

**SPY HILL LANDS  
DEVELOPMENT PROJECT  
SERVICING STUDY**

Prepared For:	<b>Alberta Transportation</b>
Prepared By:	<b>D.A. Watt Consulting Group Ltd.</b>
File:	6418
Date:	October 28, 2002



---

## TABLE OF CONTENTS

<b>1.0 BACKGROUND .....</b>	<b>1</b>
<b>2.0 SANITARY SEWERAGE.....</b>	<b>2</b>
2.1 Present Servicing Concept .....	2
2.2 Servicing Concept, Gravel Mining .....	2
<b>3.0 STORM SEWERAGE.....</b>	<b>3</b>
3.1 Present Servicing Concept .....	3
3.2 Servicing Concept , Gravel Mining .....	3
<b>4.0 WATER SERVICING.....</b>	<b>4</b>
4.1 Present Servicing Concept .....	4
4.2 Servicing Concept, Gravel Mining .....	4
<b>5.0 SHALLOW UTILITIES .....</b>	<b>4</b>
5.1 Electrical.....	4
5.2 Gas .....	4
5.3 Telus.....	4

## LIST OF FIGURES

- Figure 1. Sanitary Sewerage Present Servicing Concept **Error! Bookmark not defined.**
- Figure 2. Sanitary Sewerage Servicing Concept Gravel Mining ..... **Error! Bookmark not defined.**
- Figure 3. Storm Sewerage Present Servicing Concept ....**Error! Bookmark not defined.**
- Figure 4. Storm Sewerage Servicing Concept Gravel Mining ..... **Error! Bookmark not defined.**
- Figure 5. Water Servicing Present Servicing Concept ....**Error! Bookmark not defined.**
- Figure 6. Water Servicing Concept Gravel Mining .... **Error! Bookmark not defined.**

---

## 1.0 BACKGROUND

As a member of the Brown & Associates Planning Group team, D.A. Watt Consulting Group reviewed the servicing concept for the subject area. This report presents the results of our review.

In evaluating the servicing for the subject area the following tasks were undertaken:

- Review of the existing servicing for the area.
- Review of the servicing concepts under the development scenario of developing the subject area as a research park with no gravel extraction.
- Review of the servicing concepts under the development scenario of developing the subject area as a research park after removal of the gravel.

---

## 2.0 SANITARY SEWERAGE

### 2.1 Present Servicing Concept

There is an existing 300 mm (private) sanitary sewer, located in an utility right of way on the east side of 85<sup>th</sup> street. The sewer, shown on figure 1, extends from a private lift station, located at the north entrance to the correctional institute to approximately 820 m north of the entrance. Sewage draining to the lift station is pumped south to 112<sup>th</sup> avenue, through a 250 mm (private) force main into the City's 375 mm, 85<sup>th</sup> street sanitary trunk sewer. The private sewer serves the; U of C Experimental Farm, the Bow River Correctional Centre, and the Provincial Correctional Institute.

A portion of the SW  $\frac{1}{4}$  of section 28 would be serviced by extending sanitary sewers from the Royal Oak subdivision south of 112<sup>th</sup> avenue. The balance of the SW  $\frac{1}{4}$  of section 28, and portions of the NW and NE  $\frac{1}{4}$  of section 28, under the present servicing concept, would be serviced with sanitary sewers by extending a sanitary sewer as development occurs east of the subject area.

Section 33 and portions of section 28 would be serviced by extended sanitary sewers from the north and east as development proceeds east of the subject area.

### 2.2 Servicing Concept, Gravel Mining

In one of the mining concepts, the gravel pit the does not extend into the south half of section 28. Under this concept the south half of section 28 would be left at its present ground elevation. The servicing for this concept is shown on figure 2. As was the case in the present servicing concept a portion of the SW  $\frac{1}{4}$  of section 28 would be serviced by extending sanitary sewers from the Royal Oak subdivision. The balance of the SW  $\frac{1}{4}$  and SE  $\frac{1}{4}$  of section 28 would be serviced by extending a sanitary sewer as development occurs east of the subject area. A sanitary sewer would be extended from the SW  $\frac{1}{4}$  of section 35 (Volker Stevin) across the north half of section 27 to the subject area. Because the south half section 28 would not be mined the final elevation of the half section would be between 1273 at the west end and 1264 at the east end. A sanitary sewer could be constructed across north half of section 27 without the sewer being excessively deep.

After removal of the gravel and restoration of the pit the final ground elevation in the north half of section 28 and section 33 would be between 1245 m and 1240 m, 25 m below the final ground elevation in the south half of section 28. To service the restored pit area by extending a sanitary sewer from the Volker Stevin property across section 27 would not be feasible in that the sewer would be excessively deep. Accordingly, in order to service the north half of section 28 and section 33 a sanitary sewer would be extended from the north and east as development proceeds from the east. The sanitary sewer would be located in the major ravine that crosses the NW  $\frac{1}{4}$  of section 34 (Lafarge) and enters the NE  $\frac{1}{4}$

---

of section 33 at 85<sup>th</sup> street. Sanitary sewers within section 33 and the north half of section 28 would drain to the sanitary trunk sewer.

If the gravel pit is extended into the south half of section 28 the area comprising the pit when restored would drain north into the sanitary trunk sewer in section 33.

### **3.0 STORM SEWERAGE**

#### **3.1 Present Servicing Concept**

Figure 3 shows the existing drainage boundaries for the subject area. The majority of SW  $\frac{1}{4}$  of section 28 drains south across the 112<sup>th</sup> Avenue right of way into the Royal Oak subdivision. The balance of the  $\frac{1}{4}$  section and the east half of section 28 drain east across section 27 (Provincial Jail and Inland properties) into a ravine located in section 35. The ravine crosses the Volker Stevin gravel pit (SW  $\frac{1}{4}$  section 35). The majority of section 33 and the NW  $\frac{1}{4}$  of section 28 drain to a ravine that crosses section 35. The ravine, part of the Nose Creek drainage basin, extends from Nose Creek across lands north of the City into the Lafarge gravel pit in section 34, where the ravine crosses the Lafarge property into section 33.

#### **3.2 Servicing Concept, Gravel Mining**

In one of the concepts for mining of the subject lands does not extend the mining operation into the south half of section 28. Under this concept storm drainage from the SW  $\frac{1}{4}$  of section 28 would drain through storm sewers to a pond shown on Figure 4, which in turn would discharge into storm sewers in the Royal Oak subdivision.

In the concept of not mining lands in the south half of section 28 lands presently leased to the University would remain as an experimental farm, and lands comprising the Bow River Correctional Centre would be redeveloped as a commercial / industrial use. Storm drainage from the farm and correctional centres would drain into a storm sewer flowing from 85<sup>th</sup> street east along the north section line of section 27 to the pond on the Volker Stevin property. Lands within the mining area would drain to a pond located in section 33 at the point where the major ravine crosses 85<sup>th</sup> street. A storm sewer would have to be extended as development occurs east of the subject area to the pond.

If the mining operation extends into the south half of section 28 the mined area would drain to the pond in section 33.

---

## **4.0 WATER SERVICING**

### **4.1 Present Servicing Concept**

The existing Top Hill water reservoir located in the SW  $\frac{1}{4}$  of section 28 has sufficient storage capacity to supply future development in sections 28 and 33. Two water pressure zones; the Top Hill and Research Park zones divide the subject area. Figure 5 shows the water pressure zones. The west half of section 28 and a portion of the west half of section 33 are in the higher Research Park zone whereas, the east half of section 28 and the majority of section 33 are in the Top Hill pressure zone.

### **4.2 Servicing Concept, Gravel Mining**

In mining the north half of section 28 and section 33 the final ground elevation after restoration of the pit will be between 1240 and 1245 m. By lowering the ground level all of the north half of section 28 and all of section 33 will be in the Top Hill Pressure zone. The pressure zone after mining are shown on figure 6.

## **5.0 SHALLOW UTILITIES**

### **5.1 Electrical**

A 240 KV transmission line traverses the subject area from east to west on the section line between sections 28 and 33. The transmission line is owned by Alta Link.

### **5.2 Gas**

Atco Gas mains exist along the west side of 85<sup>th</sup> street and the south side of 144<sup>th</sup> avenue in rights of way within the subject area.

### **5.3 Telus**

**Telus does not have any facilities within the subject area**

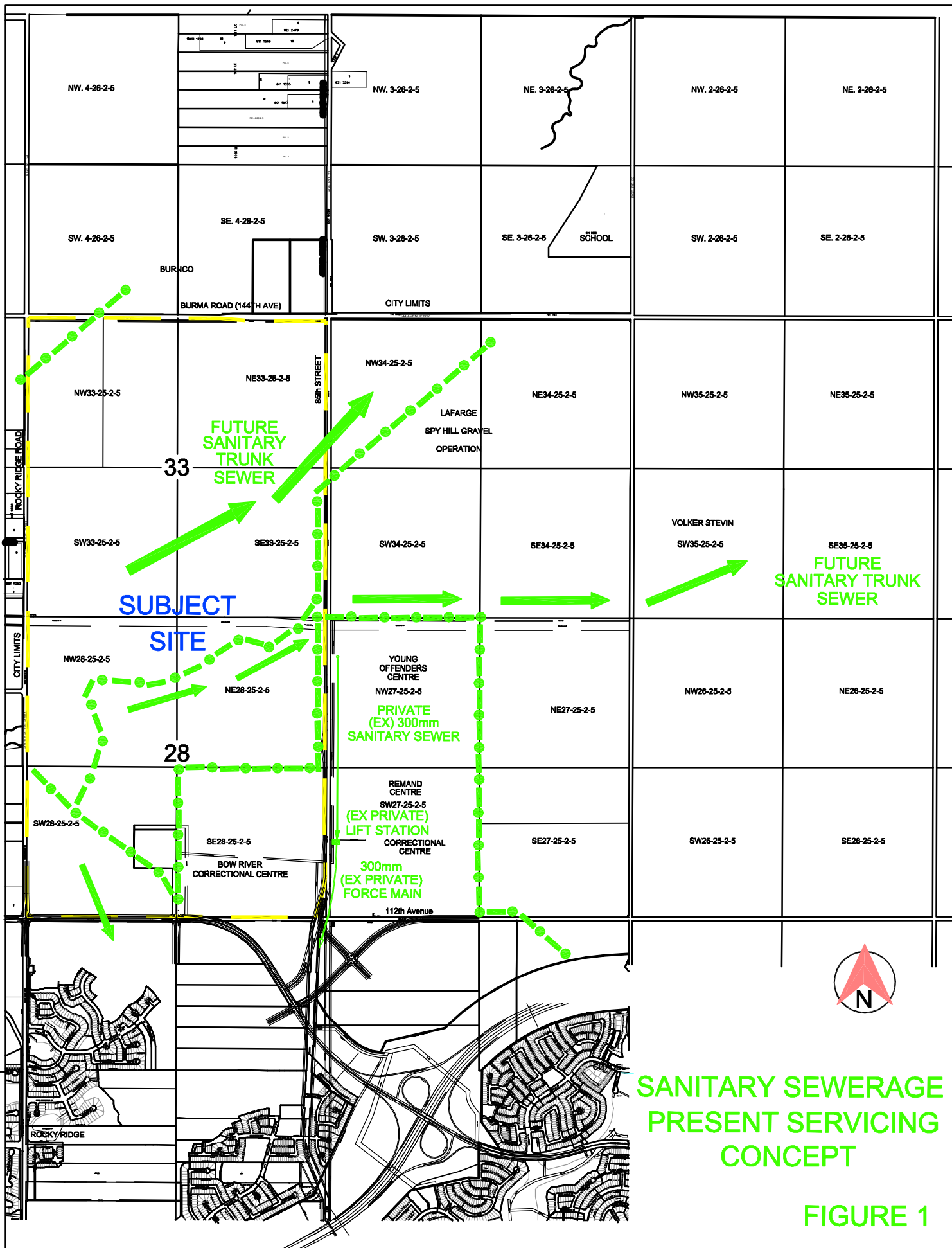
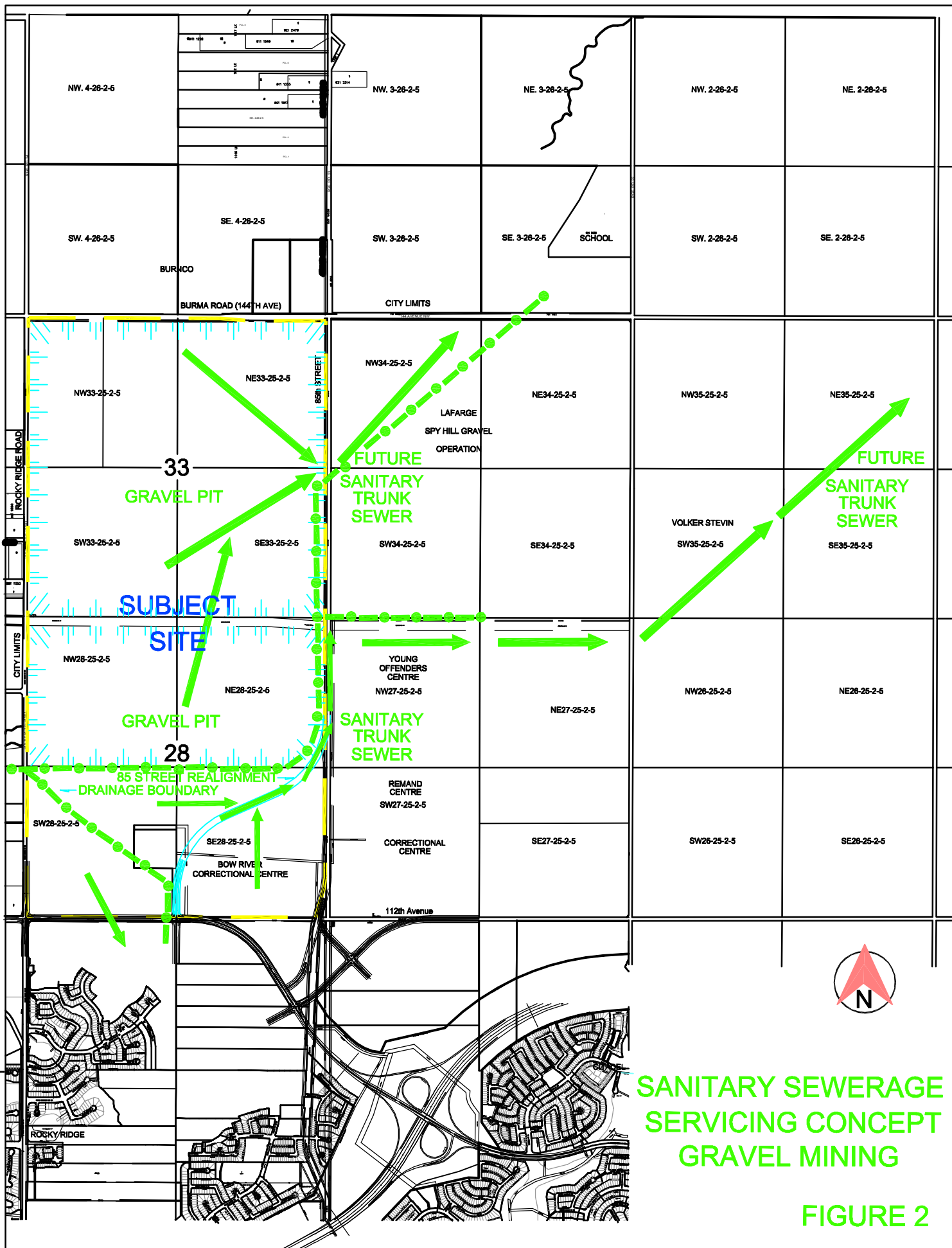


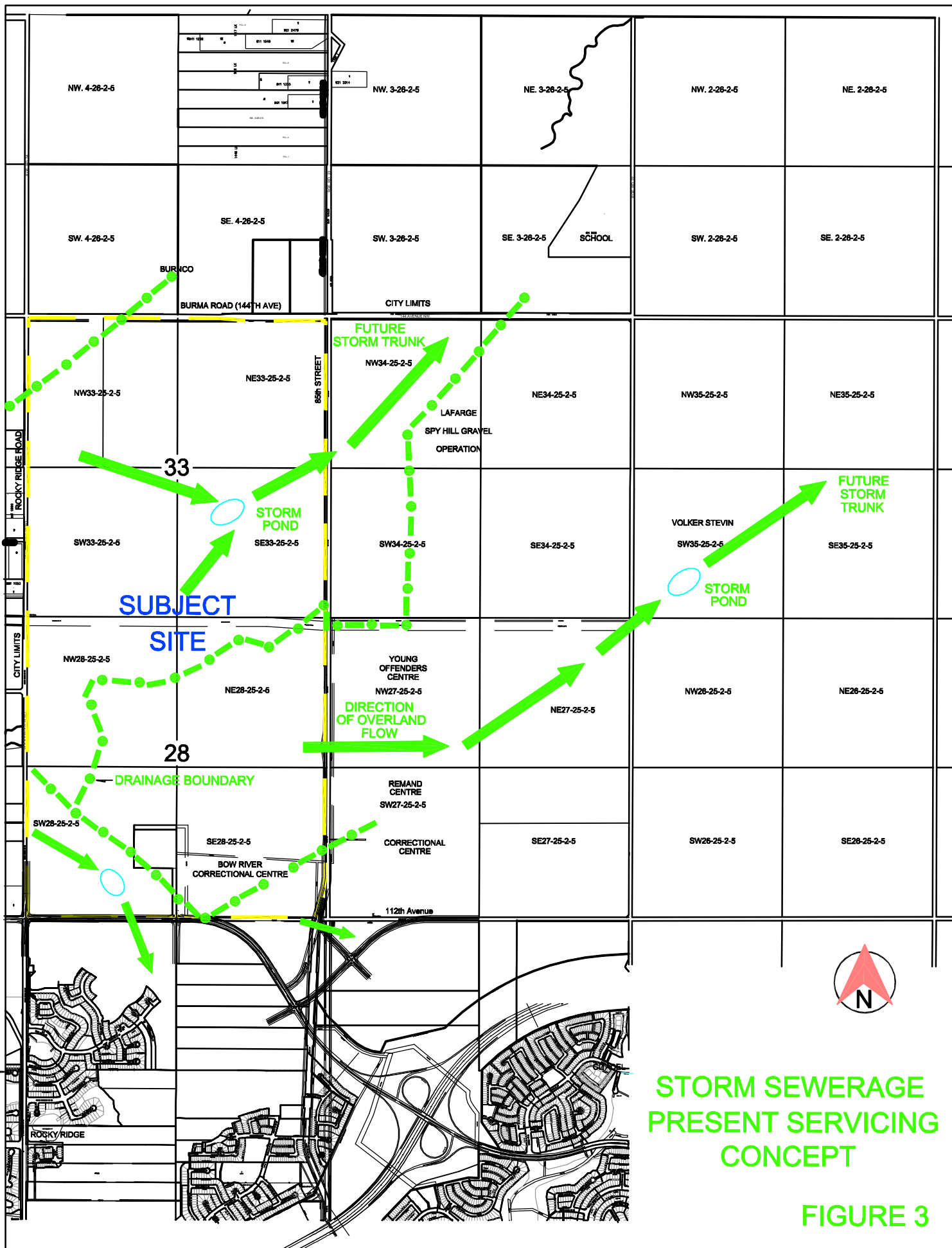
FIGURE 1

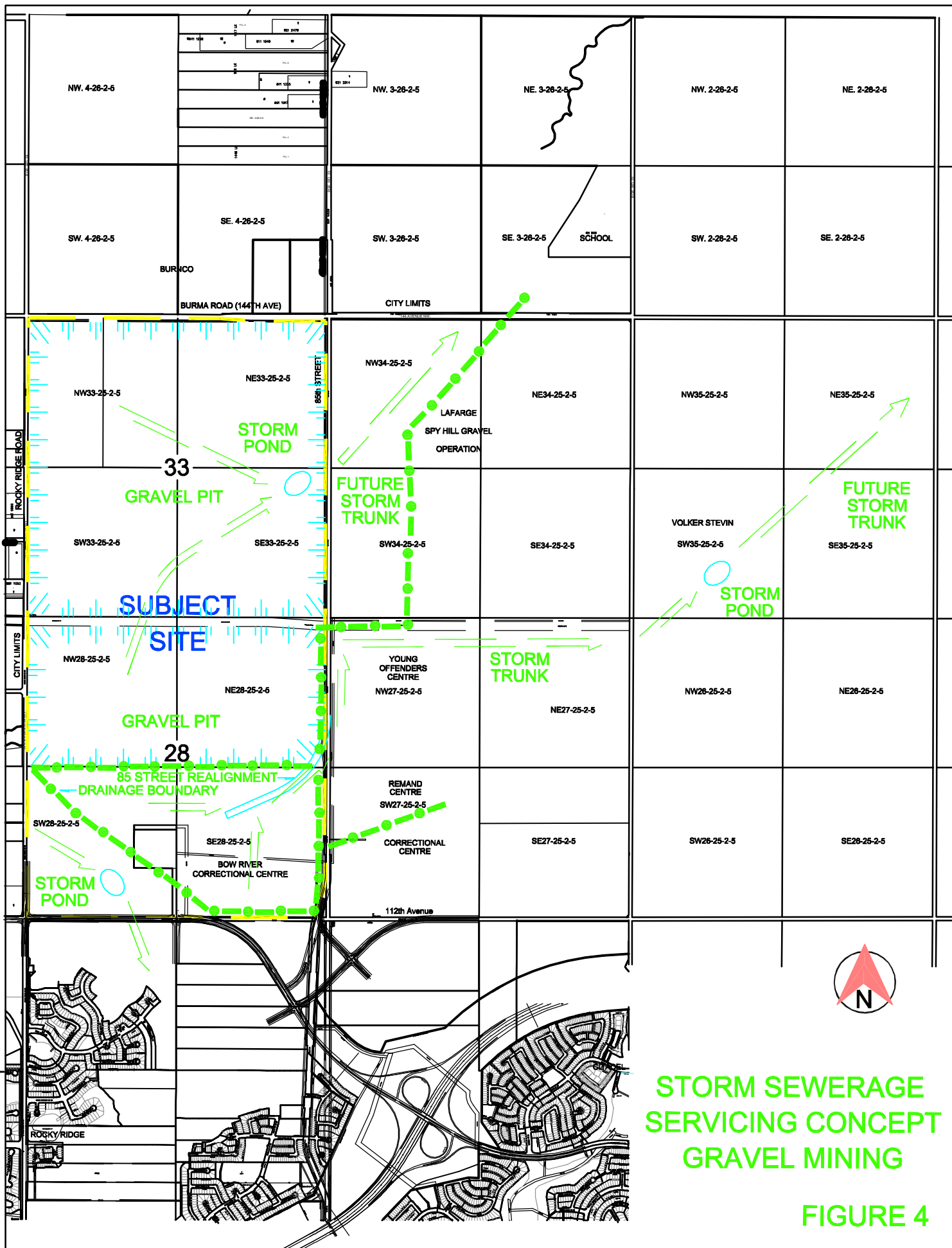


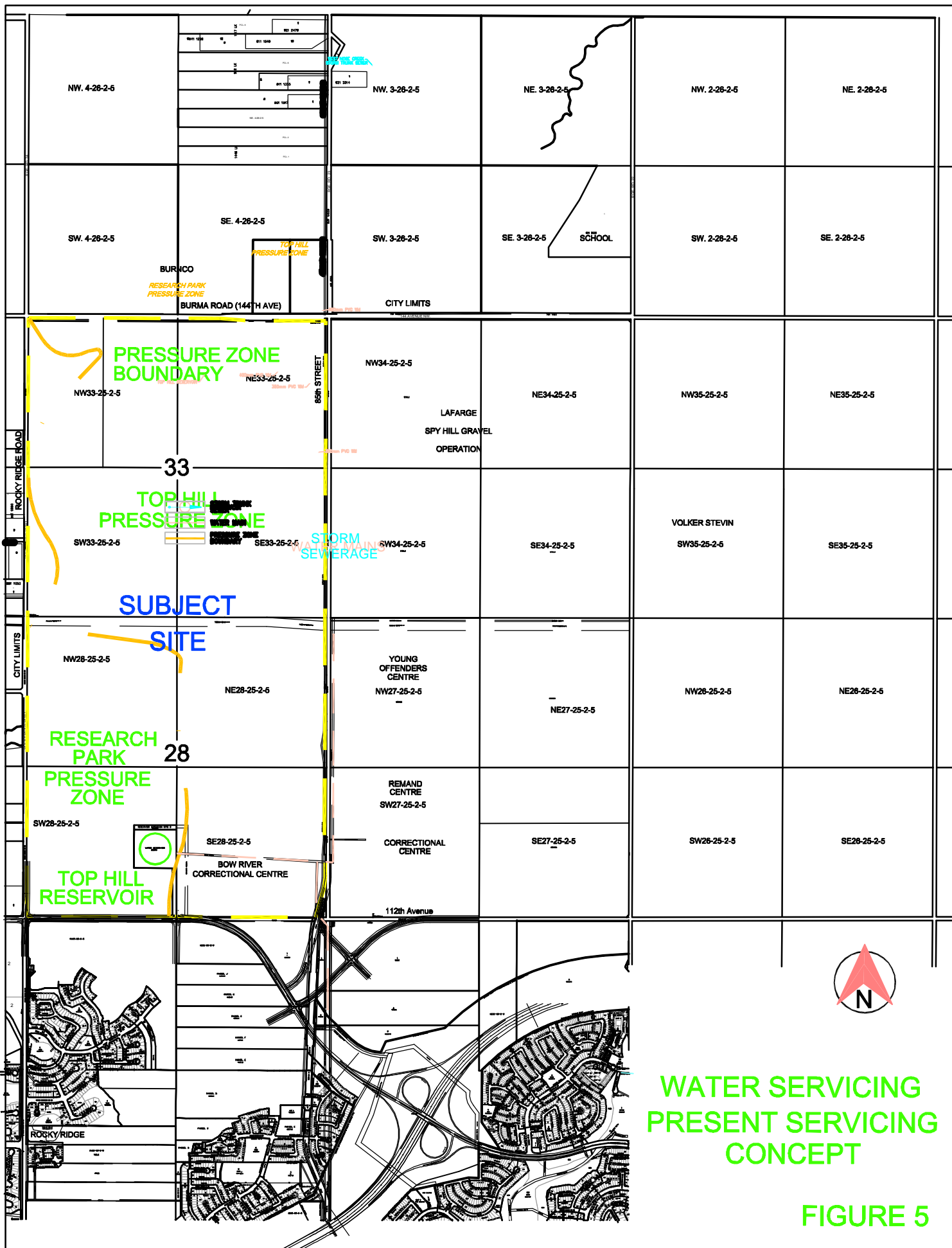


**SANITARY SEWERAGE  
SERVICING CONCEPT  
GRAVEL MINING**

**FIGURE 2**

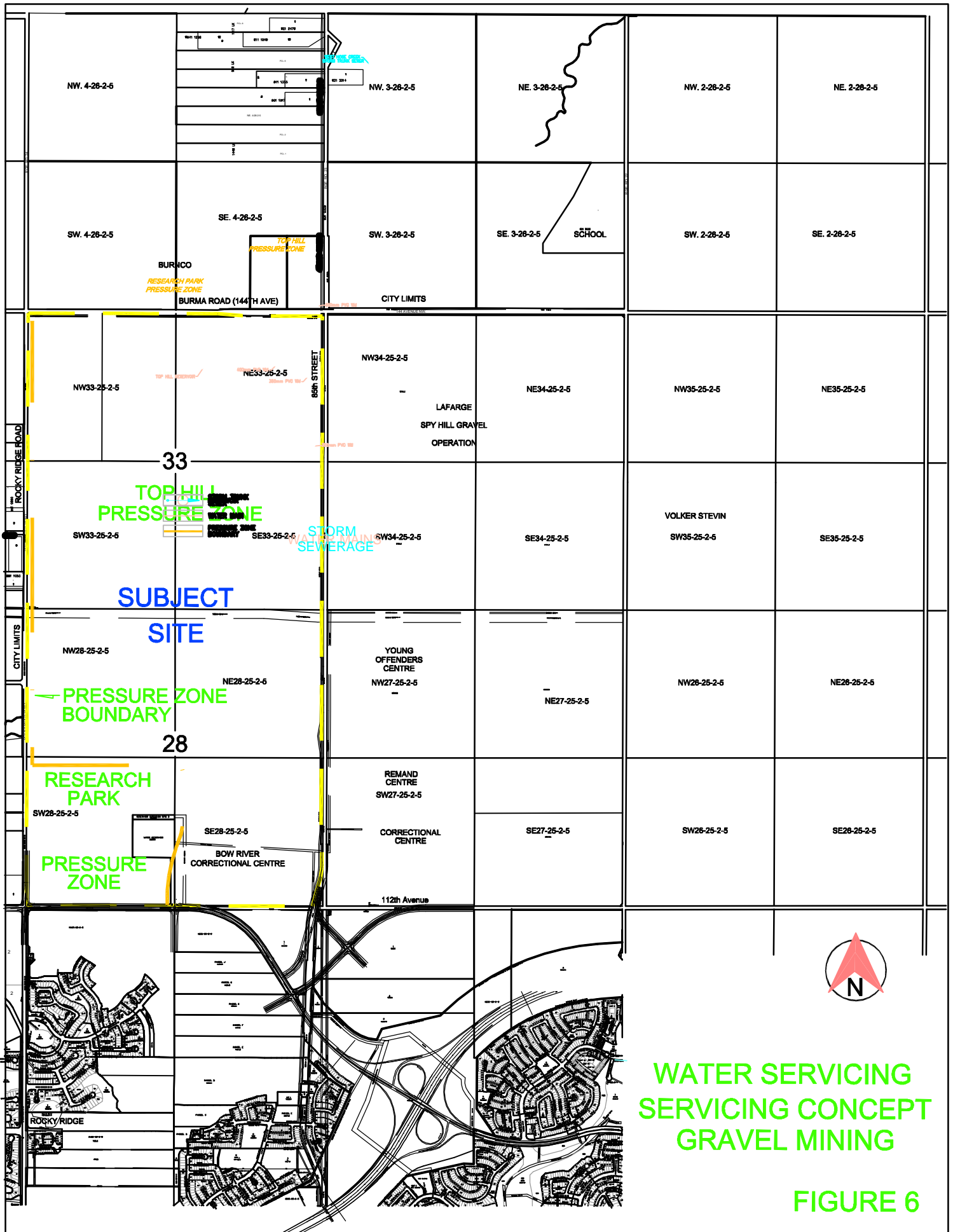






WATER SERVICING  
PRESENT SERVICING  
CONCEPT

FIGURE 5



WATER SERVICING  
SERVICING CONCEPT  
GRAVEL MINING

FIGURE 6