

MASTER PLAN

BISMARCK,
NORTH DAKOTA



TKDA

ENGINEERS PLANNERS

TOLTZ, KING, DUVALL, ANDERSON
AND ASSOCIATES, INCORPORATED

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Mr. Henry Nybo
West River Development Company
2900 East Broadway Avenue
Bismarck, ND 58501

10 November 1980

Mr. Vergil Morris
Rural Route No. 1
Bismarck, North Dakota 58501

Mr. Frank & Dan Schmaltz
Northbrook Shopping Center
1929 North Washington Street
Bismarck, North Dakota 58501

Re: Master Plan
Section 14, Twp. 139, Rge 80
Grande Prairie Estates

Gentlemen:

We are pleased to transmit herewith our report on conditions, recommendations and master plan for the improvement and development of Grande Prairie Estates Subdivisions being in Section 14, Township 139, Range 80, located approximately three miles northeast of Bismarck.

In the preparation of the report and master plan we find that this area is very suitably located for development. Its location with respect to utilities, street and highway systems and accessibility to the business and cultural community make it a prime area for development and marketing. The current population of the City of Bismarck is approximately 45,000, and with the normal rapid growth due in part to the development of the areas natural resources, it is reasonable to assume that by 1985, the growth might result in a population of 50,000 to 55,000. Grande Prairie Estates is so located geographically with ready access to necessary services to make it a prime area to accommodate a portion of the anticipated growth.

We wish to express our gratitude for the opportunity to prepare and present this report. The various utility companies have been most helpful in supplying necessary information on existing and proposed systems. It has been a pleasure for us to work with you and have your input into the study and report.

Yours very truly,

TOLTZ, KING, DUVALL, ANDERSON,
AND ASSOCIATES, INCORPORATED


James A. Skaret, P.E.
Manager, Bismarck Office

JAS/nrs
enclosures

CERTIFICATION

I HEREBY CERTIFY THAT this report was prepared by me or under my direct supervision and that I am a Registered Professional Engineer under the Laws of the State of North Dakota.




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SUMMARY

Section 14 of Hay Creek Township has been developed over the past 4 years into several rural subdivisions consisting of (1) Grande Prairie Estates (4 separate subdivisions), (2) Prairie Place Addition and, (3) Bohe Acres. Approximately 90 acres of Section 14 under the ownership of Mr. Vergil Morris, has not been subdivided. Existing subdivisions have a zoning designation of rural residential with the exception of Lot 2, Block 1, of Grande Prairie Estates 4th Addition which has an RLM-6 zoning designation.

Section 14 is rolling terrain typical of property along the Hay Creek Valley and offers a very scenic vista of the City of Bismarck to the southwest.

Direct access to State Highway 83 will be available during 1981 after completion of bridge and roadway construction west from the southwest corner of Section 14.

City utilities are reasonably available to serve Section 14 in the near future. Natural gas, electric and telephone utilities have been extended to serve existing residences in Section 14 and can be readily expanded to serve ultimate development of properties within the Section.

The City of Bismarck has been growing rapidly over the past 10 years and will likely continue to grow as a result of the expanding government center and energy development in western North Dakota. While Bismarck has grown in three directions, the City and developers have recognized the greatest potential for future residential growth to be to the north of the present City limits.

Recognizing the potential demand for additional residential development in a northerly direction from the City of Bismarck, the City master plans for future utilities services to the area and the need to plan for the resultant future expansion of the community, a master plan approach has been taken to provide sound guidance to the further development of Section 14, and in particular, the land holdings of Mr. Henry Nybo, Mr. Vergil Morris and Mr.'s Frank and Dan Schmaltz.

CONCLUSIONS

Based on the work completed, it can be concluded that:

1. Section 14 lends itself to the integration of multiple family and single family residential development.
2. Multiple family (i.e.: townhouse) development on the extremities of the Section can be accomplished taking advantage of primary access routes and land characteristics without adversely effecting the basic rural residential environment established to date.
3. An existing limitation on development is the inadequate water supplies available from groundwater sources.
4. Extension of City water and sewer utilities can be phased to eventually serve the entire Section which will significantly improve the marketability of undeveloped property and improve the environment for existing residential development.
5. Existing rural street and drainage standards can be maintained in areas of single family residential development.
6. The City of Bismarck would seem to favorably consider annexation of Section 14 at this time. ✓

7. Zoning changes required to implement the proposed master plan are relatively minor. ✓
8. Zoning and necessary platting should be done concurrently in accordance with City Ordinance after completion of annexation procedures.
9. The cost for sanitary sewer and watermain construction from the trunk City water and sewer systems to the boundaries of Section 14 would be paid for by the respective City utility.
10. Sanitary sewer and watermain costs for extensions into Section 14 serving undeveloped properties must be paid by the developer(s).
11. Existing developed lots within Section 14 may pay their proportionate cost of the sanitary sewer and watermain extensions by special assessment.
12. Initial street grading costs in undeveloped areas must be paid for by the developer(s).
13. Future street improvements, such as surfacing, can be petitioned for by the land owners and paid for by special assessment.

RECOMMENDATIONS

In view of the conclusions cited above, it is recommended that:

1. The proposed Master Plan and a request for annexation be submitted to the City including all of Section 14 with the possible exception of the Vergil Morris homestead in the NE corner. Annexation of Mr. Morris' homestead should be dependent upon Mr. Morris' plans for subdivisions and development of his 52+ acre tract within the next 2 - 4 years.

2. Planning commence for the zoning and replatting of RLM areas of the proposed master plan and the proposed Planned Unit Development.
3. Staging of the ultimate development including extension of sewer and water utilities be accomplished in such a manner as to utilize the early availability of connection to the intermediate water pressure system. Areas requiring high pressure water system service should not be included in the initial staging of the project.
4. The City be requested to determine funding requirements for the extension of water and sewer utilities.

The location of Section 14, Township 139 North, Range 80 West, in Hay Creek Township, northeast of the City of Bismarck, has a number of features making it desirable for various types of residential development. From practically all points in the section, its elevation and view to the southwest overlooking the City is very attractive. It presents a quiet, peaceful atmosphere removed from the highly urbanized area, but yet gives a feeling of closeness when viewing such landmarks as the State Capitol Building, the spheroid elevated water storage tower, the Basin Electric Building and the Missouri River and the blockhouses of Fort Lincoln in the background.

The accessibility of the area to the City where residents may be employed at various locations, would involve no more than 3 to 5 miles of travel and probably no more than 15 minutes to travel to and from work. The rural type living with ease of access is of considerable benefit to those living in the area. The arterial street and highway systems, when completed, are such that travel would be enhanced. The connection west to U.S. Highway No. 83, a distance of one mile, will be available as soon as the bridge crossing Hay Creek is completed. The Burleigh County Engineer indicates that construction is scheduled for 1981. This will provide for travel of approximately 4 miles to downtown Bismarck. The paved highway to the south (Centennial Road extended), provides easy access to the eastern areas of the City. These two routes will ultimately provide easy access to all areas of Grande Prairie Estates.

The major utility systems, domestic sewer and water supply, are reasonably accessible to the area and it is anticipated that improvements in the planning stages will improve the status. The topography of the Section lends itself

nicely to gravity systems for domestic sewer service. The need for storm water drainage systems does not appear to be great as the coulee running from northeast to southwest provides adequate drainage. In the platting process utility, drainage and recreational easements have been provided which is an added benefit to the area.

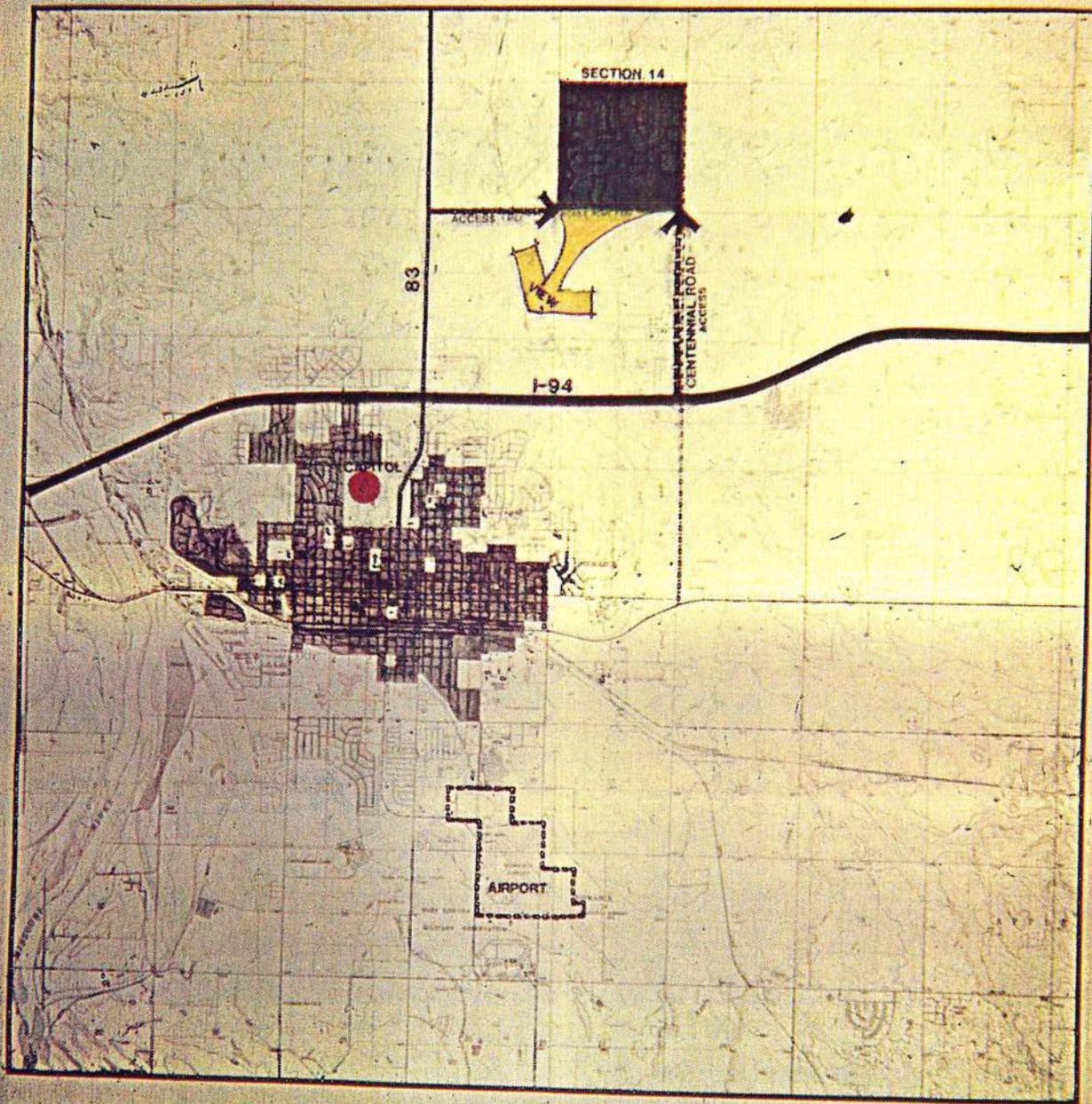
The electric, natural gas, telephone and cable-TV services are readily available and will not present any problems. In portions of the area, electric and telephone service is now in place underground on the rear lot lines. (See Figure 4). In general, the area is readily available to utility services and therefore is in prime condition for development in comparison with other platted areas on the periphery of the City.

The section is characterized by slightly rolling terrain and open land, practically devoid of trees and shrubs. Over 50% of the area contains poor soils for on-site septic systems and nearly a quarter of the area is characterized by drainageways and low areas having very poor soils.

At the present time there are in excess of 100 platted subdivisions adjacent to the City of Bismarck. Many of these are small subdivisions with large lot areas designed primarily for rural living and are so located that they will never be annexed to the City. These areas must rely on wells for water supply and drain fields for sewage disposal. They are dependent on the rural Fire Department for fire protection, the County Sheriffs Department for law enforcement and the County Highway Department for street and highway maintenance. The zoning and land use is under the jurisdiction of the County Planning Commission and administered by the Community Development Office.

The location of Grande Prairie Estates Subdivision in Section 14, Township 139, Range 80, in Hay Creek Township (see Figure 1), is adjacent to the corporate limits of the City and as such may avail itself of City utility services when annexation is accomplished. Likewise, schools, fire and police protection, street maintenance, snow removal, garbage and refuse collection services will all be available. The highway-water-sewer service map (Figure 3), which has been prepared for Section 14, will show how these services may be related to the City systems to provide the services necessary for the orderly development of the area.

The adjacent land uses at the present time are agricultural. This situation will undoubtedly change as the growth of the City develops into these areas. The zoning and land use will then change and such changes will be governed by the Planning Commission. The developers of Grande Prairie Estates Subdivision will have a voice in how the adjacent areas will be developed through the hear-



**LOCATION OF SECTION 14, HAY CREEK TWP
 NYBO, MORRIS, AND SCHMALTZ BISMARCK, NORTH DAKOTA**

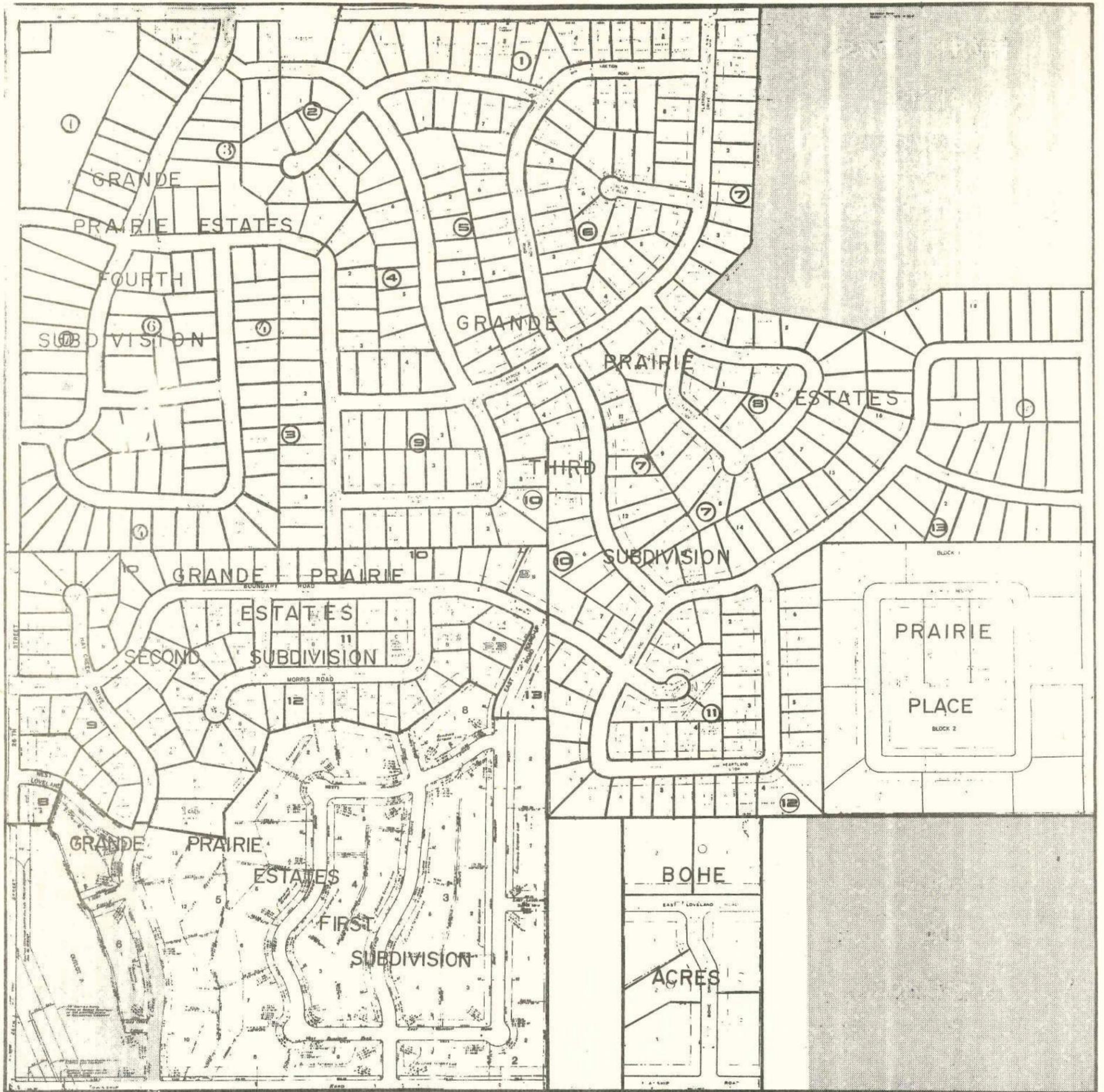
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OCTOBER 2, 1980

COMMISSION # 7421-01





BASE MAP

GRANDE PRAIRIE ESTATES, BISMARCK, NORTH DAKOTA

TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES, INCORPORATED

Master Planning Area



Scale in Feet
0 200 400



FIGURE No. 2

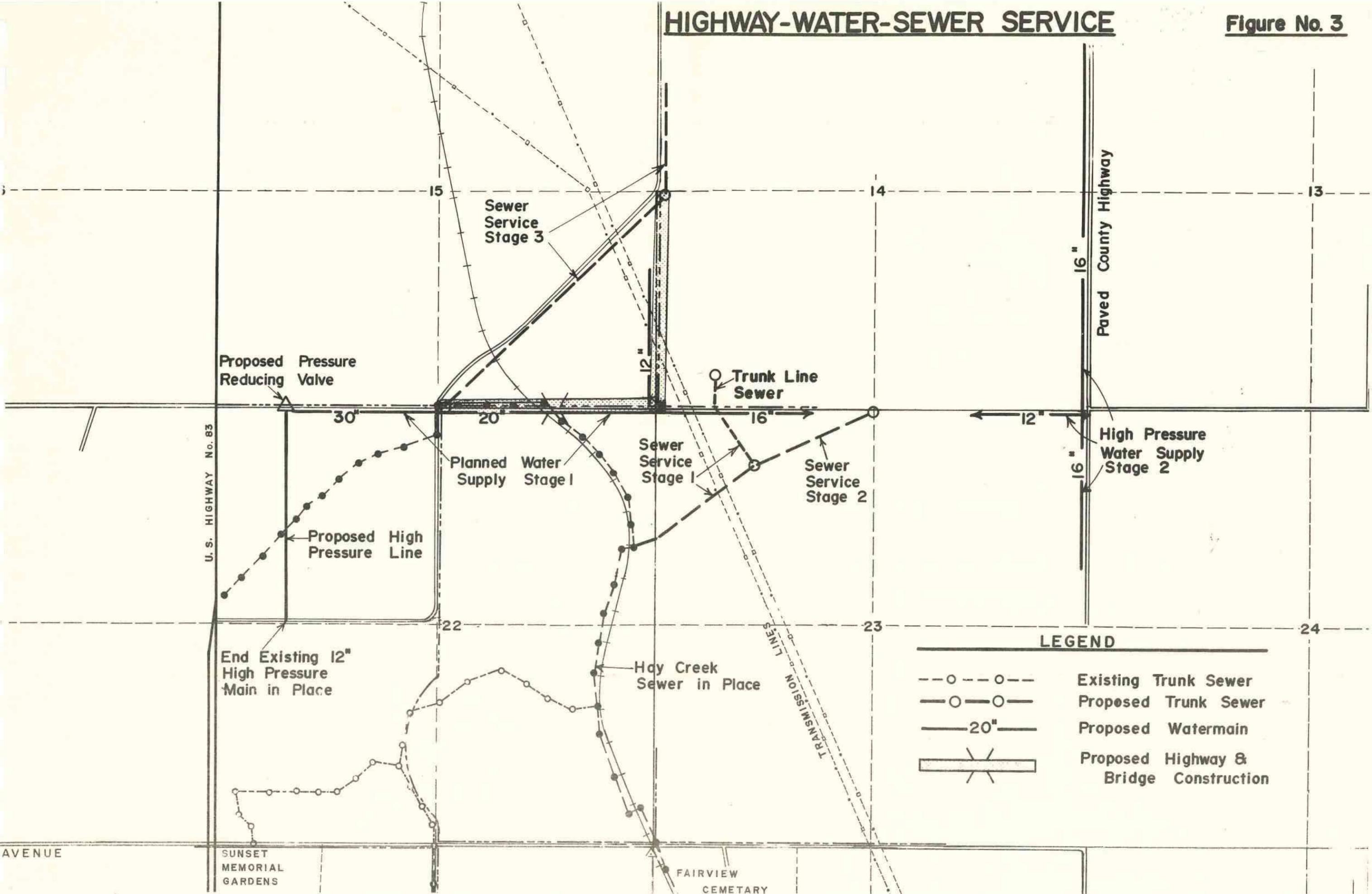
ing process before the Planning Commission and the City Commission as these areas lie within the peripheral area over which the City has jurisdiction.

The areas lying to the south in Section 23 and Section 22 to the southwest, are now in the planning stages. These areas are currently zoned RT, RM and RLM, all of which are residential zones with a variety of different uses. The Carufel's Subdivision in the Southeast corner of Section 23 and areas along the West side of Section 22, have commercial designations and the Southwest one quarter of Section 23 is zoned industrial. These zoning designations will possibly change to some extent, where there is no existing use, as the area develops. Here again, the developers of Grande Prairie Estates Subdivisions will have some control of land use through the hearing process.

The orderly development of the areas to the south and west will to some extent, dictate the type of development in Section 14. As these areas develop, it will be necessary to extend the City utility services which will be of ultimate value to Grande Prairie Estates. The Hay Creek Mobil Home Court to the southwest will also be of value in bringing City services closer. As these areas develop, it will increase the need for schools and parks which will also enhance the development in Section 14.

HIGHWAY-WATER-SEWER SERVICE

Figure No. 3



WATER SUPPLYRural Water System

The Burleigh Water Users Association has under contract, the construction of a water treatment plant adjacent to the Missouri River north of Bismarck and a distribution system to serve areas adjacent to Bismarck and east as far as Driscoll. The treatment plant, with a rated capacity of 650,000 gallons per day will deliver treated water through an 8" main to a point west of U.S. Highway No. 83, three miles north of Century Avenue. At this point, the supply main will be reduced to a 6" main running in an easterly direction and passing one mile north of Section 14. Included in the contract is a 1½" line running south along the east line of Section 14 to a point near the KOA camp site. A 1½" line will extend into Grande Prairie Estates along Heartland Drive to serve four customers located on Lots 4 and 19, Block 7 and Lot 5, Block 10, Grande Prairie Estates Third Subdivision, and Lot 1, Block 5, Grande Prairie Estates First Subdivision to serve customers: Joseph R. Hieb, Clifford D. Ternes, David C. Upgren and Gary Ternes. The Association estimates that it might be possible to serve only 15 to 20 more customers from this line which would be only a small portion of the area when fully developed. *no*

The customer cost is \$350.00 to join the Association and must be paid prior to the award of contract. This will bring water to the curb stop within 75 feet of the house. There is a flat rate charge of \$25.00 per month to amortize the cost of installation, plus \$2.50 for each 1000 gallons of water used. On this basis the average cost to a one family home

is estimated to be in the range of \$40.00 to \$50.00 per month.

The location of the service line to the area may vary within the dedicated right-of-way depending upon location of other utility services. Normally, the line is routed along the ditch line to eliminate damage, so far as possible, to street or roadway surfacing. If it should be determined feasible to install this service on a temporary basis until City water might be available, care should be taken in the location of the line so that minimum conflict of location and damage to the system during construction might occur. It is possible that an agreement might be entered into whereby the rural system could be abandoned at no cost to the developer when city service is installed. In the event that this should occur, a formal agreement should be entered into with the Burleigh Water Users Association.

In the planning stages of development one might be led to giving consideration to the possibility of installing the regular city distribution main system and supply water to it from the rural water system on a temporary basis until complete city service is available. This would not give fire protection nor qualify for the fire insurance rates where full service is provided. It is likely that there would be periods of taste and odor problems where there is not adequate turn-over of water in the system. This problem would require flushing the line periodically. There would be a significant cost factor of water wasted in the flushing process. The installation of the permanent system would need be accomplished by design and construction in accordance with City specifications and inspection approval. This is a rather unorthodox approach, but has been done in other

areas during the transition period. A study would have to be made to determine whether or not FmHA funding for construction grant and/or low interest loan might be available for such an improvement. So long as the area is outside the corporate limits of the City, the special assessment procedure cannot be used. The alternative would be for the developer to make the installation and include the cost in the price of each individual lot. Consideration of the above provisions for rural water supply is not recommended.

City Supply System

A master plan for water storage and distribution facilities for the City of Bismarck was completed in July, 1978. This plan provides for a supply main system to service Section 14 from the intermediate and high service pressure systems. In general, the west one-half of the section would be served from the intermediate service system and the east one-half from the high service system. The plan indicates that the intermediate service system would serve the areas with a ground elevation of 1720 to 1800 and the high service system would serve the areas with a ground elevation of 1800 to 1900 feet above mean sea level. Variances to the extremes of these pressure areas could be corrected by the use of simple pressure reducing valves and/or individual home pressure pumps as the need may require. These provisions could be made during the development period of the completed system.

The supply main system has been completed by the installation of a 20" main on the high service system along U.S. Highway No. 83 to the west one-quarter corner section 22 (Tierney Chevrolet Co.), and a 12" high ser-

vice main to a point 820 feet east of this point. The City Engineering Department is currently developing plans to extend the 12" line east to a point approximately 1320 feet from the west one-quarter corner. At this point a 10" line is proposed to be extended north to the north line of Section 22 (north line Capital Electric). It is proposed that at this point a pressure reducing valve be installed, (see Figure 3), to give intermediate service to areas east which require intermediate service. The supply main system to the areas east would consist of a 30" line to the north one-quarter corner Section 22 (one-half mile east U.S. Highway No. 83), a 20" line to the southwest corner Section 14 (one mile east U.S. Highway No. 83) and a 16" line along the south line section 14 to the southeast corner Grande Prairie Estates First Subdivision. It is also proposed that a 12" line be extended north along the west line Section 14, (26th Street extended), to the west one-quarter corner of Section 14.

The alternate to this route would be the installation of a 36" supply main on the intermediate system on 19th Street from I-94 to Century Avenue and a 30" line along proposed 19th Street from Century Avenue to the north one-quarter corner Section 22 (one-half mile east of U.S. Highway No. 83), as outlined in the previous route description. This route is through unplatted areas and could present problems in acquisition of right-of-way. It would increase the cost of initial service due to a greater distance and larger size supply main. While this will be a part of the ultimate system, the first alternate appears to be the most logical at this time.

Information available at present would indicate that the City utility fund would bear the expense of the system to the southwest corner of Sec-

tion 14. The developer would bear the cost of 8" watermains serving the interior areas of the Section. The theory of this arrangement being that the developer would be responsible for the cost of the main to serve his area while the utility would bear the cost of the additional size main necessary to serve other areas.

The distribution system within the subdivision would consist of a minimum 8" line (see Figure 8), and would be the financial responsibility of the developer.

The construction of the water utility service would be contingent upon annexation and formalizing arrangements with the City of Bismarck. If these conditions are realized, it is possible that construction could proceed in 1981.

DOMESTIC SEWER

A master plan for wastewater conveyance facilities for the City of Bismarck was completed in July 1978. This plan provides for a trunk line system to service Section 14 by connecting to the Hay Creek Sewer trunk line system. The portion of the overall city trunk line system lying north of I-94 is designed to serve an area of 5960 acres of the Hay Creek drainage area and will provide ultimate service to 41,000 persons. Grande Prairie Estates will be part of this system.

The master plan developed to serve Section 14 provides for a 15" trunk line sewer connecting to the Hay Creek Sewer system approximately 1200 feet south west of the south line of Section 14 at its intersection with the drainage coulee 900 feet east of the southwest corner. From this point, the trunk

line system will extend in a northeasterly direction along the natural drainage easement a distance of 6,225 feet, to the north line of Grande Prairie Estates Third Subdivision. When the area in the extreme northeast corner of the subdivision is platted, and additional 1600 feet of trunk line will be extended to the east line of the Section at a point 800 feet south of the northeast corner. This will provide for the trunk line system for all of Section 14 except an area of approximately 60 acres lying in the extreme northwest corner and properties in the southeast corner.

The collection system to service the four subdivisions, (see Figure 7), except the 60 acres in the northwest corner, will consist of approximately 34,600 feet of 8" sewer. This system will be so located to serve 439 lots in the four platted subdivisions. When the area in the northeast corner, and area of approximately 52 acres, is subdivided, comparable extensions will need be added to the collection system.

The area lying in the southeast corner consisting of 37.5 acres which is intended to be zoned for Planned Unit Development to allow for the proposed development of 240 townhouses, will ultimately be served by a gravity system extended eastward through Section 23. In the event that the Townhouse Development should proceed prior to installation of the gravity main, it would be necessary to provide a temporary pump station and force main to the west along the south line of Section 14.

The topography of the Section is such that it lends itself nicely to the development of a gravity flow system. The trunk line system running along the drainage easement need only be a minimal depth to give protection from frost damage, erosion or other factors that might cause damage to the system. It

is estimated that the average depth might not exceed 6 to 8 feet. It is possible that some problems could be encountered in construction due to underground water. The topography is such that the line could be located above the flow line of the coulee to alleviate some of the problems. The grade of the natural drain is approximately 0.4% which is ample for gravity flow of a trunk line system. With a variance of 50 feet, from elevation 1750 to 1800, the collection system should not present any problems for gravity flow into the trunk line system. In the platting process adequate provisions will have to be made for utility easements which will allow for routing of the system with a minimum of grade problems for a gravity flow system. The average depth of the collection system should be 10 to 12 feet which will provide for adequate grade for the service lines from the house to the sewer main.

The acreage in the northwest corner of the Section consists of a separate drainage area discharging into Hay Creek. The predominant contour at the lower level of this area is 1760 while the high contour along Deadwood Drive is 1780 thus making gravity sewer service impossible. The gravity service for this area is to follow downstream in a southwesterly direction a distance of nearly one mile to connect to the Hay Creek sewer. A considerable amount of this low area does have unsuitable soil for development, however, it is an area that could be developed into open space park and recreation areas. In this event, the areas along Deadwood Drive might be zoned for multiple housing areas adjacent to a park and recreational area. Consideration could then be given to providing temporary sewer service to the area by the installation

of a small package lift station to be used until such time as the gravity system to the southwest be constructed.

STREETS AND HIGHWAYS

The access to the area by the county highway system is of vital importance to its orderly development. The logical and most effective access will ultimately be from U.S. Highway No. 83 which lies one mile west of the west line of the Section. The other important access will be from the south which is the extension of Centennial Road, a major artery of the City street system, which will pass on the east line of the section. This route is important as it is the only major street in the area where an interchange with I-94 is available. (See Figure 3).

The access to the west is dependent upon the construction of a bridge crossing Hay Creek which is scheduled for the summer of 1981. This will allow for a surface crossing of the Soo Line Railroad adjacent to Hay Creek. When the bridge construction is complete, the grading and gravel surfacing of one-half mile will be completed so that access to the west will be available. There are no plans for the all weather surfacing of this route at this time.

The paved County Road on the east line of Section 14, and which will no doubt be an extension of Centennial Road, is in only fair condition and is inadequate for anticipated traffic volumes which might be expected as development of the area takes place. The long range plan for the improvement of this would indicate that regrading would be necessary at which time vertical grades would be corrected and a widened section provided. When the grading is completed, a new paved section would be constructed. This work does not carry a high priority at this time, and it is estimated that improvements might not be

scheduled for a period of 5 to 10 years. As development of Section 14, and other adjacent areas, takes place the demand for an adequate highway section could possibly change the priority schedule.

It does not appear that major improvements on the north line of Section 14 will be required in the foreseeable future. The main flow of traffic will naturally be to the south and west toward the City and there would not be major traffic volumes on the north line. The west one half mile is relatively unimproved while the east one half mile has been graded and graveled. It is apparent that some improvements to this mile should take place to allow for traffic that would require this route. There are no plans for improvements at present and work will not proceed until such time as the need requires.

The west line of Section 14 will eventually become the extension of Twenty-Sixth (26th) Street and will provide the necessary access to the west portion of the Section. At present, the north one-half mile is available to traffic, however, the condition of the road is poor, as the drainage is inadequate and there is no gravel surfacing. The south one-half has no improvements and as such, there is no traffic. There is a plan being prepared to grade this portion in order to provide access to the area west of Section 14. The major problem in developing this section is a steel tower on the U.S. Department of Interior power line. A portion of the tower is within the 66 foot right-of-way, (see Figure 6), set aside for public highway use. The matter of the location of this tower will need to be resolved by the county before street or highway design can be completed. The cost of moving the tower would be excessive, which would indicate that design would need be made with the tower in its present location.

The internal street system (see Figure 9), has adequate right-of-way to allow for various types of street improvements which might be selected. The platting process has been completed in a manner conforming to the general contours thereby eliminating grade problems and the moving of excessive amounts of dirt to make street grades desirable to the area. Contour grading to rural section and gravel surfacing of streets has been completed.

The City ordinance for E Estates district regulations, Section 15.0228, provides that rural-type road sections will be permitted and shall be surfaced with a minimum of 4" of gravel. The ordinance further provides that major streets have a minimum width of 36 feet and secondary and minor streets a width of 24 feet when outside the corporate limits of the City. The ordinance further provides that when within the corporate limits of the City, major streets shall have a roadway of 36 feet. When annexation takes place, the matter of existing roadway width will need be resolved. It would seem that favorable consideration would be given to present widths in that the streets were developed in accordance with existing ordinance when outside the corporate limits. Where on-street parking is permitted, all streets shall have a minimum width of 40 feet, (see Figure 10).

When development has been completed to the point where there will no longer be a need for heavy hauling equipment such as concrete and lumber trucks, thought might be given to a low grade asphalt type of surfacing which will eliminate dust and erosion, thereby making it more pleasing for those living in the area. This could be accomplished by an asphalt prime and seal course or an application of cold-mix asphalt bladed and compacted in place. This low grade type of surfacing would provide adequate paved surface for a number of years where traffic volumes and weights are not a problem.

DRAINAGE

The topography of Section 14 is such that surface drainage will be adequate for most all of the area. There could develop small isolated areas where drainage facilities might be required to correct small drainage problems. The coulee running from southwest to northeast through the Section provides adequate surface drainage. The contours are such that surface drainage may be directed into the natural drain. This area has been set aside for utility, drainage and recreational purposes and as such no development will take place which will be harmed by runoff waters.

In developing the rural-type street system, it will be necessary to provide adequate culvert capacity for private driveways and at street intersections. In developing the rural-type section, property owners should be encouraged to extend their lawns through the ditch section to the shoulder of the road. It is important to keep this area mowed and free and clear of weeds and other growth or trash of any form which would tend to obstruct the flow through culverts or other type drainage systems. The drainage system will require close attention in the spring of the year or other periods of high run-off conditions to eliminate damage to the grassed areas.

In the development of the individual lots, care must be taken to grade the lots in such a way that drainage will be directed from roof, driveway and other areas into the ditch or natural drainage area in such a manner as to eliminate damage to adjacent property or cause erosion by concentrated flows.

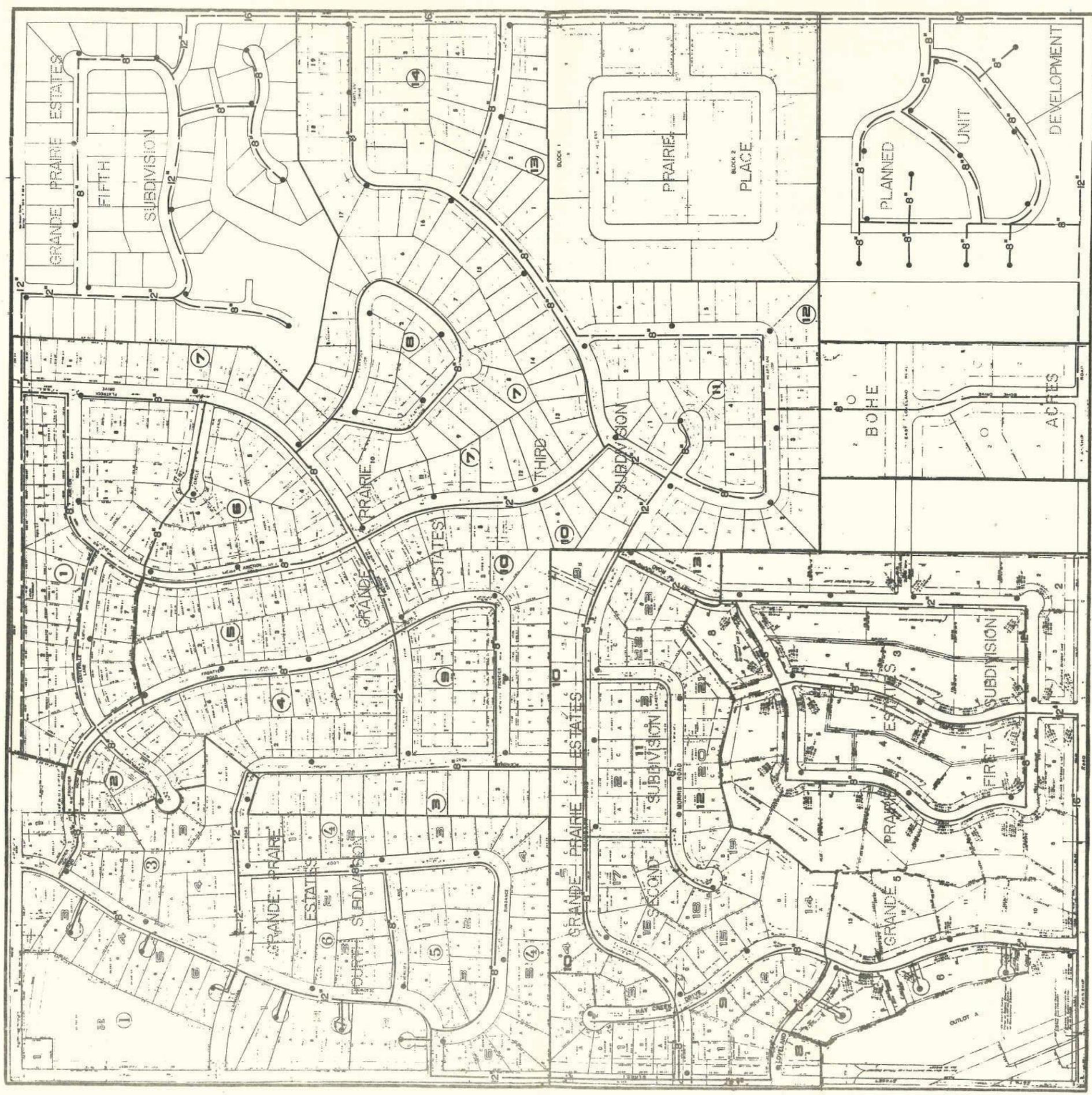
ELECTRIC-NATURAL GAS SERVICE

The electric energy for Section 14 will be furnished by Capital Electric Cooperative, Inc. The service is in place from the sub-station on the south side of Century Avenue east of Nineteenth Street to Hay Creek Court, a short distance southwest of Section 14. There is a 3 phase line in place on the east and north lines of Section 14 which provides service to customers now being served in the area. The ultimate plan is to extend service from the existing source near Hay Creek Court to Section 14 and tie to the 3 phase system which will provide for a looped system with two sources of power. There is service in place, (see Figure 4), at present to serve customers in the area. It is anticipated that ultimately the gas, electric, telephone and cable TV will be underground in a common trench on easements provided at the back lot line.

The natural gas service will be provided by Montana-Dakota Utilities Company if available and economically feasible. There is a high pressure line along the north line of Section 14, which transports natural gas to the eastern part of the state. Service cannot be provided from this line. There is a 12" line along the west line of the Section which is available for natural gas service to the Section. With proper arrangements with MDU, natural gas service can be extended into the area as the need requires. Adequate lead time should be provided to allow the supplier sufficient time to arrange the construction schedule.

TELEPHONE - CABLE TV

The telephone service provided by Northwestern Bell Telephone Company, to Section 14, appears to be adequate and no problems are anticipated for



WATER SYSTEMS MASTER PLAN
GRANDE PRAIRIE ESTATES, BISMARCK, NORTH DAKOTA
TOLTZ, KING, DUVAL, ANDERSON AND ASSOCIATES, INCORPORATED

Intermediate Pressure Zone
 High Pressure Zone

Scale in Feet
 0 200 400

FIGURE NO. 7

future installation. The service to the area enters near the southwest corner of the Section and installations are in place, (see Figure 4), serving a portion of the area. The lines are underground and service will be provided from the back lot line where electric, gas, telephone and cable TV will share a common trench location.

The Cable TV service is now in place to Hay Creek Court. The extension of the system will depend on the development of the area, the installation of other utility services and the annexation of the areas to the corporate limits of the City. In order to provide service into unincorporated areas, it is necessary that the Federal Communications Commission (FCC), grant a waiver and the County pass a supportive resolution authorizing such service. In the event that the other utilities do proceed with the extension of service, the cable for TV service will be placed in the common trench and energized only after the proper authorizations have been granted.

SCHOOL-PARK

The Bismarck School District recognizes the future need for an elementary school in the northeast area of the City. The Robert Miller elementary school located at 1989 North 20th Street has recently been completed. This school located adjacent to and south of Interstate No. 94, serves the immediate area, however, the development of Section 14 together with other anticipated adjacent area development and the Hay Creek Court will require additional school facilities. The School District is presently giving consideration to a future site for an elementary school in the general area. Consideration will be given to the development of Section 14 and the future requirements for a school in the general area. In the planning of the area, it is well to give consideration

to a school site as this facility is of prime importance in the marketing of an area as prospective home owners are usually concerned about the availability of schools for their children.

The Bismarck Park District has approximately 1500 acres, either owned, or leased, in the park system. Major items included in the system include 3 swimming pools, 2 golf courses, numerous tennis courts and ball fields coupled with general recreational and picnic area facilities. In the northeast area of the City, the closest recreational facilities are near Century High School and a general recreational area on Divide Avenue at Twenty-Sixth (26th) Street. It is natural to assume that as development takes place in the area of Section 14, that additional recreation areas would be important to the area. It would appear that there are natural areas desirable for parks and recreational facilities along the Hay Creek Valley and its tributaries. It is recommended that thought be given to some sort of park development in the northwest corner of Section 14 due to its topographic features. The possibility of developing the area with condominiums or townhouses would make a park area appealing. Thought might also be given to smaller play ground type areas which would be appealing to the development. In many cases the School District and Park District have joined in the development of facilities which are beneficial to the area and conserve on the land use area. These two entities of government play an important roll in the development of an area and can be beneficial to future property owners.

UTILITY LOCATION

In the platting process of the four Subdivisions of Grande Prairie Estates, provisions were made for various easements to provide for the installation of the services necessary for orderly development. This foresight and planning will be of great benefit in the installation of services and other beneficial uses. A sizeable utility, recreation and drainage easement has been provided in the first subdivision and continues on a smaller scale through the second and third subdivision as the drainage decreases. This will provide necessary right-of-way for the trunk line domestic sewer system, a flood plain for surface water drainage and areas that might be developed for park and recreation improvements.

Where it is apparent that sewer lines must cross private property to provide gravity service, 30 foot minimum easements have been set aside for this purpose. The back lot lines of most all lots have set aside a 7 foot easement which when combined with the lot facing the opposite direction results in a 14 foot utility easement. It is in the 14' back lot line easement strip that four of the services are normally placed. It is common practice for the electrical, natural gas, telephone and cable TV to be placed in a common trench.

Consideration has been given to the installation of water and sewer mains in the easement areas located on the rear lot lines. This location for water-mains would not be practical as the fire hydrants must be located on the street where they are readily accessible to fire fighting equipment. This could be accomplished with the main lines on the rear lot line but the hydrant leads to the street would be 200 to 300 feet in length thus increasing the cost materially. This arrangement could be accomplished for the sewer line, however,

the service line to the structure would be long and the cost greater than going to the street.

The City Public Works Department discourages the practice, and no doubt would prohibit the placing of main lines on the easement at the rear lot line. This arrangement was followed in one of the early subdivisions of the City, and found that maintenance of the system was most difficult. These rear lot areas are generally developed with trees, hedges, gardens, fences, clothes lines, utility sheds, etc., thereby making it almost impossible to reach with maintenance equipment. Even though there is an easement permitting ingress and egress for maintenance, the property owner is generally most disturbed when entrance with heavy equipment is necessary.

From a cost effective standpoint, recent investigation indicates that the estimate of cost for a 6" sewer service line would cost about \$5.25 per lineal foot and about the same for a 1" copper water service, or a total of \$10.50 per lineal foot for a combination of both services. In most all areas of the subdivisions, the setback is 40 feet and with an 80 foot right-of-way another 40 feet would result to the center of the street making a total of 80 feet of service line length. The minimum lot depth in most cases is 200 feet, and in many cases somewhat more. With the 200 foot lot depth and a 40 foot setback, the service line length would result in 160 feet. Using the estimated combined sewer and water service line cost of \$10.50 per lineal foot, the route to the rear lot easement would be \$1,680.00, while the route to the street would be \$840.00. The cost of replacing the gravel surfacing now in place would be considerably less than the cost of longer service lines. There will be exceptions to the street route where gravity flow grades dictate

that the sewer line be constructed on the easement. In these cases service will be provided to adjacent lots and the street will not be disturbed for sewer installation. The trunk line sewer to which the lateral system is to be connected, will be located in the utility, recreation and drainage easement and will not conflict with the street section other than at the point of crossing.

The 14 foot easement at the rear lot line provides a practical location for underground electric, gas, telephone and TV service lines as those services require very little maintenance, and when it does occur, normally does not require the moving in of heavy equipment. By separating these services from the sewer and water mains there is less conflict of location and elimination of service when maintenance problems are encountered.

OUTLOT A

There are three (3) power lines passing through the SW $\frac{1}{4}$ of SW $\frac{1}{4}$, and more particularly, through Outlot A. The rights-of-way for such lines are covered by recorded easements as follows:

1. Document Number 143215 to United States Department of Interior Bureau of Reclamation dated September 15, 1950, the grantee, providing for a strip of land 125 feet in width as shown in Figure 5.
2. Parcel No. U-320 to United States Department of Interior Bureau of Reclamation, dated August 28, 1957, the grantee, providing for a strip of land 125 feet in width as shown in Figure 5.
3. Document Number 210737 to Montana-Dakota Utilities Company dated May 25, 1965, the grantee, providing for a strip of land 100 feet in width as shown in Figure 5.

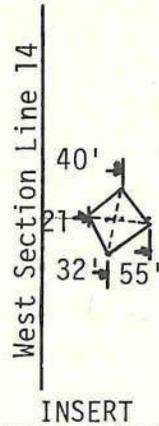
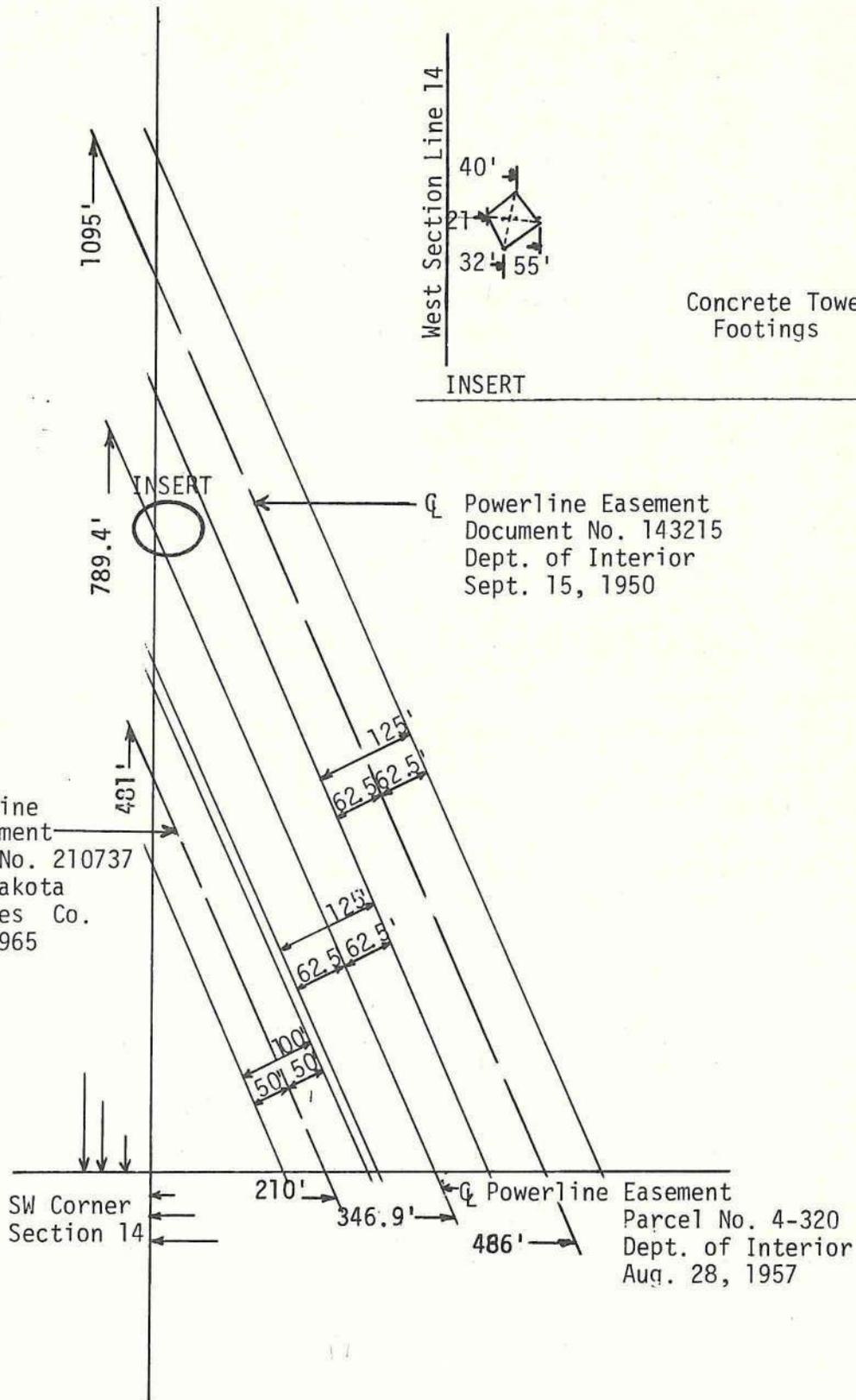
The easements granted to the United States Department of Interior Bureau of Reclamation provide for the perpetual right to enter upon premises to construct, reconstruct, operate, maintain, and make necessary replacements in connection with the transmission line and to permit the attachment of wires of others, together with the present and future right to clear the right-of-way or to trim orchard trees to the extent deemed necessary and to keep the same clear of brush, timber, and inflammable structures. The Montana-Dakota Utilities Company easement provides further the right to keep the right-of-way clear of timber, grain, bins, mounds, and stacks.

POWER LINE EASEMENTS

Figure No. 5



SCALE 1"=20
 0 10 20 30



Concrete Tower Footings

☞ Powerline Easement Document No. 210737 Montana-Dakota Utilities Co. May 26, 1965

☞ Powerline Easement Document No. 143215 Dept. of Interior Sept. 15, 1950

SW Corner Section 14

☞ Powerline Easement Parcel No. 4-320 Dept. of Interior Aug. 28, 1957

In general, the grantor shall have the right to cultivate, use and occupy the premises for any purpose which will not constitute a hazard to life or limb or interfere with any of the rights and priveleges of the grantee. This right shall not extend to or include the erection of any structure, including the drilling of wells or permission to the public for use of any portion of the easement area without advance written permission of the grantee. The grantee shall exercise due care and diligence in the exercise of the rights and privileges granted.

It is proposed that this area be designated as an area of private open space to serve proposed multi-family residential development. Due to the spatial limitations of Outlot A, it has been determined that the site could be used for clustered multi-family development. A 50 foot setback from the gas line is shown and trees and shrubs are proposed in order to ensure visual privacy-from adjoining roads. Some plantings should be included on the easement to screen 26th Street from the residences.

UNPLATTED AREAS

Northeast

The unplatted area in the northeast corner of the section consists of approximately 52 acres. The existing zoning is Rural Residential and should be rezoned to "E" Estates. The proposed platting provides for 63 single family residential lots with a minimum of 20,000 S.F. each. Very poor soils are found in low-lying drainage areas. No development should occur in these areas, which comprise 13% of the total site. As a result of severe restrictions, a greenway/recreation open space is proposed. Included in the open space area is an existing water body.

Access to the greenway is provided by a 50 foot wide recreational easement and at one point, from a public street. Several lots might take advantage of the recreational area. Many backyards front on the green space, thus expanding the opportunity for many residents to enjoy the open space.

Responding to design consideration, a majority of the lots were oriented to maximize solar access. By laying out the lots in a north-south configuration, solar heating can be utilized in winter and southern breezes can be used for cooling purposes during the summer months. Most lots are of sufficient size to secure access to sunlight regardless of their orientation.

An existing gas line paralleling the north boundary places restrictions on development of the northern lots. A 50 foot setback is suggested from the gas line so that no building will be placed on it. All buildings should be located 40 feet or more from the streets' right-of-way.

The Vergil Morris farmstead buildings have been located on an outlot that could be subdivided into individual lots conforming to minimum lot size at some future time at the option of the owner.

Southeast

The unplatted area lying in the southeast corner of the section consists of 37.5 acres. It is presently zoned Rural Residential and it is proposed that it be rezoned Planned Unit Development (PUD) to accommodate 240 Townhouses and related recreational facilities. Included within this development is an area of private open space which includes a proposed

clubhouse with an indoor swimming pool, a weight room, sauna, racket ball courts, ballroom/banquet facilities, restaurant and bar, as well as outdoor green space for soccer or football and tennis courts and parking. Soils are compatible with urban-density development, provided the area is served by public utilities. Some of the highest elevations in the section are found here. Elevation changes are minimal and generally, slopes do not exceed 6%.

Within the Townhouse development, areas of green space are proposed for neighborhood use and all units have been oriented so that at least one view from the Townhouse would be to open space. The orientation of the Townhouses is a north-south direction in order to make maximum use of solar heating. Additionally, many units are accommodated in cul-de-sacs for maximum privacy and driveways have been grouped in order to maximize front yard space. A buffer is included in the design between the existing storage buildings and proposed townhouse development in order to screen undesirable views and to act as a buffer between incompatible land uses. A jogging-exercise course is proposed along the outside ring of the development, where green space is available. The master plan also shows a baseball field, hockey rink and various tot lots throughout the development. The vehicular entry to the development is marked by a proposed system of signage which will welcome visitors and direct them to the clubhouse or to the townhouse development. A proposed boulevard separates the townhouse area from the club area. The club is placed on the highest point within Section 14 in order to take advantage of views of the area including the State Capitol and a wide area of Bismarck. In this

way, the club house and its adjoining open space become the focal point for the entire section as well as a show place for the development itself.

The acreage has been subdivided into eight large lots so that development of the project could be phased and more than one builder could be involved. The two warehouses existing on the west portion of this parcel are not compatible with the area's future development. It is suggested that an attempt be made to purchase these structures and remove them in order that the area might be developed in conformity with the general plan.

Northwest

The area lying in the northwest corner of the Section consists of 23.5 acres. It is presently zoned RLM Residential District and there is no change of zoning recommended. It is proposed in the master plan that this area be developed with townhouses. A minimum of 6 townhouse units have been developed per acre in accordance with the RLM-6 zoning which is the current zoning of the property. Cul-de-sacs are proposed in order to make maximum use of open space and low-lying areas within the property. Driveways have been grouped in order to maximize front yard space. The area contains approximately 23.5 acres and is proposed to be developed for 54 townhouse units on 6 lots.

Southwest

The area lying in the southwest corner of the Section west of Hay Creek Drive consists of 8.75 acres. It is presently zoned Rural Residen-

tial and it is proposed that the zoning be changed to RLM Residential District. It is proposed that 3 cul-de-sacs be developed with 8 units each which will result in 24 townhouse units and will provide each unit frontage on open space areas. The area of the utility easements has been proposed as open space for the townhouse development. Appropriate buffering and landscaping will ensure privacy from major streets and powerline towers.

The Master plan for the four subdivisions and the unplatted areas of Grande Prairie Estates lying in Section 14 is intended to provide a development concept and recommended procedures for the orderly long range development of the area. It is intended that the master plan provide a guide for the necessary utility services as well as a plan of development to make use of the natural characteristics with the resultant development in a manner which will meet all demands for the family type of living units. It is the intent to provide a plan of development pleasing to the prospective property owner and one which will be attractive in the general city area.

The public utility systems are basic to the overall development. Public utilities required to properly serve the area seem to be readily available and the planning necessary for these services has been addressed previously in the report. It is reasonable to assume that these basic services can be made available to provide all the convenience necessary for orderly development.

The multi-family complexes proposed in the three corners of the section will allow for a balanced type of family units for those individuals wishing the townhouse type of living. The "E" Estate zoning for the remainder of the subdivisions will provide the balance for those individuals desiring the conventional single family dwelling with adequate yard and green areas. The areas presently developed have set a pattern for the type of homes that may be anticipated in that they are all high type homes which would be a credit to any area.

In general, Section 14 is so located with respect to transportation, utilities, general view, the lack of unsightly surroundings, the proposed land use plan and development already underway that it is reasonable to assume that it may ultimately be one of the higher class developments in the Bismarck - Mandan area.

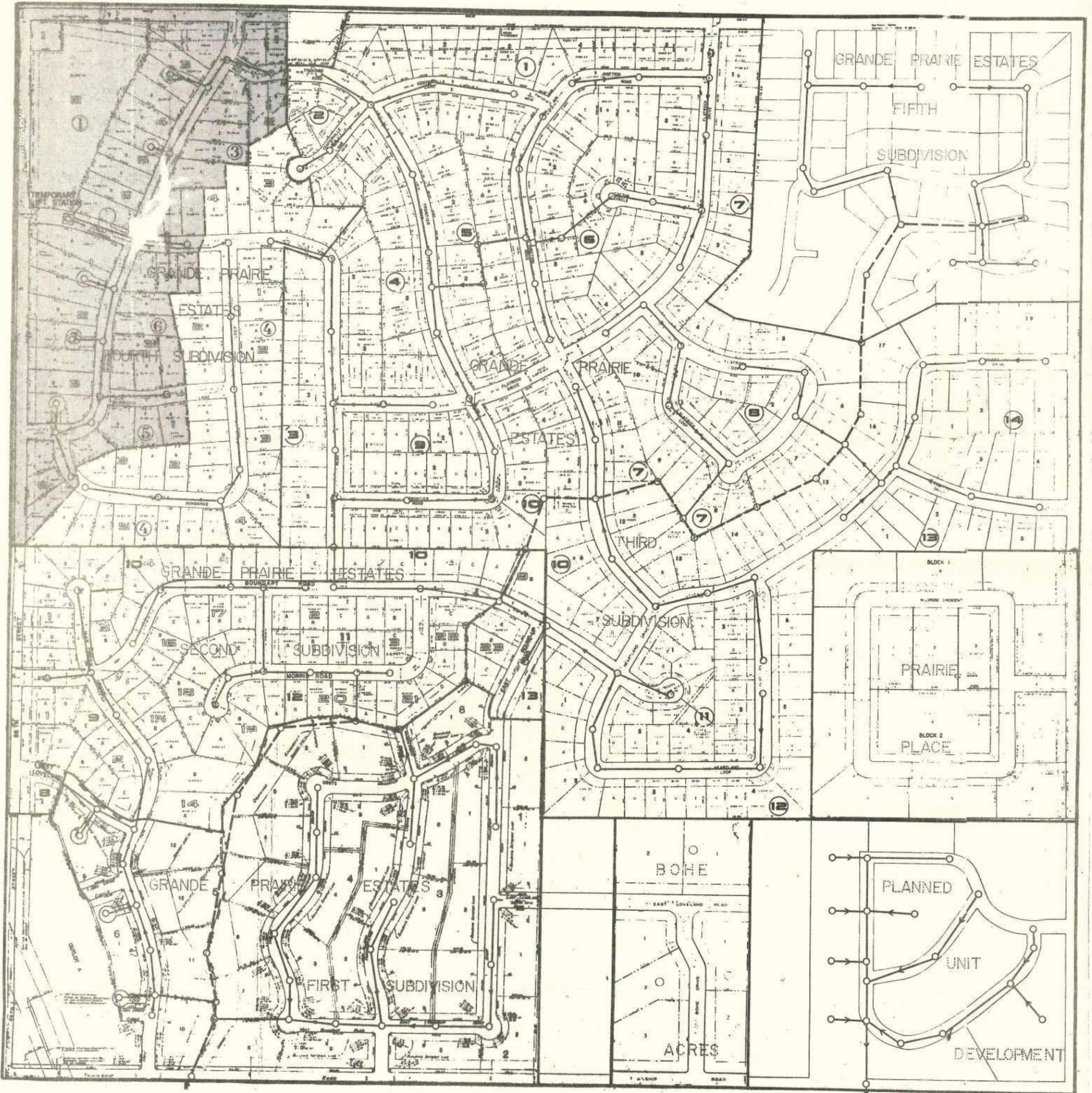
WATER SUPPLY

There are 2 sources of water supply available to serve Section 14, namely, the rural water system as proposed by the Burleigh Water Users Association and the municipal supply of the City of Bismarck. The rural water system is inadequate to serve the number of homes that will ultimately be constructed and will not provide for fire protection or lawn watering. The area lies within the 2 mile service area of the City and the rural supply would be in conflict with agreed service areas.

The municipal system of the City of Bismarck is designed to provide full service including an adequate supply for fire protection and lawn watering. The system is now extended to a location which can be readily extended to service the area. Figure No. 7 shows a preliminary layout of the municipal water system proposed to serve individual lots. It is possible that the trunk water system could be extended to Section 14 during the 1981 construction season providing that necessary arrangements are made for annexation and financing. Construction of the initial phase of the distribution system could also be constructed in 1981 or 1982. If it be the decision to proceed with development, it is recommended that the necessary arrangements for extension of water service be made at an early date.

DOMESTIC SEWER

The topography of Section 14 is such that a gravity system will serve the entire area providing that the necessary trunk line systems are constructed and connected to the Hay Creek trunk line system, which is now in



SANITARY SEWER MASTER PLAN
GRANDE PRAIRIE ESTATES, BISMARCK, NORTH DAKOTA
TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES, INCORPORATED

Interceptor
 Collector
 Lift Station Service Area
 Scale in Feet
 0 200 400



FIGURE NO. 6

service. The trunk line system which will serve the majority of the Section will connect to the Hay Creek trunk line sewer and enter the section a short distance east of the southwest corner and extend in a northeasterly direction through the Section. The service to the extreme northwest and southeast corners will be dependent upon other trunk lines connecting to the Hay Creek system. In the event that development should take place in these areas, a temporary lift station and force main could be provided for this interim period, so designed that it could be converted to the gravity system when available. Figure No. 6 shows a preliminary layout of the trunk and collector sewer system within Section 14.

It is possible that the domestic sewer service could be made available during the 1981 construction season providing necessary arrangements be made for annexation and financing.

STREETS AND HIGHWAYS

The transportation system serving the northeast section of the City and adjacent areas is complimented by two major routes. U.S. Highway No. 83 running north from the City will be the major route of travel into the City. This highway is one mile west of Section 14 and will be available when a bridge crossing Hay Creek is constructed which is scheduled for 1981. The other major means of access will be the county highway (extension of Centennial Road) running along the east line of Section 14. This is the only route connecting with I-94 serving the eastern portion of the City.

The street system within the subdivisions will be the rural type section permitted under "E" Estates zoning. Those streets adjacent to the multiple

housing areas will need be the urban type section with curb and gutter. The street configuration is such that it will be conducive to local traffic, but such that it will discourage through fast traffic. It is intended that initially the surfacing be gravel, but may be improved by a low grade asphalt treatment later when conditions will warrant the improvement.

Figure No. 8 shows areas requiring future street construction. Figure No. 9 shows typical street sections pertinent to the area street system under the zoning and development densities shown on the Master Plan.

DRAINAGE

The natural drainage of the Section is benefited by a low lying flood plain area extending from the southwest to the northeast. The grade of the waterway is gradual and does not cause erosion. The area is well grassed and during periods of no run off, is a desirable recreational area. The drainage of most of the section is into the waterway and gradients are such that surface drainage will be adequate. Small areas lying in the extreme northwest and southeast corners are in other drainage areas and may be drained by surface drainage.

Figure No. 8 shows the existing drainage patterns and structure.

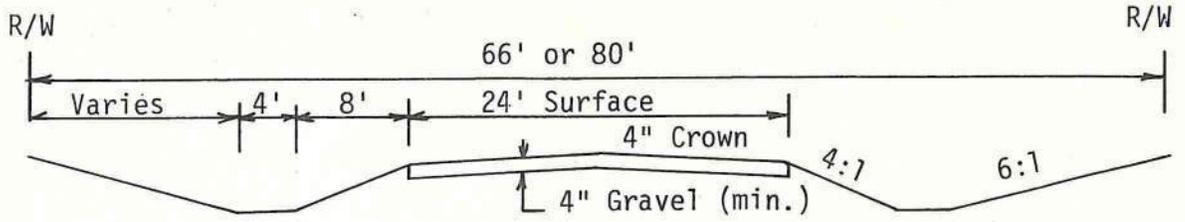
ELECTRIC-NATURAL GAS

The electric service will be provided by Capitol Electric Cooperative. There is adequate service to the area and much of the area is now serviced by an underground system in the easements at the rear lot line (see Figure 4). This system can readily be extended when the need requires. The natural gas service will be provided by Montana-Dakota Utilities Company and the supply

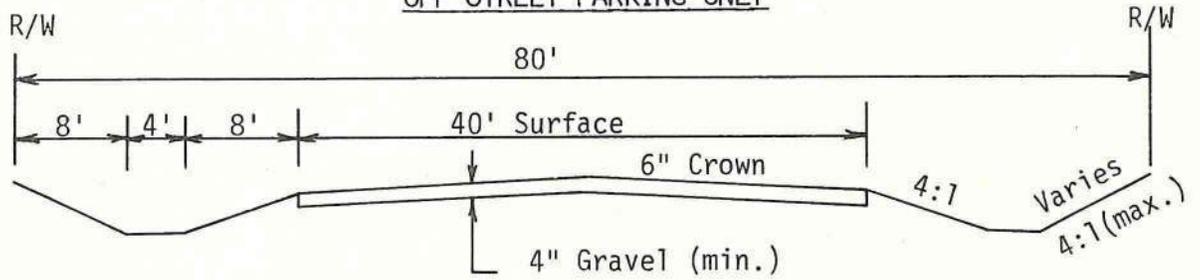
TYPICAL STREET SECTIONS

Figure No. 9

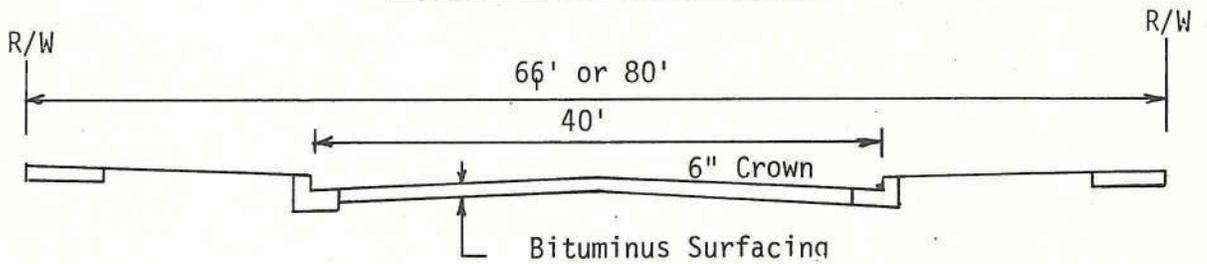
RURAL STREET SECTIONS



OFF STREET PARKING ONLY



ON STREET PARKING PERMITTED



main is now in place on the west line. This service can readily be extended into the Section in the easements on the rear lot lines as the need requires.

TELEPHONE-CABLE TV

The telephone service is provided by Northwestern Bell Telephone Company and is readily available as service is required. A considerable amount of the area now has service in place by an underground system in the rear lot easement area (see Figure 4). Cable TV has not been extended. However, this service will be available when annexation has been accomplished. The installation cannot be made prior to annexation due to a Federal Communications regulation.

SCHOOL-PARK

The natural development of the City in a northeasterly direction will require school and park facilities. The Bismarck School Board is considering the location of a school site in the general area and, while no specific site has been selected, it is anticipated that school facilities will be available as development of the area takes place. The park facilities are many times coordinated with the school system and it is anticipated that these facilities will be available. The green area along the waterway in Section 14, and the low area lying in the northwest corner, provide excellent possibilities for park improvements.

UTILITY LOCATION

In the platting process of Grande Prairie Estates four subdivisions, specified areas were set aside in the form of easements to provide right-of-way for utility location. A sizable utility, recreational and drainage ease-

ment has been provided in the waterway running from southwest to northeast through the Section. This will provide adequate latitude in the selection of a route for the trunk line sewer. Adequate provisions have also be made through platted areas for easements where it is necessary for sewer installation in order to obtain gravity flow. In general, however, the main lines of the sewer and water systems will be in the street section to allow for ease of maintenance and low costs for service line connections.

The electric, gas, telephone and cable-TV will be located underground in easements provided on the rear lot lines. The matter of utility locations has been well provided for and it would not appear that there will be any difficulty in the installation of the necessary utilities to serve the area.

SANITARY SEWER AND WATERMAIN

Cost estimates have been prepared for construction of sanitary sewers and watermains based on the extension of trunk lines from the City of Bismarck. The system layouts shown in Figures No. 6 and 7 depict line sizes based on (1) City of Bismarck Master Plan For Wastewater Conveyance Facilities, (2) City of Bismarck Master Plan For Water Storage and Distribution Facilities and (3) a preliminary analysis of wastewater collection system and water distribution system needs.

The City policy regarding payment for water and sewer service involves changing for 8" sanitary sewer and 8" watermain. Where oversizing is required to provide trunk service the respective utility pays the cost for oversizing when the City constructs the project. A trunk connection assessment of \$300.00 for water and \$200.00 for sanitary sewer is made by the City on each residential lot served in a new area of development.

Construction costs estimates have been prepared based on 8" sanitary sewer and 8" watermain construction. Construction cost estimates include estimated construction costs, 10% added for contingencies and 10% added for engineering. Cost estimates assume current cost factors (ENR Construction Cost Index = 3400).

The following table summarizes estimated construction costs for sanitary sewer and watermains serving existing Grande Prairie Estates subdivisions and development shown on the proposed Master Plan for Grande Prairie Estates based on 8" sanitary sewer and watermain sizing.

ESTIMATED CONSTRUCTION COSTS

<u>SUBDIVISION</u>	<u>SANITARY SEWER</u>	<u>WATERMAIN</u>
1st Addition	\$ 180,000	\$ 174,600
2nd Addition	\$ 159,600	\$ 142,800
3rd Addition	\$ 463,500	\$ 520,700
4th Addition	\$ 179,700	\$ 153,700
Proposed 5th Addition	\$ 111,600	\$ 99,200
Planned Unit Development	\$ 96,000	\$ 108,000

The above cost estimates include individual service connections, gravel street surface restoration and seeding of disturbed roadside ditches and easement areas. Service stubs are not included.

Developer costs for sanitary sewer and watermain construction consist of lot costs for undeveloped property. It has been noted by City administrative staff that sanitary sewer and watermain costs can be specially assessed to developed property. The tables on the following pages provide a breakdown of project costs as necessary to show estimated lot or unit costs and the developers cost for undeveloped lots assuming all undeveloped lots are owned by the developer or his associates. It can be determined from the tables that total estimated developer costs for watermain and sanitary sewer.

BREAKDOWN OF ESTIMATED COSTS
FOR SANITARY SEWER CONSTRUCTION

<u>SUB-DIVISION</u>	<u>TOTAL EST. COST</u>	<u>TOTAL LOTS/ UNITS</u>	<u>ESTIMATED COST LOT/UNIT</u>	<u>DEVELOPED LOTS</u>	<u>ESTIMATED COST TO DEVELOPED LOTS</u>	<u>ESTIMATED DEVELOPER COST</u>
I (RLM)	\$ 48,000	24	\$ 2000	-0-	\$ -0-	\$ 48,000
(OTHER)	132,000	30	4400	13	57,200	74,800
II	159,600	84	1900	12	22,800	136,800
III	463,500	309	1500	9	13,500	450,000
IV (RLM)	62,100	54	1150	-0-	-0-	62,100
(OTHER)	117,600	68	1730	-0-	-0-	117,600
Proposed V	111,600	62	1800	-0-	-0-	111,600
P.U.D.	96,000	240	400	-0-	-0-	96,000

BREAKDOWN OF ESTIMATED COSTS
FOR WATERMAIN CONSTRUCTION

<u>SUB-DIVISION</u>	<u>TOTAL EST. COST</u>	<u>TOTAL LOTS/ UNITS</u>	<u>ESTIMATED COST LOT/UNIT</u>	<u>DEVELOPED LOTS</u>	<u>ESTIMATED COST TO DEVELOPED LOTS</u>	<u>ESTIMATED DEVELOPER COST</u>
I						
(RLM)	\$ 36,600	24	\$ 1500	-0-	\$ -0-	\$ 36,600
(OTHER)	138,000	30	4600	13	58,800	78,200
II	142,800	84	1700	12	20,400	122,400
III						
*(H.P. WATER)	151,800	92	1650	2	3,300	148,500
*(I.P. WATER)	368,900	217	1700	7	11,900	357,00
IV						
(RLM)	43,200	54	800	-0-	-0-	43,200
(OTHER)	110,500	67	1650	-0-	-0-	110,500
PROPOSED V	99,200	62	1600	-0-	-0-	99,200
P.U.D.	108,000	240	450	-0-	-0-	108,000

* H.P. -- High Pressure
* I.P. -- Intermediate Pressure

BY SUBDIVISION AS FOLLOWS:

<u>DIVISION</u>	<u>SANITARY SEWER</u>	<u>WATERMAIN</u>	<u>TOTAL</u>
I	\$ 122,800	\$ 114,800	\$ 237,600
II	136,800	122,400	259,200
III	450,000	148,500 (H.P.) 357,000 (I.P.)	955,500
IV	179,700	153,700	333,400
V	111,600	99,200	210,800
P.U.D.	96,000	108,000	204,000

STREETS

Street improvements in all residential areas of Subdivision I, II, and III are complete and consist of the rural street section with a 24 foot wide gravel surfacing. This particular section does not permit on-street parking.

Street improvements on Hay Creek Drive and Loveland Road within Subdivision I, Deadwood Drive in Subdivision IV and public streets in the proposed Planned Unit Development will require urban street section with concrete curb and gutter and bituminous surfacing as a result of the higher volume traffic from proposed multi-family development along those streets. Improvements will also likely include minor storm sewer, sidewalks and street lighting. Based on comparable project costs in the City of Bismarck, the estimated cost of full urban street improvements is \$60.00 per foot of roadway. These projects are typically financed by special assessment and require no prepayment from the developer.

Street improvements for residential areas of the 4th Subdivision and the proposed 5th Subdivision are rural street section and involve surface drainage of stormwater runoff. Grading and gravel costs are estimated at \$16.50 per foot of roadway.

Implementation of the proposed master plan and provisions to serve Section 14, Hay Creek Township with public utilities is dependent on the developer seeking annexation to the City of Bismarck. Upon the approval of the Request For Annexation by the Board of City Commissioners, the developer may proceed with zoning and necessary platting.

City of Bismarck Subdivision Ordinances require the submittal of preliminary plats with request for zoning. Areas of the proposed master plan in Section 14 requiring zoning approval are:

1. Grande Prairie Estates 1st Addition
 - a) RLM - 6 Zoning - Outlot A
 - Lot 1, Block 6
 - Lot 1, Block 7
 - b) E - Estates Zoning - Block 1, 2, 3, 4, 5 & 8
2. Grande Prairie Estates 2nd Addition
 - a) RLM - 6 Zoning - Lot 1, Block 8
 - b) E- Estates Zoning - Blocks 9 - 13
3. Grande Prairie Estates 3rd Addition
 - a) E - Estates Zoning - Block 1 - 14
4. Grande Prairie Estates 4th Addition
 - a) RLM - 6 Zoning - Lots 3 - 6, Block 1
 - Lots 1 - 3, Block 7
5. Proposed Grande Prairie Estates 5th Addition (Future)
 - a) E - Estates Zoning - all lots

6. Proposed Planned Unit Development

a) P.U.D. Designation

LAND USE CONTROL PROCEDURES

City Zoning Change Requests require a minimum of 90 days for approval. Applications must be submitted 15 days prior to the first Planning Commission consideration. Submittals are made to the City-County Planning Department. All requests require 2 Planning Commission meetings (consideration and public hearing).

City plats for over 3 lots require a minimum of 120 days for approval. All plats require 2 meetings by the Planning Commission (consideration and public hearing), and a final approval by the City Commission (consideration only). Preliminary Plats are due 30 days prior to initial consideration by the Planning Commission. Final Plats of more than 3 lots are to be submitted 30 days prior to final consideration by the City Commission.

As noted above, preliminary plats of areas included in zoning requests are to be submitted with the zoning request.