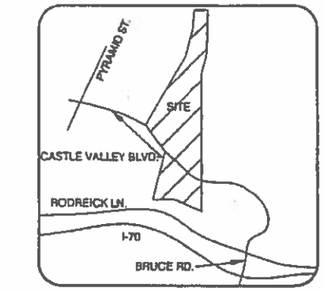
1. Beneath Structural Areas:	95% of Maximum Dry Density
2. Beneath Non-Structural Areas:	90% of Maximum Dry Density

If Proctor testing is not feasible due to the percentage of +¾ inch material, compaction of the fill should be judged by the methodology for rock fills as described in The Colorado Department of Transportation Standard Specifications.

Note: In areas where fill depths exceed 20 feet, additional compaction considerations will be required to minimize fill settlement. We recommend any fill placed within 20 feet of final subgrade elevation be compacted to a minimum of 95% of the appropriate maximum dry density, and deeper fills be compacted to 100% of the appropriate maximum dry density. The required moisture content for all fills more than 20 feet deep shall be -2 to +2% of optimum moisture content.

If the structural fill contains less than 10% passing the No. 200 sieve, it may be necessary to control compaction based on relative density (ASTM D 2049). If this is the case, then compaction around the structures and beneath slabs shall be to at least 60% relative density, and compaction beneath foundations and pavements shall be to at least 70% relative density.

SCALE: 1" = 300'



VICINITY MAP
NOT TO SCALE

TEST BORING NO. 19
TEST BORING NO. 20
TEST BORING NO. 16
TEST BORING NO. 13
TEST BORING NO. 9
TEST BORING NO. 10
TEST BORING NO. 6
TEST BORING NO. 3
TEST BORING NO. 1
TEST BORING NO. 21
TEST BORING NO. 17
TEST BORING NO. 14
TEST BORING NO. 11
TEST BORING NO. 7
TEST BORING NO. 4
TEST BORING NO. 2
TEST BORING NO. 22
TEST BORING NO. 18
TEST BORING NO. 15
TEST BORING NO. 12
TEST BORING NO. 8
TEST BORING NO. 5

5800
5700
5750
5900
5850
5950
CASTLE VALLEY BOULEVARD

—— 5850 —— APPROXIMATE 5850-FOOT CONTOUR LINE

NOTE: ALL LOCATIONS ARE APPROXIMATE

A.G. Wassenaar Geotechnical and Environmental Consultants Inc.	
SITE PLAN AND VICINITY MAP	PROJECT NO. 90114 FIGURE 1

CLS 15 — INDICATES DEPTH TO CLAYSTONE BEDROCK OF 15 FEET

SS 5 — INDICATES DEPTH TO SANDSTONE BEDROCK OF 5 FEET

CLS/SS 7 — INDICATES DEPTH TO CLAYSTONE/SANDSTONE BEDROCK OF 7 FEET

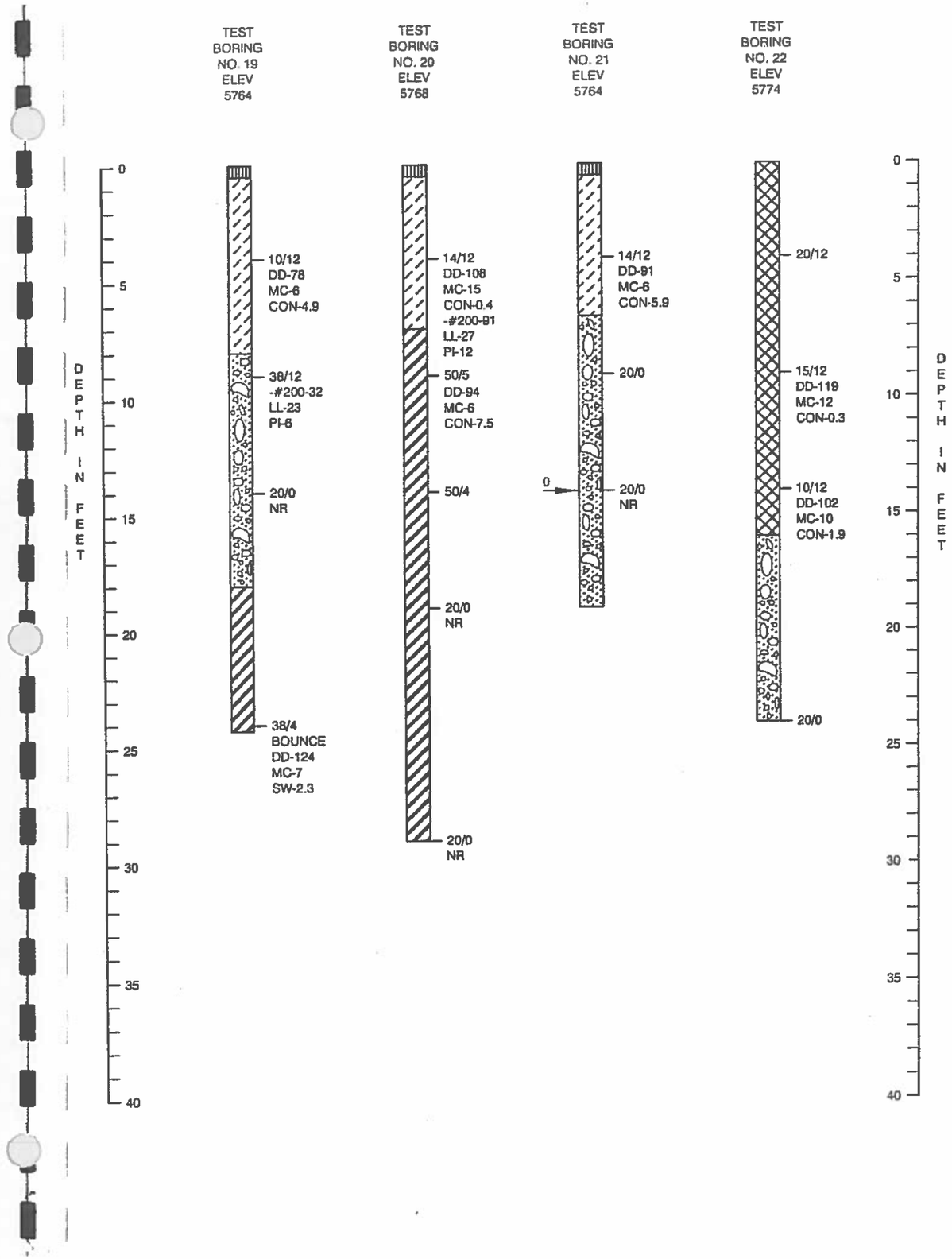
INDICATES ESTIMATED AREA WHERE BEDROCK IS LESS THAN 15 FEET BELOW THE EXISTING GROUND SURFACE

NOTE: ALL LOCATIONS ARE APPROXIMATE

A.G. Wassenaar Inc.
Geotechnical and Environmental Consultants

ESTIMATED DEPTH TO BEDROCK MAP

PROJECT NO. 90114
FIGURE 28



LEGEND

	TOPSOIL, CLAY, SANDY, ORGANIC, MOIST, DARK BROWN
	FILL (MAN-MADE), CLAY, COMPACT, SANDY, MOIST, MOTTLED BROWN (AF)
	CLAY, STIFF TO VERY STIFF, SILTY, SANDY, WITH SCATTERED GRAVEL, CALCAREOUS, SLIGHTLY MOIST, BROWN TO RED BROWN (CL)
	CLAY, VERY STIFF TO HARD, SILTY, SANDY, WITH COBBLES, SLIGHTLY MOIST, BROWN
	SAND, MEDIUM DENSE, SILTY, WITH VERY SAND SILT AND VERY SANDY GRAVEL LENSES, SLIGHTLY MOIST, RED BROWN (SM)
	SAND, MEDIUM DENSE TO DENSE, SILTY, CLAYEY, WITH VERY SANDY SILT LENSES, SCATTERED GRAVEL, SLIGHTLY MOIST TO MOIST, RED BROWN (SC)
	SAND AND GRAVELS, DENSE, WITH COBBLES, SLIGHTLY MOIST, RED BROWN
	SAND / CLAY, INTERBEDDED, DENSE / VERY STIFF,VERY SILTY, WITH SCATTERED GRAVEL, SLIGHTLY MOIST, RED BROWN
	CLAYSTONE (BEDROCK), MEDIUM HARD, SILTY TO VERY SILTY, SLIGHTLY SANDY, WITH GYPSUM, MOIST, OLIVE
	CLAYSTONE (BEDROCK), HARD TO VERY HARD, SILTY TO VERY SILTY, IRON STAINED, WITH SULFUR CRYSTALS, SLIGHTLY MOIST, OLIVE TO RUST
	SANDSTONE (BEDROCK), VERY HARD, MODERATELY TO WELL CEMENTED, SILTY, SLIGHTLY MOIST, RED BROWN
18/12	INDICATES THAT18 BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE A 2.5-INCH OUTSIDE DIAMETER SAMPLER 12 INCHES.
18/12*	INDICATES THAT18 BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE A 2-INCH OUTSIDE DIAMETER SAMPLER 12 INCHES.
NR	INDICATES NO SAMPLE RECOVERED
BOUNCE	INDICATES THAT THE SAMPLER BOUNCED WHEN DRIVEN WITH A 140-POUND HAMMER FALLING 30 INCHES
0	INDICATES THE DEPTH TO THE FREE WATER TABLE AND THE NUMBER OF DAYS AFTER DRILLING WHEN THE MEASUREMENT WAS TAKEN.
	INDICATES DEPTH AT WHICH PRACTICAL DRILLING REFUSAL WAS ENCOUNTERED.
0	INDICATES THE DEPTH AT WHICH THE TEST BORING CAVED AND THE NUMBER OF DAYS AFTER DRILLING WHEN THE MEASUREMENT WAS TAKEN.
DD	INDICATES DRY WEIGHT OF SAMPLE IN POUNDS PER CUBIC FOOT.
MC	INDICATES MOISTURE CONTENT AS A PERCENTAGE OF DRY WEIGHT OF SOIL.
SW	INDICATES PERCENT SWELL UNDER A SURCHARGE OF 1000 PSF UPON WETTING.
CON	INDICATES PERCENT CONSOLIDATION UNDER A SURCHARGE OF 1000 PSF UPON WETTING
-#200	INDICATES PERCENT PASSING THE NO. 200 SIEVE.
% CLAY	INDICATES PERCENTAGE OF CLAY SIZES (<0.002mm)
LL	INDICATES LIQUID LIMIT.
PI	INDICATES PLASTICITY INDEX.
NP	INDICATES NON-PLASTIC.
NV	INDICATES NO VALUE.
WS	INDICATES WATER SOLUBLE SULFATES IN PARTS PER MILLION.
pH	INDICATES ACIDITY OR ALKALINITY OF SAMPLE IN pH UNITS.
CL	INDICATES CHLORIDES IN PERCENT.
R	INDICATES RESISTIVITY IN OHMS-CM.

NOTES

1. TEST BORINGS WERE DRILLED MAY 17 & 18, 2006 WITH A 4-INCH DIAMETER, CONTINUOUS FLIGHT POWER AUGER.
2. NO FREE WATER WAS OBSERVED AT THE TIME OF DRILLING.
3. LOCATIONS OF TEST BORINGS WERE DETERMINED BY RECONNOITERING FROM FEATURES SHOWN ON THE SITE PLAN PROVIDED BY OTHERS.
4. ELEVATIONS ARE APPROXIMATE AND REFER TO THE TOPOGRAPHIC SITE PLAN PROVIDED BY OTHERS.
5. THE HORIZONTAL LINES SHOWN ON THE LOGS ARE TO DIFFERENTIATE MATERIALS AND REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN MATERIALS. THE TRANSITIONS BETWEEN MATERIALS MAY BE GRADUAL.
6. DRILL LOGS SHOWN IN THIS REPORT ARE SUBJECT TO THE LIMITATIONS, EXPLANATIONS, AND CONCLUSIONS OF THIS REPORT.

A.G. Wassenaar, Inc.
Geotechnical and Environmental Consultants

EXPLORATORY BORING LOGS	PROJECT NO. 90114 FIGURE 5

Town of New Castle

Castle Valley Ranch

PA17 Drainage Calculations

February 6, 2020

Prepared for:

Town of New Castle – Public Works
Box 90
New Castle, CO 81647

Prepared by:

SGM
118 W 6th Street
Glenwood Springs, CO 81601

A. INTRODUCTION

This report is to present an overall drainage analysis for Planning Area 17 of Castle Valley Ranch, a residential subdivision with single and multi-family housing. Storm runoff will be generated for the 2,5,10, 25, 50 and 100-year events. On-site sources include open space, roads, driveways, and residential lots. This Report will also show drainage calculations for the increase in runoff to PA-19 pond. This report will size new appurtenances based on the calculated runoff hydrographs. The Historic Basin map shows the pre-developed basin 1 and offsite delineation, while the Developed Drainage Map identifies PA 17 and future development drainage. Both of these maps are provided at the end of the report.

The report was completed to provide structures to safely convey the 25-year storm event through the subdivision, and the PA17 pond was designed as a temporary measure to hold the difference in flow of the 25 yr / 24-hour storm for graded and undeveloped areas. The Town of New Castle code requires only the 25-year event be released at the historic rate. Maintenance of the pond by the town is imperative to function properly for all storm events.

B. ON-SITE DRAINAGE CONSIDERATIONS

On-site basins are characterized by residential development. The existing, pre-construction conditions consist of undeveloped land with varied vegetation. Most of the area is pasture with some grass cover, shrubs and few trees. The general drainage flow is from north to south of Castle Valley Ranch road and collects in various locations into small swales and gullies. These similar swales eventually collect in a "low" in the valley which acts as the main flow path for much of Castle Valley Ranch. The general slope of the area varies from 4% to 25% grade. The existing soils are mostly Ascalon Class "B" which is predominately fine sandy loams and clays.

The proposed conditions will continue the typical pattern seen in much of Castle Valley Ranch with mostly single-family and multi-family lots of less then one acre, streets and some associated street side parking. Each lot is self contained and

drains to the rear or adjacent street frontage. Some lots will collect landscaped terrace slope runoff which will also drain towards the streets. The streets will then contain the 25-year flow and direct it toward inlets located at low points and in-line inlets in various locations.

The drainage that goes to the west will be picked up by the existing Castle Valley Ranch detention drainage system designed for PA-19, which has been sized to accommodate all proposed development. A portion of the development will drain to the east, a temporary pond will be constructed to handle this runoff.

C. HYDROLOGIC ANALYSIS

1. Methodology

Hydrologic procedures outlined in the Soil Conservation Service (SCS) Technical Release 55 *"Urban Hydrology for Small Watersheds"* (TR-55) were utilized to determine peak flows and volumes of storm runoffs generated by each basin. A uniformly distributed time varying rainfall is imposed over the basin area. The rainfall is converted to runoff using a runoff curve number based on the soil parameter, plant cover, impervious areas and surface storage. The runoff is then transformed into a hydrograph, using the unit hydrograph theory and routing methods based on travel time through the basins.

2. Rainfall

TR-55 uses a 24-hour rainfall total and a synthetic time distribution to produce a centrally peaked design storm. The SCS Type II distribution is applicable to this region. The 24-hour rainfall amounts for specific return periods were obtained using the City of Glenwood Springs standard IDF curves and are shown in Table 2.

TABLE 2

City of Glenwood Springs					
	2-year	5-year	10-year	25-year	100-year
24-hour storm total	1.2"	1.5"	1.8"	2.2"	2.6"

3. **Runoff Curve Number**

The Runoff Curve Number (CN) determines the amount of rainfall that becomes runoff and the amount that infiltrates or is abstracted. Major factor that determine CN are the hydrologic soil group (HSG), cover type, and hydrologic condition. The SCS soil type B was used for this area.

The mountainside is characterized as pastureland with fair vegetative cover and was given a CN = 69. Impervious areas were assigned a CN = 98. Developed areas were assigned a CN of 75 for ¼ acre lots and a CN of 85 for 1/8 acre lots.

4. **Results**

The results of the storm runoff analysis are summarized in Table 3.

Storm	Historic Peak (cfs)	Developed Peak (cfs)
2-year/24-hour	0.18	4.26
5-year/24-hour	0.90	9.61
10-year/24-hour	1.44	13.9
25-year/24-hour	2.85	4.10
100-year/24-hour	7.61	26.0

D. DRAINAGE ROUTING ANALYSIS

An analysis of the proposed drainage structures was done by calculating the event flows and sizing the proposed inlets per the capacity of the inlet obtained by using the Neenah specifications. Please see attached inlet and capacity calculations found in the appendix. This analysis used the 25-year event flow as the basis for determining appropriate culvert and ditch sizes. The table also gives peak flows at each culvert and culvert sizes for the 25-year event.

Also presented below is information for the Detention Pond structures associated with the development of PA 17. The Detention Ponds and structures are sized to safely convey the 2, 5, 10, 25- & 100-year storm events at flow rates well below pre-developed flow rates that will ensure downstream properties will not be affected by

development within CVR. Although the Town Code requires only the detention of the 25-year event, this development will also detain both smaller and larger events by installation of a concrete weir structure that will regulate outflow while the pond is sized to provide adequate storage during storm events. The ponds will rise temporarily during events to provide storage and slowly drain shortly after the event is over.

The PA 19 (West) pond is being enlarged to serve the increased development tributary to that pond. A temporary (East) pond is being constructed on PA 17 that will serve the graded areas tributary to it. The pond will be relocated upon the development on the remainder of PA 17 in a permanent location to the southeast.

1. **Proposed East Pond**

   The proposed East pond was designed to accommodate runoff from a portion of the PA-17 multi-family development lots. See the Developed Basin Map in the appendix. The pond was designed to overtop and follow the historic drainage patterns thereafter. Table 5 shows the peak flows of the historic storms versus the proposed flow based on the proposed 8 lots.

Storm Event	Historic (cfs)	Pond Structure Release (cfs)
25-year/24-hour	2.85	4.64

2. **Existing PA-19 (West) Pond**

   The existing PA-19 pond was designed to accommodate a portion of the proposed development of PA-17. There are some additional lots that are proposed to drain to the existing PA-19 pond, via basin G. The PA-19 pond was originally designed to take in basins C, D, E, F and the culvert crossing Castle Valley Blvd. Please refer to the drainage maps in the appendix. In order to accommodate this extra drainage, the existing PA-19 pond should be expanded by approximately 3800 cubic feet.

E. POND ROUTING

The pond structures are similar for each pond and consist of a concrete structure with a 3" orifice near the bottom of the pond that regulates lower storm flows and a concrete weir structure that controls the higher flows. Full routing calculations are provided following the report.

1. PA 19 West Pond

Storm	Q (pre-dev) cfs	Q (post-dev) cfs	Q (routed) cfs	Max. W.S. ft
2 yr	0.21	1.81	0.14	5736.9
5 yr	0.79	6.33	0.28	5737.9
10 yr	1.67	9.86	0.40	5739.3
25 yr	3.24	15.29	1.54	5740.1
100 yr	9.94	24.87	4.32	5741.6

2. Pond Routing – PA 17 Temporary (East) Pond

Storm	Q (pre-dev) cfs	Q (post-dev) cfs	Q (routed) cfs	Max. W.S. ft
2 yr	0.17	1.51	0.09	5755.7
5 yr	0.62	2.82	0.25	5756.1
10 yr	1.31	4.34	0.37	5757.9
25 yr	2.55	6.64	1.00	5758.9
100 yr	7.81	11.01	4.28	5759.8

F. CONCLUSION

The proposed drainage system does not alter the general historic flow conditions from this valley. The temporary proposed pond was designed to release the 25 yr. / 24-hour storm at or below its historic rates. It is recommended that the pond orifice structures be maintained by the city to ensure that the pond works as designed. Also, by expanding the existing PA-19 pond by approximately 3800 cubic feet, will maintain the current function of the pond.

GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

PRELIMINARY
NOT
FOR
CONSTRUCTION

LEGEND

DI2 (4.2 | 5.6) — DRAINAGE AREA DESIGNATION
25 yr / 100 yr Storm Event Flow (cfs)
DRAINAGE AREA BOUNDARY

SCHMUESER | GORDON | MEYER
ENGINEERS | SURVEYORS
118 W. 6TH STREET, SUITE 200
GLENWOOD SPRINGS, COLORADO 81601
(970) 945-1004 FAX (970) 945-5948
ASPEN, COLORADO (970) 925-6727
CRESTED BUTTE, CO (970) 349-5355

Job No. 2000-109.022
Drawn by: JLR
Date: 05/29/2008
Appr. by:
File:

3 OF 3

CVR
PA-17/19

DRAINAGE MAP
DRAIN INLET BASINS

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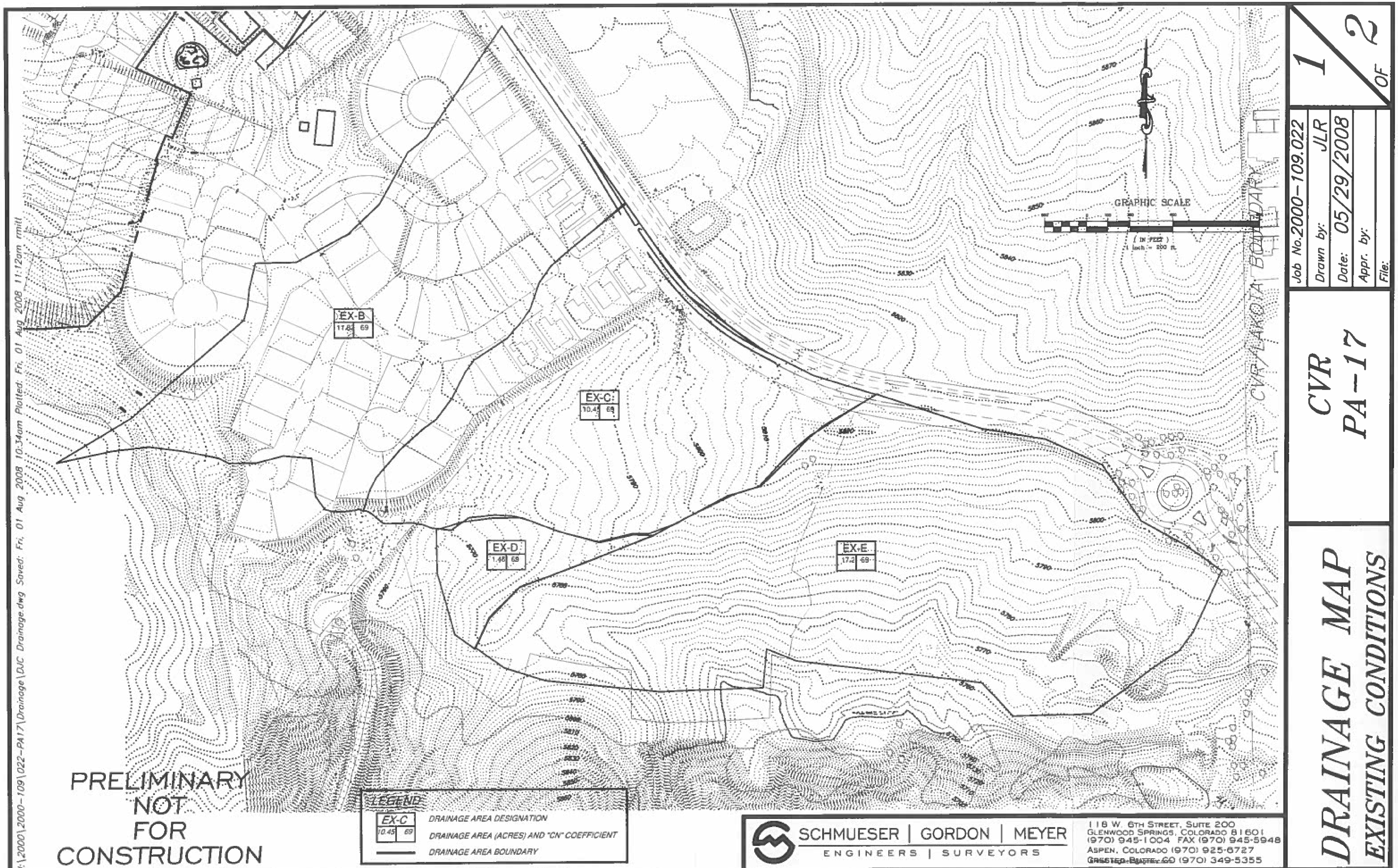

EX-B
17.82 69
EX-C
10.45 69
EX-D
1.46 69
EX-E
17.2 69
GRAPHIC SCALE
(IN FEET)
1 inch = 200 ft.
CVR/LAKOTA BOUNDARY
PRELIMINARY
NOT
FOR
CONSTRUCTION
LEGEND
EX-C
10.45 69
DRAINAGE AREA DESIGNATION
DRAINAGE AREA (ACRES) AND "CN" COEFFICIENT
DRAINAGE AREA BOUNDARY
SCHMUESER | GORDON | MEYER
ENGINEERS | SURVEYORS
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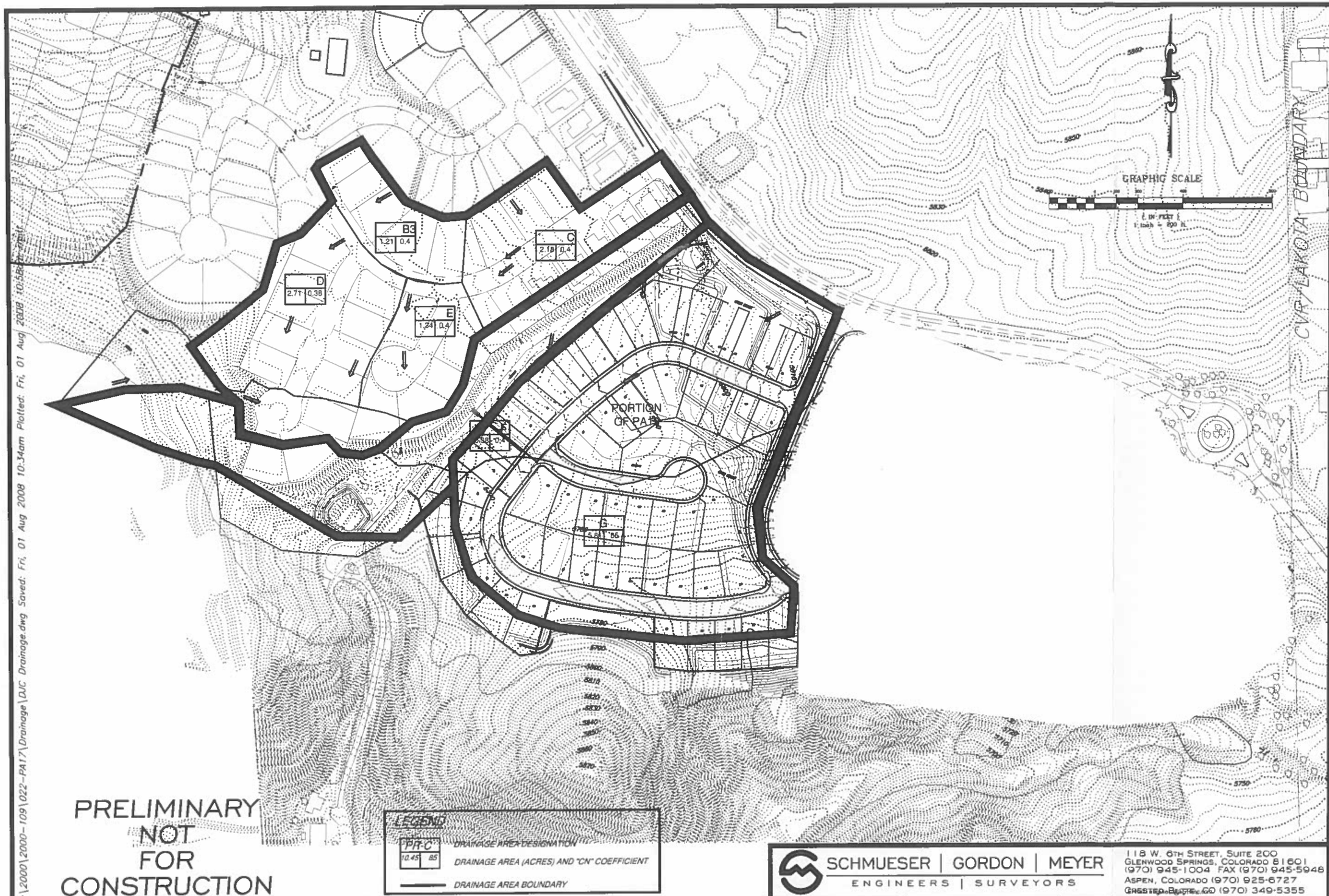
ASPEN, COLORADO (970) 925-6727
CRESTED BUTTE, CO (970) 349-5355
DRAINAGE MAP
EXISTING CONDITIONS
CVR
PA-17
Job No.2000-109.022
Drawn by: JLR
Date: 05/29/2008
Appr. by:
File:
1 OF 2



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SCHMUESER | GORDON | MEYER
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CRESTED BUTTE, CO (970) 349-5355

DRAINAGE MAP
PROPOSED CONDITIONS

CVR
PA-17/19

Job No. 2000-109.022
Drawn by: JLR
Date: 05/29/2008
Appr. by:
File:

2 OF 2

Town of New Castle

Castle Valley Ranch

PA17 Utility Report

March 18, 2020

Prepared for:

Town of New Castle – Public Works
Box 90
New Castle, CO 81647

Prepared by:

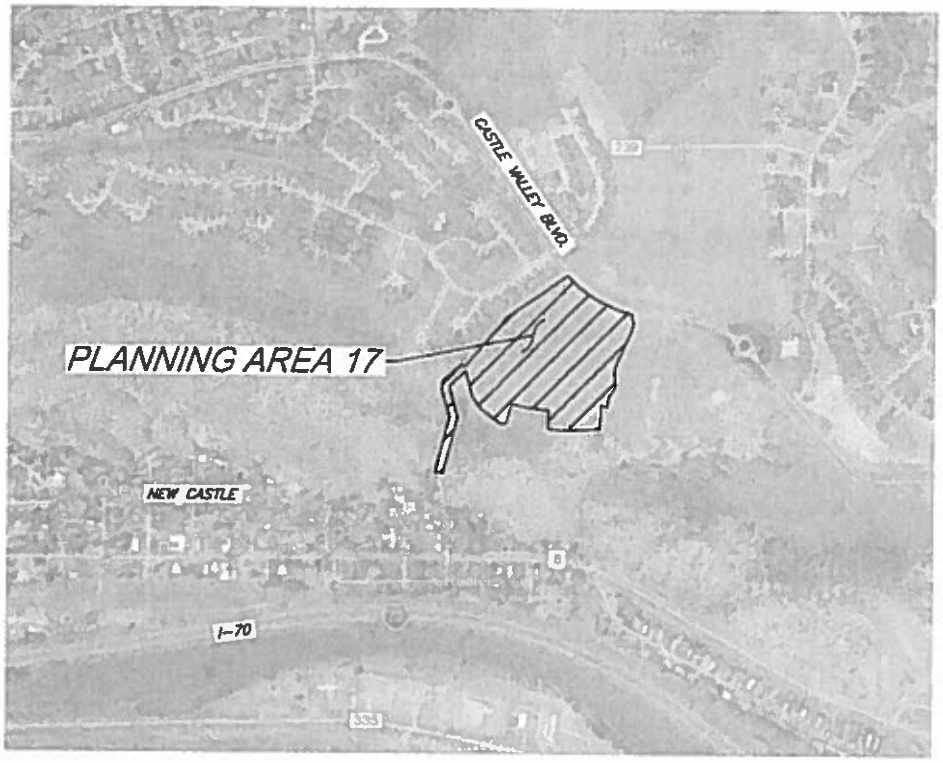
SGM
118 W 6th Street
Glenwood Springs, CO 81601

SGM

PA 17 DEVELOPMENT PLAN

Existing Land Use

The subject property is PA 17 in Filing 11of Castle Valley Ranch PUD within the Town of New Castle, State of Colorado. The parcel is approximately 13.538 acres in size. The existing parcel consists of sparsely grassed undeveloped land. The site is bordered by Castle Valley Boulevard right-of-way to the north, developed single family homes to the west, open space to the south, and undeveloped PA 19 to the east. The site is depicted in the figure below.



Proposed Land Use

Proposed development consists of the construction of 27 multi-unit residential buildings (three and four-unit townhomes) totaling 91 dwelling units. Additional improvements include asphalt parking areas, driveways, sidewalks, and asphalt pedestrian paths providing connections to Castle Valley Boulevard right-of-way and C Avenue.

WASTEWATER SYSTEM

There is an existing sanitary sewer main located south of the site within the C Avenue right-of-way. This sanitary sewer is within the roadway and will serve the proposed development. The connection to this main will be at an existing sanitary manhole located at the west of the alley

north of Main Street and east of C Avenue. An 8-inch gravity main is proposed to serve the site and will replace segment of existing main in the Alley, then extend new main east n the alley and north in the C Avenue corridor to serve the proposed development, as well as the future development of PA 19 to the east. A 20-foot utility easement is proposed to encompass this sanitary sewer main when it is located outside of existing or proposed road right of way.

The proposed development will have minimal system flows and the proposed sanitary system will serve residential uses. The three and four townhome buildings will have individual 4" PVC services to each unit. For calculation purposes, each unit has been considered a single-family dwelling. In total the system demand has been analyzed for 91 single-family dwellings. Effluent flows are estimated to be 25,480 gallons per day, with a peak flow of 63,700 gallons per day. These flows will be conveyed by 8" mains. At a minimum slope of 0.4% at 75% full pipe, the 8" main will serve 869 units (reference Castle Valley Ranch Master Plan). There are 13 existing units on the C Avenue line, adding 91 units results in a total of 104 units. There will be a capacity of 765 units remaining in the main.

WATER DISTRIBUTION

The proposed development will be served by existing 8" water mains located to the north within Castle Valley Boulevard right of way, and to the west extending from Mount Harvard Court. A 20-foot utility easement is proposed to encompass this water main when it is located outside of existing or proposed road right of way. A loop will be completed by running an 8-inch C900 PVC main through the site. This loop will connect to the existing Castle Valley Boulevard main to Mount Harvard Court and located in the project roadways providing 2" PVC services to each dwelling units and fire hydrants spaced per the Burning Mountain Fire District.

PA 17 is served by Water Tank #2 (CVR Lower Zone), which sits at an elevation of 5966. The high and low lot elevations, corresponding static pressures, and pressures with Lakota pump station operating are as follows: Elev. 5804; 70 psi; 54 psi and Elev. 5770; 85 psi; 69 psi. A 2" water service results in pressures ranging from 35 to 50 psi within the units.

Assuming 3.5 people per single-family unit with a per capita demand of 100-gallons per day (EQR=350 gpd) and a 16-hour day for 91 units, the Average Daily Demand for the residential units will be 31,850 gallons per day (33 gpm).

Based upon the Uniform Building Code and the International Fire Code, the proposed multi-family residential structures (4000 to 5000 sf) will require a fire flow of 2000 gallons per minute. The developer has elected that the buildings will not have in-house sprinkler systems. The fire flow demand must be sustained for a minimum of 2 hours with a residual pressure of 20 psi.

Maximum day demand is calculated using a multiplier of 2 on the average day demand and adding the fire flow of 2000 gallons per minute during the 2-hour duration. It has been assumed that only one structure will require a fire flow at any given time. Maximum day flow rate is 2000 plus 65.6 gallons per minute, or 2066 gallons per minute. This rate will govern over the Peak hour demand. The existing tank has been previously sized accounting for the development of PA 17.

RAW WATER IRRIGATION

A 4" main raw water irrigation is proposed for this development and will connect to the existing raw water main in the Castle Valley Boulevard right of way. The main will be extended and looped through the roadway network to serve all residences and open spaces within the development.

DRY UTILITIES

Electric

Electric service is proposed for this development and will connect to the existing main in the Castle Valley Boulevard right of way. The main will be extended and looped through the roadway network to serve all residences and open spaces within the development.

Transformers will be located by Xcel. The developer will contract with Xcel energy for costs associated with extending the electric utility to the site.

Natural Gas

Gas service is proposed for this development and will connect to the existing main in the Castle Valley Boulevard right of way. The main will be extended and looped through the roadway network to serve all residences within the development.

The contractor will contract with Xcel energy for gas service extension.

The point of contact for electrical service is Sam Wakefield with Xcel Energy (970-244-2622).

Cable

Comcast Cable service is proposed for this development and will connect to the existing main in the Castle Valley Boulevard right of way. The main will be extended and looped through the roadway network to serve all residences within the development.

The contractor will contract with Comcast for cable service extension.

The point of contact for Comcast Cable service is (970-945-7292).

Communications

Communications service is proposed for this development and will connect to the existing main in the Castle Valley Boulevard right of way. The main will be extended and looped through the roadway network to serve all residences within the development. The contractor will contract with Century Link for communications service extension.

The point of contact for Communications service is Jason Sharpe with CenturyLink communications (970-309-2973).

Town of New Castle

Castle Valley Ranch
PA17
Traffic Impact Study

March 18, 2020

Prepared for:

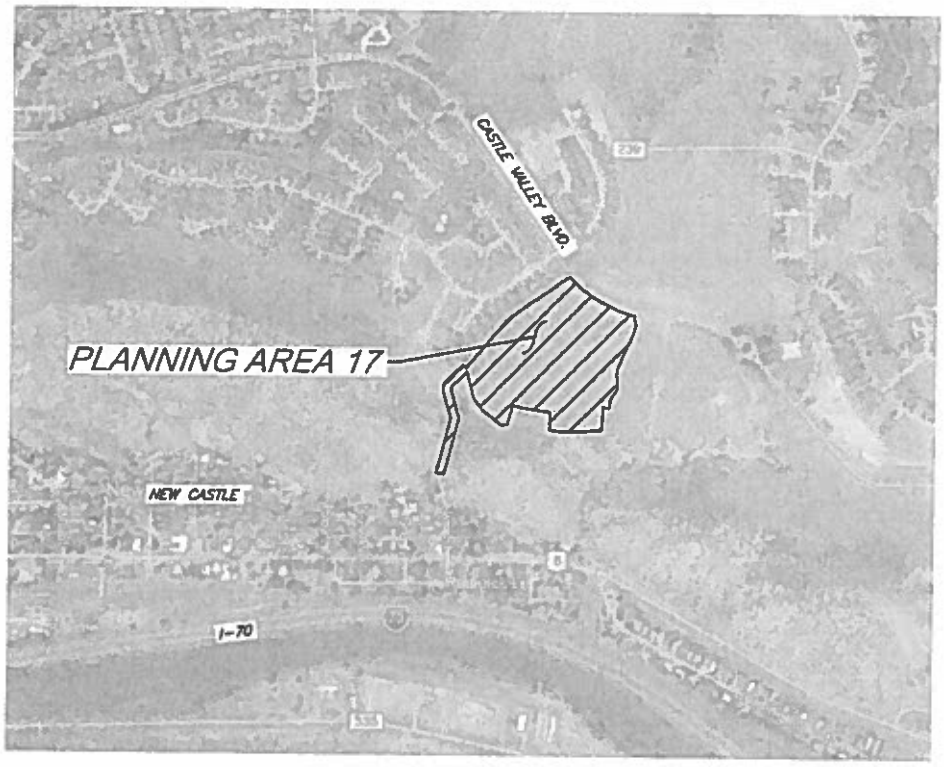
Town of New Castle – Public Works
Box 90
New Castle, CO 81647

Prepared by:

SGM
118 W 6th Street
Glenwood Springs, CO 81601

SGM

This Traffic Impact Study addresses PA 17 in Filing 11of Castle Valley Ranch PUD within the Town of New Castle, State of Colorado. The parcel is approximately 13.538 acres in size. The existing parcel consists of sparsely grassed undeveloped land. The site is bordered by Castle Valley Boulevard right-of-way to the north, developed single family homes to the west, open space to the south, and undeveloped PA 19 to the east. The site is depicted in the figure below.



Proposed Land Use

Proposed development consists of the construction of 27 multi-unit residential buildings (three and four-unit townhomes) totaling 91 dwelling units. Additional improvements include asphalt parking areas, driveways, sidewalks, and asphalt pedestrian paths providing connections to Castle Valley Boulevard right-of-way and C Avenue.

The Town of New Castle has requested a trip generation calculation and auxiliary turn lane assessment. The traffic study addresses the following items.

- Existing Roadway Conditions
- Sight distance analysis
- Trip Generation and anticipated vehicle sizes
- Directional Distribution/Traffic Assignment
- Internal Circulation
- Auxiliary turn lane analysis
- Summary of Findings

This study will provide recommendations for the development of a safe roadway access to Castle Valley Boulevard.

Existing Site and Roadway Conditions

The proposed development will provide access from Castle Valley Boulevard (CVB). CVB is a two-lane asphalt roadway serving Lakota Canyon Ranch and Castle Valley Ranch, this segment is upstream of the Lakota Canyon Ranch development and accesses.

Access to the site will be provided with a new access located approximately 500 ft east of the intersection with Wildhorse Drive and 800 ft west of the eastern CVB roundabout. No turn lanes exist along CVB at the access intersection location. Pedestrian trail (8 ft) is located on the north side of CVB.

CVB is a two-lane asphalt collector roadway, approximately 24 feet in width, with 2-3-foot gravel shoulders and a posted speed of 25 mph in the vicinity of the access. For the purposes of this study and application of the State Highway Access Code, it is classified as a non-rural arterial, NR-B using CDOT Access Category standards.

Existing traffic volumes were not collected for this study, as the volumes would have no effect on the auxiliary turn lane assessment.

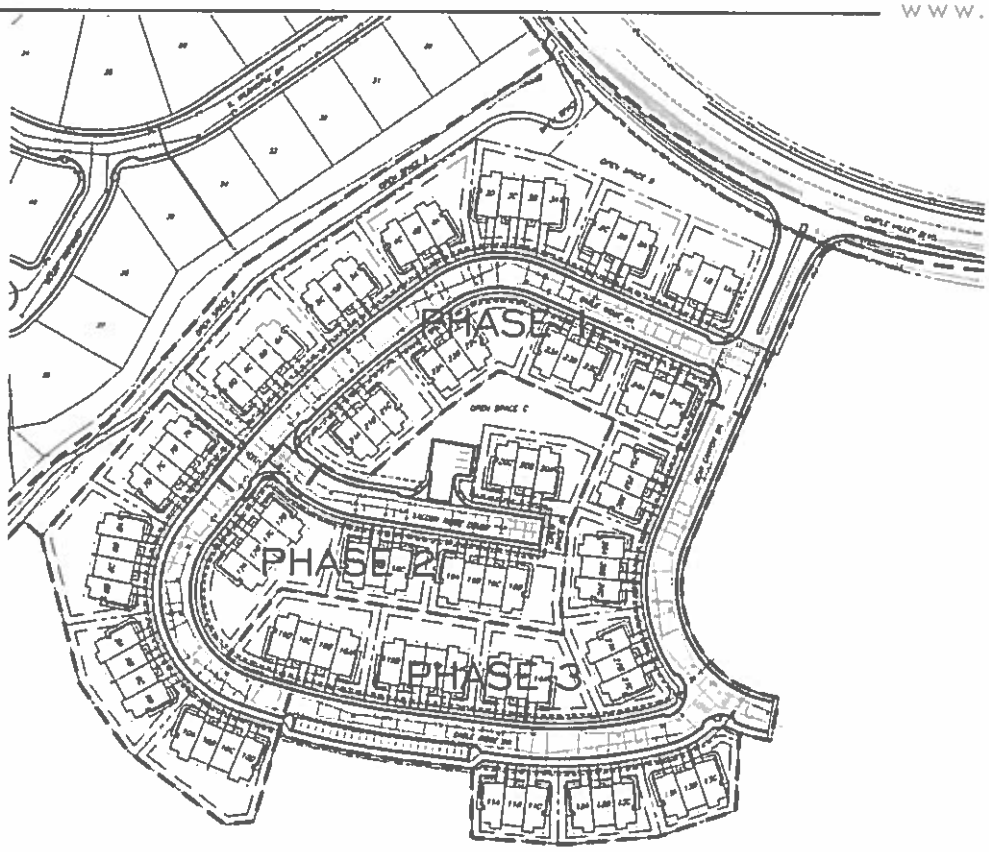
Access Sight Distance

The sight distance was analyzed for the access intersection with CVB. The analysis reviewed the access as one-way stop-controlled intersection and was based upon the guidance of AASHTO, A Policy on Geometric Design of Highways and Streets, 2018, 7th Edition, (Ch 9, Intersections). The Policy provides for guidance on decision point and construction of the sight triangle. Using Table 9-7 (Left Turn, Case B1) and Table 9-9 (Right Turn, Case B2), the sight distance requirements for the 30-mph posted speed are 335 ft and 290 ft respectively. The current sight distance is at least 400 feet in either direction.

The Policy states that the vertex of the sight triangle (decision point) should be located 14.5 ft from the edge of traveled way, the decision point typically represents the location of the driver's eye (at a height of 3.5 ft) when stopped at a major road intersection. The driver should have the ability to see a 6" high object at the center of the travel lane. The sight triangle is constructed using these parameters, and objects that could obscure the driver's vision should be located outside of this sight triangle.

Trip Generation

The proposed development consists of 91 multi-family units as shown in the conceptual site plan provided on the following page.



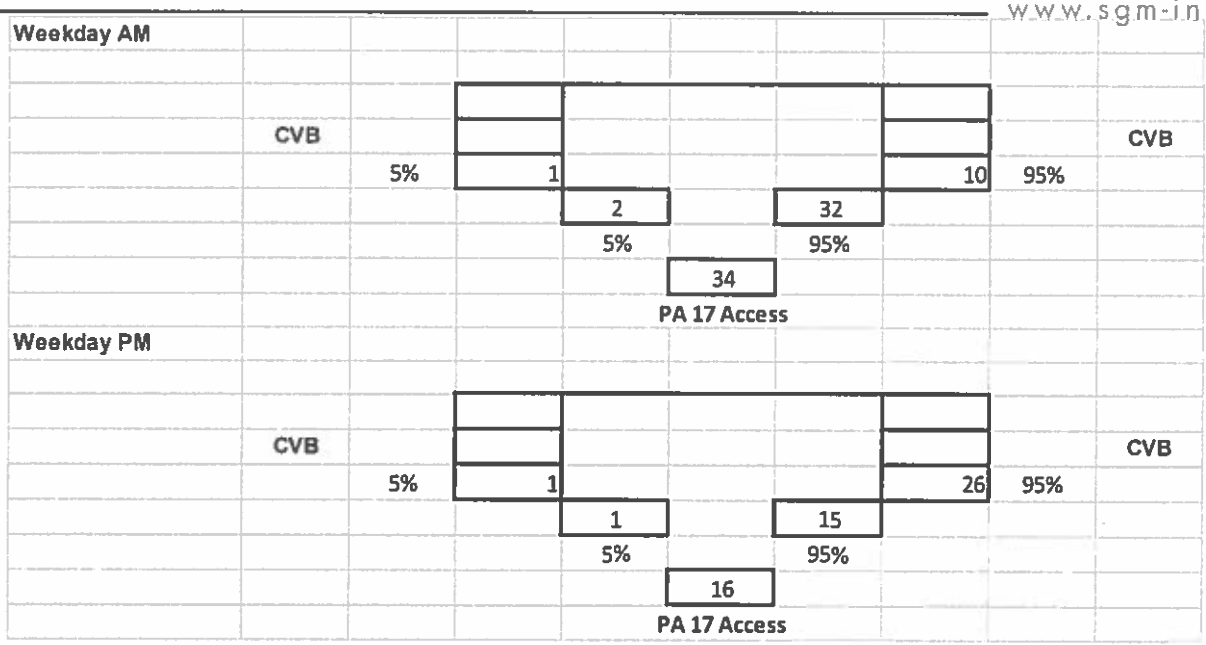
ITE's *Trip Generation (10th Edition)* provides trip generation rates for Multi-Family, low-rise (Code 220) housing units for weekday AM and PM peak hour. The resulting trip generation is shown in the Table below.

Trip Generation Table - PA 17 Castle Valley Ranch
ITE Trip Generation, 10th Edition

				Design Hour Rates							Weekday DHV				
Land Use	Number of Units	ITE Code	Veekda Rate	AM Rate	AM IN	AM OUT	PM Rate	PM IN	PM OUT	eekd Traffi	AM IN	AM OUT	PM IN	PM OUT
Multi-Family (Low-rise)	91	220	7.11	0.48	0.11	0.37	0.60	0.30	0.18	647	10	34	27	16

ITE Ttrip Generation Manual, 10th Edition	TE Code	Basis of	Time Period Used Above	Veekday Design Distributio AM IN	AM OUT	PM IN	PM OUT
Multi-Family (Low-rise)	220	Fitted Cu	Peak Hour adjac	23%	77%	63%	37%

Trip Distribution and Assignment
The distribution and assignment of site generated trips are based upon the primary access and activities oriented toward the I-70 interchange. The distribution is assumed to be 95% oriented to/from the east and 5% oriented to/from the west. The resulting trip assignment is shown on the following page.



Internal Circulation
Based upon the Trip Generation volumes, the proposed access can safely operate as a two-way, two-lane access. To safely accommodate fire access, a two-lane exit will be provided.

Auxiliary Lane Requirements
Auxiliary turn lane requirements for local collector road access are typically analyzed using the CDOT State Highway Access Code based on the anticipated peak hour volumes, the speed limit and geometry of the highway adjacent to the access, and the classification of the highway. For analysis purposes, the CVB speed limit adjacent to the site is 30 mph along an NR-B arterial. Based on the *State Highway Access Code (SHAC)*,

Auxiliary Lane Requirements:

(4) Auxiliary turn lanes shall be installed according to the criteria below.

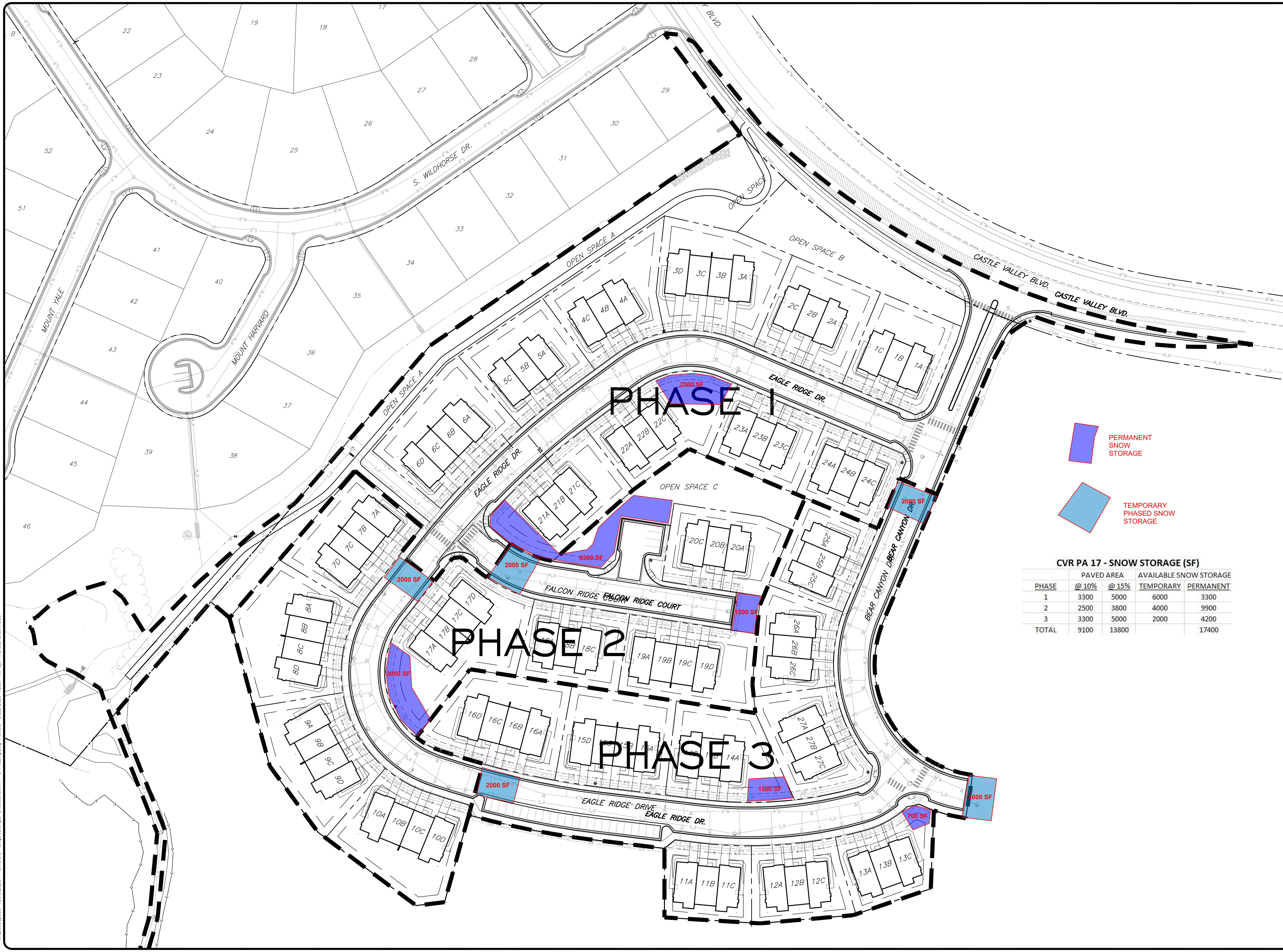
*(a) A left turn lane with storage length plus taper is required for any access with a projected peak hour left ingress turning volume greater than **25 vph**. If the posted speed is greater than 40 mph, a deceleration lane and taper is required for any access with a projected peak hour left ingress turning volume greater than 10 vph. The taper length will be included within the deceleration length.*

*(b) A right turn lane with storage length plus taper is required for any access with a projected peak hour right ingress turning volume greater than **50 vph**. If the posted speed is greater than 40 mph, a right turn deceleration lane and taper is required for any access with a projected peak hour right ingress turning volume greater than 25 vph. The taper length will be included within the deceleration length.*

Based upon the *SHAC* and the trip distribution table provided above, a westbound left turn auxiliary turn lane will be required.

Summary of Findings
2016 traffic volumes on CVB just east of Blackhawk Road were on the order of 400-500 vph during the AM and PM peak hours. PA 17 is estimated to generate approximately 43-44 vph during the AM and PM peak hours, an increase of 8-10% of the existing peak hour traffic volumes. The trip generation of the development is much less than 20% of the existing volumes at the US 6 CVB intersection and will not require a State Highway Access Permit.

The proposed access road has adequate sight distance for entering the roadway and will require a westbound left turn lane based upon the auxiliary lane requirements per the SHAC. The sight distance triangle discussed in this TIS should be implemented as part of the site access design.



CVR PA 17 - SNOW STORAGE (SF)

PHASE	PAVED AREA @ 10%	PAVED AREA @ 15%	AVAILABLE SNOW STORAGE TEMPORARY	AVAILABLE SNOW STORAGE PERMANENT
1	3300	5000	6000	3300
2	2500	3800	4000	9900
3	3300	5000	2000	4200
TOTAL	9100	13800		17400

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Castle Valley Ranch
Preliminary/Final Plat and Development Plan Set PA 17

Project Milestone: Preliminary Not For Construction

Job No. 2000-109.029
Drawn by: JM
Date: 2.25.20
QC: PE: DJC
File: CVR17-31Phasing

Title: SNOW STORAGE PLAN

Dwg No. 7a