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X	X	Memo to file from Dave Thornton - 8/22/91			
X		Declaration of Covenants - not signed, not recorded			

Receipt #
Date Rec.
Received By
#40 71

GRAND JUNCTION planning

DEVELOPMENT APPLICATION

We, the undersigned, Being the owners of property situated in Mesa County, State of Colorado, as described on the attached legal description form do hereby petition this:

Type of Petition	Acres	Phase	Common Location	Zone	Type of Usage
● Subdivision Plat/Plan	3.43	○ Minor ● Major	SE of Patterson Rd & 25 1/2 Rd.		
○ Rezone				Frm ▷ To	
● Planned Development		○ ODP ○ Prelim ● Final		PR-10	Multi-family
○ Conditional Use					
○ Hwy-Oriented Development				H.O.	
○ Text Amendment					
○ Special Use					
● Vacation			CEDAR Mill Rd.		● Right-of-way ○ Easement

● PROPERTY OWNER	● DEVELOPER	● REPRESENTATIVE
Mr. George D. Young	Alco Building Company	Bruce Milyard
Name	Name	Name
601 Horizon Place #141	599 25 Road	576 Rio Linda
Address	Address	Address
Grand Junction, CO 81506	Grand Junction, CO 81502	Grand Junction, CO 81503
City/State	City/State	City/State
	(303) 242-1423	(303) 242-1423
Business Phone #	Business Phone #	Business Phone #

Note: Legal property owner is owner of record on date of submittal.

WE HEREBY ACKNOWLEDGE THAT WE HAVE FAMILIARIZED OURSELVES WITH THE RULES AND REGULATIONS WITH RESPECT TO THE PREPARATION OF THIS SUBMITTAL, THAT THE FOREGOING INFORMATION IS TRUE & COMPLETE TO THE BEST OF OUR KNOWLEDGE, AND THAT WE ASSUME THE RESPONSIBILITY TO MONITOR THE STATUS OF THE APPLICATION AND THE REVIEW SHEET COMMENTS. WE RECOGNIZE THAT WE OURSELVES, OR OUR REPRESENTATIVE(s) MUST BE PRESENT AT ALL HEARINGS. IN THE EVENT THAT THE PETITIONER IS NOT REPRESENTED, THE ITEM WILL BE DROPPED FROM THE AGENDA, AND AN ADDITIONAL FEE CHARGED TO COVER RE-SCHEDULING EXPENSES BEFORE IT CAN AGAIN BE PLACED ON THE AGENDA

x Kenneth B Milyard 7-1-91
Signature of person completing application — Date

x George D. Young 7-1-91
PROPERTY OWNER ACKNOWLEDGES THE DEVELOPMENT APPLICATION AS IT RELATES TO THE TERMS OF THE FEBRUARY 21, 1991 "OPTION TO PURCHASE REAL PROPERTY" BETWEEN GEORGE D. YOUNG AND ALCO BUILDING COMPANY
Signature of property owner(s) - attach additional sheets if necessary

School District 51
Pomona Elementary School
2115 Grand Ave.
Grand Junction, CO 81501

Joe Frank & Kathleen Tomkins
605 Meander Drive
Grand Junction, CO 81505

Robert I Baughman
D N Barbour & P K Baughman
639 1/2 Main Street
Grand Junction, CO 81501
Location: 2581 F Road

Clifford & Elizabeth Harwin
2582 F Road
Grand Junction, CO 81505

Eugene M Sanders
2580 F Road
Grand Junction, CO 81505

William F. Novinger
2479 G Road
Grand Junction, CO 81505

James A & Debra A Sanders
c/o Daphne Branson
2580 1/2 F Road
Grand Junction, CO 81505

Wilma Alyne & Clifford LeRoy Miller
2552 F Road
Grand Junction, CO 81505

Jerry C & Kathryn D Morgan, Jr.
615 Lodgepole
Grand Junction, CO 81504

Seventh Day Adventist Assoc.
2520 So Downing St.
Denver, CO 80210
(Location: 2554 F Road)

Daphne N Branson
2580 1/2 F Road
Grand Junction, CO 81505

Glenn McClelland
838 26 1/2 Road
Grand Junction, CO 81506

Joe G Redding
Tony M Redding
2566 F Road
Grand Junction, CO 81505

Kenneth C & Melanie K Haining
2554 1/2 F Road
Grand Junction, CO 81505

Wesley H Dixon
2562 F Road
Grand Junction, CO 81505

Richard F & Jacquelyn G Dewey
2236 Tiffany Ct.
Grand Junction, CO 81503

Robert L Keech
Hazen & Norma B Hazen
5672 S. Willowbrook Dr.
Morrison, CO 80465

U S Postal Service
602 E. Forsight Circle
Grand Junction, CO 81505

#48 91

COLONY PARK

PROJECT NARRATIVE

WHAT IS THE PROPOSAL

This proposal for Colony Park is a replat of Colony Park, Filing 1. A final plat and plan for Colony Park, Filing 1 was approved by the City of Grand Junction in 1981. Since the approval, there have not been any site improvements made to the property by the original developer or subsequent owners. This proposal is in a Planned Residential 10 zone and is a 3.43 acre development. Once fully developed, 22 living units will be constructed for an overall density of 6.4 units per acre. This results in a 36% reduction between zoned density and developed density. Phase 1 is for the development of 1.76 acres with 8 living units, or a density of 4.5 units per acre. Even though Phase I is the platting of 8 living units, the infrastructure will be constructed for the entire development, or 22 living units.

The proposed Colony Park subdivision is a planned residential development offering single level style attached homes. The homes are arranged in clusters with each unit ranging in size from 1225 to 1575 sq. ft. of living space with an attached two car garage. Many of the garages are designed as side entry in an attempt to eliminate the garage door from the streetscape. The exterior asthetics of the units will be enhanced by relatively spacious open areas to be maintained and preserved by a Home Owner's Association with strong Covenants.

The target markets for this development are the retired person, the empty nester, or the small family desiring a quality home with landscaping and exteriors being maintained by a homeowner's association.

LOCATION

Colony Park subdivision is located on the south side of F Road east of 25-1/2 adjacent to Pomona School.

AREA IMPACTED BY THE PROPOSAL

West of the proposed development lies the Pomona School property which carries a PZ zoning. The area south and east of the development is presently being utilized as agricultural ground, however it is zoned PR-10. North of the proposed development lies "F" Road with the strip along the north side being primarily residential with SF-4 and SF-8 zoning. Development does conform with existing F. Road Corridor guidelines.

The most direct effect of the proposed development will be the additional traffic generated and its impact on "F" Road. In accordance with the

Institute of Transportation Engineers Trip Generation Manual, Residential Condominums Classifications, 5.2 average daily trips per unit will generate approximately 229 movements per day from Colony Park subdivision.

The schools that could potentially be impacted from the development would be Pomona Elementary, West Middle School, and Grand Junction High School.

The development will be serviced by Ute Water, City sewer and Grand Valley Irrigation for landscape watering needs.

EXTERNAL RELATIONSHIPS

Visual Screening

The visual relationship of Colony Park to the external properties consist of the view from "F" Road, the view from Pomona School on the west, and the view from the agricultural ground on the south and east. A combination of fencing and landscaping will mitigate these impacts.

The view of Colony Park from F Road is to be minimized by the use of screen fencing and landscaping. Approximately 25 feet of right of way exists between the rear edge of the sidewalk and the property line paralleling F Road. The developer, in conjunction with this application, will be applying for a revokable fence permit to allow a screen fence in the right of way along F Road. The fence will be placed approximately 10' behind the rear edge of the sidewalk in the right of way. All of the right of way area will be landscaped by the developer and maintained by the Home Owner's Association. The proposed fence along F Road will be a combination of cedar and masonry. (see detail) The fence along the east and south property line will be a rail fence designed adeqately to barricade livestock from entering the development from the adjacent agricultural property. An existing fence and proposed trees on the west property line will separate the development from Pomona School.

Vehicular Circulation and Parking

The proposed Cider Mill Road will provide internal vehicular circulation to the development. The proposed street section is the city local roadway section. This provides width for on-street parking, however, resident parking is provided for each unit in two-car garages and driveways which allow 2 additional spaces. Recreational vehicle parking is restricted by the covenants.

Pedestrian Circulation

Pedestrian circulation within the proposed development is accomodated by the 4' attached walk on both sides of Cider Mill Road and culdesac. The proposed walk connects directly into the existing walk on the south side of F Road. A required U.S. Postal Service Centralized Mail Delivery Box will be

LANDSCAPING

The proposed landscaping consists of screening and lawn areas along "F" Road, internal tree plantings, between Unit buffer plantings, lawn areas, and entry courtyard plantings. All landscape will be irrigated with a pumped automatic sprinkler system. The system is to be owned, operated and maintained by the Homeowner's Association. The irrigation source will be from the wastewater system paralleling the west property line augmented with irrigation water from Independent Ranchman's ditch on the north if needed.

GRADING AND DRAINAGE (drainage report)

The grading and drainage proposed for this site is described in detail in the attached appendix titled "Drainage Report for Colony Park" prepared by Banner and Associates.

UTILITIES

The sewer service is to connect to the existing 18" horizon intercept line on the west property line. The projected flows are based on 150 gallons/day for each bedroom. In determining the flow, the bedroom count assumes half the units are 2 bedroom and half would be 3 bedroom. This count produces a flow of 8250 gallons/day once the project is fully developed.

Proposed water service will tie into the existing 8" Ute water line located in the northeast corner of subject property.

Public Service Company will supply the project with electric and gas service while U.S. West will supply telephone service. The above mentioned services will be placed in the utility easement provided on the street side of the respective lots.

The Home Owner's Association will provide the services needed to maintain the open space and the exterior maintenance of all the living units. The Home Owner's Association is founded on a solid set of covenants designed to maintain aesthetic harmony and consistency throughout the development. A draft of the covenants is attached as Appendix D.

SPECIAL CONSIDERATIONS

Vacation Request

As noted on the application, the developer is requesting a vacation of all rights of way and easements of record associated with Colony Park, Filing 1. The vacation request is the result of this property no longer being developed in conjunction with property to the south and east. Colony Park, Filing 1, as

presently recorded, has road alignments and easements that are no longer functional now that property ownership has been bifercated. Therefore, the request before you is to vacate the existing right of way and easements which will be replaced by right of way and easements as depicted on this submittal. Recording the vacation of the present right of way and easements would occur simultaneously with recording of the final replatt. Even though future expansion of this development is not anticipated at this time, accomodations to continue the roadway to the south have been made by sizing the Cider Mill Road to a "local roadway section" and granting a right of way from the end of the culdesac to the south property line.

Revocable Fence Permit

As was mentioned earlier in the narrative, the developer in conjunction with this application, is requesting a revocable fence permit allowing the developer to construct screen fencing in the right of way along the south side of F Road. Approximately 25 feet of right of way exists between property line and the back edge of the sidewalk along F Road. The developer proposes to construct a screen fence on the right of way leaving approximately 10 feet between the fence and sidewalk to be landscaped by the developer and maintained by the Home Owner's Association. The right of way south of the fence would be landscaped to be harmonious with the other open spaces and would also be maintained by the Home Owner's Association.

Drainage Easement

The developer and property owner have been approached by the Grand Junction Drainage District and the City of Grand Junction to assist in resolving a problem that exists relative to a tile drain line that exists on the west property line. The problem is a surcharge that occurs during certain periods when the Pomona School irrigation system is discharging its waste water. Even though the final solution to the problem has not been decided, the developer has agreed to accomodate the resolution by granting an easement along the west property line providing a satisfactory and mutually beneficial resolution is adopted. The exact location and width of the easement has yet to be discussed.

Property Line Adjustments

The property owner to the South and East of subject property is Mr. Robert Baughman and family. In discussing the replat with Mr. Baughman, all parties concerned recognized the benefit in eliminating the irregular nature of the property boundary lines contained in Colony Park, Filing 1. Therefore, it has been agreed that property transfers will occur between the Mr. Baughman, et. al., and the Young/Alco group to square the property boundaries as depicted on the proposed Replat. The recording of these transfers will be concurrent with the recording of the final platt.

DEVELOPMENT SCHEDULE

Construction of the project will commence upon approval by the City of Grand Junction. The infrastructure improvements will be constructed first, and followed by construction of four (4) units upon issuance of a building permit. Once the first four living units are completed and sold, commencement of additional living units will be dictated by market demand.

ABSTRACT: #48 91

The contents of this report are a subsurface soils investigation and foundation recommendations for the proposed Colony Park Subdivision located in Grand Junction, Colorado.

The 17.1 acre site is located in the northeast quarter of Section 10, Township 1 South, Range 1 West of the Ute Principal Meridian, in Mesa County, Colorado.

Topographically, the site is nearly flat, with a slight gradient to the southwest.

The observed soil profile on this site, in general, consists of approximately 25 to 35 feet, of low plasticity, low density/high moisture silts and clays. After consideration of the investigation and testing program described herein, we will recommend several different approaches to foundation systems for this site. Due to the presence of the extremely soft, compressible, low density silts and clays encountered on this site, there is some potential for damaging differential movement associated with virtually any type of foundation system used on the site. There are, however, several procedures with respect to foundation systems, which may be used on this site to help minimize the potential for damaging differential movement. These will be described in greater detail in the body of this report. The general foundation types available for use on this site will be described only briefly here.

Deep foundation systems consisting of either drilled piers or driven piles, would be probably most suitable for the proposed structures in terms of foundation performance. As an alternative to the deep foundation system approach, mats of controlled, compacted fill may be used beneath the structures to both increase allowable bearing capacity and reduce somewhat the potential settlement for a shallow foundation system. In lieu of this, a structural mat or "waffle slab" type of foundation system, may be used to minimize differential movement.

A conventional spread footing type of foundation system used on the highly compressible silts and clays would yield a foundation with a very high risk of differential movement, due to the very large anticipated total movement, and therefore, should be discouraged for use on this site, except in connection with the compacted fill mat. Various combinations of the above referenced foundation systems, along with special construction procedures may be used to further reduce potential settlement. Specific recommendations pertaining to each type of foundation system are contained in the body of this report.

To limit differential settlement in the structures as much as possible, it is recommended that the foundation loads be well balanced around the structures and the foundation systems be heavily reinforced. Loads under any exterior, continuous footings should be balanced within $\pm$ 300 psf.

Isolated interior pads should be balanced at loads 200 psf below that used for the exterior footings.

All floor slabs on grade must be constructed to act independently of other structural portions of the buildings.

Adequate drainage must be provided at all times. Water must never be allowed to pond above the foundation soils.

Surface and subsurface drainage must be carefully designed and controlled. Perimeter drains would be recommended around the building exteriors.

A Type II Cement would be recommended in all concrete in contact with the soil on this site.

More detailed recommendations can be found within the body of this report. All recommendations will be subject to the limitations set forth herein.

GENERAL:

The purpose of this investigation was to determine the general suitability of the site for construction of a series of single family and apartment units comprising a total of 201 units. Characteristics of the individual soils found within the test borings were examined for use in designing foundations on this site.

Although Lincoln-DeVore has not seen a set of construction drawings for any of the proposed single family or apartment units, we believe that they will be basically frame structures of more or less conventional design. Foundation loads for structures of this nature are normally light to medium weight in magnitude.

The topography of the site is flat and low lying. It is located on the alluvial plain of the Colorado River. The site has a general slope to the southwest, so that surface runoff will eventually reach the river. The exact direction of drainage will be controlled by local streets and ditches around the structures, but in general, will be toward the southwest. Both surface and subsurface drainage range from fair to poor.

The foundation soils in this portion of Grand Junction are characteristically colluvial in nature, having been transported to the site by the action of water originating in the higher areas to the northeast. This colluvium has been

described as a yellowish-brown silt and clay, derived from the underlying bedrock and surficial deposits. Along the major drainageways in the area, these soils have been reworked somewhat, and are hence, truly alluvial in origin.

Bedrock in this portion of Grand Junction consists of the Mancos Formation. The Mancos Shale can broadly be described as a thin-bedded, drab, light to dark gray marine shale, with thinly interbedded fine grain sandstone and limestone layers. Some portions of the Mancos Shale are bentonitic, and therefore, are highly expansive. The majority of the shale, however, has only a moderate expansion potential. Formational shale was not encountered in any of the test borings placed on this site, and does not outcrop on this site itself. It is anticipated that the shale will exist at sufficient depth that it will not affect construction or performance of the proposed foundation systems.

BORINGS, LABORATORY TESTS AND RESULTS:

Seventeen test borings were drilled in the vicinity of the proposed construction near locations indicated on the attached Test Boring Location Diagram. These test borings were placed in such a manner as to obtain a reasonably good profile of the subsurface soils. Although some slight variations were noted from point to point, the soil profile appeared sufficiently uniform that no further test borings were deemed necessary. All test borings were drilled with a power-driven, continuous auger drill. Samples were taken with the standard split-spoon sampler, Shelby tubes, and by bulk methods.

The soil profile encountered in the test borings can broadly be described as a single layer system. The colluvial fine grain silts and clays of soil Types No. 1 and 2 are being transported to the site by the action of gravity and water in the past.

The precise gradational and plasticity characteristics associated with the soils encountered during drilling can be found on the attached summary sheets. The representative number for each soil group is indicated in a small circle immediately below the sampling point on the Drilling logs. The following discussion of the soil groups will be general in nature.

Soil Type No. 1 classified as a low plasticity clay (CL) of fine grain size. This soil type is of low permeability and of low density. These soils have a slight

low, that individual footings would cover more than about half the building area. A raft foundation in this case, is likely to be more economical than footings.

Raft foundations are also used to reduce the settlement of structures located above compressible native soil deposits. Under these conditions the depth at which the raft is established is sometimes made sufficiently great that the weight of the structure, plus that of the raft, is wholly compensated by the weight of the excavated soil. The settlement of the structure is then likely to be insignificant. A bearing value on the order of 800 psf would be applicable in this case. Where complete compensation is impractical, a shallower raft may be acceptable, if the net increase in load is small enough to reach tolerable settlements.

Foundation contact stresses must be limited to about 800 psf maximum on the native soils, being dictated by the engineering characteristics of Soil Type No. 1 and 2 in the native state, previously described. Although no accurate settlement calculations were performed for these particular buildings, settlements on the order of 2 to 3 inches could be anticipated under wall loads ranging from 2 to 3 kips per foot with shallow foundations designed on the basis of the bearing capacity value given above.

Where a shallow foundation system is used, we would recommend that the contact stresses be balanced beneath the foundation components. Most buildings are invariably

more heavily loaded on some walls and columns than on others. The amount of this variation may tend to be quite high. We would recommend that the size of the foundation component be varied in direct relationship to the actual load being carried, thus maintaining approximately the same pressure on the soil at all points. Using the criterion of dead load plus live load, we would recommend that the contact stresses beneath the load bearing walls be balanced to within ± 300 psf at all points beneath the foundation wall. Isolated interior column pads should be designed for pressures of about 200 psf less than the average of the pressures beneath the load bearing walls.

To help ensure that the structures move more or less as single units rather than in a differential manner, we would recommend that all stem walls be supported by a grade beam capable of spanning at least 15 feet. This grade beam would apply to both interior and exterior load bearing walls. Such a grade beam should be horizontally reinforced continuously around the structure with no gaps or breaks in reinforcing steel unless they are specially designed. Beams should be reinforced at both the top and the bottom with the major reinforcement being placed near the bottom. All interior bearing walls should rest on a grade beam and foundation system of their own and should not be allowed to rest on a thickened slab section or "shovel" footing.

Where the stem walls are relatively shallow, vertical reinforcing will probably not be necessary.

However, if the walls retain soil in excess of about 5 feet in height, vertical reinforcing may be necessary to resist the active pressure of the soils along the wall exterior. To aid in designing such vertical reinforcing, the following equivalent fluid pressures can be utilized:

Soil Type Nos. 1 & 2 - 59 pcf.

It should be noted that the above values should be modified to take into account any surcharge loads applied at the top of the walls as a result of stored goods, live loads on the floor, or any other externally applied forces. The above equivalent fluid pressures should also be modified for the effects of any rise in the free water table.

Where floor slabs are used, they must be placed over a compacted gravel blanket of 4 to 6 inches in thickness. Under no circumstances should this gravel pad be allowed to act as a water trap beneath the floor slab. A vapor barrier is recommended beneath any and all floor slabs which will lie below the finished exterior ground surface. All fill placed beneath the interior floor slabs must be compacted to at least 90% of its maximum Proctor dry density, ASTM D-698.

All floor slabs must be constructed to act independently of the other structural portions of the buildings. These floor slabs should contain deep construction or contraction joints to facilitate even breakage and to help minimize any unsightly cracking which could result from differential movement. Floor slabs on grade should be placed in sections no

greater than 20 feet on a side. Prior to constructing slabs on grade, all existing topsoil and organics must be removed from the building interior. Likewise, all foundations must penetrate the topsoil layer.

Any topsoil or organic materials should be removed from the interior of the buildings prior to constructing floor slabs. Unless the overexcavated portion of the site is extended to include the below slab soil also, some potential floor slab settlement can be anticipated, particularly if the floor slabs will be subject to fairly high surcharge loads. If floor loads are fairly high due to stored goods (for example, in excess of 200 psf total load) then some consolidation of the low density, deeper soils can be anticipated as a result of pressures generated by the floor slabs alone. In this case, if a shallow foundation system is used, some foundation movement would be anticipated due to settlements induced by the floor slabs. If high floor surcharge loads are to be applied to this structure, then the use of a deep foundation alternative must be recommended.

Adequate drainage must be provided in the foundation area both during and after construction to prevent the ponding of water. The ground surface around the buildings should be graded so that surface water will be carried quickly away from the structures. The minimum gradient within 10 feet of the buildings will depend upon surface landscaping. Bare or paved areas should maintain a minimum gradient of 2%, while landscaped

areas should maintain a minimum gradient of 5%. Roof drains must be carried across all backfilled areas and discharged well away from the structures.

A perimeter drain must be recommended for these buildings. This drain would consist of a perforated drain pipe, gravel collector and sand filter (or acceptable filter fabric layer). If sufficient topographic fall does not exist on the site to allow daylighting of the drain pipe, then a sealed sump and pump arrangement would be required to remove the collected moisture. Dry wells should not be used on this site.

To give the buildings extra lateral stability and to aid in the rapidity of runoff, all backfill around the buildings and in utility trenches in the vicinity of the structures should be compacted to at least 90% of its maximum Proctor dry density, ASTM D-698. The native materials encountered on this site may be used for backfilling purposes, if so desired. All backfill must be compacted to the required density by mechanical means. No water flooding techniques of any type should be used in the placement of fill on this site.

The amount of structural fill transported to the site during construction, either for purposes of site grading or to raise the interior floor slabs to their desired design elevation, should be kept to a minimum consistant with the overcut type design. The surcharge applied by the structural fill could consolidate the soft, fine grained soils previously described. Obviously, if the underlying soils consolidate as a

result of this applied surcharge, some structural movement would follow.

The soils on this site were found to contain sulfates in detrimental quantities. Therefore, a Type II Cement would be recommended in all concrete in contact with the soil. Under no circumstances should calcium chloride ever be added to a Type II Cement. In the event that Type II Cement is difficult to obtain, a Type I Cement may be used, but only if it is protected from the soils by an impermeable membrane.

The open foundation excavation must be inspected prior to the placing of forms and pouring of concrete to establish that adequate design bearing materials have been reached and that no debris, soft spots or areas of unusually low density are located within the foundation region. All fill placed below the foundations must be fully controlled and tested to ensure that adequate densification has occurred.

The bottoms of all footings should be located a minimum of 1-1/2 feet below finish grade for frost protection, or as dictated by local building codes.

It is extremely important due to the nature of data obtained by the random sampling of such a heterogeneous material as soil that we be informed of any changes in the subsurface conditions observed during construction from those outlined in the body of this report. Construction personnel should be made familiar with the contents of this report and

instructed to relate any differences immediately if encountered.

Samples of the soil in this subdivision have been evaluated using the Hveem-Carmany method to determine their support characteristics. The results are shown below. All base and fill in the parking areas should be compacted to at least 90% of its modified maximum Proctor dry density, ASTM D-1557.

Soil Type No. 1 & 2- R = 5
Average Displacement @ 300 psi = 6.32
Average Expansion Pressure @ 300 psi = 2.68

Using the city and county criteria for traffic counts of certain class streets, the required base course (assuming proper preparation of the subgrade and compaction of the base course) was computed. They were found to be as follows:

Street Class	Depth of Asphalt	Depth of Base Course
Minor residential (TI=4.0)	2"	10"
Secondary residential (TI=4.5)	2"	12"
Major residential (TI=5.0)	2"	14"

It is believed that all pertinent points concerning the subsurface soils on this site have been covered in this report. If soil types and conditions other than those outlined herein are noted during construction on the site, these should be reported to Lincoln-DeVore so that changes in recommendations can be made, if necessary. If questions arise or further information is required, please feel free to contact Lincoln-DeVore at any time.

#48 91

GEOLOGIC INVESTIGATION
COLONY PARK
MINOR SUBDIVISION

Mesa County, Colorado
May 22, 1991

John H. Wright, C.P.G.
& Associates

(303) 241-6619
336 Main St., Suite 201

P.O. Box 2355
Grand Junction, CO 81502

GEOLOGIC INVESTIGATION
COLONY PARK
MINOR SUBDIVISION

Mesa County, Colorado
May 22, 1991

CONTENTS

GEOLOGIC INVESTIGATION
COLONY PARK
MINOR SUBDIVISION

Mesa County, Colorado
May 22, 1991

INTRODUCTION

The proposed Colony Park Minor Subdivision is being developed by ALCO Building Co., 599 29 Rd., Grand Junction, CO 81505. The property consists of approximately 3.4 acres to be subdivided into 22 lots for town homes with common grounds. It is located in a portion of Section 10, T 1 S, R 1 W, Ute P.M. in Mesa County, Colorado west of the intersection of F Road and 26 Road. (See location map).

CONCLUSIONS AND RECOMMENDATIONS

1. The site was formerly shown by the Department of the Army (1976) to lie within a 100 year sheet flow floodplain. Subsequent improvements in the channel upstream and that adjacent to the north line of the property have contained the floodway in the channel (HUD, National Flood Insurance Program, 1978). Thus, the former hazard has been mitigated.

2. Evidence shows that a shallow water table may be expected to underlie the entire property. Below grade structures should be avoided.

SCOPE

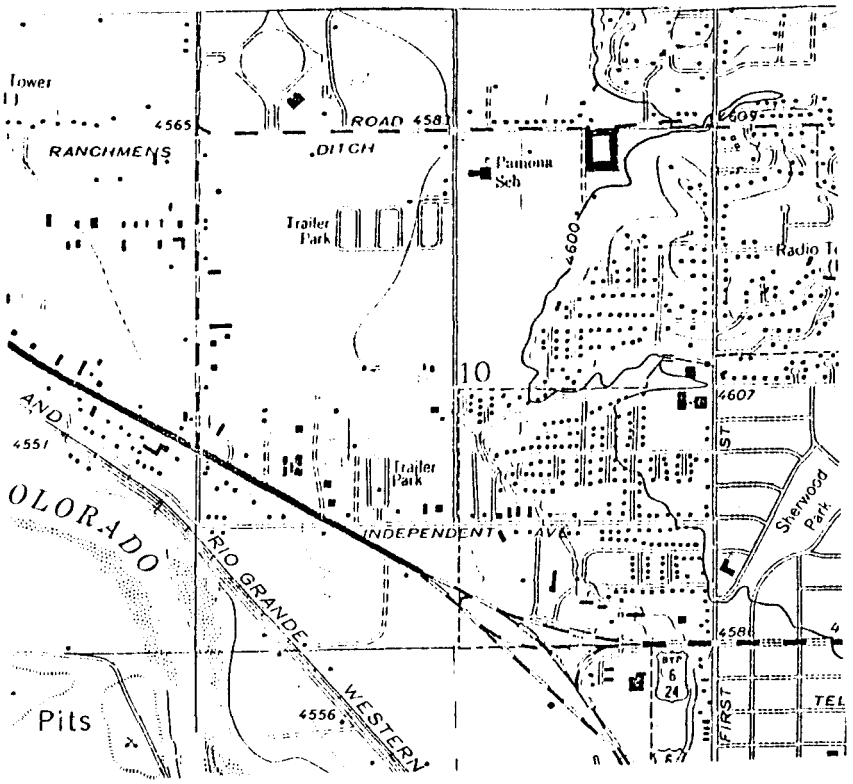
This report represents the results of a geologic investigation of the proposed Colony Park Minor Subdivision as required by Colorado S.B. 35 and local regulations. The investigation included a field examination as well as a review of available geologic literature.

A property map (1"=100') with 1' topographic contours was provided by the developers. Monumentation from the base survey was adequately located in the field.

The conclusions of this investigation are based solely on the site conditions at the time of investigation. They do not reflect hazards which might develop from improper design or construction methods.

GEOLOGY

The property lies entirely upon an alluvial floodplain deposit of sandy clay and sparse gravel which overlies the Cretaceous Mancos shale (Km). No outcrops of formational material exist on the property. Subsurface bedding is assumed to be nearly flat.



Colony Park Minor Subdivision

PROPERTY LOCATION MAP
From USGS 7.5 Minute Quadrangle: Grand Junction
Scale: 1" = 2,000'

Geologic Hazards

A 100 year sheet flow floodplain hazard was formerly shown by the Army Corps of Engineers (1976) to cover the entire site. This hazard referred to potential flooding of the open Horizon Drive Channel and the open Independent Ranchman's Ditch when both were already seasonally charged with irrigation waters. Subsequent to the Army Corps' investigations remedial work was done on both channels -- to wit, containing portions of both channels in culverts -- such that the Department of Housing and Urban Development (July 3, 1978) has indicated the floodway sufficiently contained and no 100 year flood hazard to presently exist. Thus, the former hazard has been mitigated.

A shallow water table is suspected to underlie the entire property. The source of this water is principally from two nearby irrigation ditches -- the Independent Ranchman's Ditch and the Horizon Drive Channel. While these two ditches have been contained in culverts in the immediate vicinity of the property, leakage from the open portions close to the property apparently continues to infiltrate the subsurface. Evidence of a shallow water table at 15' to 20' depth below surface was found in soils test holes drilled by Lincoln Devore in 1981. Furthermore, phreatophyte vegetation such as cottonwoods and russian olives flourished on the property at the time of this investigation. The hazard to property due to shallow water table can be easily mitigated by proper foundation design and avoidance of below grade structures such as basements. The subsurface soils report by Lincoln Devore (1981, cited below) adequately addresses this question, and makes appropriate design recommendations.

Mineral Resources

No developable valuable mineral resources are known to occur on the property.

SITE CONDITIONS

Surface Features

Natural topography is nearly flat, grading 0.5% - 1.0% to the southwest.

The surface consists mainly of an open field sparsely covered with poor grasses and cottonwood and russian olive trees. No buildings are located on the site.

Two shallow irrigation ditches cross the property, apparently once intended for local use but both presently dry.

Drainage

No stream channels exist on the property. Poor to moderate surface runoff drains southwesterly where it is captured by a branch of the

Independent Ranchman's ditch and eventually empties into the Colorado River.

Construction Factors

No hard or resistant outcrops of rock occur on the property, and surficial materials are easily rippable with conventional means.

WATER

Domestic water will be obtained from Ute Water.

Irrigation water will be derived from Grand Valley Irrigation.

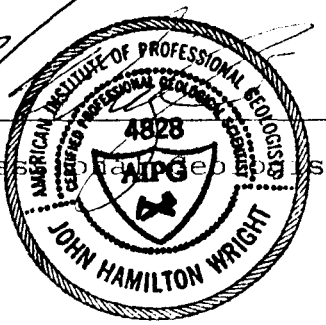
Sewage will be conveyed off site by the City of Grand Junction systems.

SOILS

Surface soils are comprised of two soil types: "Ravola loam" and "Fruita and Ravola loam". Both are pale to light brown loam which may be slightly calcareous. They are alluvial soils with occasional gravels which overlie the Cretaceous Mancos Shale. In general, they display medium runoff, medium internal drainage, moderate erosion hazard, and sparsely saline soils characteristics. Occasionally these soils and the shale substratum contain lenses of bentonitic or swelling clays. Field observations do not indicate a significant hazard associated with these characteristics on site.

Subsurface soils tests are not required for minor subdivisions by Mesa County. However, a subsurface soils test has been conducted in the past (March 24, 1981) by Lincoln Devore, professional soils engineers, over a larger tract which included the site of this investigation. At least two of the test borings were collared on the site. The Lincoln Devore investigation made findings of a shallow water table, somewhat saline soils, and certain runoff characteristics. That investigation resulted in appropriate recommendations for construction. No significant change has been wrought on the property since that investigation. The findings and recommendations of that investigation should be followed.

John H. Wright
Certified Professional Geologist
May 22, 1991



REFERENCES

1. Soil Conservation Service; Soil Survey of the Grand Junction Area, CO; Series 1940, No. 19; 1955.

2. Army Corps of Engineers; Flood Hazard Information, Colorado River and Tributaries, Grand Junction, Colorado; 1976.

3. HUD National Flood Insurance Program Map; Flood Hazards of Grand Junction; July 3, 1978.

4. Lincoln Devore; Soil Test, Colony Park Subdivision; March 24, 1981.

RADIATION EXAMINATION

COLONY PARK MINOR SUBDIVISION

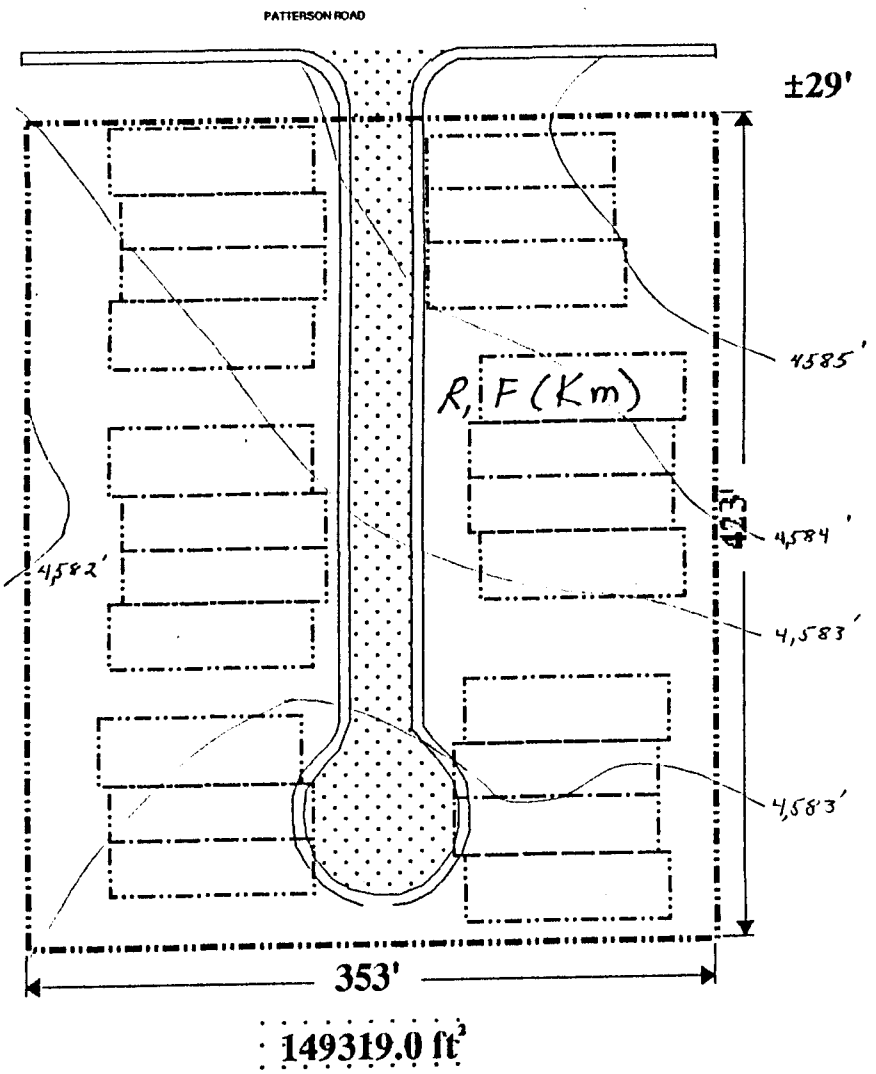
Mesa County, Colorado
May 22, 1991

The proposed Colony Park Minor Subdivision, being developed by ALCO Building Co., 599 29 Rd., Grand Junction, CO 81505, was examined for potential radiation hazard. The property is located in a portion of Section 10, T 1 S, R 1 W, Ute P.M. in Mesa County, Colorado. Conditions at the site at the time of this investigation indicate the site is free of radiation hazard.

The examination of the site was carried out according to the requirements of Colorado SB 35, and of local regulations which require radiation examinations for proposed subdivisions. The field examination was furthermore carried out in conjunction with the foregoing geologic field investigation, using a Urinco Scintillation Counter Model #720N. The surface was thoroughly traversed on foot. Background radiation was 50 counts per second, +/- 10cps. No where on the property was found a reading higher than background.

As all readings were well below Colorado Health Department standards of 250 counts per second, there is no apparent reason for more detailed radiation survey work.

John H. Wright
Certified Professional Geologist



COLONY PARK MINOR SUBDIVISION

Scale: 1"= 100'
Contour Interval: 1'

North

Explanation:

R, F (Km) Ravola and Fruita loam (overlying Cretaceous Mancos Shale)

——— No other geologic features are shown since no outcrops or structure can be observed on the surface.

Pavement Design Report

COLONY PARK SUBDIVISION

Prepared for:

Bruce Milyard
ALCO BUILDING COMPANY
599 25 Road
Grand Junction, CO 81505
Ph. (303)242-1423

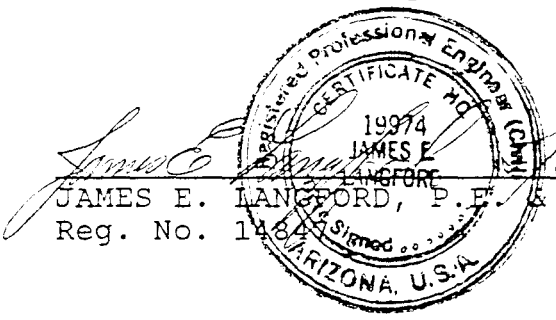
BANNER

BANNER ASSOCIATES, INC. — CONSULTING ENGINEERS
2777 CROSSROADS BOULEVARD — GRAND JUNCTION, COLORADO 81506
(303) 243-2242

May 1991

ENGINEER'S CERTIFICATION

I, JAMES E. LANGFORD, P.E. & L.S., certify that this Plan and Report was prepared by me or under my direct supervision for the Owner's hereof.



5/30/91

JAMES E. LANGFORD, P.E. & L.S.
Reg. No. 14847

PAVEMENT SECTION DESIGN

COLONY PARK FILING NO. 2

TRAFFIC ANALYSIS

COLONY PARK FILING NO. 2 is being developed as a multi-family tract with a maximum of 22 townhouse units on 3.44 acres. The parcel is surrounded by an additional 14.24 acres, together comprising this original land area known of as COLONY PARK.

The roadway through this parcel will eventually extend into the southerly properties at which time it will truly become a residential collector roadway. Since this parcel is no longer legally associated with the 14.24 acre tract, it is not possible to project with any degree of accuracy what residential form build out will take. For the purposes of this pavement design exercise, it is recognized that we have no rational basis for underdesigning the road as only a "local" roadway, nor do we have any rational basis over overdesigning it as a true "collector". Given this admittedly weak rationale, but feeling a neet to somewhat address future expansion to the south, a compromise was made. Based on the Mesa County Standards where a local roadway section must be designed using a minimum 18K EDLA of 5, and a collector is based on a minimum 18K EDLA of 25, we chose an 18K EDLA value of 10 for the basis of this design.

DESIGN CRITERIA

CRITERIA

Design Life	=	20	Years
18K EDLA	=	10	
Serviceability Index	=	2.0	[Minimum for Collector]
Reliability Factor	=	75	[Ranges from 50 to 80]
"R" Value	=	5	[Lincoln DeVore Soils Report]

Regional Factor:

Annual Precipitation < 14"	=	- 0.50
Elevation 4,585 < 6,500	=	+ 0.25
Drainage (Poor)	=	+ 0.50
Frost > 28"	=	+ 1.00
		1.25 < 2.0
USE		2.0

FROM THE CDOH NOMOGRAPH
(Figure 603-1A, July 1981)

WSN = 2.85

	HBP (0.40)	+	ABC (0.12)	=	WSN
Trial #1 3" HBP/12" ABC	1.20	+	1.44	=	2.64 < 2.85
Trial #2 4" HBP/11" ABC	1.60	+	1.32	=	2.92 > 2.85

PROPOSED PAVEMENT SECTION

4" HBP over 11" ABC
HBP - Hot Bituminous Pavement
ABC - Aggregate Base Course

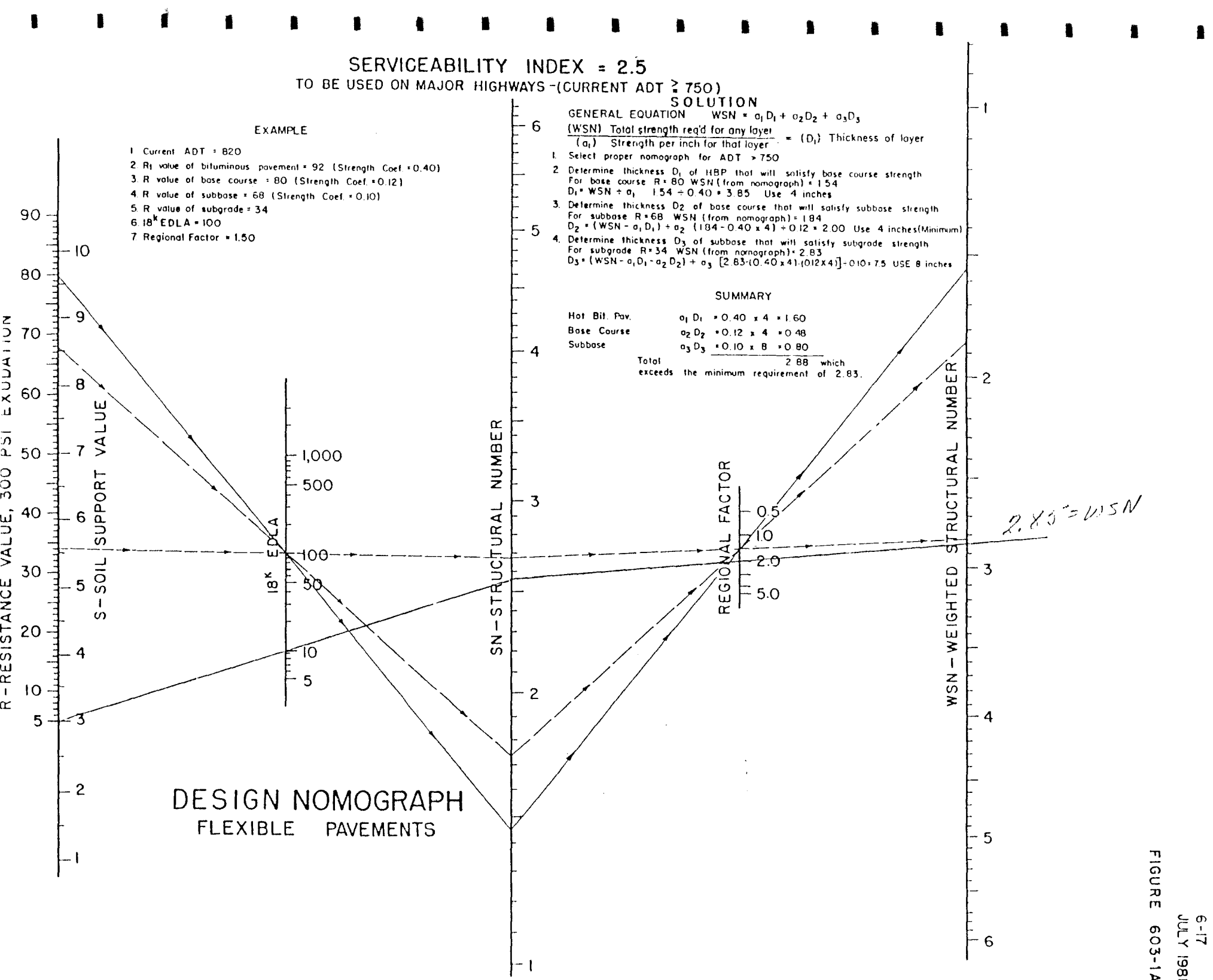


FIGURE 603-1A

TABLE 603.3

STRENGTH COEFFICIENTS

Component	Limiting Test Criteria	Coefficient
Plant Mix Seal		0.25
Hot Bituminous Pavement	$R_t \geqq 95$	0.44
" " "	$R_t = 90\text{-}94$	0.40
" " "	$R_t = 87\text{-}89$	0.35
" " "	$R_t \leqq 84\text{-}86$	0.30
" " "	$R_t \leqq 83$	0.25
Road Mix Bit. Pavement		0.20
Existing Bituminous Pavement		0.20 to 0.44
Plant Mix Bit. Base	$R_t \geqq 90$	0.34
" " " "	$R_t = 85\text{-}89$	0.30
" " " "	$R_t \leqq 80\text{-}84$	0.25
" " " "	$R_t \leqq 79$	0.22
Aggregate Base Course [A.B.C.]	"R" $\geqq$ 84	0.14
" " " " " "	"R" = 78-83	0.12
" " " " " "	"R" $\leqq$ 70-77	0.11
" " " " " "	"R" $\leqq$ 69	0.10
Foamed Asphalt Treated A.B.C. or Emulsified Asphalt Treated A.B.C.	$R_t \geqq 95$	0.23
" " " " " "	$R_t = 90\text{-}94$	0.20
" " " " " "	$R_t \leqq 84\text{-}89$	0.15
" " " " " "	$R_t \leqq 83$	0.12
Cement Treated A.B.C.	7-day test $\geqq$ 650 psi	0.23
" " " " "	" " $\leqq$ 400-649 psi	0.20
" " " " "	" " $\leqq$ 399 psi	0.15
Hydrated Lime Treated A.B.C.	"R" $\geqq$ 84	0.14
" " " " " "	"R" = 78-83	0.12
Borrow Material		0.10 *

* Used only to determine a value of strength for layers of soil and/or borrow material which are located above the soil layer from which the soil support value of the subgrade is determined.

NOTE: The minimum strength coefficient for the Base Course on highways having a current ADT volume of 750 or greater shall be 0.12.

Appendix "A"

SOILS REPORT

As
Prepared By

Lincoln DeVore
Engineering Geologists

March 24, 1981

ABSTRACT:

The contents of this report are a subsurface soils investigation and foundation recommendations for the proposed Colony Park Subdivision located in Grand Junction, Colorado.

The 17.1 acre site is located in the northeast quarter of Section 10, Township 1 South, Range 1 West of the Ute Principal Meridian, in Mesa County, Colorado.

Topographically, the site is nearly flat, with a slight gradient to the southwest.

The observed soil profile on this site, in general, consists of approximately 25 to 35 feet, of low plasticity, low density/high moisture silts and clays. After consideration of the investigation and testing program described herein, we will recommend several different approaches to foundation systems for this site. Due to the presence of the extremely soft, compressible, low density silts and clays encountered on this site, there is some potential for damaging differential movement associated with virtually any type of foundation system used on the site. There are, however, several procedures with respect to foundation systems, which may be used on this site to help minimize the potential for damaging differential movement. These will be described in greater detail in the body of this report. The general foundation types available for use on this site will be described only briefly here.

Deep foundation systems consisting of either drilled piers or driven piles, would be probably most suitable for the proposed structures in terms of foundation performance. As an alternative to the deep foundation system approach, mats of controlled, compacted fill may be used beneath the structures to both increase allowable bearing capacity and reduce somewhat the potential settlement for a shallow foundation system. In lieu of this, a structural mat or "waffle slab" type of foundation system, may be used to minimize differential movement.

A conventional spread footing type of foundation system used on the highly compressible silts and clays would yield a foundation with a very high risk of differential movement, due to the very large anticipated total movement, and therefore, should be discouraged for use on this site, except in connection with the compacted fill mat. Various combinations of the above referenced foundation systems, along with special construction procedures may be used to further reduce potential settlement. Specific recommendations pertaining to each type of foundation system are contained in the body of this report.

To limit differential settlement in the structures as much as possible, it is recommended that the foundation loads be well balanced around the structures and the foundation systems be heavily reinforced. Loads under any exterior, continuous footings should be balanced within $\pm$ 300 psf.

Isolated interior pads should be balanced at loads 200 psf below that used for the exterior footings.

All floor slabs on grade must be constructed to act independently of other structural portions of the buildings.

Adequate drainage must be provided at all times. Water must never be allowed to pond above the foundation soils.

Surface and subsurface drainage must be carefully designed and controlled. Perimeter drains would be recommended around the building exteriors.

A Type II Cement would be recommended in all concrete in contact with the soil on this site.

More detailed recommendations can be found within the body of this report. All recommendations will be subject to the limitations set forth herein.

GENERAL:

The purpose of this investigation was to determine the general suitability of the site for construction of a series of single family and apartment units comprising a total of 201 units. Characteristics of the individual soils found within the test borings were examined for use in designing foundations on this site.

Although Lincoln-DeVore has not seen a set of construction drawings for any of the proposed single family or apartment units, we believe that they will be basically frame structures of more or less conventional design. Foundation loads for structures of this nature are normally light to medium weight in magnitude.

The topography of the site is flat and low lying. It is located on the alluvial plain of the Colorado River. The site has a general slope to the southwest, so that surface runoff will eventually reach the river. The exact direction of drainage will be controlled by local streets and ditches around the structures, but in general, will be toward the southwest. Both surface and subsurface drainage range from fair to poor.

The foundation soils in this portion of Grand Junction are characteristically colluvial in nature, having been transported to the site by the action of water originating in the higher areas to the northeast. This colluvium has been

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The foundation soils in this portion of Grand Junction are characteristically colluvial in nature, having been transported to the site by the action of water originating in the higher areas to the northeast. This colluvium has been

described as a yellowish-brown silt and clay, derived from the underlying bedrock and surficial deposits. Along the major drainageways in the area, these soils have been reworked somewhat, and are hence, truly alluvial in origin.

Bedrock in this portion of Grand Junction consists of the Mancos Formation. The Mancos Shale can broadly be described as a thin-bedded, drab, light to dark gray marine shale, with thinly interbedded fine grain sandstone and limestone layers. Some portions of the Mancos Shale are bentonitic, and therefore, are highly expansive. The majority of the shale, however, has only a moderate expansion potential. Formational shale was not encountered in any of the test borings placed on this site, and does not outcrop on this site itself. It is anticipated that the shale will exist at sufficient depth that it will not affect construction or performance of the proposed foundation systems.

BORINGS, LABORATORY TESTS AND RESULTS:

Seventeen test borings were drilled in the vicinity of the proposed construction near locations indicated on the attached Test Boring Location Diagram. These test borings were placed in such a manner as to obtain a reasonably good profile of the subsurface soils. Although some slight variations were noted from point to point, the soil profile appeared sufficiently uniform that no further test borings were deemed necessary. All test borings were drilled with a power-driven, continuous auger drill. Samples were taken with the standard split-spoon sampler, Shelby tubes, and by bulk methods.

The soil profile encountered in the test borings can broadly be described as a single layer system. The colluvial fine grain silts and clays of soil Types No. 1 and 2 are being transported to the site by the action of gravity and water in the past.

The precise gradational and plasticity characteristics associated with the soils encountered during drilling can be found on the attached summary sheets. The representative number for each soil group is indicated in a small circle immediately below the sampling point on the Drilling logs. The following discussion of the soil groups will be general in nature.

Soil Type No. 1 classified as a low plasticity clay (CL) of fine grain size. This soil type is of low permeability and of low density. These soils have a slight

tendency to expand upon addition of moisture, however, owing to the relatively high moisture/low density condition of these clays, this expansion potential will not be realized. Instead the affects of consolidation will be of utmost concern. Due to the clays low density/high moisture condition on this site, these soils will have a tendency to long term consolidate under applied foundational pressures. However, if the allowable bearing values given are not exceeded we feel that differential movement would be tolerable. This soil group was found to have an allowable bearing value on the order of 800 psf maximum.

Soil Type No. 2 classified as a low plasticity silt and clay (ML/CL) of fine grain size. This soil type is also of low permeability and of low density. These soils have a slight tendency to expand upon the addition of moisture. In the high moisture/low density condition encountered on this site, this potential will not be realized; however, these soils will have a high tendency to long term consolidation under applied foundation pressures. If the allowable bearing values given are not exceeded, we feel that differential movement would be tolerable. This soil group was also found to have an allowable bearing value on the order of 800 psf maximum.

No true free water surface was encountered in any of the test borings to the depths drilled. However, very wet conditions were encountered in all test borings, and these conditions are believed to be the result of

seepage from irrigation ditches and from irrigation practices in the vicinity. Due to the high moisture conditions encountered, it is recommended that basement or half basement foundations not be used on this site, and that all floor slabs be constructed over a capillary break and vapor barrier.

The presence of a high moisture content would have to be taken into consideration should drilled piers be used. The very soft nature of the soil would require the use of casing over the full length of the drill hole. Also, some form of dewatering would be necessary unless the concrete could be tremied below standing water.

Surface drainage should be carefully designed and controlled in an effort to minimize saturation of the soils directly below foundation line. Since saturation of any soil will enhance its settlement characteristics, an effort must be made to maintain the soil at a constant moisture level. Additional recommendations pertaining to surface drainage will be found in the next section of this report.

CONCLUSIONS AND RECOMMENDATIONS:

Since the exact magnitude and nature of the foundation loads are not precisely known at the present time, the following recommendations must be somewhat general in nature. Any special loads or unusual design conditions should be reported to Lincoln-DeVore so that changes in these recommendations may be made, if necessary. However, based upon our analysis of the soil conditions and project characteristics previously outlined, the following recommendations are made.

In terms of foundation performance, a drilled pier (or driven pile) and grade beam foundation system would be the optimum foundation for this site. However, it is recognized that this would be an expensive foundation alternative, and the depth to adequate bearing would be quite variable, therefore, further recommendations will not be given in this report. It is felt that the engineering characteristics of the near surface materials are such that design of a shallow foundation system will be feasible. More complete design and construction recommendations for a deep foundation system can easily be provided at a later date, upon request. For the remainder of this report, it is assumed that a shallow foundation alternative will be used to transfer the weight of these buildings. If a heavier type of building should be used on this site than those referenced in this report, drilled piers would probably be required.

If a continuous footing foundation system is to be considered, then some modification of the foundation soils would be necessary. (This option would also apply to any areas of man-made fill which may be encountered during excavation for foundation construction.) The foundation area could be overexcavated in trenches extending at least 5 feet below the proposed footing line, with a similar dimension being maintained around the perimeter of all foundation components (both strip and pad footings). After the overexcavation has been completed, then a coarse grained, non-free draining material could be placed in the trenches in lifts not to exceed 6 inches after compaction. A minimum of 95% of the soils maximum Proctor dry density, ASTM D-698, should be maintained during the filling process.

If the site should be overexcavated and if the fill is constructed as described above, then design bearing values on the order of 1800 psf could be achieved. This increase in bearing value would result in some savings of concrete and steel and would also reduce somewhat the risk of differential movement.

In lieu of this overexcavation scheme described above, a raft or mat foundation would also be applicable, using the same bearing value. A raft or mat foundation is a combined footing that covers the entire area beneath a structure and supports all walls and columns wherever the building loads are so heavy, or the allowable soil pressure is so

low, that individual footings would cover more than about half the building area. A raft foundation in this case, is likely to be more economical than footings.

Raft foundations are also used to reduce the settlement of structures located above compressible native soil deposits. Under these conditions the depth at which the raft is established is sometimes made sufficiently great that the weight of the structure, plus that of the raft, is wholly compensated by the weight of the excavated soil. The settlement of the structure is then likely to be insignificant. A bearing value on the order of 800 psf would be applicable in this case. Where complete compensation is impractical, a shallower raft may be acceptable, if the net increase in load is small enough to reach tolerable settlements.

Foundation contact stresses must be limited to about 800 psf maximum on the native soils, being dictated by the engineering characteristics of Soil Type No. 1 and 2 in the native state, previously described. Although no accurate settlement calculations were performed for these particular buildings, settlements on the order of 2 to 3 inches could be anticipated under wall loads ranging from 2 to 3 kips per foot with shallow foundations designed on the basis of the bearing capacity value given above.

Where a shallow foundation system is used, we would recommend that the contact stresses be balanced beneath the foundation components. Most buildings are invariably

more heavily loaded on some walls and columns than on others. The amount of this variation may tend to be quite high. We would recommend that the size of the foundation component be varied in direct relationship to the actual load being carried, thus maintaining approximately the same pressure on the soil at all points. Using the criterion of dead load plus live load, we would recommend that the contact stresses beneath the load bearing walls be balanced to within ± 300 psf at all points beneath the foundation wall. Isolated interior column pads should be designed for pressures of about 200 psf less than the average of the pressures beneath the load bearing walls.

To help ensure that the structures move more or less as single units rather than in a differential manner, we would recommend that all stem walls be supported by a grade beam capable of spanning at least 15 feet. This grade beam would apply to both interior and exterior load bearing walls. Such a grade beam should be horizontally reinforced continuously around the structure with no gaps or breaks in reinforcing steel unless they are specially designed. Beams should be reinforced at both the top and the bottom with the major reinforcement being placed near the bottom. All interior bearing walls should rest on a grade beam and foundation system of their own and should not be allowed to rest on a thickened slab section or "shovel" footing.

Where the stem walls are relatively shallow, vertical reinforcing will probably not be necessary.

However, if the walls retain soil in excess of about 5 feet in height, vertical reinforcing may be necessary to resist the active pressure of the soils along the wall exterior. To aid in designing such vertical reinforcing, the following equivalent fluid pressures can be utilized:

Soil Type Nos. 1 & 2 - 59 pcf.

It should be noted that the above values should be modified to take into account any surcharge loads applied at the top of the walls as a result of stored goods, live loads on the floor, or any other externally applied forces. The above equivalent fluid pressures should also be modified for the effects of any rise in the free water table.

Where floor slabs are used, they must be placed over a compacted gravel blanket of 4 to 6 inches in thickness. Under no circumstances should this gravel pad be allowed to act as a water trap beneath the floor slab. A vapor barrier is recommended beneath any and all floor slabs which will lie below the finished exterior ground surface. All fill placed beneath the interior floor slabs must be compacted to at least 90% of its maximum Proctor dry density, ASTM D-698.

All floor slabs must be constructed to act independently of the other structural portions of the buildings. These floor slabs should contain deep construction or contraction joints to facilitate even breakage and to help minimize any unsightly cracking which could result from differential movement. Floor slabs on grade should be placed in sections no

greater than 20 feet on a side. Prior to constructing slabs on grade, all existing topsoil and organics must be removed from the building interior. Likewise, all foundations must penetrate the topsoil layer.

Any topsoil or organic materials should be removed from the interior of the buildings prior to constructing floor slabs. Unless the overexcavated portion of the site is extended to include the below slab soil also, some potential floor slab settlement can be anticipated, particularly if the floor slabs will be subject to fairly high surcharge loads. If floor loads are fairly high due to stored goods (for example, in excess of 200 psf total load) then some consolidation of the low density, deeper soils can be anticipated as a result of pressures generated by the floor slabs alone. In this case, if a shallow foundation system is used, some foundation movement would be anticipated due to settlements induced by the floor slabs. If high floor surcharge loads are to be applied to this structure, then the use of a deep foundation alternative must be recommended.

Adequate drainage must be provided in the foundation area both during and after construction to prevent the ponding of water. The ground surface around the buildings should be graded so that surface water will be carried quickly away from the structures. The minimum gradient within 10 feet of the buildings will depend upon surface landscaping. Bare or paved areas should maintain a minimum gradient of 2%, while landscaped

areas should maintain a minimum gradient of 5%. Roof drains must be carried across all backfilled areas and discharged well away from the structures.

A perimeter drain must be recommended for these buildings. This drain would consist of a perforated drain pipe, gravel collector and sand filter (or acceptable filter fabric layer). If sufficient topographic fall does not exist on the site to allow daylighting of the drain pipe, then a sealed sump and pump arrangement would be required to remove the collected moisture. Dry wells should not be used on this site.

To give the buildings extra lateral stability and to aid in the rapidity of runoff, all backfill around the buildings and in utility trenches in the vicinity of the structures should be compacted to at least 90% of its maximum Proctor dry density, ASTM D-698. The native materials encountered on this site may be used for backfilling purposes, if so desired. All backfill must be compacted to the required density by mechanical means. No water flooding techniques of any type should be used in the placement of fill on this site.

The amount of structural fill transported to the site during construction, either for purposes of site grading or to raise the interior floor slabs to their desired design elevation, should be kept to a minimum consistant with the overcut type design. The surcharge applied by the structural fill could consolidate the soft, fine grained soils previously described. Obviously, if the underlying soils consolidate as a

result of this applied surcharge, some structural movement would follow.

The soils on this site were found to contain sulfates in detrimental quantities. Therefore, a Type II Cement would be recommended in all concrete in contact with the soil. Under no circumstances should calcium chloride ever be added to a Type II Cement. In the event that Type II Cement is difficult to obtain, a Type I Cement may be used, but only if it is protected from the soils by an impermeable membrane.

The open foundation excavation must be inspected prior to the placing of forms and pouring of concrete to establish that adequate design bearing materials have been reached and that no debris, soft spots or areas of unusually low density are located within the foundation region. All fill placed below the foundations must be fully controlled and tested to ensure that adequate densification has occurred.

The bottoms of all footings should be located a minimum of 1-1/2 feet below finish grade for frost protection, or as dictated by local building codes.

It is extremely important due to the nature of data obtained by the random sampling of such a heterogeneous material as soil that we be informed of any changes in the subsurface conditions observed during construction from those outlined in the body of this report. Construction personnel should be made familiar with the contents of this report and

instructed to relate any differences immediately if encountered.

Samples of the soil in this subdivision have been evaluated using the Hveem-Carmany method to determine their support characteristics. The results are shown below. All base and fill in the parking areas should be compacted to at least 90% of its modified maximum Proctor dry density, ASTM D-1557.

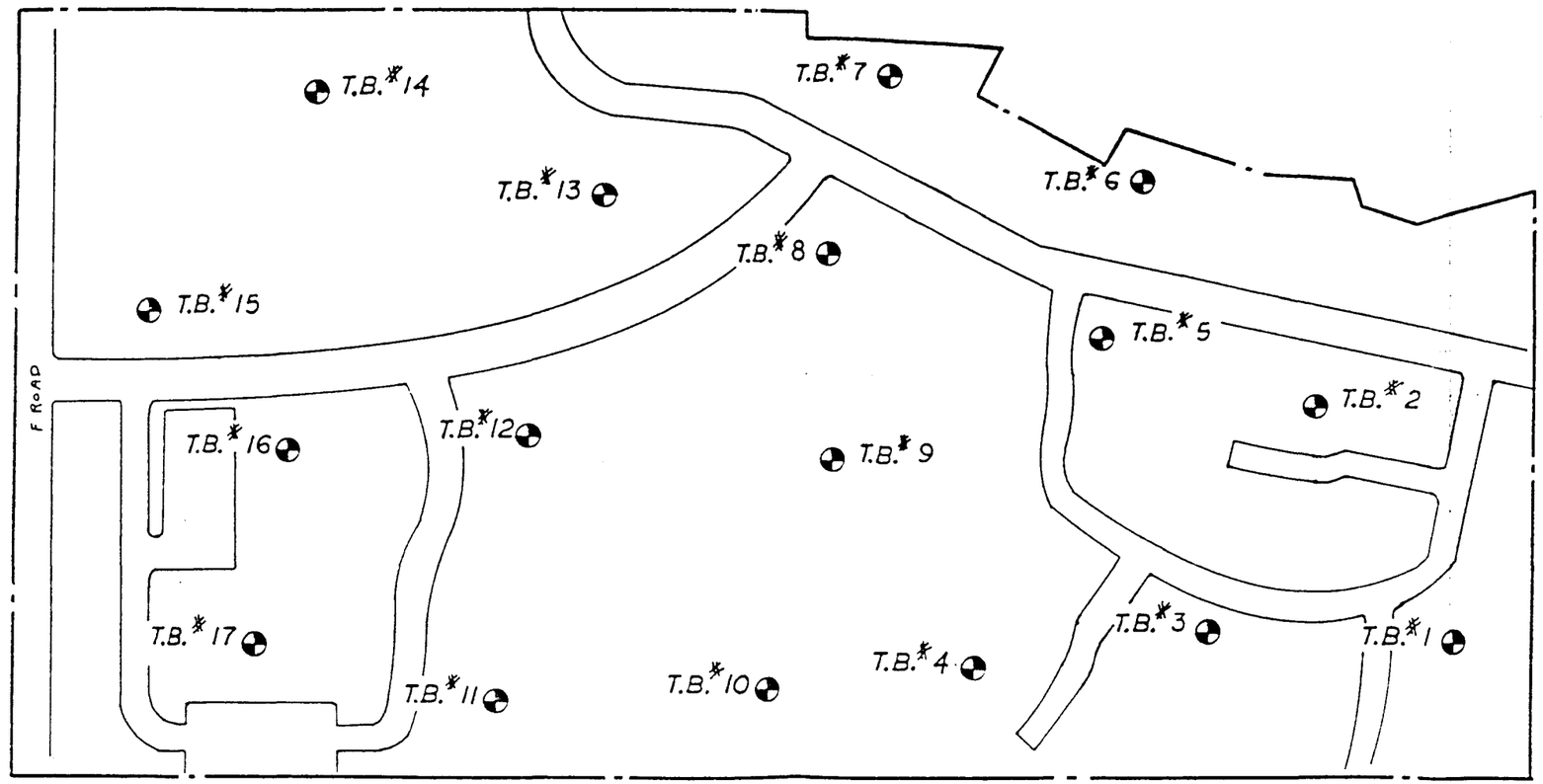
Soil Type No. 1 & 2- R = 5
Average Displacement @ 300 psi = 6.32
Average Expansion Pressure @ 300 psi = 2.68

Using the city and county criteria for traffic counts of certain class streets, the required base course (assuming proper preparation of the subgrade and compaction of the base course) was computed. They were found to be as follows:

Street Class	Depth of Asphalt	Depth of Base Course
Minor residential (TI=4.0)	2"	10"
Secondary residential (TI=4.5)	2"	12"
Major residential (TI=5.0)	2"	14"

It is believed that all pertinent points concerning the subsurface soils on this site have been covered in this report. If soil types and conditions other than those outlined herein are noted during construction on the site, these should be reported to Lincoln-DeVore so that changes in recommendations can be made, if necessary. If questions arise or further information is required, please feel free to contact Lincoln-DeVore at any time.

N

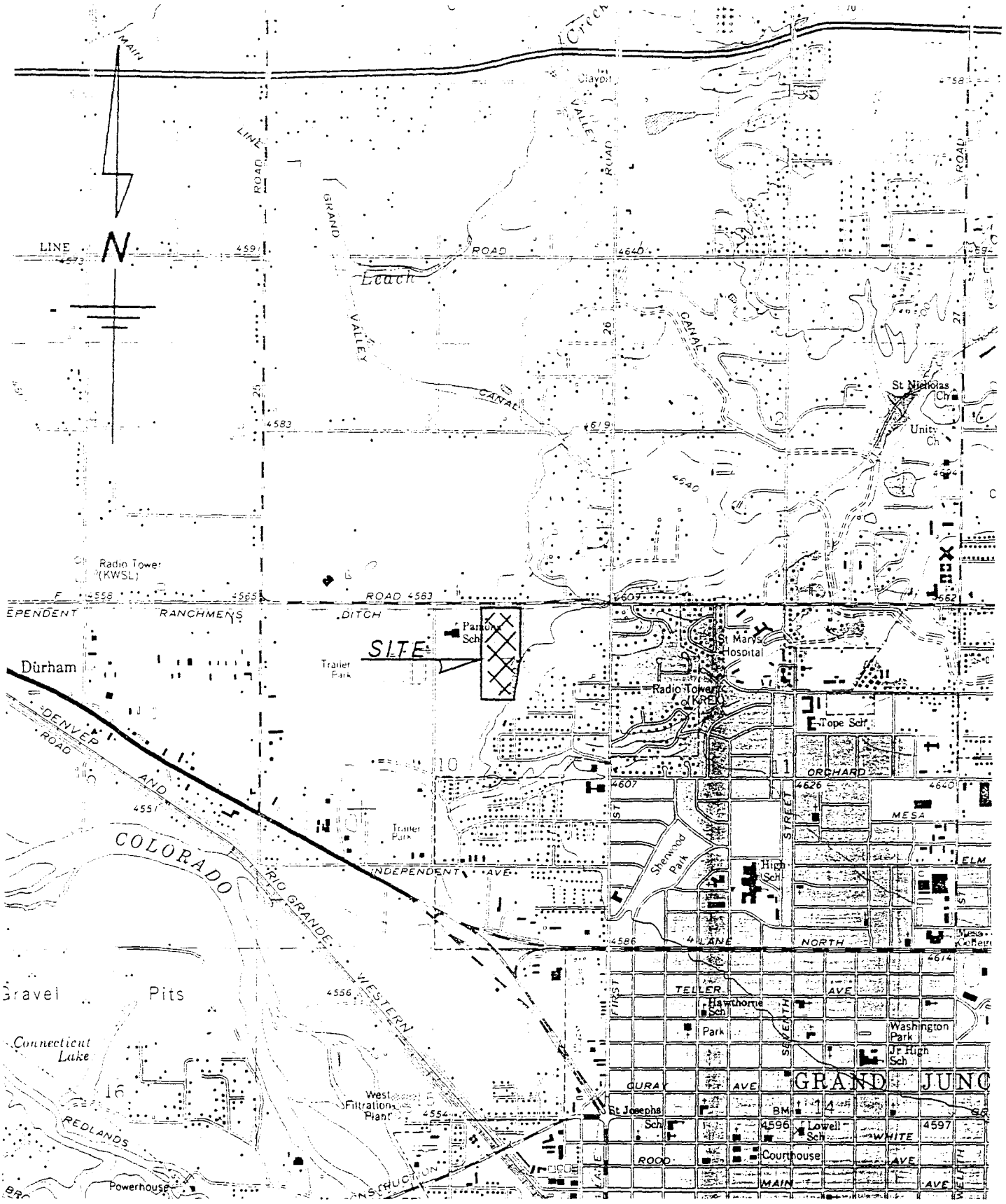


TEST BORING LOCATION DIAGRAM
COLONY PARK SUBD., F ROAD

LINCOLN DeVORE ENGINEERS-GEOLOGISTS

COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE, WYOMING: ROCK SPRINGS

DRAWN BY: R.P.K.	SCALE:	DATE: 3-24-81
CHECKED BY:	CONT. INTERVAL:	REV.

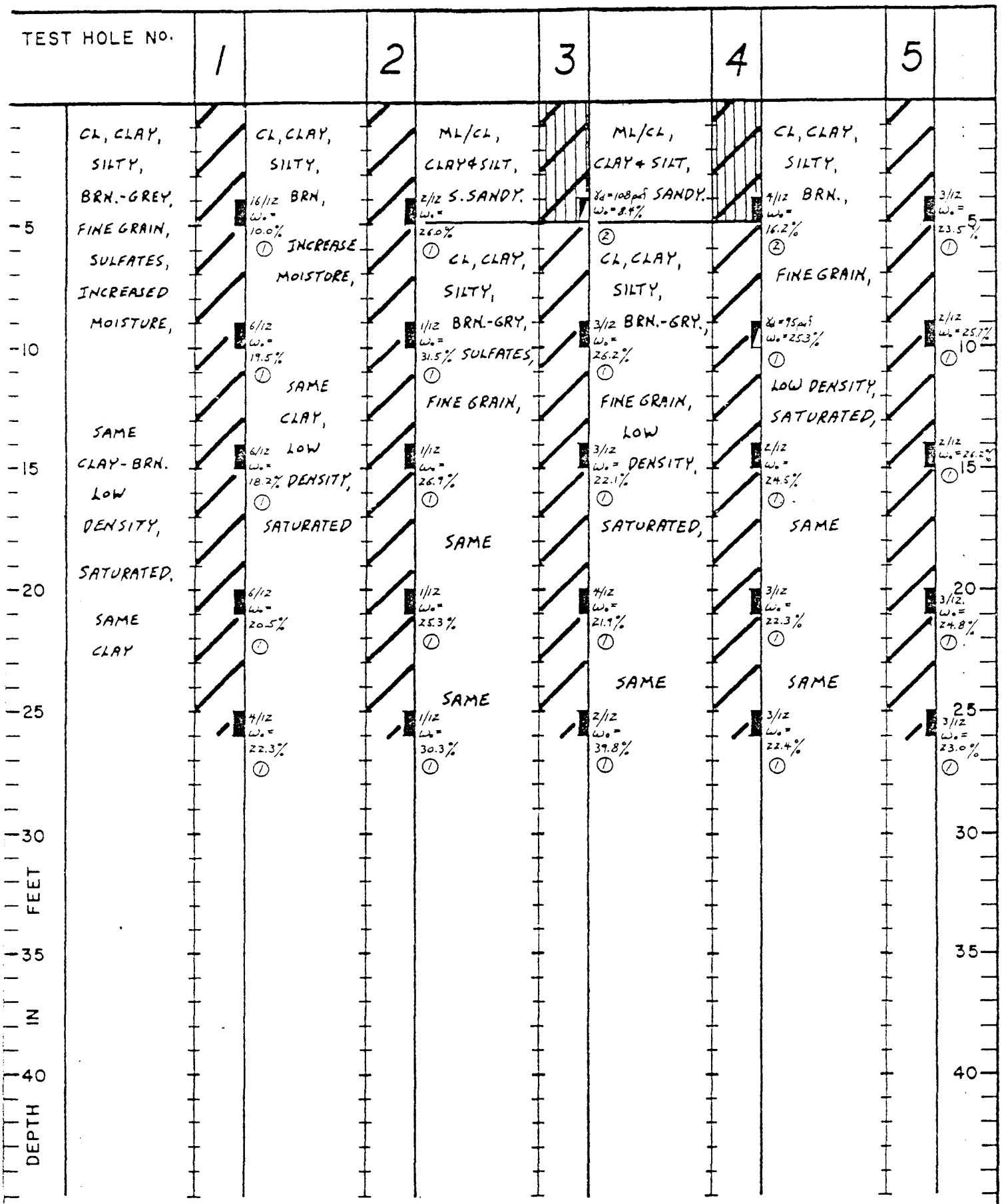


SCALE: 1" = 2000'

GENERAL SITE LOCATION DIAGRAM
COLONY PARK SUBD., 2565 F ROAD

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

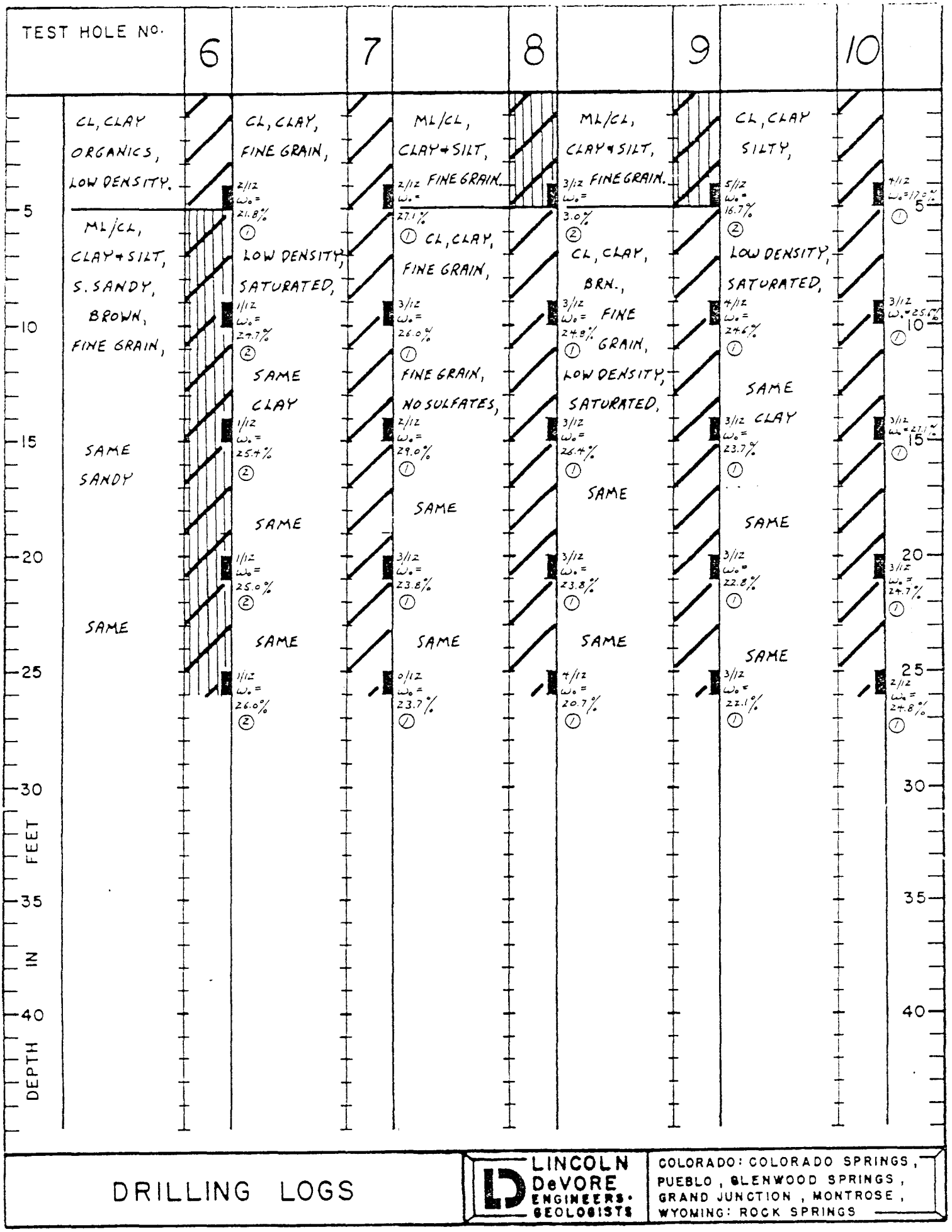
COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE, WYOMING: ROCK SPRINGS



DRILLING LOGS

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

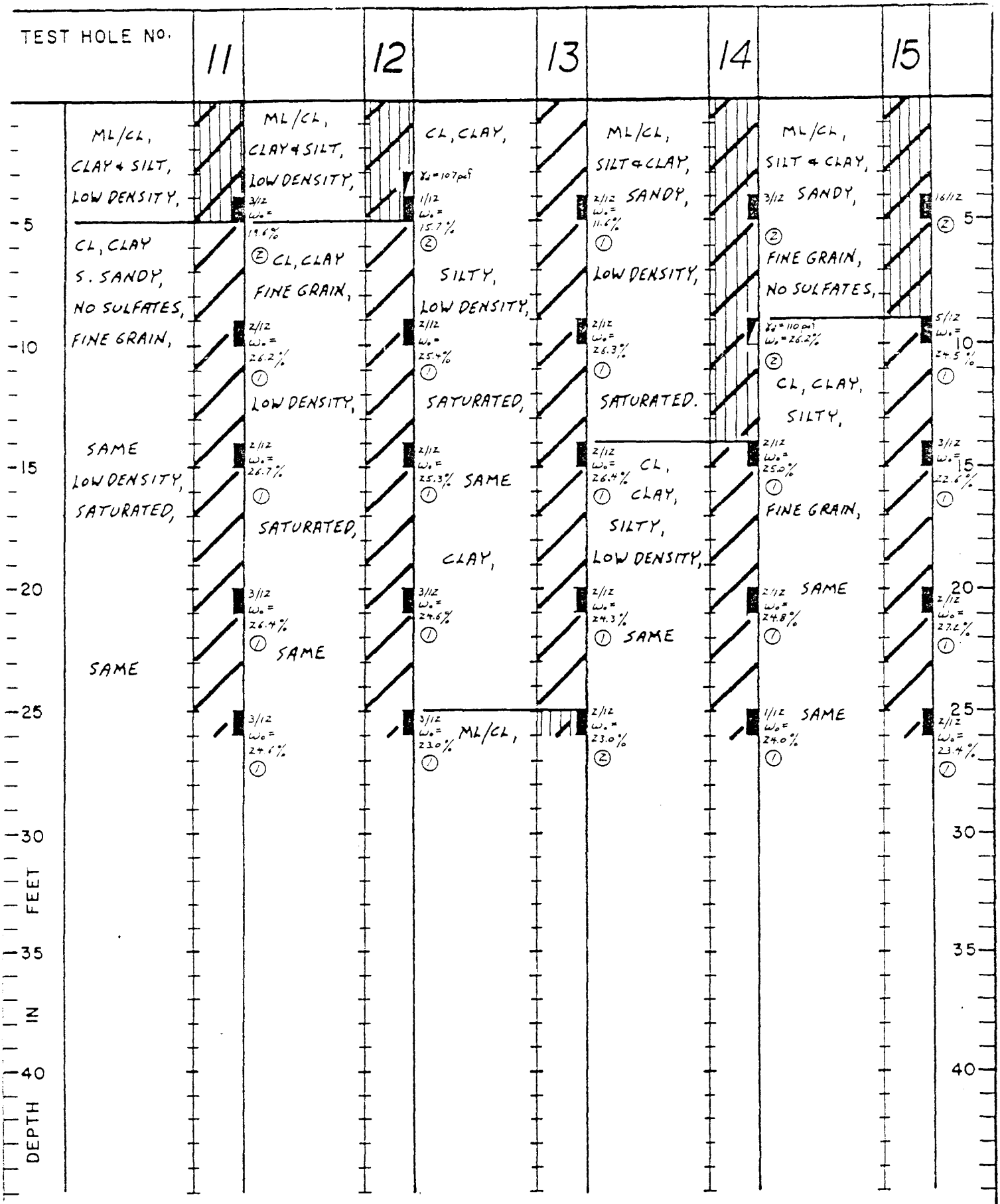
COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE, WYOMING: ROCK SPRINGS



DRILLING LOGS

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

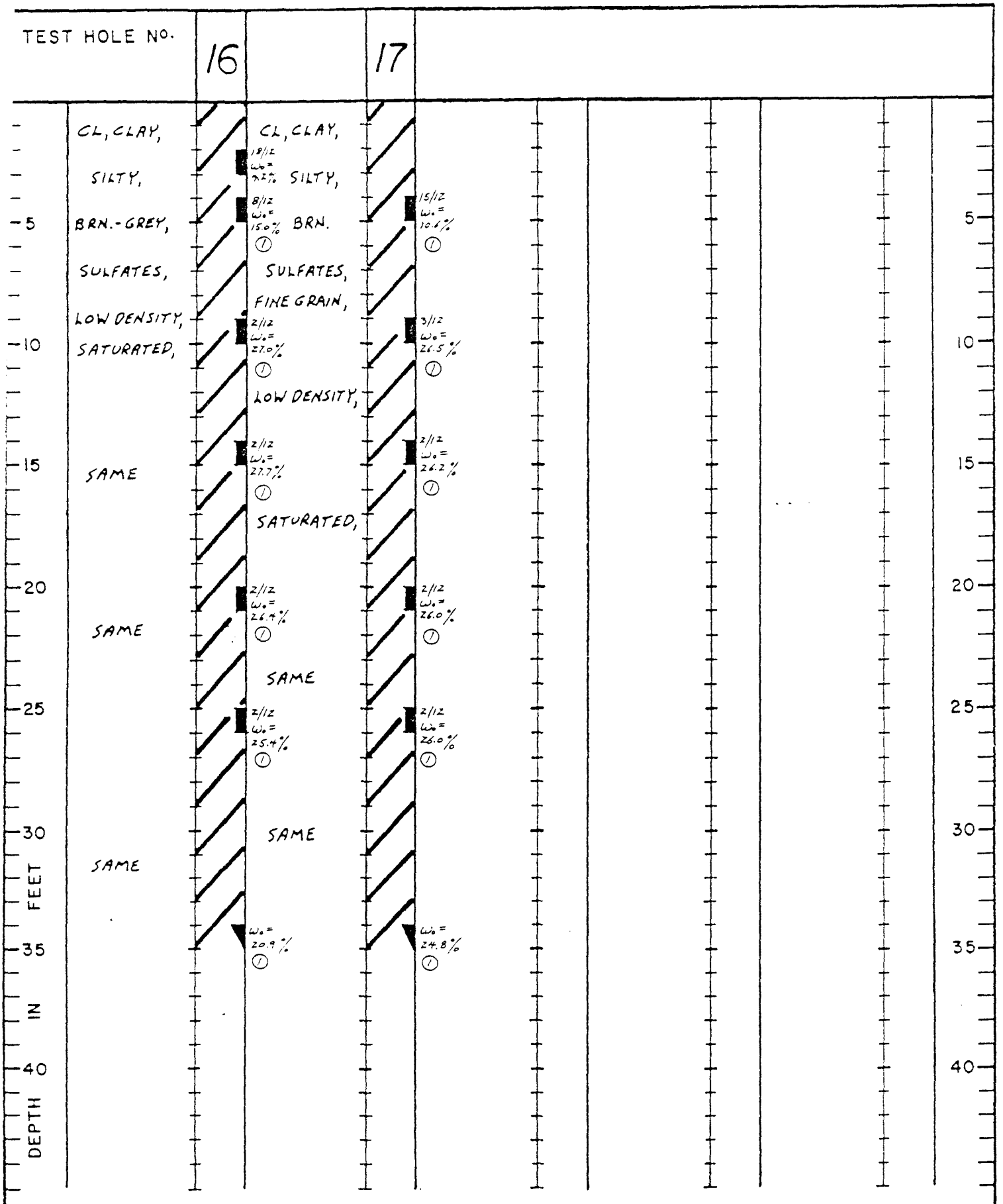
COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE, WYOMING: ROCK SPRINGS



DRILLING LOGS

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE, WYOMING: ROCK SPRINGS



DRILLING LOGS

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE, WYOMING: ROCK SPRINGS

SUMMARY SHEET

Soil Sample CL

Test No 38147-J

Location COLONY PARK SUBD.

Date 3-24-81

Boring No. 1 Depth 10' (TYP.)

Sample No. 1

Test by ———

Natural Water Content (w) 19.5 %

Specific Gravity (Gs) ———

In Place Density (γ_o) ——— pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	100.0
4	99.9
10	99.6
20	99.4
40	99.0
100	95.2
200	86.5

HYDROMETER ANALYSIS:

Grain size (mm)	%
0.02	53.5
0.005	37.6

Plastic Limit P.L. 15.9 %

Liquid Limit L. L. 26.7 %

Plasticity Index P.I. 10.8 %

Shrinkage Limit ——— %

Flow Index ———

Shrinkage Ratio ——— %

Volumetric Change ——— %

Lineal Shrinkage ——— %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content ——— %

Maximum Dry Density - γ_d ——— pcf

California Bearing Ratio (av) ——— %

Swell: 1 Days 1.5 %

Swell against 400 psf Wo gain 18.9 %

BEARING:

Housel Penetrometer (av) ——— psf

Unconfined Compression (qu) ——— psf

Plate Bearing: ——— psf

Inches Settlement ———

Consolidation % under psf

PERMEABILITY:

K (at 20°C) ———

Void Ratio ———

Sulfates 2000+ ppm.

SOIL ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

SUMMARY SHEET

Soil Sample ML/CL

Test No. 38147-J

Location COLONY PARK SUBD.

Date 3-24-81

Boring No. 3 Depth 5' (TYP)

Sample No. 2

Test by ———

Natural Water Content (w) 8.4 %

Specific Gravity (Gs) ———

In Place Density (γ_d) ——— pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	100.0
4	99.5
10	97.5
20	94.8
40	91.7
100	73.7
200	55.9

HYDROMETER ANALYSIS:

Grain size (mm)	%

Plastic Limit P.L. 17.7 %

Liquid Limit L.L. 22.7 %

Plasticity Index P.I. 5.0 %

Shrinkage Limit ——— %

Flow Index ———

Shrinkage Ratio ——— %

Volumetric Change ——— %

Lineal Shrinkage ——— %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content ——— %

Maximum Dry Density - γ_d ——— pcf

California Bearing Ratio (av.) ——— %

Swell ——— Days .5 %

Swell against 200 psf Wo gain 15.9 %

BEARING:

Housel Penetrometer (av) ——— psf

Unconfined Compression (q_u) ——— psf

Plate Bearing: ——— psf

Inches Settlement ———

Consolidation ——— % under ——— psf

PERMEABILITY:

K (at 20°C) ———

Void Ratio ———

Sulfates 2000+ ppm.

SOIL ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

Drainage Report

COLONY PARK SUBDIVISION

Prepared for:

Bruce Milyard
ALCO BUILDING COMPANY
599 25 Road
Grand Junction, CO 81505
Ph. (303)242-1423

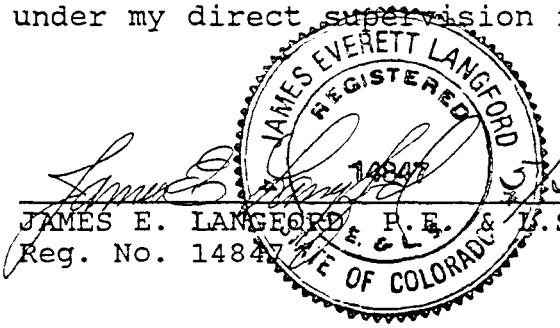
BANNER

BANNER ASSOCIATES, INC. — CONSULTING ENGINEERS
2777 CROSSROADS BOULEVARD — GRAND JUNCTION, COLORADO 81506
(303) 243-2242

May 1991

ENGINEER'S CERTIFICATION

I, JAMES E. LANGFORD, P.E. & L.S., certify that this Plan and Report was prepared by me or under my direct supervision for the Owner's hereof.



5/30/91

JAMES E. LANGFORD, P.E. & L.S.
Reg. No. 14847

TABLE OF CONTENTS

INTRODUCTION

INTRODUCTION

COLONY PARK SUBDIVISION is located approximately 1000 feet east of the intersection of Patterson/"F" and 25 Roads, south of Patterson Road and immediately adjacent to the Pamona Elementary School. The property is bounded on the north by Patterson Road, on the west by Pamona Elementary School and on the south and east by vacant land. Runoff from farm land located easterly of the proposed development is conveyed north to the Ranchman's Ditch (subsurface), located in the Patterson/"F" Road right-of-way or southerly to an existing drainage ditch location approximately 435 feet south of the south right-of-way line of Patterson/"F" road. Storm water originating from properties located to the north and west will have no impact on this project, as the runoff will be intercepted by Patterson/"F" Road and 25 Road, respectively.

This project has been removed from the 100 Year Floodplain by placing a portion of the Ranchman's Ditch underground. This information was received through conversations with the Grand Junction City Engineer, and Flood Plain Administrator.

Since the City of Grand Junction does not have specific report preparation criteria, this Report has been prepared using Mesa County's "Design Guidelines for Storm Water Management", and Mesa County Land Development Code, Section 4.1.7, which states that drainage facilities shall be designed to "adequately carry and discharge accumulated run-off into drainage channels, storm sewers, or natural watercourses so that storm water does not cause increased damage or increased flooding downstream...". An analysis of the runoff characteristics of the site and estimates of the impact of surface flows generated, has been carried out to determine the size and location of facilities required to handle this runoff.

Presented herein are the results of our analysis, and a description of the improvements we propose for mitigation of the drainage impacts presented by this development.

SITE CONDITIONS

SITE CONDITIONS

The present site conditions consist of relatively flat topography. The land has been used as pasture in past years but has been removed from a formal irrigation system due a change in ownership. Therefore, historic conditions will assume the land to be irrigated.

The site presently drains in a southwesterly direction at an average slope of 0.5%. The present ground cover consists of sparse grass cover and numerous Cottonwood and Russian Olive trees. Soil conditions, as outlined by a 1981 Soils Report be Lincoln-DeVore Engineering, Geologists, indicate clays and silts dominate the immediate surface strata. The major runoff vehicle is, at present, typically sheet flow to the west, but tends to accumulate south of the property and discharge into the drainage ditch facility.

Site development will cover approximately 70% of the property with either concrete, asphalt, or buildings. This will leave 30% for open space covered with grass allocated to utility easements and drainage ways. The open space is located primarily on the perimeter with additional areas located between building pads.

DESIGN CRITERIA AND METHODOLOGY

DESIGN CRITERIA AND METHODOLOGY

Since the site is much less than 100 acres, the Rational Method, as outlined in Chapter 2 of the "Design Guidelines for Storm Water Management in Mesa County, Colorado", was employed to determine the magnitude of "pre" and "post" development runoff discharges. Rainfall intensities were derived from the "Intensity Duration Curves", furnished by the Grand Junction Engineering Department, developed specifically for the Grand Junction Area. The Soils Report from Lincoln-DeVore dated March, 1981, was consulted to identify surface soil attributes, ground water conditions and to aid in the initial selection of runoff coefficients to best represent the existing site conditions. Flows were thus calculated and tabulated in Table 3, Runoff Volume.

The detention pond volume requirement was calculated using the Modified Rational Method as described in the publication entitled "Urban Stormwater Management, Special Report No. 49", published by the American Public Works Association. The release rate from this structure was established by subtracting the site historic discharge rate, from the developed condition flows.

DRAINAGE ANALYSIS

DRAINAGE ANALYSIS

The time of concentration (Tc) would normally be set equal to the summation of the overland flow time, flow time in curbs and gutters, and the flow time through underground conduits. In our case, the curb and gutter and pipe flow times were arrived at by dividing the length of the flow path by the velocity as calculated by the "Mannings Equation". Overland flow velocities were determined by use of the graph "Average Velocities for Estimating Travel Time for Overland Flow", USDA, Soil Conservation Service, 1980. This summation of travel times, when greater than 5 minutes, would then be set equal to the time of concentration and used in the "Intensity Duration Curves" graph for the Grand Junction area to arrive at the intensity (I) for use in the Rational Formula. In our case, since all the travel times were less than 5 minutes, none were used, and all times of concentration for developed flow were set to the minimum 5 minutes as required.

All drainage basins were digitized to determine the area of each (in acres) which contributes runoff to various design points as depicted on "Grading and Drainage Plan".

The runoff volumes have been tabulated for ease of review on Table 1, Time of Concentration, Table 2, Composite Runoff Coefficients, and Tables 3A & 3B.

The flows generated from the parcel immediately adjacent on the east will be diverted by means of an earthen ditch built during construction of the subdivision. The flows will outlet through an 18" cmp into the drain ditch located approximately 400 feet south of the COLONY PARK SUBDIVISION.

PROPOSED DETENTION FACILITY

PROPOSED DETENTION FACILITY

The Modified Rational Method was used to determine the volume of the detention facility requirements. Using the curve for the 10-year recurrence interval, rainfall intensities for 5, 10, 20, 30, 40, 50 and 60 min. rainfall averaging times were selected. Discharge rates were calculated for each using the Rational Method. These values were plotted on the graph found attached and the areas between the Max. Allowable Discharge Rate and the individual hydrographs were calculated. According to the instructions for use of this method, the largest such volume calculated or the 10 year event was then used as the minimum storage volume for the detention structure. The contours within each area being proposed for the detention facility were digitized and found to roughly total 8800 cubic feet in volume where only 660 cubic feet are required. The detention volumes are given on the Grading and Drainage Plan.

A detention outlet structure was designed using the orifice equation for high head release flow (see Calculation Sheet attached), by sizing a concrete box inlet at the end of the 18 inch RCP with a slide-in baffle to allow an historic flow of 2.32 cfs. The baffle has a 5.83" diameter hole that will reduce flows to historic runoff values.

The 100 year event has been evaluated using the same criteria as the 10 year event. While the flows are significantly larger, the detention facilities at the lower end of the storm drain network have sufficient capacity.

REFERENCES

REFERENCES

"Intensity Duration Curves", City of Grand Junction.

"Design Guidelines for Storm Water Management", Mesa County, Colorado, undated.

"Urban Stormwater Management, Special Report No. 49", American Public Works Association, 1313 East Sixteenth Street, Chicago, IL.

"Handbook of Steel Drainage and Highway Construction Products", American Iron and Steel Institute, Second Edition, 1971.

TABLES

TABLE 1
COLONY PARK SUBDIVISION
DRAINAGE STUDY - Q10 AND Q100

TIME OF CONCENTRATION

BASIN	Tc TIME OF CONCEN. MIN.	DESCRIPT. OF FLOW	Ed DIFF. IN ELEVATION	L LENGTH FT.	S SLOPE %	V VELOCITY FT/SEC FIG 2-2	Tt TRAVEL TIME SEC.
HISTORIC	21.90	OVERLAND	2.5	460	0.54	0.35	1314.29
A	3.98	OVERLAND	1.04	33	3.15	1.75	18.86
		PAVE/CONCR	1.54	330	0.47	1.5	220.00
B	4.82	OVERLAND	4.92	252	1.95	0.95	265.26
		PAVE/CONCR	0.08	36	0.22	1.5	24.00
C	2.64	PAVE/CONCR	3.25	317	1.03	2	158.50
D	2.45	PAVE/CONCR	4.15	323	1.28	2.2	146.82
E	2.59	OVERLAND	2.2	119	1.85	0.9	132.22
		PAVE/CONCR	0.5	49	1.02	2.1	23.33
F	1.63	OVERLAND	2.4	90	2.67	1.2	75.00
		PAVE/CONCR	0.5	45	1.11	2	22.50
G	1.23	OVERLAND	1	46	2.17	1.1	41.82
		PAVE/CONCR	0.5	59	0.85	1.85	31.89

TABLE 2

AREA BREAKDOWN, ACRES

BASIN NO.	TOTAL AREA	ROOF	WT'D AREA	ASPHALT	WT'D AREA	CONCRETE	WT'D AREA	GRASS	WT'D AREA	COMPOSITE "C" VALUE
A	0.761	0.082	0.0779	0.26	0.182	0.165	0.1155	0.254	0.0381	0.54
B	0.82	0.248	0.2356	0	0	0	0	0.572	0.0858	0.39
C	0.778	0.185	0.17575	0.156	0.1092	0.353	0.2471	0.084	0.0126	0.70
D	0.863	0.242	0.2299	0.156	0.1092	0.201	0.1407	0.264	0.0396	0.60
E	0.329	0.113	0.10735	0	0	0	0	0.216	0.0324	0.42
F	0.257	0.083	0.07885	0	0	0	0	0.174	0.0261	0.41
G	0.142	0.057	0.05415	0	0	0	0	0.085	0.01275	0.47

PRE-DEVEL. 3.69

RUNOFF COEFFICIENTS RECOMMENDED BY MESA COUNTY

ROOF =		0.75 TO 0.95 VALUE USED	0.95
ASPHALT =		0.70 TO 0.95 VALUE USED	0.7
CONCRETE =		0.70 TO 0.95 VALUE USED	0.7
GRASS =	FLAT TO 2%	0.13 TO 0.17 VALUE USED	0.15
	2% TO 7%	0.18 TO 0.22	
	> 7%	0.25 TO 0.35	
UNIMPROVED =		0.10 TO 0.30 VALUE USED	0.3

TABLE 3A
RUNOFF VOLUME
Q10

BASIN	C COMPOSITE VALUES	Cf	I* RAINFALL INTENSITY IN/HR	A BASIN AREA, ACRES	Q VOL., CFS Q= C Cf I A
HISTORIC					
1	0.3	1	2.1	3.69	2.32
2	0.3	1	2.06	4.29	2.65
DEVELOPED					
A	0.54	1	3.25	0.76	1.34
B	0.39	1	3.25	0.82	1.04
C	0.70	1	3.25	0.78	1.77
D	0.60	1	3.25	0.86	1.69
E	0.42	1	3.25	0.33	0.45
F	0.41	1	3.25	0.26	0.34
G	0.47	1	3.25	0.14	0.22
				TOTAL DEVELOPED	6.86

NOTE: HISTORIC FLOWS FROM AREA 2 WILL BE DIVERTED PRIOR TO ENTRANCE TO AREA 1.
THEREFORE, NO ACCOUNTING FOR THE FLOW WILL BE MADE.

TABLE 3B
RUNOFF VOLUME
Q100

BASIN	C COMPOSITE VALUES	Cf	I* RAINFALL INTENSITY IN/HR	A BASIN AREA, ACRES	Q VOL., CFS Q= C Cf I A
HISTORIC					
1	0.3	1.25	3.25	3.69	4.50
2	0.3	1.25	3.21	4.29	5.16
DEVELOPED					
A	0.54	1.25	4.91	0.76	2.54
B	0.39	1.25	4.91	0.82	1.97
C	0.70	1.25	4.91	0.78	3.34
D	0.60	1.25	4.91	0.86	3.19
E	0.42	1.25	4.91	0.33	0.86
F	0.41	1.25	4.91	0.26	0.64
G	0.47	1.25	4.91	0.14	0.41
			TOTAL DEVELOPED		12.95

NOTE: HISTORIC FLOWS FROM AREA 2 WILL BE DIVERTED PRIOR TO ENTRANCE TO AREA 1. THEREFORE, NO ACCOUNTING FOR THE FLOW WILL BE MADE.

TABLE 4
VOLUMES FOR STORAGE HYDROGRAPHS
MODIFIED RATIONAL METHOD

Q10

Tc TIME OF CONCENTRAION	C COMPOSITE RUNOFF COEFICIENT	I RAINFALL INTENSITY IN/HR	A BASIN AREA ACRES	Q=CIA VOLUMES CFS
5	0.5	3.25	3.19	5.18
10	0.5	2.47	3.19	3.94
20	0.5	1.81	3.19	2.89
30	0.5	1.46	3.19	2.33
40	0.5	1.24	3.19	1.98
50	0.5	1.06	3.19	1.69
60	0.5	0.92	3.19	1.47

VOLUMES FOR STORAGE HYDROGRAPHS
MODIFIED RATIONAL METHOD
Q100

Tc TIME OF CONCENTRAION	C COMPOSITE RUNOFF COEFICIENT	I RAINFALL INTENSITY IN/HR	A BASIN AREA ACRES	Q=CIA VOLUMES CFS
5	0.5	4.95	3.19	7.90
10	0.5	3.85	3.19	6.14
20	0.5	2.85	3.19	4.55
30	0.5	2.26	3.19	3.60
40	0.5	1.84	3.19	2.93
50	0.5	1.7	3.19	2.71
60	0.5	1.44	3.19	2.30

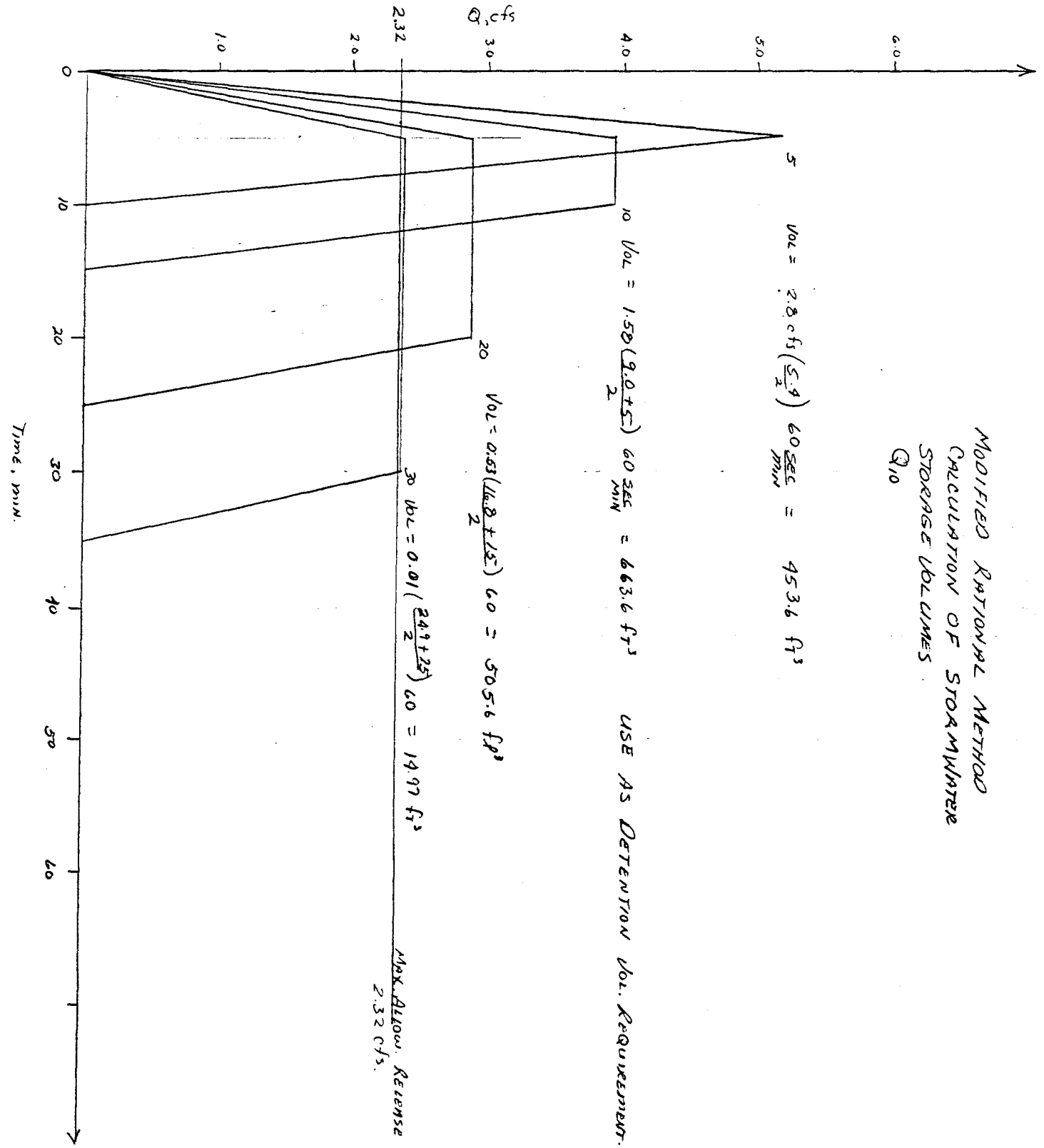
CALCULATIONS

BANNER

BANNER ASSOCIATES, INC.
CONSULTING ENGINEERS & ARCHITECTS
2777 CROSSROADS BOULEVARD
GRAND JUNCTION, CO 81506 • (303) 243-2242

JOB NO. 8239.01
JOB COLONY PARK
CALCULATED BY MAL DATE 5-28-91
CHECKED BY _____ DATE _____

SHEET NO. 1 OF _____



MODIFIED RATIONAL METHOD
CALCULATION OF STORMWATER
STORAGE VOLUMES
Q_{10}

5 VOL = $2.8\ cfs\left(\frac{5.4}{2}\right)\ 60\ \frac{sec}{min}$ = 453.6 ft^3

10 VOL = $1.58\left(\frac{9.0+5}{2}\right)\ 60\ \frac{sec}{min}$ = 663.6 ft^3 USE AS DETENTION VOL. REQUIREMENT.

20 VOL = $0.63\left(\frac{46.8+45}{2}\right)\ 60$ = 505.6 ft^3

30 VOL = $0.01\left(\frac{24.9+25}{2}\right)\ 60$ = 14.97 ft^3

MAX. ALLOW. RELEASE
2.32 cfs.

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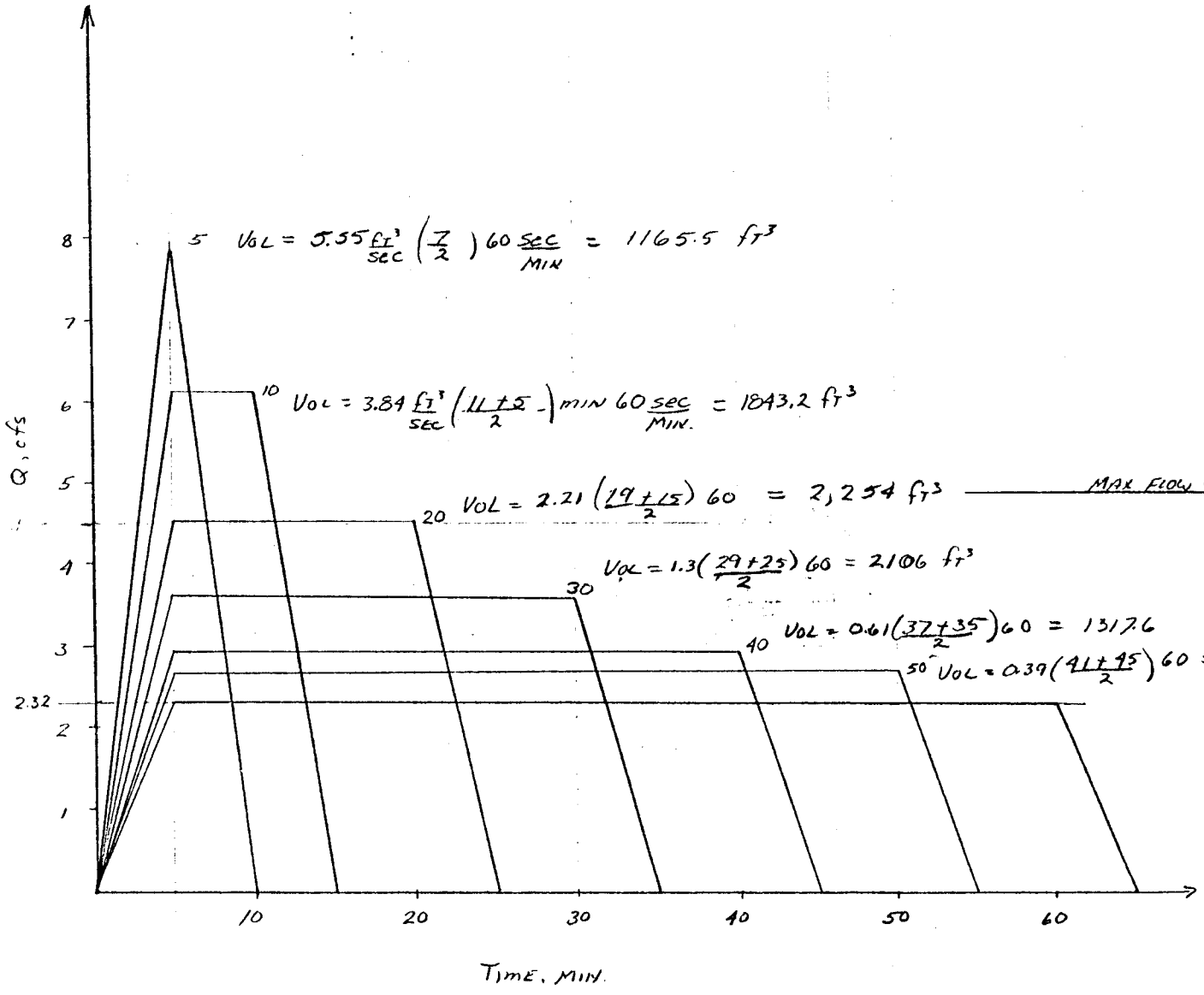
GRAND JUNCTION, CO 81506 • (303) 243-2242

SHEET NO. _____ OF _____

JOB NO 8238-01
JOB Colony Park
CALCULATED BY MDG DATE 5-29-91
CHECKED BY _____ DATE _____

MODIFIED RATIONAL METHOD
CALCULATION OF STORMWATER STORAGE VOLUMES
Q100

$VOL = Q \frac{ft^3}{sec}\left(\frac{min}{2}\right) 60 \frac{sec}{min} = ft^3$



5 $VOL = 5.55 \frac{ft^3}{sec}\left(\frac{7}{2}\right) 60 \frac{sec}{min} = 1165.5\ ft^3$

10 $VOL = 3.84 \frac{ft^3}{sec}\left(\frac{11+5}{2}\right) min\ 60 \frac{sec}{min} = 1843.2\ ft^3$

20 $VOL = 2.21\left(\frac{29+25}{2}\right) 60 = 2,254\ ft^3$ ——— MAX FLOW @ Q100

30 $VOL = 1.3\left(\frac{29+25}{2}\right) 60 = 2106\ ft^3$

40 $VOL = 0.61\left(\frac{37+35}{2}\right) 60 = 1317.6$

50 $VOL = 0.39\left(\frac{41+45}{2}\right) 60 = 1006.2\ ft^3$

OUTLET STRUCTURE

DESIGN CALCULATIONS

High Head as compared with office diameter.

$$Q = CA\sqrt{2gH}$$

Q = 2.32 cfs
H = 82.0-75.24 = 6.76
A = Area
G = 32.2
C = 0.60[1]

$$2.32 = 0.60 \frac{\pi d^2}{4} \sqrt{2(32.2)\ 6.76}$$

$$2.32 = 0.4712\ d^2\ 20.8649$$

$$d = 0.486' = 5.83"$$

[1] Page 2 - 27 "Handbook of Applied Hydraulics".

DETENTION FACILITY VOLUMETRICS

Based on FAA Drainage Facilities Design

$V = 1/3\ b\ (A + B + \sqrt{AB})$

A & B = Contour Areas, sf.
b = Depth Between Contours
V = Volume ft^3

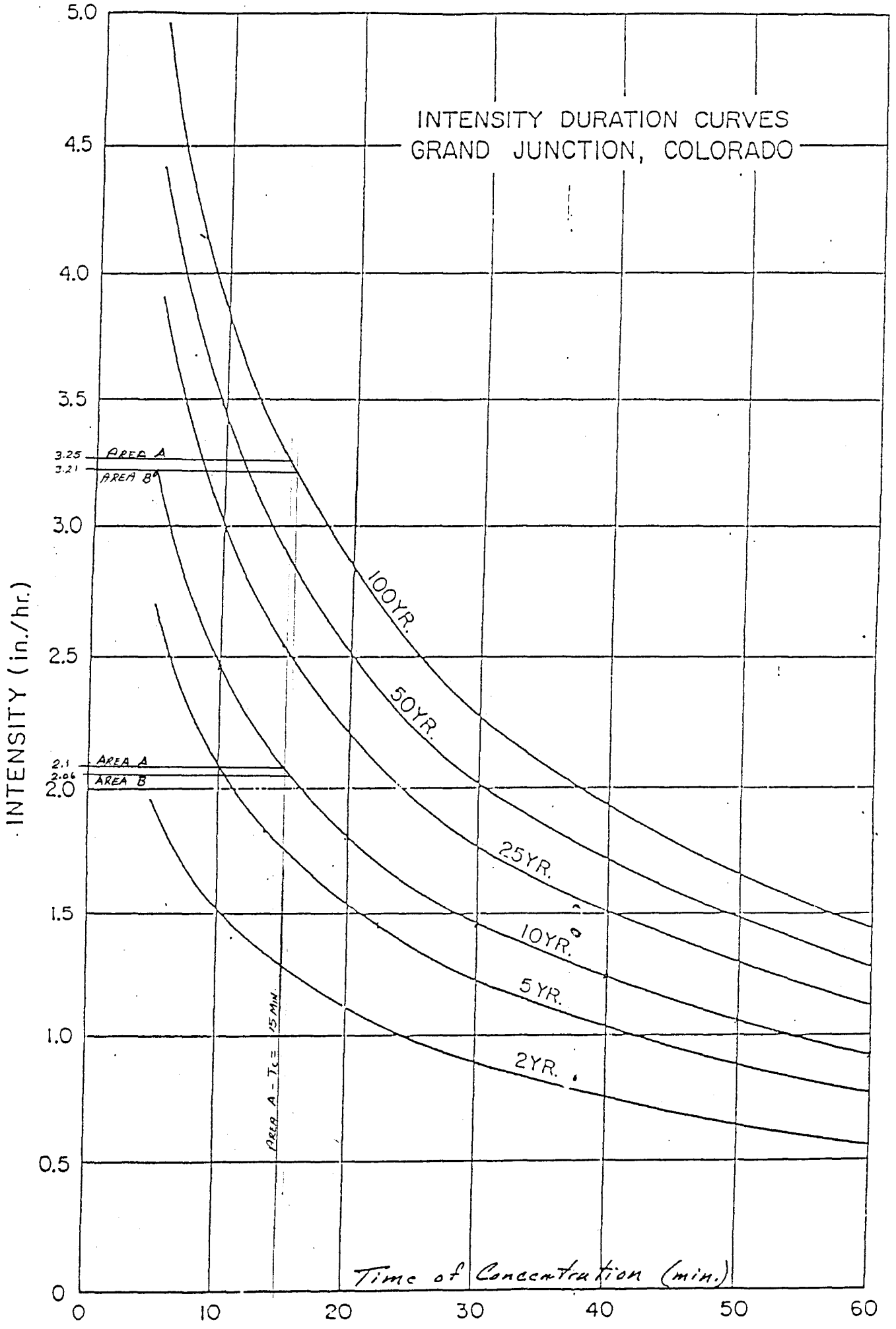
Basin Storage

Basin	A	B	b	$\sqrt{AB}$	V
E	1204.0	138	1.00	407.6	583.2
F	2776.0	55	1.40	390.7	1503.0
B	8030.0	777	1.00	2497.9	3768.3
C & D	7562.5	0	0.65	0.0	1638.5
G	1116.0	10	1.00	105.6	410.5
				Total Basin	7901 ft^3

Pipe Storage

Pipe	Area/L.F.	Length	Volume
18" RCP	$\frac{\pi(1.5)^2}{4} = 1.7671$	176'	311 ft^3
8" PVC	$\frac{\pi(.67)^2}{4} =$	407'	143 ft^3
		Total Pipe Volume	454 ft^3

Grand Total of Storage Facilities = 8355 ft^3


INTENSITY DURATION CURVES
GRAND JUNCTION, COLORADO
INTENSITY (in./hr.)
Time of Concentration (min.)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0
0
10
20
30
40
50
60
3.25 AREA A
3.21 AREA B
2.1 AREA A
2.06 AREA B
100YR.
50YR.
25YR.
10YR.
5YR.
2YR.
AREA A - Tc = 15 MIN.

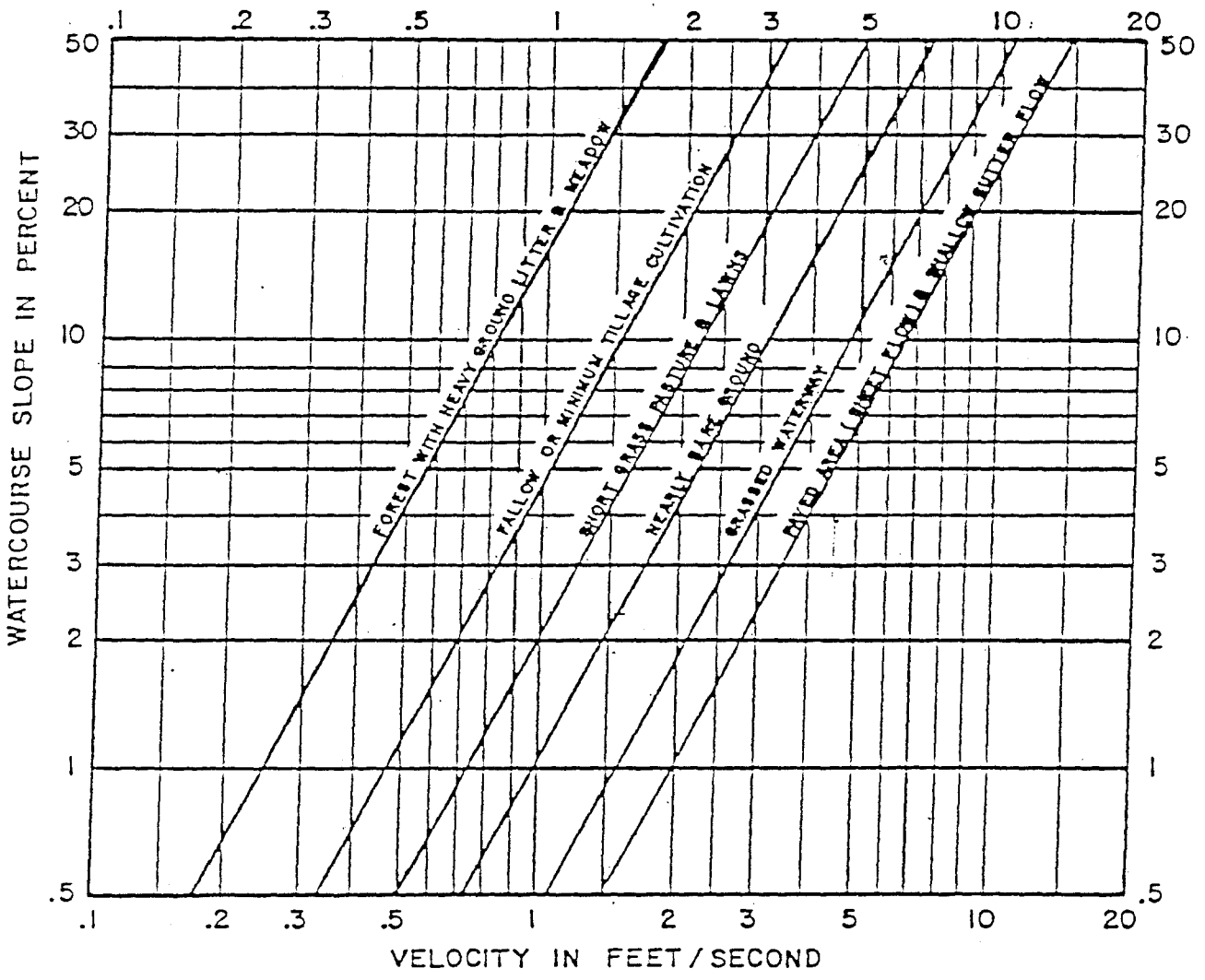
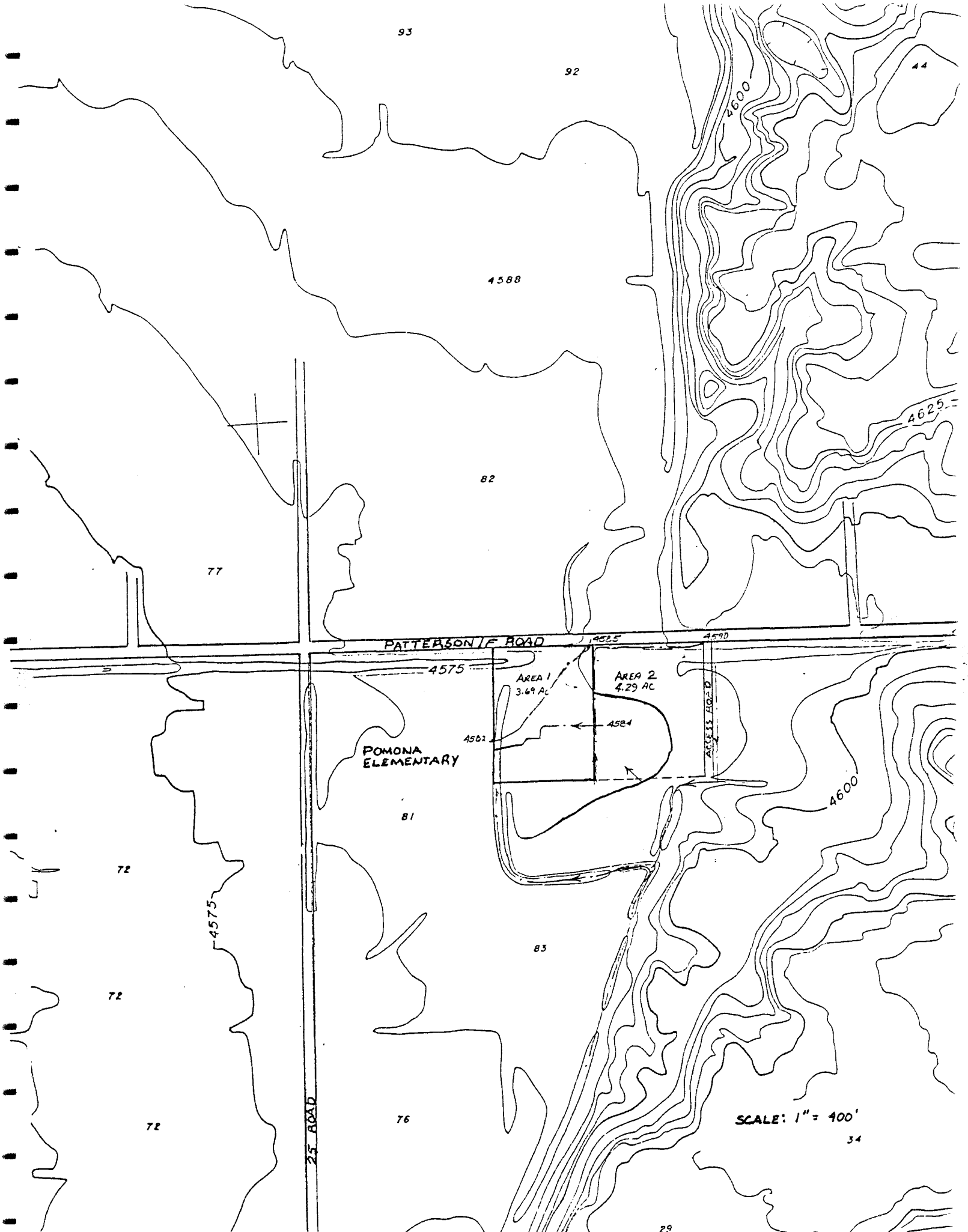


Figure 2-2 AVERAGE VELOCITIES FOR ESTIMATING TRAVEL TIME FOR OVERLAND FLOW..
(From: USDA, Soil Conservation Service, 1980)

Time of concentration is obtained by determining the average velocity for overland flow then dividing the length of the overland flow by the average velocity.


93
92
44
4600
4588
4625
82
77
PATTERSON RD
4525
4590
4575
AREA 1
3.69 AC
AREA 2
4.29 AC
4584
4582
ACCESS ROAD
POMONA
ELEMENTARY
81
4600
72
4575
83
72
25 ROAD
76
72
SCALE: 1" = 400'
34
29

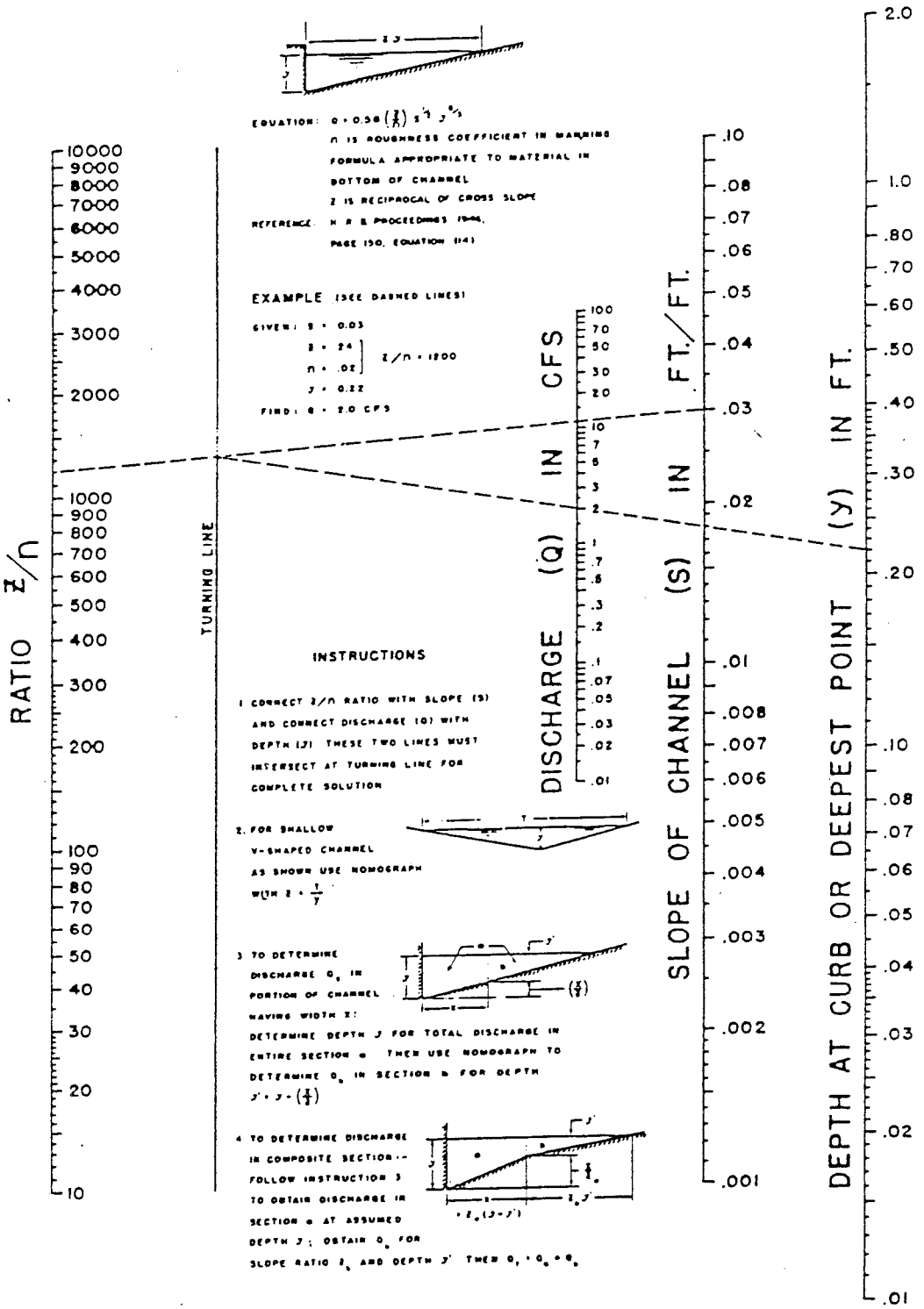


FIGURE 6-1. NOMOGRAPH FOR FLOW IN TRIANGULAR GUTTERS.

REVIEW SHEET SUMMARY

FILE NO. 48-91 **TITLE HEADING: FINAL PLAN/PLAT & ROW VACATION**

ACTIVITY: Request for a Final Plan and Plat for Colony Park and Vacation of Cedar Mill Road right-of-way

PETITIONER: Alco Building Company

LOCATION: South of Patterson, 1000 feet east of 25-1/2 Road

ENGINEER: Banner and Associates

STAFF REPRESENTATIVE: Karl Metzner 303-244-1439

NOTE: WRITTEN RESPONSE BY THE PETITIONER TO THE REVIEW COMMENTS IS REQUIRED.

City Fire Department **7/8/91**
G. Bennett

No problems at this time - water line size is to be (8) eight inches.

City Police Department **7/10/91**
Capt H.L. Gorby

The Police Department is very concerned with a housing development located adjacement to the softball field at Pamona due to noise complaints, bright lights from the field, etc. Any additional annexation will require additional manpower which will be addressed in 1992 budget.
We also would recommend acceleration and decceleration lanes at the entrance to this development.

City Parks/ Recreation **7/5/91**
Don Hobbs **244-1545**

Concerning the open space fee - We can find no record of an open space fee having been paid. Community Development has nothing in their files either. If a receiptor cancelled check the fee requirement will be modified accordingly. Should no proof be offered we will require that the full amount of $4,950 be paid.

City Utilities Engineer 7/8/91
Bill Cheney

1. Limits of special construction for sewer line where depth of cover to finish grade is less than 3.5' shall be noted on construction profiles.
2. The City will not participate in the connection of the proposed storm sewer to new or existing drainage line.

All other comments of 6-18-91 have been adequatly addressed "Improvements Agreement" for utility installations appears to be adequate.

Ute Water 7/10/91
Gary R. Matthews

Ute Water has a 8" main line on the south side of F road.

Grand Valley Irrigation 7/17/91
Phil Bertrand

Please take note that we are reviewing the prescriptive rights use ownership of the Independent Ranchman ditch. I see no real problem but want to clarify that that particular right is being respected and not in conflict.

It may be proper to clarify how the irrigation water for landscaping is going to be handled.

U.S. West 7/15/91
Leon Peach

No comments at this time.

Public Service 7/15/91
Richard D. Miller

Gas and Electric: No objections to replat.

Grand Junction Drainage District 7/18/91
John L. Ballagh

Concerning the existing subsurface drain line on the westerly side of the development, the drainage district will accept a separate document easement from the property owner. The separate document will be provided by the district, it can be referenced on the plat by a book and page. The easement document should be recorded prior to the replat. That way the general open space, access, drainage, and utility easement statement is not cluttered with any dashed lines.

The drain lines from area drains along the east side are awfully shallow. Recommend

changing grade on the north and south legs to 0.3% thus gaining manufacturer's recommended cover near the inlets.

Specify trees along west side which do not include willows, Russian olives, or poplars. Space trees between units 8A and 9A to allow for equipment access for the drain lines.

City Engineer 7/19/91
J. Don Newton

A 20 mph speed limit (R2-1) and dead end (W14-1) signs will be required on Cider Mill Road.

Show street light locations on Utility Composite and street plans.

If the proposed fence in Patterson Road right-of-way is approved, it shall be located so that sight distance is not obstructed from Cider Mill Road to Patterson Road. A drawing will be required showing fence location and available sight distance from 15 feet behind edge of roadway on Patterson Road.

No comments received from the following review agencies:

Transportation Engineer
County Planning
School District
City Property Agent
City Attorney
U.S. Postal Service

618 Dike Road, P.O. Box 3609
Grand Junction, CO 81502
303) 243-4900
FAX: (303) 243-5945

#48 91

Original
DO NOT Remove
from Office

June 28, 1991

Mr. Dan Wilson
City Attorney
250 North Fifth Street
Grand Junction, CO 81501

Dear Mr. Wilson:

United Companies will be the contractor responsible for site improvements on the Colony Park project. As a means of satisfying the performance warranties required by the City of Grand Junction, United Companies intends to submit a Performance Bond prior to starting any work on the project.

The Bond will be issued by our bonding company in an amount equal to the project costs and acceptable to the City of Grand Junction.

If you have any questions concerning this matter, please call.

Very truly yours,

UNITED COMPANIES OF MESA COUNTY, INC.

Ken W. Nesbitt
President

KWN:gb

REVIEW SHEET SUMMARY

FILE NO. 48-91 **TITLE HEADING: FINAL PLAN/PLAT & ROW VACATION**

ACTIVITY: Request for a Final Plan and Plat for Colony Park and Vacation of Cedar Mill Road right-of-way

PETITIONER: Alco Building Company

LOCATION: South of Patterson, 1000 feet east of 25-1/2 Road

ENGINEER: Banner and Associates

STAFF REPRESENTATIVE: Karl Metzner 303-244-1439

NOTE: WRITTEN RESPONSE BY THE PETITIONER TO THE REVIEW COMMENTS IS REQUIRED.

City Community Development 7/24/91
Karl Metzner 244-1439

1. The plat should be cleaned up to delete extraneous verbage. Since some previous recorded easements will be vacated via the replat they should not be shown on the final plat (dashed lines).

2. No objection to fence in R.O.W. for Patterson Road as long as it lines up with Pomona School. Fence maintenance of area between fence and curb is the responsibility of this development.

3. Developer is responsible for closing the existing curb cut for Cider Mill Road.

4. We will need to review deeds for realignment of property lines.

5. Recommend the developer contact the School District to discuss the possibility of a direct access to the school grounds from this project.

6. Show & lable future extension of cul-de-sac on the site plan as well as plat.

7. Driveway from Unit 8A exits on to Phase 2. Phase line should be angled on easement provided.

City Fire Department **7/8/91**
G. Bennett

No problems at this time - water line size is to be (8) eight inches.

City Police Department **7/10/91**
Capt H.L. Gorby

The Police Department is very concerned with a housing development located adjacement to the softball field at Pamona due to noise complaints, bright lights from the field, etc. Any additional annexation will require additional manpower which will be addressed in 1992 budget.
We also would recommend acceleration and decceleration lanes at the entrance to this development.

City Parks/ Recreation **7/5/91**
Don Hobbs **244-1545**

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City Utilities Engineer **7/8/91**
Bill Cheney

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2. The City will not participate in the connection of the proposed storm sewer to new or existing drainage line.

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Ute Water **7/10/91**
Gary R. Matthews

Ute Water has a 8" main line on the south side of F road.

Grand Valley Irrigation 7/17/91
Phil Bertrand

Please take note that we are reviewing the prescriptive rights use ownership of the Independent Ranchman ditch. I see no real problem but want to clarify that that particular right is being respected and not in conflict.

It may be proper to clarify how the irrigation water for landscaping is going to be handled.

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Leon Peach

No comments at this time.

Public Service 7/15/91
Richard D. Miller

Gas and Electric: No objections to replat.

Grand Junction Drainage District 7/18/91
John L. Ballagh

Concerning the existing subsurface drain line on the westerly side of the development, the drainage district will accept a separate document easement from the property owner. The separate document will be provided by the district, it can be referenced on the plat by a book and page. The easement document should be recorded prior to the replat. That way the general open space, access, drainage, and utility easement statement is not cluttered with any dashed lines.

The drain lines from area drains along the east side are awfully shallow. Recommend changing grade on the north and south legs to 0.3% thus gaining manufacturer's recommended cover near the inlets.

Specify trees along west side which do not include willows, Russian olives, or poplars. Space trees between units 8A and 9A to allow for equipment access for the drain lines.

City Engineer 7/19/91
J. Don Newton

A 20 mph speed limit (R2-1) and dead end (W14-1) signs will be required on Cider Mill Road.

Show street light locations on Utility Composite and street plans.

If the proposed fence in Patterson Road right-of-way is approved, it shall be located so that sight distance is not obstructed from Cider Mill Road to Patterson Road. A drawing will

be required showing fence location and available sight distance from 15 feet behind edge of roadway on Patterson Road.

No comments received from the following review agencies:

Transportation Engineer
County Planning
School District
City Property Agent
City Attorney
U.S. Postal Service

Alco Building Company, Inc.

July 31, 199

City Community Development
Karl Metzner
250 North 5th
Grand Junction, CO 81501

Dear Mr. Metzner:

Relative to ALCO Building Company's request for a final plan and plat for Colony Park, we submit our response to the review comments as follows:

COMMUNITY DEVELOPMENT:

1. Mr. Jim Langford of Banner Associates will be meeting with you prior to the hearing to delete all extraneous verbage and lines not needed on the final plat.

2. Developer has reevaluated placement of the fence in the R.O.W. We are now proposing to place the fence 20' behind the curb line which will keep the fence away from any utilities and will assure that the fence does not obstruct the sight line of cars entering Patterson Road from Cider Mill. Also, with the fence being 20' behind the curb line it will enable the design of the fence to gradually angle into the east-west fence of Pamona School. The developer will maintain the landscaped R.O.W.

3. The developer is aware of his responsibility for closing the existing curb cut for Cider Mill Road.

4. Copies of proposed deeds are in your possession.

5. Developer will contact the school district to discuss whether a direct access to the school grounds from this project is appropriate.

6. Extension of cul-de-sac will be shown on site plan as well as the plat.

7. Jim Langford of Banner & Associates is addressing the issue of Unit 8A driveway. An access easement will be provided.

CITY FIRE DEPARTMENT (No Response Necessary).

CITY POLICE DEPARTMENT:

1. Developer is aware of softball activity located adjacent to this development. The City Engineer agrees acceleration and deceleration lanes are not warranted at this time.

P. O. Box 996 599 25 Road Grand Junction, Colorado 81502 (303) 242-1423 FAX (303) 242-6918

CITY PARKS AND RECREATION:

1. Open space fees of $4950.00 will be paid, if proof of prior payment cannot be obtained.

CITY UTILITIES ENGINEER:

1. The construction profiles will be noted where special construction occurs.

2. Developer understands his responsibility in connecting to the proposed storm sewer.

UTE WATER (No Response).

GRAND VALLEY IRRIGATION:

1. Irrigation water for landscaping will come from waste water flowing into Ranchman ditch along the west property line. If this source proves to be inadequate, rights will be obtained to pull water from Ranchman ditch.

U.S. WEST (No Response).

PUBLIC SERVICE (No Response).

GRAND JUNCTION DRAINAGE DISTRICT:

1. The developer and legal council are awaiting the Easement Document for review. In concept, we do not have a problem with this approach.

2. I have referred the comments regarding cover on area drains to Jim Langford of Banner & Associates.

3. Trees along the west side will not include Willows, Russian Olives or Poplars. Trees will be spaced between Units 8A and 9A to allow for equipment access.

CITY ENGINEER:

1. Developer understands a speed limit and Dead-End sign will be required on Cider Mill Road.

2. Street light locations will be shown on the utility composite and street plans.

3. The proposed fence in the R.O.W. will be placed 20' behind the curb line which will completely eliminate the sight distance issue relative to the fence.

Respectfully,

Bruce Milyard

Bruce Milyard
ALCO Building Co.

DEVELOPMENT FILE 48-91, COLONY PARK SUBDIVISION, LOCATED SOUTH OF PATTERSON AND 1,000 FEET EAST OF 25-1/2 ROAD IN THE CITY OF GRAND JUNCTION HAS BEEN REVIEWED AND APPROVED BY THE UTILITY COORDINATING COMMITTEE.

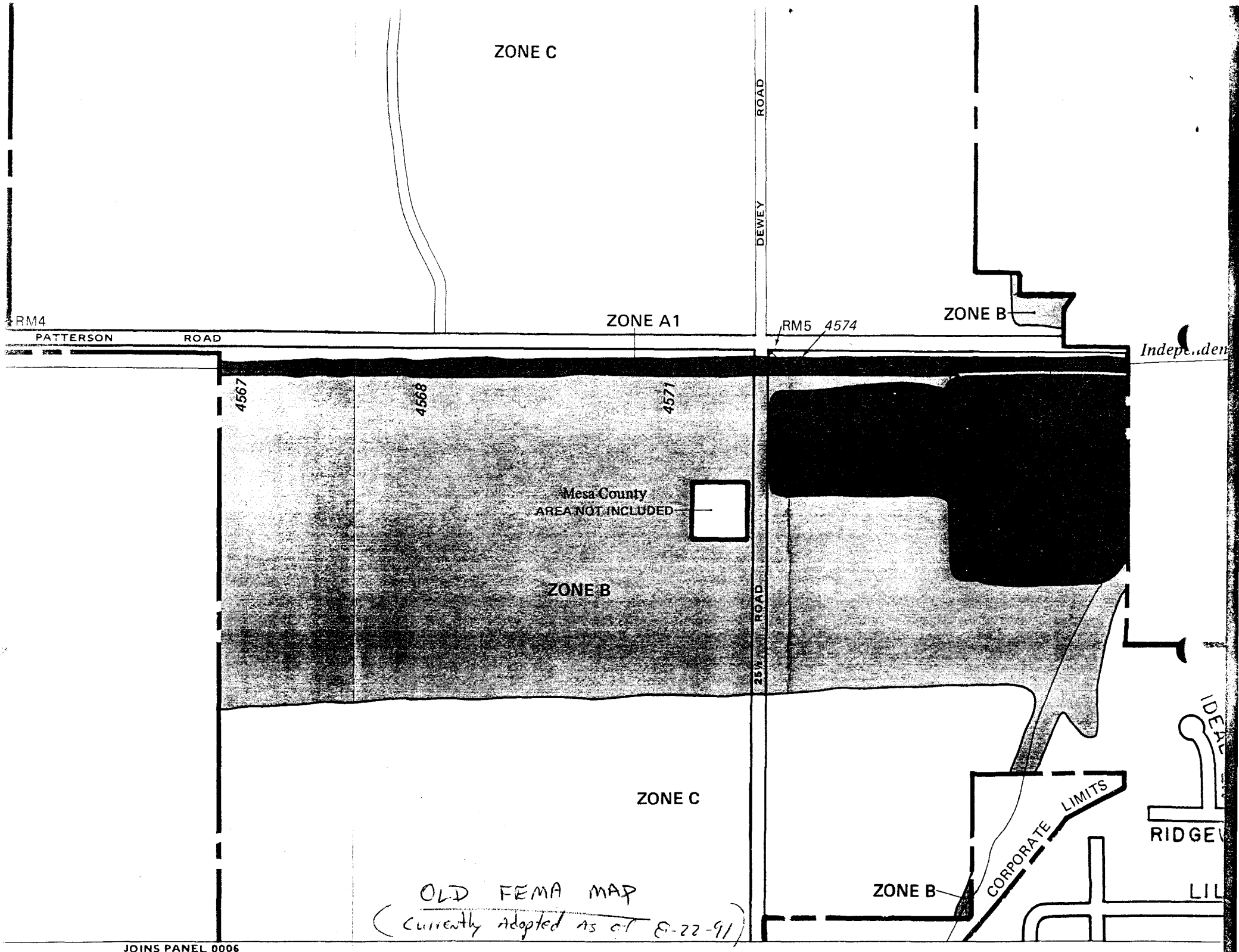
CHAIRMAN John L Ballagh

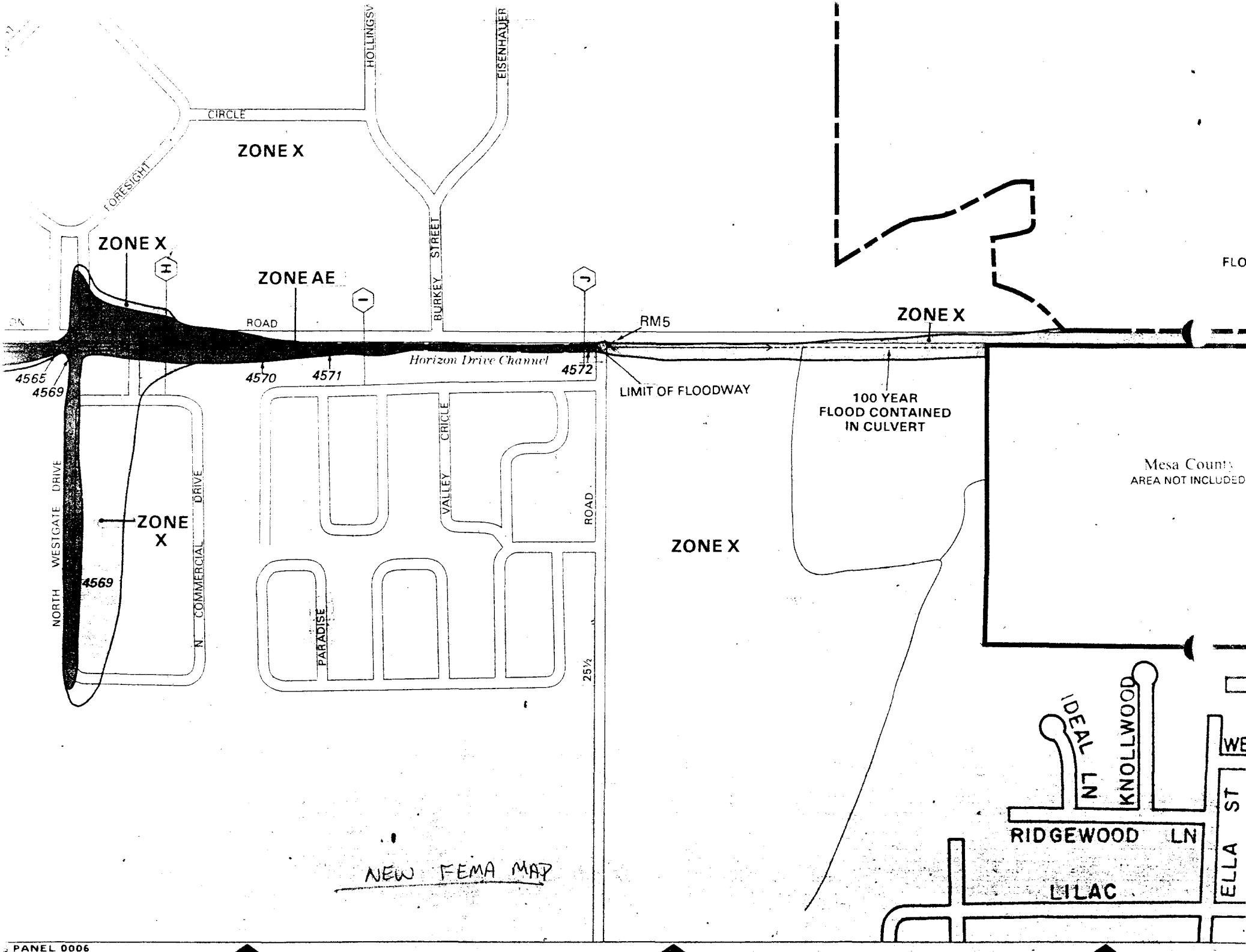
Aug 14, 1991
DATE

Memo to File #48-91 August 22, 1991

Attached is a copy of the current adopted FEMA Floodplain map (old) and a copy of the new Fema map which will be adopted shortly. Colony Park is no longer included within the 100 year Floodplain. Therefore no Floodplain permit is required.

Dave Thornton
Planner


ZONE C
DEWEY ROAD
RM4
PATTERSON ROAD
ZONE A1
RM5
4574
ZONE B
Indepe..den
4567
4568
4571
Mesa County
AREA NOT INCLUDED
ZONE B
25½ ROAD
ZONE C
CORPORATE LIMITS
ZONE B
RIDGE
LIL
OLD FEMA MAP
(Currently adopted as of 8-22-91)
JOINS PANEL 0006


HOLLINGSV
EISENHAUER
CIRCLE
ZONE X
FORESIGHT
ZONE X
H
ZONE AE
I
BURKEY STREET
J
ROAD
RM5
ZONE X
Horizon Drive Channel
4565
4569
4570
4571
4572
LIMIT OF FLOODWAY
100 YEAR
FLOOD CONTAINED
IN CULVERT
Mesa County
AREA NOT INCLUDED
NORTH WESTGATE DRIVE
ZONE
X
4569
N COMMERCIAL DRIVE
VALLEY CRICLE
ROAD
PARADISE
25½
ZONE X
IDEAL LN
KNOLLWOOD
RIDGEWOOD LN
LILAC
ELLA ST
NEW FEMA MAP
PANEL 0006

City of Grand Junction, Colorado
81501-2668
250 North Fifth Street

Mr. Bruce Milyard
Alco Building Co.
599 25 Road
Grand Junction, Co. 81502

February 24, 1992

Dear Bruce:

This is to confirm that both phases of the Colony Park development located southeasterly of 25 1/2 rd. and Patterson rd. have received final development approval. The approval date is August 6, 1991. It is your option to record the subdivision plat in one or two phases. If you choose to record in two phases the second plat must be recorded within one year of the recording of the first plat. Failure to do so would require reapproval through the final plat approval process.

Please let me know if you have any other questions.

Sincerely

Karl G. Metzner
Senior Planner

DEVELOPMENT IMPROVEMENTS AGREEMENT

1. **Parties:** The parties to this Development Improvements Agreement ("the Agreement") are Alco Joint Venture ("the Developer") and **THE CITY OF GRAND JUNCTION,** Colorado ("the City").

THEREFORE, for valuable consideration, the receipt and adequacy of which is acknowledged, the Parties agree as follows:

2. **Effective Date:** The Effective Date of the Agreement will be the date that this agreement is recorded which is not sooner than recordation of the Colony Park, Filing No. 2: A replat of a Portion of Colony Park, Filing No. 1

RECITALS

The Developer seeks permission to develop property within the City to be known as Colony Park Filing No. 2 and 3, which property is more particularly described on Exhibit "A" attached and incorporated by this reference (the "Property"). The City seeks to protect the health, safety and general welfare of the community by requiring the completion of various improvements in the subdivision and limiting the harmful effects of substandard subdivisions. The purpose of this Agreement is to protect the City from the cost of completing subdivision improvements itself and is not executed for the benefit of materialmen, laborers, or others providing work, services or material to the Subdivision or for the benefit of lot or home buyers in the Subdivision. The mutual promises, covenants, and obligations contained in this Agreement are authorized by state law, the Colorado Constitution and the City's land development ordinances.

DEVELOPER'S OBLIGATION

3. **Improvements:** The Developer will design, construct and install, at its own expense, those on-site and off-site subdivision improvements listed on Exhibit "B" attached and incorporated by this reference. The Developer agrees to pay the City for inspection services performed by the City, in addition to amounts shown on Exhibit B. The City estimates that $ Incl. will be required for City inspection of the required improvements. The Developer's obligation to complete the improvements is and will be independent of any obligations of the City contained herein.

4. **Security:** To secure the performance of its obligations under this Agreement (except its obligations for warranty under paragraph 6), the Developer will enter into an agreement which complies with either option identified in paragraph 28.

5. **Standards:** The Developer will construct the Improvements according to the standards and specifications required by the City Engineer or as adopted by the City.

6. **Warranty:** The Developer warrants that the Improvements, each and every one of them, will be free from defects for a period of twelve (12) months from the date that the City Engineer accepts or approves the improvements completed by the Developer.

7. **Commencement and Completion Periods:** The improvements, each and every one of them, will be completed within one year from the Effective Date of this Agreement (the "Completion Period").

8. **Compliance with Law:** The developer will comply with all relevant federal, state and local laws, ordinances, and regulations in effect at the time of final subdivision plat approval when fulfilling its obligations under this Agreement.

9. **Notice of Defect:** The Developer's Engineer will provide timely notice to the Developer, contractor, issuer of security and the City Engineer whenever inspection reveals, or the Developer's Engineer otherwise has knowledge, that an improvement does not conform to City standards and any specifications approved in the development application or is otherwise defective. The developer will have thirty (30) days from the issuance of such notice to correct or substantially correct the defect.

10. **Acceptance of Improvements:** The City's final acceptance and/or approval of improvements will not be given or obtained until the Developer presents a document or documents, for the benefit of the City, showing that the Developer owns the improvements in fee simple and that there are no liens, encumbrances, or other restrictions on the improvements. Approval and/or Acceptance of any improvements does not constitute a waiver by the City of any rights it may have on account of any defect in or failure of the improvement that is detected or which occurs after the approval and/or acceptance.

11. **Use of Proceeds:** The City will use funds deposited with it or drawn under the bank disbursement agreement entered into between the parties only for the purpose of completing the Improvements or correcting defects in or failure of the Improvements.

12. **Events of Default:** The following conditions, occurrences or actions will constitute a default by the Developer during the Completion Period:

a. Developers failure to complete each portion of the Improvements in conformance with the agreed upon time schedule; the City may not declare a default until a 14 calendar day notice has been given to the Developer;

b. Developer's failure to demonstrate reasonable intent to correct defective construction of any improvement within the applicable correction period; the City may not declare a default until a 14 calendar day notice has been given to the Developer;

c. Developer's insolvency, the appointment of a receiver for the Developer or the filing of a voluntary or involuntary petition in bankruptcy respecting the Developer; in such event the City may immediately declare a default without prior notification to the Developer;

d. Notification to the City, by any lender with a lien on the property, of a default on an obligation; the City may immediately declare a default without prior notification to the Developer;

e. Initiation of any foreclosure action of any lien or initiation of mechanics lien(s) procedure(s) against the Property or a portion of the Property or assignment or conveyance of the Property in lieu of foreclosure; the city may immediately declare a default without prior notification to the Developer.

13. **Measure of Damages:** The measure of damages for breach of this Agreement by the Developer will be the reasonable cost of satisfactorily completing the Improvements plus reasonable City administrative expenses. For improvements upon which construction has not begun, the estimated costs of the Improvements as shown on Exhibit "B" will be prima facie evidence of the minimum cost of completion; however, neither that amount or the amount of a letter of credit, the subdivision improvements disbursement agreement or cash escrow establish the maximum amount of the Developer's liability.

14. **City's Rights Upon Default:** When any event of default occurs, the City may draw on the letter of credit or escrowed collateral to the extent of the face amount of the credit or full amount of escrowed collateral or cash less ninety percent (90%) of the estimated cost (as shown on Exhibit "B") of all improvements previously accepted by the City or may exercise its rights to disbursement of loan proceeds or other funds under the subdivision improvements disbursement agreement. The City will have the right to complete improvements itself or it may contract with a third party for completion, and the Developer grants to the City, its successors, assigns, agents, contractors, and employees, a nonexclusive right and easement to enter the Property for the purposes of constructing, reconstructing, maintaining, and repairing such improvements. Alternatively, the City may assign the proceeds of the letter of credit, the subdivision improvements disbursement agreement, the escrowed collateral, cash, or other funds or assets to a subsequent developer (or a lender) who has acquired the Subdivision by purchase, foreclosure or otherwise who will then have the same rights of completion as the City if and only if the subsequent developer (or lender) agrees in writing to complete the unfinished improvements and provides reasonable security for the obligation. In addition, the City may also en-join the sale, transfer, or conveyance of lots within the Subdivision, until the Improvements are completed or accepted. These remedies are cumulative in nature and are in addition to any other remedies the City has at law or in equity.

15. **Indemnification:** The Developer expressly agrees to indemnify and hold the City, its officers, employees and assigns harmless from and against all claims, costs and liability of every kind and nature, for injury or damage received or sustained by any person or entity in connection with, or on account of the performance of work at the Subdivision or the Property pursuant to this Agreement. The Developer further agrees to aid and defend the City in the event that the City is named as a defendant in an action concerning the performance of work pursuant to this Agreement. The Developer further agrees to aid and defend the City in the event that the City is named as a defendant in an action concerning the performance of work pursuant to this Agreement except where such suit is brought by the Developer. The Developer is not an agent or employee of the City.

16. **No Waiver:** No waiver of any provision of this Agreement by the City will be deemed or constitute a waiver of any other provision, nor will it be deemed or constitute a continuing waiver unless expressly provided for by a written amendment to this Agreement signed by both City and Developer; nor will the waiver of any default under this Agreement be deemed a waiver of any subsequent default or defaults of the same type. The City's failure to exercise any right under this Agreement will not constitute the approval of any wrongful act by the Developer or the acceptance of any improvement.

17. **Amendment or Modification:** The parties to this Agreement may amend or modify this Agreement only by written instrument executed on behalf of the City by the City Manager or his designee and by the Developer or his authorized officer. Such amendment or modification will be properly notarized before it may be effective.

18. **Attorney's Fees:** Should either party be required to resort to litigation to enforce the terms of this Agreement, the prevailing party, plaintiff or defendant, will be entitled to costs, including reasonable attorney's fees and expert witness fees, from the opposing party. If the court awards relief to both parties, the attorney's fees may be equitably divided between the parties by the decision maker.

19. **Vested Rights:** The City does not warrant by this Agreement that the Developer is entitled to any other approval(s) required by the City, if any, before the Developer is entitled to commence development of the Subdivision or to transfer ownership of property in the Subdivision.

20. **Third Party Rights:** No person or entity who or which is not a party to this Agreement will have any right of action under this Agreement.

21. **Time:** For the purpose of computing the Abandonment and Completion Periods, and time periods for City action, such times in which war, civil disasters, or acts of God occur or exist will not be included if such times prevent the Developer or City from performing its obligations under the Agreement.

22. **Severability:** If any part, term, or provision of this Agreement is held by the courts to be illegal or otherwise unenforceable, such illegality or unenforceability will not affect the validity of any other part, term, or provision and the rights of the parties will be construed as if the part, term, or provision was never part of the Agreement.

23. **Benefits:** The benefits of this Agreement to the Developer are personal and may not be assigned without the express written approval of the City. Such approval may not be unreasonably withheld, but any unapproved assignment is void. Notwithstanding the foregoing, the burdens of this Agreement are personal obligations of the Developer and also will be binding on the heirs, successors, and assigns of the Developer, and shall be a covenant(s) running with the Property. There is no prohibition on the right of the City to assign its rights under this Agreement. The City will expressly release the original Developer's guarantee or obligations under the subdivision improvements disbursement agreement if it accepts new security from any developer or lender who obtains the Property. However, no other act of the City will constitute a release of the original Developer from his liability under this Agreement.

24. **Notice:** Any notice required or permitted by this Agreement will be deemed effective when personally delivered in writing or three (3) days after notice is deposited with the U.S. Postal Service, postage prepaid, certified, and return receipt requested, and addressed as follows:

If to Developer:

Alco Joint Venture
599 25 Rd.
Grand Junction, CO. 81505

If to City:

City of Grand Junction
Community Development Director
250 N. 5th Street
Grand Junction, Colorado 81501

25. **Recordation:** Developer will pay for any costs to record a copy of this Agreement in the Clerk and Recorder's Office of Mesa County, Colorado.

26. **Immunity:** Nothing contained in this Agreement constitutes a waiver of the City's sovereign immunity under any applicable state law.

27. **Personal Jurisdiction and Venue:** Personal jurisdiction and venue for any civil action commenced by either party to this Agreement whether arising out of or relating to the Agreement, letter of credit, subdivision improvements disbursements agreement, or cash escrow agreement will be deemed to be proper only if such action is commenced in District Court for Mesa County. The Developer expressly waives his right to bring such action in or to remove such action to any other court whether state or federal.

28. The **improvements guarantee** required by the City Code to ensure that the improvements described in the improvements agreement are constructed (to city standards) may be in the form of an agreement: (I) between a bank doing business in Mesa County and the City or as described in (II), below. The agreement between a bank and the City (I) shall provide, among other things, for the bank to guarantee and warrant to the City that it shall:

a. have available money equal to the estimated costs of the required improvements, in an amount equal to the amount agreed upon in the Improvements Agreement;

b. only pay such amounts to contractors who have constructed required Improvements;

c. only pay such amounts after the bank has received the written approval of the City Engineer, or his designee; the City Engineer shall inspect within three (3) days of request;

d. in the event the bank disburses without the City Engineer having approved such disbursement, the Bank shall pay, in addition to all other sums it would otherwise be obligated to pay, to the City the amount of the wrongful disbursement if the City Engineer determines that the work is not acceptable, based on the approved plans and specifications. The City shall use such money to cause the work to be constructed in accordance with the approved plans and specifications;

The alternative to (I), above is identified as (II) and shall contain the following provisions:

The Finance Department of the City will act as disbursing agent and will account for disbursements to Developer contractors as required improvements are completed and accepted.

The City will accept a cash deposit from the Developer equal to the City approved estimate of the required improvements, for purposes of securing and guaranteeing the construction of the required sewer, water, streets, and on-site improvements in the development plan. Such deposit(s), currently estimated at approximately $97,616 *I shall be given to the City's Finance Department, commingled with other funds of the City and specifically invested in the short term market. Interest income shall be allocated to the Developer's escrow account monthly, in the same manner as other short-term investments of the city.

Such interest income shall be used to reimburse the General Fund of the City for accounting and transaction costs incurred in making payments to the appropriate contractors. For purposes of this agreement, the City's costs shall be one hundred dollars

($100.00) for each check disbursement or other transaction which is made. In any event the amount retained by the City for its transaction costs shall not be less than two percent (2%) of the amount deposited. After all required improvements have been made and accepted by the City, any surplus funds remaining in the account (in excess of the two percent minimum or the calculated transaction costs) shall be returned to the developer within thirty (30) days of said acceptance date. Any transaction costs which are not covered by the amount of the deposit plus accrued interest shall be paid to the City by the Developer in like manner within thirty (30) days of completion of the improvements. No guarantee as to the level of interest income or rate of return on the funds so deposited is either implied or made in this agreement, the City agrees only to keep the funds invested as with other City funds.

e. in any event, the Developer promises to construct the required improvements to the satisfaction of the City Engineer, in accordance with the approved plans and specifications.

29. a. Conditions of Acceptance: The City shall have no responsibility or liability with respect to any street, or other improvement(s), notwithstanding the use of the same by the public, unless the street or other improvements shall have been accepted by the city.

Prior to requesting final acceptance of streets, storm drainage facilities, or other required improvements, the Developer shall furnish to the City Engineer as-built drawings in reproducible form and copies of results of all construction control tests required by City specifications.

b. Phased Development: If the City allows a street to be constructed in stages, the Developer of the first one-half street opened for traffic shall construct the adjacent curb, gutter and sidewalk in the standard location and shall construct the required width of pavement from the edge of gutter on his side of the street to enable an initial two-way traffic operation without on-street parking. That Developer is also responsible for end-transitions, intersection paving, drainage facilities, and adjustments to existing utilities necessary to open the street to traffic.

Attest:

City of Grand Junction
250 North Fifth Street
Grand Junction CO 81501

By: _____

Neva B. Lockhart
City Clerk

Mark K. Achen
City Manager

Attest:

Exhibit A (1 of 2)

DESCRIPTION OF A PORTION OF COLONY PARK, FILING NO. 3

A Portion of Colony Park Filing No. 3 is located in the E 1/2 of the NW 1/4 of the NE 1/4 of Section 10, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, County of Mesa, State of Colorado more fully described as follows:

Beginning at the northeasterly corner of a Portion of Colony Park, Filing No. 3, whence the 1/4 corner, a Mesa County Survey Marker, common to Sections 3 and 10, T.1 S., R.1 W., U.M. bears N 85° 44' 22" W, 1015.81 feet with the Section line between Sections 3 and 10 between the 1/4 corner and Section corner at 2-3-10-11 considered to bear N 89° 58' 25" W, and with all bearings listed herein relative thereto:

1. **Thence S 00° 02' 34" E, 423.06 feet;**
2. **Thence N 89° 58' 31" W, 145.47 feet;**
3. **Thence N 00° 01' 35" E, 3.78 feet;**
4. **Thence northeasterly 29.37 feet along the arc of a circular curve concave to the southeast with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing N 22° 10' 03" E, 28.64 feet;**
5. **Thence northerly 77.29 feet along the arc of a circular curve concave to the west with a radius of 50.00 feet, a delta of 88° 33' 52" and a chord bearing N 00° 01' 35" E, 69.82 feet;**
6. **Thence northeasterly 29.37 feet along the arc of a circular curve concave to the northeast with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing N 22° 06' 53" W, 28.64 feet;**
7. **Thence N 00° 01' 35" E, 296.40 feet;**
8. **Thence S 89° 58' 25" E, 144.96 feet to the Point of Beginning.**

The Portion of Colony Park, Filing No. 3 as described above contains 1.373 acres more or less.

DESCRIPTION OF A PORTION OF COLONY PARK, FILING NO. 3

A Portion of Colony Park, Filing No. 3 located in the E 1/2 of the NW 1/4 of the NE 1/4 of Section 10, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, County of Mesa, State of Colorado more fully described as follows:

Beginning at the northwesterly corner of a Portion of Colony Park, Filing No. 3, whence the 1/4 corner, a Mesa County Survey Marker, common to Sections 3 and 10, T.1 S., R.1 W., U.M. bears N 59° 54' 34" W, 762.00 feet with the Section line between Sections 3 and 10 between the 1/4 corner and Section corner at 2-3-10-11 considered to bear N 89° 58' 25" W, and with all bearings listed herein relative thereto:

1. Thence S 89° 58' 25" E, 124.96 feet;
2. Thence S 00° 01' 35" W, 3.00 feet;
3. Thence S 89° 58' 25" E, 31.22 feet;
4. Thence southwesterly 15.74 feet along the arc of a circular curve concave to the northwest with a radius of 38.00 feet, a delta of 23° 43' 42" and a chord bearing S 32° 26' 40" W, 15.63 feet;
5. Thence southerly 77.29 feet along the arc of a circular curve concave to the east with a radius of 50.00 feet; a delta of 88° 33' 52" and a chord bearing S 00° 01' 35" W, 69.82 feet;
6. **Thence southeasterly 29.37 feet along the arc of a circular curve concave to the southwest** with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing S 22° 06' 53" E, 28.64 feet;
7. Thence S 00° 01' 35" W, 3.78 feet;
8. Thence N 89° 58' 31" W, 158.59 feet;
9. Thence N 00° 01' 17" E, 116.33 feet to the Point of Beginning.

The Portion of Colony Park, Filing No. 3, as described above contains 0.384 acres more or less.

DESCRIPTION OF COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. 1

Colony Park, Filing No. 2, consisting of Block 1 and Cider Mill Road together in the E 1/2 of the NW 1/4 of the NE 1/4 of Section 10, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, County of Mesa, State of Colorado more fully described as follows:

Beginning at the northeasterly corner of Colony Park, Filing No. 2 whence the 1/4 corner, a Mesa County Survey Marker, common to Sections 3 and 10, T.1 S., R.1 W., U.M. bears N 85° 02' 08" W, 871.31 feet with the Section line between Sections 3 and 10 between the 1/4 corner and Section corner at 2-3-10-11 considered to bear N 89° 58' 25" W, and with all bearings listed herein relative thereto:

1. Thence S 00° 01' 35" W, 296.40 feet;
2. Thence southeasterly 29.37 feet along the arc of a circular curve concave to the northeast with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing S 22° 06' 53" E, 28.64 feet;
3. Thence southerly 77.29 feet along the arc of a circular curve concave to the west with a radius of 50.00 feet; a delta of 88° 33' 52" and a chord bearing S 00° 01' 35" W, 69.82 feet;
4. Thence southwesterly 29.37 feet along the arc of a circular curve concave to the southeast with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing S 22° 10' 03" W, 28.64 feet;
5. Thence S 00° 01' 35" W, 3.78 feet;
6. Thence N 89° 58' 31" W, 50.00 feet;
7. Thence N 00° 01' 35" E, 3.78 feet;
8. Thence northwesterly 29.37 feet along the arc of a circular curve concave to the southwest with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing N 22° 06' 53" W, 28.64 feet;
9. Thence northerly 77.29 feet along the arc of a circular curve concave to the east with a radius of 50.00 feet, a delta of 88° 33' 52" and a chord bearing N 00° 01' 35" E, 69.82 feet;
10. Thence northeasterly 15.74 feet along the arc of a circular curve concave to the northwest with a radius of 38.00 feet, a delta of 23° 43' 42" and a chord bearing N 32° 26' 40" E, 15.63 feet;
11. Thence N 89° 58' 25" W, 31.22 feet;
12. Thence N 00° 01' 35" E, 3.00 feet;
13. Thence N 89° 58' 25" W, 124.96 feet;
14. Thence N 00° 01' 17" E, 306.74 feet;
15. Thence S 89° 58' 25" E, 208.62 feet to the Point of Beginning.

Block 1 and Cider Mill Road together as described above contains 1.679 acres more or less.

CITY OF GRAND JUNCTION IMPROVEMENTS AGREEMENT

Exhibit B

RE: COLONY PARK SUBDIVISION — GRAND JUNCTION, COLORADO

Name of Subdivision or Other Improvement — Location

Intending to be legally bound, the undersigned subdivider hereby agrees to provide throughout this subdivision and as shown on the subdivision plat of COLONY PARK SUBDIVISION (Name of Subdivision) date MARCH 1 1992, the following improvements to City of Grand Junction standards and to furnish an Improvements Guarantee in the form acceptable to the City for these improvements.

Improvements	Quantity and Unit Costs	Estimated Cost	Estimated Completion Date
Street Grading	2484 sy / 2.30 sy	5,713.00	4-5-92
Street Base	1168 Ton / 15.00 ton	17,520.00	5-1-92
Street Paving	290 Ton / 31.80 ton	9,222.00	5-20-92
Curbs and Gutters & SIDEWALK		17,042.00	5-10-92
Sidewalks			
Storm Sewer Facilities		14,228.00	5-1-92
Sanitary Sewers (Manholes & ETC)		3,720.00	5-1-92
Mains	8.80 / ft.	5,280.00	5-1-92
Laterals/House Connections	770' @ 5.60/ft	4,312.00	5-1-92
On-site Sewage Treatment		-0-	
Water Mains & ETC		14,292.00	5-1-92
Fire Hydrants	2 @ 18.00	3,600.00	5-1-92
On-site Water Supply		-0-	
Survey Monuments			
Street Lights	3 @ 529.00	1,587.00	5-10-92
Street Name Signs	3 @ 200.00	600.00	6-1-92
Construction Administration (City Testing)		500.00	6-1-92
Utility Relocation Costs		-0-	
Design Costs		-0-	
SUB TOTAL		$97,616.00	

NOTE: Surveyors, testing, tree removal & rough cut on roadway are included in other categories as they are not identified on the breakdown above.

Supervision of all installations (should not normally exceed 4% of subtotal) _____

TOTAL ESTIMATED COST OF IMPROVEMENTS AND SUPERVISION: $ 97,616.00

The above improvements will be constructed in accordance with the specifications and requirements of the City or appropriate utility agency and in accordance with detailed construction plans, based on the City Council approved plan, and submitted ot the City Engineer for review and approval prior to start of construction. The improvements will be constructed in reasonable conformance with the time schedule shown above. An Improvements Guarantee will be furnished to the City prior to recording the subdivision plat.

Kenneth E. Mahyar Partner

Signature of Subdivider

(If corporation, to be signed by President and attested to by Secretary, together with the corporate seal.)

DATE: March 9 1992

I have reviewed the estimated costs and time schedule shown above and, based on the plan layouts submitted to date and the current costs of construction, I take no exception to the above.

L. Don Newton

City Engineer

City of Grand Junction, Colorado
81501-2668
250 North Fifth Street

April 13, 1992

Jim Langford
Banner Associates, Inc.
2777 Crossroads Blvd.
Grand Junction, CO 81506

Re: Colony Park Filing No. 2

I have reviewed the revised construction drawings dated March 13, 1992, for this development and have the following comments:

1. Please add the following note to Sheet 4:

   All construction within the public right-of-way shall be in accordance with the City of Grand Junction construction standards and specifications.

2. On Sheet 10, the handicap ramps shall be constructed in accordance with City standards (see enclosed standard drawing). Side flares on ramps shall have 12:1 maximum slopes.

3. It has not been determined who will be responsible for maintenance of the underground drainage system along the east side of the development, or how to get maintenance equipment to the inlets. It is my understanding that the Grand Junction Drainage District will require that no plantings, structures or obstructions will be allowed in the vicinity of the pipes and inlets east of Cider Mill Road if they are to maintain the system.

   Since Colony Park is at the lower end of the drainage basin that originates at the airport, the peak discharge from the development will occur before the peak from the upstream basin. Therefore, I will agree to waive the requirement for "on site detention" of the runoff from the east side of Cider Mill Road in order to eliminate the drainage pipes and inlets along the east side of the property. This would solve the maintenance problem, but would require regrading the area east of Cider Mill Road to slope and drain to the street.

4. Additional reinforcing steel will be required (per City standards) at the ends of the concrete V-Pan shown on Sheet 10.

5. The Grand Junction Drainage District has completed installation of the new drainage pipe along the west side of the development. Please verify that the grades and elevations of the proposed drainage system will match the new drainage pipe. Elevations at the connection to the new drainage pipe should be shown on the plans.

6. Furnish to me three sets of drawings with Engineers Stamp and Signature and provide space on the drawings for Approval by the City Engineer. We will retain 2 sets of approved drawings.

Please call if you have any questions or wish to discuss any of the above items.

Sincerely,

Don Newton

Don Newton
City Engineer

xc: Bruce Milyard, Alco Building co., Inc.
Mark Relph
Karl Metzner
John Ballagh
Gerald Williams

file:DN\LANGFORD.LET

MEMORANDUM

August 12, 1992

To: Ron Lappi
From: Don Newton

Subject: Colony Park Subdivision

Alco Building Company, Inc. has satisfactorily completed the street and drainage improvements in Colony Park Subdivision and is requesting the release of funds for these improvements in the amount shown on the attached invoices.

Remaining funds in the escrow account should be held until all remaining improvements are completed and other charges are tabulated.

xc: Community Development
Gerald Williams, Development Engineer

Alco Building Company, Inc.
242-1423

August 11, 1992

City of Grand Junction
Director of Finance
4th and White Ave.
Grand Junction, CO. 81504

Regarding: Colony Park Improvements Agreement

In reference to the improvements agreement entered into between the City of Grand Junction and Alco Joint Venture for the development of Colony Park Subdivision, I submit the following invoices for payment:

United Companies -	$29,803.00
May's Concrete -	$14,507.00
Banner and Associates, Inc. -	$467.38

Thank you for expediting payment to these contractors.

Respectfully Submitted

Bruce Milyard

Bruce Milyard
Alco Building Company

P. O. Box 996 599 25 Road Grand Junction, Colorado 81502 (303) 242-1423 FAX (303) 242-6918

City of Grand Junction, Colorado
250 North Fifth Street
81501-2668
FAX: (303) 244-1599

August 18, 1992

Bruce Milyard
Alco Building Company
P.O. Box 996
599 25 Road
Grand Junction, CO 81502

Dear Bruce:

A final inspection of the street and drainage improvements in Colony Park was held on August 11, 1992. The only item noted as a result of this inspection was an expansion joint that needs to be sealed at the east end of the new curb, gutter, and sidewalk on Patterson Road.

Final acceptance of and maintenance of the streets and drainage improvements by the City will be contingent upon receiving record drawings of the construction improvements on full size reproducible mylar and copies of all test results required by City specifications including compaction tests in all utility trenches.

You will be required to guarantee all materials and workmanship in the public improvements for a period of one year beginning on August 11, 1992.

Please call if you have any questions or need additional information.

Sincerely,

J. Don Newton

J. Don Newton, P.E.
City Engineer

xc: Karl Metzner
Gerald Williams
Mark Relph
file

Fdc Colony Park

City of Grand Junction, Colorado
250 North Fifth Street
81501-2668
FAX: (303) 244-1599

February 22, 1993

Bruce Milyard
Alco Building Co., Inc.
P. O. Box 996
599 25 Road
Grand Junction, CO 81502

Dear Bruce:

I have received the revissed record drawing and test results for the construction of Cider Mill Road from Banner Associates, Inc. From the information submitted, it appears that no asphalt testing was performed at the time of street paving. These tests were not performed until February of 1993. The purpose of quality control inspection and testing is to insure that materials meet required specifications and are properly installed during construction. Testing that is performed eight months after the street has been paved does not identify problems that can and do occur during construction.

Since the test results submitted meet minimum specifications in effect at the time of construction, Cider Mill Road is hereby accepted and henceforth will be maintained by the City. The building contractors are responsible for removing mud that is tracked onto the street from the construction sites.

The one-year warranty period on the street improvements will expire on August 11, 1993.

Please call if you have any further questions.

Sincerely,

J. Don Newton

J. Don Newton, P.E.
City Engineer

xc: Karl Metzner, Community Development
Mark Relph, Public Works Manager
Doug Cline, Streets Superintendent
Walt Hoyt, Construction Inspector
David Chase, Banner Associates, Inc.

FF — CITY OF GRAND JUNCTION COLORADO — ACTION SHEET

ACRES ________

UNITS ________

DENSITY ________

FINAL & Vacation of Cedar Mill Road Row

FILE NUMBER #48 91

ZONE PR-10

TAX SCHEDULE # 2945-101-29-001 -016

ACTIVITY Final Plan & Plat A Replat of Filing 1 Colony Park And ROW VACATION OF CEDAR Mill Road.

PHASE Final

COMMON LOCATION S. of Patterson Rd. — 1,000 feet East of 25 1/2 Rd.

DATE SUBMITTED ________ DATE MAILED OUT ________ DATE POSTED ________

______ DAY REVIEW PERIOD RETURN BY ________

OPEN SPACE DEDICATION (acreage) ________ OPEN SPACE FEE REQUIRED ________ PAID RECEIPT # ________

RECORDING FEE REQUIRED $ ________ PAID (Date) ________ DATE RECORDED ________

REVIEW AGENCIES

Agency	A Applic	B Narr	C Summary	D (crossed out)	E Title	F Covenants	G Legal	H Adj Prop Owner	I Flood Plain	J (crossed out)	K Gamma Radia.	L Subsurface Soils	M Improve Agree	N " Guarantee	O Develop Sched.	P Plat	Q Site Plan	R Adj land use	S Drain/Grading	T Util	U Landscaping	V Parking Plan	W Re... Plan	X Traffic Circ.	Y Traffic Anal.	Z Street ...	AA Loc & Vic Map	BB Assessor Map	CC Reduct Assessor	DD Reduct Plan	EE Reduct Plat	FF Action Sheet	GG Tax Cert.
Planning Department	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
City Engineer	●	●	●						●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●				
Transportation Engineer	●	●	●										●	●	●	●	●	●	●	●	●	●	●	●	●	●			●				
City Parks/Recreation	●	●	●	●									●	●	●	●	●	●	●		●	●				●			●				
City Fire Department	●	●	●										●	●	●	●	●	●	●	●	●	●	●	●	●	●			●				
City Police Department	●	●	●												●	●	●	●			●	●				●			●				
County Planning	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
County Engineer	●	●	●										●	●	●	●	●	●	●	●	●	●	●	●	●	●			●				
County Health	●	●	●							●	●		●	●	●	●	●	●	●		●	●				●			●				
Floodplain Administration	●	●	●						●				●	●	●	●	●	●	●		●	●				●			●				
G.J. Dept. of Energy	●	●	●										●	●	●	●	●	●	●		●	●				●			●				
Walker Field	●	●	●										●	●	●	●	●	●	●		●	●				●			●				
School District	●	●	●										●	●	●	●	●	●	●		●	●				●			●				
Irrigation G.V.	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
Drainage G.J.	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
Water (Ute, Clifton)	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
Sewer Dist. (FV, CGV, OM)	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
U.S. West	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
Public Service (2 sets)	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
State Highway Department	●	●	●										●	●	●	●	●	●	●		●	●				●			●				
State Geological	●	●	●							●	●		●	●	●	●	●	●	●		●	●				●			●				
State Health Department	●	●	●										●	●	●	●	●	●	●		●	●				●			●				
City Property Agent	●	●	●										●	●	●	●	●	●	●	●		●	●			●			●				
City Utilities Engineer	●	●	●										●	●	●	●	●	●	●	●		●	●			●			●				
City Attorney	●	●	●		●	●							●	●	●	●	●	●								●			●				
Building Department	●	●	●									●			●		●	●				●				●			●	●	●		
DDA	●	●	●												●														●	●	●		
GJPC (7 packets)	●	●	●												●			●			●	●			●	●			●				
CIC (11 packets)	●	●	●												●			●			●	●				●			●	●	●		
Other Post Office	●	●	●												●	●	●	●								●			●	●	●		

Park, Filing No. 1, ... 10, T1 S., R1 W., U.M., ... approved and accepted ... 82

... a Portion of Colony ... filed for record in ... of ____ M. ...

82
45

CERTIFICATE OF OWNERSHIP AND DEDICATION

KNOW ALL MEN BY THESE PRESENTS that George D. Young being the owner in fee simple of Colony Park, Filing No. 2: A Replat of a Portion of Colony Park, Filing No. 1, Section 10, Township 1 South, Range 1 West, Ute Meridian, City of Grand Junction, County of Mesa, State of Colorado does hereby Replat, said real property in accordance with the Replat shown hereon and that said owner has caused the said real property to be layed out and surveyed as Colony Park, Filing No. 2, a subdivision of a part of the City of Grand Junction, County of Mesa, Colorado.

DESCRIPTION OF COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. 1

Colony Park, Filing No. 2, consisting of Block 1 and Cider Mill Road together in the E 1/2 of the NW 1/4 of the NE 1/4 of Section 10, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, County of Mesa, State of Colorado more fully described as follows:

Beginning at the northeasterly corner of Colony Park, Filing No. 2 whence the 1/4 corner, a Mesa County Survey Marker, common to Sections 3 and 10, T1 S., R1 W., U.M. bears N 89° 02' 08" W, 671.31 feet with the Section line between Sections 3 and 10 between the 1/4 corner and Section corner of 2-3-10-11 considered to bear N 89° 58' 25" W. and with all bearings listed herein relative thereto:

1. Thence S 00° 01' 38" W, 296.40 feet;
2. Thence southeasterly 28.37 feet along the arc of a circular curve concave to the northeast with a radius of 38.00 feet, a delta of 44° 16' 58" and a chord bearing S 22° 06' 53" E, 28.64 feet;
3. Thence southerly 77.29 feet along the arc of a circular curve concave to the west with a radius of 50.00 feet, a delta of 88° 33' 52" and a chord bearing S 00° 01' 38" W, 69.82 feet;
4. Thence southwesterly 28.37 feet along the arc of a circular curve concave to the southeast with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing S 22° 10' 03" W, 28.64 feet;
5. Thence S 00° 01' 38" W, 3.78 feet;
6. Thence N 89° 58' 3" W, 50.00 feet;
7. Thence N 00° 01' 38" E, 3.78 feet;
8. Thence northwesterly 28.37 feet along the arc of a circular curve concave to the southwest with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing N 22° 06' 53" W, 28.64 feet;
9. Thence northerly 77.29 feet along the arc of a circular curve concave to the east with a radius of 50.00 feet, a delta of 88° 33' 52" and a chord bearing N 00° 01' 38" E, 69.82 feet;
10. Thence northeasterly 15.74 feet along the arc of a circular curve concave to the northwest with a radius of 38.00 feet, a delta of 23° 43' 42" and a chord bearing N 32° 28' 46" E, 15.63 feet;
11. Thence N 89° 58' 25" W, 3.22 feet;
12. Thence N 00° 01' 35" E, 3.00 feet;
13. Thence N 89° 58' 25" W, 124.96 feet;
14. Thence N 00° 01' 17" E, 306.74 feet;
15. Thence S 89° 58' 25" E, 206.62 feet to the Point of Beginning.

Block 1 and Cider Mill Road together as described above contains 1.879 acres more or less.

That said owner does hereby dedicate the streets shown in the plat shown hereon to the City of Grand Junction on behalf of the public forever and does hereby dedicate those portions of Block 1, Colony Park, Filing No. 2 which are labeled as Access, Drainage and Utility Easements in the Plat shown hereon are dedicated to the City of Grand Junction in behalf of the Public Utility Companies and the Public as perpetual easements for the installation and maintenance of utility, access and drainage facilities, including but not limited to transmission lines, electric lines, gas lines, water lines, sewer lines and telephone lines, together with the right to trim interfering trees and brush and with the perpetual right of ingress and egress for installation of such facilities, and those areas labeled Open Space in the Plat shown hereon are hereby dedicated to the owners of the property within Block 1, Colony Park Filing No. 2 for recreational and aesthetic purposes as determined appropriate by said owners. Said easements and rights shall be utilized in a reasonable prudent manner.

IN WITNESS WHEREOF, I hereunto set my hand this ______ day of ____________ A.D., 1982.

____
George D. Young

ACKNOWLEDGEMENT OF OWNERSHIP

State of Colorado)
)
County of Mesa)

On this __________ day of ________, A.D., 1982, before me the undersigned officer, personally appeared George D. Young and acknowledged that he executed the foregoing Certificate of Ownership, for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto affix my hand and official seal.
My commission expires ______________________________

____
Notary Public

____
Address

SURVEYOR'S CERTIFICATE

I, Wallace E. Beede, a Professional Land Surveyor, licensed under the laws of the State of Colorado, do hereby certify that Colony Park, Filing No. 2: A Replat of a Portion of Colony Park, Filing No. 1, Section 10, T1 S., R1 W., Ute Meridian, shown hereon has been prepared under my direct supervision and accurately represents a survey conducted under my direct supervision. This survey complies with applicable requirements of the Zoning and Development Code of the City of Grand Junction and applicable laws and regulations of the State of Colorado to the best of my knowledge and belief.

IN WITNESS WHEREOF, I hereunto affix my hand and official seal this 6 day of April ... 1982.

Wallace E. Beede
Wallace E. Beede
P.L.S. No. 20...

COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. 1

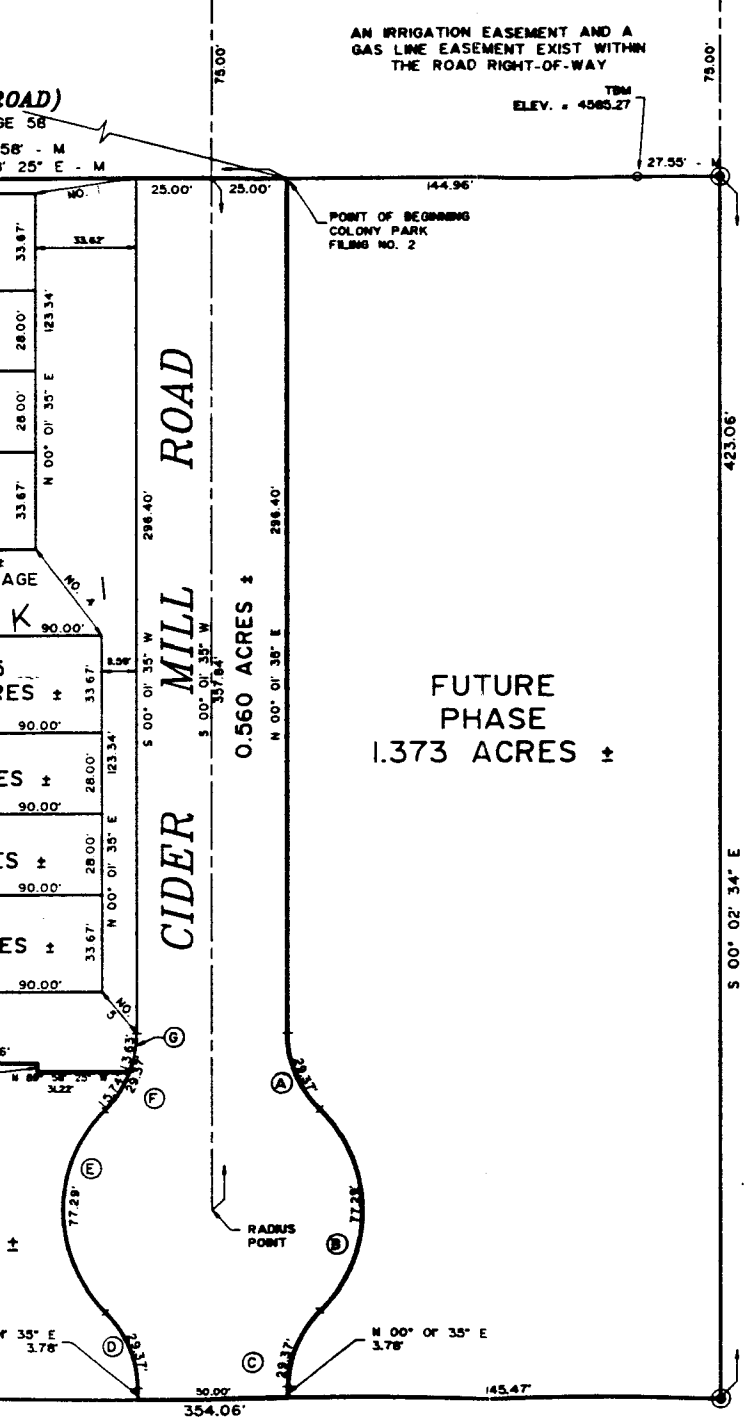


TABLE OF LOT CORNER TIES		
NO. 1	N 81° 34' 06" E	33.99'
NO. 2	N 81° 50' 37" W	35.36'
NO. 3	S 36° 12' 54" E	37.27'
NO. 4	S 36° 12' 54" E	37.27'
NO. 5	S 38° 18' 16" E	18.69'
NO. 6	S 66° 20' 50" W	62.25'

COLONY PARK, FILING NO. 2 TABLE OF AREAS	
LOTS 1 TO 8, BLOCK 1	0.512 ACRES ±
CIDER MILL ROAD	0.560 ACRES ±
LOT OS-1, BLOCK 1	0.607 ACRES ±
TOTAL	1.679 ACRES ±

FEET 30 0 30 FEET

GRAPHIC SCALE

SCALE: 1 INCH = 30 FEET

LEGEND

- ● SET THIS SURVEY, 5/8" REBAR WITH 1 1/2" DIAMETER ALUMINUM CAP MARKED BANNER, INC., 20632
- ⊕ FOUND, M.C.S.M. MONUMENT, 3" BRASS TABLET IN MONUMENT BOX.
- ○ FOUND IN PLACE, REBAR WITH CAP MARKED LS 24643
- □ MONUMENT, FOUND IN PLACE, AS DESCRIBED
- ◉ INDICATES MONUMENT IS SET IN CONCRETE
- R = DIMENSION OF RECORD
- M = DIMENSION MEASURED THIS SURVEY

CUL-DE-SAC DATA (ON THE PROPERTY LINE)

Ⓐ	Δ = 44° 16' 56"	R = 38.00'	L = 29.37'	T = 15.46'	C = 28.64'	CB = S 22° 06' 53" E
Ⓑ	Δ = 88° 33' 52"	R = 50.00'	L = 77.29'	T = 48.76'	C = 69.82'	CB = S 00° 01' 35" W
Ⓒ	Δ = 44° 16' 56"	R = 38.00'	L = 29.37'	T = 15.46'	C = 28.64'	CB = S 22° 10' 03" W
Ⓓ	Δ = 44° 16' 56"	R = 38.00'	L = 29.37'	T = 15.46'	C = 28.64'	CB = N 22° 06' 53" W
Ⓔ	Δ = 88° 33' 52"	R = 50.00'	L = 77.29'	T = 48.76'	C = 69.82'	CB = N 00° 01' 35" E
Ⓕ	Δ = 28° 29' 26"	R = 38.00'	L = 18.90'	T = 9.65'	C = 18.70'	CB = N 30° 03' 48" E
Ⓖ	Δ = 15° 47' 30"	R = 38.00'	L = 10.47'	T = 5.27'	C = 10.44'	CB = N 07° 55' 20" E

COLORADO REGISTERED LAND SURVEYOR

P.E. AND P.L.S.

April 13, 1992

NOTES:

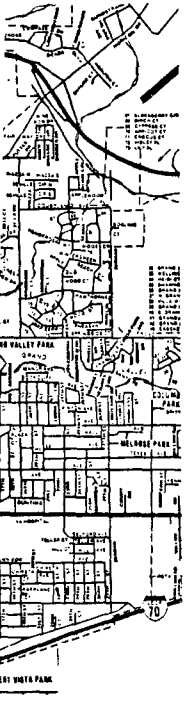
1. BASIS OF BEARINGS: THE SECTION LINE BETWEEN THE 1/4 CORNER TO SECTIONS 3 AND 10 AND THE SECTION CORNER AT 2-3-10-11 BOTH T.1 S., R.1 W., U.M. WHICH HAS A BEARING (OF RECORD) OF S 89° 58' 25" E. EACH CORNER IS MARKED BY A MESA COUNTY SURVEY MONUMENT.
2. SEA LEVEL DATUM. BASED ON MESA COUNTY
4. RESEARCH FOR RECORDED RIGHTS-OF-WAY AND EASEMENTS WAS CONDUCTED BY ABSTRACT AND TITLE COMPANY OF MESA COUNTY, INC., GRAND JUNCTION, COLORADO.

COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. 1, LOCATED IN E 1/2, NW 1/4, NE 1/4 OF

ALCO BUILDING COMPANY

PLANS FOR
CONSTRUCTION
OF

)NY PARK FILING NO. 2



MAY 1991

NO.	TITLE
1.	TITLE SHEET
2. & 3.	PLAT
4.	LEGEND AND CONSTRUCTION NOTES
5.	GRADING AND DRAINAGE PLAN
6.	UTILITY COMPOSITE
7.	ROADWAY AND SEWER PLAN AND PROFILE
8.	SEWERLINE STANDARD DETAILS
9.	WATERLINE STANDARD DETAILS
10.	ROADWAY STANDARD DETAILS

RANNER

COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. I, SECTION 10, T.1 S., R.1 W., UTE MERIDIAN

CITY APPROVAL

Colony Park, Filing No. 2: A Replat of a Portion of Colony Park, Filing No. I, located in E 1/2 of the NW 1/4 of the NE 1/4 of Section 10, T.1 S., R.1 W., U.M., City of Grand Junction, County of Mesa, State of Colorado is approved and accepted on this 8 day of April A.D. 1992

City Manager

President of the Grand Junction City Council

Chairman of the Grand Junction City Planning Commission

City Planning Director

City Engineer

COUNTY CLERK AND RECORDER'S CERTIFICATE

State of Colorado)
) ss
County of Mesa)

I hereby certify that Colony Park, Filing No. 2: A Replat of a Portion of Colony Park, Filing No. I, Section 10, T.1 S., R.1 W., Ute Meridian, was filed for record in the office of the County Clerk and Recorder of Mesa County at _____ M., on the _____ day of _____ A.D. 1992 in Book No.____ Page No.____ Reception No.____

Mesa County Clerk and Recorder

Deputy

Recorded 23 APRIL 92
BOOK 14 pages 44 & 45

CERTIFICATE OF OWNERSHIP AND DEDICATION

KNOW ALL MEN BY THESE PRESENTS that George D. Young being the owner in fee simple of Colony Park, Filing No. 2: A Replat of a Portion of Colony Park, Filing No. I, Section 10, Township 1 South, Range 1 West, Ute Meridian, City of Grand Junction, County of Mesa, State of Colorado shown hereon hereby Replats, said real property in accordance with the Replat shown hereon and that said owner has caused the said real property to be laid out and surveyed as Colony Park, Filing No. 2, a subdivision of a part of the City of Grand Junction, County of Mesa, Colorado.

DESCRIPTION OF COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. I

Colony Park, Filing No. 2, consisting of Block I and Outer Mill Road together in the E 1/2 of the NW 1/4 of the NE 1/4 of Section 10, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, County of Mesa, State of Colorado more fully described as follows:

Beginning at the northeasterly corner of Colony Park, Filing No. 2 whence the 1/4 corner, a Mesa County Survey Marker, common to Sections 3 and 10, T.1 S., R.1 W., U.M. bears N 89° 01' 09" W, 671.31 feet with the Section line between Sections 3 and 10 between the 1/4 corner and Section corner of 2-3-10-11 monumented to bear N 89° 58' 29" W, and with all bearings listed herein relative thereto;

1. Thence S 00° 01' 39" W, 296.40 feet;
2. Thence southeasterly 28.37 feet along the arc of a circular curve concave to the northeast with a radius of 36.00 feet, a delta of 44° 16' 56" and a chord bearing S 22° 09' 53" E, 26.64 feet;
3. Thence southerly 77.29 feet along the arc of a circular curve concave to the west with a radius of 50.00 feet, a delta of 88° 33' 02" and a chord bearing S 00° 01' 39" W, 69.82 feet;
4. Thence southeasterly 28.37 feet along the arc of a circular curve concave to the northeast with a radius of 36.00 feet, a delta of 44° 16' 56" and a chord bearing S 22° 09' 03" W, 26.64 feet;
5. Thence S 00° 01' 39" W, 3.78 feet;
6. Thence N 89° 58' 21" W, 50.00 feet;
7. Thence N 00° 01' 39" E, 3.78 feet;
8. Thence northeasterly 28.37 feet along the arc of a circular curve concave to the northeast with a radius of 36.00 feet, a delta of 44° 16' 56" and a chord bearing N 22° 09' 03" E, 26.64 feet;
9. Thence northerly 77.29 feet along the arc of a circular curve concave to the west with a radius of 50.00 feet, a delta of 88° 33' 02" and a chord bearing N 00° 01' 39" E, 69.82 feet;
10. Thence northeasterly 15.74 feet along the arc of a circular curve concave to the northeast with a radius of 36.00 feet, a delta of 25° 03' 42" and a chord bearing N 32° 28' 49" E, 15.61 feet;
11. Thence N 89° 58' 29" W, 3.22 feet;
12. Thence N 00° 01' 39" E, 3.00 feet;
13. Thence N 89° 58' 29" W, 214.86 feet;
14. Thence S 00° 01' 17" E, 306.74 feet;
15. Thence S 89° 58' 29" E, 308.62 feet to the Point of Beginning.

Block I and Outer Mill Road together as described above contains 1.679 acres more or less.

That said owner does hereby dedicate the streets shown on the said plat hereon to the City of Grand Junction on behalf of the public forever and does hereby dedicate those portions of Block I, Colony Park, Filing No. 2 which are labeled as Access, Drainage and Utility Easements in the Plat shown hereon are dedicated to the City of Grand Junction in behalf of the Public Utility Companies and the Public as perpetual easements for the construction and maintenance of utility, access and drainage facilities, including but not limited to transmission lines, electric lines, gas lines, water lines, sewer lines and telephone lines, together with the right to trim interfering trees and brush and with the perpetual right of ingress and egress for installation of said facilities, and those areas labeled Open Space in the Plat shown hereon are hereby dedicated to the owners of the property within Block I, Colony Park Filing No. 2 for recreational and aesthetic purposes as determined appropriate by said owners. Said easements and rights shall be utilized in a reasonable prudent manner.

IN WITNESS WHEREOF, I hereunto set my hand this _____ day of _____ A.D., 1992.

George D. Young

ACKNOWLEDGEMENT OF OWNERSHIP

State of Colorado)
) ss
County of Mesa)

On this _____ day of _____ A.D. 1992, before me the undersigned officer, personally appeared George D. Young and acknowledged that he executed the foregoing Certificate of Ownership, for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto affix my hand and official seal.
My commission expires _____

Notary Public

Address

SURVEYOR'S CERTIFICATE

I, William E. Bonella, a Professional Land Surveyor, licensed under the laws of the State of Colorado, do hereby certify that Colony Park, Filing No. 2: A Replat of a Portion of Colony Park, Filing No. I, Section 10, T.1 S., R.1 W., Ute Meridian, shown hereon has been prepared under my direct supervision and accurately represents a survey conducted under my direct supervision. This survey complies with applicable requirements of the Zoning and Development Code of the City of Grand Junction and applicable laws and regulations of the State of Colorado to the best of my knowledge and belief.

IN WITNESS WHEREOF, I hereunto affix my hand and official seal this 8 day of April A.D. 1992

William E. Bonella
P.L.S. No. 20

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON A DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.

REVISIONS: REVIEW COMMENTS 4-13-92 F.J.K. W.E.B.
REVISIONS: REVIEW COMMENTS 4-07-92 R.L.C. W.E.B.
REVISIONS: REVIEW COMMENTS 3-25-92 F.J.K. W.E.B.

COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. I, LOCATED IN E 1/2, NW 1/4, NE 1/4 OF SECTION 10, T.1 S., R.1 W., UTE MERIDIAN, MESA COUNTY, COLORADO

BANNER ASSOCIATES, INC.
GRAND JUNCTION, COLORADO

SCALE:	JOB NO:	DATE:	SHEET NO:
N.T.S.	8239-01	3-13-92	1 of 2

COLONY PARK, FILING NO. 2: A REPLATT OF A PORTION OF COLONY PARK, FILING NO. 1, SECTION 10, T.1 S., R.1 W., UTE MERIDIAN

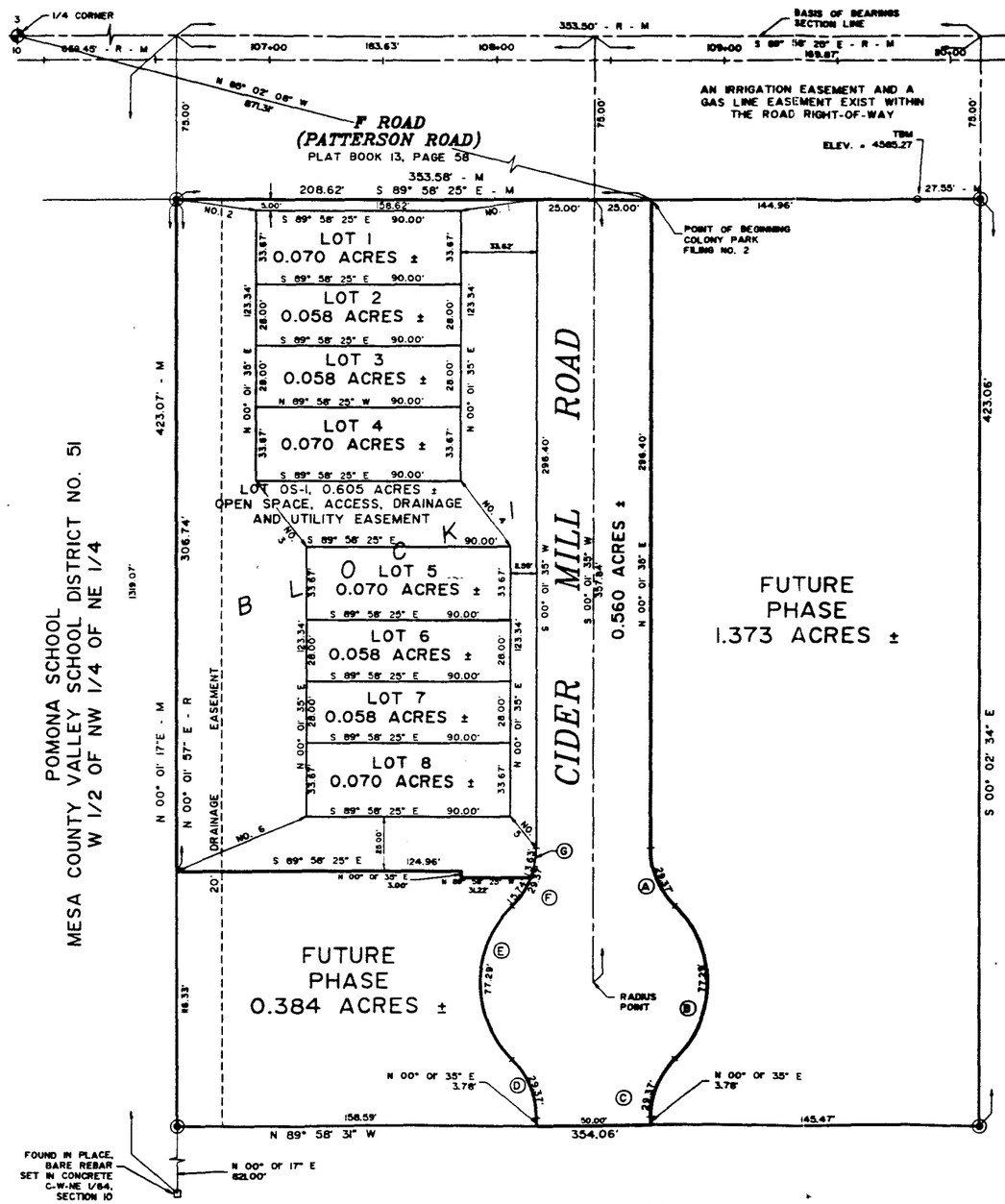


TABLE OF LOT CORNER TIES		
NO. 1	N 81° 34' 06" E	33.99'
NO. 2	N 81° 50' 37" W	35.36'
NO. 3	S 36° 12' 54" E	37.27'
NO. 4	S 36° 12' 54" E	37.27'
NO. 5	S 38° 18' 16" E	18.69'
NO. 6	S 66° 20' 50" W	62.25'

COLONY PARK, FILING NO. 2 TABLE OF AREAS	
LOTS 1 TO 8, BLOCK 1	0.512 ACRES ±
CIDER MILL ROAD	0.560 ACRES ±
LOT OS-1, BLOCK 1	0.607 ACRES ±
TOTAL	1.679 ACRES ±

N

FEET 30 0 30 FEET

GRAPHIC SCALE

SCALE: 1 INCH = 30 FEET

LEGEND

- SET THIS SURVEY, 5/8" REBAR WITH 1 1/2" DIAMETER ALUMINUM CAP MARKED BANNER, INC., 20632
- FOUND, M.C.S.M. MONUMENT, 3" BRASS TABLET IN MONUMENT BOX.
- FOUND IN PLACE, REBAR WITH CAP MARKED LS 24943
- MONUMENT, FOUND IN PLACE, AS DESCRIBED
- INDICATES MONUMENT IS SET IN CONCRETE
- R = DIMENSION OF RECORD
- M = DIMENSION MEASURED THIS SURVEY

CUL-DE-SAC DATA
(ON THE PROPERTY LINE)

(A)	Δ = 44° 16' 56"	R = 38.00'	L = 29.37'	T = 15.46'	C = 28.64'	CB = S 22° 06' 53" E
(B)	Δ = 88° 33' 52"	R = 50.00'	L = 77.29'	T = 48.76'	C = 69.82'	CB = S 00° 01' 35" W
(C)	Δ = 44° 16' 56"	R = 38.00'	L = 29.37'	T = 15.46'	C = 28.64'	CB = S 22° 10' 03" W
(D)	Δ = 44° 16' 56"	R = 38.00'	L = 29.37'	T = 15.46'	C = 28.64'	CB = N 22° 06' 53" W
(E)	Δ = 88° 33' 52"	R = 50.00'	L = 77.29'	T = 48.76'	C = 69.82'	CB = N 00° 01' 35" E
(F)	Δ = 28° 29' 26"	R = 38.00'	L = 18.90'	T = 9.65'	C = 18.70'	CB = N 30° 03' 48" E
(G)	Δ = 15° 47' 30"	R = 38.00'	L = 10.47'	T = 5.27'	C = 10.44'	CB = N 07° 55' 20" E

COLORADO REGISTERED WALLACE G. BANNER JR. 20632 PE AND PLS

April 13, 1992

NOTES:

1. BASIS OF BEARINGS: THE SECTION LINE BETWEEN THE 1/4 CORNER TO SECTIONS 3 AND 10 AND THE SECTION CORNER AT 2-3-10-11 BOTH T.1 S., R.1 W., U.M. WHICH HAS A BEARING (OF RECORD) OF S 89° 58' 25" E. EACH CORNER IS MARKED BY A MESA COUNTY SURVEY MONUMENT.
2. SEA LEVEL DATUM. BASED ON MESA COUNTY BM = 30 ON TOP OF BRASS CAP AT SECTION CORNER TO 2-3-10-11. ELEVATION GIVEN AS 4607.326
3. COLONY PARK, FILING NO. 1 WAS FILED FOR RECORD WITH THE MESA COUNTY CLERK AND RECORDER IN PLAT BOOK 13, PAGE 58.
4. RESEARCH FOR RECORDED RIGHTS-OF-WAY AND EASEMENTS WAS CONDUCTED BY ABSTRACT AND TITLE COMPANY OF MESA COUNTY, INC., GRAND JUNCTION, COLORADO.

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON A DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.

REVISIONS: REVIEW COMMENTS 4-13-92 F.J.K. W.E.B. W.G.B.
REVISIONS: REVIEW COMMENTS 4-07-92 R.L.C. W.E.B. W.G.B.
REVISIONS: REVIEW COMMENTS 3-25-92 F.J.K. W.E.B. W.G.B.

COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. 1, LOCATED IN E 1/2, NW 1/4, NE 1/4 OF SECTION 10, T.1 S., R.1 W., UTE MERIDIAN, MESA COUNTY, COLORADO

BANNER ASSOCIATES, INC.
GRAND JUNCTION, COLORADO

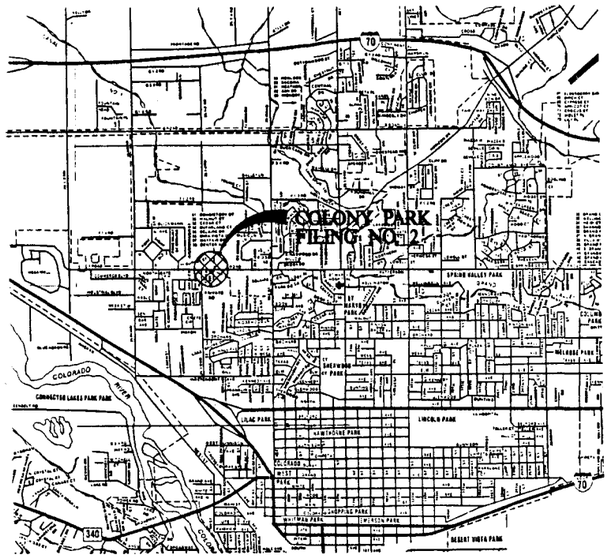
SCALE:	JOB NO:	DATE:	SHEET NO:
1" = 30'	8239-01	3-13-92	2 of 2

#48 91

ALCO BUILDING COMPANY

PLANS FOR
CONSTRUCTION
OF

COLONY PARK FILING NO. 2



VICINITY MAP

MAY 1991

NO.	TITLE
1.	TITLE SHEET
2. & 3.	PLAT
4.	LEGEND AND CONSTRUCTION NOTES
5.	GRADING AND DRAINAGE PLAN
6.	UTILITY COMPOSITE
7.	ROADWAY AND SEWER PLAN AND PROFILE
8.	SEWERLINE STANDARD DETAILS
9.	WATERLINE STANDARD DETAILS
10.	ROADWAY STANDARD DETAILS

BANNER

BANNER ASSOCIATES, INC. • CONSULTING ENGINEERS & ARCHITECTS
2777 CROSSROADS BOULEVARD • GRAND JUNCTION, CO 81506 • (303) 243-2242

JOB NO. 8239-01

COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. I, AND A PORTION OF THAT PARCEL DESCRIBED IN DOCUMENT RECORDED IN BOOK 1814, PAGE 405, AND COLONY PARK, PHASE I, FILING 2, SECTION 10, T.1 S., R.1 W., UTE MERIDIAN

CITY APPROVAL

Colony Park, Phase I, Filing No. 2: A Replat of a Portion of Colony Park, Filing No. I, located in E 1/2 of the NW 1/4 of the NE 1/4 of Section 10, T.1 S., R.1 W., U.M., City of Grand Junction, County of Mesa, State of Colorado is approved and accepted on this _____ day of _____, A.D., 199___.

_____
City Manager

_____
President of the Grand Junction City Council

_____
Chairman of the Grand Junction City Planning Commission

_____
City Planning Director

_____
City Engineer

MESA COUNTY SURVEYOR

Received _____
Reception _____

COUNTY CLERK AND RECORDER'S CERTIFICATE

State of Colorado)
)
County of Mesa)

I hereby certify that Colony Park, Filing No. 2, Phase I: A Replat of a Portion of Colony Park, Filing No. 2, Section 10, T.1 S., R.1 W., Ute Meridian was filed for record in the office of the County Clerk and Recorder of Mesa County at _____ M., on the _____ day of _____, A.D. 199__ in Book No._____, Page No._____, Reception No._____

_____
Mesa County Clerk and Recorder

_____
Deputy

COUNTY PLANNING COMMISSION CERTIFICATE

Approved this _____ day of _____, A.D., 199__, County Planning Commission of the County of Mesa, Colorado.

_____
Chairman

BOARD OF COUNTY COMMISSIONER'S CERTIFICATE

Approved this _____ day of _____, A.D., 199__, Board of County Commissioners of the County of Mesa, Colorado.

_____
Chairman

UTILITIES COORDINATING CERTIFICATE

Approved this _____ day of _____, A.D., 199__.

_____

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON A DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.

CERTIFICATE OF OWNERSHIP AND DEDICATION

KNOW ALL MEN BY THESE PRESENTS that George D. Young being the owner in fee simple of Colony Park, Filing No. 2: A Replat of a Portion of Colony Park, Filing No. I, and a Portion of that Parcel described in document recorded in Book 1814, Page 405, Section 10, Township 1 South, Range 1 West, Ute Meridian, City of Grand Junction, County of Mesa, State of Colorado does hereby Replat, said real property in accordance with the Replat shown hereon:

LEGAL DESCRIPTION OF COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. I

Colony Park Filing No. 2 is located in the E 1/2 of the NW 1/4 of the NE 1/4 of Section 10, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, County of Mesa, State of Colorado more fully described as follows:

Beginning at the northeasterly corner of Colony Park, Filing No. 2 whence the 1/4 corner, a Mesa County Survey Marker, common to Sections 3 and 10, T.1 S., R.1 W., U.M. bears N 88° 44' 22" W, 1010.18 feet with the Section line between Sections 3 and 10 between the 1/4 corner and Section corner at 2-3-10-11 considered to bear N 89° 58' 25" W, and with all bearings Reted herein relative thereto;

1. Thence S 00° 02' 34" E, 423.08 feet;
2. Thence N 89° 58' 31" W, 354.08 feet;
3. Thence N 00° 01' 17" E, 423.07 feet;
4. Thence S 89° 58' 25" E, 353.58 feet to the Point of Beginning.

Colony Park, Filing No. 2 as described above contains 3.436 acres more or less.

LEGAL DESCRIPTION OF PHASE I OF COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. I (PLAT BOOK 13, PAGE 381) AND A PORTION OF THAT PARCEL DESCRIBED IN DOCUMENT RECORDED IN BOOK 1814, PAGE 405

Parcel I is located in Colony Park, Filing No. 2 in the E 1/2 of the NW 1/4 of the NE 1/4 of Section 10, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, County of Mesa, State of Colorado more fully described as follows:

Beginning at the northeasterly corner of Phase I of Colony Park, Filing No. 2 whence the 1/4 corner, a Mesa County Survey Marker, common to Sections 3 and 10, T.1 S., R.1 W., U.M. bears N 88° 02' 08" W, 871.31 feet with the Section line between Sections 3 and 10 between the 1/4 corner and Section corner at 2-3-10-11 considered to bear N 89° 58' 25" W, and with all bearings Reted herein relative thereto:

1. Thence S 00° 01' 35" W, 298.40 feet;
2. Thence southeasterly 29.37 feet along the arc of a circular curve concave to the northeast with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing S 22° 06' 53" E, 28.64 feet;
3. Thence southerly 77.29 feet along the arc of a circular curve concave to the east with a radius of 50.00 feet, a delta of 88° 33' 52" and a chord bearing S 00° 01' 35" W, 69.82 feet;
4. Thence southeasterly 29.37 feet along the arc of a circular curve concave to the southeast with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing S 22° 06' 53" W, 28.64 feet;
5. Thence S 00° 01' 35" W, 3.78 feet;
6. Thence N 89° 58' 31" W, 50.00 feet;
7. Thence N 00° 01' 35" E, 3.78 feet;
8. Thence northwesterly 29.37 feet along the arc of a circular curve concave to the southwest with a radius of 38.00 feet, a delta of 44° 16' 56" and a chord bearing S 22° 06' 53" E, 28.64 feet;
9. Thence northerly 77.29 feet along the arc of a circular curve concave to the east with a radius of 50.00 feet, a delta of 88° 33' 52" and a chord bearing N 00° 01' 35" E, 69.82 feet;
10. Thence northeasterly 16.90 feet along the arc of a circular curve concave to the northwest with a radius of 38.00 feet, a delta of 26° 29' 28" and a chord bearing N 30° 03' 48" E, 16.70 feet;
11. Thence N 89° 58' 25" W, 157.16 feet;
12. Thence N 00° 01' 17" E, 308.74 feet;
13. Thence S 89° 58' 25" E, 208.62 feet to the Point of Beginning.

Phase I of Colony Park, Filing No. 2 as described above contains 1.877 acres more or less.

That said owner does hereby dedicate the streets shown in the plat shown hereon to the City of Grand Junction on behalf of the public forever and does hereby dedicate those portions of Phase I of Colony Park, Filing No. 2 which are labeled as Access, Drainage and Utility Easements in the Plat shown hereon are dedicated to the City of Grand Junction in behalf of the Public Utility Companies and the Public as perpetual easements for the installation and maintenance of utility, access and drainage facilities, including but not limited to transmission lines, electric lines, gas lines, water lines, sewer lines and telephone lines, together with the right to trim interfering trees and brush and with the perpetual right of ingress and egress for installation of such facilities, and those areas labeled Open Space in the Plat shown hereon are hereby dedicated to the owners of the property within Colony Park, Phase I, Filing No. 2 for recreational and aesthetic purposes as determined appropriate by said owners. Said easements and rights shall be utilized in a reasonable prudent manner.

IN WITNESS WHEREOF, I hereunto set my hand this _____ day of _____, A.D., 199__.

_____
George D. Young

ACKNOWLEDGEMENT OF OWNERSHIP

State of Colorado)
)
County of Mesa)

On this _____ day of _____, A.D., 199__, before me the undersigned officer, personally appeared George D. Young and acknowledged that he executed the foregoing Certificate of Ownership, for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto affix my hand and official seal.
My commission expires _____

_____
Notary Public

_____
Address

SURVEYOR'S CERTIFICATE

I, Wallace E. Beedle, a Professional Land Surveyor, licensed under the laws of the State of Colorado, do hereby certify that Colony Park, Filing No. 2: A Replat of a Portion of Colony Park, Filing No. I, and a Portion of that Parcel described in document recorded in Book 1814, Page 405, and Colony Park, Phase I, Filing No. 2, Section 10, T.1 S., R.1 W., Ute Meridian, shown hereon has been prepared under my direct supervision and accurately represents a survey conducted under my direct supervision. This survey complies with applicable Mesa County and State of Colorado regulations to the best of my knowledge and belief.

IN WITNESS WHEREOF, I hereunto affix my hand and official seal this 26 day of June A.D. 1991

Wallace E. Beedle
P.L.S. No. 20632

COLORADO REGISTERED WALLACE E. BEEDLE 20632 P.E. AND P.L.S.

COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. I, AND A PORTION OF THAT PARCEL DESCRIBED IN DOCUMENT RECORDED IN BOOK 1814, PAGE 405, AND COLONY PARK, PHASE I, FILING 2, LOCATED IN E 1/2, NW 1/4, NE 1/4 OF SECTION 10, T.1 S., R.1 W., UTE MERIDIAN, MESA COUNTY, COLORADO

BANNER ASSOCIATES, INC.
GRAND JUNCTION, COLORADO

SCALE:	JOB NO:	DATE:	SHEET NO:
N.T.S.	8239-01	6-26-91	1 of 2

LEGEND

R.O.W. — STREET R.O.W. LINE

℄ — LOT LINE

EASEMENT LINE

1+00 ℄ 1+50 — CENTERLINE & STATION MARKERS

E.G.T.C. — CENTERLINE COMMON TRENCH—ELECTRICAL, TELEPHONE, GAS, & CABLE T.V.

T.V. — CABLE TELEVISION LINE

T — UNDERGROUND TELEPHONE LINE

OHP — EXISTING OVERHEAD UTILITY LINES & POLES

E — CONDUIT LINE, TRANSFORMER W/SERVICE TO LOT, PULL OR SPLICE BOX, 2'0" RISER POLE

STREET LIGHT

G — GAS LINE, 1¼" DIAMETER (UNLESS OTHERWISE NOTED)

8"W — WATERLINE, TEE & THRUST BLOCK, INLINE VALVE, FIRE HYDRANT, REDUCER, WATER METER, BLOW-OFF

STORM SEWER, INLET, MANHOLE, OUTFALL (SMALLER THAN 30")

STORM SEWER (30" & LARGER)

8"S — SANITARY SEWER, CLEAN-OUT, MANHOLE, SERVICE CONNECTION, WYE, SPECIAL PIPE & PLUG

TOP BACK OF CURB / EDGE OF GUTTER — CURB INLET W/DIRECTION OF FLOW

DITCH & DIRECTION OF FLOW

TP — BENCHMARK LOCATION

2 (LOT) ② (BLOCK) — LOT & BLOCK No.

PRESSURE REDUCING VALVE

4 — SHEET REF.

GENERAL CONSTRUCTION NOTES

1. Alignment, centerline curve data, and stationing to be verified from approved subdivision plat before construction.
2. Locations of utilities shown on these plans are approximate only. Contractor is to contact affected utility for specific locations before digging.
3. These plans and the surveys upon which they are based are tied into the system of Monument Lines provided by the City of Grand Junction. The stationing shown on "F" Road is relative to the brass cap at 25 1/2 Road being Station 100+00.
4. Contractor to provide plugs and marker posts at all pipe stubouts noted on Plans, include cost in unit price bid per linear foot of pipe.
5. On existing pipe and on proposed pipe—by—others, Contractor to remove existing plug and make connection. No separate pay
6. All satisfactory excess excavation from utility construction shall be stockpiled as directed by Engineer. All unsatisfactory and waste material including vegetation, roots, concrete, rocks, and other debris, shall be hauled from the project by the Contractor. No separate pay.
7. Contractor to verify location and elevation of existing utilities prior to the construction of proposed utilities.
8. Contractor shall give 48 hour notice to all authorized inspectors, superintendents, or person in charge of public and private utilities affected by his operations prior to commencement of work. Contractor shall assure himself that all construction permits have been obtained prior to commencement of work. All permits obtainable by the Contractor shall be obtained at the Contractor's expense.
9. Contractor shall confine his construction operations to the rights—of—way, easements, and lots, as shown on Plans and Plat. Any damage to private facilities outside these limits shall be repaired by the Contractor at no expense to the Owner.
10. Contractor shall be responsible for the field location and protection of all existing utilities and structures not scheduled for disturbance under this Contract.
11. 2" x 4" marker posts, extending a minimum of 2'—0" above grade, are to be placed at the ends of all service line terminations.
12. The Contractor will coordinate his construction with the relocations or extensions of gas, telephone or power as needed for service to this site.
13. When these plans or technical specifications are found to be in conflict with City of Grand Junction details or specifications, or those of the Ute Water Conservancy District, the more restrictive will apply.

SANITARY SEWER CONSTRUCTION NOTES

1. Service connections to manholes will not be permitted. Services shall be located as shown on the Utility Composite.
2. Manholes are to be constructed in accordance with current City of Grand Junction typical details. Care shall be taken in forming the inverts, cones or slabs are to be rotated such that openings are aligned as nearly over the inlets as possible and there are to be no steps.
3. The Contractor shall set rim elevations outside paved surfaces to 4" above natural ground or finish grade.
4. Water stop gaskets and clamp assemblies are to be furnished and installed at all connections to manholes. No separate pay.
5. Where sanitary sewers cross under waterline with less than 2—feet of vertical separation, and in all cases where the sanitary sewer crosses over the waterline at any depth, provide an 18—foot joint of Special Pipe. SEE DETAIL. Include cost of waterline crossing (Special Pipe with concrete collars, adapters, and approved backfill), in unit price bid per lineal foot of sanitary sewer in appropriate sizes.
6. Sanitary sewer lines are to be tested in accordance with current City of Grand Junction technical specifications. Contractor to furnish all materials and equipment. Include cost in unit price bid for sanitary sewer lines.

STORM SEWER CONSTRUCTION NOTES

1. All storm sewers and leads to be ASTM, C—76, Class III, reinforced concrete pipe unless otherwise indicated. Joints of pipe to be tongue and groove. Bell and spigot pipe will be acceptable if Contractor bears cost of any additional expense for materials or the relocation of other utilities resulting form such substitutions.
2. All storm sewers and leads to be Class 100, DR 25, PVC pipe unless otherwise specified.
3. All storm sewer manholes shall be precast concrete as shown in DETAILS.

PAVING CONSTRUCTION NOTES

1. All road widths, and radii are to face of curb or flowline unless noted otherwise. Any "spot" design elevations are to flowline of curb and gutter unless otherwise noted.
2. T.C. = top of curb elevation
   T.P. = top of pavement elevation
   T.R. = top of manhole rim
   F.L. = flowline
   El. = elevation
3. Contractor to protect existing utilities and appurtenances. Manholes, drainage inlets, utility lines, etc., damaged, covered or filled with dirt or debris by the Contractor shall be cleaned and repaired at no expense to the Owner.
4. Hot—mix asphaltic concrete to be Grading C. A mix design for the proposed pit must be approved by Engineer prior to placement of pavement.
5. Where proposed pavement is to match existing pavement, existing pavement is to be square cut, full base thickness is to be brought to match line and existing surface is to be tack—coated before proposed surface is placed.
6. Handicap ramps are to be constructed where indicated on the plans and in accordance with current City of Grand Junction Standard Details.
7. Curb, gutter and drainage pans to have " expansion joints at each change in horizontal alignment of curb and gutter, but in no case at a greater distance apart than 100 feet. Locate dummy grooved joints between expansion joints at intervals not exceeding 10 feet.
8. 4" mat is to be obtained by 2 applications, a tack coat will be applied between the bottom and finish mat. Tack coat to be emulsified asphalt (CSSh) applied at a rate of 0.10 gallons per square yard. Include cost of tack coat in unit price for Hot Bituminous Pavement.

WATERLINE CONSTRUCTION

1. Waterline materials to be as follows:
   (a) less than 2—inch service lines to be copper (Type K).
   (b) 2—inch service lines to be Class 200 (DR—21) PVC.
   (c) 4—inch and larger to be AWWA Class 150 (DR—18) PVC.
2. Waterline fittings for 4—inch and larger waterlines to be Cast Iron (C—150). Thickness Class 22, with polyethylene wrap.
3. All 2—inch and smaller valves to be rated for 200 psi static pressure.
4. All waterlines to have normal cover of 5—feet, except at drainage swales where a minimum of 4—feet will be allowed.
5. All materials, labor and equipment required for testing and disinfection of waterlines shall be furnished by Contractor. No separate pay.
6. All pipe bends/angle points, both horizontal and vertical, as called for on the plans are to be thrust blocked per City of Grand Junction Technical Specifications.
7. Waterline lowerings, if needed, will be constructed with 45° bends, joint restraints, tie rods and anchors in accordance with City of Grand Junction Standards.

American Consulting Engineers Council Member

BANNER

BANNER ASSOCIATES, INC. ● CONSULTING ENGINEERS & ARCHITECTS
2777 CROSSROADS BOULEVARD ● GRAND JUNCTION, CO 81506 ● (303) 243-2242
605 E. MAIN ● SUITE 6 ● ASPEN, CO 81611 ● (303) 925-5657

DRAWN BY: J.E.L.	REVIEWED ____ DATE: ____ FOR ____
DESIGNED BY:	
CHECKED BY:	REVIEWED ____ DATE: ____ FOR BANNER ASSOCIATES, INC.

REVISION	DATE	DESCRIPTION	BY	CHD

ALCO BUILDING COMPANY — GRAND JUNCTION, COLORADO

LEGEND AND CONSTRUCTION NOTES

SCALE: N.T.S.	JOB NO: 8239-01	DATE: 5-23-91
SHEET NO: 4 of 10		

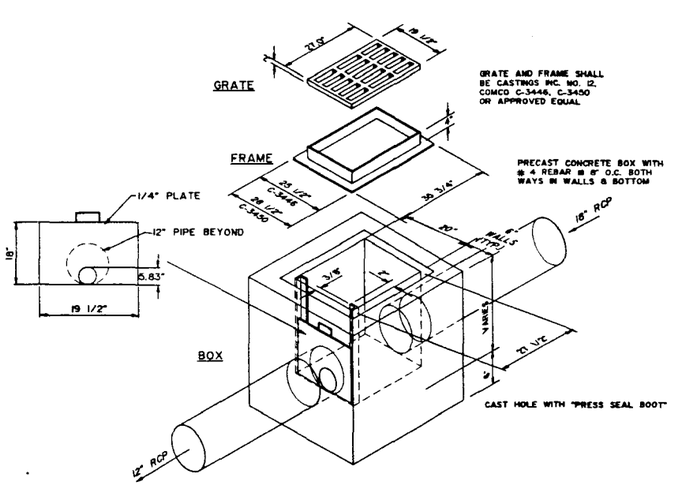
N

FEET 30 0 30 FEET

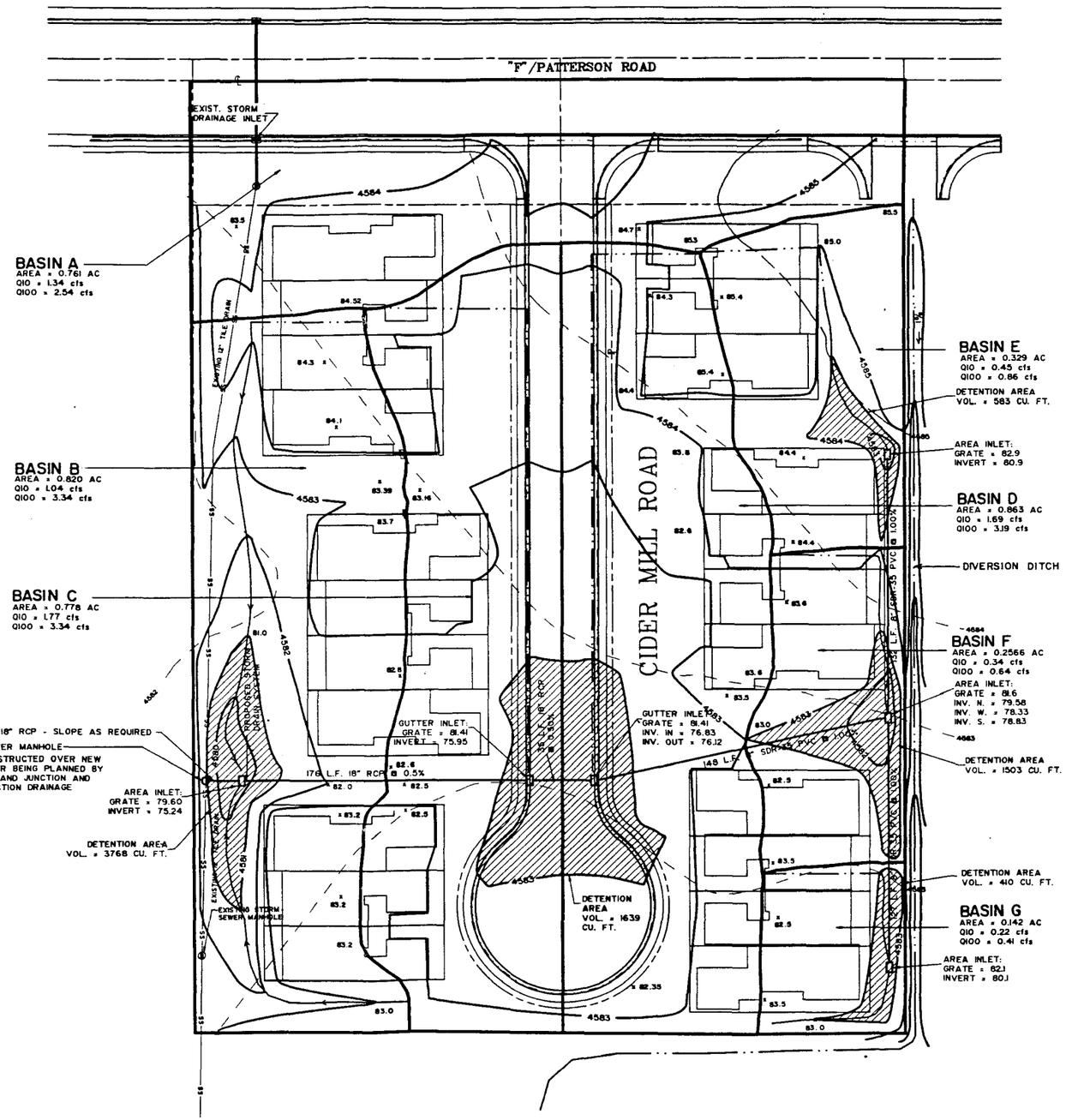
GRAPHIC SCALE
1 inch = 30 ft.

LEGEND

DRAINAGE BASIN BOUNDARY	
PROPOSED CONTOUR	
EXISTING CONTOUR	
EXISTING STORM SEWER	58
PROPOSED SPOT ELEVATION	83.6



STORM DRAIN OUTLET STRUCTURE



DRAWN BY: JEL	REVIEWED		
DESIGNED BY: JEL	DATE:	FOR	
CHECKED BY:	REVIEWED		
	DATE:	FOR BANNER ASSOCIATES, INC.	

BANNER
BANNER ASSOCIATES, INC. ● CONSULTING ENGINEERS & ARCHITECTS
2777 CROSSROADS BOULEVARD ● GRAND JUNCTION, CO 81506 ● (303) 243-2242
605 E. MAIN ● SUITE 6 ● ASPEN, CO 81611 ● (303) 925-5657

REVISION	DATE	DESCRIPTION	BY	CHD

ALCO BUILDING CO. — CITY OF GRAND JUNCTION

GRADING AND DRAINAGE PLAN

SCALE:	JOB NO:	DATE:
1"=30'	8239-01	5/29/91

SHEET NO: 5 of 10

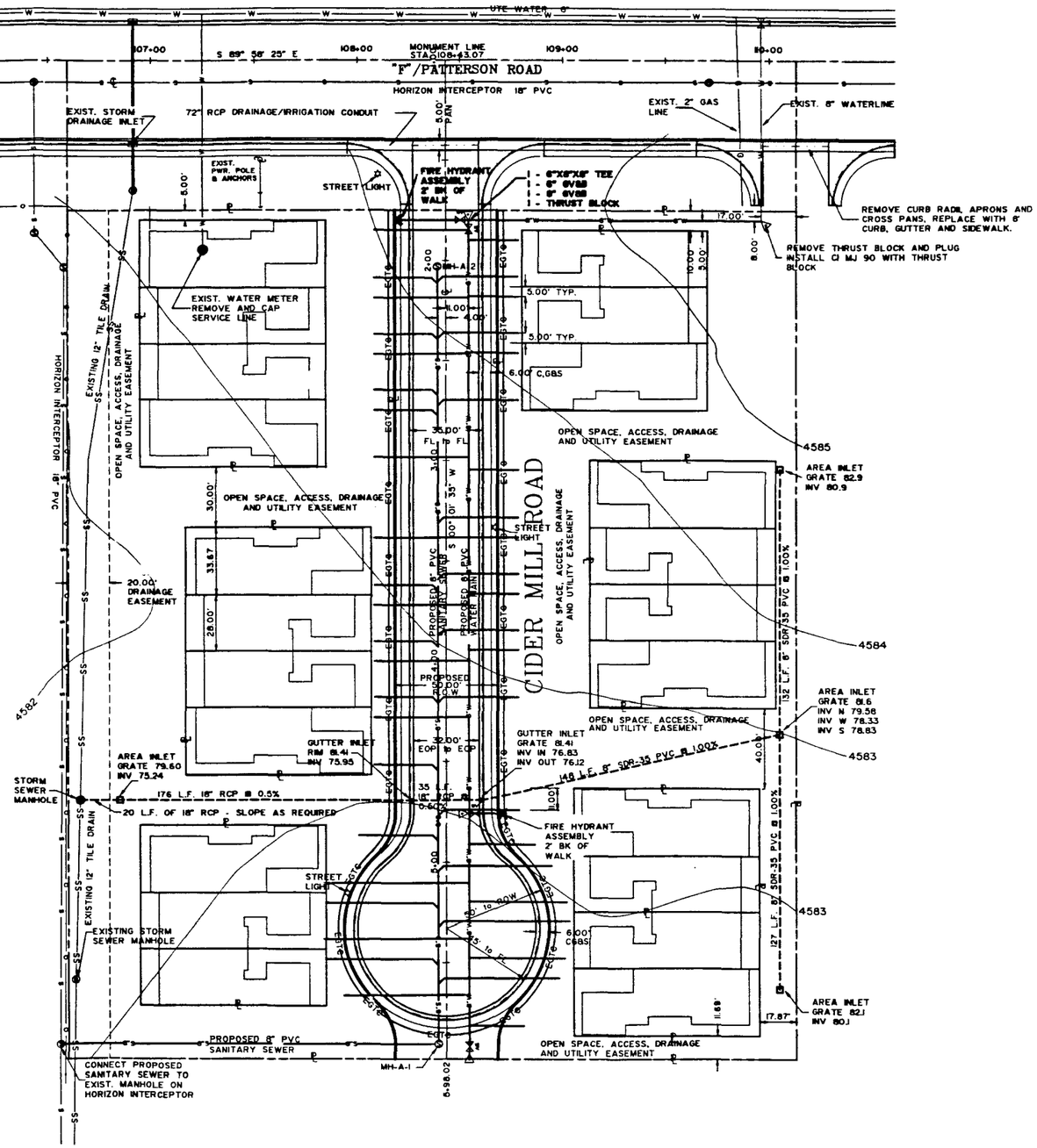
LEGEND

- R.O.W. — STREET R.O.W. LINE
- ℄ — LOT LINE
- EASEMENT LINE
- 1+00 ℄ 1+50 — CENTERLINE & STATION MARKERS
- E.G.T.C. — CENTERLINE COMMON TRENCH-ELECTRICAL, TELEPHONE, GAS, & CABLE T.V.
- T.V. — CABLE TELEVISION LINE
- T — UNDERGROUND TELEPHONE LINE
- OHP — EXISTING OVERHEAD UTILITY LINES & POLES
- E — CONDUIT LINE, TRANSFORMER W/SERVICE TO LOT, PULL OR SPLICE BOX, 2'0" RISER POLE
- STREET LIGHT
- G — GAS LINE, 1½" DIAMETER (UNLESS OTHERWISE NOTED)
- 6"W — WATERLINE, TEE & THRUST BLOCK, INLINE VALVE, FIRE HYDRANT, REDUCER, WATER METER, BLOW-OFF
- STORM SEWER, INLET, MANHOLE, OUTFALL (SMALLER THAN 30")
- STORM SEWER (30" & LARGER)
- 8"S — SANITARY SEWER, CLEAN-OUT, MANHOLE, SERVICE CONNECTION, WYE, SPECIAL PIPE & PLUG
- TOP BANK OF CREEK / EDGE OF WATER — CURB INLET W/DIRECTION OF FLOW
- DITCH & DIRECTION OF FLOW
- TP — BENCHMARK LOCATION
- 2 (LOT) / (BLOCK) — LOT & BLOCK No.
- PRESSURE REDUCING VALVE
- (4) — SHEET REF.

N

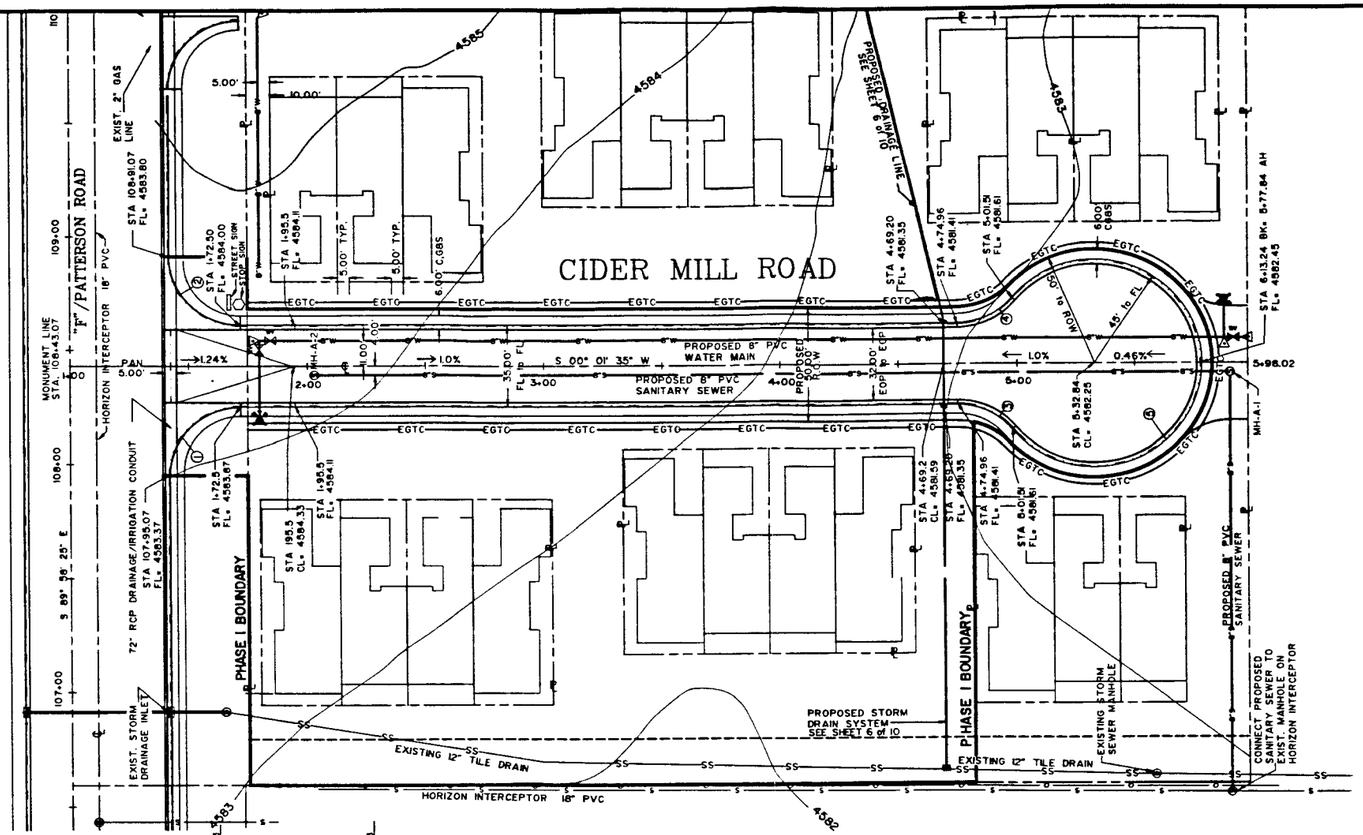
FEET 30 0 30 FEET

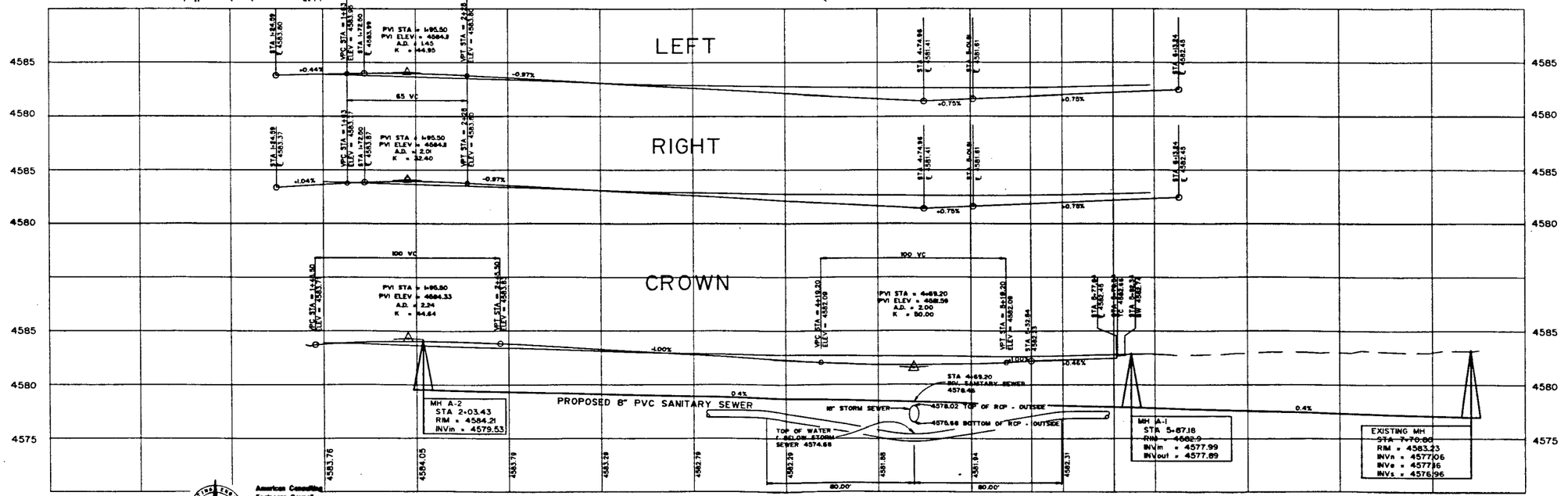
GRAPHIC SCALE
1 inch = 30 ft.

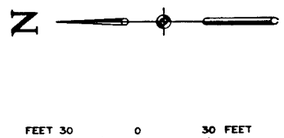


DRAWN BY:	REVIEWED	REVISION	DATE	DESCRIPTION	BY	CHD	ALCO BUILDING CO. — CITY OF GRAND JUNCTION
DESIGNED BY:	DATE: FOR						UTILITY COMPOSITE
CHECKED BY:	REVIEWED						SCALE: 1"=30' — JOB NO: 8239-01 — DATE: 5-28-91
	DATE: FOR BANNER ASSOCIATES, INC.						SHEET NO: 6 OF 10

BANNER
BANNER ASSOCIATES, INC. ● CONSULTING ENGINEERS & ARCHITECTS
2777 CROSSROADS BOULEVARD ● GRAND JUNCTION, CO 81506 ● (303) 243-2242
605 E. MAIN ● SUITE 6 ● ASPEN, CO 81611 ● (303) 925-5857







CURVE TABLE - CURB AND GUTTER FLOWLINE

CURVE NO.	LENGTH, FT	RADIUS, FT	TANGENT	DELTA,DMS
1	47.91	30.5	30.5	90-00-00
2	47.91	30.5	30.5	90-00-00
3	26.55	30.0	14.21	50-42-13
4	26.55	30.0	14.21	50-42-13
5	223.47	45.5	37.24	281-24-25

American Consulting Engineers Council Member

DRAWN BY: DCJ3
CHECKED BY: MDW
REVIEWED ____ DATE: ____ FOR ____
REVIEWED ____ DATE: ____ FOR BANNER ASSOCIATES, INC.

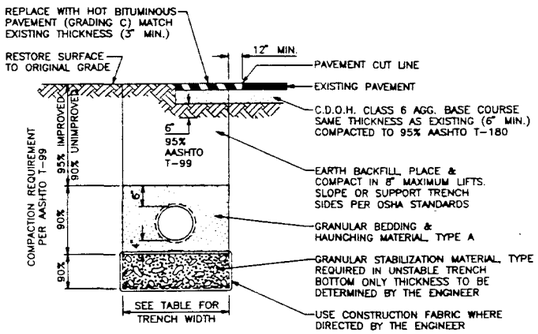
BANNER
BANNER ASSOCIATES, INC. ● CONSULTING ENGINEERS & ARCHITECTS
2777 CROSSROADS BOULEVARD ● GRAND JUNCTION, CO 81506 ● (303) 243-2242
605 E. MAIN ● SUITE 6 ● ASPEN, CO 81611 ● (303) 925-5857

REVISION	DATE	DESCRIPTION	BY	CHD

ALCO BUILDING — GRAND JUNCTION, COLORADO

CIDER MILL ROAD PLAN AND PROFILE

SCALE: Horz: 1"=30' Vert: 1"=5'
DATE: 5-28-91
Project No: 8239-01
SHEET No: 7 of 10

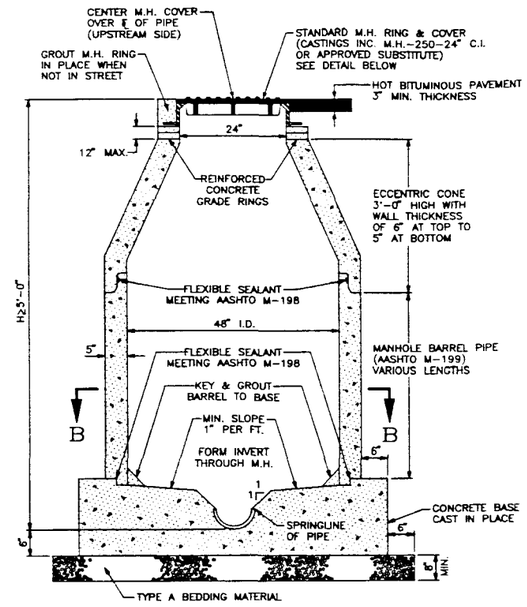


TYPICAL TRENCH DETAIL

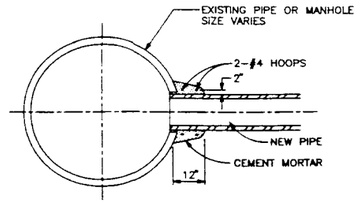
PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES			
SIEVE SIZE	PIPE BEDDING & HAUNCHING MATERIAL (CRUSHED ROCK) TYPE A	GRANULAR STABILIZATION MATERIAL (SCREENED OR CRUSHED ROCK) TYPE B	PIT RUN AGGREGATE (TO BE USED WHERE SPECIFIED OR DIRECTED BY THE ENGINEER
8 INCH	---	---	100
2 INCH	---	100	---
1 INCH	100	---	---
NO. 200	15 MAX	15 MAX	20 MAX

NOMINAL SIZE OF PIPE	MAXIMUM TRENCH WIDTH AT TOP OF PIPE	MINIMUM TRENCH WIDTH AT PIPE SPRINGLINE
LESS THAN 18"	PIPE O.D. + 18"	PIPE O.D. + 12"
18" THRU 36"	PIPE O.D. + 24"	PIPE O.D. + 18"
37" THRU 60"	PIPE O.D. + 30"	PIPE O.D. + 24"

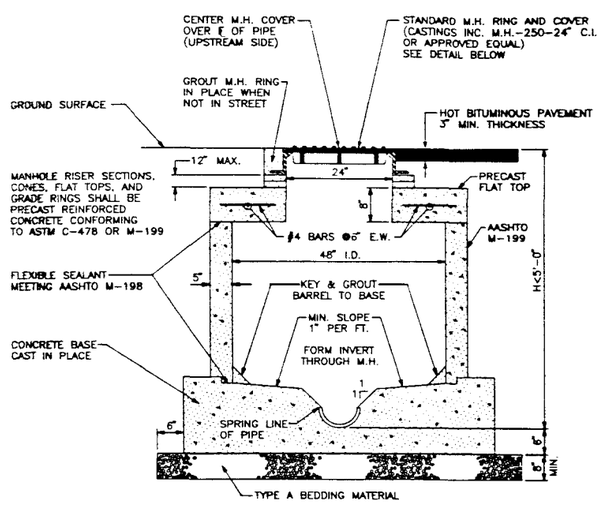
TRENCH WIDTH TABLE



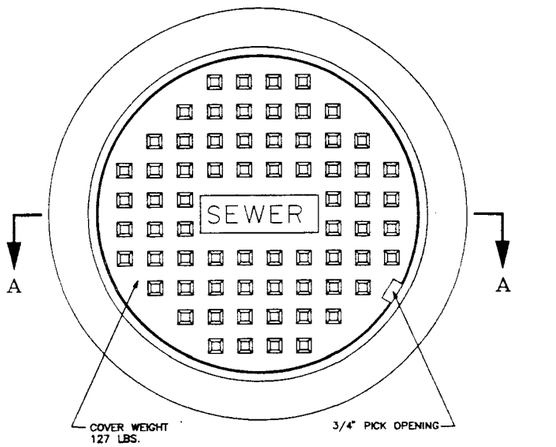
STANDARD MANHOLE



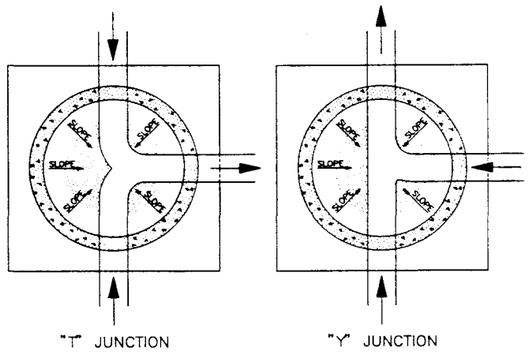
CONNECTION TO EXISTING MANHOLE OR PIPE



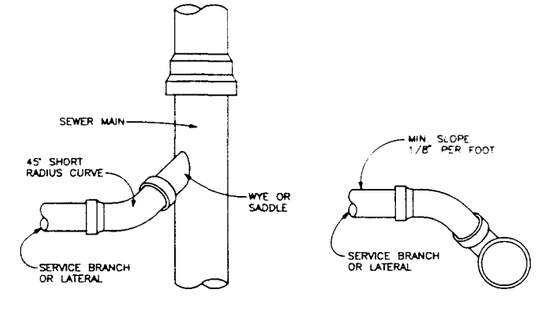
STANDARD SHALLOW MANHOLE



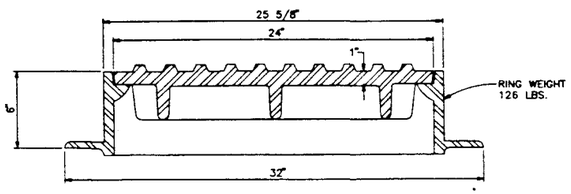
STANDARD CAST IRON MANHOLE RING & COVER



SECTION B-B



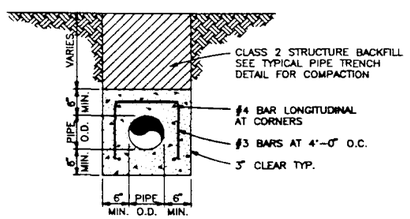
TYPICAL SERVICE "Y" CONNECTION



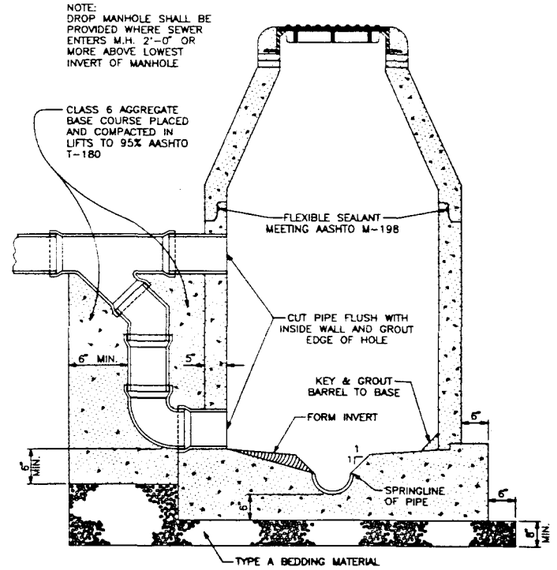
SECTION A-A

GENERAL NOTES:

1. CONCRETE SHALL BE COLORADO DIVISION OF HIGHWAYS CLASS "B" (SECTION 601.02)
2. ALL CEMENT USED IN MORTAR, CONCRETE BASES, GRADE RINGS, RISER SECTIONS, CONES, AND FLAT TOPS, FOR SANITARY SEWER MANHOLES, SHALL BE TYPE ℣ OR MODIFIED TYPE II PORTLAND CEMENT WITH LESS DTHAN 5% TRICALCIUM ALUMINATE.
3. MANHOLE RISER SECTIONS, CONES, FLAT TOPS, AND GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE CONFORMING TO ASTM C-478 OR AASHTO M-199.
4. BACKFILL AROUND MANHOLES AND OTHER STRUCTURES SHALL BE PLACED IN 8" MAX. LIFTS AND COMPACTED TO 95% AASHTO T-99.
5. ALL WORK SHALL BE IN ACCORDANCE WITH APPROVED PLANS AND CITY SPECIFICATION.
6. MANHOLE CONE AND FLAT TOP SECTIONS SHALL BE POSITIONED SUCH THAT THE MANHOLE RING AND COVER IS CENTERED OVER THE MAIN SEWER LINE.



CONCRETE ENCASEMENT DETAIL



DROP MANHOLE

DESCRIPTION	DATE
REVISION	
REVISION	
REVISION	
REVISION	

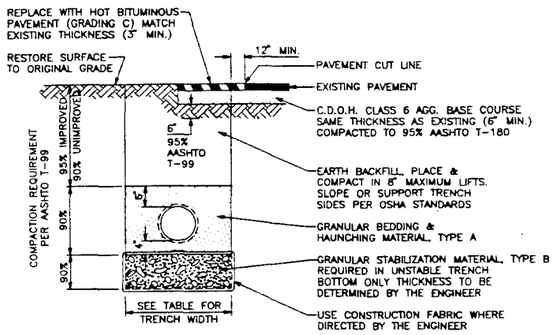
DRAWN BY KADEL DATE 5/91
CHECKED BY T.A.B. DATE 5/91
APPROVED BY B.C. DATE 5/91
FILED BOOK NO. PAGE

SCALE
PLAN: HORIZ. N.T.S. VERT.
PROFILE: HORIZ. VERT.

DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION
CITY OF GRAND JUNCTION, COLORADO

STANDARD SANITARY SEWER DETAILS (SS-1)

SHEET NO. 8 OF 10
FILE NO. SS-1.DWG

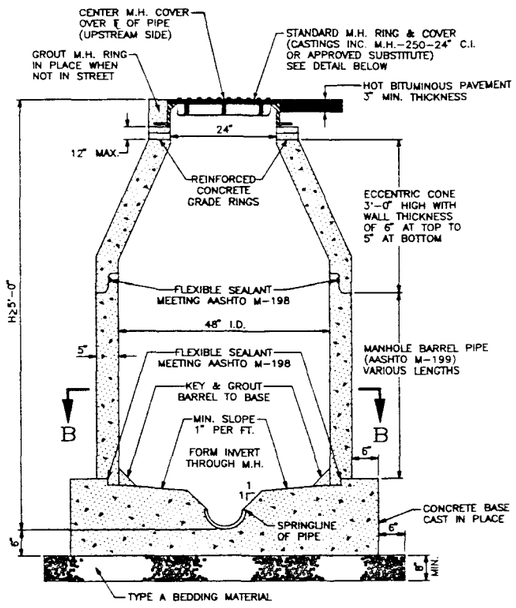


TYPICAL TRENCH DETAIL

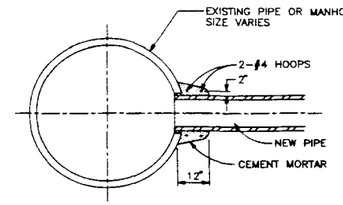
PERCENT BY WEIGHT PASSING SQUARE MESH SIEVES			
SIEVE SIZE	PIPE BEDDING & HAUNCHING MATERIAL (CRUSHED ROCK) TYPE A	GRANULAR STABILIZATION MATERIAL (SCREENED OR CRUSHED ROCK) TYPE B	PIT RUN AGGREGATE (TO BE USED WHERE SPECIFIED OR DIRECTED BY THE ENGINEER
8 INCH	---	---	100
2 INCH	---	100	---
1 INCH	100	---	---
NO. 200	15 MAX	15 MAX	20 MAX

NOMINAL SIZE OF PIPE	MAXIMUM TRENCH WIDTH AT TOP OF PIPE	MINIMUM TRENCH WIDTH AT PIPE SPRINGLINE
LESS THAN 18"	PIPE O.D. + 18"	PIPE O.D. + 12"
18" THRU 36"	PIPE O.D. + 24"	PIPE O.D. + 18"
37" THRU 60"	PIPE O.D. + 30"	PIPE O.D. + 24"

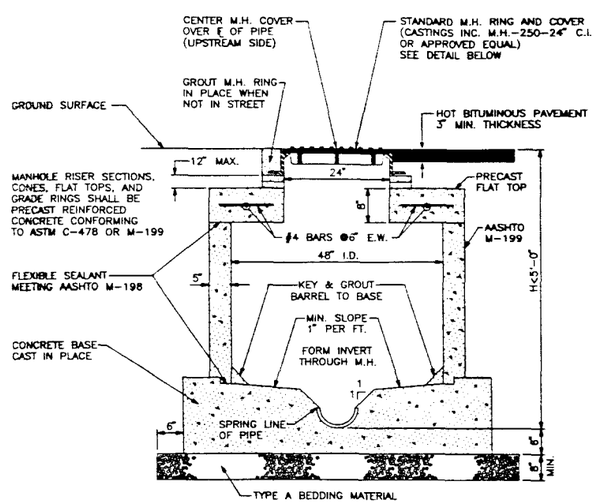
TRENCH WIDTH TABLE



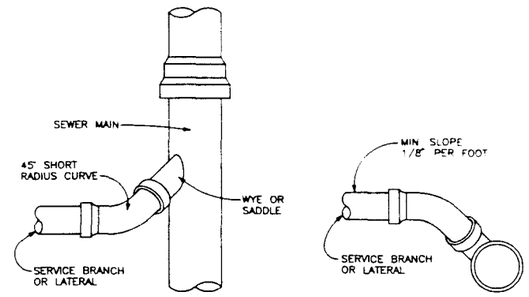
STANDARD MANHOLE



CONNECTION TO EXISTING MANHOLE OR PIPE

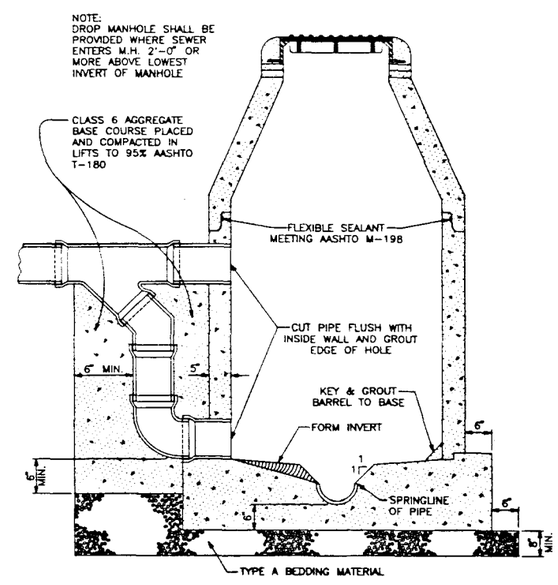


STANDARD SHALLOW MANHOLE

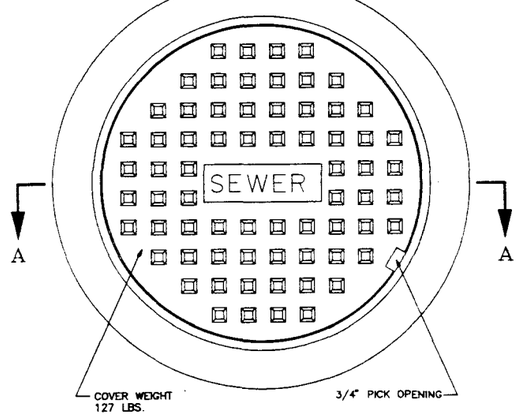


PLAN ELEVATION

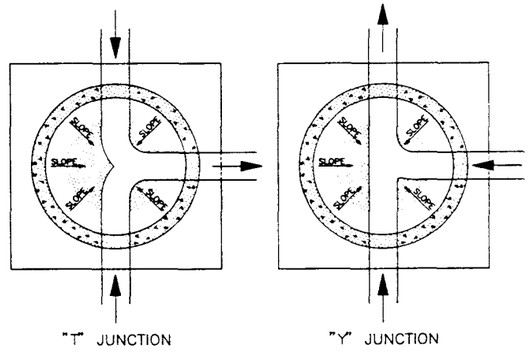
TYPICAL SERVICE "Y" CONNECTION



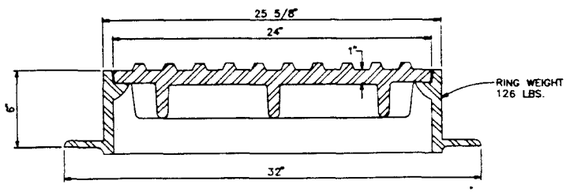
DROP MANHOLE



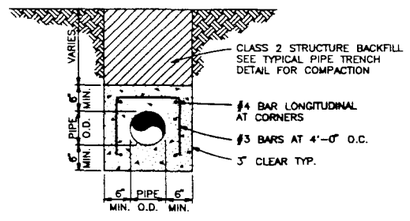
STANDARD CAST IRON MANHOLE RING & COVER



SECTION B-B



SECTION A-A



CONCRETE ENCASEMENT DETAIL

GENERAL NOTES:

1. CONCRETE SHALL BE COLORADO DIVISION OF HIGHWAYS CLASS "B" (SECTION 601.02)
2. ALL CEMENT USED IN MORTAR, CONCRETE BASES, GRADE RINGS, RISER SECTIONS, CONES, AND FLAT TOPS, FOR SANITARY SEWER MANHOLES, SHALL BE TYPE II OR MODIFIED TYPE II PORTLAND CEMENT WITH LESS DTHAN 5% TRICALCIUM ALUMINATE.
3. MANHOLE RISER SECTIONS, CONES, PLAT TOPS, AND GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE CONFORMING TO ASTM C-478 OR AASHTO M-199.
4. BACKFILL AROUND MANHOLES AND OTHER STRUCTURES SHALL BE PLACED IN 8" MAX. LIFTS AND COMPACTED TO 95% AASHTO T-99.
5. ALL WORK SHALL BE IN ACCORDANCE WITH APPROVED PLANS AND CITY SPECIFICATION.
6. MANHOLE CONE AND FLAT TOP SECTIONS SHALL BE POSITIONED SUCH THAT THE MANHOLE RING AND COVER IS CENTERED OVER THE MAIN SEWER LINE.

DESCRIPTION	DATE
REVISION	
REVISION	
REVISION	
REVISION	

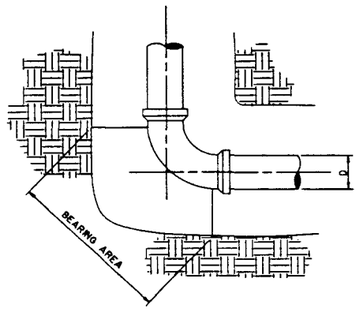
DRAWN BY KADEL DATE 5/91
CHECKED BY T.A.B. DATE 5/91
APPROVED BY B.C. DATE 5/91
FILED BOOK NO. PAGE

SCALE
PLAN HORIZ N.T.S.
PROFILE HORIZ VERT.

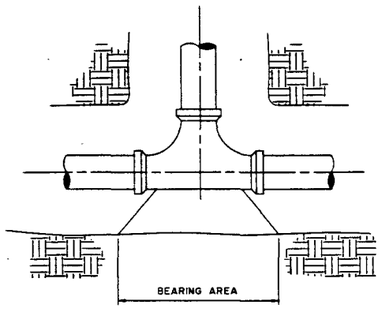
DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION
CITY OF GRAND JUNCTION, COLORADO

STANDARD SANITARY SEWER DETAILS (SS-1)

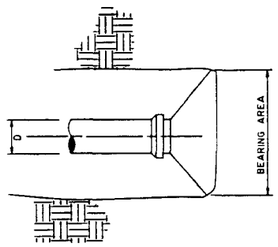
SHEET NO. 8 OF 10
FILE NO. SS-1.DWG



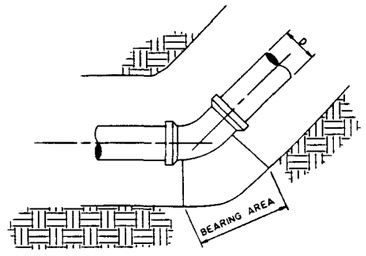
90° BEND



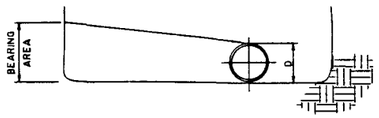
TEE



DEAD END LINE



45° BEND OR LESS



TYPICAL SECTION
THROUGH THRUST BLOCKS

NOTE:

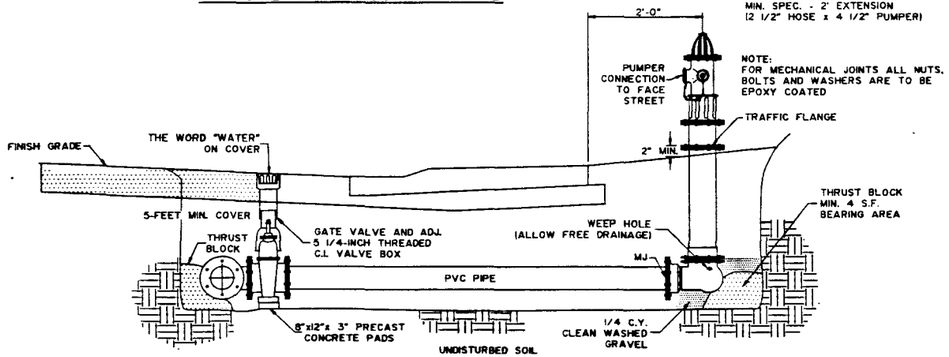
1. ALL THRUST BLOCKS ARE POURED IN PLACE.
2. ALL THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
3. PROVIDE BOND BREAKER BETWEEN THRUST BLOCKS AND AT ALL FITTINGS.
4. SEE TABLE ON DETAILS WS-726 FOR SIZE OF THRUSTBLOCKS.

MINIMUM THRUST BLOCK WT. IN LBS.						BEARING AREA IN SQUARE FEET				
PIPE SIZE	90° BEND	45° BEND	22 1/2° BEND	11 1/4 BEND	TEE OR PLUG	90° BEND	45° BEND	22 1/2° BEND	11 1/4 BEND	TEE OR PLUG
4"	2,700	1,500	800	400	1,900	1.3	1.0	1.0	1.0	1.0
6"	6,000	3,000	1,700	900	4,300	3.0	1.6	1.0	1.0	2.1
8"	10,700	5,800	3,000	1,500	7,600	5.3	2.9	1.5	1.0	3.8
10"	16,700	9,100	4,600	2,300	11,800	8.3	4.5	2.3	1.2	5.9
12"	24,000	13,000	6,700	3,400	17,000	12.0	6.5	3.3	1.7	8.5

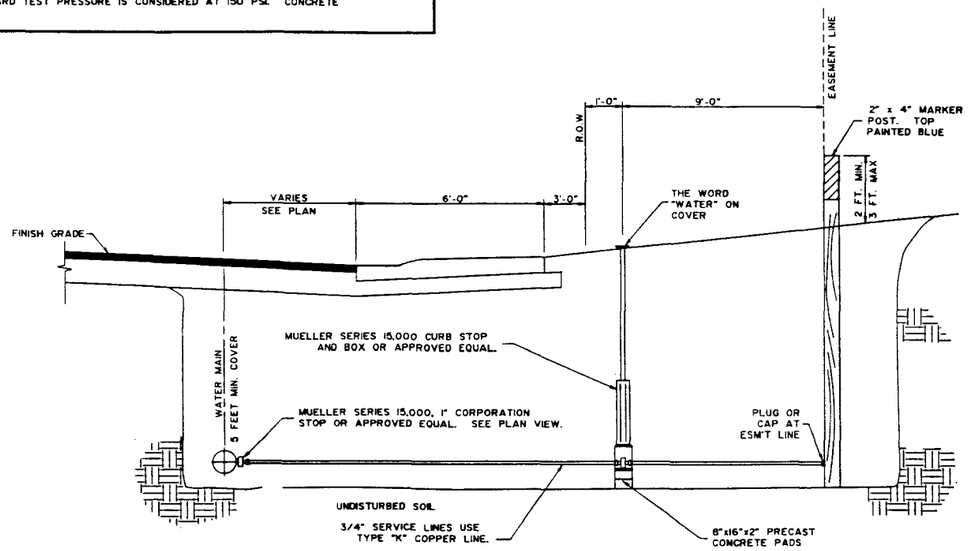
SOIL BEARING PRESSURE IS ASSUMED TO BE 2,000 PSF WHERE SOIL BEARING VARIES FROM ABOVE REQUIRED BLOCK AREA SHALL BE MODIFIED ACCORDINGLY, IN NO CASE SHALL BEARING AREA BE LESS THAN 1.0 FT. STANDARD TEST PRESSURE IS CONSIDERED AT 150 PSI. CONCRETE TO BE CLASS "C".

TIE DOWN BARS FOR 150 P.S.I. PRESSURE					TIE RODS
PIPE SIZE	90° BEND	45° BEND	22 1/2° BEND	11 1/4 BEND	FOR 150 P.S.I. PRESSURE
4"	2 - # 4	2 - # 4	2 - # 4	2 - # 4	4 - # 4
6"	2 - # 4	2 - # 4	2 - # 4	2 - # 4	4 - # 4
8"	2 - # 4	2 - # 4	2 - # 4	2 - # 4	4 - # 4
10"	2 - # 5	2 - # 4	2 - # 4	2 - # 4	4 - # 4
12"	2 - # 5	2 - # 4	2 - # 4	2 - # 4	4 - # 5

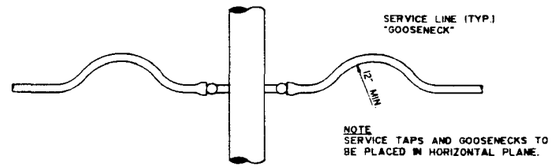
CONCRETE THRUST BLOCKS



FIRE HYDRANT ASSEMBLY



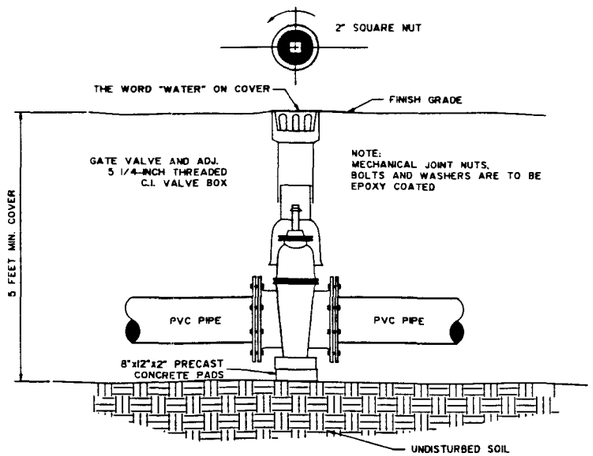
SERVICE TAPS AND "GOOSENECKS" IN SERVICE LINES ARE TO BE IN THE HORIZONTAL PLANE



PLAN VIEW

WATER SERVICE CONNECTION

LESS THAN 2 – INCH



GATE VALVE AND BOX

American Consulting Engineers Council Member

BANNER

BANNER ASSOCIATES, INC. ● CONSULTING ENGINEERS & ARCHITECTS
2777 CROSSROADS BOULEVARD ● GRAND JUNCTION, CO 81506 ● (303) 243-2242
605 E. MAIN ● SUITE 6 ● ASPEN, CO 81611 ● (303) 925-5857

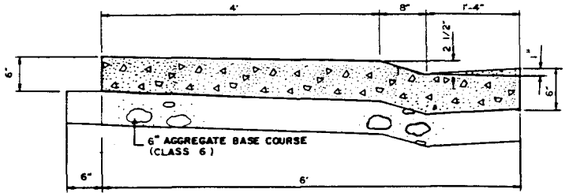
DRAWN BY: F.J.K.
DESIGNED BY: J.E.L.
CHECKED BY: J.E.L.
REVIEWED ____ DATE: ____ FOR ____
REVIEWED ____ DATE: ____ FOR BANNER ASSOCIATES, INC.

REVISION	DATE	DESCRIPTION	BY	CHD

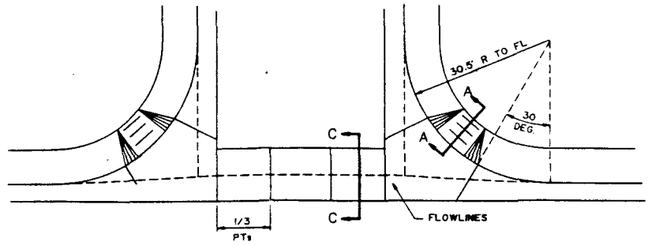
ALCO BUILDING CO. GRAND JUNCTION, COLORADO

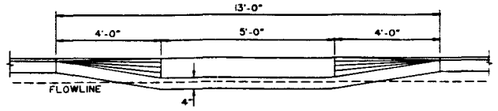
COLONY PARK SUBDIVISION
WATERLINE STANDARD DETAILS

SCALE: N.T.S. | JOB NO: 8239-01 | DATE: 5-24-91
SHEET NO: 9 of 10

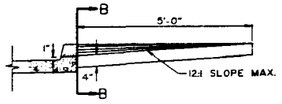


MOUNTABLE CURB AND SIDEWALK DETAIL

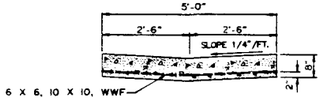




SECTION B – B



SECTION A – A

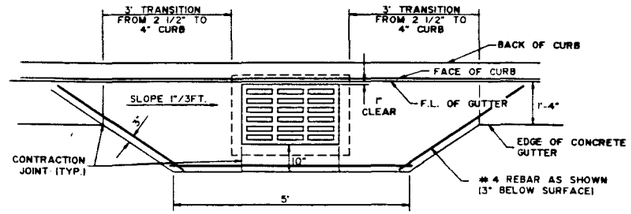


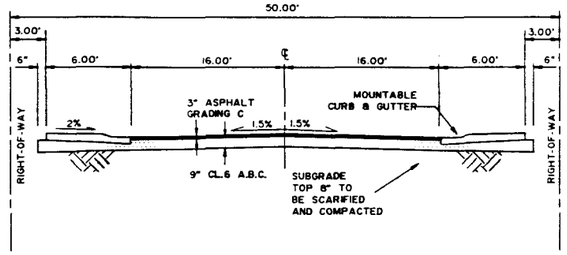
SECTION C – C

RADII, PAN AND PEDESTRIAN RAMP

GRATE AND FRAME (ALL GRATES SHALL BE BICYCLE SAFE)
(ALL INLETS IN SAGS SHALL HAVE CURB OPENINGS)

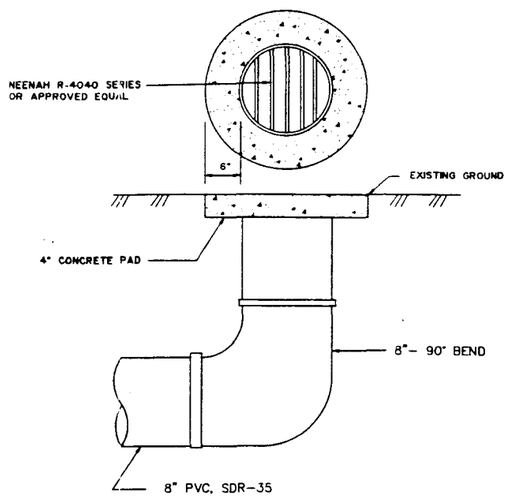
1. ADJACENT TO CURB-CURB OPENING REQUIRED; USE COMCO C-3516 OR NEENAH R-3246 WITH 1" CURB FACE RADIUS.
2. ADJACENT TO CURB-NO CURB OPENING REQUIRED; USE COMCO C-3446, CASTING INC. NO. 12 OR NEENAH R-3246-I.
3. INLET NOT ADJACENT TO CURB; USE COMCO C-3450 OR APPROVED SUBSTITUTE.



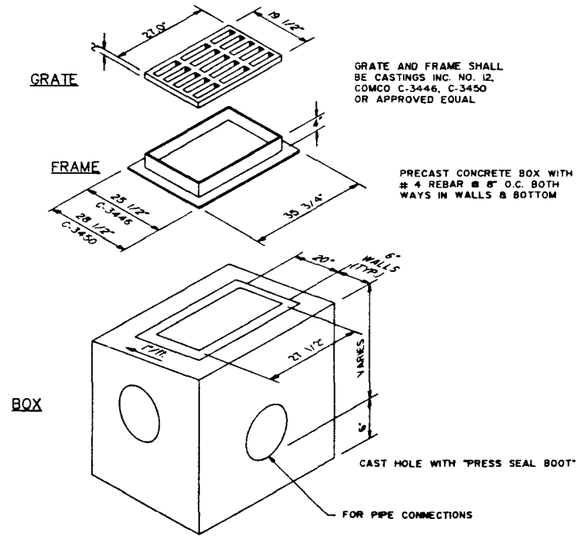


TYPICAL ROADWAY SECTION

N.T.S.



AREA DRAIN



TYPE E GRATE INLET AND BOX

DRAWN BY: F.J.K.	REVIEWED ____ DATE: ____ FOR ____	American Consulting Engineers Council Member	BANNER ASSOCIATES, INC. ● CONSULTING ENGINEERS & ARCHITECTS 2777 CROSSROADS BOULEVARD ● GRAND JUNCTION, CO 81506 ● (303) 243-2242 605 E. MAIN ● SUITE 6 ● ASPEN, CO 81611 ● (303) 925-5857
DESIGNED BY: J.E.L.	REVIEWED ____ DATE: ____ FOR BANNER ASSOCIATES, INC.		
CHECKED BY: J.E.L.			

REVISION	DATE	DESCRIPTION	BY	CHD

ALCO BUILDING CO. GRAND JUNCTION, COLORADO

COLONY PARK SUBDIVISION
ROADWAY STANDARD DETAILS

SCALE:	JOB NO:	DATE:
N.T.S.	8239-01	5-24-91

SHEET NO: 10 of 10

COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. 1, AND A PORTION OF THAT PARCEL DESCRIBED IN DOCUMENT RECORDED IN BOOK 1814, PAGE 405, AND COLONY PARK, PHASE 1, FILING 2, SECTION 10, T.1 S., R.1 W., UTE MERIDIAN

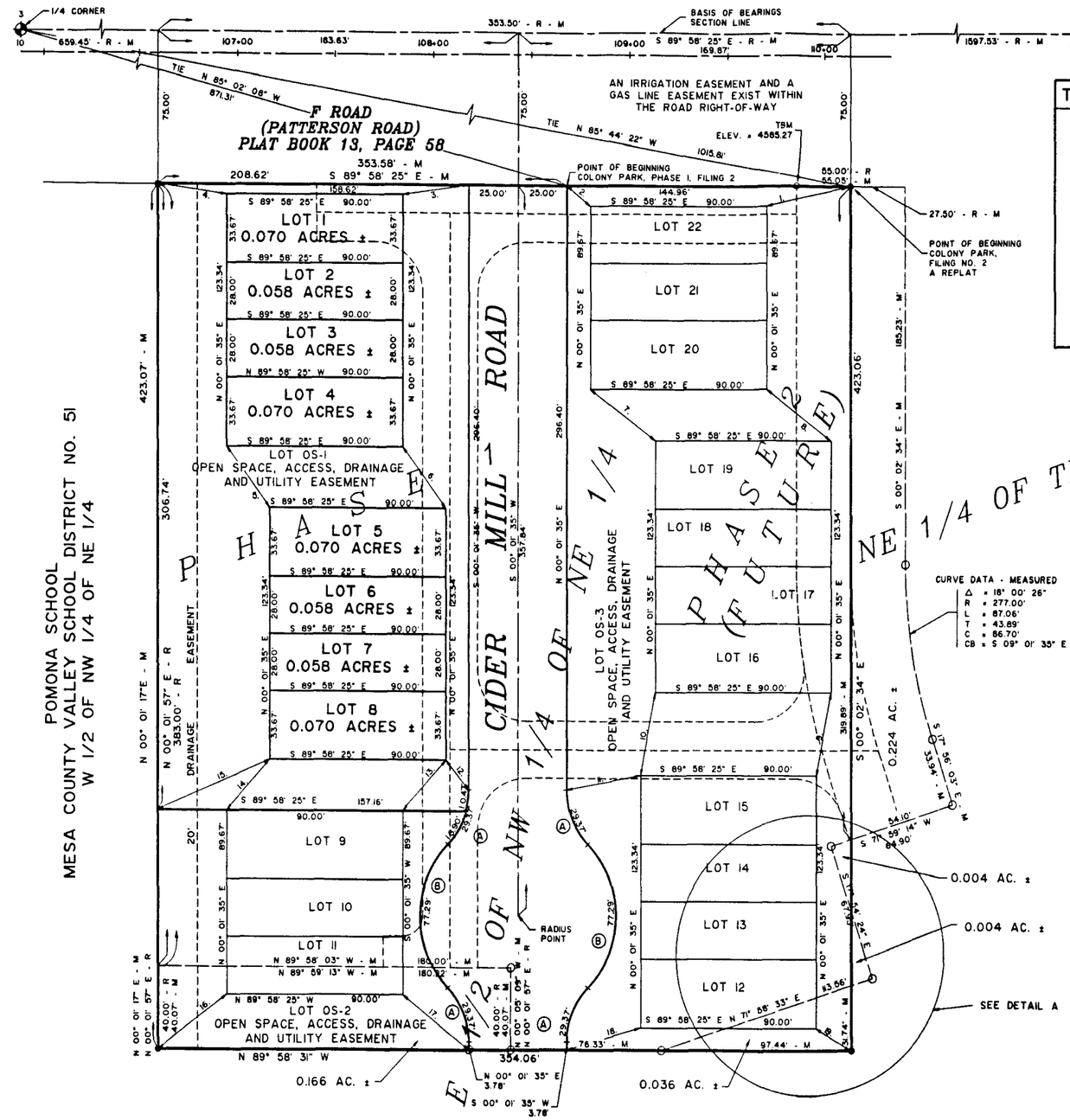


TABLE OF LOT CORNER TIES

1.	N 76° 53' 57" E	44.03'
2.	N 50° 21' 24" W	15.68'
3.	N 81° 34' 06" E	33.99'
4.	N 81° 50' 37" W	35.36'
5.	S 36° 12' 54" E	37.27'
6.	S 36° 12' 54" E	37.27'
7.	S 52° 51' 10" E	41.42'
8.	S 52° 51' 10" E	41.42'
9.	S 10° 25' 45" W	41.60'
10.	S 10° 25' 45" W	41.60'
11.	S 78° 47' 30" W	38.33'
12.	S 38° 18' 16" E	18.69'
13.	S 41° 26' 09" W	33.33'
14.	S 41° 26' 09" W	33.33'
15.	S 66° 20' 50" W	62.25'
16.	S 52° 41' 23" W	43.96'
17.	S 51° 34' 44" E	42.92'
18.	S 74° 00' 31" W	39.12'
19.	S 58° 51' 15" E	20.88'

N

FEET 30 0 30 FEET

GRAPHIC SCALE

SCALE: 1 INCH = 30 FEET

LEGEND

- SET THIS SURVEY, 5/8" REBAR WITH 1 1/2" DIAMETER ALUMINUM CAP MARKED BANNER, INC., 20632
- FOUND M.C.S.M. MONUMENT, 3" BRASS TABLET IN MONUMENT BOX.
- FOUND IN PLACE, REBAR WITH CAP MARKED LS 24943

CURVE DATA - MEASURED
Δ = 18° 00' 26"
R = 277.00'
L = 87.06'
T = 43.89'
C = 86.70'
CB = S 09° 01' 35" E

DETAIL A
SCALE: 1" = 20'

PHASE 1 TABLE OF AREAS

LOTS	0.512 ACRES ±
ACCESS	0.560 ACRES ±
OPEN SPACE	0.605 ACRES ±
TOTAL	1.677 AC. ±

COLONY PARK, FILING NO. 2 TABLE OF AREAS

PHASE 1	1.677 ACRES ±
PHASE 2	1.759 ACRES ±
TOTAL	3.436 AC. ±

CUL-DE-SAC DATA (ON THE PROPERTY LINE)

Ⓐ	Δ = 44° 16' 56"	R = 38.00'	L = 29.37'	C = 28.64'
Ⓑ	Δ = 88° 33' 52"	R = 50.00'	L = 77.29'	C = 69.82'

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON A DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.

NOTES:

1. PHASE NO. 2 IS EXCLUDED FROM THIS PLAT.
2. BASIS OF BEARINGS: THE SECTION LINE BETWEEN THE 1/4 CORNER TO SECTIONS 3 AND 10 AND THE SECTION CORNER AT 2-3-10-11 BOTH T.1 S., R.1 W., U.M. WHICH HAS A BEARING (OF RECORD) OF S 89° 58' 25" E. EACH CORNER IS MARKED BY A MESA COUNTY SURVEY MONUMENT.
3. SEA LEVEL DATUM. BASED ON MESA COUNTY BM #30 ON TOP OF BRASS CAP AT SECTION CORNER TO 2-3-10-11. ELEVATION GIVEN AS 4607.326
4. COLONY PARK, FILING NO. 2 WAS FILED FOR RECORD WITH THE MESA COUNTY CLERK AND RECORDER IN PLAT BOOK 13, PAGE 58.
5. THAT PORTION ADJOINING COLONY PARK, FILING NO. 2 ON THE SOUTH AND EAST WAS FILED FOR RECORD WITH THE MESA COUNTY CLERK AND RECORDER IN BOOK 1814, PAGE 405.

COLORADO REGISTERED WALLACE E. BEEDLE 20632 P.E. AND P.L.S.

June 26, 1991

COLONY PARK, FILING NO. 2: A REPLAT OF A PORTION OF COLONY PARK, FILING NO. 1, AND A PORTION OF THAT PARCEL DESCRIBED IN DOCUMENT RECORDED IN BOOK 1814, PAGE 405, AND COLONY PARK, PHASE 1, FILING 2, LOCATED IN E 1/2, NW 1/4, NE 1/4 OF SECTION 10, T.1 S., R.1 W., UTE MERIDIAN, MESA COUNTY, COLORADO

BANNER ASSOCIATES, INC.
GRAND JUNCTION, COLORADO

SCALE:	JOB NO:	DATE:	SHEET NO:
1" = 30'	8239-01	6-26-91	2 of 2