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File 1979-003
Date 10/5/00

Project Name: French Quarter – Final Plat

Present	Scanned	
		A few items are denoted with an asterisk (*), which means they are to be scanned for permanent record on the ISYS retrieval system. In some instances, not all entries designated to be scanned are present in the file. There are also documents specific to certain files, not found on the standard list. For this reason, a checklist has been included. **Remaining items, (not selected for scanning), will be marked present on the checklist. This index can serve as a quick guide for the contents of each file.** **Files denoted with (**) are to be located using the ISYS Query System. Planning Clearance will need to be typed in full, as well as other entries such as Ordinances, Resolutions, Board of Appeals, and etc.**
X	X	***Summary Sheet – Table of Contents**
		Application form
		Receipts for fees paid for anything
		***Submittal checklist**
		***General project report**
		Reduced copy of final plans or drawings
		Reduction of assessor's map
		Evidence of title, deeds
		***Mailing list**
		Public notice cards
		Record of certified mail
		Legal description
		Appraisal of raw land
		Reduction of any maps – final copy
		***Final reports for drainage and soils (geotechnical reports)**
		Other bound or nonbound reports
		Traffic studies
		Individual review comments from agencies
		***Consolidated review comments list**
		***Petitioner's response to comments**
		***Staff Reports**
		***Planning Commission staff report and exhibits**
		***City Council staff report and exhibits**
		***Summary sheet of final conditions**
		***Letters and correspondence dated after the date of final approval (pertaining to change in conditions or expiration date)**

DOCUMENTS SPECIFIC TO THIS DEVELOPMENT FILE:

X	X	Follow-up Form	X	X	Technical Specifications
X	X	Review Sheets	X	X	Floor Plan
X	X	Action Sheet			
X	X	Review Sheet Summary			
X	X	Letter from Jerry Beberstine, Dept. of Health to Jon Abranhamson re: approval of plans by Water Quality Control – 3/29/79			
X	X	Letter from Duane Jensen to Plateau Eng. Inc. re: plans reviewed-3/25/79			
X	X	Letter from Robbo Ligrani to Planning Commission – 10/24/79			
X	X	Letter from Edith Ligrani to Planning Commission re; request of rezone-10/24/79			
X	X	Receipt and Option Contract			
X		Application fro Approval of Sewage Collection Facilities and Small Lift Stations			
X		Letter form Karl Metzner to Jon Abrahamson re: incomplete submittal – 3/22/79			
X		Final Plat Application			
X		List of Adjacent Property Owners			

Acres .92
Units 17
Density 20.6

ACTION SHEET

File # 3-79
Zone PD-B
Tax Area Code

also see file 53-81

Activity FRENCH QUARTER - PD-B
Phase FINAL DEVELOPMENT PLAN
Date Submitted 1 MARCH 1979
Date Mailed Out 2 MARCH 1979

Date Neighbors Notified N/A
Date CIC/MCC Legal Ad
PC Hearing Date 27 MARCH 1979

Review Agencies

10 day Review Period - Return ~~By~~

Send		Send	
___	COUNTY ROAD DEPARTMENT	✓	FIRE City
___	COUNTY HEALTH DEPARTMENT	___	IRRIGATION
✓	COUNTY SURVEYOR	✓	DRAINAGE G.V.
___	COMTRONICS	___	~~WATER~~ (UTE, CLIFTON)
___	GRAND VALLEY RURAL POWER	___	SEWER
✓	MOUNTAIN BELL	✓	CITY ENGINEER/~~UTILITIES~~ Rish
✓	PUBLIC SERVICE	___	MACK, LOMA, MESA, COLLBRAN
___	SOIL CONSERVATION SERVICE	___	FRUITA, PALISADE
___	SCHOOL DISTRICT 51	✓	City Utilities - Jensen
___	STATE HIGHWAY	✓	P.D. Ed Vanden Took
___	STATE GEOLOGICAL	___	
___	STATE HEALTH - RADIOLOGICAL	___	
___	TRANSAMERICA TITLE	___	

Board	Date	Comments
XX	11/24/80	Petitioner pulled item from the GJPC agenda

Common Location Southwest Corner of 1ST St. & MESA Ave.

Staff Comments

Legal OK

adj OK

Original Documents

___ Imp. Agreement $_____ Appraisal x .05 = $_____ Open Space;
___ Imp. Guarantee Receipt #_____ Check # _____
___ Covenants _____ Open Space Dedication
___ Power of Attorney
___ Dev. Schedule

B. Pease
1606 Spruce Ct.
Cty/ - 81501
3-79

W. Carnett
1616 Spruce Ct.
Cty/ - 81501
3-79

H. Staffens
1626 Spruce Ct.
Cty/ - 81501
3-79

J. Piper
1644 Spruce Ct.
Cty/ - 81501
3-79

D. Fricke
1605 Spruce Ct.
Cty/ - 81501
3-79

B. Welz
1615 Spruce Ct.
Cty/ - 81501
3-79

A. Candelaria
1629 Spruce Ct.
Cty/ - 81501
3-79

E. Owens
643 Spruce Ct.
Cty/ - 81501
3-79

W. Arcieri
1525 N. 1st
Cty/ - 81501
3-79

A. Robbins
1049 21½ Rd.
Cty/ - 81501
3-79

W. Robbins
P.O. Box 1387
Cty/ - 81501
3-79

DETAILED STREET AND STORM DRAINAGE CONSTRUCTION SPECIFICATIONS

CITY OF GRAND JUNCTION, COLORADO
DEPARTMENT OF PUBLIC WORKS AND UTILITIES
ENGINEERING DIVISION
1978

GENERAL: Sections 200 through 700 of the Standard Specifications for Road and Bridge Construction of the State Department of Highways, Division of Highways, State of Colorado, 1976, as re-emphasized, supplemented or amended by these specifications shall govern the work and shall be considered as part of the Contract Documents. In cases of any conflicts of meaning between the above-referenced Standard Specifications and these Specifications, the supplements and amendments listed below shall govern. Unless otherwise designated, when AASHTO, ASTM, or other specifications or methods are cited, the reference shall be to the latest edition as revised or updated and issued prior to the date of advertisement of bids.

REQUIRED QUALITY CONTROL TESTS:

Item	Type of Test	Minimum Test Frequency
Subgrade and Embankment	Moisture-Density Curve	1 per soil type
Compaction	In-Place Density	1/3,400 sq.ft./lift*
Aggregate Base Course or Subbase Course	Gradation	1/1,000 ton or fraction thereof on each class
	Moisture-Density Curve	1/source on each class
	In-Place Density	1/200 ton*
Hot Bituminous Pavement	Asphalt Content	1/500 Tons or 2 Per Project Whichever is the lesser.
	Gradation	Aggregate-Minimum of 2/source
Sidewalks and Curbing (concrete)	Compressive Strength	1 set (4) cylinders per 1,000 sq. yds of sidewalk and/or 2,000 ln.ft. of curbing, minimu 1 set per project
	Slump & Air Content	1/set of cylinders and as often as needed for quality control

*Failing areas are to be retested

SECTION 201 CLEARING AND GRUBBING: This work shall consist of clearing, grubbing, removing and disposing of all vegetation and debris within the limits of the proposed grading areas. This work shall also include the preservation from injury or defacement of all vegetation and objects designated to remain.

Construction Requirements.

All vegetation such as brush, heavy sod, heavy growth of grass, decayed vegetable matter, rubbish and other unsuitable material within the area of excavation or upon which embankment is to be placed shall be stripped or otherwise removed to a depth of three (3) inches. All such materials shall be wasted or spread outside the construction area or disposed of as directed by the Engineer. In no case shall such objectionable material be allowed in or under embankment.

Ordinarily, the clearing of growth shall not extend more than eight (8) feet beyond the toes of fills or the tops of cut slopes as treated nor outside of City right of way. Contractor shall give residents at least 10 days notice to allow them to transplant items from the right of way. Except in areas to be excavated, stump holes and other holes from which obstructions are removed shall be backfilled with suitable material and compacted.

Measurement and Payment.

Clearing and grubbing will not be measured or paid for as separate items but shall be considered as incidental to the grading operations and the cost thereof included in the contract unit price per cubic yard of "Unclassified Excavation". No separate payment will be made for stripping or disposing of such materials, but the yardage removed and disposed of shall be paid for at the contract unit price per cubic yard for "Unclassified Excavation".

SECTION 202 REMOVAL OF STRUCTURES AND OBSTRUCTIONS:

Sawing concrete or wheel-cutting asphalt pavement to a neat line will not be paid for separately. The cost of cutting or sawing shall be included in the price of the items being removed.
The Contractor shall at all times take extreme and proper precautions for the protection of utility lines encountered during construction. The Contractor shall be responsible for the repair of any damaged service or utility lines, and any utility line damaged by construction operations shall be repaired at the Contractor's expense.

All reference to payment for haul of removed materials under this subsection is hereby deleted. Haul for stockpiling or disposing of removed material will not be paid for separately but shall be included in the work.

SECTION 203 EXCAVATION AND EMBANKMENT:

All excavation will be "unclassified" unless otherwise specified.

Unclassified excavation shall consist of the excavation of all materials of whatever character encountered in the work, including surface boulders. Unclassified excavation shall include excavation for ditches or channels and shall also include stripping. Stripping shall consist of removing unsuitable overburden material before removal of other material for use in the roadway.

Construction Requirements.

General. The excavation and embankments for the roadway and ditches shall be finished to reasonably smooth and uniform surfaces. Variation from the subgrade

)lane shall not be more than 1" in soil. Excavation operations shall be conducted ;o that material outside of the limits of slopes will not be disturbed. Prior to)eginning grading operations in any area, all necessary clearing and grubbing in :hat area shall have been performed. The Contractor shall not excavate beyond the limensions and elevations established, and material shall not be removed prior to the staking.

Jnclassified Excavation.

All suitable material from project excavations shall be used to construct project embankments as shown on the Plans or designated by the Engineer. All excess material beyond that needed to construct project embankments shall be placed by the Contractor at other locations to be designated by the Engineer. All material excavated and subsequently placed at those designated locations shall be placed and compacted by the Contractor in accordance with the moisture and density requirements for embankment construction as shown under "Embankment Construction" of these Specifications.

Unsuitable Material.

If excavation to the finished graded section encounters a subgrade or slopes of spongy material, vegetable matter or trash pockets, the Engineer may require the Contractor to remove the unsuitable materials and backfill to the finished graded section with suitable material. Subgrade stabilization material (703.03 Class 3) may be used to backfill the excavations of unsuitable material. The Engineer may designate as unsuitable those soils or materials that are in his judgment detrimental to the finished roadway. All unsuitable material shall be disposed of as directed by the Engineer.

Borrow.

The Contractor shall not bring any material onto the project from a borrow pit without prior written approval of the Engineer.

Embankment Construction.

Maximum dry density of all soil types encountered or to be used will be determined in accordance with AASHTO T-99. The relative compaction of each lift of all embankment construction shall be not less than 90% of the maximum density as determined by AASHTO T-99. The top six (6) inches of subgrade under pavements shall be compacted to not less than 95% of AASHTO T-99 maximum density.

Roadway embankment of earth material shall be placed in horizontal layers each not to exceed 8 inches in thickness and each layer shall be compacted as specified above before the nextlayer is placed. Effective spreading equipment shall be used on each lift to obtain uniform thickness prior to compacting. As the compaction of each layer progresses, continuous leveling and manipulating will be required to assure uniform density. Water shall be added or removed if necessary, in order to obtain the required density. Sprinkling shall be done in such a manner that areas of dry material alternated with areas of saturated material or pools of water will be avoided.

During the construction of the roadway, the roadbed shall be maintained in such condition that it will be well drained at all times.

All embankment construction shall be with moisture and density control for the full depth. The moisture content of the soil at the time of compaction shall be within ± 2% of the optimum moisture content as determined by the City's materials lab.

The natural ground under the full width of embankment section to a minimum depth of six (6) inches and cut sections for the full width of the roadbed to a minimum depth of six (6) inches below subgrade elevation shall be thoroughly scarified. The moisture content shall be increased or reduced, as necessary, to bring it to optimum. This scarified layer then shall be compacted to at least 90 percent of AASHTO T-99 maximum density. If necessary, as determined by the Engineer, subgrade stabilization material (703.03 Class 3) may be used to achieve the specified compaction. The amount of water to be used in embankment construction shall be of sufficient quantity for the soil to be at optimum moisture content, as determined by laboratory and field tests, in order to obtain the required percent of relative compaction as specified above.

Method of Measurement.

All accepted excavation shall be measured in its original position by field survey cross-sectioning, which measurements will include over-breakage or slides, not attributable to carelessness of the Contractor, and authorized excavation of unsuitable material. Volumes will be computed from the cross-section measurements by the average end areas method.

Basis of Payment.

The accepted quantities of excavation will be paid for at the contract unit price per cubic yard of "Unclassified Excavation". This price shall be full compensation for all labor, equipment, tools, and materials and all costs for water, compaction, haul and any other incidental items that may be required in connection with excavation and embankment construction including clearing and grubbing.

Payment will be made under:

Pay Item	Pay Unit
Unclassified Excavation (Haul, water & compaction)	Cubic Yard

SECTION 204 HAUL:

Delete this section. Haul will not be paid for separately but shall be considered as incidental to the grading operations and the cost thereof included in the contract unit price per cubic yard of "Unclassified Excavation".

SECTION 206 EXCAVATION AND BACKFILL FOR STRUCTURES:

Trenching and backfilling for pipes shall be in accordance with the Standard Detail shown on the plans. All materials and compaction requirements shall be as shown on the Standard Detail.

Backfilling around structures other than pipes shall consist of placing suitable materials in layers of not more than six (6) inches and compacting them to not less than 90% of AASHTO T-99 maximum density unless otherwise specified.

Measurement and Payment.

Structure excavation and structure backfill will not be paid for separately but shall be considered as incidental to the various items and the cost thereof included in the contract unit prices of those items of work which require structure excavation and structure backfill.

SECTION 207 TOPSOIL:

Top soil shall meet all material requirements of Subsection 207.02. Haul or water will not be measured and paid for separately but shall be included in the contract unit price per cubic yard of "Topsoil". Topsoil shall not be compacted.

SECTION 209 WATERING:

Wetting or water will not be paid for separately but shall be considered as incidental to the various items and the cost thereof included in the contract unit prices of those items of work which require water.

SECTION 210 RESET STRUCTURES AND FENCES:

Mailboxes shall be reset in accordance with the Standard Pavement Details sheet in the plans. "Reset" shall normally denote horizontal location change. "Adjust" shall normally denote vertical location change or other required adjustments to a structure which is to remain in place.

Prior to resetting or adjusting any utility structure (manhole, valve box, hydrant, meter, etc.) the contractor shall notify the agency which owns and operates the utility, shall insure the compatibility of any material or equipment to be installed and shall coordinate any service disruptions with that agency.

SECTION 212 SEEDING:

All seed mixture formulae and rates of application shall be as approved by the Department of Parks and Recreation of the City of Grand Junction.

SECTION 213 MULCHING:

All mulching materials, method and rates of application shall be as approved by the Department of Parks and Recreation of the City of Grand Junction.

SECTION 214 PLANTING:

All trees, shrubs and other plant material shall be as approved by the Department of Parks and Recreation of the City of Grand Jucntion.

SECTION 304 AGGREGATE BASE COURSE:

With the approval of the Engineer, existing bituminous pavement material designated for removal may be scarified into pieces not to exceed six (6) inches in greatest

dimension and then reused as subbase course or subgrade stabilization material. The broken pavement aggregates shall be thoroughly mixed and stockpiled in designated locations until it is placed on the roadbed. The compaction requirements for the reused pavement aggregates are the same as those designated on the plans for layers in which it is placed.

The following specified aggregates shall be used;

Aggregate Base Course	703.03 Class 6
Aggregate Subbase Course	703.03 Class 2
Subgrade Stabilization Material	703.03 Class 3*

*Class 3 aggregate shall not exceed 6 inches in greatest dimension.

The source of aggregates is not designated. Approval of the aggregates source will be contingent upon material meeting the specified requirements of Subsection 703.03 and having a resistance value of not less than 78 when tested by the Hveem Stabilometer method.

The top six (6) inches of subgrade soil under all paved areas shall be compacted to a density of not less than 95% of the maximum density determined in accordance with AASHTO T-99. All soft, yielding subsoil and other unsuitable material shall be removed as directed by the Engineer and replaced with Subgrade Stabilization Material.

Maximum dry density of the base and subbase courses will be determined in accordance with AASHTO T-180 Method D. The relative compaction required will be not less than 95% for Aggregate Base Course (Class 6) and 90% for Aggregate Subbase Course (Class 2).

Haul or water will not be measured and paid for separately but shall be included in the contract unit prices per ton of the aggregate base course items.

Where existing bituminous pavement material is used for subbase or subgrade stabilization, it will be paid for at the contract unit price per ton of "Aggregate Subbase Course" or Subgrade Stabilization Material".

Water used in the mixing plant to bring mixture to optimum moisture will be included in the weight for payment. The weight of any water in excess of optimum moisture content will be deducted from the scale weight of the mixture.

Payment will be made only for the actual quantities constructed in accordance with the plan dimensions. All excess material placed on the project will be at the Contractor's expense.

Payment will be made under:

Pay Item	Pay Unit
Aggregate Base Course (Class 6)(haul & water)	Ton
Aggregate Subbase Course (Class 2)(haul & water)	Ton
Subgrade Stabilization Material (Class 3)(haul & water)	Ton

SECTION 401 PLANT MIX PAVEMENTS - GENERAL:

Description.

These specifications include general requirements that are applicable to all bituminous pavements of the plant mix type irrespective of gradation of aggregate, kind and amount of bituminous material, or pavement use. Deviations from these general requirements will be indicated in the specific requirements for each type.

This work shall consist of one or more courses of bituminous mixture constructed on the prepared foundation in accordance with these Specifications and the specific requirements of the type under contract, and in conformity with the lines, grades, thicknesses, and typical cross sections shown on the Plans or established.

Composition of Mixtures.

The bituminous plant mix shall be composed of a mixture of aggregate, filler, and bituminous material. The several aggregate fractions shall be sized, uniformly graded and combined in such proportions that the resulting mixture meets the grading requirements of the job-mix formula.

The job-mix formula for each mixture shall be in effect unless modified in writing by the Engineer.

Dryer-drum mixtures shall be between 220°F. and 280° F. at the dryer discharge.

All mixtures furnished for the project shall conform to the job-mix formula within the following ranges of tolerances:

Passing No. 8 and Larger Sieves*	± 8 percent
Passing Sieves Smaller than No. 8 to larger than No. 200	± 6 percent
Passing No. 200 Sieve	± 3 percent
Bitumen	± 0.5 percent
Temperature of Mixture when Emptied from Pugmill Mixers	± 20° F.

*Exclusive of the maximum size designated in the job-mix formulas.

The bituminous mix, when tested, using the immersion-compression test procedure, shall yield a wet-dry stability ratio of not less than 0.75.

The Contractor will be permitted to use an additive in order to meet the requirement for index of retained strength. The acceptable additives and minimum amounts are as follows:

(a) Hydrated lime - 0.5% on a dry aggregate, weight basis, or

(b) Portland Cement Type 1 - 1.0% on a dry aggregate weight basis, or

(c) Standard heat-stable, refinery grade, anti-stripping additive - 0.5% on an asphalt cement, weight basis.

After the project is under contract, requests made in writing by the Contractor for changes in the job-mix formula will be considered.

Asphalt Cements.

Asphalt cements shall conform to the requirements of AASHTO M-226.

In addition, the spot test shall be negative for all grades when performed with a naptha-xylene solvent containing not more than 10 percent xylene by volume.

Liquid Asphaltic Materials.

Liquid asphaltic materials shall conform to the requirements of AASHTO M-81, M-82, and M-141 for the designated types and grades. In addition, the spot test shall be negative for all types and grades when performed with a naptha-xylene solvent containing not more than 10 percent xylene by volume.

Emulsified Asphalts.

Emulsified asphalts shall conform to AASHTO M-140 and M-208 for the designated types and grades.

Filler

Filler shall conform to the requirements of AASHTO M-17.

Hydrated Lime.

Hydrated lime shall conform to the requirements of ASTM C-207, Type N. In addition, the residue retained on a 200-mesh sieve shall not exceed 10% when determined in accordance with Standard Methods of Physical Testing, of Quicklime and Hydrated Lime, ASTM C-110. (Drying of the residues in an atmosphere free carbon dioxide will not be required.)

Construction Requirements.

Weather Limitations.

Bituminous plant mix shall be placed only on properly constructed and accepted layers that are free from water, snow, frost, or ice. The bituminous mixtures shall be placed within the air temperature limitations of the following table and only when weather conditions otherwise permit the pavement to be properly placed and finished. The judgement of the Engineer shall govern operations during marginal weather conditions.

PLACEMENT TEMPERATURE LIMITATIONS

Top Layer of the Completed Pavement			Layers Below the Top Layer of Completed Pavement		
Compacted Thickness	Min. Placement Air Temp.		Compacted Thickness	Min. Placement Air Temp.	
	Mix Temp. > 234°	Mix Temp. * 200-234°		Mix Temp. > 234°	Mix Temp. * 200°-234°
<1"	60° F.	70° F.	< 2"	40°F.	50° F.
1" -2-1/2"	50° F.	55° F.	2"-3"	30° F.	40° F.
> 2-1/2"	40° F.	45° F.	3-1/4"-4"	25° F.	30° F.
			> 4"	20° F.	20° F.

*Applies only to materials produced from dryer drum mixing plants.

Bituminous Mixing Plant.

The storage yard shall be maintained neat and orderly and the aggregates shall be readily accessible for sampling. Accommodations for storing any required filler or binder shall be provided.

The Contractor will be permitted to use the type of bituminous mixing plant he considers best suited on this project, provided the requirement of this Specification are met.

Requirements for all plants.

Mixing plants shall be of sufficient capacity and coordinated to adequately handle the proposed bituminous construction.

Storage Time.

Hot mixtures shall not be stored longer than the times listed in the following table:

	Maximum Storage Time
Untreated asphalt cement, air in bin	9 hrs.
Treated* asphalt cement, air in bin; or untreated asphalt cement inert gas in bin	24 hrs.
Treated* asphalt cement inert gas in bin	72 hrs.

* Treated with liquid silicone (Dow Corning Fluid DC-200 or approved equal) at the rate of approximately 1 oz. per 5000 gallons of asphalt cement.

Bituminous Pavers.

Bituminous pavers shall be self-contained, power-propelled units, provided with an activated screed or strike-off assembly, heated if necessary, and capable of

spreading and finishing courses of bituminous plant mix material in widths applicable to the specified typical section and thicknesses shown on the Plans.

The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed.

The paving machine shall be equipped with an automatic control system which will control the elevation of the screed and which is automatically actuated by a system of sensor-operated devices which sense and follow reference lines or surfaces on one or both sides of the machine as required.

The screed shall be maintained at the proper elevation at each end by controlling the elevation of one end and automatically controlling the transverse slope or by controlling the elevation of each end independently, as directed.

The screed or strike-off assembly shall effectively produce a finished surface of the required evenness and texture without tearing, shoving or gouging the mixture.

When laying mixtures, the paver shall be capable of being operated at forward speeds consistent with satisfactory laying of the mixture.

Rollers.

Rollers shall be of the steel wheel, vibratory, penumatic tire type, or combination and shall be in good condition, capable of reversing without backlash.

Mixing.

The aggregates shall be combined in the mixer in the amount of each fraction of aggregates required to meet the job-mix formula. The bituminous material shall be measured or gauged and introduced into the mixer in the amount specified by the job-mix formula.

After the required amounts of aggregate and bituminous material have been introduced into the mixer the materials shall be mixed until a complete and uniform coating of the particles is secured.

The bituminous material and aggregate for pugmill mixtures shall be introduced into the mixer within 35^{0} F. of each other.

Pugmill mixtures shall not be delivered for use on the road at less than 235^{0} F. Should the temperature be too high for proper compaction, the Contractor will be required to wait until the mixture has cooled to a reasonable rolling temperature.

Dryer-drum mixtures at the dryer discharge shall be from 220^{0} F. to 280^{0} F. The Engineer may require variation in the discharge temperature as necessary in order to obtain proper mixing and compaction. The mixture shall not be delivered for use on the road at less than 200^{0} F.

Spreading and Finishing.

The mixture shall be laid upon an approved surface, spread and struck off to the

Pavement Samples.

The Engineer may take samples of the compacted pavement at random locations on the project for testing. Where samples have been taken, new material shall be placed and compacted to conform with the surrounding area.

Surface Tolerances.

The finished surface shall not vary above or below the lines, grades and typical section shown on the Plans or established by more than 0.03 ft. All humps or depressions exceeding the specified tolerance shall be corrected as directed.

SECTION 403 HOT BITUMINOUS PAVEMENT:

Hot bituminous pavement shall be Grading D. The job mix formula shall be as follows:

Passing 1/2" sieve	100%
Passing 3/8" sieve	89%
Passing No. 4 sieve	55%
Passing No. 8 sieve	45%
Passing No. 30 sieve	30%
Passing No. 80 sieve	15%
Passing No. 200 sieve	8%
Asphalt cement (Viscosity Grade AC-10) by weight of mix	5.7%
Temperature of mixture when emptied from the pugmill:	275° F.

Marshall Property Requirements

Stability, lbs.	500 Min
Flow, 0.01 inch	8-18
Voids, total mix %	3-11
Aggregate voids filled %	65-75
Compaction, blows ea. end	50

Immersion-Compression

Voids in total mix %	6.0
Compressive strength psi	250 min.
Retained strength %	75 min.

Aggregates for hot bituminous pavement shall be of uniform quality, composed of clean, hard, durable particles of crushed stone, crushed gravel, nautral gravel, or crushed slag. The aggregate shall have a percentage of wear of not more than 45 when tested in accordance with AASHTO T-96. The material shall not contain clay balls, vegetable matter, and other deleterious substances. Excess of fine material shall be wasted before crushing.

The aggregates for the mixture shall be graded and combined in such proportions that the resulting composite blend meets the requirements of the job-mix formula for the project.

Should a change in source of materials be made, a new job-mix formula shall be established before the new material is used. This new job-mix formula shall be in effect until notified by the Engineer.

The grade of the bituminous material may be changed one step by the Engineer at no change in unit price. Bituminous material will be conditionally accepted at the source.

The plant mixed material may be accepted at the discharge point of the plant or it may be accepted at or behind the lay-down machine.

Payment will be made only for the actual quantities constructed in accordance with the plan dimensions. All excess material placed on the project will be at the Contractor's expense.

Bituminous material or haul will not be measured and paid for separately but shall be included in the contract unit price per ton of "Hot Bituminous Pavement".

Payment will be made under:

Pay Item	Pay Unit
Hot Bituminous Pavement (Grading D)(Haul & Asphalt)	Ton

SECTION 407 PRIME COAT, TACK COAT AND REJUVENATING AGENT:

Prime coat shall be applied uniformly at a rate of 0.30 gallons per square yard to the surface of aggregate base course prior to placement of hot bituminous pavement. Bituminous material for prime coat shall be liquid asphaltic material (MC-70).

Tack coat shall be applied uniformly at a rate of 0.10 gallons per square yard between layers of hot bituminous pavement. Bituminous material for tack coat shall be emulsified asphalt (CSS-1h) and shall consist of one (1) gallon of water for each one (1) gallon of emulsion.

Measurement and Payment

Prime coat, tack coat and rejuvenating agent will be measured and paid for by the gallons of bituminous materials. The contract unit price will be full compensation for all materials, labor, equipment, tools, and incidentals. The quantity of emulsified asphalt to be paid for shall be the number of gallons of asphalt emulsion as measured before the addition of the one (1) gallon of water for each gallon of emulsion. The cost of the water is considered incidental to the item.

Payment will be made under:

Pay Item	Pay Unit
Prime Coat (MC-70)	Gallon
Tack Coat (CSS-1h)	Gallon

SECTION 601 STRUCTURAL CONCRETE MATERIALS:
Unless otherwise specified in the plans or special conditons, all Cement shall be AASHTO M 85 Type II Portland Cement and all concrete shall be Colorado Division of Highways Class "B". (See subsection 601.02)

SECTION 604 SEWERS, MANHOLES AND INLETS:

Pipe for storm sewers, culverts, irrigation systems, or siphons will be of the size, type and class or gage specified on the plans or in the project Special Conditions. Pipe shall be installed to the lines and grades shown on the plans and in accordance with the Standard Detail for pipe trenching and backfilling as shown on the plans.

The Contractor shall furnish a certification, obtained from the manufacturer, that all applicable tests required by any standards listed herein have been met.

Cement mortar to be used for grouting pipes, gates, frames, rings, etc., at drainage structures shall be mixed at a ratio of not more than 3 parts of sand to one part of Type II Portland Cement. Sand used in cement mortar shall meet the requirements of AASHTO Designation M 45.

Pipe shall be coated galvanized corrugated steel, corrugated aluminum, nonreinforced concrete pipe, or reinforced concrete pipe unless otherwise specified on the plans or in the project Special Conditions.

Corrugated Steel pipe and coupling bands shall conform to the applicable requirements of AASHTO Designation M-36 and shall be fully coated inside and out with bituminous coating, polymeric coating, or aluminum coating. No other coating material may be used without written approval by the City Engineer.

Bituminous coated steel pipe shall meet the requirements of AASHTO Designations M-190 Type A (Fully Bituminous Coated) and M-36.

Corrugated steel pipe and coupling bands with polymeric coating shall be fabricated from precoated sheets and shall conform to the requirements of AASHTO M-245 and M-246, Type B.

Corrugated steel pipe and coupling bands coated with aluminum shall be fabricated from sheet that has been hot-dip coated in commercially pure aluminum or approved aluminum alloy. The minimum coating weight on both sides of the sheet shall be 1.0 oz/sq.ft.

Corrugated aluminum pipe shall meet the requirements of AASHTO Designation M 196.

Unless otherwise specified in the plans or Special Conditions, all corrugated metal pipe shall have helical, lock or welded seams and shall be joined with gasketed, corrugated coupling bands of the same material as that used in the pipe. Dimple bands will not be permitted. The wall thickness of corrugated metal pipe shall be determined in accordance with C.D.O.H. Standard M-603-MA unless otherwise specified on the plans.

Nonreinforced concrete pipe shall meet the requirements of AASHTO Designation M-86. Reinforced concrete pipe shall meet the requirements of AASHTO M-170. All concrete pipe shall have bell and spigot joints sealed with rubber gaskets in accordance with AASHTO Designation M-198. The wall thickness and class of reinforced and nonreinforced concrete pipe shall be determined in accordance with C.D.O.H. Standard M-603 RC unless otherwise specified on the plans.

The Contractor shall be held responsible for the care and storage of materials delivered on the work or purchased for use thereon. Any material that has been delivered on the construction site and has become damaged before actual incorporation in the work may be rejected by the Engineer. All material found during the

progress of the work to have cracks, flaws or other defects shall be rejected by the Engineer, and the Contractor shall promptly remove such defective material from the site of the work.

Conduit and accessories shall at all times be handled with care to avoid damage. Material shall not be dropped or bumped. The use of hooks will not be permitted.

The interior and ends of all conduit shall be kept free from dirt and foreign matter at all times.

Trenches shall be excavated to a width sufficient to allow for proper jointing of the conduit and thorough compaction of the bedding and backfill material under and around the conduit. Trench walls shall be properly sloped benched or shored to afford safe working conditions. The completed trench bottom shall be firm for its full length and width.

After the conduit or section of conduit is installed, it shall be inspected before any backfill is placed. Any conduit found to be damaged shall be replaced, and conduit found to be out of alignment or unduly settled shall be taken up and relaid.

Special care will be required when backfilling around conduit to bring the backfill materials up on both sides of the conduit evenly and simultaneously.

Protection of pipe conduits during construction shall be the Contractor's responsibility. Any damage to the pipe due to the Contractor's operations shall be repaired or replaced by the Contractor at his expense.

Irrigation trash racks, irrigation manholes, storm sewer manholes, storm drain inlets, and other drainage and irrigation structures shall be as detailed on the plans

Measurement and Payment.

Unless otherwise specified, this item shall include all pumping, bailing, draining, sheeting, bracing and incidentals required for proper execution of the work.

All excavation and backfill for pipes below the designed slope or subgrade line as shown on the plans shall be included under this item.

The footage of conduits of the different sizes, types and classes shown on the bid schedule to be paid for shall be the number of linear feet of conduit in place, completed, and approved, to be measured along the centerline of conduit from end to end, not including the length of end sections. The number of end sections to be paid for shall be the number of units in place, completed and approved. Manholes, inlets and other structures of the different types shown on the Proposal Form will be measured by the complete unit including ring and cover or grating and frame, except that when specified precast concrete lids for irrigation manholes will be paid for separately.

Structure excavation and structure backfill for sewer or culvert pipes will not be measured and paid for separately but shall be included in the contract unit prices per linear foot for the sizes and types of pipe listed in the bid schedule.

No separate payment will be made for rock excavation. If rock is encountered, the work shall be performed in accordance with Plan details and shall be considered subsidiary to the items.

All pavement and road base removed for construction of sewers and drainage structures shall be replaced with materials of at least equal quality and thickness as that removed. The cost of pavement and road base replacement will not be measured and paid for separately but shall be considered incidental and included in the contract unit prices for sewer pipe and drainage structures.

Pipe bedding and bed course material for structures will not be measured and paid for separately but shall be included in the contract unit prices for sewer pipe and drainage structures.

SECTIONS 608 AND 609 CONCRETE SIDEWALK, CURB, GUTTER AND APPURTENANCES:

All work shall be performed in accordance with the "Standard Pavement Details" Standard Drawing ST-1 of the City of Grand Junction.

Materials

Preformed expansion joint fillers, conforming to AASHTO Designation, M-213, shall be used to form transverse expansion joints.

Unless otherwise specified, cement shall be AASHTO M-85, Type II and concrete shall be Colorado Division of Highways Class "B" (See Subsection 601.02).

Bed course material for Portland cement concrete sidewalk, curb, gutter, driveway sections, gutter pans and curb return fillets shall be Aggregate Base Course (Class 6).

Curing compound shall be white-pigmented liquid membrane forming compound conforming to AASHTO M-148, Type 2.

Subgrade-Bedding Preparation

The subgrade shall be excavated or filled with suitable material to the required lines and grades, All soft, yielding soil and other unsuitable material shall be removed as directed and replaced with suitable material. The foundation and bed course material shall be shaped and compacted to a firm even surface conforming to the section shown on the plans or as staked. Bed course material shall be compacted to at least 90% of AASHTO T-180 maximum density.

Forms

All forms shall be in good condition and free from warp with not more than 1/4 inch variation in horizontal and vertical alignment for 10 feet of form length. The forms shall be set true to line and grade and shall be adequately pinned or braced to stay in position during placement and consolidation of concrete. The front and back of forms shall extend for the full depth of concrete. They shall be designed and constructed so as to permit their removal without damage to the concrete.

Flexible or rigid forms of proper curvature may be used to form curves.

The forms shall be thoroughly cleaned each time they are used and coated with an approved form-release agent which will not discolor or stain the concrete.

Mixing and Placing

Concrete shall be proportioned and mixed by an approved ready-mix company or batch plant in accordance with Section 601 of the Colorado Department of Highways Standard Specifications.

The bed course material shall be thoroughly moistened immediately prior to placing of concrete. The concrete shall be placed in the forms and tamped or mechanically vibrated for thorough consolidation but without segregation of the mix.

The forms shall be securely set to provide the section, surface elevations, and grades shown on the plans, and shall at no time deviate more than one-fourth (1/4) inch from an accurate straight edge sixteen (16) feet in length. Gutters shall be water tested and any ponding deeper than 1/ 4 inch corrected.

The operations of depositing the concrete and compacting shall be so conducted that the concrete shall be smooth and dense, free from honeycomb and free from pockets of segregated aggregate. At the end of the day, or in case of an unavoidable interruption of more than thirty (30) minutes, a transverse construction joint shall be placed at the point of stopping work, provided all sections are greater in length than five (5) feet. Section less than five (5) feet in length shall be removed. Concrete shall not be placed when weather is stormy, dusty, or otherwise inclement to the point that it precludes good workmanship. Minimum air temperature shall be 40^{0} Fahrenheit and rising.

Concrete, when deposited, shall have a temperature of not less than 50^{0} F. nor more than 90^{0} F. In freezing weather suitable means shall be provided for maintaining the concrete at a temperature above fifty (50) degrees F. for a period of at least five (5) days after the concrete is placed. Before placing the concrete, the forms shall be free from frost and ice and after the concrete is placed it shall be protected on all exposed sides by straw, tarpaulins or other means.

Contraction Joints

All curb, gutter and sidewalk shall be divided by transverse contraction joints at right angles to the curb line and at intervals not to exceed ten (10) feet. Joints shall be one-eighth (1/8) inches wide and shall extend to one-fourth of the concrete depth.

Contraction joints shall be sawed, or formed by one-eighth (1/8) inch thick division templates, cut to the configuration of the concrete section. Templates shall be secured to the forms so that they are not moved by placing and consolidation of concrete. Division templates shall be removed after the concrete has set and before finishing. Sawing shall be done within twenty four (24) hours after the concrete has set to prevent the formation of cracks.

Expansion Joints

Expansion joints shall be provided at both sides of driveway section where sidewalks

are detached type, around poles, fire plugs, and at back edge of driveway section where sidewalks are monolithic, manholes and other structures enclosed in concrete, at both ends of intersection radii, and at all other locations shown on the plans or as directed.

Expansion joints shall be formed by a one-half (1/2) inch thick preformed joint filler, cut to the configuration of the full size of the concrete section. Joint filler shall be secured and held in place during placing and consolidation of concrete.

Finishing

After the concrete has been leveled and the initial set has taken place, all exposed surfaces shall be carefully finished with floats and steel trowels. The final texture shall be made by drawing a good quality hair broom or brush lightly across the surface.

Upon request, the Engineer will advise the Contractor where existing walks or driveways with acceptable finish may be inspected to determine what finished texture will be required.

Concrete that is adjacent to forms and all joints shall be edged with a 1/4 inch radius edging tool. Special care shall be taken to insure a straight, neat appearance along edges or sidewalks, slabs and joints.

All honeycombed areas or small defects shall be properly pointed up with 1:2 mix mortar.

The expansion joint groove shall be raked out above the preformed joint filler and the concrete adjacent to the joint tooled and finished to a smooth surface conforming to the undisturbed adjacent concrete. The edges of the joint groove shall be rounded with an edger.

After removal of templates and finishing, contraction joints shall be reopened with a mason's trowel, the line of cut coinciding with and extending a distance of not less than 1" nor more than 1-1/2" into the joint formed by the template. The joints shall be finished with a jointer.

Forming Machine

In lieu of the construction methods described in the preceding paragraphs, the Contractor may use a slipform/extrusion machine for construction of curb, gutter, and sidewalk or any combination thereof. The machine shall place, shape, consolidate, screed and finish the concrete in one complete pass in such a manner that a minimum of hand finishing will be necessary to provide a dense, homogeneous concrete section. All operations of mixing, delivery, and spreading concrete shall be coordinated to provide uniform progress, with stopping and starting of the machine held to a minimum. Joints and finishing shall be as described in the preceding paragraphs.

Curing

As soon as concrete surfaces have been finished and before the set of cement has

taken place, the concrete shall be cured by the following method:

All exposed surfaces of concrete, including edges, etc., before initial set of concrete, and all surfaces against forms, after removal of forms, shall be covered with an impervious membrane forming curing compound. The impervious coating shall contain a color pigment which will clearly show that the surface has been properly coated and sealed. Application of the impervious membrane shall be made with a pressure sprayer immediately after the concrete has been finished at the rate of coverage recommended by the laboratory, provided that in the event application of the coating is delayed, the concrete surface shall be kept continually moist until the coating is applied. On formed surfaces the concrete shall be moistened immediately after the forms are removed and promptly coated with the impervious membrane. If the formed edges are not coated with the impervious membrane, they shall be protected by having moist or wet earth packed against them promptly after the forms are removed. Dilution or other improper handling of the membrane material shall be cause for requiring the Contractor to place and maintain wet burlap curing for a period of not less than seven (7) days as required by the Engineer.

Form Removal, Backfilling and Cleanup

Forms shall remain in place at least twelve (12) hours after concrete has been placed against them or for a longer period as directed by the Engineer. After the forms have been removed and the concrete has cured for a minimum of three (3) days, the space behind curbs and sidewalk slabs shall be filled with suitable material. Area along the outside edge of sidewalk shall be neatly graded and topsoiled to smoothly match the adjacent yards.

Areas that will be seeded or sodded shall not be compacted. Areas that will be subgraded for pavements, sidewalks, or driveway entrances shall be compacted to the densities as shown on the plans. All construction debris shall be removed from the project, and the area left in a neat and clean condition. Edges of all yards adjacent to sidewalk shall be finished smooth and ready for seeding.

Protection

The Contractor shall always have materials available to protect the surface of plastic concrete against rain. These materials shall consist of water-proof paper or plastic sheeting.

Concrete shall be cured and protected against cold in accordance with subsection 601.12 of the Colorado Highway Department Specifications.

The Contractor shall protect finished concrete work against damage or defacement of any kind until it has been accepted by the City.

Opening to Traffic

Curb and gutter shall not be opened to traffic for a period of at least seven (7) days after the last concrete has been placed or for a longer period of time if the Engineer considers it necessary. It shall be the obligation of the Contractor to maintain suitable barricades or prevent traffic using the curb and gutter prior to the time of opening.

Quality Control Testing

Mix design shall meet all requirements of Colorado Division of Highways Standard Specifications Subsection 601.02 for Class "B" concrete. Compressive strength tests shall be performed in accordance with AASHTO T-22 on laboratory cylinders prepared in accordance with AASHTO T-126 for the purpose of mix design and shall achieve a minimum compressive strength of 28 days of 3750 psi. Compressive strength tests shall be performed in accordance with AASHTO T-22 on field cylinders prepared in accordance with AASHTO T-23 for the purpose of quality control and shall achieve a minimum compressive strength at 28 days of 3000 psi. Field cylinders for quality control shall be prepared at the frequency specified on page T-1 of these specifications.

Measurement and Payment

All curb, gutter and sidewalk will be measured by the linear foot. Curb and gutter will be measured along the flowline of the gutter. Sidewalk will be measured along the centerline. Monolithic curb, gutter, and sidewalk will be measured along the flowline of the gutter.

No deduction in length will be made for catch basins, manholes or other structures installed within the concrete section.

Driveway sections and curb returns fillets will be measured by the square yard of concrete surface area. Concrete driveway sections will be measured only to the back of sidewalk line.

Reconstruction of driveway area between back of sidewalk and "neat cut line" at match to existing driveway as shown on Standard Pavement Details plan sheet will not be measured and paid for separately but is considered incidental to and included in the contract unit price per square yard for "Driveway Section".

Gutter pans will be measured by the linear foot along the center line of the gutter.

Expansion joint filler and curing materials will not be paid for separately but shall be included in the work.

Bed Course material will be measured and paid for in accordance with Section 304 for Class 6, Aggregate Base Course.

The accepted quantities will be paid for at the contract unit price for each of the pay items listed below:

Pay Item	Pay Unit
Concrete Monolithic Curb, Gutter and Sidewalk (_____feet)	Linear Foot
Concrete Curb and Gutter	Linear Foot
Concrete Sidewalk (_____feet)	Linear Foot
Concrete Driveway Section	Square Yard
Concrete Gutter Pan (_____feet wide)	Linear Foot
Concrete Curb Return Fillet	Square Yard
Concrete Median	Square Yard
Concrete Curb Ramp	Each
Miscellaneous Concrete Slabs (_____" thick)	Square Yard

CONSTRUCTION SPECIFICATIONS AND DETAILS FOR INSTALLATION OF WATER LINES AND APPURTENANCES

13.12.010 Applicability of regulations generally. This chapter shall govern all labor, materials, equipment and services which are required for installation of all water distribution systems including pipe, valves, valve boxes, fittings, fire hydrants, air-vac valves, PRV valves, service taps and lines and all appurtenant items as mentioned in this chapter.

Also included shall be the flushing, testing and disinfection of all water distribution facilities. All pipes shall be installed in conformance with the Colorado Department of Health design disinfection procedure criteria. (Ord. 482 Technical Specifications, Water System I, 1975).

13.12.020 Materials--Specifications. All materials shall be new, of the highest quality and meet the following specifications:

A. Ductile Iron Pipe. All water mains and services greater than two inches in diameter shall be DIP and shall be in accordance with ANSI Specifications A21.51-71, cement lined in accordance with A21.4-1971, with push-on or mechanical joints in accordance with ANSI Specifications A21.11-1972. All diameters up to and including twelve-inch diameter pipe shall have a Class 2 wall thickness. All pipe fourteen inches and larger in diameter shall have a Class 1 wall thickness. All DIP with push-on joints shall be connected by electrodes to permit electrical conductivity.

B. Gate valves shall be Pacific States Cast Iron Pipe Co. (PSCIPCO) in accordance with AWWA Specifications C500-71, iron body, bronze mounted, open left, nonrising stem, "O" ring stem seal, two-inch operating nut with mechanical joints in accordance with ANSI Specifications A21.11-1972. All valves shall be rated for two hundred psi working pressure.

C. Valve boxes shall be "Buffalo-Type" Mueller H-10360, which are cast iron, five and one-half-inch shaft with screw-type adjustment and a flare base. Valve boxes for valves over twelve inches in size shall be "Buffalo-Type" Mueller H-10357.

D. Fittings shall be ductile iron in accordance with ANSI Specifications A21.10-71, with mechanical joints in accordance with ANSI Specifications A21.11-1972.

E. Fire hydrants shall be Pacific State Cast Iron Pipe Co. (PSCIPCO) Model 2 and shall have a six-inch mechanical joint bottom connection, an automatic drain feature (drip valve), open left, one and one-half-inch pentagonal operating nut, two two and one-half-inch NST thread hose nozzles, one four and one-half-inch NST thread steamer nozzle, red in color and be adequate length for a seven-foot trench.

F. Tapping sleeves shall be Smith Blair Type 622 or approved equal for static head pressures up to one hundred twenty-five psi. For static head pressure in water mains greater than one hundred twenty-five psi, the tapping sleeves shall be Clow List 15's or approved equal.

G. Corporation stops shall be a Ford F-600 and shall have a AWWA Taper Thread (three-fourths-inch or one-inch CC) with an outlet for flared copper connections. Corporation stops larger than one inch shall be Mueller with flared fittings or approved equal.

H. Curb stops shall be a Ford Z22-333 for three-fourths-inch and Ford Z22-444 for one-inch key valve with flared copper fittings. Curb stops larger than one inch shall be Mueller H-15025 or approved equal.

I. Curb boxes shall be Mueller H-10334 with Mueller 88619 lid. A stationary rod shall be provided which is approximately one foot below the lid when set to grade. Curb boxes for curb stops larger than one inch shall be Mueller H-10306 with plugged lid.

J. Tee connections shall be a Ford T222-334 with flared copper fittings (or appropriate size in the aforementioned series). The connections for copper services larger than one inch shall be Mueller H-15380 or approved equal.

K. Air-vac valves shall be APCO air-vac valves (Bulletin 601) with cast iron body, bronze trim, stainless steel float and buna-N seat or approved equal. The shut-off valve shall be a Lukenheimer Figure 2127 series valve or approved equal.

L. Pressure reducing valves shall be Golden-Anderson Figure "40" series. Each pressure reducing station requires an individual design effort; however, for dependability and standardization of parts, the Golden-Anderson line shall be used.

M. Copper Tubing. All service lines installed not using ductile iron pipe (generally, any service under two inches in diameter) shall be Type K seamless soft copper tubing. No plastic, wrought iron, cast iron, galvanized pipe or any other material other than that heretofore specified shall be used. (Ord. 482 Technical Specifications Water System II, 1975).

13.12.030 Pipe laying--Mains--Depth and width requirements. The trench shall be dug so that the pipe can be laid to the alignment and depth required, seven feet being the minimum depth of cover. The trench shall be excavated only so far in advance of pipe laying as permitted by the city engineer. The trench shall be so braced and drained that the workmen may work therein safely and efficiently, and pipes can be laid in unwatered conditions. Local, state and federal OSHA safety regulations shall be followed at all times and, when required, trenches shall be of extra width to permit the use of timbers, shoring, bracing, sheeting and trench boxes.

The width of the trench shall be ample enough to permit the pipe to be laid and jointed properly and the backfill placed as specified. In no case will the trench width be less than fifteen inches wider than the outside diameter of the pipe. Should the trench width or depth become excessive, the city engineer, at his option, may direct that special bedding and backfill measures be used to insure that design loading of the pipe is not exceeded. (Ord. 482 Technical Specifications, Water System III (A), 1975).

13.12.040 Pipe laying--Service--Depth and width requirements. The same specifications for main excavation shall be followed. The city engineer, at his option, may require any service to be laid deeper than seven feet if site conditions warrant more depth for protection or prevention of freezing. (Ord. 482 Technical Specifications, Water System III(B), 1975).

13.12.050 Excavations--Classifications. There shall be two classifications of materials excavated from pipe and service line trenches. Criteria for each class of excavated material shall be as follows:

A. Earth Excavation. This classification includes all soils and loose, broken and laminated rock or stones and boulders which can be reasonably ripped, broken and removed with skillfully operated, power driven excavating equipment having a bucket capacity of three-fourths yard.

B. Rock excavation. This classification includes all solid rock masses and boulders which cannot be excavated as specified under "Earth Excavation."

Where blasting is necessary, suitable weighted plank coverings or mattresses shall be provided to confine all materials lifted by the blasting within the trench or excavation area when a danger from flying debris exists (i.e. houses, structures, traffic). The contractor shall comply with all local, state and federal laws, ordinances, safety codes and OSHA regulations relative to the handling, storage and use of explosives and the protection of life and property. All blasting operations shall be under the direct supervision of a duly licensed person. The contractor shall be responsible for notifying all parties affected by blasting operations and shall be liable for all damages caused by his operations. (Ord. 482 Technical Specifications, Water System III(C), 1975).

13.12.060 Excavation--Trench preparation. The trench bottom shall be graded so that the pipe or service line will have continuous support over its entire length and will rest either on undisturbed soil or compacted fill. Any rocks over six inches in diameter in the trench bottom shall be removed and the resulting void filled with suitable fines.

Bell holes shall be provided at each pipe joint to permit the jointing to be made properly. In all cases the trench shall be dewatered during pipe and service line installation. (Ord. 482 Technical Specifications, Water System III (D), 1975).

13.12.070 Bedding and backfill--Materials. Materials for bedding and backfill shall be:

A. Suitable Fines. The suitable fines from the excavated

material or trench sides shall not include any rock or stones over two inches in size, general debris, organics, expansive clays or frozen material.

B. Unclassified Backfill. That portion of the excavated material not having rocks larger than six inches in size, general debris, organics, expansive clays or frozen material.

C. Imported Bedding. When the trench bottom is unstable or below the water table, the city engineer will require a hard, durable one and one-half-inch washed aggregate bedding in the trench bottom to stabilize it.

D. If suitable fines connot be obtained, the city engineer, depending on groundwater conditions, will direct the use of one and one-half-inch washed aggregate or a three-fourths-inch minus bedding material meeting the following specifications:

Standard Size of Seive	Percent Passing Sieve by Weight
3/4"	100%
No. 4	30 - 60%
No. 8	25 - 50%
No. 200	5 - 12%.

This material is commonly referred to as base material or Class C road base. (Ord. 482 Technical Specifications, Water System III(E)(1), 1975).

13.12.080 Bedding--Preparation procedure. If the trench has been overexcavated or excavated in rock (in which it shall be overexcavated a minimum of six inches), the trench shall then be backfilled with suitable fines and compacted to a minimum Modified Proctor Test value of ninety-two percent until the pipe or service line can rest with full bearing at the proper invert elevation.

After shaping the trench bottom so the pipe or service line has continuous support when placed, the bedding shall be inspected by the city engineer. The trench shall then be backfilled to the spring line of the pipe in one loose lift of suitable fines and compacted to a minimum value of ninety percent Modified Proctor Test. Special care shall be taken with this portion of the backfill to assure proper filling and compaction under pipe haunches and to avoid damaging or moving the pipe. The trench shall then be filled and compacted using suitable fines from the spring line to twelve inches above the top of the pipe and compacted to a minimum value of ninety percent Modified Proctor Test. (Ord. 482 Technical Specifications, Water System III(E)(2), 1975).

13.12.090 Backfill--Unclassified. The remainder of the trench shall then be backfilled with unclassified backfill. The unclassified backfill shall not be placed by dozing over the edge of the trench, but rather by forming a gentle slope proceeding upgrade in the trench and in lifts not to exceed twelve inches. All material shall be compacted to a minimum value of ninty percent Modified Proctor Test. (Ord. 482 Technical Specifications, Water System III(E)(3), 1975).

13.12.100 Backfill--Gravel roads--Procedure. Before backfilling in any roads or rights-of-way, the backfill shall be approved by the city engineer. This backfill shall meet the general requirements of unclassified backfill and shall also be a granular material or firm, dry clay. Should the city engineer not approve the excavated material or proposed backfill material, it shall be disposed of by the contractor and suitable material imported. No backfill shall be placed upon a soft, spongy or frozen trench material or subgrade which, in the city engineer's opinion, has an unsuitable stability.

The entire length of the pipe or service line trench shall be mechanically compacted in lifts not to exceed twelve inches of loose material. The compaction shall be by means of a "whacker," vibratory roller or other means specifically approved by the city engineer.

The backfill shall be compacted to a minimum value of ninety-three percent Modified Proctor Test. Compaction tests shall be made by the city engineer or a testing firm directly under his supervision, at the owner's or contractor's expense, to determine the adequacy of the compactive effort.

The top ten inches of the trench shall meet these minimum requirements:

A. Six inches of compacted subbase material meeting the following specifications:

Standard Size of Sieve	Percent Passing Sieve by Weight
3"	100%
2-1/2"	95 - 100%
2"	50 - 75%
No. 4	30 - 60%
No. 40	15 - 30%
No. 200	5 - 20%
Liquid limit	25% maximum
Plastic limit	6% maximum.

B. Four inches of compacted base course material meeting the following specifications:

Standard Size of Sieve	Percent Passing Sieve by Weight
3/4"	100%
No. 4	30 - 60%
No. 8	25 - 50%
No. 200	5 - 12%
Liquid limit	25% maximum
Plastic limit	6% maximum.

C. The city engineer at his option may require additional gravels if conditions necessitate such, or if the original roadbed was constructed differently.

D. The aforementioned road gravels shall be compacted to a minimum value of ninety-three percent Modified Proctor Test and shall be to the same grades and lines as the existing roads and rights-of-way. (Ord. 482 Technical Specifications, Water System III(E)(4), 1975).

13.12.110 Backfill--Paved roads with gravel rights-of-way. The same backfill and road graveling requirements shall be followed as specified in Section 13.12.100.

Excavation in paved streets shall be kept to a minimum width. The pavement shall be cut to form a vertical face six inches beyond each trench wall. The cut shall be made with a saw or a wide chisel blade on jackhammer and shall be made in a straight line. Protective measures such as mats, planks, cribbing, etc. shall be used at all times to protect the existing pavement from backhole tracks, outriggers and any such equipment.

After the main waterline or service lines are laid and the backfill placed, the ten-inch course of road gravels shall be laid and compacted to within four inches of the top of the existing road pavement, or to the bottom of the existing mat (whichever is thicker).

Asphalt paving shall then be placed and compacted to a minimum four-inch depth, or to the same thickness as the existing mat (whichever is thicker), to bring the road to final grade. The final grade and general configuration shall conform to Chapters 12.24 through 12.48 and shall be subject to final inspection and approval by the city engineer. (Ord. 482 Technical Specifications, Water System III(E)(5), 1975).

13.12.120 Pipe--Handling procedure for pipes and accessories at work site--Responsibility for damage. Proper alignment, tools and facilities shall be provided and used by the contractor for the safe and efficient prosecution of work.

All pipe, fittings, valves, miscellaneous equipment and lines shall be carefully lowered into the trench by means of a derrick, ropes or suitable equipment to prevent damage to the materials, protective coatings and linings. Under no circumstances shall materials be dropped or dumped into the trench.

All lumps, blisters and excess coal tar coatings shall be removed from the bell and spigot ends of each pipe, and the outside of the spigot and the inside of the bell shall be wire-brushed and wiped clean and dry and free from soil and grease before the pipe is laid.

The pipe shall be so handled that the coating and lining will not be damaged. If, however, any part of the coating or lining is damaged, the repair shall be made by the contractor at his expense and in a manner satisfactory to the city engineer. (Ord. 482 Technical Specifications, Water System IV (A), 1975).

13.12.130 Installation--Procedure to keep pipe clear of foreign matter. Blocking under the pipe shall not be used. Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line. If the pipe-laying crew cannot put the pipe into the trench and in place without getting earth into it, the city engineer may require that before lowering the pipe into the trench, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is to be made to the adjacent pipe. During laying operations no debris, tools, clothing or other material shall be placed in the pipe. (Ord. 482 Technical Specifications, Water System IV(B)(part), 1975).

13.12.140 Installation--Alignment. After placing a length of pipe in the trench, the spigot end shall be centered in the bell and the pipe forced home and brought to correct line and grade. Pipe and fittings which do not allow a sufficient and uniform space for joints shall be removed and replaced with pipe and fittings of proper dimensions to insure such uniform space. Precautions shall be taken to prevent dirt from entering the joint space. (Ord. 482 Technical Specifications, Water System IV(B)(part), 1975).

13.12.150 Installation--Cutting of pipe--Procedure. The cutting of pipe for inserting valves and fittings of closure places shall be done in a neat and workmanlike manner without damage to the pipe or cement lining, leaving a smooth end at right angles to the axis of the pipe. The flame cutting of pipe by means of an oxyacetylene torch shall not be allowed. The cut end shall be beveled to allow the pipe to be jointed without damage to or displacement of the rubber gasket. (Ord. 482 Technical Specifications, Water System IV(B)(part), 1975).

13.12.160 Installation--Direction of pipe laying. The direction of pipe laying shall be uphill with bell ends facing in the direction of laying, unless otherwise directed by the city engineer. (Ord. 482 Technical Specifications, Water System IV(B)(part), 1975).

13.12.170 Installation--Pipe deflection--Procedure generally. Wherever it is necessary to deflect the pipe from a straight line, either in the vertical or horizontal plane, to avoid obstructions or plumb gate valve stems, or where curves are necessary, the allowable amount of deflection shall be that indicated in Section 13.12.180 and 13.12.190. (Ord. 482 Technical Specifications, Water System IV(B)(part), 1975).

13.12.180 Installation--Pipe deflection--Push-on joints. The last six inches outside of the spigot and inside of the bell of the push-on joint pipe shall be thoroughly cleaned of oil, grit, tar (other than standard coating) and other foreign matter from the joint. The gasket shall be placed in the bell with the large round side of the gasket first so it will spring into place over the bell head. A thin film of manufacturer supplied lubricant furnished with the pipe shall be applied to the inside surface of the gasket and also on the outside of the plain end of the pipe and its beveled edge. The plain end of the pipe shall then be wiped clean with a cloth and lifted and inserted just far enough to make contact with the gasket.

The plain end shall then be forced all the way into the bell socket by crowbar, spade, jack, chocker slings or other means acceptable to the city engineer.

Allowable Deflection per Joint

Diameter	Minimum Radius of Curvature	Deflection in inches per 18" length
4"	205'	19"
6"	205'	19"
8"	205'	19"
10"	205'	19"
12"	205'	19"
14"	340'	11"
16"	340'	11"
18"	340'	11".

(Ord. 482 Technical Specifications, Water System IV(B)(1), 1975).

13.12.190 Installation--Pipe deflection--Mechanical Joints. The last eight inches outside of the spigot and inside of the bell of the mechanical joint shall be thoroughly cleaned to remove oil, grit, tar (other than standard coating) and other foreign matter from the joint, and then painted with a solution recommended by the pipe manufacturer. The gland shall then be slipped on the spigot end of the pipe with the lip extension of the gland toward the socket or bell end. The gasket shall be painted with the soap solution and placed on the spigot end with the thick edge toward the gland.

The entire section of the pipe shall be pushed forward to seat the spigot end in the bell. The gasket shall then be pressed into place within the bell, being careful to have the gasket evenly located around the entire joint. The gland shall be moved along the pipe into position for bolting, all of the bolts inserted and the nuts screwed up tightly with the fingers. All nuts shall be tightened with a suitable (preferably torque-limiting) wrench. Torque range for the three-fourths-inch nuts used with four-inch through twenty-four-inch ductile iron pipe shall be sixty to ninety pounds.

Nuts spaced one hundred eighty degrees apart shall be partially tightened in an alternate sequence until full torque is reached in order to produce an equal pressure on all parts of the gland and gasket.

Allowable Deflection per Joint

Diameter	Minimum Radius of Curvature	Deflection in inches per 18' length
4"	125'	31"
6"	145'	27"
8"	195'	20"
10"	195'	20"
12"	195'	20"
14"	285'	13-1/2"
16"	285'	13-1/2"
18"	340'	11".

(Ord. 482 Technical Specifications, Water System IV(B)(2), 1975).

13.12.200 Installation--Gate valves and valve boxes. Gate valve locations shall be subject to final approval by the city engineer and shall be set plumb. Valves shall have the interior cleaned of all foreign matter before installation. Valves shall be inspected in opened and closed positions to insure that all parts are in working condition. A

valve box shall be set so that it is centered and plumb over the valve operating nut. The valve boxes shall be set to the following grades:

Area	Grade
Paved streets	2-3 inches below grade,
Gravel roads, shoulders and driveways	6 inches below grade,
Areas not in road easements or affected by snowplowing operations	Set flush to grade.

(Ord. 482 Technical Specifications, Water System IV(C), 1975).

13.12.210 Installation--Fire hydrants. Hydrant locations shall be subject to final locations by the city engineer and in a manner so as to provide complete accessibility and to minimize damage from vehicles. The maximum radius of influence shall be two hundred fifty feet.

All hydrants shall stand plumb and shall be set with their smaller hose nozzles parallel to the roadway. Hydrants shall be set to the established grade with nozzles at least two feet above the final grade. No hydrant shall be less than ten feet from the shoulder of a dedicated road.

Each hydrant connection shall have a gate valve and valve box located adjacent to or no more than four feet from the hydrant and shall be connected to the main with a six-inch diameter ductile iron lateral. Hydrants shall be provided with drainage weepholes.

All hydrants at the time of installation shall be provided with a permanent location marker in a form of a twelve-foot length of two-inch galvanized pipe with a threaded cap anchored in the hydrant thrust block. The marker pipe shall be painted fluorescent orange with a rust inhibitive paint. (Ord. 482 Technical Specifications, Water System IV(D), 1975).

13.12.220 Pipeline--Disinfection. During pipe laying, the contractor shall maintain the cleanliness of the pipe interior. Any solid material entering the pipe shall be removed prior to jointing.

All piping shall be disinfected after installation is complete in accordance with the procedures outlined in AWWA C601-68. Calcium hypochlorite tablets in an amount needed to form a minimum fifty ppm free chlorine residual shall be placed in the pipe during laying. When installation has been completed, the main shall be filled with water at a velocity of less than one foot per second. This water shall remain in the pipe for at least twenty-four hours.

After the applicable retention period, the heavily chlorinated water shall be flushed from the main until the chlorine concentration in the water leaving the main is no higher than that generally prevailing in the system or less than one ppm. The city engineer shall make final tests to determine the chlorine level before the system is approved for domestic use. (Ord. 482 Technical Specifications, Water System V(A), 1975).

13.12.230 Pipeline--Flushing. The contractor shall flush the lines by a means in accordance with good practice to insure that sand, rock or other foreign material is not left in any of the pipeline interiors. If large quantities of water are not available for flushing, this program shall be coordinated through the city engineer. (Ord. 482 Technical Specifications, Water System V(B), 1975).

13.12.240 Main testing--Pressure and leakage--Responsibility--Procedure generally. The contractor shall furnish all labor, materials and equipment and shall perform all operations required to conduct the pressure and leakage tests. Water for testing will be available from the city water supply system when possible.

Before applying the specified test pressure, all air shall be expelled from the pipe. Where any section is provided with concrete thrust blocks, the test shall not be made until at least two days have elapsed after the concrete was installed, to allow for proper curing.

The hydrostatic pressure test shall be conducted prior to the leakage test.

The city engineer shall be notified at least forty-eight hours in advance whenever pipe is to be tested, so that he may be present during the test. (Ord. 482 Technical Specifications, Water System VI(A), 1975).

13.12.250 Main testing--Hydrostatic pressure--Procedure. After the pipeline has been laid and partially backfilled except for the joints, or except when the city engineer directs the trench to be backfilled for reasons of public safety, the pipe shall be filled with water and subjected to a hydrostatic pressure test. The pipeline shall be slowly filled with water and the specified test pressure (determined on an individual system basis by the city engineer and project engineer) applied by means of a pump connected to the pipe in a manner satisfactory to the city engineer. The test pressure shall be at the lowest elevation of the pipeline and shall continue for a minimum duration of one hour. All exposed pipes, fittings, valves, hydrants and joints will be

carefully examined during the test. Any cracked or defective pipes, fittings, valves, hydrants and joints shall be removed and replaced by the contractor with sound material in the manner provided heretofore, and the test repeated until satisfactory to the city engineer. (Ord. 482 Technical Specifications, Water System VI(B), 1975).

13.12.260 Main testing--Leakage--Procedure. The leakage test shall be conducted according to the procedure and conditions specified under Section 13.16.240, except that the specified test pressure shall be one hundred fifty psi at the lowest point and shall be maintained for a continuous period of not less than two hours. The system being tested shall be valved off so the smallest test sections possible can be used. (Ord. 482 Technical Specifications, Water System VI(C), 1975).

13.12.270 Main testing--Leakage--Permitted degree. The test pressure of one hundred fifty psi shall be maintained for a period of not less than two hours, during which time the leakage shall be measured. No pipe installation will be accepted if the leakage is greater than that determined by the formula:

$$L = \frac{ND\sqrt{P}}{3700}$$

Where L is the allowable leakage in gallons per hour, N is the number of joints in the length of pipeline tested, D is the nominal diameter of the pipe in inches, and P is the average test pressure during the leakage test in pounds per square inch gage. (Ord. 482 Technical Specifications, Water System VI(D)(part), 1975).

13.12.280 Main testing--Leakage--Repair. Should any test of pipe laid disclose leakage greater than that specified above, the contractor shall at his own expense locate and repair the defective joints until the leakage is within the specified allowance. (Ord. 482 Technical Specifications, Water System VI(D)(part), 1975).

13.12.290 Service lines--Size. No service line shall be less than three-fourths-inch diameter Type K soft copper. All service lines shall be in conformance with the current Uniform Plumbing Code (UPC) to adequately supply the property being served. (Ord. 482 Technical Specifications, Water System VII(A), 1975).

13.12.300 Service lines--Construction authority. Water service line construction in city streets or rights-of-way shall be done only by the contractor or contractors approved by the city engineer. (Ord. 482 Technical Specifications, Water System VII(B), 1975).

13.12.310 Service lines--Taps. All taps to the city water system for three-fourths-inch or one-inch services shall be made by a city crew using their tapping machine. The work shall be at the owner's or contractor's expense. All larger taps shall be made only with the city engineer's express permission if a city crew is unable to do the work.

No tap-ons for service shall be made prior to the main being tested and approved. All taps are to be "wet," that is, tapped to a live, pressurized main. (Ord. 482 Technical Specifications, Water System VII(C), 1975).

13.12.320 Service lines--Connection details. All services shall have a corporation stop or gate valve (for larger sizes) at the main. Subsections B, C and G of Section 13.12-.020 of this chapter define the required stops and boxes to be used.

All new or reconstructed services shall have a main service shut-off valve at the dwelling unit or structure inside the foundation line in the crawl space or in a vault so constructed for this purpose. (Ord. 482 Technical Specifications, Water System VII(D), 1975).

13.12.330 Service lines--Required depth. Section 13.12-.040 of this chapter requires that all services be laid to a depth of seven feet or deeper. (Ord. 482 Technical Specifications, Water System VII(E), 1975).

13.12.340 Service lines--Inspection--Additional requirements. The city engineer shall inspect and approve all water services prior to backfilling and use. The service shall not leak and shall be buried at least seven feet deep. A wye fitting shall be installed at the tapping saddle to facilitate testing. (Ord. 482 Technical Specifications, Water System VII(F)(part), 1975).

13.12.350 Service lines--Location. All service line locations are subject to review and approval by the city engineer and shall be laid in a continuous straight line, perpendicular to the main whenever possible. All services shall be a minimum of five feet from any lot or property corner. All service stubs to undeveloped lots on property shall extend into the lot or property a minimum of five feet.

Whenever possible, smaller service lines (up to two-inch) shall hook into hydrant laterals to assure more continuous flow and to prevent freezing in the hydrant. (Ord. 482 Technical Specifications, Water System VII(F)(part), 1975).

13.12.360 Service lines--Separate trench requirements. All domestic water services shall be laid so that no point is nearer than ten lateral feet from a sewage service line, sewer main, building drains, any waste discharge line or nonpotable water line.

Electric, phone or TV cables may be laid in the same trench as water service lines if there is a minimum two feet of cover between the water service and the laid cable.

Gas service lines may be laid in the same trench as water service lines if the gas line is steel, cast iron, or plastic with attached location wires and the gas line is a minimum of thirty inches above the water service. (Ord. 482 Technical Specifications, Water System VII(G), 1975).

13.12.370 Service lines--Pumps--City engineer's permission required. The installation of pumps to increase water pressure and/or flow in service lines is prohibited without the written permission of the city engineer. (Ord. 482 Technical Specifications, Water System VII(H), 1975).

13.12.380 Electrical connection of push-on joints. All push-on joint water mains shall be interconnected by "Cadweld" or approved equal electrical connections as specified in subsection A of Section 13.16.020. (Ord. 482 Technical Specifications, Water System VIII(part), 1975).

13.12.390 Electrical conductivity test. Electrical conductivity tests performed by the contractor in the presence of the city engineer shall be the basis for determining whether or not satisfactory electrical conductivity has been established. The pipe shall conduct at least three hundred amperes at sixteen volts for a two hundred-foot length of pipe section. No pipe section will be accepted if it does not satisfactorily conduct the electricity stated. (Ord. 482 Technical Specifications, Water System VIII(part), 1975).

13.12.400 Thrust block requirements. Thrust blocks shall extend from the fitting, valve, or hydrant to solid, undisturbed earth and shall be installed so all joints are accessible for repair. If in the city engineer's opinion adequate support or undisturbed earth is not available, the contractor will be directed to secure the thrust block to the fitting, etc. by means of a metal harness or strap.

The concrete used for thrust blocks shall have a minimum twenty-eight-day compressive strength of three thousand psi and shall be allowed to cure a minimum of forty-eight hours at no less than fifty degrees Fahrenheit prior to backfilling operations. (Ord. 482 Technical Specifications, Water System IX, 1975).

WATER SERVICE--MAINTENANCE AND REPAIR*

Sections:

13.16.010 Superintendent--Authority to shut off water--Cause. The superintendent may cause the water to be shut off from the street mains when he deems it necessary for making connections or extensions to the same or for the purpose of cleaning the same. If at any time the superintendent ascertains that the main water line, any part thereof or any connection from the same to the property line of any owner of the premises on which water is used is defective so as to waste water or does not comply with any law or regulation of the city or the state, water service to such line shall be shut off and the line so determined to be defective or in noncompliance shall be replaced or repaired by the city. (Ord. 494 §2.7, 1975).

* For statutory provisions authorizing cities to require that owners of land make connections to the sewer system, see CRS 1973 §31-35-501 et seq.; for statutory provisions authorizing cities to regulate sewage facilities, see CRS 1973 §§31-12-101(22) and 31-15-301(1)(g). For provisions relating to the plumbing code see Chapter 15.24 of this code.

CONSTRUCTION SPECIFICATIONS AND DETAILS FOR INSTALLATION OF SEWER LINES AND APPURTENANCES

0.00 DESCRIPTION. This Work shall consist of excavation, disposal and compaction of all materials encountered within the limits of the work and necessary for the excavation and backfilling of all sewer line trenches. The Work shall include the excavation and backfill of whatever substances are encountered to the depths called on the construction drawings, or modified in the field by the Engineer. This specification shall include installation of sewer lines, manholes, and other appurtenances, including the furnishing of all materials, the excavation and backfill of all trenches, and the cleaning and testing of the completed installation.

0.01 GENERAL. Unless otherwise indicated on the drawings, all excavation shall be made by open cut. Trenches shall be properly maintained throughout construction and be kept free of water. Areas of work shall be appropriately barricaded or marked with suitable warning signs and signals as outlined and required by the Manual of Uniform Traffic Control Devices for Streets and Highways, and shall insure public safety, which is the responsibility of the Contractor.

Not more than two hundred feet (200') of trench may be opened in one place in advance of the completed work without previous written consent of the Engineer.

All work performed within the limits of this Contract shall conform to the requirements of any Federal, State, or local jurisdiction which has power to govern or control the manner in which this Contract is fulfilled.

0.02 OBSTRUCTIONS AND INCIDENTAL CONSTRUCTION. Where trees, hedges, shrubs and brush wholly within the excavation area are not designated to be protected or saved. the Contractor shall notify the Property Owner concerned not less than ten days before starting work in the area to allow the Owners to accomplish such salvaging as they may desire. Plans reflect approximate type and location of existing utilities at the time they are prepared. The Contractor shall be held wholly responsible for the location and protection of any utilities encountered.

0.03 PUBLIC CONVENIENCE AND ACCESS. The Contractor's operations shall cause no unnecessary inconvenience. The access rights of the public shall be considered at all times. Traffic shall be permitted to pass through the work area at all times unless an approved detour route is provided.

Vehicular access to driveways shall be maintained except when necessary construction precludes such access for reasonable periods of time. If backfill has been completed to such an extent that safe access may be provided, and the street opened to local traffic, the Contractor shall immediately clear the street and driveways and resume access.

The Contractor shall cooperate with the various parties involved in the delivery of mail and the collection and removal of garbage to maintain existing schedules for these services.

1.00 MATERIALS. This item covers the types of material that will be required for the installation of sewer lines within the limits of the work. All materials used shall be new and the best quality available. All material used shall be in accordance with applicable standards of the American National Standards Institute (ANSI), the American Standards Association (ASA) and the American Society of Testing and Materials (ASTM).

1.01 VITRIFIED CLAY PIPE AND FITTINGS. Vitrified clay pipe shall be extra strength clay pipe and shall conform to A.S.T.M. Designation C700. Joints for 12 inch vitrified clay pipe and smaller shall conform to A.S.T.M. C425, per MA Joint or A.S.T.M. C178 Belless factory applied P.V.C. joint. Fifteen inch and larger vitrified clay pipe and larger shall conform to A.S.T.M. C425 Perma Joint or Belless fiberglass filament collar joint. Installation and handling of Vitrified Clay pipe shall conform to A.S.T.M. Designation C12.

1.02 ABS TRUSS PIPE AND FITTINGS. ABS Truss Pipe is defined as an internally braced double walled ABS composite pipe. Truss pipe to be used for gravity, non-pressure sanitary sewers shall conform to ASTM Standard Specification D-2680, or the latest current revision. The pipe shall be of the size specified on the plans.

Fittings that may be used with the above specified ABS Truss Pipe include couplings, wyes, tees, elbows, caps, plugs, adapters, manhole water stops and clamps. All couplings and fitting shall be assembled by a chemically welded method. Each solvent weld type coupling and fitting shall be accurately formed and entirely compatible in joining with the truss pipe to assure a leak-proof joint. Temperature and curing time of all solvent welds shall be controlled in accordance with the manufacturers recommendations. Couplings and fittings shall be manufactured from the same material as the pipe, except that caps, plugs and adapters may be fabricated or molded from rubber, polyurethane, or other suitable compounds. The couplings and fittings shall have chemical and physical characteristics equal or superior to the pipe itself.

1.03 ABS SOLID WALL PIPE AND FITTINGS. ABS solid wall four (4) inch and six (6) inch solid wall pipe shall conform to A.S.T.M. D-2751 or the latest revision thereof and shall have a standard dimensional ratio (SDR) of not more than 38.

Six (6) inch ABS Solid Wall Pipe shall be considered at all locations in the Standard Technical Specifications and in drawings where six (6) inch house service lines, riser pipes and fittings are specified or noted.

1.04 INSTALLATION OF ABS SOLID WALL PIPE, ABS TRUSS PIPE AND FITTINGS. ABS truss pipe with solvent weld type couplings shall be installed in accordance with approved manufacturer's recommendations and ASTM D-2321. All joints shall be wiped clean as work progresses. Exposed ends of the truss pipe shall be protected from damage and the ends shall be plugged or covered to prevent entry of obstructing matter. Each joint shall be dry before any attempt to make coupling or a solvent weld is attempted. Couplings shall not be backfilled until inspected and approved by the Engineer.

All couplings and fittings shall be assembled by a chemically welded method. Each solvent weld type coupling and fitting shall be accurately formed and entirely compatible in joint with the ABS Extra Strength Solid Wall Pipe to

assure a leakproof joint. Temperature and curing time of all solvent welds shall be controlled in accordance with the manufacturers recommendations.. Couplings and fittings shall be manufactured from the same material as the pipe except that caps, plugs and adapters may be fabricated or molded from rubber, polyurethane or other suitable compounds. The couplings and fittings shall have chemical and physical characteristics equal or superior to the pipe itself.

1.05 POLY-VINYL CHLORIDE SEWER PIPE AND FITTINGS. Pipe and fittings shall meet the requirements of ASTM Standard Specification D3034.

All pipe shall be suitable for use as a gravity sewer conduit. A rubber ring shall be provided for contraction and expansion at each joint. The bell shall consist of an integral wall section stiffened with two Poly-Vinyl Chloride retainer rings which securely lock the solid cross section rubber ring into position. Sizes shall be as shown on the drawings. The maximum pipe length shall be 13 feet.

All fittings and accessories shall be as manufactured and furnished by the pipe supplier or approved equal and have bell and/or spigot configurations identical to that of the pipe. They shall meet all requirements set forth for Poly-Vinyl Chloride pipe as contained herein.

1.05.01 Ultimate Strength Requirements: Pipe shall be designed to pass all tests at 73.4^{0} ($\pm$ 3^{0}F) as recommended by the Hydrostatic Stress Committee of the Plastic Pipe Institute.

Minimum pipe stiffness (F/Y) at 5% deflection shall be a minimum of 46 when tested in accordance with ASTM Designation D2412, External Loading Properties of Plastic Pipe by Parallel Plate Loading.

There shall be no evidence of splitting, cracking, or breaking when the pipe is tested as follows: Flatten specimen of pipe, six inches long between parallel plates in a suitable press until the distance between the plates is forty percent of the outside diameter of the pipe. The rate of loading shall be uniform and such that the compression is completed within two to five minutes.

Pipe (6" long section) shall be subjected to impact from a free falling tub (20 lb. Type A) in accordance with ASTM C-2444. No shattering or splitting shall be evident when the following energy is impacted: 12"-220 ft. lbs. After two hours immersion in a sealed container of anlydrous (99.5% pure) acetone a 1" long sample shall show no visible spalling or cracking when tested in accordance with ASTM 2152.

1.05.02 Dimensions: The thickness ofr Poly-Vinyl Chloride sewer pipe shall be a minimum of 0.125 inches for four (4) inch diameter pipe, 0.180 inches for six (6) inch diameter pipe, 0.240 inches for eight (8) inch diameter pipe, 0.300 inches for ten (10) inch diameter pipe, 0.360 inches for twelve (12) inch diameter pipe, and 0.440 for fifteen (15) inch diameter pipe. The standard dimension ratio (SDR) number which is defined as outside diameter divided by wall thickness shall not be more than thirty-eight (38).

1.05.03 Joints: Bell ring mechanical slip joints shall be sealed with rubber rings as provided by the manufacturer and shall provide for expansion and contraction.

Prior to placing the rubber rings into the grooves all dirt or foreign matter will be removed from the grooves. Care shall be taken to insure that the ring is seated firmly into the groove. The spigot end will be thoroughly cleaned and lubricated prior to insertion into the bell end of the pipe. The lubricant shall be purchased from the pipe manufacturer and used according to manufacturer's instructions.

1.05.04 Special Testing: If Poly-Vinyl Chloride pipe is used on the project a deflection test shall be made before the sanitary sewer line is accepted and placed into operation. The total deflection allowed for the sewer pipeline shall not exceed seven percent (7%) of the inside diameter. Any portion of the sewer pipeline which exceeds the deflection allowance on the test shall be replaced at no expense to the owner. All sewer pipe shall be checked for deflection by the Engineer.

1.05.05 Handling and Storage: Plastic pipe shall be hauled and stored on flat surfaces and stacked in piles no higher than 5 feet. To prevent breakage, extra care shall be used in handling plastic pipe during cold weather

If pipe is to be stored outside for periods longer than 6 months, the pipe shall be covered with canvas or other opaque material to protect it from the sun's rays. Air circulation shall be provided under the covering.

1.06 PIPE EMBEDMENT MATERIAL. Pipe embedment material shall be crushed or river gravel and shall meet the following gradation:

Sieve Size	Percent by weight passing square mesh sieve
1 inch	100
3/4 inch	40-70
1/2 inch	10-50
No. 200	0-10

1.07 BACKFILL MATERIAL. Select backfill material shall consist of loam, silty clay, sand, gravel or other approved material taken from the excavation or imported from another source. To be suitable for use as backfill, the material shall be free from frozen lumps, cinders, ashes, refuse, and organic matter.

2.00 INSTALLATION OF SEWER LINES AND APPURTENANCES. Unless otherwise indicated, this work shall include the installation of sewer lines and all appurtenances including the furnishing of all materials, the excavation and backfill of trenches, and the cleaning and testing of the completed installation.

2.01 SEWER LINE INSTALLATION. Trenches for sewer lines shall be excavated along the lines and to the grades shown on the plans or as modified by the Engineer in the field. Trenches shall be excavated at least sixteen inches (16") wider than the external dimensions of the pipe to be laid therein.

Wherever the bottom of the trench is in rock and cannot be shaped to fit the bottom of the pipe, then rock shall be removed to a depth of not less than four inches (4") below the bottom of the pipe and the trench refilled to the required grade with pipe embedment material to form a firm base. Wherever the bottom of the trench is muck, which is saturated soil, organic matter, or any other compressible material that the Engineer determines to be unsuitable for bearing, this muck shall be removed completely and replaced with pipe embedment material to form a firm base.

The excavation shall be supported so that it will be safe and that the ground alongside the excavation will not slide or settle, and that all existing improvements, either on public or private property, will be fully protected from damage. All supports shall be removed after construction is completed, unless otherwise directed, and shall be withdrawn in a manner that will prevent caving of the sides of the excavation. All openings caused by the removal of supports shall be filled with suitable material and shall be properly compacted.

After excavation, the trench bottom shall be uniformly graded and hand-shaped so that the pipe barrel (exclusive of the joint) will have uniform and continuous bearing on firm, undisturbed bottom or thoroughly compacted granular material, throughout the length of the pipe. The trench grade shall permit the pipe spigot to be accurately centered in the preceding laid pipe joint, without lifting the pipe above the grade. Pipe shall be laid in straight sections except as noted on the plans. Jointing of the pipe shall be made in accordance with the directions of the manufacturers of the pipe and the couplings. Every open end of the pipe in place in the trench shall be carefully plugged to prevent any contamination before being left for the night or for any length of time the construction is suspended. Caution shall be taken at all times to prevent the entrance of water or debris into the completed pipeline through open ends, manholes, or in incompleted joints. At any time that it is evident to the Engineer that the Contractor is incapable of keeping the pipe free of foreign matter during installation, the Engineer shall require the Contractor to cover the pipe ends with close woven bags until the start of the jointing operation.

After the pipe has been installed in the trench, inspected and approved, the trench shall be backfilled with pipe embedment material. The pipe embedment material shall be compacted in place to an elevation six inches (6") above the top of the pipe.

Unless shown otherwise on the plans, specified, or modified in the field by the Engineer, all backfill above the bedding shall be carefully dumped into the trench, providing the depth of the bedding is no greater than four feet (4'). Care shall be taken during placement to avoid damage to the pipe. If the depth to the bedding is greater than four feet (4'), backfill shall be placed in lifts of no greater than four feet (4'), and compacted after each lift. Compaction of all backfill shall be sufficient to support overlying loads without excessive settlement with a compaction density conforming to the adjacent undisturbed ground.

Wherever sewer lines and/or appurtenances shall be installed under existing gravel or bituminous surfaced roads or streets, or in the shoulders of such

roadways and streets, or under parking areas or driveways, the contractor shall backfill the trench to 10 inches below the surface with select backfill material compacted to not less than 90% relative compaction as shown in the Pipe Trench Detail shown on the plans. The Contractor shall replace to original or better condition all paving and gravel surface disturbed by the construction of the sewer line. All paving and gravel surfaces shall be replaced immediately following construction of the sewer line. Pavement shall be replaced with hot mixed bituminous pavement unless otherwise approved by the Engineer.

2.02 SEWER MANHOLES. Manholes shall be furnished and installed to the depths and dimensions shown on the plans and/or staked in the field, including all excavation and backfill. Manholes shall be constructed with pre-cast concrete barrels, in accordance with details shown on the plans. The concrete barrels shall conform to ASTM Specification C478 or latest revision thereof. Cement for manhole bases shall be ASTM C-150 Type II. The bottom of each manhole shall be poured-in-place concrete with shaped open channel continuation of the sewer line through the manhole. Poured-in-place concrete shall have a compressive strength of not less than 3,000 p.s.i. after twenty-eight (28) days. No fast curing compounds may be used without the written consent of the Engineer.

To bring the manhole cover to the correct elevation the top section of each manhole shall be constructed of pre-cast concrete grade adjustment rings. These rings shall be not less than six inches (6") wide and furnished in varying heights of one inch increments.

Manhole steps shall be placed by the barrel manufacturer immediately after the barrel is removed from the casting form and shall be carefully grouted in place with ASTM C-150 Type II Portland Cement Mortar and sand grout to insure a firm and water-tight joint. Manhole steps shall be five-eights inch (5/8") round wrought iron, cast iron or approved equal.

Joints between manhole sections may be sealed by a full mortar joint, or by "Ram-nek" pre-formed gaskets, as manufactured by K.T. Snyder Company, Incorporated, Houston, Texas, or approved equal. Cement mortar for jointing shall consist of one part Portland Cement, Type II, or more and three parts of sand.

Manhole rings and covers shall be the new Style Machined Denver Heavy, as manufactured by the United Iron Foundry, Denver, Colorado, NEENAH No. R-1718-A, or approved equal.

2.03 PROTECTION OF WATER SUPPLIES. Sewer lines shall be located a minimum of ten feet (10') horizontally from existing or proposed water mains. Where the sewer line crosses above the water line, is less than eighteen inches (18") vertically below the water line, or is less than ten feet (10') horizontally from the water main, the sewer line shall be made impervious by either of the two methods listed below:

(1) One length of cast iron water pipe twenty feet long shall be used for sewer pipe and centered over the water main. The joints between the sewer pipe and the cast iron pipe shall be encased in a concrete collar at least six inches (6") on either side of the joint.

pipe shall include payment for all excavation and backfill; the furnishing and installing of all pipe, fittings and embedment material; traffic control devices; cleaning, testing, connection to other sewer facilities and any other incidental items which may be required for the complete and accepted pipeline.

3.01 MEASUREMENT AND PAYMENT FOR MANHOLES. Manholes will be measured by counting the number of completed units in place. The depth of manhole shall be measured from the top of the ring to the flowline of the base. The contract unit prices for "Manholes (____ to ____ feet deep)" shall be full compensation for all equipment, tools, labor, materials, excavation, backfill and incidental items required for the construction of manholes in accordance with the construction plans and specifications.

3.02 MEASUREMENT AND PAYMENT FOR PAVED ROAD SURFACES: Replacement of paved road surfaces will be paid for by the square yard of surface area to be paved. The contract unit price for "Bituminous Pavement Replacement (Grading D) (Haul & Asphalt)" shall be full compensation for furnishing and placing Class 6 aggregate base course and hot bituminous pavement, including haul, watering, and compaction of various layers.

3.03 MEASUREMENT AND PAYMENT FOR SEWER CONNECTIONS. The contract unit price for "Service Connection" shall be full compensation for transferring service lines from the old sewer line to the new pipe including all labor, tools, materials, excavation, and backfill which may be required to make the proper connection.

3.04 MEASUREMENT AND PAYMENT FOR SAND AND GREASE TRAPS. The Contractor shall furnish and install precast concrete sand and grease traps in accordance with construction plans. The contract unit price for each "Sand and Grease Trap" shall be full compensation for all concrete removal and replacement, excavation and backfill, labor, tools, materials, and any other incidentals required for construction of the trap.

3.05 PAYMENT FOR MISCELLANEOUS MANHOLE REPAIRS. The lump sum contract prices for the various items of work described in the bid schedule under Miscellaneous Manhole Repairs shall be full compensation for all excavation and backfill, labor, equipment, tools, concrete, materials, temporary rerouting of sewer lines around manholes, and any other incidental items of work required to complete the work described.

REVIEW SHEET SUMMARY

FILE # 3-79

ITEM FRENCH QUARTER - Final Development Plan

PC MEETING DATE _____

MCC/CC MEETING DATE _____

DATE REC.	COMMENTS	
3-13-79	G.J. DRAINAGE	Okay
3-13-79	CITY FIRE	Approved as shown.
3-13-79	PD/VANDERTOOK	None.
3-15-79	CITY ENG/UTILITIES	I take no exceptions with contents of the documents on this project. Please notify the City Engineer's office in writing as soon as construction is complete and you have completed your inspection and are assured that City Standards for such construction have been met. At that time our office will inspect the system and insure properly constructed manholes, cleanliness of the system, proper grade, and that deflection of P.V.C. pipe does not exceed 7% of the diameter. Prior to the acceptance of the subject collection system by the City for maintenance purposes, it will be necessary to file with the City Engineer's office a complete set of mylar plans marked "as built" bearing a properly executed seal of a professional engineer and a statement by the engineer that the line has been tested for infiltration and that infiltration does not exceed 200 gallons per inch diameter per mile per day. We noted on your plans that you show the water line in Mesa Avenue to be six inch. In double checking our water book we find that this line is not a six inch line but a four inch line.
3-16-79	CITY ENG/RISH	1. All details shown for curb, gutter and sidewalk are fine. Work will require permit and inspection by City Engineer staff. 2. Drainage scheme is acceptable. 3. Will there not be an access to 1st Street at south end of development for emergency access? 4. Although I have no objection, it should be mentioned that the site grading will create a 3 ft. high fill at the southwest corner of the property. How will this fill slope be treated? (Visual impact on adjacent properties.)
3-19-79	PUBLIC SERVICE	Electric: easements as shown on plat are okay. Gas: Easements as shown are adequate for gas. Possible Joint Trench w/electric. NOTE: P.S.Co. only requires W 10' and S 10' for easement purposes so long as water and sewer are not in that area.
3/27/79	COMPREHENSIVE PLANNER	No comment
3/27/79	DESIGN & DEVELOPMENT PLANNER	
11/18/80	Staff Comments: Petitioner wishes to have property rezoned back to original zoning (R-3). Due to circumstances involved with this planned development staff agrees with this rezone request.	

For use in sale of
VACANT LAND ONLY

GRAND JUNCTION BOARD OF REALTORS

Grand Mesa Property
French Quarter

RECEIPT AND OPTION CONTRACT
(VACANT LAND)

October 16, 19 78

RECEIVED FROM Jon F. Abrahamson
Purchaser (as joint tenants), the sum of $ 5,000.00, in the form of check
to be held by Home Owners Realty, broker, in
his escrow or trustee account, as earnest money and part payment for the following described real estate situate in the
said county of Mesa, Colorado, to wit:

Block 1 West Lake Park Annex Second Amended except the East 10 feet.

with all easements and rights of way appurtenant thereto, which property purchaser agrees to buy upon the following terms and conditions for the purchase price of $ 104,900.00, payable as follows: $ 5,000.00 hereby receipted for, $ 99,900.00 in cash or certified funds at closing.

If a note and trust deed or mortgage is to be assumed, the purchaser agrees to apply for a loan assumption if required and purchaser agrees to pay (1) a loan transfer fee not to exceed $ N/A and (2) an interest rate not to exceed N/A % per annum. If the lender's consent to a loan assumption is required, this contract is expressly conditioned upon obtaining such consent without change in the terms and conditions of such loan except as above stated.

If a secured or unsecured loan is to be carried by the seller, seller shall not be obligated to carry said loan for any person or entity in lieu of the purchaser named herein.

Price to include: All improvements presently located on said property.

1. An abstract of title to said property, certified to date, or a current commitment for title insurance policy in an amount equal to the purchase price, at seller's option and expense, shall be furnished the purchaser on or before January 30, 19 79. If seller selects to furnish said title insurance commitment, seller will deliver the title insurance policy to purchaser after closing and pay the premium thereon.

2. Title shall be merchantable in the seller, except as stated in this paragraph and in paragraph 8. Subject to payment or tender as above provided and compliance with the other terms and conditions hereunder by purchaser, the seller shall execute and deliver a good and sufficient general warranty deed to said purchaser on February 16, 19 79, or, by mutual agreement, at an earlier date, conveying said property free and clear of all taxes; except the general taxes for 19 79, payable January 1, 19 80, and except none;
free and clear of all liens for special improvements now installed, whether assessed or not; free and clear of all liens and encumbrances except: NONE

and except easements for: of record

and subject to building and zoning regulations and the following restrictive covenants: of record.

3. General taxes for the year of closing shall be apportioned to date of delivery of deed based on the most recent levy and the most recent assessment. Prepaid rents, water rents, sewer rents, and interest on encumbrances, if any, and None
shall be apportioned to date of delivery of deed.

The printed portions of this form approved by the Colorado Real Estate Commission (SC 26-12-77)

No. SC 26-12-77. Receipt and Option Contract (Vacant Land)

Lightning Quick Print · Grand Junction, Colorado

4. The hour and place of closing shall be as designated by Homeowners Realty ~~Aalfs and Associates~~

5. Possession of premises shall be delivered to purchaser on Date of Delivery of Deed

subject to the following leases or tenancies: None

6. In the event the premises are substantially damaged by fire, flood or other casualty between the date of this agreement and the date of possession or the date of delivery of deed, whichever shall be earlier, this agreement may, at the option of the purchaser herein, be declared null and void and any deposit herein made shall be immediately returned to purchaser.

7. Time is of the essence hereof, and if any payment or any other condition hereof is not made, tendered or performed as herein provided, there shall be the following remedies. In the event a payment or any other condition hereof is not made, tendered or performed by the purchaser, then this contract shall be null and void and of no effect, and both parties hereto released from all obligations hereunder, and all payments made hereon shall be retained on behalf of the seller as liquidated damages. In the event that the seller fails to perform any condition hereof as provided herein, then the purchaser may, at his election, treat the contract as terminated, and all payments made hereunder shall be returned to the purchaser: provided, however, that the purchaser may, at his election, treat this contract as being in full force and effect with the right to an action for specific performance and damages.

8. Except as stated in paragraph 2, if title is not merchantable and written notice of defect(s) is given by the purchaser or purchaser's agent to the seller or seller's agent within the time herein provided for delivery of deed and shall not be rendered merchantable within 30 days after such written notice, then this contract, at purchaser's option, shall be void and of no effect and each party hereto shall be released from all obligations hereunder and the payments made hereunder shall be returned forthwith to purchaser upon return of the abstract, if any, to seller; provided, however, that in lieu of correcting such defect(s), seller may, within said 30 days, obtain a commitment for owner's title insurance policy in the amount of the purchase price reflecting title insurance protection in regard to such defect(s), and the purchaser shall have the option of accepting the then existing insured title in lieu of such merchantable title. The seller shall pay the full premium for such owner's title insurance policy, and the abstract, if any, shall be returned by the purchaser.

9. Additional provisions:

1. Property to be free and clear of all Uranium Tailings.

10. If this proposal is accepted by the seller in writing on or before October 20, 19 78, this instrument shall become a contract between seller and purchaser and shall inure to the benefit of the heirs, successors and assigns of such parties.

~~Purchaser~~ Jon F. Abrahamson — Date 10/16/78 — Agent Aalfs and Associates

Purchaser — Date — By: Beverly J. Allen

Seller accepts the above proposal this 19 day of October, 1978 and agrees to pay a commission of 6 % of the gross sales price for services in this transaction, and agrees that, in the event of forfeiture of payments made by purchaser, such payments shall be divided between the seller's broker and the seller, one-half thereof to said broker, but not to exceed the commission, and the balance to the seller.

Rocco Lagrani, Seller — Edith Lagrani, Seller

Purchaser's Address P.O. Box 2966, Grand Junction, Colorado 81501

Seller's Address 2221 Saddle Horn Trail

City of Grand Junction. Colorado 81501
250 North Fifth St., 303 243-2633

March 15, 1979

Plateau Engineering, Inc.
840 Rood Avenue
Grand Junction, CO 81501

Dear Sirs:

Re: The French Quarter 3-79

I have reviewed the plans and specifications for the sewage collection facilities for the subject project. I take no exception with the contents of the documents. We will maintain these in our files until construction is complete.

Please notify the City Engineer's office in writing as soon as construction is complete and you have completed your inspection and are ssured that City stanards for such construction have been met. At that time our office will inspect the system and insure properly constructed manholes, cleanliness of the system, proper grade, and that deflection of P.V.C. pipe does not exceed 7% of the diameter.

Prior to the acceptance of the subject collection system by the City for maintenance purposes, it will be necessary to file with the City Engineer's office a complete set of mylar plans marked "as built" bearing a properly executed seal of a professional engineer and a statement by the engineer that the line has been tested for infiltration and that infiltration does not exceed 200 gallons per inch diameter per mile per day.

We noted on your plans that you show the water line in Mesa Ave. to be six inch. In double checking our water book we find that this line is not a six inch line but a four inch line.

If you have any questions, please feel free to let me know.

Sincerely,

Duane R. Jensen

Duane R. Jensen, P.E.
City Engineer-Utilities

DRJ/hm

cc - District Engineer, Colorado Department of Health
City-County Planning Department

COLORADO DEPARTMENT OF HEALTH

4210 EAST 11TH AVENUE DENVER, COLORADO 80220 PHONE 320-8333

March 29, 1979

Mr. Jon F. Abranhamson
c/o Plateau Engineering, Inc.
840 Rood Avenue
Grand Junction, Colorado 81501

Re: Plans and Specifications Review for
The French Quarter - Mesa County

Dear Mr. Abranhamson:

This is to inform you that the plans and specifications for your sewer line extension has been approved by the Water Quality Control Commission at its meeting held on March 5, 1979. The plans and specifications conform to the Colorado Department of Health Criteria Used in the Review of Wastewater Treatment Facilities. This approval is subject to the following condition:

> A certification from the engineer must be furnished prior to commencement of operation stating that the facilities were constructed as shown on the plans submitted or a justification by the engineer and/or operating entity of any changes that were made.

This review does not relieve the owner from compliance with all county regulations prior to construction nor from responsibility for proper engineering, construction, and operation of the facility.

Please retain this letter for your permanent records.

Very truly yours,

WATER QUALITY CONTROL DIVISION

Jerry C. Biberstine dec

Jerry C. Biberstine, P.E.
District Engineer
Field Services Section

JCB:dec

cc: Mesa County Health Department
Mesa County Planning
Plateau Engineering, Inc.
District Engineer

October 24, 1979

Grand Junction City Planning Commission
Grand Junction City Council

Dear Sirs:

We hereby request that the zoning on Block 1, West Lake Park Annex, street address 1635 North 1 Street, Grand Junction, Colorado, to be returned to R3.

The zoning on this property was changed to P.B.D. by J. Abramsen when he had an option contract to purchase said property. His option has since run out and the transfer of property never occurred. Hence the request to revert back to R3 zoning.

Respectfully,

Rocco Ligrani
Rocco Ligrani
Edith Ligrani
Edith Ligrani
RL,EL/ml

cc

Ph. 242-4769